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",

Pinetree Power, LLC

is authorized to discharge from a facility located at

Bethlehem Power Station
1241 Whitefield Road
Bethlehem, NH 03574

to receiving water named

Ammonoosuc River
Connecticut River Watershed

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

This permit shall become effective on the first day of the calendar month immediately following 60 days after signature.[1]

This permit expires at midnight, five years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on November 26, 2012.

This permit consists of **Part I**, **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011), and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this day of , 2019

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Ken Moraff, Director
Water Division
Environmental Protection Agency
Region 1
Boston, MA

[1] Pursuant to 40 Code of Federal Regulations (C.F.R.) § 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. Procedures for appealing EPA's Final Permit decision may be found at 40 C.F.R. § 124.19.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge boiler blowdown, sandfilter backwash, demineralizer regeneration, mechanical equipment cooling, cooling tower blowdown, artesian well flushing, condenser cleaning, laboratory wastewater, and other miscellaneous floor drain wastes from the drain and tempering (D&T) tank through Outfall Serial Number 001 to the Ammonoosuc River. These discharges are limited to emergency conditions to prevent loss of life, personal injury, or severe property damage; and/or for Facility decommissioning. The discharge shall be limited and monitored as specified below and the receiving water shall be monitored as specified below.

Effluent Characteristic	**Effluent Limitation**	**Monitoring Requirements[1,2,3]**	
	Maximum Daily	**Measurement Frequency[4]**	**Sample Type[5]**
Effluent Flow[6]	0.2 MGD	Continuous/discharge event	Meter
Total Suspended Solids (TSS)	100 mg/L	1/discharge event	Composite
Oil and Grease	20 mg/L	1/discharge event	Grab
pH[7]	6.5 - 8.0 S.U.	Continuous/discharge event	Meter
Total Residual Oxidants[8]	0.20 mg/L	1/discharge event	Grab
Priority Pollutant Scan[9]	No detectable amount µg/L	1/discharge event	Composite
Total Chromium	0.2 mg/L	1/discharge event	Composite
Total Copper	0.31 mg/L	1/discharge event	Composite
Total Iron	1.0 mg/L	1/discharge event	Composite

Effluent Characteristic	**Effluent Limitation**	**Monitoring Requirements[1,2,3]**	
	Maximum Daily	**Measurement Frequency[4]**	**Sample Type[5]**
Total Zinc	1.0 mg/L	1/discharge event	Composite
Temperature [10]	85 °F	Continuous/discharge event	Meter
Temperature Rise, (ΔT)[10]	20 °F	Continuous/discharge event	Meter
Whole Effluent Toxicity (WET) Testing[11,12]			
LC_{50}	≥100	1/ discharge event	Composite
NOAEL	Report %	1/ discharge event	Composite
Hardness	Report mg/L	1/ discharge event	Composite
Ammonia	Report mg/L	1/ discharge event	Composite
Total Aluminum	Report mg/L	1/ discharge event	Composite
Total Cadmium	Report mg/L	1/ discharge event	Composite
Total Copper	Report mg/L	1/ discharge event	Composite
Total Nickel	Report mg/L	1/ discharge event	Composite
Total Lead	Report mg/L	1/ discharge event	Composite
Total Zinc	Report mg/L	1/ discharge event	Composite

Ambient Characteristic[13]	**Reporting Requirement**	**Monitoring Requirements[1,2,3]**	
	Maximum Daily	**Measurement Frequency[4]**	**Sample Type[5]**
Hardness	Report mg/L	1/ discharge event	Grab
Ammonia	Report mg/L	1/ discharge event	Grab
Total Aluminum	Report mg/L	1/ discharge event	Grab
Total Cadmium	Report mg/L	1/ discharge event	Grab
Total Copper	Report mg/L	1/ discharge event	Grab
Total Nickel	Report mg/L	1/ discharge event	Grab
Total Lead	Report mg/L	1/ discharge event	Grab
Total Zinc	Report mg/L	1/ discharge event	Grab
pH[14]	Report S.U.	1/ discharge event	Grab
Temperature[14]	Report °F	1/ discharge event	Grab

2. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge stormwater through Outfall Serial Number 002 to Ammonoosuc River. The discharge shall be limited and monitored as specified below.

Effluent Characteristic	**Effluent Limitation**	**Monitoring Requirements[1,2,3]**	
	Maximum Daily	**Measurement Frequency[4]**	**Sample Type[5]**
Flow[6]	Report GPD	1/year	Meter or Estimate
Total Suspended Solids (TSS)	100 mg/L	1/year	Grab[15]
Oil and Grease	15 mg/L	1/year	Grab[15]
pH[7]	6.5 - 8.0 S.U.	1/year	Grab[15]
Total Iron	1.0 mg/L	1/year	Grab[15]

Footnotes:

1. Effluent samples shall yield data representative of the discharge. Samples shall be taken from the discharge pipe within the manhole located approximately 10 feet from the river, prior to discharging into the Ammonoosuc River. Changes in sampling location must be approved in writing by the Environmental Protection Agency Region 1 (EPA) and the State. The Permittee shall report the results to EPA and the New Hampshire Department of Environmental Services – Water Division (the "State") of any additional testing above that required herein, if testing is done in accordance with 40 C.F.R. § 136. The Permittee shall notify EPA, the NHDES inspector, and the regional New Hampshire Fish and Game Department by telephone with as much advance notice as possible but no later than 24 hours after initiating discharge from this location. See Part I.D.6 for contact information.

2. In accordance with 40 C.F.R. § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. Part 136 or required under 40 C.F.R. chapter I, subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is "sufficiently sensitive" when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 C.F.R. Part 136 or required under 40 C.F.R. chapter I, subchapter N or O for the measured pollutant or pollutant parameter. The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.

3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L).

4. Measurement frequency of each discharge event is defined as the recording of one measurement for each 24-hour period during which a discharge occurs. Measurement frequency of 1/year is defined as one sample collected during a calendar year. If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator Code (e.g., "C" for "No Discharge".

5. Each composite sample will consist of at least eight 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. If the discharge period is less than 24 hours, composite samples shall be taken during all periods of discharge occurring that day. For parameters that require a meter as the sample type, monitoring shall be performed continuously during the entire discharge event.

6. Effluent flow in Part I.A.1 shall be reported in million gallons per day (MGD) . Total flow in one 24-hour period shall not exceed 0.2 million gallons. Flow in Part I.A.2 shall be reported in gallons per day (GPD).

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

8. For the purposes of this permit, TRO analysis must be completed using a test method in 40 C.F.R. § 136 that achieves a minimum level of detection no greater than 30 µg/L.

9. The priority pollutant scan includes the 126 pollutants (except Cr and Zn) found at 40 C.F.R. Part 423, Appendix A.

10. These temperature limits shall not to be exceeded at any time (instantaneous maximum). Temperature Rise is the temperature difference between the intake water and the discharge. To evaluate compliance with ΔT limit, the permittee shall monitor the river water temperature in the vicinity of the plant but upstream of the discharge location.

11. The Permittee shall conduct acute toxicity tests (LC_{50}) during each discharge event 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 using two species, daphnid, *Ceriodaphnia dubia*, and fathead minnow, *Pimephales promelas*. The complete report for each toxicity test shall be submitted as an attachment to the monthly toxicity discharge monitoring report (DMR) submittal immediately following the completion of the test.

12. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall follow procedures outlined in **Attachment A**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment A,** Part VI. CHEMICAL ANALYSIS.

13. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS for 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**. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.

14. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection and the results reported on the appropriate DMR. These pH and temperature measurements are independent from any pH and temperature measurements required by the WET testing protocols.

15. Grab samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1-inch rainfall) storm event. Grab samples shall be taken during the first 30 minutes of the discharge.

Part I.A. continued.

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

3. The discharge shall be free from substances in kind or quantity that settle to form harmful benthic deposits; float as foam, debris, scum or other visible substances; produce odor, color, taste or turbidity that is not naturally occurring and would render the surface water unsuitable for its designated uses; result in the dominance of nuisance species; or interfere with recreational activities.

4. Tainting substances shall not be present in the discharge in concentrations that individually or in combination are detectable by taste and odor tests performed on the edible portions of aquatic organisms.

5. The discharge shall not result in toxic substances or chemical constituents in concentrations or combinations in the receiving water that injure or are inimical to plants, animals, humans or aquatic life; or persist in the environment or accumulate in aquatic organisms to levels that result in harmful concentrations in edible portions of fish, shellfish, other aquatic life, or wildlife that might consume aquatic life.

6. The discharge shall not result in benthic deposits that have a detrimental impact on the benthic community. The discharge shall not result in oil and grease, color, slicks, odors, or surface floating solids that would impair any existing or designated uses in the receiving water.

7. The discharge shall not result in an exceedance of the naturally occurring turbidity in the receiving water by more than 10 NTUs.

8. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe (40 C.F.R. § 122.42):

   a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

      (1) 100 micrograms per liter (µg/L);
      (2) 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol; and one milligram per liter (mg/L) for antimony;
      (3) Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. § 122.21(g)(7); or
      (4) Any other notification level established by the Director in accordance with 40 C.F.R. § 122.44(f) and State regulations.

b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) 500 μg/L;
(2) One mg/L for antimony;
(3) 10 times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. § 122.21(g)(7); or
(4) Any other notification level established by the Director in accordance with 40 C.F.R. § 122.44(f) and State regulations.

c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.

B. UNAUTHORIZED DISCHARGES

1. This permit authorizes discharges only from the outfall(s) listed in Parts I.A.1 and I.A.2, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources are not authorized by this permit and shall be reported in accordance with Part D.1.e.(1) of the Standard Conditions of this permit (24-hour reporting).

2. The discharge of any sludge and/or bottom deposits from any storage tank or basin at the Facility to the receiving water is prohibited.

3. There shall be no discharge as a result of metal cleaning wastes, including washing of air precipitators, preheaters, boilers, or other types of process equipment.

4. There shall be no discharge of polychlorinated biphenyl (PCB) compounds such as those commonly used for transformer fluid. The Permittee shall dispose of all known PCB equipment, articles, and wastes in accordance with 40 C.F.R. Part 761. The Permittee shall submit to EPA and NHDES-WD a certification that this disposal has been accomplished within thirty (30) days of such disposal.

C. SPECIAL CONDITIONS

1. Drain and Tempering Tank Testing

Every five years, beginning July 2020, the Permittee must collect a representative sample of water from the D&T tank during July and perform on that sample analysis of all the parameters specified in Part I.A.1. Results of all required testing shall be submitted to EPA and the State by September 15th of each year tested.

2. Cooling Water Intake Structure

a. The maximum allowable combined intake flow from both intakes is 0.25 MGD

b. The Permittee shall ensure that sediment or debris does not accumulate on the screens or within the intake pipes which causes the intake velocity to increase.

c. It has been determined that the cooling water intake structure presently designed employs the best technology available for minimizing adverse environmental impact. No change in the location, design or capacity of the present structure can be made without prior approval of the EPA and the State. The present design shall be reviewed for conformity to regulations pursuant to CWA § 316(b) at each permit renewal.

3. Best Management Practices (BMPs)

The Permittee shall design, install, and implement control measures, including best management practices (BMPs), to minimize pollutant discharges from stormwater associated steam electric generating facilities operations to the receiving water. At a minimum, the Permittee must implement control measures consistent with those described in Part 2.1 and any Sector specific control measures in Part 8 of EPA's Multi-Sector General Permit (MSGP) effective on June 4, 2015 (available at https://www.epa.gov/npdes/final-2015-msgp-documents). Specifically, BMPs must be selected and implemented to comply with the following non-numeric technology-based effluent limitations from Parts 2.1.2 and 8.O.4 of EPA's 2015 MSGP:

a. Minimize exposure
b. Good housekeeping
c. Maintenance
d. Spill prevention and response
e. Erosion and sediment control
f. Management of runoff
g. Salt storage piles or piles containing salt
f. Employee training
g. Dust generation and vehicle tracking of industrial materials
h. Sector specific non-numeric technology-based effluent limitations included in Sector O (Steam Electric Generating Facilities) and Sector A (Timber Products) of the 2015 MSGP.

4. Stormwater Pollution Prevention Plan (SWPPP)

The Permittee shall maintain a Stormwater Pollution Prevention Plan (SWPPP) to document the selection, design and installation of BMPs developed under Part I.C.3 and consistent with Parts 2.1.2 and 8.O.4 of the 2015 MSGP, to minimize the discharge of pollutants from the facility operation to the receiving water. The SWPPP shall be a written document and be consistent with the terms of this Permit.

a. The SWPPP shall be updated and signed consistent with the signatory requirements in Part II.D.2 of this Permit within ninety (90) days after the effective date of this Permit.

b. The SWPPP shall be consistent with the general provisions for SWPPPs included in Part 5 of EPA's 2015 MSGP. The SWPPP shall be prepared in accordance with good

engineering practices, identify potential sources of pollution that may reasonably be expected to affect the quality of the stormwater discharges, and document implementation of non-numeric technology based effluent limitations described in Part I.C.3 above that will be used to reduce the pollutants and assure compliance with this Permit. Specifically, the SWPPP shall contain the elements listed in Parts 5.2.1 through 5.2.5 and Part 8.O.5 of the 2015 MSGP that are briefly described below:

(1) Stormwater pollution prevention team;
(2) Site description;
(3) Summary of potential pollutant sources;
(4) Description of all stormwater control measures; and
(5) Schedules and procedures pertaining to implementation of stormwater control measures, inspections and assessments, and monitoring.
(6) Inventory of exposed materials;
(7) Drainage area site map; and
(8) Documentation of good housekeeping measures.

c. The Permittee shall inspect quarterly all areas identified as: being exposed to stormwater, potential pollutant sources, discharge points, and control measures. Inspections shall occur beginning the first full calendar quarter after the effective date of the Permit. EPA considers quarters as follows: January through March; April through June; July through September; and October through December. Inspections shall be performed by qualified personnel with participation of at least one member of the stormwater pollution prevention team. At least once each calendar year, the routine inspection must be conducted during a period when stormwater discharge is occurring.

d. The Permittee shall amend and update the SWPPP within fourteen (14) days of any changes at the facility affecting the SWPPP. Changes that may affect the SWPPP include, but are not limited to: a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the waters of the United States; a release of a reportable quantity of pollutants as described in 40 C.F.R. § 302; and a determination by the Permittee, EPA, or the State that the SWPPP appears to be ineffective in achieving the general objective of controlling pollutants in stormwater discharges associated with industrial activity. Any amended or new versions of the SWPPP shall be re-certified by the Permittee. Such re-certifications also shall be signed in accordance with the requirements identified in Part II.D.2 of this Permit.

e. The Permittee shall certify at least annually that the previous year's inspections, maintenance, and training activities were conducted, results were recorded, and records were maintained, as described in the SWPPP. If the facility is not in compliance with any BMPs and/or activities described in the SWPPP, the annual certification shall state the non-compliance and the remedies which are being undertaken. Such annual certifications also shall be signed in accordance with the requirements identified in Part II.D.2 of this Permit. The Permittee shall keep a copy of the current SWPPP and all SWPPP certifications (i.e., the initial certification, recertifications, and annual certifications) signed during the effective period of this Permit at the Facility and shall make them

available for inspection by EPA and the State. All documentation of SWPPP activities shall be kept at the Facility for at least three years and provided to EPA or the State upon request.

