ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT FACT SHEET – FINAL
Permit Number: AKG250000
Non-contact Cooling Water

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Wastewater Discharge Authorization Program
555 Cordova Street
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The Alaska Department of Environmental Conservation (the Department or DEC) proposes to reissue Alaska Pollutant Discharge Elimination (APDES) general permit to non-contact cooling water facilities discharging to surface waters of the United States (U.S.). The general permit places conditions on the discharge of pollutants from authorized facilities to waters of the U.S. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged from the authorized facilities and outlines best management practices to which they must adhere.

This fact sheet explains the nature of potential discharges from non-contact cooling water facilities and the development of the permit including:

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

Informal Review and Adjudicatory Hearing

A person authorized under a provision of 18 AAC 15 may request an informal review of a contested decision by the Division Director in accordance with 18 AAC 15.185 and/or an adjudicatory hearing in accordance with 18 AAC 15.195 – 18 AAC 15.340. See DEC's "Appeal a DEC Decision" web page https://dec.alaska.gov/commish/review-guidance/ for access to the required forms and guidance on the appeal process. Please provide a courtesy copy of the adjudicatory hearing request in an electronic format to the parties required to be served under 18 AAC 15.200. Requests must be submitted no later than the deadline specified in 18 AAC 15.

Documents are Available

The permit, fact sheet 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 and other information are also located on the Department's Wastewater Discharge Authorization Program website: http://dec.alaska.gov/water/wastewater/.

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TABLE OF CONTENTS

TABLES

ATTACHMENTS

1.0 INTRODUCTION

1.1 Basis for Issuance of a General Permit

Section 301(a) of the Clean Water Act (CWA) and Title 18 Alaska Administrative Code (AAC) Chapter 83.015 provides that the discharge of pollutants is unlawful except in accordance with an Alaska Pollutant Discharge Elimination System (APDES) permit. Although such permits can be issued to individual dischargers, 18 AAC 83.205 authorizes DEC to issue an APDES general permit to cover one or more categories or subcategories of discharges when a number of point sources:

- are located within the same geographic area and warrant similar pollution control measures;
- are involved in 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 general permit condition constitutes a violation of the CWA and subjects the owner or operator of the permitted discharge to the penalties specified in Section 309 of the CWA. 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 and authorizations under a general permit may be administratively extended past their expiration date if the general permit expires prior to the reissuance of a new general permit. For the authorization to be administratively extended, the permittee must submit a timely and complete application for a new authorization prior to the expiration of the current general permit.

1.2 Permit Issuance History

General permit AKG250000, Non-contact Cooling Water, was initially issued by the Department gof Environmental Conservation (DEC) on November 4, 2014, and became effective December 4, 2014, with an expiration date of December 3, 2019. The General Permit was administratively extended until the DEC reissued the permit on July 8, 2020, with an effective date of September 1, 2020, and an expiration of August 31, 2025. There are a total of 9 facilities currently operating that are listed in Appendix D of the general permit and are eligible for reissuance under AKG250000. The Department may administratively extend this permit and subsequent authorizations until the reissuance is complete and in effect.

1.3 Description of Non-contact Cooling Water Facilities

Non-contact cooling water is water that is used to reduce temperature and that does not come into direct contact with any raw material, intermediate product, waste product (other than heat), or finished product. Operations may include discharges of non-contact cooling water, defrost water, heat pump transfer water, and cooling tower blowdown. Non-contact cooling water maintains effective operating temperatures for buildings as well as equipment. Non-contact cooling water may be used to cool equipment such as air compressors, air conditioners, condensers, electronics/transformers, hydraulic

presses, injection molding and roto-molding equipment, oven seals, vacuum pumps, vapor degreaser condensers, viscosity baths, welding equipment including spot welders and x-ray processors.

During the initial development of AKG250000, DEC reviewed non-contact general permits from other states and ultimately determined that temperature, pH, total residual chlorine (TRC), arsenic, copper, and zinc were potential pollutants of concern and included effluent limits and/or monitoring for these pollutants. DEC also determined to cap the discharge flow at less than 2.0 million gallons per day (mgd) as non-contact cooling water discharges with lower flows present less of a risk and can be controlled through the use of a general permit. These pollutants of concern have been carried over into the reissued permit.

2.0 PERMIT COVERAGE

2.1 Non-contact Cooling Water Facilities Covered by the Permit

This general permit applies to non-contact cooling water facilities that discharge to fresh or marine surface waters. Discharge of non-contact cooling water, defrost water, heat pump transfer water, and cooling tower blowdown from facilities with design intake flow and discharge to fresh or marine surface water of less than 2.0 mgd are eligible for coverage under this general permit. Discharges from other systems not specifically listed in the general permit that are able to meet the requirements of the general permit may also be eligible for coverage under the general permit upon DEC's approval. Facilities with permit coverage under a separate APDES permit for discharges from non-contact cooling water facilities are not required to seek coverage under this permit (i.e., dual coverage is not required).

There are 9 non-contact cooling water facilities that were authorized to discharge under the existing AKG250000 general permit that are eligible for coverage under the reissued general permit. DEC will review the notice of intent (NOI) submitted by the previously authorized facilities for continued authorization to discharge and will amend, as necessary, any existing authorization to reflect current operations and general permit requirements. (New facilities are also eligible for coverage under the reissued general permit; See Section 2.3 below.) Upon permit coverage, an authorization letter identifying the APDES authorization number and a copy of the final general permit and fact sheet will be sent to qualified non-contact cooling water facilities.

