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),

Northfield Mount Hermon School
1 Lamplighter Way
Mount Hermon, MA 01354

is authorized to discharge from the facility located at

Northfield Mount Hermon School Wastewater Treatment Facility (WWTF)
Main Road
Gill, MA 01354

to receiving water named

Connecticut River (MA34-02)

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 (5) years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on September 30, 2005.

This permit consists of **Part I (**13 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 (**NPDES Part II Standard Conditions, April 2018, 21 pages).

Signed this day of , 2018

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

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Lealdon Langley, Director
Wetlands and Wastewater Program
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

*Pursuant to 40 CFR 124.15(b)(3), if no comments requesting a change to the draft permit are received, the permit will become effective upon the date of signature.

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 the Connecticut River. Such discharges shall be limited and monitored as specified below.

EFFLUENT CHARACTERISTIC	**EFFLUENT LIMITS**					**MONITORING REQUIREMENTS** [1,2,3]	
PARAMETER	**AVERAGE MONTHLY**	**AVERAGE WEEKLY**	**AVERAGE MONTHLY**[4]	**AVERAGE WEEKLY**	**MAXIMUM DAILY**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE**
EFFLUENT FLOW[6]	*********	*********	0.45 MGD	*********	Report MGD	Continuous	Continuous
EFFLUENT FLOW[6]	*********	*********	Report MGD	*********	*********	Continuous	Continuous
BOD_5 [8]	113 lb/day	169 lb/day	30 mg/L	45 mg/L	*********	1/Week	Composite[5]
BOD_5 Removal	*********	*********	≥ 85%	*********	*********	*********	*********
TSS [8]	113 lb/day	169 lb/day	30 mg/L	45 mg/L	*********	1/Week	Composite[5]
TSS Removal	*********	*********	≥ 85%	*********	*********	*********	*********
pH RANGE[7]	6.5 - 8.3 S.U. (SEE PERMIT PARAGRAPH I.A.1.b.)					1/Week	Grab
ESCHERICHIA COLI [9,10,11] (April 1 – October 31)	*********	**********	126 cfu/100 ml	*********	409 cfu/100 ml	1/Week	Grab
TOTAL RESIDUAL CHLORINE [9,10,11] (April 1 – October 31)	*********	**********	1.0 mg/L	*********	1.0 mg/L	1/Day	Grab
TOTAL NITROGEN[12]	Report lb/day	*********	Report mg/L	*********	*********	1/Month	Composite[5]
TOTAL KJELDAHL NITROGEN[12]	**********	**********	Report mg/L	**********	*********	1/Month	Composite[5]

CONTINUED FROM PREVIOUS PAGE

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 the Connecticut River. Such discharges shall be limited and monitored as specified below.

EFFLUENT CHARACTERISTIC	**EFFLUENT LIMITS**					**MONITORING REQUIREMENTS** [1,2,3]	
PARAMETER	**AVERAGE MONTHLY**	**AVERAGE WEEKLY**	**AVERAGE MONTHLY**[4]	**AVERAGE WEEKLY**	**MAXIMUM DAILY**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE**
TOTAL NITRATE[12]	*********	*********	Report mg/L	*********	*********	1/Month	Composite[5]
TOTAL NITRITE[12]	*********	*********	Report mg/L	*********	*********	1/Month	Composite[5]
TOTAL PHOSPHORUS (April 1 – Oct 31)	*********	*********	Report mg/L	*********	*********	1/Month	Composite[5]
WHOLE EFFLUENT TOXICITY[13,14,15]	Acute $LC_{50} \geq 50$ %					1/Year	Composite[5]
Total Hardness as $CaCO_3$[14,15]	*********	*********	*********	*********	Report mg/L	1/Year	Composite[5]
Ammonia Nitrogen as N[14,15]	*********	*********	*********	*********	Report mg/L	1/Year	Composite[5]
Total Recoverable Aluminum[14,15]	*********	*********	*********	*********	Report mg/L	1/Year	Composite[5]
Total Recoverable Cadmium[14,15]	*********	*********	*********	*********	Report mg/L	1/Year	Composite[5]
Total Recoverable Copper[14,15]	*********	*********	*********	*********	Report mg/L	1/Year	Composite[5]
Total Recoverable Nickel[14,15]	*********	*********	*********	*********	Report mg/L	1/Year	Composite[5]
Total Recoverable Lead[14,15]	*********	*********	*********	*********	Report mg/L	1/Year	Composite[5]
Total Recoverable Zinc[14,15]	*********	*********	*********	*********	Report mg/L	1/Year	Composite[5]

See Pages 4-5 for Footnotes.

Footnotes:

1. Effluent samples shall be collected at the outlet of the chlorine contact chamber. Any change is sampling location must be reviewed and approved in writing by EPA and MassDEP. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month. Occasional deviations from the routine sampling program are allowed, but the reason for the deviation shall be documented in correspondence appended to the applicable discharge monitoring report. 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. In accordance with 40 C.F.R. § 122.44(i)(1)(iv), the Permittee shall use sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. § 136 or required under 40 C.F.R. Chapter I, Subchapter N or O, for the analysis of pollutants or pollutant parameters limited in this permit (except WET). A method is considered "sufficiently sensitive" when either 1) The method minimum level is at or below the level of the applicable water quality criterion or permit effluent limitation for the measured pollutant or pollutant parameter; or 2) The method has the lowest minimum level of the analytical methods approved under 40 C.F.R. § 136 or required under 40 C.F.R. Chapter I, Subchapter N or O for the measured pollutant or pollutant parameter. The "minimum level" is the lowest level at which the test equipment produces a recognizable signal and acceptable calibration point for a pollutant or pollutant parameter, representative of the lowest concentration at which a pollutant or pollutant parameter can be measured with a known level of confidence.

3. When a parameter is not detected above the minimum level of detection, the Permittee must report the data qualifier signifying less than the minimum level of detection for that parameter (e.g., < 50 µg/L, if the minimum level of detection for a parameter is 50 µg/L). For the purposes of this permit, the "minimum level of detection" is the lowest concentration that can be reliably measured within specified limits of precision and accuracy for a specific laboratory analytical method during routine laboratory operating conditions (i.e., the level above which an actual value is reported for a pollutant or pollutant parameter, and the level below which a pollutant or pollutant parameter is reported as non-detect).

4. In calculating and reporting the average monthly concentration when the pollutant is not detected, assign zero to the non-detected sample result if the pollutant was not detected for all monitoring periods in the prior twelve months. If the pollutant was detected in at least one monitoring period in the prior twelve months, then assign each non-detected sample result a value that is equal to one half of the minimum level of detection for the purposes of calculating averages.

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

6. Report annual average, monthly average, and the maximum daily flow in million gallons per day (MGD). 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.

7. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.).

8. Sampling required for influent and effluent.

9. The Permittee shall minimize the use of chlorine while maintaining adequate bacterial control. Monitoring for total residual chlorine (TRC) is only required for discharges which have been previously chlorinated or which contain residual chlorine. For the purposes of this permit, TRC analysis must be completed using a test method in 40 C.F.R. § 136 that achieves a minimum level no greater than 20 μg/L. The compliance level for TRC is 20 μg/L.

10. 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.

11. The monthly average limit for E. coli is expressed as a geometric mean. E. coli monitoring shall be conducted concurrently with TRC monitoring if TRC monitoring is required.

12. 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 (lb/day) = [total nitrogen (mg/L)*average monthly flow (MGD)*8.34]

13. The permittee shall conduct acute toxicity tests (LC_{50}) once per year in accordance with test procedures and protocols specified in **Attachment A** of this permit. LC_{50} is defined in Part II.E. of this permit. The permittee shall test the daphnid, *Ceriodaphnia dubia*, only. Toxicity test samples shall be collected during the same week each time during the month of September. The complete report for each toxicity test shall be submitted as an attachment to the monthly DMR submittal immediately following the completion of the test.

14. The receiving water chemical analysis represents analysis of the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A**. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall either follow procedures outlined in **Attachment A**, Section IV., DILUTION WATER, or the Permittee shall follow the Self-Implementing Alternative Dilution Water Guidance found in *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)*.

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. (Continued)

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

3. The discharge shall be free from pollutants in concentrations or combinations that, in the receiving water, settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.

4. The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom.

5. The discharge shall not result in pollutants in concentrations or combinations in the receiving water that are toxic to humans, aquatic life or wildlife.

6. The discharge shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to the receiving water.

7. The discharge shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.

8. The results of sampling for any parameter done in accordance with EPA approved methods above its required frequency must also be reported.

9. If the average annual flow in any calendar year exceeds 80 percent of the facility's design flow (0.36 MGD), the permittee shall submit a report to MassDEP by **March 31st** 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.

10. The WWTF must provide adequate notice (pursuant to Section I.G.5 below) to the EPA and MassDEP of the following:

    a. Any new introduction of pollutants into the WWTF from an indirect discharger that 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 the WWTF by a source introducing pollutants into the WWTF 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 WWTF; and

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

11. Prohibitions Concerning Interference and Pass Through:

    a. Pollutants introduced into the WWTF by a non-domestic source (user) shall not pass through the WWTF or interfere with the operation or performance of the works.

12. 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.

13. 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.

Part I.B. SPECIAL CONDITIONS

There are no special conditions.

Part I.C. 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 Standard Conditions 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.

Part I.D. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance (O&M) of the sewer system shall be in compliance with the Standard Conditions 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 the anniversary date of the effective date of this permit. 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 (0.45 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.

Part I.F ALTERNATIVE POWER SOURCE

1. 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 WWTF it owns and operates.

Part I.G. 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* "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 19th** (*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 WWTF 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.

Part I.G. REPORTING REQUIREMENTS

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 Using NetDMR

   The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State no later than the 15th day of the month electronically using NetDMR. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessed from the internet at https://netdmr.zendesk.com/hc/en-us.

[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

2. Submittal of DMRs as NetDMR Attachments

   Unless otherwise specified in this permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. Permittees shall continue to send hard copies of reports other than DMRs to the State until further notice from the State. 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

   a. 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).

      (1) Transfer of permit notice
      (2) Request for changes in sampling location
      (3) Request for reduction in testing frequency
      (4) Report on unacceptable dilution water / request for alternative dilution water for WET testing

   b. 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

   a. 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.

      (1) Written notifications required under Part II
      (2) Notice of unauthorized discharges, including Sanitary Sewer Overflow (SSO) reporting

   b. This information shall be submitted to EPA/OES as a hard copy 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

5. State Reporting

   a. 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 Massachusetts Department of Environmental Protection (MassDEP) at the following addresses:

MassDEP – Western Regional Office
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
Bureau of Water Resources
Division of Watershed Management
8 New Bond Street
Worcester, Massachusetts 01606

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:

U.S. Environmental Protection Agency
Office of Environmental Stewardship
5 Post Office Square, Suite 100 (OES04-4)
Boston, MA 02109-3912
617-918-1850

And

Department of Environmental Protection
Western Regional Office
436 Dwight Street, 5th Floor
Springfield, MA 01103
413-784-1100
MassDEP's Emergency Response 1-888-304-1133

Part I.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.

