



Maine Department of Environmental Protection  
Waste Discharge Permit Application

## Food Processing Facilities

---

This form must be attached to the General Application for a Waste Discharge License/MEPDES Permit  
(Form DEPLW0105-B2003)

Please answer all questions completely, using additional pages as necessary with responses clearly identified by item number on this form.

1. Facility Name: \_\_\_\_\_ NPDES # ME \_\_\_\_\_
  
2. Attach a drawing showing the water flow through the facility. Please include the sources and volumes of intake water, operations contributing to wastewater discharges, treatment units and outfalls with numbers corresponding to those in the general application.  
See Attachment 1.
  
3. Is chlorine used in the process or is the intake water chlorinated? Yes If so, what is the concentration of chlorine in the final effluent(s)? \_\_\_\_\_
  
4. List chemicals used for sanitation or disinfection during production or clean-up operations, and maximum discharge concentrations.  
Nordic Aquafarms will use approved sanitation or disinfection products for cleaning the food processing facility. See Attachment 3 for a list of compounds.
  
5. List chemicals used in products or processing, and maximum discharge concentrations.  
See Attachment 3 for a list of compounds.
  
6. If boiler blowdown or non-contact cooling water is discharged, please complete EPA form 2E.  
Not Applicable.
  
7. How are sanitary wastes disposed of?

8. Please complete the attached table of products and productions rates.  
Complete a separate block for each product or type of production.

Product Name: \_\_\_\_\_

Pounds per day processed			Processing period(s) each year		Daily effluent flows	
Average	Maximum	Total pounds per year processed	Total weeks per year	During the months of	Average	Maximum
Describe processing operation The numbers above represent live weights. The final product is a head on, gutted salmon. The fish are humanely slaughtered, gutted and placed on ice.						
Type of wastewater treatment Fish processing water is sent through a 0.4 micron filter prior to entering the WWTP and sterilized by UV-C treatment along with the total final discharge.						