Reauthorization to discharge under the general permit does not begin until the permittee receives a written notice from the Department.

2.2 Automatic Coverage

18 AAC 83.210(h) provides that the Department may notify a discharger that their discharge is covered by a general permit even if the discharger has not submitted a NOI seeking coverage. A discharger so notified may request an individual permit under 18 AAC 83.215(b).

2.3 Applying for Coverage

The Department anticipates that there are additional facilities that are eligible for coverage under the general permit. The procedure for obtaining authorization to discharge under the general permit is as follows:

2.3.1 The eligible facility submits a completed NOI to the Department at least 30 days before the expected start of discharge. See General Permit section 1.4 for specific notification requirements.

2.3.2 The Department reviews the NOI for completeness.

2.3.3 If the NOI is considered complete and the Department determines the facility is eligible for coverage under the general permit, the Department sends the permittee a written notice of authorization. Authorization to discharge does not begin until the permittee receives a written notice of authorization from the Department. If the Department determines that the NOI is incomplete, the Department will request that additional information be submitted. 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.

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; effluent limitations guidelines 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; the Department determines that the discharge is a significant contributor of pollutants; or a total maximum daily load 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, Form 2G, 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 determined by the Department to be 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.

3.0 COMPLIANCE HISTORY

There is a current total of 9 non-contact cooling water facility wastewater discharge authorizations since the current general permit AKG250000 became effective on September 1, 2020. There were no terminations or new issuances during this permit cycle.

In order to evaluate the compliance of these non-contact cooling water facilities, DEC reviewed the DMR data submitted by each facility through the NetDMR E-reporting system from August 2020 through February 2025, as well as compliance inspection reports. Of the 9 active facilities, 7 were inspected during this permit cycle which resulted in varying degrees of enforcement, both informal and formal.

Most of the sampling requirements in this issuance of AKG250000 were monitoring only requirements. Parameters that had associated effluent limits included total residual chlorine (TRC), pH, temperature, flow and arsenic. None of the non-contact cooling facilities used chlorine. Two facilities experienced some pH effluent limit violations and the other seven facilities were in compliance with the pH effluent limits. Five facilities exceeded water quality criteria temperature limits at least one time. Four facilities did not exceed temperature water quality criteria. One facility did not report any results for their entire authorization period nor did they indicate to DEC that they were not discharging.

It is beyond the scope and intent of this section to provide more specific details on each facility's compliance history. For facility-specific discharge monitoring reporting and results, see the Environmental Protection Agency's (EPA) Enforcement and Compliance History Online database at https://echo.epa.gov/.

4.0 EFFLUENT LIMITS

4.1 Basis for Permit Effluent Limits

Per 18 AAC 83.015, the Department prohibits the discharge of pollutants to waters of the U.S. unless the permittee has first obtained a permit issued by the APDES Program that meet the purposes of AS 46.03 and is in accordance with the CWA Section 402. Per these statutory and regulatory provisions, the permit includes effluent limits that require the discharger to (1) meet standards reflecting levels of technological capability, (2) comply with 18 AAC 70 Water Quality Standards (WQS), and (3) comply with other state requirements that may be more stringent.

The CWA requires that the limits for a particular pollutant be the more stringent of either technology-based effluent limits (TBELs) or water quality-based effluent limits (WQBELs). TBELs are set according to the level of treatment that is achievable using available technology. A WQBEL is designed to ensure that the WQS of a waterbody are met and may be more stringent than TBELs. A more detailed legal and technical discussion of the basis for the effluent limits contained in AKG250000 follows.

4.2 Technology-Based Effluent Limits

The CWA requires particular categories of industrial dischargers to meet TBELs established by the Environmental Protection Agency (EPA) through effluent limit guideline (ELG) rulemaking. In establishing permit limits, DEC first determines if there are applicable TBELs. 18 AAC 83.430 requires that, if applicable, TBELs and standards subject to the provisions of 40 Code of Federal Regulations (CFR) §122.29(d), adopted by reference in 18 AAC 83.010, must be included in an APDES permit. Where EPA has not yet published guidelines for a particular industry, the permitting authority may determine the development of case-by-case TBELs using best professional judgment (BPJ) procedures (18 AAC 83.425, 18 AAC 83 Article 5, and 18 AAC 83.010). The intent of a TBEL is to require a minimum level of treatment for industrial point sources based on currently available treatment technologies while allowing the discharger to use any available control technique to meet the limits.

