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",

Nylon Corporation of America

is authorized to discharge from a facility located at

Nylon Corporation of America
33 Sundial Avenue
Manchester, NH 03103

to receiving water named

Merrimack River
Merrimack River Watershed

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

This permit shall become effective upon the date of signature.

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 23, 2008.

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

Signed this 1st day of August , 2019.

/S/SIGNATURE ON FILE

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

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 from heat exchangers and vacuum pumps through Outfall Serial Number 004 to the Merrimack River. The discharge shall be limited and monitored as specified below. The receiving water shall be monitored as specified below.

Effluent Characteristic	**Effluent Limitation**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[4]**	**Sample Type[5]**
Effluent Flow [6]	Report MGD	1.44 MGD	Continuous	Meter
pH [7]	6.5 - 8.0 S.U.		1/week	Grab
Temperature, June through September	---	83°F	3/week	Grab
Temperature, October through May	---	83°F	1/week	Grab
Total Residual Chlorine (TRC) [8]	---	Report µg/L	1/week	Grab

See Pages 5 through 7 for explanation of footnotes.

Effluent Characteristic	Effluent Limitation		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Whole Effluent Toxicity (WET) Testing [9,10,11]				
C-NOEC	---	Report %	1/year	Composite
Hardness	---	Report mg/L	1/year	Composite
Alkalinity	---	Report mg/L	1/year	Composite
Ammonia Nitrogen	---	Report mg/L	1/year	Composite
Total Aluminum	---	Report mg/L	1/year	Composite
Total Cadmium	---	Report mg/L	1/year	Composite
Total Copper	---	Report mg/L	1/year	Composite
Total Nickel	---	Report mg/L	1/year	Composite
Total Lead	---	Report mg/L	1/year	Composite
Total Zinc	---	Report mg/L	1/year	Composite
Receiving Water Chemical Analysis [10,11]				
Hardness	---	Report mg/L	1/year	Grab
Alkalinity	---	Report mg/L	1/year	Grab
Ammonia Nitrogen	---	Report mg/L	1/year	Grab
Total Aluminum	---	Report mg/L	1/year	Grab

Effluent Characteristic	Effluent Limitation		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Receiving Water Chemical Analysis (continued) [10,11]				
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 [12]	---	Report S.U.	1/year	Grab
Temperature [12]	---	Report °F	1/year	Grab

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge backwash water, resulting from the backwashing of the facility's intake water strainer, through Outfall Serial Number 007 to the Merrimack River. The discharge shall be limited and monitored as specified below.

Effluent Characteristic	Effluent Limitation		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Effluent Flow [6]	Report MGD	0.01 MGD	1/month	Estimate
Oil and Grease	-----	15 mg/L	1/quarter	Grab
Total Suspended Solids (TSS)	30 mg/L	100 mg/L	1/quarter	Grab
pH[7]	6.5 - 8.0 S.U.		1/quarter	Grab

Footnotes:

1. Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken at the discharge point to the receiving water, prior to co-mingling with any other wastestream. Changes in sampling location must be approved in writing by the Environmental Protection Agency Region 1 (EPA) and the State. The Permittee shall report the results to EPA and the State 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 monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is "sufficiently sensitive" when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O for the measured pollutant or pollutant parameter. The term "minimum level" refers to either the sample

concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.

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

4. Measurement frequency of 1/week is defined as the sampling of one discharge event in each seven-day calendar week. Measurement of 1/month is defined as the sampling of one discharge event in each calendar month. Measurement frequency of 1/year is defined as the sampling of one discharge event during one calendar year. Measurement frequency of 1/quarter is defined as the sampling of one discharge event in each calendar quarter. Calendar quarters are defined as January through March, inclusive, April through June, inclusive, July through September, inclusive and October through December, inclusive. If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator Code.

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

6. Effluent flow shall be reported in million gallons per day (MGD).

7. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.). See Part I.E.3 below for a provision to modify the pH range.

8. TRC monitoring is required only when any municipal water is used as the source of NCCW either partially or completely replacing the river water intake (e.g., in case of emergency, such as a power failure). For the purposes of this permit, TRC analyses must be completed using a test method in 40 C.F.R. § 136 that achieves a minimum level no greater than 30 µg/L.

9. The Permittee shall conduct chronic toxicity tests in accordance with test procedures and protocols specified in **Attachment A** of this permit. C-NOEC is defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*, and the fathead minnow, *Pimephales promelas*. Toxicity test samples shall be collected and tests completed during the calendar quarter ending September 30th. The WET test results shall be reported in the September DMR, due October 15th. The WET Test Report shall be submitted as an attachment to the September toxicity DMR.

10. The receiving water chemical analysis represents analysis of the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken at a location in the Merrimack River that provides a representative analysis of the receiving water upstream of the permitted discharge's zone of influence as specified in **Attachment A**. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall follow procedures outlined in **Attachment A (Toxicity Test Procedure and Protocol) Section IV., DILUTION WATER** in order to obtain an individual approval for use of an alternate dilution water.

11. The Permittee shall conduct the analyses specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS, of this permit. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall report the results for the effluent sample. For Part I.A.1., Receiving Water Chemical Analysis, the Permittee shall report the results for the receiving water sample. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.

12. 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.

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

4. 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.

5. 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.

6. 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.

7. 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 receiving water uses.

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

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

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

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

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

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

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

B. UNAUTHORIZED DISCHARGES

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

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

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 design, location, construction, and capacity of the cooling water intake structure shall reflect the best technology available (BTA) for minimizing the adverse environmental impacts from the impingement and entrainment of various life stages of fish (e.g., eggs, larvae, juveniles, and adults). The following requirements have been determined to represent the BTA for minimizing adverse impacts:

a. The maximum intake volume shall not exceed 1.44 MGD. In addition, the Permittee shall operate the multi-stage pumps to withdraw only the minimum amount of cooling water required to meet the Facility's cooling demands.

b. The Permittee shall install intake screens at the inlet to the cooling water intake pipes in the Merrimack River. Screens must include an anti-biofouling material or coating and mesh size must be a maximum of 1.5-inch square. In addition, any sediment build-up at

the suction end or interior to the cooling water intake pipes shall be removed during installation of the screens.

c. The design through-screen velocity at the intake screens at the inlet of the cooling water intake pipes shall not exceed 0.5 fps. The maximum velocity must be achieved under all conditions, including during minimum ambient source water surface elevations (based on BPJ using hydrological data) and during periods of maximum head loss across the screens or other devices during normal operation of the intake structure. The intake structure must be monitored by visual or remote inspection at least weekly to ensure that the effective velocity does not exceed 0.5 fps. Remote inspection may include use of a differential pressure gauge to measure flow and ensure screens do not become clogged. The intake screens must be cleared of debris where remote inspections indicate that the maximum velocity of 0.5 fps may be exceeded.

d. No change in the location, design, or capacity of the present structure, unless specified by this permit, may be made without prior approval by EPA.

e. Compliance Schedule

The Permittee will need to design and install new equipment to comply with the requirements above. As such, the Permit provides a schedule by which the Permittee shall attain compliance with Part I.C.2.b and I.C.2.c. Specifically, steps for the installation and operation of equipment required to comply with these requirements shall be completed as soon as practicable but no later than the schedule of milestones set forth in the Permit. The Permittee shall notify EPA in writing of compliance or non-compliance with the requirements for each milestone no later than fourteen (14) days following each specified deadline.

(1) Within six (6) months of the effective date of the Permit, the Permittee shall submit a final design for the intake screens, including the proposed layout and calculation of design through-screen velocity.

(2) Within twelve (12) months of the effective date of the Permit, the Permittee shall commence the process to obtain all necessary permits and approvals for installation of the intake screens.

(3) Within twenty-four (24) months of the effective date of the Permit, the Permittee shall complete the installation, test, and startup of the intake screens.

3. Discharges of Chemicals and Additives

The discharge of any chemical or additive, such as biocides or corrosion control inhibitors and including chemical substitution, which was not reported in the application submitted to EPA and the State or provided through a subsequent written notification submitted to EPA and the State is prohibited. Upon the effective date of this permit, chemicals and/or additives which have been disclosed to EPA and the State may be discharged up to the frequency and

level disclosed, provided that such discharge does not violate §§ 307 or 311 of the CWA or applicable State water quality standards. Discharges of a new chemical or additive are authorized under this permit 30 days following written notification to EPA and the State unless otherwise notified by EPA and/or the State. To request authorization to discharge a new chemical or additive, the Permittee must submit a written notification to EPA and the State in accordance with Part I.D.3 of this permit and include the following, at a minimum:

a. Information for each chemical and/or additive that will be discharged

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

b. Written rationale which demonstrates that the discharge of such chemicals and/or additives as proposed will 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.

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

a. 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 Water Division (WD)

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

      (1) Transfer of Permit notice;
      (2) Request for changes in sampling location;
      (3) Request to discharge new chemicals or additives;
      (4) Request for pH Effluent Limitation Adjustment;

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

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

4. Submittal of Reports in Hard Copy Form

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

      (1) Written notifications required under Part II.

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

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

5. State Reporting

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

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

6. Verbal Reports and Verbal Notifications

   a. Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to both EPA and to the State. This includes verbal reports and notifications which require reporting within 24 hours (e.g., Part 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 Environmental Compliance Assurance Division: **617-918-1510** and to

      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., which is the federal effluent limitation guideline regulation for pH for secondary treatment and is found in 40 C.F.R. § 133.102(c).

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",

Nylon Corporation of America

is authorized to discharge from a facility located at

Nylon Corporation of America
33 Sundial Avenue
Manchester, NH 03103

to receiving water named

Merrimack River
Merrimack River Watershed

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

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

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

This permit supersedes the permit issued on September 23, 2008.

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

Signed this day of , 2019.

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

[1] Pursuant to 40 Code of Federal Regulations (C.F.R.) § 124.15(b)(3), if no comments requesting a change to the Draft Permit are received, 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 from heat exchangers and vacuum pumps through Outfall Serial Number 004 to the Merrimack River. The discharge shall be limited and monitored as specified below. The receiving water shall be monitored as specified below.

Effluent Characteristic	**Effluent Limitation**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[4]**	**Sample Type[5]**
Effluent Flow [6]	Report MGD	1.44 MGD	Continuous	Meter
pH [7]	6.5 - 8.0 S.U.		1/week	Grab
Temperature, June through September	---	83°F	3/week	Grab
Temperature, October through May	---	83°F	1/week	Grab
Total Residual Chlorine (TRC) [8]	---	Report µg/L	1/week	Grab

See Pages 4 through 6 for explanation of footnotes.

