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",

PCC Structurals, Inc.

is authorized to discharge from a facility located at

24 Granite Street
Northfield, NH 03276-1632

to receiving water named

Winnipesaukee River (Hydrologic Code: 01070002)

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

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

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

This permit supersedes the permit issued on September 1, 2008.

This permit consists of **Part I** (11 pages), **Attachment A** (Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013, 7 pages), and **Part II** (NPDES Part II Standard Conditions, April 2018, 21 pages).

Signed this day of

_____

Ken Moraff, Director
Office of Ecosystem Protection
Environmental Protection Agency
Region 1
Boston, MA

[1] Pursuant to 40 Code of Federal Regulations (C.F.R.) § 124.15(b)(3), if no comments requesting a change to the Draft Permit are received, this permit shall become effective upon the date of signature.

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 non-contact cooling water through Outfall Serial Number 001 to the Winnipesaukee River. The discharge shall be limited and monitored as specified below and the receiving water shall be monitored as specified below.

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[4]**	**Sample Type**
Effluent Flow[5]	Report MGD	0.22 MGD	Continuous	Meter with totalizer
pH[6]	6.5 - 8.0 S.U.		1 /week	Grab
pH	Report # of exceedances/month		---	---
Temperature[7]	Report	90ºF	3/week	Grab
Temperature	Report # of exceedances/month		---	---
Whole Effluent Toxicity (WET) Testing[8,9]				
C-NOEC	---	Report %	1/year	Grab
Hardness	---	Report mg/L	1/year	Grab
Ammonia	---	Report mg/L	1/year	Grab
Total Aluminum	---	Report mg/L	1/year	Grab
Total Cadmium	---	Report mg/L	1/year	Grab
Total Copper	---	Report mg/L	1/year	Grab
Total Nickel	---	Report mg/L	1/year	Grab
Total Lead	---	Report mg/L	1/year	Grab
Total Zinc	---	Report mg/L	1/year	Grab

Ambient Characteristic[10]	Reporting Requirements		Monitoring Requirements[2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type
Hardness	---	Report mg/L	1/year	Grab
Ammonia	---	Report mg/L	1/year	Grab
Total Aluminum	---	Report mg/L	1/year	Grab
Total Cadmium	---	Report mg/L	1/year	Grab
Total Copper	---	Report mg/L	1/year	Grab
Total Nickel	---	Report mg/L	1/year	Grab
Total Lead	---	Report mg/L	1/year	Grab
Total Zinc	---	Report mg/L	1/year	Grab
pH[11]	---	Report S.U.	1/year	Grab
Temperature[11]	---	Report ºF	1/year	Grab

Footnotes:

[*1*] Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken inside the main building at a spigot prior to the cooling water leaving the plant and discharging to the receiving water. Changes in sampling location must be approved in writing by the Environmental Protection Agency Region 1 (EPA) and the New Hampshire Department of Environmental Services (NHDES or "the State"). The Permittee shall report the results to EPA and the NHDES of any additional testing above that required herein, if testing is done in accordance with 40 C.F.R. § 136.

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

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

[*4*] Continuous measurement frequency for flow requires reporting daily maximum each day and monthly average each calendar month. Measurement frequencies of 1/week and 3/week are defined as the sampling of one discharge event and three discharge events, respectively, on separate days in each seven-day calendar week. Measurement frequency of 1/year is defined as the sampling of one discharge event during one calendar year. **Once per year WET testing shall be conducted in rotating calendar quarters to ensure that testing is representative of seasonal variations**. Calendar quarters are defined as January through March, inclusive, April through June, inclusive, July through September, inclusive and October through December, inclusive. **Once per year WET testing is required in the next full quarter after the permit becomes effective.** If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator Code (e.g., "9" for "testing not required" or "C" for "no discharge").

[*5*] The monthly average and maximum daily flows for each month shall be reported in million gallons per day (MGD).

[*6*] The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.). See Part I.C.1 below for a provision to modify the pH range. The Permittee shall report the number of exceedances that occurred during the month on each DMR.

[*7*] The temperature limit is an instantaneous maximum limit, not a maximum daily limit (i.e., 90°F is the highest allowable value for any single grab sample). The highest sample measurement value for the month shall be reported. The Permittee shall report the number of exceedances that occurred during the month on each DMR.

[*8*] The Permittee shall conduct chronic toxicity tests (C-NOEC) in accordance with test procedures and protocols specified in **Attachment A** of this permit. C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*, and the fathead minnow, *Pimephales promelas*. The complete report for each toxicity test shall be submitted as an attachment to the quarterly DMR submittal immediately following the completion of the test.

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

[*10*] For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A**. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.

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

Part I.A. continued.

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

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

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

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

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

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

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

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

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

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

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

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

B. UNAUTHORIZED DISCHARGES

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

2. The discharge of any process water except non-contact cooling water is prohibited.

3. The discharge of biocides is prohibited, except as authorized under conditions of Part I.C.2.

C. SPECIAL CONDITIONS

1. The pH range may be modified if the Permittee satisfies conditions set forth in Part I.E.3 below. Upon notification of an approval by the State, EPA will review and, if acceptable, will submit written notice to the Permittee of the permit change. The modified pH range will not be in effect until the Permittee receives written notice from EPA.

2. The discharge of any chemical or additive, including chemical substitution, which was not reported in the application submitted to EPA and the State or provided through a subsequent written notification submitted to EPA and the State is prohibited. The Permittee shall contact both EPA and the State to request authorization to use and discharge any non-contact cooling system chemical. Discharges of a new chemical or additive are authorized only after the Permittee receives written approval from EPA and the State. To request authorization to discharge a new chemical or additive from EPA and the State, the Permittee must submit, at a minimum, the following information in accordance with Part I.D.3 of this permit:

(1) product name, chemical formula, general description, and manufacturer of the chemical/additive;

(2) purpose or use of the chemical/additive;
(3) Safety Data Sheet (SDS), Chemical Abstracts Service (CAS) Registry number, and EPA registration number, if applicable, for each chemical/additive;
(4) the frequency (e.g., daily), magnitude (i.e., maximum application concentration), duration (e.g., hours), and method of application for the chemical/additive;
(5) the maximum discharge concentration;
(6) the vendor's reported aquatic toxicity, if available (i.e., NOAEL and/or LC_{50} in percent for aquatic organism(s)); and
(7) an affirmation that the discharge of such chemicals as proposed shall not: 1) add any pollutants in concentrations which exceed permit effluent limitations; 2) exceed any applicable water quality standard; and 3) add any pollutants that would justify the application of permit conditions that are different from or absent in this permit.

3. Within 6 months of the effective date of this permit, the Permittee shall submit a report describing the operation of the process water washout pumps and how river water is used in that system. If water withdrawn from the river is used in a process and/or becomes or has the potential to become contaminated by a process, it is prohibited from being discharged to the river in accordance with Part I.B.2 of this permit.

4. Cooling Water Intake Structure Requirements

   a. The Permittee's non-contact cooling water intake structure (CWIS) shall reflect the best technology available (BTA) for minimizing the adverse environmental impacts due to the CWIS. To satisfy this BTA requirement, the Permittee shall comply with the following requirements:

      (1) The Permittee shall maintain the existing removable screens, which surround the 4-inch PVC pipe that withdraws water from the 8-foot by 8-foot intake sump, so that they remain free of excess debris and can be visually inspected for impinged fish from above.

      (2) The flow of Winnipesaukee River water withdrawn through the facility's CWIS shall not exceed 0.25 MGD. In addition, the Permittee shall operate its variable speed-driven pumps to withdraw only the minimum amount required to meet the Facility's demands. Furthermore, to the extent practical, uncontaminated river water not used in the operation of the process water washout pumps shall be used for cooling.

      (3) Within six months of the effective date of this permit and after obtaining all required permits, if necessary, the Permittee shall remove built-up sediment and debris from the two 10-inch cast iron intake pipes. Within one month after the completion of the sediment removal from the intake pipes, the Permittee shall submit documentation confirming that the activity was completed. Thereafter, the Permittee shall periodically inspect and control the accumulation of sediment. Sediment build-up at the entrance or interior of the intake pipes shall not cause the intake velocity to exceed 0.5 feet per second.

(4) To prevent young fish and small organisms being drawn into the facility, the Permittee shall seal the area around the 4" PVC pipe that exits the intake sump so that river water from around this PVC pipe is no longer allowed to enter the screened in area of the sump. This remedy shall be completed within six months of the effective date of this permit and within one month after its completion, the Permittee shall submit documentation confirming that the activity was completed.

b. Any change in the location, design, or capacity of the intake structure outside of the specifications of this Permit must be approved in advance in writing by EPA and NHDES.

c. The Permittee shall maintain an Entrainment/Impingement Monitoring Program that includes the following:

(1) Inspection of the intake sump and screens is required once per week and the pre-pump filters must be inspected each time they are cleaned or replaced;

(2) A monitoring log must be maintained on-site to document the program and shall include the following information:

i. date and time of each inspection;
ii. name of observer/operator; and
iii. total daily withdrawal volume for the day of the inspection.
iv. appropriate reference material to ensure that those involved in planning and conducting the inspection have the necessary knowledge and ability to 1) ensure sampling accuracy and effectiveness, including the ability to identify all fish found in this area to the species level; and 2) return trapped organisms to the river by means designed to maximize their survival. The monitoring log must be made available for review by EPA, NHDES, and New Hampshire Fish & Game (NHF&G) when requested.

(3) If any adult or juvenile fish are observed against the impingement screens, the following information must also be collected:

i. The CWIS intake location (intake sump, screen or pre-pump filter) where each fish was found; and
ii. The number of fish; and for each fish observed:

(a) identification of each fish species; if possible;
(b) total length of each fish;
(c) condition of the fish (alive, injured, dead); and
(d) treatment of the fish (released or discarded).

(4) All live adult and juvenile fish and other aquatic organisms impinged on the intake screen or otherwise trapped in the CWIS sump shall be returned to the river by means

designed to maximize their survival. All solid materials removed from the sump, screens and filters, except for naturally occurring materials such as leaves, branches, and grass, are prohibited from being discharged to the river.

d. Any unusual impingement/entrainment event must be reported to the EPA, NHDES, and NHF&G within 24 hours by telephone. An "unusual impingement/entrainment event" is defined as any occasion that the Permittee observes or estimates based on time-limited observations, four or more fish within any 24-hour period that is either trapped within the intake sump, impinged on the intake screens, or found in the pre-pump filters. The 24-hour notice must be followed with a written report within ten working days of the event, which includes the following information:

(1) species, sizes, and approximate number of fish involved in the incident;
(2) time and date of the occurrence;
(3) operating mode of the facility, including the estimated volume of intake water;
(4) the Permittee's opinion as to the suspected cause for the incident; and
(5) corrective action the Permittee will take to prevent or reduce the likelihood of a recurrence of the incident, to the maximum extent practicable.

D. REPORTING REQUIREMENTS

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

1. Submittal of DMRs Using NetDMR

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

2. Submittal of Reports as NetDMR Attachments

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

3. Submittal of Requests and Reports to EPA/OEP

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

(1) transfer of Permit notice;
(2) request for changes in sampling location;
(3) process water washout pump report;
(4) request to discharge new chemicals or additives;
(5) intake sediment removal documentation;
(6) 4" PVC pipe seal documentation;
(7) request to modify cooling water intake structure;
(8) unusual impingement/entrainment event report;
(9) request for pH effluent limitation adjustment; and
(10) report on unacceptable dilution water/request for alternative dilution water for WET testing.

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

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

4. Submittal of Reports in Hard Copy Form

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

(1) Written notifications required under Part II.

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

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

5. State Reporting

a. Unless otherwise specified in this permit or by the State, duplicate signed copies of all reports, information, requests or notifications described in this permit, including the reports, information, requests or notifications described in Parts I.D.3 and I.D.4. shall also be submitted to New Hampshire Department of Environmental Services,

Water Division (NHDES–WD) electronically to the Permittee's assigned NPDES inspector at NHDES-WD or as hardcopy to the following address(es):

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

6. Verbal Reports and Verbal Notifications

   a. Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to both EPA and to the State. This includes verbal reports and notifications which require reporting within 24 hours (e.g., Part II.B.4.c. (2), Part II.B.5.c. (3), and Part II.D.1.e.).

   b. Verbal reports and verbal notifications shall be made to EPA's Office of Environmental Stewardship at:
   617-918-1510

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

E. STATE PERMIT CONDITIONS

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

2. This NPDES Discharge Permit is issued by the EPA under Federal 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.

3. The pH range of 6.5 to 8.0 Standard Units (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 receiving water pH is not significantly altered by the Permittee's discharge. The scope of any demonstration project must receive prior approval from NHDES–WD. In no case, shall the above procedure result in pH limits outside the range of 6.0 to 9.0 S.U.

FRESHWATER CHRONIC
TOXICITY TEST PROCEDURE AND PROTOCOL
USEPA Region 1

I. GENERAL REQUIREMENTS

The permittee shall be responsible for the conduct of acceptable chronic toxicity tests using three fresh samples collected during each test period. The following tests shall be performed as prescribed in Part 1 of the NPDES discharge permit in accordance with the appropriate test protocols described below. (Note: the permittee and testing laboratory should review the applicable permit to determine whether testing of one or both species is required).

- **Daphnid (Ceriodaphnia dubia) Survival and Reproduction Test.**
- **Fathead Minnow (Pimephales promelas) Larval Growth and Survival Test.**

Chronic toxicity data shall be reported as outlined in Section VIII.

II. METHODS

Methods to follow are those recommended by EPA in: Short Term Methods For Estimating The Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition. October 2002. United States Environmental Protection Agency. Office of Water, Washington, D.C., EPA 821-R-02-013. The methods are available on-line at http://www.epa.gov/waterscience/WET/ . Exceptions and clarification are stated herein.

III. SAMPLE COLLECTION AND USE

A total of three fresh samples of effluent and receiving water are required for initiation and subsequent renewals of a freshwater, chronic, toxicity test. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. Fresh samples are recommended for use on test days 1, 3, and 5. However, provided a total of three samples are used for testing over the test period, an alternate sampling schedule is acceptable. The acceptable holding times until initial use of a sample are 24 and 36 hours for on-site and off-site testing, respectively. A written waiver is required from the regulating authority for any hold time extension. All test samples collected may be used for 24, 48 and 72 hour renewals after initial use. All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6^{o} C.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol.

Sampling guidance dictates that, where appropriate, aliquots for the analysis required in this protocol shall be split from the samples, containerized and immediately preserved, or analyzed as per 40 CFR Part 136. EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection. Testing for the presence of total residual chlorine (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. TRC analysis may be performed on-site or by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate prior to sample use for toxicity testing.

If any of the renewal samples are of sufficient potency to cause lethality to 50 percent or more of the test organisms in any of the test treatments for either species or, if the test fails to meet its permit limits, then chemical analysis for total metals (originally required for the initial sample only in Section VI) will be required on the renewal sample(s) as well.

