

**AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

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

The City of Nashua, New Hampshire

is authorized to discharge from the facility located at

Sawmill Road
Nashua, New Hampshire 03060
and

Nine Associated Combined Sewer Overflows (CSOs) located throughout the collection system to receiving waters named

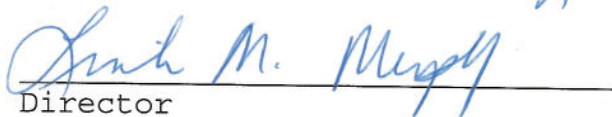
Merrimack River (Treatment Works [Outfall 001] and CSOs [Outfalls 002-005])
and

Nashua River (CSOs [Outfalls 006-009 and 012])
all in the Hydrologic Basin Code: 01070002

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein. This permit shall become effective sixty (60) days from the date of issuance. This permit and the authorization to discharge expire at midnight, five (5) years from the effective date. This permit supersedes the permit issued on March 27, 1991, and modified on February 10, 1992.

This permit consists of: 17 pages in Part I, including effluent limitations, monitoring requirements, etc.; 8 pgs. in Attachment A, "Freshwater Acute Toxicity Test Procedure and Protocol"; 1 pg. in Attachment B, "Combined Sewer Outfalls"; 5 pgs. in Attachment C, "Reassessment of Technically Based Local Limits"; 3 pgs. in Attachment D, "Industrial Pretreatment Annual Report"; 72 pgs. in the November 4, 1999, Sludge Compliance Guidance; and 35 pgs. in Part II, "General Conditions and Definitions".

Signed this 31 day of May, 2000



Director

Office of Ecosystem Protection
U.S. Environmental Protection Agency (EPA)
New England Region
Boston, Massachusetts

PART I.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1.a. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge treated waste waters (sanitary, commercial and industrial) from outfall Number 001 into the Merrimack River. Such discharges shall be limited and monitored by the permittee as specified below. Samples specified below shall be taken at a location that provides a representative analysis of the effluent.

Effluent Characteristic	Discharge Limitations		Discharge Limitations		Monitoring Requirements	
	Average Monthly lb/day	Average Weekly lb/day	Average Monthly (Units specified)	Average Weekly Daily	Measurement Frequency	Sample Type
Flow ¹ (mgd)	---	---	Report	---	Continuous	Recorder
BOD ²	4006	6008	30 mg/l	45 mg/l	5/Week	24-Hour Composite
TSS ²	4006	6008	30 mg/l	45 mg/l	5/Week	24-Hour Composite
pH Range ³			6.5 to 8.0 Standard Units (See I.F.1.a)		1/Day	Grab
<i>Escherichia coli</i> ⁴ ; Colonies/100 ml			126	---	1/Day	Grab
Total Residual Chlorine ⁵ ; mg/l			0.308	---	1/Day	Grab
Total Recoverable Copper ⁶ ; mg/l			Report	---	2/Month	24-Hour Composite
Whole Effluent Toxicity			---	---	---	---
LC ₅₀ ^{7,8,9} ; Percent			---	---	1/Quarter	24-Hour Composite
Ammonia Nitrogen as Nitrogen ¹⁰ ; mg/l			---	---	1/Quarter	24-Hour Composite
Hardness ¹⁰ ; mg/l			---	---	1/Quarter	24-Hour Composite
Total Recoverable Aluminum ¹⁰ ; mg/l			---	---	1/Quarter	24-Hour Composite
Total Recoverable Cadmium ¹⁰ ; mg/l			---	---	1/Quarter	24-Hour Composite
Total Recoverable Chromium ¹⁰ ; mg/l			---	---	1/Quarter	24-Hour Composite
Total Recoverable Copper ¹⁰ ; mg/l			---	---	1/Quarter	24-Hour Composite
Total Recoverable Nickel ¹⁰ ; mg/l			---	---	1/Quarter	24-Hour Composite
Total Recoverable Lead ¹⁰ ; mg/l			---	---	1/Quarter	24-Hour Composite
Total Recoverable Zinc ¹⁰ ; mg/l			---	---	1/Quarter	24-Hour Composite

See pages 4, 5 and 6 for explanation of superscripts.