In the initial permit development, the DEC established TBELs for flow on a case-by-case basis using BPJ after reviewing other similar general permits around the country and examining the potential universe of eligible facilities in Alaska. Based on review of other general permits for facilities discharging non-contact cooling water, daily maximum flow limitations varied from 0.05 mgd (Virginia) to 0.5 mgd (Oregon and Arkansas). 18 AAC 83.425 requires that permit writers developing case-by-case

effluent limitations consider the following: (1) The appropriate technology for the category class of point sources of which the applicant is a member, based on all available information; (2) Any unique factors relating to the applicant. The regulations also require that, in setting case-by-case limitations, the permit writer consider several specific factors established in 40 CFR §125.3(d) to select a model treatment technology and derive effluent limitations on the basis of that treatment technology. Utilizing the data and information available for wastewater discharges from similar facilities is consistent with the requirements in 40 CFR §125.3. Factors to be considered in the establishment of case-by-case limits include "the appropriate technology for the category or class of point sources of which the applicant is a member" (40 CFR §125.3(c)(2)(i)). The Department reviewed both the flow requirements in various states with similar permit requirements and coverage as well as national standards and regulations for cooling water intake structures and discharges found in the CWA Section 316. The threshold for applicability for the national rule is 2.0 mgd design intake flow. In order to ensure the potential for maximum coverage of facilities and discharges through this general permit, the Department determined the flow criteria of less than 2.0 mgd design intake flow is reasonable and satisfies the intent of 40 CFR §125.3 and will be carried forth in this permit reissuance as well.

4.3 Water Quality-Based Effluent Limits

Section 301(b)(1)(C) of the CWA requires the development of limits in permits necessary to meet WQS by July 1, 1977. WQBELs included in APDES permits are derived from EPA-approved 18 AAC 70 WQS. APDES regulation 18 AAC 83.435(a)(1) requires that permits include WQBELs that can "achieve water quality standard established under CWA §303, including state narrative criteria for water quality." The WQS are composed of use classifications, numeric and/or narrative water quality criteria, and an Antidegradation Policy (see Fact Sheet Section 10.0, Antidegradation). The use classification system designates the beneficial uses that each waterbody is expected to achieve. The numeric and/or narrative water quality criteria are the criteria deemed necessary by the state to support the use classification of each waterbody. The Antidegradation Policy ensures that the existing uses and necessary water quality are maintained.

Waterbodies in Alaska are designated for all uses unless the water has been reclassified under 18 AAC 70.230 as listed under 18 AAC 70.230(e). Some waterbodies in Alaska may also have site–specific water quality criteria per 18 AAC 70.235, such as those listed under 18 AAC 70.236(b).

AKG250000 authorizes non-contact cooling water facilities that discharge to both fresh and marine waterbodies. The designated uses for freshwater are water supply for drinking, culinary, and food processing, agriculture, aquaculture, and industrial; contact and secondary recreation; and growth and propagation of fish, shellfish, other aquatic life, and wildlife. The designated uses for marine water are water supply for aquaculture, seafood processing, and industrial; contact and secondary recreation; growth and propagation of fish, shellfish, other aquatic life, and wildlife; and harvesting for consumption of raw mollusks or other raw aquatic life.

In 2014, DEC developed AKG250000 as the first general permit in Alaska for non-contact cooling water facilities discharging to surface water. Because other States had regulated these types of facilities for multiple permit terms, DEC reviewed non-contact cooling water facility general permits from some of them, including Arkansas, Minnesota, Ohio, Oregon, Rhode Island, and Virginia for common pollutants of concern (POC) and identified temperature, pH, TRC, arsenic, and copper as pollutants to include in AKG250000. WQBELs were established at that time for temperature, pH, arsenic and TRC while

monitoring only was required for zinc and copper. During this permit cycle, temperature analysis was done and four of the facilities did not exceed temperature water quality criteria, while four facilities exceeded temperature water quality criteria at least once. The arsenic analysis showed there were eight freshwater dischargers and one marine. One of the nine exceeded arsenic water quality criteria two times. Additionally, the pH monitoring results showed that with the exception of two facilities, all of the facilities were in compliance with pH water quality criteria. None of the facilities used chlorine, so there are no TRC monitoring results.

Some freshwater metals water quality criteria, including copper and zinc, are hardness dependent. As was done in the prior permit cycle, DEC used a conservative hardness of 25 mg/L as a benchmark to represent receiving waterbody hardness for this reissuance. Water quality criteria are less restrictive with increasing hardness. This reissuance has a total of eight facilities that discharge to freshwater. Of the eight facilities that discharged to freshwater , seven submitted their monitoring results. Of those seven, none showed exceedances of water quality criteria for copper or zinc using this conservative hardness concentration. DEC will continue to use 25 mg/L as an initial screening tool to evaluate metals data. Should a facility exceed water quality criteria using the benchmark of 25 mg/L, DEC may require the facility, as per Permit Section 2.1.9, to monitor the receiving waterbody for hardness in order to establish more accurate water quality criteria for that parameter. The permittee will be notified of any additional monitoring when issued written authorization to discharge under AKG250000. Based on the monitoring results from the last five years, DEC has determined to reissue the permit with the same effluent and monitoring requirements of the previous permit. Table 1 contains a summary and basis of the WQBELs contained in AKG250000.

Table 1. Water Quality-Based Effluent Limits

Parameter	Units [a]	Water	Chronic	Acute	Basis for Limit
pH	SU	fresh	may not be less than 6.5 or greater than 8.5		18 AAC 70.20(b)(6)
		marine			18 AAC 70.20(b)(18)
Temperature	°C	fresh	N/A	13	18 AAC 70.20(b)(10)
		marine	N/A	15	18 AAC 70.20(b)(22)
TRC [b, c]	mg/L	fresh	0.011	0.019	18 AAC 70.20(b)(11)
		marine	0.0075	0.013	18 AAC 70.20(b)(23)
Arsenic, total recoverable	µg/L	fresh	N/A	10	18 AAC 70.20(b)(11)
		marine	36	69	18 AAC 70.20(b)(23)

Footnotes:

a. SU= standard units, °C = degrees Celsius, mg/L = milligrams per liter, µg/L = micrograms per liter

b. TRC monitoring requirements are only applicable to non-contact cooling water discharges where: (1) a treatment additive that contains chlorine or chlorine compounds is used; or (2) the source water of non-contact cooling water is chlorinated.

c. The TRC effluent limits are not quantifiable using EPA-approved analytical methods. DEC will use the minimum level of 0.1 mg/L as the compliance evaluation level for this parameter.