ATTACHMENT A

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
(April 26, 2018)

TABLE OF CONTENTS

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 or Act) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

a. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage 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, or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

b. Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (83 Fed. Reg. 1190-1194 (January 10, 2018) and the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note. See Pub. L.114-74, Section 701 (Nov. 2, 2015)). These requirements help ensure that EPA penalties keep pace with inflation. Under the above-cited 2015 amendments to inflationary adjustment law, EPA must review its statutory civil penalties each year and adjust them as necessary.

(1) Criminal Penalties

(a) *Negligent Violations.* The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than $2,500 nor more than $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation or by imprisonment of not more than 2 years, or both.

(b) *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act 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. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

(c) *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 303, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than $250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing

endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

(d) *False Statement.* 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. The Act further 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 non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

(2) *Civil Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(3) *Administrative Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty as follows:

(a) *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(b) *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

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 a notification of planned changes or anticipated noncompliance does not stay any permit

condition.

3. Duty to Provide Information

The Permittee shall furnish to the Director, within a reasonable time, any information which the Director 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 Director, upon request, copies of records required to be kept by this permit.

4. 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).

5. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

6. Confidentiality of Information

a. In accordance with 40 C.F.R. 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 C.F.R. 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.

c. Information required by NPDES application forms provided by the Director under 40 C.F.R. § 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.

7. Duty to Reapply

If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, 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 Director. (The Director shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

8. State Authorities

Nothing in Parts 122, 123, or 124 precludes more stringent State regulation of any activity

covered by the regulations in 40 C.F.R. Parts 122, 123, and 124, whether or not under an approved State program.

9. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

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. 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 which are installed by a permittee 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 reasonably be 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 provisions of paragraphs (c) and (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. As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by state law.

(2) *Unanticipated bypass*. The Permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (24-hour notice). As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or required to do so by law.

d. *Prohibition of bypass.*

(1) Bypass is prohibited, and the Director may take enforcement action against a Permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) 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

(c) The Permittee submitted notices as required under paragraph 4.c of this Section.

(2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director 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; and
(3) The permittee submitted notice of the upset as required in paragraph D.12.b.e (24-hour notice).
(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.

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 of 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 5 years (or longer as required by 40 C.F.R. § 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. This period may be extended by request of the Director 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 must be conducted according to test procedures approved under 40 C.F.R. § 136 unless another method is required under 40 C.F.R. Subchapters N or O.

e. The Clean Water Act 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 Director, 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 Clean Water Act, any substances or parameters at any location.

D. REPORTING REQUIREMENTS

1. Reporting Requirements

a. *Planned Changes*. The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only 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 C.F.R. § 122.29(b); or

(2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements at 40 C.F.R. § 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 that are 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 Director 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 Director. The Director 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 Clean Water Act. *See* 40 C.F.R. § 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. As of December 21, 2016 all reports and forms submitted in compliance with this section must be submitted electronically by the permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, permittees may be required to report electronically if specified by a particular permit or if required to do so by State law.

(2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 C.F.R. § 136, or another method required for an industry-specific waste stream under 40 C.F.R. Subchapters N or O, the results of such 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 report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written report 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. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all

reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section.

(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 C.F.R. § 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 Director in the permit to be reported within 24 hours. *See* 40 C.F.R. § 122.44(g).

(3) The Director may waive the written report on a case-by-case basis for reports under paragraph D.1.e. of this Section if the oral report has been received within 24 hours.

f. *Compliance Schedules.* Reports of compliance or noncompliance with, or 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. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in paragraph D.1.e. and the applicable required data in Appendix A to 40 C.F.R. Part 127. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), §122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under 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 Director, it shall promptly submit such facts or information.

i. *Identification of the initial recipient for NPDES electronic reporting data*. The owner, operator, or the duly authorized representative of an NPDES-regulated entity is required to electronically submit the required NPDES information (as specified in Appendix A to 40 C.F.R. Part 127) to the appropriate initial recipient, as determined by EPA, and as defined in 40 C.F.R. § 127.2(b). EPA will identify and publish the list of initial recipients on its Web site and in the FEDERAL REGISTER, by state and by NPDES data group (see 40 C.F.R. § 127.2(c) of this Chapter). EPA will update and maintain this listing.

2. Signatory Requirement

a. All applications, reports, or information submitted to the Director shall be signed and certified. *See* 40 C.F.R. §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 non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months 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 Director. 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.

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

For more definitions related to sludge use and disposal requirements, see EPA Region 1's NPDES Permit Sludge Compliance Guidance document (4 November 1999, modified to add regulatory definitions, April 2018).

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 under the CWA, 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 or 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.

Approved program or *approved State* means a State or interstate program which has been approved or authorized by EPA under Part 123.

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" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that 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.

Bypass see B.4.a.1 above.

C-NOEC or *"Chronic (Long-term Exposure Test) – No Observed Effect Concentration" means* 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.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 C.F.R. § 501.2, required to have an approved pretreatment program under 40 C.F.R. § 403.8 (a) (including any POTW located in a State that has elected to assume local program responsibilities pursuant to 40 C.F.R. § 403.10 (e)) and any treatment works treating domestic sewage, as defined in 40 C.F.R. § 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 its sewage sludge use or disposal practice to affect public health and the environment adversely.
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) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483and Public Law 97-117, 33 U.S.C. 1251 *et seq*.

CWA and regulations means the Clean Water Act (CWA) and applicable regulations promulgated thereunder. In the case of an approved State program, it includes State program requirements.

Daily Discharge means the "discharge of a pollutant" measured during a 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.

Direct Discharge means the "discharge of a pollutant."

Director means the Regional Administrator or an authorized representative. In the case of a permit also issued under Massachusetts' authority, it also refers to the Director of the Division of Watershed Management, Department of Environmental Protection, Commonwealth of Massachusetts.

Discharge

(a) When used without qualification, *discharge* means the "discharge of a pollutant."

(b) As used in the definitions for "interference" and "pass through," *discharge* means the introduction of pollutants into a POTW from any non-domestic source regulated under Section 307(b), (c) or (d) of the Act.

Discharge Monitoring Report ("DMR") means the EPA uniform 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.

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 Director 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."

Environmental Protection Agency ("EPA") means the United States Environmental Protection Agency.

Grab Sample means an individual sample collected in a period of less than 15 minutes.

Hazardous substance means any substance designated under 40 C.F.R. Part 116 pursuant to Section 311 of CWA.

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

Indirect discharger means a nondomestic discharger introducing "pollutants" to a "publicly owned treatment works."

Interference means a discharge (see definition above) 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, 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 that is not a land application unit, surface impoundment, injection well, or waste pile.

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

LC_{50} means 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.

Maximum daily discharge limitation means the highest allowable "daily discharge."

Municipal solid waste landfill (MSWLF) unit means a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 C.F.R. § 257.2. A MSWLF unit also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, very small quantity generator waste and industrial solid waste. Such a landfill may be publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF

unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit.

Municipality

(a) When used without qualification *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 tribal organization, or a designated and approved management agency under Section 208 of CWA.

(b) As related to sludge use and disposal, *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.

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 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 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 Director 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 Director shall consider the factors specified in 40 C.F.R. §§ 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 (see definition above) 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).

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

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved State" to implement the requirements of Parts 122, 123, and 124. "Permit" includes an NPDES "general permit" (40 C.F.R § 122.28). Permit does not include any permit which has not yet been the subject of final agency action, such as a "draft permit" or "proposed permit."

Person means 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 measured at 25° Centigrade or measured at another temperature and then converted to an equivalent value at 25° Centigrade.

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 C.F.R. § 122.3).

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 C.F.R. Part 122.

Privately owned treatment works means any device or system which is (a) used to treat wastes from any facility whose operator is not the operator of the treatment works and (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 a treatment works as defined by Section 212 of the Act, which is owned by a State or municipality (as defined by Section 504(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in Section 502(4) of the Act, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.

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

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

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, semi-solid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced waste water treatment, scum, septage, portable toilet pumpings, type III marine sanitation device pumpings (33 C.F.R. 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 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 C.F.R. § 122.2.

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; finished materials such as metallic products; 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 Section 313 of title III of SARA; 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 C.F.R. §§ 110.10 and 117.21) or Section 102 of CERCLA (*see* 40 C.F.R. § 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 C.F.R. § 122.1(b)(2).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, or an Indian Tribe as defined in the regulations which meets the requirements of 40 C.F.R. § 123.31.

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.

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 that is used for collecting and conveying storm water and that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.

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

Toxic pollutant 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 waste water 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 waste water 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 Director may designate any person subject to the standards for sewage sludge use and disposal in 40 C.F.R. 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 C.F.R. Part 503.

Upset see B.5.a. above.

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

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

Waters of the United States or waters of the U.S. 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 the 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 CWA (other than cooling ponds as defined in 40 C.F.R. § 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

Wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient 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.

*Zone of Initial Dilution (*ZID) means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports, provided that the ZID may not be larger than allowed by mixing zone restrictions in applicable water quality standards.

2. 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 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
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)
µg/L	Microgram(s) per liter
WET	"Whole effluent toxicity"
ZID	Zone of Initial Dilution

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: **MA0032573**

PUBLIC NOTICE START AND END DATES: June 13, 2018 - July 12, 2018

NAME AND MAILING ADDRESS OF APPLICANT:

Northfield Mount Hermon School
1 Lamplighter Way
Mount Hermon, MA 01354

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Northfield Mount Hermon School Wastewater Treatment Facility
Main Road
Gill, MA 01354

RECEIVING WATER(S): **Connecticut River (MA34-02)**
Connecticut Watershed - USGS Code: 01080201

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

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ATTACHMENTS

I. PROPOSED ACTION

The above named applicant has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit to discharge into the designated receiving waters. The permit currently in effect was issued on September 30, 2005, with an effective date of November 29, 2005 and expired on November 29, 2010. As of November 30, 2010, the expired permit (hereinafter referred to as the "current permit") was administratively extended because the applicant filed a complete and timely application for permit reissuance as required by 40 Code of Federal Regulations (CFR) § 122.6. The draft permit proposes an expiration date five (5) years from the effective date of the final permit.

II. TYPE OF FACILITY AND DISCHARGE LOCATION

The Northfield Mount Hermon Waste Water Treatment Facility ("Northfield Mount Hermon WWTF" or the "WWTF") is a secondary wastewater treatment plant serving approximately 400 to 800 individuals (resident students, commuter students, and staff) at Northfield Mount Hermon School. The school encompasses property within the Towns of Gill, Northfield, and Bernardston. Currently, the facility treats approximately 98% of the school's wastewater.

The design flow of the WWTF is 0.45 million gallons per day ("MGD"), the annual average daily flow reported in the 2010 application was 0.062 MGD, and the average for the last 5 years has been 0.076 MGD. The system is a separate system with no combined sewers, wastewater is comprised of domestic sewage. There are no significant industrial users.

The treated effluent is discharged to the Connecticut River (See Figure 1: Location of the Northfield Mount Hermon WWTF).