PART I.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Continued)

1.b. During the period beginning on the effective date of the permit and lasting through the expiration date, the Permittee is authorized to discharge stormwater and wastewaters from combined sewer Outfalls numbered 002 through 005 into the Merrimack River; Outfalls numbered 006 through 009, and Outfall 012 to the Nashua River. (Refer to Attachment B, "Combined Sewer Overflows".) These discharges are authorized only during wet weather. Such discharges shall be limited to the outfalls listed, and shall be monitored by the Permittee as specified below. Samples specified below shall be taken at a location that provides a representative analysis of the effluent.

Effluent Characteristic	Discharge Limitation	Monitoring Requirement	
		Measurement Frequency	Sample Type
<u>Escherichia coli</u> ^{4,11} (Colonies per 100 ml)	Wet Weather Event Maximum 1000	1/Year	Grab

Note: See pages 4, 5 and 6 for explanation of superscripts.

EXPLANATION OF SUPERSSCRIPTS TO PART I.A.1. on pages 2 and 3:

- (1) The effluent and influent flow shall be continuously measured and recorded using a flow meter and totalizer.
- (2) DURING DRY WEATHER PERIODS, the influent concentrations of Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS) shall be monitored twice per month using a 24 hour composite sample, and the results reported as average monthly rates. The influent concentrations shall be used to calculate the percent reduction in BOD₅ and TSS.
- (3) The pH range is a state certification requirement.
- (4) The average monthly value for Escherichia coli shall be determined by calculating the geometric mean and the result reported. Escherichia coli shall be tested using test method 1103.1 found in Test Methods for Escherichia coli and Enterococci in Water by the Membrane Filter Procedure, EPA-600/4-85/076 as amended by test method 9213 D.3. found in Standard Methods for the Examination of Water and Wastewater, 18th or subsequent Edition(s) as approved in 40 CFR §136.
- (5) Total Residual Chlorine (TRC) shall be tested using Amperometric Titration, the DPD spectrophotometric methods, or the DPD titrimetric method. The EPA approved methods are found in Standard Methods for the Examination of Water and Wastewater 18th or subsequent Editions, as approved in 40 CFR §136, Method 4500-CL D, Method 4500-Cl G, Method 4500-Cl F, or EPA's Manual of Methods of Analysis of Water and Wastes, Methods 330.1, 330.5, or 330.4, respectively.
- (6) The permittee may partially fulfill the monitoring-only requirement for copper when conducting a Whole Effluent Toxicity (WET) test.
- (7) The permittee shall conduct Freshwater acute Whole Effluent Toxicity tests using two species: the Daphnid (Ceriodaphnia dubia) and the Fathead Minnow (Pimephales promelas) on effluent samples following the protocol in Attachment A, FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL, dated December, 1995. Toxicity test samples shall be collected and tests completed four (4) times per year during the calendar quarters ending March 31st, June 30th, September 30th, and

December 31st. Toxicity test results are to be submitted with the Discharge Monitoring report no later than the 15th day of the month following the end of the quarter tested. For example, test results for the calendar quarter January through March are due April 15th.

- (8) LC₅₀ is the concentration of wastewater (effluent) causing mortality to 50 percent (%) of the test organisms. The "100% limit" is defined as a sample which is composed of 100 percent effluent. (See Attachment A, FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL, dated December, 1995.) Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no greater than a 50% mortality rate in that effluent sample. The limit is considered to be a maximum daily limit.
- (9) This permit shall be modified, or revoked and reissued to incorporate additional toxicity testing requirements, including chemical specific limits, if the results of the toxicity tests indicate the discharge causes any State water quality criterion to be exceeded. Results from these toxicity tests are considered "New Information" and the permit may be modified as provided in 40 CFR §122.62(a)(2).
- (10) For each Whole Effluent Toxicity test the permittee shall report on the appropriate Discharge Monitoring Report the concentrations of the Ammonia Nitrogen as Nitrogen, Hardness, and Total Recoverable Aluminum, Cadmium, Chromium, Copper, Lead, Nickel and Zinc found in the 100 percent effluent sample. All these aforementioned chemical parameters shall be determined to have at least the Minimum Quantification Level shown in Attachment A: FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL, dated December, 1995. All chemical parameter results must be reported in the appropriate toxicity report.
- (11) The Permittee shall sample each CSO outfall listed in Attachment B at least once per year. The sampling shall occur during a wet-weather discharge event. One grab sample shall be obtained one-half hour after the outfall starts discharging. The sampling can be conducted during the POTW's normal business hours; however, sampling could be conducted outside those hours at the discretion of the permittee. If more than one sample is collected per outfall per wet-weather

event, the maximum value for Escherichia coli shall be determined by calculating the geometric mean (Refer to Superscript (4)). Results from the sampling shall be reported with each December Discharge Monitoring Report (DMR) which is due by January 15th. The first round of CSO samples shall be collected beginning with the 2001 calendar year meaning the first set of results are to be reported on the December 2001 DMR. If an individual CSO does not discharge or does not discharge sufficiently to collect a sample during the calendar year, report "C" for that outfall on the December DMR.

