

ATTACHMENT 3

**Final NPDES Permit
No. NH0100170**

Dated March 6, 2015

Nashua Wastewater Treatment Facility
NPDES Permit No. NH0100170

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**AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT
DISCHARGE ELIMINATION SYSTEM (NPDES)**

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

The City of Nashua, New Hampshire

Is authorized to discharge from the wastewater treatment facilities located at,

**Sawmill Road
Nashua, New Hampshire 03060**

and from **9 Combined Sewer Overflows (CSOs)** (discharge serial numbers: 002-009 and 014); see **Attachment A** of this permit.

To the receiving waters named: **Merrimack River** (Wastewater Treatment Facility [Outfall 001] and CSOs [Outfalls #002-005 and 014]) and **Nashua River** (CSOs [Outfalls # 006-009])

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

This permit will become effective immediately on the first day of the calendar month following 60 days after signature.

This permit expires at midnight, five (5) years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on May 31, 2000.

This permit consists of **Part I** (including effluent limitations, monitoring requirements, and related conditions), **Attachment A** (Combined Sewer Overflows), **Attachment B** (Freshwater Acute Whole Effluent Toxicity Test Procedure and Protocol (February 28, 2011)), **Attachment C** (Reassessment of Technically Based Local Limits), **Attachment D** (Industrial Pretreatment Annual Report), **Attachment E** (Summary of Required Reports), and **Part II** (Standard Conditions)

Signed this 6th day of March, 2015.

___/S/ SIGNATURE ON FILE___

Ken Moraff, Acting Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency
Region I
Boston, Massachusetts

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Part I Effluent Limitations and Monitoring Requirements

A. Wastewater Treatment Facility - Outfall 001

- During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge from Outfall Serial Number 001 treated domestic, commercial and industrial wastewater effluent and stormwater to the Merrimack River. Such discharges shall be limited and monitored by the permittee as specified below. Samples taken in compliance with the monitoring requirements specified below shall be representative of the discharge and shall be taken at end of all processes, including disinfection, unless otherwise noted below or at an alternative representative location approved by the EPA and NHDES.

Effluent Characteristic	Units	Effluent Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow ¹	MGD	Report	—	Report	Continuous	Recorder
BOD ₅ ^{2,3} BOD ₅ ^{2,3}	mg/l lbs/day	30 4006	45 6008	50 6676	5/Week 5/Week	24-Hour Composite 24-Hour Composite
TSS ^{2,3} TSS ^{2,3}	mg/l lbs/day	30 4006	45 6008	50 6676	5/Week 5/Week	24-Hour Composite 24-Hour Composite
pH (Range) ^{3,4}	Standard Units	6.5 – 8.0 Standard Units			1/Day	Grab
<i>Escherichia coli</i> ^{5,6}	Colonies/100 ml	126		406	1/Day	Grab
Total Residual Chlorine ^{5,7}	mg/l	0.31		0.54	1/Day	Grab

See Pages 4 and 5 for Footnotes

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Part I.

A.1. (Continued)

Effluent Characteristic	Units	Effluent Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Total Phosphorus (April 1 st – Oct. 31 st)	mg/l lbs/day	0.8 mg/l Report	— —	Report Report	2/Week 2/Week	24-Hour Composite 24-Hour Composite
Total Recoverable Copper ⁸	µg/l	20.0	—	Report	2/Month	24-Hour Composite
Total Recoverable Lead ⁸	ug/l	0.540	—	Report	2/Month	24-Hour Composite
Whole Effluent Toxicity LC ₅₀ ^{9,10,11,12,1}	Percent	—	—	100	2/Year	24-Hour Composite
Ammonia Nitrogen, as Nitrogen ¹³	mg/l	—	—	Report	2/Year	24-Hour Composite
Hardness ¹³	mg/l	—	—	Report	2/Year	24-Hour Composite
Alkalinity ¹³	mg/l	—	—	Report	2/Year	24-Hour Composite
Total Recoverable Aluminum ¹³	mg/l	—	—	Report	2/Year	24-Hour Composite
Total Recoverable Cadmium ¹³	mg/l	—	—	Report	2/Year	24-Hour Composite
Total Recoverable Copper ¹³	mg/l	—	—	Report	2/Year	24-Hour Composite
Total Recoverable Lead ¹³	mg/l	—	—	Report	2/Year	24-Hour Composite
Total Recoverable Nickel ¹³	mg/l	—	—	Report	2/Year	24-Hour Composite
Total Recoverable Zinc ¹³	mg/l	—	—	Report	2/Year	24-Hour Composite

See Pages 4 and 5 for Footnotes

Footnotes to Part I.A.1.

1. The effluent and influent flows shall be continuously measured and recorded using a flow meter and totalizer.
2. To monitor for 85 percent removal of BOD₅ and TSS during dry weather periods, as required in Part I.A.4. of this permit, the influent concentrations of both BOD₅ and TSS shall be monitored twice per month using a 24-hour composite sample and the results reported as average monthly values. The influent concentrations shall be used to calculate the percent reduction in BOD₅ and TSS.
3. During periods when the Wet Weather Flow Treatment Facility (WWFTF) is discharging, samples collected for determining compliance with the technology-based effluent limitations for BOD₅, TSS, and pH shall be taken at a location prior to the flow combining with the effluent from the Wet Weather Flow Treatment Facility.
4. State certification requirement.
5. Samples collected for the analysis of *Escherichia coli* (*E. coli*) and total residual chlorine (TRC), as described in footnotes 6-7 below, shall be collected concurrently.
6. The average monthly value for *E. coli* shall be determined by calculating the geometric mean. *E. coli* shall be tested using an approved method as specified in 40 Code of Federal Regulations (C.F.R.) Part 136, List of Approved Biological Methods for Wastewater and Sewage Sludge.
7. Total residual chlorine shall be measured using any one of the following three methods listed in 40 C.F.R. Part 136:
 - a. Amperometric direct.
 - b. DPD-FAS.
 - c. Spectrophotometric, DPD.
8. The results of the total recoverable copper and lead analyses performed in conjunction with whole effluent toxicity (WET) tests (see footnote 13) may be used to satisfy one of the monitoring requirements for these metals for the particular month in which the samples were collected.
9. The LC₅₀ is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate in that sample.
10. The permittee shall conduct 48-hour freshwater acute (static) toxicity tests on effluent samples using the daphnid, *Ceriodaphnia dubia* (*C. dubia*), and the fathead minnow, *Pimephales promelas* (*P. promelas*), as test species. The tests shall be conducted in

accordance with the procedures and protocols specified in **Attachment B** (*Freshwater Acute Toxicity Test Procedure and Protocol*, USEPA Region 1 (February 2011)).

11. Samples collected for use in whole effluent toxicity (WET) tests shall be collected and tests completed two times per year during the calendar quarters ending September 30th and March 31st. Toxicity test results are to be postmarked by the 15th day of the month following the end of the calendar quarter sampled.
12. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in **Attachment B**, Section IV., Dilution Water, in order to obtain an individual written approval for the use of an alternate dilution water for future tests, or the permittee shall follow the self-implementing Alternative Dilution Water Guidance which may be used to obtain automatic approval for the use of an alternate dilution water for a retest and to request written approval for the use of an alternate dilution water for future tests, including the appropriate species for use with that water. This guidance is found in Attachment G of the NPDES Program Instructions for the Discharge Monitoring Report Forms (DMRs), which may be found on the EPA Region I web site at <http://www.epa.gov/Region1/enforcementandassistance/dmr.html>. If this guidance is revoked, the permittee shall obtain an individual approval as outlined in **Attachment B**. Any modification or revocation to this guidance will be transmitted to the permittees. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in **Attachment B**.
13. For each WET test performed, the permittee shall report on the appropriate Discharge Monitoring Report (DMR) the concentrations of ammonia nitrogen as nitrogen, hardness, alkalinity; and total recoverable aluminum, cadmium, copper, lead, nickel and zinc detected in the 100 % effluent sample. These results shall also be included in the WET test report for the calendar quarter in which the test was conducted.

All of the aforementioned chemical parameters shall be determined to at least the Minimum Quantification Level as stated in **Attachment B**, Section VI, Chemical Analysis.

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
(CONTINUED)**

2. The discharge shall not cause a violation of the water quality standards of the receiving water.
3. The discharge shall be adequately treated to ensure that the surface water remains free from pollutants in concentrations or combinations that settle to form harmful deposits, float as foam, debris, scum or other visible pollutants. It shall be adequately treated to ensure that the surface waters remain free from pollutants which produce odor, color, taste or turbidity in the receiving waters which is not naturally occurring and would render it unsuitable for its designated uses.

4. The permittee's treatment facility shall maintain a minimum of 85 removal of both total suspended solids and biochemical oxygen demand during dry weather. Dry weather is defined as any calendar day on which there is less than 0.1 inch of rainfall, no snow melt (which occurs on a day in which the temperature is greater than 32° F), and 24 hours after a storm event to allow the storm-related flow to pass through the collection system and treatment facilities (as recorded by a hydrograph). The percent removal shall be calculated as a monthly average using the influent and effluent BOD₅ and TSS values collected during dry weather days.
5. When the effluent discharged for a period of 3 consecutive months exceeds 80 percent of the facility's 16 million gallons per day (MGD) design flow (i.e., exceeds 12.8 MGD), the permittee shall submit to the permitting authorities a projection of 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.
6. All POTWs must provide adequate notice to both EPA Region I and the New Hampshire Department of Environmental Services, Water Division (NHDES) of the following:
 - a. Any new introduction of pollutants into the POTW from an indirect discharger in a primary industry category (see 40 C.F.R. §122 Appendix A, as amended) discharging process water; and
 - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

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

- a. The quantity and quality of effluent introduced into the facility; and
 - b. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the facility.
7. The permittee shall not discharge into the receiving water any pollutant or combination of pollutants in toxic amounts.

