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 Huntington
Board of Sewer Commissioners

is authorized to discharge from the facility located at

Huntington Wastewater Treatment Plant
Route 12
Huntington, MA 01050

to receiving water named

West Branch Westfield River (MA32-01)

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

This permit will become effective on the first day of the calendar month immediately following sixty days after signature.

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

This permit supersedes the permit issued on September 9, 2005.

This permit consists of **Part I (**16 pages including effluent limitations and monitoring requirements); **Attachment A** (USEPA Region 1 Freshwater Acute Toxicity Test Procedure and Protocol, February 2011, 8 pages); and **Part II (**25 pages including NPDES Part II Standard Conditions).

Signed this 4th day of August, 2016.

/S/ SIGNATURE ON FILE

Ken Moraff, Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

David Ferris, Director
Massachusetts Wastewater Management Program
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

PART I

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

EFFLUENT CHARACTERISTIC	**EFFLUENT LIMITS**					**MONITORING REQUIREMENTS [3]**	
PARAMETER	**AVERAGE MONTHLY**	**AVERAGE WEEKLY**	**AVERAGE MONTHLY**	**AVERAGE WEEKLY**	**MAXIMUM DAILY**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE[1]**
EFFLUENT FLOW[3]	*********	*********	0.2 mgd	*********	Report mgd	CONTINUOUS	RECORDER
EFFLUENT FLOW[3]	*********	*********	Report mgd	*********	*********	CONTINUOUS	RECORDER
BOD_5 [4]	50 lb/day	75 lb/day	30 mg/l	45 mg/l	Report mg/l	1/WEEK	24-HR COMP[5]
TSS [4]	50 lb/day	75 lb/day	30 mg/l	45 mg/l	Report mg/l	1/WEEK	24-HR COMP[5]
pH RANGE[2]	6.5 - 8.3 S.U. (SEE PERMIT PARAGRAPH I.A.1.b.)					1/DAY	GRAB
TOTAL RESIDUAL CHLORINE[2,6,7] (April 1 – October 31)	*********	**********	0.3 mg/l	*********	0.5 mg/l	1/DAY	GRAB
ESCHERICHIA COLI [2,8] (April 1 – October 31)	*********	**********	126 cfu/100 ml	*********	409 cfu/100 ml	1/WEEK	GRAB
TOTAL RECOVERABLE COPPER[9]	**********	**********	18 µg/l	*********	53 µg/l	1/MONTH	24-HR COMP[5]
TOTAL AMMONIA-NITROGEN	Report lb/day Report kg/day	Report lb/day Report kg/day	Report mg/l	********* *********	Report mg/l	1/MONTH	24-HR COMP[5]
TOTAL NITROGEN[10]	Report lb/day Report kg/day	********* *********	Report mg/l	********* *********	Report mg/l	1/MONTH	24-HR COMP[5]
TOTAL KJELDAHL NITROGEN[10]	**********	**********	Report mg/l	**********	Report mg/l	1/MONTH	24-HR COMP[5]

EFFLUENT CHARACTERISTIC	**EFFLUENT LIMITS**					**MONITORING REQUIREMENTS [3]**	
PARAMETER	**AVERAGE MONTHLY**	**AVERAGE WEEKLY**	**AVERAGE MONTHLY**	**AVERAGE WEEKLY**	**MAXIMUM DAILY**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE**
TOTAL NITRATE[10]	*********	*********	Report mg/l	*********	Report mg/l	1/MONTH	24-HR COMP[5]
TOTAL NITRITE[10]	*********	*********	Report mg/l	*********	Report mg/l	1/MONTH	24-HR COMP[5]
TOTAL PHOSPHORUS (AMBIENT)[11]	*********	*********	Report mg/l	*********	Report mg/l	1/MONTH	GRAB
TOTAL PHOSPHORUS (EFFLUENT) (April 1 – Oct 31)	3.5 lb/day	*********	Report mg/l	*********	Report mg/l	1/WEEK	24-HR COMP[5]
WHOLE EFFLUENT TOXICITY [12, 13, 14]	Acute LC_{50} =100%					1/YEAR	24-HR COMP[5]
Hardness[15]	*********	*********	*********	*********	Report mg/l	1/YEAR	24-HR COMP[5]
Ammonia Nitrogen as N[15]	*********	*********	*********	*********	Report mg/l	1/YEAR	24-HR COMP[5]
Total Recoverable Aluminum[15]	*********	*********	*********	*********	Report mg/l	1/YEAR	24-HR COMP[5]
Total Recoverable Cadmium[15]	*********	*********	*********	*********	Report mg/l	1/YEAR	24-HR COMP[5]
Total Recoverable Copper[15]	*********	*********	*********	*********	Report mg/l	1/YEAR	24-HR COMP[5]
Total Recoverable Nickel[15]	*********	*********	*********	*********	Report mg/l	1/YEAR	24-HR COMP[5]
Total Recoverable Lead[15]	*********	*********	*********	*********	Report mg/l	1/YEAR	24-HR COMP[5]
Total Recoverable Zinc[15]	*********	*********	*********	*********	Report mg/l	1/YEAR	24-HR COMP[5]

See Pages 4-5 for Footnotes.

Footnotes:

1. Effluent sampling shall be collected at a representative point following treatment and prior to discharge. Influent samples shall be taken prior to entering the grit chamber; effluent samples for pH, TSS, BOD_5, nutrients, and WET shall be taken after exiting the clarifiers, bacteria samples shall be collected after exiting the chlorine contact chamber, and TRC samples shall be collected both pre- and post-dechlorination.

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

   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, unless specified below.

2. Required for State Certification.

3. 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.

4. Samples shall be collected from the influent and the effluent and analyzed for BOD_5 and TSS twice per month. The arithmetic mean of the results shall be reported as the average monthly value and shall be used to calculate the percent removal of BOD_5 and TSS.

5. 24-hour composite samples will consist of at least twenty-four (24) grab samples taken during one consecutive 24-hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportionally to flow.

6. Total residual chlorine monitoring is required during the period April 1st through October 31st only to reflect the seasonal chlorination period. The minimum level (ML) for total residual chlorine is defined as 20 ug/l. This value is the minimum level for chlorine using EPA approved methods found in the most currently approved version of Standard Methods for the Examination of Water and Wastewater, Method 4500 CL-E and G. One of these methods must be used to determine total residual chlorine. For effluent limitations less than 20 ug/l, compliance/non-compliance will be determined based on the ML. Sample results less than the detection limit shall be reported as "[≤ detection limit]" on the discharge monitoring report.

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

8. *E. coli* monitoring is required during the period April 1st through October 31st only to reflect the seasonal chlorination period. The monthly average limit for *E. coli* is expressed as a geometric mean. *E. coli* monitoring shall be conducted concurrently with a total residual chlorine sample.

9. The minimum level (ML) for copper is 3 µg/l. This value is the ML for copper using the Furnace Atomic Absorption analytical method (EPA Method 220.2). This method or other EPA-approved method with an equivalent or lower ML shall be used. Sample results less than the detection limit shall be reported as "[≤ detection limit]" on the discharge monitoring report. A compliance schedule for copper is included in Part C. Compliance Schedule.

10. Total Kjeldahl nitrogen (TKN), ammonia nitrogen, nitrite nitrogen, and nitrate nitrogen samples shall be collected concurrently. The results of the TKN, total nitrite, and total nitrate nitrogen analysis shall be used to calculate both the concentration and mass loadings of total nitrogen as follows:

    Total nitrogen (mg/l) = [TKN + total nitrite nitrogen + total nitrate nitrogen]
    Total nitrogen (lbs/day) = [total nitrogen (mg/l)*average monthly flow (MGD)*8.34]

11. The permittee shall collect an in-stream (ambient) phosphorus sample from the receiving water upstream of the discharge once per month during the months of June through September.

12. The permittee shall conduct acute toxicity tests *once* per year. The permittee shall be conducted using the daphnid, *Ceriodaphnia dubia*, as the test species. Toxicity test samples shall be collected and the tests completed during the calendar quarter ending September 30th. The test results shall be submitted by October 15th. The tests must be performed in accordance with test procedures and protocols specified in **Attachment A** of this permit.

13. The LC_{50} 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.

14. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in **Attachment A (Toxicity Test Procedure and Protocol**) **Section IV., DILUTION WATER** in order to obtain an individual approval for use of an alternate dilution water, or the permittee shall follow the Self-Implementing Alternative Dilution Water Guidance, which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of *NPDES Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, which may be found on the EPA Region I web site at http://www.epa.gov/Region1/enforcementandassistance/dmr.html. If this guidance is revoked, the permittee shall revert to obtaining individual approval as outlined in **Attachment A**. Any modification or revocation to this guidance will be transmitted to the permittees. However, at any time, the permittee may choose to contact EPA-Region 1 directly using the approach outlined in **Attachment A**.

15. For each whole effluent toxicity test, the permittee shall report on the appropriate discharge monitoring report (DMR) the concentrations of the hardness, ammonia nitrogen as nitrogen, total recoverable aluminum, cadmium, copper, lead, nickel, and zinc found in the 100 percent effluent sample. All these aforementioned chemical parameters shall be determined to at least the minimum quantification level shown in **Attachment A**. Also the permittee should note that all chemical parameter results must still be reported in the appropriate toxicity report.

Part I.A.1. (Continued)

a. The discharge shall not cause a violation of the water quality standards of the receiving waters.

b. The pH of the effluent shall not be less than 6.5 or greater than 8.3 at any time.

c. The discharge shall not cause objectionable discoloration of the receiving waters.

d. The effluent shall not contain a visible oil sheen, foam, or 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 done in accordance with EPA approved methods above its required frequency must also be reported.

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 31 of the following calendar year describing its plans for further flow increases and describing how it will maintain compliance with the flow limit and all other effluent limitations and conditions.

2. All POTWs must provide adequate notice to the Director of the following:

a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the Clean Water Act if it were directly discharging those pollutants; and

b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

c. For purposes of this paragraph, adequate notice shall include information on:

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

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

3. Prohibitions Concerning Interference and Pass Through:

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 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. SPECIAL CONDITIONS

1. Nitrogen Optimization

   a. Within one year of the effective date of the permit, the permittee shall complete an evaluation of current and/or alternative methods of operating the existing wastewater treatment facility to optimize the removal of nitrogen, and submit a report to EPA and MassDEP documenting this evaluation and presenting a description of recommended operational changes. The methods to be evaluated include, but are not limited to, operational changes designed to enhance nitrification (seasonal and year round), incorporation of anoxic zones, septage receiving policies and procedures, and side stream management.

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

C. COMPLIANCE SCHEDULE

1. Compliance with the copper water quality-based effluent limit (WQBEL) in Part I.A.1. of this permit is deferred until three (3) years after the effective date of the permit according to the following schedule:

   a. Within twelve (12) months from the effective date of this permit, the permittee shall:

      (1) Monitor copper concentrations in freshwater influent at a minimum frequency of once (1) per month.

      (2) Evaluate all potentially significant sources of copper in the sewer system and alternatives for minimizing these sources.

      (3) Evaluate water treatment practices, including corrosion control, and pre-treatment requirements to ensure that all significant sources of copper are adequately controlled.

   b. Within twenty-four (24) months of the effective date of this permit the permittee shall submit to EPA and MassDEP a report describing this evaluation including all analytical data collected pursuant to the evaluation.

2. Within thirty-six (36) months of the effective date of this permit, the permittee shall comply with the copper limits in Part I.A.1.

D. UNAUTHORIZED DISCHARGES

This permit authorizes discharges only from the outfall(s) listed in Part I.A.1, in accordance with the terms and conditions 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 MassDEP in accordance with Part 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 MassDEP Regional Office telephone numbers). The reporting form and instruction for its completion may be found on-line at http://www.mass.gov/eea/agencies/massdep/service/approvals/sanitary-sewer-overflow-bypass-backup-notification.html.

E. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance (O&M) of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions. The permittee is required to complete the following activities for the collection system which it owns:

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. Provisions to meet this requirement shall be described in the Annual Summary Report required pursuant to Section I.E.5 below.

2. Preventive Maintenance Program

The permittee shall maintain an ongoing preventive 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. Plans and programs to meet this requirement shall be described in the Annual Summary Report required pursuant to Section I.E.5 below.

3. Infiltration/Inflow

The permittee shall control infiltration and inflow (I/I) into the sewer system as necessary to prevent high flow related unauthorized discharges from their collection systems and high flow related violations of the wastewater treatment plant's effluent limitations. Plans and programs to control I/I shall be described in the Annual Summary Report required pursuant to Section I.D.6 below.

4. Collection System Mapping

Within 30 months of the effective date of this permit, the permittee shall prepare a map of the sewer collection system it owns (see page 1 of this permit for the effective date). The map shall be on a street map of the community, with sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions and shall be kept up to date and available for review by federal, state, or local agencies. Such map(s) shall include, but not be limited to the following:

a. All sanitary sewer lines and related manholes;
b. All combined sewer lines, related manholes, and catch basins;
c. All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combination manholes);
d. All outfalls, including the treatment plant outfall(s), CSOs, and any known or suspected SSOs, including stormwater outfalls that are connected to combination manholes;
e. All pump stations and force mains;
f. The wastewater treatment facility(ies);
g. All surface waters (labeled);
h. Other major appurtenances such as inverted siphons and air release valves;

i. A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;
j. The scale and a north arrow; and
k. The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

5. Annual Reporting Requirement

The permittee shall submit a summary report of activities related to the operation and maintenance of its collection system during the previous calendar year. The report shall be submitted to EPA and MassDEP annually by March 31. The summary report shall, at a minimum, include:

a. A description of the staffing levels maintained during the year;
b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;
c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;
d. A map with areas identified for investigation/action in the coming year;
e. If treatment plant flow has reached 80% of its design flow (0.16 mgd) based on the annual average flow during the reporting year, or there have been capacity related overflows, submit a calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year; and
f. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported pursuant to the Unauthorized Discharges section of this permit.

6. Alternate Power Source

In order to maintain compliance with the terms and conditions of this permit, the permittee shall provide an alternative power source(s) sufficient to operate the portion of the publicly owned treatment works it owns and operates.

F. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices, 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 CFR 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 reduction and 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 1,500	1 /quarter
1,500 to less than 15,000	6 /year
15,000 +	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*

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

"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.

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:

   a. Name and address of contractor(s) responsible for sludge preparation, use or disposal
   b. 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.

G. MONITORING AND REPORTING

The monitoring program in the permit specifies sampling and analysis, which will provide continuous information on compliance and the reliability and effectiveness of the installed pollution abatement equipment. The approved analytical procedures found in 40 CFR Part 136 are required unless other procedures are explicitly required in the permit. The Permittee is obligated to monitor and report sampling results to EPA and the MassDEP within the time specified within the permit.

Unless otherwise specified in this permit, the permittee shall submit reports, requests, and information and provide notices in the manner described in this section.

1. Submittal of DMRs and the Use of NetDMR

   Beginning the effective date of the permit the permittee must submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and MassDEP no later than the 15th day of the month following the completed reporting period. **For a period of six months from the effective date of the permit**, the permittee may submit its monthly monitoring data in DMRs to EPA and MassDEP either in hard copy form, as described in Part I.G.4, or in DMRs electronically submitted using NetDMR. NetDMR is a web-based tool that allows permittees to electronically submit DMRs and other required reports via a secure internet connection. NetDMR is accessed from: http://www.epa.gov/netdmr. **Beginning no later than six months after the effective date of the permit**, the

permittee shall begin reporting monthly monitoring data using NetDMR, unless, in accordance with Part I.G.6, the facility is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs. The permittee must continue to use the NetDMR after the permittee begins to do so. When a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs to EPA or MassDEP.

2. Submittal of Reports as NetDMR Attachments

After the permittee begins submitting DMR reports to EPA electronically using NetDMR, the permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies, unless otherwise specified in this permit. Permittees shall continue to send hard copies of reports other than DMRs to MassDEP until further notice from MassDEP. (See Part I.G.5. for more information on state reporting.) Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the particular report due date specified in this permit.

3. Submittal of Requests and Reports to EPA/OEP

The following requests, reports, and information described in this permit shall be submitted to the EPA/OEP NPDES Applications Coordinator in the EPA Office Ecosystem Protection (OEP).

A. Transfer of permit notice
B. Request for changes in sampling location
C. Request for reduction in testing frequency
D. Request for reduction in WET testing requirement
E. Report on unacceptable dilution water / request for alternative dilution water for WET testing

These reports, information, and requests shall be submitted to EPA/OEP electronically at R1NPDES.Notices.OEP@epa.gov or by hard copy mail to the following address:

U.S. Environmental Protection Agency
Office of Ecosystem Protection
EPA/OEP NPDES Applications Coordinator
5 Post Office Square - Suite 100 (OEP06-03)
Boston, MA 02109-3912

4. Submittal of Reports in Hard Copy Form

The following notifications and reports shall be submitted as hard copy with a cover letter describing the submission. These reports shall be signed and dated originals submitted to EPA.

A. Written notifications required under Part II
B. Notice of unauthorized discharges, including Sanitary Sewer Overflow (SSO) reporting
C. Collection System O&M Plan
D. Report on annual activities related to O&M Plan
E. Reports and DMRs submitted prior to the use of NetDMR
F. Sludge monitoring reports

This information shall be submitted to EPA/OES at the following address:

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

All sludge monitoring reports required herein shall be submitted only to:

U.S. Environmental Protection Agency, Region 7
Biosolids Center
Water Enforcement Branch
11201 Renner Boulevard
Lenexa, Kansas 66219

5. State Reporting

Unless otherwise specified in this permit, duplicate signed copies of all reports, information, requests or notifications described in this permit, including the reports, information, requests or notifications described in Parts I.G.3 and I.G.4 also shall be submitted to the State at the following addresses:

MassDEP – Western Region
Bureau of Water Resources
436 Dwight Street, Suite 402
Springfield, MA 01103

Copies of toxicity tests only shall be submitted to:

Massachusetts Department of Environmental Protection
Watershed Planning Program
8 New Bond Street
Worcester, Massachusetts 01606

6. Submittal of NetDMR Opt-Out Requests

NetDMR opt-out requests must be submitted in writing to EPA and MassDEP for written approval at least sixty (60) days prior to the date a facility would be required under this 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-SMR)
Boston, MA 02109-3912

And

Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
1 Winter Street, 5th Floor
Boston, Massachusetts 02108

7. Verbal Reports and Verbal Notifications

Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to both EPA and to MassDEP. This includes verbal reports and notifications which require reporting within 24 hours. (As examples, see Part II.B.4.c. (2), Part II.B.5.c. (3), and Part II.D.1.e.) Verbal reports and verbal notifications shall be made to EPA's Office of Environmental Stewardship at:

617-918-1510

G. 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 CMR 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 CFR 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.

