

**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”),

City of Manchester, New Hampshire

is authorized to discharge from the facility located at

**Manchester Wastewater Treatment Facility
300 Winston Street
Manchester, NH 03103 and 15 Combined Sewer Overflow (CSO) Outfalls**

to receiving waters named

**Merrimack River (NHRIV700060803-14-02 and NHIMP700060802-04)
Piscataquog River (NHRIV700060607-22)
Baker Brook (NHRIV700060803-08)
Rays Brook (NHRIV700060802-15)
Unnamed Brook (NHRIV700060803-17)**

Merrimack River watershed – All Class B

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

The Towns of Goffstown, Bedford and Londonderry, New Hampshire are Co-permittees for: Part I.B, Unauthorized Discharges; Part I.C, Operation and Maintenance of the Treatment and Control Facilities (which include conditions regarding the operation and maintenance of the collection systems owned and operated by the Towns); and Part I.D, Alternate Power Source. The permit number assigned to the Towns for purposes of reporting (using NetDMR through EPA’s Central Data Exchange, as specified in Part I.I below) in accordance with the requirements in Parts I.B, I.C, and I.D of this permit are as follows: Bedford: **NHC010447**; Goffstown: **NHC020447**; and Londonderry: **NHC030447**.

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the terms and conditions of Parts I.B, I.C, and I.D of this permit. The Permittee and Co-permittees are severally liable under Parts I.B, I.C, and I.D for their own activities and required reporting under Part I.I with respect to the portions of the collection system that they own or operate. They are not liable for violations of Parts I.B, I.C, and I.D committed by others relative to the portions of the collection system owned and operated by others. Nor are they responsible for any reporting under Part I.I that is required of other Permittees under Parts I.B, I.C, and I.D.

The responsible departments for the Co-permittees are:

Town of Goffstown Goffstown Sewer Commission 16 Main Street Goffstown, NH 03045	Town of Bedford 24 North Amherst Road Bedford, NH 03110	Town of Londonderry 268 B Mammoth Road Londonderry, NH 03053

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 February 11, 2015.

This permit consists of **Part I** including the cover page(s), **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011), **Attachment B** (Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013), **Attachment C** (Reassessment of Technically Based Industrial Discharge Limits), **Attachment D** (Industrial Pretreatment Program Annual Report); **Attachment E** (PFAS Analyte List); **Attachment F** (Combined Sewer Overflow Outfalls); Attachment G (List for Pollutant Scans) and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this day of

KATHERINE MARRESE

Digitally signed by KATHERINE

MARRESE

Date: 2025.11.03 12:28:32 -05'00'

For 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 the Merrimack River. The discharge shall be limited and monitored as specified below; the receiving water and the influent shall be monitored as specified below.

Effluent Characteristic	Effluent Limitation			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
Rolling Average Effluent Flow ⁵	34 MGD ⁵	---	---	Continuous	Recorder
Effluent Flow ⁵	Report MGD	---	Report MGD	Continuous	Recorder
CBOD ₅	25 mg/L 7,090 lb/day	40 mg/L 11,350 lb/day	45 mg/L 12,770 lb/day	2/Week	Composite
CBOD ₅ Removal ⁶	≥ 85 %	---	---	1/Month	Calculation
TSS	30 mg/L 8,510 lb/day	45 mg/L 12,770 lb/day	50 mg/L 14,190 lb/day	2/Week	Composite
TSS Removal ⁶	≥ 85 %	---	---	1/Month	Calculation
pH Range ⁷	6.5 - 8.0 S.U.			1/Day	Grab
Total Residual Chlorine ^{8,9}	130 µg/L	---	220 µg/L	3/Day	Grab
<i>Escherichia coli</i> ^{8,9}	126/100 mL	---	406/100 mL	3/Week	Grab
Total Phosphorus ¹⁰ (April 1 – October 31)	236 lb/day	---	Report lb/day	2/Month	Composite
Total Phosphorus ¹⁰	Report mg/L	---	Report mg/L	2/Month	Composite
Total Aluminum	Report µg/L	---	Report µg/L	2/Month	Composite
Total Copper	24 µg/L	---	Report µg/L	2/Month	Composite
Total Ammonia Nitrogen (June 1 – September 30) ¹¹	10.4 mg/L	---	Report mg/L	2/Week	Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
Total Kjeldahl Nitrogen ¹² (April 1 – October 31) (November 1 – March 31)	Report mg/L Report mg/L	---	Report mg/L Report mg/L	1/Week 1/Month	Composite Composite
Nitrate + Nitrite ¹² (April 1 – October 31) (November 1 – March 31)	Report mg/L Report mg/L	--- ---	Report mg/L Report mg/L	1/Week 1/ Month	Composite Composite
Total Nitrogen ¹²	Report mg/L Report lb/day	---	Report mg/L	1/Month	Calculation
PFAS Analytes ¹³	---	---	Report ng/L	1/Quarter	Grab
Adsorbable Organic Fluorine ¹⁴	---	---	Report µg/L	1/Quarter	Grab
Pollutant Scan ¹⁵	---	---	Report µg/L	1/Year	Composite
Whole Effluent Toxicity (WET) Testing^{16,17}					
LC ₅₀	---	---	≥ 100 %	1/Quarter	Composite
C-NOEC	---	---	≥ 8.5 %	1/Quarter	Composite
Hardness	---	---	Report mg/L	1/Quarter	Composite
Ammonia Nitrogen	---	---	Report mg/L	1/Quarter	Composite
Total Aluminum	---	---	Report mg/L	1/Quarter	Composite
Total Cadmium	---	---	Report mg/L	1/Quarter	Composite
Total Copper	---	---	Report mg/L	1/Quarter	Composite
Total Nickel	---	---	Report mg/L	1/Quarter	Composite
Total Lead	---	---	Report mg/L	1/Quarter	Composite
Total Zinc	---	---	Report mg/L	1/Quarter	Composite
Total Organic Carbon	---	---	Report mg/L	1/Quarter	Composite

Ambient Characteristic ¹⁸	Reporting Requirements			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
Hardness	---	---	Report mg/L	1/Quarter	Grab
Ammonia Nitrogen	---	---	Report mg/L	1/Quarter	Grab
Total Aluminum	---	---	Report mg/L	1/Quarter	Grab
Total Cadmium	---	---	Report mg/L	1/Quarter	Grab
Total Copper	---	---	Report mg/L	1/Quarter	Grab
Total Nickel	---	---	Report mg/L	1/Quarter	Grab
Total Lead	---	---	Report mg/L	1/Quarter	Grab
Total Zinc	---	---	Report mg/L	1/Quarter	Grab
Total Organic Carbon	---	---	Report mg/L	1/Quarter	Grab
Dissolved Organic Carbon ¹⁹	---	---	Report mg/L	1/Quarter	Grab
pH ²⁰	---	---	Report S.U.	1/Quarter	Grab
Temperature ²⁰	---	---	Report °C	1/Quarter	Grab
Total Phosphorus ²¹ (April 1 - October 31)	---	---	Report mg/L	1/Month	Grab
Pollutant Scan ¹⁵	---	---	Report µg/L	1/Year	Grab
Aesthetics ²² (DMR Attachment)	---	---	Report	1/Month	Observation

Influent Characteristic	Reporting Requirements			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
CBOD ₅	Report mg/L	---	---	2/Month	Composite
TSS	Report mg/L	---	---	2/Month	Composite
PFAS Analytes ¹³	---	---	Report ng/L	1/Quarter	Grab
Adsorbable Organic Fluorine ¹⁴	---	---	Report µg/L	1/Quarter	Grab

Sludge Characteristic	Reporting Requirements			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
PFAS Analytes ¹³	---	---	Report ng/g	1/Quarter	Grab ²³

PART I**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Continued)**

2. During the period beginning on the effective date of the permit and lasting through the expiration date, the Permittee is authorized to discharge storm water and wastewaters into the Merrimack River from Combined Sewer Outfalls serial numbers 011, 018, 031, 043 (via Tannery Brook), 044, 045, 046, 047, 050, 052, 053, 054 (via Ray Brook), and 055, and into the Piscataquog River from Outfalls serial numbers 039 and 051. These discharges are authorized only during wet weather. Such discharges 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 below shall be reported in the monthly Discharge Monitoring Report (DMR) for Outfalls 011, 018, 031, 039, 043, 044, 045, 046, 047, 050, 051, 052, 053, 054, and 055.

Effluent Characteristic ²⁴	Discharge Limitation	Monitoring Requirement	
	Wet Weather Event Maximum	Measurement Frequency	Sample Type ⁴
<i>Escherichia coli</i>	1,000/100 mL	1/Year	Grab
Pollutant Scan ²⁵	Report µg/L	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 NHDES ("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 either to 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 the following 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.

Bypasses shall not occur below influent flows of 34 MGD. When bypass occurs, the blended effluent shall be subject to the end-of-pipe effluent limitations in Part I.A.1.a above and all bypasses shall be reported by the Permittee to EPA and NHDES pursuant to Part I.I.6 below.

A bypass of secondary treatment is subject to the requirements of Part II.B.4. and Part II.D.1.e. of this permit. The following information shall be reported as an electronic attachment to each March DMR summarizing each day there was a bypass of secondary treatment for the previous calendar year: date and time of initiation of bypass flow, influent flow at time of initiation (MGD), date and time of termination of bypass flow, influent flow at time of termination (MGD), duration of bypass (hrs), and total volume of bypass flow (MG).

6. The minimum monthly average of 85 percent removal of both CBOD₅ and TSS applies only during dry weather. Dry weather is defined as any calendar day on which there is less than 0.1 inches of rainfall and no snow melt. The percent removal shall be calculated using the average monthly influent and effluent concentrations for samples collected during dry weather days. The Permittee shall attach to its discharge monitoring reports the daily precipitation from the nearest National Weather Service gage, or a gage accepted by the permitting authority.
7. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.). See Part I.G.1 below for a provision to modify the pH range.
8. The Permittee shall minimize the use of chlorine while maintaining adequate bacterial control. Monitoring for total residual chlorine (TRC) is only required for discharges which have been previously chlorinated or which contain residual chlorine. If chlorine is not utilized during a particular monitoring period, TRC monitoring is not necessary and the Permittee may enter "NODI" code 9 (i.e., conditional monitoring) in the relevant discharge monitoring report.

Chlorination and dechlorination systems shall include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection, or interruptions or malfunctions of the dechlorination system that may have resulted in excessive levels of chlorine in the final effluent shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time that the reduced levels of chlorine or dechlorination chemicals occurred.

9. The monthly average limit for *Escherichia coli* (*E. coli*) is expressed as a geometric mean. *E. coli* monitoring shall be conducted concurrently with TRC monitoring, if TRC monitoring is required.

10. Monthly average effluent loading shall be calculated as the average of the daily discharge concentrations times the average daily flow for the month, as shown below.

Total Phosphorus (lb/day) = [(average monthly Total Phosphorus (mg/L) * total monthly effluent flow (Millions of Gallons (MG)) / # of days in the month] * 8.34

11. See Part I.G.2 for the compliance schedule applicable to the ammonia limit.

12. Total Kjeldahl nitrogen and nitrate + nitrite samples shall be collected concurrently. The results of these analyses shall be used to calculate both the concentration and mass loadings of total nitrogen, as follows.

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

Total Nitrogen (lb/day) = [(average monthly Total Nitrogen (mg/L) * total monthly effluent flow (Millions of Gallons (MG)) / # of days in the month] * 8.34

13. Report in nanograms per liter (ng/L) for effluent and influent samples; report nanograms per gram (ng/g) for sludge samples. Until there is an analytical method approved in 40 CFR Part 136 for PFAS, monitoring shall be conducted using Method 1633A. Report in NetDMR the results of all PFAS analytes required to be tested in Method 1633A, as shown in Attachment E. This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter following six months after the effective date of the permit.
14. Report in micrograms per liter (µg/L) for effluent and influent samples. Until there is an analytical method approved in 40 CFR Part 136 for Adsorbable Organic Fluorine, monitoring shall be conducted using Method 1621. This reporting requirement takes effect the first full calendar quarter following six months after the effective date of the permit.
15. During the third calendar quarter of each year, the Permittee shall concurrently monitor both the effluent and the receiving water (immediately upstream/upgradient of the discharge) for all the pollutants listed in Attachment G. All effluent and ambient results shall be reported in NetDMR for the quarterly DMR report due by October 15 of each year.
16. The Permittee shall conduct acute toxicity tests (LC50) and chronic toxicity tests (C-NOEC) in accordance with test procedures and protocols specified in Attachment A and

B of this permit. LC50 and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*, and the fathead minnow, *Pimephales promelas*. Toxicity test samples shall be collected during the same weeks each time of calendar quarters ending March 31st, June 30th, September 30th, and December 31st. The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal which includes the results for that toxicity test.

If the results indicate a violation of any toxicity limit or if the Permittee identifies or is provided notice of a sudden and significant death of large numbers of fish and/or shellfish in the vicinity of the discharge, the Permittee shall follow the procedures described in Part I.G.4 below.

17. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall follow procedures outlined in **Attachment A and B**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.
18. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A and B**. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.
19. Monitoring and reporting for dissolved organic carbon (DOC) are not requirements of the Whole Effluent Toxicity (WET) tests but are additional requirements. The Permittee may analyze the WET samples for DOC or may collect separate samples for DOC concurrently with WET sampling.
20. 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.
21. See Part I.G.3 for special conditions regarding ambient phosphorus monitoring.
22. Once per month, the Permittee shall conduct a visual inspection of the receiving water in the vicinity of the outfall and report any changes in the receiving water that may be caused by the discharge as follows:

- a) any observable change in odor,
- b) any visible change in color,
- c) any visible change in turbidity,
- d) the presence or absence of any visible floating materials, scum or foam,
- e) the presence or absence of any visible settleable solids,
- f) the presence or absence of any visible film or sheen on the surface of the water.

If an oily sheen is observed, immediately test the effluent for oil & grease. The Permittee shall also report any complaints it receives from the public regarding the taste and/or odor of the receiving water and document what remedial actions, if any, it took to address such complaints.

The results do not need to be submitted each month. Rather, an annual summary of all 12 monthly results shall be submitted as an electronic attachment to the December DMR by each January 15th for the previous calendar year.

23. 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>.
24. The Permittee shall sample CSO Outfalls 011, 018, 031, 039, 043, 044, 045, 046, 047, 050, 051, 052, 053, 054, and 055 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” values for *Escherichia coli* shall be reported on the appropriate DMR for the year sampled for each CSO outfall.
25. The Permittee shall take an effluent grab sample only from CSO outfalls 031, 044, 046, and 047 taken at least once per calendar year and shall measure for all the pollutants listed in Attachment G. 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.

Part I.A., continued.

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

B. UNAUTHORIZED DISCHARGES

1. This permit authorizes discharges only from the outfall listed in Part I.A.1, and CSO Outfalls listed in Attachment F, in accordance with the terms and conditions of this permit. For any pollutant without an effluent limitation in this permit, any pollutant loading greater than the proposed discharge (the “proposed discharge” is based on the chemical-specific data and the facility’s design flow as described in the permit application, or any other information provided to EPA during the permitting process) must be reevaluated, and the permit must be modified or reissued if the need for any new effluent limitations is identified. See notification requirements in Part II.D.1.a. 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 TREATMENT AND CONTROL FACILITIES

1. Sewer System

Operation and maintenance (O&M) of the sewer system shall be in compliance with 40 CFR § 122.41 (d) and (e) and the terms and conditions of the Part II Standard Conditions, B. Operation and Maintenance of Pollution Controls which is attached to this Permit. The Permittee and Co-permittee shall complete the following activities for the collection system which it owns:

- a. Maintenance Staff

The Permittee and Co-permittee(s) 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 Sewer System O&M Plan required pursuant to Part I.C.1.e. below.

b. Preventive Maintenance Program

The Permittee and Co-permittee(s) 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 Sewer System O&M Plan required pursuant to Part I.C.1.e. below.

c. Infiltration/Inflow

The Permittee and Co-permittee(s) 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 Sewer System O&M Plan required pursuant to Part I.C.1.e. below.

d. Sewer System Mapping

The Permittee and Co-permittee(s) shall maintain a map of the sewer collection system it owns. The map shall be on a street basemap of the community, with sufficient detail and at a scale to allow easy interpretation. The sewer 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. If any items listed below, such as the location of all outfalls, are not fully documented, the Permittee and Co-permittee(s) must clearly identify each component of the dataset that is incomplete, as well as the date of the last update of the mapping product. Such map(s) shall include, but not be limited to the following:

- (1) All sanitary sewer lines and related manholes;
- (2) All combined sewer lines, related manholes, and catch basins;
- (3) All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combination manholes);
- (4) All outfalls, including the treatment plant outfall(s), CSOs, and any known or suspected SSOs, including stormwater outfalls that are connected to combination manholes;

- (5) All pump stations and force mains;
- (6) The wastewater treatment facility(ies);
- (7) All surface waters (labeled);
- (8) Other major appurtenances such as inverted siphons and air release valves;
- (9) A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;
- (10) Interconnections with collection systems owned by other entities;
- (11) The scale and a north arrow; and
- (12) The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

e. Sewer System Operation and Maintenance Plan

The Permittee and Co-permittee(s) shall continue to implement a *Sewer System Operation and Maintenance Plan* for the portion of the system it owns. The Plan shall be available for review by federal, state and local agencies as requested.

- (1) A description of the collection system management goals, staffing, information management, and legal authorities;
- (2) A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and
- (3) A preventive maintenance and monitoring program for the collection system;
- (4) Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;
- (5) Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
- (6) 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;

- (7) 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;
- (8) An educational public outreach program for all aspects of I/I control, particularly private inflow; and
- (9) An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

2. Annual Reporting Requirement

The Permittee and Co-permittee(s) shall submit a summary report of activities related to the implementation of its O&M Plans 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;
- f. If the monthly average flow exceeded 80 percent of the facility's 34 MGD design flow (27.2 MGD) for three consecutive months in the previous calendar year, or there have been capacity related overflows, the report shall include:
 - (1) Plans for further potential flow increases describing how the Permittee will maintain compliance with the flow limit and all other effluent limitations and conditions; and
 - (2) A calculation of the maximum daily, weekly, and monthly infiltration and the

maximum daily, weekly, and monthly inflow for the reporting year.

D. ALTERNATE POWER SOURCE

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

E. INDUSTRIAL USERS AND PRETREATMENT PROGRAM

1. Legal Authority

The Permittee has been delegated primary responsibility for enforcing against discharges prohibited by 40 CFR 403.5 and applying and enforcing any national Pretreatment Standards established by the United States Environmental Protection Agency in accordance with Section 307 (b) and (c) of The Clean Water Act (Act), as amended by The Water Quality Act (WQA), of 1987.

The Permittee shall operate an industrial pretreatment program in accordance with the General Pretreatment Regulations found in 40 CFR Part 403 and the approved pretreatment program submitted by the Permittee. The pretreatment program was approved on February 27, 1985 and has subsequently incorporated substantial modifications as approved by EPA. The approved pretreatment program, and any approved modifications thereto, is hereby incorporated by reference and shall be implemented in a manner consistent with the following procedures, as required by 40 CFR Part 403.

The Permittee must have or develop a legally enforceable municipal code or rules and regulations to authorize or enable the POTW to apply and enforce the requirements of Sections 307(b) and (c) and 402(b)(8) and (9) of the Act and comply with the requirements of § 403.8(f)(1). At a minimum, this legal authority shall enable the POTW to:

- a. Deny or condition new or increased contributions of pollutants, or changes in the nature of pollutants, to the POTW by Industrial Users where such contributions do not meet applicable Pretreatment Standards and Requirements or where such contributions would cause the POTW to violate its NPDES permit;
- b. Require compliance with applicable Pretreatment Standards and Requirements by Industrial Users;
- c. Control through Permit, order, or similar means, the contribution to the POTW by each Industrial User to ensure compliance with applicable Pretreatment Standards and Requirements. In the case of Industrial Users this control shall be achieved through permits or equivalent control mechanism identified as

significant under § 403.3(v), as required by § 403.8(f)(1)(iii);

- d. Require (a) the development of a compliance schedule by each Industrial User for the installation of technology required to meet applicable Pretreatment Standards and Requirements and (b) the submission of all notices and self-monitoring reports from Industrial Users as are necessary to assess and assure compliance by Industrial Users with Pretreatment Standards and Requirements, including but not limited to the reports required in § 403.12;
- e. Carry out all inspection, surveillance and monitoring procedures necessary to determine, independent of information supplied by Industrial Users, compliance or noncompliance with applicable Pretreatment Standards and Requirements by Industrial Users. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP, but in no case less than once per year, and with adequate maintenance of records, Representatives of the POTW shall be authorized to enter any premises of any Industrial User in which a Discharge source or treatment system is located or in which records are required to be kept under § 403.12(o) to assure compliance with Pretreatment Standards. Such authority shall be at least as extensive as the authority provided under section 308 of the Act;
- f. Obtain remedies for noncompliance by any Industrial User with any Pretreatment Standard and Requirement. All POTW's shall be able to seek injunctive relief for noncompliance by Industrial Users with Pretreatment Standards and Requirements. All POTWs shall also have authority to seek or assess civil or criminal penalties in at least the amount of \$1,000 a day for each violation by Industrial Users of Pretreatment Standards and Requirements in accordance with § 403.8(f)(1)(vi)(A); and
- g. Comply with the confidentiality requirements set forth in § 403.14.

2. Implementation Requirements

The Permittee shall operate a pretreatment program in accordance with the General Pretreatment Regulations found in 40 CFR Part 403 and with the legal authorities, policies, procedures, and financial provisions of the approved Pretreatment program submitted by the Permittee. The approved Pretreatment program, and any approved modifications thereto, is hereby incorporated by reference and shall be implemented in a manner consistent with the following procedures, as required by 40 CFR Part 403:

- a. In accordance with 40 CFR § 122.44(j)(1), Identify, in terms of character and volume of pollutants contributed from Industrial Users discharging into the POTW subject to Pretreatment Standards under section 307(b) of CWA and 40

CFR Part 403.

- b. The Permittee must notify these identified Industrial Users of applicable Pretreatment Standards and any applicable requirements in accordance with 40 CFR § 403.8(f)(2)(iii). Pursuant to 40 CFR § 403.8(f)(6), prepare and maintain a list of significant industrial users and identify the criteria in 40 CFR § 403.3(v)(1) applicable to each industrial user.
- c. The Permittee must carry out inspection procedures and randomly sample and analyze the effluent from Industrial Users and conduct surveillance activities in accordance with 40 CFR § 403.8(f)(2)(v), which will determine independent of information supplied by the industrial user, whether the industrial user is in compliance with the Pretreatment Standards. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP but in no case less than once per year and maintain adequate records.
- d. The Permittee shall receive and analyze self-monitoring reports and other notices submitted by Industrial Users in accordance with the self-monitoring requirements in 40 CFR § 403.12; This must include timely and appropriate reviews of industrial user reports and notifications to identify all violations of the user's permit, the local ordinance, and federal pretreatment standards and requirements.
- e. The Permittee shall evaluate whether each SIU needs a plan to control Slug Discharges in accordance with 40 CFR § 403.8(f)(2)(vi). SIUs must be evaluated within 1 year of being designated an SIU. If required, the Permittee shall require the SIU to prepare or update, and implement a slug prevention plan that contains at least the minimum required elements in 40 CFR § 403.8(f)(2)(vi)(A-D) and incorporate the slug control requirements into the SIU's control mechanism;
- f. Pursuant to 40 CFR § 403.8(f)(2)(vii), the Permittee shall investigate instances of non-compliance with Pretreatment Standards and requirements indicated in required reports and notices or indicated by analysis, inspection, and surveillance activities.
- g. The Permittee shall publish, at least annually, in a newspaper or newspapers of general circulation that provides meaningful public notice within the jurisdiction(s) served by the POTW, a list of all non-domestic users which, at any time in the previous 12 months, were in significant noncompliance as defined in 40 CFR § 403.8 (f)(2)(viii).

- h. The Permittee shall provide sufficient resources and qualified personnel to implement its Pretreatment program in accordance with 40 CFR § 403.8(f)(3);
- i. The Permittee shall enforce all applicable Pretreatment Standards and requirements and obtain remedies for noncompliance by any industrial user. The Permittee shall develop, implement, and maintain an enforcement response plan in accordance with 40 CFR § 403.8(f)(5); and
- j. Pursuant to 40 CFR § 403.8(g), the Permittee that chooses to receive electronic documents must satisfy the requirements of 40 CFR Part 3 – (Electronic reporting).

3. Local Limit Development

- a. The Permittee shall develop, continually maintain, and enforce, as necessary, local limits to implement the general and specific prohibitions in 40 CFR § 403.5(c)(1) which prohibit the introduction of any pollutant(s) which cause pass through or interference and the introduction of specific pollutants to the waste treatment system from any source of non-domestic discharge.
- b. The Permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within 90 days of the effective date of the permit, the Permittee shall prepare and submit a written technical evaluation to EPA analyzing the need to revise local limits. As part of this evaluation, the Permittee shall assess how the POTW performs with respect to influent and effluent of pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety and collection system concerns. In preparing this evaluation, the Permittee shall complete and submit the attached form (see Attachment C – Reassessment of Technically Based Industrial Discharge Limits) with the technical evaluation to assist in determining whether existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if available and should be included in the report. Should the evaluation reveal the need to revise local limits, the Permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. The Permittee shall carry out the local limits revisions in accordance with EPA's Local Limit Development Guidance (July 2004).

4. Notification Requirements

- a. The Permittee must notify EPA of any new introductions or any substantial change in pollutants from any Industrial User within sixty (60) days following the introduction or change, as required in 40 CFR 122.42(b)(1-3). Such notice must identify:
 - (1) Any new introduction of pollutants from an Industrial User which would be subject to Sections 301, 306, and 307 of the Act if it were directly discharging those pollutants; or
 - (2) Any substantial change in the volume or character of pollutants being discharged by any Industrial User;
 - (3) For the purposes of this section, adequate notice shall include information on:
 - i. The identity of the Industrial User;
 - ii. The nature and concentration of pollutants in the discharge and the average and maximum flow of the discharge; and
 - iii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from or biosolids produced at such POTW.
- b. The Permittee must notify EPA as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required 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 pursuant to 40 CFR § 122.29 (b);
 - (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged; or
 - (3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices.
- c. The Permittee must notify EPA if the POTW modifies or intends to modify its Pretreatment Program.
- d. The Permittee must notify EPA of any instance of pass through or interference, known or suspected to be related to a discharge from an Industrial User. The notification shall be attached to the DMR submitted EPA and shall describe the incident, including the date, time, length, cause, and the steps taken by the Permittee and Industrial User to address the incident.

5. Annual Report Requirements

The Permittee shall provide EPA with a hard copy annual report that briefly describes the POTW's program activities, including activities of all participating agencies, if more than one jurisdiction is involved in the local program. The report required by this section shall be submitted no later than one year after approval of the POTW's Pretreatment Program, and at least annually thereafter. The report must include, at a minimum, the applicable required data in Appendix A to 40 CFR Part 127, a summary of changes to the POTW's pretreatment program that have not been previously reported to EPA, and any other relevant information requested by EPA. Beginning on December 21, 2025, all annual reports submitted in compliance with this section must be submitted electronically by the POTW Pretreatment Program to EPA or initial recipient, as defined in 40 CFR § 127.2(b). Electronic submittals shall be in compliance with this section and 40 CFR Part 3 (including, in all cases, subpart D to Part 3), 40 CFR § 122.22(e), and 40 CFR Part 127 (Part 127 is not intended to undo existing requirements for electronic reporting). Prior to this date, and independent of 40 CFR Part 127, EPA may also require POTW Pretreatment Programs to electronically submit annual reports under this section if specified by a particular permit or if required to do so by state law.

The Permittee shall provide EPA with an annual report describing the Permittee's pretreatment program activities for the twelve (12) month period ending 60 days prior to the due date in accordance with 40 CFR § 403.12(i). The annual report shall be consistent with the format described in Attachment D (Industrial Pretreatment Program Annual Report) of this permit and shall be submitted by **August 1** of each year.

6. Beginning the first full calendar year after the effective date of the permit, 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
- Known or Suspected PFAS Contaminated Sites
- Fire Fighting Training Facilities
- Airports
- Any Other Known or Expected Sources of PFAS

Sampling shall be conducted using Method 1633A for the PFAS analytes listed in Attachment E. The industrial discharges sampled, and the sampling results shall be summarized and included in the annual report (see Part I.E.5).

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.
10. Incinerator Conditions and Limitations

- a. Firing of sewage sludge shall not violate the requirements of the National Emission Standard for beryllium in 40 CFR Part 61, subpart C - 10 grams per 24-hour period.
- b. Firing of sewage sludge shall not violate the requirements in the National Emission Standard for mercury in 40 CFR Part 61, subpart E - 3200 grams per 24-hour period.
- c. The daily concentration of the metals in the sewage sludge fed to the incinerator shall not exceed the limits specified below (dry weight basis):

	<u>Maximum Daily</u>
Arsenic	8,573 mg/kg
Cadmium	43,416 mg/kg
Chromium	1,423,398 mg/kg
Lead	262,781 mg/kg
Nickel	213,643 mg/kg

- d. The exit gas from the sewage sludge incinerator stack shall be monitored continuously for carbon monoxide.
- e. The monthly average concentration of carbon monoxide in the exit gas from the sewage sludge incinerator, corrected for zero percent moisture and to seven percent oxygen, shall not exceed - **100 ppm on a volumetric basis**.
- f. The CO concentration shall be corrected to zero percent moisture using the correction factor below:

$$\text{Correction factor} = \frac{1}{(1-X)}$$

Where: X = decimal fraction of the percent moisture in the sewage sludge incinerator exit gas in hundredths.

- g. The measured CO concentration shall be corrected to seven percent oxygen using the correction factor below:

$$\text{Correction factor} = \frac{14}{(21-Y)}$$

Where: Y = percent oxygen concentration in the sewage sludge incinerator stack exit gas (dry volume/dry volume).

- h. The measured CO value shall be multiplied by the correction factors in items **c** and **d**. The corrected CO value shall be used to determine compliance with paragraph b.

11. Incinerator Management Practices

- a. An instrument that continuously measures and records the carbon monoxide concentration in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated and maintained for each incinerator in accordance with the manufacturer's written instructions.
- b. An instrument that continuously measures and records the oxygen concentration in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated and maintained for each incinerator in accordance with the manufacture's written instructions.
- c. An instrument that continuously measures and records information used to determine the moisture content in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated and maintained for each incinerator in accordance with the manufacture's written instructions.
- d. An instrument that continuously measures and records combustion temperatures shall be installed, calibrated, operated and maintained for each incinerator in accordance with the manufacture's written instructions.
- e. Upon completion of the testing to demonstrate compliance with the performance specifications, but not later than 90 days from the effective date of this permit, the operator of the incinerators shall submit to EPA - Region 1 a certification stating that the continuous emissions monitoring system meets the performance specifications detailed in the above referenced guidance.
- f. Operation of the incinerator shall not cause the operating combustion temperature for the incinerator to exceed the performance test combustion temperature by more than 20 percent.
- g. Any air pollution control devices shall be appropriate for the type of incinerator and operating parameters for the air pollution control device shall be adequate to indicate proper performance of the air pollution control device. For incinerators subject to the requirements of 40 CFR subpart O, operation of the air pollution control device shall not violate the air pollution control device requirements of that part.

- h. Sewage sludge shall not be fired in an incinerator if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated critical habitat.
- i. The permittee shall notify the EPA and NHDES if any continuous emission monitoring equipment is shut down or broken down for more than 72 hours while the incinerator continues to operate.
- j. Notification shall include the following:
 - (1) The reason for the shut down or break down;
 - (2) Steps taken to restore the system;
 - (3) Expected length of the down time; and
 - (4) The expected length of the incinerator operation during the down time of the monitoring system.
- k. Break downs or shutdowns of less than 72 hours shall be recorded in the operations log along with an explanation of the event.
- l. Copies of all manufacturer's instructions shall be kept on file and be available during inspections.

12. Incinerator Monitoring Frequency

- a. The frequency of monitoring beryllium shall be as required in 40 CFR Part 61, subpart C.
- b. The frequency of monitoring mercury shall be as required in 40 CFR Part 61, subpart E.
- c. The pollutants in paragraph 10.c shall be monitored at the following frequency - **bimonthly (6 times per year)**.
- d. After the sewage sludge has been monitored for the pollutants in paragraph 2c for two years at the frequency specified above, the permittee may request a reduction in the monitoring frequency.
- e. The operating parameters for the air pollution control devices shall be monitored at the following frequency - **1/day**.

- f. The CO concentration in the exit gas, the oxygen concentration in the exit gas, information from the instrument used to determine moisture content, and combustion temperatures shall be continuously monitored.

13. Incinerator Sampling and Analysis

- a. The sewage shall be sampled at a location which is prior to entering the incinerator and provides a representative sample of the sewage sludge being incinerated.
- b. The sewage sludge shall be analyzed using "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA publication SW-846, Second Edition (1982) with Updates I (April 1984) and II (April 1985) and Third Edition (November 1986) with Revision I (December 1987).
- c. If emission testing is done for demonstration of NESHAPS, testing shall be in accordance with Method 101A in 40 CFR Part 60, Appendix B, "Determination of Particulate and Gaseous Mercury Emissions from Sewage Sludge Incinerators".
- d. Sewage sludge samples for mercury shall be sampled and analyzed using Method 105 in 40 CFR Part 61, Appendix B, "Determination of Mercury in Wastewater Treatment Plant Sewage Sludge".

14. Incinerator Record Keeping Requirements

The permittee is required to keep records for the following:

- a. Report the maximum concentration of each pollutant listed in paragraph 2(c) above;
- b. Report the average monthly CO concentration in the exit gas from the incinerator stack;
- c. Information that demonstrates compliance with the National Emission Standard for beryllium;
- d. Information that demonstrates compliance with the National Emission Standard for mercury. If sludge sampling is used, include calculation for compliance demonstration;
- e. The operating combustion temperature for the sewage sludge incinerator;
- f. Report the average monthly operating values for the air pollution control devices operating parameters;

- g. The oxygen concentration and the information used to measure moisture content in the exit gas from the sewage sludge incinerator. Report the oxygen concentration and percent moisture results which were used to determine the CO values reported in paragraph 8b;
- h. Record the average daily and average monthly sewage sludge feed rate to the incinerator;
- i. The stack height of the incinerator;
- j. The dispersion factor for the site where the incinerator is located;
- k. The control efficiency for arsenic, lead, chromium, cadmium and nickel;
- l. A calibration and maintenance log for the instruments used to measure the CO concentration and the oxygen concentration in the exit gas; the information need to determine moisture content in the exit gas, and the combustion temperatures.

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.6 below. Upon notification of an approval by NHDES, EPA will review and, if acceptable, will submit written notice to the Permittee of the permit change. The modified pH range will not be in effect until the Permittee receives written notice from EPA.

2. Compliance Schedule

Beginning the first June after the effective date of the permit, the Permittee shall evaluate and implement optimization measures to reduce the concentration of ammonia nitrogen in the discharge to achieve compliance with the ammonia limit (*i.e.*, 10.4 mg/L from June 1 through September 30). The monthly average ammonia limit shall go into effect the first June following 24 months after the effective date of the permit.

3. Ambient Phosphorus Monitoring

Beginning in April of the first odd numbered year that occurs at least six months after permit issuance, and during odd numbered years thereafter, the Permittee shall collect monthly samples from April through October at a location in the receiving water upstream of the facility and analyze the samples for total phosphorus. Sampling shall be conducted on any calendar day that is preceded by at least 72 hours with less than or equal to 0.1 inches of cumulative rainfall. A sampling plan shall be submitted to EPA and the State (in

accordance with Part I.I.2 and Part I.I.7, respectively) at least three months prior to the first planned sampling date. For the years that monitoring is not required, the Permittee shall report NODI code "9" (conditional monitoring not required).

4. Toxicity Violation Procedures

a. Accelerated WET Testing

The Permittee shall conduct at least two accelerated re-tests at 14-day intervals which must be started within 14 days and 28 days of receiving the following results or as soon as possible thereafter based on factors outside the Permittee's control (*e.g.*, limited lab availability). The Permittee must document the justification for any re-tests conducted after these timeframes and submit the justification with the re-test results.

- any WET test results in violation of any WET limit and the test acceptability criteria were met (only re-test for the species that failed); or
- the Permittee identifies or is provided notice of a sudden and significant death of large numbers of fish and/or shellfish in the vicinity of the discharge that may have been due to the discharge (test for all species identified in permit).

If the receiving water was used as the dilution water and is suspected to be toxic (*e.g.*, based on results from the initial test), the Permittee shall conduct the accelerated WET tests using laboratory water as the dilution water with a similar pH and hardness as the receiving water. If the WET tests using laboratory water do not violate any WET limits, the Permittee shall return to a normal monitoring frequency but should request to continue to use laboratory water as the dilution water based on these results. If either accelerated WET test violates any WET limits (and the test acceptability criteria were met), the discharge is considered to have persistent toxicity and the Permittee must immediately initiate a Toxicity Identification Evaluation and Toxicity Reduction Evaluation (TIE/TRE) in accordance with subpart b below to resolve any toxic impacts on the receiving water.

b. TIE/TRE

- (1) If the WET re-test described above results in a violation of the WET limits, the Permittee must immediately initiate a TIE/TRE designed to identify and reduce toxicity in the discharge. Notice of TIE/TRE study implementation is to be submitted to EPA (via email: R1NPDESReporting@epa.gov) and the State within 10 days of receiving notification of WET re-test failure.
- (2) A TIE/TRE schedule and action plan must be submitted to EPA and the State as an electronic attachment to the DMR within 60 days of receipt of WET re-

test failure.

The TIE/TRE schedule (from the initiation date to the termination date) should be as short as possible, and no longer than 24 months as follows: The “TIE/TRE initiation date” is the date of the receipt of results for the toxicity test that confirms persistent toxicity and the “TIE/TRE termination date” is the date corrective actions to resolve toxicity are identified and a schedule for completing these corrective actions is proposed.

The objective of the action plan is to identify the source(s) of toxicity by analyzing toxicity testing samples for any toxicant identified as being a potential source of toxicity and ascertaining whether the same level of toxicity occurs when any suspected toxicant level varies. This information might lead to finding one or more toxicants or confirming or eliminating suspected toxicants and possibly their source(s).

- (3) Quarterly “TIE/TRE Progress Reports” should be submitted to EPA and the State as an electronic attachment to the DMR at the end of each quarter after the TIE/TRE initiation date. The progress report should list all activities and findings related to resolving toxicity, including all WET and chemical test data. The data summaries of the TIE/TRE also should be provided in a tabulated format with explanations of the procedures used and the recorded findings from the study.
- (4) A “Final TIE/TRE Report” should be submitted to EPA and the State within 45 days of the TIE/TRE termination date (as an electronic attachment to the DMR) and should summarize the TIE/TRE activities and findings, propose the corrective action(s) to be taken, and propose a schedule to complete any identified corrective action(s).
- (5) After submission of the “Final TIE/TRE Report,” the Permittee shall continue to submit quarterly “Toxicity Reduction Progress Reports” (as an electronic attachment to the DMR) documenting progress on the corrective actions being taken to reduce toxicity in accordance with the proposed schedule.
- (6) Upon completion of all corrective actions identified in the “Final TIE/TRE Report,” the Permittee shall submit a “Toxicity Reduction Completion Report” (as an electronic attachment to the DMR) summarizing the corrective actions taken based on the TIE/TRE and shall include all information necessary to demonstrate that the discharge is no longer toxic and consistently complies with all WET limits.

5. Benthic Survey

If notified in writing by NHDES or EPA that benthic deposits from the discharge are known or suspected to have a detrimental impact on downstream benthic communities, the Permittee shall conduct a benthic survey within one year of the notification to assess potential impacts from the discharge on aquatic life in the benthic environment. Visual observations, benthic sample results, or long-term permit limit exceedances could indicate a potential change in either the sediments or settleable solids downstream of the outfall as compared to upstream of the outfall. Such a change could indicate that the facility's effluent is having a detrimental impact on the downstream benthic community health.

Benthic grab samples shall be taken at three locations sited along each of two transects (one immediately upstream/upgradient of the discharge at a location considered to be unimpacted by the discharge, and one downstream/downgradient of the discharge immediately outside of the estimated zone of initial dilution). Along each transect, duplicate samples shall be taken in the thalweg along with sites near each shoreline, for a total of six samples along each transect and 12 samples total. Organisms shall be sorted and identified to the lowest possible taxonomic level. Counts shall be standardized to densities per square meter of bottom. To characterize the bottom, grain size samples shall be collected at each grab site.

Taxonomy must be performed by a professional freshwater macroinvertebrate taxonomist who, at a minimum, holds and maintains for the duration of the contract a certification from the Society of Freshwater Science for eastern genera in group 1 (Crustacea and Arthropods other than EPT and Chironomidae), group 2 (Ephemeroptera, Plecoptera, and Trichoptera nymphs and larvae only) and group 3 (Chironomidae larvae only).

The Permittee shall conduct the benthic survey described in the permit as consistently as possible with the applicable portions of the *NHDES Protocols for Macroinvertebrate Collection, Identification and Enumeration* available at

<https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/1macroinverts-sop.pdf>.

A report summarizing the results, comparing the upstream and downstream benthic populations and comparing findings with NH water quality standards for the benthic environment (*i.e.*, Env-Wq 1703.03(c)(1) and Env-Wq 1703.08(b)) shall be submitted as an electronic attachment to the DMR by January 15 following the completion of the benthic survey.

H. COMBINED SEWER OVERFLOWS

1. During wet weather (including snowmelt), the Permittee is authorized to discharge storm water/wastewater from the following CSO outfalls: 011, 018, 031, 039, 043, 044, 045, 046, 047, 050, 051, 052, 053, 054 and 055 (See Attachment F of this Permit).
2. The effluent discharged from these CSOs is subject to the following limitations:
 - a. The discharges shall receive treatment at a level providing Best Practicable Control Technology Currently Available ("BPT"), Best Conventional Pollutant Control Technology ("BCT") to control and abate conventional pollutants and Best Available Technology Economically Achievable (BAT) to control and abate non-conventional and toxic pollutants. The EPA has made a Best Professional Judgment ("BPJ") determination that BPT, BCT, and BAT for combined sewer overflow ("CSO") control includes the implementation of Nine Minimum Controls ("NMC") specified below. These Nine Minimum Controls and the Nine Minimum Controls Minimum Implementation Levels which are detailed further in Part I.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 discharge shall not contain color (unless naturally occurring), objectionable odor (unless naturally occurring), or visible floating materials such as foam, debris, or scum.
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 written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances using NeT-Sewer Overflow as described in Part I.I.6 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 for outfalls 031, 044, 046, 047, 050, and 052, and may be through estimation for the other CSO outfalls. The following information must be recorded for each combined sewer outfall for each discharge event, as set forth in Part I.H.5.:
 - Duration (hours) of discharge;
 - Volume (gallons) of discharge;
 - National Weather Service precipitation data from the nearest gage where precipitation data is available. Cumulative precipitation per discharge event shall be calculated.

The Permittee shall retain records of CSO discharges for a period of at least 3 years from

the date of the sample, measurement, report or application.

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

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

The Permittee shall place signs in English and 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 and supplemental notifications required in Part I.H.3.g.(2) and (3) of this permit, as well as procedures for communicating with public health departments, including downstream communities, whose waters may be affected by discharges from the Permittee's CSOs.

(2) Initial notification of a probable CSO activation shall be provided to the public as soon as practicable, but no later than, two (2) hours after becoming aware by monitoring, modeling or other means that a probable CSO discharge has 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, and the status and progress of CSO abatement work.

5. Combined Sewer Overflow Outfall Monitoring

For each combined sewer overflow outfall listed in Part I.H.1 of this permit, the Permittee must monitor the following which shall be reported in each monthly DMR for each outfall:

Parameters	Reporting Requirements	Monitoring Requirements	
	Total Monthly	Measurement Frequency	Sample Type
Total Flow	Report MG/Month	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	Occurrences
Rainfall	Total precipitation (inches)	Daily, when discharging	Calculation

- 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. For Number of CSO Discharge Events, a single discharge

- event spanning more than one calendar day shall be reported as one discharge event.
- b. For those months when a CSO discharge does not occur, the Permittee must indicate “no discharge” for the outfall for which data was not collected.
 - c. This information shall be submitted with each monthly DMR and submitted with the annual report required by Part I.H.4. of this permit.
 - d. National Weather Service precipitation data from the nearest gage where precipitation data is available. Cumulative precipitation per discharge event shall be calculated.

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 and Co-permittee(s) 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.7. for more information on State reporting. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the report due date specified in this permit.

3. Submittal of Industrial User and Pretreatment Related Reports

- a. Prior to 21 December 2025, all reports and information required of the Permittee in the Industrial Users and Pretreatment Program section of this permit shall be submitted to the Pretreatment Coordinator in EPA Region 1 Water Division (WD). Starting on 21 December 2025, these submittals must be done electronically as NetDMR attachments and/or using EPA’s NPDES Electronic Reporting Tool (“NeT”), or another approved EPA system, which will be accessible through EPA’s Central Data Exchange at <https://cdx.epa.gov/>. These requests, reports and notices include:

- (1) Annual Pretreatment Reports,

- (2) Pretreatment Reports Reassessment of Technically Based Industrial Discharge Limits Form,
 - (3) Revisions to Industrial Discharge Limits,
 - (4) Report describing Pretreatment Program activities, and
 - (5) Proposed changes to a Pretreatment Program
- b. This information shall be submitted to EPA WD as a hard copy at the following address:

**U.S. Environmental Protection Agency
Water Division
Regional Pretreatment Coordinator
5 Post Office Square - Suite 100 (06-03)
Boston, MA 02109-3912**

4. Submittal of Biosolids/Sewage Sludge Reports

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

5. 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.
- b. These reports, information, and requests shall be submitted to EPA WD electronically at R1NPDESReporting@epa.gov.

6. Submittal of Sewer Overflow and Bypass Reports and Notifications

The Permittee and Co-permittee(s) 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 ("NeT"), which will be accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>.

7. 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.6 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**

8. Verbal Reports and Verbal Notifications

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

EPA ECAD at 617-918-1510
and
NHDES Assigned NPDES Inspector at 603-271-2985

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.
2. Any person responsible for a bypass or upset at a wastewater facility shall give immediate notice of the bypass or upset to all public or privately owned water systems drawing water within 20 miles downstream of the point of discharge, regardless of

whether or not the water systems are on the same receiving water or on another surface water to which the receiving water is tributary. The Permittee shall maintain a list of all persons, including their telephone numbers, who are to be notified immediately by telephone. In addition, written notification, which shall be postmarked within three days of the bypass or upset, shall be sent to such persons.

Note that per RSA 485-A:2XIX, "wastewater facility" is defined as the structures, equipment, and processes required to collect, convey, and treat domestic and industrial wastes, and dispose of the effluent and sludge.

3. Any person proposing to construct or modify any of the following shall submit an application for a sewer connection permit to NHDES:
 - 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 gallons per day
 - c. Any wastewater connection or other discharge to a WWTF operating in excess of 80 percent design flow capacity or design loading capacity, based on actual average flow or loadings for three 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 gallons per minute or serving more than one building
 - f. Any proposed sewer that serves more than one building or that requires a manhole at the connection
4. At a frequency no less than once 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.

- d. A certification that the municipality is strictly enforcing its sewer use ordinance and all discharge permits it has issued.
5. When the effluent discharged for a period of three consecutive months exceeds 80 percent of the design flow or design loading capacity of the facility, the Permittee shall submit to NHDES a projection of flows and loadings up to the time when the design capacity of the 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.
6. An allowance for a revision to the pH limits:

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: 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. 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).

USEPA REGION 1 FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

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

- **Daphnid (Ceriodaphnia dubia) definitive 48 hour test.**
- **Fathead Minnow (Pimephales promelas) definitive 48 hour test.**

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

II. METHODS

The permittee shall use 40 CFR Part 136 methods. Methods and guidance may be found at:

<https://www.epa.gov/cwa-methods/whole-effluent-toxicity-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 sample shall be collected. Aliquots shall be split from the sample, containerized and preserved (as per 40 CFR Part 136) for chemical and physical analyses required. The remaining sample shall be measured for total residual chlorine and dechlorinated (if detected) in the laboratory using sodium thiosulfate for subsequent toxicity testing. (Note that EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection.) Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1.0 mg/L chlorine. If dechlorination is necessary, a thiosulfate control (maximum amount of thiosulfate in lab control or receiving water) must also be run in the WET test.

All samples held overnight shall be refrigerated at 1- 6°C.

IV. DILUTION WATER

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

If the receiving water diluent is found to be, or suspected to be toxic or unreliable, an alternate standard dilution water of known quality with a hardness, pH, conductivity, alkalinity, organic carbon, and total suspended solids similar to that of the receiving water may be substituted

AFTER RECEIVING WRITTEN APPROVAL FROM THE PERMIT ISSUING AGENCY(S).

Written requests for use of ADW with supporting documentation must be sent electronically to the NPDES Applications Coordinator in EPA Water Division (WD) at the following email address:

R1NPDESReporting@epa.gov

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 EPA Region 1 website at <https://www.epa.gov/aboutepa/epa-region-1-new-england> (click on NPDES, EPA Permit Attachments, Self-Implementing Alternate Dilution Water Guidance) for important details on alternate dilution water substitution requests.

**EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE
DAPHNID, CERIODAPHNIA DUBIA 48 HOUR ACUTE TESTS¹**

1.	Test type	Static, non-renewal
2.	Temperature (°C)	20 ± 1°C or 25 ± 1°C
3.	Light quality	Ambient laboratory illumination
4.	Photoperiod	16 hour light, 8 hour dark
5.	Test chamber size	Minimum 30 ml
6.	Test solution volume	Minimum 15 ml
7.	Age of test organisms	1-24 hours (neonates)
8.	No. of daphnids per test chamber	5
9.	No. of replicate test chambers per treatment	4
10.	Total no. daphnids per test concentration	20
11.	Feeding regime	As per manual, lightly feed YCT and <u>Selenastrum</u> to newly released organisms while holding prior to initiating test
12.	Aeration	None
13.	Dilution water ²	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q ^R or equivalent deionized water and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14.	Dilution series	≥ 0.5, must bracket the permitted RWC
15.	Number of dilutions	5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series.

February 28, 2011
(updated links/addresses 2023)

16. Effect measured	Mortality-no movement of body or appendages on gentle prodding
17. Test acceptability	90% or greater survival of test organisms in dilution water control solution
18. Sampling requirements	For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must first be used within 36 hours of collection.
19. Sample volume required	Minimum 1 liter

Footnotes:

1. Adapted from EPA-821-R-02-012.
2. Standard prepared dilution water must have hardness requirements to generally reflect the characteristics of the receiving water.

**EPA NEW ENGLAND TEST CONDITIONS FOR THE FATHEAD MINNOW
(PIMEPHALES PROMELAS) 48 HOUR ACUTE TEST¹**

1. Test Type	Static, non-renewal
2. Temperature (°C)	20 + 1 ° C or 25 + 1°C
3. Light quality	Ambient laboratory illumination
4. Photoperiod	16 hr light, 8 hr dark
5. Size of test vessels	250 mL minimum
6. Volume of test solution	Minimum 200 mL/replicate
7. Age of fish	1-14 days old and age within 24 hrs of each other
8. No. of fish per chamber	10
9. No. of replicate test vessels per treatment	4
10. Total no. organisms per concentration	40
11. Feeding regime	As per manual, lightly feed test age larvae using concentrated brine shrimp nauplii while holding prior to initiating test
12. Aeration	None, unless dissolved oxygen (D.O.) concentration falls below 4.0 mg/L, at which time gentle single bubble aeration should be started at a rate of less than 100 bubbles/min. (Routine D.O. check is recommended.)
13. dilution water ²	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q ^R or equivalent deionized and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14. Dilution series	> 0.5, must bracket the permitted RWC

15. Number of dilutions	5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series.
16. Effect measured	Mortality-no movement on gentle prodding
17. Test acceptability	90% or greater survival of test organisms in dilution water control solution
18. Sampling requirements	For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples are used within 36 hours of collection.
19. Sample volume required	Minimum 2 liters

Footnotes:

1. Adapted from EPA-821-R-02-012
2. Standard dilution water must have hardness requirements to generally reflect characteristics of the receiving water.

VI. CHEMICAL ANALYSIS

At the beginning of a static acute toxicity test, pH, conductivity, total residual chlorine, oxygen, hardness, alkalinity and temperature must be measured in the highest effluent concentration and the dilution water. Dissolved oxygen, pH and temperature are also measured at 24 and 48 hour intervals in all dilutions. The following chemical analyses shall be performed on the 100 percent effluent sample and the upstream water sample for each sampling event.

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

Notes:

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

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

- Probit Method
- Spearman-Kärber
- Trimmed Spearman-Kärber
- Graphical

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

No Observed Acute Effect Level (NOAEL)

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

VIII. TOXICITY TEST REPORTING

A report of the results will include the following:

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

FRESHWATER CHRONIC TOXICITY TEST PROCEDURE AND PROTOCOL

USEPA Region 1

I. GENERAL REQUIREMENTS

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

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

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

II. METHODS

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

III. SAMPLE COLLECTION AND USE

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

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

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

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

IV. DILUTION WATER

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

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

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

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

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

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

Written requests for use of ADW with supporting documentation must be sent electronically to the NPDES Applications Coordinator in EPA Water Division (WD) at the following email address:

R1NPDESReporting@epa.gov

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 <https://www.epa.gov/aboutepa/epa-region-1-new-england> (click on NPDES, EPA Permit Attachments, Self-Implementing Alternate Dilution Water Guidance) for further important details on alternate dilution water substitution requests.

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

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

V.1. Use of Reference Toxicity Testing

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

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

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

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

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

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

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

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

VI. CHEMICAL ANALYSIS

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

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

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

Other as permit requires

Notes:

1. Hardness may be determined by:

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

VII. TOXICITY TEST DATA ANALYSIS AND REVIEW

A. Test Review

1. Concentration / Response Relationship

A concentration/response relationship evaluation is required for test endpoint determinations from both Hypothesis Testing and Point Estimate techniques. The test report is to include documentation of this evaluation in support of the endpoint values reported. The dose-response review must be performed as required in Section 10.2.6 of EPA-821-R-02-013. Guidance for this review can be found at www.epa.gov/cwa-methods/whole-effluent-toxicity-methods

In most cases, the review will result in one of the following three conclusions: (1) Results are reliable and reportable; (2) Results are anomalous and require explanation; or (3) Results are inconclusive and a retest with fresh samples is required.

2. Test Variability (Test Sensitivity)

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

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

- The test PMSD exceeds the PMSD upper bound test variability criterion in Table 6, the test results are considered highly variable and the test may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC). If the test results indicate that the discharge is not toxic at the PLC, then the test is considered insufficiently sensitive and must be repeated within 30 days of the initial test completion using fresh samples. If the test results indicate that the discharge is toxic at the PLC, the test is considered acceptable and does not have to be repeated.
- The test PMSD falls below the PMSD lower bound test variability criterion in Table 6, the test is determined to be very sensitive. In order to determine which treatment(s) are statistically significant and which are not, for the purpose of reporting a NOEC, the relative percent difference (RPD) between the control and each treatment must be calculated and compared to the lower PMSD boundary. See *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program*, EPA 833-R-1-003, June 2002, Section 6.4.2. This document can be located under Guidance Documents at the following USEPA website location: <https://www.epa.gov/aboutepa/epa-region-1-new-england> (click on NPDES, EPA Permit Attachments).

If the RPD for a treatment falls below the PMSD lower bound, the difference is considered statistically insignificant. If the RPD for a treatment is greater than the PMSD lower bound, then the treatment is considered statistically significant.

- The test PMSD falls within the PMSD upper and lower bounds in Table 6, the sub-lethal test endpoint values shall be reported as is.

B. Statistical Analysis

1. General - Recommended Statistical Analysis Method

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

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

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

2. *Pimephales promelas*

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

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

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

3. *Ceriodaphnia dubia*

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

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

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

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

In addition to the summary sheets the report must include:

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

ATTACHMENT C

EPA - New England

Reassessment of Technically Based Industrial Discharge Limits

Under 40 CFR §122.21(j)(4), all Publicly Owned Treatment Works (POTWs) with approved Industrial Pretreatment Programs (IPPs) shall provide the following information to the Director: a written evaluation of the need to revise local industrial discharge limits under 40 CFR §403.5(c)(1).

Below is a form designed by the U.S. Environmental Protection Agency (EPA - New England) to assist POTWs with approved IPPs in evaluating whether their existing Technically Based Local Limits (TBLLs) need to be recalculated. The form allows the permittee and EPA to evaluate and compare pertinent information used in previous TBLLs calculations against present conditions at the POTW.

Please read direction below before filling out form.

ITEM I.

- * In Column (1), list what your POTW's influent flow rate was when your existing TBLLs were calculated. In Column (2), list your POTW's present influent flow rate. Your current flow rate should be calculated using the POTW's average daily flow rate from the previous 12 months.
- * In Column (1) list what your POTW's SIU flow rate was when your existing TBLLs were calculated. In Column (2), list your POTW's present SIU flow rate.
- * In Column (1), list what dilution ratio and/or 7Q10 value was used in your old/expired NPDES permit. In Column (2), list what dilution ratio and/or 7Q10 value is presently being used in your new/reissued NPDES permit.

The 7Q10 value is the lowest seven day average flow rate, in the river, over a ten year period. The 7Q10 value and/or dilution ratio used by EPA in your new NPDES permit can be found in your NPDES permit "Fact Sheet."

- * In Column (1), list the safety factor, if any, that was used when your existing TBLLs were calculated.
- * In Column (1), note how your bio-solids were managed when your existing TBLLs were calculated. In Column (2), note how your POTW is presently disposing of its biosolids and how your POTW will be disposing of its biosolids in the future.

ITEM II.

- * List what your existing TBLLs are - as they appear in your current Sewer Use Ordinance (SUO).

ITEM III.

- * Identify how your existing TBLLs are allocated out to your industrial community. Some pollutants may be allocated differently than others, if so please explain.

ITEM IV.

- * Since your existing TBLLs were calculated, identify the following in detail:
 - (1) if your POTW has experienced any upsets, inhibition, interference or pass-through as a result of an industrial discharge.
 - (2) if your POTW is presently violating any of its current NPDES permit limitations - include toxicity.

ITEM V.

- * Using current sampling data, list in Column (1) the average and maximum amount of pollutants (in pounds per day) received in the POTW's influent. Current sampling data is defined as data obtained over the last 24 month period.

All influent data collected and analyzed must be in accordance with 40 CFR §136. Sampling data collected should be analyzed using the lowest possible detection method(s), e.g. graphite furnace.

- * Based on your existing TBLLs, as presented in Item II., list in Column (2), for each pollutant the Maximum Allowable Headwork Loading (MAHL) values derived from an applicable environmental criteria or standard, e.g. water quality, sludge, NPDES, inhibition, etc. For more information, please see EPA's Local Limit Guidance Document (July 2004).

Item VI.

- * Using current sampling data, list in Column (1) the average and maximum amount of pollutants (in micrograms per liter) present your POTW's effluent. Current sampling data is defined as data obtained during the last 24 month period.

(Item VI. continued)

All effluent data collected and analyzed must be in accordance with 40 CFR §136. Sampling data collected should be analyzed using the lowest possible detection method(s), e.g. graphite furnace.

- * List in Column (2A) what the Water Quality Standards (WQS) were (in micrograms per liter) when your TBLLs were calculated, please note what hardness value was used at that time. Hardness should be expressed in milligram per liter of Calcium Carbonate.

List in Column (2B) the current WQSs or "Chronic Gold Book" values for each pollutant multiplied by the dilution ratio used in your new/reissued NPDES permit. For example, with a dilution ratio of 25:1 at a hardness of 25 mg/l - Calcium Carbonate (copper's chronic WQS equals 6.54 ug/l) the chronic NPDES permit limit for copper would equal 156.25 ug/l.

ITEM VII.

- * In Column (1), list all pollutants (in micrograms per liter) limited in your new/reissued NPDES permit. In Column (2), list all pollutants limited in your old/expired NPDES permit.

ITEM VIII.

- * Using current sampling data, list in Column (1) the average and maximum amount of pollutants in your POTW's biosolids. Current data is defined as data obtained during the last 24 month period. Results are to be expressed as total dry weight.

All biosolids data collected and analyzed must be in accordance with 40 CFR §136.

In Column (2A), list current State and/or Federal sludge standards that your facility's biosolids must comply with. Also note how your POTW currently manages the disposal of its biosolids. If your POTW is planning on managing its biosolids differently, list in Column (2B) what your new biosolids criteria will be and method of disposal.

In general, please be sure the units reported are correct and all pertinent information is included in your evaluation. If you have any questions, please contact your pretreatment representative at EPA - New England.

REASSESSMENT OF TECHNICALLY BASED LOCAL LIMITS (TBLLs)

POTW Name & Address : _____

NPDES PERMIT # :

Date EPA approved current TBLLs : _____

Date EPA approved current Sewer Use Ordinance :

ITEM I.

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

ITEM II.

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

ITEM III.

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

ITEM IV.

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

Has your POTW violated any of its NPDES permit limits and/or toxicity test requirements?

If yes, explain.

ITEM V.

Using current POTW influent sampling data fill in Column (1). In Column (2), list your Maximum Allowable Headwork Loading (MAHL) values used to derive your TBLLs listed in Item II. In addition, please note the Environmental Criteria for which each MAHL value was established, i.e. water quality, sludge, NPDES etc.

Pollutant	Column (1) Influent Data Analyses		Column (2)	Criteria
	Maximum (lb/day)	Average (lb/day)	MAHL Values (lb/day)	
Arsenic				
Cadmium				
Chromium				
Copper				
Cyanide				
Lead				
Mercury				
Nickel				
Silver				
Zinc				
Other (List)				

ITEM VI.

Using current POTW effluent sampling data, fill in Column (1). In Column (2A) list what the Water Quality Standards (Gold Book Criteria) were at the time your existing TBLLs were developed. List in Column (2B) current Gold Book values multiplied by the dilution ratio used in your new/reissued NPDES permit.

Pollutant	Column (1)		Columns (2A) (2B)	
	Effluent Data Analyses Maximum (ug/l)	Average (ug/l)	Water Quality Criteria (Gold Book) From TBLLs Today (ug/l) (ug/l)	
Arsenic				
*Cadmium				
*Chromium				
*Copper				
Cyanide				
*Lead				
Mercury				
*Nickel				
Silver				
*Zinc				
Other (List)				

*Hardness Dependent (mg/l - CaCO₃)

ITEM VII.

In Column (1), identify all pollutants limited in your new/reissued NPDES permit. In Column (2), identify all pollutants that were limited in your old/expired NPDES permit.

[illegible]

ITEM VIII.

Using current POTW biosolids data, fill in Column (1). In Column (2A), list the biosolids criteria that was used at the time your existing TBLLs were calculated. If your POTW is planing on managing its biosolids differently, list in Column (2B) what your new biosolids criteria would be and method of disposal.

Pollutant	Column (1)	Biosolids	Columns	
	Data Analyses		(2A)	(2B)
	Average		Biosolids Criteria	
	(mg/kg)		From TBLLs	New
Arsenic				
Cadmium				
Chromium				
Copper				
Cyanide				
Lead				
Mercury				
Nickel				
Silver				
Zinc				
Molybdenum				
Selenium				
Other (List)				

ATTACHMENT D

Industrial Pretreatment Program Annual Report

The Permittee shall provide to the Approval Authority with an annual report that briefly describes the POTW's program activities, including activities of all participating agencies, if more than one jurisdiction is involved in the local program. The report required by this section shall be submitted no later than one year after approval of the POTW's Pretreatment Program, and at least annually thereafter, and must include, at a minimum, the applicable required data in appendix A to 40 CFR part 127. The report required by this section must also include a summary of changes to the POTW's pretreatment program that have not been previously reported to the Approval Authority and any other relevant information requested by the Approval Authority. As of December 21, 2025 all annual reports submitted in compliance with this section must be submitted electronically by the POTW Pretreatment Program to the Approval Authority or initial recipient, as defined in 40 CFR 127.2(b), in compliance with this section and 40 CFR part 3 (including, in all cases, subpart D to part 3), 40 CFR 122.22, and 40 CFR part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of part 127, the Approval Authority may also require POTW Pretreatment Programs to electronically submit annual reports under this section if specified by a particular permit or if required to do so by state law.

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

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

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

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

For all industrial users that were in Significant Non-Compliance during the previous twelve (12) months, provide the name of the violating industrial user; indicate the nature of the violations, the type and number of actions taken (administrative order, criminal or civil suit, fines or penalties collected, etc.) and current compliance status. Indicate if the company returned to compliance and the date compliance was attained. Determination of Significant Non-Compliance shall be performed.

6. A summary of all enforcement actions not covered by the paragraph above conducted in accordance with the approved Enforcement Response Plan.
7. A description of actions being taken to reduce the incidence of significant violations by significant industrial users.
8. A detailed description of all interference and pass-through that occurred during the past year.
9. A thorough description of all investigations into interference and pass-through during the past year.
10. A description of monitoring, sewer inspections and evaluations which were done during the past year to detect interference and pass-through, specifying parameters and frequencies;

11. The Permittee shall analyze the treatment facility influent and effluent at least Annually for the presence of the toxic pollutants listed in 40 CFR Part 122 Appendix D (NPDES Application Testing Requirements) Table III as follows:

Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Zinc, Cyanide, and Phenols

The sampling program shall consist of one 24-hour flow-proportioned composite and at least one grab sample that is representative of the flows received by the POTW. The composite shall consist of hourly flow-proportioned grab samples taken over a 24-hour period if the sample is collected manually or shall consist of a minimum of 48 samples collected at 30 minute intervals if an automated sampler is used. Cyanide shall be taken as a grab sample during the same period as the composite sample. Sampling and preservation shall be consistent with 40 CFR Part 136. All analytical procedures and method detection limits must be specified when reporting the results of such analyses.

12. The Permittee shall analyze the treatment facility sludge (biosolids) prior to disposal, for the presence of toxic pollutants listed above in 40 CFR 122 Appendix D (NPDES Application Testing Requirements) Table III at least once per year. If the Permittee does not dispose of biosolids during the calendar year, the Permittee shall certify to that in the Pretreatment Annual Report and the monitoring requirements in this paragraph shall be suspended for that calendar year.

The Permittee shall use sample collection and analysis procedures as approved for use under 40 CFR Part 503 or specified in the EPA Region 8 General Permit for biosolids.

13. The summary shall include an evaluation of influent sampling results versus threshold inhibitory concentrations for the Wastewater Treatment System and effluent sampling results versus water quality standards. Such a comparison shall be based on the sampling program described in the paragraphs above or any similar sampling program described in this Permit.
14. Identification of the specific locations, if any, designated by the Permittee for receipt (discharge) of trucked or hauled waste, if modified;
15. Information as required by the Approval Authority or state permitting authority on the discharge to the POTW from the following activities:
 - (A) Ground water clean-up from underground storage tanks;
 - (B) Trucked or hauled waste; and,
 - (C) Groundwater clean-up from RCRA or Superfund sites.
16. A description of all changes made during the previous calendar year to the Permittee's pretreatment program that were not submitted as substantial or non-substantial modifications to EPA.

17. The date of the latest adoption of local limits and an indication as to whether or not the Town is under a State or Federal compliance schedule that includes steps to be taken to revise local limits.
18. Results of all PFAS sampling conducted of industrial sectors in accordance with Section I.E.6 of the NPDES permit of the following pollutants:

PFAS Analytes per Method 1633

19. Any other information that may be deemed necessary by the Approval Authority.

Attachment E: PFAS Analyte List

Target Analyte Name	Abbreviation	CAS Number
Perfluoroalkyl carboxylic acids		
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorononanoic acid	PFNA	375-95-1
Perfluorodecanoic acid	PFDA	335-76-2
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7
Perfluoroalkyl sulfonic acids		
Acid Form		
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluoropentanesulfonic acid	PFPeS	2706-91-4
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorononanesulfonic acid	PFNS	68259-12-1
Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluorododecanesulfonic acid	PFDoS	79780-39-5
Fluorotelomer sulfonic acids		
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid	4:2FTS	757124-72-4
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	6:2FTS	27619-97-2
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid	8:2FTS	39108-34-4
Perfluorooctane sulfonamides		
Perfluorooctanesulfonamide	PFOSA	754-91-6
N-methyl perfluorooctanesulfonamide	NMeFOSA	31506-32-8
N-ethyl perfluorooctanesulfonamide	NEtFOSA	4151-50-2
Perfluorooctane sulfonamidoacetic acids		
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6
Perfluorooctane sulfonamide ethanols		
N-methyl perfluorooctanesulfonamidoethanol	NMeFOSE	24448-09-7
N-ethyl perfluorooctanesulfonamidoethanol	NEtFOSE	1691-99-2
Per- and Polyfluoroether carboxylic acids		
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4
Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6

Target Analyte Name	Abbreviation	CAS Number
Ether sulfonic acids		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	756426-58-1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	113507-82-7
Fluorotelomer carboxylic acids		
3-Perfluoropropyl propanoic acid	3:3FTCA	356-02-5
2 <i>H</i> ,2 <i>H</i> ,3 <i>H</i> ,3 <i>H</i> -Perfluorooctanoic acid	5:3FTCA	914637-49-3
3-Perfluoroheptyl propanoic acid	7:3FTCA	812-70-4

Attachment F

Combined Sewer Overflow Outfalls

Outfall	CSO Regulator Name	Receiving Water	Latitude	Longitude
011	Schiller Street	Merrimack River	42° 58' 18.86" N	071° 28' 26.42" W
018	Turner/Ferry Streets	Merrimack River	42° 58' 52.84" N	071° 28' 10.17" W
031	Stark Brook (Elgin Ave.) Stark Brook (Sixth Ave.) Stark Brook (Eve Ave.)	Merrimack River	43° 01' 39.84" N	071° 28' 44.02" W
039	Third Street	Piscataquog River	42° 58' 45.12" N	071° 28' 24.93" W
043	Tannery Brook	Merrimack River	42° 58' 05.97" N	071° 28' 23.13" W
044	Cemetery Brook (Primary) Cemetery Brook (Secondary)	Merrimack River	42° 58' 52.88" N	071° 28' 02.40" W
045	Granite Street	Merrimack River	42° 59' 08.00" N	071° 28' 08.80" W
046	Bridge Street	Merrimack River	42° 59' 38.51" N	071° 28' 08.11" W
047	Penacook Street	Merrimack River	42° 59' 55.35" N	071° 28' 06.27" W
050	MH #1	Merrimack River	42° 56' 49.34" N	071° 27' 33.81" W
051	West Side Pump Station	Piscataquog River	42° 58' 41.64" N	071° 28' 16.87" W
052	MH #2	Merrimack River	42° 56' 57.36" N	071° 27' 40.80" W
053	Walnut/North Street Canal/W. Penacook	Merrimack River	43° 00' 02.43" N	071° 28' 09.46" W
054	Ray Brook	Merrimack River	43° 00' 30.53" N	071° 28' 17.16" W
055	Dunbar Street	Merrimack River	42° 57' 56" N	071° 28' 26" W

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¹ Updated July 17, 2018 to fix typographical errors.

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A. GENERAL REQUIREMENTS

1. Duty to Comply

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

- a. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
- b. Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (83 Fed. Reg. 1190-1194 (January 10, 2018) and the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note. See Pub. L. 114-74, Section 701 (Nov. 2, 2015)). These requirements help ensure that EPA penalties keep pace with inflation. Under the above-cited 2015 amendments to inflationary adjustment law, EPA must review its statutory civil penalties each year and adjust them as necessary.

(1) Criminal Penalties

- (a) *Negligent Violations.* The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than \$2,500 nor more than \$25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation or by imprisonment of not more than 2 years, or both.
- (b) *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both.
- (c) *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 303, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than \$250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing

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endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.

- (d) *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.
- (2) *Civil Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. See Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).
- (3) *Administrative Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty as follows:
 - (a) *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. See Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).
 - (b) *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. See Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

2. Permit Actions

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

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condition.

3. Duty to Provide Information

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

4. Oil and Hazardous Substance Liability

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

5. Property Rights

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

6. Confidentiality of Information

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

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

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

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

7. Duty to Reapply

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

8. State Authorities

Nothing in Parts 122, 123, or 124 precludes more stringent State regulation of any activity

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covered by the regulations in 40 C.F.R. Parts 122, 123, and 124, whether or not under an approved State program.

9. Other Laws

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

B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

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

c. Notice

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

d. *Prohibition of bypass.*

- (1) Bypass is prohibited, and the Director may take enforcement action against a Permittee for bypass, unless:
 - (a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
 - (c) The Permittee submitted notices as required under paragraph 4.c of this Section.
- (2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph 4.d of this Section.

5. Upset

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

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improper operation.

- b. *Effect of an upset.* An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph B.5.c. of this Section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- c. *Conditions necessary for a demonstration of upset.* A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - (1) An upset occurred and that the Permittee can identify the cause(s) of the upset;
 - (2) The permitted facility was at the time being properly operated; and
 - (3) The Permittee submitted notice of the upset as required in paragraph D.1.e.2.b. (24-hour notice).
 - (4) The Permittee complied with any remedial measures required under B.3. above.
- d. *Burden of proof.* In any enforcement proceeding the Permittee seeking to establish the occurrence of an upset has the burden of proof.

C. MONITORING REQUIREMENTS

1. Monitoring and Records

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- b. Except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 C.F.R. § 503), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.
- c. Records of monitoring information shall include:
 - (1) The date, exact place, and time of sampling or measurements;
 - (2) The individual(s) who performed the sampling or measurements;
 - (3) The date(s) analyses were performed;
 - (4) The individual(s) who performed the analyses;
 - (5) The analytical techniques or methods used; and
 - (6) The results of such analyses.
- d. Monitoring must be conducted according to test procedures approved under 40 C.F.R. § 136 unless another method is required under 40 C.F.R. Subchapters N or O.
- e. The Clean Water Act provides that any person who falsifies, tampers with, or

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

2. Inspection and Entry

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

- a. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

D. REPORTING REQUIREMENTS

1. Reporting Requirements

- a. *Planned Changes.* The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
 - (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. § 122.29(b); or
 - (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements at 40 C.F.R. § 122.42(a)(1).
 - (3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. *Anticipated noncompliance.* The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

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- c. *Transfers.* This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Clean Water Act. See 40 C.F.R. § 122.61; in some cases, modification or revocation and reissuance is mandatory.
- d. *Monitoring reports.* Monitoring results shall be reported at the intervals specified elsewhere in this permit.
 - (1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices. As of December 21, 2016 all reports and forms submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by State law.
 - (2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 C.F.R. § 136, or another method required for an industry-specific waste stream under 40 C.F.R. Subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.
 - (3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.
- e. *Twenty-four hour reporting.*
 - (1) The Permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all

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

- (2) The following shall be included as information which must be reported within 24 hours under this paragraph.
 - (a) Any unanticipated bypass which exceeds any effluent limitation in the permit. *See* 40 C.F.R. § 122.41(g).
 - (b) Any upset which exceeds any effluent limitation in the permit.
 - (c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. *See* 40 C.F.R. § 122.44(g).
 - (3) The Director may waive the written report on a case-by-case basis for reports under paragraph D.1.e. of this Section if the oral report has been received within 24 hours.
- f. *Compliance Schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- g. *Other noncompliance.* The Permittee shall report all instances of noncompliance not reported under paragraphs D.1.d., D.1.e., and D.1.f. of this Section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph D.1.e. of this Section. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in paragraph D.1.e. and the applicable required data in Appendix A to 40 C.F.R. Part 127. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), §122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this Section.
- h. *Other information.* Where the Permittee becomes aware that it failed to submit any

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relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

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

2. Signatory Requirement

- a. All applications, reports, or information submitted to the Director shall be signed and certified. See 40 C.F.R. §122.22.
- b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

3. Availability of Reports.

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

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

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

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

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

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

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“approved States,” including any approved modifications or revisions.

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

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

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

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

Bypass see B.4.a.1 above.

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

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

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

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

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

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

Daily Discharge means the “discharge of a pollutant” measured during a calendar day or any

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other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the “daily discharge” is calculated as the average measurement of the pollutant over the day.

Direct Discharge means the “discharge of a pollutant.”

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

Discharge

- (a) When used without qualification, *discharge* means the “discharge of a pollutant.”
- (b) As used in the definitions for “interference” and “pass through,” *discharge* means the introduction of pollutants into a POTW from any non-domestic source regulated under Section 307(b), (c) or (d) of the Act.

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

Discharge of a pollutant means:

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

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

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

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

Environmental Protection Agency (“EPA”) means the United States Environmental Protection

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Agency.

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

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

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

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

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

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

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

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

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

LC₅₀ means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC₅₀ = 100% is defined as a sample of undiluted effluent.

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

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

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publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit.

Municipality

- (a) When used without qualification *municipality* means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of CWA.
- (b) As related to sludge use and disposal, *municipality* means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal Agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management Agency under Section 208 of the CWA, as amended. The definition includes a special district created under State law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in Section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

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

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

- (a) From which there is or may be a “discharge of pollutants;”
- (b) That did not commence the “discharge of pollutants” at a particular “site” prior to August 13, 1979;
- (c) Which is not a “new source;” and
- (d) Which has never received a finally effective NPDES permit for discharges at that “site.”

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

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

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

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

NPDES means “National Pollutant Discharge Elimination System.”

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

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

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

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

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

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

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

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

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials

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(except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq.*)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

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

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

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

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

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

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

Secondary industry category means any industry which is not a “primary industry category.”

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

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

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

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does

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not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 C.F.R. § 122.2.

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

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

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

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

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

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

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

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

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

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

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

For purposes of this definition, “domestic sewage” includes waste and waste water from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Director may designate any person subject to the standards for sewage sludge use and

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disposal in 40 C.F.R. Part 503 as a “treatment works treating domestic sewage,” where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 C.F.R. Part 503.

Upset see B.5.a. above.

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

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

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

- (a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (b) All interstate waters, including interstate “wetlands;”
- (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, “wetlands”, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
 - (1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;
 - (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - (3) Which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) All impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;
- (f) The territorial sea; and
- (g) “Wetlands” adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

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

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

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

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

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

2. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl 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

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kg/day	Kilograms per day
lbs/day	Pounds per day
mg/L	Milligram(s) per liter
mL/L	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH 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. NH0100447
MANCHESTER WASTEWATER TREATMENT FACILITY
MANCHESTER, 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 Manchester Wastewater Treatment Facility (WWTF) located in Manchester, 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 # NH0100447 ("Draft Permit"). The Response to Comments explains and supports EPA's determinations that form the basis of the Final Permit. From April 10, 2024 through June 10, 2024, EPA initially solicited public comments on the Draft Permit.

EPA received comments from:

- McLane Middleton on behalf of City of Manchester, NH, dated June 10, 2024
- Greater Lawrence Sanitary District, dated June 10, 2024
- City of Nashua, NH, Department of Public Works, dated June 10, 2024
- City of Lowell (MA) Regional Wastewater Utility, dated June 10, 2024
- New Hampshire Water Pollution Control Association, dated June 10, 2024
- Conservation Law Foundation, dated June 10, 2024
- Merrimack River Watershed Council, dated June 5, 2024

After the close of the comment period, EPA made a determination to revise the Draft Permit (Revised Draft Permit) in which a narrative provision in the Draft Permit requiring that discharges "shall not cause or contribute to violations of federal or state water quality standards" (and other similar narrative provisions from Part I.A.3-8 of the 2024 Draft Permit) would be removed, and several additional monitoring requirements would be incorporated into the permit. From December 18, 2024 through February 3, 2025, EPA solicited public comments on the Revised Draft Permit.

EPA received comments from:

- McLane Middleton on behalf of City of Manchester, NH, dated February 3, 2025
- Osprey Owl Environmental, LLC, on behalf of the City of Manchester, dated February 3, 2025
- Conservancy Law Foundation, dated January 30, 2025¹
- Massachusetts Coalition for Water Resources Stewardship, dated February 3, 2025
- Andrea Amico, co-founder, Testing for Pease dated January 24, 2025
- Rebecca Backman, dated January 29, 2025

¹ Conservation Law Foundation also submitted an untimely comment letter dated April 4, 2025. See 40 CFR § 124.10. EPA reviewed these comments (which, if timely, would not result in any change to the Final Permit) but they are not reproduced in this Response to Comments document.

- Marc Feigl, dated February 3, 2025
- Written comments from individual commenters

EPA also held a public hearing on January 21, 2025, during which the following persons presented oral comments:

- Jillian Aicher, Conservation Law Foundation
- Lois Cote, volunteer with NAACP Manchester, NH branch/Environment and Climate Environmental Justice Committee
- Leslie Want, Resident of Manchester, NH
- Jose Tapia, Merrimack River Watershed Council
- Ricardo Cantu, Osprey Owl Environmental
- Hayley Jones, Slingshot
- Andrea Amico, Co-founder, Testing for Pease
- Colleen Naus, Citizen.

Although EPA's knowledge of the facility has benefited from the various comments and additional information submitted, the information and arguments presented did not raise any substantial new questions concerning the permit that warranted a reopening of the public comment period. EPA does, however, make certain clarifications and changes in response to comments. These are explained in this document and reflected in the Final Permit. Below EPA provides a summary of the changes made in the Final Permit. The analyses underlying these changes are contained in the responses to individual comments that follow.

A copy of the Final Permit and this response to comments document will be posted on the EPA Region 1 web site: at <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 at (617) 918-1369 or Cobb.Michael@epa.gov.

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I. Summary of Changes to the Final Permit

1. The Adaptation Planning requirements have been removed from the Final Permit. See Response 3.
2. The aluminum limit in the Draft Permit is replaced with a twice per month monitoring requirement in the Final Permit. The associated compliance schedule in Part I.G.2 of the Draft Permit has been removed. See Response 11.
3. The ammonia limit in the Final Permit has been updated to only apply from June through September. See Response 16.
4. The automatic benthic survey requirement in Part I.G.5 has been revised to apply only based on any known or suspected detrimental impact to the benthic community. Also, “potential” and “from the discharge” have been added. See Response 71.
5. A provision has been added to Part I.G.4 that the WET re-tests must be conducted within 14 and 28 days “or as soon as possible thereafter based on factors outside the Permittee’s control (*e.g.*, limited lab availability). The Permittee must document the justification for any re-tests conducted after these timeframes and submit the justification with the re-test results.” See Response 72.
6. Table I.A. and footnote 14 – the reporting units for AOF have been changed from ng/L to µg/L. See Response 74.
7. The reference in Part I.A.1, footnote 13 and Part I.E.6 has been changed from Method 1633 to Method 1633A to reflect the most recent revision of Method 1633. See Response 74.
8. The second bullet under Part I.G.4.a has new language that the source “may have been due to the discharge” See Response 77.
9. The third bullet under Part I.G.4.a has been removed and a requirement under footnote 22 of Part I.A.1 has been added to immediately test for oil & grease if an oily sheen is observed. See Response 77.
10. Part I.H.2.b and c were revised to the following: “The discharge shall not contain color (unless naturally occurring), objectionable odor (unless naturally occurring), or visible floating materials such as foam, debris, or scum.” See Response 80.
11. The second sentence in Part I.B.1 (Unauthorized Discharges) has been revised to indicate the following: “For any pollutant without an effluent limitation in this permit, any pollutant loading greater than the proposed discharge (the “proposed discharge” is based on the chemical-specific data and the facility’s design flow as described in the permit application, or any other information provided to EPA during the permitting process) must be reevaluated, and the permit must be modified or reissued if the need for any new effluent limitations is identified.” See Response 90.

II. Responses to Comments

COMMENTS 1 THROUGH 67 BELOW WERE RECEIVED AS PART OF THE PUBLIC NOTICE FOR THE ORIGINAL 2024 DRAFT PERMIT.

A. Comments from Gregory H. Smith, McLane Middleton, on behalf of the City of Manchester

Comment 1

Standard of Review

Under the Administrative Procedure Act (“APA”), an agency may not take actions, issue findings, or make conclusions that are:

- (A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;
- (B) contrary to constitutional right, power privilege, or immunity;
- (C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right;
- (D) without observance of procedure required by law;
- (E) unsupported by substantial evidence in a case subject to sections 556 and 557 of [the APA] or otherwise reviewed on the record of an agency hearing provided by statute; or
- (F) unwarranted by the facts to the extent that the facts are subject to trial de novo by the reviewing court.

5 U.S.C. § 706(2). An agency action is considered arbitrary and capricious when that agency relied on factors that Congress did not intend, “entirely failed to consider an important aspect of the problem,” explained its decision in such a way that is contradicted by the actual evidence or is “so implausible that it could not be ascribed to a difference in view or the product of agency experience.” *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). In addition, “an error of law also constitutes an abuse of discretion.” *Yepes-Prado v. U.S. I.N.S.*, 10 F.3d 1363, 1366 (9th Cir. 1993).

EPA exceeds its legal authority, and creates undue burdens on the City, by including requirements in the Draft Permit that the City monitor for PFAS analytes in influent, effluent, and sludge.

The Draft Permit incorporates requirements that the City use EPA methods 1633 and 1621 to monitor for per- and polyfluoroalkyl substances (“PFAS”), and adsorbable organic fluorine (“AOF”), respectively, in its influent, effluent, and sludge. EPA cannot, as a matter of law, include requirements related to PFAS-monitoring in the City’s final permit. The EPA lacks clear legislative authority to require PFAS monitoring for discharges to surface water.

Furthermore, any requirement that the City monitor for PFAS analytes will pose an undue financial burden on the City, without proper justification or legal basis, and without conducting a cost and benefit analysis.¹

¹ See *infra* Part III.D.

EPA does not have the authority to require PFAS monitoring absent clearly established water quality criteria. While EPA has the authority to regulate pollutants under the Clean Water Act, including the establishment of monitoring requirements, the lack of specific PFAS surface water quality criteria leave EPA devoid of any clear benchmark against which to assess the necessity of monitoring. EPA's recently established drinking water quality standards cannot serve this purpose. Drinking water quality standards and ambient groundwater quality criteria are entirely separate from surface water quality standards and have no legal or practical bearing on permitted discharges to the Merrimack River. The EPA has not demonstrated any evidence of adverse environmental impacts to the river, biota or fauna, nor has it found adverse human health effects in connection with PFAS compounds in surface waters. Therefore, EPA's demand for monitoring is entirely without basis.

Response 1

The comment indicates that EPA lacks legislative authority to require PFAS monitoring for discharges to surface water. Contrary to the comment and as illustrated in the Fact Sheet, "[M]onitoring data play a crucial role in fulfilling the objectives of the CWA and its implementing regulations." *In re Avon Custom Mixing Services, Inc.*, 10 E.A.D. 700, 708 (EAB 2022). More specifically, CWA § 308(a), 33 U.S.C. § 1318(a), authorizes EPA to require permittees to sample effluents and make reports when necessary to, *e.g.*, develop or assist in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance under the CWA. Additionally, CWA § 402(a)(2), 33 U.S.C. § 1342(a)(2), authorizes EPA to prescribe permit conditions on data and information collection. *See also* 40 C.F.R. § 122.41(h) (permittees shall furnish "any information" needed to determine permit compliance); 40 C.F.R. § 122.44(i) (permittees must supply monitoring data and other measurements as appropriate); *see also, e.g., In re City of Moscow*, 10 E.A.D. 135, 170-71 (EAB 2001) (holding that EPA has "broad authority" to impose information-gathering requirements on permittees); *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 671-72 (EAB 2001) (holding that CWA confers "broad authority" on permit issuers to require monitoring and information from permittees).

Also contrary to the comment, EPA may require monitoring even when corresponding water quality criteria have not yet been established. *E.g. In re Town of Concord*, 16 E.A.D. 514, 541-542 (EAB 2014) (EPA may impose monitoring requirements "regardless of a pollutant's potential to cause or contribute to a water quality violation, and regardless of whether pollutant discharges are restricted by an effluent limit."). In fact, Congress specifically contemplated that EPA would require monitoring to, among other things, "assist in the development" of standards and limitations under the Act. CWA § 308(a). To this end, data collected from a permit's monitoring requirements is often critical in future permit cycles in determining the need for effluent limitations and, if appropriate, calculating effluent limitations. It is reasonable to require monitoring when there is "little data" otherwise available. *In re Avon Custom Mixing Services*, 10 E.A.D. 700, 709 (EAB 2002).

Given the high level of activity associated with these pollutants (see EPA's *PFAS Strategic Roadmap – EPA's Commitments to Action 2021- 2024*²), it is likely that water quality standards for PFAS and/or AOF will be developed before the next reissuance of this permit. The permit's monitoring requirements are designed to ensure EPA has adequate information at that time to establish limits that may be necessary to protect all water quality standards. As described in the Fact Sheet, the purpose of the 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.

The comment asserts that drinking water quality standards and ambient groundwater standards have no bearing on permitted discharges to the Merrimack River. EPA disagrees and notes that there are drinking water intakes downstream which must also be protected. CWA § 302(a) specifically authorizes EPA to consider "public water supplies" when establishing water quality related effluent limitations. Additionally, EPA notes that a designated use for Class B waters, like the receiving water, is "after adequate treatment, . . . use as drinking water." RSA 485-A:8:II. As further described in Responses 53 and 54, a permit writer must consider designated use water quality standards when considering water quality based effluent limitations. Although, as also described in Responses 53 and 54, there is currently no PFAS standard to apply when determining the need for water quality based effluent limitations, the data gathered from the permit's monitoring conditions will assist EPA and the state in developing PFAS water quality standards, and will provide data for EPA, as permit writer, to determine the need for a water quality based effluent limit and calculate such appropriate limit in future permit renewals, once there is an applicable water quality standard. For further discussion of water quality standards with regards to PFAS, see Responses 51-56. EPA has finalized Maximum Contaminant Level Goals (MCLGs) for various PFAS compounds³ and the monitoring in this permit may also provide information necessary to ensure that the discharge is not causing or contributing to any excursions of these MCLGs downstream.

EPA maintains that the monitoring frequency should be at least quarterly to ensure that there are adequate data to assess the presence and concentration of PFAS in facility discharges. These data will enable EPA to obtain comprehensive and representative information on the sources and quantities of PFAS discharges and EPA will use these data in the future to inform its actions. EPA also reiterates that the level of sampling is consistent with an EPA-issued memo on December 5, 2022 related to *Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs*. See Fact Sheet at 32-34.

Regarding the cost and benefit analysis, see Response 4.

² Available at <https://www.epa.gov/pfas/pfas-strategic-roadmap-epas-commitments-action-2021-2024>

³ <https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>

EPA assumes that the footnote in this comment referencing III.D. of the comment is intended to reference part III.C which refers to cost-benefit analysis (see Response 4).

Comment 2

Moreover, EPA's directive that the City utilize methods 1633 and 1621 to monitor for PFAS analytes and AOF is outside of the scope of the EPA's authority. EPA notes in the Draft Permit that there is no "final 40 C.F.R. § 136 method for measuring PFAS in wastewater and sludge." Draft Permit NH0100447 Fact Sheet, p. 34. Nonetheless, EPA seeks to require monitoring via Method 1633 which it states was "finalized" in January of this year. Respectfully, no analytical method is "final" for the purpose of NPDES permit monitoring, until promulgated via the notice and comment rulemaking process. Neither Method 1633 nor method 1621 has been properly promulgated by EPA. EPA's reliance on non-promulgated analytical methods contravenes the procedural requirements of the APA, section 503. See 5 U.S.C. §§ 553, 706(2)(D).

Finally, should the EPA include PFAS monitoring requirements in the City's Final NPDES Permit, mandating that the City use method 1633 and 1621 for monitoring PFAS analytes and AOF will create undue financial burdens on the City. The City anticipates that sampling via these methods will cost \$1,245 per site and per sample, at a total of 50 sampling sites. The sampling will therefore impose an additional \$62,250.00 per year in costs annually. These costs simply cannot be justified for PFAS sampling, as the EPA lacks any legal or factual basis to justify the necessity of the sampling itself.

Response 2

CWA §§ 301, 304(h), 307, and 501(a) authorize EPA to promulgate guidelines establishing test procedures for the analysis of pollutants. EPA has promulgated such guidelines at 40 C.F.R. Part 136. EPA has also promulgated a regulation specifying that: "In the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR part 136..., monitoring shall be conducted according to a test procedure specified in the permit...." 40 C.F.R. § 122.44(i)(v)(B); *see also* 40 C.F.R. § 122.21(e)(3)(ii) (in an application for discharge, "[if] no analytical method... has been approved under 40 CFR part 136... the applicant may use any suitable method...."). Consistent with these regulations, the permit requires the use of Methods 1621 and 1633 because there are not any relevant methods in Part 136. For further discussion regarding the development of Methods 1621 and 1633, including EPA's recent proposal to add Methods 1633A and 1621 to Part 136, see Response 74.

Regarding EPA's authority to require PFAS monitoring, see Response 1. EPA recognizes that PFAS monitoring entails an increased cost but has determined that this monitoring is necessary to ensure sufficient data are available in the future to protect all water quality standards that are likely to be in effect in the next permit reissuance.

The comment also mentions the cost associated with 50 sampling sites. Although it is not entirely clear which 50 sites this refers to, EPA presumes this may refer to the annual monitoring requirement for certain industrial users (as required in Part I.E.6 of the permit). EPA recognizes that permittees have other regulatory avenues to require

annual PFAS monitoring of its industrial users. Discharges to the wastewater collection system are controlled through local limits, pretreatment programs, industrial discharge permits, and sewer use ordinances. Thus, the Permittee may, as it deems appropriate, transfer all or part of the PFAS-associated monitoring cost to the industrial user through any of these regulatory avenues. For more discussion of cost, see Response 4.

Finally, the comment suggests that if the monitoring is included in the permit, EPA should not require Methods 1633 and 1621 specifically. EPA confirms that use of these methods is necessary to ensure consistent data to best inform future permitting decisions. In any case, EPA is not aware of any other analytical methods that can measure this suite of pollutants, so the Permittee would most likely have no other choice but to use these methods even if they were not specifically required in the permit. See also Response 74.

Comment 3

EPA exceeds its legal authority and creates undue burdens on the City, by including requirements in the Draft Permit that the City develop a climate Adaptation Plan.

The Draft Permit requires that the City develop a climate Adaptation Plan with respect to the WWTF's critical assets. The City appreciates EPA's intentions to proactively anticipate the impacts of climate change. However, the requirements included in the Draft Permit fall outside the scope of EPA's authority under the Clean Water Act's NPDES program, were included without any cost benefit analysis,² and create an undue burden on the City and its environmental justice communities.

2 See *infra* Part IV.C (Comment 4)

EPA erroneously bases its authority for requiring the Adaptation Plan on several grounds. First, the EPA states that the "Adaptation Plan permit conditions are necessary to further the overarching goal of the CWA 'to restore and maintain the chemical, physical, and biological integrity of the Nation's waters....'" EPA suggests that increased precipitation, floods, storm surges, and sea level rise associated with climate change could cause a failure of wastewater treatment facilities, and thereby threaten the Nation's waters. EPA confuses the overarching policy objectives of the Clean Water Act, with the Act's actual delegation of authority to the Agency under the NPDES program. EPA has authority under the Act to regulate the discharge of a pollutant by any person from any point source³ to a navigable water. See 33 U.S.C. § 1342.

3. The term '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, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture." 33 U.S.C. § 1362.

The Adaptation Plan requirements included in the Draft Permit extend well beyond these criteria. Nothing in EPA's Adaptation Planning requirements can reasonably be tied to a discharge from an actual point source and are therefore outside the scope of its authority. See Nat'l Pork Producers Council v. EPA, 635 F.3d 738, 751 (5th Cir. 2011) ("[T]here must be an

actual discharge into navigable waters to trigger the CWA's requirements and the EPA's authority"); Nat. Res. Def. Council, Inc. v. EPA, 859 F.2d 156, 170 (D.C. Cir. 1988) ("[C]ontrary to EPA's assumption, the CWA does not empower the agency to regulate point sources themselves; rather, EPA's jurisdiction under the operative statute is limited to regulating the discharge of pollutants. Thus, just as EPA lacks authority to ban construction of new sources pending permit issuance, so the agency is powerless to impose permit conditions unrelated to the discharge itself.").

Second, EPA argues its own regulations, namely 40 C.F.R. § 122.41(d) and (e), authorize the EPA to require Adaptation Planning within the scope of NPDES permits. Part 122.41(d) requires all permittees to "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." Part 122.41(e) requires permittees to "at all times properly operate and maintain all facilities and systems of treatment and control" to achieve compliance with the conditions of a NPDES permit. EPA argues that Adaptation Planning requirements constitute "reasonable steps to minimize or prevent" potential future discharges associated with a changing climate, and that the extensive and costly upgrades to critical WWTF assets constitute "proper operation and maintenance" of municipal wastewater facilities.

As to both arguments, EPA misinterprets its own regulations by extending their reach to encompass speculative future impacts associated with climate change. Although a changing climate appears inevitable, the precise storm patterns that will emerge, and the precise impacts of climate change on a given local facility are far too speculative to serve as a basis to assess either "reasonable steps to minimize" discharges, or "proper operation and maintenance." These provisions should not be stretched beyond their plain meaning to require facilities to undertake costly and burdensome upgrades based on uncertain future scenarios.

Furthermore, EPA's interpretation undermines 40 C.F.R. § 122.41(n)(1)-(4), providing a defense for "upsets" defined as "an exceptional incident" resulting in unauthorized discharges that are "unintentional and temporary beyond the reasonable control of the operator." Surely, the severe storm events associated with climate change are beyond the reasonable control of the City of Manchester. Holding the City responsible for preventing the harm borne by these catastrophic events belies the intent of EPA's own regulations. EPA's efforts to interpret the "duty to mitigate" and the duty to ensure "proper operation and maintenance" to guarantee against all possible speculative future upsets, effectively nulls Part 122.41(n) with respect to severe storm events.

