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August 3, 2009

VIA EMAIL: Richard.G.Jackson@usace.army.mil

Colonel Reinhard W. Koenig, District Commander
c/o Mr. Richard Jackson
U.S. Army Corps of Engineers
Alaska District
P.O. Box 6898
Elmendorf AFB, AK 99506-0898

Re: POA-1990-592-M6

Dear Colonel Koenig:

Please consider these comments on Coeur Alaska, Inc.'s application to extend and modify its permit to deposit "fill material" for the Kensington Mine. We urge you to modify the permit to require the use of the proposed "paste" tailings facility at Comet Beach rather than Lower Slate Lake. The paste tailings option is, by far, the environmentally superior choice. As demonstrated by Coeur's previous support for the plan, it is also feasible and will provide just as many jobs. And because the permitting process for this plan was nearly complete in September 2008, when Coeur withdrew its application, the permit can be completed quickly.

There are many reasons why the paste tailings plan is environmentally preferable to dumping the tailings in a lake, but the most fundamental is that it is inappropriate and contrary to the purposes of the Clean Water Act to use the nation's waters for industrial waste dumps. The authors of the Clean Water Act wrote in the Senate Report, "The use of any river, lake, stream, or ocean as a waste treatment system is unacceptable." S. Rep. No. 92-414, at 7 (1971). Yet, that is precisely what the current permit allows: It authorizes the use of Lower Slate Lake as a waste treatment system for over 200,000 gallons per day of process wastewater from the ore processing mill. This is not acceptable under any circumstances.

For this reason alone, the Corps should not only require the Kensington Mine to implement the paste tailings alternative, but should work with EPA to correct the regulatory missteps that enabled the Kensington Mine permit to be granted in the first place. Specifically, the agencies must restore the longstanding requirement, prior to 2004, that all discharges subject to effluent limitations must comply with those limitations. This requirement was changed by the May 17, 2004 "Regas Memo," an unpublished, internal memo prepared by EPA to interpret the 2002 redefinition of "fill material" and other agency regulations. The Regas Memo, combined

with the 2002 fill rule, resulted in the Corps for the first time ever being responsible for permitting end-of-pipe discharges of process wastewater from industrial sources. This is not the traditional understanding of the proper use of "fill material" permits and not the appropriate role for the Army Corps of Engineers. If an industrial source is subject to an effluent limitation, it should be required to obtain an NPDES permit, the result of which would be that the application of required technologies would remove all or most solids, and the permitted discharge would no longer meet the definition of "fill material." To correct the current situation, the agencies should rescind the Regas Memo and revise the fill rule. In the meantime, the Corps should not issue or extend any permits issued under the Regas Memo, particularly where—as here—there is a better alternative at hand.

The Clean Water Act also contains an explicit policy against discharges of this type: "it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited…." 33 U.S.C. § 1251(a)(3). There can be no serious dispute that the discharge authorized by the current permit is toxic. It has a pH of 10. It is 30% solids by volume (55% by weight) and will fill the lake with 4.5 million tons of solids over time. The deposited solids will have a lasting toxic effect. During the original permitting process, they were tested for toxicity on two representative freshwater macroinvertebrates. For one of the organisms, only 5% survived. For the other, there was a significant reduction in the emergence rate. In both cases, they substantially exceeded EPA thresholds for toxicity.

The discharge will kill all of the fish in the lake and nearly all other aquatic life. The complete destruction of a lake in this manner should always be considered an unacceptable adverse effect on the environment, but particularly where a feasible alternative is readily available.

It is doubtful whether the lake would ever recover from this assault. The permit requires Coeur to deposit four inches of native material over the toxic sediments upon closure of the mine in the hope that this will allow the newly created artificial lake to recover, but there are no studies supporting the efficacy of this measure. We are aware of no examples where such a strategy has been used. In 2004, EPA wrote:

> The only question is whether the artificial lake will be able to support a similar ecosystem after closure and reclamation. The answer to that question is uncertain, but the weight of the evidence suggests that restoring and "improving" the lake would take decades, not years.

Letter from M. Combes, EPA, to T. Gallagher, Corps (Aug. 20, 2004), Enclosure 1 at 8 (attached). Even if the lake could recover some time in our children's or grandchildren's lifetimes, such a long-term loss of a lake is unacceptable. The notion—sometimes propounded by supporters of the Lower Slate Lake site—that Coeur Alaska, Inc., can improve on nature by creating a *better* lake on top of 4.5 million tons of toxic mine tailings is risible.