USEPA REGION 1 FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable acute toxicity tests in accordance with the appropriate test protocols described below:

- **Daphnid (Ceriodaphnia dubia) definitive 48 hour test.**
- **Fathead Minnow (Pimephales promelas) definitive 48 hour test.**

Acute toxicity test data shall be reported as outlined in Section VIII.

II. METHODS

The permittee shall use 40 CFR Part 136 methods. Methods and guidance may be found at:

http://water.epa.gov/scitech/methods/cwa/wet/disk2_index.cfm

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. This protocol defines more specific requirements while still being consistent with the Part 136 methods. If, due to modifications of Part 136, there are conflicting requirements between the Part 136 method and this protocol, the permittee shall comply with the requirements of the Part 136 method.

III. SAMPLE COLLECTION

A discharge sample shall be collected. Aliquots shall be split from the sample, containerized and preserved (as per 40 CFR Part 136) for chemical and physical analyses required. The remaining sample shall be measured for total residual chlorine and dechlorinated (if detected) in the laboratory using sodium thiosulfate for subsequent toxicity testing. (Note that EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection.) Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1.0 mg/L chlorine. If dechlorination is necessary, a thiosulfate control (maximum amount of thiosulfate in lab control or receiving water) must also be run in the WET test.

All samples held overnight shall be refrigerated at 1- 6^{o}C.

IV. DILUTION WATER

A grab sample of dilution water used for acute toxicity testing shall be collected from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. In the case where an alternate dilution water has been agreed upon an additional receiving water control (0% effluent) must also be tested.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable, an alternate standard dilution water of known quality with a hardness, pH, conductivity, alkalinity, organic carbon, and total suspended solids similar to that of the receiving water may be substituted **AFTER RECEIVING WRITTEN APPROVAL FROM THE PERMIT ISSUING AGENCY(S)**. Written requests for use of an alternate dilution water should be mailed with supporting documentation to the following address:

Director
Office of Ecosystem Protection (CAA)
U.S. Environmental Protection Agency-New England
5 Post Office Sq., Suite 100 (OEP06-5)
Boston, MA 02109-3912

and

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

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

See the most current annual DMR instructions which can be found on the EPA Region 1 website at http://www.epa.gov/region1/enforcement/water/dmr.html *for further important details on alternate dilution water substitution requests.*

It may prove beneficial to have the proposed dilution water source screened for suitability prior to toxicity testing. EPA strongly urges that screening be done prior to set up of a full definitive toxicity test any time there is question about the dilution water's ability to support acceptable performance as outlined in the 'test acceptability' section of the protocol.

V. TEST CONDITIONS

The following tables summarize the accepted daphnid and fathead minnow toxicity test conditions and test acceptability criteria:

EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE DAPHNID, CERIODAPHNIA DUBIA 48 HOUR ACUTE TESTS[1]

1.	Test type	Static, non-renewal
2.	Temperature (^{o}C)	20 $\pm$ 1^{o}C or 25 $\pm$ 1^{o}C
3.	Light quality	Ambient laboratory illumination
4.	Photoperiod	16 hour light, 8 hour dark
5.	Test chamber size	Minimum 30 ml
6.	Test solution volume	Minimum 15 ml
7.	Age of test organisms	1-24 hours (neonates)
8.	No. of daphnids per test chamber	5
9.	No. of replicate test chambers per treatment	4
10.	Total no. daphnids per test concentration	20
11.	Feeding regime	As per manual, lightly feed YCT and Selenastrum to newly released organisms while holding prior to initiating test
12.	Aeration	None
13.	Dilution water[2]	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q^{R} or equivalent deionized water and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14.	Dilution series	$\geq$ 0.5, must bracket the permitted RWC
15.	Number of dilutions	5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution

		series.
16.	Effect measured	Mortality-no movement of body or appendages on gentle prodding
17.	Test acceptability	90% or greater survival of test organisms in dilution water control solution
18.	Sampling requirements	For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must first be used within 36 hours of collection.
19.	Sample volume required	Minimum 1 liter

Footnotes:

1. Adapted from EPA-821-R-02-012.
2. Standard prepared dilution water must have hardness requirements to generally reflect the characteristics of the receiving water.

EPA NEW ENGLAND TEST CONDITIONS FOR THE FATHEAD MINNOW (PIMEPHALES PROMELAS) 48 HOUR ACUTE TEST[1]

1.	Test Type	Static, non-renewal
2.	Temperature (^{o}C)	20 $\pm$ 1 ^{o} C or 25 $\pm$ 1^{o}C
3.	Light quality	Ambient laboratory illumination
4.	Photoperiod	16 hr light, 8 hr dark
5.	Size of test vessels	250 mL minimum
6.	Volume of test solution	Minimum 200 mL/replicate
7.	Age of fish	1-14 days old and age within 24 hrs of each other
8.	No. of fish per chamber	10
9.	No. of replicate test vessels per treatment	4
10.	Total no. organisms per concentration	40
11.	Feeding regime	As per manual, lightly feed test age larvae using concentrated brine shrimp nauplii while holding prior to initiating test
12.	Aeration	None, unless dissolved oxygen (D.O.) concentration falls below 4.0 mg/L, at which time gentle single bubble aeration should be started at a rate of less than 100 bubbles/min. (Routine D.O. check is recommended.)
13.	dilution water[2]	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q^{R} or equivalent deionized and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14.	Dilution series	$\geq$ 0.5, must bracket the permitted RWC

15.	Number of dilutions	5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series.
16.	Effect measured	Mortality-no movement on gentle prodding
17.	Test acceptability	90% or greater survival of test organisms in dilution water control solution
18.	Sampling requirements	For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples are used within 36 hours of collection.
19.	Sample volume required	Minimum 2 liters

Footnotes:

1. Adapted from EPA-821-R-02-012
2. Standard dilution water must have hardness requirements to generally reflect characteristics of the receiving water.

VI. CHEMICAL ANALYSIS

At the beginning of a static acute toxicity test, pH, conductivity, total residual chlorine, oxygen, hardness, alkalinity and temperature must be measured in the highest effluent concentration and the dilution water. Dissolved oxygen, pH and temperature are also measured at 24 and 48 hour intervals in all dilutions. The following chemical analyses shall be performed on the 100 percent effluent sample and the upstream water sample for each sampling event.

Parameter	Effluent	Receiving Water	ML (mg/l)
Hardness[1]	x	x	0.5
Total Residual Chlorine (TRC)[2, 3]	x		0.02
Alkalinity	x	x	2.0
pH	x	x	--
Specific Conductance	x	x	--
Total Solids	x		--
Total Dissolved Solids	x		--
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
Total Metals			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005
Al	x	x	0.02
Other as permit requires			

Notes:

1. Hardness may be determined by:
   - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
     - Method 2340B (hardness by calculation)
     - Method 2340C (titration)
2. Total Residual Chlorine may be performed using any of the following methods provided the required minimum limit (ML) is met.
   - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
     - Method 4500-CL E Low Level Amperometric Titration
     - Method 4500-CL G DPD Colorimetric Method
3. Required to be performed on the sample used for WET testing prior to its use for toxicity testing.

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

- Probit Method
- Spearman-Karber
- Trimmed Spearman-Karber
- Graphical

See the flow chart in Figure 6 on p. 73 of EPA-821-R-02-012 for appropriate method to use on a given data set.

No Observed Acute Effect Level (NOAEL)

See the flow chart in Figure 13 on p. 87 of EPA-821-R-02-012.

VIII. TOXICITY TEST REPORTING

A report of the results will include the following:

- Description of sample collection procedures, site description
- Names of individuals collecting and transporting samples, times and dates of sample collection and analysis on chain-of-custody
- General description of tests: age of test organisms, origin, dates and results of standard toxicant tests; light and temperature regime; other information on test conditions if different than procedures recommended. Reference toxicant test data should be included.
- All chemical/physical data generated. (Include minimum detection levels and minimum quantification levels.)
- Raw data and bench sheets.
- Provide a description of dechlorination procedures (as applicable).
- Any other observations or test conditions affecting test outcome.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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PART II. A. GENERAL REQUIREMENTS

1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

a. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirements.

b. The CWA provides that any person who violates Section 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any of such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Section 402 (a)(3) or 402 (b)(8) of the CWA is subject to a civil penalty not to exceed $25,000 per day for each violation. Any person who negligently violates such requirements is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both. Any person who knowingly violates such requirements is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both.

c. Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

Note: See 40 CFR §122.41(a)(2) for complete "Duty to Comply" regulations.

2. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or notifications of planned changes or anticipated noncompliance does not stay any permit condition.

3. Duty to Provide Information

The permittee shall furnish to the Regional Administrator, within a reasonable time, any information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Regional Administrator, upon request, copies of records required to be kept by this permit.

4. Reopener Clause

The Regional Administrator reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA in order to bring all discharges into compliance with the CWA.

For any permit issued to a treatment works treating domestic sewage (including "sludge-only facilities"), the Regional Administrator or Director shall include a reopener clause to incorporate any applicable standard for sewage sludge use or disposal promulgated under Section 405 (d) of the CWA. The Regional Administrator or Director may promptly modify or revoke and reissue any permit containing the reopener clause required by this paragraph if the standard for sewage sludge use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or contains a pollutant or practice not limited in the permit.

Federal regulations pertaining to permit modification, revocation and reissuance, and termination are found at 40 CFR §122.62, 122.63, 122.64, and 124.5.

5. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

6. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges.

7. Confidentiality of Information

a. In accordance with 40 CFR Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 (Public Information).

b. Claims of confidentiality for the following information will be denied:

(1) The name and address of any permit applicant or permittee;
(2) Permit applications, permits, and effluent data as defined in 40 CFR §2.302(a)(2).

c. Information required by NPDES application forms provided by the Regional Administrator under 40 CFR §122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

8. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain a new permit. The permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Regional Administrator. (The Regional Administrator shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

9. State Authorities

Nothing in Part 122, 123, or 124 precludes more stringent State regulation of any activity covered by these regulations, whether or not under an approved State program.

10. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, State, or local laws and regulations.

PART II. B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of storm water pollution prevention plans. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

4. Bypass

a. Definitions

(1) *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility.

(2) *Severe property damage* means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can be reasonably expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass not exceeding limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of Paragraphs B.4.c. and 4.d. of this section.

c. Notice

(1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (Twenty-four hour reporting).

d. Prohibition of bypass

Bypass is prohibited, and the Regional Administrator may take enforcement action against a permittee for bypass, unless:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
(3) i) The permittee submitted notices as required under Paragraph 4.c. of this section.
ii) The Regional Administrator may approve an anticipated bypass, after considering its adverse effects, if the Regional Administrator determines that it will meet the three conditions listed above in paragraph 4.d. of this section.

5. Upset

a. Definition. *Upset* means an exceptional incident in which there is an unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph B.5.c. of this section are met. No determination made during

administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;
(2) The permitted facility was at the time being properly operated;
(3) The permittee submitted notice of the upset as required in paragraphs D.1.a. and 1.e. (Twenty-four hour notice); and
(4) The permittee complied with any remedial measures required under B.3. above.

d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

PART II. C. MONITORING REQUIREMENTS

1. Monitoring and Records

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. Except for records for monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application except for the information concerning storm water discharges which must be retained for a total of 6 years. This retention period may be extended by request of the Regional Administrator at any time.

c. Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;
(2) The individual(s) who performed the sampling or measurements;
(3) The date(s) analyses were performed;
(4) The individual(s) who performed the analyses;
(5) The analytical techniques or methods used; and
(6) The results of such analyses.

d. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.

e. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by

imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The permittee shall allow the Regional Administrator or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location.

PART II. D. REPORTING REQUIREMENTS

1. Reporting Requirements

a. Planned Changes. The permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR§122.29(b); or
(2) The alteration or addition could significantly change the nature or increase the quantities of the pollutants discharged. This notification applies to pollutants which are subject neither to the effluent limitations in the permit, nor to the notification requirements at 40 CFR§122.42(a)(1).
(3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition or change may justify the application of permit conditions different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

b. Anticipated noncompliance. The permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. Transfers. This permit is not transferable to any person except after notice to the Regional Administrator. The Regional Administrator may require modification or revocation and reissuance of the permit to change the name of the permittee and

incorporate such other requirements as may be necessary under the CWA. (See 40 CFR Part 122.61; in some cases, modification or revocation and reissuance is mandatory.)

d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.

(2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of the monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

(3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

e. Twenty-four hour reporting.

(1) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances.

A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(2) The following shall be included as information which must be reported within 24 hours under this paragraph.

(a) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR §122.41(g).)
(b) Any upset which exceeds any effluent limitation in the permit.
(c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Regional Administrator in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)

(3) The Regional Administrator may waive the written report on a case-by-case basis for reports under Paragraph D.1.e. if the oral report has been received within 24 hours.

f. Compliance Schedules. Reports of compliance or noncompliance with, any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

g. Other noncompliance. The permittee shall report all instances of noncompliance not reported under Paragraphs D.1.d., D.1.e., and D.1.f. of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph D.1.e. of this section.

h. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, it shall promptly submit such facts or information.

2. Signatory Requirement

a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See 40 CFR §122.22)

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 2 years per violation, or by both.

3. Availability of Reports.

Except for data determined to be confidential under Paragraph A.8. above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Regional Administrator. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

PART II. E. DEFINITIONS AND ABBREVIATIONS

1. Definitions for Individual NPDES Permits including Storm Water Requirements

Administrator means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

Applicable standards and limitations means all, State, interstate, and Federal standards and limitations to which a “discharge”, a “sewage sludge use or disposal practice”, or a related activity is subject to, including “effluent limitations”, water quality standards, standards of performance, toxic effluent standards or prohibitions, “best management practices”, pretreatment standards, and “standards for sewage sludge use and disposal” under Sections 301, 302, 303, 304, 306, 307, 308, 403, and 405 of the CWA.

Application means the EPA standard national forms for applying for a permit, including any additions, revisions, or modifications to the forms; or forms approved by EPA for use in "approved States", including any approved modifications or revisions.

Average means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For total and/or fecal coliforms and Escherichia coli, the average shall be the geometric mean.

Average monthly discharge limitation means the highest allowable average of "daily discharges" over a calendar month calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

Average weekly discharge limitation means the highest allowable average of "daily discharges" measured during the calendar week divided by the number of "daily discharges" measured during the week.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Best Professional Judgment (BPJ) means a case-by-case determination of Best Practicable Treatment (BPT), Best Available Treatment (BAT), or other appropriate technology-based standard based on an evaluation of the available technology to achieve a particular pollutant reduction and other factors set forth in 40 CFR §125.3 (d).

Coal Pile Runoff means the rainfall runoff from or through any coal storage pile.

Composite Sample means a sample consisting of a minimum of eight grab samples of equal volume collected at equal intervals during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportional to flow, or a sample consisting of the same number of grab samples, or greater, collected proportionally to flow over that same time period.

Construction Activities - The following definitions apply to construction activities:

(a) Commencement of Construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.

(b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion effluent limitation guideline at 40 CFR Part 443.

(c) Dedicated portable concrete plant is a portable concrete plant located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

(d) Final Stabilization means that all soil disturbing activities at the site have been complete, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

(e) Runoff coefficient means the fraction of total rainfall that will appear at the conveyance as runoff.

Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

Continuous discharge means a "discharge" which occurs without interruption throughout the operating hours of the facility except for infrequent shutdowns for maintenance, process changes, or similar activities.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, and Pub. L. 97-117; 33 USC §§1251 et seq.

Daily Discharge means the discharge of a pollutant measured during the calendar day or any other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Director normally means the person authorized to sign NPDES permits by EPA or the State or an authorized representative. Conversely, it also could mean the Regional Administrator or the State Director as the context requires.

Discharge Monitoring Report Form (DMR) means the EPA standard national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs must be used by "approved States" as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Discharge of a pollutant means:

(a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source", or

(b) Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation (See "Point Source" definition).

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead

to a treatment works; and discharges through pipes, sewers, or other conveyances leading into privately owned treatment works.

This term does not include an addition of pollutants by any "indirect discharger."

Effluent limitation means any restriction imposed by the Regional Administrator on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States", the waters of the "contiguous zone", or the ocean.

Effluent limitation guidelines means a regulation published by the Administrator under Section 304(b) of CWA to adopt or revise "effluent limitations".

EPA means the United States "Environmental Protection Agency".

Flow-weighted composite sample means a composite sample consisting of a mixture of aliquots where the volume of each aliquot is proportional to the flow rate of the discharge.

Grab Sample – An individual sample collected in a period of less than 15 minutes.

Hazardous Substance means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the CWA.

Indirect Discharger means a non-domestic discharger introducing pollutants to a publicly owned treatment works.

Interference means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

(a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

(b) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act (CWA), the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resources Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SDWA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection Research and Sanctuaries Act.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.

Land application unit means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.

Large and Medium municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and 40 CFR Part 122); or (ii) located in the counties with unincorporated urbanized

populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships, or towns within such counties (these counties are listed in Appendices H and I of 40 CFR 122); or (iii) owned or operated by a municipality other than those described in Paragraph (i) or (ii) and that are designated by the Regional Administrator as part of the large or medium municipal separate storm sewer system.

Maximum daily discharge limitation means the highest allowable "daily discharge" concentration that occurs only during a normal day (24-hour duration).

Maximum daily discharge limitation (as defined for the Steam Electric Power Plants only) when applied to Total Residual Chlorine (TRC) or Total Residual Oxidant (TRO) is defined as "maximum concentration" or "Instantaneous Maximum Concentration" during the two hours of a chlorination cycle (or fraction thereof) prescribed in the Steam Electric Guidelines, 40 CFR Part 423. These three synonymous terms all mean "a value that shall not be exceeded" during the two-hour chlorination cycle. This interpretation differs from the specified NPDES Permit requirement, 40 CFR § 122.2, where the two terms of "Maximum Daily Discharge" and "Average Daily Discharge" concentrations are specifically limited to the daily (24-hour duration) values.

Municipality means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribe organization, or a designated and approved management agency under Section 208 of the CWA.

National Pollutant Discharge Elimination System means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the CWA. The term includes an "approved program".

