Fact Sheet

**The U.S. Environmental Protection Agency (EPA)
Proposes to Issue a National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Pollutants Pursuant to the Provisions of the Clean Water Act (CWA) to:**

Tamgas Creek Hatchery

Mile 8 Hatchery Road
Metlakatla, Alaska 99926

NPDES Permit Number:	AK0028525
Public Notice Start Date:	September 28, 2018
Public Notice Expiration Date:	October 29, 2018
Technical Contact:	Kai Shum 206-553-0060 Shum.Kai@epa.gov 1-800-424-4372, ext. 0060 (within Alaska, Idaho, Oregon and Washington)

The EPA Proposes to Issue NPDES Permit

The EPA proposes to issue an NPDES permit for the facility referenced above. The draft permit places conditions on the discharge of pollutants from the hatchery to waters of the United States. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged from the facility.

This Fact Sheet includes:

- information on public comment, public hearing, and appeal procedures
- a listing of proposed effluent limitations and other conditions for the hatchery
- a map and description of the discharge location
- technical material supporting the conditions in the permit

Public Comment

Persons wishing to comment on, or request a Public Hearing for the draft permit for this facility may do so in writing by the expiration date of the Public Comment period. A request for a Public

Hearing must state the nature of the issues to be raised as well as the requester's name, address and telephone number. All comments and requests for Public Hearings must be in writing and should be submitted to the EPA as described in the Public Comments Section of the attached Public Notice.

After the Public Notice expires, and all comments have been considered, the EPA's regional Director for the Office of Water and Watersheds will make a final decision regarding permit issuance. If no substantive comments are received, the tentative conditions in the draft permit will become final, and the permit will become effective upon issuance. If substantive comments are received, the EPA will address the comments and issue the permit. The permit will become effective no less than 30 days after the issuance date, unless an appeal is submitted to the Environmental Appeals Board within 30 days pursuant to 40 CFR 124.19.

By the expiration date of the public comment period, all written comments and requests must be submitted to the following address:

US EPA Region 10
Attn: NPDES Permits Unit Manager
1200 Sixth Avenue
Suite 155 OWW-191
Seattle, Washington 98101-3140

Alternatively, by the expiration date of the public comment period, comments may be submitted via e-mail to Kai Shum at shum.kai@epa.gov .

Documents Are Available for Review.

The draft permit and fact sheet can be found on the EPA Region 10 website at https://www.epa.gov/npdes-permits/about-region-10s-npdes-permit-program

The draft Permit and Fact Sheet can also be reviewed at EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday at the address below:

U.S. Environmental Protection Agency Region 10
1200 Sixth Avenue
Seattle, Washington 98101
(206) 553-0523 or
Toll Free 1-800-424-4372 (within Alaska, Idaho, Oregon and Washington)

For technical questions regarding the Permit or fact sheet, contact Kai Shum at the phone number or e-mail address at the top of this fact sheet. Services can be made available to persons with disabilities by contacting Audrey Washington at (206) 553-0523.

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I. Background Information

A. General Facility Information

The Tamgas Creek Hatchery ("facility") is located within the Metlakatla Indian Community (MIC), which is an Indian Reservation. The proposed draft permit is for the facility's discharge to Tamgas Creek, which is also located within the Indian Reservation. The Alaska Department of Environmental Conservation (DEC) is the permitting authority for National Pollutant Discharge Elimination System (NPDES) permits in the State of Alaska, however EPA retains permitting and enforcement authorities for facilities operating outside state waters (generally 3 miles offshore), and others, such as facilities located in Indian Country. The MIC is located on Annette Island and is the only Indian Reservation in the State of Alaska. Accordingly, EPA is the permitting authority for this facility.

Table 1: General Facility Information

General Facility Information	
NPDES Permit Number:	AK0028525
Applicant:	Metlakatla Indian Community
Type of Ownership:	Tribal
Mailing Address:	P.O. Box 8 Metlakatla, Alaska 99926
Facility Contact:	Steven D. Leask, Manager 907-886-3150 Email: sedleask91@gmail.com
Facility Location:	Mile 8 Hatchery Road Metlakatla, Alaska 99926
Receiving Water:	Tamgas Creek, within the Metlakatla Indian Community
Facility Outfall:	55.058° N, 131.513° W

Facility Description

The MIC owns and operates the facility located approximately 7 miles south of Metlakatla, Alaska. Maps showing the location of the facility are shown in Appendix A**.** The facility is a hatchery that aids in the rehabilitation of depleted salmon stocks on Annette Island (in particular) and Southeast Alaska (in general) by developing the capacity to egg take, incubate, rear, and release juvenile salmon. The facility supports the economic development of the Annette Islands Reserve by establishing a community operated project which provides additional employment opportunities on the Reservation. After rearing the fish from the facility, MIC transfers fish from the facility to saltwater net pens on a seasonal basis. These salt water net pens are not located within the contiguous boundary of the facility. The salt water net pens are not part of this permitting action.

The facility opened in 1978 for chum production, and expanded in 1980 to include chum, coho, king, and sockeye salmon production. Fresh water is provided to the facility from an intake point at Tamgas Lake, where water is gravity fed down a 750-meter pipeline to the facility's raceways. The facility consists of a flow-through system which continually moves water through the production system and maintains the level of dissolved oxygen (DO) available for fish while carrying wastes away from the system. Some of this water may be reused and routed to flow-through adult ponds. The facility maintains 24 flow-through raceways (with no quiescent zones), all of which are constructed of cement. Salmon are hatched in incubators, raised in the raceways and depending on the species and at the appropriate stage, are transferred by tender vessel to net pens in Tamgas Harbor or Port Chester until release. Some salmon are also incubated at the hatchery and then raised freely in Tamgas Lake until they migrate to the ocean.

The Maximum Daily Flow through the facility is nine million gallons per day (MGD). The facility discharges to Tamgas Creek.

The most significant pollutants discharged from flow-through systems are solids from uneaten feed and feces, which are primarily organic matter with high 5-day biochemical oxygen demand (BOD5), if not properly treated, and organic nitrogen and phosphorus content.

The facility maintains a weir on Tamgas Creek in order to divert returning fish back to the facility which may allow fish to pass over the barrier for escapement to spawn in the Creek.

The facility uses formalin for disease treatment approximately one to two times per year, as well as hydrogen peroxide. Antibiotics are not currently used at the facility. All carcasses processed through the facility's fish intake ladder are sold for pet food. The facility produces coho, chum, sockeye, and king salmon. The facility production is approximately 237,000 lbs per year. Table 2 is a breakdown by species.

Table 2: Approximate Annual Production Weight by Species

Species	**Approximate Annual Production Weight**
Coho:	170,000 lbs
Chinook:	16,000 lbs
Chum:	50,000 lbs
Sockeye:	<1,000 lbs
Source: Telephone conversation with Steve Leask on May 18, 2016	

Aquaculture facilities may use one of several types of production systems, including ponds, flow-through systems, and recirculating systems. Flow-through production systems provide an

environment that imitates the natural environment. In such systems, fresh water, diverted from streams and/or wells, enters continuously at the top of the system near the water source. Smaller, younger fish are typically held at the top of the system near the water source, which provides the highest quality water. As fish grow, they can tolerate lower quality water, and they are moved to downstream units. Some flow-through systems are full-flow, discharging a single combined effluent stream with large water volumes and dilute pollutant concentrations. Others have two or more discharge streams, with the primary discharge from the flow-through production units, and smaller discharges from off-line settling basins. The most significant pollutants discharged from flow-through systems are solids from uneaten feed and feces, which are primarily organic matter with high 5-day biochemical oxygen demand (BOD_5), and organic nitrogen and phosphorus content.

The facility discharges directly to the Tamgas Creek without waste removal or treatment. The facility operates 140 incubators which are cleaned once per week. The Tamgas Hatchery has no off-line settling basins. Solids from the facility are removed through the fish ladder.

B. Description of Outfalls

The Hatchery has one outfall, 001, which discharges to Tamgas Creek.

Table 2. Description of Outfall.

Outfall Number	Location of Outfall	Description
001	55.058° N, 131.513° W	The fish ladder and discharge pipe discharge water from operations from the facility.

C. Industry Description

40 CFR 122.24 defines concentrated aquatic animal production (CAAP) facilities as point sources subject to the National Pollutant Discharge Elimination System (NPDES) permit program and further defines such a facility as a hatchery, fish farm, or other facility that contains, grows, or holds:

> Cold water fish species or other cold water aquatic animals in ponds, raceways, or other similar structures which discharge at least thirty days per year, but does not include:

a. Facilities that produce less than 20,000 harvest weight pounds of aquatic animals per year, and

b. Facilities that feed less than 5,000 pounds of food during the calendar month of maximum feeding.

Warm water fish species or other warm water aquatic animals in ponds, raceways, or other similar structures which discharge at least 30 days per year, but does not include:

a. Closed ponds which discharge only during periods of excess runoff; or

b. Facilities which produce less than 100,000 harvest weight pounds of aquatic animals per year

Cold water aquatic animals include, but are not limited to, the Salmonidae family of fish, e.g. trout and salmon. Warm water aquatic animals include, but are not limited to, the Ameiuride, Centrarchidae and Cyprinidae families of fish, e.g., respectively, catfish, sunfish and minnows. The facility meets the definition of a CAAP facility that produces or holds cold water species.

The terms "aquaculture facility" and "hatchery" are used interchangeably to be synonymous with "CAAP facility."

Aquaculture facilities may use one of several types of production systems, including ponds, flow-through systems, and recirculating systems. Infrequent discharges may occur as a result of a storm event or draining for harvest or repairs. Due to decomposition of biological material and settling of solids (feces, uneaten feed, and sediment), ponds are capable of treating and removing pollutants in the water; and when discharges occur, pollutant loads are often relatively low because of the settling that has taken place within the pond. Management practices to minimize the discharge of pollutants from pond systems focus on minimizing disturbance of sediments, reducing drainage frequency, managing water levels, minimizing erosion in and around pond banks, feed management, and the proper use and storage of chemicals and therapeutic agents.

Flow-through production systems provide an environment that imitates the natural environment. In such systems, fresh water, diverted from streams and/or wells, enters continuously at the top of the system near the water source. Smaller, younger fish are typically held at the top of the system near the water source, which provides the highest quality water. As fish grow, they can tolerate lower quality water, and they are moved to downstream units. Some flow-through systems are full-flow, discharging a single combined effluent stream with large water volumes and dilute pollutant concentrations. Others have two or more discharge streams, with the primary discharge from the flow-through production units, and smaller discharges from off-line settling basins. The most significant pollutants discharged from flow-through systems are solids from uneaten feed and feces, which are primarily organic matter with high 5-day biochemical oxygen demand (BOD_5), if not properly treated, and organic nitrogen and phosphorus content.

Recirculating production systems utilize tanks with continuously flowing water and side stream treatment technologies, which continuously treat a portion of the flow and return it to the production system.

D. Characterization of Discharges

Aquaculture facilities may discharge a variety of pollutants attributed to: (1) feeds, directly or indirectly (feces), (2) residuals of drugs or chemicals used for maintenance or restoration of animal health, and (3) residuals of chemicals used for cleaning equipment or for maintaining or enhancing water quality conditions.

