ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM

GENERAL PERMIT FACT SHEET - FINAL

AQUACULTURE FACILITIES IN ALASKA

Permit Number: AKG130000

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Water
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501

Public Comment Period Start Date: **October 13, 2017**
Public Comment Period Expiration Date: **November 20, 2017**

Alaska Online Public Notice System

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Proposed issuance of an Alaska Pollutant Discharge Elimination System (APDES) permit for

AQUACULTURE FACILITIES IN ALASKA

The Alaska Department of Environmental Conservation (Department or DEC) proposes to issue an APDES general permit for discharges from aquaculture facilities in Alaska. The permit authorizes and sets conditions on the discharge of pollutants from these facilities 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 these facilities and outlines best management practices to which the facility must adhere.

This fact sheet explains the nature of potential discharges from aquaculture facilities and the development of the permit including:

- information on public comment, public hearing, and appeal procedures
- a listing of proposed effluent limitations and other conditions
- technical material supporting the conditions in the permit
- proposed monitoring requirements in the permit

Final Permit

The Department has both an informal review process and a formal administrative appeal process for final APDES permit decisions. An informal review request must be delivered within 15 days after receiving the Department's decision to the Director of the Division of Water at the following address:

Director, Division of Water
Alaska Department of Environmental Conservation
555 Cordova Street
Anchorage, AK 99501

Interested persons can review 18 AAC 15.185 for the procedures and substantive requirements regarding a request for an informal Department review.

See http://dec.alaska.gov/commish/review-guidance/informal-reviews for information regarding informal reviews of Department decisions.

An adjudicatory hearing request must be delivered to the Commissioner of the Department within 30 days of the permit decision or a decision issued under the informal review process. An adjudicatory hearing will be conducted by an administrative law judge in the Office of Administrative Hearings within the Department of Administration. A written request for an adjudicatory hearing shall be delivered to the Commissioner at the following address:

Commissioner
Alaska Department of Environmental Conservation
410 Willoughby Street, Suite 303
Juneau, AK 99811-1800

Interested persons can review 18 AAC 15.200 for the procedures and substantive requirements regarding a request for an adjudicatory hearing. See http://dec.alaska.gov/commish/review-guidance/adjudicatory-hearing-guidance for information regarding appeals of Department decisions.

Documents are Available

The permit, fact sheet, application, and related documents can be obtained by visiting or contacting DEC between 8:00 a.m. and 4:30 p.m. Monday through Friday at the addresses below. The permit, fact sheet, application, and other information are located on the Department's Wastewater Discharge Authorization Program website: http://dec.alaska.gov/water/wastewater/.

Alaska Department of Environmental Conservation Division of Water Wastewater Discharge Authorization Program 555 Cordova Street Anchorage, AK 99501 (907) 269-6285	Alaska Department of Environmental Conservation Division of Water Wastewater Discharge Authorization Program 610 University Avenue Fairbanks, Alaska 99709 (907) 451-2100
Alaska Department of Environmental Conservation Division of Water Wastewater Discharge Authorization Program 410 Willoughby Avenue, Suite 310 Juneau, Alaska 99801 (907) 465-5180	

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1.0 Background

1.1 Legal Basis for Issuance of a General Permit

Clean Water Act (CWA) §301(a) and Title 18 Alaska Administrative Code (AAC) 83.015 provide that the discharge of pollutants is unlawful except in accordance with an Alaska Pollutant Discharge Elimination System (APDES) permit. The Alaska Department of Environmental Conservation (DEC or the Department) APDES regulations allow for the issuance of both individual and general permits. APDES regulations at 18 AAC 83.205 authorize DEC to issue general permits to categories of dischargers when a number of point sources are:

- Located within the same geographic area and warrant similar pollution control measures;
- Involve the same or substantially similar types of operations;
- Discharge the same types of wastes;
- Require the same effluent limits or operating conditions;
- Require the same or similar monitoring requirements; and
- In the opinion of the Department, are more appropriately controlled under a general permit than under individual permits.

A violation of a condition contained in a general permit constitutes a violation of the CWA and subjects the owner or operator of the permitted discharge to the penalties specified in CWA §309. Regulations at 18 AAC 83.210(a) allow a general permit to be administered according to the individual permit regulations found in 18 AAC 83.115 and 18 AAC 83.120; therefore, the general permit may be administratively extended past the expiration date if the general permit expires prior to a new general permit being reissued provided the permittee submits a timely and complete application for a new permit prior to the expiration of the current permit.

1.2 Permit Issuance History

Permit coverage for aquaculture facilities in Alaska began in 1998 with the issuance of DEC's statewide Wastewater General Permit for discharges of wastewater from fish hatcheries. The general permit provided coverage for fish hatcheries with a fish food budget of greater than 30,000 pounds per year and authorized discharges of wastewater from normal hatchery operations, domestic wastes, whole and ground carcasses into fresh and marine waters, and disease control chemicals. When the general permit expired on March 1, 2003, DEC requested that aquaculture facilities continue to operate under the conditions of the general permit until the permit was reissued. In 2008, the Environmental Protection Agency (EPA) approved DEC to administer the APDES permitting program, which was subsequently transferred to DEC over four phases with the fourth and final phase transferring in October 2012. The initial phase included authority to administer wastewater discharge permits associated with aquacultural activities. This general permit is the first APDES permit providing coverage for aquaculture facilities in Alaska.

2.0 Description of Industry and Receiving Waters

2.1 Aquaculture Industry

Aquaculture is the rearing or cultivation of aquatic organisms, such as fish, shellfish, and aquatic plants, under controlled conditions in aquatic animal containment systems. These aquatic animals and plants are used for a variety of purposes including food, pets, bait, and research and testing purposes. Hatcheries are aquaculture facilities that incubate and grow specific species of fish intended for use to enhance natural populations and to supplement recreational and commercial fisheries. Hatcheries greatly improve egg-to-juvenile survival rates;

however, hatchery-reared fish are subject to the same survival pressures as their naturally spawned counterparts once they are released into the wild.

Hatcheries began operating in Alaska in 1891 when cannery workers opened the first hatchery aimed at repopulating native salmon stocks on Kodiak's Karluk River. Increased commercial fishing pressure prompted the opening of several additional hatcheries in the early 1900s. Production peaked in 1911 and declined until the mid-1930s when all of the hatcheries closed. Renewed interest in salmon enhancement in the 1950s resulted in construction and operation of several state-run hatcheries. However, salmon populations continually declined and reached historically low numbers in early 1970.

In 1971, the Alaska Legislature established the Division of Fisheries Rehabilitation Enhancement and Development within the Alaska Department of Fish and Game (ADF&G) to further develop the hatchery program in the state and protect the fisheries from cyclical weaknesses in the wild salmon returns. Legislation passed throughout the 1970-80s continued to expand the hatchery program by allowing non-profit privately owned corporations to operate salmon hatcheries. In response, aquaculture associations representing local fishing and community groups were created to assist in regional salmon enhancement programs, with many of these associations operating hatcheries. Today, most state-owned commercial production hatcheries still in operation have been contracted to these private non-profit hatchery operators.

Alaska's modern hatchery program is intended to increase salmon abundance and supplement sustainable natural production while protecting wild stocks. Alaska hatcheries primarily produce pink (75%) and chum (19%) salmon due to their lower production costs, brief freshwater life stage transitioning from incubator to saltwater in 24 hours, and quick return on investment, making them the most economically viable species. Production costs for the remaining three salmon species increase because they must spend a year or more in freshwater before they are developed enough to tolerate salt water. Other species raised in Alaska's hatcheries include arctic char, rainbow trout, coho salmon, and Chinook salmon and are used to stock sport fishing waters throughout the Interior and Cook Inlet regions.

Currently, a total of 32 hatcheries are operating throughout Prince William Sound, Cook Inlet, and Kodiak, and Southeast regions of the state, including one located on Metlakatla tribal lands outside of APDES coverage area (See Appendix A). Of those, 27 are operated by private non-profit corporations, two sport fish hatcheries in Anchorage and Fairbanks are operated by ADF&G, and one research hatchery in Little Port Walter is operated by the National Marine Fisheries Service (NMFS). These hatcheries collectively release between 1.4 and 1.7 billion juveniles per year. From 2011-2015, between 47 million and 111 million adult salmon returned each year. With only 24 million adult salmon returning, 2016 saw the lowest return since 1992. Hatchery operators forecast a return of 67 million fish in 2017. An additional six hatcheries are inactive including Deer Mountain (Ketchikan), Gunnuk Creek Hatchery (Kake), Perry Island Hatchery (Prince William Sound), Bell Island Hatchery (Southern Southeast), Eklutna Hatchery (Eklutna), and Haines Projects Sites (Haines).

Alaska hatcheries must adhere to numerous fish health regulations and are required to collect and cross-fertilize eggs from wild broodstocks endemic to their area to retain genetic diversity. ADF&G authorizes selection of local broodstocks to ensure local genetically adapted stocks. The first life cycle of the hatchery requires harvesting eggs and milt from wild stocks, while second generation broodstock are imprinted to the hatchery water supply, return to the hatchery where eggs and milt are taken in all future generations. Alaska hatcheries do not grow fish to adulthood, but instead incubate fertilized eggs and release progeny as juveniles (i.e., fry or smolt). Some species are then temporarily moved to salt water where they can adapt to marine waters before being released. Juvenile salmon imprint on the release sites and return to those sites as mature adults.

Alaska's hatcheries also must operate in accordance with ADF&G permits that specify the maximum number of eggs of each species a facility can incubate, specify the authorized release locations, and may identify stocks allowed to be used for broodstock. Each hatchery must develop a basic management plan that outlines the

general operations of the hatchery and annual management plans that outline the egg-take goals, fry or smolt releases, expected adult returns, harvest management plans, production strategies, and permits required for the current year. Hatcheries must also obtain fish transport permits for egg collections, transports, and releases. Each hatchery submits annual reports documenting their egg collections, juvenile releases, current year run sizes, contributions to fisheries, and projected run sizes to ADF&G.

2.2 Receiving Waters

2.2.1 Water Quality Standards

The protection of surface water occurs primarily through the development, adoption, and implementation of water quality standards (WQS) in APDES permits. Regulations in 18 AAC 70 designate specific uses for which water quality must be protected and require that the conditions in permits ensure compliance with the Alaska's WQS. Alaska's WQS are composed of use classifications, numeric and/or narrative water quality criteria, and an Antidegradation Policy. The use classification system designates the beneficial uses that each waterbody is expected to achieve.