Continuation of PART I.A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

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, or 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 which discharges through Outfall 001 shall achieve and maintain a minimum of 85 percent removal of both BOD₅ and TSS, as a monthly average, **not including those days when wet weather would cause the system to overflow.** The percent removal shall be based on a comparison of average monthly influent versus effluent concentrations. To calculate the percent removal, the Permittee shall continuously monitor influent and effluent flow.
5. When the effluent discharged from Outfall 001 for a period of 90 consecutive days exceeds 80 percent of the 16 MGD design flow, or 12.8 MGD, the Permittee shall submit to the permitting authorities a projection of (future) loadings, 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, if needed.

6. All POTWs must provide adequate notice to both EPA and the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) of the following:
 - a. Any new introduction of pollutants into the POTW from an indirect discharger in a primary industry category (see 40 CFR §122 Appendix A as amended) discharging process water; and
 - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
 - c. For purposes of this paragraph, adequate notice shall include information on:
 - (1) the quantity and quality of effluent introduced into the POTW; and
 - (2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

B. COMBINED SEWER OVERFLOW EFFLUENT LIMITATIONS, MONITORING REQUIREMENTS AND BEST MANAGEMENT PRACTICES

1. EFFLUENT LIMITATIONS

During wet weather, the Permittee is authorized to discharge storm water/wastewater from combined sewer outfalls listed in Attachment B, "List of Combined Sewer Overflows", subject to the following effluent limitations.

- a. The discharges shall receive treatment at a level providing Best Practicable Control Technology Currently Available (BPT), Best Conventional Pollutant Control Technology (BCT) to control and abate conventional pollutants and Best Available Technology Economically Achievable (BAT) to control and abate non-conventional and toxic pollutants. The EPA has made a Best Professional Judgement (BPJ) determination that BPT, BCT, and BAT for combined sewer overflow (CSO) control include the implementation of Nine Minimum Controls specified below and detailed further in Part I.B.2. of this permit:

- (1) Proper operation and regular maintenance programs for the sewer system and the combined sewer overflows.
 - (2) Maximum use of the collection system for storage.
 - (3) Review and modification of the pretreatment program to assure CSO impacts are minimized.
 - (4) Maximization of flow to the POTW for treatment.
 - (5) Prohibition of dry weather overflows from CSOs.
 - (6) Control of solid and floatable materials in CSO.
 - (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 nine minimum controls is required by the effective date of the permit. The Permittee has recently submitted documentation of the implementation of these controls. Approvable documentation must include the minimum requirements set forth in Part I.B.2 of this Permit and additional activities the Permittee can reasonably feasibly undertake.
- c. The discharges shall not cause violations of Federal or State Water Quality Standards.
2. MINIMUM IMPLEMENTATION LEVELS FOR NINE MINIMUM CONTROLS
- a. The Permittee must implement the nine minimum controls in accordance with the documentation provided under Part I.B.1.a. of this permit. This implementation must include the following controls plus 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 and tidal surcharging. (Nine Minimum Control Numbers 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. If maintenance is necessary, the Permittee shall record: the description of the necessary maintenance, the date the necessary maintenance was performed, and whether the observed problem was corrected. The Permittee shall maintain all records of inspections for at least three years.

Annually, no later than January 15th, the Permittee shall submit a certification to the State and EPA which states that the previous calendar year's monthly inspections were conducted, results recorded, and records maintained.

The State and EPA have the right to inspect any CSO related structure or outfall at any time without prior notification to the Permittee.

- c. Discharges to the combined system of septage, holding tank wastes or other material which may cause a visible oil sheen or containing floatable material are prohibited during wet weather when CSO discharges may be active. (Nine Minimum Control Numbers 3, 6, and 7).
- d. Dry weather overflows (DWOs) are prohibited (Nine Minimum Control Number 5). All dry weather sanitary and/or industrial discharges from CSOs must be reported to EPA and the State within 24 hours in accordance with the reporting requirements for plant bypass (Paragraph D.1.e of Part II of this permit).
- e. Within 180 days of the effective date of this permit, the Permittee shall quantify and record all discharges from combined sewer outfalls (Nine Minimum Control Number 9). Quantification may be through direct measurement or estimation. When estimating, the Permittee shall make reasonable efforts, i.e. gaging, measurement, to verify the validity of the estimation technique.