IV. DILUTION WATER

Samples of receiving water must be collected from a location in the receiving water body 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. EPA strongly urges that screening for toxicity be performed prior to the set up of a full, definitive toxicity test any time there is a question about the test dilution water's ability to achieve test acceptability criteria (TAC) as indicated in Section V of this protocol. The test dilution water control response will be used in the statistical analysis of the toxicity test data. All other control(s) required to be run in the test will be reported as specified in the Discharge Monitoring Report (DMR) Instructions, Attachment F, page 2,Test Results & Permit Limits.

The test dilution water must be used to determine whether the test met the applicable TAC. When receiving water is used for test dilution, an additional control made up of standard laboratory water (0% effluent) is required. This control will be used to verify the health of the test organisms and evaluate to what extent, if any, the receiving water itself is responsible for any toxic response observed.

If dechlorination of a sample by the toxicity testing laboratory is necessary a "sodium thiosulfate" control, representing the concentration of sodium thiosulfate used to adequately dechlorinate the sample prior to toxicity testing, must be included in the test.

If the use of an alternate dilution water (ADW) is authorized, in addition to the ADW test control, the testing laboratory must, for the purpose of monitoring the receiving water, also run a receiving water control.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable an ADW of known quality with hardness similar to that of the receiving water may be substituted. Substitution is species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species. Substitution to an ADW is authorized in two cases. The first is the case where repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use be made by the permittee and toxicity testing laboratory. The second is in the case where two of the most recent documented incidents of unacceptable site dilution water toxicity requires ADW use in future WET testing.

For the second case, written notification from the permittee requesting ADW use **and** written authorization from the permit issuing agency(s) is required **prior to** switching to a long-term use of ADW for the duration of the permit.

Written requests for use of ADW must be mailed with supporting documentation to the following addresses:

Director
Office of Ecosystem Protection (CAA)
U.S. Environmental Protection Agency, Region 1
Five Post Office Square, Suite 100
Mail Code OEP06-5
Boston, MA 02109-3912

and

Manager
Water Technical Unit (SEW)
U.S. Environmental Protection Agency
Five Post Office Square, Suite 100
Mail Code 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.

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

Method specific test conditions and TAC are to be followed and adhered to as specified in the method guidance document, EPA 821-R-02-013. If a test does not meet TAC the test must be repeated with fresh samples within 30 days of the initial test completion date.

V.1. Use of Reference Toxicity Testing

Reference toxicity test results and applicable control charts must be included in the toxicity testing report.

If reference toxicity test results fall outside the control limits established by the laboratory for a specific test endpoint, a reason or reasons for this excursion must be evaluated, correction made and reference toxicity tests rerun as necessary.

If a test endpoint value exceeds the control limits at a frequency of more than one out of twenty then causes for the reference toxicity test failure must be examined and if problems are identified corrective action taken. The reference toxicity test must be repeated during the same month in which the exceedance occurred.

If two consecutive reference toxicity tests fall outside control limits, the possible cause(s) for the exceedance must be examined, corrective actions taken and a repeat of the reference toxicity test must take place immediately. Actions taken to resolve the problem must be reported.

V.1.a. Use of Concurrent Reference Toxicity Testing

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established **upper** control limits i.e. ≥3 standard deviations for IC25 values and ≥ two concentration intervals for NOECs, and even though the primary test meets TAC, the primary test will be considered unacceptable and must be repeated.

V.2. For the *C. dubia* test, the determination of TAC and formal statistical analyses must be performed using only the first three broods produced.

V.3. Test treatments must include 5 effluent concentrations and a dilution water control. An additional test treatment, at the permitted effluent concentration (% effluent), is required if it is not included in the dilution series.

VI. CHEMICAL ANALYSIS

As part of each toxicity test's daily renewal procedure, pH, specific conductance, dissolved oxygen (DO) and temperature must be measured at the beginning and end of each 24-hour period in each test treatment and the control(s).

The additional analysis that must be performed under this protocol is as specified and noted in the table below.

Parameter	Effluent	Receiving Water	ML (mg/l)
Hardness[1, 4]	x	x	0.5
Total Residual Chlorine (TRC)[2, 3, 4]	x		0.02
Alkalinity[4]	x	x	2.0
pH[4]	x	x	--
Specific Conductance[4]	x	x	--
Total Solids[6]	x		--
Total Dissolved Solids[6]	x		--
Ammonia[4]	x	x	0.1
Total Organic Carbon[6]	x	x	0.5
Total Metals[5]			
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
- USEPA 1983. Manual of Methods Analysis of Water and Wastes
  -Method 330.5

3. Required to be performed on the sample used for WET testing prior to its use for toxicity testing
4. Analysis is to be performed on samples and/or receiving water, as designated in the table above, from all three sampling events.
5. Analysis is to be performed on the initial sample(s) only unless the situation arises as stated in Section III, paragraph 4
6. Analysis to be performed on initial samples only

VII. TOXICITY TEST DATA ANALYSIS AND REVIEW

A. Test Review

1. Concentration / Response Relationship

A concentration/response relationship evaluation is required for test endpoint determinations from both Hypothesis Testing and Point Estimate techniques. The test report is to include documentation of this evaluation in support of the endpoint values reported. The dose-response review must be performed as required in Section 10.2.6 of EPA-821-R-02-013. Guidance for this review can be found at http://water.epa.gov/scitech/methods/cwa/ . In most cases, the review will result in one of the following three conclusions: (1) Results are reliable and reportable; (2) Results are anomalous and require explanation; or (3) Results are inconclusive and a retest with fresh samples is required.

2. Test Variability (Test Sensitivity)

This review step is separate from the determination of whether a test meets or does not meet TAC. Within test variability is to be examined for the purpose of evaluating test sensitivity. This evaluation is to be performed for the sub-lethal hypothesis testing endpoints reproduction and growth as required by the permit. The test report is to include documentation of this evaluation to support that the endpoint values reported resulted from a toxicity test of adequate sensitivity. This evaluation must be performed as required in Section 10.2.8 of EPA-821-R-02-013.

To determine the adequacy of test sensitivity, USEPA requires the calculation of test percent minimum significant difference (PMSD) values. In cases where NOEC determinations are made based on a non-parametric technique, calculation of a test PMSD value**,** for the sole purpose of assessing test sensitivity, shall be calculated using a comparable parametric statistical analysis technique. The calculated test PMSD is then compared to the upper and lower PMSD bounds shown for freshwater tests in Section 10.2.8.3, p. 52, Table 6 of EPA-821-R-02-013. The comparison will yield one of the following determinations.

- The test PMSD exceeds the PMSD upper bound test variability criterion in Table 6, the test results are considered highly variable and the test may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC). If the test results indicate that the discharge is not toxic at the PLC, then the test is considered insufficiently sensitive and must be repeated within 30 days of the initial test completion using fresh samples. If the test results indicate that the discharge is toxic at the PLC, the test is considered acceptable and does not have to be repeated.

- The test PMSD falls below the PMSD lower bound test variability criterion in Table 6, the test is determined to be very sensitive. In order to determine which treatment(s) are statistically significant and which are not, for the purpose of reporting a NOEC, the relative percent difference (RPD) between the control and each treatment must be calculated and compared to the lower PMSD boundary. See *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program*, EPA 833-R-00-003, June 2002, Section 6.4.2. The following link: Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program can be used to locate the USEPA website containing this document. If the RPD for a treatment falls below the PMSD lower bound, the difference is considered statistically insignificant. If the RPD for a treatment is greater that the PMSD lower bound, then the treatment is considered statistically significant.

- The test PMSD falls within the PMSD upper and lower bounds in Table 6, the sub-lethal test endpoint values shall be reported as is.

B. Statistical Analysis

1. General - Recommended Statistical Analysis Method

Refer to general data analysis flowchart, EPA 821-R-02-013, page 43

For discussion on Hypothesis Testing, refer to EPA 821-R-02-013, Section 9.6

For discussion on Point Estimation Techniques, refer to EPA 821-R-02-013, Section 9.7

2. *Pimephales promelas*

Refer to survival hypothesis testing analysis flowchart, EPA 821-R-02-013, page 79

Refer to survival point estimate techniques flowchart, EPA 821-R-02-013, page 80

Refer to growth data statistical analysis flowchart, EPA 821-R-02-013, page 92

3. *Ceriodaphnia dubia*

Refer to survival data testing flowchart, EPA 821-R-02-013, page 168

Refer to reproduction data testing flowchart, EPA 821-R-02-013, page 173

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

- Test summary sheets (2007 DMR Attachment F) which includes:
  - Facility name
  - NPDES permit number
  - Outfall number
  - Sample type
  - Sampling method
  - Effluent TRC concentration
  - Dilution water used
  - Receiving water name and sampling location
  - Test type and species
  - Test start date
  - Effluent concentrations tested (%) and permit limit concentration
  - Applicable reference toxicity test date and whether acceptable or not
  - Age, age range and source of test organisms used for testing
  - Results of TAC review for all applicable controls
  - Test sensitivity evaluation results (test PMSD for growth and reproduction)
  - Permit limit and toxicity test results
  - Summary of test sensitivity and concentration response evaluation

In addition to the summary sheets the report must include:

- A brief description of sample collection procedures
- Chain of custody documentation including names of individuals collecting samples, times and dates of sample collection, sample locations, requested analysis and lab receipt with time and date received, lab receipt personnel and condition of samples upon receipt at the lab(s)
- Reference toxicity test control charts
- All sample chemical/physical data generated, including minimum limits (MLs) and analytical methods used
- All toxicity test raw data including daily ambient test conditions, toxicity test chemistry, sample dechlorination details as necessary, bench sheets and statistical analysis
- A discussion of any deviations from test conditions
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review per species per endpoint

NPDES PART II STANDARD CONDITIONS
(April 26, 2018)[1]

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

A. GENERAL REQUIREMENTS

1. Duty to Comply

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

a. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

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

(1) Criminal Penalties

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

(b) *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

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

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

(d) *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

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

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

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

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

2. Permit Actions

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

condition.

3. Duty to Provide Information

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

4. Oil and Hazardous Substance Liability

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

5. Property Rights

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

6. Confidentiality of Information

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

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

(1) The name and address of any permit applicant or Permittee;
(2) Permit applications, permits, and effluent data.

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

7. Duty to Reapply

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

8. State Authorities

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

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

9. Other Laws

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

B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

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

b. *Bypass not exceeding limitations.* The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (c) and (d) of this Section.

c. Notice

(1) *Anticipated bypass*. If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass. As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by state law.

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

d. *Prohibition of bypass.*

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

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

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and

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

(2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph 4.d of this Section.

5. Upset

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

improper operation.

b. *Effect of an upset.* An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph B.5.c. of this Section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

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

(1) An upset occurred and that the Permittee can identify the cause(s) of the upset;
(2) The permitted facility was at the time being properly operated; and
(3) The Permittee submitted notice of the upset as required in paragraph D.1.e.2.b. (24-hour notice).
(4) The Permittee complied with any remedial measures required under B.3. above.

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

C. MONITORING REQUIREMENTS

1. Monitoring and Records

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

b. Except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 C.F.R. § 503), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

c. Records of monitoring information shall include:

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

d. Monitoring must be conducted according to test procedures approved under 40 C.F.R. § 136 unless another method is required under 40 C.F.R. Subchapters N or O.

e. The Clean Water Act provides that any person who falsifies, tampers with, or

knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

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

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

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

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

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

D. REPORTING REQUIREMENTS

1. Reporting Requirements

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

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. § 122.29(b); or

(2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements at 40 C.F.R. § 122.42(a)(1).

(3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

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

c. *Transfers.* This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Clean Water Act. *See* 40 C.F.R. § 122.61; in some cases, modification or revocation and reissuance is mandatory.

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

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices. As of December 21, 2016 all reports and forms submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by State law.

(2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 C.F.R. § 136, or another method required for an industry-specific waste stream under 40 C.F.R. Subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

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

e. *Twenty-four hour reporting.*

(1) The Permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all

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

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

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

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

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

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

h. *Other information.* Where the Permittee becomes aware that it failed to submit any

relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

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

2. Signatory Requirement

a. All applications, reports, or information submitted to the Director shall be signed and certified. *See* 40 C.F.R. §122.22.

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

3. Availability of Reports.

Except for data determined to be confidential under paragraph A.6. above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Director. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

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

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

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

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

"approved States," including any approved modifications or revisions.

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

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

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

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

Bypass see B.4.a.1 above.

C-NOEC or *"Chronic (Long-term Exposure Test) – No Observed Effect Concentration" means* the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 C.F.R. § 501.2, required to have an approved pretreatment program under 40 C.F.R. § 403.8 (a) (including any POTW located in a State that has elected to assume local program responsibilities pursuant to 40 C.F.R. § 403.10 (e)) and any treatment works treating domestic sewage, as defined in 40 C.F.R. § 122.2, classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sewage sludge use or disposal practice to affect public health and the environment adversely.

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

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

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483and Public Law 97-117, 33 U.S.C. 1251 *et seq*.

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

Daily Discharge means the "discharge of a pollutant" measured during a calendar day or any

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

Direct Discharge means the "discharge of a pollutant."

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

Discharge

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

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

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

Discharge of a pollutant means:

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

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

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any "indirect discharger."

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

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

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

Agency.

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

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

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

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

Interference means a discharge (see definition above) which, alone or in conjunction with a discharge or discharges from other sources, both:

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

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

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

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

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

LC_{50} means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 100% is defined as a sample of undiluted effluent.

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

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

publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit.

Municipality

(a) When used without qualification *municipality* means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of CWA.

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

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

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

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

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

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

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

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

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

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

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

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

NPDES means "National Pollutant Discharge Elimination System."

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

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

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

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

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

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

pH means the logarithm of the reciprocal of the hydrogen ion concentration measured at 25° Centigrade or measured at another temperature and then converted to an equivalent value at 25° Centigrade.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 C.F.R. § 122.3).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials

(except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq*.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

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

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

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

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

Publicly owned treatment works (POTW) means a treatment works as defined by Section 212 of the Act, which is owned by a State or municipality (as defined by Section 504(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in Section 502(4) of the Act, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

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

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

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

Sewage Sludge means any solid, semi-solid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced waste water treatment, scum, septage, portable toilet pumpings, type III marine sanitation device pumpings (33 C.F.R. Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

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

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does

not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 C.F.R. § 122.2.

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

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

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

Sludge-only facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to section 405(d) of the CWA, and is required to obtain a permit under 40 C.F.R. § 122.1(b)(2).

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

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

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

Storm water discharge associated with industrial activity means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.

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

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

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

For purposes of this definition, "domestic sewage" includes waste and waste water from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Director may designate any person subject to the standards for sewage sludge use and

disposal in 40 C.F.R. Part 503 as a "treatment works treating domestic sewage," where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 C.F.R. Part 503.

Upset see B.5.a. above.

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

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

Waters of the United States or waters of the U.S. means:

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

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

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

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

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

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

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

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

(f) The territorial sea; and

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

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 C.F.R. § 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland.

Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

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

Whole Effluent Toxicity (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test.

