

**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 West Stockbridge
Board of Selectmen
Town Hall, Main Street
West Stockbridge, MA 02166**

is authorized to discharge from the facility located at:

**Wastewater Treatment Facility
Moscow Road
West Stockbridge, MA 02156**

to receiving waters named: **Williams River (Housatonic River Watershed)**

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

This permit shall become effective on the date of 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 December 28, 2004.

This permit consists of 12 pages in Part I including effluent limitations, monitoring requirements, 25 pages in Part II (Standard Conditions), and Attachment A (Freshwater Acute Toxicity Test Procedures and Protocol).

Signed this 1st day of September, 2010

/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.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 Williams River. Such discharges shall be limited and monitored as specified below.

<u>EFFLUENT CHARACTERISTIC</u>	<u>EFFLUENT LIMITS</u>		<u>MONITORING REQUIREMENTS</u>	
<u>PARAMETER</u>	<u>AVERAGE MONTHLY</u>	<u>MAXIMUM DAILY</u>	<u>MEASUREMENT FREQUENCY</u>	<u>SAMPLE TYPE¹</u>
FLOW, GPD ²	76,000	REPORT	CONTINUOUS	RECORDER
FLOW, GPD ²	REPORT	*****	CONTINUOUS	RECORDER
BOD ₅ , mg/l ³	20	40	1/WEEK	24-HOUR COMPOSITE ⁵
lbs/day	13	25		
TSS, mg/l ³	20	40	1/WEEK	24-HOUR COMPOSITE ⁵
lbs/day	13	25		
pH RANGE, su ⁴	6.5 to 8.3		1/DAY	GRAB
FECAL COLIFORM, cfu/100 ml ^{4,6} (April 1 to October 31 for first year only) (see schedule in footnote 6)	200	400	2/WEEK	GRAB
ESCHERICHIA COLI, cfu/100 ml ^{4,6} (April 1 to October 31 for first year) (April 1 to October 31 after first year) (see schedule in footnote 6)	REPORT 126	409	1/MONTH 2/WEEK	GRAB
DISSOLVED OXYGEN, mg/l ⁴	≥6.0		1/WEEK	GRAB

<u>EFFLUENT CHARACTERISTIC</u>	<u>EFFLUENT LIMITS</u>		<u>MONITORING REQUIREMENTS</u>	
	<u>PARAMETER</u>	<u>AVERAGE MONTHLY</u>	<u>MAXIMUM DAILY</u>	<u>MEASUREMENT FREQUENCY</u>
TOTAL PHOSPHORUS, (May 1 to October 31), mg/l lbs/day	0.5 0.32	1.0 0.63	1/WEEK	24-HOUR COMPOSITE ⁵
AMMONIA-NITROGEN (April 1 to 30), mg/l lbs/day	10 6.3	20 12.7	1/WEEK	24-HOUR COMPOSITE ⁵
(May 1 to October 31), mg/l lbs/day	5 3.2	10 6.3	1/WEEK	24-HOUR COMPOSITE ⁵
(January), mg/l	REPORT	****	1/MONTH	24-HOUR COMPOSITE ⁵
NITRITE – NITROGEN, mg/l ¹⁰	REPORT	****	1/QUARTER	24-HOUR COMPOSITE ⁵
NITRATE – NITROGEN, mg/l ¹⁰	REPORT	****	1/QUARTER	24-HOUR COMPOSITE ⁵
TOTAL KJELDAHL NITROGEN, mg/l ¹⁰	REPORT	****	1/QUARTER	24-HOUR COMPOSITE ⁵
WHOLE EFFLUENT TOXICITY ^{7, 8, 9}		LC50 ≥100 %	2/YEAR	24-HOUR COMPOSITE ⁵

Footnotes:

1. All sampling shall be representative of the effluent that is discharged through outfall 001 to the Williams River. A routine sampling program shall be developed in which samples are taken at the same location, same time and same day(s) 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. In addition, all samples shall be analyzed 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 required effluent samples shall be collected after UV disinfection and prior to discharge to the Williams River.
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 previous eleven months.
3. Sampling required for influent and effluent.
4. Required for State Certification.
5. 24-hour composite samples will consist of at least twenty four (24) grab samples taken during one consecutive 24 hour period (e.g. 0700 Monday - 0700 Tuesday).
6. Fecal coliform and *Escherichia coli* bacteria limits and monitoring requirements are in effect during the period April 1 through October 31 only, to reflect the seasonal disinfection period. The average monthly limits for fecal coliform and *E.coli* are expressed as geometric means. Samples for fecal coliform bacteria and *E. coli* shall be taken concurrently.

