

**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"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21 §§26-53),

Australis Aquaculture, LLC

Is authorized to discharge from the facility located at

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

To receiving water named **Connecticut River (MA 34-02)**

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

This draft permit will become effective on the date of signature if no comments are received during public notice. If comments are received during public notice, the permit will become effective on the first day of the calendar month immediately following sixty days after signature.

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

This permit supersedes the permit issued on September 10, 2003.

This permit consists of 11 pages in Part I, including effluent limitations, monitoring requirements and 25 pages in Part II including Standard Conditions.

Signed this day of

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

Glenn Haas, Director
Division of Watershed Management
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date and lasting through the expiration date, the permittee is authorized to discharge treated wastewater from the fish production process through Outfall 002 to the Connecticut River. Such discharge shall be limited and monitored by the permittee as specified below. Samples taken in compliance with the monitoring requirements specified below shall be taken at a location that provides a representative analysis of the effluent prior to mixing with any other waste streams.

Effluent Characteristic		Discharge Limitation			Monitoring Requirements ¹	
Parameter	Units	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow	MGD	0.3	-	0.3	Continuous ²	Recorder
BOD ₅	mg/l	40 100 lb/day	-	80 200 lb/day	Weekly ³	Composite ⁴
TSS	mg/l	30 75 lb/day	-	50 125 lb/day	Weekly ³	Composite ⁴
pH ⁵	SU	6.5-8.0 (See I.A.3 Page 3)			Monthly	Grab
Dissolved Oxygen	mg/l	-	-	> 6.0 (See I.A.4 Page 3)	Weekly ³	Grab
Total Phosphorous	mg/l	Report	-	Report	Monthly ⁶	Composite ⁴
Total Nitrogen ⁷	mg/l lb/day	Report mg/l Report lb/day	-	Report mg/l Report lb/day	Monthly ⁶	24-hour Composite
Nitrate plus Nitrite	mg/l	Report	-	Report	Monthly ⁶	24-hour Composite
Total Kjeldahl Nitrogen	mg/l	Report	-	Report	Monthly ⁶	24-hour Composite
Total Ammonia	mg/l	Report	-	Report	Monthly	24-hour Composite
Total Residual Chlorine	mg/l	1	-	1	During major cleaning events, such as disinfection of a tank ^{8,9}	Grab
Ozone, Residual	mg/l	>0.02 ¹⁰	-	>0.02 ¹⁰	Daily	Grab

Footnotes on Page 3

Footnotes:

1. Samples taken in compliance with the monitoring requirements specified above shall be representative of all waste streams and taken prior to entering the receiving water.
2. The flow shall be continuously measured and recorded using a flow meter and totalizer.
3. The BOD₅, TSS, Dissolved Oxygen samples shall be taken weekly during maintenance activities.
4. A composite sample shall consist of at least 8 grab samples collected during the cleaning cycle.
5. Required for State Certification.
6. Samples for Nitrate plus Nitrite, Total Kjeldahl Nitrogen, Total Ammonia, and Total Phosphorus shall be taken monthly during maintenance activities concurrent with a round of weekly samples.
7. See Part I.C, Special Conditions, for requirements to evaluate and implement optimization of nitrogen removal.
8. The minimum level (ML) for total residual chlorine is defined as 0.05 mg/l. This value is the minimum level for chlorine using EPA approved methods found in Standard Methods for the Examination of Water and Wastewater, 20th Edition, Method 4500 CL-E and G, or USEPA Manual of Methods of Analysis of Water and Wastes, Method 330.5. One of these methods must be used to determine total residual chlorine. For effluent limitations less than 0.05 mg/l, compliance/noncompliance will be determined based on the ML. Sample results of 0.05 mg/l or less shall be reported as zero on the discharge monitoring report.
9. The effluent shall be monitored hourly for TRC when chlorine cleaning water is added to the system. Sampling shall be monitored hourly for TRC when chlorine cleaning water is added to the system. Sampling should continue for one hourly period following the first value below the ML assuming level remains below the ML. The effluent sample shall be representative of the maximum concentration of chlorine levels in the final effluent.
10. 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 waters which have been or may be promulgated.
3. The pH of the effluent shall not be less than 6.5 SU nor greater than 8.3 SU and not more than 0.5 units outside of the background range. There shall be no change from background conditions that would impair any use assigned to this class.
4. Dissolved oxygen shall be maintained at a minimum of 6.0 mg/l.
5. The discharge shall be adequately treated to ensure that the surface water remains free from pollutants in concentrations or combinations that settle to form harmful deposits, float as foam, debris, scum, or other visible pollutants. The discharge shall be adequately treated to ensure that the surface waters remain free from pollutants which produce odor, color, taste, or turbidity in the receiving waters which is not naturally occurring and would render it unsuitable for its designated uses.
6. 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).

