

**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"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

**Town of Montague
1 Avenue A
Montague, Massachusetts 01376**

is authorized to discharge from the facility located at

**Montague Water Pollution Control Facility
34 Greenfield Road
Montague, Massachusetts 01351**

and

2 combined sewer overflow (CSO) discharges

to the receiving water named **Connecticut River**

in accordance with effluent limitations, monitoring requirements, and other conditions set forth herein. If no comments are received during public notice, this permit shall become effective on the day of signature. If comments are received during public notice, this permit will become effective no sooner than 30 days after signature.

This permit and the authorization to discharge expire at midnight, five (5) years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on November 2, 2000.

This permit consists of Part I including effluent limitations and monitoring requirements, Part II including General Conditions and Definitions, and Attachment A (Toxicity Testing) and Attachments B and C (Industrial Pretreatment).

Signed this 22nd day of September, 2008

/S/ SIGNATURE ON FILE

Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

Director
Division of Watershed Management
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

Part 1. A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall serial number **001**. Such discharges shall be limited and monitored by the permittee as specified below.

<u>Effluent Characteristics</u>	<u>Units</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
		<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type²</u>
Flow ¹	mgd mgd	1.83 Report	***** *****	***** Report	continuous	recorder
BOD ₅ ³	mg/l lbs/day	30 458	45 687	Report Report	2/week 2/week	24-hour composite ⁴ 24-hour composite
Total Suspended Solids ³	mg/l lbs/day	30 458	45 687	Report Report	2/week 2/week	24-hour composite 24-hour composite
pH ⁵	su	6.0 – 8.3			1/day	grab
E. Coli ^{5,6} (April 1 – October 31)	cfu/100ml	126	*****	409	2/week	grab
Fecal Coliform ⁶ (April 1 – October 31)	cfu/100ml	200	*****	400	2/week	grab
Total Residual Chlorine ^{6,7,8} (April 1 – October 31)	mg/l	*****	*****	1.0	1/day	grab
Total Nitrogen ⁹	mg/l lbs/day	Report Report	***** *****	***** *****	1/month 1/month	24-hour composite 24-hour composite
Total Ammonia Nitrogen	mg/l	Report	*****	*****	1/month	24-hour composite
Total Kjeldahl Nitrogen	mg/l	Report	*****	*****	1/month	24-hour composite
Nitrite + Nitrate Nitrogen	mg/l	Report	*****	*****	1/month	24-hour composite
Whole Effluent Toxicity ^{10,11}	%	*****	*****	LC ₅₀ ≥ 50 ¹²	2/year	24-hour composite ⁴

NPDES Permit No. MA0100137

Page 3 of 17

Footnotes:

1. The average monthly flow limit is an annual average limit which shall be reported as a rolling average. The first value will be calculated using the monthly average flow for the first full month ending after the effective date of the permit and the eleven previous monthly average flows. Each subsequent month's DMR will report the annual average flow that is calculated from that month and the previous 11 months. In addition, report the average monthly flow and maximum daily flow for each month.
2. All sampling shall be representative of the influent and of the effluent that is discharged through outfall 001 to the Connecticut River. A routine sampling program shall be developed in which samples are taken at the same location, same time, and same days of every month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report that is submitted to EPA. All samples shall be tested using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. All samples shall be 24-hour composites unless specified as a grab sample in 40 CFR §136.
3. Sampling required for influent and effluent.
4. 24-hour composite samples will consist of at least twenty four (24) grab samples taken during a consecutive 24-hour period (e.g. 7:00 am Monday to 7:00 am Tuesday) and combined proportional to flow.
5. Required for State Certification.
6. The average monthly limits for fecal coliform and *E.coli* are expressed as geometric means. Fecal coliform sampling and *E. coli* sampling shall be done concurrently. The fecal coliform limits and monitoring requirements shall end one year after the effective date of this permit. The *E. coli* limits shall go into effect one year after the effective date of this permit; the monitoring requirements go into effect upon the effective date of the permit. A total residual chlorine sample shall be taken at the same time as *E. coli* and fecal coliform samples. Grab samples for bacteria and total residual chlorine shall also be taken once in the first hour and then every three hours during a bypass.
7. The minimum level (ML) for Total Residual Chlorine (TRC) is defined as 20 ug/l using EPA approved methods found in the most currently approved version of Standard Methods for the Examination of Water and Wastewater, Method 4500 CL-E and G. One of these methods must be used to determine TRC. The ML is not the minimum level of detection, but rather the lowest point on the curve used to calibrate the test equipment for

the pollutant of concern. If EPA approves a more sensitive method of analysis for TRC,

the permit may be reopened to require the use of the new method with a corresponding lower ML. When reporting sample data at or below the ML, see the latest EPA Region NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs) for guidance.

8. Chlorination systems shall include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection or that may have resulted in excessive levels of chlorine in the final effluent shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time that the reduced or excessive levels of chlorine occurred.
9. See Part I.F, Special Conditions, for requirements to evaluate and implement optimization of nitrogen removal.
10. The permittee shall conduct acute toxicity tests 2 times per year. The permittee shall test the daphnid, *Ceriodaphnia dubia*, only. The tests must be performed in accordance with the Toxicity Test Procedure and Protocol (**Attachment A**) and the schedule in the table below.

Test Dates Second Week in	Submit Results by:	Test Species
June September	July 31 October 31	Daphnid (<i>Ceriodaphnia dubia</i>)

After submitting two years of WET test results, all of which demonstrate compliance with the WET permit limits, the permittee may request a reduction in the WET testing requirements. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from the EPA that the WET testing requirement has been changed.

11. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in **Attachment A (Toxicity Test Procedure and Protocol) Section IV., DILUTION WATER** in order to obtain an individual approval for use of an alternate dilution water, or the permittee shall follow the Self-Implementing Alternative Dilution Water Guidance which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of NPDES

NPDES Permit No. MA0100137

Page 5 of 17

Program Instructions for the Discharge Monitoring Report Forms (DMRs) which is sent to all permittees with their annual set of DMRs and may also be found on the EPA,

Region I web site at <http://www.epa.gov/region1/enforcementandassistance/dmr2007.pdf>.

If this guidance is revoked, the permittee shall revert to obtaining individual approval as outlined in **Attachment A**. Any modification or revocation to this guidance will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in **Attachment A**.

12. The LC_{50} is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 50% limit means that a sample of 50% effluent shall cause no more than a 50% mortality rate.

Part 1. A.

2. Additional limitations

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
- b. The discharge shall not cause objectionable discoloration of the receiving waters.
- c. The effluent shall not contain a visible oil sheen, foam, or floating solids at any time.
- d. If the average annual flow in any calendar year exceeds 80 percent of the facility's design flow, the permittee shall submit a report to MassDEP by March 31 of the following calendar year describing its plans for further flow increases and describing how it will maintain compliance with the flow limit and all other effluent limitations and conditions.
- e. The treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.
- f. Sample results using EPA approved methods for any parameter above its required frequency must also be reported.
- g. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.
- h. The permittee shall submit with its monthly reports the date, time, and duration of all bypasses.

PART 1. A. 3.

1. The WWTF must provide notice to the Director as soon as possible of the following:

a. Any new introduction of pollutants into the POTW from an indirect discharger in a primary industry category 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, notice shall include information on:

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

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

2. Prohibitions Concerning Interference and Pass Through:

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

3. Toxics Control

a. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.

b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

4. Numerical Effluent Limitations for Toxicants

a. EPA or the MassDEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (CWA), state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations

for any pollutants, including but not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

Part 1. B. COMBINED SEWER OVERFLOWS (CSOs)

1. During wet weather, the permittee is authorized to discharge combined storm water and wastewater from the CSO outfalls listed below:

<u>Outfall</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Description</u>
01	42° 34' 45" N	72° 34' 24" W	Greenfield Road near WPCF
02	42° 36' 16" N	72° 33' 38" W	Adjacent to Power Canal

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

- a. The discharges shall receive treatment at a level providing Best Practicable Control Technology Currently Available (BPT), Best Conventional Pollutant Control Technology (BCT) to control and abate conventional pollutants and Best Available Technology Economically Achievable (BAT) to control and abate non-conventional and toxic pollutants. The EPA has made a Best Professional Judgment (BPJ) determination that BPT, BCT, and BAT for combined sewer overflows (CSOs) include the implementation of the Nine Minimum Controls (NMC) specified below.

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

- (2) Maximum use of the collection system for storage.

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

- (4) Maximization of flow to the POTW for treatment.

- (5) Prohibition of dry weather overflows from CSOs.

- (6) Control of solid and floatable materials in CSOs.

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

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

NPDES Permit No. MA0100137

Page 8 of 17

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

- b. Within **6 months of the effective date of this permit**, the permittee shall submit to EPA updated documentation on its implementation of the Nine Minimum Controls.
 - c. The discharges shall not cause or contribute to violations of Federal or State Water Quality Standards.
3. If additional information becomes available, this permit may be reopened for the purpose of adding technology based requirements.
 4. The permittee may consolidate CSO reports which are on similar reporting schedules.
 5. The permittee shall implement the following paragraphs a. through j. by the effective date of this permit:
 - a. Each CSO structure/regulator shall be routinely inspected to insure that they are in good working condition and adjusted to minimize combined sewer discharges. Such inspections shall occur monthly unless EPA approves a site specific inspection program which has been determined by EPA to provide an equal level of protectiveness (NMC Nos. 1, 2, and 4).
 - b. The following inspection results shall be recorded: the 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 necessary maintenance was performed, and whether the observed problem was corrected. The permittee shall maintain all records of inspections for at least three years.
 - c. Annually, no later than January 15, 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.
 - d. The Commonwealth of Massachusetts and EPA have the right to inspect any CSO related structure or outfall without prior notification to the permittee.
 - e. Discharges of septage, holding tank wastes, or other materials which may cause a visible oil sheen or contain floatable material to the combined sewer system are prohibited during wet weather when CSO discharges may be active. (NMC Nos.

