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Sent via email

RE: Kensington Gold Mine POA1 draft SEIS Comments

Mr. Heithecker:

Thank you for the opportunity to submit scoping comments on the proposed amendment to the 2005 Plan of Operations (POA1) and the draft supplemental Environmental Impact Study (SEIS) for the 2004 final SEIS and Record of Decision for the Kensington Gold Mine Project. The agency published the Notice of Intent for this SEIS on September 23, 2019.

Berners Bay lies just below this project and will be impacted by increased development, transportation of fuel and materials, and faces the almost certain eventual failure of the dam projected to be holding 9 million tons of semi-liquid tailings by 2033. This very type of tailings management design contributed to the devastation at the Mt. Polley Mine in British Columbia and was cited by the Expert Panel as a practice that needs to be discontinued. In describing the future mining industry, the Expert Panel defined Best Management Technology (BAT) as "filtered, unsaturated, compacted tailings and reduction in the use of water covers in a closure setting."[1]

Berners Bay is heavily used by Juneau residents and visitors for recreation, sport and subsistence hunting and fishing, weekend outings, and simply as a place to get away from it all. Berners Bay provides spawning and rearing grounds for herring and hooligan, feeding opportunities for marine mammals and migratory birds and intact habitat for mountain goats, brown bear and moose. Any impacts to Berners Bay will be felt over the much larger area of Lynn Canal and southeast Alaska. The full value of this productive ecosystem is immeasurable and therefore must be protected at all cost. Because this project operates on public lands administered by the Forest Service, this project must be held to the highest standards and the operation carried out in a way that assures the long term integrity of Berners Bay. The Forest Service must take a precautionary (conservative) approach to fulfill its public trust responsibilities as Tongass managers and apply the most protective BAT's.

[1] Independent Expert Engineering Investigation and Review Panel. January 30, 2015 at iv. Available at: https://www.mountpolleyreviewpanel.ca/sites/default/files/report/ReportonMountPolleyTailingsStorageFacilityBreach.pdf.

The Forest Service must take into account the concerns raised below and provide a serious analysis of alternative tailings storage technologies for this project.

The Southeast Alaska Conservation Council (SEACC) has worked with communities across Southeast Alaska, from Yakutat to Ketchikan, to conserve their interests in the Tongass National Forest. SEACC's membership includes commercial fishermen, Indigenous peoples, small-scale timber operators, tourism and recreation business owners, hunters and guides, and concerned citizens from all walks of life. SEACC is dedicated to safeguarding the integrity of Southeast Alaska's unsurpassed natural environment while providing for balanced, sustainable use of our region's resources.

Proposed Action and Purpose

Under the proposed POA1, Coeur Alaska requests an additional 4.5 million tons of tailings disposal capacity in the Tailings Treatment Facility (TTF), formally known as Lower Slate Lake, to extend the life of mine another 10 years. This volume of tailings is the same amount authorized in 2004 thereby doubling the amount of tailings disposed into Lower Slate Lake. To accomplish this, Coeur Alaska requests another rise (number 4) to the impoundment dam. The resulting rise in water elevation will require construction of a causeway (back dam) separating Upper Slate Lake from the TTF to avoid a Waters of the U.S. decision in the near term. The causeway would be removed at closure and the TTF allowed to flood Upper Slate Lake and some of its tributaries. Missing from the proposed POA1 is any discussion regarding the need to change the Use Protection Designation of Upper Slate Lake. The increase in the area inundated by water will require the relocation and/or rebuilding of major project infrastructures including the water treatment plant, various roads, power lines, storm water diversions and pipelines. In addition, Coeur Alaska seeks to expand three waste rock disposal areas and construct a new waste rock pile.

According to POA1, Coeur Alaska proposes to offset the inundation of stream habitat in Upper Slate Creek by the re-routing and lengthening of Fat Rat Creek, changes to South Creek, and construction of a delta.

Additionally, the applicant seeks to increase the project's mill capacity from 2,000 tons per day (tpd) to 3,000 tpd. Coeur intends the increase in mill production will "add operational flexibility and make up for periods of maintenance shutdowns." *See* POA1 at 1. The current permitted mill processing rate is 2,000 tpd but historical production has averaged approximately 1,800 tpd or 90% of permitted production. *See* POA1 at 2. Proposed POA1 offers no information as to how the mill will accomplish this increase in production. Overall, the proposed action in POA1 will increase the surface disturbance from 239 acres to 394 acres, a 49% increase in the amount of National Forest lands disturbed. *See* POA1 Table 4-1 at 41.