Assuming *ad arguendo* that EPA has authority to require climate Adaptation Planning in the City's NPDES permit, compliance with the Adaptation Planning requirements, as proposed, is simply infeasible for the City of Manchester. In addressing climate change impacts on municipal WWTFs, it is crucial to ensure a fair and effective approach. The current approach encompassed in the Draft Permit risks overwhelming municipal permit holders with unrealistic timelines and financial obligations. EPA offers no assurance of financial assistance or support to aid WWTFs in meeting these obligations. Without adequate financial assistance, the proposed permit conditions place an undue financial burden on the municipality and could potentially

compromise critical wastewater treatment services. As written, the Draft Permit's development of the Adaptation Plan would require hundreds, or even thousands of staff hours, and significant engineering costs will be associated with identifying critical assets and assessing appropriate adaptive measures. The costs associated with developing and executing such an extensive plan would cost millions of dollars.

Additionally, the City urges EPA to consider the distinctive challenges that Manchester faces as an environmental justice community. Requiring a small, disadvantaged community to create an Adaptation Plan threatens to exacerbate existing disparities in the City. Without assurance of federal and/or State financial assistance or support from the EPA and/or NHDES, the financial strains associated with the Draft Permit conditions place additional strains on the financial and managerial capacity of the City's wastewater treatment services upon which our residents rely. Therefore, the City requests that EPA eliminate the Adaptation Planning requirements until it identifies an available funding source to support these efforts, in the City's final permit.

Further, the timeline proposed in the Draft Permit for compliance with Adaptation Planning requirements is not achievable, even with adequate funding. Compliance with all three components of the Adaptation Plan necessitates substantial financial investment and some operational disruption. The City conservatively estimates that fully developing a meaningful implementation schedule for its adaptation plan would require 5 to 6 years.

The City shares EPA's concerns over the threats of climate change and has already voluntarily taken proactive steps to guard against its impacts and protect the Merrimack River. Working closely with the City to establish realistic timelines and providing logistical and financial support will lead to the implementation of more effective long-term climate change adaptation measures and a stronger partnership between EPA and the City of Manchester.

Response 3

The proposed Adaptation Planning requirements have been removed from the Final Permit. In response to the concerns of this commenter (and other commenters below), EPA considered whether the aims of the proposed requirements could be satisfied without imposing new requirements in the permit and determined, as described below, that existing, non-permit programs will provide the Permittee opportunity to conduct a comparable assessment of their flood risks. To that end, EPA notes that the Permittee remains responsible for complying with all effluent limitations expressed in Part I.A.1 of the permit, even in the event of a major storm or flood.

On the federal level, for example, municipalities must engage in flood risk assessment when utilizing the Clean Water Act State Revolving Fund,⁴ and the Federal Emergency Management Agency (FEMA) requires a hazard mitigation plan when municipalities apply for certain types of non-emergency disaster assistance.⁵ At the State Level,

⁴ <https://www.epa.gov/system/files/documents/2022-09/Federal%20Flood%20Risk%20Management%20Standard%20.pdf>.

⁵ <https://www.fema.gov/emergency-managers/risk-management/hazard-mitigation-planning/requirements>

NHDES' Resilience and Adaptation Program aids municipalities and utilities in identifying natural disaster and climate related vulnerabilities within their systems and assisting with corrective implementation measures.⁶ Additionally, many municipalities and regional organizations have developed their own local flood risk tools and requirements.⁷ As described in the Fact Sheet, the goal of the Draft Permit requirements was to reduce and/or eliminate noncompliant discharges that result from impacts of major storm and flood events through advanced planning and flood risk mitigation measures. EPA is persuaded that non-permit requirements, such as those described above, will provide permittees with a comparable assessment of their flood risks as the Draft Permit intended to generate and accordingly will accomplish the Draft Permit's objective of ensuring that effluent limitations are achieved even during major storm and flood events. EPA has thus decided to remove the Adaptation Planning requirements from the Final Permit to improve efficiency and reduce redundancy.

EPA's decision is consistent with the aims of Executive Order 14239, Achieving Efficiency Through State and Local Preparedness (March 18, 2025) ("Federal policy must rightly recognize that preparedness is most effectively owned and managed at the State, local, and even individual levels, supported by a competent, accessible, and efficient Federal Government"; "it is the policy of the United States that my Administration streamline its preparedness operations; update relevant Government policies to reduce complexity and better protect and serve Americans; and enable State and local governments to better understand, plan for, and ultimately address the needs of their citizens.").

As stated above, removal of these provisions does not alter the requirement for the Permittee to ensure compliance with the permit limits.⁸ As detailed in the Fact Sheet, flood risk is a significant issue for POTWs in New England and the impacts in recent years are well-documented. It is EPA's expectation that municipalities will avail themselves of the various tools described above as well as available federal guidance⁹ to ensure risks to their POTWs are mitigated to allow for permit compliance. Additionally, should circumstances change such that flood planning requirements outside the scope of the permit are insufficient to protect Water Quality Standards, EPA may propose additional operation and maintenance flood planning requirements in subsequent permits.

Comment 4

The EPA failed to perform a cost-benefit analysis to establish effluent limits for ammonia and aluminum, implement PFAS monitoring requirements, or mandate Adaptation Planning.

⁶ <https://www.des.nh.gov/news-and-media/blog/providing-planning-synergy-integrating-resilience-adaptation-asset-management>

⁷ See, e.g., City of Portsmouth, NH, Hazard Mitigation Plan Update 2024, https://www.portsmouthnh.gov/sites/default/files/2024-07/PortsmouthHazardMitigationPlanUpdate2024_DRAFT_w_maps.pdf.

⁸ EPA notes that an "upset" "constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations [under certain circumstances]," but it does not apply to *water-quality* based permit effluent limitations. 40 C.F.R. § 122.41(n).

⁹ For example: <https://www.epa.gov/waterutilityresponse/flood-resilience-basic-guide-water-and-wastewater-utilities>.

Considering the costs and benefits of agency actions has long been a guiding principle in pursuit of informed and prudential agency decision-making. In the context of the Clean Water Act, the EPA is authorized to weigh financial costs of a permit requirement, against the anticipated water quality benefits. Historically, EPA has conducted cost-benefit analyses under the Clean Water Act even in the absence of a clear legislative directive. In *Entergy Corp. v. Riverkeeper Inc.*, for example, the United States Supreme Court upheld EPA's application of a cost-benefit analysis, finding that despite the statute's silence with respect the consideration of costs and benefits, "it was well within the bounds of reasonable interpretation for the EPA" to perform a cost-benefit analysis in setting effluent standards under the Clean Water Act. *Entergy*, 556 U.S. at 223; see also *id.* at 218 (agreeing with EPA's interpretation that the setting of effluent limits allows for the consideration of the costs of technology and the relationship between those costs and the environmental benefits produced). Consistent with the EPA's approach of considering costs and benefits when setting effluent limits under the Clean Water Act, EPA should conduct a proper cost-benefit analysis before setting effluent limits on ammonia and aluminum in the City's final permit.

Moreover, it is evident that the EPA's authority to perform cost-benefit analyses extends beyond effluent limits to encompass other permit requirements, including climate Adaptation Planning requirements, and PFAS monitoring. Given the extraordinary compliance costs to the City, the City requests that EPA perform a meaningful cost-benefit analysis before imposing the abovementioned effluent limits, Adaptation Planning requirements, or PFAS monitoring in the City's final NPDES Permit.

Response 4

As described in Response 3, EPA has removed the proposed Adaptation Planning requirements from the final permit. EPA recognizes that the other new requirements identified in the comment entail an increased cost to the Permittee. EPA's ability to consider cost varies based on the type of permit requirement.

Regarding the development of effluent limitations, the financial burden is not an appropriate consideration. Although EPA appreciates the commenter's financial concerns, it is well-established that CWA section 301(b)(1)(C) requires effluent limits to meet water quality standards, without exception for cost or technical feasibility. *Upper Blackstone Water Pollution Abatement Dist. v. EPA*, 690 F.3d 9, 33 (1st Cir. 2012), cert. denied, 569 U.S. 972 (2013) ("...cost considerations may not be considered by the EPA in the setting of permit limits to assure compliance with state water quality standards."); *In re City of Fayetteville, Ark.*, 2 E.A.D. 594, 600-601 (CJO 1988) ("The meaning of [CWA § 301(b)(1)(C)] is plain and straightforward. It requires unequivocal compliance with applicable water quality standards and does not make any exceptions for cost or technological feasibility."), *aff'd sub nom Arkansas v. Oklahoma*, 503 U.S. 91 (1992); see also, e.g., *In re Scituate Wastewater Treatment Plant*, 12 E.A.D. 708, 734 (EAB 2006).

Regarding PFAS monitoring, EPA did consider cost in setting appropriate monitoring requirements but must also ensure that sufficient data will be available in the future to

establish appropriate effluent limits to protect water quality. In this case, the quarterly PFAS requirement is consistent with EPA guidance (see Response 1) in order to adequately characterize the discharge and identify potential sources of PFAS. EPA considers this level of monitoring to be a minimum at this time given that this is a new requirement and PFAS levels have never been characterized in the past. In other words, the permit could have required much more frequent PFAS monitoring without any consideration of cost but only requires quarterly monitoring to limit the cost.

Comment 5

The Draft Permit contradicts numerous provisions of the 2020 Consent Decree negotiated in good faith between the City and the EPA related to the City's CSO system.

In 1999, the City entered a Compliance Order with the EPA, marking the commencement of the first phase of its comprehensive CSO abatement control efforts ("Phase I"). Over a 10-year period, the City fulfilled its obligations under Phase I, investing \$58 million to completely eliminate thirteen CSO outfalls, implement sewer separations, and implement various other abatement control measures. These efforts resulted in a remarkable 99% reduction in CSO discharges to the Merrimack River from the outfalls on the west side of the River, from approximately 53.2 million gallons to a mere 0.2 million gallons annually. Following the successful completion of Phase I, the City was effectively capturing and treating around 83% of its annual wet weather combined sewage by volume.

The subsequent 2020 Consent Decree encompassed an agreement between the City and EPA, for the City to implement the second phase of the City's CSO abatement efforts ("Phase II"). Phase II comprises of a comprehensive set of further corrective measures to the City's sewer system, including additional WWTF upgrades, sewer separation projects, and further abatement controls. The 2020 Consent Decree was the result of several years of negotiations between the City and the EPA. Unfortunately, the Draft Permit ignores several provisions included in the carefully negotiated agreement.

The City strongly urges the EPA to reconsider terms included in the Draft Permit, which contradict the terms of the 2020 Consent Decree, currently in effect. The decree, lodged with the U.S. District Court for the District of New Hampshire, is "binding upon the United States and the State, and upon the City and any successors, assigns, or other entities or persons otherwise bound by law." 2020 Consent Decree ¶ 3. Thus, the agreement is not only binding upon the City, but upon EPA as well. Further, the "Consent Decree resolve[d] the civil claims of the United States and the State for violations alleged in the Complaints filed in this action through the date of lodging." 2020 Consent Decree ¶ 62. To the extent the Draft Permit contradicts the Consent Decree, the Draft Permit cannot be sustained.

The 2020 Consent Decree is a product of years of good faith negotiations between the City and the EPA. It represents a comprehensive and mutually agreed-upon framework for responsibly managing and monitoring the City's CSO outfalls. Deviating from the terms of the Consent Decree undermines the substantial investment of time, resources, and goodwill made by all parties involved and the sound decision to balance the schedule for improvements with fiscal

consideration. To the extent that the 2020 Consent Decree and the Draft Permit are contradictory or otherwise inconsistent, the EPA must harmonize the terms of the Draft Permit to meet the negotiated terms of the 2020 Consent Decree. Should the EPA fail to update the Draft Permit in this manner, the City must resolve any ambiguity regarding which legal standards and obligations apply, in favor of the 2020 Consent Decree approved by the Court.

For example, consistent with the terms of the 2020 Consent Decree, the City has used continuous flow devices to directly monitor six of the City's fifteen CSO outfalls, 044, 031A, 050, 052, 047, and 046. See Consent Decree ¶ 19 ("[T]hese six CSO outfalls are estimated to be more than 99% of all of the City's total CSO discharge volumes."). However, EPA's Draft Permit requires the City to quantify and record all discharges from combined sewer outfalls via direct measurement, for each discharge event, for all fifteen of the City's CSOs. See Draft Permit Part I.H.3.e. Not only does the Draft Permit directly contradict the 2020 Consent Decree, undermining several years of collaboration, cooperative efforts, and joint decision-making between the City and the EPA, but it is altogether arbitrary to require the City to directly monitor an additional nine outfalls, which combined constitute a *de minimis* amount of the City's total CSO discharges.

Response 5

As noted by the commenter, the 2020 Consent Decree ("CD") resolved the United States' and the state's civil claims of violations *through the date of lodging* (emphasis added). That is: the CD contemplates mutually agreeable resolutions for past violations, it does not contemplate permit terms in future permit renewals. In fact, EPA is not able to reach agreements with permittees or any other outside parties about the terms of any future permit, as doing so would violate, for example, the notice and comment requirements of 40 C.F.R. § 124.10. Although the terms of the CD do not limit the terms EPA may include in this permit renewal, EPA acknowledges and appreciates the effort the parties undertook to reach the CD agreement and also acknowledges the significant CSO abatement control efforts undertaken by the City since 1999 and the significant reductions in CSO discharges that have occurred since that time. EPA also recognizes that the City continues its efforts under the CD. EPA Region 1's Water Division has consulted with Region 1's Enforcement and Compliance Assurance Division about the perceived conflicts between the Consent Decree and the draft permit terms and offers the following responses.

The commenter characterizes the permit's requirement to quantify and record discharges for all combined sewer outfalls as a direct contradiction to the CD, which requires monitoring for just six outfalls. EPA disagrees. The CD requirement to directly monitor six CSO outfalls is duplicated in the Draft Permit. The requirement to directly monitor the other nine CSO outfalls is an additional requirement and, as described above, the terms of the CD do not limit any additional permit terms EPA may include in future permit proceedings.

Regarding the commenter's assertion that the other nine CSO outfalls constitute a *de minimis* amount of the City's total CSO discharges, EPA notes that discharges through

these outfalls is expected to be less frequent. Therefore, EPA will allow the Permittee to have the option of direct measurement or estimation to quantify the discharges from these other nine outfalls. This approach is adequate to characterize the continued effectiveness of the City's CSO abatement program and to ensure public notification includes accurate information to ensure the protection of public health. Part I.H.3.e of the Final Permit has been changed to allow for estimation of flows from the other nine CSO outfalls.

Comment 6

Additionally, the NPDES Draft Permit includes lengthy requirements for the City to follow a Public Notification Plan concerning discharges from the City's CSOs. The 2020 Consent Decree, however, includes its own public notification plan already approved by EPA, and followed by the City. The 2020 Consent Decree and the Draft Permit require different dates and frequencies for publishing CSO notifications. Compare Consent Decree ¶ 19(c) ("By no later than March 15th, annual notification of the locations of CSOs, a summary of CSO activations and volumes, and the status and progress of CSO abatement work shall be posted by the City...."), with Draft Permit Part I.H.5. ("For each combined sewer overflow outfall listed in Part 1.H.1 of this permit, Permittee must monitor the following which shall be reported in *each monthly* DMR for each outfall.") (emphasis added). Consistent with the Consent Decree, the City respectfully reiterates⁴ its request to submit CSO notifications on an annual basis on March 15 of each year.

4. See E-mail Correspondence from Fred McNeill to Robin Johnson and Hayley Franz (Feb. 2, 2024) (requesting that the deadline for the CSO DMRs submittals be changed from January 15 to March 15). This change, in part, was requested because a January 15 deadline makes it very difficult to obtain the flow metering data and run the SWMM Model to estimate CSO discharges since the DMRs for December are not completed until early January. A March 15 deadline will allow the City sufficient time to gather all of the flow information, analyze it, and complete our model runs before officially submitted.

Response 6

As described in Response 5, the terms of the CD do not limit the terms EPA may include in this permit renewal. This comment appears to express concerns relating to several distinct reporting requirements in the permit. First, the comment suggests that the annual March 31 reporting deadline required by Part I.H.3.g.4 of the permit is in conflict with the annual March 15 CSO reporting deadline in the CD. EPA does not consider the annual March 31 reporting deadline to be in conflict with the March 15 due date in the CD and notes that it alleviates the concern raised in footnote 4 of the comment regarding a due date of January 15. Based on footnote 4, EPA considers that the City has sufficient time to submit the annual report required by the CD by March 15 and to subsequently post the annual report online based on the permit requirement by March 31. Additionally on March 31 each year, Part I.H.4 of the permit requires "a summary of CSO outfall monitoring data required by Part I.H.5 of this permit" whereas the CD requires "a summary of CSO activations and volumes." Although the language between the permit and the CD may differ, EPA does not consider these terms to be in conflict and notes, again, that the terms of the CD do not limit the terms EPA may include in this permit renewal.

Another concern raised in this comment is that the permit requires monthly reporting in addition to the annual report. See Permit Part I.H.5.c. The lack of a monthly reporting requirement in the CD does not preclude EPA from including one in the permit. EPA also notes that paragraph 19.B.iv of the CD does require the Permittee to provide data on the volume of a CSO discharge within 14 days after the City has become aware of the termination of any CSO discharge; this data may be useful in complying with the permit's monthly DMR reporting requirement. Importantly, the monthly DMR submittals are not due until the 15th day of the following month, so the flow data included in these monthly DMR submittals as required by the permit would never be due before the flow data would be due based on paragraph 19.B.iv of the CD. In complying with the permit terms, the Permittee can duplicate any relevant portions of the CSO Discharge Monitoring and Notification Program required in the CD but must also capture any additional items required by the Permit that are not included in the CD. Notably, the permit at Part I.H.3.g.(2) & (3) includes initial notification and supplemental notification for each CSO activation, the requirements of which are largely duplicated in Section F of the CD.

Comment 7

Additionally, while the 2020 Consent Decree requires the City to notify the public and other potentially affected parties of probable CSO activation “no later than, four (4) hours after the City has become aware, by monitoring, modeling or other means, that a CSO discharge has occurred,” the Draft Permit imposes a more stringent two-hour time window. Compare Consent Decree ¶19(a), with Draft Permit Part I.H.3.g.2. The City respectfully requests that the Draft Permit be modified so that it is consistent with the Consent Decree.

Response 7

EPA acknowledges that the Draft Permit establishes a shorter initial notification period than the CD. As noted in Section 5.6 of the Fact Sheet, the Draft Permit includes more specific notification implementation level requirements which reflect advances in technologies to ensure that the public receives adequate notification of CSO occurrences and CSO impacts. For example, metering of CSO outfalls can provide timely notification to the City of overflow activity, which can in turn allow the City to provide its required notification more quickly to the public. EPA considers that expedited notification is a critical component necessary to improve the protection of public health related to CSO discharges. As described in Response 5, the terms of the CD do not limit the terms EPA may include in this permit renewal. EPA additionally notes that compliance with the permit terms will not create a barrier to compliance with the CD – in fact, compliance with the permit's 2-hour initial notification requirement will necessarily ensure compliance with the CD's 4-hour initial notification requirement.

Comment 8

Finally, the Draft Permit requires the City to develop an infiltration and inflow (“I/I”) program for preventing I/I in the City's sewer system to prevent unauthorized discharges. The City again urges EPA to consider the binding 2020 Consent Decree currently in effect. Under this agreement, the City is expected to remove 95% by volume of the City's annual wet-weather

combined sewage (approximately 1.5 out of the City's 1.6 million gallons) by the year 2030. Additional WWTF treatment upgrades and abatement controls are expected to reduce the City's remaining CSO discharge volume by an additional 74%, at a cost of \$271 million, by the end of Phase II. This enormous undertaking requires the City to perform construction work, which will necessarily remove I/I. The City's entire CSO system is undergoing massive abatement, spanning a decades long effort to reduce I/I. Therefore, the requirements outlined in the Draft Permit are redundant and unnecessary in light of the City's longstanding commitment and significant investments in CSO abatement.

Response 8

See Response 5.

The permit requires the Permittee to continue to implement an I/I program that was required in the 2015 Permit. EPA recognizes the significant CSO abatement efforts being done by the City and the impact that such work will have on preventing I/I. EPA agrees that the CSO abatement work described in the comment is likely to largely satisfy the I/I reduction requirement and the City can cite its ongoing CSO abatement efforts to satisfy much of this permit requirement for areas of the collection system that are undergoing CSO abatement work. However, EPA does not consider this requirement to be redundant given that certain areas of the collection system may still be subject to excessive I/I even after CSO abatement activities are completed in a given area of the collection system. For example, the CSO abatement work in certain areas of the collection system may have been completed many years ago and any new sources of I/I in those areas must continue to be prevented. Therefore, EPA finds that this requirement is necessary to ensure that an I/I program is maintained through the life of the permit throughout the collection system.

Note: Comments 9 through 20 below were attached to McLane Middleton's submittal and are from Jeffrey Pinnette, P.E. of Wright-Peirce on behalf of the City of Manchester

Wright-Pierce has reviewed the draft permit (NPDES Permit No. NH0100447) for the City of Manchester, New Hampshire's (City) Wastewater Treatment Facility (WWTF). To support the development of these technical comments, we reviewed and analyzed the draft Permit, Fact Sheet and backup calculations used to derive new effluent limitations. We have discussed the key issues with City staff and developed the following comments on behalf of the City for submittal to EPA:

Comment 9

Effluent Flow – Part I.C.3.f – “If the monthly average flow exceeded 80 percent of the facility's 34 MGD design flow (27.2 MGD) for three consecutive months in the previous calendar year, or there have been capacity related overflows, the report shall include:

- 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

- A calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year

The City disputes this provision in the permit because the City already has a High Flow Management Plan in place as required by EPA which requires and promotes treating as much flow as possible. The monthly flows treated by the WWTF routinely exceed 80 percent of permitted flow particularly during winter/spring months and driven by extended wet weather events (refer to monthly flow data in Appendix A of the Fact Sheet). This criterion could be exceeded in any given winter/spring. The City has developed plans for addressing the noted concerns including:

- The City has a Long-Term Control Plan (CDM-Smith, 2010) in place and is currently making a major investment to separate Cemetery Brook from the collection system. This alone will decrease flows to the WWTF by 12% on average and peak flows by up to 55 MGD.
- The City completed its most recent facility plan update for the WWTF in 2010 (AECOM) and is currently following that plan and intends to update the plan every 20 years with the next facility plan update intended to be finalized by 2030.

Request 1: The City requests that EPA remove or revise Part I.C.3.f to be consistent with the City's actual flows in relation to the permit flow as the City has the potential to exceed this criteria and the fact that long-term plans are already in place to address these concerns.

Response 9

This effluent flow planning requirement is in place to ensure that a comprehensive assessment can be made with respect to the capacity and operation of the collection system and the POTW treatment facility and that a comprehensive scheme is in place for addressing issues which can adversely affect treatment plant operations and lead to adverse impacts on water quality. The comment suggests that it is very likely that this condition would be triggered during the permit term (driven by extended wet weather events) and that a High Flow Management Plan is already in place to address these concerns.

EPA agrees that the information in the City's High Flow Management Plan will likely fulfill much of this requirement with respect to wet weather and, therefore, this provision will not result in a significant additional burden on the City to develop an alternate plan for addressing wet weather. However, EPA also clarifies that this provision may also be triggered due to an increase in baseflow (*e.g.*, due to growth) resulting in a need to plan for the potential expansion of the treatment capacity of the WWTF. Given that this provision may trigger such planning which is distinct from wet weather events or the High Flow Management Plan, EPA finds that this permit provision is necessary and must be maintained in the Final Permit. For clarity, EPA notes that I/I values reported under this provision may be based on estimates, and any of this information that has been previously collected for other reporting purposes may also be used in satisfying this requirement.

Comment 10

Total Aluminum The City takes exception to the proposed aluminum limit for the following reasons: Unreliable ambient river data Anomalous effluent results Pending change to EPA's Aluminum Calculator Ambient River Results – WET versus Clean Sampling The ambient river level for aluminum was determined to be 130 µg/l for the reasonable potential to exceed analysis based on Manchester's WET testing data from December 2018 through September 2023. This ignores past clean sampling results from Manchester as well as important information presented on aluminum levels in the Merrimack River in the comments for the most recent NPDES permits for the City of Lowell and Greater Lawrence Sanitary District (GLSD). These analyses have demonstrated the inadequacy of WET testing for determining river aluminum levels. Clean sampling techniques and testing via EPA Method 1669 for aluminum are critical. Another is the relationship of metal levels with river flow, especially for an element as abundant as aluminum. High river flows result in sediment scour that elevates the resulting ambient concentration in the river. Figure 1 below was developed by Osprey Owl Environmental, LLC (OOE) and shows the results of clean sampling conducted by Manchester as part of their 2008/2009 study self-performed by the City and led by Rick Cantu, who now is the chief investigator for OOE. The results (reproduced with permission from OOE) are shown versus river flow for sampling at the Queen City Bridge upstream of the Manchester WWTF outfall. A detailed interpretation of the chart can be provided if desired, but a key issue is that scouring of aluminum particles is understood to occur at river water velocities of 7,000 cfs and greater.

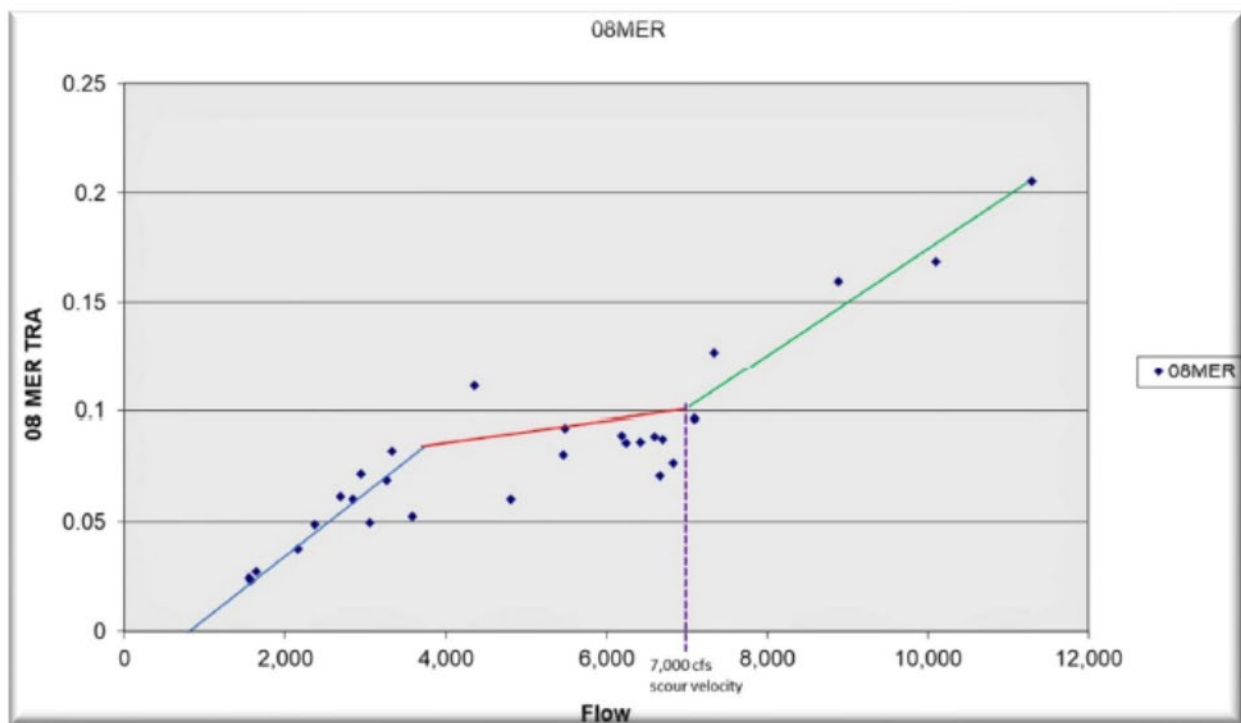


Figure 1 2008/2009 Aluminum Clean Sampling Results in the Merrimack River Just Upstream of Manchester WWTF Outfall vs. River Flow

It is notable that at river flows below 4,000 cfs, the river concentration is less than the 87 µg/l chronic criteria for aluminum in the river and well below the adjusted value of 105.8 µg/l for total recoverable aluminum. For comparison, the City's recent WET test results for the ambient river concentration are plotted along with river flow in Figures 2a and 2b. The ambient river concentrations show very strong correlation to river flow as was also found in the City's 2008/2009 study. For reference, the annual mean flow for the Goff's Falls monitoring station is 5,504 cfs (USGS web site), 4,284 cfs for the monitoring period, and the current 7Q10 flow is 676 cfs. The strong correlation between river concentrations and river flow is extremely well documented both from the 2008/2009 data set and the more recent WET test data. As discussed further below, concentrations that are representative of low flow conditions should be used in the reasonable potential to exceed analysis.

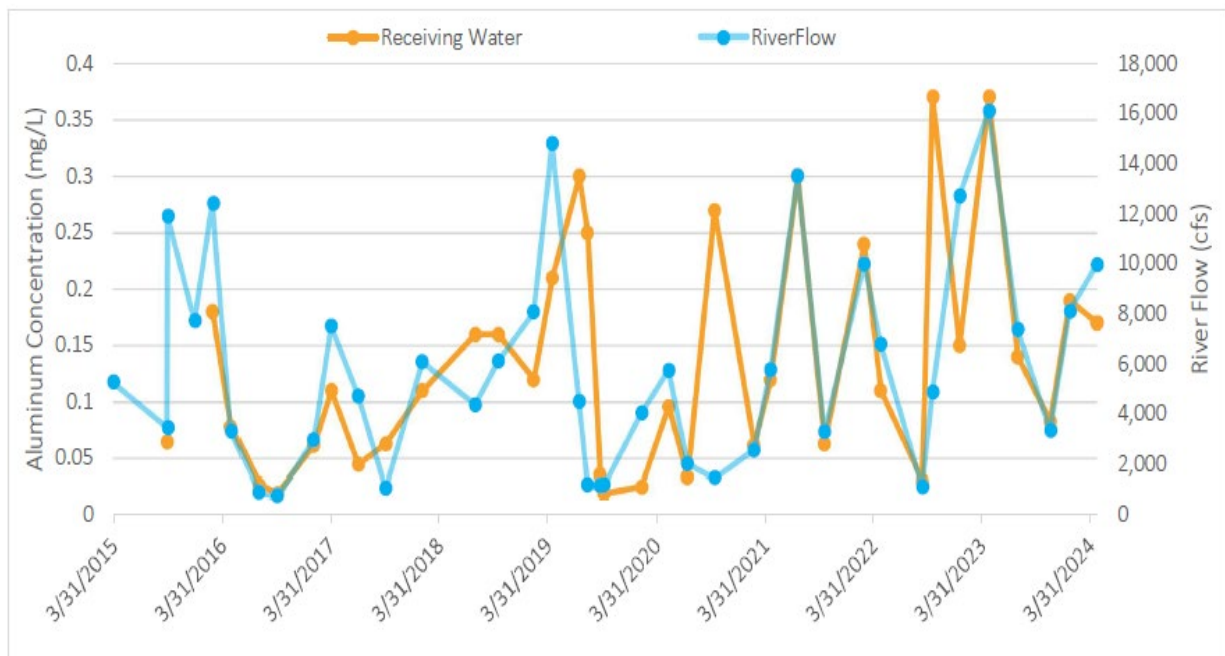


Figure 2a Manchester Aluminum WET Testing Data (2015-2024, in mg/L, Left Column), Ambient Merrimack River Just Upstream of Manchester WWTF Outfall and River Flow by Date (in cfs, right column)

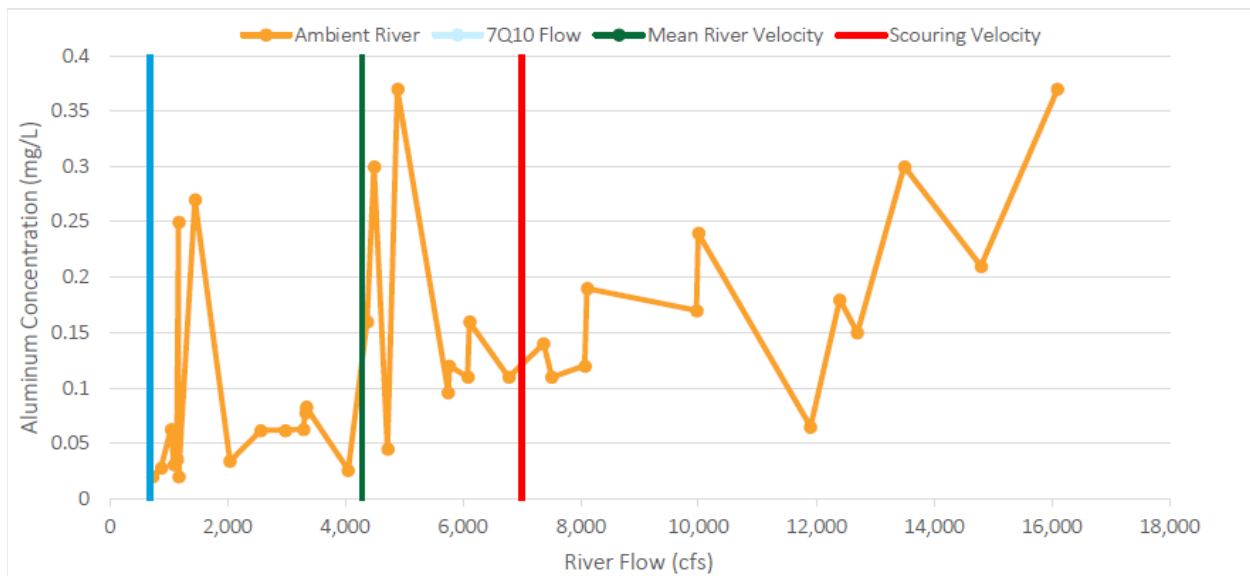


Figure 2b Manchester Aluminum WET Testing Data (2015-2024, in mg/L, left column), Ambient Merrimack River Just Upstream of Manchester WWTF Outfall Versus River Flow

The City's WET test results in Figure 2 above show scatter similar to that demonstrated by GLSD WET testing as noted in their comments on their most recent permit as shown in Figure 3 (reproduced with permission). Based on the information provided in their comments to their draft permit, GLSD's ambient concentration was reduced from a median value based on WET testing of 112.5 $\mu\text{g/l}$ to 80.0 $\mu\text{g/l}$ based on the clean sampling data. It is notable that GLSD clean sampling occurred at mean to moderately high flows.

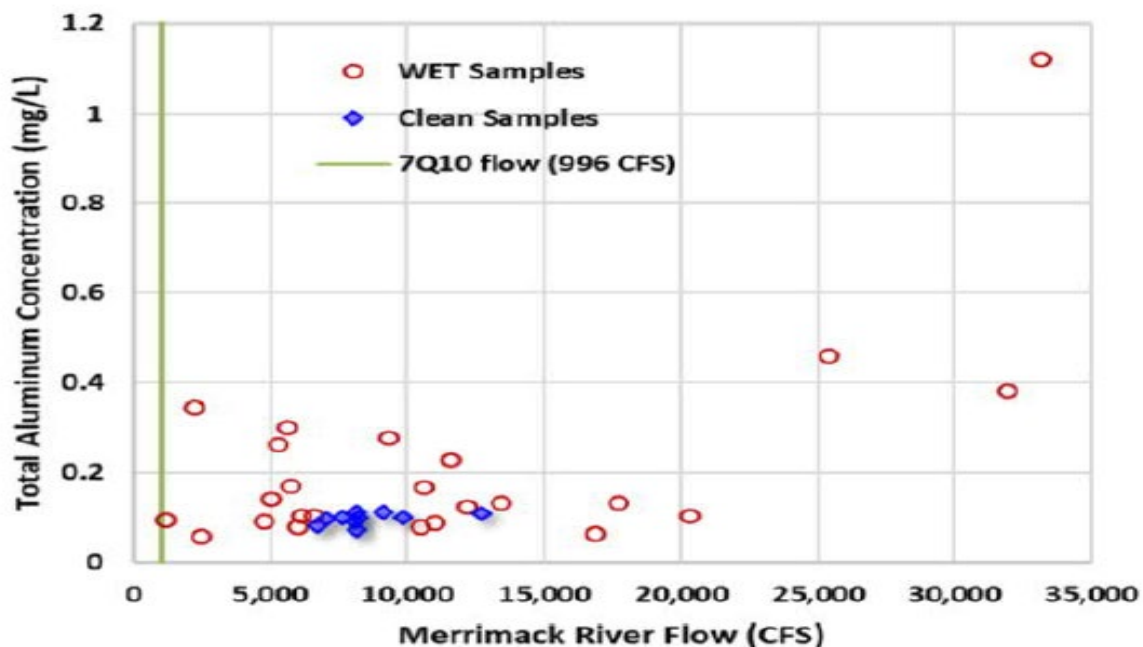


Figure 3 GLSD Aluminum WET & Clean Sampling Data for Merrimack River Just Upstream of GLSD Outfall (Downstream of Manchester) and River Flow

The City of Lowell provided the clean sampling data in Table 1 to support its most recent 2019 NPDES permit that allowed a reduction of the river concentration to 35 µg/l from WET test results with a median level of 140 µg/l. It should be noted that while there is significant additional flow to the Merrimack River between Manchester and Lowell, there is not enough dilution to account for the difference between a proposed ambient concentration of 130 µg/l for Manchester and 35 µg/l at Lowell even if there was no aluminum in the additional flow. It is notable that the Lowell sampling occurred predominantly during lower flow conditions.

Table 1 – Lowell Clean Sampling Aluminum Data

Sampling Date	River Flow, cfs	Aluminum, µg/l
7/11/2016	1,650	41
10/3/2016	1,010	18
11/8/2016	2,750	64
9/28/2017	1,980	35
10/18/2017	1,780	23
10/25/2017	4,490	21
7/30/2018	6,210	100

Recent clean sampling conducted by OOE for the Town of Merrimack (slightly downstream from Manchester) is presented in Table 2. These results are representative of the reach that the Manchester WWTF outfall discharges to and includes the impact of the discharge. The results also show the same correlation with river flow.

Table 2 – Merrimack, NH Clean Sampling Aluminum Data

Sampling Date	River Flow, cfs	Aluminum, µg/l
10/7/2021	8,640	95
10/19/2021	3,250	88
8/17/2022	815	31

The City's request for additional time for commenting was not approved by EPA, so the City is unable to complete additional clean sampling results for the river concentration. Nevertheless, the City will be having OOE conduct both an audit of its sampling techniques, sampling location and an intensive round of sampling that we are confident will show that clean sampling results are generally in conformance with the results from the City's 2008/2009 study as shown in Figure 1. The City requests that EPA leave this docket open and refrain from issuing a final permit until this issue has been resolved.

The changes in ambient concentration with flow in the river are a challenge for interpreting EPA's intent in the reasonable potential to exceed analysis. The goal of the reasonable potential

to exceed analysis is ostensibly related to ensuring concentrations do not exceed applicable criteria during the 7Q10 low flow conditions that the analysis is conducted. At the current 7Q10 flow of 676 cfs, the river concentration should be less than 50 µg/l as shown in Figure 1 above for Manchester's 2008/2009 study. The recent clean sampling results for Merrimack on August 17, 2022 at a river flow of 815 cfs with a concentration of 31 µg/l is further supporting data. The Lowell data also supports this clearly. As discussed further in comment 2.c., once the State of New Hampshire approves EPA's recommended Aluminum Calculator, the discussion will be moot, because the aluminum criteria will be much higher than actual river concentrations at any flow.

In summary, the WET test results are an inappropriate basis for establishing ambient aluminum concentrations. Moreover, there is a very clear relationship of ambient river concentration to flow. The City requests the resulting downstream concentration be re-calculated to use an ambient concentration characteristic of low river flow conditions. The City will be moving forward to audit their procedures for clean sampling and updated testing of the actual clean sampling river aluminum concentration at lower flows, characteristic of the reasonable potential to exceed analysis. The City requests using the clean sampling results for ambient data from the City's 2008/2009 study using data representative of low flow conditions. Alternatively, the City asks EPA to hold the docket open and refrain from issuing a final permit until the City has time to collect new clean sampling ambient data. In any case, the data is compelling that river concentration will vary with river flow. Concentrations representative of low flow conditions should be used in the reasonable potential to exceed analysis. There is already extensive clean sampling data that indicates the river concentrations at lower flow conditions are less than 50 µg/l. See Fact Sheet pages 29-33 and Appendix B for EPA's discussion of applicable aluminum criteria, reasonable potential analysis and proposed limit derivation, and Whole Effluent Toxicity (WET) testing.

Response 10

As discussed in Response 11 below, EPA has decided to replace the aluminum limit proposed in the Draft Permit with a twice per month monitoring requirement in the Final Permit. This comment objects to the derivation of the aluminum limit based on a claim that the ambient river data used in the analysis were unreliable. The assertions in this comment did not, alone, persuade EPA to replace the proposed aluminum limit with a monitoring requirement, for the reasons described below.

First, the comment demonstrates that the ambient aluminum concentration decreases as river flow decreases resulting in a much lower ambient concentration under low flow conditions. Figures 1, 2a and 2b all demonstrate this same trend. EPA acknowledges this trend and agrees that ambient aluminum levels in the receiving water are typically lower under low flow conditions. Based on this information, EPA must conduct two separate reasonable potential analyses (*i.e.*, one during low flow conditions and another during higher flow conditions) to determine whether the discharge has the reasonable potential to cause or contribute to an excursion of water quality standards. In the Draft Permit, EPA evaluated the WET data taken during the 5-year review period (under all flow conditions) and determined the median ambient concentration to be 130 µg/L.

Based on the trends presented in the comment, parsing these data based on river flow would result in a lower value under 7Q10 conditions and a higher value under high river flow conditions. Even if the low flow analysis were to demonstrate no reasonable potential, the higher flow analysis would be even higher than EPA's analysis (*i.e.*, still well above the criteria) and would still result in the need for a limit under "non-7Q10" conditions. EPA notes that this analysis must be done using a higher ambient flow value than the 7Q10, but since the ambient concentration is above the criterion, there is no assimilative capacity and a limit at the criterion (118 ug/L) would be required no matter what river flow value is used in the calculation. For these reasons, EPA disagrees that the correlation in aluminum to river flow would result in any change to the Final Permit.

Second, the comment suggests that the ambient data used by EPA are invalid based on the sampling method being inferior to clean sampling. The comment compares a variety of data taken at different locations of the Merrimack River in different years, under different river flows and using different sampling techniques in supporting its claim that the WET test data are flawed. In summary, the comment presents the following ambient aluminum data: 2014-2018 WET data upstream of GLSD (median 112.5 µg/L) 2019 clean data upstream of GLSD (median 80 µg/L) 2014-2018 WET data upstream of Lowell (median 140 µg/L) 2016-2018 clean data upstream of Lowell (median 35 µg/L) The comment notes that clean sampling in GLSD and Lowell resulted in lower effluent results and then presents 3 results from October 2021 and August 2022 showing lower aluminum results just downstream of Manchester.

Finally, the comment indicates that Manchester will be pursuing additional clean sampling and requests that the permit not be finalized presumably until that data can be collected and considered by EPA. See Response 14 (discusses how EPA must use all available data and make many reasonable assumptions to ensure WQS are protected under critical conditions, even when additional or better data may become available in the future).

As for comparisons to GLSD and Lowell, "'a disparity in [permit] requirements is... legally irrelevant' to a permit challenge because 'permits are issued on an individual basis, taking into account individual differences where appropriate.'" *In re Springfield Water and Sewer Commission*, 18 E.A.D. 499, n. 31 (EAB 2021) (citations omitted). EPA notes that certain material circumstances in the GLSD and Lowell permits were different.

In the case of GLSD, the Permittee submitted a detailed description of their previous testing method which included a rope and a metal bucket, identifying several sources of likely contamination. While EPA required the Permittee to correct their deficient WET sampling technique, this information justified use of only the clean sampling data.

In the case of Lowell, the Permittee presented data demonstrating that certain WET samples and clean samples were taken concurrently showing that their clean sampling technique resulting in much lower values. Similarly, EPA was able to justify using only the clean sampling data in the analysis.

In the case of Manchester, the Permittee has not identified any specific sources of contamination, nor have they taken any WET and clean samples concurrently. Without these additional proofs, EPA is unable to determine whether the prior WET data are flawed or if any differences in aluminum can simply be attributed to differences in the actual aluminum levels in the Merrimack River based on a variety of potential factors. Given this uncertainty, the best EPA can do is to combine the WET and clean sampling data into one larger dataset. Given that only 3 clean samples have been submitted (resulting in only 2 monthly average values), this update does not have any impact on the resulting limit. Applying the updated ambient data submitted in Comment 78 below (using monthly averages) also does not have any impact on the resulting limit.

Although the comment also requests that the Final Permit not be issued until additional clean sampling results could be included in the analysis, EPA finds this unnecessary based on Response 11 below regarding the change in aluminum requirements in the Final Permit. However, EPA appreciates the City's efforts in collecting additional ambient data (including additional data submitted in Comment 78 below) and notes that any such data may be used by EPA in the next reissuance of the permit.

Comment 11

Anomalous Effluent Results The aluminum levels in the effluent from the reasonable potential to exceed analysis was based on WET testing data collected by the City during the monitoring period from December 2018 to November 2023 as shown in Figure 4. With the exception of 2 data points, which are 5 times higher than the average value of the rest of the data set (0.24 and 0.26 mg/l compared with the average of all other data 0.048 mg/l), the City's discharge is well below the proposed limit. These 2 consecutive data points skew the 95th percentile used in the potential to exceed calculation higher than it would be otherwise. The 3 most recent WET testing concentrations for aluminum in the WWTF effluent for 4th quarter 2023, 1st quarter 2024, and 2nd quarter 2024 (not included in the draft permit), are 0.036, 0.052 and 0.032 mg/l, respectively and further show the anomalous data points are not representative of the actual WWTF effluent aluminum concentration. Figure 5 shows WET testing results from 2015 through to the most recent, with the two anomalous data points circled in red. The average aluminum concentration in the expanded data set is 0.060 mg/L for the WWTP effluent. The 4 most recent results have been back in the historic range. While the City makes every effort to maintain clean sampling techniques, it is highly probable that the protocol was compromised during those two tests in the first and second quarter of 2023. This is much more likely than the alternative hypothesis that there were unusual discharges to the collection system for the period of the two elevated results. The City will be proceeding with an audit of its effluent sampling methodology by OOE to ensure that there are no future problems, but as noted above and shown in Figure 5, the 4 most recent results are back at historic levels. The City requests these 2 anomalous data points be removed from the WET testing data set and the potential to exceed be recalculated.

Aluminum
Daily Max
(mg/L)
Report
0.026
0.26
0.0485
N/A
0.043
0.068
0.042
0.044
0.042
0.026
0.028
0.069
0.052
0.053
0.045
0.059
0.03
0.059
0.042
0.077
0.036
0.24
0.26
0.054

Figure 4 – Manchester Effluent Aluminum WET Data in Permit

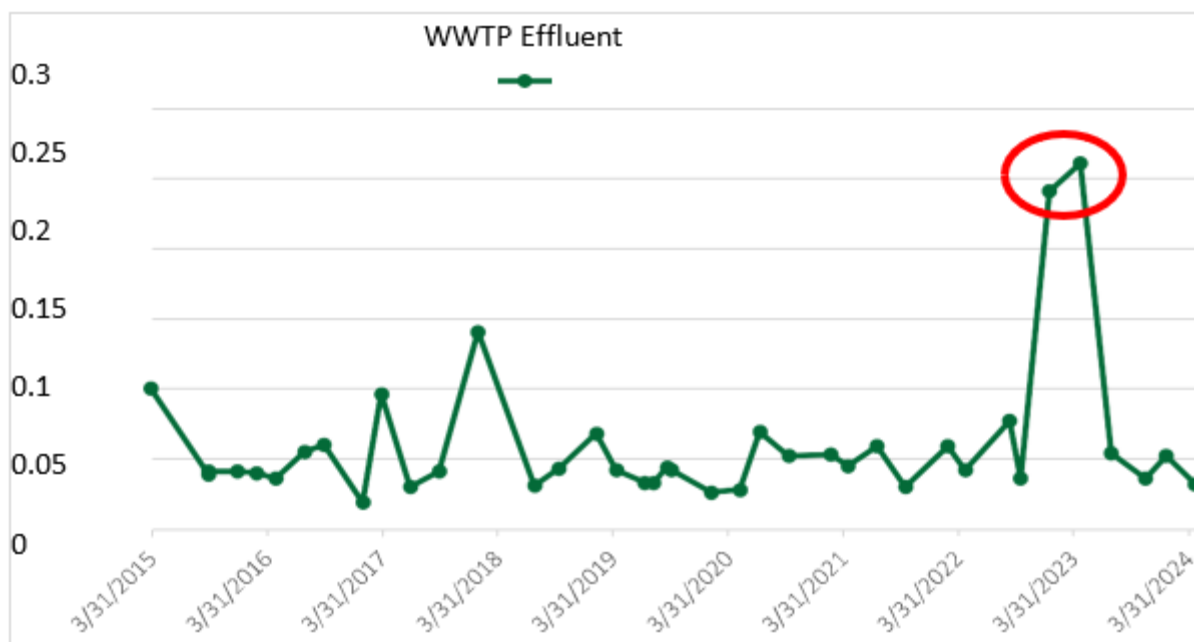


Figure 5 - Manchester Effluent Aluminum WET Testing Data from First Quarter of 2015 to Second Quarter of 2024

Response 11

Given that the historic aluminum levels show relatively consistent results, EPA agrees that these two data points in early 2023 appear to be outliers. In contrast to the ambient data discussed in Response 10 (which are quite variable), these effluent data are quite consistent (except for the two outliers in early 2023) indicating that the effluent generally has very low variability as measured throughout the permit term. This observable consistency both before and after early 2023 makes it easier to flag these as outliers rather than potential increasing trends in aluminum in the effluent. Based on this comment, EPA has re-evaluated the data and determined that the limit was only triggered based on these two data points which are much higher than the long-term average both before and after these two samples were taken.

Further, as noted in the comment, the source of this short-term spike is unknown, is potentially due to sampling error and/or contamination and appears to have been resolved. Given that removal of these two outliers would result in a finding that the aluminum limit is unnecessary because the discharge would not have reasonable potential to cause or contribute to a violation of applicable water quality standards, EPA considers that it would be more appropriate to better characterize the discharge rather than establishing a limit based on two anomalous and likely unrepresentative effluent samples. Therefore, EPA has decided to replace the limit proposed in the Draft Permit with a twice per month monitoring requirement in the Final Permit. These more frequent data will allow EPA to perform a more robust reasonable potential analysis in the next permit reissuance.

Given the potential contamination of both the ambient and effluent aluminum samples flagged by the Permittee in Comments 10 and 11, EPA highlights that the Permittee must improve its sampling methodology to ensure that future results are representative, and all such data can be used in future permitting decisions.

Comment 12

Aluminum Calculator The State of New Hampshire has presented draft changes to Env-Wq 1700 Aluminum Criteria that will allow the Aluminum Calculator provided by EPA to be used. The calculator requires Dissolved Organic Carbon (DOC), Total Hardness, and pH data. The Fact Sheet indicates a representative pH for the Merrimack at the Manchester WWTF outfall of 7.5 and a total hardness value of 15.8 mg/l. The City has not conducted DOC testing to date. However, OOE has conducted recent testing for the Town of Merrimack for DOC downstream of Manchester as summarized in Table 3. Table 3 – Merrimack, NH Dissolved Organic Carbon Data

Sampling Date	River Flow, cfs	Dissolved Organic Carbon, mg/l
10/7/2021	8,640	5.9
10/19/2021	3,250	4.9
8/17/2022	815	3.4

Using the calculator, a sensitivity analysis was completed with the best available data as shown in Figure 6. The results show acute and chronic criteria values far higher than the current chronic criteria of 118 µg/l in the Fact Sheet (105.8 µg/l after the 90% factor in the reasonable potential to exceed analysis). The limiting chronic criteria is in the range of 708 µg/l for DOC of 3.4 mg/l, total hardness of 15.8 mg/l and pH of 7.5.

ENTER DATA HERE					ACUTE	CHRONIC
SiteName	DOC (mg/L)	Total Hardness (mg/L as CaCO ₃)	pH	FAV	CMC	CCC
	0.5	15.8	7.5 #	1284.88	640	430
	1.0	15.8	7.5 #	1857.84	930	540
	1.5	15.8	7.5 #	2266.7	1100	610
	2.0	15.8	7.5 #	2587.34	1300	650
	2.5	15.8	7.5 #	2851.66	1400	680
	3.0	15.8	7.5 #	3076.66	1500	700
	3.5	15.8	7.5 #	3272.63	1600	710
	4.0	15.8	7.5 #	3446.26	1700	730

Figure 6 - Aluminum Calculator Sensitivity Analysis

In fact, OOE also conducted pH and total hardness testing at the same time on 8/17/2022 for the Town of Merrimack with the acute and chronic criteria results shown in Figure 7.

	DOC	Total Hardness			
Site Name	(mg/L)	(mg/l as CaCO ₃)	pH	CMC	CCC
8/17/2022	3.4	18	7.45	1600	680

Figure 7 – Aluminum Calculator Results for 8/17/2022 Data

The City requests that the Aluminum Calculator results for the river be recognized as valid and

demonstrating that the current chronic (and acute) criteria for aluminum are excessively low by EPA's own best science. The City plans to move forward with collection of site specific DOC, total hardness and pH data for use with the calculator.

Response 12

As noted in Response 11, there is no aluminum limit established in the Final Permit. In the next permit reissuance, EPA will determine whether any limits are appropriate based on the WQS in effect at that time and the sampling results collected pursuant to the monitoring requirements in this permit.

Although this permit does not establish an enforceable effluent limit for aluminum, EPA responds to concerns raised in this comment to support the public's understanding of how EPA is required to derive effluent limits. The data and calculations presented in this comment apply an approach to developing site-specific aluminum criteria based on EPA's most recent aluminum criteria recommendations. Although EPA has promulgated these aluminum criteria recommendations, "[s]tates are not required to adopt [recommended] criteria and may, with approval, incorporate adjusted criteria or rely on other scientifically defensible methods to protect designated uses" when setting or revising their WQS. *In re City of Keene*, 18 E.A.D. 749, n. 22 (EAB 2022); 40 C.F.R. § 131.11(b).

Furthermore, even if a state does wish to incorporate the recommended criteria, the state must complete the process laid out in 40 C.F.R. Part 131, Subpart C to update its WQS. This process includes EPA review and approval of the proposed new standards. 40 C.F.R. § 131.21. "[U]ntil such time as the State modifies its water quality standards and the Region approves those modifications, the existing standards remain in effect" and EPA must rely on the existing standards when calculating effluent limits. *Keene*, 18 E.A.D. at 752; *see also id.* ("...the Region is required to devise effluent limits to comply with existing state water quality standards, even if those state standards may be revised at some point in the future to incorporate updated recommendations by the Agency."). Although the State of NH has submitted revised aluminum criteria to incorporate EPA's criteria recommendations, EPA has yet to approve these revisions to the NH WQS. EPA appreciates the instream sampling that the City of Manchester has cited which may be used to support future aluminum criteria, if approved in the future. If the updated aluminum WQS are adopted by the state and approved by EPA by the permit next reissuance, then EPA will apply those WQS at that time. "Until that time, the Region is bound by New Hampshire's existing water quality standards." *Keene*, 18 E.A.D. at 751.

Comment 13

Compliance Schedule

In Part I, Item G.1 of the draft permit, EPA has proposed a compliance schedule of 12 months. The City requests the compliance schedule be increased to 60 months if a limit is included in the permit. This will allow further data to be collected and the WQS revisions proposed by NHDES to be implemented. This compliance schedule for aluminum will allow the City to collect

additional effluent and ambient aluminum data using clean sampling techniques and will also allow the City to begin collecting DOC, total hardness and pH data for use with the EPA aluminum calculator. The City requests that the aluminum compliance schedule be extended to 60 months if a limit is included in the final permit. The City requests that if during the compliance period, should the data or WQS revisions support an elimination of the proposed limit, the EPA shall modify the permit.

Response 13

As discussed in Response 11, the Final Permit has established an aluminum monitoring requirement in lieu of an effluent limit. Therefore, the associated compliance schedule has also been removed.

Comment 14

Ammonia Nitrogen

The City takes exception to the proposed ammonia limit for the following reasons:

- Inadequate notification of pending limit means the City does not have the funding capacity.
- Inadequate ambient temperature data to determine appropriate shoulder season limits.
- Inadequate ambient pH characterization.
- Extended compliance schedule needed.

Inadequate Notification

The implementation of a new permit limit for ammonia has major capital improvement implications and no identified source of funding. The City is operating under a Consent Decree that requires major investments in both the collection system and the WWTF. At the WWTF, the City has an existing Capital Improvements Plan that includes critical infrastructure upgrades over the next 5 to 10 years, including new emergency generators; the complete renovation of the Crescent Road (main) Pump Station delivering all flows to the WWTF; and emergency secondary clarifier renovations. If the EPA had intended to implement an ammonia limit in this next permit, it should have been part of the discussions for the current Consent Decree.

An ammonia limit will also create new difficulties in permit compliance related to the total phosphorus effluent limit which became effective under the Consent Decree this past April. The City resolved to meet this limit using enhanced biological phosphorus removal (EBPR). Critical components of this plan were completed and brought online in late 2023. It is unreasonable of EPA to require a new permit parameter like ammonia that has major ramifications on compliance with a recently promulgated parameter like total phosphorus without greater notice and ability to plan.

There is a long-standing precedent for EPA to require monitoring of a pollutant regulated under the Clean Water Act for at least one permit cycle before a set limit is put into the NPDES permit. Such a monitoring requirement provides the time to gather a data set for a defensible limit for each WWTF. While the City has conducted supplemental ammonia sampling that was supplied

to EPA to better characterize effluent ammonia levels, we categorically object on behalf of other WWTFs along the Merrimack that will be facing a limit without anything more than quarterly WET testing. This is significant both for the reasonable potential to exceed analysis and for the specific WWTF to be able to determine how to comply. More significantly for the City of Manchester, the 5-year permit cycle would allow collection of river temperature data to better characterize when and what permit limits are actually needed, especially during the shoulder seasons when an ammonia limit will be most difficult to comply with. This is particularly relevant in light of EPA's response to the City of Fitchburg Comments from Mark McNamara dated January 29, 2024 on the lack of adequate temperature data used to establish new ammonia limits in its draft permit. In its response, EPA placed the burden of proof on the permittee to show that lower temperatures were applicable to shoulder months. This will be discussed further in our Comment 16 below. However, it is unreasonable for EPA to propose a limit that will be based on an educated guess of the applicable temperature without giving the potential permittee reasonable notice and opportunity to collect the appropriate data set. That opportunity would typically be provided by making a pending permit limit parameter a report requirement in the permit cycle prior to actual implementation.

By making ammonia a report parameter for this permit cycle, it would also allow EPA sufficient time to provide adequate and appropriate guidance related to the total nitrogen monitoring requirement, which may result in a future total nitrogen limit. It would be a significant aid to utilities such as Manchester if EPA was able to provide greater guidance on whether a total nitrogen limit will actually be necessary for WWTFs discharging to the Merrimack River and what specific limits might be applicable in determining the most appropriate means to comply with an ammonia limit. For example, to comply only with an ammonia limit, Manchester might choose to nitrify without any meaningful denitrification and thus need significant alkalinity addition both to avoid pH violations and to maintain the pH in the ideal range for EBPR. Conversely, if a future total nitrogen limit is also anticipated, it may be more cost effective to move forward with denitrifying process modifications to reduce or eliminate the need for alkalinity addition. In the latter case, it also would be critical to have guidance on the anticipated effluent limits for total nitrogen. Both alternatives will still require consideration of additional provisions for the current EBPR process and the implications of elevated nitrate levels. Also, nitrification, and total nitrogen removal, can significantly impact secondary system capacity. The City believes that much better planning for more cost-effective facilities can be conducted once EPA is able to provide better guidance.

Response 14

Given that the need for a new ammonia limit was not identified until the development of the Draft Permit began in early 2024, the Permittee could not have been given advanced notice that this limit may be necessary in the next permit reissuance. In fact, every permit reissuance has the potential to trigger the need for new limits without any means to provide advanced notice prior to the development of the Draft Permit. By providing public notice and opportunity to comment on the Draft Permit consistent with 40 C.F.R. §§ 124.10 and 124.11, EPA has given the Permittee and other interested parties the requisite notice of the proposed limit.

This comment suggests that only robust datasets taken over a full permit term should be used to establish permit limits and that EPA should not use limited datasets or assumptions. EPA disagrees. Although it is true that in some, appropriate instances EPA will impose a monitoring requirement in one permit cycle to collect sufficient data to determine whether an effluent limit is necessary and, if so, what that effluent limit will be in a subsequent permit cycle, in other instances, such as this one, EPA already has sufficient data to make those determinations and therefore delaying imposition of a limit for the sole purpose of collecting five more years' worth of data would run contrary to EPA's obligation to "establish [permit] conditions, as required on a case-by-case basis, to provide for and ensure compliance with all applicable requirements of CWA and regulations." 40 C.F.R. § 122.43. Based on an analysis of the available data and reasonable assumptions drawn therefrom – described in Section 5.1.8 of the Fact Sheet – EPA has determined that the Ammonia Nitrogen limit is necessary to ensure compliance with WQS.

The First Circuit has affirmed that EPA must use all available data and make reasonable assumptions to ensure WQS are protected under critical conditions, even when additional or better data may become available in the future:

neither the CWA nor EPA regulations permit the EPA to delay issuance of a new permit indefinitely until better science can be developed, even where there is some uncertainty in the existing data...

In almost every case, more data can be collected, models further calibrated to match real world conditions; the hope or anticipation that better science will materialize is always present, to some degree, in the context of science-based agency decisionmaking. Congress was aware of this when it nonetheless set a firm deadline for issuing new permits.

As in many science-based policymaking contexts, under the CWA the EPA is required to exercise its judgment even in the face of some scientific uncertainty. The Supreme Court has recognized this dimension of EPA decisionmaking in the context of the Clean Air Act [by reasoning that] the EPA cannot "avoid its statutory obligation by noting the [presence of] uncertainty." (citation omitted).

Upper Blackstone Pollution Abatement District v. EPA, 690 F.3d 9, 19-20 (1st Cir. 2012).

EPA also notes that the commenter's preferred approach of requiring a full permit term's worth of monitoring data would require EPA to impose robust monitoring requirements for a wide range of pollutants in every permit to ensure that any potential limit in the future would be based on a robust 5-year dataset. Rather than taking this approach (which would be quite costly and burdensome to the regulated community), EPA has chosen a more pragmatic approach to require minimal monitoring for a wide variety of pollutants (*e.g.*, chemical specific analyses as part of the quarterly WET tests, or the annual pollutant scan requirements in Parts I.A.1 and I.A.2 of the Permit) and uses

reasonable assumptions and/or statistical evaluations to model or project a worst-case scenario as part of the reasonable potential analysis.

The comment requests that EPA provide better guidance on future permit limits for total nitrogen to plan for the best approach to meet the ammonia limit. EPA notes that the total nitrogen analysis is distinct from most other pollutants of concern because the impacts of total nitrogen are not seen until reaching the marine portion of the Merrimack River. Therefore, the total nitrogen load from the entire watershed must be evaluated and impacts far downstream must be considered. This is different than pollutants such as aluminum or ammonia which are evaluated for toxic impacts in the immediate vicinity downstream of the discharge. More work needs to be done before total nitrogen limits (if any are required) can be allocated to the various POTWs and other sources in the watershed. EPA acknowledges that this makes the decision regarding treatment process changes to achieve the ammonia limit more challenging but is not able to provide any guidance at this time. To the extent EPA is able to provide guidance in the future, it will endeavor to do so.

Comment 15

Effluent Ammonia – Warm Season

Using the full data set for ammonia (both WET and supplemental data) in the Fact Sheet for the warm season period as shown in Table 4, our determination of the 95th percentile value does not match the value presented in the reasonable potential analysis in Appendix B of the Fact Sheet. Using the Excel percentile function (.inc version), the 95th percentile value is 18.25 mg/l rather than 21.8 mg/l. Using this revised value for C_e for Ammonia (warm), the C_d value is reduced to 1.48 mg/l. This has important implications for the need for a limit during the shoulder months as discussed further in Comment 16 below.

Table 4 – Manchester Effluent Ammonia Data

Date	Effluent Ammonia, mg/l	Date	Effluent Ammonia, mg/l
WET Tests:		City Supplemental:	
12/31/2018		5/1/2020	11.5
3/31/2019		5/1/2021	18.0
6/30/2019	13.0	5/1/2022	16.0
9/30/2019	13.0	5/1/2023	14.0
12/31/2019		6/1/2020	17.0
3/31/2020		6/1/2021	16.0
6/30/2020	12.0	6/1/2022	14.0
9/30/2020	19.0	6/1/2023	12.5

12/31/2020		7/1/2020	12.1
3/31/2021		7/1/2021	5.3
6/30/2021	13.0	7/1/2022	8.6
9/30/2021	4.1	7/1/2023	9.0
12/31/2021		8/1/2020	3.6
3/31/2022		8/1/2021	11.0
6/30/2022	13.0	8/1/2022	6.2
9/30/2022	1.2	8/1/2023	6.4
12/31/2022		9/1/2019	15.0
3/31/2023		9/1/2020	19.0
6/30/2023	7.8	9/1/2021	6.8
9/30/2023	9.0	9/1/2022	3.7
		9/1/2023	4.0
		10/1/2019	8.7
		10/1/2020	8.3
		10/1/2021	4.9
		10/1/2022	15.0
		10/1/2023	7.3

Response 15

As noted in Appendix B of the Fact Sheet, the 95th percentile calculation was based on the approach used in EPA's guidance document called the Technical Support Document (TSD) for Water Quality Based Toxics Control¹⁰ and not Microsoft Excel's built-in percentile function. This accounts for the difference in the results described in the comment.

As shown in Appendix E (Table E-3) of the TSD, EPA recommends that the monthly average water quality-based limits be based on the estimates of the 95th percentile of the distribution of the average of the daily effluent values. For sample sizes of greater than 10, the averages (represented by random variable X_n) are assumed to be normally distributed. As presented in the TSD, the following formula is used to calculate the 95th percentile value:

$$E(X_n) + 1.645[V(X_n)]^{1/2}$$

Where:

X_i = daily pollutant measurement i

$Y_i = \ln(x_i)$

K = sample size of data set

$\mu_y = \sum (Y_i)/k; \quad 1 \leq i \leq k$

¹⁰ EPA TSD, EPA/505/2-90-001; March 1991; see Appendix E.

$$\sigma_y^2 = (\text{SUM}[(y_i - \mu_y)^2]) / (k-1); 1 \leq i \leq k$$

$$E(X) = \exp(\mu_y + \sigma_y^2)$$

$$V(X) = \exp(2 \mu_y + \sigma_y^2)[\exp(\sigma_y^2) - 1]$$

$$E(X_n) = E(X)$$

$$V(X_n) = V(X)/n$$

$$cv(X_n) = V(X_n)^{1/2}/X_n$$

EPA acknowledges that the dataset used in the Draft Permit was based solely on the City's supplemental data (resulting in a 95th percentile value of 21.8 mg/L). EPA did not include the WET data since most of the WET data were taken in the same months as the supplemental data and, if the WET dataset were combined, EPA would need to average multiple results in the same month to determine the monthly average values. Having said that, EPA added the WET results simply to determine any impact on the analysis for comparison purposes only. The resulting 95th percentile of the combined dataset, using the TSD method, resulted in a higher value of 24.5 mg/L and would not have any impact on the resulting limit.

In any case, the comment simply suggests that a revised 95th percentile may impact the analysis of the shoulder months. Based on Response 16 below, noting the removal of the ammonia limit in May and October, EPA notes that the changes proposed in Comment 15 are unnecessary to achieve the requested result.

Comment 16

Ambient River Temperature

The City objects to the lack of ambient temperature data provided to support the proposed ammonia criteria. EPA has assumed a flat 25°C temperature for the permit limit months of May to October. The derivation for the temperature parameter is not defined in the Fact Sheet, and it does not appear that an adequate current temperature monitoring database exists for the Merrimack River. Because the water quality criteria for ammonia can vary significantly with temperature, the City requests the opportunity to collect further ambient temperature data to be used to derive the acute and chronic criteria. The City is particularly concerned about the temperatures used during the "shoulder" period months of May, June, September and October, when river temperatures are likely to be significantly lower. If an ammonia limit is not needed in these shoulder periods, it will simplify operations as the plant is seeking to comply with its phosphorus limit through enhanced biological phosphorus removal (EBPR) and could result in major cost savings to comply with any necessary future ammonia limit.

The EPA has not defined in the Fact Sheet the applicable temperature as the mean, median, or 95th percentile for determining the criteria. In the EPA response to comments by the City of Fitchburg dated January 29, 2024 noted above in our Comment 14, the EPA maintained that the maximum temperature for a particular month was the appropriate temperature parameter for determining the water quality criteria. There is probably a reasonable case to be made for this position regarding the acute criteria, which is not the limiting criteria in the reasonable potential to exceed analysis, but the 95th percentile value would also be a consideration. The

NH Env-Wq 1700, 1703.26(c) indicates that the chronic criteria should be based on a 30-day averaging period, which suggests that a monthly average temperature is applicable. The ideal data set would probably include multiple years of monthly average data and might use the highest of the monthly average values.

A search was conducted for available temperature data for the Merrimack River, particularly data applicable to the reach of river that Manchester discharges. Temperature data for the Goffs Falls USGS gauge from 1951 to 1998 is the primary data set that was found for the Merrimack River in its entirety. It is fortunate that this is the most applicable gaging station located just upstream of the Manchester WWTF outfall. Table 5 summarizes all of the USGS data available for May through October and specifically for each month.

Table 5 – Historical Merrimack River Temperature Data, Goffs Falls USGS Gage

Date	All Data	May	June	July	August	September	October
	Temp °C						
5/7/1952	10.5	10.5					
5/12/1953	16.5	16.5					
8/13/1953	21.5				21.5		
5/6/1954	9	9					
8/13/1954	21.5				21.5		
10/6/1955	15						15
5/7/1956	8	8					
8/3/1956	21				21		
10/3/1956	12						12
5/3/1957	13	13					
7/10/1957	23.5			23.5			
8/23/1967	23.5				23.5		
9/8/1978	8					8	
11/1/1979	5						5
8/6/1980	28				28		
9/16/1980	24					24	
10/23/1980	10						10
6/16/1981	21		21				
8/5/1981	24				24		
9/15/1981	15					15	
10/27/1981	7						7
5/25/1982	14	14					
7/2/1982	17			17			
8/17/1982	22				22		
10/27/1983	9.5						9.5
5/8/1986	11	11					
6/19/1986	20		20				
8/13/1987	20				20		

5/23/1989	16	16					
7/12/1989	24			24			
7/17/1990	25			25			
9/5/1990	22					22	
6/9/1993	18.5		18.5				
6/28/1995	25.2		25.2				
6/30/1995	26.6		26.6				
8/21/1995	26.5				26.5		
10/10/1995	17.1						17.1
8/12/1996	25.4				25.4		
10/2/1996	17.9						17.9
7/7/1997	25			25			
6/17/1998	20.1		20.1				
Average	18.0	12.3	21.9	22.9	23.3	17.3	11.7
Min	5.0	8.0	18.5	17.0	20.0	8.0	5.0
Max	28.0	16.5	26.6	25.0	28.0	24.0	17.9
Count	41	8	6	5	10	4	8

The City maintains that this data set is inadequate, but it does illustrate the importance of this issue and the inadequacy of EPA's educated guess on temperature for the shoulder periods. In Table 6 below, the applicable chronic criteria was determined based on the average and maximum monthly temperature values from the USGS database in Table 5 above and assuming a pH of 7.5. To reiterate, the City maintains that the monthly average temperature is the appropriate temperature parameter to use for the chronic criteria. For reference, 90% of the chronic criteria in the reasonable potential to exceed analysis for the warm weather period from May through October was 0.91 mg/l based on an assumed temperature of 25°C and a pH of 7.5. The estimated downstream river concentration, Cd, for ammonia was 1.74 mg/l for the warm season, and as noted in Comment 3.b, our determination indicates a slightly lower value of 1.48 mg/l. In Table 6, any time the 90% of the chronic criteria is greater than the downstream concentration, there would be no need for a permit limit. This is illustrated by the highlighted cells (yellow if less than EPA determination of 1.74 mg/l, green if less than 1.48 mg/l).

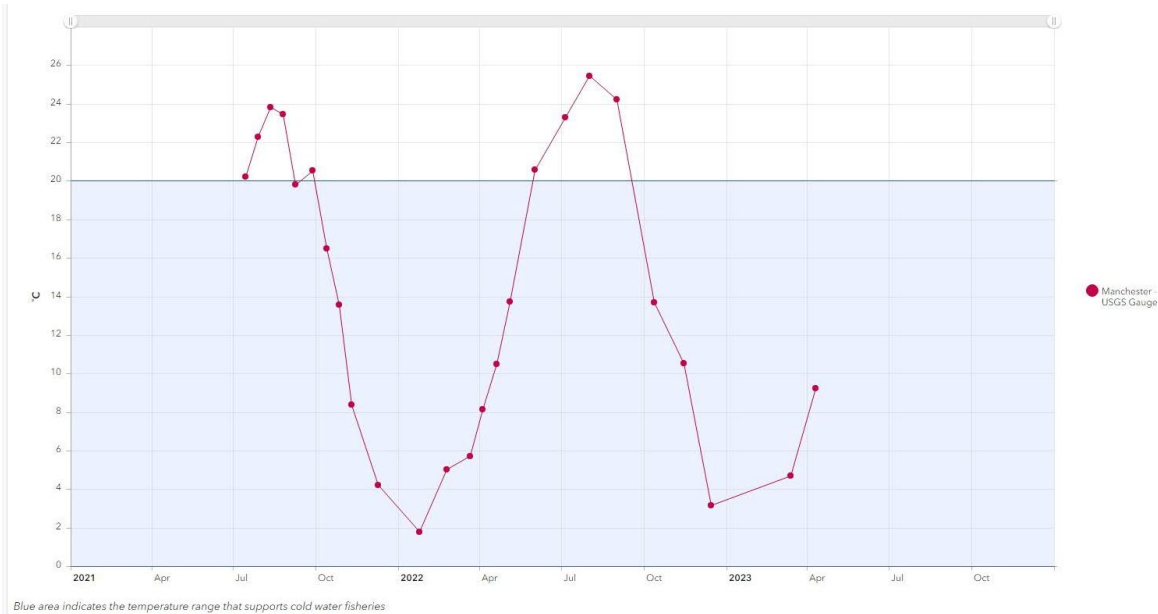
Table 6 – Chronic Criteria Based on Average and Maximum Monthly Temperatures

Temperature Condition	All Data	May	June	July	August	September	October
Chronic Ammonia Criteria, mg/l							
Average		2.3	1.2	1.15	1.13	1.68	2.4
Maximum		1.75	0.90	0.98	0.83	1.1	1.6
0.90*Chronic Ammonia Criteria, mg/l ^a							
Average		2.1	1.08	1.04	1.102	1.51	2.16
Maximum		1.58	0.81	0.72	0.75	0.99	1.44

Notes: a. Yellow highlighting indicates chronic criteria exceeds EPA's calculated downstream ammonia concentration of 1.74 mg/l. Green highlighting indicates additional conditions that comply based of the revised downstream concentration of 1.48 mg/l from Comment 3.b.

This limited data set suggests that monthly temperature data does not support an ammonia limit in May, September, and October. More extensive monitoring may show June to be a possibility, though the current data set does not support this. The possibility of a different lower pH value would also increase the chronic criteria as discussed further in Comment 17 below. One additional source of temperature data was found. The Merrimack River Watershed Council (MRWC) collects and reports on a number of water quality parameters including temperature both on their website and in annual reports. The MRWC has been collecting data at several monitoring locations with data collection on a roughly monthly basis starting in 2021 for most stations. One of the stations is the USGS station at Goff's Falls and the published data is presented in Figure 8 below (MRWC web site). This data was not integrated with the above USGS data due to the limited time provided by EPA to respond but can easily be added to improve the data set.

Figure 8 – MRWC Merrimack River Temperature Data at Goff's Falls Gauging Station



In summary, EPA has assumed a flat 25°C temperature for the permit limit months of May to October. While an adequate long-term monitoring data set is not available, a small data set was found that indicates that the shoulder seasons in this area do not approach 25°C for a river temperature. Moreover, the City maintains that the applicable temperature parameter for the chronic criteria is the monthly average temperature. Because the water quality criteria fluctuate greatly with temperature, the City requests a separate and revised temperature be used to evaluate requirements for May, June, September and October – and the City requests adequate time to collect the necessary temperature data.

Response 16

This comment requests that the temperature assumption be revised throughout the year (especially during the months of May, September, and October) to account for lower temperatures in those months. The comment also provides some historic data to support this request.

EPA acknowledges that the ammonia criteria are based on temperatures which change throughout the year. Given the lack of temperature data available in each receiving water throughout the year, EPA must make reasonable assumptions (rather than necessarily requiring robust monitoring, as described in Response 14) regarding temperature to ensure the permit is protective under reasonable worst-case conditions. Having said that, EPA is amenable to revising those assumptions when presented with reasonable temperature data (even if those data are somewhat limited). In this case, the permit provides a summary of historic data from 1952 through 1998.

The comment indicates that “The ideal data set would probably include multiple years of monthly average data and might use the highest of the monthly average values.” EPA agrees that this would be ideal and given that most months include only one temperature value, EPA considers that the temperatures in Table 5 represent the monthly average. Therefore, consistent with the comment, EPA considers that the maximum value of these monthly average temperatures for each month represent a reasonable worst-case assumption for use in deriving the chronic ammonia criterion for each month. These temperatures are 16.5°C in May, 24.0°C in September and 17.9°C in October. However, EPA also recognizes that these data are over 25 years outdated. Therefore, EPA has also included a safety factor and has rounded up to 20°C in May, 25°C in September and 20°C in October.

EPA has updated its analysis for May and October using the default temperature of 20°C in these months. (September was already based on 25°C so an updated analysis is not warranted.) Based on this updated analysis, EPA found that there is no reasonable potential to cause or contribute to an excursion of water quality standards in May or October and a limit is not necessary in those months. Therefore, the ammonia limit in the Final Permit has been updated to only apply from June through September.

Finally, regarding the commenter’s request for adequate time to collect the necessary temperature data, EPA refers to Response 14 and additionally notes that the Permittee is welcome to collect additional data and provide it for use in the future. Given that it would be considered “new information” that was not available at the time of permit issuance and would have justified a lower limit at that time, it would likely satisfy the anti-degradation exception regarding “new information”, meaning that the limit could permissibly “backslide”, if justified by the data and legal standard. See 33 U.S.C. § 1342(o)(2)(B)(i).

Comment 17

Ambient River pH

The City objects to the limited database for ambient pH in the determination of the applicable ammonia criteria. The limit derivation for pH is noted as being based on WET testing data collected by the City for upstream ambient water quality and plant effluent, which is a very limited data set. For example, the Merrimack River Watershed Council (MRWC) is also monitoring for pH and their available data for the Goff's Falls station is shown in Figure 9. There is unexplained variability in the pH primarily during the cold weather season, but for the warm season months the pH has varied from 6.9 to 7.4. Because the water quality criteria for ammonia can vary significantly with pH, the City requests adequate time to collect additional ambient pH data to be used to determine the applicable acute and chronic criteria.

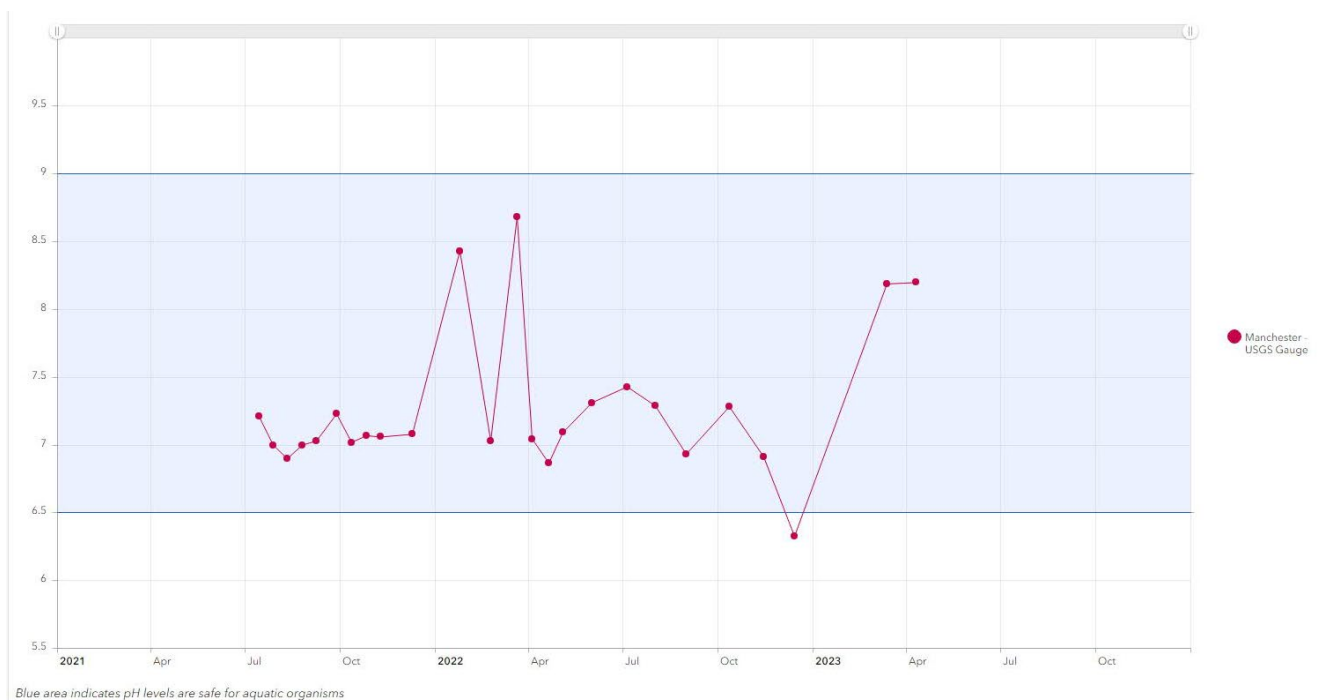


Figure 9 – MRWC Merrimack River pH Data at Goff's Falls Gauging Station

Response 17

As described in Response 14, given the lack of pH data available in each receiving water throughout the year, EPA may make reasonable assumptions rather than requiring robust monitoring regarding pH data to ensure the permit is protective under reasonable worst-case conditions.

Also see Response 16, noting that the Permittee may collect additional data to inform the development of alternative ammonia limits in the future.

Finally, EPA notes that this comment simply requests time to collect additional pH data and does not request that EPA apply the data in Figure 9 to update the analysis from the Fact Sheet. In any case, EPA notes that the pH data in Figure 9 is similar to the data used by EPA in the development of the Draft Permit. While this data covers approximately 2 years and appears to be monthly samples, the data used by EPA covers 5 years of quarterly samples. The median of the data used by EPA was 7.5. Although the data presented in Figure 9 appears to have a slightly lower median, EPA considers that the full 5-year dataset is more representative of long-term conditions and this comment does not result in any change to the Final Permit.

Comment 18

Salmonids

The acute criteria values vary with the presence of salmonids. There are reports that indicate salmon cannot tolerate water temperatures over 20°C and will seek colder tributaries (See Figure 8, Merrimack River Watershed Council 2021 Water Quality Report, New Hampshire Fish and Game Fact Sheet, and MassDEP Surface Water Quality Standards). Based on this, it is incorrect to use a river temperature of 25°C to calculate water quality standard criteria, while simultaneously assuming salmonids are present. As such, the acute criteria should be revised and the limit recalculated.

Response 18

The Essential Fish Habitat (EFH) designation for the Merrimack River and its tributaries is to protect Atlantic salmon habitat. The habitat must still be protected even if the species itself is not present during a given season. Therefore, the data referenced by the Commenter indicating that salmonids do not tolerate temperatures above 20°C is not sufficient to demonstrate that EPA's assumption of 25°C for certain months is unreasonable or erroneous. Therefore, this comment does not result in any change to the analysis or the Final Permit.

Comment 19

Compliance Schedule

Finally, should a limit be maintained in the final permit, the City requests the following changes to the compliance schedule:

- 60-month period to conduct river temperature and pH monitoring to determine the appropriate values to use for analysis to determine whether shoulder periods of May, June, September and October require a permit limit at all, and if so, whether a higher limit would be applicable. It is presumed that after 48 months of monitoring, the City would report on the findings for the applicable river temperature and pH, and an updated analysis of the reasonable potential to exceed on a monthly basis to confirm whether limits can be eliminated for some of the shoulder months.

- Concurrent 60-month period to optimize the existing treatment process for phosphorus removal and conduct operational monitoring and trials related to nitrification for ammonia removal. This optimization period will allow the City to understand the performance of their EBPR system with the improvements that were just brought online in December of 2023. Of critical importance are the early spring months prior to and during compliance season to better define the extent of the existing system's ability to remove ammonia while maintaining EBPR. This period will also be used to trial process modifications (with advanced notice and concurrence of EPA and NHDES) to promote nitrification and better understand overall impacts. The City may also choose to pilot test new systems/technology to make better decisions on the longer-term capital improvements required for ammonia compliance. This optimization period will allow the City to understand the implications of meeting the ammonia limit in relation to the total phosphorus limit, and provide a subsequent report on the optimization efforts
- 12-month period to prepare planning level report for ammonia removal. The planning level report would summarize the findings of process optimization efforts to determine the capability of the existing treatment process and evaluate alternatives for the needed upgrades to the secondary treatment process to achieve concurrent EBPR and ammonia removal with the possibility of utilizing a nitrogen removal configuration that would incorporate both nitrification and denitrification. Previous upgrades focused on EBPR, which, as constructed, will require changes to allow both EBPR and nitrification simultaneously to ensure permit compliance for both.
- 24-month period to design upgrades needed to meet ammonia limit.
- 30-month period to construct upgrades needed to meet ammonia limit.
- 12-month period to start-up, troubleshoot, and optimize new process to attain compliance. Overall, a 138-month compliance schedule is requested.

Response 19

Federal regulations at 40 C.F.R. § 122.47(a)(1) require that "Any schedules of compliance under this section shall require compliance as soon as possible...." EPA does not consider a 138-month compliance schedule to be "as soon as possible" under the present facts and circumstances. The request for a 60-month (*i.e.* 5-year) period to monitor temperature and pH is akin to the request in Comment 14 to impose monitoring for a full permit cycle (5 years) before imposing an enforceable effluent limit. Consistent with the rationale in Response 14, EPA does not consider it appropriate to delay implementation of effluent limits for the purpose of collecting this additional data. Additionally, EPA highlighted the change in season of the ammonia limit described in Response 16 and notes that this change is expected to expedite the Permittee's ability to come into compliance. The 24-month compliance schedule in the Draft Permit is based on an assumption that compliance may be achieved through optimization without the need for a major facility upgrade. Given that the comment confirms that optimization alone may be effective in achieving the limit, EPA considers that any

schedule longer than 2 years would not be “as soon as possible.” Therefore, the compliance schedule has not been changed.

However, if the initial 12-month optimization study results in a finding that a major facility upgrade is necessary, the Permittee may contact EPA’s Enforcement and Compliance Assurance Division (ECAD) to discuss the timing of such an upgrade. Any request for an extended compliance schedule must be accompanied by a financial analysis consistent with EPA’s Clean Water Act Financial Capability Assessment Guidance (Revised March 2024).¹¹

Comment 20

Part I. A.1, Footnote 16 - Dilution Water for WET Testing

The City has previously communicated with EPA on the issues found with river water quality for WET testing. Email communication was sent on February 2, 2024 to EPA and NHDES requesting a change in dilution water. This request stems from historical, re-occurring issues with *Ceriodaphnia dubia* and *Pimephales promelas* test failures with Aquatec Environmental, Inc, which is the laboratory the City uses for the analysis. In a letter from Aquatec, dated December 29, 2023, the lab director explains that the test failures are likely caused by variable river water quality and they recommend changing to the lab’s water for dilution water. The City requests this change to the use of the lab’s water for dilution water be accepted.

Response 20

EPA has reviewed the City’s request and has granted the use of alternate dilution water for this permit term. This does not result in any change to the Final Permit, but the Permittee will be notified in writing separately regarding this allowance, consistent with the 2015 Final Permit’s whole effluent toxicity testing protocols in Attachments A and B, and EPA Region 1’s Self-Implementing Alternative Dilution Water Guidance, dated March 2007.

B. Comments from Cheri Cousins, P.E., Executive Director, Greater Lawrence Sanitary District

Due to the inclusion of a significant change to an effluent limit and condition established within the Draft Permit, GLSD recognizes that this modification will evolve into potential operational implications and impacts to a demanding and continuing capital investment schedule and an inability to immediately achieve compliance with the new permit limitations that will result in additional constraints to service affordability for each of the permitted activities within the Merrimack River watershed. GLSD respectfully submits the following comments that were prepared in partnership with our consultants, Kleinfelder.

As documented below, it is hoped that EPA and NHDES will consider these comments and amend the Draft Permit to reflect parameters that can be achieved through compliance

¹¹ Available at: <https://www.epa.gov/waterfinancecenter/clean-water-act-financial-capability-assessment-guidance>

measures that remain protective and result in improvements in water quality for the Merrimack River watershed. Being similarly situated as MWTF, GLSD recognizes that instituting the total ammonia nitrogen (TAN) permit limit will potentially result in GLSD being unable to achieve compliance with future permits issued for our operations and require exorbitant capital investment that may not achieve the water quality goals.

Comment 21

GLSD requests that EPA and NHDES remove the TAN limit from the Draft Permit this time but continue the monitoring requirements so that sufficient data can be obtained to establish equitable and achievable effluent permit limits that are protective of the Merrimack River.

Part I.A of the Draft Permit imposes a new average monthly effluent limitation of 10.4 mg/l for TAN. Prior to the issuance of the Draft Permit, Merrimack River NPDES permit holders were not notified of the inclusion of new criteria being utilized to establish new permit limits for TAN for the protection and propagation of fish and shellfish. By contrast, MWTF's 2015 NPDES permit and GLSD's 2019 NPDES permit utilize the revised 1999 freshwater criteria that re-examined the temperature and pH relationships and established criterion continuous concentration (CCC) with unionized ammonia and not TAN.

Inadequate Site-Specific Data to Determine Total Ammonia Nitrogen (TAN) CCC

In establishing the new monthly average TAN limit of 10.4 mg/L (May through October) in the Draft Permit, EPA's rationale incorporated the revised 2013 [AQUATIC LIFE AMBIENT WATER QUALITY CRITERIA FOR AMMONIA – FRESHWATER](#)¹ recommended criteria. The 2013 CCC is dependent on ambient pH and temperature and includes the evaluation of data for several sensitive freshwater species that had not previously been tested. The results of the revised evaluation established a chronic criterion magnitude that is 2.4-fold lower than the 1999 chronic criterion, which impedes the Permittees' ability to immediately comply with the new effluent limitation.

Furthermore, based upon the Draft Permit's Fact Sheet, EPA assessed that the MWTF discharge has a reasonable potential to cause or contribute to excursions above the instream water quality criteria for ammonia and used a mass balance equation to project the ammonia concentrations downstream of the discharge and to determine necessary permit limits (Appendix B). However, EPA does not document that it has obtained sufficient warm weather data on pH and temperature for calculation of CCC. Without proper justification, EPA assumes both factors to be accurate and utilizes an assumed warm weather (May through October) temperature of 25° C and a cold weather (November through April) temperature of 5° C for the mass balance calculation.

GLSD objects to the incorporation of the new TAN limit without sufficient site-specific data and establishing permit limits that impede the permittees' ability to comply; hence, establishing an unfounded "two-year compliance schedule to allow for optimization of the treatment processes to meet the proposed limit." The new TAN effluent limit, if applied to GLSD's pending NPDES permit, will yield similar results which will impede GLSD's ability to adequately comply with the

new TAN limit that is 2.4-fold lower than the 1999 chronic criterion and require the establishment of a compliance schedule for which GLSD could not achieve under a similar two-year compliance schedule due to the complexity of improvements and investment needed to achieve this requirement.

If EPA establishes the 2013 chronic criterion as the basis for TAN effluent limits with assumed ambient pH and temperature (Highest 7-Day Average of Daily Maximum (7- DADMax) Temperature (or MAX(T, 7))), GLSD and many other Merrimack River water communities will be unable to comply with the TAN permit limits. Furthermore, GLSD's current NPDES permit has nominal ammonia monitoring requirements and limited datasets to characterize or establish defensible TAN limits that are pH and temperature-dependent.

Response 21

Regarding the commenter's request for a monitoring requirement to collect sufficient data, assertion that there is inadequate site-specific data to support the limit, and assertion of insufficient notice prior to the issuance of the Draft Permit, please refer to Response 14.

The basis for the permit's ammonia limits is described in the Fact Sheet on pages 23-24 and Appendix B. The comment explains that the ammonia limit is based on EPA's recommended 2013 aquatic life ambient water quality criteria for freshwater. EPA clarifies that the limit is based on the applicable, numeric state Water Quality Standard developed and approved by EPA under the process laid out in 40 C.F.R. Part 131, Subpart C. Although the applicable, numeric WQS was based on the 2013 recommended criteria, it is most accurate to say that the permit's effluent limit is based on the WQS, not on the recommended criteria. This distinction is consistent with 40 C.F.R. Part 122 and EAB case law. 40 C.F.R. § 122.44(d)(1)(vii)(A) ("When developing water quality-based effluent limits... the permitting authority shall ensure that... the level of water quality to be achieved... is derived from, and complies with all applicable water quality standards"); see e.g., *In re City of Keene*, 18 E.A.D. 749, 755-756, n. 23 (EAB 2022) ("New Hampshire incorporated EPA's... recommended criteria into its water quality standards and the Region approved those standards. The Region is required to establish effluent limits based on those standards."). For additional explanation of the distinction between EPA recommended criteria and effective state WQS, please refer to Response 12.

The commenter also notes that the previous permit's limits were based on different standards. EPA is required to derive limits based on currently-effective WQS, not those that were in effect in the past or that may be in effect in the future. See *Keene*, 18 E.A.D. at 752.

Regarding temperature and pH, see Responses 16 and 17, respectively. Additionally, this comment repeats EPA's default temperature assumption but says it is "without proper justification." While the comment does not explain why these assumptions are unjustified, EPA notes that these values are the standard assumption for all POTW permits in NH based on EPA's assessment of the typical water temperatures in NH under

reasonable worst-case conditions. Notably, the comment does not provide any evidence that these assumptions are incorrect but simply suggests that more data is necessary. As described in Response 14, EPA may take a permitting action even if additional data may become available in the future.

Regarding the compliance schedule, see Response 23 below.

Regarding the commenter's concerns that this permit limit and possible similar limits in other permits in the future impede permittees' ability to comply, EPA notes that in future permit proceedings, a permittee (or other interested party) is always encouraged to submit pertinent public comments, and EPA will take such comments into appropriate consideration. Similarly, to the extent GLSD is concerned regarding its future permit reissuance and a potential TAN limit, EPA notes that GLSD is welcome to begin to collect additional pH, temperature and/or ammonia data to ensure that EPA has a more robust dataset for the District's next permit reissuance.

Comment 22

Error in Determination of 95th Percentile or Maximum Effluent TAN

Permit factsheet Appendix B – Reasonable Potential and Limits Calculations include effluent TAN concentration (C_e) of 21.8 mg/L that represents 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. However, the calculation of 95th percentile TAN concentration is greater than the maximum value of 19 mg/L during the warm weather period based on 10 WET testing data between 12/31/2018 and 9/30/2023 included in Appendix A. It is unclear how EPA calculated this value as it is incorrect based on either normal distribution or lognormal distribution.

Request: EPA includes a detailed description of the calculation for the 95th percentile effluent TAN concentration.

Response 22

See Response 15.

Comment 23

Inadequate Documentation of a Compliance Schedule

EPA acknowledged that the total ammonia nitrogen limits cannot immediately be achieved with the issuance of a Draft Permit and has prescribed a two-year compliance window that appears to be a woefully insufficient allotment of time to achieve compliance. While GLSD strongly opposes the inclusion of an effluent limitation for TAN, in the event EPA adopts a Final Permit that does, in fact, contain an effluent limitation for TAN, GLSD requests that a compliance schedule be included in the permit to allow a reasonable opportunity to attain compliance.

If EPA contends to utilize the 2013 criteria to establish TAN limits and includes TAN limits in each NPDES permit issued within the Merrimack River watershed, GLSD anticipates that many

communities within Merrimack River watershed will be unable to comply without major upgrades to the plant's secondary processes. These upgrades often require significant capital investment and are subject to public funding and bidding requirements that are time-consuming; therefore, they are impossible to comply with if subjected to a similar compliance schedule. For example, GLSD operations currently run in an anaerobic-oxic (AO) mode for biological phosphorus removal (BPR). The current BPR mode prefers conditions that are incapable of achieving permit.