New Discharger means any building, structure, facility, or installation:

(a) From which there is or may be a "discharge of pollutants";

(b) That did not commence the "discharge of pollutants" at a particular "site" prior to August 13, 1979;

(c) Which is not a "new source"; and

(d) Which has never received a finally effective NPDES permit for discharges at that "site".

This definition includes an "indirect discharger" which commences discharging into "waters of the United States" after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a "site" for which it does not have a permit; and any offshore rig or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a "site" under EPA's permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the Regional Administrator in the issuance of a final permit to be in an area of biological concern. In determining whether an area is an area of biological concern, the Regional Administrator shall consider the factors specified in 40 CFR §§125.122 (a) (1) through (10).

An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a "new discharger" only for the duration of its discharge in an area of biological concern.

New source means any building, structure, facility, or installation from which there is or may be a "discharge of pollutants", the construction of which commenced:

(a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or

(b) After proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

NPDES means "National Pollutant Discharge Elimination System".

Owner or operator means the owner or operator of any "facility or activity" subject to regulation under the NPDES programs.

Pass through means a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved" State.

Person means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to any pipe ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 CFR §122.2).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. §§2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

(b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well is used either to facilitate production or for disposal purposes is approved by the authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Primary industry category means any industry category listed in the NRDC settlement agreement (Natural Resources Defense Council et al. v. Train, 8 E.R.C. 2120 (D.D.C. 1976), modified 12 E.R.C. 1833 (D. D.C. 1979)); also listed in Appendix A of 40 CFR Part 122.

Privately owned treatment works means any device or system which is (a) used to treat wastes from any facility whose operation is not the operator of the treatment works or (b) not a "POTW".

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Publicly Owned Treatment Works (POTW) means any facility or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a "State" or "municipality".

This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

Regional Administrator means the Regional Administrator, EPA, Region I, Boston, Massachusetts.

Secondary Industry Category means any industry which is not a "primary industry category".

Section 313 water priority chemical means a chemical or chemical category which:

(1) is listed at 40 CFR §372.65 pursuant to Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986);

(2) is present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and

(3) satisfies at least one of the following criteria:

(i) are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols), or Table V (certain toxic pollutants and hazardous substances);
(ii) are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR §116.4; or
(iii) are pollutants for which EPA has published acute or chronic water quality criteria.

Septage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

Sewage Sludge means any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumpings, Type III Marine Sanitation Device pumpings (33 CFR Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

Sewage sludge use or disposal practice means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge.

Significant materials includes, but is not limited to: raw materials, fuels, materials such as solvents, detergents, and plastic pellets, raw materials used in food processing or production, hazardous substance designated under section 101(14) of CERCLA, any chemical the facility is required to report pursuant to EPCRA Section 313, fertilizers, pesticides, and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

Significant spills includes, but is not limited to, releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 CFR §110.10 and §117.21) or Section 102 of CERCLA (see 40 CFR § 302.4).

Sludge-only facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to Section 405(d) of the CWA, and is required to obtain a permit under 40 CFR §122.1(b)(3).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Trust Territory of the Pacific Islands.

Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm water discharge associated with industrial activity means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. (See 40 CFR §122.26 (b)(14) for specifics of this definition.

Time-weighted composite means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.

Toxic pollutants means any pollutant listed as toxic under Section 307 (a)(1) or, in the case of "sludge use or disposal practices" any pollutant identified in regulations implementing Section 405(d) of the CWA.

Treatment works treating domestic sewage means a POTW or any other sewage sludge or wastewater treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices.

For purposes of this definition, "domestic sewage" includes waste and wastewater from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Regional Administrator may designate any person subject to the standards for sewage sludge use and disposal in 40 CFR Part 503 as a "treatment works treating domestic sewage", where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 CFR Part 503.

Waste Pile means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

Waters of the United States means:

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of tide;

(b) All interstate waters, including interstate "wetlands";

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands", sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;

(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(3) Which are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as waters of the United States under this definition;

(e) Tributaries of waters identified in Paragraphs (a) through (d) of this definition;

(f) The territorial sea; and

(g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in Paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the United States.

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Whole Effluent Toxicity (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test. (See Abbreviations Section, following, for additional information.)

2. Definitions for NPDES Permit Sludge Use and Disposal Requirements.

Active sewage sludge unit is a sewage sludge unit that has not closed.

Aerobic Digestion is the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air.

Agricultural Land is land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture.

Agronomic rate is the whole sludge application rate (dry weight basis) designed:

(1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and

(2) To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

Air pollution control device is one or more processes used to treat the exit gas from a sewage sludge incinerator stack.

Anaerobic digestion is the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of air.

Annual pollutant loading rate is the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period.

Annual whole sludge application rate is the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period.

Apply sewage sludge or sewage sludge applied to the land means land application of sewage sludge.

Aquifer is a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding ground water to wells or springs.

Auxiliary fuel is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of the sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

Base flood is a flood that has a one percent chance of occurring in any given year (i.e. a flood with a magnitude equaled once in 100 years).

Bulk sewage sludge is sewage sludge that is not sold or given away in a bag or other container for application to the land.

Contaminate an aquifer means to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR §141.11 to be exceeded in ground water or that causes the existing concentration of nitrate in the ground water to increase when the existing concentration of nitrate in the ground water exceeds the maximum contaminant level for nitrate in 40 CFR §141.11.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 CFR §501.2, required to have an approved pretreatment program under 40 CFR §403.8 (a) (including any POTW located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §403.10 (e) and any treatment works treating domestic sewage, as defined in 40 CFR § 122.2,

classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved state programs, the Regional Administrator in conjunction with the State Director, because of the potential for sewage sludge use or disposal practice to affect public health and the environment adversely.

Control efficiency is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

Cover is soil or other material used to cover sewage sludge placed on an active sewage sludge unit.

Cover crop is a small grain crop, such as oats, wheat, or barley, not grown for harvest.

Cumulative pollutant loading rate is the maximum amount of inorganic pollutant that can be applied to an area of land.

Density of microorganisms is the number of microorganisms per unit mass of total solids (dry weight) in the sewage sludge.

Dispersion factor is the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.

Displacement is the relative movement of any two sides of a fault measured in any direction.

Domestic septage is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant.

Domestic sewage is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

Dry weight basis means calculated on the basis of having been dried at 105 degrees Celsius (°C) until reaching a constant mass (i.e. essentially 100 percent solids content).

Fault is a fracture or zone of fractures in any materials along which strata on one side are displaced with respect to the strata on the other side.

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

Final cover is the last layer of soil or other material placed on a sewage sludge unit at closure.

Fluidized bed incinerator is an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

Food crops are crops consumed by humans. These include, but are not limited to, fruits, vegetables, and tobacco.

Forest is a tract of land thick with trees and underbrush.

Ground water is water below the land surface in the saturated zone.

Holocene time is the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present.

Hourly average is the arithmetic mean of all the measurements taken during an hour. At least two measurements must be taken during the hour.

Incineration is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

Industrial wastewater is wastewater generated in a commercial or industrial process.

Land application is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

Land with a high potential for public exposure is land that the public uses frequently. This includes, but is not limited to, a public contact site and reclamation site located in a populated area (e.g., a construction site located in a city).

Land with low potential for public exposure is land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest and a reclamation site located in an unpopulated area (e.g., a strip mine located in a rural area).

Leachate collection system is a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit.

Liner is soil or synthetic material that has a hydraulic conductivity of 1×10^{-7} centimeters per second or less.

Lower explosive limit for methane gas is the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure.

Monthly average (Incineration) is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month.

Monthly average (Land Application) is the arithmetic mean of all measurements taken during the month.

Municipality means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management agency under section 208 of the CWA, as amended. The definition includes a special district created under state law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

Other container is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Pasture is land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover.

Pathogenic organisms are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

Permitting authority is either EPA or a State with an EPA-approved sludge management program.

Person is an individual, association, partnership, corporation, municipality, State or Federal Agency, or an agent or employee thereof.

Person who prepares sewage sludge is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

pH means the logarithm of the reciprocal of the hydrogen ion concentration; a measure of the acidity or alkalinity of a liquid or solid material.

Place sewage sludge or sewage sludge placed means disposal of sewage sludge on a surface disposal site.

Pollutant (as defined in sludge disposal requirements) is an organic substance, an inorganic substance, a combination or organic and inorganic substances, or pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could on the basis on information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction) or physical deformations in either organisms or offspring of the organisms.

Pollutant limit (for sludge disposal requirements) is a numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of pollutant that can be applied to a unit of land (e.g., kilograms per hectare); or the volume of the material that can be applied to the land (e.g., gallons per acre).

Public contact site is a land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

Qualified ground water scientist is an individual with a baccalaureate or post-graduate degree in the natural sciences or engineering who has sufficient training and experience in ground water hydrology and related fields, as may be demonstrated by State registration, professional certification, or completion of accredited university programs, to make sound professional judgments regarding ground water monitoring, pollutant fate and transport, and corrective action.

Range land is open land with indigenous vegetation.

Reclamation site is drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites.

Risk specific concentration is the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of a site where the sewage sludge incinerator is located.

Runoff is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off the land surface.

Seismic impact zone is an area that has 10 percent or greater probability that the horizontal ground level acceleration to the rock in the area exceeds 0.10 gravity once in 250 years.

Sewage sludge is a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to:, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in treatment works.

Sewage sludge feed rate is either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located.

Sewage sludge incinerator is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 CFR §122.2.

Sewage sludge unit boundary is the outermost perimeter of an active sewage sludge unit.

Specific oxygen uptake rate (SOUR) is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in sewage sludge.

Stack height is the difference between the elevation of the top of a sewage sludge incinerator stack and the elevation of the ground at the base of the stack when the difference is equal to or less than 65 meters. When the difference is greater than 65 meters, stack height is the creditable stack height determined in accordance with 40 CFR §51.100 (ii).

State is one of the United States of America, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, and an Indian tribe eligible for treatment as a State pursuant to regulations promulgated under the authority of section 518(e) of the CWA.

Store or storage of sewage sludge is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

Surface disposal site is an area of land that contains one or more active sewage sludge units.

Total hydrocarbons means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

Total solids are the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees Celsius.

Treat or treatment of sewage sludge is the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

Treatment works is either a federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

Unstable area is land subject to natural or human-induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement.

Unstabilized solids are organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Vector attraction is the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

Volatile solids is the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degrees Celsius in the presence of excess air.

Wet electrostatic precipitator is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

Wet scrubber is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

3. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)

TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont. (Continuous)	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M^3/day	Cubic meters per day
DO	Dissolved oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day
mg/l	Milligram(s) per liter
ml/l	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
pH	A measure of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or material
Surfactant	Surface-active agent

Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
ug/l	Microgram(s) per liter
WET	"Whole effluent toxicity" is the total effect of an effluent measured directly with a toxicity test.
C-NOEC	"Chronic (Long-term Exposure Test) – No Observed Effect Concentration". The highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.
A-NOEC	"Acute (Short-term Exposure Test) – No Observed Effect Concentration" (see C-NOEC definition).
LC_{50}	LC_{50} is the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 100% is defined as a sample of undiluted effluent.
ZID	Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO THE CLEAN WATER ACT (CWA)

NPDES PERMIT NUMBER: **MA0101265**

PUBLIC NOTICE START AND END DATES: March 8, 2016 – April 6, 2016

NAME AND MAILING ADDRESS OF APPLICANT:

Town of Huntington, Board of Sewer Commissioners
P.O. Box 301
Huntington, MA 01050

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Huntington Wastewater Treatment Plant
Route 112
Huntington, MA 01050

RECEIVING WATER(S): **West Branch Westfield River (MA32-01)**

RECEIVING WATER CLASSIFICATION(S): **Class B – Cold Water Fishery**

Table of Contents

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

The above named applicant has requested that the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) reissue its NPDES permit to discharge into the designated receiving water, the Westfield River. The Huntington Waste Water Treatment Plant (WWTP) is an advanced wastewater treatment plant engaged in the collection and treatment of domestic wastewater. The location of the facility and discharge is included as Attachment A.

The existing NPDES permit was issued on September 9, 2005, with an effective date of November 8, 2005 and expired on November 8, 2010. As of November 8, 2010, the expired permit (hereinafter referred to as the "current permit") was administratively extended because the applicant filed a complete application for permit reissuance as required by 40 Code of

Federal Regulations (CFR) § 122.6.

II. Description of Facility and Discharge

A quantitative description of the discharge in terms of significant effluent parameters based on recent discharge monitoring reports (DMRs) from January 2010 through July 2015 is included as Attachment B.

III. Receiving Water Description

The Huntington WWTP discharges to the West Branch Westfield River Segment MA32-01. Segment MA32-01 extends from the source formed by confluence of Depot Brook and Yokum Brook in Becket to the confluence with the Westfield River in Huntington, a length of 18.1 miles. Just downstream from the discharge location the West Branch Westfield River joins the Westfield River (Segment MA32-05) which extends 17.8 miles from the confluence with the Middle Branch Westfield River in Huntington to the Route 20 Bridge in Westfield, MA.

The West Branch Westfield River has been designated as a Class B water and Cold Water Fishery. The Massachusetts Surface Water Quality Standards (MA SWQS), 314 Code of Massachusetts Regulations ("CMR") 4.05(3) (b) states that Class B 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. They shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. The waters should have consistently good aesthetic value.

The West Branch Westfield River is classified as a cold water fishery. Just downstream of the discharge location, the West Branch Westfield River joins the Westfield River, which is a Class B, warm water fishery. The MA SWQS (314 CMR 4.02) defines a cold water fishery as waters in which the mean of the maximum daily temperature over a seven day period generally does not exceed 68° Fahrenheit (20° Celsius) and, when other ecological factors are favorable (such as habitat), are capable of supporting a year-round population of cold water stenothermal aquatic life such as trout (*salmonidae*). A warm water fishery is generally not capable of sustaining a year-round population of cold water stenothermal aquatic life, however, the Massachusetts Division of Fish and Wildlife (MassWildlife) has designated the Westfield River as a "cold water fishery resource." The MA SWQS at 314 CMR 4.06(1)(d)(7) stipulate that:

> Cold Water – in these waters dissolved oxygen and temperature criteria for cold water fisheries apply. Certain waters not designated as cold water in 314 CMR 4.00 may contain habitat that supports a cold water fish population and, in such cases, the cold water fish population and habitat shall be protected and maintained as existing uses. The Massachusetts Division of Fisheries and Wildlife is responsible for identifying cold water fish populations that meet their protocol regardless of whether or not the water meets the cold water criteria in 314 CMR 4.00. Where a cold water fish population has been identified by the Division of Fisheries and Wildlife as meeting their protocol, but the water has not been documented to meet the cold water criteria in 314 CMR 4.00, the Department will protect the existing cold water fish population and its habitat as an

existing use.

Sections 305(b) and 303(d) of the CWA require that States complete a water quality inventory and develop a list of impaired waters. Specifically, Section 303(d) of the CWA requires States to identify those water bodies that are not expected to meet surface water quality standards after the implementation of technology-based controls, and as such, require the development of a Total Maximum Daily Load (TMDL) for each pollutant that is prohibiting a designated use(s) from being attained. The results of the 305(b) assessments are used in the development of the Commonwealth of Massachusetts's 303(d) lists, which are published every two years and identify the water bodies which are not meeting (or are not expected to meet) water quality standards, identify the designated use(s) which is impaired and also the pollutant(s) causing the impairment(s).

The Massachusetts 2012 Integrated List of Waters (2012 Integrated List) and the Proposed 2014 Integrated List of Waters list the West Branch Westfield River (Segment MA32-01) as a category 2 water ("attaining some uses; others not assessed"). The segment attains designated uses for fish and other aquatic life. Other designated uses are not assessed. The Westfield River (Segment MA32-05) just downstream from the discharge location is listed as impaired (category 5) for aquatic macroinvertebrate bioassessments, excess algal growth, taste and odor, and turbidity.

Finally, in 1968, the United States Congress established a National Wild and Scenic Rivers system to protect outstanding rivers from the harmful effects of new federal projects, such as dams, hydroelectric facilities, bank stabilization and bridges. To be considered "Wild and Scenic" a river must have at least one "outstandingly remarkable" natural, cultural or recreational value pursuant to federal law (Wild and Scenic Rivers Act, 16 U.S.C. 1271-1287). http://www.mass.gov/dfwele/river/pdf/westfieldwildscenic.pdf. On November 2, 1993 and October 29, 2004, certain segments of the Westfield River were designated as "Wild and Scenic" under the Wild and Scenic Rivers Act. The Wild and Scenic designation applies to 78.1 miles of the Westfield River, primarily along the East Branch, Middle Branch and West Branch. Included in the designated stretch of the river is the lower West Branch from the Chester/Huntington town line to the confluence with the Main Stem, and the Main Stem from the confluence with the Middle and East Branch until the Huntington/Russell town line, which encompasses the location of the Huntington WWTP's outfall and the downstream segment.

IV. Limitations and Conditions

The effluent limitations and monitoring requirements described in Part VII of this Fact Sheet may be found in the draft NPDES permit.

V. Permit Basis: Statutory and Regulatory Authority

Congress enacted the Clean Water Act (CWA or the "Act") "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except as authorized by specified permitting

sections of the CWA, one of which is Section 402. See CWA §§ 301(a), 402(a).

Section 402(a) established one of the CWA's principal permitting programs, the National Pollutant Elimination System (NPDES). Under this section of the CWA, EPA may "issue a permit for the discharge of any pollutant, or combination of pollutants" in accordance with certain conditions. See CWA § 402(a). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. See CWA § 402(a)(1)-(2).

Section 301 of the CWA provides for two types of effluent limitations to be included in NPDES permits: "technology-based" limitations and "water quality-based" limitations. See §§ 301, 304(b); 40 CFR §§ 122, 125, 131. Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 402 and 301(b) of the Clean Water Act. For publicly owned treatment works (POTWs), technology-based requirements are effluent limits based on secondary treatment as defined in 40 CFR § 133.102.