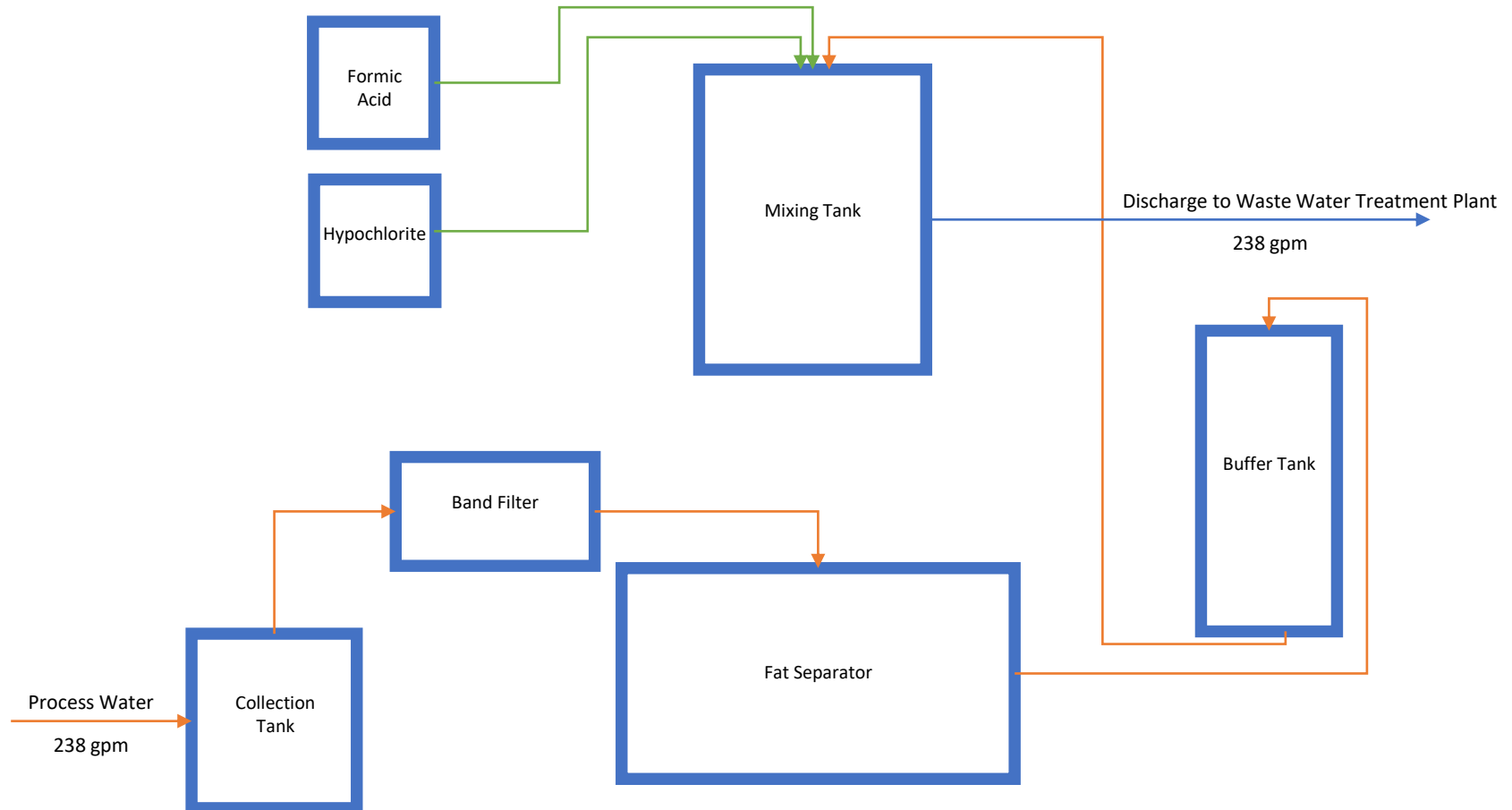
Product Name: \_\_\_\_\_

Pounds per day processed			Processing period(s) each year		Daily effluent flows	
Average	Maximum	Total pounds per year processed	Total weeks per year	During the months of	Average	Maximum
Describe processing operation						
Type of wastewater treatment						

Product Name: \_\_\_\_\_

Pounds per day processed			Processing period(s) each year		Daily effluent flows	
Average	Maximum	Total pounds per year processed	Total weeks per year	During the months of	Average	Maximum
Describe processing operation						
Type of wastewater treatment						

## NAF Fish Processing Facility – Process Water Treatment



Water used during fish processing originates from the municipal Belfast Water District supply. Wastewater generated undergoes initial disinfection and filtering prior to travelling to the Wastewater Treatment Plant. At the Wastewater Treatment Plant, fish processing water is blended with smolt and grow-out facility production water and undergoes full chemical and biological treatment prior to discharge into Belfast Bay.

### Chlorine Disinfection of Fish Processing Water

All process water from fish processing will be subject to disinfection in a holding tank prior to discharge. In line with disinfection processes in the Norwegian industry, the initial chlorine concentration in the holding tank for processing water will be 50 milligrams per liter (mg/L). Processing water will remain in the holding tank for approximately 20 minutes until the chlorine has reacted and been reduced to a maximum concentration of 10 mg/L. The fish processing water is then released from the holding tank and mixed with production water from the grow-out and smolt production units on its way to the waste water treatment plant. Dilution with the wastewater from smolt and grow-out production units should result in a chlorine concentration of 0.4 mg/L. Further, reactions with biological matter during the intermixing with production waters and the waste water treatment process will significantly reduce concentrations prior to effluent discharge into Belfast Bay.

## Chemicals for the Fish Farm

**Note:** Annual usage estimates represent approximate quantity required given a product is the only one used for this application. The quantities needed will be dependent on the site-specific conditions experienced which are difficult to establish prior to operations and are indicated as estimates only. Likely a fraction of the estimated annual use of each of these products will be used. All products listed will be used according to label.