TAN limits. To remove both total phosphorus (TP) and ammonia, the plant will require a major process upgrade to an anaerobic-anoxic-aerobic (oxic) (A2O) process configuration, which would require internal mixed liquor return and likely result in the need for more blower capacity to oxidize ammonia to meet effluent TP and nitrogen limits. These endeavors will require large capital investment and introduce additional operational complexities to cycle between the anaerobic and aerobic environments to achieve compliance. Such an upgrade would be at considerable expense and a significant length of time (without proven environmental benefit). Hence, GLSD envisions the inclusion of a compliance schedule in future NPDES permits if EPA does not alter the implementation of TAN limits and such compliance schedule would abide with 314 CMR 4.03(b) when a permittee: *"...cannot comply with such permit requirements or limitations, or there is insufficient information available to determine whether the permittee can comply with such permit requirements or limitations."*

GLSD foresees a compliance schedule including:

EDP+ 2 years: The Permittee shall undertake an engineering analysis and alternatives study of the WWTP to determine the most cost-effective treatment methods available to consistently achieve compliance with the water quality-based effluent limitation for TAN contained in future permits. This alternatives analysis shall utilize a statistically defensible data set of current plant performance and receiving waters over a number of months and seasons and shall recommend treatment methodologies that will provide for compliance over a range of conditions, including wet weather events, projected future flows to the facility (up to the permitted flow), and a range of temperature conditions.

EDP+ 4 years: Permittee shall secure all necessary approvals and future funding commitments for the required upgrade project. Permittee shall also complete the design and prepare the Request for Proposal.

EDP+ 5 years: Permittee shall advertise for bids for improvements necessary at the WWTF to achieve consistent compliance for the total nitrogen effluent limitation.

EDP + 6 years: Permittee shall select the contractor and award the project.

EDP+ 9 years: Permittee shall complete construction and place into operation improvements at the WWTF, as noted above.

EDP+ 10 Years: Permittee shall evaluate performance of the WWTF improvements and request

an extension to the compliance schedule if necessary.

EDP+ 12 years: Based on the performance evaluation, the Permittee shall achieve compliance with the TAN water quality-based effluent limitation.

Response 23

GLSD proposes a longer compliance schedule for their own facility based on a potential ammonia limit in a future permit reissuance. EPA recognizes that the operational changes and associated timing necessary to achieve a facility-specific limit will likely be different for each facility. Therefore, EPA does not consider that this proposed schedule applies to Manchester or the current permit proceeding, and it does not result in any change to the Final Permit.

For a discussion of Manchester's compliance schedule, see Response 19.

Comment 24

As requested above, GLSD believes that EPA and NHDES should revise and re-issue the Draft Permit, allowing for public comment on the significant changes proposed herein. GLSD looks forward to working with EPA and NHDES to resolve the above issues and develop a final permit that is protective of the Merrimack River and sustainable for the permittee, its member communities, and the ratepayers, including the environmental justice communities that it serves.

Response 24

On December 18, 2024, EPA issued a Revised Draft Permit and held a second public comment period from December 18, 2024 – February 3, 2025. Additionally, EPA exercised its discretion under 40 C.F.R. § 124.12 to host a public hearing on January 21, 2025.

The Revised Draft Permit included new proposed monitoring requirements for effluent characteristics and ambient characteristics. See Response 80 for more details about these new requirements. Because no comments received during the first public comment period appeared to raise substantial new questions concerning the permit, EPA did not propose any other changes in the 2025 Revised Draft Permit. However, to further promote public participation in the permit process and because EPA exercised its discretion to hold a public hearing,¹² EPA accepted comments on all aspects of the draft permit during the second public comment period. EPA has considered all of the comments from both comment periods (including the public hearing) in finalizing the permit.

C. Comments from David L. Boucher, Superintendent, City of Nashua, NH, Department of Public Works

¹² "The public comment period under § 124.10 shall automatically be extended to the close of any public hearing under this section." 40 C.F.R. § 124.12(c).

Comment 25

Section I. G.2, Compliance Schedule

The City of Nashua, NH notes that the Manchester, NH WWTF is not designed for ammonia removal and has recently (December 2023) brought online a new enhanced biological phosphorus removal (EBPR) process. Manchester has not been allowed the opportunity to capture an appropriate quantity of ammonia data with that process online, especially regarding optimizing the system during critical seasonal cycles, as well as not having the opportunity to collect appropriate ambient river data. There is a necessity for a significant amount of data to be collected first, during critical periods of operation, to determine what level of ammonia reduction is routinely achieved by the Facility, with the EBPR online. Following data collection, process modeling and the plant's potential capacity to remove ammonia must be determined, an upgrade has to be designed, and finally constructed, prior to compliance being possible.

The time period necessary for the planning and implementation of any ammonia removal capability will extend well beyond the proposed compliance period allowed within this permit. The approach currently required in the draft permit is inconsistent with the way EPA has approached this issue in the past and creates an unreasonable time schedule for the City of Manchester to achieve compliance. The City of Nashua requests a reasonable compliance schedule to be allowed to be developed for the City of Manchester.

Response 25

See Responses 19 and 23.

D. Comments from Aaron Fox, Executive Director, City of Lowell (MA) Regional Wastewater Utility

Comment 26

Effluent Ammonia Limit: LRWWU strongly disagrees with the proposed implementation of an ammonia limit in this permit, and the potential for a similar approach in the next permit for the Duck Island WWTF. Our objections to the implementation of an ammonia limit are based on the following:

WWTFs discharging to the Merrimack River received a total phosphorus limit in the most recent permit cycle. Like the City of Manchester, LRWWU has focused on meeting its total phosphorus limit via enhanced biological phosphorus removal (EBPR). LRWWU's new total phosphorus effluent limit becomes effective in April 2025 under the compliance schedule of our current permit. A requirement to remove ammonia would typically require the secondary system to be operated to nitrify. This will inhibit the EBPR process and thus cannot be implemented easily. Nitrification also will likely cause impacts on capacity, potentially increasing CSO volumes, due to the need to operate at higher sludge ages. The changes necessary will require very careful study and planning including input from MassDEP and EPA. This will require better characterization of a number of parameters including ammonia, pH and alkalinity levels across

the WWTF. The long-standing practice of including a monitoring requirement for multiple permit cycles provides time to initiate these efforts.

Response 26

See Responses 14 and 19. Regarding the commenter's concerns about a future permit for a different facility, see Response 21.

Comment 27

The EPA has proposed an ammonia limit based on an assumed temperature for the Merrimack River of 25°C for the period from May through October. EPA responses to comments on other permits indicate that this temperature has been assumed based on professional judgment by EPA staff without any actual monitoring data. LRWWU has concerns about the lack of adequate river temperature data on which to determine if permit limits might be needed throughout this entire period particularly for May and June, but also for September and October. We are aware that there is some data for temperature on the Merrimack River and it does not support the temperature assumptions by EPA. We also understand that there are questions about the appropriate temperature parameter to use for the acute and chronic water quality criteria determination, and that different temperature parameters might be appropriate for each – for example a 95th percentile value for acute and a monthly average value for chronic. We also understand that in recent permit comment responses (e.g. Fitchburg), the EPA has sought to place the burden of collecting appropriate ambient data on the permittee. While we question whether this is appropriate, it is certainly unreasonable to expect a permittee to collect the data without adequate notification of a pending pollutant limit as would typically be provided.

Response 27

See Response 16.

As for the burden of collecting ambient data, EPA is not in a position to collect samples for each facility that it permits. Consistent with its obligations under the CWA, regulations, and applicable guidance, EPA reviews all of the applicable data in the administrative record when it makes permitting decisions. In this instance, as described in the Fact Sheet and elsewhere in this RTC, EPA has determined it has sufficient data and information to determine there is reasonable potential for the discharge to cause or contribute to a violation of the applicable water quality standard and to derive the Total Ammonia Nitrogen effluent limit. The Permittee or another interested party is welcome to submit additional data, should it become available in the future, and EPA will consider it, as appropriate. The fact that additional information might become available in the future does not preclude EPA from acting now, as further described in Response 14.

Although in certain instances EPA may exercise its discretion to provide advance public notice ahead of a draft permit issuance, EPA has provided adequate notification of the pending pollutant limit by providing notice and opportunity for public comment consistent with 40 C.F.R. § 124.10.

To the extent Lowell is concerned regarding their future permit reissuance and the TAN limit that may be included, EPA notes that Lowell is encouraged to begin to collect additional pH, temperature and/or ammonia data to ensure that EPA has a more robust dataset for its next permit reissuance.

Comment 28

EPA is requiring monitoring of total nitrogen through monitoring of TKN, Nitrate and Nitrite for both the current Lowell permit and as a new requirement within the City of Manchester draft permit with a goal as stated both in the current Lowell Fact Sheet and the City of Manchester Fact Sheet of collecting sufficient data to assess the impact of nitrogen on the Merrimack River estuary. This assessment and the potential need to plan for a future total nitrogen limit will have major ramifications on the most appropriate approach for meeting an ammonia limit, while concurrently maintaining effective removal of phosphorus. By making ammonia a monitored parameter, it will provide EPA with time to be able to report on at least its preliminary findings and the anticipated magnitude of any proposed effluent limit. This will have major implications on the most cost-effective means to implement the process changes needed for ammonia removal.

Response 28

As noted in the Fact Sheet, EPA is requiring total nitrogen monitoring to provide information on the fate of nitrogen through the treatment process and the impact to the Merrimack River in the estuary at the mouth of the river. At this time, it is not known whether there will be a total nitrogen limit established in the next permit. At the time of the next permit issuance, EPA will review available effluent data in the Merrimack River and determine whether a limit is required and, if warranted, allow for a compliance schedule to meet such a limit. The public will have an opportunity to comment on any such future permit proceeding consistent with regulations.

To the extent this comment requests the ammonia limit to be changed to a monitoring requirement, see Response 14.

Comment 29

Finally, providing a monitoring requirement also provides a small window of time for permittees to adjust our Capital Improvement Plans to account for the major capital improvements required with no identified source of funding. LRWWU, similar to the City of Manchester, is under a Consent Decree to make a major investment in its collection system to reduce combined sewer overflows. Under the Consent Decree, the LRWWU's capital improvement capacity is already to the limit of the community.

Response 29

Regarding the consideration of cost in setting effluent limits, see Response 4. Regarding possible conditions of permits other than the one that is the subject of this permit proceeding, see Response 21.

Comment 30

For these reasons, the LRWWU requests that EPA remove the proposed ammonia limit from the City of Manchester permit and substitute a monitoring requirement. We would also note that even after a permit cycle of monitoring, EPA should anticipate the need for a much, much longer compliance schedule than the 24 months included in the current draft for the City of Manchester. As noted above, there will be extensive planning, design, construction and operational requirements to achieve concurrent ammonia removal and phosphorus removal.

Response 30

See Responses 14, 19, and 23.

Comment 31

Adaptation Planning: LRWWU agrees that adaptation planning for potential storm damage to infrastructure located in flood prone areas should be encouraged, but we do not believe that EPA has the authority to include these planning requirements on the permittee and co-permittees in a NPDES permit particularly without an identified source of funding. Our objections to the inclusion of Adaptation Planning in NPDES permits are based on the following:

The permit requires three major components to be completed over a 48-month timeline including Identification of Vulnerable Critical Assets within 24 months; an Adaptive Measures Assessment within 36 months; and an Implementation and Maintenance Schedule within 48 months of the permit effective date. This timeline is not practical given the scope of these studies and the number of stakeholders that should be included in such a planning effort. Furthermore, the cost of these studies will be considerable and therefore will require time to identify funding sources and assess the impact of these costs to rate payers. The LRWWU will also need to develop the staff capacity to manage and implement these efforts. Additional time is required to properly plan and execute studies of this scale and importance.

Response 31

See Response 3.

Comment 32

Climate change adaptation is a critical issue that requires a regional planning approach with the utility serving as one of several stakeholders in the planning process, and the funding and execution of such a planning process should not be the sole responsibility of the utility. The task of planning for and adapting to extreme storm and flood events under multiple climate change scenarios should be a collaborative effort that involves relevant local, state, and federal government departments and agencies; placing this requirement in a NPDES permit places an unreasonable burden on the utility and restricts the ability of relevant stakeholders outside of the utility to participate in the planning process.

Response 32

See Response 3.

Comment 33

This is a five-year permit for wastewater infrastructure that is typically renewed on a 20 to 30-year cycle. Planning for storm and flooding events that may occur during the useful life of facilities (20 to 30 years) will be challenging and planning for longer-term scenarios (25 to 70 years) may not be practical given the variability of long-term climate change models. While longer-term scenarios should not be ignored, decisions about infrastructure investment should focus on meeting projected climate change conditions within the useful life of the infrastructure given the uncertainties involved in this planning and the impact of capital investments on rate payers.

Response 33

See Response 3.

Comment 34

For these reasons, the LRWWU requests that EPA remove, or at a minimum modify, these provisions from the draft City of Manchester permit. If the EPA chooses to modify the provisions, we suggest that the permit timelines be extended significantly to reflect an appropriate planning and implementation period that accounts for the myriad of funding, coordination, and implementation challenges involved in meeting these permit requirements, especially considering the importance of engaging with local, regional, and federal stakeholders to develop and implement an effective regional approach to climate mitigation planning.

Response 34

See Response 3.

Comment 35

PFAS Testing: There are several issues of concern regarding PFAS testing requirements. PFAS testing methods are still evolving, with a limited number of labs prepared to conduct these tests, and available testing is costly. Utilities need the flexibility to adopt the latest and best PFAS testing approaches as these protocols further evolve. The need for additional research regarding PFAS impacts, the lack of a testing method that has been fully vetted by EPA, and the scarcity of labs able to perform this testing should be reflected in any new permit requirements.

Response 35

Regarding lab availability, EPA is aware of several labs throughout the country that conduct PFAS testing and expects that more labs will become equipped as more permits require use of this method. Given that dozens of permittees in MA and NH have been collecting and reporting PFAS data since late 2023, EPA does not anticipate issues related to lab availability for Manchester.

Regarding cost, see Response 2.

Regarding PFAS testing methods, see Responses 1 and 74.

E. Comments from Michael Theriault, P.E., President, New Hampshire Water Pollution Control Association

Comment 36

Total Ammonia Nitrogen

Please remove the effluent limit on this permit and change to “report” results. Imposition of a numeric limit without adequate supporting or comparative data from other WWTFs or discharge sources is inconsistent with other permits. It has been a standard that EPA require monitoring of a pollutant for at least one permit cycle before a set limit is put into the NPDES permit. This approach places an undue burden on Manchester and results in permits limits issued based on limited (inadequate) sampling data sets.

Ammonia nitrogen monitoring was not a requirement of the 2015 NPDES permit, except as reported quarterly in the WET testing results. Delaying a numeric limit until the next permit cycle evaluations will allow for more information gathering prior to establishing a limit.

Response 36

See Response 14.

Comment 37

Total Ammonia Nitrogen

Criteria values can vary significantly with pH and temperature. Further ambient pH and temperature data should be collected and used to derive the acute and chronic criteria.

The limit derivation for pH is based on WET testing data collected by the City for upstream ambient water quality and plant effluent, which is a limited data set.

The limit derivation for temperature is not defined in the Fact Sheet. EPA has assumed a flat 25°C temperature for the permit limit months of May to October. The shoulder seasons in this area do not approach 25°C for a river temperature. The acute criteria should be revised assuming a flat 20°C temperature for the warmer months and the limit recalculated. The acute criteria values vary with the presence of salmonids and reports that indicate salmon cannot tolerate water temperatures over 20°C and will seek colder tributaries (See Merrimack River Watershed Council 2021 Water Quality Report, New Hampshire Fish and Game Fact Sheet, and MassDEP Surface Water Quality Standards).

Response 37

See Responses 14 (regarding limited data collection), 16 (regarding temperature), 17 (regarding pH), and 18 (regarding salmonids).

Comment 38

Permit factsheet Appendix B – Reasonable Potential and Limits Calculations include effluent Ammonia concentration that represents the 95th percentile from the DMR data and/or WET

testing data during the review period. Based on a review of WET testing data included in Appendix A the 95th percentile value appears to be 18.25 mg/l rather than 21.8 mg/l proposed. It is unclear how EPA calculated this value as it appears incorrect.

Response 38

See Response 15.

Comment 39

Total Ammonia Nitrogen - Inadequate Compliance Schedule

EPA acknowledged that the total ammonia nitrogen limits cannot immediately be achieved with the issuance of a Draft Permit and has prescribed a two-year compliance window. Based on our discussions with Manchester and the experience of other organization members this is an insufficient allotment of time to achieve compliance. The Compliance schedule should be removed. In the event EPA adopts a Final Permit that does contain an effluent limitation for Total Ammonia Nitrogen, the compliance schedule must be significantly increased to allow a reasonable opportunity to attain compliance.

Response 39

See Response 19.

Comment 40

Total Aluminum

Please remove the effluent limit on this permit.

The State of New Hampshire is in the process of drafting changes to the WQS (similar to MA) that allow the aluminum calculator provided by EPA to be used. The calculator requires Dissolved Organic Carbon and Total Hardness data.

Response 40

See Responses 11 and 12.

Comment 41

Total Aluminum- Inadequate Compliance Schedule

EPA acknowledged that the aluminum limit cannot immediately be achieved with the issuance of a Draft Permit and has prescribed a 12-month compliance window. Based on our discussions with Manchester and the experience of other organization members this is an insufficient allotment of time to achieve compliance. The Compliance schedule should be removed. In the event EPA adopts a Final Permit that does contain an effluent limitation for Aluminum, the compliance schedule must be significantly increased to allow a reasonable opportunity to attain compliance.

Response 41

See Responses 11 and 13.

Comment 42

Part I.C.1. requires Adaptation Planning be developed by the permittee and co-permittees. This requirement appears to impose an undue burden on the permittee and co-permittees as follows:

The Adaptation Plan is quite comprehensive and includes three primary components. Each has a mandated timeline and requires significant resources. Identifying critical assets, assessing adaptive measures, and preparing an implementation and maintenance schedule within the specified timeframes can be a major demand on permittees and co-permittees with limited staff and budget.

Response 42

See Response 3.

Comment 43

The Adaptation Plan does not appear to come with provisions for funding or financial support for permittees. Undertaking vulnerability assessments, adaptive measures assessments, and the subsequent implementation and maintenance schedules would likely require considerable financial investments and staff resources.

Limited federal or state funding will lead many permittees and co-permittees to consider this an unfunded mandate. As more permittees and co-permittees receive new permits, there is a need, for a program to fund all components of the Adaptation Plan.

Response 43

See Response 3.

Comment 44

Current federal and state funding requires the permittees and co-permittees to apply for and secure a loan or grant award, as well as obtain borrowing authorization before they can complete eligible portions of the Plan within the mandated timeline. Based on the size and scope of the Adaptation Plan outlined in the permit, the mandated timeline is not enough time to complete the Plan.

Response 44

See Response 3.

Comment 45

The rigid timelines for each component of the Adaptation Plan, even when Part I.C.1.b. is considered, may not fully address the variations in capacity and complexity of systems managed

by permittees and co-permittees. Allowing flexibility would be beneficial and enable permittees and co-permittees to adjust the process to meet their specific needs.

Response 45

See Response 3.

Comment 46

Component 3: Implementation and Maintenance Schedule requires permittees and co-permittees to submit a proposed schedule along with details on funding sources for adaptive measures. This could result in a long-term financial burden, particularly if the identified adaptive measures are expensive or if funding sources are not readily available. If funding is challenging, other asset management priorities may need to be deferred, which could exacerbate existing, known issues.

Response 46

See Response 3.

Comment 47

It is requested that the EPA consider adjustments to these requirements to address these concerns to best ensure permittees and co-permittees will be able to fully comply with the permit.

Response 47

See Response 3.

Comment 48

The costs associated with developing such extensive upgrades for Total Ammonia Nitrogen, Total Aluminum, and Climate Adaptation could result in deferring important projects with more immediate needs. The proposed timeframes could have immediate impacts on the City of Manchester and Co- permittee's ability to fund other projects. Any rate impacts will be felt by the most vulnerable populations served by City and Co-permittees which is largely comprised of environmental justice communities, this is of particular concern.

The NHWPCA recommends that EPA, before including such language in a permit for Total Ammonia Nitrogen, Total Aluminum, and Climate Adaptation Planning, provide the City of Manchester, Co- permittees, and the public a formal cost-benefit analysis and calculate the cost burden of these requirements. The cost-benefit analysis should take into consideration the impact that increasing the carbon footprint of wastewater treatment facilities due to ever-increasing requirements and costs to meet more stringent permit limits will have on the environment. Ultimately, there is a trade-off that approaches the point of diminishing returns. Permittees and the public need the opportunity to weigh the net environmental and public health benefits of an onerous NPDES permit limit and climate planning mandate versus the benefits that will be deferred or delayed for other water quality improvement projects.

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As described in Response 3, EPA has removed the proposed Adaptation Planning requirement from the Final Permit. Regarding the other referenced provisions, see Response 4.

F. Comments from Jillian Aicher, Equal Justice Works Legal Fellow, Conservation Law Foundation

FACTUAL BACKGROUND & OVERVIEW

I. The Manchester WWTF is Northern New England's largest WWTF and is the only WWTF in New Hampshire that burns sewage sludge.

The City of Manchester's WWTF is Northern New England's largest WWTF. The WWTF is designed to treat 34 million gallons of wastewater per day.⁵ As detailed in the Fact Sheet of the Draft Permit, the WWTF serves 155,000 users—109,000 in the City of Manchester and 46,000 in the Towns of Londonderry, Bedford, and Goffstown.⁶

The Manchester WWTF discharges effluent into the Merrimack River, an iconic water resource of critical importance to New Hampshire and Massachusetts. In addition to its importance as a natural resource for aquatic and wildlife species, the river provides drinking water for more than 700,000 people, including communities located downstream from the WWTF such as Nashua, NH, and Lowell, Methuen, Andover, Tewksbury, and Lawrence, MA.⁷ Along with discharging effluent into surface waters, the WWTF burns sewage sludge in an onsite incinerator, releasing emissions into the ambient air. The Manchester WWTF is the only WWTF in New Hampshire that incinerates sewage sludge.⁸

⁵ See ENV'T PROT. AGENCY, AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM, NPDES PERMIT NO. NH0100447 2024 DRAFT PERMIT at 3 (2024), <https://www.epa.gov/system/files/documents/2024-04/draftnh0100447permit-2024.pdf> [hereinafter Draft Permit].

⁶ *Id.* at Fact Sheet 13

⁷ *About the Merrimack*, EPA (April 23, 2024), <https://www.epa.gov/merrimackriver/about-merrimack>. NATIONAL BIOSOLIDS DATA PROJECT, STATE BIOSOLIDS SURVEY: 2018 DATA (2021), https://static1.squarespace.com/static/601837d1c67bcc4e1b11862f/t/6203f0b582fcfb750de408e1/1644425397690/NH_BiosolidsDataSummary_NBDP%26NEIWPCC_20220209.pdf.

⁸ NATIONAL BIOSOLIDS DATA PROJECT, STATE BIOSOLIDS SURVEY: 2018 DATA (2021), https://static1.squarespace.com/static/601837d1c67bcc4e1b11862f/t/6203f0b582fcfb750de408e1/1644425397690/NH_BiosolidsDataSummary_NBDP%26NEIWPCC_20220209.pdf.

II. The Manchester WWTF releases toxic PFAS into the environment through effluent discharges and incinerator emissions.

The Manchester WWTF's discharges into the Merrimack River and emissions into ambient air contain toxic PFAS chemicals. Two sources of information—a peer-reviewed article and Manchester's own PFAS monitoring data—document PFAS in the WWTF's inputs and outputs.

The first PFAS data source, the “Battelle Study,” is a peer-reviewed paper detailing a two-day PFAS sampling program that Battelle Memorial Institute researchers conducted in 2019. The Battelle Study documents PFAS in the WWTF's influent, effluent, sludge, incinerator ash slurry, and incinerator stack gas.⁹ PFAS concentrations in treated water effluent reached 167 parts per trillion (“ppt”) for 30 PFAS compounds combined.¹⁰ Total PFAS levels in the water increased after wastewater treatment, from 117 ppt in influent to 167 ppt in effluent discharged to the Merrimack River.¹¹ The level of GenX—a PFAS compound recently regulated in drinking water and known to cause health harms¹²—more than doubled from influent to treated effluent.¹³ This increase, of total PFAS and some individual compounds, observed at the Manchester facility corresponds with findings in other studies.¹⁴ This phenomenon highlights that wastewater treatment facilities do not remove PFAS pollutants; rather, they can exacerbate the PFAS problem.

The Battelle Study also shows that the WWTF's onsite incinerator emits PFAS into ambient air.¹⁵ The study estimated that the incinerator removed only 51 percent of the PFAS measured and concluded that the incinerator “may inadequately remove PFAS.” Comparing the 51 percent destruction and removal efficiency (“DRE”) for PFAS¹⁶ to the 99.9 percent DRE required for polychlorinated biphenyls, another organic pollutant,¹⁷ shows that the Manchester incinerator subjects neighboring residents to unacceptable PFAS emissions and associated health risks.

Importantly, the Battelle Study did not capture the full scope of PFAS pollution. The researchers only measured 30 PFAS compounds in air emissions and calculated the 51 percent DRE without accounting for products of incomplete combustion (“PICs”)¹⁸. Thus, the incinerator could be emitting unmeasured PFAS or other harmful byproducts not documented in the study. The researchers also observed that the incinerator formed GenX and emitted 44,000 times more inorganic fluoride than expected.¹⁹ Recently-issued EPA guidance on PFAS destruction and disposal further highlights the uncertainties associated with PFAS emissions from sewage sludge incineration. The guidance states that “[t]he behavior of PFAS and PFAS-related PICs” in thermal treatment systems like sewage sludge incinerators is “largely unknown,” and that these systems create “secondary waste streams” in which “PFAS and PFAS-related PICs may be present.”²⁰

The second PFAS data source, the “Manchester Monitoring Data,” consists of data that the Manchester WWTF compiled after voluntarily monitoring four PFAS in influent, effluent, sludge, ash, landfill leachate, and septage monthly from 2019 through 2023.²¹ The PFAS levels in the WWTF's effluent ranged from 6 to 50.3 ppt when only four compounds were measured.²² Some individual compound concentrations in effluent documented in the WWTF monitoring data exceed the Battelle Study's measured concentrations for PFOA, PFOS, and PFHxS, reaching as high as 20.6 ppt,²³ 30 ppt,²⁴ and 9.1 ppt²⁵ respectively. The WWTF monitoring data also demonstrates that the WWTF is discharging PFAS into the Merrimack River on an ongoing basis, with no continuous trend of decreasing concentrations over time.

Manchester did not identify PFAS in its application documents submitted in 2019 for this permit renewal,²⁶ and the Draft Permit materials do not suggest that EPA considered the Battelle Study and/or the City's PFAS Monitoring Data in developing the Draft Permit. However, these data sources demonstrate that the WWTF is consistently discharging toxic PFAS into the Merrimack River and its sludge incinerator is releasing PFAS into Manchester's air. EPA must consider this information in its permit development process, as the NPDES "permitting scheme is dependent on the permitting authority being able to judge whether the discharge of a particular pollutant constitutes a significant threat to the environment[.]"²⁷

9. See Seay et al., *supra* note 6, at 4; see also SEAY ET AL., SUPPORTING INFORMATION FOR PER- AND POLYFLUOROALKYL SUBSTANCES FATE AND TRANSPORT AT A WASTEWATER TREATMENT PLANT WITH A COLLOCATED SEWAGE SLUDGE INCINERATOR at S19, S37 (2023), <https://www.sciencedirect.com/science/article/pii/S0048969723009737#s0110> [hereinafter Battelle Study Supporting Information] (attached as Exhibit E).
10. Battelle Study Supporting Information, at tbl. S12.
11. *Id.* at Text S5.
12. See 89 Fed. Reg. 32532, 32532, 32548 (April 26, 2024).
13. Battelle Study Supporting Information, at tbl. S12.
14. Seay et al., *supra* note 6, at 4.
15. *Id.* at 1.
16. *Id.*
17. 40 C.F.R. § 761.70(a)(2).
18. See Seay et al., at 2, 9 ("The DREs reported here represent the losses of a given target PFAS or PFAS class, without respect to the potential for species to be partially broken down into unmeasured products of incomplete combustion. Future research measuring full mineralization can provide a more complete understanding of the breakdown of PFAS during incineration.")
19. *Id.* at 6, 8.
20. EPA 2024 PFAS Destruction & Disposal Guidance, at 54.
21. City of Manchester WWTF PFAS Monitoring Reports (2019–23) (attached as Exhibits F through J). Although the WWTF represented in two annual Industrial Pretreatment Program Reports that it had taken measurements of 16 PFAS compounds, it only monitored for the four PFAS regulated in New Hampshire drinking water and groundwater. See CITY OF MANCHESTER, INDUSTRIAL PRETREATMENT PROGRAM ANNUAL REPORT: JUNE 1, 2022 THROUGH MAY 31, 2023 at 17 (2023), https://www.manchesternh.gov/Portals/2/Departments/enviro_n_protect/-website/City_of_Manchester_IPP_Annual_Report_2022-2023.pdf?ver=2023-08-01-114901-107 [hereinafter 2022–2023 IPP Annual Report]; CITY OF MANCHESTER, INDUSTRIAL PRETREATMENT PROGRAM ANNUAL REPORT: JUNE 1, 2019 THROUGH MAY 31, 2020 at 17 (2020) https://www.manchesternh.gov/Portals/2/Departments/enviro_n_protect/IDP/2019-2020%20IPP%20Annual%20Report.pdf?ver=2020-12-16-113619-713 [hereinafter 2019–2020 IPP Annual Report].
22. City of Manchester WWTF PFAS Monitoring Reports (2019–23).
23. City of Manchester WWTF PFAS Monitoring Report (2021).
24. City of Manchester WWTF PFAS Monitoring Report (2022).
25. City of Manchester WWTF PFAS Monitoring Report (2022).
26. See generally MANCHESTER WWTF, PERMIT APPLICATION SECTION 3: INFORMATION ON EFFLUENT DISCHARGES (approved Mar. 5. 2019) (attached as Exhibit K).
27. *Piney Run Pres. Ass'n v. Cnty. Comm'rs of Carroll Cnty.*, 268 F.3d 255, 268 (4th Cir. 2001).

III. The Manchester WWTF receives PFAS-contaminated influent from industrial users and has no processes to control or treat PFAS.

Industrial Users (“IUs”) likely contribute the largest share of PFAS to the WWTF’s influent. These IUs include landfills with documented PFAS contamination and other industrial facilities in PFAS-associated industries. The WWTF receives wastewater from at least 88 IUs,²⁸ 14 of which are classified as Significant Industrial Users (“SIUs”), according to its most recent annual pretreatment report.²⁹ But the City’s most recent annual pretreatment report does not identify all IUs; for example, the City began accepting PFAS-contaminated influent from the active North County Environmental Services (“NCES”) landfill in Bethlehem, NH in 2024.³⁰ The WWTF is not equipped to remove PFAS from influent, so the PFAS it receives from industrial facilities and landfills passes through the plant to the Merrimack River through treated wastewater or to ambient air through the sludge-burning incinerator.

28. 2022–2023 IPP Annual Report App’x A–D; 2019–2020 IPP Annual Report App’x A–D.

29. 2022–2023 IPP Annual Report App’x A; *see also* 2019–2020 IPP Annual Report App’x A. *But see* Draft Permit Fact Sheet at 13 (stating that Manchester’s permit application listed 18 SIUs).

30. CITY OF MANCHESTER, DEP’T OF PUBLIC WORKS, CLASS III WASTEWATER DISCHARGE PERMIT NO. T-3001-2-24 (2024) (attached as Exhibit L); CITY OF MANCHESTER DEP’T OF PUBLIC WORKS, CLASS III WASTEWATER DISCHARGE PERMIT NO. T-3001-4-24 (2024) (attached as Exhibit M).

A. The Manchester WWTF accepts PFAS-contaminated leachate from two landfills.

The City accepts PFAS-contaminated landfill leachate from two landfills—the closed Manchester Municipal Landfill, and the active landfill in Bethlehem owned by NCES, a subsidiary of Casella. Both closed and active landfills generate leachate, a type of wastewater formed from precipitation, groundwater seepage, microbiological organism breakdown, and ground moisture.³¹ Leachate contains pollutants “at several orders of magnitude higher than typical domestic wastewater” and often contains emerging contaminants like PFAS.³²

The closed Manchester Municipal Landfill, an SIU under the City’s pretreatment program, is generating leachate and sending it to the WWTF. The Manchester Municipal Landfill has consistently contributed PFAS to the WWTF since at least 2019, with leachate concentrations ranging from 5.72 ppt³³ to 169.6 ppt³⁴ when four PFAS compounds were measured.

Moreover, although it is not classified as an IU or SIU in Manchester’s pretreatment reports, NCES sent landfill leachate to the Manchester WWTF from April to May 2024 (up to 30,000 gallons per day),³⁵ in March 2024 (47,703 gallons total),³⁶ and in February 2024 (454,886 gallons total)³⁷ under temporary discharge permits.³⁸ The WWTF sampled NCES’s leachate influent for PFAS in February 2024, measuring 1,870 ppt PFOA, 281 ppt PFOS, 4,240 ppt PFHxS, and 125 ppt PFNA.³⁹ The WWTF’s findings noted that each of these samples exceeded the New Hampshire drinking water standards, which are 12 ppt PFOA, 15 ppt PFOS, 18 ppt PFHxS, and 11 ppt PFNA.⁴⁰ The NCES landfill leachate contained 11,186.7 ppt total PFAS when 17 compounds were measured on February 13, 2024 (during NCES’s temporary permit period to discharge into the

Manchester WWTF)⁴¹ and 12,263 ppt PFAS when 12 compounds were measured for a different WWTF in 2023.⁴²

In addition to discharging PFAS at high concentrations, evidence suggests NCES violated the temporary discharge permits that authorized it to send leachate to the City's WWTF. The landfill sent more leachate to the WWTF than the permit's daily limit, discharged leachate to the plant on days that were not covered by the temporary permit, and failed to disclose certain pollutant parameters.⁴³ Despite these violations, despite the WWTF's inability to treat PFAS, and despite the known health risks associated with these pollutants, the City has communicated with Casella regarding the potential to accept PFAS from another active Casella landfill, the Coventry landfill in Vermont.⁴⁴

No evidence suggests that EPA considered the above information regarding Manchester accepting PFAS-contaminated influent from landfills when developing the City's draft permit. EPA must consider this information before finalizing the permit and should respond accordingly, as described below in the "Detailed Comments on the Draft Permit."

31. Env't Prot. Agency, Off. of Rsch. & Dev., State of the Practice of Onsite Leachate Treatment at Municipal Solid Waste Landfills at 1 (EPA/600/R-21/182) (Oct. 2021).

32. *Id.* at 9.

33. City of Manchester WWTF PFAS Monitoring Report (March 2022).

34. City of Manchester WWTF PFAS Monitoring Report (October 2019).

35. City of Manchester Dep't of Public Works, Class III Wastewater Discharge Permit No. T-3001-4-24 (2024).

36. Letter from Lindsey Menard, North Country Environmental Services, Inc., to Jaime Colby, P.E., New Hampshire Department of Environmental Services, regarding North Country Environmental Services, Inc. Landfill Facility - Bethlehem, NH Permit # - NH DES-SW-SP-03-002 First Quarter Facility Report; 2024 at 21 (April 30, 2024) (attached as Exhibit N).

37. *Id.* at 17.

38. City of Manchester, Dep't of Public Works, Class III Wastewater Discharge Permit No. T-3001-2-24 (2024); City of Manchester Dep't of Public Works, Class III Wastewater Discharge Permit No. T-3001-4-24 (2024).

39. Email from Christopher Crowley, Manchester EPD, to Frederick McNeill, Manchester EPD, regarding Leachate Disposal PFAS sampling results vs. NHDES Drinking water limits (April 18, 2024) (attached as Exhibit O).

40. *Id.*

41. NORTH COUNTRY ENV'T SERVS., INC. SUMMARY OF MONITORING DATA – TANK B LEACHATE – PFAS (Tbl. 3) (2024) (attached as Exhibit P).

42. Letter from Lindsey Menard, North Country Environmental Services, Inc., to Kristin Noel City of Concord, New Hampshire Wastewater Treatment Facility, regarding North Country Environmental Services, Inc. Landfill Facility – Bethlehem, New Hampshire City of Concord Leachate Discharge Permit (#H34) Annual Leachate Report, 2023 at PDF 30 (March 20, 2023) (attached as Exhibit Q).

43. Email from Save Forest Lake to Stergios Spanos, Dep't Env't Servs. Regarding Manchester WWTP Permit Violations – NCES Landfill Leachate (May 21, 2024) (attached as Exhibit R).

44. See Email from Clark James, Casella, to Frederick McNeill, Manchester EPD, regarding Leachate Disposal (April 17, 2024) (attached as Exhibit S).

B. Other facilities in PFAS-associated industries send wastewater to the Manchester WWTF.

In addition to landfill leachate contributing PFAS to the WWTF's effluent, at least 11 other SIUs operate in PFAS-related sectors and send wastewater into the WWTF, as detailed in the chart below:⁴⁵

Significant Industrial User	Type of Business	Average Flow (Gallons Per Day)
Jewell Instrument	Metal Finisher	3,700
NYCOA	Plastic Production	285,000
XMA	Semi-Conductor	560
Velcro USA	Textile Manufacturing	80,100
Prysmian Cables & Systems	Textile Manufacturing	23,700
E&R Cleaners	Cleaning Services	70,600
Sterling Laundry	Cleaning Services	95,000
Elliot Hospital	Hospital	69,400
Catholic Medical Center	Hospital	68,900
Department of Veterans Affairs	Hospital	45,000
Dartmouth Hitchcock	Hospital	25,000

The additional industry categories in the chart above—metal finishing, plastic production, semi-conductors, textile manufacturing, cleaning services, and hospitals—have been associated with PFAS use or PFAS contamination.⁴⁶ Other IUs that are not classified as significant but that potentially discharge PFAS into the Manchester facility include but are not limited to commercial car washes and Textile Coating International, a facility that manufactures polytetrafluoroethylene.⁴⁷

Despite awareness that it is receiving PFAS in influent and discharging PFAS to the Merrimack River since at least 2019, the Manchester WWTF has no treatment processes to remove PFAS and has not implemented source reduction measures to reduce the PFAS entering the plant. To the contrary, the Manchester WWTF has admittedly failed to initiate any communications with industrial users regarding PFAS.⁴⁸

45. See 2022–2023 IPP Annual Report App'x A; see also 2019–2020 IPP Annual Report App'x A.

46. See 2022–2023 IPP Annual Report; 2019–2020 IPP Annual Report. See also April 2022 EPA PFAS Memorandum, at 2; *Per- and polyfluoroalkyl substances (PFAS)*, CTRS. FOR DISEASE CONTROL AND PREVENTION (Sept. 15, 2022), <https://www.cdc.gov/niosh/topics/pfas/default.html>; 'Forever chemicals' – the part of cleaning you don't want to last, EWG (Oct. 27, 2023), <https://www.ewg.org/news-insights/news/2023/10/forever-chemicals-part-cleaning-you-dont-want-last>.

47. 2022–2023 IPP Annual Report App'x B (Textile Coating International), App'x C (State Motors Car Wash).

48. See Email from Adam Dumville, Director, McLane Middleton to Tom Irwin, Vice President, Conservation Law Foundation (Feb. 15, 2024) (attached as Exhibit T).

IV. PFAS chemicals are harmful to humans and wildlife, persistent, and bioaccumulative.

PFAS pollution from the Manchester WWTF and its onsite incinerator increases health risks for residents in Manchester and communities downstream of the plant. These manufactured and persistent chemicals are detrimental to humans: they are linked to health harms such as cancer (kidney, prostate, and testicular cancer), thyroid disease, developmental impacts to children, reproductive and fertility impacts, obesity, diabetes, high cholesterol, and decreased vaccine response.⁴⁹

EPA has highlighted the negative health impacts of PFAS chemicals, and the need to address them, in its recent regulatory actions. Most recently, on April 17, 2024, EPA designated PFOA and PFOS as “hazardous substances” under the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”).⁵⁰ On April 8, 2024, EPA established enforceable drinking water standards that cover six PFAS chemicals (PFOA, PFOS, PFHxS, PFNA, GenX, and PFBS).⁵¹ In February 2024, EPA issued a proposed rule designating nine PFAS chemicals as “hazardous constituents” under the Resource Conservation and Recovery Act (“RCRA”).⁵² In June 2022, EPA set stringent drinking water health advisories under the Safe Drinking Water Act (“SDWA”) for PFOA and PFOS (interim) and GenX and PFBS (final).⁵³ In issuing these rules, proposed rules, and guidance values, EPA has recognized that PFAS cause “toxic and adverse effects in animals, humans, or both”⁵⁴ and has cited evidence regarding the immune, cardiovascular, developmental, carcinogenic, liver, and kidney effects of these chemicals.⁵⁵

The New Hampshire Department of Environmental Services (“DES”) also has highlighted the health harms associated with some PFAS. In 2019, DES established state drinking water maximum contaminant levels and ambient groundwater quality standards for PFOA, PFOS, PFHxS, and PFNA.⁵⁶ In proposing those rules, DES highlighted the potential for those chemicals to cause liver damage, lipid metabolism effects, decreased immune response, and negative fertility impacts for women.⁵⁷ DES also recognized that they are linked to cancer and thyroid, developmental, cholesterol, and neurobehavioral impacts.⁵⁸

In addition to their persistence and toxicity, many PFAS chemicals bioaccumulate in wildlife.⁵⁹ PFAS bioaccumulation harms both animals and humans. Regarding animals, studies have linked PFAS to “stress, diminished growth rates and reproductive abilities, and” sometimes even death in aquatic life⁶⁰ such as fish and mussels.⁵⁷ Regarding humans, dietary sources of PFAS—including fish—constitute “at least 61% of PFAS exposure in adults.”⁵⁸ There is a “significant positive correlation” between higher fish consumption and increased PFAS detected in humans.⁵⁹ Of particular note and concern, consuming just one serving of freshwater fish with 8.41 micrograms of PFOS per kilogram of fish—the median level of PFOS found in freshwater fish in one EPA sampling program—*has the same health impacts as drinking water with 48 ppt PFOS (2,400 times higher than EPA’s interim health advisory level for PFOS) for an entire month.*⁶⁰

Many EJ communities are located within the City of Manchester. Two U.S. Census Tracts that are located roughly two miles away from the WWTF and its incinerator are overburdened by environmental pollution. One of these communities has a population that is 56 percent people

of color, 62 percent low income, and falls above the 96th state percentile for all but one of EPA's EJ Indexes. Another has a population that is 41 percent people of color, 43 percent low income, and falls above the 94th state percentile for all thirteen EJ Indexes. These two communities are located north and northeast of the facility, exposing them to health risks from breathing contaminated air when wind blows from the south. Manchester residents that fish near or downstream of the WWTF are also likely disproportionately impacted by the WWTF's PFAS pollution in water and air.

49. See 87 Fed. Reg. 36848, 36849 (June 21, 2022); 89 Fed. Reg. 8606, 8613–8615 (Feb. 8, 2024); *Our Current Understanding of the Human Health and Environmental Risks of PFAS*, EPA, <https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas> (last updated June 7, 2023).

50. Env't Prot. Agency, Designation of Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) as CERCLA Hazardous Substances (Pre-Publication Notice) (April 17, 2024), https://www.epa.gov/system/files/documents/2024-04/pre-publication_final-rule-cercla-pfoa-pfos-haz-sub.pdf; see also 89 Fed. Reg. 39,124, 39139 (May 8, 2024).

51. ENV'T PROT. AGENCY, PFAS NATIONAL PRIMARY DRINKING WATER REGULATION RULEMAKING (PRE-PUBLICATION VERSION) (April 8, 2024), https://www.epa.gov/system/files/documents/2024-04/pfas-npdwr_prepubfederalregisternotice_4.8.24.pdf; see also 89 Fed. Reg. 32532 (April 26, 2024).

52. See generally 89 Fed. Reg. 8606 (Feb. 8, 2024).

53. 87 Fed. Reg. 36848, 36849 (June 21, 2022).

54. 89 Fed. Reg. 8606, 8609 (Feb. 8, 2024).

55. 87 Fed. Reg. 36848, 36849 (June 21, 2022).

56. These rules were “temporarily stayed by a court injunction,” but the same standards “were established as a matter of law by House Bill 1264, which became effective July 23, 2020.” See N.H. DEP'T ENV'T SERVICES, 2023 STATUS REPORT ON THE OCCURRENCE OF PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONTAMINATION IN NEW HAMPSHIRE at 29 (2023), <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wmd-23-01.pdf>.

57. N.H. DEP'T ENV'T SERV., TECHNICAL BACKGROUND REPORT FOR THE JUNE 2019 PROPOSED MAXIMUM CONTAMINANT LEVELS (MCLs) AND AMBIENT GROUNDWATER QUALITY STANDARDS (AGQs) FOR PERFLUOROOCTANE SULFONIC ACID (PFOS), PERFLUOROOCTANOIC ACID (PFOA), PERFLUORONONANOIC ACID (PFNA), AND PERFLUOROHXANE SULFONIC ACID (PFHxS) (R-WD-19-29) at 1, <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wd-19-29.pdf> [hereinafter DES Technical Background].

58. *Id.*

59. See *Per- and Polyfluorinated Substances (PFAS) Factsheet*, CTRS. FOR DISEASE CONTROL AND PREVENTION, https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html; Heidi M. Pickard et al., *PFAS and Precursor Bioaccumulation in Freshwater Recreational Fish: Implications for Fish Advisories*, 56 ENV'T SCI. & TECH. 15573, 15573, 15578, 15579–80 (2022); N.H. DEP'T ENV'T SERV., PLAN TO GENERATE PFAS SURFACE WATER QUALITY STANDARDS 11 (2019), <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wd-19-30.pdf>.

60. Serena E. George et al., *Nonlethal Detection of PFAS Bioaccumulation and Biomagnification Within Fishes in an Urban- and Wastewater-dominant Great Lakes Watershed*, 321 ENV'T POLLUTION 121123, 121123 (2023).

57. [Changhui Liu](#) et al., *Oxidative Toxicity of Perfluorinated Chemicals in Green Mussel and Bioaccumulation Factor Dependent Quantitative Structure-activity Relationship*, 33 ENV'T TOXICOLOGY & CHEMISTRY 2323, 2332 (2014); See generally Guang-hua Lu et al., *Toxicity of Perfluorononanoic Acid and Perfluorooctane Sulfonate to Daphnia Magna* 8 WATER SCIENCE & ENGINEERING 40 (2015).

58. George et al., *supra* note 65, at 121123.

59. *Id.*

60. Barbo et al., *supra* note 5, at 6 (emphasis added).

V. PFAS pollution from the Manchester WWTF disproportionately impacts Environmental Justice communities in Manchester and downstream locations.

The PFAS pollution from the Manchester WWTF and its incinerator threatens to add to cumulative burdens in EJ communities. Sources of PFAS—like wastewater treatment plants, landfills, and manufacturing facilities—often disproportionately impact communities of color due to inequitable siting.⁶¹ Moreover, many residents of EJ communities eat locally-caught fish at higher rates for cultural and/or subsistence reasons, which increases exposure to PFAS.⁶²

Many EJ communities are located within the City of Manchester. Two U.S. Census Tracts that are located roughly two miles away from the WWTF and its incinerator are overburdened by environmental pollution. One of these communities has a population that is 56 percent people of color, 62 percent low income, and falls above the 96th state percentile for all but one of EPA’s EJ Indexes.⁶³ Another has a population that is 41 percent people of color, 43 percent low income, and falls above the 94th state percentile for all thirteen EJ Indexes.⁶⁴ These two communities are located north and northeast of the facility, exposing them to health risks from breathing contaminated air when wind blows from the south.⁶⁵ Manchester residents that fish near or downstream of the WWTF are also likely disproportionately impacted by the WWTF’s PFAS pollution in water and air.

PFAS pollution from the WWTF also threatens the health of residents, including EJ residents, in downstream communities that source their drinking water from the Merrimack River. For example, the WWTF is located within 20 miles upstream of Pennichuck Water Works, which provides drinking water to Nashua, NH and surrounding communities.⁶⁶ Because PFAS do not break down, travel significant distances in water, and are harmful even at low levels, the PFAS in the City’s effluent likely impact drinking water in other downstream communities in northern Massachusetts that source their drinking water from the Merrimack River.

61. *Communities of color disproportionately exposed to PFAS pollution in drinking water*, HARVARD T.H. CHAN SCHOOL OF PUBLIC HEALTH (May 15, 2023), <https://www.hsph.harvard.edu/news/press-releases/communities-of-color-disproportionately-exposed-to-pfas-pollution-in-drinking-water/>.

62. Barbo et al., *supra* note 5, at 8. Ralph Jimenez, ‘Forever chemicals’ endanger health of anglers who eat what they catch,’ N.H. BULLETIN (April 11, 2023), <https://newhampshirebulletin.com/2023/04/11/forever-chemicals-endanger-health-of-anglers-who-eat-what-they-catch/>.

63. *EJScreen Community Report: Manchester, NH Blockgroup 330110025002*, EPA, <https://ejscreen.epa.gov/mapper/> (last visited April 17, 2024). The EJ Index value “combines data on low income and people of color populations with a single environmental indicator” to highlight “potential EJ concerns.” *Id.*

64. *EJScreen Community Report: Manchester, NH Blockgroup 330110024004*, EPA, <https://ejscreen.epa.gov/mapper/> (last visited April 17, 2024).

65. See *Manchester Airport*, WINDFINDER https://www.windfinder.com/windstatistics/manchester_airport_new_hampshire. See also BARR ENGINEERING COMPANY, PREPARED FOR SAINT-GOBAIN PERFORMANCE PLASTICS CORP., PRELIMINARY AIR SOIL AND WATER MODELING TECHNICAL MEMORANDUM JUNE 2017 - REVISED SEPTEMBER 2018 SAINT-GOBAIN PERFORMANCE PLASTICS App’x A (2018), <https://www4.des.state.nh.us/OneStopPub/Air/330110016518-0227TypeModeling2.pdf> (analyzing wind rose data from the Manchester airport to determine prevailing wind direction and found in time periods between 1980 and 2012, finding that “the most frequent wind directions [are] from the

northwest or south, consistent with both climatology of the Northeast US and the valley topography.”)

66. EPA, OFF. OF ECOSYSTEM PROT., AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM NPDES PERMIT NO. NH0100447, RESPONSE TO COMMENTS at 7 (2015), *accessible at* <https://www3.epa.gov/region1/npdes/permits/2015/finalnh0100447permit.pdf> [hereinafter 2015 NPDES Permit].

LEGAL BACKGROUND & CONTEXT

Congress passed the CWA with a clear goal: “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”⁶⁷ Section 1311(a) prohibits the discharge of a pollutant from a point source into waters of the United States unless in accordance with a NPDES permit or another specified provision.⁶⁸

The City’s current permit does not address PFAS chemicals or authorize the facility to discharge PFAS.⁶⁹ Neither the City’s 2013 permit application documents submitted for the 2015 permit issuance, nor the 2019 permit application documents submitted for this permit reissuance, address PFAS.⁷⁰ Thus, until EPA issues a final permit, the WWTF is discharging PFAS pollutants into the Merrimack River without authorization from a NPDES permit, in violation of the Clean Water Act section 1311(a). EPA may not issue a final permit that fails to “provide for compliance with the applicable requirements of CWA” or its implementing regulations.⁷¹

In addition to prohibiting discharges without a NPDES permit, the CWA also established the National Pretreatment Program (also referred to as the Industrial Pretreatment Program, or “IPP”) to ensure that industrial discharges to WWTFs do not result in harmful and illegal pollution. Congress established the National Pretreatment Program “to prevent the discharge of any pollutant through” a municipally owned WWTF that “interferes with, passes through, or otherwise is incompatible with such [publicly owned treatment works, or ‘POTW’].”⁷² To achieve that goal, EPA developed National Pretreatment Program regulations.⁷³ In accordance with EPA’s rules, to codify and implement its authority under the IPP, the City developed a local Sewer Use Ordinance, which EPA approved in 1997.⁷⁴

67. 33 U.S.C. § 1251(A).

68. *Id.* § 1311(a).

69. 2015 NPDES Permit.

70. Correspondence from Frederick McNeill, City of Manchester Highway Dep’t, Env’t Prot. Div., to Shelly Puleo, U.S. Env’t Prot. Agency Region 1, Regarding Manchester NPDES Permit NH100447 Renewal Application (May 29, 2013) (attached as Exhibits U–V); MANCHESTER WWTF, PERMIT APPLICATION SECTION 3: INFORMATION ON EFFLUENT DISCHARGES (Approved Mar. 5. 2019)

71. 40 C.F.R. § 122.4 (a).

72. 33 U.S.C. § 1317(b)(1).

73. *See* 40 C.F.R. § 403 *et seq.*

74. *See* 2022–2023 IPP Annual Report. Manchester adopted minor amendments to the Sewer Use Ordinance in 2014. *Id.*

[EPA Note: EPA has reviewed the supporting information provided above and EPA’s responses under the “Detailed Comments on the Draft Permit” below include EPA’s consideration of the information provided above.]

Comment 49

DETAILED COMMENTS ON THE DRAFT PERMIT

CLF hereby incorporates by reference, as if fully set forth in this section, the entirety of the foregoing discussion and provides the following comments on the Draft Permit and ways in which EPA should amend it for purposes of issuing a final permit.

I. EPA should conduct an Environmental Justice analysis related to the WWTF, including the WWTF’s Sewage Sludge Incinerator, to fully inform and guide the development of its NPDES permit.

EPA policies and guidance that address NPDES permitting and PFAS disposal emphasize the need to prioritize environmental justice⁷⁵. However, the Draft Permit fails to address or even mention EJ. Before finalizing Manchester’s permit, EPA should analyze the permit’s potential EJ impacts—especially regarding PFAS in air and water outputs from the facility. EJ considerations underscore the need for the expanded PFAS monitoring and source reduction measures detailed in the following sections.

In 2024, EPA published a NPDES Program Policy entitled “Addressing Environmental Justice and Equity in NPDES permitting.”⁷⁶ The NPDES Program Policy outlines seven “Principles for Addressing Environmental Justice and Equity” and five “Recommended Practices for Incorporating Principles into NPDES permits.”⁷⁷ EPA’s EJ principles in NPDES permitting include, among others:

“Identify[ing] potential environmental justice concerns related to the permit” and “Conduct[ing] a ‘fit for purpose’ environmental justice analysis” for permits in “potentially overburdened” communities.⁷⁸

The policy recommends that the administrative record for the permitting action should include the “fit for purpose analysis” results “to transparently show whether and how the permit could adversely and disproportionately affect a community.”⁷⁹ The EJ analysis should include demographic data, environmental data (“including surface water quality monitoring”), public health information, “potential pollutant and non-pollutant stressors,” cumulative impacts, and “potential methods for avoiding, minimizing, or mitigating adverse effects on the community.”⁸⁰ The policy recommends using EPA’s EJScreen tool “to identify potential or existing environmental justice concerns in communities affected by the permit.”⁸¹

EPA’s PFAS Destruction & Disposal Guidance and PFAS Strategic Roadmap also highlight EJScreen as a useful tool to evaluate EJ concerns in the context of PFAS air emissions.⁸² The Destruction & Disposal guidance emphasizes uncertainties associated with incinerating PFAS-contaminated sewage sludge in fluidized bed incinerators like that used at the Manchester

WWTF.⁸³ It explicitly highlights the need for permit writers to “screen communities located in the vicinity of potential releases from the destruction, disposal, and storage options [of PFAS] (considering fate and transport) in order to consider the potential for adverse and disproportionate impacts . . . and to consider potential measures to prevent, reduce, or address such impacts.”⁸⁴

EJScreen identifies EJ concerns in several Census Tracts in Manchester—including two tracts that are located two miles from the sludge incinerator in an often-downwind location.⁸⁵ The PFAS emissions from the WWTF’s sludge incinerator likely contribute to cumulative impacts of environmental pollution in Manchester EJ communities. In finalizing Manchester’s permit, EPA should implement its NPDES Program Policy principles and recommendations, including by conducting a “fit for purpose” analysis. The analysis should address PFAS pollution from the WWTF and its incinerator and incorporate the EJ recommendations in EPA’s Destruction & Disposal Guidance for PFAS. That analysis will most likely support the monitoring and source reduction measures discussed in Parts II through V below to “prevent, reduce, or address” disproportionate impacts of PFAS pollution on overburdened communities.⁸⁶

In light of the presence of nearby EJ communities and the adverse health and environmental impacts associated with PFAS being discharged into the Merrimack River and emitted into the air, it is essential that EPA conduct an EJ analysis before proceeding to a final permit. Failure to do so would fly in the face of EPA’s NPDES Program Policy Addressing Environmental Justice and Equity in NPDES Permitting, EPA’s 2024 Interim Guidance on the Destruction and Disposal of PFAS and Materials Containing PFAS, and EPA’s PFAS Strategic Roadmap.

75. See ENV’T PROT. AGENCY, NPDES PROGRAM POLICY ADDRESSING ENVIRONMENTAL JUSTICE AND EQUITY IN NPDES PERMITTING 5 (2024), <https://www.epa.gov/system/files/documents/2024-01/npdes-ej-program-guidance-principles-recommended-practices-january-2024.pdf> [hereinafter 2024 NPDES EJ Policy]; 2024 EPA Destruction & Disposal Guidance, at 58; EPA, PFAS STRATEGIC ROADMAP: EPA’S COMMITMENTS TO ACTION 2021–2024 18 (2021), *accessible at* https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf.

76. See 2024 NPDES EJ Policy.

77. *Id.* at 2–6.

78. *Id.* at 2–3.

79. *Id.* at 4.

80. *Id.*

81. *Id.* at 5.

82. 2024 EPA Destruction & Disposal Guidance, at 58; EPA, PFAS STRATEGIC ROADMAP: EPA’S COMMITMENTS TO ACTION 2021–2024 at 18 (2021), *accessible at* https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf.

83. 2024 EPA Destruction & Disposal Guidance, at 58.

84. *Id.*

85. See Factual Background & Overview, Part V, above.

86. 2024 EPA Destruction & Disposal Guidance, at 58.

Response 49

This comment references EPA's *NPDES Program Policy – Addressing Environmental Justice and Equity in NPDES Permitting*¹³ and suggests that this document requires a “fit for purpose” environmental justice analysis to be conducted for this permit. However, a series of Presidential executive orders in January 2025 revoked or abolished the Executive Orders (EO) on which this EPA policy was based. EO 14173 (1/21/24)¹⁴ has revoked EO 12898 (2/6/94) and EO 14154 (1/20/25)¹⁵ has abolished EO 14096 (4/21/23) and EO 14008 (1/27/21).

EPA has ensured that this permit reissuance fully protects all updated water quality standards and does not allow any increased water quality impacts to the environment or human health. The commenter is concerned about PFAS in the effluent discharge. As described elsewhere in this response to comments, the permit's PFAS monitoring requirements are equivalent to those in other recent POTW permits issued by EPA Region 1 and include PFAS monitoring requirements consistent with EPA guidance and EPA's strategic plan for addressing PFAS in wastewater. For these reasons and within its discretion, EPA is not conducting the requested analysis.

Regarding emissions from the incinerator, EPA notes that this permitting action is not authorizing such emissions (of PFAS or any other pollutant) because these emissions are regulated under a separate state permit. See Response 62.

Comment 50

II. EPA must strengthen the Draft Permit's provisions for monitoring PFAS at the WWTF.

CLF appreciates that the Draft Permit requires monitoring for PFAS in the Manchester WWTF's influent, effluent, and sludge.⁸⁷ However, in finalizing the permit, EPA should require monthly—not quarterly—monitoring for PFAS under methods 1633 and 1621.

Monthly monitoring is feasible, as the City has been collecting samples for PFAS monitoring on a monthly basis since 2019.⁸⁸ More frequent monitoring will also help to achieve EPA's stated goal of “obtain[ing] more comprehensive information” regarding PFAS sources and concentrations.⁸⁹ Because the sample types are grab samples, and PFAS levels may vary depending on short-term changes in wastewater influent, monthly monitoring is essential to providing a more accurate picture regarding PFAS entering and being discharged from the WWTF.

¹³ Available at: <https://www.epa.gov/system/files/documents/2024-01/npdes-ej-program-guidance-principles-recommended-practices-january-2024.pdf>

¹⁴ <https://www.federalregister.gov/documents/2025/01/31/2025-02097/ending-illegal-discrimination-and-restoring-merit-based-opportunity>

¹⁵ <https://www.federalregister.gov/documents/2025/01/29/2025-01956/unleashing-american-energy>

For example, NCES began sending leachate to the Manchester WWTF in February 2024, under temporary permits.⁹⁰ A monthly monitoring requirement would more likely capture the impact of that additional IU and any other PFAS sources that discharge to the WWTF on a temporary basis.

Thus, EPA should retain the analytes monitored and the measurements methods in Draft Permit Part I(A)(1) (40 target PFAS under method 1633 and AOF under method 1621) but should increase the measurement frequency to monthly.

87. Draft Permit Part I(A)(1), at 4–5.

88. See 2022–2023 IPP Annual Report at 17.

89. EPA, PFAS Strategic Roadmap: EPA’s Commitments to Action 2021–2024 at 18 (2021), accessible at https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf.

90. City of Manchester, Dep’t of Public Works, Class III Wastewater Discharge Permit No. T-3001-2-24 (2024); City of Manchester Dep’t of Public Works, Class III Wastewater Discharge Permit No. T-3001-4-24 (2024); see also Letter from Lindsey Menard, North Country Environmental Services, Inc., to Jaime Colby, P.E., New Hampshire Department of Environmental Services, regarding North Country Environmental Services, Inc.

Landfill Facility - Bethlehem, NH Permit # - NH DES-SW-SP-03-002 First Quarter Facility Report; 2024 at 21 (April 30, 2024).

Response 50

EPA has determined that a quarterly monitoring frequency for PFAS compounds will ensure that there are adequate data to assess the presence and concentration of PFAS in facility discharges. This monitoring is consistent with EPA’s *October 2021 PFAS Strategic Roadmap*¹⁶ and an EPA memo dated December 5, 2022, called *Addressing PFAS Discharges in EPA-Issued NPDES Permits and Through the Pretreatment Program and Monitoring Programs*.¹⁷ Given that EPA is including quarterly monitoring in all similar permits to characterize these discharges and because EPA is mindful of the cost to permittees associated with this monitoring, EPA does not consider monitoring beyond this recommended frequency is warranted at this time. This comment does not result in any change to the Final Permit.

EPA agrees that monitoring requirements provide useful information about IU sources of PFAS. Therefore, Part I.E.6 of the permit does require annual PFAS monitoring for a number of categories of industrial users that may discharge PFAS. EPA anticipates that this annual monitoring will yield adequate data that can be used by the Permittee to regulate industrial users in the future as well as supporting EPA's ongoing work on PFAS (summarized at <https://www.epa.gov/pfas/key-epa-actions-address-pfas>), and in particular the work EPA is doing to develop new ELGs for PFAS for some industries (<https://www.epa.gov/eg/current-effluent-guidelines-program-plan>). Given that monitoring of IUs at this stage is designed to identify sources of PFAS and not necessarily to characterize variability or permit compliance from these sources, EPA finds that annual monitoring is sufficient. Once actual sources are identified (and

¹⁶ https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf

¹⁷ https://www.epa.gov/system/files/documents/2022-12/NPDES_PFAS_State%20Memo_December_2022.pdf

especially if permit limits are in place in the future), more frequent monitoring of IUs that are significant sources may be necessary.

Comment 51

III. EPA must analyze the need for effluent limitations for PFAS and implement necessary effluent limitations.

A NPDES permit may only be issued if the permit “provide[s] for compliance with the applicable requirements of [the] CWA” and its implementing regulations.⁹¹ The CWA establishes that EPA “shall” prescribe “conditions for [NPDES] permits to assure compliance with” specified sections of the CWA, including section 1311.⁹² Section 1311 provides that effluent limitations “shall be applied to all point sources of discharge of pollutants[.]”⁹³ The WWTF’s outfall 001 constitutes a point source under the CWA,⁹⁴ and PFAS constitutes a pollutant.⁹⁵

NPDES permits “shall include conditions meeting” requirements, such as technology-based effluent limitations and standards, “when applicable.”⁹⁶ A facility must disclose pollutants in its permit application for the permit writer to “judge whether the discharge of a particular pollutant constitutes a significant threat to the environment” to inform the permit development process.⁹⁷ The permittee “shall promptly submit” any “facts or information” that it failed to disclose in its permit application.⁹⁸

The City submitted its permit application in 2019; the application did not address PFAS in 2019 or in subsequent years.⁹⁹ The administrative record for this application, therefore, does not include the Manchester Monitoring Data or the Battelle Study data, and EPA failed to analyze the need for PFAS effluent limitations. EPA must consider the two sources of data documenting PFAS pollution at the WWTF—as well as the attached documents detailing WWTF’s past and future acceptance of NCES leachate, the PFAS levels in NCES leachate, and any other data that may be necessary to collect and assess—and, after analysis, set appropriate effluent limitations to control PFAS in the WWTF’s discharges.

91. 40 C.F.R. § 122.4(a), (d).

92. 33 U.S.C. § 1342(a)(2).

93. *Id.* § 1311(e).

94. See *id.* § 1362(4) (defining “point source” as “any discernible, confined and discrete conveyance, including . . . any pipe[.]”)

95. See *id.* § 1362(6); see also 86 Fed. Reg. 14560 (March 17, 2021) (“PFAS compounds fall into the category of nonconventional pollutant[.]”); N.H. Dep’t Env’t Services, Plan to Generate PFAS Surface Water Quality Standards 17 (2019), <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wd-19-30.pdf> (“PFAS would be considered a pollutant[.]”)

96. 40 CFR. § 122.44(a)(1), (d).

97. *Piney Run Pres. Ass’n v. Cnty. Comm’rs of Carroll Cnty.*, 268 F.3d 255, 268 (4th Cir. 2001).

98. 40 C.F.R. § 122.41(l)(8).

99. Manchester WWTF, Permit Application Section 3: Information on Effluent Discharges (Approved Mar. 5, 2019). Though Manchester mentioned its PFAS monitoring program in its

industrial pretreatment program reports submitted to EPA, it did not publish results, and it incorrectly stated that it was monitoring for 16 PFAS compounds. See 2022–2023 IPP Annual Report at 17.

Response 51

EPA is pursuing a rigorous scientific agenda to better characterize toxicities, understand exposure pathways, and identify new methods to avert and remediate PFAS pollution. As with all EPA decisions, decisions regarding PFAS will be grounded in scientific evidence, within the scope of the Agency’s legal authority, and consistent with programmatic procedures. To approach the issue of PFAS both expeditiously and prudently, EPA has developed a PFAS Strategic Roadmap which identifies commitments to action across a number of EPA offices and programs.¹⁸ As just a few examples of water-related commitments, EPA is committed to restricting PFAS discharges from industrial sources through a multi-faceted Effluent Limitations Guidelines program, publishing final recommended ambient water quality criteria for PFAS, and leveraging NPDES permitting to reduce PFAS discharges to waterways. *PFAS Strategic Roadmap*, 13-15. EPA’s Office of Water has issued guidance to further the objectives of the Strategic Roadmap. *E.g. Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs* (Dec. 5, 2022).¹⁹ As described below and elsewhere in this Response to Comments, the PFAS monitoring requirements in this permit conform with EPA guidance and policy objectives, as well as all other governing law. The Fact Sheet also describes EPA’s consideration of PFAS contaminants in this permit. Fact Sheet, 33-35.

The commenter asserts that the Permittee did not submit to EPA with its permit application or at any point thereafter the PFAS monitoring data it has previously collected. Forty C.F.R. § 122.21(j) governs application requirements for new and existing publicly owned treatment works (POTWs). Forty C.F.R. § 122.21(j)(4) describes the effluent monitoring data that applicants must submit to EPA. It instructs applicants to submit data for particular pollutants listed in Appendix J to Part 122 “and for any other pollutants for which the State or EPA have established water quality standards applicable to the receiving waters.” *Id.* (j)(4)(iv). The state of New Hampshire adopted water quality standards for certain PFAS chemicals in February 2025.²⁰ EPA has not approved these standards for purposes of the Clean Water Act. See 40 C.F.R. § 131.21 (requiring EPA to review and either approve or disapprove water quality standards submitted by a State); see also Response 53. The Permittee submitted its permit

¹⁸ https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf

¹⁹ https://www.epa.gov/system/files/documents/2022-12/NPDES_PFAS_State%20Memo_December_2022.pdf

²⁰ On February 25, 2025, NHDES adopted revisions to New Hampshire Code of Administrative Rules Env-Wq 1700 to require the use of the maximum contaminant levels (MCLs) of four PFAS parameters as the Protection of Human Health Water and Fish Ingestion criteria when the surface water is a source for a public water system or is within 20 miles upstream of any active surface water intake for a public water system. The four PFAS parameters are perfluorohexane sulfonic acid (PFHxS), perfluorononanoic acid (PFNA), perfluorooctane sulfonic acid (PFOS), and perfluorooctanoic Acid (PFOA). The Manchester WWTF is located within 20 miles upstream of a drinking water intake, so these MCLs would apply as the surface water quality criteria in the Merrimack River at the location of the Manchester WWTF outfall.

application prior to the state adopting these PFAS criteria. As there was no state- or EPA-approved criteria at the time of application, the Permittee was not required to submit PFAS data with its application.

The application regulations also indicate that EPA “should require sampling for additional pollutants, as appropriate, on a case-by-case basis.” 40 C.F.R. § 122.21(j)(4)(v). In this case, EPA is not exercising its discretion to require the permittee’s prior sampling results for PFAS contaminants. EPA’s national approach to PFAS regulations is to use Method 1633 for the collection of consistent data to ensure that permitting decisions are based on consistent, verified and robust datasets. Given that Method 1633 was not fully multi-lab validated until January 2024, any data collected before this time would not be consistent with EPA’s national approach. See also Response 87.

Even if the permittee submitted PFAS monitoring data, it would not result in an effluent limitation for the reasons described in subsequent responses to this commenter’s comments. Additionally, EPA notes that the commenter submitted the “Battelle study” and “City of Manchester WWTF PFAS Monitoring Reports (2019–23)” as attachments to its public comments, and these data are therefore already part of the administrative record for this proceeding.²¹ This data does not result in any changes to the draft permit because, as described next, there are neither technology-based requirements nor state water quality standards for PFAS contaminants. However, EPA will consider it, as appropriate, along with the data collected pursuant to the new PFAS monitoring requirements in the permit, in future permit reissuances.

Regarding the commenter’s request that EPA analyze and set appropriate effluent limitations to control PFAS in the WWTF’s discharges, see Responses 52 and 53.

Comment 52

EPA must analyze the need for technology-based effluent limitations and should implement technology-based effluent limits in the final permit.

EPA must analyze the need for technology-based effluent limitations (“TBELs”) for PFAS; after consideration, EPA should implement TBELs. TBELs are the “minimum level of control that must be imposed in a” NPDES permit.¹⁰⁰ When “EPA-promulgated effluent limitations are inapplicable,” permit writers may establish effluent limitations on a “case-by-case basis[.]”¹⁰¹ Technology-based standards are “based on how effectively technology can reduce the pollutant being discharged.”¹⁰² In setting case-by-case technology-based limits, the permit writer considers the “appropriate technology for the category or class of point sources” and any “unique factors” for the prospective permittee.¹⁰³

²¹ See 40 C.F.R. 122.21(j) (“The Director may waive any requirement of this paragraph if he or she has access to substantially identical information.”)

EPA has recently evaluated the effectiveness and commercial availability of PFAS removal technologies in finalizing drinking water standards for six PFAS under the SDWA.¹⁰⁴ Under the SDWA, EPA designated Granular Activated Carbon (“GAC”), Ion Exchange (“IX”), and Reverse Osmosis (“RO”) and Nanofiltration (“NF”) as Best Available Technologies (“BATs”).¹⁰⁵ In promulgating final drinking water standards for six PFAS compounds, EPA referenced the reliable and high removal efficiencies (greater than 99 percent), and “reasonable” cost.¹⁰⁶

The PFAS removal technologies designated as BATs under the SDWA can be used to remove many PFAS from water to nondetectable levels¹⁰⁷—i.e., below the detectable levels measured in the Battelle Study and the Manchester Monitoring data. Given that TBELs are the “minimum” level of control required under the CWA and that the CWA is a technology-forcing statute,¹⁰⁸ EPA should consider developing TBELs for all PFAS compounds for which treatment technologies, including but not limited to GAC, IX, or RO/NF, could achieve significant PFAS reductions.

100. 40 C.F.R. § 125.3(a).

101. *Id.* §§ 122.44(a)(1), 125.3(c)(2).

102. Nat. Res. Def. Council v. U.S. E.P.A., 808 F.3d 556, 563 (2d Cir. 2015).

103. 40 C.F.R. § 125.3(c)(2).

104. 89 Fed. Reg. 32532, 32622 (April 26, 2024).

105. *Id.*

106. *Id.* at 32575. See also Env’t Prot. Agency, Best Available Technologies and Small System Compliance Technologies for Per- and Polyfluoroalkyl Substances (PFAS) in Drinking Water at 33 (2024) (analyzing the removal efficiencies, reliability, operational capacity, and state of the research on GAC, IX, and RO/NF PFAS removal technologies and concluding that all three technologies are “potential BAT.”)

107. See 89 Fed. Reg. 32532, 32622 (April 26, 2024).

108. Nat. Res. Def. Council v. U.S. E.P.A., 808 F.3d 556, 563–64 (2d Cir. 2015) (“Congress designed this [technology-based effluent limitation] standard to be technology-forcing, meaning it should force agencies and permit applicants to adopt technologies that achieve the greatest reductions in pollution.”)

Response 52

The commenter makes several requests regarding technology-based effluent limitations (TBELs). CWA § 301(b)(1)(B) defines the scope of TBELs for POTWs: “effluent limitations based upon secondary treatment as defined by the Administrator pursuant to [CWA § 304(d)(1)].” See *also* 40 C.F.R. § 125.3(a)(1) (TBELs for POTWs are based upon secondary treatment). As described in the Fact Sheet, secondary treatment standards are codified in 40 C.F.R. Part 133 and include requirements in terms of biochemical oxygen demand (BOD₅), total suspended solids (TSS), and pH. Fact Sheet, 5; see 40 C.F.R. Part 133. None of the requirements at Part 133 require TBELs to address PFAS contaminants. To the extent the commenter is requesting EPA update Part 133 to include PFAS TBELs for POTWs, this is beyond the scope of the current permit proceeding.

The commenter requests EPA set a case-by-case technology-based effluent limit for PFAS contaminants under 40 C.F.R. § 125.3(c)(2), which says:

On a case-by-case basis under section 402(a)(1) of the Act, to the extent that EPA-promulgated effluent limitations are inapplicable. The permit writer shall apply the appropriate factors listed in § 125.3(d) and shall consider:

- (i) The appropriate technology for the category or class of point sources of which the applicant is a member, based upon all available information; and
- (ii) Any unique factors relating to the applicant.

As a threshold matter, the procedure cited by the commenter is not relevant to POTWs. EPA has established TBELs for POTWs pursuant to 40 C.F.R. § 125.3(a)(1) and thus “EPA-promulgated effluent limitations” are not “inapplicable.” 40 C.F.R. § 125.3(c)(2). *Natural Resources Defense Council v. EPA*, 822 F.2d 104, 111 (D.C. Cir. 1987) (“If no national standards have been promulgated for a particular category of point sources, the permit writer is authorized to use, on a case-by-case basis... impose ‘such conditions as the permit writer determines are necessary to carry out the provisions of [the Clean Water Act.]’”); *e.g. In re Scituate Wastewater Treatment Plant*, 12 E.A.D. 708, 712 n.1 (EAB 2006) (“In some cases, no industry-specific effluent limitations guidelines exist. In those instances, permit issuers must use their ‘best professional judgment’ to establish appropriate technology-based effluent limitations on a case-by-case basis.”); *see also In re Arizona Public Service Co.*, 18 E.A.D. 245, 291-292 (EAB 2020) (“...the statute states that the Administrator may impose such conditions ‘as the Administrator determines are necessary’ to carry out the provisions of the [CWA], giving the Administrator discretion in the implementation of this authority.”) (citations omitted).

EPA guidance also reflects that case-by-case TBELs are inappropriate for POTWs. NPDES Permit Writers Manual, pg. 5-44 – 5-45 (indicates that case-by-case TBELs are appropriate “for [certain] **industrial** dischargers”, *i.e.* “where EPA-promulgated effluent guidelines are not applicable to a **non-POTW** discharge...” (emphases added); *see also id.* at 5-48 (“The permit writer also should document the rationale for concluding that there are no applicable effluent guidelines for the **industrial** wastewater or pollutant discharge.”) (emphasis added). Similarly, EPA guidance addressing PFAS in NPDES Permits contemplates the option to develop site-specific TBELs for PFAS discharges only for appropriate industrial facilities, not for POTWs. *Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs* (Dec. 2022), 3-4 (recommends site-specific TBELs for applicable industrial direct dischargers, not for POTWs); *PFAS Strategic Roadmap*, 13- 14 (“Restrict PFAS discharges from **industrial sources** through...Effluent Limitations Guidelines.... EPA is taking a proactive approach to restrict PFAS discharges from multiple **industrial** categories.”) (emphases added).

Finally, the commenter references Best Available Technologies for PFAS under the Safe Drinking Water Act and suggests EPA might apply them as TBELs for POTWs. EPA notes that drinking water technology and wastewater technology are [often] different. Although a Safe Drinking Water Act MCL may be a relevant data point for developing CWA effluent limitations, MCLs are developed for different purposes than CWA effluent

limitations and do not automatically represent an appropriate TBEL for CWA purposes. *In re Phelps Dodge Corporation, Verde Valley Ranch Development*, 10 E.A.D. 460, 516 (EAB 2002) (“[petitioner] offers no support for its novel theory that drinking water standards set in accordance with the [SDWA] should have been used by [the Region] to establish storm water pollution controls or limits for the [NPDES permit]. We are aware of nothing in federal statutes, regulations, or common law that would dictate this use of SDWA standards, and no such authority has been pointed out to us.”).

For all of these reasons, the comment does not result in any changes to the Final Permit.

Comment 53

EPA must analyze the need for water quality-based effluent limitations and should implement water quality-based effluent limitations in the final permit.

EPA must analyze the need to establish water quality-based effluent limits (“WQBELs”) for PFAS at the Manchester WWTF. A permit may not be issued if its provisions “cannot ensure compliance with the applicable water quality requirements of all affected States.”¹⁰⁹ EPA’s regulations require a WQBEL to control pollutants that “are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.”¹¹⁰ To analyze whether the source has reasonable potential, EPA considers whether the “discharge, alone or in combination with other sources . . . could lead to an excursion above an applicable water quality standard.”¹¹¹

According to EPA’s NPDES Permit Writers’ Manual, “pollutants of concern,” which are “candidates for WQBELS,” consist of “any pollutants identified as present in the effluent through effluent monitoring,” including data from “special studies” or “compliance inspection monitoring.”¹¹² PFAS are consistently “present in the effluent”¹¹³ of the Manchester WWTF, as made clear by the WWTF Monitoring Data and the Battelle Study data. Thus, EPA has the responsibility to analyze whether the Manchester WWTF’s PFAS discharges *could contribute* (not just whether they actually cause) the violation of state water quality standards and, if such potential exists, establish a WQBEL to ensure against water quality standard violations.¹¹⁴ Specifically, EPA must analyze whether the City’s discharges “may . . . have the reasonable potential to cause, or contribute to”¹¹⁵ violations of New Hampshire’s narrative standards for toxics, and its standards protecting designated uses.

109. 40 CFR. § 122.44(a), (d).

110. 40 C.F.R. § 122.44(d)(1)(i).

111. Env’t Prot. Agency, Off. of Wastewater Mgmt., NPDES Permit Writers’ Manual (EPA-833-K-10-001) at 6-23 (2010), https://www3.epa.gov/npdes/pubs/pwm_2010.pdf.

112. *Id.* at 6-15.

113. *Id.*

114. *Id.*; 40 C.F.R. § 122.44(d)(1)(i).

115. 40 C.F.R. § 122.44(d)(1)(i).

Response 53

When TBELs alone are insufficient to maintain or achieve compliance with state water quality standards, NPDES permits must also include water quality-based effluent limitations (WQBELs). CWA § 301(b)(1)(C); 40 C.F.R. § 122.44(d). To determine whether a WQBEL is necessary, EPA calculates – using available data and/or best professional judgment – whether a permittee’s discharge has the reasonable potential to cause or contribute to a violation of state water quality standards. 40 C.F.R. § 122.44(d)(1). Water quality standards include three components: (1) “water quality criteria,” expressed in numeric or narrative form, specifying the quantities of various pollutants that may be present in the water body without impairing the designated uses; (2) an “antidegradation” provision that protects existing uses and high-quality waters. See CWA § 303(c)(2)(A), 33 U.S.C. § 1313(c)(2)(A); 40 C.F.R. §§ 131.10-12; and (3) the “designated uses” of a water body, such as public drinking supply, recreation, or wildlife habitat.²² EPA’s consideration of each of these three components is summarized below:

(1) Numeric and narrative Water Quality Criteria:

At this time, New Hampshire does not have EPA-approved surface water quality criteria for any PFAS contaminants. On February 25, 2025, NHDES adopted revisions to New Hampshire Code of Administrative Rules Env-Wq 1700 to require the use of the maximum contaminant levels (MCLs) of four PFAS parameters as the Protection of Human Health Water and Fish Ingestion criteria when the surface water is a source for a public water system or is within 20 miles upstream of any active surface water intake for a public water system. The four PFAS parameters are perfluorohexane sulfonic acid (PFHxS), perfluorononanoic acid (PFNA), perfluorooctane sulfonic acid (PFOS), and perfluorooctanoic Acid (PFOA). The Manchester WWTF is located within 20 miles upstream of a drinking water intake, so these MCLs would apply as the surface water quality criteria in the Merrimack River at the location of the Manchester WWTF outfall. Nevertheless, as described elsewhere in this Response to Comments, NPDES permits are written to ensure compliance with *EPA-approved* water quality standards. See Response 12. As laid out in 40 C.F.R. Part 131, Subpart C, a state’s adoption of standards is only the first step in this process. Following that, the state submits the standards to the EPA Regional Administrator for review and approval. 40 C.F.R. §§ 131.20(c), 131.21. The regulations are very clear that if “a state... adopts a water quality standard that goes into effect under state... law on or after May 30, 2000” then “once EPA approves that water quality standard, it becomes the applicable water quality standard for purposes of the Act.” 40 C.F.R. § 131.21(c); *see also In re City of Keene*, 18 E.A.D. 749, 752 (EAB 2022) (“...the Region is required to devise effluent limits to comply with existing [EPA-approved] state water quality standards, even if those state standards may be revised at some point in the future...”).

²² “In addition to the three required components of water quality standards, states may, at their discretion, include in their standards policies that generally affect how the standards are applied or implemented.” NPDES Permit Writers’ Manual, pg. 6-9.

On October 7, 2024, EPA published in the Federal Register Final Recommended Aquatic Life Criteria and Benchmarks for Select PFAS. 89 Fed. Reg. 81077 (Oct. 7, 2024).²³ As described in Responses 12 and 21, EPA-recommended criteria are not equivalent to duly enacted and approved state water quality criteria, and EPA writes permits to comply with the latter, not the former. Because there is no state water quality criterion for PFAS at this time, there is necessarily no reasonable potential for the Permittee's discharge to cause or contribute to a violation of it.

In instances where a state does not have a numeric criterion for a specific pollutant, state narrative criteria can, if appropriate, be the basis for limiting the discharge of that pollutant. 40 C.F.R. § 122.44(d)(1)(vi), NPDES Permit Writers' Manual, pg. 6-8. The commenter requests EPA consider New Hampshire's narrative standards for toxics. As described in the Fact Sheet (pg. 31-33), Env-Wq 1703.21 states:

- (a) Unless naturally occurring or allowed under Env-Wq 1707, all surface waters shall be free from toxic substances or chemical constituents in concentrations or combinations that:
 - (1) Injure or are inimical to plants, animals, humans or aquatic life; or
 - (2) Persist in the environment or accumulate in aquatic organisms to levels that result in harmful concentrations in:
 - a. Edible portions of fish, shellfish, other aquatic life, or
 - b. Wildlife that might consume aquatic life.

Although New Hampshire has updated the table accompanying this standard, Table 1703-1, Water Quality Criteria For Toxic Substances, to include MCLs for four PFAS chemicals in certain instances applicable to the Permittee, EPA has not approved these standards, and, as described previously, only EPA-approved standards apply. EPA also notes that it has not included any PFAS chemicals on the list of toxic pollutants under CWA § 307(a). See 40 C.F.R. § 401.15 (list of toxic pollutants, no PFAS listed); 40 C.F.R. Part 423, Appendix A (list of 126²⁴ priority / toxic pollutants promulgated under CWA § 307(a), no PFAS listed);²⁵ see also CWA § 502(13) (defining "toxic pollutant");²⁶ Permit Part II Standard Conditions pg. 18 ("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.").

In any event, as described in the Fact Sheet, EPA has chosen a Whole Effluent Toxicity (WET) approach to ensure the permittee's discharge does not violate this narrative water quality criterion. Fact Sheet, 31-32 ("The inclusion of WET requirements in the ... Permit will assure that the Facility does not discharge combinations of pollutants into

²³ See also 89 Fed. Reg. 89636 (Nov. 13, 2024) (correction to a certain table in the previous publication).

²⁴ "Note that the list goes up to 129; however, there are only 126 priority pollutants because 017, 049, and 050 were deleted." NPDES Permit Writers' Manual, pg. 1-4.

²⁵ See also <https://www.epa.gov/eg/toxic-and-priority-pollutants-under-clean-water-act> for general information about Toxic and Priority Pollutants under the Clean Water Act.

²⁶ The state water quality standards do not define the term "toxic substances." See Env-Wq Part 1702, Definitions.

the receiving water in amounts that would be toxic to aquatic life or human health.”); *see also NPDES Permit Writers’ Manual*, pg. 6-11 – 6-12 (“Effluent limitations... may be based on a parameter-specific approach or a WET testing approach to implementing water quality standards” and “The WET approach is useful [for example] ... where it might be infeasible to identify and regulate all toxic pollutants in the effluent.”).

(2) Anti-degradation:

States must develop an antidegradation policy consistent with 40 C.F.R. § 131.12. Antidegradation policies can play a critical role in helping states protect a water whose quality is better than established criteria levels. *NPDES Permit Writers’ Manual*, pg. 6-8. The New Hampshire Antidegradation Policy specifies that a “proposed discharge or activity that would cause a significant change in water quality” should, generally, not be approved. Env-Wq 1708.01(b)(1). It defines “significant degradation” as discharges “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.” Env-Wq 1708.09(a). *See also* Fact Sheet, 6. Also under the state Policy, “Remaining assimilative capacity [is] evaluated by comparing existing water quality... to the state’s water quality criteria.” Env-Wq 1708.08(d). Because there is no applicable water quality criterion for PFAS, there necessarily could not be a significant degradation on the basis of PFAS pollutants. The antidegradation policy also specifies that “[e]xisting uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.” Env-Wq 1708.01(a). As described in the Fact Sheet, the Permit, as a whole “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.” Fact Sheet, 7.

(3) Designated uses:

See Response 54.

Finally and as an overarching point, EPA notes that for each EPA-issued NPDES permit, 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 including state water quality standards, the state should include such conditions in its certification of the permit. Here, the state has not included an effluent limit for any PFAS contaminants, indicating that the state agrees such effluent limits are not necessary to meet the requirements of state law. See also Response 55.

As described in Response 56, because numeric criteria for PFAS may take effect during this permit term, EPA may choose to reopen and modify or reissue the permit to include effluent limits for PFAS if (1) EPA develops and finalizes federal effluent limitations guidelines for POTWs for PFAS or promulgates, pursuant to CWA § 303(c)(4)(B), water

quality criteria for PFAS, or if (2) EPA approves New Hampshire surface water quality standards for PFAS.

In any event, the data gathered from the permit's monitoring and reporting requirement may also inform broader-scale EPA actions, such as EPA's objective to develop national recommended ambient water quality criteria for PFAS to protect aquatic life and human health. *PFAS Strategic Roadmap*, 15. Such recommended criteria may be used by New Hampshire or other states in developing Water Quality Standards.

Given that there are no surface water quality criteria for PFAS, EPA has no way to determine whether a given level of PFAS causes or contributes to a violation of the narrative standards for toxics. EPA is working toward development of criteria and will be able to conduct such an analysis once criteria are established.

Comment 54

EPA must consider, at a minimum, state water quality standards pertaining to toxics and designated uses.

At least two of New Hampshire's state water quality standards are directly implicated by the WWTF's discharges of PFAS and must be considered.

First, New Hampshire's surface water quality standards include narrative standards for toxic substances. Specifically, Rule Env-Wq 1703.21(a) provides:

(a) Unless naturally occurring or allowed under [a mixing zone regulation], all surface waters shall be free from toxic substances or chemical constituents in concentrations or combinations that:

- (1) Injure or are inimical to plants, animals, humans or aquatic life; or
- (2) Persist in the environment or accumulate in aquatic organisms to levels that result in harmful concentrations in:
 - a. Edible portions of fish, shellfish, other aquatic life, or
 - b. Wildlife that might consume aquatic life.¹¹⁶

Second, under Env-Wq 1703.01(b), "[a]ll surface waters shall be restored to meet the water quality criteria for their designated classification including existing and designated uses."¹¹⁷ To protect human health, all surface waters, including the Merrimack River, have "fish consumption" as a designated use.¹¹⁸ Protecting a surface water for fish consumption means that the "surface water can support a population of fish free from toxicants and pathogens that could pose a human health risk to consumers[.]"¹¹⁹

New Hampshire's designated uses also protect aquatic life. Pursuant to Env-Wq 1703.01(c), "[a]ll surface waters shall provide, wherever attainable, for the protection and propagation of

fish, shellfish and wildlife, and for recreation in and on the surface waters.”¹²⁰ The Merrimack River is designated as a Class B water, and subject to the statutory requirement that “disposal of sewage or waste [shall not] be inimical to aquatic life or to the maintenance of aquatic life.”¹²¹

116. N.H. Code Admin. R. Env-Wq § 1703.21(a).

117. 1 Id. § 1703.01(b).

118. 1 N.H. Dep’t Env’t Servs., Section 305(b) and 303(d) Consolidated Assessment and Listing Methodology (R-WD-20-20) at 10 (2022), <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wd-20-20.pdf>.

119. 1 Id.

120. 1 N.H. Code Admin. R. Env-Wq § 1703.01(c).

121. N.H. Rev. STAT. ANN. 485-A:8 (II); Draft Permit Fact Sheet at 16.

Response 54

Regarding the state narrative standard for toxics, see Response 53.

As described on pages 5-6 of the Fact Sheet, state law specifies different water body classifications, each of which is associated with certain designated uses. The commenter requests EPA consider these designated use water quality standards.

The state has classified the Merrimack River as a Class B water. Fact Sheet, 16. The designated uses for Class B waters include “fishing, swimming and other recreational purposes and, after adequate treatment, for use as water supplies.” RSA 485-A:8:II; *see also* Env-Wq 1703.01(c) (“All surface waters”, *i.e.*, including Class B waters, “shall provide, wherever attainable, for the protection and propagation of fish, shellfish and wildlife, and for recreation in and on the surface waters.”). To protect these designated uses, state water quality standards require:

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.

RSA 485-A:8:II. Fact Sheet, 16.

The commenter references the state's description of the "fish consumption" designated use contained in the 2020/2022 Section 305(b) and 303(d) Consolidated Assessment and Listing Methodology ("CALM").²⁷ That is: "The surface water can support a population of fish free from toxicants and pathogens that could pose a human health risk to consumers." CALM, Pg. 10.

The receiving water is impaired for the fish consumption designated use due to mercury. Fact Sheet, 17. At this time, the state has not made a determination that the receiving water is impaired for fish consumption due to PFAS. EPA notes again that although the state has adopted WQS for four PFAS chemicals, EPA has not approved those standards. See Response 53.

EPA agrees that PFAS may pose risks to human health and aquatic life. As described elsewhere, the data gathered in accordance with the permit's monitoring requirements will help EPA to better understand these risks and take future action, if appropriate, to reduce those risks. If, for example, the state determines that the receiving water is impaired for a designated use due to PFAS, or if EPA approves the state's water quality criteria for PFAS, EPA will consider the available data and/or use best professional judgment to determine if there is reasonable potential for the discharge to cause or contribute to a violation of the designated use standards or any other applicable water quality standard and, if so, propose an appropriate effluent limitation.

EPA notes, as it did in Response 53, that for each EPA-issued NPDES permit, 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 including state water quality standards, the state should include such conditions in its certification of the permit. Here, the state has not included an effluent limit for any PFAS contaminants, indicating that the state agrees such effluent limits are not necessary to meet the requirements of state law. See also Response 55.

Comment 55

EPA must perform a reasonable potential analysis using available PFAS data, which likely require the establishment of WQBELs for PFAS.

Permit writers can use both "effluent and receiving water data and modeling techniques" to conduct a reasonable potential analysis.¹²² According to EPA's Central Tenets of the NPDES Permitting Program, "[w]here valid, reliable, and representative effluent data or instream

²⁷ Available at: <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wd-20-20.pdf>

background data are available they MUST be used in applicable reasonable potential and limits derivation calculations. Data may not be arbitrarily discarded or ignored.”¹²³ EPA must therefore use the Manchester Monitoring Data, the Battelle Study data, the NCES leachate PFAS sampling data¹²⁴, the fish sampling data discussed below, and any other available “representative”¹²⁵ data to consider the WWTF’s reasonable potential to violate New Hampshire’s water quality standards pertaining to toxics and designated uses. EPA may use that data in conjunction with modeling methodologies if necessary.

Both the narrative toxics and the designated use provisions require water quality that is safe for human health¹²⁶ and aquatic life.¹²⁷ The compounds detected in Manchester WWTF’s effluent are toxic, injurious, and inimical to humans and animals.

The Manchester Monitoring Data shows that Manchester’s discharges consistently contain PFOA, PFOS, and PFHxS.¹²⁸ And while the WWTF’s monthly monitoring reports only measure four compounds, the Battelle Study demonstrates that Manchester’s discharges contain at least twelve additional compounds: PFBA; PFPeA; PFHxA; PFHpA; PFNA; PFDA; PFBS; NMeFOSAA; NEtFOSAA; 6:2 FTS; 8:2 FTS; HFPO-DA (GenX).¹²⁹ The WWTF’s discharges most likely contain additional PFAS compounds that neither the WWTF monitoring data nor the Battelle Study measured.

In 2024, in proposing to designate nine PFAS compounds as constituents under RCRA, EPA stated that PFOA, PFOS, PFHxS, PFBS, GenX, PFNA, PFDA, PFHxA, and PFBA “have toxic effects on humans or other life forms.”¹³⁰ All nine compounds that EPA labeled toxic in the RCRA proposal have been detected in the WWTF’s discharges to the Merrimack River. Other PFAS and precursors detected in the WWTF’s effluent in the Battelle Study but not addressed in EPA’s proposed rule—PFPeA, PFHpA, 6:2 FTS, and 8:2 FTS—are also associated with toxic health effects and/or break down into PFAS with known toxic effects.¹³¹

In addition to being toxic, injurious, and inimical to humans and animals on their own, EPA and scientific literature have made clear that many PFAS persist in the environment and bioaccumulate in edible fish tissue. In establishing interim and final health advisories under the SDWA, EPA stated that “[m]any PFAS are environmentally persistent, bioaccumulative, and have long halflives in humans[.]”¹³² In designating PFOA and PFOS “hazardous substances” under CERCLA, EPA stated that evidence “indicated that PFOA and PFOS are persistent in the environment and that they bioaccumulate in both humans and wildlife.”¹³³

Evidence suggests that bioaccumulation of PFAS, particularly PFOS, in fish in the Merrimack River, results in “harmful concentrations” of these chemicals in “[e]dible portions of fish,”¹³⁴ in violation of the narrative toxics standard, and could “pose a human health risk to consumers,” in violation of the fish consumption designated use.¹³⁵ As noted above, consuming just one serving of freshwater fish with 8.41 parts per billion (ppb) PFOS has the same negative health impacts as drinking water with 48 ppt PFOS (2,400 times higher than EPA’s health advisory level for PFOS) for an entire month.¹³⁶ One sampling program, conducted by Harvard researchers for a peer-reviewed study (the Pickard Study), gathered fish samples in 2017 and labeled some as

being from the Merrimack River, in locations downstream from the City's WWTF.¹³⁷ All samples had PFAS in their edible muscle tissue.¹³⁸

PFOS in the Pickard Study fish samples described as being from the Merrimack River ranged from .205 ppb (25 compounds, brown bullhead) to 7.914 ppb (37 compounds, largemouth bass).¹³⁹ The highest PFOS measurement, 7.914 ppb, closely approaches the 8.41 ppb level at which eating one standard serving of fish is equivalent to drinking water at 48 ppt for an entire month. Total PFAS levels ranged from 1.249 ppb (25 compounds, brown bullhead) to 17.819 ppb (37 compounds, largemouth bass).¹⁴⁰ Given that the WWTF has discharged PFOS and other PFAS chemicals into the Merrimack River since the WWTF monitoring began in 2019 and likely since a much earlier time, the WWTF "may" be contributing to those harmful concentrations,¹⁴¹ which most likely violate Env-Wq 1703.21(a)(2)(a) and Env-Wq 1703.01(b). Thus, a WQBEL is needed to ensure compliance with water quality standards.

