

**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”),

Great Falls Aquaculture, LLC

is authorized to discharge from a facility located at

**Great Falls Aquaculture, LLC
1 Australia Way
Turners Falls, MA 01376**

to receiving water named

**Connecticut River (MA34-02)
Connecticut River Watershed**

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

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

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

This Permit supersedes the Permit issued on February 23, 2010.

This Permit consists of this **cover page**, **Part I**, and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this day of

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

¹ Pursuant to 40 Code of Federal Regulations (CFR) § 124.15(b)(3), if no comments requesting a change to the Draft Permit are received, the Permit will become effective upon the date of signature. Procedures for appealing EPA’s Final Permit decision may be found at 40 CFR § 124.19.

PART I**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge wastewater from the fish production process through Outfall Serial Number 002 to the Connecticut River. The discharge shall be limited and monitored as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	Effluent Limitations		Monitoring Requirements ^{1,2,3}	
	Average Monthly	Maximum Daily	Measurement Frequency ⁴	Sample Type ⁵
Effluent Flow ⁶	0.3 MGD	0.3 MGD	Continuous	Meter
pH ⁷	6.5 - 8.3 S.U.		1/Month	Grab
Biochemical Oxygen Demand, 5-day (BOD5)	100 lb/day Report mg/L	200 lb/day Report mg/L	2/Month	Composite
Total Suspended Solids (TSS)	75 lb/day Report mg/L	99 lb/day Report mg/L	2/Month	Composite
Dissolved Oxygen	---	> 6.0 mg/L	1/Month	Grab
Total Kjeldahl Nitrogen	Report mg/L	Report mg/L	2/Month	Composite
Total Nitrate + Nitrite	Report mg/L	Report mg/L	2/Month	Composite
Total Nitrogen ^{8,9}	Report mg/L Report lb/day	Report mg/L Report lb/day	2/Month	Composite
Total Phosphorus	Report mg/L	Report mg/L	1/Month	Composite
Total Residual Chlorine (TRC) ^{10,11}	1 mg/L	1 mg/L	1/Month	Grab
Ammonia Nitrogen	Report mg/L	Report mg/L	1/Month	Composite
Fish Biomass on Hand	Report	---	1/Month	Calculate
Fish Feed Used	Report	---	1/Month	Calculate
Efficiency of Fish Feed Used ¹²	Report	---	1/Month	Calculate
Ozone, Residual ¹³	> 0.02 mg/L	> 0.02 mg/L	Daily	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 after treatment through the wastewater treatment system, 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). 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 CFR Part 136.

2. In accordance with 40 CFR § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR Part 136 or required under 40 CFR 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 CFR Part 136 or required under 40 CFR 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). For calculating and reporting the average monthly concentration when one or more values are not detected, assign a value of zero to all non-detects and report the average of all the results. The number of exceedances shall be enumerated for each parameter in the field provided on every Discharge Monitoring Report (DMR).
4. Measurement frequency of continuous is defined as the continuous measurement of an analyte using a recording device such as a flow meter. Measurement frequency of 1-2/month is defined as the sampling of one to two discharge events in each calendar month. 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.).
8. Total Kjeldahl nitrogen, nitrite nitrogen, and nitrate nitrogen samples shall be collected concurrently by composite sample. The results of these analyses shall be used to calculate both the concentration and mass loadings of Total Nitrogen:

Total Nitrogen = total Kjeldahl nitrogen + total nitrate nitrogen + total nitrite nitrogen

The Total Nitrogen loading values reported each month shall be calculated as follows:

Total Nitrogen (lb/day) = [average monthly total nitrogen concentration (mg/L) * total monthly effluent flow (million gallons) / days in the month] * 8.345

9. See Part I.D.2 for a special condition related to total nitrogen.
10. Monitoring for TRC must take place after wastewater treatment and occur on a day when wastewater from tank cleaning could be discharged through the outfall.
11. For the purposes of this permit, TRC analysis must be completed using a test method in 40 CFR Part 136 that achieves a minimum level of detection no greater than 30 µg/L.
12. Efficiency of Fish Feed Used = [Wet Weight of Fish Gained (lbs)/Dry Weight of Feed Applied (lbs)] x 100
13. The ozone residual greater than 0.02 mg/l is following sixty (60) seconds contact time.

Part I.A. continued.

2. The discharge shall not cause a violation of the water quality standards of the receiving water.
3. The discharge shall be free from pollutants in concentrations or combinations that, in the receiving water, settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.
4. The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom.
5. The discharge shall not result in pollutants in concentrations or combinations in the receiving water that are toxic to humans, aquatic life or wildlife.
6. The discharge shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to the receiving water.
7. The discharge shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.
8. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify EPA as soon as they know or have reason to believe (40 CFR § 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 ($\mu\text{g/L}$);
 - (2) 200 $\mu\text{g/L}$ for acrolein and acrylonitrile; 500 $\mu\text{g/L}$ for 2,4-dinitrophenol and for 2-methyl-4,6-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 CFR § 122.21(g)(7); or
 - (4) Any other notification level established by EPA in accordance with 40 CFR § 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 $\mu\text{g/L}$;
 - (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 CFR § 122.21(g)(7); or
- (4) Any other notification level established by EPA in accordance with 40 CFR § 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 Part I.A.1, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources are not authorized by this permit and shall be reported in accordance with Part D.1.e.(1) of the Standard Conditions of this permit (24-hour reporting).
2. There shall be no direct discharge of “cleaning water” (i.e., water containing settled solids that have accumulated on the bottom of active rearing units that is discharged, absent some form of solids removal, along with a portion of the culture water directly to the receiving water during periodic cleaning operations) from any rearing unit (fish farm building, rectangular raceway, circular pool, etc.). However, the discharge of “cleaning water” to a settling pond, lagoon, empty rectangular raceway or circular pool, and/or clarifier for the purposes of settling solids including the temporary storage of those solids followed by the discharge of any decant water that accumulates above those solids and/or any water that flows slowly over those solids is allowed as long as that decant and/or overflow water discharges through a currently permitted outfall (Outfall 002).

C. NARRATIVE EFFLUENT LIMITATION REQUIREMENTS FOR CONCENTRATED AQUATIC ANIMAL PRODUCTION FACILITIES WITH MODIFICATIONS

Pertinent definitions from 40 CFR Part 451 for specific terms used in this section are listed under Item 5. General Definitions at the end of this section.

1. Drug Use

Except as noted below, the Permittee must notify EPA and MassDEP in accordance with the following procedures of any investigational new animal drug (INAD) or extra-label drug use which may lead to a discharge of the drug to waters of the United States as stipulated below. However, reporting is not required for any INAD or extra-label drug use that has been previously approved by the U.S. Food and Drug Administration (USFDA) for a different species or disease if the INAD or extra-label use is at or below the approved dosage and involves similar conditions of use.

- a. The Permittee must provide to EPA and MassDEP a written report of the impending use of an INAD within seven (7) days of agreeing or signing up to participate in an INAD

study. The written report must identify the INAD to be used, method of use, the dosage, and the disease or condition the INAD is intended to treat.

- b. For INAD's and extra-label drug uses, the Permittee must provide an oral report to EPA and MassDEP as soon as possible, preferably in advance of use, but no later than seven (7) days after initiating use of that drug. The oral report must identify the drugs used, method of application, and the reason for using that drug.
- c. For INAD's and extra-label drug uses, the Permittee must provide a written report to EPA and MassDEP within thirty (30) days after initiating use of that drug. The written report must identify the drug used and include: the reason for treatment, date(s) and time(s) of the addition (including duration), method of application; and the amount added.

2. Structural Failure and/or Damage to Culture Units

The Permittee must notify EPA and MassDEP in accordance with the following procedures when there is a "reportable failure" in, or damage to, the structure of an aquatic animal containment system (i.e., culture unit) or its wastewater treatment system that results in an unanticipated material discharge of pollutants to waters of the United States.

- a. For this Facility, a "reportable failure" applies only to active culture units (ones that contain fish and flowing water) and their ancillary components and refers to the collapse or damage of a rearing unit or its wastewater treatment system; damage to pipes, valves, and other plumbing fixtures; and damage or malfunction to screens or physical barriers in the system, which would prevent the rearing unit from containing water, sediment (i.e., settled solids), and the aquatic animals being reared. Wastewater treatment systems include ponds or settling tanks to which cleaning water is directly discharged and culture units which are used for the temporary storage of settled solids removed from active culture units.
- b. The Permittee must provide an oral report to EPA and MassDEP within twenty-four (24) hours of discovery of any reportable failure or damage that results in a material discharge of pollutants. The report shall describe the cause of the failure or damage in the containment system and identify materials that have been released to the environment as a result of that failure.
- c. The Permittee must provide a written report to EPA and MassDEP within seven (7) days of discovery of the failure or damage documenting the cause, the estimated time elapsed until the failure or damage was repaired, an estimate of the material released as a result of the failure or damage, and steps being taken to prevent a recurrence.

3. Spills

In the event a spill of drugs, pesticides or feed occurs that results in a discharge to "waters" or "a water" of the United States, the Permittee must provide an oral report of the spill to

EPA and MassDEP within twenty-four (24) hours of its occurrence and a written report within seven (7) days to EPA and MassDEP. The report shall include the identity and quantity of the material spilled.

4. Best Management Practices (BMP) Plan

The Permittee must implement and maintain a BMP Plan on site that describes how the following requirements will be achieved. The Permittee shall make the current version of the BMP Plan available to EPA and/or MassDEP upon request. The Permittee shall implement the intent of the following BMP Plan requirements upon the permit's effective date. The Permittee, however, has ninety (90) days following the permit's effective date to certify in writing to EPA and MassDEP that a written BMP Plan has been developed in accordance with requirements listed in this part and must submit that certification with the appropriate DMR.

Further, the Permittee shall amend the BMP Plan within thirty (30) days following any change in facility design, construction, operation, or maintenance which affects the potential for the discharge of pollutants into surface waters or after the EPA and/or MassDEP determine certain changes are required following an event that results in non-compliance, exceedance of a benchmark concentration, a facility inspection, or review of the BMP Plan. The Permittee shall place in the BMP Plan a written documentation of each amended change along with a brief description stating the reason for the amendment, including the date of the change or monitoring event that triggered the amendment. The Permittee shall also document what date the amended BMP Plan was implemented.

The BMP Plan must address, at a minimum, the following requirements:

- a. Solids Control
 - i. Employ efficient feed management and feeding strategies that limit feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth in order to minimize potential discharges of uneaten feed and waste products to waters of the United States.
 - ii. In order to minimize the discharge of accumulated solids from settling tanks, basins and production systems, identify and implement procedures for routine cleaning of rearing units and off-line settling basins, and procedures to minimize any discharge of accumulated solids during the inventorying, grading and harvesting of aquatic animals in the production system.
 - iii. If any material is removed from the rearing units and/or settling tanks, describe where it is to be placed and the techniques used to prevent it from entering the surface waters from any on-site storage. If the material is removed from the site, describe who received the material and its method of disposal and/or reuse.

- iv. Remove and dispose of aquatic animal mortalities properly on a regular basis to prevent discharge to waters of the United States, except in cases where EPA and MassDEP authorize such discharges in order to benefit the aquatic environment.
- b. Biological Control
- i. Describe in detail the precautions that will be exercised by the facility to prevent aquatic organisms that are neither indigenous nor naturalized to State waters from becoming established in the local surface waters.
 - ii. Provide a description of any storage and/or treatment strategies designed to prevent biological pollution (non-indigenous organisms including fish parasites and fish pathogens and dead or dying fish) from entering the receiving water when the cultured fish population or a portion thereof are showing signs of stress.
- c. Materials Storage
- i. Ensure proper storage of drugs, pesticides, and feed in a manner designed to prevent spills that may result in the discharge of drugs, pesticides, or feed to water of the United States.
 - ii. Implement procedures for properly containing, cleaning, and disposing of any spilled material.
- d. Structural Maintenance
- i. Inspect the production system and the wastewater treatment system on a routine basis in order to identify and promptly repair any damage.
 - ii. Conduct regular maintenance of the production system and the wastewater treatment system in order to ensure that they are properly functioning.
- e. Recordkeeping
- i. In order to show how representative feed conversion ratios (i.e., efficiency of fish feed used) were calculated, maintain records documenting the feed amounts and estimates of the number and weight of aquatic animals for each rearing unit.
 - ii. Keep records that document the frequency of cleaning, inspections, repairs and maintenance. In addition, records of all medicinal and chemical usage (i.e., for each occurrence) at the facility shall be recorded and filed in the BMP Plan to include the dosage concentration, frequency of application (hourly, daily, etc.) and the duration (hours, days) of treatment, and the method of application.

f. Training

- i. In order to ensure the proper clean-up and disposal of material, adequately train all relevant facility personnel in spill prevention and how to respond in the event of a spill.
- ii. Train staff on the proper operation and cleaning of production and wastewater treatment systems including training in feeding procedures and proper use of equipment.

g. Aquaculture Drugs and Chemicals Used for Disease Control and/or Prevention

List in the BMP Plan all aquaculture drugs and chemicals including all INAD and extra-label drugs and for each, identify:

- i. Product name and manufacturer.
- ii. Chemical formulation.
- iii. Purpose/reason for its use.
- iv. Dosage concentration, frequency of application (hourly, daily, etc.) and the duration (hours, days) of application.
- v. The method of application.
- vi. Safety Data Sheets (SDS), Chemical Abstracts Service Registry number for each active therapeutic ingredient.
- vii. The method or methods, if any, used to detoxify the wastewater prior to its discharge.
- viii. Information on the persistence and toxicity in the environment.
- ix. Information on the USFDA approval for the use of said medication or chemical on fish or fish related products used for human consumption.
- x. Available aquatic toxicity data (vendor data, literature data, etc.); Lethal Concentration to 50 percent test organisms (LC50) at 48 and/or 96 hours and No Effect Level (NOEL) concentrations for typical aquatic organisms (salmon, trout, daphnia, fathead minnow, etc.).

5. General Definitions

- a. **Approved Dosage** means the dose of a drug that has been found to be safe and effective under the conditions of a new animal drug application.

- b. **Aquatic Animal Containment System** means a culture or rearing unit such as a raceway, pond, tank, net or other structure used to contain, hold or produce aquatic animals. The containment system includes structures designed to hold sediments and other materials that are part of a wastewater treatment system.
- c. **Concentrated aquatic animal production facility** is defined at [40 CFR 122.24](#) and appendix C of [40 CFR part 122](#).
- d. **Drug** means any substance defined as a drug in section 201(g)(1) of the Federal Food, Drug and Cosmetic Act (21 U.S.C. 321).
- e. **Extra-label Drug Use** means a drug approved under the Federal Food, Drug and Cosmetic Act that is not used in accordance with the approved label direction, see 21 CFR Part 530.
- f. **Investigational New Animal Drug (INAD)** means a drug for which there is a valid exemption in effect under section 512(j) of the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. 360b(j), to conduct experiments.
- g. **New Animal Drug Application** is defined in 512(b)(1) of the Federal Food, Drug, and Cosmetic Act [21 U.S.C. 360(b)(1)].
- h. **Pesticide** means any substance defined as a “pesticide” in section 2(u) of the Federal Insecticide, Fungicide, and Rodenticide Act [7 U.S.C. 136(u)]
- i. **Recirculating system** means a system that filters and reuses water in which the aquatic animals are produced prior to discharge. Recirculating systems typically use tanks, biological or mechanical filtration, and mechanical support equipment to maintain high water to produce aquatic animals.