EPA regulations require NPDES permits to contain effluent limits more stringent than technology-based limits where necessary to maintain or achieve federal or state water quality standards. Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on water quality standards. Under 40 CFR § 122.44(d)(1)(i), effluent limits must be included for all pollutants or pollutant parameters that "are or may be discharged at a level that causes, has reasonable potential to cause, or contributes to an excursion above" water quality standards. For Massachusetts those water quality standards are set forth in the MA SWQS, 314 CMR 4.00. The MA SWQS include both numeric and narrative criteria and establish requirements for the regulation and control of toxic constituents, incorporating by reference EPA recommended criteria (National Recommended Water Quality Criteria 2002), used unless a site specific criteria is established. Massachusetts regulations similarly require that its permits contain limitations which are adequate to assure the attainment and maintenance of the water quality standards of the receiving waters as assigned in the MA SWQS. See 314 CMR 3.11(3). EPA is required to obtain certification from the state in which the discharge is located that all water quality standards or other applicable requirements of state law, in accordance with Section 301(b)(1)(C) of the CWA, are satisfied, unless it is deemed that the state certification is waived. Section 401(a)(2) of the CWA and 40 CFR § 122.44(d)(4) require EPA to condition NPDES permits in a manner that will ensure compliance with the applicable water quality standards of a "downstream affected state."

In addition, a permit may not be renewed, reissued or modified with less stringent limitations or conditions than those contained in the previous permit unless in compliance with the anti-backsliding requirements of CWA Section 402(o) and 40 CFR § 122.44(l). States are also required to develop antidegradation policies pursuant to 40 CFR § 131.12. No lowering of water quality is allowed, except in accordance with the antidegradation policy.

VI. Facility Information

The Huntington Wastewater Treatment Plant (WWTP) is a 0.2 million gallon per day (mgd) secondary wastewater treatment plant serving approximately 1,200 people in Huntington. The WWTP includes the following major components: a gravity-fed influent wet well; comminutor; dual grit channels; two circular aeration systems each consisting of three concentric channels

including a manual rotating aeration basin (aka oxidation ditch) and a center-feed clarifier; dual chlorine contact chambers, an effluent pipe, and an outfall pipe to a box diffuser located in the West Branch Westfield River. Physical dechlorination is utilized. A flow process diagram for the facility is shown in Attachment B. Influent samples are taken prior to entering the grit chamber. Effluent samples for pH, TSS, BOD_5, and WET testing are taken after exiting the clarifiers, while fecal coliform and TRC are collected after exiting the chlorine contact chamber. TRC is sampled both pre- and post-dechlorination.

Sludge is thickened and stored at the sludge storage well. About every 10 days, sludge is trucked to the Westfield Water Pollution Control Plant for incineration.

VII. Derivation of Permit Limits

1. Effluent Flow and Dilution Factor

Effluent Flow

Sewage treatment plant discharge is encompassed within the definition of "pollutant" and is subject to regulation under the CWA. The CWA defines "pollutant" to mean, inter alia, "municipal . . . waste" and "sewage…discharged into water." 33 U.S.C. § 1362(6).

EPA may use design flow of effluent to both determine the necessity for effluent limitations in the permit that comply with the Act, and to calculate the limits themselves. EPA practice is to use design flow as a reasonable and important worst-case condition in EPA's reasonable potential and water quality-based effluent limitation (WQBEL) calculations to ensure compliance with water quality standards under Section 301(b)(1)(C). Should the effluent discharge flow exceed the flow assumed in these calculations, the instream dilution would decrease and the calculated effluent limits would not be protective of WQS. Further, pollutants that did not have the reasonable potential to exceed WQS at the lower discharge flow may have reasonable potential at a higher flow due to the decreased dilution. In order to ensure that the assumptions underlying the Region's reasonable potential analyses and derivation of permit effluent limitations remain sound for the duration of the permit, the Region may ensure its "worst-case" effluent wastewater flow assumption through imposition of permit conditions for effluent flow. Thus, the effluent flow limit is a component of WQBELs because the WQBELs are premised on a maximum level of flow. In addition, the flow limit is necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQS.

Using a facility's design flow in the derivation of pollutant effluent limitations, including conditions to limit wastewater effluent flow, is fully consistent with, and anticipated by NPDES permit regulations. Regarding the calculation of effluent limitations for POTWs, 40 CFR § 122.45(b)(1) provides, "permit effluent limitations…shall be calculated based on design flow." POTW permit applications are required to include the design flow of the treatment facility. *Id.* § 122.21(j)(1)(vi).

Similarly, EPA's reasonable potential regulations require EPA to consider "where appropriate, the dilution of the effluent in the receiving water," 40 CFR § 122.44(d)(1)(ii), which is a function of *both* the wastewater effluent flow and receiving water flow. EPA guidance directs

that this "reasonable potential" analysis be based on "worst-case" conditions. EPA accordingly is authorized to carry out its reasonable potential calculations by presuming that a plant is operating at its design flow when assessing reasonable potential.

The limitation on sewage effluent flow is within EPA's authority to condition a permit in order to carry out the objectives of the Act. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 CFR §§ 122.4(a) and (d), 122.43, and 122.44(d). A condition on the discharge designed to protect EPA's WQBEL and reasonable potential calculations is encompassed by the references to "condition" and "limitations" in CWA Section 402 and 301 and implementing regulations, as they are designed to assure compliance with applicable water quality regulations, including antidegradation. Regulating the quantity of pollutants in the discharge through a restriction on the quantity of wastewater effluent is consistent with the overall structure and purposes of the CWA.

In addition, as provided in Part II.B.1 and 40 CFR § 122.41(e), the permittee is required to properly operate and maintain all facilities and systems of treatment and control. Operating the facilities wastewater treatment systems as designed includes operating within the facility's design effluent flow. Thus, the permit's effluent flow limitation is necessary to ensure proper facility operation, which in turn is a requirement applicable to all NPDES permits. *See* 40 CFR § 122.41.

The current permit contains a flow limit of 0.2 MGD, equal to the design flow, expressed as a 12-month rolling average. From January 2010 through July 2015, the range of 12-month average effluent flow was from 0.04 MGD to 0.08 MGD, averaging 0.06 MGD. No violation of the 12-month rolling average flow limit occurred during the specified review period. The draft permit carries forward the 12-month rolling average flow limit of 0.2 MGD.

7Q10 Low Flow

Water quality-based limitations are established with the use of a calculated available dilution. 314 CMR 4.03(3)(a) requires that effluent dilution be calculated using the receiving water 7Q10. The 7Q10 is the lowest observed mean river flow for 7 consecutive days, recorded over a 10-year recurrence interval.

The current permit established the 7Q10 flow at the discharge using a design flow of 0.2 MGD (0.31 cfs) and an estimated 7Q10 at of 17.23 cfs for Westfield River and calculated a dilution factor of 56.6.[1] During development of this Draft Permit, EPA confirmed that the discharge is located upstream of the confluence with the main branch in the West Branch of the Westfield River. As such, the 7Q10 low flow at the point of discharge is estimated at 8.1 cfs.[2] Using this new low flow statistic results in the following dilution factor:

[1] 7Q10 low flow statistic based on the sum of 7Q10 low flows for each of three branches of the Westfield River using three upstream USGS stream gages.
[2] EPA calculated the updated 7Q10 low flow statistic, defined as the 7-day mean low flow that occurs on average once in 10 years, using United States Geologic Survey (USGS) StreamStats version 3 for Massachusetts, available at http://water.usgs.gov/osw/streamstats/massachusetts.html.

Dilution factor = (River 7Q10 @ Discharge + Design Flow) ÷ Design Flow
= (8.1 cfs + 0. 31 cfs) ÷ 0.31 cfs = 27

The dilution factor in the Draft Permit (27) is substantially less than that used in development of the current permit (78) because of the difference in the 7Q10 low flow value upstream and downstream of the confluence of the West Branch and main stem Westfield River, which is affected by the reduction in basin drainage area from 320 square miles to 96 square miles. EPA has conservatively used the adjusted dilution factor for the calculation of water quality-based effluent limitations in the draft permit. However, EPA acknowledges that the dilution within 500 feet downstream of the discharge increases rapidly when the West Branch combines with the main stem of the Westfield River and the effluent likely experiences higher dilution.

2. Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS)

The draft permit includes a monthly average limit of 30 mg/l and weekly average limit of 45 mg/l for BOD_5 and TSS. These technology-based limits are the same as in the current permit and are the minimum level of effluent quality attainable under secondary treatment consistent with 40 CFR § 133.102(a) and (b). The draft permit also contains percent removal requirements of 85% in accordance with the secondary treatment requirements at 40 CFR § 133.102(a)(3) and (b)(3). The draft permit also includes mass-based limits calculated using the facility's design flow of 0.2 MGD as required by 40 CFR § 122.45(f).

Average monthly concentrations reported during the period of from January 2010 through July 2015 ranged from 6.6 to 15.5 mg/l with an average of 11.3 mg/l for BOD_5 and from 6.6 to 51.2 mg/l with an average of 10.6 mg/l for TSS. Average weekly concentrations during this period ranged from 9.2 to 27.2 mg/l with an average of 13.2 mg/l for BOD_5 and from 0.3 to 21.6 mg/l with an average of 11.9 mg/l for TSS. A single exceedance of the concentration-based average monthly TSS limit of 30 mg/l (51.2 mg/l) was reported for June 2012, but the mass-based average monthly load for this month was 4.8 lbs/day, which is well within the limit of 50 lbs/day. See Attachment C. The BOD_5 and TSS removal percentages have both averaged over 85% with no violations during this time period.

3. pH

Massachusetts Surface Water Quality Standards for Class B waters at 314 CMR 4.05(3)(b)(3) require a pH in the range of 6.5 to 8.3 standard units (s.u.). According to DMR data from December 2006 through February 2015, the pH at the Huntington WWTP ranged from 6.5 to 7.9 s.u. See Attachment C. In accordance with antibacksliding regulations at 40 CFR § 122.44(l), the water quality-based limit for pH range has been carried forward in the draft permit.

4. Bacteria

The fecal coliform bacteria limits in the current, administratively continued permit have been replaced by limits for *Escherichia coli* (*E. coli*). These limits are based upon the *E. coli* criteria that were adopted in the revised Massachusetts SWQS for Class B waters that were

promulgated on December 29, 2006 and approved by EPA on September 19, 2007 (314 CMR § 4.05(b)(4)). In the revised water quality standards, fecal coliform bacteria has been replaced by *E. coli* as the bacterial indicator organism for freshwater systems.

The Massachusetts SWQS allow for the application of bacteria criteria for Class B waters on a seasonal basis at the discretion of MassDEP (314 CMR § 4.05(4)(a)(4)(b)). The draft permit includes the provision in the POTW General Permit allowing for the application of bacteria limits to discharges to Class B waters on a seasonal basis, from April 1st through October 31st, upon receipt of approval from MassDEP to conduct seasonal disinfection of the effluent, as allowed by the *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters* (MassDEP February 23, 1990). Applying the bacteria limits during these months will ensure protection of the contact recreation designated uses assigned to this class, since these are the months in which the receiving waters are expected to be used for recreational purposes.

The monthly average limitation in the draft permit is 126 colony forming units (cfu) per 100 ml, expressed as a monthly geometric mean. The daily maximum and average weekly limitations in the draft permit are 409 cfu/100 ml. These limitations are a State certification requirement and are consistent with EPA guidance recommending that no dilution be considered in establishing permit limits for discharges to rivers designated for primary contact recreation. *EPA Memorandum re: Initial Zones of Dilution for Bacteria in Rivers and Streams Designated for Primary Contact Recreation*, November 12, 2008. The monitoring frequency is maintained at two times per week.

Generally, bacteria counts (fecal coliform) during the period of January 2010 through July 2015 have been low (less than 30 cfu/100 ml). There was a single violation of the current fecal coliform effluent limits in October 2014 when an average monthly fecal count of 605 cfu/100 ml and a weekly average count of 2419 cfu/100 ml was reported. Fecal counts returned to historically low levels (less than 14 cfu/100 ml) in subsequent fecal monitoring during the period from April through July 2015. See Attachment C.

5. Total Residual Chlorine

Chlorine and chlorine compounds produced by the chlorination of wastewater can be extremely toxic to aquatic life. Effluent limits are based on water quality criteria for total residual chlorine (TRC) which Massachusetts adopted by reference to EPA's 2002 National Recommended Water Quality Criteria (EPA-822-R-02-047). The freshwater aquatic life criteria for TRC are 11 µg/l for protection from chronic toxicity and 19 µg/l for protection from acute toxicity. The draft permit includes revised TRC limitations based on the following calculations:

Average Monthly TRC Limit = 11 µg/l * 27 = 297/1000 = 0.3 mg/l
Maximum Daily TRC Limit = 19 µg/l * 27 = 513/1000 = 0.5 mg/l

The average monthly and maximum daily TRC limits have been revised based on the updated dilution factor. The average monthly limit decreased from 0.6 mg/l to 0.3 mg/l and the maximum daily limit decreased from 1.0 mg/L to 0.5 mg/l. TRC limitations and monitoring

requirements are in effect seasonally from April 1st – October 31st based on state certification requirements (see discussion of seasonal limitations in the section titled "Bacteria," above).

Between January 2010 and July 2015, the reported average monthly TRC concentration in the effluent ranged from 0.02 to 0.4 mg/l with a long-term average of 0.2 mg/l. The maximum daily TRC concentration ranged from 0.05 to 0.9 mg/l with an average of 0.4 mg/l. During this period, the permittee would have exceeded the more stringent average monthly limit of 0.3 mg/l on one occasion and the daily average limit of 0.5 mg/l on 4 occasions. These limits apply seasonally during the chlorination period which extends from April 1 to October 31.

The draft permit also continues the current permit's requirement that the chlorination system provide an alarm for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system may result in levels of chlorine that are inadequate for achieving effective disinfection. The draft permit requires that all interruptions or malfunctions be reported with the monthly DMRs. The draft permit requires that the report include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time that the reduced levels of chlorine chemicals occurred.

6. Nutrients: Ammonia-Nitrogen, Total Nitrogen, and Total Phosphorus

Nutrients are compounds containing nitrogen and phosphorus. Although nitrogen and phosphorus are essential for plant growth, high concentrations of these nutrients can cause eutrophication, a condition in which aquatic plant and algal growth is excessive. Plant and algae respiration and decomposition reduces dissolved oxygen concentrations in the water, creating poor habitat for fish and other aquatic animals. The MA SWQS at 314 CMR 4.05(5)(c) state "Unless naturally occurring, all surface waters shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses and shall not exceed the site specific criteria developed in a TMDL or as otherwise established by the Department pursuant to 314 CMR 4.00."

Nitrogen

The Huntington WWTP discharges to the West Branch Westfield River, which ultimately joins the Connecticut River and drains to Long Island Sound. It has been determined that excessive nitrogen loadings to Long Island Sound are causing significant water quality problems, including low levels of dissolved oxygen (hypoxia), that can exceed water quality standards and impair the function and health of the Sound. To address nitrogen-driven eutrophication impacts in Long Island Sound and improve water quality, the Connecticut Department of Energy and Environmental Protection (CT DEEP) completed a Total Maximum Daily Load (TMDL) for 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 percent reduction from the baseline total nitrogen loading estimated in the TMDL. The TMDL target of a 25 percent reduction from baseline loadings is currently being met, and the overall loading from MA, NH, and VT wastewater treatment plants discharging to the Connecticut River

watershed has been reduced by about 36 percent.

In order to ensure that the aggregate nitrogen loading from out-of-basin point sources does not exceed the TMDL target of a 25 percent reduction over baseline loadings, EPA intends to include nitrogen-related conditions in permits for existing treatment facilities in Massachusetts and New Hampshire, and included such monitoring requirements in the POTW General Permit. CT DEEP applied a threshold of 20 lbs/day (equivalent in impact to a 35 lb/day threshold at upstream facilities in MA and NH) when imposing nitrogen controls on existing facilities. See Nitrogen Control for Small Sewage Facilities; General Permit for Nitrogen Discharges. The current permit does not include requirements for annual monitoring of total ammonia nitrogen, total Kjeldahl nitrogen (TKN), total nitrite nitrogen (NO_2), total nitrate nitrogen (NO_3) or phosphorus, and as a result, there is no site-specific data available to calculate the nitrogen load from the Huntington WWTP. However, EPA has estimated a total daily load of 19.6 lbs/day total nitrogen from this facility based on an average value for Massachusetts secondary treatment facilities. See Attachment D.

To obtain a more accurate assessment of the nitrogen loading from the Huntington WWTP, the draft permit includes average monthly and maximum daily monitoring requirements for total nitrogen, ammonia nitrogen, TKN, total nitrite nitrogen, and total nitrate nitrogen at a frequency of one per month. In addition, Part I.B. of the draft permit requires an evaluation of current and/or alternative methods of operating the existing wastewater treatment facility in order to control total nitrogen levels, including, but not limited to, operational changes designed to enhance nitrification (seasonal and year round), incorporation of anoxic zones, septage receiving policies and procedures, and side stream management. This evaluation is required to be completed and submitted to EPA and MassDEP within one year of the effective date of the permit, along with a description of past and ongoing optimization efforts. The draft permit requires annual reports to be submitted that summarize progress and activities related to optimizing nitrogen removal efficiencies, document the annual nitrogen discharge load from the facility, and track trends relative to previous years. If the wastewater treatment system is optimized to remove total nitrogen to the greatest extent practicable, and if the effluent nitrogen monitoring results demonstrate a long-term decreasing trend in total nitrogen loading to the receiving water, the permittee may submit a written request to EPA for a reduction of the total nitrogen monitoring requirements.

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

Total Phosphorus

While phosphorus is an essential nutrient for the growth of aquatic plants, it can stimulate rapid

plant growth in freshwater ecosystems when it is present in high quantities. The excessive growth of aquatic plants and algae within freshwater systems negatively impacts water quality and can interfere with the attainment of designated uses by: (1) increasing the oxygen demand within the water body (to support an increase in both plant respiration and the biological breakdown of dead organic (plant) matter); (2) causing an unpleasant appearance and odor; (3) interfering with navigation and recreation; (4) reducing water clarity; and (5) reducing the quality and availability of suitable habitat for aquatic life. Cultural (or accelerated) eutrophication is the term used to describe dense and excessive plant growth in a water body that results from nutrients entering the system as a result of human activities.

Discharges from municipal and industrial wastewater treatment plants, agriculture runoff, and stormwater are examples of human-derived (i.e., anthropogenic) sources of nutrients in surface waters. The MA SWQS at 314 CMR 4.05(5)(c) require that, unless naturally occurring, surface waters must be free from nutrients that cause or contribute to impairment of the existing or designated uses, and the concentration of phosphorus may not exceed site specific criteria developed in a TMDL. Any existing point source discharge containing nutrients in concentrations that would cause or contribute to cultural eutrophication, including the growth of aquatic plants or algae, in any surface water shall be provided with the most appropriate treatment, including, where necessary, highest and best practical treatment for POTWs, to remove such nutrients and to ensure the protection of existing and designated uses. As previously noted, the Westfield River mainstem, downstream of the outfall, is listed as impaired for excess algal growth, which is commonly an effect of excessive seasonal phosphorus input in freshwater. The additional downstream impairments for aquatic macroinvertebrate bioassessment and taste and odor may also be associated with excessive phosphorus. There is currently no TMDL to address these impairments in the Westfield River.