In addition to using PFAS discharge data and fish sampling data, EPA also can use modeling to determine whether the WWTF's discharges "may" present the "reasonable potential to cause, or contribute to"¹⁴² a violation of New Hampshire's narrative toxics standard and designated use provisions.¹⁴³ One peer-reviewed study (the Massarsky Study) established a modeling methodology that uses "two publicly available modeling tools"—the Ecological Structural Activity Relationships program and the Exposure and Fate Assessment Screening Tool—to (1) estimate environmental concentrations of PFAS and (2) assess toxicity.¹⁴⁴ The modeling method can be used "for screening-level assessments of PFAS that have been detected within wastewater but not measured in the environment."¹⁴⁵ EPA should supplement the Massarsky Study methodology with the WWTF's actual PFAS discharge data and use it to conduct a reasonable potential analysis.¹⁴⁴

By estimating environmental concentrations in surface water and ecotoxicity, the Massarsky Study modeling method would also allow EPA to assess whether the WWTF "may" be contributing to an "excursion" of the narrative toxics standard's protections for aquatic life and the designated uses for "Aquatic Life Integrity" and "Wildlife."¹⁴⁶

122. Env't Prot. Agency, Off. of Wastewater Mgmt., NPDES Permit Writers' Manual (EPA-833-K-10-001) at 6-23 (2010), https://www3.epa.gov/npdes/pubs/pwm_2010.pdf.

123. EPA, Central Tenets of the National Pollutant Discharge Elimination System (NPDES) Permitting Program 3, <https://www3.epa.gov/npdes/pubs/tenets.pdf>.

124. *Id.*

125. See N.H. Code Admin. R. Env-Wq § 1703.21(a) (establishing narrative toxics standard); *id.* § 1703.01(b) (protecting designated uses); N.H. Dep't Env't Servs., Section 305(b) and 303(d) Consolidated Assessment and Listing Methodology (R-WD-20-20) at 10 (2022) (designating "[a]ll surface waters" for fish consumption and potential drinking water supply.)

126. See N.H. CODE ADMIN. R. ENV-WQ § 1703.21(a); *id.* § 1703.01(b)-(c) (protecting designated uses and requiring waters to support "protection and propagation of fish"); N.H. DEP'T ENV'T SERVS., SECTION 305(B) AND 303(D) CONSOLIDATED ASSESSMENT AND LISTING METHODOLOGY (R-WD-20-20) at 10 (2022) (designating "[a]ll surface waters" for aquatic life integrity and wildlife.)

127. City of Manchester WWTF PFAS Monitoring Reports (2019–23).

128. Battelle Study Supporting Information, at tbl. S12.
129. 89 Fed. Reg. 8606, 8615 (Feb. 8, 2024).
130. Lisa M. Weatherly et al., Systemic Toxicity Induced by Topical Application of Perfluoroheptanoic Acid (PFHpA), Perfluorohexanoic Acid (PFHxA), and Perfluoropentanoic Acid (PFPeA) in a Murine Model, 171 Food & Chem. Toxicology 113515, 113515 (2023) (documenting “systemic toxicity and immunological disruption” from PFHpA, PFHxA and PFPeA, including impacts to liver, skin, metabolism, tissue damage, and inflammation.); Nan Sheng et al., *Comparative Hepatotoxicity of 6:2 Fluorotelomer Carboxylic Acid and 6:2 Fluorotelomer Sulfonic Acid, Two Fluorinated Alternatives to Long-chain Perfluoroalkyl Acids, on Adult Male Mice*, 91 Archives of Toxicology 2909, 2909 (2017) (finding that 6:2 FTS caused “liver weight increase, inflammation, and necrosis” in mice); Kavitha Dasu et al., Aerobic soil biodegradation of 8:2 fluorotelomer stearate monoester, 46 Env’t Sci. & Tech. 3831, 3831 (2012) (suggesting that 8:2 FTS breaks down into PFOA).
131. 87 Fed. Reg. 36848, 36849 (June 21, 2022).
132. 89 Fed. Reg. 39,124, 39139 (May 8, 2024).
133. N.H. Code Admin. R. Env-Wq § 1703.21(a)(2)(a).
134. *Id.* § 1703.01(b); Consolidated Assessment and Listing Methodology, R-WD-20-20 at 10 (2022).
135. Barbo et al., *supra* note 5, at 6.
136. See Heidi M. Pickard et al., *PFAS and Precursor Bioaccumulation in Freshwater Recreational Fish: Implications for Fish Advisories*, 56 Env’t Sci. & Tech. 15573 (2022) (attached as Exhibit W); see also Heidi M. Pickard et al., Supporting Information for PFAS and Precursor Bioaccumulation in Freshwater Recreational Fish: Implications for Fish Advisories S-2–S-3 (2022), https://pubs.acs.org/doi/suppl/10.1021/acs.est.2c03734/suppl_file/es2c03734_si_001.pdf [hereinafter Pickard et al. Supporting Information] (attached as Exhibit X) (Fish Concentrations Table S16 attached as Exhibit Y) (Water Concentrations Table S17 attached as Exhibit Z).
137. Pickard et al. Supporting Information, at S2–S3, TS16 (Fish Concentrations Table, Locations 5 and 6).
138. *Id.*
139. *Id.*
140. See 40 C.F.R. § 122.44(d)(1)(i).
141. *Id.*
142. Env’t Prot. Agency, Off. of Wastewater Mgmt., NPDES Permit Writers’ Manual (EPA-833-K-10-001) at 6-23 (2010), https://www3.epa.gov/npdes/pubs/pwm_2010.pdf.
143. See Andrey Massarsky et al., Critical Evaluation of ECOSAR and E-FAST Platforms to Predict Ecological Risks of PFAS, 8 Env’t Advances 1, 1 (2022) (attached as Exhibit AA).
144. *Id.* at 12.
145. *Id.* (“If monitoring data are available, the data should be used in lieu of [estimated environmental concentrations]”)
146. 40 C.F.R. § 122.44(d)(1)(i); See N.H. Code Admin. R. Env-Wq § 1703.21(a); *id.* § 1703.01(b)-(c) (protecting designated uses and requiring waters to support “protection and propagation of fish”); N.H. Dep’t Env’t Servs., Section 305(b) and 303(d) Consolidated Assessment and Listing Methodology (R-WD-20-20) at 10 (2022) (designating “[a]ll surface waters” for aquatic life integrity and wildlife.)

Response 55

A “reasonable potential analysis” refers to the permit writer’s determination of whether a pollutant or pollutant parameter “[is] or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.” 40 C.F.R. §

122.44(d)(1)(i). If the permitting authority determines that the discharge of a pollutant will cause, has the reasonable potential to cause, or contribute to an excursion above WQSs, the permit must contain WQBELs for that pollutant. See 40 C.F.R. § 122.44(d)(1)(i); Fact Sheet, 8; *see also* NPDES Permit Writers' Manual, pg. 6-23.

To conduct a reasonable potential analysis, a permit writer needs an applicable water quality standard. As described in Responses 51-53, there is currently no EPA-approved state WQS for PFAS. Therefore, because there is no standard to apply, even with the data referenced by the commenter, EPA is unable to conduct a reasonable potential analysis at this time.

However, EPA notes that the state, as part of its 401 water quality certification process, conducted a reasonable potential analysis using recent state-adopted (but not EPA-approved) PFAS MCLs. In their response to comments document, NHDES concluded that "The results of this evaluation... show that the Manchester WWTF's discharge does not have reasonable potential to cause or contribute to an exceedance of the four PFAS water quality criteria in the receiving water, and the permit, as currently written, will ensure that the discharge will comply with New Hampshire's surface water quality standards."²⁸ EPA concurs with NHDES's analysis and conclusion which provides additional support that effluent limits for PFAS are not necessary in this permit to protect water quality standards at this time.

See Response 53 regarding possible changes in PFAS standards and subsequent possible modification of the permit.

Comment 56

EPA should use "peer-reviewed scientific literature," "site-specific surveys and data" from the Manchester WWTF and the Merrimack River, and New Hampshire's prospective surface water quality standards for PFAS to calculate numeric WQBELs for PFAS.

Based on the discussion above, EPA's analysis will likely find that the WWTF's PFAS discharges "may . . . have the reasonable potential to cause, or contribute to an excursion above" New Hampshire's narrative standard for toxics and the provisions protecting designated uses—and thus, that WQBELs for PFAS are required.¹⁴⁷ EPA may develop the WQBELs based on a "calculated numeric criterion for the pollutant[s] which the permitting authority demonstrates will attain and maintain" the narrative water quality criteria in Env-Wq 1703.21(a) and Env-Wq 1703.01(b).¹⁴⁸ In establishing WQBELs for PFAS, EPA may not consider "treatability" or "analytical detection levels," but rather must focus on limits that will protect water quality.¹⁴⁹

EPA has previously translated narrative water quality criteria for phosphorous into numeric effluent limits for the Manchester WWTF, as detailed in the Draft Permit's Fact Sheet.¹⁵⁰ In doing so, "EPA looks to a wide range of materials, including nationally recommended criteria

²⁸ See page 6, available at : <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/wqc2025-nh0100447-rtc.pdf>

and other relevant materials, such as . . . peer-reviewed scientific literature and site-specific surveys and data to determine instream targets that are protective of water quality.”¹⁵¹ In the context of PFAS, EPA has access to site-specific data (the Battelle Study and Manchester Monitoring Report), EPA’s preambles and scientific literature supporting its final and proposed rules for PFAS under CERCLA, SDWA, and RCRA, and numerous other peer-reviewed scientific articles (including those cited in and attached to these comments).

EPA’s regulations also specify that the numeric limits calculated to protect water quality “may be derived using a proposed State criterion[.]”¹⁵² Thus, in addition to considering the above, in setting a WQBEL for PFAS for the Manchester WWTF, EPA should account for NH’s draft surface water quality criteria for PFAS, released in 2023 as a draft for stakeholder review.¹⁵³ The prospective surface water quality criteria are: 12 ppt PFOA, 15 ppt PFOS, 18 ppt PFHxS, and 11 ppt PFNA for sources “within 20 miles upstream of any active surface water intake for a public water system.”¹⁵⁴ As the Manchester WWTF is within 20 miles upstream from Pennichuck Water Works,¹⁵⁵ NH’s surface water quality standards for PFAS will apply to the Manchester WWTF when finalized.

If EPA does not include effluent limits for PFAS in the Draft Permit, EPA should at the very least include a reopener provision providing for modification of the permit to include effluent limits either (1) when EPA finalizes federal effluent limitations guidelines or water quality criteria for PFAS,¹⁵⁶ and/or (2) when DES finalizes New Hampshire surface water quality standards for PFAS.^{157s6*}

147. 40 C.F.R. § 122.44(d)(1)(i).

148. 40 C.F.R. § 122.44(d)(1)(vi)(A-C).

149. EPA, Central Tenets of the National Pollutant Discharge Elimination System (NPDES) Permitting Program 3, <https://www3.epa.gov/npdes/pubs/tenets.pdf>.

150. Draft Permit Fact Sheet at 27.

151. *Id.* (citing 40 CFR § 122.44(d)(1)(vi)(A), (B)).

152. 40 C.F.R. § 122.44(d)(1)(vi)(A).

153. See N.H. Dep’t Env’t Services, CHAPTER Env-Wq 1700 Surface Water Quality Regulations: Draft for Stakeholder Review at § 1703.22(l), Table 1703-2A (2023), 20230613 Draft IP for Stakeholder Review (nh.gov).

154. *Id.* § 1703.22(l).

155. 2015 Permit, Response to Comments, at 14.

156. See EPA, PFAS Strategic Roadmap: EPA’s Commitments to Action 2021–2024 13, 15 (2021), accessible at https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf.

157. See N.H. Dep’t Env’t Services, CHAPTER Env-Wq 1700 Surface Water Quality Regulations: Draft for Stakeholder Review (2023), 20230613 Draft IP for Stakeholder Review (nh.gov). See also Env’t Prot. Agency, Off. of Wastewater Mgmt., NPDES Permit Writers’ Manual (EPA-833-K-10-001) at 6-23 (2010), https://www3.epa.gov/npdes/pubs/pwm_2010.pdf (“Where data are generated as a condition of the permit (for example for a new permittee), it might be appropriate for the permit writer to include a reopener condition in the permit to allow the incorporation of a WQBEL if the monitoring data indicate that a WQBEL is required.”)

Response 56

EPA agrees that numeric criteria can be developed based on a wide range of materials, as described in the comment. As noted in Response 53, EPA is actively working toward the development of such numeric criteria. As described in Responses 51-55, there are no

EPA-approved Water Quality Standards for PFAS and therefore no reasonable potential for the Permittee to cause or contribute to a violation of such WQS. Therefore, EPA is not calculating establishing any effluent limitations for PFAS at this time.

See Response 53 regarding possible changes in PFAS standards and subsequent possible modification of the permit.

Comment 57

The permit must include effluent limitations to “minimize” impacts to Essential Fish Habitat.

In addition to establishing effluent limitations for a “minimum level” of control¹⁵⁸ and/or to ensure compliance with narrative water quality criteria,¹⁵⁹ EPA should include effluent limitations for PFAS because monitoring requirements alone do not “minimize” impacts to Essential Fish Habitat (“EFH”).¹⁶⁰ The Draft Permit’s Fact Sheet states that “EPA has determined that actions regulated by the Draft Permit may adversely affect EFH” for Atlantic Salmon.¹⁶¹ The fact sheet states that the permit “has been conditioned” to “minimize any impacts that reduce the quality and/or quantity of EFH for Atlantic salmon.”¹⁶² One of the stated EFH conditions to ensure against adverse impacts is: “monitoring for four Per- and Polyfluoroalkyl Substances (PFAS) in the influent, effluent, and sludge.”¹⁶³

First, we request that EPA update the Fact Sheet’s statement to reflect the requirement that the WWTF monitor for 40 (not four) PFAS under method 1633 as well as AOF under method 1621.¹⁶⁴ Second, monitoring for 40 PFAS and AOF will not “minimize” the impacts of PFAS on Atlantic Salmon’s habitat, and monitoring alone will not reduce the levels of the toxic contaminant in the WWTF’s receiving water. In the context of WQBELs, EPA has stated that permit writers cannot use “data collection efforts” as a “substitute for enforceable permit limits,” further supporting the argument that monitoring alone will not improve water quality or protect wildlife habitat.¹⁶⁵ Therefore, we urge EPA to analyze, and ultimately establish, effluent limitations to achieve the EFH impact-minimization requirement.

158. See 40 C.F.R. § 125.3(a).

159. See *id.* § 122.44(d)(1).

160. Draft Permit, Fact Sheet at 48.

161. *Id.*

162. *Id.*

163. *Id.*

164. *Id.* at Part I(A)(1), at 4–5.

165. EPA, Central Tenets of the National Pollutant Discharge Elimination System (NPDES) Permitting Program at 3, <https://www3.epa.gov/npdes/pubs/tenets.pdf>.

Response 57

EPA agrees that the reference to four (rather than 40) PFAS compounds in the EFH section of the Fact Sheet was a typographical error. Permit Part I.A.1 of the Draft Permit correctly indicated that EPA was proposing to require monitoring for 40 PFAS analytes (see also footnote 13 and Attachment E), and page 48 of the Fact Sheet incorrectly

summarized the permit requirement. This Fact Sheet error is noted here for the record since the Fact Sheet cannot be changed after the public notice of the Draft Permit.

As described in the Fact Sheet, EPA has determined that actions regulated by the Draft Permit may adversely affect EFH for Atlantic salmon and therefore EPA is required to consult with NOAA. Fact Sheet, 47-48. EPA agrees that monitoring alone will not minimize impacts from PFAS on Atlantic Salmon habitat. The Draft Permit has been conditioned in a number of ways to minimize impacts that reduce the quality and/or quantity of EFH, one of which is monitoring of PFAS in the influent, effluent, and sludge. Fact Sheet, 48. Additionally, monitoring is an important step toward characterizing the discharge and determining if PFAS reductions are necessary to minimize impacts to the EFH or otherwise protect water quality. See Responses 51 and 53.

Comment 58

IV. EPA must strengthen the permit's PFAS monitoring and control measures under the Industrial Pretreatment Program

Congress established the National Pretreatment Program under the CWA, which requires EPA to establish rules “to prevent the discharge of any pollutant through” a WWTF, or POTW, that “interferes with, passes through, or otherwise is incompatible with such works.”¹⁶⁶ In finalizing general pretreatment rules in 1978, EPA emphasized the need for “[s]ource control of industrial toxic pollutants through pretreatment” as “a necessary element of ensuring safe drinking water supplies, minimizing public exposure to toxic air pollutants released in incineration of municipal sludges, and encouraging the recovery of concentrated toxics from industrial sludges.”¹⁶⁷

The preamble for EPA's general pretreatment rules also clarified the meaning of “incompatible” pollutant, specifying that they include, among others, pollutants that (1) “increase the cost to consumers of treating drinking water[,]” (2) “[l]imit the sludge management alternatives available to the POTW and increase the cost to the public of providing adequate sludge management,” or (3) “prevent the attainment of water quality standards[.]”¹⁶⁸ EPA also made clear that the “ultimate fate of toxic pollutants removed from the wastewater,” not just “mere removal,” is relevant to “determining compatibility or incompatibility of a toxic pollutant[.]”¹⁶⁹ Specifically, “mere removal” of pollutants from wastewater is not “adequate to protect the environment” because “the substance may be discharged into the air or onto the land.”¹⁷⁰ Relevant factors for assessing incompatibility include whether the pollutant, when discharged into a WWTF, “increase[s] human exposure to air pollutants” or “concentrate[s] in the municipal sludge[.]”¹⁷¹

PFAS meet the above criteria for incompatibility; therefore, source control under the IPP is essential. First, PFAS discharges from the WWTF affect downstream drinking water sources and pass the cost of any necessary treatment on to downstream consumers.¹⁷² For example, Pennichuck Water Works sources water for Nashua consumers from the Merrimack River within 20 miles downstream from the Manchester WWTF.¹⁷³ Pennichuck Water Works' 2024 Consumer Confidence Report (“CCR”) lists PFOA as having a running annual average of 3.20 ppt in 2023 and a range from nondetect to 5.43 ppt.¹⁷⁴ The CCR listed “wastewater treatment” as

one of the “Typical Source[s] of Contaminant.”¹⁷⁵ Thus, Nashua consumers will bear the burden of addressing PFAS discharged by the Manchester WWTF. Second, PFAS remain in sludge (or its byproducts) after land application, incineration, or landfilling, which “[l]imits management alternatives” and requires costly treatment to remove or destroy.¹⁷⁶ Third, PFAS discharges in wastewater likely violate water quality standards, as discussed in Detailed Comments, Part III.B above. The “ultimate fate” of PFAS also indicates incompatibility, as PFAS incineration “increase[s] human exposure to air pollutants,”¹⁷⁷ and these chemicals build up to high concentrations in sludge.¹⁷⁸

Federal pretreatment regulations require municipal wastewater treatment plants to “fully and effectively exercise[] and implement[]” their pretreatment authority.¹⁷⁹ At “minimum,”¹⁸⁰ municipal pretreatment authority must include authority to:

- “Deny or condition new or increased contributions of pollutants, or changes in the nature of pollutants, to the POTW by Industrial Users where such contributions do not meet applicable Pretreatment Standards and Requirements or where such contributions would cause the POTW to violate its NPDES permit”¹⁸¹
- “Require compliance with applicable Pretreatment Standards and Requirements by Industrial Users”¹⁸²
- “Control through Permit, order, or similar means, the contribution to the POTW by each Industrial User to ensure compliance with applicable Pretreatment Standards and Requirement”¹⁸³
- “Carry out all inspection, surveillance and monitoring procedures necessary to determine, independent of information supplied by Industrial Users, compliance or noncompliance with applicable Pretreatment Standards and Requirements by Industrial Users”¹⁸⁴
- “[I]mmediately and effectively to halt or prevent any discharge of pollutants to the POTW which reasonably appears to present an imminent endangerment to the health or welfare of persons,”¹⁸⁵ and
- “[H]alt or prevent any discharge to the POTW which presents or may present an endangerment to the environment or which threatens to interfere with the operation of the POTW.”¹⁸⁶

“Pretreatment Standards and Requirements” include a general prohibition that bars any industrial discharger from “introduc[ing] into a POTW any pollutant(s) which cause Pass Through[.]”¹⁸⁷ Pass through is “a Discharge 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).”¹⁸⁸ The

Manchester WWTF's current permit, and the Draft Permit, both incorporate the narrative toxics substance provision as a permit requirement,¹⁸⁹ and they also require compliance with water quality standards.¹⁹⁰

PFAS-contaminated discharges from the Manchester WWTF to the Merrimack River likely qualify as "pass through" because: (1) the WWTF's discharges contain PFAS pollution, as documented in the Battelle Study and the Manchester Monitoring Data, (2) the PFAS-contaminated water exits the WWTF into the Merrimack River, a water of the United States, and (3) the PFAS-contaminated discharges likely violate the WWTF's narrative NPDES permit provisions regulating toxic substances and requiring compliance with state water quality standards, as discussed in Detailed Comments, Part III.B, above.¹⁹¹

"Pretreatment Standards" also include the local prohibitions in Manchester's Sewer Use Ordinance.¹⁹² Manchester's Sewer Use Ordinance prohibits IUs from discharging pollutants into the plant that "constitute a hazard to humans or animals in the receiving waters[.]"¹⁹³ PFAS-contaminated discharges from the Manchester WWTF likely "constitute a hazard to humans or animals" in the Merrimack River. EPA's recent regulation designating PFOA and PFOS as "hazardous substances" under CERCLA describes "hazard" as meaning "potential harm to humans or the environment from exposure to the substance[.]"¹⁹⁴ In the final CERCLA rule, EPA determined that PFOA and PFOS "may pose a hazard" sufficient to warrant the "hazardous substances" designation because "[n]umerous health studies support a finding that PFOA and PFOS exposure can lead to adverse human health effects, including cancer (testicular and kidney for PFOA, liver cancer for PFOS), pregnancy-induced hypertension and preeclampsia, and decreased immune response to vaccination" as well as thyroid hormone and endocrine effects, among others.¹⁹⁵ The final rule also referenced animal studies linking PFOA and PFOS with "adverse health effects."¹⁹⁶

As discussed above, the WWTF has received PFOA and PFOS, among other PFAS chemicals, in influent and discharged these chemicals into the Merrimack River, and the Pickard Study detected these chemicals in fish gathered from Merrimack River locations.¹⁹⁷ More specifically, the WWTF has received landfill leachate that regularly contains PFAS, including leachate with concentrations as high as 58.7 ppt PFOS¹⁹⁸ and 92.5 ppt¹⁹⁹ PFOA from the Manchester Landfill and leachate with concentrations as high as 281 ppt PFOS and 1,870 ppt PFOA from the NCES landfill in 2024.²⁰⁰ The WWTF has routinely recorded the discharge of PFAS in its effluent, with concentrations as high as 30 ppt PFOS²⁰¹ and 20.6 ppt PFOA²⁰² prior to the acceptance of NCES landfill leachate; thus, effluent concentrations may have been even higher after receiving NCES leachate with higher PFOS and PFOA concentrations. The Pickard Study detected PFOS in edible fish muscle tissue from Merrimack River locations ranging from .205 ppb (25 compounds, brown bullhead) to 7.914 ppb (37 compounds, largemouth bass) and PFOA reaching 0.386 ppb—again, before the WWTF began accepting NCES leachate.²⁰³

Given that EPA has recognized that PFOA and PFOS "may pose a hazard,"²⁰⁴ and that these substances have been detected in the WWTF's influent, effluent, and fish in the Merrimack River, the WWTF's discharges likely "constitute a hazard to humans or animals" under the City's Sewer Use Ordinance.²⁰⁵ Total PFAS levels in the WWTF's influent and effluent, and fish muscle

tissue, are even higher, and PFAS compounds other than PFOA and PFOS have also been linked with adverse health effects, as discussed above.²⁰⁶

The City has not “fully and effectively” implemented its pretreatment authorities to control, inspect, halt, and prevent PFAS contributions from IUs²⁰⁷ because it has admittedly failed to initiate any communications with IUs regarding PFAS.²⁰⁸ Because NPDES permits must ensure compliance with the CWA,²⁰⁹ the final permit must ensure the City is “fully and effectively” implementing the pretreatment authorities listed above.²¹⁰ Thus, in issuing a final permit, EPA must include a broader Industrial User Survey requirement for PFAS and stronger PFAS control and prevention measures. More specifically, EPA should incorporate the following changes to the Draft Permit’s “Industrial Users and Pretreatment Program” section, Part I(E), to ensure compliance with federal, state, and local law.

166. 33 U.S.C. § 1317(b)(1); Int’l Union, United Auto. Aerospace & Agr. Implement Workers of Am., AFL-CIO v. Amerace Corp., 740 F. Supp. 1072, 1079 (D.N.J. 1990) (citing id.)

167. 43 Fed. Reg. 27736, 27736 (June 26, 1978).

168. Id. at 27737. EPA’s original pretreatment regulations, promulgated at 40 C.F.R. Part 128, defined incompatible and compatible pollutants. See 38 Fed. Reg. 30982, 30983 (Nov. 8, 1973). Those regulations defined “Compatible pollutant” as “biochemical oxygen demand, suspended solids, pH and fecal coliform bacteria, plus additional pollutants identified in the NPDES permit if the publicly owned treatment works was designed to treat such pollutants, and in fact does remove such pollutants to a substantial degree.” Id. The regulations defined “Incompatible pollutant” as “any pollutant which is not a compatible pollutant.” Id. Although EPA replaced the Part 128 regulations with the general pretreatment regulations at Part 403 in 1978, and has since amended the Part 403 regulations, the current statutory and regulatory language still make clear that one goal of the National Pretreatment Program is to “prevent the introduction of pollutants into POTWs which will pass through the treatment works or otherwise be incompatible with such works.” 40 C.F.R. § 403.2(b) (emphasis added); see also 33 U.S.C. § 1317(b)(1).

169. 43 Fed. Reg. 27736, 27761 (June 26, 1978).

170. Id.

171. Id.

172. *Best way to meet EPA’s new PFAS drinking water standards is pollution control at the source, says SELC*, Southern Env’t l. Ctr., (April 10, 2024), <https://www.southernenvironment.org/press-release/best-way-to-meet-epas-new-pfas-drinking-water-standards-is-pollution-control-at-the-source-says-selc/> (“PFAS are not removed by conventional water treatment so keeping them out of drinking water sources is critical to avoid burdening downstream communities. Polluters should have to bear the cost of their pollution not downstream communities.”)

173. Draft Permit 2015, Response to comments at 14.

174. Pennichuck, Pennichuck 2024 Consumer Confidence Report, Nashua EPA # 1621010 at 3 (2024), <https://pennichuck.com/pdf/CCR-A0.pdf>.

175. Id.

176. See NEIWPCC, Northeast Regional Sludge End-Use and Disposal Estimate at 7 (2022), https://neiwpc.org/wp-content/uploads/2022/10/NEIWPCC-Sludge-End-Use-Disposal-Estimate-Report_FINAL.pdf (“Currently available sludge disposal options may not adequately address the destruction of the PFAS group of chemicals. With public awareness and outcry driving quick regulatory actions regarding PFAS, the trace amounts detected in wastewater solids have led to several states currently having restrictions (Vermont and New Hampshire) or bans (Maine) on land applications. With pending legislation and legal responsibility uncertainties, many landfills have

become risk-averse, either reducing or altogether stopping the acceptance of sludge containing PFAS.”)

177. See Seay et al., *supra* note 6, at 1.

178. Ting Zhou et al., Occurrence, Fate, and Remediation for Per- and Polyfluoroalkyl Substances (PFAS) in Sewage Sludge: A Comprehensive Review, 466 J. of Hazardous Materials 1, 14 (2024) (“The PFAS concentrations in sludge matrices across the world are up to thousands of ng/g [dry weight.]”)

179. 40 C.F.R. § 403.8(f).

180. *Id.* § 403.8(f)(1).

181. *Id.* § 403.8(f)(1)(i).

182. *Id.* § 403.8(f)(1)(ii).

183. *Id.* § 403.8(f)(1)(iii).

184. *Id.* § 403.8(f)(1)(v).

185. *Id.* § 403.8(f)(1)(vi)(B).

186. *Id.*

187. *Id.* §§ 405(a)(1), 403.3(l).

188. *Id.* § 403.3(p).

189. See 2015 Permit I(A)(6); Draft Permit I(A)(6).

190. See 2015 Permit I(A)(2); Draft Permit I(A)(3).

191. See 2015 Permit I(A)(2), (6); Draft Permit I(A)(3), (6).

192. 40 C.F.R. §§ 403.3(l), 403.5(d).

193. Manchester, N.H. Code Ord. § 52.026(B).

194. 89 Fed. Reg. 39124, 39141 (May 8, 2024).

195. *Id.* at 39143.

196. *Id.*

197. See Factual Background & Overview, Parts II & III; Detailed Comments on the Draft Permit, Part III.B.2.

198. City of Manchester WWTF Monitoring Report (2022).

199. City of Manchester WWTF Monitoring Report (2019).

200. Email from Christopher Crowley, Manchester EPD, to Frederick McNeill, Manchester EPD, regarding Leachate Disposal PFAS sampling results vs. NHDES Drinking water limits.

201. City of Manchester WWTF Monitoring Report (2022).

202. City of Manchester WWTF Monitoring Report (2021).

203. Pickard et al. Supporting Information, T16 (Fish Concentrations).

204. 89 Fed. Reg. 39124, 39143 (May 8, 2024).

205. MANCHESTER, N.H. CODE ORD. § 52.026(B).

206. See Detailed Comments on the Draft Permit, Part III.B.2.

207. 40 C.F.R. § 403.8(f)(1).

208. See Email from Adam Dumville, Director, McLane Middleton to Tom Irwin, Vice President, Conservation Law Foundation (Feb. 15, 2024).

209. 40 C.F.R. § 122.4(a).

210. *Id.* § 403.8(f)(1).

Response 58

CWA § 307(b)(1) instructs EPA to promulgate “pretreatment standards” for the introduction into POTWs of pollutants that “interfere with,” “pass[] through,” or are otherwise “incompatible” with the treatment works. EPA has promulgated these standards at 40 C.F.R. Part 403. Any POTW with a design flow of more than 5 million gallons per day (mgd) and subject to pretreatment standards must establish a pretreatment program. 40 C.F.R. § 403.8(a); *see also id.* §§ 403.9, 122.44(j). As described

in the Fact Sheet, the Permittee's pretreatment program was approved on February 27, 1985 and has subsequently incorporated substantial modifications as approved by EPA. Fact Sheet, 21.

Also as described in the Fact Sheet, the Permittee has been delegated primary responsibility for enforcing against discharges prohibited by 40 C.F.R. § 403.5 and applying and enforcing any national Pretreatment Standards established by the United States Environmental Protection Agency in accordance with Section 307 (b) and (c) of The Clean Water Act (Act), as amended by The Water Quality Act (WQA), of 1987. Fact Sheet, 18-24; 40 C.F.R. § 403.8(f)(5) ("The POTW shall develop and implement an enforcement response plan" and requirements for such a plan.); *In re B.J. Carney Indus.*, 7 E.A.D. 171, 175 (EAB 1997) ("[G]enerally speaking, the pretreatment standards are primarily enforced by POTWs."); *Introduction to the National Pretreatment Program*, pg. 2-4 ("Unlike other environmental programs that rely on federal or state governments to implement and enforce specific requirements, under the National Pretreatment Program most of the responsibility rests on local municipalities.").

EPA disagrees that PFAS discharges into the POTW from industrial users interfere with, pass through, or are otherwise incompatible with the treatment works such that the permittee would need to revise its pretreatment program at this time. As described in Responses 51-56, the Permit does not contain effluent limitations for PFAS. Therefore, even if PFAS are entering the POTW from industrial users and ultimately discharging to the receiving water, there is no violation of an effluent limit for PFAS. If, after a future permit modification or renewal, the permit does include effluent limits for PFAS, it may be the case that industrial discharges into the POTW would interfere with, pass through, or otherwise be incompatible with the treatment works and the permittee might therefore need to revise aspects of its pretreatment program at that time.

The commenter also asserts that industrial discharge of PFAS into the POTW violates the permittee's existing sewer use ordinance. As described above, the POTW, not EPA, has primary responsibility for enforcing against violations of its pretreatment regulations.

The commenter asserts that the permittee has not fully and effectively implemented its pretreatment authorities because it has failed to initiate any communications with IUs regarding PFAS, referencing 40 C.F.R. § 403.8(f). The permittee's prior permit did not contain any PFAS requirements and the commenter has not identified any legal requirement for a POTW to "initiate communications" with industrial users regarding a pollutant that is not limited by the currently effective permit. For this and other reasons, EPA does not agree that the permittee is not fully and effectively implementing its pretreatment authorities. EPA additionally notes that during the Region 1 Water Division's most recent audit of the permittee's pretreatment program, in August 2022, EPA found that the program was very well implemented.²⁹

²⁹ August 4, 2022 cover letter to Christopher J. Crowley Re: 2022 Industrial Pretreatment Program Audit.

EPA agrees that industrial source control is an important step in regulating PFAS. To better understand the inflow of PFAS from industrial users into the POTW, EPA has included an annual monitoring requirement for individual industrial users that are likely to discharge PFAS, Permit Part I.E.6, as well as a quarterly monitoring for PFAS in the collective influent into the POTW, Permit Part I.A.1. The PFAS data collected under these requirements may aid in future evaluations of local limits or other efforts to reduce inflow of PFAS from industrial users. As mentioned in Response 2, EPA notes that the Permittee may choose to pass on the cost of monitoring to the industrial users. If permit limits for PFAS are established in the future, the Permittee may be required to use pretreatment requirements and/or sewer use ordinances to directly regulate these industrial users, consistent with 40 C.F.R. Part 403.

Comment 59

The final permit should require more comprehensive PFAS monitoring measures for Industrial Users, including an Industrial User Survey and an updated Industrial User Inventory.

Draft Permit section I(E)(6) requires annual PFAS sampling of IUs in specific categories using method 1633. It also requires the City to include the PFAS industrial sources and sampling results in a report submitted to EPA, under section I(E)(5). While we appreciate the requirement for Manchester to measure PFAS in industrial-user influent, annual sampling using only EPA method 1633 will not sufficiently characterize each IU's contribution of PFAS to the WWTF. Moreover, requiring the City to submit results only to EPA does not provide sufficient transparency for the public.²¹¹

Federal regulations and EPA recommendations support requiring a broad IU survey. 40 C.F.R. section 403.8(f)(2) requires that WWTFs implement procedures "to identify and locate all possible Industrial Users that might be subject to the pretreatment program" and "identify the character and volume of pollutants contributed to the POTW by the Industrial Users."²¹² Importantly, in 2022, EPA published a memorandum regarding "*Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs*"²¹³ recommending that, that under section 403.8(f)(2), WWTFs update their inventory of IUs to include those that discharge PFAS.²¹⁴ For both WWTFs and IUs, the memorandum also recommends quarterly monitoring and highlights that facilities may use method 1621 for Adsorbable Organic Fluorine ("AOF") in addition to method 1633 for PFAS.²¹⁵ The memorandum also recommends gathering information on industrial wastewater by placing monitoring requirements in IU permits.²¹⁶

In May 2024, EPA Region 3 echoed the 2022 PFAS memorandum language when it specifically recommended that a WWTF in Virginia, with similar PFAS effluent levels to that of the Manchester WWTF, "[i]ncorporate in the permit the requirement to conduct a survey to identify and locate all possible IUs that might be subject to the pretreatment program and identify the character and volume of pollutants contributing to the POTW by the IUs" and "revise[]" its IU inventory accordingly.²¹⁷ Moreover, in issuing the Air Force Academy's NPDES permit (effective 2023), EPA Region 8 required the Academy to "perform and begin implementing a PFAS source identification and reduction plan" no more than 180 days after

detecting PFAS in an effluent sample.²¹⁸ The PFAS plan required in that permit must determine the “source or suspected source of the PFAS,” include control measures, and form “[a] plan for identifying future sources of PFAS in the influent” and controlling and/or removing those future sources.²¹⁹

To ensure that Manchester “fully and effectively” implements its “authorities and procedures”²²⁰ under the pretreatment program to investigate PFAS contributions from IUs, EPA, in finalizing the permit, should supplement provisions contained in Draft Permit section I.E.6 by requiring that: (1) IUs monitor for PFAS on at least a quarterly basis,²²¹ (2) IUs use method 1621 in conjunction with method 1633 to measure both targeted and non-targeted PFAS, (3) the City conduct an IU Survey and update its IU Inventory accordingly, and (4) the City publicly post all IU PFAS monitoring data and its updated IU Inventory for PFAS on its Industrial Pretreatment website.²²²

211. 2024 NPDES EJ Policy, at 5 (“Consideration should also be given on how best to make compliance monitoring, test results, records, and reports required by the permit publicly available in a meaningful way that is understandable and readily accessible by the community.”)

212. 40 C.F.R. § 403.8(f)(2)(i), (ii).

213. See December 2022 EPA PFAS Memorandum, at 4.

214. *Id.*

215. *Id.* at 2, 4.

216. *Id.* at 4.

217. Email from Jennifer Fulton, EPA Region III, to Susan Edwards, Va. Dep’t Env’t Quality, Regarding Danville – Northside WWTP (VA0060593) (May 14, 2024) (attached as Exhibit BB).

218. 1 EPA Region 8, Auth. To Discharge Under the Nat’l Pollutant Discharge Elimination System (Permit No.: CO-0020974) at 38-39 (2023), <https://www.epa.gov/system/files/documents/2023-01/co0020974-afa-wwtf-npdes-permit-final-12.20.22.pdf>.

219. *Id.*

220. 40 C.F.R. § 403.8(f).

221. See December 2022 EPA PFAS Memorandum, at 4.

222. See *Industrial Pretreatment*, CITY OF MANCHESTER, <https://www.manchesternh.gov/Departments/Environmental-Protection/Industrial-Pretreatment>.

Response 59

Regarding the request for quarterly monitoring of each IU, EPA first notes that Permit Part I.A.1 does require quarterly influent monitoring of PFAS analytes, consistent with the recommendation in section B.2 of the referenced guidance.³⁰ The requirement in Permit Part I.E.6 for the Permittee to annually sample certain industrial dischargers using Method 1633 is intended to identify the potential sources of PFAS in the influent. Therefore, EPA finds that annual monitoring is sufficient for this purpose and is consistent with the recommendation in section B.3.a of the referenced guidance. Once sources are identified (and especially if effluent limits for PFAS are established), more

³⁰ *Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment and Monitoring Programs*, EPA Office of Water, Dec. 5, 2022. Available at: https://www.epa.gov/system/files/documents/2022-12/NPDES_PFAS_State%20Memo_December_2022.pdf.

frequent monitoring of those IUs may be necessary in the future to track reductions. As described in Response 60, EPA also notes that the recommendations in section B.3.b of the guidance are recommendations to POTWs, not recommendations to NPDES permit issuers.

Regarding the request for IUs to use both Method 1621 and 1633, EPA notes again that this initial requirement is intended to identify potential sources of PFAS and considers that Method 1633 is sufficient for this purpose. EPA notes that the pretreatment program activities section of the guidance does not reference any particular method but that other sections of the guidance recommend the use of Method 1621 in conjunction with Method 1633 “if appropriate.” Once sources are identified, additional monitoring through the use of Method 1621 may also be appropriate to track overall reductions in the future.

The commenter cites EPA guidance, 40 C.F.R. § 403.8(f)(2), and recent examples from other EPA regions in support of its request that the Permittee conduct an IU survey and update its IU inventory. Forty C.F.R. § 403.8(f)(2)(i) and (ii) require POTWs subject to pretreatment requirements to “identify and locate all possible Industrial Users which might be subject to the POTW Pretreatment Program” and to “identify the character and volume of pollutants contributed to the POTW” by those users. *See also* 40 C.F.R. § 122.44(j)(1) and Permit Part I.E.2.a. As described above, Permit Part I.E.6 requires the Permittee to commence annual sampling of certain industrial dischargers into the POTW using Method 1633 for the PFAS analytes listed in Attachment E. EPA finds that the list of categories of dischargers, which also includes “any other known or expected sources of PFAS,” reasonably addresses the commenter’s desire for the POTW to identify IU sources of PFAS without unreasonably overburdening the permittee. Additionally, EPA is taking broader action outside of this permit proceeding to better understand PFAS in POTW influents. *See, e.g., EPA Effluent Guidelines Program Plan 15* (January 2023),³¹ pg. 6-19. *See also* Response 61. Finally, EPA notes that comparisons to other permits are “not germane.” *In re Springfield Water and Sewer Commission*, 18 E.A.D. 430, 459 (EAB 2021).

Regarding the request to require the Permittee to post its IU PFAS results and IU inventory on its website, EPA notes that the City does post its IPP annual reports currently. Future reports would include PFAS results. In any case, EPA notes that the IPP annual reports submitted to EPA are public documents and can be requested at any time.

Comment 60

The final permit must require the City to implement PFAS source reduction measures for Industrial Users, including through IU “Permit[s], order[s], or other similar means” and local limits.

³¹ Available at: https://www.epa.gov/system/files/documents/2023-01/11143_ELG%20Plan%2015_508.pdf

The final permit must require that the City reduce or eliminate PFAS contributions from IUs by establishing best management practices (“BMPs”), numeric limits, and/or treatment requirements in IU permits (or through other IU control mechanisms) and by developing local limits for PFAS.

To ensure that the permit prevents incompatible PFAS pollutants from entering and exiting the WWTF,²²³ to ensure that the City “fully and effectively implement[s] and exercis[es]” its pretreatment authorities,²²⁴ and to “provide for compliance” with the CWA,²²⁵ EPA must establish PFAS source reduction measures for IUs in the City’s final permit.

First, PFAS chemicals are “incompatible” with the Manchester WWTF because the WWTF does not remove them, and as a result they: threaten to increase drinking water costs for downstream consumers; “[l]imit the sludge management alternatives available” and raise “the cost to the public of providing adequate sludge management”; and likely “prevent the attainment of water quality standards[.]”²²⁶ Moreover, incinerating PFAS-containing sludge at the Manchester WWTF “increase[s] human exposure to air pollutants,”²²⁷ and these chemicals build up to high concentrations in sludge,²²⁸ further demonstrating that they are “incompatible” with the Manchester WWTF.²²⁹ To ensure that the pretreatment rules are implemented “[t]o prevent the introduction of pollutants into POTWs which . . . [are] incompatible with such works,”²³⁰ EPA should require source reduction measures for PFAS in the Manchester WWTF’s final permit.

Second, the PFAS chemicals detected in Manchester WWTF’s effluent “reasonably appear[] to present an imminent endangerment to the health or welfare of persons” and “an endangerment to the environment” because PFAS are toxic to both humans and aquatic organisms.²³¹

Thus, EPA must establish PFAS source reduction requirements in the City’s permit to ensure that the City “fully” implements its authority to:

- “[I]mmediately and effectively . . . *halt or prevent any discharge of pollutants to the POTW* which reasonably appears to present an imminent endangerment to the health or welfare of persons”²³² and
- “[H]*alt or prevent any discharge to the POTW* which presents or may present an endangerment to the environment[.]”²³³

Third, the PFAS chemicals detected in Manchester WWTF’s effluent likely qualify as “pass through” and likely “constitute a hazard” for humans and animals, in violation of federal and local pretreatment standards.²³⁴ Thus, to ensure compliance with the CWA, EPA should establish PFAS source reduction requirements for IUs in the City’s permit to ensure that the City “fully” implements its authority to:

- “Control through Permit, order, or similar means, the contribution to the POTW by each Industrial User to ensure compliance with applicable Pretreatment Standards and Requirements[.]”²³⁵ and
- “Deny or condition new or increased contributions of pollutants, or changes in the nature of pollutants, to the POTW by Industrial Users where such contributions do not meet applicable Pretreatment Standards and Requirements[.]”²³⁶

The final permit should require the City to reduce PFAS from industrial sources by implementing PFAS BMPs, numeric limits, and/or treatment requirements for IUs through “Permit, order, or similar means.”²³⁷ Pursuant to EPA’s 2022 memorandum, BMPs can require elimination or substitution of PFAS in products, establish plans for “[a]ccidental discharge minimization,” and mandate “[e]quipment decontamination or replacement.”²³⁸ The Air Force Academy’s permit provides an example of requiring source reduction BMPs. That permit provides that if the Air Force Academy detects PFAS in its effluent, it must develop a “PFAS Plan” that contains the following components (among others):

- “Identification and implementation of best management practices (BMPs) to keep PFAS out of the collection system,” including “product substitution, reduction, or elimination for discharges with PFAS;”
- “Accidental discharge minimization[;]”
- “Equipment decontamination or replacement[;]” and
- “[A] mechanism for reduction/elimination of [future] sources and, if removal is possible, treatment that will be implemented to reduce/remove PFAS from the effluent[.]”²³⁹

The City’s final permit should also require the City to develop local limits for PFAS.²⁴⁰ New Hampshire pretreatment regulations provide that “[s]pecific numerical limits shall be required on constituents contained in waste if the inclusion of such limits is necessary to meet applicable federal and state law[.]”²⁴¹ New Hampshire’s state pretreatment regulations prohibit discharging “[a]ny pollutant” into a WWTF “at a flow rate or pollutant concentration or quantity that is *likely to* . . . [c]onstitute a hazard to humans or animals” or “cause pass through.”²⁴² As discussed above, the Manchester WWTF’s PFAS discharges are likely to constitute a hazard to humans or animals and likely to cause pass through.²⁴³ Therefore, “the inclusion of [local] limits” to avoid the likely hazard and pass through associated with PFAS “is necessary to meet applicable . . . state law.”²⁴⁴ DES has also stated that its review of industrial discharge requests is “limited” in the absence of local limits.²⁴⁵

223. 43 Fed. Reg. 27736, 27736–37, 27761 (June 26, 1978).

224. 40 C.F.R. § 403.8(f).

225. *Id.* § 122.4 (a).

226. 43 Fed. Reg. 27736, 27736–37, 27761 (June 26, 1978); *see also* Detailed Comments on the Draft Permit, Part IV.

227. *See* Seay et al., *supra* note 6, at 1.

228. Ting Zhou et al., *Occurrence, fate, and remediation for per- and polyfluoroalkyl substances (PFAS) in sewage sludge: A comprehensive review*, 466 J. OF HAZARDOUS MATERIALS 1, 14 (2024) (“The PFAS concentrations in sludge matrices across the world are up to thousands of ng/g [dry weight.]”)

229. *See* 43 Fed. Reg. 27736, 27761 (June 26, 1978).

230. 40 C.F.R. § 403.2(b); *see also* 33 U.S.C. § 1317(b)(1).

231. *Id.* § 403.8(f)(1)(vi)(B); *see* Detailed Comments on the Draft Permit, Parts III.B.2 and IV.

232. *Id.* § 403.8(f)(1)(vi)(B) (emphasis added).

233. *Id.* (emphasis added).

234. *See id.* §§ 405(a)(1), 403.3(l); MANCHESTER, N.H. CODE ORD. § 52.026(B); *see also* Detailed Comments on the Draft Permit, Parts III.B.2 and IV.

235. *Id.* § 403.8(f)(1)(iii).

236. *See id.* at 3.

237. EPA REGION 8, AUTH. TO DISCHARGE UNDER THE NAT’L POLLUTANT DISCHARGE ELIMINATION SYSTEM (Permit No.: CO-0020974) at 38-39 (2023), <https://www.epa.gov/system/files/documents/2023-01/co0020974-afa-wwtf-npdes-permit-final-12.20.22.pdf>.

238. *See* 40 C.F.R § 403.5(c)(1) (“Each POTW with an approved pretreatment program shall continue to develop these limits as necessary and effectively enforce such limits.”)

239. N.H. CODE ADMIN R. ENV-WQ § 305.04.

240. *Id.* § 305.06(c) (emphasis added).

241. *See* Detailed Comments on the Draft Permit, Parts III.B.2 and IV.

242. N.H. CODE ADMIN R. ENV-WQ § 305.04.

243. Digital letter from Zachary Lorch, NH Dept’ Env’t Servs. To Jeff Backman, Allenstown Wastewater Treatment Facility (April 19, 2024) (attached as Exhibit CC).

244. N.H. CODE ADMIN R. ENV-WQ § 305.04.

245. Digital letter from Zachary Lorch, NH Dept’ Env’t Servs. To Jeff Backman, Allenstown Wastewater Treatment Facility (April 19, 2024) (attached as Exhibit CC).

Response 60

The commenter requests EPA require the Permittee to reduce PFAS from industrial sources and to develop local limits for PFAS on the theories that PFAS chemicals are “incompatible” with or “pass through” treatment, and/or that the PFAS chemicals detected in Manchester WWTF’s effluent reasonably appear to present an imminent endangerment to the health or welfare of persons and the environment.

As described in Response 58, EPA disagrees that PFAS discharges into the POTW from industrial users interfere with, pass through, or are otherwise incompatible with the treatment works such that the Permittee would need to revise its pretreatment program at this time. Additionally, both EPA’s *Local Limits Development Guidance* (pg. 6-1 through 6-3) and *Introduction to the National Pretreatment Program* (pg. 3-6 through 3-8), recommend that POTWs consider information relative to the Maximum Allowable Headworks Loading (MAHL) when developing local limits. MAHL is defined as “the estimated maximum loading that can be received at a POTW’s headworks without causing pass through or interference.” *Intro. To the Nat’l Pretreatment Program*, xii. Because there is no PFAS effluent limit in the Permit, it is not possible to calculate a Maximum Allowable Headworks Loading at this time, for the reasons described in

Response 58. Data collected pursuant to the permit's monitoring requirements may be useful in calculating the Maximum Allowable Headworks Loading and/or need for local limits in the future.

If appropriate in the future, the development of local limits or other changes to the Permittee's pretreatment program would occur via a process separate from this permit renewal proceeding. Following the issuance of this permit, the Permittee must, consistent with 40 C.F.R. § 122.44(j)(2)(ii) and Permit Part I.E.3.b, "Provide a written technical evaluation of the need to revise local limits under 40 C.F.R. § 403.5(c)(1)," following the requirements of Permit Part I.E.3.b. *See also id.* § 403.5(c) (development of specific limits by POTWs); Permit Parts I.E.3.c, I.E.2 ("The Permittee must notify EPA if the POTW modifies or intends to modify its Pretreatment Program") and ("any approved modifications [to the approved pretreatment program], [are] hereby incorporated by reference and shall be implemented in a manner consistent with the following procedures...."); *see also Local Limits Development Guidance*, 6-16 ("Establishing or revising local limits is considered to be a modification of the POTW's pretreatment program. Therefore, the new or changed local limits must be submitted to the Approval Authority for its review and approval. The POTW must submit a notice to the Approval Authority that states the basis for the modification and must provide a modified program description and other documentation requested by the Approval Authority. After a modification is approved by the Approval Authority, it will be incorporated into the POTW's NPDES permit [40 CFR 403.18(e) and 40 CFR 122.62].").

Regarding sludge incineration, see Response 62.

Regarding imminent endangerment, 40 C.F.R. § 403.8(f) lays out the six minimum elements that must be included in a POTW's pretreatment program. *See also Introduction to the National Pretreatment Program*, pg. 2-5 – 2-6.³² One element, as referenced by the comment, is that a POTW "shall have authority and procedures (after informal notice to the discharger) immediately and effectively to halt or prevent any discharge of pollutants to the POTW which reasonably appears to present an imminent endangerment to the health or welfare of persons" or the environment. 40 C.F.R. § 403.8(f)(1)(vi)(B). As described in the Fact Sheet, the Permittee has an approved pretreatment program. Fact Sheet, 21. As described in Response 58, the POTW, not EPA, has primary responsibility for identifying and enforcing against violations of its pretreatment regulations. In any event, because PFAS monitoring is included for the first time in this permit renewal and because scientific understanding of harms caused by PFAS is still developing, it may be the case that there is insufficient evidence to determine whether PFAS discharges from industrial users present an imminent endangerment. *See Intro. To the Nat'l Pretreatment Program*, pg. 4-9 ("POTW monitoring activities are the basis for evaluation of IU compliance.").

³² Available at: https://www.epa.gov/sites/default/files/2015-10/documents/pretreatment_program_intro_2011.pdf

The commenter references EPA’s December 2022 *Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs* memo in support of its request for EPA to require best management practices. The recommendations in Part B.3.b of the memo are recommendations to POTWs, not to permit issuers. Consistent with this guidance, EPA recommends that the Permittee take the actions in Part B.3.b of the memo.

Comment 61

The permit should prohibit the WWTF from accepting landfill leachate that has not been treated to remove PFAS.

As mentioned above, federal pretreatment regulations provide WWTFs with authority to “deny or condition” industrial discharges to ensure compliance with Pretreatment Standards and Requirements.²⁴⁶ The Manchester WWTF’s acceptance of leachate from landfills contributes PFAS pollutants incompatible with the WWTF’s treatment and contributes to its likely PFAS-related violations of pretreatment standards. Thus, the final permit should prohibit Manchester from accepting landfill leachate that has not been treated for PFAS.

The Manchester WWTF accepts up to 100,000 gallons of leachate per day from the closed Manchester Municipal Landfill.²⁴⁷ That landfill leachate has contained PFAS concentrations reaching as high as 169.6 ppt for four PFAS compounds.²⁴⁸ The leachate has contained PFOA and PFOS levels reaching as high as 92.5 ppt²⁴⁹ and 58.8 ppt,²⁵⁰ respectively—23,125 times EPA’s interim health advisory level for PFOA and 2,925 times EPA’s interim health advisory level for PFOS. In addition to accepting leachate on a daily basis from the closed Manchester Municipal Landfill, the WWTF has also accepted landfill leachate from the NCES landfill in Bethlehem, New Hampshire, receiving up to 30,000 gallons per day from April to May 2024,²⁵¹ 47,703 gallons total in March 2024,²⁵² and 454,886 gallons total in February 2024²⁵³ under temporary discharge permits.²⁵⁴ In February 2024, the NCES leachate contained individual PFOA and PFOS levels reaching as high as 1,870 ppt and 281 ppt, respectively²⁵⁵—467,500 times EPA’s interim health advisory level for PFOA and 14,050 times EPA’s interim health advisory level for PFOS.

The City accepts landfill leachate despite the incompatibility of PFAS pollutants with the WWTF (i.e., the WWTF’s lack of treatment processes to remove or destroy PFAS chemicals, leading to PFAS discharges into the Merrimack River, contaminated sewage sludge, and PFAS air emissions from the WWTF’s incinerator). Because source reduction measures requiring elimination or substitution of PFAS in operations cannot be employed by these landfills to reduce PFAS (i.e., landfills do not affirmatively use PFAS in their operations), EPA should require that the City “deny or condition” leachate acceptance by prohibiting leachate from entering the WWTF unless it has been treated to eliminate the presence of PFAS.

246. 40 C.F.R. § 403.8(f)(1)(i).

247. 2022–2023 IPP Annual Report App’x A; 2019–2020 IPP Annual Report App’x A.

248. City of Manchester WWTF PFAS Monitoring Report (October 2019).

249. City of Manchester WWTF PFAS Monitoring Reports (2019)

250. City of Manchester WWTF PFAS Monitoring Reports (2022)
251. City of Manchester Dep't of Public Works, Class III Wastewater Discharge Permit No. T-3001-4-24 (2024).
252. Letter from Lindsey Menard, North Country Environmental Services, Inc., to Jaime Colby, P.E., New Hampshire Department of Environmental Services, regarding North Country Environmental Services, Inc. Landfill Facility - Bethlehem, NH Permit # - NH DES-SW-SP-03-002 First Quarter Facility Report; 2024 at 21 (April 30, 2024).
253. *Id.* at 17.
254. CITY OF MANCHESTER, DEP'T OF PUBLIC WORKS, CLASS III WASTEWATER DISCHARGE PERMIT NO. T-3001-2-24 (2024); CITY OF MANCHESTER DEP'T OF PUBLIC WORKS, CLASS III WASTEWATER DISCHARGE PERMIT NO. T-3001-4-24 (2024).
255. Email from Christopher Crowley, Manchester EPD, to Frederick McNeill, Manchester EPD, regarding Leachate Disposal PFAS sampling results vs. NHDES Drinking water limits (April 18, 2024).

Response 61

As described in Response 58, EPA disagrees that PFAS discharges into the POTW from industrial users interfere with, pass through, or are otherwise incompatible with the treatment works such that the Permittee would need to revise its pretreatment program at this time and the POTW, not EPA, has primary responsibility for identifying and enforcing against violations of its pretreatment regulations.

EPA agrees that PFAS in landfill leachate is a problem that requires further information and action. As announced in the Effluent Guidelines Program Plan 15 (January 2023),³³ the EPA has completed a detailed study of the Landfills category. Based on the information and data collected through this study, the development of effluent guidelines and pretreatment standards for landfills that discharge their leachate is warranted. The EPA intends to revise the existing Landfills Point Source Category ELGs to address PFAS discharge from these landfills. After this separate process is final, the Permittee (and other POTWs) would be required to revise its pretreatment program accordingly.

Comment 62

V. EPA should require monitoring and reporting of PFAS in air emissions from the Sewage Sludge Incinerator.

The City's sewage sludge incinerator removes only 51 percent of PFAS and creates other PFAS compounds, including GenX, according to the Battelle Study.²⁵⁶ But neither the data from the WWTF nor any other sewage sludge incineration studies have measured the full scope of PFAS products of incomplete combustion pollution.²⁵⁷ PFAS emissions from the City's incinerator contaminate the ambient air and, through deposition, can contribute to surface water and groundwater pollution. The incinerator's PFAS emissions thus threaten the health of those living near or downstream of the incinerator by increasing risks of breathing contaminated air, drinking contaminated water, or eating contaminated fish.

³³ Link to Federal Register notice and more information available at: <https://www.epa.gov/eg/final-effluent-guidelines-program-plan>.

The dangers of incinerating PFAS-contaminated sewage sludge underscore the need to implement the source reduction measures in Detailed Comments, Parts III and IV above. Reducing or eliminating PFAS in industrial influent will reduce the PFAS not only in the WWTF's effluent to the Merrimack River, but also in the sewage sludge that is later incinerated. As EPA underscored in finalizing general pretreatment rules, "[s]ource control of industrial toxic pollutants through pretreatment" is "a necessary element of . . . minimizing public exposure to toxic air pollutants released in incineration of municipal sludges[.]"²⁵⁸

Moreover, Part I(F) of the Draft Permit, subsections 10 through 14, establishes requirements for the WWTF's sewage sludge incinerator. These requirements include concentration-based emissions limitations, management practices, and monitoring, sampling, recordkeeping, and reporting requirements.²⁵⁹ EPA should require monitoring and public reporting of PFAS in air emissions from the WWTF's incinerator in the final permit, in part I(F) subsections (10), (12), (13), and (14).

EPA has validated two methods for testing PFAS in stack gas emissions: OTM-45, which measures 50 semivolatile PFAS, and OTM-50, which measures 30 volatile PFAS.²⁶⁰ Other methods, such as Total Fluorine, are available for measuring nontargeted PFAS in air.²⁶¹ Requiring the City to monitor PFAS from the incinerator's stack using these methods is essential to achieving two important goals adopted by EPA: one pertaining to destruction and disposal of PFAS, the other related to environmental justice.

As to the first of these goals, EPA recently acknowledged in its Interim Guidance on Destruction & Disposal that it lacks an understanding of PFAS (and other byproduct) emissions from sewage sludge incinerators.²⁶² In that guidance and in its PFAS Strategic Roadmap, the agency has committed to gathering data on PFAS emissions to better understand impacts to humans and the environment.²⁶³ Requiring monitoring and public reporting of PFAS emissions at the Manchester WWTF would help EPA achieve its data-collection goal.

As to the second goal, EPA has emphasized the potential for PFAS in air emissions to disproportionately impact overburdened communities.²⁶⁴ The agency has stated that it will analyze the impact of air emissions on EJ communities and has acknowledged the need to provide transparent information to communities near PFAS-emitting facilities.²⁶⁵ The Manchester WWTF—which is often upwind of at least two EJ communities—has been shown to emit PFAS into ambient air, destroying only 51 percent of the PFAS that enter the incinerator and creating new compounds including GenX.²⁶⁶ Requiring monitoring and reporting of PFAS emissions from the incinerator is essential to enabling EPA and stakeholders to evaluate and address associated EJ concerns.

256. Seay et al., *supra* note 6, at 6, 8.

257. *Id.* at 9; 2024 EPA Destruction & Disposal Guidance, at 59–60.

258. 43 Fed. Reg. 27736, 27736 (June 26, 1978).

259. Part I(F)(h) also establishes that "Sewage sludge shall not be fired in an incinerator if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated critical habitat." The Draft Permit's Fact Sheet states that "There are no known threatened or

endangered species within the vicinity of the incinerator.” Fact Sheet at 40. But the Fact Sheet later makes a conflicting assertion, that “two listed species, the endangered northern long-eared bat (*Myotis septentrionalis*) and the threatened small whorled pogonia (*Isotria medeoloides*), were identified as potentially occurring in the action area of the Facility’s discharges.” Draft Permit, Fact Sheet at 46. Given that the WWTF’s incinerator and outfall are located on the same site, endangered and threatened species in the vicinity of the discharges are also in the vicinity of the incinerator. CLF requests that EPA address this conflict and, if applicable, assess the impact of PFAS incineration on the endangered and threatened species near the City’s WWTF.

260. *PFAS Analytical Methods Development and Sampling Research*, EPA (Feb. 8. 2024), <https://www.epa.gov/water-research/pfas-analytical-methods-development-and-sampling-research>.

261. Seay et al., *supra* note 6, at 2. 2024 EPA PFAS Destruction & Disposal Guidance, at 51, 54 (“The behavior of PFAS and PFAS-related [products of incomplete combustion] in these unit operations is largely unknown . . . Additionally, these control devices produce secondary waste streams in the form of fly ash and scrubber blowdown solutions, and PFAS and PFAS-related [products of incomplete combustion] may be present in these solid and liquid effluents depending on their vapor pressure and solubility.”)

262. *Id.* at 58, 61; *see also* EPA, PFAS STRATEGIC ROADMAP: EPA’S COMMITMENTS TO ACTION 2021–2024 18–19 (2021), accessible at https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf

263. (“EPA will prioritize efforts to evaluate conventional thermal treatment of PFAS-containing wastes and air emissions[.]”)

264. 2024 EPA Destruction & Disposal Guidance, at 58; EPA, PFAS STRATEGIC ROADMAP: EPA’S COMMITMENTS TO ACTION 2021–2024 18 (2021), accessible at https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf.

265. EPA, PFAS STRATEGIC ROADMAP: EPA’S COMMITMENTS TO ACTION 2021–2024 18 (2021), accessible at https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf; 2024 EPA Destruction & Disposal Guidance, at 56.

266. Seay et al. *supra* note 6, at 2, 6, 9.

Response 62

The sewage sludge requirements in 40 C.F.R. Part 503 are self-implementing, meaning any person subject to the regulations must adhere to them regardless of whether a permit has been issued pursuant to a State or EPA program. 40 C.F.R. § 503.3(b). As noted in the Fact Sheet on page 37, the incineration requirements in this permit are based on the sewage sludge incinerator regulations found at 40 C.F.R. Part 503, Subpart E. The sewage sludge standards for incineration regulate the following seven metals: mercury, beryllium, arsenic, cadmium, chromium, nickel and lead. Forty C.F.R. § 503.46 addresses the frequency of monitoring for these seven metals, along with monitoring for total hydrocarbons, oxygen concentration, moisture content, and combustion temperatures. Forty C.F.R. § 504.48 outlines the yearly reporting requirement for Class I sludge management facilities such as the City of Manchester’s WWTF.

The commenter requests that EPA require monitoring and public reporting of PFAS emissions from the WWTF’s incinerator in the Final Permit. However, the sewage sludge incinerator regulations at 40 C.F.R. Part 503, Subpart E do not require PFAS monitoring or reporting. The current conditions of the Draft Permit satisfy all technical standards required under Section 405(d) of the Clean Water Act, 33 U.S.C. § 1345(d), and EPA does not consider it necessary to add additional sewage sludge monitoring or reporting conditions to the Final Permit at this time.

The commenter also states that EPA has validated two methods for testing PFAS in stack gas emissions: OTM-45 and OTM-50. These methods are intended to measure PFAS in air emissions from stationary sources pursuant to the Clean Air Act. EPA notes that the emissions from Manchester’s incinerator are primarily regulated by a separate state air quality permit (<https://www4.des.state.nh.us/OneStopPub/Air/330110008914-0141TypePermit.pdf>). Any emissions requirements, including stack testing for PFAS, beyond the standard requirements from 40 C.F.R. Part 503 would be more appropriately established in the state air quality permit rather than this NPDES permit designed primarily to regulate the surface water discharge. The incinerator requirements in this NPDES permit are simply indicating what is already required in 40 C.F.R. Part 503, which does not include any requirements for PFAS.

Comment 63

REQUEST FOR A PUBLIC HEARING

EPA must hold a public hearing for a NPDES permit when the agency determines, “on the basis of requests,” that “a significant degree of public interest in a draft permit[]” exists.²⁶⁷ EPA may also decide to hold a public hearing if “such a hearing might clarify one or more issues involved in the permit decision[.]”²⁶⁸

EPA should hold a public hearing on the Manchester WWTF’s NPDES permit because there is a “significant degree of public interest” in the Draft Permit and because a hearing would clarify the issues discussed above, related to addressing PFAS pollution in the Manchester WWTF’s water discharges and air emissions.²⁶⁹

As EPA stated in its Destruction & Disposal Guidance for PFAS, “the importance of encouraging appropriate information access for and dialogue with communities—and, in particular, with potentially vulnerable communities—cannot be overemphasized[.]”²⁷⁰ This guidance, along with EPA’s Program Policy on NPDES permitting, repeatedly highlight the need to meaningfully engage with community members who will be impacted by the final permit, including the WWTF’s discharges to the Merrimack River and its air emissions from the incineration of PFAS-contaminated sewage sludge.²⁷¹

CLF requests that EPA hold an in-person public hearing in Manchester at a time and location that facilitates meaningful participation by members of the community.

267. 40 C.F.R. § 124.12(a)(1).

268. *Id.*

269. *Id.*

270. 2024 EPA Destruction & Disposal Guidance, at 56.

271. *Id.*; 2024 NPDES EJ Policy 2–6.

Response 63

EPA “shall” hold a public hearing if EPA finds “a significant degree of public interest in a draft permit.” 40 C.F.R. § 124.12(a)(1). Additionally, EPA “may” hold a public hearing, at

the Agency's discretion, "whenever, for instance, such a hearing might clarify one or more issues involved in the permit decision." 40 C.F.R. § 124.12(a)(2). In this case, EPA received two requests for a public hearing (*i.e.*, from CLF and from the Merrimack River Watershed Council). EPA exercised its discretion to hold a public hearing on January 21, 2025 at 7:00 pm. Comments 100-111 below were received at the public hearing.

Comment 64

CONCLUSION

As discussed above, the NPDES permitting process for Manchester's WWTF involves significant issues related to environmental justice and the increasingly concerning problem of PFAS pollution. In light of the size of the WWTF, the WWTF's incineration of sewage sludge, data demonstrating significant levels of toxic PFAS chemicals flowing into and out of the WWTF, and the nearby location of communities experiencing disproportionate environmental impacts, it is essential that EPA fully address the concerns raised in these comments and, in finalizing the permit, take the following actions summarized here and set forth more fully in the Detailed Comments, above):

1. Conduct an EJ analysis that complies with EPA policies and guidance;²⁷²
2. Strengthen provisions for measuring and controlling PFAS at the WWTF, including adding a monthly (not quarterly) monitoring requirement for PFAS and AOF;
3. Analyze the need for and implement necessary effluent limitations, including technology-based effluent limitations and water quality-based effluent limitations;
4. Include PFAS measures under the IPP, including but not limited to:
 - a. Comprehensive PFAS monitoring requirements for IUs, including quarterly monitoring by IUs, an IU Survey, an updated IU Inventory, and publication of IU PFAS monitoring data and updated IU inventories on the City's IPP website;
 - b. PFAS source reduction measures for IUs, including through IU "Permit[s], order[s], or other similar means"²⁷³ and local limits; and
 - c. A prohibition on the WWTF accepting landfill leachate that has not been treated to eliminate PFAS;
5. Include provisions to address PFAS from the incinerator's air emissions, including:
 - a. All PFAS source reduction measures set forth above, to reduce PFAS in the sludge generated by the WWTF and burned in its incinerator, and
 - b. A requirement to monitor PFAS in the sewage sludge incinerator's emissions.

272. See 2024 NPDES EJ Policy.

273. 40 C.F.R § 403.8(f)(1)(iii).

Response 64

See Responses 49 through 62.

G. Comments from John Macone, Director, Policy and Education, Merrimack River Watershed Council

Comment 65

PFAS monitoring, reduction and incineration

As a receiver of significant quantities of wastewater that contains PFAS, the Manchester plant is burdened with a waste problem that requires heightened attention. This is especially important given the Merrimack River's role as a primary drinking water source for 500,000 people who live downstream of the Manchester plant.

While the draft permit calls for regular sampling of PFAS levels in influent, effluent, and sludge, a more vigorous approach should be considered. Could the testing of effluent be increased, and if PFAS levels exceed high parameters, the plant be required to track the source and reduce/eliminate it? Also, it appears that there is no monitoring proposed for the emissions from the plant's incinerator. Is it established that the incineration process eliminates PFAS, or are people who live in the emission plume exposed to airborne PFAS? Is it possible to have these emissions regularly tested for PFAS levels, to at least provide some baseline information that can help determine whether the incineration process is, or is not, a source of environmental PFAS contamination.

Response 65

Regarding effluent monitoring frequency, see Response 50.

Regarding PFAS source reduction, see Responses 51 and 58.

Regarding monitoring of the sewage sludge incinerator, see Response 62.

The question regarding the ability of an incinerator to eliminate PFAS is outside the scope of this permit. As described elsewhere in this response to comments, EPA is undertaking a variety of efforts to better understand PFAS in the environment. As more data become available, future requirements under the State's Clean Air Act permit (referenced in Response 62) may be appropriate.

Comment 66

CSO annual reporting

MRWC is requesting that the annual reporting requirements in the draft permit be significantly changed in order to provide more timely and detailed data to the public.

Manchester has accomplished some significant steps forward in its public reporting of CSO events, transforming in five years from the Merrimack River's least transparent reporter to one of its most sophisticated and accessible reporters. Manchester's map-based CSO event reporting system provides timely reports on the most recent event. However, this reporting system fails to provide any useful data on prior events, and the annual reporting requirements in the draft permit are inadequate – reports are required once per year, on March 31, and no standards appear to be in place for what will be reported.

Currently, Manchester releases a bare-bones annual report on January 15 that only records the total annual flow and the number of events. No other CSO-producing plant on the Merrimack is allowed to provide such a minimal level of data – the other plants produce much more comprehensive data, and posts it on their websites in a timely manner. There should be more consistency and transparency in reporting CSO events throughout the Merrimack River watershed.

Given the new technology that Manchester is employing to track CSOs, it would be beneficial to the public to have reports/data published on the city's website at least quarterly (if not after each event), as is done at nearby plants such as Lowell Regional Wastewater Facility, and Greater Lawrence Sanitary District. Reports should be broken down by day of event, with information provided on flow from each outfall, rainfall, and duration.

This level of detail can be extremely valuable for organizations such as MRWC that are tracking CSO events and conducting research and water sampling. This data is crucial to the development of better modeling for a much-improved public health notification system. It would also benefit research into the public health impacts of CSO events, as was demonstrated by Boston University's recent publication that found dramatic increases in Merrimack Valley emergency room visits for gastro-intestinal disorders in the days following reports of significant CSO events at Massachusetts CSO wastewater plants. New Hampshire residents would benefit from this kind of research, and one of the foundations of it is making Manchester's CSO discharge data more detailed and transparent.

Response 66

EPA agrees that the Permittee should provide more detailed and timely information to the public regarding CSO discharges. Therefore, and as described in the Fact Sheet, "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." Fact Sheet, 44. The Draft and Final Permit at I.H.3.g includes more detailed requirements related to public notification, including the annual report. Specifically, the permit requires the Permittee to submit a public notification plan that incorporates: an initial public notification as soon as practicable but no later than 2 hours of a probable CSO discharge has occurred (including date, time and location), a supplemental public notification within 24 hours after the CSO discharge stops (including location, start time, end time). Finally, the permit requires an annual report that must be posted on a publicly-available website

and includes a summary of activities undertaken during the previous calendar year to comply with the nine minimum controls, a summary of CSO outfall monitoring (which includes flow volume, number of activations, duration of flow, rainfall), and the status and progress of CSO abatement work. This comment does not result in any changes to the Final Permit.

Comment 67

Public hearing requested

Manchester's wastewater plant is one of the largest on the Merrimack River. Its operational impact on downstream communities and drinking water resources is significant. The impact on area residents of incinerating PFAS-laden sludge is not well understood. MRWC believes it would be beneficial to the permit process to hold a well-publicized hearing in Manchester to allow the public to comment on the permit, and to be better informed of what the city of Manchester and the EPA are planning to accomplish with this new permit.

Response 67

Please see Response 63.

THE COMMENTS BELOW WERE RECEIVED AS PART OF THE PUBLIC NOTICE FOR THE 2025 REVISED DRAFT PERMIT.

H. Comments from Gregory H. Smith, McLane Middleton, on behalf of the City of Manchester

The City of Manchester, New Hampshire (the "City"), by and through its attorneys, McLane Middleton, P.A., submits the following comments on the revised United States Environmental Protection Agency's ("EPA" or "Agency") Draft National Discharge Elimination System ("NPDES") Permit for the City's Wastewater Treatment Facility, NPDES Permit No. NH100447 (the "Draft Permit") issued on December 16, 2024. These comments are timely, having been submitted prior to the deadline for public comments of February 3, 2025, established by EPA. The City fully incorporates by reference its prior comments on the draft NPDES Permit dated June 10, 2024. In addition, we attach here, and incorporate by reference, comments prepared by OspreyOwl Environmental, LLC on behalf of the City of Manchester. See Attachment A.

The Agency must not issue a NPDES Permit containing permit conditions that are plainly contrary to executive orders and directives issued by the new administration. On January 20, 2025, a new federal administration took control of the White House and the federal government. From that day forward, a number of Executive Orders were issued, many of which rescinded and/or suspended environmental regulatory programs, climate change, and energy policies that President Biden's administration had put in place. Accordingly, unless and until the new administration reviews the Draft Permit, the conditions therein, and the comments submitted by the City, the Agency should refrain from taking any action contrary to the new administration's agenda. Moreover, to the extent any rule, regulation, or policy

changes the authority for any conditions or requirements in this permit, the City objects to them and reserves the right to object and challenge such condition(s).

Comment 68

EPA cannot require the City to implement a Climate Adaptation Plan.

The Draft Permit currently contains a requirement for the City to develop and adopt a Climate Adaptation Plan. Such a requirement falls outside the scope of EPA's authority under the Clean Water Act's NPDES program, was included without any cost benefit analysis, creates an undue burden on the City, and would be blocked or rescinded by, and is contrary to the new administration's objectives and policies.

The new administration has taken an immediate and strong position opposing and eliminating climate-related polices. As part of an Executive Order titled Initial Rescission of Harmful Executive Orders and Actions, the new administration revoked approximately ten pre-existing policies regarding climate change and resiliency, including but not limited to, Executive Order 13990 Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis (Jan. 25, 2021); Executive Order 14008, Tackling the Climate Crisis at Home and Abroad (Feb. 1, 2021); and Executive Order 14082, Implementation of the Energy and Infrastructure Provisions of the Inflation Reduction Act of 2022 (Sept. 16, 2022).

Moreover, all federal agencies involved in permitting have been directed to "adhere to only the relevant legislated requirements for environmental considerations and any considerations beyond those requirements are eliminated."¹ Accordingly, any guidance or policies issued by federal agencies should not be considered when issuing a final permit to the City. EPA must limit its review and apply conditions based solely on statutes—not agency guidance.

Contrary to this directive, the EPA bases its authority to condition the City's NPDES permit on such a plan almost exclusively on Agency policy and guidance. The City is well aware of concerns related to climate change; however, the proposed condition—and the breadth of its requirements—would impose unauthorized and unwarranted burdens on the City. EPA's attenuated "legal authority" purportedly stems from a requirement that the City "shall at all times properly operate and maintain all facilities and systems of treatment and control." Draft Permit, Appendix C § I.C. Today, there is no rational basis upon which EPA can state that the City is not in compliance with this requirement. Based on the foregoing, the Agency lacks legislative authority to require a climate adaptation plan.

¹ See *Executive Order, Unleashing American Energy* (Jan. 20, 2025), available at <https://www.whitehouse.gov/presidential-actions/2025/01/unleashing-american-energy/> (emphasis added).

Response 68

See Response 3.

Comment 69

EPA exceeds its legal authority, and creates undue burdens on the City, by including requirements in the Draft Permit that the City monitor for PFAS analytes in influent, effluent, and sludge.

The Draft Permit unlawfully includes a requirement for the City to conduct PFAS-monitoring of its influent, effluent, and sludge. However, as addressed above and described in the City's comments dated June 10, 2024, the EPA lacks legislative authority to require PFAS monitoring for discharges to surface waters.

In issuing a draft condition regarding PFAS monitoring, the Agency relies heavily on "guidance" or "action plans," which are not legislative authority. See Draft Permit, 2024 Fact Sheet at 33–35 (relying heavily on EPA's Action Plan, a memorandum from Radhika Fox, Assistant Administrator of EPA's water division, and EPA's PFAS Road Map). Apart from such guidance, EPA entirely relies on Section 308 of the Clean Water Act. Such reliance is misplaced, however, because neither the State of New Hampshire, nor the federal government has set surface water quality standards for PFAS.

It is also expected that many PFAS rules and regulations, which the new administration regards as unduly burdensome on the regulated community, will be withdrawn or rescinded. For example, we have already seen the new administration withdraw the Agency's proposed effluent limitations guidelines for PFAS, namely, EPA's proposed Rule on "Clean Water Act Effluent Limitations Guidelines (ELG) and Standards for PFAS Manufacturers Under the Organic Chemicals, Plastics and Synthetic Fibers (OCSPF) Point Source Category." Coupled with the Regulatory Freeze Pending Review Executive Order,² and Acting Administrator James Payne's order addressed to stop all communications with external parties, the Agency should withhold issuance of any permits that unlawfully and unreasonably require a permittee to sample and/or monitor for PFAS.

² <https://www.whitehouse.gov/presidential-actions/2025/01/regulatory-freeze-pending-review/>

Response 69

Regarding authority for PFAS monitoring, see Response 1.

Administrator Zeldin has announced major EPA actions to combat PFAS contamination. *Administrator Zeldin Announces Major EPA Actions to Combat PFAS Contamination* (April 28, 2025).³⁴ In line with Administrator Zeldin's Powering the Great American Comeback initiative, EPA's work in this space will advance Pillar 1: Clean Air, Land, and Water for Every American, and Pillar 3: Permitting Reform, Cooperative Federalism, and Cross-Agency Partnership. *Id.*

³⁴ Available at: <https://www.epa.gov/newsreleases/administrator-zeldin-announces-major-epa-actions-combat-pfas-contamination>

Comment 70

Monthly visual inspections required by the Draft are administratively burdensome, and redundant, because New Hampshire's existing water quality standards already prohibit discharges that impair aesthetic values in receiving waters.

The Draft Permit requires the City to conduct monthly visual inspections of the receiving water near the outfall for a range of aesthetic parameters, including odor, color, turbidity, visible floating materials, foam, scum, settleable solids, and surface film or sheen. This requirement is redundant and unnecessary.

New Hampshire's surface water quality standards, specifically Env-Wq 1703.03(c)(1), already prohibit discharges that cause all the aforementioned undesirable aesthetic effects. These standards ensure that the quality of the receiving waters is maintained in a manner that protects aesthetic values and the designated uses of the waters. Given that the permittee is already required to comply with these State water quality standards, these additional monthly visual inspections are unnecessary to ensure compliance. Indeed, the City is already required to comply with existing effluent limitations and to conduct sampling of its effluent to ensure compliance with this requirement. See City of Manchester, NH, NPDES Permit No. NH0100447, Part I.A. –Effluent Limitations and Monitoring Requirements (Feb. 11, 2015); see also Draft City of Manchester, NH, NPDES Permit No. NH0100447, at Part 1.A. (Dec. 16, 2024).

Visual inspections will not consistently capture the necessary data with the precision required to assess compliance with water quality standards. Modern, more reliable monitoring techniques, as already required in the Draft Permit, would better serve the goal of ensuring water quality without the administrative burden of subjective monthly inspections. Moreover, the requirement that the City “conduct a visual inspection of the receiving water in the vicinity of the outfall.” What is meant by “in the vicinity”? Is it at the outfall, 10 feet from the outfall, or 100 yards from the outfall? The permit requirement is vague and ambiguous and cannot be reliably enforced.

Further, conducting monthly visual inspections—which are not required by other existing NPDES permits issued to wastewater treatment facilities along the Merrimack River and elsewhere³—imposes an operational burden on the permittee, diverting resources from more impactful water quality management efforts. Selectively singling out the City for this requirement, while not imposing this requirement on others, is a violation of the due process and equal protection clause of the State and federal constitutions.

³ See e.g., NPDES Permit No. NH0100901 (Concord Hall Street Wastewater Treatment Plant); NPDES Permit No. NH0101390, November 21, 2021 (Allentown Sewer Commission; NPDES Permit No. 0100170, March 6, 2015 (City of Nashua, NH); NPDES Permit No. MA0100447, September 25, 2019 (Greater Lawrence Sanitary District); see also NPDES Permit No. NH0100013, April 29, 2024 (Berlin Pollution Control Facility and Combined Sewer Outfall); NPDES Permit No. NH0100234, August 1, 2023 (Pierce Island Wastewater Treatment Facility).

Response 70

Regarding the comment that NH's surface water quality standards already apply to the discharges and already prohibit discharges that impair aesthetic values, EPA has an independent duty under CWA section 301(b)(1)(C) to ensure the permit achieves state water quality standards. *See In re City of Marlborough, Mass. Easterly Wastewater Treatment Facility*, 12 E.A.D. 235, 252 n.22 (EAB 2005). Further, EPA agrees that the permit is designed to protect water quality standards (including aesthetics) based on the effluent limitations included in the permit, but considers that this visual inspection is necessary to ensure compliance. Similar to any other effluent requirement (*e.g.*, copper), a limit is included in the permit and a monitoring requirement is included to ensure compliance. The visual inspection is intended to serve as a monitoring requirement to ensure compliance with aesthetics and EPA considers it sufficiently reliable. In any case, EPA clarifies that the results of a visual observation are not directly enforceable, but EPA may use the results to establish more stringent permit requirements in the future, if necessary.

Regarding the definition of "in the vicinity" of the outfall, EPA clarifies this to mean the general area of the receiving water expected to be most directly impacted by the discharge. EPA realizes the precise location is subject to the discretion of the Permittee, which is intentional to allow the Permittee the discretion to determine this general area.

Regarding this requirement singling out the City of Manchester, EPA disagrees and is not singling out any permittee. EPA highlights that this is a new requirement and notes that this requirement has been proposed in draft permits to Manchester WWTF (NH0100447), Nashua WWTF (NH0100170) and even a draft General Permit (NHG590000) that is designed to cover 21 eligible WWTFs throughout NH.

Comment 71

The requirement for a benthic survey in the Merrimack River is burdensome, impractical, and unnecessary.

The Draft Permit requires the permittee to conduct a benthic survey in the Merrimack River once during the permit term. This requirement is redundant, burdensome and impractical given the unique characteristics of the Merrimack River.

First, like the aesthetic standards discussed above, New Hampshire's water quality standards already prohibit discharges that cause harmful impacts to aquatic life, including impacts to the benthic community. These State standards, as outlined in Env-Wq 1703.03(c)(1) and Env-Wq 1703.08(b), ensure that surface waters are free from harmful benthic deposits and that any discharge complies with water quality standards that protect aquatic life.

Second, conducting a benthic survey in a large, dynamic river like the Merrimack presents several logistical challenges. The river has a long history of industrial contamination, particularly

from historic mill operations, which has altered the benthic environment. These legacy impacts, unrelated to the permitted operation of the City's wastewater treatment facility—combined with the river's high flow rates and sediment transport dynamics, create a complex ecosystem where it is impossible to isolate the effects of the City's discharge of effluent to the river from other natural and historical influences. The Merrimack River also is the receiving water for multiple other wastewater treatment facilities, both upstream (Franklin, Concord, and Allenstown) and downstream (Nashua, Lowell, Lawrence). As such, a benthic survey cannot reasonably be expected to produce reliable or actionable data on the discharge's effects on the benthic community.

Third, it has already been reported that nearly 100% of the Merrimack River already supports the State's designated uses. Specifically, the reduction in pollutants has already resulted in the reestablishment of benthic fauna.⁴

Fourth, the costs and resources required to conduct such a survey—not required by other existing NPDES permits⁵—are selectively burdensome for the City. The Merrimack River is a large waterbody, and sampling would need to occur at multiple locations along both upstream and downstream transects. The variability in sediment composition, flow dynamics, and the presence of other pollution sources make it logistically challenging to conduct a meaningful survey that could provide scientifically defensible results. Given the complexity of the river system, the data collected from such a survey cannot be expected to provide useful or interpretable insights that would support informed decision-making.

Finally, alternative monitoring methods, such as focused effluent water quality monitoring (e.g., dissolved oxygen, nutrient levels, etc.), which are already required in the City's permit provide more direct and relevant information regarding the discharge's impact on the river's ecosystem.

⁴ See *Merrimack River Watershed Protection Initiative, Past, Present and Future*, EPA Region 1, available at

⁵ See *supra*, footnote 3

Response 71

Regarding the comment that NH's WQS regarding the benthic community already apply to the discharge without a permit requirement, see Response 70.

In response to similar comments received by NHDES on the draft 401 certification, the final 401 certification includes the following updated statement regarding the benthic survey requirement:

"If notified in writing by NHDES or EPA that benthic deposits from the discharge are known or suspected to have a detrimental impact on downstream benthic communities, the Permittee shall conduct a benthic survey within one year of the notification to assess those impacts on aquatic life in the benthic environment. Visual observations, benthic sample results, or long-term permit limit exceedances could indicate a potential change in either the sediments or

settleable solids downstream of the outfall as compared to upstream of the outfall. Such a change could indicate that the facility's effluent is having a detrimental impact on the downstream benthic community health."

NHDES also provided the following justification for this statement in its final 401 certification:

"Because the permit includes effluent limitations on parameters such as total suspended solids and metals, it is already expected to be protective of the benthic community in the vicinity of the facility's outfall and meet surface water quality standards, specifically those in Env-Wq 1703.03(c)(1)(a) and 1703.08. NHDES' position is that a benthic survey should only be required if benthic deposits from a discharge are known or suspected to have a detrimental impact on a downstream benthic community and more specific benthic data is necessary to determine if additional protections are needed."

In response to this comment regarding the benthic survey requirement, EPA acknowledges that there is uncertainty regarding the potential impacts to the benthic community from this discharge. While EPA expects that facilities with a smaller dilution factor will have a higher potential to impact the downstream benthic community, EPA also acknowledges that benthic surveys can be expensive (especially in larger rivers such as the Merrimack River). EPA agrees with the comment as well as with NHDES that the requirement to conduct such an expensive benthic survey should be reserved for WWTFs that are "known or suspected to have a detrimental impact" on the benthic environment. Therefore, EPA has revised this condition in Part I.G.5 of the Final Permit to only be triggered based on the language above. EPA has also added the words "potential" and "from the discharge" to clarify that the permit condition is designed to "assess potential impacts from the discharge on aquatic life in the benthic environment."

EPA finds that this change will ensure that only if the discharge is likely to have a detrimental impact will it be subject to this requirement. Further, EPA expects that this change will generally limit the applicability of benthic surveys to facilities with very low dilution factors into relatively small receiving waters (given that the triggers of the study and potential detrimental impacts are more likely for those discharges). EPA highlights that any benthic surveys that may be conducted in these relatively smaller receiving waters will be at a relatively lower cost (compared to larger receiving waters with more deeply submerged outfalls, which would be much more expensive to conduct and are less likely to be triggered based on the revision above).

EPA also clarifies that it is appropriate to establish standard protocols to ensure any benthic surveys (if necessary) are conducted consistently. Given that this discharge is into a freshwater receiving water, EPA has added the following condition to the benthic survey requirement.

The Permittee shall conduct the benthic survey described in the permit as consistently as possible with the applicable portions of the *NHDES Protocols for Macroinvertebrate Collection, Identification and Enumeration* available at <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/1macroinverts-sop.pdf>.

Further, EPA clarifies that the purpose of the benthic survey is to compare such results directly with NH water quality standards for the benthic environment (*i.e.*, Env-Wq 1703.03(c)(1) and Env-Wq 1703.08(b)). Therefore, the Final Permit has also been updated to require the report to compare findings with these standards. Although, to be clear, EPA does not expect that the results of these benthic surveys to be able to be used by NHDES to assess the receiving water segments for impairment of the benthic environment. Rather, EPA does consider that they may identify detrimental impacts to the benthic community for further evaluation by EPA and/or NHDES.

Finally, EPA notes that the results of a benthic survey (if conducted during the permit term) will inform EPA's future permitting decisions. On the one hand, if the results demonstrate that the discharge is causing detrimental impacts to the benthic environment, EPA may reopen and modify or reissue the permit with more stringent conditions to ensure the permit is protective of water quality standards for the benthic environment. On the other hand, if the results demonstrate that the discharge is not causing any detrimental impacts, EPA may remove this condition in the next permit term.

Comment 72

Accelerated WET Testing:

The Revised Draft Permit requires the City to conduct accelerated WET Testing within 14 and 28 days after receiving certain results. Such accelerated WET Testing is impracticable and unworkable. WET Testing is booked many weeks in advance and labs have limited availability to perform such testing. The organisms for the WET Testing are flown in from Colorado, which presents a significant logistical challenge. As an alternative, upon obtaining unfavorable results from a WET Test, the City requests that it be allowed to conduct a retest within the same quarter, but not within the limited timeframe of only 14 to 28 days.

Response 72

Regarding the requirement to conduct accelerated WET testing within 14 and 28 days, EPA considers that expediting such re-tests is important to ensure that any persistent toxicity from the discharge is found and addressed as quickly as possible. However, EPA also recognizes that there may be limitations outside the Permittee's control, such as lab availability. Therefore, EPA has maintained the 14 and 28 days timeline in the Final Permit, but has added a provision that the re-tests must be conducted within those timeframes "or as soon as possible thereafter based on factors outside the Permittee's control (*e.g.*, limited lab availability). The Permittee must document the justification for

any re-tests conducted after these timeframes and submit the justification with the re-test results.”

Comment 73

Pollutant Scan:

The Revised Draft Permit requires the City to conduct a Pollutant Scan during the third quarter of every year. The City objects to this requirement because it is unnecessarily redundant and unnecessarily burdensome, among other reasons.

Response 73

EPA finds these data necessary to ensure the permit does not allow toxic impacts in the receiving water. The results will be used in the next permit reissuance. EPA finds that annual pollutant scans will provide a more robust dataset to better characterize discharge, especially given the variety of potential sources throughout the POTW collection system.

For more on EPA’s authority to require monitoring, see Response 1.

I. Comments from OspreyOwl Environmental, LLC, on behalf of the City of Manchester:

Comment 74

PFAS and AOF REQUIREMENTS:

In Part 1, Footnotes: there are 26 associated footnotes. Footnote 2 Reads:

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).

The tests for PFAS and adsorbable organic fluorine have not, at the time of the issuance of this Draft Permit, completed the promulgation process. There has been no Final Action on the CWA Methods Update Rule for the Analysis of Contaminants in Effluent.¹

As stated, “Final Action” is “To Be Determined.” Until promulgation is final, these two parameters should not be included in any of the footnote references.

¹<https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202404&RIN=2040-AG37>

In December of 2024, the EPA proposed Method 1633A for promulgation at 40 CFR Part 136.3 (docket number EPA-HQ-OW-2024-0328).² EPA states on its website, “[w]hile the method is not nationally required for CWA compliance monitoring until the EPA has promulgated it through rulemaking, the EPA recommends it now for use in individual permits.”³ In the above docket referenced, EPA states, “[o]nce final, the updates . . . [will] improv[e] the consistency of how regulated parameters are analyzed by requiring fully validated methods that have well documented accuracy and precision.” Until then, the regulated community does not,

and will not, have a methodology that has been fully validated to determine accuracy and precision.

² https://www.epa.gov/system/files/documents/2024-12/mur-22-proposal-fact-sheet_december-2024.pdf

³ <https://www.epa.gov/cwa-methods/cwa-analytical-methods-and-polyfluorinated-alkyl-substances-pfas>

Performing these expensive tests now would not meet the criteria for valid testing, as these methods are still going through review for accuracy and precision criteria. Until this step in the approval process has been completed, the request for PFAS and AOF sampling and analysis using these test methods does not comply with the conditions of the Draft Permit's footnote 2. These requirements should be removed from the Draft Permit.⁴

⁴ *Footnotes 13 and 14 would be affected by the above comment. EPA also states in footnote 13: that "[u]ntil there is an analytical method approved in 40 CFR Part 136 for PFAS, monitoring shall be conducted using Method 1633." EPA is seeking approval for Method 1633A. Similar language appears in footnote 14: "[u]ntil there is an analytical method approved in 40 CFR Part 136 for Adsorbable Organic Fluorine, monitoring shall be conducted using Method 1621."*

Additionally, the Adsorbable Organic Fluorine test (Method 1621) is a speculative test for finding sources of PFAS. Several non-PFAS compounds are detectable using the 1621 analysis.⁵

According to the EPA:

"The EPA's Office of Water has published Method 1621, 'Determination of Adsorbable Organic Fluorine (AOF) in Aqueous Matrices by Combustion Ion Chromatography (CIC),' a method to measure the aggregate concentration of organofluorines (molecules with a carbon-fluorine bond) in wastewater. The most common sources of organofluorines are PFAS and non-PFAS fluorinated compounds such as pesticides and pharmaceuticals." "AOF is a method-defined parameter, meaning that the results of the measurement are dependent on the manner in which the measurement is made The method tells the user that organofluorines are present but cannot identify which specific organofluorines are present. The strength of the method is that it can broadly screen for thousands of known PFAS compounds at the part per billion level in aqueous (water) samples."

"The Office of Water encourages interested parties to review and use . . . [M]ethod [1621], with the understanding that it may undergo revision during a rulemaking process. Method 1621 is not nationally required for CWA compliance monitoring until the EPA has promulgated it through rulemaking."⁶

Further, this method measures PFAS in micrograms per liter (ug/l), whereas footnote 14 requires measurement in nanograms per liter (ng/l). Therefore, Method 1621 is not compatible with the requirements of the Draft Permit.

⁵ <https://www.epa.gov/system/files/documents/2024-01/method-1621-for-web-posting.pdf>

⁶ <https://www.epa.gov/cwa-methods/cwa-analytical-methods-and-polyfluorinated-alkyl-substances-pfas>

Response 74

As recognized by the commenter, EPA has proposed to add to 40 C.F.R. Part 136 new methods for per- and polyfluoroalkyl substances (PFAS) and for adsorbable organic fluorine (AOF). 90 Fed. Reg. 6967 (Jan. 21, 2025); *see also* 90 Fed. Reg. 10043 (Feb. 21, 2025) (extending public comment period through March 24, 2025). As of the date of this final permit issuance, there has been no final action on this proposed rule.

Before proposing to add methods for PFAS to Part 136, EPA published several versions of Draft Method 1633.³⁵ The EPA decided to release multiple revisions of the draft method in response to stakeholder requests for the agency to update the method incrementally with the multi-laboratory data as soon as practicable. The draft methods were subjected to multiple levels of review across several EPA Program Offices. EPA also encouraged laboratories, regulatory authorities, and other interested parties to review the draft method(s) and provide feedback and comments to the Office of Water. EPA is grateful for the constructive feedback received from multiple interested parties to date, which resulted in many of the changes reflected in the method.

EPA released the final version of Method 1633 and the last volumes of the multi-laboratory study report on the [Clean Water Act \(CWA\) Methods website](#) on Wednesday, January 31, 2024. In response to comments from laboratories and others, the EPA developed Method 1633A. The changes between 1633 and 1633A are minor (mostly clarifications) and can be reviewed in the “Version History” section of the Method 1633A on Page ii. The Method is the result of a collaboration between the EPA and the Department of Defense. It is a fully validated method that has been tested in a wide variety of wastewaters and is compliant with the required quality assurance and control procedures for chemical analysis of NPDES monitoring samples, as specified in 40 C.F.R. § 136.7. Method 1633 contains the final quality control (QC) criteria generated from a multi-laboratory validation study. The Office of Water is unaware of any other PFAS method that has been validated using 10 laboratories, 15 challenging aqueous matrices (six wastewaters, three surface waters, three groundwaters, and three landfill leachates), nine solid matrices (three soils, three sediments, and three biosolids), and three aquatic tissues. Thus, EPA is recommending for the NPDES permit program and the National Pretreatment Program use Method 1633 or 1633A currently as the best analytical methods currently available for monitoring of effluent for PFAS. The Final Permit has been updated to reference Method 1633A.

EPA also completed a multi-laboratory validation study of EPA Method 1621, a method for AOF. EPA released the final method and the multi-laboratory study report on the CWA Methods website on Wednesday, January 31, 2024. The method-defined parameter AOF is particularly useful in the context of PFAS analysis. Targeted methods typically require a matching analytical standard for each compound of interest. In the case of PFAS, analytical standards are not available for every compound. An AOF method

³⁵ See Version History on pg. ii-iii of Method 1633, Revision A (Dec. 2024), available at: <https://www.epa.gov/system/files/documents/2024-12/method-1633a-december-5-2024-508-compliant.pdf>.

can help provide context for what targeted analyses might miss, especially if used on a sample where PFAS contamination is suspected. More information about how AOF and Method 1621 relate to PFAS and Method 1633 is available on EPA's website:

<https://www.epa.gov/cwa-methods/frequent-questions-about-pfas-methods-npdes-permits>.

The comment states that tests for PFAS and AOF have not, at the time of the issuance of this Draft Permit, completed the promulgation process. EPA agrees, as described above, that neither Method 1633A nor Method 1621 have yet been added to Part 136. EPA notes, however, that existing EPA regulations contemplate the use of methods not yet promulgated in Part 136 under appropriate circumstances. See Response 2.

