

**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 Ayer  
Board of Selectmen**

is authorized to discharge from the facility located at

**Ayer Wastewater Treatment Facility  
Brook Street  
Ayer, MA 01432**

to receiving water named

**Nashua River (MA-81-05)**

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

This permit shall become effective 60 days after signature.

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

This permit supersedes the permit issued on July 28, 2000 and expired September 30, 2005.

This permit consists of 10 pages in Part I including effluent limitations, monitoring requirements, Attachments A, B & C and 35 pages in Part II including General Conditions and Definitions.

Signed this 28<sup>th</sup> day of February, 2006

/s/ SIGNATURE ON FILE

Linda M. Murphy, 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**

<p>A.1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number <b>001</b>, treated effluent to the Nashua River. Such discharge shall be limited and monitored by the permittee as specified below.</p>									
<u>EFFLUENT CHARACTERISTIC</u>		<u>EFFLUENT LIMITS</u>				<u>MONITORING REQUIREMENTS</u>			
		Mass Limits			Concentration Limits				
PARAMETER		AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	MEASUREMENT FREQUENCY	SAMPLE TYPE <sup>3</sup>
FLOW <sup>1</sup>		***	***	***	Report MGD	***	Report MGD	CONTINUOUS	RECORDER
FLOW <sup>2</sup>		***	***	***	1.79 MGD	***	Report MGD	CONTINUOUS	RECORDER
BOD <sub>5</sub> <sup>4</sup>		448 lbs/Day 204 kgs/Day	672 lbs/Day 305 kgs/Day	Report	30 mg/l	45 mg/l	Report mg/l	1/WEEK	24-HOUR COMPOSITE <sup>5</sup>
TSS <sup>4</sup>		448 lbs/Day 204 kgs/Day	672 lbs/Day 305 kgs/Day	Report	30 mg/l	45 mg/l	Report mg/l	1/WEEK	24-HOUR COMPOSITE <sup>5</sup>
pH RANGE <sup>6</sup>		6.5 - 8.3 SU SEE PERMIT PAGE 4 OF 10, PARAGRAPH I.A.1.b.						1/DAY	GRAB
DISSOLVED OXYGEN <sup>6</sup>		6.0 mg/l minimum						1/DAY	GRAB
FECAL COLIFORM <sup>6,7</sup>		***	***	***	200 cfu/100 ml	***	400 cfu/100 ml	1/WEEK	GRAB
TOTAL RESIDUAL CHLORINE <sup>7,8</sup>		***	***	***	0.14 mg/l	***	0.25 mg/l	1/DAY (when in use)	GRAB
TOTAL COPPER		***	***	***	47 ug/l	***	64 ug/l	1/MONTH	24-HOUR COMPOSITE <sup>5</sup>
TOTAL PHOSPHORUS <sup>9</sup> (April 1- October 31)		***	***	***	0.2 mg/l	***	Report mg/l	2/WEEK	24-HOUR COMPOSITE <sup>5</sup>
TOTAL PHOSPHORUS <sup>9,10</sup> (November 1- March 31)		***	***	***	1 mg/l	***	Report mg/l	1/WEEK	24-HOUR COMPOSITE <sup>5</sup>
ORTHOPHOSPHORUS, DISSOLVED <sup>9,10</sup> (November 1- March 31)		***	***	***	Report mg/l	***	Report mg/l	1/WEEK	24-HOUR COMPOSITE <sup>5</sup>
WHOLE EFFLUENT TOXICITY <sup>11,12,13,14</sup>		Acute LC <sub>50</sub> ≥ 100% Chronic NOEC >7.7%						4/YEAR	24-HOUR COMPOSITE <sup>5</sup>

Footnotes:

