
North Coast Regional Water Quality Control Board

Regional Water Quality Control Board North Coast Region Staff Summary Report October 5, 2023

ITEM: 3

SUBJECT: Public Hearing on Order No. R1-2023-0019 to consider for adoption of proposed Waste Discharge Requirements for the Nordic Aquafarms California, LLC, and Humboldt Bay Harbor, Recreation and Conservation District WDID No. 1B20161NHUM (Justin McSmith)

BOARD ACTION: The Board will consider adoption of Waste Discharge Requirements Order No. R1-2023-0019. The Order will serve as a National Pollutant Discharge Elimination System (NPDES) permit for a period of five years.

BACKGROUND: Nordic Aquafarms California, LLC is the owner and operator of Nordic Aquafarms California, LLC, a land-based aquaculture and fish processing facility (Facility). The Humboldt Bay Harbor, Recreation and Conservation District (HBHRCD) is the owner and operator of the Intake System and Ocean Outfall that serves the Facility. Upon issuance, Nordic Aquafarms California, LLC and HBHRCD will become co-permittees under the Order. Specific requirements apply to each permittee as outlined in the Order. The Nordic Project on the Samoa peninsula was evaluated as part of the Nordic Aquafarms California, LLC Land-based Aquaculture Project [Environmental Impact Report](https://humboldt.gov/DocumentCenter/View/108020/Nordic-Aquafarms-Final-EIR) (<https://humboldt.gov/DocumentCenter/View/108020/Nordic-Aquafarms-Final-EIR>) (State Clearinghouse No. 2021040532) performed by Humboldt County. Ongoing permitting actions are still ongoing for the California Coastal Commission and the California Department of Fish and Wildlife.

The Permittees are redeveloping the site of the decommissioned Freshwater Tissue Samoa Pulp Mill facility to construct a land-based finfish recirculating aquaculture system (RAS) facility and install a three to five-megawatt photovoltaic solar panel array covering approximately 690,000 square feet of the facility roofs. The Facility consists of 32 acres that will be used for the land-based finfish aquaculture facility and associated infrastructure.

The proposed total water volume of effluent discharge from the Facility is 10.3 million gallons per day (MGD), which would be comprised of 10 MGD seawater sourced from Humboldt Bay (salinity 30.0 to 33.5 parts per thousand (PPT) and 0.3 MGD of

freshwater sourced from the Humboldt Bay Municipal Water District (HBMWD) via the Mad River pumping station (salinity 0 PPT).

The treatment system at the Facility will consist of an advanced wastewater treatment plant to treat the effluent, including a Moving Bed Biofilm Reactor (MBBR), a membrane bioreactor (MBR) and UV-C disinfection. The effluent will be discharged about a mile and a half offshore to the Pacific Ocean through a 64-port diffuser.

DISCUSSION: Order No. R1-2023-0019 (Proposed Permit) is a new NPDES permit for the new aquaculture facility. The Proposed Permit prescribes effluent limitations for biochemical oxygen demand (BOD), total suspended solids (TSS), settleable solids, pH, oil and grease and turbidity.

The Proposed Permit includes special provisions which require studies and reports to ensure compliance with the operation and maintenance of the Facility, outfall and intake and toxicity testing requirements. Other noteworthy requirements of the Proposed Permit include the following:

1. **Disaster Preparedness Assessment Report and Action Plan.** The Permittees are required to assess the Facility, operations, and discharge systems to determine areas of short- and long-term vulnerabilities related to natural disasters and extreme weather; identify control measures needed to protect, improve, and maintain infrastructure, waste discharge compliance, and receiving water quality in the event of a natural disaster, extreme weather conditions, or sea level rise; develop a schedule to implement necessary control measures and implement the necessary control measures per the approved schedule of implementation.
(Order Section 6.3.2.1)
2. **New Facility Certification Report.** Nordic Aquafarms California, LLC, shall submit a certification report, once construction of the new Facility is complete and prior to first discharge, for each new treatment facility, expansion of an existing facility, and design capacity re-ratings, prepared by the design engineer.
(Order section 6.3.4.3)
3. **Mitigation Project for Intake Structures.** Humboldt Bay Harbor, Recreation and Conservation District shall complete the mitigation project described in Fact Sheet section 2.1.3 to mitigate impacts to aquatic life due to the operation of the intake structures for the Facility. The mitigation project is consistent with section III.M.2.e.(2) of the 2019 Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (Ocean Plan) for compliance with Water Code section 13142.5. Regional Water Board staff will consult with California Department of Fish and Wildlife (CDFW) and California Coastal Commission to ensure that the Mitigation Project fully mitigates the loss of aquatic life.
(Order Section 6.3.7.3)

4. **Monitoring of Coastal Oceanography and Water Quality.** This monitoring program shall be carried out to understand interannual variability of receiving water conditions (e.g., cool vs warm years) and shall commence with pre-discharge baseline monitoring. Baseline monitoring shall commence one to two years prior to the discharge from the Facility. Post-discharge receiving water monitoring would commence following completion of Phase 1 operations following the same methodology as the baseline monitoring. The post-discharge monitoring shall continue for three years to provide “before-after-control impact” or “before-after-gradient” design for the biological monitoring program. The monitoring program shall be conducted during the summer/fall period of upwelling “relaxation,” when conditions are least energetic, and dilution of the discharge would thus be lowest. Two annual surveys shall occur during the summer/fall period, ideally in August or September, separated by at least two weeks.