Beneficial uses of freshwater include water supply, water recreation, and growth and propagation of fish, shellfish, other aquatic life, and wildlife. Beneficial uses for marine water include harvesting for consumption of raw mollusks or other raw aquatic life in addition to the uses that apply to freshwater. Water bodies in Alaska are protected for all uses unless the water has been reclassified under 18 AAC 70.230 as listed under 18 AAC 70.230(e). Some water bodies in Alaska can also have site –specific water quality criterion per 18 AAC 70.235, such as those listed under 18 AAC 70.236(b). The numeric and/or narrative water quality criteria are the criteria deemed necessary by the state to support the beneficial use classification of each waterbody.

To prevent unnecessary lowering of water quality, the Antidegradation Policy ensures that the designated and existing water uses and the level of water quality necessary to protect the uses are maintained and protected. The Department conducts an antidegradation analysis to determine the permitted activities' potential effect on water quality and to ensure the activities comply with the Antidegration Policy and the WQS. Most waterbodies in Alaska are pristine and have water quality that exceeds the criteria established in the WQS. In such cases, a wastewater discharge may comply with the WQS, but still cause some degree of degradation of the waterbody. See Fact Sheet Section 9.0 for the antidegradation analysis conducted for the general permit.

2.2.2 Potential Aquaculture Impacts on Receiving Waters

Most aquaculture facilities rely on a steady water supply from seawater, surface water, or groundwater for production. Surface waters are typically run through fine mesh screens to remove debris and certain contaminants prior to use. Flow through systems are designed to continually move water through the production system, allowing it to exit the facility within an hour. The constant movement of water maintains the level of dissolved oxygen (DO) available for fish while carrying wastes away from the system. Recirculating systems are designed to reuse water before it is discharged. Net pen systems are sited in open water and rely on tides and currents to flush any potential wastes out of the system.

Aquaculture facilities generate a variety of pollutants from uneaten feed, fish feces, fish carcasses, algae, parasites and pathogens, cleaning chemicals, and medications used to treat fish diseases. While the concentrations of pollutants vary by production type, the main pollutants of concern found in wastewater discharges from hatcheries include total suspended solids (TSS) settleable solids (SS), pH, ammonia, DO, and nutrients (nitrogen and phosphorus). Hatcheries also discharge whole and ground fish carcasses after stripping them of eggs and milt for breeding purposes. Flow through systems discharge high volumes of wastewater, but with relatively low pollutant concentrations. Recirculating systems discharge lower volumes of water, but with

higher solids concentrations in the form of sludge. Net pen systems release solids and nutrients directly into the surrounding environment.

Uncontrolled release of these pollutants have the potential to cause adverse effects on water quality. Elevated levels of TSS and SS increase turbidity, or cloudiness, of the water. Although some turbid water ways can maintain high productivity values for salmon, turbidity can have far reaching effects on the aquatic environment. Turbidity can block sunlight from passing through the water column, reducing the amount of light available for photosynthesis, which decreases production of plant material (primary production). High turbidity can adversely affect fish by reducing the abundance of fish food (secondary production), interfering with their ability to avoid predators, increasing the risk of infection or disease, decreasing egg survival rates, increasing water temperature, and reducing levels of DO. Turbid waters can also create a human hazard by carrying disease-causing pathogens, such as virus and bacteria, or toxic pollutants. High turbidity in drinking water can shield bacteria or other organisms so that chlorine treatment is no longer effective at disinfecting the water. Some pathogens found in water with high turbidity can cause symptoms such as nausea, cramps, and headaches.

Nutrients are naturally found in aquatic systems and support the growth of algae and aquatic plants. However, excess nutrients can lead to eutrophication, a process that stimulates an explosive growth of plants and algae, particularly in estuarine or marine environments, to such an extent that it disrupts normal functioning of the ecosystem. While this is not common in Alaska's waters because they are often low in nutrient content, overgrowth of plants and algae can increase biological oxygen demand (BOD), deplete oxygen levels, and increase temperature, which degrades benthic communities and can stress or kill fish and other organisms.

Variation of pH can dramatically influence the health and growth of fish, especially young fish, by causing mortality, triggering alterations in fish's metabolic processes, and affecting their ability to take in water through their gills. Changes in pH can also influence levels of potentially toxic ammonia, cause loss of equilibrium, hyperexcitability, increased breathing, cardiac output, and decreased swimming performance.

To determine the pollutants of concern for the general permit, DEC evaluated EPAs *Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category* at 40 Code of Federal Regulations (CFR) 451, other relevant National Pollutant Discharge Elimination System (NPDES) and state permits, and historical compliance data for facilities covered under the 1998 State of Alaska wastewater general permit for fish hatcheries. Based on DEC's analysis, the pollutants of concern for the general permit are TSS, SS, pH, ammonia, DO, and chlorine.

The aquaculture industry uses a variety of best management practices (BMPs) and wastewater treatment technologies to prevent or minimize the release of pollution from their operations. BMPs are activities, procedures, and other management strategies that reduce the effluent volume or concentrations of pollution in the wastewater. BMPs commonly used in the aquaculture industry include feed management, solids control, health management, and mortality removal.

3.0 Permit Coverage

3.1 Coverage and Eligibility

Coverage under the general permit is limited to concentrated aquatic animal production (CAAP) facilities that discharge aquatic animal rearing waste and wastewater to fresh or marine surface water (located throughout the state) or a system that discharges to a surface water at least 30 days per year. With respect to cold water, as defined in 40 CFR 122, Appendix C, a hatchery, fish farm, or other facilities is a CAAP facility if it contains, grows, or holds aquatic animals in either of the following categories:

- Cold water fish species or other cold water aquatic animals in ponds, raceways, or other similar structure which discharge at least 30 days per year but does not include:
    - Facilities which produce less than 9,090 harvest weight kilograms (approximately 20,000 pounds) of aquatic animals per years; and
    - Facilities which feed less than 2,272 kilograms (approximately 5,000 pounds) of food during the calendar month of maximum feeding.

CAAP facilities that produce, hold, or contain 20,000 pounds or more of aquatic animals per year (any 12 month period) and feed more than 5,000 pounds of fish food in any one calendar month are eligible to apply for coverage under the general permit. If a facility uses more than one production system, the facility is subject to the permit if the total production from any of the regulated production systems meets the production threshold. The facility would need to demonstrate compliance with the management practices required for each of the regulated production systems it is operating.

DEC may require smaller aquaculture facilities to apply for coverage if they are determined to be a significant contributor of pollution to waters of the United States (U.S.). In making this determination, DEC will evaluate the site-specific facility conditions, the quantity and nature of the pollutants, and the potential impacts to the receiving waters. Other smaller facilities that do not meet the eligibility threshold for coverage may also voluntarily request coverage under the general permit.

3.2 Exclusions

Several types of wastewater discharges require coverage under another general or individual permit because they cannot be adequately controlled under the conditions outlined in the general permit or are outside the scope of the general permit. Facilities utilizing molluscan shellfish operations do not typically meet the definition of a CAAP facility and are not eligible for coverage under the general permit. Facilities that indirectly discharge their process wastewater to privately or publicly owned treatment works (POTW) are excluded from coverage because POTWs are expected to adequately treat the main pollutants of concern generated from hatcheries (e.g., TSS).

The general permit excludes discharges to sensitive aquatic habitats, such as tidal flats and salt marshes, in an effort to maintain high levels of water quality. Depending on site-specific conditions, permittees may request approval to discharge to a sensitive habitat by submitting documentation demonstrating that the discharge will not cause substantial habitat degradation. The permit excludes discharges to degraded waters unless the subject water is protected from further degradation and the permittee demonstrates that the general permit is adequate to provide the level of protection required by the TMDL or control plan including facility-specific wasteload allocations, that the pollutant(s) for which the waterbody is impaired is not present at the facility, or that the discharge is not expected to cause or contribute to an excursion of a WQS.

3.3 Prohibited Discharges

The general permit prohibits several types of discharges that may cause or contribute to an excursion of a WQS or may impact an approved use of the waterway. The following discharges are prohibited:

- Atlantic salmon (*Salmo salar*);
- Discharges of ground aquatic animal mortalities or broodstock carcasses to freshwater;
- Discharge of any waste streams, including spills and other unintentional or non-routine discharges of pollutants that are not part of the normal operation of the facility as disclosed in the Notice of Intent (NOI) and regulated by the permit;
- Solids, including sludge and grit that accumulate in raceways or ponds or in other components of the production facility in excess of the applicable limits in the general permit;

- Floating solids, debris, deposits, foam, scum or other residues that alone or in combination with other substances, cause a film, sheen, or discoloration on the surface of the receiving water or adjoining shorelines; cause leaching of toxic or deleterious substances; or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines;
- Disease control chemicals and drugs except those approved by the Food and Drug Administration (FDA) and/or the EPA for hatchery and prescribed by a licensed veterinarian;
- Hazardous or toxic substances, including unapproved drugs and pesticides, in toxic amounts that may impair designated uses or violate WQS of the receiving water; and
- Biocidal chemicals for cleaning nets in the water, unless prescribed by a veterinarian to prevent the spread of disease.

3.4 Obtaining Authorization

In accordance with 18 AAC 83.210, dischargers seeking coverage under a general permit must submit a Notice of Intent (NOI) and any required supporting documentation to DEC. After reviewing the NOI and supporting documentation, DEC will assign each operator a unique authorization number and send each applicant a written authorization stating that coverage has been granted and any special conditions or monitoring requirements specific to the facility's discharge. DEC may notify a discharger that their discharge is covered by this APDES general permit, even if the discharger has not submitted an NOI in accordance with 18 AAC 83.210(h).

Pursuant to 18 AAC 83.215(a), DEC may require any permittee applying for, or covered by a general permit, to apply for and obtain an individual permit. In addition, any interested person may petition the Department to take this action. The Department may consider the issuance of an individual permit when:

- The discharger is not in compliance with conditions of the general permit;
- A change has occurred in the availability or demonstrated technology or practices;
- ELGs are promulgated for point sources covered by the general APDES permit;
- A water quality management plan is approved;
- Circumstances have changed so that the discharger is no longer appropriately controlled under the general permit;
- DEC determines that the discharge is significant; or
- A TMDL has been completed for the impaired receiving water.

