

**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, Inc.

is authorized to discharge from a facility located at

**Pinetree Power, Inc.
1241 Whitefield Road
Bethlehem, NH 03574**

to receiving water named

Ammonoosuc River (Hydrologic Basin Code 01070001)

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 following sixty (60) days after the date of signature.

This permit supersedes the permit issued on September 22, 2006.

This permit and the authorization to discharge expire at midnight, five (5) years from the last day of the month preceding the effective date.

This permit consists of 10 pages in Part I which includes effluent limitations, monitoring and reporting requirements, and state permit conditions; Attachment A - Freshwater Acute Toxicity Test Procedure and Protocol (February 2011) (8 pages); Attachment B includes instructions for preparing Stormwater Pollution Prevention Plans (6 pages); as well as 25 pages in Part II which includes general conditions and definitions.

Signed this 26th day of November, 2012.

_____/S/ SIGNATURE ON FILE_____

Stephen S. Perkins, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency
Region I - New England
Boston, Massachusetts

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 from **outfall serial number 001**(process): boiler blowdown, sandfilter backwash, demineralizer regeneration, mechanical equipment cooling, cooling tower treatment filtrate (blowdown), artesian well flushing, condenser cleaning, laboratory wastewater and other miscellaneous floor drain wastes to the Ammonoosuc River only during emergencies. Such discharges shall be limited and monitored as specified below.

Effluent Characteristic	Maximum Daily Discharge Limitations	Monitoring Requirements ¹	
		Measurement Frequency	Sample Type
Flow (million gallons per day)	0.20	Continuous	Recorder
Total Suspended Solids (mg/L)	100	Each Discharge Event	Composite ⁸
Temperature (°F)	85 ²	Continuous	Recorder
Temperature Rise, (ΔT), (°F) ³	20 ²	Continuous	Recorder
Oil and Grease (mg/L)	20	Each Discharge Event	Grab
The 126 priority pollutants contained in chemicals added for cooling tower maintenance (except Cr and Zn)	No detectable amount	Each Discharge Event	Composite ⁸
Total Recoverable Chromium (mg/L)	0.2	Each Discharge Event	Composite ⁸
Total Recoverable Zinc (mg/L)	1.0	Each Discharge Event	Composite ⁸
Total Recoverable Copper (mg/L)	0.31	Each Discharge Event	Composite ⁸
Total Recoverable Iron (mg/L)	0.30	Each Discharge Event	Composite ⁸
Total Residual Oxidants (mg/L)	0.2	Each Discharge Event	Grab
pH (standard units)	≥6.5 and ≤8.0 ⁴	Continuous	Recorder ⁵
Whole Effluent Toxicity ⁶ LC50 (%)	≥100	Each Discharge Event ⁷	Composite ⁸
NOAEL (%)	Report	“	“
Ammonia (mg/L)	Report	“	“
Hardness (mg/L)	Report	“	“
Total Solids (mg/L)	Report	“	“
Total Organic Carbon (mg/L)	Report	“	“
Aluminum (mg/L)	Report	“	“
Cadmium (mg/L)	Report	“	“
Lead (mg/L)	Report	“	“
Nickel (mg/L)	Report	“	“

- 1 Effluent samples shall be representative of the discharge and shall be taken from the discharge pipe within the manhole located approximately 10 feet from the river, prior to discharging into the Ammonoosuc River and without mixing with storm water. At no time shall the discharge flow rate exceed 150 gallons per minute. The permittee shall notify EPA and NHDES-WD within 24 hours by telephone after initiating discharge from this location.
- 2 These temperature limits shall not to be exceeded at any time (instantaneous maximum).
- 3 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.
- 4 pH limits shall not to be exceeded at any time (instantaneous maximum). Also see State Permit Conditions, Part I.C.
- 5 Report minimum and maximum values.
- 6 The Whole Effluent Toxicity (WET) test required by this permit is a 48-Hour Static Acute test on effluent samples using two species, Daphnid (Ceriodaphnia dubia) and Fathead Minnow (Pimephales promelas) following the protocol in Attachment A (Freshwater Acute Toxicity Test Procedure and Protocol dated February 2011).
 - i. LC50 (Lethal Concentration 50 Percent) is the concentration of wastewater (effluent) causing mortality to 50 percent (%) of the test organisms. The "100 % or greater limit" is defined as a sample which is composed of 100 % effluent.
 - ii. NOAEL (No Observed Acute Effect Level) is defined as the highest concentration of toxicant or effluent to which organisms are exposed in a life-cycle or partial life-cycle test which causes no adverse effects (in this case, death) at a specific time of observation as determined from hypothesis testing where the test results (again, death) exhibit a linear dose-response relationship. However, where the test results do not exhibit a linear dose-response relationship, report the lowest concentration where there is no observable effect. See Attachment A, page A-8 for additional information.
 - iii. All pollutant parameters shall be determined to at least the Minimum Quantification Level (MLs) shown in Attachment A, page A-7, or as amended.
- 7 Whole Effluent Toxicity (WET) test results are to be submitted by the 15th day of the month following the month the discharge event occurred.
- 8 Composite samples shall be taken over the 24 hour period of one calendar day. If the discharge period is less than 24 hours, composite samples shall be taken during all periods of discharge occurring that day.

2. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge from **outfall serial number 002**: storm water runoff to the Ammonoosuc River. Such discharges shall be limited and monitored by the permittee as specified below.

Effluent Characteristic	Maximum Daily Discharge Limitations	Monitoring Requirements ¹	
		Measurement Frequency	Sample Type
Flow (gallons per day)	Report	1/Quarter	Estimate
Oil and Grease (mg/L)	15	1/Quarter	Grab ²
Total Suspended Solids (mg/L)	100	1/Quarter	Grab ²
Total Recoverable Iron (mg/L)	1.0	1/Quarter	Grab ²
pH (standard units)	≥ 6.5 and ≤ 8.0 ³	1/Quarter	Grab ²

¹ Effluent samples shall be representative of the discharge and shall be taken from the storm water collection system prior to discharging to the wetland area and eventually to the Ammonoosuc River.

² 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. The grab samples shall be taken during the first thirty minutes of the discharge. If collection of the grab sample(s) during the first thirty minutes is impracticable, grab sample(s) can be taken as soon after that as possible, and the permittee shall submit with the monitoring report a description of why the collection of the grab sample(s) during the first thirty minutes was impracticable. When a permittee is unable to collect grab sample(s) due to adverse climatic conditions, the permittee must submit, in lieu of sampling data, a description of why the grab sample(s) could not be collected, including available documentation of the event. The permittee must submit this information either in the comments section of the DMR(s) or in an attached letter. Adverse weather conditions which may prohibit the collection of sample(s) include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of sample(s) impracticable (drought, extended frozen conditions, specified storm event did not occur during sampling period, event occurred during nights or weekends when there is limited personnel at the plant). A "no discharge" report shall be submitted for those quarters in which there is no discharge.

³ The pH shall not be less than 6.5 S.U. or greater than 8.0 S.U. unless due to naturally occurring conditions in the rainfall.

3. Water Treatment Chemicals

- a. Every two years, beginning July 2013, the permittee must collect a representative sample of water from the drain/tempering tank during July and perform on that sample a: 48-Hour static acute WET test following the protocol shown in Attachment A (Freshwater Acute Toxicity Test Procedure and Protocol dated February 2011). Results of all required testing shall be submitted on Discharge Monitoring Reports (DMR) to EPA and the NHDES-WD by September 15th of each year tested. If an emergency happens to cause Pinetree Power to discharge prior to July 31 of any given year, then the analysis of discharge samples for outfall 001 may be used as a substitute for that calendar year's WET test on the drain/tempering tank contents.
- b. The Regional Administrator or the Director shall be notified in advance of any addition and/or change of chemicals containing pollutants not approved for water discharge (See Part I.A.5.c). The notification shall include the following information: discharge frequency, concentration, and the impact, if any, on the indigenous populations of the receiving water. If deemed appropriate, the Regional Administrator or the Director may require, among other parameters, Whole Effluent Toxicity testing as part of a feasibility study. The term "Regional Administrator" means the Regional Administrator of Region I of the U.S. Environmental Protection Agency and the term "Director" means the Director of the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) or their respective designees.

4. Storm Water Pollution Prevention Plan (SWPPP)

- a. The permittee shall continue to implement its SWPPP. Review and updating the SWPPP shall be done at least annually. Except as provided elsewhere in this permit, the SWPPP for this facility shall provide for compliance with the terms of the permit and the plan. The SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from this facility. In addition, the SWPPP shall describe and ensure the implementation of practices to reduce the pollutants in storm water discharges associated with industrial activity and to assure compliance with the terms and conditions of this permit. Attachment B provides the minimum requirements that must be addressed in the SWPPP for this facility.
- b. Within sixty (60) days of the effective date of this permit, the permittee shall submit to EPA and NHDES-WD a copy of its updated SWPPP.

5. Water Quality Requirements

- a. Discharges and water withdrawals shall not either cause a violation of the water quality standards or jeopardize any Class B use of the Ammonoosuc River.
- b. The thermal plumes from the station shall: (a) not block zones of fish passage, (b) not interfere with spawning of indigenous populations, (c) not change the balanced indigenous population of the receiving water, and (d) have minimal contact with surrounding

shorelines.

- c. Pollutants which are not limited by the permit, but have been specifically disclosed in the last permit application, may be discharged at the frequency and level disclosed in the application, provided that such discharge does not violate sections 307 and 311 of the Act or applicable water quality standards.
- d. Discharges to the Ammonoosuc River shall be adequately treated to insure that the surface water remains free from pollutants in concentrations or combinations that settle to form harmful deposits, float as foam, debris, scum or other visible pollutants. They shall be adequately treated to insure that the surface waters remain free from pollutants which produce odor, color, taste, or turbidity in the receiving water which is not naturally occurring and would render it unsuitable for its designated uses.
- e. The effluent shall not contain metals and/or materials in concentrations or in combinations which are hazardous or toxic to aquatic life or which would impair the uses designated by the classification of the receiving waters.

6. Cooling Water Intake Structure Requirements

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 Regional Administrator and the Director. The present design shall be reviewed for conformity to regulations pursuant to CWA § 316(b) at each permit renewal.

7. Other Requirements

- a. 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 CFR 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.
- b. The ChemTreat materials identified by the permittee only may be used as biocides. No other biocide shall be used without explicit approval from EPA and the Director.
- c. There will be no discharge as a result of metal cleaning wastes, including washing of air precipitators, preheaters, boilers, or other types of process equipment.
- d. Wood chips, sawdust, waste ash, and other wood related debris shall not enter the Ammonoosuc River from any runoff area. These materials shall be prevented from entering the storm water collection system. All solids collection areas shall be inspected at least quarterly for compliance with this provision and, if necessary, cleaned. All debris removed from collection areas shall be disposed of according to applicable State and Federal regulations.
- e. The permittee shall comply with all existing federal, state, and local laws and regulations

that apply to the reuse or disposal of solids, such as those which may be removed from the cooling towers, water and waste treatment operations and equipment cleaning. At no time shall these solids be discharged to the Ammonoosuc River.

- f. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Regional Administrator as soon as they know or have reason to believe (40 CFR §122.42):
 - i. 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) One hundred micrograms per liter (100 ug/l);
 - (2) Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
 - (4) Any other notification level established by the Regional Administrator in accordance with 40 CFR §122.44(f).
 - ii. 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) Five hundred micrograms per liter (500 ug/l);
 - (2) One milligram per liter (1 mg/L) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
 - (4) Any other notification level established by the Regional Administrator in accordance with 40 CFR §122.44(f).

8. Possible Permit Requirement Changes

- a. Storm Water Monitoring Frequency Adjustment

If four consecutive storm water (Part I.A.2) monitoring values show compliance with the permit limits, the permittee may request to reduce monitoring for that pollutant to no less than once per year for the duration of the permit. The permittee shall submit the requests, with copies of the monitoring data, to the EPA. Until written notice is received by certified mail from the EPA indicating that the storm water monitoring requirements have been changed, the permittee is required to continue testing at the frequency specified in this permit.

b. pH Limit Adjustment

The permittee may submit a written request to the EPA requesting a change in the permitted pH limit range to be not less restrictive than 6.0 to 9.0 S.U. The permittee's written request must include the State's letter containing an original signature (no copies). The State's letter shall state that the permittee has demonstrated to the State's satisfaction that as long as discharges to the receiving water from a specific outfall are within a specific numeric pH range, the naturally occurring receiving water pH will be unaltered. That letter must specify for each outfall the associated numeric pH limit range. Until written notice is received by certified mail from the EPA indicating the pH limit range has been changed, the permittee is required to meet the permitted pH limit range in the respective permit.

c. This permit shall be modified, or alternatively, revoked and reissued to comply with any applicable standard or limitation promulgated or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

(1) contains different conditions or is otherwise more stringent than any effluent limitation in this permit; or

(2) controls any pollutant not limited by this permit.

d. This permit may be modified, or alternatively, revoked and reissued to incorporate additional testing requirements, including chemical specific limits, for Outfalls 001 and 002 and the water in the drain/tempering tank, if any testing result indicates that the discharge causes or has reasonable potential to cause or contribute to an exceedance of any State water quality criterion. Results of the analyses required by this Permit are considered "New Information" and the Permit may be modified as provided in 40 CFR Section 122.62(a)(2).