Aquaculture facilities may generate and/or contribute significant amounts of nutrients (nitrogen and phosphorus) and solids to receiving waters. These pollutants have the potential to contribute to a number of negative water quality impacts related to eutrophication - algal blooms, increased turbidity, low dissolved oxygen and associated stresses to stream biota, increased water treatment requirements for users downstream, changes in benthic fauna, and stimulation of harmful microbial activity. In addition, the potential discharge of chemical and drug residuals raises concerns for deleterious effects on biota and on subsequent human consumers of fish or water.

The facility has similar operations, species raised, disease treatment/prevention, and wastewater discharge as the nine USFWS National Fish Hatcheries covered under the NPDES General Permit for Federal Aquaculture Facilities and Aquaculture Facilities Located in Indian Country in Washington (General Permit). The General Permit covers salmonid facilities and includes hatcheries east of the Cascade mountains and in the Columbia River area.

Since the USFWS National Fish Hatcheries have similar discharges, in order to draft a permit for the facility and to determine the pollutants of concern, the U.S. Environmental Protection Agency Region 10 (EPA) evaluated Discharge Monitoring Reports (DMRs), annual reports, and applications submitted by the facilities covered under the General Permit. In addition, the EPA has reviewed and incorporated the CAAP effluent limitation guidelines (ELGs) using best professional judgement.

The U.S. Food and Drug Administration (FDA) Center for Veterinary Medicine regulates animal drugs under the Federal Food, Drug, and Cosmetic Act (FFDCA). Extensive toxicity studies are required prior to drug approval from the FDA; however, limited data on potential environmental effects are available for some medications that are currently authorized for investigational use; and limited data are available characterizing the ecological significance of releases of drugs and chemicals at aquaculture facilities in the United States. The EPA recognizes, however, the general concerns with residual antibiotics and pesticides in the environment. Such residual materials may pollute receiving waters and immunize the organisms they are designed to control. These effects can be distributed well outside of the original areas of application. In addition, chemicals can harm aquatic organisms in receiving waters, depending on the rates applied and the rate of breakdown of the product or of the active ingredient.

Aquaculture facilities are not considered to be significant sources of pathogens that affect human health.

E. Permit History

This will be the first NPDES permit for this facility.

The facility submitted an application on November 5, 1976, for an NPDES permit, and began operating in 1977. On November 16, 1982, EPA issued a letter setting forth certain operating requirements for the facility and stated that for administrative reasons no permit would be issued at that time. EPA conducted a site visit to the facility in August 2010. An Administrative Order on Consent between the EPA and Metlakatla Indian Community, issued on July 22, 2011, was agreed upon to resolve permitting issues related to the facility. The order required submission of a complete NPDES permit application within 90 days of receipt, reporting effluent monitoring results, chemical and drug usage, and an underwater survey report. The facility submitted a new application for an NPDES permit on May 5, 2012, which was received May 8, 2012. In a letter to the facility dated May 10, 2012, EPA determined that the revised application was timely and complete. Only the results from one effluent monitoring sample, including TSS and SS data, were submitted with the application (data dated August 26, 2011). The underwater photographic survey results under Tamgas Harbor were submitted on February 7, 2012.

II. RECEIVING WATER

In drafting permit conditions, the EPA must analyze the effect of the facility's discharge on the receiving water. The details of that analysis are provided later in this Fact Sheet. This section summarizes characteristics of the receiving water that impact that analysis.

A. Receiving Water

The facility's outfall discharges into Tamgas Creek located near Mile 8 Hatchery Road on Annette Island in Alaska. The receiving water is located in Indian Country.

Tamgas Creek is approximately 0.35 miles long and is fed from the western side of Tamgas Lake. Downstream from the facility, Tamgas Creek discharges into Tamgas Harbor. Tamgas Harbor is located within the southwest portion of Annette Island and outlets to the Pacific Ocean to the south.

B. Designated Beneficial Uses

This facility discharges to Tamgas Creek, near its confluence with Tamgas Harbor. EPA is applying Alaska's EPA-approved Water Quality Standards. In accordance with Alaska's water quality standards, all uses in the Alaska Water Quality Standards are applicable unless otherwise designated.

18 AAC 70.020(a) lists Alaska's protected water use classes and subclasses as follows:

(1) fresh water

(A) water supply

(i) drinking, culinary, and food processing;
(ii) agriculture, including irrigation and stock watering;
(iii) aquaculture;
(iv) industrial;

(B) water recreation
(i) contact recreation;
(ii) secondary recreation;

(C) growth and propagation of fish, shellfish, other aquatic life, and wildlife; and

(2) marine water

(A) water supply
(i) aquaculture;
(ii) seafood processing;
(iii) industrial;

(B) water recreation
(i) contact recreation;
(ii) secondary recreation;

(C) growth and propagation of fish, shellfish, other aquatic life, and wildlife; and

(D) harvesting for consumption of raw mollusks or other raw aquatic life.

C. Tribal Water Quality Standards

MIC does not currently have its own water quality standards. Until they establish their own regulations for water water quality, Alaska's standards will be used as a reference to protect downstream uses in Alaska waters. According to DEC's document entitled, "Alaska's Impaired Waters - 2010", there are no listed impairments to water quality in the downstream segment of Tamgas Creek or in the Tamgas Harbor in the vicinity of the discharge.

General provisions of Alaska's Water Quality Standards are found in 18 AAC 70.010, and Alaska's Antidegradation policy is found in 18 AAC 70.015. 18 AAC 70.020(b) lists Alaska's specific water quality criteria for the designated uses in Part III.B. Due to the site characteristics and proximity of outfall location on Tamgas Creek to the harbor, EPA considered both applicable fresh water and marine water standards and the state's antidegradation policy for this permitting action. EPA believes that this permitting action would meet: 18 AAC 70.015(a)(1) and/or (a)(2) – Tier 1, in which the existing water uses and level of water quality necessary to protect existing uses would be maintained and protected, and/or, Tier 2 in which the lowering or potential lowering of water quality would not exceed applicable criteria.

D. Total Maximum Daily Loads (TMDLs)

No assessment data was available for Tamgas Creek, Tamgas Harbor or other water bodies upstream of the facility discharge (2010 Watershed Quality Assessment Report for the Ketchikan Watershed). Thus, there are no relevant TMDL WLAs for the facility's discharge.

III. EFFLUENT LIMITATIONS

A. General Approach to Determining Effluent Limitations

Section 301(a) of the CWA, 33 USC § 1311(a), prohibits the discharge of pollutants to waters of the U.S. unless the discharger is authorized pursuant to an NPDES permit. CWA § 402, 33 USC § 1342, authorize the EPA, or an approved state or tribal NPDES program, to issue an NPDES permit authorizing discharges subject to limitations and requirements imposed pursuant to CWA Sections 301, 304, 306, 401 and 403, 33 USC §§ 1311, 1314, 1316, 1341 and 1343.

In general, the CWA requires that the limits for a particular pollutant be the more stringent of either technology-based effluent limits (TBELs) or water quality-based effluent limits (WQBELs). TBELs are set according to the level of treatment that is achievable using available technology. WQBELs are designed to ensure that the state adopted, EPA approved, water quality standards of a waterbody are being met and they may be more stringent than TBELs.

The EPA first determines which TBELs apply to a discharge in accordance with applicable ELGs or through best professional judgment (BPJ). The EPA further determines which WQBELs apply to a discharge based upon an assessment of the pollutants discharged and a review of state or tribal water quality standards. Monitoring requirements must also be included in the permit to determine compliance with effluent limitations. Effluent and ambient monitoring may also be required to gather data for future effluent limitations or to monitor effluent impacts on receiving water quality.

The EPA has evaluated the facility's discharge with respect to these sections of the CWA and relevant NPDES implementing regulations to determine what conditions and requirements to include in the draft permit. The derivation of technology based and water quality based effluent limits for the proposed permit is described in detail in Appendix B of this Fact Sheet.

B. Evaluation of Technology-Based Limitations

Section 301(b) of the CWA requires industrial dischargers to meet technology-based ELGs, established by the EPA, which are enforceable through their incorporation into NPDES permits. The intent of a TBEL is to require a minimum level of treatment for industrial point sources based on currently available treatment technologies while allowing a discharger to choose and use any available control technique to meet the limitations. Accordingly, every individual member of a discharge class or category is required to operate their water pollution control technologies according to industry-wide standards and accepted engineering practices.

In developing TBELs for this Permit, the EPA considered the ELGs for CAAP facilities, as well as the precedent set by the EPA's General Permit for NPDES General Permit for Federal Aquaculture Facilities and Aquaculture Facilities Located in Indian Country in Washington, which was reissued in 2016. The General Permit is particularly relevant since the Tamgas Creek Hatchery is an aquaculture facility, that is located in Indian Country. Its operations are similar to that of hatcheries in Washington. For more information, see https://www.epa.gov/npdes-permits/npdes-general-permit-federal-aquaculture-facilities-and-aquaculture-facilities-located. Limitations and other requirements of these guidelines, standards, regulations, and permit are described below.

I. Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category. 40 CFR Part 451.

On August 23, 2004, the EPA published in the Federal Register ELGs for the Concentrated Aquatic Animal Production Point Source Category. These regulations, codified at 40 CFR Part 451, became effective on September 23, 2004.

CAAP facilities are point sources and subject to NPDES permits. A hatchery, fish farm, or other facility is considered a CAAP facility if it grows, contains, or holds, aquatic animals in either of two categories: cold water species or warm water species. The cold water species category includes facilities where animals are produced in ponds, raceways, or other similar structures that discharge at least 30 days per year, but does not include facilities that produce less than approximately 9,090 harvest weight kg (approximately 20,000 lb) of aquatic animals per year. It also does not include facilities that feed less than 2,272 kg (approximately 5,000 lb) of food during the calendar month of maximum feeding.

Although the NPDES permit program applies to all discharges from CAAP facilities, as defined at 40 CFR §122.24, only those facilities that produce, hold, or contain 100,000 pounds or more of fish during any twelve month period are subject to the ELGs for the CAAP Point Source Category. The ELGs include narrative effluent limitations for flow-through and recirculating production facilities and for net pen production facilities, as well as general reporting requirements for all facilities subject to the rule. The ELGs do not include any numerical limitations for specific pollutants.