D. SPECIAL CONDITIONS

1. Additional Facility-Specific Best Management Practices (BMPs) for the Control of Aquaculture Discharges

a. Chlorine Neutralization

Any hypochlorite solution applied to the surface of any rearing equipment exposed to culture water must be neutralized prior to that equipment being exposed to culture water.

b. Significant Mortality Event

The permittee shall notify EPA and MassDEP within 24-hours upon the occurrence of any mortality of greater than 25 percent in any aquatic species under culture at the facility (excluding larval fish) in accordance with reporting requirements in Standard Conditions Part II.D.1.e.

c. Production Changes

Any change in 1) the fish species to be raised at this facility or, 2) the development stage to be attained at this facility, will require written notification to EPA and MassDEP and possible permit modification.

d. Medication

- (1) The permittee shall use only medications and disease control chemicals in dosages and combinations as approved by the U.S. Food and Drug Administration (USFDA), U.S. Fish and Wildlife Service (USFWS), EPA and MassDEP.
- (2) The permittee shall use these medications and chemicals as needed to treat a disease or disease-causing conditions. The prophylactic use of disease control medications is prohibited.
- (3) The permittee shall notify within 24 hours by telephone and within 5 working days in writing the Regional Administrator at EPA, U.S. Fish and Wildlife Service, the Massachusetts Division of Fisheries and Wildlife, and the Massachusetts Department of Environmental Protection of the emergency use or the immediate intended use of any medication and/or chemical not specifically identified in the Best Management Practices Plan as described below.
- (4) EPA will notify the permittee when the use of a specific chemical described in PART I.D.1.c., immediately above, is unacceptable or that the dosage concentration or frequency level must be modified to protect the aquatic community in the receiving water.

2. Total Nitrogen Optimization

- a. Within one month of the effective date of the Final Permit, the Permittee shall notify EPA and MassDEP on the status of the Permittee's fluidized bed biofilter denitrification system. The notification shall include an installation schedule and planned date of full operation of the vessels. If already installed by the due date of the notification, preliminary findings on the system's ability to reduce nitrogen loads from the effluent should be discussed.
- b. Once the denitrification system is operational, the Permittee shall notify EPA and MassDEP if the denitrification system is taken offline or no longer used. Alternative methods for reducing nitrogen in the discharge should be included in the notification.
- c. The Permittee shall continue to implement, monitor, and evaluate measures to minimize the average mass discharge of total nitrogen ("TN"). Such measures include optimizing the efficiency of fish feed applied, using low-TN source water, water re-use, improved

wastewater treatment, and other operational changes. The annual average total nitrogen load that the Facility should be targeting is 52.1 lb/day.

- d. The Permittee shall submit an annual report to EPA and MassDEP by February 1st of each year, that summarizes activities related to minimizing discharges of nitrogen (including the fish feeding efficiency), documents the annual nitrogen discharge load from the facility, and tracks trends relative to the previous calendar year. If, in any year, the discharges of TN on an average annual basis have increased, the annual report shall include a detailed explanation of the reasons why TN discharges have increased, including any change in influent flows/loads and any operational changes. The report shall also include all supporting data.

E. REPORTING REQUIREMENTS

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

1. Submittal of DMRs Using NetDMR

The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State electronically using NetDMR no later than the 15th day of the month following the monitoring period. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>.

2. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this Permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. 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 following the monitoring period), 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 EPA WD:

- (1) Transfer of Permit notice;
- (2) Request for changes in sampling location;
- (3) BMP reports and certifications, if required; and
- (4) Request to discharge new chemicals or additives.

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

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

4. Submittal of Reports in Hard Copy Form

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

- (1) Written notifications required under Part II, Standard Conditions. Beginning December 21, 2025, such notifications must be done electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which will be accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>.

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

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

5. State Reporting

See Part I.E.2

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 Enforcement and Compliance Assurance Division at:

617-918-1510

c. Verbal reports and verbal notifications shall be made to the State's Emergency Response at:

888-304-1133

F. STATE 401 CERTIFICATION CONDITIONS

1. This Permit is in the process of receiving state water quality certification issued by the State under § 401(a) of the CWA and 40 CFR § 124.53. EPA will incorporate by reference all State water quality certification requirements (if any) into the Final Permit.

DRAFT

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

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¹Updated July 17, 2018 to fix typographical errors.

NPDES PART II STANDARD CONDITIONS
(April 26, 2018)

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

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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

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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

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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

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- (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

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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

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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.

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- 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

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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

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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

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“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 96-483 and 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

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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

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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.

LC₅₀ means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The *LC₅₀* = 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

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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).

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

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

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

NPDES means “National Pollutant Discharge Elimination System.”

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

Pass through means a Discharge (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

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(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

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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

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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.

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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

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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: MA0110264

PUBLIC NOTICE START AND END DATES: April 4, 2022 – May 3, 2022

NAME AND MAILING ADDRESS OF APPLICANT:

Great Falls Aquaculture, LLC
1 Australia Way
Turners Falls, MA 01376

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Great Falls Aquaculture, LLC
1 Australia Way
Turners Falls, MA 01376

RECEIVING WATER AND CLASSIFICATION:

Connecticut River (MA34-02)
Connecticut River Watershed
Class B

SIC CODE: 0273 (Animal Aquaculture)

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1.0 Proposed Action

Great Falls Aquaculture, LLC (the Permittee or Great Falls) 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 Turner Falls recirculating aquaculture facility (the Facility) into the Connecticut River (Massachusetts stream segment MA34-02). This facility was previously owned and operated by Australis Aquaculture, LLC (Australis). Australis and Great Falls notified EPA of the change of ownership and the transfer of the NPDES permit in a letter dated November 26, 2018. As part of this permitting action, EPA is processing the transfer request and upon the issuance of the final permit, Great Falls will be the responsible party for NPDES Permit No. MA0110264.

The permit currently in effect was issued on February 23, 2010 with an effective date of March 1, 2010 and expired on February 28, 2015 (the 2010 Permit). Australis filed an application for permit reissuance with EPA dated September 2, 2014, as required by 40 Code of Federal Regulations (CFR) § 122.6. Since the permit application was deemed timely and complete by EPA on September 30, 2014, the Facility's 2010 Permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d). Great Falls submitted an updated permit application on December 10, 2021. EPA and the State met with the Permittee on January 6, 2022.

2.0 Statutory and Regulatory Authority

Congress enacted the Federal Water Pollution Control Act, codified at 33 U.S.C. § 1251 – 1387 and commonly known as the Clean Water Act (CWA), “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except as authorized by specific permitting sections of the CWA, one of which is § 402. *See* CWA §§ 301(a), 402(a). Section 402(a) established one of the CWA’s principal permitting programs, the NPDES Permit Program. Under this section, EPA may “issue a permit for the discharge of any pollutant or combination of pollutants” in accordance with certain conditions. CWA § 402(a). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. *See* CWA § 402(a)(1) and (2). The regulations governing EPA’s NPDES permit program are generally found in 40 CFR §§ 122, 124, 125, and 136.

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

2.1 Technology-Based Requirements

Technology-based treatment requirements represent the minimum level of control that must be imposed under CWA §§ 301(b) and 402 to meet best practicable control technology currently

available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. *See* 40 CFR § 125 Subpart A.

Subpart A of 40 CFR Part 125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under § 301(b) of the CWA, including the application of EPA promulgated Effluent Limitation Guidelines (ELGs) and case-by-case determinations of effluent limitations under CWA § 402(a)(1). EPA promulgates New Source Performance Standards (NSPS) under CWA § 306 and 40 CFR § 401.12. *See also* 40 CFR §§ 122.2 (definition of “new source”) and 122.29.

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 CFR § 125.3(a)(2). Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA cannot be authorized by a NPDES permit. In the absence of published technology-based effluent guidelines, the permit writer is authorized under CWA § 402(a)(1)(B) to establish effluent limitations on a case-by-case basis using best professional judgment (BPJ).

2.2 Water Quality-Based Requirements

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

2.2.1 Water Quality Standards

The CWA requires that each state develop water quality standards (WQSs) for all water bodies within the State. *See* CWA § 303 and 40 CFR §§ 131.10-12. Generally, WQSs consist of three parts: 1) beneficial designated use or uses for a water body or a segment of a water body; 2) numeric or narrative water quality criteria sufficient to protect the assigned designated use(s); and 3) antidegradation requirements to ensure that once a use is attained it will not be degraded and to protect high quality and National resource waters. *See* CWA § 303(c)(2)(A) and 40 CFR § 131.12. The applicable State WQSs can be found in Title 314 of the Code of Massachusetts Regulations, Chapter 4 (314 CMR 4.00).

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

criteria are typically based on lifetime chronic exposure and, therefore, are typically applicable to monthly average limits.

When permit effluent limitation(s) are necessary to ensure that the receiving water meets narrative water quality criteria, the permitting authority must establish effluent limits in one of the following three ways: 1) based on a “calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use,” 2) based on a “case-by-case basis” using CWA § 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or, 3) in certain circumstances, based on use of an indicator parameter. *See* 40 CFR § 122.44(d)(1)(vi)(A-C).

2.2.2 Antidegradation

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

Massachusetts’ statewide antidegradation policy, entitled “Antidegradation Provisions,” is found in the State’s WQSs at 314 CMR 4.04. Massachusetts guidance for the implementation of this policy is in an associated document entitled “Implementation Procedures for the Antidegradation Provisions of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00,” dated October 21, 2009. According to the policy, no lowering of water quality is allowed, except in accordance with the antidegradation policy, and all existing in-stream uses, and the level of water quality necessary to protect the existing uses of a receiving water body must be maintained and protected.

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

2.2.3 Assessment and Listing of Waters and Total Maximum Daily Loads

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

not requiring the calculation of a Total Maximum Daily Load (TMDL); and 5) impaired or threatened for one or more uses and requiring a TMDL.

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

For impaired waters where a TMDL has been developed for a particular pollutant and the TMDL includes a waste load allocation (WLA) for a NPDES permitted discharge, the effluent limitation in the permit must be “consistent with the assumptions and requirements of any available WLA”. 40 CFR § 122.44(d)(1)(vii)(B).

2.2.4 Reasonable Potential

Pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements in addition to TBELs that are necessary to achieve water quality standards established under § 303 of the CWA. *See also* 33 U.S.C. § 1311(b)(1)(C). In addition, limitations “must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the permitting authority determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality.” 40 CFR § 122.44(d)(1)(i). To determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any WQS, EPA considers: 1) existing controls on point and non-point sources of pollution; 2) the variability of the pollutant or pollutant parameter in the effluent; 3) the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and 4) where appropriate, the dilution of the effluent by the receiving water. *See* 40 CFR § 122.44(d)(1)(ii).

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

2.2.5 State Certification

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate the State WQSs, the State waives, or is deemed to have waived, its right to certify. *See* 33 U.S.C. § 1341(a)(1). Regulations governing state certification are set forth in 40 CFR § 124.53 and § 124.55. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the Draft Permit will be certified.

If the State believes that conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either CWA §§ 208(e), 301, 302, 303, 306 and 307, or applicable requirements of State law, the State should include such conditions in its certification and, in each case, cite the CWA or State law provisions upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. EPA includes properly supported State certification conditions in the NPDES permit. The only exception to this is that the permit conditions/requirements regulating sewage sludge management and implementing CWA § 405(d) are not subject to the State certification requirements. Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through EPA's permit appeal procedures of 40 CFR Part 124.

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

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

2.3 Effluent Flow Requirements

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

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

WQBELs because the WQBELs are premised on a maximum level flow. The effluent flow limit is also necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSs.

The limitation on effluent flow is within EPA's authority to condition a permit to carry out the objectives and satisfy the requirements of the CWA. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 CFR §§ 122.4(a) and (d), 122.43 and 122.44(d). A condition on the discharge designed to ensure the validity of EPA's WQBELs and reasonable potential calculations that account for "worst case" conditions is encompassed by the references to "condition" and "limitations" in CWA §§402 and 301 and the implementing regulations, as WQBELs are designed to assure compliance with applicable water quality regulations, including antidegradation requirements. Regulating the quantity of pollutants in the discharge through a restriction on the quantity of effluent is also consistent with the CWA.

In addition, as provided in Part II.B.1 of this permit and 40 CFR § 122.41(e), the Permittee is required to properly operate and maintain all facilities and systems of treatment and control. Improper operation and maintenance may result in non-compliance with permit effluent limitations. Consequently, the effluent flow limit is a permit condition that relates to the Permittee's duty to mitigate (*i.e.*, minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment) and to properly operate and maintain the treatment works. *See* 40 CFR §§ 122.41(d), (e).

2.4 Monitoring and Reporting Requirements

2.4.1 Monitoring Requirements

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

The monitoring requirements included in this permit have been established to yield data representative of the Facility's discharges in accordance with CWA §§ 308(a) and 402(a)(2), and consistent with 40 CFR §§ 122.41(j), 122.43(a), 122.44(i) and 122.48. The Draft Permit specifies routine sampling and analysis requirements to provide ongoing, representative information on the levels of regulated constituents in the discharges. The monitoring program is needed to enable EPA and the State to assess the characteristics of the Facility's effluent, whether Facility discharges are complying with permit limits, and whether different permit conditions may be necessary in the future to ensure compliance with technology-based and water quality-based standards under the CWA. EPA and/or the State may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to CWA § 304(a)(1), State water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including, but not limited to, those pollutants listed in Appendix D of 40 CFR Part 122.

NPDES permits require that the approved analytical procedures found in 40 CFR Part 136 be used for sampling and analysis unless other procedures are explicitly specified. Permits also

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

- The method minimum level³ (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 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter.

2.4.2 Reporting Requirements

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

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

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

² Fed. Reg. 49,001 (Aug. 19, 2014).

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

⁴ <https://netdmr.zendesk.com/hc/en-us>

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

2.5 Standard Conditions

The Standard Conditions, included as Part II of the Draft Permit, are based on applicable regulations found in the Code of Federal Regulations. *See generally* 40 CFR Part 122.

2.6 Anti-backsliding

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

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2010 Permit unless specific conditions exist to justify relaxation in accordance with CWA § 402(o) or § 303(d)(4). Discussion of any less stringent limitations and corresponding exceptions to anti-backsliding provisions is provided in the sections that follow.

3.0 Description of Facility and Discharge

3.1 Location and Type of Facility

The Permittee produces barramundi (*Lates calcarifer*) at the Facility located at 1 Australia Way off Industrial Boulevard in the Airport Industrial Park in Turners Falls, Massachusetts. A location map is provided in Figure 1. The fish production process at the Facility consists of fish growing tanks, as well as killing, packing, and distributing facilities. The Facility has an on-site wastewater treatment plant (WWTP) for effluent generated from the aquaculture process.

Fingerlings (~1/4 gram in size) are bought from overseas hatcheries and shipped to the Facility where they are fed to marketable fish size. Most fish are sold live to markets around North America. A much smaller portion of fish are killed, filleted, and packaged on site for sale. Fish are purchased and raised year-round. The Permittee indicated on their permit renewal application that the maximum annual production amount is 1.1 million pounds of fish. Fish are raised in recirculating aquaculture systems (RAS) discussed further in Section 3.2 below.

