STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

Beth Nagusky
ACTING COMMISSIONER

October 4, 2010

Mr. Steve Eddy
UM Center for Cooperative Aquaculture Research
33 Salmon Farm Road
Franklin, Maine 04634

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0110183
Maine Waste Discharge License (WDL) Application # W-007642-6F-H-R
Final Permit, UMCCAR Fish Hatchery & Research Facility, Franklin

Dear Steve:

Enclosed please find a copy of your **final** MEPDES permit and Maine WDL which was approved by the Department of Environmental Protection. Please read the permit/license and its attached conditions carefully. You must follow the conditions in the order to satisfy the requirements of law. Any discharge not receiving adequate treatment is in violation of State Law and is subject to enforcement action.

Any interested person aggrieved by a Department determination made pursuant to applicable regulations, may appeal the decision following the procedures described in the attached DEP FACT SHEET entitled "*Appealing a Commissioner's Licensing Decision.*"

If you have any questions regarding the matter, please feel free to call me at (207) 215-1579 or contact me via email at Robert.D.Stratton@maine.gov.

Sincerely,

Robert D. Stratton
Division of Water Quality Management
Bureau of Land and Water Quality

Enc./cc: Tanya Hovell (MEDEP); Sandy Mojica (USEPA); Dr. Nick Brown (UMCCAR)

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION
AUGUSTA, ME 04333

IN THE MATTER OF

UNIVERSITY of MAINE CENTER for COOPERATIVE AQUACULTURE RESEARCH FRANKLIN, HANCOCK COUNTY, MAINE FISH HATCHERY #ME0110183 #W-007642-6F-H-R	**APPROVAL**	) MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT AND WASTE DISCHARGE LICENSE **RENEWAL**

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, Section 1251, et. seq and Maine Law 38 M.R.S.A., Section 414-A et seq., and applicable regulations the Department of Environmental Protection (Department) has considered the application of the UNIVERSITY of MAINE CENTER for COOPERATIVE AQUACULTURE RESEARCH (hereinafter UMCCAR), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

The applicant has applied for a renewal of Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0110183 / Maine Waste Discharge License (WDL) #W-007462-5Q-D-R, which was issued on June 1, 2005 for a five-year term. The MEPDES Permit / Maine WDL approved a multiphase discharge of fish hatchery wastewater to Taunton Bay, Class SB, from a multi-species research fish hatchery and rearing facility in Franklin, Maine. Phase I (Outfall #001A) accommodated the UMCCAR facility with a 0.634 MGD monthly average flow. Phase II (Outfall #001B) accommodated the UMCCAR facility plus construction of a USDA National Cold Water Marine Aquaculture Research Center (NCWMAC) with a combined 1.27 MGD monthly average flow. This permitting action renews the Phase II discharge scenario and has assigned the application MEPDES Permit #ME0110183 / Maine WDL #W-007642-6F -H-R, referring to all facilities located at this site and discharging wastewater cumulatively as UMCCAR or the UMCCAR facility(s).

PERMIT SUMMARY

This permitting action is similar to the June 1, 2005 MEPDES Permit / Maine WDL and subsequent permit modifications and revisions in that it is carrying forward all previous terms and conditions with a few exceptions. This permitting action is different in that it is:

1. regulating all facility discharges through Outfall #001B;
2. establishing monitoring requirements for total nitrogen mass and concentration;
3. revising minimum monitoring frequency requirements for formalin;
4. revising minimum monitoring frequency requirements for total residual chlorine;
5. updating requirements related to disease and pathogen control and reporting, proper use and record keeping of therapeutic agents and disinfecting/sanitizing agents;
6. updating salmon genetic testing requirements; and
7. updating Ambient Water Quality Monitoring procedures for reevaluating nitrogen limits.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated August 18, 2010, and subject to the Conditions listed below, the Department makes the following conclusions:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.

2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.

3. The provisions of the State's antidegradation policy, 38 MRSA Section 464(4)(F), will be met, in that:

   (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;

   (b) Where high quality waters of the State constitute an outstanding national resource, that water quality will be maintained and protected;

   (c) The standards of classification of the receiving water body are met or, where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;

   (d) Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification, that higher water quality will be maintained and protected; and

   (e) Where a discharge will result in lowering the existing quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.

4. The discharge will be subject to effluent limitations that require application of best practicable treatment.

ACTION

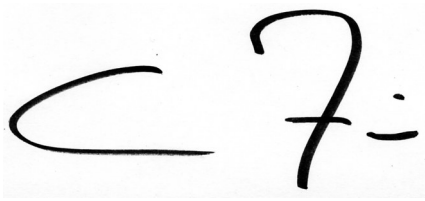
THEREFORE, the Department APPROVES the above noted application of the UNIVERSITY of MAINE CENTER for COOPERATIVE AQUACULTURE RESEARCH to discharge fish hatchery and rearing facility / aquacultural research facility wastewater consisting of a monthly average flow of 1.27 MGD to Taunton Bay, Class SB, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations including:

1. "*Maine Pollutant Discharge Elimination System Permit Standard Conditions applicable To All Permits*," revised July 1, 2002, copy attached.

2. The attached Special Conditions, including any effluent limitations and monitoring requirements.

3. This permit expires five (5) years from the date of signature below.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES



This permit has been digitally signed by Andrew C. Fisk on behalf of Acting Commissioner Beth Nagusky. It is digitally signed pursuant to authority under 10 M.R.S.A. § 9418. It has been filed with the Board of Environmental Protection as of the signature da
2010.10.04 07:56:20 -04'00'

Date of initial receipt of application: April 21, 2010
Date of application acceptance: April 22, 2010

This Order prepared by Robert D. Stratton, BUREAU OF LAND & WATER QUALITY

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The permittee is authorized to discharge **fish hatchery and rearing facility / aquacultural research facility wastewater from <u>Outfall #001B</u>** to Taunton Bay. Such discharges shall be limited and monitored by the permittee as specified below. The italicized numeric values bracketed in the table below and in subsequent text are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports (DMRs). Footnotes are found on Pages 5 and 6.

Effluent Characteristic	**Discharge Limitations and Reporting Requirements**				**Minimum Monitoring Requirements**	
	Monthly <u>Average</u> as specified	Daily <u>Maximum</u> as specified	Monthly <u>Average</u> as specified	Daily <u>Maximum</u> as specified	Measurement <u>Frequency</u> as specified	Sample <u>Type</u> as specified
Flow *[50050]*	1.27 MGD *[03]*	---	---	---	Daily *[01/01]*	Measured *[MS]*
BOD_5 *[00310]*	318 lbs/day *[26]*	530 lbs/day *[26]*	30 mg/L *[19]*	50 mg/L *[19]*	2 / month *[02/30]*	Composite[1] *[CP]*
TSS *[00530]*	318 lbs/day *[26]*	530 lbs/day *[26]*	30 mg/L *[19]*	50 mg/L *[19]*	2 / month *[02/30]*	Composite[1] *[CP]*
Total Inorganic Nitrogen[2,3] From Oct 1–May 31 (NH_3, NO_2, NO_3) *[00640]*	Report lbs/day *[26]*	96.1 lbs/day *[26]*	Report mg/L *[19]*	Report mg/L *[19]*	1/month *[01/30]*	Grab *[GR]*
Total Inorganic Nitrogen[2,3] From June 1 – Sept 30 (NH_3, NO_2, NO_3) *[00640]*	Report lbs/day *[26]*	50 lbs/day *[26]*	Report mg/L *[19]*	Report mg/L *[19]*	1/week *[01/07]*	Grab *[GR]*
Total Nitrogen[3] *[00600]*	Report lbs/day *[26]*	Report lbs/day *[26]*	Report mg/L *[19]*	Report mg/L *[19]*	1/month *[01/30]*	Grab *[GR]*
Fish on Hand *[45604]*	Report lbs/day *[26]*	Report lbs/day *[26]*	---	---	1/week *[01/07]*	Calculated *[CA]*
Formalin[4] **1-Hour Treatment Maximum** *[51064]*	report lbs/day *[26]*	38.6 lbs/day *[26]*	report mg/L *[19]*	250 mg/L *[19]*	Once per occurrence *[01/OC]*	Calculated *[CA]*
Formalin[4] **24-Hour Treatment Maximum** *[51064]*	report lbs/day *[26]*	38.6 lbs/day *[26]*	report mg/L *[19]*	250 mg/L *[19]*	Once per occurrence *[01/OC]*	Calculated *[CA]*
Total Residual Chlorine[5] *[50060]*	---	---	0.11 mg/L *[19]*	0.16 mg/L *[19]*	Once per occurrence *[01/OC]*	Grab *[GR]*
pH[6] *[00400]*	---	---	---	6.0-8.5 S.U. *[12]*	1/week *[01/07]*	Grab *[GR]*

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS, FOOTNOTES:

Effluent Monitoring: Effluent values shall be collected at Outfall #001B following all means of wastewater treatment prior to discharge to the receiving water. All monitoring shall be conducted so as to capture conditions representative of wastewater generating processes at the facility, such as flow-through and cleaning discharge flows, use of therapeutic and disinfecting/sanitizing agents, etc. and in consideration of settling pond detention times. Any change in sampling location must be reviewed and approved by the Department in writing. Sampling and analysis must be conducted in accordance with: a) methods approved in 40 Code of Federal Regulations (CFR) Part 136; b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136; or c) as otherwise specified by the Department. Samples that are sent out for analysis shall be analyzed by a laboratory certified by the State of Maine's Department of Health and Human Services. Samples that are sent to a POTW licensed pursuant to *Waste discharge licenses*, 38 M.R.S.A. § 413 are subject to the provisions and restrictions of *Maine Comprehensive and Limited Environmental Laboratory Certification Rules,* 10-144 CMR 263 (last amended February 13, 2000). **All effluent limits are gross, end of pipe limits, unless otherwise specified**.

All analytical test results shall be reported to the Department including results which are detected below the respective reporting limits (RLs) specified by the Department or as specified by other approved test methods. If a non-detect analytical test result is below the respective RL, the concentration result shall be reported as <Y where Y is the detection limit achieved by the laboratory for each respective parameter. Reporting a value of <Y that is greater than an established RL is not acceptable and will be rejected by the Department. For mass, if the analytical result is reported as <Y or if a detectable result is less than a RL, report a <X lbs/day, where X is the parameter specific limitation established in the permit.

1. Composite Samples: Composite sample means a sample consisting of a minimum of four grab samples collected at two-hour intervals during the working day at the facility. Alternatively, upon approval by the Department's compliance inspector, the permittee may use 24-hour composites collected with an automatic composite sampler.

2. Total Inorganic Nitrogen (TIN): The daily maximum TIN mass limit shall consist of 96.1 lbs/day from October 1 through May 31 and 50 lbs/day from June 1 through September 30 each year. The TIN mass limit may be reevaluated in the future based on ambient water quality monitoring, as specified in Fact Sheet Section 14.

3. Total Inorganic Nitrogen and Total Nitrogen (TN): TIN refers to ammonia (NH_3), nitrite (NO_2), and nitrate (NO_3) nitrogen. TN relates to NH_3 and organic nitrogen (combined as total Kjeldahl nitrogen or TKN), NO_2 and NO_3. Organic N does not have a separate analytical test. But, the permittee can obtain all necessary forms of nitrogen from which to calculate TIN and TN by analyzing for NH_3, TKN, NO_2, and NO_3. This permitting action only requires reporting of TIN and TN.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS, FOOTNOTES (cont'd)

4. Formalin: Formalin monitoring shall be conducted only when in use at the facility and shall consist of a calculated effluent value. The permittee shall calculate the effluent formalin concentration through accurate determinations of the formalin mass administered in each facility use, the volume of facility wastewater to which the formalin is added during the treatment period, and the volume of large wastewater structures that receive the effluent (during 1-hour treatments or less). The effluent mass shall be calculated by multiplying the gallons of formalin used by a 9.13 lbs / gallon conversion formula based on the weight of formalin. The permittee shall provide this information and calculations to the Department in a document accompanying the monthly DMR. See Fact Sheet Section 6f for sample calculations. The two-tiered formalin limits correspond to a first tier standard one hour per day treatment typical of hatchery and rearing facility discharges and a second tier for up to a maximum of 24 hours of treatment and discharge for addressing emergency conditions at the facility. Concentration limits for both tiers are based on the Department's BPJ of AWQC that will be protective of aquatic life in the receiving water. **Note, formalin treatments and discharges pursuant to the second tier limits (1 hour to 24 hour discharges) must be conducted no more frequently than once every four days. The permittee shall provide a list of dates on which the second tier limits were utilized and the length of time of each such treatment, with each monthly DMR.**

5. Total Residual Chlorine: Limitations and monitoring requirements are applicable whenever elemental chlorine or chlorine based compounds are being used at the facility and discharged in the facility waste-stream.

6. pH: Exceedences of the pH range limitation shall be considered permit violations unless due to natural causes. At no time shall the effluent pH exceed 0.5 standard units outside of the pH levels in Taunton Bay at the point of discharge. If effluent pH falls outside of 6.0-8.5 s.u., the permittee shall provide corresponding ambient pH values with the appropriate monthly DMR.

B. NARRATIVE EFFLUENT LIMITATIONS

1. The effluent shall not contain a visible oil sheen, foam or floating solids at any time which would impair the usages designated by the classification of the receiving waters.
2. The effluent shall not contain materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the usages designated by the classification of the receiving waters.
3. The discharges shall not cause visible discoloration or turbidity in the receiving waters which would impair the usages designated by the classification of the receiving waters.
4. Notwithstanding specific conditions of this permit the effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

SPECIAL CONDITIONS

C. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with: 1) the permittee's General Application for Waste Discharge Permit, accepted for processing on April 22, 2010; 2) the terms and conditions of this permit; and 3) only from Outfall #001B. Discharges of wastewater from any other point source are not authorized under this permit, and shall be reported in accordance with Standard Condition B(5), *Bypasses*, of this permit.

D. NOTIFICATION REQUIREMENT

In accordance with Standard Condition D, the permittee shall notify the Department of the following:

1. Any substantial change in the volume or character of pollutants being introduced into the wastewater collection and treatment system.

2. For the purposes of this section, adequate notice shall include information on:

   a. The quality or quantity of wastewater introduced to the waste water collection and treatment system; and

   b. Any anticipated impact of the change in the quantity or quality of the wastewater to be discharged from the treatment system.

E. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report (DMR) forms provided by the Department. If you are receiving printed-copy DMR forms by mail, the completed, returned forms must be **postmarked on or before the thirteenth (13th) day of the month or hand-delivered to the Department's Regional Office such that the DMRs are received by the Department on or before the fifteenth (15th) day of the month** following the completed reporting period. A signed copy of the DMR and all other reports required herein shall be submitted to the Department assigned inspector (unless otherwise specified by the Department) at the following address:

Department of Environmental Protection
Bureau of Land and Water Quality
106 Hogan Road
Bangor, Maine 04401

SPECIAL CONDITIONS

E. MONITORING AND REPORTING (cont'd)

Alternatively, if you are submitting an electronic Discharge Monitoring Report (eDMR), the completed eDMR must be electronically submitted to the Department by a facility authorized DMR Signatory **not later than close of business on the 15th day of the month** following the completed reporting period. **Printed Copy documentation** submitted in support of the eDMR must be **postmarked on or before the thirteenth (13th) day of the month or hand-delivered to the Department's Regional Office such that it is received by the Department on or before the fifteenth (15th) day of the month** following the completed reporting period. **Electronic documentation** in support of the eDMR must be submitted **not later than close of business on the 15th day of the month** following the completed reporting period.

F. OPERATION & MAINTENANCE (O&M) PLAN

This facility shall have a current written comprehensive Operation & Maintenance (O&M) Plan**.** The plan shall provide a systematic approach by which 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.

The O&M Plan shall establish Best Management Practices (BMP) 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 BMP portion 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. Among other items, the plan shall describe in detail efficient feed management and feeding strategies to minimize discharges of uneaten feed and waste products, how and when the accumulated solids are to be removed, dewatered, and methods of disposal. The plan shall also describe where the removed material is to be placed and the techniques used to prevent it from re-entering the surface waters from any onsite storage. The plan shall document the recipients and methods of any offsite waste disposal.

By December 31 of each year, **or within 90 days of any process changes or minor equipment upgrades,** the permittee shall evaluate and modify the O&M Plan including site plan(s) and schematic(s) for the waste water treatment facility to ensure that it is up-to-date. The O&M Plan shall be kept on-site at all times and made available to Department and EPA personnel upon request.

Within 90 days of completion of new and or substantial upgrades of the wastewater treatment facility, the permittee shall submit the updated O&M Plan to their Department inspector for review and comment.

SPECIAL CONDITIONS

G. SETTLING BASIN CLEANING

All wastewater settling structures shall be cleaned when accumulated materials occupy 20% of a basin's capacity, when material deposition in any area of the basins exceed 50% of the operational depth, or at any time that materials in or from the basins are contributing to a violation of permit effluent limits. The permittee is responsible for reporting effluent violations pursuant to Standard Conditions D.1 (f) and (g).

H. DISEASE AND PATHOGEN CONTROL AND REPORTING

UMCCAR must comply with Maine Department of Inland Fisheries and Wildlife and Maine Department of Marine Resources salmonid fish health rules (12 MRSA, §6071; 12 MRSA, §§7011, 7035, 7201, and 7202, or revised rules). The cited rules include requirements for notification to the appropriate agency within 24-hours of pathogen detection. In the event of a catastrophic pathogen occurrence, in addition to the requirements of the rules, **the permittee shall notify the Department in writing within 24-hours of detection**, with information on necessary control measures and the veterinarian involved. The permittee shall submit to the Department for review and approval, information on the proposed treatment including materials/chemicals to be used, material/chemical toxicity to aquatic life, the mass and concentrations of materials/chemicals as administered, and the concentrations to be expected in the effluent. If, upon review of information regarding a treatment pursuant to this section, the Department determines that significant adverse effects are likely to occur, it may restrict or limit such use.

I. THERAPEUTIC AGENTS

All medicated fish feeds, drugs, and other fish health therapeutants shall be registered with USEPA as appropriate, approved by the US Food and Drug Administration (USFDA), and applied according to USFDA accepted guidelines and manufacturer's label instructions. Records of all such materials used are to be maintained at the facility for a period of five years. This permitting action does not authorize routine off-label or extra-label drug use. Such uses shall only be permitted in emergency situations when they are the only feasible treatments available and only under the authority of a veterinarian. **The permittee shall notify the Department in writing within 24-hours of such use.** This notification must be provided by the veterinarian involved and must include the agent(s) used, the concentration and mass applied, a description of how the use constitutes off-label or extra-label use, the necessity for the use in terms of the condition to be treated and the inability to utilize accepted drugs or approved methods, the duration of the use, the likely need of repeat treatments, and information on aquatic toxicity. Such uses and discharges will be subject to Department review and approval. If, upon review of information regarding the use of a drug pursuant to this section, the Department determines that significant adverse effects are likely to occur, it may restrict or limit such use. **The use and discharge of therapeutic agents is subject to the conditions described in Permit Special Condition C, Unauthorized Discharges.**

SPECIAL CONDITIONS

J. DISINFECTING/SANITIZING AGENTS

Records of all disinfectants and/or sanitizing agents used that have the potential to enter the waste stream or receiving water, their volumes and concentrations as used and concentrations at the point of discharge, shall be maintained at the facility for a period of five years. This permitting action only authorizes the discharge of those materials applied for, evaluated by the Department, and either regulated or determined to be deminimus in this permitting action or in subsequent Department actions. **The use and discharge of disinfecting/sanitizing agents is subject to the conditions described in Permit Special Condition C, Unauthorized Discharges.**

K. MINIMUM TREATMENT TECHNOLOGY REQUIREMENT:

Based on the information provided and Department BPJ, the permittee shall provide minimum treatment technology for the UMCCAR facility that shall consist of treatment equal to or better than 60-micron microscreen filtration of the effluent, wastewater settling/clarification, and removal of solids. UMCCAR shall provide treatment and/or effluent quality equal to or better than the BPJ minimum treatment technology and shall comply with all effluent limitations, monitoring requirements, and operational requirements established in this permitting action. Additional treatment may be necessary to achieve specific water quality based limitations.

L. SALMON GENETIC TESTING AND ESCAPE PREVENTION

The US Fish and Wildlife Service and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) formally listed the Atlantic salmon as an endangered species on November 17, 2000. In that decision, the Gulf of Maine Distinct Population Segment (DPS) encompassed all naturally reproducing remnant populations of Atlantic salmon downstream of the former Edwards Dam site on the Kennebec River northward to the mouth of the St. Croix River. The watershed structure, available Atlantic salmon habitat, and abundance of Atlantic salmon at various life stages were best known for the following eight rivers: Dennys River, East Machias River, Machias River, Pleasant River, Narraguagus River, Ducktrap River, Sheepscot River, and Cove Brook. On June 15, 2009, the two agencies expanded the Gulf of Maine DPS to include salmon in the Penobscot, Kennebec, and Androscoggin Rivers and their tributaries. Two significant issues of concern regarding the rearing of salmon in Maine involve the genetic integrity of the salmon and escape prevention to avoid impacts on native fish.

SPECIAL CONDITIONS

L. SALMON GENETIC TESTING AND ESCAPE PREVENTION (cont'd)

Leading up to the 2000 listing and in review of MEPDES Permit / Maine WDLs for other fish hatchery and rearing facilities in Maine, the USFWS and NOAA Fisheries have advocated for genetic testing of Atlantic salmon housed at hatchery and rearing facilities to ensure that they are of North American origin, as well as employment of a fully functional Containment Management System (CMS) at facilities to prevent the escape of raised salmon or other species of concern in order to avoid impacts on native fish populations. The escape of reared fish also has the potential for transmission of diseases and pathogens to native fish populations. These issues are of particular concern for the Gulf of Maine DPS and resulted in establishment of CMS requirements for the UMCCAR facility in the previous permitting action. UMCCAR discharges effluent to Taunton Bay which, according to USFWS, is part of a designated DPS water.