3, 6, and 7).

f. Dry weather overflows (DWOs) are prohibited (NMC No. 5). All dry weather sanitary and/or industrial discharges from CSOs must be reported to EPA and the State within twenty-four hours in accordance with the reporting requirements for plant bypass (Paragraph D.1.e of Part II of this permit).

g. The permittee shall quantify and record all discharges from the combined sewer outfalls (NMC #9). Quantification may be through direct measurement or estimation. When estimating, the permittee shall make reasonable efforts (i.e. gaging, measurements) to verify the validity of the estimation technique. The following information must be recorded for each combined sewer outfall for each discharge event:

- (1) Estimated duration (hours) of discharge;
- (2) Estimated volume (gallons) of discharge;
- (3) National Weather Service precipitation data from the nearest gage where precipitation is available at daily (twenty-four hour) intervals and the nearest gage where precipitation is available at one hour intervals.

h. Cumulative precipitation per discharge event shall be calculated.

i. The permittee shall maintain all records of discharges for at least six years after the effective date of this permit, as it is collected, on an ongoing basis.

j. Within 12 months of the effective date of this permit, the permittee shall install and maintain identification signs for all combined sewer outfalls. The signs must be located at or near the combined sewer outfalls and easily readable by the public. These signs shall be a minimum of twelve by eighteen (12 X 18) inches in size, with white lettering against a green background, and shall contain the following information:

TOWN OF MONTAGUE
WET WEATHER-Sewer Discharge
OUTFALL (discharge serial number)

PART 1. C. UNAUTHORIZED DISCHARGES

The permit only authorizes discharges in accordance with the terms and conditions of this permit and only from the outfalls listed in PART 1 A.1 and 1.B.1. of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs) from any portion of the collection system owned and operated by the permittee are not authorized by this permit and shall be reported in accordance with Section D.1.e. (1) of the General Requirements

of this permit (Twenty-four hour reporting).

Notification of SSOs to MassDEP shall be made on its SSO Reporting Form (which includes DEP Regional Office telephone numbers). The reporting form and instruction for its completion may be found on-line at <http://www.mass.gov/dep/water/approvals/surffms.htm#sso>.

PART 1. D. 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 shall meet the following conditions for the collection system which it owns and operates.

1. Maintenance Staff

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.

2. Preventative Maintenance Program

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.

3. Infiltration/Inflow Control

The permittee shall develop and implement a plan to control infiltration and inflow (I/I) in the separate sanitary sewer portion of its sewerage system. The plan shall be submitted to EPA and MassDEP **within six months of the effective date of this permit** (see page 1 of this permit for the effective date) and shall describe the permittee's program for preventing infiltration/inflow related effluent limit violations, and all unauthorized discharges of wastewater, including overflows and by-passes due to excessive infiltration/inflow. The plan shall include:

i) An ongoing program to identify and remove sources of infiltration and inflow. The program shall include the necessary funding level and the source(s) of funding.

ii) An inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts. Priority should be

NPDES Permit No. MA0100137

Page 11 of 17

given to removal of public and private inflow sources that are upstream from, and potentially contribute to, known areas of sewer system backups and/or overflows.

iii) Identification and prioritization of areas that will provide increased aquifer recharge as the result of reduction/elimination of infiltration and inflow to the system.

iv) An educational public outreach program for all aspects of I/I control, particularly private inflow.

By **March 31** the permittee shall submit an annual summary report of all actions taken to minimize I/I during the previous calendar year. The summary report shall, at a minimum, include:

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

ii) Expenditures for any infiltration/inflow related maintenance activities and corrective actions taken during the previous year.

iii) A map with areas identified for I/I-related investigation/action in the coming year.

iv) A calculation of the annual average I/I, the maximum month I/I for the reporting year.

v) A report of any infiltration/inflow related corrective actions taken as a result of unauthorized discharges reported pursuant to 314 CMR 3.19(20) and reported pursuant to PART 1. C. UNAUTHORIZED DISCHARGES of this permit.

PART 1. E. ALTERNATIVE POWER SOURCE

In order to maintain compliance with the terms and conditions of this permit, the permittee shall continue to provide an alternative power source with which to sufficiently operate its treatment works (as defined at 40 CFR §122.2).

PART 1. F. PRETREATMENT

1. Limitations for Industrial Users:

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'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 120 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 B**) 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. Upon completion of its review, EPA will notify the POTW if the evaluation reveals that the local limits should be revised. Should the local limits need to be revised, the permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. If local limits are to be updated, revisions should be performed in accordance with EPA's Local Limits 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 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 the MassDEP 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 C** of this permit and shall be submitted no later than March 1 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. 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 120 days of this permit's effective date proposed changes, if applicable, to the permittee's pretreatment program deemed necessary to assure conformity with current Federal Regulations. The permittee will implement these proposed changes pending EPA Region I's approval under 40 CFR 403.18. This submission is separate and distinct from any local limits analysis submission described above.

f. Within 60 days of the effective date of the permit, the permittee must submit an updated Sewer Use Ordinance to EPA for review and approval.

PART 1. G. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.
2. The permittee shall comply with the more stringent of either the state or federal (40 CFR Part 503), requirements.
3. The requirements and technical standards of 40 CFR Part 503 apply to facilities which perform one or more of the following use or disposal practices:

NPDES Permit No. MA0100137

Page 14 of 17

- 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 CFR part 503 conditions 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 (e.g. lagoons- reed beds), or are otherwise excluded under 40 CFR 503.6.
5. The permittee shall use and comply with the attached compliance guidance document to determine appropriate conditions. Appropriate conditions contain the following elements:
- a. General requirements
 - b. Pollutant limitations
 - c. Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
 - d. Management practices
 - e. Record keeping
 - f. Monitoring
 - g. Reporting

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 at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year:

<u>Dry metric tons/year</u>	<u>Monitoring Frequency</u>
less than 290	1/year
290 to less than 1500	1/quarter
1500 to less than 15000	6/year
15000 +	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 guidance by **February 19**. Reports shall be submitted to the address contained in the reporting section of the permit. Sludge monitoring is not required by the permittee when the permittee is not responsible for the ultimate sludge disposal. The permittee must be assured that any third party contractor is in compliance with appropriate regulatory requirements. In such case, the permittee is required only to submit an annual report by February 19 containing the following information:

- Name and address of contractor responsible for sludge disposal
- Quantity of sludge in dry metric tons removed from the facility by the sludge contractor.

PART 1. H. SPECIAL CONDITIONS

Within **one year of the effective date of the permit**, the permittee shall complete an evaluation of alternative methods of operating the existing wastewater treatment facility to optimize the removal of nitrogen, and submit a report to EPA and MassDEP documenting this evaluation and presenting a description of recommended operational changes. The methods to be evaluated include, but are not limited to, operational changes designed to enhance nitrification (seasonal and year round), incorporation of anoxic zones, septage receiving policies and procedures, and side stream management. The permittee shall implement the recommended operational changes in order to maintain the existing mass discharge loading of total nitrogen. The annual average total nitrogen load from this facility (2004 – 2005) is estimated to be 172 lbs/day.

The permittee shall also submit an annual report to EPA and MassDEP, **by February 1 each year**, that summarizes activities related to optimizing nitrogen removal efficiencies, documents the annual nitrogen discharge load from the facility, and tracks trends relative to the previous year.

PART 1. I. MONITORING AND REPORTING

1. Reporting

a. Monitoring results obtained during each calendar month shall be summarized and reported on Discharge Monitoring Report Form(s) postmarked **no later than the 15th day of the following month**.

b. Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director at the following addresses:

Environmental Protection Agency

NPDES Permit No. MA0100137

Page 16 of 17

Water Technical Unit (SEW)

P.O. Box 8127

Boston, MA 02114

- c. Signed and dated Discharge Monitoring Report Forms and all other reports, excluding toxicity test reports, required by this permit shall be submitted to the State at:

Massachusetts Department of Environmental Protection

Bureau of Resource Protection

Western Regional Office

436 Dwight Street

Springfield, MA 01103

- d. Signed and dated Discharge Monitoring Reports and toxicity test reports required by this permit shall also be submitted to the State at:

Massachusetts Department of Environmental Protection

Division of Watershed Management

Surface Water Discharge Permit Program

627 Main Street, 2nd Floor

Worcester, MA 01608

- e. Signed and dated pretreatment reports required in Section 1.F. PRETREATMENT of this permit shall be submitted to EPA at:

EPA New England

Attn: Justin Pimpare

One Congress Street

Suite 1100 – CMU

Boston, MA 02113

PART 1. J. STATE PERMIT CONDITIONS

1. This discharge permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) under Federal and State law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MassDEP pursuant to M.G.L. Chap. 21, §43.

NPDES Permit No. MA0100137

Page 17 of 17

2. 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 this permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared, invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as an NPDES permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of Federal law, this permit shall remain in full force and effect under State law as a permit issued by the Commonwealth of Massachusetts.