Information regarding the facility's treated discharge outfall is listed below:

Outfall	Description of Discharge	Outfall Location
001	Secondary Wastewater Treatment Plant Effluent	N 42° 39' 47"/ W 72° 28' 33"

III. DESCRIPTION OF DISCHARGE

A quantitative description of the discharge in terms of significant effluent parameters based on recent discharge monitoring reports ("DMRs") from June 2011 through June 2016 is included as Attachment A: Discharge Monitoring Report Summary Data" of the Fact Sheet.

IV. LIMITATIONS AND CONDITIONS

The draft permit contains effluent limits for outfall serial number 001 for treated effluent flow, biochemical oxygen demand (BOD_5), total suspended solids (TSS), pH, Escherichia coli, total residual chlorine. The draft permit also contains effluent monitoring requirements for ammonia nitrogen, total kjeldahl nitrogen, nitrite nitrogen, nitrate nitrogen, total nitrogen, total phosphorus, whole effluent toxicity, and total recoverable metals (aluminum, cadmium, copper, lead, nickel and zinc). These proposed limitations and conditions, the basis of which are

discussed throughout this fact sheet, may be found in Part I of the draft permit.

V. STATUTORY AND REGULATORY AUTHORITY

Congress enacted the Clean Water Act (CWA), "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 specific permitting sections of the CWA, one of which is Section 402. See CWA§§ 303(a), 402(a). Section 402(a) established one of the CWA's principal permitting programs, the National Pollutant Discharge Elimination System (NPDES). Under this section, 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). The regulations governing EPA's NPDES permit program are generally found in 40 C.F.R. §§122, 124, 125, and 136.

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 CWA §§ 301, 304(b); 40 C.F.R. §§122, 125, and 131).

A. TECHNOLOGY BASED EFFLUENT LIMITS

Technology-based limitations, generally developed on an industry-by-industry basis, reflect a specified level of pollutant reducing technology available and economically achievable for the type of facility being permitted. See CWA § 301(b). As a class, publicly owned treatment works (POTWs) must meet performance-based requirements based on available wastewater treatment technology. See CWA § 301(b)(1)(B). The performance level for POTWs is referred to as "secondary treatment." Secondary treatment is comprised of technology-based requirements expressed in terms of BOD5, TSS and pH. See 40 C.F.R. § 133.

Under Section 301(b)(1) of the CWA, POTWs must have achieved effluent limits based upon secondary treatment technology by July 1, 1997. Since all statutory deadlines for meeting various treatment technology-based effluent limitations established pursuant to the CWA have expired. When technology-based effluent limits are included in a permit, compliance with those limitations is from the date the issued permit becomes effective. See 40 C.F.R. § 125.3(a)(1).

B. WATER QUALITY-BASED EFFLUENT LIMITS (WQBELs)

Water quality-based effluent limits are developed and incorporated in NPDES permits to ensure that State water quality standards are met regardless of the decision made with respect to technology and economics in establishing technology-based limitations. In particular, Section 301(b)(1)(C) requires achievement of, "any more stringent limitation, including those necessary to meet water quality standards…established pursuant to any State law or regulation…" See 40 C.F.R. §§ 122.4(d)(1)(providing that a permit must contain effluent limits as necessary to protect State water quality standards, "including State narrative criteria for water quality")(emphasis added) and 122.44(d)(5)(providing in part that a permit incorporate any

more stringent limits required by Section 301(b)(1)(C) of the CWA).

1. Water Quality Standards

The CWA requires that each State develop water quality standards (WQSs) for all water bodies within the State. See CWA § 303. WQSs have three parts: (1) one or more "designated uses" for each water body or water body segment in the state; (2) water quality "criteria," consisting of numeric concentration levels and/or narrative statements specifying the amounts of various pollutants that may be present in each water body without impairing the designated uses of that water body; and (3) an antidegradation provision, focused on protecting existing and designated uses. See CWA § 303(c)(2)(A) and 40 C.F.R. § 131.12. The limits and conditions of the permit reflect the goal of the CWA and EPA to achieve and then to maintain water quality standards. The applicable state WQSs can be found in Title 314 of the Code of Massachusetts Regulations, Chapter 4 (314 CMR 4.00).

Receiving stream requirements are established according to numeric and narrative standards adopted under State law for each stream classification. When using chemical-specific numeric criteria from the State's WQSs to develop permit limits, both the acute and chronic aquatic life criteria are used and expressed in terms of maximum allowable in-stream pollutant concentrations. Maximum daily limits are generally derived from the acute aquatic life criteria, and the average monthly limit is generally derived from the chronic aquatic life criteria. Chemical-specific limits are established in accordance with 40 CFR §122.44(d) and §122.45(d). Where a State has not established a numeric water quality criterion for a specific chemical pollutant that is present in the effluent in a concentration that causes or has a reasonable potential to cause a violation of narrative water quality standards, the permitting authority must establish effluent limits in one of three ways: based on a "calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use," on a "case-by-case basis" using CWA Section 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or, in certain circumstances, based on an indicator parameter. See 40 C.F.R. § 122.44(d)(1)(vi)(a-C).

2. Assessment and Listing of Waters and TMDLs.

The objective of the CWA is to restore and maintain the chemical, physical and biological integrity of the Nation's waters. To meet this goal, the CWA requires states to develop information on the quality of their water resources and report this information to EPA, the U.S. Congress, and the public. To this end, the EPA released guidance on November 19, 2001, for the preparation of an integrated "List of Waters" that could combine reporting elements of both §305(b) and 303(d) of the CWA. The integrated list format allows states to provide the status of all their assessed waters in one list. States choosing this option must list each water body or segment in one of the following five categories: 1) Unimpaired and not threatened for all designated uses; 2) Unimpaired waters for some uses and not assessed for others; 3) Insufficient information to make assessments for any uses; 4) Impaired or threatened for one or more uses but not requiring the calculation of a Total Maximum Daily Load (TMDL); and 5) Impaired or threatened for one or more uses and requiring a TMDL.

A TMDL is a pollution budget and includes a calculation of the maximum amount of a pollutant that can occur in a waterbody and allocates the necessary reductions to one or more pollutant sources, including point source discharges, such as wastewater treatment plants. A TMDL serves as a planning tool and potential starting point for restoration or protection activities with the ultimate goal of attaining or maintaining water quality standards. See 40 C.F.R. §130.7.

For impaired waters where a TMDL has been developed for a particular pollutant and the TMDL includes a waste load allocation for a NPDES permitted discharge, the effluent limit in the permit may not exceed the waste load allocation. See 40 C.F.R. §122.44(d)(1)(vii)(B).

3. Reasonable Potential

Pursuant to 40 C.F.R. § 122.44(d)(1), NPDES permits must contain any requirements in addition to technology-based limits necessary to achieve water quality standards established under Section 303 of the CWA. In addition, limitations "must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality" (40 C.F.R. § 122.44(d)(1)(i)). There is reasonable potential to cause or contribute to an excursion of WQSs ("reasonable potential") if the actual or projected instream concentration exceeds the applicable criterion. If there is reasonable potential for a particular pollutant, then a WQBEL must be derived for that pollutant.

In evaluating reasonable potential, EPA considers: 1) existing controls on point and non-point sources of pollution; 2) pollutant concentration and variability in the effluent and receiving water as determined by the permit's reissuance application; 3) sensitivity of the species to toxicity testing; 4) the statistical approach outlined in *Technical Support Document for Water Quality-Based Toxics Control* (TSD), March 1991, EPA/505/2-90-001 in Section 3; and, where appropriate, 5) dilution of the effluent in the receiving water.

4. Anti-Backsliding

Section 402(o) of the CWA generally provides that the effluent limitations of a renewed, reissued, or modified permit must be at least as stringent as the comparable effluent limitations in the previous permit. EPA has also promulgated anti-backsliding regulations, which are found at 40 C.F.R. §122.44(l). Unless applicable anti-backsliding requirements are met, the limits and conditions in the reissued permit must be at least as stringent as those in the previous permit.

5. State Certification

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either 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 the State WQSs or it is deemed that the state has waived its right to certify. Regulations governing state certification are set forth in 40 C.F.R. § 124.53 and § 124.55. EPA has requested permit certification by the State pursuant to 40 C.F.R. § 124.53 and expects that the Draft Permit will be certified.

If the State believes that any conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either the CWA §§ 208(e), 301, 302, 303, 306 and 307 or the appropriate requirements of State law, the State should include such conditions and, in each case, cite the CWA or State law reference upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. The only exception to this is that the sludge conditions/requirements implementing § 405(d) of the CWA are not subject to the § 401 State Certification requirements. Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through the applicable procedures of 40 C.F.R. § 124.

In addition, the State should provide a statement of the extent to which any condition of the Draft Permit can be made less stringent without violating the requirements of State law. Since the State's certification is provided prior to permit issuance, any failure by the State to provide this statement waives the State's right to certify or object to any less stringent condition.

It should be noted that under CWA § 401, EPA's duty to defer to considerations of state law is intended to prevent EPA from relaxing any requirements, limitations or conditions imposed by state law. Therefore, "[a] State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition." See 40 C.F.R. § 124.55(c). In such an instance, the regulation provides that, "The Regional Administrator shall disregard any such certification conditions or denials as waivers of certification." Id. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 C.F.R. § 122.4 (d) and 40 C.F.R. § 122.44(d).

C. 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 wastewater effluent both to determine the necessity for effluent limitations in the permit that comply with the Act, and to calculate the limits themselves. EPA's practice is to use design flow as a reasonable and important worst-case condition in reasonable potential and water quality-based effluent limitations (WQBEL) calculations to ensure compliance with water quality standards under Section 301(b)(1)(C). Should the wastewater effluent flow exceed the flow assumed in these calculations, the instream dilution would decrease and the calculated effluent limits may not be protective of WQS. Further, pollutants that do not have the reasonable potential to exceed WQS at the lower wastewater 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" wastewater effluent flow assumption through imposition of permit conditions for wastewater effluent flow. Thus, the wastewater effluent flow limit is a component of WQBELs because the WQBELs are premised on a maximum level of flow. In addition, the wastewater effluent 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 consistent with, and anticipated by NPDES permit regulations. Regarding the calculation of effluent limitations for POTWs, 40 C.F.R. § 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 C.F.R. § 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 wastewater effluent flow is within EPA's authority to condition a permit in order to carry out the objectives of the Act. *See* CWA §§ Sections 402(a)(2) and 301(b)(1)(C); 40 C.F.R. §§ 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 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 of this permit and 40 C.F.R. § 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 wastewater effluent flow. Thus, the permit's wastewater effluent flow limitation is necessary to ensure proper facility operation, which in turn is a requirement applicable to all NPDES permits. *See* 40 C.F.R. § 122.41.

EPA has also included the wastewater effluent flow limit in the permit to minimize or prevent infiltration and inflow (I/I) that may result in unauthorized discharges and compromise proper operation and maintenance of the facility. Improper operation and maintenance may result in non-compliance with permit effluent limitations. Infiltration is groundwater that enters the collection system though physical defects such as cracked pipes or deteriorated joints. Inflow is extraneous flow added to the collection system 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 available for treatment and the operating efficiency of the treatment works and to properly operate and maintain the treatment works.