The following information must be recorded for each combined sewer outfall for each discharge event:

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

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

Annually, no later than January 15th, the Permittee shall submit a certification to the State and EPA which states that the all discharges from combined sewer outfalls were recorded, and records maintained for the previous calendar year.

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

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

3. UNAUTHORIZED DISCHARGES

The Permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from Outfall 001 and those outfalls listed in Attachment B of this permit. Discharges of wastewater from any other point source are not authorized under this permit, unless in accordance with Part II.B.4 (Bypass) of this permit.

4. REOPENER/ADDITIONAL CSO CONTROL MEASURES

This permit may be modified or reissued upon the completion of a long-term CSO control plan. Such modification may include performance standards for the selected controls, post construction water quality assessment program, monitoring for compliance with water quality standards, and a reopener clause to be used in the event that the selected CSO controls fail to meet water quality standards. Section 301(b)(1)(C) requires that a permit include limits that may be necessary to protect Federal and State water quality standards.

C. SLUDGE CONDITIONS

1. The Permittee shall comply with all existing federal & state laws and regulations that apply to sewage sludge use and disposal and with the Clean Water Act Section 405(d) technical standards.
2. The Permittee shall comply with the more stringent of either the state or federal (40 CFR §503), requirements.
3. The requirements and technical standards of 40 CFR §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. Placement of sludge in a municipal solid waste landfill. (See 40 CFR §503.4)
 - d. Sewage sludge incineration in a sludge-only incinerator
4. Except in conformance with the general provision in 40 CFR Section 503.4, conditions in 40 CFR §503 do not apply to facilities which place sludge within a municipal solid waste landfill. These conditions also 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 CFR §503.6.

5. The Permittee shall use and comply with the attached November 4, 1999 "Sludge Compliance Guidance" document to determine appropriate conditions. Appropriate conditions contain the following elements. Depending upon the quality of material produced by a facility all conditions may not apply to the facility.

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

6. The Permittee shall monitor the pollutant concentrations, pathogen reduction and vector attraction reduction 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 +	1/Month

7. The Permittee shall sample the sewage sludge using the procedures detailed in 40 CFR §503.8.

8. The Permittee shall submit an annual report containing the information specified in the attached "Sludge Compliance Guidance". Reports are due annually by February 19th. Reports shall be submitted to both EPA and the New Hampshire Department of Environmental Services at the address contained in Section E., "Monitoring and Reporting".

D. INDUSTRIAL PRETREATMENT PROGRAM

1. DEVELOPMENT OF LIMITATIONS FOR INDUSTRIAL USERS:

- a. Pollutants introduced into POTW's by a non-domestic source (user) shall not Pass Through the POTW or Interfere with the operation or performance of the works. The terms "user", and "pass through and interference" are defined in 40 CFR §403.3.

- b. The Permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within 180 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 of pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety and collection system concerns. In preparing this evaluation, the Permittee shall complete the attached form (Attachment C, "Reassessment of Technically Based Local 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 Guidance Manual for the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program (December, 1987).

2. IMPLEMENTATION OF 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 CFR §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.
- b. The Permittee shall provide the EPA and NH DES 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 403.12(i). The annual report shall be consistent with the format described in **Attachment D** of this permit, "NPDES Permit Requirement for Industrial Pretreatment Annual Report" and shall be submitted no later than **March 1st** of each year.
- c. The Permittee must obtain approval from EPA prior to making any significant changes to the industrial pretreatment program in accordance with 40 CFR §403.18(c).
- d. 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 CFR §405 et. seq.

E. MONITORING AND REPORTING

Monitoring results shall be summarized for each calendar month and reported on separate Discharge Monitoring Report Form(s) postmarked no later than the 15th day of the month following the completed reporting period.