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND
1 CONGRESS STREET
SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023**

FACT SHEET

**DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
PERMIT TO DISCHARGE TO THE WATERS OF THE UNITED STATES.**

NPDES NO: **MA0100137**

DATE OF PUBLIC NOTICE: February 22, 2008

NAME AND ADDRESS OF APPLICANT:

**Town of Montague
1 Avenue A
Montague, Massachusetts 01351**

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

**Montague Water Pollution Control Facility
34 Greenfield Road
Montague, Massachusetts 01351**

and CSO discharges at 2 locations

RECEIVING WATER: **Connecticut River (Segment MA34-04)**

CLASSIFICATION: **B (Warm Water Fishery)**

LATITUDE: **42° 34' 45" N**

LONGITUDE: **72° 34' 24" W**

I. Proposed Action, Type of Facility, and Discharge Location

The above named applicant has requested that the U.S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection (MassDEP) reissue its NPDES permit to discharge into the designated receiving water, the Connecticut River. The Montague Water Pollution Control Facility (WPCF) is a 1.83 Million Gallons per Day (MGD) secondary treatment plant serving a population of 6,946 in Montague and 306 from the Riverside area of the Town of Gill. The activated sludge treatment facility treats sanitary and industrial wastewater. The facility also treats septage from the surrounding communities and a small amount of thickened sludge from the Ashfield WPCF and the Monroe WPCF. Approximately

1.53 and 0.33 dry metric tons of sludge per year, respectively, are unloaded into the septage holding tank and pumped to the headworks. Sludge disposal is contracted out and the sludge is incinerated offsite.

The wastewater collection system is about 90% separate and 10% combined sewers. Currently, there is only one permitted CSO outfall (# 01), which receives flows from a regulator in Greenfield Road. Another outfall, identified while conducting the CSO and Facility Study, receives overflows from two regulator structures located in Avenue A and at 7th and L Streets. This outfall discharges to the Connecticut River adjacent to the Power Canal. This outfall is now included in the draft permit as CSO outfall #02.

In the Town's *Long Term Control Plan for Combined Sewer Overflow and Water Pollution Control Facility Plan* (December, 2005), a 1-year continuous model simulation estimated the average annual discharges from the CSO outfalls as shown below:

<u>Regulators</u>	<u>Greenfield Road</u>	<u>Avenue A and 7th and L Streets</u>
CSO	#01	#02
No. of Overflows	31	26
Volume (MG/Year)	3.48	3.56

The Long Term Control Plan's recommended alternative includes off-line storage, conveyance improvements, improvements at the WPCF, and removing inflow from roof leaders and service connections. These improvements are expected to result in about a 96% reduction in CSO discharges to an estimated total average annual discharge of 0.29 million gallons. The Town has completed the off-line storage and conveyance improvements. The WPCF improvements, which include a wet weather preliminary treatment, storage, and disinfection facility, are expected to be completed by spring, 2009. Because these CSO control improvements will result in an increase in flow to the treatment facility and possible CSO-related bypasses of secondary treatment, the Draft permit requires additional sampling for bacteria and chlorine during those events to ensure that permit limits are met.

The locations of the treatment facility and the CSOs are shown on Figures 1 and 2, respectively.

II. Description of Discharge

A quantitative description of the discharge in terms of significant effluent parameters based on recent monitoring data is shown in Attachment 1.

III. Permit Limitations and Conditions

The effluent limitations of the draft permit and the monitoring requirements may be found in the draft NPDES permit.

IV. Permit Basis and Explanation of Effluent Limitation Derivation

The Clean Water Act (CWA or the Act) prohibits the discharge of pollutants to waters of the United States without an NPDES permit unless such a discharge is otherwise authorized by the Act. An NPDES permit is used to implement technology based and water quality based effluent limitations as well as other requirements including monitoring and reporting. This draft NPDES permit was developed in accordance with statutory and regulatory authorities established pursuant to the Act. The regulations governing the NPDES program are found in 40 CFR Parts 122, 124 and 125 and Part 133 for secondary treatment.

EPA is required to consider technology and water quality requirements when developing permit effluent limits. Technology based treatment requirements represent the minimum level of control

that must be imposed under Sections 402 and 301(b) of the Act (see 40 CFR 125 Subpart A) to meet Best Practicable Control Technology Currently Available (BPT), Best Conventional Control Technology (BCT) for conventional pollutants, and Best Available Technology Economically Available (BAT) for toxic pollutants. Technology-based limitations for publicly-owned treatment works are found at 40 CFR Part 133 – Secondary Treatment Regulation.

Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on water quality standards. The Massachusetts Surface Water Quality Standards, 314 CMR 4.00, include requirements for the regulation and control of toxic constituents and also require that EPA criteria, established pursuant to Section 304(a) of the CWA, shall be used unless a site specific criteria is established. The State will limit or prohibit discharges of pollutants to surface waters to assure that surface water quality standards of the receiving waters are protected and maintained.

The permit must also limit any pollutant or pollutant parameter (conventional, non-conventional, toxic, and whole effluent toxicity) that is, or may be, discharged at a level that caused, or has reasonable potential to cause, or contributes to an excursion above any water quality criterion [40 CFR §122.44(d)(1)]. An excursion occurs if the projected or actual in-stream concentrations exceed the applicable criterion. In determining reasonable potential, EPA considers existing controls on point and non-point sources of pollution, variability of the pollutant in the effluent, sensitivity of the species to toxicity and, where appropriate, the dilution of the effluent in the receiving water.

Also note that according to Section 402 (o) of the Clean Water Act and EPA regulation 40 CFR § 122.44(l), when a permit is reissued, effluent limitations, standards, or conditions must be at least as stringent as the final effluent limitations, standards or conditions in the previous permit, except under certain limited conditions. In addition, in accordance with regulations found at 40 CFR Section 131.12, MassDEP has developed and adopted a statewide antidegradation policy to maintain and protect existing in-stream water quality. The Massachusetts Antidegradation Provisions are found at Title 314 CMR 4.04. No lowering of water quality is allowed, except in accordance with the antidegradation provisions.

The limits in the draft permit are based on information in the application, the existing permit, discharge monitoring reports, and toxicity test results.

Waterbody Classification and Usage

The Connecticut River is classified as a Class B, warm water fishery waterbody. The Massachusetts Surface Water Quality Standards (314 CMR 4.05(3)(b)) state that Class B waters shall have the following designated uses:

“These waters are designated as habitat for fish, other aquatic life and wildlife, and for primary and secondary contact recreation. Where designated they shall be suitable as a source of public water supply with appropriate treatment. They shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value.”

The “*Connecticut River Basin 1998 Water Quality Assessment Report*” identifies support for aquatic life designated uses in the upper 28.5 miles of this segment; although in “Alert Status”. That report also identifies non-support for fish consumption due to PCB contamination. The report did not assess other uses. The proposed *Massachusetts Year 2006 Integrated List of Waters* 303 (d) list identifies this segment as non-attainment due to priority organics and pathogens.

Results of effluent testing submitted with the permit application indicated that the treatment facility does not cause or contribute to the non-attainment due to priority organics. The CSOs with the discharge of untreated combined wastewater do cause or contribute to the non-attainment due to pathogens.

Flow and Dilution Factor

The existing permitted average daily flow of the facility is 1.83 mgd (2.83 cfs). The 7Q10 flow of the Connecticut River at the point of discharge used in the existing permit is 1,675 cfs. An examination of the data in the *USGS Streamflows* statistics indicates that this 7Q10 flow is still valid and will be used in the calculations for this permit. Therefore, the dilution factor for the facility is as follows:

$$\begin{aligned} 7Q10@ \text{ WWTF discharge} &= 1,675 \text{ cfs} \\ \text{Design flow} &= 1.83 \text{ mgd} = 2.83 \text{ cfs} \end{aligned}$$

$$\begin{aligned} \text{Dilution factor} &= (\text{River 7Q10 @ Discharge} + \text{Design Flow}) \div \text{Design Flow} \\ \text{Dilution Factor} &= (1675 + 2.83) \div 2.83 = 593 \end{aligned}$$

BOD and TSS

The secondary treatment requirements for Publicly Owned Treatment Works (40 CFR Part 133) shall be used in establishing this permit's limits. The calculations for the monthly and weekly average BOD and TSS mass limits are:

<u>mass limits</u>	<u>Flow x Concentration x Conversion Factor = lbs/day</u>
30-day average	$1.83 \text{ mgd} \times 30 \text{ mg/l} \times 8.34(\text{lb})(\text{l})/(\text{mg})(\text{gal}) = 458 \text{ lbs/day}$
7-day average	$1.83 \text{ mgd} \times 45 \text{ mg/l} \times 8.34(\text{lb})(\text{l})/(\text{mg})(\text{gal}) = 687 \text{ lbs/day}$

These are the same as in the existing permit and are maintained in the draft permit. The eighty-five percent (85%) removal requirement for BOD and TSS is also based upon the secondary treatment requirements and are retained in this draft permit.

E. coli, Fecal coliform, and pH

Bacteria and pH limits are based on water quality considerations and state certification requirements. These limits are designed to achieve the water quality standards for a Class B receiving water. The seasonal limits for bacteria are at the discretion of the State. Year-round bacteria limits are not necessary because no public water supplies and shellfishing are affected by the discharge. In addition, chlorine and chlorine compounds resulting from the disinfection process can be extremely toxic to aquatic life. Consequently, the seasonal limit allows for the attainment of the primary and secondary contact recreation uses to when they are most likely to occur and is the same as that in other permitted discharges to the Connecticut River in the area.

