

**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 Sturbridge

is authorized to discharge from the facility located at

**New Boston Road Extension
Sturbridge, MA 01566**

to receiving water named

**Quinebaug River
(Quinebaug French Watershed)**

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein. This permit shall become effective (See ** below).

This permit shall become effective on December 1, 2006

This permit and the authorization to discharge expire at midnight, November 30, 2011.

This permit supersedes the permit issued on January 2, 2002.

This permit consists of 11 pages in Part I including effluent limitations, monitoring requirements, Attachments A and B and 27 pages in Part II including General Conditions and Definitions.

Signed this 28th day of SEPTEMBER, 2006

/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 I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

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

Effluent Characteristic	Units	Effluent Limits			Monitoring Requirements	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ³
Flow ²	MGD	0.75	----	Report	Continuous	Recorder
Flow ²	MGD	Report	----	Report	Continuous	Recorder
CBOD ₅ ⁴ (April 1 – September 30)	mg/l	10	10	15	3/Week	24-Hour Composite ⁵
	lbs/day	63	63	94	3/Week	24-Hour Composite ⁵
BOD ₅ ⁴ (October 1 - March 31)	mg/l	20	20	30	2/Week	24-Hour Composite ⁵
	lbs/day	125	125	188	2/Week	24-Hour Composite ⁵
TSS ⁴ (April 1 – September 30)	mg/l	10	10	15	3/Week	24-Hour Composite ⁵
	lbs/day	63	63	94	3/Week	24-Hour Composite ⁵
TSS ⁴ (October 1 - March 31)	mg/l	20	20	30	3/Week	24-Hour Composite ⁵
	lbs/day	125	125	188	3/Week	24-Hour Composite ⁵
pH Range		(See Condition I.A.1.b. on Page 6)			1/Day	Grab
Dissolved Oxygen (April 1 – October 31)	mg/l	NOT LESS THAN 6 mg/l			1/Day	Grab
Fecal Coliform ^{1,6} (April 1- October 31)	cfu/100 ml	200	----	400	2/Week	Grab
Total Residual Chlorine ^{6,7,8} (April 1 – October 31)	ug/l	75	----	129	1/Day	Grab

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<u>Effluent Characteristic</u>	<u>Units</u>	<u>Effluent Limits</u>			<u>Monitoring Requirements</u>	
		<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type³</u>
Copper, Total ⁹	ug/l	25	----	34	1/Month	24-Hour Composite ⁵
Phosphorus, Total* (April 1 - October 31)	mg/l	0.2	----	----	2/Week	24-Hour Composite ⁵
Phosphorus, Total* (November 1- March 31)	mg/l	1.0	----	1.5	2/Week	24-Hour Composite ⁵
Ortho Phosphorus, Dissolved (November 1-March 31) ¹⁰	mg/l	Report	----	Report	2/Week	24-Hour Composite ⁵
	lbs/day	Report	----	Report	2/Week	24-Hour Composite ⁵
Ammonia Nitrogen, (June 1-October 31)	mg/l	1.5	----	2.0	1/Week	24-Hour Composite ⁵
	lbs/day	9.4	----	Report	1/Week	24-Hour Composite ⁵
Ammonia Nitrogen, (November 1 - May 31))	mg/l	Report	----	Report	1/Month	24-Hour Composite ⁵
Total Kjeldahl Nitrogen	mg/l	Report	----	Report	1/Month	24-Hour Composite ⁵
Total Nitrate	mg/l	Report	----	Report	1/Month	24-Hour Composite ⁵
Total Nitrite	mg/l	Report	----	Report	1/Month	24-Hour Composite ⁵
Whole Effluent Toxicity ^{12,13,14}		Acute LC ₅₀ ≥ 100% Chronic C-NOEC ≥ 15%			4/year ¹¹	24-Hour Composite ⁵

All sampling shall be representative of the effluent that is discharged through outfall 001 to the Quinebaug River.

* See Section E – Compliance Schedule.

