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Sent via Email

Re: Comments on the Kensington Mine Draft Supplemental Environmental Impact Statement (DSEIS) based on the amendment to the 2005 Plan of Operation (POA1)

Mr. Reece,
Please accept these comments on behalf of the Southeast Alaska Conservation Council (SEACC) and the undersigned non-governmental organizations, representing thousands of Alaskans.

The 2020 DSEIS is in response to Coeur, Alaska's (applicant) proposed amendment to the approved 2005 Plan of Operation (POA1) for the Kensington Gold Mine for the purpose of extending the life of the mine on Tongass National Forest Lands beyond 2023 for a minimum of 10 years. These lands are administrated in trust by the United States Department of Agriculture as implemented by the U.S. Forest Service on behalf of the citizens of the U.S. to protect the public's common interest. The role of the Forest Service as identified in its mission statement is "to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations."[1] The Kensington Mine has been operating for 10 years and has already created the need to maintain structures in perpetuity to protect the vast downstream productive and unique resources of Berners Bay for all future generations.

Berners Bay encompasses a wide range of critical and unique ecosystems, including snow-capped alpine peaks, old-growth Sitka spruce and hemlock forest, cottonwood floodplains, freshwater marshes, and saltwater estuaries. The bay is habitat for thousands of coho and sockeye salmon that support local commercial and sport fisheries, and commercial catches of king, tanner, and Dungeness crab, and shrimp. Berners Bay contains the last healthy spawning population of herring in the greater Lynn Canal region, which combined with the spring eulachon run forms the base of a productive food chain supporting eagles, gulls, seals, sea lions,

[1] This is Who We Are. USFS January, 2019. Available at: https://www.fs.usda.gov/sites/default/files/fs_media/fs_document/usfs_vpr_pocketbook_webpdf.pdf

and humpback whales. Brown and black bears, wolves, wolverines, deer, moose, and mountain goats are found in lands surrounding Berners Bay. Opportunities for recreational hunting, fishing, gathering, kayaking, air boating, and camping abound, and commercial tourism in Berners Bay has increased in recent years.

Berners Bay is also culturally significant to the Auk Kwaan, the original people of the region. The Auk Kwaan consider Lions Head Mountain sacred because it contains the spirits of their shamans. Several ancient village sites are located around Berners Bay. According to tribal leader Rosa Miller, "where there are villages, there are also burial sites."

When it passed the Tongass Timber Reform Act in 1990, Congress identified 46,000 acres of the Berners Bay watershed as one of 12 areas on the Tongass to be managed in perpetuity in accordance with Land Use Designation II (LUD II), no commercial logging allowed. This area was chosen for special management because of its high value fisheries habitat and the fact that it is a popular recreational destination for local residents and visitors to Alaska. Protection for these special values has been recommended and supported by the Alaska Department of Fish and Game (ADF&G), Alaska communities, and commercial fishermen.[2] By designating Berners Bay as a Legislated LUD II area, Congress directed the Forest Service to manage this area primarily "in a roadless state to retain [its] wildland character."[3] The special management designation requires that any permitted development, such as mining on patented claims, be limited in scope to be compatible with the area's wildland character. This requires that any activity allowed in or around Berners Bay must be designed and implemented in a manner that sustains and safeguards this spectacular ecosystem's unsurpassed abundance and diversity of renewable living resources, along with its capacity to continue to provide food, income, and enjoyment to local residents and visitors just as the mission statement for the Forest Service describes. We agree that it is the responsibility of the Forest Service to ensure that future generations can enjoy the same opportunities and uses of Berners Bay's incredible riches that we now enjoy.

SEACC's membership includes commercial fishermen, Alaska Natives, small-scale timber operators and value-added wood product manufacturers, tourism and recreation business owners, hunters and guides, and Alaskans from many other 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.

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[2] In 1983, ADF&G recommended that this area be "reserve[d] permanently for protection of fish and wildlife." From 1987 to 1989, the communities of Juneau, Wrangell, Petersburg and Sitka supported protection of Berners Bay. In 1988, United Fishermen of Alaska included Berners Bay in a list of "priority fish habitat areas deserving protection."

[3] H.R. REP. NO. 101-931, 101st Cong., 2d Sess., at 16 (Oct. 23, 1990) (Joint Explanatory Statement of the Committee of Conference on the Tongass Timber Reform Act).

Overview

The proposed action qualifies for review under the National Environmental Protection Act (NEPA) as a major federal action on federal lands that is likely to have significant environmental impacts.[4] NEPA directs the Forest Service to attain a balance between the protection of the beneficial uses of the current environment and fulfilling the needs of the applicant while avoiding environment degradation, risk to health or safety or undesirable and unintended environmental consequences.[5] NEPA provides the process whereby the agency can systematically assess the ecological risks the project poses to the environment, choose alternatives that may mitigate for those risks, and disclose that reasoning process to the public. However, this DSEIS seems more focused on protecting *process* risk, i.e. the threats to the completion of the agency's projects, the ability to meet its deadlines and outputs, and the future availability of budgets and staffing rather than risk to the human health environment. This type of risk assessment is the antithesis of the Forest Service's mission.

An overarching problem with the DSEIS is that the Forest Service describes the purpose and need for the review as if the agency has no discretion but to fulfill the applicant's plan of operation through one action alternative or another. However, this is incorrect; the Forest Service also has discretion to deny the application if appropriate. By defining the purpose and need so narrowly, the Forest Service misleads the public and unreasonably constrains its analysis of alternatives, contrary to NEPA. The purpose and need must take into account the Forest Service's statutory mission and Congress' directives to protect the Berners Bay watershed, not the needs of the applicant alone, and cannot be so narrow that the outcome is predetermined.[6] Yet here, the Forest Service fails to even disclose that it has discretion to choose the No-Action Alternative. This narrow lens affects the rest of the analysis and prevents the agency from properly weighing long-term environmental and social consequences in order to strike the balance Congress intended.

The 2020 DSEIS is a supplement to the 2004 supplemental EIS, which was a supplement to the 1997 SEIS which supplemented the 1992 Final EIS and Record of Decision (ROD), 28 years ago.

The DSEIS is based on fulfilling the applicant's purpose and need - a minimum 10 years of continued production for the Kensington Gold Mine. The DSEIS also describes a No-Action Alternative, which erroneously states are meant only to define a baseline against which the performance of all other action alternatives will be measured. This is the second 10-year life of

[4] 42 U.S.C. § 4332(c), 40 CFR 1501.3 and 1502.3.
[5] 42 USC § 4331(b)(5).
[6] *See Alaska Survival v. Surface Transp. Bd.*, 705 F.3d 1073, 1084-85 (9th Cir. 2013).

mine action for the project and more than likely not the last. What is lost in the 'process' heavy documentation is that after only 10 years of production, the project has created the need to actively monitor and maintain extensive structures and programs forever in order to protect Berners Bay.

Project Description

The Preferred Alternative based on POA1 proposes to construct a Stage 4, 33-foot raise to the existing tailings dam to achieve a final height of 127 feet. This would allow capacity for dumping and additional 4.0 million tons of mining waste into Lower Slate Lake resulting in a total of 8.5 million tons at the end of this authorization.

This action will allow another 10-years of operation for the mine. In turn, this would increase the amount of water held back by the dam above Berners Bay from 1,632 acre-feet of water to 2,194 acre-feet. Flooding and other impacts will result in a loss of 52.9 acres of wetlands, the loss or reduction of 4.4 miles of stream habitat, the loss of 131 acres of productive old-growth habitat and 24 acres of forested muskeg. Although not recognized or addressed, this is likely to be the final raise of the dam possible at this location due to available terrain. To accommodate any further expansion after 2033, the applicant will likely have to consider a different tailings disposal method other than lake dumping. There is no reason why the Forest Service cannot examine the available terrain and make that determination.

Additionally, the POA1 describes building another dam between the tailings treatment facility and Upper Slate Lake to keep the contaminated tailings and water from co-mingling with Upper Slate Lake. After closure and once water treatment has achieved the appropriate state water quality criteria in Lower Slate Lake, it will be allowed to fill with water covering this dam under the now combined Slate Lake final water level. Water treatment is expected to be required for at least 30 years after closure to achieve water quality criteria.

POA1 also describes relocating or building new supportive infrastructure, by-pass pipelines, storm water diversion trenches, collection sumps, water treatment facilities, access to power, etc. Waste rock piles are proposed to be enlarged on both the Kensington side near Johnson Creek and Comet Beach side above Sherman and Ophir Creeks.