***Escherichia coli* Bacteria**

The *Escherichia coli* (*E. coli*) limit is based on state water quality standards for Class B waters (314 CMR 4.05(b)(4)). The State of Massachusetts recently (December 29, 2006) promulgated new bacteria criteria in the Surface Water Quality Standards (314 CMR 4.00). Fecal coliform bacteria have been replaced by *E. coli* in those standards. EPA approved the new bacteria criteria on September 19, 2007. Therefore, the draft permit includes *E. coli* limits, with a one year compliance schedule for attaining the limits. After one year, the new *E. coli* limit will go into effect.

The effluent limits are 126 cfu/100 ml geometric monthly mean and 409 cfu/100 ml maximum daily value (this is the 90% distribution of the geometric mean of 126 cfu/100 ml). These limits are seasonal, April 1 to October 31. The draft permit includes a requirement that the *E. coli* samples should be taken at the same time as the daily total chlorine residual sample is collected. Two samples per week are required.

Fecal Coliform Bacteria

As discussed above, new bacteria criteria have been adopted by MassDEP and approved by EPA. However, because one year is being given to achieve compliance with the new *E. coli* limits, the existing fecal coliform limits are included in the permit for the first year, whereupon the new *E. coli* limits will go into effect.

These bacteria limits are seasonal, April 1 to October 31. The draft permit includes a requirement that the fecal coliform samples be taken at the same time as the daily total chlorine residual sample is collected. Twice weekly sampling is required.

pH

The current permit pH limits require that the pH not be less than 6.0 or greater than 8.3 at any time. The 6.0 minimum limit had been approved in recognition of the effects of acid rain on wastewater streams in combined systems. This less stringent limitation will not result in any significant changes in water quality given the high dilution factor. The draft permit maintains those pH limits.

Total Residual Chlorine

Total Residual Chlorine (TRC) water quality criteria are established in the *Quality Criteria for Water 1986* (the Gold Book) and the subsequent 2002 update and have been adopted into the State Water Quality Standards. The in-stream criteria shall not exceed 11 ug/l for chronic toxicity and 19 ug/l for acute toxicity to protect aquatic life. Allowing for available dilution at the annual monthly average flow, the TRC permit limit calculations based on the dilution factor of 593 are shown below.

$$\begin{aligned} \text{Average Monthly Chlorine Limit} &= 11 \text{ ug/l} * 593 = 6,523 \text{ ug/l} = 6.5 \text{ mg/l} \\ \text{Daily Maximum Chlorine Limit} &= 19 \text{ ug/l} * 593 = 11,267 \text{ ug/l} = 11.3 \text{ mg/l} \end{aligned}$$

However, the Massachusetts Implementation Policy for the Control of Toxic Pollutants in Surface Waters (February 23, 1990) stipulates that the maximum effluent concentration of chlorine shall not exceed 1.0 mg/l for discharges with dilution factors greater than 100. Consequently, the permit sets at 1.0 mg/l maximum daily limit to be in compliance with that policy. As discussed above, the discharge of chlorine to the receiving water is limited to those months when primary and secondary contact recreational activities may occur.

Metals

Potential metals limits for the Montague WPCF would be calculated using the dilution factor and the hardness of the receiving water, when appropriate. As an example, a copper limit is calculated using the dilution factor of 593 and a total recoverable chronic criteria of 3.9 mg/l based upon a hardness of 36 mg/l.

$$\text{Chronic copper limit} \quad 3.9 \text{ ug/l} * 593 = 2,310 \text{ ug/l}$$

This result and the results for the other metals indicate that there is no need for metals limits in the draft permit.

Nitrogen

In December 2000, the Connecticut Department of Environmental Protection (CT DEP) completed a Total Maximum Daily Load (TMDL) for addressing nitrogen-driven eutrophication impacts in Long Island Sound. The TMDL included a Waste Load Allocation (WLA) for point sources and a Load Allocation (LA) for non-point sources. The point source WLA for out-of-basin sources (Massachusetts, New Hampshire and Vermont wastewater facilities discharging to the Connecticut, Housatonic and Thames River watersheds) requires an aggregate 25% reduction from the baseline total nitrogen loading estimated in the TMDL.

The baseline total nitrogen point source loadings estimated for the Connecticut, Housatonic, and Thames River watersheds were 21,672 lbs/day, 3,286 lbs/day, and 1,253 lbs/day respectively (see table below). The estimated current point source total nitrogen loadings for the Connecticut, Housatonic, and Thames Rivers respectively are 13,836 lbs/day, 2,151 lbs/day, and 1,015 lbs/day. (Please note that EPA's current estimate of loadings to the Connecticut River is slightly greater than the estimates shown in Attachment 2 and 3 of CT DEP's comments, but is based on more recent information and includes all POTWs in the watershed). The following table summarizes the estimated baseline loadings, TMDL target loadings, and estimated current loadings:

<u>Basin</u>	<u>Baseline Loading</u> ¹	<u>TMDL Target</u> ²	<u>Current Loading</u> ³
Connecticut River	21,672 lbs/day	16,254 lbs/day	13,836 lbs/day
Housatonic River	3,286	2,464	2,151
Thames River	1,253	939	1,015
Totals	26,211	19,657	17,002

1. Estimated loading from TMDL, (see Appendix 3 to CT DEP "Report on Nitrogen Loads to Long Island Sound", April 1998)

2. Reduction of 25% from baseline loading

3. Estimated current loading from 2004 – 2005 DMR data – detailed summary attached as Exhibit A.

The TMDL target of a 25 percent aggregate reduction from baseline loadings is currently being met, and the overall loading from MA, NH and VT wastewater treatment plants discharging to the Connecticut River watershed has been reduced by about 36 percent.

In order to ensure that the aggregate nitrogen loading from out-of-basin point sources does not exceed the TMDL target of a 25 percent reduction over baseline loadings, EPA intends to include a permit condition for all existing treatment facilities in Massachusetts and New Hampshire that discharge to the Connecticut, Housatonic and Thames River watersheds, requiring the permittees to evaluate alternative methods of operating their treatment plants to optimize the removal of nitrogen, and to describe previous and ongoing optimization efforts. Facilities not currently engaged in optimization efforts will also be required to implement optimization measures sufficient to ensure that their nitrogen loads do not increase, and that the aggregate 25 % reduction is maintained. Such a requirement has been included in this permit. We also intend to work with the State of Vermont to ensure that similar requirements are included in its discharge permits.

Specifically, the permit requires an evaluation of alternative methods of operating the existing

wastewater treatment facility in order to control total nitrogen levels, including, but not limited to, operational changes designed to enhance nitrification (seasonal and year round), incorporation of anoxic zones, septage receiving policies and procedures, and side stream management. This evaluation is required to be completed and submitted to EPA and MassDEP within one year of the effective date of the permit, along with a description of past and ongoing optimization efforts. The permit also requires implementation of optimization methods sufficient to ensure that there is no increase in total nitrogen compared to the existing average daily load. The annual average total nitrogen load from this facility (2004 – 2005) is estimated to be 172 lbs/day. The permit requires annual reports to be submitted that summarize progress and activities related to optimizing nitrogen removal efficiencies, document the annual nitrogen discharge load from the facility, and track trends relative to previous years.

The agencies will annually update the estimate of all out-of-basin total nitrogen loads and may incorporate total nitrogen limits in future permit modifications or reissuances as may be necessary to address increases in discharge loads, a revised TMDL, or other new information that may warrant the incorporation of numeric permit limits. There have been significant efforts by the New England Interstate Water Pollution Control Commission (NEIWPCC) work group and others since completion of the 2000 TMDL, which are anticipated to result in revised wasteload allocations for in-basin and out-of-basin facilities. Although not a permit requirement, it is strongly recommended that any facilities planning that might be conducted for this facility should consider alternatives for further enhancing nitrogen reduction.

Phosphorus

Phosphorus is a nutrient that can promote excessive plant growth which interferes with water uses and reduces in-stream dissolved oxygen. State water quality standards (314 CMR 4.04(5) Control of Eutrophication) require any existing point source discharge containing nutrients in concentrations which encourage eutrophication or growth of weeds or algae shall be provided with the highest and best practicable treatment to remove such nutrients.

This segment of the Connecticut River does not appear on the Massachusetts 303(d) list for nutrients and the facility discharge has a very high dilution factor of 593. Consequently, no phosphorus limit is included in the draft permit.

Whole Effluent Toxicity

The Massachusetts Surface Water Quality Standards require that EPA criteria established pursuant to Section 304(a)(1) of the Clean Water Act be used as guidance in the interpretation of the following narrative criteria:

“All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife.”

National studies conducted by the Environmental Protection Agency have demonstrated that domestic sources contribute toxic constituents to wastewater treatment plants (WWTPs). These constituents include metals, chlorinated solvents and aromatic hydrocarbons among others. The

impact of the toxicity of several constituents in a single effluent is accomplished through whole effluent toxicity (WET) testing.