APDES regulations at 18 AAC 83.215(b) allow any owner or operator authorized by a general permit to request to be excluded from the coverage of the general permit by applying for an individual permit. The responsible party shall submit an individual permit application (Form 2A and Form 2M if requesting a mixing zone) with reasons supporting the request to the Department no later than 90 days after the publication of the general permit. The request shall be processed under the provisions of 18 AAC 83.115 and 18 AAC 83.120. The Department will grant the request by issuing an individual permit if the reasons cited by the responsible party are adequate to support the request. Pursuant to 18 AAC 83.215(d), a permittee who already has authorization to discharge under an individual permit may request general permit coverage. If the Department approves coverage under a general permit, the individual permit is revoked and/or modified.

3.5 Notice of Intent Requirements

The general permit requires owners or operators of eligible facilities to submit a complete and accurate NOI to the Department within 60 days of the effective date of this general permit. Owners or operators must submit an NOI for each hatchery, which may include the main land-based hatchery, adjacent net pen sites, and discontiguous net pen sites. For example under current facility ownership, NSRAA would submit one NOI for

Hidden Falls that includes information on the Hidden Falls land-based hatchery and net pen sites at Kasnyku Bay, Takatz Bay, SE Cove, and Thomas Bay. DEC will issue one authorization for each hatchery that includes unique permit conditions for the land-based hatchery and each net pen site as appropriate. If net pens are associated with or receive fry from multiple hatcheries (i.e. two or more), the information must be submitted on the NOI. The NOI should identify the net pens that are requesting authorization and those being authorized separately. Net pens are only required to be covered under one authorization.

Applicants must also submit a Carcass Disposal Plan with the NOI describing how the facility will dispose of mortalities and broodstock carcasses, the proposed discharge (i.e., water) or disposal (i.e., upland) location(s), description of tides and currents in the disposal area (either measured or estimated based on the best available data), maximum daily pounds of carcasses expected to be discharged, and the number of days the discharge is anticipated to occur per season.

If the Department determines that the NOI is incomplete, the Department will request additional information from the applicant. If the Department determines that the facility is not eligible for coverage under the general permit, authorization will be denied and, if appropriate, the applicant will be directed to submit an application for an individual permit. If the NOI is considered complete and the facility is eligible for coverage under the general permit, the Department will send the permittee a written notice of authorization. Authorization to discharge under the general permit does not begin until the permittee receives a written notice of authorization from the Department.

The NOI may be submitted electronically via the Permit Application Portal or via a paper copy form. The NOI must be signed by the responsible party in accordance with Signatory Requirements in Appendix A Section 1.12 and submitted to the DEC address located in Permit Appendix A, Section 1.1.1.

3.6 Continuation of an Expired General Permit

If the general permit is not reissued prior to the expiration date, it will remain in force and effect for discharges that were authorized prior to the expiration date provided permittees submit an application for a new permit in accordance with the provisions of 18 AAC 83.155(c). Permittees wishing to continue coverage under the new permit must submit a new NOI to DEC within six months (180 days) prior to the expiration of the general permit.

4.0 Compliance History

EPA has not historically provided NPDES permit coverage for wastewater discharges from hatchery facilities in Alaska. Alaska's hatcheries have operated under the conditions set forth in DEC's statewide Wastewater General Permit for hatcheries since its issuance in 1998. In 2008, DEC assumed authority from EPA to authorize wastewater discharges from hatcheries and began implementing the APDES permitting program. Issuance of this general permit is the first APDES permit authorizing wastewater discharges from hatcheries in Alaska. Accordingly, no further NPDES/APDES compliance history narrative is available or presented herein.

5.0 Limitations

5.1 Basis for Permit Effluent Limits

The CWA requires that the limits for a particular pollutant be the more stringent of either technology-based effluent limits (TBEL) or water quality-based effluent limits (WQBEL). TBELs are intended to require a minimum level of treatment for industrial point sources based on currently available treatment technologies and are set according to the level of treatment that is achievable using available technology. WQBELs are designed to ensure that the WQS of a waterbody are met. DEC first determines which TBELs apply to a discharge in

accordance with applicable national effluent limitation guidelines (ELG) and standards. DEC then evaluates the expected effluent quality to determine if WQS may still be exceeded. If exceedances could occur, DEC must include WQBELs in the permit.

On August 23, 2004, EPA published technology based ELGs for the CAAP point source category in the Federal Register. These regulations, codified in 40 CFR 451, became effective one month later on September 23, 2004, and have not been updated since. The ELGs apply to all CAAP facilities that produce, hold, or contain 100,000 pounds or more of aquatic animals during any 12 month period. While facilities producing fewer than 100,000 pounds of aquatic animals per year are not subject to the ELG, as CAAP facilities they still require APDES permits. Facilities not covered by the ELG include closed pond systems, molluscan shellfish operations, those that indirectly discharge process wastewater, and aquaria and net pens rearing native species released after a growing period of no longer than four months to supplement commercial and sport fisheries. This last exclusion applies primarily to Alaskan non-profit facilities which raise native salmon for release into the wild in flow-through systems and then hold them for a short time in net pens preceding their release. The flow-through portion of these facilities are subject to the ELG if they produce 100,000 pounds or more of aquatic animals per year, but the net pen portions would be excluded from the ELG. However, despite this exclusion from the ELG, all CAAP facilities, including net pens, are subject to APDES permitting requirements regardless of species produced or the duration held.

The ELG establishes technology-based narrative limitations and standards for wastewater discharges from new and existing CAAP facilities that use flow through, recirculating, or net pen production systems. The type of production system determines the nature, quantity, and quality of effluents from each facility type. The limitations and standards vary for different production facility types and production levels and are designed to be commensurate with the amount of pollutants expected to be discharged at each facility. The ELGs are largely based on production and operational controls and BMPs that will minimize the generation and discharge of solids from the facility, including rigorously implemented feed management, proper storage of material, adequate solids control, and proper operation and maintenance. EPA chose not to include specific numeric limitations for any pollutants of concern based on their expectation that proper use of BMPs would provide an acceptable level of pollutant control and minimizing TSS would also effectively control concentrations of other pollutants. Table 1 below lists the activities required by the ELG for flow through, recirculating, and net pen facilities.

Table 1: Comparison of Limitations for Flow Through, Recirculating, and Net Pen Facilities

Limitations and Best Management Practices	Flow Through and Recirculating	Net Pens
Solids Control	x	
Feed Management		x
Materials Storage	x	x
Structural Maintenance	x	
Recordkeeping	x	x
Training	x	x
Waste Collection and Disposal		x
Transport or Harvest Discharge		x
Carcass Removal		x

DEC agrees with EPA's conclusion that permit limitations and standards should vary for different production facility types and production levels and designed the permit requirements to be commensurate with the amount of pollutants expected to be discharged at each facility. Larger facilities with higher production levels are expected to generate more solids than facilities with lower production levels and, therefore, pose a lower risk to water quality. Because the ELGs applicable to larger facilities apply BMPs and reporting practices in lieu of

numeric standards that translate to practicable water quality protections, DEC determined that select ELG requirements were not overly burdensome to smaller facilities (e.g., with less than 100,000 pounds release weight), provided appropriate water quality protections for smaller facilities as well and incorporated the ELGs into the general permit for certain facilities that do not meet the volume ELG applicability thresholds.

In order to determine if WQBELs are needed and to develop those limits when necessary, DEC typically conducts a reasonable potential analysis (RPA). The RPA is a water quality-based analysis that identifies the applicable water quality criteria, determines if there is a "reasonable potential" for the discharge to cause or contribute to an excursion of WQS in the receiving water, and develops effluent limits, if needed. Because this is the first issuance of the general permit, DEC does not have historical monitoring data from hatcheries needed to conduct a RPA. The general permit requires hatcheries to monitor for several water quality parameters (TSS, SS, pH, ammonia, DO, and chlorine) to generate data for use in conducting a RPA during the next permit cycle.

5.2 Flow Through and Recirculating Facilities Producing 100,000 Pounds or More Total Annual Release Weight from the Facility

Flow through and recirculating facilities producing large quantities of aquatic animals are required to implement a combination of BMPs aimed at minimizing the release of solids from the facility. Solids control practices are expected to reduce the concentration of solids while also reducing the loadings being discharged. The main action permittees must take to control solids is employing efficient feed management and feeding strategies that limit feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth. To further control solids, permittees must identify and implement procedures for cleaning rearing units, inspecting and repairing the production and wastewater treatment systems, and removing and disposing of aquatic animal mortalities on a regular basis.

The general permit requires permittees to ensure that drugs, pesticides, disinfectants, and feed are stored in a manner designed to prevent spills that may result in a discharge of those materials to waters of the U.S, and implement procedures for properly containing, cleaning, and disposing of any spilled material. Permittees must also conduct regular structural maintenance activities, including conducting weekly inspections of the production and wastewater systems and performing maintenance as needed. Permittees must maintain records documenting feed amounts and estimates of the numbers and weights of aquatic animals for each rearing unit and the frequency of cleaning, inspections, maintenance and repairs performed at the facility. Additionally, permittees must provide staff training on the proper operation and cleaning of production and wastewater treatment systems and spill prevention and response measures.

5.3 Flow Through and Recirculating Facilities Producing 20,000 to 100,000 Pounds Total Annual Release Weight From The Facility

Flow through and recirculating facilities producing smaller quantities of aquatic animals are also required to implement BMPs that minimize the release of solids from the facility. Because the nature of the discharge is similar, the solids control measures required for smaller facilities are comparable to those for larger facilities. As mentioned above, permittees must employ efficient feed management and feeding strategies that limit feed input to the minimum amount reasonably necessary to achieve production goals, identify and implement procedures for cleaning rearing units, and removing and disposing of aquatic animal mortalities on a regular basis. DEC determined that the solids control practices were achievable by all facilities and would not likely deviate from current practices. Smaller facilities are also required to manage spills by containing, cleaning, and disposing of any spilled materials.