### Cleaners

#### Detergents

**Aqualife® Multipurpose Cleaner.** A biodegradable, nonhazardous cleaner that is designed specifically for use in fish hatcheries, aquaculture facilities, fish & food processing plants, & agricultural farms. Active ingredients: sodium hydroxide (1-5%), the product is phosphate free, contains no volatile organic compounds and is NSF certified for use in food processing facilities. Used according to the label at dilutions of 1:20. Approximate annual use: 2232 gallons/year (8449 l/year).

**Gil Save®.** High-foaming chlorinated, alkaline, liquid detergent, Gil Save is designed for foam and high pressure spray cleaning of meat and poultry plants, breweries, dairies and canneries. It is a complete product containing alkalis, water conditioners, chlorine and high-foaming wetting agents. Gil Save is an effective cleaner of food processing equipment by removing fatty and protein soils, pectin, mold, yeast and organic greases. Active ingredients: sodium hydroxide (7-9%), sodium hypochlorite (3-4%). Use according to label at concentrations of 0.2-3% (¼-4 oz/gal). Approximate annual use: 678 gallons/year (2567 l/year).

#### Clean in Place (CIP)

**Gil Super CIP®.** A heavy-duty, chelated-liquid caustic cleaner for use in CIP, boil-out, soak, spray clean and atomization cleaning systems, Gil Super CIP is formulated to remove protein, fatty and carbonized soils typically found in dairy and food processing. Active ingredients: sodium hydroxide (49%). Used according to label at 0.1-3% (1/8-4 oz/gal). Approx. annual use: 5840 gallons/year (22107 l/year).

**Gil Hydrox®.** A concentrated organic, liquid acid cleaner, Gil Hydrox rapidly removes milk/beer stone, alkaline/hard water film and stains/protein build-up from dairy and food processing equipment. It is specially formulated for use in CIP, spray and acid rinse operations. Active ingredients: glycolic acid (29-31%). Used according to label at 0.3-1.5% (½-2 oz/gal). Approx. annual use: 5840 gallons/year (22107 l/year).

#### Disinfectants/Sanitizers

**Bleach.** Active ingredient: sodium hypochlorite (8%) in concentrated form. Typically used at 100-1000 ppm for general cleaning/disinfection. Approximate annual use: 1500 gallons/year (5700 l/year).

**Ozone.** Ozone can be dissolved into water to provide an aqueous ozone solution that is stable, safe, easy to control, leaves no residue and has been granted GRAS approval by both the USDA and FDA for direct contact with food. This water containing ozone can replace chlorine as an antimicrobial agent or be used to supplement existing water rinses and achieve improved antimicrobial intervention. This is now a common application to sanitize fillet machines, cutting tables, knives, and all equipment that may be used in the seafood processing areas. Approximate annual use: TBD. Concentration in discharge = 0 ppm

**Virkon® Aquatic.** A powerful cleaning and disinfecting solution with efficacy against fish viruses, bacteria, fungi, and molds. Virkon® Aquatic is EPA registered (except in California where registration is pending) for the disinfection of environmental surfaces associated with aquaculture. Active ingredient: Potassium monopersulfate (21.4%). Used in accordance with label as a general cleaner and in footbaths. Working solution strengths normally range from 0.5% - 2.0%. Approx. annual use: 1100 lbs/year (500 kg/year).

**Zep FS Formula 12167® Chlorinated Disinfectant and Germicide.** A liquid chlorine sanitizer and deodorant for use in all types of food-handling establishments. Authorized as no rinse sanitizer for equipment. Provides deodorizing activity by destroying bacteria which generate many disagreeable odors. Can also be used to sanitize commercial laundry. Active ingredients: Sodium hypochlorite (5-10%) and sodium hydroxide (1-3%). Used according to label, effective at concentrations as low as 0.3% (1 oz/ 2 gallons). USDA applicable and EPA and Maine registered. Approx. annual use: 1980 gallons/year (7495 l/year).