Signed and Dated original Discharge Monitoring Reports and all other reports required herein, shall be submitted to the Director at the following address:

U.S. Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114-8127

Duplicate signed copies of all reports required herein shall be submitted to the State at:

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

F. STATE PERMIT CONDITIONS

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

- b. Pursuant to State Law NH RSA 485-A:13 and the New Hampshire Code of Administrative Rules, submission shall be made to the NHDES-WD, of a Discharge Permit Request form by a municipality proposing to accept into its POTW (including sewers and interceptors):
- (1) any increase in industrial wastewater flow, pollutant characteristics or concentration; or
 - (2) any increase in sanitary wastewater flow of 5,000 gallons per day, or more.
- c. 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).
- d. Any modifications of the Permittee's Sewer-Use Ordinance, including local limitations on pollutant concentrations, shall be submitted to the NHDES-WD for approval prior to adoption by the Permittee.
- e. Within 90 days of the effective date of this permit, the Permittee shall submit to NHDES-WD a copy of its current sewer-use ordinance and a copy of any other document granting legal authority to issue permits to industries discharging industrial waste to the municipal wastewater treatment plant.
- f. Within 120 days of the effective date of this permit, the Permittee shall submit to NHDES-WD a current list of all industries discharging industrial waste to the municipal wastewater treatment plant. At a minimum, the list shall indicate the name and address of each industry, along with the following information: telephone number, contact person, facility description, production quantity, products manufactured, industrial processes used, chemicals used in processes, existing level of pretreatment, and list of existing discharge permits.

2. This NPDES Discharge Permit is issued by the EPA under Federal and State law. Upon final issuance by the EPA, the NHDES-WD may adopt this permit, including all terms and conditions, as a State permit pursuant to RSA 485-A:13.

Each Agency shall have the independent right to enforce the terms and conditions of this Permit. 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, unless and until each Agency has concurred in writing with such modification, suspension or revocation.

G. SPECIAL CONDITIONS

Whole Effluent Toxicity Test Frequency Adjustment

The Permittee may submit a written request to the EPA requesting a reduction in the frequency (to not less than once per year) of required toxicity testing, after completion of a minimum of the most recent four (4) successive toxicity tests of effluent, all of which must be valid tests and must demonstrate compliance with the permit limits for whole effluent toxicity. Until written notice is received by certified mail from the EPA indicating that the Whole Effluent Testing requirement has been changed, the Permittee is required to continue testing at the frequency specified in the respective permit.

pH Limit Adjustment

The Permittee may submit a written request to the EPA requesting a change in the permitted pH limit range to be not less restrictive than 6.0 to 9.0 Standard Units found in the applicable National Effluent Limitation Guideline (Secondary Treatment Regulations in 40 CFR §133) for this facility. The Permittee's written request must include the State's approval letter containing an original signature (no copies). The State's letter shall state that the Permittee has demonstrated to the State's satisfaction that as long as discharges to the receiving water from a specific outfall are within a specific numeric pH range the naturally occurring receiving water pH will be unaltered. That letter must specify for each outfall the associated numeric pH limit range. Until written notice is received by certified mail from the EPA indicating the pH limit range has been changed, the Permittee is required to meet the permitted pH limit range in the respective permit.

ATTACHMENT A

NH0100170

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

Methods should follow those recommended by EPA in:

Weber, C.I. et al. Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, Fourth Edition. Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency, Cincinnati, OH, August 1993, EPA/600/4-90/027F.

Any exceptions are stated herein.

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. A thiosulfate control (maximum amount of thiosulfate in lab control or receiving water) should also be run.

All samples held overnight shall be refrigerated at 4°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 upstream of the discharge free from toxicity or other sources of contamination. Avoid collecting near areas of obvious road or agricultural runoff, storm sewers or other point source discharges. An additional control (0% effluent) of a standard laboratory water of known quality shall 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
U.S. Environmental Protection Agency
One Congress Street
Suite 1100 (Mail Code: CAA)
Boston, Massachusetts 02114-2023

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 RECOMMENDED 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 25 ml
7. Age of test organisms	1-24 hours (neonates)
8. No. 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	Feed YCT and <u>Selenastrum</u> while holding organisms prior to initiating test as per manual.
12. Aeration	None
13. Dilution water ²	Receiving water, other surface water, synthetic soft 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 factor	≥ 0.5

- | | |
|---|---|
| 15. Number of dilutions ³ | 5 plus a control. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series. |
| 16. Effect measured | Mortality-no movement of body or appendages on gentle prodding |
| 17. Test acceptability | 90% or greater survival of test organisms in 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/600/4-90/027F.
2. Standard prepared dilution water must have hardness requirements to generally reflect the characteristics of the receiving water.
3. When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