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B. COMBINED SEWER OVERFLOWS (CSOs)

1. Combined Sewer Overflow Outfalls # 002 – 009 and 014

During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge stormwater and wastewater from combined sewer overflow (CSO) outfalls numbered 002 - 005 and 014 into the Merrimack River and from CSO outfalls numbered 006-009 into the Nashua River (see **Attachment A**). These discharges are authorized only during wet weather (i.e., any period in which there is greater than 0.1 inches of rain and/or snow melt). Such discharges shall be limited and monitored by the permittee as specified below. Samples taken in compliance with the requirements specified below shall be collected at a location that provides a representative analysis of the effluent.

Effluent Characteristic	Units	Effluent Limitation	Monitoring Requirement	
Parameter		Wet Weather Event Maximum	Measurement Frequency	Sample Type
<i>Escherichia coli</i> ^{1,2}	Colonies/100 ml	1000	1/Year	Grab

See Page 8 for Footnotes

Footnotes to Part I.B.1.

1. Each of the CSO outfalls identified in **Attachment A** of this permit shall be sampled, at a minimum, once per year. The sampling shall occur during a wet weather discharge event. One grab sample shall be collected within one-half hour after the outfall begins discharging and the results shall be reported. The sampling may be conducted during the POTW's normal business hours; however, sampling may be conducted outside of those hours at the discretion of the permittee. If more than one sample is collected per outfall per wet weather discharge event, all of the sampling results shall be used to calculate the geometric mean, which shall be recorded on the DMRs as the "event maximum".
2. Results from each year's sampling shall be reported with each December's discharge monitoring report (DMR) which shall be postmarked by January 15th. If an individual CSO does not discharge or does not discharge sufficiently to collect a sample during the calendar year, report a "C" for that outfall on the December DMR.
3. *E. coli* shall be analyzed using an approved method as specified in 40 C.F.R. Part 136, List of Approved Biological Methods for Wastewater and Sewage Sludge.

Part I.B.1. (Continued)

During wet weather, the permittee is authorized to discharge storm water/wastewater from the combined sewer outfalls listed in **Attachment A**, subject to the following conditions.

- 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 include the implementation of the Nine Minimum Controls (NMCs) specified below and detailed further in **Part I.B.2** (Nine Minimum Controls, Minimum Implementation Levels) of this permit:
 - (1) Proper operation and regular maintenance programs for the sewer system and the combined sewer overflow outfalls.
 - (2) Maximum use of the collection system for storage.
 - (3) Review and modification of pretreatment requirements to assure CSO impacts are minimized.
 - (4) Maximization of flow to the POTW for treatment.
 - (5) Elimination 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 CSO impacts.

- (9) Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.
- b. Implementation of these controls is required by the effective date of the permit. Until the review and update of the program for implementing the NMCs, as required in Part I.B.1.c of this draft permit, has been completed, the permittee shall continue to implement the NMCs in accordance with the documentation submitted by the City on April 30, 2010, titled "High Flow Management Plan", except where the minimum implementation levels described in Part I.B.2. are more stringent. Upon completion of the review, the nine minimum controls shall then be implemented in accordance with the updated documentation, except as updated pursuant to the annual reporting requirements in Part I.B.4.
- c. **Within twelve months of the effective date of the permit**, the permittee shall review and update (as necessary) its program for implementing the Nine Minimum Controls, and shall submit to EPA and NHDES updated documentation of this program, which shall include a certification that this review has been performed and a description of any resultant revisions made to the program. EPA and NHDES consider that approvable documentation must include the minimum requirements set forth in Part I.B.2. of this permit and additional activities the permittee can reasonably undertake.
- d. The discharges shall not cause or contribute to violations of state water quality standards in the receiving waters.
2. Nine Minimum Controls Minimum Implementation Levels
- a. The permittee shall implement the nine minimum controls in accordance with the documentation provided to EPA and NHDES under Part I.B.1. of this permit, or as subsequently modified to enhance the effectiveness of the controls. This implementation must include the items listed below (Part I.B.2.) plus any other controls the permittee can feasibly implement as set forth in the documentation.
- b. Each CSO structure/regulator, and/or pumping station shall be routinely inspected at a minimum of once per month to insure that they are in good working condition and adjusted to minimize combined sewer discharges (NMCs #1, 2, and 4). The following inspection results shall be recorded: date and time of the inspection, the general condition of the facility, and whether the facility is operating satisfactorily. The following information shall be recorded if maintenance is necessary: a description of the necessary maintenance, the date the necessary maintenance was performed, and whether the observed problem was corrected. The permittee shall maintain records of all inspections for a minimum of three years.
- c. Discharges to the combined sewer system of septage, holding tank wastes or other material which may cause a visible oil sheen or containing a floatable material are prohibited during wet weather when CSO discharges may be active (NMCs #3, 6, and 7).

- d. Dry weather overflows (DWOs) are prohibited (NMC # 5). Dry weather is defined as any calendar day on which there is less than 0.1 inch of rainfall, no snow melt (which occurs on a day in which the temperature is greater than 32° F), and 24 hours after a storm event to allow the storm-related flow to pass through the collection system and treatment facilities (as recorded by a hydrograph). All dry weather sanitary and/or industrial discharges from CSOs must be reported to EPA and NHDES within 24 hours and a written report provided within five days of the overflow in accordance with the reporting requirements for plant bypass (Paragraph D.1.e. of Part II of this permit and 40 C.F.R. § 122.41(l)(6)).
- e. The permittee shall quantify and record all discharges from combined sewer outfalls (NMC # 9). Quantification shall be through direct measurement. The following information shall be recorded for each combined sewer outfall for each discharge event:
- Duration (hours) of discharge;
 - Volume (gallons) of discharge; and
 - Precipitation data collected by the City of Nashua's rain gages at daily (24-hour) intervals and one-hour intervals. Cumulative precipitation per discharge event shall be calculated.

The permittee shall maintain all records of discharges for at least three years after the effective date of the permit.

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

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

The permittee, to the extent practicable, shall add a universal symbol to its warning signs reflecting a CSO discharge, or place additional signs in languages other than English based on notification from the EPA and NHDES or on the permittee's own determination that the primary language of a substantial percentage of the residents in the vicinity of a given outfall structure is not English.

- g. The permittee shall issue an annual notification to the public which shall include (a) general information on CSOs, (b) their locations in Merrimack River Watershed, (c) potential health risks posed by exposure to CSO discharges, and (d) a status update of measures taken during the previous calendar year to reduce occurrences of CSO discharges.

3. Nine Minimum Controls Annual Reporting Requirement

Annually, no later than **March 1st** of each year, the permittee shall submit a report to EPA and NHDES summarizing activities undertaken during the previous calendar year relating to compliance with the nine minimum controls. This report shall include, but not be limited to, the following:

- a. A certification which states that the once-per-month inspections required in Part I.B.2.b. of the permit were conducted, results recorded, and records maintained.
- b. A certification which states that all discharges from CSOs were recorded and records maintained for the previous calendar year. In addition, a summary of the previous year's discharge monitoring information required by Part I.B.2.e. of this draft permit, including activation frequencies and discharge volumes, for all of the authorized combined sewer overflow outfalls identified in **Attachment A** of this permit, shall be submitted as an attachment to this certification.
- c. Precipitation data for each day of the previous calendar year, including total rainfall, peak intensity, and average intensity.
- d. A summary of modifications to the NMC program which have been evaluated, and a description of those which will be implemented during the upcoming year.
- e. In the first annual report submitted in accordance with this permit, the permittee shall update the public notification plan describing the measures actively being taken to meet NMC #8 (see Part I.B.1.) and an evaluation of further measures to enhance the public notification program, including the following:
 - (1) Outfall signs visible from both water and land.
 - (2) Signs/notices at areas where people may be using CSO-impacted waters for recreation such as swimming, boating, fishing, and places where the public may gain access to the water (e.g. boat put-in areas). The notice would include information on the health risks posed by CSOs and sources for additional information on CSOs and water quality.
 - (3) Analysis of precipitation data collected by the City of Nashua's rain gages located throughout the collection system and CSO discharge data to estimate the threshold rain events which normally cause overflows. This evaluation shall be conducted on data collected beginning the effective date of the permit.
 - (4) Annually, **by April 15th**, the permittee shall provide the public with an update on the progress made in reducing CSO discharge events during the previous calendar year and shall also include a reference to contacts for additional information on CSOs and their impact on water quality.

- (6) **Within six months of the effective date of the permit**, and annually thereafter, the permittee shall update its website to include (a) general information on CSOs, (b) their locations in Merrimack River Watershed, (c) potential health risks posed by exposure to CSO discharges, and (d) a link to the City's website which describes the progress on abatement projects and the most current information on CSO activations including the frequency, duration, and volume of each discharge.
- (7) Notification to downstream public or privately owned water supply systems drawing water from the same receiving water and located within 20 miles downstream of the point of discharge, within 24 hours of discharge from a CSO. When the City of Nashua WWTF's staff is unavailable to confirm an actual discharge from a CSO during a significant precipitation event, the permittee shall report the probable occurrence of a CSO discharge in the same manner. Subsequently, the occurrence of the CSO discharge event shall be confirmed or dispelled as information becomes available. The planned notice contact list shall be provided to EPA and NHDES **within 1 month of the effective date of the permit**.