5. Discharges of Chemicals and Additives

The discharge of any chemical or additive, including chemical substitution, which was not reported in the application submitted to EPA and the State or provided through a subsequent written notification submitted to EPA and the State is prohibited. Upon the effective date of this permit, chemicals and/or additives which have been disclosed to EPA and the State may be discharged up to the frequency and level disclosed, provided that such discharge does not violate §§ 307 or 311 of the CWA or applicable State water quality standards. Discharges of a new chemical or additive are authorized under this permit 30 days following written notification to EPA and the State unless otherwise notified by EPA and/or the State. To request authorization to discharge a new chemical or additive, the Permittee must submit a written notification to EPA and the State in accordance with Part I.D.3 of this permit. The written notification must include the following information, at a minimum:

a. The following information for each chemical and/or additive that will be discharged:

(1) Product name, chemical formula, general description, and manufacturer of the chemical/additive;
(2) Purpose or use of the chemical/additive;
(3) Safety Data Sheet (SDS), Chemical Abstracts Service (CAS) Registry number, and EPA registration number, if applicable, for each chemical/additive;
(4) The frequency (e.g., daily), magnitude (i.e., maximum application concentration), duration (e.g., hours), and method of application for the chemical/additive;
(5) The maximum discharge concentration; and
(6) The vendor's reported aquatic toxicity, if available (i.e., NOAEL and/or LC_{50} in percent for aquatic organism(s)).

b. Written rationale which demonstrates that the discharge of such chemicals and/or additives as proposed: 1) will not add any pollutants in concentrations which exceed any permit effluent limitation; and 2) will not add any pollutants that would justify the application of permit conditions different from, or in addition to those currently in this permit.

D. 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 accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

2. Submittal of Reports 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. *See* Part I.D.5. for more information on State reporting. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the particular report due date specified in this permit.

3. Submittal of Requests and Reports to EPA Water Division (WD)

   a. The following requests, reports, and information described in this permit shall be submitted to the NPDES Applications Coordinator in the EPA WD:

      (1) Transfer of Permit notice;
      (2) Request for changes in sampling location;
      (3) D&T tank testing results;
      (4) BMP and SWPPP reports and certifications, if required;
      (5) Request to discharge new chemicals or additives; and
      (6) Report on unacceptable dilution water/request for alternative dilution water for WET testing.

   b. These reports, information, and requests shall be submitted to EPA WD electronically at R1NPDESReporting@epa.gov or by hard copy mail to the following address:

U.S. Environmental Protection Agency
Water Division
NPDES Applications Coordinator
5 Post Office Square - Suite 100 (06-03)
Boston, MA 02109-3912

4. Submittal of Reports in Hard Copy Form

   a. The following notifications and reports shall be signed and dated originals, submitted in hard copy, with a cover letter describing the submission:

      (1) Prior to December 21, 2020, written notifications required under Part II. Starting on December 21, 2020, such notifications must be done electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

b. This information shall be submitted to EPA ECAD at the following address:

U.S. Environmental Protection Agency
Enforcement and Compliance Assurance Division
Water Compliance Section
5 Post Office Square, Suite 100 (04-SMR)
Boston, MA 02109-3912

5. State Reporting

Unless otherwise specified in this permit or by the State, 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.D.3 through I.D.6 shall also be submitted to the New Hampshire Department of Environmental Services, Water Division (NHDES–WD) electronically to the Permittee's assigned NPDES inspector at NHDES-WD or as a hardcopy to the following address:

New Hampshire Department of Environmental Services
Water Division
Wastewater Engineering Bureau
29 Hazen Drive, P.O. Box 95
Concord, New Hampshire 03302-0095

6. Verbal Reports and Verbal Notifications

a. 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 the State. This includes verbal reports and notifications which require reporting within 24 hours (e.g., Part I.A.1(footnote 1), Part II.B.4.c.(2), Part II.B.5.c.(3), and Part II.D.1.e.).

b. Verbal reports and verbal notifications shall be made to EPA's Enforcement and Compliance Assurance Division at:

617-918-1510

c. Verbal reports and verbal notifications shall also be made to the to the Permittee's assigned NHDES–WD NPDES inspector at:

603-271-1494

d. Verbal reports and verbal notifications shall also be made to the Lakes Region and Central New Hampshire Fish and Game Department (Region 2) at:

603-744-5470

E. STATE PERMIT CONDITIONS

1. The Permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water unless it has been treated in such a manner as will not lower the legislated water quality classification or interfere with the uses assigned to said water by the New Hampshire Legislature (RSA 485-A:12).

2. This NPDES Discharge Permit is issued by the EPA under Federal law. Upon final issuance by the EPA, the NHDES–WD may adopt this permit, including all terms and conditions, as a State permit pursuant to RSA 485-A:13. 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 the Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation.

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)[1]

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[1] Updated July 17, 2018 to fix typographical errors.

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.1.e.2.b. (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.6. 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 1
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: NH0021423

PUBLIC NOTICE START AND END DATES: August 28, 2019 – September 26, 2019

NAME AND MAILING ADDRESS OF APPLICANT:

Pinetree Power, LLC
1241 Whitefield Road
Bethlehem, NH 03574

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Pinetree Power, LLC - Bethlehem Power Station
1241 Whitefield Road
Bethlehem, NH 03574

RECEIVING WATER AND CLASSIFICATION:

Ammonoosuc River (Assessment Unit ID NHRIV801030403-07)
Merrimack River Watershed
Class B

SIC CODE: 4911 (Electric Services)

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Appendices

1.0 Proposed Action

Pinetree Power, Inc. (the "Permittee") has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge from Pinetree Power, Inc. (the "Facility" or "Station") into and withdraw water from the Ammonoosuc River.

The permit currently in effect was issued on November 26, 2012 with an effective date of February 1, 2013 and expired on January 31, 2018 (the "2012 Permit"). The Permittee filed an application for permit reissuance with EPA dated July 19, 2017, as required by 40 Code of Federal Regulations (C.F.R.) § 122.6. Since the permit application was deemed timely and complete by EPA on February 6, 2018, the Facility's 2012 Permit has been administratively continued pursuant to 40 C.F.R. § 122.6 and § 122.21(d). EPA and the State conducted a site visit on July 11, 2019.

This NPDES Permit is issued by EPA under federal law. New Hampshire construes Title L, Water Management and Protection, Chapters 485-A, Water Pollution and Waste Disposal, to authorize the New Hampshire Department of Environmental Services (NHDES) to "consider" a federal NPDES permit to be a State surface water discharge permit. As such, all the terms and conditions of the permit may, therefore, be incorporated into and constitute a discharge permit issued by NHDES.

2.0 Statutory and Regulatory Authority

Congress enacted the Federal Water Pollution Control Act, codified at 33 U.S.C. § 1251 – 1387 and commonly known as 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 § 402. *See* CWA §§ 301(a), 402(a). Section 402(a) established one of the CWA's principal permitting programs, the NPDES Permit Program. Under this section, EPA may "issue a permit for the discharge of any pollutant or combination of pollutants" in accordance with certain conditions. CWA § 402(a). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. *See* CWA § 402(a)(1) and (2). The regulations governing EPA's NPDES permit program are generally found in 40 C.F.R. §§ 122, 124, 125, and 136.

"Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits" in order to achieve the statutory mandates of Section 301 and 402. *Arkansas v. Oklahoma,* 503 U.S. 91, 105 (1992). *See also* 40 C.F.R. §§ 122.4(d), 122.44(d)(1), 122.44(d)(5). CWA §§ 301 and 306 provide for two types of effluent limitations to be included in NPDES permits: "technology-based" effluent limitations (TBELs) and "water quality-based" effluent limitations (WQBELs). *See* CWA §§ 301, 304(b); 40 C.F.R. §§ 122, 125, and 131.

2.1 Technology-Based Requirements

Technology-based treatment requirements represent the minimum level of control that must be imposed under CWA §§ 301(b) and 402 to meet best practicable control technology currently available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. *See* 40 C.F.R. § 125 Subpart A.

Subpart A of 40 C.F.R. Part 125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under § 301(b) of the CWA, including the application of EPA promulgated Effluent Limitation Guidelines (ELGs) and case-by-case determinations of effluent limitations under CWA § 402(a)(1). EPA promulgates NSPS under CWA § 306 and 40 C.F.R. § 401.12. *See also* 40 C.F.R. §§ 122.2 (definition of "new source") and 122.29. Cooling water intake structure requirements under CWA § 316(b) are developed for new facilities in accordance with 40 C.F.R. Part 125, Subpart I, while they are developed for existing facilities in accordance with 40 C.F.R. Part 125, Subpart J.

In general, ELGs for non-POTW facilities must be complied with as expeditiously as practicable but in no case later than three years after the date such limitations are established and in no case later than March 31, 1989. *See* 40 C.F.R. § 125.3(a)(2). Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA cannot be authorized by a NPDES permit. In the absence of published technology-based effluent guidelines, the permit writer is authorized under CWA § 402(a)(1)(B) to establish effluent limitations on a case-by-case basis using best professional judgment (BPJ).

2.2 Water Quality-Based Requirements

The CWA and federal regulations require that effluent limitations based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. This is necessary when less stringent TBELs would interfere with the attainment or maintenance of water quality criteria in the receiving water. *See* CWA § 301(b)(1)(C) and 40 C.F.R. §§ 122.44(d)(1),122.44(d)(5), 125.84(e) and 125.94(i).

2.2.1 Water Quality Standards

The CWA requires that each state develop water quality standards (WQSs) for all water bodies within the State. *See* CWA § 303 and 40 C.F.R. §§ 131.10-12. Generally, WQSs consist of three parts: 1) beneficial designated use or uses for a water-body or a segment of a water-body; 2) numeric or narrative water quality criteria sufficient to protect the assigned designated use(s); and 3) antidegradation requirements to ensure that once a use is attained it will not be degraded and to protect high quality and National resource waters. *See* CWA § 303(c)(2)(A) and 40 C.F.R. § 131.12. The applicable State WQSs can be found in the New Hampshire Code of Administrative Rules, Surface Water Quality Regulations, Chapter Env-Wq 1700 *et seq*. *See also*

generally, N.H. Rev. Stat. Title L, Water Management and Protection, Chapter 485-A, Water Pollution and Waste Disposal.

As a matter of state law, state WQSs specify different waterbody classifications, each of which is associated with certain designated uses and numeric and narrative water quality criteria. When using chemical-specific numeric criteria to develop permit limitations, acute and chronic aquatic life criteria and human health criteria are used and expressed in terms of maximum allowable in-stream pollutant concentrations. In general, aquatic-life acute criteria are considered applicable to daily time periods (maximum daily limit) and aquatic-life chronic criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific human health criteria are typically based on lifetime chronic exposure and, therefore, are typically applicable to monthly average limits.

When permit effluent limitation(s) are necessary to ensure that the receiving water meets narrative water quality criteria, the permitting authority must establish effluent limits in one of the following three ways: 1) 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," 2) based on a "case-by-case basis" using CWA § 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or, 3) in certain circumstances, based on use of an indicator parameter. *See* 40 C.F.R. § 122.44(d)(1)(vi)(A-C).

2.2.2 Antidegradation

Federal regulations found at 40 C.F.R. § 131.12 require states to develop and adopt a statewide antidegradation policy that maintains and protects existing in-stream water uses and the level of water quality necessary to protect these existing uses. In addition, the antidegradation policy ensures maintenance of high quality waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and to support recreation in and on the water, unless the State finds that allowing degradation is necessary to accommodate important economic or social development in the area in which the waters are located.

The New Hampshire Antidegradation Policy, found at Env-Wq 1708, applies to any new or increased activity that would lower water quality or affect existing or designated uses, including increased loadings to a water body from an existing activity. The antidegradation regulations focus on protecting high quality waters and maintaining water quality necessary to protect existing uses. Discharges that cause "significant degradation" are defined in NH WQS (Env-Wq 1708.09(a)) as those that use 20% or more of the remaining assimilative capacity for a water quality parameter in terms of either concentration or mass of pollutants or flow rate for water quantity. When NHDES determines that a proposed increase would cause a significant impact to existing water quality , the applicant must provide documentation to demonstrate that the lowering of water quality is necessary, that it will provide net economic or social benefit in the area in which the water body is located, and that the benefits of the activity outweigh the environmental impact caused by the reduction in water quality. *See* Env-Wq 1708.10(b).

This permit is being reissued with effluent limitations sufficiently stringent to satisfy the State's antidegradation requirements, including the protection of the exiting uses of the receiving water.

2.2.3 Assessment and Listing of Waters and Total Maximum Daily Loads

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, 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 planning tool and potential starting point for restoration activities with the ultimate goal of attaining water quality standards. A TMDL essentially provides a pollution budget designed to restore the health of an impaired water body. A TMDL typically identifies the source(s) of the pollutant from point sources and non-point sources, determines the maximum load of the pollutant that the water body can tolerate while still attaining WQSs for the designated uses, and allocates that load among the various sources, including point source discharges, subject to NPDES permits. *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 (WLA) for a NPDES permitted discharge, the effluent limitation in the permit must be "consistent with the assumptions and requirements of any available WLA". 40 C.F.R. § 122.44(d)(1)(vii)(B).

2.2.4 Reasonable Potential

Pursuant to CWA § 301(b)(1)(C) and 40 C.F.R. § 122.44(d)(1), NPDES permits must contain any requirements in addition to TBELs that are necessary to achieve water quality standards established under § 303 of the CWA. *See also* 33 U.S.C. § 1311(b)(1)(C). In addition, limitations "must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the permitting authority 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). To determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any WQS, EPA considers: 1) existing controls on point and non-point sources of pollution; 2) the variability of the pollutant or pollutant parameter in the effluent; 3) the

sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and 4) where appropriate, the dilution of the effluent by the receiving water. *See* 40 C.F.R. § 122.44(d)(1)(ii).

If the permitting authority determines that the discharge of a pollutant will cause, has the reasonable potential to cause, or contribute to an excursion above WQSs, the permit must contain WQBELs for that pollutant. *See* 40 C.F.R. § 122.44(d)(1)(i).

2.2.5 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, the State waives, or is deemed to have waived, its right to certify. *See* 33 U.S.C. § 1341(a)(1). 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 conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either CWA §§ 208(e), 301, 302, 303, 306 and 307, or applicable requirements of State law, the State should include such conditions in its certification and, in each case, cite the CWA or State law provisions upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. EPA includes properly supported State certification conditions in the NPDES permit. The only exception to this is that the permit conditions/requirements regulating sewage sludge management and implementing CWA § 405(d) are not subject to the 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 EPA permit appeal procedures of 40 C.F.R. Part 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 final 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." 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 limitations based upon WQSs and State requirements are contained in 40 C.F.R. §§ 122.4(d) and 122.44(d).

2.3 Effluent Flow Requirements

Generally, EPA uses effluent flow both to determine whether an NPDES permit needs certain effluent limitations and to calculate the effluent limitations themselves. EPA practice is to use effluent flow as a reasonable and important worst-case condition in EPA's reasonable potential and WQBEL calculations to ensure compliance with WQSs under CWA § 301(b)(1)(C). Should the effluent flow exceed the flow assumed in these calculations, the in-stream dilution would be reduced, and the calculated effluent limitations might not be sufficiently protective (i.e., might not meet WQSs). Further, pollutants that do not have the reasonable potential to exceed WQSs at a lower discharge flow may have reasonable potential at a higher flow due to the decreased dilution. In order to ensure that the assumptions underlying EPA's reasonable potential analyses and permit effluent limitation derivations remain sound for the duration of the permit, EPA may ensure the validity of its "worst-case" effluent flow assumptions through imposition of permit conditions for effluent flow.[1] In this regard, the effluent flow limitation is a component of WQBELs because the WQBELs are premised on a maximum level flow. The effluent flow limit is also necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSs.

