Maine Pollutant Discharge Elimination System Permit (MEPDES) Application

BACKGROUND AND KEY FACTS

By investing in proven and state-of-the-art wastewater treatment technologies, our facility will meet or exceed all regulatory standards.

All the key components of the discharge are either below existing background levels in the bay, or quickly reach background levels or lower within a short distance of the discharge pipe.

We are setting a new standard for the fish farming industry in terms of environmental profile per pound of fish produced.

THE MEPDES PERMIT: On or about October 19, 2018, Nordic Aquafarms will file an application for a discharge permit for its land-based salmon farm in Belfast, Maine with the Maine Department of Environmental Protection (DEP). This permit is known as the Maine Pollution Discharge Elimination System (MEPDES) wastewater discharge permit. This is the first of several local, state and federal permits to be obtained before construction can begin.

Prior to the filing of the application and pursuant to DEP rules, we are holding a "Public Information Meeting" to present information from the draft application. The meeting is an opportunity to take questions and comments from the public, which may then become part of our final application to the Maine DEP.

Once filed, the discharge application will be available for public inspection at DEP's Augusta office and Belfast city hall during normal business hours. The application will also be available on the DEP's website on the "Major Projects" page. A fact sheet about all opportunities for public comment in the permitting process is available at: www.maine.gov/dep/publications/is-public.html

In 1972, the federal Clean Water Act (CWA) made it illegal to discharge any pollutant from a point source into navigable waters without a permit. The CWA meant the end to the kind of discharges that took place during the poultry processing era in Belfast. In Maine, the state administers the discharge permits, and the Maine DEP reviews the permit applications.

BACKGROUND: Our facility will utilize the latest and most advanced recirculating aquaculture system (RAS) technology. All fish production will take place indoors. Both groundwater from wells and ocean water from Penobscot Bay will be used in the production of the salmon. The water will be continually recirculated, with a small continuous water exchange.

Prevention of disease is a high priority, and the primary risk for disease is the intake water from the bay. The intake water is treated in three steps with a final strong UV light dose for disinfection to create bio-secure water.

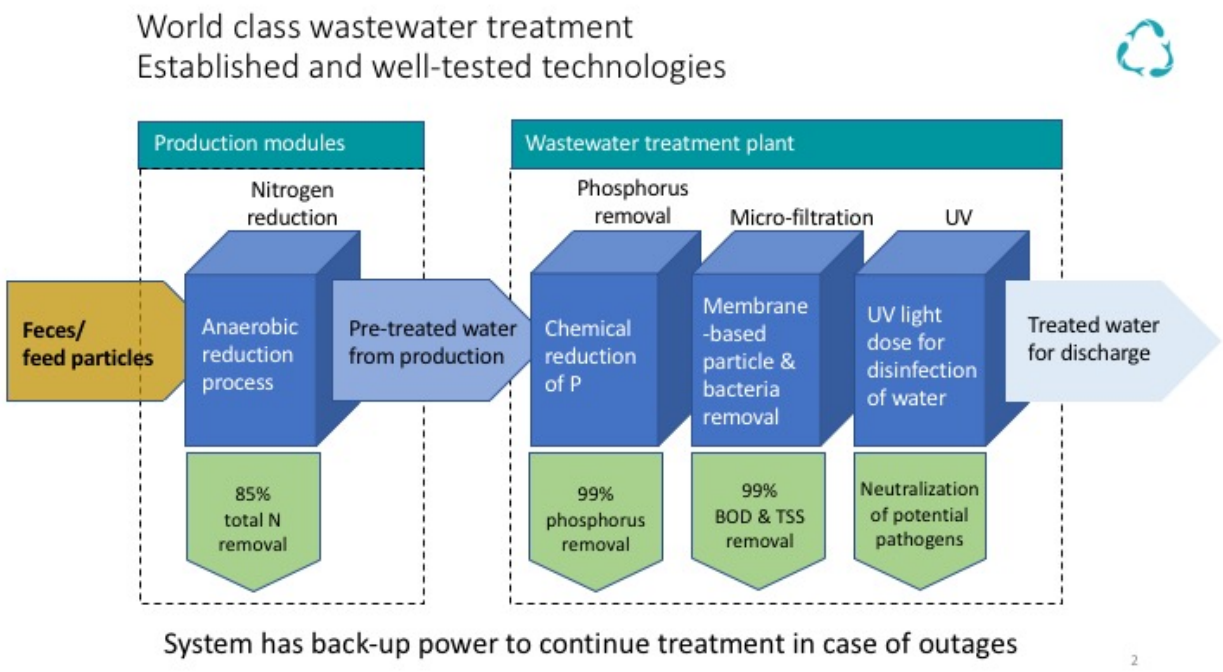
With robust biosecurity and quarantine measures the risk of disease is greatly reduced in land-based systems like ours. Despite this, we are taking extra contingency measures for our discharge to protect the receiving water body. The combination of fine mesh microfiltration, followed by a strong UV light dose, neutralizing potentially harmful bacteria and virus in the discharge. To date, we have not seen any RAS farm take such measures in discharge treatment.

