

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF MINING, LAND AND WATER

DAM SAFETY AND CONSTRUCTION UNIT



Certificate of Approval to Modify a Dam

The **State of Alaska** under Alaska Statute Title 46 and the regulations adopted under this statute, grants to:

Teck Alaska Incorporated

The approval to modify the following structure at the **Red Dog Mine** in accordance with the terms and conditions contained in this certificate:

Red Dog Tailings Main Dam (NID ID# AK00201)

The location of this project is: S31, T31N, R18W, Kateel River Meridian

The holder of this certificate shall:

- Modify the dam and appurtenant works in accordance with the construction documents listed in Attachment A.
- 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 listed in Attachment A, attached hereto and made a part hereof.

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CERTIFICATE OF APPROVAL TO MODIFY A DAM
Red Dog Tailings Main Dam

This *Certificate of Approval to Modify a Dam* is granted subject to the pertinent statutory provisions in AS 46.15 and AS 46.17 and the Administrative Regulations in 11 AAC 93. This certificate is valid only for the time period indicated in Attachment B.

APPROVED BY: Charles F. Cobb, P.E.
TITLE: state Dam Safety Engineer
Division of Mining, Land and Water
SIGNATURE: *Charles F. Cobb*
DATE: *April 6, 2020*

State of Alaska)
) SS.
Third Judicial District)

This is to certify that on *April 6*, 2020, 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 in and for the State of Alaska

My Commission expires: *with office*

HENRY C. BROOKS
Notary Public
State of Alaska

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CERTIFICATE OF APPROVAL TO MODIFY A DAM
Red Dog Tailings Main Dam

Attachment A – Special Conditions

1. This work authorized by this certificate is described in the Technical Memorandum subject “Work Plan for Proposed 2020 Geotechnical Investigation at the Tailings Main Dam, Red Dog Mine, Alaska” by Golder Associates dated March 19, 2020. This approval only applies to the investigation, the installed instrumentation, and the borehole completion procedures as described in the plan.
2. An engineer qualified in accordance with 11 AAC 93.193 must be in direct responsible charge of observing the work. If the engineer is unable to be physically present at the site, a field engineer, geologist or technician must be on site and must observe the work as directed by the the qualified engineer.
3. Any unexpected performance of the drilling or the instrument installation in the dam should be reported to Department within 24 hours.
4. Any existing instrumentation potentially affected by this repair must be preserved and remain operational, or be replaced, unless specifically approved for removal or abandonment by the engineer of record and the Department.
5. Any new piezometers and thermistors installed during the work must be maintained and monitored in accordance with a revised operation and maintenance manual for the dam as required by 11 AAC 93.197, and collected data must be included in the annual instrumentation report required under the most current *Certificate of Approval to Operate a Dam* for the Red Dog Tailings Main Dam.
6. If any conditions are encountered which require substantial clarification, deviation or change from the Technical Memorandum, the clarification, deviation or change must be approved in writing by the qualified engineer and submitted to the Department. Any clarification, deviation or change that could affect the safety of the dam must be approved in writing by the Department before continuing that aspect of the investigation or repair. The engineer of record shall maintain a sequentially numbered record of all clarifications, deviations and changes in the work plan.
7. No later than March 31, 2021, provide a report on the geotechnical investigation including a description of borehole completion for each boring, recommended geotechnical design parameters based on the field and laboratory test results and other information, and recommendations for additional geotechnical investigation and testing as needed to characterize the site for the detailed design of the expanded facility.
8. This certificate of approval expires on December 31, 2020.

End of Attachment A

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