

# 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 Alaska Statute Title 46 and the regulations adopted under this statute, grants to:

### **Fairbanks Gold Mining, Inc.**

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

### **Fort Knox Tailings Dam (NID ID#AK00212)**

The location of this project is: T2N, R3E, S14, Fairbanks Meridian

The holder of this certificate shall:


- ☐ Operate the Fort Knox Tailings Dam and appurtenant works in accordance with accepted practice and the Operations and Maintenance Manual Rev. 8 dated August 2019, conditionally approved by the Department of Natural Resources Dam Safety and Construction Unit (the Department) concurrent with this certificate.
- ☐ 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 as found in Attachment A, attached hereto and made a part hereof.

**CERTIFICATE OF APPROVAL TO OPERATE A DAM**  
**Fort Knox Tailings Dam**

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This *Certificate of Approval to Operate a Dam* supersedes any other *Certificate of Approval to Operate a Dam* for the Fort Knox Tailings Dam and shall become invalid 60 days after the Periodic Safety Inspection due date specified under Attachment A. A valid certificate shall be issued with revised special conditions based on information contained in a current Periodic Safety Inspection Report approved by the Department and dam safety regulatory standards current at the time of the inspection.

This *Certificate of Approval to Operate a Dam* is granted subject to the pertinent statutory provisions in AS 46.15, AS 46.17 and the administrative regulations in 11 AAC 93.

APPROVED BY: Charles F. Cobb, P. E.  
  
TITLE: State Dam Safety Engineer  
Division of Mining, Land and Water  
  
SIGNATURE:   
  
DATE: September 6, 2019

State of Alaska           )  
                                      ) SS.  
Third Judicial District )

This is to certify that on September 6, 2019, before me appeared Charles F. Cobb, known by me to be the Authorized Representative of the Division of Mining, Land and Water, Alaska Department of Natural Resources, and acknowledged to me that this Certificate of Approval was voluntarily executed on behalf of the State of Alaska.

HENRY C. BROOKS  
Notary Public  
State of Alaska

  
Notary Public in and for the State of Alaska

My commission expires: with office

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**Fort Knox Tailings Dam**

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**Attachment A – Special Conditions**

1. The Fort Knox Tailings Dam (AK00212) is approved to operate as a Class II (significant) hazard potential dam as defined in 11 AAC 93.157 at a nominal seal zone elevation of 1557 feet, plus an additional six feet of frost protection fill over the seal zone of the dam.
2. This *Certificate of Approval to Operate a Dam* incorporates all pertinent and applicable conditions of the *Certificate of Approval to Construct a Dam* at the Fort Knox Mine Tailings Storage Facility approved on February 14, 1994, in addition to the conditions contained or repeated herein for emphasis.
3. No later than October 15, 2019, submit the construction completion report for the Phase 1 Causeway prepared in accordance with the requirements of 11 AAC 93.171(f)(6)(A) including all instrumentation and locations.
4. Operate, monitor, inspect and maintain the Fort Knox Tailings Dam in accordance with best practices and the procedures described in the “Kinross Fort Knox Tailings Storage Facility, NID ID# AK00212, Operations & Maintenance Manual Rev. 8” dated August 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.
5. In the pending revision of the O&M Manual for the currently approved raise of the Fort Knox Tailings Dam to seal zone elevation 1560 feet, provide the stage-storage curve referenced in Section 3.2.1 of Revision 8 of the O&M Manual, clearly showing maximum operating pond and respective freeboard limits. The stage-storage curve must reflect the volume of containment relative to elevation up to top of seal zone, at a minimum. The format of the stage-storage curve is subject to Department approval.
6. Continue to report the total precipitation and water surface elevation in the north and south ponds on at least twice per month until further notice.
7. Submit water balance forecasts twice per year until further notice. The water balance forecasts must be based on the most currently available reservoir bathymetry and precipitation data. The water balance forecasts must show historical pond levels and and confidence limits on the forecasts. The operating freeboard limits on the dam must be clearly indicated. Include computer model input files with the submittals.
8. This certificate approves operation of the Fort Knox Tailings Dam including tailings deposition upstream of the Phase 1 Causeway. The Phase 1 Causeway must be maintained at nominal crest elevation 1582 feet (site datum).
9. Tailings deposition is approved in accordance with the plan presented in Appendix A of the *Report on Detailed Design of Phase 1 Causeway*, Revision 1 by Knight Peisold dated August 16, 2019 up to nominal elevation 1557 feet (site datum) measured at the upstream slope of the Phase 1 Causeway. The tailings may slope

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### Fort Knox Tailings Dam

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upstream from this level at the natural angle of repose of the tailings. The deposition plan is subject to modification based on site conditions and the final closure plan for the Fort Knox Tailings Dam pending review and approval by the Department. During tailings deposition upstream of the Phase 1 Causeway, monitoring shall be conducted in accordance with the FGMI Phase 1 Causeway—First Fill Monitoring Plan included as Attachment B to a letter from FGMI dated August 12, 2019.

10. Minor decant ponds are expected on the tailings deposit upstream of the Phase 1 Causeway, however, no water may be intentionally impounded. Significant volumes of impounded water shall be removed from the tailings deposit upstream of the Phase 1 Causeway as expeditiously as possible.
11. 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 subsequent Periodic Safety Inspection and revise as necessary.
12. Perform a Periodic Safety Inspection (PSI) on the dam and appurtenant works including the Phase 1 Causeway and Fish Creek East Waste Rock Dump as required by 11 AAC 93.159 by July 11, 2021. 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.
13. Implement the recommendations of the inspection engineer contained in the “Fort Knox Project Tailings Storage Facility Report on 2018 Periodic Safety Inspection” report dated January 15, 2019.
14. An Emergency Action Plan (EAP) shall be maintained for the Fort Knox Tailings Dam in accordance with the requirements of 11 AAC 93.164(b)(4)(a). 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 with 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. Provide written notice to the Department within 7 days after all EAP exercises.

15. Notify the Department immediately if the EAP is activated, or within 24 hours for any significant problems that may develop with the dam or appurtenant works which

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**Fort Knox Tailings Dam**

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could affect the safety of the dam. 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.

16. An annual performance report prepared by an engineer qualified in accordance with 11 AAC 93.193(b) shall be submitted to the Department by December 31 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, including both the north and south sections of the tailings storage facility
- an updated water balance graph showing historic and projected water levels in the pond
- 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 acceptable to the Department. This requirement is waived for each 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.

17. 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 during mine operations.

18. The hazard potential classification of the Fort Knox Tailings Dam in the proposed closure configuration must be reviewed in accordance with 11 AAC 93.157 prior to mine closure, with consideration of future downstream development and land use changes after mine closure.

19. No later than September 6, 2020, provide adequate financial assurance as required by 11 AAC 93.171(f)(2)(C), 11 AAC 93.171(f)(4)(F) and 11 AAC 93.172(a)(6)(C) consistent with Alaska Statute 37.14.800 for the Fort Knox Tailings Dam and appurtenant features including the Phase 1 Causeway and Fish Creek East Waste Rock Dump.

20. This *Certificate of Approval to Operate a Dam* expires on September 10, 2021.

**End of Attachment A**

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