The public notification plan shall include a schedule for implementation of enhanced public notice measures.

4. Wet Weather Flow Treatment Facility and Screening and Disinfection Facility

In addition to the requirements described above, the Wet Weather Flow Treatment Facility (WWFTF) and Screening and Disinfection Facility (SDF) are subject to additional monitoring requirements as enhanced minimum controls, as set forth in Table I.B.5.a. and Table I.B.5.b.

Discharges from these facilities shall not cause or contribute to violations of the water quality standards in the receiving water.

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Part I.B.5.

a. Wet Weather Flow Treatment Facility - internal outfall (001W) to the chlorine contact chamber - Effluent Limitations and Monitoring Requirements

During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge from Outfall Serial Number 001W (internal outfall to chlorine contact chamber) domestic, commercial and industrial wastewater and stormwater to the chlorine contact chamber before final discharge to the Merrimack River. Such discharges shall be limited and monitored by the permittee as specified below.

Effluent Characteristic	Effluent Limitation				Monitoring Requirement ¹	
Parameter	Average Monthly		Maximum Daily		Measurement Frequency	Sample Type
BOD ₅ ²	Report (mg/l and lbs/day)		Report (mg/l and lbs/day)		1/Month	Event Composite ^{3,4}
TSS ²	Report mg/l and lbs/day)		Report (mg/l and lbs/day)		1/Month	Event Composite ^{3,4}
Parameter	Total Monthly	Maximum Hourly	Duration	Frequency	Measurement Frequency	Sample Type
Flow into the WWFTF ⁵⁸	Report (MG)	Report (MGD)	Report (Total Hours)	Report (# of Events)	Per Event ⁴	Recorder
Flow discharged from the WWFTF to the chlorine contact tank ⁶	Report (MG)	Report (MGD)	Report (Total # of Hours)	Report (# of Events)	Per Event ⁴	Recorder
Flow drained back to the POTW ⁷	Report (MG)	Report (MGD)	Report (Total of Hours)	Report (#of Events)	Per Event ⁴	Recorder
Rainfall Precipitation ⁹	See Footnote 8				Per Event ⁴	Recorder

See Page 14 for Footnotes

Footnotes to Part I.B.5.a.

1. Samples taken in compliance with the monitoring requirements specified in table B.5.a. shall be collected at a point before the chlorine contact chamber, or at an alternative representative location approved by the EPA and NHDES, and shall be representative of the discharge.
2. The influent and effluent concentrations of BOD₅ and TSS shall be monitored at a frequency of once per month when there is flow through the facility. The influent concentrations shall be used to calculate the percent reduction in BOD₅ and TSS.
3. An event composite must represent an event when there is flow discharged from the facility for a duration of at least four hours. An event composite is considered to represent an event duration of at least four hours where (i) the composite represents at least four consecutive hours of flow through the facility; or (ii) the composite represents at least four hours of flow through the facility during a 24-hour period starting at approximately 8:00 AM each day (+/- 2 hours) coinciding with the permittee's composite sampling schedule, if flows through the facility are discontinuous.
4. An "event" is defined as anytime there is flow into the WWFTF.
5. Report total flow (million gallons (MG)), peak flow rate (MGD) and duration (total hours), each time there is flow into the facility.
6. Report total flow (MG), peak flow rate (MGD) and duration (total hours), each time there is flow discharged from the facility toward the chlorine contact tank.
7. Report total flow (MG), peak flow rate (MGD) and duration (total hours), each time there is flow drained back to the POTW for secondary treatment.
8. Report precipitation data for the Nashua area per activation event. Report the intensity (inches/hour) and duration (total hours/event) of each rain event whenever there is flow into the WWFTF. Precipitation data that is collected in accordance with the LTCP may be used to satisfy this reporting requirements, provided that the intensity and duration of each rain event is included.

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Part I.B.5.

b. Screening and Disinfection Facility (SDF) (Outfall No. 014) - Effluent Limitations and Monitoring Requirements

During the period beginning on the effective date¹ and lasting through the expiration date, the permittee is authorized to discharge from Outfall Serial Number 014 to the Merrimack River combined wastewater and stormwater.

Effluent Characteristic Parameter	Effluent Limitation ¹		Monitoring Requirement ²	
	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
BOD ₅ ²	Report (mg/l and lbs/day)	Report (mg/l and lbs/day)	1/Month	Event Composite ^{3,4}
TSS ²	Report (mg/l and lbs/day)	Report (mg/l and lbs/day)	1/Month	Event Composite ^{3,4}
Total Residual Chlorine ^{5,7}	63.2 µg/l	109 µg/l	1 Event/Month ³	Grab
	Wet Weather Event Maximum			
<i>Escherichia coli</i> ^{5,6}	1,000 colonies/100 mL		1 Event/Month ³	Grab

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Part I.B.5.b.Screening and Disinfection Facility (Continued)

Effluent Characteristic	Effluent Limitation				Monitoring Requirement ²	
Parameter	Total Monthly	Maximum Hourly	Duration	Frequency	Measurement Frequency	Sample Type
Flow into the SDF ⁹	Report (MG)	Report (MGD)	Report (Total of Hours)	Report (# of Events)	Per Event ⁵	Recorder
Flow discharged from the SDF to the Merrimack River ¹⁰	Report (MG)	Report (MGD)	Report (Total of Hours)	Report (# of Events)	Per Event ⁵	Recorder
Flow drained back to the collection system ¹¹	Report (MG)	Report (MGD)	Report (Total # of Hours)	Report (#of Events) ⁸	Per Event ⁵	Recorder
Rainfall Precipitation ¹²	See Footnote 12				Per Event ⁵	Recorder

See Page 17 for Footnotes

Footnotes to Part I.B.5.b.

1. Samples taken in compliance with the monitoring requirements specified in Part I.B.5.b. shall be taken at a location that provides a representative sample of the discharge or at an alternative location approved by the EPA and NHDES.
2. The influent and effluent concentrations of BOD₅ and TSS shall be monitored at a frequency of once per month when there is flow through the facility. The influent concentrations shall be used to calculate the percent reduction in BOD₅ and TSS.
3. An “event” is defined as anytime there is flow into the SDF.
4. An event composite must represent an event when there is flow discharged from the facility for a duration of at least four hours. An event composite is considered to represent an event duration of at least four hours where (i) the composite represents at least four consecutive hours of flow through the facility; or (ii) the composite represents at least four hours of flow through the facility during a 24-hour period starting at approximately 8:00 AM each day (+/- 2 hours) coinciding with the permittee’s composite sampling schedule, if flows through the facility are discontinuous.
5. Samples collected for the analysis of *Escherichia coli* (*E. coli*) and total residual chlorine (TRC), as described in footnotes 6-7 below, shall be collected concurrently.
6. The average monthly value for *E. coli* shall be determined by calculating the geometric mean. *E. coli* shall be tested using an approved method as specified in 40 Code of Federal Regulations (C.F.R.) Part 136, List of Approved Biological Methods for Wastewater and Sewage Sludge.
7. Total residual chlorine shall be measured using any one of the following three methods listed in 40 C.F.R. Part 136:
 - a. Amperometric direct.
 - b. DPD-FAS.
 - c. Spectrophotometric, DPD.
8. Report total flow (million gallons (MG), peak flow rate (MGD) and duration (total hours), each time there is flow into the facility.
9. Report total flow (MG), peak flow rate (MGD) and duration (total hours), each time there is flow discharged from the facility to the Merrimack River.
10. Report total flow (MG), peak flow rate (MGD) and duration (total hours), each time there is flow drained back to the collection system.

11. Report precipitation data for the Nashua area, per activation event. Report the intensity (inches/hour) and duration (total hours/event) of each rain event whenever there is flow into the SDF. Precipitation data that is collected in accordance with the LTCP may be used to satisfy this reporting requirements, provided that the intensity and duration of each rain event is included.

C. SPECIAL CONDITIONS

During periods of wet weather, the wastewater treatment facility and the wet weather flow treatment facility shall be operated in a manner that is consistent with the City of Nashua's High Flow Management Plan (HFMP), dated 2010, or the most current EPA-approved High Flow Management Plan.

D. UNAUTHORIZED DISCHARGES

The permit only authorizes discharges in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs) and unauthorized CSOs, are not authorized by this permit and shall be reported in accordance with Part II, Section D.1.e.(1) of the General Requirements of this permit (Twenty-four hour reporting).

E. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions. The permittee is required to complete the following activities for the collection system (both the combined and sanitary collection systems) which it owns:

1. Maintenance Staff

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

2. Preventative Maintenance Program

The permittee shall maintain an ongoing preventative 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. This requirement shall be described in the Collection System O & M Plan required pursuant to Section D.5. below.

3. Infiltration/Inflow

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

4. Collection System Mapping

Within 30 months of the effective date of this permit, the permittee shall prepare a map of the sewer collection system it owns (see page 1 of this permit for the effective date). The map shall be on a street map of the community, with sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions and shall be kept up to date and available for review by federal, state, or local agencies. Such map(s) shall include, but not be limited to the following:

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

Any mapping of the collection system that has already been performed may be used to satisfy this requirement, as long as all of the components identified above in (a) through (k) are included.