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

1. Test Type	Static, non-renewal
2. Temperature (°C):	20 ± 1 ° C or 25 ± 1°C
3. Light quality:	Ambient laboratory illumination
4. Photoperiod:	16 hr light, 8 hr dark
5. Size of test vessels:	250 mL minimum
6. Volume of test solution:	Minimum 200 mL/replicate
7. Age of fish:	1-14 days old and age within 24 hrs of the others
8. No. of fish per chamber	10 (not to exceed loading limits)
9. No. of replicate test vessels per treatment	4
10. Total no. organisms per concentration:	40
11. Feeding regime:	Light feeding using concentrated brine shrimp nauplii while holding prior to initiating the test as per manual
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 soft 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 factor	≥ 0.5
15. Number of dilutions ³	5 plus a control. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series.
16. Effect measured	Mortality-no movement on gentle prodding
17. Test acceptability	90% or greater survival of test organisms in 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-600/4-90/027F.
2. Standard dilution water must have hardness requirements to generally reflect characteristics of the receiving water.
3. When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

VI. CHEMICAL ANALYSIS

At the beginning of a static acute toxicity test, pH, conductivity, total residual chlorine, 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. It is also recommended that total alkalinity and total hardness be measured in the control and highest effluent concentration at the beginning of the test. The following chemical analyses shall be performed for each sampling event.

Parameter	<u>Effluent</u>	<u>Diluent</u>	Minimum Quanti- fication Level (mg/L)
Hardness* ¹	x	x	0.5
Alkalinity	x	x	2.0
pH	x	x	---
Specific Conductance	x	x	---
Total Solids and Suspended Solids	x	x	---
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
Total Residual Chlorine (TRC)* ²	x	x	0.05
Dissolved Oxygen	x	x	1.0

Total Metals

Cd	x		0.001
Cr	x		0.005
Pb	x	x	0.005
Cu	x	x	0.0025
Zn	x	x	0.0025
Ni	x	x	0.004
Al	x	x	0.02
Mg, Ca	x	x	0.05

Superscripts:

*¹ Method 2340 B (hardness by calculation) from APHA (1992), Standard Methods for the Examination of Water and Wastewater, 18th or subsequent Edition(s) as approved in 40 CFR Part 136.

*² Total Residual Chlorine

Either of the following methods from APHA (1992), Standard Methods for the Examination of Water and Wastewater, 18th or subsequent Edition(s) as approved in 40 CFR Part 136 must be used for these analyses:

- Method 4500-Cl E. Low-Level Amperometric Titration Method (the preferred method); or
- Method 4500-Cl G. DPD Colorimetric Method, or use U.S. EPA Manual of Methods Analysis of Water and Wastes Method 330.5

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

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

See the flow chart in Figure 6 on p. 77 of EPA 600/4-90/027F 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. 94 of EPA 600/4-90/027F.

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

ATTACHMENT B
LIST OF COMBINED SEWER OVERFLOWS

<u>Discharge Serial Number</u>	<u>Location</u>	<u>Present Use</u>	<u>Receiving Water</u>
002	Salmon Brook Overflow	Combined Discharge	Merrimack River
003	Farlington Road	Combined Discharge	Merrimack River
004	Burke Street	Combined Discharge	Merrimack River
005	East Hollis Street	Combined Discharge	Merrimack River
006	Nashua River	Combined Discharge	Nashua River
007	Tampa Street	Combined Discharge	Nashua River
008	Broad Street	Combined Discharge	Nashua River
009	Locke Street	Combined Discharge	Nashua River
012	Jackson Street	Combined Discharge	Nashua River

ATTACHMENT C

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)	Column (2)
	EXISTING TBLLs	PRESENT CONDITIONS
POTW Flow (MGD)	_____	_____
SIU Flow (MGD)	_____	_____
Dilution Ratio or 7Q10 (from NPDES Permit)	_____	_____
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 Industrial Headwork Loading (MAIHL) values used to derive your TBLs listed in Item II. In addition, please note the Environmental Criteria for which each MAIHL value was established, i.e. water quality, sludge, NPDES etc.

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

*Hardness Dependent (mg/l - CaCO3)

ITEM VII.

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

Column (1) NEW PERMIT		Column (2) OLD PERMIT	
Pollutants	Limitations (ug/l)	Pollutants	Limitations (ug/l)
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----
-----	-----	-----	-----

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)	Columns	
	Biosolids Data Analyses Average (mg/kg)	(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 completed during the preceding year, including the number of:
 - significant industrial users inspected by POTW (include inspection dates);
 - 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 Nashua's 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 Nashua's 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 Town is under a State or Federal compliance schedule that includes steps to be taken to revise local limits.