STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JANET T. MILLS
GOVERNOR

MELANIE LOYZIM
COMMISSIONER

June 25, 2021

Megan Sorby
Kingfish Maine
33 Salmon Farm Road
Franklin, ME. 04634
megan@kingfish-maine.com

Sent via electronic mail
Delivery confirmation requested

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0037559
Maine Waste Discharge License (WDL) Application #W009238-6F-A-N
Finalized MEPDES Permit *NEW*

Dear Ms. Sorby:

Enclosed please find a copy of your **final** MEPDES permit and Maine WDL which was approved by the Department of Environmental Protection. Please read this permit and its attached conditions carefully. Compliance with this license will protect water quality.

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 207-446-3820.

Your Department compliance inspector copied below is also a resource that can assist you with compliance. Please do not hesitate to contact them with any questions.

Thank you for your efforts to protect and improve the waters of the great state of Maine!

Sincerely,

Cindy L. Dionne
Division of Water Quality Management
Bureau of Water Quality

Enc.

ec: Melanie Loyzim, DEP
Brian Kavanah, DEP
Don Witherill, DEP
Gregg Wood, DEP
Pamela Parker, DEP
Clarissa Trasko, DEP
Rob Mohlar, DEP
Angela Brewer, DEP
Lori Mitchell, DEP
Alex Rosenberg, USEPA
Sandy Mojica, USEPA
Nathan Chien, USEPA
Richard Carvalho, USEPA
Kingfish Interested Parties List

DEP INFORMATION SHEET

Appealing a Department Licensing Decision

Dated: November 2018 **Contact: (207) 287-2452**

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) an administrative process before the Board of Environmental Protection (Board); or (2) a judicial process before Maine's Superior Court. An aggrieved person seeking review of a licensing decision over which the Board had original jurisdiction may seek judicial review in Maine's Superior Court.

A judicial appeal of final action by the Commissioner or the Board regarding an application for an expedited wind energy development (35-A M.R.S. § 3451(4)) or a general permit for an offshore wind energy demonstration project (38 M.R.S. § 480-HH(1)) or a general permit for a tidal energy demonstration project (38 M.R.S. § 636-A) must be taken to the Supreme Judicial Court sitting as the Law Court.

This information sheet, in conjunction with a review of the statutory and regulatory provisions referred to herein, can help a person to understand his or her rights and obligations in filing an administrative or judicial appeal.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

The laws concerning the DEP's *Organization and Powers*, 38 M.R.S. §§ 341-D(4) & 346; the *Maine Administrative Procedure Act*, 5 M.R.S. § 11001; and the DEP's *Rules Concerning the Processing of Applications and Other Administrative Matters* ("Chapter 2"), 06-096 C.M.R. ch. 2.

DEADLINE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written appeal within 30 days of the date on which the Commissioner's decision was filed with the Board. Appeals filed more than 30 calendar days after the date on which the Commissioner's decision was filed with the Board will be dismissed unless notice of the Commissioner's license decision was required to be given to the person filing an appeal (appellant) and the notice was not given as required.

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017. An appeal may be submitted by fax or e-mail if it contains a scanned original signature. It is recommended that a faxed or e-mailed appeal be followed by the submittal of mailed original paper documents. The complete appeal, including any attachments, must be received at DEP's offices in Augusta on or before 5:00 PM on the due date; materials received after 5:00 pm are not considered received until the following day. The risk of material not being received in a timely manner is on the sender, regardless of the method used. The appellant must also send a copy of the appeal documents to the Commissioner of the DEP; the applicant (if the appellant is not the applicant in the license proceeding at issue); and if a hearing was held on the application, any intervenor in that hearing process. All of the information listed in the next section of this information sheet must be submitted at the time the appeal is filed.

INFORMATION APPEAL PAPERWORK MUST CONTAIN

Appeal materials must contain the following information at the time the appeal is submitted:

1. *Aggrieved Status*. The appeal must explain how the appellant has standing to maintain an appeal. This requires an explanation of how the appellant may suffer a particularized injury as a result of the Commissioner's decision.
2. *The findings, conclusions, or conditions objected to or believed to be in error.* The appeal must identify the specific findings of fact, conclusions regarding compliance with the law, license conditions, or other aspects of the written license decision or of the license review process that the appellant objects to or believes to be in error.
3. *The basis of the objections or challenge.* For the objections identified in Item #2, the appeal must state why the appellant believes that the license decision is incorrect and should be modified or reversed. If possible, the appeal should cite specific evidence in the record or specific licensing requirements that the appellant believes were not properly considered or fully addressed.
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 matters specifically raised in the written notice of appeal.
6. *Request for hearing.* If the appellant wishes the Board to hold a public hearing on the appeal, a request for public hearing must be filed as part of the notice of appeal, and must include an offer of proof in accordance with Chapter 2. The Board will hear the arguments in favor of and in opposition to a hearing on the appeal and the presentations on the merits of an appeal at a regularly scheduled meeting. If the Board decides to hold a public hearing on an appeal, that hearing will then be scheduled for a later date.
7. *New or additional evidence to be offered.* If an appellant wants to provide evidence not previously provided to DEP staff during the DEP's review of the application, the request and the proposed evidence must be submitted with the appeal. The Board may allow new or additional evidence, referred to as supplemental evidence, to be considered in an appeal only under very limited circumstances. The proposed evidence must be relevant and material, and (a) the person seeking to add information to the record must show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process; or (b) the evidence itself must be newly discovered and therefore unable to have been presented earlier in the process. Specific requirements for supplemental evidence are found in Chapter 2 § 24.

OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD

1. *Be familiar with all relevant material in the DEP record.* A license application file is public information, subject to any applicable statutory exceptions, and is made easily accessible by the DEP. Upon request, the DEP will make application materials available during normal working hours, provide space to review the file, and provide an 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 general questions regarding the appeal process.
3. *The filing of an appeal does not operate as a stay to any decision.* If a license has been granted and it has been appealed, the license normally remains in effect pending the processing of the appeal. Unless a stay of the decision is requested and granted, a license holder may proceed with a project pending the outcome of an appeal, but the license holder 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 receipt of an appeal, and will provide the name of the DEP project manager assigned to the specific appeal. The notice of appeal, any materials accepted by the Board Chair as supplementary evidence, any materials submitted in response to the appeal, and relevant excerpts from the DEP's application review file will be sent to Board members with a recommended decision from DEP staff. The appellant, the license holder if different from the appellant, and any interested persons are notified in advance of the date set for Board consideration of an appeal or request for public hearing. The appellant and the license holder will have an opportunity to address the Board at the Board meeting. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision or remand the matter to the Commissioner for further proceedings. The Board will notify the appellant, the license holder, and interested persons of its decision.

II. JUDICIAL APPEALS

Maine law generally allows aggrieved persons to appeal final Commissioner or Board licensing decisions to Maine's Superior Court (see 38 M.R.S. § 346(1); 06-096 C.M.R. ch. 2; 5 M.R.S. § 11001; and M.R. Civ. P. 80C). A party's appeal must be filed with the Superior Court within 30 days of receipt of notice of the Board's or the Commissioner's decision. For any other person, an appeal must be filed within 40 days of the date the decision was rendered. An appeal to court of a license decision regarding an expedited wind energy development, a general permit for an offshore wind energy demonstration project, or a general permit for a tidal energy demonstration project may only be taken directly to the Maine Supreme Judicial Court. See 38 M.R.S. § 346(4).

Maine's Administrative Procedure Act, DEP statutes governing a particular matter, and the Maine Rules of Civil Procedure must be consulted for the substantive and procedural details applicable to judicial appeals.

ADDITIONAL INFORMATION

If you have questions or need additional information on the appeal process, for administrative appeals contact the Board's Executive Analyst at (207) 287-2452, or for judicial appeals contact the court clerk's office in which your appeal will be filed.

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.

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

IN THE MATTER OF

KINGFISH MAINE	)	MAINE POLLUTANT DISCHARGE
JONESPORT, WASHINGTON COUNTY, MAINE	)	ELIMINATION SYSTEM PERMIT
LAND BASED AQUACULTURE	)	AND
ME0037559	)	WASTE DISCHARGE LICENSE
W009238-6F-A-N **APPROVAL**	)	**NEW**

In accordance with the applicable provisions of *Pollution Control*, 38 M.R.S. §§ 411 – 424-B, *Water Classification Program*, 38 M.R.S. §§ 464 – 470, and *Federal Water Pollution Control Act*, 33 U.S.C. § 1251, and applicable rules of the Department of Environmental Protection (Department), the Department has considered the application of KINGFISH MAINE (Kingfish or permittee), for a new combination Maine Pollutant Discharge Elimination System (MEPDES) permit/Maine Waste Discharge License (WDL) (collectively permit) with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

On August 7, 2020, Kingfish submitted an application to the Department for a new MEPDES permit/WDL for the daily maximum discharge of 28.7 million gallons per day (MGD) of treated wastewater associated with a land-based recirculating aquaculture system (RAS) to Chandler Bay, Class SB, in Jonesport, Maine. The total 28.7 MGD flow is made up of 6.5 MGD of fish culture or process water and 22.2 MGD of water used for heat recovery in the facility (not process water). The permittee proposes to rear Yellowtail Kingfish (*Seriola lalandi*) from on-site broodstock through each life stage to harvest and initial processing. At full production, the facility will be able to produce 8,000 metric tons or about 16 million pounds of fish per year. Kingfish proposes to begin construction once all required permits have been obtained.

On August 17, 2020, the Department formally accepted the application as complete and accepted the application for processing pursuant to 06-096 C.M.R. Chapter 2, *Rules Concerning the Processing of Applications and other Administrative Matters* (June 9, 2018).

PERMIT SUMMARY

This permit establishes:

1. Technology-based numeric limitations for flow, biochemical oxygen demand (BOD), total suspended solids (TSS) and pH;

2. A requirement to seasonally (May – October) monitor the effluent for total phosphorus, total ammonia (as N), total kjeldahl nitrogen, nitrate + nitrite nitrogen;

3. A monthly average water quality-based mass limitation for total nitrogen;

4. A requirement for the permittee to conduct a dye study to more accurately determine the mixing characteristics of the treated effluent discharge from the facility with the receiving water;

5. A requirement to conduct seasonal (May – October) ambient water quality monitoring in Chandler Bay;

6. A requirement for the facility to develop and maintain an Operations & Maintenance (O&M) Plan for the production facility and the wastewater treatment facility;

7. Best practicable treatment (BPT) and General Reporting requirements consistent with National Effluent Guidelines (NEG) found at 40 Code of Federal Regulations (CFR), Part 451 – *Concentrated Aquatic Animal Production Point Source Category*;

8. A requirement for the permittee to meet with the Department's permitting and compliance inspection staff 90 days prior to commencement of operations, to review the permit limitations, monitoring requirements, and reporting requirements;

9. Daily maximum concentration limits for formalin based off of 1-hour or 24-hour treatment types; and

10. A finding by the Department pursuant to the antidegradation provisions under *Classification of Maine waters*, 38 M.R.S. § 464(4)(F), for nitrogen as it pertains to eelgrass as an indicator.

CONCLUSIONS AND FINDINGS

BASED on the findings in the attached Fact Sheet dated June 25, 2021, and subject to the Conditions listed below, the Department makes the following CONCLUSIONS AND FINDINGS:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below its 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, *Classification of Maine waters*, 38 M.R.S. § 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) Where the standards of classification of the receiving waterbody are not met, the discharge will not cause or contribute to the failure of the waterbody to meet the standards of classification;[**]

   (d) Where the actual quality of any classified receiving waterbody 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 water quality of any waterbody, 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 as defined in 38 M.R.S. § 414-A(1)(D).

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[*] The receiving water is classified SB (see Section 3 of the Fact Sheet) and does not meet the definition of "outstanding national resource" nor will the discharge to the receiving water affect any such outstanding national resource.

[**] The receiving water is in attainment of the standards of classification for SB waters.

[***] The receiving water is classified SB and its quality does not exceed the minimum standards of the next highest classification.

[****] See Section 6 of the Fact Sheet.

ACTION

THEREFORE, the Department APPROVES the application of KINGFISH MAINE to discharge a daily maximum flow of 28.7 MGD of treated wastewater associated with a land-based RAS to Chandler Bay, Class SB in Jonesport, Maine, subject to the attached conditions and all applicable standards and regulations:

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 becomes effective upon the date of signature below and expires at midnight five (5) years after that date. If a renewal application is timely submitted and accepted as complete for processing prior to the expiration of this permit, the terms and conditions of this permit and all subsequent modifications and minor revisions thereto remain in effect until a final Department decision on the renewal application becomes effective. [*Maine Administrative Procedure Act*, 5 M.R.S. § 10002 and *Rules Concerning the Processing of Applications and Other Administrative Matter*s, 06-096 CMR 2(21)(A) (last amended June 9, 2018)].

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES DONE

AND DATED AT AUGUSTA, MAINE, THIS _25_ DAY OF ___June_____ 2021.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____

For Melanie Loyzim, Commissioner, Department of Environmental Protection

Date of initial receipt of application: August 7, 2020

Date of application acceptance: August 17, 2020

FILED

JUNE 25, 2021

State of Maine
Board of Environmental Protection

Date filed with Board of Environmental Protection

This Order prepared by Cindy L. Dionne, Bureau of Water Quality

SPECIAL CONDITIONS
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The permittee is authorized to discharge treated **wastewater associated with a land-based RAS from Outfall #001A OR Outfall #001B** to Chandler Bay. Such discharges are limited and must be monitored by the permittee as specified below:[(1)]

****Parameters listed in this table may be sampled once mixed with the heat recovery water.****

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow *[50050]*	Report MGD *[03]*	28.7 MGD *[03]*	---	---	Continuous *[99/99]*	Meter *[MR]*
Total Kjeldahl Nitrogen (as N) *[00625]* ***(May – Oct)***	Report lbs./day *[26]*	Report lbs./day *[26]*	Report mg/L *[19]*	Report mg/L *[19]*	1/Week *[01/07]*	Composite[(2)] *[24]*
Nitrate + Nitrite Nitrogen (as N) *[00630]* ***(May – Oct)***	Report lbs./day *[26]*	Report lbs./day *[26]*	Report mg/L *[19]*	Report mg/L *[19]*	1/Week *[01/07]*	Composite[(2)] *[24]*
Total Nitrogen (as N) [(3,4)] *[00600]* ***(May – Oct)***	1,580 lbs./day *[26]*	Report lbs./day *[26]*	Report mg/L *[19]*	Report mg/L *[19]*	1/Week *[01/07]*	Calculated *[CA]*
Fish on Hand *[45604]*	---	Report Metric Tons *[41]*	---	---	1/Month *[01/30]*	Calculated *[CA]*
Total Phosphorus[(5)] *[00665]* ***(May – Oct)***	Report lbs./day *[26]*	Report lbs./day *[26]*	Report mg/L *[19]*	Report mg/L *[19]*	1/Week *[01/07]*	Composite[(2)] *[24]*
Total Ammonia (as N) *[00610]* ***(May – Oct)***	Report lbs./day *[26]*	Report lbs./day *[26]*	Report mg/L *[19]*	Report mg/L *[19]*	1/Week *[01/07]*	Grab *[GR]*
Temperature *[00011]* ***(June 1 – Sept 1)***	---	---	---	Report °F *[15]*	1/Day *[01/01]*	Measure *[MS]*
pH (Std. Units) *[00400]*	---	---	---	6.0-9.0 *[12]*	3/Week *[03/07]*	Grab *[GR]*
Formalin[(6)] *[51064]* 1-Hour Treatment Maximum	Report lbs./day *[26]*	Report lbs./day *[26]*	Report mg/L *[19]*	45 mg/L *[19]*	1/Occurrence *[01/OC]*	Calculated *[CA]*
Formalin[(6)] *[51064]* 24-Hour Treatment Maximum	Report lbs./day *[26]*	Report lbs./day *[26]*	Report mg/L *[19]*	25 mg/L *[19]*	1/Occurrence *[01/OC]*	Calculated *[CA]*
Production[(7)] *[00145]* *(Yellowtail Kingfish)*	Report lbs./day *[26]*	Report lbs./day *[26]*	---	---	Daily *[01/01]*	Measured *[MS]*

SPECIAL CONDITIONS
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The permittee is authorized to discharge treated **wastewater associated with *the process/culture processes* of a land-based RAS from Outfall #001A OR Outfall #001B** to Chandler Bay. Such discharges are limited and must be monitored by the permittee as specified below:[(1)]

****Parameters listed in this table must be sampled prior to mixing with heat recovery water.****

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow *[50050]*	Report MGD *[03]*	6.5 MGD *[03]*	---	---	Continuous *[99/99]*	Meter *[MR]*
Biochemical Oxygen Demand[(3)] (BOD_5) *[00310]*	1,626 lbs./day *[26]*	2,711 lbs./day *[26]*	30 mg/L *[19]*	50 mg/L *[19]*	3/Week *[03/07]*	Composite[(2)] *[24]*
Total Suspended Solids(TSS) [(3)] *[00530]*	1,626 lbs./day *[26]*	2,711 lbs./day *[26]*	30 mg/L *[19]*	50 mg/L *[19]*	3/Week *[03/07]*	Composite[(2)] *[24]*
Total Residual Chlorine[(8)] *[50060]*	---	---	0.1 mg/L *[19]*	0.3 mg/L *[19]*	1/Day *[01/01]*	Grab *[GR]*
Fish Oil and Grease *[00552]*	39 lbs./day *[26]*	96 lbs./day *[26]*	Report mg/L *[19]*	Report mg/L *[19]*	2/Week *[02/07]*	Grab *[GR]*

SPECIAL CONDITIONS

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

Footnotes

1. **Sampling** – All effluent monitoring must be conducted following the last treatment unit prior to discharging to the receiving water. *Compliance with BOD, TSS, TRC, and O&G limitations are based on monitoring conducted on effluent from the process/culture processes and not effluent associated with the heat recovery process.* Samples must be taken at the discharge reservoir or as otherwise approved by the Department. All monitoring must be conducted so as to be representative of end-of-pipe effluent characteristics. Any change in sampling location must be approved by the Department in writing prior to implementing that change. The permittee must conduct sampling and analysis in accordance with; a) methods approved by 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 must be analyzed by a laboratory certified by the State of Maine's Department of Health and Human Services for wastewater. Samples that are sent to a laboratory operated by a waste discharge facility licensed pursuant to *Waste discharge licenses*, 38 M.R.S. § 413 are subject to the provisions and restrictions of *Maine Comprehensive and Limited Environmental Laboratory Certification Rules*, 10-144 CMR 263 (last amended December 19, 2018). 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 this permit, the results of that monitoring must be included in the calculation and reporting of the data submitted in the Discharge Monitoring Report (DMR).