5. Collection System Operation and Maintenance Plan

The permittee shall develop and implement a Collection System Operation and Maintenance Plan.

- a. **Within six (6) months of the effective date of the permit**, the permittee shall submit to EPA and NHDES:
 - (1) A description of the collection system management goals, staffing, information management, and legal authorities;

- (2) A description of the overall condition of the collection system including a list of recent studies and construction activities; and
 - (3) A schedule for the development and implementation of the full Collection System O & M Plan including the elements in paragraphs b.1. through b.7. below.
- b. The full Collection System O & M Plan shall be submitted to EPA and NHDES and implemented **within twenty four (24) months from the effective date of this permit**. The Plan shall include:
 - (1) The required submittal from paragraph 5.a. above, updated to reflect current information;
 - (2) A preventative maintenance and monitoring program for the collection system;
 - (3) Sufficient staffing to properly operate and maintain the sanitary sewer collection system;
 - (4) Sufficient funding and the source(s) of funding for implementing the plan;
 - (5) Identification of known and suspected overflows and back-ups, including combined manholes, a description of the cause of the identified overflows and back-ups, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;
 - (6) A description of the permittee's program 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 disconnections and redirection of illegal sump pumps and roof down spouts; and
 - (7) An educational public outreach program for all aspects of I/I control, particularly private inflow.

6. Annual Reporting Requirement

The permittee shall submit a summary report of activities related to the implementation of its Collection System O & M Plan during the previous calendar year. The report shall be submitted to EPA and NHDES **annually by March 31**. The first annual report is due 36 months following the effective date of the permit. The summary report shall, at a minimum, include:

- a. A description of the staffing levels maintained during the year;
- b. A map and a description of inspection and maintenance activities conducted and
- c. corrective actions taken during the previous year;
- d. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;
- e. A map with areas identified for investigation/action in the coming year;
- f. If treatment plant flow has reached 80% of the 16 MGD design flow (12.8 MGD) or there have been capacity related overflows, submit a calculation of the

- maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year; and
- g. 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. ALTERNATIVE POWER SOURCE

In order to maintain compliance with the terms and conditions of this permit, the permittee shall provide an alternate power source with which to sufficiently operate the wastewater facility, as defined at 40 C.F.R. § 122.2, which references the definition at 40 C.F.R. § 403.3(o). Wastewater facility is defined by RSA 485A:2.XIX as the structures, equipment, and processes required to collect, convey, and treat domestic and industrial wastes, and dispose of the effluent and sludge.

G. INDUSTRIAL PRETREATMENT PROGRAM CONDITIONS

1. Limitations for Industrial Users:

- a. A user may not introduce into a POTW any pollutant(s) which cause pass through or interference with the operation or performance of the treatment works. The terms “user”, “pass through” and “interference” are defined in 40 C.F.R. § 403.3.
- b. The permittee shall develop and enforce specific effluent limits (local limits) for Industrial Users(s) and all other users as necessary, which together with appropriate changes in the POTW Treatment Plant’s facilities or operation, are essential 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 this permit**, the permittee shall prepare and submit a written technical evaluation to the 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 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 (**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).

2. Industrial Pretreatment Program

a. The permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the permittee's approved Pretreatment Program and the General Pretreatment Regulations, 40 C.F.R. §403. At a minimum, the permittee must perform the following duties to properly implement the Industrial Pretreatment Program (IPP):

- (1) Carry out inspection, surveillance, and monitoring procedures 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.
- (2) Issue or renew all necessary industrial user control mechanisms within 90 days of their expiration date or within 180 days after the industry has been determined to be a significant industrial user.
- (3) Obtain appropriate remedies for noncompliance by any industrial user with any pretreatment standard and/or requirement.
- (4) Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.
- (5) The permittee shall provide the EPA and the NHDES with an annual report describing the permittee's pretreatment program activities for the twelve month period ending 60 days prior to the due date in accordance with 40 C.F.R. §403.12(i). The annual report shall be consistent with the format described in **Attachment D** (NPDES Permit Requirement for Industrial Pretreatment Annual Report) and shall be submitted no later than **March 1st** of each year.
- (6) The permittee must obtain approval from EPA prior to making any significant changes the industrial pretreatment program in accordance with 40 C.F.R.. §403.18(c).
- (7) The permittee must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the Federal Regulations at 40 C.F.R. §405 et. seq.
- (8) The permittee must modify its pretreatment program to conform to all changes in the Federal Regulations that pertain to the implementation and enforcement of the Industrial Pretreatment Program. The permittee must provide EPA, in writing, **within 180 days of the effective date of this**

permit, proposed changes to the permittee's pretreatment program deemed necessary to assure conformity with current Federal Regulations. At a minimum, the permittee must address in its written submission the following areas: (1) enforcement response plan; (2) revised sewer use ordinances; and (3) slug control evaluations. The permittee will implement these proposed changes pending EPA's approval under 40 C.F.R. §403.18.

H. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal & state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.
2. The permittee shall comply with the more stringent of either the state (Env-Wq 800) or federal (40 C.F.R. Part 503) requirements.
3. The requirements and technical standards of 40 C.F.R. Part 503 apply to facilities which perform one or more of the following 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 40 C.F.R. Part 503 conditions do not apply to facilities which place sludge within a municipal solid waste landfill. These conditions do not apply to facilities which do not dispose of sewage sludge during the life of the permit, but rather treat the sludge (lagoons, reed beds), or are otherwise excluded under 40 C.F.R. Section 503.6.
5. The permittee shall use and comply with the *NPDES Permit Sludge Compliance Guidance* (USEPA November 4, 1999), to determine appropriate conditions. This guidance document is available upon request from EPA Region 1 and may also be found at: <http://www.epa.gov/region1/npdes/permits/generic/sludgeguidance.pdf>. Appropriate conditions contain the following elements:

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

Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.

6. The permittee shall monitor the pollutant concentrations, pathogen reduction and vector attraction reduction for the permittee's chosen sewage sludge use or disposal practices at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year.

less than 290	1/Year
290 to less than 1,500	1/Quarter
1,500 to less than 15,000	6/Year
15,000 plus	1/Month

7. The permittee shall sample the sewage sludge using the procedures detailed in 40 C.F.R. Section 503.8.
8. The permittee shall submit an annual report containing the information specified in the *NPDES Permit Sludge Compliance Guidance*. Reports are **due annually by February 19th**. Reports shall be submitted to both addresses (EPA-Region I and NHDES) contained in the reporting section of the permit.

I. MONITORING AND REPORTING

1. **For a period of one year from the effective date of the permit**, the permittee may either submit monitoring data and other reports to EPA in hard copy form or report electronically using NetDMR, a web-based tool that allows permittees to electronically submit Discharge Monitoring Reports (DMRs) and other required reports via a secure internet connection. **Beginning no later than one year after the effective date of the permit**, the permittee shall begin reporting using NetDMR, unless the facility is able to demonstrate a reasonable basis that precludes the use of NetDMR for submitting DMRs and reports. Specific requirements regarding submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

a. Submittal of Reports Using NetDMR

NetDMR is accessed from: <http://www.epa.gov/netdmr>. **Within one year of the effective date of this permit**, the permittee shall begin submitting DMRs and reports required under this permit electronically to EPA using NetDMR, unless the facility is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports ("opt-out request").

DMRs shall be submitted electronically to EPA no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA, including the NHDES Monthly Operating Reports (MORs), as an electronic attachment to the DMR. Once a permittee

begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA or to NHDES.

b. Submittal of NetDMR Opt-out Requests

Opt-out requests must be submitted in writing to EPA for written approval at least sixty (60) days prior to the date a facility would be required under this permit to begin using NetDMR. This demonstration shall be valid for twelve (12) months from the date of EPA approval and shall thereupon expire. At such time, DMRs and reports shall be submitted electronically to EPA unless the permittee submits a renewed opt-out request and such request is approved by EPA. All opt-out requests should be sent to the following addresses:

**Attn: NetDMR Coordinator
U.S. Environmental Protection Agency, Water Technical Unit
5 Post Office Square, Suite 100 (OES04-4)
Boston, MA 02109-3912**

And

**Attn: Compliance Supervisor
New Hampshire Department of Environmental Services (NHDES)
Water Division
Wastewater Engineering Bureau
P.O. Box 95
Concord, New Hampshire 03302-0095**

c. Submittal of Reports in Hard Copy Form

Monitoring results shall be summarized for each calendar month and reported on separate hard copy DMRs postmarked no later than the 15th day of the month following the completed reporting period. All reports required under the permit, including NHDES MORs, shall be submitted as an attachment to the DMRs. Signed and dated original DMRs and all other reports (with the exception of pretreatment reports) or notifications required herein or in Part II shall be submitted to the Director at the following address:

**U.S. Environmental Protection Agency
Water Technical Unit (OES04-SMR)
5 Post Office Square - Suite 100
Boston, MA 02109-3912**

All pretreatment reports shall be submitted to:

**U.S. Environmental Protection Agency
Attn: Justin Pimpare
Regional Pretreatment Coordinator
5 Post Office Square - Suite 100
OEP06-03
Boston, MA 02109-3912**

Duplicate signed copies of all reports or notifications required above shall be submitted to the State at the following address:

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

Any verbal reports, if required in **Parts I** and/or **II** of this permit, shall be made to both EPA-New England and to NHDES.