Based on the potential for toxicity and in accordance with EPA regulation and policy, the draft permit includes acute toxicity limitations and monitoring requirements. (See, e.g., "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants", 50 Fed. Reg. 30,784 (July 24, 1985); see also, EPA's Technical Support Document for Water Quality-Based Toxics Control). EPA Region I has developed a toxicity control policy which requires wastewater treatment facilities to perform the toxicity testing in order to meet the state certification requirement. The frequency and type of WET tests depend on the dilution factor and risk factor.

Pursuant to EPA Region 1 policy, and MassDEP's Implementation Policy for the Control of Toxic Pollutants in Surface Waters, discharges having a dilution ratio greater than 100:1 require acute toxicity testing two times per year with a $LC_{50} \geq 50\%$. The principal advantages of biological techniques are: (1) the effects of complex discharges of many known and unknown constituents can be measured only by biological analyses; (2) bioavailability of pollutants after discharge is best measured by toxicity testing including any synergistic effects of pollutants; and (3) pollutants for which there are inadequate chemical analytical methods or criteria can be addressed. Therefore, toxicity testing is being used in conjunction with pollutant specific control procedures to control the discharge of toxic pollutants. The WET testing requirements in the draft permit are the same as in the current permit.

V. COMBINED SEWER OVERFLOWS (CSO)

1. Background

Combined sewer systems are wastewater collection systems designed to carry sewage and storm water in a single pipe. Flows in combined sewers can be classified as dry weather flow or wet weather flow.

Dry weather flow is the flow in a combined sewer that results from domestic, commercial, and industrial wastewater and groundwater infiltration with no contribution from storm water runoff or storm water induced infiltration. Dry weather overflows from CSOs are illegal and must be immediately reported to EPA and the MassDEP. Dry weather overflows must be eliminated as expeditiously as possible.

Wet weather flow is a combination of domestic, commercial, and industrial wastewater, groundwater infiltration, and stormwater flow including snowmelt. In periods of wet weather or snowmelt the combined wastewater flows can exceed the interceptor or regulator capacity of the combined sewers and/or treatment facilities. When this occurs, the combined wastewater can overflow and discharge directly to surface waters, i.e. a combined sewer overflow (CSO). CSOs are distinguished from bypasses which are "intentional diversions of waste streams from any portion of the treatment facility" (40 CFR §122.41 (m)).

The objectives of the National CSO Control Policy are:

- 1) To ensure that if the CSO discharges occur, they are only as a result of wet weather;
- 2) To bring all wet weather CSO discharge points into compliance with the technology based requirements of the CWA and applicable federal and state water quality standards; and
- 3) To minimize water quality, aquatic biota, and human health impacts from wet weather flows.

2. Effluent Standards

CSOs are point sources subject to NPDES permit requirements for both water quality based and technology based requirements but are not subject to the secondary treatment regulations applicable to publicly owned treatment works in accordance with 40 CFR §133.103(a) *Combined sewers*.

As noted above, Section 301(b)(1)(C) of the Clean Water Act of 1977 mandated compliance with water quality standards by July 1, 1977. Technology based permit limits must be established for best conventional pollutant control technology (BCT) and best available technology economically achievable (BAT) based on best professional judgment (BPJ) in accordance with Section 301(b) and Section 402(a) of the Water Quality Act Amendments of 1987 (WQA).

3. Conditions for Discharge

The draft permit prohibits dry weather discharges from CSO outfalls. Dry weather discharges must be immediately reported to EPA and MassDEP. Wet weather discharges must be monitored and reported as specified in the permit.

4. Nine Minimum Controls (NMC)

The permittee must comply with BPJ derived BCT/BAT controls which, at a minimum, include the following: (1) proper operation and maintenance of the sewer system and outfalls, (2) maximum use of the collection system for storage, (3) review pretreatment programs to assure that CSO impacts are minimized, (4) maximization of flow to the POTW for treatment, (5) prohibition of dry weather overflows, (6) control of solid and floatable materials in the discharge, (7) pollution prevention programs which focus on contamination reduction activities, (8) public notification to ensure that the public receives adequate notification of CSO occurrences and impacts, and (9) monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

5. Nine Minimum Controls Documentation

Because CSO-related projects have been completed, the permit requires the permittee to submit

updated documentation on the implementation of the Nine Minimum Controls.

6. Reopener/Additional CSO Control Measures

The permit requires monthly inspections of each CSO structure/regulator. The results of the inspections, including any necessary maintenance are to be recorded and maintained for at least three (3) years. By January 15th of each year, the permittee submit a certification to the EPA and the MassDEP that the previous year's inspections have been conducted and records maintained. The permit also requires that all discharges from combined sewer outfalls shall be quantified and recorded. The permit requires that these records be maintained for at least six (6) years. In addition, the permit requires that identification signs be maintained at all CSO structures.

The permit maybe modified or reissued upon completion of a long-term CSO control plan. Such modification may include performance standards for selected controls, a 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 water quality standards.

7. Required Treatment

EPA's national CSO policy ("CSO policy") published in the Federal Register on April 19, 1994 (59 FR 18688) requires that a permittee develop and submit a long-term CSO control plan which complies with the requirements of the CSO policy. As previously mentioned, the Town recently completed the "Long Term Control Plan for Combined Sewer Overflow and Water Pollution Control Facility Plan" in December 2005.

VI. Endangered Species Act (ESA)

Under Section 7 of the Endangered Species Act, federal agencies are required to ensure that any action they conduct, authorize, or fund is not likely to jeopardize the continued existence of a federally listed species, or result in the adverse modification of critical habitat. According to the USFWS, there are no federally listed species present within this reach of the Connecticut River, with the exception of transient bald eagles (*Haliaeetus leucocephalus*). EPA has contacted the United State Fish and Wildlife Service (USFWS) concerning the listed species under its purview. Based on the fact that this is a reissuance of an existing permit, with no increase in pollutants authorized, EPA believes that this permitted activity will have no effect on the listed species.

EPA has also contacted the NOAA Fisheries concerning the possible presence of shortnose sturgeon (*Acipenser brevirostrum*) in the vicinity of the facility's discharge. EPA believes the authorized discharge from this facility is not likely to adversely affect shortnose sturgeon or its

habitat, and is seeking concurrence to this opinion from NOAA Fisheries through the ESA consultation.

VII. Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16U.S.C. §1801 et seq. (1998)), EPA is required to consult with the National Fisheries Services (NOAA Fisheries) if EPA's action or proposed action that it funds, permits, or undertakes, may adversely impact any essential fish habitat (EFH). The Amendments broadly define essential fish habitat as: waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 U.S.C. § 1802 (10)). Adversely impact means any impact which reduces the quality and/or quantity of EFH (50 C.F.R. § 600.910 (a)). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

Essential fish habitat is only designated for species for which federal fisheries management plans exist (16 U.S.C. § 1855 (b) (1)(A)). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

Only Atlantic Salmon (*Salmo salar*) is believed to be present during one or more lifestages within the area which encompasses the discharge site. No "habitat areas of particular concern", as defined under §600.815(a)(9) of the Magnuson-Stevens Act, have been designated for this site. Although EFH has been designated for this general location, EPA has concluded that the limits and conditions contained in this draft permit minimize adverse effects to Atlantic Salmon EFH for the following reasons:

- The design flow of the facility is 1.83 mgd and the dilution factor is 593;
- The technology-based limits for chlorine are more stringent and protective of aquatic organisms than those based on EPA water quality criteria;
- Acute toxicity tests will be conducted on *Ceriodaphnia dubia* and current results of the toxicity tests are in compliance with the permit limits;
- The permit will prohibit violations of the state water quality standards.

If adverse impacts to EFH are detected as a result of this permit action, NOAA Fisheries will be notified and an EFH consultation will be reinitiated.

VIII. Sludge

The draft permit prohibits sludge discharges through the outfall. Section 405(d) of the CWA requires that sludge conditions be included in all POTW permits. However, the permittee's practice of contracting out the sludge disposal is not regulated by the National Sewage Sludge Program. If the permittee changes to a method of sludge disposal that is regulated, then the permittee must comply with the requirements of 40 CFR Part 503.

IX. Pretreatment Program

There are eight significant industrial users discharging to the WPCF, five of which are categorical users. A list of the industrial users is included in Attachment 4. About 150,000 gpd of process wastewater is discharged to the collection system from these industrial users.

The permittee is required to administer a pretreatment program based on the authority granted under 40 CFR §122.44(j), 40 CFR Part 403 and section 307 of the Act. The permittee's pretreatment program first received EPA approval on July 22, 1985. The Federal Pretreatment Regulations in 40 CFR Part 403 were amended in October 1988, and again in July 1990. Appropriate pretreatment program requirements were incorporated into subsequent permits that were consistent with that approval and federal pretreatment regulations in effect when the permits were issued.

Activities that must be addressed by the permittee include, but are not limited to, the following: (1) develop and enforce EPA approved specific effluent limits (technically-based local limits); (2) revise the local sewer-use ordinance or regulation, as appropriate, to be consistent with Federal Regulations; (3) develop an enforcement response plan; (4) implement a slug control evaluation program; (5) track significant noncompliance for industrial users; and (6) establish a definition of and track significant industrial users.

These requirements are necessary to ensure continued compliance with the POTW's NPDES permit and its sludge use or disposal practices.

Within 60 days of the effective date of the permit, the permittee is required to submit an updated Sewer Use Ordinance to EPA for review.