In the absence of numeric criteria for phosphorus, EPA uses nationally recommended criteria and other technical guidance to develop effluent limitations for the discharge of phosphorus. EPA has published national guidance documents which contain recommended total phosphorus criteria and other indicators of eutrophication. EPA's 1986 Quality Criteria for Water (the "Gold Book") recommends that in-stream phosphorus concentrations not exceed 0.05 mg/l in any stream entering a lake or reservoir, 0.1 mg/l for any stream not discharging directly into lakes or impoundments, and 0.025 mg/l within a lake or reservoir. For this segment of the West Branch Westfield River, the 0.1 mg/l recommendation would apply.

EPA has also released recommended Ecoregional Nutrient Criteria, established as part of an effort to reduce problems associated with excess nutrients in water bodies in specific areas of the country. The published criteria represent conditions in waters within ecoregions that are minimally impacted by human activities, and thus free from the effects of cultural eutrophication. Huntington is located within Ecoregion VIII, Nutrient-Poor, Largely Glaciated Upper Midwest and Northeast. The recommended total phosphorus criterion for this ecoregion, found in Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion VIII (EPA December 2001) is 10 ug/l (0.01 mg/l).

The effects-based Gold Book threshold is a general target applicable in free-flowing streams. As the Gold Book notes, there are natural conditions of a water body that can result in either

increased or reduced eutrophication response to phosphorus inputs; in some waters more stringent phosphorus reductions may be needed, while in some others a higher total phosphorus threshold could be assimilated without inducing a eutrophic response. Elevated concentrations of chlorophyll a, excessive algal and macrophyte growth, and low levels of dissolved oxygen are all effects of nutrient enrichment. The relationship between these factors and high in-stream total phosphorus concentrations is well documented in scientific literature, including guidance developed by EPA to address nutrient over-enrichment (Nutrient Criteria Technical Guidance Manual – Rivers and Streams. (EPA July 2000 [EPA822-B-00-002]). EPA is not aware of any evidence that the West Branch Westfield River is unusually susceptible to eutrophication impacts, so that the 100 ug/l threshold appears sufficient in this receiving water. With respect to factors that can reduce susceptibility, the Gold Book identifies morphometric features (steep banks, great depths and substantial flows), limitation by nutrients other than phosphorus, reduced light penetration where waters are highly laden with natural silts or color, or other naturally occurring phenomena that limit plant growth. EPA is not aware of evidence that any of these factors are reducing eutrophic response in the Westfield River downstream of the discharge.

A representative sample of in-stream phosphorus upstream of the discharge is not available at

$$Q_rC_r = Q_dC_d + Q_sC_s$$

Where:

Q_d = Effluent design flow = 0.2 mgd
C_d = Effluent phosphorus concentration
Q_s = Upstream receiving water 7Q10 flow = 5.24 mgd
Q_r = Upstream receiving water phosphorus concentration = 0.02 mg/L
C_r = Downstream phosphorus concentration (here equal to Gold Book criterion 0.1 mg/L)
Q_r = Downstream flow (Qd + Qs) = 5.44 mgd

Solving for the effluent phosphorus concentration (C_d):

$$C_d = \frac{Q_rC_r - Q_sC_s}{Q_d}$$

$$C_d = \frac{(5.44 \text{ mgd} * 0.1 \text{ mg/L}) - (5.24 \text{ mgd} * 0.02 \text{ mg/L})}{0.2 \text{ mgd}} = \mathbf{2.18 \text{ mg/L}}$$

for the Huntington WWTP. In the absence of representative upstream data, and based on experience in similar watersheds, EPA is using an in-stream phosphorus concentration of 20 µg/l as the upstream concentration to determine the effluent phosphorus concentration that would result in reasonable potential to exceed the Gold Book criterion of 100 µg/L downstream.

As shown above, there is reasonable potential for the discharge to cause the West Branch Westfield River downstream to exceed the Gold Book criterion (0.1 mg/L) if the effluent concentration exceeds 2.18 mg/L. To address this potential, the draft permit imposes an effluent limit for phosphorus. Based on the permittee's request, this limit will be applied as a mass-

based limit. To ensure that the mass-based limit is protective under worst-case conditions, the limit is calculated using the lowest expected receiving water and effluent flows. In this case, the upstream 7Q10 flow and the lowest monthly average effluent flow during the months of July through September are used. At the Huntington WWTP, the lowest summer period monthly average effluent flow reported during the past five years is 0.05 mgd.

The phosphorus load downstream of the discharge (L_R) in pounds per day (lb/d) is equal to the upstream load (L_{Up}) plus the effluent load (L_D).

$$L_R = L_{Up} + L_D$$

The equation can be rearranged to determine the maximum allowable effluent load (L_D) that would result in a downstream phosphorus load (L_R) in compliance with the Gold Book criterion (0.1 mg/L) assuming an upstream phosphorus load based on a concentration of 20 µg/l (0.02 mg/L) at critical low flow conditions.

$$L_D = L_R - L_{Up}$$

The upstream phosphorus load (L_{Up}) is the product of the upstream phosphorus concentration ($C_{R\ Up}$), the 7Q10 low flow (Q_{7Q10}) and a factor to convert from concentration (mg/L at mgd) to pounds per day (lb/d).

$$L_{Up} = C_{R\ Up} * Q_{7Q10} * \text{Conversion Factor}$$

$$L_{Up} = 0.02 \text{ mg/L} * 5.24 \text{ mgd} * 8.34 = 0.87 \text{ lb/d}$$

An in-stream phosphorus load downstream of the discharge (L_R) that meets the Gold Book criteria of 100 µg/L is the product of the criteria expressed as mg/L (C_R), the downstream flow (Q_R), and a conversion factor. The downstream flow (Q_R) is the sum of the upstream 7Q10 low flow (Q_{7Q10}) and 0.05 mgd ($Q_{D\ Low}$, which is the lowest summer period monthly average effluent flow for the past five years).

$$L_R = C_R * (Q_{7Q10}+Q_{D\ Low}) * \text{conversion factor}$$

$$L_R = 0.1 \text{ mg/L} * (5.24 \text{ mgd} + 0.05 \text{ mgd}) * 8.34 = 4.41 \text{ lb/d}$$

The maximum phosphorus load in the effluent during summer operations that would comply with the Gold Book criteria downstream under critical flow conditions is:

$$L_D = L_R - L_{Up}$$

$$L_D = 4.41 \text{ lb/d} – 0.87 \text{ lb/d} = \mathbf{3.54\ lb/d}$$

The calculation above indicates that an effluent load of no more than 3.5 lb/d is necessary for the protection of water quality standards during low flow conditions. In other words, a phosphorus load limitation of 3.5 pounds per day is necessary to meet the narrative water quality standard ensuring that existing point source discharges from POTWs that would cause or contribute to cultural eutrophication are provided with the highest and best practical

treatment to ensure the protection of existing and designated uses. *See* 314 CMR 4.05(5)(c).

The draft permit includes a mass-based monthly average phosphorus limit of 3.5 pounds per day in the effluent. This limit applies seasonally, from April 1st through October 31st, and shall be monitored once per week. In addition, the draft permit includes a requirement to monitor in-stream total phosphorus upstream of the discharge monthly from June through September to confirm that the in-stream concentration used in the mass balance equation is representative of the West Branch Westfield River.

7. Metals

Certain metals in water can be toxic to aquatic life. There is a need to limit toxic metal concentrations in the effluent where aquatic life may be impacted. Metals may be present in both dissolved and particulate forms in the water column. However, extensive studies suggest that it is the dissolved fraction that is biologically available, and therefore, presents the greatest risk of toxicity to aquatic life inhabiting the water column. This conclusion is widely accepted by the scientific community both within and outside of EPA (Water Quality Standards Handbook: Second Edition, Chapter 3.6 and Appendix J, EPA 1994 [EPA 823-B-94-005a]. Also see http://www.epa.gov/waterscience/standards/ handbook/chapter03.html#section6). As a result, water quality criteria are established in terms of dissolved metals.

However, many inorganic components of domestic wastewater, including metals, are in the particulate form, and differences in the chemical composition between the effluent and the receiving water affects the partitioning of metals between the particulate and dissolved fractions as the effluent mixes with the receiving water, often resulting in a transition from the particulate to dissolved form (The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion (USEPA 1996 [EPA-823-B96-007]). Consequently, quantifying only the dissolved fraction of metals in the effluent prior to discharge may not accurately reflect the biologically-available portion of metals in the receiving water. Regulations at 40 CFR 122.45(c) require, with limited exceptions, that metals limits in NPDES permits be expressed as total recoverable metals.

An evaluation of Whole Effluent Toxicity (WET) reports submitted to the permitting agencies between August 2005 and September 2014 indicates that the Huntington WWTP effluent includes detectable levels of aluminum, copper, lead, nickel, and zinc (see Attachment E). The facility's effluent concentrations were characterized assuming a lognormal distribution in order to determine the estimated 95th percentile of the daily maximum. For metals with hardness-based water quality criteria (copper, lead, nickel, and zinc), the criteria were determined using the equations in EPA's 2002 *National Recommended Water Quality Criteria* using the appropriate factors for the individual metals found in the MA SWQS (see Table 1 below).

Hardness

Certain metals, including cadmium, lead, nickel, and zinc, are more toxic at lower hardness, and this is factored into calculations of the water quality criteria. EPA's Office of Water – Office of Science and Technology stated in a letter dated July 7, 2000 that: "The hardness of the water

containing the discharged toxic metals should be used for determining the applicable criterion. Thus, the downstream hardness should be used."

The theoretical hardness of Westfield River downstream of the treatment plant during critical low flow periods and design discharge flow was calculated based on the median ambient and effluent hardness value reported in the facility's whole effluent toxicity tests conducted in the summer months of August 2005 – 2014 (i.e., see Table 1 below).

Table 1. West Branch Westfield River and Huntington WWTP Hardness WET Results.

Test Date	Effluent Hardness, mg/l (as CaCO3)	Ambient Hardness, mg/l (data collected upstream)
7/14/2005	70	29
8/3/2006	63.0	33.0
8/16/2007	61.4	31.8
8/14/2008	66.0	24.1
8/20/2009	54.1	26.9
8/19/2010	64.0	30.8
8/22/2012	63.2	33.1
8/14/2013	45.2	29.8
8/13/2014	55.5	31.3
Median	**63.1**	**31.1**

Calculation of hardness in the receiving water:

$$C_r = (Q_d C_d + Q_s C_s)/Q_r$$

$$C_r = (0.31 \text{ cfs})(63.1 \text{ mg/l}) + (8.1 \text{ cfs})(31.1 \text{ mg/l})/ (8.41 \text{ cfs}) = \mathbf{32.3\ mg/l}$$

Where:

Q_s = 7Q10 river stream flow upstream of plant = 8.1 cfs
Q_d = Design discharge flow from plant = 1.5 MGD = 0.31 cfs
Q_r = Combined stream flow (7Q10 + plant flow) = (8.1 + 0.31) = 8.41 cfs
C_s = Upstream hardness concentration = 31.1 mg/l as CaCo3

C_d = Plant discharge hardness concentration = 63.1 mg/l as CaCo3
C_r = Receiving water hardness concentration

Water Quality Criteria

Therefore, a hardness of 32.3 mg/l as CaCo3 was used to calculate the water quality criteria for certain metals. Table 2 presents the factors used to determine the acute and chronic total recoverable criteria for each metal.

Table 2. Factors used to calculate acute and chronic total recoverable criteria.

Metal	Parameters				Total Recoverable Criteria	
	ma	ba	mc	bc	Acute Criteria (CMC) (µg/L)	Chronic Criteria (CCC) (µg/L)
Aluminum	—	—	—	—	750	87
Cadmium	1.0166	-3.9240	0.7409	-4.7190	0.68	0.12
Copper	0.9422	-1.7000	0.855	-1.702	4.85	3.57
Lead	1.273	-1.46	1.273	-4.705	19.50	0.76
Nickel	0.846	2.255	0.846	0.0584	181.15	20.14
Zinc	0.8473	0.884	0.847	0.884	46.19	46.19

* Acute Criteria (CMC) = $\exp\{m_a*\ln(\text{hardness})+b_a\}$
** Chronic Criteria (CCC) = $\exp\{m_c*\ln(\text{hardness})+b_c\}$

Reasonable Potential Analysis

In order to determine whether the effluent has the reasonable potential to cause or contribute to an exceedance above the in-stream water quality criteria for each metal, the following mass balance is used to project in-stream metal concentrations downstream from the discharge.

$$Q_d C_d + Q_S C_S = Q_r C_r$$

rewritten as:

$$C_r = \frac{Q_d C_d + Q_S C_S}{Q_r}$$

where:

Q_d = effluent flow (design flow = 0.2 mgd = 0.31 cfs)

C_d = effluent metals concentration in ug/L (95th percentile[3])
Q_S = upstream 7Q10 low flow (8.1 cfs)
C_S = median upstream metals concentration in ug/L
Q_r = stream flow downstream, after discharge ($Q_d + Q_s$ = 8.41 cfs)
C_r = downstream pollutant concentration in ug/L

Reasonable potential is then determined by comparing this resultant in-stream concentration (for both acute and chronic conditions) with the criteria for each metal. EPA's Technical Support Document for Water Quality Based Toxics Control (EPA/5-5/2-90-001, March 1991), commonly known as the "TSD," describes the statistical approach in determining if there is reasonable potential for an excursion above the maximum allowable concentration (see Attachment F). If there is reasonable potential (for either acute or chronic conditions), the appropriate limit is then calculated by rearranging the above mass balance to solve for the effluent concentration (C_d) using the criterion as the resultant in-stream concentration (C_r). Note that if a limit is calculated to be lower than the criterion, then the limit is set at the criterion. See Table 3 below for the results of this analysis with respect to aluminum, copper, lead, nickel and zinc.

[3] For the Huntington WWTP, WET data was available for 10 sample dates, and the 95th percentile of the effluent was calculated and used for C_d. *See* Attachment E for details of this statistical approach.

Table 3. Results of Reasonable Potential Analysis for Metals at Huntington WWTP.

Metal	Qd	Cd (95th Percentile)	Qs	Cs (Median)	Qr	Cr	Criteria		Acute Reasonable Potential	Chronic Reasonable Potential	Limits	
	cfs	µg/l	cfs	µg/l	cfs	µg/l	Acute (µg/l)	Chronic (µg/l)	Cd & Cr > Criteria	Cd & Cr > Criteria	Acute (µg/l)	Chronic (µg/l)
Aluminum	0.31	299	8.1	53	8.41	62.1	750	87	N	N	N/A	N/A
Copper		103		3		6.69	4.85	3.57	Y	Y	**53**	**18**
Lead		14		0		0.52	19.50	0.76	N	N	N/A	N/A
Nickel		7		2		2.18	181.15	20.14	N	N	N/A	N/A
Zinc		140		4		9.0	46.19	46.19	N	N	N/A	N/A

As indicated in Table 3, based on the maximum measured effluent concentrations and median upstream concentrations there is no reasonable potential (for either acute or chronic conditions) that the discharge of aluminum, cadmium, nickel, lead, or zinc will cause or contribute to an exceedance of the applicable water quality criteria. The draft permit does not include limits for these metals, although monitoring and reporting for all metals will continue to be required as part of the WET tests. However, there is reasonable potential for copper to cause or contribute to an exceedance of the acute and chronic water quality criteria. The draft permit contains a monthly average (chronic) copper limit of 18 µg/L and maximum daily (acute) copper limit of 53 µg/L. The draft permit also includes a 24-month compliance schedule to enable the permittee to evaluate its options for achieving these limits.

8. Whole Effluent Toxicity

The Massachusetts Surface Water Quality Standards at 314 CMR 4.05(5)(e) include the following narrative criteria:

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

As set forth in the *MassDEP Implementation Policy for the Control of Toxic Pollutants in Surface Waters*, "in terms of biotoxicity tests the Division interprets its narrative criterion for the protection of aquatic life to mean that acceptable receiving water concentration whole effluent toxicity is the highest measured continuous concentration of an effluent that causes no observed acute or chronic effect on a representative standard test organism." This is consistent with EPA policy and guidance. (See, e.g., *Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants*, 50 Fed. Reg. 30,784 (July 24, 1985); TSD). National studies conducted by EPA have demonstrated that domestic sources contribute toxic constituents to WWTPs. These constituents include metals, chlorinated solvents and aromatic hydrocarbons among others. The impact of the toxicity of several constituents in a single effluent is accomplished through whole effluent toxicity (WET) testing.

The principal advantages of biological techniques are: (1) the effects of complex discharges of many known and unknown constituents can be measured only by biological analyses; (2) bioavailability of pollutants after discharge is best measured by toxicity testing including any synergistic effects of pollutants; and (3) pollutants for which there are inadequate chemical analytical methods or criteria can be addressed. Therefore, toxicity testing is being used in conjunction with pollutant specific control procedures to control the discharge of toxic pollutants.

The frequency and type of WET tests depend on the dilution factor and risk factor. As recommended by MassDEP in the *Implementation Policy for the Control of Toxic Pollutants in Surface Waters*, POTW discharges having a dilution ratio between 10 and 100 require acute toxicity testing with a $LC_{50} \geq 100\%$ four times per year. The dilution factor for this facility is 27. The current permit requires a test frequency of once per year. The facility currently conducts WET testing during August or September when low flow conditions are most likely to occur. Results of WET testing since 2006 indicates that the facility has consistently met the acute toxicity limit (see Attachment E). The draft permit continues to require an acute limit at an $LC_{50} \geq 100\%$ with a monitoring frequency of once per year during the third quarter (July to September). The acute toxicity testing protocol is Attachment A

to the draft permit.