J. STATE PERMIT CONDITIONS

1. The permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water unless it has been treated in such a manner as will not lower the legislated water quality classification or interfere with the uses assigned to said water by the New Hampshire Legislature (RSA 485-A:12).
2. This NPDES discharge permit is issued by EPA under federal and state law. Upon final issuance by EPA, the New Hampshire Department of Environmental Services-Water Division (NHDES) 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 shall have the right to enforce the permit pursuant to state law, if the permit is adopted. Any modification, suspension, or revocation of this permit shall be effective only with respect to the agency taking such action, and shall not affect the validity or status of the permit as issued by the other agency.
4. Pursuant to New Hampshire Statute RSA 485-A13, I(c), any person responsible for a bypass or upset at a *wastewater facility* shall give immediate notice of a bypass or upset to all public or privately owned water systems drawing water from the same receiving water and located within 20 miles downstream of the point of discharge regardless of whether or not it is on the same receiving water or on another surface water to which the receiving water is tributary. Wastewater facility is defined at RSA

485-A:2XIX as the structures, equipment, and processes required to collect, convey, and treat domestic and industrial wastes, and dispose of the effluent and sludge. The permittee shall maintain a list of persons, and their telephone numbers, who are to be notified immediately by telephone. In addition, written notification, which shall be postmarked within 3 days of the bypass or upset, shall be sent to such persons.

5. The pH range of 6.5 to 8.0 Standard Units (S.U.) must be achieved in the final effluent.
6. Pursuant to New Hampshire Code of Administrative Rules, Env- Wq 703.07(a):
 - a. Any person proposing to construct or modify any of the following shall submit an application for a sewer connection permit to the department:
 - (1) Any extension of a collector or interceptor, whether public or private, regardless of flow;
 - (2) Any wastewater connection or other discharge in excess of 5,000 gpd;
 - (3) Any wastewater connection or other discharge to a wastewater treatment plant operating in excess of 80 percent design flow capacity based on actual average flow for 3 consecutive months;
 - (4) Any industrial wastewater connection or change in existing discharge of industrial wastewater, regardless of quality or quantity; and
 - (5) Any sewage pumping station greater than 50 gallons per minute (gpm) or serving more than one building.
7. For each new or increased discharge of industrial waste to the POTW, the permittee shall submit, in accordance with Env-Wq 904.14(e) an "Industrial Wastewater Discharge Request Application" approved by the permittee in accordance with 904.13(a). The "Industrial Wastewater Discharge Request Application" shall be prepared in accordance with Env-Wq 904.10.
8. Pursuant to Env-Wq 904.17, at a frequency of no less than every five years, the permittee shall submit to NHDES:
 - a. A copy of its current sewer use ordinance. The sewer use ordinance shall include local limits pursuant to Env-Wq 904.04(a).
 - 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

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- d. A certification that the municipality is strictly enforcing its sewer use ordinance and all discharge permits it has issued.
9. In addition to submitting DMRs, monitoring results shall also be summarized for each calendar month and reported on separate Monthly Operations Report Form(s) (MORs) postmarked or submitted electronically using NetDMR no later than the 15th day of the month following the completed reporting period. Signed and dated MORs, which are not submitted electronically using NetDMR shall be submitted to:

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

Attachment A

City of Nashua – Combined Sewer Overflow Outfalls (CSOs)

CSO Outfall No.	Location	Interceptor Sub-System	Receiving Water
002	Salmon Brook	Salmon Brook Interceptor	Merrimack River
003	Farmington Road	South Merrimack Interceptor	Merrimack River
004	Burke Street	North Merrimack River Interceptor	Merrimack River
005	East Hollis Street	North Merrimack River Interceptor	Merrimack River
006	Nashua River	North Merrimack River Interceptor	Nashua River
007	Tampa Street	Nashua River Interceptor	Nashua River
008	Broad Street	Nashua River Interceptor	Nashua River
009	Lock Street	North Merrimack River Interceptor	Nashua River
014	SDF	North Merrimack River Interceptor	Merrimack River

ATTACHMENT B

USEPA REGION 1 FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

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

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

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

II. METHODS

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

<http://water.epa.gov/scitech/swguidance/methods/wet/index.cfm#methods>

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. This protocol defines more specific requirements while still being consistent with the Part 136 methods. If, due to modifications of Part 136, there are conflicting requirements between the Part 136 method and this protocol, the permittee shall comply with the requirements of the Part 136 method.

III. SAMPLE COLLECTION

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

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

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

IV. DILUTION WATER

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

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

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

and

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

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

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

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

V. TEST CONDITIONS

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

EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE DAPHNID, CERIODAPHNIA DUBIA 48 HOUR ACUTE 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 ³ | 5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series. |
| 16. Effect measured | Mortality-no movement of body or appendages on gentle prodding |
| 17. Test acceptability | 90% or greater survival of test organisms in dilution water control solution |
| 18. Sampling requirements | For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must first be used within 36 hours of collection. |
| 19. Sample volume required | Minimum 1 liter |
-

Footnotes:

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

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

1. Test Type	Static, non-renewal
2. Temperature (°C):	$20 \pm 1^{\circ} \text{C}$ or $25 \pm 1^{\circ} \text{C}$
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 the others
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 ³ | 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 ⁴	x	x	--
Specific Conductance	x	x	--
Total Solids	x		--
Total Dissolved Solids	x		--
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
Total Metals			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005
Al	x	x	0.02
Other as permit requires			

Notes:

1. Hardness may be determined by:

- APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
 - Method 2340B (hardness by calculation)
 - Method 2340C (titration)

2. Total Residual Chlorine may be performed using any of the following methods provided the required minimum limit (ML) is met.

- APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
 - Method 4500-CL E Low Level Amperometric Titration
 - Method 4500-CL G DPD Colorimetric Method

3. Required to be performed on the sample used for WET testing prior to its use for toxicity testing

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

- Probit Method
- Spearman-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 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 p.,3-28 in EPA's Guidance Manual on the Development and Implementation of Local Limits Under the Pretreatment Program, 12/87.

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. 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) MAHL Values	Criteria
	Maximum (lb/day)	Average (lb/day)	(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 Average (ug/l) (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.

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

ATTACHMENT D

NPDES PERMIT REQUIREMENT
FOR
INDUSTRIAL PRETREATMENT ANNUAL REPORT

The information described below shall be included in the pretreatment program annual reports:

1. An updated list of all industrial users by category, as set forth in 40 C.F.R. 403.8(f)(2)(i), indicating compliance or noncompliance with the following:
 - baseline monitoring reporting requirements for newly promulgated industries
 - compliance status reporting requirements for newly promulgated industries
 - periodic (semi-annual) monitoring reporting requirements,
 - categorical standards, and
 - local limits;
2. A summary of compliance and enforcement activities during the preceding year, including the number of:
 - significant industrial users inspected by POTW (include inspection dates for each industrial user),
 - significant industrial users sampled by POTW (include sampling dates for each industrial user),
 - compliance schedules issued (include list of subject users),
 - written notices of violations issued (include list of subject users),
 - administrative orders issued (include list of subject users),
 - criminal or civil suits filed (include list of subject users) and,
 - penalties obtained (include list of subject users and penalty amounts);
3. A list of significantly violating industries required to be published in a local newspaper in accordance with 40 C.F.R. 403.8(f)(2)(vii);
4. 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;
5. A summary of all pollutant analytical results for influent, effluent, sludge and any toxicity or bioassay data from the wastewater treatment facility. The summary shall include a comparison 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 paragraph below or any similar sampling program described in this Permit.

At a minimum, annual sampling and analysis of the influent and effluent of the Wastewater Treatment Plant shall be conducted for the following pollutants:

- | | |
|--------------------|-------------------|
| a.) Total Cadmium | f.) Total Nickel |
| b.) Total Chromium | g.) Total Silver |
| c.) Total Copper | h.) Total Zinc |
| d.) Total Lead | i.) Total Cyanide |
| e.) Total Mercury | j.) Total Arsenic |

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.

6. A detailed description of all interference and pass-through that occurred during the past year;
7. A thorough description of all investigations into interference and pass-through during the past year;
8. 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;
9. A description of actions being taken to reduce the incidence of significant violations by significant industrial users; and,
10. The date of the latest adoption of local limits and an indication as to whether or not the permittee is under a State or Federal compliance schedule that includes steps to be taken to revise local limits.

Attachment E

Summary of Reports Required by NPDES Permit No. NH0100170¹

Report	Date Due	Submit Report to EPA at: ²	Submit Report to State at: ²
Discharge Monitoring Report (DMR) (Part I)	Monthly, by the 15 th day of the following month.	Environmental Protection Agency Water Technical Unit (SEW) P.O. Box 8127 Boston, Massachusetts 02114	New Hampshire Department of Environmental Services Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095
WET Test Report (Part I.A.1.)	The 15 th day of the month following the end of the calendar quarter sampled.	Environmental Protection Agency Water Technical Unit (SEW) P.O. Box 8127 Boston, Massachusetts 02114	New Hampshire Department of Environmental Services Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095
Nine Minimum Controls Program Update (Part I.B.1.)	One-time submission, due within 12 months of the effective date	Environmental Protection Agency Water Technical Unit (SEW) P.O. Box 8127 Boston, Massachusetts 02114	New Hampshire Department of Environmental Services Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095

¹This table is a summary of the reports required to be submitted under this NPDES permit, and is included in the permit to serve as an aide to the permittee. If there are any discrepancies between the permit and this summary, the permittee shall follow the permit requirements.