Maine's Aquaculture General Permit (#MEG130000, Part II, Section I) and individual MEPDES Permits for marine aquaculture facilities contain requirements to address the genetic integrity of Atlantic salmon raised in Maine for aquaculture. The genetic requirements are implemented at the marine sites as well as at the hatchery and rearing facilities that raise and supply salmon for marine aquaculture. As UMCCAR does not raise salmon for marine aquaculture, it is not subject to these requirements through other permitting actions. **The use of Atlantic salmon eggs or fish originating from non-North American stock is prohibited at the UMCCAR facility**. The permittee shall comply with the requirements specified in Permit Attachment A, *Genetic Testing Requirements for non-Marine Aquaculture (non-tested) Atlantic Salmon.*

Based on requirements established in Maine's Aquaculture General Permit, individual MEPDES Permits for marine aquaculture facilities, and guidance developed by the Maine Aquaculture Association, this permitting action carries forward the requirement that **the permittee shall employ a fully functional CMS at the facility** designed, constructed, and operated so as to prevent the accidental or consequential escape of fish to open water. The CMS plan shall include a site plan or schematic with specifications of the particular system. The permittee shall develop and utilize a CMS consisting of management and auditing methods to describe or address the following: site plan description, inventory control procedures, predator control procedures, escape response procedures, unusual event management, severe weather procedures and training. The CMS shall contain a facility specific list of critical control points (CCP) where escapes have been determined to potentially occur. Each CCP must address the following: the specific location, control mechanisms, critical limits, monitoring procedures, appropriate corrective actions, verification procedures that define adequate CCP monitoring, and a defined record keeping system.

The CMS site specific plan shall describe the use of effective containment barriers appropriate to the life history of the fish. The facility shall have in place both a three-barrier system for fish up to 5 grams in size and a two barrier system for fish 5 grams in size or larger. The three-barrier system shall include one barrier at the incubation/rearing unit, one barrier at the effluent from the hatch house/fry rearing area and a third barrier placed inline with the entire effluent from the facility. Each barrier shall be appropriate to the size of fish being contained. The two-barrier system shall

SPECIAL CONDITIONS

L. SALMON GENETIC TESTING AND ESCAPE PREVENTION (cont'd)

include one barrier at the individual rearing unit drain and one barrier inline with the total effluent from the facility. Each barrier shall be appropriate to the size of fish being contained. Barriers installed in the system may be of the screen type or some other similarly effective device used to contain fish of a specific size in a designated area. Barriers installed in the system for compliance with these requirements shall be monitored daily. Additional requirements include:

1. The CMS shall be audited **at least once per year and within 30 days of a reportable escape** (more than 50 fish) by a party other than the facility operator or owner qualified to conduct such audits and approved by the Department. ***[09008]*** A written report of these audits shall be provided to the permittee and the Department for review and approval **within 30 days of the audit being conducted.** If deficiencies are identified during the audit, the report shall contain a corrective action plan, including a timetable for implementation and re-auditing to verify deficiencies are addressed as in the corrective action plan approved by the Department. Additional third party audits to verify correction of deficiencies shall be conducted in accordance with the corrective action plan or upon request of the Department. The permittee shall notify the Department upon completion of corrective actions.

2. Facility personnel responsible for routine operation shall be properly trained and qualified to implement the CMS. **Prior to any containment system assessment** associated with this permit, the permittee shall provide to the Department documentation of the employee's or contractor's demonstrated capabilities to conduct such work. ***[21599]***

3. The permittee shall maintain complete records, logs, reports of internal and third party audits and documents related to the CMS on site for a period of 5 years.

4. For new facilities, a CMS shall be prepared and submitted to the Department for review and approval prior to fish being introduced into the facility.

The permittee shall report any known or suspected escapes of more than 50 fish within 24 hours to the Maine Dept of Marine Resources Bureau of Sea-Run Fisheries and Habitats at 207-941-9973 (Pat Keliher and Joan Trial), Maine Department of Inland Fisheries and Wildlife at 207-287-5202 (Commissioner's office), USFWS Maine Field Office at 207-827-5938, and NOAA Fisheries Maine Office at 207-866-7379. During off-hours, the reports can be called to 800-432-7381.

SPECIAL CONDITIONS

M. FACILITY OPERATIONAL AGREEMENT

The permittee has the ultimate responsibility for all wastewater discharges from entities or facilities located at the UMCCAR site and utilizing its facilities. The permittee also has the ultimate responsibility for compliance with all limitations and requirements established in this permitting action as well as attainment of receiving water class standards and designated uses. Therefore, **prior to any wastewater discharge from entities or facilities located at UMCCAR,** the permittee shall ensure that a formal and legally enforceable agreement is developed and put in place that gives UMCCAR the authority to insure compliance with all effluent limitations, monitoring and operational requirements contained in this permitting action. Copies of this facility operational agreement(s) shall be kept at UMCCAR and at each facility and provided to the Department upon request.

N. REOPENING OF PERMIT FOR MODIFICATIONS

Upon evaluation of the tests results or monitoring requirements specified in Special Conditions of this permitting action, new site specific information, or any other pertinent test results or information obtained during the term of this permit, the Department may, at any time and with notice to the permittee, modify this permit to; 1) include effluent limits necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded, (2) require additional effluent and or ambient water quality monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information including, but not limited to, new information from ambient water quality studies of the receiving water.

O. SEVERABILITY

In the event that any provision, or part thereof, of this permit is declared to be unlawful by a reviewing court, the remainder of the permit shall remain in full force and effect, and shall be construed and enforced in all aspects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

ATTACHMENT A

(Genetic Testing Requirements for
Non-Marine Aquaculture (non-tested) Atlantic Salmon)

Genetic Testing Requirements for Non-Marine Aquaculture (non-tested) Atlantic Salmon

Maine's Aquaculture general permit and individual MEPDES Permits for marine aquaculture facilities contain requirements to address the genetic integrity of Atlantic salmon raised in Maine for aquaculture. The genetic requirements are implemented at the marine sites as well as at the hatchery and rearing facilities that raise and supply salmon for marine aquaculture. As UMCCAR does not raise salmon for marine aquaculture, it is not subject to these requirements through other permitting actions. Therefore, the permittee shall comply with the following requirements. Throughout this document, the term UMCCAR is used to refer to the permittee and all entities and facilities located at the UMCCAR site and utilizing its facilities.

1. a. **The use of Atlantic salmon eggs or fish** (hereinafter referred to as Atlantic salmon) **originating from non-North American stock is prohibited at the UMCCAR facility.** Non-North American stock is defined as any Atlantic salmon (*Salmo salar*) that possess genetic material derived partially (hybrids) or entirely (purebreds) from any Atlantic salmon stocks of non-North American heritage, regardless of the number of generations that have passed since the initial introduction of the non-North American genetic material. For the purposes of this permit, classification of brood fish as either North American or non-North American stock will be based on genetic evaluation of each fish's DNA in accordance with the Atlantic Salmon Microsatellite Analysis Protocol (salmon testing protocol) below. The Microsatellite Protocol shall be used to classify each brood fish.

   b. Only fish determined to be North American, according to the salmon testing protocol, can be used to produce offspring to be placed at the UMCCAR facility. No fish classified as non-North American can be used to create progeny for the UMCCAR facility.

   c. **Prior to January 1 of each year**, beginning the effective date of this permit, genetic evaluation information developed pursuant to the salmon testing protocol shall be submitted to NOAA Fisheries and/or the US Fish and Wildlife Service, with confirmation sent to the Department.

   d. **Prior to April 30 of each year**, beginning the effective date of this permit, the permittee shall submit to the Department confirmation from the Services demonstrating compliance with section 1. In the event any fish or gametes are found to be non-North American pursuant to the salmon testing protocol, the permittee shall also report to the Department and the Services the disposition of those fish or gametes.

   e. As of the effective date of this permit, **all Atlantic salmon kept at the UMCCAR facility must be of North American origin. At least 30 days prior** to bringing any Atlantic salmon to the facility that are not destined for marine aquaculture and are thus not subject to the salmon testing protocol through other permit requirements, the permittee shall provide the Department with written confirmation regarding compliance with these conditions.

2. Transgenic salmonids are prohibited. Transgenic salmonids are defined as species of the genera *Salmo, Oncorhynchus* and *Salvelinus* of the family Salmonidae and bearing, within their DNA, copies of novel genetic constructs introduced through recombinant DNA technology using genetic material derived from a species different from the recipient, and including descendants of individuals so transfected. This prohibition does not apply to vaccines.

3. Personnel from the Department, the Department of Marine Resources, the US Environmental Protection Agency, NOAA Fisheries, and the US Fish and Wildlife Service shall be allowed to inspect the facility during normal operation hours. These personnel will provide credentials attesting to their position and will follow the site's biosecurity procedures and may, at market value, purchase random samples of salmon from the facility to monitor compliance with these conditions. Operational records regarding compliance with this permitting action shall be made available to these personnel for their inspection upon request.

4. The intentional release of Atlantic salmon to the receiving waters is prohibited.

Atlantic Salmon Microsatellite Analysis Protocol (salmon testing protocol)

This protocol will be used to determine which Atlantic salmon can be used for breeding and production stock pursuant to the requirements of this permitting action. The protocol describes a standardized procedure to classify fish as either North American or non-North American stock and is largely based on the procedures used by King et al. (2001; Molecular Ecology, 10: 807-821). The permittee shall be responsible for providing genotype data to the US Fish and Wildlife Service and the National Marine Fisheries Service (the "Services") for data analysis and fish classification as described herein.

DNA isolation

Genomic DNA will be isolated from tissue, fin clip or scale samples from each fish intended for use as broodstock employing either a commercially available DNA extraction, such as PureGene (Gentra Systems) or DNeasy tissue kit (Qiagen Inc.) or a phenol/chloroform based extraction system such as used in Patton et al. (1997; Can. J. Fish. Aquat. Sci., 54: 1548-1556) or, particularly for scales, a Chelex-resin based protocol such as given in King et al. (2001). DNA should be of sufficiently consistent quality and quantity to perform PCR analyses.

Microsatellite analysis

The loci used to classify brood fish as either North American or non-North American stock will be: Ssa85, Ssa171, Ssa197, and Ssa202 (O'Reilly et al. 1996); SSOSL311 and SSOSL438 (Slettan et al. 1995, 1996) and Ssa289 (McConnel et al. 1995). Additional loci are required for marking purposes via genetic parentage determination, and will be supplemental to the loci identified above that are used for continent of origin determination. Also, additional loci may be incorporated in the future by the Services to allow for unique genotypes or for additional identification purposes.

PCR conditions for the selected loci will essentially follow that of King et al. (2001) and Patton et al. (1997) with possible minor modifications for optimization of products of individual loci. The loci will be labeled with fluorescent dyes to allow for visualization, including Ned, Hex, and 6-Fam by ABI or any other comparable commercial supplier of labeled oligonucleotides. An appropriate size standard for genotyping will be used (such as the 500ROX by ABI). Microsatellite analysis will be performed using the ABI 3100 autosequencer or any other commercial system providing equivalent results. Fragment analysis will be accomplished using a combination of GENESCAN and GENOTYPER software packages from ABI, or any other commercial system providing equivalent results. The permittee will present electronic data tables from the GENOTYPER program, or in an equivalent program that is acceptable to the Services, to the Services in spreadsheet format in Excel or any other commercially available program providing equivalent results that allow the data to be easily reformatted for subsequent analyses. The output files (gel tracings) from GENESCAN and GENOTYPER will also be provided by the permittee at the same time to help the Services assure data quality. Data provided must be complete at all loci for all fish.

Size verification of allelic products

To ensure accurate sizing of allelic products from the aquaculture fish relative to the designations developed in the King laboratory (see King et al. 2001), the Services will provide an adequate supply of DNA samples from representative fish of known genotypes to enable calibration of equipment throughout the term of the controlling permit conditions. Control samples will be used at the inception of the study to set the automated allele designation/binning parameters of the GENOTYPER software or equivalent genotyping software so that all subsequent allele designations made for aquaculture fish will be sized relative to the standards.

Genetic screening

Identification of North American stock will be based on assignment tests performed with GeneClass, www.montpellier.inra.fr/URLB/geneclass/geneclass.html. Atlantic salmon for the facility will be compared to two reference groups. The first group will be comprised of samples from North America (Dennys, Ducktrap, East Machias, Machias, Narraguagus, Penobscot mainstem, Pleasant, Sheepscot, Conne, Gold, Gander, Miramichi, Saguenay, and Stewiacke rivers and aquaculture stocks derived from St John and Penobscot populations). The second group will be comprised of non-North American samples from at least 2 rivers each from Iceland, Norway, Finland, Scotland, Ireland, and Spain and the Landcatch aquaculture stock plus a hybrid stock crossing Landcatch with St John NB aquaculture salmon.

The likelihood for assigning any given fish to each reference population will be calculated using the program GeneClass. If the ratio of the likelihood scores indicates that North American origin is at least twice as likely as non-North American origin, then that fish will be considered to be of North American origin. All other fish will be classified as non-North American stock. In addition, those fish not able to be classified as either NNA or NA due to incomplete genotypes or insufficient sample size or quality will be considered non-North American. The Services will promptly report the results to the facility

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND MAINE WASTE DISCHARGE LICENSE

FACT SHEET

Date: August 18, 2010

MEPDES PERMIT NUMBER: #ME0110183
MAINE WDL NUMBER: # W-007642-6F-H-R

NAME AND ADDRESS OF APPLICANT:

University of Maine Center for Cooperative Aquaculture Research
33 Salmon Farm Road
Franklin, Maine 04634

COUNTY: HANCOCK

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

UM Center for Cooperative Aquaculture Research
33 Salmon Farm Road
Franklin, Maine 04634

RECEIVING WATER / CLASSIFICATION: Taunton Bay / Class SB

COGNIZANT OFFICIAL AND TELEPHONE NUMBER:

Nick Brown (207) 422-9096; npbrown@maine.edu
Steve Eddy (207) 422-8198; stephen.eddy@umit.maine.edu

1. APPLICATION SUMMARY

The applicant has applied for a renewal of Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0110183 / Maine Waste Discharge License (WDL) #W-007462-5Q-D-R, which was issued on June 1, 2005 for a five-year term. The MEPDES Permit / Maine WDL approved a multiphase discharge of fish hatchery wastewater to Taunton Bay, Class SB, from a multi-species research fish hatchery and rearing facility in Franklin, Maine. Phase I (Outfall #001A) accommodated the UMCCAR facility with a 0.634 MGD monthly average flow. Phase II (Outfall #001B) accommodated the UMCCAR facility plus construction of a USDA National Cold Water Marine Aquaculture Research Center (NCWMAC) with a combined 1.27 MGD monthly average flow. This permitting action renews the Phase II discharge scenario and has assigned the application MEPDES Permit #ME0110183 / Maine WDL #W-007642-6F-H-R, referring to all facilities located at this site and discharging wastewater cumulatively as UMCCAR or the UMCCAR facility(s).

2. PERMIT SUMMARY

a. Regulatory - On January 12, 2001, the Department received authorization from the U.S. Environmental Protection Agency (USEPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine, excluding areas of special interest to Maine Indian Tribes. On October 30, 2003, after consultation with the U.S. Department of Justice, USEPA extended Maine's NPDES program delegation to all but tribally owned discharges. That decision was subsequently appealed. On August 8, 2007, a panel of the U.S. First Circuit Court of Appeals ruled that Maine's environmental regulatory jurisdiction applies uniformly throughout the State. From January 12, 2001 forward, the program has been referred to as the MEPDES program and permit #ME0110183 (same as NPDES permit number) utilized as the primary reference number for the UMCCAR facility.

b. Terms and conditions –This permitting action is similar to the June 1, 2005 MEPDES Permit / Maine WDL and subsequent permit modifications and revisions in that it is carrying forward all previous terms and conditions with a few exceptions. This permitting action is different in that it is:

1. regulating all facility discharges through Outfall #001B;
2. establishing monitoring requirements for total nitrogen mass and concentration;
3. revising minimum monitoring frequency requirements for formalin;
4. revising minimum monitoring frequency requirements for total residual chlorine;
5. updating requirements related to disease and pathogen control and reporting, proper use and record keeping of therapeutic agents and disinfecting/sanitizing agents;
6. updating salmon genetic testing requirements; and
7. updating Ambient Water Quality Monitoring procedures for reevaluating nitrogen limits.

c. History: The most recent relevant regulatory actions include the following:

March 21, 1990 – The USEPA accepted as complete a NPDES Permit application from the Penobscot Salmon Co. Inc. for the discharge of fish hatchery wastewater to Taunton Bay in Franklin, Maine. The application was assigned NPDES #ME0110183. For the 2005 permitting action, the Department inquired but received no information from USEPA pertaining to subsequent USEPA actions.

May 25, 1990 – The Department issued WDL #W-7642-WA-A-N to the Penobscot Salmon Co., Inc. for the discharge of a monthly average of 0.288 MGD of fish hatchery wastewater from a new recirculating commercial Atlantic salmon and Rainbow trout hatchery and rearing facility to Taunton Bay in Franklin. The WDL was issued for a five-year term.

March 30, 1995 - The Department received an application from Atlantic Aquafarms, Inc. for the renewal of WDL #W-7642-WA-A-N for the discharge of a monthly average of 0.288 MGD of fish hatchery wastewater. The application was assigned #W-7642-5Q-B-R.

2. PERMIT SUMMARY (cont'd)

March 14, 1997 – The Department received a letter from Integrated Food Technologies (IFT) Inc., notifying the Department that IFT Inc. had become the owner of the Franklin facility formerly known as Atlantic Aquafoods Inc., formerly known as Atlantic Aquafarms Inc., formerly known as the Penobscot Salmon Co. Inc.

December 15, 1997 – The Department received an application from IFT Inc. for the transfer of WDL #W-7642-WA-A-N and the pending renewal application.

March 3, 1999 – IFT inc. ceased operation at the Franklin facility.

November 29, 1999 – The Department received an application from UMCCAR for transfer of WDL #W-7642-WA-A-N and the pending renewal application. UMCCAR purchased the Franklin facility at public auction during the fall of 1999. The application was assigned WDL #W-7642-5Q-C-T.

December 20, 2000 – The Department issued WDL #7642-5Q-B-R / C-T for the renewal and transfer of WDL #W-7642-WA-A-N to UMCCAR for the discharge of a monthly average of 0.288 MGD of fish hatchery wastewater from a multi-species research fish hatchery and rearing facility. The WDL was issued for a five-year term.

June 1, 2005 – The Department issued MEPDES Permit #ME0110183 / Maine WDL #W-007642-5Q-D-R to UMCCAR. for a multiphase discharge from the research fish hatchery and rearing facility of 0.634 MGD for the UMCCAR facility and 1.27 MGD following construction and start-up of the USDA National Cold Water Marine Aquaculture Research Center. The UMCCAR facility has a combined wastewater discharge to Taunton Bay in Franklin, Class SB. The Permit / WDL was issued for a five-year term.

October 10, 2008 – The Department issued Minor Revision #W-007642-5Q-E-M / MEPDES Permit #ME0110183 to revise effluent formalin limitations based on newly obtained toxicity data and a revision of the Department's best professional judgement of ambient water quality criteria.

June 2, 2009 – The Department issued Minor Revision #W-007642-6F-E-M / MEPDES Permit #ME0110183 for a one-time, seven-day use of the therapeutant SLICE (emamectin benzoate) for control of sea lice in salmon smolts raised at the facility. The Minor Revision should have been labeled as #W-007642-6F-F-M.

July 29, 2009 – The Department issued Minor Revision #W-007642-6F-G-M / MEPDES Permit #ME0110183 to revise effluent BOD_5 and TSS minimum monitoring frequency requirements from once / week to twice / month and to provide guidance for reporting analytical results below detection and/or reporting limits.

2. PERMIT SUMMARY (cont'd)

January 25, 2010 – The Department authorized UMCCAR to allow Sea and Reef Aquaculture to raise tropical ornamental marine fish, shrimp, and corals at the UMCCAR facility following review of the proposal by the Maine Department of Marine Resources, NOAA Fisheries, and the USFWS. The Department determined that the above noted activity could be undertaken at UMCCAR without requiring modification or revision of the MEPDES Permit / Maine WDL.

April 21, 2010 – UMCCAR submitted a timely application for renewal of its WDL / MEPDES Permit. The application was assigned WDL #W-007642-6F-H-R / MEPDES Permit #ME0110183.

d. Source Description/ Facility Operation:

UMCCAR is a multi-species marine research fish hatchery and rearing facility located on the shore of Taunton Bay in Franklin, Maine. The UMCCAR is used for aquaculture research and development, training, and demonstration projects for a variety of existing and "alternative" aquaculture species. Co-located on the adjacent property and sharing the same effluent discharge pipe into Taunton Bay is the National Cold Water Marine Aquaculture Research Center (NCWMAC) operated by the US Department of Agriculture's (USDA) Agriculture Research Service (ARS). The NCWMAC performs research that develops and improves aquaculture farming methods for cold water marine species.