Effluent Characteristic	Effluent Limitation		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Whole Effluent Toxicity (WET) Testing [9,10,11]				
C-NOEC	---	Report %	1/year	Composite
Hardness	---	Report mg/L	1/year	Composite
Alkalinity	---	Report mg/L	1/year	Composite
Ammonia Nitrogen	---	Report mg/L	1/year	Composite
Total Aluminum	---	Report mg/L	1/year	Composite
Total Cadmium	---	Report mg/L	1/year	Composite
Total Copper	---	Report mg/L	1/year	Composite
Total Nickel	---	Report mg/L	1/year	Composite
Total Lead	---	Report mg/L	1/year	Composite
Total Zinc	---	Report mg/L	1/year	Composite
Receiving Water Chemical Analysis [10,11]				
Hardness	---	Report mg/L	1/year	Grab
Alkalinity	---	Report mg/L	1/year	Grab
Ammonia Nitrogen	---	Report mg/L	1/year	Grab
Total Aluminum	---	Report mg/L	1/year	Grab

Effluent Characteristic	Effluent Limitation		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Receiving Water Chemical Analysis (continued) [10,11]				
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 [12]	---	Report S.U.	1/year	Grab
Temperature [12]	---	Report °F	1/year	Grab

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge backwash water, resulting from the backwashing of the facility's intake water strainer, through Outfall Serial Number 007 to the Merrimack River. The discharge shall be limited and monitored as specified below.

Effluent Characteristic	**Effluent Limitation**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[4]**	**Sample Type[5]**
Effluent Flow [5]	Report MGD	0.01 MGD	1/month	Estimate
Oil and Grease	-----	15 mg/L	1/quarter	Grab
Total Suspended Solids (TSS)	30 mg/L	100 mg/L	1/quarter	Grab
pH[7]	6.5 - 8.0 S.U.		1/quarter	Grab

Footnotes:

1. Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken at the discharge point to the receiving water, prior to co-mingling with any other wastestream. Changes in sampling location must be approved in writing by the Environmental Protection Agency Region 1 (EPA) and the State. The Permittee shall report the results to EPA and the State 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 monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is "sufficiently sensitive" when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O for the measured pollutant or pollutant parameter. The term "minimum level" refers to either the sample

concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.

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

4. Measurement frequency of 1/week is defined as the sampling of one discharge event in each seven-day calendar week. Measurement of 1/month is defined as the sampling of one discharge event in each calendar month. Measurement frequency of 1/year is defined as the sampling of one discharge event during one calendar year. Measurement frequency of 1/quarter is defined as the sampling of one discharge event in each calendar quarter. Calendar quarters are defined as January through March, inclusive, April through June, inclusive, July through September, inclusive and October through December, inclusive. If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator Code.

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

6. Effluent flow shall be reported in million gallons per day (MGD).

7. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.). See Part I.E.3 below for a provision to modify the pH range.

8. TRC monitoring is required only when any municipal water is used as the source of NCCW either partially or completely replacing the river water intake (e.g., in case of emergency, such as a power failure). For the purposes of this permit, TRC analyses must be completed using a test method in 40 C.F.R. § 136 that achieves a minimum level no greater than 30 µg/L.

9. The Permittee shall conduct chronic toxicity tests in accordance with test procedures and protocols specified in **Attachment A** of this permit. C-NOEC is defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*, and the fathead minnow, *Pimephales promelas*. Toxicity test samples shall be collected and tests completed during the calendar quarter ending September 30th. The WET test results shall be reported in the September DMR, due October 15th. The WET Test Report shall be submitted as an attachment to the September toxicity DMR.

10. The receiving water chemical analysis represents analysis of the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken at a location in the Merrimack River that provides a representative analysis of the receiving water upstream of the permitted discharge's zone of influence as specified in **Attachment A**. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall follow procedures outlined in **Attachment A (Toxicity Test Procedure and Protocol) Section IV., DILUTION WATER** in order to obtain an individual approval for use of an alternate dilution water.

11. The Permittee shall conduct the analyses specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS, of this permit. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall report the results for the effluent sample. For Part I.A.1., Receiving Water Chemical Analysis, the Permittee shall report the results for the receiving water sample. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.

12. 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.

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

4. 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.

5. 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.

6. 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.

7. 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 receiving water uses.

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

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

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

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

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

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

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

B. UNAUTHORIZED DISCHARGES

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

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

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 design, location, construction, and capacity of the cooling water intake structure shall reflect the best technology available (BTA) for minimizing the adverse environmental impacts from the impingement and entrainment of various life stages of fish (e.g., eggs, larvae, juveniles, and adults). The following requirements have been determined to represent the BTA for minimizing adverse impacts:

a. The maximum intake volume shall not exceed 1.44 MGD. In addition, the Permittee shall operate the multi-stage pumps to withdraw only the minimum amount of cooling water required to meet the Facility's cooling demands.

b. The Permittee shall install intake screens at the inlet to the cooling water intake pipes in the Merrimack River. Screens must include an anti-biofouling material or coating and mesh size must be a maximum of 1.5-inch square. In addition, any sediment build-up at

the suction end or interior to the cooling water intake pipes shall be removed during installation of the screens.

c. The design through-screen velocity at the intake screens at the inlet of the cooling water intake pipes shall not exceed 0.5 fps. The maximum velocity must be achieved under all conditions, including during minimum ambient source water surface elevations (based on BPJ using hydrological data) and during periods of maximum head loss across the screens or other devices during normal operation of the intake structure. The intake structure must be monitored by visual or remote inspection at least weekly to ensure that the effective velocity does not exceed 0.5 fps. Remote inspection may include use of a differential pressure gauge to measure flow and ensure screens do not become clogged. The intake screens must be cleared of debris where remote inspections indicate that the maximum velocity of 0.5 fps may be exceeded.

d. No change in the location, design, or capacity of the present structure, unless specified by this permit, may be made without prior approval by EPA.

e. Compliance Schedule

The Permittee will need to design and install new equipment to comply with the requirements above. As such, the Permit provides a schedule by which the Permittee shall attain compliance with Part I.C.2.b and I.C.2.c. Specifically, steps for the installation and operation of equipment required to comply with these requirements shall be completed as soon as practicable but no later than the schedule of milestones set forth in the Draft Permit. The Permittee shall notify EPA in writing of compliance or non-compliance with the requirements for each milestone no later than fourteen (14) days following each specified deadline.

(1) Within six (6) months of the effective date of the Permit, the Permittee shall submit a final design for the intake screens, including the proposed layout and calculation of design through-screen velocity.

(2) Within twelve (12) months of the effective date of the Permit, the Permittee shall commence the process to obtain all necessary permits and approvals for installation of the intake screens.

(3) Within twenty-four (24) months of the effective date of the Permit, the Permittee shall complete the installation, test, and startup of the intake screens.

3. Discharges of Chemicals and Additives

The discharge of any chemical or additive, such as biocides or corrosion control inhibitors and including chemical substitution, which was not reported in the application submitted to EPA and the State or provided through a subsequent written notification submitted to EPA and the State is prohibited. Upon the effective date of this permit, chemicals and/or additives which have been disclosed to EPA and the State may be discharged up to the frequency and

level disclosed, provided that such discharge does not violate §§ 307 or 311 of the CWA or applicable State water quality standards. Discharges of a new chemical or additive are authorized under this permit 30 days following written notification to EPA and the State unless otherwise notified by EPA and/or the State. To request authorization to discharge a new chemical or additive, the Permittee must submit a written notification to EPA and the State in accordance with Part I.D.3 of this permit and include the following, at a minimum:

a. Information for each chemical and/or additive that will be discharged

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

b. Written rationale which demonstrates that the discharge of such chemicals and/or additives as proposed will 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.

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

a. 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 Water Division (WD)

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

      (1) Transfer of Permit notice;
      (2) Request for changes in sampling location;
      (3) Request to discharge new chemicals or additives;
      (4) Request for pH Effluent Limitation Adjustment;

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

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

4. Submittal of Reports in Hard Copy Form

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

      (1) Written notifications required under Part II.

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

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

5. State Reporting

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

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

6. Verbal Reports and Verbal Notifications

   a. Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to both EPA and to the State. This includes verbal reports and notifications which require reporting within 24 hours (e.g., Part 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 Environmental Compliance Assurance Division: **617-918-1510** and to

   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., which is the federal effluent limitation guideline regulation for pH for secondary treatment and is found in 40 C.F.R. § 133.102(c).

ATTACHMENT A
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° 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

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]

TABLE OF CONTENTS

[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: NH0000116

PUBLIC NOTICE START AND END DATES: June 18, 2019 – July 17, 2019

NAME AND MAILING ADDRESS OF APPLICANT:

Nylon Corporation of America
333 Sundial Avenue
Manchester, NH 03103

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Nylon Corporation of America
333 Sundial Avenue
Manchester, NH 03103

RECEIVING WATER AND CLASSIFICATION:

Merrimack River (#NHRIV700060803-14-02)
Merrimack River Watershed
Class B

SIC CODE: 2821 (Plastic Materials, Synthetic Resins and Nonvulcanizable Elastomers)

Table of Contents

Tables

Figures

Appendices

1.0 Proposed Action

The Nylon Corporation of America ("NYCOA" or the "Permittee") has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge from the Nylon Corporation of America (the "Facility") into the Merrimack River. NYCOA has additional coverage for stormwater-only discharges under the 2015 Multi-sector General Permit (MSGP) NHR053159. Authorization for stormwater discharges under the MSGP will not be discussed further.

The permit currently in effect was issued and effective on September 23, 2008 and expired on August 31, 2013 (the "2008 Permit"). The Permittee filed an application for permit reissuance with EPA dated May 21, 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 November 14, 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 State conducted a site visit on February 21, 2019.

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, Chapter 485-A, Water Pollution and Waste Disposal.

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 and/or qualitative 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

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

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

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

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

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

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. In order 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

2.4.1 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

[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)*.

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 effluent limitation established in the permit for the measured pollutant or pollutant parameter; or
- In the case of permit applications, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or parameter in the discharge; or
- The method has the lowest ML of the analytical methods approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O for the measured pollutant or pollutant parameter.

2.4.2 Reporting Requirements

The Draft Permit requires the Permittee to 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:

[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), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor. EPA is considering the following terms related to analytical method sensitivity to be synonymous: "quantitation limit," "reporting limit," "level of quantitation," and "minimum level." *See* Federal Register, Vol. 79, No. 160, Tuesday, August 19, 2014; FR Doc. 2014–19557.

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, and/or 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.

3.0 Description of Facility and Discharge

3.1 Location and Type of Facility

The Facility is located along the eastern bank of the Merrimack River on Sundial Avenue in Manchester, New Hampshire. The Facility manufactures a polyamide-type synthetic resin. A location map is provided in Figure 1.

The manufacturing process uses non-contact cooling water (NCCW) to reduce or control the temperature of various stages of the manufacturing process. The NCCW does not come in direct contact with any raw material, intermediate product, a waste product (other than heat) or finished product. Water used for non-contact cooling purposes at the Facility is withdrawn from a pair of cooling water intake structures (CWIS) situated near the bottom of the Merrimack River. A complete description of the CWIS is provided in Section 3.3 below.

Water withdrawn from the Merrimack River is passed through an intake water strainer to filter out solids prior to its use as NCCW in several heat exchangers and a vacuum pump which support the manufacture of a polyamide-type synthetic resin (Nylon 6 and 6,6) produced in pelletized form. This product is used in electrical, home and garden, automotive, consumer, and industrial applications. Caprolactam and various additives comprise the raw materials used. All process wastewater from the manufacturing process is discharged to the City of Manchester

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

Publicly Owned Treatment Works (POTW). Discharges to surface waters from this Facility are limited to NCCW and filter backwash. See Section 3.2.