²See Part I. for electronic (NetDMR) reporting requirements

Attachment E¹ (Continued)

Report	Date Due	Submit Report to EPA at²:	Submit Report to State at²:
Nine Minimum Controls Annual Report (Part I.B.4.)	Annually, by March 1 st	Environmental Protection Agency Water Technical Unit (SEW) P.O. Box 8127 Boston, Massachusetts 02114	New Hampshire Department of Environmental Services Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095
Sludge Report (Part I.H.)	Annually, by February 19 th	Environmental Protection Agency Water Technical Unit (SEW) P.O. Box 8127 Boston, Massachusetts 02114	New Hampshire Department of Environmental Services Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095
Collection System Map (Part I.E.4.)	Within 30 months of the effective date of the permit.	Environmental Protection Agency Water Technical Unit (SEW) P.O. Box 8127 Boston, Massachusetts 02114	New Hampshire Department of Environmental Services Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095
Collection System O&M Plan (Part I.E.5.)	Within 6 months of the effective date of the permit. Full plan due within 24 months from the effective date.	Environmental Protection Agency Water Technical Unit (SEW) P.O. Box 8127 Boston, Massachusetts 02114	New Hampshire Department of Environmental Services Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095

¹This table is a summary of the reports required to be submitted under this NPDES permit, and is included in the permit to serve as an aide to the permittee. If there are any discrepancies between the permit and this summary, the permittee shall follow the permit requirements.

²See Part I. for electronic (NetDMR) reporting requirements

Attachment E¹ (Continued)

Report	Date Due	Submit Report to EPA at²:	Submit Report to State at²:
Collection O&M Plan Annual Report (Part I.E.6.)	Annually, by March 31 st .	Environmental Protection Agency Water Technical Unit (SEW) P.O. Box 8127 Boston, Massachusetts 02114	New Hampshire Department of Environmental Services Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095
Reassessment of Technically Based Industrial Discharge Limits	Within 90 days of the effective date of the permit.	Justin Pimpare Environmental Protection Agency Water Technical Unit (SEW) P.O. Box 8127 Boston, Massachusetts 02114	New Hampshire Department of Environmental Services Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095
Pretreatment Program Annual Report (Part I.G.)	Annually, by March 1 st	Justin Pimpare Environmental Protection Agency P.O. Box 8127 Boston, Massachusetts 02114	
Pretreatment Program Update (Part I.G.)	Within 180 days of the effective date of the permit	Justin Pimpare Environmental Protection Agency Water Technical Unit (SEW) P.O. Box 8127 Boston, Massachusetts 02114	

¹This table is a summary of the reports required to be submitted under this NPDES permit, and is included in the permit to serve as an aide to the permittee. If there are any discrepancies between the permit and this summary, the permittee shall follow the permit requirements.

²See Part I. for electronic (NetDMR) reporting requirements

Attachment E¹ (Continued)

Report	Date Due	Submit Report to EPA at²:	Submit Report to State at²:
Sewer Use Ordinance, List of all significant indirect dischargers , List of all permitted indirect (Part I.G.8)	No less than every 5 years.	NA	New Hampshire Department of Environmental Services Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095
Monthly Operating Report Forms (MORs) (Part I.I.9.)	Monthly, by the 15 th day of the following month.	NA	New Hampshire Department of Environmental Services Water Division Wastewater Engineering Bureau P.O. Box 95 Concord, New Hampshire 03302-0095

¹This table is a summary of the reports required to be submitted under this NPDES permit, and is included in the permit to serve as an aide to the permittee. If there are any discrepancies between the permit and this summary, the permittee shall follow the permit requirements.

²See Part I. for electronic (NetDMR) reporting requirements

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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NPDES PART II STANDARD CONDITIONS
(January, 2007)

PART II. 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) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

- a. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the 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, even if the permit has not yet been modified to incorporate the requirements.
- b. The CWA provides that any person who violates Section 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any of such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Section 402 (a)(3) or 402 (b)(8) of the CWA is subject to a civil penalty not to exceed \$25,000 per day for each violation. Any person who negligently violates such requirements is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than 1 year, or both. Any person who knowingly violates such requirements 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.
- c. Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.

Note: See 40 CFR §122.41(a)(2) for complete “Duty to Comply” regulations.

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 notifications of planned changes or anticipated noncompliance does not stay any permit condition.

3. Duty to Provide Information

The permittee shall furnish to the Regional Administrator, within a reasonable time, any information which the Regional Administrator 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 Regional Administrator, upon request, copies of records required to be kept by this permit.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

4. Reopener Clause

The Regional Administrator reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA in order to bring all discharges into compliance with the CWA.

For any permit issued to a treatment works treating domestic sewage (including “sludge-only facilities”), the Regional Administrator or Director shall include a reopener clause to incorporate any applicable standard for sewage sludge use or disposal promulgated under Section 405 (d) of the CWA. The Regional Administrator or Director may promptly modify or revoke and reissue any permit containing the reopener clause required by this paragraph if the standard for sewage sludge use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or contains a pollutant or practice not limited in the permit.

Federal regulations pertaining to permit modification, revocation and reissuance, and termination are found at 40 CFR §122.62, 122.63, 122.64, and 124.5.

5. 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).

6. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges.

7. Confidentiality of Information

- a. In accordance with 40 CFR 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 CFR 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 as defined in 40 CFR §2.302(a)(2).
- c. Information required by NPDES application forms provided by the Regional Administrator under 40 CFR §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.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

8. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, 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 Regional Administrator. (The Regional Administrator shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

9. State Authorities

Nothing in Part 122, 123, or 124 precludes more stringent State regulation of any activity covered by these regulations, whether or not under an approved State program.

10. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, State, or local laws and regulations.

PART II. 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 and with the requirements of storm water pollution prevention plans. 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 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.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

- (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 be reasonably 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 provision of Paragraphs B.4.c. and 4.d. of this section.

c. Notice

- (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
- (2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (Twenty-four hour reporting).

d. Prohibition of bypass

Bypass is prohibited, and the Regional Administrator may take enforcement action against a permittee for bypass, unless:

- (1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- (2) 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
- (3) i) The permittee submitted notices as required under Paragraph 4.c. of this section.
ii) The Regional Administrator may approve an anticipated bypass, after considering its adverse effects, if the Regional Administrator determines that it will meet the three conditions listed above in paragraph 4.d. of this section.

5. Upset

- a. Definition. *Upset* means an exceptional incident in which there is an unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph B.5.c. of this section are met. No determination made during

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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;
 - (3) The permittee submitted notice of the upset as required in paragraphs D.1.a. and 1.e. (Twenty-four hour notice); and
 - (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.

PART II. 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 for 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 five years (or longer as required by 40 CFR Part 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 except for the information concerning storm water discharges which must be retained for a total of 6 years. This retention period may be extended by request of the Regional Administrator 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 results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.
- e. 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

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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 Regional Administrator 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 CWA, any substances or parameters at any location.

PART II. D. REPORTING REQUIREMENTS

1. Reporting Requirements

- a. Planned Changes. The permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only 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 in 40 CFR§122.29(b); or
 - (2) The alteration or addition could significantly change the nature or increase the quantities of the pollutants discharged. This notification applies to pollutants which are subject neither to the effluent limitations in the permit, nor to the notification requirements at 40 CFR§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 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 Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- c. Transfers. This permit is not transferable to any person except after notice to the Regional Administrator. The Regional Administrator may require modification or revocation and reissuance of the permit to change the name of the permittee and

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incorporate such other requirements as may be necessary under the CWA. (See 40 CFR Part 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.
 - (2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of the 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 submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission 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.
 - (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 CFR §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 Regional Administrator in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)
 - (3) The Regional Administrator may waive the written report on a case-by-case basis for reports under Paragraph D.1.e. if the oral report has been received within 24 hours.

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- f. Compliance Schedules. Reports of compliance or noncompliance with, 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.
- h. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, it shall promptly submit such facts or information.

2. Signatory Requirement

- a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See 40 CFR §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 noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 2 years per violation, or by both.

3. Availability of Reports.

Except for data determined to be confidential under Paragraph A.8. 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 Regional Administrator. 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.

PART II. E. DEFINITIONS AND ABBREVIATIONS

1. Definitions for Individual NPDES Permits including Storm Water Requirements

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 to, 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 and disposal” under Sections 301, 302, 303, 304, 306, 307, 308, 403, and 405 of the CWA.

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

Average means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For total and/or fecal coliforms and Escherichia coli, the average shall be the geometric mean.

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” measured during the calendar week divided by the number of “daily discharges” measured during the 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.

Best Professional Judgment (BPJ) means a case-by-case determination of Best Practicable Treatment (BPT), Best Available Treatment (BAT), or other appropriate technology-based standard based on an evaluation of the available technology to achieve a particular pollutant reduction and other factors set forth in 40 CFR §125.3 (d).

Coal Pile Runoff means the rainfall runoff from or through any coal storage pile.

Composite Sample means a sample consisting of a minimum of eight grab samples of equal volume collected at equal intervals during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportional to flow, or a sample consisting of the same number of grab samples, or greater, collected proportionally to flow over that same time period.