Water Supply: The two facilities share a common seawater supply pumped from Taunton Bay through two, 6-inch diameter HDPE intake pipes with concrete collars that extend 2,900 feet into Taunton Bay to a depth of 55 feet at mean low tide. The pumps, filtration and associated infrastructure are in a pump house constructed in 2004 and located on the shore. The existing supply lines are adequate for current activities, but when the pump house was constructed two 10-inch HDPE "stubbed" lines and additional pumping ports were incorporated into the pipe works to accommodate future expansion. These are currently unused and there are no plans to increase pumping capacity beyond the permitted discharge level of 1.27 MGD. All of the seawater supply pumped from Taunton Bay is filtered through a series of five sand filters to 35 microns and then disinfected with an 18 lamp Trojan UV sterilizer, to prevent pathogens from entering the facilities. The sand filters are backwashed as needed (currently once every 3-4 weeks), and the backwash effluent passes through a series of two 1,000 gallon settling tanks to capture solids before entering the effluent discharge pipe. After filtration and UV disinfection, the seawater is pumped up to a set of three storage tanks located on the CCAR site and fed by gravity to the two facilities as needed. The three storage tanks each have a capacity of 22,500 gallon (85 m^3). One tank holds fresh water, while the other two are designed to hold seawater.

2. PERMIT SUMMARY (cont'd)

Both facilities have fresh water wells for their domestic water supply, and enabling the culture of freshwater species. The UMCCAR relies primarily on two wells, located on either side of the road leading down to the facility (wells 1 and 2). These wells can each yield approximately 40 gallons per minute (GPM); only one well is used for daily operations, with the other well serving as a back-up. The UMCCAR site also has six other wells on the site, one of them a saltwater well; these are currently off line and not being utilized.

The NCWMAC has a total of twelve drilled wells. Eight of these wells are currently being used or scheduled to be in operation in 2010 (Table 1).

Table 1. lists all of the wells that have been installed on the NCWMAC property, description, potential flow rate, salinity, whether they are in use or not.

USDA NCWMAC Wells

Well Number	Description	Potential Flow Rate (GPM/LPM)	Salinity	Status
1	Potable Fresh	15/56.8	Fresh	On line
2	Potable Fresh	untested	Fresh	Off line
3	Potable Fresh	untested	Fresh	Off line
4	Potable Fresh	untested	Fresh	Off line
5	Potable Fresh	untested	Fresh	Off line
6	Potable Fresh	33/125.0	Fresh	Pending startup 2010
7	Potable Fresh	40/151.4	Fresh	On line
8	Salty Well	80/302.8	~15 ppt	On line
9	Salty Well	65/246.0	~15 ppt	On line
10	Salty Well	40/151.4	~10 ppt	On line
11	Salty Well	25/94.6	~10 ppt	Pending startup 2010
12	Brackish	40/151.4	~2.5 ppt	On line

Infrastructure, species and biomass: Both facilities contain a number of fish holding systems of varying sizes and used for different species and life stages of fish and invertebrates. The facilities almost exclusively use (with some minor exceptions) recirculating marine and freshwater holding systems. In these types of systems, the bulk of the water is treated and reused within the system, thus limiting the total discharge of water and pollutants back into Taunton Bay. However, the UMCCAR and the NCWMAC work with different species and use different water treatment technologies, and so are addressed separately below.

UM Center for Cooperative Aquaculture Research

The UMCCAR systems are mostly contained within four main buildings, with plans underway to construct a fifth building over the two in-ground silo tanks that were an original part of the facility. In addition, there are currently four greenhouse structures that contain or could contain holding systems for the culture of fish or invertebrates. The NCWMAC is presently occupying one of the UMCCAR greenhouses.

2. PERMIT SUMMARY (cont'd)

A system is defined as one or more tanks or raceways sharing the same volume of water and the same water treatment and supply equipment. The UMCCAR currently has ten major operational systems, and will be adding eight more within the next five years (see Table 2). In addition, there are around a dozen minor systems (1000 gallons or less) that contribute in total less than 5% to the facility discharge and/or are in operation only for limited periods (egg incubation systems, worm brood stock tanks, temporary holding tanks, etc.). All of the UMCCAR recirculation systems share similar water treatment methods, described as follows. Water draining from the fish tanks or raceways is filtered to remove solid wastes such as feces and uneaten feed. Solids filtration may be accomplished by use of screened drums, parabolic screens, cartridges or by media such as sand or beads, and is designed to remove particles larger than 30 to 90 microns. These solids are constantly removed from the system via backwashing or high pressure spray into a "sludge line" and then into large underground settling tanks. Here the solids are settled out and the overlying water is discharged into Taunton Bay. After solids removal, system water is treated with biological filtration to reduce levels of ammonia and nitrites. Biofiltration occurs in tanks or sump chambers containing plastic media as a surface substrate for the two groups of bacteria that break down the ammonia and nitrite. The system water than undergoes further polishing and treatment, including de-gassing to remove carbon dioxide and disinfection with UV sterilizers. Additional treatment may consist of foam fractionation, which uses a stream of air bubbles to remove fine suspended solids and proteins from the water. All of the UMCCAR systems have some form of temperature control consisting of chiller units and heat exchangers to maintain temperatures year round in the range of 5° to 16°C. The treated water is then pumped back to the fish tanks, either directly or via a header tank. This process continually repeats itself, but it is not entirely a closed loop. Typically, 10% to 20% of the entire volume of the system is replaced every day with new "make-up" water. The make-up water enters the system at a constant slow rate, with a corresponding discharge of overflow water from the system equal to the make-up rate. The overflow water has been treated within the system with solids removal and biological filtration, but it contains nitrates produced as a byproduct of biological filtration and typically has a low level of suspended solids. The overflow discharge exits the system via an overflow line into the underground settling tanks prior to discharge into Taunton Bay, as described in more detail later.

The UMCCAR holding systems were built to accommodate both small research scale projects and large commercial scale projects. Some of the systems were built to meet the needs of specific species, whereas others are multi-purpose and could accommodate any of a number of fish species. Projects at the UMCCAR are largely industry driven, and the species that are presently being worked with include Atlantic halibut, Atlantic cod, green sea urchins, and marine sand worms. Future species could include Atlantic tuna, sturgeon, char, bloodworms, and other commercially valuable species. In addition, Sea & Reef Aquaculture, a company specializing in marine ornamentals, is in the process of building a facility in the MTI-1 business incubator. Table 2 lists the major systems on the CCAR site, typical discharge rates, species, and maximum biomass figures.

2. PERMIT SUMMARY (cont'd)

Table 2. List of culture systems at the UMCCAR.

SYSTEM ID & LOCATION	STATUS AS OF 2010	TOTAL SYSTEM VOLUME (M^3)	DISCHARGE FLOW (AVERAGE GPM/LPM)*	SPECIES OR PURPOSE	POTENTIAL BIOMASS (MT)
Unit 1; Main Bldg.	Under construction	45	1.7/6.4	Multi-species	3
Unit 2; Greenhouse 1	On-line	170	6.2/23.5	Multi-species	3.6
Unit 3; Greenhouse 1	On-line	170	6.2/23.5	Multi-species	3.6
Unit 4; Main bldg.	On-line	44	1.6/6.1	Quarantine	0.5
Broodstock 1A; Marine Hatchery	On-line	150	5.5/20.8	halibut	2.5
Broodstock 1B; Marine Hatchery	On-line	150	5.5/20.8	halibut	2.5
Broodstock 2; Marine Hatchery	Under construction	80	3.0/11.4	cod	1.2
Larval 1; Marine Hatchery	On-line	40	1.5/5.7	Multi-species 54 tank trials	0.2
Larval 2; Marine Hatchery	Under construction	105	3.9/14.8	halibut	1.5
Larval 3; Marine Hatchery	proposed	42	1.5/5.7	Multi-species	0.2
Yolk sac room; Marine Hatchery	On-line	14	<1.0/3.8	halibut	<.1
Incubator 1; Marine Hatchery	On-line	400	14.7/55.6	halibut	13.0
Incubator 2; MTI-1	Under construction	95	3.5/13.2	Sea & Reef Aquaculture	0.15
MTI-2; Greenhouse 2	Under construction	10	<1.0/3.8	Multi-species; urchin demo.	0.5
ARS 1; Greenhouse 3	On-line	34.6	1.3/4.9	NCWMAC, char	0.5
Processing Bldg.	On-line	9	<1.0/3.8	Multi-species; invertebrates	0.2
System 2A	proposed	1400	51.4/194.5	Multi-species	51.2
System 2B	proposed	1400	51.4/194.5	Multi-species	51.2
TOTALS		**4,358.6 m^3**	**161.9 gpm 612.8 lpm**		**135.65 mt**

*Average discharge flow is based on a 20% daily make-up of total system volume.
**A metric ton (MT) is equal to 1.1 U.S. Short tons, or 2,200 lbs.

2. PERMIT SUMMARY (cont'd)

National Coldwater Marine Aquaculture Center

All of the culture systems located on NCWMAC property are located within the Main Building, Research Tank Building #1 and Research Tank Building #2. In addition NCWMAC also occupies one Greenhouse (ARS1 Greenhouse #3) on UMCCAR property.

Similar to UMCCAR a NCWMAC recirculating system is defined as one or more culture tanks sharing the same volume of water, and the same water treatment and pumping equipment. With the exception of two small egg incubation systems, and several small scale research systems all NCWMAC recirculating systems share a similar design, described as follows. Water exits a culture tank through a screened side box or through a screened bottom drain. On the larger systems the bottom drain is plumbed into a radial flow clarifier which allows the larger biosolids to settle out and be removed from the system by periodic draining of the clarifier. Both water streams then combine before entering a 60 micron microscreen drum filter which mechanically removes solids before flowing into a pump sump. The water is then pumped from the pump sump through a fluidized-sand biofilter for ammonia removal before flowing down through a cascade aeration column to remove carbon dioxide. It then passes through a low head oxygenator which increases its dissolved oxygen level. Several of the systems also have the capability of injecting ozone into the low head oxygenators to improve water quality. Depending upon the system, the water stream then passes through an Ultraviolet irradiation unit (50,000 microwatt-sec/cm^2) before returning to the culture tank. Make up water is added to the pump sump of each system at a constant rate of approximately 2.5% of the total systems flow rate (or approximately 75% of the total system volume per day). Water exits the system via an over flow side box on the pump sump, the micro screen drum filter, and the flushing of the clarifiers/pipes. The Wastewater Treatment section of this fact sheet describes how the waste stream from each culture system is processed. Several systems have chilling units attached to them which enables control of their water temperature.

2. PERMIT SUMMARY (cont'd)

Table 3 lists all culture systems on the NCWMAC site, typical discharge rates, species, and maximum biomass figures.

Culture System	Total System Volume (m^3)	Discharge Flow (GPM/LPM)	Species	Potential Biomass (MT)
Parr	55.2	8.5/32.2	Salmon	1.32
Smolt #1	47.9	5.8/22.0	Salmon	1.1
Smolt #2	47.9	5.8/22.0	Salmon	1.1
Ongrow	209.3	29.6/112.0	Salmon	5.76
3 Yr Broodstock #1	249.3	29.6/112.0	Salmon	7.36
3 Yr Broodstock #2	249.3	29.6/112.0	Salmon	7.36
4 Yr Broodstock #3	135.5	14.8/56.0	Salmon	3.6
Incubation Heath Tray	1	0.8/3.0	Salmon	NA
Incubation Trough	0.8	1.8/6.8	Salmon	NA
RT Bay #1 System #1	5.26	1.1/4.2	Salmon	0.19
RT Bay #1 System #2	5.1	1.3/4.9	Salmon	0.18
RT Bay #2	4	0.8/3.0	Salmon	0.19
Research Tank Building #1	75.7	10.0/37.8	Multi -species	0.91
RT Building #2 System #1	16.2	2.5/9.5	Multi -species	0.48
RT Building #2 System #2	11.3	2.5/9.5	Multi -species	0.308
RT Building #2 System #3	11.3	2.5/9.5	Multi -species	0.308
RT Building #2 System #4	11.3	2.5/9.5	Multi -species	0.308
RT Building #2 Heat Pump #1	4.6	0.7/2.6	Multi -species	0.09
RT Building #2 Heat Pump #2	4.6	0.7/2.6	Multi -species	0.09
TOTALS	**1145.56 m^3**	**150.9 gpm 571.2 lpm**		**30.65 mt**

e. Wastewater Treatment:

Center for Cooperative Aquaculture Research

The CCAR has four main sources of discharge water: solids removed from the recirculating systems and discharged down a sludge line; overflow water from the recirculating systems that is discharged down an overflow line; overflow from the reservoirs; and floor drains. The solids are comprised primarily of uneaten fish feed and fish wastes, and are filtered from the recirculating systems as previously described. The overflow water from the recirculating systems has been treated within the systems as previously described, but contains nitrates and varying low levels of suspended solids. The overflow water from the reservoirs consists of a clean mixture of unused excess well water and unused filtered seawater from the seawater supply. The water from the floor drains consists of spillage from tanks in the facility and/or fresh water used to rinse the floors clean.

2. PERMIT SUMMARY (cont'd)

The waste solids, system overflows, and floor drains are all routed to one of two underground settlement tank systems. Each tank system consists of a series of three, 3,000-gallon concrete tanks (16-feet x 8-feet x 5-feet (4,788 gal each) in series connected by pipe baffles. An additional 1,500-gallon settlement tank is utilized for wastewater from greenhouse 3, which is currently being used by the NWCMAC to rear char. After passing through the settling tanks, the effluent is discharged into the facility wastewater stream. The settling tanks are pumped of bio-solids two times per year (or when the solids level reaches 20% of the total depth) by a local contractor and disposed of off-site in accordance with federal and state regulations. Reservoir overflow, consisting of clean unused water that has not passed through any rearing system, does not enter the settling tanks but is discharged directly into the facility wastewater stream.

National Coldwater Marine Aquaculture Center

With the exception of the two egg incubation systems all water overflowing the NCWMAC's fish culture systems (Incubation Room, Parr Room, Smolt Room, Ongrow Room, Broodstock Room, and Research Tank Room), and all flows resulting from routine flushing of the fish culture system sumps and pipes is combined and piped to the NCWMAC's Wastewater Treatment Building. The two egg incubation systems overflow into NCWMAC's septic system. The Wastewater Treatment Building treats the fish culture system discharge using a 40-micron or 60-micron microscreen drum filter to capture larger particulate matter, UV irradiation to disinfect the water, and an inclined traveling belt screen with 1.0 mm openings to exclude from the discharge all eggs or fish that may have escaped into the water entering the Wastewater Treatment Building. The discharge flow exiting the treatment building is monitored using an ultrasonic flow meter, for use in the discharge monitoring report calculation. The mean flow discharged from the fish culture systems is approximately 150 gpm. At times the total flow to the Wastewater Treatment Building during flushing events can approach 700 gpm but is of relatively short duration (2-3 hours or less). To account for these variations in discharge flows, the microscreen drum filter and inclined traveling belt filter/self-cleaning band screen were sized to treat in excess of 1,000 gpm and the UV irradiation unit was sized to dose 45,000 μw-sec/cm2 to a flow of 715 gpm at a UV transmittance of 80%, a level that will inactivate most known fish pathogens.

A relatively small flow (approximately 20-40 gpm) containing concentrated (500-1,200 mg/L TSS) waste biosolids, e.g., waste feed and fecal matter, is produced by the frequent backwash of seven microscreen drum filters and the intermittent flushing of captured solids from the twenty settling units located in the NCWMAC's fish culture systems. This flow of waste biosolids is piped to the NCWMAC's Wastewater Treatment Building via separate lines from the fish culture system overflows and pipe/sump flushing flows. Inside the Wastewater Treatment Building, the waste biosolids are dewatered using chemical coagulation / flocculation followed by filtration across an inclined traveling belt filter installed with a 100 μm filter cloth. The inclined traveling belt filter is expected to dewater the biosolids to approximately 10% solids. Dewatered biosolids are then pumped to a covered 20-foot diameter x 20-foot tall slurry storage tank providing six months of storage capacity. The biosolids are stored until they can be removed by a contract hauler and taken off-site to a compost facility or to a POTW where the biosolids can be anaerobically digested.

2. PERMIT SUMMARY (cont'd)

Combined Outfall

Following treatment, the process wastewater streams from each facility are combined in an effluent manhole located near the new saltwater intake pump station at UMCCAR. The manhole contains a weir device with a Pulsar dB Flow Transducer connected to a flow monitor for estimating the discharge flow from the UMCCAR facility before it combines with the discharge from the NCWMAC facility. This manhole is also the location where samples are obtained for monitoring discharge parameters (BOD, TSS, Total Inorganic Nitrogen, pH, salinity, and temperature). The effluent streams combine into a 14-inch diameter 1,900 foot long pipe that discharges into Taunton Bay at a water depth of 5-feet at mean low tide.

Sanitary wastewater at both the UMCCAR and NCWMAC facilities is handled separately and disposed through approved on-site subsurface disposal systems. Use of agents for therapeutic and disinfecting/sanitizing purposes are addressed in subsequent Fact Sheet Sections titled accordingly.

3. CONDITIONS OF PERMITS

Maine law, 38 M.R.S.A. Section 414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require application of best practicable treatment (BPT), be consistent with the U.S. Clean Water Act, and ensure that the receiving waters attain the State water quality standards as described in Maine's Surface Water Classification System. In addition, 38 M.R.S.A., Section 420 and Department rule 06-096 CMR Chapter 530, *Surface Water Toxics Control Program,* require the regulation of toxic substances not to exceed levels set forth in Department rule 06-096 CMR Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants,* and that ensure safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected.

4. RECEIVING WATER QUALITY STANDARDS:

Maine law, 38 M.R.S.A., Section 469 classifies Taunton Bay at the point of discharge as a Class SB water. Maine law, 38 M.R.S.A., Section 465-B(2), describes the standards for Class SB waters.

5. RECEIVING WATER QUALITY CONDITIONS:

The State of Maine 2008 *Integrated Water Quality Monitoring and Assessment Report* (DEPLW0895), prepared pursuant to Sections 303(d) and 305(b) of the Federal Water Pollution Control Act contains no entries for Taunton Bay, indicating that Taunton Bay is meeting the standards of its classification. Several waters in the vicinity of, and connected to, Taunton Bay are listed as impaired. Those waters are included in Category 5-B-1, Estuarine and Marine Waters Impaired only by Bacteria (TMDL Required) and include Jellison Cove, Hancock (9-acres, ID 714-9, DMR Area 49-A), Carrying Place, Hancock (25-acres, ID 714-10, DMR Area 49-B), US Rt 1 Bridge, West Sullivan and Long Cove, Sullivan (30-acres, ID 714-13, DMR Area 50-A), Egypt Bay, Hancock and Franklin (106-acres, ID 714-16, DMR Area 50-E), and other waters. All of these waters are classified as Class SB waters and are noted as impaired due to "Elevated fecals; Nonpoint Source" based on current sampling. The Department has no information that UMCCAR causes or contributes to the attainment status questions of the waters listed.

Taunton Bay is part of a larger system that includes Hog Bay, Egypt Bay, and Sullivan Harbor. According to information provided by the Maine Department of Inland Fisheries and Wildlife for the previous permitting action, these waters constitute important habitat areas for bald eagles, shorebird staging habitat, tidal waterfowl and wading bird habitat, and contain extensive eelgrass beds. Maine's Natural Areas Program previously designated part of Taunton Bay as the northern most recorded breeding area for the Horseshoe crab. The bay provides habitat for shellfish and other aquatic life and is used for harvesting of shellfish as well as recreation in and on the waters.

Reportedly, MeDMR identified a greater than 85% loss of eel grass cover in Taunton Bay between 1996-2002. The University of Maine (UM) further defined the decline as beginning in 1998-2000 and hypothesized that it was potentially caused by the use of broad spectrum herbicides within the watershed, excessive nutrient discharges to the bay, or a combination of the two. Subsequently, the UM informally reported that the decline was likely caused by drought conditions and increased ambient temperatures within the referenced timeframe. The Department has no information that UMCCAR has caused or contributed to eel grass concerns in Taunton Bay. However, nutrient discharges have been implicated as causing similar effects in other habitat areas and the Department remains concerned with eutrophication of the bay.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS:

Pursuant to Maine Law (38 M.R.S.A., §414-A.1), the Department shall only authorize discharges to Maine waters when those discharges, either by themselves or in combination with other discharges, "*will not lower the quality of any classified body of water below such classification*". *Further, "the discharge will be subject to effluent limitations that require application of the best practicable treatment". "Best practicable treatment* (BPT) *means the methods of reduction, treatment, control and handling of pollutants, including process*

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

methods, and the application of best conventional pollutant control technology or best available technology economically available, for a category or class of discharge sources that the department determines are best calculated to protect and improve the quality of the receiving water and that are consistent with the requirements of the Federal Water Pollution Control Act" (40 CFR). "If no applicable standards exist for a specific activity or discharge, the department must establish limits on a case-by-case basis using best professional judgement…" considering "*…the existing state of technology, the effectiveness of the available alternatives for control of the type of discharge and the economic feasibility of such alternatives…*". Pursuant to 38 M.R.S.A, §414-A.1 and §464.4, the Department regulates wastewater discharges through establishment of effluent limitations and monitoring requirements that are protective of Maine waters.

At the time of the previous permitting action, the Department undertook to revise its wastewater discharge permitting program for fish hatcheries and rearing facilities to provide for establishment of scientifically valid and consistently applied effluent limitations, monitoring and operational requirements based on the Department's best professional judgement (BPJ) of best practicable treatment (BPT) or site specific water quality conditions. This permitting action represents a continuance of that process based on observations and analyses conducted for UMCCAR and other facilities since issuance of the previous permitting actions.