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

2. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)
TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont.	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M^3/day	Cubic meters per day
DO	Dissolved oxygen

kg/day	Kilograms per day
lbs/day	Pounds per day
mg/L	Milligram(s) per liter
mL/L	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
Surfactant	Surface-active agent
Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
µg/L	Microgram(s) per liter
WET	"Whole effluent toxicity"
ZID	Zone of Initial Dilution

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

FACT SHEET

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

NPDES PERMIT NUMBER: NH0001023

PUBLIC NOTICE START AND END DATES: August 31, 2018 – September 29, 2018

NAME AND MAILING ADDRESS OF APPLICANT:

PCC Structurals, Inc.
P.O. Box 188
Tilton, NH 03276-0188

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

PCC Structurals, Inc.
24 Granite Street
Northfield, NH 03276-1632

RECEIVING WATER AND CLASSIFICATION:

Winnipesaukee River (USGS Basin ID: 01081000 Winnipesaukee River at Tilton, NH)
Assessment Unit NHRIV700020203-12
Hydrologic Code: 01070002
Class B

SIC CODE: 3365 (Aluminum Foundries – except die-castings) NAICS 331524
"casts in a full range of aluminum alloys, and specializes in high volume production for airframe and aero-engine components" http://www.pccstructurals.com/locations/

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1.0 Proposed Action

PCC Structurals, Inc. (the "Permittee") has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge non-contact cooling water (NCCW) from the PCC Structurals facility (the "Facility") into the designated receiving water (Winnipesaukee River).

In July 2000, PCC Structurals (formerly Wyman-Gordon Investment Castings, Inc.) began to discharge all the Facility's treated process wastewater, with the exception of NCCW, to the Winnipesaukee River Basin Publicly Owned Treatment Works (POTW). Stormwater from the Facility was covered by the EPA Multi-Sector General Permit for Stormwater Associated with Industrial Activity (MSGP) issued in 2008, however PCC Structurals did not reapply for coverage when the MSGP was reissued in 2015. Besides stormwater, PCC Structurals discharges only NCCW directly to the Winnipesaukee River, thereby requiring an individual NPDES permit. NCCW is water employed to reduce or control the temperature of manufacturing processes, which does not come in direct contact with any raw material, intermediate product, waste product (other than heat) or finished product.

The permit currently in effect was issued on September 1, 2008 with an effective date of September 1, 2008 and expired on August 31, 2013 (the "2008 Permit"). The Permittee filed an application for permit reissuance with EPA dated March 1, 2013, as required by 40 Code of Federal Regulations (C.F.R.) § 122.6. Since the permit application was deemed timely and complete by EPA on June 19, 2013, the Facility's 2008 Permit has been administratively continued pursuant to 40 C.F.R. § 122.6 and § 122.21(d). EPA and the New Hampshire Department of Environmental Services (NHDES or "the State") conducted a site visit on March 27, 2018 with company representatives Jim Palizzolo and Joel Clough. Since that time, EPA was informed that PCC Structurals was working on the application for the MSGP for the stormwater discharges.

2.0 Statutory and Regulatory Authority

Congress enacted the Clean Water Act (CWA), "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." *See* CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except as authorized by specific permitting sections of the CWA, one of which is § 402. *See* CWA §§ 303(a), 402(a). Section 402(a) established one of the CWA's principal permitting programs, the NPDES Permit Program. Under this section, EPA may "issue a permit for the discharge of any pollutant or combination of pollutants" in accordance with certain conditions. *See* CWA § 402(a). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. *See* CWA § 402(a)(1) and (2). The regulations governing EPA's NPDES permit program are generally found in 40 C.F.R. §§ 122, 124, 125, and 136.

Section 301 of the CWA provides for two types of effluent limitations to be included in NPDES permits: "technology-based" effluent limitations (TBELs) and "water quality-based" effluent limitations (WQBELs). *See* CWA §§ 301, 304(b); 40 C.F.R. §§ 122, 125, and 131.

2.1 Technology-Based Requirements

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

Subpart A of 40 C.F.R. § 125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under § 301(b) of the CWA, including the application of EPA promulgated Effluent Limitation Guidelines (ELGs) and case-by-case determinations of effluent limitations under § 402(a)(1) of the CWA.

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

2.2 Water Quality-Based Requirements

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

2.2.1 Water Quality Standards

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

generally, Title 50, Water Management and Protection, Chapters 485A, Water Pollution and Waste Disposal Section 485-A.

Receiving water requirements are established according to numerical and narrative standards in WQSs adopted under State law for each water body classification. When using chemical-specific numeric criteria to develop permit limits, acute and chronic aquatic life criteria and human health criteria are used and expressed in terms of maximum allowable in-stream pollutant concentrations. In general, aquatic-life acute criteria are considered applicable to daily time periods (maximum daily limit) and aquatic-life chronic criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific human health criteria are typically based on lifetime chronic exposure and are therefore typically applicable to monthly average limits.

When permit effluent limits are necessary for a pollutant to meet narrative water quality criteria, the permitting authority must establish effluent limits in one of three ways: based on a "calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use," on a "case-by-case basis" using CWA § 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or, in certain circumstances, based on an indicator parameter. *See* 40 C.F.R. § 122.44(d)(1)(vi)(A-C).

2.2.2 Anti-degradation

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

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

This permit is being reissued with effluent limitations sufficiently stringent to protect the exiting uses of the receiving water.

2.2.3 Assessment and Listing of Waters and Total Maximum Daily Loads

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

A TMDL is a planning tool and potential starting point for restoration activities with the ultimate goal of attaining water quality standards. A TMDL is essentially a pollution budget designed to restore the health of an impaired water body. A TMDL typically identifies the source(s) of the pollutant from direct and indirect discharges, determines the maximum load of the pollutant that can be discharged to a specific water body while maintaining WQSs for designated uses, and allocates that load to the various pollutant sources, including point source discharges, subject to NPDES permits. *See* 40 C.F.R. § 130.7.

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

2.2.4 Reasonable Potential

Pursuant to 40 C.F.R. § 122.44(d)(1), NPDES permits must contain any requirements in addition to TBELs necessary to achieve water quality standards established under § 303 of the CWA. In addition, limitations "must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality". *See* 40 C.F.R. § 122.44(d)(1)(i). There is reasonable potential to cause or contribute to an excursion if the projected or actual in-stream concentration exceeds the applicable criterion. If the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to such an excursion, the permit must contain WQBELs for the pollutant. *See* 40 C.F.R. § 122.44(d)(1)(iii).

In determining reasonable potential, EPA considers: 1) existing controls on point and non-point sources of pollution; 2) the variability of the pollutant or pollutant parameter in the effluent; 3) the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and 4) where appropriate, the dilution of the effluent in the receiving water. EPA typically considers the statistical approach outlined in *Technical Support Document for Water Quality-based Toxics Control* (TSD)[1] to determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any WQS. *See* 40 C.F.R. § 122.44(d). EPA's quantitative approach statistically projects effluent concentrations based on available effluent data, which are then compared to the applicable water quality criteria.

2.2.5 State Certification

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

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

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

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

[1] March 1991, EPA/505/2-90-001.

permit limits based upon water quality standards and state requirements are contained in 40 C.F.R. § 122.4(d) and 40 C.F.R. § 122.44(d).

2.3 Effluent Flow Requirements

Generally, EPA uses effluent flow both to determine the necessity for effluent limitations in a permit that comply with the CWA, and to calculate the effluent limitations themselves. EPA practice is to use effluent flow as a reasonable and important worst-case condition in EPA's reasonable potential and WQBEL calculations to ensure compliance with WQSs under § 301(b)(1)(C) of the CWA. Should the effluent flow exceed the flow assumed in these calculations, the in-stream dilution would decrease and the calculated effluent limitations may not be protective (i.e., meet WQSs). Further, pollutants that do not have the reasonable potential to exceed WQSs at a lower discharge flow may have reasonable potential at a higher flow due to the decreased dilution. To ensure that the assumptions underlying EPA's reasonable potential analyses and derivation of permit effluent limitations remain sound for the duration of the permit, EPA may ensure its "worst-case" effluent flow assumption through imposition of permit conditions for effluent flow.[2] In this regard, the effluent flow limit is a component of WQBELs because the WQBELs are premised on a maximum level flow. The effluent flow limit also is necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSs.

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

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

2.4 Monitoring and Reporting Requirements

[2] EPA's reasonable potential regulations require EPA to consider "where appropriate, the dilution of the effluent in the receiving water," which is a function of both the effluent flow and receiving water flow. 40 C.F.R. §122.44(d)(1)(ii). EPA guidance directs that this "reasonable potential" analysis be based on "worst-case" conditions. In *re Washington Aqueduct Water Supply Sys., 11 E.A.D. 565, 584 (EAB 2004).*

2.4.1 Monitoring Requirements

EPA has the authority in accordance with several statutory and regulatory requirements established pursuant to the CWA, 33 USC § 1251 et seq., the NPDES program (*see* § 402 and the implementing regulations generally found at 40 C.F.R. §§ 122, 124, 125, and 136), CWA § 308(a), 33 USC § 1318(a), and applicable state regulations to include requirements such as monitoring and reporting in NPDES permits.

The monitoring requirements included in this permit have been established to yield data representative of the discharges under the authority of §§ 308(a) and 402(a)(2) of the CWA, and consistent with 40 C.F.R. §§ 122.41(j), 122.43(a), 122.44(i) and 122.48. The monitoring requirements included in this permit specify routine sampling and analysis, which will provide ongoing, representative information on the levels of regulated constituents in the wastewater discharge streams. The monitoring program is needed to assess effluent characteristics, evaluate permit compliance, and determine if additional permit conditions are necessary to ensure compliance with technology-based and water quality-based requirements, including WQSs. EPA and/or the state may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to § 304(a)(1) of the CWA, state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including, but not limited to, those pollutants listed in Appendix D of 40 C.F.R. § 122. Therefore, the monitoring requirements in this permit are included for specific regulatory use in carrying out the CWA.

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

- The method minimum level[4] (ML) is at or below the level of the applicable water quality criterion or permit limitation for the measured pollutant or pollutant parameter; or

3 Federal Register, Vol. 79, No. 160, Tuesday, August 19, 2014; FR Doc. 2014–19557.
4 The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL). Minimum levels may be obtained in several ways: They may be published in a method; they may be sample concentrations equivalent to the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a lab, by a factor. EPA is considering the following terms related to analytical method sensitivity to be

- In the case of permit applications, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or parameter in the discharge; or
- The method has the lowest ML of the EPA-approved analytical methods.

2.4.2 Reporting Requirements

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

NetDMR is a national web-based tool for regulated CWA permittees to submit DMRs electronically via a secure internet application to EPA through the Environmental Information Exchange Network. NetDMR has allowed participants to discontinue mailing in hard copy forms to EPA under 40 C.F.R. §§ 122.41 and 403.12. NetDMR is accessed from the following website: https://netdmr.zendesk.com/hc/en-us. Further information about NetDMR can be found on the EPA Region 1 NetDMR website.[5]

With the use of NetDMR, the Permittee is no longer required to submit hard copies of DMRs and reports to EPA and the State unless otherwise specified in the Draft Permit. In most cases, reports required under the permit shall be submitted to EPA as an electronic attachment through NetDMR. Certain exceptions are provided in the permit such as for providing written notifications required under the Part II Standard Conditions.

2.5 Anti-backsliding

A permit may not be renewed, reissued or modified with less stringent limitations or conditions than those contained in a previous permit unless in compliance with the anti-backsliding requirements of the CWA. *See* §§ 402(o) and 303(d)(4) of the CWA and 40 C.F.R. § 122.44(l)(1 and 2). Anti-backsliding provisions apply to effluent limits based on technology, water quality, BPJ and state certification requirements.

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2008 Permit unless specific conditions exist to justify one of the exceptions listed in 40 C.F.R. § 122.44(l)(2)(i) and/or in accordance with § 303(d)(4). Discussion of any applicable exceptions are discussed in sections that follow. Therefore, the Draft Permit complies with the anti-backsliding requirements of the CWA.

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synonymous: "quantitation limit," "reporting limit," "level of quantitation," and "minimum level." *See* Federal Register, Vol. 79, No. 160, Tuesday, August 19, 2014; FR Doc. 2014–19557.

[5] https://netdmr.zendesk.com/hc/en-us/articles/209616266-EPA-Region-1-NetDMR-Information.

3.0 Description of Facility and Discharge

3.1 Location and Type of Facility

PCC Structurals at the Northfield, NH location "specializes in complex air and vacuum aluminum investment cast components for aerospace, military, energy, and commercial applications." http://www.pccstructurals.com/locations/pcc-structurals-tilton.html. The Facility manufactures aluminum cast products through a process called investment casting (a.k.a. lost wax process) and is located along the eastern bank of Winnipesaukee River on Granite Street in Northfield, NH. Location maps are provided as Figure 1. Non-contact cooling water (NCCW) is used to cool several types of machinery including die presses and hydraulic units. A site plan is provided as Figure 2 and a schematic of the water flow is provided as Figure 3. The Facility operates 24 hours per day, seven days per week. PCC Structurals ships some products to another PCC Structurals facility located in nearby Franklin, NH for further finishing operations including parts grinding, straightening, and acid etching.

3.1.1 Effluent Limitation Guidelines

EPA has established National Effluent Limitation Guidelines (ELGs) for the Metal Molding and Casting Point Source Category, which is applicable to processes performed by PCC Structurals. *See* 40 C.F.R. Part 464. Based on the most recent information provided by the Permittee, the pertinent subpart of these regulations for PCC Structurals is Subpart A (40 C.F.R. § 464.10) *Aluminum Casting*. However, as previously mentioned, the Facility discharges all process wastewater, except NCCW to the local POTW. The NCCW, which is discharged directly to the Winnipesaukee River and subject to this NPDES permit, is a waste stream not covered by the ELG for the Metal Molding and Casting Point Source Category. Therefore, additional information regarding the application of 40 C.F.R. Part 464 to PCC Structurals is not included in this Fact Sheet.

3.1.2 Measure of Production

In accordance with 40 CFR § 122.45(b)(2), EPA based the calculation of effluent limitations on a reasonable measure of actual production by the Facility. EPA determined that the measure of production appropriate for this Facility is the maximum daily permitted flow limit for the NCCW, 0.22 MGD. The maximum effluent flow reflects the amount of NCCW needed for plant operations.

3.2 Location and Type of Discharge

Outfall 001 is an approximately 12-inch PVC pipe located at Latitude 43° 26' 30" Longitude -71° 35' 7" on the eastern bank of Winnipesaukee River. *See* Figure 4. Across the river and downstream approximately 750 feet is the Tilton United States Geological Survey (USGS) gauge station, No. 01081000. The approximate linear distance from Outfall 001 to the main building is

1,100 feet. Sampling in accordance with the NPDES permit is conducted inside the main building at a spigot prior to the cooling water leaving the plant.

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the Permittee by means of Discharge Monitoring Reports (DMRs), from November 2012 through December 2017, is provided in Appendix A of this Fact Sheet.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Facility discharges NCCW through Outfall 001 to the Winnipesaukee River. The segment of the river where the discharge occurs is Assessment Unit NHRIV700020203-12 (Hydrologic Code: 01070002).