B. MONITORING AND REPORTING

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

1. Submittal of Reports Using NetDMR

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

DMRs shall be submitted electronically to EPA no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA

as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA or to NH DES.

2. Submittal of NetDMR Opt-Out Requests

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

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

And

Attn: Compliance Supervisor
New Hampshire Department of Environmental Services (NH DES)
Water Division
Wastewater Engineering Bureau
P.O. Box 95
Concord, New Hampshire 03302-0095

3. Submittal of Reports in Hard Copy Form

Monitoring results shall be summarized for each calendar month and reported on separate hard copy Discharge Monitoring Report Form(s) (DMRs) postmarked no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted as an attachment to the DMRs. Signed and dated original DMRs and all other reports or notifications required herein or in Part II shall be submitted to the Regional Administrator at the following address:

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

Duplicate signed copies of all reports or notifications required above shall be submitted to the State at the following address:

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

Any verbal reports, if required in **Parts I** and/or **II** of this permit, shall be made to both EPA-New England and to NH DES-WD.

C. STATE PERMIT CONDITIONS

The permittee shall comply with the following conditions which are included as State Certification requirements.

The pH range of 6.5-8.0 S.U. must be achieved in the final effluent unless the permittee can demonstrate to NHDES-WD: (1) that the range should be widened due to naturally occurring conditions in the receiving water, or (2) that the naturally occurring source water pH is unaltered by the permittee's operations. The scope of any demonstration project must receive prior approval from NHDES-WD. In no case, shall the above procedure result in pH limits less restrictive than applicable federal effluent limitation guideline(s) published in the CFRs.

This NPDES Discharge Permit is issued by the U.S. Environmental Protection Agency under Federal and State 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/swguidance/methods/wet/index.cfm#methods>

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°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/enforcementandassistance/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 TESTS¹

1.	Test type	Static, non-renewal
2.	Temperature (°C)	20 ± 1° C or 25 ± 1° 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 <u>Selenastrum</u> 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	≥ 0.5, must bracket the permitted RWC

15. Number of dilutions ³	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 TEST¹**

1. Test Type	Static, non-renewal
2. Temperature (°C):	20 ± 1 ° C or 25 ± 1°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 the others
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	≥ 0.5, must bracket the permitted RWC

15. Number of dilutions ³	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 90% or greater survival of test organisms in dilution water control solution
17. Test acceptability	
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.

<u>Parameter</u>	<u>Effluent</u>	<u>Receiving Water</u>	<u>ML (mg/l)</u>
Hardness ¹ ,	x	x	0.5
Total Residual Chlorine (TRC) ^{2, 3} ,	x		0.02
Alkalinity	x	x	2.0
pH ⁴	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.

Stormwater Pollution Prevention Plan (SWPPP)

The SWPPP does not contain effluent limitations; the limitations are contained in Part I.A of this permit. The SWPPP is intended to document the selection, design, and installation of control measures. As distinct from the SWPPP, the additional documentation requirements are intended to document the implementation (including inspection, maintenance, monitoring, and corrective action) of the permit requirements.

The Stormwater Pollution Prevention Plan shall be prepared in accordance with good engineering practices and in accordance with the factors outlined in 40 Code of Federal Register (CFR) Section 125.3(d)(2) or (3) as appropriate. The plan shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility. In addition, the plan shall describe and ensure the implementation of practices which are to be used to reduce the pollutants in storm water discharges associated with industrial activity at the facility and to assure compliance with the terms and conditions of this permit. The permittee must implement the provisions of the Storm Water Pollution Prevention Plan required under this part as a condition of this permit.

1.0 Contents of Your SWPPP

Your SWPPP must contain all of the following elements:

- Stormwater pollution prevention team;
- Site description;
- Summary of potential pollutant sources;
- Description of control measures;
- Schedules and procedures; and
- Signature requirements.

Where your SWPPP refers to procedures in other facility documents, such as a Spill Prevention, Control and Countermeasure (SPCC) Plan or an Environmental Management System (EMS) developed for a National Environmental Performance Track facility, copies of the relevant portions of those documents must be kept with your SWPPP.

1.1 Stormwater Pollution Prevention Team

You must identify the staff members (by name or title) that comprise the facility's stormwater pollution prevention team as well as their individual responsibilities. Your stormwater pollution prevention team is responsible for assisting the facility manager in developing and revising the facility's SWPPP as well as maintaining control measures and taking corrective actions where required. Each member of the stormwater pollution prevention team must have ready access to either an electronic or paper copy of applicable portions of this permit and your SWPPP.

1.2 Site Description

Your SWPPP must include the following:

- **Activities at the Facility-** Provide a description of the nature of the industrial activities at your facility;
- **General location map-** Provide a general location map (e.g., U.S. Geological Survey (USGS) quadrangle map) with enough detail to identify the location of your facility and all receiving waters for your stormwater discharges; and
- **Site map-** Provide a map showing:
 - The size of the property in acres;
 - The location and extent of significant structures and impervious surfaces;
 - Directions of stormwater flow (use arrows);
 - Locations of all existing structural control measures;
 - Locations of all receiving waters in the immediate vicinity of your facility, indicating if any of the waters are impaired and, if so, whether the waters have TMDLs established for them;
 - Locations of all stormwater conveyances including ditches, pipes, and swales;
 - Locations of potential pollutant sources;
 - Locations where significant spills or leaks have occurred;
 - Locations of all stormwater monitoring points;
 - Locations of stormwater inlets and outfalls, and an approximate outline of the areas draining to each outfall;
 - Municipal separate storm sewer systems, where your stormwater discharges to them;
 - Locations and descriptions of all non-stormwater discharges;
 - Locations of the following activities where such activities are exposed to precipitation:
 - fueling stations;
 - vehicle and equipment maintenance and/or cleaning areas;
 - loading/unloading areas;
 - locations used for the treatment, storage, or disposal of wastes;
 - liquid storage tanks;
 - processing and storage areas;
 - immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility;
 - transfer areas for substances in bulk; and
 - machinery; and
 - Locations and sources of run-on to your site from adjacent property that contains significant quantities of pollutants.

1.3 Summary of Potential Pollutant Sources

You must document areas at your facility where industrial materials or activities are exposed to stormwater and from which allowable non-stormwater discharges are released. *Industrial materials or activities* include, but are not limited to: material handling equipment or activities; industrial machinery; raw materials; industrial production and processes; and intermediate products, by-products, final products, and

waste products. *Material handling activities* include, but are not limited to: the storage, loading and unloading, transportation, disposal, or conveyance of any raw material, intermediate product, final product or waste product. For each area identified, the description must include:

- 1.3.1 *Activities in the area-*** A list of the industrial activities exposed to stormwater (e.g., material storage; equipment fueling, maintenance, and cleaning; cutting steel beams).
- 1.3.2 *Pollutants-*** A list of the pollutant(s) or pollutant constituents (e.g., crankcase oil, zinc, sulfuric acid, and cleaning solvents) associated with each identified activity. The pollutant list must include all significant materials that have been handled, treated, stored, or disposed, and that have been exposed to stormwater in the 3 years prior to the date you prepare or amend your SWPPP.
- 1.3.3 *Spills and Leaks-*** Documentation of where potential spills and leaks could occur that could contribute pollutants to stormwater discharges, and the corresponding outfall(s) that would be affected by such spills and leaks. You must document all significant spills and leaks of oil or toxic or hazardous pollutants that actually occurred at exposed areas, or that drained to a stormwater conveyance, in the 3 years prior to the date you prepare or amend your SWPPP.

Note: Significant spills and leaks include, but are not limited to, releases of oil or hazardous substances in excess of quantities that are reportable under CWA Section 311 (see 40 CFR 110.6 and 40 CFR 117.21) or Section 102 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 USC §9602. This permit does not relieve you of the reporting requirements of 40 CFR 110, 40 CFR 117, and 40 CFR 302 relating to spills or other releases of oils or hazardous substances.

- 1.3.4 *Non-Stormwater Discharges-*** Documentation that you have evaluated for the presence of non-stormwater discharges and that all unauthorized discharges have been eliminated. Documentation of your evaluation must include:
- The date of any evaluation;
 - A description of the evaluation criteria used;
 - A list of the outfalls or onsite drainage points that were directly observed during the evaluation;
 - The different types of non-stormwater discharge(s) and source locations; and
 - The action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), if any were identified. For example, a floor drain was sealed, a sink drain was re-routed to sanitary, or an NPDES permit application was submitted for an unauthorized cooling water discharge.
- 1.3.5 *Salt Storage-*** The location of any storage piles containing salt used for deicing or other commercial or industrial purposes.
- 1.3.6 *Sampling Data-*** A summary of all stormwater discharge sampling data collected at your facility during the previous permit term.

1.4 Schedules and Procedures

1.4.1 Best Management Practices- The following must be documented in your SWPPP:

- **Good Housekeeping-**
 - A schedule for regular pickup and disposal of waste materials, along with routine inspections for leaks and conditions of drums, tanks and containers;
 - A description of measures that prevent or minimize fugitive dust emissions from waste ash piles and wood chip storage areas. The permittee shall consider establishing procedures to minimize offsite tracking of waste ash, wood chips and sawdust. To prevent offsite tracking the facility may consider specially designed tires, or washing vehicles in a designated area before they leave the site, and controlling the wash water;
 - Inspections of all residue hauling vehicles for proper covering over the load, adequate gate sealing and overall integrity of the body or container. Vehicles without load coverings or adequate gate sealing, or with leaking containers or beds must be repaired as soon as practicable;
 - Plant procedures established to reduce and/or control the tracking of waste ash or residue from ash loading areas including, where practicable, requirements to clear the ash storage pad/floor and immediately adjacent roadways of spillage, debris and excess water before each loaded vehicle departs; and
- **Maintenance-** Preventative maintenance procedures, including regular inspections, testing, maintenance, and repair of all industrial equipment and systems, and control measures, to avoid situations that may result in leaks, spills, and other releases, and any back-up practices in place should a runoff event occur while a control measure is off-line;
- **Spill Prevention and Response Procedures-** Procedures for preventing and responding to spills and leaks. You may reference the existence of other plans for Spill Prevention Control and Countermeasure (SPCC) developed for the facility under Section 311 of the CWA or programs otherwise required by for the facility, provided that you keep a copy of that other plan onsite and make it available for review; and
- **Employee Training-** A schedule for all types of necessary training.

1.4.2 Monitoring and Inspection

Your SWPPP must document:

- Locations where samples are collected;
- Parameters for sampling and the frequency of sampling for each parameter;
- Schedules for monitoring at your facility, including schedule for alternate monitoring periods for climates with irregular stormwater runoff; and

- Procedures (e.g., responsible staff, logistics, laboratory to be used, etc.) for gathering storm event data.

You must document in your SWPPP your procedures for performing, as appropriate, the three types of inspections, including:

- Routine facility inspections;
- Quarterly visual assessment of stormwater discharges; and
- Comprehensive site inspections.

For each type of inspection performed, your SWPPP must identify:

- Person(s) or positions of person(s) responsible for inspection;
- Schedules for conducting inspections, including tentative schedule for facilities in climates with irregular stormwater runoff; and
- Specific items to be covered by the inspection, including schedules for specific outfalls.

1.5 SWPPP Signature and Availability

You must sign and date your SWPPP and retain a copy of the current SWPPP required by this permit at the facility. The current SWPPP must be immediately available to EPA; a State, Tribal, or local agency approving stormwater management plans; the operator of a municipal storm water system receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) at the time of an onsite inspection or upon request. EPA may provide access to portions of your SWPPP to a member of the public upon request. Confidential Business Information (CBI) may be withheld from the public, but may not be withheld from those staff cleared for CBI review within EPA, USFWS, or NMFS.

2.0 Required SWPPP Modifications

You must modify your SWPPP whenever necessary to address any changes at the facility including those changes implemented when a review indicates that changes to your control measures are necessary to meet the effluent limits in this permit. Changes to your SWPPP document must be signed and dated accordingly.