In addition to the requirements described above, the draft permit requires the permittee to submit to EPA in writing, within 120 days of the permit's effective date, a description of proposed changes to permittee's pretreatment program deemed necessary to assure conformity with current federal pretreatment regulations. These requirements are included in the draft permit to ensure that the pretreatment program is consistent and up-to-date with all pretreatment requirements in effect. Lastly, the permittee must continue to submit, annually on August 1, a pretreatment report detailing the activities of the program for the twelve month period ending 60 days prior to the due date.

The permit requires the permittee to submit to EPA, within 120 days of the permit's effective date, all required modifications of the Streamlining Rule in order to be consistent with the provisions of the newly promulgated Rule. To the extent the permittee's legal authority is not consistent with the required changes, they must be revised and submitted to EPA for review.

X. State Certification Requirements

EPA may not issue a permit unless the Massachusetts Department of Environmental Protection (MassDEP) certifies that the effluent limitations included in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards. The MassDEP has reviewed the draft permit and advised EPA that the limitations are adequate to protect water quality. EPA has requested permit certification by the State pursuant

to 40 CFR §124.53 and expects the draft permit will be certified.

XI. Comment Period and Procedures the Final Decision

All persons, including applicants, who believe any condition of the permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period to the EPA and MassDEP contacts listed below. Any person prior to such date, may submit a request in writing for a public hearing to consider the draft permit to EPA and the State Agency. Such requests shall state the nature of the issues to be raised in the hearing. A public hearing may be held after at least thirty (30) days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

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

XII. EPA and MassDEP Contacts

Additional information concerning the draft permit may be obtained between the hours of 9 am and 5 pm, Monday through Friday from:

Mark Malone (CMP)
Municipal Permits Branch
U.S. EPA
One Congress Street - Suite 1100
Boston, MA 02114-2023
TEL. (617) 918-1619
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Paul Hogan
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Division of Watershed Management
627 Main Street
Worcester, MA 01608
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Stephen S. Perkins, Director
Office of Ecosystem Protection
U.S. EPA

Exhibit A
Nitrogen Loads

NH, VT, MA Discharges to Connecticut River Watershed

FACILITY NAME	PERMIT NUMBER	DESIGN FLOW (MGD) ¹	AVERAGE FLOW (MGD) ²	TOTAL NITROGEN (mg/l) ³	TOTAL NITROGEN - Existing Flow(lbs/day) ⁴
NEW HAMPSHIRE					
Bethlehem Village District	NH0100501	0.340	0.220	19.600	35.962
Charlestown WWTF	NH0100765	1.100	0.360	19.600	58.847
Claremont WWTF	NH0101257	3.890	1.610	14.060	188.789
Colebrook WWTF	NH0100315	0.450	0.230	19.600	37.597
Groveton WWTF	NH0100226	0.370	0.290	19.600	47.405
Hanover WWTF	NH0100099	2.300	1.440	30.000	360.288
Hinsdale WWTF	NH0100382	0.300	0.300	19.600	49.039
Keene WWTF	NH0100790	6.000	3.910	12.700	414.139
Lancaster POTW	NH0100145	1.200	1.080	8.860	79.804
Lebanon WWTF	NH0100366	3.180	1.980	19.060	314.742
Lisbon WWTF	NH0100421	0.320	0.146	19.600	23.866
Littleton WWTF	NH0100153	1.500	0.880	10.060	73.832
Newport WWTF	NH0100200	1.300	0.700	19.600	114.425
Northumberland Village WPCF	NH0101206	0.060	0.060	19.600	9.808
Sunapee WPCF	NH0100544	0.640	0.380	15.500	49.123
Swanzey WWTP	NH0101150	0.167	0.090	19.600	14.712
Troy WWTF	NH0101052	0.265	0.060	19.600	9.808
Wasau Paper (industrial facility)	NH0001562		5.300	4.400	194.489
Whitefield WWTF	NH0100510	0.185	0.140	19.600	22.885
Winchester WWTP	NH0100404	0.280	0.240	19.600	39.231
Woodsville Fire District	NH0100978	0.330	0.230	16.060	30.806
New Hampshire Total		24.177	19.646		2169.596

VERMONT					
Bellows Falls	VT0100013	1.405	0.610	21.060	107.141
Bethel	VT0100048	0.125	0.120	19.600	19.616
Bradford	VT0100803	0.145	0.140	19.600	22.885
Brattleboro	VT0100064	3.005	1.640	20.060	274.373
Bridgewater	VT0100846	0.045	0.040	19.600	6.539
Canaan	VT0100625	0.185	0.180	19.600	29.424
Cavendish	VT0100862	0.155	0.150	19.600	24.520
Chelsea	VT0100943	0.065	0.060	19.600	9.808
Chester	VT0100081	0.185	0.180	19.600	29.424
Danville	VT0100633	0.065	0.060	19.600	9.808
Lunenburg	VT0101061	0.085	0.080	19.600	13.077
Hartford	VT0100978	0.305	0.300	19.600	49.039
Ludlow	VT0100145	0.705	0.360	15.500	46.537
Lyndon	VT0100595	0.755	0.750	19.600	122.598
Putney	VT0100277	0.085	0.080	19.600	13.077
Randolph	VT0100285	0.405	0.400	19.600	65.386
Readsboro	VT0100731	0.755	0.750	19.600	122.598
Royalton	VT0100854	0.075	0.070	19.600	11.442

St. Johnsbury	VT0100579	1.600	1.140	12.060	114.662
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NH, VT, MA Discharges to Connecticut River Watershed

FACILITY NAME	PERMIT NUMBER	DESIGN FLOW (MGD) ¹	AVERAGE FLOW (MGD) ²	TOTAL NITROGEN (mg/l) ³	TOTAL NITROGEN - Existing Flow(lbs/day) ⁴
Saxtons River	VT0100609	0.105	0.100	19.600	16.346
Sherburne Fire Dist.	VT0101141	0.305	0.300	19.600	49.039
Woodstock WWTP	VT0100749	0.055	0.050	19.600	8.173
Springfield	VT0100374	2.200	1.250	12.060	125.726
Hartford	VT0101010	1.225	0.970	30.060	243.179
Whitingham	VT0101109	0.015	0.010	19.600	1.635
Whitingham Jacksonville	VT0101044	0.055	0.050	19.600	8.173
Cold Brook Fire Dist.	VT0101214	0.055	0.050	19.600	8.173
Wilmington	VT0100706	0.145	0.140	19.600	22.885
Windsor	VT0100919	1.135	0.450	19.600	73.559
Windsor-Weston	VT0100447	0.025	0.020	19.600	3.269
Woodstock WTP	VT0100757	0.455	0.450	19.600	73.559
Woodstock-Taftsville	VT0100765	0.015	0.010	19.600	1.635
Vermont Totals		15.940	10.960		1727.302

MASSACHUSETTS					
Amherst	MA0100218	7.100	4.280	14.100	503.302
Athol	MA0100005	1.750	1.390	17.200	199.393
Barre	MA0103152	0.300	0.290	26.400	63.851
Belchertown	MA0102148	1.000	0.410	12.700	43.426
Charlemont	MA0103101	0.050	0.030	19.600	4.904
Chicopee	MA0101508	15.500	10.000	19.400	1617.960
Easthampton	MA0101478	3.800	3.020	19.600	493.661
Erving #1	MA0101516	1.020	0.320	29.300	78.196
Erving #2	MA0101052	2.700	1.800	3.200	48.038
Erving #3	MA0102776	0.010	0.010	19.600	1.635
Gardner	MA0100994	5.000	3.700	14.600	450.527
Greenfield	MA0101214	3.200	3.770	13.600	427.608
Hadley	MA0100099	0.540	0.320	25.900	69.122
Hardwick G	MA0100102	0.230	0.140	14.600	17.047
Hardwick W	MA0102431	0.040	0.010	12.300	1.026
Hatfield	MA0101290	0.500	0.220	15.600	28.623
Holyoke	MA0101630	17.500	9.700	8.600	695.723
Huntington	MA0101265	0.200	0.120	19.600	19.616
Monroe	MA0100188	0.020	0.010	19.600	1.635
Montague	MA0100137	1.830	1.600	12.900	172.138
N Brookfield	MA0101061	0.760	0.620	23.100	119.445
Northampton	MA0101818	8.600	4.400	22.100	810.982
Northfield	MA0100200	0.280	0.240	16.800	33.627
Northfield School	MA0032573	0.450	0.100	19.600	16.346
Old Deerfield	MA0101940	0.250	0.180	9.200	13.811
Orange	MA0101257	1.100	1.200	8.600	86.069
Palmer	MA0101168	5.600	2.400	18.800	376.301
Royalston	MA0100161	0.040	0.070	19.600	11.442
Russell	MA0100960	0.240	0.160	19.600	26.154
Shelburne Falls	MA0101044	0.250	0.220	16.900	31.008
South Deerfield	MA0101648	0.850	0.700	7.900	46.120
South Hadley	MA0100455	4.200	3.300	28.800	792.634
Spencer	MA0100919	1.080	0.560	13.600	63.517
Springfield	MA0103331	67.000	45.400	4.300	1628.135

Sunderland	MA0101079	0.500	0.190	8.700	13.786
Templeton	MA0100340	2.800	0.400	26.400	88.070

NH, VT, MA Discharges to Connecticut River Watershed

FACILITY NAME	PERMIT NUMBER	DESIGN FLOW (MGD) ¹	AVERAGE FLOW (MGD) ²	TOTAL NITROGEN (mg/l) ³	TOTAL NITROGEN - Existing Flow(lbs/day) ⁴
Ware	MA0100889	1.000	0.740	9.400	58.013
Warren	MA0101567	1.500	0.530	14.100	62.325
Westfield	MA0101800	6.100	3.780	20.400	643.114
Winchendon	MA0100862	1.100	0.610	15.500	78.855
Woronoco Village	MA0103233	0.020	0.010	19.600	1.635
Massachusetts Totals		166.010	106.950		9938.820

1. Design flow – typically included as a permit limit in MA and VT but not in NH.
2. Average discharge flow for 2004 – 2005. If no data in PCS, average flow was assumed to equal design flow.
3. Total nitrogen value based on effluent monitoring data. If no effluent monitoring data, total nitrogen value assumed to equal average of MA secondary treatment facilities (19.6 mg/l), average of MA seasonal nitrification facilities (15.5 mg/l), or average of MA year round nitrification facilities (12.7 mg/l). Average total nitrogen values based on a review of 27 MA facilities with effluent monitoring data. Facility is assumed to be a secondary treatment facility unless ammonia data is available and indicates some level of nitrification.
4. Current total nitrogen load.