3.1.1 Effluent Limitation Guidelines

EPA has promulgated technology-based effluent limitation guidelines (ELGs) for the nylon products manufactured at this facility (SIC 2821) in 40 C.F.R. Subchapter N, Part 414. However, all the process wastewater associated with this manufacturing is directed to the City of Manchester's POTW. The discharges of non-contact cooling water and filter backwash water which are authorized by this permit are not subject to these ELGs.

3.2 Location and Type of Discharge

Outfalls 004 and 007 are located at Latitude 42° 58' 25" Longitude 71° 28' 18" on the eastern bank of the Merrimack River in Manchester, NH.

The Permittee has requested the continued authorization to discharge NCCW from Outfall 004 and filter backwash water from Outfall 007 into the Merrimack River. In addition, the Permittee withdraws water for non-contact cooling from the Merrimack River via its cooling water intake structure (CWIS). A schematic of water flow is provided in Figure 2.

On average, the CWIS withdraws approximately 0.8 MGD to meet the cooling demand in support of the production of pelletized nylon. The NCCW is associated with the operation of several heat exchangers and a vacuum pump and is discharged to the Merrimack River via Outfall 004 at an average maximum daily rate of 0.8 MGD. The Permittee also operates an intake water strainer which is periodically backwashed to clear it of solids. This backwash is directed to Outfall 007 with an average daily discharge of 2,780 gallons per day (GPD).

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the Permittee, including Discharge Monitoring Reports (DMRs), from January 2014 through January 2019 is provided in Appendix A of this Fact Sheet.

3.3 Cooling Water Intake Structure

The NYCOA CWIS is located on the eastern bank of the Merrimack River in a segment of the River which is approximately 3000 feet downstream from an area of rapids that extend from the Amoskeag Dam to a point just below the Queen City Avenue Bridge in Manchester, NH. The CWIS consists of twin 30-inch (28-inch interior diameter) cast iron intake pipes with 90-degree elbows (i.e., inlets facing downstream) extending approximately 55 to 60 feet in a westerly direction perpendicular from the eastern bank of the Merrimack River. Presently, the open ends of the two intake pipes do not have screening to restrict fish or debris movement into the pipes.

The ends of the intake pipes are approximately 0.0 to 0.5 feet off the river bottom depending on how river flow affects bottom sediments. The bottom of the pipe inlets are approximately 4 to 6 feet deep, based on river flow conditions. Each of the two intake pipes connects to separate 16-foot wide, 24-foot long, 11-foot high inlet tanks located in the Merrimack River's eastern

bank. On the side of each tank opposite from where cooling water enters (the back side of these tanks) is situated a single 3.5-foot wide, 7-foot long, 6-foot high chamber, which is common to both tanks. This chamber receives water from both tanks through two 28-inch diameter openings. This chamber also constitutes the entrance to the facility's subterranean 5-foot by 5-foot cooling water intake tunnel. The intake tunnel has a screen type barrier installed at its inlet. The screen is fabricated from half inch iron rods; welded two inches on center; resulting in a screen opening size of 1.5 inches by 1.5 inches. A through screen velocity of this barrier, using an equivalent hydraulic diameter of this square shaped intake tunnel of 3.27 feet, is calculated to be 0.27 ft/sec. The tunnel is approximately 34-feet below ground level and runs 123 feet from the inlet chamber to the basement of NYCOA's boiler building.

In the boiler building, three cooling water pumps draw cooling water from this tunnel. All three pumps are multi-stage vertical centrifugal pumps, where the flow varies depending on system demand, even though the motors rotate at constant speed. The pumping system is mechanically interlocked to allow a maximum flow of 1,000 GPM (2.23 cfs). Pump No. 1 and Pump No. 2, both with a capacity of 400 GPM, can only operate (individually or together) when Pump No. 3 is locked out. Pump No. 3, with a capacity of 1,000 GPM, can only operate when Pump No. 1 and Pump No. 2 are locked out. All three cooling water pumps discharge to a single cooling water pipe main. The cooling water in the cooling water main passes through an in-line filter. After passing through the filter, the cooling water leaves the basement of NYCOA's boiler building and is directed to NYCOA's various production lines.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Facility discharges to the Merrimack River (Assessment Unit #NHRIV700060803-14-02), which is classified as Class B by the NHDES. This segment is also classified as a warm water fishery by the New Hampshire Fish and Game Department. The Merrimack River is part of the Merrimack River Watershed. The Merrimack River originates in Franklin, NH and discharges to the Atlantic Ocean in Newburyport, Massachusetts.

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

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).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.

This segment of the Merrimack River is listed in the final *New Hampshire Year 2016 Integrated List of Waters* ("303(d) List") as a Category 5-P "Waters Requiring a TMDL.[6] The pollutants requiring a TMDL are aluminum and pH. The source for the impairments is unknown. A previous TMDL that was completed found that this segment is impaired for fish consumption due to mercury. The status of each designated use is presented in Table 1.

Table 1: Summary of Designated Uses and Listing Status

Designated Use	Status
Aquatic Life	Impaired
Drinking Water After Treatment	Insufficient Information (Potentially Not Attaining Standard)
Primary Contact Recreation	Impaired
Secondary Contact Recreation	Supporting
Fish Consumption	Impaired

According to the *2016 Watershed Report Card*[7] this segment of the Merrimack River is attaining designated uses for secondary contact recreation. The Aquatic Life designated use is impaired due to aluminum and pH and is potentially not attaining the standard for alkalinity, copper, and non-native fish, shellfish, and zooplankton. Sources of the aquatic life impairments are unknown. The Drinking Water designated use is potentially not attaining the standard for *E. coli*. The designated use for primary contact recreation is impaired due to exceedances of criteria for *E. coli*, likely resulting from wet weather discharges from combined sewer overflows (CSOs). The Fish Consumption designated use is impaired for mercury due to atmospheric deposition.

4.2 Available Dilution

[6] *New Hampshire Year 2016 Section 303(d) Surface Water Quality List*. NHDES, R-WD-17-09; November 2017.
[7] NHDES 2016 Surface Water Quality Assessment Viewer available at: http://nhdes.maps.arcgis.com/apps/webappviewer/index.html?id=aca7a13dced5426aa542c62b1ea10d0c and NHDES 2016 Watershed Report Card available at: http://www2.des.state.nh.us/onestoppub/SWQA/010700060803_2016.pdf

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.[8] The critical flow in non-tidal rivers and streams is some measure of the low flow of that river or stream. State WQSs require that effluent dilution for non-tidal rivers and streams be calculated based on the receiving water lowest observed mean river flow for seven consecutive days, recorded over a 10-year recurrence interval, or 7-day 10-year low flow (7Q10). See Env-Wq 1705.2(d).

The 7Q10 flow for the Merrimack River just downstream of the Nylon Corporation of America (NYCOA) outfall was calculated using the Dingman ratio proration method with the following data:

- Q_{DSG}: the last 30 years of stream flow data (3/14/1989 – 3/14/2019) at the downstream USGS Merrimack River Near Goffs Falls below Manchester, NH Gage (01092000), excluding the provisional stream flow data from 12/11/2018 – 3/14/2019

- Q_{D1}: estimation of watershed flow contributions to the river segment upstream of the NYCOA outfall (Dingman Area 1) using the Dingman equation

- Q_{D2}: estimation of watershed flow contributions to the river segment upstream of the downstream USGS Gage 01092000 (Dingman Area 2) using the Dingman equation

Table 2 shows the calculation to determine the 7Q10 flow of the Merrimack River just downstream of the NYCOA outfall.

Table 2: 7Q10 Calculation for NYCOA

Stream Flow Component	Flow (cfs)	Comments
Q_{DSG} 7Q10 flow at downstream Merrimack River Near Goffs Falls below	639	Period of record: 3/14/1989 – 3/14/2019 Excludes provisional data from 12/11/2018 – 3/14/2019
		Calculated using US EPA DFlow program (v3.1b)

[8] EPA Permit Writer's Manual, Section 6.2.4

Manchester, NH Gage (01092000)		
Q_{D1} estimation of watershed flow contributions to the river segment upstream of the NYCOA outfall	435	Calculated using Dingman[1] equation
Q_{D2} estimation of watershed flow contributions to the river segment upstream of the downstream USGS Gage 01092000	437	Calculated using Dingman[1] equation
7Q10 downstream of the NYCOA Outfall	**636**	**$7Q10 = (Q_{DSG})(Q_{D1}/Q_{D2})$**
1. Dingman, S.L., and S.C Lawlor, 1995. Estimating Low-Flow Quantiles from Drainage-Basin Characteristics in New Hampshire and Vermont, American Water Resources Association, Water Resources Bulletin, pp 243-256.		

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

Dilution Factor = $(0.9)*[(Q_s)/Q_d]$

where Q_s = 7Q10 river flow downstream of the NYCOA outfall = 636 cfs

Q_d = maximum daily permitted flow at Outfall 004 = 1.44 MGD (2.23 cfs)

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

Dilution factor = $(0.9)*[(636)/2.23]$ = **257**

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 are discussed throughout this Fact Sheet, may be found in Part I of the Draft Permit. EPA notes that the State of New Hampshire adopted new criteria into their WQSs in December 2016 and submitted them to EPA for review and approval. The proposed criteria do not affect the water quality-based effluent limitations for temperature, pH, and oil and grease in the Draft Permit.

5.1 Effluent Limitations and Monitoring Requirements at Outfall 004

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 data are included in Appendix A.

5.1.1 Effluent Flow

From January 2014 through January 2019 average monthly effluent flow at Outfall 004 has ranged from 0.067 MGD to 0.88 MGD and maximum daily effluent flow ranged from 0.5 MGD to 1.17 MGD with an average of 0.80 MGD. See Appendix A. The Facility's 2008 Permit limits the discharge to a maximum flow rate of 1.5 MGD. Under normal operating conditions, and as indicated by monitoring data and information provided by the Permittee, the maximum flow based on the capacity of the pumps is 1.44 MGD. The Permittee operates three (3) vertical centrifugal pumps which can vary their flows based on system demand. Pumps #1 and #2 have a rated flow capacity of 400 gpm (0.58 MGD) each while Pump #3 has a capacity of 1000 gpm (1.44 MGD). The pumping system is mechanically interlocked so that Pump #3 can operate only when Pumps #1 and #2 are locked out, whereas Pumps #1 and #2 can only operate (individually or together) when Pump # 3 is locked out.

In the 2008 Permit, EPA set the daily maximum flow limit at the slightly higher limit of 1.5 MGD, to allow for slight variability in flow instrumentation measurements or cooling water pump efficiencies when the non-contact cooling water system is operating near flow capacity. The Permittee monitors flow continuously using a flow meter containing a totalizer on the intake side of its cooling water system. The NCCW intake volume is the only wastestream discharged from Outfall 001, therefore the intake monitoring location is representative of the effluent flow. From January 2014 to January 2019, the maximum daily effluent flow monitored at this location using the totalizer was 1.17 MGD. Based on this data and the design capacity of the pump, the Draft Permit proposes setting a maximum daily effluent flow limit of 1.44 MGD monitored continuously at the intake. The Permittee shall continue to report average monthly flow.

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 (S.U.). Solutions with pH 7.0 S.U. are neutral, while those with pH less than 7.0 S.U. are acidic and those with pH greater than 7.0 S.U. are basic.[9] Discharges with pH values markedly different from the receiving water pH can have a detrimental effect on the environment. Sudden pH changes can kill aquatic life.