The requirements of these guidelines and standards were used in developing the technology-based limitations for the General Permit, even though the guidelines themselves do not apply to facilities producing less than 100,000 pounds of cold-water species per year. Since the ELGs apply best management practices (BMPs) and certain reporting practices in lieu of numeric standards, the EPA Region 10 determined under the provisions of best professional judgment (BPJ) that their implementation for smaller facilities is not overly burdensome and provides an important level of protection for the

receiving waters. Moreover, for the most part, smaller facilities already implement many of the BMPs in the ELGs.

a. Under the ELGs at 40 CFR 451.3, CAAP facilities must report the following events to the permitting authority:

(1) *The use of an investigational new animal drug (INAD) or any extra-label drug, which may lead to the discharge of the drug to Waters of the United States. This reporting is not required for an INAD or an extra-label drug that has been previously approved by the Food and Drug Administration (FDA) for a different species or disease, if it is used at or below the previously approved dose rate and involves similar conditions of use.*

(2) *Failure of or damage to a containment system that results in unanticipated discharges of pollutants to waters of the U.S.*

(3) *Spills of drugs, pesticides, or feed that result in discharges to waters of the U.S.*

b. Under the ELGs at 40 CFR 451.3(d) and 451.11(a) through (e), dischargers utilizing flow-through and recirculating systems must develop and maintain a BMP Plan, which addresses the following activities at the facility. These management practices represent the application of BPT, BAT, BCT, and NSPS for the industry.

(1) *Solids control. The discharger must employ efficient feed management and feeding strategies; identify and implement procedures for routine cleaning of rearing units and off-line settling basins, and procedures to minimize any discharge of accumulated solids during the inventorying, grading, and harvesting of aquatic animals in the production system; and remove and dispose of aquatic animal mortalities on a regular basis.*

(2) *Materials storage. The discharger must properly store drugs, pesticides, and feed in a manner to prevent spills, and implement procedures for containing, cleaning, and disposing of any spilled material.*

(3) *Structural maintenance. The discharger must inspect, conduct regular maintenance of, and repair the production and wastewater treatment systems on a routine basis.*

(4) *Recordkeeping. The discharger must document feed amounts and numbers and weights of aquatic animals to calculate feed conversion ratios, and document the frequency of cleanings, inspections, maintenance, and repairs.*

(5) *Training. The discharger must train personnel in spill prevention and response and on the proper operation and cleaning of production and wastewater treatment systems.*

During the development of the ELGs, the EPA concluded that control of suspended solids would also effectively control concentrations of other pollutants of concern, such as BOD_5, because other pollutants are either bound to the solids or are incorporated into them. Although certain bacteria are found at high levels in the effluent, the EPA concluded that disinfection is not economically achievable.

II. Total Suspended and Settleable Solids Limits

The final ELG for discharges from aquaculture facilities with greater than 100,000 pounds annual production were published in the Federal Register on August 23, 2004. It included no numeric effluent limitations for total suspended solids (TSS) and settleable solids. The EPA Region 10 used its Best Professional Judgment (BPJ) in applying numeric limitations for TSS and settleable solids to upland hatcheries that are equivalent to the State of Washington's effluent limitations for all upland aquaculture facilities. These limitations are incorporated into state regulations at WAC §173-221A-100 and into the State's general NPDES permit for upland finfish hatching and rearing facilities. This will protect the receiving waters of the State and of the tribes, which, in most cases, flow into State waters.

The proposed effluent limits for total suspended solids and settleable solids are net limits and are consistent with other EPA issued permits in Washington State.

C. Evaluation of Water Quality-Based Limitations

In addition to the technology-based limits discussed above, the EPA evaluates the facility discharges to determine compliance with Section 301(b)(1)(C) of the CWA, which requires all NPDES permits to contain limits that will ensure compliance with State/Tribal water quality standards, including the State's/Tribe's antidegradation policy. NPDES permits must also implement conditions imposed by the State/Tribe to protect its water quality standards as part of its certification of NPDES permits under CWA Section 401(d).

Section 301(b)(1)(C) of the CWA and its implementing regulations at 40 CFR 122.44(d) require permits to include limits for all pollutants or parameters which are or may be discharged at a level which will cause or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality. If such WQBELs are necessary, they must be stringent enough to ensure that water quality standards are met, and they must be consistent with any available waste load allocation. For pollutants with technology-based limits, the EPA must also determine whether the technology-based limits will be protective of the corresponding water quality criteria. (40 CFR §122.44(d)(1)(vii)(B)).

The EPA wrote the draft Permit in accordance with the Alaska's 2010 EPA-approved water quality standards.

To determine a WQBEL, when necessary, the EPA uses the following approach.

1. Determine Appropriate Water Quality Criteria

The EPA wrote this permit to comply with the EPA-approved 2010 water quality standards of the State of Alaska.

2. Develop Wasteload Allocations (WLAs)

A WLA may be developed to establish the allowable loading of each pollutant that may be discharged without causing or contributing to exceedances of water quality standards in receiving waters. WLAs can be established in three ways - mixing zone-based WLAs, TMDL-based WLAs, and end-of-pipe WLAs.

a. Mixing Zone-Based WLA

A mixing zone is an allocated impact zone where state water quality standards can be exceeded as long as acutely toxic conditions are prevented. It is a defined area or volume of the receiving water adjacent to or surrounding a wastewater discharge where the receiving water, as a result of the discharge, may not meet all applicable water quality criteria. Mixing zones should be as small as practicable. A mixing zone is considered a place where wastewater mixes with receiving water and is based upon the dilution available and the assimilative capacity of the receiving water.

When the State or a tribe authorizes a mixing zone for a discharge, the WLA is calculated based on the available dilution at the edge of the mixing zone, background concentrations of pollutants, and the water quality criteria. ***This Permit does not allow for mixing zones***, therefore, mixing zone based WLAs are not appropriate.

b. TMDL-Based WLA

Where the receiving water quality does not meet applicable water quality standards, a WLA may be based on a total maximum daily load (TMDL) determination by the State or appropriate tribal authority. A TMDL is the determination of the maximum amount of a pollutant or pollutant property, from point, nonpoint, and background sources, including a margin of safety, that can be discharged to a receiving water without exceeding applicable water quality criteria. Section 303(d) of the CWA requires development of TMDLs for water bodies that will not meet water quality standards, after technology-based limitations are imposed, to ensure that these waters will come into compliance with water quality standards. Where discharges are to receiving waters listed as impaired, pursuant to CWA Section 303(d), such discharges must be authorized by NPDES permits. ***At this time, there are no applicable WLAs assigned to this facility.***

3. Derivation of Total Residual Chlorine Limits

a. Method of Calculating Water Quality Based Effluent Limits

In developing water quality-based effluent limits (WQBELs), the EPA relied on methods from the Technical Support Document for Water Quality Based Toxics Control (TSD) [EPA/505/2-90-001] to determine specific limits. The TSD requires the following steps to determine specific limitations.

b. Deriving a Wasteload Allocation (WLA) from the applicable water quality criterion.

The WLA takes into account variability in effluent quality and is expressed as a single level of effluent water quality necessary to provide protection against acute or chronic adverse effects in the receiving water. When no dilution is allowed, the WLA is set equal to the applicable water quality criterion, as is the case with the facility.

c. Calculating long-term average concentration needed to meet the water quality criteria

The wasteload allocation (WLA) is set equal to the aquatic life criterion. The long-term average discharge concentration (LTA) necessary to protect the WLA is determined by multiplying the WLA by a factor (less than 1) to account for effluent variability. The LTA is a target level for treatment performance which provides a measure of safety that the criterion, or WLA, will be exceeded only infrequently (1% or 5% of the time, depending on the level chosen).

WLA multipliers are determined based on a coefficient of variation (CV) and on a specified probability of occurrence. The CV is a measure of the relative variability of a set of data; and in this case, because there is no data, the CV was set equal to 0.6 (the default value recommended by the TSD). From Table 5-1 of the TSD, at the 99th percentile probability basis, the acute WLA multiplier is 0.321 and the chronic WLA multiplier is 0.527.

d. Using the most limiting (the lowest) LTA, WQBELs are calculated.

Average monthly effluent limitations (AMLs) and maximum daily effluent limitations (MDLs) are calculated by multiplying the most limiting LTA times a multiplier that accounts for averaging periods and maximum exceedance frequencies of the effluent limitations, and the effluent monitoring frequency. The CV was set equal to 0.6 (CV = 0.6) and, in the case of the AML, the sampling frequency was set equal to 4 (n = 4). Both of these values are those recommended as default values in the TSD for situations where facility specific data is not available. Following the EPA Region 10 permitting policy, a 99th percentile occurrence probability was used to determine the MDL multiplier and a 95th percentile occurrence probability was used to determine the AML multiplier. Given these assumptions and using Table 5-2 of the TSD, the MDL multiplier is determined to be 3.11, and the AML multiplier is 1.55.

e. Specific Calculations

The applicable water quality criteria for total residual chlorine in the waters of the State of Alaska are established for the protection of aquatic life. These criteria are presented in the following table:

Table 3
Water Quality Criteria for Total Residual Chlorine for Protection of Aquatic Life

		Acute	Chronic
Fresh Water	µg/L	19	11

Marine Water	µg/L	13	7.5

Using factors set forth above, the EPA determined the WLA multipliers and calculated the LTAs for total residual chlorine, which are summarized below.

Table 4
Total Residual Chlorine Long Term Averages (LTAs)

	WLA(µg/L)	WLA Multiplier	LTA (µg/L)
Fresh Water -- Acute	19	0.321	6.10
Chronic	11	0.527	**5.80**
Marine Water --Acute	13	0.321	4.17
Chronic	7.5	0.527	**3.95**

Using the most limiting LTA (acute or chronic) from Table 4, above, for each kind of receiving water, the limitations are calculated using multipliers discussed above.

Table 5
Total Residual Chlorine Effluent Limitations

Type of Water	Long-Term Average	MDL Multiplier	AML Multiplier	MDL (µg/L)	AML (µg/L)
Fresh Water	5.80	3.11	1.55	**18.0**	**9.0**

D. Proposed Effluent Limitations and Requirements

Table 6
Effluent Limitations for Discharges from Outfall 001[1]

Pollutant	Average Monthly Limit	Maximum Daily Limit	Instantaneous Maximum	Basis for Limit
Net **Total Suspended Solids**[1]	5 mg/L	---	15 mg/L	TBEL based on BPJ

Table 6

Effluent Limitations for Discharges from Outfall 001[1]

Pollutant	Average Monthly Limit	Maximum Daily Limit	Instantaneous Maximum	Basis for Limit
Net **Settleable Solids**[1]	0.1 ml/L	---	---	TBEL based on BPJ
Total Residual Chlorine[2] – into fresh water	9.0 µg/L	18.0 µg/L	---	WQBEL

1. Net concentration = effluent concentration – influent concentration. Net TSS and settleable solids determinations will require influent analysis in addition to effluent analysis unless the permittee chooses to assume that the pollutant concentration in the influent is zero. Influent samples must be collected prior to collection of effluent samples; and net TSS and settleable solids will be determined by subtracting the influent concentrations from the effluent concentrations: see Appendix B. The EPA may require additional sampling to prove substantial similarity between influent and effluent solids, where indicated. All influent and effluent samples and flow measurements must be taken on the same day.

2. Chlorine limits only apply when chlorine or Chloramine-T is being used. The Permittee will be in compliance with the effluent limits for total residual chlorine, provided the total residual chlorine residual levels are at or below the compliance evaluation level of 50 µg/L. Chlorine monitoring is not required if chlorine is allowed to dry at the location of use.

a. Discharge Limits During Drawdowns for Fish Release. These limits apply to raceways or pond systems during drawdown for fish release. See Table 7, below. The total residual chlorine limits set forth in Table 6, above, still apply to raceways or pond systems during drawdown for fish release.