4.3.1 pH

Alaska WQS at 18 AAC 70.020(b)(6) and at 18 AAC 70.020(b)(18)(C) states that the pH water quality criteria for the growth and propagation of fish, shellfish, other aquatic life, and wildlife for both fresh and marine water may not be less than 6.5 or greater than 8.5 standard units.

4.3.2 Temperature

Alaska WQS at 18 AAC 70.020(b)(10) states that temperature for freshwater uses for egg and fry incubation may not exceed 13° C. 18 AAC 70.020(b)(22) states the temperature for marine water uses for seafood processing, growth and propagation of fish, shellfish, other aquatic life, wildlife, and harvesting for consumption of raw mollusks or other raw aquatic life may not exceed 15° C.

4.3.3 Total Residual Chlorine

Alaska WQS at 18 AAC 70.020(b)(11) states that freshwater TRC concentrations for the protection for aquatic life may not exceed either an acute concentration of 0.019 mg/L or a chronic concentration of 0.011 mg/L. Alaska WQS at 18 AAC 70.020(b)(23) states that marine TRC concentrations for the protection of aquatic life may not exceed either an acute concentration of 0.013 mg/L or a chronic concentration of 0.0075 mg/L.

4.3.4 Arsenic

Alaska WQS at 18 AAC 70.020(b)(11) for freshwater states that the concentrations of substances in freshwater may not exceed the numeric criteria for drinking water and aquatic organisms shown in the Alaska Water Quality Criteria Manual. The drinking water arsenic concentration may not exceed 10 µg/L. Alaska WQS at 18 AAC 70.020(b)(23) for marine water states that the concentration of substances in water may not exceed the numeric criteria for aquatic life for marine water shown in the Alaska Water Quality Criteria Manual. The acute aquatic life arsenic concentration may not exceed 69 µg/L and the chronic aquatic life concentration may not exceed 36 µ/L.

5.0 MONITORING REQUIRMENTS

5.1 Basis for Monitoring Requirements

In accordance with Alaska Statutes (AS) 46.03.110(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 and to determine if additional effluent limits are required. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limits are required and/or to monitor effluent impact on receiving waterbody quality. Monitoring may be required in individual authorizations for site-specific evaluations related, but not limited to receiving waterbody impairments, issues associated with threatened or endangered species, verification of mixing zone sizes, or application requirements.

Monitoring frequencies are based on the nature and effect of a pollutant as well as a minimum sampling frequency that DEC has determined necessary to adequately monitor a facility's discharge and compliance with effluent limits. Permittees may submit a written request that monitoring frequencies be reduced or eliminated for parameters that do not have associated effluent limits after two years of monitoring and reporting if results indicate no detections above applicable water quality criteria. Monitoring reductions may only occur with DEC's written approval.

The permittee is responsible for monitoring and reporting results electronically to the Department via NetDMR (See Fact Sheet Section 11.3).

Table 2 contains a summary of effluent limits and monitoring requirements in AKG250000.

Table 2 -Effluent Limits and Monitoring Requirements

Parameter	Effluent Limits				Monitoring Requirements	
	Units [a]	Daily Minimum	Monthly Average	Daily Maximum	Sample Frequency	Sample Type
Flow	mgd	N/A	N/A	See below [b]	Continuous	Measured
pH	SU	6.5	N/A	8.5	1/Month	Grab
Temperature	˚ C	N/A	N/A	13 (fresh) 15 (marine)	1/Month	Grab
Total Residual Chlorine (TRC) [c, d]	mg/L	N/A	0.011 (fresh) 0.0075 (marine)	0.019 (fresh) 0.013 (marine)	1/Month	Grab
Arsenic, total recoverable	µg/L	N/A	36 (marine)	10 (fresh) 69 (marine)	1/Quarter	24-hour composite [e]
Copper, total recoverable	µg/L	N/A	N/A	Report	1/Quarter	24-hour composite
Zinc, total recoverable	µg/L	N/A	N/A	Report	1/Quarter	24-hour composite

Footnotes:

a. mgd = million gallons per day, SU = standard units, ˚ C = degrees Celsius, mg/L = milligrams per liter, µg/L = micrograms per liter

b. A facility specific flow limitation not to exceed 2.0 mgd shall be included as a part of the authorization to discharge.

c. TRC monitoring requirements are only applicable to non-contact cooling water discharges where: (1) a treatment additive that contains chlorine or chlorine compounds is used; or (2) the source water of non-contact cooling water is chlorinated.

d. The TRC effluent limits are not quantifiable using EPA-approved analytical methods. DEC will use the minimum level of 0.1 mg/L as the compliance evaluation level for this parameter.

e. See Appendix C for a definition.