The limitation on effluent flow is within EPA's authority to condition a permit to carry out the objectives and satisfy the requirements of the CWA. *See* CWA §§ 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 ensure the validity of EPA's WQBELs and reasonable potential calculations that account for "worst case" conditions is encompassed by the references to "condition" and "limitations" in CWA §§402 and 301 and the implementing regulations, as WQBELs are designed to assure compliance with applicable water quality regulations, including antidegradation requirements. Regulating the quantity of pollutants in the discharge through a restriction on the quantity of effluent is also consistent with 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. Improper operation and maintenance may result in non-compliance with permit effluent limitations. 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 that 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), (e).

2.4 Monitoring and Reporting Requirements

[1] EPA's regulations regarding "reasonable potential" require EPA to consider "where appropriate, the dilution of the effluent in the receiving water," *id.* 40 C.F.R. §122.44(d)(1)(ii). *Both* the effluent flow and receiving water flow may be considered when assessing reasonable potential. *In re Upper Blackstone Water Pollution Abatement Dist.*, 14 E.A.D. 577, 599 (EAB 2010). EPA guidance directs that this "reasonable potential" analysis be based on "worst-case" conditions. *See In re Washington Aqueduct Water Supply Sys., 11 E.A.D. 565, 584 (EAB 2004)*.

2.4.1 Monitoring Requirements

Sections 308(a) and 402(a)(2) of the CWA and the implementing regulations at 40 C.F.R. Parts 122, 124, 125, and 136 authorize EPA to include monitoring and reporting requirements in NPDES permits.

The monitoring requirements included in this permit have been establish1ed to yield data representative of the Facility's discharges in accordance with CWA §§ 308(a) and 402(a)(2), and consistent with 40 C.F.R. §§ 122.41(j), 122.43(a), 122.44(i) and 122.48. The Draft Permit specifies routine sampling and analysis requirements to provide ongoing, representative information on the levels of regulated constituents in the wastewater discharges. The monitoring program is needed to enable EPA and the State to assess the characteristics of the Facility's effluent, whether Facility discharges are complying with permit limits, and whether different permit conditions may be necessary in the future to ensure compliance with technology-based and water quality-based standards under the CWA. EPA and/or the State may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to CWA § 304(a)(1), 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 C.F.R. Part 122.

NPDES permits require that the approved analytical procedures found in 40 C.F.R. Part 136 be used for sampling and analysis unless other procedures are explicitly specified. Permits also include requirements necessary to comply with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule*.[2] This Rule requires that where EPA-approved methods exist, NPDES applicants must use sufficiently sensitive EPA-approved analytical methods when quantifying the presence of pollutants in a discharge. Further, the permitting authority must prescribe that only sufficiently sensitive EPA-approved methods be used for analyses of pollutants or pollutant parameters under the permit. The NPDES regulations at 40 C.F.R. § 122.21(e)(3) (completeness), 40 C.F.R. § 122.44(i)(1)(iv) (monitoring requirements) and/or as cross referenced at 40 C.F.R. § 136.1(c) (applicability) indicate that an EPA-approved method is sufficiently sensitive where:

- The method minimum level[3] (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or
- In the case of permit applications, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high

[2] Fed. Reg. 49,001 (Aug. 19, 2014).
[3] The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor. EPA is considering the following terms related to analytical method sensitivity to be synonymous: "quantitation limit," "reporting limit," "level of quantitation," and "minimum level." *See* Fed. Reg. 49,001 (Aug. 19, 2014).

enough that the method detects and quantifies the level of the pollutant or parameter in the discharge; or

- The method has the lowest ML of the analytical methods approved under 40 C.F.R. Part 136 or required under 40 C.F.R. chapter I, subchapter N or O for the measured pollutant or pollutant parameter.

2.4.2 Reporting Requirements

The Draft Permit requires the Permittee to report monitoring results obtained during each calendar month to EPA and the State electronically using NetDMR. The Permittee must submit a Discharge Monitoring Report (DMR) for each calendar month no later than the 15th day of the month following the completed reporting period.

NetDMR is a national web-based tool enabling regulated CWA permittees to submit DMRs electronically via a secure internet application to EPA through the Environmental Information Exchange Network. NetDMR has eliminated the need for participants to mail in paper forms to EPA under 40 C.F.R. §§ 122.41 and 403.12. NetDMR is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/. Further information about NetDMR can be found on the EPA NetDMR support portal webpage.[4]

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.

2.5 Standard Conditions

The standard conditions, included as Part II of the Draft Permit, are based on applicable regulations found in the Code of Federal Regulations. *See generally* 40 C.F.R. Part 122.

2.6 Anti-backsliding

The CWA's anti-backsliding requirements prohibit a permit from being renewed, reissued or modified to include less stringent limitations or conditions than those contained in a previous permit except in compliance with one of the specified exceptions to those requirements. *See* CWA §§ 402(o) and 303(d)(4) and 40 C.F.R. § 122.44(l). Anti-backsliding provisions apply to effluent limits based on technology, water quality, and/or state certification requirements.

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2012 Permit unless specific conditions exist to justify relaxation in accordance with CWA

[4] https://netdmr.zendesk.com/hc/en-us

§ 402(o) or § 303(d)(4). Discussion of any less stringent limitations and corresponding exceptions to anti-backsliding provisions is provided in the sections that follow.

3.0 Description of Facility and Discharge

3.1 Location and Type of Facility

The Facility is located along the northern bank of Ammonoosuc River on Whitefield Road in Bethlehem, NH. A location map is provided in Figure 1. The plant burns regionally grown wood chips and saw mill bark as its primary fuel source to generate energy at a maximum rate of 289 million BTU's per hour. Wood chips are brought to the plant by truck. The main features of the Facility are: mechanical truck dump stations, wood storage yard, loader/conveyor building, chip silos, boiler, turbine, generator, maintenance shop, cooling tower, electrostatic precipitator and river water supply intake. The site is manned 24 hours per day and 365 days a year. A site plan is provided in Figure 2. Until recently, the Station has been a "base-load" facility. The following table provides the average yearly capacity utilization rates (CUR) for each of the past five years and associated notes:

Table 1: Average Yearly Capacity Utilization Rates (CUR)

Year	CUR%	Notes
2018	56.7	off line for economics
2017	91.33	run reduced load due to economics
2016	83.0	back on-line February 27th from generator failure
2015	89.5	generator failed on October 6, 2015
2014	96.7	normal operations

Heat resulting from incineration of the wood chips produces steam in the boiler. Steam is used to power a turbine electric generator which pro duces electric power for commercial sale. The turbine exhaust is directed to a surface condenser (non-contact) to convert the steam to water for reuse in the boiler. A two-cell mechanical draft cooling tower (180,000-gallon capacity) is used to cool and recirculate cooling water through the condenser. Multi-clone and a three-field electrostatic precipitator are used to remove particulates from boiler emissions. Wood ash is stored in bins prior to removal for off-site agricultural use.

As indicated, mechanical draft cooling towers are used to recycle non-contact condenser cooling water. Pinetree Power is permitted to discharge cooling tower wastewater mixed with other process wastes (outfall 001) and stormwater (outfall 002). Stormwater runoff is from the land adjacent to the facility, roadways, and vehicle parking areas. Although Pinetree Power has not needed to discharge any cooling/process water since it began operating in 1986, the Station requests that it continue to have the option of discharging during emergencies.

3.1.1 Effluent Limitation Guidelines

EPA has not promulgated technology-based effluent limitation guidelines (ELGs) for wood-burning steam electric power plants. The effluent guidelines for steam electric power plants at 40 CFR Part § 423 are specific for fossil fuel or nuclear fuel facilities but do not include wood fuel units such as Pinetree Power.

In accordance with Section 402(a)(1)(B) of the CWA, EPA has established effluent limitations on a case-by-case basis using BPJ. To the extent applicable to the Facility, since the discharges from wood fuel units are similar to fossil fuel units, EPA has incorporated technology-based limitations and conditions from the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category at 40 CFR Part § 423 (Steam Electric ELGs). Where BPJ is applied, all the relevant technology standard factors were considered by EPA. These factors are spelled out in CWA 304 and 40 CFR 125.3.

3.2 Location and Type of Discharge

Outfall 001 is located at Latitude 44° 19’ 30” Longitude 71° 41’ 15” on the northern bank of Ammonoosuc River. The Permittee has requested authorization to discharge wastewater from the Facility during emergencies through Outfall 001 into Ammonoosuc River.

Water used for domestic purposes at the facility is withdrawn from four artesian wells and discharged to a septic system. Cooling tower make-up water is taken from the Ammonoosuc River. Depending on the time of year, the station has typically required approximately 180,000 gallons per day. On dry days (i.e., low humidity) the cooling tower may evaporate an estimated 250 gallons per minute (gpm).

River water is pumped up to a “drain & tempering” (D&T) tank prior to its use in the cooling tower. Other wastewater streams from the station are directed to this tank including boiler blowdown, sand/carbon filter backwash, demineralizer backwash and regeneration, mechanical equipment cooling, cooling tower “graver” treatment filtrate (blowdown), artesian well flushing (2-3 hours/month), condenser cleaning[5], laboratory wastewater and other miscellaneous floor drain wastes. The cooling tower is used to remove heat from the condenser non-contact cooling water in a closed-looped system. When needed due to evaporation, water is pumped from the D&T tank to the towers. A schematic drawing of the flow of water at the facility and the various discharges from the Facility is presented in Figure 3. Every three to five years, solids are removed from the D&T tank. Solids are removed from the cooling tower water by a side-stream softener system called “graver.” The filtrate from this system, containing tower treatment chemicals, is directed to the D&T tank (at 15 gpm) and the solids are removed for off-site disposal.

There are four underground storage (“surge”) tanks (each with 37,300-gallon capacity) that are also used to store cooling/process water. Usually, two of the tanks remain full in case water is

[5] Plugs are used to clean the condenser tubes. The solids are collected and disposed of off-site. The filtrate and rinse waters are directed to the recirculating cooling system.

needed and two tanks are kept empty for internal wastestream discharges (i.e. boiler blowdowns) when needed. These tanks are filled during an outage to perform maintenance on the cooling system.

3.2.1 Outfall 001 (Process Wastewater)

Outfall 001 is the discharge from the D&T tank. The D&T tank has three 50 gpm pumps that are used to transfer water to the cooling towers, storage tanks, or the discharge line. An eight-inch pipe is used for the discharge. In case of a discharge during an emergency or in the event the Facility is decommissioned, samples would be collected from a manhole located about ten feet from the river. Historically, the only discharge to the Ammonoosuc River of cooling/process waste was in 1991 to conduct a benthic macroinvertebrate study in the receiving stream. Although Pinetree Power has never needed to discharge since the station began operations in 1986, the company continues to apply for the option of discharging during emergencies or in the event the Facility is decomissioned. The Draft Permit clarifies that emergencies are considered event that "prevent loss of life, personal injury, or severe property damage."

3.2.2 Outfall 002 - Stormwater

Stormwater throughout most[6] of the site collects in a series of underground culverts, which combine and emerge from the ground at the Outfall 002 location. A series of stone rip rap and grass swales were recently renovated along the ditch that parallels the facility access road, in order to reduce iron levels in the stormwater. The sampling location for Outfall 002 is a wooden weir located after the swale system, prior to the wetland area on the east side of the access road. *See* Figure 4. Stormwater then flows through a culvert underneath the access road, into another wetland on the west side of the access road, through another culvert underneath Route 116 and along a ditch between Route 116 and the railroad tracks. Stormwater eventually joins with a small brook and flows under the railroad tracks and into the Ammonoosuc River.

The current Bethlehem Power Station Stormwater Pollution Prevention Plan (SWPPP), dated May 2017 but last reviewed and approved January 4, 2019, indicates there are two other stormwater outfalls – 003 and 004. As discussed in the Fact Sheet for the 2012 Permit, these represent storm water flow to swales and infiltration to the ground. Although these stormwater discharges are likely hydrologically connected to the Ammonoosuc, there is no discrete discharge point to the river.

A quantitative description of the discharges in terms of effluent parameters, based on monitoring data submitted by the Permittee, including Discharge Monitoring Reports (DMRs), from April 2014 through March 2019, is provided in Appendix A of this Fact Sheet. During this time period, there were no discharges of non-contact cooling water or other process wastewater from Outfall 001. However, the Permittee sampled non-contact cooling water and other process wastewater

[6] Stormwater from the wood chip storage area flows to a swale and infiltrates the ground. Mountain run-off from behind the plant drains to a pond area located just east of the plant. The pond eventually drains to the river.

from the D&T tank. These results are included in Appendix A, along with the sampling results for discharges of stormwater from Outfall 002.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Ammonoosuc River is a 55-mile long river that originates in the White Mountains of New Hampshire and flows into the Connecticut River. The Ammonoosuc River watershed drains an area of approximately 400 square miles. The river is designated into the New Hampshire Rivers Management and Protection Program. Pinetree Power withdraws water from and is permitted to discharge effluent and stormwater to the Ammonoosuc River in Bethlehem, NH. The segment of the river where the discharge occurs is Assessment Unit ID NHRIV801030403-07 (Hydrologic Unit: 01080101).

River Classification

The State classifies the Ammonoosuc River as a Class B water body in the vicinity of the Pinetree Power. *See* Legislative Classification of Surface Waters in New Hampshire, 8/15/91. The river also provides acceptable spawning and nursery habitat for fish species and has been identified as a cold-water fishery by the New Hampshire Fish and Game Department (NHF&G).[7] Pursuant to New Hampshire Law at Revised Statutes Annotated (RSA) 485-A:8, II,

> Class B waters shall be of the second highest quality and shall have no objectionable physical characteristics, … The pH range for said waters shall be 6.5 to 8.0 except when due to natural causes … Any stream temperature increase associated with the discharge of treated sewage, waste or cooling water, water diversions, or releases shall not be such as to appreciably interfere with the uses assigned to this class. The waters of this classification shall be considered as being acceptable for fishing, swimming and other recreational purposes and, after adequate treatment, for use as water supplies.

RSA 485-A:8, VIII also states that

> [i]n prescribing minimum treatment provisions for thermal wastes discharged to interstate waters, the department shall adhere to the water quality requirements and recommendations of the New Hampshire [F]ish and [G]ame [D]epartment, the New England Interstate Water Pollution Control Commission, or the United States

[7] "The Ammonoosuc River also provides habitat for at least 15 resident cold and warm water fish species... The Ammonoosuc River is a high quality fishery for both cold and warm water species and, according to the New Hampshire Fish and Game Department, is suitable for wild, self-sustaining populations of brook trout." *NH DES Environmental Fact Sheet – Ammonoosuc River, 2016.*

Environmental Protection Agency, whichever requirements and recommendations provide the most effective level of thermal pollution control.