POA1 also describes increasing the mill throughput rate by 33% from 2000 tons per day to 3000 tons per day. This increase in mill rate is considered a non-reviewable action according to the Forest Service.[7] However, the purpose of the DSEIS is to evaluate the impacts of any decision to

[7] DSEIS at page 1-6

approve POA1 received from the Coeur, Alaska the owner/operator.[8] The proposed change in throughput will have environmental effects that the agency must take into account, because the agency's decision could be the relevant legal cause of those effects.[9] For example, increasing the mill rate would increase energy usage, fuel transfers, floatation chemicals, road traffic and shortened life of mine. These actions and their resulting environmental effects would be a direct result of approving POA1. They would also be connected actions automatically triggered by and dependent on increasing the mill rate, which in turn may be dependent on increasing the life of the mine.[10] The environmental effects of increasing the mill rate should have been included in the DSEIS and made available to the public.

POA1 also describes fish habitat improvement projects to replace habitat function that will be lost or reduced as a result of increasing water levels to the maximum Stage 4 post-closure elevations. The six fish habitat projects incorporated into POA1 include removing gravel from existing stream beds to form deltas to provide Dolly Varden char spawning habitat, rerouting Fat Rat Creek to South Creek to create a wider and deeper channel at a new stream mouth and replacing culverts on South Creek, Fat Rat Creek, and Spectacle Creek to ensure adequate upstream passage and improve upstream habitat quality. These culverts were installed under a previous authorization by the applicant and therefore should not qualify as mitigation under this application.

Agency Responsibility

The upper Slate Creek system of lakes and streams including the treatment lake is directly entwined with the health of the lower reaches of the system including Berners Bay. The Forest Service is ultimately the responsible agency and may not defer to another agency without review. Under the Clean Water Act, the Forest Service must comply with State water quality standards, including protecting all existing uses, such as propagation of aquatic life.[11] The National Forest Management Act (NFMA) requires that all agency projects and activities "shall be consistent with the land management plans."[12] For lands allocated to the Mineral Land Use Designation (LUD), like the Kensington Project Area, the Tongass Land Management Plan (TLMP) requires the Forest Service to maintain water quality to protect state-designated beneficial uses, like aquatic life, to "maintain the present and continued productivity of . . . water resources to the extent feasible," and to "avoid irreversible or serious and adverse effects on . . . water

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[8] *Id*. at page S-1
[9] *See Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1213 (9th Cir. 2008) (explaining that an agency can only avoid analyzing environmental impacts that it truly has "no ability" to prevent).
[10] *See Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 968 (9th Cir. 2006).
[11] 33 U.S.C. § 1323; 18 AAC 70.015(a)(2)(C).
[12] 16 U.S.C. § 1604(i).

resources."[13] Agency regulations reinforce these substantive requirements.[14] Under NEPA an agency is required to identify and discuss all relevant factors balanced by the agency in making its decision "and state how those considerations entered into its decision."[15] NEPA also requires the Forest Service to discuss reclamation in sufficient detail to ensure the fair evaluation of the environmental consequences from the proposed action in light of connected and cumulative actions.

TLMP requires the Forest Service to "avoid irreversible or serious and adverse effects on . . . water resources," and to maintain water quality to protect existing uses.[16] ANILCA and TLMP further require the Forest Service to maintain the present and continued productivity of anadromous fish and other foodfish habitat to the maximum extent feasible.[17] The Ninth Circuit has interpreted this standard to be "a strict one [that] demands strict compliance."[18]

The DSEIS fails to adequately address or review how the Forest Service will fulfill these responsibilities. All of these matters were brought up in scoping and decisions were made on how they were to be addressed in the DSEIS. For instance, authorizing structures that must be maintained forever is not necessarily conducive with maintaining the continued productivity of the rivers and bay. There is no discussion of how the risk to the public is balanced with the private need expressed in the application, and no review of the likelihood of further expansions increasing the risk of each alternative or the success of the reclamation plan. This is essential to understand the impacts of this decision. There is also no discussion of the applicant's compliance history or of Alaska Department of Environmental Conservation's (ADEC) enforcement record, both of which are relevant to the Forest Service's responsibilities and decision. The Forest Service is ultimately responsible for avoiding serious and adverse impacts to water quality. The agency must do more to meet that obligation than the DSEIS reflects.

We find the DSEIS is so deficient that it deprives the public a meaningful opportunity to comment. **We request the Forest Service withdraw the DSEIS, fix the errors in analysis and process, and then publish an updated DSEIS for public comment.**

History of the Project

In June 1996 the applicant revised their 1995 Amended Plan of Operations in response to issues raised during scoping and at meetings with state and federal agencies. The primary change

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[13] TLMP at 3-130 (SW3.C), 4-61 (SW3.I.A and I.A.2).
[14] 36 C.F.R. §§ 228.8(b), (e).
[15] 40 C.F.R. § 1505.2(a)(2).
[16] TLMP at 4-61 (SW3.I.A and I.A.2).
[17] 16 U.S.C. § 539b; TLMP at 3-125 (Objectives).
[18] *SEACC v. Watson*, 697 F.2d 1305, 1310 (9th Cir. 1983).

described in the 1996 Amended Plan of Operations was the elimination of a wet tailings (slurry) disposal behind a dam in Sherman Creek area on the Comet Beach (west) side of the project area in favor of a dry tailings disposal facility (DTF) at basically the same location. The Forest Service approved this amended plan of operations, consistent with the selected alternative, on May 28, 1998. Coeur obtained all permits necessary for construction from federal, state, and local authorities.

However, in 2001 the applicant submitted an amendment to the approved 1997 Plan of Operations for the stated purpose of improving efficiency and reducing the extent of surface disturbance caused by the approved project. The amended plan proposed a number of changes to the 1997 approved plan primarily, moving the tailings disposal into Lower Slate Lake behind three successive raises of a dam in order to increase the storage capacity of the natural lake and maintain a water cover. The purpose of the water cover was not to isolate potentially acid-producing tailings from air—the tailings are net neutralizing—but to justify framing tailings disposal as 'fill material' under the Clean Water Act Section 404 rather than as a point-source discharge under CWA Section 402 permitting that would have required the protection of the aquatic life standards in Lower Slate Lake. The Forest Service approved the amended Plan of Operations and authorized the supplemental EIS in its Record of Decision (ROD) in December of 2004. This unprecedented decision led to a series of lawsuits by SEACC and others that is outside the scope of this letter. To this day, the Kensington Gold Mine is the only mine in the U.S. allowed to dump tailings directly into a water of the U.S.

General Deficiencies Across All Alternatives

The significant issue with implementing POA1 identified in the DEIS is the consequences of a "dam breach [that] would result in long-term adverse effects to portions of Berners Bay resulting from habitat changes due to the tailings deposits."[19] This significant issue is carried over from implementing the previous ROD so is present in all alternatives including the No-Action Alternative.

<u>Incomplete and Defective Dam Failure Analysis</u>

The dam failure risk analysis in the DSEIS at 3.2.1 is incomplete and unsupported. Risk in the DSEIS is defined as is "a function of the probability an event would occur (e.g., Factor of Safety) coupled with the consequences."[20] The DSEIS describes the risk of dam failure as a low probability coupled with high consequences if failure should occur. The low probability estimate is unsupported and the analysis of possible consequences ill-defined and incomplete.

[19] DSEIS at page 3-69.
[20] *Id.* at page 3-3

The risk analysis presented is based on post closure conditions when water and tailing levels would be highest. The conditions described at closure are based on the mine ceasing operation in 2033, followed by up to 30 years or more of active water treatment until the water quality-based use criteria are again met in the lake without the need for treatment. The duration of water treatment is partly based on the performance of the operator. This analysis in incomplete because the Forest Service fails to account for the record of non-compliance by the operator with permit limits surrounding water treatment. Closure is dependent on the ability of water treatment by the operator to restore water quality in the lake. Ignoring the past history of non-compliance with state permits on water quality is arbitrary, capricious, and dangerous. If the operator does not effectively treat water for any period of time, that will extend the active period of the dam, extend the dependence on treat and release to control lake levels, and increase the risk of failure.

During the operational period of the TTF, the water level in the lake is dependent on the ability to treat the water and release it. Under the scenario offered in the DSEIS, at some time 40 years in the future these criteria will be met without treatment, the by-pass from Upper Slake Lake will be removed and the lake allowed to flood over the back dam, creating one larger Slate Lake until water freely flows over the spillway into Slake Creek. The dam will have to be maintained forever keeping the spillway free flowing and will be subject to a schedule of inspections. The DSEIS notes that active, operational dams are 5 times more likely to fail than inactive dams in closure. In the case of this project, one contributing factor left unexamined in the DSEIS is that water level in the lake is dependent on the ability to treat then release water while maintaining a safety factor for extreme weather events and spring runoff. There has been at least one instance where water treatment rates were inadequate to prevent the water level from rising above the free-board provided to accommodate a 200-year predicted storm events. The "operating water level in the TTF was measured at 699.1 feet on September 10, 2017. This is above the TTF lake trigger level (understood to represent the 200-year, 24-hour storm surge storage elevation) of 697.3 feet . . . attributed primarily to low water treatment rates."[21] Therefore the ability to treat and release water is the weak point in the dam safety analysis during the active period not the structure of the dam itself. The DSEIS makes no mention of risk due to loss of water treatment ability, either through equipment failure of power outages. Loss of this ability combined, with or caused by an earthquake or large storm event, could lead to failure by overtopping.