The comment generally expresses concerns about accuracy and precision and asserts that the testing methods do not comport with the requirements in Footnote 2 of the draft permit, which states:

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 either to 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 the following 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.

Here, there are no effluent limits for PFAS nor are there any methods approved under 40 C.F.R. Part 136. Given that Methods 1633 and 1621 are the best and only methods available for measuring these pollutants at this time, EPA finds that the results are sufficiently sensitive for purposes of this NPDES permit. EPA also reiterates the points above in this response regarding the systematic development of the two methods for use in NPDES permits and 40 C.F.R. § 122.44(i)(v)(B).

The commenter expresses concern that several non-PFAS compounds are detectable using Method 1621. EPA agrees and notes that Method 1621 is a screening method for wastewater. As noted on page 35 of the Fact Sheet, monitoring for both Adsorbable Organic Fluorine using Method 1621 concurrently with PFAS monitoring will screen for a broader range of these types of emerging contaminants. EPA finds that the combination of Method 1633 (for 40 specific PFAS pollutants) as well as Method 1621 (for a wider variety of PFAS and similar pollutants) will together provide a robust dataset to fully characterize the discharge.

Finally, the commenter also states that Method 1621 is incompatible with the requirements of the Draft Permit because Method 1621 measures PFAS in micrograms per liter whereas the Permit requires measurement in nanograms per liter. EPA agrees that the units in the permit should be µg/L to match the units in the method. The Final Permit has been updated accordingly.

Regarding concerns about cost, see Response 2.

Comment 75

ADAPTATION PLANNING

Section C.1., Adaptation Planning covers three pages of the Draft Permit with 13 footnotes. In the first Draft Permit Fact Sheet, the EPA outlines its claimed authority to include Adaptation Planning requirements. See Appendix C, Item C., Legal Authority.

EPA references a Federal Register document, Vol. 45, No. 98 published on Monday, May 19, 1980. Nowhere does that Register Notice, discuss the prevention of future flooding or include any language to indicate Adaptation Plan requirements. Item 7 on page 33303 of the Federal Register cited here, describes Proper Operation and Maintenance, as requiring a permittee to: “maintain in good working order and operate efficiently all facilities and systems of treatment of control which are installed or used by the permittee to achieve compliance with the terms and conditions of the permit” and includes “effective performance based on designed facility removal, adequate funding, effective management, adequate operator training, staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures.” Per this description of O&M, flooding and natural disaster prevention are not a part of Proper Operation and Maintenance.

EPA also cites several EAB cases that have nothing to do with adaptation planning for climate change. First, in the case *In re Avon Custom Mixing Services, Inc.*, 17 E.A.D. 700, 709 (EAB 2002),⁷ EPA attempts to extend this EAB decision recognizing the Agency’s authority to include monitoring requirements in NPDES permits, to provide authority to EPA to also require adaptation planning. But this case does not concern adaptation planning and EPA misunderstands its scope. This same situation is evident in the cited *City of Moscow*⁸ EAB decision. Again, there is no reference in this case to adaptation planning. The EPA uses these references to demonstrate an inherent connection where none exists.

⁷[https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/Decision%7EDate/81FE3FF52FDC1DA385257069005F7D71/\\$File/avon.pdf](https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/Decision%7EDate/81FE3FF52FDC1DA385257069005F7D71/$File/avon.pdf)

⁸ <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/15509>

In footnote 30, EPA argues Congress intended to include adaptation measures in the scope of the CWA under section 223, added via the Infrastructure Investment and Jobs Act. Section 223 creates a grant program to support POTWs “at risk of being significantly impaired or damaged

by a natural hazard.” Plainly, section 223 is a grant program, and does not extend to authority to require adaptation planning in NPDES permits. NPDES permits issued since the inception of the CWA in 1972 made clear that operation and maintenance are for the plant and all processes under its control for the effective treatment of wastewater. There was never an expectation previously, as in the new Draft Permit, that a WWTP would mitigate and offset the impacts of natural disasters, hurricanes, and floods.

The Supreme Court in the case of *Loper Bright Enterprises vs. Raimondo* overturned the longstanding *Chevron USA vs. the Natural Resources Defense Council*, under which regulatory agencies were given deference when determining the meaning of a statute when the wording was unclear, ambiguous, or nonexistent. CWA Section 223 only creates a grant program and does not authorize any NPDES requirements. The *Chevron* decision was overturned to prevent this exact type of overreach by EPA arguing this program now applies lawfully to every NPDES Permit holder.

Furthermore, implementation of the Adaptation Plan is infeasible. There are several models, monitoring stations, and planning that need to be completed by the USGS, USACE, and the NHDES Dam Control Bureau before the implementation of the adaptation plans produces reliable and cost-effective impacts on flood control. Additionally, before any adaptation plan can be accepted and implemented a look back at the historic flooding in NH should be performed by EPA.

Section 402 of the Clean Water Act (b)(1)(B) also requires the issuance of permits that “are for fixed terms not exceeding five years;” This requirement is outlined in the State designated programs also as indicated in Section 402 (a)(1)(B)(3). “EPA shall be subject to the same terms, conditions, and requirements as apply to a State permit program and permits issued thereunder under subsection (b) of this section.” The administrative attempt in this Draft Permit is to set conditions that go well beyond the five-year permit period.

Due to the above reasons, the City of Manchester respectfully requests the adaptation planning requirements be removed.

Response 75

See Response 3.

Comment 76

BENTHIC SURVEY

Footnote 23 of the limitations table states the following:

During the third calendar quarter (i.e., July through September) that begins at least 12 months after the effective date of the permit, a benthic survey shall be conducted once per permit term to assess impacts from the discharge on aquatic life in the benthic environment. See Part I.G.5 for more details.

The EPA, Region 1, produced a document titled, ‘Merrimack River, Watershed Protection

Initiative in November of 1987. The document was produced with the input of NHDES and MassDEP. The introduction described that the Merrimack River was once one of the 10 most polluted rivers in the nation. "In 1965, rafts of decomposing material floated along the Contoocook River (a major tributary); very little benthic fauna and no pollution-sensitive species were found along portions of the river near Concord." Page 8. The report goes on to say that the Merrimack's pollution was caused by sewage, tannery and textile wastes, industrial wastes, and tannery sludges. However, "[t]oday, two decades and a half of billion dollars in federal and state expenditures later, the Merrimack provides drinking water to well over a quarter of a million people and serves as an unparalleled resource for the region." "One of the nation's 10 most polluted in the 1960s, the river now fully or partially meets fishable/swimmable standards in 94.3% in its New Hampshire miles." The report further states, "[t]he river has exhibited marked improvements in physical appearance as well as biological and chemical makeup. For example, these significant reductions in the input of pollutants have resulted in the reduction of sewage-laden sediments by re-established benthic fauna."

Table I-1 on page 32 lists 24 major industries that contribute flow to the Merrimack or tributaries to the Merrimack River. The list of pollutants follows and includes BOD, chromium, ethylene dibromide, fluorides, ammonia, oil and grease, phosphorus, perchloroethylene, trichloroethylene, settleable solids, total suspended solids, total toxic organics, and a metal listing of cadmium, nickel, aluminum, lead, iron, tin, zinc, silver, copper, and cyanide. This is quite a list of likely legacy pollution with the likelihood that these pollutants are still retained in the upper sediment layers of the riverbed.

Page 40 begins a narrative on the 'Present Situation' at the time of the writing of the document. There is a listing of all the ways the Merrimack can continue to be contaminated, spills, urban runoff, transport accidents of tankers that are near or cross the river, contaminated groundwater, agriculture (farms), underground storage tanks, industrial landfills, hazardous waste sites, and road salts, all of which are unassociated with wastewater treatment facility operations.

Manchester believes that should the EPA demonstrate that the WWTP, through its NPDES Permit, has violated its permit in such a way that could cause adverse impacts on the benthic environment before requiring a benthic survey. Otherwise, there is no reason to believe the benthic environment in the Merrimack River has worsened in the 38 years since the writing of the 1987 report.

The City of Manchester respectfully requests to have the Benthic Survey requirements removed from the permit.

Response 76

See Response 71.

Comment 77

Section G, Special Conditions

In Section 4. Toxicity Violation Procedures, a. Accelerated Testing Procedures, there is a requirement for a WET retest at 14 days and at 28 days of a WET test failure, death of fish or shellfish in the vicinity of the outfall, or an oily sheen noted on the surface of the water in the vicinity of the outfall.

A WET test failure may indicate toxicity in the influent of the wastewater treatment plant, or it very well may result from upstream operational impacts of the Hooksett, Concord, and Franklin treatment plants, or some other source. The presumption that the failure is being caused by the City's WWTP effluent is unsupported. If there was an observable violation around the outfall, an operator could inspect the effluent by taking a sample from the effluent tap at the main building. The operator could test the effluent for pH, D.O., and Cl₂ residual and even do a microscopic evaluation of the effluent discharge and MLSS blanket in the secondary clarifiers. If there is sufficient microbiological life, then there is no indication that the plant process is toxic. This with a test for residual chlorine in the effluent and the dissolved oxygen going to the outfall would be all that is needed to determine if it was any type of causal plant toxicity that killed the fish. These three measures would be more than logical to prove effluent toxicity without the need to spend \$3,600 on another WET test and possibly another \$3,600 after that. Manchester requests that the second bullet be stricken from the final permit and language to review effluent micro-life, and check effluent residual chlorine, pH and D.O. is more expedient and of no actual cost to the WWTP with results within an hour of the event rather than a month later.

The third bullet calls for a toxicity test if there is an oily sheen on the surface of the water in the vicinity of the outfall. Again, an examination of the plant effluent would easily determine if the cause of the oily sheen is coming from the WWTP. These actions are immediate and visually verifiable rather than the long waiting period between costly toxicity testing. The proposed action is a poor allocation of \$3,600 from plant resources. Additionally, if the WWTP investigation demonstrates oily sheen in the effluent then the NHDES oil spill bureau would be immediately called for their assistance. For this reason, Manchester also requests that the third bullet also be stricken from the final permit.

Response 77

Regarding the second bullet under Part I.G.4.a, EPA acknowledges that a sudden and significant death of large numbers of fish and/or shellfish in the vicinity of the discharge may be caused by something other than the discharge. Therefore, EPA has added language to the Final Permit to clarify that the source "may have been due to the discharge" indicating that if the Permittee is able to identify that there is another source more likely than the discharge, then this requirement is not triggered. However, EPA does not agree that simply measuring pH, D.O., and chlorine or looking at the effluent or MLSS under a microscope is an adequate replacement for a WET re-test.

Regarding the third bullet under Part I.G.4.a, EPA agrees that the presence of an oily sheen in the receiving water is not sufficient justification for a WET re-test. Rather, EPA considers that an oil & grease test is more appropriate. Therefore, EPA has updated the Final Permit to remove the third bullet under Part I.G.4.a and added a requirement

under footnote 22 of Part I.A.1 to immediately test for oil & grease if an oily sheen is observed.

Comment 78

ALUMINUM

In Appendix B, Reasonable Potential and Limits Calculations the EPA calculated the 95th percentile and the background concentration from WET test data taken between December of 2018 and September of 2023. The resultant calculation relied upon the following data for aluminum:

TABLE 1 – EPA NPDES Al Data Used for Reasonable Potential Calculation

Date	Effluent	Ambient
Dec-18	43	160
Mar-19	68	120
Jun-19	42	210
Sep-19	44	300
Dec-19	42	0
Mar-20	26	61
Jun-20	28	96
Sep-20	69	34
Dec-20	52	270
Mar-21	53	62
Jun-21	45	120
Sep-21	59	300
Dec-21	30	63
Mar-22	59	240
Jun-22	42	110
Sep-22	77	31
Dec-22	36	370
Mar-23	240	150
Jun-23	260	370
Sep-23	54	140

The upstream 7Q10 is 436 MGD in the table. The upstream median concentration is 130 ug/l. The plant design flow is 34 MGD. The acute and chronic values for the plant effluent were listed as 132.5 ug/l. Combined Qd was 470 MGD. The calculated Cd was 130.2 for both acute and chronic criteria.

The allowable acute concentration with the 10% NH safety factor is 912.2 ug/l. The chronic concentration with the 10% safety factor is 105.8 ug/l. Cd does not exceed the acute value but does exceed the chronic value of 105.8 by 24.4 ug/l, hence the proposed NPDES permit limit of 118 ug/l.

A clean sampling program was performed for Manchester, Hooksett (upstream), and Derry (downstream) over the course of the summer of 2024. The ambient river results are listed in

the table below.

TABLE 2 – Manchester, Hooksett, Derry ‘Clean Sample’ Al concentrations

DATE	River	Manchester	Hooksett	Derry
	Flow			
6/25/2024	5,070	47	45	51
6/27/2024	2,670	56	49	43
7/2/2024	2,720	93	61	51
7/18/2024	1,590	26	27	24
8/21/2024	2,450	93	86	84
8/23/2024	2,780	71	63	70
9/6/2024	1,530	46	40	37
9/11/2024	1,150	26	30	27
10/4/2024	620	22	74	25
10/11/2024	970	24	32	28
Median		46.5	47	40

The cells are shaded lowest concentration (peach), middle concentration (straw), and highest concentration (powder blue) to determine trends. Hooksett samples were immediately upstream from their outfall (about 11 miles upstream from Manchester’s 001 outfall). Manchester samples were taken at the Fisher Cat Stadium boat ramp (about 1.5 miles upstream of Manchester’s 001 outfall), and the Derry samples were taken from a small beach area (about four miles downstream of Manchester’s 001 outfall) about ½ mile below the Roger Wizorek bridge (new airport cutoff bridge).

The samples were all very close to each other except for the 7/2 sample (Manchester was a 1/3 higher than the other two samples and the 10/4 sample where Hooksett was three times higher than the other two samples). Employees were trained during most of the sampling events, which could explain the variations. However, when the measurements are below 100 ug/l multiple factors could contribute to contamination of the sample collected. The duplicates indicated that the samples were all collected uniformly.

The highest flow was on 6/25 at 5,070 cfs and the lowest flow was on 10/4 at 620 cfs. As all flows were below 7,000 cfs it is not believed that scouring of the riverbed contributed to any of the measured contamination in all samples. The table including EPA’s WET test data and the latest Manchester Ambient data would be as follows.

TABLE 3 – Aluminum ‘Clean Sample’ Summer of 2024 Concentrations

Date	Ambient
	WET ug/l

Dec-18	160
Mar-19	120
Jun-19	210
Sep-19	300
Dec-19	0
Mar-20	61
Jun-20	96
Sep-20	34
Dec-20	270
Mar-21	62
Jun-21	120
Sep-21	300
Dec-21	63
Mar-22	240
Jun-22	110
Sep-22	31
Dec-22	370
Mar-23	150
Jun-23	370
Sep-23	140
6/25/2024	47
6/27/2024	56
7/2/2024	93
7/18/2024	26
8/21/2024	93
8/23/2024	71
9/6/2024	46
9/11/2024	26
10/4/2024	22
10/11/2024	24
Median	93

The median upstream value is 93 ug/l when the 'Clean Sample' ambient test data is included with the EPA data. According to the Dilution Factor the available dilution in the Merrimack River is 674.5 cfs (436 mgd). The WWTP design flow is 34 mgd. The formula for calculating reasonable potential is $(C_s \times Q_s) + (C_e \times Q_e) / Q_d$.

132.5 ug/l C_e = Effluent Concentration 95th Percentile

34 MGD Q_e = Avg Design Q for Chronic: Peak Q Acute

93 ug/l C_s = Median Concentration in Merrimack River upstream

436 MGD Q_s = 7Q10 Stream flow Merrimack River

95.9 ug/l Cd = downstream concentration

470 MGD. Qd = Downstream flow (Qs + Qe)

$(93 \times 436) + (132.5 \times 34) / 470 = 40,548 + 4,505 / 470 = 45,053 / 470 = 95.9 \text{ ug/l}$ is the final downstream concentration including Manchester's effluent value of 132.5 ug/l.

This value is below the 105.8 ug/l chronic criteria and would not trigger a 'Reasonable Potential' value. Effluent aluminum samples had not been collected via 'Clean Methods' during most of the WET tests conducted between December of 2018 and September of 2023. The same sampling criteria were used for standard plant sampling. The sampling hose was not changed out, the strainer had a metal stainless weight at the end, algae was allowed to collect on the strainer, the pump hosing was not changed out and the 5-gallon carboy was used time and again without a consistent interior cleaning. During the summer sampling event, the staff was instructed in the proper way to set up the sample collection apparatus for the cleanest samples possible.

Clean sampling for effluent discharge can be accomplished in four easy steps. These include a clean bag insert in the composite carboy to avoid the addition of sloughings and organic matter that clings to the side of the carboy from previous composite samples. Use a new or ultra-clean sampling hose to take samples from the effluent channel and ensure the strainer is free of algae. Clean the thicker pumping tubing to pump the from the effluent channel into the bagged carboy. Use a metal-free strainer to avoid particulate pieces of stainless steel being drawn up into the sampling tube from the strainer rubbing against the concrete tankage.

The NHDES proposed a change to the aluminum criteria in the State's adopted CALM. The initial proposal was to use regression curves from DOC, pH, Hardness, and river/stream discharge cfs at the time of sampling. Comments were made and the NHDES again asked for comments removing the DOC, pH, and Hardness values from the calculation while only keeping the river/stream discharge values. The premise was to collect 24 samples, including analysis for DOC, pH, and Total Hardness, and run these values through the aluminum calculator. The below table has the clean sample data from the summer sampling event for Manchester as run through the aluminum calculator.

TABLE 3 – Aluminum Calculator with 5th percentile, 10th percentile and 50th percentile values

Total Al Ug/L	Date	Total Hardness		pH		FAV	CMC	CCC
		DOC (mg/L)	(mg/L as CaCO3)					
47	6/25/2024	3	16	7.3	7542.874	2,517	1,300	550
56	6/27/2024	3.1	16	7.4	7542.874	2,831	1,400	620

93	7/2/2024	4.3	15	7.42	7542.874	3,242	1,600	670
26	7/18/2024	3.7	15	7.48	7542.874	3,243	1,600	700
93	8/21/2024	5.5	14	7	7542.874	2,278	1,100	470
71	8/23/2024	5.2	14	7.68	7542.874	4,366	2,200	910
46	9/6/2024	3.6	15	7.1	7542.874	2,148	1,100	460
26	9/11/2024	3.3	17	7.3	7542.874	2,662	1,300	570
22	10/4/2024	2.8	19	7.3	7542.874	2,559	1,300	550
24	10/11/2024	3.1	19	7.4	7542.874	2,952	1,500	630

5th 464.5

10th 469

50th 595

The NHDES has proposed a 50th percentile of the flow and the calculated CCC in instances where there is a significant relationship ($p < 0.05$) with the data sets. A 10th percentile if there is not a significant relationship and a 5th percentile if there are endangered species around the discharge outfall. Taking the lowest 5th percentile from Table 3 above, the value is 464.5 ug/l. This is much higher than the current value of 118 ug/l.

Due to this new information, Manchester would respectfully request that the limit of 118 ug/l be removed from the final permit. The final permit value can be determined once the NHDES approves their version of the Aluminum Calculator in their proposed CALM.

Response 78

EPA appreciates the data collection described in this comment. As noted in Response 11, the Final Permit includes a monitoring requirement in lieu of an aluminum limit. In the next permit reissuance, EPA will determine whether any limits are appropriate based on the WQS in effect at that time and the sampling results collected pursuant to the monitoring requirements in this permit.

Comment 79

Ammonia

In the table of permit limitations, EPA has indicated an Ammonia limit of 10.4 mg/l from May 1st through October 31st. The 'Reasonable Potential' calculation has a 95th percentile limit of 0.17 mg/l for the plant effluent and an upstream concentration of 21.8 mg/l. The final acute and chronic values downstream would be 1.74 mg/l. The water quality value of 0.91 mg/l (10% NHDES safety applied) means there is reasonable potential. The permit value was calculated at 10.4 mg/l from the concentration values.

The amount of ammonia that must be removed is 11.4 mg/l from the stated value of 21.8 mg/l. The design capacity of the WWTP is 34 mgd. The daily removal of ammonia required is $11.4 \times 34 \times 8.34$ or 3,233 pounds of ammonia/day. Multiply this by 184 days of required compliance from May 1st through October 31st and you have 594,872 lbs. of ammonia.

The EPA website⁹ states that 40% of nitrous oxide comes from human sources and that one

pound of nitrous oxide (N₂O) is equivalent to 265 pounds of carbon dioxide (CO₂). In the chart, 6% comes from wastewater treatment. The Intergovernmental Panel on Climate Change (IPCC)¹⁰ states that one pound of N₂O equates to 300 lbs of CO₂. Each agency indicates there is not a great method of estimating N₂O discharges from wastewater treatment. The IPCC does state the following, "N₂O emission from wastewater handling is estimated to contribute 26% to the total greenhouse gas emission (CO₂, CH₄, and N₂O) of the water chain, being the sum of drinking water production, water transport, wastewater, and sludge treatment and discharge." (Frijns et al., 2008).

⁹ <https://www.epa.gov/ghgemissions/nitrous-oxide-emissions>

¹⁰ <https://www.sciencedirect.com/science/article/pii/S0043135409001420>

Ammonia is removed during the treatment process by first nitrification and then denitrification. During nitrification, ammonia is converted to nitrite or nitrate. These intermediate byproducts are converted to dinitrogen gas during denitrification. N₂O can be produced in either the nitrification or denitrification stages and can be exacerbated by low D.O. or low COD/N ratios (Manchester has low COD in the influent due to I/I and at times there is not enough COD to produce the volatile fatty acids needed for permitted phosphorus removal).

Literature values indicate that a pound of ammonia can produce an estimated 0.08 pounds of N₂O. At this conversion value, there would be a total of 47,590 pounds of N₂O per seasonal ammonia removal. That is 23.8 tons of N₂O emitted into the atmosphere. At the EPA equivalent value of 265:1, that is 6,307 tons of CO₂ discharged annually due to ammonia treatment. By IPCC standards of 300:1 that would be 7,140 tons of equivalent CO₂ discharged annually.

Adaptation Planning is focused on climate change and its impacts. The USCAE/CDM study of the Merrimack River from 2005 through 2012 in three separate phases indicated there were no observable problems on the Merrimack River due to any locations of elevated nitrogen or phosphorus. Matter is neither created nor destroyed but only changes form. Ammonia is a great example as it converts to N₂O and CO₂ equivalence in the thousands of tons. There needs to be a review of the damage contributed to the climate change conditions and the real benefits of removing 11.8 mg/l of ammonia from the wastewater discharge. It has been 13 years since the finalization of the USCAE/CDM report and the river has not shown any evidence of additional impacts from the continued discharge of ammonia. The EPA cites a mountain of evidence of climate change catastrophes in NH and VT in Appendix C, Rational for Adaptation Planning. This is the chance to find the balance between the pollution caused by different wastewater treatment activities rather than shift the pollution from the discharge of ammonia (which the plant will need to spend several million dollars to achieve) to the atmosphere in the form of thousands of tons of equivalent CO₂ greenhouse gas pollutants. The result is that 15 to 20 years down the road the EPA will be mandating the capture and treatment of methane from the phosphorus removal process and N₂O from the nitrification/denitrification process costing the plant several more million dollars when a balance is available today to seek the road of less environmental damage by true evaluation of the cause and effect of unnecessary wastewater treatment.

Manchester requests that the evaluation of ammonia removal impacts be weighed against the greenhouse gases impacts and present a reasonable synopsis to the City of Manchester of the pros and cons of implementation and sound reasoning to go forth with ammonia treatment at the expense of climate change.

Response 79

This comment suggests that EPA balance toxic impacts from ammonia with impacts from greenhouse gases produced to treat ammonia. EPA understands the concern raised in this comment but must condition this NPDES permit to ensure protection of water quality standards. In this case, the discharge of ammonia has the reasonable potential to cause or contribute to toxic impacts in the receiving water and must contain a limit to protect these water quality standards. In other words, EPA is unable to allow a violation of water quality standards in the hope that impacts outside the scope of this permit (e.g., greenhouse gas emissions) would be lessened.

J. Comments from Philip D. Guerin, Executive Director of the Massachusetts Coalition for Water Resources Stewardship:

Comment 80

The overall theme of the revised draft NPDES permit was to make additional changes to the draft permit issued in March 2024 and with these changes undo decades of standard language and approaches used in past permits to demonstrate how the permit achieved compliance with narrative state water quality standards. To the best of our knowledge, past permits were certified by the State of New Hampshire through the 401 Water Quality Certification process. This would indicate that the State, which establishes water quality standards, agreed that the previous and long-held language regarding narrative water quality standards was sufficient to comply with the narrative standards.

So, what has happened to cause this dramatic change in language? Did NHDES suggest that the new language would be necessary now in order to receive Water Quality Certification going forward? The Statement of Basis does not provide any information that suggests a reason for this change. Has EPA notified and ordered all state agencies that NPDES permits must include the new language and requirements regarding narrative water quality standards as permits are renewed? Or is this yet another example of Region 1 “experimenting” with permits in New Hampshire and Massachusetts to determine what they might implement in terms of over the top, onerous novel requirements? Is this the federal government once again targeting two states with costly requirements that will not be applied elsewhere?

Response 80

EPA notes that these changes are in response to the Supreme Court case *City and County of San Francisco v. EPA*, 145 S.Ct. 704, which was decided on March 4, 2025.³⁶ The decision indicates that “end-result” requirements are not appropriate in NPDES

³⁶ Supreme Court decision available at: https://www.supremecourt.gov/opinions/24pdf/23-753_f2bh.pdf

permits. According to the Supreme Court decision, “end-result” requirements are “permit provisions that do not spell out what a permittee must do or refrain from doing but instead make a permittee responsible for the quality of the water in the body of water into which the permittee discharges pollutants.”

Rather than including any provisions that may be considered “end-result” requirements in this permit, EPA’s permitting approach includes several new permit requirements (as described in the 2025 Statement of Basis) designed to gather information needed to establish requirements and/or effluent limitations on the discharge in the future. EPA notes that this approach is in accord with the recommendations of the Supreme Court decision. Specifically, page 20 of the decision concludes with the following statement:

“In sum, we hold that §1311(b)(1)(C) does not authorize the EPA to include ‘end-result’ provisions in NPDES permits. Determining what steps a permittee must take to ensure that water quality standards are met is the EPA’s responsibility, and Congress has given it the tools needed to make that determination. If the EPA does what the CWA demands, water quality will not suffer.”

In this case, EPA has determined that the monitoring requirements described in the 2025 Statement of Basis are necessary steps that the CWA demands to ensure sufficient information is available to protect water quality.

Regarding the comment that this only applies in New Hampshire and Massachusetts, EPA disagrees and notes that the Supreme Court decision applies nation-wide. See also Response 70.

Finally, in response to this comment, EPA made one additional revision to the Draft Permit to ensure that the permit is fully consistent with the Supreme Court decision referenced above. Specifically, Part I.H.2.b and c were revised to the following:

“The discharge shall not contain color (unless naturally occurring), objectionable odor (unless naturally occurring), or visible floating materials such as foam, debris, or scum.”

Contrary to the aesthetics monitoring requirements in Part I.A.1, footnote 22 of the permit, EPA notes that this provision in Part I.H.2 must be revised because it is a permit limitation and is not simply a monitoring requirement. In other words, a permit may include monitoring requirements of the receiving water but may not include “end-result” effluent limitations. Based on this revision to Part I.H.2.b and c from the Draft Permit, the revised effluent limitation clearly spells out what the Permittee must do to achieve compliance, i.e., ensure its discharge does not contain the elements contained in the limitation. Therefore, EPA confirms that the Final Permit does not include any “end-result” requirements and is fully consistent with the recent Supreme Court decision.

Comment 81

Among the more disturbing new requirements that are included in the revised draft permit for Manchester are:

Benthic Macroinvertebrate Surveys: Once during the permit term, the City of Manchester will have to evaluate benthic invertebrates upstream and downstream of its discharge by collecting 3 samples across 2 transects of the Merrimack River. Under the Clean Water Act, the assessment of water quality and stream health is a state function that should not fall on a permittee. The level of effort and cost involved in doing such surveys across the Merrimack River will be significant. Only certified freshwater macroinvertebrate taxonomists are allowed to perform the analysis. How many such individuals are there in the region that could do this work, especially if this requirement is applied to all other permittees in New Hampshire and Massachusetts. The financial resources necessary to conduct such surveys are better spent on infrastructure improvements. If EPA and/or NHDES want to assess benthic invertebrates in the Merrimack River then they are free to do so.

Response 81

See Response 71.

Comment 82

Pollutant Scans on Ambient waters, Effluent and CSOs: Once per year, Manchester must conduct a pollutant scan on ambient waters upstream of its outfall, its effluent, and at 4 selected CSOs. The pollutant scan is a multi-method analysis that essentially tests for everything that can be tested. The Statement of Basis offers that this is necessary, in addition to the long-standing toxicity testing requirement, because not all toxins may be “discovered” through toxicity testing. Once again, this is a drastic change from past permits and adds more new costs for compliance.

Response 82

For more details regarding the need for the new pollutant scan requirements described in this comment, see Response 80. Regarding EPA’s authority to require monitoring, see Response 1. Regarding cost, see Response 4. Like PFAS monitoring and other permit requirements discussed in these Responses, EPA finds that the pollutant scans are necessary to ensure information is available to protect water quality.

Comment 83

Toxicity Testing Follow-up: Following any failure of a standard toxicity test, Manchester would have to conduct 2 accelerated retests within 14 and 28 days. The same would be required if there was a reported fish kill in the “vicinity” of the outfall or an oily sheen in the “vicinity” of the outfall. The term “vicinity” does not appear to be defined. If a fish kill were to occur it is expected that the NH Department of Fisheries and Wildlife would investigate and, if they had probable cause to suspect the Manchester WWTP as a source that would be the starting point for further investigation including possible additional testing at the outfall. Any fish kill somewhere near the outfall should not be justification for Manchester to be assumed guilty and

have to spend limited resources trying to prove otherwise. This is particularly troubling in a major river system where a fish kill far upstream of the outfall can get swept downstream by flows and potentially collect near the outfall. But the new toxicity follow-up does not end there. If one of the accelerated tests fails toxicity limits that triggers a Toxicity Identification Evaluation and Toxicity Reduction Evaluation (TIE/TRE). This constitutes a lengthy, costly and challenging series of investigations, action plans and progress reports to find out what in the effluent is toxic and what can be done to resolve the matter. There is already a scarcity of laboratories capable and certified to conduct toxicity tests. With this permit and others to follow in New Hampshire and Massachusetts, the demand for these limited laboratory services will increase. Has EPA or NHDES assessed lab capacity for an increase in toxicity test requirements, especially the accelerated testing?

Response 83

See Response 70 regarding the definition of vicinity.

See Response 77 regarding a change to the Final Permit clarifying these requirements.

Notwithstanding these changes, if the discharge violates multiple WET tests and/or a fish kill occurs that may have been due to the discharge, EPA finds that it is necessary for the Permittee to conduct a TIE/TRE to ensure that the discharge does not continue to cause persistent toxicity. However, regarding lab availability or any other factor outside of the control of the Permittee, see Response 72.

Comment 84

CSO Visual Assessment:

In order to assure that Manchester's CSOs are not causing or contributing to water quality violations (language that has now been stricken from the permit), the revised permit requires a visual assessment of each CSO at the point of outfall (end of pipe) during a discharge event. The visual assessment would look for evidence of oily sheens, floatables or other objectionable wastes emanating from the CSO discharge pipe. All observations would have to be documented and reported. The logistics of performing such observations during an event, that is during a heavy rainfall, are problematic and would divert staff, and put them in dangerous situations, when they would be needed elsewhere (e.g., to manage pump stations, assist with flood control activities, implement high water plans at WWTP).

All of these changes in narrative criteria compliance are a major shift from decades-long practices and NPDES permit language. These matters are far too drastic to first appear in a revised draft permit. If EPA intends to make such sweeping changes to the NPDES program, that would require a national discussion including EPA, the States and the community of wastewater infrastructure managers, operators and advocates. All of the changes in red in the revised draft permit should be removed and, if EPA desires to move these changes forward in future permits it should start with an open conversation among all the key parties.

Response 84

First, EPA clarifies that the monthly visual inspection requirement described in Part I.A.1, footnote 22 only applies to the WWTF Outfall 001 and does not apply to CSO outfalls. Regarding the commenter's safety concerns, EPA clarifies that the permit does not require that the visual inspection be done during a rainfall event.

Regarding the basis for these permit changes, see Response 80. EPA values input from and collaboration with interested parties and the public. For this and other reasons, public participation in NPDES permit proceedings is required by 40 C.F.R. Part 124. Specifically, under 40 C.F.R. § 124.11, "During the public comment period provided under § 124.10, any interested person may submit written comments on the draft permit...." *See also* 40 C.F.R. § 124.13 (obligation to raise issues and provide information during the public comment period). EPA considers and responds to all public comments consistent with 40 C.F.R. § 124.17. EPA has complied with these requirements and therefore finds that this revised Draft Permit has provided sufficient opportunity for the Permittee to review and comment on these provisions. EPA also notes that a significant number of comments were received by a variety of parties, suggesting that interested parties were aware and made use of the opportunity to comment.

Comment 85

Adaptation Planning: As stated in comments submitted on numerous recent draft NPDES permits for wastewater treatment facilities, MCWRS believes that adaptation planning requirements are not appropriate for inclusion in a NPDES permit. Adaptation planning does not fall under the category of Operations and Maintenance, has no place in a five-year permit, is not related to a discharge, cannot be applied solely to Massachusetts and New Hampshire permittees and would be better received if it were offered through a funded federal program as directed by Congress. Climate change planning is more appropriate when communities are undertaking significant planning efforts or when planning for major renovations to wastewater facilities. When designing renovations and major upgrades to wastewater facilities, engineers already follow protocols established by NEIWPCC that includes updated provisions for flood damage prevention. The requirement for adaptation planning should be stricken from this permit.

Response 85

See Response 3.

Comment 86

PFAS: PFAS monitoring as required in the draft permit imposes a significant cost burden on Manchester and its ratepayers. Each sample analyzed for PFAS costs \$350-\$500 and with trip blanks and other quality control samples the financial impact quickly multiplies. PFAS sampling should be limited to twice annually for the initial two (2) years with results allowing less frequent (annual) analysis thereafter. The draft permit also proposes that Manchester take quarterly grab samples of influent and effluent and test for Adsorbable Organic Fluorine (AOF),

using Method 1621, at the same time as samples are grabbed for PFAS Analytes. Method 1621 is a draft test method designed to capture all organic fluorine compounds in the wastewater. This method is still under development by EPA's Engineering and Analysis Division (EAD), which indicated it is not approved for CWA compliance monitoring. The multi-laboratory validation study has not yet been performed on this method. In addition, Adsorbable Organic Fluorine is not a pollutant and has never been identified as a cause of water quality violations in any surface water. Rather, Adsorbable Organic Fluorine is a surrogate measure for PFAS. While it may prove useful as a better way to measure PFAS, the burden of proving its utility in this regard should not fall upon NPDES permittees. EPA should do its own research on the effectiveness of Adsorbable Organic Fluorine as a surrogate parameter for PFAS and spare permittees the costs and responsibility for performing this testing. This proposed requirement should be removed from the permit.

Response 86

See Responses 1, 2, 4, and 74.

K. Comments from Jillian Aicher of the Conservation Law Foundation:

Comment 87

As EPA is well aware, PFAS pollution represents a significant threat to human health and the environment that EPA and other regulators are still catching up to address.³⁷ Having explicitly

³⁷ Hiroko Tabuchi, *The EPA Promotes Toxic Fertilizer. 3M Told It of Risks Years Ago*. New York Times, (Dec. 27, 2024), accessible at <https://www.nytimes.com/2024/12/27/climate/epa-pfas-fertilizer-3m-forever-chemicals.html> ("The data suggested that the toxic chemicals, made by 3M, were fast becoming ubiquitous in the environment. The company's research had already linked exposure to birth defects, cancer and more. That sewage was being used as fertilizer on farmland nationwide, a practice encouraged by the Environmental Protection Agency.")

Hiroko Tabuchi, *Their Fertilizer Poisons Farmland. Now, They Want Protection from Lawsuits*. New York Times, (Dec. 6, 2024), accessible at <https://www.nytimes.com/2024/12/06/climate/sludge-fertilizer-synagro-lobbying.html> ("The E.P.A. continues to promote sludge as fertilizer. It regulates harmful pathogens and some heavy metals in biosolids, but not PFAS.")

Hiroko Tabuchi, *Her Children Were Sick. Was It "Forever Chemicals" on the Family Farm?* New York Times, (Sept. 21, 2024), accessible at <https://www.nytimes.com/2024/09/21/climate/farm-pfas-meat-poison-sewage-sludge.html> ("The E.P.A. has more recently said that no level of certain kinds of PFAS is safe. 'We're starting to find out that agricultural soil is a big source of PFAS,' said Samuel Ma, an associate professor of civil and environmental engineering at Texas A&M University who studies emerging contaminants. But regulators 'seem to only be focusing on drinking water.'")

Hiroko Tabuchi, *5 Takeaways from Our Reporting on Toxic Sludge Fertilizer*. New York Times, (Aug. 31, 2024), accessible at <https://www.nytimes.com/2024/08/31/climate/takeaways-pfas-sludge-fertilizer.html> ("For decades, the government has encouraged farmers across the United States to spread sewage sludge on their cropland and pastures. But now there's a growing awareness that sludge fertilizer can contain heavy concentrations of "forever chemicals" linked to cancer, birth defects and other health risks.")

Hiroko Tabuchi, *Something's Poisoning America's Land. Farmers Fear "Forever Chemicals."* New York Times, (Aug. 31, 2024), accessible at <https://www.nytimes.com/2024/08/31/climate/pfas-fertilizer-sludge-farm.html> ("E.P.A.'s own researchers have found elevated levels in sewage sludge. And in the

acknowledged the importance of monitoring for PFAS and *reducing* per- and polyfluoroalkyl substances (PFAS) contributions to WWTFs (*see, e.g., below*), EPA has an important opportunity to establish permit requirements consistent with its own recommendations and to proactively protect the Merrimack River and local communities from PFAS pollution.

“Regardless of the management practice to use or dispose of sewage sludge, exposure and risk reduction is possible through pretreatment at industrial facilities discharging to a WWTP. By monitoring sewage sludge for PFOA and PFOS, WWTPs can identify likely discharges of PFOA and PFOS from industrial contributors, require pretreatment, and achieve significant reductions in PFOA and PFOS concentrations in their sewage sludge. **In some state programs, WWTPs with industrial sources have achieved a 98 percent reduction in PFOS sewage sludge concentrations through industrial pretreatment initiatives. The EPA recommends that states, Tribes, and WWTPs monitor sewage sludge for PFAS contamination, identify likely industrial discharges of PFAS, and implement industrial pretreatment requirements, where appropriate. Doing so will help reduce downstream PFAS contamination and lower the concentration of PFOA and PFOS in sewage sludge[.]”**

– U.S. Environmental Protection Agency, January 25, 2025
(90 Fed. Reg. 3863-64) (emphases added).

“EPA-issued NPDES permits should include the permit conditions described below, as appropriate, for facilities where PFAS is expected or likely to be present in their discharge. . . Require [best management practices] and pollution prevention to address PFAS discharges to POTWs.”

– U.S. Environmental Protection Agency, April 28, 2022
Memo from Radhika Fox to Water Division Directors.

As set forth below, CLF urges EPA to follow its own recommendations by including not only PFAS monitoring provisions in the final NPDES permit, but also PFAS prevention and reduction requirements. We also urge EPA to reinstate the narrative limits in Part I.A.3–8 of the Original Draft Permit and retain the Adaptation Planning measures in Part I.C of both Draft Permits. CLF incorporates by reference our comments on the Original Draft Permit³⁸ and submits the following comments on the Revised Draft Permit.

EPA Should Expand PFAS Monitoring and Must Include PFAS Reduction Requirements in the Final Permit.

agency’s most recent survey of biosolids, PFAS were almost universal. A 2018 report by the E.P.A. inspector accused the agency of failing to properly regulate biosolids, saying it had ‘reduced staff and resources in the biosolids program over time.’”)

³⁸ Conservation Law Foundation, Comments on Draft NPDES Permit No. NH0100447 (June 10, 2024), accessible at <https://www.clf.org/wp-content/uploads/2024/07/2024-6-10-CLF-Comments-on-Manchester-NH-Draft-NPDES-Permit.pdf> [hereinafter CLF June 10, 2024 Comments].

The bedrock purpose of the Clean Water Act is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” 33 U.S.C. § 1251(a). EPA has recognized that PFAS jeopardize the integrity of the Nation’s waters and pose serious hazards to human health and the environment.³⁹ WWTFs like Manchester’s do not remove or destroy PFAS, resulting in PFAS releases to the environment through WWTF effluent and sewage sludge disposal.⁴⁰

As described in our June 10, 2024 comments, ample data shows that the Manchester WWTF receives PFAS-contaminated influent, discharges PFAS into the Merrimack River, and through its onsite incinerator emits PFAS into the air.⁴¹ EPA also recently recognized that PFAS in sludge incinerator ash could potentially result in PFAS discharges through stormwater – and in doing so, the agency specifically cited the PFAS study conducted at the Manchester WWTF and its onsite incinerator.⁴²

To mitigate hazards from PFAS in wastewater effluent discharges and air emissions, EPA should make the following changes to the Draft Permit.

EPA Should Include and Strengthen PFAS Monitoring Provisions in the Final Permit.

CLF supports EPA including PFAS monitoring in the permit. Monitoring and reporting for PFAS – both at the wastewater treatment plant and at individual Industrial Users – will benefit both EPA and the City by characterizing the sources of PFAS into the WWTF and better informing strategies to reduce PFAS in the WWTF’s effluent and sludge. Monitoring information is essential because PFAS are a class of persistent and health-harming pollutants and their confirmed presence in the WWTF’s effluent and sludge poses risks for both the Merrimack River and health in surrounding and downstream communities. The Merrimack River is designated under the Clean Water Act for aquatic life protection, recreation, fish consumption, and potential drinking water supply; the Manchester facility’s PFAS contributions are harmful to these important designated uses.⁴³

³⁹ EPA, PFAS Strategic Roadmap: EPA’s Commitments to Action 2021–2024 at 5, 7 (October 2021), accessible at https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf.

⁴⁰ 90 Fed. Reg. 3859, 3861, 3863 (Jan. 25, 2025) (“Traditional wastewater treatment technology does not remove or destroy PFOA or PFOS, and these chemicals typically accumulate in the sewage sludge.”); see also Ruyle et al., 122 PNAS 3, *High organofluorine concentrations in municipal wastewater affect downstream drinking water supplies for millions of Americans* (Jan. 6, 2025), accessible at <https://doi.org/10.1073/pnas.2417156122> (“Data presented here suggest that US POTWs do not effectively remove most EOF prior to effluent discharge, regardless of whether they have secondary or tertiary treatment (Fig. 1C and Dataset S5). Aquatic discharges from POTWs contain elevated levels of PFAS, including PFAA, PFAA precursors, and polyfluorinated pharmaceuticals.”)

⁴¹ CLF June 10, 2024 Comments at 2–11 & Attached Exhibits.

⁴² EPA, National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP) for Stormwater Discharges Associated with Industrial Activity Fact Sheet at 3, 80–81, 89–90 (2024), accessible at <https://www.epa.gov/system/files/documents/2024-12/proposed-2026-msgp-fact-sheet.pdf> (citing Seay, 2023).

⁴³ CLF June 10, 2024 Comments at 18–21.

The Clean Water Act and its regulations provide EPA with authority to include monitoring requirements for PFAS and Adsorbable Organic Fluorine (AOF, a nontargeted measurement for the large class of PFAS chemicals) in the WWTF's influent, effluent, and sludge. The statute provides that EPA may issue permits that include conditions that the Agency "determines are necessary to carry out the provisions of" the Clean Water Act, "including conditions on data and information collection, reporting, and such other requirements as [EPA] deems appropriate." 33 U.S.C. § 1342(a). EPA regulations provide that the agency "shall establish conditions, as required on a case-by-case basis, to provide for and ensure compliance with all applicable requirements of" the Clean Water Act and its implementing rules. 40 C.F.R. § 122.4(a).

Additional EPA regulations not only authorize, but also require, every NPDES permit to contain conditions, including monitoring requirements, "when applicable." 40 C.F.R. § 122.44(i). Monitoring requirements for PFAS and AOF are applicable at the Manchester WWTF, as they will allow EPA and the City to "assess treatment efficiency, characterize effluents and characterize receiving water."⁴⁴ The statutory and regulatory authority to impose conditions and data-gathering requirements directly contradicts the City of Manchester's unsupported claim that EPA lacks authority to require PFAS monitoring without "clearly established water quality criteria."⁴⁵

Even if water quality criteria were a prerequisite to PFAS monitoring, narrative criteria and recent numeric criteria developments satisfy that prerequisite. New Hampshire statutory and regulatory narrative water quality criteria 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[.]" and PFAS fall within that narrative language. RSA 485-A:8, VI; N.H. Code Admin. 1703.21(a)(1).⁴⁶ Moreover, on October 7, 2024, EPA finalized numeric aquatic life water quality criteria for PFOA and PFOS and benchmarks for eight other PFAS compounds.⁴⁷ On December 26, 2024, EPA also proposed numeric human health water quality criteria for PFOA, PFOS, and PFBS.⁴⁸ The State of New Hampshire also has taken recent action related to water quality criteria, proposing, on October 29, 2024, numeric surface water quality criteria for PFAS.⁴⁹ Thus, not only do 33 U.S.C. § 1342(a) and 40 C.F.R. § 122.44(i) provide EPA authority to require PFAS monitoring, but final and proposed criteria also provide EPA with an additional basis and need for requiring monitoring.

Clean Water Act regulations authorize EPA to require monitoring for PFAS and AOF using methods 1633 and 1621. Regulations specify that "[i]n the case of pollutants or pollutant parameters for which there are no approved methods under" federal regulations, "monitoring

⁴⁴ EPA. Off. Of Wastewater Mgmt., NPDES Permit Writers' Manual, Chapter 8, at 8-2 (2010), https://www3.epa.gov/npdes/pubs/pwm_chapt_08.pdf.

⁴⁵ City of Manchester, Comments on U.S. EPA Draft NPDES Permit, Wastewater Treatment Facility, NH0100447 (June 10, 2024) at 3.

⁴⁶ See also CLF June 10, 2024 Comments at 19–22.

⁴⁷ 89 Fed. Reg. 81077 (Oct. 7, 2024).

⁴⁸ 89 Fed. Reg. 105041 (Dec. 26, 2024).

⁴⁹ N.H. Dep't Env't Servs., *Rulemaking Notice for Env-Wq 1700* (October 2024), accessible at <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/env-wq-1700-rmn.pdf>.

shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters.” 40 C.F.R. § 122.44(i)(1)(iv)(B)). Because PFAS and AOF do not yet have monitoring methods approved in federal regulations, EPA has authority to specify methods 1633 and 1621 in the permit.

Both federal rules and state law also authorize EPA to include PFAS monitoring requirements for Industrial Users. Federal regulations authorize the Approval Authority in an Industrial Pretreatment Program – which, in the case of Manchester’s program, is EPA – to require a WWTF to include “any other relevant information requested by the Approval Authority” in its annual pretreatment program report. 40 CFR § 403.12(i). Data on targeted and nontargeted PFAS in industrial wastewater will help identify sources of PFAS into the WWTF and will inform reduction measures to control discharges of toxic pollutants that the WWTF cannot remove.

New Hampshire law also explicitly authorizes WWTFs to monitor PFAS from industrial sources. RSA 485-A:5-e, I allows WWTFs to “require any industrial or commercial facilities . . . contributing discharge to its plant to test such discharge to determine the level of PFAS in the discharge.” The law allows the WWTF to impose PFAS testing requirements such as:

- (a) Identification of potential sources of PFAS using safety data sheets or other specification sheets.
- (b) Sample test result of the discharge measuring levels of PFAS in the discharge provided to the wastewater treatment plant.
- (c) Submission of an annual report to the municipality in which the wastewater treatment plant containing [sic] a list of the test results.

RSA 485-A:5-e, I.

Recent scientific literature confirms that EPA should require Industrial User monitoring using both method 1633 and method 1621. A study of PFAS and organofluorine in WWTF influent and effluent determined that most PFAS monitoring in wastewater considers only “a few intensively studied PFAS,” but nontargeted testing reveals that wastewater treatment plant effluent contains “large quantities of unknown organofluorine.”⁵⁰ The authors state empirical data from “major organofluorine sources” is “critically needed.”⁵¹ Further analysis on “unknown organofluorine,” according to the authors, is essential to determine “accumulation of any replacement PFAS used by industry following the phase out of legacy compounds[,]” demonstrating the basis for requiring nontargeted organofluorine monitoring through 1621 for Industrial Users.⁵²

Including method 1621 monitoring requirements also corresponds with EPA’s own recommendations in its April 2022 memorandum, “Addressing PFAS Discharges in EPA-Issued

⁵⁰ Ruyle et al., *supra* note 3.

⁵¹ Ruyle et al., *supra* note 3.

⁵² *Id.*

NPDES Permits and Expectations Where EPA is the Pretreatment Control Authority.”⁵³ That memo states that EPA can require AOF monitoring in addition to method 1633, “if appropriate.”⁵⁴ Here, it is appropriate to require both methods 1633 and 1621 for Industrial User sampling, given that recent literature emphasized the significant presence of “unknown organofluorine” in wastewater and emphasized that “[e]xperts have called for a class-based approach for regulating organofluorine, focusing on PFAS, due in part to the extreme persistence of these compounds and their transformation products[.]”⁵⁵

Response 87

See Responses 51-62.

The commenter references EPA’s Draft Sewage Sludge Risk Assessment for PFOA and PFOS, published in the Federal Register on January 15, 2025. 90 Fed. Reg. 3859.⁵⁶ As suggested by the name, this risk assessment is a draft, not final. The draft risk assessment reflects the agency’s latest scientific understanding of the risks to human health and the environment posed by the presence of PFOA and PFOS in sewage sludge that is land applied as a soil conditioner or fertilizer (on agricultural, forested, and other lands), surface disposed (*e.g.*, placed in a sewage sludge-only landfill called a monofill), or incinerated. The draft risk assessment focuses on those living on or near impacted properties where sewage sludge has been used or disposed. The intent of the draft risk assessment is to evaluate whether there may be risks to human health or the environment for the wide range of possible sewage sludge use and disposal scenarios. EPA will review public comments, particularly regarding scientific and technical aspects, and prepare a final risk assessment for publication. If the final risk assessment indicates that there are risks above acceptable thresholds when using or disposing of sewage sludge, the EPA expects to propose a regulation under CWA section 405 to manage PFOA and/or PFOS in sewage sludge to protect public health and the environment. The EPA may also consider developing regulations under other statutory authorities to further reduce PFAS discharged to WWTPs. The public comment period for the draft assessment has been extended; comments must be received by August 14, 2025. 90 Fed. Reg. 16128.⁵⁷

EPA acknowledges that Manchester has limited amounts of existing PFAS data. However, EPA did not request Manchester to submit such data with its permit renewal application because EPA’s national approach to PFAS regulations is to use Method 1633 for the collection of consistent data to ensure that permitting decisions are based on

⁵³ Memo from Radhika Fox to Water Division Directors, EPA Region 1–10, *Addressing PFAS Discharges in EPA-Issued NPDES Permits and Expectations Where EPA is the Pretreatment Control Authority* (April 28, 2022), https://www.epa.gov/system/files/documents/2022-04/npdes_pfas-memo.pdf.

⁵⁴ *Id.* at 2, 3.

⁵⁵ Ruyle et al., *supra* note 6.

⁵⁶ Available at: <https://www.federalregister.gov/documents/2025/01/15/2025-00734/draft-sewage-sludge-risk-assessment-for-perfluorooctanoic-acid-pfoa-and-perfluorooctane-sulfonic#page-3863>

⁵⁷ Available at: <https://www.federalregister.gov/documents/2025/04/17/2025-06571/draft-sewage-sludge-risk-assessment-for-perfluorooctanoic-acid-pfoa-and-perfluorooctane-sulfonic>

consistent, verified and robust datasets. See also Response 51. Given that Method 1633 was not fully multi-lab validated until January 2024, EPA only had very limited data during the development of this Draft Permit in 2024.

EPA acknowledges the commenter's general support of the PFAS monitoring conditions. While EPA agrees with the commenter's assertions regarding the usefulness of PFAS data from Industrial Users, EPA finds that annual PFAS monitoring is sufficient for the purposes of this initial permit term. EPA's intention is to ensure that both EPA and the Permittee are able to identify actual sources of PFAS throughout the collection system to inform future source reduction efforts. EPA finds that annual PFAS monitoring of the categories of IUs identified in the permit as potential sources is sufficient to make this preliminary identification of actual sources. EPA considers that quarterly monitoring or AOF monitoring of IUs is not needed to make this preliminary identification of actual PFAS sources. Given the large number of IUs in Manchester, EPA also considers that the cost and resources associated with expanding this monitoring requirement would be better directed elsewhere in complying with the permit. However, more frequent monitoring of these IUs may be necessary in the future to track actual PFAS reductions.

Comment 88

EPA Has Authority and Sufficient Basis to Include Industrial Source Control Measures and Must Do So in the Final Permit.

EPA should not only strengthen monitoring for PFAS in wastewater from Industrial Users as described above, but it must also include control requirements to reduce contributions of industrial PFAS to the WWTF.

Both the federal Industrial Pretreatment Program and New Hampshire state law authorize EPA to include PFAS reduction requirements. Federal Industrial Pretreatment Program regulations authorize the Approval Authority (here EPA) to "modify . . . a POTW's Permit" to include "a compliance schedule for the development of a POTW Pretreatment Program where the addition of pollutants into a POTW by an Industrial User or combination of Industrial Users presents a substantial hazard to the functioning of the treatment works, quality of the receiving waters, human health, or the environment[.]" 40 C.F.R. § 403.8(e)(1). As described in our June 10 comments, the addition of PFAS to the Manchester WWTF from Industrial Users most likely presents a substantial hazard to the quality of receiving waters (i.e., impacts to designated uses), and to human health and the environment through both effluent discharges and incinerator emissions.⁵⁸ And under New Hampshire law, 485-A:5-e, "A wastewater treatment plant may refuse discharge from an industrial or commercial facility . . . that has reported a level of PFAS in its discharge above the level the wastewater treatment plant determines to be acceptable." RSA 485-A:5-e, III.

⁵⁸ CLF June 10, 2024 Comments, at 3–10, 13–46.

Not only is EPA authorized to require source reduction measures in the City’s permit, but it is required to do so under federal pretreatment program regulations, as detailed in our June 10, 2024 comments.⁵⁹

EPA itself has repeatedly underscored the need for not only PFAS monitoring, but also PFAS reduction, from industrial users. Most recently, in its January 2025 Draft Health Risk Assessment for PFOA and PFOS in Sewage Sludge, EPA highlighted that needed, stating:

Regardless of the management practice to use or dispose of sewage sludge, exposure and risk reduction is possible through pretreatment at industrial facilities discharging to a WWTP. By monitoring sewage sludge for PFOA and PFOS, WWTPs can identify likely discharges of PFOA and PFOS from industrial contributors, require pretreatment, and achieve significant reductions in PFOA and PFOS concentrations in their sewage sludge. In some state programs, WWTPs with industrial sources have achieved a 98 percent reduction in PFOS sewage sludge concentrations through industrial pretreatment initiatives. The EPA recommends that states, Tribes, and WWTPs monitor sewage sludge for PFAS contamination, identify likely industrial discharges of PFAS, **and implement industrial pretreatment requirements, where appropriate.**⁶⁰

According to EPA, industrial pretreatment requirements “will help reduce downstream PFAS contamination and lower the concentration of PFOA and PFOS in sewage sludge.”⁶¹ EPA similarly recommended in its April 2022 memorandum that EPA require best management practices “and pollution prevention to address PFAS discharges to” municipal WWTFs.⁶² Those best management practices include product elimination or substitution, accidental discharge minimization, and equipment decontamination or replacement.⁶³ The Agency similarly stated in its PFAS Strategic Roadmap that “EPA will seek to proactively use existing NPDES authorities to reduce discharges of PFAS at the source[.]”⁶⁴ And in July 2024, EPA Region 1’s Water Permits Branch Chief stated: “I do think eventually we will get to the point of including requirements in

⁵⁹ See *id.* at 31 (citing § 403.8(f)(1)(vi)(B)) (EPA must establish PFAS source reduction requirements in the City’s permit to ensure that the City “fully” implements its authority to . . . “[I]mmediately and effectively . . . halt or prevent any discharge of pollutants to the POTW which reasonably appears to present an imminent endangerment to the health or welfare of persons” and . . . “[H]alt or prevent any discharge to the POTW which presents or may present an endangerment to the environment[.]”)

⁶⁰ 90 Fed. Reg. 3859, 3863–64 (Jan. 25, 2025) (emphasis added).

⁶¹ *Id.* at 3864.

⁶² Memo from Radhika Fox to Water Division Directors, *Addressing PFAS Discharges in EPA-Issued NPDES Permits and Expectations Where EPA is the Pretreatment Control Authority* at 3 (April 28, 2022), https://www.epa.gov/system/files/documents/2022-04/npdes_pfas-memo.pdf.

⁶³ *Id.* at 2–4.

⁶⁴ EPA, PFAS Strategic Roadmap: EPA’s Commitments to Action 2021–2024 at 14 (October 2021), accessible at https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf.

the permits themselves[,]” and “I think the initial focus will be on the pretreatment part . . . Find out where your biggest contributors are and restrict them first and foremost.”⁶⁵

Industrial pretreatment requirements are appropriate and necessary for Manchester’s WWTF, given that EPA has access to data showing the plant has consistently received PFAS in influent and released PFAS through its effluent and sludge incineration since at least 2019.⁶⁶ EPA must therefore follow *its own recommendations* and include PFAS reduction requirements for Industrial Users in Manchester WWTF’s NPDES permit.

Response 88

See Responses 52 and 87. Similar to WWTF effluent data, EPA’s approach is to use this permit term to require industrial users to collect PFAS data using Method 1633 in order to identify the significant sources of PFAS within each municipality. Although EPA requires PFAS monitoring from a variety of industrial categories that are likely sources, EPA considers that actual monitoring is necessary to confirm which (if any) industrial users are significant sources of PFAS in the POTW’s collection system. EPA notes that this is consistent with the citation in the comment that sources should be identified before pretreatment requirements are implemented. EPA also notes that PFAS criteria are also being developed which will provide further information regarding the scope of future source reduction requirements. EPA expects that the industrial user data will be used in the future to make informed decisions regarding PFAS reductions from the sources that are identified.

Comment 89

EPA Must Use Recently Finalized and Proposed Water Quality Criteria to Analyze and Determine PFAS Effluent Limitations and Include Such Effluent Limitations in the Final Permit.

As described in our June 10 comments, EPA must analyze the need for technology-based and water quality-based effluent limitations (WQBELs) for PFAS. When analyzing the need for WQBELs, EPA must conduct a reasonable potential analysis for PFAS.⁶⁷ Recently finalized and proposed numeric water quality criteria for PFAS serve as indicators for whether the City’s discharges “may . . . have the reasonable potential to cause, or contribute to” violations of New Hampshire’s narrative standards for toxics, and its standards protecting designated uses for both human health and aquatic life. See 40 C.F.R. § 122.44(d)(1)(i).⁶⁸ Therefore, those recently finalized and proposed criteria must inform EPA’s reasonable potential analysis and subsequent WQBEL calculations. Specifically, in analyzing and establishing WQBELs, EPA must consider: (1)

⁶⁵ Mara Hoplamazian, *PFAS in, PFAS out: How wastewater in Manchester is a pathway for contamination* NHPR, (July 26, 2024), accessible at <https://www.nhpr.org/nh-news/2024-07-26/pfas-in-pfas-out-how-wastewater-in-manchester-is-a-pathway-for-contamination>.

⁶⁶CLF June 10, 2024 Comments, at 3–8.

⁶⁷ *Id.* at 17–23.

⁶⁸ See also CLF June 10, 2024 Comments, at 17–21.

EPA's final aquatic life criteria and benchmarks for PFAS,⁶⁹ (2) EPA's proposed human health criteria for PFAS,⁷⁰ and (3) New Hampshire's proposed surface water quality criteria for PFAS.⁷¹

Response 89

See Responses 51-56.

Comment 90

EPA Must Reinstate Narrative Permit Limitations

EPA revised its original Draft Permit to remove narrative provisions from the Original Draft Permit, Part I.A.3-8, and the current permit, Part I.A.2-7. These changes indicate a preemptive response to *San Francisco v. EPA*, a case that the Supreme Court of the United States has heard but not decided. *San Francisco v. EPA*, 75 F.4th 1074, 1093 (9th Cir. 2023), *cert. granted*, S. Ct. No. 23-753 (May 28, 2024). EPA must reinstate the narrative provisions in the final permit, as they are not only authorized under Clean Water Act section 301(b)(1)(C), 33 U.S.C. §1311(b)(1)(C) but they also provide an essential backstop for protecting water quality and ensuring that permitted discharges do not violate water quality standards.

The Clean Water Act prohibits the discharge of a pollutant from a point source into waters of the United States unless in accordance with a NPDES permit or another specified provision. 33 U.S.C. § 1311(a). Federal regulations promulgated under the Clean Water Act prohibit EPA from issuing a NPDES permit that “cannot ensure compliance with the applicable water quality requirements of all affected States,” 40 CFR § 122.4(d), and that cannot achieve water quality standards, including narrative water quality criteria. 40 CFR § 122.44(d). By removing the narrative permit provisions in Part I.A.3-8 of the Original Draft Permit, EPA removed provisions that “ensure compliance” with New Hampshire’s water quality standards, including narrative standards. Finalizing the permit without reinstating those narrative permit provisions would thus violate the Clean Water Act and its implementing rules.

The Revised Permit’s additional monitoring and reporting requirements do not “ensure compliance with applicable narrative water quality standards,” as EPA claims in its Statement of Basis for the Revised Draft Permit.⁷² Those additional provisions cover a limited range of pollutants as compared to state narrative water quality criteria, and removing the narrative provisions removes an enforcement mechanism to address violative discharges. For example, the Revised Draft removes a narrative provision that stated: “The discharge shall not cause a violation of the water quality standards of the receiving water,”⁷³ narrowing EPA’s ability to ensure compliance with New Hampshire’s water quality standards and criteria through the permit.

⁶⁹ 89 Fed. Reg. 81077 (Oct. 7, 2024).

⁷⁰ 89 Fed. Reg. 105041 (Dec. 26, 2024).

⁷¹ N.H. Dep’t Env’t Servs., *Rulemaking Notice for Env-Wq 1700* (October 2024), accessible at <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/env-wq-1700-rmn.pdf>.

⁷² EPA, 2024 Statement of Basis for 2024 Revised Draft Permit NPDES Permit No. NH0100447 at 4 (December 2024).

⁷³ EPA, NPDES Permit No. NH0100447 Revised Draft Permit, Part I.A.6 (deleted) (December 2024).

The Revised Draft also removes a provision that incorporated the language of New Hampshire’s narrative criteria for toxic pollutants.⁷⁴ In its place, the Revised Draft includes enhanced Whole Effluent Toxicity requirements and a Pollutant Scan for specified pollutants to “ensure 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 violation of state narrative criteria.⁷⁵ However, EPA implicitly recognized that the new monitoring provisions do not cover all pollutants encapsulated by the state narrative water quality standards. EPA’s Statement of Basis for the revisions acknowledges that Whole Effluent Toxicity requirements may not capture “other sources of toxic effects (including to human health)” and that the Pollutant Scan includes “many” but not all “common toxic pollutants.”⁷⁶

The Pollutant Scan covers only pollutants listed in Attachment G, which is the same list of pollutants specified on permit application forms.⁷⁷ Attachment G does not include PFAS or AOF – toxic pollutants with the potential to violate New Hampshire’s narrative water quality criteria.⁷⁸ The prior narrative permit provisions, on the other hand, cover pollutants that the permittee did not list on its application but that nonetheless may violate water quality standards. *See Ohio Valley Env’t Coal., Inc. v. Marfork Coal Co.*, 966 F. Supp. 2d 667, 685 (S.D.W. Va. 2013) (permit provisions incorporating state water quality standards function “[a]s a backstop” that “protects water quality standards that [the permitting authority] did not anticipate would be threatened based on the discharge levels reported in a permit application.”).

The agency should include the new provisions in the Revised Draft Permit in addition to, not in lieu of, narrative limitations. It should also add PFAS and AOF to Attachment G, as the City has consistently documented PFAS in its influent and effluent and those pollutants have the potential to violate New Hampshire’s narrative water quality standard for toxics.

Response 90

As described in Response 80 and as a result of the Supreme Court decision in *City and County of San Francisco v. EPA*, EPA is unable to include the narrative permit limitations described in this comment. However, EPA finds that the permit remains fully protective of all state water quality standards based on all currently available information.

In any case, EPA is able to modify or reissue the Permit to incorporate any more stringent effluent limitations necessary to protect water quality standards based on the results of the permit’s monitoring requirements. To make this more clear, EPA has revised the second sentence in Part I.B.1 (Unauthorized Discharges) to indicate the following:

⁷⁴ *Id.*

⁷⁵ *Id.* at 7.

⁷⁶ *Id.* at 7–8.

⁷⁷ *Id.* at 8.

⁷⁸ CLF June 10, 2024 Comments, at 19–22.

“For any pollutant without an effluent limitation in this permit, any pollutant loading greater than the proposed discharge (the “proposed discharge” is based on the chemical-specific data and the facility’s design flow as described in the permit application, or any other information provided to EPA during the permitting process) must be reevaluated, and the permit must be modified or reissued if the need for any new effluent limitations is identified.”

Regarding enforceability, EPA notes that the narrative limitations described in the comment generally required additional data to support an enforcement action. Under the new permitting approach, EPA expects that much of this additional data will be readily available and that any effluent limitations established in the future based on this data will be enforceable.

Finally, the commenter notes that the list of pollutants listed as Attachment G required for the pollutant scan requirement does not include PFAS or AOF. EPA notes that PFAS and AOF are required to be sampled quarterly for the facility influent, effluent, and sludge and EPA finds that additional annual sampling through a pollutant scan is unnecessary.

Comment 91

EPA Should Retain Adaptation Planning Measures in the Final Permit.

CLF supports the Adaptation Planning Measures in the Original and Revised Draft Permit. There is widespread consensus that climate change has already caused dramatic changes in the frequency and severity of precipitation and major storms, has caused and contributed to sea level rise, and has dramatically shifted air, water, and surface temperatures. Increased impacts in the near and long-term are already assured as a result of emissions to-date and will be severely exacerbated by continued emissions of greenhouse gases. It is beyond any reasonable dispute that climate disruption poses severe risks to riverine infrastructure, water quality, and human health.

EPA has recognized that in the Northeast specifically, climate change places strains on “aging infrastructure” and creates risks for surface waters and human health.⁷⁹ The agency specifically acknowledged that “[m]illions of Northeastern residents” living in coastal and river floodplain areas “are potentially more vulnerable” to climate change-induced “[s]ea level rise, heavy precipitation, and storm surge” and resulting impacts on infrastructure, surface waters, and human health.⁸⁰

The Clean Water Act and federal regulations authorize EPA to require the Adaptation Planning measures in Draft Permit Part I.C. Section 402 of the Clean Water Act authorizes EPA to include permit conditions that the Agency “determines are necessary to carry out the provisions of” the

⁷⁹ EPA, *Climate Impacts in the Northeast* (last updated January 19, 2017), accessible at https://19january2017snapshot.epa.gov/climateimpacts/climate-impacts-northeast_.html#Reference%201.

⁸⁰ *Id.*

statute. 33 U.S.C. § 1342(a). Federal regulations state that the EPA Regional Administrator “shall establish conditions, as required on a case-by-case basis, to provide for and ensure compliance with all applicable requirements of” the Clean Water Act and its implementing rules. 40 C.F.R. § 122.4(a).⁸¹ EPA highlighted several additional statutory and regulatory authorities for Adaptation Planning requirements in the Fact Sheet to its Original Draft Permit, including CWA §§ 301(b)(1)(C), 401(a)(1)-(2) and 40 C.F.R. §§ 122.4(d), 122.41(d), (e), (n).

Wastewater treatment plants like Manchester’s are particularly susceptible to non-speculative climate change impacts within the purview of the Clean Water Act, including combined sewer overflow events due to increased precipitation causing discharges of raw sewage from point source outfalls into surface waters that serve as recreation sites or drinking water sources.⁸² Moreover, the City’s claims that Adaptation Planning requirements pose environmental justice concerns ignores the environmental injustices and disparate impacts of pollution that will likely result if the City is *not* required to engage in adaptation planning.⁸³

Response 91

See Response 3.

L. Comments from Andrea Amico, co-founder, Testing for Pease:

Comment 92

My name is Andrea Amico. I am a Portsmouth, NH resident and co-founder of a community action group called Testing for Pease. Over 10 years ago, my life changed forever when I learned my family was exposed to high levels of PFAS through contaminated drinking water at the former Pease Air Force Base. PFAS are manmade chemicals that are toxic at low levels and they build up in the body and have been associated with multiple adverse health effects to humans.

I have dedicated a decade of my life advocating for answers and actions for my community. I have also partnered with many other communities over the nation impacted by PFAS contamination, as well. A lot of the work we are doing on PFAS is reactive to the decades of pollution to communities. It is long overdue that we take a proactive approach to PFAS

⁸¹ See also Off. of Wastewater Mgmt., Memo from Christopher Kloss to Regional Water Division Directors, Regions 1-10, *Incorporating Resiliency Considerations in NPDES Permitting* (Dec. 13, 2024), accessible at <https://www.epa.gov/system/files/documents/2024-12/resilience-npdes-permitting.pdf>.

⁸² EPA, *Climate Impacts in the Northeast* (last updated January 19, 2017), accessible at https://19january2017snapshot.epa.gov/climateimpacts/climate-impacts-northeast_.html#Reference%201.

⁸³ See generally Union of Concerned Scientists, *Looming Deadlines for Coastal Resilience* at 6 (June 2024), accessible at <https://www.ucsusa.org/resources/looming-deadlines-coastal-resilience> (“During this decade, our results show a 10 percent increase in public and affordable housing exposed to disruptive flooding twice per year in nondisadvantaged communities but a 40 percent increase in disadvantaged communities. . . . During the same period and with the same inundation frequency, the numbers of brownfields and K–12 schools exposed to flooding also increase more rapidly in disadvantaged communities than in those that are nondisadvantaged.”); see also *EJScreen Community Report: Manchester, NH* (last visited January 28, 2025), accessible at <https://ejscreen.epa.gov/mapper/> (listing the City’s flood risk at the 74th national percentile).

exposure and do everything in our power to prevent PFAS from entering into our environment and exposing innocent communities.

I am concerned about PFAS at the Manchester wastewater treatment plant and because it is emitting PFAS through wastewater and through the on site incinerator. PFAS chemicals don't break down. PFAS are harmful to human health and impact multiple systems of the human body. PFAS get into our air, water, soil, wildlife, food supplies, and more. The EPA is well aware of the danger of PFAS to human health as evidenced by their actions last year to deem two common PFAS as hazardous substances and for EPA establishing the first ever national drinking water standards for some PFAS. These historical actions by EPA demonstrate that EPA knows the harms of PFAS to human health and the environment. Therefore, EPA should do everything in their control to stop the spread of these harmful contaminants in all communities, including Manchester and the surrounding towns impacted by the PFAS emitting from the wastewater treatment plant and its on-site incinerator.

It is concerning that the Manchester wastewater treatment plant is receiving wastewater that contains PFAS, but the plant cannot remove PFAS. As a result, the plant is sending these harmful chemicals directly into the Merrimack River which provides drinking water for more than 700,000 people, including communities downriver from Manchester's wastewater treatment plant. Manchester's wastewater treatment plant and its on-site incinerator are also sending PFAS into the air. We have seen the devastating effects of air born PFAS in Merrimack, NH and surrounding communities from the St Gobain Performance Plastics Factory and the widespread impacts from that contamination. How many more communities in NH have to be contaminated by these harmful chemicals and suffer the consequences before we take action to stop the exposure?

To advance environmental justice and better protect human health and the environment, EPA should strengthen the PFAS provisions in Manchester's final permit. And EPA should include effluent limits for PFAS in the permit, and should require "upstream" PFAS reduction to curb PFAS coming into the plant from industrial sources. This permit process gives EPA an important opportunity to reduce PFAS pollution in Manchester and in surrounding areas. EPA should make the following changes when finalizing the draft permit:

Response 92

EPA acknowledges the commenter's concerns. Administrator Zeldin has announced major EPA actions to combat PFAS contamination. *Administrator Zeldin Announces Major EPA Actions to Combat PFAS Contamination* (April 28, 2025).⁸⁴ In line with Administrator Zeldin's Powering the Great American Comeback initiative, EPA's work in this space will advance Pillar 1: Clean Air, Land, and Water for Every American, and Pillar 3: Permitting Reform, Cooperative Federalism, and Cross-Agency Partnership. *Id.*

⁸⁴ Available at: <https://www.epa.gov/newsreleases/administrator-zeldin-announces-major-epa-actions-combat-pfas-contamination>

Accordingly, EPA is requiring PFAS monitoring in this and other NPDES permits for the reasons described in the 2024 Fact Sheet. Also see, e.g., Response 1.

Regarding the request to include effluent limits, see Responses 51-56.

Regarding the request concerning industrial users, see Responses 58-60.

Regarding the incinerator, see Response 62.

Comment 93

EPA should follow its own policy from 2024 and conduct an environmental justice analysis before finalizing this permit. The agency should fully consider and include permit measures that address the impact of the plant's PFAS air and water pollution on communities facing cumulative environmental burdens in Manchester and downstream locations.

Response 93

See Response 49.

Comment 94

EPA must consider the need for effluent limits at the wastewater treatment plant and include necessary limits in the final permit. In its analysis, EPA must evaluate all existing data on PFAS at the Manchester plant, relevant control technologies, and conditions and uses of receiving waters.

Response 94

See Responses 51-56.

Comment 95

EPA must strengthen monitoring and source reduction requirements for industrial users – including the Manchester municipal landfill – to reduce PFAS before it even gets to the wastewater treatment plant. The City has clear authority to do this under NH law, RSA 485-A:5-e.

Response 95

See Responses 58-60 and 86.

Comment 96

EPA should require monitoring and reporting of PFAS in air emissions from the plant's sludge incinerator.

Response 96

See Response 62.

M. Comments from Rebecca Backman:

Comment 97

I urge EPA to meaningfully consider community concerns before finalizing this permit. I am concerned about the Manchester wastewater treatment facility and its onsite sewage sludge incinerator contaminating the Merrimack River and ambient air with toxic PFAS pollution. PFAS chemicals, nicknamed “forever chemicals” for their persistence in the environment, have been linked to serious health effects, including cancer, and they disproportionately affect environmental justice communities. These “forever chemicals” are released from the Manchester wastewater treatment facility and its incinerator, threatening the health of Manchester residents and residents of downstream communities. I urge EPA to strengthen the Manchester wastewater treatment facility’s National Pollutant Discharge Elimination System Permit by: conducting an environmental justice analysis, including expanded PFAS monitoring at the wastewater treatment facility and at industrial facilities; incorporating provisions to control PFAS and reduce PFAS contributions from industrial sources; and adding PFAS air monitoring requirements for the sewage sludge incinerator.

Response 97

See Responses 49, 50, 58-60, and 62.

N. Comments from Marc Feigl:

Comment 98

EPA must strengthen monitoring and source reduction requirements for industrial users – including the Manchester municipal landfill – to reduce PFAS before it even gets to the wastewater treatment plant. The City has clear authority to do this under NH law, RSA 485-A:5-e.

Response 98

See Responses 58-60 and 88.

Comment 99

EPA should require monitoring and reporting of PFAS in air emissions from the plant’s sludge incinerator.

Response 99

See Response 62.

O. General Response to Comments Submitted by Residents of the Manchester, NH area

EPA received comments on the revised Draft Permit from approximately fifty individuals who reside in the Manchester, NH area which were submitted as a single document. Due to the length of this document as well as overlapping issues raised by the commenters, EPA is providing the following summary of the issues and concerns raised as well as general responses to these issues. This document is included as an attachment to this response to comments document.

The issues and concerns raised by the individual commenters as well as general responses are described below:

- **PFAS emissions from the sludge incinerator**

See Responses 49 and 62.

- **PFAS being discharged from the WWTF into the Merrimack River, which is a drinking water source**

See Response 1.

- **PFAS requirements in the permit should be strengthened.**

See Responses 50-62.

- **EPA should conduct an EJ Analysis to address cumulative impacts on affected communities.**

See Response 49.

- **Final permit should contain PFAS effluent limits and limits for the upstream receiving water.**

See Responses 51-56.

- **PFAS source control.**

See Responses 58-60.

- **EPA should require monitoring and reporting of PFAS in air emissions from the plant's sludge incinerator.**

See Responses 49 and 62.

- **Include PFAS limits based on PFAS data from the Manchester WWTF.**

See Responses 51-56.

- **Monitoring results should be made available to the public.**

Most monitoring results will be available to the public through EPA's website: <https://echo.epa.gov/>. Any results not available through this website are available upon request.

- **Chlorine smell in tap water.**

While EPA acknowledges the concern expressed by the commenter regarding the chlorine odor being detected in drinking water, this issue is outside the scope of this permit, which regulates chlorine discharged from the WWTF and not in the tap water.

THE COMMENTS BELOW WERE PROVIDED AS TESTIMONY AT THE PUBLIC HEARING

P. Testimony Provided by Jillian Aicher, Conservation Law Foundation, January 21, 2025.

Comment 100

We submitted comments on the original draft permit on June tenth and we will also be submitting written comments on February third. Thank you, first of all, for holding this public hearing on the draft permit to ensure that the permit complies with the Clean Water Act, advances environmental justice and protects public health and the environment. We ask EPA to take specific actions related to 3 categories. The 1st is environmental justice, the second is PFAS provisions in the permit, and the third is narrative permit provisions.

Response 100

EPA acknowledges the comment. Detailed responses are provided in the following responses.

Comment 101

With respect to environmental justice, we urge EPA to follow its own 2024 EPA program policy, entitled Addressing Environmental Justice and Equity and NPDES permitting. As we identified in our June tenth comments on the original draft permit, there are at least two communities in Manchester that are located nearby the wastewater treatment plant and incinerator, roughly 2 miles away, that are often downwind of the sewage sludge incinerator, and are already overburdened by environmental pollution. Those communities are ranking at or above the 94th state percentile for almost all of EPA's environmental justice indexes as are indicated on the EJ screen tool. So, to comply with the NPDES EJ policy that EPA has, EPA should first conduct a thorough screening of potential environmental injustices that are caused or exacerbated by the wastewater treatment plant and its sewage sludge incinerator. And it should do so, using EPA's EJ screen tool. EPA should also then conduct a thorough environmental justice analysis which includes, but is not limited to, the impact of the plant's PFAS pollution, both through the water and through the air from the sewage sludge incinerator.

And then finally, with the results of that analysis, EPA must include measures in the permit that minimize, avoid, or mitigate the disproportionate and adverse effects from the wastewater

treatment plant and its incinerator, and those mitigation measures include the PFAS permit requirements that we're advocating for.

Response 101

See Response 49.

Comment 102

With respect to those PFAS permit requirements, first, we reiterate that we support EPA, including PFAS monitoring requirements in this permit. EPA has the clear authority to require those monitoring requirements with methods 1633, and 1621, clearly under regulations at 40 CFR. 122.44.I. EPA's authority is even more clearly supported by its recently finalized aquatic life water quality criteria and benchmarks for several PFAS compounds. But monitoring alone is not enough to protect public health and the environment. EPA must also take steps to reduce PFAS through both effluent limits and through industrial source control.

So first, with respect to effluent limits, EPA must analyze the need for both technology based and water quality based effluent limits. And with water quality based effluent limits, EPA must conduct the reasonable potential analysis that takes into account PFAS data taken at the plant which we've provided in our previous comments, as well as the final EPA water quality criteria for aquatic life, the proposed criteria for human health, and New Hampshire's proposed surface water quality standard for PFAS.

Response 102

See Responses 50, 87, 51-56.

Comment 103

With respect to industrial source control, the agency recommended in April of 2022, that permits for plants like Manchester's, where EPA is the permitting authority and the pretreatment control authority, that those permits require not only monitoring for PFAS, but also measures to address PFAS and discharges to the to the POTW. And that includes best management and practices, local limits and other methods of PFAS pollution prevention.

Manchester has clear authority to implement source control. Under RSA. 485 a. 5.e. and under the Clean Water Act, which is described further, in our written June 10th comments. EPA also recently recognized in its sewage sludge risk assessment for PFOA and PFOS that, regardless of the method of sludge disposal (So here, that's incineration), regardless of that method, exposure and risk reduction is possible through pretreatment at industrial facilities that discharge into a wastewater treatment plant. EPA went on in that health risk assessment to recommend that wastewater treatment plants implement industrial pretreatment requirements where appropriate. And here it is absolutely appropriate and necessary for EPA to require industrial source control measures given the ample data that EPA has, showing that the Manchester plant is both receiving PFAS and its influent and discharging. PFAS into the Merrimack River through its effluent and emitting PFAS into the air through sludge incineration.

Response 103

See Responses 58-60.

Comment 104

Regarding narrative limits, we object to EPA's removal of narrative provisions in the original draft permit in Part I.A. These changes indicate a premature response to the case San Francisco versus EPA, which the Supreme Court has heard, but has not yet decided. EPA should be retaining these narrative provisions that were listed in the original permit. As they are an essential backstop that protect water quality and ensure compliance with codified state water quality standards.

Response 104

See Responses 80 and 90.

Q. Testimony Provided by Lois Cote, volunteer with NAACP Manchester, NH branch/Environment and Climate Environmental Justice Committee, January 21, 2025.

Comment 105

In my first 20 years of a relationship with the mighty Merrimack, it was one of the 10 most polluted rivers in the country, smelling bad and having weird colorations floating around. But I loved the river valley nonetheless, and I used to fantasize to imagine what it was like before it was settled and developed. Fortunately, the arrival of the Clean Water Act and the EPA's interventions started a cleanup that took decades but brought the river to the class B level (swim boat fish) and provided much better sourcing of drinking water for the communities downstream, now numbering probably about 700,000 people. Sadly, the Merrimack is at risk again. It's in danger of becoming dangerously polluted, and it has been more than a decade ago that increasing amounts of raw sewage were flowing in, partly at least, due to the aging and inadequate combined sewage overflow systems used during heavy rainwater events.

In the same period the wastewater treatment facility incinerator in which the sludge byproduct was burned, it was found to be inadequate and was releasing mercury into the air in unsafe amounts along with other pollutants. Thus, as I'm sure you know, Manchester had to remediate its incinerator, and is in a 20 year consent decree with you, in the fifth year of phase two, to resolve the CSO problems with a full upgrade of the system. And this is all good news.

Response 105

EPA acknowledges receipt of these comments.

Comment 106

But now we have PFAS. And why? Why is it that our response to this crisis is so often deer in the headlights, or a very slow move toward remediation and restriction of these substances? Is it because PFAS, unlike floating sewage is, they are invisible and odorless, allowing us to avoid accepting the real dangers? It took the Merrimack over 100 years to become the toxic soup of

my childhood, when an accidental dunk in it might cost you your life. PFAS have been with us since the 1940s. Are we not yet at a crisis level?

I'm a retired child and family therapist. A number of my clients lived in the two Manchester environmental justice tracks that you, EPA, monitor. Many of them had learning disabilities and childhood asthma. Some had early life lead exposure with the concomitant lifelong impairments. Now come the toxic almost forever chemicals, PFAS, adding to the environmental burden these families carry, spewed by the local incinerator into the air they breathe, and for the environmental justice communities of the 700,000 down river. Well, it comes in the water.

The first environment experienced by every human is the uterus. There is mounting evidence of in utero exposure to PFAS with some certainty regarding negative developmental impacts. What multigenerational harms are we risking and avoiding or further delaying, acting effectively to stop the threat of PFAS.

Response 106

EPA agrees that PFAS contamination is a serious threat to human health. See Response 49 and Response 92 and the other responses referenced therein.

R. Testimony Provided by Leslie Want, Resident of Manchester, NH

Comment 107

I am testifying to ask that the Manchester Wastewater Treatment Plant be required to test for PFAS, a forever chemical known to cause cancer and that we require companies that are sending their wastewater to Manchester to reduce or eliminate PFAS as a byproduct sent to the treatment plant.

The Manchester wastewater treatment plant is the only one in the state that incinerates its sludge sending harmful pollutants into the air of the surrounding neighborhoods. My son works less than a quarter of a mile from the treatment plant and has told me that on most days the air smells terrible. Not only does the water treatment plant send these pollutants into the air through incineration but dumps the overwhelming majority of them into the Merrimack River to be sent to the many communities downstream like the town of Merrimack and city of Nashua among others. It is important to stop carcinogenic pollutants like PFAS at the source because once they are in the environment, we are forever unable to remove them. For the most part, we don't even know the magnitude of the problem because the wastewater treatment plan is not required to test for PFAS. It is time to make that change and require the data be collected so we understand the scope of the impact on not only the environment but our own health.

Please help our community by testing for PFAS. We know it is there but need a clearer understanding of the magnitude of the problem.

Response 107

EPA notes that Permit Part I.A.1 requires PFAS monitoring. See also Responses 1 and 50.

See Response 92 and the Responses referenced therein.

Regarding the incinerator, see Response 62.

R. Testimony Provided by Jose Tapia, Merrimack River Watershed Council

Comment 108

The incineration of sludge at the Manchester wastewater treatment plant concerns me as an individual and MRWC as an environmental organization and stakeholder. PFAS is widely accepted to be a forever chemical, derived from the industrial processes, and these can linger for thousands of years.

Treatment plants are always under scrutiny and have a thankless job, literally filtering excrement. But the wastewater treatment plant, Manchester is directly discharging PFAS into the Merrimack. It's a drinking source for over half a million people and it's spreading PFAS around this portion of the watershed through the incineration process of their sludge.

I believe the EPA should very strongly consider setting effluent limits and using whatever enforcement mechanisms it has to encourage or mandate source production from industry to mitigate the further spread of PFAS into New Hampshire and the rest of the country.

Response 108

See Responses 51-62.

S. Testimony Provided by Ricardo Cantu, OspreyOwl Environmental

Comment 109

December of this year of 2024, a month ago there was a proposal for a docket number for the Method 1633A, which has changed again. That's EPA-HQ-OW-2024-0328. So in that it states that while a method is not nationally required for clean water acceptance, the compliance monitoring until the EPA has promulgated it through rulemaking. So it actually hasn't been promulgated yet. There's not a final action on absorbable organic fluorine or PFAS. So the testing we're doing is legally indefensible. If we had to go to court for an industry or with the EPA or the EPA with the City of Manchester. We're waiting for that to happen, and it's the same thing under Method 1621. It says the same thing, that CWA compliance monitoring is not nationally required until the EPA has promulgated this through rulemaking. So those are 2 things that need to be done before this is officially used for compliance, compliance monitoring, setting limits.

Also, the EPA right now is doing a large PFAS study. It's been noted in the Federal Register on March 26, 2024. This was a study of the large plants over 10 MGD. I asked Rob at Manchester if he had been contacted to do that study. He said, no. I looked at a review of the PNAS site, and there were 8 large plants that service 70% of the population, water-wise, wastewater plants. So

they must be the big plants like Chicago, probably New Orleans, Houston. Things like that, but it says their names will remain anonymous until the study is done. Through that study they looked at the information that they gathered, and they found out that adsorbable organic fluorine actually measures a lot more pharmaceuticals than it does PFAS. It's about 10 to 12% PFAS and probably 70% well, it says less than 10%, and then the rest is pharmaceuticals, prescribed fluorinated pharmaceuticals. So that test really has no bearing on the PFAS to determine PFAS. It'll measure about 1,400 compounds. It can't determine which ones it is. So the adsorbable organic fluorine is kind of a really a worthless test in the scheme of things when you look at what it can do. And, as pointed out in that study as it's going is information on the study, the removal rates from the 8 plants. Things like that. But it doesn't look hopeful from what I read. So, I just wanted to make that clear. The Office of Management and Budget had said that the cost for the study, that study that they were going to do, was with 2 to 300 large plants within the country. And that's about 3% of the total, 15,000 plants that are in the United States. So what they want to do with the study is they're looking to do one set of PFAS sampling, influent, effluent, sludge.

You've required 4 of not only Manchester, but the small and medium general permits, and the EPA states in that study that there is only enough laboratories, 7, that they should only do about 700 samples every 4 months. They've taken the 200 plants they're looking at, they're doing 10 industrial samples, and they're going to break that down. So there's no capacity out there to do all this additional testing that the EPA is requiring. So that needs to be looked at seriously, because all of these plants that are being required to do this much PFAS sampling and adsorbable organic fluorine will not be able to find a facility that do those testing, so that needs to be looked at. Also the Office of Management and Budget said that it would take about 25,640 hours for those 200 plants at a cost of 5.5 million dollars. When you look at the cost of each test, it's about \$2,115. Then the cost for a PFAS sample is about \$500 and adsorbable fluorine is about \$440. So it comes out to be about \$3,055 a sample. And what you're requiring the 22 samples, it's about \$67,000 a year that the wastewater plants are going to have to pay, and that's all of them. Not only Manchester, but all the other ones also.

Yesterday there was an executive order that was signed that actually eliminated Executive Order 14008, which was part of the climate crisis for home and abroad. So that impacts greatly. I'm moving on now to the rulemaking of what do you call that there the adaptation plan. But just one more thing, there was another executive order that actually asked that all rulemaking that has not been finalized be held up. So they're looking at 60 to 90 days until the new administration can review those policies and procedures. So at this point I don't know if you can actually get those rolling until they've been reduced. So those are probably being held for the time being.

And in the adaptation planning, there's a whole list of items that the EPA is looking to have completed. They referenced a Federal Register document of May of 1980. And I read through that. They talk about that it gives them the ability to enforce the regulations. I read through that register notice, and nowhere in there did it say anything about flooding or prevention of future flooding. It's basically the maintenance and operation of the plant: make sure it's working in good order, it's efficient that the treatment systems and controls are installed and

used appropriately. So it goes into proper operation and effective performance based on facility, removal, and design.

Now these facilities removals, we all know they've been designed 40-50 years ago, initially conventional treatment. Then they move to some tertiary treatment with phosphorus removal. They're looking at also nitrogen removal in the future. But it's harder and harder to take these plants and modify them for the type of work that they weren't initially intended for.

There was a document in 1940 that was written by the Department of the Interior and the Army Corps of Engineers. It was about the flooding from 1937, 1927, 1936, 1934. And as you read it, it sounds very similar to the document that's mentioned in 1980. It's called the Hurricane Floods in 1938, published by the USGS. And you go through that, it actually tells you about the curve numbers, intensity monitors, rain, climate. Everything that we have issues with today was spelled out in that document. So, I just don't know why that we didn't look at that when they were building the plants in the sixties and seventies. It's kind of tough that we're going. I had to do stuff that we should have done in the beginning, and the only people that suffer from that are the rate payers, because initially, it was 95% funded by the State and the Federal Government. Nowadays, it's funded basically by the communities borrowing through SRF funding.

Also, I looked at the there's a brick building resilience and infrastructure and communities, and they have a grant program. They have a 25 million dollars grant program. Fifty-six grants were awarded for general competition. Forty-nine were for justice, 40 communities, which is expected and reliable. Only 2 of those were for a wastewater resilience, 17.1 and 19.3. Those are for wastewater plants. Most of the grants were for safe rooms, protecting neighborhoods from flooding, securing collection system, piping, wildfire mitigation. And going through those, everything mentioned, the baseline conditions of a 100-year flood. There wasn't 1 grant that was mentioned for the 500-year flood. So any adaptation plan that's put into the permit, the EPA is looking for resilience up to the 500-year flood. That is not anything that I've seen in any of these brick releases, the money that's been funded. There's 25 million dollars that's in funding each year, and it really says it's for eligible plants. And nowhere in that does it say that it's for NPDES. So it's really not a requirement. The EPA cites a lot of law that says it's required, but we don't see that in there at all. It's just that when you read the law itself, there's nothing mentioned about flooding or flood resiliency.

And then the final thing on the benthic study. EPA along with the State of New Hampshire and the State of Massachusetts, a document in 1987 called The Merrimack River Watershed Protection Initiative. And in that time, they said in the sixties, that the Merrimack was one of the 10 most polluted rivers in the nation, which it was. On page 8, it says that in 1965 there were rafts, decomposing material, floating along the Contoocook River, and that the Benthic fauna and the pollution sensitive species around Concord area were not found. So the pollution was very severe. As you get reading that further, it goes on, and it says that a lot of that was caused by road salt, urban runoff, contaminated spills, tanker trucks overturning next to the river, contaminated groundwater, agricultural farms, underground storage tanks, industrial landfills, hazardous waste sites, road salts, etc. And then it says in wastewater treatment plants

are also, if there's an ever-present possibility from the industrial municipal wastewater treatment plant if they're running with poor maintenance practices, irregularities. So I would say that in the Fact Sheet, I would like to see at least one instance where a benthic problem was found from a treatment plant and the study. I think that it's just that they're about \$30,000 to do these studies. So they're not cheap.

And the book says that in 1987, when it was written, that the class B was attained and everything looked fine in the Merrimack River. This was in 1987. In that book it was written again by the EPA, the State of Massachusetts, and the State of New Hampshire. So what changed between 1987 and today, that's what we need to know. And I would like to see that explained further in the fact sheet rather than just go on an expedition to do this additional sampling.

And then just another thing on the ammonia reduction to 10.4. You're looking to set that in there the 95th percentile was 21.8. The difference is 11.6. If you look at what that generates for carbon footprint, when you remove ammonia, you're actually nitrifying and denitrifying, which releases nitrous oxide. Nitrous oxide is 3 times more potent a greenhouse gas than carbon dioxide. So when you're sending that up into the atmosphere, you're actually going to create about 7,000 tons a year of carbon dioxide equivalent in order to treat ammonia, that the CDM Study, that was paid for by the Army Corps of Engineers from 2003 to 2012, actually looked at the river and said there were really no major problems, even minor problems, with ammonia contamination, nitrogen, or phosphorus. So you're looking, you're actually like the folks said with the PFAS, you're creating a worse problem for the atmosphere, the climate change, by trying to treat down to these low levels for ammonia and phosphorus. So there needs to be an actual model to look at those and see cause and effect and benefit. Benefit versus pros and cons.

Response 109

Regarding Methods 1633A and 1621, see Responses 1 and 74.

Regarding lab availability, see Response 35.

Regarding cost, see Response 2.

Regarding the Adaptation Plan, see Response 3.

Regarding the benthic survey, see Response 71.

Regarding ammonia reduction and nitrous oxide, see Response 79.

T. Testimony Provided by Hayley Jones, Slingshot

Comment 110

Good evening, everybody. My name is Hayley Jones. I use they and them pronouns, and I am the Vermont and New Hampshire State Director, with Slingshot, which is an environmental health and justice organization.

We work alongside 50 community groups across the northeast to tackle some of the most pressing pollution threats of our time, including the devastating PFAS contamination crisis.

Since receiving the first call back in 2016 about elevated PFOS levels in North Bennington's drinking water, we've been supporting communities most impacted by this public health crisis, whether they be firefighters, military veterans, or simply families living downstream from really notorious polluters like St. Gobain.

For years we've been seeing the horrific impacts of this contamination, including, but not limited to, hormone disruption, liver and thyroid problems and numerous types of cancer. So as a community organizer with significant experience in this field, I am concerned about the toxic forever chemicals spewing from Manchester's wastewater treatment facility and its on-site incinerator. So I'm here, along with the folks who have spoken before me, to request that the EPA significantly strengthen the PFAS provisions and environmental justice considerations in Manchester's final Clean Water Act permit.

First of all, we're asking that the EPA follow its own policy from 2024 and carry out an environmental justice analysis before finalizing the permit.

The agency must fully consider and include permit measures that address the impact of the facilities pollution, particularly on communities that are facing compounding environmental health burdens. Yes, we're talking about Manchester, but we're also thinking about Nashua, Lowell, Lawrence, and Haverhill, cities that are well known to meet several of the Federal criteria for environmental justice communities.

Secondly, we ask that the EPA not only use all available data to set health protective PFAS limits on the discharges from this Manchester facility, but also to look upstream at industries that are employing these toxic forever chemicals.

We've done the research, and under New Hampshire law the City does have clear authority to strengthen monitoring and source reduction requirements for industrial users, which means that we can be reducing PFAS loads before they're even coming to the facility for treatment.

Finally, we're calling on the EPA to require monitoring and reporting of PFAS emissions from the facility's sludge incinerator and ideally move towards a phase out of this technology. We've known for decades that burning our waste really only makes our problems worse. We're creating often highly concentrated toxic ash that then gets buried in landfills regardless, or we're just blowing the original pollutants out of smokestacks and into people's lungs.

So to all the EPA officials present, thank you so much for holding this hearing. And we at Slingshot hope that you'll consider this permit renewal as an opportunity to carry out your current Federal mandate of safeguarding human and environmental health in order to protect the vulnerable communities of New Hampshire, Massachusetts, and beyond. We urge you to place even more stringent guardrails on this permit.

Response 110

See Responses 49, 51-56, 58-60, and 62.

U. Andrea Amico, Co-founder, Testing for Pease

These oral comments provided at the public hearing were identical to Comments 92-96. See Responses 92-96.

V. Testimony Provided by Colleen Naus, Citizen

Comment 111

First of all, I want to thank the EPA and all of you who are so much more knowledgeable about this than me. I recently, just months ago, found out about the incinerator. I do live within the two-mile radius. and myself, and most of my neighbors, had no idea that the incinerator is burning toxic sludge.