Consistent with the requirements of New Hampshire's WQS at RSA 485-A:8 II, "The pH for said (Class B) waters shall be 6.5 to 8.0 except when due to natural causes." The monitoring frequency is once per week for Outfall 004. From January 2014 through January 2019, pH values at Outfall 004 ranged from 6.4 to 7 S.U. The reported pH value was less than the minimum range of 6.5 S.U. once during this period in December 2018.

The pH limits from the 2008 Permit are carried forward into the Draft Permit consistent with WQS and to comply with anti-backsliding requirements found in 40 C.F.R. § 122.44(1).

[9] Summarized from U.S. Environmental Protection Agency, Entry: Causal Analysis/Diagnosis Decision Information System, Volume 2: Sources, Stressors & Responses, pH. Available at http://www.epa.gov/caddis/index.html.

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 (because 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.

The Merrimack River in the Manchester, NH is classified as a warm water fishery. The State's statutory and regulatory provisions do not specify numeric temperature criteria but do specify narrative criteria specific to thermal discharges in order to protect the existing and designated uses of the waterbody and restore and maintain the chemical, biological, and physical integrity of the State's waters and to provide for the protection and propagation of fish, shellfish, and wildlife. See Env-Wq 1701.01 and 1703.01(b). New Hampshire's environmental statutes and water quality standards dictate that in Class B waters, "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." See RSA 485-A:8, II and Env-Wq 1703.13(b).

From January 2014 through January 2019 average monthly temperature at Outfall 004 has ranged from 43°F to 82°F with an average of 63°F and maximum daily effluent temperature ranged from 47°F to 92°F with an average of 68.9°F. See Appendix A. The Facility's 2008 Permit limits the discharge to a maximum temperature of 83°F, which has been exceeded six times during the reporting period. The maximum daily temperature limit of 83°F is consistent with the water quality-based discharge temperature limit for protection of warm water fisheries in EPA's 2014 Non-contact Cooling Water General Permit (NCCW GP) (NHG250000). The high dilution factor at this outfall (257) will also minimize any impact of the thermal discharge and ensure protection of designated uses for aquatic life, including the warm water fishery.

Exceedances of the maximum daily temperature limit were reported in May 2016, July 2016 and 2018, and August 2015, 2016, and 2018. Maximum temperatures of 84° - 85°F were reported in four of the six cases; the maximum daily temperature reached 89°F in August 2015 and 92°F in August 2016. The average monthly temperature in each of these months was in the range of 73°F (in May 2016) to 82°F (in July 2016). Given the high dilution and rapid mixing afforded by the Merrimack River, the maximum daily temperature limit of 83°F remains appropriate to protect the designated uses of the river. The Draft Permit maintains the water quality-based temperature limit from the 2008 Permit consistent with the requirements of 40 C.F.R. § 122.44(l). Monitoring frequency is once per week between October and May, when discharge temperatures are well below 83°F (see Appendix A) and three times per week from June through September when discharge temperatures approach and at times exceed the maximum daily temperature limit.

5.1.4 Total Residual Chlorine

Chlorine and chlorine compounds are toxic to aquatic life. Free chlorine is directly toxic to aquatic organisms and can react with naturally occurring organic compounds in receiving waters to form toxic compounds such as trihalomethane. Potable water sources are typically chlorinated to minimize or eliminate pathogens. 40 C.F.R. § 141.72 stipulates that a public water system's residual disinfectant concentration in the water entering the distribution system cannot be less than 0.2 mg/L for more than four hours. The acute and chronic aquatic life criteria specified in the New Hampshire water quality standards are 19 µg/L and 11 µg/L, respectively (See Env-Wq 1703.21, Table 1703.1). The 2008 Permit did not include monitoring requirements for TRC. Using the WQC noted above with the dilution factor of 257, the effluent levels equal to or greater than 2.83 mg/l (257 * 0.011 mg/L) and 4.88 mg/l (257 * 0.019 mg/L) would violate chronic and acute WQC, respectively.

The Permittee discontinued the use of sodium hypochlorite as a biocide for its NCCW system in 2004. However, the Permittee retains the option of using municipal (City of Manchester) water for its NCCW in the eventuality of an emergency at the facility, such as a power failure. Since the municipal water may contain a chlorine residual from the City's disinfection process, the Draft Permit has added a requirement for the Permittee to sample Outfall 004 for TRC on a weekly basis for any portion of a calendar week that the facility uses municipal water for its NCCW system. A similar requirement is included in the New Hampshire NCCW General Permit (NHG250000) for facilities that use municipal drinking water as the source of non-contact cooling water.

5.1.5 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)).

In accordance with current EPA policy[10], whole effluent chronic effects are regulated by limiting the highest measured continuous concentration of an effluent that causes no observed chronic

[10] See Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants, 49 FR 9016, March 9, 1984, EPA-833-K-10-001, September 2010, EPA/505/2-90-001, March, 1991.

effect on a representative standard test organism, known as the chronic No Observed Effect Concentration (C-NOEC). Whole effluent acute effects are regulated by limiting the concentration that is lethal to 50% of the test organisms, known as the LC_{50}.

The 2008 Permit had noted that the prior permit (issued in 2001) had required WET testing which showed chronic toxicity, with a C-NOEC value of 12.5%. There were 2 additional WET tests conducted which continued to display chronic toxicity of the effluent. Subsequent to this testing, a site inspection was conducted and it was determined that floor drains were potentially contributing flow to the NCCW flow and contributing to toxicity of the discharge at Outfall 004. The Permittee was directed to seal certain floor drains. The Permittee also discontinued the use of sodium hypochlorite in its NCCW system in 2004.

To determine whether these changes would result in improved chronic toxicity, the 2008 Permit required the Permittee to conduct two WET tests during the first year of the 2008 Permit for two species. One WET test was conducted in February of 2009 on one species, the fathead minnow *Pimephales promelas*. Although the modified acute portion of this testing resulted in LC50 value greater than (>) 100%, the effluent once again exhibited chronic toxicity, with a C-NOEC value of 6.25%. A second WET test in April 2009 was conducted on two species and resulted in an LC50 >100% for both species. The C-NOEC values were 100% for the fathead minnow and 25% for the daphnid, *Ceriodaphnia dubia*.

The 2009 WET test data alone is not sufficient to determine if current effluent conditions cause, or have the reasonable potential to cause, or contribute to an excursion above water quality standards in accordance with 40 C.F.R. § 122.44(d)(1)(i). Monitoring requirements in NPDES permits are established on a case-by-case basis at a frequency necessary to determine compliance with permit limitations and conditions, and to evaluate the effectiveness of treatment and control measures, and permit limitations. Regardless, regulations at 40 C.F.R. § 122.44(i)(2) establish a floor, or minimum frequency for monitoring results of no less than once per year. In this case, five samples collected for WET over a five-year permit term will ensure an acceptable likelihood of detecting a toxic event in the discharge and meet the requirement of 40 C.F.R. § 122.44(d)(1)(i). The TSD recommends either chronic or acute testing when the dilution factor is between 100 and 1000.[11] In this case, the dilution factor for this facility is 257. Because NYCOA has exhibited chronic toxicity in prior tests, EPA has elected to require chronic WET testing, rather than acute, in the Draft Permit.

Therefore, the Draft Permit has established once per year chronic WET testing for 2 species. Toxicity testing must be performed in accordance with the EPA Region 1 test procedures and protocol specified in **Attachment A,** *Freshwater Chronic Toxicity Test Procedure and Protocol* (March 2013) of the Draft Permit. Additionally, annual monitoring for effluent and ambient aluminum and copper will be conducted consistent with the WET protocol in **Attachment A** to satisfy the requirement to monitor discharges to impaired waters.

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

5.2 Effluent Limitations and Monitoring Requirements at Outfall 007

5.2.1 Effluent Flow

From January 2014 through January 2019 average monthly effluent flow at Outfall 007 has ranged from 0.003 MGD to 0.008 MGD and maximum daily effluent flow ranged from 0.003 MGD to 0.006 MGD with an average of 0.004 MGD. See Appendix A. Flow at Outfall 007 has never exceeded the 2008 Permit's maximum daily flow limit of 0.01 MGD. The Draft Permit includes a maximum flow rate of 0.01 MGD at Outfall 007 with monitoring required once per month.

5.2.2 pH

Consistent with the requirements of New Hampshire's WQS at RSA 485-A:8 II, "The pH for said (Class B) waters shall be 6.5 to 8.0 except when due to natural causes." The monitoring frequency in the current permit is once per year for Outfall 007. A review of DMR data in Attachment A shows that the pH values ranged from 6.7 to 7.3 S.U. for Outfall 007 with no violations of the permitted range. The Draft Permit requires quarterly monitoring for pH. The increased monitoring frequency will allow for a better characterization of the discharge and ensure that the discharge does not contribute to the Merrimack River's impairment for pH.

5.2.3 Total Suspended Solids

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

Effluent TSS limits of 30 mg/L as a monthly average and 100 mg/L as a daily maximum were established in 2001 Permit. The rationale was that these limits were similar to those used for comparable backwash systems, such as those in the electrical power industry that filter intake water. Although Steam Electric ELGs do not specifically apply to this Facility because it is not a steam electric generator, EPA looked to these guidelines as representative of technology-based requirements for similar discharges in establishing requirements for the based on BPJ pursuant to § 402(a)(1) of the CWA.

From January 2014 through January 2019 TSS concentrations monitored annually at Outfall 007 were non-detect (Appendix A). EPA confirmed reported TSS values were non-detect at the minimum level for TSS (5 mg/L). The Draft Permit clarifies (at Part I.A.2 footnote 3) that when

a parameter is not detected above the minimum level, the Permittee must report the value as less than the minimum level for that parameter (e.g., ≤5 mg/L). The Draft Permit contains monthly average and maximum daily TSS limitations of 30 mg/L and 100 mg/L, respectively, when the Facility is discharging, monitored quarterly by grab sample. The monitoring frequency has been increased from annually to quarterly to better characterize the discharge. These limitations have been continued from the Facility's 2008 Permit in accordance with anti-backsliding requirements found in 40 C.F.R. § 122.44(1).

5.2.4 Oil and Grease

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

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

From January 2014 through January 2019 (Appendix A), NYCOA reported oil and grease concentrations at 5 mg/L in August of each year at Outfall 007. EPA confirmed reported values were non-detect at the minimum level for oil and grease (5 mg/L). The Draft Permit maintains the daily maximum limit of 15 mg/L for Outfall 007, monitored once per quarter by grab sample, when discharging. The Draft Permit also clarifies (at Part I.A.2 footnote 3) that when a parameter is not detected above the minimum level, the Permittee must report the value as less than the minimum level for that parameter (e.g., ≤5 mg/L). The monitoring frequency has been increased from annually to quarterly to better characterize the discharge. This limitation has been continued from the Facility's 2008 Permit in accordance with anti-backsliding requirements found in 40 C.F.R. § 122.44(1) and ensures that the discharge will not cause or contribute to a violation of State WQSs.