6.0 WHOLE EFFLUENT TOXICITY (WET)

AKG250000 requires WET monitoring for chronic toxicity only if the permittee has notified DEC that biocides or metallic cooling water additives, with the exception of chlorine, will be used and DEC has granted approval of the additives (See Permit Section 2.2). If applicable, DEC will include specific WET testing requirements for facilities that have DEC approval to use biocides or metallic cooling water additives in their individual authorization to discharge. If, after four consecutive sample results indicating no toxicity, the permittee can submit a request to DEC to suspend toxicity monitoring. The permittee may suspend toxicity monitoring only after receiving written approval from DEC. Currently, none of the authorized non-contact cooling water facilities either use or have requested to use biocides or metallic cooling water additives.

7.0 MIXING ZONES

18 AAC 70.990(38), as amended through June 23, 2003, defines a mixing zone as meaning "an area in a waterbody surrounding, or downstream of, a discharge where the effluent plume is diluted by the receiving water within which specified water quality criteria may be exceeded" as long as toxic conditions are prevented and the designated use of the waterbody as a whole is not impaired as a result of the mixing zone. All water quality criteria must be met at the boundary of the mixing zone.

In accordance with 18 AAC 70.240, upon application, the Department may authorize in a discharge permit, a mixing zone for a waterbody in which water quality criteria may be exceeded. The permittee must provide all available evidence reasonably necessary to demonstrate that the mixing zone will comply with 18 AAC 70.240. Form 2M serves as the mixing zone application under the general permit and provides information necessary to demonstrate consistency with 18 AAC 70.240 and must be submitted by any permittee that requests either a new or modified mixing zone. (See Permit Section 1.4.4). The Department will consider mixing zone requests on a case-by-case basis, and will, in its discretion, approve, approve with conditions, or deny a mixing zone application.

Appendix A of this fact sheet contains mixing zone criteria found at 18 AAC 70.240. The mixing zone criteria include an analysis of the size of the mixing zone, treatment technology, existing uses of the waterbody, human consumption, spawning areas, human health, aquatic life, and endangered species.

The Department may establish limits at the boundary of an authorized mixing zone in the receiving waterbody. These limits shall be based on the limits and requirements of 18 AAC 70. The permittee will be notified of any receiving waterbody limits when issued authorization by DEC to discharge under the general permit.

New or modified mixing zones that the Department has not previously public noticed will be public noticed in accordance with 18 AAC 83.120.

8.0 COMPLIANCE SCHEDULES

Per 18 AAC 70.910, the Department has authority to include compliance schedules as conditions of a permit, certification, or approval.

9.0 ANTIBACKSLIDING

18 AAC 83.480(a) requires that "interim effluent limitations, standards, or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit, unless the circumstances on which the previous permit was based have materially and substantially changed since the permit was issued, and the change in circumstances would cause for permit modification or revocation and reissuance under 18 AAC 83.135." 18 AAC 83.480(c) also states that a permit may not be reissued "to contain an effluent limitation that is less stringent than required by effluent guidelines in effect at the time the permit is renewed or reissued." The effluent limitations in this permit reissuance are consistent with 18 AAC 83.480. Therefore, the permit effluent limitations, standards, and conditions in AKG250000 are as stringent as in the previously issued permit. Accordingly, no further backsliding analysis is required for this permit reissuance.

10.0 ANTIDEGRADATION

Section 303(d)(4) of the CWA states that, for waterbodies where the water quality meets or exceeds the level necessary to support the water body's designated uses, WQBELs may be revised as long as the revision is consistent with the State's Antidegradation policy. The State's Antidegradation policy is found in the 18 AAC 70 WQS regulations at 18 AAC 70.015. The Department's approach to implementing the Antidegradation policy is found in 18 AAC 70.016 Antidegradation implementation methods for discharges authorized under the federal Clean Water Act. Both the Antidegradation policy and the implementation methods are consistent with 40 CFR 131.12 and approved by EPA. This section analyzes and provides rationale for the Department's decisions in the permit issuance with respect to the Antidegradation policy and implementation methods.

Using the policy and corresponding implementation methods, the Department determines a tier protection level, whereby a higher numbered tier indicates a greater level of water quality protection. Tier 1 and Tier 2 classification and protection level on a parameter by parameter basis. A Tier 3 protection level applies to a designated water. At this time, no Tier 3 waters have been designated in Alaska.

18 AAC 70.015(a)(1) states that the existing water uses and the level of water quality necessary to protect existing uses must be maintained and protected (Tier 1 protection level).

None of the non-contact cooling water facilities that are authorized to discharge under the current permit discharge to receiving waterbodies listed as impaired in the *State of Alaska 2022 Integrated Water Quality Monitoring and Assessment Report*; therefore, no parameters have been identified where only the Tier 1 protection level applies. Accordingly, this antidegradation analysis conservatively assumes that the Tier 2 protection level applies to all parameters, consistent with 18 AAC 70.016(c)(1).

18 AAC 70.015(a)(2) 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 authorizes a reduction in water quality (Tier 2 protection level).