Furthermore, the New Hampshire Code of Administrative Rules, Chapter Env-Wq 1700 - Surface Water Quality Regulations (hereinafter "NH Standards") provides expanded and refined interpretations of the State Statute (RSA 485-A:8). The NH Standards were re-adopted and became effective on December 1, 2016. Env-Wq 1703.03(c) states that: [t]he following physical, chemical and biological criteria shall apply to all surface waters:

(1) All surface waters shall be free from substances in kind or quantity that:

a. Settle to form harmful deposits;
b. Float as foam, debris, scum or other visible substances;
c. Produce odor, color, taste or turbidity that is not naturally occurring and would render the surface unsuitable for its designated uses;
d. Result in the dominance of nuisance species; or
e. Interfere with recreational activities….

Water Quality Assessment

The section of Ammonoosuc River where the Facility discharges is a 4.262-mile segment (Assessment Unit NHRIV801030403-07). This segment is listed on the New Hampshire Department of Environment Services' (NHDES) Final 2016 Section 303(d) Surface Water Quality List Submitted to EPA. The §303(d) list was submitted on November 30, 2017 for review and EPA partially approved it on June 22, 2018.[8] Each Assessment Unit has six designated use descriptions: Aquatic Life, Drinking Water After Adequate Treatment, Fish Consumption, Primary Contact Recreation, Secondary Contact Recreation and Wildlife. The use of this section of the river as Drinking Water after Adequate Treatment is rated as "Good" (Fully Supported). Fish Consumption is rated "Poor" (Not Support, Marginal) due to atmospheric deposition of mercury - a state-wide listing covered by the Northeast Regional Mercury Total Maximum Daily Load, developed in 2007. Primary Contact Recreation (i.e., swimming), Secondary Contact Recreation (i.e., boating) and Wildlife designated uses are all rated as "Insufficient Information/No Data" or not assessed. Finally, Aquatic Life is deemed impaired for pH (TMDL needed (though low priority)). Pinetree Power is permitted to discharge during emergencies, wastewater with neutral pH (i.e., ≥6.5 and ≤8.0 standard units). The status of each designated use is presented in Table 2.

Table 2: Summary of Designated Uses and Listing Status

Designated Use	Status
Aquatic Life	Poor (TMDL needed)

[8] The New Hampshire's 2106 §303(d) List was approval with several exceptions, none relating to the Ammonoosuc River.

Drinking Water After Treatment	Good
Swimming	No Data
Boating	No Data
Wildlife	Not assessed
Fish Consumption	Poor (TMDL completed)

As previously indicated, the river has been identified as a cold-water fishery by the NHF&G and provides acceptable spawning and nursery habitat for at least 15 resident cold and warm water fish species. Several fish species are stocked annually including trout (native brook, and nonnative rainbow and/or brown trout depending on the year). Resident (non-stocked) species include wild brook trout. Parts of the Ammonoosuc River may contain other fish species such as blacknose dace, longnose dace, slimy sculpin, longnose sucker, white sucker, common shiner and tessellated darter.[9]

4.2 Ambient Data

A summary of the ambient data collected in the receiving water in the vicinity of the Facility that is referenced in this Fact Sheet can be found in Appendix B of this Fact Sheet. This ambient data is associated with the whole effluent toxicity (WET) testing that was conducted on the D&T tank during the permit term, from which no discharges occurred. In all cases, the LC_{50} result was >100% and the A-NOAEL value was 100 %.

4.3 Available Dilution

To ensure that discharges do not cause or contribute to violations of WQSs under all expected conditions, WQBELs are derived assuming critical conditions for the receiving water.[10] The critical flow in rivers and streams is some measure of the low flow of that river or stream. For non-tidal rivers and streams, State WQSs require that permit limits for all aquatic life criteria and human health criteria for non-carcinogens shall be based on the 7Q10 flow.[11] *See* Env-Wq 1705.2(d).

The 7Q10 flow for the Ammonoosuc River just downstream of the Pinetree Power outfall was calculated using the Dingman method (Dingman Scenario II) with the following data:

- Q_{USG}: the last 30 years of stream flow data (8/8/1989 – 8/8/2019) at the upstream USGS Ammonoosuc River at Bethlehem Junction, NH Gage (01137500), excluding the provisional stream flow data from 10/15/2018 – 8/7/2019;

[9] *See* New Hampshire Statewide Target Fish Community Assessment Cold River - Final Report, NH DES, January 2018, found at https://www4.des.state.nh.us/blogs/rmac/wp-content/uploads/Cold-Report.pdf.
[10] EPA Permit Writer's Manual, Section 6.2.4
[11] 7Q10 means the lowest average flow that occurs for seven consecutive days on an annual basis with a recurrence interval of once in 10 years on average, expressed in terms of volume per time period. Env-Wq 1702.01.

- Q_{D1}: estimation of watershed flow contributions to the intervening river segment between the upstream gage and the BPC outfall (Dingman Area 1) using the Dingman equation; and

- Q_{WWTF}: average flow from the Bethlehem WWTF, calculated using DMR data from 2014-2018.

Table 3 shows the calculation to determine the 7Q10 flow of the Ammonoosuc River just downstream of the Pinetree Power outfall.

Table 3: 7Q10 Calculation for Ammonoosuc River at Pinetree Power Outfall

Stream Flow Component	Flow (cfs)	Comments
Q_{USG} 7Q10 flow at upstream USGS Ammonoosuc River at Bethlehem Junction, NH Gage (01137500)	28.9	Period of record: 8/8/1989 – 8/8/2019 Excludes provisional data from 10/15/2018 – 8/7/2019
		Calculated using US EPA DFlow program (v3.1b)
Q_{D1} estimation of watershed flow contributions to the intervening river segment between the upstream gage and the Pinetree Power outfall	0.940	Calculated using Dingman[1] equation
Q_{WWTF} flow input from Bethlehem WWTF	0.326	Based on Bethlehem WWTF DMR data from 2014-2018
7Q10 just downstream of the Pinetree Power Outfall	**30.2**	**7Q10 = Q_{USG} + Q_{D1} + Q_{WWTF}**

1. Dingman, S.L., and S.C Lawlor, 1995. Estimating Low-Flow Quantiles from Drainage-Basin Characteristics in New Hampshire and Vermont, American Water Resources Association, Water Resources Bulletin, pp 243-256.

Dilution Factor

The dilution factor was calculated from a stream mass balance as follows:

Dilution Factor = $(0.9)(Q_S/Q_{EFF})$

Where

Q_S = 7Q10 flow of the Ammonoosuc River just downstream of the Pinetree Power outfall

Q_{EFF} = maximum daily permitted flow for Pinetree Power = 0.2 mgd = 0.309 cfs

0.9 = factor to reserve 10% of the receiving water assimilative capacity

Dilution factor = (0.9)(30.2/0.309) = 88

5.0 Proposed Effluent Limitations and Conditions

The proposed effluent limitations and conditions derived under the CWA and State WQSs are described below. These proposed effluent limitations and conditions, the basis of which is discussed throughout this Fact Sheet, may be found in Part I of the Draft Permit.

In accordance with 40 CFR § 122.45(b)(2), EPA based the calculation of certain effluent limitations upon a reasonable measure of actual production of the Facility, or flow. EPA determined that the measure appropriate for this Facility is the maximum effluent flow, 0.2 MGD. The maximum effluent flow is used to calculate the dilution factor and reflects the magnitude and duration of process flow during an emergency episode at the Facility.

EPA notes that the State of New Hampshire adopted new criteria into their WQSs in December 2016 and submitted them to EPA for review and approval. Although the new criteria have not yet been approved by EPA, the Draft Permit is being proposed with effluent limits derived to meet the new criteria in anticipation of a state certification to do so.

5.1 Effluent Limitations and Monitoring Requirements – Outfall 001

The State and Federal regulations, data regarding discharge characteristics, and data regarding ambient characteristics described above, were used during the effluent limitations' development process. Discharge and ambient data are included in Appendix A and B. EPA's Reasonable Potential Analysis is included in Appendix C and results are discussed in the sections below.

5.1.1 Effluent Flow

From April 1, 2014 through May 31, 2019 (Appendix A) there was no discharge at Outfall 001. The maximum daily effluent flow limit of 0.20 MGD for this outfall, from which a discharge would occur only during an emergency or in the event the Facility is decommissioned, will be retained in the Draft Permit. Monitoring for effluent flow is required during any discharge and must be monitored continuously by meter.

5.1.2 Total Suspended Solids

Solids could include inorganic (e.g., silt, sand, clay, and insoluble hydrated metal oxides) and organic matter (e.g., flocculated colloids and compounds that contribute to color). Solids can

clog fish gills, resulting in an increase in susceptibility to infection or asphyxiation. Suspended solids can increase turbidity in receiving waters and reduce light penetration through the water column or settle to form bottom deposits in the receiving water. Suspended solids also provide a medium for the transport of other adsorbed pollutants, such as metals, which may accumulate in settled deposits that can have a long-term impact on the water column through cycles of re-suspension.

There has been no discharge from this outfall during the monitoring period of April 1, 2014 through May 31, 2019 (Appendix A). The Draft Permit contains a maximum daily TSS limitation of 100 mg/L, when the Facility is discharging, monitored by composite sample. This limitation was originally based on best practicable control technology (BPT) requirements established in the Steam Electric ELGs at 40 CFR Part 423.12, using EPA's BPJ authority pursuant to CWA § 402(a)(1). TSS data from the D&T tank show that this limit is achievable (Appendix A).

This limitation has been continued from the Facility's 2012 Permit in accordance with anti-backsliding requirements found in 40 C.F.R. § 122.44(1).

5.1.3 Oil and Grease

Oil and Grease is not a definitive chemical constituent, but includes a large range of organic compounds, which can be both petroleum-related (e.g., hydrocarbons) and non-petroleum (e.g., vegetable and animal oils and greases, fats, and waxes). These compounds have varying physical, chemical, and toxicological properties. Generally, oils and greases in surface waters either float on the surface, are solubilized or emulsified in the water column, adsorb onto floating or suspended solids and debris, or settle on the bottom or banks. Oil and grease, or certain compounds within an oil and grease mixture can be lethal to fish, benthic organisms and water-dwelling wildlife.

State WQSs for Class B waters at Env-Wq 1703.09(b) state that "Class B waters shall contain no oil or grease in such concentrations that would impair any existing or designated uses". Additionally, State WQSs at Env-Wq 1703.03(c)(1)(c) state that "All surface waters shall be free from substances in kind or quantity that … produce odor, color, taste or turbidity that is not naturally occurring and would render the surface water unsuitable for its designated use." Given the language in both these narrative standards, EPA interprets these provisions, in particular "free from floating visible substances", to mean free from an oil sheen, and to prohibit, in the context of discharges into Class B waters, any discharge that would cause an oil sheen. An oil and grease concentration of 15 mg/L is recognized as the level at which many oils produce a visible sheen and/or cause an undesirable taste in fish.[12]

There has been no discharge from this outfall during the monitoring period of April 1, 2014 through May 31, 2019 (Appendix A). The Draft Permit contains a maximum daily Oil & Grease

[12] USEPA. 1976. *The Red Book – Quality Criteria for Water.* July 1976.,

(O&G) limitation of 20 mg/L, when the Facility is discharging, monitored by grab sample. This limitation was based on Best Practicable Control Technology (BPT) requirements established in the Federal Guidelines for the Steam Electric Power Generating Point Source Category (40 CFR Part 423.12), using EPA's BPJ authority pursuant to CWA § 402(a)(1). Oil & Grease data from the D&T tank show that this limit is achievable (Appendix A).

This limitation has been continued from the Facility's 2012 Permit in accordance with anti-backsliding requirements found in 40 C.F.R. § 122.44(1).

5.1.4 pH

The hydrogen-ion concentration in an aqueous solution is represented by the pH using a logarithmic scale of 0 to 14 standard units (S.U.). Solutions with pH 7.0 S.U. are neutral, while those with pH less than 7.0 S.U. are acidic and those with pH greater than 7.0 S.U. are basic. Discharges with pH values markedly different from the receiving water pH can have a detrimental effect on the environment. Sudden pH changes can kill aquatic life. pH can also have an indirect effect on the toxicity of other pollutants in the water.

From April 1, 2014 through May 31, 2019 (Appendix A) there was no discharge at Outfall 001. The Draft Permit continues to require a pH range of 6.5 to 8.0 S.U. when the Facility is discharging, monitored continuously. The pH limitations are based on the State WQSs at RSA 485-A:8 II, which require that "[t]he pH range for said [Class B] waters shall be 6.5 to 8.0 S.U. except when due to natural causes." These limitations are also based on CWA § 301(b)(1)(C) and 40 CFR § 122.44(d).

The 2012 Permit includes a provision to allow the Permittee to demonstrate that the pH range of 6.5-8.0 S.U. for process wastewater discharges should be widened due to either naturally occurring conditions in the receiving water or that the naturally occurring source water pH is unaltered by the Permittee's operations. This option has been removed from the Draft Permit because 1) the Ammonoosuc River is considered impaired for pH; and 2) the Facility has not needed to discharge process wastewater in over 30 years and will only discharge during an emergency. New Hampshire DES has determined that the pH range should not be widened under these circumstances.

5.1.5 Total Residual Oxidants

The daily maximum limitation of 0.2 mg/L for Total Residual Oxidants (TRO) was established in the 2012 Permit. The TRO limit is based on Best Available Technology Economically Achievable (BAT) requirements established in the Steam Electric ELGs at 40 CFR Part 423.13 using EPA's BPJ authority. This limit is maintained in the Draft Permit in accordance with the anti-backsliding requirements found in 40 CFR §122.44. The Permittee uses bromine and chlorine containing chemicals in the cooling towers. The test methods for TRC and TRO are similar, but TRO is appropriate here since the Permittee uses both classes of compounds.

5.1.6 Priority Pollutants

The 2012 Permit "no detectable amount" limits for the 126 priority pollutants found at 40 C.F.R. Part 423, Appendix A are based on BAT requirements in the Steam Electric ELGs at 40 CFR Part 423.13(d)(1) for cooling tower blowdown using EPA's BPJ authority pursuant to CWA § 402(a)(1). These limits are maintained in the Draft Permit in accordance with the anti-backsliding requirements found in 40 CFR §122.44.

5.1.7 Metals

Metals are naturally occurring constituents in the environment and generally vary in concentration according to local geology. Metals are neither created nor destroyed by biological or chemical processes. However, metals can be transformed through processes including adsorption, precipitation, co-precipitation, and complexation. Some metals are essential nutrients at low levels for humans, animals, plants and microorganisms, but toxic at higher levels (e.g., copper and zinc). Other metals have no known biological function (e.g., lead). The environmental chemistry of metals strongly influences their fate and transport in the environment and their effects on human and ecological receptors. Toxicity results when metals are biologically available at toxic concentrations affecting the survival, reproduction and behavior of an organism.

The 2012 Permit contained TBELs for total recoverable chromium of 0.2 mg/L and total recoverable zinc of 1.0 mg/L. These limitations were established using BPJ pursuant to CWA § 402(a)(1) and are based on the Best Available Technology Economically Achievable (BAT) requirements established in the Federal Guidelines for the Steam Electric Power Generating Point Source Category (40 CFR Part 423.13(d)(1) for cooling tower blowdown). The 2012 Permit also contained WQBELs for total recoverable copper of 0.31 mg/L and for total recoverable iron of 0.30 mg/L. The Permittee also obtained monitoring data for total recoverable aluminum, cadmium, lead, nickel and zinc in the discharge and the receiving water in conjunction with Whole Effluent Toxicity testing of the D&T tank water. Total recoverable iron data was not reported because no discharges occurred.