2. **Composite sample –** 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 Special Condition A on monitoring and reporting) and combined proportional to the flow over that same time period.

3. **BOD, TSS and Total nitrogen** – In the Department's discretion, the monthly average and daily maximum limitations for BOD, TSS, and total nitrogen may be subject to a statistical evaluation at the end of the term of this permit to assist the Department in establishing best practicable treatment standards for the RAS industry.

4. **Total nitrogen (as N) – Monthly** – The permittee is required to report the monthly average and daily maximum mass and concentrations for each month (May – October) of each year by adding the total kjeldahl nitrogen values to the nitrate + nitrite nitrogen values for each sampling event. See **Attachment A** of this permit for *Protocol for Nitrogen and Phosphorus Sample Collection and Analysis for Waste Water and Ambient Marine Waters.*

SPECIAL CONDITIONS

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

Footnotes (cont'd)

5. **Total phosphorus** – See **Attachment A** of this permit for *Protocol for Nitrogen and Phosphorus Sample Collection and Analysis for Waste Water and Ambient Marine Waters.*

6. **Formalin** – If sampling for Formalin is to occur, the sample must be taken from the discharge reservoir. Limits of 25 mg/L and 45 mg/L must be attained at the discharge reservoir prior to facility discharge to Chandler Bay.

   Formalin monitoring must be conducted when formalin is in use at the facility and must be reported as calculated effluent mass and concentration values via Department approved methodology.

   The following calculation must be applied to assess the total mass of formalin discharged per occurrence (lbs./day):

   Formalin applied (gallons) x 9.03[1] (lbs./gallon) = Total formalin in effluent (lbs./day)

   The permittee must provide this information and calculations to the Department in a document accompanying the monthly electronic DMR. The formalin limit corresponds to two types of treatments:

   1. One hour per day treatment typical of hatchery and rearing facility discharges; and

   2. Maximum of up to 24 hours of treatment and discharge for addressing emergency conditions at the facility.

   Formalin discharges lasting longer than 1-hour in duration must be conducted no more frequently than once every four days. The permittee must provide a list of dates on which treatments longer than 1-hour were performed, and the length of time of each such treatment, with each monthly electronic DMR.

   For instances when a permittee has not used formalin for an entire reporting period, the permittee must report "N9" for this parameter on the monthly electronic DMR.

[1] Per Material Safety Data Sheet, Parasite-S has a specific gravity of 1.0775-1.0865 giving it an average density of 9.03 lbs./gallon.

SPECIAL CONDITIONS

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

Footnotes (cont'd)

7. **Production -** Production refers to the pounds of fish live weight processed per day at the facility.

8. **TRC Monitoring** – Limitations and monitoring requirements are in effect any time elemental chlorine or chlorine-based compounds are utilized to disinfect the discharge(s). The permittee must utilize a USEPA-approved test method capable of bracketing the total residual chlorine (TRC) limitations specified in this permitting action. For instances when a facility has not disinfected with chlorine-based compounds for an entire reporting period, the facility must report "N9" on the electronic DMR.

B. NARRATIVE EFFLUENT LIMITATIONS

1. The permittee must not discharge effluent that contains a visible oil sheen, foam or floating solids at any time which would impair the uses designated for the classification of the receiving waters.

2. The permittee must not discharge effluent that contains materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the uses designated for the classification of the receiving waters.

3. The discharge must not discharge effluent that impart visible discoloration, taste, turbidity, toxicity, radioactivity or other properties in the receiving waters which would impair the usages designated for the classification of the receiving waters.

4. The permittee must not discharge effluent that lowers the quality of any classified body of water below such classification or lowers the existing quality of any body of water if the existing quality is higher than the classification.

SPECIAL CONDITIONS

C. AUTHORIZED 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 August 17, 2020; 2) the terms and conditions of this permit; and 3) only from Outfall #001A or Outfall #001B. Discharges of wastewater from any other point source are not authorized under this permit and must be reported in accordance with Standard Condition D(1)(f), *Twenty-four-hour reporting*, of this permit.

D. NOTIFICATION REQUIREMENT

In accordance with Standard Condition D, the permittee must 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 must include information on:

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

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

E. MONITORING AND REPORTING

Electronic Reporting

NPDES Electronic Reporting, 40 CFR 127, requires MEPDES permit holders to submit monitoring results obtained during the previous month on an electronic discharge monitoring report to the regulatory agency utilizing the United States Environmental Protection Agency (USEPA) electronic system.

Electronic Discharge Monitoring Reports (DMRs) submitted using the USEPA NetDMR system, must be:

1. Submitted by a facility authorized signatory; and
2. Submitted no later than **midnight on the 15th day of the month** following the completed reporting period.

SPECIAL CONDITIONS

E. MONITORING AND REPORTING (cont'd)

Documentation submitted in support of the electronic DMR may be attached to the electronic DMR. Toxics reporting must be done using the DEP Toxsheet reporting form. An electronic copy of the Toxsheet reporting document must be submitted to the Department compliance inspector as an attachment to an email. In addition, a hardcopy form of this sheet must be signed and submitted to the compliance inspector, or a copy attached to the NetDMR submittal will suffice. Documentation submitted electronically to the Department in support of the electronic DMR must be submitted no later than midnight on the 15th day of the month following the completed reporting period.

F. DYE STUDY

Within 12 months of the effective date of this permit, the permittee must submit a plan to the Department for review and approval that includes a scope of work and schedule to conduct a dye study to ensure the accuracy of the analysis of the mixing characteristics of the effluent being discharged with the receiving water.

To assess in practice, the mixing characteristics of the treated effluent and the receiving water, **a dye study must be conducted the first summer (in July or August) following the facility discharging at full buildout (to include heat recovery water and culture systems) and/or with approval from Department staff.** The dye study must be conducted in July or August and at a full range of tidal stages.

Within 6 months of completion of the dye study, the permittee must submit a report to the Department that characterizes the mixing conditions in the receiving water and depicts the radial propagation of measured dilution factors associated with the discharge, to the point where the dye concentration is below the instrument detection level.

The information derived from this dye study will assist the Department in verifying the hydrodynamics of the receiving water and dilution factors associated with the discharge.

SPECIAL CONDITIONS

G. AMBIENT WATER QUALITY MONITORING

Within 6 months of the effective date of this permit, the permittee must submit an ambient water quality monitoring plan to the permittee's Compliance contact for review and approval by the Department's Division of Environmental Assessment (DEA), to monitor four (4) sampling stations established by the Department. *[ICIS code 22099]* (Fact Sheet Attachment D). The monitoring plan must conform with a Department-approved sampling plan or Quality Assurance Project Plan (QAPP), and be submitted for approval at least 60 days (March 1st) prior to the start of the ambient water quality monitoring program. The monitoring plan must be approved by the Department prior to the start of the ambient monitoring.

All ambient water quality sampling and analysis must be conducted by using Maine accredited labs, or as otherwise specified by the Department.

Beginning May 1, 2022, the permittee must commence ambient monitoring at the four (4) designated sites established by the Department's DEA at a frequency of approximately every three (3) weeks between May 1st and October 31st of each year. Each monitoring event must be conducted during a four-hour sampling window on the second half of alternating ebb and flood tides, to include approximately one hour of slack water. Minimum parameters to be monitored via sonde are temperature, salinity, pH, dissolved oxygen, chlorophyll *a,* and turbidity. Minimum parameters to be monitored via grab samples are total phosphorus, total kjeldahl nitrogen, nitrate + nitrite nitrogen, chlorophyll *a* and phaeophytin.

On or before December 31st of each year, the permittee must submit a report to the Department summarizing the data collected from the ambient water quality monitoring plan and report any data trends or anomalies. [*ICIS code 22099]* The report must be accompanied by quality checked sonde and grab sample data as well as laboratory reports for all grab sample analyses. All grab sample data must be submitted to the Department in Electronic Data Deliverable format per requirements detailed at https://www.maine.gov/dep/maps-data/egad/#ed .

SPECIAL CONDITIONS

H. OPERATION & MAINTENANCE PLAN

Within 6 months after commencement of the initial operations (eggs on-site), the permittee must submit a written Operation & Maintenance (O&M) Plan for the facility to the Department for review and approval. The plan must provide a systematic approach by which the permittee must 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.

An acceptable O&M plan must ensure the following items are adequately addressed:

1. Solids Control

    a. Methods and practices to ensure efficient feed management and feeding strategies that limit feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth in order to minimize potential discharges to waters of the State.

    b. In order to minimize the discharge of accumulated solids from the solids processing system and production systems, identify and implement procedures for routine cleaning of rearing units and any settling tanks, and procedures to minimize any discharge of accumulated solids during the inventorying, grading, and harvesting of aquatic animals in the production system.

    c. Procedure for removal and disposal of mortalities.

2. Materials Storage

    a. Ensure proper storage of drugs[1], pesticides[2], feed, chemicals and any petroleum and/or hazardous waste products in a manner designed to prevent spills that may result in the discharge of drugs, pesticides, or feed to waters of the State.

    b. Implement procedures for properly containing, cleaning, and disposing of any spilled material that has the potential to enter waters of the State.

[1] **Drug.** "Drug" means any substance defined as a drug in section 201(g)(1) of the *Federal Food, Drug and Cosmetic Act* [21 U.S.C. § 321].

[2] **Pesticide.** "Pesticide" means any substance defined as a "pesticide" in section 2(u) of the *Federal Insecticide, Fungicide, and Rodenticide Act* [7 U.S.C. § 136 (u)].

SPECIAL CONDITIONS

H. OPERATION & MAINTENANCE PLAN (cont'd)

3. Structural Maintenance

   a. Inspect the production system and the wastewater treatment system on a routine basis in order to identify and promptly repair any damage.

   b. Conduct regular maintenance of the production system and the wastewater treatment system in order to ensure that they are properly functioning.

4. Recordkeeping

   a. Maintain records for fish rearing units documenting the feed amounts and estimates of the numbers and weight of fish.

   b. Maintain records that document the frequency of cleaning, inspections, repairs and maintenance.

   c. Maintain records that document drug/pesticide/other compound use as indicated under *Special Condition I, Disease Control*.

   d. Carry out all necessary MEPDES Licensing and Compliance related activities, and maintain associated documentation for a minimum of 3 years.

5. Training

   a. In order to ensure the proper clean-up and disposal of spilled material adequately, train all relevant personnel in spill prevention and spill response.

   b. Appropriately qualified managerial and operational staff shall be available and trained in the proper operation, maintenance, and upkeep of the Recirculating Aquaculture System, along with any related production and wastewater treatment systems, including training in feeding procedures and proper use of equipment to prevent unauthorized discharges.

SPECIAL CONDITIONS

H. OPERATION & MAINTENANCE PLAN (cont'd)

6. Waste Water Operations

a. Provide a flow chart for the wastewater treatment process, the sludge and solids dewatering and removal process, and effluent discharge system.

b. Identify and develop operational and maintenance standard operating procedures for the treatment system components used to treat clean water, sludge water from cleaning mechanical filters, sludge water from backflushing biological treatment filters, and other wastewaters, as applicable:

(1) Belt/drum filters and thickeners;
(2) Use of flocculants/coagulants;
(3) Clarifiers/settling tanks;
(4) Fish exclusion barriers;
(5) Centrifuges;
(6) UV disinfection/sterilization;
(7) Chemical storage and disposal;
(8) Intake/outfall maintenance;
(9) Other

Define each of the following operator responsibilities:
(1) Operations Manager qualifications and duties;
(2) Staff duties;
(3) Sample collection and analysis;
(4) Regulatory reporting:

a. Discharge monitoring reports
b. Spill/release reports;

(5) Any other operator responsibilities not listed.

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

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

SPECIAL CONDITIONS

I. DISEASE CONTROL

The permittee must comply with Maine Department of Inland Fisheries and Wildlife (MDIFW) (freshwater facilities) and Maine Department of Marine Resources (MEDMR) (salmon & marine facilities) fish health laws (12 M.R.S. § 10051; *Importing of certain marine organisms* 12 M.R.S. § 6071; *Other powers,* 12 M.R.S. § 10105; *License to cultivate or sell commercially grown and imported fish,* 12 M.R.S. § 12507; and *Permit to import live freshwater fish or eggs,* 12 M.R.S. § 12509, as amended). The cited laws include requirements for notification to the appropriate agency within 24-hours of pathogen detection. In addition to the requirements of the MDIFW and MEDMR rules, **the permittee must notify the Department in writing within 24 hours following pathogen detection**, with information on the disease/pathogen, necessary control measures, and the contact information for the veterinarian(s) involved.

1. **General requirements.** All chemicals used at the facility must be applied in compliance with this permit, federal labeling restrictions, applicable statute, Board of Pesticides Control rules, and best management practices (BMPs). In accordance with Special Condition D of this permit, the permittee must notify the Department of any substantial change in the volume or character of pollutants being introduced into the wastewater collection and treatment system.

2. **FDA-approved drugs.** All drugs used for disease prevention or control must be approved or authorized by the U.S. Food and Drug Administration (FDA), and all applications must comply with applicable FDA requirements and must only be administered in accordance with label instructions.

   a. Drugs identified in the permittee's application: A list of drugs, chemicals and other compounds proposed and approved for use at the permittee's facility during the term of the permit was provided by the permittee in its August 17, 2020, General Application for Waste Discharge Permit as Permit **Attachment B**. FDA-approved drugs in the permittee's August 17, 2020 application are:

      1. Formalin (Parasite-S)
      2. Tricaine methanesulfonate (Tricane-S® aka MS-222)
      3. PVP Iodine (Ovadine®)
      4. Hydrogen peroxide (35% Perox-Aid®)

   b. Preventative treatments: This permit does not authorize the discharge of any drug identified in the permittee's application and otherwise approved herein to be administered as a preventative measure unless the drug is FDA-approved and the treatment and route of administration are consistent with the drug's intended use and in accordance with label instructions.

SPECIAL CONDITIONS

I. DISEASE CONTROL (cont'd)

c. Drugs not identified in the permittee's application: When the need to treat or control diseases requires the use of an FDA-approved drug not identified in the application, the permittee must notify the Department verbally or by electronic mail prior to initial use of the drug.

1. The notification must include a description of the drug, its intended purpose, the method of application, the amount, the concentration, the duration of the use, and information on aquatic toxicity.

2. **Within seven (7) days of the initial notification,** the permittee must submit a written report that includes all of the information outlined in Section I.2(c)(1) above.

3. The Department may require submission of an application for permit modification, including public notice requirements, if the drug is to be used for more than a 30-consecutive day period.

4. 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 use of the drug.

3. **Extralabel drug use.** Extralabel drug use is not authorized by this permit, unless in accordance with a specific prescription written for that use by a licensed veterinarian.

a. Notification. The permittee must notify the Department orally or by e-mail prior to initial extralabel use of a drug.

1. The notification must include a description of the drug, its intended purpose, the method of application, the amount, concentration, and duration of the use, information on aquatic toxicity, and a description of how and why the use qualifies as an extralabel drug use under FDA requirements.

2. **Within seven (7) days of the initial notification** the permittee must submit a written report that includes all of the information outlined in Section I.3(a)(1) above. The report must include documentation that a veterinarian has prescribed the drug for the proposed use. A copy of the veterinarian's prescription must be maintained on-site during treatment for Department review.

3. If, upon review of information regarding the extralabel use of a drug pursuant to this section, the Department determines that significant adverse effects are likely to occur, it may deny, restrict or limit use of the drug.

SPECIAL CONDITIONS

I. DISEASE CONTROL (cont'd)

4. **Investigational New Animal Drug (INAD).** The discharge of drugs authorized by the FDA for use during studies conducted under the INAD program is not authorized by this permit, unless in accordance with specific prior consent given in writing by the Department.

   a. Initial report. The permittee must provide a written report to the Department for the proposed use of an INAD ***within seven (7) days*** of agreeing or signing up to participate in an INAD study. The written report must identify the INAD to be used, method of use, dosage, and disease or condition the INAD is intended to treat.

   b. Evaluation and monitoring. ***At least ninety (90) days prior to initial use*** of an INAD at a facility, the permittee must submit for Department review and approval a study plan for the use of the drug that:

      1. Indicates the date the facility agreed or signed up to participate in the INAD study.

      2. Demonstrates that the minimum amount of drug necessary to evaluate its safety, efficacy, and possible environmental impacts will be used.

      3. Includes 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. Currently available data or literature that adequately characterizes the environmental fate of the INAD and its metabolite(s) may be proposed for consideration in determinations of environmental monitoring and evaluation programs required by the Department pursuant to this section.

   c. Notification. The permittee must notify the Department verbally or by electronic mail ***no more than forty-eight (48) hours after*** beginning the first use of the INAD under the approved plan.

SPECIAL CONDITIONS

J. 06-096 CMR 530(2)(D)(4) STATEMENT FOR REDUCED/WAIVED TESTING

By December 31 of each calendar year, the permittee must provide the Department with a certification describing any of the following that have occurred since the effective date of this permit ***[ICIS Code 96299]***. See **Attachment E** of the Fact Sheet of this permit for an acceptable certification form to satisfy this Special Condition.

a. Changes in the number or types of waste streams contributing directly or indirectly to the wastewater treatment works that may increase the toxicity of the discharge;

b. Changes in the operation of the treatment works that may increase the toxicity of the discharge; and

c. Changes in the processes contributing wastewater to the treatment works that may increase the toxicity of the discharge.

The Department reserves the right to establish surveillance level chemical specific or priority pollutant testing or other toxicity testing if new information becomes available that indicates the discharge may cause or have a reasonable potential to cause exceedances of ambient water quality criteria/thresholds.

K. COMMENCEMENT OF OPERATIONS

At least 90 days prior to commencing production/operations, the permittee must meet with the Department's permitting and compliance inspection staff to review applicability of the permit limitations, monitoring requirements and reporting requirements. Should the Department determine that the proposed production/operations are significantly different from what was presented in past application materials or subsequently revised and included in permitting actions, the Department may require the permittee to modify this permit or to file an application for a new permit. In addition, pursuant to Department Rule, Chapter 2 Rules *Concerning the Processing of Applications and Other Administrative Matters*, Section 21*, License Renewals, Amendments and Transfers*, Sub-section C, *Transfers*, a transferee must make application to the Department no later than two (2) weeks after transfer of ownership or entering into a licensee agreement to conduct business on said property. Pending determination on the application for approval of transfer, the transferee must abide by all of the conditions of this permit and is jointly or severally liable with the permittee for any violation of the terms and conditions thereof.