The fecal coliform limits and monitoring requirements are in effect through October 31, 2011 (the end of the 2011 bacteria sampling season). As of November 1, 2011 the fecal coliform limits and monitoring requirements will end.

The *E. coli* effluent limitations go into effect on April 1, 2012, at the start of the 2012 sampling season. The monitoring and report requirements for *E. coli* go into effect on the effective date of this permit. The monitoring frequency for *E. coli* is 1/month until November 1, 2011 and 2/week thereafter.

7. The permittee shall conduct acute toxicity tests two times per year. The permittee shall test the daphnid, Ceriodaphnia dubia, only. Toxicity test samples shall be collected during the second week of the months of January and July. The test results shall be submitted by the last day of the month following the completion of the test. The results are due February 28 and August 31, respectively. The tests must be performed in accordance with test procedures and protocols specified in **Attachment A** of this permit. The permittee must submit a map showing the discharge location and the receiving water sampling location with the first Whole Effluent Toxicity test submitted under this permit.

8. 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.
9. If Ceriodaphnia dubia 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 or the permittee shall follow the Self-Implementing Alternative Dilution Water Guidance document 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 the NPDES Permit Program Instructions for the Discharge Monitoring Forms (DMRs) available on the EPA Region I website at <http://www.epa.gov/region1/enforcementandassistance/dmr.html>. If this Guidance document is revoked, the permittee shall revert to obtaining 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**. The permittee must continue to run the required sets of controls including chemistry (e.g. site water controls and lab water controls) when utilizing alternative dilution water.
10. The quarterly testing for Nitrite, Nitrate and Total Kjeldahl Nitrogen shall be performed in January, April, July and October.

Part I.A.2.

- a. The discharges 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 or greater than 8.3.
 - c. The discharges 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. If the annual average 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 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.
 - g. The results of sampling for any parameter in accordance with EPA approved methods 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 POTWs by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.
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 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 to EPA and the MassDEP in accordance with Section II. 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 system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges.

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).

4. Infiltration/Inflow Control Plan:

- a. The permittee shall continue implement a plan to control infiltration and inflow (I/I) to the separate sewer system. An updated plan shall be submitted to EPA and MassDEP **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:

- 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 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 a result of reduction/elimination of infiltration and inflow to the system; and

- iv. An educational public outreach program for all aspects of I/I control, particularly private inflow.
- b. 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 March 31**. 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 the Unauthorized Discharges section of this permit.

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, including EPA regulations promulgated at 40 CFR Part 503, which prescribe "Standards for the Use or Disposal of Sewage Sludge" pursuant to Section 405(d) of the CWA, 33 U.S.C. § 1345(d).
2. If both state and federal requirements apply to the permittee's sludge use and/or disposal practices, the permittee shall comply with the more stringent of the applicable requirements.
3. The requirements and technical standards of 40 CFR Part 503 apply to the following sludge 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 requirements of 40 CFR Part 503 do not apply to facilities which dispose of sludge in a municipal solid waste landfill. 40 CFR § 503.4. These requirements also do not apply to facilities which do not use or 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 40 CFR, Part 503 requirements including the following elements:

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

Which of the 40 C.F.R. Part 503 requirements apply to the permittee will depend upon the use or disposal practice followed and upon the quality of material produced by a facility. The EPA Region 1 Guidance document, "EPA Region 1 - NPDES Permit Sludge Compliance Guidance" (November 4, 1999), may be used by the permittee to assist it in determining the applicable requirements.¹

6. The sludge shall be monitored for pollutant concentrations (all Part 503 methods) and pathogen vector attraction reduction (land application and surface disposal) 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

Sampling of the sewage sludge shall use the procedures detailed in 40 CFR 503.8.