The previous permitting action established effluent limitations and monitoring requirements for two Outfall designations: Outfalls #001A and #001B. Outfall #001A referred to the UMCCAR facility discharge only, prior to the NCWMAC facility coming online. Outfall #001B referred to the combined UMCCAR and NCWMAC discharge through an extended outfall structure. Only Outfall #001B was used after the NCWMAC facility began discharging in August 2009, and is being utilized in this permitting action, representative of the UMCCAR facility including all entities or facilities located on site.

a. Flow: The previous licensing action established monthly average flow limits of 0.634 MGD for Outfall #001A (Phase 1) and 1.27 MGD for Outfall #001B (Phase 2). The 1.27 MGD effluent flow limit is being carried forward in this permitting action, representative of the design criteria for the UMCCAR facility including all entities or facilities located on site. The required minimum monitoring frequency consists of daily measurement of discharge flow, consistent with Department guidelines for wastewater treatment facility discharges. A review of the Discharge Monitoring Report (DMR) data for the UMCCAR facility for the period of June 2005 through April 2010 indicates the following.

EFFLUENT FLOW – OUTFALL #001A (Pre-NCWMAC)

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg.	0.634 MGD	0.08 MGD	0.46 MGD	0.24 MGD	49

EFFLUENT FLOW – OUTFALL #001B (Including NCWMAC)

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg.	1.27 MGD	0.26 MGD	0.28 MGD	0.27 MGD	7

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

b. Dilution Factors: Department Regulation (06-096 CMR) Chapter 530, *Surface Water Toxics Control Program*, October 2005, states, *"for discharges to the ocean, dilution must be calculated as near-field or initial dilution, or that dilution available as the effluent plume rises from the point of discharge to its trapping level, at mean low water and slack tide for the acute exposure analysis, and at mean tide for the chronic exposure analysis using appropriate models determined by the Department such as MERGE, CORMIX or another predictive model."* Based on the location and configuration of the facility outfall pipe as well as the physical properties and flushing rate of Taunton Bay, the Department has determined the dilution factors for the discharge of a monthly average of 1.27 MGD from the UMCCAR facility including all entities or facilities located on site to be as follows:

Acute = 12.5:1 Chronic = 15:1 Harmonic mean [(1)] = 45:1

Footnote (1): The harmonic mean dilution factor is approximated by multiplying the chronic dilution factor by three (3). This multiplying factor is based on guidelines for estimation of human health dilution presented in the USEPA publication *"Technical Support Document for Water Quality-Based Toxics Control"* (Office of Water; EPA/505/2-90-001, page 88), and represents an estimation of harmonic mean flow on which human health dilutions are based in a riverine 7Q10 flow situation.

c. Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS): The previous permitting action established monthly average and daily maximum concentration limits of 30 mg/L and 50 mg/L respectively for BOD_5 and TSS based on Department BPJ of Best Practicable Treatment (BPT) for re-circulating facilities. These limits were based on recommendations included in USEPA's 2002 proposed draft National Effluent Guidelines for TSS from re-circulated fish hatchery wastewater receiving a secondary level of treatment, the Department's long-standing view of the relationship with and significance of BOD_5, and consideration of effluent quality from facilities utilizing the Department's BPJ of minimum treatment technology. Mass limits were calculated based on the monthly average flow limit for Outfalls #001A and #001B, the appropriate concentration limits, and a standard conversion factor. The previously established BOD_5 and TSS mass and concentration limits for Outfall #001B are being carried forward in this permitting action.

A review of the DMR data for the UMCCAR facility for the period of June 2005 through April 2010 indicates the following.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

OUTFALL #001A (Pre-NCWMAC)
BOD MASS

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg.	159 lbs/day	2.5 lbs/day	118 lbs/day	<10.8 lbs/day	50
Daily Max.	264 lbs/day	3.0 lbs/day	224 lbs/day	19.2 lbs/day	50

BOD CONCENTRATION

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg.	30 mg/L	2.2 mg/L	32 mg/L *	<5.3 mg/L	50
Daily Max.	50 mg/L	2.2 mg/L	61 mg/L **	8.4 mg/L	50

* 1 exceedence of monthly average BOD concentration limit; ** 2 exceedences of daily maximum BOD concentration limit

TSS MASS

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg.	159 lbs/day	<8.2 lbs/day	68 lbs/day	<24.9 lbs/day	50
Daily Max.	264 lbs/day	<10.1 lbs/day	206 lbs/day	44.4 lbs/day	50

TSS CONCENTRATION

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg.	30 mg/L	<4.1 mg/L	78 mg/L	<16.6 mg/L	50
Daily Max.	50 mg/L	3.5 mg/L	95 mg/L	26.1 mg/L	50

* 6 exceedences of monthly average TSS concentration limit; ** 4 exceedences of daily maximum TSS concentration limit

OUTFALL #001B (Including NCWMAC)
BOD MASS

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg.	318 lbs/day	<4.4 lbs/day	9.5 lbs/day	<6.7 lbs/day	7
Daily Max.	530 lbs/day	4.6 lbs/day	10 lbs/day	7.5 lbs/day	7

BOD CONCENTRATION

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg.	30 mg/L	<2.1 mg/L	<4.5 mg/L	<3.0 mg/L	7
Daily Max.	50 mg/L	2.2 mg/L	4.9 mg/L	3.5 mg/L	7

TSS MASS

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg.	318 lbs/day	<8.5 lbs/day	25 lbs/day	<12.7 lbs/day	7
Daily Max.	530 lbs/day	<8.7 lbs/day	40 lbs/day	<16.9 lbs/day	7

TSS CONCENTRATION

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg.	30 mg/L	<4 mg/L	<12 mg/L	<5.9 mg/L	7
Daily Max.	50 mg/L	<4 mg/L	19 mg/L	<7.8 mg/L	7

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

The previous permitting action established minimum monitoring requirements of once per week for effluent BOD_5 and TSS, which were modified to twice per month in July 2009, based on revised Department BPJ of monitoring frequencies necessary to more accurately characterize facility effluent conditions. This permitting action carries forward the twice per month minimum monitoring frequency requirement.

d. Total Inorganic Nitrogen (TIN) and Total Nitrogen (TN): The previous permitting action carried forward the 96.1 lbs/day daily maximum limit from October 1 through May 31 and established a 50 lbs/day daily maximum TIN mass limit from June 1 through September 30 each year. The more restrictive summer mass limit was established based on Department BPJ as TIN represents a more significant concern in Taunton Bay during the summer months and based on limited ambient data. The previous permitting action contained provisions for reevaluation of the TIN mass limits based on ambient water quality monitoring. It also established reporting requirements TIN mass (monthly average) and concentration (monthly average and daily maximum). And, it established minimum monitoring frequencies of once per week from June 1 through September 30 and once per month from October 1 through May 31 based on the Department's BPJ of monitoring frequencies necessary to more accurately characterize facility effluent conditions.

A review of the DMR data for the UMCCAR facility for the period of June 2005 through April 2010 indicates the following.

OUTFALL #001A (Pre-NCWMAC)
TOTAL INORGANIC NITROGEN MASS

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg. Oct 1–May 31 Jun 1–Sep 30	 report lbs/day report lbs/day	0.81 lbs/day	17 lbs/day	<5.2 lbs/day	48
Daily Max. Oct 1–May 31 Jun 1–Sep 30	 96.1 lbs/day 50 lbs/day	1.2 lbs/day	44.4 lbs/day	<6.6 lbs/day	48

TOTAL INORGANIC NITROGEN CONCENTRATION

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg. Oct 1–May 31 Jun 1–Sep 30	 report mg/L report mg/L	0.2 mg/L	<6.3 mg/L	<2.4 mg/L	48
Daily Max. Oct 1–May 31 Jun 1–Sep 30	 report mg/L report mg/L	1.4 mg/L	<16.4 mg/L	<3.1 mg/L	48

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

OUTFALL #001B (Including NCWMAC)
TOTAL INORGANIC NITROGEN MASS

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg. Oct 1–May 31 Jun 1–Sep 30	 report lbs/day report lbs/day	2.9 lbs/day	11.0 lbs/day	<8.2 lbs/day	7
Daily Max. Oct 1–May 31 Jun 1–Sep 30	 96.1 lbs/day 50 lbs/day	<6.5 lbs/day	11.5 lbs/day	<9.4 lbs/day	7

TOTAL INORGANIC NITROGEN CONCENTRATION

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg. Oct 1–May 31 Jun 1–Sep 30	 report mg/L report mg/L	<1.4 mg/L	4.5 mg/L	<3.4 mg/L	7
Daily Max. Oct 1–May 31 Jun 1–Sep 30	 report mg/L report mg/L	2.9 mg/L	5.1 mg/L	<4.3 mg/L	7

During development of the previous permitting action, the University of Maine (UM) reported that between 1996-2002, MEDMR observed a greater than 85% loss of eel grass cover in Taunton Bay. From local observations, the UM narrowed the beginning of the decline to between 1998-2000. The UM hypothesized that one of the potential causes for the decline may have been excessive nitrogen discharges to the bay. Subsequently, the UM informally reported that the decline was likely caused by drought conditions and increased ambient temperatures within the referenced timeframe. The Department has no information that the Permittee has caused or contributed to eel grass concerns in Taunton Bay. However, nutrient discharges have been implicated as causing similar effects in other habitat areas and the Department remains concerned with eutrophication of the bay.

Studies along the Maine coast, in estuarine and marine areas in New Hampshire, and elsewhere have focused on concerns with total nitrogen impacts on eutrophication in these habitats instead of TIN. Though the current trend appears to be shifting from TIN toward TN, the Department wishes to proceed cautiously based on unknowns with nutrient fate and transport in the marine environment and the sensitivity of the receiving water. Therefore, this permitting action carries forward TIN effluent limitations, monitoring requirements, and minimum monitoring frequencies established in the previous permitting action. To provide for full use of previously collected and future TIN data and its relationship with TN, this permitting action establishes monthly average and daily maximum TN mass and concentration monitoring requirements at minimum frequency of once per month. This permitting action carries forward provisions for evaluating and

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

establishing TIN and/or TN effluent limits and monitoring requirements based on ambient water quality monitoring, as specified in Fact Sheet Section 14.

The terms TIN and TN relate to combinations of various forms of nitrogen. TIN refers to ammonia (NH_3), nitrite (NO_2), and nitrate (NO_3) nitrogen. TN relates to NH_3 and organic nitrogen (combined as total Kjeldahl nitrogen or TKN), NO_2 and NO_3. Organic N does not have a separate analytical test. But, the permittee can obtain all necessary forms of nitrogen from which to calculate TIN and TN by analyzing for NH_3, TKN, NO_2, and NO_3. This permitting action only requires reporting of TIN and TN.

e. Fish on Hand: This permitting action is carrying forward the reporting requirement for monthly average and daily maximum mass of fish on hand. This parameter is intended to enable both the Department and the permittee in evaluating management practices at the facility and trends in effluent quality and receiving water impacts. This permitting action is also carrying forward the required minimum monitoring frequency of once per week based on the Department's BPJ of the monitoring frequency necessary to more accurately characterize facility effluent conditions.

A review of the DMR data for the UMCCAR facility for the period of June 2005 through April 2010 indicates the following.

FISH ON HAND - OUTFALL #001A (Pre-NCWMAC)

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg.	report lbs/day	8,002 lbs/day	70,668 lb/day	33,018 lb/day	48
Daily Max.	report lbs/day	8,143 lbs/day	85,683 lb/day	34,813 lb/day	48

FISH ON HAND - OUTFALL #001B (Including NCWMAC)

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg.	report lbs/day	49,414 lbs/day	57,408 lb/day	54,605 lb/day	7
Daily Max.	report lbs/day	50,296 lbs/day	61,455 lb/day	56,288 lb/day	7

f. Formalin**:** Fish hatcheries and rearing facilities commonly use formalin based biocides for therapeutic treatment of fungal infections and external parasites of finfish and finfish eggs. At the time of the previous permitting action, the permittee projected maximum worst-case formalin use at the UMCCAR, after start-up of the NCWMAC facility, to consist of 4.23 gallons per day. Annual formalin use is currently reported at 8 gallons (30 liters) per year. The previous permitting action established monthly average mass and concentration reporting requirements and daily maximum mass and concentration limits for formalin with a required minimum monitoring frequency requirement of once per week for both Outfalls #001A and #001B, as well as guidance for calculating the levels of effluent formalin. For

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

the previous permitting action, as existing studies revealed significant variability in formalin toxicity, the MEDEP undertook its own investigation to determine appropriate limitations, contracting with a commercial laboratory for Whole Effluent Toxicity (WET) testing on *Ceriodaphnia dubia* for 48-hour acute toxicity, pursuant to standard methods. Pursuant to MEDEP's long standing goal of 100% survival of the test species, Lotic Inc. identified a BPJ of ambient water quality criteria (AWQC) of 1.56 mg/L. The 1.56 mg/L BPJ of AWQC was multiplied by the facility's acute (1Q10) ambient to effluent dilution to calculate concentration limits under acute critical low flow conditions. Mass limits were calculated based on the projected maximum amount of formalin used per day, multiplied by a conversion factor of 9.13 lbs / gallon representing the weight of formalin. Though standard methods and assumptions were utilized in the Lotic study, realistically no facilities utilize formalin for 48-hours continuously. Thus, using the standard methods and assumptions appeared to overestimate impacts to aquatic life. In 2008, the Maine Department of Inland Fisheries and Wildlife (MDIFW) provided results of its study of acute toxicity at more targeted time frames of less than 48-hours, typical of rearing facility operations.

MDIFW utilized statistical "bootstrapping" to lend greater statistical significance to the data set. These results were reviewed by MEDEP and determined to represent a more appropriate means of establishing toxicity based effluent limits for formalin. Simultaneously, MEDEP revised its survival goals to 95% of test species to correspond with toxicity work conducted by USEPA. A MEDEP biologist noted, "*the basis for all of EPA's ambient water quality criteria for aquatic life (is) to protect 95% of the species*" and determined that using the 5^{th} percentile of MDIFW's 1-hour exposure data "*gives an equivalent amount of protection to aquatic life*." Based on this, in 2008 the Department developed a revised BPJ of AWQC of 45 mg/L based on a one hour treatment, typical of most hatchery and rearing facility discharges. Under emergency conditions, it is acknowledged that additional rearing structures may need to be treated, causing formalin discharges to extend beyond the typical one hour period. To accommodate this, the Department also developed a BPJ of AWQC of 25 mg/L based on a maximum 24-hour treatment period. Such emergency treatments and discharges must be conducted no more frequently than once every four days to ensure the average formalin concentration does not exceed the 5^{th} percentile level. Based on this research, the Department revised UMCCAR's MEPDES Permit / Maine WDL on October 10, 2008, revising hatchery and rearing station permit concentration limits for formalin.

In this permitting action, the Department is utilizing the same procedure to calculate formalin concentration limits. These calculations utilize a 1-hour exposure criteria typical of normal treatment operations, a 24-hour exposure criteria to accommodate emergency treatment conditions, and the 12.5:1 effluent to ambient acute dilution applicable to this facility and its receiving water, for Outfall #001B as the NCWMAC facility has been put online at UMCCAR Franklin.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

45 mg/L (1-hour acute criteria) x 12.5 (effluent dilution) = 563 mg/L formalin limit.
25 mg/L (24-hour acute criteria) x 12.5 (effluent dilution) = 313 mg/L formalin limit.

The permittee's maximum therapeutic dose for fish treatments of 250 mg/L shall be considered the maximum possible effluent concentration. The previously established daily maximum formalin mass limit of 38.6 lbs/day for Outfall #001B, developed pursuant to Department Rules, Chapter 523.6(f) based on projected use at UMCCAR, is being carried forward in this permitting action. It must be noted that the concentration and mass limits are derived separately and that compliance with one does not guarantee compliance with the other. Throughout the term of the permit, the permittee shall report the monthly average effluent formalin mass and concentration. Effluent values shall be determined through calculations, as described below. This permitting action is establishing effluent limitations and monitoring requirements for formalin, as this is the commonly used form, and not for formaldehyde. The Department is requiring UMCCAR to report therapeutic agents used at the facility that have the potential to be discharged to the receiving water. This permitting action revises the minimum monitoring frequency requirement to once per occurrence (each formalin use), consistent with Department BPJ and requirements for other facilities within this industry.

A review of the DMR data for the UMCCAR facility for the period of June 2005 through April 2010 indicates the following.

OUTFALL #001A (Pre-NCWMAC)
FORMALIN MASS

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg.	report lbs/day	0.4 lbs/day	2.1 lbs/day	1.2 lbs/day	10
Daily Max.	36.2 lbs/day	1.0 lbs/day	2.6 lbs/day	1.7 lbs/day	10

FORMALIN CONCENTRATION

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg.	report mg/L	0.02 mg/L	1.8 mg/L	0.96 mg/L	10
Daily Max.	21.8 mg/L	0.6 mg/L	3.0 mg/L	1.8 mg/L	10

OUTFALL #001B (Including NCWMAC)
FORMALIN MASS

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg. 1-hr treatment 24-hr treatment	 report lbs/day report lbs/day	---	---	---	0
Daily Max. 1-hr treatment 24-hr treatment	 38.6 lbs/day 38.6 lbs/day	---	---	---	0

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

FORMALIN CONCENTRATION

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg.					
1-hr treatment	report mg/L	---	---	---	0
24-hr treatment	report mg/L				
Daily Max.					
1-hr treatment	250 mg/L	---	---	---	0
24-hr treatment	250 mg/L				

Effluent levels of formalin can be calculated based on the amount of formalin used at the facility for hatchery, rearing, and broodstock functions and the dilution available in large wastewater settling structures and through mixing in the total facility waste-stream. Previously, the Department developed methods for calculating effluent formalin concentrations and mass values utilizing the varying treatment concentrations in the different facility functions and various internal dilutions provided within the facility. In this permitting action, the Department is providing a more simplified recommendation that utilizes the total mass of formalin used for all functions during the treatment period and the dilutions described above during the same time period. The facility may propose alternative methods for Department review and approval. Effluent formalin values must be calculated upon each use at the facility.

In this example, a theoretical facility adds approximately 0.172-gallons (650 ml) of undiluted formalin directly to each line of hatchery egg troughs to achieve the desired dose during a 15-minute treatment period. The hatchery facility uses a maximum of 6 lines of egg troughs for treatment at a time. The hatchery facility wastewater joins with the total facility wastewater prior to discharge to the receiving water. With a total facility discharge flow of 3.0 MGD, the flow during the 15-minute treatment period equates to 31,250-gallons (3.0 MGD / 24-hours / 4) available for dilution of the 1.03 gallons of formalin administered (0.172 gal x 6 troughs). The combined wastewater flow is then discharged to the receiving water. The end of pipe concentration from egg treatments can be calculated as follows, using 1 million parts per million to provide for the concentration of undiluted formalin.

31,250-gal wastewater / 1.03 gal formalin = 30,340:1 dilution
1,000,000 ppm (undiluted) formalin / 30,340 = 33 ppm formalin discharged

For treatments on fish in rearing structures, the same facility adds approximately 6-gallons of undiluted formalin at the head of raceway pools by drip and allows it to flow through the entire line over a one hour period. As in the example above, the rearing facility wastewater joins with the total facility wastewater prior to discharge to the receiving water. With a total facility discharge flow of 3.0 MGD, the flow during the one hour treatment period equates to 125,000-gallons (3.0 MGD / 24-hours) available for dilution of the 6.0 gallons of formalin administered. The combined wastewater flow is then discharged to the receiving water. The end of pipe concentration from fish treatment can be calculated as follows:

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

125,000-gal rearing facility wastewater / 6 gal formalin = 20,833:1 dilution
1,000,000 ppm (undiluted) formalin / 20,833 = 48 ppm formalin discharged

These examples consider hatchery and rearing facility treatments to be conducted on different occasions. If multiple treatments occur simultaneously, the total amount of formalin must be considered in calculating the end of pipe concentration. For brevity, these examples do not include a broodstock function, which would be calculated in a similar manner. If extended period pool treatments are conducted at the facility, the time during which the pool volume is discharged into the facility waste-stream should be used to determine an appropriate dilution volume instead of the time the formalin is added to the pool. Also, these examples utilized a facility that discharges its effluent without significant wastewater settling. If the facility used a 500,000-gallon settling basin, the rearing facility discharge under the one-hour discharge scenario could be analyzed as follows.

125,000-gal rearing facility wastewater / 6 gal formalin = 20,833:1 dilution
500,000-gal basin volume / 125,000 combined waste-stream = 4:1 dilution
1,000,000 ppm (undiluted) formalin / 20,833 / 4 = 12 ppm formalin discharged

Use of the settling basin volume as an additional dilution is only applicable for the one-hour treatment scenario. Under a greater period of time of treatment and discharge, the additional settling volume becomes part of the facility infrastructure and the total facility discharge flow is used. It must be noted that to obtain an accurate end-of-pipe calculation, each facility must utilize accurate amounts of formalin used for all treatment functions, accurate volumes of the facility's effluent flow during the treatment period, and accurate volumes of water within any large settling structures. Effluent flow limits and design criteria can not be used. These examples illustrate end-of-pipe (EOP) concentrations, which would be further diluted depending upon the facility's effluent dilution in the receiving water. If a facility receives a 3:1 effluent dilution in the receiving water, the calculated EOP concentration should be divided by three to provide the concentration in the receiving water after mixing.

g. Total Residual Chlorine (TRC): The previous permitting action established a daily maximum water quality based TRC limit for Outfall #001A of 0.18 mg/L and monthly average and daily maximum water quality based TRC limits for Outfall #001B of 0.11 mg/L and 0.16 mg/L. Limits on TRC are specified to ensure that ambient water quality standards are maintained and that best practicable treatment (BPT) technology is being applied to the discharge for facilities that use and discharge chlorine-based materials. The Department imposes the more stringent of the calculated water quality based or technology/BPT based limits. End of pipe water quality based thresholds for TRC can be calculated for Outfall #001B as follows:

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

Parameter	Acute Criteria	Chronic Criteria	Acute Dilution	Chronic Dilution	Acute Limit	Chronic Limit
Chlorine	0.013 mg/L	0.0075 mg/L	12.5:1	15:1	0.16 mg/L	0.11 mg/L

Example calculation: Acute – 0.013 mg/L (12.5.1) = 0.16 mg/L

The Department has established a daily maximum BPT limitation of 1.0 mg/L for facilities that disinfect their wastewater with elemental chlorine or chlorine based compounds or use them in their processes. The calculated water quality based TRC limits of 0.16 mg/L (acute) and 0.11 mg/L (chronic) are more stringent than the BPT limitation of 1.0 mg/L and are therefore being carried forward in this permitting action. The minimum monitoring frequency is being revised from once per day to once per occurrence based on the extreme intermittent frequency of use at UMCCAR, an intent to provide language leading to greater understanding and compliance, and Department BPJ.