SPECIAL CONDITIONS

L. REOPENING OF PERMIT FOR MODIFICATION

In accordance with 38 M.R.S. § 414-A(5) and upon evaluation of the test results from tests required in the Special Conditions of this permit, 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 monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

M. 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 must remain in full force and effect and must be construed and enforced in all aspects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

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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.

ATTACHMENT A

Protocol for Nitrogen and Phosphorus Sample Collection and Analysis for Waste Water and Ambient Marine Waters

Approved analytical methods for waste water are reproduced below from Electronic Code of Federal Regulations (e-CFR), Title 40 § 136.3, Table 1B. See e-CFR footnote text where indicated. Laboratories performing analyses for waste water must be accredited by the Maine Center for Disease Control's Division of Environmental and Community Health per Laboratory Accreditation Rules, effective date December 19, 2018. Ambient water sampling methods should conform with approved analytical methods listed for waste water to enable greatest data comparability.

PARAMETER	METHODOLOGY	EPA	STANDARD METHODS	ASTM	USGS/AOAC/OTHER
Kjeldahl Nitrogen - Total (as N) (mg/L)	Manual digestion[20] and distillation or gas diffusion, followed by any of the following:		4500-N_{org} B-2011 or C-2011 and 4500-NH_3 B-2011	D3590-11 (A)	I-4515-91 [45]
	Titration		4500-NH_3 C-2011		973.48 [3]
	Nesslerization			D1426-08 (A)	
	Electrode		4500-NH_3 D-2011 or E-2011	D1426-08 (B)	
	Semi-automated phenate	350.1, Rev. 2.0 (1993)	4500-NH_3 G-2011 4500-NH_3 H-2011		
	Manual phenate, salicylate, or other substituted phenols in Berthelot reaction based methods		4500-NH_3 F-2011		See footnote.[60]
	Automated gas diffusion, followed by conductivity cell analysis				Timberline Ammonia-001.[74]
	Automated methods that do not require manual distillation				
	Automated phenate, salicylate, or other substituted phenols in Berthelot reaction based methods colorimetric (auto digestion and distillation)	351.1 (Rev. 1978)[1]			I-4551-78.[8]
	Semi-automated block digestor colorimetric (distillation not required)	351.2, Rev. 2.0 (1993)	4500-N_{org} D-2011	D3590-11 (B)	I-4515-91.[45]
	Block digester, followed by Auto distillation and Titration				See footnote.[39]
	Block digester, followed by Auto distillation and Nesslerization				See footnote.[40]

	Block Digester, followed by Flow injection gas diffusion (distillation not required)				See footnote.[41]
	Digestion with peroxdisulfate, followed by Spectrophotometric (2,6-dimethyl phenol)				Hach 10242.[76]
	Digestion with persulfate, followed by Colorimetric				NCASI TNTP W10900.[77]
Nitrate-Nitrite (as N) (mg/L)	Cadmium reduction, Manual		4500-NO_3^- E-2011	D3867-04 (B)	
	Cadmium reduction, Automated	353.2, Rev. 2.0 (1993)	4500-NO_3^- F-2011	D3867-04 (A)	I-2545-90.[51]
	Automated hydrazine		4500-NO_3^- H-2011		
	Reduction/Colorimetric				See footnote.[62]
	Ion Chromatography	300.0, Rev. 2.1 (1993) and 300.1, Rev. 1.0 (1997)	4110 B-2011 or C-2011	D4327-03	993.30.[3]
	CIE/UV		4140 B-2011	D6508-10	D6508, Rev. 2.[54]
	Enzymatic reduction, followed by automated colorimetric determination				I-2547-11,[72] I-2548-11,[72] N07-0003.[73]
	Spectrophotometric (2,6-dimethylphenol)				Hach 10206.[75]
Phosphorus - Total (mg/L)	Digestion,[20] followed by any of the following:		4500-P B(5)-2011		973.55.[3]
	Manual	365.3 (Issued 1978)[1]	4500-P E-2011	D515-88 (A)	
	Automated ascorbic acid reduction	365.1 Rev. 2.0 (1993)	4500-P (F-H)-2011		973.56,[3] I-4600-85.[2]
	ICP/AES[4 36]	200.7, Rev. 4.4 (1994)	3120 B-2011		I-4471-97.[50]
	Semi-automated block digestor (TKP digestion)	365.4 (Issued 1974)[1]		D515-88 (B)	I-4610-91.[48]
	Digestion with persulfate, followed by Colorimetric				NCASI TNTP W10900.[77]

Sample Collection: Collection of effluent or ambient samples should follow the subsequent procedures. Where procedures differ for sample type, specific instructions are provided.

Effluent samples: Nutrient analyses should be conducted on composite samples unless a facility's permit specifically designates grab sampling for a particular parameter. Composite samples must be collected in new, clean (washed with dilute H_2SO_4 or HCl), or autoclaved individual bottles or a single jug made of glass or polyethylene. Effluent sampler hoses should be cleaned, as needed. From the composite sample container or the original grab sample container, a well-mixed aliquot of sample must be used to triple rinse new or clean sample containers, and then the sample containers filled to the recommended volume per laboratory requirements.

Ambient samples: Surface water samples should be collected as a single grab in a container of sufficient volume for all analyses at a given water column location. One new, clean (washed with dilute H_2SO_4 or HCl), or autoclaved jug or bottle should first be triple rinsed with ambient surface water, the grab sample collected, and then a small volume of the grab sample used to triple rinse any individual sample bottles not containing preservative. Finally, a well-mixed aliquot of ambient surface water from the original grab container should be transferred to individual sample containers in volume sufficient to meet laboratory requirements.

If specified by the method, nitrate-nitrite samples only should be filtered immediately after collection from the composite or original grab sample either by pre-rinsed syringe and filter tip or using a pre-rinsed filter manifold. Filters should be sterile and have 0.45 µm pore size.

Sample Identification: The Chain of Custody form and sample bottle labels, as appropriate, must include facility name, sample location, sample type (grab or composite), sample date and time (starting/end date and times for composite samples), preservation information, and analysis to be completed.

Sample Preservation and Handling: During compositing or after a grab is collected, the sample must be held at 0-6 °C (without freezing). If the sample is being shipped to a commercial laboratory or analysis cannot be performed the day of collection, then the sample must be preserved using H_2SO_4 to obtain a sample pH of <2 SU, and refrigerated at 0-6 °C (without freezing) until receipt by the laboratory. The holding time for a preserved sample of TKN, nitrate-nitrate or TP is 28 days from sample collection. All shipped samples should be accompanied by a completed Chain of Custody form.

Sampling QA/QC: If an effluent composite sample is being collected using an automated sampler, then a blank must be run once per month on the composite sampler. Distilled or deionized water should be drawn into the sample jug or bottle using the sample collection line, allowed to remain in the jug or bottle for 24 hours, preserved, and then analyzed for the parameter of interest.

Laboratory QA/QC: Laboratories must follow the appropriate QA/QC methods that are presented in their own parameter-specific Standard Operating Procedures (SOPs).

ATTACHMENT B

KINGFISH MAINE CHEMICAL LIST

Chemical	Trade Name	Application	Method	Max Dosage	Areas of Potential Use
Hydrochloric Acid		pH Balancing, Cleaning Equipment	Diluted and Applied	n/a	Hatchery/Growout
Sodium Hydroxide		pH Balancing, Cleaning Equipment	Diluted and Applied	n/a	Hatchery/Growout
Demineralized water		Calibrating Equipment	n/a	n/a	Hatchery/Growout/Processing
Sodium Bicarbonate		pH Balancing	Diluted and Applied	n/a	Hatchery/Growout
Sodium Hypochlorite		Cleaning and Disinfecting Equipment	Diluted and Applied	150ppm	Hatchery/Growout/Processing
Sodium Thiosulfate		Neutralizing Sodium hypochlorite	Added to water in proportion to sodium hypochlorite used	300ppm	Hatchery/Growout
Hydrogen Peroxide	Perox-aid, Perosan	Cleaning Equipment; External Fish Treatments	Spray or Bath Immersion	1000ppm	Hatchery/Growout
Formalin	Parasite-S	Extrernal Fish Treatment	Bath Treatment	200ppm	Hatchery/Growout
PVP Iodine	Ovadine	Disinfection of Fish Eggs	Bath Treatment	100ppm	Hatchery
Tricaine Methanesulfonate	MS-222, Tricane-S	Anesthesia	Bath Treatment	750ppm	Hatchery/Growout
Antimicrobial Hand Soap		General Cleaning	n/a	n/a	Hatchery/Growout/Processing
Citric Acid		General Cleaning	Diluted and Applied	n/a	Hatchery/Growout/Processing
Pentapotassium bis (peroxymonosulphate) bis(sulphate) & Sodium Dodecylbenzene Sulfonate	Virkon Aquatic	Cleaning & Disinfecting Equipment	Diluted and Applied	10g/l	Hatchery/Growout/Processing
Phosphoric Acid		Cleaning Processing Equipment	Diluted and Applied	As per label instructions	Processing
Chlorinated Alkaline		Cleaning Processing Equipment	Diluted and Applied	As per label instructions	Processing
Didecyldimethylammonum Chloride		Cleaning & Disinfecting Processing Equipment	Diluted and Applied	As per label instructions	Processing
Ferric Chloride					Hatchery/Growout
Ammonium Chloride		Biofilter Startup	Diluted and Applied	n/a	Hatchery/Growout
Sodium Nitrite		Biofilter Startup	Diluted and Applied	n/a	Hatchery/Growout
Methanol		Carbon source for Denitrification	Diluted and Applied	n/a	
Ethanol		Carbon source for Denitrification	Diluted and Applied	n/a	
MicroC		Carbon source for Denitrification	Diluted and Applied	n/a	

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND
WASTE DISCHARGE LICENSE

FINAL FACT SHEET

Date: **June 25, 2021**

MEPDES PERMIT: **ME00037559**
WASTE DISCHARGE LICENSE: **W009238-6F-A-N**

NAME AND ADDRESS OF APPLICANT:

KINGFISH MAINE
33 Salmon Farm Road
Franklin, ME 04634

COUNTY: **WASHINGTON**

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

9 Dun Garvin Road
Jonesport, ME 04649

RECEIVING WATER / CLASSIFICATION: **Chandler Bay, Class SB**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER:

Ms. Megan Sorby
E-mail: megan@kingfish-maine.com
Tel: (502) 387-8673

1. APPLICATION SUMMARY

On August 7, 2020, Kingfish Maine (Kingfish or permittee) submitted an application to the Department of Environmental Protection (Department) for a new Maine Pollutant Discharge Elimination System (MEPDES) permit/Waste Discharge License (WDL) for the daily maximum discharge of 28.7 million gallons per day (MGD) of treated wastewater associated with a land based recirculating aquaculture system (RAS) to Chandler Bay, Class SB, in Jonesport, Maine. Kingfish also submitted an application to the Department of Conservation, Agriculture, and Forestry (DACF) Submerged Lands Program for a Submerged Lands Lease.

The total 28.7 MGD flow is made up of 6.5 MGD of fish culture or process water and whereas 22.2 MGD of water that is used for heat recovery in the facility (not process water). The permittee proposes to rear Yellowtail Kingfish (*Seriola lalandi*) from on-site broodstock through each life stage to harvest and initial processing. At full production, the facility will be able to produce 8,000 metric tons or about 16 million pounds of fish per year. Kingfish proposes to begin construction once all required permits (including but not limited to, a Natural Resources Protection Act or NRPA permit to be filed) have been obtained.

a. Application - On August 7, 2020, Kingfish submitted an application to the Department for a new MEPDES permit/WDL for the daily maximum discharge of 28.7 million gallons per day (MGD) of treated wastewater associated with a land based recirculating aquaculture system (RAS) to Chandler Bay, Class SB, in Jonesport, Maine. See **Attachment A** of this Fact Sheet for a location map. The total 28.7 MGD flow is made up of 6.5 MGD of fish culture or process water and 22.2 MGD of water that is used for heat recovery in in the facility (not process water). The permittee proposes to rear Yellowtail Kingfish (*Seriola lalandi*) from on-site broodstock, through each life stage to harvest and initial processing. At full production, the facility will be able to produce 8,000 metric tons or about 16 million pounds of fish per year. Kingfish proposes to begin construction once all required permits have been obtained.

   On August 17, 2020, the Department formally accepted the application as complete and accepted the application for processing pursuant to 06-096 C.M.R. Chapter 2, *Rules Concerning the Processing of Applications and other Administrative Matters* (June 9, 2018).

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1. APPLICATION SUMMARY (cont'd)

b. Source Description -The facility is a proposed land-based recirculating aquaculture facility for the culture and grow out of 6,000-8,000 metric tons per year of Yellowtail Kingfish (*Seriola lalandi*). The application also includes plans for potential processing onsite. Intake water for the facility is described in several parts of the Kingfish application, including those quoted below.

Kingfish states that [it]"will . . . be drawing water from Chandler Bay, allowing for ongoing monitoring of the water quality. [Its] intake pipes will be located at approximately half the distance, or 1,312 ft (400m) from shore along the same trajectory as the effluent pipes . . . . [It does] not utilize water from any other sources than Chandler Bay (99.4%) or private on-site wells (0.6%) . . . .The facility will take in 19,812 gallons per minute (gpm) of seawater from Chandler Bay through two seawater intake pipes." This leaves approximately 140 gpm to be pumped from onsite wells. Kingfish states that the total intake amount will "go through large particle filtration and then be piped to the pump station to be split in two ways" as explained below.

1. Heat Recovery Water
15,410gpm (3500m^3/hr) of seawater will go through heat exchangers where Kingfish Maine will extract the thermal energy in the water in a countercurrent flow system. This energy will be utilized in heating the temperature of the water in the culture systems to our target range. This heat recovery water does not come in contact with culture water or fish. It has reduced suspended solids and colder temperature than when it was taken into the pump station but is otherwise unaltered from its natural state. Therefore, it will not go through any further treatment but will go directly to the discharge reservoir prior to being discharged in Outfall A or B.

2. Culture System & Processing Water
4,402 gpm (1000m^3/hr) of seawater will be filtered for medium and fine solids and sent to a holding tank, which will feed hatchery, growout, and processing operation.

Culture System Water- Water leaving the culture tanks will go through mechanical filtration, which removes large and fine solids, within the recirculating system (40-60um). After mechanical filtration, new ("make up") water will be added and an equal amount of water will leave the culture system and go through heat exchangers, where we will recover all possible thermal energy from the discharged culture water by utilizing a countercurrent flow system and heat pumps with the *Heat Recovery Water.* The energy will be redirected back to maintain target water temperature in the culture systems. After this step, the culture system water will then be piped to the discharge water filtration system. In this system, water will go through large and fine solids filtration (mechanical, 100um), followed by biofilters for the reduction of nutrient load, and finally, sterilization. The water will then combine with other effluent sources in the discharge reservoir prior to being discharged in Outfall A or B.

1. APPLICATION SUMMARY (cont'd)

Processing Water-The processing plant will use a small amount of the total seawater listed above in addition to a maximum of 107 gpm ($25m^3$/hr) of freshwater as well. All water utilized in processing plant will be collected and go through its own dedicated filtration system first, consisting of a primary flocculation to bind fats, oils, and other biproducts of processing; mechanical filtration to remove solids and bound materials; then a secondary flocculation and water clarification. It will then progress to the main discharge water filtration system, where it will combine with the outflow from the culture systems, go through the same filtration steps, meaning this water, just as the culture water, has redundant filtration systems prior to discharge. It will finally go to the discharge reservoir with all filtered water prior to being discharged in Outfall A or B.

Total Flow: 28.7 million gallons per day, of which

- 6.5 million gallons is for the culture and processing of fish ("culture water", "processing water"), and
- 22.2 is used in reclaiming thermal energy from the water prior to discharge ("heat recovery water")

See **Attachment B** of this Fact Sheet for a process flow schematic for the facility.

c. Wastewater Treatment – Kingfish states that "[t]he wastewater discharge from the proposed Kingfish facility will include a combination of heat recovery water and culture water from the RAS as explained in the quotations below.

1. *Heat Recovery water* - "The heat recovery water includes only water that is taken from Chandler Bay and cycled through heat exchangers to remove heat energy. Heat recovery water does not interact with any RAS processes involved in growing fish and, thus, is identical to ambient seawater conditions in Chandler Bay in all aspects (e.g., salinity, nutrient characteristics) except for water temperature. During most times of the year, the temperature of water returned to Chandler Bay is anticipated to be approximately 5 degrees (F) below (i.e., colder than) ambient conditions due to the heat recovery process that will be used by Kingfish to maintain growing conditions in the culture tanks.[2]" *Footnote included here*: [2]This is expected to be true throughout the year with the only exception of when surface water temperatures in Chandler Bay reach freezing. Wastewater discharges during these times will be the same temperature as ambient surface water." As stated previously under "Source Description," "This heat recovery water does not come in contact with culture water or fish. It has reduced suspended solids and colder temperature than when it was taken into the pump station but is otherwise unaltered from its natural state. Therefore, it will not go through any further treatment but will go directly to the discharge reservoir prior to being discharged in Outfall A or B."

1. APPLICATION SUMMARY (cont'd)

2. *Culture and processing water* - "The culture water from the RAS facility includes water that interacts with RAS processes involved in growing fish. Culture water from the hatchery and grow-out tanks in which yellowtail kingfish will be raised at the facility will be discharged to Chandler Bay. The suspended solids and nutrient (primarily phosphorus and nitrogen) content of the culture water, as well as the biological oxygen demand (BOD) condition of the culture water, may be present at levels above ambient conditions in Chandler Bay."

   "Water leaving the culture tanks will go through mechanical filtration, which removes large and fine solids, within the recirculating system (40-60um). After mechanical filtration, new ("make up") water will be added and an equal amount of water will leave the culture system and go through heat exchangers, where we will recover all possible thermal energy from the discharged culture water by utilizing a countercurrent flow system and heat pumps with the *Heat Recovery Water.* The energy will be redirected back to maintain target water temperature in the culture systems. After this step, the culture system water will then be piped to the discharge water filtration system. In this system, water will go through large and fine solids filtration (mechanical, 100um), followed by biofilters for the reduction of nutrient load, and finally, sterilization. The water will then combine with other effluent sources in the discharge reservoir prior to being discharged in Outfall A or B."

