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**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),

**Division of Fisheries and Wildlife
Commonwealth of Massachusetts**

is authorized to discharge from the facility located at

**Sandwich State Fish Hatchery
Route 6A
Sandwich, MA 02563**

to receiving water named

Dock Creek (Cape Cod Coastal Drainage Area -- MA 96)

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

This permit shall become effective on the date of signature if no comments are received during public notice. If comments are received during public notice, this permit will become effective on the first day of the month following 60 days after signature.

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

This permit supersedes the permit issued on February 26, 2002.

This permit consists of 13 pages in Part I including effluent limitations, monitoring requirements, and state permit conditions; 25 pages in Part II, Standard Conditions; and Attachment A – Marine Chronic Toxicity Test Procedure and Protocol.

Signed this ____ day of _____, 2007.

Stephen S. Perkins, 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

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PART I

A. EFFLUENT LIMITS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number 001 , treated fish culture water to Dock Creek. Such discharges 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.						
<u>EFFLUENT CHARACTERISTIC</u>		<u>EFFLUENT LIMITS</u>			<u>MONITORING REQUIREMENTS</u>	
PARAMETER	UNITS	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>MAXIMUM DAILY</u>	<u>MEASUREMENT FREQUENCY</u>	<u>SAMPLE TYPE</u>
FLOW	MGD	Report Only	***	Report Only	Daily ¹	Instantaneous
BOD ₅	mg/l lbs/day	***	***	5 58	Quarterly, during cleaning operations ²	Composite ³
TSS	mg/l lbs/day	***	***	10 116	Quarterly, during cleaning operations ²	Composite ³
Total Ammonia, as N	mg/l	6	***	10	Quarterly, during cleaning operations ²	Composite ³
Total Residual Chlorine	ug/l	7.5	***	13	Daily, when chlorine is in use ⁸	Grab
Total Nitrogen, as N ⁹	mg/l	***	***	Report Only	Quarterly, during cleaning operations ²	Composite ³
Total Phosphorus, as P	mg/l	***	***	Report Only	Quarterly, during cleaning operations ²	Composite ³
pH	std units	(see condition I.A.3. of this permit)			Monthly	Grab
Dissolved Oxygen	mg/l	≥ 6.0 mg/l			Quarterly, when formalin is in use ⁴	Grab
Formaldehyde	mg/l	***	***	0.74	Quarterly, when formalin is in use ⁴	Grab

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Whole Effluent Toxicity Testing ^{5, 6, 7}	%	Acute LC ₅₀ = 100% Chronic C-NOEC = 100%			Quarterly, when formalin is in use ⁴	Composite ³

Footnotes:

1. The effluent flow shall be measured daily at the weir structure located at the hatchery discharge. Daily flows shall be recorded and the average monthly and maximum daily values shall be reported.
2. The quarterly BOD, TSS, Ammonia, Total Nitrogen, and Phosphorus samples shall be taken immediately following a raceway cleaning and/or maintenance activity when pollutant concentrations in the discharge are likely to be at a maximum, rather than at a random operating time during the month.
3. Composite Sampling - The composite samples shall consist of at least 8 grab samples collected at approximately equal intervals during the day. For those composite samples collected during cleaning operations:
 - a. If raceway flows are continuously discharging through a settling pond or are diverted through a settling pond during cleaning, a representative composite sample shall be taken of the settling pond overflow, during cleaning operations.
 - b. If raceway flows during cleaning operations are diverted to treatment lagoons which are continually discharging, a representative composite sample shall be taken of the lagoon discharge at the time of maximum concentration or design detention time, which ever is best representative of maximum concentration.