Extensive comments on the Draft Permit were received from Nordic Aquafarms California, LLC, the HBHRCD, Humboldt Baykeeper, CDFW, and California Coastal Commission. A full explanation of the comments and Regional Water Board Staff’s (Staff) responses is provided in the attached Response to Comments document. The Proposed Permit has been revised in response to some of the comments received. The most significant concerns expressed in the comments are summarized in the following enumerated paragraphs with Staff’s response and proposed resolution where applicable.

1. **Dilution Credit.** Nordic Aquafarms California, LLC, requested an increase in the dilution credit from the historical 115:1 to 173.9:1 based on updated modeling showing that the discharge of 10.3 mgd, through 60 of the 64 ports on the diffuser, will result in an initial zone of dilution of 173.9:1.

The Ocean Plan allows for a mixing zone as determined by the initial zone of dilution. The Proposed Order has been modified to increase the dilution credit from 115:1 to 173.9:1.

2. **Mitigation Project.** CDFW and the California Coastal Commission requested additions to the Mitigation Project Reopener Provision and the Mitigation Project Workplan to state that “mitigation options to offset impacts to longfin smelt larvae are still being discussed between the Harbor District and the Department and will be determined through the Department’s CESA 2081(b) ITP process” and a request that “the draft permit’s re-opener clause be modified to acknowledge ongoing interagency review and to specify that the Regional Board may re-open the permit specifically to incorporate additional or different mitigation requirements that result from that review if needed to provide conformity to relevant water code and Ocean Plan provisions”.

The Proposed Order has been modified to include the suggested language in the Mitigation Project Reopener Provision and the Mitigation Project Provision as requested.

- 3. Update Modeling to Incorporate the Change from Atlantic Salmon to Yellowtail Kingfish.** CDFW and Humboldt Baykeeper commented that the near and far field modeling should be reanalyzed using water quality metrics for Yellowtail Kingfish discharge to ensure all water quality objectives will be met. Nordic Aquafarms California, LLC, included updated modeling results with their public comment letter that updated the zone of water quality degradation and impacts to water quality with updated effluent characteristics as result of the change in species raised from Atlantic Salmon to Yellowtail Kingfish.

The Fact Sheet in the Proposed Order has been modified to include the updated characterization of the effluent and further detail the requirements of the diffuser to maintain the initial zone of dilution.

- 4. Nitrogen Monitoring.** California Coastal Commission commented on the need to increase monitoring for nitrogen compounds from monthly to daily sampling to allow quantification of daily fluctuations in nitrogen concentrations that may affect biotic imbalances.

The Proposed Order has been updated to require weekly monitoring of nitrogen concentrations to better quantify the loading of nitrogen on the Pacific Ocean and determine if future, observable impacts to water quality are a result of the discharge. Staff reached out to the local laboratory to determine if daily sampling would be feasible and was told that daily sampling would not be feasible due to staffing shortages and the lack of availability to analyze samples on the weekends.

A copy of the Draft Permit was posted on the Regional Water Board website and was available for public comment from July 24, 2023, through August 23, 2023, for an initial 30-day comment period. A full explanation of the comments and responses is provided in the attached Response to Comments document. Comment letters and staff responses are attached.

Staff initiated changes were made to the Proposed Order to update and provide clarification on the Proposed Order. Specifically, Staff made updates to the Fact Sheet language discussing the Policy on Regulation of Fish Hatcheries, Fish Rearing Facilities, and Aquaculture Operations and to include language on the Regulation for Use of Aquaculture Drugs.

While it is not anticipated that the Permittees will contest this item, Staff expect that outside parties will address the Board during the public hearing.

RECOMMENDATION: Adopt Order No. R1-2023-0019 as proposed.

SUPPORTING DOCUMENTS:

1. Proposed Order No. R1-2023-0019
2. Notice of Public Hearing
3. Response to Comments Document
4. Copies of the public comment letters received regarding this Order are available upon request by emailing Justin.McSmith@Waterboards.ca.gov
5. [Final EIR for the Nordic Project](https://humboldt.gov.org/DocumentCenter/View/108020/Nordic-Aquafarms-Final-EIR)
(<https://humboldt.gov.org/DocumentCenter/View/108020/Nordic-Aquafarms-Final-EIR>)