The dam failure analysis is based on two separate scenarios; earthquake or overtopping.[22] The risk analysis of failure due to earthquake is limited because it only takes into consideration the TTF itself separate from the surrounding environment. Risk is based on "[g]eotechnical stability of the TTF dam and the probability for failure considering the embankment characteristics,

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[21] See Kensington 2017 Environmental Audit, January 19, 2018 at page 32. Available at: http://dnr.alaska.gov/mlw/mining/largemine/kensington/pdf/kens_coeurak_envaudit2017.pdf.
[22] DSEIS Section 3.2.1.2.

construction method, storage volumes and designed Factor of Safety."[23] The DSEIS fails to consider performance of the dam under earthquake scenarios in combination with foreseeable connected events from the surrounding environment. Connected failures from the surrounding environment such as earthquake-triggered landslides, the addition of large amounts of wood debris into the lake, increased frequency of storm events due to climate change or loss of power to the treatment plant while active is absent.

The second primary cause of dam failure is identified as overtopping. "For inactive impoundments, overtopping has been identified as the primary failure mode in nearly half of the incidents."[24] Unlike failure based on a single cause such as an earthquake, overtopping may be caused by a multitude of possible events operating independently or connected to other events that may lead to failure. The DSEIS describes only two overtopping scenarios. One is based on a failure of the filtered tailings facility into the lake causing a mini-tsunami that could overtop the dam.[25] The second scenario is failure of the back dam during anticipated spring high water levels.[26] These scenarios are analyzed independent of one another.

Failure is often caused by multiple events rather than single events. "Failure of tailings dams is often caused by multiple factors and, in essence, is due to the influence of the external environment, for example, through increased loading of the tailings dam, earthquakes, rainfall, floods, and dam foundation subsidence."[27] The DSEIS fails to consider a wide range of likely operational conditions and modes of failure such as slope failure from the surrounding lands resulting in displacement of water and addition of woody debris due to earthquake or large storm event. Failure to include other scenarios and multiple connected events underestimates the probability of failure and overestimates the feasibility of corrective action. The fact that a large part of the risk is present in the No-Action Alternative as a carryover from the first 10-year decision does not eliminate any unforeseen risks from that decision, which carries over to all alternatives. If there is new information or analysis that affects this decision then it must be considered in this supplement.[28]

The conditions described in the DSEIS at closure are assumed to remain essentially unchanged forever. At closure, when active water treatment is no longer necessary and is decommissioned, the Upper Slate Lake Diversion would be removed and drainage from the Upper and Lower Slate

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[23] *Id*. at page 3-3.
[24] *Id.* at 3.2.1.1 at 3-5
[25] Interesting; assumption of another supplement in 10 years where filtered tailings are approved?
[26] *Id.* at 3.2.3.4 at 3-14
[27] Advances in Civil Engineering Volume 2019, Article ID 4159306. Available at: https://www.hindawi.com/journals/ace/2019/4159306/
[28] See 40 CFR § 1502.9.

Lake watersheds restored "that would be similar to pre-mine conditions."[29] The DSEIS fails to support this conclusion.

Long-term care and maintenance of the spillway is described as annual inspections, inspections after earthquakes or large storm events (assuming access in time to mediate any issues prior to failure) and removing brush/shrub, trees and debris from the dam and spillway in perpetuity.[30] In the long term, the DSEIS fails to consider the addition of silt into the lake possibly accelerated by mitigation work on man-made deltas, rerouting Fat Rat Creek and removing roads, pipelines and other infrastructure, natural lake succession from open water to wetland accelerated by climate change, plant growth and/or isostatic and tectonic rebound.

The DSEIS reliance on inspections to lower risk is unsupported. Even though failure during the active phase is considered five times more likely than at closure, to date the dam has been inspected by the contractor only twice since production commenced in 2010: on June 6, 2014 and on December 16, 2016 where it was noted that the lake level is rising at a faster rate than planned due to low water treatment rates. The last visual inspection performed by DNR of the dam was February 8, 2017—almost 4 years and one dam raise ago.[31] This is despite the fact that dam inspections are supposed to be performed every 3 years as required by the ADNR Dam Safety Permit.[32] The DSEIS is silent on if the post-closure inspections either annually or after a storm or seismic events are to be conducted by the applicant, state of Alaska or private contractor. Regardless, as pointed out in the Mt Polley Expert Panel Report "[b]y definition, no amount of inspection can discover a hidden flaw."[33] The DSEIS fails to justify how a schedule of inspections, implemented or not, affects any part of the risk analysis.

In any event, dam failure is considered a high consequence event, yet the DSEIS underestimates or is silent on a possible range of these adverse consequences. Most if not all the tailings would enter Berners Bay where the flood of tailings and water would lose their energy, settle from suspension, and become deposited after entering the water. The DSEIS fails to adequately consider short and long-term ecological effects to Berners Bay beyond the deposition of tailings into Slate Cove either through dispersal within the bay or migration through the food chain. The DSEIS fails to describe the short and long-term consequences of up to 8.5 million tons of fine tailings and thousands of acre-feet of water scouring the Slate Creek watershed and entering Berners Bay, including possible impacts to commercial fishing and tourism.

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[29] DSEIS at page 3-27
[30] DSEIS at page S-5
[31] Inspection information is available at:
http://dnr.alaska.gov/mlw/mining/largemine/kensington/archive_inspections.cfmt.
[32] DSEIS at page 2-14.
[33] Independent Expert Engineering Investigation and Review Panel. January 30, 2015 at page 138. Available at:
https://www.mountpolleyreviewpanel.ca/sites/default/files/report/ReportonMountPolleyTailingsStorageFacilityBreach.pdf.

The failure to take a hard look at the impacts to Berners Bay underestimates the environmental and social risk indicators related to the unique values of the Bay. It is not likely that up to 8.5 million tons of fine tailings entering Berners Bay will be biologically benign. Berners Bay is one of the few bays in North America that maintains it original biodiversity and ecological stability. The DSEIS fails to account for the loss of local uses of the Bay and surrounding uplands in the event of failure. Understanding land disturbance and competing land uses is critical to evaluating the social and ecological impacts failure of this mine waste facility would cause.

The DSEIS further attempts to define the risk of failure in light of overall failure rates and mechanisms world-wide in section 3.2.1.1. Based on worldwide data, the analysis identified possible reasons active dams are 5 times more likely to fail than inactive dams. The possible factors described in the DSEIS depend on the idea that removing the "human factor" after closure lessens risk. In the case of this dam, however, relying on inspections and dam and spillway maintenance in perpetuity means humans will always be a factor. The agency's "human factor" theory also underscores what SEACC argued in its scoping comments; it is not reasonable to ignore the applicant's compliance record under other legal permitting limits. A lack of compliance on maintenance and inspection requirements would add to the risk of failure. The analysis also cites the reduced inflow of water once the addition of tailings slurry is stopped. Since the DSEIS ignores possible effects of climate change, any estimations of inflow decreasing are unsupported.

Another supposed mitigating factor the risk analysis cites is that the construction pore pressures in the dam dissipate over time; but without justification, the analysis ignores the parallel adverse consequences of the liner deteriorating over time. Finally, the DSEIS notes that inactive dams have a lower probability of failure because "[f]ailures are less noticed and may go unreported." This comment effectively acknowledges another fundamental problem with the agencies reliance on a tailings inactivity as risk reducing. It is a failure to correctly calculate probability, not the probability of an actual failure. The distinction presented in the DSEIS between active and inactive tailings facilities and the probably of failure does not apply to this dam scenario under any of the alternatives described for this project.

The DSEIS calculates the probability of dam failure based on world-wide incidents to be very low. However, using a world-wide data base smooths over the fact that, worldwide, North America has the largest rate of dam failures at 43% and America alone counts for 37% of the global failures.[34] Dams fail at a higher rate in America than world-wide. This must be taken into account.

[34] *Id.* at page 9.