   Processing Water – "The processing plant will use a small amount of the total seawater listed above in addition to a maximum of 107 gpm (25m3/hr) of freshwater as well. All water utilized in processing plant will be collected and go through its own dedicated filtration system first, consisting of a primary flocculation to bind fats, oils, and other biproducts of processing; mechanical filtration to remove solids and bound materials; then a secondary flocculation and water clarification. It will then progress to the main discharge water filtration system, where it will combine with the outflow from the culture systems, go through the same filtration steps, meaning this water, just as the culture water, has redundant filtration systems prior to discharge. It will finally go to the discharge reservoir with all filtered water prior to being discharged in Outfall A or B.

   As mentioned in "Summary of Kingfish Maine Water Use & Filtration", solids filtration for the culture water, both large and fine particles, will occur using fish exclusion barriers and drum or disc filters to remove solids down to 40-60um in the culture systems, and 100um in the additional wastewater treatment system. The solids collected in the processing area will be filtered utilizing similar mechanical filtration and, if required, include chemical flocculants for improved clarification and removal."

1. APPLICATION SUMMARY (cont'd)

Kingfish further states that "[a]ll solid waste will be combined and trucked offsite for disposal. Kingfish Maine is exploring secondary uses for any waste from processing activities on site, such as composting with Coast of Maine Organic Products Inc., an organic compost producer located in East Machias, ME. Due to the high or concentrated salt level in our sludge, options for additional uses are limited, but we continue to explore all new technology for making use of this nutrient rich material."

Sanitary wastewater generated at the facility will be handled with an onsite septic system to be constructed after all applicable permits are obtained.

The process flow diagram in **Attachment B** of this Fact Sheet shows how water and contaminants are treated and then discharged into Chandler Bay.

Intake and Outfall Structures – Kingfish states that "[its] intake pipes will be located at approximately half the distance, or 1,312 ft (400m) from shore along the same trajectory as the effluent pipes." The outfall pipes are 48" diameter and will be place approximately 30 feet below the mean low water at their discharge point. The discharge point is 2,624 feet from the shore of the site.

Kingfish further states that "[t]he point of discharge (Outfall A) will be equipped with a multiport diffuser, equipped with duckbill style valves to maintain consistency effluent flow rate. Ports will be oriented upward from the seafloor."

"This outfall (Outfall B) is redundant for Outfall A, i.e. it only operates when A is not (i.e., for cleaning and maintenance); flow is the same as A and NOT in addition to A. The point of discharge will be equipped with a multiport diffuser, equipped with duckbill style valves to maintain consistency effluent flow rate. Ports will be oriented upward from the seafloor."

"Kingfish . . . incorporated a diffuser design on the end of each effluent pipe in order to aid in improved dispersion and mixing of the flow; this includes a six-port diffuser, each measuring 8.3 inches (211mm) with duckbill-style valves as well as an additional three, capped ports for redundancy and cleaning."

See **Attachment C** of this Fact Sheet for a schematic of the outfall and intake pipes.

2. CONDITIONS OF PERMITS

Conditions of licenses, 38 M.R.S. § 414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require the application of best practicable treatment (BPT), be consistent with the federal 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, *Certain deposits and discharges prohibited,* 38 M.R.S. § 420 and Department rule, *Surface Water Toxics Control Program,* 06-096 C.M.R. ch. 530, require the regulation of toxic substances not to exceed levels set forth in *Surface Water Quality Criteria for Toxic Pollutants,* 06-096 C.M.R. ch. 584 and that ensure safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected.

3. RECEIVING WATER QUALITY STANDARDS

Classifications of estuarine and marine waters, 38 M.R.S. § 469, states that all estuarine and marine waters lying within the boundaries of coastal counties of the State of Maine and that are not otherwise classified are Class SB waters. Additionally, 38 M.R.S. § 469(7), states that "all estuarine and marine waters lying within the boundaries of Washington County and that are not otherwise classified are Class SB waters." The area of the discharge is one of these waters and is therefore Class SB. *Standards for classification of estuarine and marine waters*, 38 M.R.S. § 465-B(2), describes the standards for Class SB waters as follows:

A. *Class SB waters must be of such quality that they are suitable for the designated uses of recreation in and on the water, fishing, aquaculture, propagation and harvesting of shellfish, industrial process and cooling water supply, hydroelectric power generation, navigation and as habitat for fish and other estuarine and marine life. The habitat must be characterized as unimpaired.*

B. *The dissolved oxygen content of Class SB waters may not be less than 85% of saturation. Between April 15th and October 31st, the number of enterococcus bacteria in these waters may not exceed a geometric mean of 8 CFU per 100 milliliters in any 90-day interval or 54 CFU per 100 milliliters in more than 10% of the samples in any 90-day interval. The number of total coliform bacteria or other specified indicator organisms in samples representative of the waters in shellfish harvesting areas may not exceed the criteria recommended under the National Shellfish Sanitation Program, United States Food and Drug Administration.*

3. RECEIVING WATER QUALITY STANDARDS (cont'd)

C. Discharges to Class SB waters may not cause adverse impact to estuarine and marine life in that the receiving waters must be of sufficient quality to support all estuarine and marine species indigenous to the receiving water without detrimental changes in the resident biological community. There may be no new discharge to Class SB waters that would cause closure of open shellfish areas by the Department of Marine Resources. For the purpose of allowing the discharge of aquatic pesticides approved by the department for the control of mosquito-borne diseases in the interest of public health and safety, the department may find that the discharged effluent will not cause adverse impact to estuarine and marine life as long as the materials and methods used provide protection for nontarget species. When the department issues a license for the discharge of aquatic pesticides authorized under this paragraph, the department shall notify the municipality in which the application is licensed to occur and post the notice on the department's publicly accessible website.

4. RECEIVING WATER QUALITY CONDITIONS

The State of Maine 2016 Integrated Water Quality Monitoring and Assessment Report, prepared by the Department pursuant to Sections 303(d) and 305(b) of the federal Clean Water Act, lists Chandler Bay, Jonesport in:

- Category 5D – *Estuarine and Marine Waters Impaired by Legacy Pollutants* due to elevated levels of PCBs and other persistent, bioaccumulating substances in tomalley**.**

  All estuarine and marine waters capable of supporting American lobster are listed in Category 5-D for shellfish consumption due to elevated levels of PCBs and other persistent, bioaccumulating substances in tomalley. Also included in a statewide marine consumption advisory is a variety of saltwater finfish and shellfish based on elevated mercury, PCB and dioxin levels. Safe eating guidelines for sensitive populations are presented at the following website: www.maine.gov/dhhs/mecdc/environmental-health/eohp/fish/saltwater.htm

The Department has made a best professional judgment (BPJ) determination based on information gathered to date and the information in this Fact Sheet that, as permitted, the discharge will not cause or contribute to the failure of the receiving water to meet the standards of its ascribed classification and the designated uses of the waterbody will continue to be maintained and protected. If future modeling or ambient water quality monitoring determines the discharge is causing or contributing to the non-attainment of standards, this permit will be re-opened pursuant to Special Condition M, *Reopening of Permit For Modification*, to impose more stringent limitations to meet water quality standards.

5. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

a. Flow: This permitting action is establishing a daily maximum flow limitation of 28.7 MGD for Outfall #001A or Outfall #001B based on information provided by the permittee.

b. Dilution Factors: *Enforcement generally,* 38 M.R.S. § 451, states in relevant part:

> *After adoption of any classification by the Legislature for surface waters or tidal flats or sections thereof, it is unlawful for any person, firm, corporation, municipality, association, partnership, quasi-municipal body, state agency or other legal entity to dispose of any pollutants, either alone or in conjunction with another or others, in such manner as will, after reasonable opportunity for dilution, diffusion or mixture with the receiving waters or heat transfer to the atmosphere, lower the quality of those waters below the minimum requirements of such classifications, or where mixing zones have been established by the department, so lower the quality of those waters outside such zones, notwithstanding any exemptions or licenses which may have been granted or issued under sections 413 to 414-B.*
>
> *The department may establish a mixing zone for any discharge at the time of application for a waste discharge license. The department shall attach a description of the mixing zone as a condition of a license issued for that discharge. After opportunity for a hearing in accordance with section 345-A, the department may establish by order a mixing zone with respect to any discharge for which a license has been issued pursuant to section 414 or for which an exemption has been granted by virtue of section 413, subsection 2.*
>
> *The purpose of a mixing zone is to allow a reasonable opportunity for dilution, diffusion or mixture of pollutants with the receiving waters before the receiving waters below or surrounding a discharge will be tested for classification violations. In determining the extent of any mixing zone to be established under this section, the department may require from the applicant testimony concerning the nature and rate of the discharge; the nature and rate of existing discharges to the waterway; the size of the waterway and the rate of flow therein; any relevant seasonal, climatic, tidal and natural variations in such size, flow, nature and rate; the uses of the waterways in the vicinity of the discharge, and such other and further evidence as in the department's judgment will enable it to establish a reasonable mixing zone for such discharge. An order establishing a mixing zone may provide that the extent thereof varies in order to take into account seasonal, climatic, tidal and natural variations in the size and flow of, and the nature and rate of, discharges to the waterway.*

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

> *Where no mixing zones have been established by the department, it is unlawful for any person, corporation, municipality or other legal entity to dispose of any pollutants, either alone or in conjunction with another or others, into any classified surface waters, tidal flats or sections thereof, in such manner as will, after reasonable opportunity for dilution, diffusion, mixture or heat transfer to the atmosphere, lower the quality of any significant segment of those waters, tidal flats or sections thereof, affected by such discharge, below the minimum requirements of such classification, and notwithstanding any licenses which may have been granted or issued under sections 413 to 414-B.*

Surface Water Toxics Control Program, 06-096 C.M.R. ch. 530, § 4(A)(2)(a) (calculation of dilution factors) states in relevant part:

> *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 level 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.*

Modeling for Near-field and Far-field Dilution

The United States Environmental Protection Agency (USEPA) supports the use of the CORMIX model for calculating near-field dilution factors. Page 76 of the *USEPA Technical Support For Water Quality Based Toxics Control, March 1991*, states in relevant part:

> *The first model, CORMIX may be the most useful to regulators since it is an expert system that guides the user in selecting an appropriate modeling strategy for rivers or estuaries.*
>
> *CORMIX is a series of software elements for the analysis of a submerged buoyant or nonbuoyant discharge containing conventional or toxic pollutants and entering into stratified or unstratified watercourses, with emphasis on the geometry and dilution characteristics of the initial mixing zone.*

Near-Field Dilution

Near-field dilution factors are applicable to pollutants that have the potential for an immediate adverse effect on the flora or fauna of a marine ecosystem. For example, marine organisms react to elevated levels of toxic pollutant such as total metals within hours or days of being exposed. Therefore, estimating acute and chronic dilution factors with a steady state model such as the CORMIX model is supported by Department rules and USEPA technical support documents.

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

In its application, Kingfish states that "[it] performed both near-field modelling using CORMIX and far-field modeling using TUFLOW, a 3-dimensional far-field model, of the facility's effluent in order to locate the outfall in a position that would maximize mixing and dispersion. Kingfish Maine assessed modelling results for effluent points progressively farther from shore in order to achieve the point of maximum mixing and dispersion with minimal disturbance to local activity."

Far-field dilution

Far-field dilution factors are applicable to pollutants that have the potential for a more subtle and/or systemic types of effects on the flora or fauna of a marine ecosystem, or pollutants that exert their influence on broader time scales. For example, biochemical oxygen demand (BOD_5) decays over time and takes five days after being discharged to exert its implied influence on ambient dissolved oxygen. Eutrophication associated with excessive nitrogen loadings happens on significantly broader spatial and time scales in marine systems such as Chandler Bay, due in large part to the very dynamic nature of the bay.

Unlike the CORMIX model that is supported by Department rules and USEPA technical support documents for estimating near-field acute and chronic dilution factors, there currently are no state or federal rules or statutes that designate acceptable methodologies to model far-field dilution. Therefore, modeling personnel must use BPJ to select modeling tools that are most appropriate for a particular receiving water and discharge characteristics.

Title 38 M.R.S. § 451 provides some guidance regarding dilution factors that may be considered by the Department:

> *In determining the extent of any mixing zone to be established under this section, the department may require from the applicant testimony concerning the nature and rate of the discharge; the nature and rate of existing discharges to the waterway; the size of the waterway and the rate of flow therein; any relevant seasonal, climatic, tidal and natural variations in such size, flow, nature and rate; the uses of the waterways in the vicinity of the discharge, and such other and further evidence as in the department's judgment will enable it to establish a reasonable mixing zone for such discharge.*

For this permitting action, Kingfish used a three-dimensional, far-field model called TUFLOW to estimate the far-field dilution factors for the discharge to Chandler Bay.

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

The Department's practice is to use a more normalized condition, such as the mean, for far-field dilution factor purposes. The staff summarized the rationale for the Department's use of a more normalized condition in this context as it more accurately reflects the impact (or lack thereof) of nitrogen and BOD on the receiving water given the longer response times (3-14 days) associated with pollutants.

Based on Department staff's review and analysis of Kingfish's application, the Department finds that the proposed near-field factor (acute and chronic 60:1) and far-field dilution factor (173:1) are appropriate and will be utilized for the discharge. The Department finds use of the CORMIX model and the TUFLOW models are supported by Department rule and the USEPA for estimating the geometry and dilution characteristics of the receiving waters and the resulting dilution factors are based on a sound scientific rationale and meet the dilution licensing criteria established in 38 M.R.S., § 451 and 06-096 C.M.R. ch. 530.

Special Condition F, *Dye Study,* of this permit requires the permittee to conduct a dye study once operations have commenced and a steady state flow of 28.7 MGD has been achieved. The information derived from this dye study will assist the Department in further assessing the hydrodynamics of the receiving water and dilution factors associated with the discharge. Should future statistical evaluation conducted in accordance with the methodology in Chapter 530 of the Department's rules indicate the discharge is exceeding or has a reasonable potential to exceed applicable AWQC, the Department will reopen the permit pursuant to Special Condition L, *Reopening of Permit for Modification*, to establish limitations as necessary.

c. Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS):

As discussed above in section 3, the receiving water in this case is Class SB. *Standards for classification of estuarine and marine waters*, 38 M.R.S. § 465-B(2), states in relevant part:

Class SB waters. Class SB waters shall be the 2nd highest classification

B. The dissolved oxygen content of Class SB waters may not be less than 85% of saturation.

C. Discharges to Class SB waters may not cause adverse impact to estuarine and marine life in that the receiving waters must be of sufficient quality to support all estuarine and marine species indigenous to the receiving water without detrimental changes in the resident biological community.

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

Classification of Maine waters, 38 M.R.S. § 464 (4)(F)(3), states in relevant part:

The department may only issue a discharge license pursuant to section 414-A or approve water quality certification pursuant to the Federal Water Pollution Control Act, Section 401, Public Law 92-500, as amended, if the standards of classification of the water body and the requirements of this paragraph are met. The department may issue a discharge license or approve water quality certification for a project affecting a water body in which the standards of classification are not met if the project does not cause or contribute to the failure of the water body to meet the standards of classification.

Conditions of licenses, 38 M.R.S. § 414-A(1)(D), states in relevant part (emphasis added):

The discharge will be subject to effluent limitations that require application of the best practicable treatment. "Effluent limitations" means any restriction or prohibition including, but not limited to, effluent limitations, standards of performance for new sources, toxic effluent standards and other discharge criteria regulating rates, quantities and concentrations of physical, chemical, biological and other constituents that are discharged directly or indirectly into waters of the State. "Best practicable treatment" means the methods of reduction, treatment, control and handling of pollutants, including process methods, and the application of best conventional pollutant control technology or best available technology economically achievable, 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, as amended, and published in 40 Code of Federal Regulations. 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 judgment, after consultation with the applicant and other interested parties of record. In determining best practicable treatment for each category or class, the department shall consider 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.

BOD_5 is a measurement of dissolved oxygen that is used by aerobic microorganisms when decomposing organic matter in water. Elevated BOD_5 discharged into a receiving water can cause the ambient dissolved oxygen to be depleted. TSS are solids in water that can be trapped by a filter. Elevated levels of TSS can settle to the bottom of receiving water and impact the resident biological community.

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

Currently, there are no state or federally promulgated best practicable treatment (BPT) numeric standards for BOD_5 and TSS for land-based RAS facilities. In 2002, the USEPA promulgated standards for RAS facilities based on narrative best management practices (BMPs) controls but opted not to establish numerical standards for BOD_5 and TSS at that time. However, the Department has historically been more stringent than the federally promulgated standards and has established numeric limitations for both parameters. The Department has issued MEPDES permits/WDLs for other RAS facilities establishing 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 BPT for RAS facilities. These limits were based on BPT recommendations included in USEPA's 2002 proposed draft National Effluent Guidelines for TSS for re-circulated fish hatchery wastewater receiving a secondary level of treatment and the Department's long-standing view of the relationship between TSS and BOD_5. **For the proposed discharge from the Kingfish facility, mass limits will be calculated based on the monthly average flow limit of the fish culture wastewater of 6.5 MGD**, the applicable concentration limits of 30 mg/L and 50 mg/L (based on the Department's historic practice and BPJ) and a conversion factor of 8.34 lbs./gal for water.

The limits are therefore calculated as follows:

Monthly average: (6.5 MGD)(30 mg/L)(8.34 lbs./gal) = 1,626 lbs./day

Daily maximum: (6.5 MGD)(50 mg/L)(8.34 lbs./gal) = 2,711 lbs./day

The Department staff modeled the impact of the BPT discharge levels calculated above for BOD_5 and TSS on the ambient dissolved oxygen and determined the discharge would not have a discernable influence on ambient dissolved oxygen. The proposed discharge of BOD_5 at 30 mg/L has the potential to increase ambient BOD_5 concentrations by up to 0.17 mg/L, based on a far-field dilution factor of 173:1 (30 mg/L/173 = 0.17 mg/L).

BOD is exerted at an approximate rate of 20% per day (20% per day for 5 days equals 100%), which would suggest a relative influence on dissolved oxygen of approximately 0.17 mg/L (0.17 mg/L/5 = 0.03 mg/L). This degree of influence is significantly less than what could be measured within a reliable degree of accuracy. Dissolved oxygen monitoring instrumentation is only accurate to within plus or minus 0.1 mg/L.

The pipes will discharge at approximately 30 feet below the mean low water mark and will be fitted with a multiport diffuser designed to enhance mixing with the receiving water. Based on Department staff's review and analysis, the Department finds that establishing an application of BPT-based limitations for BOD_5 and TSS will enable Kingfish's discharge to meet the dissolved oxygen standard licensing criteria of 85% saturation and will not cause or contribute to failure of the receiving water to meet the standards of its assigned classification.