7. The effluent shall not contain materials in concentrations or combinations which are hazardous or toxic to human health, aquatic life of the receiving water or which would impair the uses designated by its classification.
8. The results of sampling for any parameter above its required frequency must also be reported, in accordance with 40 CFR §122.41(l)(4)(ii).
9. The permittee shall notify EPA and MassDEP in writing of any changes in the operations, including the use of chemical additives, at the facility that may have an effect on the permitted discharge of wastewater from the facility.
10. 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.
11. 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.**
12. 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 the State and possible permit modification.
13. There shall be no discharge of untreated wastewater resulting from cleaning accumulated solids in the raceways, culture tanks, screens, and associated equipment.
14. This permit shall be modified, or revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - a. contains different conditions or is otherwise more stringent than any effluent limitation in this permit; or
 - b. controls any pollutant not limited by this permit. If the permit is modified or reissued, it shall be revised to reflect all currently applicable requirements of the Act.
15. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director 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":
 - i. One hundred micrograms per liter (100 µg/l);
 - ii. Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/l) for animony;

- iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
 - iv. The level established by the Director in accordance with 40 CFR §122.44(f).
 - 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":
 - i. Five hundred micrograms per liter (500 µg/l);
 - ii. One milligram per liter (1 mg/l) for antimony;
 - iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
 - iv. The level established by the Director in accordance with 40 CFR §122.44(f).
 - 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.
- 16. Toxics Control
 - a. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.
 - b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.
- 17. Medication
 - a. 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 (USF&WS), EPA and MassDEP.
 - b. 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.
 - c. 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 Game, 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.
 - d. EPA will notify the permittee when the use of a specific chemical described in PART I.A.17.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.

B. NARRATIVE EFFLUENT LIMITATION REQUIREMENTS FROM 40 CODE OF

FEDERAL REGULATIONS (CFR) PART 451 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 Usage

Except as noted below, the permittee must notify EPA and MassDEP in accordance with the following procedures of the use of any investigational new animal drug (INAD) or extralabel drug where such a use 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 extralabel drug use that has been previously approved by the USFDA for a different species or disease if the INAD or extralabel use is at or below the approved dosage and involves similar conditions of use.

- a. The permittee must provide to EPA a written report of an INADs impending use within 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 INADs and extralabel drug uses, the permittee must provide an oral report to EPA as soon as possible, preferably in advance of use, but no later than 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 INADs and extralabel drug uses, the permittee must provide a written report to EPA within 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**” (as defined immediately below) 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 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 within 24 hours of discovery of any “**reportable failure**” as defined in item “a” immediately above or damage that results in a material discharge of pollutants, describing the cause of the failure or damage in the containment system and identifying materials that have been released to the environment as a result of this failure.

- c. The permittee must provide a written report to EPA within 7 days of discovery of the failure or damage documenting the cause, 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 water of the United States, the permittee must provide an oral report of the spill to EPA and MassDEP within 24 hours of its occurrence and a written report within 7 days to the above Agencies in accordance with Section D.1.e.(1) of the Standard Conditions of this permit. The report shall include the identity and quantity of the material spilled.

4. Best Management Practices (BMP) Plan

- a. The permittee shall develop, implement, and maintain a plan which establishes Best Management Practices (BMPs) to be followed in operating the facility, cleaning the raceways/culture tanks, screens and other equipment and disposing of any solid waste. The purpose of the plan is to identify and to describe the practices which minimize the amounts of pollutants (biological, chemical and medicinal) discharged to surface waters.
- b. The permittee shall implement the intent of the BMP requirements described below upon the permit's effective date. However, the permittee has **180 days following the effective date of the permit** to certify in writing to EPA and MassDEP that a written Plan has been developed in accordance with requirements listed in this part. This certification must be submitted with the appropriate DMR. A current copy of the plan shall be maintained at the facility and shall be made available for inspection by EPA and MassDEP upon request.
- c. The permittee shall amend and update the BMP plan within 14 days following a change in facility design, construction, operation, or maintenance which affects the potential for the discharge of pollutants into surface waters; a release of a reportable quantity of pollutants as described in 40 CFR §302; or a determination by EPA, MassDEP or the permittee that the BMP plan appears to be ineffective in achieving the general objectives of controlling pollutants in discharges to surface waters.
- d. Below is a list of requirements that shall be addressed in the BMP Plan, at a minimum.
 - i. *Solids control*
 1. 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 U.S.
 2. In order to minimize the discharge of accumulated solids from settling ponds and 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

aquatic animals in the production system. **Part I.A.16 “Toxics Control”** above prohibits the direct discharge of “cleaning water” absent some form of solids removal prior to discharge.