The DSEIS also uses data on dam failures from 1915 to the present. This also tends to unrealistically minimize the risk in light of the fact that there has been a substantial increase in the failure rate since 1960. See below:[35]

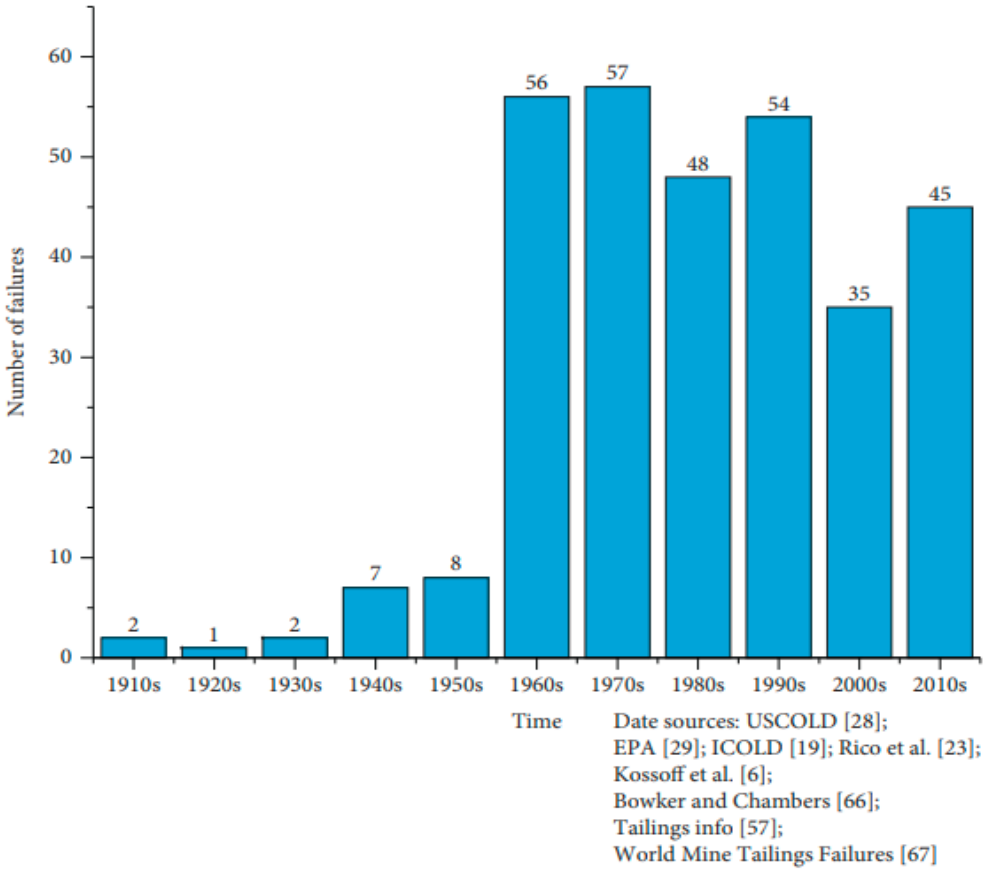

FIGURE 3: Failure events over time.

The rate of dam failure has stayed much higher than the overall 1915-present average since 1960, and the failure rate after the year 2000 is currently five to six significant tailings dam failures annually.[36] As a consequence of failing to consider the local rate of dam failure and the recent increase in failure rates, the DSEIS again underestimates the probability of failure.

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[35] Tailings Dam Failures: A Review of the Last One Hundred Years. Geotechnical News December 2010 at page 50. Available at: https://ksmproject.com/wp-content/uploads/2017/08/Tailings-Dam-Failures-Last-100-years-Azam2010.pdf.

[36] See Catastrophic tailings dam failures and disaster risk disclosure. International Journal of Disaster Risk Reduction
Volume 42, January 2020, 101361. Available at
https://www.sciencedirect.com/science/article/pii/S2212420919306648.

Failure analysis is further constrained by the agency's refusal to consider reasonably foreseeable additional mining after 2033 despite a clear history of mines expanding at an incremental and gradual rate while avoiding responsibility for direct or indirect build-up of risk. The DSEIS cannot justify using the history of dam failure over 100 years to calculate risk while at the same time ignoring the clear history of mines (including this one) that progress through repeated authorizations of expansion while incrementally increasing risk.

The DESIS fails to identify these gaps in information or the consequences of the gaps on the analysis for every alternative described. Overall, the DSEIS fails to provide an analysis that soberly evaluates the risks involved and protects the public interest.

The DSEIS Ignores the Reasonable Possibility of Further Mine Production after 2023

NEPA requires that the Forest Service consider all cumulative impacts or effects.[37] Cumulative effects may result from "[t]he incremental impact of the action when added to other past, present, and reasonably foreseeable future actions." [38] By choosing to limit the scope of its analysis to the timeframe proposed by the applicant, the Forest Service is ignoring the possibility that the mine will continue production after 2033. Ignoring this reasonably foreseeable possibility defies the Forest Service's commitment to the principles of sound public land management that include long-term planning on an ecosystem basis.[39]

The DSEIS fails to consider the cumulative impacts of an extended life of mine past 2033 nor provides any justification for this decision. In response to comments submitted during scoping, the Forest Service states at Section 2.5.4 that "[a]n alternative to consider a longer timeframe. . . does not meet the purpose and need and is not within the scope (timeframe) of the SEIS project analysis. Extensions of mine life beyond 2033 are too speculative to analyze or discuss how an expansion would occur." The actual life of mine is based on "the employment of the available capital, the ore reserves--or such reasonable extension of the ore reserves as conservative geological analysis may justify--will be extracted."[40] Information on these factors is readily available. None of the factors that define life of mine are examined in the DSEIS. Instead of justifying this conclusion based on information or reasonable inferences, the Forest Service doubles back, rendering the justification circular using the conclusion as a crucial piece of support, the possibility of further mining is not within the scope of the SEIS because the SEIS limits the life of mine. Circularity is a defect in reasoning because it avoids any discussion about the very real possibility of mining beyond 2033. The DSEIS correctly states that "the potential

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[37] See *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1072 (9th Cir. 2011).
[38] *Id.* at 1076.
[39] The Process Predicament How Statutory, Regulatory, and Administrative Factors Affect National Forest Management. USDA Forest Service, 2002 at 5. Available at: https://www.fs.fed.us/projects/documents/Process-Predicament.pdf.
[40] Minedat.org available at: https://www.mindat.org/glossary/life_of_mine.

for successfully identifying and defining additional economic mineral resources through continued exploration activities, the operations could continue beyond 10 years; however, the likelihood of this is currently unknown."[41] The DSEIS makes no attempt to define this "likelihood". In contrast, the actual likelihood of dam failure at Section 3.2.1.1 is also unknown but the DSEIS uses information from tailings dams throughout the world to make a determination.

The continuation of mining past the term of this decision is based on the applicant's ability to continue to identify mineral reserves through exploratory drilling. The certainty that an orebody will be economic to develop proceeds with the on-going exploration program, moving resources from the initial level of inferred resources with a low probability of being economic to a proven and probable stage and finally to a measured and indicated resource that is economical to develop based on the mine plan. These levels of certainty are governed under National Instrument 43-101 guidelines (NI 43-101).

Mines typically operate by having available measured and indicated ores three years in advance of the mining rate for planning purposes. In 2004 at the time of the last ROD approving ten years of operation, the applicant had identified 617,000 tons of measured and indicated resources. The latest NI 43-101 estimate of measured and indicated reserves for the project is 2,743,800 tons, or almost 4 and a half times the amount the 10-year life of mine was based on in 2004.[42]

These reserves are based only on the Kensington, Jualin and Raven orebodies. The outward extent of these orebodies has not been completely defined. When an orebody appears to continue past the areas that have been drilled it is called "open". The Jualin "vein # 4 is open at depth and along strike to the south."[43] The Raven orebody "appears to be open both up and down dip at this point".[44] In the Qualified Person's opinion "additional exploration has a likelihood of generating further exploration successes, particularly down-dip of known zones."[45]

Additionally, many other orebodies have been identified for further exploration in the area. These include prospects and exploration targets identified as Seward, Thomas, Bear, Savage, Rose, Johnson, Big Lake-Yankee Boy, Ivanhoe-Hope, North Comet Ridge, Ophir, Mexican, Bear, Northern Belle, Selkirk-Acropolis, Cumberland, Fremming, Valentine, Hoggatt Creek, Pit-4, Babcock, DZ, Hartford, Acropolis, Cookhouse and Gold King. Most of these prospects have

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[41] DSEIS at page 3-115.
[42] NI 43-101 documents are available at: https://www.coeur.com/investors/filings/sedar-filings/
[43] Kensington Mine Southeast Alaska, U.S.A. NI 43-101 Technical Report April 25, 2018 at 150. Available at: https://www.coeur.com/_resources/pdfs/Technical%20Reports/Kensington%20TR.PDF.
[44] *Id*. at page 187.
[45] *Id*. at page 66.

been mapped and sampled by the applicant.[46] At this time it is not certain that any of these prospects will prove economical to develop but their presence still attests to the reasonably foreseeable outcome that some of them will be.

NEPA requires federal land managers to conduct environmental analyses in order to evaluate the short and long-term implications of cumulative actions to the extent that such implications are known or reasonably foreseeable. It is reasonably foreseeable if not probable that the mine will continue to operate past 2033, and this analysis needs to be included in this SEIS.[47] In particular, a cumulative impacts analysis must recognize that the current tailings storage system in Lower Slate Lake reach functional capacity after the current action is completed and another system will have to be employed. Mining beyond 2033 is likely to produce dry stack storage similar to the filtered tailings alternative. Filtered tailings stacked next to Lower Slate Lake essentially turns the lake into a contact water collection pond possibly requiring water treatment forever. Further expansion will require additional land disturbed for waste rock dumping and other operations.

