



Rio Tinto Closure
4700 Daybreak Parkway,
South Jordan, Utah 84095

October 16, 2023

Anne Marie Palmieri
Environmental Program Manager
Alaska Department of Environmental Conservation
P.O. Box 1542
Haines, AK 99827

Re: Beatson Mine – Proposed Cleanup Approach

Dear Anne Marie,

This letter summarizes the conceptual cleanup approach proposed by Rio Tinto for the Beatson Mine Site (Site) on Latouche Island, Alaska. The remedial scope reflects the coordination with the Alaska Department of Environmental Conservation (DEC) to date and will be described in greater detail in the Draft Site Cleanup Plan which will be submitted to DEC in Q1 2024. The intent of this letter is to provide DEC with an overview to gain concurrence of the cleanup scope as the project work advances in support of the development of the Draft Site Cleanup Plan. The specifics of the Site Cleanup Plan will be developed in consultation with DEC for formal review and approval in the coming months.

Project Background

The Site is located on the northwest part of Latouche Island, Prince William Sound, Alaska and consists of a group of three abandoned underground copper mines: the Beatson Mine, Blackbird Mine (including Lower Blackbird and Blackbird Mines), and the Chenega Claim. The Kennecott Copper Corporation owned the mine until 1962, when it reserved the mineral estate and conveyed the surface estate to a private developer, who subdivided the former mine property and constructed roads using waste rock previously removed from the mine. In 1989, Minaska, Inc. (predecessor to Kennecott Royalty Company, a Rio Tinto Subsidiary), acquired from a subsidiary of BP America, Inc. the mineral estate reserved by Kennecott Copper Corporation. In 2016, Rio Tinto, on behalf of Minaska, Inc. and its successors, began investigating possible environmental impacts at the Site after receiving a Potentially Responsible Party letter from DEC in December 2014. The individual property owners were also identified as potentially responsible parties. Although Minaska Inc. did not own or operate the mines, Rio Tinto (on behalf of Minaska Inc. and its successors) has been conducting investigative work since 2016 to determine the extent of contamination and potential remediation requirements. Rio Tinto has submitted several Site Characterization Reports to DEC with respect to the extent of contamination and has engaged DEC in technical dialogue on multiple topics related to site investigation, risk assessment and remedial planning. DEC is aware of the Rio Tinto Stage Gate process of evaluating closure projects as detailed in a Memorandum of Understanding (Rio Tinto/DEC, September 2020). Currently, the Site is being evaluated at a Pre-Feasibility Study level which focuses on assessing potential remedial options based on the conceptual site model to identify a preferred option. The specific engineering details for the preferred remedial option are still in development, but an overall conceptual cleanup plan has been identified and is described in the following section.

Proposed Cleanup Approach

The site conditions, waste rock, surface water, and groundwater cleanup decisions are interconnected. Overall, the plan consists of source control of contaminated materials, natural attenuation for surface water and groundwater, and application of institutional controls.

Management of Metals

There are three main elements of the remedial plan with respect to managing contamination due to metals:

- **Manage waste rock & upland tailings and metal-impacted soil and creek sediment.** The remedial strategy focuses on removal and consolidation of point sources into an engineered, on-site repository. The waste rock is highly weathered and acid rock drainage (ARD)-generating. Managing waste rock and other metal-impacted media will control the contamination source and reduce future loading to groundwater and surface water, as follows:
 - The extent of waste rock currently targeted for remediation as well as the likely location of the engineered repository has been identified on the Western Ridge of the site.
 - The repository cover (placed in order from lowest to highest layers) is assumed to consist of a layer of protective soil (to ensure a smooth surface on top of the waste rock), followed by a low-permeability liner and a geocomposite drainage layer, followed by a layer of general fill and a layer of soil to allow for revegetation.
 - Additional volumes of metal-impacted soil (typically, areas near waste rock piles or roads where diffuse waste rock is mixed with soil) will also be added to the waste rock repository. The extent of those areas will be defined by Alternative Cleanup Levels (ACLs) designed to protect wildlife populations and future land uses. The ACLs are derived following state regulations and will be reviewed and approved by DEC prior to their application in the Site Cleanup Plan.
 - Contaminated sediment from creeks will be removed wherever accessible and with consideration of construction impacts to riparian areas and placed in the engineered repository. Creek grades will be restored with suitable borrow material.
 - Areas where waste rock, uplands tailings or soil have been removed will be reclaimed with suitable vegetation.