7. Under 40 CFR § 503.9(r), the permittee is a "person who prepares sewage sludge" because it "is ... the person who generates sewage sludge during the treatment of domestic sewage in a treatment works" If the permittee contracts with *another* "person who prepares sewage sludge" under 40 CFR § 503.9(r) – i.e., with "a person who derives a material from sewage sludge" – for use or disposal of the sludge, then compliance with Part 503 requirements is the responsibility of the contractor engaged for that purpose. If the permittee does not engage a "person who prepares sewage sludge," as defined in 40 CFR § 503.9(r), for use or disposal, then the permittee remains responsible to ensure that the applicable requirements in Part 503 are met. 40 CFR §503.7. If the ultimate use or disposal method is land application, the permittee is responsible for providing the person receiving the sludge with notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.

¹ This guidance document is available upon request from EPA Region 1 and may also be found at: <http://www.epa.gov/region1/npdes/permits/generic/sludgeguidance.pdf>

8. The permittee shall submit an annual report containing the information specified in the 40 CFR Part 503 requirements (§ 503.18 (land application), § 503.28 (surface disposal), or § 503.48 (incineration)) by **February 19** (*see also* "EPA Region 1 - NPDES Permit Sludge Compliance Guidance"). Reports shall be submitted to the address contained in the reporting section of the permit. If the permittee engages a contractor or contractors for sludge preparation and ultimate use or disposal, the annual report need contain only the following information:
- Name and address of contractor(s) responsible for sludge preparation, use or disposal
 - Quantity of sludge (in dry metric tons) from the POTW that is transferred to the sludge contractor(s), and the method(s) by which the contractor will prepare and use or dispose of the sewage sludge.

E. MONITORING AND REPORTING

1. **For a period of one year from the effective date of the permit**, the permittee may either submit monitoring data and other reports to EPA in hard copy form, or report electronically using NetDMR, a web-based tool that allows permittees to electronically submit discharge monitoring reports (DMRs) and other required reports via a secure internet connection. **Beginning no later than one year after the effective date of the permit**, the permittee shall begin reporting using NetDMR, unless the facility is able to demonstrate a reasonable basis that precludes the use of NetDMR for submitting all DMRs and reports. Specific requirements regarding submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

a. Submittal of Reports Using NetDMR

NetDMR is accessed from: <http://www.epa.gov/netdmr>. Within one year of the effective date of the Permit, the permittee shall begin submitting DMRs and reports required under this permit electronically to EPA using NetDMR, unless the facility is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports ("opt out request").

DMRs shall be submitted electronically to EPA no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA, including the MassDEP Monthly Operations and Maintenance Report, as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees shall continue to send hard copies of reports other than DMRs (including Monthly Operation and Maintenance Reports) to MassDEP until further notice from MassDEP.

b. Submittal of NetDMR Opt Out Requests

Opt out requests must be submitted in writing to EPA for written approval at least sixty (60) days prior to the date a facility would be required under the Permit to begin using NetDMR. This demonstration shall be valid for twelve (12) months from the date of EPA approval and shall thereupon expire. At such time, DMRs and reports shall be submitted electronically to EPA unless the permittee submits a renewed opt out request and such

request is approved by EPA. All opt out requests should be sent to the following addresses:

Attn: NetDMR Coordinator
U.S. Environmental Protection Agency, Water Technical Unit
5 Post Office Square, Suite 100 (OES04-4)
Boston, MA 02109-3912

And

Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

c. Submittal of Reports in Hard Copy Form

Hard copy DMR submittals shall be completed and postmarked no later than the 15th day of the month following the completed reporting period. MassDEP Monthly Operation and Maintenance Reports shall be submitted as an attachment to the DMRs. Signed and dated originals of the DMRs, and all other reports required herein, shall be submitted to the appropriate State addresses and to the EPA address listed below:

U.S. Environmental Protection Agency
Water Technical Unit
5 Post Office Square, Suite 100 (OES04-4)
Boston, MA 02109-3912

The State Agency addresses are:

Massachusetts Department of Environmental Protection
Western Regional Office
Bureau of Resource Protection
436 Dwight Street
Springfield, MA 01103

and

Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

F. STATE PERMIT CONDITIONS

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are (i) a federal National Pollutant Discharge Elimination System permit issued by the U.S. Environmental Protection Agency (EPA) pursuant to the Federal Clean Water Act, 33 U.S.C. §§1251 et seq.; and (ii) an identical state surface water discharge permit issued by

the Commissioner of the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and 314 C.M.R. 3.00. All of the requirements contained in this authorization, as well as the standard conditions contained in 314 CMR 3.19, are hereby incorporated by reference into this state surface water discharge permit.