3.0 Additional Documentation Requirements

You are required to keep the following inspection, monitoring, and certification records with your SWPPP that together keep your records complete and up-to-date, and demonstrate your full compliance with the conditions of this permit:

- A copy of this permit (an electronic copy easily available to SWPPP personnel is also acceptable);
- Descriptions and dates of any incidences of significant spills, leaks, or other releases that resulted in discharges of pollutants to waters of the U.S., through stormwater or otherwise; the circumstances leading to the release and actions taken in response to the release; and measures taken to prevent the recurrence of such releases;
- Records of employee training, including date training received;

- Documentation of maintenance and repairs of control measures, including the date(s) of regular maintenance, date(s) of discovery of areas in need of repair/replacement, and for repairs, date(s) that the control measure(s) returned to full function, and the justification for any extended maintenance/repair schedules;
- All inspection reports, including the routine facility inspection reports, quarterly visual assessment reports, and comprehensive site inspection reports;
- Description of any deviations from the schedule for visual assessments and/or monitoring, and the reason for the deviations (e.g., adverse weather or it was impracticable to collect samples within the first 30 minutes of a measurable storm event);
- Description of any corrective action taken at your site, including dates when problems were discovered and modifications occurred;
- Documentation of any permit limit exceedances and how they were responded to, including either (1) corrective action taken, (2) a finding that the exceedance was due to natural background pollutant levels, or (3) a finding that no further pollutant reductions were technologically available and economically practicable and achievable in light of best industry practice; and
- Documentation to support any determination that pollutants of concern are not expected to be present above natural background levels if you discharge directly to impaired waters, and that such pollutants were not detected in your discharge or were solely attributable to natural background sources.

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PART II. A. GENERAL REQUIREMENTS

1. Duty to Comply

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

- a. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirements.
- b. The CWA provides that any person who violates Section 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any of such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Section 402 (a)(3) or 402 (b)(8) of the CWA is subject to a civil penalty not to exceed \$25,000 per day for each violation. Any person who negligently violates such requirements is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than 1 year, or both. Any person who knowingly violates such requirements is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than 3 years, or both.
- c. Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.

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

2. Permit Actions

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

3. Duty to Provide Information

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

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4. Reopener Clause

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

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

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

5. Oil and Hazardous Substance Liability

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

6. Property Rights

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

7. Confidentiality of Information

- a. In accordance with 40 CFR Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words “confidential business information” on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 (Public Information).
- b. Claims of confidentiality for the following information will be denied:
 - (1) The name and address of any permit applicant or permittee;
 - (2) Permit applications, permits, and effluent data as defined in 40 CFR §2.302(a)(2).
- c. Information required by NPDES application forms provided by the Regional Administrator under 40 CFR §122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

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8. Duty to Reapply

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

9. State Authorities

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

10. Other Laws

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

PART II. B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

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

b. Bypass not exceeding limitations

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

c. Notice

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

d. Prohibition of bypass

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

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

5. Upset

- a. Definition. *Upset* means an exceptional incident in which there is an unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph B.5.c. of this section are met. No determination made during

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

- c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - (1) An upset occurred and that the permittee can identify the cause(s) of the upset;
 - (2) The permitted facility was at the time being properly operated;
 - (3) The permittee submitted notice of the upset as required in paragraphs D.1.a. and 1.e. (Twenty-four hour notice); and
 - (4) The permittee complied with any remedial measures required under B.3. above.
- d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

PART II. C. MONITORING REQUIREMENTS

1. Monitoring and Records

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- b. Except for records for monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application except for the information concerning storm water discharges which must be retained for a total of 6 years. This retention period may be extended by request of the Regional Administrator at any time.
- c. Records of monitoring information shall include:
 - (1) The date, exact place, and time of sampling or measurements;
 - (2) The individual(s) who performed the sampling or measurements;
 - (3) The date(s) analyses were performed;
 - (4) The individual(s) who performed the analyses;
 - (5) The analytical techniques or methods used; and
 - (6) The results of such analyses.
- d. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.
- e. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by

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

2. Inspection and Entry

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

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location.

PART II. D. REPORTING REQUIREMENTS

1. Reporting Requirements

- a. **Planned Changes.** The permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:
 - (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR§122.29(b); or
 - (2) The alteration or addition could significantly change the nature or increase the quantities of the pollutants discharged. This notification applies to pollutants which are subject neither to the effluent limitations in the permit, nor to the notification requirements at 40 CFR§122.42(a)(1).
 - (3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition or change may justify the application of permit conditions different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. **Anticipated noncompliance.** The permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- c. **Transfers.** This permit is not transferable to any person except after notice to the Regional Administrator. The Regional Administrator may require modification or revocation and reissuance of the permit to change the name of the permittee and

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

- d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.
- (1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.
 - (2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of the monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.
 - (3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.
- e. Twenty-four hour reporting.
- (1) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances.

A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
 - (2) The following shall be included as information which must be reported within 24 hours under this paragraph.
 - (a) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR §122.41(g).)
 - (b) Any upset which exceeds any effluent limitation in the permit.
 - (c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Regional Administrator in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)
 - (3) The Regional Administrator may waive the written report on a case-by-case basis for reports under Paragraph D.1.e. if the oral report has been received within 24 hours.

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- f. Compliance Schedules. Reports of compliance or noncompliance with, any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
 - g. Other noncompliance. The permittee shall report all instances of noncompliance not reported under Paragraphs D.1.d., D.1.e., and D.1.f. of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph D.1.e. of this section.
 - h. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, it shall promptly submit such facts or information.
2. Signatory Requirement
- a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See 40 CFR §122.22)
 - b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 2 years per violation, or by both.
3. Availability of Reports.

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

PART II. E. DEFINITIONS AND ABBREVIATIONS

1. Definitions for Individual NPDES Permits including Storm Water Requirements

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

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

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

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

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

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

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

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

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

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

Construction Activities - The following definitions apply to construction activities:

- (a) Commencement of Construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.
- (b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion effluent limitation guideline at 40 CFR Part 443.
- (c) Dedicated portable concrete plant is a portable concrete plant located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

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

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

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

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

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

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

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

Discharge of a pollutant means:

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

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

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

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

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

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

EPA means the United States “Environmental Protection Agency”.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- (a) From which there is or may be a “discharge of pollutants”;
- (b) That did not commence the “discharge of pollutants” at a particular “site” prior to August 13, 1979;
- (c) Which is not a “new source”; and
- (d) Which has never received a finally effective NPDES permit for discharges at that “site”.

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

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

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

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

NPDES means “National Pollutant Discharge Elimination System”.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- (1) is listed at 40 CFR §372.65 pursuant to Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986);
- (2) is present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and
- (3) satisfies at least one of the following criteria:
 - (i) are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols), or Table V (certain toxic pollutants and hazardous substances);
 - (ii) are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR §116.4; or
 - (iii) are pollutants for which EPA has published acute or chronic water quality criteria.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Waters of the United States means:

- (a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of tide;
- (b) All interstate waters, including interstate “wetlands”;
- (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, “wetlands”, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
 - (1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;
 - (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - (3) Which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) All impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) Tributaries of waters identified in Paragraphs (a) through (d) of this definition;
- (f) The territorial sea; and
- (g) “Wetlands” adjacent to waters (other than waters that are themselves wetlands) identified in Paragraphs (a) through (f) of this definition.

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

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

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

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

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

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

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

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

- (1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and
- (2) To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Range land is open land with indigenous vegetation.

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

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(January, 2007)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

3. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl ₂	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)

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TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont. (Continuous)	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M ³ /day	Cubic meters per day
DO	Dissolved oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day
mg/l	Milligram(s) per liter
ml/l	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH ₃ -N	Ammonia nitrogen as nitrogen
NO ₃ -N	Nitrate as nitrogen
NO ₂ -N	Nitrite as nitrogen
NO ₃ -NO ₂	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
pH	A measure of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or material
Surfactant	Surface-active agent

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

**NEW ENGLAND - REGION I
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912**

FACT SHEET

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

NPDES PERMIT NO.: **NH0021423**

PUBLIC COMMENT PERIOD: **September 26, 2012 – October 25, 2012**

PUBLIC NOTICE NO.: **NH-016-12**

NAME AND ADDRESS OF APPLICANT:

**IPR-GDF SUEZ
1241 Whitefield Road
Bethlehem, NH 03574**

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

**Pinetree Power, Inc.
1241 Whitefield Road
Bethlehem, NH 03574**

SIC CODE: **4911** NAICS Code(s): **221112**

RECEIVING WATER: **Ammonoosuc River (Hydrologic Basin Code: 01040001)**

CLASSIFICATION: **Class B**

CURRENT PERMIT ISSUED: **9-22-2006**
EXPIRED: **10-31-2011**
APPLICATION REC: **5-10-2011**

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1.0 Type of Facility, Discharge Location and Proposed Action

Pinetree Power, Inc. located in Bethlehem, New Hampshire, is a 17 gross-megawatt (MW) woodchip-fired electrical generation facility (referred to hereafter as either Pinetree Power, station, permittee or facility). The station is a “base-load” facility, having an average yearly capacity utilization rate of 92% for the past five years. August 3, 2012 email from Mark Driscoll, Plant Manager to Sharon DeMeo, EPA. Electricity is generated by means of one 15 MW_{net} wood- fired steam turbine unit, which began commercial operation on December 18, 1986.

Pinetree Power’s current National Pollutant Discharge Elimination System (NPDES) Permit allows the discharge of pollutants to the adjacent Ammonoosuc River. 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 and storm water.¹ Storm water 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 1986², the station requests that it continue to have the option of discharging during emergencies.

Under the Clean Water Act (CWA) §§ 301(a), 316 and 402, Pinetree Power’s pollutant discharges must receive authorization from a NPDES permit issued by the U.S. Environmental Protection Agency (EPA). EPA may not issue a permit for Pinetree Power unless the New Hampshire Department of Environmental Services (NH DES) either certifies that the effluent limitations and/or conditions contained in the permit are stringent enough to assure, among other things, that the discharge will not cause the receiving water to violate the New Hampshire Surface Water Quality Regulations (NH-Standards) or waives its right to certify as set forth in 40 CFR §124.53. Pinetree Power has in the past obtained the necessary federal permits and state certifications. EPA last reissued the station’s federal permit number NH0021423 on September 22, 2006. This permit expired on October 31, 2011. The permit was administratively continued, however, because the station timely applied for permit reissuance. As a result, Pinetree Power remains subject to the existing permit until EPA issues it a new one.

EPA received Pinetree Power’s application for reissuance of the facility’s NPDES permit on May 10, 2011. EPA currently intends to reissue the facility’s NPDES permit. This Draft Permit proposes to continue to authorize the discharge of storm and cooling/process water.

¹ Although the permit issued in 1986 indicated there were two storm water discharge locations, Pinetree Power discharges storm water through one outfall location. During the last permit reissuance, storm water outfall 003 was removed from the permit. Facility site maps show outfalls 003 and 004 but these locations represent storm water flow to swales and infiltration to the ground (i.e., no discharge to the river). Outfall 001 is for process wastewater and outfall 002 is storm water.

² 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.

2.0 Description of Discharge

Refer to Section 6.2 of this Fact Sheet for a description of the discharges associated with each outfall location. A schematic drawing of the flow of water at the facility and the various discharges from the facility is presented in Attachment C. A site location plan is presented in Attachment B.

3.0 Receiving Water Description

Pinetree Power withdraws water from and is permitted to discharge treated effluent to the Ammonoosuc River, which is classified as a Class B water body pursuant to the State of New Hampshire Surface Water Quality Regulations (N.H. Code of Administrative Rules, PART Env-Wq 1703.01) and N.H. RSA 485-A:8. Class B waters are “considered as being acceptable for fishing, swimming and other recreational purposes and, after adequate treatment, for use as water supplies.” RSA 485-A:8, II.

Section 303(d) of the Federal Clean Water Act (CWA) requires states to identify those water-bodies that are not expected to meet surface water quality standards after the implementation of technology-based controls and, as such require the development of total maximum daily loads (TMDL). The 4.253 mile segment of the Ammonoosuc River in which Pinetree Power is permitted to discharge (NHRIV801030403-07) is on the 2010, CWA 303(d) list for pH. Pinetree Power is permitted to discharge during emergencies, wastewater with neutral pH (i.e., ≥ 6.5 and ≤ 8.0 standard units).

4.0 Limitations and Conditions

The Draft Permit’s proposed effluent discharge and cooling water intake limits, monitoring requirements, and implementation schedules may be found in Part I (Effluent Limitations and Monitoring Requirements) of the Draft Permit.

The facility has not needed to discharge process water in 24 years of operation, they will only discharge during emergency situations, and the sampling frequency for all parameters in the permit (outfall 001- process) is “each discharge event.” Furthermore, the facility has never had an emergency where a discharge was necessary. Since it is unlikely that two or more emergencies would occur within one months’ time, EPA removed the average monthly limits for outfall 001 during the last permit reissuance. The change was considered more representative of actual conditions at the plant. If two emergency discharges did somehow occur within one month, the permittee is required to sample each discharge event and meet maximum daily limits.