The Department may allow a reduction of water quality only after the specific analysis and requirements under 18 AAC 70.016(b)(5)(A-C), 18 AAC 70.016(c), 18 AAC 70.016(c)(7)(A-F), and 18 AAC 70.016(d) are met. The Department's findings are as follows:

> ***18 AAC 70.016(b)(5)***
>
> ***(A)*** *existing uses and the water quality necessary for protection of existing uses have been identified based on available evidence, including water quality and use related data, information submitted by the applicant, and water quality and use related data and information received during public comment;*
>
> ***(B)*** *existing uses will be maintained and protected; and*
>
> ***(C)*** *the discharge will not cause water quality to be lowered further where the department finds that the parameter already exceeds applicable criteria in 18 AAC 70.020(b), 18 AAC 70.030, or 18 AAC 70.236(b).*

18 AAC 70.020 and 18 AAC 70.050 specify the protected water use classes for the State; therefore, the most stringent water quality criteria found in 18 AAC 70.020 and in the *Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances* (September 2022) apply and were evaluated. This will ensure existing uses and the water quality necessary for protection of existing uses of the receiving waterbody are fully maintained and protected.

The permit places limits and conditions on the discharge of pollutants. The WQ criteria, upon which the permit effluent limits are based, serve the specific purpose of protecting the existing and designated uses of the receiving water. WQBELs are set equal to the most stringent water quality criteria available for any of the protected water use classes. This also ensures that the resulting water quality at and beyond the boundary of any authorized mixing zone will fully protect all existing and designated uses of the receiving waterbody as a whole.

The Department concludes the terms and conditions of the permit will be adequate to fully protect and maintain the existing uses of the water and that the findings under 18 AAC 70.016(b)(5) are met.

18 AAC 70.016(c)

(c) ***Tier 2 analysis for the lowering or potential lowering of water quality not exceeding applicable criteria.*** *Tier 2 applies when the water quality for a parameter in a water of the United States within this state does not exceed the applicable criteria under 18 AAC 70.020(b), 18 AAC 70.030, or 18 AAC 70.236(b) and receives the protection under 18 AAC 70.015(a)(2).*

(3) *the department will not conduct a Tier 2 antidegradation analysis for*

(A) *reissuance of a license or general or individual permit for a discharge that the applicant is not proposing to expand;*

In the prior permit cycle, DEC conservatively assumed that all discharges under AKG250000 were Tier 2 waters, and accordingly conducted a Tier 2 antidegradation analysis. DEC determined the AKG250000 general permit would meet the Antidegradation Policy and the Department's July 14, 2010, *Policy and Procedure Guidance for Interim Antidegradation Implementation Methods* requirements. The *Interim Guidance* has been superseded by the 18 AAC 70.016 regulations.

18 AAC 70.16(c)(3)(A) states that the Department will not conduct a Tier 2 antidegradation analysis for reissuance of a license or general or individual permit for a discharge that the applicant is not proposing to expand. 18 AAC 70.990(75) states that an expanded discharge is one in which discharges are expanded such that they could result in an increase in a permitted parameter load or concentration or other changes in discharge characteristics that could lower water quality or have other adverse environmental impacts. The discharges covered under AKG250000 are not expanded from the prior issuance of the general permit in 2020. There will not be an increase in a permitted parameter load, concentration, or other change in discharge characteristics that could lower water quality of have other adverse environmental impacts.

18 AAC 70.16(c)(3)(A), states that the Department will not conduct a Tier 2 antidegradation analysis for this permit reissuance of a license or general or individual permit for a discharge that the applicant is not proposing to expand. Therefore, consistent with 18 AAC 70.016(c)(2)(A) and 18 AAC 70.16(c)(3)(A), DEC is not conducting a Tier 2 antidegradation analysis for this permit reissuance.

New applicants proposing to discharge to a Tier 2 water and meeting all permit requirements will not be considered a new or expanded discharge and will not require a Tier 2 analysis. Eligibility for coverage in Permit Section 1.0 describes the types of non-contact cooling water facilities that may obtain coverage. AKG250000 was specifically designed for this sector and the POC commonly associated with them. The general permit contains conditions and restrictions that limit the discharge of POC from non-contact cooling water facilities. A new non-contact cooling water facility will not be authorized to discharge either new pollutants or pollutants in higher concentrations than that allowed by the conditions and restrictions of AKG250000.

11.0 SPECIAL CONDITIONS

11.1 Quality Assurance Project Plan (QAPP)

The permittee is required to develop, implement, and maintain a QAPP. The QAPP must be designed to assist in planning for the collection and analysis of effluent and receiving water samples in support of the permit. The QAPP shall consist of standard operating procedures the permittee must follow for collecting, handling, storing and shipping samples; laboratory analysis; precision and accuracy requirements; data reporting; and quality assurance/quality control criteria. The QAPP will help ensure the accuracy of monitoring data and potentially explain anomalies if they occur. The QAPP must be developed and implemented within 180 days of receiving authorization under this general permit. Any existing QAPP for the facility may be modified to meet the requirements of Permit Section 2.5. The QAPP is required to be retained onsite and made available to DEC upon request.

11.2 Best Management Practices (BMP) Plan

Permit Section 2.6 requires the permittee to develop and implement a BMP Plan within 180 days of the effective date of receiving authorization to discharge. The objective of the BMP Plan is to prevent or minimize the generation and potential for the release of pollutants from the non-contact cooling water facility to receiving waters through normal and ancillary activities. Any existing BMP Plan for the facility may be modified to meet the requirements of Permit Section 2.6. The BMP Plan is required to be retained onsite and made available to DEC upon request.