Closure plans are only 'conceptual' and include flooding underground workings by the placement of yet to be designed portal plugs. The workings will flood to the point of elevation where a constructed bulkhead will divert all ground water from the Kensington side of the Project to the Comet Beach side, so "the water can be managed in one location." *See* POA1 at 68. No other information is offered on bulkhead construction or the expected design of the new Comet water management and treatment system.

Under NEPA, the Forest Service must take a hard look at the environmental effects of the proposed action, examine reasonable alternatives and provide a clear basis for the selection of an alternatives. *See* 40 C.F.R. 1502.14.

Authority

The approval of Coeur Alaska's request to amend its plan of operations constitutes an "action" over which the Forest Service has both involvement and control. The Forest Service is the lead agency on the Kensington Gold Mine Project and has authority to require, evaluate, and approve or modify the Coeur's Plan of Operation based on the *Organic Act* of 1897 and on the *Mining Law* of 1872, which is described in 36 CFR Part 228, Subpart A. The Forest Service may not rely on another agency, state or federal to carry out this duty. If another agency cannot meet its regulatory responsibilities, the Forest Service is ultimately responsible for ensuring that federal and state regulations are implemented on National Forest System lands.

SEACC identifies the following significant issues for the agency to consider as it proceeds with this NEPA process.

SIGNIFICANT ISSUES TO BE ADDRESSED IN THE DRAFT SEIS

1). The Forest Service Must Evaluate the Reasonably Foreseeable Effects of this Project Continuing after 2033

NEPA requires that the Forest Service consider all cumulative impacts. *See* 40 C.F.R. § 1508.25(c). Cumulative effects may result from "[t]he incremental impact of the action when added to other past, present, and reasonably foreseeable future actions." *Id.* § 1508.7. It is reasonably foreseeable that the mining operations will continue past the purposed 10-year authorization and those impacts must be analyzed now.[2]

Mining has occurred intermittently in the Lions Head Cirque since 1887. The original 1997 SEIS for the Kensington Project estimated a life of mine of 12 years after an initial of construction period of 2 years. Due to changes in the plan of operation and appeals, production did not actually begin until 2010. As Coeur's own documents indicate, the project contains further expansion potential in the main Kensington and Raven deposits as well as the Comet-Seward, upper and lower Elmira, upper Raven and the new Johnson Veins. *See* Annual Report at 27.[3] As of the final quarter of 2018, Coeur has invested $324,414,000 of capital costs toward infrastructure at the site. *Id*. at 98. As noted above, implementation of proposed POA1 will require additional investment in mill expansion including grinding and floatation cells, energy

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[2] Note; Kensington's presentation at the 2019 Alaska Miners Association Convention in Anchorage, AK November 6th titled "Geologic Modeling at Coeur Alaska Inc.'s Kensington Mine "It Just Keeps Getting Better" by Mike Sphelmann, Coeur Alaska

[3] Available at: http://www.annualreports.com/HostedData/AnnualReports/PDF/NYSE_CDE_2018.pdf.

generation, relocation and rebuilding of major infrastructure, increasing tailings storage and development of mitigation.

It is reasonably foreseeable that Coeur Alaska will continue to expand its reserves through exploration during the duration of this permit and continue operating past 2033 in order to recover the capitol expenses of upgrades and expansion. The Applicant has every incentive to fully develop all the probable mineral reserves at its Kensington and Jualin properties to maximize the return on investment. It is incumbent on the Forest Service to take a hard look at this reasonably foreseeable expansion now, not later after the mine infrastructure under this Amended Plan of Operation is approved and constructed. As noted by the U.S. Supreme Court, "NEPA ensures that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast." *Robertson v. Methow Valley*, 490 U.S. 332, 349 (1989).

The Forest Service does not have the option of ignoring the reasonably foreseeable possibility of a longer life of mine regardless of the scope of the submitted Plan of Operation or any Alternative preferred by the applicant. The agency has a duty to consider all reasonably foreseeable future actions.

In addition to future actions, the Forest Service must also consider the cumulative effects from potential construction of a road from Echo Cove to Berners Bay, reduced ferry service in Lynn Canal and potential development of the Herbert Glacier Project. These projects directly affect national forest lands subject to the jurisdiction of the Forest Service. Thus, while separate, all these actions will have cumulatively significant social, economic, and environmental effects.