5.4 Net Pen Facilities Producing 100,000 Pounds or More Total Annual Release Weight From the Facility, Except Those Facilities Rearing Native Species Released After a Growing Period of Four Months or Less

Like flow through and recirculating systems, net pen facilities producing large quantities of aquatic species are required to follow several BMPs designed to minimize the discharge of pollutants to waters of the U.S. As with flow through and recirculating systems, controlling the accumulation of solids through feed management is a key element in managing the discharge of pollutants. Permittees are required to use feed management strategies that optimize the amount of feed needed to sustain targeted rates of aquatic animal growth while minimizing the accumulation of uneaten food and solids beneath the pens. Permittees must implement strategies to collect and dispose of waste materials, including feed bags, packing materials, waste rope, and netting, and store all other substances in a manner designed to prevent spills. Permittees must also remove and dispose of other animal matter such as mortalities, blood, or viscera encountered during daily operations or transport of aquatic animals. The general permit requires permittees to ensure that drugs, pesticides, disinfectants, and feed are stored in a manner designed to prevent spills that may result in a discharge of those materials to waters of the U.S, and implement procedures for properly containing, cleaning, and disposing of any spilled material.

To control discharges from net cleaning, permittees must conduct several routine maintenance activities. Permittees must inspect the nets to identify damage and promptly perform corrective actions. Whenever possible, permittees should allow the nets to dry over water and transfer them to upland areas for cleaning. If infeasible to move the net pens to an upland location prior to cleaning, *in situ* cleaning is only allowed under conditions that will disperse solids and prevent concentrated bottom settling. In the proposed final permit, DEC revised this part to require permittees to use cleaning practices that will minimize bottom settling to the extent practical to avoid any confusion over the term “concentrated bottom settling”. Cleaning of discreet portions of the net must be phased over a sufficient period of time in order to avoid an influx of materials during a single cleaning event.

Also like other large facilities, permittees must maintain records documenting feed amounts and estimates of the numbers and weight of aquatic animals for each rearing unit, document the frequency of net changes, inspections, and repairs performed at the facility. Permittees must provide staff training on the proper operation and cleaning of production and wastewater treatment systems and spill prevention and response measures.

Due to the mobile nature of net pens, permittees must situate net pens in waters with adequate current velocity relative to water depth from the bottom of the net pens to the sea floor to avoid degradation of water quality and benthic conditions below the nets and anchor nets in a way that ensures continued flow or tidal exchange. Proper siting of net pens will ensure an adequate supply of oxygenated water is available for maintaining overall fish health and performance as well as flushing wastes away from the nets, which will lessen potential adverse impacts to the benthic communities near and under the nets. Appropriate site selection and configuration can also contribute to a safer working environment and lower production costs by creating easily accessible and stable areas for routine activities such as feeding and conducting inspections. Facility operators are responsible for obtaining all other local, state, and federal permits and approvals for siting of net pens.

5.5 All Other Net Pen Facilities Producing 20,000 Pounds or More Total Annual Release Weight from the Facility, Regardless of Species or Duration Held

Net pen facilities producing smaller quantities of aquatic animals are required to develop and implement some of the same BMPs designed to minimize the discharge of pollutants to waters of the U.S. as larger net pen facilities. Because solids control is such a critical part of controlling pollutants from all facilities, smaller net pen facilities must also employ efficient feed management and feeding strategies by limiting the amount of feed

while still achieving production goals. Permittees must remove and dispose of aquatic animal mortalities to prevent discharge to waters of the U.S., except in cases where DEC authorizes such discharge.

Because potential impacts from cleaning operations are comparable for all net pen facilities, permittees must adhere to the same net cleaning practices as larger facilities. When the nets are empty, they should be allowed to dry over the water and transported to an upland location for cleaning. If it is infeasible to move the net pens to an upland location prior to cleaning, *in situ* cleaning is only allowed under conditions that will disperse solids and prevent concentrated bottom settling. In the proposed final permit, DEC revised this part to require permittees to use cleaning practices that will minimize bottom settling to the extent practical to avoid any confusion over the term “concentrated bottom settling”. Cleaning of discreet portions of the net must be phased over a sufficient period of time in order to avoid an influx of materials during a single cleaning event.

Similar to larger net pen facilities, permittees of smaller net pen facilities are also expected to situate net pens in locations with adequate current velocity relative to the depth from the bottom of the net pens to the sea floor to avoid degradation of water quality and benthic conditions below the nets and to position nets in a manner that does not impede flow or tidal exchange to prevent the deposition of solids below the nets. Also, facility operators are responsible for obtaining all other local, state, and federal permits and approvals for siting of net pens.

6.0 Monitoring

6.1 Basis for Effluent and Receiving Water Monitoring

In accordance with Alaska Statutes (AS) 46.03.101(d) and 18 AAC 83.430, the Department may specify in a permit the terms and conditions under which waste material may be disposed. Monitoring in permits is required to determine compliance with effluent limits, to gather effluent and surface water data, to determine if additional effluent limits are required, and/or to evaluate if the effluent is causing or contributing to an instream excursion of water quality criteria. Permittees are responsible for conducting the monitoring and for reporting results in an Annual Report or on the application for permit reissuance, as appropriate, to the Department. Additional monitoring may be required in individual authorizations for site-specific evaluations related to, but not limited to, protection of WQS, evaluation of receiving waterbody impairments, threatened or endangered species, or application requirements. Permittees will be notified of any additional monitoring when issued authorization to discharge under the general permit.

6.2 Monitoring Frequencies

The general permit requires permittees operating flow through and recirculating facilities to monitor several water quality parameters including flow, TSS, SS, pH, ammonia, DO, and chlorine at least once per month under normal operating conditions, during cleaning operations, and before aquatic animals are released. Any permittee using chlorine to disinfect rearing vessels is required to monitor for chlorine unless the rearing vessel is allowed to dry completely and does not discharge chlorine to waters of the U.S. Permittees operating net pens are required to monitor the water column within and outside the net pens for dissolved oxygen at least once per month when aquatic animals are present in the nets and to visually assess the benthos prior to releasing aquatic animals each season.

During this permit cycle, DEC will review and analyze the data to identify trends, pollutants with a reasonable potential to cause an excursion above the WQS, or other areas of concern. If the analysis indicates specific pollutants with a reasonable potential to cause an excursion above the WQS, DEC will develop effluent limitations for those parameters and incorporate them into future general permits.

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 and compliance. Permittees have the option of taking more frequent samples than are required under the general permit. These samples must be used for averaging if they are conducted using the Department-approved test methods (generally found in 18 AAC 70 and 40 CFR 136 [adopted by reference in 18 AAC 83.010]).

6.3 General Monitoring Requirements

The general permit allows DEC to require additional influent, effluent, or receiving waterbody monitoring for site-specific purposes related to, but not limited to, application requirements, the protection of WQS, gathering data to support TMDL development, evaluation of receiving water impairments, or evaluation of effects on threatened or endangered species. Likewise, monitoring frequency may be adjusted for site-specific purposes. The permittee will be notified of any additional or site-specific monitoring when issued authorization to discharge under the general permit. Permittees also have the option of taking more frequent samples than are required under the general permit. These samples must be reported in the Annual Report if they are conducted using the Department-approved test methods (generally found in 18 AAC 70 and 40 CFR 136 [adopted by reference in 18 AAC 83.010]).

Permittees must use a sufficiently sensitive EPA-approved test method that quantifies the level of pollutants to a level lower than applicable limits or water quality standards or use the most sensitive test method available, per 40 CFR 136 (Guidelines Establishing Test Procedures for the Analysis of Pollutants), adopted by reference at 18 AAC 83.010(f). For purposes of reporting on the Annual Report for a single sample, if a value is less than the method detection limit (MDL), the permittee must report "less than (<) {numeric value of MDL}" and if only a value is less than a reporting limit (RL) (also called a minimum reporting limit (MRL) or a practical quantification limit (PQL) is reported, the permittee must report "less than (<) {numeric value of RL}." Effluent samples must be collected from the effluent stream after the last facility structure before discharge into receiving waters or to subsequent mixing with other water flows.

6.4 Flow Through and Recirculating Facilities

6.4.1 Effluent Monitoring

Because CAAP facilities are known to generate elevated concentrations of TSS, SS, pH, ammonia, DO, and chlorine, DEC has identified them as pollutants of concern in wastewater discharges from hatcheries. All flow through and recirculating facilities must sample and analyze the wastewater discharge for the water quality parameters at the frequencies listed in Table 2.

Table 2. Flow Through and Recirculating Systems Monitoring Requirements

Parameter	Units	Sample Type	Sample Frequency	Sample Location
Flow[a]	Gallons per day	Flow meter, calibrated weir, or other approved method	Continuous	Effluent[b]
Total Suspended Solids	mg/L	Composite	Monthly[c] (normal)[d]	Influent and Effluent[b]
			Monthly (cleaning)[e]	Influent and Effluent
			1 per Drawdown After Release[f]	Influent and Effluent
Settleable Solids	ml/L	Composite	Monthly[c] (normal)[d]	Influent and Effluent[b]
			Monthly (cleaning)[e]	Influent and Effluent
			1 per Drawdown After Release[f]	Influent and Effluent
pH	Standard Units	Grab[g]	Monthly[d]	Influent and Effluent[b]
			1 per Drawdown After Release[f]	Influent and Effluent
Ammonia	mg/L	Grab[g]	Monthly[d]	Effluent[b]
			1 per Drawdown After Release[f]	Effluent
Dissolved Oxygen	mg/L	Grab[g]	Monthly[d]	Effluent[b]
			1 per Drawdown After Release[f]	Effluent

Footnotes:

a. Flow measurements and all influent/effluent samples must be taken on the same day.
b. Effluent samples must be collected from the waste stream after the last unit prior to discharge into the receiving waters or to subsequent mixing with other water flows.
c. Monthly monitoring must begin in the first full calendar month of permit coverage.
d. Samples shall be taken monthly during "normal" hatchery operations. The TSS samples shall consist of at least four grab samples taken at approximately two hour intervals during hatchery operating hours which will result in a composite sample representative of the discharge during normal operations.
e. Samples shall be taken monthly during the "cleaning" operations. For discharges directly from raceways, sampling shall occur during raceway cleaning operations. The TSS samples shall consist of at least four grab samples taken at evenly spaced intervals during the cleaning period which will result in a composite sample representative of the discharge during the cleaning operations. Two settleable solids grab samples shall be collected at least one hour apart which will result in a composite sample representative of the discharge during cleaning operations.
f. Drawdown samples must be collected from the last quarter of the volume of the rearing pond or raceway drawdown for the release event. If releasing multiple raceways or rearing ponds on the same day, permittees must combine grab samples from individual discharges into a flow proportional composite sample for analysis.
g. Grab samples must be representative samples of all outfalls discharging rearing pond or raceway water to waters of the U.S.