Total Nitrogen Load = 13,836 lbs/day

MA (41 facilities) = 9,939 lbs/day (72%)

VT (32 facilities) = 1,727 lbs/day (12%)

NH (21 facilities) = 2170 lbs/day (16%)

TMDL Baseline Load = 21,672 lbs/day

TMDL Allocation = 16,254 lbs/day (25% reduction)

MA Discharges to Housatonic River Watershed

FACILITY NAME	PERMIT NUMBER	DESIGN FLOW (MGD) ¹	AVERAGE FLOW (MGD) ²	TOTAL NITROGEN (mg/l) ³	TOTAL NITROGEN - Existing Flow(lbs/day) ⁴
MASSACHUSETTS					
Crane	MA0000671		3.100	8.200	212.003
Great Barrington	MA0101524	3.200	2.600	17.000	368.628
Lee	MA0100153	1.000	0.870	14.500	105.209
Lenox	MA0100935	1.190	0.790	11.800	77.745
Mead Laurel Mill	MA0001716		1.500	6.400	80.064
Mead Willow Mill	MA0001848		1.100	4.600	42.200
Pittsfield	MA0101681	17.000	12.000	12.400	1240.992
Stockbridge	MA0101087	0.300	0.240	11.100	22.218
West Stockbridge	MA0103110	0.076	0.018	15.500	2.327
Massachusetts Totals			22.218		2151.386

1. Design flow – typically included as a permit limit in MA and VT but not in NH.
2. Average discharge flow for 2004 – 2005. If no data in PCS, average flow was assumed to equal design flow.
3. Total nitrogen value based on effluent monitoring data. If no effluent monitoring data, total nitrogen value assumed to equal average of MA secondary treatment facilities (19.6 mg/l), average of MA seasonal nitrification facilities (15.5 mg/l), or average of MA year round nitrification facilities (12.7 mg/l). Average total nitrogen values based on a review of 27 MA facilities with effluent monitoring data. Facility is assumed to be a secondary treatment facility unless ammonia data is available and indicates some level of nitrification.
4. Current total nitrogen load.

Total Nitrogen Load = 2151.386 lbs/day

TMDL Baseline Load = 3,286 lbs/day

TMDL Allocation = 2,464 lbs/day (25% reduction)

MA Discharges to Thames River Watershed

FACILITY NAME	PERMIT NUMBER	DESIGN FLOW (MGD) ¹	AVERAGE FLOW (MGD) ²	TOTAL NITROGEN (mg/l) ³	TOTAL NITROGEN - Existing Flow(lbs/day) ⁴
MASSACHUSETTS					
Charlton	MA0101141	0.450	0.200	12.700	21.184
Leicester	MA0101796	0.350	0.290	15.500	37.488
Oxford	MA0100170	0.500	0.230	15.500	29.732
Southbridge	MA0100901	3.770	2.900	15.500	374.883
Sturbridge	MA0100421	0.750	0.600	10.400	52.042
Webster	MA0100439	6.000	3.440	17.400	499.199
Massachusetts Totals		11.820	7.660		1014.528

1. Design flow – typically included as a permit limit in MA and VT but not in NH.
2. Average discharge flow for 2004 – 2005. If no data in PCS, average flow was assumed to equal design flow.
3. Total nitrogen value based on effluent monitoring data. If no effluent monitoring data, total nitrogen value assumed to equal average of MA secondary treatment facilities (19.6 mg/l), average of MA seasonal nitrification facilities (15.5 mg/l), or average of MA year round nitrification facilities (12.7 mg/l). Average total nitrogen values based on a review of 27 MA facilities with effluent monitoring data. Facility is assumed to be a secondary treatment facility unless ammonia data is available and indicates some level of nitrification.
4. Current total nitrogen load.

Total Nitrogen Load = 1014.528 lbs/day

TMDL Baseline Load = 1,253 lbs/day

TMDL Allocation = 939 lbs/day (25% reduction)

Montague WPCF



1 Miles

0

1

Figure 1



Town of Montague, MA
CSO Locations

Figure 2

Montague Water Pollution Control Facility
 NPDES Permit No. MA0100137

Attachment 1

	Flow1	BOD	TSS	Fecal Coliform	Chlorine	Ammonia	TKN	Nitrite + Nitrate	WET
Permit Limits	1.83 MGD	30 mg/l	30 mg/l	200cfus/100 ml	1 mg/l	report mg/l	report mg/l	report mg/l	50%
August, 2007	1.094	8	9	115		0.55	2	8	
July	1.08	8	8	51	0.48	0.45	1.2	5.3	
June	1.078	8	6	16	0.99	5.1	5.2	2	100
May	1.086	20	9	6	0.8	0.1	1	0.05	
April	1.086	17	9	17	0.67	15	13	0.19	
March	1.057	15	8	*****	*****	0	0	0	
February	1.041	18	10	*****	*****				
January	1.06	19	9	*****	*****	0.62	1.5	4.3	
December, 06	1.077	13	7	*****	*****	0.75	3.25	8.1	
November	1.085	13	8	*****	*****	3	4.3	4.6	
October	1.084	9	14		0.95	0.56	1.4	6.6	
September	1.121	7	9	31	0.81	0.97	1.3	11	100
August	1.111	5	15	24	0.72	0.41	4.95	12	
July	1.108	8	17	14	0.8	0.47	2.7	11	
June	1.11	5	11	7	0.95	0.64			100
May	1.097	8	7	5	0.91	2.4	2.11	7.3	
April	1.088	9	9	10	0.98	0.81	4.9	5.1	
March	1.107	11	11	*****	*****	5.7	7.2	5.5	
February	1.117	10	9	*****	*****	0.47	0	5.8	
January	1.106	8	6	*****	*****	1.9	1.3	9	
December, 05	1.086	11	8	*****	*****	0.22	1.5	5.9	
November	1.086	24	14	*****	*****	1.9	4.8	10	
October	1.071	17	23	42	1.12	0	0	0	
September	1.029	12	12	27	0.86	2	2.4	8	100
August	1.049	9	12	23	0.96	1.2	2.9	13	

1Rolling annual average

***** seasonal limit - no testing required

Attachment 2 – Table of Loads from Long Island Sound Watershed Segments

End-of-pipe point source nitrogen loads, equalized nitrogen loads with applied equivalency factors for combined attenuation and LIS attenuation (from SWEM model) effects by zone and tier (see Figure 3 of Attachment 1, the TMDL), and for NH, VT and MA sources, and percent benefit towards the improvement of hypoxic conditions in western Long Island Sound.				
Zone/Tier	End-of-pipe Nitrogen Load (lbs/day)**	Combined Equivalency Factor	Equalized Nitrogen Load (E-lbs/day)	Relative Effect (%)
1-1	5719	0.18	1029	1.09
1-2	42	0.16	7	0.01
1-3 Quinebaug	691	0.14	97	0.10
1-3 Shetucket	648	0.15	97	0.10
2-1	0	0.26	0	
2-2	10657	0.24	2558	
2-3	3945	0.23	907	
2-4 (Farmington R.)	2502	0.21	525	
MA	9836	0.21	2066	
NH	1616	0.19	307	
VT	1523	0.19	289	
3-1	9809	0.59	5787	6.12
3-2	2068	0.49	1013	1.07
4-1	3075	0.90	2768	2.93
4-2 Housatonic	1487	0.62	922	0.98
4-2 Naugatuck	4813	0.81	3899	4.12
4-3 Housatonic	188	0.47	88	0.09
4-3 Naugatuck	680	0.81	551	0.58
5-1	5194	0.91	4727	5.00
6-1	6071	1.00	6071	6.42
7-1	4585	0.87	3989	4.22
8-1	99070	0.48	47554	50.31
9-1	51601	0.12	6192	6.55
10-1 (Nassau Co.)	2650	0.80	2120	2.24
11-1 west*	1044	0.88	919	0.97
11-1 east*	76	0.51	39	0.04

* Estimated pending SWEM confirmation. ** Excludes de minimis facilities

Attachment 3 – EPA End of pipe nitrogen loading estimates for MA, NH and VT (D. Pincumbe, personal communication)

