

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 Douglas Water & Sewer Department
P.O. Box 624
Douglas, MA 01516

is authorized to discharge from the facility located at

Douglas Wastewater Treatment Facility
29 Charles Street
East Douglas, MA 01516

to receiving water named **Mumford River**

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

This permit will become effective May 1, 2007.

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

This permit supersedes the permit issued on January 31, 2003, which became effective on April 1, 2003.

This permit consists of 11 pages in Part I including effluent limitations, monitoring requirements, and **Attachments A (Freshwater Chronic Toxicity Test Procedure and Protocol) and B (Sludge Guidance)** and Part II including General Conditions and Definitions.

Signed this 1st day of March, 2007

/s/ SIGNATURE ON FILE

Stephen S. Perkins, 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.a. 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 discharge shall be limited and monitored by the permittee as specified below. Samples will be collected prior to discharging into the Mumford River, and at a location that provides a representative analysis of the effluent.

<u>Effluent Characteristic</u>	<u>Units</u>	<u>Discharge Limitation</u>			<u>Monitoring Requirement</u> ^{*4}	
		<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow ^{*2} (Annual Average)	MGD	0.6	—	—	Continuous	Recorder
Flow ^{*2}	MGD	Report	—	Report	Continuous	Recorder
Instream Flow ^{*3}	cfs	Report	—	Report	3 Days/Week	Grab
BOD ₅ (May 1 - October 31)	mg/l	10	15	Report	1/Week ^{*5}	24-Hour Composite ^{*6}
BOD ₅ (May 1 - October 31)	lbs/day	45	68	—	—	24-Hour Composite ^{*6}
BOD ₅ (November 1 - April 30)	mg/l	20	30	Report	1/Week ^{*5}	24-Hour Composite ^{*6}
BOD ₅ (November 1 - April 30)	lbs/day	90	136	—	—	24-Hour Composite ^{*6}
TSS (May 1 - October 31)	mg/l	10	15	Report	1/Week ^{*5}	24-Hour Composite ^{*6}
TSS (May 1 - October 31)	lbs/day	45	68	—	—	24-Hour Composite ^{*5}
TSS (November 1 - April 30)	mg/l	20	30	Report	1/Week ^{*5}	24-Hour Composite ^{*6}
TSS (November 1 - April 30)	lbs/day	90	136	—	—	24-Hour Composite ^{*6}
pH ^{*1}	std. units	(See Condition I.A.1.c. on Page 6)			1/Day	Grab
<i>E. coli</i> ^{*1,8} (April 1 - Oct. 31)	cfu /100 ml	Report	—	Report	1/Month	Grab

<u>Effluent Characteristic</u>	<u>Units</u>	<u>Discharge Limitation</u>			<u>Monitoring Requirement</u> ^{*4}	
		<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Fecal Coliform Bacteria ^{*1,7} (April 1 - Oct. 31)	cfu /100 ml	200	—	400	1/Week	Grab
Ammonia-Nitrogen (May 1 - October 31)	mg/l	5.0	—	—	1/Week	24-Hour Composite ^{*6}
Ammonia-Nitrogen ^{*13} (Nov 1 - April 30)	mg/l	Report	—	—	1/Month	24-Hour Composite ^{*6}
Total Kjeldahl Nitrogen	mg/l	Report	—	—	1/Month	24-Hour Composite ^{*6}
Total Nitrate Nitrogen	mg/l	Report	—	—	1/Month	24-Hour Composite ^{*6}
Total Nitrite Nitrogen	mg/l	Report	—	—	1/Month	24-Hour Composite ^{*6}
Phosphorus, Total (April 1 - Oct. 31)	lbs/day	1.2	—	Report	1/Week	24-Hour Composite ^{*6}
Phosphorus, Total (November 1 - March 31)	mg/l	1.0	—	Report	1/Week	24-Hour Composite ^{*6}
Ortho-phosphorus, dissolved ^{*14} (Nov 1-March 31)	lbs/day	Report	—	Report	1/Week	24-Hour Composite ^{*6}
Ortho-phosphorus, dissolved ^{*14} (Nov 1-March 31)	mg/l	Report	—	Report	1/Week	24-Hour Composite ^{*6}
Whole Effluent Toxicity (WET) ^{*9,*10*12}	%	Acute: LC ₅₀ - 100% or greater			4/Year ^{*11}	24-Hour Composite ^{*6}
	%	Chronic: C-NOEC - Report			4/Year ^{*11}	24-Hour Composite ^{*6}

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 shall 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. The permittee shall monitor the instream flow of the Mumford River at a frequency of three (3) days per week-Monday, Wednesday, and Friday. Monitoring shall be conducted using the staff gauge located downstream of the Gilboa Dam in East Douglas. Should the permittee wish to change the location of the monitoring site, they may submit to EPA and MassDEP an alternate monitoring site, and sampling at that site may commence upon receipt by certified mail from EPA and MassDEP that the change in the monitoring location has been approved.