Some of the things that I've read from Jillian's report, and other places, that Manchester was allowing very toxic sludge being shipped in from many industrial places. Some of that has stopped.

We have so much toxic sludge, and now we're burning it in my own neighborhood, and we had no idea we were breathing this toxic substance.

So, I just am learning more about it, and I am hoping, like when I grew up in Nashua in the seventies and in the late eighties, the EPA helped me in cleaning up some of the, not the toxic, but the asbestos dump site, and I'm hoping that you'll step in to help us again, because it just is scary how toxic this stuff is, or we don't know how bad and toxic it is unless you test it.

I recently had a water waste main pipe break on my road. It goes from the Water Waste Company partially treated wastewater over to the Energy Company for cooling. I am telling you, when that pipe broke, there was stuff that came out of it. I got sick, I got eye infections, and it was almost impossible to look to find out exactly what was in it. So I don't feel confident that it's really transparent. You know one person saying you may not want to eat your vegetables, or you know the high levels of chlorine, or this, and I can tell you it was stuck, and still some is from September to now, after rain, snow. So that scares me, and that's how I was led on to finding out about this, and had no idea. And I hope the EPA will step in to protect us and be transparent about finding solutions, and maybe, you know, talking to limiting the amount of industrial waste that is being dumped down there for us to breathe, and into the water that I was drinking as well (I grew up in Nashua).

Response 111

EPA appreciates the concerns raised by the commenter regarding the impact of PFAS on public health. See Response 92 and the other responses referenced therein.

**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”),

City of Manchester, New Hampshire

is authorized to discharge from the facility located at

Manchester Wastewater Treatment Facility

300 Winston Street

Manchester, NH 03103

and 15 Combined Sewer Overflow (CSO) Outfalls

to receiving waters named

Merrimack River (NHRIV700060803-14-02 and NHIMP700060802-04)

Piscataquog River (NHRIV700060607-22)

Baker Brook (NHRIV700060803-08)

Rays Brook (NHRIV700060802-15)

Unnamed Brook (NHRIV700060803-17)

Merrimack River watershed – All Class B

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

The Towns of Goffstown, Bedford and Londonderry, New Hampshire are Co-permittees for: Part I.B, Unauthorized Discharges; Part I.C, Operation and Maintenance of the Treatment and Control Facilities (which include conditions regarding the operation and maintenance of the collection systems owned and operated by the Towns); and Part I.D, Alternate Power Source. The permit number assigned to the Towns for purposes of reporting (using NetDMR through EPA’s Central Data Exchange, as specified in Part I.I below) in accordance with the requirements in Parts I.B, I.C, and I.D of this permit are as follows: Bedford: **NHC010447**; Goffstown: **NHC020447**; and Londonderry: **NHC030447**.

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the terms and conditions of Parts I.B, I.C, and I.D of this permit. The Permittee and Co-permittees are severally liable under Parts I.B, I.C, and I.D for their own activities and required reporting under Part I.I with respect to the portions of the collection system that they own or operate. They are not liable for violations of Parts I.B, I.C, and I.D committed by others relative to the portions of the collection system owned and operated by others. Nor are they responsible for any reporting under Part I.I that is required of other Permittees under Parts I.B, I.C, and I.D. The responsible departments for the Co-permittees are:

Town of Goffstown Goffstown Sewer Commission 16 Main Street Goffstown, NH 03045	Town of Bedford 24 North Amherst Road Bedford, NH 03110	Town of Londonderry 268 B Mammoth Road Londonderry, NH 03053

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 February 11, 2015.

This permit consists of **Part I** including the cover page(s), **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011), **Attachment B** (Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013), **Attachment C** (Reassessment of Technically Based Industrial Discharge Limits), **Attachment D** (Industrial Pretreatment Program Annual Report); **Attachment E** (PFAS Analyte List); **Attachment F** (Combined Sewer Overflow Outfalls) and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this day of

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

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

PART I**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

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

Effluent Characteristic	Effluent Limitation			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
Rolling Average Effluent Flow ⁵	34 MGD ⁵	---	---	Continuous	Recorder
Effluent Flow ⁵	Report MGD	---	Report MGD	Continuous	Recorder
CBOD ₅	25 mg/L 7,090 lb/day	40 mg/L 11,350 lb/day	45 mg/L 12,770 lb/day	2/Week	Composite
CBOD ₅ Removal ⁶	≥ 85 %	---	---	1/Month	Calculation
TSS	30 mg/L 8,510 lb/day	45 mg/L 12,770 lb/day	50 mg/L 14,190 lb/day	2/Week	Composite
TSS Removal ⁶	≥ 85 %	---	---	1/Month	Calculation
pH Range ⁷	6.5 - 8.0 S.U.			1/Day	Grab
Total Residual Chlorine ^{8,9}	130 µg/L	---	220 µg/L	3/Day	Grab
Escherichia coli ^{8,9}	126/100 mL	---	406/100 mL	3/Week	Grab
Total Phosphorus ¹⁰ (April 1 – October 31)	236 lb/day	---	Report lb/day	2/Month	Composite
Total Phosphorus ¹⁰	Report mg/L	---	Report mg/L	2/Month	Composite
Total Aluminum ¹¹	118 µg/L	---	Report µg/L	2/Month	Composite
Total Copper	24 µg/L	---	Report µg/L	2/Month	Composite
Total Ammonia Nitrogen (May 1 – October 31) ¹¹	10.4 mg/L	---	Report mg/L	2/Week	Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
Total Kjeldahl Nitrogen ¹² (April 1 – October 31) (November 1 – March 31)	Report mg/L Report mg/L	---	Report mg/L Report mg/L	1/Week 1/Month	Composite Composite
Nitrate + Nitrite ¹² (April 1 – October 31) (November 1 – March 31)	Report mg/L Report mg/L	--- ---	Report mg/L Report mg/L	1/Week 1/ Month	Composite Composite
Total Nitrogen ¹²	Report mg/L Report lb/day	---	Report mg/L	1/Month	Calculation
PFAS Analytes ¹³	---	---	Report ng/L	1/Quarter	Grab
Adsorbable Organic Fluorine ¹⁴	---	---	Report ng/L	1/Quarter	Grab
Whole Effluent Toxicity (WET) Testing^{15,16}					
LC ₅₀	---	---	≥ 100 %	1/Quarter	Composite
C-NOEC	---	---	≥ 8.5 %	1/Quarter	Composite
Hardness	---	---	Report mg/L	1/Quarter	Composite
Ammonia Nitrogen	---	---	Report mg/L	1/Quarter	Composite
Total Aluminum	---	---	Report mg/L	1/Quarter	Composite
Total Cadmium	---	---	Report mg/L	1/Quarter	Composite
Total Copper	---	---	Report mg/L	1/Quarter	Composite
Total Nickel	---	---	Report mg/L	1/Quarter	Composite
Total Lead	---	---	Report mg/L	1/Quarter	Composite
Total Zinc	---	---	Report mg/L	1/Quarter	Composite
Total Organic Carbon	---	---	Report mg/L	1/Quarter	Composite

Ambient Characteristic ¹⁷	Reporting Requirements			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
Hardness	---	---	Report mg/L	1/Quarter	Grab
Ammonia Nitrogen	---	---	Report mg/L	1/Quarter	Grab
Total Aluminum	---	---	Report mg/L	1/Quarter	Grab
Total Cadmium	---	---	Report mg/L	1/Quarter	Grab
Total Copper	---	---	Report mg/L	1/Quarter	Grab
Total Nickel	---	---	Report mg/L	1/Quarter	Grab
Total Lead	---	---	Report mg/L	1/Quarter	Grab
Total Zinc	---	---	Report mg/L	1/Quarter	Grab
Total Organic Carbon	---	---	Report mg/L	1/Quarter	Grab
Dissolved Organic Carbon ¹⁸	---	---	Report mg/L	1/Quarter	Grab
pH ¹⁹	---	---	Report S.U.	1/Quarter	Grab
Temperature ¹⁹	---	---	Report °C	1/Quarter	Grab
Total Phosphorus ²⁰ (April 1 - October 31)	---	---	Report mg/L	1/Month	Grab

Influent Characteristic	Reporting Requirements			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
CBOD ₅	Report mg/L	---	---	2/Month	Composite
TSS	Report mg/L	---	---	2/Month	Composite
PFAS Analytes ¹³	---	---	Report ng/L	1/Quarter	Grab
Adsorbable Organic Fluorine ¹⁴	---	---	Report ng/L	1/Quarter	Grab

Sludge Characteristic	Reporting Requirements			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
PFAS Analytes ¹³	---	---	Report ng/g	1/Quarter	Grab ²¹

PART I**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Continued)**

2. During the period beginning on the effective date of the permit and lasting through the expiration date, the Permittee is authorized to discharge storm water and wastewaters into the Merrimack River from Combined Sewer Outfalls serial numbers 011, 018, 031, 043, 044, 045, 046, 047, 050, 052, 053, 054, and 055, and into the Piscataquog River from Outfalls serial numbers 039 and 051. These discharges are authorized only during wet weather. Such discharges 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 below shall be reported in the monthly Discharge Monitoring Report (DMR) for Outfalls 011, 018, 031, 039, 043, 044, 045, 046, 047, 050, 051, 052, 053, 054, and 055.

Effluent Characteristic ²²	Discharge Limitation	Monitoring Requirement	
	Wet Weather Event Maximum	Measurement Frequency	Sample Type ⁴
<i>Escherichia coli</i>	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 NHDES ("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 either to 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 the following 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.

Bypasses shall not occur below influent flows of 34 MGD. When bypass occurs, the blended effluent shall be subject to the end-of-pipe effluent limitations in Part I.A.1.a above and all bypasses shall be reported by the Permittee to EPA and NHDES pursuant to Part I.I.6 below.

A bypass of secondary treatment is subject to the requirements of Part II.B.4. and Part II.D.1.e. of this permit. The following information shall be reported as an electronic attachment to each March DMR summarizing each day there was a bypass of secondary treatment for the previous calendar year: date and time of initiation of bypass flow, influent flow at time of initiation (MGD), date and time of termination of bypass flow, influent flow at time of termination (MGD), duration of bypass (hrs), and total volume of bypass flow (MG).

6. The minimum monthly average of 85 percent removal of both CBOD₅ and TSS applies only during dry weather. Dry weather is defined as any calendar day on which there is less than 0.1 inches of rainfall and no snow melt. The percent removal shall be calculated using the average monthly influent and effluent concentrations for samples collected during dry weather days. The Permittee shall attach to its discharge monitoring reports the daily precipitation from the nearest National Weather Service gage, or a gage accepted by the permitting authority.
7. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.). See Part I.G.1 below for a provision to modify the pH range.
8. The Permittee shall minimize the use of chlorine while maintaining adequate bacterial control. Monitoring for total residual chlorine (TRC) is only required for discharges which have been previously chlorinated or which contain residual chlorine. If chlorine is not utilized during a particular monitoring period, TRC monitoring is not necessary and the Permittee may enter "NODI" code 9 (i.e., conditional monitoring) in the relevant discharge monitoring report.

Chlorination and dechlorination systems shall include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection, or interruptions or malfunctions of the dechlorination system that may have resulted in excessive levels of chlorine in the final effluent shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time that the reduced levels of chlorine or dechlorination chemicals occurred.

9. The monthly average limit for *Escherichia coli* (*E. coli*) is expressed as a geometric mean. *E. coli* monitoring shall be conducted concurrently with TRC monitoring, if TRC monitoring is required.

10. Monthly average effluent loading shall be calculated as the average of the daily discharge concentrations times the average daily flow for the month, as shown below.

Total Phosphorus (lb/day) = [(average monthly Total Phosphorus (mg/L) * total monthly effluent flow (Millions of Gallons (MG)) / # of days in the month] * 8.34

11. See Part I.G.2 for the compliance schedules applicable to the total aluminum and ammonia limits.

12. Total Kjeldahl nitrogen and nitrate + nitrite samples shall be collected concurrently. The results of these analyses shall be used to calculate both the concentration and mass loadings of total nitrogen, as follows.

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

Total Nitrogen (lb/day) = [(average monthly Total Nitrogen (mg/L) * total monthly effluent flow (Millions of Gallons (MG)) / # of days in the month] * 8.34

13. Report in nanograms per liter (ng/L) for effluent and influent samples; report nanograms per gram (ng/g) for sludge samples. Until there is an analytical method approved in 40 CFR Part 136 for PFAS, monitoring shall be conducted using Method 1633. Report in NetDMR the results of all PFAS analytes required to be tested in Method 1633, as shown in Attachment E. This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter following six months after the effective date of the permit.

14. Report in nanograms per liter (ng/L) for effluent and influent samples. Until there is an analytical method approved in 40 CFR Part 136 for Adsorbable Organic Fluorine, monitoring shall be conducted using Method 1621. This reporting requirement takes effect the first full calendar quarter following six months after the effective date of the permit.

15. The Permittee shall conduct acute toxicity tests (LC50) and chronic toxicity tests (C-NOEC) in accordance with test procedures and protocols specified in Attachment A and B of this permit. LC50 and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*, and the fathead minnow, *Pimephales promelas*. Toxicity test samples shall be collected during the same weeks each time of calendar quarters ending March 31st, June 30th, September 30th, and December 31st.

The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal which includes the results for that toxicity test.

16. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall follow procedures outlined in **Attachment A and B**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.
17. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A and B**. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.
18. Monitoring and reporting for dissolved organic carbon (DOC) are not requirements of the Whole Effluent Toxicity (WET) tests but are additional requirements. The Permittee may analyze the WET samples for DOC or may collect separate samples for DOC concurrently with WET sampling.
19. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection and the results reported on the appropriate DMR. These pH and temperature measurements are independent from any pH and temperature measurements required by the WET testing protocols.
20. See Part I.G.3 for special conditions regarding ambient phosphorus monitoring.
21. 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>.
22. The Permittee shall sample CSO Outfalls 011, 018, 031, 039, 043, 044, 045, 046, 047, 050, 051, 052, 053, 054, and 055 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" values for *Escherichia coli* shall be reported on the appropriate DMR for the year sampled for each CSO outfall.

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

B. UNAUTHORIZED DISCHARGES

1. This permit authorizes discharges only from the outfall listed in Part I.A.1, and CSO Outfalls listed in Attachment F, 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 TREATMENT AND CONTROL FACILITIES

1. Adaptation Planning

- a. *Adaptation Plan.* Within the timeframes described below, the Permittee and Co-permittee(s) shall develop an Adaptation Plan for the Wastewater Treatment System (WWTS) ² and/or sewer system³ that they own and operate. Additional information on the procedures and resources to aid permittees in development of the Adaptation Plan is provided on EPA's Region 1 NPDES website at <https://www.epa.gov/npdes-permits/npdes-water-permit-program-new-england>. The Adaptation Plan shall contain sufficient detail for EPA to evaluate the analyses.

Component 1: Identification of Vulnerable Critical Assets. Within 24 months of the effective date of the permit, the Permittee and Co-permittee(s) shall develop and sign, consistent with the signatory requirements in Part II.D.2 of this Permit, an identification of critical assets⁴ and related operations⁵ within the WWTS and/or sewer system which they own and operate, as applicable, that are most vulnerable due to major storm and flood events⁶ under baseline conditions⁷ and under future conditions.⁸ This information shall be provided to EPA upon

² "Wastewater Treatment System" or "WWTS" means any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It does not include sewers, pipes and other conveyances to the wastewater treatment facility.

³ "Sewer System" refers to the sewers, pump stations, manholes and other infrastructure use to convey sewage to the wastewater treatment facility from homes or other sources.

⁴ A "critical asset" is an asset necessary to ensure the safe and continued operation of the WWTS or the sewer system and ensure the forward flow and treatment of wastewater in accordance with the limits set forth in this permit.

⁵ "Asset related operations" are elements of an asset that enable that asset to function. For example, pumps and power supply enable the operation of a pump station.

⁶ "Major storm and flood events" refer to instances resulting from major storms such as hurricanes, extreme/heavy precipitation events, and pluvial, fluvial, and flash flood events such as high-water events, storm surge, and high-tide flooding, including flooding caused by sea level change. "Extreme/heavy precipitation" refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal according to location and season.

⁷ "Baseline conditions" refers to the 100-year flood based on historical records.

⁸ "Future conditions" refers to projected flood elevations using one of two approaches: a) Climate Informed Science Approach (CISA): The elevation and flood hazard area that result from using the best-available, actionable hydrologic and hydraulic data and methods that integrate current and future changes in flooding based on climate science. These shall include both short term (10-25 years forward-looking) and long term (25-70 years forward-

request. For these critical assets and related operations, the Permittee and Co-permittee(s) shall assess the ability of each to function properly in the event of impacts⁹ from major storm and flood events in terms of effluent flow (e.g., bypass, upset or failure), sewer flow (e.g., overflow, inflow and infiltration), and discharges of pollutants (e.g., effluent limit exceedance).

*Component 2: Adaptive Measures Assessment.*¹⁰ Within 36 months of the effective date of the permit, the Permittee and Co-Permittee(s) shall develop and sign, consistent with the signatory requirements in Part II.D.2 of this Permit, an assessment of adaptive measures,¹¹ and/or, if appropriate, the combinations of adaptive measures that minimize the impact of future conditions on the critical assets and related operations of the WWTS and/or sewer system(s). This information shall be provided to EPA upon request. The Permittee and Co-permittee(s) shall identify the critical assets and related operations at the highest risk of not functioning properly under such conditions and, for those, select the most effective adaptation measures that will ensure proper operation of the highest risk critical assets and the system as a whole.

Component 3: Implementation and Maintenance Schedule. Within 48 months of the effective date of the permit, the Permittee and Co-Permittee(s) shall submit to EPA a proposed schedule for implementation and maintenance of adaptive measures. The Implementation and Maintenance Schedule shall summarize the general types of significant risks¹² identified in Component 1, including the

looking) relative to the baseline conditions and must include projections of flooding due to major storm and flood events using federal, state and local data, where available; b) Freeboard Value and 500-year floodplain Approach: The flood elevations that result from adding an additional 2 feet to the 100-year flood elevation for non-critical actions and by adding an additional 3 feet to the 100-year flood elevation for critical actions compared to the flood elevations that result from 500-year flood (the 0.2% -annual-chance flood) and selecting the higher of the two flood elevations.

9 “Impacts” refers to a strong effect on an asset and/or asset-related operation that may include destruction, damage or ineffective operation of the asset and/or asset operation. Impacts may be economic, environmental, or public health related.

10 The Permittee and Co-permittee(s) may complete this component using EPA’s Climate Resilience Evaluation and Awareness Tool (CREAT) Risk Assessment Application for Water Utilities, found on EPA’s website Creating Resilient Water Utilities (CRWU) (<https://www.epa.gov/crwu>), or methodology that provides comparable analysis.

11 “Adaptive Measures” refers to physical infrastructure or actions and strategies that a utility can use to protect their assets and mitigate the impacts of threats. They may include but are not limited to: building or modifying infrastructure, utilization of models (including but not limited to: flood, sea-level rise and storm surge, sewer/collection system, system performance), monitoring and inspecting (including but not limited to: flood control, infrastructure, treatment) and repair/retrofit.

12 In light of security concerns posed by the public release of information regarding vulnerabilities to wastewater infrastructure, the Permittee shall provide information only at a level of generality that indicates the overall nature of the vulnerability but omitting specific information regarding such vulnerability that could pose a security risk.

methodology and data used to derive future conditions¹³ used in the analysis and describe the adaptive measures taken (or planned) to minimize those risks from the impact of major storm and flood events for each of the critical assets and related operations of the WWTS and the sewer system and how those adaptive measures will be maintained, including the rationale for either implementing or not implementing each adaptive measure that was assessed and an evaluation of how each adaptive measure taken (or planned) will be funded.

- b. *Credit for Prior Assessment(s) Completed by Permittee and/or Co-permittee(s).* If the Permittee and/or Co-permittee(s) has/have undertaken assessment(s) that were completed within 5 years of the effective date of this permit, or is [are] currently undertaking an assessment that address some or all of the Adaptation Plan components, such prior assessment(s) undertaken by the Permittee and/or Co-permittee(s) may be used (as long as the reporting time frames (set forth in Part I.C.1.a) and the signatory requirements (set forth in Part II.D.2 of this permit) are met) in satisfaction of some or all of these components, as long as the Permittee and/or Co-permittee(s) explains how its prior assessments specifically meet the requirements set forth in this permit and how the Permittee and/or Co-permittee(s) will address any permit requirements that have not been addressed in its prior or ongoing assessment(s).
- c. *Adaptation Plan Progress Report.* The Permittee and Co-Permittee(s) shall submit an Adaptation Plan Progress Report on the Adaptation Plan for the prior calendar year that documents progress made toward completing the Adaptation Plan and, following its completion, any progress made toward implementation of adaptive measures, and any changes to the WWTF or other assets that may impact the current risk assessment. The first Adaptation Progress Report is due the first March 31 following completion of the Identification of Critical Vulnerable Assets (*Component 1*) and shall be included with the annual report required in Part I.C.3 below each year thereafter. The Adaptation Plan shall be revised if on- or off-site structures are added, removed, or otherwise significantly changed in any way that will impact the vulnerability of the WWTS or sewer system.

2. Sewer System

Operation and maintenance (O&M) of the sewer system shall be in compliance with 40 CFR § 122.41 (d) and (e) and the terms and conditions of the Part II Standard Conditions, B. Operation and Maintenance of Pollution Controls which is attached to this Permit. The

¹³ See footnote 8.

Permittee and Co-permittee shall complete the following activities for the collection system which it owns:

a. Maintenance Staff

The Permittee and Co-permittee(s) 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 Sewer System O&M Plan required pursuant to Part I.C.2.e. below.

b. Preventive Maintenance Program

The Permittee and Co-permittee(s) 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 Sewer System O&M Plan required pursuant to Part I.C.2.e. below.

c. Infiltration/Inflow

The Permittee and Co-permittee(s) 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 Sewer System O&M Plan required pursuant to Part I.C.2.e. below.

d. Sewer System Mapping

The Permittee and Co-permittee(s) shall maintain a map of the sewer collection system it owns. The map shall be on a street basemap of the community, with sufficient detail and at a scale to allow easy interpretation. The sewer 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. If any items listed below, such as the location of all outfalls, are not fully documented, the Permittee and Co-permittee(s) must clearly identify each component of the dataset that is incomplete, as well as the date of the last update of the mapping product. Such map(s) shall include, but not be limited to the following:

- (1) All sanitary sewer lines and related manholes;
- (2) All combined sewer lines, related manholes, and catch basins;

- (3) All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combination manholes);
- (4) All outfalls, including the treatment plant outfall(s), CSOs, and any known or suspected SSOs, including stormwater outfalls that are connected to combination manholes;
- (5) All pump stations and force mains;
- (6) The wastewater treatment facility(ies);
- (7) All surface waters (labeled);
- (8) Other major appurtenances such as inverted siphons and air release valves;
- (9) A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;
- (10) Interconnections with collection systems owned by other entities;
- (11) The scale and a north arrow; and
- (12) The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

e. Sewer System Operation and Maintenance Plan

The Permittee and Co-permittee(s) shall continue to implement a *Sewer System Operation and Maintenance Plan* for the portion of the system it owns. The Plan shall be available for review by federal, state and local agencies as requested.

- (1) A description of the collection system management goals, staffing, information management, and legal authorities;
- (2) A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and
- (3) A preventive maintenance and monitoring program for the collection system;
- (4) Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;

- (5) Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
- (6) 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;
- (7) 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;
- (8) An educational public outreach program for all aspects of I/I control, particularly private inflow; and
- (9) An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

3. Annual Reporting Requirement

The Permittee and Co-permittee(s) shall submit a summary report of activities related to the implementation of its O&M Plans 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;
- f. If the monthly average flow exceeded 80 percent of the facility's 34 MGD design flow

(27.2 MGD) for three consecutive months in the previous calendar year, or there have been capacity related overflows, the report shall include:

- (1) Plans for further potential flow increases describing how the Permittee will maintain compliance with the flow limit and all other effluent limitations and conditions; and
 - (2) A calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year.
- g. The Adaptation Plan Progress Report described in Part I.C.1.c above (beginning the first March 31 following 24 months from the effective date of the permit).

D. ALTERNATE POWER SOURCE

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

E. INDUSTRIAL USERS AND PRETREATMENT PROGRAM

1. Legal Authority

The Permittee has been delegated primary responsibility for enforcing against discharges prohibited by 40 CFR 403.5 and applying and enforcing any national Pretreatment Standards established by the United States Environmental Protection Agency in accordance with Section 307 (b) and (c) of The Clean Water Act (Act), as amended by The Water Quality Act (WQA), of 1987.

The Permittee shall operate an industrial pretreatment program in accordance with the General Pretreatment Regulations found in 40 CFR Part 403 and the approved pretreatment program submitted by the Permittee. The pretreatment program was approved on February 27, 1985 and has subsequently incorporated substantial modifications as approved by EPA. The approved pretreatment program, and any approved modifications thereto, is hereby incorporated by reference and shall be implemented in a manner consistent with the following procedures, as required by 40 CFR Part 403.

The Permittee must have or develop a legally enforceable municipal code or rules and regulations to authorize or enable the POTW to apply and enforce the requirements of Sections 307(b) and (c) and 402(b)(8) and (9) of the Act and comply with the requirements of § 403.8(f)(1). At a minimum, this legal authority shall enable the POTW to:

- a. Deny or condition new or increased contributions of pollutants, or changes in the nature of pollutants, to the POTW by Industrial Users where such contributions

do not meet applicable Pretreatment Standards and Requirements or where such contributions would cause the POTW to violate its NPDES permit;

- b. Require compliance with applicable Pretreatment Standards and Requirements by Industrial Users;
- c. Control through Permit, order, or similar means, the contribution to the POTW by each Industrial User to ensure compliance with applicable Pretreatment Standards and Requirements. In the case of Industrial Users this control shall be achieved through permits or equivalent control mechanism identified as significant under § 403.3(v), as required by § 403.8(f)(1)(iii);
- d. Require (a) the development of a compliance schedule by each Industrial User for the installation of technology required to meet applicable Pretreatment Standards and Requirements and (b) the submission of all notices and self-monitoring reports from Industrial Users as are necessary to assess and assure compliance by Industrial Users with Pretreatment Standards and Requirements, including but not limited to the reports required in § 403.12;
- e. Carry out all inspection, surveillance and monitoring procedures necessary to determine, independent of information supplied by Industrial Users, compliance or noncompliance with applicable Pretreatment Standards and Requirements by Industrial Users. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP, but in no case less than once per year, and with adequate maintenance of records, Representatives of the POTW shall be authorized to enter any premises of any Industrial User in which a Discharge source or treatment system is located or in which records are required to be kept under § 403.12(o) to assure compliance with Pretreatment Standards. Such authority shall be at least as extensive as the authority provided under section 308 of the Act;
- f. Obtain remedies for noncompliance by any Industrial User with any Pretreatment Standard and Requirement. All POTW's shall be able to seek injunctive relief for noncompliance by Industrial Users with Pretreatment Standards and Requirements. All POTWs shall also have authority to seek or assess civil or criminal penalties in at least the amount of \$1,000 a day for each violation by Industrial Users of Pretreatment Standards and Requirements in accordance with § 403.8(f)(1)(vi)(A); and
- g. Comply with the confidentiality requirements set forth in § 403.14.

2. Implementation Requirements

The Permittee shall operate a pretreatment program in accordance with the General Pretreatment Regulations found in 40 CFR Part 403 and with the legal authorities, policies, procedures, and financial provisions of the approved Pretreatment program submitted by the Permittee. The approved Pretreatment program, and any approved modifications thereto, is hereby incorporated by reference and shall be implemented in a manner consistent with the following procedures, as required by 40 CFR Part 403:

- a. In accordance with 40 CFR § 122.44(j)(1), Identify, in terms of character and volume of pollutants contributed from Industrial Users discharging into the POTW subject to Pretreatment Standards under section 307(b) of CWA and 40 CFR Part 403.
- b. The Permittee must notify these identified Industrial Users of applicable Pretreatment Standards and any applicable requirements in accordance with 40 CFR § 403.8(f)(2)(iii). Pursuant to 40 CFR § 403.8(f)(6), prepare and maintain a list of significant industrial users and identify the criteria in 40 CFR § 403.3(v)(1) applicable to each industrial user.
- c. The Permittee must carry out inspection procedures and randomly sample and analyze the effluent from Industrial Users and conduct surveillance activities in accordance with 40 CFR § 403.8(f)(2)(v), which will determine independent of information supplied by the industrial user, whether the industrial user is in compliance with the Pretreatment Standards. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP but in no case less than once per year and maintain adequate records.
- d. The Permittee shall receive and analyze self-monitoring reports and other notices submitted by Industrial Users in accordance with the self-monitoring requirements in 40 CFR § 403.12; This must include timely and appropriate reviews of industrial user reports and notifications to identify all violations of the user's permit, the local ordinance, and federal pretreatment standards and requirements.
- e. The Permittee shall evaluate whether each SIU needs a plan to control Slug Discharges in accordance with 40 CFR § 403.8(f)(2)(vi). SIUs must be evaluated within 1 year of being designated an SIU. If required, the Permittee shall require the SIU to prepare or update, and implement a slug prevention plan that contains at least the minimum required elements in 40 CFR § 403.8(f)(2)(vi)(A-D) and incorporate the slug control requirements into the SIU's control mechanism;
- f. Pursuant to 40 CFR § 403.8(f)(2)(vii), the Permittee shall investigate instances of

non-compliance with Pretreatment Standards and requirements indicated in required reports and notices or indicated by analysis, inspection, and surveillance activities.

- g. The Permittee shall publish, at least annually, in a newspaper or newspapers of general circulation that provides meaningful public notice within the jurisdiction(s) served by the POTW, a list of all non-domestic users which, at any time in the previous 12 months, were in significant noncompliance as defined in 40 CFR § 403.8 (f)(2)(viii).
- h. The Permittee shall provide sufficient resources and qualified personnel to implement its Pretreatment program in accordance with 40 CFR § 403.8(f)(3);
- i. The Permittee shall enforce all applicable Pretreatment Standards and requirements and obtain remedies for noncompliance by any industrial user. The Permittee shall develop, implement, and maintain an enforcement response plan in accordance with 40 CFR § 403.8(f)(5); and
- j. Pursuant to 40 CFR § 403.8(g), the Permittee that chooses to receive electronic documents must satisfy the requirements of 40 CFR Part 3 – (Electronic reporting).

3. Local Limit Development

- a. The Permittee shall develop, continually maintain, and enforce, as necessary, local limits to implement the general and specific prohibitions in 40 CFR § 403.5(c)(1) which prohibit the introduction of any pollutant(s) which cause pass through or interference and the introduction of specific pollutants to the waste treatment system from any source of non-domestic discharge.
- b. The Permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within 90 days of the effective date of the permit, the Permittee shall prepare and submit a written technical evaluation to EPA analyzing the need to revise local limits. As part of this evaluation, the Permittee shall assess how the POTW performs with respect to influent and effluent of pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety and collection system concerns. In preparing this evaluation, the Permittee shall complete and submit the attached form (see

Attachment C – Reassessment of Technically Based Industrial Discharge Limits) with the technical evaluation to assist in determining whether existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if available and should be included in the report. Should the evaluation reveal the need to revise local limits, the Permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. The Permittee shall carry out the local limits revisions in accordance with EPA's Local Limit Development Guidance (July 2004).

4. Notification Requirements

- a. The Permittee must notify EPA of any new introductions or any substantial change in pollutants from any Industrial User within sixty (60) days following the introduction or change, as required in 40 CFR 122.42(b)(1-3). Such notice must identify:
 - (1) Any new introduction of pollutants from an Industrial User which would be subject to Sections 301, 306, and 307 of the Act if it were directly discharging those pollutants; or
 - (2) Any substantial change in the volume or character of pollutants being discharged by any Industrial User;
 - (3) For the purposes of this section, adequate notice shall include information on:
 - i. The identity of the Industrial User;
 - ii. The nature and concentration of pollutants in the discharge and the average and maximum flow of the discharge; and
 - iii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from or biosolids produced at such POTW.
- b. The Permittee must notify EPA as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required 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 pursuant to 40 CFR § 122.29 (b);
 - (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged; or
 - (3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices.

- c. The Permittee must notify EPA if the POTW modifies or intends to modify its Pretreatment Program.
- d. The Permittee must notify EPA of any instance of pass through or interference, known or suspected to be related to a discharge from an Industrial User. The notification shall be attached to the DMR submitted EPA and shall describe the incident, including the date, time, length, cause, and the steps taken by the Permittee and Industrial User to address the incident.

5. Annual Report Requirements

The Permittee shall provide EPA with a hard copy annual report that briefly describes the POTW's program activities, including activities of all participating agencies, if more than one jurisdiction is involved in the local program. The report required by this section shall be submitted no later than one year after approval of the POTW's Pretreatment Program, and at least annually thereafter. The report must include, at a minimum, the applicable required data in Appendix A to 40 CFR Part 127, a summary of changes to the POTW's pretreatment program that have not been previously reported to EPA, and any other relevant information requested by EPA. Beginning on December 21, 2025, all annual reports submitted in compliance with this section must be submitted electronically by the POTW Pretreatment Program to EPA or initial recipient, as defined in 40 CFR § 127.2(b). Electronic submittals shall be in compliance with this section and 40 CFR Part 3 (including, in all cases, subpart D to Part 3), 40 CFR § 122.22(e), and 40 CFR Part 127 (Part 127 is not intended to undo existing requirements for electronic reporting). Prior to this date, and independent of 40 CFR Part 127, EPA may also require POTW Pretreatment Programs to electronically submit annual reports under this section if specified by a particular permit or if required to do so by state law.

The Permittee shall provide EPA with an annual report describing the Permittee's pretreatment program activities for the twelve (12) month period ending 60 days prior to the due date in accordance with 40 CFR § 403.12(i). The annual report shall be consistent with the format described in Attachment D (Industrial Pretreatment Program Annual Report) of this permit and shall be submitted by **August 1** of each year.

6. Beginning the first full calendar year after the effective date of the permit, 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
- Known or Suspected PFAS Contaminated Sites
- Fire Fighting Training Facilities
- Airports
- Any Other Known or Expected Sources of PFAS

Sampling shall be conducted using Method 1633 for the PFAS analytes listed in Attachment E. The industrial discharges sampled, and the sampling results shall be summarized and included in the annual report (see Part I.E.5).

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.

10. Incinerator Conditions and Limitations

- a. Firing of sewage sludge shall not violate the requirements of the National Emission Standard for beryllium in 40 CFR Part 61, subpart C - 10 grams per 24-hour period.
- b. Firing of sewage sludge shall not violate the requirements in the National Emission Standard for mercury in 40 CFR Part 61, subpart E - 3200 grams per 24-hour period.
- c. The daily concentration of the metals in the sewage sludge fed to the incinerator shall not exceed the limits specified below (dry weight basis):

	<u>Maximum Daily</u>
Arsenic	8,573 mg/kg
Cadmium	43,416 mg/kg
Chromium	1,423,398 mg/kg
Lead	262,781 mg/kg
Nickel	213,643 mg/kg

- d. The exit gas from the sewage sludge incinerator stack shall be monitored continuously for carbon monoxide.
- e. The monthly average concentration of carbon monoxide in the exit gas from the sewage sludge incinerator, corrected for zero percent moisture and to seven percent oxygen, shall not exceed - **100 ppm on a volumetric basis**.
- f. The CO concentration shall be corrected to zero percent moisture using the correction factor below:

$$\text{Correction factor} = \frac{1}{(1-X)}$$

Where: X = decimal fraction of the percent moisture in the sewage sludge incinerator exit gas in hundredths.

- g. The measured CO concentration shall be corrected to seven percent oxygen using the correction factor below:

$$\text{Correction factor} = \frac{14}{(21-Y)}$$

Where: Y = percent oxygen concentration in the sewage sludge incinerator stack exit gas (dry volume/dry volume).

- h. The measured CO value shall be multiplied by the correction factors in items **c** and **d**. The corrected CO value shall be used to determine compliance with paragraph b.

11. Incinerator Management Practices

- a. An instrument that continuously measures and records the carbon monoxide concentration in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated and maintained for each incinerator in accordance with the manufacturer's written instructions.
- b. An instrument that continuously measures and records the oxygen concentration in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated and maintained for each incinerator in accordance with the manufacture's written instructions.
- c. An instrument that continuously measures and records information used to determine the moisture content in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated and maintained for each incinerator in accordance with the manufacture's written instructions.
- d. An instrument that continuously measures and records combustion temperatures shall be installed, calibrated, operated and maintained for each incinerator in accordance with the manufacture's written instructions.
- e. Upon completion of the testing to demonstrate compliance with the performance specifications, but not later than 90 days from the effective date of this permit, the operator of the incinerators shall submit to EPA - Region 1 a certification stating that the continuous emissions monitoring system meets the performance specifications detailed in the above referenced guidance.
- f. Operation of the incinerator shall not cause the operating combustion temperature for the incinerator to exceed the performance test combustion temperature by more than 20 percent.
- g. Any air pollution control devices shall be appropriate for the type of incinerator and operating parameters for the air pollution control device shall be adequate to indicate proper performance of the air pollution control device. For

incinerators subject to the requirements of 40 CFR subpart O, operation of the air pollution control device shall not violate the air pollution control device requirements of that part.

- h. Sewage sludge shall not be fired in an incinerator if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated critical habitat.
- i. The permittee shall notify the EPA and NHDES if any continuous emission monitoring equipment is shut down or broken down for more than 72 hours while the incinerator continues to operate.
- j. Notification shall include the following:
 - (1) The reason for the shut down or break down;
 - (2) Steps taken to restore the system;
 - (3) Expected length of the down time; and
 - (4) The expected length of the incinerator operation during the down time of the monitoring system.
- k. Break downs or shut downs of less than 72 hours shall be recorded in the operations log along with an explanation of the event.
- l. Copies of all manufacturer's instructions shall be kept on file and be available during inspections.

12. Incinerator Monitoring Frequency

- a. The frequency of monitoring beryllium shall be as required in 40 CFR Part 61, subpart C.
- b. The frequency of monitoring mercury shall be as required in 40 CFR Part 61, subpart E.
- c. The pollutants in paragraph 2c shall be monitored at the following frequency - **bimonthly (6 times per year)**.
- d. After the sewage sludge has been monitored for the pollutants in paragraph 2c for two years at the frequency specified above, the permittee may request a reduction in the monitoring frequency.

- e. The operating parameters for the air pollution control devices shall be monitored at the following frequency - 1/day.
- f. The CO concentration in the exit gas, the oxygen concentration in the exit gas, information from the instrument used to determine moisture content, and combustion temperatures shall be continuously monitored.

13. Incinerator Sampling and Analysis

- a. The sewage shall be sampled at a location which is prior to entering the incinerator and provides a representative sample of the sewage sludge being incinerated.
- b. The sewage sludge shall be analyzed using "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA publication SW-846, Second Edition (1982) with Updates I (April 1984) and II (April 1985) and Third Edition (November 1986) with Revision I (December 1987).
- c. If emission testing is done for demonstration of NESHAPS, testing shall be in accordance with Method 101A in 40 CFR Part 60, Appendix B, "Determination of Particulate and Gaseous Mercury Emissions from Sewage Sludge Incinerators".
- d. Sewage sludge samples for mercury shall be sampled and analyzed using Method 105 in 40 CFR Part 61, Appendix B, "Determination of Mercury in Wastewater Treatment Plant Sewage Sludge".

14. Incinerator Record Keeping Requirements

The permittee is required to keep records for the following:

- a. Report the maximum concentration of each pollutant listed in paragraph 2(c) above;
- b. Report the average monthly CO concentration in the exit gas from the incinerator stack;
- c. Information that demonstrates compliance with the National Emission Standard for beryllium;
- d. Information that demonstrates compliance with the National Emission Standard for mercury. If sludge sampling is used, include calculation for compliance demonstration;
- e. The operating combustion temperature for the sewage sludge incinerator;

- f. Report the average monthly operating values for the air pollution control devices operating parameters;
- g. The oxygen concentration and the information used to measure moisture content in the exit gas from the sewage sludge incinerator. Report the oxygen concentration and percent moisture results which were used to determine the CO values reported in paragraph 8b;
- h. Record the average daily and average monthly sewage sludge feed rate to the incinerator;
- i. The stack height of the incinerator;
- j. The dispersion factor for the site where the incinerator is located;
- k. The control efficiency for arsenic, lead, chromium, cadmium and nickel;
- l. A calibration and maintenance log for the instruments used to measure the CO concentration and the oxygen concentration in the exit gas; the information need to determine moisture content in the exit gas, and the combustion temperatures.

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.

2. Compliance Schedules

- a. The Total Aluminum monthly average limit of 118 µg/L will become effective 12 months from the effective date of the permit to allow time for the Permittee to optimize treatment and/or source reduction in order to come into consistent compliance with the effluent limits. During these initial 12 months, the Permittee shall monitor (2/month) and report monthly average and daily maximum Total Aluminum on each monthly DMR.
- b. Beginning the first May after the effective date of the permit, the Permittee shall evaluate and implement optimization measures to reduce the concentration of ammonia nitrogen in the discharge to achieve compliance with the ammonia limit (from May 1 through October 31). The monthly average ammonia limit shall go into

effect the first May following 24 months after the effective date of the permit.

3. Ambient Phosphorus Monitoring

Beginning in April of the first odd numbered year that occurs at least six months after permit issuance, and during odd numbered years thereafter, the Permittee shall collect monthly samples from April through October at a location in the receiving water upstream of the facility and analyze the samples for total phosphorus. Sampling shall be conducted on any calendar day that is preceded by at least 72 hours with less than or equal to 0.1 inches of cumulative rainfall. A sampling plan shall be submitted to EPA and the State (in accordance with Part I.I.2 and Part I.I.7, respectively) at least three months prior to the first planned sampling date. For the years that monitoring is not required, the Permittee shall report NODI code "9" (conditional monitoring not required).

H. COMBINED SEWER OVERFLOWS

1. During wet weather (including snowmelt), the Permittee is authorized to discharge storm water/wastewater from the following CSO outfalls: 011, 018, 031, 039, 043, 044, 045, 046, 047, 050, 051, 052, 053, 054 and 055 (See Attachment F of this Permit).
2. The effluent discharged from these CSOs is subject to the following limitations:
 - a. The discharges shall receive treatment at a level providing Best Practicable Control Technology Currently Available ("BPT"), Best Conventional Pollutant Control Technology ("BCT") to control and abate conventional pollutants and Best Available Technology Economically Achievable (BAT) to control and abate non-conventional and toxic pollutants. The EPA has made a Best Professional Judgment ("BPJ") determination that BPT, BCT, and BAT for combined sewer overflow ("CSO") control includes the implementation of Nine Minimum Controls ("NMC") specified below. These Nine Minimum Controls and the Nine Minimum Controls Minimum Implementation Levels which are detailed further in Part I.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 written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances using NeT-Sewer Overflow as described in Part I.I.6 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.5.:
- Duration (hours) of discharge;
 - Volume (gallons) of discharge;
 - National Weather Service precipitation data from the nearest gage where precipitation data is available. Cumulative precipitation per discharge event shall be calculated.

The Permittee shall retain records of CSO discharges for a period of at least 3 years from the date of the sample, measurement, report or application.

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

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

The Permittee shall place signs in English and 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 and supplemental notifications required in Part I.H.3.g.(2) and (3) of this permit, as well as procedures for communicating with public health departments, including downstream communities, whose waters may be affected by discharges from the Permittee's CSOs.

(2) Initial notification of a probable CSO activation shall be provided to the public as soon as practicable, but no later than, two (2) hours after becoming aware by monitoring, modeling or other means that a probable CSO discharge has 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, and the status and progress of CSO abatement work.

5. Combined Sewer Overflow Outfall Monitoring

For each combined sewer overflow outfall listed in Part I.H.1 of this permit, the Permittee must monitor the following which shall be reported in each monthly DMR for each outfall:

Parameters	Reporting Requirements	Monitoring Requirements	
	Total Monthly	Measurement Frequency	Sample Type
Total Flow	Report MG/Month	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	Occurrences
Rainfall	Total precipitation (inches)	Daily, when discharging	Calculation

- 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. For Number of CSO Discharge Events, a single discharge event spanning more than one calendar day shall be reported as one discharge event.
- b. For those months when a CSO discharge does not occur, the Permittee must indicate “no discharge” for the outfall for which data was not collected.
- c. This information shall be submitted with each monthly DMR and submitted with the annual report required by Part I.H.4. of this permit.
- d. National Weather Service precipitation data from the nearest gage where precipitation data is available. Cumulative precipitation per discharge event shall be calculated.

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 and Co-permittee(s) 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.7. for more information on State reporting. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be

considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the report due date specified in this permit.

3. Submittal of Industrial User and Pretreatment Related Reports

- a. Prior to 21 December 2025, all reports and information required of the Permittee in the Industrial Users and Pretreatment Program section of this permit shall be submitted to the Pretreatment Coordinator in EPA Region 1 Water Division (WD). Starting on 21 December 2025, these submittals must be done electronically as NetDMR attachments and/or using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which will be accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>. These requests, reports and notices include:

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

- b. This information shall be submitted to EPA WD as a hard copy at the following address:

**U.S. Environmental Protection Agency
Water Division
Regional Pretreatment Coordinator
5 Post Office Square - Suite 100 (06-03)
Boston, MA 02109-3912**

4. Submittal of Biosolids/Sewage Sludge Reports

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

5. 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.

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

6. Submittal of Sewer Overflow and Bypass Reports and Notifications

The Permittee and Co-permittee(s) 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 ("NeT"), which will be accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>.

7. 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.6 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**

8. Verbal Reports and Verbal Notifications

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

EPA ECAD at 617-918-1510

and

NHDES Assigned NPDES Inspector at 603-271-2985

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-A:13, I(c), any person responsible for a bypass or upset at a wastewater facility shall give immediate notice of a bypass or upset to all public or privately owned water systems drawing water from the same receiving water and located within 20 miles downstream of the point of discharge regardless of whether or not it is on the same receiving water or on another surface water to which the receiving water is tributary. Wastewater facility is defined at RSA 485-A:2XIX as the structures, equipment, and processes required to collect, convey, and treat domestic and industrial wastes, and dispose of the effluent and sludge. The Permittee shall maintain a list of persons, and their telephone numbers, who are to be notified immediately by telephone. In addition, written notification, which shall be postmarked within 3 days of the bypass or upset, shall be sent to such persons.
5. The pH range of 6.5 to 8.0 Standard Units (S.U.) must be achieved in the final effluent unless the Permittee can demonstrate to NHDES-WD: 1) that the range should be widened due to naturally occurring conditions in the receiving water; or 2) that the naturally occurring receiving water pH is not significantly altered by the Permittee's discharge. The scope of any demonstration project must receive prior approval from NHDES-WD. In no case, shall the above procedure result in pH limits outside the range of 6.0 to 9.0 S.U., which is the federal effluent limitation guideline regulation for pH for secondary treatment and is found in 40 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. 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.
8. When the effluent discharged for a period of three (3) consecutive months exceeds 80 percent of the 34 MGD design flow (27.2 MGD) or design loading capacity, the Permittee shall submit to the permitting authorities a projection of flows and loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality

management plans. Before the design flow will be reached, or whenever treatment necessary to achieve permit limits cannot be assured, the Permittee may be required to submit plans for facility improvements.

Attachment A - USEPA REGION 1 FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

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

- **Daphnid (Ceriodaphnia dubia) definitive 48 hour test.**
- **Fathead Minnow (Pimephales promelas) definitive 48 hour test.**

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

II. METHODS

The permittee shall use 40 CFR Part 136 methods. Methods and guidance may be found at:

<https://www.epa.gov/cwa-methods/whole-effluent-toxicity-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 sample shall be collected. Aliquots shall be split from the sample, containerized and preserved (as per 40 CFR Part 136) for chemical and physical analyses required. The remaining sample shall be measured for total residual chlorine and dechlorinated (if detected) in the laboratory using sodium thiosulfate for subsequent toxicity testing. (Note that EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection.) Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1.0 mg/L chlorine. If dechlorination is necessary, a thiosulfate control (maximum amount of thiosulfate in lab control or receiving water) must also be run in the WET test.

All samples held overnight shall be refrigerated at 1- 6°C.

IV. DILUTION WATER

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

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

Written requests for use of ADW with supporting documentation must be sent electronically to the NPDES Applications Coordinator in EPA Water Division (WD) at the following email address:

R1NPDESReporting@epa.gov

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 EPA Region 1 website at <https://www.epa.gov/aboutepa/epa-region-1-new-england> (click on NPDES, EPA Permit Attachments, Self-Implementing Alternate Dilution Water Guidance) for important details on alternate dilution water substitution requests.

**EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE
DAPHNID, CERIODAPHNIA DUBIA 48 HOUR ACUTE TESTS¹**

1. Test type	Static, non-renewal
2. Temperature (°C)	20 ± 1°C or 25 ± 1°C
3. Light quality	Ambient laboratory illumination
4. Photoperiod	16 hour light, 8 hour dark
5. Test chamber size	Minimum 30 ml
6. Test solution volume	Minimum 15 ml
7. Age of test organisms	1-24 hours (neonates)
8. No. of daphnids per test chamber	5
9. No. of replicate test chambers per treatment	4
10. Total no. daphnids per test concentration	20
11. Feeding regime	As per manual, lightly feed YCT and <u>Selenastrum</u> to newly released organisms while holding prior to initiating test
12. Aeration	None
13. Dilution water ²	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q ^R or equivalent deionized water and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14. Dilution series	≥ 0.5, must bracket the permitted RWC
15. Number of dilutions	5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series.

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(updated links/addresses 2023)

16. Effect measured	Mortality-no movement of body or appendages on gentle prodding
17. Test acceptability	90% or greater survival of test organisms in dilution water control solution
18. Sampling requirements	For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must first be used within 36 hours of collection.
19. Sample volume required	Minimum 1 liter

Footnotes:

1. Adapted from EPA-821-R-02-012.
2. Standard prepared dilution water must have hardness requirements to generally reflect the characteristics of the receiving water.

**EPA NEW ENGLAND TEST CONDITIONS FOR THE FATHEAD MINNOW
(PIMEPHALES PROMELAS) 48 HOUR ACUTE TEST¹**

1. Test Type	Static, non-renewal
2. Temperature (°C)	20 + 1 ° C or 25 + 1°C
3. Light quality	Ambient laboratory illumination
4. Photoperiod	16 hr light, 8 hr dark
5. Size of test vessels	250 mL minimum
6. Volume of test solution	Minimum 200 mL/replicate
7. Age of fish	1-14 days old and age within 24 hrs of each other
8. No. of fish per chamber	10
9. No. of replicate test vessels per treatment	4
10. Total no. organisms per concentration	40
11. Feeding regime	As per manual, lightly feed test age larvae using concentrated brine shrimp nauplii while holding prior to initiating test
12. Aeration	None, unless dissolved oxygen (D.O.) concentration falls below 4.0 mg/L, at which time gentle single bubble aeration should be started at a rate of less than 100 bubbles/min. (Routine D.O. check is recommended.)
13. dilution water ²	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q ^R or equivalent deionized and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14. Dilution series	> 0.5, must bracket the permitted RWC

15. Number of dilutions	5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series.
16. Effect measured	Mortality-no movement on gentle prodding
17. Test acceptability	90% or greater survival of test organisms in dilution water control solution
18. Sampling requirements	For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples are used within 36 hours of collection.
19. Sample volume required	Minimum 2 liters

Footnotes:

1. Adapted from EPA-821-R-02-012
2. Standard dilution water must have hardness requirements to generally reflect characteristics of the receiving water.

VI. CHEMICAL ANALYSIS

At the beginning of a static acute toxicity test, pH, conductivity, total residual chlorine, oxygen, hardness, alkalinity and temperature must be measured in the highest effluent concentration and the dilution water. Dissolved oxygen, pH and temperature are also measured at 24 and 48 hour intervals in all dilutions. The following chemical analyses shall be performed on the 100 percent effluent sample and the upstream water sample for each sampling event.

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

Notes:

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

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

- Probit Method
- Spearman-Kärber
- Trimmed Spearman-Kärber
- Graphical

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

No Observed Acute Effect Level (NOAEL)

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

VIII. TOXICITY TEST REPORTING

A report of the results will include the following:

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

Attachment B - FRESHWATER CHRONIC TOXICITY TEST PROCEDURE AND PROTOCOL USEPA Region 1

I. GENERAL REQUIREMENTS

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

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

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

II. METHODS

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

III. SAMPLE COLLECTION AND USE

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

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

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

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

IV. DILUTION WATER

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

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

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

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

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

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

Written requests for use of ADW with supporting documentation must be sent electronically to the NPDES Applications Coordinator in EPA Water Division (WD) at the following email address:

R1NPDESReporting@epa.gov

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 <https://www.epa.gov/aboutepa/epa-region-1-new-england> (click on NPDES, EPA Permit Attachments, Self-Implementing Alternate Dilution Water Guidance) for further important details on alternate dilution water substitution requests.

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

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

V.1. Use of Reference Toxicity Testing

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

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

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

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

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

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

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

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

VI. CHEMICAL ANALYSIS

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

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

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

Other as permit requires

Notes:

1. Hardness may be determined by:

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

VII. TOXICITY TEST DATA ANALYSIS AND REVIEW

A. Test Review

1. Concentration / Response Relationship

A concentration/response relationship evaluation is required for test endpoint determinations from both Hypothesis Testing and Point Estimate techniques. The test report is to include documentation of this evaluation in support of the endpoint values reported. The dose-response review must be performed as required in Section 10.2.6 of EPA-821-R-02-013. Guidance for this review can be found at www.epa.gov/cwa-methods/whole-effluent-toxicity-methods

In most cases, the review will result in one of the following three conclusions: (1) Results are reliable and reportable; (2) Results are anomalous and require explanation; or (3) Results are inconclusive and a retest with fresh samples is required.

2. Test Variability (Test Sensitivity)

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

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

- The test PMSD exceeds the PMSD upper bound test variability criterion in Table 6, the test results are considered highly variable and the test may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC). If the test results indicate that the discharge is not toxic at the PLC, then the test is considered insufficiently sensitive and must be repeated within 30 days of the initial test completion using fresh samples. If the test results indicate that the discharge is toxic at the PLC, the test is considered acceptable and does not have to be repeated.
- The test PMSD falls below the PMSD lower bound test variability criterion in Table 6, the test is determined to be very sensitive. In order to determine which treatment(s) are statistically significant and which are not, for the purpose of reporting a NOEC, the relative percent difference (RPD) between the control and each treatment must be calculated and compared to the lower PMSD boundary. See *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program*, EPA 833-R-1-003, June 2002, Section 6.4.2. This document can be located under Guidance Documents at the following USEPA website location: <https://www.epa.gov/aboutepa/epa-region-1-new-england> (click on NPDES, EPA Permit Attachments).

If the RPD for a treatment falls below the PMSD lower bound, the difference is considered statistically insignificant. If the RPD for a treatment is greater than the PMSD lower bound, then the treatment is considered statistically significant.

- The test PMSD falls within the PMSD upper and lower bounds in Table 6, the sub-lethal test endpoint values shall be reported as is.

B. Statistical Analysis

1. General - Recommended Statistical Analysis Method

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

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

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

2. *Pimephales promelas*

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

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

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

3. *Ceriodaphnia dubia*

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

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

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

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

In addition to the summary sheets the report must include:

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

EPA - New England

Attachment C - Reassessment of Technically Based Industrial Discharge Limits

Under 40 CFR §122.21(j)(4), all Publicly Owned Treatment Works (POTWs) with approved Industrial Pretreatment Programs (IPPs) shall provide the following information to the Director: a written evaluation of the need to revise local industrial discharge limits under 40 CFR §403.5(c)(1).

Below is a form designed by the U.S. Environmental Protection Agency (EPA - New England) to assist POTWs with approved IPPs in evaluating whether their existing Technically Based Local Limits (TBLLs) need to be recalculated. The form allows the permittee and EPA to evaluate and compare pertinent information used in previous TBLLs calculations against present conditions at the POTW.

Please read direction below before filling out form.

ITEM I.

- * In Column (1), list what your POTW's influent flow rate was when your existing TBLLs were calculated. In Column (2), list your POTW's present influent flow rate. Your current flow rate should be calculated using the POTW's average daily flow rate from the previous 12 months.
- * In Column (1) list what your POTW's SIU flow rate was when your existing TBLLs were calculated. In Column (2), list your POTW's present SIU flow rate.
- * In Column (1), list what dilution ratio and/or 7Q10 value was used in your old/expired NPDES permit. In Column (2), list what dilution ratio and/or 7Q10 value is presently being used in your new/reissued NPDES permit.

The 7Q10 value is the lowest seven day average flow rate, in the river, over a ten year period. The 7Q10 value and/or dilution ratio used by EPA in your new NPDES permit can be found in your NPDES permit "Fact Sheet."
- * In Column (1), list the safety factor, if any, that was used when your existing TBLLs were calculated.
- * In Column (1), note how your bio-solids were managed when your existing TBLLs were calculated. In Column (2), note how your POTW is presently disposing of its biosolids and how your POTW will be disposing of its biosolids in the future.

ITEM II.

- * List what your existing TBLLs are - as they appear in your current Sewer Use Ordinance (SUO).

ITEM III.

- * Identify how your existing TBLLs are allocated out to your industrial community. Some pollutants may be allocated differently than others, if so please explain.

ITEM IV.

- * Since your existing TBLLs were calculated, identify the following in detail:
 - (1) if your POTW has experienced any upsets, inhibition, interference or pass-through as a result of an industrial discharge.
 - (2) if your POTW is presently violating any of its current NPDES permit limitations - include toxicity.

ITEM V.

- * Using current sampling data, list in Column (1) the average and maximum amount of pollutants (in pounds per day) received in the POTW's influent. Current sampling data is defined as data obtained over the last 24 month period.

All influent data collected and analyzed must be in accordance with 40 CFR §136. Sampling data collected should be analyzed using the lowest possible detection method(s), e.g. graphite furnace.

- * Based on your existing TBLLs, as presented in Item II., list in Column (2), for each pollutant the Maximum Allowable Headwork Loading (MAHL) values derived from an applicable environmental criteria or standard, e.g. water quality, sludge, NPDES, inhibition, etc. For more information, please see EPA's Local Limit Guidance Document (July 2004).

Item VI.

- * Using current sampling data, list in Column (1) the average and maximum amount of pollutants (in micrograms per liter) present your POTW's effluent. Current sampling data is defined as data obtained during the last 24 month period.

(Item VI. continued)

All effluent data collected and analyzed must be in accordance with 40 CFR §136. Sampling data collected should be analyzed using the lowest possible detection method(s), e.g. graphite furnace.

- * List in Column (2A) what the Water Quality Standards (WQS) were (in micrograms per liter) when your TBLLs were calculated, please note what hardness value was used at that time. Hardness should be expressed in milligram per liter of Calcium Carbonate.

List in Column (2B) the current WQSs or "Chronic Gold Book" values for each pollutant multiplied by the dilution ratio used in your new/reissued NPDES permit. For example, with a dilution ratio of 25:1 at a hardness of 25 mg/l - Calcium Carbonate (copper's chronic WQS equals 6.54 ug/l) the chronic NPDES permit limit for copper would equal 156.25 ug/l.

ITEM VII.

- * In Column (1), list all pollutants (in micrograms per liter) limited in your new/reissued NPDES permit. In Column (2), list all pollutants limited in your old/expired NPDES permit.

ITEM VIII.

- * Using current sampling data, list in Column (1) the average and maximum amount of pollutants in your POTW's biosolids. Current data is defined as data obtained during the last 24 month period. Results are to be expressed as total dry weight.

All biosolids data collected and analyzed must be in accordance with 40 CFR §136.

In Column (2A), list current State and/or Federal sludge standards that your facility's biosolids must comply with. Also note how your POTW currently manages the disposal of its biosolids. If your POTW is planning on managing its biosolids differently, list in Column (2B) what your new biosolids criteria will be and method of disposal.

In general, please be sure the units reported are correct and all pertinent information is included in your evaluation. If you have any questions, please contact your pretreatment representative at EPA - New England.

POTW Name & Address : _____

Date EPA approved current TBLLs : _____

ITEM I.

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

ITEM II.

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

ITEM III.

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

ITEM IV.

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

If yes, explain.

Has your POTW violated any of its NPDES permit limits and/or toxicity test requirements?

If yes, explain.

ITEM V.

Using current POTW influent sampling data fill in Column (1). In Column (2), list your Maximum Allowable Headwork Loading (MAHL) values used to derive your TBLLs listed in Item II. In addition, please note the Environmental Criteria for which each MAHL value was established, i.e. water quality, sludge, NPDES etc.

Pollutant	Column (1) Influent Data Analyses		Column (2)	Criteria
	Maximum (lb/day)	Average (lb/day)	MAHL Values (lb/day)	
Arsenic				
Cadmium				
Chromium				
Copper				
Cyanide				
Lead				
Mercury				
Nickel				
Silver				
Zinc				
Other (List)				

ITEM VI.

Using current POTW effluent sampling data, fill in Column (1). In Column (2A) list what the Water Quality Standards (Gold Book Criteria) were at the time your existing TBLLs were developed. List in Column (2B) current Gold Book values multiplied by the dilution ratio used in your new/reissued NPDES permit.

Pollutant	Column (1)		Columns (2A) (2B)	
	Effluent Data Analyses Maximum (ug/l)	Average (ug/l)	Water Quality Criteria (Gold Book) From TBLLs Today (ug/l) (ug/l)	
Arsenic				
*Cadmium				
*Chromium				
*Copper				
Cyanide				
*Lead				
Mercury				
*Nickel				
Silver				
*Zinc				
Other (List)				

*Hardness Dependent (mg/l - CaCO₃)

ITEM VII.

In Column (1), identify all pollutants limited in your new/reissued NPDES permit. In Column (2), identify all pollutants that were limited in your old/expired NPDES permit.

[illegible]

ITEM VIII.

Using current POTW biosolids data, fill in Column (1). In Column (2A), list the biosolids criteria that was used at the time your existing TBLLs were calculated. If your POTW is planing on managing its biosolids differently, list in Column (2B) what your new biosolids criteria would be and method of disposal.

Pollutant	Column (1)	Biosolids	Columns	
	Data Analyses		(2A)	(2B)
	Average		Biosolids Criteria	
	(mg/kg)		From TBLLs	New
Arsenic				
Cadmium				
Chromium				
Copper				
Cyanide				
Lead				
Mercury				
Nickel				
Silver				
Zinc				
Molybdenum				
Selenium				
Other (List)				

ATTACHMENT D

Industrial Pretreatment Program Annual Report

The Permittee shall provide to the Approval Authority with an annual report that briefly describes the POTW's program activities, including activities of all participating agencies, if more than one jurisdiction is involved in the local program. The report required by this section shall be submitted no later than one year after approval of the POTW's Pretreatment Program, and at least annually thereafter, and must include, at a minimum, the applicable required data in appendix A to 40 CFR part 127. The report required by this section must also include a summary of changes to the POTW's pretreatment program that have not been previously reported to the Approval Authority and any other relevant information requested by the Approval Authority. As of December 21, 2025 all annual reports submitted in compliance with this section must be submitted electronically by the POTW Pretreatment Program to the Approval Authority or initial recipient, as defined in 40 CFR 127.2(b), in compliance with this section and 40 CFR part 3 (including, in all cases, subpart D to part 3), 40 CFR 122.22, and 40 CFR part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of part 127, the Approval Authority may also require POTW Pretreatment Programs to electronically submit annual reports under this section if specified by a particular permit or if required to do so by state law.

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

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

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

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

For all industrial users that were in Significant Non-Compliance during the previous twelve (12) months, provide the name of the violating industrial user; indicate the nature of the violations, the type and number of actions taken (administrative order, criminal or civil suit, fines or penalties collected, etc.) and current compliance status. Indicate if the company returned to compliance and the date compliance was attained. Determination of Significant Non-Compliance shall be performed.

6. A summary of all enforcement actions not covered by the paragraph above conducted in accordance with the approved Enforcement Response Plan.
7. A description of actions being taken to reduce the incidence of significant violations by significant industrial users.
8. A detailed description of all interference and pass-through that occurred during the past year.
9. A thorough description of all investigations into interference and pass-through during the past year.
10. A description of monitoring, sewer inspections and evaluations which were done during the past year to detect interference and pass-through, specifying parameters and frequencies;

11. The Permittee shall analyze the treatment facility influent and effluent at least Annually for the presence of the toxic pollutants listed in 40 CFR Part 122 Appendix D (NPDES Application Testing Requirements) Table III as follows:

Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Zinc, Cyanide, and Phenols

The sampling program shall consist of one 24-hour flow-proportioned composite and at least one grab sample that is representative of the flows received by the POTW. The composite shall consist of hourly flow-proportioned grab samples taken over a 24-hour period if the sample is collected manually or shall consist of a minimum of 48 samples collected at 30 minute intervals if an automated sampler is used. Cyanide shall be taken as a grab sample during the same period as the composite sample. Sampling and preservation shall be consistent with 40 CFR Part 136. All analytical procedures and method detection limits must be specified when reporting the results of such analyses.

12. The Permittee shall analyze the treatment facility sludge (biosolids) prior to disposal, for the presence of toxic pollutants listed above in 40 CFR 122 Appendix D (NPDES Application Testing Requirements) Table III at least once per year. If the Permittee does not dispose of biosolids during the calendar year, the Permittee shall certify to that in the Pretreatment Annual Report and the monitoring requirements in this paragraph shall be suspended for that calendar year.

The Permittee shall use sample collection and analysis procedures as approved for use under 40 CFR Part 503 or specified in the EPA Region 8 General Permit for biosolids.

13. The summary shall include an evaluation of influent sampling results versus threshold inhibitory concentrations for the Wastewater Treatment System and effluent sampling results versus water quality standards. Such a comparison shall be based on the sampling program described in the paragraphs above or any similar sampling program described in this Permit.
14. Identification of the specific locations, if any, designated by the Permittee for receipt (discharge) of trucked or hauled waste, if modified;
15. Information as required by the Approval Authority or state permitting authority on the discharge to the POTW from the following activities:
 - (A) Ground water clean-up from underground storage tanks;
 - (B) Trucked or hauled waste; and,
 - (C) Groundwater clean-up from RCRA or Superfund sites.
16. A description of all changes made during the previous calendar year to the Permittee's pretreatment program that were not submitted as substantial or non-substantial modifications to EPA.

17. The date of the latest adoption of local limits and an indication as to whether or not the Town is under a State or Federal compliance schedule that includes steps to be taken to revise local limits.
18. Results of all PFAS sampling conducted of industrial sectors in accordance with Section I.E.6 of the NPDES permit of the following pollutants:

PFAS Analytes per Method 1633

19. Any other information that may be deemed necessary by the Approval Authority.

Attachment E: PFAS Analyte List

Target Analyte Name	Abbreviation	CAS Number
Perfluoroalkyl carboxylic acids		
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorononanoic acid	PFNA	375-95-1
Perfluorodecanoic acid	PFDA	335-76-2
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7
Perfluoroalkyl sulfonic acids		
Acid Form		
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluoropentanesulfonic acid	PFPeS	2706-91-4
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorononanesulfonic acid	PFNS	68259-12-1
Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluorododecanesulfonic acid	PFDoS	79780-39-5
Fluorotelomer sulfonic acids		
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid	4:2FTS	757124-72-4
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	6:2FTS	27619-97-2
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid	8:2FTS	39108-34-4
Perfluorooctane sulfonamides		
Perfluorooctanesulfonamide	PFOSA	754-91-6
N-methyl perfluorooctanesulfonamide	NMeFOSA	31506-32-8
N-ethyl perfluorooctanesulfonamide	NEtFOSA	4151-50-2
Perfluorooctane sulfonamidoacetic acids		
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6
Perfluorooctane sulfonamide ethanols		
N-methyl perfluorooctanesulfonamidoethanol	NMeFOSE	24448-09-7
N-ethyl perfluorooctanesulfonamidoethanol	NEtFOSE	1691-99-2
Per- and Polyfluoroether carboxylic acids		
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4
Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6

Target Analyte Name	Abbreviation	CAS Number
Ether sulfonic acids		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	756426-58-1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	113507-82-7
Fluorotelomer carboxylic acids		
3-Perfluoropropyl propanoic acid	3:3FTCA	356-02-5
2 <i>H</i> ,2 <i>H</i> ,3 <i>H</i> ,3 <i>H</i> -Perfluorooctanoic acid	5:3FTCA	914637-49-3
3-Perfluoroheptyl propanoic acid	7:3FTCA	812-70-4

Attachment F

Combined Sewer Overflow Outfalls

Outfall	CSO Regulator Name	Receiving Water	Latitude	Longitude
011	Schiller Street	Merrimack River	42° 58' 18.86" N	071° 28' 26.42" W
018	Turner/Ferry Streets	Merrimack River	42° 58' 52.84" N	071° 28' 10.17" W
031	Stark Brook (Elgin Ave.) Stark Brook (Sixth Ave.) Stark Brook (Eve Ave.)	Merrimack River	43° 01' 39.84" N	071° 28' 44.02" W
039	Third Street	Piscataquog River	42° 58' 45.12" N	071° 28' 24.93" W
043	Tannery Brook	Merrimack River	42° 58' 05.97" N	071° 28' 23.13" W
044	Cemetery Brook (Primary) Cemetery Brook (Secondary)	Merrimack River	42° 58' 52.88" N	071° 28' 02.40" W
045	Granite Street	Merrimack River	42° 59' 08.00" N	071° 28' 08.80" W
046	Bridge Street	Merrimack River	42° 59' 38.51" N	071° 28' 08.11" W
047	Penacook Street	Merrimack River	42° 59' 55.35" N	071° 28' 06.27" W
050	MH #1	Merrimack River	42° 56' 49.34" N	071° 27' 33.81" W
051	West Side Pump Station	Piscataquog River	42° 58' 41.64" N	071° 28' 16.87" W
052	MH #2	Merrimack River	42° 56' 57.36" N	071° 27' 40.80" W
053	Walnut/North Street Canal/W. Penacook	Merrimack River	43° 00' 02.43" N	071° 28' 09.46" W
054	Ray Brook	Merrimack River	43° 00' 30.53" N	071° 28' 17.16" W
055	Dunbar Street	Merrimack River	42° 57' 56" N	071° 28' 26" W

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

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¹ Updated July 17, 2018 to fix typographical errors.

NPDES PART II STANDARD CONDITIONS
(April 26, 2018)

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

NPDES PART II STANDARD CONDITIONS

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endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.

- (d) *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.
- (2) *Civil Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. See Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).
- (3) *Administrative Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty as follows:
 - (a) *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. See Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).
 - (b) *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. See Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

2. Permit Actions

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

NPDES PART II STANDARD CONDITIONS
(April 26, 2018)

condition.

3. Duty to Provide Information

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

4. Oil and Hazardous Substance Liability

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

5. Property Rights

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

6. Confidentiality of Information

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

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

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

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

7. Duty to Reapply

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

8. State Authorities

Nothing in Parts 122, 123, or 124 precludes more stringent State regulation of any activity

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covered by the regulations in 40 C.F.R. Parts 122, 123, and 124, whether or not under an approved State program.

9. Other Laws

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

B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

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

c. Notice

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

d. *Prohibition of bypass.*

- (1) Bypass is prohibited, and the Director may take enforcement action against a Permittee for bypass, unless:
 - (a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
 - (c) The Permittee submitted notices as required under paragraph 4.c of this Section.
- (2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph 4.d of this Section.

5. Upset

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

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improper operation.

- b. *Effect of an upset.* An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph B.5.c. of this Section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- c. *Conditions necessary for a demonstration of upset.* A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - (1) An upset occurred and that the Permittee can identify the cause(s) of the upset;
 - (2) The permitted facility was at the time being properly operated; and
 - (3) The Permittee submitted notice of the upset as required in paragraph D.1.e.2.b. (24-hour notice).
 - (4) The Permittee complied with any remedial measures required under B.3. above.
- d. *Burden of proof.* In any enforcement proceeding the Permittee seeking to establish the occurrence of an upset has the burden of proof.

C. MONITORING REQUIREMENTS

1. Monitoring and Records

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- b. Except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 C.F.R. § 503), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.
- c. Records of monitoring information shall include:
 - (1) The date, exact place, and time of sampling or measurements;
 - (2) The individual(s) who performed the sampling or measurements;
 - (3) The date(s) analyses were performed;
 - (4) The individual(s) who performed the analyses;
 - (5) The analytical techniques or methods used; and
 - (6) The results of such analyses.
- d. Monitoring must be conducted according to test procedures approved under 40 C.F.R. § 136 unless another method is required under 40 C.F.R. Subchapters N or O.
- e. The Clean Water Act provides that any person who falsifies, tampers with, or

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

2. Inspection and Entry

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

- a. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

D. REPORTING REQUIREMENTS

1. Reporting Requirements

- a. *Planned Changes*. The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
 - (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. § 122.29(b); or
 - (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements at 40 C.F.R. § 122.42(a)(1).
 - (3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. *Anticipated noncompliance*. The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

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- c. *Transfers.* This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Clean Water Act. See 40 C.F.R. § 122.61; in some cases, modification or revocation and reissuance is mandatory.
- d. *Monitoring reports.* Monitoring results shall be reported at the intervals specified elsewhere in this permit.
 - (1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices. As of December 21, 2016 all reports and forms submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by State law.
 - (2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 C.F.R. § 136, or another method required for an industry-specific waste stream under 40 C.F.R. Subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.
 - (3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.
- e. *Twenty-four hour reporting.*
 - (1) The Permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all

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

- (2) The following shall be included as information which must be reported within 24 hours under this paragraph.
 - (a) Any unanticipated bypass which exceeds any effluent limitation in the permit. *See* 40 C.F.R. § 122.41(g).
 - (b) Any upset which exceeds any effluent limitation in the permit.
 - (c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. *See* 40 C.F.R. § 122.44(g).
 - (3) The Director may waive the written report on a case-by-case basis for reports under paragraph D.1.e. of this Section if the oral report has been received within 24 hours.
- f. *Compliance Schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
 - g. *Other noncompliance.* The Permittee shall report all instances of noncompliance not reported under paragraphs D.1.d., D.1.e., and D.1.f. of this Section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph D.1.e. of this Section. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in paragraph D.1.e. and the applicable required data in Appendix A to 40 C.F.R. Part 127. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), §122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this Section.
 - h. *Other information.* Where the Permittee becomes aware that it failed to submit any

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relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

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

2. Signatory Requirement

- a. All applications, reports, or information submitted to the Director shall be signed and certified. See 40 C.F.R. §122.22.
- b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

3. Availability of Reports.

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

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

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

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

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

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

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“approved States,” including any approved modifications or revisions.

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

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

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

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

Bypass see B.4.a.1 above.

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

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

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

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

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

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

Daily Discharge means the “discharge of a pollutant” measured during a calendar day or any

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other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the “daily discharge” is calculated as the average measurement of the pollutant over the day.

Direct Discharge means the “discharge of a pollutant.”

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

Discharge

- (a) When used without qualification, *discharge* means the “discharge of a pollutant.”
- (b) As used in the definitions for “interference” and “pass through,” *discharge* means the introduction of pollutants into a POTW from any non-domestic source regulated under Section 307(b), (c) or (d) of the Act.

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

Discharge of a pollutant means:

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

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

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

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

Environmental Protection Agency (“EPA”) means the United States Environmental Protection

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Agency.

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

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

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

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

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

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

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

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

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

LC₅₀ means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC₅₀ = 100% is defined as a sample of undiluted effluent.

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

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

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publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit.

Municipality

- (a) When used without qualification *municipality* means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of CWA.
- (b) As related to sludge use and disposal, *municipality* means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal Agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management Agency under Section 208 of the CWA, as amended. The definition includes a special district created under State law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in Section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

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

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

- (a) From which there is or may be a “discharge of pollutants;”
- (b) That did not commence the “discharge of pollutants” at a particular “site” prior to August 13, 1979;
- (c) Which is not a “new source;” and
- (d) Which has never received a finally effective NPDES permit for discharges at that “site.”

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

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

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

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

NPDES means “National Pollutant Discharge Elimination System.”

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

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

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

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

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

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

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

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

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials

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(except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq.*)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

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

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

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

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

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

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

Secondary industry category means any industry which is not a “primary industry category.”

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

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

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

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does

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not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 C.F.R. § 122.2.

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

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

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

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

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

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

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

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

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

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

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

For purposes of this definition, “domestic sewage” includes waste and waste water from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Director may designate any person subject to the standards for sewage sludge use and

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disposal in 40 C.F.R. Part 503 as a “treatment works treating domestic sewage,” where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 C.F.R. Part 503.

Upset see B.5.a. above.

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

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

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

- (a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (b) All interstate waters, including interstate “wetlands;”
- (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, “wetlands”, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
 - (1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;
 - (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - (3) Which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) All impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;
- (f) The territorial sea; and
- (g) “Wetlands” adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

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

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

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

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

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

2. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl 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

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kg/day	Kilograms per day
lbs/day	Pounds per day
mg/L	Milligram(s) per liter
mL/L	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH 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: NH0100447

PUBLIC NOTICE START AND END DATES: April 10, 2024 – May 10, 2024

NAME AND MAILING ADDRESS OF APPLICANT:

City of Manchester and 15 Combined Sewer
300 Winston Street Overflow (CSO) Outfalls
Manchester, NH 03103

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Manchester Wastewater Treatment Facility
300 Winston Street
Manchester, NH 03103

The Towns listed below are co-Permittees for activities required in Part I.B. (Unauthorized Discharges), Part I.C. (Operation and Maintenance of the Sewer System) and Part I.D. (Alternate Power Source):

NHC010447	NHC020447	NHC030447
Town of Bedford 24 North Amherst Road Bedford, NH 03110	Town of Goffstown Goffstown Sewer Commission 16 Main Street Goffstown, NH 03045	Town of Londonderry 268 B Mammoth Road Londonderry, NH 03053

RECEIVING WATERS AND CLASSIFICATION:

Merrimack River (NHRIV700060803-14-02 and NHIMP700060802-04)
Piscataquog River (NHRIV700060607-22)
Baker Brook (NHRIV700060803-08)
Rays Brook (NHRIV700060802-15)
Unnamed Brook (NHRIV700060803-17)
Merrimack River Watershed - All Class B

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Appendix E – CSO Discharge Data Summaries from 2018-2023

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 Manchester Wastewater Treatment Facility (the Facility) into the designated receiving waters shown on Page 1 of this Fact Sheet.

The permit currently in effect was issued on February 11, 2015 with an effective date of May 1, 2015 and expired on April 30, 2020 (the 2015 Permit). The Permittee filed an application seeking NPDES permit reissuance from EPA dated October 30, 2019, as required by 40 Code of Federal Regulations (CFR) § 122.6. Since the permit application was deemed timely and complete by EPA on March 3, 2020, the Facility's 2015 Permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d). EPA and the State conducted a site visit on February 5, 2024.

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 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 for Setting NPDES Permit Requirements

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 to the extent authorized under specific provisions 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" on the condition that the discharge will comply with the standards specified in certain other provisions of the statute (e.g., CWA §§ 301, 306 and 403). CWA § 402(a)(1). 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 Parts 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 Sections 301 and 402 of the CWA. *Arkansas v. Oklahoma*, 503 U.S. 91, 105 (1992). Technology-based effluent limitations (TBELs) represent the minimum level of pollutant discharge control that must be satisfied under Sections 301(b) and 402(a)(1) of the CWA. See also 40 CFR § 125.3(a). When limits more stringent than technology-based limits are needed to maintain or achieve compliance with state water quality standards (WQS), then NPDES permit must include water quality-based

effluent limits (QBELs). See CWA §§ 301(b)(1)(C) and 401; 40 CFR §§ 122.4(d), 122.44(d)(1) and (5), 124.53, and 124.55.

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 (BOD₅), 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 Regulations, Chapter Env-Wq 1700, *et seq.* See also *generally*, N.H. Rev. Stat. Title L, Water Management and Protection, Chapters 485-A, Water Pollution and Waste Disposal.

As a matter of state law, state WQSs specify different water body classifications, each of which is associated with certain designated uses and particular numeric and narrative water quality

criteria intended to help attain the designated uses. Then the state assigns one of the water body classifications to each water body in the state. 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), 33 U.S.C. § 1311(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. In addition, permit limits "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, or 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 a discharger’s effluent flow volume 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 its reasonable potential and WQBEL calculations to ensure compliance with WQSs under CWA § 301(b)(1)(C). Should a facility’s effluent flow exceed the flow assumed in these calculations, the in-stream dilution would be reduced, and the calculated effluent limitations might not be sufficiently protective (i.e. might not meet WQSs). Further, pollutants that do not have the reasonable potential to exceed WQSs at a lower discharge flow may have a reasonable potential to do so at a higher flow due to the decreased dilution in the receiving water (which, conversely, means there will be a higher concentration of the pollutants). 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” effluent flow assumptions through imposition of permit conditions for effluent flow.¹ In this regard, the effluent flow limitation is a component of an WQBELs because the WQBELs are premised on a maximum level flow. The effluent flow limit may also be 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.

Setting limits on effluent flow volumes is within EPA’s authority to condition a permit to carry out the objectives and satisfy the requirements of the CWA. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 CFR §§ 122.4(a) and (d), 122.43 and 122.44(d). Regulating the quantity of

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).

pollutants in the discharge through a restriction on the quantity of effluent is also consistent with EPA's authorities under the CWA.

As provided in Part II.B.1 (Standard Conditions) of the proposed permit and 40 CFR § 122.41(e), the Permittee is required to properly operate and maintain all facilities and systems of treatment and control. Improper operation and maintenance may result in non-compliance with permit effluent limitations. Consequently, an 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).

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).

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(h), (j), and (l)(9), 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. See 40 CFR § 122.41 (j)(4). 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 level³ (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or
- In the case of permit applications, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or parameter in the discharge; or
- The method has the lowest ML of the analytical methods approved under 40 CFR Part 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

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).

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 Final 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 EPA's NPDES permitting regulations. *See* 40 CFR Part 122.41 *See also, 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 2015 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.

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 Merrimack River are shown in Figure 1. The longitude and latitude of Outfall 001 are 42° 56' 22" N, 71° 27' 25" W.

This facility is engaged in the collection and treatment of domestic, commercial and industrial wastewaters from the City of Manchester (109,000 served) and three surrounding towns. The City's wastewater treatment facility (WWTF) is a 34 mgd conventional activated sludge facility.

EPA is including three co-permittees to the Draft Permit. The Towns of Londonderry (23,000 served), Bedford (6,000 served), and Goffstown (17,000 served) own and operate sanitary wastewater collection systems that discharge flows to the Manchester WWTF for treatment. These municipalities are co-permittees for certain activities pertaining to proper operation and maintenance of their respective collection systems (See Part I.C. and I.D of the Draft Permit). Adding them to the Draft Permit ensures that they comply with requirements to operate and maintain the collection systems so as to avoid discharges of sewage from the collection systems. These co-permittees did not apply for permit coverage; with letters sent February 6, 2024, EPA waived application requirements for the co-permittees. The legal basis for including municipal satellite collection systems as co-permittees is described in *In re Charles River Pollution Control District*, 16 E.A.D. 623 (EAB 2015)⁵.

According to the City's NPDES Application, there are 18 significant industrial users (including 6 categorical industrial users) discharging to the City's collection system. The total process wastewater flow from industries in Manchester is approximately 1 million gallons per day (mgd) and the wastewater flow from industries in the towns of co-permittees are an additional 1 mgd, comprising a total of approximately 2 mgd or 10 percent of the total average monthly flow to the treatment plant. Septage (sludge pumped from septic tanks and brought to the treatment plant by septage haulers) accounts for less than 0.1 percent of the total average treatment plant flow.

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the permittee from December 2018 through November 2023 is provided in Appendix A of this Fact Sheet.

3.1.1 Treatment Process Description

The Manchester WWTF provides preliminary, primary, and secondary treatment of municipal wastewater. The first process is preliminary treatment. This step consists of screening which

⁵ The decision is available at:

[https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/Published%20and%20Unpublished%20Decisions/F89699D1A0710BCF85257DE200717A93/\\$File/Charles%20River%20Decision%20Vol%2016.pdf](https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/Published%20and%20Unpublished%20Decisions/F89699D1A0710BCF85257DE200717A93/$File/Charles%20River%20Decision%20Vol%2016.pdf)

removes rags, sticks, and other large items from the wastewater stream by means of a bar rack. The next step is grit removal, as the wastewater enters the chamber the flow decreases to a rate of 2 feet per second (fps) which causes sand and other inorganic materials to settle out of the stream. The air from the grit blowers keeps organic materials, such as food wastes and human waste, in suspension where it progresses to the next treatment process: primary treatment. The grit is pumped out of the chamber then is removed by a mechanical classifier and disposed of in a landfill.

Primary treatment occurs in three circular 125 foot primary clarifiers. The wastewater from the grit chamber enters the primary clarifiers where it has a residence time of approximately 2 hours. During this process, solid materials settle due to gravity. The settled solids are collected by sweeping mechanisms at the bottom of the tanks where they are pumped to the gravity thickeners, which are part of the sludge handling process. Approximately 50 to 60% of the suspended solids are removed during primary clarification. From here, the wastewater begins the secondary treatment phase.

During secondary treatment, two processes occur. The first process is the activated sludge process. This occurs within aeration tanks where bacteria are grown and cultured. The bacteria use oxygen and feed on the remaining suspended solids and dissolved organic matter. Air is introduced to the aeration tanks to assure sufficient oxygen is available to allow the bacteria to survive. From here the wastewater enters the secondary clarifiers. Like the primary clarifiers, there are three circular 125 foot secondary clarifiers. The secondary clarification process allows the bacteria from the aeration basins to settle out via gravity. The solids from the secondary clarifiers are either returned to the aeration basin and/or transferred to the thickening centrifuges. At this point the wastewater is disinfected prior to discharge. During the disinfection process, the wastewater is chlorinated and dechlorinated.

Sodium hypochlorite is added to the wastewater and travels in a maze-like pattern in the chlorine contact chamber to allow for a minimum of one-hour contact time between the chlorine and the wastewater. Because chlorine can be harmful to aquatic life, the wastewater is dechlorinated prior to final discharge. Sodium bisulfite is added to the wastewater and a minimum of two-minutes contact is necessary to allow the chlorine to be neutralized into harmless salts. At this point the water becomes plant effluent and is discharged to the Merrimack River.

In September 2000, the City completed construction of a bypass of its existing secondary treatment works. This bypass allows the treatment plant to accept wet weather flows up to 70 MGD into the treatment plant, with flows up to 34 MGD receiving full secondary treatment and flows between 34 and 70 MGD receiving primary treatment (*i.e.*, primary clarification and removal of solids and floatables) and disinfection (Note that disinfection occurs in chlorine contact tanks after the bypassed flow is blended with the flow receiving secondary treatment).

This increase in wet weather flow capacity reduces the magnitude and frequency of untreated wastewater discharges through CSOs. The addition of this bypass was part of Phase 1 of the Long-Term Control Plan discussed in Section 5.6 of this Fact Sheet.

The biosolids collected in the primary and secondary clarifiers are transferred to the sludge handling process, which consists of thickening, dewatering, and eventual incineration in the Fluidized Bed Incinerator (FBI). The primary sludge is thickened in the gravity thickeners. The gravity thickeners consist of three tanks 50 feet in diameter. By means of gravity, further solid/liquid separation occurs to a point where the solids content in the thickeners is approximately 4% to 6% solids.

The waste activated sludge is sent to one of three thickening centrifuges. The sludge is thickened to approximately 3% to 4% solids. The thickened waste activated sludge and the thickened primary sludge are pumped to an inline mixer where they are blended. The blended thickened sludge is then pumped to one of three dewatering centrifuges for dewatering. A screw mechanism within the center of the spinning centrifuge moves the sludge as solids are separated from liquid. The sludge has a solids content of approximately 24% to 26% when it exits the centrifuge. At this point the sludge is sufficiently dewatered and it is sent to a Sludge Silo for storage. The stored dewatered sludge is then sent to the FBI for incineration once the level in the silo is 75% of its capacity. During occasional maintenance activities when the incinerator is not in operation, the sludge is then sent to sludge trailers for off-site disposal. In 2023, the facility generated 4,424 dry metric tons of biosolids.

3.1.2 Collection System Description

The City of Manchester owns and operates a wastewater collection system comprised of 55 percent sanitary sewers, which carry domestic, industrial, and commercial wastewater; and 45 percent combined sewers, which carry domestic, industrial, and commercial wastewater plus stormwater runoff. Manchester's wastewater collection system consists of ten pumping stations and approximately 385 miles of sewers. The WWTF serves the majority of Manchester along with portions of Bedford, Goffstown and Londonderry. The Goffstown, Bedford and Londonderry have separate sewer systems. There are 15 CSO outfalls remaining in the Manchester wastewater collection system and interceptor network. Of the 15 remaining CSO outfalls, 2 discharge to the Piscataquog River (adjacent to Bass Island and immediately upstream of the river's confluence with the Merrimack River), 2 discharge to the Merrimack River from the west side of the city, and 11 discharge to the Merrimack River from the east side of the city (including Tannery Brook and Ray Brook). During certain wet weather events, discharges of untreated sanitary wastewater and stormwater occur from the City's 15 combined sewer overflow outfalls ("CSOs") into the Piscataquog and Merrimack Rivers, as listed below and shown in Appendix C.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Manchester WWTF discharges through Outfall 001 into the Merrimack River, to AUID NHRIV700060803-14-02. The Merrimack River flows to the Plum Island Estuary in Newburyport, Massachusetts.

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

The Merrimack River AUID NHRIV700060803-14-02 is listed in the final *New Hampshire Integrated List of Waters for the Clean Water Act 2020-2022 Reporting Cycle* ("303(d) List") as a Category 5 "Waters Requiring a TMDL."⁶ The pollutants requiring TMDLs are aluminum and pH. In 2011, NHDES finalized a bacteria TMDL for segment NHRIV700060802-15, among other water body segments.

The 15 CSO outfalls discharge to seven receiving water segments. The impairments, if any, of each receiving water segment are presented in Table 1.

Table 1: Receiving Water Impairments

Outfall	Assessment Unit Name	Assessment Unit ID	Impaired Designated Use	Parameter Name
001, 011, 018, 044, 045, 046, 051, 052, 055,	Merrimack River	NHRIV700060 803-14-02	Aquatic Life	Aluminum, pH, Phosphorus
			Primary Contact Recreation	E. coli
			Fish Consumption	Mercury
047, 053	Merrimack River – Amoskeag Dam Bypass	NHRIV700060 803-14-01	Fish consumption	Mercury
031	Merrimack River – Amoskeag Dam	NHIMP70006 0802-04	Primary and Secondary Contact Recreation	E. coli
			Fish Consumption	Mercury
039	Piscataquog River	NHRIV700060 607-22	Aquatic Life	pH
			Primary and Secondary Contact Recreation	E. coli
			Fish Consumption	Mercury
054	Rays Brook	NHRIV700060 802-15	Aquatic Life	Chloride
			Fish Consumption	Mercury
043	Baker Brook	NHRIV700060 803-08	Aquatic Life	Chloride
			Fish Consumption	Mercury
050	Unnamed Brook	NHRIV700060 803-17	Fish consumption	Mercury

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 water⁷. The critical flow in rivers and streams is some measure of the low flow of that river or stream. State WQSs at Env-Wq 1705.2 require that:

⁷ EPA Permit Writer's Manual, Section 6.2.4

(a) The flow used to calculate permit limits shall be specified in (b) through (d), below.

(b) For tidal waters, the flow condition shall be equivalent to the conditions that result in a dilution that is exceeded 99% of the time.

(c) For non-tidal rivers and streams, permit limits for all human health criteria for carcinogens shall be developed based on the long-term harmonic mean flow, which is the number of daily flow measurements divided by the sum of the reciprocals of the daily flows.

(d) For non-tidal rivers and streams, permit limits for all aquatic life criteria and human health criteria for non-carcinogens shall be based on the 7Q10 flow.

NHDES calculated the 7Q10 as follows:

7Q10 Streamflow Analysis

The Manchester Wastewater Treatment Plant (WWTP) outfall is located just downstream of the USGS Merrimack River Near Goffs Falls, Below Manchester, NH Gage (01092000). Therefore, the 7Q10 at a location just upstream of the Manchester WWTP outfall was calculated using the gage data, and the Dingman ratio proration method⁸ was not used. The calculated 7Q10 is 676 cfs.

Dilution Factor Calculation

The dilution factor for the Manchester WWTP outfall was calculated using the following equation:

$$\text{Dilution Factor} = 0.9 * (Q_S + Q_D) / Q_D$$

Where: Q_S = 7Q10 flow of the Merrimack River just upstream of outfall = 676 cfs
 Q_D = design flow of Manchester WWTP = 34 mgd = 52.6 cfs
0.9 = factor to reserve 10% of the receiving water assimilative capacity

$$\text{Dilution Factor} = 0.9 * (676 + 52.6) / 52.6 = \mathbf{12.5}$$

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.

⁸ Dingman, S.L., and S.C Lawlor, 1995. Estimating Low-Flow Quantiles from Drainage-Basin Characteristics in New Hampshire and Vermont, American Water Resources Association, Water Resources Bulletin, pp 243-256.

5.1 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 December 2018 to November 2023 (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.

5.1.1 Effluent Flow

The effluent flow in the 2015 Permit is a reporting requirement only. The DMR data during the review period show that the average monthly flow ranged from 12.37 MGD to 31.17 MGD.

The flow effluent limit reflects the design flow of the facility of 34 MGD.

The Draft Permit includes an average monthly flow limit of 34 MGD, reported as a rolling annual average. 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.

As noted in Section 3.1.1 above, the facility is able to bypass secondary treatment during period of high flow above 34 MGD. The permit requires that bypasses shall not occur below influent flows of 34 MGD. When bypass occurs, the blended effluent shall be subject to the end-of-pipe effluent limitations in Part I.A.1.a above and all bypasses shall be reported by the Permittee to EPA and NHDES pursuant to Part I.I.6 below. A bypass of secondary treatment is subject to the requirements of Part II.B.4. and Part II.D.1.e. of the permit. The following information shall be reported as an electronic attachment to each March DMR summarizing each day there was a bypass of secondary treatment for the previous calendar year: date and time of initiation of bypass flow, influent flow at time of initiation (MGD), date and time of termination of bypass flow, influent flow at time of termination (MGD), duration of bypass (hrs), and total volume of bypass flow (MG). This information may be used by EPA to evaluate the frequency and magnitude of bypasses of secondary treatment during the permit term.

5.1.2 Carbonaceous Biochemical Oxygen Demand (CBOD₅)

5.1.2.1 CBOD₅ Concentration Limits

The five-day carbonaceous biochemical oxygen demand (CBOD₅) limits in the 2015 Permit were based on the secondary treatment regulations for POTWs found at 40 CFR § 133.102(a) and (b). The average monthly limit is 25 mg/L and the average weekly limit is 40 mg/L. The 2015 Permit also contains a maximum daily limitation of 45 mg/L for CBOD₅.

The DMR data during the review period shows that there have been no violations of the CBOD₅ average monthly and average weekly concentration limits, and there has been one violation of the maximum daily limitation for CBOD₅.

The Draft Permit proposes the same CBOD₅ concentration limits as in the 2015 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency is twice per week.

5.1.2.2 CBOD₅ Mass Limits

The mass-based CBOD₅ limits in the 2015 Permit are based on the concentration limits noted above and calculated with the facility's design flow of 34 MGD. These are a monthly average of 7,090 lb/day, a weekly average of 11,350 lb/day, and a daily maximum of 12,770 lb/day

The DMR data from the review period shows that there have no exceedances of the average monthly or average weekly CBOD₅ mass limits, and that there has been one exceedance of the maximum daily limit.

These mass-based BOD₅ limits were calculated based on the design flow of the facility and the concentration limits shown above, as shown below.

CBOD₅ Mass Loading Calculations:

Calculations of maximum allowable loads for average monthly and average weekly CBOD₅ are based on the following equation:

$$L = C_d * Q_d * 8.345$$

Where:

L = Maximum allowable load in lb/day

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

Q_d = Annual average design flow of Facility

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

Average Monthly: 25 mg/L * 34 MGD * 8.345 = 7,090 lb/day

Average Weekly: 40 mg/L * 34 MGD * 8.345 = 11,350 lb/day

Maximum Daily: 45 mg/L * 34 MGD * 8.345 = 12,770 lb/day

These mass-based CBOD₅ limits will be carried forward in the Draft Permit.

5.1.3 Total Suspended Solids (TSS)

5.1.3.1 TSS Concentration Limits

The five-day TSS limits in the 2015 Permit were based on the secondary treatment regulations for POTWs found at 40 CFR § 133.102(a) and (b). The average monthly limit is 30 mg/L and the average weekly limit is 45 mg/L. The 2015 Permit also contains a maximum daily limitation of 50 mg/L for TSS.

The DMR data during the review period shows that there have been no violations of the TSS average monthly and average weekly concentration limits, and there has been two violations of the maximum daily limitation.

The Draft Permit proposes the same TSS concentration limits as in the 2015 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency shall be twice per week.

5.1.3.2 TSS Mass Limits

The mass-based TSS limits in the 2015 Permit are based on the concentration limits noted above and calculated with the facility's design flow of 34 MGD. These are a monthly average of 8,510 lb/day, a weekly average of 12,770 lb/day, and a daily maximum of 14,190 lb/day.

The DMR data from the review period shows that there have no exceedances of the average monthly or average weekly TSS mass limits, and there have been four exceedances of the maximum daily limit.

These mass-based TSS limits were calculated based on the design flow of the facility and the concentration limits above, as shown below.