2. This authorization also incorporates the state water quality certification issued by MassDEP under § 401(a) of the Federal Clean Water Act, 40 C.F.R. 124.53, M.G.L. c. 21, § 27 and 314 CMR 3.07. All of the requirements (if any) contained in MassDEP's water quality certification for the permit are hereby incorporated by reference into this state surface water discharge permit as special conditions pursuant to 314 CMR 3.11.
3. 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 a 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
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

FACT SHEET

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

NPDES NO: MA0103110

NAME AND ADDRESS OF APPLICANT:

Board of Selectmen
Town of West Stockbridge
Town Hall, 9 Main Street
West Stockbridge, MA 02166

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

West Stockbridge Wastewater Treatment Facility
9 Moscow Road
West Stockbridge, Massachusetts 02166

RECEIVING WATER: Williams River (Segment MA21-06, Housatonic River Basin)

CLASSIFICATION: B (Cold Water Fishery; High Quality)

LATITUDE: 42°20'21"N

LONGITUDE: 73°22'20"W

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

The above-named applicant has requested that the U.S. Environmental Protection Agency reissue its NPDES permit to discharge into the designated receiving waters. The West Wastewater Treatment Facility is a 76,000 gallon per day (GPD) advanced treatment plant. Treatment consists of primary sedimentation in anoxic tanks, rotating biological contactors, alum addition for phosphorus removal (seasonal), rapid mix/flocculation, secondary clarifiers, rapid mix/flocculation, filtration (tertiary treatment), and ultraviolet (UV) disinfection (seasonal). (See flow chart at Figure 1.) Sludge is stored in the anoxic tanks and then transported to the Fitchburg Wastewater Treatment Facility for disposal.

This facility discharges to the Williams River approximately 30 feet downstream from an old train bridge. A topographic map is attached as Figure 2. Approximately 9 miles downstream of the discharge the Williams River joins the Housatonic River, which flows

in a southerly direction through Connecticut and eventually discharges into Long Island Sound.

II. Description of Discharge

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

III. Receiving Water Description

The Williams River is classified as a Class B waterbody (Cold Water Fishery and High Quality Water). 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, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated . . . they shall be suitable as a source of public water supply with appropriate treatment Class B waters 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 temperature in cold water fisheries shall not exceed 68 degrees F (20 degrees C) based on the mean of the daily maximum temperature over a seven day period, unless naturally occurring.

High quality waters, as defined in 314 CMR 4.04(2) are “waters whose quality exceeds minimum levels necessary to support the national goal uses, low flow waters, and other waters whose character cannot be adequately described or protected by traditional criteria.” Massachusetts regulations require:

These waters shall be protected and maintained for their existing level of quality unless limited degradation by a new or increased discharge is authorized by the Department pursuant to 314 CMR 4.04(5). Limited degradation also may be allowed by the Department where it determines that a new or increased discharge is insignificant because it does not have the potential to impair any existing or designated water use and does not have the potential to cause any significant lowering of water quality.

This discharge, initiated in 1990, was authorized pursuant to a variance proceeding under the Massachusetts antidegradation provisions as required under 314 CMR 4.04. See Fact Sheet, Request for Variance From Antidegradation Provisions of Massachusetts Surface Water Quality Standards, Town of West Stockbridge Wastewater Treatment Facility (Mass DEP 1990).

The *Massachusetts Year 2008 Integrated List of Waters* (Clean Water Act Section “303(d) list”) details the quality of waters in Massachusetts, including the Williams

River. The 303(d) list indicates that the river segment receiving the West Stockbridge Wastewater Treatment Facility's discharge is attaining its uses for aquatic life, aesthetics, and primary and secondary contact recreation, with other uses not assessed.

