

# STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINING, LAND AND WATER  
DAM SAFETY AND CONSTRUCTION UNIT



## Certificate of Approval to Operate a Dam

The **State of Alaska** under AS 46.17, and the regulations adopted under this statute, grants to:

**Coeur Alaska, Inc.**

The approval to operate the following structure at the **Kensington Mine** in accordance with the terms and conditions contained in this certificate:

### **Lower Slate Lake Tailings Dam (NID ID# AK00308)**

The location of this project is: T35S, R62E, S26, Copper River Meridian

The holder of this certificate shall:

- Operate and maintain the Lower Slate Lake Tailings Dam and appurtenant works in accordance with accepted practice and the document titled, "Operations and Maintenance Manual, Kensington Project Lower Slate Lake Tailings Dam (AK00308)" dated May 31, 2019.
- Except for claims or losses arising from negligence of the State, defend and indemnify the State against, and hold it harmless from any and all claims, demands, legal actions, loss, liability and expense for injury or death of persons, and damages to or loss of property, arising out of or connected with the exercise of the approval granted by this certificate.
- Comply with all applicable laws, regulations and conditions.
- Allow representatives of the Department to inspect the work and records covered by this certificate at all times determined necessary by the Commissioner.
- Follow special conditions that apply to the operation of this dam presented in Attachment A, attached hereto and made a part hereof.

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**Lower Slate Lake Tailings Dam**

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**Attachment A – Special Conditions**

1. The Lower Slate Lake Tailings Dam is approved to operate as a Class II (significant) hazard potential dam as defined in 11 AAC 93.157 at a nominal crest elevation of 740 feet for the Stage 3 configuration of the dam.
2. Operate, monitor, inspect and maintain the Lower Slate Lake Tailings Dam in accordance with best practices and the procedures described in the “Operations and Maintenance Manual, Kensington Project Lower Slate Lake Tailings Dam (AK00308)” dated May 31, 2019 (O&M Manual). Inspect the dam and appurtenant works after all significant seismic or precipitation events. Maintain records of all inspections, monitoring data, and routine maintenance.
3. Within 90 days of the date of this certificate, submit a plan and schedule to:
  - Implement the survey instructions included in Attachment B to this certificate
  - Update the O&M Manual to include revised instrumentation and surveillance procedures to monitor for horizontal and vertical movement of the dam.
4. Document any routine operations and maintenance procedures that deviate from or are not included in the current version of the O&M Manual. Review the O&M Manual concurrent with each Periodic Safety Inspection and revise as necessary.
5. If the water level in the reservoir rises to the invert elevation of the spillway prior to mine closure and begins to flow through the spillway, the Department shall be notified as required under Special Condition 8.
6. Perform a Periodic Safety Inspection (PSI) on the dam and appurtenant works as required by 11 AAC 93.159 by July 28, 2023. The frequency for the PSI shall be in accordance with 11 AAC 93.159(a). The PSI must be performed by an engineer qualified in accordance with 11 AAC 93.193(b). Approval of the engineer and the scope of the inspection must be obtained from the Department in advance of the inspection. Submit a draft PSI report to the Department for review within 30 days of the visual inspection of the dam.
7. An Emergency Action Plan (EAP) shall be maintained in accordance with the requirements of 11 AAC 93.164(a). The EAP may be included in the O&M Manual as provided under 11 AAC 93.164(e) for a Class II dam. The EAP shall be reviewed, exercised, and revised in accordance with the following schedule:

<u>DATE</u>	<u>ACTION</u>
Annually	Internal review
Annually	Orientation exercise with all responsible parties
Annually	Revise as needed and distribute updated pages
Biennially	Drill exercise (Internal responsible parties)
Triennially	Table top exercise with all responsible parties
Triennially	Revise and distribute to all responsible parties

The drill exercise is not required in the same year as the table top exercise. EAP exercises must include responsible parties listed in the plan as indicated in the schedule. Provide written notice to the Department within 7 days after all EAP exercises.

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8. Notify the Department immediately if the EAP is activated, or within 24 hours for any significant problems that may develop which could affect the safety of the dam or for discharge through the spillway prior to mine closure. An incident report shall be completed and submitted to the Department in accordance with 11 AAC 93.177 within 14 days after the conclusion of the incident.
9. An annual performance report prepared by an engineer qualified in accordance with 11 AAC 93.193(b) shall be submitted to the Department by October 30 of each year during active mine operations. At a minimum, the report shall include:
- the findings of a visual inspection of the dam when it is clear of snow
  - photographs of key features of the dam and appurtenant works and other observations during the visual inspection
  - a review and evaluation of routine inspection and maintenance reports
  - a review and evaluation of monitoring data including instrumentation, seepage, and survey data
  - a description of the accumulated tailings and the remaining storage capacity of the tailings storage facility
  - an updated water balance graph based on actual data collected during the previous year that includes the historic and projected water levels in the TSF pond, and a comparison to the remaining stage of the dam and the current estimated construction schedule for that stage
  - other information pertinent to the operation and performance of the tailings storage facility and dam.

The report shall be in summary form and in a format approved in advance by the Department. This requirement is waived for the year that a PSI is conducted, but the PSI must include the above listed information in addition to meeting the other requirements of 11 AAC 93.159.