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

5.3 Special Conditions

5.3.1 Cooling Water Intake Structure (CWIS) Requirements

With any NPDES permit issuance or reissuance, EPA is required to evaluate or re-evaluate compliance with applicable standards, including the technology standard specified in Section 316(b) of the CWA for cooling water intake structures. Section 316(b) requires that:

> [a]ny standard established pursuant to section 301 or section 306 of this Act and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact.

33 U.S.C. § 1326(b). The operation of CWISs can cause or contribute to a variety of adverse environmental effects, such as killing or injuring fish larvae and eggs entrained 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 the intake structure's screens.

In order to satisfy the requirements of § 316(b), the location, design, construction, and capacity of the facility's CWIS(s) must reflect "the best technology available for minimizing adverse environmental impacts" ("BTA"). CWA § 316(b) applies to facilities with point source discharges authorized by a NPDES permit that also withdraw water from waters of the United States through a CWIS for cooling purposes. Regulations at CWA § 316(b) are applicable to NYCOA because the Facility withdraws water from the Merrimack River for cooling purposes via a cooling water intake structure.

EPA issued regulations for cooling water intake structures applicable to new facilities on December 18, 2001 that took effect January 17, 2002. 66 Fed. Reg. 65255 (December 18, 2001) (40 C.F.R. Part 125, Subpart I). These regulations apply to new power generating and manufacturing facilities. As NYCOA is an existing facility, these regulations do not apply. EPA issued regulations for cooling water intake structures applicable to existing facilities on August 14, 2014 that took effect October 14, 2014. 79 Fed. Reg. 48310 (August 14, 2014) (40 C.F.R. Part 125, Subpart J). These regulations apply to existing power generating and manufacturing facilities that are designed to withdraw more than 2 MGD from waters of the U.S. and use at least 25 percent of the water they withdraw exclusively for cooling purposes. *See* 40 C.F.R. § 125.91(a). The design intake flow for NYCOA's CWIS is 1.44 MGD, which is less than the regulatory threshold of 2 MGD. As such, the regulations for existing facilities under 40 C.F.R. §§125.94 through 125.99 do not apply to this facility. In cases where facilities have a design intake flow of 2 MGD or smaller, EPA sets appropriate requirements on a site-specific basis, using best professional judgment (BPJ). *See* 40 C.F.R. § 125.90(b). Therefore, EPA has developed technology-based requirements for the NYCOA CWIS by applying § 316(b) on a site-specific basis using BPJ.

In addition to satisfying technology-based requirements, NPDES permit requirements for CWISs must also satisfy any more stringent provisions of state water quality standards (WQS) or other

state legal requirements that may apply, as well as any applicable conditions of a state certification under CWA § 401. *See* CWA §§ 301(b)(1)(C), 401(a)(1), 401(d), 510; 40 C.F.R. §§ 122.4(d), 122.44(d). *See also* 40 C.F.R. § 125.84(e). This means that permit conditions for CWISs must satisfy numeric and narrative water quality criteria and protect designated uses that may apply from the state's WQS.

New Hampshire's standards state "[t]hese rules shall apply to any person who causes point or nonpoint source discharge(s) of pollutants to surface waters, or who undertakes hydrologic modifications, such as dam construction or water withdrawals, or who undertakes any other activity that affects the beneficial uses or the level of water quality of surface waters." N.H. Code R. Env-Wq 1701.02(b). This language clearly indicates the applicability of the standards to cooling water withdrawals from the state's waters. In addition, because cooling water withdrawals can result in impingement and/or entrainment of aquatic organisms, such withdrawals must comply with certain designated uses and water quality criteria, including protection of water use classifications and existing and designated uses and providing for the protection and propagation of fish, shellfish, and wildlife. See *Id*. 1701.03(b), (c), and (d). The Merrimack River at the intake is designated a Class B Water, which means that the waterbody provides, at a minimum, habitat for fish and other aquatic life and wildlife, including for their reproduction, migration, growth, and other critical functions, and for primary and secondary recreation. Finally, New Hampshire state standards prescribe the following water quality criterion for "biological and aquatic community integrity": "[t]he surface waters shall support and maintain a balanced, integrated, and adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of a region" and "[d]ifferences from naturally occurring conditions shall be limited to non-detrimental differences in community structure and function." *Id*. 1703.19. See also *id*. 1702.08.

In summary, the New Hampshire WQSs apply to CWISs and permit requirements must be sufficient to ensure that the CWIS neither causes nor contributes to violations of the WQS, including that it provide habitat for fish and other aquatic life and a recreational fishing resource, and will satisfy the terms of the state's water quality certification under CWA § 401. EPA anticipates that the NHDES will provide this certification before the issuance of the Final Permit.

Effect of Cooling Water Intake Structures

Section 316(b) of the CWA addresses the adverse environmental impact of CWIS at facilities requiring NPDES permits. The principal adverse environmental impacts typically associated with CWISs evaluated by EPA are the *entrainment* of fish eggs, larvae, and other small forms of aquatic life through the plant's cooling system, and the *impingement* of fish and other larger forms of aquatic life on the intake screens. Entrainment of organisms occurs when a facility withdraws water into the CWIS from an adjacent water body. Fish eggs and larvae and other planktonic organisms in the water small enough to pass through intake screens and become entrained along with the cooling water drawn into the facility where they may be subjected to death or damage due to high velocity and pressure, increased temperature, and exposure to

chemical anti-biofouling agents.[13] See 79 Fed. Reg. 48303. Impingement of organisms occurs when a facility draws water through its CWIS and organisms too large to pass through the screens, and unable to swim away, become trapped against the screens and other parts of the intake structure and may be killed, injured or weakened. See 79 Fed. Reg. 48303. In some cases, contact with screens or other equipment can cause an organism to lose its protective slime and/or scales, or suffer other injuries, which may eventually result in mortality. See 66 Fed. Reg. 65263.

The extent of entrainment and impingement depend on species characteristics, the facility's environmental setting, the volume of cooling water flow through the plant, and the location, design, construction, and capacity of the CWIS. The intake structure's location and depth, the velocity of water drawn to the entrance of the intake structure (approach velocity) and through the screens (through-screen velocity), the seasonal abundance of various species of fish, and the size of various fish relative to the size of the mesh of any intake barrier system (e.g., screens) can all impact rates of impingement and entrainment.

The most direct impact of impingement and entrainment mortality is the loss of aquatic organisms, including fish, benthic invertebrates, phytoplankton, fish eggs and larvae, and other susceptible organisms. In many cases, CWISs are in or connected to impaired waterbodies, in which impingement and entrainment may further impair degraded or altered aquatic communities already affected by poor water quality. Losses from impingement and entrainment may also contribute to impacts to threatened and endangered species, indigenous populations of aquatic organisms, commercial fisheries, recreational fisheries, and reduce ecologically critical aquatic organisms, including important elements of an ecosystem's food chain. In addition, impingement and entrainment mortality can diminish a population's compensatory reserve, which is the capacity of a species to increase survival, growth, or reproduction rates in response to environmental variability, including temperature extremes, heavy predation, disease, or years of low recruitment. Finally, fish and other species affected directly and indirectly by CWISs can provide other valuable ecosystem goods and services, including nutrient cycling and ecosystem stability. See 79 Fed. Reg. 48318-48321.

Location, Construction, Design, and Capacity of the CWIS

As described above, Section 316(b) of the CWA requires the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact. See 33 U.S.C. § 1326(b). EPA reviewed the location, design, and capacity of NYCOA's CWIS in establishing site-specific technology-based requirements applicable to the continued operation of its intake system based on BPJ.

Location

The term "location" refers to the water body, or segment of the water body, in which the CWIS is located. Location also refers to where the intake is located within a particular water body, such

[13] EPA 2011. Environmental and Economic Benefits Analysis of the Proposed Section 316(b) Existing Facilities Regulation: Section 2.3 CWIS Impacts to Aquatic Ecosystems. EPA. March 28, 2011.

as its placement within the water column and its locations relative to the shoreline, the point of thermal discharges, and any particularly sensitive resource areas (e.g., migration routes, spawning areas).

The NYCOA CWIS is located on the eastern bank of the Merrimack River just below the Queen City Avenue Bridge in Manchester, NH and about 3,000 feet downstream from the Amoskeag Dam. Two intake pipes extend from the eastern bank approximately 55 to 60 feet into the Merrimack River. The ends of the intake pipes are between 0.0 to 0.5 feet off the river bottom at an average depth of about 4 to 6 feet based on median river flow conditions. Visual inspection of the intake is challenging due to the distance from the river bank, depth of the intakes, and clarity of the water at this location. The intake pipes are located approximately 115 to 120 feet from the main channel of the river, considering that the average river width is approximately 350 feet and assuming that the main channel of the river is approximately at mid-stream.

The Merrimack River supports resident freshwater species such as smallmouth bass, largemouth bass, pickerel, horned pout, black crappie, bluegill, yellow perch, carp, and white sucker.[14] Many of these fish engage in nest building or deposit eggs near the substrate where these early life stages would be less susceptible to entrainment. Anadromous fish, such as river herring and American shad, which may be present downstream of Amoskeag dam, would typically travel in the main channel of the river more than 100 feet from the location of the intakes. However, eggs and larvae of these anadromous species may be exposed to mortality from withdrawals at NYCOA's intakes. Early life stages would be expected to drift with the current past the intakes. The downstream orientation of the opening to the CWIS likely reduces exposure to drifting organisms. The downstream orientation, combined with the relatively low withdrawal flow (see discussion below), minimizes the risk of entrainment of early life stages.

Design

The "design' element of a CWIS refers to the various components that make up the CWIS itself, including, but not limited to, screening systems intended to keep aquatic organisms and debris from being drawn into the Facility's cooling system as well as pumps and technologies that influence the volume and/or velocity of water drawn into the plant.

Two, 30-inch cast iron intake pipes are fitted with a 90-degree elbow with the intake facing downstream. According to the Permittee, the static, flat mesh screens were removed in 2007 due to fouling, which restricted cooling water flow. The 2007 CWIS Description indicates that NYCOA intended to install a "barrel" screen design and automated cleaning system using compressed air in 2008; however, it appears that the screens were never replaced. Intake screens are widely available and relatively cost effective for minimizing the potential for adverse impacts at a CWIS. A screen size of 3/8-inch is a typical industry standard. The Draft Permit requires the Permittee to install screens on the inlet of each of the cast iron intake pipes to prevent fish and

[14] See, for example, a characterization of the Merrimack River upstream of the Facility in Hooksett Pool for NH0001465 at https://www3.epa.gov/region1/npdes/merrimackstation/pdfs/MerrimackStationAttachD.pdf.

other aquatic organisms from entering the CWIS. The screen size must be no larger than the 1.5-inch by 1.5-inch screen size on the existing barrier located at the entrance to the cooling water intake tunnel in the cooling water chamber. The screens proposed to meet the § 316(b) requirements of this Permit must include anti-biofouling coating and/or an automated cleaning system using compressed air to reduce fouling issues.