Table 7

Effluent Limits for Discharges during Drawdown for Fish Release

Pollutant	Maximum Daily Limit

Total Suspended Solids	100 mg/L
Settleable Solids	1.0 ml/L

2. Rearing Vessel Disinfection Water

When rearing vessels are disinfected with chlorine, the total residual chlorine effluent limits apply. Chlorine monitoring is not required if rearing vessels are allowed to dry completely and there is no discharge of chlorine.

The facility does not currently use chlorine, but this draft permit includes chlorine limits and monitoring requirements in case the facility needs to use chlorine in the future.

IV. MONITORING AND REPORTING REQUIREMENTS

A. Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA and 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality. The Permittee is responsible for conducting the monitoring and for reporting results on DMRs, annual reports, or on the application for renewal, as appropriate, to the EPA. Permittees must analyze water samples using a sufficiently sensitive EPA approved analytical method.

B. Effluent Monitoring

1. Monitoring Frequencies

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples must be used for averaging if they are conducted using the EPA-approved test methods (generally found in 40 CFR Part 136) or as specified in the permit.

The EPA has determined that the proposed monitoring frequencies and sample types represent the minimum sampling frequency required to adequately characterize effluent and to adequately monitor facility performance. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

The EPA proposes the following monitoring requirements in this Permit.

Total Residual Chlorine
Total residual chlorine is also an effective indicator of Chloramine-T levels in the effluent (in freshwater-reared salmonids, Chloramine-T is used for control of mortality due to bacterial gill disease).[a]

Table 8
Effluent Monitoring Requirements from the Rearing Ponds/Raceways Other than Times of Drawdown for Fish Release

Parameter	Units	Sample Type	Sample Frequency	Sample Location
Effluent Flow[2]	Gallons per day	Flow meter, calibrated weir, or other approved method	Monthly[3]	Effluent[4,5]
Net Total Suspended Solids[6]	mg/L	Composite[7]	Monthly[2]	Influent[5] & Effluent[3]
Net Settleable Solids[5]	ml/L	Grab	Monthly[2]	Influent[5] & Effluent[3]
Total Residual Chlorine (including when Chloramine-T is in use)[8]	µg/L	Grab	Monthly[2]	Effluent[3]

[a] http://www.wchemical.com/downloads/dl/file/id/94/halamid_aqua_label.pdf

Table 8

Effluent Monitoring Requirements from the Rearing Ponds/Raceways Other than Times of Drawdown for Fish Release

Parameter	Units	Sample Type	Sample Frequency	Sample Location

1. All influent and effluent samples and flow measurements must be taken on the same day.
2. Monthly monitoring must begin in the first full calendar month of permit coverage; quarterly monitoring must begin in the first full calendar quarter of permit coverage.
3. Effluent samples must be collected from the effluent stream after the last unit prior to discharge into the receiving waters or to subsequent mixing with other water flows.
4. If the facility is operating in a steady state (no drawdown nor filling up), the flow may be monitored at the influent or the effluent.
5. Net concentration = effluent concentration – influent concentration. Net TSS and settleable solids determinations will require influent analysis in addition to effluent analysis unless the permittee chooses to assume that the pollutant concentration in the influent is zero. Influent samples must be collected prior to collection of effluent samples; and net TSS and settleable solids will be determined by subtracting the influent concentrations from the effluent concentrations: see Appendix B of the Permit. The EPA may require additional sampling to prove substantial similarity between influent and effluent solids, where indicated.
6. Composite samples must consist of four or more discrete samples taken at one-half hour intervals or greater over a 24-hour period; if the facility cleans raceways periodically, at least one fourth of the samples must be taken during quiescent zone or raceway cleaning.
7. Total residual chlorine must be monitored only when being used, giving consideration to retention times in the facility. Monitoring must be conducted during each calendar quarter if the chemical used at any time during the quarter, but sampling does not need to occur more than once a quarter.

Monitoring Discharges of Rearing Pond and Raceway Drawdowns for Fish Release

Samples for rearing pond and raceway drawdowns for fish release must be collected regardless of amount of fish in the facility. See Table 9, below.

Table 9

Monitoring Requirements for Discharges from Rearing Pond or Raceway Drawdowns for Fish Release

Parameter	Sample Point	Sampling Frequency	Type of Sample
Settleable Solids (mL/L)	Effluent	1/Drawdown[1]	Grab
Total Suspended Solids (mg/L)	Effluent	1/Drawdown[1]	Grab

1. Drawdown samples must be collected during the last quarter of each drawdown event. If the drawdown is a continuous event that involves more than one rearing pond or raceway discharging directly to Tamgas Creek, the Permittee may composite grab samples from each rearing pond or raceway proportionally to their respective flows, each taken in the last quarter of its drawdown; the combined sample may be analyzed instead of separately analyzing grab samples from each of the rearing ponds or raceways. If the discharge is to a settling pond, the facility must estimate when the final ¼ of the discharge is being released to the settling pond, delay the monitoring by the residence time calculated for the pond, and then monitor as the effluent discharges from the pond to the receiving water. If multiple drawdown events are sequential or on different days, a separate grab sample must be analyzed for each event.

Monitoring Discharges of Rearing Vessel Disinfection Water

Rearing vessel disinfection water that has been treated with chlorine must be tested before it is allowed to be discharged; see Table 10, below. Chlorine monitoring is not required if rearing vessels are allowed to dry completely and there is no discharge of chlorine.

Table 10
Monitoring Requirement for Discharges of
Rearing Vessel Disinfection Water

Parameter	Sample Point	Sampling Frequency	Type of Sample
Total Residual Chlorine (mg/L)[1]	Effluent[2]	1/Discharge	Grab

1. Total residual chlorine must be monitored only when being used, giving consideration to retention times in the facility. Monitoring must be conducted during each calendar quarter if the chemical used at any time during the quarter, but sampling does not need to occur more than once a quarter.
2. Effluent samples must be collected from the effluent stream after the last unit prior to discharge into the Tamgas Creek or to subsequent mixing with other water flows.

2. Surface Water Monitoring

Since the facility discharges directly to surface waters, it must conduct surface water monitoring quarterly for ammonia, pH, and temperature immediately upstream, outside the influence of the discharge.

In general, surface water monitoring may be required for pollutants of concern to assess the assimilative capacity of the receiving water for the pollutant. In addition, surface water monitoring may be required for pollutants for which the water quality criteria are dependent and to collect data for TMDL development if the facility discharges to an impaired water body. Table 11, shown below, provides the proposed surface water monitoring requirements for the draft permit. Surface water monitoring results must be submitted with the next permit application, and in the January DMR of the following year.

Table 11
Surface Water Quality Monitoring Requirements

Parameter	Units	Sample Type	Sample Frequency	Sample Location
pH	Standard Units	Grab[2]	1/quarter	Upstream[2]
Temperature	Celsius	Grab[2]	1/quarter	Upstream[2]
Ammonia	mg/l	Grab[2]	1/quarter	Upstream[2]

Notes.
1. All surface water samples must be collected at approximately the same time as the effluent samples.
2. On Tamgas Creek upstream of the outfall.

3. Minimum Levels

All samples must be analyzed to achieve minimum levels (MLs) that are equivalent to or less than those levels that the EPA has determined are achievable using EPA methods. If the results reported by the Permittee have consistently been well above the required MLs, it may request less stringent MLs. See Table 7 in the Permit for MLs. The draft Permit's minimum level for Total Residual Chlorine is 50 µg/L. The Permittee will be in compliance with the effluent limits for total residual chlorine, provided the total residual chlorine residual levels are at or below the compliance evaluation level of 50 µg/L.

C. Submission of Discharge Monitoring Reports (DMRs)

The facility will be required to submit DMRs to the EPA Region 10. The draft permit requires that the permittee submit DMR data electronically using NetDMR. NetDMR is a national web-based tool that allows DMR data to be submitted electronically via a secure Internet application.

The EPA currently conducts free training on the use of NetDMR. Further information about NetDMR, including upcoming trainings and contacts, is provided on the following website: https://netdmr.epa.gov. The permittee may use NetDMR after requesting and receiving permission from EPA Region 10.

The Permittee is required to submit an Annual Report—a report that describes the previous year's production, feed rates, use of aquaculture drugs and chemicals, and the facility's efforts to adhere to required operating practices. The Permittee is required to report certain events to the EPA before or when they happen, including the use of an Investigational New Animal Drug (INAD) or the extra-label use of an aquaculture drug, failures in containment systems that result

in unanticipated releases of pollutants, and spills of drugs and pesticides that result in their release to receiving waters.

D. Quality Assurance Plan (QAP)

40 CFR 122.41(e) requires Permittees to properly operate and maintain their facilities, including "adequate laboratory controls and appropriate quality assurance procedures." In order to implement this requirement, the draft Permit (Section III) requires that the Permittee develop or update a QAP that ensures that the monitoring data submitted to the EPA are complete, accurate, and representative of the environmental or effluent conditions. 40 CFR 122.41(e) requires the Permittee to develop a QAP to ensure that the monitoring data submitted are accurate and to explain data anomalies if they occur.

The draft Permit proposes that the Permittee provide written notification to the EPA that the QAP has been developed and implemented within 90 days after the effective date of the permit. The QAP must be kept on-site and made available to the EPA upon request.

The QAP must consist of standard operating procedures that the Permittee must follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting. It must be available on-site for inspection at the request of the EPA. The Permittee is required to follow specific sampling procedures [i.e., the EPA approved quality assurance, quality control, and chain-of-custody procedures described in Requirements for Quality Assurance Project Plans (EPA/QA/R-5)]; and Guidance for Quality Assurance Project Plans (EPA/QA/G-5) throughout all sample collection and analysis activities in order to ensure that quality data are collected.

V. BEST MANAGEMENT PRACTICES PLAN

40 CFR 122.44(k) allows the EPA to establish requirements to implement BMPs in NPDES permits to control or abate the discharge of pollutants whenever necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. BMPs are important tools for waste minimization and pollution prevention.

The proposed Permit requires the Permittee to adhere to specific operating limitations and BMPs and requires the Permittee to develop and implement a BMP Plan within 90 days of the effective date of the permit. The Permittee must identify and assess potential impacts of pollutant discharges and identify specific management practices and operating procedures to prevent or minimize the generation and discharge of pollutants, including the specific operating limitations and BMPs listed in the Permit.

The BMP Plan is an enforceable condition of the Permit and must be amended whenever there is a change in the facility or its operation which materially increases the potential for discharges of pollutants.

A. Record Keeping

The EPA proposes to include a BMP requirement that the Permittee maintain records of all drug and chemical usage at the facility. These records should include the information required in the Aquaculture Drugs and Chemicals section of the Annual Report (see Appendix A of the Permit). Records must provide detailed descriptions of how the Permittee calculated the maximum effluent concentrations reported on their Annual Reports.