Construction Activities - The following definitions apply to construction activities:

- (a) Commencement of Construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.
- (b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion effluent limitation guideline at 40 CFR Part 443.
- (c) Dedicated portable concrete plant is a portable concrete plant located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

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- (d) Final Stabilization means that all soil disturbing activities at the site have been complete, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.
- (e) Runoff coefficient means the fraction of total rainfall that will appear at the conveyance as runoff.

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) Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, and Pub. L. 97-117; 33 USC §§1251 et seq.

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

Director normally means the person authorized to sign NPDES permits by EPA or the State or an authorized representative. Conversely, it also could mean the Regional Administrator or the State Director as the context requires.

Discharge Monitoring Report Form (DMR) means the EPA standard 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 (See “Point Source” definition).

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

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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 Regional Administrator 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”.

EPA means the United States “Environmental Protection Agency”.

Flow-weighted composite sample means a composite sample consisting of a mixture of aliquots where the volume of each aliquot is proportional to the flow rate of the discharge.

Grab Sample – An individual sample collected in a period of less than 15 minutes.

Hazardous Substance means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the CWA.

Indirect Discharger means a non-domestic discharger introducing pollutants to a publicly owned treatment works.

Interference means a discharge 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 (CWA), 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 which is not a land application unit, surface impoundment, injection well, or waste pile.

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

Large and Medium municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and 40 CFR Part 122); or (ii) located in the counties with unincorporated urbanized

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populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships, or towns within such counties (these counties are listed in Appendices H and I of 40 CFR 122); or (iii) owned or operated by a municipality other than those described in Paragraph (i) or (ii) and that are designated by the Regional Administrator as part of the large or medium municipal separate storm sewer system.

Maximum daily discharge limitation means the highest allowable “daily discharge” concentration that occurs only during a normal day (24-hour duration).

Maximum daily discharge limitation (as defined for the Steam Electric Power Plants only) when applied to Total Residual Chlorine (TRC) or Total Residual Oxidant (TRO) is defined as “maximum concentration” or “Instantaneous Maximum Concentration” during the two hours of a chlorination cycle (or fraction thereof) prescribed in the Steam Electric Guidelines, 40 CFR Part 423. These three synonymous terms all mean “a value that shall not be exceeded” during the two-hour chlorination cycle. This interpretation differs from the specified NPDES Permit requirement, 40 CFR § 122.2, where the two terms of “Maximum Daily Discharge” and “Average Daily Discharge” concentrations are specifically limited to the daily (24-hour duration) values.

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 tribe organization, or a designated and approved management agency under Section 208 of the CWA.

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 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 rig 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 Regional Administrator 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 Regional Administrator shall consider the factors specified in 40 CFR §§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 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).

Permit means an authorization, license, or equivalent control document issued by EPA or an “approved” State.

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

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 CFR §122.2).

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

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

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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 CFR Part 122.

Privately owned treatment works means any device or system which is (a) used to treat wastes from any facility whose operation is not the operator of the treatment works or (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 any facility or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a "State" or "municipality".

This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

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

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

Section 313 water priority chemical means a chemical or chemical category which:

- (1) is listed at 40 CFR §372.65 pursuant to Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986);
- (2) is present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and
- (3) satisfies at least one of the following criteria:
 - (i) are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols), or Table V (certain toxic pollutants and hazardous substances);
 - (ii) are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR §116.4; or
 - (iii) are pollutants for which EPA has published acute or chronic water quality criteria.

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, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumpings, Type III Marine Sanitation Device pumpings (33 CFR Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

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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, 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 EPCRA Section 313, 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 CFR §110.10 and §117.21) or Section 102 of CERCLA (see 40 CFR § 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 CFR §122.1(b)(3).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Trust Territory of the Pacific Islands.

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 which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. (See 40 CFR §122.26 (b)(14) for specifics of this definition.

Time-weighted composite means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.

Toxic pollutants 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 wastewater 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 wastewater 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 Regional Administrator may designate any person subject to the standards for sewage sludge use and disposal in 40 CFR 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 CFR Part 503.

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

Waters of the United States 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 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 the CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the United States.

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration 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. (See Abbreviations Section, following, for additional information.)

2. Definitions for NPDES Permit Sludge Use and Disposal Requirements.

Active sewage sludge unit is a sewage sludge unit that has not closed.

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Aerobic Digestion is the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air.

Agricultural Land is land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture.

Agronomic rate is the whole sludge application rate (dry weight basis) designed:

- (1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and
- (2) To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

Air pollution control device is one or more processes used to treat the exit gas from a sewage sludge incinerator stack.

Anaerobic digestion is the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of air.

Annual pollutant loading rate is the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period.

Annual whole sludge application rate is the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period.

Apply sewage sludge or sewage sludge applied to the land means land application of sewage sludge.

Aquifer is a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding ground water to wells or springs.

Auxiliary fuel is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of the sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

Base flood is a flood that has a one percent chance of occurring in any given year (i.e. a flood with a magnitude equaled once in 100 years).

Bulk sewage sludge is sewage sludge that is not sold or given away in a bag or other container for application to the land.

Contaminate an aquifer means to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR §141.11 to be exceeded in ground water or that causes the existing concentration of nitrate in the ground water to increase when the existing concentration of nitrate in the ground water exceeds the maximum contaminant level for nitrate in 40 CFR §141.11.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 CFR §501.2, required to have an approved pretreatment program under 40 CFR §403.8 (a) (including any POTW located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §403.10 (e) and any treatment works treating domestic sewage, as defined in 40 CFR § 122.2,

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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 sewage sludge use or disposal practice to affect public health and the environment adversely.

Control efficiency is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

Cover is soil or other material used to cover sewage sludge placed on an active sewage sludge unit.

Cover crop is a small grain crop, such as oats, wheat, or barley, not grown for harvest.

Cumulative pollutant loading rate is the maximum amount of inorganic pollutant that can be applied to an area of land.

Density of microorganisms is the number of microorganisms per unit mass of total solids (dry weight) in the sewage sludge.

Dispersion factor is the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.

Displacement is the relative movement of any two sides of a fault measured in any direction.

Domestic septage is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant.

Domestic sewage is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

Dry weight basis means calculated on the basis of having been dried at 105 degrees Celsius (°C) until reaching a constant mass (i.e. essentially 100 percent solids content).

Fault is a fracture or zone of fractures in any materials along which strata on one side are displaced with respect to the strata on the other side.

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

Final cover is the last layer of soil or other material placed on a sewage sludge unit at closure.

Fluidized bed incinerator is an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

Food crops are crops consumed by humans. These include, but are not limited to, fruits, vegetables, and tobacco.

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Forest is a tract of land thick with trees and underbrush.

Ground water is water below the land surface in the saturated zone.

Holocene time is the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present.

Hourly average is the arithmetic mean of all the measurements taken during an hour. At least two measurements must be taken during the hour.

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

Industrial wastewater is wastewater generated in a commercial or industrial process.

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 with a high potential for public exposure is land that the public uses frequently. This includes, but is not limited to, a public contact site and reclamation site located in a populated area (e.g., a construction site located in a city).

Land with low potential for public exposure is land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest and a reclamation site located in an unpopulated area (e.g., a strip mine located in a rural area).

Leachate collection system is a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit.

Liner is soil or synthetic material that has a hydraulic conductivity of 1×10^{-7} centimeters per second or less.

Lower explosive limit for methane gas is the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure.

Monthly average (Incineration) is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month.

Monthly average (Land Application) is the arithmetic mean of all measurements taken during the month.

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.

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Other container is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Pasture is land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover.

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

Permitting authority is either EPA or a State with an EPA-approved sludge management program.

Person is 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; a measure of the acidity or alkalinity of a liquid or solid material.

Place sewage sludge or sewage sludge placed means disposal of sewage sludge on a surface disposal site.

Pollutant (as defined in sludge disposal requirements) is an organic substance, an inorganic substance, a combination of organic and inorganic substances, or pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could on the basis of information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction) or physical deformations in either organisms or offspring of the organisms.

Pollutant limit (for sludge disposal requirements) is a numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of pollutant that can be applied to a unit of land (e.g., kilograms per hectare); or the volume of the material that can be applied to the land (e.g., gallons per acre).

Public contact site is a land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

Qualified ground water scientist is an individual with a baccalaureate or post-graduate degree in the natural sciences or engineering who has sufficient training and experience in ground water hydrology and related fields, as may be demonstrated by State registration, professional certification, or completion of accredited university programs, to make sound professional judgments regarding ground water monitoring, pollutant fate and transport, and corrective action.

Range land is open land with indigenous vegetation.

Reclamation site is drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites.

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Risk specific concentration is the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of a site where the sewage sludge incinerator is located.

Runoff is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off the land surface.

Seismic impact zone is an area that has 10 percent or greater probability that the horizontal ground level acceleration to the rock in the area exceeds 0.10 gravity once in 250 years.

Sewage sludge is a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to: domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in treatment works.

Sewage sludge feed rate is either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located.

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

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

Sewage sludge unit boundary is the outermost perimeter of an active sewage sludge unit.

Specific oxygen uptake rate (SOUR) is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in sewage sludge.

Stack height is the difference between the elevation of the top of a sewage sludge incinerator stack and the elevation of the ground at the base of the stack when the difference is equal to or less than 65 meters. When the difference is greater than 65 meters, stack height is the creditable stack height determined in accordance with 40 CFR §51.100 (ii).