3. A description of where the removed material is to be placed and the techniques used to prevent it from re-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.
 4. Remove and dispose of aquatic animal mortalities properly on a regular basis to prevent discharge to waters of the U.S., except in cases where the permitting authority authorizes such discharge in order to benefit the aquatic environment.
- ii. *Biological control*
1. The precautions that will be exercised by the facility to prevent aquatic organisms that are not indigenous nor naturalized to Massachusetts waters from becoming established in the local surface waters.
 2. A description for the storage and treatment of Outfall 002 discharge 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.
- iii. *Materials storage*
1. 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 waters of the U.S.
 2. Implement procedures for properly containing, cleaning, and disposing of any spilled material.
- iv. *Structural maintenance*
1. Inspect the production system and the wastewater treatment system on a routine basis in order to identify and promptly repair any damage.
 2. Conduct regular maintenance of the production system and the wastewater treatment system in order to ensure that they are properly functioning.
- v. *Recordkeeping*
1. In order to show how representative feed conversion ratios were calculated, maintain records for aquatic animal rearing units documenting the feed amounts and estimates of the number and weight of aquatic animals.
 2. Keep records documenting the frequency of cleaning, inspections, maintenance and repairs. In addition, records of all medicinal and chemical usage (i.e., for each occurrence) at the facility shall be recorded and filed in the Plan to include the dosage concentration,

frequency of application (hourly, daily, etc.) and the duration (hours, days) of treatment, and the method of application.

vi. *Training*

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

vii. *Medications and chemicals*

For each medication or chemical that are expected to be used in the culture tanks & raceways, identify:

1. Product name of the medication or chemical.
2. The chemical formulation of the medication or chemical.
3. The purpose or use of the chemical.
4. The dosage concentration, frequency of application (hourly, daily, etc.) and the duration (hours, days) of treatment.
5. The method of application.
6. Material Safety Data Sheets (MSDS), Chemical Abstracts Service (CAS) Registry number for each active therapeutic ingredient.
7. The method or methods used to detoxify the wastewater prior to discharge following application of chemical and/or medication.
8. Information on the persistence and toxicity of each medication or chemical.
9. Information on the Food and Drug Administration (USFDA) approval for the use of said medication or chemical on fish or fish related products used for human consumption.
10. Available aquatic toxicity data for each medication or chemical used (vendor data, literature data, etc.); 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. **Drug** means any substance defined as a drug in section 201(g)(2) of the Federal Food, Drug and Cosmetic Act (21 U.S.C. 321).
- d. **Extralabel 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 §530.

- e. **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.
- f. **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)].
- g. **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)].

C. SPECIAL CONDITIONS

Within **one year of the effective date of the permit**, the permittee shall complete an evaluation of alternative methods of operating the existing wastewater treatment facility to optimize the removal of nitrogen, and submit a report to EPA and MassDEP documenting this evaluation and presenting a description of recommended operational changes. The methods to be evaluated include, but are not limited to, operational changes designed to enhance nitrification (seasonal and year round), incorporation of anoxic zones, septage receiving policies and procedures, and side stream management. The permittee shall implement the recommended operational changes in order to maintain the existing mass discharge loading of total nitrogen. The annual average total nitrogen load from this facility (2008 – 2009) is estimated to be 4.92 lb/day.

The permittee shall also submit an annual report to EPA and MassDEP, **by February 1 each year**, that summarizes activities related to optimizing nitrogen removal efficiencies, documents the annual nitrogen discharge load from the facility, and tracks trends relative to the previous year.

D. UNAUTHORIZED DISCHARGES

This permit authorizes the permittee to discharge only in accordance with the terms and conditions of this permit and only from the outfall listed in Part I.A of this permit. Discharges of wastewater from any other point sources which are not authorized by this permit or other NPDES permits shall be reported in accordance with Section D.1.e.(1) of the Standard Conditions of this permit (twenty-four hour reporting).

E. SLUDGE

The disposal of solid waste materials from the facility shall comply with the appropriate Federal, State and local statutes.

F. MONITORING AND REPORTING

Monitoring results obtained during each calendar month shall be summarized and reported on Discharge Monitoring Report Form(s) postmarked **no later than the 15th day of the following month**. Other monitoring results shall be submitted as required by this Permit.

1. Signed and dated original DMRs and all other reports or notifications required herein, shall be submitted to the Director and the State at the following address:

Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114-8127

The State Agency is:

Massachusetts Department of Environmental Protection
Western Regional Office
436 Dwight Street
Suite 402
Springfield, MA

2. A copy of all technical information associated with medications and chemicals used for disease/parasite control and complementary aquatic toxicology and biological pollution shall be submitted to the following:

U.S. Fish and Wildlife Service
300 Westgate Center Drive
Hadley, MA 01035-9589

To:

Massachusetts Department of Environmental Protection
Division of Watershed Management
627 Main Street, 2nd Floor
Worcester, MA 01608

And to:

Massachusetts Department of Fisheries, Wildlife and Environmental Law Enforcement
Massachusetts Division of Fisheries and Wildlife
Field Headquarters
One Rabbit Hill Road
Westborough, MA 01581

G. STATE PERMIT CONDITIONS

1. This NPDES Discharge permit is issued jointly by the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) under Federal and State law, respectively. As such, all terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MA DEP pursuant to MG.L. Chapter 21 §43.
2. EPA shall have the right to enforce the terms and conditions of this Permit pursuant to federal law and MassDEP shall have the right to enforce the Permit pursuant to state law. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of the Permit as issued by the other Agency.