The DSEIS failed to respond to or review SEACC's scoping comments on the reasonably foreseeable, if not probable, continued life of mine after 2033.

<u>The DSEIS Ignores the Effects of Climate Change on the Project</u>

SEACC pointed out in scoping comments that the effects of climate change on the project must be considered at every stage of the mine, including closure and maintenance in perpetuity. SEACC also pointed out that these effects are far from being certain and that level of uncertainty also must be taken into account during the performance and risk analysis for every action under each alternative. No prediction can be more certain than its most uncertain element. Yet the DSEIS contains a false level of certainty throughout the document as represented in the repeated use of the phrase "no substantial adverse effects" in the impacts analysis.

NEPA requires federal agencies to consider both the potential effects of a proposed action on climate change and the implications of climate change on the environmental effects of a proposed action and its components. Regardless of whether complete, quantifiable information about this project's effects on global climate change is possible, information on the probable impacts of climate change to the project is available and must be included. To the degree we understand climate science, the Forest Service must still recognize the potential that components of this proposal could be adversely affected by the predicted climate changes and therefore provide qualitative analysis in the SEIS to help inform project decisions.[48] Climate change effects to the project are a critical piece of the information leading toward a sound decision. The

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[46] *Id*. at page 65.
[47] *N. Plains Res. Council*, 668 F.3d at 1072, 1076; FSH 1909.15.
[48] *See* USDA, Climate Change Considerations in Project Level NEPA Analysis (January 13, 2009) at 6-7.

discussion of alternatives must "sharply [define] the issues and [provide] a clear basis for choice…by the decision maker and the public."[49]

Instead, the DSEIS only identifies the project's effect on global climate change through the lens of greenhouse gas emissions and loss of carbon storage. "The quantity of trees cut and the limited amount of greenhouse gas emitted under any alternative (including No-Action) would have no discernible impact on climate to provide a meaningful comparison between alternatives." The analysis of the effects of climate change in the DSEIS is limited to its effects on the natural environment, and does not consider how climate change will affect the performance of the structures and components described in POA1.[50] There is no comparison of these effects of climate change between alternatives or consideration given to climate change effects on the reclamation and closure plans. There is no consideration or review of the range of uncertainty climate change brings to the evaluation of risk.

The DSEIS failed to respond to SEACC's scoping comments on considering the effects of climate change on project actions. The CEQ regulations provide direction that is applicable when responding to comments about climate change.[51] They direct the responsible agency to: 1. Modify alternatives including the proposed action, 2. Develop and evaluate alternatives not previously given serious consideration by the Agency, 3. Supplement, improve, or modify the analysis, 4. Make factual corrections, and 5. Explain why the comments do not warrant further agency response, citing the sources, authorities, or reasons which support the Agency's position and, if appropriate, indicate those circumstances that would trigger agency reappraisal or further response. The DSEIS lacks any of these responses, which must be included in any FSEIS.

The changing climate presents significant challenges for mining companies and agencies that are responsible for regulating the industry. Increased climate variability and extreme weather events must be considered in the design and construction of all aspects of the project. Planning for an uncertain climate future is an essential part of risk management especially where structures have to be maintained in perpetuity.

By utilizing existing climate projections, coupled with good planning and adequate monitoring, the SEIS must consider and mitigate against climate related changes in order to conduct mining in a safe and responsible manner.

> "To address the risks and vulnerabilities associated with climate change, land managers will need science-based assessments of the relative vulnerability of key ecosystem components and their ability to adapt to increased stress. These assessments will help

[49] *Ctr. for Biological Diversity v. U.S. Dep't of Interior*, 623 F.3d 633, 648 (9th Cir. 2010).
[50] DSEIS at 3-1 and 2.
[51] 40 CFR 1503.4.

managers set priorities in maintaining healthy, resilient ecosystems and protecting communities and infrastructure. Basing their decisions on such assessments, land managers can avoid fragmented, piecemeal approaches and make cost-effective investments." [52]

We request that the FSEIS include the kind of discussion outlined above or explain in detail why the effects of climate change warrant no further response.

Lack of Consideration of Past Performance when Predicting Future Outcomes.
Ultimately an EIS and the NEPA process itself is an exercise in predicting the future performance of all identified alternatives, mitigation and closure plans. This is not a paper exercise, but ultimately must be implemented at the project site. Consideration of past performance by the applicant is critical to predicting future performance. SEACC included this information in our scoping comments but again, the DSEIS failed to respond.

The Forest Service cannot ignore the applicant's compliance history in an EIS because ultimately "[t]he State of Alaska will also rely on much of this analysis to approve activities on state lands and issue applicable permits."[53] As lead agency, the Forest Service cannot ignore a pattern of failure by the applicant to comply with State permit limitations when attempting to describe the future effects of the proposed action or alternatives. The 2004 ROD confidently states that "the treated effluent from the TSF would always meet NPDES permit limits and could be discharged continuously to the diversion pipeline."[54] This confidence is unsupported and misleading to the public in light of the applicant's egregious compliance history.

We note for the record that no notices of violations were issued to Coeur Alaska during 2016 by ADEC and that the 2016 APDES Annual Report to regulating agencies was silent on any compliance issues or violations.[55] The record contained in the 2017 Final Fact Sheet for APDES Permit renewal (No. AK0050571) shows 27 exceedances of permit limitations from the years of 2012-2014 for outfall 001[56] and 23 exceedances for Outfall 002.[57] Despite these repeated exceedances, the last Notice of Violation from issued by ADEC was on June 18, 2013 to address the seepage of acidic metal-laden waters directly into the TDF.[58] This was followed

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[52] National Roadmap for Responding to Climate Change. USDA. February, 2011 at 7.
[53] 2004 ROD at page 1.
[54] 2004 ROD Section 4.5.6 at page 4-17.
[55] See, http://dnr.alaska.gov/mlw/mining/largemine/kensington/pdf/kensapdes2016vol2.pdf.
[56] AK0050571 final Fact Sheet at pages 9-10. Available at: http://dnr.alaska.gov/mlw/mining/largemine/kensington/pdf/dec/dec_ak5005071_2017fact.pdf.
[57] *Id*. at 11-123.
[58] *See* letter from Weitz to Eppers dated June 18, 2013.

by a compliance letter on August 5, 2013 for failure to limit and monitor sulfate discharges from Outfall 001 and for reporting sulfur rather than sulfate from September 2011 to August 2015.[59]

On August 5, 2019, and again on July 30, 2019, the U.S. EPA stepped in after a multi-year investigation and negotiated a Consent Agreement between EPA R-10 and Coeur Alaska the owners of the Kensington mine over repeated violations of various permit limitations. The findings from 2015 through 2017 included:

- 200 wastewater discharge violations
- Unauthorized discharge of acid rock drainage into Lower Slate Lake
- Improper operation and maintenance of sampling equipment
- Multiple effluent-sampling violations
- Failure to develop a complete Storm Water Pollution Prevention Plan
- Failure to repair a secondary containment structure for over a year that holds a majority of the facility's fuel
- Failure to conduct required monitoring, assessments, inspections and trainings
- Failure to use proper sample handling and analysis procedures
- Failure to report releases of nitrate compounds annually from 2013 to 2017

This represents a failure by the applicant to comply with effluent and other limitations designed to protect the surrounding environment. As noted in the 2004 ROD, "[t]he treatment plant *could* be operated to achieve compliance with all indicated discharge limits" (emphasis added)[60]—but in fact, that has not happened.

This also represents a failure by the State of Alaska to hold the applicant accountable and rectify deficiencies in a timely manner. The performance of the applicant's ability to meet the limitations designed to protect the surrounding environment and other users of the forest and the ability of the State of Alaska to ensure compliance is relevant to all forward-looking statements contained in the DSEIS.[61] Ultimately, the Forest Service fails in its duty to maintain the present and continued productivity of the water resources if it does not review the applicant's performance and compliance history.

The DSEIS predicts that "exceedances of effluent limitations from Outfall 001 and Outfall 002 *could* occur, affecting water quality immediately downstream [and that] impacts would localized, minor, and temporary."[62] Based on the compliance history it is reasonably foreseeable that exceedances *will* occur and that the impacts may not be minor or temporary.

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[59] *See* letter Weitz to Eppers dated August 5, 2013.
[60] 2004 ROD at page 4-19.
[61] See 36 CFR § 228.8(b), (c).
[62] 2020 DSEIS 2.7.3 at page 2-54.

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.