5.0 Permit Basis: Statutory and Regulatory Authority

The CWA prohibits the discharge of pollutants from point sources to waters of the United States without authorization from a NPDES permit, unless the CWA specifically exempts a particular

type of point source discharge from requiring a permit. The NPDES permit is the mechanism used to apply the CWA's pollution control standards and monitoring and reporting requirements directly to particular facilities. This draft NPDES permit was developed in accordance with the CWA, EPA regulations promulgated thereunder, and any other applicable federal and state legal requirements. The regulations governing the EPA NPDES permit program are generally found at 40 C.F.R. Parts 122, 124, 125, and 136.

When developing permit limits, EPA must apply both technology-based and water quality-based requirements. To the extent that both may apply, whichever is more stringent governs the permit limits. Criteria and standards for the imposition of technology-based treatment requirements in permits under Section 301(b) of the CWA, including the application of EPA-promulgated effluent limitations and case-by-case determinations of effluent limitations under Section 402(a)(1) of the CWA, are set out in 40 C.F.R. Part 125, Subpart A. Development of water quality-based permit limits is addressed in, among other provisions, CWA §§ 301(b)(1)(C) and 401, as well as 40 C.F.R. §§ 122.4, 122.44, 124.53 and 124.55.

Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA (see 40 C.F.R. §125 Subpart A) to meet best practicable control technology currently available (BPT) for certain conventional pollutants, best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. The technology-based guidelines (ELGs) for industrial dischargers can be found at 40 CFR Parts 400 - 471 and represent the minimum level of control that must be imposed under section 301(b) and 402 of the CWA. *See* 40 CFR Part 125, Subpart A.

In the absence of published technology-based ELGs, the permit writer is authorized under Section 402(a)(1)(B) of the CWA to establish appropriate technology-based effluent limitations (*e.g.*, BAT limits) on a case-by-case basis using best professional judgement (BPJ). *See* also 40 C.F.R. § 125.3.

The effluent guidelines for steam electric power plants are specific for fossil fuel or nuclear fuel facilities but do not include wood fuel units such as Pinetree Power. Therefore, the effluent guidelines which represent BPT and BAT as set forth in 40 CFR Part 423 are not applicable to these types of units. However, since the discharges from wood fuel units are similar to fossil fuel units, the Steam Electric Power Generating Guidelines may serve as guidance for establishing effluent limitations for those types of discharges. Therefore, limitations for wood fuel units such as Pinetree Power may be based on BPT and BAT requirements established in the Federal Guidelines for the Steam Electric Power Generating Point Source Category (40 CFR Part 423) using EPA's BPJ authority.

Water-quality based limitations are required in NPDES permits when EPA and the State determine that effluent limits more stringent than technology-based limits are necessary to maintain or achieve state or federal water-quality standards. *See* CWA §§ 301(b)(1)(C) and 401. State Water Quality Standards provide a classification for all the water bodies in the state and

specify the “designated uses” and numeric and narrative water quality criteria that water bodies in each classification should be able to achieve. The New Hampshire Surface Water Quality Regulations (NH-Standards) include a narrative statement that prohibits the discharge of any pollutant or combination of pollutants in quantities that would be toxic or injurious to human health or aquatic life. In addition, the State has adopted EPA’s numerical criteria for specific toxic pollutants and toxicity criteria. State Water Quality Standards also contain antidegradation requirements to ensure that once a use is attained it will not be degraded. Permit limits must then be devised so that discharges and cooling water withdrawals do not cause violations of these Water Quality Standards.

The permit must limit any pollutant or pollutant parameter (conventional, non-conventional, toxic and whole effluent toxicity) that is or may be discharged at a level that causes, or has the "reasonable potential" to cause or contribute to, an excursion above any water-quality criterion. See C.F.R. § 122.44(d)(1). An excursion would occur if the projected or actual in-stream concentration exceeds the applicable criterion. In determining “reasonable potential,” EPA considers: (1) existing controls on point and non-point sources of pollution; (2) pollutant concentrations and variability in the effluent and receiving water as determined from the permit application, the permittee’s monthly Discharge Monitoring Reports (DMRs), and State and Federal Water Quality Reports; (3) the sensitivity of the species to toxicity testing; (4) the known water quality impacts of processes on wastewater; and, where appropriate, (5) the dilution of the effluent that would be provided by the receiving water.

In accordance with State regulations (N.H. Code of Administrative Rules, PART Env-Wq 1705.02), the flow used to calculate permit limits for facilities on rivers or streams is based on a known or estimated value of the annual seven (7) consecutive-day mean low flow at the 10-year recurrence interval (7Q10) for aquatic life and human health (non-carcinogens only) in the receiving water at a point just upstream of the outfall. Furthermore, 10 percent (%) of the receiving water's assimilative capacity is held in reserve for future needs in accordance with New Hampshire's Surface Water Quality Regulations Env-Wq 1705.01. The current set of New Hampshire Surface Water Quality Regulations became effective on May 21, 2008.

When using chemical-specific numeric criteria to develop permit limits, both the acute and chronic aquatic-life criteria, expressed in terms of maximum allowable in-stream pollutant concentrations, are used. Acute aquatic-life criteria are considered applicable to daily time periods (maximum daily or instantaneous maximum limits) and chronic aquatic-life criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific limits are allowed under 40 C.F.R. § 122.44(d)(1) and are implemented under 40 C.F.R. § 122.45(d). In the Draft Permit for Pinetree Power, the Region has established, pursuant to 40 C.F.R. § 122.45(d)(1), maximum daily and instantaneous maximum discharge limits for specific chemical pollutants to satisfy Water Quality Standards.

Narrative criteria from the State’s Water Quality Standards often provide a basis for limiting toxicity in discharges where: (1) a specific pollutant can be identified as causing or contributing to the toxicity but the state has no numeric standard; or (2) toxicity cannot be traced to a specific

pollutant. *See* 40 C.F.R. § 122.44(d)(1)).

Under CWA § 401, EPA may not issue a NPDES permit unless it first obtains a certification from the state confirming that all water-quality standards will be satisfied or the state waives its certification rights. If the state issues a certification with conditions, then the permit must conform to the conditions. *See* 40 C.F.R. §§ 124.53 and 124.55.

The Draft Permit's effluent monitoring requirements have been established under the authority of CWA §§ 308(a) and 402(a)(2) and in accordance with 40 C.F.R. §§ 122.41(j), 122.44(i) and 122.48. The monitoring program in the permit specifies routine sampling and analysis which will provide continuous, representative information on the levels of regulated materials in the waste water discharge streams. The approved analytical procedures are to be found in 40 C.F.R. Part 136 unless other procedures are explicitly required in the permit.

The CWA's anti-backsliding requirements prohibit a NPDES permit from being renewed, reissued or modified with less stringent limitations or conditions than those contained in the previous permit unless an exception to the anti-backsliding requirements applies. *See* CWA §§ 402(o) and 303(d)(4) and 40 C.F.R. §122.44(l)(1) and (2). EPA's anti-backsliding provisions found at 40 C.F.R. §122.44(l) generally prohibit the relaxation of permit limits, standards, and conditions.

In addition to technology-based and water quality-based requirements, limits for thermal discharges may potentially be based on a variance from such requirements under CWA § 316(a). The permittee has not, however, sought relaxation of those limitations under a § 316(a) variance. For the derivation of the thermal discharge limit, see Section 6.3.1 of this Fact Sheet.

Permit limits on cooling water withdrawals may be imposed in a NPDES permit under CWA § 316(b). The requirements of CWA § 316(b) are discussed in further detail in Section 6.4 of this Fact Sheet.

The permit must also satisfy the requirements of the Endangered Species Act (ESA) and the Essential Fish Habitat (EFH) provisions of the 1996 Amendments (PL 104-297) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq. (1998)). There are no endangered species located in the Ammonoosuc River and EFH requirements are discussed further in Section 8.0 of this Fact Sheet.

6.0 Explanation of the Permit's Effluent Limitation(s)

6.1 Facility Information

Pinetree Power is a 15 MW base-load electric generating station. The station is located on the north bank of the Ammonoosuc River in Bethlehem, New Hampshire. See Attachment B for a map showing the geographical location of the facility. 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. Bethlehem Power Station Stormwater Pollution Prevention Plan, June 1, 2007, page 3. Wood chips are brought to the plant by trucks. The main process areas of the

plant include: mechanical truck dump stations, wood storage yard, loader/conveyor building, chip silos, boiler, turbine, generator, maintenance shop, cooling tower, and electrostatic precipitator. “The site is manned 24hrs/day 365 days a year” Id, 4.

Heat resulting from incineration of the wood chips produces steam in the boiler. Steam is used to power a turbine electric generator which produces 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.

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 may need up to 360,000 gallons per day. On dry days (i.e., low humidity) the cooling tower may evaporate an estimated 250 gallons per minute.

There are two intake structures located five feet apart, imbedded in the middle of the river and flush with the river bottom. Each intake structure consists of a small excavated area covered with a 2' by 4' Johnson (aka wedgewire) screen. The screens are made of stainless steel and have a mesh size of 0.03 inches (0.76 mm). Water flows by gravity through the screens and then through a 10 inch pipe to a below ground sump located on the bank of the river. The gravity feed rate is approximately 450 gpm depending on the height of the river. 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. August 3, 2012 email from Mark Driscoll, Plant Manager to Sharon DeMeo, EPA. The sump's capacity is 50,000 gallons. Three variable speed pumps are used to transfer sump water up to the station. There are two 300 gpm and one 200 gpm maximum capacity pumps, although only one pump at a time is used to transfer water. Water is continually recirculated in the sump until needed.

River water is pumped up to a “drain/tempering” tank at maximum rate of 300 gpm prior to its use in the cooling tower. Other wastewater streams from the station are directed to this tank including: boiler blowdown, sandfilter backwash, demineralizer regeneration, mechanical equipment cooling, cooling tower “graver” treatment filtrate (blowdown), artesian well flushing (2-3 hours/month), condenser cleaning³, 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 drain/tempering 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 Attachment C. Every three to five years, solids are removed from the tempering tank. Solids are removed from the cooling tower water

³ 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.

by a side-stream softener system called “graver”. The filtrate from this system, containing tower treatment chemicals, is directed to the tempering tank (at 50 gpm) and the solids are removed for off-site disposal.

There are four underground storage (“surge”) tanks (each with 37,500 gallon capacity) that are also used to store cooling/process water. Usually, two of the tanks remain full in case water is 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.

6.2 Descriptions of Permitted Outfalls

Outfall 001 (Process Wastewater)

Outfall 001 is the discharge from the drain and tempering tank (also referred to as drain/tempering tank). The drain/tempering tank has three 50 gpm pumps that are used to transfer water to the cooling towers, storage tanks, or the discharge line. Therefore a maximum flow rate of 150 gpm may be discharged to the Ammonoosuc River. An eight inch pipe is used for the discharge. In case of an emergency discharge, 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.

Outfall 002 (Storm Water)

Storm water throughout most⁴ of the site collects in a series of underground culverts, which combine and emerge from the ground at the old outfall 002 location. A series of stone rip rap and grass swales were recently completed 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 now a 5-gallon collection bucket located after the swale system, prior to the wetland area on the east side of the access road. 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.

After sampling data consistently showed iron results higher than the maximum daily limit of 1.0 mg/L, extensive work was done to the property in 2010. *See* Attachment A-2 of this Fact Sheet for sampling data. Work completed on the storm water collection system includes: isolation of log storage drainage area, sealing fuel yard area, new swale system along access road, and replacement of storm water pipe. Limited data since 2011 show iron levels below permit limits.

⁴ Storm water from the wood chip storage area flows to a swale and infiltrates the ground. Mountain runoff from behind the plant drains to a pond area located just east of the plant. The pond eventually drains to the river.

6.3 Derivation of Effluent Limits under the CWA and/or State of New Hampshire Water Quality Standards

6.3.1 Outfall Location 001 (Process Wastewater)

Conventional Pollutants

Limitations for conventional pollutants in the Draft Permit (pH, Oil and Grease, and Total Suspended Solids) are based upon those in the existing permit in accordance with the antibacksliding requirements found in 40 CFR §122.44.

The maximum daily flow limit of 0.20 MGD in the existing and Draft Permit reflects the maximum volume that the facility would need to discharge should an emergency situation arise. This flow includes the wastewater in the drain/tempering tank and cooling tower (through the drain/tempering tank). Should Pinetree Power discharge, the flow rate shall not exceed 150 gpm as required by the Draft Permit. At this flow rate, the effluent adds a one percent increase over the 7Q10 flow levels after accounting for the State's 10 percent reserve rule. At 150 gpm discharge rate, it will take approximately 24 hours to discharge 0.2 million gallons. Monitoring for all parameters including performing a WET test is required during any discharge.

The Total Suspended Solids (TSS) limit of 100 mg/L and the Oil & Grease (O&G) limit of 20 mg/L were originally 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.