1. The monthly average and maximum daily flows for each month shall be reported.
2. For flow, report maximum and minimum daily rates and total flow for each operating date. This 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.
3. All required effluent samples shall be collected prior to chlorination except for the chlorine residual and fecal coliform samples, which shall be taken after disinfection. Any change in sampling location must be reviewed and approved in writing by EPA and MADEP. All samples shall be tested using analytical methods found in 40 CFR 136, or alternative method 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 for a consecutive 24 hour period (e.g. 0700 Monday - 0700 Tuesday).
6. Required for State Certification.
7. Fecal coliform bacteria limit will apply and monitoring requirement will be in effect year round. The average monthly limit is expressed as a geometric mean. Samples for total residual chlorine (when in use, refers to the facility's design which allows for disinfection of the effluent in the case of bypass which is not authorized by this permit) and fecal coliform bacteria shall be taken at the same time.
8. Testing should be performed using EPA approved methods found in Standard Methods for the Examination of Water and Wastewater, 20<sup>th</sup> Edition, Method 4500 CL-E and G, or USEPA Manual of Methods of Analysis of Water Wastes, Method 330.5. One of these methods must be used to determine total residual chlorine.
9. Pending completion of the following schedule of compliance, the permittee must achieve a total phosphorus limit of 1.0 mg/l year round and optimize operation of the facility for the removal of phosphorus. The monitoring requirements for total phosphorus is once (1) per month from the effective date through June 30, 2006. Beginning July 1, 2006, total phosphorus shall be monitoring twice (2) per week. The monitoring requirements for orthophosphorus become effective on the effective date of the permit but it is noted that sampling is not required until November 1.

By September 1, 2006, the permittee shall submit to EPA and MassDEP a status report relative to the evaluation of process and operational modifications necessary to achieve the seasonal total phosphorus limit of 0.2 mg/l including a date for the implementation of the recommended modifications.

By June 1, 2007, the permittee shall submit to EPA and MassDEP an additional status report

discussing the status of the implementation of the recommended modification.

On April 1, 2008, the new seasonal permit limit of 0.2 mg/l total phosphorus (April 1 – October 31) becomes effective.

10. The maximum daily concentration and loading values reported for dissolved orthophosphorus shall be the 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 (4) times per year using a single species, the daphid, Ceriodaphnia dubia. The chronic test may be used to calculate the acute LC<sub>50</sub> at the 48 hour exposure interval. Toxicity test samples shall be collected during the second week of the months of March, June, September and December. The test results shall be submitted by the last day of the month following the completion of the test. The results are due by April 30, July 31, October 31, and January 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 <sub>50</sub>	Chronic Limit NOEC
March June September December	April 30 July 31 October 31 January 31	<u>Ceriodaphnia dubia</u>	≥ 100%	>7.7%

12. The LC<sub>50</sub> 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 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 "5.5% or greater" limit is defined as a sample which is composed of 5.5% (or greater) effluent, the remainder being dilution water. This is a maximum daily limit.
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 B**. 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 B**.

Part I.A.2.

- 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. The discharge shall not cause a change of more than 0.5 standard units in the naturally occurring instream pH range.
- 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 results of sampling for any parameter above its required frequency must also be reported.

3. 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.

4. Prohibitions Concerning Interference and Pass Through:

- a. Pollutants introduced into POTW's by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.
- b. If, within 30 days after notice of an interference or pass through violation has been sent by EPA to the POTW, and to persons or groups who have requested such notice, the POTW fails to commence appropriate enforcement action to correct the violation, EPA may take appropriate enforcement action.

5. 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.

6. Numerical Effluent Limitations for Toxicants

EPA or DEP 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. INDUSTRIAL PRETREATMENT PROGRAM**

1. 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.
2. The permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond.
3. 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):
  - a. 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.
  - b. 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.
  - c. Obtain appropriate remedies for noncompliance by any industrial user with any pretreatment standard and/or requirement.
  - d. Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.

4. The permittee shall provide the EPA (and States) with an annual report describing the permittee's pretreatment program activities for the twelve (12) month period ending 60 days prior to the due date in accordance with 403.12(i). The annual report shall be consistent with the format described in **Attachment C** of this permit and shall be submitted **by November 30 of each year**.
5. 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).
6. 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.
7. The permittee must modify its pretreatment program, if necessary, to conform to all changes in the Federal Regulations that pertain to the implementation and enforcement of the industrial pretreatment program. The permittee must provide EPA, in writing, **within 180 days of this permit's effective date** proposed changes, if applicable, to the permittee's pretreatment program deemed necessary to assure conformity with current Federal Regulations. At a minimum, the permittee must address in its written submission the following areas: (1) enforcement response plan; (2) revised sewer use ordinances; and (3) slug control evaluations. The permittee will implement these proposed changes pending EPA Region I's approval under 40 CFR 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.B.3.b.

## C. 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).

## 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:

### 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 system 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 MA DEP **within six (6) 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 MA DEP 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.

### 3. 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 §122.2)



## E. 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. 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

## **F. MONITORING AND REPORTING**

### **1. Reporting**

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.**

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  
Central Regional Office - Bureau of Resource Protection  
627 Main Street  
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

## **G. STATE PERMIT CONDITIONS**

This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP) 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 MA DEP pursuant to M.G.L. Chap. 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.