From April 1, 2014 through May 31, 2019 (Appendix A), total recoverable cadmium and lead were not detected above laboratory detection limits. However, total recoverable aluminum, chromium, copper, nickel, and zinc were detected in the D&T tank water. EPA completed an analysis to determine if, in the event the D&T tank water were to be discharged via Outfall 001, these discharges would cause, or have a reasonable potential to cause, or contribute to an excursion above WQSs using the State water quality criteria for metals (Appendix C). State WQSs contain minimum criteria applicable to all surface waters for toxic pollutants. *See* Chapter Env-Wq 1700, Parts 1703.21 – 1703.24. The acute and chronic water quality criteria for aluminum, chromium, nickel, and zinc are as follows:

Aluminum:
Freshwater acute (Class B) = 750 µg/L

Freshwater chronic (Class B) = 87 µg/L

Chromium (+3):
Freshwater acute (Class B) = 152 µg/L
Freshwater chronic (Class B) = 19.8 µg/L

Copper:
Freshwater acute (Class B) = 2.9 µg/L
Freshwater chronic (Class B) = 2.3 µg/L

Nickel:
Freshwater acute (Class B) = 120 µg/L
Freshwater chronic (Class B) = 13.3 µg/L

Zinc:
Freshwater acute (Class B) = 30.0 µg/L
Freshwater chronic (Class B) = 30.0 µg/L

The results of EPA's analysis indicate that in the event the contents of the D&T tank were to be discharged via Outfall 001, discharges of aluminum, cadmium, chromium, copper, lead, nickel and zinc would not cause, or have a reasonable potential to cause, or contribute to an excursion above WQSs. As a result, the Draft Permit does not include new or revised WQBELs for these metals.

Monitoring for total recoverable aluminum, cadmium, lead, and nickel in the D&T tank water and the receiving water continues to be required in conjunction with Whole Effluent Toxicity Testing, discussed further below. Further, the TBELs for total recoverable chromium and total recoverable zinc are continued in the Draft Permit in accordance with anti-backsliding requirements found in 40 C.F.R. § 122.44(1). Finally, the WQBELs for total recoverable copper and iron are continued in the Draft Permit in accordance with anti-backsliding requirements found in 40 C.F.R. § 122.44(1). The Draft Permit retains a daily maximum effluent limitation for total recoverable copper of 0.31 mg/L.

With regards to the WQBEL for total recoverable iron, EPA corrected the limitation based on the State water quality criteria for iron and the designation of the receiving water. Since the receiving water is a Class B waterbody, the acute and chronic aquatic life water quality criteria for iron apply, and are as follows:

Iron:
Freshwater acute (Class B) = NA
Freshwater chronic (Class B) = 1,000 µg/L

The Draft Permit proposes an effluent limitation for total recoverable iron of 1.0 mg/L. Since the application of a human health criterion for the consumption of water was mistakenly applied in

deriving the water quality-based effluent limitation in the 2012 Permit, and the receiving water is in attainment with 303(d)(4) with respect to iron, an exception to the CWA's anti-backsliding provision applies which allows an increase in this WQBEL. *See* CWA § 402(o) and/or 303(d)(4). The provision at CWA § 402(o)(1) specifies that a less stringent effluent limitation may be applicable if CWA § 303(d)(4)(B) is met. That is, correction of technical mistakes and mistaken interpretation of the law may justify the application of a less stringent effluent limitation if the receiving water meets or exceeds the applicable water quality standards.[13] EPA finds that the revised limitation, which is based on the applicable water quality criterion for which the receiving water is in attainment, is a correction of the 2012 Permit limitation, which is based on a water quality criterion that does not apply, and therefore constitutes a correction.

Note that because regulations at 40 C.F.R. § 122.45(c) require, with limited exceptions, that effluent limits for metals in NPDES permits be expressed as total recoverable metals, effluent limitations included in the Draft Permit are expressed as total recoverable metals. *See* EPA-823-B96-007, *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion:*1996.

5.1.8 Temperature

The 2012 Permit established an effluent temperature limit of 85 degrees Fahrenheit (ºF) and a temperature change (ΔT) of 20 ºF to meet the narrative temperature criteria of the NH-Standards [Env-Wq 1703.13(b)]. Performing an energy balance on this facility's discharge using the river's temperature extremes, its 7Q10 flow likely to occur during either the summer or the winter low flow periods, and the facility's maximum discharge temperature indicates that the Facility's thermal discharge would cause an indiscernible rise in the ambient streamflow temperature. For example, assuming that during the summer and the winter low-flow periods, the in-stream ambient temperatures just above the outfall are 70 ºF and 35 ºF, respectively, and that the 7Q10 flow is 30.2 cfs, the 85 ºF thermal discharge would only cause an increase in receiving water temperatures of 0.2 and 0.5 ºF, respectively, over ambient conditions. The equation used to calculate the increase in river temperature due to the 85 ºF discharge from facility is shown below.[14]

$$Trf = [(Qra \times Tra) + (Qp \times Tp)] \div (Qra + Qp)$$

Where:

Trf = Temperature in river just below Outfall 001, in ºF

[13] See Section III of *Interim Guidance on Implementation of Section 402(o) Anti-backsliding Rules for Water Quality-Based Permits*.

[14] Each temperature shown in the equation is referenced to a base temperature, which in this situation in 0°F. The base temperature component of the equation is not shown as it cancels out. Consequently, the temperatures used in the equation are delta Ts which represent the change in temperature above the base temperature of 0°F.

Qra = Flow (7Q10) in river just above Outfall 001, in cfs
Tra = Temperature in river just above Outfall 001, in ºF
Qp = Flow of process discharge from facility, in cfs (to convert process flow in MGD to cfs, multiply by 1.547)
Tp = Temperature of process discharge from facility, in ºF

Therefore:

Trf = [(29.9 x 70) + (0.31 x 85)] ÷ (29.9+ 0.31) = 70.2 (summer)
Trf = [(29.9 x 35) + (0.31 x 85)] ÷ (29.9 + 0.31) = 35.5 (winter)

Complete mixing is assumed in this case because the river flow is rapid and turbulent in the area of the discharge. In addition, the discharge temperature is expected to be lower than the 85 ºF limit because the discharge originates from the D&T tank and not directly from the cooling tower. Furthermore, EPA has determined that, for this facility, the best available technology (BAT) for thermal pollution control is the use of its cooling towers. Therefore, there is no need for a 316(a) variance from this technology standard.

5.1.9 Whole Effluent Toxicity

CWA §§ 402(a)(2) and 308(a) provide EPA and States with the authority to require toxicity testing. Section 308 specifically describes biological monitoring methods as techniques that may be used to carry out objectives of the CWA. Whole effluent toxicity (WET) testing is conducted to ensure that the additivity, antagonism, synergism, and persistence of the pollutants in the discharge do not cause toxicity, even when the individual pollutants are present at low concentrations in the effluent. The inclusion of WET requirements in the Draft Permit will assure that the Facility does not discharge combinations of pollutants into the receiving water in amounts that would be toxic to aquatic life or human health.

In addition, under CWA § 301(b)(1)(C), discharges are subject to effluent limitations based on WQSs. Under CWA §§ 301, 303 and 402, EPA and the States may establish toxicity-based limitations to implement narrative water quality criteria calling for "no toxics in toxic amounts." *See also* 40 C.F.R. § 122.44(d)(1). New Hampshire statute and regulations state that, "all surface waters shall be free from toxic substances or chemical constituents in concentrations or combination that injure or are inimical to plants, animals, humans, or aquatic life...." (N.H. RSA 485-A:8, VI and the N.H. Code of Administrative Rules, PART Env-Wq 1730.21(a)(1)).

In accordance with current EPA guidance whole effluent chronic effects are regulated by limiting the highest measured continuous concentration of an effluent that causes no observed chronic effect on a representative standard test organism, known as the chronic No Observed Effect Concentration (C-NOEC). Whole effluent acute effects are regulated by limiting the concentration that is lethal to 50% of the test organisms, known as the LC_{50}.

This policy recommends that permits for discharges having a dilution factor between 20 and 100 to require acute toxicity testing four times per year for two species. The acute WET limit in the 2012 Permit is an LC_{50} greater than or equal to 100%, using the daphnid (*Ceriodaphnia dubia*) and the fathead minnow (*Pimephales promelas*) as the test species. The Facility has consistently met this limit (Appendix A) based on sampling of the contents of the non-discharged D&T tank.

Based on the potential for toxicity in an effluent (D&T tank water) which is comprised of several wastewater streams and may contain a variety of pollutants from water treatment chemicals and in accordance with EPA national and regional policy and 40 C.F.R. § 122.44(d),[15] the Draft Permit continues the effluent limits from the 2012 Permit. WET testing is required during each discharge event. Toxicity testing must be performed in accordance with the EPA Region 1 test procedures and protocols specified in **Attachment A,** *Freshwater Acute Toxicity Test Procedure and Protocol* (February 2011) of the Draft Permit.

5.2 Effluent Limitations and Monitoring Requirements – Outfall 002 (Stormwater)

5.2.1 Sampling Frequency

The 2012 Permit provided the Permittee the opportunity to request the reduction in stormwater monitoring if at least four consecutive quarterly samples showed no violations. The Permittee has requested that stormwater sampling frequency is reduced to annual. Based on 1) extensive work completed on the stormwater collection system and 2) monitoring data for the past five years, EPA has determined that it is reasonable to require stormwater monitoring annually.

5.2.2 Effluent Flow

From April 1, 2014 through May 31, 2019 (Appendix A) effluent flow has ranged from 1000 gpd to 126,045 gpd. The Facility's 2012 Permit required flow to be monitored with no limit. The Draft Permit requires an annual report only requirement for estimated stormwater flow.

5.2.3 Total Suspended Solids

Solids could include inorganic (e.g., silt, sand, clay, and insoluble hydrated metal oxides) and organic matter (e.g., flocculated colloids and compounds that contribute to color). Solids can clog fish gills, resulting in an increase in susceptibility to infection or asphyxiation. Suspended solids can increase turbidity in receiving waters and reduce light penetration through the water column or settle to form bottom deposits in the receiving water. Suspended solids also provide a medium for the transport of other adsorbed pollutants, such as metals, which may accumulate in settled deposits that can have a long-term impact on the water column through cycles of re-suspension.

[15] See *Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants*, 49 FR 9016, March 9, 1984, EPA-833-K-10-001, September 2010, EPA/505/2-90-001, March 1991, and *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters*. February 23, 1990.

From April 1, 2014 through May 31, 2019 (Appendix A) daily maximum total suspended solids (TSS) concentrations have ranged from below detection level to a single detected value of 6 mg/L. The 2012 Permit contains a maximum daily TSS limitations of 100 mg/L, monitored annually by grab samples.

These limitations have been retained in this Draft Permit in accordance with anti-backsliding requirements found in 40 C.F.R. § 122.44(1). These limitations were originally established using BPJ pursuant to CWA § 402(a)(1) and were based on the benchmark value of 100 mg/L for TSS from the EPA's 2008 Multi-Sector General Permit (MSGP) Subpart A, Subsector A3 for log storage and handling.

5.2.4 Oil and Grease

Oil and Grease is not a definitive chemical constituent, but includes a large range of organic compounds, which can be both petroleum-related (e.g., hydrocarbons) and non-petroleum (e.g., vegetable and animal oils and greases, fats, and waxes). These compounds have varying physical, chemical, and toxicological properties. Generally, oils and greases in surface waters either float on the surface, are solubilized or emulsified in the water column, adsorb onto floating or suspended solids and debris, or settle on the bottom or banks. Oil and grease, or certain compounds within an oil and grease mixture can be lethal to fish, benthic organisms and water-dwelling wildlife.

State WQSs for Class B waters at Env-Wq 1703.09(b) state that "Class B waters shall contain no oil or grease in such concentrations that would impair any existing or designated uses". Additionally, State WQSs at Env-Wq 1703.03(c)(1)(c) state that "[a]ll surface waters shall be free from substances in kind or quantity that … produce odor, color, taste or turbidity that is not naturally occurring and would render the surface water unsuitable for its designated use." Given the language in both these narrative standards, EPA interprets these provisions, in particular "free from floating visible substances", to mean free from an oil sheen, and to prohibit, in the context of discharges into Class B waters, any discharge that would cause an oil sheen. An oil and grease concentration of 15 mg/L is recognized as the level at which many oils produce a visible sheen and/or cause an undesirable taste in fish.[16]

From April 1, 2014 through May 31, 2019 (Appendix A), oil and grease concentrations have all been below detection. The Draft Permit contains an effluent limitation of 15 mg/L. This limitation has been continued from the Facility's 2012 Permit in accordance with anti-backsliding requirements found in 40 C.F.R. § 122.44(1).

5.2.5 pH

[16] USEPA. 1976. *The Red Book – Quality Criteria for Water.* July 1976.

The hydrogen-ion concentration in an aqueous solution is represented by the pH using a logarithmic scale of 0 to 14 standard units (S.U.). Solutions with pH 7.0 S.U. are neutral, while those with pH less than 7.0 S.U. are acidic and those with pH greater than 7.0 S.U. are basic. Discharges with pH values markedly different from the receiving water pH can have a detrimental effect on the environment. Sudden pH changes can kill aquatic life. pH can also have an indirect effect on the toxicity of other pollutants in the water.

From April 1, 2014 through May 31, 2019 (Appendix A), pH ranged from 7.03 to 7.58 S.U. The Draft Permit requires a pH range of 6.5 to 8.0 S.U. when the Facility is discharging, monitored annually by grab samples. The pH limitations are based on the State WQSs at RSA 485-A:8 II, which require that "The pH for said (Class B) waters shall be 6.5 to 8.0 except when due to natural causes."

5.2.6 Iron

The ferrous (Fe^{2+}) and the ferric (Fe^{3+}) ions of iron are the primary forms of iron that can occur in the aquatic environment. Groundwater in New Hampshire often contains naturally high levels of iron (i.e. concentrations which exceed surface WQSs) from iron-bearing minerals in rocks and soils.[17] Upon mixing and exposure to air, Fe^{+3} can cause growth of iron bacteria in aquatic systems and may discolor the effluent or cause localized sediment deposits in the receiving waters. Excessive amounts may cause or contribute to violations of WQSs including those related to color, turbidity, solids, and odor.

From April 1, 2014 through May 31, 2019 (Appendix A), iron ranged from below detection to 0.51 mg/L (i.e., no exceedances). The 2012 Permit contained a maximum daily limit of 1.0 mg/L for iron. This limitation is based on the State freshwater chronic criteria applied at the end of pipe.[18] No allowance was made for dilution (dilution factor of 1:1) because the stormwater discharges to wetland areas prior to the river. The 1.0 mg/L limit was also the benchmark value for the 2008 MSGP, Part 8, Subpart O for Steam Electric Generating Facilities, which was set equal to the chronic freshwater National Recommended Water Quality Criteria. The 1.0 mg/L iron limit for Outfall 002 is continued in the Draft Permit in accordance with anti-backsliding requirements found in 40 C.F.R. § 122.44(1). During the last permit term, there were consistent exceedances of the 1.0 mg/L iron permit limit until 2011, when extensive work was completed on the storm water collection system, including isolation of the log storage drainage area, sealing the fuel yard area, a new swale system along the access road, and replacement of storm water piping.