Footnotes:

1. Required for State Certification.
2. Report annual average, monthly average, and the maximum daily flow. The limit is an annual average, which shall be reported as a rolling average. The value will be calculated as the arithmetic mean of the monthly average flow for the reporting month and the monthly average flows of the eleven previous months.
3. All required effluent samples shall be collected at the discharge point. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.

A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month. Occasional deviations from the routine sampling program are allowed, but the reason for the deviation shall be documented 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.

4. Sampling required for influent and effluent.
5. A 24-hour composite sample will consist of at least twenty four (24) grab samples taken during one consecutive 24 hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportionally to flow.
6. Fecal coliform and total residual monitoring will be conducted during the period April 1st through October 31 only, to reflect the seasonal chlorination period. Fecal coliform discharges shall not exceed a monthly geometric mean of 200 colony forming units per 100 ml, nor shall they exceed 400 cfu per 100 ml as a daily maximum. Fecal coliform samples shall be taken once per day and conducted concurrently with TRC sampling.

Total residual chlorine monitoring is required whenever chlorine is added to the treatment process (i.e. TRC sampling is not required if chlorine is not added for disinfection or other purpose). The TRC limitations are in effect year-round.

7. The permittee shall collect at least one TRC grab sample per day. For every day that more than one grab sample is taken, the monthly DMR shall include an attachment documenting the individual grab sample results for that day, the date and time of each sample, the method used for analysis, and a summary of any operational modifications implemented in response to the sample results. All test results using EPA approved methods shall be used in the calculation and reporting of the monthly average and maximum daily data submitted on the DMR (see Part II, Section D.1.d (2)).

8. The minimum detection level (ML) for total residual chlorine is defined as 20 ug/l. This value is the minimum level for chlorine 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, or USEPA Manual of Methods of Analysis of Water and Wastes, Method 330.5. One of these methods must be used to determine total residual chlorine. For effluent limitations less than 20 ug/l, compliance/non-compliance will be determined based on the ML. Sample results of 20 ug/l or less shall be reported as zero on the discharge monitoring report.

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

9. The minimum detection level (ML) for copper is defined as 3.0 ug/l. This value is the minimum detection level for copper using the Furnace Atomic Absorption analytical method (EPA Method 220.2). For effluent limitations less than 3.0 ug/l, compliance/non-compliance will be determined based on the ML from this method, or another approved method that has an equivalent or lower ML, one of which must be used. Sample results of 3.0 ug/l or less shall be reported as zero on the discharge monitoring report.
10. The maximum daily concentration and loading values reported for dissolved orthophosphorus shall be values from the same day that the maximum daily total phosphorus concentration and loading values were measured.
11. The permittee shall conduct chronic (and modified acute) toxicity tests four times per year. The chronic test may be used to calculate the acute LC₅₀ at the 48 hour exposure interval. The permittee shall test the fathead minnow, Pimephales promelas, only. Toxicity test samples shall be collected during the second week of the months of February, May, August and November. The test results shall be submitted by the last day of the month following the completion of the test. The results are due March 31, June 30, September 30 and, December 31 respectively. The tests must be performed in accordance with test procedures and protocols specified in **Attachment A** of this permit.

Test Dates Second Week in	Submit Results By:	Test Species	Acute Limit LC ₅₀	Chronic Limit C-NOEC
February	March 31	<u>Pimephales promelas</u> (fathead minnow)	100%	>15%
May	June 30			
August	September 30			
November	December 31			
		SEE ATTACHMENT A		