A review of the DMR data for the UMCCAR facility for the period of June 2005 through April 2010 indicates the following.

TOTAL RESIDUAL CHLORINE - OUTFALL #001A (Pre-NCWMAC)

Value	**Limit**	**Minimum**	**Maximum**	**Average**	**# Values**
Daily Max.	0.18 mg/L	---	<0.05 mg/L	---	1

TOTAL RESIDUAL CHLORINE - OUTFALL #001B (Including NCWMAC)

Value	**Limit**	**Minimum**	**Maximum**	**Average**	**# Values**
Monthly Avg.	0.11 mg/L	---	---	---	0
Daily Max.	0.16 mg/L	---	---	---	

h. pH – This permitting action is carrying forward the daily maximum pH range limit of 6.0 – 8.5 standard units (su), considered by the Department as a best practicable treatment standard for fish hatcheries and rearing facilities and consistent with the pH limit established in discharge permits for these facilities. Based on Department BPJ, as a portion of the influent water consists of water extracted from the receiving water, this permitting action further specifies "*Exceedences of the pH range limitation shall be considered permit violations unless due to natural causes. At no time shall the effluent pH exceed 0.5 standard units outside of the pH levels in Taunton Bay at the point of discharge. If effluent pH falls outside of 6.0-8.5 s.u., the permittee shall provide corresponding ambient pH values with the appropriate monthly DMR.*". This permitting action carries forward the minimum pH monitoring frequency requirement of once/week to provide for more accurate characterization of facility effluent conditions.

A review of the DMR data for the UMCCAR facility for the period of June 2005 through April 2010 indicates the following.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

pH RANGE - OUTFALL #001A (Pre-NCWMAC)

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg.	---	6.9 s.u.	7.6 s.u.	---	49
Daily Max.	6.0-8.5 s.u.	7.3 s.u.	8.1 s.u.	---	49

pH RANGE - OUTFALL #001B (Including NCWMAC)

Value	Limit	Minimum	Maximum	Average	# Values
Monthly Avg.	---	7.4 s.u.	7.7 s.u.	---	7
Daily Max.	6.0-8.5 s.u.	7.7 s.u.	7.9 s.u.	---	7

7. SETTLING BASIN CLEANING:

Discharge of inadequately treated fish hatchery wastewater (excess feed and fish waste) contributes solids, BOD, and nutrients to receiving waters, which can contribute to eutrophication and oxygen depletion. This, in combination with other pollutant specific toxic effects, impacts the aquatic life and habitat value in the receiving water. Typical hatchery wastewater treatment practices include effluent filtration and settling with solids removal.

This permitting action carries forward requirements that the permittee must clean any settling structures at a minimum when accumulated materials occupy 20% of a basin's capacity, when material deposition in any area of the basin exceeds 50% of the operational depth, or at any time that materials in or from the basins are contributing to a violation of permit effluent limits.

8. DISEASE AND PATHOGEN CONTROL AND REPORTING:

Maine Department of Inland Fisheries and Wildlife (MDIFW) Rules (Chapter 2.03-A) and Maine Department of Marine Resources (MeDMR) Rules (Chapter 24.21) state that *"the transfer and/or introduction of organisms fall within the jurisdiction of the Department of Marine Resources (12 MRSA, §6071) into coastal waters within the State of Maine and the Department of Inland Fisheries and Wildlife (12 MRSA, §§7011, 7035 and 7201, 7202) into public and/or private waters within the State of Maine. These rules are intended to protect wild and farmed salmonid fish populations and shall be applicable to all individuals involved in the culture and movement of live salmonids and gametes."* Further, both agencies' rules define Diseases of Regulatory Concern as *"…infectious agents that have been demonstrated to cause a significant increase in the risk of mortality among salmonid populations in the State of Maine. Diseases of Regulatory Concern are classified by the Commissioner into three (3) disease categories: exotic, endemic (limited distribution) and endemic based on an annual review and analysis of epidemiological data."* This permitting action carries forward requirements that the permittee must comply with MDIFW and MeDMR salmonid fish

8. DISEASE AND PATHOGEN CONTROL AND REPORTING (cont'd)

health rules (12 MRSA, §6071; 12 MRSA, §§7011, 7035, 7201, and 7202, or revised rules). The cited rules include requirements for notification to the appropriate agency within 24-hours of pathogen detection. In the event of a catastrophic pathogen occurrence, in addition to the requirements of the rules, the permittee shall notify the Department in writing within 24-hours of detection, with information on necessary control measures and the veterinarian involved. The permittee shall submit to the Department for review and approval, information on the proposed treatment including materials/chemicals to be used, material/chemical toxicity to aquatic life, the mass and concentrations of materials/chemicals as administered, and the concentrations to be expected in the effluent. If, upon review of information regarding a treatment pursuant to this section, the Department determines that significant adverse effects are likely to occur, it may restrict or limit such use.

9. THERAPEUTIC AGENTS:

In the June 30, 2004, USEPA Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category (National Effluent Guidelines), EPA requires proper storage of drugs, pesticides and feed and requires facilities to report use of any investigational new animal drug (INAD), extra-label drug use, and spills of drugs, pesticides or feed that results in a discharge to waters of the U.S. This permitting action carries forward the previous requirements that all medicated fish feeds, drugs, and other fish health therapeutants shall be approved by the US Food and Drug Administration (USFDA) and applied according to USFDA accepted guidelines and manufacturer's label instructions and that therapeutic agents must also be registered with USEPA, as appropriate. Further, records of all such materials used must be maintained at the facility for five years.

This permitting action does not authorize routine off-label or extra-label drug use. Such uses shall only be permitted in emergency situations when they are the only feasible treatments available and only under the authority of a veterinarian. The permittee shall notify the Department in writing within 24-hours of such use. This notification must be provided by the veterinarian involved and must include the agent(s) used, the concentration and mass applied, a description of how the use constitutes off-label or extra-label use, the necessity for the use in terms of the condition to be treated and the inability to utilize accepted drugs or approved methods, the duration of the use, the likely need of repeat treatments, and information on aquatic toxicity. If, upon review of information regarding the use of a drug pursuant to this section, the Department determines that significant adverse effects are likely to occur, it may restrict or limit such use.

This permitting action does not authorize the discharge of drugs authorized by the USFDA pursuant to the Investigational New Animal Drug (INAD) program. As the INAD program typically involves the long-term study of drugs, their benefits and effects, the permittee is anticipated to be able to notify the Department of its intent to conduct, and provide information

9. THERAPEUTIC AGENTS (cont'd)

related to, such study. The permittee is required to provide notification to the Department for review and approval prior to the use and discharge of any drug pursuant to the INAD program. This notification must include information to demonstrate that the minimum amount of drug necessary to evaluate its safety, efficacy, and possible environmental impacts will be used. Notifications must also include an environmental monitoring and evaluation program that at a minimum describes sampling strategies, analytical procedures, evaluation techniques and a timetable for completion of the program. The program must consider the possible effects on the water column, benthic conditions and organisms in or uses of the surrounding waters. INAD related uses and discharges will be subject to Department review and approval. UMCCAR indicates that the following therapeutic agents may be used at the Franklin facility. These agents must be used pursuant to the requirements specified herein.

Formalin. Effluent limitations and monitoring requirements related to the use of formalin at the facility are addressed in Permit Special Condition A, footnote 4 and Fact Sheet Section 6.f. Hydrogen Peroxide may be used for control of fungus on eggs, bacterial gill disease on fish, as a replacement for formalin. A total of 8 gallons per year or less may be used at a concentration of 100 ppm for bath treatments and subsequently discharged into the full facility waste-stream. SLICE is contained in feed mixture as a treatment to combat sea lice in salmon, often prior to their introduction to sea water. Active ingredient Emamectin Benzoate. SLICE was used at UMCCAR in 2009 pursuant to a permit Minor Revision (Fact Sheet Section 2.c), authorizing its use at 0.01 grams per day for one, seven day period. SLICE use was previously part of USFDA INAD program #10-418. SLICE will only be used under the guidance of a veterinarian and according to USFDA and/or USEPA requirements as specified above, and pursuant to the recent USFWS INAD #11-370. UMCCAR plans to use SLICE at 0.02 grams per day for one, seven day period per year. The Department has reviewed the proposed use and finds that resulting concentrations are anticipated to fall below detection levels, projected no-effect concentrations, and constitute a deminimus discharge of pollutants.

The use and discharge of the materials described above or incorporated in the future are subject to the conditions described in Permit Special Condition C, Unauthorized Discharges.

10. DISINFECTING/SANITIZING AGENTS:

UMCCAR indicates that the following disinfecting/sanitizing agents may be used at the Franklin facility. These agents must be used pursuant to the requirements specified herein.

Perosan for cleaning and disinfecting equipment and surfaces to prevent viral and bacterial pathogens. Active ingredients hydrogen peroxide, acetic acid, peroxyacetic acid. Approximately 2 gallons used per year at a concentration of up to 700 ppm active ingredients, sprayed on surfaces, rinsed, immediately ready for fish occupancy.
Chlorine bleach for cleaning and disinfecting tanks after movement of a year class, other times as necessary. Approximately 60 gallons used per year at a concentration of 120 ppm

10. DISINFECTING/SANITIZING AGENTS (cont'd)

and frequency of 1/week. Tanks are dechlorinated with sodium bisulfite and rinsed prior to discharge into facility waste-stream. The discharge of total residual chlorine is regulated in this permitting action.
Virkon-s footbath disinfectant (1% solution). Active ingredients potassium peroxymonosulfate, sodium dodecylbenzen-sulphonate, sulfamic acid. Approximately 60 pounds of powder used per year. Footbath wastewater is not discharged into the facility waste-stream.

In this permitting action, the Department carries forward the requirement that the permittee must maintain records of all sanitizing agents and/or disinfectants used that have the potential to enter the waste-stream or receiving water, their volumes and concentrations as used and concentrations at the point of discharge, at the facility for a period of five years. This permitting action only authorizes the discharge of those materials applied for, evaluated by the Department, and either regulated or determined to be deminimus in this permitting action or in subsequent Department actions. The discharges of any other agents or waste products not specifically included in this permitting action are considered unauthorized discharges pursuant to Permit Special Condition C.

The use and discharge of the materials described above or incorporated in the future are subject to the conditions described in Permit Special Condition C, Unauthorized Discharges.

11. MINIMUM TREATMENT TECHNOLOGY REQUIREMENT:

Between 2000 and 2002, eleven Maine fish hatcheries were evaluated to identify potential options for facility upgrades. All nine Maine Department of Inland Fisheries and Wildlife hatcheries were evaluated by FishPro Inc., while the two USFWS hatcheries were evaluated by the Freshwater Institute. Recommended wastewater treatment upgrades for each of the facilities included microscreen filtration of the effluent. In the previous permitting action, based on the information provided and Department BPJ, the Department required that the permittee shall provide minimum treatment technology for the UMCCAR facility that shall consist of treatment equal to or better than 60-micron microscreen filtration of the effluent, wastewater settling/clarification, removal of solids. This determination is being carried forward in this permitting action. As the permit holder, UMCCAR shall provide treatment and/or effluent quality equal to or better than the BPJ minimum treatment technology and shall comply with all effluent limitations, monitoring requirements, and operational requirements established in this permitting action. Additional treatment may be necessary to achieve specific water quality based limitations.

12. SALMON GENETIC INTEGRITY AND HATCHERY ESCAPE PREVENTION:

The US Fish and Wildlife Service and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) formally listed the Atlantic salmon as an endangered species on November 17, 2000. In that decision, the Gulf of Maine Distinct Population Segment (DPS) encompassed all naturally reproducing remnant populations of Atlantic salmon downstream of the former Edwards Dam site on the Kennebec River northward to the mouth of the St. Croix River. The watershed structure, available Atlantic salmon habitat, and abundance of Atlantic salmon at various life stages were best known for the following eight rivers: Dennys River, East Machias River, Machias River, Pleasant River, Narraguagus River, Ducktrap River, Sheepscot River, and Cove Brook. On June 15, 2009, the two agencies expanded the Gulf of Maine DPS to include salmon in the Penobscot, two significant issues of concern regarding the rearing of salmon in Maine involve the genetic integrity of the salmon and escape prevention to avoid impacts on native fish.

On December 4, 2000, in regard to the Department's pending delegation to administer the NPDES Permit Program, USEPA Region I informed the Department that "*permits issued to freshwater hatcheries raising salmon will require that the facility be designed or modified to achieve zero escapement of fish from the facility*". The EPA also stated, "*The information contained in the* (US Fish and Wildlife and NOAA Fisheries) *Services' listing documents indicates that a remnant population of wild Atlantic salmon is present in…*" Maine waters "*…and that salmon fish farms and hatcheries are activities having a significant impact on the…*" Gulf of Maine Distinct Population Segment (DPS) of Atlantic salmon "*…through, among other things, the escape of farmed and non-North American strains of salmon which may interbreed with the wild Maine strains, compete for habitat, disrupt native salmon redds, and spread disease." "Based on this information, the Services have concluded that the escape of farm-raised salmon from fish farms and hatcheries is likely to significantly impair the growth, reproduction and habitat of wild salmon, thereby impairing the viability of the DPS." "EPA has analyzed current information, including these findings, and based on this information believes that this remnant population constitutes an existing instream use of certain Gulf of Maine rivers and considers that the above-described impacts to the population would be inconsistent with Maine's water quality standards. Assuming the information discussed above does not significantly change, EPA will utilize its authorities to ensure compliance with Maine water quality standards by ensuring that conditions to protect the remnant population of Atlantic salmon are included in NPDES permits for salmon fish farms and hatcheries, which are subject to regulation as concentrated aquatic animal production facilities." "In view of the substantial danger of extinction to the DPS described by the Services, it is EPA's view that proposed permits authorizing activities that would adversely affect the population, as described earlier in this letter, would be inconsistent with Maine's water quality standards and objectionable under the CWA.*"

12. SALMON GENETIC INTEGRITY AND HATCHERY ESCAPE PREVENTION (cont'd)

Leading up to the 2000 listing and in review of MEPDES Permit / Maine WDLs for other fish hatchery and rearing facilities in Maine, the USFWS and NOAA Fisheries have advocated for genetic testing of Atlantic salmon housed at hatchery and rearing facilities to ensure that they are of North American origin, as well as employment of a fully functional Containment Management System (CMS) at facilities to prevent the escape of raised salmon or other species of concern in order to avoid impacts on native fish populations. The escape of reared fish also has the potential for transmission of diseases and pathogens to native fish populations. These issues are of particular concern for the Gulf of Maine DPS and resulted in establishment of CMS requirements for the UMCCAR facility in the previous permitting action. UMCCAR discharges effluent to Taunton Bay which, according to USFWS, is part of a designated DPS river.

As part of the previous permitting action, the permittee submitted a Biosecurity Plan for the USDA-ARS National Cold Water Marine Aquaculture Center, Franklin, Maine, which summarized the design considerations and management practices to be used to reduce or eliminate the risk of pathogen introduction into, or exit from, this facility. The goals of the "Biosecurity Plan" were to 1) protect the facility stocks from pathogens, 2) prevent the release of pathogens and chemicals into the receiving environment, and 3) prevent the unintentional release of fish. At this time, all salmon are housed in the NCWMAC portion of the UMCCAR facility. The NCWMAC raises salmon for a breeding program with eggs released to commercial production through the Maine Aquaculture Association. In addition, NCWMAC cultures up to 5 generations of broodstock at any one time.

A. Genetic Integrity: The USDA ARS NCWMAC currently receives all of its' eggs/fish from three sources: (1) internally grown broodstock reared on site, (2) eyed eggs from Cooke Aquaculture Bingham and Oak Bay hatcheries, and (3) Penobscot River eggs from Craig Brook hatchery in East Orland. The USDA facility utilizes primarily St. John's strain in the breeding program but also uses Penobscot River wild salmon as a reference control line. The NCWMAC has also received landlocked salmon eggs from the Maine Grand Lake Stream hatchery in previous years for research purposes. The NCWMAC facility holds multiple generations of broodstock fish, which spend their entire lives in freshwater or brackish well water at the facility. At present, NCWMAC is holding five generations of broodstock from the 2006, 2007, 2008, 2009, and 2010 year classes. All brood fish are analyzed according to Microsatellite Protocols described in this permit with results submitted to USFWS. Only those fish which are deemed to be twice as likely to be of North American origin are utilized. Prior to each individual brood fish being analyzed, they are pit tagged and given unique ID numbers. At time of result receipt, any fish which fail to pass the required score are destroyed and thusly not used for spawning. All testing is performed at the Research Productivity Council (RPC), located in Fredericton, NB with results sent directly from RPC to USFWS. The use of Atlantic salmon eggs or fish originating from non-North American stock is prohibited at the NCWMAC.

12. SALMON GENETIC INTEGRITY AND HATCHERY ESCAPE PREVENTION (cont'd)

As stated above, Maine's Aquaculture General Permit (#MEG130000, Part II, Section I) and individual MEPDES Permits for marine aquaculture facilities contain requirements to address the genetic integrity of Atlantic salmon raised in Maine for aquaculture. The genetic requirements are implemented at the marine sites as well as at the hatchery and rearing facilities that raise and supply salmon for marine aquaculture. As UMCCAR does not raise salmon for marine aquaculture, it is not subject to these requirements through other permitting actions. The permittee shall comply with the requirements specified in Permit Attachment A, *Genetic Testing Requirements for non-Marine Aquaculture (non-tested) Atlantic Salmon*, pursuant to Permit Special Condition L. The use of Atlantic salmon eggs or fish originating from non-North American stock is prohibited at the UMCCAR facilities.

B. Escapement: As part of the facility's Containment Management System, NCWMAC incorporates several different barriers to inhibit the escapement of fish into receiving waters. All culture tanks in each of the research buildings have screens on the outlets to prevent fish escapement. Effluent from the three USDA research buildings flows through an effluent treatment building that contains a drum filter, fish exclusion screen, UV sterilizer, and a belt filter that removes particulates and sludge to an outside storage tank. There are no critical control points inside the Main Building, Research Tank Building #1 or Research Tank Building #2 because there are 2 screen barriers (60 micron drum filter and fish exclusion screen in the USDA effluent building that are inspected daily and do not allow fish to escape from the facility. In addition, the NCWMAC has an externally performed audit of its Containment Management System program conducted once per year with results submitted to the Department. Since inception of the CMS program, NCWMAC has received perfect scores on all audits.

Based on requirements established in Maine's Aquaculture General Permit, individual MEPDES Permits for marine aquaculture facilities, and guidance developed by the Maine Aquaculture Association, this permitting action carries forward the requirement that the permittee shall employ a fully functional CMS at the facility designed, constructed, and operated so as to prevent the accidental or consequential escape of fish to open water. The CMS plan shall include a site plan or schematic with specifications of the particular system. The permittee shall develop and utilize a CMS consisting of management and auditing methods to describe or address the following: site plan description, inventory control procedures, predator control procedures, escape response procedures, unusual event management, severe weather procedures and training. The CMS shall contain a facility specific list of critical control points (CCP) where escapes have been determined to potentially occur. Each CCP must address the following: the specific location, control mechanisms, critical limits, monitoring procedures, appropriate corrective actions, verification procedures that define adequate CCP monitoring, and a defined record keeping system.

12. SALMON GENETIC INTEGRITY AND HATCHERY ESCAPE PREVENTION (cont'd)

The CMS site specific plan shall describe the use of effective containment barriers appropriate to the life history of the fish. The facility shall have in place both a three-barrier system for fish up to 5 grams in size and a two barrier system for fish 5 grams in size or larger. The three-barrier system shall include one barrier at the incubation/rearing unit, one barrier at the effluent from the hatch house/fry rearing area and a third barrier placed inline with the entire effluent from the facility. Each barrier shall be appropriate to the size of fish being contained. The two-barrier system shall include one barrier at the individual rearing unit drain and one barrier inline with the total effluent from the facility. Each barrier shall be appropriate to the size of fish being contained. Barriers installed in the system may be of the screen type or some other similarly effective device used to contain fish of a specific size in a designated area. Barriers installed in the system for compliance with these requirements shall be monitored daily. Additional requirements include:

1. The CMS shall be audited at least once per year and within 30 days of a reportable escape (more than 50 fish) by a party other than the facility operator or owner qualified to conduct such audits and approved by the Department. A written report of these audits shall be provided to the permittee and the Department for review and approval within 30 days of the audit being conducted. If deficiencies are identified during the audit, the report shall contain a corrective action plan, including a timetable for implementation and re-auditing to verify deficiencies are addressed as in the corrective action plan approved by the Department. Additional third party audits to verify correction of deficiencies shall be conducted in accordance with the corrective action plan or upon request of the Department. The permittee shall notify the Department upon completion of corrective actions.