5.3 Special Conditions

[17] DeSimone, L.A., et. al. *Quality of Water from Domestic Wells in Principal Aquifers of the United States, 1991–2004*. U.S. Geological Survey Scientific Investigations Report 2008–5227: 2009.
[18] New Hampshire Code of Administrative Rules, Env-Wq 1703.21, Table 1703-1.

5.3.1 Drain and Tempering Tank Testing

The 2012 Permit requires WET testing of the contents of the D&T tank every two years. The Permittee has requested that testing of the D&T tank be limited to every 5 years. Based on WET tests taken during the last two permit terms, EPA has determined that it is reasonable to require testing of the D&T tank every 5 years. In addition to WET testing, the D&T tank must be analyzed for all parameters specified in Part I.A.1. of the permit. EPA has included this requirement to monitor for the potential build up, if any, of pollutants in the D&T tank due to the Facility's method of operation and in order to monitor compliance with permitted limits and/or to ensure State water quality standards will be met should the D&T tank need to be drained.

5.3.2 Cooling Water Intake Structure

Background

The basis for cooling water intake structure (CWIS) requirements is found in CWA Section 316(b), 33 U.S.C. Section 1326(b). Section 316(b) governs requirements related to CWISs and requires "that the location, design, construction, and capacity of CWISs reflect the best technology available for minimizing adverse environmental impact." The operation of CWISs can cause or contribute to a variety of adverse environmental effects, such as killing or injuring fish larvae and eggs by entraining them in the water withdrawn from a water body and sent through a facility's cooling system, or by killing or injuring fish and other organisms by impinging them against intake screens, racks, or other structures. CWA § 316(b) applies if the permit applicant seeks to withdraw cooling water from a water of the United States, as is the case with Pinetree Power.

EPA has promulgated Section 316(b) regulations applicable to new[19] and existing[20] facilities that withdraw from one or more CWISs with an intake flow greater than 2 MGD. Since Pinetree Power's intake flow is less than 2 MGD, CWIS requirements are determined by the permitting authority on a case-by-case basis using BPJ in accordance with 40 C.F.R. § 125.90(b). As follows, this Fact Sheet includes an assessment of how the location, design, construction, and capacity of Pinetree Power's CWIS reflects the best technology available (BTA) for minimizing adverse environmental impact. In making the BPJ determination of BTA for this facility, EPA considered site-specific information regarding the CWIS, as well as certain general technical information informed by existing CWA § 316(b) regulations.

In addition, state legal requirements, including state WQSs, also may apply to the development of permit conditions for CWISs. State WQSs set designated uses for water bodies within the State and specify narrative and numeric criteria that the water bodies must satisfy. The limits in EPA-issued NPDES permits that address CWISs must satisfy both CWA § 316(b) and any applicable State requirements, such as applicable WQSs. *See* CWA §§ 301(b)(1)(C), 401(a)(1)

[19] Fed. Reg. 65255 (December 18, 2001).
[20] Fed. Reg. 48300 (August 15, 2014).

and (d), and 510; 40 CFR §§ 122.4(d), 122.44(d), 125.84(e), and 125.94(e); NH Env-Wq §§ 1701.02(b), 1703.19. The NHDES has primary responsibility for determining what permit limits are necessary to achieve compliance with State law requirements. Since the NPDES permit that EPA expects to issue to Pinetree Power will be subject to State Certification under CWA § 401, the permit will also need to satisfy any NHDES conditions of such a certification. *See also* 40 CFR §§ 124.53 and 124.55. EPA anticipates that NHDES will provide this certification before the issuance of the Final Permit.

Cooling Water Intake Structure Description

Pinetree Power's two CWIS's are located approximately five feet apart, imbedded in the middle (20-60 feet from the bank depending on the river water level) of the Ammonoosuc River and flush with the river bottom. *See* Figure 5. Each intake structure consists of a small rectangular box covered with a wedgewire screen. There is some confusion about the screen size. A 1991 purchase order indicates that the screens are 2 feet by 2 feet, although previous information from the Permittee reports that the intake screens are 2 feet by 4 feet. A visual inspection during the site visit seems to support the latter. The screens are made of stainless steel and have a mesh size of 0.03 inches (0.76 mm). Station personnel check the intake screens once per year. Rocks and debris may need to be removed if flow is impeded. No aquatic organisms have ever been observed on the screens or inside the pump house sump. The direction of river flow is in the westerly direction. The relative velocity of the river in this segment is considered as high during most of the year. The average river width along a north-south transect at Pinetree Power's location is approximately 80-120 feet.

On the river's bank, within property leased by Pinetree Power, there is a 16-foot by 28-foot wooden shed with a cement foundation. The foundation of the shed acts as a sump that is 18 feet deep. River water from both intakes enters the sump by gravity through one 10-inch diameter pipe. The sump's capacity is 50,000 gallons. Three pumps are used to transfer sump water up to the Facility, although only one pump at a time. Water is continually recirculated in the sump until needed.

Potential Impact of CWIS Operation

Several fish species are stocked annually including trout (native brook, and nonnative rainbow and/or brown trout depending on the year). Resident (non-stocked) species include wild brook trout. Parts of the Ammonoosuc River may contain other fish species such as blacknose dace, longnose dace, slimy sculpin, longnose sucker, white sucker, common shiner and tessellated darter.[21]

Trout species, for the most part, engage in nest building or deposit eggs within the gravel of the benthic substrate. Larval development generally takes place associated with the gravel, as well.

[21] *See* New Hampshire Statewide Target Fish Community Assessment Cold River - Final Report, NH DES, January 2018, found at https://www4.des.state.nh.us/blogs/rmac/wp-content/uploads/Cold-Report.pdf.

Therefore, large numbers of eggs and larvae of these species would not be expected to be dispersed as free-floating organisms in the water column of this channel of the Ammonoosuc River, some 20+ feet from the shore, where the Facility's CWIS intakes are located. The free-swimming fry, however, do emerge from the gravel substrate, to search for food. Juvenile and adult life stages of these species tend to prefer habitat associated with the river bank. This habitat is characterized by diminished river flow and the presence of underwater structure (e.g., rocks). If these species do encounter the intake structure, some 20 feet away from the river banks, the low intake velocity can generally be resisted by these life stages.

Components of BTA for CWIS at Pinetree Power

EPA has considered the adverse environmental effects from operation of the Facility's CWIS and technology options for minimizing these adverse effects by evaluating the CWIS' location, design, construction, and capacity. As stated previously, this site-specific 316(b) determination of BTA for the Pinetree Power's Draft Permit is based on BPJ.

"Location"

Pinetree Power's CWIS's are imbedded in the stream bed, flush with the bottom, in the main stem of the Ammonoosuc River. (Figure 5) The river water flow rate at this location is rapid at most times. For this reason, it is less likely that fish or any other aquatic organisms would be impinged. Furthermore, the segment of the river in Bethlehem, NH, where the facility in located, is not a preferred location for spawning of salmon or other indigenous species. As a transient area only, there is little potential for entrainment of eggs and larvae. Mark Driscoll, Plant Manager of Pinetree Power indicated that no aquatic organisms have ever been observed within the sump. The Draft Permit requires Pinetree Power to ensure sediment does not accumulate on the screens or within the intake pipes causing an increase in the intake velocity.

"Design and Construction"

Pinetree Power's CWIS consists of two embedded chambers in the stream bed, covered with 0.76 mm mesh wedgewire screens. This size mesh reduces entrainment of larvae and certain eggs. Water flows by gravity through the screens and then through one 10-inch pipe to a 50,000 gallon below ground sump, located on the bank of the river.

The velocity of water entering a cooling water intake structure exerts a direct physical force against which fish and other organisms must act to avoid impingement or entrainment. As velocity increases at a CWIS, so does the potential for impingement and entrainment. EPA considers velocity to be one of the more important factors that can be controlled to minimize adverse environmental impacts at CWISs. *See* 65 FR 49060, 49087 (Aug. 10, 2000). As previously noted, EPA has identified an intake velocity or "through screen" velocity threshold of 0.5 fps as protective to minimize impingement of most species of adult and juvenile fish. However, requirements applicable to existing facilities under CWA 316(b) at 125.94(c)(1)

provides that facilities can meet the impingement standard by using closed-cycle cooling such as that used by Pinetree Power.[22]

"Capacity"

Generally, limiting flow capacity is the single most effective operational measure to minimize the adverse environmental impacts of entrainment and impingement. Pinetree Power utilizes two mechanical draft cooling towers for cooling condenser water. This recirculating system significantly reduces the amount of river water withdrawn compared to a once-through system. The 2012 Permit limited intake flow to 0.25 MGD. Therefore, the Draft Permit's maximum allowable intake flow remains 0.25 MGD. As previously stated, at maximum intake capacity (0.288 MGD) compared to the Ammonoosuc River's critical low flow (15 MGD), the facility withdraws approximately 1.9% of the river flow. For comparison, the Phase I Rule, which is not applicable to this permit, uses a value of 5% of the mean annual flow as the upper limit allowed for the location of a new facility with a CWIS in a freshwater river. *See* 40 C.F.R. 125.84(b)(3)(i). The small percentage of water withdrawn by the Facility, relative to the expected river flow, minimizes the potential for drifting organisms to be pulled into the CWIS.

Thus, as a component of BTA for this Facility to minimize adverse environmental effects, CWIS capacity is limited to 0.25 MGD. This 0.25 MGD intake limit represents a low intake flow both in absolute terms and as compared to river flow, even under historic low flow conditions. The Facility meets this intake flow restriction by using mechanical draft cooling towers.

5.3.3 Best Management Practices

Best management practices (BMPs) may be expressly incorporated into a permit on a case-by-case basis where it is determined that they are necessary to achieve effluent limitations and standards or to carry out the purpose and intent of the CWA under § 402(a)(1). BMPs may be necessary to control or abate the discharge of pollutants when: 1) authorized under section 304(e) of the CWA for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) authorized under section 402(p) of the CWA for the control of storm water discharges; 3) numeric effluent limitations are infeasible; or 4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. *See* 40 C.F.R. 122.44(k). Pollutants may be present because they are generated during Facility operations, which could result in significant amounts of these pollutants reaching waters of the United States via discharges of wastewater and stormwater.

In this case, the Draft Permit requires the selection, design, installation, and implementation of control measures for stormwater associated with the Facility operations to comply with the non-numeric technology-based effluent limits in the Draft Permit. These non-numeric limitations are consistent with the limitations specified in Part 2.1.2 and Part 8, Sector A (Timber Products) and

[22] Fed. Reg. 48300 (August 15, 2014).

O (Steam Electric Generating Facilities) of EPA's current MSGP effective June 4, 2015.[23] Although the effluent guidelines for steam electric power plants at 40 CFR Part § 423 do not include wood fuel units such as Pinetree Power, EPA has determined through BPJ that this Facility is similar enough to warrant the requirement to comply with the Sector O technology-based limitations. The non-numeric requirements include:

- Minimize exposure of processing and material storage areas to stormwater discharges;
- Design good housekeeping measures to maintain areas that are potential sources of pollutants;
- Implement preventative maintenance programs to avoid leaks, spills, and other releases of pollutants to stormwater that is discharged to receiving waters;
- Implement spill prevention and response procedures to ensure effective response to spills and leaks if or when they occur;
- Design of erosion and sediment controls to stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants;
- Utilize runoff management practices to divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff;
- Develop proper handling procedures for salt or materials containing chlorides that are used for snow and ice control;
- Conduct employee training to ensure personnel understand the requirements of this permit;
- Minimize dust generation and vehicle tracking of industrial materials; and
- Comply with sector specific non-numeric technology-based effluent limitations included in Sector O (Steam Electric Generating Facilities) as well as Sector A (Timber Products) of the MSGP.

These non-numeric effluent limitations support, and are equally enforceable as, the numeric effluent limitations included in the Draft Permit. The purpose of these requirements is to reduce or eliminate the discharge of pollutants to waters of the United States. They have been selected on a case-by-case basis based on those appropriate for this specific facility. *See* CWA §§ 304(e) and 402(a)(1) and 40 C.F.R. § 122.44(k). These requirements will also ensure that discharges from the Facility will meet State WQSs pursuant to CWA § 301(b)(1)(C) and 40 C.F.R. 122.44(d)(1). Unless otherwise stated, the Permittee may select, design, install, implement and maintain BMPs as the Permittee deems appropriate to meet the permit requirements. The selection, design, installation, implementation and maintenance of control measures must be in accordance with good engineering practices and manufacturer's specifications.

5.3.4 Stormwater Pollution Prevention Plan

[23] The MSGP is currently available at: https://www.epa.gov/npdes/final-2015-msgp-documents.

On September 9, 1992, EPA issued its general permit for stormwater discharges associated with industrial activity, which, among other things, required all facilities to prepare a Stormwater Pollution Prevention Plan (SWPPP) to implement technology-based pollution prevention measures in lieu of numeric limitations. [24] The general permit established a process whereby the operator of the industrial facility evaluates potential pollutant sources at the site and selects and implements appropriate measures designed to prevent or control the discharge of pollutants in stormwater runoff.[25] This Draft Permit contains BMPs for stormwater associated with the operation of a steam electric generating facility and a wood chip (log) storage and handling area.

In addition to BMPs, the Draft Permit also contains requirements for the Permittee to develop, implement, and maintain a SWPPP for stormwater discharges associated with the operation of a steam electric generating facility and a wood chip (log) storage and handling area. These requirements are consistent with EPA's MSGP effective June 4, 2015. The Draft Permit specifies that the SWPPP must include the following, at a minimum:

- Stormwater pollution prevention team;
- Site description;
- Summary of potential pollutant sources;
- Description of all stormwater control measures; and
- Schedules and procedures pertaining to implementation of stormwater control measures, inspections and assessments, and monitoring.

The development and implementation of the SWPPP is an enforceable element of the permit. The Draft Permit directs the Permittee to incorporate BMPs, as described above, directly into the SWPPP, which serves to document the selection, design and installation of control measures selected to meet the permit effluent limitations. The goal of the SWPPP is to reduce or prevent the discharge of pollutants to waters of the United States either directly or indirectly through stormwater runoff.

The Draft Permit requires the Permittee within ninety (90) days of the effective date of the permit to certify that the SWPPP has been prepared, meets the requirements of the permit, and documents the control measures, including BMPs, that have been implemented to reduce or eliminate the discharge of pollutants from stormwater associated with the operation of a steam electric generating facility and a wood chip (log) storage and handling area. The Permittee must also certify at least annually that the Facility has complied with the BMPs described in the SWPPP, including inspections, maintenance, and training activities. The Permittee is required to amend and update the SWPPP if any change occurs at the Facility affecting the SWPPP, such as changes in the design, construction, operation, or maintenance of the Facility. The SWPPP must be maintained on site at the Facility and provided to EPA and/or the State upon request. All SWPPP records must be maintained on-site for at least three years.

[24] Fed. Reg. 41264 (September 9, 1992).
[25] Fed. Reg. 41242 (September 9, 1992).

