

22.0 ODORS

The Belfast salmon farm will not generate noticeable odors. Modern fish production facilities capture and store byproduct streams in airtight and/or cooled storage, to protect their economic value. Odor in the seafood industry generally emanates from waste exposure to air; with the result of also destroying the value of potential byproducts. In our case, that would lead to economic losses.

Potential sources of odor in land-based aquaculture include:

1. Ensilage of mortalities;
2. Fish processing;
3. The Waste Water Treatment Plant; and
4. To a lesser extent, feed storage.

The following steps will be taken to avoid odors at each of these points.

22.1 Universally

Basic mechanisms for odor control throughout the facility:

1. Sealed enclosure in tanks;
2. Chilling or freezing;
3. Regular out-shipment to off-take partners; and
4. Air treatment systems.

All processes with the potential for creating odors will take place in completely enclosed buildings. Nordic will partner with established recycling and disposal professionals with years of experience in odor control. We have obtained capacity to serve letters from multiple companies for each of these byproduct streams. Through consultation with these partners we will install proven equipment at key areas to ensure additional odor control. We will employ air filtration that may include carbon, biofilters, wet scrubbers, and media.

22.2 Ensilage of Mortalities

Even with well-designed life support systems and husbandry practices, mortalities are a natural part of any farming operation. Mortalities will be removed and tank-stored in a weak organic acid solution to maintain a pH below 4. This is a common means of preserving these materials in air-sealed containers for out-shipment. Following preservation, mortalities will be properly disposed of offsite through one of our professional recycling and disposal partners.



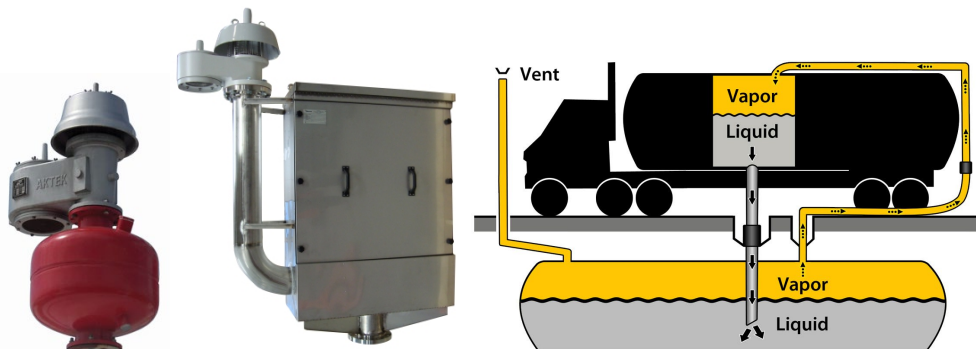
Examples of commercially available fish ensilage systems

22.3 Fish Processing

After processing, residual fish parts, or byproducts, will immediately be stored in insulated, food grade containers for regular out-shipment to offtake partners. Byproducts will be frozen to prevent spoilage. These materials will be processed into secondary products, such as bait, pet food, and human supplements. Recycling for these uses requires that materials be handled and stored in a manner that prevents spoilage, and the associated odor. Reuse retains the value of these byproducts. We have received a capacity to serve letter from a company with a history of providing these services for other salmon and seafood processors in greater New England (**Appendix 22-A**). This company has demonstrated their competency and professionalism over the 57 years they have been in operation.

22.4 Filtrate

Organic material removed by our water filtration systems will be regularly removed from the facility by a partner with demonstrated experience in the transportation, disposal and odor control of similar materials. Materials filtered from the water will be immediately pumped into and stored in sealed tanks until they are outshipped in tank trucks. Filtrate will not be exposed to air, therefore fermentation and resulting odors will not develop. Nordic has received letters of capacity to serve from reputable partners with years of experience (**Appendix 22-B**). These partners have demonstrated their ability to remove odiferous materials from holding tanks in urban settings without releasing odors.



Examples of common odor control filters for tankers and basic recovery method that will be employed to reduce ventilation of air during pumping out of tanks

22.5 Feed

Feed silos will be stored inside fish rearing buildings. There will be no storage of fish feed outdoors. Given the high cost of fish feed, Nordic will manage this resource carefully and will not store more than a week's supply at the time. Thus, we anticipate no odors from fish feed.

22.6 Nordic Aquafarm's Supporting Experience

Sashimi Royal, an Aquaculture Stewardship Council certified facility, is Nordic's sister company and has been producing Yellowtail kingfish in a similar recirculating aquaculture system facility for over two years without complaints of odor. Key staff have 30 years of experience in the fish farming industry and extensive experience in such operations. Our engineering team in Denmark (Nordic DK) is among the most experienced farm designers in the industry and have designed many facilities in the past two decades with waste processing solutions.

Current employees of Nordic have firsthand experience managing recirculating aquaculture systems and these waste streams:

- Cathal Dineen, Production Director
 - Production Director, Fredrikstad Seafoods (Nordic subsidiary)
 - Production Lead, Kuterra RAS salmon farm in British Columbia

- David Noyes, Chief Technology Officer
 - Operations Manager and Systems Lead RAS Yellowtail Kingfish, Black Sea Bass farm in Maine
 - Laboratory assistant, RAS Atlantic Salmon, Arctic char, Lumpfish USDA ARS National Cold Water Marine Aquaculture Center in Maine
 - Research assistant Aquaculture Research institute and University of Maine Animal Health Lab, University of Maine, multiple RAS systems and species

- Erik Heim, President
 - Developer, executive and chairperson in a number of land-based operations internationally.
 - Extensive work with environmental solutions and in setting high standards in modern facilities

In Maine, we are working with environmental consulting companies and vendors to ensure high environmental standards. In future US organizational build-up, additional specialist staff will be hired in Maine.

APPENDIX 22-A

Capacity to Serve Letter –
Channel Fish Co.

APPENDIX 22-B

Capacity to Serve Letters –
Agri-Cycle Energy, Casella Organics, and Waste Management