2. Facility personnel responsible for routine operation shall be properly trained and qualified to implement the CMS. Prior to any containment system assessment associated with this permit, the permittee shall provide to the Department documentation of the employee's or contractor's demonstrated capabilities to conduct such work.

3. The permittee shall maintain complete records, logs, reports of internal and third party audits and documents related to the CMS on site for a period of 5 years.

4. For new facilities, a CMS shall be prepared and submitted to the Department for review and approval prior to fish being introduced into the facility.

The permittee shall report any known or suspected escapes of more than 50 fish within 24 hours to the Maine Dept of Marine Resources Bureau of Sea-Run Fisheries and Habitats at 207-941-9973 (Pat Keliher and Joan Trial), Maine Department of Inland Fisheries and Wildlife at 207-287-5202 (Commissioner's office), USFWS Maine Field Office at 207-827-5938, and NOAA Fisheries Maine Office at 207-866-7379. During off-hours, the reports can be called to 800-432-7381.

13. FACILITY OPERATIONAL AGREEMENT

The permittee shall develop and put in place formal and legally enforceable agreements with all entities and facilities located at the UMCCAR site and utilizing its facilities, that gives UMCCAR the authority to ensure compliance with all effluent limitations, monitoring and operational requirements contained in this permitting action. Copies of these facility operational agreements shall be kept at each facility and provided to the Department upon request.

14. AMBIENT WATER QUALITY MONITORING:

For the previous permitting action, the DEP's Division of Environmental Assessment (DEA) reviewed information related to current and proposed facility effluent characteristics, as well as the water exchange, tidal flushing, and dilution dynamics of Taunton Bay. DEP DEA stated, "*The proposed increase (in pollutants) will result in a doubling of incremental total inorganic nitrogen (TIN) from its current values." "When these concentrations are considered in conjunction with background …TIN concentration, the risk of the occurrence of an algae bloom becomes probable*." Further, "*…the expected increase in …TIN is of concern (*and*) could lead to eutrophication of the bay." "Additional data collection and modeling would be necessary to demonstrate that increased nutrients would not result in eutrophication*."

In response to potential impacts to Taunton Bay from increased nutrient discharges and the lack of ambient water quality data, the previous permitting action carried forward a previous daily maximum effluent TIN mass limit for non-summer months and established a more restrictive daily maximum mass limit for summer months, based on Department BPJ that TIN represents a more significant concern in Taunton Bay during the summer months The previous permitting action also established reporting requirements for mass (monthly average) and concentration (monthly average and daily maximum), as described in Fact Sheet Section 6d. Future research trends appear to be more focused on total nitrogen (TN) and its potential impacts on eutrophication in sensitive marine habitats. This permitting action carries forward TIN effluent limitations, monitoring requirements, and minimum monitoring frequencies established in the previous permitting action. But, to provide for full use of previously collected and future TIN data and its relationship with TN, this permitting action also establishes monthly average and daily maximum TN mass and concentration monitoring requirements.

This permitting action provides for reevaluation of the TIN and/or TN mass limits and monitoring requirements in the future based on ambient water quality monitoring (AWQM) in Taunton Bay. The objectives of an AWQM program are to determine the assimilative capacity of the bay without adverse effects through site specific nutrient limits to ensure that the UMCCAR discharge does not cause or contribute to nonattainment of water quality standards or designated uses including, but not limited to, impacts to eel grass. The effluent limits and monitoring requirements established in this permitting action shall be in effect

14. AMBIENT WATER QUALITY MONITORING (cont'd)

until such time as the permittee conducts a Department approved AWQM program and the Department formally modifies the permit pursuant to Permit Special Condition N.

To initiate this process, the permittee must submit a proposed AWQM program to the Department for review and approval that addresses the following recommended items at a minimum:

Purpose of Study: the objectives of the study and data collected, background information on the facility, permit requirements, other related information, additional modeling or studies needed to complete study objectives.

Technical Design of Study: the sampling frequency, locations, parameters, and limiting conditions such as tides or flows, specific times or conditions targeted, such as base flows or wet weather flows, summary tables.

Monitoring Locations: at a minimum, 9 locations consisting of: the end of the effluent discharge pipe, 30 meters upcurrent and 30 meters downcurrent of the effluent pipe, at the end of the intake pipe, at the east reference station (Akvaplan Niva study), and at least four (two landward, two seaward) far field monitoring locations to address dissolved oxygen and eutrophication concerns, located to provide sampling coverage of the entire length of Taunton Bay.

Sampling Parameters and Frequency: at a minimum, a nitrogen suite consisting of dissolved inorganic N, total dissolved N, and particulate N, chlorophyll-a, ultimate BOD, TSS, secchi depth, dissolved oxygen, temperature, and salinity conducted bi-weekly from June through September each year. Sampling days shall be planned so that early morning and mid-afternoon sampling results in coverage of different ambient and tidal conditions, i.e. low, high, neap, and spring tide events at both times. Further, sampling for dissolved oxygen (DO), temperature, and salinity shall be undertaken twice per day with the goal of sampling all locations as close to high and low tides as possible. Additionally, benthic impacts shall be assessed around the discharge pipe through investigating infauna community changes as well as epifauna and flora collected annually at the sampling stations excluding the intake pipe as it is significantly deeper and therefore not a relevant reference station.

Reporting: at a minimum, the AWQM program will include annual reporting with program data, statistical analysis of the AWQM results, discussion of the results, and recommendations for any proposed changes to the program.

Sampling Procedures: the AWQM Program shall follow and reference DEP's Standard Operating Procedures (SOPs) for DO, temperature, and salinity sampling, provide details about how sampling will be performed, who will conduct sampling, how many sampling teams and people, what equipment will be utilized, and appropriate safety procedures.

14. AMBIENT WATER QUALITY MONITORING (cont'd)

Quality Control: qualifications of people conducting sampling, DO and salinity meter calibration procedures, how meters will be checked to assure they are functioning properly. DEP SOPs recommend cross-checking DO meters with two other DO meters or a Wrinkler titration both before and after each sampling event and checking salinity meters with standards, a hydrometer or two other meters. Will a DO meter that compensates for salinity corrections to DO be used? A quality control sheet displaying the meter crosschecks should be used for each sampling event and should be submitted to DEP with the data. What accuracy and precision are expected for each measurement? What are the tolerances under which data should be rejected? How will duplicate sampling be undertaken? (DEP recommends a coverage of at least 10%). Will data be checked after each sampling event for validation by a QC authority? State the laboratory being used for sample analysis and their qualifications. Insure that chain of custody, sample preparation, and holding times are followed.

Schedule: table or outline form listing sampling dates, data entry, validation, report submittal dates.

The Department will review and either approve or require modifications to the permittee's proposed AWQM program. Any proposed ambient water quality monitoring or other site specific information gathering efforts conducted by the permittee, agent(s) for the permittee or other third party, must be approved by the Department prior to such undertaking. In the event that the permittee conducts ambient water quality monitoring or gathers site specific information without prior review and written approval from the Department, they are at risk of the data or information not being accepted for consideration in re-evaluating limitations. The Department's approved AWQM program will likely specify:

The Department will perform periodic and ongoing analysis of the AWQM data and reports to determine the assimilative capacity of the bay, to facilitate determination of an appropriate effluent total inorganic nitrogen mass limit, and to evaluate additional monitoring needs.

15. TEMPERATURE

The temperature of the facility effluent is anticipated to be different from the ambient seawater temperature as both heating and cooling of the water within the UMCCAR facilities will be necessary at times to provide viable conditions for species and life stages on station. The Department analyzed the temperatures and effluent flows of all individual components of UMCCAR as they are represented in the total discharge. The Department found that, due to the unique requirements of the species housed at UMCCAR, effluent temperatures are anticipated to be cooler than ambient in the summer and warmer than ambient at other times of the year. Specifically, the Department found that UMCCAR's discharge is anticipated to cause a -0.17 degree F change in the summer (June 1 – Sept 1) average ambient temperature and a +0.42 degree F change in the non-summer (Sept 2 – May 31) average ambient temperature.

15. TEMPERATURE (cont'd)

Chapter 582, Regulations Relating to Temperature, Tidal Water Thermal Discharges, state, "*No discharge of pollutants shall cause the monthly mean of the daily maximum ambient temperatures in any tidal body of water, as measure outside the mixing zone, to be raised more than 4 degrees Fahrenheit, nor more than 1.5 degrees Fahrenheit from June 1 to September 1. In no event shall any discharge cause the temperature of any tidal waters to exceed 85 degrees Fahrenheit at any point outside a mixing zone established by the Board.*" Though Chapter 582 references increases in ambient temperature, the Department recognizes that both increases and decreases in ambient temperatures can cause adverse effects to aquatic life and thus considered both. Regardless, the temperature changes described above fall within the requirements of Chapter 582. Based on the information provided, the Department does not consider ambient temperature increases or decreases from the discharge to be of concern.

16. DISCHARGE IMPACT ON RECEIVING WATER QUALITY:

As permitted, based on the information available to date and best professional judgement, the Department has determined the existing water uses will be maintained and protected and the discharge will not cause or contribute to the failure of Taunton Bay to meet standards for Class SB classification.

17. PUBLIC COMMENTS:

Public notice of this application was made in the Ellsworth American Newspaper on or about April 13, 2010. The Department receives public comments on an application until the date a final agency action is taken on that application. Those persons receiving copies of draft permits shall have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to Chapter 522 of the Department's rules.

18. DEPARTMENT CONTACTS:

Additional information concerning this permitting action may be obtained from and written comments should be sent to:

Robert D. Stratton
Division of Water Quality Management
Bureau of Land and Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017

Telephone (207) 215-1579
Fax (207) 287-3435
email: Robert.D.Stratton@maine.gov

19. RESPONSE TO COMMENTS:

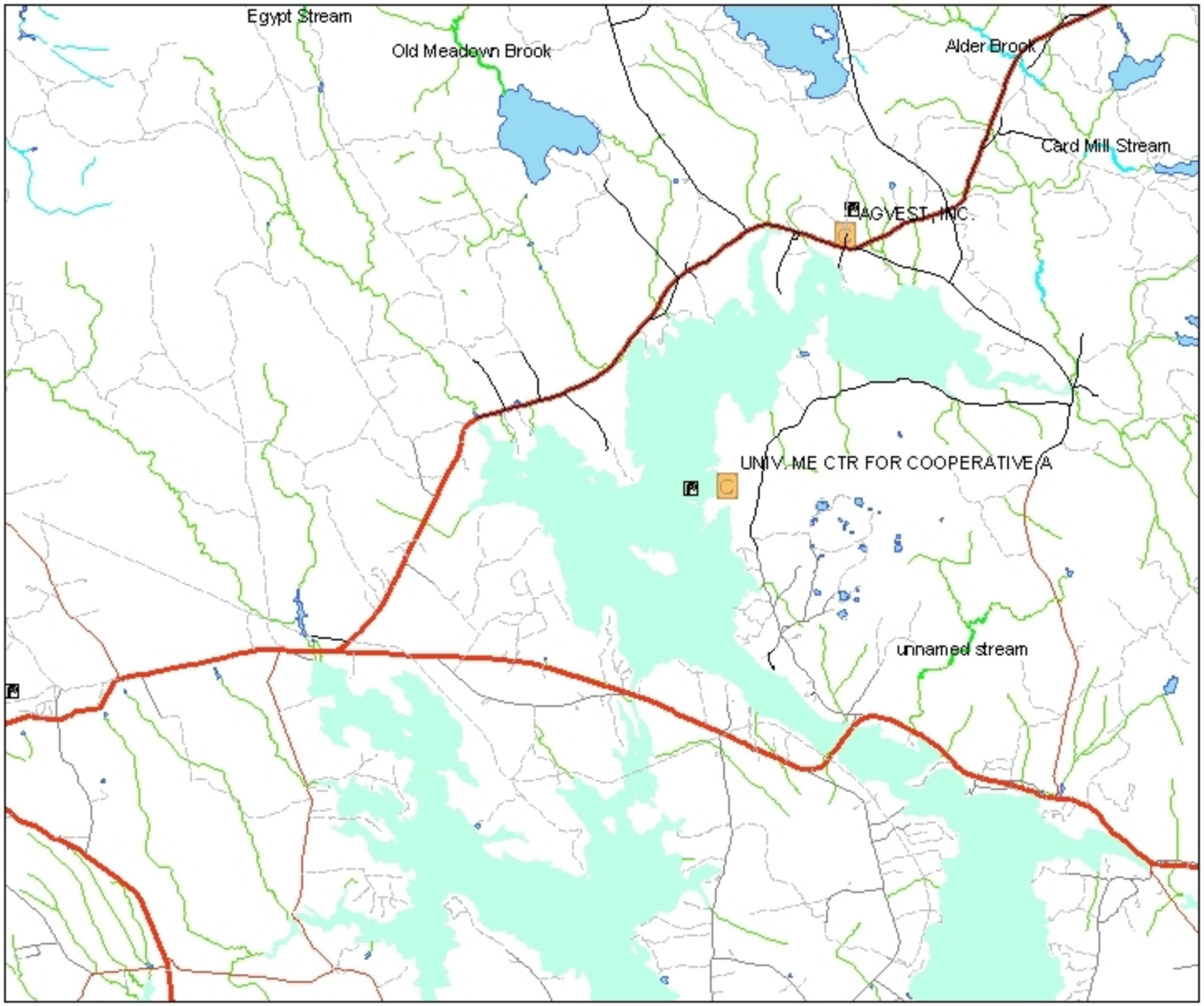
During the period of August 18, 2010 through September 17, 2010, the Department solicited comments on the proposed draft Maine Pollutant Discharge Elimination System Permit / Maine Waste Discharge License to be issued to the University of Maine Center for Cooperative Aquaculture Research for the proposed discharge. The Department did not receive any comments that resulted in significant revisions to the permit. Therefore, no response to comments has been prepared.

ATTACHMENT A

(Facility Location and Habitat Maps)

ATTACHMENT B

(Facility Site Plans)



Legend

Rivers
- AA
- A
- B
- C

Streams
- AA
- A
- B
- C

Ponds and Lakes

Wastewater_Facilities

Bald_Eagle_EHJyr

SA

SB

sa

sb

sc

Wastewater_Outfalls

Roads

JURISDICTION
- Town Road
- Town Road - Summer
- Town Road - Winter
- State-aided Highway
- State Highway
- Toll Highway
- Private Road
- Reservation Road
- Seasonal Parkway

Miles

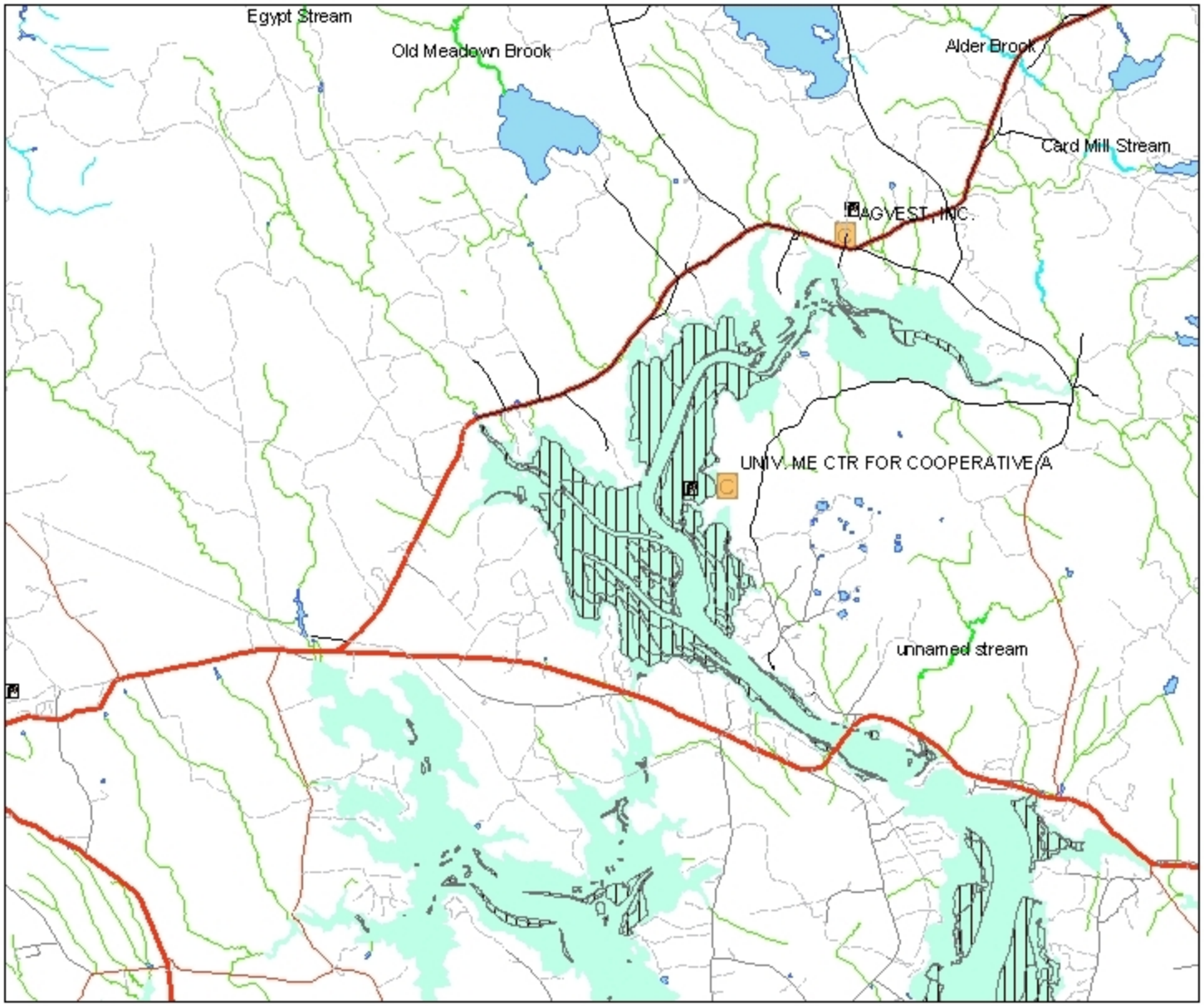
0 0.35 0.7 1.4 2.1 2.8

UM Center for Cooperative Aquaculture Research Franklin, Maine

Map created by:
Bob Stratton
Division of Water Quality Management
Maine Department of Environmental Protection

DEPARTMENT OF ENVIRONMENTAL PROTECTION · STATE OF MAINE ·

N



Legend

Rivers
- AA
- A
- B
- C

Streams
- AA
- A
- B
- C

Ponds and Lakes

Wastewater_Facilities

Eelgrass_Beds

SA

SB

sa

sb

sc

Wastewater_Outfalls

Roads

JURISDICTION
- Town Road
- Town Road - Summer
- Town Road - Winter
- State-aided Highway
- State Highway
- Toll Highway
- Private Road
- Reservation Road
- Seasonal Parkway

Miles

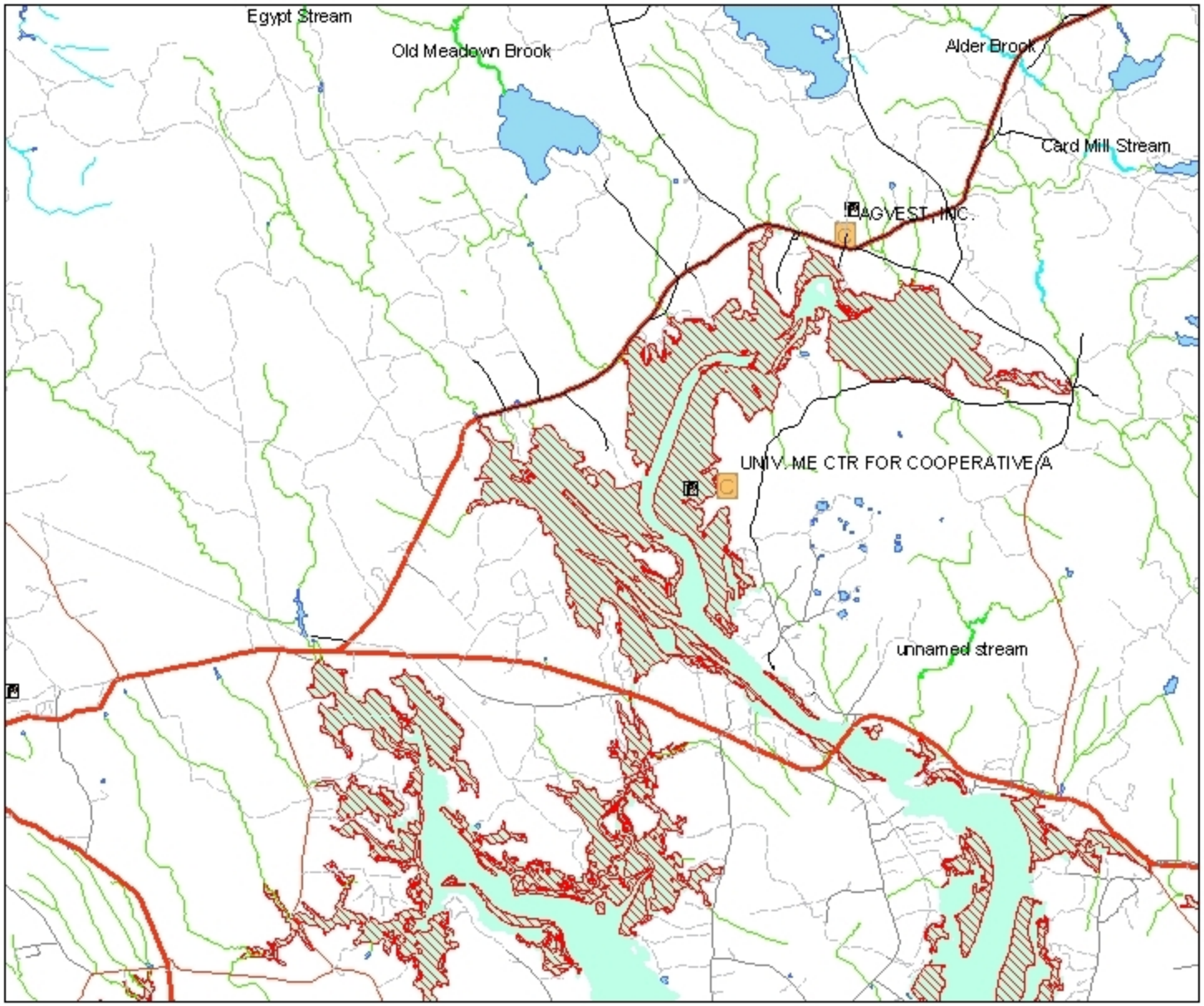
0 0.35 0.7 1.4 2.1 2.8

UM Center for Cooperative Aquaculture Research Franklin, Maine

Map created by:
Bob Stratton
Division of Water Quality Management
Maine Department of Environmental Protection

DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE OF MAINE

N



Legend

Rivers
- AA
- A
- B
- C

Streams
- AA
- A
- B
- C

Ponds and Lakes

Wastewater_Facilities

Tidal_Waterfowl_Wader_Habitat

SA

SB

sa

sb

sc

Wastewater_Outfalls

Roads

JURISDICTION
- Town Road
- Town Road - Summer
- Town Road - Winter
- State-aided Highway
- State Highway
- Toll Highway
- Private Road
- Reservation Road
- Seasonal Parkway

Miles

0 0.35 0.7 1.4 2.1 2.8

UM Center for Cooperative Aquaculture Research Franklin, Maine

Map created by:
Bob Stratton
Division of Water Quality Management
Maine Department of Environmental Protection

DEPARTMENT OF ENVIRONMENTAL PROTECTION · STATE OF MAINE

N

NOTICE OF EMERGENCY RULE-MAKING

AGENCY: Department of Marine Resources
STATUTORY AUTHORITY: 12 M.R.S. §§6172, 6192, 6193 & 6194
Struck text is being removed, and underlined text is being added

BASIS STATEMENT

The Commissioner of the Maine Department of Marine Resources amends the emergency DMR Regulation 95.04 VV, Closed Area No. 50-B, Mill Brook, Springer Creek and West Brook, West Franklin, promulgated on June 5, 2000. This amendment combines pollution closures in Area No. 50-B, Mill Brook, Springer Creek and West Brook, West Franklin, Area No. 50-C, Johnny's Brook and Card Mill Stream (Franklin), Area No. 50-D, Evergreen Point (Sullivan), and Area No. 50-E, Egypt Bay (Hancock - Franklin) into a single regulation. This amendment changes the title of the rule for Area No. 50-B and increases the size of the current prohibited area at Johnny's Brook and Card Mill Stream to adequately dilute elevated bacterial levels. All existing pollution and red tide/psp closures remain in effect. As authorized by 12 M.R.S. §§6172, 6192, 6193 & 6194 the Commissioner of Marine Resources adopts emergency amendments to Chapter 95.04(VV).

RULE TITLE AND SUBJECT: DMR Regulation 95.04 T3, Closed Area No. 50-C, Johnny's Brook and Card Mill Stream, Franklin, amended September 5, 2001; 95.04 L3, Closed Area No. 50-D, Evergreen Point, Sullivan, amended on May 18, 2005; 95.04 N3, Closed Area No. 50-E, Egypt Bay, Hancock and Franklin, amended January 23, 1995; are repealed. DMR Regulation 95.04 VV, Closed Area No. 50-B, Mill Brook, Springer Creek and West Brook, West Franklin, promulgated on June 5, 2000, is amended as follows:

TITLE & TEXT OF RULE: DMR Chapter 95.04 (VV), Area No. 50-B, Egypt Bay, West Brook, Mill Brook, Springer Creek, Card Mill-Johnny's Brook (Franklin) and Evergreen Point (Sullivan).

Effective immediately, because of pollution, it shall be unlawful to dig, take or possess any clams, quahogs, oysters and mussels from all shores, flats and waters of the following areas:

A. Egypt Bay (Hancock-Franklin): westerly and northerly (upstream) of a line beginning at a red post on an unnamed point that is located approximately 1000 yards southeast of where route 182 crosses Egypt Stream. From this red post the line runs south (about 300 yards) to the most eastern tip of an unnamed island, then runs southeasterly for approximately 330 yards to the nearest point (unnamed) of land.

B. West Brook (Franklin): inside (northerly) of a line beginning at a red-painted post on the southernmost tip of the un-named point on the eastern shore of the cove into which West Brook enters Taunton Bay, and then extending westerly to a red-painted post on the western shore of the cove.

C. Mill Brook (Franklin): inside (northerly) of a line beginning at the southernmost tip of Hardison Point and extending southwesterly (about 0.2 mile) to the most southeastern tip of an unnamed point that is located about 600 yards southeast of where Route 182 crosses Mill Brook. This unnamed point is located on the western shore of the cove where Mill Brook enters Taunton Bay.

D. Springer Creek (Franklin): inside (northerly) of a line beginning at the southernmost tip of Dwelley Point and extending westerly to the southernmost tip of Julius Darling Point.

E. Hog Bay (Franklin): in an area extending from the mouths of Johnny's Brook and Card Mill Stream west to a line across Hog Bay just where it widens, marked by red-painted posts, approximately 1900 yards west of the Route 200 (Bert Gray Road, so called) bridges crossing the head of Hog Bay.

F. Evergreen Point (Sullivan): east of a line starting at the northwest tip of Evergreen Point (Evergreen Point Road) and extending north approximately 910 yards to a red-marker on the most western tip of the un-named point (Plover Lane) on the northern shore of the cove. This new regulation classifies the area as restricted and any harvest requires a special MDMR permit.

TEXT OF RULE: 95.04 VV , Closed Area No. 50-B, Mill Brook, Springer Creek and West Brook, West Franklin.

Effective immediately, because of pollution, it shall be unlawful to dig, take or possess any clams, quahogs, oysters or mussels taken from the shores, flats and waters of Taunton Bay, town of Franklin from the following areas:

1. (Springer Creek)-Inside (northerly) of a line beginning at the southernmost tip of Dwelley Point and extending westerly to the southernmost tip of Julius Darling Point.

2. (Mill Brook)-Inside (northerly) of a line beginning at the southernmost tip of Hardison Point and extending southwesterly (about 0.2 mile) to the most southeastern tip of an unnamed point that is located about 600 yards southeast of where Route 182 crosses Mill Brook. This unnamed point is located on the western shore of the cove where Mill Brook enters Taunton Bay.

3. (West Brook)-Inside (northerly) of a line beginning at a red-painted post on the southernmost tip of the un-named point on the eastern shore of the cove into which West Brook enters Taunton Bay, and then extending westerly to a red-painted post on the western shore of the cove.

TEXT OF RULE: 95.04 T3, Closed Area No. 50-C, Johnny's Brook and Card Mill Stream, Franklin

1. Effective immediately, because of pollution, it shall be unlawful to dig, take or possess any clams, quahogs, oysters or mussels taken from the shores, flats and waters of Hog Bay, Franklin in an area extending from the mouths of Johnny's Brook and Card Mill Stream west to a line across Hog Bay, marked by red-painted posts, approximately 100 yards west of the Route 200 (Bert Gray Road, so called) bridges crossing the head of Hog Bay.

TEXT OF RULE: DMR Regulation 95.04 L3, Closed Area No. 50-D, Evergreen Point, Sullivan

Effective immediately, because of pollution, it shall be unlawful to dig, take or possess any clams, quahogs, oysters or mussels taken from the shores, flats and waters of the un-named cove northeast of Evergreen Point, Sullivan, east of a line starting at the northwest tip of Evergreen Point (Evergreen Point Road) and extending north approximately 910 yards to a red-marker on the most western tip of the un-named point (Plover Lane) on the northern shore of the cove. This new regulation classifies the area as restricted and any harvest requires a special MDMR permit.

TEXT OF RULE: DMR Regulation 95.04 N3, Closed Area No.50-E, Egypt Bay, Hancock and Franklin.

Effective immediately, because of pollution, it shall be unlawful to dig, take or possess any clams, quahogs, oysters and mussels from all shores, flats and waters of Egypt Bay in the towns of Hancock and Franklin. This closed area lies westerly and northerly (upstream) of a line beginning at a red post on an unnamed point that is located approximately 1000 yards southeast of where route 182 crosses Egypt Stream. From this red post the line runs south (about 300 yards) to the most eastern tip of an unnamed island, then runs southeasterly for approximately 330 yards to the nearest point (unnamed) of land.

EFFECTIVE DATE: April 29, 2010 EFFECTIVE TIME: 12:00 PM

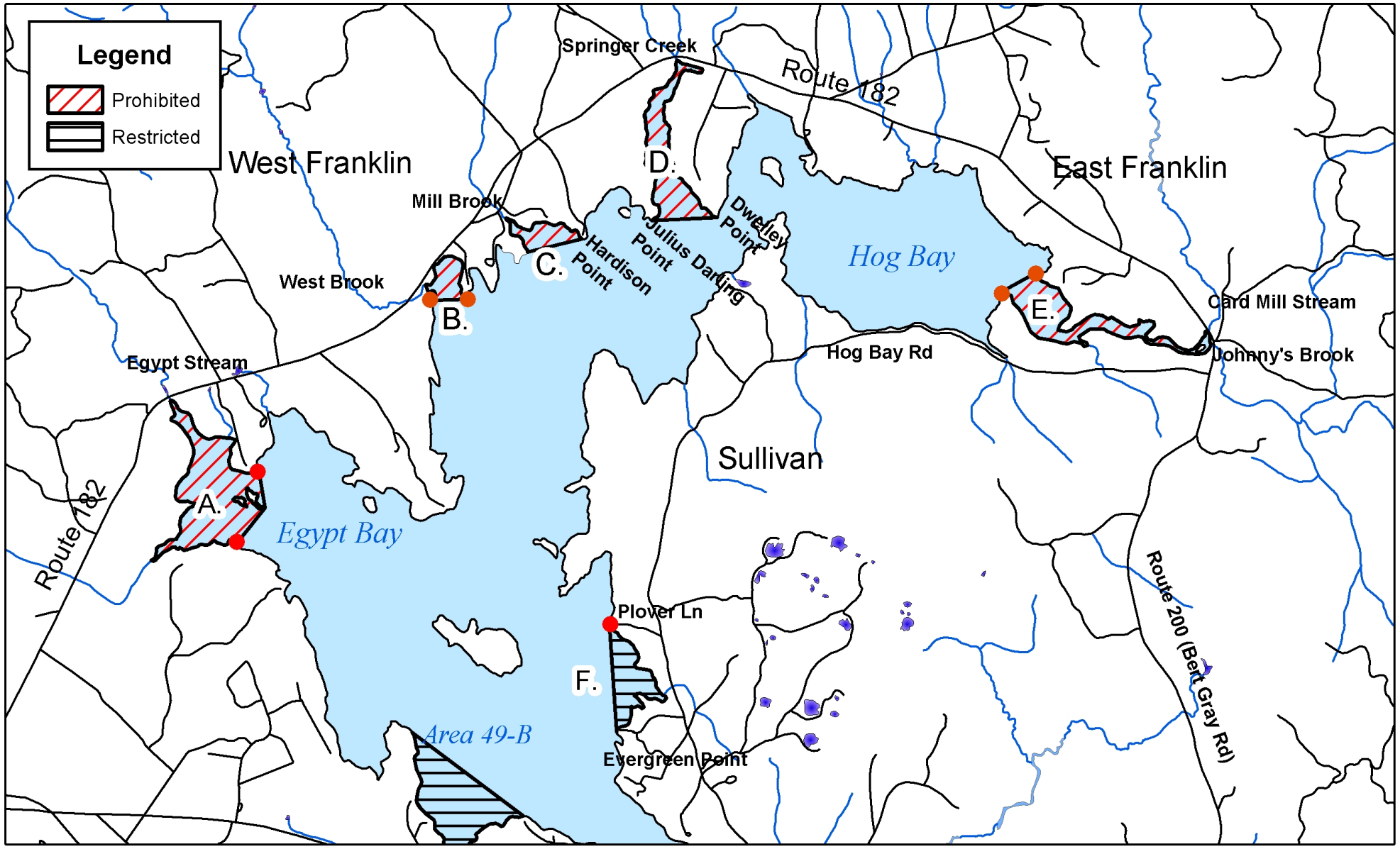
AGENCY CONTACT PERSON: Amy M. Fitzpatrick, Department of Marine Resources,
194 McKown Point Road, W. Boothbay Harbor, Maine 04575
http://www.maine.gov/dmr/rm/public_health/closures/closedarea.htm
EMAIL: Amy.Fitzpatrick@maine.gov

Maine Department of Marine Resources

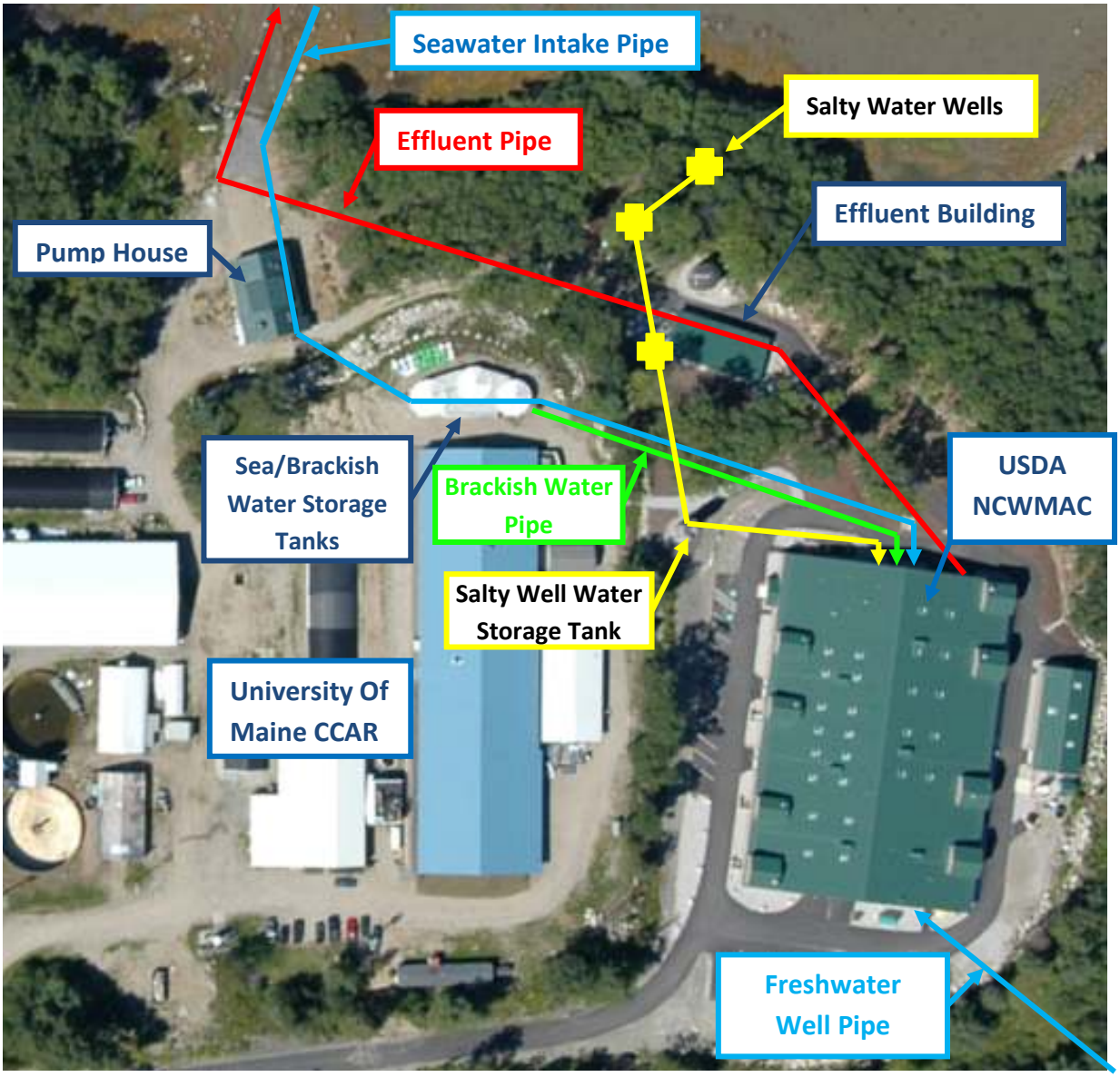
Pollution Area No. 50-B

Egypt Bay, West Brook, Mill Brook, Springer Creek,
Card Mill-Johnny's Brook (Franklin) and Evergreen Point (Sullivan) April 29, 2010

All existing bacterial and red tide/PSP closures in this area remain in effect.



USDA ARS NCWMAC Intake and Effluent Discharge



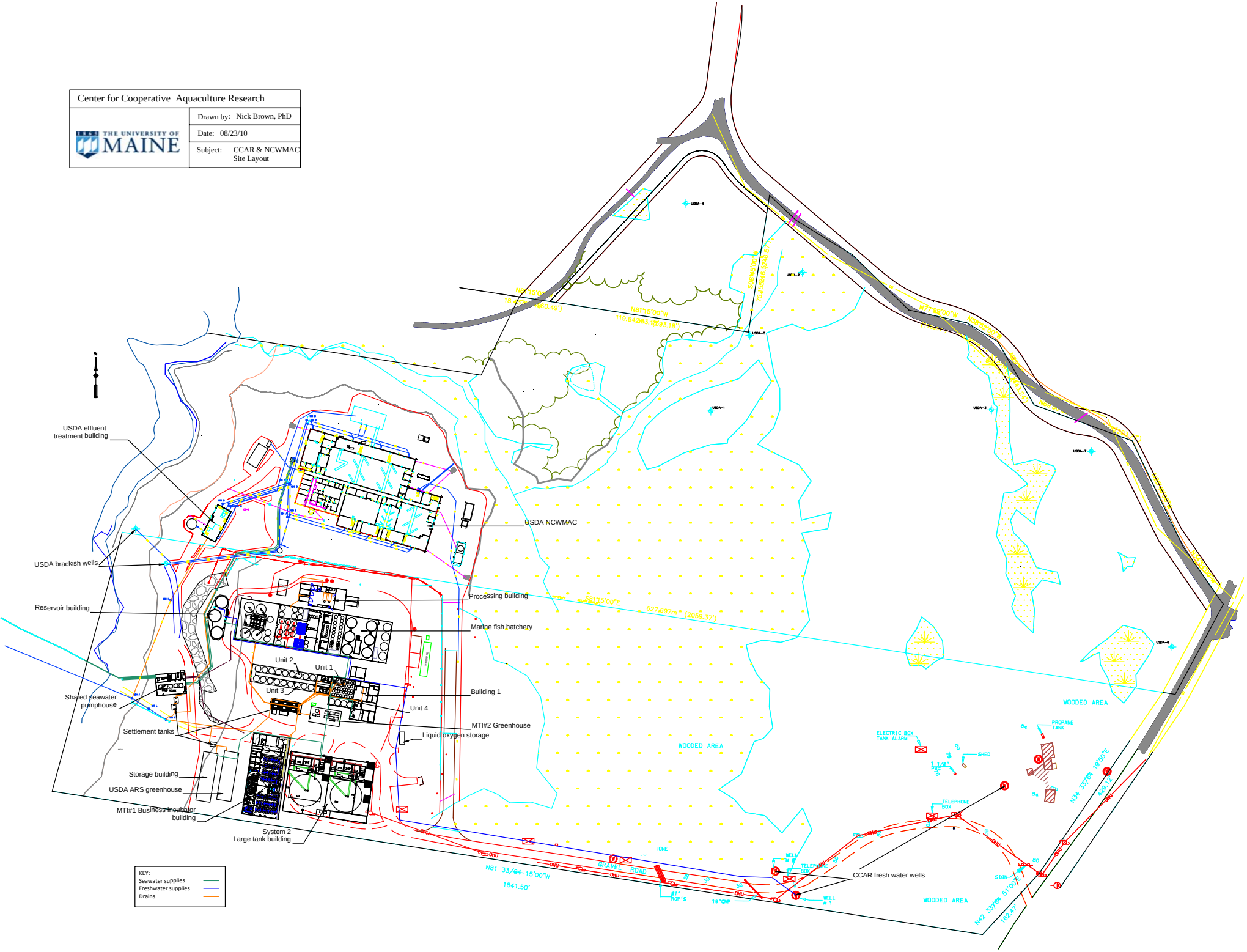
Center for Cooperative Aquaculture Research