Furthermore, the extraneous flow due to significant I/I greatly increases the potential for sanitary sewer overflows (SSOs) in separate systems. Consequently, the effluent flow limit is a permit condition that relates to the permittee's duty to mitigate (*i.e.*, minimize or prevent any discharge in violation of the permit which has a reasonable likelihood of adversely affecting human health or the environment) and to properly operate and maintain the treatment works.

See 40 C.F.R. §§ 122.41(d) and (e).

D. 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 Service (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat," 16 U.S.C. § 1855(b).

The Amendments broadly define "essential fish habitat" (EFH) as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity," 16 U.S.C. § 1802(10). "Adverse impact" means any impact which reduces the quality and/or quantity of EFH, 50 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.

EFH is only designated for fish 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.

E. ENDANGERED SPECIES ACT

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA), grants authority and imposes requirements on 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.").

Section 7(a)(2) of the CWA requires every Federal agency, in consultation with and with the assurance 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 freshwater species.

VII. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATION DERIVATION

A. BACKGROUND

1. Treatment Process Description

The Northfield Mount Hermon Wastewater Treatment Facility (WWTF) consists of a manual bar rack, three aerated lagoons in series, rapid mixing, clarification through a clariflocculator, addition of liquid chlorine and contact through a chlorine contact chamber, and approximately 450 feet to an outfall located at the base of the Connecticut River. Physical dechlorination is utilized. Influent samples are taken from the influent channel prior to the bar rack. Effluent samples are collected prior to exiting the chlorine contact chamber. An effluent flow meter is also located at this location. Sludge from the clariflocculator is pumped back to the lagoons, which were last pumped out in 2005.

2. Collection System Description

The Northfield Mount Hermon WWTF is served by a separate sewer system. A separate sanitary sewer conveys domestic, industrial and commercial sewage, but not stormwater. It is part of a "two pipe system" consisting of separate sanitary sewers and storm sewers. The two systems have no interconnections; the sanitary sewer leads to the wastewater treatment plant and the storm sewers discharge to a local water body.

3. Compliance History During Current Permit Term

The Northfield Mount Hermon WWTF is in compliance with the current permit.

4. Receiving Water

The Northfield Mount Hermon WWTF discharges to the Connecticut River in Segment MA34-02. Segment MA34-02 extends from the Route 10 bridge in Northfield, Massachusetts to Turners Falls Dam, Gill/Montague, a length of 11.2 miles.

The Connecticut River has been designated as a Class B water and Warm Water Fishery. The Massachusetts Surface Water Quality Standards (MA SWQS), 314 Code of Massachusetts Regulations ("CMR") 4.05(3)(b) state 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 Connecticut River is classified as a warm water fishery. The MA SWQS (314 CMR 4.02) define a warm water fishery as waters in which the maximum mean monthly temperature generally exceeds 68° Fahrenheit (20° Celsius) during the summer months and are not capable of sustaining a year-round population of cold water stenothermal aquatic life.

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 that are not meeting (or are not expected to meet) water quality standards, identify the designated use(s) that is impaired and also the pollutant(s) causing the impairment(s).

The Massachusetts 2014 Integrated List of Waters lists the Connecticut River (Segment MA34-02) as a Category 5 water ("Waters requiring a TMDL"). The segment is listed as impaired for PCB in fish tissue and two causes that do not require TMDLs: alteration in stream-side or littoral vegetation covers and other flow regime alterations.

5. Available Dilution

7 Day, 10 Year Low Flow

Water quality-based limitations are established with the use of a calculated dilution factor, based on the available dilution of the effluent. Massachusetts water quality regulations require that the available effluent dilution be based on the 7 day, 10-year low flow (7Q10 flow) of the receiving water (314 CMR 4.03(3)(1)). The 7Q10 low flow is the mean low flow over 7 consecutive days, recurring every 10 years.

The 7Q10 flow used in the draft permit has been extrapolated from current and former U.S. Geological Survey gage stations in the area of the Northfield Mount Hermon WWTF outfall (which does not have a permanent flow gage station). The discharge is located about 13 miles upstream of the Montague City gage station USGS Station No. 01170500 ("Montague City"). The 7Q10 extrapolation was performed using DFLOW 4.1, a Windows-based tool developed to estimate user selected stream flows for low flow analysis using USGS data. For this permit reissuance, the most recent 30 years (1987-2016) of USGS data were used to recalculate 7Q10. According to DFLOW 4.1, the 7Q10 at Montague City is 2,120 cfs.

The 7Q10 at the Northfield Mount Hermon WWTF outfall is determined based on the following calculation. A proportion of the Montague City and WWTF outfall drainage areas ("D.A.") is multiplied by the 7Q10 for Montague City (2,120 cfs). This calculation is detailed below:

$$\text{7Q10 @ Northfield Mount Hermon WWTF outfall} = \frac{\text{(D.A. @ WWTF outfall)}}{\text{(D.A. @ Montague City)}} \times \text{(7Q10 @ Montague City)}$$

$$= \frac{\text{(6,740 square miles ("mi}^2\text{"))}}{\text{(7,860 mi}^2\text{)}} \times \text{(2,120 cfs)}$$

$$= 1{,}820 \text{ cfs}$$

Given the 7Q10 flow of 1,820 cfs and the facility's design flow of 0.45 million gallons per day

(MGD) or 0.70 cubic feet per second (cfs), the dilution factor was calculated by dividing the total flow of the receiving water downstream of the discharge by the discharge design flow as shown below:

$$\text{Dilution Factor (DF)} = \frac{\text{(Receiving water 7Q10 + discharge design flow)}}{\text{discharge design flow}}$$

DF = (1,820 cfs + 0.70 cfs)/0.70 cfs
DF = 2,600

B. EFFLUENT LIMITATION AND MONITORING REQUIREMENTS

In addition to the State and Federal regulations described above, data submitted by the permittee in its permit application as well as in monthly discharge monitoring reports (DMRs) and in whole effluent toxicity (WET) test reports from 2011 to 2016 were used to evaluate the discharge during the effluent limitations development process (see Attachment A: Discharge Monitoring Report Summary Data**"** and Attachment B: Whole Effluent Toxicity and Metals Data**").**

1. Wastewater Effluent Flow

The proposed wastewater effluent flow limit is based on the average daily design flow of the treatment plant, which is 0.45 MGD. Flow is to be measured continuously. The permittee shall report the annual average monthly flow using the annual rolling average method (See Permit Footnote 1). The average monthly and maximum daily flow for each month shall also be reported.

A review of DMR data, from June 2011 through June 2016 shows that the reported monthly flows have been in compliance with the 0.45 MGD flow limit. The annual average flow was 0.076 MGD with a range of 0.043 to 0.108 MGD.

2. Conventional Pollutants

a) Biochemical Oxygen Demand (BOD_5)

The draft permit proposes the same BOD_5 limits as in the current permit. The monthly average limits are 30 mg/L and 113 lb/day and the weekly average limits are 45 mg/L and 169 lb/day. The limits are based on secondary treatment standards in 40 CFR § 133.102(a) and (b). The monitoring frequency remains once per week.

A review of DMR data submitted over the last 60 months shows that there have been no permit violations of BOD_5 concentration limits. Based on the DMR data, the monthly average and weekly average were 11.65 mg/L (range 3.24-22.98 mg/L; n=60) and 15.95 mg/L (range 4.40-39.54 mg/L; n=60), respectively.

BOD Mass Loading Calculations:

Calculations of maximum allowable loads for average monthly, average weekly and

maximum daily BOD_5 are based on the following equation:

$$L = C \times DF \times 8.34$$

Where:

L = Maximum allowable load in lb/day.
C = Maximum allowable effluent concentration for reporting period in mg/L. Reporting periods are average monthly and weekly and daily maximum.
DF = Annual average design flow of facility (0.45 MGD).
8.34 = Factor to convert effluent concentration in mg/L and design flow in MGD to lb/day.

(Concentration limit) [30] X 8.34 (Constant) X 0.45 (Design flow) = 113 lb/day
(Concentration limit) [45] X 8.34 (Constant) X 0.45 (Design flow) = 169 lb/day

b) Total Suspended Solids (TSS)

The draft permit proposes the same TSS limits as in the current permit. The monthly average limits are 30 mg/l and 113 lbs/day and the weekly average limits are 45 mg/L and 169 lb/day. The limits are based on secondary treatment standards in 40 CFR § 133.102(a) and (b). The monitoring frequency remains once per week.

A review of DMR data submitted over the last 60 months shows that there have been no permit violations of TSS concentration limits. Based on the DMR data, the monthly average and weekly average were 6.03 mg/L (range 1.00-27.12 mg/L; n=60) and 8.89 mg/L (range 1.00-37.00 mg/l; n=60), respectively.

TSS Mass Loading Calculations:

Calculations of maximum allowable loads for average monthly, average weekly and maximum daily TSS are based on the following equation:

$$L = C \times DF \times 8.34$$

Where:

L = Maximum allowable load in lbs/day.
C = Maximum allowable effluent concentration for reporting period in mg/L. Reporting periods are average monthly and weekly and daily maximum.
DF = Annual average design flow of facility (0.45 MGD).
8.34 = Factor to convert effluent concentration in mg/L and design flow in MGD to lb/day.

(Concentration limit) [30] X 8.34 (Constant) X 0.45 (Design flow) = 113 lb/day
(Concentration limit) [45] X 8.34 (Constant) X 0.45 (Design flow) = 169 lb/day

Eighty-Five Percent (85%) BOD_5 and TSS Removal Requirement

The provisions of 40 CFR §133.102(a)(3), (4) and (b)(3) requires that the 30-day average percent removal for BOD_5 and TSS be not less than 85%. This requirement was included in the previous permit and has been carried forward into the draft permit.

A review of DMR data shows that BOD_5 and TSS removal percentages average 98% and 98%, respectively. There have been no violations of the 85% removal requirement for BOD_5 or TSS over the last 60 months.

c) pH

Consistent with the current permit, the draft permit includes pH limitations which are required by state water quality standards at 314 CMR 4.05(3)(b)(3). The pH of the effluent shall not be less than 6.5 or greater than 8.3 standard units at any time. The monitoring frequency is once per day.

A review of DMR data submitted over the last 60 months shows that there has been no violation of the pH limitations. Based on the DMR data, the pH values have ranged from 6.9-8.3 standard units.

d) Bacteria

The current permit, issued in September 2005, includes effluent limitations for bacteria using fecal coliform bacteria as the indicator bacteria to protect seasonal recreational uses in the receiving water from April 1st through October 31st. A review of DMR data shows that the permittee has been in compliance with the average monthly and maximum daily fecal coliform limits of the current permit (200 cfu/100 ml and 400 cfu/100 ml, respectively). The monthly geometric mean fecal coliform bacteria count ranged from 0-8 cfu/100 ml. The maximum fecal coliform count reported over the last 60 months was 33 cfu/100 ml.