3.1.1 Effluent Limitation Guidelines

On August 23, 2004, EPA promulgated technology-based effluent limitations guidelines (ELGs) for the Concentrated Aquatic Animal Production (CAAP) Point Source Category at 40 CFR Part 451, Subpart A, Flow-through and Recirculating Systems Subcategory for facilities that contain, hold, or produce more than 100,000 pounds of aquatic animals per year (69 FR 51906). The ELGs became effective on September 22, 2004. The promulgated ELGs contain narrative

effluent limitations with specific provisions for solids control, materials storage, structural maintenance, recordkeeping, and training.

EPA has determined that the Facility meets the definition of a CAAP at 40 CFR § 122.24(b). The Facility operates recirculating systems, independent of runoff conditions, and anticipates producing more than 100,000 pounds of aquatic animals per year. The Permittee has indicated on its 2021 Permit Renewal Application that they produce approximately 1.1 million pounds of aquatic animals per year, with a maximum harvestable weight of 660,000 pounds. Therefore, EPA has determined that Australis is subject to promulgated ELGs found at 40 CFR § 451. As a result, the Draft Permit includes narrative effluent limitation requirements, including requirements for development and implementation of a Best Management Practices (BMP) Plan containing the elements specified in the ELGs at 40 CFR § 451.11. These limitations represent application of BPT, BAT, and BCT for recirculating CAAP facilities.

3.2 Location and Type of Discharge

The Draft Permit authorizes discharges of treated process wastewater from aquatic animal production to the Connecticut River through Outfall 002. Outfall 002 was extended in 2003 and now discharges directly into the Connecticut River at Latitude 42° 35' 47.77", Longitude -72° 32' 04.38". The outfall was formerly referred to as Outfall 001 prior to the extension and is referred to in the current permit and the Draft Permit as Outfall 002. The discharge pipe is buried beneath the Connecticut River backwater known as the "deep hole" before its discharge approximately 1,000 feet from the southern shoreline.

Fish are raised from fingerlings to marketable size in a series of RAS. The first RAS is used for fingerlings and is referred to as a quarantine system because water used in it is not recirculated to other systems and is instead discharged directly to the wastewater treatment plant. This is to help prevent the spread of any disease or parasites from the newly acquired fish. Once the fish reach certain benchmark sizes they are transferred through a series of larger RAS until they are at full size (>1 lb) and are moved to production tanks. When ready for sale, fish are then sent to one of two purging areas where they are either killed or packaged alive.

Each RAS is made up of one or more culture tanks that receive a continuous stream of water. Water and any solids accumulating in the tanks drains out through the bottom where it passes through a microscreen filter, biofilter, and gas transfer system. These systems promote pH adjustment, nitrification, oxygenation, ozonation (disinfection), and carbon dioxide removal to return the water back to ideal conditions for fish culturing. Water is cycled back to the culture tanks, with any volume losses offset by the addition of "fresh water" from either groundwater wells or town water supply (used exclusively in the nursery RAS). The freshwater addition also serves to keep nitrate concentrations at appropriate levels for fish culture. Wastewater high in solids, including from filter backwashing, is directed to the wastewater treatment system. An additional source of water, referred to by the Permittee as "gooseneck water", is comprised of overflow water from the sumps of the culture systems (post drum filter) in most systems and from the top of the culture tanks in others. This gooseneck water is sent to a tank to supply the high-pressure spray nozzles used for backwashing micro-screen filters.

The Facility has a Grade 2M-classified Wastewater Treatment Plant (WWTP) to treat wastewater produced from fish culturing. The WWTP is designed for the removal of settleable solids, organic matter, and nitrogen-based organics. Two discharges are produced from the Facility. A higher-solids wastewater is produced and sent to the Montague Publicly Owned Treatment Works (NPDES Permit Number MA0100137). The other low-solids wastewater is discharged to the Connecticut River under this permit. Figure 2 depicts a schematic of water flow and wastewater treatment at the Facility.

The high solids wastewater from the RAS undergoes the following treatment steps:

1. Grit Removal via trash rack (2 units)
2. Solids Settling via cone-bottom settling tank (3 units)
3. Biological Clarifiers (2 units)
4. Microscreen Filter (1 unit)
5. Denitrification via denitrification tank (1 unit) → currently not receiving carbon feedstock and thus not being used for denitrification
6. Microscreen Filter (1 unit)
7. Ozonation via ozone contact chamber (1 unit)
8. Counter-current heat exchanger with incoming well water (1-unit)

Physical treatment is achieved with the Grit Removal and Solids Settling stages. Solid wastes include fish feces and uneaten feed. Any mortalities are removed prior to wastewater treatment, manually from the culture tanks. After exiting the cone-bottom settling tanks (i.e., primary clarifiers), water flows to one of two bio-clarifiers. Each bio-clarifier is equipped with structured media containing nitrifying bacteria and heterotrophic bacteria to oxidize ammonia and consume Biological Oxygen Demand (BOD). Clarifiers are aerated and agitated regularly and drained bi-weekly. Solids from both the primary clarifiers and the bio-clarifiers are sent to the sewer system, discharging to the Montague POTW.

After bio-clarification, water flows to the Waste Room Drum Filter, the first microscreen filter in the treatment system. At this stage, low-solids culture tank over-flow water combines with the clarified water before flowing to the Denitrification Tank (a former production RAS). Currently, the Denitrification Tank is not used for its labeled purpose and instead is a mixed reservoir that may provide further bio clarification. A summary of the historic and future use of this system for denitrification will be elaborated on in Section 5.1.5.1 below. Water exits the Denitrification Tank, passes through another Microscreen Filter and is routed to an Ozone Contact Chamber where ozone is introduced for disinfection and aeration. The water then passes through the plate heat exchanger (where groundwater is flowing in the opposite direction to feed the RAS). The Permittee indicated that outgoing effluent temperature remains around 60°F. A flow meter is the last measurement device before the discharge passes out of the WWTP, discharging through Outfall 002 to the Connecticut River. Ozone is measured after the ozone contact chamber, the rest of the parameters from the 2010 Permit are sampled after the heat plate exchanger.

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 1, 2017 through December 31, 2021, is provided in Appendix A of this Fact Sheet.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Facility discharges through Outfall 002 to the Connecticut River, Segment MA34-02, which begins at the Route 10 bridge in Northfield and ends at the Turner Falls Dam in Gill/Montague. Eventually the Connecticut River flows across the state line into Connecticut and discharges to Long Island Sound.

The Connecticut River is classified as a Class B warm water fishery in the Massachusetts WQSs, 314 Code of Massachusetts Regulations (CMR) 4.06. Class B waters are described in the Commonwealth of Massachusetts Water Quality Standards at 314 CMR 4.05(3)(b). They are designated for the following uses:

- Habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions;
- primary and secondary contact recreation;
- where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment;
- suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses; and
- shall have consistently good aesthetic value.

Connecticut River (Segment 34-02) is listed in the *Massachusetts Year 2018 Integrated List of Waters* (“303(d) List”) as a Category 5 “Waters Requiring a TMDL.”⁵ The causes of impairment include:

- Alteration in stream-side or littoral vegetative cover
- Flow Regime Modification
- Water Chestnut
- PCBs in Fish Tissue

The first two causes of impairment are a result of the Turner Falls and Northfield Mountain Pumped Storage Facility. These impairments along with the invasive Water Chestnut do not require TMDLs according to the report, due to their status as “non-pollutants.” To date, no TMDL has been developed for this segment for the “PCBs in Fish Tissue” impairment. The

⁵ *Final Massachusetts Integrated List of Waters for the Clean Water Act 2018/2020 Reporting Cycle*. MassDEP Division of Watershed Management Watershed Planning Program, Worcester, Massachusetts; November 2021, Control Number: 505.1.

Connecticut River Watershed 2003 Water Quality Assessment Report lists Segment 34-02 as supporting all designated uses except fish consumption due to PCBs in fish tissues.⁶

4.2 Ambient Data

The 2010 Permit did not require the Permittee to collect any ambient data in the Connecticut River. However, EPA did utilize data collected as part of MassDEP's *Connecticut River Watershed 2008 DWM Water Quality Monitoring Data Technical Memorandum* (February 2013). Station CTBERN (ID W1799) 800 feet north of the Route 10 bridge in Northfield (42.68537 -72.47375) was chosen as a representative upstream receiving water concentration. Data from this location was used to conduct a reasonable potential analysis (See Appendix B). A summary of the data used is presented below.

Table 1 Ambient Monitoring Data from W1799 (2008)

Parameter	Monitoring Date	Value
Ammonia-N	5/6/2008	0.02 mg/L
	6/3/2008	< 0.02 mg/L
	7/1/2008	0.02 mg/L
	7/29/2008	0.02 mg/L
	9/9/2008	0.03 mg/L
Hardness	6/3/2008	48 mg/L
	7/1/2008	36 mg/L
	7/29/2008	29 mg/L
Total Phosphorus	5/6/2008	0.015 mg/L
	6/3/2008	0.014 mg/L
	7/1/2008	0.027 mg/L
	7/29/2008	0.019 mg/L
	9/9/2008	0.011 mg/L
pH	5/30/2008	7.4 S.U.
	6/4/2008	7.3 S.U.
	6/27/2008	7.1 S.U.
	7/2/2008	7.2 S.U.
	7/25/2008	7.2 S.U.
	7/30/2008	7.1 S.U.

4.3 Available Dilution

To ensure that discharges do not cause or contribute to violations of WQSs under all expected conditions, WQBELs are derived assuming critical conditions for the receiving water.⁷ The critical flow is some measure of the low flow of the receiving water and may stipulate the

⁶ *Connecticut River Watershed 2013 Water Quality Assessment Report*. MassDEP Division of Watershed Management, Worcester, Massachusetts; October, 2008, Report Number: 34-AC-2.

⁷ [EPA Permit Writer's Manual, Section 6.2.4](#)

magnitude, duration, and frequency of allowable excursions from the magnitude component of criteria in order to prevent adverse impacts of discharges on existing and designated uses. State WQSs specify the hydrologic condition at which water quality criteria must be applied.

For rivers and streams in Massachusetts, the lowest flow condition at and above which aquatic life criteria must be applied is the lowest mean flow for seven consecutive days, recorded once in 10 years, or 7-day 10-year low flow (7Q10). *See* 314 CMR 4.03(3)(a). For rivers and streams and waters whose flows are regulated by dams or similar structures, human health based criteria may be applied at the harmonic mean flow. *See* 314 CMR 4.03(3)(d).

MassDEP calculated the 7Q10 and harmonic mean flow for the Connecticut River based on data from the United States Geological Survey (USGS) low-flow frequency statistics for the nearest USGS gauging station to the Facility along the Connecticut River (station number 01170500 at gauge identifier) for a 30-year period of record, and the USGS's SWToolbox frequency analysis tool.⁸ The 7Q10 and harmonic mean flow in the receiving water upstream of the discharge was then calculated as follows:

$$\text{Flow}_{@Facility} = \text{Flow}_{@Gauge} / \text{Drainage Area}_{@Gauge} * \text{Drainage Area}_{@Facility}$$

Where:

$$\begin{aligned} \text{Drainage Area}_{@Gauge} &= 7,860 \text{ square miles (mi}^2\text{)} \\ 7\text{Q10 Flow}_{@Gauge} &= 1,911 \text{ cubic feet per second (cfs)} \\ \text{Harmonic Mean Flow}_{@Gauge} &= 6,366 \text{ cfs} \\ \text{Drainage Area}_{@Facility} &= 7,160 \text{ mi}^2 \end{aligned}$$

Therefore:

$$\begin{aligned} 7\text{Q10} &= 1,911 \text{ cfs} / 7,860 \text{ mi}^2 * 7,160 \text{ mi}^2 \\ 7\text{Q10} &= 1,740 \text{ cfs} \end{aligned}$$

$$\begin{aligned} \text{Harmonic mean} &= 6,366 \text{ cfs} / 7,860 \text{ mi}^2 * 7,160 \text{ mi}^2 \\ \text{Harmonic mean} &= 5,799 \text{ cfs} \end{aligned}$$

Using the above-calculated 7Q10 (Q_s), the dilution factor (DF) was calculated using the permitted daily maximum flow (Q_d) as follows:

$$\text{DF} = (Q_s + Q_d) / Q_d$$

Where:

$$\begin{aligned} Q_s &= 7\text{Q10 in million gallons per day (MGD)} \\ Q_d &= \text{Discharge flow in MGD} = \text{Facility design flow} = 0.3 \text{ MGD} = 0.464 \text{ cfs} \end{aligned}$$

Therefore:

$$\text{DF} = (1,740 \text{ cfs} + 0.464 \text{ cfs}) / 0.464 \text{ cfs} = 3,751$$

⁸ USGS SWToolbox software information page: <https://www.usgs.gov/software/swtoolbox-software-information>

EPA used this dilution factor (DF), the 7Q10 and/or the harmonic mean flow in its quantitative derivation of WQBELs for pollutants in the Draft Permit.

5.0 Proposed Effluent Limitations and Conditions

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

5.1 Effluent Limitations and Monitoring Requirements

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

5.1.1 Effluent Flow

From January 1, 2017 through December 31, 2021 daily maximum effluent flow has ranged from 0.12 MGD to 0.28 MGD, while monthly average effluent flow has ranged from 0.09 MGD to 0.18 MGD (Appendix A). The Facility's 2010 Permit includes maximum daily and monthly average flow limits of 300,000 gallons per day (gpd) or 0.3 MGD. The different treatment stages have design flow capacities from 180 gpm (0.172 MGD) for the primary clarifier to 400 gpm (0.576 MGD) for the ozonation system. Under normal operating conditions, and as indicated by monitoring data and information provided by the Permittee, the current effluent flow limits are not exceeded. The Draft Permit maintains the flow limits of 0.3 MGD as well as continuous monitoring for flow using a flow meter or similar recording device, when the Facility is discharging.

5.1.2 pH

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

From January 1, 2017 through December 31, 2021, pH has ranged from 6.82 to 8.12 S.U. (Appendix A). The Draft Permit requires a pH range of 6.5 to 8.3 S.U. when the Facility is discharging, monitored monthly by grab samples. The pH limitations are based on the State WQSs for Inland Water, Class B at 314 CMR 4.05(3)(b)3, which require that the pH of the receiving water be in the range of 6.5 to 8.3 S.U. These limitations are based on CWA § 301(b)(1)(C) and 40 CFR § 122.44(d).

5.1.3 Total Suspended Solids and Biological Oxygen Demand

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

Biochemical oxygen demand (BOD) measures the amount of oxygen consumed by microorganisms in decomposing organic matter in water. BOD also measures the chemical oxidation of inorganic matter (i.e., the extraction of oxygen from water via chemical reaction). The rate of oxygen consumption in a waterbody is affected by several variables: temperature, pH, the presence of microorganisms, and the type of organic and inorganic material. BOD directly affects the amount of dissolved oxygen in rivers and streams. The greater the BOD, the more rapidly oxygen is depleted in the stream. Depletion of the in-stream oxygen levels cause aquatic organisms to become stressed, suffocate, and die. Five-day Biochemical Oxygen Demand (BOD₅) is a common measure of BOD. As with solids, uneaten feed and fish excreta can increase the oxygen demand of the culture water. Controls on these discharges will lower the BOD₅ of the effluent.