The pH limits are based on New Hampshire's Surface Water Quality Regulations Env-Wq 1703.18 and New Hampshire's State statutes (N.H. RSA 485-A:8). Language included in the Draft Permit allows for a change in pH limit(s) under certain conditions for process wastewater flows. A change would be considered if the applicant can demonstrate to the satisfaction of the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) that the in-stream pH standard will be protected when the discharge is outside the permitted range. At that time, the applicant or NHDES-WD may request (in writing) that the permit limits be modified by EPA to incorporate the results of the demonstration.

Anticipating the situation where NHDES-WD grants a formal approval changing the pH limit(s) to outside the 6.5 to 8.0 Standard Units (S.U.), EPA maintains a provision to the Draft Permit allowing EPA to modify the pH limit(s) using a certified letter approach. *See* Part I.A.8.b and Part I.C of the Draft Permit. This change would be allowed as long as it can be demonstrated that the revised pH limit range does not alter the naturally occurring receiving water pH. However, the pH limit range shall not be less restrictive than 6.0 - 9.0 S.U. This range is established using EPA's BPJ authority and based on the pH limits found in the National Effluent Limitation Guideline (Steam Electric Power Generating Point Source Category at 40 CFR §423.12(b)(1)).

If the State approves results from a pH demonstration study, the permit's pH limit range can be relaxed in accordance with 40 CFR 122.44(l)(2)(i)(B), based on new information not available at

the time of this permit's issuance. This new information includes results from the pH demonstration study that justifies the application of a less stringent effluent limitation. EPA anticipates that the limit determined from the demonstration study, as approved by the NHDES-WD, would satisfy all effluent requirements for this discharge category and would comply with NH-Standards.

Nonconventional and Toxic Pollutants

Total Residual Oxidants

The limit for Total Residual Oxidants (TRO) in the Draft Permit is based on the Total Residual Chlorine (TRC) limit in the existing permit in accordance with the antibacksliding requirements found in 40 CFR §122.44. The TRC limit was originally established based on 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) using EPA's BPJ authority. TRC was required because the facility used only chlorine as a biocide in the cooling tower. However, Pinetree Power has now stopped using NALCO water treatment chemicals and has switched over to ChemTreat, including formulations containing bromine (ChemTreat CL41 and C2189T). The test methods for TRC and TRO are the same. However, for wastewater containing bromides, the analysis using the TRC test method results in the measurement of total residual oxidants. Therefore, the Draft Permit limit of 0.2 mg/L is now a TRO limit.

Metals

Chromium and Zinc

Limits for 126 priority pollutants⁵, total chromium and total zinc are based on the existing permit in accordance with the antibacksliding requirements found in 40 CFR §122.44. These limits were established during the last permit reissuance based on 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), using EPA's BPJ authority. The current permit includes a provision that gives the permittee an opportunity to demonstrate that none of the 126 priority pollutants occurs in any of the treatment chemicals added by the company using engineering calculations. This provision, also added using EPA's BPJ authority, was based on 40 CFR § 423.13(d)(3), which can be utilized "[a]t the permitting authority's discretion". EPA has removed this option in the Draft Permit since the facility operates its cooling tower and steam condenser system as a continuous recycle, closed-loop system resulting in no discharge to the receiving water and will only discharge if there is an emergency. Furthermore, the facility has never had an emergency where a discharge was necessary and therefore have never collected and analyzed samples for the 126 priority pollutants.

⁵ The 126 priority pollutants (See 40 C.F.R. 423 Appendix A) are those potentially contained in chemicals added for cooling tower maintenance. No detectable amount is allowed in the discharge. As per the effluent guidelines and included in the Draft Permit, compliance may be determined by engineering calculations.

Iron

The iron limit is based on the limit in the existing permit in accordance with the antibacksliding requirements found in 40 CFR §122.44.

Copper

The limit for total recoverable copper in the Draft Permit is based on the existing permit in accordance with the antibacksliding requirements found in 40 CFR §122.44. This limit has been updated based on an updated 7Q10 assessment. A recomputation of the maximum daily copper limit to account for this change shows a lower copper limit than the existing limit of 0.35 mg/L. The maximum daily copper limit of 0.31 mg/L in the Draft Permit is based on the acute aquatic-life criteria, found in the current NH-Standards, multiplied by the appropriate available dilution of the receiving water, as shown below.

Dilution Factor

In June 2007, for the Littleton Wastewater Treatment Plant permit, NH DES calculated the 7Q10 for the Ammonoosuc River at the Bethlehem Junction Gage as 26.97 cfs. Since the facility is over 5 miles downstream of the gage, 7Q10 at Pinetree Power was determined using Scenario II of the NH DES June 2002 “Interim Final Policy on 7Q10 and Withdrawals for Fresh Water Surface Waters.” An empirical equation developed by Dingman⁶, which estimates 7Q10 stream flows in un-gaged, unregulated streams in New Hampshire and Vermont as a function of watershed characteristics, was used to calculate the 7Q10 streamflow for the watershed area downstream from the gaging station. The formula variables are watershed (basin) area, mean basin elevation, and the percent of the basin underlain by coarse-grained stratified drift in contact with streams. The Dingman 7Q10 for the intervening drainage area between the gage and the facility is 0.96 cfs. In considering consumptive water uses, the NH DES Registered Water User Database indicates there is one input that needed to be added to the Dingman 7Q10 for the intervening area. That input is the flow from the Bethlehem POTW, which averaged 0.26 cfs during 2009 through 2011.⁷ Therefore, the 7Q10 at Pinetree Power is the Bethlehem Junction Gage (26.97 cfs), plus the Dingman 7Q10 (0.96 cfs) and the average flow from the Wastewater Treatment Plant (0.26 cfs). A 7Q10 just downstream of Pinetree Power is 28.2 cfs.

Further, given the 7Q10 just below Pinetree Power, the design flow of the facility (0.2 MGD), and accounting for 90% of the river’s assimilative capacity (therefore reserving 10 % for future

⁶ 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.

⁷ This is considered a net input because the Bethlehem water supply is withdrawn from surface waters in the basin upstream of the gage. The gage accounts for those withdrawals but does not account for the return flow to the river via the Wastewater Treatment System discharge.

needs, in accordance with the requirements of Env-Wq 1705.01), a dilution factor of 82 was calculated as shown below.

$$DF = \frac{(Q_{001})}{Q_{PDF} \times 1.547} \times 0.90$$

where:

DF = Dilution Factor

Q_{001} = 7Q10 flow at Outfall 001, in cfs

0.90 = Factor to reserve 10% assimilative capacity

Q_{PDF} = Maximum flow of process discharge from Outfall 001, in MGD

1.547 = Factor to convert MGD to cfs

$$DF = [28.2 \text{ cfs}/(0.2\text{mgd} \times 1.547)] \times 0.9 = 82$$

This dilution factor, which is lower than that used for the existing permit (93.5), is for calculating the water quality-based copper limit necessary to meet the acute aquatic life criteria when and if there is an emergency discharge.

Copper Limit

The risk of toxicity posed by the presence of copper in fresh water systems is a function of the hardness of the water in which it is found. Likewise, water quality criteria for copper are dependent upon the hardness of the water in which the criteria are being applied. The acute freshwater aquatic life criteria for copper specified in the New Hampshire Water Quality Standards is 3.6 µg/l (see Env-Wq 1703.21, Table 1). This criteria is based on a hardness value of 25 mg/l CaCO₃, in accordance with New Hampshire's water quality standards (see Env-Wq 1703.21, Table 1703.1, footnote f). The results of analyses conducted on samples of the Ammonoosuc River water in conjunction with yearly whole effluent toxicity (WET) tests from 2007-2011 indicate that the ambient hardness is less than 25 mg/l calcium carbonate (CaCO₃). Therefore, in accordance with the state water quality standards, a hardness value of 25 mg/l is used in the determination of water quality criteria for copper in the receiving water.

Metals can be present in both dissolved and particulate forms in the water column. However, extensive studies suggest that it is the dissolved fraction that is biologically available, and therefore presents the greatest risk of toxicity to aquatic life inhabiting the water column. This conclusion is widely accepted by the scientific community both within and outside of EPA (*Water Quality Standards Handbook: Second Edition*, Chapter 3.6 and Appendix J, EPA 1994 [EPA 823-B-94-005a]). *Also see* <http://water.epa.gov/scitech/swguidance/standards/handbook/chapter03.cfm>. As a result, water quality criteria are established in terms of dissolved metals.

Differences in the chemical composition between effluent and receiving water affects the partitioning of metals between the particulate and dissolved fractions as the effluent mixes with the receiving water, often resulting in a transition from the particulate to dissolved form (*The*

Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion (USEPA 1996 [EPA-823-B96-007])⁸. Therefore, quantifying only the dissolved fraction of metals in the effluent prior to discharge may not accurately reflect the biologically-available portion of metals in the receiving water. Therefore, effluent limits for metals are expressed as total recoverable metals in accordance with the requirements of 40 CFR § 122.45(c). The total recoverable concentration of a metal is a measure of both the dissolved and particulate fraction. In order to establish total recoverable limits that will ensure attainment of dissolved aquatic life criteria, conversion factors have been developed to reflect the partitioning of metals as the effluent mixes with the receiving water, allowing for the translation between a dissolved criterion and a total recoverable limit (and vice-versa). These conversion factors are the fraction of the total recoverable metal in the effluent that will be in the dissolved form in the receiving water (*The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion* (USEPA 1996 [EPA-823-B96-007])).

Conversion factors for translating dissolved criteria into total recoverable limits are found in the New Hampshire water quality standards at Env-Wq 1703.21, Table 1703.2 (also see *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion* (USEPA 1996 [EPA-823-B96-007])). Dividing the dissolved acute criteria for copper by the applicable conversion factor (0.96) and then multiplying those values by the dilution factor (82) yields the maximum concentration of total recoverable copper (i.e., effluent limits) that may be discharged without resulting in the criteria being exceeded, as shown below.

$$\text{MDL} = \text{DF} \times (\text{ALC}/\text{CF})$$

where:

MDL = Maximum Daily Limit at Outfall 001, in $\mu\text{g}/\text{L}$

DF = Dilution Factor from previous equation

ALC = Aquatic-Life Criteria from NH-Standards in $\mu\text{g}/\text{L}$;

CF = Conversion Factor from NH-Standards Table 1703.2 for ALC

$$\text{Maximum Daily (Acute) Concentration} = 82 \times (3.6 \mu\text{g}/\text{l}/0.96) = 308 \mu\text{g}/\text{l} (0.31 \text{ mg}/\text{l})$$

The results of copper analyses conducted on samples of the effluent in conjunction with yearly whole effluent toxicity (WET) testing of the non-discharged drain/tempering tank (Part I.A.3.a of the permit) from 2007 to 2011 show that the concentration of copper in the samples analyzed

⁸ *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion* (USEPA 1996 [EPA-823-B96-007]) was used as the basis for the use of the criteria conversion factor (CF). National Guidance requires that permits limits for metals are to be expressed in terms of total recoverable metal and not dissolved metal. As such, conversion factors are used to develop total recoverable limits from dissolved criteria. The conversion factor reflects how the discharge of a particular metal partitions between the particulate and dissolved form after mixing with the receiving water. In the absence of site-specific data describing how a particular discharge partitions in the receiving water, a default assumption equivalent to the criteria conversion factor is used in accordance with guidance.

ranged from 0.02 mg/l to 0.04 mg/l (40 µg/l). *See* Appendix A-1 of this Fact Sheet. In addition, Pinetree Power stopped using NALCO water treatment chemicals and has switched over to ChemTreat, including one formulation which contains cupric nitrate (ChemTreat CL2150).

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 Draft Permit includes a provision that prohibits the discharge of metal cleaning wastes. *See* Part I.A.7.c of the Draft Permit.

Temperature

The temperature limit of 85 degrees Fahrenheit (°F) and a temperature change (ΔT) of 20 °F in the Draft Permit meets 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 this 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 °F and 35 °F, respectively, and that the 7Q10 flow is 28.2 cfs, the 85 °F thermal discharge would only cause an increase in receiving water temperatures of 0.2 and 0.5 °F, respectively, over ambient conditions. The equation used to calculate the increase in river temperature due to the 85 degree Fahrenheit (°F) discharge from facility is shown below.⁹

$$T_{rf} = [(Q_{ra} \times T_{ra}) + (Q_p \times T_p)] \div (Q_{ra} + Q_p)$$

where:

- T_{rf} = Temperature in river just below Outfall 001, in °F
- Q_{ra} = Flow (7Q10) in river just above Outfall 001, in cfs
- T_{ra} = Temperature in river just above Outfall 001, in °F
- Q_p = Flow of process discharge from facility, in cfs (to convert process flow in MGD to cfs, multiply by 1.547)
- T_p = Temperature of process discharge from facility, in °F

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 °F limit because the discharge originates from the drain/tempering 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.