11.3 Electronic Reporting (E-Reporting) Rule

11.3.1 E-Reporting Rule for DMRs (Phase 1)

The permittee must submit DMR data electronically through Network Discharge Monitoring Report (NetDMR) per Phase I of the E-Reporting Rule (40 CFR Part 127) upon the effective date of this permit. Authorized persons may access permit information by logging into the NetDMR Portal (https://cdxnodengn.epa.gov/oeca-netdmr-web/action/login). Permittees submitting DMRs in compliance with the E-Reporting Rule are not required to submit as described in permit Appendix A – Standard Conditions unless requested or approved by DEC. Permittees shall include any DMR data required by the permit that cannot be reported in a NetDMR field (e.g., mixing zone receiving water data, etc.) as an attachment to the NetDMR submittal. DEC has established an E-Reporting website at http://dec.alaska.gov/water/compliance/electronic-reporting-rule/ that contains general information about this new reporting format. Training materials and webinars for NetDMR can be found at https://usepa.servicenowservices.com/oeca_icis?id=netdmr_homepage.

11.3.2 E-Reporting Rule for Other Reports (Phase 2)

Phase II of the E-Reporting rule will integrate electronic reporting for all other reports required by the Permit (e.g., Annual Reports and Certifications) and implementation is expected to begin December 2025. Permittees should monitor DEC's E-Reporting Information website located at https://dec.alaska.gov/water/compliance/electronic-reporting-rule for updates on Phase II of the E-Reporting Rule and will be notified when they must begin submitting all other reports electronically. Until such time, other reports required by the Permit may be submitted in accordance with Appendix A-Standard Conditions.

11.4 Standard Conditions

Appendix A of the permit contains standard regulatory language that must be included in all APDES permits. These requirements are based on the regulations and cannot be challenged in the context of an individual APDES permit action. The standard regulatory language covers requirements such as monitoring, recording, reporting requirements, compliance responsibilities, and other general requirements.

12.0 OTHER LEGAL REQUIREMENTS

12.1 Endangered Species Act

The Endangered Species Act (ESA) requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or endangered 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 provide them an opportunity to provide listings of threatened and endangered species and critical habitat.

This fact sheet and the permit will be submitted to the agencies for review during the public notice period, and any comments received from these agencies will be considered prior to issuance of the permit.

The Department also periodically reviews USFWS and NOAA listings at https://www.fws.gov/endangered/ and https://www.fisheries.noaa.gov/alaska/endangered-species-conservation/endangered-threatened-and-candidate-species-alaska for updates.

Threatened and endangered species that occur in Alaskan waters are included in Table 3.

Table 3- Threatened and Endangered Species

Species Name	Scientific Name	Listing Status
Albatross, short-tailed	*Phoebastria albatrus*	Endangered
Bear, polar	*Ursus maritimus*	Threatened
Eider, spectacled	*Somateria fischeri*	Threatened
Eider, Stellar's	*Polysticta stelleri*	Threatened
Herring, Pacific Southeast Alaska distinct population segment	*Clupea pallasi*	Candidate for listing
Eskimo curlew	*Numenius borealis*	Endangered
Loon, yellow-billed	*Gavia adamsii*	Candidate for listing
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
Seal, Ringed	*Phoca (pusa)hispida*	Endangered
Seal, Guadalupe Fur	*Arctocephalus townsendi*	Endangered
Sea turtle, loggerhead*	*Caretta caretta*	Threatened
Sea turtle, Olive Ridley*	*Lepidochelys olivacea*	Threatened
Sea-lion, Stellar western population (west of 144º longitude)	*Eumetopias jubatus*	Endangered
Whale, blue*	*Balaenoptera musculus*	Endangered
Whale, bowhead	*Balaena mysticetus*	Endangered
Whale, Cook Inlet beluga	*Delphinapterus leucas*	Endangered
Whale, fin	*Balaenoptera physalus*	Endangered
Whale, humpback	*Megaptera novaeangliae*	Threatened
Whale, gray* 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
*Occurs rarely in Alaska		

12.2 Essential Fish Habitat (EFH)

The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) designates EFH in waters used by anadromous salmon and various life stages of marine fish under NMFS jurisdiction. EFH refers to those waters and associated river bottom substrates necessary for fish spawning, breeding, feeding, or growth to maturity—including aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish.

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 to maturity.

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

Section 305(b) of the Magnuson-Stevens Act 916 USC 1855(b)) requires federal agencies to consult NMFS when any 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.

This fact sheet and the permit will be submitted to the agencies for review during the public notice period, and any comments received from these agencies will be considered prior to issuance of the permit.

12.3 Ocean Discharge Criteria Evaluation (ODCE)

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

Interactive nautical charts depicting Alaska's baseline plus additional boundary lines are available at https://www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml https://www.charts.noaa.gov/ChartCatalog/Alaska.htmland interactive maps at https://alaskafisheries.noaa.gov/mapping/arcgis/rest/services/NOAA_Baseline/MapServer.

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 State WQS. Consistent with 40 CFR §125.122(b), adopted by reference at 18 AAC 83.010(C)(8), discharges in compliance with State 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 Section 403 warrants a presumption that discharges in compliance with these [standards] also satisfy CWA Section 403." (Ocean Discharge Criteria, 45 Federal Register 65943.) As such, given the permit requires compliance with State 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.