The EPA proposes to include a record keeping requirement to ensure that the Permittee is able to accurately calculate maximum peak effluent concentration after drug or chemical applications. In order to show how the maximum concentration of the drug or chemical in the discharge was derived, the Permittee must maintain records by outfall of the approach/analyses used to determine the elapsed time from its application to its maximum (peak) effluent concentration. See Section I.F.5(c) of the Permit. In addition, the Permittee must provide the information required on page 7 of the revised Annual Report (see Appendix A of the Permit) - either for each water-borne chemical treatment, or for a reasonable worst case/maximum effluent concentration scenario. This information includes the necessary data inputs for calculating water-borne treatment concentrations for static bath and flow-through treatments.

B. Polychlorinated Biphenyls (PCBs) in Hatcheries

Painted and Caulked Surfaces

Polychlorinated Biphenyls (PCBs) belong to a broad family of man-made organic chemicals known as chlorinated hydrocarbons. PCBs were domestically manufactured from 1929 until their manufacture was banned in 1979. Although no longer commercially produced in the United States, PCBs may be present in products and materials produced before the 1979 PCB ban. Products that may contain PCBs include caulking and oil-based paint. PCBs can be taken up into the bodies of small organisms and fish. As a result, people who ingest fish may be exposed to PCBs that have bioaccumulated in the fish they are ingesting. See http://www.epa.gov/epawaste/hazard/tsd/pcbs/about.htm for more information.

In the Permit, the EPA included a BMP requirement that aquaculture facilities implement procedures to eliminate the release of PCBs from any known sources in the facility- including paint, caulk, or feed. PCBs are inadvertently generated during pigment production, and yellow pigment contains PCB-11. The EPA's Persistence, Bioaccumulation and Toxicity Profiler defines the bioconcentration factor (BCF) for PCB-11 as 5,400. Therefore, yellow paint or caulk should not be used in areas that will come into contact with water that will be discharged or come into contact with fish.

If the facility has pre-1979 paint or caulk that comes into contact with water that is discharged to waters of the US or water in which fish are present, as per 40 CFR §761.358, the facility should determine the PCB concentration of paint or caulk. The facility should use either Method

3500B/3540C or Method 3500B/3550B from the EPA's SW-846, Test Methods for Evaluating Solid Waste, or a method validated under subpart Q of this part, for chemical extraction of PCBs from individual and composite samples of PCB bulk product waste. Use Method 8082 from SW-846, or a method validated under subpart Q of this part, to analyze these extracts for PCBs.

The facility must remove any paint or caulk with PCB concentrations that exceed 50 ppm PCB (the allowable TSCA level). Paint or caulk with PCB concentrations of more than 50 ppm is considered a PCB bulk product, and is unauthorized for use. PCB bulk products and any PCB remediation waste must be removed and disposed of according to the regulations at 40 CFR Part 761. Care must be taken to minimize releases to the environment. Any release to the environment is an unauthorized disposal, enforceable under TSCA. The regulations further stipulate proper storage and record keeping requirements. If removing paint or caulk that was applied prior to 1980, refer to the EPA guidance (abatement steps 1-4) at http://www.epa.gov/epawaste/hazard/tsd/pcbs/pubs/caulk/guide/guide-sect4a.htm.

Pre-1979 paint or caulk with a PCB concentration of less than 50 ppm is not considered a PCB bulk product under TSCA. However, the Permittee is strongly encouraged to remove it, given the proximity to fish and the risks associated with PCB consumption by the fish. Follow the EPA guidance to ensure safe removal; see http://www.epa.gov/epawaste/hazard/tsd/pcbs/pubs/caulk/guide/index.htm. Please contact your EPA Region 10 PCB Coordinator for more information (see http://www.epa.gov/epawaste/hazard/tsd/pcbs/pubs/coordin.htm for a list of PCB Coordinators).

Fish Feed

Like other persistent organic pollutants found in fish tissue, PCBs are ubiquitous environmental contaminants and may be found globally through atmospheric deposition, historical releases, or food-web cycling. More specifically, PCBs can be an issue in feeds used in aquaculture facilities (Hites, et al. 2004).[b] For example, in a 2006 study of persistent organic pollutants in feed and rainbow trout, the Washington Department of Ecology found that most feed and fish tissue samples contained measurable concentrations of PCBs. Aroclor-1254 was the most commonly detected, followed by 1260, 1242, and 1248; none of the other Aroclors were detected (Ecology, 2006).[c]

The USFWS and the USGS have also been investigating PCBs and other contaminants in fish feed. “Over the past several decades it has become increasingly evident that feeds used in aquaculture worldwide contain significant concentrations of contaminants (Mac et al. 1979; Hilton et al. 1983; Rappe et al. 1998; Hites et al. 2004; Maule et al. 2007). Contaminants can enter fish feeds from a variety of sources, but generally reflect global contaminant inputs into

[b] Hites, R. A., J. A. Foran, D. O. Carpenter, M. C. Hamilton, B. A. Knuth, S. J. Schwager. 2004. “Global Assessment of Organic Contaminants in Farmed Salmon.” *Science*. Vol. 303 no. 5655 pp. 226-229.
[c] Serdar, D., K. Kinney, M. Mandjikov, and D. Montgomery. 2006. “Persistent Organic Pollutants in Feed and Rainbow Trout from Selected Trout Hatcheries.”
https://fortress.wa.gov/ecy/publications/SummaryPages/0603017.html

oceans and eventually into marine food webs, which are the main sources of fish oil and fish meal used in fish feed (Horst et al. 1998). Organisms at higher trophic levels typically have higher levels of organochlorines (OCs) [e.g., polychlorinated biphenyl (PCBs), dioxins and furans, and many pesticides] due to biomagnification through the food web (Muir et al. 1992; Gobas et al. 1999). Diets that contain a high percentage of pelagic ocean fish meal and oil will likely contain higher amounts of contaminants of global concern, such as PCB congeners… Hatchery-reared fish consuming feeds made from oils and meals derived from marine fish may accumulate these contaminants, thus placing some hatchery-reared fish at a higher trophic level than their wild counterparts that are consuming a natural diet. … In a recent study (Maule et al. 2007), [USFWS and USGS] found that all of the feed samples (collected from October 2001 to October 2003) at 11 cold-water U.S. Fish and Wildlife Service National Fish Hatcheries (NFH) across four regions in the United States contained measurable concentrations of at least one dioxin, furan, PCB congener, or DDT metabolite, and most contained more than one. The most commonly detected contaminants were PCBs (Maule et al. 2007)."[d] In general, contaminant levels in feed have been dropping- possibly because suppliers are screening ingredients or being more careful with source selection (Maule, et al., 2007).[e]

Results from a study of contaminant concentrations in juvenile fall Chinook salmon from Columbia River hatcheries suggest that the river is a more important source of contamination than are hatcheries (Johnson, et al., 2010).[f]

At this time, the EPA is not aware of a feasible way to reduce PCBs in salmonid feed. However, the EPA has included a BMP requirement that the Permittee must implement procedures to eliminate the release of PCBs from any known sources in the facility- including feed. Thus, if a reduced PCB feed formulation becomes available during this next permit cycle, the EPA encourages the permittee to take all reasonable steps to reduce PCB exposure via feed.

VI. TRIBAL COORDINATION AND CONSULTATION

During permit development, NPDES permits staff followed the EPA Region 10 Tribal Consultation and Coordination Procedures, available online at http://www.epa.gov/region10/pdf/tribal/consultation/r10_tribal_consultation_and_coordination_procedures.pdf, and had coordinated with MIC.

[d] Excerpt from Davis, J. and A. Gannam. 2012. "WA - Investigation of Contaminants in Feeds and Fish at FWS Pacific Region National Fish Hatcheries and the Ramifications to Human and Ecological Health." USFWS Report. DEC Project ID: 200710002.3. FFS #: 1F52.

[e] Maule, A.G., A.L. Gannam, and J.W. Davis. 2007. Chemical contaminants in fish feeds used in federal salmonid hatcheries in the USA. Chemosphere 67:1308-1315.

[f] Lyndal L. Johnson , Maryjean L. Willis , O. Paul Olson , Ronald W. Pearce, Catherine A. Sloan & Gina M. Ylitalo (2010) Contaminant Concentrations in Juvenile Fall Chinook Salmon from Columbia River Hatcheries, North American Journal of Aquaculture, 72:1, 73-92, DOI: 10.1577/A08-068.1

VII. ENVIRONMENTAL JUSTICE CONSIDERATIONS

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, directs each federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities." EPA is striving to enhance the ability of overburdened communities to participate fully and meaningfully in the permitting process for EPA-issued permits, including NPDES permits. "Overburdened" communities can include minority, low-income, tribal, and indigenous populations or communities that potentially experience disproportionate environmental harms and risks. As part of an agency-wide effort, EPA Region 10 will consider prioritizing enhanced public involvement opportunities for EPA-issued permits that may involve activities with significant public health or environmental impacts on already overburdened communities. For more information, please visit http://www.epa.gov/compliance/ej/plan-ej/.

As part of the permit development process, EPA Region 10 conducted an "EJSCREEN" to determine whether a permit action could affect overburdened communities. EJSCREEN is a nationally consistent geospatial tool that contains demographic and environmental data for the United States at the census block group level. As a pre-decisional tool, EJSCREEN is used to highlight permit candidates for additional review where enhanced outreach may be warranted.

The EPA also encourages permittees to review (and to consider adopting, where appropriate) Promising Practices for Permit Applicants Seeking EPA-Issued Permits: Ways To Engage Neighboring Communities (see https://www.federalregister.gov/articles/2013/05/09/2013-10945/epa-activities-to-promote-environmental-justice-in-the-permit-application-process#h-13). Examples of promising practices include: thinking ahead about community's characteristics and the effects of the permit on the community, engaging the right community leaders, providing progress or status reports, inviting members of the community for tours of the facility, providing informational materials translated into different languages, setting up a hotline for community members to voice concerns or request information, follow up, etc.

EPA's EJSCREEN tool did not identify the Metlakatla Indian Reservation as a potentially overburdened community. During the screening process, EPA considered specific case-by-case circumstances, and EPA concluded that there is no indication that the issuance of this permit would trigger significant environmental justice concerns. Separate from the environmental justice screening effort, EPA also conducted tribal coordination with the Metlakatla Reservation.

VIII. OTHER LEGAL REQUIREMENTS

A. Antidegradation

The EPA is required under Section 301(b)(1)(C) of the Clean Water Act (CWA) and implementing regulations (40 CFR 122.4(d) and 122.44(d)) to establish conditions in NPDES permits that ensure compliance with state and tribal water quality standards, including

antidegradation requirements. Since the facility discharges to waters within the reservation which does not have EPA-approved water quality standards, EPA considered the antidegradation policy from the State of Alaska.

General provisions of Alaska's Water Quality Standards are found in 18 AAC 70.010, and Alaska's Antidegradation policy is found in 18 AAC 70.015. 18 AAC 70.020(b) lists Alaska's specific water quality criteria for the designated uses in Part III.B. Due to the site characteristics and proximity of outfall location on Tamgas Creek to the harbor, EPA considered both applicable fresh water and marine water standards and the state's antidegradation policy for this permitting action. EPA believes that this permitting action would meet: 18 AAC 70.015(a)(1) and/or (a)(2) – Tier 1, in which the existing water uses and level of water quality necessary to protect existing uses would be maintained and protected, and/or, Tier 2 in which the lowering or potential lowering of water quality would not exceed applicable criteria.