> The Winnipesaukee River is a 10.5-mile-long (16.9 km)[1] river that connects Lake Winnipesaukee with the Pemigewasset and Merrimack rivers in Franklin, New Hampshire. The river is in the Lakes Region of central New Hampshire. The river's drainage area is approximately 488 square miles (1,264 km2). The river has two distinct sections. …
>
> The river's lower section begins at the natural outlet of Silver Lake, on the boundary between Belmont and Tilton, New Hampshire. The river passes through the center of the twin towns of Tilton and Northfield, then descends through a narrow valley to Franklin where additional small dams use the river's power. From Tilton to Franklin, the river has a drop of up to 90 feet per mile …. The Winnipesaukee River joins the Pemigewasset River just downstream from the center of Franklin, forming the Merrimack River.[6]

River Classification

The State classifies the Winnipesaukee River as a Class B water body in the vicinity of the PCC Structurals outfall. *See* Legislative Classification of Surface Waters in New Hampshire, 8/15/91, p. 40. The river also provides acceptable spawning and nursery habitat for fish species and has been identified as a cold water fishery by the New Hampshire Fish and Game Department (NHF&G). Pursuant to New Hampshire Law at Revised Statutes Annotated (RSA) 485-A:8, II,

> Class B waters shall be of the second highest quality and shall have no objectionable physical characteristics, shall contain a dissolved oxygen content of at least 75 percent of saturation.... The pH range for said waters shall be 6.5 to 8.0 except when due to natural causes. Any stream temperature increase associated with the discharge of treated sewage, waste or cooling water, water diversions, or releases shall not be such as to appreciably interfere with the uses assigned to this class. The waters of this classification shall be

[6] https://en.wikipedia.org/wiki/Winnipesaukee_River

> considered as being acceptable for fishing, swimming and other recreational purposes and, after adequate treatment, for use as water supplies….

RSA 485-A:8, VIII also states that

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

Furthermore, the New Hampshire Code of Administrative Rules, Chapter Env-Wq 1700 - Surface Water Quality Regulations (hereinafter "NH Standards") provides expanded and refined interpretations of the State Statute (RSA 485-A:8). The NH Standards were re-adopted and became effective on May 21, 2008. Env-Wq 1703.03(c) states that: [t]he following physical, chemical and biological criteria shall apply to all surface waters:

> (1) All surface waters shall be free from substances in kind or quantity which:
>
> a. settle to form harmful deposits;
> b. float as foam, debris, scum or other visible substances;
> c. produce odor, color, taste or turbidity which is not naturally occurring and would render it unsuitable for its designated uses;
> d. result in the dominance of nuisance species; or
> e. interfere with recreational activities…

Water Quality Assessment

Historically, the reach of the Winnipesaukee River system where PCC Structurals is located had been degraded by municipal waste water discharges. Over the past 35 years, however, the operation of comprehensive wastewater collection and treatment facilities have markedly improved water quality in the river.

The section of Winnipesaukee River where the Facility discharges is a 0.623-mile segment (Assessment Unit NHRIV700020203-12). This segment is listed on the New Hampshire Department of Environment Services' (NHDES) FINAL 2012 Section 303(d) Surface Water Quality List Submitted to EPA. The 303(d) list was submitted on July 19, 2013 for review and EPA approved it on September 24, 2015. Each Assessment Unit has six designated use descriptions: Aquatic Life, Drinking Water after Adequate Treatment, Fish Consumption, Primary Contact Recreation, Secondary Contact Recreation and Wildlife. The use of this section of the river as "Drinking Water after Adequate Treatment" is rated as "Good" (Fully Supported). Fish Consumption is rated "Poor" (Not Support, Marginal) due to atmospheric deposition of mercury - a state-wide listing covered by the Northeast Regional Mercury Total Maximum Daily

Load, developed in 2007.[7] Aquatic Life, Primary Contact Recreation (i.e., swimming) Secondary Contact Recreation (i.e., boating) and Wildlife designated uses are all rated as "Insufficient Information/No Data."[8]

As previously indicated, the river has been identified as a cold water fishery by the NHF&G and provides acceptable spawning and nursery habitat for fish species. Several fish species are stocked annually by the NHF&G including trout (brook, rainbow, and/or brown trout depending on the year) and river herring (blueback and alewife), which are stocked in lake Winnisquam and migrate into the Winnipesaukee River beginning in July. Resident (non-stocked) species include American eel and smallmouth bass. Adult landlocked salmon can migrate downstream into the Winnipesaukee River but there is no clear evidence of spawning.

4.2 Ambient Data

The ambient data collected in the receiving water in the vicinity of the Facility that is referenced in this Fact Sheet can be found in Appendix B of this Fact Sheet. The DMR data shows that the temperature of the discharge can reach 90°F in the summer and is generally in the 50-75°F range in the winter. Based on available 1995 to 1999 ambient temperature data, the temperature in the river ranges from 35°F to 79°F. Heat balance calculations, which are described more fully in Section 5.1.3 of this Fact Sheet, show that with a maximum discharge temperature of 90°F, the highest rise in river temperature (delta T) expected, assuming complete mixing, would be 0.25°F during low flow conditions in October and 0.1°F during summer low flow conditions.

4.3 Available Dilution

To ensure that discharges do not cause or contribute to violations of WQSs under all expected conditions, WQBELs are derived assuming critical conditions for the receiving water.[9] The critical flow in rivers and streams is a certain measure of the low flow of that river or stream. State WQSs require that effluent dilution is calculated based on the receiving water's lowest observed mean river flow for seven consecutive days, recorded over a 10-year recurrence interval, or 7-day, 10-year low flow (7Q10). Critical flows such as the harmonic mean flows may be used for deriving water quality-based effluent limitations based on human health criteria.

In accordance with New Hampshire's Water Quality Standards (RSA 485-A:8 VI, Env-Wq 1705.02), the available dilution for rivers and streams is based on a known or estimated value of 7Q10 flow. The receiving water 7Q10 is used for aquatic life and human health criteria for non-carcinogens, while the long-term harmonic mean flow is used for human health (for carcinogens only) (see Env-Wq 1702.44). Furthermore, ten percent of the receiving water's assimilative

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[7] *See* http://www.epa.gov/region1/eco/tmdl/pdfs/ne/Northeast-Regional-Mercury-TMDL.pdf.
[8] *See* http://www2.des.state.nh.us/onestoppub/SWQA/010700020203_2012.pdf. *See also* https://ofmpub.epa.gov/waters10/attains_waterbody.control?p_au_id=NHRIV700020203-12&p_cycle=2012&p_state=NH&p_report_type=
[9] EPA Permit Writer's Manual, Section 6.2.4

capacity is held in reserve for future needs in accordance with New Hampshire's Surface Water Quality Regulations (Env-Wq 1705.01).

NHDES determined that the 7Q10 for the Winnipesaukee River is 101 cfs (65 million gallons per day (MGD)), based on data from the USGS database for the nearest gauge station to the Facility along the Winnipesaukee River (station number 01081000 at Tilton[10]), for the climate years 1944 to 2017 (4/1/43 to 3/31/16).

However, river flow is controlled by upstream dams both for summer recreational activities and annual fall dam maintenance. Figure 5 of this Fact Sheet shows USGS data during the fall of 2016 and 2017, during which time river flow dropped to abnormally low values over the course of a week. NHDES explains that

> [t]he levels of the Winnipesaukee River through the towns of Tilton and Northfield are a function of the flows being discharged from dams upstream and from the uncontrolled runoff into the river channel downstream of the dams. There are approximately 13 square miles of local drainage area between the outlet of Silver Lake and the flow-measuring gage in Tilton…
>
> [o]n or near Columbus Day, a two week shutdown of flows at upstream dams is initiated to facilitate maintenance in the river reach from Lakeport Dam to the confluence of the Winnipesaukee and Pemigewasset rivers in Franklin. During these times, a minimum flow of approximately 50 cfs is maintained in the river reach downstream of the outlet of Silver Lake, as measured at the stream gage in Tilton. After the shutdown, discharges are normally returned to between 250 and 1,200 cfs, depending upon the prevailing hydrologic conditions being experienced by the watershed and the water levels in upstream lakes.[11]

On September 13, 2017, NHDES announced the 2017 schedule for the annual fall drawdown of certain lakes in New Hampshire. The schedule included the following narrative:

> Not included in this schedule is Lake Winnipesaukee. Unlike the other lakes in this schedule, Lake Winnipesaukee is not purposely drawn down in the fall. Instead, in the fall after Columbus Day, the releases from Lakeport Dam are reduced from a normal minimum of 250 cubic feet per second (cfs) to a flow between 30 and 50 cfs for a period of up to two weeks to allow for maintenance of the dams and hydropower facilities on the Winnipesaukee River. The flow of 30 to 50 cfs is the minimum flow needed to maintain the downstream aquatic life during this period. This year the reduction will be begun on October 16th.[12]

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[10] USGS StreamStats National Data Collection Station Report for Station 01081000:
https://streamstatsags.cr.usgs.gov/gagepages/html/01081000.htm
https://waterdata.usgs.gov/nwis/uv?site_no=01081000

[11] https://www4.des.state.nh.us/Rti_home/station_information_display.asp?WID=winni&ID=TLTN3&NAME=Winnipesaukee+River

[12] https://www.des.nh.gov/media/pr/2017/20170913-lakes-drawdown.htm

This description has been included in schedules going back to at least 2006. Table 1 provides river flow information for a seven-day window during the fall of 2017. As mentioned, the Tilton USGS gauge station is located approximately 750 feet downstream of the PCC Structurals facility on the opposite bank and is therefore representative of the actual river levels at the facility.

Table 1: Flow Data from USGS Tilton Gauge No. 01081000

Date	Flow in cubic feet per second (cfs)
2017-10-18	71.1
2017-10-19	50.1
2017-10-20	51.7
2017-10-21	52.7
2017-10-22	54.2
2017-10-23	53.9
2017-10-24	56.6

In addition to controlling flow for annual maintenance, this reach of the Winnipesaukee River is controlled (i.e., held back and released) for recreational purposes (e.g., kayaking) several times during the summer months.

Because 7Q10 is not necessarily representative of river flows for a controlled/regulated river, EPA decided that best professional judgment should be utilized to identify alternative methods for defining low flow, such as, for example, the minimum guaranteed release flow for the upstream dam. As described on EPA's DFLOW website, these "alternate design flows …are often used instead of traditional [7Q10] design flows on regulated rivers because they better reflect the actual flow regimes." https://www.epa.gov/waterdata/definition-and-characteristics-low-flows-dflow#standards In this case, although state drawdown announcements assert the river flow could go as low as 30 cfs, river flow data for the past 10 years show that the flow never dropped below 50 cfs. Therefore, EPA determined that the appropriate critical low flow value to use for limits development is 50 cfs (32 MGD).[13]

Generally, a dilution factor (DF) is calculated using the permitted daily maximum flow and the critical flow in the receiving water at the outfall.[14] For PCC Structurals the DF equals 131.

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[13] A similar approach was used for permitting the Clinton Wastewater Treatment Plant, Douglas Wastewater Treatment Facility, and McLaughlin State Fish Hatchery, all located in Massachusetts, to name a few.

[14] In this case, considering the water supply is from the drainage basin and in New Hampshire, a dilution factor would be determined using the following equation: $DF = Q_R/Q_P * 0.9$ where:

Q_R = Estimated 7Q10 (or alternate critical low flow) for the receiving water at the facility's outfall, in MGD

Q_P = Facility's maximum discharge flow, in MGD

0.9 = Factor to reserve 10 percent of river's assimilative capacity (NH Env-Wq 1705.01)

However, a calculated DF is not necessary for developing limits for this facility because the pollutant of concern for NCCW is heat and the calculation of river temperature rise does not involve the use of a dilution factor. Section 5.1.3 of this Fact Sheet provides more information regarding the Draft Permit temperature limit.

5.0 Proposed Effluent Limitations and Conditions

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

5.1 Effluent Limitations and Monitoring Requirements

The State and Federal regulations, data regarding discharge characteristics, and data regarding ambient characteristics described above, were used during the effluent limitations development process. Discharge and ambient data are included in Appendix A and B, respectively.

5.1.1 Effluent Flow

From November 2012 through December 2017 (Appendix A), the daily maximum discharge flow of NCCW ranged from 0.109 MGD to 0.243 MGD. The Facility's 2008 Permit limits the discharge to a maximum flow of 0.22 MGD. One violation of the flow limit (0.243 MGD) occurred on August 31, 2015. The Draft Permit maintains a maximum daily flow limit of 0.22 MGD in accordance with the anti-backsliding requirements found in 40 CFR §122.44, measured using a continuous recording flow meter with totalizer. Instead of measuring flow once per week as required in the 2008 Permit, the Draft Permit requires continuous flow monitoring since the company is already equipped to operate in this manner. The instantaneous readings from the flow meter observed during the site visit on March 28, 2018 ranged from 98 to 107 gallons per minute (gpm). The Draft Permit requires reporting of both the average monthly and maximum daily flows with a maximum daily limit of 0.22 MGD.

Furthermore, a condition in the 2008 Permit prohibits the discharge of NCCW through Outfall 003. Facility personnel could not locate this outfall during the site visit. In the past, possibly during the time of the 1995 Permit, there were seven cooling water outfalls at this location. Since then, NCCW used throughout the facility has been combined for discharge through one outfall location (Outfall 001). Company representatives had neither knowledge of the other six cooling water outfall locations nor if those pipes had been removed or capped. The Draft Permit requires that NCCW discharges through only Outfall 001 and no other location.

5.1.2 pH

The hydrogen-ion (H-) concentration in an aqueous solution is represented by the pH using a logarithmic scale of 0 to 14 standard units (SU). Solutions with pH 7.0 SU are neutral, while those with pH less than 7.0 standard units (S.U.) are acidic and those with pH greater than 7.0

S.U. are basic. pH is influenced by geology and soils, organic acids (decaying leaves and other matter), and human-introduced acids from wastewater discharges and acid deposition (acid rain typically has a pH of 3.5 to 5.5).

The pH of a waterbody can affect many chemical and biological processes that are important to the survival and reproduction of fish and other aquatic life. Organisms thrive within different ranges of pH and values outside of an organism's preferred range can limit growth and reproduction and lead to physiological stress. Low pH can also affect the toxicity of chemical compounds such as ammonia and certain metals by making them more "available" for uptake by aquatic plants and animals, producing conditions that are toxic to aquatic life. Therefore, effluent with pH values markedly different from the receiving water pH can have a detrimental effect on the environment. Sudden pH changes can kill aquatic life.

The Draft Permit limits pH between 6.5 and 8.0 S.U. and requires monitoring weekly at Outfall 001. The pH limitations and conditions in the Draft Permit are based on the NH Standards, Env-Wq 1703.18(b) for Class B waters and are consistent with the 2008 Permit. According to DMR data from November 2012 through December 2017, included in Appendix A of this Fact Sheet, there were no reported violations the pH limits.