NEPA requires the Forest Service to "describe the environment of the areas to be affected or created by the alternatives under consideration," including the no action alternative. 40 CFR § 1502.15. The No-action Alternative must include predictions of the foreseeable consequences of closure. The Forest Service must consider the possible centuries of maintenance that may be needed for the existing project. Additionally, the Forest Service must examine the performance of the existing permitted actions based on the 2004 ROD to help inform projected performance of alternatives. The Forest Service is not precluded from following the procedures under the Administrative Procedures Act for reversing or modifying a prior decision. *See, e.g.*, 5 U.S.C. § 558(c).

2). The Forest Service Must Address the Performance, Compliance and Other Outstanding Issues with the Implementation of the Current Action before Extending Life of Project.

As the lead agency, the Forest Service must consider Coeur Alaska's performance in implementing the approved 2004 POO when addressing risks associated with any Alternative selection. SEACC questions whether implementation of the chosen Alternative in 2004 has been successful. This Project has a history of violating water quality regulations and other compliance and reporting issues.

On August 8, 2019 the US Environmental Protection Agency (EPA) entered into a consent agreement with Coeur Alaska settling two hundred wastewater discharge violations, unauthorized discharge of acid rock drainage, multiple effluent sampling violations, failure to conduct required monitoring, assessments, inspections and trainings, failure to use proper sample handling and analysis procedures and failure to report releases of nitrate compounds from 2013 to 2017 among other violations. *See* https://www.epa.gov/newsreleases/epa-and-coeur-alaska-settle-over-alleged-kensington-mine-pollution-discharges. The EPA noted that mine water discharges not properly controlled and treated can harm water quality and aquatic life.

Continuing Non-Compliance

Many of these issues remain unresolved. *See* APDES Annual Report 2017 Volume 2: Water Quality.[4] The most recent compliance data shows that acute copper standards are still routinely exceeded in Johnson Creek. *Id*. at 12. Acute copper standards were exceeded for the first time in Slate Creek during the 2018 water year and manganese still remains an issue exceeding the Human Health Consumption of Water and Aquatic Organisms standard in November 2018. *Id*. at 14-15.

Sherman Creek shows exceedances in the acute water quality standards for copper in both January and November 2018, with values of 15.7 ug/L and 6.6 ug/L respectively. *Id*. at 16. Monitoring in Ophir Creek shows exceedances of nitrate, sulfate and total dissolved solids during 2018 with similar exceedances in previous years. *Id*. at 17-18. Similar exceedances occur in Lower Slate and Johnson Creeks.

A recent check with EPA Enforcement and Compliance shows that Coeur Alaska is still out of compliance due to the continued failure to maintain proper records and submit required reports.[5]

Unresolved Issues

Still unresolved is the nature or prevention of the 'white material' showing up in the surface waters below Outfall 001. *See* Inspection Report: Kensington Gold Mine-Monday September 23, 2019, as well as several previous inspections.[6] This material could be a byproduct from the current water treatment system. This must be resolved and alternative water treatment systems considered during this NEPA process.

Coeur Alaska's reliance on Site Specific Criteria (SSC) for sulfate for Outfall 001 is not protective of fishery values for a couple of reasons. The SSC at 18 AAC 70.236(b) sets the limit for sulfates associated with magnesium and sodium at 200 mg/l. Only considering sulfate bound with sodium (Na) and magnesium (Mg) ignores any contribution of sulfates associated with iron, the most common form of sulfate (pyrite), or calcium (gypsum).[7] The effluent limit for 'sulfate

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[4] February 2019. Available at: http://dnr.alaska.gov/mlw/mining/largemine/kensington/pdf/apdeswq2018.pdf

[5] See https://echo.epa.gov/detailed-facility-report?fid=110055091699. Last accessed 10/3/2019.

[6] Available at: http://dnr.alaska.gov/mlw/mining/largemine/kensington/pdf/inspections/KGM-176-2019-09-23.pdf