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- c. If lagoons are batch discharged, a representative composite sample shall be taken at the time of discharge.
 - d. If raceway or tanks are vacuumed, a representative composite sample of hatchery discharge shall be taken during the vacuuming cycle.
4. Sampling for dissolved oxygen, formaldehyde, and Whole Effluent Toxicity testing shall be conducted quarterly during formalin use, when effluent pollutant concentrations are likely to be at a maximum. Sampling is not required if formalin is not used during the quarter. In such cases, "No Discharge" shall be reported on the Discharge Monitoring Reports. The permittee is required to conduct Whole Effluent Toxicity (WET) testing following EPA Region I Protocols. The test species are Mysid Shrimp (*Mysidopsis bahia* or *Americamysis bahia*) and Inland silverside (*Menidia beryllina*). A cover letter indicating the sampling location shall be submitted with the test results. The test results shall be submitted by the last day of the month following completion of the test. A test must be performed in accordance with test procedures and protocols specified in Attachment A of this permit.
5. The acute Whole Effluent Toxicity test limit is the LC50 equal to 100%. The LC50 is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than 50% mortality.
6. The C-NOEC (chronic-no observed effect concentration) is defined as the highest concentration of toxicant or effluent to which organisms are exposed in a life cycle or partial life cycle test which causes no adverse effect on growth, survival, or reproduction at a specific time of observation as determined from hypothesis testing where the test results exhibit a linear dose-response relationship. However, where the test results do not exhibit a linear dose-response relationship, the permittee must report the lowest concentration where there is no observable effect. The 100% limit is defined as a sample which is composed of 100% effluent.
7. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in **Attachment A (Toxicity Test Procedure and Protocol) Section IV., DILUTION WATER** in order to obtain an individual approval for use of an alternate dilution water, or the permittee shall follow the Self-Implementing Alternative Dilution Water Guidance which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of NPDES Program Instructions for the Discharge Monitoring Report Forms (DMRs) which is sent to all permittees with their annual set of DMRs and may also be found on the EPA, Region I web site at <http://www.epa.gov/region1/enforcementandassistance/dmr.html>. If

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this guidance is revoked, the permittee shall revert to obtaining individual approval as outlined in **Attachment A**. Any modification or revocation to this guidance will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in **Attachment A**.

8. Chlorine is "in use" whenever sodium hypochlorite or any other chlorination chemicals are used at the hatchery. When chlorine is in use, there shall be no introduction of water which has been treated with sodium hypochlorite or any other chlorination chemicals into the discharge. All water which has been chlorinated shall be neutralized with dechlorinating agent and discharged onto the lawn at the hatchery.
9. Total Nitrogen shall be determined by performing the "Total Kjeldahl Nitrogen (as N)" test and the "Nitrate-Nitrite (as N)" test and adding the two test results together to produce a value for mg/l of Total Nitrogen.

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2. The discharge shall not cause a violation of the water quality standards of the receiving waters.
3. The pH of the effluent shall not be less than 6.5 nor greater than 8.3 standard units (SU) at any time, unless caused by natural causes such as low pH of the source water. To demonstrate that pH values of the effluent are outside this pH range due to natural causes, the permittee must show that pH measurements of the source water and the effluent are the same. Documentation of such conditions must be submitted by the permittee with the discharge monitoring reports.
4. The discharge shall not cause objectionable discoloration of the receiving waters.
5. The effluent shall not contain visible oil sheen, foam, floating solids, or settleable solids at any time.
6. The permittee shall not discharge into the receiving water any pollutant or combination of pollutants in toxic amounts.
7. There shall be no discharge of untreated wastewaters resulting from cleaning accumulated solids in the raceways, culture tanks, screens and associated equipment.
8. The results of sampling for any parameter done more often than its required frequency in accordance with EPA approved methods must also be reported.
9. The permittee shall notify EPA and the State within 24-hours upon the occurrence of a water quality induced mortality of greater than 25 percent in any aquatic species under culture at the facility in accordance with reporting requirements in the Standard Conditions, Part II.D.1.e.
10. In accordance with 40 Code of Federal Regulations (CFR) §122.42, all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
 - a. That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - (1) One hundred micrograms per liter (100 ug/L);
 - (2) Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2,4-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or

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- (4) Any other notification level established by the Director in accordance with 40 CFR §122.44(f) and Massachusetts 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) Five hundred micrograms per liter (500 ug/L);
 - (2) One milligram per liter (1 mg/L) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
 - (4) Any other notification level established by the Director in accordance with 40 CFR §122.44(f) and Massachusetts 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.
- 11. No components of the effluent shall result in any demonstrable harm to aquatic life or violate any 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, with the permittee being so notified.
- 12. This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable standard or limitation promulgated or approved under sections 301(b)(2)(C) and (d), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - a. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - b. Controls any pollutants not limited in the permit.
- 13. 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.
- 14. Medications and disease control chemicals
 - a. The permittee shall use only medications and disease control chemicals in dosages and combinations as included in the Best Management Practices (BMP) plan [See Part I.A.15.d.iv.]