The NH Standards also include a provision allowing the effluent pH at the end of pipe to be outside the required 6.5 to 8.0 S.U. range if due to natural causes. This narrative water quality-based stipulation has been included in the Draft Permit based on certification requirements under § 401(a)(1) of the CWA, as described in 40 C.F.R. §§ 124.53 and 124.55. Since PCC Structurals does not treat or add chemicals to its NCCW, the facility's Facility's discharge pH is unlikely to be different from the receiving water's naturally occurring pH. Therefore, if the receiving water's naturally occurring pH is outside the range of 6.5 to 8.0, the NCCW would also likely be outside that range. In order to confirm this is the case, the 2008 Permit offers the Permittee the option to demonstrate compliance by showing the pH differential (intake versus discharge) is consistent with water quality requirements.

The Draft Permit (Part I.E.3) contains language similar to the existing 2008 Permit, which allows EPA to consider a change to the pH limits. Such a change in the permit pH limit(s) would not be in violation of anti-backsliding requirements because the modification would be based on new information not available at the time of the issuance of the existing permit. *See* 40 C.F.R. § 122.44(l)(2)(i)(B).

5.1.3 Temperature

Ambient water temperature is an important factor for aquatic life and can influence other water quality aspects such as dissolved oxygen (the solubility of oxygen decreases as water temperature increases). Water temperature affects the metabolic and reproductive activities of aquatic organisms and can determine which fish and macroinvertebrate species can survive in a

given waterbody. Freshwater fishes cannot regulate their body temperature through physiological means, so their body temperatures are very close to the temperatures of the water they inhabit.[15]

> If the temperature of a reach of stream is raised by 5-10° C., it is probable that cold water fish will avoid this reach and that they will be replaced by warm water fish. Thus, without any direct visible mortality, the character of the fish and supporting aquatic life will change. It will also change because the temperature impacts successful spawning and hatching of eggs.[16]

The Winnipesaukee River in the Tilton, NH area is classified as a cold water fishery by the NHF&G, which recommends that maximum daily temperature not exceed 68ºF.[17] During the summer months, the intake water's higher temperatures along with PCC Structural's added heat load will result in NCCW discharge temperatures above exceeding 68ºF. PCC Structurals has applied for reissuance of the 2008 Permit allowing the discharge of NCCW at a maximum discharge temperature limit of 90ºF and a maximum discharge flow limit of 0.22 MGD. During the development of prior permits, a heat balance analysis was conducted that evaluated the receiving water's capacity to assimilate the heat load generated by PCC Structurals' discharge.

EPA re-evaluated the heat balance analysis to confirm that the heated discharge from PCC Structurals will not pose a threat to the Winnipesauke River's ecosystem or otherwise violate state water quality standards. The heat balance analysis approach for the Draft Permit applies parameters representing a worst-case scenario (i.e., low river flow, high discharge flow, and maximum permitted effluent temperature). The basic equations used for the calculation of river temperature rise are as follows:

$$Qplant = Cpmp\Delta Tp$$
$$Qriver = Cpmr\Delta Tr$$
$$Cpmp\Delta Tp = Cpmr\Delta Tr$$
$$\Delta Tr = mp/mr \times \Delta Tp$$

Where:

Qplant = heat load discharged from facility (btu)
Cp = heat capacity of water = 1.0 btu/lb°F

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[15] Moyle, P.B. and J.J. Cech Jr., 2004. Fishes, an introduction to ichthyology. Prentice Hall, Upper Saddle River, NJ, USA.

[16] http://www.watercenter.org/physical-water-quality-parameters/water-temperature/water-temperature-effects-on-fish-and-aquatic-life/

[17] Massachusetts Surface Water Quality Standards define cold water fisheries as "waters in which the mean of the maximum daily temperature over a seven day period generally does not exceed 68°F (20°C) and, when other ecological factors are favorable (such as habitat), are capable of supporting a year-round population of cold water stenothermal aquatic life such as trout (Salmonidae)." This temperature limitation has been incorporated into EPA's Non-Contact Cooling Water General Permit for New Hampshire and Massachusetts. *See* https://www.epa.gov/npdes-permits/noncontact-cooling-water-general-permit-nccw-gp-massachusetts-new-hampshire

mp = maximum permitted daily discharge (MGD)
ΔTp = change in temperature, effluent – influent, °F
mr = 7Q10 (MGD) * 0.9 (10% reserve for NH)
ΔTr = change in river temperature, °F

PCC Structurals has a maximum reported effluent temperature of 90°F. The maximum permitted discharge flow of 0.22 MGD (although the maximum intake flow is 0.288 MGD with one of the two 200 gpm pumps operating). The 7Q10, or in this case the alternative critical low flow, as previously discussed, is 32 MGD. The receiving water, a cold water fishery, has an average temperature of 53°F in October, according to five ambient data points for October during 1995 to 1998. *See* Appendix B. Using the same ambient temperature data in Appendix B, the average of the two temperature readings taken during the summer is 76°F.

Therefore:

ΔTP = effluent − influent = 90°F − 53°F = 37°F (October)
ΔTP = effluent − influent = 90°F − 76°F = 14°F (Summer)

ΔTr = mp/mr * ΔTP = 0.22 MGD/ 32 MGD * 37°F = 0.25 °F (October)
ΔTr = mp/mr * ΔTP = 0.22 MGD/ 32 MGD * 14°F = 0.1°F (Summer)

As calculated and assuming complete mixing, PCC Structurals' NCCW effluent discharges under worse-case conditions would raise the Winnipesauke River temperature in the vicinity downstream of the outfall 0.25ºF during low flow conditions in October and 0.1ºF during summer low flow conditions.

The NHF&G has reviewed the heat balance calculations and determined that the temperature increase both during the summer and October is not likely to alter the fish community or impact the fish present. *See* John Magee, NHF&G emails to Hayley Franz, NHDES, June 11, 2018 and July 2, 2018. In addition, NHDES have determined that PCC Structurals' NCCW discharge to the Winnipesaukee River meets the requirements of NH Statue RSA 485-A:8 II, which requires that "[a]ny stream temperature increase associated with the discharge of ... cooling water ... shall not be such to appreciably interfere with the uses assigned to this class." NHDES concluded that the heat balance calculations demonstrate that PCC Structurals' NCCW discharge does not interfere with the Class B use of the segment of the Winnipesaukee River where the discharge occurs.

EPA concurs with NHDES and NHF&G. Therefore, the Draft Permit maintains a daily maximum temperature limit of 90ºF (measured three times per week) and a daily maximum flow limit of 0.22 MGD for the discharge of NCCW through Outfall 001. Company representatives explained during the recent site visit in March that when instream ambient temperatures approach 80ºF, they will switch over to using either roof top chillers or in some cases city water (only if necessary due to high cost).

5.1.4 Whole Effluent Toxicity

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

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

The 2008 Permit required the Permittee perform and report a one-time chronic and modified acute WET test to ensure that the Facility’s NCCW was not potentially harmful to the environment. Chronic fathead minnow (*Pimephales promelas*) testing conducted on December 17, 2008 failed to meet the acceptability criteria for survival and statistical variability due to the failure of the receiving water. Therefore, chronic minnow testing was repeated in February 2009. WET testing was also performed in December of 2009 and 2012. Results of these tests are shown below in Table 2.

Table 2: WET Test Results

	December 2008	**February 2009**	**December 2009**	**December 2012**
Parameter	**Concentration (mg/L except assay results)**			
pH	6.4	6.8	6.5	6.95
Hardness	14	27	15	15
Total solids	66	100	82	58
Total Dissolved Solids	51	92	41	75
Total Organic Carbon	2.7	2.9	2	2.1
Aluminum	0.03	<0.010	0.03	0.024
Cadmium	<0.0005	0.0006	<0.0005	<0.0005
Copper	0.015	0.012	0.026	0.018
Lead	<0.0005	0.0007	0.0006	<0.0005
Magnesium	0.86	2.6	0.88	0.91
Nickel	<0.002	< 0.002	0.017	<0.002
Zinc	0.014	0.0056	0.025	0.004
Ammonia-Nitrogen	<0.1	<0.1	<0.1	<0.1
LC_{50} C. dubia	>100%		>100%	>100%
LC_{50} P. promelas		>100%	>100%	>100%
C-NOEC C. dubia	100%		50%	100%
C-NOEC P. promelas		50%	25%	12.5%

LC_{50} (lethal concentration 50 percent) is the concentration of wastewater causing mortality to 50 % of the test organisms. Therefore, a >100% limit result means that a sample of 100% effluent (no dilution) has not caused a mortality rate >50% for that effluent sample. The LC_{50} test results in Table 1 above show that there is no indication of acute toxicity.

C-NOEC (Chronic-No Observed Effect Concentration) 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 effect on growth, survival or reproduction, based on a statistically significant difference from dilution control, at a specific time of observation as determined from hypothesis testing. As described in the EPA WET Method Manual EPA 821-R-02-013, Section 10.2.6.2, all test results are to be reviewed and reported in accordance with EPA guidance on the evaluation of the concentration-response relationship. Based on the C-NOEC toxicity testing results shown in Table 1 above, EPA believes there is an indication of chronic toxicity. Therefore, the Draft Permit includes an annual WET testing requirement for chronic toxicity.

The 2008 Permit WET test procedure of using a chronic (and modified acute) toxicity test is no longer valid. Toxicity testing must be performed in accordance with the EPA Region 1 test procedures and protocols specified in **Attachment A,** *Freshwater Chronic Toxicity Test Procedure and Protocol* (March 2013) of the Draft Permit.

Because no pollutants are added to the NCCW except heat, WET tests showing toxicity is unexpected. EPA questioned whether the "bypass" of water through the process water washout pumps, as shown on Figure 3, could be a potential source of contamination. Therefore, the Draft Permit requires that the Permittee submit a report describing the operation of the process water washout pumps and how river water is used in that system. If the water withdrawn from the river "bypasses" and remains uncontaminated by the washout pumps, this water should be used for cooling to the extent practicable instead of discharging directly to the river. On the other hand, if river water is used in a process and/or becomes or has the potential to become contaminated by a process, it is prohibited from being discharged to the river. The Draft Permit prohibits the discharge of any process water besides NCCW.

5.2 Special Conditions

5.2.1 Discharges of Chemicals and Additives

Common chemicals that are added to once through cooling systems include, *but are not limited to*: algaecides and biocides such as chlorine. Generally, NPDES permits allow the discharge of only those chemicals and additives specifically disclosed by the permittees to EPA and the State, provided that such discharge does not violate § 307 or 311 of the CWA or applicable State WQSs. In this case, PCC Structurals does not add any chemicals or additives to the NCCW. Therefore, consistent with the 2008 Permit, the Draft Permit prohibits the addition of chemicals to the NCCW and furthermore requires that the Permittee contact both EPA and NHDES to request authorization to use and discharge a non-contact cooling system chemical.

However, EPA recognizes that PCC Structurals may need to add chemicals or additives in the future. Any request for authorization to discharge a chemical or additive, such as an algaecide or biocide must be made in writing to EPA and the State, and must include the following information:

- product name, chemical formula, and manufacturer of the chemical/additive;
- purpose or use of the chemical/additive;
- Safety Data Sheet (SDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive;
- the frequency (e.g., hourly, daily), magnitude (e.g., maximum and average), duration (e.g., hours, days), and method of application for the chemical/additive;
- if available, the vendor's reported aquatic toxicity (i.e., NOAEL and/or LC_{50} in percent for aquatic organism(s)); and
- an affirmation that the discharge of such chemicals as proposed shall not: 1) add any pollutants in concentrations which exceed permit effluent limitations; 2) exceed any applicable water quality standard; and 3) add any pollutants that would justify the application of permit conditions that are different from or absent in this permit.

Discharges of new chemicals or additives are not authorized until the Permittee receives a response in writing from EPA.

5.2.2 Cooling Water Intake Structure

Background

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

EPA has promulgated Section 316(b) regulations applicable to new (66 Fed. Reg. 65255 (Dec. 18, 2001)) and existing (79 Fed. Reg. 48300 (Aug. 15, 2014)) facilities that withdraw from one or more CWISs with an intake flow greater than 2 MGD. Since PCC Structurals intake flow is less than 2 MGD, CWIS requirements are determined by the permitting authority on a case-by-case basis using BPJ in accordance with 40 C.F.R. § 125.90(b). As follows, this Fact Sheet includes an assessment of how the location, design, construction, and capacity of PCC Structurals CWIS reflect the best technology available (BTA) for minimizing adverse environmental impact. In making the BPJ determination of BTA for this facility, EPA considered site-specific information regarding the CWIS, as well as certain general technical information informed by existing CWA § 316(b) regulations.

In addition, state legal requirements, including state WQSs, also may apply to the development of permit conditions for CWISs. State WQSs set designated uses for water bodies within the State and specify narrative and numeric criteria that the water bodies must satisfy. The limits in EPA-issued NPDES permits that address CWISs must satisfy both CWA § 316(b) and any applicable State requirements, such as applicable WQSs. *See* CWA §§ 301(b)(1)(C), 401(a)(1) and (d), and 510; 40 CFR §§ 122.4(d), 122.44(d), 125.84(e), and 125.94(e); NH Env-Wq §§ 1701.02(b), 1703.19. The NHDES has primary responsibility for determining what permit limits are necessary to achieve compliance with State law requirements. Since the NPDES permit that EPA expects to issue to PCC Structurals will be subject to State Certification under CWA § 401, the permit will also need to satisfy any NHDES conditions of such a certification. *See also* 40 CFR §§ 124.53 and 124.55. EPA anticipates that NHDES will provide this certification before the issuance of the Final Permit.

Cooling Water Intake Structure Description

PCC Structurals' CWIS is located on the eastern bank of the Winnipesaukee River in a segment of the river which is just outside of downtown Tilton, NH. The direction of river flow is in the southerly direction. The relative velocity of the river in this segment is considered as slow to

moderate during most of the year. The average river width along an east-west transect at PCC Structurals' location is approximately 300 feet. A small island is located in the Winnipesaukee River opposite the northern end of PCC Structurals' property. This island divides the river into two channels, the channel flowing by PCC Structurals being the slightly narrower channel, with a width of approximately 100 feet.

On the river's bank, within PCC Structurals property, there is an 8-foot by 8-foot wooden shed with a cement foundation. *See* Figure 6. The foundation of the shed acts as a sump. River water enters the sump by gravity and is then drawn from the sump through a 4-inch PVC pipe that runs 32-feet to another structure that houses PCC Structurals' NCCW pumps. Figure 7 provides a diagram of the CWIS. The NCCW is drawn through two relatively new centrifugal pumps; each having a maximum pumping capacity of 200 gpm. The two pumps are controlled by variable frequency drives that maintain a system pressure of 70 pounds per square inch by using a pressure transducer. By employing variable drives, PCC Structurals adjusts the NCCW pumping rates depending on the cooling demand of the Facility's industrial processes. Normally, PCC Structurals maintains NCCW flow by using only one pump. The instantaneous readings from the flow meter observed during the site visit on March 28, 2018 ranged from 98 to 107 gpm.