Consistent with Massachusetts' current bacteria criteria, which were approved by EPA on September 19, 2007, the bacteria limits proposed in the draft permit for Outfall 001 are 126 colony forming units (cfu) of *E.coli* per 100 milliliters (ml) as a geometric mean and 409 cfu of *E.coli* per 100 ml maximum daily value (this is the 90% distribution of the geometric mean of 126 cfu/100 ml). The proposed monitoring frequency is once per week which is the same as in the current permit. As in the current permit, the bacteria limits apply from April 1st through October 31st. Due to the change in the Massachusetts bacteria criteria, there is no effluent limit or monitoring requirements for fecal coliform in the draft permit.

e) 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. Taking dilution into account, TRC limits in the effluent would calculate as following:

Average Monthly TRC Limit = 11 μg/L * 2,600 ÷ 1000 μg/mg = 28.6 mg/L
Maximum Daily TRC Limit = 19 μg/L * 2,600 ÷ 1000 μg/mg = 49.4 mg/L

However, the Massachusetts *Implementation Policy for the Control of Toxic Pollutants in Surface Waters* stipulates that the maximum effluent concentration of TRC shall not exceed 1.0 mg/l for discharges with dilution factors greater than 100.

Based upon this analysis, the draft permit includes a maximum daily effluent limitation and an average monthly effluent limitation of 1.0 mg/L for TRC. Thus, these effluent limits are also being carried forward from the current permit. The sampling frequency has been maintained as once per day. As shown in Attachment A: Discharge Monitoring Report Summary Data" of the Fact Sheet, the applicant has been able to achieve consistent compliance with the existing limitation.

3. Non-conventional Pollutants

a) Nutrients: Nitrogen and 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 in the water, creating poor habitat for fish and other aquatic animals. In addition, nitrogen in the form of ammonia can reduce the receiving stream's dissolved oxygen concentration through nitrification and can also be toxic to aquatic life at elevated temperatures. The toxicity level of ammonia depends on the temperature and pH of the receiving water (USEPA 1999).

Nitrogen

The Northfield Mount Hermon WWTF discharges to the Connecticut River, which drains to Long Island Sound. In December 2000, the Connecticut Department of Energy and Environmental Protection (CT DEEP) and New York State Department of Environmental Conservation (NYSDEC) completed a Total Maximum Daily Load (TMDL) for addressing nitrogen-driven eutrophication impacts in Long Island Sound. The TMDL included a Waste Load Allocation (WLA) for point sources and a Load Allocation (LA) for non-point sources. The point source WLA for out-of-basin sources (Massachusetts, New Hampshire and Vermont wastewater facilities discharging to the Connecticut, Housatonic and Thames River watersheds) requires an aggregate 25% reduction from the baseline total nitrogen loading estimated in the TMDL.

The baseline out-of-basin total nitrogen point source loadings estimated for the Connecticut, Housatonic, and Thames River watersheds were 21,672 lb/day, 3,286 lb/day, and 1,253 lb/day respectively (see Table 1: Estimated Out-of-Basin Point Source Nitrogen Loadings to the Connecticut, Housatonic and Thames Rivers Watersheds below). The estimated point source

total nitrogen loadings for the Connecticut, Housatonic, and Thames, Rivers, respectively are 13,836 lb/day, 2,151 lb/day, and 1,015 lb/day, based on 2004-2005 information and including all POTWs in the watershed.

Table 1: Estimated Out-of-Basin Point Source Nitrogen Loadings to the Connecticut, Housatonic and Thames Rivers Watersheds

Basin	**Baseline Loading[1] lb/day**	**TMDL Target[2] lb/day**	**Current Loading[3] lb/day**
Connecticut River	21,672	16,254	13,836
Housatonic River	3,286	2,464	2,151
Thames River	1,253	939	1,015
Totals	**26,211**	**19,657**	**17,002**

1. Estimated loading from TMDL, (see Appendix 3 to CT DEEP "Report on Nitrogen Loads to Long Island Sound", April 1998)
2. Reduction of 25% from baseline loading
3. Estimated current loading from 2004 – 2005 DMR data

As can be seen in Table 1, the TMDL target of a 25% aggregate 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%.

Due to the relatively small contribution of the discharge and its relatively distant location from Long Island Sound, EPA estimates that the nitrogen discharged from the facility is attenuated within the Connecticut River and its tributaries and is not contributing to the dissolved oxygen impairment in Long Island Sound. The annual average total nitrogen load from Northfield Mount Hermon from 2004 through 2005 data, which contributed to the "Current Loading" identified in Table 1, was 16.4 lb/day. More recent data from 2013 to 2016 (summarized in Attachment A) indicates that the average is now approximately 13 lb/day. In order to ensure that the out-of-basin total nitrogen wasteload allocation prescribed by the Long Island Sound TMDL continues to be met, the draft permit includes average monthly reporting requirements for total nitrogen (TN), total Kjeldahl nitrogen (TKN), total nitrite nitrogen (NO_2), and total nitrate nitrogen (NO_3) to be reported in terms of concentration (mg/L) and loading (lb/day).

Future Nitrogen Limits

EPA and state agencies continue to assess nitrogen loads to the Connecticut River and Long Island Sound 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 incorporation of nitrogen control requirements.

In December 2015, EPA signed a letter detailing an EPA nitrogen reduction strategy for waters in the Long Island Sound watershed. The strategy recognizes that more work must be done to reduce nitrogen levels, further improve DO conditions, and attain other related water quality standards in Long Island Sound. EPA is working to establish thresholds for Western Long Island Sound and several coastal embayments, including the mouth of the Connecticut River. Documents regarding the EPA Nitrogen Reduction Strategy are available for public review on EPA's Long Island Sound website http://longislandsoundstudy.net/issues-actions/water-quality/nitrogen-strategy/). EPA has identified the Connecticut Riverine System as the priority

system in the Performance Work Statement (more information can be found at http://longislandsoundstudy.net/issues-actions/water-quality/nitrogen-strategy/). Upon completion of establishing thresholds, allocations of total nitrogen loadings will be made where further reductions are necessary. If reductions are needed for the Northfield Mount Hermon discharge, a water quality-based limit will be added in a future permit action. If so, EPA anticipates exploring possible trading approaches for nitrogen loading in the Massachusetts portion of the Connecticut River watershed.

Although not a permit requirement, it is recommended that any facilities planning that might be conducted for this facility should consider alternatives for further enhancing nitrogen reduction.

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. Nutrients are also prohibited in concentrations that would cause or contribute to cultural eutrophication.

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 that 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.

More recently, EPA released 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. Northfield Mount Hermon is located within Ecoregion VIII. The recommended

total phosphorus criteria for Ecoregion VIII is 10 µg/L[1].

According to the Gold Book, there are two basic needs in establishing a phosphorus limit: 1) to control the development of plant nuisances within the flowing water; and 2) to protect the downstream receiving waterway. The Gold Book also recognizes that there may be instances where higher concentrations of phosphorus do not produce eutrophic conditions, as well as instances where lower concentrations may be associated with populations of nuisance organisms. As an example, fast-flowing waters with substantial canopy cover that limits light penetration may represent conditions that would be less suitable for excessive plant growth than a slow-moving stream with an open canopy and high light penetration, and therefore warrant less stringent permit conditions to control phosphorus.

While the segment of the Connecticut River (Segment MA34-02) is listed as Category 5 water ("Waters requiring a TMDL"), this assessment suggests that the downstream receiving segment of the Connecticut River is representative of surface waters that are minimally impacted by nutrients and is not adversely affected by effluent flow from the Northfield Mount Hermon WWTF.

Previous permits have not included phosphorus testing requirements. With a dilution factor of 2,600 it is very unlikely that the facility's phosphorous discharges have a reasonable potential to cause or contribute to a water quality standards exceedance. However, with lack of data, a reasonable potential calculation for the discharge to exceed the Gold Book criterion (0.1 mg/l) could not be performed. To be able to quantitatively determine the potential that phosphorus discharges from the Northfield Mount Hermon WWTF may cause or contribute to the development of excessive plant growth in the Connecticut River in the next permit cycle, the draft permit includes the requirement to monitor phosphorus monthly on a seasonal basis, from April 1st through October 31st.

b) 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. An evaluation of the concentration of metals in the facility's effluent (from Whole Effluent Toxicity reports submitted from 2005 to 2015) was used to determine reasonable potential for toxicity caused by aluminum, copper, lead and zinc.

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 https://www.epa.gov/wqs-tech/water-quality-standards-handbook). 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

[1] EPA, *Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria, Lakes and Reservoirs in Ecoregion XIII*, December 2001, EPA 822-B-01-015.

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.

The facility's effluent concentrations (from Attachment B: Whole Effluent Toxicity and Metals Data") were characterized assuming a lognormal distribution in order to determine the estimated 95^{th} percentile of the daily maximum (See Attachment C: Statistical Analysis for Metals Effluent Data ($N \geq 10$)). For metals with hardness-based water quality criteria, the criteria were determined using the equations in EPA's National Recommended Water Quality Criteria: 2002, using the appropriate factors for the individual metals found in the MA Standards.

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 the Connecticut 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 August and September of 2005 through 2015, as summarized in Table 2.

Table 2: Connecticut River and Northfield Mount Hermon WWTF Hardness WET Results

Test Date	**Effluent Hardness, mg/l (as $CaCO_3$)**	**Ambient Hardness, mg/l (data collected upstream)**
8/2/2005	52	40
8/16/2005	44	40
9/12/2006	60	44
9/11/2007	52	44
9/9/2008	56	36
9/15/2009	52	48
9/14/2010	54	50
9/13/2011	56	34
9/12/2012	50	52
9/10/2013	48	42
9/9/2014	56	40
9/9/2015	60	46
Median	**53**	**43**

Calculation of hardness in the receiving water:

$$C_r = \frac{(Q_dC_d + Q_sC_s)}{Q_r} = \frac{(0.70\ cfs)(53\ mg/l) + (1820\ cfs)(43\ mg/l)}{1820.7\ cfs} = 43.0\ mg/l$$

Where:

Q_s = 7Q10 river stream flow upstream of plant = 1,820cfs
Q_d = Design discharge flow from plant = (1.5 MGD * 1.547) = 0.70 cfs
Q_r = Combined stream flow (7Q10 + plant flow) = (1,820+ 0.70) = 1,820.7 cfs
C_s = Upstream hardness concentration = 43 mg/l as $CaCO_3$
C_d = Plant discharge hardness concentration = 53 mg/l as $CaCO_3$
C_r = Receiving water hardness concentration

Therefore, a hardness of 43.0 mg/L as $CaCo_3$ was used to calculate the water quality criteria for certain metals.

Table 3 summarizes the factors used to determine the acute and chronic total recoverable criteria for each metal.