6.4.2 Receiving Water Monitoring

To accurately determine the level of ammonia, additional receiving water monitoring is required for discharges to marine waters. Analytical tests for ammonia usually measure total ammonia, which is the sum of ionized ammonium (NH_4^+) and the more toxic, non-ionized ammonia (NH_3). At any given time, there will be both ammonium ions and ammonia molecules present in the water. The quantity of each molecule is dependent on both pH and water temperature. When pH and water temperature are elevated, the non-ionized form of ammonia is present in elevated concentrations in the water and can be toxic to aquatic animals.

The general permit requires permittees to monitor the receiving waterbody once per calendar year as specified in Table 3. Permittees must collect samples within the receiving waterbody at a location that is outside the influence of the facility's discharge. Samples must be collected at different times of the year and from different locations within the receiving waterbody each year.

Table 3: Flow Through and Recirculating Receiving Waterbody Monitoring Requirements

Parameter	Units	Sample Type	Sample Frequency	Sample Location
pH	Standard Units	Grab	1/year	Receiving Water[b]
Temperature	Celsius	Grab	1/year	Receiving Water[b]
Salinity[a]	Parts per Thousand	Grab	1/year	Receiving Water[b]

Footnotes:
a. Monitoring for salinity is only required for discharges to marine waters.
b. Permittees must collect grab samples of the receiving water during different seasons and from different locations within the receiving water that are not influenced by the facility's discharge during each year's sampling event.

6.4.3 Disinfection Water

Facilities that use chlorine to disinfect water are required to sample and analyze rearing vessel water as specified in Table 4. Chlorine monitoring is not required if rearing vessels are allowed to dry completely and do not discharge chlorine to waters of the U.S.

Table 4. Disinfection Water Monitoring Requirements

Parameter	Units	Sample Type	Sample Frequency	Sample Location
Total Residual Chlorine[a]	mg/L	Grab	1 per Discharge	Effluent[b]

Footnotes:
a. Total residual chlorine reporting level of 0.1 mg/L (100µg/L) will be used for this parameter.
b. Permittees must collect grab samples of disinfection water prior to mixing with receiving waters or any other flow.

6.5 Net Pen Facilities

All net pen facilities are required to conduct analytical and/or and visual monitoring to evaluate the water column beneath and around the net pens while aquatic animals occupy the net at each net pen site. At least once per month when aquatic animals are present in the nets, permittees must sample and analyze the water column within and around the net pens for DO. At a minimum, permittees will be required to take at least one sample within the net pen structure (15 feet or more below the water surface, if possible) and one sample outside the perimeter of the net pen structure. Because the net pen facilities in use across the state are in a variety of ecoregions with distinctive site-specific conditions, DEC may require the permittee to conduct additional monitoring depending on the site-specific characteristics of the net pen site. DEC will specify the number, locations, and depths of required samples in each written general permit authorization. Floating marine bag systems are not required to monitor for dissolved oxygen, but are required to conduct visual inspections.

Permittees must also visually assess the benthos below the net pens prior to releasing the aquatic animals each season. Within 15 days prior to releasing the aquatic animals, permittees must assess the sediment types and color, the presence of feed or other debris, and the presence of benthic bacterial or fungal mats. If bacterial or fungal mats are observed, permittees should estimate the percent coverage beneath the net pens and within 150 feet of its perimeter in a down-current direction. During the public review period for the draft permit, one commenter requested that the permit require additional monitoring if the fungal mats extend beyond 150 feet to determine the mat's full extent. DEC's intention behind this provision is to require permittees to document the presence or absence of benthic bacterial or fungal mats and to estimate the relative size of the mats, not to limit monitoring to 150 feet of the perimeter of the net pen. Therefore, DEC removed the requirement to limit monitoring to 150 feet from the perimeter of the net pens if mat's were identified. Each week when the aquatic animals are present in the nets, permittees must visually assess the water column around the nets for floating debris or other sign of solids, sheens, or discoloration originating from the net pens.

7.0 Carcass Disposal

7.1 General Requirements

The general permit authorizes the discharge of whole and ground carcasses, but places certain restriction of the discharge. Discharges of carcasses that cause the following nuisance conditions are not authorized under the general permit:

- The receiving water to be unfit or unsafe for a beneficial use;
- A film, sheen, or discoloration on the surface of the water or adjoining shorelines;
- Leaching of toxic or deleterious substances; or
- A sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines unless authorized by a ZOD.

The general permit requires permittees to obtain approval from DEC of each discharge location before discharging. To obtain approval, permittees must submit a Carcass Disposal Plan for each discharge location with the NOI. The disposal plan must include a description of the disposal method, proposed discharge location, tides and currents in the area of discharge, an estimate of the maximum poundage, duration of discharge, and any other relevant site-specific information. DEC consider site-specific factors, such as remoteness of the facility, when evaluating the plan and developing special conditions associated with mortalities or broodstock carcass disposal. Also, permittees must maintain a daily log of each discharge occurrence and approximate weight of broodstock carcasses discharged and provide it to DEC upon request.

7.2 Broodstock Whole Carcass Disposal

Aquaculture facilities that convert aquatic animals from a raw to marketable form, including but not limited to, roe removal for sale or sale of whole, partial, or packaged aquatic animals, which involves more than evisceration of fish or other seafood at sea are not authorized to discharge solid waste greater than 0.5 inches in size resulting from this activity to marine water. Discharge of ground waste to freshwater is prohibited.

Facilities that do not convert aquatic animals from a raw to marketable form may discharge whole carcasses in marine waters at least 300 feet deep that are suitable for dispersing the carcasses while the vessel is underway. If the depth requirements cannot be met due to site-specific conditions, permittees may request a waiver of the depth requirement. Permittees are responsible for providing adequate information to justify the waiver such as bathymetric data, average and maximum current speeds, and historical impacts from discharge of fish wastes. Permittees must maintain a daily log of each discharge occurrence and approximate weight of broodstock carcasses discharged and make it available to DEC upon request.

DEC will consider discharges of whole carcasses to freshwater on a case-by-case basis depending on site-specific factors and receiving water characteristics. Discharges of whole carcasses to freshwater is prohibited within a public water system drinking water protection area. Drinking water protection areas can be identified using the interactive web map application Alaska DEC Drinking Water Protection Areas, located at: http://dec.alaska.gov/das/GIS/apps.htm.

7.3 Ground Carcass Disposal

The general permit authorizes the discharge of ground carcasses to marine waters only. Marine waters typically have tidal velocities and depths sufficient to disperse carcasses and large volumes of ground carcasses are not expected to accumulate on the seafloor. Because freshwater is often less dynamic and mixes at a slower rate than marine water, the general permit prohibits the discharge of ground carcasses to freshwater to prevent or minimize the accumulation of large volumes of ground carcasses in freshwater systems. Additionally, APDES

regulations at 18 AAC 70.210 allows DEC to authorize a deposit of substances on the bottom of marine waters only within limits set by the Department.

Aquaculture facilities that convert aquatic animals from a raw to marketable form, including but not limited to roe removal for sale and or sale of whole, partial, or packaged aquatic animals, which involves more than evisceration of fish or other seafood at sea must grind all solid waste greater than 0.5 inches in size resulting from this activity prior to discharging to marine waters.

Discharges of ground carcasses to marine waters must be through an outfall pipe with a depth terminus of at least 60 feet below mean lower low water leading to marine waters suitable for dispersing the fish waste. Discharges of ground carcasses to estuarine waters must be through an outfall pipe with a depth terminus of at least 10 feet below mean lower low water or ordinary high water, whichever is deeper. All fish waste must be ground to at least 1.27 cm (0.5 inch) in any dimension prior to discharge. Permittees must maintain a daily log of each discharge occurrence and approximate weight of carcasses discharged and make it available to DEC upon request.

If the depth requirement cannot be met due to site-specific conditions, permittees may apply for a reduction of the depth requirements. Permittees are responsible for providing adequate information to justify the request such as receiving water bathymetry, current or flow, historic effect of past discharges, required medication to pipe to meet required depth, and estimated costs for the modification.

During grinding operations, permittees are required to inspect the grinder system on a daily basis to ensure fish waste is less than 1.27 cm (0.5 inch) in any dimension. If 10 or more fish waste particles in a five gallon bucket of wastewater exceed 1.27 cm (0.5 inch), permittees must take corrective action. Corrective actions may include replacing or sharpening the grinder plates, adjusting the pump speed, reducing the size of the cutting plate, or adding an audio grinder. Permittees must keep a daily log documenting the inspection and any corrective actions taken. The daily log must be made available to DEC upon request.

In accordance with 18 AAC 70.210, permittees may request a ZOD for persistent accumulations of ground carcasses beneath the outfall when they submit an NOI. DEC will specify the limits of the ZOD and may include requirements for implementation of additional control measures or monitoring in each written general permit authorization. Refer to Fact Sheet Section 11.3 for additional information about permittee responsibilities when requesting a facility-specific ZOD.

8.0 Antibacksliding

Antibacksliding refers to statutory and regulatory provisions that prohibit the renewal, reissuance, or modification of an existing permit that contains effluent limitations, permit conditions, or standards less stringent than those established in the previous permit unless certain conditions are met. 18 AAC 83.480 requires that “effluent limitations, standards, or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit”. Further analysis under 18 AAC 83.480, as well as CWA §402(o), is not required as this is the first time the general permit has been issued.

9.0 Antidegradation

The Antidegradation Policy states that the existing water uses and the level of water quality necessary to protect existing uses must be maintained and protected. The Department’s approach to implementing the Antidegradation Policy, found in 18 AAC 70.015, is based on the requirements in 18 AAC 70 and the Department’s *Policy and Procedure Guidance for Interim Antidegradation Implementation Methods (Interim Methods)*, dated July 14, 2010. This policy describes the procedures DEC uses to determine whether a waterbody, or portion of a waterbody, is classified as Tier 1, Tier 2, or Tier 3, where a higher numbered tier

indicates a greater level of water quality protection. At this time, no Tier 3 waters have been designated in Alaska. The Department conservatively assumes that the quality of the receiving waterbodies is better than the water quality criteria and is conducting a Tier 2 analysis.