TSS Mass Loading Calculations:

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

$$L = C_d * Q_d * 8.345$$

Where:

L = Maximum allowable load in lb/day

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

Q_d = Annual average design flow of Facility

Average Monthly: 30 mg/L * 34 MGD * 8.345 = 8,510 lb/day

Average Weekly: 45 mg/L * 34 MGD * 8.345 = 12,770 lb/day

$$\text{Maximum Daily: } 50 \text{ mg/L} * 34 \text{ MGD} * 8.345 = 14,190 \text{ lb/day}$$

These mass-based TSS limits will be carried forward in the Draft Permit.

5.1.4 Eighty-Five Percent (85%) BOD₅ and TSS Removal Requirement

In accordance with the provisions of 40 CFR § 133.102(a)(4) and (b)(3), the 0001 Permit requires that the 30-day average percent removal for BOD₅ and TSS be not less than 85%. The DMR data during the review period shows that the median BOD₅ and TSS removal percentages are 98% and 98%, respectively. There were no exceedances of the 85% removal requirement for BOD₅ or TSS during that period.

The requirement to achieve 85% BOD₅ and TSS removal has been carried forward into the Draft Permit and will continue to apply only during dry weather.

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 in the 2015 Permit are carried forward into the Draft Permit as there has been no change in the WQSs with regards to pH. The limitations are based on CWA 301(b)(1)(C) and 40 CFR § 122.44(d).

5.1.6 Bacteria

The 2015 Permit includes effluent limits for bacteria using *Escherichia coli* (*E. coli*) bacteria as the indicator bacteria to protect recreational uses. NH WQS at Env-Wq 1700, Appendix E require a monthly geometric mean of 126 *E. coli*/100 ml and a maximum daily limit of 406 *E. coli*/100 ml. The DMR data during the review period show that there have been no exceedances of the *E. coli* limitations.

The Draft Permit proposes maintaining the effluent limits for bacteria from the 2015 Permit. EPA has revised the units to reflect those in the NH WQS. The *E. coli* limits are a monthly geometric mean of 126 *E. coli*/100 ml and a maximum daily limit of 406 *E. coli*/100 ml. The sampling frequency for *E. coli* is three per week.

5.1.7 Total Residual Chlorine

The Permittee uses chlorine disinfection. The 2015 Permit includes effluent limitations for total residual chlorine (TRC) of 130 µg/L (average monthly) and 220 µg/L (maximum daily). The DMR

data during the review period show that there have been no exceedances of the TRC limitations.

The TRC permit limits are based on the instream chlorine criteria defined the New Hampshire Code of Administrative Rules, Env-Wq 1703.21 and Table 1703.1. These freshwater instream criteria for chlorine are 11 µg/L (chronic) and 19 µg/L (acute). Because the upstream chlorine is assumed to be zero in this case, the water quality-based chlorine limits are calculated as the criteria times the dilution factor, as follows:

Chronic criteria * dilution factor = Chronic limit
 $11 \mu\text{g/L} * 12.5 = 137.5 \mu\text{g/L}$ (average monthly)

Acute criteria * dilution factor = Acute limit
 $19 \mu\text{g/L} * 12.5 = 237.5 \mu\text{g/L}$ (maximum daily)

These limits are less stringent than those in the 2015 Permit. Therefore, to be consistent with the anti-backsliding requirements discussed in Section 2.6, the limits in the 2015 Permit are carried forward into the Draft Permit.

5.1.8 Ammonia

The 2015 Permit does not include ammonia limits, but the Permittee was required to monitor and report effluent and ambient ammonia concentrations on a quarterly basis as part of the Whole Effluent Toxicity (WET) testing. Additionally, at EPA's request Manchester provided effluent ammonia data via email on February 13, 2024, that they had collected from 2019 through 2023 outside of WET testing. All monthly average ammonia data are summarized Table 2 below and have been incorporated into the reasonable potential analysis for ammonia (See Appendix B).

Table 2: Effluent Monthly Average Ammonia Data (mg/L)

Month	2019	2020	2021	2022	2023
January	---	---	13.00	15.00	9.40
February	12.00	15.00	17.50	11.00	13.00
March	---	---	16.00	12.00	12.00
April	13.00	---	14.00	11.50	9.90
May	---	11.50	18.00	16.00	14.00
June	---	17.00	16.00	14.00	12.50
July	---	12.1	5.30	8.6	9.00
August	---	3.6	11.00	6.20	6.40
September	15.00	19.0	6.80	3.7	4.00
October	8.70	8.25	4.90	15.00	7.30
November	---	11.00	11.00	9.10	12.00
December	---	12.00	5.70	13.00	8.20

Ambient data, taken upstream of the Manchester outfall in the Merrimack River, is presented in Appendix A and shows the median concentration for the warm weather period (May 1 through October 31) is 0.17 mg/L and for the cold weather period (November 1 through April 30) is 0.12 mg/L.

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

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

To determine the applicable ammonia criteria, EPA assumes a warm weather (May through October) temperature of 25° C and a cold weather (November through April) temperature of 5° C. EPA used the ambient pH monitoring shown in Appendix A, which indicates that the median pH is 7.5 S.U. Additionally, the Merrimack River in the vicinity of the Manchester WWTF discharge is within Essential Fish Habitat (EFH) for Atlantic salmon (*Salmo salar*), so EPA has assumed that salmonids could be present in the receiving waters.

Based on the information and assumptions described above, Appendix B presents the applicable ammonia criteria, the details of the mass balance equation, the reasonable potential determination, and, if necessary, the limits required in the Draft Permit. As shown, EPA determined that there is reasonable potential to cause or contribute to an excursion of WQS for ammonia, so the Draft Permit proposes a new monthly average ammonia limit of 10.4 mg/L from May through October.

DMR data during the review period indicate that the facility has not been consistently below the proposed average monthly limit. As shown in Attachment A, the maximum average monthly discharge in the warm season was 19 mg/L (in September 2020) compared to the proposed limit of 10.4 mg/L. Therefore, the Draft Permit includes a two-year compliance schedule to allow for optimization of the treatment processes to meet the proposed limit.

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 receiving water phosphorus and nitrogen are the nutrients of concern evaluated below.

5.1.9.1 Total Nitrogen

The Merrimack River is a large and densely populated watershed including 40 POTW discharges in Massachusetts and New Hampshire. EPA estimates that approximately 15,000 lb/day of nitrogen is discharged by POTWs into the freshwater portion of the watershed and another 2,000 lb/day into the marine portion. Recent nitrogen data collected by CDM Smith in 2014 and 2016 in the estuarine portions of the Merrimack River indicates elevated total nitrogen and chlorophyll 'a' levels. High nutrient concentrations can lead to increased levels of chlorophyll 'a', therefore chlorophyll 'a' can be an indicator of elevated nutrient concentrations. In samples with salinity greater than 10 ppt, total nitrogen ranged from 0.442 to 1.67 mg/L while chlorophyll 'a' ranged from 4 to 42 ppt⁹. EPA also collected samples on the outgoing tide in 2017 in this area and found total nitrogen levels in the range of 0.62 mg/L to 1.3 mg/L and chlorophyll 'a' ranging from 2 to 11 ppt in samples with salinity greater than 10 ppt. EPA continued to collect ambient samples in 2018 and 2019 which demonstrated similar results. EPA is concerned about the impacts that these nitrogen levels may be having on aquatic life in the estuary as most of these results are outside the range typically found in healthy estuaries in Massachusetts¹⁰. However, more data is necessary to determine whether there is reasonable potential for nitrogen discharges from the facility to cause or contribute to a violation of the narrative nutrient criteria in the Merrimack River estuary, particularly data that characterizes aquatic life designated uses that may be affected in this area so that the narrative criteria can be interpreted numerically. In the meantime, EPA finds that quantifying the load of total nitrogen from this facility and others in the Merrimack River watershed is an important first step to understanding the nitrogen load from point sources and their potential impact on the estuary.

The Draft Permit includes weekly monitoring and reporting requirements for total nitrate plus total nitrite, total Kjeldahl nitrogen (TKN) and total nitrogen from April through October and monthly monitoring and reporting from November through March. The monitoring data will provide additional information on the fate of nitrogen through the treatment process and the impact to the Merrimack River in the estuary at the mouth of the river.

5.1.9.2 Total Phosphorus

While phosphorus is an essential nutrient for the growth of aquatic plants, it can stimulate rapid plant growth in freshwater ecosystems when it is present in high quantities.

⁹ CDM Smith/US Army Corps of Engineers New England District, Merrimack River Watershed Assessment Study - Phase III Final Monitoring Data Report August 2017, Appendix C.

¹⁰ Howes, Brian, et al, Site-Specific Nitrogen Thresholds for Southeastern Massachusetts Embayments: Critical Indicators Interim Report, Massachusetts Estuaries Project, December 22, 2003.

The excessive growth of aquatic plants and algae within freshwater systems negatively impacts water quality and can interfere with the attainment of designated uses by: 1) increasing oxygen demand within the water body to support an increase in both plant respiration and the biological breakdown of dead organic (plant) matter;¹¹ 2) causing an unpleasant appearance and odor; 3) interfering with navigation and recreation, for instance, by fouling engines and propellers, making waters unappealing to swimmers, and interfering with fishing lures and equipment; 4) reducing water clarity; 5) reducing the quality and availability of suitable habitat for aquatic life; and 6) producing toxic cyanobacteria during certain algal blooms. Cultural (or accelerated) eutrophication is the term used to describe dense and excessive plant growth in a water body that results from nutrients entering the system as a result of human activities. Discharges from municipal and industrial wastewater treatment plants, agriculture runoff, and stormwater are examples of human-derived (*i.e.*, anthropogenic) sources of nutrients in surface waters. See generally, *Nutrient Criteria Technical Guidance Manual – Rivers and Streams*, EPA July 2000 [EPA-822-B-00-002], Chapters 1 and 3.

The New Hampshire Surface Water Quality Regulations contain a narrative criterion that limits phosphorus to the level that will not impair a water body's designated use. Specifically, Env-Wq 1703.14(b) states that, "Class B waters shall contain no phosphorus or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occurring." Env-Wq 1703.14(c), further states that, "Existing discharges containing either phosphorus or nitrogen which encourage cultural eutrophication shall be treated to remove phosphorus or nitrogen to ensure attainment and maintenance of water quality standards." Cultural eutrophication is defined in Env-Wq 1702.15 as, "... the human-induced addition of wastes containing nutrients which results in excessive plant growth and/or decrease in dissolved oxygen." Cultural eutrophication also results in violations of other nutrient-related water quality standards such as low dissolved oxygen, decreased water clarity, objectionable odors and surface scum. The NH WQS at Env-Wq 1703.07(b)(2) require that dissolved oxygen have an instantaneous minimum concentration of at least 5 mg/L in Class B waters. Further, NH WQS at Env-Wq 1703.12(b) states that Class B waters "shall contain no slicks, odors, or surface floating solids that would impair any existing or designated use, unless naturally occurring." Also see Part 2.2.2 of this Fact Sheet above regarding antidegradation and existing uses which may be impacted by nutrient over-enrichment.

When permitting nutrient discharges, EPA analyzes available information from a reasonably conservative standpoint, as it regards one key function of a nutrient limit as preventative. This protective approach is appropriate because, once begun, the cycle of eutrophication can be difficult to reverse due to the tendency of nutrients to be retained in the sediments. For this

¹¹ "Algae" includes phytoplankton (microscopic algae measured by levels of chlorophyll a), macroalgae (commonly referred to as seaweed), and other plants stimulated by nutrient over-enrichment. Excessive algal growth contributes to low levels of dissolved oxygen through increased plant respiration and decomposition of dead plant matter. Notably, during the day, algae provide oxygen to the water as a by-product of photosynthesis. At night, however, when photosynthesis ceases but plant respiration continues, dissolved oxygen levels decline. Additionally, as these algae die, they are decomposed by bacteria that consume yet more oxygen. When dissolved oxygen levels are low, aquatic organisms become stressed and die, and overall aquatic health is degraded.

reason, time is of the essence when permitting for nutrients, so EPA acts on the best information reasonably available when developing the draft permit and does not generally delay permit issuance pending collection of new data or development of new models. This approach is also consistent with the requirement for NPDES permits to be revisited and reissued at regular intervals, with permit terms not to exceed five years.

When translating narrative phosphorus criteria into numeric values (and establishing WQBELs, if necessary), EPA looks to a wide range of materials, including nationally recommended criteria and other relevant materials, such as EPA nutrient technical guidance and information published under Section 304(a) of the CWA, peer-reviewed scientific literature and site-specific surveys and data to determine instream targets that are protective of water quality. See 40 CFR § 122.44(d)(1)(vi)(A), (B).

EPA has produced several guidance documents, described below, that recommend a range of total ambient phosphorus concentrations that are sufficiently stringent to control cultural eutrophication and other adverse nutrient-related impacts, with 0.1 mg/L representing the upper end of this range. These guidance documents recommend protective in-stream phosphorus concentrations based on two different analytical approaches. An effects-based approach provides a threshold value above which adverse effects (*i.e.*, water quality impairments) are likely to occur. This approach applies empirical observations of a causal variable (*i.e.*, phosphorus) and a response variable (*i.e.*, chlorophyll-a as a measure of algal biomass) associated with designated use impairments. Alternatively, reference-based values are statistically derived from a comparison within a population of rivers in the same ecoregion class. They are a quantitative set of river characteristics (physical, chemical and biological) that represent conditions in waters in that ecoregion that are minimally impacted by human activities (*i.e.*, reference conditions), and thus by definition representative of water without cultural eutrophication. Dischargers in Massachusetts and New Hampshire are located within either Ecoregion VIII, Nutrient-Poor, Largely Glaciated Upper Midwest and Northeast or Ecoregion XIV, Eastern Coastal Plains. The recommended total phosphorus criteria for these ecoregions are 10 µg/L and 31.25 µg/L, respectively. While reference conditions reflect in-stream phosphorus concentrations that are sufficiently low to meet the requirements necessary to support designated uses, they may also represent levels of water quality beyond what is necessary to support such uses.

EPA follows an effects-based approach. EPA's 1986 *Quality Criteria for Water* (the "Gold Book") recommends maximum threshold concentrations that are designed to prevent or control adverse nutrient-related impacts from occurring. Specifically, the Gold Book recommends in-stream phosphorus concentrations of no greater than 0.1 mg/L for any stream not discharging directly to lakes or impoundments 0.05 mg/L in any stream entering a lake or reservoir, and 0.025 mg/L within a lake or reservoir. In this case, EPA is applying a target concentration of 0.1 mg/L because the receiving water is a stream/river not discharging directly to a lake or impoundment.

As the Gold Book notes, there are natural conditions of a water body that can result in either increased or reduced eutrophic response to phosphorus inputs; in some waters more stringent phosphorus reductions may be needed, while in some others a higher total phosphorus threshold could be assimilated without inducing a eutrophic response. In this case, EPA is not aware of any site-specific factors relevant to the receiving water that would result in it being unusually more or less susceptible to phosphorus loading.

EPA notes that since the 2015 Permit already contained a limit for phosphorus, EPA uses the mass balance equation presented in Appendix B to determine if a more stringent limit would be required to continue to meet WQS under current conditions. The limit is determined to be the more stringent of either (1) the existing limit or (2) the calculated effluent concentration (C_d) allowable to meet WQS based on current conditions.

Sampling data from 2014-2016¹², summarized in Table 3, reported three summer in-stream phosphorus concentrations collected at Station 14A-MER located approximately 5.2 miles upstream of the Manchester WWTP.

Table 3: Instream total phosphorus concentrations (mg/L)

Date	14-MER
6/25/2014	0.027
10/1/2015	0.097
8/1/2016	0.023

Based on the phosphorus criterion described above, the ambient data presented above, the upstream 7Q10 flow, and the design flow of the Facility, Appendix B presents the details of the mass balance equation, the determination of whether the existing limit needs to be more stringent to continue to protect WQS.

The 2015 Permit had a limit of 236 lb/day and EPA determined that this limit should be carried forward (applicable from April 1 through October 31) to continue to protect WQS as specified below.

Mass-based limit analysis and comparison

To ensure the revised mass-based limit is protective under the worst-case conditions, the limit is calculated using the lowest expected receiving water flow and effluent flow. Hence, the upstream 7Q10 receiving water flow (676 cfs or 436.7 MGD) and the lowest monthly average effluent flow during the review period (12.4 MGD, See Appendix A) are used. The numeric mass-based limit is determined based on the following equations:

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

¹² Reardon, Matthew, MassDEP, Division of Watershed Management, 2013, "Technical Memorandum: Big River Watershed 2008 DWM Water Quality Monitoring Data," DWM Control Number CN 323.1.

and

$$M_E = Q_E C_E \times 8.345$$

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

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

where:

M_E = mass-based phosphorus limit

Q_E = effluent flow in MGD (lowest monthly average effluent flow = 12.4 MGD)

C_E = effluent phosphorus concentration in mg/L

Q_S = upstream 7Q10 flow (436.7 MGD)

C_S = upstream median river phosphorus concentration (0.0267 mg/L)

Q_D = downstream flow (449.1 MGD)

C_D = downstream river phosphorus concentration (Gold Book target = 0.100 mg/L)

0.90 = factor to reserve 10% assimilative capacity

8.345 = factor to convert from MGD * mg/L to lb/day

$$M_E = [(449.1)(0.1)(0.9) - (436.7)(0.0267)] \times 8.345 = 240 \text{ lb/day}$$

Solving for M_E gives the maximum allowable mass the facility may discharge without violating water quality standards. Given that the limit is less stringent than the current limit in the 2015 Permit, the Draft Permit proposes to carry forward the limit of 236 lb/day, applicable from April through October.

Additionally, the Draft Permit also includes an ambient monitoring requirement to ensure that current ambient phosphorus data are available to use in the reassessment of the total phosphorus effluent in the next permitting cycle. Note that this ambient data will be used in the next permit reissuance, along with any other relevant information available at that time, to reevaluate whether a more stringent limit may be necessary to protect WQS. EPA notes that this ambient monitoring is particularly necessary in this case in order to better characterize the receiving water given that the best available data used above was from over 7 years ago.

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 hardness-dependent using the equations in NH Env Wq-1703. The estimated hardness of the Merrimack River downstream of the treatment plant is calculated using the critical low flow (7Q10), the design flow of the treatment plant, and the median hardness for both the receiving water upstream of the discharge and the treatment plant effluent. Effluent and receiving water data are presented in Appendix A. Using the mass balance equation discussed in Appendix B, the resulting downstream hardness is 15.7 mg/L and the corresponding criteria are also presented in Appendix B. Since this downstream hardness is below 20 mg/L, the default value of 20 mg/L was used to determine the total recoverable metals criteria. See Env-Wq 1703.22(f).

5.1.10.2 Acid-Soluble Aluminum Study

In a letter from NHDES to EPA (dated July 1, 2014), NHDES stated that the aluminum criteria presented in the New Hampshire water quality regulations (Env-Wq-1700) should be applied in terms of acid-soluble aluminum. The letter goes on to say:

New Hampshire's aluminum criteria are based on EPA's 1988 ambient water quality criteria document for aluminum. According to this document, acid-soluble aluminum is operationally defined as "[a]luminum that passes through a 0.45 um membrane filter after the sample has been acidified to a pH at between 1.5 and 2.0 with nitric acid." For the many reasons listed in the "Implementation" section of the EPA document, acid-soluble aluminum is considered a better measurement of the forms that are toxic to aquatic life or that can be readily converted to toxic forms under natural conditions.

To express these criteria in terms of total recoverable aluminum, the fraction of acid-soluble to total recoverable aluminum in the receiving water must be determined. Based upon Manchester's 2008 permit (with a total recoverable aluminum limit of 87 µg/L) and EPA's subsequent Administrative Order (AO) in 2009, the City of Manchester was required to submit a report on the findings of one year of ambient aluminum and hardness data and a plan for either (a) filing a formal NPDES permit modification request of the limit; or (b) achieving and maintaining full compliance with the limit. The City of Manchester submitted this Aluminum Study Report (ASR) in February of 2011, requesting a formal permit modification of the aluminum limit. Based upon information presented in the ASR, EPA reevaluated the aluminum limit in terms of acid soluble consistent with the interpretation of the criteria by NHDES.

Based on the median ASA and TRA data, the fraction of acid-soluble to total recoverable aluminum in the receiving water was determined as 0.74 (64.8 / 88.0). Hence, the acid-soluble aluminum criteria of 750 µg/L (acute) and 87 µg/L (chronic) can be converted to total

recoverable criteria by dividing them by 0.74, resulting in total recoverable criteria of 1,014 µg/L (acute) and 118 µg/L (chronic). These criteria are applied in the analysis below.

5.1.10.3 Reasonable Potential Analysis and Limit Derivation

To determine whether the effluent has the reasonable potential to cause or contribute to an exceedance above the in-stream water quality criteria for each metal, EPA uses the mass balance equation presented in Appendix B to project the concentration downstream of the discharge and, if applicable, to determine the limit required in the permit.

For any metal with an existing limit in the 2015 Permit, the same mass balance equation is used to determine if a more stringent limit would be required to continue to meet WQS under current conditions. The limit is determined to be the more stringent of either (1) the existing limit or (2) the calculated effluent concentration (C_e) allowable to meet WQS based on current conditions.

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, lead, nickel, and zinc, so the Draft Permit does not propose any new limits for these metals. However, EPA determined that there is reasonable potential to cause or contribute to an excursion of the chronic WQS for aluminum, so the Draft Permit proposes a new aluminum limit of 118 µg/L. Additionally, there is no need for a more stringent copper limit to continue to protect WQS so the existing monthly average limit of 24 µg/L is being carried forward for the reasons specified in Appendix B.

Given that the facility only had a small number of exceedances of the proposed limit for aluminum, EPA is proposing a 12-month compliance schedule. EPA considers that this time will allow optimization of the existing treatment facility to achieve the limits consistently. EPA notes that compliance schedules must achieve compliance “as soon as possible” based on 40 CFR 122.47(a)(1).

Effluent and ambient monitoring for each of these metals will continue to be required in the WET tests.

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 WQs. 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 chronic effects are regulated by limiting the highest measured continuous concentration of an effluent that causes no observed chronic effect on a representative standard test organism, known as the chronic No Observed Effect Concentration (C-NOEC). Whole effluent acute effects are regulated by limiting the concentration that is lethal to 50% of the test organisms, known as the LC₅₀. This policy recommends that permits for discharges having a dilution factor of between 10 and 20 require acute and chronic toxicity testing four times per year for two species. Additionally, the C-NOEC effluent limit should be greater than or equal to the receiving water concentration and the LC₅₀ limit should be greater than or equal to 100%.

The chronic and acute WET limits in the 2015 Permit are C-NOEC greater than or equal to 8.5% and LC₅₀ greater than or equal to 100%, respectively, using the daphnid (*Ceriodaphnia dubia*) and the fathead minnow (*Pimephales promelas*) as the test species. The Facility has consistently met these limits (Appendix A).

Based on the potential for toxicity from domestic and industrial contributions, the state narrative water quality criterion, the dilution factor of 12.5, and in accordance with EPA national and regional policy and 40 CFR § 122.44(d), the Draft Permit continues the effluent limits from the 2015 Permit including the test organism and the testing frequency. Although the updated dilution factor would result in a limit of 8.0% (1/12.5), EPA notes that the limit of 8.5% is carried forward consistent with anti-backsliding regulations discussed in Section 2.6 above. Toxicity testing must be performed in accordance with the updated EPA Region 1 WET test procedures and protocols specified in Attachments A, *Freshwater Acute Toxicity Test Procedure*

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

In addition, EPA's 2018 *National Recommended Water Quality Criteria* for aluminum are calculated based on water chemistry parameters that include dissolved organic carbon (DOC), hardness and pH. New Hampshire is in the process of adopting these aluminum criteria and therefore DOC hardness and pH data may be needed in the next permit reissuance to determine the appropriate aluminum criteria at that time. Since aluminum monitoring is required as part of each WET test, an accompanying new testing and reporting requirement for DOC, in conjunction with each WET test, is warranted in order to assess potential impacts of aluminum in the receiving water.

5.1.12 Per- and polyfluoroalkyl substances (PFAS)

As explained at <https://www.epa.gov/pfas>, PFAS are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. PFAS manufacturing and processing facilities, facilities using PFAS in production of other products, airports, and military installations can be contributors of PFAS releases into the air, soil, and water. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. Exposure to some PFAS above certain levels may increase risk of adverse health effects.¹³ 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 for New Hampshire

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:

	<u>MCLs/AGQs</u>	<u>MCLGs</u>
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

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 AGQs for these PFAS in State statute at the identical levels as the challenged regulations. The statutory MCLs and AGQs became effective on July 23, 2020.

¹³ 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

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, and consistent with recent EPA guidance,¹⁴ the Draft Permit requires that the Facility conduct quarterly influent, effluent and sludge sampling for PFAS chemicals and annual sampling of certain industrial users. The quarterly monitoring shall begin the first full calendar quarter beginning six months after the effective date of the permit. The annual monitoring for certain industrial users shall begin the first full calendar year following the effective date of the permit.

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;”.

(See 40 CFR § 122.21(e)(3)(ii) and 40 CFR § 122.44(i)(1)(iv)(B)).

In the absence of a final 40 CFR § 136 method for measuring PFAS in wastewater and sludge, the Draft Permit requires the use of Method 1633 which was finalized in January 2024. Monitoring should include each of the 40 PFAS parameters detectable by Method 1633 (see Draft Permit Attachment B for list of PFAS parameters) and the monitoring frequency is quarterly. Reporting of all 40 PFAS analytes is necessary to address the emerging understanding and remaining uncertainties regarding sources and types of analytes of PFAS in wastewater and

¹⁴ Radhika Fox, Assistant Administrator, EPA to Water Division Directors, EPA Regions 1-10, December 5, 2022, Subject: “Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs.” Available at: https://www.epa.gov/system/files/documents/2022-12/NPDES_PFAS_State%20Memo_December_2022.pdf

their impacts. While NHDES has currently adopted MCLs for only 4 of these analytes as described above, it is possible that MCLs, water quality criteria and/or effluent limitation guidelines could be adopted for many of the other 36 analytes measured by Method 1633 during the life of the permit. Therefore, EPA considers it prudent to require reporting for all 40 analytes that are measured using Method 1633 to ensure EPA has sufficient data to address each of these PFAS analytes in the future. This level of monitoring is recommended in EPA's *October 2021 PFAS Strategic Roadmap*¹⁵ and in an EPA memo dated April 28, 2022, called *Addressing PFAS Discharges in EPA-Issued NPDES Permits and Expectations Where EPA is the Pretreatment Control Authority*¹⁶.

All PFAS results must be reported on DMRs (see 40 CFR § 122.41)(l)(4)(i). 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.

Additionally, EPA has recently published Method 1621 to screen for organofluorines in wastewater. Organofluorines (molecules with a carbon-fluorine bond) are rarely naturally occurring and the most common source of organofluorines are PFAS and non-PFAS fluorinated compounds such as pesticides and pharmaceuticals. The Permittee shall monitor Adsorbable Organic Fluorine using Method 1621 once per quarter concurrently with PFAS monitoring to screen for a broader range of these types of emerging contaminants. This requirement also takes effect the first full calendar quarter following six months after the effective date of the permit.

All monitoring results may be used by EPA in the next permit reissuance to ensure the discharge continues to protect designated uses and meets water quality standards.

5.2 Industrial Pretreatment Program

The Permittee is required to administer a pretreatment program under 40 CFR Part 403. *See also* CWA § 307; 40 CFR § 122.44(j). The Permittee's pretreatment program received EPA approval on February 27, 1985 and, as a result, appropriate pretreatment program requirements were incorporated into the previous permit, which were consistent with that approval and federal pretreatment regulations in effect when the permit was issued.

The Federal Pretreatment Regulations in 40 CFR part 403 were amended in October 1988, in July 1990, and again in October 2005. Those amendments established new requirements for implementation of pretreatment programs. Upon reissuance of this NPDES permit, the permittee is obligated to modify its pretreatment program to be consistent with current

¹⁵ https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf

¹⁶ https://www.epa.gov/system/files/documents/2022-04/npdes_pfas-memo.pdf

Federal Regulations. The activities that the permittee must address include, but are not limited to, the following: 1) develop and enforce EPA-approved specific effluent limits (technically-based local limits); 2) revise the local sewer-use ordinance or regulation, as appropriate, to be consistent with Federal Regulations; 3) develop an enforcement response plan; 4) implement a slug control evaluation program; 5) track significant noncompliance for industrial users; and 6) establish a definition of and track significant industrial users.

These requirements are necessary to ensure continued compliance with the POTW's NPDES permit and its sludge use or disposal practices.

In addition to the requirements described above, the Draft Permit requires the Permittee to submit to EPA in writing, within 180 days of the permit's effective date, a description of proposed changes to permittee's pretreatment program deemed necessary to assure conformity with current federal pretreatment regulations. These requirements are included in the Draft Permit to ensure that the pretreatment program is consistent and up to date with all pretreatment requirements in effect. Lastly, the Permittee must continue to submit, annually by August 1st, a pretreatment report detailing the activities of the program for the twelve-month period ending 60 days prior to the due date.

5.3 Sludge Conditions

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

The City of Manchester owns and operates one fluidized bed incinerator. The incinerator has the following air pollution control devices: a venturi scrubber which removes particulate matter and volatile metals; a spray down scrubber which removes acid gases and additional metals; an electrodynamic venturi which removes fine particulates and metals. The City generates approximately 4,500 dry metric tons of sewage sludge annually. In addition to sewage sludge, the City also incinerates scum. The resulting ash is disposed off-site by private contract issued on an annual basis. At the present time ash removal and disposal is done by Resource Management Inc. Disposal of ash is not regulated by Part 503.

Subpart E of the Part 503 regulations outlines the standards for the incineration of sewage sludge. The permit contains general requirements, management practices, pollutant limitations, an operational standard, monitoring frequency, record keeping and reporting requirements implementing the provisions of the regulations. The basis of each provision is detailed below.

Pollutant Limitations:

The sludge standards regulate the following seven metals: mercury, beryllium, arsenic, cadmium, chromium, nickel and lead. The pollutant limits in the permit are based on the requirements in §503.43.

Mercury and beryllium are regulated by the National Emission Standard for Hazardous Air Pollutants (NESHAPs) found in 40 CFR Part 61. The permit requires that the firing of sewage sludge in the facility's incinerators does not cause the violation of the NESHAPs for mercury and beryllium. The NESHAP for beryllium applies to each incinerator. The NESHAP for mercury applies to the facility.

The allowable sludge concentrations for arsenic, cadmium, chromium, and nickel are calculated from Equation (5) in §503.43(d):

$$C = \frac{RSC \times 86,400}{DF \times (1 - CE) \times SF} \quad \text{Eq. (5)}$$

Where:

- C = Daily concentration of pollutant in sewage sludge in mg/kg of total solids (dry weight basis)
- CE = control efficiency for the incinerator - based on performance tests
- DF = dispersion factor in micrograms per cubic meter per gram per second
- RSC = risk specific concentration in micrograms per cubic meter
- SF = sewage sludge feed rate in metric tons per day (dry weight basis)

The parameters, with the exception of RSC, are site specific to the Manchester's incinerator. The RSC is derived for each pollutant based on a risk assessment.

The RSC is the allowable increase in the average daily ground level ambient air concentration for a pollutant above background levels that result from the firing of sewage sludge in an incinerator. It is equivalent to the amount of a pollutant that a person living near the incinerator can inhale with a probability of 1 in 10,000 that the person will contract cancer as a result of inhaling the pollutant. The RSC was calculated from the equation below, which is found in the *Technical Support Document for Sewage Sludge Incineration* (EPA 822/R-93-003, November 1992):

$$RSC = \frac{RL \times BW}{Q^* \times I_a} \times 10^3$$

Where:

- RL = Risk Level, 10^{-4}
- BW = body weight, 70 kg (154 lbs), this is the average weight of an adult male

Q^* = allowable dose of a pollutant from EPA's Integrated Risk Information System database

I_a = inhalation rate, 20 m/day, normal inhalation rate for an adult male.

The RSC calculated from this equation is intended to protect the "Highly Exposed Individual" (HEI). The HEI is a person who remains for an extended period of time, 70 years, at the point of maximum ground level pollutant concentration. The RSC values for the regulated metals are found in Tables 1 and 2 of § 503.43 and are presented below.

<u>Pollutant</u>	<u>RSC (ug/m³)</u>
Arsenic	0.023
Cadmium	0.057
Chromium	0.65*
Nickel	2.0

*Chromium RSC based on fluidized bed with wet scrubber

The sludge feed rate, dispersion factor and control efficiency (based on performance stack test) are:

Sludge Feed Rate: 29.71 metric tons/day

Dispersion factor: 1.66 ug/m³/g/sec

<u>Pollutant</u>	<u>Control Efficiency (%)</u>
Arsenic	99.53
Cadmium	99.77
Chromium	99.92
Lead	99.90
Nickel	98.36

Based on the above parameters, the concentration limits for each pollutant are calculated below using Equation (5) in §503.43(d):

<u>Pollutant</u>	<u>Limit (mg/kg)</u>
Arsenic	8,573
Cadmium	43,416
Chromium	1,423,398
Nickel	213,643

The pollutant limit for lead is calculated using equation (4) of §503.43:

$$C = \frac{0.1 \times \text{NAAQS} \times 86,400}{\text{DF} \times (1 - \text{CE}) \times \text{SF}} \quad \text{Eq. (4)}$$

Instead of using an RSC, a percentage of the National Ambient Air Quality Standard (NAAQS) for lead was used. The NAAQS for lead ($1.5 \mu\text{g}/\text{m}^3$) is found in 40 CFR § 50.12. Although lead is classified as a probable human carcinogen, the Clean Air Science Advisory Committee of the Science Advisory Board recommended that the NAAQS for lead be based on the noncarcinogenic effects. Developmental neurotoxicity is considered to be the most sensitive end point for lead exposure. The calculated concentration from equation (4) shown below also protects the HEI described above.

<u>Pollutant</u>	<u>Limit (mg/kg)</u>
Lead	262,781

The limits for arsenic, cadmium, chromium, nickel and lead are the same as in the 2015 Permit, given that the regulations have not changed and in accordance with anti-backsliding requirements found at 40 CFR § 122.44(l).

Operational Standard:

The Part 503 regulations have an operational standard for total hydrocarbons (THC). Hydrocarbons are simple organic compounds containing carbon and hydrogen. The standard is designed to regulate organic emissions from sewage sludge incinerators. THC represent a subset of organic compounds and is used in the regulation since it is impractical to attempt to monitor sludges or stack emissions for all organic compounds which may be present.

The THC value must be corrected to seven percent oxygen and zero percent moisture. The correction to seven percent oxygen is used because seven percent is the standard amount of oxygen used to reference measurements of pollutant limits expressed as concentration; it is also equivalent to 50 percent excess air (excess air is air added to a system above the amount of air needed for complete combustion to occur); and without the correction, inaccurate readings may occur because the presence of the additional oxygen may dilute the THC reading. Similarly, the correction for moisture is needed since the presence of moisture can also dilute the actual THC reading. THC is conventionally expressed in terms of a dry volumetric basis, hence the need to set the standard based on zero moisture.

On February 25, 1994, §503.40 was amended. The amendment allows facilities to monitor carbon monoxide (CO) instead of THC. A facility can monitor for CO if the facility can meet a monthly average concentration CO limit of 100 parts per million on a volumetric basis. This limit, like the THC limit, is corrected to seven percent oxygen and zero percent moisture. The City of Manchester monitors CO.

Management Practices:

The permit contains management practices based on §503.45 pertaining to the operation of the incinerator. The management practices include maintaining the instruments which monitor CO, oxygen and temperature; proper operation of all air pollution control devices; and

notification to EPA when the continuous monitoring equipment is not operational for a period of 72 hours or more.

The permit requires notification to EPA and the state if any monitoring equipment is broken or shut down for longer than 72 hours. It also prohibits adversely affecting a threatened or endangered species or their critical habitat. There are no known threatened or endangered species within the vicinity of the incinerator. Therefore, EPA has determined that the activity will not affect a threatened or endangered species.

The monitoring frequency is based on §503.46. The Permittee is required to monitor heavy metals 6 times per year. The monitoring for mercury and beryllium is at the frequency required by 40 CFR Part 61. The record keeping requirements are based on §503.47.

5.4 Infiltration/Inflow (I/I)

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

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

5.5 Operation and Maintenance

5.5.1 Adaptation Planning for the Wastewater Treatment System (WWTS) and/or Sewer System

The Draft Permit, in Part I.C.1. requires the Permittee and Co-permittee(s) to develop an Adaptation Plan to address major storm and flood events as part of their operation and maintenance planning for the part of the WWTS and/or sewer systems that they each own and operate. These requirements are new. EPA has determined that these additional requirements are necessary to ensure the proper operation and maintenance of the WWTS and/or sewer system and has included a schedule in the Draft Permit for completing these requirements.

See Appendix C for a further rationale regarding this Adaptation Plan.

5.5.2 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 permit conditions. The requirements at 40 CFR § 122.41(d) impose a ‘duty to mitigate’ upon the permittee, which requires that “all reasonable steps be taken to minimize or prevent any discharge violation of the permit that has a reasonable likelihood of adversity affecting human health or the environment. EPA and MassDEP maintain that an I/I removal program is an integral component of ensuring permit compliance with the requirements of the permit under the provisions at 40 CFR § 122.41(d) and (e).

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

Some of the requirements in the Draft Permit are not included in the 2015 Permit. EPA has determined that this additional requirement is necessary to ensure the proper operation and maintenance of the collection system and has included schedules for completing these requirements in the Draft Permit.

Because the Towns of Goffstown, Bedford, and Londonderry own and operate a collection system that discharges to the Manchester WWTF, they have been included as Co-permittees for the specific permit requirements discussed in the paragraph above. The historical background and legal framework underlying this Co-permittee approach is set forth in Appendix D to this Fact Sheet, *EPA Region 1 NPDES Permitting Approach for Publicly Owned Treatment Works that Include Municipal Satellite Sewage Collection Systems*.

5.6 Combined Sewer Overflows

Description and History

The City of Manchester owns and operates a wastewater collection system comprised of 55 percent sanitary sewers, which carry domestic, industrial, and commercial wastewater; and 45 percent combined sewers, which carry domestic, industrial, and commercial wastewater plus stormwater runoff. Manchester’s wastewater collection system consists of ten pumping stations and approximately 385 miles of sewers. The WWTF serves the majority of Manchester

along with portions of Bedford, Goffstown and Londonderry. The Goffstown, Bedford and Londonderry have separate sewer systems. There are 15 CSO outfalls remaining in the Manchester wastewater collection system and interceptor network. Of the 15 remaining CSO outfalls, 2 discharge to the Piscataquog River (adjacent to Bass Island and immediately upstream of the river's confluence with the Merrimack River), 2 discharge to the Merrimack River from the west side of the city, and 11 discharge to the Merrimack River from the east side of the city (including Tannery Brook and Ray Brook). During certain wet weather events, discharges of untreated sanitary wastewater and stormwater occur from the City's 15 combined sewer overflow outfalls ("CSOs") into the Piscataquog and Merrimack Rivers, as listed in Table 1 below.

CSO discharge data summaries from 2018-2023 are shown in Appendix E.

The City submitted a Long-Term Control Plan (LTCP) in 1995 which identified the CSO controls necessary to comply with water quality standards and the NPDES permit in effect at that time. In March of 1999, the city and the EPA entered into a negotiated Compliance Order (CO) that established a 10-year \$58 million Phase I CSO abatement program (Phase I). The measures included in the Phase I CSO abatement program were completed, and the City subsequently submitted a revised Long-Term Control Plan in 2010 to address the remaining CSOs. On July 13, 2020, EPA and the City of Manchester entered into a Consent Decree which contains a schedule to complete the CSO abatement measures identified in the revised 2010 LTCP.

Consistent with the Consent Decree, the City has completed the following projects to reduce and/or eliminate discharges from CSOs: (1) Wastewater Treatment Plant Improvements: Increased primary and secondary treatment capacity to 42 MGD and increased primary treatment and disinfection of flows from 42 MGD – 72 MGD; (2) Program Assessment and Reporting: Semi-annual compliance report submittal (ongoing); (3) System Optimization With Real Time Controls: Completed study of system optimization with real time controls; (4) evaluation of inactive CSOs for permanent closure; (5) Cemetery Brook Separation Project: Drain Basis of Design Report submitted; Cemetery Brook drain tunnel design – 60% of the design submitted- The Cemetery Brook Drain Tunnel project will significantly reduce the impacts of CSO discharges by removing stormwater inflow from the collection system. The tunnel is anticipated to significantly reduce wet weather overflows; (6) Christian Brook Separation Project: Christian Brook Main Drain – flow redirected to the City's new drainage system; and (7) CSO discharge and notification program.

Table 4: Manchester CSO Outfall Locations

Outfall	CSO Regulator Name	Receiving Water	Latitude	Longitude
011	Schiller Street	Merrimack River	42° 58' 18.86" N	071° 28' 26.42" W
018	Turner/Ferry Streets	Merrimack River	42° 58' 52.84" N	071° 28' 10.17" W
031	Stark Brook (Elgin Ave.) Stark Brook (Sixth Ave.) Stark Brook (Eve Ave.)	Merrimack River	43° 01' 39.84" N	071° 28' 44.02" W
039	Third Street	Piscataquog River	42° 58' 45.12" N	071° 28' 24.93" W
043	Tannery Brook	Merrimack River	42° 58' 05.97" N	071° 28' 23.13" W
044	Cemetery Brook (Primary) Cemetery Brook (Secondary)	Merrimack River	42° 58' 52.88" N	071° 28' 02.40" W
045	Granite Street	Merrimack River	42° 59' 08.00" N	071° 28' 08.80" W
046	Bridge Street	Merrimack River	42° 59' 38.51" N	071° 28' 08.11" W
047	Penacook Street	Merrimack River	42° 59' 55.35" N	071° 28' 06.27" W
050	MH #1	Merrimack River	42° 56' 49.34" N	071° 27' 33.81" W
051	West Side Pump Station	Piscataquog River	42° 58' 41.64" N	071° 28' 16.87" W
052	MH #2	Merrimack River	42° 56' 57.36" N	071° 27' 40.80" W
053	Walnut/North Street Canal/W. Penacook	Merrimack River	43° 00' 02.43" N	071° 28' 09.46" W
054	Ray Brook	Merrimack River	43° 00' 30.53" N	071° 28' 17.16" W
055	Dunbar Street	Merrimack River	42° 57' 56" N	071° 28' 26" W

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.B. 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.

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. As discussed above, the City submitted a draft LTCP in 1995 and a revised draft LTCP in 2010.

Permit Requirements

In accordance with the National CSO Policy, the Draft Permit contains the following conditions for the CSO discharges:

(i) Dry weather discharges from CSO outfalls are prohibited. Dry weather discharges must be immediately reported to EPA and MassDEP.

(ii) During wet weather, the discharges must not cause any exceedance of water quality standards.

(iii) The permittee shall meet the technology-based Nine Minimum Controls described above and shall comply with the implementation levels as set forth in Part I.B. of the Draft Permit.

(iv) The permittee shall review its entire NMC program and revise it as necessary.

Documentation of this review and any resultant revisions made to the NMC program shall be submitted to EPA and MassDEP within 6 months of the effective date of the permit. An annual report shall be provided by April 30th of each year which describes any subsequent revisions made to the NMC program and shall also include monitoring results from CSO discharges, and the status of CSO abatement projects.

5.7 Standard Conditions

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

6.0 Federal Permitting Requirements

6.1 Endangered Species Act

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

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

The Federal action being considered in this case is EPA’s proposed NPDES permit for the Manchester Wastewater Treatment Facility. The Draft Permit is intended to replace the 2015 Permit in governing the Facility. As the federal agency charged with authorizing the discharge from this Facility, EPA determines potential impacts to federally listed species, and initiates consultation, when required under Section 7(a)(2) of the ESA.

Regarding protected species under the jurisdiction of NOAA Fisheries, a number of anadromous and marine species and life stages are present in New Hampshire 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 shortnose 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 overlap with coastal waters where protected marine species are found. The Facility discharges directly into the Merrimack River, which travels through New Hampshire and then into Massachusetts and subsequently to an estuary system and out to the Atlantic Ocean. The facility is located approximately 35 miles upstream from the Essex Dam in Lawrence, Mass., which is the upstream limit for two species of anadromous fish, the shortnose sturgeon (*Acipenser brevirostrum*) and the Atlantic sturgeon (*Acipenser oxyrinchus*). In general, adult shortnose sturgeon (SNS) and adult Atlantic sturgeon (ATS) are present in coastal waters. Sturgeon species have not previously been reported in the vicinity of the action area and are unlikely to be present so far upstream of the Essex Dam.

On the basis of the evaluation, EPA's preliminary determination is that this action is not likely to adversely affect, the life stages of the protected species which are expected to inhabit the Merrimack 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.

For protected species under the jurisdiction of the USFWS, two listed species, the endangered northern long-eared bat (*Myotis septentrionalis*) and the threatened small whorled pogonia (*Isotria medeoloides*), were identified as potentially occurring in the action area of the Facility's discharges. According to the USFWS, the endangered northern long-eared bat is found in the following habitats based on seasons, "winter – mines and caves; summer – wide variety of forested habitats." The small whorled pogonia "grows in older hardwood stands of beech, birch, maple, oak, and hickory that have an open understory. Sometimes it grows in stands of softwoods such as hemlock. It prefers acidic soils with a thick layer of dead leaves, often on slopes near small streams." Neither of these species is considered aquatic.

Because the Facility's projected action area in Manchester, New Hampshire overlaps with the general ranges of these species, EPA submitted an evaluation on potential effects of the project to the Information for Planning and Consultation (IPaC) system provided by the USFWS. The USFWS system confirmed by letter on January 31, 2024 that, based on the specific project information submitted, the project would have "no effect" on the northern long-eared bat or small whorled pogonia¹⁷. This concluded EPA's consultation responsibilities for the Manchester

¹⁷ USFWS IPaC Project code: 2024-0043023 Letter dated 1/31/2024

WWTF NPDES permitting action under ESA section 7(a)(2). No ESA section 7 consultation is required with USFWS for these species.

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 threatened 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.

Essential fish habitat is only designated for species for which federal fisheries management plans exist (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. A New England Fishery Management Council's Omnibus Essential Fish Habitat Amendment in 2017 updated the descriptions.¹⁸ In some cases, a narrative identifies rivers and other waterways that should be considered EFH

¹⁸ The information is included on the NOAA Fisheries website at:
<https://www.fisheries.noaa.gov/national/habitatconservation/essential-fish-habitat>.

due to present or historic use by federally managed species. In a letter to EPA New England dated October 10, 2000, NOAA Fisheries agreed that for NPDES permit actions, EFH initial notification for purposes of consultation can be accomplished in the EFH section of the Draft Permit's supporting Fact Sheet.

The Federal action being considered in this case is EPA's proposed NPDES permit for the Manchester WWTF, which discharges through Outfall 001 and 15 CSOs to the Merrimack River and other waters identified in Table 1 in Section 4.1 of this document. A review of the relevant essential fish habitat information provided by NOAA Fisheries indicates that the outfall exists within designated EFH for one federally managed species, Atlantic salmon (*Salmo salar*). This is because the Manchester WWTF discharge to the Merrimack River. The Merrimack River system has been designated as EFH for Atlantic salmon. Therefore, consultation with NOAA Fisheries under the Magnuson-Stevens Fishery Conservation and Management Act is required. EPA has determined that actions regulated by the Draft Permit may adversely affect EFH. The Draft Permit has been conditioned in the following way to minimize any impacts that reduce the quality and/or quantity of EFH for Atlantic salmon.

The Draft Permit has been conditioned in the following way to minimize any impacts that reduce the quality and/or quantity of EFH.

- This Draft Permit action does not constitute a new source of pollutants. It is the reissuance of an existing NPDES permit;
- The Facility withdraws no water from the Merrimack River, so the EFH will not be reduced in quality and/or quantity through impingement or entrainment of EFH designated species or their prey;
- Acute and chronic toxicity tests will be conducted quarterly to ensure that the discharge does not exhibit toxicity;
- Total suspended solids, biochemical oxygen demand, pH, *Escherichia coli*, total phosphorus, total aluminum, total lead, total copper, and acute toxicity are regulated by the Draft Permit to meet water quality standards;
- The Draft Permit prohibits the discharge of pollutants or combination of pollutants in toxic amounts;
- The effluent limitations and conditions in the Draft Permit were developed to be protective of all aquatic life;
- The Draft Permit prohibits violations of the state water quality standards; and
- The Draft Permit requirements minimize any reduction in quality and/or quantity of EFH, either directly or indirectly.
- The Draft Permit requires monitoring for four Per- and Polyfluoroalkyl Substances (PFAS) in the influent, effluent, and sludge.

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 the permit writer, Robin Johnson at the following email address: to Johnson.Robin@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 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.

If for any reason, comments on the Draft Permit and/or a request for a public hearing cannot be emailed to the permit writer specified above, please contact them at telephone number: (617) 918-1045.

8.0 Administrative Record

The administrative record on which this Draft Permit is based may be accessed by contacting Robin Johnson at 617-918-1045 or via email to Johnson.Robin@epa.gov.

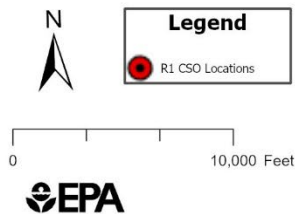
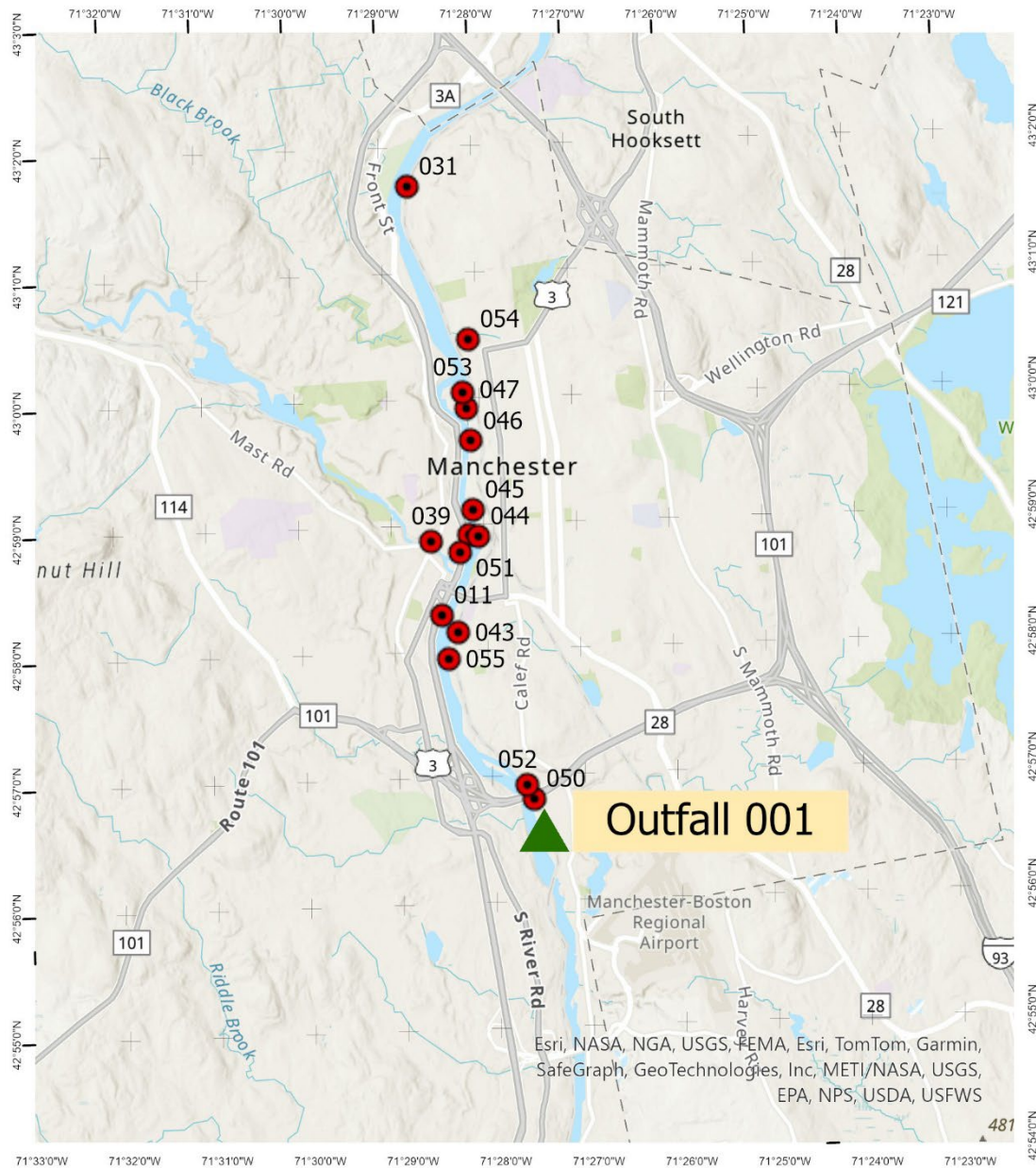
April 2024

Date

Ken Moraff, Director

Water Division

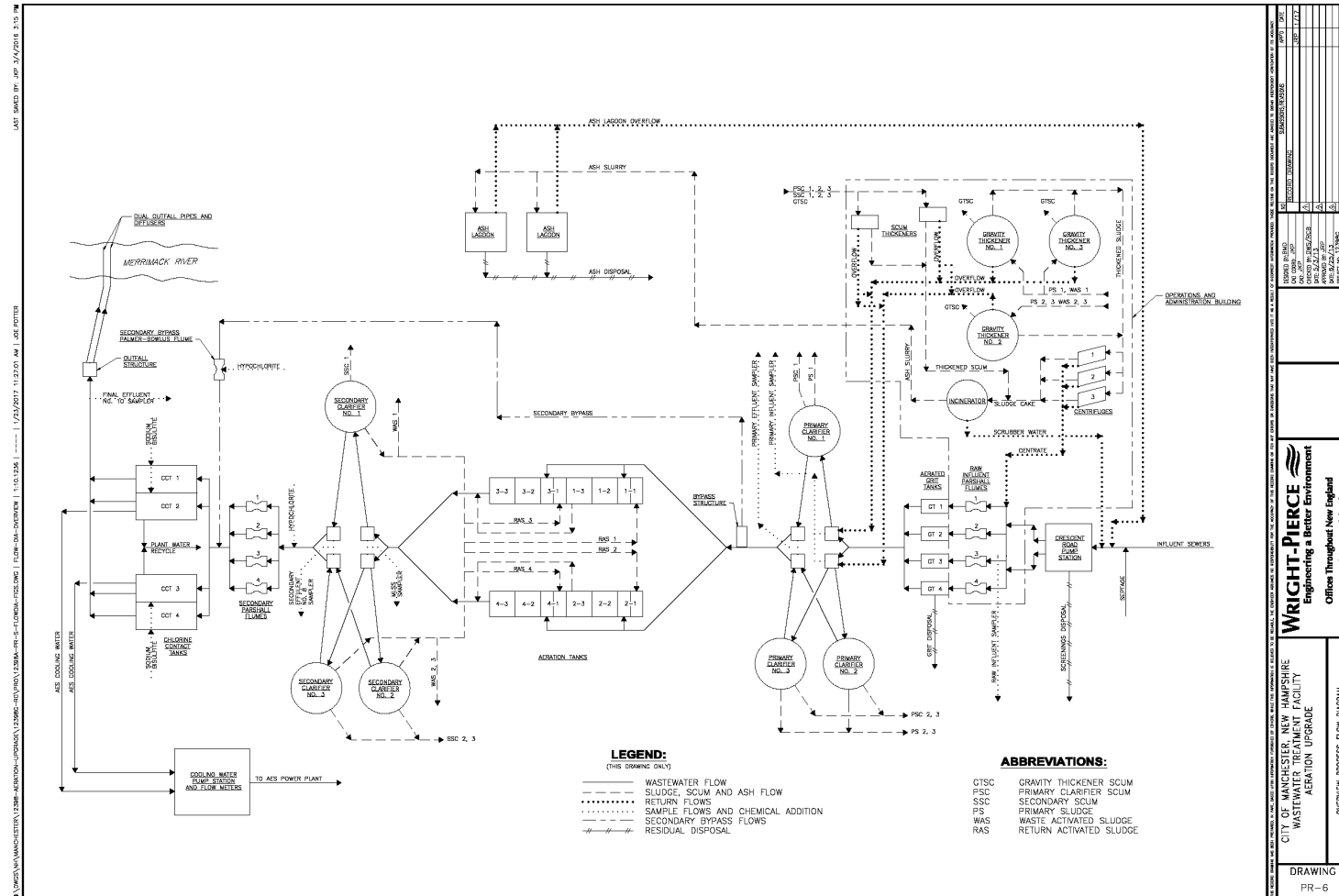
U.S. Environmental Protection Agency

Figure 1: Location Map**FIGURE 1
Site Location Map**

Manchester Wastewater
Treatment Facility
300 Winston Street
Manchester, NH 03103
NPDES No. NH0100447

1/31/2024

Figure 2: Flow diagram



Outfall 001

Parameter	Flow	Flow	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max
Units	(MGD)	(MGD)	(lb/d)	(mg/L)	(lb/d)	(mg/L)	(lb/d)	(mg/L)
Effluent Limit	Report	Report	7090	25	11350	40	12770	45
Minimum	12.37	18.22	656	4.9	706	5.4	1228	8.1
Maximum	31.17	63.7	2091	11.1	3138	13.9	10746	49.5
Median	21.24	35.43	1116	6.4	1482	7.59	3345.5	12.85
No. of Violations	N/A	N/A	0	0	0	0	0	1
12/31/2018	29.98	54.16	1537	5.9	2612	7.3	6008	13.3
1/31/2019	24.7	51	1491	7.2	1899	8.43	4424	14
2/28/2019	23.2	35.2	1461	7.38	1473	8.13	3929	13.4
3/31/2019	21.75	33.13	2042	11.1	2712	13.9	3844	15.3
4/30/2019	26.3	55.8	1614	7.53	1905	9.29	3860	13
5/31/2019	25.72	34.79	1223	5.7	2256	10	2504	11.2
6/30/2019	22	39.8	1104	5.69	1431	7.34	3280	14.3
7/31/2019	17.5	40.38	966	6.3	1021	6.8	3738	11.9
8/31/2019	15.2	21.6	961	7.48	1207	8.83	2112	11.7
9/30/2019	14.7	18.8	1086	8.71	1275	9.32	1863	13.1
10/31/2019	15.5	38.7	984	7.33	1063	7.58	4097	12.7
11/30/2019	17.42	36.4	993	6.6	1322	10.9	3795	12.5
12/31/2019	24.16	57.6	1417	6.7	3074	9.7	5572	11.6
1/31/2020	21.95	33.8	1110	6	1277	7.2	2001	9.4
2/29/2020	22.1	41.6	1328	7.01	1350	7.06	3920	11.3
3/31/2020	23.59	36.47	1466	7.4	1550	7.8	3517	14.7
4/30/2020	29.29	44.49	2063	8.1	2609	9.2	4638	13.2
5/31/2020	22.35	36.37	1146	6.1	1529	7.5	3033	11.3
6/30/2020	14.58	20.54	884	7.2	1012	8.3	1473	10.8
7/31/2020	14.43	25.88	1149	9.5	1421	11.7	2525	13.3
8/31/2020	13.1	22.02	868	7.7	1601	11	2773	15.1
9/30/2020	12.91	19.4	656	6.1	755	7.3	1521	11.6
10/31/2020	15.5	31.3	744	5.31	997	6.2	2481	10.1
11/30/2020	16.2	31.7	1095	7.73	954	7.88	2869	13
12/31/2020	25.59	56.02	1415	6.3	1880	7.1	6167	13.2
1/31/2021	21.22	36.94	1054	5.9	1227	6.8	2526	9.4
2/28/2021	17.48	30.75	1033	6.9	1100	7.9	2693	10.5
3/31/2021	19.93	28.53	781	6.5	1249	7.3	1228	10.7
4/30/2021	20.65	34.26	1179	6.7	1429	8.2	2829	10.3
5/31/2021	20.43	29.87	1112	6.4	1235	6.7	2645	12.4
6/30/2021	16.12	21.52	809	6	848	6.6	1444	8.8
7/31/2021	28.2	44	1689	6.99	1797	8.56	3749	13.1

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Parameter	Flow	Flow	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max
Units	(MGD)	(MGD)	(lb/d)	(mg/L)	(lb/d)	(mg/L)	(lb/d)	(mg/L)
Effluent Limit	Report	Report	7090	25	11350	40	12770	45
8/31/2021	22.01	35.39	1585	7.9	3138	10.9	10566	35.8
9/30/2021	24.25	45.62	1200	5.8	2044	6.8	3048	9.7
10/31/2021	18.65	43.92	1055	6.4	1499	7.7	3407	16
11/30/2021	22.41	29.69	1118	5.9	1290	6.5	2303	11.3
12/31/2021	21.26	29.39	1284	7.1	2387	7.6	2826	12.5
1/31/2022	20.76	32.63	1158	6.5	1503	7.8	2531	10.5
2/28/2022	28.3	49.2	2091	8.25	3068	11.64	8936	21.8
3/31/2022	25.28	33.79	1093	5.1	1491	6.1	2655	10.3
4/30/2022	24.81	39.26	1177	5.4	1387	6.3	3700	11.3
5/31/2022	20.34	29.82	857	5	922	5.4	1651	10.4
6/30/2022	18	31.49	815	5.3	1105	6.4	2547	9.7
7/31/2022	15.45	24.37	1114	8.4	1634	11.9	3110	21.6
8/31/2022	12.37	18.22	674	6	706	6.1	3987	26.9
9/30/2022	16.48	36.72	953	5.7	1635	7.5	7286	25.5
10/31/2022	17.28	35.47	767	5	1094	6.3	3239	18.8
11/30/2022	19.01	32.16	1073	6.5	1171	7.1	2473	11.6
12/31/2022	27	63.7	1570	6.08	2865	8.47	7807	14.7
1/31/2023	31.17	59.88	1712	6.2	2479	7.5	5230	13
2/28/2023	24.61	36	1106	5.4	1797	6.3	1831	8.1
3/31/2023	30.65	43.94	1576	6	2282	7.6	3591	9.8
4/30/2023	27.6	44.7	1717	7.27	1783	8.71	4473	12
5/31/2023	26.61	46.73	1402	5.9	2713	8.2	4677	14.1
6/30/2023	20.4	33.8	1246	6.69	2886	13.22	10746	49.5
7/31/2023	30.18	51.2	1784	6.6	2483	8.5	8668	21.7
8/31/2023	20.2	27.16	1094	6.2	1310	7.4	3284	14.5
9/30/2023	23.6	41.77	1290	6.2	1585	7.1	4157	17.2
10/31/2023	19.54	36.77	920	5.4	1153	5.7	4293	14
11/30/2023	18.88	33.93	810	4.9	1288	7	3792	13.4

Outfall 001

Parameter	TSS	TSS	TSS	TSS	TSS	TSS	pH	pH
	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max	Minimum	Maximum
Units	(lb/d)	(mg/L)	(lb/d)	(mg/L)	(lb/d)	(mg/L)	(SU)	(SU)
Effluent Limit	8510	30	12770	45	14190	50	6.5	8
Minimum	792	5.3	983	6.4	1378	10	6.5	7
Maximum	3186	15.9	7433	38.6	36992	170.4	605	7.7
Median	1516	8.5	2095	10.43	4823.5	17.6	6.75	7.2
No. of Violations	0	0	0	0	4	2	0	0
12/31/2018	2111	8.3	2727	11.8	6775	19	6.8	7
1/31/2019	2039	9.27	2768	10.46	6340	23.6	6.8	7.4
2/28/2019	1708	8.64	1878	9.89	4985	17	6.8	7.3
3/31/2019	2924	15.9	3603	18.5	5362	29.2	6.6	7.2
4/30/2019	2397	11.1	3041	13.7	10103	32.6	6.7	7.2
5/31/2019	1763	8.1	2332	10	4621	21.6	6.8	7.2
6/30/2019	1520	7.73	2013	10.2	5640	22.8	6.8	7.2
7/31/2019	1406	9	2092	10.8	6264	28	6.7	7.1
8/31/2019	965	7.5	1221	8.7	2815	15.6	6.8	7.1
9/30/2019	1301	10.49	1504	11.17	2787	19.6	6.8	7.4
10/31/2019	1334	9.59	1829	11.09	6774	21	6.8	7.4
11/30/2019	1356	9.1	1868	12.1	5222	20.6	6.9	7.2
12/31/2019	1867	8.5	3353	11.5	8070	20	6.7	7.1
1/31/2020	1444	7.7	1804	9.1	3413	13.4	6.9	7.1
2/29/2020	1809	9.58	2126	11	3885	17.4	6.8	7.2
3/31/2020	1950	9.8	2530	12.8	4670	19	6.9	7.2
4/30/2020	3166	12.6	4331	15.8	11803	35.3	6.9	7.3
5/31/2020	1552	8.1	2130	10.4	3640	13.8	6.9	7.2
6/30/2020	865	7.1	1082	8.7	1378	10	7	7.2
7/31/2020	1045	8.5	1333	10.1	2604	15.6	6.9	7.5
8/31/2020	988	7.9	2356	15.8	7952	43.3	6.8	7.3
9/30/2020	792	7.3	1004	9.8	1877	14.8	6.5	7.5
10/31/2020	842	5.9	1143	6.7	3065	14.8	6.5	7.2
11/30/2020	1108	7.52	2295	13.17	5241	19.8	6.5	7.1
12/31/2020	1303	5.6	2032	6.9	7662	16.4	6.5	7.3
1/31/2021	933	5.3	1007	6.4	2711	12.4	6.6	7.2
2/28/2021	1161	7.7	1596	9.8	4155	16.2	6.6	7.6
3/31/2021	1037	6.1	1033	6.5	2760	11.6	6.6	7.4
4/30/2021	1346	7.6	1773	9.8	4172	14.6	6.9	7.4
5/31/2021	1440	8.5	1674	9.9	2245	12.8	6.8	7.3
6/30/2021	933	6.9	983	7.3	1997	11.2	6.6	7.2
7/31/2021	3014	11.6	3596	15.6	13900	46.7	6.5	7.1

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Parameter	TSS	TSS	TSS	TSS	TSS	TSS	pH	pH
	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max	Minimum	Maximum
Units	(lb/d)	(mg/L)	(lb/d)	(mg/L)	(lb/d)	(mg/L)	(SU)	(SU)
Effluent Limit	8510	30	12770	45	14190	50	6.5	8
8/31/2021	2200	10.6	3959	16.4	20159	68.3	6.6	7.1
9/30/2021	1405	6.7	3619	11.5	3205	11.6	6.7	7.1
10/31/2021	1547	9.1	2947	15.2	6450	32.4	6.5	7.1
11/30/2021	1448	7.7	2098	10.5	2869	14.4	6.5	7.1
12/31/2021	1594	8.7	1844	9.4	4461	18.2	6.6	7.3
1/31/2022	1275	7.2	1613	8.4	2510	12	6.9	7.1
2/28/2022	3046	11.41	4371	14.66	17462	42.6	6.7	7.5
3/31/2022	1591	7.5	2222	9.2	4073	16.6	6.7	7.7
4/30/2022	1709	8	2009	8.7	4780	14.6	6.8	7.3
5/31/2022	1296	7.7	1399	8.4	2477	14	6.8	7.3
6/30/2022	1268	8.2	1669	9.4	3834	14.6	6.6	7.3
7/31/2022	1512	11.2	2072	15.2	5126	35.8	6.6	7.2
8/31/2022	1071	9.5	1171	10.7	6284	42.4	6.6	7.2
9/30/2022	1631	9.9	2844	13	13544	47.4	6.05	7.2
10/31/2022	1152	7.5	1510	8.5	4260	17.8	6.6	7.3
11/30/2022	1382	8.6	1498	9.3	2949	13.6	6.7	7.2
12/31/2022	2071	8.1	3214	9.9	11684	23.2	6.6	7.3
1/31/2023	2399	8.8	3537	11.1	7291	14.6	6.5	7.3
2/28/2023	1568	7.5	2512	8.8	2942	11	6.8	7.5
3/31/2023	2293	8.7	3032	10.3	4314	14.2	6.5	7.3
4/30/2023	2278	9.74	2441	10.46	6187	16.6	6.8	7.5
5/31/2023	2165	8.9	4342	13	7717	20.4	6.8	7.2
6/30/2023	2752	14	7433	38.6	36992	170.4	6.9	7.3
7/31/2023	3186	11.7	4611	16	17337	40.6	6.9	7.1
8/31/2023	1770	10	2463	13.7	7793	41	6.9	7.2
9/30/2023	2308	10.8	2959	12.5	7594	32.4	6.6	7.1
10/31/2023	1291	7.6	1589	8.3	4723	15.4	6.7	7.4
11/30/2023	1138	7	1673	9.1	4867	17.2	6.8	7.2

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Parameter	E. coli	E. coli	E. coli	E. coli	TRC	TRC	TP	TP
	Monthly Geometric Mean	Monthly Geometric Mean	Daily Max	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	(CFU/100mL)	(CFU/100mL)	(CFU/100mL)	(CFU/100mL)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Effluent Limit	126	Report	406	Report	0.13	0.22	Report	Report
Minimum	2.26	2.16	10.7	5.2	0	0.05	0.28	0.29
Maximum	15.84	12.76	163.1	547.5	0.062	0.18	5.35	8.8
Median	6.01	4.33	36.4	37.3	0.0335	0.12	1.425	1.65
No. of Violations	0	N/A	0	N/A	0	0	N/A	N/A
12/31/2018	5.94		15.8		0.03	0.1	0.88	0.92
1/31/2019	4.01		41.7		0.01	0.07	1.4	1.4
2/28/2019	4.34		19.5		0.01	0.17	1.45	1.5
3/31/2019	6.01		22.8		0.057	0.11	1.53	2.2
4/30/2019	7.65		163.1		0.057	0.15	1.45	1.6
5/31/2019	2.67		24.3		0.041	0.13	1.15	1.3
6/30/2019	5.04		57.3		0	0.1	1.6	1.7
7/31/2019	3.77		30.9		0.039	0.1	1.65	2.4
8/31/2019	9.62		125.4		0.046	0.11	2.75	3
9/30/2019	10.95		125.9		0.06	0.14	2.95	3.4
10/31/2019	10.6		64.4		0.04	0.11	1.22	2
11/30/2019	2.26		10.7		0.035	0.11	2.05	2.8
12/31/2019	3.2		14.5		0.04	0.15	0.34	0.42
1/31/2020	7.58		48.1		0.04	0.13	0.28	0.29
2/29/2020	4.4		36.4		0.01	0.14	1.2	1.3
3/31/2020	5.8		29.4		0.04	0.14	2.1	2.1
4/30/2020	7.63		26.8		0.044	0.12	1.74	2.5
5/31/2020	9		47.9		0.03	0.11	2.7	3.3
6/30/2020	6.66		31.1		0.024	0.12	2.55	2.7
7/31/2020	12.57		103.9		0.035	0.11	2.55	4.3
8/31/2020	15.84		160.7		0.05	0.12	0.4	0.42
9/30/2020		10.46		78.9	0.037	0.11	1.49	2.5
10/31/2020		10.04		28.1	0.031	0.09	1.7	1.7
11/30/2020		4.33		24.2	0.032	0.09	0.91	1.3
12/31/2020		5.74		190.4	0.039	0.15	1.22	1.5
1/31/2021		3.66		22.3	0.03	0.08	0.81	1.4
2/28/2021		3.12		13	0.034	0.09	1.93	2.9
3/31/2021		2.52		16.8	0.025	0.08	0.99	1.5
4/30/2021		2.66		14.6	0.022	0.08	0.71	1
5/31/2021		12.76		137.3	0.03	0.12	1.18	1.5
6/30/2021		2.16		176.3	0.032	0.14	2.05	2.2
7/31/2021		4.12		70.6	0.048	0.18	0.625	0.75

Outfall 001

Parameter	E. coli	E. coli	E. coli	E. coli	TRC	TRC	TP	TP
	Monthly Geometric Mean	Monthly Geometric Mean	Daily Max	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	(CFU/100mL)	(CFU/100mL)	(CFU/100mL)	(CFU/100mL)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Effluent Limit	126	Report	406	Report	0.13	0.22	Report	Report
8/31/2021		5.51		17.5	0.03	0.11	2.65	2.8
9/30/2021		5.88		17.4	0.032	0.1	1.35	1.4
10/31/2021		5.25		51.2	0.03	0.1	1.45	1.9
11/30/2021		3.94		30.8	0.038	0.11	1.88	2.9
12/31/2021		3.91		21.1	0.051	0.16	0.89	0.94
1/31/2022		3.06		25.3	0.04	0.11	1.2	1.2
2/28/2022		9.58		313	0.01	0.16	1.02	1.3
3/31/2022		5.34		18.7	0.026	0.08	1.25	1.4
4/30/2022		4.34		172	0.035	0.11	1.15	1.2
5/31/2022		2.38		15.6	0.03	0.16	0.82	0.92
6/30/2022		3.35		547.5	0.038	0.14	2.1	2.4
7/31/2022		6		37.3	0.05	0.15	3	3.2
8/31/2022		7.59		81.6	0.022	0.05	3.3	3.8
9/30/2022		8.1		54.6	0.023	0.07	0.62	0.75
10/31/2022		3.85		61.2	0.03	0.11	5.35	8.8
11/30/2022		3.39		39.9	0.033	0.13	2.2	2.2
12/31/2022		5.79		93.4	0.03	0.16	2.4	3.5
1/31/2023		6.49		163.1	0.03	0.15	0.79	0.94
2/28/2023		2.56		10.9	0.025	0.13	1.1	1.1
3/31/2023		8.29		126	0.033	0.13	1.5	1.7
4/30/2023		4.76		23.8	0.047	0.14	1.9	2
5/31/2023		3.62		35	0.058	0.16	0.64	1
6/30/2023		3.93		21.3	0.037	0.1	2.35	2.4
7/31/2023		3.64		165	0.03	0.15	1.03	1.1
8/31/2023		6.43		46.5	0.03	0.15	0.55	0.77
9/30/2023		7.19		67	0.062	0.17	0.29	0.34
10/31/2023		3.02		12.1	0.05	0.15	5	5.2
11/30/2023		2.26		5.2	0.042	0.15	1.03	1.8

Outfall 001

Parameter	TP	TP	TP	Copper	Copper
	Monthly Ave	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	(lb/d)	(lb/d)	(lb/d)	(ug/L)	(ug/L)
Effluent Limit	236	Report	Report	24	Report
Minimum	40.35	75	40.5	2.35	2.4
Maximum	748	891	1516	8.95	10
Median	290	199.5	267	4.675	5.15
No. of Violations	10	N/A	N/A	0	N/A
12/31/2018				4	5
1/31/2019				5.5	6
2/28/2019				5.8	5.9
3/31/2019				6.7	7.2
4/30/2019	318		373	5.2	6.4
5/31/2019	254		267	4.35	5.3
6/30/2019	264.5		276	4.6	5.5
7/31/2019	212		340	3.9	5.1
8/31/2019	306		334	8.1	9.5
9/30/2019	321		376	5.9	7.5
10/31/2019	195		125	3.55	3.9
11/30/2019				3.25	3.5
12/31/2019				2.75	2.8
1/31/2020				2.7	2.8
2/29/2020				3.5	4
3/31/2020				5.95	7.7
4/30/2020	368		542	5.2	6.2
5/31/2020	492		637	5.15	6.4
6/30/2020	295		316	5.15	5.3
7/31/2020	285		485	8.95	10
8/31/2020	40.35		40.5	6	6.1
9/30/2020		149	250	4.5	4.5
10/31/2020		199.5	206	5.2	5.2
11/30/2020				7.8	8.8
12/31/2020				5.45	5.9
1/31/2021				3.35	3.7
2/28/2021				5.7	6.5
3/31/2021				5.35	5.9
4/30/2021		123	177	4.85	5.8
5/31/2021		159	204	5.4	5.7
6/30/2021		251.5	263	3	3.3
7/31/2021		133	158	2.35	2.4

Outfall 001

Parameter	TP	TP	TP	Copper	Copper
	Monthly Ave	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	(lb/d)	(lb/d)	(lb/d)	(ug/L)	(ug/L)
Effluent Limit	236	Report	Report	24	Report
8/31/2021		636	826	3.3	3.4
9/30/2021		220	233	2.85	3.2
10/31/2021		178	237	3.7	3.7
11/30/2021				8.1	9
12/31/2021				6.2	6.4
1/31/2022				5.95	6.3
2/28/2022				4.9	5.7
3/31/2022				6.2	6.4
4/30/2022		228	241	4.95	5.1
5/31/2022		142	161	4.65	4.9
6/30/2022		316	349	4.7	4.9
7/31/2022		456	522	2.95	3
8/31/2022		317	344	3.95	4.1
9/30/2022		75	97	3.9	4.7
10/31/2022		891	1516	5.7	6.3
11/30/2022				4.05	4.1
12/31/2022				5.25	5.7
1/31/2023				3.9	4
2/28/2023				3.85	4.1
3/31/2023				3.1	3.2
4/30/2023		378	414	5.05	5.2
5/31/2023		124	192	2.55	2.8
6/30/2023		358	392	2.45	2.6
7/31/2023		189	196	2.85	3.5
8/31/2023		81	112	4.5	4.7
9/30/2023	70		78	3.05	3.3
10/31/2023	748		772	5.2	5.7
11/30/2023				4	4.3

WET Effluent

Parameter	LC50 Acute Ceriodaphnia	C-NOEC Chronic Ceriodaphnia	LC50 Acute Pimephales	Noel Statre 7Day Chronic Pimephales	Ammonia	Aluminum	Cadmium
	Monthly Ave Min	Monthly Ave Min	Monthly Ave Min	Monthly Ave Min	Daily Max	Daily Max	Daily Max
Units	(%)	(%)	(%)	(%)	(mg/L)	(mg/L)	(mg/L)
Effluent Limit	100	8.5	100	8.5	Report	Report	Report
Minimum	100	50	100	50	1.2	0.026	0
Maximum	100	100	100	100	19	0.26	0
Median	100	100	100	100	12	0.0485	Non-Detect
No. of Violations	0	0	0	0	N/A	N/A	N/A
12/31/2018	100	100	100	100	7.9	0.043	< .0002
3/31/2019	100	100	100	100	12	0.068	< .0002
6/30/2019	100	100	100	100	13	0.042	< .0002
9/30/2019	100	50	100	100	13	0.044	< .0002
12/31/2019	100	100	100	100	8.7	0.042	< .0002
3/31/2020	100	50	100	100	15	0.026	< .0002
6/30/2020	100	100	100	100	12	0.028	< .0002
9/30/2020	100	100	100	50	19	0.069	< .0002
12/31/2020	100	100	100	100	7	0.052	< .0002
3/31/2021	100	50	100	100	17	0.053	< .0002
6/30/2021	100	100	100	100	13	0.045	< .0005
9/30/2021	100	100	100	100	4.1	0.059	< .0005
12/31/2021	100	100	100	100	5.7	0.03	< .0005
3/31/2022	100	50	100	100	12	0.059	< .0005
6/30/2022	100	50	100	100	13	0.042	< .0005
9/30/2022	100	100	100	100	1.2	0.077	< .0005
12/31/2022	100	100	100	100	13	0.036	< .0005
3/31/2023	100	100	100	100	8.8	0.24	< .0005
6/30/2023	100	100	100	100	7.8	0.26	< .0005
9/30/2023	100	50	100	100	9	0.054	< .0005

WET Effluent

Parameter	Copper	Lead	Nickel	Zinc	Hardness
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Effluent Limit	Report	Report	Report	Report	Report
Minimum	0.0037	0	No Data	0.013	44
Maximum	0.012	0.0031	No Data	0.071	76
Median	0.0057	Non-Detect	No Data	0.0375	68
No. of Violations	N/A	N/A	N/A	N/A	N/A
12/31/2018	0.0066	< .001	< .005	0.071	67
3/31/2019	0.0078	< .001	< .005	0.04	76
6/30/2019	0.0077	< .001	< .005	0.04	68
9/30/2019	0.0055	< .001	< .005	0.037	62
12/31/2019	0.0051	< .001	< .005	0.026	76
3/31/2020	0.0039	< .001	< .005	0.028	65
6/30/2020	0.0055	< .001	< .0055	0.029	64
9/30/2020	0.0109	0.0006	< .005	0.025	71
12/31/2020	0.0057	< .0005	< .005	0.055	51
3/31/2021	0.0065	< .0005	< .005	0.049	69
6/30/2021	0.0057	< .0005	< .005	0.042	68
9/30/2021	0.0044	< .0005	< .005	0.025	52
12/31/2021	0.0037	< .0005	< .005	0.023	64
3/31/2022	0.0065	< .0005	< .005	0.038	68
6/30/2022	0.0058	< .0005	< .005	0.041	76
9/30/2022	0.0042	< .0005	< .005	0.024	74
12/31/2022	0.004	< .0005	< .005	0.0169	73
3/31/2023	0.012	0.002	< .005	0.064	70
6/30/2023	0.0114	0.0031	< .005	0.039	44
9/30/2023	0.0049	0.002	< .005	0.013	60

WET Ambient

Parameter	pH	Alkalinity	Hardness	Total Organic Carbon	Ammonia	Aluminum	Cadmium	Copper
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0	0	0
Maximum	0.85	0.85	0.85	0.85	0.85	0.37	0	0
Median	0.12	0.12	0.12	0.12	0.12	0.12	Non-Detect	Non-Detect
Quarter Ending								
12/31/2018	7.2	16	11	6.5	0.12	0.16	<0.0002	<0.002
3/31/2019	7.2	8	20	2.9	0.11	0.12	<0.0002	<0.002
6/30/2019	7.1	12	10	4.8	0.13	0.21	<0.0002	<0.002
9/30/2019	7.5	20	11	4.3	0.21	0.3	<0.0002	<0.002
12/31/2019	7.4	20	20	3.9	<0.1	<0.02	<0.0002	<0.002
3/31/2020	7.2	16	13	2.55	<0.5	0.061	<0.0002	<0.002
6/30/2020	7.5	16	16	2.8	0.35	0.096	<0.0002	<0.002
9/30/2020	7.5	16	15	3.41	0.41	0.034	<0.0002	<0.002
12/31/2020	7.4	12	14	6	0.16	0.27	<0.0002	<0.002
3/31/2021	7.1	12	15	3.3	0.26	0.062	<0.0002	<0.002
6/30/2021	7.8	12	11	3.8	<0.08	0.12	<0.0005	<0.002
9/30/2021	7.4	12	16	9.7	0.85	0.3	<0.0005	<0.002
12/31/2021	7.7	20	24	4.2	0.093	0.063	<0.0005	<0.002
3/31/2022	7.5	24	14	4.6	0.16	0.24	<0.0005	<0.002
6/30/2022	7.8	20	16	4	0.074	0.11	<0.0005	<0.002
9/30/2022	7.5	32	17	3.1	0.45	0.031	<0.0005	<0.002
12/31/2022	7.8	20	11	7.8	0.12	0.37	<0.0005	<0.002
3/31/2023	7.7	28	9	4	0.09	0.15	<0.0005	<0.002
6/30/2023	7.6	16	11	4.9	0.11	0.37	<0.0005	<0.002
9/30/2023	7.5	20	13	5.1	<0.06	0.14	<0.0005	<0.002

WET Ambient

Parameter	Lead	Nickel	Zinc
	Daily Max	Daily Max	Daily Max
Units	(mg/L)	(mg/L)	(mg/L)
Effluent Limit	Report	Report	Report
Minimum	0	No Data	0
Maximum	0.0007	No Data	0.071
Median	Non-Detect	No Data	Non-Detect
Quarter Ending			
12/31/2018	<0.001	<0.005	0.071
3/31/2019	<0.001	<0.005	<0.02
6/30/2019	<0.001	<0.005	<0.02
9/30/2019	<0.001	<0.005	<0.02
12/31/2019	<0.001	<0.005	<0.02
3/31/2020	<0.001	<0.005	<0.02
6/30/2020	<0.001	<0.005	<0.02
9/30/2020	<0.0005	<0.005	<0.005
12/31/2020	0.0007	<0.005	0.0056
3/31/2021	<0.0005	<0.005	<0.005
6/30/2021	<0.0005	<0.005	<0.005
9/30/2021	0.0007	<0.005	0.0053
12/31/2021	<0.0005	<0.005	<0.005
3/31/2022	<0.005	<0.005	0.0074
6/30/2022	<0.0005	<0.005	<0.005
9/30/2022	<0.0005	<0.005	<0.005
12/31/2022	0.0006	<0.005	0.0107
3/31/2023	0.0005	<0.005	<0.005
6/30/2023	0.0006	<0.005	0.005
9/30/2023	<0.0005	<0.005	<0.005

CSO Monitoring

CSO Outfall	11	18	31	39	43	44	45	46	47	50
Parameter	E. coli	E. coli	E. coli	E. coli	E. coli	E. coli	E. coli	E. coli	E. coli	E. coli
	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX
Units	(CFU/100m	(CFU/100m	(CFU/100m	(CFU/100m	(CFU/100m	(CFU/100m	(CFU/100m	(CFU/100m	(CFU/100m	(CFU/100m
Effluent Limit	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Minimum	2490	241960	No Data	No Data	2419.6	2400	1610	2400	1970	2419.6
Maximum	2490	241960	No Data	No Data	2419.6	241960	10462	86640	129970	241960
Median	Non-Dete	Non-Dete	No Data	No Data	Non-Detect	2490	2419.6	2490	2419.6	2419.6
No. of Violations	1	1	No Data	No Data	1	5	5	5	5	3
12/31/2018	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	241960	10462	86640	129970	241960
12/31/2019	NODI: C	241960	NODI: E	NODI: C	NODI: C	241960	1610	5200	1970	241960
12/31/2020	2490	NODI: C	NODI: E	NODI: C	NODI: E	2490	2490	2490	2490	NODI: C
12/31/2021	NODI: C	NODI: C	NODI: E	NODI: C	NODI: E	2400	2400	2400	2400	NODI: C
12/31/2022	NODI: C		NODI: E	NODI: C	2419.6	2419.6	2419.6	2419.6	2419.6	2419.6

CSO Monitoring

CSO Outfall	51	52	53	54	55
Parameter	E. coli	E. coli	E. coli	E. coli	E. coli
	MAX	MAX	MAX	MAX	MAX
Units	(CFU/100m	(CFU/100m	(CFU/100m	(CFU/100m	(CFU/100mL)
Effluent Limit	1000	1000	1000	1000	1000
Minimum	No Data	64.8	2400	2400	No Data
Maximum	No Data	241960	2400	14136	No Data
Median	No Data	2419.6	Non-Detect	2490	No Data
No. of Violations	No Data	3	1	5	No Data
12/31/2018	NODI: C	241960	NODI: C	14136	NODI: E
12/31/2019	NODI: C	241960	NODI: C	3450	NODI: C
12/31/2020	NODI: C	NODI: C	NODI: C	2490	NODI: C
12/31/2021	NODI: C	64.8	2400	2400	NODI: C
12/31/2022	NODI: C	2419.6	NODI: C	2419.6	NODI: C

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.

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

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

Where:

C_s = upstream concentration (median value of available ambient data)

Q_s = upstream flow (7Q10 flow upstream of the outfall)

C_e = effluent concentration (95th percentile or maximum of effluent concentration)

Q_e = effluent flow of the facility (design flow)

C_d = downstream concentration

Q_d = downstream flow ($Q_s + Q_e$)

Solving for the downstream concentration results in:

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

When both the downstream concentration (C_d) and the effluent concentration (C_e) exceed the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above the water quality standard. See 40 C.F.R. § 122.44(d). When EPA determines that a discharge causes, has the reasonable potential to cause, or contribute to such an excursion, the permit must contain WQBELs for the parameter. See 40 C.F.R. § 122.44(d)(1)(iii). Limits are calculated by using the criterion as the downstream concentration (C_d) and rearranging the mass balance equation to solve for the effluent concentration (C_e). Refer to the pollutant-specific section of the Fact Sheet for a discussion of these calculations, any assumptions that must be made and other relevant permit requirements.

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.

Appendix B – Reasonable Potential and Limits Calculations

NPDES Permit No. NH0100447

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	Conc. Units	Q _s (MGD)	C _s ¹	Q _e (MGD)	C _e ²		Q _d (MGD)	C _d		Criteria * 0.9		Reasonable Potential		Limits	
					Acute	Chronic		Acute	Chronic	Acute	Chronic	Acute	Chronic	Acute	Chronic
Aluminum	µg/L	436	130	34	132.5	132.5	470	130.2	130.2	912.2	105.8	N	Y	N/A	118
Cadmium	µg/L	436	0	34	0.0	0.0	470	0.0	0.0	0.4	0.2	N	N	N/A	N/A
Copper	µg/L	436	0	34	7.5	24.0	470	0.5	1.7	2.8	2.1	N	Y	N/A	24.0
Lead	µg/L	436	0	34	2.7	2.7	470	0.2	0.2	9.5	0.4	N	N	N/A	N/A
Nickel	µg/L	436	0	34	0.0	0.0	470	0.0	0.0	108.2	12.0	N	N	N/A	N/A
Zinc	µg/L	436	0	34	67.5	67.5	470	4.9	4.9	27.6	27.6	N	N	N/A	N/A
Ammonia (Cold)	mg/L	436	0.12	34	17.4	17.4	470	1.4	1.4	12.0	2.9	N	N	N/A	N/A
Ammonia (Warm)	mg/L	436	0.17	34	21.8	21.8	470	1.74	1.74	5.5	0.91	N	Y	N/A	10.4

¹Median concentration for the receiving water just upstream of the facility's discharge taken from the WET testing data during the review period (see Appendix

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

APPENDIX C

I. Rationale on the Appropriateness of, and the Authority for, the Inclusion of the Wastewater Treatment System and Sewer System Adaptation Plan Requirements

The adaptation planning requirements proposed in the Draft Permit are new requirements that build on existing operation and maintenance practices. EPA provides this appendix to further explain the basis for and importance of these provisions.

In Section A below, EPA discusses the necessity for requiring the development of Adaptation Plans at wastewater treatment systems (“WWTS”) and sewer systems¹ and provides some examples of how major storm and flood events can impact facility operations. In Section B below, EPA discusses the various components and proper scope of an Adaptation Plan. In Section C below, EPA sets forth the legal basis for its decision to require wastewater treatment systems and sewer systems to develop an Adaptation Plan.

A. Necessity for Wastewater Treatment System and Sewer System Adaptation Planning

Wastewater treatment systems and sewer systems are crucial in helping protect human health and the environment and providing critical services to the communities that they serve. Many wastewater treatment facilities and associated sewer system pump stations are located at low elevations (to maximize flow via gravity) within riverine or coastal floodplains and are at risk of increased flooding and other impacts from major storm events. As noted in a 2016 report by the New England Interstate Water Pollution Control Commission² wastewater systems are already facing severe effects due to major storm and flood events and need to better adapt to this new reality:

In the Northeast and throughout the world, extreme storm events are growing in frequency and force. Hurricanes and blizzards threaten the operation of wastewater infrastructure and in some cases the infrastructure itself. Consequently, wastewater facilities should be made more resilient through preparedness planning and physical upgrades.

¹ The Clean Water Act authorizes EPA, as permit issuer, to issue permits for “publicly owned treatment works” (POTWs). CWA § 402. POTWs comprise wastewater treatment systems and sewer systems. 40 C.F.R. §§ 122.2, 403.3(q); *In re Charles River Pollution Control District*, 16 EAD 623, 635 (EAB 2015) (“POTW treatment plants, like the satellite sewage collection systems that convey wastewater to the plants, are components of a POTW.”) To more precisely and accurately describe the permit requirements, the Permit and this Response to Comments refer to “wastewater treatment system(s)” and “sewer system(s)” or, in some instances, both.

“Wastewater Treatment System” or “WWTS” means any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It does not include sewers, pipes and other conveyances to the wastewater treatment facility.

² “Preparing for Extreme Weather at Wastewater Utilities: Strategies and Tips, New England Interstate Water Pollution Control Commission” (September 2016) pg. 2, https://www.neiwpcc.org/neiwpcc_docs/9-20-2016%20NEIWPCC%20Extreme%20Weather%20Guide%20for%20web.pdf

In the Northeast in the last five years Hurricanes Irene (2011) and Sandy (2012), and winter blizzards such as the February 2013 nor'easter, produced widespread economic harm. Sandy caused nearly 11 billion gallons of sewage to be released into coastal waters, rivers, and other bodies of water as power outages and storm surge overwhelmed wastewater-treatment plants. 94% of these releases were a result of flooding and storm surge as waters overwhelmed sewage-treatment plants.

As a result, addressing the ongoing challenges and the increasing risks faced by wastewater infrastructure systems nationwide - reduction or failure of system services resulting in discharges of untreated or partially treated sewage, flooding, physical damage to assets, impacts to personnel, to name just some of the possible outcomes - are a priority for EPA and a host of federal and state agencies, as well as regional and local governmental bodies. Addressing these challenges is also a priority for many wastewater treatment managers across the country. As noted in a 2019 study,³ which surveyed wastewater treatment systems in Connecticut, 78% of wastewater managers had made adaptive changes that ranged from low-cost temporary adaptive changes to a few who described major changes that addressed redesign or the rebuilding of WWTPs; of those who had made changes, half “did so to improve resiliency to withstand the worst storm experienced by the wastewater system to date.”⁴

Flooding and other major storm events can lead to a variety of, and more frequent, WWTS and sewer system failures. One recent analysis suggests that one-third of 5,500 wastewater treatment plants analyzed from around the country would be at risk of flooding in the event of a major storm.⁵ System failures, such as backups of untreated wastewater into the collection system and potentially into buildings and connections, bypasses of pollution treatment, and/or discharges of raw sewage into the environment are some of the potential impacts that may become more frequent.⁶

³ “Kirchhoff, C.J. and P.L. Watson. 2019. “Are Wastewater Systems Adapting to Climate Change?” *Journal of the American Water Resources Association*, 1-12. pg. 1. <https://doi.org/10.1111/1752-1688.12748>. (Citations omitted in quote).

⁴ *Id.* at pgs. 5, 8.

⁵ “Rising Flood Risks Threaten Many Water and Sewage Treatment Plants Across the U.S.” (August 10, 2023), <https://apnews.com/article/climate-change-flood-risks-infrastructure-vermont-7bd953f513035468ee74f8f7c619bb8e>

⁶ See EPA’s *Resilient Strategies Guide* (noting that “[u]tilities are increasingly recognizing that future extreme weather events, energy prices and ecological conditions may not be predictable based on historical observations. These shifts may require utilities to change how they operate and manage their resources.”) <https://www.epa.gov/crwu/resilient-strategies-guide-water-utilities#/resources/646>; EPA Memorandum, “Re-Instatement of Federal Flood Risk Management Standard for State Revolving Fund Programs,” Thompkins, Anita Maria and Stein, Raffael to Water Division Directors (April, 2022) <https://www.epa.gov/dwsrf/federal-flood-risk-management-standard-srf-programs> (noting that “[f]looding is one of the most common hazards in the United States accounting for roughly \$17 billion in damage annually between 2010-2018 according to [FEMA], and it will continue to be an ongoing challenge for water infrastructure” with impacts that “can include physical damage to assets, soil and streambank erosion and contamination of water sources, loss of power and communication, loss of access to facilities, saltwater intrusion, and dangerous conditions for personnel.”). See also, National Association of Clean Water Agencies (“NACWA”), “NACWA Principles on Climate Adaptation and Resiliency” (noting that “[f]or many clean water agencies, changing weather patterns have become a management reality and responsibility.”) https://www.nacwa.org/docs/default-source/conferences-events/2018-ulc/nacwa-statement-of-principles-on-climate_.pdf?sfvrsn=2

In New England, as well as elsewhere throughout the country,⁷ storms and flooding have caused damage to, and in some cases total failure of, wastewater treatment systems and sewer systems. Implementing adaptive measures so that a wastewater treatment plant's wastewater infrastructure may withstand increasingly frequent heavy precipitation and major storm and flood events is, therefore, a critical step in a system's maintenance. Additionally, EPA notes that sometimes, mitigation measures based on adaptation/mitigation plans that were at one point sufficient and that were based on historic, local major storm and flood predictions, may now be insufficient given actual experience with major storms and flooding, the emergence of new data that was not previously available, and more recent projections. And while EPA also acknowledges that it may not always be possible to anticipate all future events (i.e., speed or direction of the wind, temperature fluctuations, the uprooting of trees, etc.) that can exacerbate, or alleviate, the outcomes of major storm and flood events, as illustrated in the examples below, it is important to ensure that existing adaptation plans reflect, as best as possible, all relevant data.

Many New England WWTSs have been negatively impacted by major storm and flood events in recent years. In one notable example from Rhode Island in 2010, historically high flood waters (known as "the Great Flood of 2010") severely impacted several wastewater treatment facilities, including the Warwick Rhode Island Wastewater Treatment Facility.⁸ After repetitive flood damages to the WWTS, the City of Warwick had constructed a protective berm, or levee, in the mid-1980s to protect the WWTS from future damages. The levee, originally designed for the 100-year flood at that time, plus three feet of freeboard, was breached by repeated heavy rain events in March 2010. The flooding caused catastrophic impacts to the WWTS which led to the "unthinkable" - the decision to evacuate the plant as the Pawtuxet River crested at 20.79 feet.⁹ The impact to the treatment plant was extreme:

While the flood waters caused no structural damages to the facility's tanks or buildings, anything electrical and everything that was not metal or concrete was ruined. It was at least two days before the river had subsided to the point where staff could begin to access the facility.¹⁰

With a tremendous amount of work and rebuilding, the facility was dewatered, and primary and then secondary treatment were restored. The facility was unable to achieve full compliance with its permit limits for a period of about 80 days.¹¹ Due to this flooding, the facility updated their flood protection plans based on local storm and flooding data and implemented improvements

⁷ National Association of Clean Water Agencies ("NACWA") Fact Sheet: "10 Extreme Rain and Flood Events in the US – All in 2022" (listing the "top 10 flood events of 2022" and their effects on water infrastructure from across the country, including the devastating impacts that include loss of life, estimated damages in the range of millions to billions of dollars, and extreme impacts to system services.)