VIII. Sludge

Section 405(d) of the CWA requires that EPA develop technical standards regulating the use and disposal of sewage sludge. These regulations were signed on November 25, 1992, published in the Federal Register on February 19, 1993, and became effective on March 22, 1993. Domestic sludge that is land applied, disposed of in a surface disposal unit, or fired in a sewage sludge incinerator is subject to Part 503 technical standards and to State Env-Wq 800 standards. Part 503 regulations have a self-implementing provision, however, the CWA requires implementation through permits. Domestic sludge which is disposed of in municipal solid waste landfills are in compliance with Part 503 regulations provided the sludge meets the quality criteria of the landfill and the landfill meets the requirements of 40 CFR Part 258.

The draft permit has been conditioned to ensure that sewage sludge use and disposal practices meet the CWA Section 405(d) Technical Standards. In addition, EPA-New England has prepared a 72-page document entitled "EPA Region I NPDES Permit Sludge Compliance Guidance" for use by the permittee in determining their appropriate sludge conditions for their chosen method of sewage sludge use or disposal practices. This guidance document is available upon request from EPA Region 1 and may be found at: http://www.epa.gov/region1/npdes/permits/generic/sludgeguidance.pdf. The permittee is required to submit an annual report to EPA Region 1 and MassDEP, by February 19th each year, containing the information specified in the Sludge Compliance Guidance document for their chosen method of sewage sludge use or disposal practices.

IX. Operation and Maintenance

The permit standard conditions for "Proper Operation and Maintenance," set forth in 40 CFR § 122.41(e), 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), which requires that "all reasonable steps be taken 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 maintain that an infiltration/inflow (I/I) removal program is an integral component to ensuring compliance with the requirements of the permit under the provisions at 40 CFR § 122.41(d) and (e).

General requirements for proper operation and maintenance, and mitigation, have been included in Part II of the draft permit. Specific permit conditions have also been included in Part I.E of the draft permit. These requirements included maintaining an adequate maintenance staff, performing preventative maintenance, controlling infiltration and inflow into the system, mapping the wastewater collection system, and maintaining alternate power where necessary. These requirements are included to minimize the occurrence of permit violations that have a reasonable likelihood of adversely affecting human health or the environment.

Infiltration is groundwater that enters the collection system through physical defects such as cracked pipes or deteriorated joints. Inflow is extraneous flow that enters the collection system through point sources such as roof leaders, 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 (SSOs) in separate systems, and combined sewer overflows (CSOs) in combined systems.

The draft permit includes a requirement for the permittee to control infiltration and inflow (I/I) within the sewer collection system it owns and operates. The permittee shall develop an I/I removal program commensurate with the severity of I/I in the collection system. This program may be scaled down in sections of the collection system that have minimal I/I.

Several of the requirements in the draft permit are not included in the current permit, including collection system mapping and preparation of a collection system operation and maintenance plan. EPA and MassDEP have determined that these additional requirements are necessary to ensure the proper operation and maintenance of the collection system and has included schedules for completing these requirements in the draft permit.

X. Antidegradation

This draft permit is being reissued with an allowable waste-load identical to the current permit and there has been no change in outfall location. The State of Massachusetts has indicated that there will be no lowering of water quality and no loss of existing water uses and that no additional anti-degradation review is warranted.

XI. Essential Fish Habitat

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 as: waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity [16 U.S.C. § 1802 (10)]. Adversely impact means any impact which reduces the quality and/or quantity of EFH (50 C.F.R. § 600.910 (a)). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

Essential fish habitat is only designated for species for which federal fisheries management plans exist [16 U.S.C. § 1855(b)(1)(A)]. EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999. Anadromous Atlantic salmon (*Salmo salar*) is the only managed species that could occur within the area which encompasses the discharge site. EPA does not expect that any life stages of Atlantic salmon would be present in the West Branch Westfield River at the WWTP outfall for the following reasons: (1) there is a notable distance between the Connecticut River and the outfall, which is approximately 25 miles upstream of the confluence of the Chicopee and Connecticut Rivers and upstream of three separate dams, two of which provide no access for migrating fish; and (2) Atlantic salmon fry are no longer stocked in rivers in the Commonwealth.

In this case, however, EPA has adopted a conservative approach and conducted an EFH review of this permit action under the premise that juvenile and adult life stages of Atlantic salmon may be present in the vicinity of the facility's discharge. Under this scenario, EPA has determined that the draft permit has been conditioned in such a way to be protective of EFH for the following reasons:

- This permit action is a reissuance of an existing NPDES permit (i.e., not a new source of pollutants);
- The facility withdraws no water from the West Branch Westfield River, so there is no potential for mortality to EFH species life stages from impingement or entrainment;
- While the effluent dilution is calculated to be 27:1, the dilution within 500 feet downstream of the discharge is judged to increase rapidly when the West Branch combines with the main stem of the Westfield River;
- The draft permit prohibits the discharge of pollutants or combinations of pollutants in toxic amounts;
- The draft permit prohibits a violation of water quality standards;
- Effluent limits and requirements were developed to be protective of aquatic life;
- Acute and chronic toxicity tests will be performed annually; and
- Limits specifically protective of aquatic organisms have been established for total residual chlorine and total recoverable copper based on water quality criteria.

EPA believes that the limitations and conditions in the draft permit adequately protect aquatic life, including those with designated EFH in the receiving water, and therefore additional mitigation is not warranted. If adverse impacts to EFH are detected as a result of this permit action, or if new information is received that changes the basis for our conclusion, NMFS will be notified and an EFH consultation will be initiated.

As a federal agency charged with authorizing the discharge from this facility, EPA has submitted the draft permit and fact sheet, along with a letter under separate cover, to NMFS Habitat Division.

XII. Endangered Species Act

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA) grants authority to and imposes requirements upon Federal agencies regarding endangered or threatened species of fish, wildlife, or plants ("listed species") and habitat of such species that has been designated as critical (a "critical habitat"). The ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of 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 United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. The National Marine Fisheries Service (NMFS) administers Section 7 consultations for marine species and anadromous fish.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, or plants to determine if any listed species might potentially be impacted by the re-issuance of this NPDES permit. The two listed species that have the potential to be present in the vicinity of the Huntington WWTP are the shortnose sturgeon (*Acipenser brevirostrum*) and the dwarf wedgemussel (*Acipenser*

oxyrinchus oxyrinchus).

The information on shortnose sturgeon presented below was taken primarily from the Draft Endangered Species Act Section 7 Consultation Biological Opinion (BO) for the Holyoke Hydroelectric Project (Federal Energy Regulatory Commission (FERC) Permit #2004), issued to FERC by NOAA Fisheries on September 1, 2004. Additional information was taken from the NMFS Protected Resource Division (PRD) August 9, 2007 letter to EPA. No part of the Westfield River has been characterized as a concentration area for shortnose sturgeon. Further, the Huntington WWTP is located more than 25 miles upstream of the confluence with the Connecticut River, and upstream passage is blocked by three separate dams (at the Woronoco Hydroelectric Project, the Indian River Hydroelectric Project in Russell, and the Crescent Mills Hydroelectric Project), at least two of which provide no upstream fish access. Given the distance and blockage of upstream migratory routes, shortnose sturgeon would not be expected in the action area of the discharge.

The federally endangered dwarf wedgemussel (*Alasmidonta heterodon*) has been historically found in the Westfield River and is currently found in the Connecticut River in Hampshire County. The species is unlikely, however, to occur in the West Branch Westfield River presently, and according to site data from the dwarf wedgemussel 5-year Review: Summary and Evaluation (USFWS New England Field Office 2007), recent populations of dwarf wedgemussel in Massachusetts are limited to the Mill River and Fort River. A freshwater mussel survey conducted in the vicinity of the Main Street Bridge on the main stem of the Westfield River in Russell for the proposed Russell Biomass facility observed no individuals (2008 FEIS for the Russell Biomass Project: Appendix F).

Based on the normal and expected distribution of these species, it is extremely unlikely that there would be any NMFS listed species in the vicinity of the action area of the facility's discharge. EPA has made the determination that no protected species are present in the area influenced by the discharge. Therefore, EPA has made the assessment that consultation is not required for these protected species under section 7 of the ESA.

XIII. Monitoring and Reporting

The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308 (a) of the CWA in accordance with 40 CFR §§ 122.41(j), 122.44(l), and 122.48.

The Draft Permit requires the permittee to report monitoring results obtained during each calendar month in the Discharge Monitoring Reports (DMRs) no later than the 15th day of the month following the completed reporting period.

The Draft Permit includes new provisions related to electronic DMR submittals to EPA and the State. The Draft Permit requires that, no later than six months after the effective date of the permit, the permittee submit all DMRs to EPA using NetDMR, unless the permittee 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").

In the interim (until six months from the effective date of the permit), the permittee may either submit monitoring data to EPA in hard copy form, or report electronically using NetDMR.

NetDMR is a national web-based tool for regulated Clean Water Act permittees to submit DMRs electronically via a secure Internet application to U.S. EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in hard copy forms under 40 CFR § 122.41 and § 403.12. NetDMR is accessed from the following url: http://www.epa.gov/netdmr. Further information about NetDMR can be found on the EPA Region 1 NetDMR website located at http://www.epa.gov/region1/npdes/netdmr/index.html.

EPA currently conducts free training on the use of NetDMR, and anticipates that the availability of this training will continue to assist permittees with the transition to use of NetDMR. To learn more about upcoming trainings, please visit the EPA Region 1 NetDMR website http://www.epa.gov/region1/npdes/netdmr/index.html .

The Draft Permit also includes an "opt-out" request process. Permittees who believe they can not use NetDMR due to technical or administrative infeasibilities, or other logical reasons, must demonstrate the reasonable basis that precludes the use of NetDMR. These permittees must submit the justification, in writing, to EPA at least sixty (60) days prior to the date the facility would otherwise be required to begin using NetDMR. Opt-outs become effective upon the date of written approval by EPA and are valid for twelve (12) months from the date of EPA approval. The opt-outs expire at the end of this twelve (12) month period. Upon expiration, the permittee must submit DMRs to EPA using NetDMR, unless the permittee submits a renewed opt-out request sixty (60) days prior to expiration of its opt-out, and such a request is approved by EPA.

In most cases, reports required under the permit shall be submitted to EPA as an electronic attachment through NetDMR, subject to the same six month time frame and opt-out provisions as identified for NetDMR. Certain exceptions are provided in the permit such as for providing written notifications required under the Part II Standard Permit Conditions. Once a permittee begins submitting reports to EPA 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 must continue to send hard copies of reports other than DMRs to MassDEP until further notice from MassDEP.

Until electronic reporting using NetDMR begins, or for those permittees that receive written approval from EPA to continue to submit hard copies of DMRs, the Draft Permit requires that submittal of DMRs and other reports required by the permit continue in hard copy format. Hard copies of DMRs must be postmarked no later than the 15th day of the month following the completed reporting period.

XIV. State Certification Requirements

EPA may not issue a permit in the Commonwealth of Massachusetts unless MassDEP certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards or it is deemed that the state certification is waived. MassDEP has reviewed the Draft Permit and advised that EPA that the limitations are adequate to protect water quality. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the Draft Permit will be certified.

XV. Comment Period, Hearing Requests, and Procedures for Final Decisions

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the U.S. EPA, Office of Ecosystem Protection, Attn: Danielle Gaito, 5 Post Office Square, Suite 100 (OEP06-4), Boston, Massachusetts 02109-3912 or via email to gaito.danielle@epa.gov. 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 proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 CFR § 124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA 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 any public hearings, if such hearings are held, the EPA will issue a Final Permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the Final Permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 CFR § 124.19.

XVI. EPA and MassDEP Contacts

Additional information concerning the Draft Permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays from:

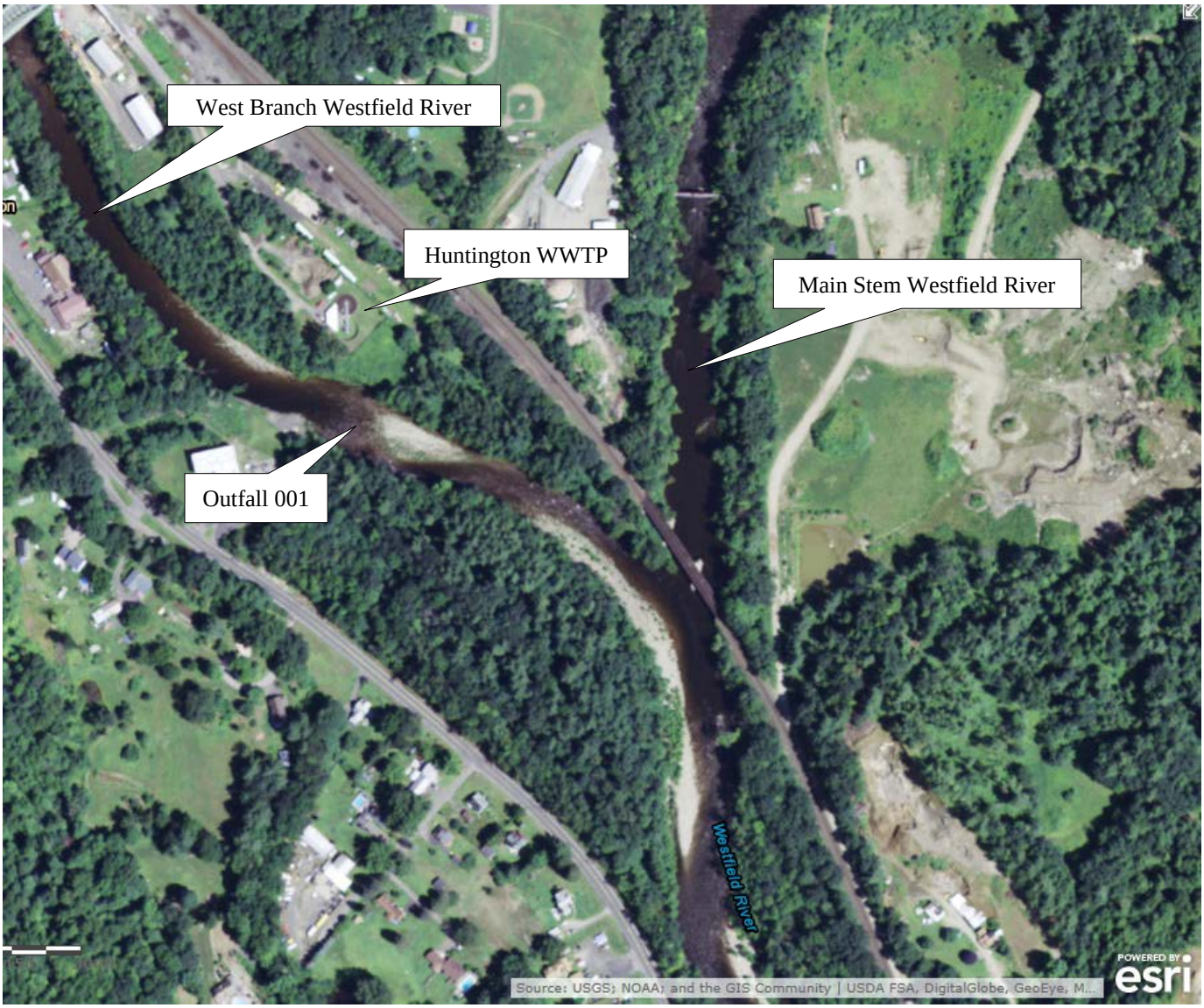
Danielle Gaito
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100 (OEP06-4)
Boston, MA 02109-3912
Tel: (617) 918-1297 Fax: (617)918 -0297
gaito.danielle@epa.gov

Claire Golden
Massachusetts Department of Environmental Protection
205B Lowell Street
Wilmington, MA 01887
Tel: (978) 694-3244 Fax: (978) 694-3498
claire.golden@state.ma.us