Table 3: 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	0.90	0.14
Copper	0.9422	-1.7000	0.8545	-1.702	6.32	4.54
Lead	1.273	-1.46	1.273	-4.705	27.89	1.09
Nickel	0.846	2.255	0.846	0.0584	229.77	25.45
Zinc	0.8473	0.884	0.8473	0.884	58.61	58.61

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

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

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.

$$Q_dC_d + Q_sC_s = Q_rC_r$$

Rewritten as:

$$C_r = \frac{Q_dC_d + Q_sCs}{Q_r}$$

where:

Q_s = 7Q10 river stream flow upstream of plant = 1,820 cfs
Q_d = Design discharge flow from plant = (1.5 MGD * 1.547) = 0.70 cfs
Q_r = Combined stream flow (7Q10 + plant flow) = (1,820+ 0.70) = 1,820.7 cfs
C_d = effluent metals concentration, in ug/L (95th percentile)
C_s = median upstream metals concentration, in ug/L (median)
C_r = downstream pollutant concentration, in µg/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. In EPA's Technical Support Document for Water Quality Based Toxics Control, EPA/505/2-90-001, March 1991, commonly known as the "TSD," box 3-2 describes the statistical approach in determining if there is reasonable potential for an excursion above the maximum allowable concentration. 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). Table 4 summarizes the results of this analysis with respect to aluminum, copper, nickel, lead, and zinc.

Table 4: Results of Reasonable Potential Analysis for Metals at Northfield Mount Hermon WWTF

Metal	Qd	Cd[1] (95th percentile)	Qs	Cs[2] (Median)	Qr = Qs+Qd	Cr=(QdCd+QsCs)/Qr	Criteria		Reasonable Potential	Limit = (Qr*Criteria-Qs*Cs)/Qd	
	cfs	µg/l	cfs	µg/l	cfs	µg/l	Acute (µg/l)	Chronic (µg/l)	C_r > Criteria	Acute (µg/l)	Chronic (µg/l)
Aluminum	0.70	43.2	1,820	33.0	1,820.7	33.0	750	87	N	N/A	N/A
Copper		13		2.00		2.004	6.32	4.54	N	N/A	N/A
Nickel		2.36		0.00		0.00	27.89	1.09	N	N/A	N/A
Lead		1.1		0.00		0.00043	229.8	25.55	N	N/A	N/A
Zinc		18.1		3.55		3.56	58.61	58.61	N	N/A	N/A

[1]Data from the 2005-2015 Whole Effluent Toxicity (WET) testing were used to calculate values for aluminum, copper, nickel, lead, and zinc (See Attachment B: Whole Effluent Toxicity and Metals Data).

[2]Median upstream data: WET testing results from the Connecticut River, just upstream of the Northfield Mount Hermon WWTF discharge (See Attachment B: Whole Effluent Toxicity and Metals Data).

Since the concentration of aluminum, copper, nickel, lead, and zinc do not indicate a reasonable potential to cause or contribute to an exceedance of the applicable water quality criteria, limits for these metals are not proposed for the draft permit. Monitoring for all listed metals will continue to be required as part of the annual WET tests.

c) Effluent Toxicity

Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on water quality standards. The MA SWQS, found at 314 CMR 4.05(5)(e), include the following narrative statement and require that EPA criteria established pursuant to Section 304(a)(1) of the CWA be used as guidance for interpretation of 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. For pollutants not otherwise listed in 314 CMR 4.00, the National recommended water quality criteria: 2002, EPA 822-r-02-047, November 2002, published by EPA pursuant to Section 304(a) of the Federal Water Pollution Control Act, are the allowable receiving water concentrations for the affected waters, unless the State either establishes a site specific criterion or determines that naturally occurring background concentrations are higher. Where the State determines that naturally occurring background concentrations are higher, those concentrations shall be the allowable receiving water concentrations. The State may establish site specific criteria for toxic pollutants based on the site specific considerations. Site-specific limits, human health risk levels and permit limits will be established in accordance with 314 CMR 4.05(e)(1)(2)(3)(4).*

National studies conducted by the EPA have demonstrated that domestic sources, as well as industrial sources, contribute toxic constituents to WWTFs. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. Based on the potential for toxicity from domestic and industrial contributions, the state narrative water quality criterion, the level of dilution at the discharge location, and in accordance with EPA national and regional policy and 40 C.F.R. § 122.44(d), the draft permit includes a whole effluent acute toxicity (lethal concentration to 50% of the test organisms or LC_{50}) limitation. (See also: *Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants*, 49 Fed. Reg. 9016 March 9, 1984, and EPA's "Technical Support Document for Water Quality-Based Toxics Control", March, 1991.)

The MassDEP's Division of Watershed Management has a current toxics policy which requires toxicity testing for NPDES dischargers such as the Northfield Mount Hermon WWTF (*Implementation Policy for the Control of Toxic Pollutants in Surface* Waters, MassDEP 1990). In addition, EPA recognizes that toxicity testing is required to assure that the synergetic effect of the pollutants in the discharge do not cause toxicity, even though the pollutants may be at low concentrations in the effluent. The inclusion of a whole effluent toxicity limitation in the draft permit will assure that the Northfield Mount Hermon WWTF does not discharge combinations of toxic compounds into in amounts which would affect aquatic or human life.

Pursuant to EPA Region I Policy, and MassDEP's *Implementation Policy for the Control of Toxic Pollutants in Surface Waters* (February 1990), dischargers having a dilution factor greater than 100

are required to conduct acute toxicity testing with a $LC_{50} \geq 50\%$, two times per year. In accordance with the above guidance, the draft permit includes an acute toxicity limit (LC_{50} of $\geq 50\%$). 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 2005 indicate that the facility has consistently met the acute toxicity limit (see Attachment B: Whole Effluent Toxicity and Metals Data" of the Fact Sheet). The draft permit continues to require an acute limit at an $LC_{50} \geq 50\%$ with a monitoring frequency of once per year during the third quarter (July to September). Toxicity testing must be performed in accordance with the EPA Region I Acute WET test procedures and protocols included as Attachment A to the draft permit. The requirements for WET testing have changed since the last permit issuance. EPA and MassDEP may use the results of the toxicity tests and chemical analyses conducted by the permittee, required by the permit, as well as national water quality criteria, state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitation for any pollutants.

VIII. SLUDGE CONDITIONS

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. These standards are required to be implemented through permits. The conditions in the permit satisfy this requirement.

IX. INFILTRATION/INFLOW (I/I)

Infiltration is groundwater that enters the collection system though physical defects such as cracked pipes, or deteriorated joints. Inflow is extraneous flow entering 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 to secondary treatment. It greatly increases the potential for sanitary sewer overflows (SSO) in separate systems, and combined sewer overflows in combined systems.

The draft permit includes a requirement for the permittee to control infiltration and inflow (I/I) within the sewer collections 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.

X. OPERATION AND MAINTENANCE

The standard permit conditions for 'Proper Operation and Maintenance', found at 40 CFR §122.41(e), require the proper operation and maintenance of permitted wastewater systems and related facilities to achieve permit conditions. The requirements at 40 CFR § 122.41(d) impose a 'duty to mitigate' upon the permittee, which requires that "all reasonable steps be taken to minimize or prevent any discharge violation of the permit which has a reasonable likelihood of adversity affecting human health or the environment. EPA and MassDEP maintain that an I/I removal program is an integral component of ensuring permit 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 permit. Specific permit conditions have also been included in Part I.C. and I.D. of the draft permit. These requirements include mapping of the wastewater collection system, preparing and implementing a collection system operation and maintenance plan, reporting of unauthorized discharges including SSOs, maintaining an adequate maintenance staff, performing preventative maintenance, controlling inflow and infiltration to separate sewer collection systems (combined systems are not subject to I/I requirements) to the extent necessary to prevent SSOs and I/I related effluent violations at the wastewater treatment facility 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.

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 has 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.

XI. 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.

XII. ESSENTIAL FISH HABITAT DETERMINATION (EFH)

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq. (1998)), EPA is required to consult with the National Marine Fisheries Services (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, may adversely impact any essential fish habitat (EFH) 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 that 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 Connecticut River at the WWTF outfall for the following reasons: (1) the discharge is upstream of a number of separate dams, several 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 design flow from the Northfield Mount Hermon WWTF is 0.45 MGD monthly average and the dilution ratio is 2,600:1;
- The Northfield Mount Hermon WWTF withdraws no water from the Connecticut River, so there is no potential for mortality to EFH species life stages from impingement or entrainment;
- 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 toxicity tests will be performed annually; and
- Limits specifically protective of aquatic organisms have been established for total residual chlorine 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, National Marine Fisheries Service (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.

XIII. ENDANGERED SPECIES ACT

Section 7(a) of the Endangered Species Act (ESA) of 1973, as amended, 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 ensure 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 Northfield Mount Hermon WWTF outfall 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) (the "Biological Opinion"), issued to FERC by NOAA Fisheries on February 12, 2015. According to the Biological Opinion, "Currently, the Holyoke Dam (rkm 139) separates the Connecticut River population of shortnose sturgeon into an upstream and downstream segment. Upstream of the dam, shortnose sturgeon are present in a 59-km reach up to the Turners Falls Dam (rkm 198)." Discharge from the Northfield Mount Hermon WWTF enters the Connecticut River more than 10 miles upstream of Turners Falls Dam. Therefore, the species is unlikely to be found in the location of discharge from the treatment plant.

The federally endangered dwarf wedgemussel (*Alasmidonta heterodon*) has been historically found in the Connecticut River in Franklin County. According to site data from "Dwarf Wedgemussel *Alasmidonta heterodon* 5-Year Review: Summary and Evaluation" (USFWS New England Field Office 2013), recent populations of dwarf wedgemussel in Massachusetts are limited to the Mill River, Fort River, and Hop Brook. Therefore, the species is unlikely to be found in the location of the Northfield Mount Hermon WWTF discharge.

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

XIV. 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 electronically report monitoring results obtained during each calendar month as a Discharge Monitoring Report (DMR) to EPA and the State using NetDMR no later than the 15th day of the month following the completed reporting period.

NetDMR is a national web-based tool for regulated CWA permittees to submit DMRs electronically via a secure internet application to EPA through the Environmental Information Exchange Network. NetDMR has allowed participants to discontinue mailing in hard copy forms to EPA under 40 C.F.R. §§ 122.41 and 403.12. NetDMR is accessed from the following website: https://netdmr.zendesk.com/hc/en-us. Further information about NetDMR can be found on the EPA Region 1 NetDMR website.

With the use of NetDMR, the Permittee is no longer required to submit hard copies of DMRs and reports to EPA and the State unless otherwise specified in the Draft Permit. In most cases, reports required under the permit shall be submitted to EPA as an electronic attachment through NetDMR.

Certain exceptions are provided in the permit, such as for providing written notifications required under the Part II Standard Conditions.

XV. STATE PERMIT CONDITIONS

The NPDES Permit is issued jointly by the U. S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection under federal and state law, respectively. As such, all the terms and conditions of the permit are, therefore, incorporated into and constitute a discharge permit issued by the Director of the Wastewater Program pursuant to M.G.L. Chap. 21, §43.

XVI. STANDARD CONDITIONS

The standard conditions in Part II of the permit are based on 40 CFR Parts 122, Subparts A and D and 40 CFR 124, Subparts A, D, E, and F and are consistent with management requirements common to other permits.