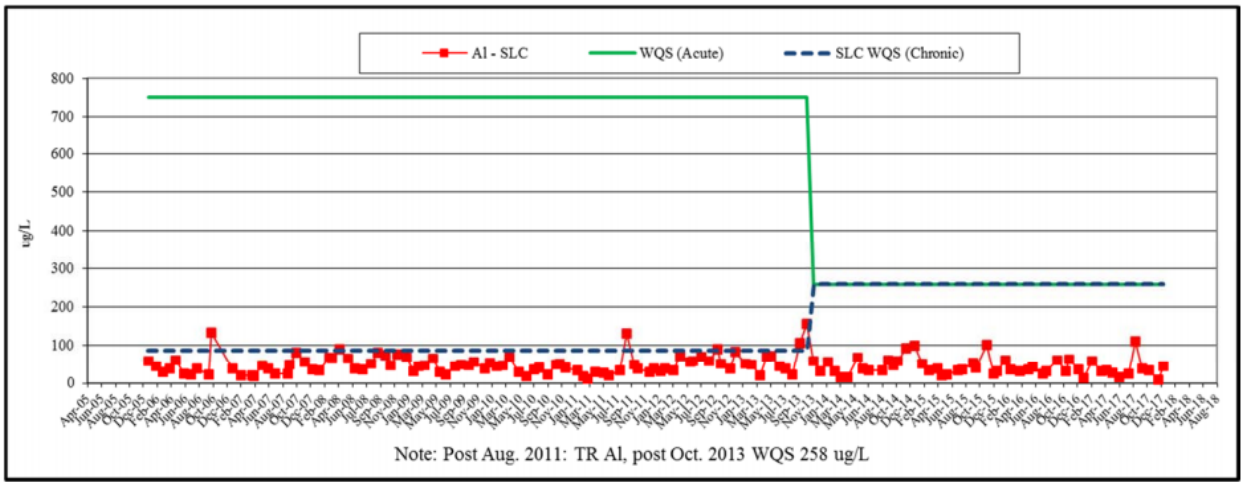
[7] It is very probable that calcium sulfate is the mysterious "white substance" persistent below Outfall 001 and could be a by-product of excessive lime treatment.

associated with the ions of Na & Mg' is set at 200mg/L, however, the Total Dissolved Solids (the sum of all ions) is set at 1000mg/L, more than enough room to mask the contributions of sulfate that may be in the form of iron or calcium sulfate. *See* FFS AK0050571 at 14. There is no justification to measure or monitor sulfate in this manner.

The SSC also relies on a 'sulfate by calculation' method for monitoring that does not exist. It is not included in EPA methods or Standard Methods nor has this method ever been published in the Federal Register. Repeated attempts by SEACC to have the Alaska Department of Environmental Conservation or EPA produce any record of promulgation of such a method have been unsuccessful. The Forest Service must resolve this discrepancy and require the use of approved methodology.

In 2013 Coeur employed an unsupported change to the aluminum criteria for Slate Creek that miraculously brought them into compliance. *See* below.[8]

Figure 12c: Slate Creek (SLC) Monitoring Results 2006-2017, Trace Chemistry



When discussed at the Annual Meeting, SEACC was told that this represented an Upper Tolerance Limit (UTL). UTL's are not meant to be a standard or criteria. UTL's are a statistical analysis of the confidence that levels of contamination can be detected above background at a particular sample site. It does not set background levels or establish new criterion. It is also not a natural conditions determination or a site specific criteria. There is no justification to change the 86 mg/L chronic level for aluminum. Coeur Alaska should comply with published aluminum criteria and work to resolve the exceedances.

The Forest Service must consider that it has the authority to alter project operations and/or require additional mitigation actions for impacts that are likely to or do result in violations of regulatory stipulations. *See* 2004 ROD at 11. Although the Forest Service is not precluded from following the procedures under the Administrative Procedures Act for reversing a prior decision, it is preferable that these impacts be avoided in the first instance. *See e.g.*, 5 U.S.C. § 558(c). If

[8] Available at: http://dnr.alaska.gov/mlw/mining/largemine/kensington/pdf/apdeswq2018.pdf

Coeur is unable to remedy these current violations, what basis does the Forest Service have to estimate performance in the future?

The Forest Service must begin this supplemental NEPA process by resolving the outstanding issues surrounding implementation of the last decision. The Forest Service must take a hard look at its reliance on the Alaska Department of Environmental Conservation (ADEC). Despite effluent quality violations dating back to 2013 cited by EPA, ADEC took no action. The wastewater discharge permit was re-authorized despite the violations listed in the Final Fact Sheet. *See* APDES FFS for AK0050571 Table 1 and 2 at 9-13.[9] It does not appear that ADEC has even conduced a site inspection of the APDES operations.[10] The Forest Service must consider evaluating the capacity of ADEC to fulfill the responsibilities the Forest Service is relying on.

3). The Forest Service has a Duty to Require the Applicant Provide Adequate Baseline Data to Inform the Draft SEIS and Closure Plan

The Forest Service must require adequate baseline information to assure that the "beneficial uses consistent with State Water Quality Standards" and "the present and continued productivity of water resources" in affected watersheds and Berners Bay will be met within reasonable certainty in each Alternative. *See* Tongass Land Management Plan at 3-156. Any measure of future performance starts with a robust assessment of baseline conditions.