According to the fact sheet developed for the 2008 Permit (2008 Fact Sheet), the CWIS consists of two 10-inch (inside diameter) cast iron pipes that form a "V" as they extend approximately 10 to 12 feet in a westerly direction from the foundation of the wooden shed. The 2008 Fact Sheet indicates that one of the intake pipes is orientated approximately 25° upstream from a line perpendicular to the river's bank in the channel between the small island the PCC Structurals property. The other pipe is orientated approximately 60° downstream from a line perpendicular to the river's bank in the main river channel where the two "island channels" rejoin. Furthermore, the 2008 Fact Sheet describes that the ends of the intake pipes are approximately 0.1 to 0.5 feet off the river bottom, depending on how river flow affects bottom sediments and the top of each pipe inlet is situated in the river at a depth of approximately 18 inches at river low flow conditions. While the ends of the intake pipes can at times be visible from the shore near concrete block house, a detailed visual inspection of the inlet pipes is not possible. In addition, surface currents along this reach of the river usually distort or diminish the water's clarity.

During the March 27, 2018 site visit, company representatives had no knowledge of the cooling water intake pipe configuration and given the high-water level of the river, there was no way to make a visual confirmation of previous information. Inside the wooden shed, however, EPA observed the outline of a cast iron pipe along the back wall nearest to and within the river. Although the pipe was below the water level, it appeared to be full of sediment. The Draft Permit requires the removal of all sediment buildup within the intake pipe and to notify EPA and NHDES when it has been completed.

The 2008 Permit requires that screens are installed at the discharge end of the two 10-inch cast iron river water intake pipes so that the screens extend into the 8-foot by 8-foot sump and can be visually inspected for impinged fish from above. Screens were instead installed around the 4-inch PVC intake pipe that withdraws water from the sump. Separate panels installed in vertical

tracks consist of approximately 0.2-inch mesh screens that can be raised and lowered for maintenance purposes. *See* Figure 8. The overall measurement of these screens is 60-inches wide by 74-inches deep.[18] Although this configuration is slightly different to that described in the 2008 Permit, EPA considers that this alternate design complies with the permit requirement. No fish were observed during the site visit in either compartment of the intake sump and EPA was later informed that fish have never been seen "outside the screen on the inside of the intake house."[19] Although the 2008 Permit required impingement monitoring within the intake sump area, a log of sump observations was not available. However, a log was kept for the pre-pump filters described below.

Since the 2008 Permit was issued, the 4-inch copper pipe that withdrew water from the sump was replaced with a 4-inch PVC intake pipe. During the recent site visit, river water was observed to be flowing into the sump from around this PVC pipe. *See* Figure 9. Therefore, at medium to high river water levels, young fish and small organisms could enter the screened-in area of the sump and be drawn into the Facility. In order to prevent entry, the Draft Permit requires that the Permittee seal this bypass of the intake structure.

As described, two 200 gpm variable speed driven pumps are used to direct river water into the Facility to be used for cooling. Just prior to the pumps, river water flows through two high pressure, fine mesh filters, presumably to protect the pumps from large objects. *See* Figure 10. Company representatives indicated that these filters are checked periodically for fish and other aquatic life in compliance with the impingement monitoring provision of the 2008 Permit. Log sheets are available in the pump house and all observations are recorded in a database. No organisms have been observed on these pump screens. Based on the new screen configuration within the intake sump and lack of any aquatic life found on either the intake pipe screens or the pre-pump filters, EPA has determined that entrainment/impingement monitoring is only needed 1) once per week for the intake sump bay; and 2) during periodic cleaning of the pre-pump filters (cleaning based on pressure differential).

When PCC Structurals' design intake flow of 0.288 MGD, with one of two 200 gpm pumps operating, is compared to the Winnipesauke River's critical low flow (32 MGD) for this section of the river, the Facility takes in 0.9% of the river flow. Thus, PCC Structurals withdraws a small percentage of the Winnipesaukee River, even during conditions of maximum intake and low river flow. In addition, based on the maximum intake flow and assuming that the open ends of the intake pipes are free of accumulated river sediment or debris, the intake velocity is less than 0.5 feet per second (fps).[20]

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[18] Overall width of 60 inches includes 36 inches across one side and 24 inches across the other side. The other two sides enclosing the PVC intake pipe are the walls of the sump.
[19] Jim Palizzolo, PCC Structurals email to Sharon DeMeo, EPA on April 24, 2018.
[20] EPA has identified a "through screen" velocity threshold of 0.5 fps as protective to minimize impingement of most species of adult and juvenile fish. *See* 66 FR 65274 [December 18, 2001] and DCN 2-028A, EPRI's "Technical Evaluation of the Utility of Intake Approach Velocity as an Indicator of Potential Adverse Environmental Impact Under Clean Water Act 316(b)."

Potential Impact of CWIS Operation

Several fish species are stocked annually by the NHF&G including trout (brook, rainbow, and/or brown trout depending on the year) and river herring (blueback and alewife), which are stocked in lake Winnisquam and migrate into the Winnipesaukee River beginning in July. Resident (non-stocked) species include American eel (catadromous species) and smallmouth bass. Parts of the Winnipesaukee River may contain other fish species such as yellow perch, sucker, chain pickerel, brown bullhead, bluegill, and pumpkinseed.

Adult landlocked Atlantic salmon can migrate downstream into the Winnipesaukee River but there is no clear evidence of spawning since stocking has ceased. Atlantic salmon are anadromous species, but are not likely to navigate past the many man-made obstructions to fish passage to access the Winnipesaukee River. Any migrating adult anadromous fish that may be able to reach the Winnipesaukee would likely be able to overcome the relatively small intake velocity of the Facility's CWIS. On the other hand, juvenile, catadromous American eels have the ability to ascend obstacles that block other fish species. They can work their way through cracks in dams and climb vertical surfaces with only a trickle of water. However, dams and other barriers have greatly reduced the distribution of eels, which were once present in nearly all freshwater habitats that could be reached from the ocean. Eels may remain in freshwater for over 20 years before migrating back to the ocean.[21]

Trout species, for the most part, engage in nest building or deposit eggs within the gravel of the benthic substrate. Larval development generally takes place associated with the gravel, as well. Therefore, large numbers of eggs and larvae of these species would not be expected to be dispersed as free-floating organisms in the water column of this channel of the Winnipesaukee River, some 10 to12 feet from the shore, where the Facility's CWIS intakes are located. The free-swimming fry, however, do emerge from the gravel substrate, to search for food. Juvenile and adult life stages of these species tend to prefer habitat associated with the river bank. This habitat is characterized by diminished river flow and the presence of underwater structure (e.g., rocks). If these species do encounter the intake pipes, some 10 to12 feet away from the river banks, the low intake velocity can generally be resisted by these life stages.

Components of BTA for CWIS at PCC Structurals

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

Location

[21] http://www.wildlife.state.nh.us/fishing/profiles/american-eel.html

PCC Structurals' two intake pipes are in the main stem of the river and elevated above the bottom of the Winnipesauke River. This reduces the potential of the CWIS to negatively impact benthic organisms and therefore considered a component of BTA. The 2008 Permit requires PCC Structurals to ensure sediment does not accumulate within the intake pipes causing the intake velocity to increase above the design standard of 0.5 fps. During March 27, 2018 site visit, EPA and NHDES saw evidence of significant sediment build up. The Draft Permit requires that sediment is removed from the pipes and reported to the agencies. Visual inspection is required annually thereafter and removal shall occur based on these observations.

Capacity

Generally, limiting flow capacity is the single most effective operational measure to minimize the adverse environmental impacts of entrainment and impingement. The maximum flow capacity of the PCC Structurals' NCCW system is 0.288 MGD (0.39 cfs), provided that only one of the two pumps is used at any given time, which is how the system is operated. The 2008 Permit limited intake flow to 0.25 MGD. Therefore, the Draft Permit's maximum allowable intake flow remains 0.25 MGD. As previously stated, at maximum intake capacity (0.288 MGD) compared to the Winnipesauke River's critical low flow (32 MGD), the facility withdraws approximately 0.9% of the river flow. For comparison, the Phase I Rule, which is not applicable to this permit, uses a value of 5% of the mean annual flow as the upper limit allowed for the location of a new facility with a CWIS in a freshwater river. *See* 40 C.F.R. 125.84(b)(3)(i). The small percentage of water withdrawn by the Facility, relative to the expected river flow, minimizes the potential for drifting organisms to be pulled into the CWIS.

Thus, as a component of BTA for this Facility to minimize adverse environmental effects, CWIS capacity is limited to 0.25 MGD. This 0.25 MGD intake limit represents a low intake flow both in absolute terms and as compared to river flow, even under historic low flow conditions. In addition, PCC Structuals employs variable frequency drives to withdraw NCCW, and operates the pumps such that only the minimum required amount of cooling water is pumped to meet the Facility's cooling demands. Furthermore, the Draft Permit requires the Permittee, to the extent practical, to use the uncontaminated river water that is not used in the operation of the process water washout pumps as cooling water. These further reductions in CWIS capacity are also components of BTA.

Design and Construction

The velocity of water entering a cooling water intake structure exerts a direct physical force against which fish and other organisms must act to avoid impingement or entrainment. As velocity increases at a CWIS, so does the potential for impingement and entrainment. EPA considers velocity to be one of the more important factors that can be controlled to minimize adverse environmental impacts at CWISs. *See* 65 FR 49060, 49087 (Aug. 10, 2000). As previously noted, EPA has identified an intake velocity or "through screen" velocity threshold of 0.5 fps as protective to minimize impingement of most species of adult and juvenile fish. *See* footnote 13. As calculated for the 2008 Fact Sheet, the maximum intake velocity at the entrance

to the 10-inch cast iron intake pipes of the CWISs is 0.36 fps using the maximum operating intake capacity of 0.25 MGD. The CWIS intake pipes at the Facility do not have screens or bars at the entrance to the pipes, which would restrict the movement of fish into the pipes. However, based on the low intake velocity discussed above, it is likely that fish entering the pipes to seek cover would be able to swim back into the river without being drawn into and trapped in the pump bay. Since velocities of 0.5 fps and below are considered sufficiently low enough to allow fish to avoid being impinged at CWIS's, as noted above, this requirement is considered a component of BTA to minimize impingement.

Furthermore, as described above and in compliance with the 2008 Permit, screens were installed around the PVC pipe that withdraws water from the intake sump. Separate panels installed in vertical tracks consist of approximately 0.2-inch mesh screens that can be raised and lowered for maintenance purposes. *See* Figure 8. Based on the size of the screens and amount of open area for water to move through the screens, even at low river flow, the through-screen velocity is extremely low. The small mesh size prevents smaller organisms from entering the suction area of the sump and the low intake velocity allows organisms to escape. Both are components of BTA for PCC Structurals' CWIS.

BTA Determination

Based on the characteristics of PCC Structurals' CWIS detailed in this Fact Sheet, juvenile or adult life stages of fish species that may swim near the facility will likely experience minimal impingement potential due to the CWIS' low design capacity, low capacity compared to low river flow, and low intake velocity. Based on the assessment of the characteristics of fish eggs and larvae in the Winnipesaukee River and the location and capacity of the intakes in the river, the potential for entrainment by the CWIS is low. Therefore, EPA has determined that the current location, design, capacity and construction of the PCC Structurals' CWIS represents the BTA for minimizing adverse environmental impact. The following Draft Permit conditions are required components of BTA:

1. The CWIS capacity is limited to 0.25 MGD;

2. The Permittee shall operate the intake pumps to withdraw NCCW such that only the minimum required amount of cooling water is pumped to meet the facility's cooling demands. In other words, the Permittee must cease or reduce the intake of cooling water whenever withdrawal of source water is not necessary. This is especially important April 15 to June 15 due to the presence of larval aquatic life in New England freshwater waterbodies;

3. To the extent practical, uncontaminated river water not used in the operation of the process water washout pumps shall be used for cooling;

4. The two 10-inch cast iron intake pipes are located away from the river bank and above the river bottom. The intake velocity at the entrance of these pipes must be maintained

below 0.5 fps;

5. The screens surrounding the 4-inch PVC pipe that withdraws water from the intake sump must be maintained (i.e., periodic removal of debris build-up) and the sump and screens visually inspected for fish as described below;

6. The Permittee is required to remove accumulated sediment from the cast iron intake pipes, report when this is completed and periodically inspect to ensure accumulation within the intake pipes does not cause the intake velocity to increase above 0.5 fps; and

7. The Permittee shall seal the area around the 4-inch PVC pipe that exits the intake sump so that river water is no longer allowed to enter the screened-in area of the sump. This will prevent young fish and small organisms to be drawn into the plant.

Entrainment/Impingement Monitoring

The 2008 Permit requires PCC Structurals to maintain a biological monitoring program including inspection, three times per week, of all areas where adult and juvenile fish may become trapped or impinged and maintenance of a log documenting any findings. According to company representatives, no fish have been observed in the intake sump, on the intake screens or within the pre-pump filters. Considering the Draft Permit requirements described above, EPA has determined that the potential for impingement and entrainment at this location is low. Therefore, visual impingement/entrainment monitoring of the intake sump and screens is required once per week. In addition, the pre-pump filters must be inspected for fish or other organisms each time they are cleaned or replaced. A log similar to the 2008 Permit is required. The Draft Permit also requires reporting of any unusual impingement/entrainment monitoring events.

5.3 Standard Conditions

The standard conditions of the permit are based on 40 C.F.R. § 122, Subparts A and D and 40 C.F.R. § 124, Subparts A, D, E, and F and are consistent with management requirements common to other permits.

6.0 Federal Permitting Requirements

6.1 Endangered Species Act

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

Section 7(a)(2) of the ESA requires every Federal agency, in consultation with and with the assurance of the Secretary of Interior, to ensure that any action it authorizes, funds or carries out,

in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. The National Marine Fisheries Service (NMFS) administers Section 7 consultations for marine and anadromous species.

The Federal action being considered in this case is EPA's proposed NPDES permit for the Facility. The Draft Permit is intended to replace the 2008 Permit in governing the Facility. As the federal agency charged with authorizing the discharge from this Facility, EPA determines potential impacts to federally listed species, and initiates consultation, when required under Section 7(a)(2) of the ESA.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants in the Winnipesaukee River to determine if EPA's proposed NPDES permit could potentially impact any such listed species. Based on previous discussions with USFWS and NMFS, EPA has determined that no species of concern are known to occur in the vicinity of PCC Structurals and the Winnipesaukee River.

EPA has structured the proposed limitations to be sufficiently stringent to assure that State WQSs will be met, including for protection of aquatic life. The effluent limitations established in this permit ensure the protection of aquatic life and maintenance of the receiving water as an aquatic habitat.

Therefore, EPA finds that adoption of the proposed permit will have no effect on any threatened or endangered species or its critical habitat and consultation with NMFS or USFWS under Section 7 of the ESA is not required.