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and as approved for appropriate uses by the U.S. Food and Drug Administration (USFDA), U.S. Fish and Wildlife Service (USF&WS), EPA and the Commonwealth of Massachusetts.

- 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-Region I, the U.S. Fish and Wildlife Service, the Massachusetts Division of Fisheries and Game, and the Massachusetts Department of Environmental Protection (MassDEP) 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. The Regional Administrator or the Director will notify the permittee when the use of a specific chemical described in item 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.

15. Best Management Practices (BMP) Plan

- a. The Best Management Practices (BMP) plan shall be updated. The plan shall identify 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. Best Management Practices 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. The purpose of the plan is to identify and to describe the practices which prevent or minimize the amounts of pollutants (biological, chemical and medicinal) discharged to surface waters.
- b. The updated BMP plan shall be completed and signed within **90 days after the effective date** of this permit. The permittee shall certify the BMP Plan has been updated and that it meets the requirements of this permit. The certification shall be signed in accordance with the requirements identified in 40 CFR §122.22. A copy of this initial certification shall be sent to EPA and MassDEP within one hundred and twenty (120) days of the effective date of the Permit. A current copy of the plan shall be maintained at the facility.
- c. The plan shall be modified as necessary and appropriate during the life of the permit. Specifically, the permittee shall amend and sign the BMP plan within thirty (30) days following a change in facility design, construction, operation, or maintenance which affects the potential for the discharge of pollutants into surface waters. The amended BMP plan shall be certified as described in item b above.

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d. The BMP Plan shall include, at a minimum, the following items:

i. During operations:

- (1) A description of the pollution control equipment or methods used to enhance solids collection.
- (2) A description of how excessive solids buildup will be identified to trigger more frequent cleaning of the raceways/culture tanks and equipment thereby preventing more suspended and dissolved materials in the discharge.
- (3) A description of feeding methods used to minimize the amount of feed residual in the discharge.
- (4) A description of the preventative maintenance program for cleaning equipment so that delays in cleaning due to equipment failures are avoided.
- (5) A description of the analyses and model (if one is used) used to determine the time of maximum concentration based on dosage, injection point, facility flow, etc.

ii. Biological Pollution

- (1) Describe, in detail, the precautions that will be exercised by the facility to prevent aquatic organisms that are not indigenous to the New England area and/or the United States from becoming established in the local surface waters.
- (2) A description for storage and treatment of Outfall 001 discharge during plant upsets to prevent biological pollution (non-native organisms, fish parasites, and fish diseases) from entering the receiving water in the case of an untreated discharge bypass.

iii. Cleaning of culture tanks/raceways and other equipment

- (1) Describe in detail how the accumulated solids are to be removed, dewatered and methods of disposal.
- (2) Describe 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 to be removed from the site, describe who receives the material and its method of disposal and/or reuse.

iv. Medications and chemicals used in the facility

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- (1) List in the plan all medications and chemicals that are expected to be used in the culture tanks/raceways. For each medication or chemical, identify:
 - (a) Product name of the medication or chemical.
 - (b) The chemical formulation of the medication or chemical.
 - (c) The purpose or use of the chemical.
 - (d) The dosage concentration, frequency of application (hourly, daily, etc.) and the duration (hours, days) of treatment.
 - (e) The method of application.
 - (f) Material Safety Data Sheets (MSDS), Chemical Abstracts Service (CAS) Registry number for each active therapeutic ingredient.
 - (g) The method or methods used to detoxify the wastewater prior to discharge following application of chemical and/or medication.
 - (h) Information on the persistence and toxicity of each medication or chemical.
 - (i) 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.
 - (j) Available aquatic toxicity data for each medication or chemical used (vendor data, literature data, etc.); LC₅₀ at 48 and/or 96 hours and No Observed Effect Level (NOEL) concentrations for typical aquatic organisms (salmon, trout, daphnia, fathead minnow, etc.).