Use of Upper Tolerance Limits (UTL's) Instead of the Numeric Criteria as Required under 18 AAC 70 State of Alaska Water Quality Standards

The 2004 final SEIS and ROD warned that additional water treatment may be necessary to meet water quality criteria for aluminum. "An additional stage might need to be added to the mine drainage treatment process to provide these pH levels and ensure that aluminum limits are met."[63]

In October 2013, the ADEC approved an addendum to the Integrated Waste Management and Disposal Plan for the freshwater monitoring program for the Project. The Alaska solid waste regulations contain provisions at 18 AAC 60.830(j) that allow for using a method to determine whether there is a statistically significant increase in background values for each parameter or constituent to being monitored. The addendum invoked those provisions to excuse pollutant increases associated with the Project that were not statistically significant according to this method. As a result of the addendum, for example, the chronic aquatic life effects standard for total recoverable aluminum increased from 86ug/L to 258ug/L in several surface water streams subject to the Project's discharge. Monitoring that previously was out of compliance with 18 AAC 70 now was in compliance. However, 18 AAC 60.830(j) pertains specifically to ground water, for which there are no aquatic life criteria; this provision should not have been applied to surface water. Subpart (j) reads:

> "The owner or operator shall determine whether there is a statistically significant increase over background values for each parameter or constituent required to be analyzed *by the particular groundwater monitoring program* that applies to the facility, as determined under 18 AAC 60.850(a) or 18 AAC 60.860. In addition, (1) to determine whether a statistically significant increase has occurred, the owner or operator shall compare the concentration of each parameter or constituent detected in a monitoring well to the background value of that constituent, according to the statistical methods and performance standards set out in (h) and (i) of this section; and (2) after completing sampling and analysis, the owner or operator shall determine whether there has been a statistically significant increase over background at each monitoring well." Emphasis added.

In addition, 18 AAC 60.860 contains the requirement that "(h) The owner or operator shall specify in the operating record one of the following statistical methods to be used in evaluating

[63] See 2004 ROD at page 4-21 and 4-23.

groundwater monitoring data for each hazardous constituent." Neither the addendum or the DSEIS reveal what statistical model was used to determine the new criteria. SEACC has requested the water quality data that was entered into the model from ADEC unsuccessfully. SEACC brought up this issue at the Annual Meeting with Agencies in 2017 and 2018. Neither ADEC nor the Forest Service had any information and could not explain the 3-fold increase in the aquatic life criteria over Alaska's standards given in 18 AAC 70 for aluminum. No information has been provided that demonstrates these increased limits are protective of aquatic life in these anadromous rivers. As the responsible agency, the Forest Service must include this information and review its effectiveness at protecting water resources. **We request that this information be included in the SEIS**.

Lack of Consideration of the Effects of Increasing the Mill Capacity

The 2020 DEIS contains no information about the effects of increasing the mill throughput from 2000 tons per day (tpd) to 3000 tpd. "The Forest Service has not viewed the mill throughput as a production limits as within their authority and does not regulate mining rates or potential increases."[64] Information provided at the public meeting on December 10, 2020 indicates that the applicant does not intend to expand mill infrastructure, only to be allowed to increase the rate of grinding and throughput of the existing equipment when they deem necessary. We are unclear why the applicant would seek authorization from the Forest Service for an action beyond the scope of the Forest Service's authority. Regardless, the throughput increase will cause environmental impacts that must be considered in the FSEIS, either as direct effects of the Forest Service's proposed action, effects of connected actions, or reasonably foreseeable cumulative impacts.

Milling and ore processing is that largest consumer of energy for the project. It logically follows that running the mill one-third faster will increase fuel consumption and effect fuel storage and transport systems. Providing the extra ore for increased production also demands an increase of the mining rate, increased ammonia-based explosives and the removal of explosive residue from waste-water streams. Additionally, the use and storage of process chemicals will increase, as will manpower and traffic on the roads, with related effects such as wildlife encounters and dust. Other related operations such as discharge of tailings and waste rock as well as the operation of the PUG plant will increase in conjunction with increasing mill throughput. Increasing the mill throughput also means that the life time of this action will be shortened, increasing the probability that another expansion will be necessary in a relatively short amount of time.

Increasing the mill rate is listed as a proposed action DSEIS at S-1. All of the possible effects mentioned above flow from actions connected to and triggered by increasing the mill rate. They are also significant effects that would flow directly from approving POA1, and they would be

[64] DSEIS at page 1-6

cumulative to the effects of approving the Project expansion; many would occur at the same time and place as the effects of the expansion itself.[65] **For all these reasons, the Forest Service must include an analysis of the connected effects arising from increasing the mill rate in the SEIS.**

The DSEIS Lacks Any of the Required Information About Gaps in Data and Information

The DSEIS reflects the Forest Service still lacks key information relevant to the environmental impacts of its decision. NEPA establishes specific requirements that an agency must meet when it is missing such information.

> "(a) When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement, and there is incomplete or unavailable information, the agency shall make clear that such information is lacking.
>
> . . .
>
> (c) If the information relevant to reasonable foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are unreasonable or the means to obtain it are not known, the agency shall include within the environmental impact statement:
>
> (1) A statement that such information is incomplete or unavailable;
>
> (2) a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment;
>
> (3) a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment, and;
>
> (4) the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community.
>
> (d) For the purposes of this section, "reasonably foreseeable" includes impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason."[66]

The Forest Service cannot continue to ignore outstanding issues while predicting no significant impact due to the implementation of the Project. The Forest Service must take a hard look at possible environmental effects and "apply a rule of reason when it makes a decision regarding

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[65] *See, e.g.*, 40 C.F.R. § 1508.1(g).
[66] 40 C.F.R. § 1502.21.

EIS supplementation. NEPA does require that agencies take a 'hard look' at the environmental effects of their planned action, even after a proposal has received initial approval....Application of the rule of reason thus turns on the value of the new information to the still pending decision-making process."[67]

We ask that the Forest Service satisfy NEPA's requirements for missing information in the SEIS and require the applicant to fill the gaps in information and analysis described above, including climate change effects on the project, reasonable foreseeable life of mine beyond 2033, and the effects of increasing mill throughput. In addition, the SEIS should review the changes to the aluminum criteria for stream monitoring and compliance and include and consider the lack of compliance by the applicant as it pertains to the applicant's ability to implement any chosen alternative.[68]

Analysis of Alternatives

The DSEIS describes 4 action alternatives; a No-Action Alternative, the Proposed Action Alterative implementing POA1, a filtered tailings alternative (dry stack) with no fourth raise to the dam and Reduced Water Alternative with a shorter dam raise and a smaller lake at closure.

The upper Slate Creek system including the treatment lake is directly entwined with the health of the lower reaches of the system including Berners Bay, primarily within National Forest lands. The Forest Service is ultimately responsible and may not defer to another agency without review.

Under the Clean Water Act, the Forest Service must comply with State water quality standards, including protecting all existing uses, such as propagation of aquatic life.[69] Additionally, the National Forest Management Act requires that all agency projects and activities "shall be consistent with the land management plans."[70] For lands allocated to the Mineral Land Use Designation (LUD), like the Kensington Project Area, the Tongass Land Management Plan (TLMP) requires the Forest Service to maintain water quality to protect state-designated beneficial uses, such as for the support of aquatic life and to "maintain the present and continued productivity of . . . water resources to the extent feasible," and "avoid irreversible or serious and adverse effects on . . . water resources."[71] Agency regulations reinforce these substantive requirements.[72] The NEPA further requires an agency to identify and discuss all relevant factors balanced by the agency in making its decision "and state how those considerations entered into

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[67] *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 361, 373-74 (1989).
[68] 40 CFR 1502.9(a).
[69] 33 U.S.C. § 1323; 18 AAC 70.015(a)(2)(C).
[70] 16 U.S.C. § 1604(i).
[71] TLMP at 3-130 (SW3.C), 4-61 (SW3.I.A and I.A.2).
[72] 36 C.F.R. §§ 228.8(b), (e).

its decision."[73] Finally, the NEPA requires the Forest Service to discuss reclamation in sufficient detail to ensure the fair evaluation of the environmental consequences from the proposed action and comply with applicable Federal and State water quality standards, including regulations issued pursuant to the Clean Water Act.

The Alaska National Interest Lands Conservation Act (ANILCA) and TLMP further require the Forest Service to maintain the present and continued productivity of anadromous fish and other food fish habitat to the maximum extent feasible.[74] The Ninth Circuit has interpreted this standard to be "a strict one [that] demands strict compliance."[75]

No-Action Alternative

The No-Action Alternative is required in an EIS. The No-Action Alternative functions as a baseline against which the other alternatives will be compared. The establishment of the baseline conditions of the affected environment is a practical requirement of the NEPA process. The 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.[76] In *Half Moon Bay Fisherman's Mktg. Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988), the Ninth Circuit stated that "without establishing . . . baseline conditions . . . there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA."

In NEPA analyses, the No-Action Alternative typically represents a "no build" alternative or maintaining the status quo. Because this is an SEIS, the No-Action Alternative reflects the implementation of a previous ROD which authorized three consecutive lifts of the dam and the conversion of Lower Slate Lake to a tailings storage and water treatment facility, among other actions. It is therefore critical that the No-Action Alternative fully describe the state of the environment and expected outcomes under the project implemented in the last decision. This baseline information will forever be unavailable should any other alternative in this proposed action be chosen.