IV. Permit Limitations and Conditions

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

V. Permit Basis: Statutory and Regulatory Authority

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. A 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.

Under Section 301(b)(1)(B) of the Clean Water Act (CWA), Publicly Owned Treatment Works (POTWs) were required to achieve effluent limitations based upon secondary treatment by July 1, 1977. The secondary treatment requirements are set forth in 40 CFR Part 133 and define secondary treatment as an effluent achieving specific limitations for biochemical oxygen demand (BOD₅), total suspended solids (TSS), and pH.

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.

According to Clean Water Act Section 402(o) and federal regulations at 40 CFR § 122.44(1), 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.

VI. Explanation of Effluent Limitation Derivation

The limits in the draft permit are based on information in the application, the existing permit, discharge monitoring reports and whole effluent testing reports.

Flow and Dilution Factor

The design flow of the facility is 76,000 GPD (0.12 cfs). The 7Q10 flow of the Williams River just upstream of the outfall can be calculated using the 7Q10 flow of gage station No. 01197800, located downstream of the discharge on the Williams River near Great Barrington, by proportioning the flow measured at the downstream gage by the respective watershed drainage areas at each location. The resulting 7Q10 flow and dilution factor calculations are below:

Drainage Area @ outfall: 25 square miles
 Drainage Area @ Gage Station: 42.5 square miles
 7Q10 @ Gage Station: 4.3 cubic feet/seconds (cfs)
 7Q10 @ outfall: $25/42.5 \times 4.3 \text{ cfs} = 2.5 \text{ cfs}$

Dilution Factor = $(\text{River 7Q10 @ Discharge} + \text{Design Flow}) \div \text{Design Flow}$
 Dilution Factor = $(2.5 \text{ cfs} + 0.12 \text{ cfs}) \div 0.12 \text{ cfs} = 21.8$

BOD, TSS, Total Phosphorus and Ammonia Nitrogen Limits

The first NPDES permit issued to this facility, on December 10, 1990, set numerical limits for BOD, TSS, phosphorus, and ammonia nitrogen in accordance with the findings in the State’s antidegradation variance procedure. The limits in this draft permit for these parameters will basically remain the same as the limits originally established under that procedure. MassDEP has reviewed the proposed limits in the draft permit and concurred that these limits meet water quality standards.

The mass limits calculations are below. Mass limits for BOD and TSS are in the current permit; mass limits for phosphorus and ammonia are included in the draft permit consistent with 40 CFR § 122.45(f).

<u>Mass Limits</u>	<u>Flow x Concentration x Conversion Factor = lbs/day</u>
TSS & BOD	
Average monthly	$0.076 \text{ mgd} \times 20 \text{ mg/l} \times 8.34(\text{lb})(1)/(\text{mg})(\text{gal}) = 12.7 \text{ lbs/day}$
Maximum daily	$0.076 \text{ mgd} \times 40 \text{ mg/l} \times 8.34(\text{lb})(1)/(\text{mg})(\text{gal}) = 25.4 \text{ lbs/day}$
Phosphorus	
Average monthly	$0.076 \text{ mgd} \times 0.5 \text{ mg/l} \times 8.34(\text{lb})(1)/(\text{mg})(\text{gal}) = 0.32 \text{ lbs/day}$
Maximum daily	$0.076 \text{ mgd} \times 1.0 \text{ mg/l} \times 8.34(\text{lb})(1)/(\text{mg})(\text{gal}) = 0.63 \text{ lbs/day}$

Ammonia - April

Average monthly $0.076 \text{ mgd} \times 10 \text{ mg/l} \times 8.34(\text{lb})(\text{l})/(\text{mg})(\text{gal}) = 6.3 \text{ lbs/day}$

Maximum daily $0.076 \text{ mgd} \times 20 \text{ mg/l} \times 8.34(\text{lb})(\text{l})/(\text{mg})(\text{gal}) = 12.7 \text{ lbs/day}$

Ammonia – May to October

Average monthly $0.076 \text{ mgd} \times 5 \text{ mg/l} \times 8.34(\text{lb})(\text{l})/(\text{mg})(\text{gal}) = 3.2 \text{ lbs/day}$

Maximum daily $0.076 \text{ mgd} \times 10 \text{ mg/l} \times 8.34(\text{lb})(\text{l})/(\text{mg})(\text{gal}) = 6.3 \text{ lbs/day}$

pH and Dissolved Oxygen

The limitation for pH, fecal coliform, and dissolved oxygen (DO) are based upon the Massachusetts state certification requirements under Section 401(a)(1) of the Clean Water Act (CWA), as defined in 40 CFR § 124.53 and water quality standards.