10. Routine seepage monitoring is required. If any unexpected increase in seepage is detected in the seepage monitoring system, the exposed portions of the liner system must be investigated prior to covering with tailings or other material.
11. The tailings deposition plan shall prioritize deposition to cover the Stage 2 geomembrane with tailings between minimum elevation 715 feet as shown on drawing number C021 of the drawing package approved in *Certificate of Approval to Modify a Dam* number FY2018-19-AK00308 for the Stage 3 modification, up to nominal elevation 723 feet. Notify the Department within 14 days when the tailings deposition in this area is complete.
12. Adequate financial assurance required by 11 AAC 93.171(f)(2)(C) and 11 AAC 93.172(a)(6)(C) must be provided for the following:
- Modification of the Lower Slate Lake Tailings Dam and appurtenant works to a final, post-closure operating configuration including consideration for premature closure

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- Post-closure monitoring, operation, maintenance, and inspection of the dam and appurtenant works for an indefinite time period

The specific tasks and cost estimates may be included as discrete line items in the reclamation and closure plan required under 11 AAC 97.310. The methods of financial assurance, the proposed final, post-closure operating configuration, the post-closure monitoring, operation, maintenance and inspection requirements and the respective cost estimates are subject to approval by the Department. The Department's approval may be withdrawn, and additional financial assurance may be required, if the Department determines that circumstances at the mine or otherwise so require.

13. An application for a certificate of approval must be submitted to the Department for any modifications or major repairs that may affect the safety of the dam, or for removal or abandonment of the dam, or for transfer of ownership.
14. No less than twelve months prior to permanent closure of the Kensington Mine, submit to the Department an application to transfer the *Certificate of Approval to Operate a Dam* in accordance with 11 AAC 93.173(j) to the entity responsible for post-closure operation and maintenance of the Lower Slate Lake Tailings Dam, if the entity is different from Coeur Alaska, Inc. Transfer is subject to Department approval, and the Department may issue a new certificate of approval with any terms and conditions that the Department determines are necessary to ensure that the dam will be operated and maintained in a safe manner.
15. This *Certificate of Approval to Operate a Dam* incorporates all pertinent and applicable conditions of the *Certificate of Approval to Construct a Dam* number FY2006-7-AK00308 dated March 8, 2006 for the Lower Slate Lake Tailings Dam, and *Certificate of Approval to Modify a Dam* number FY2012-18-AK00308 for the Stage 2 modification, and *Certificate of Approval to Modify a Dam* number FY2018-19-AK00308 for the Stage 3 modification, in addition to the conditions contained or repeated herein for emphasis.
16. This *Certificate of Approval to Operate a Dam* expires on September 26, 2023.

**End of Attachment A**

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**Attachment B—Survey Instructions**

An Alaska licensed, Professional Land Surveyor with specific expertise in datums and coordinate systems shall perform or supervise the work described in Attachment B. The Professional Land Surveyor must be independent (third party) from the Kensington Mine with qualifications subject to ADNR approval.

1. Verify or establish a minimum of four permanent benchmarks that are placed outside the area impacted by current and future mining and construction activities. The locations must be evenly distributed and geometry between benchmark monuments must be considered relative to the tailings storage facility dam. The benchmark monuments must be a geodetic benchmark and setting that is stable and not susceptible to frost heave. For guidance on monumentation installation see: US Army Corps of Engineers Engineering and Design *Survey Markers and Monumentation* EM 1110-1-1002, available online.
2. Establish GPS-Derived Orthometric Heights on benchmark monuments by simultaneously occupying all benchmarks, for three independent sessions, lasting a minimum of four hours each session. Also locate control within one-half mile of the mine for three independent sessions lasting at a minimum the time required to process data using OPUS Projects or similar software. Final adjusted coordinates shall be constrained to current NAD 83 (2011) epoch 2010.0 coordinates of not less than three NGS CORS. The vertical datum shall be NAVD88 using GNSS measurements and GEOID12B. Deliver the data and OPUS Projects login information or similar software reports to ADNR Survey Section for review.
3. Verify or establish survey instrument monuments in locations on the dam specified by the design engineer for the Lower Slate Lake Tailings Dam. The instrument monuments must be sufficient to detect horizontal and vertical movement in excess of the tolerance of the survey equipment and procedures. See US Army Corps of Engineers, Engineering and Design, *Structural Deformation Surveying* EM 1110-2-1009, available online, for additional guidance.
4. Perform control leveling through dam monitoring monuments and benchmarks using procedures and equipment that meets or exceeds accuracy classification of 2 cm horizontal and 5 cm vertical at the 95% confidence level. Monitor instruments monthly for one year to establish baseline conditions.
5. Site coordinates for dams regulated under Article 3 of 11 AAC 93 shall be reported to ADNR in either a newly established low distortion projection or Alaska State Plane Coordinate System of 1983, Zone 1. If a new low distortion projection is used, transformation parameters must be delivered to ADNR Survey Section for review.
6. Develop written standard procedures for passive control network verification on a daily, monthly, and biannual basis. The procedures must include RTK initialization verification that is performed by site surveyors at the beginning and end of each day of data collection as well as network occupation requirements seasonally and upon events such as earthquakes or other actions which may alter the integrity of the control network. Provide a copy of the procedures to ADNR Survey Section for review.
7. Develop written standard procedures for surveillance of survey instrument monument located on the Lower Slate Lake Tailings Dam including routine monitoring frequencies, expected range of movements, and appropriate trigger action response plans and update the project O&M manual accordingly.

**End of Attachment B**

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