6.2 Essential Fish Habitat

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

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

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

Atlantic salmon, (Salmo salar). However, natural spawning of Atlantic salmon is not thought to occur in the Winnipesaukee River and stocking efforts have ceased. "The U.S. Fish and Wildlife Service ended its participation in the Merrimack River Salmon Restoration Program in 2013 due to budget concerns and shifting priorities."[22] Even so, EPA considers that the Draft Permit conditions and limitations adequately protect all aquatic species, including the Atlantic salmon for the following reasons:

- This permit action is a reissuance of an existing NPDES permit (i.e., no new source of pollutants);
- The Facility withdraws a small percentage (0.9%) of the Winnipesaukee River, even during conditions of maximum intake and low river flow. This limited amount of water withdrawal minimizes the opportunity for the entrainment of any life stages of Atlantic salmon;
- The Draft Permit limits the intake through screen velocity to 0.5 fps to minimize impingement of Atlantic salmon;
- The Draft Permit is designed so that all discharges meet state water quality standards;
- The Draft Permit prohibits the discharge of pollutants or combinations of pollutants in toxic amounts; and
- The Draft Permit increases the frequency of chronic toxicity testing from once per permit cycle to once per year to confirm that the discharge does not present toxicity problems.

EPA believes the Draft Permit adequately protects EFH and therefore additional mitigation is not warranted. NMFS will be notified and EFH consultation will be initiated if adverse impacts to EFH are detected as a result of this permit action or if new information becomes available that changes the basis for these conclusions.

6.3 National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to take into account the effects of Federal "undertakings" on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. 16 USC§ 470 et seq. EPA's reissuance of a NPDES permit is a federal undertaking. Therefore, discharges covered under this permit must not adversely affect properties listed on or eligible for listing on the National Registry of Historic Places under the NHPA.

Adjacent to and downstream from the Facility are landmarks listed on the National Register of Historic Places.[23] Therefore, the New Hampshire Division of Historical Resources requires that the proposed action (i.e., the Draft Permit) is reviewed for consistency with the *Procedures for the Protection of Historic and Cultural Properties* (36 C.F.R. 800) as required by the NHPA and Federal Advisory Council on Historic Preservation. Based on the previous review completed for

[22] http://www.wildlife.state.nh.us/fishing/profiles/atlantic-salmon.html

the 2008 Permit and the limited changes proposed since the last permit issuance, EPA expects a favorable finding for this Draft Permit.

7.0 Public Comments, Hearing Requests, and Permit Appeals

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to Sharon DeMeo, U.S. EPA, Office of Ecosystem Protection**,** Industrial Permits Branch, 5 Post Office Square, Suite 100, Boston, Massachusetts 02109-3912 or via email to demeo.sharon@epa.gov.

Any person, prior to the close of the public comment period, 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, forward a copy of the final decision to the applicant, and provide a copy or notice of availability of the final decision to each person who 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.

8.0 EPA Contact

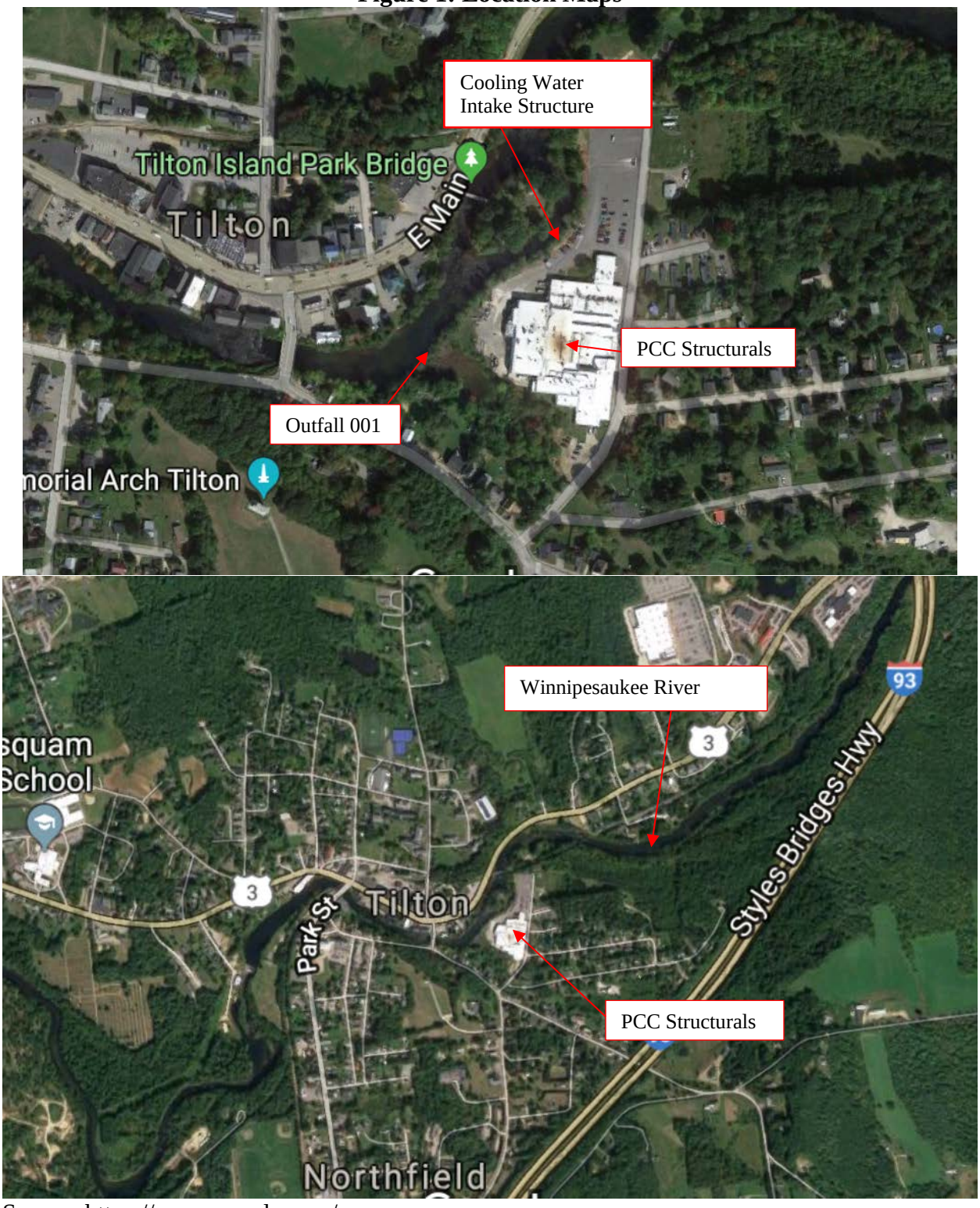
The administrative record on which this Draft Permit is based may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays, from the EPA contact below:

Sharon DeMeo
EPA Region 1
5 Post Office Square, Suite 100 (OEP06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1995
FAX: (617) 918-0995
Email: demeo.sharon@epa.gov