The current amount of data included in POA1 is inadequate and unreliable. Upper Slate Creek is the primary source of water feeding into the TTF. Projecting future water quality and quantity is critical to the continued productivity of the watershed, the long-term performance of the water cover, and to prevent overflow discharges. To support POA1, Coeur staff collected only four samples at two sites above Upper Slate Lake. All of the sampling was conducted in one year between the months of August–November. *See* Table 6 at POA1. This level of data fails to account for seasonal variance, let alone longer-term fluctuations over the proposed 10-year life of mine, or the 'forever' life time of the closure plan. The applicant provides no information on discharge volumes during the typically driest month of March. *Id*. at 6.

South Creek is the site for mitigation designed to off-set lost habitat in Upper Slate Creek, yet the POA1 only provides data from three months in a single year; September to November 1, 2017. *Id.* Figure 3 at 24. Fat Rat Creek which POA1 describes as being lengthened and re-routed into South Creek was only sampled once and that was apparently by accident. *Id*. This level of data provides no basis for measuring the performance or sufficiency of the proposed mitigation.

POA1 offers no data on the local hydrology of the Spectacle Lakes/Fat Rat Lake system. It is clear this area is a wetland of interconnected ground and surface waters. POA1 suggests that the relocation and increased flow in Fat Rack Creek may lead to channelization or scouring, but

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[9] Available at: http://dnr.alaska.gov/mlw/mining/largemine/kensington/pdf/dec/dec_ak5005071_2017fact.pdf
[10] See Inspection Reports at: http://dnr.alaska.gov/mlw/mining/largemine/kensington/

offers no information as to how this may affect the surrounding wetlands by either cutting off side channels or dewatering connected wetlands. Any analysis of hydrological effects must also consider isostatic rebound and climate change that will have synergistic effects to the proposed Plan. In addition to the physical effects, more data should be collected on biological effects. The Forest Service must conduct a new Biological Assessment/Biological Evaluation (BA/BE) for Upper Slake Lake, Fat Rat and South Creek and the Spectacle Lakes complex.

The Forest Service must specify the sufficiency of the data required for it to make a reasoned decision and require its collection in order to inform the agency's evaluation and conclusions regarding the effectiveness of each proposed alternative.

4). The Forest Service Must Identify Reasonable Alternatives to the Closure Plan

Even in the unlikely scenario that the closure plan is implemented in 2033, the plan described in POA1 is inadequate for consideration as an alternative in the draft SEIS.

Diverting ground water to the Comet Beach side

POA1 describes a 'conceptual' closure plan that calls for a portal plug for the Kensington and Jualin portals. Coeur will install an underground bulkhead at the 1007-foot elevation. Once the lower workings flood to this level, the bulkhead will divert the accumulating water to the Comet Portal where the water can be managed in one location. *See* POA1 7.6 at 68. Coeur will not provide a final design or cost estimate for any of these structures to the Forest Service until two years prior expected shutdown of the Mine. This is far too late for the agency to meaningfully consider this critical information before it makes a final decision on whether to approve the POO, as amended.

If this conceptual plan is to be carried over in one or more Alternatives, the Forest Service must analyze the effects of removing the contribution of Kensington ground water to the water cover over the TTF and conduct a new water balance calculation. The Forest Service must take a hard look at the feasibility of collecting and treating mine water on the Comet Beach side especially in light of the issues Coeur has had with compliance under the current authorization.

The Forest Service must support any assumption it makes as to the effectiveness and long term performance of portal plugs to prevent either slow releases of ground water through rock fractures or catastrophic failure of the plugs themselves. Coeur Alaska must provide an adequate plan prior to the draft SEIS so as to inform both the agency and the public about the closure plan, including the level of bonding necessary to assure full implementation.

Consideration of Climate Change

The performance and risk assessment of any Alternative must be based on the ability of the Forest Service to accurately predict the effects of climate change. Given the uncertainties associated with predicting climate change impacts, this evaluation will necessarily be imprecise. The probability of predicting the success of any Alternative is limited by this low precision. Therefore, climate change becomes the measuring stick, the minimum detection limit, against which the agency should base the risk analysis for all Alternatives. The Forest Service cannot

calculate the future performance of any Alternative, including the No-Action Alternative more precisely than it can predict the effects of climate change. The Forest Service must incorporate this uncertainty into its alternative analysis.