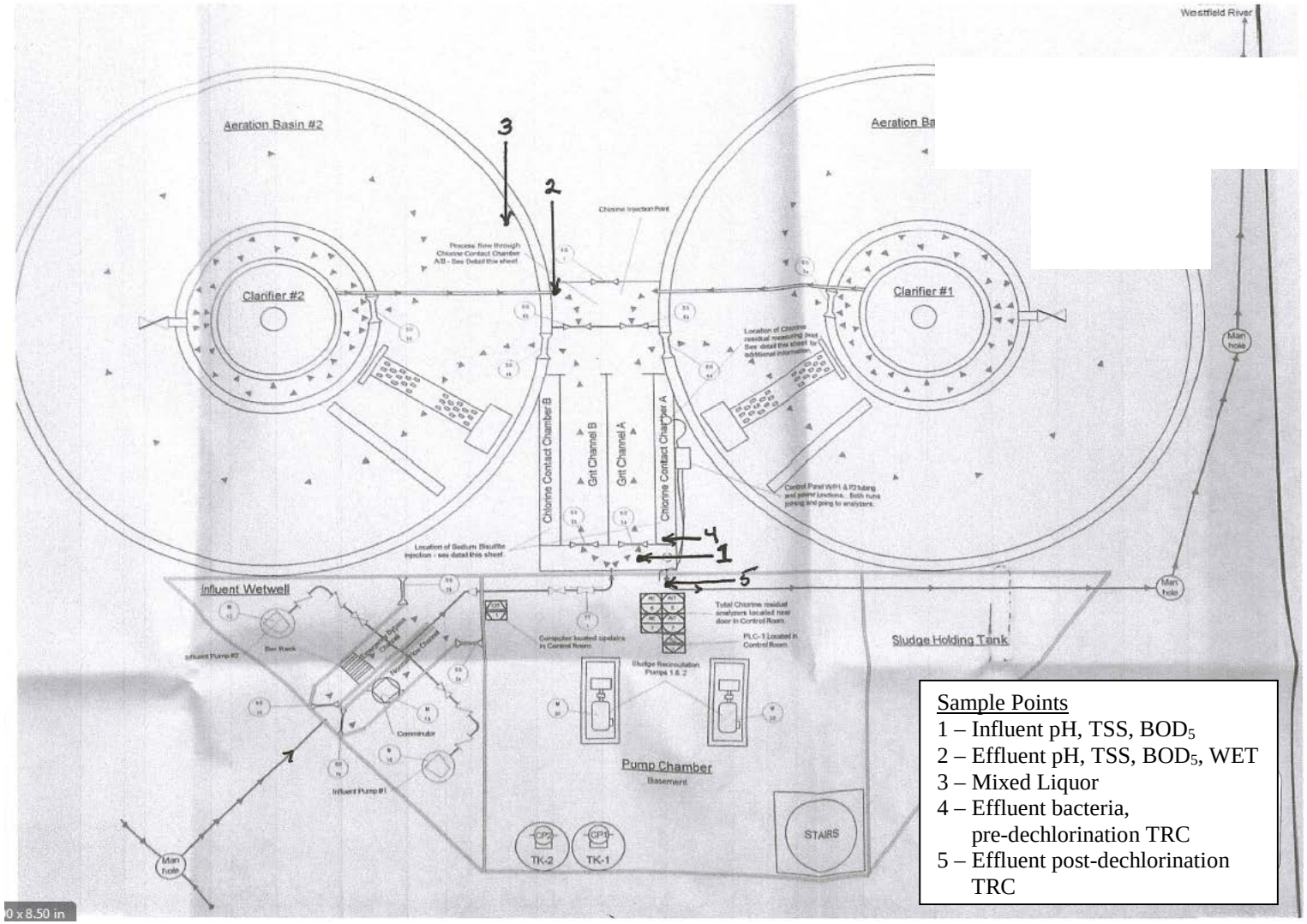
_____

Ken Moraff, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

ATTACHMENT A: SITE LOCATION



ATTACHMENT B: FLOW DIAGRAM



ATTACHMENT C: DISCHARGE MONITORING REPORT SUMMARY DATA

	BOD5				Total Residual Chlorine		Fecal Coliform		Effluent Flow	
Monitoring Period End Date	Average Monthly lb/day	Average Monthly mg/L	Average Weekly lb/d	Average Weekly mg/L	Average Monthly mg/L	Maximum Daily mg/L	Average Monthly cfu/100 mL	Maximum Daily cfu/100 mL	Average Monthly MGD	Maximum Daily MGD
1/31/2010	18.6	10.8	8.4	13.9					0.07	0.15
2/28/2010	5.8	12.1	6.8	12.9					0.08	0.20
3/31/2010	14.1	13.3	18.2	15.1					0.06	0.28
4/30/2010	7.6	8.6	13.9	10.0	0.30	0.50	10.0	10.0	0.07	0.17
5/31/2010	4.4	9.7	6.3	14.2	0.30	0.40	10.0	10.0	0.07	0.06
6/30/2010	3.8	9.5	6.2	13.1	0.30	0.40	10.0	10.0	0.07	0.09
7/31/2010	3.4	9.4	4.5	11.7	0.30	0.50	10.0	10.0	0.06	0.07
8/31/2010	2.8	8.4	3.3	9.6	0.30	0.50	10.0	10.0	0.06	0.06
9/30/2010	3.8	8.8	4.6	10.8	0.40	0.50	10.0	10.0	0.06	0.10
10/31/2010	4.4	9.5	6.3	10.1	0.30	0.50	10.0	10.0	0.06	0.09
11/30/2010	5.2	9.7	5.6	9.6					0.06	0.07
12/31/2010	5.7	6.6	7.4	9.2					0.04	0.12
1/31/2011	5.3	9.6	7.1	10.2					0.06	0.08
2/28/2011	5.5	11.7	7.1	13.4					0.06	0.08
3/31/2011	10.0	9.4	13.1	11.1					0.06	0.29
4/30/2011	8.2	11.8	12.0	14.6	0.20	0.40	10.0	10.0	0.06	0.13
5/31/2011	7.3	8.8	9.4	10.0	0.20	0.30	10.0	20.0	0.07	0.15
6/30/2011	5.4	10.4	6.6	12.2	0.20	0.40	10.0	10.0	0.07	0.09
7/31/2011	6.4	12.3	10.4	16.7	0.30	0.40	10.0	10.0	0.07	0.08
8/31/2011	4.2	11.5	5.3	12.8	0.30	0.50	10.0	120.0	0.07	0.43
9/30/2011	14.7	12.2	35.7	15.4	0.30	0.40	30.0	400.0	0.08	0.30
10/31/2011	15.2	9.9	10.2	11.0	0.30	0.40	30.0	10.0	0.08	0.20
	BOD5				Total Residual Chlorine		Fecal Coliform		Effluent Flow	

Monitoring Period End Date	Average Monthly	Average Monthly	Average Weekly	Average Weekly	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily
	lb/day	mg/L	lb/d	mg/L	mg/L	mg/L	cfu/100 mL	cfu/100 mL	MGD	MGD
11/30/2011	8.1	11.4	9.4	12.7					0.08	0.12
1/31/2012	6.0	15.3	7.2	13.7					0.81	0.09
2/29/2012	8.4	15.5	14.8	27.2					0.08	0.09
3/31/2012	6.6	12.8	11.0	21.7					0.07	0.08
4/30/2012	4.6	10.9	5.4	11.4	0.20	0.30	10.0	30.0	0.07	0.06
5/31/2012	5.7	10.8	8.8	11.9	0.20	0.30	10.0	10.0	0.07	0.10
6/30/2012	4.6	9.7	5.8	11.0	0.20	0.30	10.0	20.0	0.07	0.11
7/31/2012	3.0	9.7	3.7	11.3	0.20	0.40	10.0	10.0	0.07	0.07
8/31/2012	3.9	10.6	4.3	12.4	0.20	0.30	10.0	40.0	0.06	0.05
9/30/2012	3.4	10.6	4.2	12.1	0.30	0.50	10.0	10.0	0.06	0.14
10/31/2012	3.9	9.9	4.1	10.4	0.30	0.40	10.0	10.0	0.06	0.20
11/30/2012	3.5	9.6	4.0	11.4					0.05	0.06
12/31/2012	4.6	12.7	5.5	13.6					0.05	0.09
1/31/2013	5.6	12.4	7.0	14.2					0.05	0.07
2/28/2013	6.4	12.2	5.0	10.9					0.05	0.09
3/31/2013	5.6	12.0	8.4	12.7					0.06	0.14
4/30/2013	5.7	12.5	6.9	12.2	0.02	0.90	10.0	10.0	0.06	0.09
5/31/2013	4.9	12.3	9.0	13.6	0.10	0.90	10.0	10.0	0.05	0.10
6/30/2013	8.1	13.1	13.7	13.5	0.10	0.90	10.0	10.0	0.05	0.18
7/31/2013	5.6	12.4	7.6	12.9	0.07	0.12	0.0	0.0	0.05	0.08
8/31/2013	4.8	14.1	5.4	15.4	0.09	0.90	0.0	2.0	0.05	0.05
9/30/2013	4.8	13.2	6.0	13.9	0.08	0.16	0.0	0.0	0.05	0.05
10/31/2013	3.5	12.8	4.1	14.1	0.05	0.08	0.0	0.0	0.05	0.05
11/30/2013	3.2	9.6	4.4	12.5					0.05	0.07
12/31/2013	3.7	12.0	4.3	13.4					0.04	0.05
	BOD5				Total Residual Chlorine		Fecal Coliform		Effluent Flow	
Monitoring Period End Date	Average Monthly	Average Monthly	Average Weekly	Average Weekly	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Average Weekly	Maximum Daily

	lb/day	mg/L	lb/d	mg/L	mg/L	mg/L	cfu/100 mL	cfu/100 mL	MGD	MGD
1/31/2014	4.3	13.6	7.2	17.4					0.05	0.71
2/28/2014	3.5	13.6	5.3	18.7					0.05	0.07
3/31/2014	3.5	10.5	4.2	11.9					0.05	0.08
4/30/2014	8.3	11.4	13.2	13.4	0.06	0.20	0.3	4.1	0.05	0.14
5/31/2014	3.8	10.6	4.6	12.0	0.04	0.08	0.4	2.0	0.05	0.11
6/30/2014	8.6	11.1	14.3	12.1	0.03	0.05	0.3	5.2	0.05	0.16
7/31/2014	8.9	11.4	11.5	12.7	0.04	0.06		5.2	0.05	0.14
8/31/2014	9.4	11.9	16.4	15.2	0.03	0.06	1.0	16.6	0.05	0.13
9/30/2014	4.0	9.6	4.7	11.5	0.05	0.09	5.7	6.3	0.05	0.77
10/31/2014	5.5	10.0	8.3	11.2	0.03	0.06	605.0	2419.0	0.05	0.11
11/30/2014	8.2	12.7	11.1	19.4					0.06	0.10
12/31/2014	9.6	10.7	10.5	16.7					0.06	0.17
1/31/2015	8.9	12.8	11.3	13.6					0.07	0.13
2/28/2015	7.4	13.2	6.1	12.6					0.07	0.11
3/31/2015	7.7	12.9	5.9	12.3					0.07	0.12
4/30/2015	11.0	11.6	11.8	13.4	0.03	0.05	2.2	13.4	0.07	0.16
5/31/2015	6.3	13.3	8.3	13.8	0.03	0.30	2.1	9.8	0.07	0.13
6/30/2015	6.3	13.9	7.3	14.1	0.03	0.09	1.5	4.1	0.07	0.08
7/31/2015	4.8	9.7	7.4	12.6	0.06	0.10	1.3	3.0	0.07	0.07
Existing permit limit	50	30	75	45	0.6	1.0	200	400	0.2	Report
Minimum	2.79	6.60	3.29	9.20	0.02	0.05	0.00	0.00	0.04	0.05
Maximum	18.56	15.50	35.72	27.20	0.40	0.90	605.00	2419.00	0.81	0.77
Average	6.35	11.31	8.29	13.22	0.17	0.35	23.68	84.63	0.07	0.14
Standard Deviation	3.10	1.75	4.84	2.91	0.12	0.25	97.09	389.07	0.09	0.13
No. Measurements	66	66	66	66	39	39	38	39	66	66
No. Exceedances	0	0	0	0	0	0	1	1	1	**

	Total Suspended Solids				pH	
Monitoring Period End Date	Average Monthly	Average Monthly	Average Weekly	Average Weekly	Daily Minimum	Daily Maximum
	lb/d	mg/L	lb/d	mg/L	SU	SU

1/31/2010	26.9	14.3	10.3	18.9	6.5	7.0
2/28/2010	5.0	10.3	6.3	11.1	6.6	7.0
3/31/2010	11.4	10.9	12.4	11.8	6.6	6.8
4/30/2010	8.8	9.8	16.3	13.6	6.7	7.2
5/31/2010	4.6	10.0	5.2	11.8	6.6	6.9
6/30/2010	4.5	11.5	5.8	17.0	6.7	6.9
7/31/2010	4.3	12.1	5.5	15.7	6.5	7.2
8/31/2010	4.0	11.6	8.4	21.6	6.6	7.1
9/30/2010	4.3	9.8	6.0	11.5	6.6	7.0
10/31/2010	5.6	11.4	10.5	16.2	6.5	6.9
11/30/2010	5.7	10.7	6.7	12.8	6.6	6.9
12/31/2010	7.2	7.9	11.4	13.9	6.5	6.9
1/31/2011	5.6	10.3	8.2	15.3	6.7	6.9
2/28/2011	5.2	11.0	7.3	13.7	6.6	6.9
3/31/2011	10.5	9.3	18.9	11.5	6.7	7.0
4/30/2011	7.1	8.4	8.9	10.9	6.6	7.1
5/31/2011	6.9	8.4	8.6	9.8	6.7	7.0
6/30/2011	6.0	12.1	7.7	15.7	6.6	6.9
7/31/2011	5.8	11.8	8.5	13.1	6.7	6.9
8/31/2011	3.8	11.0	4.4	14.6	6.7	6.9
9/30/2011	9.7	9.0	17.9	10.2	6.7	7.0
10/31/2011	14.4	9.2	10.2	12.1	6.7	7.0
11/30/2011	6.2	8.8	6.9	0.3	6.7	7.1
1/31/2012	5.5	13.9	6.2	11.5	6.5	7.0
2/29/2012	6.1	11.2	6.9	12.6	6.5	6.9
3/31/2012	5.9	11.3	6.8	13.1	6.5	6.9
Monitoring Period End Date	Average Monthly	Average Monthly	Average Weekly	Average Weekly	Daily Minimum	Daily Maximum
	lb/d	mg/L	lb/d	mg/L	SU	SU
4/30/2012	4.9	11.6	7.6	16.8	6.5	6.8
5/31/2012	5.2	10.0	7.7	10.7	6.5	7.2

6/30/2012	4.8	51.2	5.6	10.5	6.7	7.4
7/31/2012	3.3	10.7	3.7	12.8	6.7	7.8
8/31/2012	3.7	9.9	5.2	11.4	6.8	7.1
9/30/2012	3.0	9.4	3.4	10.7	6.8	7.3
10/31/2012	4.3	10.9	4.6	12.6	6.5	7.1
11/30/2012	3.5	9.5	4.1	11.6	6.6	7.4
12/31/2012	3.9	10.8	4.8	12.0	6.5	6.9
1/31/2013	4.0	8.8	4.8	9.8	6.8	7.3
2/28/2013	4.7	9.2	3.7	8.2	6.9	7.4
3/31/2013	4.5	9.4	6.2	11.2	6.5	7.4
4/30/2013	5.2	10.7	6.8	13.5	6.5	6.9
5/31/2013	4.5	11.1	9.4	12.8	6.5	7.1
6/30/2013	5.8	10.0	8.4	12.3	6.8	7.3
7/31/2013	4.1	9.2	5.5	10.1	6.6	7.9
8/31/2013	3.3	9.6	3.8	11.0	6.8	7.4
9/30/2013	3.6	9.7	4.7	10.6	6.8	7.6
10/31/2013	2.9	10.4	4.3	14.9	6.8	7.6
11/30/2013	3.9	11.2	6.7	13.8	6.5	7.1
12/31/2013	3.3	10.8	3.8	12.0	6.5	7.0
1/31/2014	3.2	10.3	5.1	13.7	6.5	7.0
2/28/2014	2.3	9.0	2.5	9.6	6.5	6.8
3/31/2014	3.1	9.3	4.3	10.2	6.5	7.0
4/30/2014	5.9	8.1	9.2	9.3	6.5	6.9
5/31/2014	3.0	8.6	3.4	10.1	6.5	6.9
6/30/2014	8.0	10.2	13.2	12.2	6.5	7.2
Monitoring Period End Date	Average Monthly	Average Monthly	Average Weekly	Average Weekly	Daily Minimum	Daily Maximum
	lb/d	mg/L	lb/d	mg/L	SU	SU
7/31/2014	6.7	8.7	9.1	9.2	6.5	7.0
8/31/2014	6.3	8.6	10.0	9.5	6.5	6.9
9/30/2014	3.5	8.3	5.1	8.6	6.7	7.2

10/31/2014	4.9	8.4	10.6	11.5	6.6	7.3
11/30/2014	5.5	8.5	7.0	12.2	6.5	6.9
12/31/2014	8.5	9.2	10.4	10.6	6.5	6.9
1/31/2015	9.0	12.6	12.6	14.5	6.5	6.8
2/28/2015	5.1	9.1	4.1	8.8	6.5	6.9
3/31/2015	5.3	9.0	4.0	8.3	6.5	6.9
4/30/2015	8.6	9.0	11.1	9.3	6.5	7.1
5/31/2015	3.8	8.1	4.8	8.6	6.5	7.2
6/30/2015	3.1	6.6	4.3	8.5	6.5	7.4
7/31/2015	4.7	9.7	6.2	11.3	6.5	7.2
Existing Permit Limit	50	30	75	45	6.5	8.3
Minimum	2.29	6.60	2.49	0.30	6.5	6.8
Maximum	26.94	51.20	18.86	21.60	6.9	7.9
Average	5.72	10.63	7.32	11.90	6.6	7.1
Standard Deviation	3.45	5.26	3.43	2.96	0.11	0.24
No. Measurements	66	66	66	66	66	66
No. Exceedances	0	1	0	0	0	0

ATTACHMENT D: NITROGEN LOADS

MASSACHUSETTS DISCHARGES TO CONNECTICUT RIVER WATERSHEDS					
FACILITY NAME	**PERMIT NUMBER**	**DESIGN FLOW (MGD)[1]**	**AVERAGE FLOW (MGD)[2]**	**TOTAL NITROGEN (mg/l)[3]**	**TOTAL NITROGEN - Existing Flow(lbs/day)[4]**
Amherst	MA0100218	7.10	4.28	14.10	503.30
Athol	MA0100005	1.75	1.39	17.20	199.39
Barre	MA0103152	0.30	0.29	26.40	63.85
Belchertown	MA0102148	1.00	0.41	12.70	43.43
Charlemont	MA0103101	0.05	0.03	19.60	4.90
Chicopee	MA0101508	15.50	10.00	19.40	1617.96
Easthampton	MA0101478	3.80	3.02	19.60	493.66
Erving #1	MA0101516	1.02	0.32	29.30	78.20
Erving #2	MA0101052	2.70	1.80	3.20	48.04
Erving #3	MA0102776	0.01	0.01	19.60	1.63
Gardner	MA0100994	5.00	3.70	14.60	450.53
Greenfield	MA0101214	3.20	3.77	13.60	427.61
Hadley	MA0100099	0.54	0.32	25.90	69.12
Hardwick G	MA0100102	0.23	0.14	14.60	17.05
Hardwick W	MA0102431	0.04	0.01	12.30	1.03
Hatfield	MA0101290	0.50	0.22	15.60	28.62
Holyoke	MA0101630	17.50	9.70	8.60	695.72
Huntington	MA0101265	0.20	0.12	19.60	19.62
Monroe	MA0100188	0.02	0.01	19.60	1.63
Montague	MA0100137	1.83	1.60	12.90	172.14
N Brookfield	MA0101061	0.76	0.62	23.10	119.45
Northampton	MA0101818	8.60	4.40	22.10	810.98
Northfield	MA0100200	0.28	0.24	16.80	33.63
Northfield School	MA0032573	0.45	0.10	19.60	16.35
Old Deerfield	MA0101940	0.25	0.18	9.20	13.81
Orange	MA0101257	1.10	1.20	8.60	86.07
Palmer	MA0101168	5.60	2.40	18.80	376.30
Royalston	MA0100161	0.04	0.07	19.60	11.44
Russell	MA0100960	0.24	0.16	19.60	26.15
Shelburne Falls	MA0101044	0.25	0.22	16.90	31.01
South Deerfield	MA0101648	0.85	0.70	7.90	46.12
South Hadley	MA0100455	4.20	3.30	28.80	792.63
Spencer	MA0100919	1.08	0.56	13.60	63.52
Springfield	MA0103331	67.00	45.40	4.30	1628.13