⁸ Holbrook, Nicolas Q., The Flood Crews of 2010: A History of Rhode Island's 2010 Floods as Told By The State's Wastewater Collection and Treatment Operators, Rhode Island DEM, Office of Water Resources (2017) <https://dem.ri.gov/sites/g/files/xkgbur861/files/programs/benviron/water/pdfs/floodcrews2010.pdf>

⁹ Id. at 13.

¹⁰ Id.

¹¹ Burke, Janine L., Executive Director, Warwick Sewer Authority, "The Great Flood of 2010: A Municipal Response," pg. 237 Journal NEWEA (September 2012) <https://www.warwicksewerauthority.com/pdfs/floodmitigation/NEWEA%20Journal%20Article%20on%20WSA%20Flood%20Response.pdf>

for the WWTS, including raising the levee to protect the WWTS from inundation caused by a 500-year flood event.¹²



Figure 1: The flooded Warwick wastewater facility on Wednesday, March 31, 2010. (State of Rhode Island)

More recently, in July 2023, Vermont experienced a major storm and flooding event characterized by the National Weather Service as “catastrophic flash flooding and river flooding” with upwards of three to nine inches of rain falling in 48 hours, an amount that in some places of Vermont, amounted to the “greatest calendar day rainfall “since records began in 1948.”¹³ According to local reporting, operations at 33 wastewater treatment systems were disrupted, and several facilities, like those in the towns of Ludlow and Johnson, were rendered inoperable and will need significant reconstruction.¹⁴ As one news outlet reported about the conditions in Ludlow:

[t]he facility that keeps the village’s drinking water safe was built at elevation and survived. But its sewage plant fared less well. Flooding tore through it, uprooting chunks of road, damaging buildings and sweeping sewage from treatment tanks into the river.

¹² Preliminary Design Report, Wastewater Treatment Facility Flood Protection and Mitigation Design, Warwick, Rhode Island (Prepared by AECOM for Warwick Sewer Authority, July 12, 2012) <https://www.warwicksewerauthority.com/pdfs/floodmitigation/Warwick%20Flood%20Mitigation%20PDR%207-24-12%20with%20Appendices.pdf>; [Warwick Wastewater Treatment Facility – Climate Vulnerability Summary https://dem.ri.gov/sites/g/files/xkgbur861/files/programs/benviron/water/pdfs/cvswarwick.pdf](https://dem.ri.gov/sites/g/files/xkgbur861/files/programs/benviron/water/pdfs/cvswarwick.pdf)

¹³ Banacos, Peter, “The Great Vermont Flood of 10-11 July 2023: Preliminary Meteorological Summary” National Oceanic and Atmospheric Administration, National Weather Service, pg. 2 (August 5, 2023) <https://www.weather.gov/btv/The-Great-Vermont-Flood-of-10-11-July-2023-Preliminary-Meteorological-Summary> (noting that damage “rivaled and in some areas exceeded – Tropical Storm Irene in 2011”)

¹⁴ Robinson, Shaun, “Total Destruction:’ Flooding Knocks Out Johnson’s Wastewater Plant, Disrupts Operations Elsewhere” (July 18, 2023); <https://vtdigger.org/2023/07/18/total-destruction-flooding-knocks-out-johnsons-wastewater-plant-disrupts-operations-elsewhere/> (“Across Vermont, 33 wastewater treatment facilities were impacted by the flooding ...according to Michelle Kolb, a supervisor in the state Department of Environmental Conservation’s wastewater program.”)

Even [over three weeks after the storm event] the plant can only handle half its normal load.¹⁵



Figure 2: Ludlow Wastewater Treatment Plant (photo August 2, 2023, taken after July storm event)¹⁶

The wastewater treatment plant in Johnson, Vermont was similarly devastated with the Assistant Plant Manager reporting to a local news outlet, “Total destruction. The only thing we have left is the shell of a building.”¹⁷

According to officials from Vermont DEC, both the Ludlow and Johnson WWTs had some flood protections in place prior to this event: Ludlow built a new influent pump station designed to withstand a 500-year flood event in 2020-21.¹⁸ While its plant was rendered inoperable immediately after the early July flood, it came back on-line in late July. For the Johnson Wastewater Treatment Plant, this was the 6th flooding event at the plant since it was built in 1995. In the assessment that occurred by state and federal officials after the most recent flood, long-term recommendations ranged from more minor fixes (i.e., replacing the gravity line with a pump station and force main) to undertaking an assessment that would compare the cost of moving the facility against the already-significant cost of just repair and construction, estimated

¹⁵ Naishadham, Suman, Peterson, Brittany, Fassett, Carnille, “Rising Flood Risks Threaten Many Water and Sewage Treatment Plants Across the US,” Vermont Public, <https://www.vermontpublic.org/local-news/2023-08-10/ludlow-vermont-rising-flood-risks-threaten-many-water-and-sewage-treatment-plants-across-the-us>

¹⁶ <https://apnews.com/article/climate-change-flood-risks-infrastructure-vermont-7bd953f513035468ee74f8f7c619bb8e> (picture captions: Joe Gaudiana, the Ludlow, VT. Chief Water and Sewer Operator, left, surveys damage with Elijah Lemieux, of the Vermont Rural Water Association, at the wastewater treatment plant following July flooding, Wednesday, Aug. 2, 2023, in Ludlow. (AP Photo/Charles Krpa))

¹⁷ Robinson, Shaun, “Total Destruction: ‘Flooding Knocks Out Johnson’s Wastewater Plant, Disrupts Operations Elsewhere’ (July 18, 2023); <https://vtdigger.org/2023/07/18/total-destruction-flooding-knocks-out-johnsons-wastewater-plant-disrupts-operations-elsewhere/>

¹⁸ Telephone conversation with Vermont Department of Conservation officials, Heather Collins and Michelle Kolb (September 25, 2023).

to be at least \$2 million.¹⁹ As the officials emphasized, short of relocating, or finding significant additional resources, for some of Vermont’s impacted facilities, there are no easy fixes and future adaptations might mean preparing “to-go bags,” and installing “redundant pipes,” submersible pumps, waterproof electrical boxes or, in some cases, possibly building a second story on an existing plant.

Even more recently, in September 2023 the City of Leominster in central Massachusetts experienced a flash flooding event.²⁰ Previously, the city had identified a riverbank section of the North Nashua River, near the WWTs, that had eroded and was continuing to be eroded and was heading towards a buried sewer main. As detailed in the summary of work report,²¹ “[l]eft unabated, the stream would likely carve a new path into the sewer line, potentially causing a break.” To mitigate this potential problem, the city completed a riverbank stabilization project under FEMA’s Hazard Mitigation Grant Program to protect the main sewer line that was identified as vulnerable to flooding and failure. That line was unimpacted by the recent flash flooding in September and the stabilization work is still intact while other infrastructure in the area suffered significant flood damages. In addition to illustrating the potential impacts of a recent flooding event on a WWTF, this example - of identifying a risk to increased flooding and consequent mitigation measure - exemplifies the process that EPA envisions for the Adaptation Plan.

EPA acknowledges and appreciates that many WWTs and sewer systems are currently designed with some flood protections to combat the increasing frequency of major storm and flood events and the resulting impacts to wastewater treatment systems and sewer systems. To address the current and future risks associated with these more frequent and intense storms occurring in the region, EPA finds that the development of an Adaptation Plan is necessary in order to ensure the proper operation and maintenance of WWTs and sewer systems.

B. Requirement to Develop an Adaptation Plan

To support the Permittee’s²² development of an Adaptation Plan, EPA Region 1 has developed a companion document: *Recommended Procedures and Resources for the Development of Adaptation Plans* (“Recommended Procedures”)²³ to assist owners and operators of wastewater treatment systems and/or sewer systems to develop adaptation plans that meet the requirements included in Region 1 NPDES permits. The document provides recommendations and procedures for the use of a free EPA tool developed specifically for water utilities. Permittees may use the recommended tool and the associated procedures, or they may use other approaches providing comparable analyses, as discussed in more detail below, to satisfy permit requirements.

¹⁹ Johnson Village Wastewater Post July 2023 Flood Treatment Plant Assessment Lamoille County, Vermont, NPDES Permit Number Vermont 0100901 (August 9, 2023)

²⁰ Derrick Bryson Taylor and Johnny Diaz, “Massachusetts Cities Declare Emergency After ‘Catastrophic’ Flash Flooding” <https://www.nytimes.com/2023/09/12/us/leominster-massachusetts-flash-flooding.html>

²¹ City of Leominster, North Nashua River Riverbank Stabilization Project: Summary of Work (prepared by GZA GeoEnvironmental, Inc.) (February 2023)

²² For brevity, this document refers to “Permittee” throughout; however, this reference also includes all “Co-Permittee(s)” subject to the applicable permit requirements.

²³ Available at: <https://www.epa.gov/npdes-permits/npdes-water-permit-program-new-england>

In the permit, the three components of the Adaptation Plan include the following (additional detail, including definitions of certain terms, is included in the permit):

- Component #1: Requires the Permittee to develop and sign, within 24 months of the effective date of the permit, an identification of critical assets and related operations within the WWTS and/or sewer system which they own and/or operate that are most vulnerable to major storm and flood events under baseline and future conditions and to assess the ability of each to function properly in the event of major storm and flood events in terms of effluent flow, sewer flow, and discharges of pollutants;
- Component #2: Requires the Permittee to develop and sign, within 36 months of the effective date of the permit, an assessment of adaptive measures, and/or, if appropriate, the combination of adaptive measures that minimize the impact of future conditions on the critical assets and related operations of the WWTS and/or sewer system(s); and
- Component #3: Requires the Permittee to submit a summary of the work completed in Components #1 and #2 with a proposed schedule for implementation and maintenance of adaptive measures within 48 months of the effective date of the permit.

The rationale for specific revisions and definitions is provided in more detail below.

- The permit requires the Permittee to develop an implementation schedule rather than specify a particular schedule for implementation. EPA notes that the permit also requires that the Permittee report annually on “any progress made toward implementation of adaptive measures.” This leaves the Permittee free to evaluate other considerations when determining when and how to implement adaptive measures. EPA encourages Permittees to move forward with implementation actions that address the vulnerabilities identified as part of its Adaptation Plan in as timely a manner as possible and to prioritize addressing the most impactful vulnerabilities.²⁴
- Permittees who wish to comply with this permit requirement through prior assessments must explain how its prior assessments specifically meet the requirements of the permit. The permit allows such assessments that were undertaken in the last 5 years to be used, as long as they meet certain conditions specified in the permit.
- EPA uses certain minimum standards (e.g., use of FEMA Flood Standards) and other terminology that is defined in and consistent with the federal flood standards, to ensure

²⁴ EPA notes that there are many aspects involved in addressing adaptation planning and associated implementation measures, including regional considerations and that region-wide planning is appropriate. Permittees are encouraged to engage in regional planning and EPA understands this may impact proposed schedules for implementation measures. EPA expects, however, that for most Permittees there will be many implementation measures that do not require regional planning or collaboration. To the extent this is not the case, the Permittee may document its analysis supporting such a conclusion and base its implementation schedule accordingly.

eligibility for federal funding as well as SRF funding.²⁵ The permit requires that the Permittee evaluate asset vulnerability using “baseline conditions” and “future conditions.” The permit defines baseline conditions as the 100-year flood based on historical records and future conditions as projected flood elevations using one of two approaches consistent with the federal flood standards.

This clearly defines what minimum conditions must be used to assess vulnerability under the Adaptation Plan, and EPA has provided tools and data references a Permittee may use to evaluate these conditions and meet the permit requirements. The flood elevations specified account for many of the storm and flood conditions; however, EPA notes that these data may not account for all potential instances of extreme precipitation. Currently, data sets or mapping tools that model changes to flood elevations in response to varying storm sizes are not readily available or simple to use. Therefore, EPA is not requiring facilities to identify or use such data in their analysis. However, EPA notes that there may be site-specific data available for use in a given municipality, and EPA encourages facilities to consider impacts from site-specific events for planning purposes if possible. One or more of the resources provided in the Recommended Procedures document, referenced above, may also account for impacts of extreme precipitation to an extent that is useful to facilities.

- The permit requires evaluating the vulnerability of assets once during the permit term (during the development of the Adaptation Plan). Additional revisions of the Adaptation Plan during the permit term would only be required during the permit term if there has been a significant change to the infrastructure of the system to update the description of the assets removed or updated, to incorporate any new assets into the documentation, and describe any effects these changes have on the asset and/or system vulnerability.
- In light of security concerns posed by the public release of information regarding vulnerabilities to wastewater infrastructure, Permittees are not required to submit Component 1 and 2 and instead must keep that documentation on file and available for inspection or review by EPA upon request. In all other submittals (Component 3 and future annual reports), the Permittee shall provide information only at a level of generality that indicates the overall nature of the vulnerability but omitting specific information regarding such vulnerability that could pose a security risk.
- Regarding timing, EPA considers that the permit allows adequate time to initiate the necessary funding and procurement processes (which EPA understands must line-up with local requirements which can take place over many months or even years) in order to develop the plans (either in-house or through professional engineering services) without significantly impacting other ongoing municipal projects.

²⁵ “Re-Instatement of Federal Flood Risk Management Standard for State Revolving Fund Programs,” Thompkins, Anita Maria and Stein, Raffael to Water Division Directors (April, 2022) <https://www.epa.gov/dwsrf/federal-flood-risk-management-standard-srf-programs>

- Regarding annual reporting, the first report is due on March 31 following the completion of Component 1 of the Adaptation Plan. As described above, flood and major storm events are a significant threat to water quality. An annual reporting requirement is therefore appropriate to facilitate Adaptation Planning and, ideally, the implementation of an Adaptation Plan occurring as promptly and as efficiently as possible.
- Regarding the cost of developing the Adaptation Plan, there are costs and other resources that Permittees must allocate to comply with all permit requirements. EPA considers proper operation and maintenance of the WWTs as well as the collection system to include addressing major storm and flood events that would impair operation of the system. EPA acknowledges that the Permittee will incur costs and other potential resource expenditures to develop a plan related to these events but considers these expenditures to be necessary in order to prevent impacts during such events (e.g., bypass, upset or failure of the WWTs, overflow, or increased inflow and infiltration in the sewer system, and discharges of pollutants that exceed effluent limits), which would adversely affect human health or the environment.

However, EPA appreciates the regulated community's concerns regarding costs as described below.

1. In order to minimize costs and provide additional clarity to Permittees, EPA has developed a companion document, *Recommended Procedures and Resources for the Development of Adaptation Plans for Wastewater Treatment Systems and/or Sewer Systems*, ("Recommended Procedures"), which a Permittee could elect to use to guide it through development of the Adaptation Plan. The document instructs Permittees on the use of EPA's CREAT tool, which is free to use by Permittees and will help Permittees navigate through much of the analysis needed to develop an Adaptation Plan. It is EPA's intention that a Permittee could use these tools to develop an Adaptation Plan in an effort to reduce costs and possibly to eliminate or reduce the need to hire external contractors.
2. As mentioned above, the permit that allows credit for prior work to eliminate potentially costly duplication of efforts.
3. It is EPA's intention to provide Permittees with technical assistance for the development of the Adaptation Plan. EPA has many on-line training tools,²⁶ some of which have been utilized by New England WWTs²⁷ and also plans (in accordance with available funding and agency priorities) to offer: a New England-based virtual workshop training series for WWTs operators and others on the use of the CREAT tool which EPA expects will commence in early 2024 (which will be recorded to maximize its utility for those who may want to access the information at a later date);

²⁶ <https://www.epa.gov/crwu/training-and-engagement-center>; see also, the Resources Section in the *Recommended Procedures* for additional resources that Permittees might find useful.

²⁷ See https://toolkit.climate.gov/sites/default/files/Manchester-by-the-Sea_March_2016.pdf;]; see also, the Resources Section of the *Recommended Procedures* document for more New England case studies and other useful resources.

in-person technical assistance sometime in mid-2024 and telephone assistance on the use of the CREAT tool. In recommending Permittees use this tool and by providing procedures for using it, EPA hopes to both enable Permittees to develop robust Adaptation Plans themselves, but also to reduce the costs, including the costs associated with outside contractors.

4. Additionally, EPA notes that there may be federal, state or local funding sources available to assist entities with adaptation planning.²⁸
- With regards to the cost of implementing adaptation measures, the selection and deadlines for implementing specific adaptation measures are not included as requirements in the permit since those will only be known after the completion of the Adaptation Plan. EPA expects that the Permittee will begin implementation of those measures in the coming years. However, since the Permittee will be setting the prioritizations and scheduling for implementing the measures based on their own risks and vulnerabilities to major storm and flood events, they may incorporate affordability and funding availability into their considerations.

EPA notes, that in developing the Adaptation Plan, the Permittee may, as part of the process, be comparing the potential economic costs of the baseline condition, or “no action alternative,” with those of possible adaptation measures, under current and predicted risks of major storm and flood events. This option is available in the use of the adaptation planning approach as outlined in the companion document to this permit entitled *Recommended Procedures and Resources for the Development of Adaptation Plans for Wastewater Treatment Systems and/or Sewer Systems*.²⁹ Depending on site-specific circumstances, the Permittee may find that the cost of not implementing adaptation measures is greater than the cost of implementing them.

C. Legal Authority

The Adaptation Plan permit conditions are necessary to further the overarching goal of the CWA³⁰ “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” and derive from the same authorities as all other standard operation and maintenance requirements. CWA § 101(a), 40 C.F.R. §§ 122.41(d), (e), (n). The Adaptation Plan requirements are an iterative update to EPA’s standard O&M permit provisions and intend to address serious and increasingly prevalent threats to Permittees’ compliance with permit effluent limitations. As illustrated by the recent examples detailed in Section A, major storm and flood events can

²⁸ See EPA’s website for [Federal Funding for Water and Wastewater Utilities in National Disasters \(Fed FUNDS\)](https://www.epa.gov/fedfunds). <https://www.epa.gov/fedfunds>. Potential resources may also be available through the State of Massachusetts.

²⁹ Available at: <https://www.epa.gov/npdes-permits/npdes-water-permit-program-new-england>

³⁰ Congress has recently expressly affirmed that natural hazard adaptation measures for POTWs appropriately fall within the scope of the CWA: Congress added section 223 to the CWA via the Infrastructure Investment and Jobs Act, creating a grant program to support, *inter alia*, “the modification or relocation of an existing publicly owned treatment works, conveyance, or discharge system component that is at risk of being significantly impaired or damaged by a natural hazard[.]” Pub. L. 117-58, 135 Stat. 1162 (codified at 33 U.S.C. § 1302a(c)(4))(2021).

gravely impact discharges from WWTSS and thus water quality. That is, plant and/or sewer system failure due to storms, increased precipitation/floods, storm surge, and sea level rise can and do lead to bypasses, upsets, and violations of some or all of the permit limits, including water quality-based limits and limits based on secondary treatment standards. The Adaptation Plan is designed to reduce and/or eliminate noncompliant discharges that result from impacts of major storm or flood events through advanced planning and adaptation measures and is authorized by both EPA regulations and the CWA.

EPA recognizes that larger scale planning may be necessary to address some issues and that requiring the same would be beyond the scope of this NPDES permit. This NPDES permit does not intend to address all issues caused by major storm and flood events. To the contrary, the Adaptation Plan O&M requirements intend to address one specific issue that EPA has witnessed in New England, as described in Section A: the operability of the WWTSS and/or sewer system during and after major storm and flood events. This issue is appropriate for an NPDES permit because it is central to the Permittee's compliance with the Permit's effluent limitations and other Permit conditions, and thus central to EPA's obligation to issue permits that assure compliance with Water Quality Standards and other applicable laws. For the reasons described in this Section, EPA is well within its CWA-based authority to impose the Adaptation Plan requirements.

EPA's O&M regulations authorize EPA to impose the Adaptation Plan requirement. 40 C.F.R. § 122.41(e) ("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 of the permitted facilities and systems inherently includes adaptation planning. As illustrated in the examples in Section A, if a WWTSS is unable to operate properly as designed due to impacts from a major storm or flood event, the discharge of pollutants in violation of both its permit and applicable water quality standards is highly likely to occur and with increasing frequency. In other words, the Permittee cannot satisfy its obligation to operate properly "at all times" if it cannot do so during and after major storms or flooding events. The new Adaptation Plan requirements are an iterative extension of the previous permit's requirements that "The permittee will maintain an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure." Major storm and flood events represent an increasing cause of WWTSS malfunctions and failures and thus EPA added the Adaptation Plan requirements to the O&M requirements to more specifically address this issue.

EPA is well within its CWA-based authority to include these permit conditions which are necessary to reduce the frequency or likelihood of bypass or upset and otherwise achieve compliance with the permit's effluent limits, and thus also assure compliance with water quality standards and other CWA requirements. CWA § 402(a)(2) ("[EPA] shall prescribe conditions for [NPDES] permits to assure compliance with the [applicable CWA] requirements...as he deems appropriate."); CWA §§ 301(b)(1)(C), 401(a)(1)-(2); *see also* 40 C.F.R. § 122.4(d) ("No permit may be issued... When the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States"); *See also* 40 C.F.R. § 122.44(d)(1). The provisions are reasonable measures rooted in the permitting requirements to properly operate

and maintain all facilities and the duty to take all reasonable steps to minimize or prevent any discharge in violation of the permit. 40 C.F.R. § 122.41(d), (e).

The Agency relied on the same CWA-based authority when it promulgated the O&M regulations:

Many commenters expressed doubt whether EPA is legally authorized to require proper operation and maintenance of facilities. This requirement is clearly authorized for NPDES permittees by section 402(a)(2) of CWA which requires the Administrator to prescribe permit conditions which will assure compliance with the requirements of CWA section 402(a)(1).

45 Fed. Reg. 33290, 33303-04 (May 19, 1980). In 1980 and now, the proper operation and maintenance of a facility – including the Adaptation Plan requirements – effectuates the permit limits on all addressed pollutants and protects all applicable water quality standards, as they assure that such limits will be met, even in times of major storms or during flood events. CWA § 402(a)(2). It is well-established that EPA may include specific permit conditions that ensure the preconditions or assumptions underlying EPA’s pollutant effluent flow calculations remain constant, thus ensuring the permit, as a whole, assures compliance with WQS and other applicable CWA requirements. *See In re: City of Lowell*, 2020 WL 3629979 at *35, 18 E.A.D. 115, 156 (EAB 2020) (affirming effluent flow limit as a proper exercise of the Agency’s 40 C.F.R. § 122.41(e) authority in part on the basis that the permit’s pollutant effluent limits were calculated based on a presumed maximum wastewater effluent discharge from the facility, and thus “If flow limits exceed the assumed maximum flow, ... then the Region may have erroneously concluded that a pollutant did not have a reasonable potential to cause or contribute to an exceedance of water quality standards or that the permit’s pollutant effluent limits assure compliance with Massachusetts’ water quality standards.”) Likewise, the Adaptive Plan O&M requirements ensure the basic, necessary preconditions (i.e., the plant’s operability) to compliance with the permit’s effluent limits and other requirements of the CWA. Given the importance of WWTS and sewer system operability to compliance with this NPDES permit, it is not unreasonable for EPA to impose the Adaptation Plan O&M requirements. *C.f. In re Avon Custom Mixing Services, Inc.*, 17 E.A.D. 700, 709 (EAB 2002) (“Given the importance of monitoring to the integrity of NPDES permits, and the broad authority the CWA confers on the Region to impose monitoring requirements in NPDES permits, it does not strike us as unreasonable that the Region has decided to include new monitoring requirements in the reissued permit.”)

The EAB has affirmed the Agency’s authority to require the preparation and submission of a plan as part of the Operation & Maintenance requirements of an NPDES permit. *In Re City of Moscow, Idaho*, 10 E.A.D. 135, 169-172 (EAB 2001) (affirming O&M permit provision that required development and submission of a quality assurance project plan, “[t]he primary purpose of [which] shall be to assist in planning for the collection and analysis of samples in support of the permit...”³¹ under the O&M regulations, stating “it seems plain that the CWA and its implementing regulations authorize the Region to include permit requirements like the QAPP here in conjunction with the ultimate goal of assuring compliance with the CWA.”). Like the

³¹ NPDES Permit issued to City of Moscow, Idaho, Part I.E (March 12, 1999) (available at: <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/15509>)

O&M planning requirement in *Moscow*, the primary purpose of the Adaptation Plan in this permit is to assist in planning for compliance with the permit – in this instance, by ensuring the facility remains operable even during flooding or other major storm events – and the ultimate goal of the requirement is to assure compliance with the CWA.

40 C.F.R. § 122.41(d) also authorizes EPA to impose the Adaptation Plan requirement. (“Duty to mitigate. The Permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.”) It is a reasonable step for EPA to require a Permittee to create an Adaptation Plan to minimize facility disruptions during major storm and flood events. For example, if a Permittee identifies that an asset critical to its WWTs is extremely vulnerable to a major storm and that loss of the asset would result in the inoperability of the WWTs and thus discharges in violation of permit limits, then mitigating those risks reasonably minimizes or prevents harmful discharges in violation of the permit.

EPA also has broad authority for data and information collection, reporting, and “such other requirements as [the delegated permit authority] deems appropriate” to carry out the objectives of the Act.” CWA § 402(a)(2). *See also In re Moscow*, 10 E.A.D. at 171. Components 1 and 2 of the Adaptation Plan require the Permittee to collect and report to EPA data and information that are appropriate to carry out the objectives of the CWA. This information and data will allow the Permittee to identify assets which are vulnerable to flooding and adaptive measures appropriate to address those vulnerabilities. As described elsewhere in this Appendix, facility vulnerabilities threaten compliance with permit requirements and thus CWA objectives. Conversely, information about appropriate adaptive measures will facilitate compliance with both.

EPA notes that although the CWA limits the terms of NPDES permits to five years, CWA § 402(b)(1)(B), such a limitation does not logically constrain the permitting authority from requiring the Permittee to consider future conditions beyond the five-year term. EPA expects Permittees to fully comply with the Adaptation Plan provision within the five-year term of the permit, meaning it does not impose any obligations on the Permittee beyond the five-year permit term. One directly relevant example for WWTs are Combined Sewer Overflow Long-Term Control Plans (LTCPs). The CSO Policy, 59 Fed. Reg. 18688 (April 19, 1994), which Congress expressly incorporated directly into the CWA at § 402(q), requires the development of LTCPs to ultimately come into compliance with the Act, recognizing that such schedules will (and have) in many instances span multiple permit terms. That Congress directly amended the CWA to require compliance with the CSO Policy, including its long-term permitting approaches, demonstrates that the Act does not constrain permitting authorities from considering timeframes outside of the five-year permit term. Another example of permissible permit timeframes that extend beyond the five-year permit term are compliance schedules, which may go beyond the expiration date of the permit if consistent with applicable state law. *See In Re Moscow*, 10 E.A.D. at 153 (“...a Region’s authority to provide for compliance schedules in EPA-issued permits is limited to those circumstances in which the State’s water quality standards or its implementing regulations ‘can be fairly construed as authorizing a schedule of compliance.’”) (citations omitted). The WWTs Adaptation Plan reasonably also requires *consideration* of long-term horizons as the planning and actions needed to address increasing major storms and flood events will be in many instances long-term as well.

Further, EPA does not consider the expected life or design life the appropriate recurrence interval to evaluate future risks. Namely, while a particular facility can be designed initially for an expected period of operation and the design storm at a given point in time, material changes often occur over time to operate and maintain a facility, thus extending its design life, and with the impacts of increased severity and frequency of major storm and flood events, the original design storm may no longer represent likely discharge conditions. EPA asserts that a forward-looking evaluation of the risks to a facility relative to its current operational state is important to selection and implementation of the control measures necessary to minimize discharges that result from impacts of major storm and flood events.

EPA acknowledges that there are many possible approaches and that there are other programs that require resiliency planning. However, because adaptation planning is a critical step in complying with the permit's effluent limitations, EPA has determined that it is appropriate to include the Adaptation Plan requirements in the permit itself even if similar requirements also derive from other obligations. Major storm and flood events are of urgent concern, and EPA does not believe it would be sufficient to rely entirely on non-Permit obligations to address these threats to the proper operation and maintenance of WWTSS and/or sewer systems, especially because not all Permittees may otherwise be obligated to engage in adaptation planning, or may not be required to do so at this time. EPA has determined that planning for major storm and flood events must be done by all facilities now to avoid negative impacts. In recognition of the fact that Permittees may complete similar assessments to satisfy other obligations, the permit allows the Permittee to use qualifying assessments done for other programs or obligations to satisfy some or all of the components of the Adaptation Plan requirements. EPA considers its approach to be appropriate and reasonable to ensure consistent operation and maintenance of permitted facilities. Therefore, EPA will require Adaptation Plans be developed under NPDES permits for all wastewater treatment plants in Massachusetts.

Appendix D

EPA REGION 1 NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION SYSTEMS

This regional interpretative statement provides notice to the public of EPA Region 1's interpretation of the Clean Water Act ("CWA" or "Act") and implementing regulations, and advises the public of relevant policy considerations, regarding the applicability of the National Pollutant Discharge Elimination System ("NPDES") program to publicly owned treatment works ("POTWs") that include municipal satellite sewage collection systems ("regionally integrated POTWs"). When issuing NPDES permits to these types of sanitary sewer systems, it is EPA Region 1's practice to include and regulate the owners/operators of the municipal satellite collection systems through a co-permitting structure. This interpretative statement is intended to explain, generally, the basis for this practice. EPA Region 1's decision in any particular case will be made by applying the law and regulations on the basis of specific facts when permits are issued.

EPA has set out a national policy goal for the nation's sanitary sewer systems to adhere to strict design and operational standards:

"Proper [operation and maintenance] of the nation's sewers is integral to ensuring that wastewater is collected, transported, and treated at POTWs; and to reducing the volume and frequency of ...[sanitary sewer overflow] discharges. Municipal owners and operators of sewer systems and wastewater treatment facilities need to manage their assets effectively and implement new controls, where necessary, as this infrastructure continues to age. Innovative responses from all levels of government and consumers are needed to close the gap."¹¹

Because ownership/operation of a regionally integrated POTW is divided among multiple parties, the owner/operator of the treatment plant many times lacks the means to implement comprehensive, system-wide operation and maintenance ("O&M") procedures. Failure to properly implement O&M measures in a POTW can cause, among other things, excessive extraneous flow (*i.e.*, inflow and infiltration) to enter, strain and occasionally overload treatment system capacity. This failure not only impedes EPA's national policy goal concerning preservation of the nation's wastewater infrastructure assets, but also frustrates achievement of the water quality- and technology-based requirements of CWA § 301 to the extent it results in sanitary sewer overflows and degraded treatment plant performance, with adverse impacts on human health and the environment.

In light of these policy objectives and legal requirements, it is EPA Region 1's permitting practice to subject all portions of the POTW to NPDES requirements in order to ensure that the treatment system as a whole is properly operated and maintained and that human health and

¹ See *Report to Congress: Impacts and Control of CSOs and SSOs* (EPA 833-R-04-001) (2004), at p. 10-2. See also "1989 National CSO Control Strategy," 54 Fed. Reg. 37371 (September 8, 1989).

water quality impacts resulting from excessive extraneous flow are minimized. The approach of addressing O&M concerns in a regionally integrated treatment works by adding municipal satellite collection systems as co-permittees is consistent with the definition of “publicly owned treatment works,” which by definition includes sewage collection systems. Under this approach, the POTW in its entirety is subject to NPDES regulation as a point source discharger under the Act. This entails imposition of permitting requirements applicable to the POTW treatment plant along with a more limited set of conditions applicable to the connected municipal satellite collection systems.

The factual and legal basis for the Region’s position is set forth in greater detail in *Attachment A*.

Attachment A

ANALYSIS SUPPORTING EPA REGION 1 NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION SYSTEMS

<i>Exhibit A</i>	List of regional centralized POTW treatment plants and municipal satellite collection systems subject to the co-permittee policy
<i>Exhibit B</i>	Analysis of extraneous flow trends for representative systems
<i>Exhibit C</i>	Form of Regional Administrator's waiver of permit application requirements for municipal satellite collection systems

Introduction

On May 28, 2010, the U.S. EPA Environmental Appeals Board ("Board") issued a decision remanding to the Region certain NPDES permit provisions that included and regulated satellite collection systems as co-permittees. *See In re Upper Blackstone Water Pollution Abatement District*, NPDES Appeal Nos. 08-11 to 08-18 & 09-06, 14 E.A.D. __ (*Order Denying Review in Part and Remanding in Part*, EAB, May 28, 2010).² While the Board "did not pass judgment" on the Region's position that its NPDES jurisdiction encompassed the entire POTW and not only the treatment plant, it held that "where the Region has abandoned its historical practice of limiting the permit only to the legal entity owning and operating the wastewater treatment plant, the Region had not sufficiently articulated in the record of this proceeding the statutory, regulatory, and factual bases for expanding the scope of NPDES authority beyond the treatment plant owner/operator to separately owned/operated collection systems that do not discharge directly to waters of the United States, but instead that discharge to the treatment plant." *Id.*, *slip op.* at 2, 18. In the event the Region decided to include and regulate municipal satellite collection systems as co-permittees in a future permit, the Board posed several questions for the Region to address in the analysis supporting its decision:

- (1) Is the scope of NPDES authority limited to owners/operators of the treatment plant, or does the authority extend to owners/operators of the municipal satellite collection systems that comprise the wider POTW?
- (2) If the latter, how far up the collection system does NPDES jurisdiction reach, *i.e.*, where does the "collection system" end and the "user" begin?
- (3) Do municipal satellite collection systems "discharge [] a pollutant" within the meaning of the statute and regulations?

² The decision is available on the Board's website via the following link:
http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/30b93f139d3788908525706c005185b4/34e841c87f346d94852577360068976f!OpenDocument.

(4) Are municipal satellite collection systems “indirect dischargers” and thus excluded from NPDES permitting requirements?

(5) Is the Region’s rationale for regulating municipal satellite collection systems as co-permittees consistent with the references to “municipality” in the regulatory definition of POTW, and the definition’s statement that “[t]he term also means the municipality...which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works”?

(6) Is the Region’s rationale consistent with the permit application and signatory requirements under NPDES regulations?

See *Blackstone*, *slip op.* at 18, 20, n. 17.

This regional interpretative statement is, in part, a response to the Board’s decision. It details the legal and policy bases for regulating as co-permittees publicly owned treatment works (“POTWs”) that include municipal satellite collection systems. Region 1’s analysis is divided into five sections. First, the Region provides context for the co-permitting approach by briefly describing the health and environmental impacts associated with poorly maintained sanitary sewer systems. Second, the Region outlines its evolving permitting practice regarding regionally integrated POTWs, particularly its attempts to ensure that such entity’s municipal satellite collection systems are properly maintained and operated. Third, the Region explains the legal authority to include municipal satellite collection systems as co-permittees when permitting regionally integrated POTWs. In this section, the Region answers the questions posed by the Board in the order presented above. Fourth, the Region sets forth the basis for the specific conditions to which the municipal satellite collection systems are subject as co-permittees. Finally, the Region discusses other considerations informing its decision to employ a co-permittee structure when permitting regionally integrated POTWs.

I. Background

A sanitary sewer system (SSS) is a wastewater collection system owned by a state or municipality that is designed to collect and convey only sanitary wastewater (domestic sewage from homes as well as industrial and commercial wastewater).³ The purpose of these systems is to transport wastewater uninterrupted from its source to a treatment facility. Developed areas that are served by sanitary sewers often also have a separate storm sewer system (*e.g.*, storm drains) that collects and conveys runoff, street wash waters and drainage and discharges them directly to a receiving water (*i.e.*, without treatment at a POTW). While sanitary sewers are not designed to collect large amounts of runoff from precipitation events or provide widespread drainage, they typically are built with some allowance for higher flows that occur

³ A combined sewer, on the other hand, is a type of sewer system that collects and conveys sanitary sewage and stormwater runoff in a single-pipe system to a POTW treatment plant. See *generally* Report to Congress: Impacts and Control of CSOs and SSOs (EPA 833-R-04-001) (2004), from which EPA Region 1 has drawn this background material.

during periods of high groundwater and storm events. They are thus able to handle minor and controllable amounts of extraneous flow (*i.e.*, inflow and infiltration, or I/I) that enter the system. Inflow generally refers to water other than wastewater—typically precipitation like rain or snowmelt—that enters a sewer system through a direct connection to the sewer. Infiltration generally refers to other water that enters a sewer system from the ground, for example through defects in the sewer.

Municipal sanitary sewer collection systems can consist of a widespread network of pipes and associated components (*e.g.*, pump stations). These systems provide wastewater collection service to the community in which they are located. In some situations, the municipality that owns the collector sewers may not provide treatment of wastewater, but only conveys its wastewater to a collection system that is owned and operated by a different municipal entity (such as a regional sewer district). This is known as a satellite community. A “satellite” community is a sewage collection system owner/operator that does not have ownership of the treatment facility and a specific or identified point of discharge but rather the responsibility to collect and convey the community’s wastewater to a POTW treatment plant for treatment. *See* 75 Fed. Reg. 30395, 30400 (June 1, 2010).

Municipal sanitary sewer collection systems play a critical role in protecting human health and the environment. Proper operation and maintenance of sanitary sewer collection systems is integral to ensuring that wastewater is collected, transported, and treated at POTW treatment plants. Through effective operation and maintenance, collection system operators can maintain the capacity of the collection system; reduce the occurrence of temporary problem situations such as blockages; protect the structural integrity and capacity of the system; anticipate potential problems and take preventive measures; and indirectly improve treatment plant performance by minimizing deterioration due to I/I-related hydraulic overloading.

Despite their critical role in the nation’s infrastructure, many collection systems exhibit poor performance and are subjected to flows that exceed system capacity. Untreated or partially treated overflows from a sanitary sewer system are termed “sanitary sewer overflows” (SSOs). SSOs include releases from sanitary sewers that reach waters of the United States as well as those that back up into buildings and flow out of manholes into city streets.

There are many underlying reasons for the poor performance of collection systems. Much of the nation’s sanitary sewer infrastructure is old, and aging infrastructure has deteriorated with time. Communities also sometimes fail to provide capacity to accommodate increased sewage delivery and treatment demand from increasing populations. Furthermore, institutional arrangements relating to the operation of sewers can pose barriers to coordinated action, because many municipal sanitary sewer collection systems are not entirely owned or operated by a single municipal entity.

The performance and efficiency of municipal collection systems influence the performance of sewage treatment plants. When the structural integrity of a sanitary sewer collection system deteriorates, large quantities of infiltration (including rainfall-induced infiltration) and inflow can enter the collection system, causing it to overflow. These extraneous flows are among the

most serious and widespread operational challenges confronting treatment works.⁴

Infiltration can be long-term seepage of water into a sewer system from the water table. In some systems, however, the flow characteristics of infiltration can resemble those of inflow, *i.e.*, there is a rapid increase in flow during and immediately after a rainfall event, due, for example, to rapidly rising groundwater. This phenomenon is sometimes referred to as rainfall-induced infiltration.

Sanitary sewer systems can also overflow during periods of normal dry weather flows. Many sewer system failures are attributable to natural aging processes or poor operation and maintenance. Examples include years of wear and tear on system equipment such as pumps, lift stations, check valves, and other moveable parts that can lead to mechanical or electrical failure; freeze/thaw cycles, groundwater flow, and subsurface seismic activity that can result in pipe movement, warping, brittleness, misalignment, and breakage; and deterioration of pipes and joints due to root intrusion or other blockages.

Inflow and infiltration impacts are often regional in nature. Satellite collection systems in the communities farthest from the POTW treatment plant can cause sanitary sewer overflows (“SSOs”) in communities between them and the treatment plant by using up capacity in the interceptors. This can cause SSOs in the interceptors themselves or in the municipal sanitary sewers that lead to them. The implication of this is that corrective solutions often must also be regional in scope to be effective.

The health and environmental risks attributed to SSOs vary depending on a number of factors including location and season (potential for public exposure), frequency, volume, the amount and type of pollutants present in the discharge, and the uses, conditions, and characteristics of the receiving waters. The most immediate health risks associated with SSOs to waters and other areas with a potential for human contact are associated with exposure to bacteria, viruses, and other pathogens.

Human health impacts occur when people become ill due to contact with water or ingestion of water or shellfish that have been contaminated by SSO discharges. In addition, sanitary sewer systems can back up into buildings, including private residences. These discharges provide a direct pathway for human contact with untreated wastewater. Exposure to land-based SSOs typically occurs through the skin via direct contact. The resulting diseases are often similar to those associated with exposure through drinking water and swimming (*e.g.*, gastroenteritis), but may also include illness caused by inhaling microbial pathogens. In addition to pathogens, raw sewage may contain metals, synthetic chemicals, nutrients, pesticides, and oils, which also can be detrimental to the health of humans and wildlife.

⁴ In a 1989 Water Pollution Control Federation survey, 1,003 POTWs identified facility performance problems. Infiltration and inflow was the most frequently cited problem, with 85 percent of the facilities reporting I/I as a problem. I/I was cited as a major problem by 41 percent of the facilities (32 percent as a periodic problem).

II. EPA Region 1 Past Practice of Permitting POTWs that Include Municipal Satellite Collection Systems

EPA Region 1's practice in permitting regionally integrated POTWs has developed in tandem with its increasing focus on addressing I/I in sewer collection systems, in response to the concerns outlined above. Up to the early 1990s, POTW permits issued by Region 1 generally did not include specific requirements for collection systems. When I/I and the related issue of SSOs became a focus of concern both nationally and within the region in the mid-1990s, Region 1 began adding general requirements to POTW permits that required the permittees to "eliminate excessive infiltration and inflow" and provide an annual "summary report" of activities to reduce I/I. As the Region gathered more information and gained more experience in assessing these reports and activities, it began to include more detailed requirements and reporting provisions in these permits.

MassDEP also engaged in a parallel effort to address I/I, culminating in 2001 with the issuance of MassDEP Policy No. BRP01-1, "Interim Infiltration and Inflow Policy." Among other provisions, this policy established a set of standard NPDES permit conditions for POTWs that included development of an I/I control plan (including funding sources, identification and prioritization of problem areas, and public education programs) and detailed annual reporting requirements (including mapping, reporting of expenditures and I/I flow calculations). Since September 2001, these requirements have been the basis for the standard operation and maintenance conditions related to I/I.

Regional treatment plants presented special issues as I/I requirements became more specific, as it is generally the member communities, rather than the regional sewer district, that own the collection systems that are the primary source of I/I. Before the focus on I/I, POTW permits did not contain specific requirements related to the collection system component of POTWs. Therefore, when issuing NPDES permits to authorize discharges from regionally integrated treatment POTWs, EPA Region 1 had generally only included the legal entity owning and/or operating the regionally centralized wastewater treatment plant. As the permit conditions were focused on the treatment plant itself, this was sufficient to ensure that EPA had authority to enforce the permit requirements.

In implementing the I/I conditions, Region 1 initially sought to maintain the same structure, placing the responsibility on the regional sewer district to require I/I activities by the contributing systems and to collect the necessary information from those systems for submittal to EPA. MassDEP's 2001 Interim I/I Policy reflected this approach, containing a condition for regional systems:

((FOR REGIONAL FACILITIES ONLY)) The permittee shall require, through appropriate agreements, that all member communities develop and implement infiltration and inflow control plans sufficient to ensure that high flows do not cause or contribute to a violation of the permittees effluent limitations, or cause overflows from the permittees collection system.

As existing NPDES permittees, the POTW treatment plants were an obvious locus of regulation. The Region assumed the plants would be in a position to leverage preexisting legal and/or contractual relationships with the satellite collection systems they serve to perform a coordinating function, and that utilizing this existing structure would be more efficient than establishing a new system of direct reporting to EPA by the collection system owners. The Region also believed that the owner/operator of the POTW treatment plant would have an incentive to reduce flow from contributing satellite systems because doing so would improve treatment plant performance and reduce operation costs. While relying on this cooperative approach, however, EPA Region 1 also asserted that it had the authority to require that POTW collection systems be included as NPDES permittees and that it would do so if it proved necessary. Indeed, in 2001 Region 1 acceded to Massachusetts Water Resources Authority's ("MWRA") request that the contributing systems to the MWRA Clinton wastewater treatment plant ("WWTP") be included as co-permittees, based on evidence provided by MWRA that its specific relationship with those communities would not permit it to run an effective I/I reduction program for these collection systems. EPA Region 1 also put satellite collection systems on notice that they would be directly regulated through legally enforceable permit requirements if I/I reductions were not pursued or achieved.

In time, the Region realized that its failure to assert direct jurisdiction over municipal satellite dischargers was becoming untenable in the face of mounting evidence that cooperative (or in some cases non-existent) efforts on the part of the POTW treatment plant and associated satellites were failing to comprehensively address the problem of extraneous flow entering the POTW. The ability and/or willingness of regional sewer districts to attain meaningful I/I efforts in their member communities varied widely. The indirect structure of the requirements also tended to make it difficult for EPA to enforce the implementation of meaningful I/I reduction programs.

It became evident to EPA Region 1 that a POTW's ability to comply with CWA requirements depended on successful operation and maintenance of not only the treatment plant but also the collection system. For example, the absence of effective I/I reduction and operation/maintenance programs was impeding the Region's ability to prevent or mitigate the human health and water quality impacts associated with SSOs. Additionally, these excess flows stressed POTW treatment plants from a hydraulic capacity and performance standpoint, adversely impacting effluent quality. *See Exhibit B* (Analysis of extraneous flow trends for representative systems). Addressing these issues in regional systems was essential, as these include most of the largest systems in terms of flow, population served and area covered, and serve the largest population centers.

The Region's practice of imposing NPDES permit conditions on the municipal collection systems in addition to the treatment plant owner/operator represents a necessary and logical progression in its continuing effort to effectively address the serious problem of I/I in sewer collection systems.⁵ In light of its past permitting experience and the need to effectively address

⁵ Although EPA Region 1 has in the past issued NPDES permits only to the legal entities owning and operating the wastewater

the problem of extraneous flow on a system-wide basis, Region 1 decided that it was necessary to refashion permits issued to regionally integrated POTWs to encompass all owners/operators of the treatment works (*i.e.*, the regional centralized POTW treatment plant and the municipal satellite collection systems).⁶ Specifically, Region 1 determined that the satellite systems should be subject as co-permittees to a limited set of O&M-related conditions on permits issued for discharges from regionally integrated treatment works. These conditions pertain only to the portions of the POTW collection system that the satellites own. This ensures maintenance and pollution control programs are implemented with respect to all portions of the POTW. Accordingly, since 2005, Region 1 has generally included municipal satellite collection systems as co-permittees for limited purposes, in addition to the owner/operator of the treatment plant as the main permittee subject to the full array of NPDES requirements, including secondary treatment and water-quality based effluent limitations. The Region has identified 36 permits issued by the Region to POTWs in New Hampshire and Massachusetts that include municipal satellite collection systems as co-permittees. *See Exhibit A*. The 36 permits include a total of 81 satellite collection systems as co-permittees.

III. Legal Authority

The Region's prior and now superseded practice of limiting the permit only to the legal entity owning and/or operating the wastewater treatment plant had never been announced as a regional policy or interpretation. Similarly, the Region's practice of imposing NPDES permit conditions on the municipal collection systems in addition to the treatment plant owner/operator has also never been expressly announced as a uniform, region-wide policy or interpretation. Upon consideration of the Board's decision, described above, EPA Region 1 has decided to supply a clearer, more detailed explanation regarding its use of a co-permittee structure when issuing NPDES permits to regionally integrated POTWs. In this section, the Region addresses the questions posed by the Board in the *Upper Blackstone* decision referenced above.

(1) Is the scope of NPDES authority limited to owners/operators of the treatment plant, or does the authority extend to owners/operators of the municipal satellite collection systems that comprise the wider POTW?

The scope of NPDES authority extends beyond the owners/operators of the treatment plant to include to owners/operators of portions of the wider POTW, for the reasons discussed below.

The CWA prohibits the "discharge of any pollutant by any person" from any point source to

treatment plant (*i.e.*, only a portion of the "treatment works"), the Region's reframing of permits to include municipal satellite collection systems does not represent a break or reversal from its historical legal position. EPA Region 1 has never taken the legal position that the satellite collection systems are beyond the reach of the CWA and the NPDES permitting program. Rather, the Region as a matter of discretion had merely never determined it necessary to exercise its statutory authority to directly reach these facilities in order to carry out its NPDES permitting obligations under the Act.

⁶ EPA has "considerable flexibility in framing the permit to achieve a desired reduction in pollutant discharges." *Natural Resources Defense Council, Inc. v. Costle*, 568 F.2d 1369, 1380 (D.C.Cir.1977). ("[T]his ambitious statute is not hospitable to the concept that the appropriate response to a difficult pollution problem is not to try at all.").

waters of the United States, except, *inter alia*, in compliance with an NPDES permit issued by EPA or an authorized state pursuant to Section 402 of the CWA. CWA § 301, 402(a)(1); 40 C.F.R. § 122.1(b). Where there is a discharge of pollutants, NPDES regulations require the “operator” of the discharging “facility or activity” to obtain a permit in circumstances where the operator is different from the owner. *Id.* § 122.21(b). “Owner or operator” is defined as “the owner or operator of any ‘facility or activity’ subject to regulation under the NPDES program,” and a “facility or activity” is “any NPDES ‘point source’ or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.” *Id.* § 122.2.

“Publicly owned treatment works” are facilities subject to the NPDES program. Statutorily, POTWs as a class must meet performance-based requirements based on available wastewater treatment technology. *See* CWA § 402(a)(1) (“[t]he Administrator may...issue a permit for the discharge of any pollutant....upon condition that such discharge will meet (A) all applicable requirements under [section 301]...”); § 301(b)(1)(B) (“In order to carry out the objective of this chapter there shall be achieved...for publicly owned treatment works in existence on July 1, 1977...effluent limitations based upon secondary treatment[.]”); *see also* 40 C.F.R. pt 133. In addition to secondary treatment requirements, POTWs are also subject to water quality-based effluent limits if necessary to achieve applicable state water quality standards. *See* CWA § 301(b)(1)(C). *See also* 40 C.F.R. § 122.44(a)(1) (“...each NPDES permit shall include...[t]echnology-based effluent limitations based on: effluent limitations and standards published under section 301 of the Act”) and (d)(1) (same for water quality standards and state requirements). NPDES regulations similarly identify the “POTW” as the entity subject to regulation. *See* 40 C.F.R. § 122.21(a), (requiring “new and existing POTWs” to submit information required in 122.21(j),” which in turn requires “all POTWs,” among others, to provide permit application information).

A municipal satellite collection system is part of a POTW under applicable law. The CWA and its implementing regulations broadly define “POTW” to include not only wastewater treatment plants but also the sewer systems and associated equipment that collect wastewater and convey it to the plants. Under NPDES regulations at 40 C.F.R. §§ 122.2 and 403.3(q), the term “Publicly Owned Treatment Works” or “POTW” means “a treatment works as defined by section 212 of the Act, which is owned by a State or municipality (as defined by section 502(4) of the Act).” Under section 212 of the Act,

“(2)(A) The term ‘treatment works’ means any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature to implement section 1281 of this title, or necessary to recycle or reuse water at the most economical cost over the estimated life of the works, including intercepting sewers, outfall sewers, *sewage collection systems* [emphasis added], pumping, power, and other equipment, and their appurtenances; extensions, improvements, remodeling, additions, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities; and any works, including site acquisition of the land that will be an integral part of the treatment process (including land used for the storage of treated

wastewater in land treatment systems prior to land application) or is used for ultimate disposal of residues resulting from such treatment.

(B) In addition to the definition contained in subparagraph (A) of this paragraph, ‘treatment works’ means any other method or system for preventing, abating, reducing, storing, treating, separating, or disposing of municipal waste, including storm water runoff, or industrial waste, including waste in combined storm water and *sanitary sewer systems* [emphasis added]. Any application for construction grants which includes wholly or in part such methods or systems shall, in accordance with guidelines published by the Administrator pursuant to subparagraph (C) of this paragraph, contain adequate data and analysis demonstrating such proposal to be, over the life of such works, the most cost efficient alternative to comply with sections 1311 or 1312 of this title, or the requirements of section 1281 of this title.”

Under the NPDES program regulations, this definition has been interpreted as follows:

“The term *Publicly Owned Treatment Works* or *POTW* [emphasis in original]...includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the Act, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.”

See 40 C.F.R. § 122.2, cross-referencing 403.3(q).

The statutory and regulatory definitions plainly encompass both the POTW treatment plant and municipal satellite collection systems. Municipal satellite collection systems are part of a POTW by definition (*i.e.*, they are “sewage collection systems” under section 212(A) and “sanitary sewer systems” under section 212(B)). They are also conveyances that send wastewater to a POTW treatment plant for treatment under 40 C.F.R. 403.3(q)). The preamble to the rule that created the regulatory definition of POTW supports the reading that the treatment plant comprises only a portion of the POTW. See 44 Fed. Reg. 62260, 62261 (Oct. 29, 1979).⁷

Consistent with EPA Region 1’s interpretation, courts have similarly taken a broad reading of the terms treatment works and POTW.⁸

⁷ “A new provision...defining the term ‘POTW Treatment Plant’ has been added to avoid an ambiguity that now exists whenever a reference is made to a POTW (publicly owned treatment works). ...[T]he existing regulation defines a POTW to include both the treatment plant and the sewer pipes and other conveyances leading to it. As a result, it is unclear whether a particular reference is to the pipes, the treatment plant, or both. The term “POTW treatment plant” will be used to designate that portion of the municipal system which is actually designed to provide treatment to the wastes received by the municipal system.”

⁸ See, *e.g.*, *United States v. Borowski*, 977 F.2d 27, 30 n.5 (1st Cir. 1992) (“We read this language [POTW definition] to refer to such sewers, pipes and other conveyances that are publicly owned. Here, for example, the City of Burlington’s sewer is

(2) *If the latter, how far up the collection system does NPDES jurisdiction reach, i.e., where does the “collection system” end and the “user” begin?*

NPDES jurisdiction extends beyond the treatment plant to the outer boundary of the municipally-owned sewage collection systems, which are defined as sewers whose purpose is to be a common carrier of wastewater for others to a POTW treatment plant for treatment, as explained below.

As discussed in response to Question 1 above, the term “treatment works” is defined to include “sewage collection systems.” CWA § 212. In order to define the extent of the sewage collection system for purposes of co-permittee regulation—*i.e.*, to identify the boundary between the portions of the collection system that are subject to NPDES requirements and those that are not—Region 1 is relying on EPA’s regulatory interpretation of the term “sewage collection system.” In relevant part, EPA regulations define “sewage collection system” at 40 C.F.R. § 35.905 as:

“ each, and all, of the common lateral sewers, within a publicly owned treatment system, which are primarily installed to receive waste waters directly from facilities which convey waste water from individual structures or from private property and which include service connection “Y” fittings designed for connection with those facilities. The facilities which convey waste water from individual structures, from private property to the public lateral sewer, or its equivalent, are specifically excluded from the definition....”

Put otherwise, a municipal satellite collection system is subject to NPDES jurisdiction under the Region’s approach insofar as its purpose is to be a common carrier of wastewater for others to a POTW treatment plant for treatment. The use of this primary purpose test (*i.e.*, common sewer installed as a recipient and carrier waste water from others) allows Region 1 to draw a principled, predictable and readily ascertainable boundary between the POTW’s collection system and user. This test would exclude, for example, branch drainpipes that collect and transport wastewater from fixtures in a commercial building or public school to the common lateral sewer. This type of infrastructure would not be considered part of the collection system, because it is not designed to be a common recipient and carrier of wastewaters from other users. Rather, it is designed to transport its users’ wastewater to such a common collection system at a point further down the sanitary sewer system.

EPA’s reliance on the definition of “sewage collection system” from outside the NPDES

included in the definition because it conveys waste water to the Massachusetts Water Resource Authority’s treatment works.”); *Shanty Town Assoc. v. Env’tl. Prot. Agency*, 843 F.2d 782, 785 (4th Cir. 1988) (“As defined in the statute, a ‘treatment work’ need not be a building or facility, but can be any device, system, or other method for treating, recycling, reclaiming, preventing, or reducing liquid municipal sewage and industrial waste, including storm water runoff.”) (citation omitted); *Comm. for Consideration Jones Fall Sewage System v. Train*, 375 F. Supp. 1148, 1150-51 (D. Md. 1974) (holding that NPDES wastewater discharge permit coverage for a wastewater treatment plant also encompasses the associated sanitary sewer system and pump stations under § 1292 definition of “treatment work”).

regulations for interpretative guidance is reasonable as the construction grants regulations at 40

C.F.R. Part 35, subpart E pertain to grants for POTWs, the entity that is the subject of this NPDES policy. Additionally, the term “sewage collection systems” expressly appears in the definition of treatment works under section 212 of the Act as noted above. Finally, this approach is also consistent with EPA’s interpretation in other contexts, such as the SSO listening session notice, published in the Federal Register on June 1, 2010, which describes wastewater collection systems as those that “collect domestic sewage and other wastewater from homes and other buildings and convey it to wastewater sewage treatment plants for proper treatment and disposal.” See “Municipal Sanitary Sewer Collection Systems, Municipal Satellite Collection Systems, Sanitary Sewer Overflows, and Peak Wet Weather Discharges From Publicly Owned Treatment Works Treatment Plants Serving Separate Sanitary Sewer Collection Systems,” 75 Fed. Reg. 30395.⁹

(3) Do municipal satellite collection systems “discharge [] a pollutant” within the meaning of the statute and regulations?

Yes, because they are a part of the POTW, municipal satellite collection systems discharge pollutants to waters of the United States through one or more outfalls (point sources).

The “discharge of a pollutant,” triggers the need for a facility to obtain an NPDES permit. A POTW “discharges [] pollutant[s]” if it adds pollutants from a point source to waters of the U.S. (See 40 C.F.R. § 122.2, section (a) of the definition of “discharge of a pollutant.”) As explained above, municipal satellite collection systems are part of the POTW. The entire POTW is the entity that discharges pollutants to waters of the U.S. through point source outfalls typically located at the treatment plant but also occasionally through other outfalls within the overall system. The fact that a collection system may be located in the upstream portions of the POTW and not necessarily near the ultimate discharge point at the treatment plant is not material to the question of whether it “discharges” a pollutant and consequently may be subject to conditions of an NPDES permit issued for discharges from the POTW.¹⁰

“Discharge of a pollutant” at 40 C.F.R. § 122.2 is also defined to include “... discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person *which do not lead to a treatment works.*”(emphasis added). Some municipal collection systems have argued that this sentence means that only municipal discharges that do not lead to a “treatment plant” fall within the scope of “discharge of a pollutant.” They further argue that because discharges through satellite collection systems do lead to a treatment plant, such systems do not “discharge [] pollutant[s]” and therefore are not subject to the NPDES permit

⁹ That EPA has in the past looked for guidance from Part 35 when construing the NPDES permitting program, for instance, in the context of storm water permitting, provides further support to the Region that its practice in this regard is sound. See, e.g., “National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges,” 55 Fed. Reg. 47990, 47955 (looking to the definition of “storm sewer” at 40 C.F.R. § 35.2005(b)(47) when defining “storm water” under the NPDES program).

¹⁰ This position differs from that taken by the Region in the *Upper Blackstone* litigation. There, the Region argued that the treatment plant was the sole discharging entity for regulatory purposes. The Region has revised this view upon further consideration of the statute, regulations and case law and determined that the POTW as a whole is the discharging entity.

requirements. This argument is flawed in that it incorrectly equates “treatment works,” the term used in the definition above, with “treatment plant.” To interpret “treatment works” as it appears in the regulatory definition of “discharge of a pollutant” as consisting of only the POTW treatment plant would be inconsistent with the definition of “treatment works” at 40 C.F.R. § 403.3(q), which expressly includes the collection system. *See also* § 403.3(r) (defining “POTW Treatment Plant” as “*that portion* [emphasis added] of the POTW which is designed to provide treatment (including recycling and reclamation) of municipal sewage and industrial waste”).

(4) Are municipal satellite collection systems “indirect dischargers” and thus excluded from NPDES permitting requirements?

No, municipal satellite collection systems are part of the POTW, not “indirect dischargers” to the POTW.

Section 307(b) of the Act requires EPA to establish regulatory pretreatment requirements to prevent the “introduction of pollutants into treatment works” that interfere, pass through or are otherwise incompatible with such works. Section 307 is implemented through the General Pretreatment Regulations for Existing and New Sources of Pollution (40 C.F.R. Part 403) and categorical pretreatment standards (40 C.F.R. Parts 405-471). Section 403.3(i) defines “indirect discharger” as “any non-domestic” source that introduces pollutants into a POTW and is regulated under pretreatment standards pursuant to CWA § 307(b)-(d). The source of an indirect discharge is termed an “industrial user.” *Id.* at § 403.3(j). Under regulations governing the NPDES permitting program, the term “indirect discharger” is defined as “a non-domestic discharger introducing ‘pollutants’ to a ‘publicly owned treatment works.’” 40 C.F.R. § 122.2. Indirect dischargers are excluded from NPDES permit requirements by the indirect discharger rule at 40 C.F.R. § 122.3(c), which provides, “The following discharges do not require an NPDES permit: . . . The introduction of sewage, industrial wastes or other pollutants into publicly owned treatment works by indirect dischargers.”

Municipal satellite collection satellite systems are not indirect dischargers as that term is defined under part 122 or 403 regulations. Unlike indirect dischargers, municipal satellite collection systems are not “introducing pollutants” to POTWs under 40 C.F.R. § 122.2; they are, instead, part of the POTW by definition. Similarly, they are not a non-domestic *source* that introduces pollutants into a POTW within the meaning of § 403.3(j), but as part of the POTW collect and convey municipal sewage from industrial, commercial and domestic users of the POTW.

The Region’s determination that municipal satellite collection systems are not indirect dischargers is, additionally, consistent with the regulatory history of the term indirect discharger.

The 1979 revision of the part 122 regulations defined “indirect discharger” as “a non-municipal, non-domestic discharger introducing pollutants to a publicly owned treatment works, which introduction does not constitute a ‘discharge of pollutants’...” See National Pollutant Discharge Elimination System, 44 Fed. Reg. 32854, 32901 (June 7, 1979). The term “non-municipal” was removed in the Consolidated Permit Regulations, 45 Fed. Reg. 33290, 33421 (May 19, 1980) (defining “indirect discharger” as “a nondomestic discharger...”). Although the change was not explained in detail, the substantive intent behind this provision remained the same. EPA characterized the revision as “minor wording changes.” 45 Fed. Reg. at 33346 (Table VII: “Relationship of June 7[, 1979] Part 122 to Today’s Regulations”). The central point again is that under any past or present regulatory incarnation, municipal satellite collection systems, as POTWs, are not within the definition of “indirect discharger,” which is limited to dischargers that introduce pollutants to POTWs.

The position that municipal satellite collection systems are part of, rather than discharge to, the POTW also is consistent with EPA guidance. EPA’s 1994 Multijurisdictional Pretreatment Programs Guidance Manual, (EPA 833-B94-005) (June 1994), at p. 19, asserts that EPA has the authority to require municipal satellite collection systems to develop pretreatment programs by virtue of their being part of the POTW.

(5) How is the Region’s rationale consistent with the references to “municipality” in the regulatory definition of POTW found at 40 C.F.R. § 403.3(q), and the definition’s statement that “[t]he term also means the municipality....which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works?”

There is no inconsistency between the Region’s view that municipally-owned satellite collection systems are part of a POTW, and the references to municipality in 40 C.F.R. § 403.3(q), including the final sentence of the regulatory definition of POTW in the pretreatment regulations.

The Region’s co-permitting rationale is consistent with the first part of the pretreatment program’s regulatory definition of POTW, because the Region is only asserting NPDES jurisdiction over satellite collection systems that are owned by a “State or municipality (as defined by section 502(4) of the Act).” The term “municipality” as defined in CWA § 502(4) “means a city, town, borough, county, parish, district, association, or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes...” Thus, in order to qualify under this definition, a wastewater collection system need only be “owned by a State or municipality.” There is no requirement that the constituent components of a regionally integrated POTW, *i.e.*, the collection system and regional centralized POTW treatment plant, be owned by the same State or municipal entity.

Furthermore, there is no inconsistency between the Region’s view that a satellite collection system is part of a POTW, and the final sentence of the regulatory definition of POTW in the pretreatment regulations. As noted above, the sentence provides that “POTW” may “also” mean a municipality which has jurisdiction over indirect discharges to and discharges from the treatment works. This is not a limitation because of the use of the word “also” (contrast this

with the “only if” language in the preceding sentence of the regulatory definition).

(6) How does the Region’s rationale comport with the permit application and signatory requirements under NPDES regulations?

EPA’s authority to require municipal satellite collection systems to separately comply with the permit application requirements, or to provide waivers from these requirements where appropriate, is consistent with NPDES regulations, which provide that all POTWs must submit permit application information set forth in 40 C.F.R. § 122.21(j) unless otherwise directed, and municipal satellite collection systems are part of the POTW.

EPA has the authority to require municipal satellite collection systems to submit permit applications. These entities are operators of parts of the POTW. NPDES regulations characterize the operator “of the POTW” (which by definition includes the sewage collection system) as opposed to the operator “of the POTW treatment plant” as an appropriate applicant. *Id.* § 122.21(a), (requiring applicants for “new and existing POTWs” to submit information required in 122.21(j),” which in turn requires “all POTWs,” among others, to provide permit application information). This reading of the regulation is in keeping with the statutory text, which subjects the POTW writ large to the secondary treatment and water quality-based requirements. See CWA § 301(b)(1)(B), (C). In fact, the NPDES permit application for POTWs solicits information concerning portions of the POTW beyond the treatment plant itself, including the collection system used by the treatment works. See 40 C.F.R. 122.21(j)(1).

Notwithstanding that EPA could require applications for all the municipal satellite collection systems, requiring such applications may result in duplicative or immaterial information. The Regional Administrator (“RA”) may waive any requirement of this paragraph if he or she has access to substantially identical information. 40 C.F.R. § 122.21(j). See *generally*, 64 Fed. Reg. 42440 (August 4, 1999). The RA may also waive any application requirement that is not of material concern for a specific permit. Region 1 believes that it will typically receive information sufficient for NPDES permitting purposes from the POTW treatment plant operator’s application.

In most cases, EPA Region 1 believes that having a single permit application from the POTW treatment plant operator will be more efficient in carrying out the regulation’s intent than multiple applications from the satellite systems. (The treatment plant operator would of course be required to coordinate as necessary with the constituent components of the POTW to ensure that the information provided to EPA is accurate and complete). EPA Region 1 therefore intends to issue waivers to exempt municipal satellite collection systems from permit application and signatory requirements in accordance with 40 C.F.R. § 122.21(j). To the extent the Region requires additional information, it intends to use its information collection authority under CWA § 308.

IV. Basis for the Specific Conditions to which the Municipal Satellite Collection Systems are Subject as Co-permittees

The legal authority for extending NPDES conditions to all portions of the municipally-owned treatment works to ensure proper operation and maintenance and to reduce the quantity of extraneous flow into the POTW is Section 402(a) of the CWA. This section of the Act authorizes EPA to issue a permit for the “discharge of pollutants” and to prescribe permit conditions as necessary to carry out the provisions of the CWA, including Section 301 of the Act. Among other things, Section 301 requires POTWs to meet performance-based requirements based on secondary treatment technology, as well as any more stringent requirements of State law or regulation, including water quality standards. See CWA § 301(b)(1)(B),(C).

The co-permittee requirements are required to assure continued achievement of secondary treatment requirements and water quality standards in accordance with sections 301 and 402 of the Act and to prevent unauthorized discharges of sewage from collection systems. With respect to secondary treatment, the inclusion of the satellite systems as co-permittees is necessary because high levels of I/I dilute the strength of influent wastewater and increase the hydraulic load on treatment plants, which can reduce treatment efficiency (*e.g.*, result in violations of technology-based percent removal limitations for BOD and TSS due to less concentrated influent, or violation of other technology effluent limitations due to reduction in treatment efficiency), lead to bypassing a portion of the treatment process, or in extreme situations make biological treatment facilities inoperable (*e.g.*, wash out the biological organisms that treat the waste).

As to water quality standards, the addition of the satellite systems as co-permittees is necessary to ensure collection system operation and maintenance, which will reduce extraneous flow entering the system and free up available capacity. This will facilitate compliance with water quality-based effluent limitations—made more difficult by reductions in treatment efficiency and also reduce water quality standard violations that result from the occurrence of SSOs. See *Exhibits B* (Municipal satellite collection systems with SSOs) and *C* (Analysis of extraneous flow trends for representative systems). SSOs that reach waters of the U.S. are discharges in violation of section 301(a) of the CWA to the extent not authorized by an NPDES permit.

Subjecting portions of an NPDES-regulated entity upstream of the ultimate discharge point is consistent with EPA’s interpretation of the CWA in other contexts. For example, it is well established that EPA has the ability to apply discharge limitations and monitoring requirements to internal process discharges, rather than to outfalls, on the grounds that compliance with permit limitations “may well involve controls applied at points other than the ultimate point of discharge.” See *Decision of the General Counsel No. 27 (In re Inland Steel Company)*, August 4, 1975 (“Limitations upon internal process discharges are proper, if such discharges would ultimately be discharged into waters of the United States, and if such limitations are necessary to carry out the principal regulatory provisions of the Act.”). In the case of regionally integrated POTWs, placing conditions on satellite collection systems—though located farther up the

system than the point of discharge—is a logical implication of the regulations and serves to effectuate the statute.

Without imposing conditions on the satellite communities, standard permit conditions applicable to all NPDES permits by regulation cannot be given full effect. To illustrate, there is no dispute that the operator of the POTW treatment plant and outfall is discharging pollutants within the meaning the CWA and, accordingly, is subject to the NPDES permit program. NPDES permitting regulations require standard conditions that “apply to all NPDES permits,” pursuant to 40 C.F.R. § 122.41, including a duty to mitigate and to properly operate and maintain “all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit.” *Id.* at § 122.41(d), (e). EPA regulations also require additional conditions applicable to specified categories of NPDES permit, including “Publicly owned treatment works.” *See id.* at § 122.42(b). A municipal satellite collection system, as demonstrated above, falls within the regulatory definition of a POTW. In light of EPA’s authority to require appropriate operation and maintenance of collection systems necessary to achieve compliance with an NPDES permit, and because the operator of the POTW treatment plant may not own or operate a significant portion of the wider treatment works (*i.e.*, the collection systems that send flow to the POTW treatment plant), it is appropriate, and in some cases necessary, to extend pertinent, mandated standard conditions to all portions of the POTW, which is subject to regulation in its entirety.

The alternative of allowing state and local jurisdictional boundaries to place significant portions of the POTW beyond the reach of the NPDES permitting program would not only be inconsistent with the broad statutory and regulatory definition of the term POTW but would impede Region 1 from carrying out the objectives of the CWA. It would also, illogically, preclude the Region from imposing on POTWs standard conditions EPA has by regulation mandated for those entities.

Other Considerations Informing EPA Region 1’s Decision to Use a Co-permittee Permitting Structure for Regionally Integrated POTWs

In addition to consulting the relevant statutes, regulations, and preambles, Region 1 also considered other EPA guidance in coming to its determination to employ a co-permittee structure for regionally integrated POTWs. EPA’s 1994 Multijurisdictional Pretreatment Programs Guidance Manual, p. 19, asserts that EPA has the authority to include municipal satellite collection systems as co-permittees by virtue of their being part of the POTW:

If the contributing jurisdiction owns or operates the collection system within its boundaries, then it is a co-owner or operator of the POTW. As such, it can be included on the POTW’s NPDES permit and be required to develop a pretreatment program. Contributing jurisdictions should be made co-permittees where circumstances or experience indicate that it is necessary to ensure adequate pretreatment program implementation.

The same logic that led EPA to conclude it had authority to require municipal satellite collection systems to develop a pretreatment program pursuant to an NPDES permit supports EPA Region 1's decision to impose permit conditions on such facilities to undertake proper O & M and to reduce inflow and infiltration.

EPA Region 1 also took notice of federal listening session materials on the June 2010 proposed SSO rule and associated model permits and fact sheet. The position articulated by EPA in these model documents—specifically the application of standard NPDES conditions to municipal satellite collection systems—generally conform to Region 1's co-permitting approach.

Finally, in addition to federal requirements, EPA Region 1 considered the co-permittee approach in light of state regulations and policy pertaining to wastewater treatment works. The Region found its approach to be consistent with such requirements. Under Massachusetts law, "Any person operating treatment works shall maintain the facilities in a manner that will ensure proper operation of the facilities or any part thereof," where "treatment works" is defined as "any and all devices, processes and properties, real or personal, used in the collection, pumping, transmission, storage, treatment, disposal, recycling, reclamation or reuse of waterborne pollutants, but not including any works receiving a hazardous waste from off the site of the works for the purpose of treatment, storage or disposal, or industrial wastewater holding tanks regulated under 314 CMR 18.00" See 314 CMR 12.00 ("Operation and Maintenance and Pretreatment Standards for Wastewater Treatment Works and Indirect Dischargers"). MassDEP has also prioritized this area, issuing detailed operation and maintenance guidelines entitled "Optimizing Operation, Maintenance and Rehabilitation of Sanitary Sewer Collection Systems."

Exhibit A

Permit Number	Permittee	Co-permittees	Issue Date with Co-permittees
MA0100404	Massachusetts Water Resources Authority – Clinton	Town of Clinton Lancaster Sewer District	September 27, 2000
MA0101010	City of Brockton	Town of Abington Town of Whitman	May 11, 2005
MA0100412	Westborough Wastewater Treatment Plant	Town of Westborough Town of Shrewsbury Town of Hopkinton	May 20, 2005
MA0100480	City of Marlborough	Town of Northborough	May 26, 2005
MA0100447	Greater Lawrence Sanitary District	City of Lawrence, Town of Andover, Town of North Andover, Town of Methuen, Town of Salem, NH	August 11, 2005
MA0100633	Lowell Regional Wastewater Utilities	Town of Chelmsford, Town of Dracut Town of Tewksbury Town of Tyngsborough	September 1, 2005
MA0100064	Pepperell Wastewater Treatment Plant	Town of Groton	December 22, 2005
MA0100439	Town of Webster Sewer Department	Town of Dudley	March 24, 2006
MA0100455	Town of South Hadley, Board of Selectmen	Town of Granby, Town of Chicopee	June 12, 2006
MA0100617	City of Leominster (NPDES Permit No. MA0100617)	Town of Lunenburg Town of Lancaster	September 28, 2006
MA0100510	Hoosac Water Quality District	Town of Williamstown Town of North Adams Town of Clarksburg	September 28, 2006
MA0101036	Board of Public Works, North Attleborough	Town of Plainville	January 4, 2007
NH0100544	Town of Sunapee	New London Sewer Commission	February 21, 2007
MA0100552	Lynn Water and Sewer Commission (NPDES Permit No. MA0100552)	Town of Nahant Town of Swampscott Town of Saugus	March 3, 2007

Permit Number	Permittee	Co-permittees	Issue Date with Co-permittees
NH0100331	City of Concord	Boscawen Board of Selectmen	June 29, 2007
NH0100790	City of Keene (NPDES Permit No. NH0100790)	Town of Marlborough, NH Swanzey Sewer Commission	August 24, 2007
NH0100625	Town of Hampton	Rye Sewer Commission	August 28, 2007
NH0100161	Town of Merrimack, NH	Town of Bedford	September 25, 2007
MA0101621	City of Haverhill	Town of Groveland	December 5, 2007
MA0101681	City of Pittsfield, Department of Public Works	Town of Dalton Town of Lenox Town of Hinsdale Town of Lanesborough Town of Richmond	August 22, 2008
NH0100447	City of Manchester	Town of Goffstown Town of Bedford Town of Londonderry	September 25, 2008
MA0100781	City of New Bedford	Town of Acushnet Town of Dartmouth	September 28, 2008
MA0101818	City of Northhampton	Town of Williamsburg	September 30, 2008
NH0100960	Winnepesaukee River Basin Program Wastewater Treatment Plant	Town of Belmont Town of Center Harbor City of Franklin Town of Gilford City of Laconia Town of Meredith Town of Northfield Town of Tilton	June 19, 2009
MA0101800	City of Westfield	Town of Southwick	September 30, 2009
MA0101231	Hull Permanent Sewer Commission	Cohasset Sewer Commission Hingham Sewer Commission	September 1, 2009
MA0100994	Gardner Department of Public Works	Town of Ashburnham	September 30, 2009
MA0102598	Charles River Pollution Control District	Town of Franklin Town of Medway Town of Millis Town of Bellingham	July 23, 2014

Permit Number	Permittee	Co-permittees	Issue Date with Co-permittees
MA0101702	MFN Region Wastewater District	Town of Mansfield Town of Norton Town of Foxboro	September 11, 2014
MA0100897	Taunton Wastewater Treatment Plant	Town of Raynham Town of Dighton	April 10, 2015
NH0100366	City of Lebanon, NH	Town of Enfield	September 30, 2015
NH0100099	Town of Hanover, NH	City of Lebanon	November 18, 2015
MA0100501	South Essex Sewerage District	City of Beverly, Town of Danvers Town of Marblehead City of Peabody City of Salem	May 5, 2016
NH0100471	Town of Milford, NH	Town of Wilton Sewer Commission	August 31, 2020
MA0101613	Springfield Regional Wastewater Treatment Facility	Town of Agawam Town of East Longmeadow Town of Longmeadow Town of Ludlow Town of West Springfield Town of Wilbraham	September 30, 2020
NH0101390	Town of Allenstown, NH	Town of Pembroke Sewer Commission	November 29, 2021
NH0100901	Town of Concord - Concord Hall Street Wastewater Treatment Facility	Town of Bow	July 1, 2022
MAG590000	2022 Medium Wastewater Treatment Facilities General Permit	(as authorized)	September 28, 2022

Exhibit B

I/I Flow Analysis for Sample Regional Publicly Owned Treatment Works

I. Representative POTWS

The **South Essex Sewer District (SESD)** is a regional POTW with a treatment plant in Salem, Massachusetts. The SESD serves a total population of 174,931 in six communities: Beverly, Danvers, Marblehead, Middleton, Peabody and Salem. The **Charles River Pollution Control District (CRPCD)** is a regional POTW with a treatment plant in Medway, Massachusetts. The CRPCD serves a total population of approximately 28,000 in four communities: Bellingham, Franklin, Medway and Millis. Both of these facilities have been operating since 2001 under permits that place requirements on the treatment plant to implement I/I reduction programs with the satellite collection systems, in contrast to Region 1's current practice of including the satellite collection systems as co-permittees.

II. Comparison of flows to standards for nonexcessive infiltration and I/I

Flow data from the facilities' discharge monitoring reports (DMRs) are shown in comparison to the EPA standard for nonexcessive infiltration/inflow (I/I) of 275 gpcd wet weather flow and the EPA standard for nonexcessive infiltration of 120 gallons per capita per day (gpcd) dry weather flow; the standards are multiplied by population served for comparison with total flow from the facility. See *I/I Analysis and Project Certification*, EPA Ecol. Pub. 97-03 (1985); 40 CFR 35.2005(b)(28) and (29).

Figures 1 and 2 show the Daily Maximum Flows (the highest flow recorded in a particular month) for the CRPCD and SESD, respectively, along with monthly precipitation data from nearby weather stations. Both facilities experience wet weather flows far exceeding the standard for nonexcessive I/I, particularly in wet months, indicating that these facilities are receiving high levels of inflow and wet weather infiltration.

Figure 1. CRPCD Daily Maximum Flow Compared to Nonexcessive I/I Standard

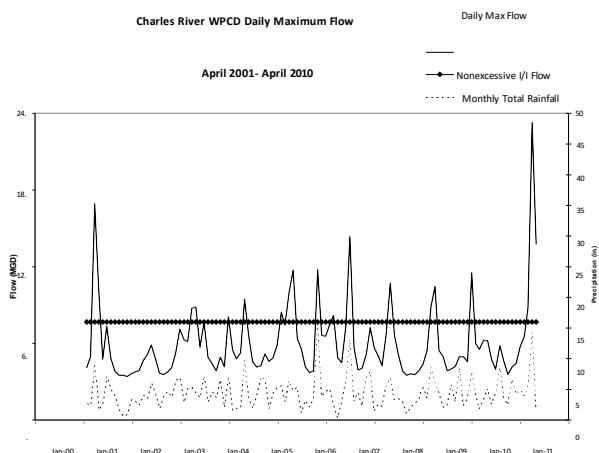
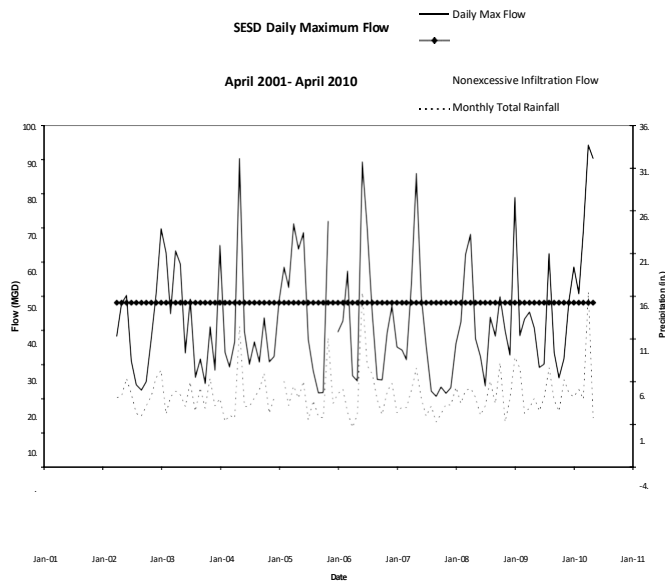


Figure 2. SESD Daily Maximum Flow Compared to Nonexcessive I/I Standard



Figures 3 and 4 shows the Average Monthly Flows for the CRPCD and SESD, which exceed the nonexcessive infiltration standard for all but the driest months. This indicates that these systems experience high levels of groundwater infiltration into the system even during dry weather.

Figure 3. CRPCD Monthly Average Flow Compared to Nonexcessive Infiltration Standard

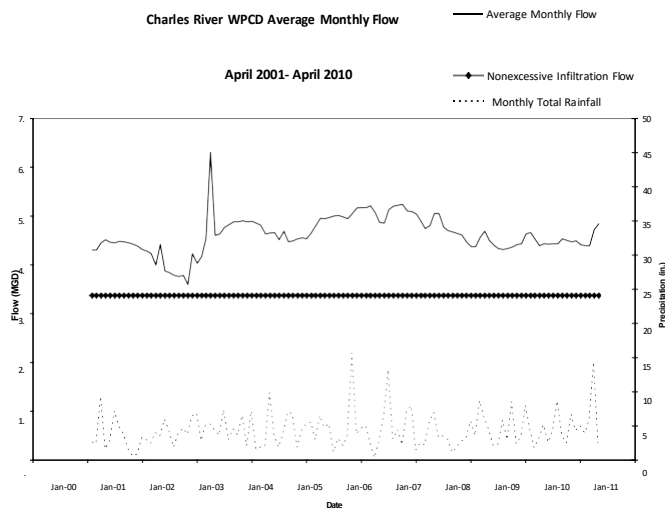
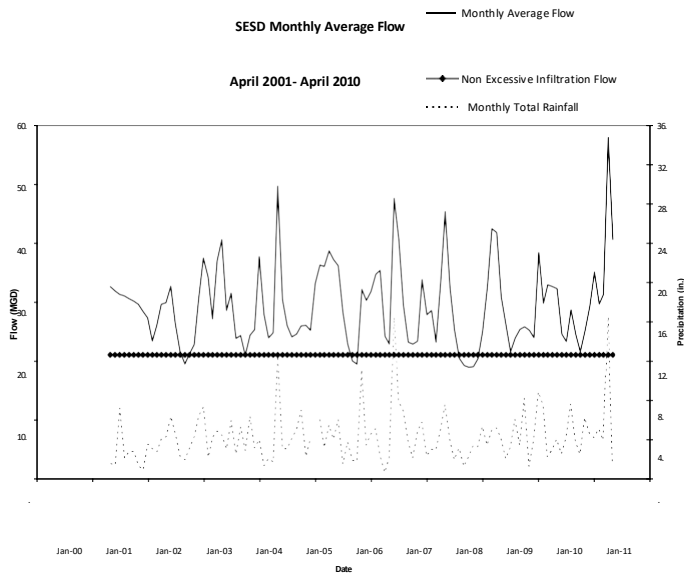


Figure 4. SESD Monthly Average Flow Compared to Nonexcessive Infiltration Standard



II. Flow Trends

Figures 5 and 6 show the trend in Maximum Daily Flows over the period during which these regional facilities have been responsible for implementing cooperative I/I reduction programs with the satellite collection systems. The Maximum Daily Flow reflects the highest wet weather flow for each month. The trend over this time period has been of increasing Maximum Daily Flow, indicating that I/I has not been reduced in either system despite the permit requirements.

Figure 5. CRPCD Daily Maximum Flow Trend

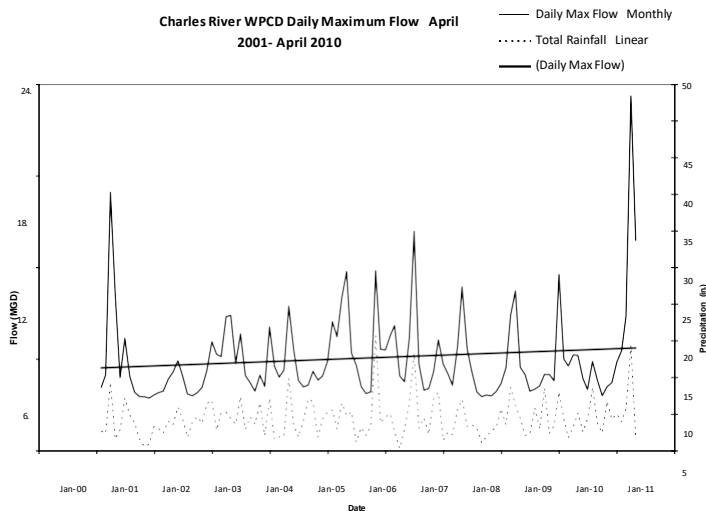
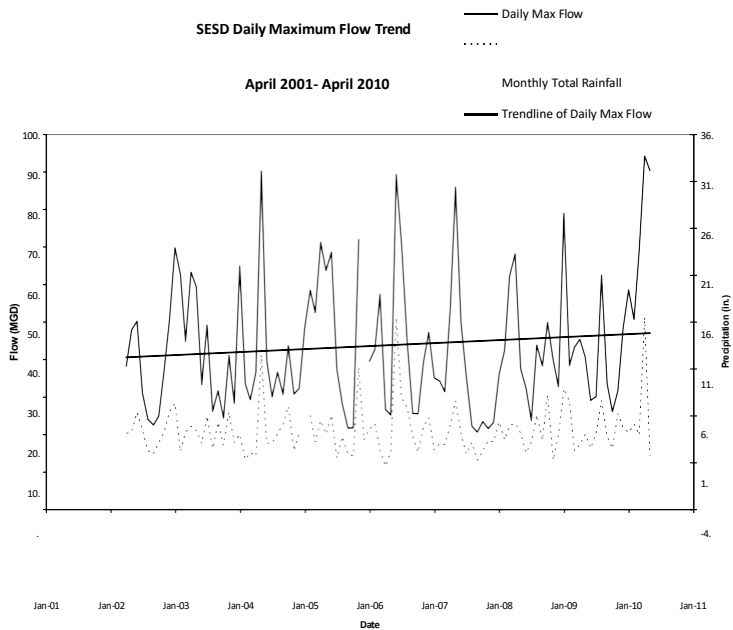


Figure 6. SESD Daily Maximum Flow Trend



III. Violations Associated with Wet Weather Flows

Both the CRPCD and SESD have experienced permit violations that appear to be related to I/I, based on their occurrence during wet weather months when excessive I/I standards are exceeded. Figure 7 shows violations of CRPCD's effluent limits for CBOD (concentration) and TSS (concentration and percent removal). Twelve of the sixteen violations occurred during months when daily maximum flows exceeded the EPA standard.

Figure 7. CRPCD CBOD and TSS Effluent Limit Violations

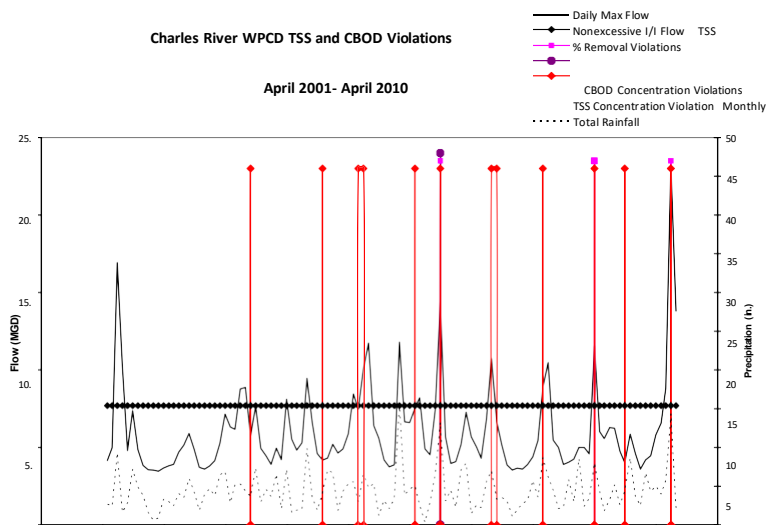
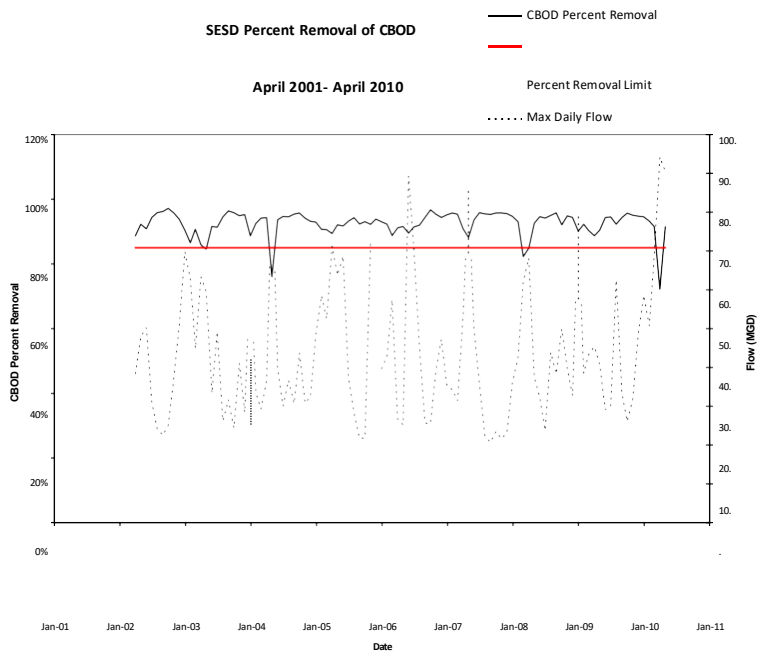


Figure 8 shows SESD’s results for removal of CBOD, in percentage, as compared to maximum daily flow. SESD had three permit violations where CBOD removal fell below 85%, all during months with high Maximum Daily Flows.

Figure 8. SESD CBOD Percent Removal



In addition, both of these regional POTWs have experienced SSOs within the municipal satellite collection systems. In the SESD system, Beverly, Danvers, Marblehead and Peabody have reported SSOs between 2006 and 2008, based on data provided by MassDEP. In the CRPCD system, both Franklin and Bellingham have reported SSOs between 2006 and 2009.

Exhibit C

Form of Regional Administrator's waiver of permit application requirements for municipal satellite collection systems



REGION 1

BOSTON, MA 02109

Re: Waiver of Permit Application and Signatory Requirements for [Municipal Satellite Sewage Collection System]

Dear _____:

Under NPDES regulations, all POTWs must submit permit application information set forth in 40 C.F.R. § 122.21(j) unless otherwise directed. Where the Region has “access to substantially identical information,” the Regional Administrator may waive permit application requirements for new and existing POTWs. *Id.* Pursuant to my authority under this regulation, I am waiving NPDES permit application and signatory requirements applicable to the above-named municipal satellite collection systems.

Although EPA has the authority to require municipal satellite collection systems to submit individual permit applications, in this case I find that requiring a single permit application executed by the regional POTW treatment plant owner/operator will deliver “substantially identical information,” and will be more efficient, than requiring separate applications from each municipal satellite collection system owner/operator. Municipal satellite collection system owners/operators are expected to consult and coordinate with the regional POTW treatment plant operators to ensure that any information provided to EPA about their respective entities is accurate and complete. In the event that EPA requires additional information, it may use its information collection authority under CWA § 308. 33 U.S.C. § 1318.

This notice reflects my determination based on the specific facts and circumstances in this case. It is not intended to bind the agency in future determinations where a separate permit for municipal satellites would not be duplicative or immaterial.

If you have any questions or would like to discuss this decision, please contact [EPA Permit Contact] at <mailto:permit.writer@epa.gov> or 617-918-XXXX.

Sincerely,

Regional Administrator

Manchester CSO Discharge Summary (2018-2023)

	2018		2019		2020		2021		2022		2023	
Outfall	Events (#)	Volume (MG)	Events (#)	Volume (MG)	Events (#)	Volume (MG)	Events (#)	Volume (MG)	Events (#)	Volume (MG)	Events (#)	Volume (MG)
011	2	0.1	0	0	0	0	0	0	0	0	2	0.1
018	3	0.39	0	0	0	0	0	0	0	0	0	0
031	42	16.81	40	8	39	7.2	42	11.7	47	15.5	42	36.6
039	3		0	0	0	0	0	0	0	0	2	0.1
043	2	0.1	0	0	4	0	1	0.2	2	0.1	6	0.8
044	55	298.31	57	142.1	49	137.8	56	190.3	61	308.9	56	781.6
045	6	2.21	2	0	3	0.1	0	0	1	0	4	2
046	7	9.52	6	0.1	4	0.7	4	0.3	49	9.5	43	16.6
047	31	23.43	28	8.8	31	7.5	35	13.8	46	12.3	39	23.9
050	3	1.86	0	0	0	0	0	0	15	5.3	8	4.1
051	0	0	0	0	0	0	0	0	0	0	0	0
052	3	1.86	0	0	0	0	1	<0.1	16	6.9	8	6.1
053	0	0	0	0	0	0	0	0	0	0	0	0
054	17	3	12	1.1	14	0.7	19	1	20	1.7	28	3
055	3	6	0	0	0	0	0	0	0	0	3	0.8
TOTAL	177	364.2	145	160.1	144	154	158	217.7	257	360.2	241	875.7

0 = <0.1

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY-REGION 1 (EPA)
WATER DIVISION
5 POST OFFICE SQUARE
BOSTON, MASSACHUSETTS 02109

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

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

PUBLIC NOTICE PERIOD: April 10, 2024 – May 10, 2024

PERMIT NUMBER: **NH0100447**

NAME AND MAILING ADDRESS OF APPLICANT:

City of Manchester
300 Winston Street
Manchester, NH 03103

NAME AND LOCATION OF FACILITY WHERE DISCHARGE OCCURS:

City of Manchester
300 Winston Street
Manchester, NH 03103

RECEIVING WATER: Merrimack River, Class B

PREPARATION OF THE DRAFT PERMIT:

EPA is issuing for public notice and comment the Draft. Sludge from this facility is incinerated on site. The effluent limits and permit conditions imposed have been drafted pursuant to, and assure compliance with, the CWA, including EPA-approved State Surface Water Quality Standards at Env-Wq 1700 et seq. NHDES cooperated with EPA in the development of the Draft NPDES Permit. NHDES plans to adopt EPA's permit under Chapter 485-A of the New Hampshire Statutes (NH RSA 485-A:13, I(a)).

In addition, EPA has requested that NHDES grant or deny certification of this Draft Permit pursuant to Section 401 of the CWA and implementing regulations. Under federal regulations governing the NPDES program at 40 Code of Federal Regulations (CFR) § 124.53(e), state certification shall contain conditions that are necessary to assure compliance with the applicable provisions of CWA sections 208(e), 301, 302, 303, 306, and 307 and with appropriate requirements of State law, including any conditions more stringent than those in the Draft

Permit that NHDES finds necessary to meet these requirements. In addition, NHDES may provide a statement of the extent to which each condition of the Draft Permit can be made less stringent without violating the requirements of State law.

INFORMATION ABOUT THE DRAFT PERMIT:

The draft permit and explanatory fact sheet may be obtained at no cost at <https://www.epa.gov/npdes-permits/new-hampshire-draft-individual-npdes-permits> or by contacting:

Robin Johnson
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912
Telephone: (617) 918-1045
johnson.rob@epa.gov

Any electronically available documents that are part of the administrative record can be requested from the EPA contact above.

PUBLIC COMMENT AND REQUESTS FOR PUBLIC HEARING:

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by **May 10, 2024**, which is the close of the public comment period. Comments, including those pertaining to EPA's request for CWA § 401 certification and/or NHDES proposed issuance of a State Surface Water Permit, should be submitted to the EPA contact at the address or email address listed above. Upon the close of the public comment period, EPA will make all comments available to NHDES.

If comments are submitted in hard copy form, please also email a copy to the EPA contact above.

FINAL PERMIT DECISION:

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

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

RENE PELLETIER, DIRECTOR
WATER DIVISION
NEW HAMPSHIRE DEPARTMENT OF
ENVIRONMENTAL SERVICES