In 18 AAC 70.015(a)(2), the Antidegradation Policy states that if the quality of water exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality must be maintained and protected unless the Department, after receiving from the applicant all information reasonably necessary to make a decision, allows the reduction of water quality for a ZOD under 18 AAC 70.210, a mixing zone under 18 AAC 70.240, or another purpose as authorized in a Department permit, certification, or other approval. The Department may authorize a reduction of water quality only after the applicant submits information in support of the application and the Department makes five findings. The five findings and the Department's determination are as follows:

1. **18 AAC 70.015 (a)(2)(A)**. Allowing lower water quality is necessary to accommodate important economic or social development in the area where the water is located.

Alaska's hatcheries were created to support the commercial fishing industry by supplementing wild fish stocks to benefit the people of the state. Alaska's hatcheries play a significant role in maintaining reliable and sustainable salmon harvests by contributing millions of pounds of fish to the commercial, sport, and subsistence fisheries each year. The commercial fishing industry is a major economic engine throughout the state with an estimated total economic value of $5.9 billion annually. In 2015, a nationwide high of 6 billion pounds of salmon, valued at $1.7 billion, was harvested in Alaska's waters. According to the *Alaska Fisheries Enhancement Annual Report 2016*, hatcheries contributed an annual average of about one-third of the total Alaska commercial salmon harvest between 2007 and 2016.

While Alaska produced half of the world's salmon in 1980, today Alaska typically accounts for only 12-15 percent of the global supply of salmon. However, Alaska has created a niche market for higher quality wild salmon and salmon roe, which is generally not available from salmon farmed elsewhere because they are not reared to maturity. Over the last decade, roe accounted for about one-third of the wholesale value of chum salmon and one-fifth of the first wholesale value of pink salmon. Alaska salmon roe is sold worldwide with strong markets in Russia, Japan, and Ukraine.

The overall economic value, exvessel, and first wholesale values of the hatchery harvest have steadily increased since 2003. The 2013 season was a record harvest with 283 million fish, which was the second highest catch for wild stocks (176 million fish) and the highest catch for hatchery stocks (107 million fish) in Alaska's history. The 2015 season was the second highest harvest overall, with 263 million fish consisting of the third highest catch for wild stocks (107 million fish) and the second highest catch for hatchery stocks (93 million fish). The hatchery harvest alone in both 2013 and 2015 were greater than the entire statewide commercial salmon harvest in most years. Exvessel value of the commercial hatchery harvest averaged $146 million over the past decade with a peak of $209 million in 2010. First wholesale value of the hatchery harvest averaged $370 million over the last decade, with peak years of over half a billion dollars in 2010 and 2013. Preliminary estimates indicate that hatchery returns and market conditions are expected to improve in 2017.

In 2016, Alaska's hatcheries collected roughly 1.9 billion eggs and released a nearly historic high of 1.7 billion juvenile salmon. The 2016 season saw a return of 24 million hatchery raised fish (released in 2015 or earlier) and accounted for approximately 22 percent of the statewide commercial salmon harvest of 109 million fish. Despite being the lowest hatchery harvest since 1992, 2016 was in the top third of all time harvests. The majority of returning hatchery fish were harvested in the common property commercial fisheries (78 percent) and the cost recovery fisheries (17 percent). The 24 million hatchery fish harvested as part of the commercial fishery in 2016 had an exvessel value of $85 million and a commercial first wholesale value of $187 million.

Roughly 227,000 hatchery-produced salmon, rainbow trout, arctic char, and grayling were harvested by sport, personal use, and subsistence users in 2016.

The commercial fishing industry is the largest private-sector employer in the state and provides jobs for over 60,000 individuals in both rural and urban areas and generates $1.6 billion in annual labor income. Of those, hatcheries provide nearly 3,000 full and part-time jobs across the state with an estimated labor income of $204 million. In areas with lower populations, hatcheries comprise a large portion of the labor market and provide viable employment opportunities for local residents.

Issuance of the permit will allow existing aquaculture facilities to continue to operate, allow new aquaculture facilities to begin operations, and establish standards for controlling wastewater discharges from these facilities to protect water quality. The localized lowering of water quality is temporary and limited due to natural attenuation and dispersion.

Based on the evaluation required per 18 AAC 70.015(a)(2)(D), the Department has determined that the most reasonable and effective pollution prevention, control, and treatment methods are being used and that the localized lowering of water quality is necessary. The Department determined that the permitted activities are necessary to accommodate the important economic and social development in the area where the water is located and that the finding is satisfied.

2. **18 AAC 70.015 (a)(2)(B)**. Except as allowed under this subsection, reducing water quality will not violate the applicable criteria of 18 AAC 70.020 or 18 AAC 70.235 or the whole effluent toxicity limit in 18 AAC 70.030.

Aquaculture facilities generate a variety of pollutants from uneaten feed, fish feces, fish carcasses, algae, parasites and pathogens, cleaning chemicals, and medications used to treat fish diseases. The main pollutants of concern found in wastewater discharges from hatcheries and net pen facilities include TSS, SS, pH, ammonia, DO, and chlorine. Hatcheries also release whole and ground carcasses after removing their eggs and milt for breeding purposes.

The general permit prohibits or excludes several types of discharges that may cause a violation of water quality criteria or whole effluent toxicity limits. Discharges to degraded waters are excluded from coverage unless certain conditions are met such as demonstrating that the discharge is not expected to cause or contribute to a WQS violation. The permit also prohibits the discharge of potentially hazardous or toxic waste streams, untreated cleaning wastewater, and certain disease control chemicals and drugs such that compliance with the permit will ensure compliance with 18 AAC 70.030.

While the general permit does not place specific numeric limits on discharges, it requires permittees to comply with narrative effluent limitations in the form of operational and management requirements and BMPs aimed at minimizing the production of wastes and reducing the discharge of pollutants to waters of the U.S. The BMPs are based on a combination of settling technology and feed management control practices and are expected to reduce both pollutant concentrations and loading. DEC has determined that these measures are technically available, result in effluent reductions commensurate with compliance costs, and are economically achievable. The general permit also requires permittees to conduct effluent monitoring and report the results annually. The Department will review monitoring data submitted by permittees to ensure water quality criteria are being met.

Permittees may request authorization for a facility-specific ZOD for persistent accumulations of residues in marine waters. The general permit does not authorize a standardized ZOD that would apply to all discharges, but DEC will define specific limits for ZODs on a case-by-case basis after thoroughly evaluating a variety of factors such as the site-specific characteristics, reasonable alternatives to the ZOD, and potential direct and indirect impacts to human health, aquatic species, or other wildlife. Discharges from hatcheries shall meet all

water quality criteria at the boundary of any authorized ZOD, although water quality criteria and antidegradation requirements for residues may be exceeded within the ZOD.

The Department determined that the reduction in water quality will not violate the water quality criteria in 18 AAC 70 or the WET limit in 18 AAC 70.030, and that the finding is satisfied.

3. **18 AAC 70.015(a)(2)(C)**. The resulting water quality will be adequate to fully protect existing uses of the water.

The general permit places restrictions on discharges from aquaculture facilities and requires permittees to implement several BMPs designed to ensure compliance with applicable water quality criteria as well as to protect the existing uses of the waterbody. The existing aquaculture facilities have been discharging wastewater for several decades with little to no qualitative or quantitative evidence of adverse effect on the uses of receiving waters as a whole, which are mostly assumed to have water quality that exceeds Alaska's WQS. In response to confusion regarding the types of evidence DEC used in determining that aquaculture facilities have not adversely affected water quality expressed during the public comment period, DEC revised the above statement to clarify that no evidence, whether qualitative or quantitative, exists that suggests discharges from aquaculture facilities have caused large scale or widespread harm to water quality nor altered existing uses of any waters despite continually discharging for several decades. Alaska's aquaculture facilities are often found near turbulent marine waters where rapid mixing and dilution occurs. The general permit requires that new net pen facilities be situated in locations with adequate current velocity to avoid degradation of water quality and benthic conditions around the nets.

In addition to discharges from regular operation of aquaculture facilities, these facilities may also discharge large volumes of whole or ground fish carcasses after spawning each season. The general permit requires permittees to obtain DEC approval of each discharge site and lists several general prohibitions, including causing the receiving water to be unfit or unsafe for a beneficial use, and specific conditions on discharges. Disposal of ground fish waste to freshwater is not authorized under any circumstances and disposal of whole carcasses to freshwater will be authorized on a case-by-case basis. The general permit also restricts the discharge of whole carcasses within a drinking water protection area. Facilities that grind fish waste are required to take corrective action if the grinding operation fails to consistently grind to the required size of 1.27 cm (0.5 inch).

As mentioned above, the general permit allows permittees to request a ZOD for the deposition of residues in marine waters. In compliance with 18 AAC 70.210, the Alaska water quality criteria and the antidegradation requirements may be exceeded within the boundaries of an authorized ZOD. However, the standards must be met at every point outside the boundary of the ZOD, which will ensure that the uses of the waterbody as a whole will be maintained and protected.

The general permit requires permittees to monitor and report discharges and enables DEC to require additional monitoring of the influent, effluent, or receiving water for several purposes. Because this is the first APDES general permit authorizing discharges of wastewater from aquaculture facilities, DEC will collect the monitoring data during this permit term and analyze the data to further refine which pollutants have a reasonable potential to cause a violation of Alaska's WQS. DEC will perform permit compliance inspections to evaluate the facilities' ability to adhere to the conditions outlined in the general permit.

DEC determined that discharges from aquaculture facilities operating under the terms and conditions of the general permit will be adequate to fully protect existing uses of the waterbody and that the finding is satisfied.

4. **18 AAC 70.015(a)(2)(D)**. The methods of pollution prevention, control, and treatment found by the department to be most effective and reasonable will be applied to all wastes and other substances to be discharged.

EPA promulgated the *ELG and New Source Performance Standards for the CAAP Point Source Category*, found at 40 CFR 451, in August 2004. The ELG expresses effluent limitations in the form of narrative standards rather than numeric values and is based on the technologies EPA determined are the best practicable control technology currently available. In developing the ELG, EPA considered several treatment options for controlling pollutants at aquaculture facilities and found that although it would be feasible to calculate numeric effluent limitations for TSS based on treatment technologies alone, a combination of operational and management requirements would provide comparable discharge levels and other treatments may not be practicable for all facilities. EPA based the final requirements on production and operational controls that include a rigorously implemented feed management program, proper storage of materials, solids controls, and proper operational and maintenance activities.