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

d. Total Nitrogen (TN) – *Classification of Maine Waters,* 38 M.R.S. § 464, sets forth provisions governing the states antidegradation policy and states in relevant part:

3. The department may only issue a discharge license pursuant to section 414-A or approve water quality certification pursuant to the Federal Water Pollution Control Act, Section 401, Public Law 92-500, as amended, if the standards of classification of the water body and the requirements of this paragraph are met. The department may issue a discharge license or approve water quality certification for a project affecting a water body in which the standards of classification are not met if the project does not cause or contribute to the failure of the water body to meet the standards of classification.
. . . .

5. The department may only issue a discharge license pursuant to section 414-A or approve water quality certification pursuant to the United States Clean Water Act, Section 401, Public Law 92-500, as amended, which would result in lowering the existing quality of any water body after making a finding, following opportunity for public participation, that the action is necessary to achieve important economic or social benefits to the State and when the action is in conformance with subparagraph (3). That finding must be made following procedures established by rule of the board.

Conditions of licenses, 38 M.R.S. §414-A (1)(D) states in relevant part:

The Department shall issue a license for a discharge of pollutants only if it finds that:

The discharge will be subject to effluent limitations that require application of the best practicable treatment. "Effluent limitations" means any restriction or prohibition including, but not limited to, effluent limitations, standards of performance for new sources, toxic effluent standards and other discharge criteria regulating rates, quantities and concentrations of physical, chemical, biological and other constituents that are discharged directly or indirectly into waters of the State. "Best practicable treatment" means the methods of reduction, treatment, control and handling of pollutants, including process methods, and the application of best conventional pollutant control technology or best available technology economically achievable, 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, as amended, and published in 40 Code of Federal Regulations. 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 judgment, after consultation with the applicant and other interested parties of record. In determining best practicable treatment for each category or class, the department shall consider 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.

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

Nitrogen is generally the limiting nutrient for primary productivity in marine waters. Discharges of excess quantities of immediately bioavailable nitrogen can cause algal blooms in the receiving waters, which can lead to negative impacts to dissolved oxygen levels. Immediately bioavailable nitrogen typically consists of dissolved inorganic forms, including nitrate (NO_3^-), nitrite (NO_2^-), and ammonium (NH_4^+). Total kjeldahl nitrogen (TKN) is the sum of organic nitrogen, ammonia (NH_3), and ammonium (NH_4^+).

To calculate Total Nitrogen (TN), the concentrations of nitrate and nitrite are determined and added to TKN. With the exception of ammonia, nitrogen is not acutely toxic; thus, at this time, the Department considers a far-field dilution model to be most appropriate when evaluating the more systemic types of influences associated with nitrogen in the marine environment.

Currently, there are no state or federally promulgated BPT standards for land-based RAS facilities and the State of Maine has not promulgated numeric ambient water quality criteria for TN. Since 2015, on a case-by-case basis, Department staff have completed reasonable potential (RP) analyses upon renewal of wastewater discharge licenses for those facilities that discharge nitrogen directly to marine waters of the state. To date, the Department's RP analyses have generally utilized two TN threshold values to address aquatic life use of Maine's marine waters that the Department staff believe are appropriate here and are as follows:

- 0.32 mg/L for protection of eelgrass, when historically mapped as present within close proximity to the discharge in question; and

- 0.45 mg/L for protection of dissolved oxygen, when eelgrass has not been historically mapped within close proximity to the discharge in question.

The Department's definition of "close proximity" with regard to eelgrass has been eelgrass located approximately 0.5 km from the wastewater outfall, or by BPJ based on known eelgrass resources.

The Department finds that using these thresholds values is consistent with the Department's historic practices and is appropriate for Kingfish's permit.

The 0.32 mg/L TN threshold value the Department currently uses as the threshold value for the protection of eelgrass is a concentration used regionally by USEPA permitting staff.

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

The USEPA decision to use 0.32 mg/L was due to its numerical midpoint between 0.34 mg/L, a concentration deemed protective of eelgrass by the Massachusetts Estuary Project, and 0.30 mg/L, an average concentration from the lower Piscataqua River, where the Department observed epiphytic growth on eelgrass that resulted in a 2012 impaired waters listing due to eelgrass loss. The TN threshold value of 0.45 mg/L used for the protection of dissolved oxygen originates from a New Hampshire Department of Environmental Services (NH DES) guidance document for the Great Bay estuary (NH DES 2009) and was utilized in an EPA-issued wastewater discharge license in the Taunton River estuary in Massachusetts (EPA 2015).

During Maine Department of Marine Resources surveys in 1997 and 2009, eelgrass beds were mapped as present as close as 1.0 and 1.4 km, respectively, to the west of the Kingfish outfall location **(Attachment D)**. Although eelgrass has not been documented in "close proximity" to the Kingfish outfall location, the permittee's TUFLOW FV modeling estimates suggest that a maximum effluent nitrogen contribution of approximately 0.038 mg/L will occur along the shallow subtidal shoreline in the location of historically mapped eelgrass. Due to this proposed effluent influence on eelgrass habitat, the Department is using BPJ to apply the nitrogen threshold value of 0.32 mg/L for the protection of eelgrass as well as the nitrogen threshold value of 0.45 mg/L for the protection of dissolved oxygen in the far field.

See **Attachment D** of this Fact Sheet for map of eelgrass locations.

The far-field dilution factor to be assessed for the eelgrass and dissolved oxygen threshold values is 173:1 based on the most confining physical feature, the intertidal and shallow subtidal shoreline located to the west and northwest of the outfall. The application of this far-field dilution factor is detailed in the below "Discussion of Antidegradation" section. In addition to the nitrogen threshold values, the Department's staff utilize a weight of evidence approach to determine attainment of water quality standards and place a greater weight on ambient water chemistry and biological data, including dissolved oxygen, pH, and chlorophyll *a* to determine whether the discharge, if permitted, will cause or contribute to violations of water quality.

A paucity of data exist for characterizing ambient water column conditions in the vicinity of the outfall during the May to October time period considered by the Department as most environmentally sensitive. Total nitrogen concentrations from these months are only available from a single site in outer Chandler Bay that was sampled by the EPA once during each of 2004, 2005, 2009 and 2010 **(Attachment D)**. To establish a background TN concentration for the purposes of evaluating possible nitrogen impacts from a neutrally buoyant wastewater plume, Department staff averaged surface and mid-water data from this site for the four sampling events to approximate representative water column condition at the outfall location. Based on this calculation, the Department will utilize a mean TN value of 0.26 mg/L for the ambient concentration at the outfall location and for the antidegradation calculations as follows.

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

Analysis of Dissolved Oxygen as the Environmental Response Indicator

Given:

Critical water quality threshold = 0.45 mg/L
Background concentration = 0.26 mg/l
Kingfish's proposed discharge concentration of total nitrogen = 6.6 mg/L
Far field factor = 173:1 (calculated by Kingfish and accepted by the Department as described in Section 5(b) of this Fact Sheet)

Finding: Remaining Assimilative Capacity Calculation

Remaining Assimilative Capacity (RAC) Concentration of Receiving Water
Threshold – Background = RAC
0.45 mg/L – 0.26 mg/L = 0.19 mg/L

Total RAC Concentration for Kingfish Discharge
Dilution Factor x RAC = Total RAC for Kingfish Discharge
173 x 0.19 mg/L = 32.87 mg/L

Concentration threshold to perform Anti-deg analysis (finding 20% of RAC of receiving water)
RAC for Kingfish Discharge x 0.2 (or 20%) = 20% Anti-deg threshold
32.87 mg/L x 0.2 = **6.6 mg/L**

The threshold for performing anti-deg analysis for this discharge is 6.6 mg/L. Kingfish is proposing to discharge at 6.6 mg/L, therefore, the Kingfish discharge does not exceed the anti-degradation provision threshold of 20% of the RAC for dissolved oxygen as an environmental response indicator.

Conversion of Proposed Kingfish Concentration Discharge to Pounds
Flow x Conversion Factor x Concentration = lbs./day
28.7 MGD x 8.34 x 6.6mg/L = 1,580 lbs./day

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

Analysis of Eelgrass as the Environmental Response Indicator

Given:

Critical water quality threshold - 0.32 mg/L
Background concentration – 0.26 mg/l
Kingfish's proposed discharge concentration – 6.6 mg/L
Dilution factor: 173:1

Finding: Proposed effluent limitation

Remaining Assimilative Capacity (RAC) Concentration of Receiving Water
Threshold – Background = RAC
0.32 mg/L – 0.26 mg/L = 0.06 mg/L

Total RAC Concentration for Kingfish Discharge
Dilution Factor x RAC = Total RAC for Kingfish Discharge
173 x 0.06 mg/L = 10.38 mg/L

Concentration threshold to perform Anti-deg analysis (finding 20% of RAC of receiving water)
RAC for Kingfish Discharge x 0.2 (or 20%) = 20% Anti-deg threshold
10.38 mg/L x 0.2 = **2.1 mg/L**

The threshold for performing anti-deg analysis for this discharge is 2.1 mg/L. Kingfish is proposing to discharge at 6.6 mg/L, therefore, Kingfish has triggered the anti-degradation provision threshold of 20% of the RAC for their discharge.

Conversion of 20% Concentration Threshold to Pounds
Flow x Conversion Factor x Concentration = lbs./day
28.7 MGD x 8.34 x 2.1 mg/L = 503 lbs./day

Conversion of Proposed Kingfish Concentration Discharge to Pounds
Flow x Conversion Factor x Concentration = lbs./day
28.7 MGD x 8.34 x 6.6 mg/L = 1,579.76 (or 1,580) lbs./day

What percent of the Total RAC is Kingfish proposing to use?
Proposed Kingfish Discharge ÷ Total RAC x 100 = Percent of Total RAC that Kingfish is proposing to use:

6.6 mg/L ÷ 10.38 mg/L x 100 = 64%

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

Based on the Department staff's review and analysis and the record information as described in this Fact Sheet, the Department finds that Kingfish's proposed discharge concentration of 6.6 mg/L would not meet the default antidegradation licensing criteria threshold of 2.1 mg/L at full flow. The proposed discharge value of 6.6 mg/L would consume 64% of the remaining assimilative capacity of the receiving water.

The determination that the proposed discharge would consume 64% of the remaining assimilative capacity for nitrogen as it pertains to eelgrass is not a determination that there is toxicity related to the discharge nor is it a determination that the discharge is in violation of any water quality criterion or standard. Rather, this determination triggers the Sate's antidegradation process in 38 M.R.S. § 464(4)(F)(5).

At 6.6 mg/L, according to the State's antidegradation policy and the staff's historical practice and best professional experience and judgment, this discharge concentration is considered a lowering of water quality and the applicant can meet the standard if it establishes and the Department makes the findings required by 38 M.R.S. § 464(4)(F)(5). This permit therefore limits Kingfish's discharge to the antidegradation threshold for dissolved oxygen at 6.6 mg/L or 1,580 lbs./day. **See Section 6 of this Fact Sheet for further discussion of and analysis pursuant to the State's antidegradation policy.**

e. Temperature - *Regulations Relating to Temperature*, 06-096 C.M.R. ch. 582, states in relevant part:

SUMMARY: These rules provide safeguards for fresh and salt water fauna in lakes and rivers of the state, by establishing instream limits on temperature resulting from thermal discharges.

and

5. Tidal Water Thermal Discharges – No discharge of pollutants shall cause the monthly mean of the daily maximum ambient temperatures in any tidal body of water, as measured 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.

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

Analysis of Temperature
Department staff reviewed and analyzed Kingfish's proposed discharge from the standpoint of applicable temperature criteria and note the following:

The factors of a worst-case scenario for the applicant's discharge at the full flow of 28.7 MGD would be as follows:

- Using a "critical period" (June 1 – September 1) from the above referenced Department Rule to derive the mean ambient daily maximum temperature of 14°C (56°F); website: https://live.seatemperature.org/north-america/united-states/jonesport.htm and;

- Using the maximum facility discharge temperature of 15°C (59°F), identified by the applicant in its application.

Calculation to assess the impacts of the discharge temperature are as follows:

Given:

An acute near-field dilution factor is the most conservative dilution factor for this analysis as temperature impacts to the environment are greatest shortly after being discharged to the receiving water.

Facility Effluent flow = 28.7 MGD (from the application)
Receiving water volume = 1693 MG - calculated from the acute near-field dilution factor of 60:1 as such:
60 x 28.7 MG = 1722
1722 MG - 28.7 MG = 1693 MG

Critical period average ambient temperature = 56 °F (14° C)
Facility daily max effluent temperature = 59 °F (15° C)

Find the change in temperature (ΔT):

$$\frac{(59°F)(28.7\ MGD) + (56°F)(1693\ MGD)}{1722\ MGD} = 56°F$$

56°F -56°F = **0°F < 1.5°F**

Based on Department's staff review and analysis and the record information as described in this Fact Sheet, the Department finds that this worst-case scenario of a change of 0°F for the critical period of June 1 to September 1 would be below 1.5°F, and thus meet the criteria in 06-096 C.M.R ch, 582. The Department has established a monitoring requirement to confirm the effluent discharge temperature.

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

f. Total Phosphorus – In the marine environment, nitrogen is considered the controlling nutrient that may cause or contribute to water quality issues such as algal blooms. However, total phosphorus may be a minor contributing factor as well. This permit is establishing a monitoring requirement for total phosphorus to determine the nutrient loading from the discharge to Chandler Bay.

g. Fish on Hand - This permitting action is establishing a 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 to evaluate management practices at the facility and trends in effluent quality and receiving water impacts as it relates to fish being held on site at any given time. A minimum monitoring frequency of once per month is based on the Department's BPJ of the monitoring frequency necessary to accurately characterize facility effluent conditions.

h. Toxics - Department rule *Surface Water Toxics Control Program,* 06-096 C.M.R ch. 530 requires the regulation of toxic substances not to exceed levels set forth in *Surface Water Quality Criteria for Toxic Pollutants,* 06-096 C.M.R ch. 584. Chapter 530 § (2)(D)(5) states:

The Department may waive or reduce testing or replace testing with requirements adequate to characterize the toxicity of identified pollutants when a discharger provides information adequate to:

a. Identify all toxic pollutants present or demonstrate that no toxic pollutants are used in its processes in toxic amounts;

b. Demonstrate that chemicals used in or formed by the discharger's industrial processes are not known or suspected to result in the formation of toxic pollutants in toxic amounts; and

c. Demonstrate the discharger does not process or treat waters known or suspected to contain toxic pollutants.

Kingfish's application provided a list of chemicals and therapeutants that may be used at the facility.

i. pH – This permitting action is establishing a pH range limit of 6.0 – 9.0 standard units (SU), which is considered by the Department as a BPT for fish hatcheries and rearing facilities and consistent with the pH limit established in discharge permits for those facilities.

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

j. Formalin – Formalin is a drug used to treat fungal infections and external parasites of finfish and finfish eggs.

Neither the Department nor USEPA have promulgated ambient water quality criteria for formalin. Using best professional judgment, the Department has established water quality-based thresholds for formalin based on Whole Effluent Toxicity (WET) testing on the water flea (*Ceriodaphnia dubia*) for 48-hour acute toxicity. For one-hour treatments, which are typical of most hatchery and rearing facility operations, the Department has established an ambient water quality threshold of 45 mg/L. Rarely, certain circumstances require use of formalin to control disease on additional rearing structures which results in the discharge of formalin for periods longer than the typical one-hour period for normal disease treatment. To ensure water quality standards are met and that formalin is not discharged at levels that would be toxic to aquatic life in the receiving water, the Department has established an ambient water quality threshold of 25 mg/L based on BPJ for a maximum 24-hour treatment period.

k. Total Residual Chlorine (TRC) - Limitations on TRC are specified to ensure that ambient water quality standards are maintained and that BPT technology is being applied to the discharge. Department permitting actions impose the more stringent of either a water quality-based or BPT-based limit.

1. With dilution factors as determined previously, end-of-pipe (EOP) water quality-based concentration thresholds for TRC may be calculated as follows:

Acute (A) Criterion	Chronic (C) Criterion	A & C Dilution Factors	Calculated Acute Threshold	Chronic Threshold
0.013 mg/L	0.0075 mg/L	60:1(A) 173:1 (C)	0.78 mg/L	1.3 mg/L

2. BPT-Based Limit
   a. The Department has established a daily maximum BPT-based limitation of 1.0 mg/L for facilities that disinfect their effluent with elemental chlorine or chlorine-based compounds.

   b. For facilities that need to dechlorinate the discharge in order to meet water quality based thresholds, the Department has established daily maximum and monthly average BPT-based limits of 0.3 mg/L and 0.1 mg/L, respectively.

Kingfish proposes to dechlorinate the effluent prior to discharge in order to achieve compliance with the water quality-based thresholds. The calculated acute water quality-based threshold of 0.78 mg/L is less stringent than the daily maximum BPT-based limit of 0.3 mg/L and therefore a daily maximum BPT-based limit of 0.3 mg/L for TRC is established in this permitting action.

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

The monthly average BPT-based limit of 0.1 mg/L is more stringent than the calculated chronic water quality-based threshold of 1.3 mg/L and therefore the monthly average BPT-based limit of 0.1 mg/L for TRC is established in this permitting action.

l. Fish Oil and Grease (O&G) – There are no National Effluent Guidelines (NEGs) for Yellowtail Kingfish, however, the biological similarities exist between the Kingfish and tuna species, therefore this permitting action is establishing O&G effluent mass limits and concentration limits based on the NEGs for tuna processing 40 CFR Part 408, Subpart N, *Standards of performance for new sources* that establish technology based mass limits of a monthly average of 0.76 lbs./1,000 lbs. of tuna processed and a daily maximum of 1.9 lbs./1,000 lbs. of tuna processed. Pursuant to USEPA guidance for development of NEG-based effluent limits, these rates are multiplied by the projected average production value of 50,706 lbs./day to yield conventional mass limits of a monthly average of 39 lbs./day and a daily maximum of 96 lbs./day.

The calculations are as follows:

Monthly average: 50,706 lbs./day (0.76 lbs./1,000 lbs.) = 39 lbs./day

Daily maximum: 50,706 lbs./day (1.9 lbs./1,000 lbs.) = 96 lbs./day

As for concentration limits, the Department applied the NEG production based monthly average and daily maximum limits of 0.76 lbs./1,000 lbs. and 1.9 lbs./1,000 lbs. respectively, to ensure BPT was being achieved under all production regimes.

The permit establishes requirements for grab sampling at a minimum frequency of twice per week.