Eschericia coli Bacteria

The current permit includes bacteria limits on fecal coliform bacteria. Since issuance of the current permit, Massachusetts has promulgated, and EPA has approved, revised water quality standards for bacteria, which include Class B water quality criteria based on Eschericia coli, replacing fecal coliform. (see Massachusetts Surface Water Quality Standards, 314 CMR 4.05(3)(b)(4)).

The draft permit therefore includes water quality-based effluent limitations for E.coli bacteria, replacing the fecal coliform bacteria limits in the current permit. Pursuant to both MassDEP and EPA guidance, mixing zones for bacteria are not allowed, so the E.coli limits were not calculated using a dilution factor. E. coli limits in the draft permit are a monthly geometric mean of 126 cfu/100 ml mean and a maximum daily limit of 409 cfu/100 ml (this is the 90% distribution of the geometric mean of 126 cfu per 100 ml).

The draft permit includes a compliance schedule for attaining the new limits. The existing fecal coliform limits of 200 colony forming units (cfu)/100 ml for the average monthly geometric mean limit and 400 cfu/100 ml for the maximum daily limit are maintained for the first full monitoring period under the new permit (i.e. through October 2011). During this one year period the permittee shall report E.coli on a monthly basis. After October 31, 2011, the E. coli limits will go into effect, and the fecal coliform limit will end.

Monitoring frequency remains the same as under the current permit at 2 per week.

Nitrogen

It has been determined that excessive nitrogen loadings are causing significant water quality problems in Long Island Sound, including low dissolved oxygen. 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, based on recent information and including all POTWs in the watershed. The following table summarizes the estimated baseline loadings, TMDL target loadings, and estimated current loadings:

Basin	Baseline Loading¹ (lbs/day)	TMDL Target² (lbs/day)	Existing Loading³ (lbs/day)
Connecticut River	21,672	16,254	13,836
Housatonic River	3,286	2,464	2,151
Thames River	1,253	939	1,015
Totals	26,211	19,657	17,002

The TMDL target of a 25 percent aggregate reduction from baseline loadings is currently being met. 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 nitrogen-related conditions in permits for existing treatment facilities in Massachusetts and New Hampshire that discharge to the Connecticut, Housatonic and Thames River watersheds. For facilities discharging loads equal greater than 35 lbs/day total nitrogen, permit conditions will require the optimization of nitrogen removal with the existing treatment technology. For existing facilities discharging less than 35 lbs/day, monitoring of nitrogen discharges will be required. This is consistent with the approach applied by the Connecticut Department of Environmental Protection, which applied a threshold of 20 lbs/day (equivalent in impact to a 35 lb/day threshold at facilities upstream in MA and NH) when imposing nitrogen controls on existing facilities. See Nitrogen Control for Small Sewage Facilities (CT DEP); General Permit for Nitrogen Discharges (CT DEP 2005).

The annual average total nitrogen load from the West Stockbridge WWTF (2004 – 2005) is estimated to be 2 lbs/day (see Table 2). This is well below the threshold of 35 lbs/day. Therefore, the draft permit maintains the current permit requirements of quarterly, year-

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 – see Table 2.

round reporting of effluent total Kjeldahl, nitrate, and nitrite nitrogen loadings and quarterly reporting of ammonia nitrogen loadings for the period, November 1 to March 31, when numerical limits are not in effect

Whole Effluent Toxicity

National studies conducted by the Environmental Protection Agency have demonstrated that domestic sources contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents and aromatic hydrocarbons among others. The Region's current policy is to include toxicity testing requirements in all municipal permits, while Section 101(a)(3) of the CWA specifically prohibits the discharge of toxic pollutants in toxic amounts.