The paste tailings plan also eliminates the risk of damage to Berners Bay from a failure of the tailings facility. EPA has designated Berners Bay an "aquatic resource of national

significance." Commenting in 2004 on the proposed plan to discharge mine tailings directly into Lower Slate Lake, EPA wrote:

> We are especially concerned about the adverse effects of the proposed discharge on the Berners Bay ecosystem and adjacent waters of the United States. Berners Bay has unique ecological diversity and productivity and provides outstanding fisheries, shellfish, wildlife and recreation values.

Letter from M. Combes, EPA, to T. Gallagher, Corps (Aug. 20, 2004), at 2 (attached). Lower Slate Lake drains to Berners Bay, while the paste tailings facility does not. The huge quantity of tailings in Lower Slate Lake would be held back by an earthen dam 90 feet high and 500 feet long. Were that dam to fail, the impacts to Berners Bay would be catastrophic. Impoundment dams are prone to failure. To cite just one recent example, a dam containing coal ash slurry from a power plant near Kingston, Tennessee failed in December 2008, releasing more than a billion gallons of the slurry with massive damage to property and the environment. To avoid an uncontrolled discharge to Berners Bay, the dam at Lower Slate Lake would have to last forever. Similarly, the consequences of a fuel spill on marine resources would be much higher in Berners Bay than at the site of the proposed paste tailings facility.

Because the Kensington Mine contains reserves beyond those considered in the current permit, the Corps and EPA must also consider the impacts of the tailings facility expansion that will be needed after ten years of operation. At Lower Slate Lake, there is nowhere else to go. The only choices would be to fill the impoundment completely, eliminating the water, or building a similar impoundment at Upper Slate Lake, destroying yet another lake and compounding the risk of catastrophic failure. In contrast, the paste tailings site at Comet Beach contains ample room for expansion without destruction of any lakes, rivers, or streams.

Proponents of using the lake as a waste dump have criticized EPA for noting that the ore mill as constructed has a lower capacity than envisioned in the EIS and original permitting decision. They point out that the mine will operate beyond the ten years analyzed at that time. This is true, but it is a consideration that favors the paste tailings facility. The longer operation of the mine will ultimately require expanded tailings storage, a need met at the paste site but not at Lower Slate Lake. The foreseeable need for expansion alone is sufficient reason to select the paste tailings facility over Lower Slate Lake.

For these reasons and others, EPA has consistently taken the position that an uplands tailings disposal site would be environmentally preferable to dumping tailings in Lower Slate Lake. *See*, *e.g.*, Letter from M. Combes, EPA, to T. Gallagher, Corps (Aug. 20, 2004) (attached); Letter from M. Gearheard, EPA, to F. Cole, USFS (Dec. 1, 2004) (attached); Letter from M. Gearheard, EPA, to R. Koenig, Corps (July 14, 2009) (attached). Even in issuing the NPDES permit, EPA wrote, "However, for the reasons discussed in our December 1, 2004 letter, EPA continues to believe that Alternative A [dry stack tailings] is environmentally preferable." EPA, ROD, Kensington Gold Project (June 28, 2005), at 7.

Since that time, the paste tailings option has emerged as a choice that would have essentially the same impacts as the dry stack facility, but with improved economics for the mine.

The paste tailings plan was proposed by Coeur in 2007. After the Ninth Circuit Court of Appeals declared the lake dumping plan illegal, Juneau Mayor Bruce Botelho brought the parties together, with the assistance of a mediator, to identify options that would allow the mine to open promptly. Through this process, Coeur developed the paste tailings plan with the support of all concerned, including the conservation groups. *See* Coeur Alaska, Inc., Kensington Mine, Comet Paste Tailings Facility (PowerPoint presentation, Jan. 7 & 8, 2008) (excerpts attached). Coeur proceeded to apply for the necessary permits and approvals, and in compliance with the National Environmental Policy Act the Forest Service prepared a draft Environmental Assessment (EA). The EA was circulated to the relevant agencies, who submitted technical comments aimed at strengthening the document. The agencies were within perhaps two weeks of releasing the EA to the public when, on September 23, 2008, Coeur abruptly and unexpectedly withdrew its applications with all the agencies, falsely accusing EPA of attempting to delay the process.