Sampling will not be required when inclement weather precludes safe instream flow monitoring.

If the results of monitoring indicate that a minimum instream flow of 16 cubic feet per second (cfs) is not being consistently met, the permit will be reopened and new water quality-based effluent limits established to reflect a more accurate 7Q10 instream flow.

- *4. All required effluent samples shall be collected at the point specified in Part I.A.1.h. of this permit. 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 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.

- *5. Sampling is required for influent and effluent.
- *6. A 24-hour composite sample shall 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.
- *7. Fecal coliform limits and monitoring requirements are in effect from April 1st through October 31st. This is a State certification requirement. The monthly average limit is expressed as a geometric mean. Fecal coliform discharges shall not exceed a monthly geometric mean of 200 colony forming units (cfu) per 100 ml, nor shall they exceed 400 cfu per 100 ml as a daily maximum.
- *8. The monthly *E. coli* sample shall be collected concurrently with one of the fecal coliform samples.
- *9. The LC₅₀ is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) will cause no more than

a 50% mortality rate.

- *10. 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.
- *11. The permittee shall conduct chronic (and modified acute) toxicity tests four times per year, and will test the daphnid, Ceriodaphnia dubia only. The chronic test may be used to calculate the acute LC₅₀ at the 48-hour exposure interval. Toxicity test samples shall be collected during the second week of the months of January, April, July, and October. The test results shall be submitted by the last day of the month following the completion of the test. The results are due February 28th, May 31st, August 31st, and November 30th, 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
January April July October	February 28 th May 31 st August 31 st November 30 th	<u>Ceriodaphnia dubia</u> (Daphnid) See Attachment A	≥ 100 %	Report

After submitting a **minimum** of four consecutive sets of whole effluent toxicity (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.

- *12. 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 permittee 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**. If the permittee uses an alternative dilution water, the ambient water will still need to be tested.
- *13. From November 1st - April 30th, the permittee shall make all reasonable efforts to maintain

nitrification.

- *14. The maximum daily concentration and loading values reported for dissolved ortho-phosphorus shall be the values from the same day that the maximum daily total phosphorus concentration and loading values were measured.

Part I.A.1. (continued);

- b. The discharge shall not cause a violation of the water quality standards of the receiving waters.
 - c. The pH of the effluent shall not be less than 6.5 nor greater than 8.3 at any time.
 - d. The discharge shall not cause objectionable discoloration of the receiving waters.
 - e. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
 - f. 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 will be based on monthly average values.
 - g. 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 31st of the following calendar year describing its plans for further flow increases and how it will maintain compliance with the flow limit and all other effluent limitations and conditions.
 - h. Samples taken in compliance with the monitoring requirements stated above shall be taken at a point prior to mixing with other streams and shall be representative of the discharge.
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:
 - (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:
- 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.

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 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.

B. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from outfall number 001 (as described in Part I. Section A.1.a). 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 Part II. Section D.1.e.(1) of the General Requirements of this permit (Twenty-four hour reporting).

Notification of SSOs shall be made to MassDEP on its SSO Reporting Form (which includes MassDEP Regional Office telephone numbers). The reporting form and instructions 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 system infrastructure. The program will include an inspection program designed to identify all potential and actual unauthorized discharges.

3. Infiltration/Inflow Control Plan:

The permittee shall continue to implement their Infiltration and Inflow (I/I) Control Plan, which includes the following:

- (1) 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.
- (2) 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.
- (3) Identification and prioritization of areas that will provide increased aquifer recharge as the result of reduction/elimination of infiltration and inflow to the system.
- (4) 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 April 1**. The summary report shall, at a minimum, include:

- (1) A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year.
- (2) Expenditures for any infiltration/inflow-related maintenance activities and corrective actions taken during the previous year.
- (3) A map with areas identified for I/I-related investigation/action in the coming year.
- (4) A calculation of the annual average I/I, the maximum month I/I for the reporting year.
- (5) 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.

4. 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).

D. 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 (**Attachment B**) 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.

Reports are due annually **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

E. 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

F. 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. Chap. 21, §43.

Each Agency will have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit will be effective only with respect to the Agency taking such action, and will 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 will 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 will remain in full force and effect under State law as a permit issued by the Commonwealth of Massachusetts.