XVII. STATE CERTIFICATION REQUIREMENTS

EPA may not issue a permit unless the MassDEP either 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 the certification is deemed to be waived. Regulations governing state certification are set forth in 40 CFR §§124.53 and §124.55. The staff of the MassDEP has reviewed the draft permit and indicated to EPA that the limitations are adequate to protect water quality. EPA Region 1 has requested permit certification by the State and expects that the final permit will be certified.

XVIII. PUBLIC COMMENT PERIOD AND PROCEDURES FOR FINAL DECISION

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: Michele Cobban Barden, 5 Post Office Square, Suite-100, (OEP06-1), Boston, Massachusetts 02109-3912 or via email to barden.michele@epa.gov. Any person, prior to such date, may submit a request in writing to EPA and the State's Agency for a public hearing to consider the draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period and after a public hearing, if such a hearing is held, the Regional Administrator 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 thirty (30) days following the notice of final permit decision, permit may be appealed to the Environmental Appeals Board in the manner described at 40 CFR § 124.19.

XIX. 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:

Michele Barden
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100 (OEP06-1)
Boston, MA 02109-3912
Tel: (617) 918-1539 Fax: (617)918 -0297
barden.michele@epa.gov

Jennifer Wood
Massachusetts Department of Environmental Protection
Bureau of Water Resources
One Winter Street
Boston, MA 02108
Tel: (617) 654-6536 Fax: (617) 292-5696
jennifer.wood@state.ma.us

June 11, 2018
Date

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

Figure 1: Location of the Northfield Mount Hermon WWTF

Attachment A: Discharge Monitoring Report Summary Data

	Effluent Flow		BOD_5				Total Suspended Solids			
Monitoring Period End Date	Average Monthly	12 Month Average	Average Monthly	Average Monthly	Average Weekly	Average Weekly	Average Monthly	Average Monthly	Average Weekly	Average Weekly
	MGD	MGD	lb/day	mg/L	lb/d	mg/L	lb/d	mg/L	lb/d	mg/L
6/30/2011	0.081	0.081	14.4	17.34	22.1	21.6	1.88	2	5.5	4.5
7/31/2011	0.032	0.079	5.86	20	7.38	22.7	0.483	1.66	0.65	2
8/31/2011	0.151	0.089	12.03	8.13	21.6	10.9	1.94	1.75	2.97	2
9/30/2011	0.162	0.099	11.41	7.81	26.7	12.54	4.14	3.37	6.4	4.5
10/31/2011	0.138	0.102	3.52	3.24	6.7	4.4	2.51	2.5	4.29	5
11/30/2011	0.107	0.103	8.498	8.546	16.5	11	1.792	1.7	4.5	3
12/31/2011	0.122	0.106	7.78	6	19.5	12.63	1.8	1.5	3.1	2
1/31/2012	0.092	0.108	2.76	3.89	3.22	4.78	5.5	13.9	1.35	11.5
2/29/2012	0.068	0.108	4.74	7.65	7.05	11	6.1	11.2	7.88	12.6
3/31/2012	0.04	0.097	7.22	16.83	10.58	25.38	5.9	11.3	6.1	13.1
4/30/2012	0.047	0.093	2.4	6.35	2.74	7.35	4.9	11.6	1.66	16.8
5/31/2012	0.065	0.092	5.28	8.05	6	10.34	5.2	10.0	6.87	10.7
6/30/2012	0.087	0.092	4.89	6.97	8.09	11.84	4.8	51.2	15.5	10.5
7/31/2012	0.049	0.094	3.88	8.06	6.32	10.11	3.3	10.7	3.66	12.8
8/31/2012	0.037	0.085	1.29	4.785	1.62	5.12	3.7	9.9	2.85	11.4
9/30/2012	0.065	0.076	5.6	7	12.3	9.52	3.0	9.4	7.1	10.7
10/31/2012	0.061	0.07	4.64	7.398	8.06	10	4.3	10.9	1.47	12.6
11/30/2012	0.05	0.065	3.46	6.56	6.43	13.31	3.5	9.5	3.08	11.6
12/31/2012	0.061	0.06	5.98	9.82	10.62	16.12	3.9	10.8	3.03	12.0
1/31/2013	0.059	0.057	6.44	10.72	10.9	17	4.0	8.8	16.9	9.8
2/28/2013	0.069	0.057	7.02	9.41	12.61	11	4.7	9.2	23	8.2
3/31/2013	0.088	0.0615	16.39	17.5	23.9	20.28	4.5	9.4	29.3	11.2
4/30/2013	0.062	0.063	9.8	14.71	12.67	21.4	5.2	10.7	22.1	13.5
5/31/2013	0.061	0.062	3.97	5.66	8.13	8.21	4.5	11.1	11.8	12.8
6/30/2013	0.283	0.078	19.67	15.78	40.9	20.3	5.8	10.0	14.6	12.3

	Effluent Flow		BOD_5				Total Suspended Solids			
Monitoring Period End Date	Average Monthly	12 Month Average	Average Monthly	Average Monthly	Average Weekly	Average Weekly	Average Monthly	Average Monthly	Average Weekly	Average Weekly
	MGD	MGD	lb/day	mg/L	lb/d	mg/L	lb/d	mg/L	lb/d	mg/L
7/31/2013	0.053	0.079	12.55	14.21	29.5	22.6	4.1	9.2	7.35	10.1
8/31/2013	0.093	0.083	4.25	4.51	4.25	4.51	3.3	9.6	2.35	11.0
9/30/2013	0.069	0.084	11.41	15.36	18.3	29.1	3.6	9.7	7.38	10.6
10/31/2013	0.082	0.043	6.44	14.87	10.25	21.95	2.9	10.4	1.7	14.9
11/30/2013	0.049	0.083	5.61	15.87	9.75	21.21	3.9	11.2	1.6	13.8
12/31/2013	0.072	0.083	4.12	6.88	5.29	8.25	3.3	10.8	0.65	12.0
1/31/2014	0.109	0.087	10.12	10.09	21.17	12.9	3.2	10.3	9.35	13.7
2/28/2014	0.058	0.086	7.66	13.69	10.11	15.56	2.3	9.0	8.16	9.6
3/31/2014	0.072	0.085	9.15	13.29	13.5	14.28	3.1	9.3	8	10.2
4/30/2014	0.134	0.091	21.68	16.05	34.1	18.85	5.9	8.1	37.9	9.3
5/31/2014	0.082	0.093	5.47	9.16	9.5	12.52	3.0	8.6	5.2	10.1
6/30/2014	0.034	0.072	5.01	13.98	7.15	19.52	8.0	10.2	2.75	12.2
7/31/2014	0.103	0.076	19.23	18.79	28.6	21.6	6.7	8.7	24.4	9.2
8/31/2014	0.065	0.074	18.73	16.79	52.4	22.44	6.3	8.6	14	9.5
9/30/2014	0.046	0.072	7.26	15	8.68	20.45	3.5	8.3	3.54	8.6
10/31/2014	0.072	0.074	14.68	22.93	18.89	27.36	4.9	8.4	2.66	11.5
11/30/2014	0.055	0.075	12.2	22.98	19.3	28.86	5.5	8.5	3.37	12.2
12/31/2014	0.137	0.08	14.15	12.51	21.6	19.56	8.5	9.2	5.83	10.6
1/31/2015	0.067	0.077	6.5	11.86	8.98	13.66	9.0	12.6	7.13	14.5
2/28/2015	0.041	0.075	4.17	9.44	6	11.65	5.1	9.1	3.46	8.8
3/31/2015	0.063	0.075	5.11	8.17	7.41	9.88	5.3	9.0	9.59	8.3
4/30/2015	0.091	0.071	9.71	11.85	13.35	14.25	8.6	9.0	21.7	9.3
5/31/2015	0.033	0.067	4.77	13.51	6.54	16.69	3.8	8.1	2.62	8.6
6/30/2015	0.031	0.067	4.08	14.88	6.72	20.6	3.1	6.6	1.53	8.5
7/31/2015	0.049	0.063	11.57	21.05	17.2	25.5	4.7	9.7	7	11.3
8/31/2015	0									

	Effluent Flow		BOD_5				Total Suspended Solids			
Monitoring Period End Date	Average Monthly	12 Month Average	Average Monthly	Average Monthly	Average Weekly	Average Weekly	Average Monthly	Average Monthly	Average Weekly	Average Weekly
	MGD	MGD	lb/day	mg/L	lb/d	mg/L	lb/d	mg/L	lb/d	mg/L
9/30/2015	0.065	0.058	7.52	11.67	10.5	22.56	7.52	11.67	3	22.56
10/31/2015	0.062	0.057	6.69	13.95	15.8	39.54	6.69	13.95	2.87	39.54
11/30/2015	0.038	0.056	3.51	8.06	3.88	12.22	3.51	8.06	1.73	12.22
12/31/2015	0.06	0.05	3.67	6.63	6.82	8.89	3.67	6.63	1.15	8.89
1/31/2016	0.079	0.051	5.83	9.1	7.07	11.31	26.9	14.3	4.5	18.9
2/28/2016	0.105	0.056	11.2	9.08	17.38	10.32	5.0	10.3	9.77	11.1
3/31/2016	0.079	0.057	15.86	18.98	23.5	24.48	11.4	10.9	21.3	11.8
4/30/2016	0.049	0.054	7.31	15.36	11.79	20.8	8.8	9.8	7.37	13.6
5/31/2016	0.035	0.054	5.49	12.74	8.35	16.69	4.6	10.0	2.75	11.8
6/30/2016	0.032	0.054	2.44	7.8	2.82	7.87	4.5	11.5	0.93	17.0
Current Permit limit	Report	0.45	113	30	169	45	113	30	169	45
Minimum	0.000	0.043	1.29	3.24	1.62	4.40	0.48	1.00	0.65	1.00
Maximum	0.283	0.108	21.68	22.98	52.40	39.54	24.62	27.12	37.90	37.00
Average	0.074	0.076	8.10	11.65	13.48	15.95	4.51	6.03	7.67	8.89
Standard Deviation	0.042	0.016	4.79	4.88	9.70	7.14	5.23	5.72	7.81	7.45
No. Measurements	61	60	60	60	60	60	60	60	60	60
No. Exceedances	**	0	0	0	0	0	0	0	0	0