Unfortunately, the No-Action Alternative as described in the DSEIS is incomplete. As noted above, for example, the entire DSEIS omits any reference of probable impacts to the environment and structures built under the previous authorization due to climate change, including the current tailings dam.

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[73] 40 C.F.R. § 1505.2(a)(2).
[74] 16 U.S.C. § 539b; TLMP at 3-125 (Objectives).
[75] *See SEACC v. Watson*, 697 F.2d at 1310.
[76] 40 C.F.R. § 1502.15.

The No-Action Alternative analysis also inappropriately minimizes the necessity for long-term care and maintenance (LTCM) requirements that must continue forever. As currently described, LTCM will consist of dam safety inspections and annual routine maintenance of the TTF dam and spillway in perpetuity. In addition, "[s]pecial event inspections considered in the LTCM Plan will include one inspection by a qualified engineer in the event of a large earthquake, and one inspection in response to an extreme precipitation event such as a 100-year storm during the post-closure period."[77]

The December 2, 2020 catastrophic landslide in the community of Haines 37 miles to the north of the project prompted geologists to note that, while tragic, it was not at all surprising for Southeast Alaska. The region is prime landslide territory and a changing climate—trending toward warmer, rainier winters—is likely to increase the frequency of slides in the future. Climate change has created weather patterns that will lead to more slides and more extreme storm events. Warmer temperatures and less snow have been predicted for many years.[78]

There are several slopes surrounding the tailings lake that are steeper than the slope that failed in Haines. Not only could a mass failure into the lake displace a vast amount of water and impact the dam, but trees entering the lake from the hillside may clog the spillway leading to overtopping. These storm events may simultaneously affect access to the site denying the possibility of clearing the spillway to prevent overtopping and dam failure. The No-Action Alternative fails to consider or plan for this and other probable failure scenarios. These scenarios are not a small probability but rather a certainty given that this dam and spillway will need to function forever.

We ask the Forest Service to conduct a slope analysis surrounding the tailings lake and include the probability of slope failure in the No-Action Alternative. Furthermore, we request the Forest Service address the significant issues identified above in the No-Action Alternative, and make clear to the public that it is within the agency's discretion to choose that alternative.

<u>Preferred Alternative</u>

The information provided for the preferred alternative suffers from all the inadequacies common to each alternative. As pointed out earlier, it is incumbent on the Forest Service to consider the reasonable probability that the Project will continue beyond this action and require additional space to dump tailings and waste rock leading to cumulative impacts.

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[77] *See* POA1 Appx. E at page 13.

[78] See Chilkat Valley News, December 3, 2020. Available at: https://www.chilkatvalleynews.com/story/2020/12/03/news/changing-climate-means-more-landslides-in-future-scientists-say-in-wake-of-haines-disaster/14427.html.

The DSEIS also lacks a reasonable analysis of the risks of failure of the dam and associated impacts. The DSEIS must inform the decision maker and the public about the chances that reasonably foreseeable accidents associated with proposed actions and alternatives could occur, and about the potential adverse consequences of those accidents. The term "reasonably foreseeable" extends to events that may have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.[79]

The DSEIS states that a breach of the tailings dam is considered to be a low probability with high consequences and "would be similar to those under the No-Action Alternative for any of the tailings treatment alternatives"—despite the doubling of water and tailings that selection of the preferred alternative would allow.[80]

The DSEIS does not identify a dam breach, or any other failure scenario as the maximum reasonably foreseeable accident. A maximum reasonably foreseeable accident is an accident with the most severe consequences that can reasonably be expected to occur for a given proposal.[81] The DSEIS also lacks consideration (in the form of accident scenarios) that failure may occur based on a sequence of events rather than as a result of the failure of an individual component such as seismicity or storm events considered separately. Evaluating an accident scenario by using the risk values for individual components rather than multiple parameters yield unrealistic results. This is not a conservative way to measure risk.

The DSEIS must consider accident scenarios that involve an initiating event followed by a sequence of other foreseeable events or circumstances that result in adverse consequences. For instance, the DSEIS should consider a scenario where a large storm event (200-year probability as an example) results not only in a high water level in the lake, but also loss of power to the water treatment plant and/or other combinations of reasonably foreseeable accident circumstances such as slope failure above the lake resulting in trees blocking the spillway.

These scenarios would not be based on conjecture. At some point in the future a large storm event will occur after the liner protecting the dam from seepage has failed. The amount of water behind the dam is a function of the rate water can be treated and released from the lake. There has already been at least one instance where water treatment rates were inadequate to prevent the water level from rising above the free-board provided to accommodate a 200-year predicted

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[79] 40 CFR 1502.21(d).
[80] DSEIS at page 3-69.
[81] Maximum reasonably foreseeable accidents are not the same as "worst-case" accidents, which almost always include scenarios so remote or speculative that they are not reasonably foreseeable and not helpful to a decision maker. Analysis of worst-case accidents is not required under NEPA.

storm events. The "operating water level in the TTF was measured at 699.1 feet on September 10, 2017. This is above the TTF lake trigger level (understood to represent the 200-year, 24-hour storm surge storage elevation) of 697.3 feet… attributed primarily to low water treatment rates."[82]

The liner itself has only a finite and unknown service life. "However, loss of liner integrity due to deformation, or simply long-term degradation due to the indefinite service life, could result in loss of some or all of the water cover over the tailings. Although considered unlikely by Golder Associates, more extensive settlement or cracking of the dam and rupture or tearing of the liner could result in sudden loss of the water pool. This would likely erode portions of the dam in the process and some loss of tailings, possibly a breach [would occur] depending on the extent of deformation and cracking."[83]

Furthermore, the elevation of the back dam once submerged at closure only allows 6 feet of clearance at the minimum predicted water level.[84] If this water level can be maintained, which is unclear since no consideration of climate changes was included, the submerged dam could trap large woody debris entering into the lake from the surrounding uplands. The primary input of water into the final Slate Lake is above the location of the back dam. If minimum water levels cannot be maintained due to prolonged drought during closure (forever) there is the potential that the back dam will be exposed and create a difference in water elevation between the two resulting lakes adding to the risk of failure of the back dam and or drying out of the lower portion of the lake destroying the aquatic life.

NEPA planning necessarily involves reasonable forecasting. The courts have read the NEPA as requiring agencies to engage in "[r]easonable forecasting,"[85] identifying "which environmental effects are essentially unknown,"[86] considering "the probabilities as well as the consequences" of actions,[87] and evaluating "the costs of proceeding without more and better information."[88]

Furthermore, the DSEIS omits an analysis of the uncertainty inherent in the risk analysis and its relevance to the Forest Service's decision. Where uncertainties preclude quantitative analysis, the unavailability of relevant information must be explicitly acknowledged. The NEPA

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[82] See Kensington 2017 Environmental Audit, January 19, 2018 at page 32. Available at: http://dnr.alaska.gov/mlw/mining/largemine/kensington/pdf/kens_coeurak_envaudit2017.pdf.
[83] DSEIS 3.2.3.1 at 3-10.
[84] *Id.* Figure 2.3-3 at page 2-23.
[85] *Scientists' Institute for Public Information, Inc. v. Atomic Energy Comm'n* (*SIPI*), 481 F.2d 1079, 1092 (D.C. Cir. 1973).
[86] *Id.*
[87] *Carolina Environmental Study Group, Inc. v. United States*, 510 F.2d 796, 799 (D.C. Cir. 1975)
[88] *Alaska v. Andrus*, 580 F.2d 465, 473 (D.C. Cir.), *vacated in part on other grounds sub nom. Western Oil & Gas Ass'n v. Alaska*, 427 U.S. 922 (1978).

document must describe the analysis that is used, and the effect the incomplete or unavailable information has on the ability to estimate the probabilities or consequences of reasonably foreseeable accidents.[89]

The preferred alternative is basically a continuation of the selected alternative from the 2004 ROD allowing a doubling in size of the lake and close to a doubling of the tailings stored. The current dam will have to be maintained in perpetuity. "A high degree of post-closure maintenance for an indefinite service life will be needed for the current dam configuration. Reinvasion of vegetation such as large spruce trees onto the dam slope, and clogging of the final closure spillway with woody debris, likely will occur."[90]

The assumption that the effects of the preferred alternative are similar to the effects of No-Action Alternative is misguided in light of the inadequacies outlined above, as the proposed alternative essentially doubles the amount of tailings and water that may be released in the event of a dam failure. In the event of a dam failure "the predicted runout distance is much greater than the distance between the TTF and Slate Cove for each alternative. This indicates that a large portion of the tailings and water released would reach the cove [Berners Bay]."[91]

The DSEIS fails to calculate risk based on the acknowledgment that maintenance in perpetuity means eventually failure is a certainty. Throughout the analysis of the impacts associated with implementing the preferred alternative, the risk of failure is minimized or ignored. The minimization of risk was displayed at the public meeting on December 10. At the meeting, the Forest Service sought to downplay the risk of dam failure by "clearing up the misconception" that the dam was actually a water dam and not a tailings dam. For the record, the 2004 ROD authorizing construction of the dam refers to it as a tailings dam multiple times and never as a water dam. We request the Forest Service acknowledge and correct this mistake in the SEIS.