5.3.5 Discharges of Chemicals and Additives

Chemicals and additives include, but are not limited to: algaecides/biocides, antifoams, coagulants, corrosion/scale inhibitors/coatings, disinfectants, flocculants, neutralizing agents, oxidants, oxygen scavengers, pH conditioners, and surfactants. The Draft Permit allows the discharge of only those chemicals and additives specifically disclosed by the Permittee to EPA and the State. The following chemicals and additives were disclosed to EPA:

- Water Clarification Agents – ChemTreat P8221, P812, P812A;
- Micro biocide – Surpass Surchlor (Hypochlorite);
- Industrial Water Treatment – ClearChem Tower Treat 162, Tetra BioRid 38i/40i/43i/46i (sodium bromide solutions);
- Industrial Water Treatment – Surpass Chemical Sodium Hydroxide (50% solution);
- Industrial Water Treatment – Surpass Chemical Sulfuric Acid (77-100%);
- Industrial Water Treatment – Univar Sodium Carbonate (Soda Ash) – pH adjustment; and
- Industrial Boiler Water Treatment – ClearChem HPB-21, Oxout 270, RL-455.

However, EPA recognizes that chemicals and additives in use at a Facility may change during the term of the permit. As a result, the Draft Permit includes a provision that requires the Permittee to notify EPA and the State in writing of the discharge a new chemical or additive; allows for EPA and State review of the change; and provides the factors for consideration of such changes. The Draft Permit specifies that for each chemical or additive, the Permittee must submit the following information, at a minimum, in writing to EPA and the State:

- Product name, chemical formula, and manufacturer of the chemical/additive.
- Purpose or use of the chemical/additive.
- Safety Data Sheet (SDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive.
- The frequency (e.g., hourly, daily), magnitude (e.g., maximum and average), duration (e.g., hours, days), and method of application for the chemical/additive.
- If available, the vendor's reported aquatic toxicity (i.e., NOAEL and/or LC_{50} in percent for aquatic organism(s)).

The Permittee must also provide an explanation which demonstrates that the discharge of such chemical or additive: 1) will not add any pollutants in concentrations which exceed any permit effluent limitation; and 2) will not add any pollutants that would justify the application of permit conditions different from, or in addition to those currently in this permit.

Assuming these requirements are met, discharges of a new chemical or additive is authorized under the permit upon notification to EPA and the State unless otherwise notified by EPA or the State.

5.3.6 Metal Cleaning Waste

The boiler, preheaters and air precipitator at Pinetree Power are physically cleaned without the use of water. Solids are mixed with bottom ash and landfilled. Therefore, the 2012 Permit includes a provision that prohibits the discharge of metal cleaning wastes. The Draft Permit maintains this prohibition in accordance with anti-backsliding requirements found in 40 C.F.R. § 122.44(1).

5.3.7 Polychlorinated Biphenyls

The 2012 Permit prohibits the discharge of polychlorinated biphenyl compounds (PCBs) such as those commonly used for transformer fluid. This limitation was originally established using BPJ pursuant to CWA § 402(a)(1) and based on the requirement found in §423.13(a) for existing sources covered by the Steam Electric ELGs. The Draft Permit maintains this prohibition in accordance with anti-backsliding requirements found in 40 C.F.R. § 122.44(1).

6.0 Federal Permitting Requirements

6.1 Endangered Species Act

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

Section 7(a)(2) of 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 Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) administers Section 7 consultations for marine and anadromous species.

The Federal action being considered in this case is EPA's proposed NPDES permit for the Pinetree Facility's discharges of pollutants and withdrawals of water for cooling purposes. The Draft Permit is intended to replace the 2012 Permit in governing the Facility. As the federal agency charged with authorizing the discharge from this Facility, EPA determines potential impacts to federally listed species, and initiates consultation with the Services, when required under § 7(a)(2) of the ESA.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants to determine if EPA's proposed NPDES permit could potentially impact any such listed species.[26] Two species under the jurisdiction of USFWS, both listed as threatened, are in the area of the Facility. The first species, the northern long-eared bat (*Myotis septentrionalis*) has been identified as "statewide". According to the USFWS, the northern long-eared bat is found in "winter – mines and caves, summer – wide variety of forested habitats." This species is not aquatic, so the discharge will have no direct effect on this mammal. Further, the permit action is also expected to have no indirect effect on the species because it is not expected to impact insects, the primary prey of the northern long-eared bat. Therefore, the proposed permit action is deemed to have no impact on this listed species.

The second species under the jurisdiction of USFWS is the Canada Lynx (*Lynx canadensis*). According to the USFWS, the distribution of lynx in North America is closely associated with the distribution of North American boreal forest. This is not an aquatic species. Therefore, the proposed permit action will have no direct or indirect effect on this listed species.

No protected marine or anadromous species under the jurisdiction of NOAA Fisheries are present in the Pinetree Facility's action area.

Because no federally listed threatened or endangered species have been identified as occuring in the vicinity of this discharge and the action area of the outfalls of Pinetree Power, EPA finds that adoption of the proposed permit will have no effect on any threatened or endangered species or their critical habitat, and consultation with NOAA Fisheries or USFWS under Section 7 of the ESA is not required.

6.2 Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (*see* 16 U.S.C. § 1801 *et seq*., 1998), EPA is required to consult with the NOAA Fisheries 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 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), or site specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

[26] See §7 resources for USFWS at https://ecos.fws.gov/ipac/ or NMFS at https://www.greateratlantic.fisheries.noaa.gov/protected/section7/index.html

EFH is only designated for fish species for which federal Fisheries Management Plans exist. *See* U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999. The Connecticut River and its tributaries, including the Ammonoosuc River in the vicinity of Pinetree Power are designated essential fish habitat (EFH) for Atlantic salmon (*Salmo salar*).[27]

EPA has concluded that the Facility's operating conditions as well as the limits and conditions contained in this Draft Permit minimize adverse effects to Atlantic salmon EFH for the following reasons:

- The Facility has been operating closed-loop, with no discharge for over 30 years[28];
- The only permitted process wastewater discharge allowed is during emergencies and decommissioning;
- EPA, NHDES and NHF&G must be notified of a discharge and extensive monitoring is required;
- Cooling towers are used for condenser cooling water;
- If there were a discharge, the effluent would be rapidly diluted so as to raise the ambient temperature of the river by no more than 0.5 degrees Fahrenheit;
- Testing is required for the D&T tank contents to evaluate the effluent's ability to meet permitted limits and/or in stream NH-Standards; and
- The location, design, construction, and capacity of the Facility's cooling water intake structure(s) (CWIS) reflect the Best Technology Available (BTA) for minimizing adverse environmental impacts;
- Total suspended solids, oil and grease, total residual oxidants, total chromium, total copper, total iron, total zinc, temperature, and pH are regulated by the Draft Permit to meet water quality standards;
- The Draft Permit prohibits the discharge of pollutants or combination of pollutants in toxic amounts;
- The effluent limitations and conditions in the Draft Permit were developed to be protective of all aquatic life; and
- The Draft Permit prohibits violations of the state water quality standards.

EPA believes the Draft Permit adequately protects Atlantic salmon EFH, and therefore additional mitigation is not warranted. If adverse impacts to EFH do occur as a result of this permit action, or if new information becomes available that changes the basis for this determination, then NOAA Fisheries Habitat Conservation Division will be notified, and consultation will be re-initiated.

[27] https://www.habitat.noaa.gov/application/efhmapper/atlanticSalmonEFH.pdf;
[28] The only process discharge from this facility since operations began was in June 1991, to perform a thermal plume study and benthic macrovertebrate study. Effluent was discharged at a rate of 30 gpm for two hours.

As part of the renewal of the NPDES permit for this Facility, in addition to the Draft Permit and the information contained in this Fact Sheet, a letter under separate cover will be sent to NOAA Fisheries Habitat Conservation Division.

7.0 Public Comments, Hearing Requests, and Permit Appeals

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:

George Papadopoulos
EPA Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1579
Email: papadopoulos.george@epa.gov

Prior to the close of the public comment period, any person may submit a written request to EPA and the State 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. A public hearing may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA will respond to all significant comments in a Response to Comments document attached to the Final Permit and make these responses available to the public at EPA's Boston office and on EPA's website.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision, forward a copy of the final decision to the applicant, and provide a copy or notice of availability of the final decision to each person who submitted written comments or requested notice. Within 30 days after EPA serves notice of the issuance of the Final Permit decision, an appeal of the federal NPDES permit may be commenced by filing a petition for review of the permit with the Clerk of EPA's Environmental Appeals Board in accordance with the procedures at 40 C.F.R. § 124.19.

8.0 Administrative Record

The administrative record on which this Draft Permit is based may be accessed at EPA's Boston office between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays, from George Papadopoulos, EPA Region 1, Water Division, Industrial Permits Section, 5 Post Office Square, Suite 100, Boston, Massachusetts 02109-3912 or via email to papadopoulos.george@epa.gov.