12.4 Permit Expiration

The permit will expire five years from the effective date of the permit.

13.0 REFERENCES

ADEC (Alaska Department of Environmental Conservation). 2022. 18 AAC 70 Water Quality Standards, as amended through November 13, 2022.

ADEC. 2022. Alaska water quality criteria manual for toxics and other deleterious organic and inorganic substances, as amended through September 8, 2022.

ADEC. 2022. Alaska's final 2022 integrated water quality monitoring and assessment report, September 15, 2022.

ADEC 2017. 18 AAC 83 Alaska Pollutant Discharge Elimination System, as amended through November 7, 2017.

APPENDIX - A Mixing Zone Analysis Checklist

The purpose of the Mixing Zone Checklist is to guide the permit writer through the mixing zone regulatory requirements to determine if all the mixing zone criteria at 18 AAC 70.240 are satisfied, as well as provide justification to authorize a mixing zone in an Alaska Pollutant Discharge Elimination System permit.

Criteria	Description	Resources	Regulation
Size	Is the mixing zone as small as practicable? **If yes, mixing zone may be approved as proposed or authorized with conditions.**	EPA Permit Writers' Manual	18 AAC 70.240 (k)
Technology	Were the most effective technological and economical methods used to disperse, treat, remove, and reduce pollutants? **If yes, mixing zone may be approved as proposed or authorized with conditions.**		18 AAC 70.24(c)(1)
Low Flow Design	**For river, streams, and other flowing freshwaters.** - Determine low flow calculations or documentation for the applicable parameters.		18 AAC 70.240(I)
Existing use	Does the mixing zone… (1) maintain and protect designated and existing uses of the waterbody as a whole? **If yes, mixing zone may be approved as proposed or authorized with conditions.**		18 AAC 70.240(c)(2)
	(2) impair overall biological integrity of the waterbody? **If yes, mixing zone may be approved as proposed or authorized with conditions.**		18 AAC 70.240(c)(3)
	(3) create a public health hazard that would preclude or limit existing uses of the waterbody for water supply or contact recreation? **If yes, mixing zone may be approved as proposed or authorized with conditions.**		18 AAC 70.240(c)(4)(B)
	(4) preclude or limit established processing activities or established commercial, sport, personal use, or subsistence fish and shellfish harvesting? **If yes, mixing zone may be approved as proposed or authorized with conditions.**		18 AAC 70.240(c)(4)(C)
Human consumption	Does the mixing zone… (1) produce objectionable color, taste, or odor in aquatic resources harvested for human consumption? **If yes, mixing zone may not be approved**		18 AAC 70.240(d)(6)
Spawning Areas	Does the mixing zone… (1) discharge in a spawning area for anadromous fish or Arctic grayling, northern pike, rainbow trout, lake trout, brook trout, cutthroat trout, whitefish, sheefish, Arctic char (Dolly Varden), burbot, and landlocked coho, king, and sockeye salmon? **If yes, mixing zone prohibited may not be approved.**		18 AAC 70.240(f)

Criteria	Description	Resources	Regulation
Human Health	Does the mixing zone… (1) contain bioaccumulating, bioconcentrating, or persistent chemical above natural or significantly adverse levels? **If yes, mixing zone may not be approved.**		18 AAC 70.240(d)(1)
	(2) contain chemicals expected to cause carcinogenic, mutagenic, tetragenic, or otherwise harmful effects to human health? **If yes, mixing zone may not be approved.**		18 AAC 70.240(d)(2)
	(3) occur in a location where the department determines that a public health hazard reasonably could be expected? **If yes, mixing zone may be approved as proposed or authorized with conditions**		18 AAC 70.240(k)(4)
Aquatic Life	Does the mixing zone… (1)cause a toxic effect in the water column, sediments, or biota outside the boundaries of the mixing zone? **If yes, mixing zone may be approved as proposed or authorized with conditions**		18 AAC 70.240(c)(4)(A)
	(2) result in a reduction in fish and shellfish population levels? **If yes, mixing zone may be approved as proposed or authorized with conditions.**		18 AAC 70.240(c)(4)(D)
	(3) result in permanent or irreparable displacement of indigenous organisms? **If yes, mixing zone may be approved as proposed or authorized with conditions.**		18 AAC 70.240(c)(4)(E)
	(4) form a barrier to migratory species or fish passage? **If yes, mixing zone may be approved as proposed or authorized with conditions.**		18 AAC 70.240(c)(4)(G)
	(5) result in undesirable or nuisance aquatic life? **If yes, mixing zone may not be approved**		18 AAC 70.240(d)(5)
	(6) prevent lethality to passing organisms; or exceed acute aquatic life criteria at and beyond the boundaries of a smaller initial mixing zone surrounding the outfall, the size of which shall be determined using methods approved by the Department? **If yes, mixing zone may not be approved**		18 AAC 70.240(d)(7) 18 AAC 70.240(d)(8)
Endangered Species	Are there threatened or endangered species (T/E spp) at the location of the mixing zone? If yes, are there likely to be adverse effects to T/E spp based on comments received from USFWS or NOAA? If yes, will conservation measures be included in the permit to avoid adverse effects? **If yes, mixing zone may be approved as proposed or authorized with conditions**		18 AAC 70.240(c)(4)(F)