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To: DEP, Nordic Aqua Farms
Subject: Nordic aquafarms comments pt 2

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Re Nordic Aquafarms application public comment pt 2 MERCURY ISSUES

Dear Board of Environmental Protection members and staff

I am executive director of Friends of Penobscot Bay, a waterkeeper affiliate

We are writing in opposition to the Nordic Aquafarm (NAF) project and urge the Board to follow its mandate and require an evaluation of the regional effect of adding multiple major water dependent industrial animal agriculture facilities to the Penobscot Estuary home of New England's largest remaining wild atlantic salmon stock.

Because a significant amount of mercury has reached the mouth of Penobscot River down the decades from the Orrington spill and will continue to enter upper Penobscot Bay for years we are requesting the Board consult with Maine Centers for Disease control on expanding of Maine's fish safe eating guidelines for fresh water and salt water species to include a separate guideline for land-farmed fishes raised in waters with known mercury restrictions.

Specifically the new label would be for Atlantic Salmon and other fishes raised in Recirculating Aquaculture System facilities in which the incoming habitat water for the tank-farmed fish is taken from rivers and/or lakes with fish or seafood consumption warnings imposed by the state for pregnant and nursing women, women who may get pregnant, and children under the age of 8.

We believe this is necessary for the Board to add this into its consideration We are disappointed that the DEP has avoided any and all precautionary introductions of the new Recirculating Aquaculture System industry to Penobscot Bay and River with an inadequate "best professional judgement" disclaimer concerning potential violations of state mercury safety standards .

Water Discharge vs. Water Intake DEP's disclaimer refers to the discharge of wastewater as opposed to -

1) the levels of mercury in water intake and the effects of raising fish in water in which mercury is present in a closed system as opposed to open water.

2) The mercury content of the flesh of the fishes raised in water sourced from areas in which fish consumption advisories are present.

RAS and Mercury Removal Because suspended mercury levels in these waters are variable, the systems proposed for the mercury removal must be able to adapt when concentrations are elevated or fall. We think that despite their best efforts , the mercury concentrations in the RAS fish tissues will fluctuate. This would vary based on numerous factors including the location and seasonality of the salt wedge in the lower Penobscot River, where sediments can resuspend as currents collide at this fresh salt interface. For that reason, we believe that a third mercury advisory guideline be developed.

Public Health It is critical that public health agencies have an advisory's language in place for this new class of salmon, that, unlike landlocked salmon and open ocean net pen salmon, must spend their entire lives bathing & breathing waters known to have elevated mercury levels. The potential for significant mercury uptake in RAS tank farmed salmon is a real one. It is our hope that the State of Maine will act NOW and preemptively develop a guideline mercury standard for the flesh of RAS fish raised entirely using state waters known to be contaminated by that metal.

RAS Investment in Maine on the rise This new system of fish farming in Maine is drawing many investors as Maine is touted by the seafood industry press and media as one of the most desirable states in which to operate these facilities. We have little doubt that Penobscot Bay and its tidal rivers will feature greatly in such initiatives, It is imprudent to wait until more of these facilities dot the shores of Maine rivers, bays and coasts, and the industry gets the clout to challenge creation of such standards.

Advisory Labels Such an advisory label, clearly visible to potential buyers,would be used by: in three venues

* Wholesale distributors' invoices of product from a RAS facility with such challenges.

* Retail and online outlets where said product is sold fresh, frozen or processed,

* Advertisements and commercials promoting said product from that facility

Double Exposure to Mercury Unlike landlocked salmon, RAS farmed salmon are raised in both freshwater and saltwater tanks during different stages of their lives. When the freshwater for an RAS facility is drawn from a lake sufficiently contaminated with mercury to have an advisory for its fishes, and then the saltwater for that facility's fishes' post-smolt phase of their lives is drawn from a section of a river closed to crustacean harvesting due to mercury contamination, the farmed fish will have at least double the exposure to mercury.

Our mercury advisory request presently concerns the proposed use of Penobscot River water pumped ashore in Belfast Maine to raise Atlantic salmon in NORdic's land based recirculating aquaculture operation. We also believe that this should apply to the Whole Oceanbs applicant where water from a mercury contaminated river would be mixed with water from a mercury contaminated Bucksport Lake that also has a mercury advisory.

Resuspension of Mercury According to court ordered and peer reviewed studies, the high turbulence of river waters adjacent to the town of Bucksport resuspends more mercury into the water column there than anywhere else on the river. Source: Penobscot River Mercury Study, Chapter 7 "Field Investigations of Hydrodynamics & Particle Transport in Penobscot River and Bay", Fig 7A.

Significantly, the level of mercury in this reach of waters may be grossly underestimated, due to incomplete testing. An RAS facility that uses mercury tainted water may filter out mercury but this is only a partial removal and is yet to be proven for waters pumped continually into and through the facility at a very high rate and in such large amounts, with varying levels of mercury in them as RAS facilities require.

At best the organisms raised in such waters their entire lives would have lower levels of mercury (but most certainly not mercury-free) and at worst would have MEHG levels above the state's food safety advisory trigger. That they are raised in a concentrated area with little of the variability of wild fishes is significant.

Incomplete Records .Until such time as a reliable study clarifies the amounts of mercury actually in the intake water we request the department to be responsibly precautionary and require safe eating guidelines labeling of aquaculture products raised in waters that are under state and/or federal mercury advisories.

Conclusion In closing, we must again emphasize that as interest in siting RAS aquaculture facilities in Maine grows, it is imperative that the state of Maine protect health of consumers of RAS aquaculture products raised with such waters, by

requiring the appropriate health advisory labels to be affixed to the products whether fresh, frozen or processed. We look forward to the Board of Environmental Protection working with the ME CDC on this important issue.

Thank you

Ron Huber executive director

Friends of Penobscot Bay