## Therapeutants

### Compounds Potentially Used:

Note: the quantities needed will be dependent on the site-specific conditions experienced which are difficult to establish prior to operations and so are indicated as estimates only. All products listed will be used according to label use or a licensed veterinarian's prescription.

**Parasite-S, Formalin-F, and Formacide-B.** (Formalin). Active ingredient 37% formaldehyde. Used periodically according to the label if needed to alleviate fish health issues due to *saprolegniasis*, external protozoa and monogenetic trematodes. Typical dose rates from 25 ppm to 1,000 ppm. Approximate annual use: 925 gallons/year (3500 l/year).

**Finquel® or Tricane-S.** (Tricaine methanesulfonate). Used periodically in accordance with the label to reduce stress on the fish when handling small numbers for examination. Typical dose rates of 15-330 mg/L. Approximate annual use: 1.1 lbs/year (500 g/year).

**Halamid® Aqua.** (Chloramine-T). Active ingredients N-chloro, p-toluenesulfonamide and sodium salt trihydrate. Used periodically according to the label if needed to alleviate fish health issues due to bacterial gill disease. Typical dose range 12-20 ppm. Approximate annual use: 1100 lbs/year (500 kg/year).

**Ovadine® (PVP Iodine).** A buffered 1% Iodine solution (Iodophor) specifically formulated for use in disinfecting fish eggs. It contains a 10% Povidone-Iodine (PVP Iodine) complex, which provides 1% available iodine. Used according to the label at dose rates of 50 -100 ppm as available iodine solution. Estimated usage: 160 gallons/year (600 l/year).

#### **Compounds Rarely Used Only in Emergency Situations:**

**Praziquantel.** Considered as 100% active. Can be used if fish are suffering from trematode/cestode infections. Typical dose ranges from 5-200 ppm depending on length of standing bath treatment. Used as needed/intermittent or emergency use only, according to label use or as prescribed by a licensed veterinarian. Approx. annual use: 0 lbs/year (0 kg/year).

**Potassium permanganate.** Considered as 97% active. Can be used if fish are suffering from certain parasites and fungal infections in younger fish life-stages. Typical dose range 1.5-2.5 ppm. Used as needed/intermittent or emergency use only, according to label use or as prescribed by a licensed veterinarian. Approx. annual use: 0 lbs/year (0 kg/year).

**Terramycin® 200.** (oxytetracycline dehydrate, 44% active): Can be used as an in-feed treatment (maximum of 0.08 g active oxytetracycline/kg fish/day) if fish are suffering from certain bacterial infections. Used as needed/intermittent or emergency use only, according to label use or as prescribed by a licensed veterinarian. Approx. annual use: 0 lbs/year (0 kg/year).

**Aquaflor®.** (florfenicol; 50% active). Can be used as an in-feed treatment (maximum of 15 mg/kg fish/day) if fish are suffering from certain bacterial infections. Used as needed/intermittent or emergency use only, according to label use or as prescribed by a licensed veterinarian. Approx. annual use: 0 lbs/year (0 kg/year).

**Romet® 30/Romet® TC.** (sulfadimethoxine/ormetoprim, 30% active or 20% active, respectively). Can be used as an in-feed treatment (maximum of 50 mg/kg fish/day) if fish are suffering from certain bacterial infections. Used as needed/intermittent or emergency use only, according to label use or as prescribed by a licensed veterinarian. Approx. annual use: 0 lbs/year (0 kg/year).

## **Waste Water Treatment**

**Formic Acid (85%).** Used for pH correction of fish processing water prior to disinfection with sodium hypochlorite. Approx. annual use: 18200 gallons/year (69000 l/year).

**Bleach.** Active ingredient: sodium hypochlorite (15%). Used to disinfect water used in fish processing. Applied at concentration of 50 mg/l. Estimated discharge concentration: 0.4 mg/l. Approx. annual use: 14800 gallons/year (56000 l/year).

**Methanol.** Used as supplemental carbon source in waste water treatment plants to stimulate denitrification processes. Approx. annual use: 1.5 million gallons/year (5.6 million l/year).