The existence of incomplete or unavailable scientific information concerning significant adverse environmental impacts essential for a reasoned choice among alternatives and triggers the requirements of 40 CFR § 1502.21. This provision requires the analysis and disclosure of the costs of uncertainty and the costs of proceeding without more and better information. Regulations at 40 CFR § 1502.1 mandate that all NEPA documents be "supported by evidence that the agency has made the necessary environmental analyses." The Forest Service has a duty to disclose the underlying scientific data and rationale supporting the conclusions and

[89] 40 CFR 1502.21.

[90] Coeur Alaska, Inc. Kensington Mine 2017 Environmental Audit at page 9.

[91] 2020 DSEIS at 3.2.1 at 3-6.

assumptions in an EIS. Unsupported conclusions and assumptions violate NEPA.[92] The DSEIS lacks this information.

Lacking scientific data and evidence in the DSEIS undercuts the Forest Service's ability to predict outcomes and effects. EIS's in general already have a dismal record of accurately predicting the future outcomes resulting from their decisions. A study of 25 mines in the U.S. conducted in 2006 compared actual results in water quality versus the predicted results in the EIS and found mitigation efforts failed to protect water quality 64% of the time despite their predicted effectiveness.[93] This failure rate is compounded by ignoring gaps in data and the uncertainty endemic in predicting the future. Piling one supplement upon another without addressing new information magnifies these shortcomings. **We request that the SEIS adequately address and disclose the effects of climate change on the project, compliance history of the applicant, reasonably foreseeable operations past 2033 and the risks associated with maintenance in perpetuity.**

Finally, the DSEIS does not mitigate the loss of productive old growth forest, (POG). The Preferred Alternative will remove 131 acres of POG, 24 acres of forested muskeg, and 10 acres of unproductive forest. Mitigation describes replacing lost Dolly Varden habitat but is silent on replacing the lost value of the old growth timber.

Old-growth forests provide critical nesting, foraging, rearing, denning, and cover habitat for old-growth forest-dependent wildlife species such as Sitka black-tailed deer, American marten, black and brown bears, goshawks, and cavity or snag-dependent species like flying squirrels, woodpeckers, and owls. Large dead or defective trees provide nesting sites for owls and bald eagles, as well as foraging sites for woodpeckers, sapsuckers, brown creepers, and other species.

Replacing culverts constructed under previous authorizations should not count as mitigation against the impacts of this proposal.

The final SEIS should consider the funding of the Klag Bay clean-up contaminated by mining activities as proposed in SEACC's scoping comments as compensatory mitigation for the loss of old-growth forest the Project would cause.

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[92] *See Dubois v. U.S. Department of Agriculture*, 102 F.3d 1273, 1287 (1st Cir. 1996).

[93] See, Kuipers, J.R., Maest, A.S., MacHardy, K.A., and Lawson, G. 2006. Comparison of Predicted and Actual Water Quality at Hardrock Mines: The reliability of predictions in Environmental Impact Statements Table 8.2 at page 192. Available at: https://www.earthworks.org/cms/assets/uploads/archive/files/publications/ComparisonsReportFinal.pdf

Filtered Tailings Alternative

If implemented, the proposed location of the tailings dump on the north bank of Lower Slate Lake essentially relies on the lake to function as a contact water collection pond. As with the Greens Creek dry stack facility, there is a high probability that this may result in the need for water treatment in perpetuity.

As pointed out above, the limited available terrain for any more lifts to the dam makes any further expansion of the tailings lake improbable after 2033. The foreseeability of further mine operations after this action means it is reasonably foreseeable the next action will require filtered tailings disposal. These alternatives should not be bifurcated and treated piecemeal, but analyzed together in terms of a more realistic life of mine.

Reduced Water Alternative

The reference to the dam raise descried on the Reduced Water Alternative on page S-7 of the 2020 DSEIS ("Stage 4 Dam would be raised 66 feet instead of the 88 feet in the Proposed action") is in error. We request the Forest Service correct this error.

The purpose of this alternative seems only to be to allow operations under even shorter life of mine authorization. Reducing the raise of the dam increases the probability that another expansion will be necessary sooner. It also assumes that a 9-foot water cover is reasonable despite the goal of returning Lower Slate Lake to its pre-tailings disposal facility biological productivity. The DSEIS states, "The resulting water body with shallow depths may be poor Dolly Varden habitat because it may have elevated temperatures in the summer and limited volume and possibly low oxygen in winter from ice formation, as well as no Dolly Varden spawning habitat.

In addition, Dolly Varden could not move down from Upper Slate Lake as *flow bypass from Upper Slate Lake to East Fork Slate Creek would continue after closure.*"[94] It is unclear why restoring the natural flow from Upper to Lower Slate Lake at closure is not feasible for this alternative. Under the No-Action and Preferred Alternative closure plans the water level would be allowed to rise to the spillway after water quality criteria was met. Maintaining the coffer diversion dam and by-pass pipeline would only add to the infrastructure needed to be maintained into perpetuity.

The DSEIS also does not consider the likely scenario where warmer water temperatures and available dissolved metals and nutrients may result in colonization by algae or filamentous iron reducing bacteria, leading to eutrophic conditions in the lake that would affect aquatic life and reduce the efficiency of the water treatment plant.

[94] DSEIS at 3-65. Emphasis added.

The Forest Service's failure to consider the indefinite timeline of the effects of the project and to favor finite descriptions of the alternatives and closure plans throughout the DSEIS constrains the Forest Service from recognizing that at some point in the future these lakes will fill with silt through natural succession combined with regional isostatic and tectonic uplift. In the unlikely event that the dam avoids catastrophic failure, all that will remain will be Slate Creek cutting across an expanse of flat land and over the spill way. And it is inevitable the Creek will eventually cut through the dam as sure as the Colorado River cut through the Colorado Plateau. Berners Bay has probably existed and been a productive estuary since the mid-Holocene warming event 9,000-5,000 years ago, so it is reasonable to assume it would continue to be productive for a long time. The only question is will the Forest Service live up to its mission to meet the needs of present and future generations or allow short-term actions that deprive future generations of these benefits.

Suggested Action Alternative

We recommend the Forest Service analyze a dry stack alternative located on the Comet Beach side of the project area. The 1997 plan of operations submitted by Coeur, Alaska described the construction of a "dry tailings facility (DTF)," in which the mine would dispose of waste from its froth-flotation mill on dry "uplands" in this area. At the time this alternative, Alternative D in the 1997 SEIS and ROD, was identified as the environmentally preferable alternative and was the selected alternative approved by the Forest Service.

The DTF described in 1997 would accommodate 20 million tons of de-watered tailings stored in cells separated by the construction of berms. In addition, drainage structures around the DTF, dewatering and disposal of the process wastewater and long-term closure plans were developed. The Forest Service approved the plan of operations for the DTF and the U.S. Army Corps of Engineers ("Corps") and the Environmental Protection Agency ("EPA") issued permits to the company authorizing the construction of this facility in 1997.

The Greens Creek Mine operated by Hecla has successfully implemented a DTF facility without berms or cells needed to provide external containment. External containments for tailings facilities have been shown to only add additional structures that may be subject to failure. Hecla's DTF relies on removing around 86% of the water and using compaction for stability.[95] This technology is feasible for the Kensington Gold Mine and should be considered in the SEIS.

[95] Hecla Greens Creek Active Tailings and Production Rock Site 2019 Annual Report Table 4.2.c at 8. Available at: http://dnr.alaska.gov/mlw/mining/largemine/greenscreek/pdf/2019-Active-Tailings-and-Production-Rock-Site-Report.pdf.

The 1997 SEIS and ROD described the mill as also being located on the Comet Beach side of the project. Since Coeur decided to pursue the option of lake dumping on the Kensington side, the mill was instead built there. This should not pose an obstacle to building a DTF on the Comet Beach side. Currently, the mine must pipe the tailings slurry 3.5 miles through a pipeline from the mill to Lower Slate Lake. It is feasible to pump it underground a little farther to the Comet Beach side. Visual impacts should also not be a consideration since the Comet Beach Side already has the largest rock dump of the project located there.

This alternative would reduce the threat to the critical ecosystem of Berners Bay by continued mine activity. This alternative would also increase the life of mine and avoid the need for short-term authorizations and permitting processes every 7-8 years, saving the Forest Service's resources. We request that this alternative be identified and analyzed against the other alternatives presented in the DSEIS.

Conclusion

We request the Forest Service withdraw the DSEIS, fix the errors in analysis and process, include the previously authorized alternative of a dry stack TTF on the Comet Beach side of the project in order to protect Berners Bay and then publish an updated DSEIS for public comment.

Thank you for the opportunity to submit timely comments on this important federal action.

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