August 2018

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

Figure 1: Location Maps



Source: https://maps.google.com/

Figure 2: Site Plan

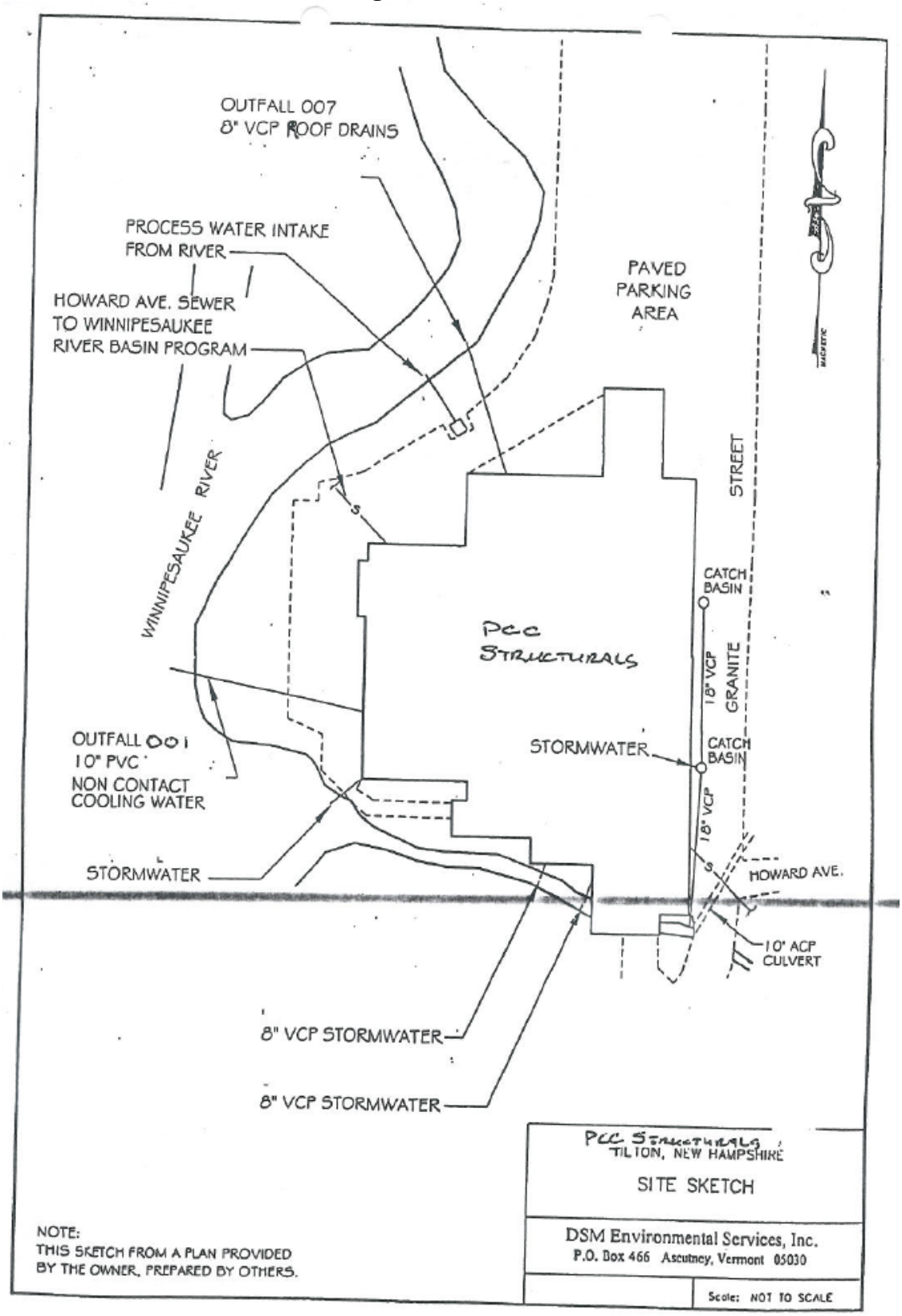


Figure 3: Schematic of Water Flow

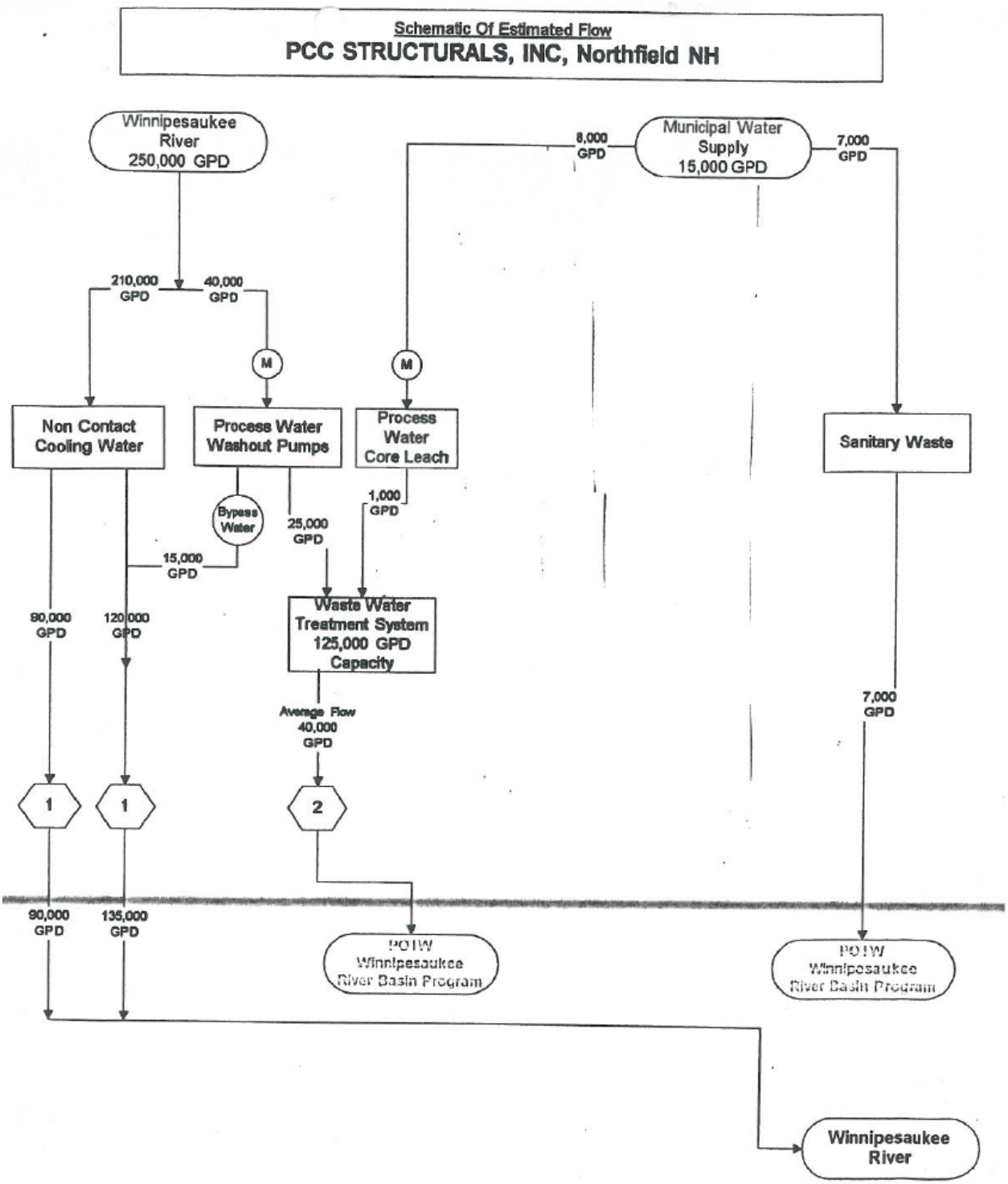


Figure 4: Outfall 001

Figure 5: Winnipesaukee River Gage Data

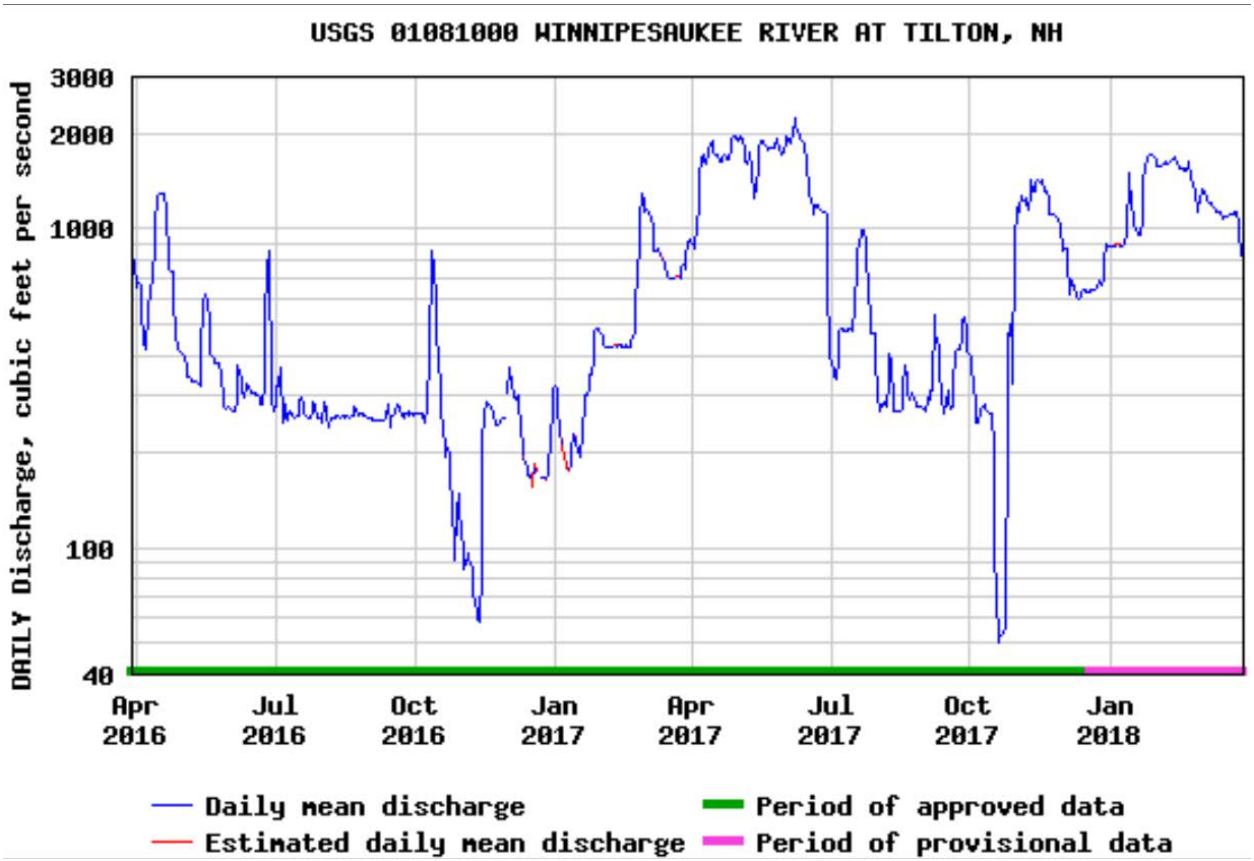


Figure 6: Wooden Shed Covering Cooling Water Intake Structure Sump

Figure 7: Diagram of Cooling Water Intake Structure

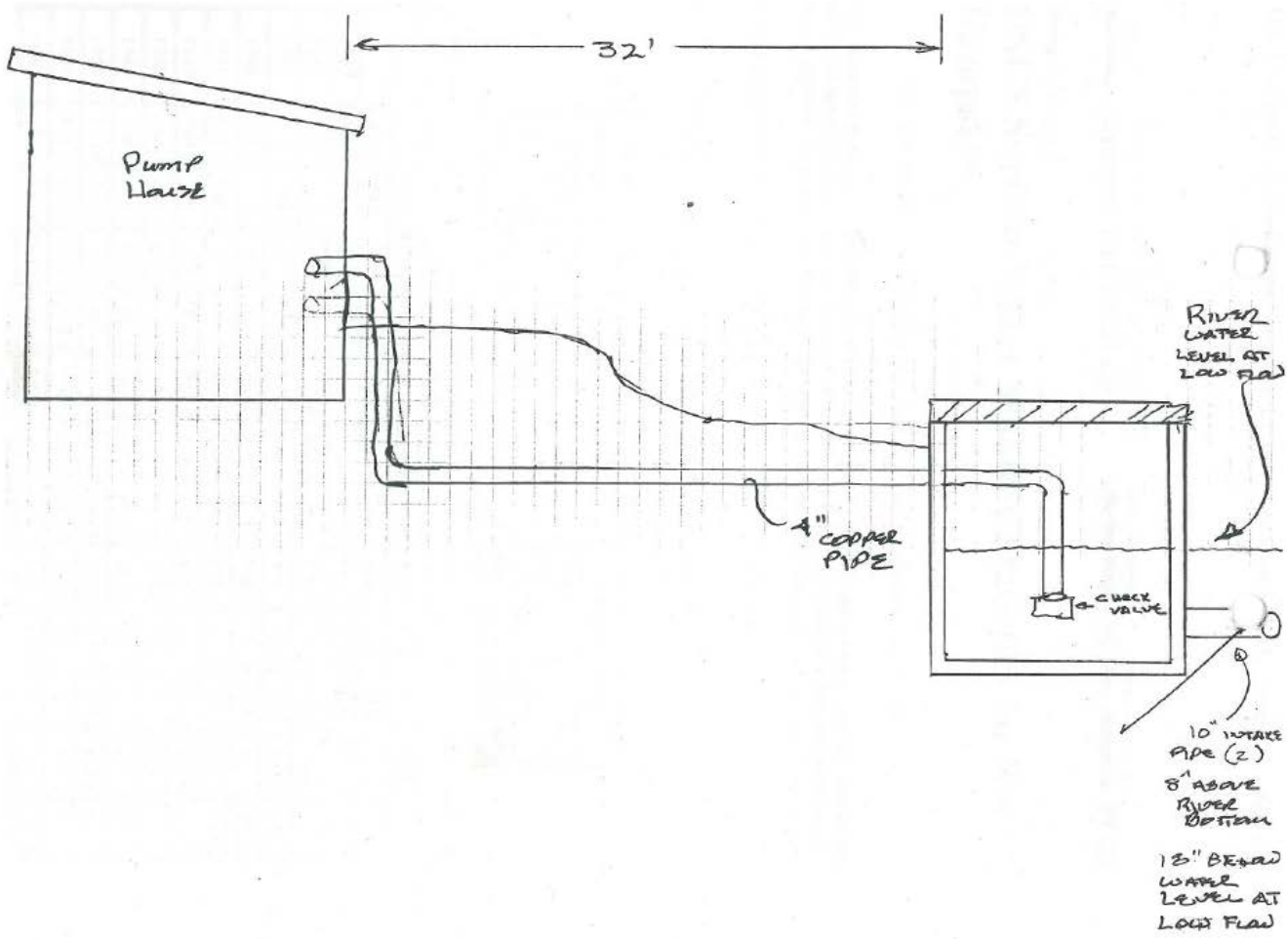


Figure 8: PVC Intake Pipe to Pump House

Figure 9: Water Entering Screen Well of Intake Structure

Figure 10: Filter Units Prior to Intake Pumps

Appendix A: Discharge Monitoring Data

Outfall Monitoring Location: 001						
	Flow (MGD)		Temperature (ºF)		pH (S.U.)	
Existing Permit Limits	0.22	Report	90	Report	6.5	8
	DAILY MX	MO AVG	DAILY MX	MO AVG	MIN	MAX
Monitoring Period End Date						
11/30/2012	0.113	0.082	67.6	62.5	6.7	7
12/31/2012	0.12	0.084	54.8	48.5	6.6	7
1/31/2013	0.138	0.092	55.6	48.2	6.7	6.9
2/28/2013	0.12	0.104	51.6	47.3	6.7	7
3/31/2013	0.13	0.098	51.5	47.7	6.5	6.8
4/30/2013	0.156	0.105	71.4	57.4	6.5	6.9
5/31/2013	0.143	0.112	73	69	6.5	6.9
6/30/2013	0.147	0.107	87	76	6.7	7
7/31/2013	0.178	0.145	87.6	82.7	6.5	7
8/31/2013	0.175	0.140	84.6	80.5	6.9	7.1
9/30/2013	0.181	0.129	75.8	71.8	6.8	7.6
10/31/2013	0.18	0.125	74	65.7	6.8	7
11/30/2013	0.16	0.125	60.6	53.1	6.7	7
12/31/2013	0.151	0.109	52.6	48.1	6.9	7.2
1/31/2014	0.128	0.102	52.6	48.1	6.9	7.1
2/28/2014	0.136	0.109	53.7	49.4	6.8	7.1
3/31/2014	0.117	0.968	54.4	50.1	6.8	7
4/30/2014	0.133	0.839	67.2	55.5	6.5	7
5/31/2014	0.137	0.938	74.7	69.5	6.8	7.1
6/30/2014	0.16	0.939	85.5	80.3	6.6	6.9
7/31/2014	0.165	0.135	88.5	84.5	6.6	6.8
8/31/2014	0.174	0.136	86.9	83.4	6.6	6.8
9/30/2014	0.148	0.136	83.4	78.2	6.5	6.8
10/31/2014	0.141	0.109	76.3	82.9	6.9	7.1
11/30/2014	0.133	0.971	65.8	60.1	7	7.2
12/31/2014	0.19	0.111	55.4	50.1	6.8	7.1
1/31/2015	0.163	0.118	57.6	51	6.9	7.1
2/28/2015	0.137	0.116	52	47.1	6.8	7
3/31/2015	0.162	0.123	54	49.1	6.8	7.3
4/30/2015	0.13	0.079	68.2	58.3	6.6	7.4
5/31/2015	0.165	0.112	86.6	74.5	6.9	7.1
6/30/2015	0.166	0.119	84.1	78.4	6.9	7.4
7/31/2015	0.183	0.127	87.7	84.1	6.8	7.2
8/31/2015	0.243	0.129	89.1	85.6	6.9	7.2

9/30/2015	0.166	0.125	89	81	6.9	7.2
10/31/2015	0.142	0.077	75.2	69.5	6.5	7.3
11/30/2015	0.134	0.098	64.1	59.4	6.7	7.2
12/31/2015	0.119	0.086	64.8	55.7	6.6	7.1
1/31/2016	0.113	0.088	56.3	48.9	6.8	7
2/29/2016	0.122	0.084	54.8	51.2	6.7	7.1
3/31/2016	0.111	0.083	58.8	54.76	6.7	7.2
4/30/2016	0.12	0.089	63.2	58.1	6.8	7.5
5/31/2016	0.149	0.114	72.4	61.94	6.89	7.15
6/30/2016	0.133	0.105	81.4	71.2	6.8	7.34
7/31/2016	0.139	0.109	87.7	81.4	6.9	7.1
8/31/2016	0.174	0.152	90.2	84.7	7	7.3
9/30/2016	0.181	0.121	84.4	78.2	7.1	7.24
10/31/2016	0.132	0.112	77.1	68.1	6.9	7.23
11/30/2016	0.123	0.107	65.3	60.6	6.8	7.04
12/31/2016	0.116	0.095	57.3	49.18	6.8	7.1
1/31/2017	0.119	0.091	61.9	57.4	6.9	7
2/28/2017	0.125	0.085	59.7	54.6	6.9	7.2
3/31/2017	0.109	0.087	57	53.8	6.8	7.7
4/30/2017	0.11	0.085	67.1	59.82	6.98	7.1
5/31/2017	0.204	0.124	71	64.94	7.06	7.3
6/30/2017	0.163	0.122	78.7	74.27	7.15	8
7/31/2017	0.205	0.127	88.1	80.1	7	7.2
8/31/2017	0.16	0.135	88.3	83.614	7.29	7.9
9/30/2017	0.166	0.121	83.2	76.86	7.67	8
10/31/2017	0.178	0.112	76.3	73.24	6.87	7.2
11/30/2017	0.142	0.112	65.5	62.86	6.9	7.4
12/31/2017	0.11	0.086	52.4	48.11	6.99	7.4
Maximum	0.243	0.971	90.2	85.6	7.67	8
Minimum	0.109	0.077	51.5	47.1	6.5	6.8
Average	0.149	0.180	70.93	65.14	6.82	7.18
Standard Deviation	0.028	0.229	12.96	12.95	0.205	0.258
# of Measurements	62	62	62	62	62	62

Appendix B: Ambient Winnipesaukee River Water Data

Date	°F
1/9/1995	45
5/9/1995	61
10/4/1995	60
10/16/1995	52
4/15/1996	41
7/11/1996	73
10/17/1996	53
1/6/1997	39
7/18/1997	79
12/8/1997	36
10/30/1997	46
2/6/1998	34
4/8/1998	42
5/29/1998	67
10/6/1998	53
12/1/1998	44
1/26/1999	35
5/17/1999	58

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

U.S. ENVIRONMENTAL PROTECTION AGENCY-REGION 1
OFFICE OF ECOSYSTEM PROTECTION
5 POST OFFICE SQUARE
BOSTON, MASSACHUSETTS 02109

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

PUBLIC NOTICE PERIOD: August 31, 2018 – September 29, 2018

PERMIT NUMBER: **NH0001023**

PUBLIC NOTICE NUMBER: **NH-010-18**

NAME AND MAILING ADDRESS OF APPLICANT:

PCC Structurals, Inc.
24 Granite Street
Northfield, New Hampshire 03276-1632

NAME AND LOCATION OF FACILITY WHERE DISCHARGE OCCURS:

PCC Structurals, Inc.
24 Granite Street
Northfield, New Hampshire 03276-1632

RECEIVING WATER: Winnipesaukee River Class B

PREPARATION OF THE DRAFT PERMIT:

The U.S. Environmental Protection Agency (EPA) and the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) have cooperated in the development of a draft permit for the PCC Structurals, Inc., which discharges once-through cooling water. The effluent limits and permit conditions imposed have been drafted to assure compliance with the Clean Water Act, 33 U.S.C. sections 1251 et seq., Chapter 485-A of the New Hampshire Statutes: Water Pollution and Waste Disposal, and the New Hampshire Surface Water Quality Regulations, Env-Wq 1700 et seq. EPA has formally requested that the State certify the draft permit pursuant to Section 401 of the Clean Water Act and expects that the draft permit will be certified.

INFORMATION ABOUT THE DRAFT PERMIT:

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

Sharon DeMeo
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (OEP06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1995
Demeo.sharon
@epa.gov

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

PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:

All persons, including applicants, who believe any condition of the draft permit is inappropriate, must raise all issues and submit all available arguments and all supporting material for their arguments in full by **September 29, 2018**, to the address or email address listed above. Any person, prior to such date, may submit a request in writing to EPA and NHDES for a public hearing to consider this draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

FINAL PERMIT DECISION:

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice.

RENE J. PELLETIER, ASSISTANT DIRECTOR
WATER DIVISION
NEW HAMPSHIRE DEPARTMENT OF
ENVIRONMENTAL SERVICES

KEN MORAFF, DIRECTOR
OFFICE OF ECOSYSTEM PROTECTION
U.S. ENVIRONMENTAL PROTECTION
AGENCY - REGION I