NAME	NUMBER	DESIGN FLOW (MGD) ¹	AVERAGE FLOW (MGD) ²	TOTAL NITROGEN (mg/l) ³	TOTAL NITROGEN (lbs/day) ⁴	Exp. Date
Bethlehem	NH0100501		0.19	19.6	31.1	
Charlestown	NH0100765		0.38	19.6	62.1	
Claremont	NH0101257		1.60	14.0 ^b	186.8	2005
Colebrook	NH0100315		0.22	19.6	36.0	
Groveton	NH0100226		0.49	19.6	80.1	
Woodsville	NH0100978		0.19	16.0 ^b	25.4	
Hinsdale	NH0100382		0.27	19.6	44.1	
Lancaster	NH0100145		0.98	8.8 ^b	71.9	2005
Lisbon	NH0100421		0.17	19.6	27.8	
Littleton	NH0100153		0.77	10.0 ^b	64.2	
Newport	NH0100200		0.65	19.6	106.2	2006
Keene	NH0100790	6.0	3.47	12.7	367.5	1999
Northumberland	NH0101206		0.06	19.6	9.8	
Sunapee	NH0100544		0.35	15.5	44.7	
Troy	NH0101052		0.10	19.6	16.3	
Lebanon	NH0100366		1.87	19.0 ^b	296.3	2011
Swanzey	NH0101150		0.09	19.6	14.7	
Whitefield	NH0100510		0.12	19.6	19.6	
Winchester	NH0100404		0.23	19.6	37.6	
Hanover	NH0100099		1.5	19.6	245.2	
			13.70		1,787.4	
Bellows Falls	VT010013	1.40 ^s	0.61	21.0 ^b	106.8	
Bethel	VT0100048	0.12 ^s	0.12	19.6	19.6	
Bradford	VT0100803	0.14 ^s	0.14	19.6	22.9	
Brattleboro	VT010064	3.00 ^s	1.64	20.0 ^b	273.6	2009
Bridgewater	VT0100846	0.04 ^s	0.04	19.6	6.5	
Canaan	VT0100625	0.18 ^s	0.18	19.6	29.4	
Cavendish	VT0100862	0.15 ^s	0.15	19.6	24.5	
Chelsea	VT0100943	0.06 ^s	0.06	19.6	9.8	
Chester	VT010081	0.18 ^s	0.18	19.6	29.4	
Danville	VT0100633	0.06 ^s	0.06	19.6	9.8	
Lunenburg	VT0101061	0.08 ^s	0.08	19.6	13.1	
Hartford	VT0100978	0.30 ^s	0.3	19.6	49.0	
Ludlow	VT0100145	0.70 ^s	0.36	15.5	46.5	
Lyndon	VT0100595	0.75 ^s	0.75	19.6	122.6	2007
Putney	VT0100277	0.08 ^s	0.08	19.6	13.1	
Randolph	VT0100285	0.40 ^s	0.4	19.6	65.4	

NAME	NUMBER	DESIGN FLOW (MGD) ¹	AVERAGE FLOW (MGD) ²	TOTAL NITROGEN (mg/l) ³	TOTAL NITROGEN (lbs/day) ⁴	Exp. Date
Readsboro	VT0100731	0.75 ⁵	0.75	19.6	122.6	2007
Royalton	VT0100854	0.07 ⁵	0.07	19.6	11.4	
ST. Johnsbury	VT0100579	1.60	1.14	12.0 ⁶	114.1	2009
Saxtons River	VT0100609	0.10 ⁵	0.1	19.6	16.3	
Sherburne Fire Dist.	VT0101141	0.30 ⁵	0.3	19.6	49.0	
Woodstock WWTP	VT0100749	0.05 ⁵	0.05	19.6	8.2	
Springfield	VT0100374	2.20	1.25	12.0 ⁶	125.1	2003
Hartford	VT0101010	1.22 ⁵	0.97	30.0 ⁶	242.7	2006
Whitingham	VT0101109	0.01 ⁵	0.01	19.6	1.6	
Whitingham Jacksonville	VT0101044	0.05 ⁵	0.05	19.6	8.2	
Cold Brook Fire Dist.	VT0101214	0.05 ⁵	0.05	19.6	8.2	
Wilmington	VT0100706	0.14 ⁵	0.14	19.6	22.9	
Windsor	VT0100919	1.13 ⁵	0.45	19.6	73.6	
Windsor-Weston	VT0100447	0.02 ⁵	0.02	19.6	3.3	
Woodstock WTP	VT0100757	0.45 ⁵	0.45	19.6	73.6	
Woodstock-Taftsville	VT0100765	0.01 ⁵	0.01	19.6	1.6	
			10.96		1724.4	
Huntington	MA0101265	0.20 ⁵	0.12	19.6	19.6	
Russell	MA0100960	0.24	0.16	19.6	26.2	
Westfield	MA0101800	6.10 ⁵	3.78	20.4	643.1	2005
Woronoco Village	MA0103233	0.02	0.01	19.6	1.6	
Charlemont	MA0103101	0.05 ⁵	0.03	19.6	4.9	
Greenfield	MA0101214	3.20	3.77	13.6	427.6	2007
Monroe	MA0100188	0.02	0.01	19.6	1.6	
Old Deerfield	MA0101940	0.25 ⁵	0.18	9.2	13.8	
Shelburne Falls	MA0101044	0.25 ⁵	0.22	16.9	31.0	
Amherst	MA0100218	7.10	4.28	14.1	503.3	2005
Barre	MA0103152	0.30 ⁵	0.29	26.4	63.8	
Belchertown	MA0102148	1.00	0.41	12.7	43.4	
Easthampton	MA0101478	3.80	3.02	19.6	493.7	2000
Hadley	MA0100099	0.54	0.32	25.9	69.1	
Hatfield	MA0101290	0.50 ⁵	0.22	15.6	28.6	
Holyoke	MA0101630	17.50 ⁵	9.70	8.6	695.7	2005

NAME	NUMBER	DESIGN FLOW (MGD) ¹	AVERAGE FLOW (MGD) ²	TOTAL NITROGEN (mg/l) ³	TOTAL NITROGEN (lbs/day) ⁴	Exp. Date
Montague	MA0100137	1.83 ⁵	1.60	12.9	172.1	2006
Northampton	MA0101818	8.60 ⁵	4.40	22.1	811.0	2005
Northfield School	MA0032573	0.45	0.10	19.6	16.3	
Northfield	MA0100200	0.28	0.24	16.8	33.6	
South Deerfield	MA0101648	0.85	0.70	7.9	46.1	
South Hadley	MA0100455	4.20 ⁵	3.30	28.8	792.6	2005
Sunderland	MA0101079	0.50 ⁵	0.19	8.7	13.8	
Athol	MA0100005	1.75 ⁵	1.39	17.2	199.4	2007
Erving #2	MA0101052	2.70 ⁵	1.80	3.2	48.0	2007
Erving #1	MA0101516	1.02 ⁵	0.32	29.3	78.2	
Erving #3	MA0102776	0.01	0.01	19.6	1.6	
Gardner	MA0100994	5.00 ⁵	3.70	14.6	450.5	2007
Orange	MA0101257	1.10 ⁵	1.20	8.6	86.1	
Royalston	MA0100161	0.04 ⁵	0.07	19.6	11.4	
Templeton	MA0100340	2.80 ⁵	0.40	26.4	88.1	
Winchendon	MA0100862	1.10 ⁵	0.61	15.5	78.9	
Chicopee	MA0101508	15.50 ⁵	10.0	19.4	1,618.0	2010
Hardwick W	MA0102431	0.04 ⁵	0.01	12.3	1.0	
Hardwick G	MA0100102	0.23 ⁵	0.14	14.6	17.0	
N Brookfield	MA0101061	0.76 ⁵	0.62	23.1	119.4	2005
Palmer	MA0101168	5.60 ⁵	2.40	18.8	376.3	2005
Spencer	MA0100919	1.08 ⁵	0.56	13.6	63.5	
Ware	MA0100889	1.00 ⁵	0.74	9.4	58.0	
Warren	MA0101567	1.50	0.53	14.1	62.3	
Springfield			45.4	4.3	1,628.1	2006
			104.05		9,938.3	

1. Design flow – typically included as a permit limit in MA and VT but not in NH.
2. Average discharge flow for 2004 – 2005. If no data in PCS, average flow was assumed to equal design flow.
3. Total nitrogen value based on effluent monitoring data. If no effluent monitoring data, total nitrogen value assumed to equal average of MA secondary treatment facilities (19.6 mg/l), average of MA seasonal nitrification facilities (15.5 mg/l), or average of MA year round nitrification facilities (12.7 mg/l). Average total nitrogen values based on a review of 27 MA facilities with effluent monitoring data. Facility is assumed to be a secondary treatment facility unless ammonia data is available and indicates some level of nitrification.
4. Current total nitrogen load.
5. Flow limit is based on an annual average rather than a monthly average.
6. Effluent total nitrogen data from USGS study.

**Town of Montague, Massachusetts
NPDES Permit No. MA0100137
Industrial Users**

<u>Company</u>	<u>Industry</u>	<u>Process Wastewater</u>
Southworth Manufacturing	Paper	70,000 gpd
Australis Aquaculture, LLC	Fish Farming	3,800 gpd
Judd Wire	Insulated Conductors	0
Hallmark Imaging Co.	Film Processing	0
New England Extrusion	Plastic Film	0
Hillside Plastics	Plastic containers	0
Con-Agra Foods, Inc.	Soybeans	21,000 gpd
Heat Fab	Sheet metal	<200 gallons per year