Traditional salmon farming has none of these safeguards. In fact, we are setting a new standard for the fish farming industry by achieving the best environmental profile per pound of fish produced that has ever been documented.

The discharge will go through a pipe that runs from the facility approximately one kilometer (.62 miles) into the bay. We have secured an easement through a neighboring property across Route 1 that leads to deep water. All pipes will be buried below the surface in the intertidal area and will not be visible or noticeable to project neighbors or the community. The location and construction of the discharge pipe, as well as the sea water intake pipe, are governed by additional and separate federal, state and local permits, applications for which will be presented to the public in the coming months.

Unlike sea pen fish farming, we treat all water coming in and out for bacteria and pathogens, we remove and recycle nutrients from our production water, we have extensive barriers to prevent fish escape and co-mingling with wild species, and we do not need medication and chemicals to treat for sea lice. In addition, our operation is on private property, not out in the ocean and public waterways.

Nordic Aquafarms is using state-of-the-art wastewater treatment technologies to ensure that its discharge meets or exceeds all applicable water quality standards.



DISCHARGE: The discharge from our indoor salmon farm consists of residual nutrients from fish feed particles and fish feces. Like other permitted discharges, ours will be evaluated based on the levels of various elements within the discharge and parameters used by the DEP to evaluate the quality of discharged water and its potential impact on the environment.

Below is information about key discharge components that is in the draft application being presented at a Public Information Meeting as required by DEP. We include a brief description of each component, why they matter, the percentage by which we are reducing each component in our discharge, the existing background levels of concentration in the bay, and the amount our draft application anticipates will be discharged when the facility is at maximum capacity.

Please note: All data presented pertains to the fully-built facility, which will be constructed in two phases over the next several years. The discharge from Phase 1, with a production capacity of approximately 16,000 MT, will account for 50% of the discharge volume contained in the draft application.

Total suspended solids (TSS)

What it is:	TSS represents undissolved particles in the water
Why it matters:	High particle concentrations can reduce water quality and impair marine life.
Reduction:	99%
Background levels:	6.9 to 11 mg/l
NAF discharge:	Maximum level of 185 kg per day with a concentration of 6.33 mg/l
Noteworthy:	Our discharge is lower than the background values of existing water in the bay.

Biochemical oxygen demand (BOD)

What it is:	BOD represents the oxygen required to decompose the organic material in the discharge water.
Why it matters:	High levels of BOD indicate that water quality has been compromised, and generally results in lowering the dissolved oxygen content of the water.
Reduction:	99%
Background levels:	At or near the laboratory detection limit of 2.0 mg/l
NAF discharge:	Maximum level of 162 kg per day with a concentration of 5.55 mg/
Noteworthy:	Dilution will quickly bring BOD to background level.

P**hosphorus (P)**

What it is:	Phosphorus is a chemical element and a nutrient.
Why it matters:	Too much phosphorus in the water can cause algae to grow, which can harm water quality and decrease the oxygen that fish and other aquatic life need to survive.
Reduction:	99%
Background levels:	0.012 to 0.024 mg/l.
NAF discharge:	Maximum level of 5.8 kg per day with a concentration of 0.20 mg/l
Noteworthy:	Dilution will quickly bring P to background level. This discharge level is equivalent to the amount of natural run-off from about 20 average lawns.

Total Nitrogen (N)

What it is:	Nitrogen is a chemical element and a nutrient.
Why it matters:	Like phosphorus, Nitrogen (and in particular, NH3 or ammonia) is another key nutrient that is important to control because of its potential to overstimulate the growth of aquatic plants and algae.

Reduction:	85%
Background levels:	0.17 to 0.48 mg/l
NAF discharge:	Maximum level of 673 kg per day with a concentration of 23 mg/l
Noteworthy:	Dilution will bring N to background level. Modeling of the discharge over time shows that N is reduced to 0.3 mg/l, a concentration that is protective of eelgrass beds, the most sensitive sea life in the vicinity, within a short distance from the proposed discharge pipe.

According to a 2011 study of Penobscot Bay, approximately 11.6% of Total Nitrogen in the bay comes from agricultural runoff, 17.7% comes from other development (including business parks, strip malls, housing developments), 4.3% comes from point source discharges, such as sewage treatment plants and businesses, and the majority of the remainder comes from atmospheric deposition. Nordic's discharge is anticipated to add about 0.75% to the point source discharge figure.

The portion of the NH3 (Ammonia) in the Total Nitrogen discharge is low. The amount of Ammonia that will be discharged is 0.07 kg per day with a concentration of 0.003 mg/l. This is significantly lower than background levels, which range from below 0.024 to 0.045 mg/l.

MONITORING: The discharge from Phase 1 will account for 50% of the discharge volume in the application, which is based on a fully-built facility with an annual capacity of 33,000 MT. The discharge in Phase 1 will be monitored and documented before Phase 2 expansion begins.

Protocols for ongoing discharge measurement are a key part of our overall operations and quality assurance. Data collected from sensors, manual testing, and a discharge log will be continuously maintained and reviewed as a part of the management of the facility.

The results of data collection will be used to document the environmental profile of the operation and discharge logs will be available for regulators to audit at any time.