⁹ Each temperature shown in the equation is referenced to a base temperature, which in this situation is 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 T's which represent the change in temperature above the base temperature of 0°F.

Whole Effluent Toxicity

EPA's *Technical Support Document for Water Quality Based Toxics Control* (USEPA 1991 [EPA/505/290-001]) recommends using an "integrated strategy" containing both pollutant (chemical) specific approaches and whole effluent (biological) toxicity approaches to control toxic pollutants in effluent discharges from entering the nation's waterways. EPA-Region I adopted this "integrated strategy" on July 1, 1991, for use in permit development and issuance. These approaches are designed to protect both aquatic life and human health. Pollutant-specific approaches such as those found in the Gold Book and state regulations address individual chemicals, whereas whole effluent toxicity (WET) approaches evaluate interactions between pollutants thus rendering an "overall" or "aggregate" toxicity assessment of the effluent. Furthermore, WET measures the "additive" and/or "antagonistic" effects of individual chemical pollutants, which pollutant-specific approaches do not; thus, the need for both approaches. In addition, the presence of an unknown toxic pollutant can be discovered and addressed through this process.

Section 101(a)(3) of the CWA specifically prohibits the discharge of toxic pollutants in toxic amounts and New Hampshire law states that, "all 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;" (NH RSA 485-A:8, VI and the NH Code of Administrative Rules, Part Env-Wq 1703.21). The federal NPDES regulations found at 40 CFR §122.44(d)(1)(v) require whole effluent toxicity limits in a permit when reasonable potential exists for a discharge to cause or contribute to an excursion above state narrative criteria for toxicity. Furthermore, the results of toxicity tests may be used to demonstrate compliance with the "no toxics in toxics amounts" requirement found in both the CWA and in the State of New Hampshire's regulations.

The New Hampshire Fish and Game Department and the U.S. Fish & Wildlife Service, among other partners and volunteers, participate in efforts to restore and enhance migratory fish populations in the Connecticut River basin, including the Ammonoosuc River, as part of the Anadromous Fish Program. In order to support this program by assuring that Pinetree Power does not discharge an effluent of toxic nature into the Ammonoosuc River, EPA-New England has included Whole Effluent Toxicity (WET) testing in the Draft Permit. EPA believes this is warranted given the discharge may contain Water Treatment Chemicals (WTCs) used in the boiler water and cooling system which may be toxic to aquatic organisms if released in sufficient concentrations.

Where EPA - New England believes toxicity testing is appropriate and necessary as described above, the type of toxicity testing (acute and/or chronic) and the effluent limitation (LC50 and/or NOAEL) are set based upon available dilution. Based upon available dilution and in accordance with EPA-New England's Toxicity Policy, an acute limit of LC50 using a sample of 100 percent effluent is maintained to the Draft Permit. LC50 is defined as the concentration of toxicant, or in this case, as percentage of effluent that would be lethal to 50 % of the test organisms during a specific time period. The No Observed Acute Effect Level (NOAEL) monitoring-only

requirement is included in the Draft Permit due to the potential presences of WTCs in the discharge.

Results of these toxicity tests are included in the Draft Permit to demonstrate compliance with the no toxic provision of the NH-Standards. The Draft Permit includes the WET testing requirement for each discharge event. The acute WET test calls for 48 hour testing using the species Daphnid (Ceriodaphnia dubia) and Fathead Minnow (Pimephales promelas). Results from these tests will provide the EPA, the State and the permittee with an estimate of the overall toxic content of its discharge. If toxicity violations are shown, monitoring frequency and testing requirements may be increased in addition to enforcement actions. The permit may also be modified, or alternatively, revoked and reissued to incorporate additional toxicity testing requirements or chemical specific limit(s).

This Draft Permit requires reporting of selected parameters determined from the chemical analysis of the WET tests 100 % effluent sample. Specifically, Hardness, Ammonia, Total Solids, Total Organic Carbon and Total Cadmium, Lead, Nickel and Aluminum are to be reported on the appropriate Discharge Monitoring Report (DMR) for entry into EPA's ICIS Data Base. Total Residual Chlorine (TRC), pH, Total Suspended Solids, copper and zinc, also required by the WET protocol, are included in the Draft Permit with appropriate limitations as determined during this permit reissuance and discussed elsewhere in this Fact Sheet. *See* Draft Permit, Attachment A, page A-7.

Water Treatment Chemicals (WTCs)

This facility operates its cooling tower and steam condenser system as a continuous recycle, closed-loop system resulting in no discharge to the receiving water. However, cooling tower blowdown, boiler blowdown, and other process wastewater may be discharged from Pinetree Power through Outfall 001(drain/tempering tank) during an emergency. Given the nature of the possibly sudden and infrequent discharge, EPA-New England is concerned about the potential build-up of toxic substances in the drain/tempering tank. Water treatment chemicals are added to both the cooling water and the boiler water; therefore the blowdown wastewater contains these chemicals. Thus, monitoring water in the drain/tempering tank would lend insight into whether or not there is potential for the discharge of toxic substances in the process waste through Outfall 001.

Consequently, EPA has required sampling every year during the last permit term. *See* Attachment A-1 of this Fact Sheet. Based on positive results, except for 2009, the Draft Permit requires sampling every other year, during July. The permittee must collect a representative sample of water from the drain/tempering tank and perform, on that sample, a 48-Hour static acute WET test using two species, Daphnid (Ceriodaphnia dubia) and the Fathead Minnow (Pimephales promelas) as previously described.

EPA-New England believes this approach is necessary to monitor for the potential build up, if any, of toxic substances in the drain/tempering tank due to the facility's method of operation and in order to prevent future exceedances in permitted limits and/or in-stream NH-Standards should

the tempering tank need to be suddenly drained. Furthermore, when an emergency discharge situation occurs, there will be little or no opportunity to evaluate this effluent's ability to meet permitted limits and/or in stream NH-Standards. Therefore, EPA-New England decided to take the proactive stance outlined above to be prepared for the onset of an "emergency discharge" situation if and when it occurs. Results of these analyses are considered "New Information" and could result in additional limits and/or monitoring requirements for Outfall 001 (process wastewater).

Attachment A-1 of this Fact Sheet shows annual WET test results from 2007 to 2011. Samples collected from the drain/tempering tank in 2009 demonstrate that the effluent, if discharged, would not have meet the LC50 permit limit. In addition, NOAEL for that sample was 25% and 50% for Ceriodaphnia and Pimephales, respectively.

6.3.2 Outfall Location 002 (Storm Water)

Since EPA has not promulgated any ELGs for storm water discharge from power plants, EPA concludes that is reasonable to look to the most recent Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activities¹⁰ (MSGP) for guidance on determining appropriate monitoring, inspection and reporting requirements and limits for Pinetree Power. As with the existing permit, EPA has determined the following technology-based requirements on a BPJ basis: (1) continue the existing permit's storm water limit of 15 mg/L for Oil & Grease in the Draft Permit in accordance with the antibacksliding requirements found in 40 CFR §122.44; (2) continue monitoring with a maximum discharge limit for iron based on the 2008 MSGP, Part 8, Subpart O – Steam Electric Generating Facilities; (3) continue TSS monitoring with a maximum discharge limit of 100 mg/L based on the 2008 MSGP, Part 8, Subpart A – Timber Products, Subsector A3 – Log Storage and Handling; and (4) require the permittee to annually update and implement its Storm Water Pollution Prevention Plan (SWPPP) for its storm water discharges.

Iron is limited to 1.0 mg/L at this location (maximum daily limit) based on the benchmark value in the 2008 Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activities for Steam Electric Generating Facilities (Part 8, Subpart O). This benchmark was set equal to the National Recommended Water Quality Criteria for iron in freshwater. Groundwater and storm water from the facility first discharge to a wetland area prior to the Ammonoosuc River. Water quality-based effluent limits are based on a dilution factor calculated using the permitted flow of the facility and the low flow condition in the receiving water. Generally, for discharges to wetland areas, a dilution factor of one is assumed since rivers do not contribute any appreciable flow to wetlands. As a result, the state water quality criteria are applied at the end of pipe with no allowance for dilution. The New Hampshire freshwater chronic criteria concentration for iron is 1.0 mg/L, which is the permitted limit for Pinetree Power. *See* New Hampshire Code of Administrative Rules, Env-Wq 1703.21.

¹⁰ See Federal Register, Vol. 73, No. 189, September 29, 2008, p. 56572-56578, as modified effective May 27, 2009.

Attachment A-2 of this Fact Sheet shows sampling results of storm water samples collected from August 2006 through July 2012. These results show consistent exceedances of the 1.0 mg/L iron permit limit until 2011. As previously discussed, 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. Limited data since 2011 show iron levels below permit limits.

A provision has been maintained in the Draft Permit, similar to that required by the 2008 Draft MSGP, which allows for a reduction in monitoring if four consecutive monitoring values show compliance with the permit limits.

The Draft Permit also includes pH limits that are based on NH WQS, which require that the pH be within the range of 6.5 - 8.0 standard units (s.u.). The MSGP, Part 8, Subpart A – Timber Products, requires pH in the range of 6.0-9.0 s.u for discharges resulting from the spray down or intentional wetting of logs at wet deck storage areas. The water quality-based limits are more stringent than the technology-based limits that would otherwise be imposed by EPA and, therefore, the water quality-based limits govern the permit.

Storm Water Pollution Prevention Plan

Pursuant to Section 304(e) of the CWA and 40 C.F.R. §122.44(k), Best Management Practices (BMP) may be expressly incorporated into a permit on a case-by-case basis where necessary to carry out Section 402(a)(1) of the CWA. This facility engages in activities which could result in the discharge of toxic and hazardous pollutants to waters of the United States either directly or indirectly through storm water runoff. These operations include at least one of the following from which there is or could be site runoff: material storage, in-facility transfer, material processing, material handling, or loading and unloading. The permit requires this facility to update its SWPPP which includes BMPs appropriate for this specific facility to control storm water discharges from these and other activities which could contribute pollutants to waters of the United States, potentially violating the State's Water Quality Standards. Specifically, at this facility, waste ash and wood chip storage areas are examples of material storage, processing and handling operations that shall be included in the SWPPP.

The goal of the SWPPP is to reduce, or prevent the discharge of pollutants through the storm water system. The SWPPP requirements in the Draft Permit are intended to provide a systematic approach by which 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 condition of the permit. The SWPPP approach involves the following four main steps:

- (1) Forming a team of qualified facility personnel who will be responsible for updating the SWPPP and assisting the plant manager in its implementation;
- (2) Assessing and reassessing the potential storm water pollution sources;
- (3) Selecting and implementing appropriate management practices and controls for these potential pollution sources; and
- (4) Reevaluating, periodically, the effectiveness of the SWPPP in preventing storm water

contamination and in complying with the various terms and conditions of the Draft Permit.

The Draft Permit requires the permittee to update and submit the SWPPP no later than 60 days after the permit's effective date and continue to implement the plan throughout the duration of the permit. The SWPPP shall be prepared in accordance with good engineering practices and identify potential sources of pollutants which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity for the facility. The SWPPP is a supporting element to any numerical effluent limitations in the Draft Permit. Consequently, the SWPPP is as equally enforceable as the numerical limits. The permittee is encouraged to reference EPA Industrial SWPPP guidance at http://www.epa.gov/npdes/pubs/industrial_swppp_guide.pdf

6.4 Cooling Water Intake Structure -CWA § 316(b)

With any NPDES permit issuance or reissuance, EPA is required to evaluate or re-evaluate compliance with applicable standards, including those stated in CWA Section 316(b) regarding cooling water intake structures (CWIS). CWA §316(b) applies if the permit applicant seeks to withdraw cooling water from waters of the United States. To satisfy §316(b) the permit applicant must demonstrate to the satisfaction of the EPA (or, if appropriate, the State) that the location, design, construction, and capacity of the facility's CWIS(s) reflect the best technology available (BTA) for minimizing adverse environmental impacts. Such impacts include death or injury to aquatic organisms by impingement (being pinned against screens or other parts of a CWIS) or entrainment (being drawn into cooling water systems and subjected to thermal, physical or chemical stresses).

EPA has or plans to promulgate §316(b) regulations describing technology standard requirements for the following:

1. New power plants and other types of new facilities with CWISs (so-called "Phase I" facilities). 66 Fed. Reg. 65255 (Dec. 18, 2001) (effective date of the regulations is January 17, 2002);
2. A new Existing Facilities Rule ("Phase II") that addresses all electric generating as well as manufacturing facilities with cooling water intake structures was proposed in April, 2011; the Final Rule is expected sometime this year;¹¹ and
3. New offshore oil and gas extraction facilities that have a design intake flow threshold of greater than 2 million gallons per day ("Phase III" facilities). 71 Fed. Reg. 35006 (June 16, 2006) (effective date is July 17, 2006).