The EPA referred to the applicable designated uses for the Tamgas Creek in this antidegradation analysis. The draft permit ensures a level of water quality necessary to protect the designated uses and, in compliance with 40 CFR 131.12(a)(1) and 131.35(e)(2)(i), also ensures that the level of water quality necessary so that existing uses are maintained and protected.

Where technology-based limits are not protective enough to meet water quality standards, the EPA sets water quality-based effluent limits (WQBELs). If the EPA receives information during the public comment period or tribal consultation demonstrating that there are additional existing uses for the waterbodies in this Permit, the EPA will consider this information before issuing a final permit and will establish additional or more stringent permit conditions if necessary to ensure protection of existing uses.

The facility does not currently disinfect with chlorine; however, the draft permit includes an effluent limit and monitoring requirements for chlorine in case the facility needs to disinfect with chlorine in the future. In that case, the facility would neutralize the chlorine. The chlorine limit in this draft permit is set at Alaska's water quality criteria. The facility is only required to monitor for chlorine when the chemical is being used (which is unlikely to occur).

The facility applies some therapeutic chemicals, including formalin, to promote fish health. As per a BMP requirement in this permit, all drugs and pesticides must be used in accordance with applicable label instructions (FIFRA or FDA), except when part of an Investigational New Animal Drug Study or as an extralabel drug use as prescribed by a veterinarian. Accordingly, the EPA expects that there is no effect to ESA-listed species from the facility, and the discharge will not cause measurable change to existing water quality.

Summary

In the EPA's opinion, discharges from the facility will not cause a measurable change in degradation to existing water quality.

B. National Environmental Policy Act (NEPA)

NEPA requires federal agencies to conduct an environmental review of their actions (including permitting activity) that may significantly affect the quality of the human environment. The EPA regulations which implement NEPA, at 40 CFR 122.29(c), clarify this requirement as it pertains to NPDES permitting actions as requiring NEPA environmental review for the issuance of an NPDES permit for new sources only. A new source is defined as a facility from which there is or may be a discharge, the construction of which commenced: (1) After promulgation of standards of performance under Section 306 of the CWA, which are applicable to such source, or (2) After proposal of standards of performance in accordance with Section 306 of the CWA, which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal. See 40 CFR 122.2. Based on the definition of new source, the EPA determined that the facility is **not a new source**, as the facility was constructed in 1978, prior to the 2004 promulgation of the CAAP ELGs/NSPS. Therefore, the EPA is not proceeding with a NEPA analysis of the impacts of this NPDES Permitting Action, as it is not required by NPDES regulations.

C. Certification

40 CFR 121.21 requires EPA to issue a CWA § 401 certification where (1) standards have been promulgated by EPA or (2) water quality standards have been established, but no State or interstate agency has authority to give such a certification. The EPA has neither promulgated water quality standards nor have water quality standards been established for the MIC, therefore no certification is required.

D. Endangered Species Act [16 USC § 1531 et al.]

The Endangered Species Act requires federal agencies to consult with National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) and the U.S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or endangered species.

EPA found on a USFWS website (https://www.fws.gov/alaska/fisheries/endangered/listing.htm), the following species listed as endangered or threatened by USFWS in Alaska:

- Steller's eider (*Polysticta stelleri*) (threatened)
- Spectacled eider (*Somateria fischeri*)(threatened)
- Short-tailed albatross (*Phoebastria albatrus*) (endangered)
- Northern sea otter (*Enhydra lutris kenyoni*) (threatened) SW Distinct Population Segment
- Polar bear (*Ursus maritimus*) (threatened)
- Aleutian shield fern (*Polystichum aleuticum*)(endangered)
- Eskimo curlew (*Numenius borealis*)(endangered)
- Wood bison (*Bison bison athabascae*) (threatened)

The above species are not expected to be in the project area. Accordingly, EPA believes that there is NO EFFECT to USFWS species.

EPA utilized the IPAC tool on July 3, 2018, to identify threatened and endangered species in the vicinity of the discharge. No species were identified by the IPAC tool in the vicinity of the discharge.

Because EPA does not expect marine species to be impacted, therefore, no species listed by NOAA Fisheries would be impacted. Accordingly, EPA determined that there is NO EFFECT to ESA species from this discharge.

E. Essential Fish Habitat (EFH)

Essential fish habitat (EFH) is the waters and substrate (sediments, etc.) necessary for fish to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires the EPA to consult with NOAA Fisheries when a proposed discharge has the potential to adversely affect EFH (i.e., reduce quality and/or quantity of EFH).

A review of the EFH as listed by the NMFS EFH Mapper Tool (July 3, 2018) - http://www.habitat.noaa.gov/protection/efh/efhmapper/) and the most recent EFH 5-year review report (NPFMC; NMFS; ADFG, 2010) shows that the receiving waters of the permitted discharge is EFH for several species including: Chinook Salmon, Chum Salmon, Pink Salmon, Sockeye Salmon, Coho Salmon, and Dover Sole.

The EFH regulations define an adverse effect as any impact which reduces quality and/or quantity of EFH and may include direct (e.g. contamination or physical disruption), indirect (e.g. loss of prey, reduction in species' fecundity), site specific, or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

The EPA has determined that based on the nature of the discharge and specific site characterization, that there is NO EFFECT on EFH in the vicinity of the discharge.

F. Permit Expiration

This Permit will expire five years from the effective date.

G. Standard Permit Provisions

Specific regulatory management requirements for NPDES permits are contained in 40 CFR 122.41. These conditions are included in the Draft Permit as standard regulatory language that must be included in all NPDES permits. The standard regulatory language covers requirements such as monitoring, recording, reporting requirements, compliance responsibilities, and other general requirements.

IX. DEFINITIONS AND ACRONYMS

The Act - The Clean Water Act, codified at 33 U.S.C. §1251 et seq.

Administrator - The Administrator of the United States Environmental Protection Agency, or an authorized representative (40 CFR §122.2).

Aquaculture facility - A hatchery, fish farm, or other facility which contains, grows, or holds fish for later harvest (or process) and sale or for release.

Average monthly limit - The maximum allowable average of "daily discharges" over a monitoring month, calculated as the sum of all "daily discharges" measured during a monitoring month divided by the number of "daily discharges" measured during that month. It may also be referred to as the "monthly average discharge"(40 CFR §122.2).

Background - The biological, physical, or chemical condition of waters measured at a point immediately upstream of the influence of the discharge.

BAT - Best available technology economically achievable

BCT - Best conventional pollutant control technology

Beneficial use - A desirable use of a water resource, such as recreation (fishing, boating, swimming) and water supply.

Best Management Practices (BMPs) - Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of Waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. (40 CFR §122.2)

BOD (Biochemical oxygen demand) - The measure of the oxygen required to break down organic materials in water. Higher organic loads require larger amounts of oxygen and may reduce the amount of oxygen available for fish and aquatic life below acceptable levels. Unless otherwise specified, this term means the 5-day BOD incubated at 20º C. (BOD_5)

BPJ - Best professional judgment.

BPT - Best practicable control technology currently available

Bypass - The intentional diversion of waste streams from any portion of a treatment facility. (40 CFR §122.41 (m))

CAAP - Concentrated aquatic animal production; At 40 CFR §122.24, the EPA defines concentrated aquatic animal production (CAAP) facilities as point sources subject to the National Pollutant Discharge Elimination System (NPDES) permit program including those upland facilities that discharge for at least 30 days per year and contain, grow, or hold cold water fish species or other cold water aquatic animals except in facilities which produce less than 9,0000

harvest weight kilograms (approximately 20,000 pounds) of aquatic animals per year and facilities which feed less than 2,272 kilograms (approximately 5,000 pounds) of food during the calendar month of maximum feeding.

CFR - Code of Federal Regulations, the body of federal regulations. Title 40 of the Code of Federal Regulations, Parts 1 - 1499 contains regulations of the Environmental Protection Agency.

cfs - Cubic feet per second.

Chemical - Any substance that is added to the facility to maintain or restore water quality for aquatic animal production and that may be discharged to Waters of the United States.

Clean Water Act - Formerly referred to as the Federal Water Pollution Control Act of 1972, codified at 33 U.S.C. §1251 et seq.

Cold water species - Cold water aquatic animals include, but are not limited to, the Salmonidae family of fish, e.g. trout and salmon.

Composite sample - A combination of four or more discrete samples taken at on-half hour intervals or greater over a 24-hour period; at least one fourth of the samples must be taken while cleaning. Facilities with multiple effluent discharge points and/or influent points must composite samples from all points proportionally to their respective flows.

Core rearing - A designated use of a water body where there is moderate to high density use by salmonid species, usually in the middle to upper reaches of a river system.

Critical Habitat - The geographical area occupied by a threatened or endangered species. See 16 U.S.C. §1532 (the Endangered Species Act of 1973) for a complete definition.

CWA - The Clean Water Act, 33 U.S.C. §1251 *et seq.*

DMR - Discharge monitoring report

Director - The Director of the EPA Region 10 Office of Water and Watersheds

Discharge of a pollutant-
(a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or (b) Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by humans; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any "indirect discharger" (40 CFR §122.2).

Disinfectant - Any chemical used to reduce pathogenic or objectionable organisms, including but not limited to algicides, fungicides, and pesticides.

Effluent - Wastewater discharged from a point source, such as a pipe.

Effluent limitation - Any restriction imposed by the Director on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States," the waters of the "contiguous zone," or the ocean (40 CFR §122.2).

ELGs (effluent limitations guidelines) - Regulations published by the Administrator under Section 304(b) of CWA to adopt or revise "effluent limitations." (40 CFR §122.2).

EPA - The United States Environmental Protection Agency.

Extralabel Drug Use - A drug approved under the Federal Food, Drug, and Cosmetic Act that is not used in accordance with the approved label directions; see 21 CFR 530. (40 CFR §451.2(f))

FR (or Fed.Reg.) - The Federal Register, the official daily publication for rules, proposed rules, and notices of Federal agencies and organizations, as well as executive orders and other presidential documents.

Flow-through System - A system designed for continuous water flow to waters of the United States through chambers used to produce aquatic animals. Flow-through systems typically use either raceways or tank systems. Water is transported from nearby rivers or springs to raceways which are typically long, rectangular chambers at or below grade, constructed of earth, concrete, plastic, or metal. Tanks systems are similarly supplied with water and concentrate aquatic animals in circular or rectangular tanks above grade. The term "flow through system" does not include net pens.

Grab Samples - A discrete volume of water collected, by hand or machine, during one short sampling period (less than 15 minutes).

Hatchery - Culture or rearing unit such as a raceway, pond, tank, net or other structure used to contain, hold or produce aquatic animals. The containment system includes structures designed to hold sediments and other materials that are part of a wastewater treatment system.(40 CFR §451.2 (c))

Hazardous Substance - Any substance designated under 40 CFR part 116, pursuant to Section 311 of the CWA.