In another change of circumstances since the original permitting decision, Coeur has created an unforeseen acid mine drainage (AMD) problem at Lower Slate Lake. While Coeur claims the problem is localized, the extent of the sulfide deposit is unknown. For the same reason that the sulfide deposit was unforeseen initially, it is possible that the problem could be exacerbated, or more sulfide deposits encountered, by continuing work at Lower Slate Lake. This problem could be avoided by moving the tailings disposal to the Comet Beach paste site. The suggestion that the problem can be eliminated simply by covering the site with more rock is unrealistic. If it were that easy to stop acid mine drainage, it would not be such a persistent problem at mining sites around the world. Regardless of which site is selected for tailings disposal, Coeur will have to take significant measures to control the problem for the long term.

Some people have asserted that the Ninth Circuit's injunction caused the AMD problem by preventing Coeur from taking measures to stop it. This is nonsense. The purpose of the injunction was to protect the environment of Lower Slate Lake, and if it ever appeared that the injunction was hindering the control of an AMD problem, the court would not have hesitated to modify the injunction as needed. Not once did Coeur, the Corps, the State, or any other party approach the plaintiffs to the lawsuit about seeking modification of the injunction to address this problem. Had they done so, the plaintiffs would have agreed readily. In fact, when a concern was raised that the injunction would stand in the way of erosion control, the plaintiffs themselves suggested modifying the language of the injunction to allow appropriate measures. The truth is that the injunction was no hindrance to any appropriate measures for controlling AMD.

The Corps' initial analysis favoring lake dumping over the "dry stack" uplands disposal option was based largely on a simplistic comparison of the acres of wetlands lost, failing to take into account the relative values of the wetlands or the value of the lake. The construction of either a dry or paste tailings disposal facility will require placing clean fill in forested wetlands. However, the forested wetlands are commonplace throughout Southeast Alaska, while the lacustrine and emergent palustrine wetlands in the vicinity of Lower Slate Lake are rare in the area and much more valuable ecologically. The Corps' initial analysis assumed that the lake would recover and new emergent wetlands created, but for the reasons discussed above this is by no means certain and would take many decades even if it were ultimately successful.

The paste plan also has a significant economic advantage over dry tailings for Coeur. It is cheaper to operate, because it does not require removing as much water from the tailings. Coeur claimed that the dry tailings option was not practicable but has admitted that the paste tailings plan is highly advantageous. In 2007, Coeur itself proposed the paste tailings plans and touted its significant benefits. Had Coeur not withdrawn its applications for permits for the paste plan, it would be under construction now, and this controversy would be unnecessary.

Indeed, EPA determined in 1982 that it is *never* necessary to deposit tailings from froth-flotation ore processing mills into waters. At that time, EPA studied the mining industry and found that most mines were already operating with no discharge to navigable waters. *See* 47 Fed. Reg. 54,598, 54,602 (Dec. 3, 1982). Adopting a zero-discharge effluent limitation, EPA rejected arguments that it would be too costly in wet and mountainous areas, *id.*, like Southeast Alaska. In fact, the Greens Creek Mine, which is just 50 miles from the Kensington and located in the same environment, has successfully and profitably used a dry stack tailings disposal site for many years. As discussed above, the Corps and EPA should work together to take appropriate regulatory measures to make the effluent limitations applicable again.

Proponents of using Lower Slate Lake as a waste dump have argued that to do otherwise would somehow undercut the Supreme Court's decision in *Coeur Alaska, Inc. v. Southeast Alaska Conservation Council*. This reflects a misunderstanding of the Court's decision. The Court found that both the Clean Water Act and the agencies' regulations are ambiguous on the question of whether EPA's effluent limitations apply to the discharge of the wastewater slurry from the Kensington ore mill. Accordingly, the Court merely deferred to an informal, unpublished EPA memo (the "Regas Memo"), which itself was constrained by uncertainty over the requirements of the law. Far from precluding agency review of these questions, the Supreme Court's decision cries out for administrative clarification. Switching to the paste tailings facility at the Kensington Mine is an important first step in achieving the intent of the Clean Water Act to restore the integrity of the nation's waters, to stop using lakes and other waters as waste treatment systems, and to eliminate the discharge of toxic pollutants in toxic amounts. Other needed steps include rescinding the Regas Memo and modifying the 2002 fill rule. *See* Letter from C. Pope, Sierra Club, et al., to Pres. Obama (July 17, 2009) (attached).