In addition, the screens shall be designed to maintain a through-screen velocity of no greater than 0.5 fps.[15] Designing the intake to a velocity that can be avoided by a majority of fish will minimize the potential adverse impacts due to impingement mortality at a CWIS. The existing cooling water pipes currently have an intake velocity lower than 0.26 fps, which likely minimizes the potential for impingement. Maintaining a low intake velocity after installation of the screens will not only reduce the risk of fish becoming impinged, but also ensure that fish do not swim into the intake structure and become trapped in the inner chambers of the CWIS. Moreover, a design velocity is well suited for NYCOA because compliance can be measured by calculation of intake velocity rather than through biological monitoring which, as explained below, is challenging at this CWIS. A remote monitoring instrument, such as a differential pressure gauge, should be used at the intake to ensure that debris and/or fouling does not cause an exceedance of the through-screen velocity limit.

As described in Section 3.3, the CWIS at NYCOA begins at the inlet to the pipes in the Merrimack River, travels to the intake tanks and chamber, through a 1.5-inch by 1.5-inch opening into the intake tunnel, through the cooling water pumps, and finally through an in-line screen located in the cooling water main. The 2008 Fact Sheet identified that there is currently no accessible location to directly observe impingement of aquatic life at the NYCOA CWIS. The 2008 Permit required the Permittee to conduct "modified" impingement monitoring either by visually inspecting the cooling water pump discharge filter itself or the backwash water from the filter. According to the 2008 Fact Sheet, the area after the discharge pumps is the only reasonably accessible location for impingement monitoring. According to the Permittee, impingement monitoring is conducted three times weekly by opening a valve at one end of the river water pump into a 5-gallon bucket (Email from Jeffrey Slark to George Papadopoulos dated 2/15/2019).

The intent of the impingement monitoring is to document the occurrence of impingement at a CWIS. However, the monitoring location is a substantial distance from the intake location and past two separate screens; it is not representative the actual potential for impingement, which would most likely occur at the first screen encountered (at the inlet to the cooling water intake tunnel). As expected, no impingement was observed during monitoring downstream of the cooling water pumps under the 2008 Permit. Because the monitoring under the 2008 Permit is unlikely to be representative of any actual impingement that may be occurring within the chamber, the Draft Permit eliminates the requirement to conduct impingement monitoring. In

[15] A through-screen velocity of 0.5 fps or less is generally accepted as resulting in a 96 percent or better reduction in impingement mortality for most species and is consistent with compliance alternatives for meeting the requirements of § 316(b) for new and existing facilities. See 40 C.F.R. § 125.94(c)(2). See also 66 Fed. Reg. 65,274 [December 18, 2001] and 79 Fed. Reg. 48336 [August 14, 2014].

addition, the design through-screen velocity of the screens is consistent with the recommended standard to minimize impingement mortality and will ensure that most fish are able to avoid becoming impinged at the inlet to the CWIS.

Construction

The term "construction" refers to the physical aspects of installing the CWIS or any associated technologies. For an existing Facility and CWIS such as NYCOA, EPA considers any adverse impacts that might occur as a result of modifying a CWIS, including installation of any new technology designed to minimize impingement and entrainment. Under the Draft Permit, the Permittee must install new intake screens, which may also require cleaning or removal of accumulated sediment at the location of the intake. Installation of the screens will occur only once during the permit term and the minor construction involved is not likely to result in adverse impacts.

Capacity

The CWIS uses a series of three, multi-stage pumps with variable flow depending on system demand: two, 400 gpm pumps and one, 1,000 gpm pump. The interlocking pump system is designed to allow a maximum flow of 1,000 gpm (1.44 MGD) through independent operation of the single large pump, or operation of the two smaller pumps (individually or in tandem). The system does not allow simultaneous operation of all three pumps.

The Draft Permit includes a maximum daily effluent flow limit of 1.44 MGD based on the design capacity of the pumps. The mean annual river flow of the Merrimack River at Goffs Falls (USGS Gage 01092000), which is approximately 2 miles downstream from the Facility, is about 5,471 (water years 1937-2017). Based on this value, the design flow of the CWIS (2.23 cfs) is equivalent to 0.04% of the mean annual river flow, and about 0.35% of the 7Q10 low flow (636 cfs, see Section 4.3). The low volume of the cooling water intake, in comparison to the river flow, will likely expose a relatively low density of early life stages of fish and other aquatic organism to entrainment. In addition, the Draft Permit requires the Permittee to minimize the intake of cooling water by optimizing the pump capacity to meet, and not exceed, cooling water demand. In the past five years, the actual maximum daily cooling water demand during April through August (when early life stages are present in the Merrimack River[16]) ranged from 0.5 MGD to 1.17 MGD with an average of 0.84 MGD. See Appendix A. The average maximum daily flow during the entrainment season (0.84 MGD = 0.13 cfs) represents about 0.002% of the mean annual river flow and about 0.02% of the 7Q10 low flow. In other words, on average, about 0.02% of the early life stages present in the Merrimack River in the vicinity of the intake

[16] NYCOA has not conducted entrainment monitoring in the Merrimack River; however, the presence of early life stages in the Merrimack River is documented in monitoring conducted for Merrimack Station in Bow, New Hampshire (NH0001465). See, for example, the Draft Permitting Determinations for the Thermal Discharge and Cooling Water Intake Structures at https://www3.epa.gov/region1/npdes/merrimackstation/pdfs/MerrimackStationAttachD.pdf.

would be exposed to entrainment. The BTA for entrainment at NYCOA is optimizing operation of the cooling water pumps to meet cooling water demand.

According to the Permittee, the intake velocity at each pipe is about 0.26 fps at a maximum withdrawal of 500 gpm per intake pipe (at design of 1,000 gpm). This calculation assumes that there is not build-up of sediment around the pipe and no screens on the pipe inlets. As discussed above, an intake value less than 0.5 fps is expected to enable most juvenile and adult fish to avoid becoming impinged and, as such, represents the BTA for impingement mortality. In addition, the Draft Permit requires installation of screens at the pipe inlets with a design intake flow of no greater than 0.5 fps, which will also ensure that fish do not travel into the intake pipes and become trapped in the inner chambers of the cooling water system.

BTA Determination and Permit Conditions

The BTA for NYCOA's CWIS includes optimization of the cooling water pumps to meet cooling demand, maintaining the current location of the intakes, and installing new screens at the inlet of the cooling water intake pumps with a design through-screen velocity no greater than 0.5 fps. The Facility will continue to report the actual cooling water flow on a monthly basis in its DMRs under Part I.A.1 of the Draft Permit. Specifically, Part I.C.2 of the Draft Permit requires:

- The maximum intake volume shall not exceed 1.44 MGD. In addition, the Permittee shall operate the multi-stage pumps to withdraw only the minimum amount of cooling water required to meet the Facility's cooling demands.

- The Permittee shall install intake screens at the inlet to the cooling water intake pipes in the Merrimack River. Screens must include an anti-biofouling material or coating and mesh size must be a maximum of 1.5-inch by 1.5-inch. In addition, any sediment build-up at the suction end or interior to the cooling water intake pipes shall be removed during installation of the screens.

- The design through-screen velocity at the intake screens at the inlet of the cooling water intake pipes shall not exceed 0.5 fps. The maximum velocity must be achieved under all conditions, including during minimum ambient source water surface elevations (based on BPJ using hydrological data) and during periods of maximum head loss across the screens or other devices during normal operation of the intake structure.

Compliance Schedule

EPA understands that the Permittee will need to design and install new equipment to comply with the BTA requirements and that, consequently, the Permittee cannot immediately comply with these requirements upon the effective date of the Permit. In the past, EPA did not include compliance schedules for BTA requirements in NPDES permits; rather, compliance schedules for BTA requirements were included in administrative compliance orders issued in conjunction with the new or reissued NPDES permit. EPA's approach to compliance schedules pertaining to BTA requirements, however, has changed. The regulation at 40 C.F.R. § 122.47(a)(1) governing

compliance schedules in NPDES permits states "any schedules of compliance under this section shall require compliance as soon as possible, but not later than the applicable statutory deadline under the CWA." In the 2014 Final Rule governing regulations for CWISs at existing facilities, EPA explained that, because § 316(b) has no statutory deadline for meeting the "best technology available for minimizing adverse environmental impact" standard, there is no statutory bar to the use of a compliance schedule in appropriate circumstances. See 79 Fed. Reg. 48359. Consequently, the 2014 Final Rule provides for compliance schedules in the NPDES permits for § 316(b) requirements where appropriate. While the 2014 Final Rule does not apply to this Facility because the design flow is under the regulatory threshold of 2 MGD, the same reasoning expressed in the Rule applies to determinations based on best professional judgement, such as the BTA determination for this Facility. In this case, EPA has proposed a reasonable compliance schedule in Part I.C.2 of the Draft Permit by which the Permittee is to achieve compliance with the permit requirements under CWA § 316(b).

Part I.C.2.e of the Draft Permit provides a schedule by which the Permittee shall attain compliance with the CWIS requirements. Specifically, steps for the installation and operation of equipment required to comply with Part I.C.2 of the Permit shall be completed as soon as practicable but no later than the schedule of milestones set forth in the Draft Permit. The Draft Permit provides for six months from the effective date of the Permit to submit a proposed design for the intake screens, and additional six months (12 months from the effective date) to commence the process to obtain necessary permits, and one year (24 months from the effective date of the permit) to complete installation of the screens. Updates on the completion of each milestone must be submitted to EPA within 14 days of the scheduled deadline.

5.3.2 Discharges of Chemicals and Additives

Chemicals and additives include, but are not limited to: algaecides/biocides, antifoams, coagulants, corrosion/scale inhibitors/coatings, disinfectants, flocculants, neutralizing agents, oxidants, oxygen scavengers, pH conditioners, and surfactants. The Draft Permit allows the discharge of only those chemicals and additives specifically disclosed by the Permittee to EPA and the State, provided that such discharge does not violate § 307 or 311 of the CWA or applicable State WQSs.

Although the Permittee has used sodium hypochlorite in the past as a biocide, it no longer uses this or any other cooling water additive in its cooling water system. However, EPA recognizes that chemicals and additives may need to be used during the term of the permit. As a result, the Draft Permit includes a provision that requires the Permittee to notify EPA and the State in writing of the discharge a new chemical or additive; allows for EPA and State review of the change; and provides the factors for consideration of such changes. The Draft Permit specifies that the Permittee must submit the following information for each chemical or additive, at a minimum, in writing to EPA and the State:

- Product name, chemical formula, and manufacturer of the chemical/additive.
- Purpose or use of the chemical/additive.
- Safety Data Sheet (SDS) and Chemical Abstracts Service (CAS) Registry number for

each chemical/additive.
- The frequency (e.g., hourly, daily), magnitude (e.g., maximum and average), duration (e.g., hours, days), and method of application for the chemical/additive.
- If available, the vendor's reported aquatic toxicity (i.e., NOAEL and/or LC_{50} in percent for aquatic organism(s)).

The Permittee must also provide an explanation which demonstrates that the discharge of such chemical or additive: 1) Will not add any pollutants in concentrations which exceed permit effluent limitations; 2) Will not exceed any applicable water quality standard; and 3) Will not add any pollutants that would justify the application of permit conditions that are different from or absent in this permit.

Discharges of a new chemical or additive is authorized under the permit upon notification to EPA and the State unless otherwise notified by EPA or the State.

5.4 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 to and imposes requirements on Federal agencies regarding endangered or threatened species of fish, wildlife, or plants (listed species) and habitat of such species that has been designated as critical (a “critical habitat”).