State is one of the United States of America, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, and an Indian tribe eligible for treatment as a State pursuant to regulations promulgated under the authority of section 518(e) of the CWA.

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.

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

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Total hydrocarbons means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

Total solids are the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees Celsius.

Treat or treatment of sewage sludge is the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

Treatment works is either a federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

Unstable area is land subject to natural or human-induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement.

Unstabilized solids are organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

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

Volatile solids is the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degrees Celsius in the presence of excess air.

Wet electrostatic precipitator is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

Wet scrubber is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

3. 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.)

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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)	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M ³ /day	Cubic meters per day
DO	Dissolved oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day
mg/l	Milligram(s) per liter
ml/l	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH ₃ -N	Ammonia nitrogen as nitrogen
NO ₃ -N	Nitrate as nitrogen
NO ₂ -N	Nitrite as nitrogen
NO ₃ -NO ₂	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
pH	A measure of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or material
Surfactant	Surface-active agent

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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)
ug/l	Microgram(s) per liter
WET	“Whole effluent toxicity” is the total effect of an effluent measured directly with a toxicity test.
C-NOEC	“Chronic (Long-term Exposure Test) – No Observed Effect Concentration”. 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.
A-NOEC	“Acute (Short-term Exposure Test) – No Observed Effect Concentration” (see C-NOEC definition).
LC ₅₀	LC ₅₀ is the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC ₅₀ = 100% is defined as a sample of undiluted effluent.
ZID	Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.

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Figure 1 Nashua WWTF and Outfall 001

Aerial Image obtained from Google Maps (<http://maps.google.com>)



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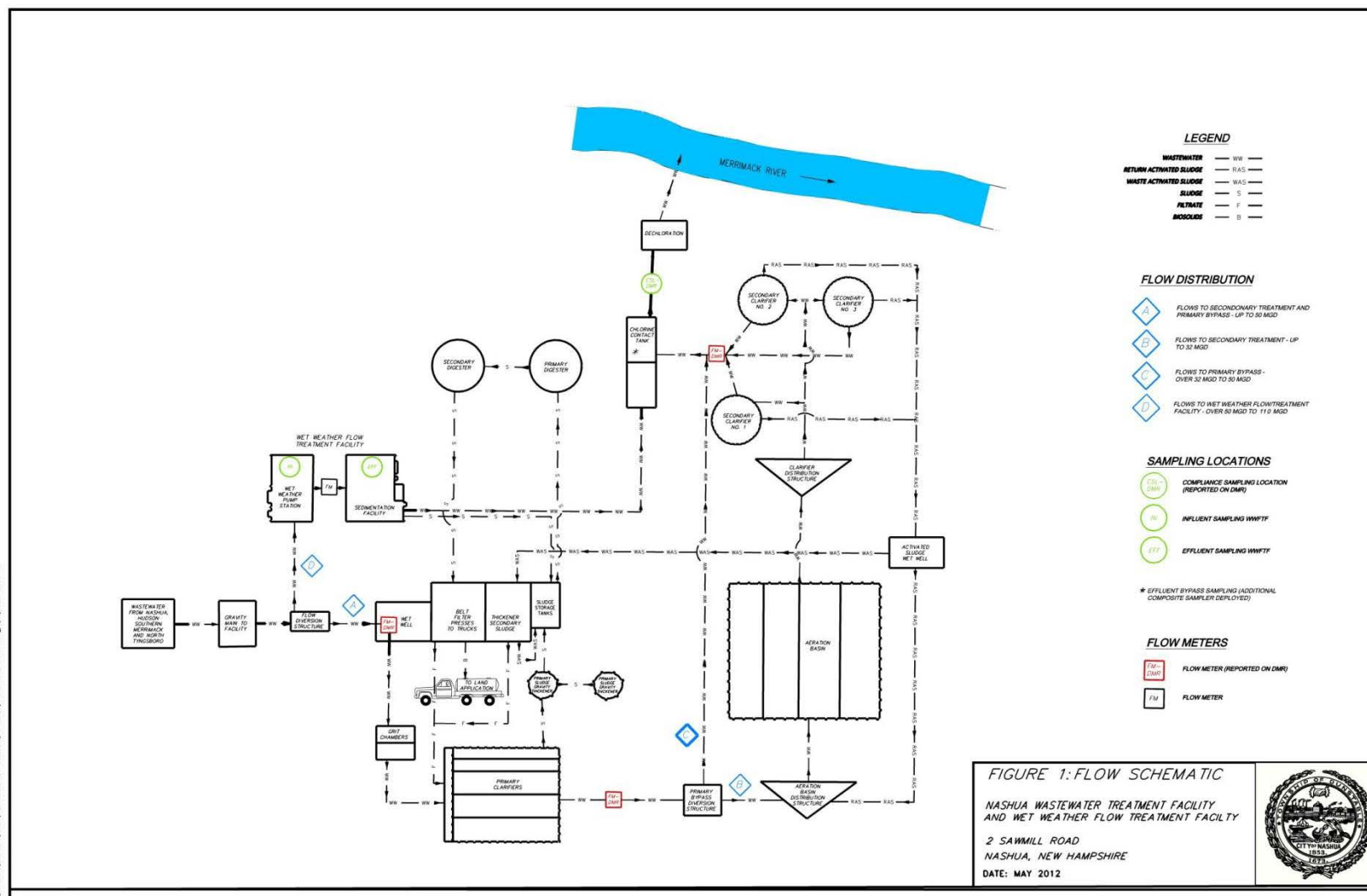


Figure 3 Wet Weather Flow Schematic

Nashua CSO Location Map

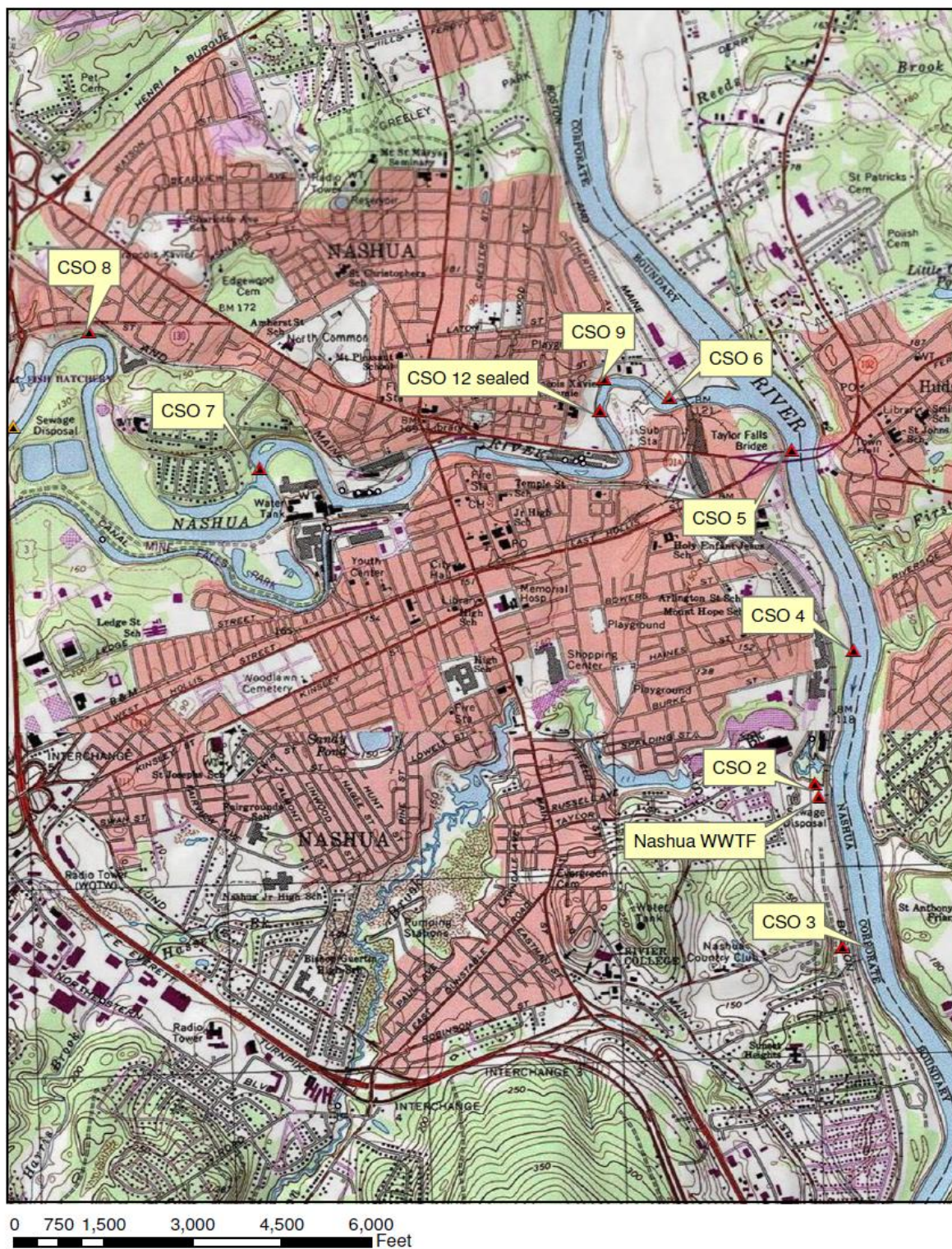


Figure 4 Nashua CSO Discharge Outfall Locations