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6. ANTI-DEGRADATION - IMPACT ON RECEIVING WATER QUALITY

The State of Maine's antidegradation policy states that water quality that exceeds the minimum applicable standards will be managed by the Department for the environmental, economic, and social benefit of the State. *See* 38 M.R.S. §§414-A(1)(C), 464(4)(F)(5) and the Conclusions section of this Permit. Where a new or increased discharge is proposed, the Department determines whether the discharge will result in a lowering of existing water quality. Pursuant to the policy, the Department must:

A. Determine whether the discharge will use greater than 20% of the remaining assimilative capacity for a water quality parameter. If the Department finds that the discharge does use greater than 20% of the remaining assimilative capacity for that water quality parameter, then,

B. The Department must determine whether the discharge will result in a lowering of existing water quality.

As discussed above in section 5.d. of this Fact Sheet, the Department has identified that Kingfish proposes to discharge nitrogen in an amount that will use greater than 20% of the remaining assimilative capacity for nitrogen as it relates to eelgrass as the indicator thresholds.

Pursuant to the State's antidegradation policy, the Department considers this to be a lowering of water quality.

Therefore, the Department has determined that the proposed nitrogen discharge from the Kingfish facility will result in a lowering of water quality as it relates to eelgrass habitat.

When, as here, the Department determines that a new or increased discharge will result in a lowering of existing water quality, the Department may still issue a discharge license if it finds, "following opportunity for public participation, that the action is necessary to achieve important economic or social benefits to the State" and that the standards of classification of the water body are met and that the discharge does not cause or contribute to the failure of the water body to meet the standards of classification. 38 M.R.S. §§ 414-A(1)(C), 464(4)(F)(5). In making this determination pursuant to the statutory standard, the Department staff generally considers the following on a case-by-case basis consistent with its historical practice and best experience and judgment as reflected in its non-binding Antidegradation Waste Discharge Program Guidance dated June 13, 2001 developed in consultation with the USEPA (only relevant parts included):

6. ANTI-DEGRADATION - IMPACT ON RECEIVING WATER QUALITY (cont'd)

A. Whether the lowering of water quality is necessary to accommodate new or increased commercial activity or industrial production while providing that (1) the discharge consistently complies with applicable effluent limitations requiring application of best practicable treatment or new source performance standards and (2) any existing treatment facility is appropriate and is optimally maintained.

B. The economic and social benefits that would result from the lowering of water quality. These benefits may include, but are not limited to, increases in employment, increases in local or regional income or purchasing power, increases in the community tax base, correction of an environmental or public health problem or nuisance situation (e.g., removal of overboard discharges or failing or substandard septic systems) and improved community stability. In the case of a lowering of water quality due to community growth, benefits may include an assessment of the economic and social consequences that would result if the new or increased discharge and the resulting lowering of water quality were not approved.

C. The technical availability, economic feasibility, and environmental effectiveness of alternatives that could reduce or eliminate the lowering of water quality. Alternatives may include, but are not limited to, alternative discharge locations, non-discharging alternatives, alternative methods of production, improved process controls, wastewater minimization technologies, improved wastewater treatment facility operation and maintenance, alternative wastewater treatment methodologies, and advanced treatment beyond applicable technology requirements.

The Department will address each of these items using the permittee's application materials and the "DECD Economic and Fiscal Impacts of a proposed Recirculating Aquaculture Facility in Jonesport, Maine" document as well as technical support information submitted to the Department by Kingfish during the Preliminary draft comment stage of this licensing proceeding.

A. Whether the lowering of water quality is necessary to accommodate new or increased commercial activity or industrial production while providing that

(1) the discharge consistently complies with applicable effluent limitations requiring application of best practicable treatment or new source performance standards and

(2) any existing treatment facility is appropriate and is optimally maintained.

As discussed below in subsection B, the construction and operation of the Kingfish facility will result in new or increased commercial activity or industrial production. Additionally, Kingfish has demonstrated that the technology it proposes will comply with effluent limits that require best practicable treatment. Information submitted by the permittee during the preliminary draft comment stage details processes employed by the industry, advanced technologies, and results in Kingfish implementing the highest level of technology that can reasonably be applied.

6. ANTI-DEGRADATION - IMPACT ON RECEIVING WATER QUALITY (cont'd)

B. The economic and social benefits that would result from the lowering of water quality. These benefits may include, but are not limited to, increases in employment, increases in local or regional income or purchasing power, increases in the community tax base, correction of an environmental or public health problem or nuisance situation (e.g., removal of overboard discharges or failing or substandard septic systems) and improved community stability. In the case of a lowering of water quality due to community growth, benefits may include an assessment of the economic and social consequences that would result if the new or increased discharge and the resulting lowering of water quality were not approved.

The Department requested the State of Maine Department of Economic and Community Development (DECD) review the Kingfish proposal for economic impacts to aid the Department in its analysis of whether this permitting action is necessary to achieve important economic or social benefits to the State as required by 38 M.R.S. §464(4)(F)(5). The DECD determination letter states that "Washington County, ME, meets the federal criteria for economic distress." The DECD further stated "that the economic and social benefits associated with the Kingfish project include increases in employment, increases in local/regional income, increases in the community tax base, and improved community resiliency. These benefits are directly related to the creation of jobs with higher per capita income than the County average as well as economic impacts during construction and annual facility operations."

The Maine DECD determined and the Department finds that "the economic benefits to Washington County and to the State of Maine are significant and will create needed jobs and investment in rural Maine."

C. The technical availability, economic feasibility, and environmental effectiveness of alternatives that could reduce or eliminate the lowering of water quality. Alternatives may include, but are not limited to, alternative discharge locations, non-discharging alternatives, alternative methods of production, improved process controls, wastewater minimization technologies, improved wastewater treatment facility operation and maintenance, alternative wastewater treatment methodologies, and advanced treatment beyond applicable technology requirements.

In an email dated March 1, 2021, Kingfish representative Megan Sorby stated: "Kingfish evaluated all alternatives that are applicable to a marine RAS facility, which included alternative site location, discharge pipe lengths, and various effluent treatment methods. This site in Jonesport, Maine provides for the least impact with respect to land and water resource concerns while still providing the critical site components our facility would need to operate, such as space, access to good quality seawater, and existing infrastructure."

6. ANTI-DEGRADATION - IMPACT ON RECEIVING WATER QUALITY (cont'd)

More specifically, Kingfish considered and rejected the following alternative in its application:

Alternative discharge point – Kingfish explained, "In our modelling, we also completed model runs at a location further from shore that demonstrated greater dilution of a critical parameter, nitrogen. However, in order to achieve this, the discharge point was approximately 2 miles from shore in order to avoid depth limitations to tidal mixing caused by the presence of two islands, Ballast and Mark Islands." Kingfish ultimately rejected this alternative because "[l]ocating the discharge at this point not only presents an economic limitation for Kingfish Maine but also requires far greater impact to the seafloor and to local fishing activity, in direct contrast to the main concerns voiced by the community. Assessing these factors, the placement of our discharge point at 2,624 ft (800m) and intake at 1,312 ft (400m) from shore of the site is the most favorable option."

1. Land application of treated wastewater - Kingfish determined that "[l]and application of our effluent would not be permissible due to the salinity of the water and surrounding watershed protection concerns."

2. Removing or decreasing effluent flow during critical periods – Kingfish stated, "Our effluent quality is stable across the operation cycle. As evidenced by the results of our near-field and far-field modeling, there is not strong variability in the tidal cycle conditions. Combining these two characteristics, there is not a benefit to be gained from retaining discharge for a period during that cycle, i.e., there is not a critical period that designates one time frame as more sensitive to receiving effluent than another."

Additionally, Kingfish submitted to the Department detailed technical information for its proposed land-based RAS facility. This information outlines alternatives for the industry as well as the most progressive technologies available that Kingfish is proposing to employ.

Therefore, considering the information in A, B, and C above and pursuant to 38 M.R.S. §§414-A(1)(C), 464(4)(F)(5), the Department finds that the new proposed discharge from Kingfish will result in a lowering of existing water quality as it related to eelgrass as an indicator for nitrogen, and that this lowering of water quality is necessary to achieve important economic or social benefits to the State.

6. ANTI-DEGRADATION - IMPACT ON RECEIVING WATER QUALITY (cont'd)

The Department further finds that:

1. Existing in-stream water use will be maintained and protected;
2. The discharge is not to an outstanding nation resource water;
3. The standards of the assigned classification will be met in all receiving water affected by the discharge or that the discharge will not cause or contribute to the failure of the receiving waters to meet standards;
4. Actual water quality is maintained and protected where any criterion of water quality exceeds the minimum standards of the next highest classification.

The Department finds the existing and designated water uses will be maintained and protected and the discharge as permitted will not cause or contribute to the failure of the receiving water to meet standards for Class SB classification. Therefore, the Department finds that as permitted the discharge will meet the antidegradation requirements set forth in 38 M.R.S. § 464 (4)(F). As discussed below in section 7 of this Fact Sheet, the Department makes this finding following opportunity for public participation as required by 38 M.R.S. § 464 (4)(F).

7. PUBLIC COMMENTS

Public notice of this application was made in the *Machias Valley* Observer newspaper on or about July 8 and July 15, 2020. The Department receives public comments on an application until the date a final agency action is taken on the application. Those persons receiving copies of draft permits must have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to *Application Processing Procedures for Waste Discharge Licenses,* 06-096 C.M.R. ch. 522 (effective January 12, 2001).

Pursuant to 38 M.R.S. §464(4)(F)(5) the Department made additional public notice of the draft, emphasizing the draft findings regarding antidegradation in the *Machias Valley Observer* newspaper on or about May 5, 2021. The notice stated that the anticipated discharge is necessary to achieve important economic or social benefits to the State and that the project will not cause or contribute to the failure of the waterbody to meet the standards of its assigned classification. Noticed persons must have at least 30 days in which to submit comments on the draft finding or to request a public hearing, pursuant to *Application Processing Procedures for Waste Discharge Licenses,* 06-096 C.M.R. ch. 522 (effective January 12, 2001).

8. DEPARTMENT CONTACTS

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

Cindy Dionne
Division of Water Quality Management
Bureau of Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone: (207) 287-7823
e-mail: cindy.l.dionne@maine.gov

9. RESPONSE TO COMMENTS

During the period of May 5, 2021 through June 7, 2021, the Department made the proposed draft MEPDES permit/WDL available for a formal 30-day public comment period, consistent with Department Rules. The Department received comments from the following entities:

John Albertini
Robb Cotiaux
Angela Brewer, Maine DEP (AB)
Clarissa Trasko, Maine DEP (CT)
Dr. Richard Aishton on behalf of the Roque Island Gardner Homestead Corporation (RIGHC)
Anastasia Fischer, Board Chair of Eastern Maine Conservation Initiative (EMCI)
Holly Faubel (HF)
Jim Merkel (JM) (Multiple comments made by Mr. Merkel reference the Nordic Aquafarms project in Belfast, and due to that, those comments were not pertinent to the proposed Kingfish facility.)

Similar comments have been combined by subject matter where possible. Responses to substantive comments are as follows.

9. RESPONSE TO COMMENTS (cont'd)

Language Edits to Permit

Comment #1 (AB) - To revise first paragraph on Permit page 13 as such:

Within 6 months of the effective date of this permit, the permittee must submit an ambient water quality monitoring plan to the permittee's Compliance contact for review and approval by the Department's Division of Environmental Assessment (DEA), to monitor four (4) sampling stations established by the Department. [ICIS code 22099] (Fact Sheet Attachment D). ~~See **Attachment D** of the Fact Sheet for the approved water quality monitoring sampling sites (blue boxes on Attachment).~~ The ~~proposed~~ monitoring plan must conform with a Department-approved sampling plan or Quality Assurance Project Plan (QAPP), and ~~to~~ be submitted for approval at least 60 days (March 1st) prior to the start of the ambient water quality monitoring program.

Response #1: The Department has amended the permit to reflect these comments.

Comment #2 (AB) - To revise paragraph 3 on Permit page 13 as such:

Each monitoring event must be conducted during a four-hour sampling window on the second half of alternating ~~an~~ ebb and ~~or~~ flood tides, to include approximately one hour of slack water.

Response #2: The Department has amended the permit to reflect these comments.

Comment #3 (CT) - To revise Special Condition A table and footnotes to reflect sampling points for process wastewater parameters and full facility effluent parameters.

Response #3: The Department has amended the permit to reflect these comments.

Comment #4 (CT) - To remove Special Condition C. *Treatment Plant Operator* in lieu of added language in Special Condition H. *Operations and Maintenance (O&M) Plan.*

Response #4: The Department has amended the permit to reflect these comments.

Water Quality Monitoring/Dye Study

Comment #5 (RIGHC) - The long-term value of Roque Island Archipelago research could easily be compromised. How will MDEP ensure that this is not the case?

9. RESPONSE TO COMMENTS (cont'd)

Response #5: The Department has included thrice weekly effluent sampling for biochemical oxygen demand (BOD), total suspended solids (TSS), as well as pH. The permit includes limits for BOD, TSS, and Total Nitrogen. The applicant must seasonally measure total Kjeldahl nitrogen, nitrate + nitrite, total phosphorus, and total ammonia once per week. The permit also includes a requirement to complete a dye study to confirm the mixing characteristics of the effluent as well as yearly, seasonal ambient water quality monitoring at four sites in the bay which include water column characterization of temperature, salinity, pH, dissolved oxygen, turbidity, total phosphorus, total kjeldahl nitrogen, nitrate + nitrite nitrogen, chlorophyll *a*, and phaeophytin. The four ambient monitoring sites selected by the Department were chosen to best document conditions at or near sensitive habitats including intertidal and shallow subtidal areas with the potential to host shellfish, eelgrass, and juvenile lobster and finfish. Pre-production monitoring beginning in 2022 will establish baseline condition against which post-production data will be compared in order to anticipate any measurable impacts to the resident biological community. Additionally, the applicant has provided model outputs based on current velocity and direction data that predict the breadth and magnitude of the facility effluent, which are summarized on pages 10-12 of the Fact Sheet.

Further, the modeled trajectory of the effluent plume predicts the most likely potential shoreline interaction to the northwest of the discharge, not to the north and east in the direction of the Roque Island archipelago. The Department believes that the combination of permit limits and required monitoring/sampling is protective of water quality standards and will ensure future water quality is maintained.

However, should an a future statistical evaluation conducted in accordance with the methodology in Chapter 530 of the Department's rules indicate the discharge is exceeding or has a reasonable potential to exceed applicable AWQC, the Department will reopen the permit pursuant to Special Condition L, *Reopening of Permit for Modification*, to establish limitations as necessary.

Comment #6 (EMCI) - "We would appreciate it if the DEP would consider amending its approval with the following elements:

> 1. Require both near-field and far-field baseline data for the area be gathered over the course of the next year—for a full 12 months--including water temperatures. There is currently very little data on this area, and it appears that Kingfish has not had a monitoring program in place prior to developing their plan.

9. RESPONSE TO COMMENTS (cont'd)

Response #6: The Department acknowledges the paucity of baseline water quality data in Chandler Bay and is therefore requiring the applicant to characterize ambient conditions at four locations selected at or near sensitive habitats that host many important members of the resident biological community. A focus on far-field site monitoring enables characterization of pre- and post-production conditions based on loading of non-conventional pollutants that may be expressed on a chronic basis and over a broader spatial extent. The period of greatest sensitivity (May-Oct.) has been determined as those months when ambient water temperatures are highest and nutrient concentrations are typically lowest, thereby documenting the period when effluent influence would be most likely to be observed. Any influence during the remainder of the year (Nov.-April) would be anticipated to be less than during the critical sensitive period. Although ambient monitoring is not being required on a year-round basis, effluent monitoring for Biochemical Oxygen Demand, Total Suspended Solids, and pH is required on a year-round basis and will provide critical information to determine if ambient impacts outside of most sensitive period could be anticipated. The discharge temperature of heat recovery water will only ever be less than its original intake temperature, and so the effluent monitoring focus for temperature occurs during the summer months when the magnitude of difference from the ambient temperature is greatest. As stated in Response #5, pre-production monitoring beginning in 2022 will establish baseline condition against which post-production data will be compared in order to anticipate any measurable impacts to the resident biological community.

The Department believes that the combination of permit limits and required monitoring/sampling is protective of water quality standards and will ensure future water quality is maintained.

Comment #7 (EMCI) – We would appreciate it if the DEP would consider amending its approval with the following elements:

> 3. We would like to see an additional requirement for Kingfish to monitoring effluents year-round, vs the May-October requirement stated in the approval, and to commit to do this in select far-field locations and identified ecologically sensitive areas, in addition to the required near-field sampling sites.

Response 7: Please see Response #1 above for the effluent monitoring schedule and ambient near- vs. far-field site locations. Ambient monitoring occurring at four far field sites will be conducted concurrently with effluent monitoring to best couple facility loading with environmental response data. Also, it should be noted that effluent quality is expected to be consistent once the facility has reached steady-state rearing and treatment application. This can be confirmed with year-round effluent monitoring that is required in the permit for particular parameters.

9. RESPONSE TO COMMENTS (cont'd)

Comment # 8 (HF) - Again we see the suggestion of doing a dye study *after* the facility is built and operating. What purpose and what remedy would there be that this operator could possibly do once the facility is designed, built and operating. They can't shut down, they are a highly open RAS design which requires them to continue to operate as such or lose their livestock. So what then?

Response 8: The dye study required by this permit is intended to determine the accuracy of and provide additional assurance regarding the predicted model results for the near-field and far-field from this discharge. As noted in other permits with Dye Study requirements, dye studies of the type required in this permit cannot be properly simulated without an operational discharge. The primary purpose of the dye study is to verify modeling assumptions.

The information derived from this dye study will assist the Department in confirming and more accurately assessing the hydrodynamics of the receiving water and dilution factors associated with the discharge. Should the monitoring results of the dye study indicate the modeling results to date are not accurate, pursuant to Special Condition L, *Reopening of Permit For Modification*, the Department may modify limitations and require additional information/data be collected to confirm that water quality standards are being met in the receiving water.

If effluent monitoring results or ambient water monitoring results obtained from the monitoring stations indicate the discharge from the proposed facility is causing or contributing to a non-attainment of water quality standards, the Department may modify limitations and require additional information/data be collected to confirm water quality standards are being met in the receiving water pursuant to Special Condition L, *Reopening The Permit For Modifications*.

Nitrogen/Antidegradation

Comment 9 (RIGHC) - Where does MDEP draw the line and how will MDEP measure the actual levels? And, moreover, when do the nitrogen levels become unacceptable? A change in designated uses or classification of the receiving water may change depending on how much beyond the 20% nitrogen consumption – again, by what method(s) and how often will MDEP check to ensure that levels are within reasonable variation? And what will be a reasonable variation? (beyond 20%?)