v. Personnel Training

- (1) Describe the training to be provided for employees to assure they understand the goals and objectives of the BMPs, the requirements of the NPDES Permit and their individual responsibilities for complying with the goals and objectives of the BMP Plan and the NPDES permit.

vi. BMP Records Maintenance

- (1) Records of the calculations done at the time of sampling must be maintained at the facility in order that an inspector may verify that the sampling was properly

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conducted

I.B. SPECIAL CONDITION: STUDY OF ALGAL AND/OR FUNGAL GROWTH AT THE POINT OF DISCHARGE

As a condition of this permit, the permittee shall design and conduct a study of the algal, bacterial, and/or fungal growths, commonly called sewage fungus, at the point of discharge from the hatchery. The study shall be designed to meet the following objectives: a) identify to the lowest reasonable taxon the algal, bacterial, and/or fungal growths at the discharge location; b) determine the causes of the growths, including the discharges of nutrients from the fish hatchery; c) determine what permit effluent limitations (e.g., nutrients) and/or BMPs that will prevent such growths and comply with Massachusetts Water Quality Standards; and d) if necessary, determine what nutrient control methods at the fish hatchery will result in compliance with the necessary limitations. Nutrient control methods may include, but are not limited to the reduction of nutrients introduced into the hatchery raceways, improved methods of avoiding solids carryover into the discharge, and improved treatment for nutrient removal in the effluent prior to discharge.

Within **eighteen months after the effective date** of this permit, the permittee shall submit to EPA and the MassDEP, a final report on the study.

Following completion of the study, the permittee shall immediately incorporate all controls deemed necessary to prevent the growths in the receiving water into the facility's BMP plan.

I.C. UNAUTHORIZED DISCHARGES

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

I.D. MONITORING AND REPORTING

Monitoring results obtained during each calendar month shall be summarized and reported on Discharge Monitoring Form(s) postmarked no later than the 15th day of the following month.

Signed and dated originals of these, and all other reports required herein, shall be submitted to EPA and the MassDEP at the following addresses:

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

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Massachusetts Department of Environmental Protection
Southeast Regional Office
Bureau of Waste Prevention
20 Riverside Drive
Lakeville, MA 02347

Signed and dated Discharge Monitoring Report Forms and toxicity tests reports required by this permit shall also be submitted to the State at:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

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

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

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

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

Massachusetts Division of Marine Fisheries
Attn: Dr. Jack Schwartz
30 Emerson Avenue
Gloucester, Massachusetts 01930

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Additional monitoring and recordkeeping requirements are contained in Section C of the Part II Standard Conditions of this permit. Section C includes, but is not limited to, the requirements to record: the date, exact place, and time of sampling, measurements, and analyses; the individual(s) who performed the sampling, measurements, and analyses; the analytical techniques or methods used; and the results of such analyses. Section C of Part II also includes the requirements to retain records of all monitoring information, including all data, for a period of at least 3 years from the date of the sample, measurement, report or application.

Additional reporting requirements are contained in Section D of the Part II Standard Conditions of this permit. Section D requires reporting of monitoring results on a Discharge Monitoring Report (DMR), as well as reporting within 24 hours of any noncompliance which may endanger health or the environment. Section D also requires reporting to EPA if a variety of conditions exist, including planned changes to the facility and anticipated or unanticipated noncompliance. This section also sets the signatory and public availability requirements of reports sent to EPA.

I.E. STATE PERMIT CONDITIONS

This 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 the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MassDEP pursuant to M.G.L. Chap. 21, §43.

Each Agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as an NPDES permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of Federal law, this permit shall remain in full force and effect under State law as a permit issued by the Commonwealth of Massachusetts.