

**Wood, Gregg**

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**From:** Andrew Stevenson <andrewsteve@icloud.com>  
**Sent:** Monday, October 29, 2018 6:00 AM  
**To:** Wood, Gregg  
**Subject:** [EXTERNAL SENDER] Comments regarding Whole Oceans, LLC MEPDES permit application  
**Attachments:** 2018-10-29\_Stevenson-Whole Oceans MEPDES-comments.docx

Good morning, Gregg:

Attached are my comments on the MEPDES effluent discharge permit application submitted by Whole Oceans, LLC.

I will send a paper copy in this morning's mail.

Thank you for the opportunity to participate in the permit review and approval process.

Sincerely,  
Andrew



Andrew E. Stevenson  
5 Union Street  
Belfast, Maine 04915

October 29, 2018

Mr. Gregg Wood, Sr. Environmental Engineer  
Maine Department of Environmental Protection  
Bureau of Water Quality  
Division of Water Quality Management  
17 State House Station  
Augusta, Maine 04333-0017

Re: General Application for WDL/MEPDES Permit by Whole Oceans, LLC

Dear Mr. Wood:

I appreciate the opportunity to review the MEPDES permit application submitted to DEP by Whole Oceans, LLC requesting permission to discharge wastewater to the Penobscot River. Whole Oceans (hereafter referred to as "WO") is proposing to construct and operate a recirculating aquaculture system (RAS) that will of raise salmon from eggs to fully grown adults for commercial markets. Such an operation, if permitted, will be the first of its kind in Maine. I have paid careful attention to the overall plan as well as the details that are contained in the WO proposal and offer these comments to your department and to the applicant for consideration.

The "beneficial use" of sludge from the Production Area needs to be identified. In the production flow diagram (PFD), "Whole Oceans Production Area Effluent PFD," the applicant states in-plant process flows will be treated with polymers, filtered by belt filter and centrifuge, and the sludge produced will be "...hailed to beneficial reuse via truck." There is not enough information in the application to tell how long such solids can be held at the facility before they must be trucked away and no description of the holding facilities that might be constructed. I request that the beneficial use be identified before DEP makes a permitting decision.

The landfill to receive sterilized solids from treating the Quarantine Area needs to be identified. In the diagram, "Whole Oceans Quarantine Area Effluent PFD," the applicant states that "...sterilized solids slurry to landfill." From the diagram it is impossible to tell how such a solid waste stream will be delivered to the landfill, whether the landfill is part of the WO facility or a 3<sup>rd</sup> party somewhere else. The questions of storage time and holding tanks also apply to this waste stream. I request that the applicant identify landfills capable of receiving and safely burying such a slurry. I believe this is particularly important because the actual composition of such a slurry is unknown but likely to contain one or more of the 11 fungicides, topical bactericides, parasiticides, antibiotics, therapeutants listed in the application.



The details of incineration or ensiling need to be provided. Also depicted on the PFD, "Whole Oceans Quarantine Area Effluent PFD," is an operation for burning or ensiling "...all mortalities and screenings from fish exclusion barriers..." If either of these operations is part of the overall WO facility design, I request that the applicant include that information. If either operation is an off-site 3<sup>rd</sup> party, then the applicant needs to identify the companies or services that can provide safe handling and disposal of the mortalities.

There is ambiguity regarding the point of effluent discharge. The PFDs for the Production Area and the Quarantine Area show that effluents from these operations will be "...Penobscot river discharge." Likewise, in the applicant's EPA Form 2D, "New Sources and New Dischargers Application for Permit to Discharge Process Wastewater," the applicant lists the Penobscot River as the discharge point for all water flowing through the plant. However, in Attachment D to WDL – DEP Form: Fish Processing the applicant states in response to Question 8 under "Type of wastewater treatment" that "...The fish processing wastewater is collected in sealed tanks and is then pumped to the municipal sanitary sewer." I request that the applicant revise the documents to clearly state that the only wastewater to be discharged to the Bucksport municipal wastewater system will be sanitary waste flows from normal office activities such as bathrooms and cafeterias...if that is the case.

Many substances are unaccounted for in the waste flows described. The applicant lists six fungicides, topical bactericides, parasiticides; three antibiotics; and two therapeutants in Attachment B to Question 5 on the Food Processing Form. I think it is important for your department, the Department of Marine Resources (DMR), the Department of Agriculture, Conservation & Forestry (DACF), and the public to know how WO intends to control, track, destroy, or neutralize these substances. I request that the applicant provide DEP with credible information about how these substances bio-accumulate in the salmon (if they do) or how they persist in the effluent and the solid waste flows (if they do not).

Critical information on salmon feedstocks is missing. In Attachment F to WDL DEP Form: Fish Rearing, the applicant states in answer to Question 4 – Type(s) of feed used, that WO will use "...Commercial Fish Farm Food." The salmon are projected to consume the food at the rate of 22,000 lbs./day for eight months a year, and 66,000 lbs./day for four months a year. This blanket statement is insufficient for a DEP decision on the application. Without a clear statement of feedstock constituents, DEP cannot determine the complete nature of the plant effluent or the solid waste streams. Without complete knowledge of either effluent or solid waste, DEP and DMR cannot determine the short- or long-term effects of the effluent discharged and DACF cannot determine the short- or long-term effects of any solids disposed of offsite.



Skretting USA, one of the largest providers of commercial fish feed in the U.S. has at least three different categories of salmon feed – one for fry, one for smolts, and one for maturing adults. A representative of that firm stated at a public meeting on the salmon fish farm proposed by Nordic Aquafarms for Belfast that Skretting could custom-make its various feeds...essentially tailoring the feed to the requirements of the buyer. If the feedstocks used by WO can be so easily “engineered,” DEP needs to know what goes into them and what is left out.

The lack of information on feedstock composition also prevents DEP from having the information needed to properly assess the feasibility of the sludge-handling operations proposed for the WO facility. Food composition is listed as a major determinant in the effectiveness of sludge production and sludge thickening on Page 4 in Attachment H to WDL – Description of treatment facilities. Billund Aqua, the provider of the sludge-handling filters, presses, and centrifuges, states that the quality of the fish feed has a direct bearing on sludge production. The important factors include: the physical quality of the feed (how much dust), its composition (how much oil, nitrogen, phosphor, and carbohydrate), its digestibility; the excrement produced, and the type of pellet.

I request that DEP require the applicant to provide additional information on the composition of the feedstocks that WO will feed its fish at all stages of their life cycle.

A list of drugs or therapeutics appears to be missing. Also in Attachment F to WDL DEP Form: Fish Rearing, Attachment B contains the answers to Question 10 and 11 on the form. I believe that the answer to Question 11 needs to include the six substances classified as fungicides, topical bactericides, or parasiticides that are listed in Attachment B to Question 5 for the same form.

The water intake point appears to be downstream from the discharge point. In Attachment C to WDL – DEP Form: Topographic Map, the applicant’s map shows the saltwater intake point as being downstream for Outfall 003, the proposed discharge point. Is this an accurate depiction of the two points? If so, the applicant appears willing to risk contaminating his own source of saltwater. If not, a revised map showing the correct placement of the saltwater intake and the effluent discharge outfall needs to be provided.

Thank you very much for the opportunity to submit these comments as part of the public record on the MEPDES effluent discharge permit application filed with your department by Whole Oceans, LLC.

Sincerely,

Andrew E. Stevenson