9. RESPONSE TO COMMENTS (cont'd)

Response #9: The Department antidegradation guidance requires that the Department use the "20% or more" threshold of remaining assimilative capacity for a parameter as the basis to initiate the antidegradation process. The 20% or more threshold is merely used as a trigger to initiate the antidegradation process and is not equivalent to a reasonable potential to exceed a numeric criteria or potential loss of a designated use/change of classification. The limit set in the permit is based off of the calculations in the Fact Sheet and although the permittee may discharge at levels lower than the limit, discharges above limits will be treated as exceedances, and therefore violations of the permit. Effluent monitoring of the discharge will provide the actual discharge levels which can be compared to the proposed levels in the application materials. Monthly discharge monitoring reports which contain facility-specific data are monitored by Compliance staff via electronic submittals from permittees into State and Federal databases.

Comment #10 (EMCI) **–** We would appreciate it if the DEP would consider amending its approval with the following elements:

> 2. We would like to understand why the DEP has approved atypical anti-degradation standards for this project. The DEP's approval seems to assume that Kingfish will exceed the 20% assimilative capacity of the bay with their discharge, but approval of this threshold seems atypical. Our particular concern is for the far field impacts; understanding how the effluents will be dissolved over a number of tide cycles, which areas will be affected by currents, and whether this is actually sufficient to keep the ecology of the bay from being harmed. The DEP's statement on pg.3, section 3E--"Where a discharge will result in lowering the existing water quality of any waterbody, 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"--appears to exempt Kingfish Maine from accountability for the impacts of their wastewater on the ecological health of the area.

Response #10: EMCI is correct in that the antidegradation process is atypical to the Department, as a vast majority of the discharge licenses that we approve are renewal applications. Modifications to licenses that propose an increase in discharge and new applications for discharge are the only applications that require the Department to consider antidegradation. The Department antidegradation guidance requires that the Department use the "20% or more" threshold of remaining assimilative capacity for a pollutant as the basis to initiate the antidegradation process. The 20% or more threshold is merely used as a trigger to initiate the antidegradation process and is not equivalent to a reasonable potential to exceed a numeric criteria or potential loss of a designated use/change of classification.

9. RESPONSE TO COMMENTS (cont'd)

The applicant must provide information that the discharge is "necessary to achieve important economic or social benefits to the State", that the discharge will comply "with applicable effluent limitations requiring application of best practicable treatment or new source performance standards", and that the Department review "technical availability, economic feasibility, and environmental effectiveness of alternatives that could reduce or eliminate the lowering of water quality." This is not an exemption from accountability to the water quality standards, but an evidence-based approach (evidence of use of BPT, alternatives researched, advanced technologies implemented) provided by the applicant that this new discharge, though a lowering of existing water quality, that standards of the assigned classification will continue to be met in all receiving waters affected by the discharge and that the discharge will not cause or contribute to the failure of the receiving waters to meet standards.

If a proposed project triggered the antidegradation threshold of >20% use of remaining assimilative capacity of a water quality parameter, but the applicant was unable to provide support evidence that they were using best practicable or advanced treatment, did not consider alternatives, or did not provide important economic or social benefits to the State, the Department would have the ability to reject that proposed project.

The primary purpose of the far-field modeling was to better understand the fate and transport of the discharge over a number of tide cycles. The western shore adjacent to the proposed facility is the area that will be most directly effected by the discharge plume, but this influence was determined to fall within a range of influence that was determined to be acceptable. Impacts to areas outside the modeled plume area will be significantly and progressively more diffuse. Impacts to the bay, as a whole, are not expected to significant.

Additionally, I would like to reiterate from the application materials for the discharge model; "The TUFLOW FV model predicts that the diluted wastewater discharge plume may reach its north and south limits approximately 7 days after commencement of discharges; i.e., the model predicts the diluted wastewater discharge is highly unlikely to move beyond 3 miles north of the discharge location or 1 mile south of the discharge location during any given tidal cycle."

Ambient sampling combined with facility effluent monitoring will allow the Department to closely monitor the health of the receiving water. Should the monitoring results indicate water quality impacts, pursuant to Special Condition L, *Reopening of Permit For Modification*, the Department may modify limitations and require additional information/data be collected to confirm that water quality standards are being met in the receiving water.

9. RESPONSE TO COMMENTS (cont'd)

Formalin

Comment # 11 (HF) - The lack of testing in the winter months are particularly problematic in regard to the use and discharge of Formalin (formaldehyde) which is highly toxic in cold water. This permit would allow formaldehyde to be used and discharged during summer and winter months on a weekly basis. The use of Formalin is so toxic that its use in waters during cold weather is not recommended. While the livestock in the warm production water would be fine, the discharge into the relatively cold waters of Chandler Bay and its drift to the greater Machias is highly problematic.

Response # 11: Formalin is currently used in multiple land-based aquaculture facilities across Maine and has been in use at these facilities for more than a decade. As indicated on labels for formalin, a condensate may form inside of the storage container if the product is stored below label temperatures. This condensate may have toxic effects and render the product unusable. This may be the toxic affect that you are speaking to in regards to colder weather as impacts to water quality are actually more acute in warmer waters as formalin decreases oxygen content as concentrations increase.

Additionally, when used in a flow thru system, most formalin is lost prior to discharge due to it being rapidly removed due to heterotrophic bacteria that use it as a carbon source in a nitrogen rich environment. Formalin, if used, will be rapidly degraded by the biofilters of each RAS and again diluted by the addition of the heat recovery water prior to discharge. When used in RAS such as Kingfish's, which discharges formalin into an effluent treatment system, formalin discharge to the environment will likely be non-detectable even if it were to be used regularly and at the maximum levels allowed by the Department. Furthermore, its rapid breakdown in the presence of organics would result in non-detectable levels making it past the effluent treatment plant. However, the Department is establishing water quality limitations in this permit to confirm this information.

9. RESPONSE TO COMMENTS (cont'd)

Solids & Sludge Disposal

Comment #12 (JM) **-** Sludge disposal will not be as easy as it sounds as the salty effluent will not be useful in many applications and if used, it can cause other serious issues if spread on sacrifice lands, that then rains was into nearby creeks."

Its sludge is problematic to dispose of because it is salty and could be a vector for spreading disease to wild fish. If it is dehydrated, it takes considerable energy and concentrates the salts. Dried sludge will unlikely be a valuable fertilizer. But can the salt be removed and what farmer wants to add all this salt to their fields. For how many years can this be done? Can the soils be made unfertile?

If the sludge is not dried, where will it be spread? In wintertime, with frozen soil and snow on the ground, spreading is impossible, as spring runoff would send the nitrogen-rich sludge into streams causing massive problems. How far south will the sludge be sent in winter? What are the impacts of run-off in these sacrifice zones? Will the neighbors object to the smell? Will Kingfish need a settling pond for the sludge, and what would happen during a hurricane or intense rains? How will it be kept from streams?

Response #12: As indicated in the Kingfish application "All solid waste will be combined and trucked offsite for disposal. Kingfish Maine is exploring secondary uses for any waste from processing activities on site, such as composting with Coast of Maine Organic Products Inc., an organic compost producer located in East Machias, ME. Due to the high or concentrated salt level in our sludge, options for additional uses are limited, but we continue to explore all new technology for making use of this nutrient rich material."

Waste disposal companies include Crossroads Landfill, Casella Organics, Agri-Cycle Energy, Channel Fish Company, Coast of Maine Organic Products, and Compost Maine. These entities are regulated by the Department's Bureau of Remediation and Waste Management in accordance with all Departmental Rules and guidelines.

Temperature

Comment #13 (EMCI) – We would appreciate it if the DEP would consider amending its approval with the following elements:

> 4. We would like to know why the DEP has not required Kingfish to report on the consistency of the water temperature they will be releasing into the Bay. With such a huge amount of water, it seems that if their system has a failure there could be serious consequences to the ecological health of the area.

9. RESPONSE TO COMMENTS (cont'd)

Response #13: The permit requires the permittee to report on the temperature of the effluent during the critical time period of June 1 through September 1 pursuant to *Regulations Relating to Temperature*, 06-096 C.M.R. ch. 582, despite calculations on page 21 of the Fact Sheet that show that temperature is not expected to increase due to the discharge. Additionally, the Department would like to reiterate that 22 MGD of the discharge volume will be ambient seawater that will be colder once discharged than when it was taken in to the facility. Failure of the heat recovery system would allow the ambient water to pass through the facility at sea temperature, only to be amended by the process water.

Ammonia

Comment #14 (HF) -In addition to this highly dangerous viral threat to fin-fish in the area, there is again the threat of unionized ammonia, especially during winter months when ice forms on the water surface when no testing is called for.

Response # 14: As previously noted in the Response to Comments, effluent quality is expected to be consistent once the facility has reached steady-state rearing and treatment application. Additionally, because certain parameters such as nitrogen, including ammonia, phosphorus, and temperature have the potential to exert a higher level of impact on the receiving water in the warmer months of the year (May-October) rather than the colder months, the permit requires seasonal limitations or monitoring requirements for these parameters as well as ambient water quality monitoring during this time frame.

Viruses/Virus Control

Comment #15 (HF) - However this permit fails to address the issues of extreme risk of viral pollution as Seriola lalandi, while more resistant, are carriers of natural and mutant strains naturally occurring virus and virions which can be bioamplification in these warm water production tanks . The discharge of this effluent will affect all wild fin-fish in this area, in particular cold water highly migratory fish both Endangered and threatened.

Combined flow leaves the anoxic chamber and goes through an aerobic bioreactor for nitrification and finally a sterilization step (0.4mg/L ozone or 30mJ/cm2 UV)

Neither of the methods they reference will sterilize the effluent water from unvaccinated fish sufficiently in regard to water borne novel virus that would be carried out in its effluent.

9. RESPONSE TO COMMENTS (cont'd)

Response #15: The Department requested Marcy Nelson (DMR) and David Russell (IFW) weigh in on specific comments in regard to *Seriola lalandi* as well as those raised regarding viral load in the effluent. Their response, in relevant part states:

> Although the commentor did not specify a specific viral threat, the Maine Department of Marine Resources has conducted a risk evaluation for the species and the Maine Aquatic Animal Health Technical Committee has convened several times to discuss topics related to the import of new *Seriola lalandi* stock to improve the genetic base of broodstock at an affiliated facility that is in current operation in Maine. Juveniles from this affiliated facility are proposed for stocking the facility to be built in Jonesport. In this regard it should be noted that rigorous requirements in respect to pathogen screening have been established for pre-import screening of the source facility and for post import rearing in Maine under quarantine conditions, with post-import screening as a requirement for consideration of a release from quarantine. The conditions set for a "release from quarantine" were made with the assumption that subsequent rearing will be at a facility with no effluent disinfection measures. In this regard, any planned use of ozone or UV disinfection could be considered as an additional safeguard that is going above and beyond expectations.
>
> MDMR Regulations: The Maine Department of Marine Resources (MDMR) also has the authority to license land-based aquaculture facilities (§6085. Marine organism aquaculture license). Biosecurity and the protection of natural resources from the introduction of pathogens, parasites, and pests is a primary focus of that licensing process. While there are not general MDMR requirements for land-based aquaculture facilities to incorporate treatment processes on effluent to reduce or eliminate the discharge of aquatic pathogens, MDMR has the authority to require such, if deemed appropriate and necessary. Furthermore, MDMR Regulations Chapter 24 has strict biosecurity and permitting requirements regarding the import, introduction, and/or transfer of finfish. The addition of fish to the proposed facility will require a Chapter 24 permit from MDMR. The issuance of a Chapter 24 permit requires demonstration of freedom from evidence of all diseases of regulatory concern, and that the fish originate from a qualified source/hatchery. The Commissioner of MDMR has broad latitude to condition permits for the importation, introduction, and/or movement of finfish to minimize risk to Maine's natural resources. Additionally, the Maine Aquatic Animal Health Technical Committee (AAHTC), comprised of fish health professionals representing state and federal agencies, academia, and industry, advises MDMR in matters related to aquatic animal health and biosecurity, including pre-import/transfer pathogen screening and appropriate effluent treatment and/or quarantine requirements, if necessary. Kingfish Maine is proposing effluent treatment measures that are beyond that which would be required for fish that meet MDMR Chapter 24 standards and are not required to be in quarantine.

9. RESPONSE TO COMMENTS (cont'd)

General Risk Assessment:
As yellowtail kingfish (*Seriola lalandi)* are grown at considerably warmer temperatures than the waters to receive the discharge, there is a level of risk reduction associated with the rearing environment for the Kingfish Maine facility not being a good climate match for amplifying one of the viral pathogens of greatest potential harm to Gulf of Maine species. Furthermore, warm water pathogens, which may be of concern to the producer are of much lower concern for fish species that may be present in the much cooler receiving waters of Maine. The potential pathogen threats to State resources and the Gulf of Maine from the rearing of yellowtail kingfish is considerably less than the rearing of fish that are a climate match to the Gulf of Maine.

VHSV IVa, a virus that is endemic to the Gulf of Maine that is of concern to local species is a virus in which Seriola species may be susceptible under the right conditions. However, VHSV will not be amplified at planned rearing temperatures if it were to be introduced into Kingfish Maine's RAS. The optimum temperature for VHSV viral replication is 14-15 degrees C. The proposed rearing temperatures for the Seriola lalandi are significantly greater. Bacterial species such as vibrios, which are ubiquitous to Maine, could be amplified, but are unlikely to be an issue in the cooler waters of the state after discharge. Furthermore, the effluent treatment outlined is adequate mitigation for bacterial pathogens.

Risk to local fish species will be mitigated as a function of poor climate match and from the use of stock that has been screened and found free of specific pathogens. Any effluent disinfection can be viewed as additional risk mitigation. Yellowtail kingfish to be stocked into the proposed facility will be fish that have been subjected to rigorous pathogen screening according to MDMR requirements. The table below outlines the various viruses that are of producer concern. It should be noted that pre-import screening requirements for the source facility and for screening of post imported stock in quarantine will detect all viruses listed in the table below as well as all applicable pathogens listed as being of regulatory concern in MDMR Chapter 24.

9. RESPONSE TO COMMENTS (cont'd)

Agents of potential concern for the rearing of Seriola species. Many are not a concern for the Gulf of Maine due to poor climate match, lack of suitable hosts in the wild, and/or non-exotic status. Effluent treatment, as outlined in your email would mitigate the threat of most of that listed below.

Viral	**UV dose to mitigate amplification**
Red Sea Bream Iridovirus (Iridovirus)	15-26 mJ/cm2 for Iridoviridae
Viral Splenic Virus (Iridovirus)	15-26 mJ/cm2 for Iridoviridae
Lymphocystis (Iridovirus)	15-26 mJ/cm2 for Iridoviridae
Yellowtail Ascites Virus (aquabirnavirus)	110-120 mJ/cm2 for Birnaviridae
Viral Hemorrhagic Septicemia Virus (Rhabdovirus)**	<5 mJ/cm2 for Rhabdoviridae
Nodaviruses (Nodaviridae)	140 mJ/cm2 for Nodaviridae
Bacterial	**30 mJ/cm2 is a general bacterial killing dose**
Photobacterium damesela	Poor climate match
Enterococcus seriolicida	Poor climate match
Vibrio harveyi	Autogenous vaccines typically used in RAS
Vibro alginolyticus	Poor climate match
Streptococcal sp	Poor climate match
Nocardia Seriolae	Poor climate match
Parasites	
Benedenia seriolae	Host species not present in Gulf of Maine
Zeuxapta seriolae	Host species not present in Gulf of Maine
Unicapsula seriolae	Host species not present in Gulf of Maine
Kudoa neurophila	44 mJ/cm2 or ozone @ 10 min/ORP of 700 mV
Myxobolus spirosulcatus	40 mJ/cm2 established for other Myxobolus sp
Caligus lalandi	Amplification prevented with 40-60µM filter
Amyloodinum ocellatum	Amplification prevented with 40-60µM filter

** Seriola species may be susceptible at colder temperatures. No detections in Seriola lalandi
UV reference for viral families https://journals.asm.org/doi/full/10.1128/JVI.79.22.14244-14252.2005
UV and ozone reference for Kudoa https://pubmed.ncbi.nlm.nih.gov/22947107/

Viruses are highly sensitive to ozone and a contact time of just a minute will neutralize most threats. Effectiveness is a function of dose and hydraulic residence contact time. An ORP of 700 corresponds approximately to a dose of 0.4 mg/l. In this regard, MDMR quarantine requirements have specified a redundant effluent treatment process comprised of ozone contact followed by UV disinfection. For the Kingfish company, we have specified 0.4 mg/l residual ozone for a contact time of 5 minutes followed by UV disinfection at 150 mJ/cm2. It should be noted that the higher dose of 150 mJ/cm2 is for a quarantine application. A dose of 30 mJ/cm2, although not suitable for quarantine, is adequate for general mitigation of pathogen amplification in an aquaculture setting.

9. RESPONSE TO COMMENTS (cont'd)

Comment #16 (JM) – UV light is not effective in killing viruses.

Response #16: Please see Response #15.

Miscellaneous

Comment # 17 (RIGHC) - What will MDEP do to ensure that the effects from the Kingfish Maine installation do not produce an adverse influence on lobster habitat and their life cycle? Moreover, the potential for affecting other important, income-producing resources such as scallops, mussels, clams, periwinkles and fish is high. Is the MDEP really willing to put these at risk for some increased economic and social benefits? What will MDEP do to monitor the impacts on other commercially beneficial species as well to ensure that the marine ecosystem is not significantly affected?

Response # 17: Please see Response #5 that indicates the ambient monitoring as well as the effluent monitoring that the Department is requiring to ensure that water quality is maintained for all species in the receiving water, regardless of their economic benefit. Additionally, the effluent is anticipated to be neutrally buoyant with an initial upward velocity that would maintain distance between the effluent plume and the benthic surface where adult lobsters would be present. The Department believes that the combination of permit limits and required monitoring/sampling is protective of water quality standards and will ensure future water quality is maintained.

Comment #18 (HF) **-** "This effluent permit allows for the discharge of a combined over 22 million million gallons per day of water at a level of 6.0 pH. Shellfish cannot live and thrive and put on the needed calcium to their shells in the presence of a steady 6.0pH effluent stream and there is insufficient modeling to determine impact of such. This is a license to operate for 6 years and that gives them the ability to discharge over 22 million gallons of 6.0 pH water per day with no recourse for correction."

Response # 18: Please note that the volume of 22 MGD of heat recovery water is ambient seawater that will be used only for the redirection of heat to the rearing units to which no pH buffering will be applied. Therefore, it is ambient seawater that will be discharged as part of the total facility discharge and is not expected to have a significantly different pH than the receiving water. However, to be protective, the limitation range is applied to the entire facility and is considered by the Department to be BPT for fish hatcheries and rearing facilities and consistent with the pH limit established in discharge permits for those facilities.