- **Implement institutional controls.** The human health ACLs reflect the expected future use of the land with application of appropriate institutional controls developed in consultation with DEC. Rio Tinto owns the majority of mine-impacted properties or is actively engaged with all other mine impacted landowners to implement practical and acceptable institutional controls that will be enforced with an environmental covenant per state regulation. The specific types of institutional controls will vary for different areas of the Site but are expected to include requirements that groundwater and impacted surface water bodies are not used as a source of potable water, the engineered repository is not disturbed (e.g., no digging), impacted land is not used for an unrestricted full-time residential use, and no building construction occurs within subsidence areas. Recreational and commercial land uses are likely to be permissible. Ongoing confirmation that the ICs remain in place, including regular inspection of the engineered repository, and reclaimed areas is anticipated.

- **Monitor for post-remedial attenuation.** Post-remedial monitoring to confirm the anticipated reduction in groundwater and surface water loading will follow a DEC-approved monitoring plan. Our assessment of mass loading and site data collected to date, as well as experience at other sites (including sites where UAAs have been approved), indicate that a significant reduction in loading, once waste rock and tailings have been removed, will occur over time. Nonetheless, default surface water quality standards are likely unattainable in a reasonable time following implementation of the remedial actions. The cleanup plan objectives are to demonstrate that the

loading reduction has occurred, and that surface water has established a new, stable condition, with improved water quality relative to the pre-remedial baseline conditions.

Management of Surface Water

Surface water contamination is addressed via removal of source materials and reduction in metals loading as described above, therefore water quality will improve and be documented via post-remedial monitoring. Treatment of surface water is not practical for the Site due to the remote location and lack of infrastructure. Removal of waste rock and debris will also lead to the removal of some artificial impoundments and lead to minor changes in watercourses, but in principle, no major diversions or construction of new watercourses is expected. In summary:

- Minor changes to the headwater of the Blackbird Creek system will be made as a result of removing the Blackbird waste rock pile and the waste rock used for road construction which is expected to restore the topography to a more natural state. No changes to the main channels of the south and north forks of Blackbird Creek are expected.
- The Beach Level Portal will be closed to prevent access by people but continue to discharge water, consistent with the other adits on the Site.

Other Components

Other elements of the remedial plan in addition to the metal-focused remedial actions noted above include:

- **Debris management.** Debris from former mine infrastructure will be recycled and taken off-site or disposed of on site within the engineered repository. Debris consists of metal, concrete, wood, and other materials. Wood will not be placed in the engineered repository to avoid future decay and settlement within the repository and is anticipated to be burned on Site, evaluated for on-Site reuse, or recycled off site. Limited separation, segregation to allow for on-site re-use may be possible (e.g., salvaging of timbers, crushing and recycling of concrete). Any hazardous materials (such as fuel cans, batteries, etc.) encountered will be disposed off-site in an appropriately permitted facility.
- **Mine openings.** A site-specific hazard assessment for all mine features will be used to guide the selection of appropriate mitigation approaches. At a minimum, barriers to prevent human ingress to mine openings will be installed, with the specific closure option for each location dependent on the hazard assessment and compliance with Rio Tinto safety standards.
- **Hydrocarbon management.** An area of the site has residual concentrations of hydrocarbons from the historical storage and use of bunker oil for power generation. These hydrocarbons are highly weathered and limited to the recalcitrant fractions (i.e., residual range and diesel range organics). The residual hydrocarbons are not mobile or volatile and have not impacted groundwater or surface water. Remediation of these residual hydrocarbons will be completed per DEC requirements and is anticipated to include focused excavation and off-site disposal or on-site stabilization and disposal within a repository.

Please feel free to contact me at (760) 514 8146 or Roney.lima@riotinto.com if you have any questions or need further information.

Sincerely,



Roney Lima
Asset Manager, Closure Americas

The logo for RioTinto, featuring the word "RioTinto" in white serif font on a red rectangular background.

Rio Tinto Closure
4700 Daybreak Parkway,
South Jordan, Utah 84095

cc:

Brandice Nobis, Rio Tinto

Craig Stevens, Rio Tinto

Jessi Massingale, Floyd|Snider

Colby Caywood, WSP

Blair McDonald, WSP