Impaired Waters - Waters identified by Ecology pursuant to Section 303(d) of the Clean Water Act for which effluent limitations guidelines are not stringent enough to implement all applicable water quality standards.

INAD - Investigational New Animal Drug, a drug for which there is a valid exemption in effect under section 512(j) of the Federal Food, Drug, and Cosmetic Act, 21 U.S.C.360b(j), to conduct experiments. (40 CFR §451.2(h))

Indian Country - "all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same." (18 USC §1151)

Influent - The water entering a facility or part of a facility.

Listed Endangered or Threatened Species - Species that are in danger of extinction throughout all or a significant portion of their range or that are likely to become endangered species within the foreseeable future. See 16 U.S.C. §1532 (the Endangered Species Act of 1973) for a complete definition.

mg/L - Milligrams of solute per liter of solution, equivalent to parts per million, assuming unit density.

Minimum level (ML) - The concentration at which the entire analytical system must give a recognizable signal and an acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method-specified sample weights, volumes and processing steps have been followed (40 CFR §136).

Monthly average - The average of "daily discharges" over a monitoring month, calculated as the sum of all "daily discharges" measured during a monitoring month divided by the number of "daily discharges" measured during that month (40 CFR §122.2).

NPDES (National Pollutant Discharge Elimination System) - The national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of CWA (40 CFR §122.2).

Net - The difference between effluent concentration and influent concentration (or loads).

Net Pen - A stationary, suspended, or floating system of nets or screens in open marine, lake, or estuarine waters of the United States. Net pen systems are typically located along a shore or pier or may be anchored and floating offshore. Net pens and cages rely on tides or currents to provide a continual supply of high quality water.

New Source - Any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced:

(a) After promulgation of standards of performance under Section 306 of the CWA, which are applicable to such source, or
(b) After proposal of standards of performance in accordance with Section 306 of the CWA, which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal. (40 CFR §122.2)

NPDES - The National Pollutant Discharge Elimination System, the national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing [wastewater discharge] permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the CWA. (40 CFR §122.2)

Off-line Settling Basin - A constructed retention basin that receives wastewater from cleaning of aquaculture facility rearing or holding units and/or quiescent zones for the retention and treatment of the wastewater through settling of solids.

Outfall – A discrete point or outlet where the discharge is released to the receiving water.

Outstanding National Resource - A state park, game sanctuary or refuge; a national park, preserve, or monument; a national wildlife refuge; a national wilderness area; or a river designated as *wild* or *scenic* under the Wild and Scenic Rivers Act.

Permittee - An individual, association, partnership, corporation, municipality, Indian Tribe or authorized Indian tribal organization, State or Federal agency, or an agent or employee thereof, who is authorized by the EPA to discharge in accordance with the requirements of the General Permit.

Point Source - Any discernible, confined, and discrete conveyance from which pollutants are or may be discharged.

Pollutant - Chemical wastes, biological materials, … industrial waste discharge into water. (40 CFR §122.2)

Production - The act of harvesting, processing or releasing fish, or the harvest weight of fish contained, grown, or held in a CAAP facility. (40 CFR §122, Appx. C)

Publicly Owned Treatment Works (POTW) - Devices and systems, owned by a state or municipality, used in storage, treatment, recycling, and reclamation of municipal sewage or liquid industrial wastes, including sewers that convey wastewater to a POTW treatment plant. (40 CFR §403.3)

QA - Quality assurance, an integrated system of management activities involving planning, implementation, documentation, assessment, reporting, and quality improvement to ensure that a process, item, or service is of the type and quality needed to meet the performance criteria.

Recirculating System - A system that filters and reuses water in which the aquatic animals are produced prior to discharge; recirculating systems typically use tanks, biological or mechanical filtration, and mechanical support equipment to maintain high quality water to produce aquatic animals.

Regional Administrator - The Administrator of Region 10 of the United States Environmental Protection Agency, or an authorized representative.

Severe property damage - Substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR § 122.41(m)(ii))

Special Resource Tribal Waters - Waters that comprise a special and/or a unique resource to the Tribe, as determined by the appropriate tribal authority

The facility or "facility" – Refers to the Tamgas Creek Hatchery

TSS - Total Suspended Solids

Tier II water - Waters of a higher quality than the criteria assigned that may not be degraded unless such lowering of water quality is necessary and in the overriding public interest.

Toxic pollutants - Those pollutants, or combinations of pollutants, including disease-causing agents, which, after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, on the basis of information available to the Administrator, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction) or physical deformation in such organisms or their offspring. (CWA §502(13))

Toxic substances … Substances that when discharged above natural background levels in waters of the state have the potential either singularly or cumulatively to adversely affect characteristic water uses, cause acute or chronic toxicity to the most sensitive biota dependent upon those waters, or adversely affect public health, as determined by the Department of Ecology.

TSD - Technical Support Document for water quality-based toxics control (EPA 1991).

TSS - Total suspended solids, of which the concentration in water is measured in mg/L.

Upland hatchery - A hatchery not located within the waters of the State (or, by extension, the U.S.) where fish are hatched, fed, nurtured, held, maintained, or reared to reach the size of release or for market sale. (WAC 173-221A-030)

Upset - An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation. (40 CFR §122.41(n)(1)).

WAC - Washington Administrative Code.

WQBEL (Water quality-based effluent limitation) - An effluent limitation that is applied to a discharger when technology-based limitations would cause violations of water quality standards.

WLA - Wasteload allocation, the amount of pollutant assigned to a specific discharger in a TMDL or, in the absence of a TMDL, calculated by the permitting authority to comply with water quality standards in the receiving water.

Warm water species - Fish that include, but are not limited to, the *Ameiuride*, *Centrarchidae* and *Cyprinidae* families of fish, e.g., respectively, catfish, sunfish and minnows.

Waters of the United States (40 CFR §122.2) -

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
(b) All interstate waters, including interstate wetlands;
(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
(1) Which are or could be used by interstate or foreign travelers for recreational or other purposes;
(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
(3) Which are or could be used for industrial purposes by industries in interstate commerce;
(d) All impoundments of waters otherwise defined as Waters of the United States under this definition;
(e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;
(f) The territorial sea; and
(g) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

X. REFERENCES

Final Rule, Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category, 69 *Fed. Reg*. 51892 (August 23, 2004).

USEPA (1991). Technical Support Document for Water Quality-Based Toxics Control. Office of Water, Washington, D.C. EPA/505/2-90-001 (March 1991).

USEPA (1993). Guidance Manual for Developing Best Management Practices (BMP). Office of Water, Washington, D.C. EPA/833/B-93-004 (October 1993).
USEPA (1996). NPDES Permit Writers' Manual. Office of Wastewater Management, Washington, D.C. EPA/833/B-96-003 (December 1996).

USEPA Region 10 (2007). Aquaculture Facilities in Idaho. NPDES Permit Nos. ID-G13-0000 and ID-G13-1000 and Fact Sheet. USEPA. (2010). *NPDES Permit Writers' Manual*.

Environmental Protection Agency, Office of Wastewater Management, EPA-833-K-10-001.

Washington Dept.of Ecology (2002). Cypress Island, Inc. (Dana Passage – Hartstene Island), NPDES permit #WA0040401, March 20, 2002.

Washington. Dept. of Ecology (2006). Upland Hatchery General Permit. April 22, 2005.

XI. Appendix A – Map and Photos of Tamgas Creek Hatchery

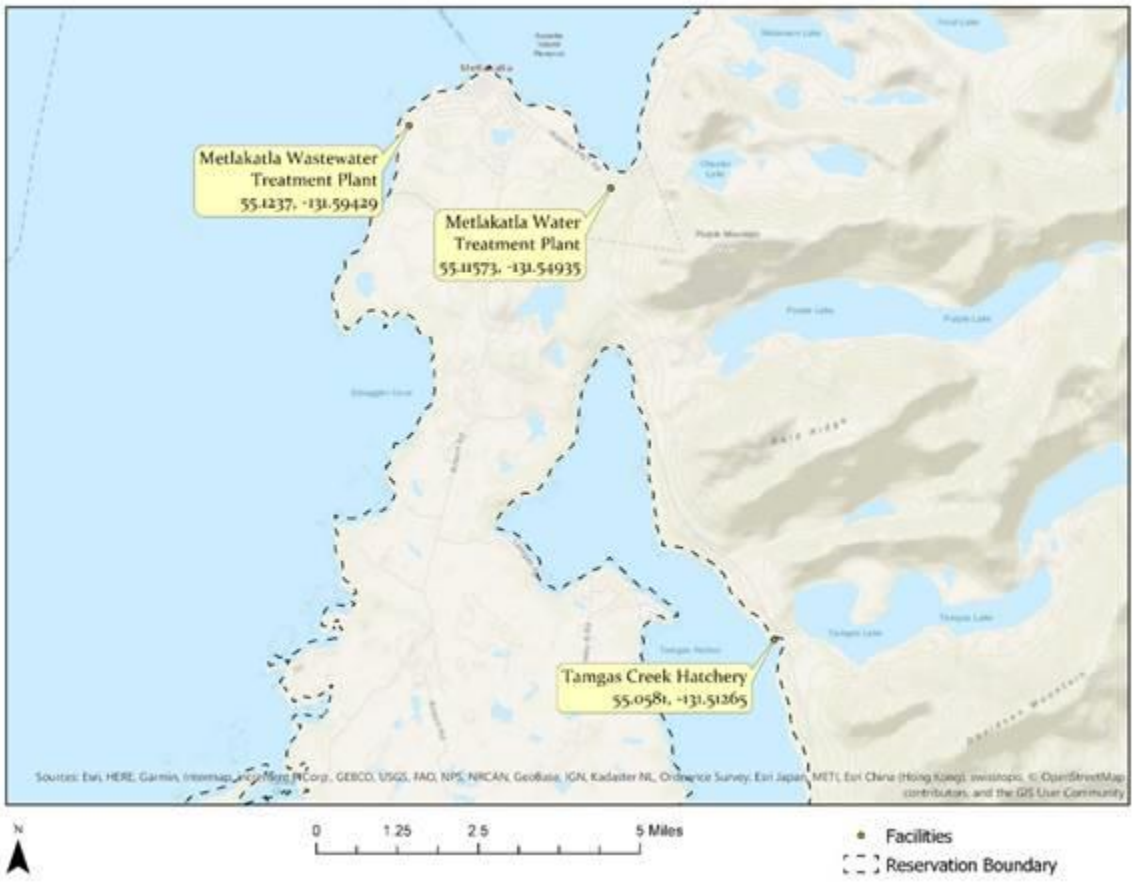

Figure 1: The Tamgas Creek Hatchery shown within the MIC Reservation Boundary

Figure 2: Aerial photograph of Tamgas Creek Hatchery.

Figure 3: Photograph of Outfall: fish ladder (left) and discharge pipe (right).

Figure 4: Photograph of Tamgas Creek downstream from the outfall.