Based on the potential for toxicity resulting from domestic and industrial contributions, 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 Technical Support Document for Water Quality-Based Toxics Control (EPA, 1991). EPA Region I has developed a toxicity control policy which requires wastewater treatment facilities to perform toxicity bioassays on their effluents.

Pursuant to EPA Region I policy, and MassDEP's Implementation Policy for the Control of Toxic Pollutants in Surface Waters, discharges having a dilution ratio between 20:1 and 100:1 require acute toxicity testing four times per year. The principal advantages of biological techniques are: (1) the effects of complex discharges of many known and unknown constituents can be measure 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.

Whole Effluent Toxicity ("WET") tests for the West Stockbridge for the period from July 2006 to October 2009 showed no exceedances. The current permit states that "[a]fter submitting one year and a minimum of two consecutive sets of WET test results, the permittee may request a reduction in the WET testing requirements." The permittee has satisfied these submittal requirements with at least thirteen consecutive WET tests showing no exceedances. Therefore EPA is reducing the WET testing requirements to two times per year, to be conducted in July and January.

Metals

EPA reviewed analytical data submitted in connection with the West Stockbridge WET Reports to determine whether the facility discharges toxic metals. Data from the period July 2006 through October 2009 are set forth in Table 3, along with the relevant water

quality criteria for each parameter. These data indicate that undiluted effluent meets water quality criteria for all metals except aluminum.

To determine whether the facility's discharge of aluminum has a "reasonable potential" to contribute to an excursion above water quality standards, EPA conducted a statistical analysis of the effluent data as outlined in the *Technical Support Document for Water Quality-based Toxics Control* (EPA 1991), Appendix E.

The potential to exceed the chronic (average monthly) criterion is estimated from the 95th percentile of a lognormal distribution based on the effluent monitoring data, which was calculated to be 1.19 mg/l. The effluent is diluted by the receiving water, which has an average background concentration of 0.03 mg/l (based on WET report data). The resulting concentration is given by:

$$\text{Instream concentration} = [(QR * CR) + (QD * CD)] / (QR + QD)$$

Where QR = receiving water flow
 CR = concentration in receiving water
 QD = discharge flow
 CD = estimated upper bound concentration in discharge

Giving

$$\text{Instream concentration} = [(2.5 * 0.03) + (0.12 * 1.19)] / (2.5 + 0.12) = 0.083 \text{ mg/l}$$

This is lower than the water quality criteria of 0.087 mg/l and therefore does not indicate a reasonable potential to contribute to an excursion above water quality standards.

Similarly, the potential to exceed the acute criterion is estimated from the 99 percentile of a lognormal distribution based on the effluent monitoring data, and was calculated to be 2.57 mg/l, giving

$$\text{Acute: } [(2.5 * 0.03) + (0.12 * 2.57)] / (2.5 + 0.12) = 0.15 \text{ mg/l}$$

This does not exceed the acute criterion of 0.75 mg/l and therefore does not indicate a reasonable potential to contribute to an excursion above water quality standards. Therefore no effluent limit has been set for aluminum, or any other metal.

VII. Operation and Maintenance Requirements

The permit standard conditions for 'Proper Operation and Maintenance' are found at 40 CFR 9122.41(e). These require proper operation and maintenance of permitted wastewater systems and related facilities to achieve permit conditions. Similarly, the permittee has a 'duty to mitigate' as stated in 40 CFR §122.41(d). This requires the permittee to take all reasonable steps to minimize or prevent any discharge in violation of the permit which has a reasonable likelihood of adversely affecting human health or the environment. EPA and MassDEP have included specific operation and maintenance

requirements for the wastewater treatment plant and collection system. These requirements may be found in Part I.C. of the permit and include requirements for adequate staffing, preventative maintenance, infiltration and inflow (I/I) control, and alternate power needed at pump stations.