	pH		Fecal Coliform		Total Residual Chlorine		Total Kjeldahl Nitrogen (TKN)	Nitrite- Nitrate Nitrogen
Monitoring Period End Date	Daily Minimum	Daily Maximum	Maximum Daily	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily
	SU	SU	mg/L	mg/L	mg/L	mg/L	cfu/100 mL	cfu/100 mL
6/30/2011	7.2	7.5	0	0	0.27	0.74		
7/31/2011	7.2	7.4	1	2	0.35	0.85		
8/31/2011	7.2	7.3	0	0	0.21	0.49		
9/30/2011	7.1	7.4	7	17	0.29	0.97		
10/31/2011	7	7.4	0	0	0.31	0.62		
11/30/2011	7.1	7.2						
12/31/2011	7.1	7.3						
1/31/2012	7.2	7.3						
2/29/2012	7.2	7.4						
3/31/2012	7.2	7.4					17	3
4/30/2012	7.3	7.5	0	0	0.46	0.95	17	1
5/31/2012	7.4	7.5	0	0	0.31	0.57		
6/30/2012	7.3	8.3	8	33	0.53	0.85		
7/31/2012	7.2	7.4	3	5	0.22	0.58		
8/31/2012	7.3	7.5	0	0	0.36	0.59		
9/30/2012	7.3	7.4	0	0	0.28	0.4		
10/31/2012	7.3	7.5	0	0	0.28	0.55		
11/30/2012	7.4	7.6						
12/31/2012	7.5	7.7						
1/31/2013	7.6	8						
2/28/2013	7.8	8						
3/31/2013	7.8	8						
4/30/2013	7	8	0.4	2	0.34	0.6	19	4.7
5/31/2013	6.9	7.5	1	2	0.29	0.54		
6/30/2013	7.1	7.3	0	0	0.23	0.45	6.7	5.9
7/31/2013	7.1	7.6	2	3	0.25	0.61		

	pH		Fecal Coliform		Total Residual Chlorine		Total Kjeldahl Nitrogen (TKN)	Nitrite- Nitrate Nitrogen
Monitoring Period End Date	Daily Minimum	Daily Maximum	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Maximum Daily	Maximum Daily
	SU	SU	cfu/100 mL	cfu/100 mL	mg/L	mg/L	mg/L	mg/L
8/31/2013	7.4	7.5	0	0	0.38	0.67		
9/30/2013	7.1	7.7	1	3	0.35	0.56		
10/31/2013	7.4	7.6	0.25	1	0.41	0.6		
11/30/2013	7.3	7.6						
12/31/2013	7.4	7.5						
1/31/2014	7.4	7.7						
2/28/2014	7.3	7.5						
3/31/2014	7.2	7.4						
4/30/2014	7.2	8.3	1	2	0.33	0.51		
5/31/2014	7.3	8	0	0	0.38	0.6	13	40
6/30/2014	7.3	7.6	0	0	0.23	0.39	10	3.3
7/31/2014	7.2	8.2	8	31	0.29	0.58		
8/31/2014	7.3	7.6	0	0	0.32	0.58		
9/30/2014	7.3	7.7	1	1	0.25	0.42		
10/31/2014	7.4	7.6	0.5	2	0.32	0.53		
11/30/2014	7.4	7.6						
12/31/2014	7.3	7.7						
1/31/2015	7.4	7.7						
2/28/2015	7.1	7.5						
3/31/2015	7.2	7.4						
4/30/2015	7.4	8.2	1	2	0.3	0.62		
5/31/2015	7.4	7.8	2.5	7	0.33	0.69		
6/30/2015	7.3	7.7	1	3	0.33	0.96	17	1.5
7/31/2015	7.3	7.6	0	0	0.43	0.69		
8/31/2015								

	pH		Fecal Coliform		Total Residual Chlorine		Total Kjeldahl Nitrogen (TKN)	Nitrite + Nitrate Nitrogen
Monitoring Period End Date	Daily Minimum	Daily Maximum	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Maximum Daily	Maximum Daily
	SU	SU	cfu/100 mL	cfu/100 mL	mg/L	mg/L	mg/L	mg/L
9/30/2015	7.3	7.5	1	4	0.28	0.75		
10/31/2015	7.2	7.6	0	0	0.15	0.48		
11/30/2015	7.4	7.6						
12/31/2015	7.4	7.7					9	9
1/31/2016	7.3	7.6						
2/28/2016	7.3	7.6						
3/31/2016	7.4	7.8						
4/30/2016	7.3	7.8	2	7	0.37	0.81		
5/31/2016	7.3	7.8	0.2	1	0.33	0.57	14	2.15
6/30/2016	7.3	7.6	0	0	0.27	0.71	18	1.3
Current Permit Limit	6.5	8.3	200	400	1.0	1.0	Report	Report
Minimum	6.90	7.20	0.00	0.00	0.15	0.39	6.70	1.00
Maximum	7.80	8.30	8.00	33.00	0.53	0.97	19.00	40.00
Average	7.26	7.63	1.20	3.66	0.32	0.63	14.07	7.19
Standard Deviation	0.16	0.25	2.16	7.79	0.07	0.15	4.26	11.79
No. Measurements	60	60	35	35	35	35	10	10
No. Exceedances	0	0	0	0	0	0	**	**

Attachment B: Whole Effluent Toxicity and Metals Data

		Effluent Data (mg/L total recoverable)						
Date	LC50	Hardness	Al	Cd	Cu	Ni	Pb	Zn
8/2/2005		52.00	0.022	<0.00100	<0.0025	<0.00400	<0.0050	0.0046
8/16/2005	100	44.00	<0.020	<0.00100	0.0034	<0.00400	<0.0050	0.0053
9/12/2006	100	60.00	<0.020	<0.00100	0.0068	<0.00400	<0.0050	0.0053
9/11/2007	100	52.00	0.040	<0.00100	0.0140	0.00200	0.0010	0.0110
9/9/2008	100	56.00	<0.010	<0.00100	0.0050	0.00200	<0.0010	0.0140
9/15/2009	100	52.00	<0.010	<0.00100	0.0030	<0.00100	<0.0010	0.0070
9/14/2010	100	54.00	<0.010	<0.00100	0.0030	0.00200	<0.0020	0.0050
9/13/2011	100	56.00	0.055	<0.00050	0.0067	0.00240	0.0005	0.0110
9/12/2012	100	50.00	0.039	<0.00050	0.0092	0.00220	0.0010	0.0180
9/10/2013	100	48.00	<0.100	<0.00050	<0.0050	<0.00500	<0.0015	<0.0200
9/9/2014	100	56.00	<0.200	<0.00050	0.0080	<0.00500	<0.0015	<0.0200
9/9/2015	100	60.00	<0.200	<0.00050			<0.0025	<0.0200
Median		53.00						
95th percentile (µg/L) [1]			43.2		13	2.36	1.1	18.1
Freshwater								
Chronic Criterion (µg/L)			87	0.14	4.54	1.09	25.45	58.61
Acute Criterion (µg/L)			750	0.90	6.32	27.89	229.8	58.61

[1] Minimum Limit values are listed in USEPA Region 1 Freshwater Acute Toxicity Test Procedure and Protocol (Attachment A to the draft permit). Results reported as "<" were assigned a value of 0 mg/L.

		Receiving Water Data (mg/l total recoverable)					
Date	Hardness	Al	Cd	Cu	Ni	Pb	Zn
8/2/2005	40.00	0.023		0.0410	<0.00400	<0.0050	0.0032
8/16/2005	40.00	<0.020		<0.0050	<0.00400	<0.0050	0.0049
9/12/2006	44.00	0.035	<0.00100	<0.0025	<0.00400	<0.0050	0.0052
9/11/2007	44.00	0.068		0.0020	<0.00100	<0.0010	<0.0020
9/9/2008	36.00	0.098		0.0020	0.00200	<0.0010	0.0130
9/15/2009	48.00	0.045		0.0020	<0.00100	<0.0010	0.0070
9/14/2010	50.00	0.011		<0.0010	<0.00100	<0.0020	0.0050
9/13/2011	34.00	0.610		0.0029	0.00140	0.0007	0.0039
9/12/2012	52.00	0.033	<0.00050	0.0022	<0.00100	<0.0005	0.0028
9/10/2013	42.00	<0.100	<0.00050	<0.0050	<0.00500	<0.0015	<0.0200
9/9/2014	40.00	<0.200	<0.00050	<0.0050	<0.00500	<0.0015	<0.0200
9/9/2015	46.00		<0.00050		<0.00500	<0.0025	<0.0200
Median[1]	43.00	0.033	0.000	0.0020	0.000	0.000	0.0036

[1] Minimum Limit values are listed in USEPA Region 1 Freshwater Acute Toxicity Test Procedure and Protocol (Attachment A to the draft permit).Results reported as "<" were assigned a value of 0 mg/L.

Attachment C: 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

The *TSD* also includes a procedure for determine such percentiles when the dataset includes non-

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

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

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
COMMONWEALTH OF MASSACHUSETTS
1 WINTER STREET
BOSTON, MASSACHUSETTS 02108

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY – REGION 1
OFFICE OF ECOSYSTEM PROTECTION
5 POST OFFICE SQUARE
BOSTON, MASSACHUSETTS 02109

JOINT PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO WATERS OF THE UNITED STATES UNDER SECTIONS 301 AND 402 OF THE CLEAN WATER ACT, AS AMENDED, AND SECTIONS 27 AND 43 OF THE MASSACHUSETTS CLEAN WATERS ACT, AS AMENDED, AND REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE CLEAN WATER ACT.

PUBLIC NOTICE PERIOD: June 13, 2018 – July 12, 2018

PERMIT NUMBER: **MA0032573**

PUBLIC NOTICE NUMBER: MA-014-18

NAME AND MAILING ADDRESS OF APPLICANT:

Northfield Mount Hermon School
1 Lamplighter Way
Mount Hermon, MA 01354

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

Northfield Mount Hermon School Wastewater Treatment Facility
Main Road
Gill, MA 01354

RECEIVING WATER: Connecticut River (Class B)

The U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) have cooperated in the development of a draft permit for the Northfield Mount Hermon School WWTF, which discharges treated wastewater. Sludge from this facility in stored in the aerated lagoons and was last pumped out in 2005. The effluent limits and permit conditions imposed have been drafted to assure compliance with the Clean Water Act, 33 U.S.C. sections 1251 et seq., the Massachusetts Clean Waters Act, G.L. c. 21, §§ 26-53, 314 CMR 3.00, and State Surface Water Quality Standards at 314 CMR 4.00. EPA has requested that the State certify this draft permit pursuant to Section 401 of the Clean Water Act and expects that the draft permit will be certified.

INFORMATION ABOUT THE DRAFT PERMIT:

The draft permit and explanatory fact sheet may be obtained at no cost at http://www.epa.gov/region1/npdes/draft_permits_listing_ma.html or by contacting:

Michele Barden
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (OEP06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1539
barden.michele@epa.gov

The administrative record containing all documents relating to this draft permit including all data submitted by the applicant may be inspected at the EPA Boston office mentioned above between 9:00 a.m. and 5:00 p.m., Monday through Friday, except holidays.

PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:

All persons, including applicants, who believe any condition of this draft permit is inappropriate, must raise all issues and submit all available arguments and all supporting material for their arguments in full by **July 12, 2018**, the address or email address listed above. Any person, prior to such date, may submit a request in writing to EPA and MassDEP for a public hearing to consider this draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on this draft permit, the Regional Administrator will respond to all significant comments and make the responses available to the public at EPA's Boston office.

FINAL PERMIT DECISION:

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator 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.

LEALDON LANGLEY, DIRECTOR
WETLANDS AND WASTEWATER
PROGRAM
MASSACHUSETTS DEPARTMENT OF
ENVIRONMENTAL PROTECTION

KEN MORAFF, DIRECTOR
OFFICE OF ECOSYSTEM PROTECTION
EPA-REGION 1