The 2010 Permit contains limitations on both of these pollutants, acknowledging their role as the primary pollutants of concern from aquaculture operations. These limits were based on Best Professional Judgment (BPJ) pursuant to CWA § 402(a)(1) and were established prior to the 2004 CAAP ELGs, which stipulate narrative requirements to implement BMPs that minimize TSS and BOD₅ discharges through proper feed management and management of solids (requirements that were also included in the 2010 Permit). As a result of the comments received on the draft of the 2010 Permit, EPA converted the concentration-based limits to load limits and made the TSS limits more stringent following procedures outlined in EPA's *Technical Support Document for Water Quality-Based Toxics Control (TSD)*.⁹ A summary of the limits and monitoring data (Appendix A) from the period of January 1, 2017 through December 31, 2021 is provided in Table 2 below.

Table 2. TSS and BOD₅ Limitations and Monitoring Results January 1, 2017 through December 31, 2021

Pollutant	Limit Type	Limit Value (lb/d)	Median (lb/d)	Maximum (lb/d)	Number of Exceedances
TSS	Maximum Daily	99	46.2	141.8	1
	Monthly Average	75	40.3	140	1
BOD ₅	Maximum Daily	200	26.4	69.1	0

⁹ USEPA, *Technical Support Document for Water Quality-Based Toxics Control*, Office of Water, Washington, D.C., March 1991.

	Monthly Average	100	22.4	56.5	0
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The Facility exceeded their TSS permit limits in November 2020. Other than that month, the Facility has demonstrated consistent compliance with their permitted limits. The Permittee indicated that the exceedance was caused by the high solids flow that resulted from running the denitrification system. The Permittee discussed the connection between nitrogen removal and solids augmentation in its February 2022 Nitrogen Optimization Report.

The Draft Permit continues the limitations and twice monthly monitoring requirements for TSS and BOD₅ in order to control discharges of aquaculture waste to the Connecticut River. In addition, the Facility is subject to the effluent limitations guidelines (ELGs) for CAAP facilities (40 CFR Part 451) based on the level of fish production. The narrative effluent limitations established as the technology-based ELGs were incorporated into 2010 Permit and have been included in the Draft Permit. The ELGs require implementation of effective operational measures to achieve reduced discharges of solids and other materials. The continuation of both the numeric and narrative limitations in the Draft Permit is in accordance with anti-backsliding requirements found in 40 CFR § 122.44(1). The Draft Permit also includes a reporting requirement of the concentrations of TSS and BOD₅ used to calculate the monthly average and maximum daily loads – included for greater transparency of load calculations.

5.1.4 Dissolved Oxygen

Massachusetts WQS at 314 CMR 4.05(3)(b)(1) state that for Class B warm water fisheries, the dissolved oxygen (DO) concentration shall not be less than 5.0 mg/L. The 2010 Permit contains a more stringent limit of no less than 6.0 mg/L, monitored weekly. This limit was carried forward from previous permits and based on State WQS at the time. Likely, there were concerns that the high density of aquatic animal production could deplete dissolved oxygen concentrations in the effluent. From January 1, 2017 through December 31, 2021, minimum measured DO concentrations have ranged from 10 mg/L to 27.55 mg/L (Appendix A). The Permittee has not had any difficulty complying with its effluent limitation.

Anti-backsliding requirements at 40 CFR § 122.44(1) prevent an effluent limitation from being changed to be less stringent even when revised regulations have been promulgated. As a result, the Draft Permit maintains the effluent DO monitoring requirement and limitation. However, given the Permittee's history of compliance with this requirement and the effluent concentrations relative to the limitation, EPA has reduced weekly monitoring frequency to monthly.

5.1.5 Nutrients

Nutrients are compounds containing nitrogen and phosphorus. Although nitrogen and phosphorus are essential for plant growth, even moderately elevated concentrations of these nutrients can cause eutrophication, a condition in which aquatic plant and algal growth is excessive. Plant and algae respiration and decomposition reduces dissolved oxygen in the water, creating poor habitat for fish and other aquatic animals. Phosphorus is typically the limiting nutrient triggering eutrophication in freshwater ecosystems and nitrogen in marine or estuarine

ecosystems. For this permit, both phosphorus and nitrogen are nutrients of concern as described below.

5.1.5.1 Total Nitrogen

The Facility discharges to the Connecticut River, which drains to Long Island Sound (LIS). In 2000, New York and Connecticut finalized a Total Maximum Daily Load¹⁰ (TMDL) that addressed dissolved oxygen impairments in Long Island Sound due to excessive nitrogen loading. It was approved by EPA in 2001. While the TMDL included waste load allocations (WLAs) for point sources in Connecticut and New York, out-of-basin facilities were not assigned WLAs. The Connecticut and New York WLAs included in the TMDL were based on an assumption that out-of-basin point source loads of total nitrogen would be reduced in aggregate by 25% from the baseline through enforceable permit requirements imposed by permitting authorities in the out-of-basin states to protect downstream waters. Building off this assumption, the 2010 Permit required monthly monitoring for Total Nitrogen (TN) and its constituents – Total Kjeldahl Nitrogen (TKN), nitrate, and nitrite – as well as annual reporting to evaluate operational changes to reduce the nitrogen load from the Facility.

EPA's approach to controlling out-of-basin discharges of nitrogen to LIS was updated in 2019. EPA has adopted a systematic, state-by-state approach to control nitrogen pollution discharging from "out-of-basin" point sources in Massachusetts, New Hampshire and Vermont into tributaries of LIS, a severely impaired water body shared by New York and Connecticut. EPA prioritized implementing effluent limits for major POTW facilities with design flows greater than 1 MGD. Industrial dischargers and POTWs with flows less than 1 MGD are now being re-issued with nitrogen optimization requirements in lieu of effluent limitations.¹¹ This approach is consistent with the one taken in the 2010 Permit, described above.

From January 1, 2017, through December 31, 2021, TN load from the Facility has ranged from 38 to 158 lb/day, with a median value of 97 lb/day (Appendix A). For comparison, these loads equate to a concentration range of 51.1 to 112 mg/L TN. Almost the entire load of TN is nitrate and nitrite nitrogen, with a relatively small proportion composed of Total Kjeldahl Nitrogen (TKN). This is expected given the fluidized bed reactor used in the RAS to promote nitrification.

EPA has estimated that between 2017-2021, the sum of the average annual loads in pounds per day for the 48 Massachusetts point source discharges to the Connecticut River is 8,485 lb/day. The annual average TN load from the Facility ranged from 63 to 120 lb/day over the last five years.¹² Australis is the largest industrial contributor of Total Nitrogen to the Connecticut River

¹⁰ Connecticut Department of Environmental Protection and New York State Department of Environmental Conservation, *A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound* (LIS TMDL), December 2000.

¹¹ A complete summary of EPA's updated methodology is provided in the fact sheets to recently issued POTW permits discharging in the LIS watershed. See, e.g., Erving POTW #1 (MA0101516) available at <https://www.epa.gov/npdes-permits/massachusetts-final-individual-npdes-permits>.

¹² This value was calculated by taking the average monthly load of TN for a given month and the 11 preceding months and averaging them for each month between December 2016 through November 2021. Data from Appendix

in Massachusetts and is the thirteenth largest contributor of 48 point-source dischargers.¹³ It simultaneously has the 27th largest design flow, indicating the treatment efficiency of the operation has not been optimized. For further comparison, there are three other CAAPs that discharge to the Connecticut River, albeit they are flow-through systems and not recirculating systems like the Facility.¹⁴ The annual average TN load between 2017-2021 for those facilities ranged from 9 to 38 lb/day.

Both Australis and Great Falls did not submit annual nitrogen optimization reports as required by Part I.C. of the 2010 Permit. When notified, Australis supplied a report titled, *Nitrogen Removal in Waste Water Treatment Plant: Process Evaluation Report*.¹⁵ Great Falls was notified of this compliance issue during the drafting of the Draft Permit and submitted its first annual report by the February 1st, 2022 deadline. The report is titled *Annual Nitrogen Discharge Optimization Report September, 2018 – December, 2021*.

The initial evaluation report from Australis found that current wastewater treatment practices (circa 2013) removed approximately 23% of the total inorganic nitrogen load produced from fish culturing, while an additional 22% of the inorganic nitrogen is reclaimed through the recirculation system itself. In other words, water reuse and solids removal were responsible for reducing total inorganic nitrogen loads ~45% from what would be expected given the nitrogen inputs from the fish stock and fish feed. The Australis report went on to conclude that operational changes to enhance the removal of nitrogen were not recommended because Australis found that: (1) current practices remove a significant load of nitrogen already, (2) operational changes were unlikely to remove significant quantities of additional nitrogen, and (3) there was a trade-off between increasing denitrification (to remove nitrate/nitrite) and increased solids and BOD loads. Regarding the last point, Australis found that increasing denitrification by promoting an anaerobic environment in the biofilters, led to poor filter performance and increased solids loads.

Australis proposed three alternative strategies to reduce total nitrogen. The first was an on-site solids capture system for the beneficial reuse of fish manure and biosolids. However, since the solids that would be reused were currently being discharged to the Montague WWTP, regulated by its own NPDES permit, the system would have little effect on the direct discharge's nitrogen load. The second proposal was to increase the efficiency of fish feeding. Progress had already been made at the time of the report and further optimization was expected as indicated by the report. The last strategy was to use an advanced denitrification system to treat the wastewater. The report indicated that a pilot study was underway. Given the lack of follow-up studies, it is unclear what the success of these strategies or the pilot studies were.

A as well as Discharge Monitoring Report data for the 11 months preceding December 2016 were used for this calculation.

¹³ Data summarized from EPA's Enforcement Compliance History Online (ECHO) database and based on estimates of the average TN load from 2016 through 2020.

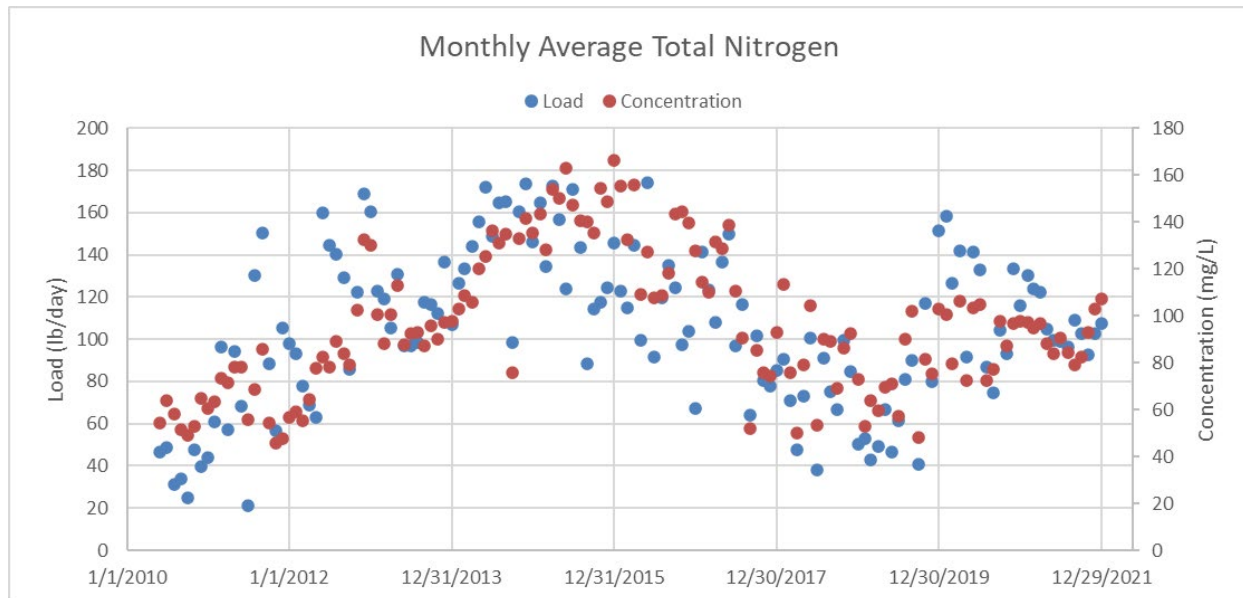
¹⁴ NPDES Permit No. MA0110043, MA0110035, MA0110051. Since this analysis was conducted, these CAAPs have been covered under EPA's Aquaculture General Permit. Their new permit numbers are: MAG130003, MAG130005, and MAG130002, respectively.

¹⁵ The report is undated and unsigned and was not found in EPA's administrative records for the Facility. No other subsequent annual reports were found or provided to EPA from Australis.

The 2022 report submitted by Great Falls laid out the nitrogen optimization efforts made since the company took over ownership in 2018. Great Falls inherited a denitrification system from Australis that was installed in 2017. The system was a repurposed grow-out culture tank that works by mixing incoming treated wastewater with a carbon source. As explained previously, water leaving this denitrification system is pumped to the ozone contact chamber. The system began operation in May of 2017. Methanol was initially used as the carbon source by Australis leading to significant reductions in inorganic nitrogen loads. Due to safety concerns with storing methanol on site, Great Falls switched to a glycerin-based carbon source in June of 2019. The new process led to varied nitrogen reduction results and Great Falls noted that increasing carbon dosing to promote reductions in inorganic nitrogen led to increases in TSS and BOD. While EPA acknowledges a spike in TSS load in November 2020 that resulted in permit limit exceedances, generally, the Permittee has been well within compliance for its TSS and BOD₅ limitations (Appendix A).

Since 2019, Great Falls has actively been seeking funding to build and install a new denitrification system. In parallel, the Permittee has been testing a small pilot-scale system to denitrify the wastewater with a fluidized bed reactor design. In 2021, the Massachusetts Department of Agricultural Resources awarded the company funding to build a denitrification system based on the fluidized bed design. No further updates were provided in the report.

Part I.C. of the 2010 Permit referenced an annual total nitrogen load for the Facility of 4.92 lb/day. This value was meant to be the baseline load that the Facility should work towards reducing. However, after examining the 2010 Draft Permit’s fact sheet, it is clear that this load is based on Total Kjeldahl Nitrogen (TKN) concentrations, the organic portion of total nitrogen, from 2008-2009. To determine what the appropriate baseline should have been, EPA compiled total nitrogen data from May 2010 through the reporting period for this fact sheet (December 2021). See the figure below.



For the first 12 months of this period, monthly average total nitrogen load ranged from 24.9 lb/day to 94.29 lb/day with an average value of 52.1 lb/day. From there, a steady increase in both load and concentration occurred, peaking at the end of 2015 before declining to a minimum in 2019. This decline coincides with the use of the denitrification system in 2017 and the subsequent increase appears to align with discontinuing its use. As stated previously, annual average total nitrogen loads are currently closer to 110 lb/day than the 2010-2011 average value of 52.1 lb/day.