> **"**Climate change poses threats to numerous ecosystem services. Key threats include changes to sea levels, increased storm intensities, ocean acidification, warming ocean and stream temperatures, increased retreat of glaciers, changing precipitation amounts and patterns, changes to evapotranspiration rates, changing distributions of species, changing outbreaks of insects, changes to ecosystem productivity, and changing fire regimes. Mitigation of some impacts may be possible with strategic planning, but many impacts cannot be mitigated, and these effects will need to be accounted for and addressed in future forest plans and management actions."[11]

A general summary of predicted climate changes for landscapes include the following: temperature increases, with winter temperatures increasing at a higher rate than summer temperatures; increase in length of growing seasons and the number of frost-free days; shifts in temperatures in seasonal transition months from below freezing to above freezing; increase in precipitation; more rain instead of snow; increase in evapotranspiration rates; a decrease in P-PET ratios (Precipitation versus Potential Evapotranspiration) in the summer causing dryer summer conditions at the location and an increase in storm intensities. *Id* at 8. Parenthetical added.

Increased storm intensities may cause several potential impacts to the area from increased wind throw or changes to stream morphology. Projections of future changes anticipate even more dramatic effects and have been shown to err on the conservative side. The Forest Service must consider the likelihood of successfully maintaining the water balance in the TTF or in the mitigated wetlands. If the probability of success of any alternative becomes too small based on climate change or any other factor, another alternative must be selected.

4). The Forest Service Must Consider an Alternative to a Submerged Tailings Design.

Related to all the issues above, the Forest Service must consider an Alternative to the submerged tailings cover design proposed by Coeur for the TTF. POA1 is an extension of the same tailing storage plan described in the 2004 ROD. The issues with the overall performance of the current facility has been discussed above. SEACC has identified additional considerations that should be addressed.

<u>Issues with Water Balance</u>

POA1 calls for a minimum water cover of nine feet above the tailings during the operational phase of the project to prevent oxidation of any sulfides present and to limit the ability of wildlife to directly access the tailings. The water cover also serves to allow retention time for the tailings solids to settle from the supernatant water. *See* POA1 at 26.

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[11] Climate change: anticipated effects on ecosystem services and potential actions by the Alaska Region, U.S. Forest Service. Ecosystem Management Research Institute, Seeley Lake, Montana, USA. At 2. Available at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev2_038171.pdf

At closure or in consideration of the No-Action Alternative, a minimum water cover of 28 feet must be maintained forever in order to support benthic life and fish populations. *See* POA1 4.2 at 23. At all times the TTF must also maintain a storm surge capacity, corresponding to the one in 200-year precipitation event above the minimum water cover. Changes due to climate change predict that "rainfall rates and the frequency of heavy precipitation events are projected to increase particularly over higher latitudes."[12] Additional surge capacity should be considered.

The Environmental Audit performed in 2017 found that the TTF lake level was rising faster than the planned rate of rise and had encroached on the 200-yr, 24-hr storm surge storage threshold. This raises the possibility of an unplanned spillway discharge into Lower Slate Creek. *See* Kensington Mine 2017 Environmental Audit at 56.[13] The 2017 audit attributed the lake level rise to low water treatment-discharge rates. The benchmark water treatment plant (WTP) treat and discharge rate was 700 gallons/minute (gpm). *Id*. at 8-9. This is less than half the 1500 gpm flow rate permitted for Outfall 002. *See* FFS for AK0050571 Table 5 at 18.[14] Despite this inability to treat sufficient volumes of water to maintain storm surge capacity, POA1 still assumes a treatment rate of 1,500 gpm. *See* POA1 at 70. Even operating at 50% of the permitted rate, the WTP has a history of effluent quality violations. *See* Section 2, *supra* at 9. Based on past performance, the zero discharge treat and release concept for this facility is infeasible and another alternative must be evaluated.

If overflow conditions occur, the dam is protected by a spillway. The spillway prevents dam failure and the catastrophic effects of a liquefied tailings release into Slate Creek and Berners Bay. Long term closure plans do not attempt to estimate how long the spill way must remain intact. The Forest Service must assume it may be centuries. The spill way is built in the vicinity of the exposed graphitic phyllite (GP) deposit. The shotcrete sidewalls of the Stage 2 Interim Spillway already show effects of acid rock drainage (ARD) after only a few years.[15] ARD seepage may reduce the structural integrity of the Spillway, including degradation and spalling of the concrete. POA1 rather unhelpfully states that the "GP material encountered during construction of the Stage 4 Main Dam raise will be managed in a similar way as current practice (as described in Section 3.6)." *See* POA1 at 44. Parenthetical in original. Given the inadequacy of current practices, the Forest Service should evaluate alternatives that call for complete removal of the ARD material and disposal underground.