Proponents of the Lower Slate Lake site also complain that the paste tailings facility would leave a stack 75 feet high after completion (according to the draft EA). While true, the tailings dam at Lower Slate Lake would be even higher: 90 feet (and 500 feet long). An important difference is that the paste stack would be revegetated upon completion to blend into the surrounding hilly terrain. In contrast, the tailings dam at Lower Slate Lake would have to be maintained as an eyesore in perpetuity to avoid catastrophic consequences to Berners Bay.

The paste tailings facility is by far the best option available. It is both environmentally preferable and feasible. It is supported by conservation groups through a mediated process that included local leaders and all agencies with jurisdiction over the mine. It faces no risk of litigation and no risk of veto from EPA. Unlike the lake dumping plan, it is also consistent with the purposes of the Clean Water Act and with needed regulatory measures to rescind the Regas Memo and revise the fill rule. In short, it is the option that will allow the mine to open promptly with all its economic benefits, much lower adverse environmental impact, and no controversy.

The Corps should require this tailings disposal method in considering Coeur's application to extend and modify its permit.

Thank you for your careful attention to these comments.

Sincerely,

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August 20, 2004

Colonel Timothy J. Gallagher
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Subject: EPA Comments on Public Notice of Application for Permit
Reference Numbers: POA-1990-592-M and POA-1997-245-2
Waterway Numbers: Lynn Canal 31 and Berners Bay 4
Applicant: Coeur Alaska, Inc.
Location: Kensington Mine and Cascade Point, north of Juneau, Alaska

Attention: John C. Leeds, III - Project Manager

Dear Colonel Gallagher:

Thank you for approving our request for an extension of the comment period on the public notices referred to above. The Environmental Protection Agency (EPA) has reviewed the public notices and related documents, pursuant to our authority under Section 404 of the Clean Water Act. The following is a summary of EPA's preliminary findings with respect to the proposed discharges. Please refer to Enclosure 1 for EPA's detailed comments on the proposed projects. We have also enclosed a copy of EPA's comments on the Kensington DSEIS for your information (see Enclosure 2).

As stated in the Draft Supplemental Environmental Impact Statement (DSEIS), "The purpose of the Proposed Action is to consider certain changes to the 1998 approved Plan of Operations for the Kensington Gold Project regarding access, tailings disposal, and support facilities." The proposed work at Kensington Mine includes the discharge of 5,451,700 cubic yards of fill and dredged material into 95.9 acres of waters of the United States. The proposed work at Cascade Point includes dredging 23,000 cubic yards of material and discharging 29,000 cubic yards of fill material below the High Tide Line.

The 404(b)(1) Guidelines state, in part, that no discharge of dredged or fill material may be permitted unless it is the least environmentally damaging practicable alternative. Based upon the information provided, EPA believes that there are other practicable alternatives to the proposed discharge that could have less adverse effect on the aquatic ecosystem and we would like to continue to explore the practicability of these alternatives. In 1998, the applicant received

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a Section 404 permit for mining activities for the Kensington Gold Project which would locate all of the mine facilities on the east side of Lynn Canal near Sherman Creek and would include disposal of mine tailings in a dry tailings facility. In contrast, the applicant's newly proposed project would locate most of the mine facilities on the northwest side of Berners Bay near Johnson Creek and would include the creation of a tailings disposal facility in Lower Slate Lake (i.e., damming the lake and filling it with 4.5 million tons of tailings), resulting in 95.9 acres of direct impact including the removal of 20 acres of freshwater habitat and associated aquatic life (Lower Slate Lake). EPA has significant concerns with the impacts associated with the new proposal and believes the originally permitted project (evaluated in the DSEIS as Alternative A and, in variation, A1) was, at the time it was permitted, a practicable alternative and would have less adverse impact on the aquatic ecosystem, consistent with the Guidelines.

EPA finds that the impacts associated with the newly proposed project would lead to significant adverse effects to aquatic resources. The direct loss of Lower Slate Lake and indirect impacts to the surrounding aquatic ecosystem, including Berners Bay, may cause or contribute to significant degradation of the waters of the United States. Additionally, we are concerned that, without additional treatment, the proposed discharge may cause or contribute to violations of Alaska water quality standards for turbidity, aluminum, iron and lead. Please note that in response to some of these concerns, which were raised in the NPDES permit application process, the applicant has proposed some changes to the projects (e.g., a pipeline diversion of Upper Slate Lake flows around Lower Slate Lake). The federal and state agencies have begun discussing the outlines of a new alternative that may include these and other changes.