Section 7(a)(2) of the ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of Interior, to ensure that any action it authorizes, funds or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. The National Marine Fisheries Service (NMFS) administers Section 7 consultations for marine 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 § 7(a)(2) of the ESA.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, or plants in the Merrimack River to determine if any such listed species might potentially be impacted by the issuance of this NPDES permit. [17] Two listed species, the northern long-eared bat (*Myotis septentrionalis*) and the small whorled pogonia (*Isotria medeoloides*), were identified as present in the vicinity of the Facility. According to the USFWS, the northern long-eared bat is found in "winter – mines and caves, summer – wide variety of forested habitats." The small whorled pogonia occurs in upland sites in forests with sparse to moderate ground cover and a relatively open understory canopy. Both are terrestrial species, not aquatic, so the discharge will have no direct effect on either the northern long-eared bat or the small whorled pogonia. Further, the permit action is also expected to have no indirect effect on the northern long-eared bat because it is not expected to impact insects, its primary prey. Therefore, the proposed permit action is deemed to have no impact on either listed species.

EPA has made the preliminary determination that there are no species listed as federally threatened or endangered in the vicinity of NYCOA that would be affected by the proposed action. Therefore, EPA has judged that a formal consultation pursuant to Section 7 of the ESA is not required. Supporting information included in this Fact Sheet and the Draft Permit will be made available to USFWS and NMFS when the Draft Permit is published.

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". *See* 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". *See* 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.[16] *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.

According to the National Marine Fisheries Service (NMFS), the Merrimack River and its tributaries is designated EFH for Atlantic salmon (*Salmo salar*).[18] This section of the Merrimack

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

[18] See Final Omnibus Essential Fish Habitat Amendment 2 Volume 2: EFH and HAPC Designation Alternatives and Environmental Impacts; Atlantic salmon. December 8, 2016. Available at https://www.greateratlantic.fisheries.noaa.gov/regs/2018/April/18oa2frmap.html

River is classified as a Class B waterbody. Pursuant to New Hampshire Statutes RSA 485-A:8, Class B waters are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other crucial functions, and for primary and secondary contact recreation.

One or more life stages of Atlantic salmon may be present within the area which encompasses the discharge site. Although the last remnant stock of Atlantic salmon indigenous to New Hampshire is believed to have been extirpated over 200 years ago, an effort to restore this historic run had been underway in the Merrimack River until 2013 when, as a result of shifting budget priorities, the USFWS ceased stocking efforts on the river. However, fish ladders at dams on the Merrimack River and the removal of the Merrimack Village Dam at the mouth of the Souhegan River ensure that suitable spawning habitat remains accessible to migrating salmon.[19]

Atlantic salmon juvenile or adult life stages could pass in the vicinity of the discharge on the Merrimack River downstream of the Amoskeag Dam. The area of the discharge on the river mainstem is not judged to be suitable for spawning, which is likely to occur in tributaries where the appropriate gravel or cobble riffle substrate can be found.[20]

EPA has determined that the limits and conditions contained in this Draft Permit minimize adverse effects to Atlantic Salmon EFH for the following reasons:

- This permit action is a reissuance of an existing NPDES permit (i.e., no new source of pollutants);
- The dilution factor is high (257) (See Section 4.2 of this Fact Sheet);
- The Draft Permit's 83°F maximum daily temperature limit is consistent with NH Water Quality Standards for the protection and propagation of an indigenous population;
- The Merrimack River is approximately 350 feet wide in the vicinity of NYCOA, providing a large zone of passage for migrating Atlantic salmon;
- Acute toxicity tests will be conducted annually on daphnids (*Ceriodaphnia dubia*) and fathead minnows (*Pimephales promelas*);
- The Draft Permit requires installation of new screens at the existing cooling water intake pipes to protect fish and the calculated existing intake velocity and required design through-screen velocity of the new screens is not greater than 0.5 fps;
- The Draft Permit prohibits the discharge of pollutants or combinations of pollutants in toxic amounts; and
- The Draft Permit is designed so that all discharges meet NH Water Quality Standards.

EPA believes that the conditions and limitations contained within the Draft Permit adequately protects all aquatic life, including those with designated EFH in the receiving water, and that further mitigation is not warranted. Should adverse impacts to EFH be detected as a result of this permit action, or if new information is received that changes the basis for EPA's conclusions, NMFS will be contacted and an EFH consultation will be re-initiated.

---

[19] New Hampshire Fish and Game. Species Profiles: Atlantic salmon. Accessed on 4/16/2019. https://www.wildlife.state.nh.us/fishing/profiles/atlantic-salmon.html

[20] Final Omnibus Essential Fish Habitat Amendment 2 Volume 2.

As the federal agency charged with authorizing the discharge from this facility, EPA has submitted the Draft Permit and this Fact Sheet, along with a cover letter, to NMFS Habitat Division for their review.

7.0 Public Comments, Hearing Requests, and Permit Appeals

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to George Papadopoulos, U.S. EPA, Water Division, Industrial Permits Branch, 5 Post Office Square, Suite 100, Boston, Massachusetts 02109-3912 or via email to papadopoulos.george@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:

George Papadopoulos
EPA Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1579; FAX: (617) 918-0579
Email: papadopoulos.george@epa.gov

June 6, 2019
Date

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

Figures

Figure 1: Location Map

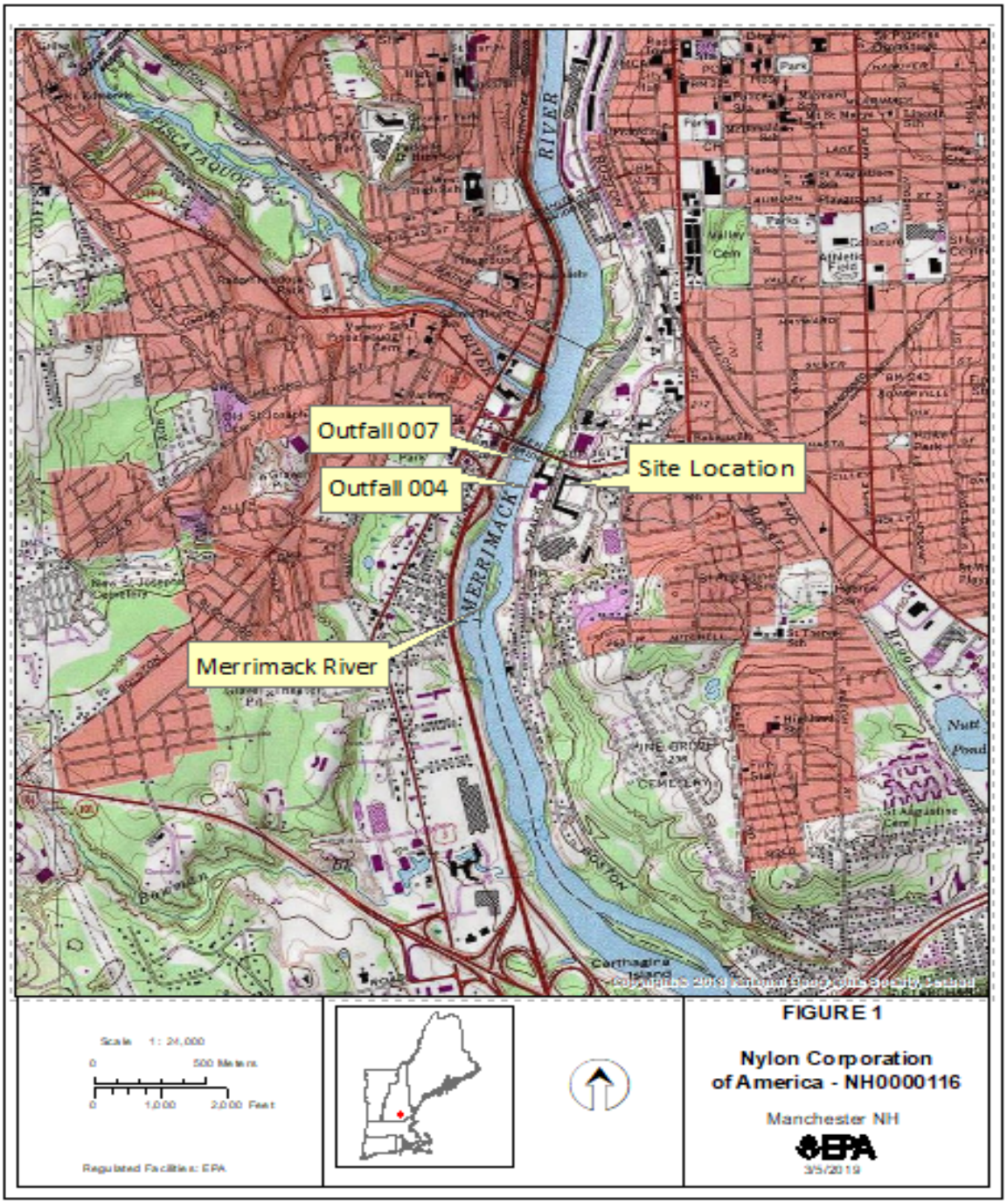
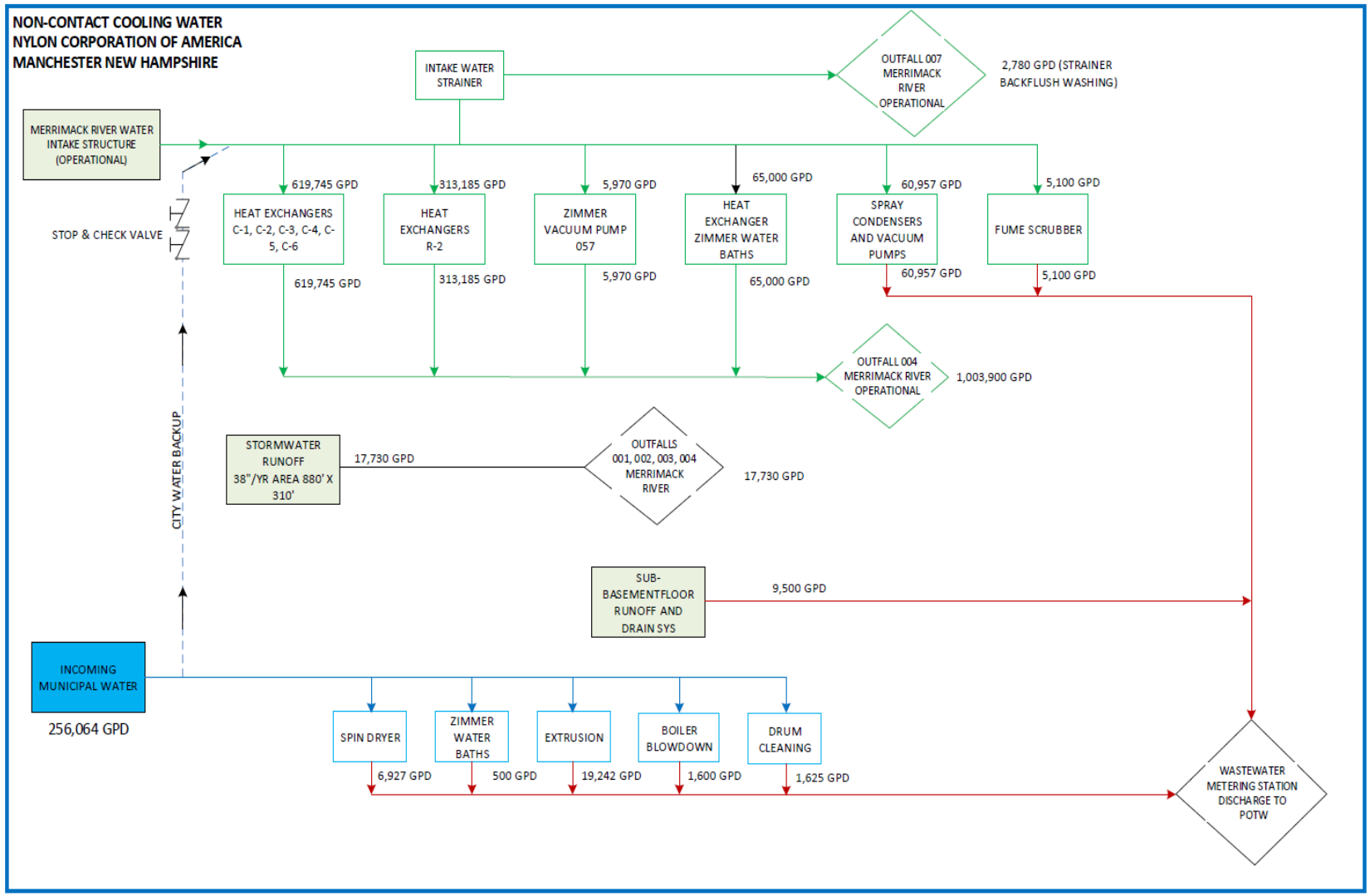