As mentioned above, in 2019, EPA updated its approach to controlling out of basin point sources of nitrogen to Long Island Sound. The continued downstream nutrient impairment necessitated stricter controls on out of basin point sources than the one EPA was using. Given that larger POTWs make up the vast majority of the nitrogen load for out of basin point sources, EPA has been implementing annual average load limits for POTWs with design flows greater than 1 MGD. For the most part, permits for industrial dischargers and POTWs with flows less than 1 MGD are being reissued with nitrogen optimization requirements and no effluent limitations. This approach is in line with the conditions of the Facility's 2010 Permit. However, EPA does have significant concerns about the loads of nitrogen discharged from the Facility relative to other dischargers of similar volumes and the Permittee's noncompliance with nitrogen optimization requirements thus far. As a result, EPA has chosen to update the requirements for the Draft Permit.

EPA has found the following updates to the Draft Permit are necessary to lead to improvements in reductions of total nitrogen loading from the Facility to the Connecticut River.

- 1) A revised baseline annual average nitrogen load of 52.1 lb/day is included in the Draft Permit as a target for the Facility's optimization efforts. This value, calculated above, represents the load being discharged at the beginning of the 2010 Permit term and for which the Facility is and was required to optimize around.
- 2) Additional monitoring requirements for feed, production, and feed conversion ratio are included in the Draft Permit. These values will help EPA and the Permittee evaluate the efficiency of fish feeding, one of the major sources of total nitrogen.
- 3) Within one month of the effective date of the Final Permit, the Permittee must report on the status of the denitrification system, the installation schedule and/or planned alternatives.
- 4) Total Nitrogen, Total Kjeldahl Nitrogen, and Total Nitrate + Nitrite reporting have been increased to twice monthly in line with the TSS and BOD5 requirements. Given the relationship between these parameters as identified by the Permittee in the annual nitrogen report, EPA finds that they should be monitored at similar frequencies to appropriately monitor their minimization.
- 5) The annual optimization reporting requirement has been updated in line with other recently issued permits.

EPA finds that these conditions are necessary to ensure that this out-of-basin point-source does not contribute to violations of Connecticut's antidegradation standards. In line with the principal

objective of the CWA, articulated in CWA § 101(a), to “maintain the chemical, physical and biological integrity of the Nation’s waters.”

5.1.5.2 Phosphorus

While phosphorus is an essential nutrient for the growth of aquatic plants, it can stimulate rapid plant growth in freshwater ecosystems when it is present in high quantities. The excessive growth of aquatic plants and algae within freshwater systems negatively impacts water quality and can interfere with the attainment of designated uses by: 1) increasing oxygen demand within the water body to support an increase in both plant respiration and the biological breakdown of dead organic (plant) matter;¹⁶ 2) causing an unpleasant appearance and odor; 3) interfering with navigation and recreation, for instance, by fouling engines and propellers, making waters unappealing to swimmers, and interfering with fishing lures and equipment; 4) reducing water clarity; 5) reducing the quality and availability of suitable habitat for aquatic life; and 6) producing toxic cyanobacteria during certain algal blooms. Cultural (or accelerated) eutrophication is the term used to describe dense and excessive plant growth in a water body that results from nutrients entering the system as a result of human activities. Discharges from municipal and industrial wastewater treatment plants, agriculture runoff, and stormwater are examples of human-derived (*i.e.*, anthropogenic) sources of nutrients in surface waters. See generally, *Nutrient Criteria Technical Guidance Manual – Rivers and Streams*, EPA July 2000 [EPA-822-B-00-002], Chapters 1 and 3.

The MA WQS under 314 CMR 4.05(5)(c) requires that, unless naturally occurring, surface waters must be free from nutrients that cause or contribute to impairment of the existing or designated uses, and the concentration of phosphorus may not exceed site specific criteria developed in a TMDL. Nutrients are also prohibited in concentrations that would cause or contribute to cultural eutrophication. Cultural eutrophication also results in exceedances of other nutrient-related water quality standards such as low dissolved oxygen, decreased water clarity, objectionable odors, and surface scum. The MA WQS at 314 CMR 4.05(3)(b)(1) requires that dissolved oxygen not be less than 6.0 mg/L in cold water fisheries or 5.0 mg/L in warm water fisheries. Further, the MA WQS at 4.05(3)(b)(5), (6) and (8) state that waters must be free from “floating, suspended, and settleable solids,” free from “color and turbidity in concentrations or combinations that are aesthetically objectionable...”, and have no taste and odor “in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to this Class, or that would cause tainting or undesirable flavors in the edible portions of aquatic life.” To prevent cultural eutrophication, the MA WQS at 4.05(5)(c) states that “Any existing point source discharge containing nutrients in concentrations that would cause or contribute to cultural eutrophication, including the excessive growth of aquatic plants or algae, in any surface water shall be provided with the most appropriate treatment as determined by the

¹⁶ “Algae” includes phytoplankton (microscopic algae measured by levels of chlorophyll a), macroalgae (commonly referred to as seaweed), and other plants stimulated by nutrient over-enrichment. Excessive algal growth contributes to low levels of dissolved oxygen through increased plant respiration and decomposition of dead plant matter. Notably, during the day, algae provide oxygen to the water as a by-product of photosynthesis. At night, however, when photosynthesis ceases but plant respiration continues, dissolved oxygen levels decline. Additionally, as these algae die, they are decomposed by bacteria that consume yet more oxygen. When dissolved oxygen levels are low, aquatic organisms become stressed and die, and overall aquatic health is degraded.

Department, including, where necessary, highest and best practical treatment (HBPT) for POTWs and BAT for non POTWs, to remove such nutrients to ensure protection of existing and designated uses.” Also see Part 2.2.2 of this Fact Sheet above regarding antidegradation and existing uses which may be impacted by nutrient over-enrichment.

When permitting nutrient discharges, EPA analyzes available information from a reasonably conservative standpoint, as it regards one key function of a nutrient limit as preventative. This protective approach is appropriate because, once begun, the cycle of eutrophication can be difficult to reverse due to the tendency of nutrients to be retained in the sediments. For this reason, time is of the essence when permitting for nutrients, so EPA acts on the best information reasonably available when developing the draft permit, and does not generally delay permit issuance pending collection of new data or development of new models. This approach is also consistent with the requirement for NPDES permits to be revisited and reissued at regular intervals, with permit terms not to exceed five years.

When translating narrative phosphorus criteria into numeric values (and establishing WQBELs, if necessary), EPA looks to a wide range of materials, including nationally recommended criteria and other relevant materials, such as EPA nutrient technical guidance and information published under Section 304(a) of the CWA, peer-reviewed scientific literature and site-specific surveys and data to determine instream targets that are protective of water quality. See 40 CFR § 122.44(d)(1)(vi)(A), (B).

EPA has produced several guidance documents, described below, that recommend a range of total ambient phosphorus concentrations that are sufficiently stringent to control cultural eutrophication and other adverse nutrient-related impacts, with 0.1 mg/L representing the upper end of this range. These guidance documents recommend protective in-stream phosphorus concentrations based on two different analytical approaches. An effects-based approach provides a threshold value above which adverse effects (*i.e.*, water quality impairments) are likely to occur. This approach applies empirical observations of a causal variable (*i.e.*, phosphorus) and a response variable (*i.e.*, chlorophyll-a as a measure of algal biomass) associated with designated use impairments. Alternatively, reference-based values are statistically derived from a comparison within a population of rivers in the same ecoregion class. They are a quantitative set of river characteristics (physical, chemical and biological) that represent conditions in waters in that ecoregion that are minimally impacted by human activities (*i.e.*, reference conditions), and thus by definition representative of water without cultural eutrophication. Dischargers in Massachusetts and New Hampshire are located within either Ecoregion VIII, Nutrient-Poor, Largely Glaciated Upper Midwest and Northeast or Ecoregion XIV, Eastern Coastal Plains. The recommended total phosphorus criteria for these ecoregions are 10 µg/L and 31.25 µg/L, respectively. While reference conditions reflect in-stream phosphorus concentrations that are sufficiently low to meet the requirements necessary to support designated uses, they may also represent levels of water quality beyond what is necessary to support such uses.

EPA follows an effects-based approach. EPA’s 1986 *Quality Criteria for Water* (the “Gold Book”) recommends maximum threshold concentrations that are designed to prevent or control adverse nutrient-related impacts from occurring. Specifically, the Gold Book recommends in-stream phosphorus concentrations of no greater than 0.05 mg/L in any stream entering a lake or

reservoir, 0.1 mg/L for any stream not discharging directly to lakes or impoundments, and 0.025 mg/L within a lake or reservoir. As the Gold Book notes, there are natural conditions of a water body that can result in either increased or reduced eutrophic response to phosphorus inputs; in some waters more stringent phosphorus reductions may be needed, while in some others a higher total phosphorus threshold could be assimilated without inducing a eutrophic response. EPA is not aware of any site-specific factors relevant to the receiving water that would result in it being unusually more or less susceptible to phosphorus loading.

In determining whether the discharge has the reasonable potential to cause or contribute to excursions above the instream water quality criteria (the Gold Book value of 0.05 mg/L for streams entering a lake or reservoir; Turner Falls dam is immediately downstream of the discharge) for phosphorus, EPA used the mass balance equation presented in Appendix B to project the phosphorus concentration downstream of the discharge. If there is reasonable potential, this mass balance equation is also used to determine the limit that is required in the permit.

Based on the phosphorus criterion described above, the upstream 7Q10 flow, and the design flow of the Facility, Appendix B presents the details of the mass balance equation, the determination of whether there is reasonable potential to cause or contribute to an excursion of WQS and, if necessary, the limits proposed in the Draft Permit WQS. As shown, it was estimated that under critical conditions the downstream concentration will be 17.3 µg/L which does not exceed the instream target of 100 µg/L. Therefore, there is no reasonable potential to cause or contribute to an excursion of WQS, so the Draft Permit does not propose a phosphorus limit. Given the effluent phosphorus concentrations, values that greatly exceed the Gold Book criteria, monitoring remains in place in the Draft Permit.

5.1.6 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. Chlorine is used at the Facility to disinfect fish production tanks between production batches. The Permittee's BMP Plan indicates that culture tanks are cleaned on a staggered basis, approximately every six months. Sodium hypochlorite is added to the tanks and mixed in to distribute it through the RAS. The chlorine is neutralized with sodium thiosulfate after disinfection. The Permittee tests the residual chlorine level prior to reconnecting the tank to the wastewater treatment system, only re-connecting it if the level is below 0.08 mg/L. Some chlorine may also enter the wastewater treatment plant from disinfection of production equipment with the Virkon-S disinfectant (EPA Registration Number 39967-137).

The 2010 Permit includes Total Residual Chlorine (TRC) maximum daily and average monthly limits of 1.0 mg/L. Monitoring is only required during major cleaning events. From January 1, 2017 through December 31, 2021, the Permittee reported "NODI: 9" codes on their monthly discharge monitoring reports, indicating no sampling for TRC. The Permittee clarified on the January 6, 2022 conference call that they have not been sampling at the point of discharge but do test chlorine levels prior to re-connecting any of the RAS to the water treatment system as mentioned above. Therefore, sampling for TRC does occur for all of the tanks before they

discharge to the outfall. EPA examined recent TRC testing the Permittee provided, indicating levels below 0.08 mg/L, and thus below the effluent limit. The Permittee also indicated that their biological filters would not function properly if chlorine was not adequately neutralized.

Chlorinated discharges are subject to Massachusetts WQS' *Implementation Policy for the Control of Toxic Pollutants in Surface Waters*, 1990. The policy states that, "In segments with dilution factors greater than 100, the maximum effluent concentration of chlorine shall not exceed 1.0 mg/L TRC." The Facility's dilution factor remains above this threshold (3,751). As a result, the Draft Permit continues the WQBELs for TRC based on State WQS.

Given the Permittee's history of not sampling at the point of discharge, EPA finds it necessary to clarify TRC effluent monitoring requirements and update monitoring frequencies. The Draft Permit requires effluent monitoring once per month rather than once during "major cleaning events" at the point of discharge. Given the frequency of cleaning operations and the lack of clarity in the 2010 Permit over what qualifies as a major cleaning event, EPA finds that routine effluent monitoring at the point of discharge should be explicitly stipulated in the Draft Permit. While the Permittee has indicated that there is an incredibly small likelihood of discharging TRC concentrations above the effluent limit, let alone above the 0.08 mg/L internal limit, EPA still finds routine monitoring necessary. For one, the Permittee uses chlorine for tank cleaning year-round. In addition, no TRC data has been collected at the point of discharge from the Facility, only from individual wastewater streams. Lastly, EPA does not find TRC monitoring at a once per month frequency particularly burdensome given the ubiquity of this monitoring for point source discharges permitted under the NPDES program. In conclusion, the Draft Permit requires monthly grab sampling of TRC to meet the 1.0 mg/L monthly average and maximum daily effluent limitations.

5.1.7 Ammonia

Ammonia (NH₃) is the unionized form of ammonia nitrogen. Elevated levels of ammonia can be toxic to aquatic life. Temperature and pH affect the toxicity of ammonia to aquatic life. The toxicity of ammonia increases as temperature increases and ammonia concentration and toxicity increase as pH increases. Ammonia can affect fish growth, gill condition, organ weights and hematocrit, and can result in excessive plant and algal growth, which can cause eutrophication. Ammonia can also affect dissolved oxygen through nitrification, in which oxygen is consumed as ammonia is oxidized. Low oxygen levels can then, in turn, increase ammonia by inhibiting nitrification. Total ammonia-nitrogen concentrations in surface waters tends to be lower during summer than during winter due to uptake by plants and decreased ammonia solubility at higher temperatures.

EPA conducted an analysis to determine whether the discharge has the reasonable potential to cause or contribute to excursions above the instream water quality criteria for total ammonia nitrogen. In Massachusetts, state water quality criteria for ammonia are derived from EPA's *National Recommended Water Quality Criteria: 2002*, which are incorporated into the state WQSs by reference at 314 CMR 4.05(5)(e). EPA relied on data from MassDEP's *Connecticut River Watershed 2008 DWM Water Quality Monitoring Data Technical Memorandum* (February 2013) to calculate applicable criteria for the Connecticut River at the point of discharge.

Monitoring location W1799 was chosen as the upstream receiving water point. Temperature values were assumed to be 25°C in the warm season (April - October) and 5°C in the cold season (November - March). The resulting criteria ranged from 2.7 mg/L to 19.7 mg/L and are presented in Appendix B.

Based on the ammonia criteria described above, the upstream 7Q10 flow, and the design flow of the Facility, Appendix B presents the details of the mass balance equation, the determination of whether there is reasonable potential to cause or contribute to an excursion of WQS and, if necessary, the limits proposed in the Draft Permit WQS. As shown, there is no reasonable potential to cause or contribute to an excursion of WQS, so the Draft Permit does not propose ammonia limits. Given the effluent ammonia concentrations, values that occasionally exceed the water quality criteria, monitoring remains in place in the Draft Permit.