The general permit requires facilities that produce over 100,000 pounds of aquatic animals to comply with the non-numeric effluent limits defined in the ELG and requires smaller facilities to implement measures determined to be reasonable, practical, and feasible based on best professional judgement. While some of the chosen BMPs apply to all facility types, the BMPs were customized to meet the needs of different facility types and levels of aquatic animal production and are intended to be commensurate with the amount of pollutants expected to be discharged at each facility.

All facilities are required to control solids through efficient feed management, adhere to proper operation and maintenance procedures, use only FDA or EPA-approved disease control chemicals, and implement a plan to reduce polychlorinated biphenyls (PCBs) in the facility discharge. Larger flow through and recirculating facilities must also ensure proper materials storage and spill response, promptly perform structural maintenance, keep records, and train employees. Larger net pen facilities must also properly collect and dispose of solid wastes (e.g., waste rope and netting), minimize discharges associated with the transport of aquatic animals, routinely remove mortalities, promptly perform structural maintenance, keep records, and train employees.

Because this is the first issuance of the APDES general permit, DEC will use this permit cycle to gather data to further evaluate that permittees are indeed employing methods of pollution prevention, control, and treatment that are most effective and reasonable for the wastewater discharge.

DEC determined that the methods of pollution prevention, control, and treatment in the permit are the most effective and reasonable for applying to all wastes and substances discharged from aquaculture facilities, and the finding is satisfied.

5. **18 AAC 70.015(a)(2)(E)**. All wastes and other substances discharged will be treated and controlled to achieve (i) for new and existing point sources, the highest statutory and regulatory requirements; and (ii) for nonpoint sources, all cost-effective and reasonable best management practices.

The "highest statutory and regulatory treatment requirements" are defined in 18 AAC 70.990(30) (as amended June 26, 2003) and in the *Interim Methods*. Accordingly, the three parts of the definition are as follows:

A) Any federal technology-based ELG identified in 40 CFR 125.3 and 40 CFR 122.29, as amended through August 15, 1997, adopted by reference at 18 AAC 83.010(c)(9). The general permit implements the applicable portions of the *ELG and New Source Performance Standards for the CAAP Point Source Category*, found at 40 CFR 451; therefore, this requirement is met. Pollutant controls that may provide equal or better water quality protection are also allowable and encouraged, especially where those alternatives are practicable and would provide better water quality and environmental protection.

B) Minimum treatment standards in 18 AAC 72.040. This part of the definition appears to be in error, as 18 AAC 72.040 describes discharges to sewers and not minimum treatment. The correct reference appears to be the minimum treatment standards found at 18 AAC 72.050, which refers to domestic wastewater discharges only. The general permit does not authorize domestic waste discharges; therefore, further analysis is not warranted for this finding.

C) Any treatment requirement imposed under another state law that is more stringent than requirements of this chapter.

This part of the definition includes any more stringent treatment required by state law, including 18 AAC 70 and 18 AAC 72. Neither the regulations in 18 AAC 15 and 18 AAC 72, nor another state law that the Department is aware of more stringent requirements than those found in 18 AAC 70. After review of the applicable statutory and regulatory requirements, including 18 AAC 70, 72, and 83, the Department finds that discharges from aquaculture facilities and net pens meet the highest applicable statutory and regulatory requirements and that this finding is satisfied.

10.0 Operation and Maintenance

10.1 General Operating Requirements

Permittees are required to develop an Operations and Maintenance Plan within 180 days of the effective date of the general permit that describes the general operating and maintenance activities and management practices used at the facility to achieve compliance with the terms and conditions of the general permit. Permittees are expected to safely and efficiently operate and maintain their facilities by following several general operating procedures aimed at eliminating or minimizing discharges of pollutants to waters of the U.S. Permittees must properly handle and dispose of solid wastes, including fish mortalities, sludge, filter backwash, and other debris, to prevent those materials from entering receiving waters. Permittees should avoid removing dam boards in raceways or ponds or sweeping accumulated solids from raceways or ponds into receiving waters. Rearing ponds should be cleaned within one week prior to drawdown for fish release. The cleaning water must be treated as necessary to meet the Alaska WQS. Additionally, permittees must dispose of aquatic animal mortalities, broodstock carcasses, egg taking wastes, and other processing wastes in a manner that minimizes those materials from entering waters of the U.S. Permittees must keep a copy of the facility's operations and maintenance plan at the facility and make it available to all employees and to DEC upon request

10.2 Disease Control Chemicals

The general permit authorizes the use of certain disease control chemicals, including Investigational New Animal Drugs (INAD) and Low Regulatory Priority (LRP) compounds, provided they have been approved by the FDA and/or EPA for use in aquaculture applications. The permit also authorizes extralabel drug use when prescribed by a licensed veterinarian. Permittees must apply all drugs, pesticides, or other chemicals according to label directions or under the order of a licensed veterinarian. When drugs, pesticides, or other chemicals are used, permittees must document the use and the proper disposal of all spent materials. Details pertaining to the use, including the amount used, concentration, detention time, type of treatment, and flow, must be reported to DEC in the Annual Report.

10.3 Production Changes

To allow DEC to maintain an accurate account of the permitted aquaculture facilities in the state, permittees must notify DEC of any proposed significant production increase (20 percent or greater) or change in the nature of the discharge which substantially deviates from the information submitted in the NOI. Permittees must continue complying with the general permit requirements, including monitoring and submitting Annual Reports,

if the pounds of fish at a facility drops below 20,000 or the monthly pounds of food feed for a month drops below 5,000 until a Notice of Termination (NOT) is submitted. Once a NOT is submitted, the facility will no longer be covered under the general permit. A new NOI would be required for the facility if the pounds of fish reaches 20,000 pounds or the monthly pounds of feed reaches 5,000 pounds.

11.0 Special Conditions

11.1 Polychlorinated Biphenyls Reduction Activities

PCBs are a group of persistent organic chemicals that do not readily degrade in the environment and cycle between air, soil, and water for extended periods of time. PCBs are easily taken up by fish and other small organisms and accumulate in the organs and fat tissue. Despite being banned in the U.S. in 1979, PCBs are still commonly found in fish feed, which is made largely from ground-up small fish and is designed to have high amounts of fish oils. With few other food sources, PCBs will further bioaccumulate and bioconcentrate in tissues of hatchery raised fish and may pose a health risk to people who frequently eat fish. PCBs are known to increase the risk of developing cancer, disrupt hormonal regulation, increase the risk of preterm delivery and low birth weight, and increase the risk that babies will develop neurodevelopmental effects from maternal consumption of PCBs.

To minimize the spread of PCBs, permittees are required to develop and implement a plan to reduce PCBs in the facility discharge within 180 days of the effective date of the general permit. At a minimum, the plan should address limiting the amount of PCBs in the fish food used at the facility, minimizing the discharge of unconsumed food, and removing accumulated fish feed prior to discharge. Permittees must obtain information about PCBs levels in fish food from suppliers and submit it to DEC with the Annual Report.

11.2 Quality Assurance Project Plan

Permittees are required to develop procedures to ensure that the monitoring data submitted are accurate and to explain data anomalies if they occur. The permittee is required to develop or update the Quality Assurance Project Plan (QAPP) within 180 days of the effective date of the final permit and submit a letter to DEC stating that the plan has been implemented within the required period. The QAPP shall consist of standard operating procedures the permittee must follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting. The plan shall be retained on site and made available to the Department upon request.

11.3 Zone of Deposit

A ZOD is defined as a limited area where substances may be allowed to be deposited on the seafloor of marine waters. In accordance with state regulations at 18 AAC 70.210, the Department may authorize a ZOD, within limits set by the Department, in a permit as long as toxic conditions are prevented and the designated uses of the water as whole are not impaired. The water quality criteria for residues in 18 AAC 70.020(b) and the antidegradation requirements of 18 AAC 70.015 may be exceeded in a ZOD. However, the standards must be met at every point outside the ZOD. The compliance point for permittees with an authorized ZOD is at the outer boundary of the specified ZOD area.

As stated in 18 AAC 70.210(b), the Department will consider the following when deciding whether to authorize a ZOD in a permit:

- Alternatives that would eliminate, or reduce, any adverse effects of the deposit;
- The potential direct and indirect impacts on human health;
- The potential impacts on aquatic life and other wildlife, including the potential for bioaccumulation and persistence;

- The potential impacts on other uses of the waterbody;
- The expected duration of the deposit and any adverse effects; and
- The potential transport of pollutants by biological, physical, and chemical processes.

The general permit provides permittees who discharge ground carcasses to marine waters the opportunity to request a ZOD for persistent accumulations of ground carcasses below the outfall. The permit does not authorize a standardized ZOD that would cumulatively apply to all discharges. DEC will define specific limits for ZODs on a case-by-case basis after reviewing information provided in the NOI and soliciting comments from the public. Permittees are responsible for providing an analysis of alternatives to marine discharges of ground carcasses, the flushing and mixing characteristics of the receiving water, and an evaluation of the potential environmental impacts associated with the ZOD. According to 18 AAC 70.210(c), the burden of proof for justifying a ZOD rests with the applicant.

When authorizing a ZOD, DEC may also require monitoring of the seafloor within the ZOD to determine the extent the ground carcasses deposits and to evaluate the impacts to the benthic community. Any additional monitoring requirements will be specified in each written general permit authorization.

12.0 Reporting and Recordkeeping Requirements

12.1 Annual Report

Permittees are required to submit a signed original Annual Report and an electronic copy to DEC by March 15 of each calendar year. The Annual Report must include a summary of general hatchery operations, disease control chemical usage, monitoring results, sampling methodology, and a narrative discussion of the significance of the sampling results. At a minimum, the Annual Report must include the following information, as listed in general permit Part 7.1.1:

- Number of days the facility operated;
- Feeding rates and total amount of feed used during the season by month;
- Conversion ratio and calculation;
- Date that aquatic animals were added to the net pens and date the aquatic animals were released from the net pens;
- Total weight of the aquatic animals when added to then net pens and total weight of the aquatic animals when released from the net pens;
- Species of aquatic animals in the net pens during the season;
- Method, total pounds and kilograms, and location of aquatic animal mortality disposal;
- Method, total pounds and kilograms, and location of broodstock carcass disposal;
- Disease control chemical usage as required in Permit Part 6.2.4;
- PCB content of feed as required in Permit Part 7.1.1.4; and
- All effluent and receiving water monitoring results, sampling and analysis methodology, and explanation of results.