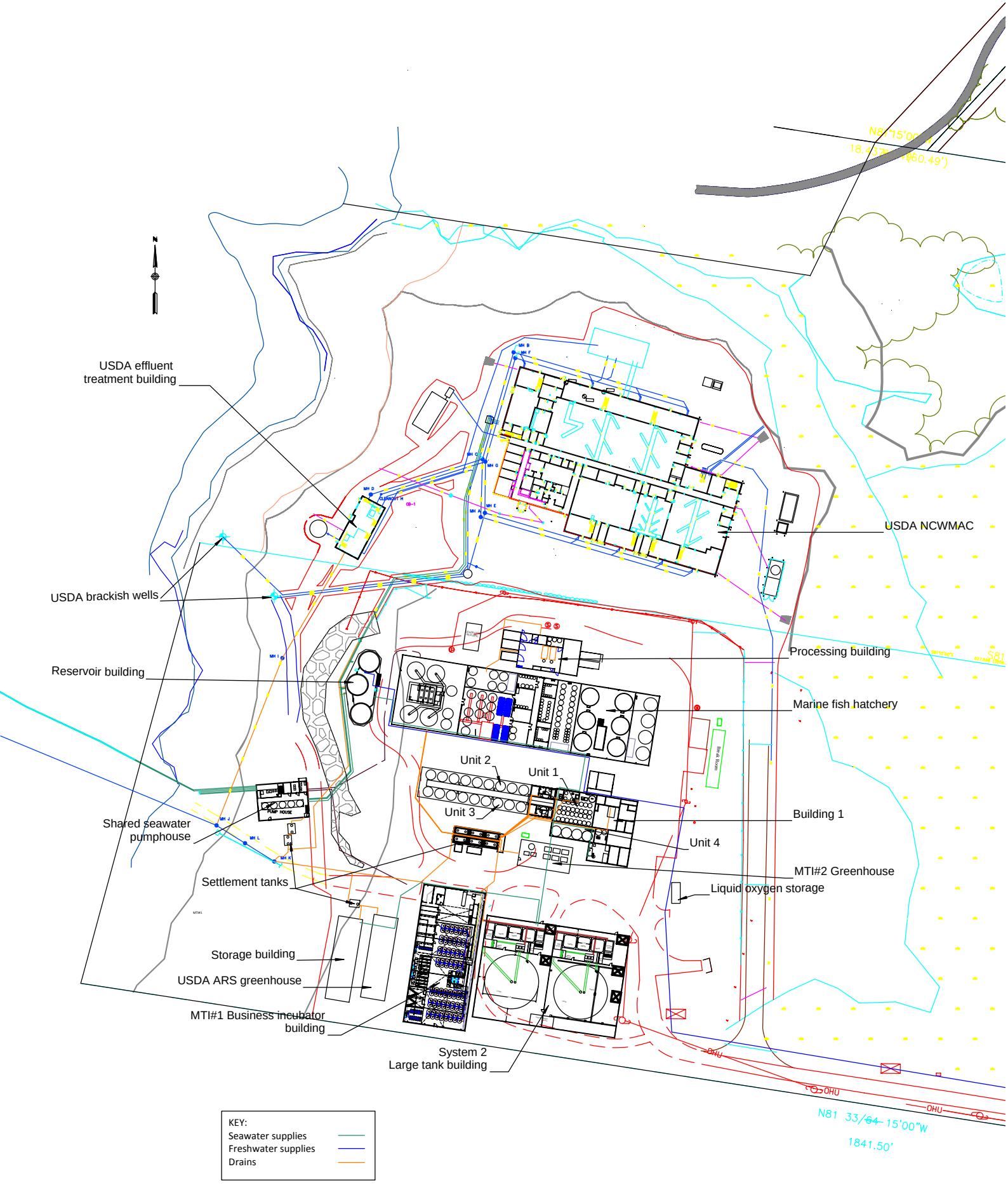
THE UNIVERSITY OF MAINE

Drawn by: Nick Brown, PhD

Date: 08/23/10

Subject: CCAR & NCWMAC Site Layout




USDA effluent treatment building
USDA NCWMAC
USDA brackish wells
Processing building
Reservoir building
Marine fish hatchery
Unit 2
Unit 1
Unit 3
Building 1
Shared seawater pumphouse
Unit 4
MTI#2 Greenhouse
Settlement tanks
Liquid oxygen storage
Storage building
USDA ARS greenhouse
MTI#1 Business incubator building
System 2 Large tank building
KEY:
Seawater supplies
Freshwater supplies
Drains

CONTENTS

SECTION		TOPIC	PAGE
A		GENERAL PROVISIONS	
	1	General compliance	2
	2	Other materials	2
	3	Duty to Comply	2
	4	Duty to provide information	2
	5	Permit actions	2
	6	Reopener clause	2
	7	Oil and hazardous substances	2
	8	Property rights	3
	9	Confidentiality	3
	10	Duty to reapply	3
	11	Other laws	3
	12	Inspection and entry	3
B		OPERATION AND MAINTENANCE OF FACILITIES	
	1	General facility requirements	3
	2	Proper operation and maintenance	4
	3	Need to halt reduce not a defense	4
	4	Duty to mitigate	4
	5	Bypasses	4
	6	Upsets	5
C		MONITORING AND RECORDS	
	1	General requirements	6
	2	Representative sampling	6
	3	Monitoring and records	6
D		REPORTING REQUIREMENTS	
	1	Reporting requirements	7
	2	Signatory requirement	8
	3	Availability of reports	8
	4	Existing manufacturing, commercial, mining, and silvicultural dischargers	8
	5	Publicly owned treatment works	9
E		OTHER PROVISIONS	
	1	Emergency action - power failure	9
	2	Spill prevention	10
	3	Removed substances	10
	4	Connection to municipal sewer	10
F		DEFINTIONS	10

A. GENERAL PROVISIONS

1. **General compliance**. All discharges shall be consistent with the terms and conditions of this permit; any changes in production capacity or process modifications which result in changes in the quantity or the characteristics of the discharge must be authorized by an additional license or by modifications of this permit; it shall be a violation of the terms and conditions of this permit to discharge any pollutant not identified and authorized herein or to discharge in excess of the rates or quantities authorized herein or to violate any other conditions of this permit.

2. Other materials. Other materials ordinarily produced or used in the operation of this facility, which have been specifically identified in the application, may be discharged at the maximum frequency and maximum level identified in the application, provided:

(a) They are not

(i) Designated as toxic or hazardous under the provisions of Sections 307 and 311, respectively, of the Federal Water Pollution Control Act; Title 38, Section 420, Maine Revised Statutes; or other applicable State Law; or
(ii) Known to be hazardous or toxic by the licensee.

(b) The discharge of such materials will not violate applicable water quality standards.

3. Duty to comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of State law and the Clean Water 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, and 38 MRSA, §420 or Chapter 530.5 for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.
(b) Any person who violates any provision of the laws administered by the Department, including without limitation, a violation of the terms of any order, rule license, permit, approval or decision of the Board or Commissioner is subject to the penalties set forth in 38 MRSA, §349.

4. Duty to provide information. The permittee shall furnish to the Department, within a reasonable time, any information which the Department 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 Department upon request, copies of records required to be kept by this permit.

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

6. Reopener clause. The Department reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedule of compliance or other provisions which may be authorized under 38 MRSA, §414-A(5).

7. Oil and hazardous substances. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject under section 311 of the Federal Clean Water Act; section 106 of the Federal Comprehensive Environmental Response, Compensation and Liability Act of 1980; or 38 MRSA §§ 1301, et. seq.

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

9. Confidentiality of records. 38 MRSA §414(6) reads as follows. "Any records, reports or information obtained under this subchapter is available to the public, except that upon a showing satisfactory to the department by any person that any records, reports or information, or particular part or any record, report or information, other than the names and addresses of applicants, license applications, licenses, and effluent data, to which the department has access under this subchapter would, if made public, divulge methods or processes that are entitled to protection as trade secrets, these records, reports or information must be confidential and not available for public inspection or examination. Any records, reports or information may be disclosed to employees or authorized representatives of the State or the United States concerned with carrying out this subchapter or any applicable federal law, and to any party to a hearing held under this section on terms the commissioner may prescribe in order to protect these confidential records, reports and information, as long as this disclosure is material and relevant to any issue under consideration by the department."

10. 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.

11. Other laws. The issuance of this permit does not authorize any injury to persons or property or invasion of other property rights, nor does it relieve the permittee if its obligation to comply with other applicable Federal, State or local laws and regulations.

12. Inspection and entry. The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the EPA 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.

B. OPERATION AND MAINTENACE OF FACILITIES

1. General facility requirements.

(a) The permittee shall collect all waste flows designated by the Department as requiring treatment and discharge them into an approved waste treatment facility in such a manner as to

maximize removal of pollutants unless authorization to the contrary is obtained from the Department.

(b) The permittee shall at all times maintain in good working order and operate at maximum efficiency all waste water collection, treatment and/or control facilities.

(c) All necessary waste treatment facilities will be installed and operational prior to the discharge of any wastewaters.

(d) Final plans and specifications must be submitted to the Department for review prior to the construction or modification of any treatment facilities.

(e) The permittee shall install flow measuring facilities of a design approved by the Department.

(f) The permittee must provide an outfall of a design approved by the Department which is placed in the receiving waters in such a manner that the maximum mixing and dispersion of the wastewaters will be achieved as rapidly as possible.

2. 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.

3. Need to halt or reduce activity 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.

4. 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.

5. Bypasses.

(a) Definitions.

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

(ii) 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.

(i) 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.

(ii) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D(1)(f), below. (24-hour notice).

(d) Prohibition of bypass.

(i) Bypass is prohibited, and the Department 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 preventive maintenance; and
(C) The permittee submitted notices as required under paragraph (c) of this section.

(ii) The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three conditions listed above in paragraph (d)(i) of this section.

6. Upsets.

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

(b) Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph (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:

(i) An upset occurred and that the permittee can identify the cause(s) of the upset;
(ii) The permitted facility was at the time being properly operated; and
(iii) The permittee submitted notice of the upset as required in paragraph D(1)(f) , below. (24 hour notice).
(iv) The permittee complied with any remedial measures required under paragraph B(4).

(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 AND RECORDS

1. General Requirements. This permit shall be subject to such monitoring requirements as may be reasonably required by the Department including the installation, use and maintenance of monitoring equipment or methods (including, where appropriate, biological monitoring methods). The permittee shall provide the Department with periodic reports on the proper Department reporting form of monitoring results obtained pursuant to the monitoring requirements contained herein.

2. Representative sampling. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. If effluent limitations are based wholly or partially on quantities of a product processed, the permittee shall ensure samples are representative of times when production is taking place. Where discharge monitoring is required when production is less than 50%, the resulting data shall be reported as a daily measurement but not included in computation of averages, unless specifically authorized by the Department.

3. 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 five years, 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 Department at any time.

(c) Records of monitoring information shall include:

(i) The date, exact place, and time of sampling or measurements;
(ii) The individual(s) who performed the sampling or measurements;
(iii) The date(s) analyses were performed;
(iv) The individual(s) who performed the analyses;
(v) The analytical techniques or methods used; and
(vi) The results of such analyses.

(d) Monitoring results must be conducted according to test procedures approved under 40 CFR part 136, unless other test procedures have been specified in the permit.

(e) State law provides that any person who tampers with or renders inaccurate any monitoring devices or method required by any provision of law, or any order, rule license, permit approval or decision is subject to the penalties set forth in 38 MRSA, §349.

D. REPORTING REQUIREMENTS

1. Reporting requirements.

(a) Planned changes. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(i) 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 CFR 122.29(b); or

(ii) 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 under Section D(4).

(iii) 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 Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(c) Transfers. This permit is not transferable to any person except upon application to and approval of the Department pursuant to 38 MRSA, § 344 and Chapters 2 and 522.

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

(i) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Department for reporting results of monitoring of sludge use or disposal practices.

(ii) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR part 136 or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Department.

(iii) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Department in the permit.

(e) 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.

(f) Twenty-four hour reporting.

(i) 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 submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission 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.

(ii) 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.
(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 Department in the permit to be reported within 24 hours.

(iii) The Department may waive the written report on a case-by-case basis for reports under paragraph (f)(ii) of this section if the oral report has been received within 24 hours.

(g) Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (d), (e), and (f) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (f) of this section.

(h) Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

2. Signatory requirement. All applications, reports, or information submitted to the Department shall be signed and certified as required by Chapter 521, Section 5 of the Department's rules. State law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan or other document filed or required to be maintained by any order, rule, permit, approval or decision of the Board or Commissioner is subject to the penalties set forth in 38 MRSA, §349.

3. Availability of reports. Except for data determined to be confidential under A(9), above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. As required by State law, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal sanctions as provided by law.

4. Existing manufacturing, commercial, mining, and silvicultural dischargers. In addition to the reporting requirements under this Section, all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Department 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, 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 ug/l);
(ii) 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 for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
(iii) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with Chapter 521 Section 4(g)(7); or
(iv) The level established by the Department in accordance with Chapter 523 Section 5(f).

(b) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a 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 ug/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 Chapter 521 Section 4(g)(7); or
(iv) The level established by the Department in accordance with Chapter 523 Section 5(f).

5. Publicly owned treatment works.

(a) All POTWs must provide adequate notice to the Department of the following:

(i) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA or Chapter 528 if it were directly discharging those pollutants.
(ii) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
(iii) For purposes of this paragraph, adequate notice shall include information on (A) the quality and quantity of effluent introduced into the POTW, and (B) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

(b) When the effluent discharged by a POTW for a period of three consecutive months exceeds 80 percent of the permitted flow, the permittee shall submit to the Department a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.

E. OTHER REQUIREMENTS

1. Emergency action - power failure. Within thirty days after the effective date of this permit, the permittee shall notify the Department of facilities and plans to be used in the event the primary source of power to its wastewater pumping and treatment facilities fails as follows.

(a) For municipal sources. During power failure, all wastewaters which are normally treated shall receive a minimum of primary treatment and disinfection. Unless otherwise approved, alternate power supplies shall be provided for pumping stations and treatment facilities. Alternate power supplies shall be on-site generating units or an outside power source which is separate and independent from sources used for normal operation of the wastewater facilities.

(b) For industrial and commercial sources. The permittee shall either maintain an alternative power source sufficient to operate the wastewater pumping and treatment facilities or halt, reduce or otherwise control production and or all discharges upon reduction or loss of power to the wastewater pumping or treatment facilities.

2. Spill prevention. (applicable only to industrial sources) Within six months of the effective date of this permit, the permittee shall submit to the Department for review and approval, with or without conditions, a spill prevention plan. The plan shall delineate methods and measures to be taken to prevent and or contain any spills of pulp, chemicals, oils or other contaminates and shall specify means of disposal and or treatment to be used.

3. **Removed substances.** Solids, sludges trash rack cleanings, filter backwash, or other pollutants removed from or resulting from the treatment or control of waste waters shall be disposed of in a manner approved by the Department.

4. **Connection to municipal sewer.** (applicable only to industrial and commercial sources) All wastewaters designated by the Department as treatable in a municipal treatment system will be cosigned to that system when it is available. This permit will expire 90 days after the municipal treatment facility becomes available, unless this time is extended by the Department in writing.

F. DEFINITIONS. For the purposes of this permit, the following definitions shall apply. Other definitions applicable to this permit may be found in Chapters 520 through 529 of the Department's rules

Average means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For bacteria, the average shall be the geometric mean.

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. Except, however, bacteriological tests may be calculated as a geometric mean.

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 State. 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.

Composite sample means a sample consisting of a minimum of eight grab samples collected at equal intervals during a 24 hour period (or a lesser period as specified in the section on monitoring and reporting) and combined proportional to the flow over that same time period.

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 other similar activities.

Daily discharge means the discharge of a pollutant measured during a calendar day or any 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 measurement, the daily discharge is calculated as the average measurement of the pollutant over the day.

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.

Flow weighted composite sample means a composite sample consisting of a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge.

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

Interference means a Discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

(1) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
(2) 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 Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Maximum daily discharge limitation means the highest allowable daily discharge.

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.

Pass through means a discharge which exits the POTW into waters of the State 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).

Permit means an authorization, license, or equivalent control document issued by EPA or an approved State to implement the requirements of 40 CFR parts 122, 123 and 124. Permit includes an NPDES general permit (Chapter 529). Permit does not include any permit which has not yet been the subject of final agency action, such as a draft permit or a proposed permit.

Person means an individual, firm, corporation, municipality, quasi-municipal corporation, state agency, federal agency or other legal entity.

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 or vessel or other floating craft, from which pollutants are or may be discharged.

Pollutant means dredged spoil, solid waste, junk, incinerator residue, sewage, refuse, effluent, garbage, sewage sludge, munitions, chemicals, biological or radiological materials, oil, petroleum products or byproducts, heat, wrecked or discarded equipment, rock, sand, dirt and industrial, municipal, domestic, commercial or agricultural wastes of any kind.

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 any facility for the treatment of pollutants owned by the State or any political subdivision thereof, any municipality, district, quasi-municipal corporation or other public entity.

Septage means, for the purposes of this permit, any waste, refuse, effluent sludge or other material removed from a septic tank, cesspool, vault privy or similar source which concentrates wastes or to which chemicals have been added. Septage does not include wastes from a holding tank.

Time weighted composite means a composite sample consisting of a mixture of equal volume aliquots collected over a constant time interval.

Toxic pollutant includes 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. Toxic pollutant also includes those substances or combination of substances, including disease causing agents, which after discharge or upon exposure, ingestion, inhalation or assimilation into any organism, including humans either directly through the environment or indirectly through ingestion through food chains, will, on the basis of information available to the board either alone or in combination with other substances already in the receiving waters or the discharge, cause death, disease, abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformations in such organism or their offspring.

Wetlands means those areas that are inundated or saturated by surface or ground water 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 means the aggregate toxic effect of an effluent measured directly by a toxicity test.

DEP INFORMATION SHEET

Appealing a Commissioner's Licensing Decision

Dated: May 2004 **Contact: (207) 287-2811**

SUMMARY

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's (DEP) Commissioner: (1) in an administrative process before the Board of Environmental Protection (Board); or (2) in a judicial process before Maine's Superior Court. This INFORMATION SHEET, in conjunction with consulting statutory and regulatory provisions referred to herein, can help aggrieved persons with understanding their rights and obligations in filing an administrative or judicial appeal.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

DEP's *General Laws*, 38 M.R.S.A. § 341-D(4), and its *Rules Concerning the Processing of Applications and Other Administrative Matters* (Chapter 2), 06-096 CMR 2.24 (April 1, 2003).

HOW LONG YOU HAVE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written notice of appeal within 30 calendar days of the date on which the Commissioner's decision was filed with the Board. Appeals filed after 30 calendar days will be rejected.

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, c/o Department of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017; faxes are acceptable for purposes of meeting the deadline when followed by receipt of mailed original documents within five (5) working days. Receipt on a particular day must be by 5:00 PM at DEP's offices in Augusta; materials received after 5:00 PM are not considered received until the following day. The person appealing a licensing decision must also send the DEP's Commissioner and the applicant a copy of the documents. All the information listed in the next section must be submitted at the time the appeal is filed. Only the extraordinary circumstances described at the end of that section will justify evidence not in the DEP's record at the time of decision being added to the record for consideration by the Board as part of an appeal.

WHAT YOUR APPEAL PAPERWORK MUST CONTAIN

The materials constituting an appeal must contain the following information at the time submitted:

1. *Aggrieved Status*. Standing to maintain an appeal requires the appellant to show they are particularly injured by the Commissioner's decision.
2. *The findings, conclusions or conditions objected to or believed to be in error.* Specific references and facts regarding the appellant's issues with the decision must be provided in the notice of appeal.
3. *The basis of the objections or challenge.* If possible, specific regulations, statutes or other facts should be referenced. This may include citing omissions of relevant requirements, and errors believed to have been made in interpretations, conclusions, and relevant requirements.
4. *The remedy sought.* This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions.

5. *All the matters to be contested.* The Board will limit its consideration to those arguments specifically raised in the written notice of appeal.

6. *Request for hearing.* The Board will hear presentations on appeals at its regularly scheduled meetings, unless a public hearing is requested and granted. A request for public hearing on an appeal must be filed as part of the notice of appeal.

7. *New or additional evidence to be offered.* The Board may allow new or additional evidence as part of an appeal only when the person seeking to add information to the record can show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process or show that the evidence itself is newly discovered and could not have been presented earlier in the process. Specific requirements for additional evidence are found in Chapter 2, Section 24(B)(5).

OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD

1. *Be familiar with all relevant material in the DEP record.* A license file is public information made easily accessible by DEP. Upon request, the DEP will make the material available during normal working hours, provide space to review the file, and provide opportunity for photocopying materials. There is a charge for copies or copying services.

2. *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal.* DEP staff will provide this information on request and answer questions regarding applicable requirements.

3. *The filing of an appeal does not operate as a stay to any decision.* An applicant proceeding with a project pending the outcome of an appeal runs the risk of the decision being reversed or modified as a result of the appeal.

WHAT TO EXPECT ONCE YOU FILE A TIMELY APPEAL WITH THE BOARD

The Board will formally acknowledge initiation of the appeals procedure, including the name of the DEP project manager assigned to the specific appeal, within 15 days of receiving a timely filing. The notice of appeal, all materials accepted by the Board Chair as additional evidence, and any materials submitted in response to the appeal will be sent to Board members along with a briefing and recommendation from DEP staff. Parties filing appeals and interested persons are notified in advance of the final date set for Board consideration of an appeal or request for public hearing. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision. The Board will notify parties to an appeal and interested persons of its decision.

II. APPEALS TO MAINE SUPERIOR COURT

Maine law allows aggrieved persons to appeal final Commissioner licensing decisions to Maine's Superior Court, see 38 M.R.S.A. § 346(1); 06-096 CMR 2.26; 5 M.R.S.A. § 11001; & MRCivP 80C. Parties to the licensing decision must file a petition for review within 30 days after receipt of notice of the Commissioner's written decision. A petition for review by any other person aggrieved must be filed within 40-days from the date the written decision is rendered. The laws cited in this paragraph and other legal procedures govern the contents and processing of a Superior Court appeal.

ADDITIONAL INFORMATION

If you have questions or need additional information on the appeal process, contact the DEP's Director of Procedures and Enforcement at (207) 287-2811.

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.