9. RESPONSE TO COMMENTS (cont'd)

Comment # 19 (JM) -

What effect would Kingfish's odor plume have on Chandler Bay lobsters?

The quantities of sulfides, pheromones and fish smell in Kingfish's effluent could affect lobster in proximity to the outflow.

Response #19: As stated in Response #17, the effluent is anticipated to be neutrally buoyant with an initial upward velocity that would maintain distance between the effluent plume and the benthic surface where adult lobsters would be present. Additionally, as stated in the Response to Comments for the Whole Oceans permit, literature suggests that pheromones of the sort that may be discharged from this facility have very short half lives in aquatic environments. Given the buoyancy of the discharge plume as well as the short half lives for pheromones in the aquatic environment, the Department does not have any information that lobsters will be negatively impacted by the Kingfish discharge.

However, should monitoring results indicate water quality impacts, pursuant to Special Condition L, *Reopening of Permit For Modification*, the Department may modify limitations or include new limitations to protect lobsters in the receiving water.

Comment #20 (JM) **-** Kingfish claims to capture a high percentage of phosphorus and assumes it would be filtered out with solids. But depending upon the diet fed to fish in containment, their excrement's phosphorus can both change in level and amount that is dissolved into the water. Can the dissolved phosphorous be removed by filters?

Response #20: Given that the constituents that make up fish feed as well as the types of fish feed can change as operations evolve, the Department has instituted an effluent phosphorus monitoring protocol to ensure that elevated levels of phosphorus are not discharged to the receiving waters. The Department may take responsive actions to reduce nutrient loading from Kingfish's effluent if needed pursuant to Special Condition L, *Reopening The Permit For Modification.*

ATTACHMENT A



MAP REFERENCE: USGS JONESPORT QUADRANGLE 2018

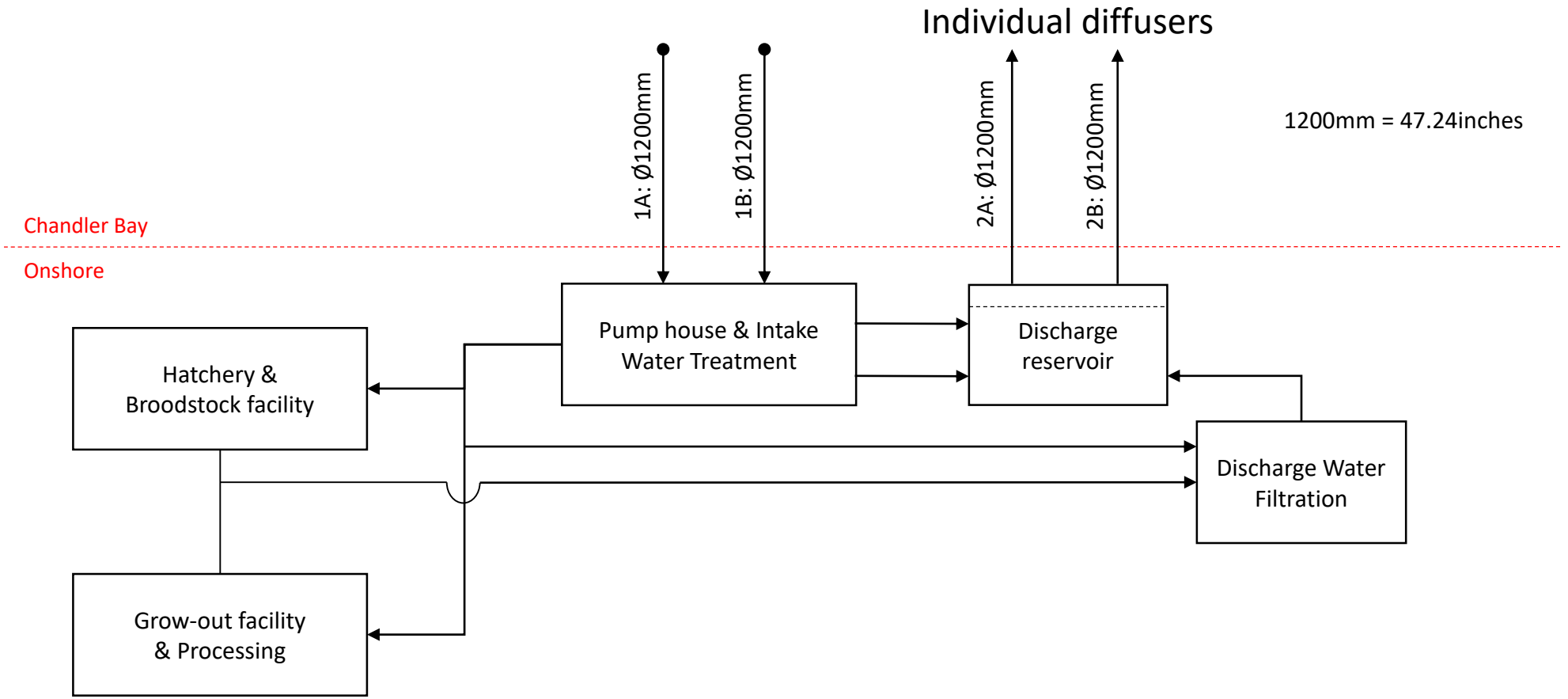
Gartley & Dorsky
ENGINEERING SURVEYING
CAMDEN, ME (207) 236-4365
WWW.GARTLEYDORSKY.COM

KINGFISH MAINE
Jonesport, Maine
RAS Facility

JUNE, 2020 | 19412 | SITE LOCATION EXHIBIT

ATTACHMENT B

CONCEPTUAL FLOW DIAGRAM – INTAKE & EFFLUENT



ATTACHMENT C

LEGEND

- SUBJECT PARCEL PROPERTY LINE
- APPROXIMATE PROPERTY LINE
- SETBACK LINE
- IRON ROD FOUND
- IRON PIPE FOUND
- 5/8" REBAR SET (4/23/2020)
- GRANITE MONUMENT FOUND
- 56 EXISTING CONTOUR
- 23 EXISTING CONTOURS (BATHYMETRIC)
- UTILITY POLE
- OH OVERHEAD UTILITY LINE
- STREAM
- POSSIBLE STREAM (SEE NOTE #6)
- DRAINAGE COURSE (SEE NOTE #6)
- PIT TEST PIT
- BOR EL=32.1' BORING & GROUND ELEVATION
- POST
- DUG WELL
- TREE
- BUSH
- VEGETATION
- LITTORAL ZONE OF SURVEYED PARCEL

NAD 83 MAINE EAST ZONE GRID NORTH

MAGNETIC 2020

MAINE COAST HERITAGE TRUST
BOWDOIN MILL ISLAND #201
TOPSHAM, ME 04086

KENT T. INGVES
756 WATERMAN ROAD
LEBANON, CT 06249

PAULA STAHL
46 BELLEVUE STREET
WILLIMANTIC, CT 06226
BOOK 4607, PAGE 208
TAX MAP 8, LOT 26

W.W. WOOD PROPERTIES, LLC
BOOK 4301, PAGE 266
TAX MAP 8, LOT 23
93.2 ACRES

UNITED STATES OF AMERICA
USCG
BOOK 4301, PAGE 266
TAX MAP 8, LOT 20

AGNES EVA SAWYER PATTERSON
18 FROST LANE
ORONO, MAINE 04473
BOOK 2286, PAGE 196
(SEE BOOK 567, PAGE 313)
TAX MAP 8, LOT 1

CHANDLER BAY
A/K/A ENGLISHMAN BAY
ZONE VE (EL 15')

JOSH WOODWARD LN
MASON BAY ROAD
DUN GARVIN ROAD
HOPPE STONE BEACH
NATT POINT
LITTLE POND BEACH
ELMER SAWYER'S POINT ROAD
FIRE ROAD
GREENWOOD CEMETERY
GRAVEL BEACH
LEDGE
REMAINS OF HOUSE
BUILDING
MAILBOX
WELL HOUSE
CABLE GATE
SEPTIC FIELDS
WATER
STREAM

BASE OF 1" IRON PIPE, 0.9' ABOVE GRND.
5/8" REBAR, "WEST FALLS SURVEYING", 0.3' ABOVE GRND.
BASE OF 1" IRON PIPE, 1.2' ABOVE GRND.
3/4" REBAR, "RLS 11168", 1.3' ABOVE GRND.
BASE OF 3/4" REBAR, 1.5' ABOVE GRND.
MEAN HIGH WATER (MHW) EL.=5.9'
BASE OF 1" REBAR, "RLS 11168", 1.6' ABOVE GRND.
BASE OF 3/4" REBAR, 1' ABOVE GRND.
MEAN LOW WATER (MLW) EL.=-6.3'
1534'-31'± [467.66m]
2020 HIGHEST ANNUAL TIDE (HAT) AS PUBLISHED BY NOAA FOR SHOPPEE POINT ELEVATION =8.3' (SEE NOTE #3)
LIMIT OF SPECIAL FLOOD HAZARD AREA ZONE VE (EL 15')
250' SHORELAND ZONE
75' SETBACK - SEE NOTE #6
TBM 1/2" REBAR WITH "G4D CONTROL" CAP FLUSH WITH GRND. ELEV. =23.13' (SEE NOTE #3)
14" SPRUCE
SEE NOTE #9
LEDGE & BOULDERS
858'-10'± [261.78m]
MEAN HIGH WATER (MHW) EL.=5.9'
INV.=56.7
INV.=57.1
5/8" REBAR, "CES PLS 23247", 0.3' ABOVE GRND.
1" IRON ROD, 1' ABOVE GRND.
BASE OF 1" IRON ROD, 0.7' BELOW GRND.
BASE OF 1" IRON ROD, .8' ABOVE GRND.
BASE OF 4" REBAR, 1' ABOVE GRND. 2' ABOVE GRND.
5/8" REBAR, "CES PLS 23247", 1' ABOVE GRND.
12"x12" TAPERED STONE MON 2' ABOVE GRND.
OUTFALL A
N:326455.50 E:1229322.29
N:326498.71 E:1229446.24
N:326352.60 E:1229353.82
N:326395.47 E:1229480.09
OUTFALL B
N:325974.53 E:1228097.98
PROJECTED INTAKE
APPROXIMATE LIMIT OF W.W. WOOD PROPERTIES, LLC LITTORAL ZONE
W.W. WOOD PROPERTIES, LLC LITTORAL ZONE (1,000' FROM MEAN LOW WATER)
LIMIT OF W.W. WOOD PROPERTIES, LLC LITTORAL ZONE
LIMIT OF AGNES EVA SAWYER PATTERSON LITTORAL ZONE
LITTORAL ZONE BASE LINE
LITTORAL ZONE BASE LINE
BASE LINE USED IN DETERMINING INTERTIDAL BOUNDARIES (MLW)
MEAN HIGH WATER (MHW) EL.=5.9'

PLAN REFERENCES:

1) "TOPOGRAPHIC SURVEY, KINGFISH MAINE" BY GARTLEY & DORSKY ENGINEERING & SURVEYING DATED FEBRUARY 11, 2020 AND AS REVISED.

NOTES FROM PLAN REF. 1:

1) ALL DIRECTIONS ARE REFERENCED TO THE MAINE COORDINATE SYSTEM OF 1983 (2011), EAST ZONE, BASED ON AN RTK GPS SURVEY. ALL DISTANCES ARE GRID DISTANCES. THE COMBINED FACTOR IS 0.99996999.

2) ELEVATIONS ARE REFERENCED TO NAVD 1988 BASED ON STATIC GPS OBSERVATIONS PERFORMED ON DECEMBER 17, 2019 AND PROCESSED THROUGH THE NATIONAL GEODETIC SURVEY'S ONLINE POSITIONING USER SERVICE (OPUS). TIDAL DATUMS WERE CALCULATED USING NOAA'S VERTICAL DATUM TRANSFORMATION SOFTWARE (VDATUM).

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

NO.	REVISIONS	DATE

SHEET TITLE: **EXHIBIT 2**

SCALE: 1" = 200'

DRAWN BY: AM

CHECKED BY:

DATE: JULY 27, 2020

CLIENT/PROJECT: **KINGFISH MAINE**

LOCATION: ROUTE 187

TOWN: JONESPORT COUNTY: WASHINGTON STATE: MAINE

Gartley & Dorsky ENGINEERING & SURVEYING
59 Union Street, Unit 1, P.O. Box 1031, Camden, ME 04843-1031
Ph. (207) 236-4365 Fax: (207) 236-3055 Toll Free: 1-888-282-4365
165 Main Street Suite 2D P.O. Box 1072 Damariscotta, Maine 04543
Ph. (207) 790-5095

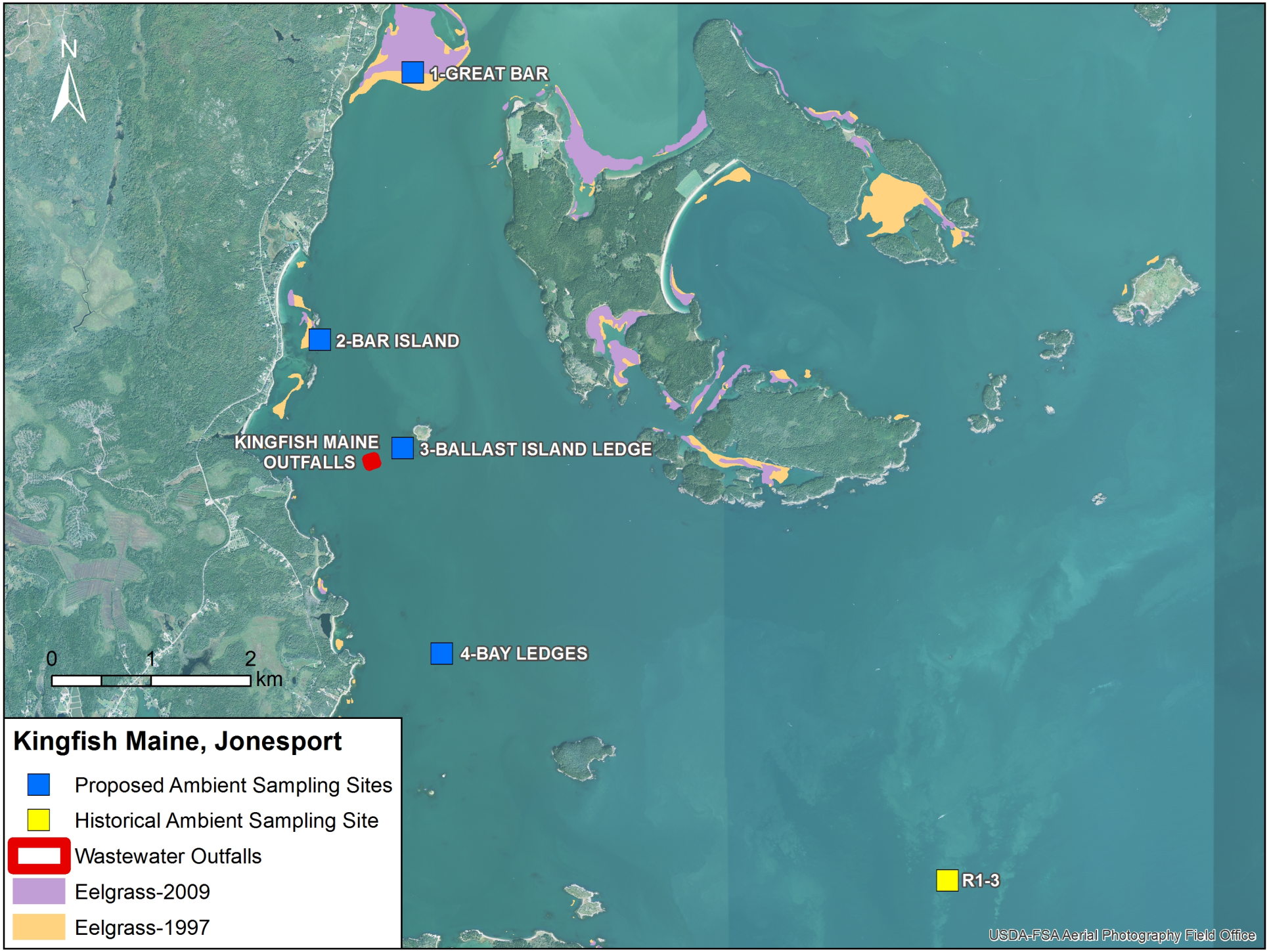
STATE OF MAINE WILLIAM J. LANE No. 6977 LICENSED PROFESSIONAL ENGINEER 7.27.20

PROJ. NO. 2019-412

EX2

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ATTACHMENT D


N
1-GREAT BAR
2-BAR ISLAND
KINGFISH MAINE
OUTFALLS
3-BALLAST ISLAND LEDGE
4-BAY LEDGES
R1-3
0
1
2
km
Kingfish Maine, Jonesport
Proposed Ambient Sampling Sites
Historical Ambient Sampling Site
Wastewater Outfalls
Eelgrass-2009
Eelgrass-1997
USDA-FSA Aerial Photography Field Office

ATTACHMENT E

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHAPTER 530.2(D)(4) CERTIFICATION

MEPDES#_____Facility Name_____

Since the effective date of your permit, have there been;		NO	YES Describe in comments section
1	Increases in the number, types, and flows of industrial, commercial, or domestic discharges to the facility that in the judgment of the Department may cause the receiving water to become toxic?	☐	☐
2	Changes in the condition or operations of the facility that may increase the toxicity of the discharge?	☐	☐
3	Changes in storm water collection or inflow/infiltration affecting the facility that may increase the toxicity of the discharge?	☐	☐
4	Increases in the type or volume of hauled wastes accepted by the facility?	☐	☐

COMMENTS:

Name (printed): _____

Signature:_____Date: _____

This document must be signed by the permittee or their legal representative.

This form may be used to meet the requirements of Chapter 530.2(D)(4). This Chapter requires all dischargers having waived or reduced toxic testing to file a statement with the Department describing changes to the waste being contributed to their system as outlined above. As an alternative, the discharger may submit a signed letter containing the same information.

Scheduled Toxicity Testing for the next calendar year

Test Conducted	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
WET Testing	□	□	□	□
Priority Pollutant Testing	□	□	□	□
Analytical Chemistry	□	□	□	□
Other toxic parameters [1]	□	□	□	□

Please place an "X" in each of the boxes that apply to when you will be conducting any one of the three test types during the next calendar year.

[1] This only applies to parameters where testing is required at a rate less frequently than quarterly.