Of these requirements, only the I/I control requirements apply specifically to the collection system. EPA and MasDEP have determined that an I/I removal program is an integral component to ensure permit compliance. I/I is extraneous water entering the wastewater collection system through a variety of sources. Infiltration is groundwater that enters the collection system through physical defects such as cracked pipes, or deteriorated joints. Inflow is extraneous flow entering the collection system through point sources such as roofleaders, yard and area drains, sump pumps manhole covers, tide gates, and cross connections from storm water systems. Significant I/I in a collection system may displace sanitary flow reducing the capacity and the efficiency of the treatment works and may cause bypasses of secondary treatment. It greatly increases the potential for sanitary sewer overflows in separate systems and combined sewer overflows in combined systems. The permittee shall develop an I/I removal program commensurate with the severity of the I/I in the collection system. Where portions of the collection system have little I/I, the control program will logically be scaled down

The MassDEP has stated that inclusion of the I/I conditions in the draft permit shall be a standard State Certification requirement under Section 401 of the Clean Water Act and 40 CFR §124.55(b).

VIII. Sludge

The West Stockbridge WWTF has its sludge transported offsite to the Fitchburg WWTF for treatment and disposal.

Section 405(d) of the Clean Water Act (CWA) requires that EPA develop technical standards regulating the use and disposal of sewage sludge. These regulations, found at 40 CFR Part 503, regulate the use and disposal of domestic sludge that is land applied, disposed in a surface disposal unit, or fired in a sewage sludge incinerator. Part 503 regulations have a self-implementing provision; however, the CWA requires implementation through permits.

The draft permit has been conditioned to ensure that sewage sludge use and disposal practices meet the CWA Section 405(d) Technical Standards and the 40 CFR Part 503 regulations. EPA encourages the permittee to make use of the guidance document entitled "EPA Region I NPDES Permit Sludge Compliance Guidance, November 1999" (<http://www.epa.gov/region1/npdes/permits/generic/sludgeguidance.pdf>), prepared for use by permittees in helping to determine the appropriate sludge conditions for the chosen method of sewage sludge use or disposal practices.

The permittee is required to submit an annual report to EPA and MassDEP by **February 19th** of each year, containing the information specified in the 40 CFR Part 503 (see the

sludge compliance guidance document for additional guidance) for the permittee's chosen method of sludge disposal.

IX. Essential Fish Habitat Determination (EFH)

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq. (1998)), EPA is required to consult with the National Marine Fisheries Services (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat," (16 U.S.C. § 1855(b)).

The Amendments broadly define "essential fish habitat" (EFH) as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity," (16 U.S.C. § 1802(10)). "Adverse impact" means any impact which reduces the quality and/or quantity of EFH (50 CFR § 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. The Williams River is not covered by the EFH designation for riverine systems and thus EPA and MassDEP have determined that a formal EFH consultation with NMFS is not required.

X. Endangered Species Act (ESA)

Section 7(a) of the Endangered Species Act (ESA) of 1973, as amended (the "Act"), grants authority to and imposes requirements upon Federal agencies regarding threatened or endangered species of fish, wildlife, or plants ("listed species") and habitat of such species that have been designated as critical ("critical habitat").

Section 7(a)(2) of the Act requires every Federal agency in consultation with and with the assistance of the Secretary of the Interior, to insure that any action it authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The National Marine Fisheries Service (NMFS) administers Section 7 consultations for marine species and anadromous fish. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. EPA and the MassDEP have determined that an ESA consultation is not required for this discharge, since no listed species or critical habitat are located in an area that could be affected by the West Stockbridge WWTF's discharge.

The permittee should contact the State regarding a Massachusetts Natural Heritage and Endangered Species Program (NHESP) review.

XI. State Certification Requirements

EPA may not issue a permit unless the Massachusetts Department of Environmental Protection 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 and continue to meet the requirements of the antidegradation policy. EPA has requested permit certification by the State pursuant to 40 CFR §124.53 and expects the draft permit will be certified.

XII. Comment Period and Procedures for 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:

Susan Murphy
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100 (OEP6-1)
Boston, MA 02109-3912

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 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.

XIII. Contacts

Requests for additional information or questions concerning the draft permit may be addressed Monday through Friday, between the hours of 9:00 a.m. and 5:00 p.m., to :

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5 Post Office Square, Suite 100 (OEP6-1)
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April 21, 2010
Date

Stephen Perkins, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

Attachments:

Figure 1 – Single-line Schematic of Wastewater Flow

Figure 2 – Locus Map

Table 1 - Two year facility DMR data

Table 2 – Massachusetts POTW Discharges to the Housatonic River

Table 3 - WET Report Analytical Data