5.1.8 Ozone

The 2010 Permit requires daily monitoring of residual ozone concentrations and a requirement that residual ozone cannot fall below 0.02 mg/L. The permit requirement was carried forward from previous permit issuances and based on the Facility's use of an ozone disinfection system. It is EPA's understanding based on the previous fact sheet that this requirement was to ensure that the ozone system was disinfecting the hatchery effluent to sufficient levels to prevent the discharge of potentially harmful pathogens. The permitting record does not specify what the specific pathogens of concern are. NPDES permits for discharges to the Connecticut River typically require monitoring for *Escherichia coli* to control discharges of bacteria. *E. coli* is a bacterium that provides direct evidence of fecal contamination from warm-blooded animals. Discharges related to culturing Barramundi are unlikely to be sources of this bacteria; however, other foreign pathogens may be transported on the organisms, including fungi that the Facility currently treats for. In accordance with anti-backsliding regulations, EPA has carried forward this requirement in the Draft Permit.

5.1.9 Narrative Effluent Limitations

As discussed in Section 3.1.1 of this Fact Sheet, the ELGs contained in 40 CFR § 451.11 are narrative limitations that describe BMPs that the Permittee must implement at the Facility. These practices require the Permittee to develop and employ methods for feed management, removal of accumulated solids, storage of drugs and pesticides, spill prevention, management of the wastewater treatment system, maintaining accurate records, and ensuring that all personnel receive proper training. The Draft Permit requires the selection, design, installation, and implementation of control measures for wastewater associated with the Facility operations to comply with the non-numeric technology-based effluent limits. These non-numeric limitations are consistent with the limitations specified in 40 CFR Part 451 Subpart A for flow-through and recirculating systems in the CAAP Point Source Category and have also been carried forward from the 2010 Permit. Requirements include:

- Solids control including feed management and feeding strategies to minimize potential discharges of uneaten feed, accumulated solids, and disposal of animal mortalities;

- Materials storage including proper storage of drugs, pesticides, and feed, and procedures for spill prevention and disposal;
- Structural maintenance including route inspections and maintenance;
- Recordkeeping including documenting feed amounts, numbers/weight of aquatic animals, and frequency of inspections and repairs;
- Training including proper spill clean-up and disposal and operation and cleaning of wastewater treatment systems, feeding procedures, and use of equipment.

The Draft Permit also carries forward several facility-specific BMPs from the 2010 Permit that are not contained in the ELGs. Specifically,

- the prohibition on the discharge of untreated cleaning water (Part I.B.2.);
- the Biological Control BMP that requires the Permittee to control potential releases of their cultured species (Part I.C.4.b.);
- Chlorine Neutralization prior to discharge BMP (Part I.D.1.a.);
- Significant Mortality Event notification requirement (Part I.D.1.b.);
- Production Changes notification requirement (Part I.D.1.c.); and
- Additional medication notification requirements and prohibitions (Part I.D.1.e.).

These facility-specific BMPs have been carried forward in accordance with the prohibition on backsliding. *See* CWA §§ 402(o) and 303(d)(4) and 40 CFR § 122.44(l).

The purpose of all of these requirements is to reduce or eliminate the discharge of pollutants to waters of the United States. These requirements will also ensure that discharges from the Facility will meet State WQSs pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1). Unless otherwise stated, the Permittee may select, design, install, implement and maintain BMPs as the Permittee deems appropriate to meet the permit requirements. The selection, design, installation, implementation and maintenance of control measures must be in accordance with good engineering practices and manufacturer's specifications.

6.0 Federal Permitting Requirements

6.1 Endangered Species Act

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA), grants authority and imposes requirements on Federal agencies regarding endangered or threatened species of fish, wildlife, or plants (listed species) and habitat of such species that 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 Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries) administers Section 7 consultations for marine and anadromous species.

The Federal action being considered in this case is EPA's proposed NPDES permit for the recirculating aquaculture facility (the Facility). The Draft Permit is intended to replace the 2010 Permit in governing the Facility. As the federal agency charged with authorizing the discharge from this Facility, EPA determines potential impacts to federally listed species, and initiates consultation, when required under Section 7(a)(2) of the ESA.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants in the expected action area of the outfall to determine if EPA's proposed NPDES permit could potentially impact any such listed species in this segment of the Connecticut River (MA34-02).

Regarding protected species under the jurisdiction of NOAA Fisheries, a number of anadromous and marine species and life stages are present in Massachusetts waters. Various life stages of protected fish, sea turtles and whales have been documented in Massachusetts coastal and inland waters, either seasonally or year-round. In general, adult and subadult life stages of Atlantic sturgeon (*Acipenser oxyrinchus*) and adult shortnose sturgeon (*Acipenser brevirostrom*) are present in coastal waters. These sturgeon life stages are also found in some river systems in Massachusetts, along with early life stages of protected sturgeon and juvenile shortnose sturgeon. Protected marine species, including adult and juvenile life stages of leatherback sea turtles (*Dermochelys coriacea*), loggerhead sea turtles (*Caretta caretta*), Kemp's ridley sea turtles (*Lepidochelys kempii*) and green sea turtles (*Chelonia mydas*) are found in coastal waters and bays. Adult and juvenile life stages of North Atlantic right whales (*Eubalaena glacialis*) and fin whales (*Balaenoptera physalus*) have also been documented in coastal waters and bays. Those coastal areas have been designated as critical habitat for North Atlantic right whale feeding.

In this case, the Facility's outfall and action area do not overlap with coastal waters where protected marine species (sea turtles and whales) are found. The Facility's discharge is over 80 miles north of Long Island Sound and over 80 miles west of the Massachusetts coastline. However, one species of anadromous fish, the shortnose sturgeon (*Acipenser brevirostrom*), is potentially present in the vicinity of the discharge. In general, adult shortnose sturgeon (SNS) are present in coastal waters, but various sturgeon life stages are also found in some river systems in Massachusetts. As noted previously, the Facility discharges directly into the mainstem of the Connecticut River. According to NOAA Fisheries,¹⁷ an existing dam-locked population of shortnose sturgeon inhabit the upstream sections of the Connecticut River above the Holyoke Dam in Holyoke, MA, approximately 38 miles downstream of the Facility's outfall. The lifestages include adult and juvenile SNS that are expected to migrate, forage and overwinter in the area, young of year SNS that are expected to migrate and forage in the area and post yolk-sac larvae SNS that are expected to migrate and forage in the area. However, the furthest upstream the SNS lifestages are found is the base of the Turner's Falls Dam. The Facility's outfall is approximately 1.5 miles upstream of the Turner's Falls Dam. In addition, the dilution factor of the Facility's discharge is very high, at 3,751. EPA has determined that the action area of the

¹⁷ See ESA Section 7 resources for NOAA Fisheries in the Greater Atlantic Region at <https://noaa.maps.arcgis.com/apps/webappviewer/index.html?id=1bc332edc5204e03b250ac11f9914a27>.

outfall will not travel as far downstream as the Turner's Falls Dam and therefore will not overlap with the presence of SNS. EPA has judged that no consultation is necessary for SNS or any other protected species under the jurisdiction of NOAA Fisheries.

For protected species under the jurisdiction of the USFWS, one listed species, the northern long-eared bat (*Myotis septentrionalis*), was identified as potentially occurring in the action area of the Facility's discharge. Another endangered species, the northeastern bulrush (*Scirpus ancistrochaetus*), was found to be in the general vicinity of the discharge.

According to the USFWS, the threatened northern long-eared bat is found in the following habitats based on seasons, "winter – mines and caves; summer – wide variety of forested habitats." This species is not considered aquatic. However, because the Facility's projected action area in the Connecticut River near Turner Falls, Massachusetts overlaps with the general statewide range of the northern long-eared bat, EPA prepared an Effects Determination Letter for the Great Falls NPDES Permit Reissuance and submitted it to USFWS. Based on the information submitted by EPA, the USFWS notified EPA by letter, dated January 3, 2021, that the permit reissuance is consistent with activities analyzed in the USFWS January 5, 2016, Programmatic Biological Opinion (PBO). The PBO outlines activities that are excepted from "take" prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.). The USFWS consistency letter concluded EPA's consultation responsibilities for the Great Falls NPDES permitting action under ESA section 7(a)(2) with respect to the northern long-eared bat. No further ESA section 7 consultation is required with USFWS.

According to the USFWS,¹⁸ the northeastern bulrush is a wetland obligate plant occurring in acidic to almost neutral wetlands including sinkhole ponds, wet depressions, vernal pools (collectively, seasonal or ephemeral wetlands), beaver flowages, and other riparian areas found in hilly country (Schuyler 1962, p. 47). Since the Great Falls Aquaculture action area discharges directly to the mainstem of the Connecticut River, it does not overlap with the habitat of the northeastern bulrush. Therefore, the proposed permit action is deemed to have no impact on this listed species and ESA consultation with USFWS for this plant is not required.

At the beginning of the public comment period, EPA notified USFWS and NOAA Fisheries Protected Resources Division that the Draft Permit and Fact Sheet were available for review and provided a link to the EPA NPDES Permit website to allow direct access to the documents.

EPA finds that adoption of the proposed permit is not likely to adversely affect any threatened or endangered species or its critical habitat and informal consultation with NOAA Fisheries or USFWS under Section 7 of the ESA is required. Initiation of consultation is required and shall be requested by the EPA or by USFWS/NOAA Fisheries where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the analysis; (b) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not

¹⁸ For USFWS species list see at <https://ecos.fws.gov/ipac/>.

considered in this analysis; or (c) If a new species is listed or critical habitat designated that may be affected by the identified action. No take is anticipated or exempted. If there is any incidental take of a listed species, initiation of consultation would be required.

6.2 Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (*see* 16 U.S.C. § 1801 *et seq.*, 1998), EPA is required to consult with the NOAA Fisheries if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat". *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 CFR § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

EFH is only designated for fish species for which federal Fisheries Management Plans exist. *See* 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999. A New England Fishery Management Council's Omnibus Essential Fish Habitat Amendment in 2017 updated the descriptions.

The Federal action being considered in this case is EPA's proposed NPDES permit for the Great Falls recirculating aquaculture facility (the Facility), which discharges through Outfall 002 to the Connecticut River, segment MA34-02 in Turner Falls, Massachusetts. The Connecticut River is covered by EFH designation for riverine systems at Latitude 42° 35' 47.77", Longitude -72° 32' 04.38", as determined by the NOAA EFH Mapper.¹⁹ EPA's review of available EFH information indicated that this water body is designated EFH for Atlantic salmon. Therefore, consultation with NOAA Fisheries under the Magnuson-Stevens Fishery Conservation and Management Act is required.

The Connecticut River and its tributaries are designated EFH for Atlantic salmon (*Salmo salar*). EPA has determined that the operation of this Facility, as governed by this permit action, may adversely affect the EFH of the Atlantic salmon in the Connecticut River Watershed. The Draft Permit has been conditioned in the following way to minimize any impacts that reduce the quality and/or quantity of EFH:

- This Draft Permit action does not constitute a new source of pollutants. It is the reissuance of an existing NPDES permit;
- The design flow of the Facility is 0.3 MGD and the dilution factor is 3,751:1;
- The Facility withdraws no water from the Connecticut River, so the EFH will not be reduced in quality and/or quantity through impingement or entrainment of EFH

¹⁹ NOAA EFH Mapper available at <http://www.habitat.noaa.gov/protection/efh/efhmapper/>.

designated species or their prey;

- Total suspended solids, biochemical oxygen demand, pH, dissolved oxygen, and total residual chlorine are regulated by the Draft Permit to meet water quality standards;
- The Draft Permit prohibits the discharge of pollutants or combinations of pollutants in toxic amounts;
- The effluent limitations and conditions in the Draft Permit were developed to be protective of all aquatic life; and
- The Draft Permit prohibits violations of the state water quality standards.

EPA believes that the conditions and limitations contained in the Draft Permit adequately protects all aquatic life, including EFH designated for Atlantic salmon in the receiving water. 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, NOAA Fisheries Habitat Division will be contacted and an EFH consultation will be re-initiated.

At the beginning of the public comment period, EPA notified NOAA Fisheries Habitat and Ecosystem Services Division that the Draft Permit and Fact Sheet were available for review and provided a link to the EPA NPDES Permit website to allow direct access to the documents. In addition to this Fact Sheet and the Draft Permit, information to support EPA's finding was included in a letter under separate cover that will be sent to the NOAA Fisheries Habitat and Ecosystem Services Division during the public comment period.

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:

Nathan Chien
EPA Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1649
Email: Chien.Nathan@epa.gov

Prior to the close of the public comment period, any person may submit a written request to EPA for a public hearing to consider the Draft Permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held if the criteria stated in 40 CFR § 124.12 are satisfied. In reaching a final decision on the Draft Permit, EPA will respond to all significant comments in a Response to Comments document attached to the Final Permit and make these responses available to the public at EPA's Boston office and on EPA's website.

Following the close of the comment period, and after any public hearings, if such hearings are held, EPA will issue a Final Permit decision, forward a copy of the final decision to the applicant, and provide a copy or notice of availability of the final decision to each person who

submitted written comments or requested notice. Within 30 days after EPA serves notice of the issuance of the Final Permit decision, an appeal of the federal NPDES permit may be commenced by filing a petition for review of the permit with the Clerk of EPA's Environmental Appeals Board in accordance with the procedures at 40 CFR § 124.19.

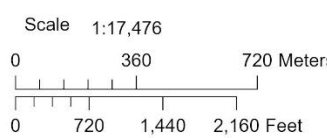
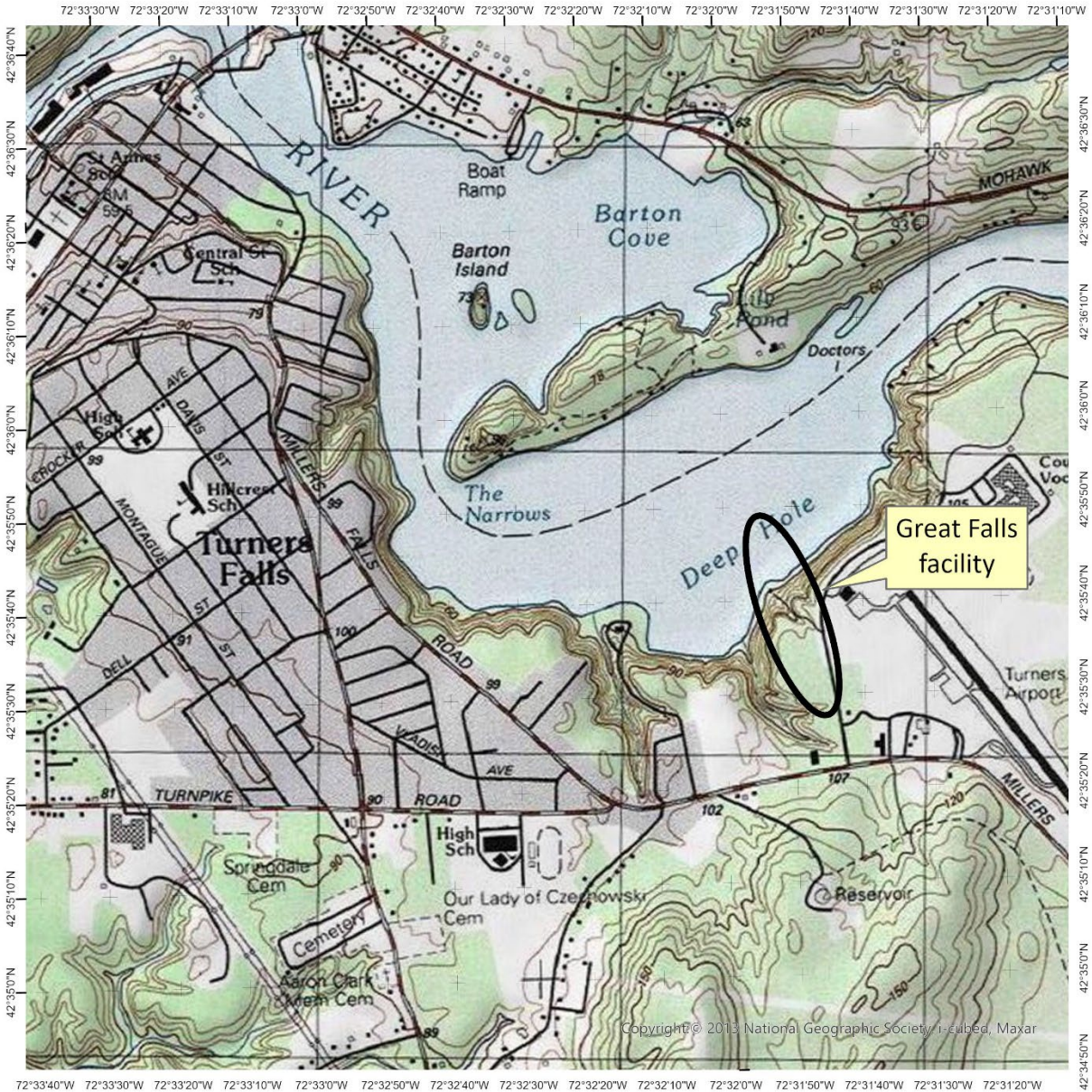
8.0 Administrative Record

The administrative record on which this Draft Permit is based may be accessed at EPA's Boston office by appointment, Monday through Friday, excluding holidays from Nathan Chien, EPA Region 1, 5 Post Office Square, Suite-100 (06-1), Boston, MA 02109-3912, or via email to Chien.Nathan@epa.gov.