In situations where permitted facilities do not discharge during certain months, permittees must still submit Annual Reports stating that no discharge occurred. If permittees monitor the influent, effluent, or receiving water characteristics more frequently than required by the general permit, permittees must include the results of those samples in the data calculations reported in the Annual Report.

Permittees must retain a copy of the general permit, NOI and supporting data used to complete the NOI, monitoring information, documentation used in the preparation of the Annual Reports, and the Annual Reports the for a minimum of three years from the date of the sample, event, or activity.

The Permittee is responsible for electronically submitting Annual reports in accordance with 40 CFR 127. The start dates for e-reporting are provided in 40 CFR 127.16. DEC has established a website at http://dec.alaska.gov/water/Compliance/EReportingRule.htm that contains general information. As DEC implements the E-Reporting Rule, more information will be posted on this webpage. The permittee will be further notified by DEC in the future about how to implement the conditions in 40 CFR 127.

12.2 Aquaculture Facilities with 100,000 Pounds or More Release Weight from Facility

In addition to the general reporting requirements listed above, facilities that produce 100,000 pounds or more release weight from the facility must also report details on drug usage, structural failures, and spills that result in a discharge to waters of the U.S. If a permittee agrees to participate in an INAD study, they must notify DEC of the INADs impending use in writing within seven days of agreeing to participate in the study. The written notification must identify the INAD used, method of use, dosage, and the reason for using the INAD. When other drugs are used, the permittee must notify DEC orally within seven days after initiating use of the drug and in writing within 30 days of initiating use of the drugs. The reports should identify the drug used, date and time of application, method of application, amount used, and reason for using the drug.

13.0 Other Considerations

13.1 Endangered Species Act

The Endangered Species Act (ESA) requires federal agencies to consult with the US Fish and Wildlife Service (USFWS) and NMFS (Services) if their actions could beneficially or adversely affect any threatened or endangered (T&E) species or their habitats. NMFS is responsible for administration of the ESA for listed cetaceans, seals, sea lions, sea turtles, anadromous fish, marine fish, marine plants, and corals. All other species (including polar bears, walrus, and sea otters) are administered by the USFWS.

As a state agency, DEC is not required to consult with USFWS or NMFS regarding permitting actions; however, DEC interacts voluntarily with these federal agencies to obtain listings of T&E species and critical habitat. DEC contacted the Services on May 18, 2017, to provide them early notification of DEC's intent to issue the general permit, to request an updated list of T&E species, and to allow them an opportunity to share concerns regarding listed species with DEC. On May 18, 2017, NMFS and USFWS responded by providing current lists of T&E species for their respective agencies. Species of concern that inhabit or that have inhabited Alaskan waters at least at one time and that are listed as threatened, endangered are included in Table 3.

An interactive endangered species map maintained by NMFS may be accessed at http://alaskafisheries.noaa.gov/mapping/esa/.The USFWS has further information regarding ESA at https://www.fws.gov/alaska/fisheries/endangered/index.htm.

Table 5. Threatened and Endangered Species in Alaska

Species Name	Scientific Name	Listing Status
Albatross, short-tailed	*Phoebastria albatrus*	Endangered
Bear, polar	*Ursus maritimus*	Threatened
Bison, wood	*Bison bison athabascae*	Threatened
Curlew, Eskimo	*Numenius borealis*	Endangered
Eider, spectacled	*Somateria fischeri*	Threatened
Eider, Stellar's	*Polysticta stelleri*	Threatened
Fern, Aleutian shield	*Polystichum aleuticum*	Endangered
Otter, northern sea Southwest Alaska distinct population segment	*Enhydra lutris kenyoni*	Threatened
Seal, bearded Beringia distinct population segment	*Erignathus barbatus nauticus*	Threatened
Seal, ringed, Arctic subspecies	*Phoca hispida hispida*	Threatened
Sea turtle, green	*Chelonia mydas*	Threatened
Sea turtle, leatherback	*Dermochelys coriacea*	Endangered
Sea turtle, loggerhead	*Caretta caretta*	Threatened
Sea turtle, Olive Ridley	*Lepidochelys olivacea*	Threatened
Sea lion, Stellar Western distinct population segment	*Eumetopias jubatus*	Endangered
Whale, beluga Cook Inlet distinct population segment	*Delphinapterus leucas*	Endangered
Whale, blue	*Balaenoptera musculus*	Endangered
Whale, bowhead	*Balaena mysticetus*	Endangered
Whale, fin	*Balaenoptera physalus*	Endangered
Whale, humpback Western North Pacific distinct population segment	*Megatera novaeangliae*	Endangered
Whale, grey Western North Pacific distinct population segment	*Eschrichtius robustus*	Endangered
Whale, North Pacific Right	*Eubalaena japonica*	Endangered
Whale, sei	*Balaenoptera borealis*	Endangered
Whale, sperm	*Physeter macrocephalus*	Endangered

13.2 Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) designates essential fish habitat (EFH) in waters used by anadromous salmon and marine fish species under NMFS jurisdiction. EFH refers to those waters and associated river bottom substrates necessary for fish to spawn, breed, feed, or grow to maturity, including aquatic areas and related physical, chemical, and

biological properties that are used by fish or have been used by fish in the past. Spawning, breeding, feeding, or growth to maturity covers a species' full life cycle necessary for fish from commercially-fished species to spawn, breed, feed, or grow the maturity.

The EFH implementing regulations define an adverse effect as any impact which reduced 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.

Magnuson-Stevens Act §305(b) requires federal agencies to consult with NMFS when an activity proposed to be permitted, funded, or undertaken by a federal agency may have an adverse effect on designated EFH as defined by the Act. As a state agency, DEC is not required to consult with NMFS regarding permitting actions, but interacts voluntarily with NMFS to identify EFH.

On May 18, 2017, DEC requested NMFS provide early notification of DEC's intent to issue the general permit and to provide them an opportunity to share concerns with DEC regarding EFH. On May 18, 2017, NMFS responded and provided web links containing Alaska specific information on locations of EFH.

During the draft permit comment review period, NMFS requested that DEC list the following EFH areas and web link:

- Bering Seas and Aleutian Island Groundfish
- Gulf of Alaska Groundfish
- Bering Sea and Aleutian Island King and Tanner Crabs
- Alaska Scallops
- Alaska stocks of Pacific Salmon

More information regarding EFH species in Alaska can be found on the NMFS webpage at : https://www.habitat.noaa.gov/protection/efh/newInv/index.html.

13.3 Ocean Discharge Criteria Evaluation

CWA §403(a), Ocean Discharge Criteria, prohibits the issuance of a permit under CWA §402 for a discharge into the territorial sea, the water of the contiguous zone, or the oceans except in compliance with §403. Permits for discharges seaward of the baseline on the territorial seas must comply with the requirements of §403, which include development of an Ocean Discharge Criteria Evaluation (ODCE).

Interactive nautical charts depicting Alaska's baseline plus additional boundary lines are available at http://www.charts.noaa.gov/OnLineViewer/AlaskaViewerTable.shtml and interactive maps at https://alaskafisheries.noaa.gov/portal/apps/webappviewer/index.html?id=0c4a81f75310491d9010c17b6c081c81.

The charts and maps are provided for informational purposes only. The U.S. Baseline committee makes the official determinations on baseline. Ocean Discharge Criteria are not applicable for marine discharges to areas located landward of the baseline of the territorial sea.

The general permit requires compliance with Alaska WQS. Consistent with 40 CFR 125.122(b), adopted by reference at 18 AAC 83.010(C)(8), discharges in compliance with Alaska WQS shall be presumed not to cause unreasonable degradation of the marine environment. EPA made the connection between

the similar protections provided by ODCE requirements and WQS when promulgating ocean discharge criteria rules in 1980, as stated, “the similarity between the objectives and requirements of [state WQS] and those of CWA §403 warrants a presumption that discharges in compliance with these [standards] also satisfy CWA §403.” (Ocean Discharge Criteria, 45 Federal Register 65943.) As such, given the permit requires compliance with Alaska WQS, unreasonable degradation to the marine environment is not expected and further analysis under 40 CFR 125.122 is not warranted for this permitting action.

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APPENDIX A. Alaska Hatcheries

Table 1. Alaska Hatcheries

Facility	Aquaculture Association	Receiving Water
Armin F. Koering	Prince William Sound	Sawmill Bay
Auke Creek	National Marine Fisheries Service	Auke Creek
Burnett Inlet	Southern Southeast Regional	Burnett Inlet
Cannery Creek	Prince William Sound	Unakwik Inlet
Crystal Lake	Alaska Department of Fish & Game	Crystal Lake
Deer Mountain Tribal	Southern Southeast Regional	Ketchikan Creek
Gulkana I & II	Prince William Sound	East Fork Gulkana River
Haines Project (inactive)	Northern Southeast Regional	Klehini River
Hidden Falls	Northern Southeast Regional	Kasnyku Bay
Kitoi Bay	Kodiak Regional	Kitoi Bay
Klawock	Southern Southeast Regional	Klawock River
Little Port Walter	National Marine Fisheries Service	Little Port Walter
Macaulay	Douglas Island Pink and Chum, Inc.	Gastineau Channel
Main Bay	Prince William Sound	Main Bay
Medvejie	Northern Southeast Regional	Medvejie Creek
Neets Bay	Southern Southeast Regional	Neets Creek
Pillar Creek	Kodiak Regional	Pillar Creek
Port Armstrong	Armstrong-Keta, Inc	Port Armstrong
Port Graham	Cook Inlet	Port Graham Bay
Port Saint Nicholas	Southern Southeast Regional	Port Saint Nicholas
Ruth Burnette	Alaska Dept of Fish & Game	Chena River
Sawmill Creek	Northern Southeast Regional	Sawmill Cove
Sheldon Jackson	Sitka Sound Science Center	Sitka Sound
Snettisham	Douglas Island Pink and Chum, Inc.	Speel Arm
Solomon Gulch	Valdez Fisheries Development Association	Solomon Gulch
Tamgas Creek	Metlakatla Indian Corp	Tamgas Creek
Trail Lakes	Cook Inlet	Upper Trail Lake
Tutka Bay	Cook Inlet	Tutka Bay
Wally Noerenberg	Prince William Sound	Lake Bay
Whitman Lake	Southern Southeast Regional	Whitman Creek
William Jack Hernandez	Alaska Dept of Fish & Game	N/A