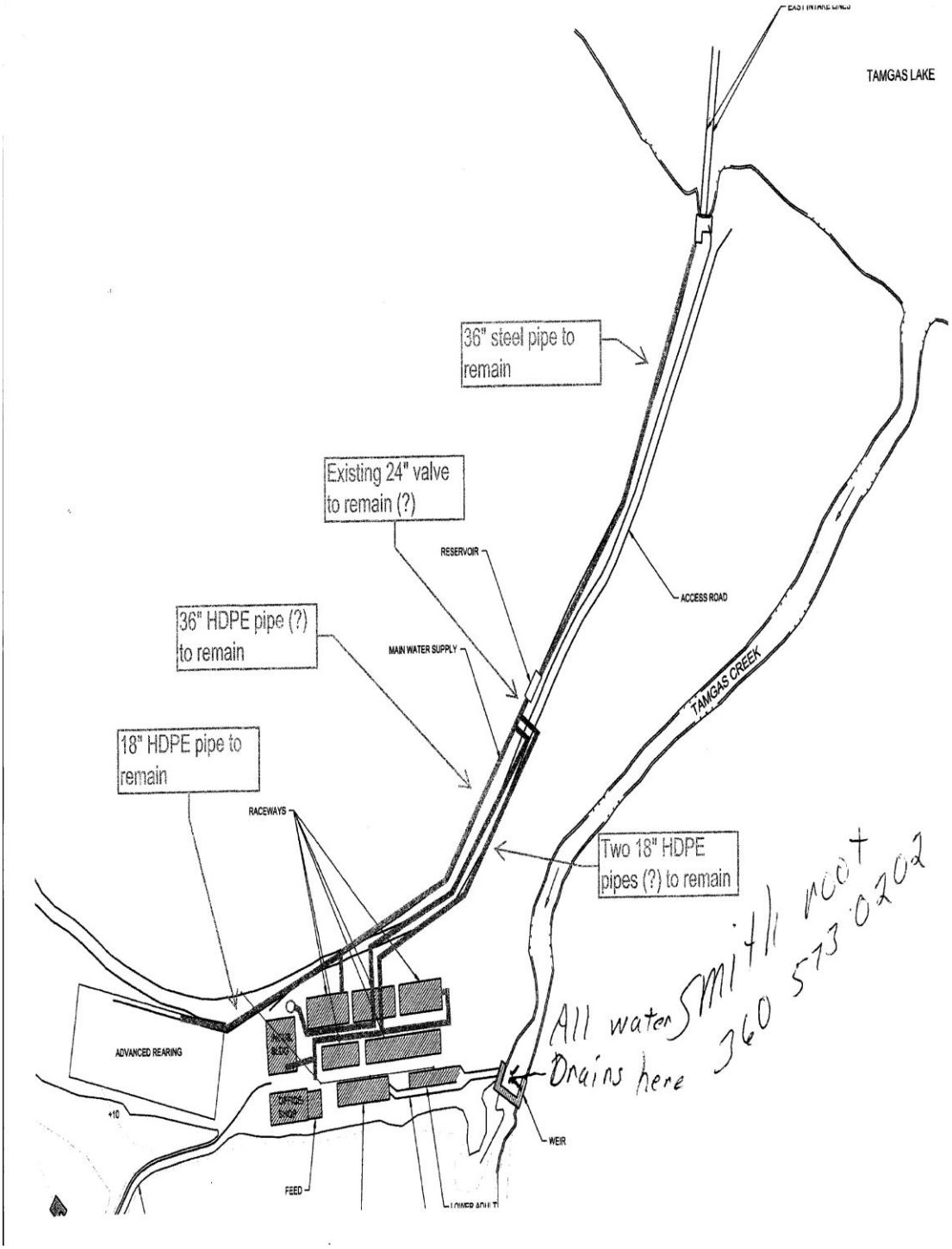

Figure 5: Diagram of Tamgas Creek Hatchery

Appendix B — Basis for Effluent Limitations

A. Effluent Limitations

To determine a WQBEL, when necessary, the EPA uses the following approach.

1. Determine Appropriate Water Quality Criteria

The EPA wrote this permit to comply with the EPA-approved water quality standards of the State of Alaska. See https://www.epa.gov/wqs-tech/water-quality-standards-regulations-confederated-tribes-warm-springs-indian-reservation.

2. Develop Wasteload Allocations (WLAs)

A WLA may be developed to establish the allowable loading of each pollutant that may be discharged without causing or contributing to exceedances of water quality standards in receiving waters. WLAs can be established in three ways - mixing zone-based WLAs, TMDL-based WLAs, and end-of-pipe WLAs.

a. Mixing Zone-Based WLA

A mixing zone is an allocated impact zone where state water quality standards can be exceeded as long as acutely toxic conditions are prevented. It is a defined area or volume of the receiving water adjacent to or surrounding a wastewater discharge where the receiving water, as a result of the discharge, may not meet all applicable water quality criteria. Mixing zones should be as small as practicable. A mixing zone is considered a place where wastewater mixes with receiving water and is based upon the dilution available and the assimilative capacity of the receiving water.

When the State or a tribe authorizes a mixing zone for a discharge, the WLA is calculated based on the available dilution at the edge of the mixing zone, background concentrations of pollutants, and the water quality criteria. ***This Permit does not allow for mixing zones***, therefore, mixing zone based WLAs are not appropriate.

b. TMDL-Based WLA

Where the receiving water quality does not meet applicable water quality standards, a WLA may be based on a total maximum daily load (TMDL) determination by the State or appropriate tribal authority. A TMDL is the determination of the maximum amount of a pollutant or pollutant property, from point, nonpoint, and background sources, including a margin of safety, that can be discharged to a receiving water without exceeding applicable water quality criteria. Section 303(d) of the CWA requires development of TMDLs for water bodies that will not meet water quality standards, after technology-based limitations are imposed, to ensure that these waters will come into compliance with water quality standards. Where discharges are to receiving waters listed as impaired, pursuant to CWA Section 303(d), such discharges must be authorized by NPDES permits. ***At this time, there are no applicable WLAs assigned to this facility.***

3. Derive Water Quality Based Permit Limitations

After WLAs have been developed, the EPA applies the statistical permit limit derivation approach described in Chapter 5 of the Technical Support Document (TSD) for Water Quality-Based Toxics Control, USEPA Office of Water (1991) (EPA/505/2-90-001) to establish

maximum daily effluent limitations and average monthly effluent limitations. This approach takes into account effluent variability, sampling frequency, water quality standards, and the difference in time frames between the monthly average and the daily maximum limits.

As described below, WQBELS for total residual chlorine are included in the proposed Permit.

B. Proposed Effluent Limitations

This discussion includes a description of the basis for each of the technology-based or water quality-based effluent limitations in the proposed permit.

1. Transport Water

Fish hatcheries commonly transport fish in 500-1000 gallon, truck-mounted tanks for release to the wild. Because these fish, in theory, can be caught and eaten immediately following their release, the transport water cannot contain aquaculture drugs and/or chemicals for which FDA requires a withdrawal period prior to human consumption. Such tanks are typically equipped only to provide life support (oxygen) to the fish while they are in transit. The only chemical routinely added to the transport water is salt, at 0.8 percent, to provide an isotonic transport medium, which is comfortable for the fish. The Permit does not address the discharge of transport water because it is a separate discharge at a remote location.

2. Total Suspended and Settleable Solids Limits

The final ELG did not contain numeric effluent limitations for total suspended solids (TSS) and settleable solids. However, in development of the 2009 and (reissued in 2016) NPDES General Permit for Federal Aquaculture Facilities and Aquaculture Facilities Located in Indian Country in Washington, the EPA used its Best Professional Judgment (BPJ) in applying numeric limitations for TSS and settleable solids to upland hatcheries that are equivalent to the State of Washington's effluent limitations for all upland aquaculture facilities. The Hatchery is similar to USFWS salmonid hatcheries in Washington State in terms of operations, species raised, and effluent characteristics.

The proposed effluent limits for total suspended solids and settleable solids are net limits. This permit requires that gross influent and effluent values be reported on the DMR form along with the calculated net values. The EPA may require additional sampling to prove substantial similarity between influent and effluent solids, where it determines that they are necessary. In such cases, the Permittee may continue to report net values until the comparability tests are completed.

3. Nutrients

In the ELGs, the EPA did not propose numeric limits for nutrients because, as it reasoned in the background information in its proposal (67 FR 57891 (Sept. 12, 2002)), control of TSS also effectively controls such nutrients because other pollutants are either bound to the solids or are incorporated into them [67 FR 57872]. The EPA Region 10 concurs with this reasoning for not including nutrient limitations unless the receiving water is water quality limited for nutrients and believes that implementation of BMPs to minimize the discharge of excess feed will serve to limit nutrient residuals in discharges.

4. Drugs, Disinfectants and Other Chemicals

There are no applicable ELGs in place for most drugs, disinfectants, and other chemicals used within the aquaculture industry. The EPA Region 10 has also noted that State and tribal water quality criteria do not specifically limit residuals of these materials in discharges from aquaculture facilities. For other chemicals, state and tribal water quality criteria generally include narrative criteria, which prohibit levels of toxic substances in concentrations that impair beneficial uses of receiving waters. The ELG does, however, require reporting on the use of drugs, disinfectants, and other chemicals in authorized discharges.

In this Permit, the EPA Region 10 is not including WQBELs for drugs, disinfectants, and other chemicals that are potentially applied within the facilities, except for chlorine. The facility shall provide information report (actual) chemical use in its Annual Reports. The EPA proposes to include additional monitoring requirements for aquaculture chemicals expected to be discharged to the receiving water.

5. Total Residual Chlorine

For disinfection and cleaning of equipment, chlorine may be used at concentrations above the water quality criteria.

a. Chlorine Standards

For the protection of aquatic life, the Confederated Tribes of the State of Alaska has established the water quality criteria in Table B-1, below, for total residual chlorine.

Table B-1
Chlorine Water Quality Criteria

	Fresh Water		Marine Water	
	Acute	**Chronic**	**Acute**	**Chronic**
Total Residual Chlorine (µg/L)	**19**	**11**	**13**	**7.5**

b. Chlorine Limits

The EPA believes there is reasonable potential for excursions above total residual chlorine criteria in receiving waters. Therefore, the draft Permit includes the effluent limitations listed in Table B-2, below, for total residual chlorine. Appendix C of this Fact Sheet shows the derivation of the water quality based effluent limits for total residual chlorine that are presented below.

Table B-2 Total Residual Chlorine Effluent Limitations		
Type of Water	**MDEL (µg/L)**	**AMEL (µg/L)**
Fresh Water	18.0	9.0

6. pH

There are no applicable technology-based effluent guidelines for pH from discharges from aquaculture facilities; however the most stringent criteria for pH in fresh waters from applicable state standards is 6.5 - 8.5, with no variation attributable to discharges allowed greater than 0.5 pH units from natural conditions.

pH is not a pollutant of concern in this Permit. The EPA has determined that discharges from fish hatcheries do not have reasonable potential to cause or contribute to an exceedance of the water quality standard for pH, and therefore, no discharge limitation for pH is being proposed by the Permit.