12. The LC₅₀ is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
13. C-NOEC (chronic-no observed effect concentration) is defined as the highest concentration of toxicant or effluent to which organisms are exposed in a life cycle or partial life cycle test which causes no adverse effect on growth, survival, or reproduction at a specific time of observation as determined from hypothesis testing where the test results exhibit a linear dose-response relationship. However, where the test results do not exhibit a linear dose-response relationship, the permittee must report the lowest concentration where there is no observable effect. The “15% or greater” limit is defined as a sample which is composed of 15% (or greater) effluent, the remainder being dilution water. This is a maximum daily limit derived as a percentage of the inverse of the dilution factor of 6.9.
14. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall follow procedures outlined in **Attachment A Section IV., DILUTION WATER** in order to obtain permission to use an alternate dilution water. In lieu of individual approvals for alternate dilution water required in **Attachment A**, EPA-New England has developed a Self-Implementing Alternative Dilution Water Guidance document (called “Guidance Document”) which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. If this Guidance document is revoked, the permittee shall revert to obtaining approval as outlined in **Attachment A**. The “Guidance Document” has been sent to all permittees with their annual set of DMRs and Revised Updated Instructions for Completing EPA’s Pre-Printed NPDES Discharge Monitoring Report (DMR) Form 3320-1 and is not intended as a direct attachment to this permit. Any modification or revocation to this “Guidance Document” 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**.

Part I.A.1. (Continued)

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
- b. The pH of the effluent shall not be less than 6.5 nor greater than 8.3 at any time.
- c. The discharge shall not cause objectionable discoloration of the receiving waters.
- d. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
- e. The permittee’s 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. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.

- g. The results of sampling for any parameter above its required frequency must also be reported.
2. All POTWs must provide adequate notice to the Director of the following:
- a. any new introduction of pollutants into that 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, 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.

3. Prohibitions Concerning Interference and Pass-Through:

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.

4. 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.

5. Numerical Effluent Limitations for Toxicants

EPA or 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.

B. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from the outfall listed in Part I A.1. of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs) 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>.

C. 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:

1. Maintenance Staff

The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit.

2. Preventative Maintenance Program

The permittee shall maintain an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer systems infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges.

3. Infiltration/Inflow Control Plan:

The permittee shall develop and implement a plan to control infiltration and inflow (I/I) to the separate sewer 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:

- 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.
- An inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts. Priority should be 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.
- Identification and prioritization of areas that will provide increased aquifer recharge as the result of reduction/elimination of infiltration and inflow to the system.
- An educational public outreach program for all aspects of I/I control, particularly private inflow.

Reporting Requirements:

A summary report of all actions taken to minimize I/I during the previous calendar year shall be submitted to EPA and the MassDEP annually, **by the anniversary date of the effective date of this permit**. The summary report shall, at a minimum, include:

- A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year.
- Expenditures for any infiltration/inflow related maintenance activities and corrective actions taken during the previous year.
- A map with areas identified for I/I-related investigation/action in the coming year.
- A calculation of the annual average I/I, the maximum month I/I for the reporting year.
- 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 the Unauthorized Discharges section of this permit.

D. ALTERNATE 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 §403.3).

E. SCHEDULE OF COMPLIANCE

No later than 4 years from the effective date of the permit, the permittee shall achieve compliance with the phosphorus limit of 0.2 mg/l between April 1 and October 31. The limits shall be achieved in accordance with the following schedule:

1. Complete conceptual design of necessary upgrades no later than 18 months after the effective date of the permit.
2. Complete plans and specifications for necessary upgrades no later than 30 months after the effective date of the permit.
3. Complete construction of necessary upgrades and attain compliance with the final effluent limits for total phosphorus and total aluminum no later than 48 months after the effective date of the permit.

During the interim period, the permittee shall achieve an April 1 – October 31 monthly average total phosphorus limit of 1.0 mg/l and a maximum daily limit of 1.5 mg/l. Monitoring of the discharge shall be done in accordance with the requirements of Part I A.1. of the permit.

F. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices 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:
 - 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. See Attachment B. Appropriate conditions contain the following elements:
 - General requirements
 - Pollutant limitations
 - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
 - Management practices
 - Record keeping
 - Monitoring
 - Reporting

Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.
6. The permittee shall monitor the pollutant concentrations, pathogen reduction and vector attraction reduction 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 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

G. MONITORING AND REPORTING

1. Reporting

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

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

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

The State Agency is:

Massachusetts Department of Environmental Protection
Bureau of Resource Protection
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

Signed and dated Discharge Monitoring Report Forms 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, Massachusetts 01608

H. STATE PERMIT CONDITIONS

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. Chapter 21, §43.

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.