April 4, 2022

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

Figure 1: Location Map



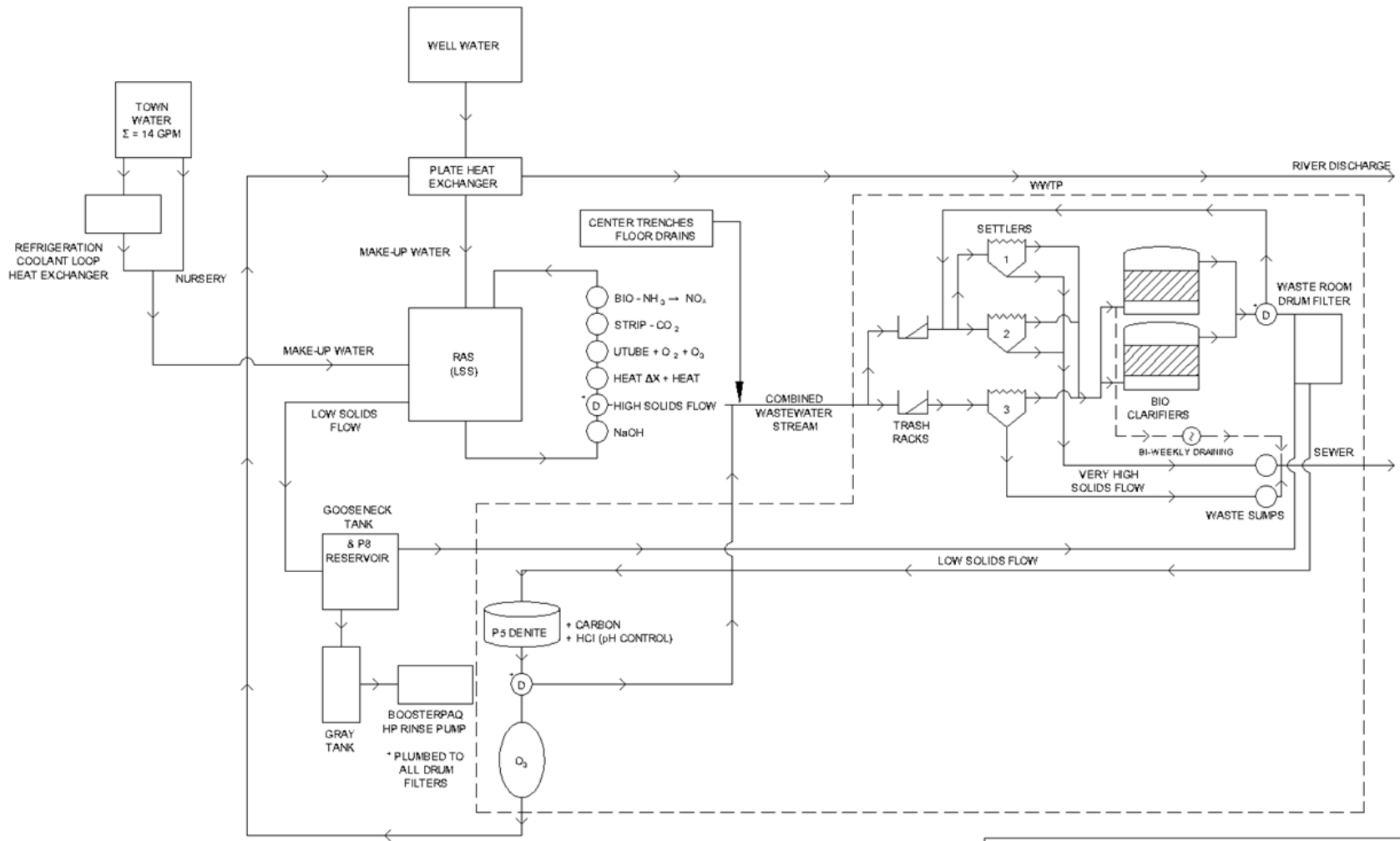
Regulated Facilities: EPA 



FIGURE 1
Site Location Map
Great Falls Aquaculture
1 Australia Way
Turner Falls, MA
NPDES No. MA0110264



Figure 2: Schematic of Water Flow



Appendix A: Discharge Monitoring Data

GREAT FALLS AQUACULTURE									
Outfall Serial Number 002									
Monthly Effluent Monitoring									
Parameter	Flow	Flow	pH	pH	Dissolved Oxygen	BOD5	BOD5	TSS	TSS
	Monthly Avg	Daily Max	Minimum	Maximum	Minimum	Monthly Avg	Daily Max	Monthly Avg	Daily Max
Units	MGD	MGD	SU	SU	mg/L	lb/d	lb/d	lb/d	lb/d
Effluent Limit	0.3	0.3	6.5	8.3	6	100	200	75	99
Minimum	0.09	0.12	6.82	7.01	10	5	6.2	14.7	20.3
Maximum	0.18	0.28	7.99	8.12	27.55	56.5	69.1	140	141.8
Median	0.125	0.16	7.2	7.39	17.6	22.4	26.4	40.3	46.2
No. of Violations	0	0	0	0	0	0	0	1	1
Monitoring Period End Date									
1/31/2017	0.12	0.16	7.17	7.34	16.4	29.8	33.6	56.6	80.6
2/28/2017	0.12	0.15	7.19	7.36	17.5	44.1	61.2	68.9	95.1
3/31/2017	0.12	0.15	7.19	7.34	16.8	26.5	37.7	41.3	58.5
4/30/2017	0.12	0.14	7.18	7.28	18.4	32.1	38.7	44.9	48.4
5/31/2017	0.11	0.14	7.19	7.3	18.5	23.6	32.2	28	42.7
6/30/2017	0.1	0.17	7.17	7.31	17.6	9	12.1	35.5	41.9
7/31/2017	0.16	0.28	7.21	7.39	16.5	16.8	19.4	25.3	25.5
8/31/2017	0.14	0.27	7.11	7.2	15.2	25.4	56.2	49	79.9
9/30/2017	0.14	0.16	7.11	7.26	18.7	6.4	9.5	46.7	66.9
10/31/2017	0.13	0.16	7.11	7.24	16.4	5.8	6.2	39.1	44.2
11/30/2017	0.12	0.14	7.15	7.28	15.9	5	6.9	67.2	74.3
12/31/2017	0.11	0.12	7.19	7.28	16.9	7.7	9	24.4	29.2
1/31/2018	0.12	0.14	7.16	7.24	17.2	19.5	25	26.9	44.9
2/28/2018	0.11	0.13	7.19	7.26	18.4	22.4	28.1	30.9	31.3
3/31/2018	0.11	0.17	7.19	8.09	10	12.8	34.5	29.2	47
4/30/2018	0.11	0.14	7.35	7.91	10	14.8	21.2	30.3	45.4
5/31/2018	0.11	0.15	7.87	7.99	14.5	42.9	57.3	48.1	55.4

GREAT FALLS AQUACULTURE									
Outfall Serial Number 002									
Monthly Effluent Monitoring									
Parameter	Flow	Flow	pH	pH	Dissolved Oxygen	BOD5	BOD5	TSS	TSS
	Monthly Avg	Daily Max	Minimum	Maximum	Minimum	Monthly Avg	Daily Max	Monthly Avg	Daily Max
Units	MGD	MGD	SU	SU	mg/L	lb/d	lb/d	lb/d	lb/d
6/30/2018	0.09	0.12	7.95	8.06	14.2	47.8	63.2	46	66.3
7/31/2018	0.1	0.14	7.96	8.02	15.6	39.9	54.5	21.6	28.3
8/31/2018	0.11	0.12	7.1	7.2	19.5	20.4	29.3	52.8	60.3
9/30/2018	0.11	0.13	7.99	8	19.4	23.4	25.6	39.8	43.2
10/31/2018	0.12	0.14	7.98	8	18.8	17.9	22	31.2	34.4
11/30/2018	0.11	0.21	7.77	8.03	17.4	15.5	16.5	25.4	35.8
12/31/2018	0.11	0.13	7.76	7.81	17.7	32.9	33.8	34.9	37.4
1/31/2019	0.11	0.25	7.72	8.12	17.62	34.1	37.9	38	49.8
2/28/2019	0.09	0.13	7.79	7.82	16.9	28	28.2	32	37
3/31/2019	0.11	0.13	7.78	7.79	16.7	34.2	34.5	41.1	41.9
4/30/2019	0.09	0.12	7.79	7.81	17.05	24.5	25.8	32.8	33.1
5/31/2019	0.11	0.14	7.79	7.81	16.82	31.2	44.3	27.8	32
6/30/2019	0.11	0.2	6.82	7.81	16.5	38.8	44.4	53.2	76
7/31/2019	0.11	0.13	7.42	7.51	16.53	37.6	43.7	34.1	39.1
8/31/2019	0.11	0.2	6.99	7.03	16.55	30.2	38	68.7	75
9/30/2019	0.13	0.2	7.37	7.45	16.35	15.6	27	51	74
10/31/2019	0.16	0.18	7.27	7.39	16.2	15.8	17.3	69.1	73.4
11/30/2019	0.17	0.19	7.02	7.13	16.55	14.2	15.9	74.7	75.2
12/31/2019	0.16	0.18	6.96	7.01	16.8	29.5	33.8	57.1	57.3
1/31/2020	0.17	0.22	7.04	7.29	17.08	39.1	12.3	46.8	33.5
2/29/2020	0.18	0.2	7.2	7.25	15.8	29.4	36.5	72.9	74.4
3/31/2020	0.15	0.17	7.2	7.24	23.5	22.4	23.3	45.1	52.8
4/30/2020	0.15	0.18	7.29	7.39	22.2	15.5	16.5	45	48.2
5/31/2020	0.16	0.18	7.22	7.35	21.3	9.2	12	24.9	25.2
6/30/2020	0.15	0.16	7.2	7.26	21.2	14.1	17.7	25.3	26.9
7/31/2020	0.15	0.16	7.12	7.2	21.4	7.4	10.1	27.1	39

GREAT FALLS AQUACULTURE									
Outfall Serial Number 002									
Monthly Effluent Monitoring									
Parameter	Flow	Flow	pH	pH	Dissolved Oxygen	BOD5	BOD5	TSS	TSS
	Monthly Avg	Daily Max	Minimum	Maximum	Minimum	Monthly Avg	Daily Max	Monthly Avg	Daily Max
Units	MGD	MGD	SU	SU	mg/L	lb/d	lb/d	lb/d	lb/d
8/31/2020	0.14	0.16	7.21	7.28	23.9	22.9	29.4	49.2	62.8
9/30/2020	0.13	0.14	7.14	7.2	22.6	30.1	33.6	65.3	75
10/31/2020	0.13	0.18	7.01	7.32	21.8	28	33.8	73.6	85
11/30/2020	0.15	0.17	7.02	7.18	21.5	56.5	69.1	140	141.8
12/31/2020	0.15	0.18	7.09	7.13	22	26.2	32.2	19.1	41.8
1/31/2021	0.17	0.18	7.04	7.26	17.6	26.9	28.2	14.7	21
2/28/2021	0.15	0.18	7.22	7.39	27.4	20.2	22.5	47.6	84.9
3/31/2021	0.15	0.17	7.19	7.45	22.6	16.1	18.1	20.2	23.8
4/30/2021	0.15	0.15	7.28	7.41	20.5	15.1	18.4	64.2	80.8
5/31/2021	0.14	0.16	7.4	7.5	15.8	10.4	15.5	20.8	24.4
6/30/2021	0.13	0.14	7.2	7.43	22.3	11.3	11.5	23.8	25.7
7/31/2021	0.14	0.16	7.26	7.45	19.9	11.7	14	53.9	62.5
8/31/2021	0.14	0.17	7.36	7.4	24.4	10.1	17.6	52.3	64.8
9/30/2021	0.13	0.23	7.1	7.53	18.5	23.1	29.9	40.8	49.1
10/31/2021	0.13	0.16	7.47	7.52	25.2	5.4	7.1	32.1	37.5
11/30/2021	0.12	0.14	7.38	7.56	27.55	16	21.1	16.8	20.3
12/31/2021	0.12	0.2	7.35	7.42	26.06	10.8	12.4	22.4	24

GREAT FALLS AQUACULTURE								
Outfall Serial Number 002								
Monthly Effluent Monitoring Continued								
Parameter	Total Nitrogen (TN)	Total Nitrogen (TN)	Total Nitrite + Nitrate	Nitrogen, Kjeldahl, total (TKN)	Total Phosphorus (TP)	Total Ammonia	Ozone - residual	Ozone - residual
	Monthly Avg	Monthly Avg	Monthly Avg	Monthly Avg	Monthly Avg	Daily Max	Monthly Avg Min	Daily Min
Units	lb/d	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	0.02	0.02
Minimum	38.36	47.94	47.7	2.5	1.05	0.24	0.02	0.02
Maximum	158.09	138.71	135.85	19.52	10.8	9.52	0.06	0.08
Median	96.745	88.655	87.85	6.395	4.78	1.695	0.03	0.02
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	0	0
Monitoring Period End Date								
1/31/2017	141.52	114.16	111.5	5.53	5.38	2.66	0.05	0.02
2/28/2017	123.49	110.14	106.5	4.62	3.92	3.64	0.04	0.02
3/31/2017	107.84	131.58	128.5	4.13	4.91	3.08	0.03	0.02
4/30/2017	136.6	128.78	126.5	3.85	4.7	2.73	0.03	0.02
5/31/2017	149.83	138.71	135.85	6.68	4.34	2.86	0.03	0.02
6/30/2017	97.01	110.7	108.5	8.02	4.37	2.2	0.03	0.02
7/31/2017	116.33	90.38	89.77	5.23	3	0.61	0.03	0.02
8/31/2017	63.94	51.94	50.5	6.19	2.45	1.44	0.02	0.02
9/30/2017	101.45	85.25	82.3	5.99	3.46	2.95	0.03	0.02
10/31/2017	80.47	75.99	72.9	7.48	3.66	3.09	0.02	0.06
11/30/2017	78	74.5	72.6	5.5	4.01	1.9	0.03	0.02
12/31/2017	85.34	92.77	90.4	5.99	3.62	2.37	0.03	0.02
1/31/2018	90.78	113.64	111.5	5.69	3.85	2.14	0.03	0.02
2/28/2018	70.93	75.64	66.12	19.52	5.06	9.52	0.02	0.02
3/31/2018	47.6	50.13	48.84	5.31	4.06	1.29	0.02	0.03