The Forest Service also must evaluate the effects of reduced precipitation during the summer months on the ability of Coeur to maintain the minimum water cover level required. Precipitation levels in 2017–2019 years were the lowest on record in Southeast Alaska. *See* Alaska's Changing Environment: Documenting Alaska's Physical and Biological Changes Through

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[12] See Climate Change Science: An analysis of some key questions. National Academies Press, 2001. Available at: https://www.nap.edu/read/10139/chapter/2

[13] Available at: http://dnr.alaska.gov/mlw/mining/largemine/kensington/pdf/kens_coeurak_envaudit2017.pdf

[14] Available at: http://dnr.alaska.gov/mlw/mining/largemine/kensington/pdf/dec/dec_ak5005071_2017fact.pdf

[15] See photo. USDA Inspection of the Kensington Gold Mine Report 176

Observations.[16] Shallow water may become too warm to support aquatic life. During the summer of 2019, very little water was discharged in order to maintain the water cover. Because of the treatment system designation of Lower Slate Lake, no data is collected on water quality or temperature at the TTF. The Forest Service lacks information as to the ability of Slate Lake to support aquatic life after closure during times of drought. Additional data should be collected to inform projected performance. The effects of periodic drought will be exacerbated by the proposed reduction of watershed area and rain catchment due to the flooding of the Upper Slate Creek tributaries at closure. Coeur's ability to maintain a correct water balance is uncertain.

When the reasonably foreseeable development of the project beyond 2033 is considered, a hard look must be taken at the limits of the current and proposed TTF design. The physical location of the dam will not allow any future increase in dam height. Submerged tailings cover for future increases in life of mine will not be an option at this site. The Forest Service must account for the future need of a separate or additional tailings storage system.

Alternatives to a Watered Tailings Facility

Environmentally Preferable Alternatives are alternatives that cause the least damage to the biological and physical environment and which best protect, preserve, and enhance historic, cultural, and natural resources of National lands.

The ROD for the Kensington Gold Project as amended May 28, 1998 identified a dry tailings disposal identified as the chosen Alternative (Alternative D). This ROD considered the advantages of dry tailings over wet tailings storage. Dry tailings have the advantage of not relying on the performance of an external structure (dam) for success. Revegetation can begin immediately and would require less long-term maintenance. Dry tailings eliminate the need to disturb a larger area of Forest Service land that would otherwise be inundated by water. Dry stack will lesson or eliminate the need for active water treatment. "The use of a dry tailings facility will address many concerns regarding long term stability." *See* 1997 ROD at 5. The Forest Service approved this amended plan of operations, consistent with the selected alternative.

In 2001 Coeur submitted an amendment to the approved 1997 Plan of Operations that resulted in an SEIS and ROD that authorized tailings disposal into Lower Slate Lake and required water treatment. *See* Alternative D: Modified TSF Design and Water Treatment, 2004 SEIS and ROD at 9.

Alternative D was chosen to address comments received and concerns about the TSF effluent meeting NPDES permit limitations intended to protect downstream water quality in East Fork Slate Creek below the TTF. Water would be pumped from the TTF to a reverse osmosis treatment system that would remove solids and metals to ensure compliance with permit limits.

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[16] H. R. McFarland, Ed. International Arctic Research Center, University of Alaska Fairbanks. 2019.[16] Available at: https://uaf-iarc.org/wp-content/uploads/2019/08/Alaskas-Changing-Environment_2019_WEB.pdf

Since implementation of POA1 would require an additional supplement to the 2004 SEIS it must be noted that reverse osmosis is not being utilized and the facility in not in compliance with permit standards.

The Forest Service should take another look at the feasibility of dry stack, paste or cemented tailings or other non-watered tailings disposal technologies. The Forest Service must require reverse osmosis for all discharge waters if the submerged tailings system is carried forward.

5). The Forest Service Must Consider Requiring Additional Mitigation.