FACILITY NAME	PERMIT NUMBER	DESIGN FLOW (MGD)[1]	AVERAGE FLOW (MGD)[2]	TOTAL NITROGEN (mg/l)[3]	TOTAL NITROGEN - Existing Flow(lbs/day)[4]
Sunderland	MA0101079	0.50	0.19	8.70	13.79
Templeton	MA0100340	2.80	0.40	26.40	88.07
Ware	MA0100889	1.00	0.74	9.40	58.01
Warren	MA0101567	1.50	0.53	14.10	62.32
Westfield	MA0101800	6.10	3.78	20.40	643.11
Winchendon	MA0100862	1.10	0.61	15.50	78.85
Woronoco Village	MA0103233	0.02	0.01	19.60	1.63
Massachusetts Totals		**166.01**	**106.95**		**9938.82**

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

ATTACHMENT E: WHOLE EFFLUENT TOXICITY AND METALS DATA

		Effluent Data (mg/L total recoverable)						
Date	LC50	Hardness	Al	Cd	Cu	Pb	Ni	Zn
7/14/2005	100	70	0.023	<0.001	0.017	<0.005	<0.004	0.042
9/8/2005	100	65	0.028	<0.001	0.009	<0.005	<0.004	0.047
8/3/2006	100	63	0.041	<0.0005	0.012	<0.005	0.003	0.062
8/16/2007	100	61.4	0.019	<0.001	0.007	<0.001	0.002	0.04
8/14/2008	100	66	0.053	<0.001	0.036	<0.001	0.003	0.1
8/20/2009	100	54.1	0.022	<0.001	0.009	0.006	<0.001	0.03
8/19/2010	100	64	0.649	<0.001	0.153	0.014	0.005	0.109
8/22/2012	100	63.2	<.01	<0.001	0.052	<0.002	0.006	0.123
8/14/2013	100	45.2	0.127	<0.001	0.03	0.004	0.001	0.064
8/13/2014	100	55.5	0.041	<0.0002	0.021	0.0014	0.002	0.085
Median		63.10						
95th percentile (µg/L)			299	103		14	7	140
Freshwater								
Chronic Criterion (µg/L)			87	0.1	3.6	0.8	20.1	46.2
Acute Criterion (µg/L)			750	0.7	4.9	19.5	181.1	46.2

	Receiving Water Data (mg/l total recoverable)						
Date	Hardness	Al	Cd	Cu	Pb	Ni	Zn
7/14/2005	29	0.03		<0.0025	<0.005	<0.004	<0.0025
9/8/2005	37	<0.02		<0.0025	<0.005	<0.004	0.0028
8/3/2006	33	0.053		<0.0025	<0.005	<0.002	0.0055
8/16/2007	31.8	<.01		<0.001	<0.001	<0.001	<0.002
8/14/2008	24.1	0.119		0.002	<0.001	<0.001	0.003
8/20/2009	26.9	0.016		<0.001	<0.002	<0.001	0.009
8/19/2010	30.8	0.039		0.004	<0.002	0.002	0.005
8/22/2012	33.1	0.02	<0.001	<0.001	<0.002	<0.001	<0.002
8/14/2013	29.8	0.144	<0.001	<0.001	<0.002	<0.001	0.002
8/13/2014	31.3	0.073	<0.0002	<0.001	<0.0005	<0.001	<0.002
Median	31.05	0.053	0.00	0.003	0.00	0.002	0.004

ATTACHMENT F: STATISTICAL ANALYSIS FOR METALS EFFLUENT DATA (N ≥ 10)

EPA bases its determination of "reasonable potential" on a characterization of the upper bound of expected effluent concentrations based on a statistical analysis of the available monitoring data. As noted in the *Technical Support Document for Water Quality Based Toxics Control* (EPA 1991) ("TSD"), "[a]ll monitoring data, including results for concentrations of individual chemicals, have some degree of uncertainty associated with them. The more limited the amount of test data available, the larger the uncertainty." Thus with a limited data set, the maximum concentration that has been found in the samples may not reflect the full range of effluent concentration.

To account for this, EPA has developed a statistical approach to characterizing effluent variability when the monitoring dataset includes 10 or more samples.[4] As "experience has shown that daily pollutant discharges are generally lognormally distributed," *TSD* at App. E, EPA uses a lognormal distribution to model the shape of the observed data, unless analysis indicates a different distributional model provides a better fit to the data. The model parameters (mean and variance) are derived from the monitoring data. The model parameter μ is the mean of the natural logs of the monitoring data values, while σ is the standard deviation of the natural logs of the monitoring data values.

The lognormal distribution generally provides a good fit to environmental data because it is bounded on the lower end (i.e. you cannot have pollutant concentrations less than zero) and is positively skewed. It also has the practical benefit that if an original lognormal data set X is logarithmically transformed (i.e. Y = ln[X]) the resulting variable Y will be normally distributed. Then the upper percentile expected values of X can be calculated using the z-score of the standardized normal distribution (i.e. the normal distribution with mean = 0 and variance = 1), a common and relatively simple statistical calculation. The p^{th} percentile of X is estimated by

$$X_p = \exp(\mu_y + z_p \times \sigma_y),$$

where μ_y = mean of Y
σ_y = standard deviation of Y
Y = ln[X]
z_p = the z-score for percentile "p"

For the 95^{th} percentile, $z_{95} = 1.645$, so that

$$X_{95} = \exp(\mu_y + 1.645 \times \sigma_y)$$

The 95th percentile value is used to determine whether a discharge has a reasonable potential to cause or contribute to an exceedance of a water quality standard. The combination of the upper bound effluent concentration with dilution in the receiving water is calculated to determine whether the water quality criteria will be exceeded.

Datasets including non-detect values

[4] A different statistical approach is applied where the monitoring data set includes less than 10 samples.

The *TSD* also includes a procedure for determine such percentiles when the dataset includes non-detect results, based on a delta-lognormal distribution. In the delta-lognormal procedures, nondetect values are weighted in proportion to their occurrence in the data. The values above the detection limit are assumed to be lognormally distributed values.

The statistical derivation of the delta-lognormal upper bounds is quite complex and is set forth in the TSD at Appendix E. Calculation of the 95th percentile of the distribution, however, involves a relatively straightforward adjustment of the equations given above for the lognormal distribution, as follows.

For the deltalognormal, the pth percentile of X, referred to here as X_p*, is given by

$$X_p^* = \exp(\mu_y^* + z_p^* \times \sigma_y^*),$$

where μ_y*= mean of Y values for data points above the detection limit;
σ_y*= standard deviation of Y for data points above the detection limit;
Y = ln[X*];
X*= monitoring data above detection limit; and
z_p* = an adjusted z score that is given by the equation:

$$z_p^* = \text{z-score}[(p - \delta)/(1 - \delta)]$$

where δ is the proportion of nondetects in the monitoring dataset.

k = total number of dataset
r = number of nondetect values in the dataset
$\delta = r/k$

For the 95th percentile, this takes the form of $z_p^* = \text{z-score}[(.95 - \delta)/(1 - \delta)]$. The resulting values of z_p* for various values of δ is set forth in the table below; the calculation is easily performed in excel or other spreadsheet programs.

Example calculations of z_p* for 95th percentile

δ	(0.95 - δ)/ (1 - δ)	z_p*
0	0.95	1.645
0.1	0.94	1.593
0.3	0.93	1.465
0.5	0.90	1.282
0.7	0.83	0.967

RESPONSE TO COMMENTS
NPDES PERMIT NO. MA0101265
HUNTINGTON WASTEWATER TREATMENT PLANT

In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's responses to comments received on the draft NPDES Permit, MA0101265. The response to comments explains and supports the EPA determinations that form the basis of the final permit. From March 8, 2016 to April 6, 2016, the United States Environmental Protection Agency ("EPA") and the Massachusetts Department of Environmental Protection ("MassDEP") (together, the "Agencies") solicited public comments on a draft NPDES permit, MA0101265, developed pursuant to a permit application from Huntington Wastewater Treatment Plant (WWTP), for the reissuance of a National Pollutant Discharge Elimination System ("NPDES") permit to discharge treated wastewater from outfall number 001 to the West Branch Westfield River in Huntington, Massachusetts.

After a review of the comments received, EPA and MassDEP have made a final decision to issue this permit authorizing these discharges. The final permit is substantially identical to the draft permit that was available for public comment.

Although EPA's decision-making process has benefitted from the comments and additional information submitted, the information and arguments presented did not raise any substantial new questions concerning the permit. EPA did, however, make minor changes in response to comments. The analyses underlying these changes is explained in the responses to individual comments that follow and is reflected in the final permit.

1. The monitoring frequency for *Escherichia coli* in Part I.A.1 was changed from two per week to one per week. (Comment 7)

2. The italicized language was added to Part I.A.1 footnote 7: The chlorination *and dechlorination* system shall include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection, *or interruptions or malfunctions of the dechlorination system* that may have resulted in excessive levels of chlorine in the final effluent shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time that the reduced levels of chlorine *or dechlorination* chemicals occurred. (Comment 5)

A copy of the final permit and this response to comment document will be posted on the EPA Region 1 website: https://www3.epa.gov/region1/npdes/mass.html.

Copies of the final permit may be obtained by writing or calling Danielle Gaito, U.S. Environmental Protection Agency, 5 Post Office Square, Suite 100 (OEP 06-4), Boston, MA 02109-3912; Telephone: (617) 918-1297.

Comments submitted by Robert Thompson, Chair
Wild & Scenic Westfield River Committee

Comment 1

The Wild & Scenic Westfield River Committee (WSWRC) comments that the URL provided on page 4 of the Fact Sheet is outdated and recommends including links to its current website http://www.wildscenicwestfieldriver.org/ or the National Wild & Scenic Rivers website https://www.rivers.gov/rivers/westfield.php.

Response: The fact sheet accompanies the public notice draft of the NPDES permit and will not be re-issued. For this reason, EPA cannot change the URL provided in the fact sheet. However, this response to comment document will be made available with the issuance of a final permit and serves to provide the correct URLs noted in the comment above.

Comment 2

The WSWRC comments that, as the NPDES permit is a federal permit and the project discharges into a designated Wild & Scenic segment, a consultation under Section 7(a) of the Wild & Scenic Rivers Act (Public Law 90-542; 16 U.S.C. 1271 et seq.) with the National Park Service may be required.

Response: As noted in its comments, Section 7(a) of the Wild & Scenic Rivers Act states "no department or agency of the United States shall assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration." See also 40 C.F.R. § 122.49(a) "section 7 of the Act prohibits the Regional Administrator from assisting by license or otherwise the construction of any water resources project that would have a direct, adverse effect on the values for which a national wild and scenic river was established."

According to the Wild & Scenic Rivers Section 7 Consultation guidance[1] a "water resources project is any dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act, or other construction of developments

[1] Interagency Wild and Scenic Rivers Coordinating Council's WSRA Section 7(a) Flowcharts. January 10, 2011. Available at https://www.rivers.gov/publications.php.

which would affect the free-flowing characteristics of a wild and scenic or congressionally authorized study river (36 C.F.R. 297). In addition to projects licensed by FERC, water resources projects include, but are not limited to, fisheries habitat and watershed restoration/enhancement projects; water diversion projects; transmission lines and pipelines; bridge and other roadway construction/reconstruction projects; dams; water conduits; bank stabilization projects; channelization projects; powerhouses, levee construction; reservoirs; recreation facilities, such as boat ramps or fishing piers; and activities that require a 404 permit from the U.S. Army Corps of Engineers." Examples of water resources projects include hydropower licensing projects, bridge construction, stabilization projects, and infrastructure projects (such as boat docks). Based on this definition, EPA believes that while the construction of an outfall pipe for discharge from a treatment plant would likely qualify as an infrastructure project, the re-issuance of an NPDES permit for an existing outfall pipe is neither a project works under the Federal Power Act, nor a water resources project as defined.

In response to the WSWRC's comment, EPA contacted Liz Lacy of the National Park Service to confirm that no consultation under the WSRA is required for this action. Ms. Lacy confirmed that no Section 7 consultation would be required for this action, and replied that the comments provided by WSWRC will serve as the NPS's comments as well (June 14, 2016 Email from Liz Lacy of NPS to Danielle Gaito of EPA).

Comment 3

The WSWRC comments that the Westfield River, just downstream from the discharge location, is listed as impaired for aquatic macroinvertebrate bioassessments, excess algal growth, taste and odor, and turbidity. The WSWRC maintains that, because there are no major inputs immediately below the discharge, then the WWTP likely is contributing to the impairment to some extent, and that a strong permit will help this waterbody meet standards and enhance the water quality of this reach.

Response: EPA agrees that robust NPDES permits issued to facilities throughout the watershed are necessary to protect the water quality of the Westfield River. EPA believes that the final NPDES permit for the Huntington WWTP establishes a mass-based phosphorus limit, ambient phosphorus monitoring, and nitrogen monitoring for the continued protection of both the West Branch Westfield River at the facility's outfall as well as the downstream segments of the Westfield River.

The lower segment of the Westfield River approximately 17 miles downstream from the Huntington WWTP (MA32-05) is, as the WSWRC comments, listed as impaired for aquatic life and aesthetic uses due to macroinvertebrate bioassessments, excess algal growth, taste and odor, and turbidity. See MassDEP's 2001 Westfield River Watershed Water Quality Assessment Report[2] (pp. 50-62). The upper segment of the river supports

[2] Westfield River Watershed 2001 Water Quality Assessment available at http://www.mass.gov/eea/docs/dep/water/resources/07v5/32wqar.pdf.

designated uses. The impaired reach is located downstream of inputs from the Huntington WWTP, as the commenter indicates, but also the Russell WWTP (NPDES permit MA0100960), Woronoco WWTP (MA0103233), and the Westfield WWTP (MA0101800). The impaired reach also likely receives inputs from the City of Westfield's municipal separate storm sewer system (MS4) that may contribute to the impairments. In addition to this Final Permit, EPA has issued permits to the Westfield WWTP and General Permits addressing MS4 inputs in Massachusetts to reduce nutrient loading and improve conditions in the impaired reach since the last assessment.

Comment 4

The WSWRC supports EPA's decision to change the dilution factor based on the fact that the discharge occurs on the West Branch of the Westfield River and not the mainstem as it had been calculated in the past. The WSWRC questions why StreamStats was used to derive the low flow statistics, rather than the USGS West Branch Westfield River at Huntington, MA (Gage 01181000) located approximately 1 mile upstream. The WSWRC comments that the lowest flow recorded at the USGS gage was 3.8 cfs in August 1955. The StreamStats calculation is more than double this low flow reading. With only minor drainage coming into the river between the gage and the WWTP discharge, it seems the StreamStats calculations may be more than what had been observed in the past. The WSWRC comments that, with the extreme high and low flows seen in the past couple of decades, it may be warranted to monitor and plan for anytime the USGS gage records lower flows than the proposed 7Q10 low flow.

Response: As the commenter notes, the West Branch Westfield River is the receiving water for the effluent, not the mainstem Westfield River, which results in a lower dilution factor than used in the current permit. The WSWRC expresses concern about the difference between the lowest recorded flow at the upstream gage and the StreamStats calculation used to calculate dilution in the draft permit. However, the 7Q10 low flow value used to calculate dilution is not equivalent to the lowest recorded flow, regardless of whether EPA uses the USGS gage data or StreamStats. The hydrologic conditions at which water quality criteria apply under MassDEP's Surface Water Quality Standards at 314 CMR 4.03(3) are:

(a) For rivers and streams, the lowest flow condition at and above which aquatic life criteria must be applied is the lowest mean flow for seven consecutive days to be expected once in ten years. When records are not sufficient to determine this condition, the flow may be estimated using methods approved by the Department.

In calculating the limits for the draft and final permits, EPA used the 7Q10 low flow, which, as stated in the fact sheet (p. 7), is "the lowest observed mean river flow for 7 consecutive days, recorded over a 10-year recurrence interval." EPA appropriately used the 7Q10 low flow statistic in applying the water quality criteria.

Comment 5

The WSWRC supports the permit requirement to alarm the chlorine system for interruptions or malfunctions, and to require the permittee to report the date and length of time the system may have reduced levels of chlorine. The WSWRC comments that the requirement should be expanded to include the same information for malfunctions or human error resulting in an overdose of chlorine as it can be harmful to aquatic life in the receiving waters.

Response: The WSWRC correctly identifies that the permit condition associated with the chlorination system at Part I.A.1. footnote 7 of the draft permit should address both interruptions or malfunctions of the chlorination *and* dechlorination systems. The final permit has been updated to address both reduced levels and overdoes of chlorine in the effluent. Part I.A.1 footnote 7 in the final permit states:

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

Comment 6: The WSWRC comments that the permittee is "only required to check for toxicity of their effluent using living organism once per year" and that, based on the "newly calculated dilution factor and the impaired macroinvertebrate community downstream, we suggest the permit toxicity testing as well to get a better handle on whether the WWTP is contributing to the impaired macroinvertebrate communities."

Response: The annual toxicity testing required in the draft permit is consistent with the POTW General NPDES Permit, which covers facilities of similar size as the Huntington WWTP. EPA agrees that the testing requirement will provide valuable information about both the effluent and receiving water, though notes that the impaired macroinvertebrate communities referenced in the comment are many miles downstream of the facility in the lower 1.0 mile of the segment. The Huntington WWTP effluent is unlikely to contribute to any impairment of aquatic life use related to the benthic macroinvertebrate community that far downstream.

Comments submitted by James Gobeille, Operator
Huntington WWTP

Comment 7: The permittee comments that currently the facility tests for *E.coli* once per week. The draft permit requires twice weekly sampling, which is a doubling of the current testing. The permittee requests that the *E.coli* sampling be maintained at the current permit frequency of once per week.

Response: Twice weekly bacteria sampling is a standard monitoring frequency in wastewater treatment plant NPDES permits. However, the POTW General Permit for Massachusetts, which is available for WWTPs with design flows less than 1 MGD (such as Huntington WWTP), requires bacteria sampling once per week. Although Huntington WWTP is not eligible for General Permit coverage both because the dilution factor is less than 50 and because it discharges to a segment designated as a Wild and Scenic River[3], EPA was informed by the monitoring requirements and frequencies in the General Permit when setting effluent limitations and monitoring frequencies in the draft permit. EPA agrees that once weekly *E. coli* sampling, consistent with the current permit and the POTW General Permit, is adequate. The monitoring frequency for *E. coli* in Part I.A.1 of the Final Permit has been changed to once weekly.

[3] See p. 5 of the Fact Sheet for 2010 Reissuance of the POTW General Permit MAG580000 Section D (Exclusions). https://www3.epa.gov/region1/npdes/permits/potw/POTWGP-2010-FactSheet.pdf