Figure 2: Schematic of Water Flow



Appendices

Appendix A: Discharge Monitoring Data

Nylon Corporation of America NH0000116
Monitoring Location Outfall 004
Monthly Reporting January 2014 – January 2019

Parameter	Flow	Flow	pH	pH	Temperature	Temperature
	Monthly Avg	Daily Max	Minimum	Maximum	Monthly Avg	Daily Max
Units	MGD	MGD	SU	SU	deg F	deg F
Effluent Limit	Report	1.5	6.5	8	Report	83
Minimum	**0.067**	**0.5**	**6.4**	**6.6**	**43**	**47**
Maximum	**0.88**	**1.17**	**7**	**7.4**	**82**	**92**
Average	**0.54**	**0.796**	**6.7**	**6.99**	**63**	**68.9**
No. of Exceedences	**N/A**	**0**	**1**	**0**	**N/A**	**6**
1/31/2014	0.77	1	6.6	6.8	46	53
2/28/2014	0.7	0.98	6.8	6.9	46	54
3/31/2014	0.64	0.99	6.8	7	51	57
4/30/2014	0.72	0.92	6.5	6.9	57	65
5/31/2014	0.067	1.17	6.8	6.9	64	69
6/30/2014	0.63	0.87	6.7	7	73	75
7/31/2014	0.88	1.08	6.5	7.2	79	82
8/31/2014	0.7	1	6.7	7.1	77	80
9/30/2014	0.85	1.08	6.6	7.2	73	81
10/31/2014	0.72	0.93	6.5	7.2	66	69
11/30/2014	0.53	1.03	6.7	6.9	56	62
12/31/2014	0.34	0.65	6.6	6.6	48	55
1/31/2015	0.42	0.69	6.7	6.8	48	53
2/28/2015	0.37	0.58	6.8	6.9	46	55
3/31/2015	0.53	0.65	6.7	7.2	50	53
4/30/2015	0.57	1	6.7	6.8	58	63
5/31/2015	0.49	0.71	6.6	6.9	70	75
6/30/2015	0.67	0.82	6.8	7.2	72	76
7/31/2015	0.84	1.07	6.6	7.3	80	83
8/31/2015	0.27	0.67	6.8	7.3	81	**89**
9/30/2015	0.56	0.93	6.9	7.2	77	83
10/31/2015	0.56	0.67	6.8	7	63	69
11/30/2015	0.6	0.75	6.6	6.8	58	62

Parameter	Flow	Flow	pH	pH	Temperature	Temperature
	Monthly Avg	Daily Max	Minimum	Maximum	Monthly Avg	Daily Max
Units	MGD	MGD	SU	SU	deg F	deg F
12/31/2015	0.51	0.69	6.6	6.8	53	57
1/31/2016	0.46	0.8	6.6	6.8	52	56
2/29/2016	0.46	0.67	6.7	6.8	48	50
3/31/2016	0.45	0.54	6.5	6.7	54	59
4/30/2016	0.5	0.68	6.6	6.7	61	74
5/31/2016	0.5	0.98	6.7	6.9	73	**84**
6/30/2016	0.54	0.92	6.6	6.8	75	82
7/31/2016	0.39	1.06	6.8	7.2	82	**85**
8/31/2016	0.8	1.06	7	7.4	82	**92**
9/30/2016	0.73	1.09	6.7	7	76	81
10/31/2016	0.72	0.94	6.9	7.1	68	77
11/30/2016	0.34	0.67	6.8	7.2	59	68
12/31/2016	0.43	0.57	6.8	7	55	67
1/31/2017	0.37	0.5	6.8	7.1	54	71
2/28/2017	0.4	0.57	6.9	7	52	57
3/31/2017	0.38	0.56	6.7	6.9	50	56
4/30/2017	0.36	0.6	6.6	6.9	61	64
5/31/2017	0.4	0.65	6.7	6.8	66	70
6/30/2017	0.62	0.83	6.8	7	74	81
7/31/2017	0.54	0.84	6.5	7.2	78	83
8/31/2017	0.4	0.64	6.9	7.2	76	81
9/30/2017	0.6	0.72	6.9	7.2	76	82
10/31/2017	0.67	0.78	6.7	7.2	72	77
11/30/2017	0.7	0.82	6.6	6.8	56	64
12/31/2017	0.62	0.81	6.7	6.8	51	52
1/31/2018	0.68	0.78	6.6	6.7	43	47
2/28/2018	0.59	0.74	6.6	6.8	52	56
3/31/2018	0.56	0.97	6.7	6.8	47	50
4/30/2018	0.63	0.72	6.5	6.9	54	62
5/31/2018	0.41	0.51	6.6	6.8	67	70
6/30/2018	0.3	0.66	6.7	7.1	78	82
7/31/2018	0.52	0.69	7	7.4	80	**86**
8/31/2018	0.74	0.76	6.8	7.1	80	**85**
9/30/2018	0.49	0.78	6.9	7.1	75	83

Parameter	Flow	Flow	pH	pH	Temperature	Temperature
	Monthly Avg	Daily Max	Minimum	Maximum	Monthly Avg	Daily Max
Units	MGD	MGD	SU	SU	deg F	deg F
10/31/2018	0.39	0.66	6.6	7.4	68	78
11/31/2018	0.36	0.69	6.6	6.6	52	57
12/31/2018	0.47	0.64	**6.4**	6.8	50	53
1/31/2019	0.51	0.75	6.5	7.2	51	58

Nylon Corporation of America NH0000116
Monitoring Location Outfall 007
Monthly and Annual Reporting January 2014 – January 2019

Parameter	Flow	Flow	TSS	TSS	pH	pH	Oil & grease
	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Minimum	Maximum	Daily Max
Units	MGD	MGD	mg/L	mg/L	SU	SU	mg/L
Effluent Limit	Report	0.01	30	100	6.5	8	15
Minimum	**0.003**	**0.003**	**4**	**4**	**6.7**	**6.7**	**5**
Maximum	**0.008**	**0.006**	**5**	**5**	**7.3**	**7.3**	**5**
Average	**0.003**	**0.004**	**4.8**	**4.8**	**6.96**	**7.02**	**5**
No. of Exceedences	**N/A**	**0**	**0**	**0**	**0**	**0**	**0**
1/31/2014	0.003	0.004					
2/28/2014	0.003	0.004					
3/31/2014	0.003	0.005					
4/30/2014	0.003	0.004					
5/31/2014	0.003	0.005					
6/30/2014	0.003	0.004					
7/31/2014	0.003	0.004					
8/31/2014	0.003	0.004	< 5	< 5	7.3	7.3	< 5
9/30/2014	0.003	0.004					
10/31/2014	0.003	0.004					
11/30/2014	0.003	0.006					
12/31/2014	0.003	0.006					
1/31/2015	0.003	0.005					
2/28/2015	0.003	0.005					
3/31/2015	0.003	0.004					
4/30/2015	0.003	0.005					
5/31/2015	0.003	0.004					
6/30/2015	0.003	0.004					
7/31/2015	0.003	0.004					
8/31/2015	0.008	0.003	< 5	< 5	6.8	6.8	< 5
9/30/2015	0.003	0.005					
10/31/2015	0.003	0.004					
11/30/2015	0.003	0.004					
12/31/2015	0.003	0.004					
1/31/2016	0.003	0.005					

2/29/2016	0.003	0.004					
3/31/2016	0.003	0.004					
4/30/2016	0.003	0.004					
5/31/2016	0.003	0.006					
6/30/2016	0.003	0.005					
7/31/2016	0.003	0.005					
8/31/2016	0.003	0.004	< 5	< 5	7.2	7.2	< 5
9/30/2016	0.003	0.004					
10/31/2016	0.003	0.004					
11/30/2016	0.003	0.006					
12/31/2016	0.003	0.004					
1/31/2017	0.003	0.004					
2/28/2017	0.003	0.004					
3/31/2017	0.003	0.004					
4/30/2017	0.003	0.005					
5/31/2017	0.003	0.005					
6/30/2017	0.003	0.004					
7/31/2017	0.003	0.005					
8/31/2017	0.003	0.005	< 5	< 5	6.7	6.7	< 5
9/30/2017	0.003	0.004					
10/31/2017	0.003	0.004					
11/30/2017	0.003	0.004					
12/31/2017	0.003	0.004					
1/31/2018	0.003	0.003					
2/28/2018	0.003	0.004					
3/31/2018	0.003	0.005					
4/30/2018	0.003	0.004					
5/31/2018	0.003	0.004					
6/30/2018	0.003	0.006					
7/31/2018	0.003	0.004					
8/31/2018	0.003	0.003	< 4	< 4	6.8	7.1	< 5
9/30/2018	0.003	0.005					
10/31/2018	0.003	0.005					
11/30/2018	0.003	0.006					
12/31/2018	0.003	0.004					
1/31/2019	0.003	0.005					

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

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

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

PUBLIC NOTICE PERIOD: **June 18, 2019 – July 17, 2019**

PERMIT NUMBER: **NH0000116**

PUBLIC NOTICE NUMBER: **NH-007-19**

NAME AND MAILING ADDRESS OF APPLICANT:

Nylon Corporation of America (NYCOA)
333 Sundial Avenue
Manchester, NH 03103

NAME AND LOCATION OF FACILITY WHERE DISCHARGE OCCURS:

Nylon Corporation of America
333 Sundial Avenue
Manchester, NH 03103

RECEIVING WATER: Merrimack 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 NYCOA, which discharges non-contact cooling water and backwash water from the non-contact cooling water system. 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:

George Papadopoulos
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1579
Papadopoulos.George@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 **July 17, 2019**, 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.

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

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