The described mitigation plan of digging a new channel and lengthening Fat Rat Creek, diverting Spectacle Creek, and creating a delta at the confluence of South Creek to replace spawning habitat is inadequate. POA1 offers no clear plan and notes that "[d]epending on channel design, a delta of this size could provide 50–100 m of spawning habitat." *See* POA1 Revised Reclamation Plan at 39. This is less than half the 215 m of spawning habitat currently available. *Id*. at 42. Long term estimates of changes to hydrology, fine sediment transport during construction, channelization, sediment transport and the amount of time to 'stabilize' are not possible to predict within a 10-year life of permit because these effects may not materialize or resolve within 10 years. Isostatic rebound, forest succession into the wetlands and changes to precipitation due to climate change may quickly erase any man-made salmon habitat.

The only certain mitigation of these ecosystem values would be to permanently set-aside tracts of equal value in and around the project area. The Forest Service must consider land donations by Coeur, land or conservation trust options, enlargements to the Old Growth Habitat reserves or purchased tracks around Berners Bay to assure permanent protection of the identified values lost as a result of this mine project.

Alternatives Suggested by SEACC

If the Forest Service considers continuing the watered tailings facility at the TTF, then it must consider additional alternatives and requirements to address the on-going issues with implementation.

<u>Water Treatment</u>
Consider an alternative that allows water to be discharged only when it meets water quality criteria.[17] In the event Coeur cannot demonstrate that the discharge from the TTF would meet applicable water quality criteria through the SEIS and NPDES processes it should not be allowed to discharge at all.

The Forest Service must consider requiring mechanical treatment using pressure filtration in addition to chemical treatment.

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[17] Memornadum to: Gene Weglinski FROM: Rick Richins SUBJECT: Draft Contingency Water Treatment for Kensington Mine Project. July 14, 2004

The Forest Service must evaluate proposals to remove high levels of naturally occurring aluminum from the TTF discharge. The methods include at a minimum: 1) granular activated carbon (GAC) absorption; and 2) membrane treatment.

The Forest Service must consider requiring Reverse Osmosis (RO) treatment (permanently). This is a tested treatment process Coeur has proposed as a contingency in the event ongoing treatment is not determined to be effective. RO has been shown to be extremely effective in removing aluminum. RO was approved by ADEC but only used temporarily and the equipment removed. *See* Inspection Report 176: Kensington Gold Mine September 23, 2019.[18]

In light of repeated nitrogen exceedances; the Forest Service must evaluate requiring installation of a breakpoint chlorination system. This system has been approved by ADEC for the TTF but never installed.

Closing Statement

NEPA regulations require agencies to consider cumulative actions, "which when viewed with other *proposed actions* have cumulatively significant impacts and should therefore be discussed in the same impact statement." *See* 40 C.F.R. § 1508.25(a)(2) (emphasis added). While NEPA doesn't mandate particular results, it does prohibit uninformed agency action. This not only ensures that important effects of a proposed action will not be overlooked or underestimated by the decision-maker, but it also guarantees that the relevant information will be made available to the public, state, and local decision-makers.

NEPA also requires that significant actions on federal lands be evaluated in light of accurate and adequate information. At this point, neither exists. The Forest Service should require Coeur Alaska collect additional baseline information on Lower Slate Late, the upper Slate Creek watershed, Fat Rat and South Creek including the wetlands surrounding the Spectacle Lakes system.

The Forest Service must consider past performance when predicting future outcomes. It is clear that as designed and operated, the current plan of operation is not working. It either must be abandoned in favor of an alternative or modified to regain compliance. The Forest Service cannot rely on Alaska State agencies to perform this responsibility.

The Forest Service should utilize the experience of similar operations when evaluating the future performance of this action. The Forest Service must consider the conclusions of the Mt Polley Expert Panel and consider eliminating submerged tailings storage as a management practice.

The Forest Service should require adequate bonding based on the values of the surrounding National Forest and waters. This level of bonding must consider that active maintenance may be required forever.

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[18] Available at: http://dnr.alaska.gov/mlw/mining/largemine/kensington/pdf/inspections/KGM-176-2019-09-23.pdf

The Forest Service should incorporate the reasonably foreseeable scenario that this project and life of mine will be extended well past the 10 years described in POA1 and require the information necessary for the agency and public to evaluate that consideration.

Any EIS process is necessarily a forward-looking examination of the performance and risks associated with the proposed action and alternatives. A large amount of uncertainty exists in either the 10-year life of mine or the forever closure plan. The amount of this uncertainty must be based on the largest contributor to that level of uncertainty; climate change. Therefore, the Forest Service must take a conservative approach throughout the entire draft SEIS and incorporate the precautionary principle at every step.

Thank you for considering these comments.

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