GREAT FALLS AQUACULTURE								
Outfall Serial Number 002								
Monthly Effluent Monitoring Continued								
Parameter	Total Nitrogen (TN)	Total Nitrogen (TN)	Total Nitrite + Nitrate	Nitrogen, Kjeldahl, total (TKN)	Total Phosphorus (TP)	Total Ammonia	Ozone - residual	Ozone - residual
	Monthly Avg	Monthly Avg	Monthly Avg	Monthly Avg	Monthly Avg	Daily Max	Monthly Avg Min	Daily Min
Units	lb/d	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
4/30/2018	73.03	79.32	78.5	4.06	3.84	0.82	0.03	0.02
5/31/2018	100.68	104.32	102.5	9.84	6.07	1.82	0.03	0.02
6/30/2018	38.36	53.59	51.94	12.9	4.83	1.65	0.03	0.02
7/31/2018	91.11	90.2	88.8	8.6	6	1.4	0.03	0.02
8/31/2018	75.24	89.27	88	6.17	5.94	1.27	0.05	0.02
9/30/2018	66.47	69	67.7	5.85	4.78	1.3	0.04	0.02
10/31/2018	99.74	86.33	85.5	8.18	4.79	0.83	0.04	0.02
11/30/2018	84.94	92.65	91.7	9.77	4.72	0.95	0.03	0.02
12/31/2018	50.24	73.04	72.1	15.6	5.87	0.94	0.03	0.02
1/31/2019	52.75	52.91	51.7	11.6	4.6	1.21	0.03	0.02
2/28/2019	42.83	63.85	63.14	9.83	4.52	0.71	0.04	0.02
3/31/2019	49.05	59.67	58.64	9.53	3.64	1.03	0.03	0.02
4/30/2019	66.47	69.47	68.34	7.25	3.18	1.13	0.03	0.02
5/31/2019	46.72	70.9	69.14	10.2	3.41	0.95	0.03	0.02
6/30/2019	61.21	57.06	56.28	5.3	1.8	0.78	0.03	0.02
7/31/2019	81.08	90.3	88.9	5.7	2.6	1.4	0.03	0.02
8/31/2019	89.79	101.86	101.2	5.9	2.6	0.66	0.03	0.02
9/30/2019	40.53	47.94	47.7	3.31	1.05	0.24	0.04	0.02
10/31/2019	117.29	81.48	80.3	10.2	2.53	1.18	0.04	0.02
11/30/2019	79.71	75.18	74.4	7.4	3.5	0.78	0.03	0.08
12/31/2019	151.39	102.98	101.04	7.04	5.45	1.94	0.05	0.02
1/31/2020	158.09	100.33	98.54	8.21	5.97	1.79	0.05	0.02

GREAT FALLS AQUACULTURE								
Outfall Serial Number 002								
Monthly Effluent Monitoring Continued								
Parameter	Total Nitrogen (TN)	Total Nitrogen (TN)	Total Nitrite + Nitrate	Nitrogen, Kjeldahl, total (TKN)	Total Phosphorus (TP)	Total Ammonia	Ozone - residual	Ozone - residual
	Monthly Avg	Monthly Avg	Monthly Avg	Monthly Avg	Monthly Avg	Daily Max	Monthly Avg Min	Daily Min
Units	lb/d	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
2/29/2020	126.36	79.67	88.5	6.77	4.84	1.17	0.06	0.02
3/31/2020	142.03	106.05	105.1	14.8	4.72	0.95	0.05	0.02
4/30/2020	91.66	72.35	71.9	4.07	3.88	0.45	0.04	0.02
5/31/2020	141.2	103.54	102.04	2.5	4.78	1.5	0.03	0.02
6/30/2020	132.72	104.91	103.04	6.41	5.23	1.87	0.03	0.02
7/31/2020	86.63	72.68	70.8	2.53	4.57	1.88	0.04	0.02
8/31/2020	74.44	77.05	76.14	3.2	4.33	0.81	0.03	0.02
9/30/2020	104.27	97.53	96.8	9.6	6.37	0.73	0.03	0.02
10/31/2020	93.21	87.26	86.47	3.1	6.71	0.79	0.03	0.02
11/30/2020	133.56	96.62	93.62	4.1	10.8	3	0.03	0.02
12/31/2020	115.82	97.54	94.9	7.1	6.25	2.64	0.05	0.02
1/31/2021	130.23	97.42	95.34	6.82	5.68	2.08	0.02	0.04
2/28/2021	123.79	94.86	92.9	6.2	6.06	1.96	0.04	0.02
3/31/2021	122.52	96.94	95.2	4.56	6.2	1.74	0.03	0.02
4/30/2021	104.74	88.04	85.72	6.38	6.43	2.32	0.04	0.02
5/31/2021	99.61	83.7	81.6	5.34	6.71	2.1	0.03	0.02
6/30/2021	98.88	90.32	87.7	7.32	6.46	2.62	0.03	0.02
7/31/2021	96.48	84.46	82.88	2.88	7.06	1.58	0.04	0.02
8/31/2021	109.23	79.26	76.8	6.95	7.29	2.36	0.05	0.02
9/30/2021	102.72	82.35	80.24	5.58	6.24	2.11	0.04	0.02
10/31/2021	92.78	92.37	89.91	8.4	7.77	2.46	0.06	0.02
11/30/2021	102.84	101.49	98.23	8.16	7.72	3.26	0.05	0.02

GREAT FALLS AQUACULTURE								
Outfall Serial Number 002								
Monthly Effluent Monitoring Continued								
Parameter	Total Nitrogen (TN)	Total Nitrogen (TN)	Total Nitrite + Nitrate	Nitrogen, Kjeldahl, total (TKN)	Total Phosphorus (TP)	Total Ammonia	Ozone - residual	Ozone - residual
	Monthly Avg	Monthly Avg	Monthly Avg	Monthly Avg	Monthly Avg	Daily Max	Monthly Avg Min	Daily Min
Units	lb/d	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
12/31/2021	107.37	99.11	96.3	6.52	8.65	2.81	0.05	0.02

Notes:

N/A = not applicable

MGD = million gallons per day

SU = Standard Units

mg/L = milligram per liter

lb/d = pounds per day

red text = effluent limit violation

Appendix B: Reasonable Potential Analysis

Methodology

A reasonable potential analysis is completed using a single set of critical conditions for flow and pollutant concentrations that will ensure the protection of water quality standards. To determine the critical condition of the effluent, EPA projects an upper bound of the effluent concentration based on the observed monitoring data and a selected probability basis. EPA generally applies the quantitative approach found in Appendix E of the *Technical Support Document for Water Quality-based Toxics Control* (TSD)¹ to determine the upper bound of the effluent data. This methodology accounts for effluent variability based on the size of the dataset and the occurrence of non-detects (i.e., samples results in which a parameter is not detected above laboratory minimum levels). EPA used this methodology to calculate the 95th percentile.

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

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

Where:

C_d = downstream concentration

C_s = upstream concentration (median value of available ambient data)

C_e = effluent concentration (95th percentile of effluent concentrations)

Q_s = upstream flow (7Q10 flow upstream of the outfall)

Q_e = effluent flow of the Facility (permitted maximum daily flow)

Q_d = downstream flow ($Q_s + Q_e$)

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

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

When the downstream concentration exceeds the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above WQSS. See 40 CFR § 122.44(d). When EPA determines that a discharge causes, has the reasonable

¹ USEPA, *Technical Support Document for Water Quality-Based Toxics Control*, Office of Water, Washington, D.C., March 1991.

potential to cause, or contribute to such an excursion, the permit must contain WQBELs for the parameter. The limitation is calculated by rearranging the above mass balance equation to solve for the effluent concentration using the applicable criterion as the downstream concentration. The resulting effluent concentration then becomes the basis for the effluent limit. *See* 40 CFR § 122.44(d)(1)(iii).

Determination of Applicable Criteria

State water quality criteria for ammonia are derived from EPA's *National Recommended Water Quality Criteria: 2002*, which are incorporated into the state WQSs by reference at 314 CMR 4.05(5)(e). EPA relied on data from MassDEP's *Connecticut River Watershed 2008 DWM Water Quality Monitoring Data Technical Memorandum* (February 2013) to calculate applicable criteria for the Connecticut River at the point of discharge. Monitoring location W1799 chosen as the upstream receiving water point. Temperature values were assumed to be 25°C in the warm season (April - October) and 5°C in the cold season (November - March).

A discussion of phosphorus criteria can be found in Section 5.1.5.2 above.

Calculation of Reasonable Potential

EPA first calculated the upper bound of expected effluent concentrations for each parameter. EPA then used the calculated upper bound of expected effluent concentrations, the median value of the available ambient data, the permitted daily maximum effluent flow and the upstream 7Q10 flow to project the in-stream concentration downstream from the discharge.² When this resultant in-stream concentration (C) exceeds the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above water quality standards. The results are summarized in the table below.

No pollutants had reasonable potential to cause or contribute to an excursion above WQS.

² EPA used the median value of phosphorus and ammonia data from monitoring location W1799 in MassDEP's *Connecticut River Watershed 2008 DWM Water Quality Monitoring Data Technical Memorandum* (February 2013) for the receiving water concentration.

Summary of Reasonable Potential Results

Pollutant	Conc. Units	Q _s (MGD)	C _s ¹	Q _e (MGD)	C _e ²		Q _d (MGD) ³	C _d		Criteria		Reasonable Potential ⁴	
					Acute	Chronic		Acute	Chronic	Acute	Chronic	C _e & C _d > Acute Criteria	C _e & C _d > Chronic Criteria
Phosphorus	µg/L	1124.04	15	0.3	8776.7	8776.7	1124.34	17.3	17.3	N/A	50.0	N	N
Ammonia (Cold)	mg/L	1124.04	0.02	0.3	4.9	4.9	1124.34	0.0	0.0	19.7	5.4	N	N
Ammonia (Warm)	mg/L	1124.04	0.02	0.3	3.6	3.6	1124.34	0.0	0.0	19.7	2.7	N	N

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

² Median upstream values calculated using monitoring data for the receiving water upstream of the Facility's discharge.

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

⁴ "Y" is indicated if downstream concentration exceeds the criterion. "N" is indicated if downstream concentration does not exceed the criterion.

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY – REGION 1 (EPA)
WATER DIVISION
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BOSTON, MASSACHUSETTS 02109

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

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

PUBLIC NOTICE PERIOD: April 4, 2022 – May 3, 2022

NAME AND MAILING ADDRESS OF APPLICANT:

Great Falls Aquaculture, LLC
1 Australia Way
Turner Falls, MA 01376

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

Great Falls Aquaculture, LLC
1 Australia Way
Turner Falls, MA 01376

RECEIVING WATER AND CLASSIFICATION:

Connecticut River (Class B)

PREPARATION OF THE DRAFT PERMIT AND EPA REQUEST FOR CWA § 401 CERTIFICATION:

EPA is issuing for public notice and comment the Draft NPDES Permit for the Great Falls Aquaculture, LLC facility, which discharges treated process wastewater from aquaculture operations. The effluent limits and permit conditions have been drafted pursuant to, and assure compliance with, the CWA, including EPA-approved State Surface Water Quality Standards at 314 CMR 4.00. MassDEP cooperated with EPA in the development of the Draft NPDES Permit. MassDEP retains independent authority under State law to publish for public notice and issue a separate Surface Water Discharge Permit for the discharge, not the subject of this notice, under the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53.

In addition, EPA has requested that MassDEP grant or deny certification of this Draft Permit pursuant to Section 401 of the CWA and implementing regulations. Under federal regulations governing the NPDES program at 40 Code of Federal Regulations (CFR) § 124.53(e), state certification shall contain conditions that are necessary to assure compliance with the applicable provisions of CWA sections 208(e), 301, 302, 303, 306, and 307 and with appropriate requirements of State law, including any conditions more stringent than those in the Draft Permit that MassDEP finds necessary to meet these requirements. Furthermore, MassDEP may provide a statement of the extent to which each condition of the Draft Permit can be made less stringent without violating the requirements of State law.

INFORMATION ABOUT THE DRAFT PERMIT:

The Draft Permit and explanatory Fact Sheet may be obtained at no cost at <https://www.epa.gov/npdes-permits/massachusetts-draft-individual-npdes-permits> or by contacting:

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Boston, MA 02109-3912
Telephone: (617) 918-1649
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Following U.S. Centers for Disease Control and Prevention (CDC) and U.S. Office of Personnel Management (OPM) guidance and specific state guidelines impacting our regional offices, EPA's workforce has been directed to telework to help prevent transmission of the coronavirus. While in this workforce telework status, there are practical limitations on the ability of Agency personnel to allow the public to review the administrative record in person at the EPA Boston office. However, any electronically available documents that are part of the administrative record can be requested from the EPA contact above.

PUBLIC COMMENT AND REQUESTS FOR PUBLIC HEARINGS:

All persons, including applicants, who believe any condition of this Draft Permit is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by May 3, 2022, which is the close of the public comment period. Comments, including those pertaining to EPA's request for CWA § 401 certification, should be submitted to the EPA contact at the address or email listed above. Upon the close of the public comment period, EPA will make all comments available to MassDEP. All commenters who want MassDEP to consider their comments in the state decision-making processes (i.e., the separate state permit and the CWA § 401 certification) must submit such comments to MassDEP during the state comment period for the state Draft Permit and CWA § 401 certification. For information on submitting such comments to MassDEP, please follow the instructions found in the state public notice at: <https://www.mass.gov/service-details/massdep-public-hearings-comment-opportunities>.

Any person, prior to the close of the EPA public comment period, may submit a request in writing to EPA for a public hearing on the Draft Permit under 40 CFR § 124.10. 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 if the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on this Draft Permit, the Regional Administrator will respond to all significant comments and make the responses available to the public.

Due to the COVID-19 National Emergency, if comments are submitted in hard copy form, please also email a copy to the EPA contact above.

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 notify the applicant and each person who has submitted written comments or requested notice.

KEN MORAFF, DIRECTOR
WATER DIVISION
UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY – REGION 1

LEALDON LANGLEY, DIRECTOR
DIVISION OF WATERSHED MGMT
MASSACHUSETTS DEPARTMENT OF
ENVIRONMENTAL PROTECTION