August 2019

Ken Moraff, Director
Water Division
U.S. Environmental Protection Agency

Figure 1: Location Map

Scale 1 : 16,915

0 500 Meters

0 1,000 2,000 Feet

Regulated Facilities: EPA

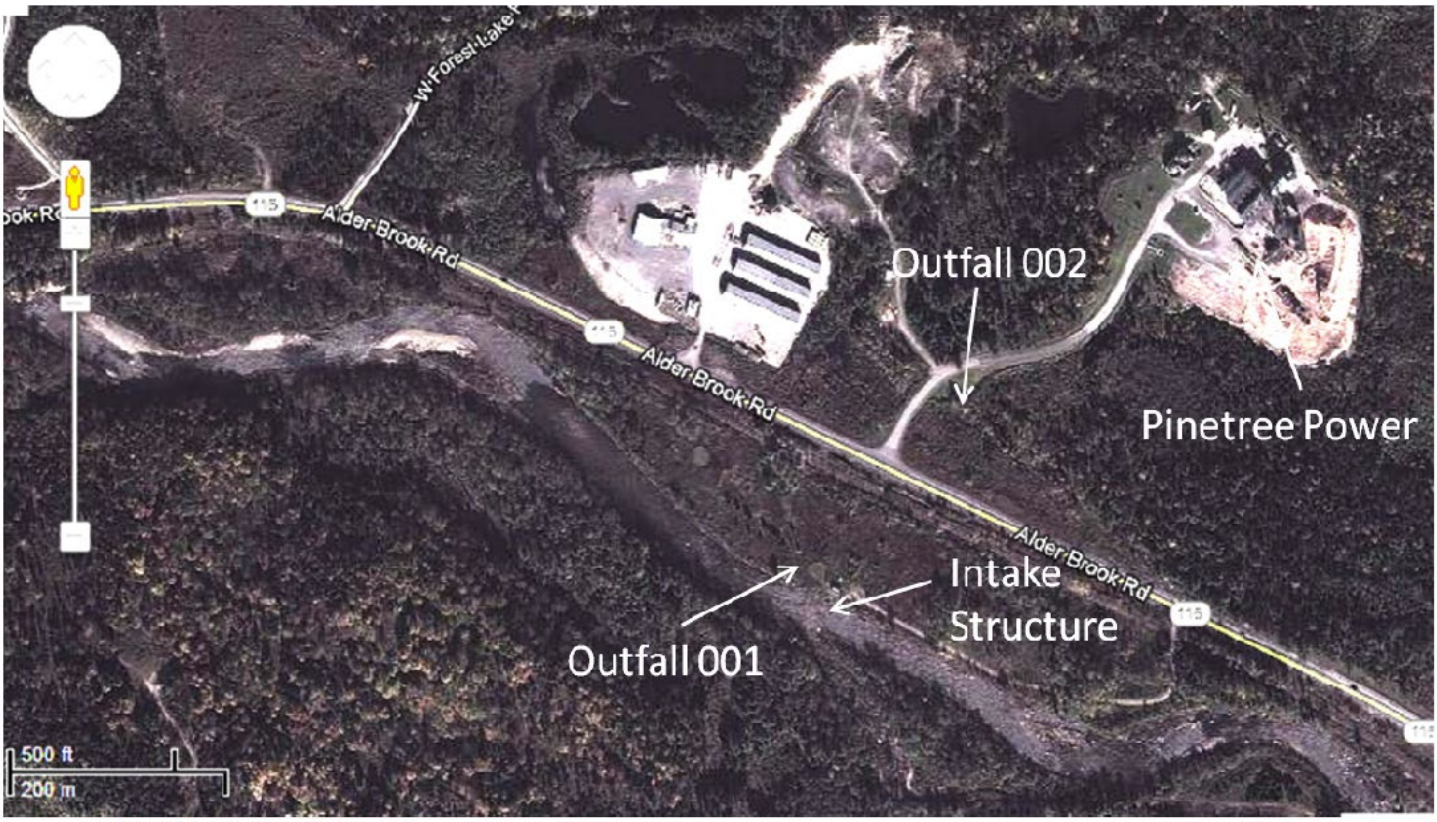
FIGURE 1
Pinetree Power
Location Map

Bethleham, NH

EPA

5/16/2019

Figure 2: Site Plan



*Taken from maps.google.com

Figure 3: Schematic of Water Flow

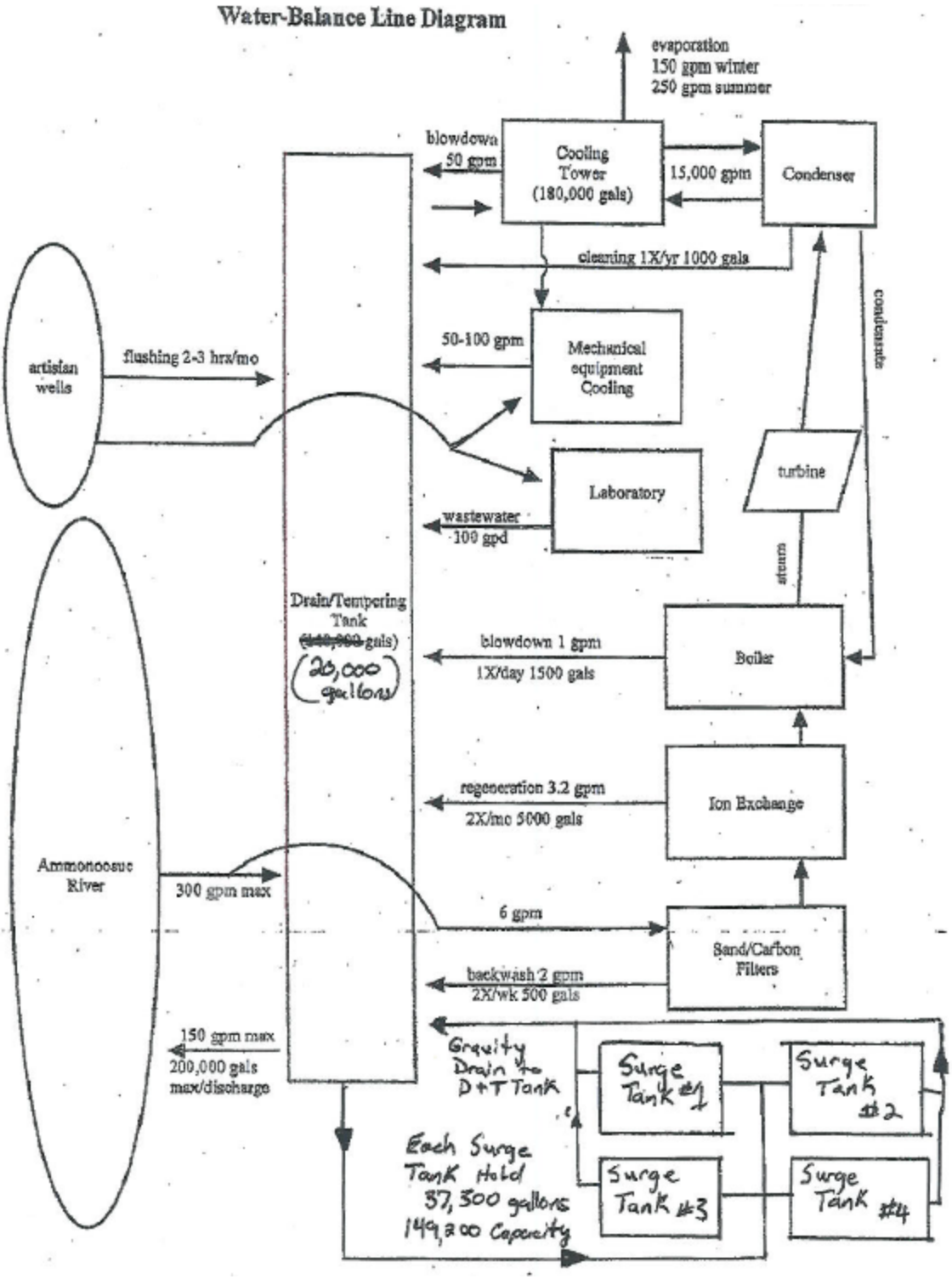


Figure 4: Outfall 002

Figure 5: Cooling Water Intake Structures

Appendix A: Discharge Monitoring Data

Bethlehem Power Station **Outfall Serial Number 001 – D&T Tank Water** **Whole Effluent Toxicity Testing – Effluent**								
Parameter	**A-NOAEL**	**LC50**	**Hardness**	**pH**	**Phosphorus, Total**	**TRC**	**TOC**	**Ammonia-N**
Units	**%**	**%**	**mg/L CaCO3**	**S.U.**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Effluent Limitation	Report	100	Report	Report	Report	Report	Report	Report
Minimum	100	>100	22	6.4	NA	0	8.9	0
Maximum	100	>100	66	7.8	0.19	0	14	0.06
Average	100	>100	41	7.18	NA	NA	10.65	NA
No. of Violations	0	NA	NA	NA	NA	NA	NA	NA
Monitoring Period End Date								
7/11/12	100	>100	30	6.4	---	<0.001	9.8	<0.05
7/6/13	100	>100	22	7.3	---	<0.05	9.9	0.06
7/15/15	100	>100	66	7.8	---	<0.05	14	<0.05
7/26/17	100	>100	46	7.2	0.19	<0.05	8.9	<0.05

Bethlehem Power Station **Outfall Serial Number 001 – D&T Tank Water** **Whole Effluent Toxicity Testing – Effluent**								
Parameter	**Aluminum**	**Cadmium**	**Chromium**	**Copper**	**Iron**	**Lead**	**Nickel**	**Zinc**
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Effluent Limitation	Report	Report	0.2	0.31	0.30	Report	Report	1.0
Minimum	0.05	0	0.001	0.018	NA	0	0	0.005
Maximum	0.11	0	0.002	0.057	NA	0	0.004	0.014
Average	0.075	NA	0.0016	0.034	NA	NA	0.002	0.0103
No. of Violations	NA	NA	0	0	NA	NA	NA	0
Monitoring Period End Date								
7/11/12	0.07	<0.001	0.001	0.018	---	<0.001	<0.001	0.005
7/6/13	0.11	<0.001	0.002	0.027	---	<0.001	0.001	0.014
7/15/15	0.07	<0.0005	0.002	0.057	---	<0.0005	0.004	0.013
7/26/17	0.05	<0.0005	0.0012	0.033	---	<0.0005	0.001	0.009

Bethlehem Power Station **Outfall Serial Number 002** **Quarterly Effluent Monitoring**						
Parameter	**TSS**	**pH**		**Oil & grease**	**Flow Rate**	**Iron**
Units	**mg/L**	**S.U.**		**mg/L**	**gal/d**	**mg/L**
	Daily Max	**Minimum**	**Maximum**	**Daily Max**	**Daily Max**	**Daily Max**
Effluent Limitation	100	6.5	8	15	Report	1
Minimum	0	7.03	7.03	0	1000	0
Maximum	6	7.58	7.58	0	126045	0.51
Average	0.353	7.19	7.19	0	35600	0.236
No. of Violations	0	0	0	0	N/A	0
Monitoring Period End Date						
4/30/2014	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
7/31/2014	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
10/31/2014	0	7.16	7.16	0	126045	0.1
1/31/2015	0	7.06	7.06	0	6000	0.11
4/30/2015	0	7.31	7.31	0	1000	0.45
7/31/2015	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
10/31/2015	0	7.11	7.11	0	73000	0.15
1/31/2016	0	7.34	7.34	0	6200	0.13
4/30/2016	0	7.13	7.13	0	13000	0
7/31/2016	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
10/31/2016	0	7.21	7.21	0	1115	0.12
1/31/2017	0	7.04	7.04	0	64000	0.08
4/30/2017	6	7.21	7.21	0	29000	0.32
7/31/2017	0	7.09	7.09	0	21000	0.19

10/31/2017	0	7.05	7.05	0	13000	0.31
1/31/2018	0	7.03	7.03	0	29000	0.19
4/30/2018	0	7.13	7.13	0	90400	0.35
7/31/2018	0	7.19	7.19	0	29000	0.36
10/31/2018	0	7.58	7.58	0	46000	0.51
1/31/2019	0	7.37	7.37	0	29000	0.32
4/30/2019	0	7.23	7.23	0	29000	0.32

Appendix B: Ambient Data

Pinetree Power Whole Effluent Toxicity Testing – Receiving Water Bi-Annual Reporting								
Parameter	**A-NOEC**	**LC50**	**Hardness**	**pH**	**Conductivity**	**Alkalinity**	**TOC**	**Ammonia-N**
Units	**%**	**%**	**mg/L CaCO3**	**S.U.**	**µmos/cm**	**mg/L CaCO3**	**mg/L**	**mg/L**
Monitoring Period End Date								
7/11/12	100	>100	9	7.0	56	7	2.8	<0.05
7/6/13	100	>100	8	7.3	47	6	3.5	<0.05
7/15/15	100	>100	10	7.6	66	10	2.5	<0.05
7/26/17	---	---	12	7.0	70	8	3.4	<0.05

Pinetree Power Whole Effluent Toxicity Testing – Receiving Water Bi-Annual Reporting							
Parameter	**Aluminum**	**Cadmium**	**Chromium**	**Copper**	**Lead**	**Nickel**	**Zinc**
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Monitoring Period End Date							
7/11/12	0.07	<0.001	---	<0.01	<0.001	<0.001	<0.05
7/6/13	0.11	<0.01	---	<0.01	<0.001	<0.001	0.008
7/15/15	0.07	<0.0005	---	<0.01	<0.0005	<0.001	<0.05
7/26/17	0.06	<0.0005	---	<0.001	<0.0005	<0.001	<0.005

Appendix C: Reasonable Potential Analysis

Methodology

A reasonable potential analysis is completed using a single set of critical conditions for flow and pollutant concentration that will ensure the protection of water quality standards. To determine the critical condition of the effluent, EPA projects an upper bound of the effluent concentration based on the observed monitoring data and a selected probability basis. EPA generally applies the quantitative approach found in Appendix E of the *Technical Support Document for Water Quality-based Toxics Control* (TSD)[1] to determine the upper bound of the effluent data. This methodology accounts for effluent variability based on the size of the dataset and the occurrence of non-detects (i.e., samples results in which a parameter is not detected above laboratory detection limits). EPA used this methodology to calculate the 95th percentile. Because the dataset consists of less than 10 samples, EPA used a lognormal distribution and conservative coefficient of variation of 0.6 to, except when these data include one or more non-detect results, in which case EPA used a delta-lognormal distribution.

EPA uses the calculated upper bound of the data, along with a concentration representative of the parameter in the receiving water, the critical effluent flow, and the critical upstream flow to project the downstream concentration after complete mixing using the following simple mass-balance equation:

$$Q_s C_s + Q_e C_e = Q_d C_d$$

Where:

C_d = downstream concentration
C_s = upstream concentration (median value of available ambient data)
C_e = effluent concentration (95th percentile of pollutant concentrations)
Q_s = upstream flow (7Q10 flow)
Q_e = effluent flow of the Facility (permitted maximum daily flow)
Q_d = downstream flow ($Q_s + Q_e$)

Solving for the receiving water concentration downstream of the discharge (C_d) yields:

$$C_d = \frac{C_s Q_s + C_e Q_e}{Q_d}$$

As required by Env-Wq 1705.01, 10% of the assimilative capacity of the receiving water is reserved by using a multiplying factor of 0.9 in this calculation. When the downstream concentration (C) exceeds the applicable criterion multiplied by 0.9, there is reasonable potential for the discharge to cause, or contribute to an excursion above WQSs. *See* 40 C.F.R. § 122.44(d). When EPA determines that a discharge causes, has the reasonable potential to cause, or contribute to such an excursion, the permit must contain WQBELs for the parameter. The limitation is calculated by rearranging the above mass balance equation to solve for the effluent concentration (C_e) using the applicable criterion multiplied by 0.9 as the downstream concentration (C_d). *See* 40 C.F.R. § 122.44(d)(1)(iii).

Determination of Applicable Criteria

State water quality criteria for toxic substances are found in Env-Wq 1703.21. Freshwater aquatic life criteria for aluminum, cadmium, copper, lead, nickel and zinc are established in

terms of dissolved metals and are converted to total recoverable using published conversion factors. *See* Env-Wq 1703.23. Additionally, the criteria for cadmium, copper, lead, nickel and zinc are hardness-dependent. *See* Env-Wq 1703.22. EPA calculated hardness-dependent chronic and acute criteria for metals detected in the effluent using the downstream hardness determined using the hardness values measured in the Facility's discharge (Appendix A) and the median hardness value measured in the receiving water immediately upstream of the discharge (Appendix B). Since this downstream hardness is below 20 mg/L, 20 mg/L was used to determine the total recoverable metals criteria. *See* Env-Wq 1703.22(f). The applicable criteria are summarized in the table below.

Summary of Applicable Criteria[1,2]

Parameter	**Acute Criteria (CMC)**	**Chronic Criteria (CCC)**
Units	**µg/L**	**µg/L**
Aluminum	750	87
Cadmium	0.39	0.22
Copper	3.07	2.36
Lead	10.52	0.41
Nickel	120.23	13.37
Zinc	30.64	30.64
Chromium (3+)	482.56	13.37

[3]For hardness-dependent criteria, *See National Recommended Water Quality Criteria, Appendix B - Parameters for Calculating Freshwater Dissolved Metals Criteria That Are Hardness-Dependent*: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm ; Required by Env-Wq 1703.24.

[4]For dissolved to total recoverable metal conversion, *See Appendix A - Conversion Factors for Dissolved Metals:* http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#appendxa; Required by Env-Wq 1703.23.

Calculation of Reasonable Potential

EPA first calculated the upper bound of expected effluent concentrations for each parameter. EPA then used the calculated upper bound of expected effluent concentrations, the median value of the available ambient data, the permitted daily maximum effluent flow and the 7Q10 flow to project the in-stream concentration downstream from the discharge. When this resultant in-stream concentration (C) exceeds the applicable criterion multiplied by 0.9, there is reasonable potential for the discharge to cause, or contribute to an excursion above water quality standards. The results are summarized in the table below.

Summary of Reasonable Potential Results

Parameter	Effluent Flow	Effluent Conc[1]	Upstream Flow	Upstream Conc[2]	Downstream Flow[3]	Downstream Concentration	Acute Criterion	Chronic Criterion	Reasonable Potential[4]
Units	**cfs**	**µg/L**	**cfs**	**µg/L**	**cfs**	**µg/L**	**µg/L**	**µg/L**	**—**
Aluminum	0.31	286.0	29.9	70	30.2	72.2	750	87	N
Cadmium		0.0		0.0		0.0	0.39	0.22	N
Copper		148.2		0.0		1.5	3.07	2.36	N
Lead		0.0		0.0		0.00	10.52	0.41	N
Nickel		10.4		0.0		0.11	120.23	13.37	N
Zinc		36.4		0.0		0.37	30.64	30.64	N
Chromium (3+)		5.2		0.0		0.053	482.56	23.11	N

[1] Values represent the 95th percentile concentration calculated using the monitoring data reported by the Facility (*See* Appendix A).

[2] Median upstream values calculated using monitoring data for the receiving water immediately upstream of the Facility's discharge reported by the Facility (see Appendix B).

[3] Value calculated as the sum of effluent flow and upstream flow.

[4] "Y" is indicated if the downstream concentration exceeds the acute criterion; otherwise, "N" is indicated.

No parameters have a reasonable potential to cause or contribute to an excursion above water quality standards.

NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES
WATER DIVISION
P.O. BOX 95
CONCORD, NEW HAMPSHIRE 03302-0095

U.S. ENVIRONMENTAL PROTECTION AGENCY – REGION 1
WATER DIVISION
5 POST OFFICE SQUARE
BOSTON, MASSACHUSETTS 02109

JOINT PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO THE WATERS OF THE UNITED STATES UNDER SECTIONS 301 AND 402 OF THE CLEAN WATER ACT (THE "ACT"), AS AMENDED, AND REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE ACT, AND ISSUANCE OF A STATE SURFACE WATER PERMIT UNDER NH RSA 485-A:13, I(a).

DATE OF NOTICE: **August 28, 2019**

PERMIT NUMBER: **NH0021423**

PUBLIC NOTICE NUMBER: **NH-08-19**

NAME AND MAILING ADDRESS OF APPLICANT:

Pinetree Power, LLC
1241 Whitefield Road
Bethlehem, NH 03574

NAME AND LOCATION OF FACILITY WHERE DISCHARGE OCCURS:

Pinetree Power – Bethlehem Station
1241 Whitefield Road
Bethlehem, NH 03574

RECEIVING WATER: Ammonoosuc River, Class B

PREPARATION OF THE DRAFT PERMIT:

The U.S. Environmental Protection Agency (EPA) and the New Hampshire Department of Environmental Services, Water Division have cooperated in the development of a Draft Permit for the above identified facility. The effluent limits and permit conditions imposed have been drafted to assure that State Water Quality Standards and provisions of the Clean Water Act will be met. EPA has formally requested that the State certify the 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:

A Fact Sheet (describing the type of facility; type and quantities of wastes; a brief summary of the basis for the draft permit conditions; and significant factual, legal and policy questions

considered in preparing this draft permit) and the draft permit may be obtained at no cost at http://www.epa.gov/region1/npdes/draft_permits_listing_nh.html or by writing or calling EPA's contact person named below:

George Papadopoulos
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (06-4)
Boston, MA 02109-3912
Telephone: (617) 918-1579

The administrative record containing all documents relating to the Draft Permit is on file and 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 the Draft Permit is inappropriate, must raise all issues and submit all available arguments and all supporting material for their arguments in full by **September 26, 2019**, to the U.S. EPA, 5 Post Office Square, Boston, Massachusetts 02109-3912. Any person, prior to such date, may submit a request in writing to EPA and the State 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. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the Draft Permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

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.

THOMAS E. O'DONOVAN, P.E., DIRECTOR
WATER DIVISION
NEW HAMPSHIRE DEPARTMENT OF
ENVIRONMENTAL SERVICES

KEN MORAFF, DIRECTOR
WATER DIVISION
U.S. ENVIRONMENTAL PROTECTION
AGENCY - REGION I