These regulations do not, however, apply to wood-fired power plants such as Pinetree. Instead,

¹¹ A previous "Phase II" Rule regulated power plants with flows of 50 million gallons per day or more ("Phase II" facilities) 69 Fed. Reg. 41576 (July 9, 2004) (effective date was September 7, 2004). On January 25, 2007, the United States Court of Appeals for the Second Circuit remanded several aspects of the Phase II Rule to EPA. As a result of the remand, EPA suspended the Rule on March 20, 2007.

EPA continues to rely upon the existing NPDES program, which implements section 316(b) for these facilities on a case-by-case, best professional judgment basis. See 40 C.F.R. § 125.90(b). EPA has determined that Pinetree Power's CWIS presently employs the best technology available for minimizing adverse environmental impact for the reasons presented below.

“Location”

Pinetree Power's CWIS is imbedded in the stream bed, flush with the bottom, in the middle of the Ammonoosuc River. The river water flow rate at this location is rapid at all times. For this reason, it is unlikely that fish or any other aquatic organisms would be impinged. Mark Driscoll, Plant Manager of Pinetree Power indicated that no aquatic organisms have ever been observed on the screens. August 3, 2012 email from Mark Driscoll, Plant Manager to Sharon DeMeo, EPA. Furthermore, the segment of the river in Bethlehem, NH, where the facility is 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.

“Design and Construction”

Pinetree Power's CWIS consists of two embedded chambers in the stream bed, covered with 2' by 4', 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 a 10 inch pipe to a 50,000 gallon below ground sump, located on the bank of the river. The low intake velocity further reduces any potential for impingement.

“Capacity”

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.

7.0 Endangered Species Act

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

Section 7(a)(2) of the Act requires every federal agency in consultation with and with the assistance of the Secretary of the Interior, to 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 National Marine Fisheries Service (NMFS) administers Section 7 consultations for marine species and anadromous fish.

The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. EPA has made a determination that no listed species and/or critical habitat are found in the vicinity of the project. This determination was based in part on correspondence received by EPA from the USFWS (dated July 14, 2005), which stated that that based on information currently available, “no federally-listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area(s)....” and that “further consultation with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act is not required” (U.S. Fish and Wildlife Service letter, dated July 14, 2005 regarding the Littleton Wastewater Treatment Plant).

In a letter to EPA dated July 10, 2007, the NMFS also stated that “no listed species are known to occur in the Ammonoosuc River...” and that “no further coordination with NMFS is necessary” (NMFS letter, July 2007 regarding the Littleton Wastewater Treatment Plant).

If new information becomes available regarding the presence of a listed species in the vicinity of the project, EPA will contact the federal agency responsible under the Endangered Species Act.

8.0 Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 *et seq.*(1998)), EPA is required to consult with the National Marine Fishery Service (NMFS) if EPA’s action or proposed actions that it funds, permits, or undertakes, “may adversely impact any essential fish habitat.” 16 U.S.C. § 1855(b). The Amendments broadly define “essential fish habitat” (EFH) as: “waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. 16 U.S.C. § 1802(10). Adversely impact means any impact which reduces the quality and/or quantity of EFH. 50 C.F.R. § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. *Id.*

Essential fish habitat is only designated for fish species for which federal Fisheries Management Plans exist. 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

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*). According to the New Hampshire Fish and Game Department, there is an extensive stocking program in the upper Ammonoosuc River. The reach of the Ammonoosuc River where the intake and discharge is located is a fish transient area, used by smolts during their spring migration to the sea via the Connecticut River.

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

- 1- The facility has been operating closed-loop, with no discharge for over 20 years;

- 2- The only permitted process waste discharge is during an emergency;
- 3- EPA and NHDES must be notified of a discharge and extensive monitoring is required;
- 4- Cooling towers are used to cool condenser cooling water;
- 5- If there were a discharge, the effluent would be rapidly diluted so as to raise the ambient temperature by no more than 0.5 degrees Fahrenheit;
- 6- Yearly WET testing is required for the drain/tempering tank contents to evaluate this effluent's ability to meet permitted limits and/or in stream NH-Standards; and
- 7- 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.

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 NMFS will be notified and consultation will be promptly initiated.

9.0 Monitoring and Reporting

The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308 (a) of the CWA in accordance with 40 CFR §§122.41 (j), 122.44 (l), and 122.48. The sampling frequency for all parameters proposed in the Draft Permit is each discharge event, given that discharge will only occur during emergencies.

The Draft Permit includes new provisions related to Discharge Monitoring Report (DMR) submittals to EPA and the State. The Draft Permit requires that, no later than one year after the effective date of the permit, the permittee submit all monitoring data and other reports required by the permit to EPA using NetDMR, unless the permittee is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports ("opt-out request").

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

NetDMR is a national web-based tool for regulated Clean Water Act permittees to submit discharge monitoring reports (DMRs) electronically via a secure Internet application to U.S. EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in hard copy forms under 40 CFR § 122.41 and § 403.12. NetDMR is accessed from the following url: <http://www.epa.gov/netdmr>. Further information about NetDMR, including contacts for EPA Region 1, is provided on this website.

EPA currently conducts free training on the use of NetDMR, and anticipates that the availability of this training will continue to assist permittees with the transition to use of NetDMR. To participate in upcoming trainings, visit <http://www.epa.gov/netdmr> for contact information for New Hampshire.

The Draft Permit requires the permittee to report monitoring results obtained during each

calendar month using NetDMR, no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA or to NH DES.

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

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

10.0 Antidegradation

This Draft Permit is being reissued with some minor changes in permit limitations and requirements and in consideration of changes in water treatment chemistries at Pinetree Power. EPA has determined that the changes, as described in this Fact Sheet, will not cause lowering of water quality or loss of existing water uses and that no additional antidegradation review is warranted.

11.0 State Certification Requirements

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 and/or conditions contained in the permit are stringent enough to assure, among other things, that the discharge will not cause the receiving water to violate the State's Surface Water Quality Regulations or waives its right to certify as set forth in 40 CFR §124.53. The NHDES is the certifying authority within the State of New Hampshire.

Upon public noticing of the Draft Permit, EPA is formally requesting that the State's certifying authority make a written determination concerning certification. The State will be deemed to have waived its right to certify unless certification is received within 60 days of receipt of this request.

The State's certification should include the specific conditions necessary to assure compliance with applicable provisions of the Clean Water Act, Sections 208(e), 301, 302, 303, 306 and 307

and with appropriate requirements of State law. In addition, the State should provide a statement of the extent to which each condition of the Draft Permit can be made less stringent without violating the requirements of State law. Since certification is provided prior to permit issuance, failure to provide this statement for any condition waives the right to certify or object to any less stringent condition which may be established by EPA during the permit issuance process following public noticing as a result of information received during that noticing. If the State believes that any conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either the CWA or State law, the State should include such conditions and, in each case, cite the CWA or State law reference upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. The sludge conditions implementing section 405(d) of the CWA are not subject to the 401 certification requirements.

Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through the applicable procedures of 40 CFR Part 124.

The New Hampshire Department of Environmental Services, Water Division is the certifying authority. EPA has discussed this Draft Permit with the Staff of the Wastewater Engineering Bureau and expects that the Draft Permit will be certified. Regulations governing state certification are set forth in 40 CFR §§124.53 and 124.55.

12.0 Comment Period, Hearing Requests, and Procedures for Final Decisions

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to Sharon DeMeo, U.S. EPA, Office of Ecosystem Protection, Industrial Permits Branch, 5 Post Office Square, Suite 100, Mail Code OEP06-1, Boston, Massachusetts 02109-3912. Any person, prior to such date, may submit a request in writing for a public hearing to consider the Draft Permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting 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 and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the Final Permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 C.F.R. § 124.19.

13.0 EPA Contact

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

**Ms. Sharon DeMeo, Environmental Engineer
U.S. Environmental Protection Agency
Office of Ecosystem Protection
5 Post Office Square, Suite 100 (OEP06-1)
Boston, Massachusetts 02109-3912
Telephone: (617) 918-1995
FAX No.: (617) 918-0995**

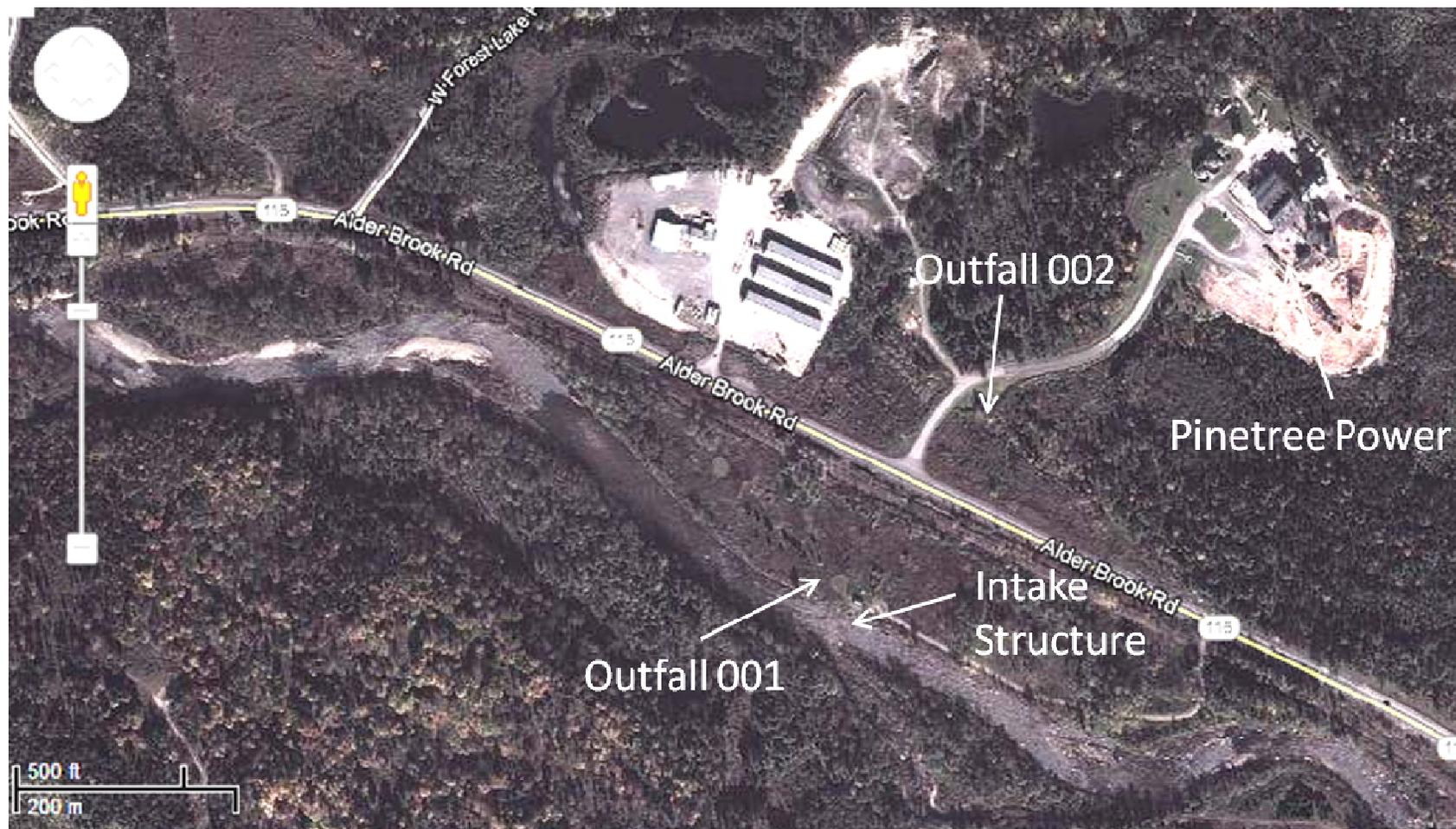
September 2012

Date:

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

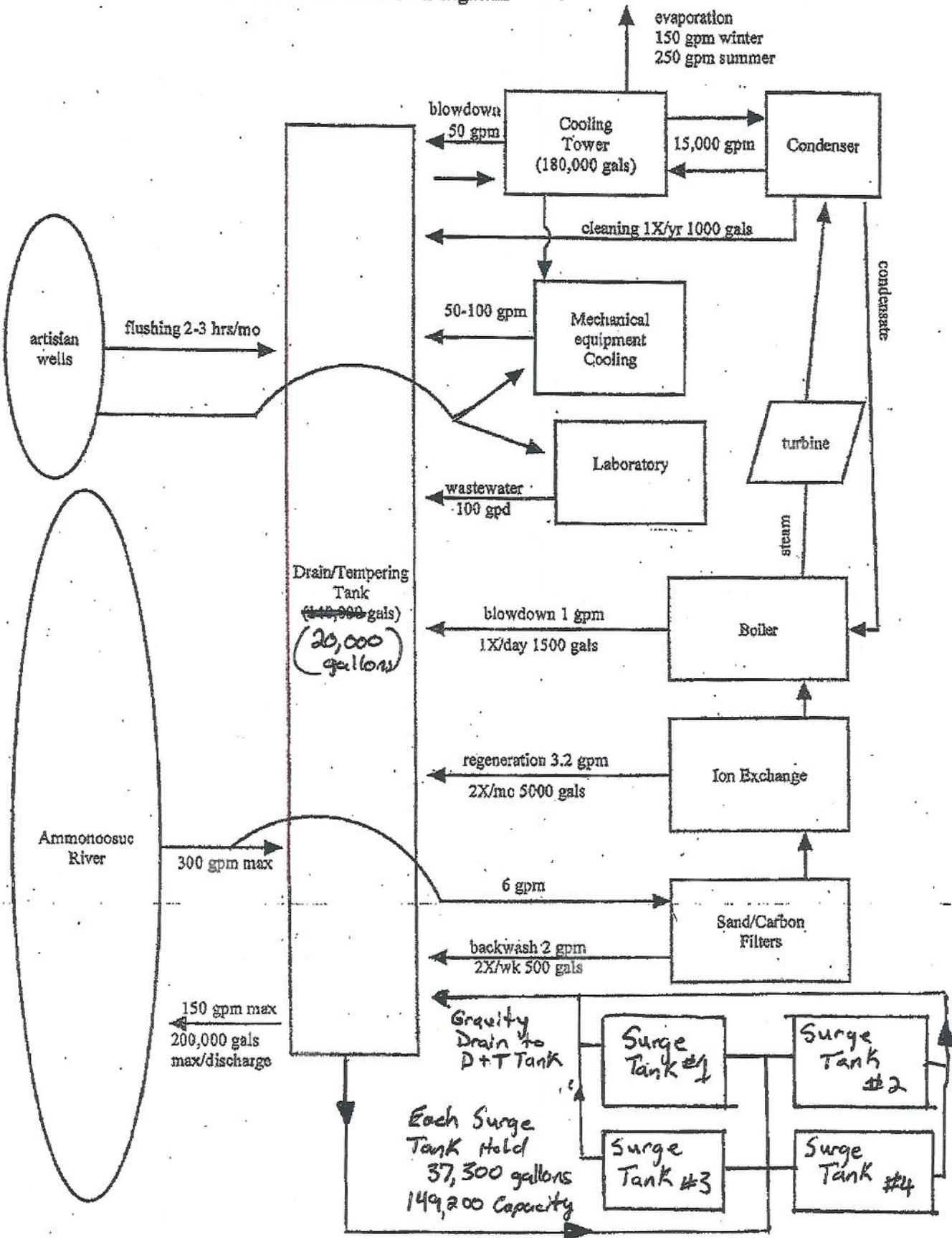
Pinetree Power - Outfall 001 (Process Wastewater)					Attachment A-1			NH0021423			
Data from WET testing - Represents process effluent should a discharge occur. There has been no discharge during the permit term.											
Parameter	Hardness	Al	Cd	Pb	Ni	Cr	Cu	Zn	pH	TSS	TS
Limits	Report	Report	Report	Report	Report	0.2	0.35	1	6.5	30	Report
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
Report	D-MX	D-MX	D-MX	D-MX	D-MX	D-MX	D-MX	D-MX	MIN	M-AVG	D-MX
Date											
7/24/2007	32	0.11	<0.001	<0.001	<0.001	0.003	0.016	0.009	7.1	<5	200
7/24/2008	48	0.26	<0.001	<0.001	0.002	0.007	0.028	0.017	5.4	5	210
7/22/2009	36	0.09	<0.001	<0.001	0.003	0.004	0.04	0.018	5.3	<5	180
7/22/2010	38	0.27	<0.001	<0.001	0.001	0.002	0.025	0.007	7	5	220
7/6/2011	31	0.09	<0.001	<0.001	0.002	0.002	0.016	0.009	6.8	<5	180
min	31	0.09	0	0	0	0.002	0.016	0.007	5.3	5	180
max	48	0.27	0	0	0.003	0.007	0.04	0.018	7.1	5	220
No. of Violations	n/a	n/a	n/a	n/a	n/a	0	0	0	2	0	n/a
Parameter	TOC	DO	TRC	LC50 Ceriodaphnia	LC50 Pimephales	Am-N	NOAEL Ceriodaphnia	NOAEL Pimephales			
Limits	Report	Report	0.15	100	100	Report	Report	Report			
Units	mg/L	mg/L	mg/L	%	%	mg/L	%	%			
Report	D-MX	D-MX	D-MX	D-MN	D-MN	D-MX	D-MN	D-MN			
Date											
7/24/2007	11	7.9	0.05	100	100	<0.05	100	100			
7/24/2008	17	8.2	1.7	100	100	<0.05	100	100			
7/22/2009	8.1	9.2	0.5	46.7	100	<0.005	25	50			
7/22/2010	15	8.3	<0.05	100	100	<0.05	100	100			
7/6/2011	6.4	8	<0.05	100	100	0.06	100	100			
min	6.4	7.9	0	46.7	100	0	25	50			
max	17	9.2	1.7	100	100	0.06	100	100			
No. of Violations	n/a	n/a	1	1	0	n/a	n/a	n/a			

Pinetree Power - Oufall 002 (Storm Water)					Attachment A-2					NH0021423		
Parameter	COD	Flow	Flow	Iron	O&G	pH	pH	pH	pH	pH (rainfall)	TSS	TSS
Limit	Report	Report	Report	1	15	6	8.5	6.5	8	Report	Report	100
Units	mg/L	MGD	MGD	mg/L	mg/L	SU	SU	SU	SU	SU	mg/L	mg/L
Report	D-MX	D-MX	M-AVG	D-MX	D-MX	MIN	MAX	MIN	MAX	MIN	D-MX	D-MX
Date												
8/31/2006	60	0.0003	0.0003		5	7.86	7.86				16	
9/30/2006	20	0.0003	0.0003		5	7.7	7.7				6	
10/31/2006	30	0.0003	0.0003		5	7.51	7.51				6	
*1/31/2007												
4/30/2007	90			2.2	7			7.6	7.6	6.73		91
7/31/2007	30			1.1	5			7.31	7.31	7.04		27
10/31/2007	10			1.5	5			7.27	7.27	6.19		6
1/31/2008	50			1.2	5			7.54	7.54	7.01		5
4/30/2008	15			1.3	5			7.14	7.14	5.97		80
7/31/2008	60			2.5	5			7.15	7.15	5.44		10
10/31/2008	80			1.4	5			7.23	7.23	6.21		19
1/31/2009	30			1.3	5			7.26	7.26	6.84		6
4/30/2009	70			2.4	5			7.37	7.37	6.94		43
7/31/2009	40			1.1	5			7.47	7.47	6.39		6
10/31/2009	20			2.5	5			7.22	7.22	5.91		7
1/31/2010	130			1.5	5			7.04	7.04	6.47		10
4/30/2010	40			2.3	5			7.23	7.23	6.85		5
7/31/2010	120			1.8	5			7.46	7.46	7.62		27
10/31/2010	50			4.6	5			7.82	7.82	6.57		34
**1/31/2011												
4/30/2011	47			1	5			7.24	7.24	5.96		5
•7/31/2011												
10/31/2011	29			0.09	0			7.67	7.67	5.68		0
1/31/2012	15			0.44	0			7.16	7.16	6.71		0
•4/30/2012												
7/31/2012	31			0.19	0			7.44	7.44	5.87		0
min	10	0.0003	0.0003	0.09	0	7.51	7.51	7.04	7.04	5.44	6	0
max	130	0.0003	0.0003	4.6	7	7.86	7.86	7.82	7.82	7.62	16	91
No. of Violations	n/a	n/a	n/a	15	0	0	0	0	0	n/a	n/a	0
* no sample collected due to insufficient rainfall												
** no sample collected due to construction of stormwater swale												
• no sample collected - rain events occurred during off-hours												



*Taken from maps.google.com

Water-Balance Line Diagram



**Response to Comments on
Draft National Pollutant Discharge Elimination System
Permit No. NH0021423
Pinetree Power, Inc.
Bethlehem, New Hampshire**

Introduction:

In accordance with the provisions of 40 C.F.R. §124.17, this document presents the United States Environmental Protection Agency's (EPA's) responses to comments received on the draft National Pollutant Discharge Elimination System ("NPDES") permit for Pinetree Power, Inc. The responses to comments explain and support the EPA determinations that form the basis of the final permit. From September 26, 2012 to October 25, 2012, EPA solicited public comments on a draft NPDES permit, # NH0021423, developed pursuant to a permit application from Pinetree Power, Inc., for the reissuance of a NPDES permit to discharge process wastewater from outfall 001, and stormwater from outfall 002 to the Ammonoosuc River, New Hampshire.

Comments were received on the draft permit from Pinetree Power, Inc. After a review of these comments, EPA has made a final decision to issue this permit authorizing these discharges. The final permit is substantially identical to the draft permit that was available for public comment. Although EPA's decision-making process has benefited from the comments submitted, the information and arguments presented did not raise any substantial new questions concerning the permit. EPA did, however, make certain minor changes and clarifications in response to comments. The analyses underlying these changes are explained in the responses to individual comments that follow and are reflected in the final permit.

Copies of the final permit may be obtained by writing or calling Sharon DeMeo, United States Environmental Protection Agency, 5 Post Office Square, Suite 100 (Mail Code: OEP06-1), Boston, Massachusetts 02109-3912; Telephone (617) 918-1995. Copies may also be obtained from the EPA Region 1 web site at <http://www.epa.gov/region1/npdes/index.html>.

Comments and Responses:**Comment 1: Fact Sheet**

1. Cover page: name and address of applicant, should be Pinetree Power, Inc. not IPR-GDF SUEZ;
2. Page 9 of 26: first paragraph should be 15 GPM not the 50 GPM;
3. Page 9 of 26: second paragraph, (surge tanks) are 37,300 gallon capacity not the 37,500 as listed;
4. Page 9 of 26: the sampling location is now a wooden weir, not a 5 gallon bucket as I told you; and

5. Page 11 of 26: second paragraph, Chem Treat CL41 and C2189T, need to add CL2150 as well.

Response 1:

These comments regarding the fact sheet information have been noted. Since the fact sheet is a final document and cannot be modified, this response to comments document provides a means of correcting and/or clarifying any information in the fact sheet and any inconsistencies between the fact sheet and the final permit.

On page 11 of the Fact Sheet EPA indicates that Chem Treat CL41 and C2189T are both new treatment chemistries that contain bromine. Although EPA is aware that the company will be using CL2150 and other Chem Treat compounds, the Material Safety Data Sheets (MSDS) provided by the company on April 3, 2012 shows that Chem Treat CL2150 does not contain bromine. In fact, CL2150 is discussed on page 15 of the Fact Sheet as a “formulation which contains cupric nitrate...”

In addition, Pinetree Power contacted EPA requesting the use of ChemTreat CL1432 in replacement of CL5530 in its cooling towers. After review, EPA determined that this chemical substitution is acceptable. Please see Part I.A.3.b of the final permit for future requests.

Comment 2: Draft Permit

1. Name and mailing address of applicant; IPR-GDF SUEZ should be Pinetree Power, Inc.
2. Page 4 of 10: Monitoring Requirements; Flow, Estimate; how do you estimate flow from a rain storm without monitoring equipment? The flow is coming out of an 18” pipe into the swale; we just do not feel our estimate would be very accurate. Is there a better way to estimate a flow other than guessing?

Response 2:

EPA will make the applicant name correction to the cover page of the final permit.

The draft permit does not specify how the storm water flow from outfall 002 shall be reported (i.e., flow units). This oversight is corrected in the final permit. EPA requires that the permittee estimate the total volume as „gallons per day“ of stormwater discharged from the site for each event monitored (once/quarter).

As described in the first comment above (#4), the storm water now travels through a weir, instead of a 5 gallon bucket. If this is a V-notch, sharp crested, or other weir device that is used to measure flow, metering equipment could be purchased and used to determine flow. However, this is not required.

As described on pages 363-366 of the 2008 Low Impact Development Manual for Michigan, developed by the Southeast Michigan Council of Governments, which can be found at

http://www.semcog.org/uploadedfiles/Programs_and_Projects/Water/Stormwater/LID/LID_Manual_chapter9.pdf, EPA recommends using the Runoff Curve Number (CN)

Method, or better yet, the Small Storm Hydrology Method (SSHM). With the CN Method, runoff is calculated for each land use type and then summed for the entire site. For the SSHM, a single area-weighted runoff coefficient (Rv) is calculated for the site and then multiplied by the rainfall depth to obtain runoff volume. Either way, the operator needs to characterize their land use and estimate catchment areas (as well as having an accurate estimate of rainfall from a gage or other source).