EPA continues to have significant concerns regarding the proposed projects under Section 404. We are especially concerned about the adverse effects of the proposed discharge on the Berners Bay ecosystem and adjacent waters of the United States. Berners Bay has unique ecological diversity and productivity and provides outstanding fisheries, shellfish, wildlife and recreation values (see Enclosure 3). EPA will continue to actively participate in discussions on this proposal, pursuant to our authorities under Sections 402 and 404 of the Clean Water Act, Section 309 of the Clean Air Act, and the National Environmental Policy Act.

While we have these concerns, we would very much like to work collaboratively with you and the State to achieve a satisfactory outcome. EPA requests a meeting with the Alaska District to discuss our comments and work towards a timely resolution of these issues. Please let me know when you or your staff are available to meet. If you wish to discuss this letter before we meet, please call me at 907-271-5083, or have your staff call Chris Meade at 907-586-7622.

Sincerely,

for Marcia Combes, Director
Alaska Operations

Enclosures (3)

cc: Rick Richins, Coeur Alaska, Inc.
Steve Hohensee, USFS
Sue Walker, NOAA
Richard Enriquez, USFWS
Dan Easton, ADEC

Enclosure 1

EPA's Detailed Comments on the Kensington Gold Project

Subject: EPA Comments on Public Notice of Application for Permit
Reference Number: POA-1990-592-M and POA-1997-245-2
Waterway Number: Lynn Canal 31 and Berners Bay 4
Applicant: Coeur Alaska, Inc.
Location: Kensington Mine and Cascade Point, north of Juneau, Alaska

Introduction

This document contains the Environmental Protection Agency's (EPA) detailed comments on the Department of the Army's (DA) public notice for the Kensington Gold Project, which was published on June 21, 2004. The legal basis for this review is Section 404 of the Clean Water Act (hereinafter referred to as "404") and the Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material set forth at 40 CFR Part 230 (hereinafter referred to as "Guidelines"). EPA has determined that these comments are consistent with EPA's memorandum on Clean Water Act Regulation of Mine Tailings, dated May 17, 2004 (hereinafter referred to as "Mine Tailings Memo").

The Mine Tailings Memo affirms that the placement of the mine tails in the disposal site (i.e., Lower Slate Lake) must comply with the Guidelines. The Guidelines include specific substantive requirements known as restrictions on discharge. These restrictions are set forth at 40 CFR § 230.10, paragraphs (a) through (d). EPA's detailed comments are organized into four sections that correspond to the restrictions on discharge. Section 1 of these comments compares the practicability and ecological impact of various alternatives under consideration (40 CFR § 230.10(a)). Section 2 considers whether the proposed discharge may cause or contribute to violations of any applicable Alaska water quality standards (40 CFR § 230.10(b)(1)). Section 3 analyzes whether the proposed discharge may cause or contribute to significant degradation of the waters of the United States (40 CFR § 230.10(c)). Section 4 examines whether the proposed discharge includes all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem (40 CFR § 230.10(d)).

It is important to note that each of the restrictions on discharge (and thus, each of the sections below) applies independently to the proposed discharge. That is, if the proposed discharge fails to comply with any of the four subsections of 40 CFR 230.10, then DA may not authorize the fill, even if it meets the other three subsections.

Section 1. Alternatives

The Guidelines state that "no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem" (40 CFR § 230.10(a)). The following discussion addresses both the practicability and the aquatic effects of the detailed alternatives in the Kensington DSEIS.

Practicable

The term *practicable* means "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes" (40 CFR § 230.3(q)). Thus, there is a three part test to determine whether an alternative is practicable:

1. *Cost.* The relevant consideration is whether the cost of an alternative is substantially greater than the costs normally associated with the particular type of project, rather than the financial circumstances of the applicant. For comparison, please refer to the cost of other large mine projects in Alaska, such as the Greens Creek and Pogo mines. In both cases, DA and EPA determined that the cost of a DTF is reasonable. EPA believes that all of the detailed alternatives in the Kensington DSEIS may be "capable of being done after taking into consideration cost."

2. *Existing Technology.* The relevant consideration is whether an alternative is technically feasible based on available technology. For comparison, please refer to the technology used at other large mines in Alaska, such as the Greens Creek and Pogo mines. In both cases, DA and EPA determined that a DTF is the best available technology. EPA believes that all of the detailed alternatives in the Kensington DSEIS may be "capable of being done after taking into consideration...existing technology."

3. *Logistics.* In the context of mining in general, and this project in particular, logistics refers to the transportation of personnel, equipment, supplies and minerals. The relevant consideration is whether an alternative provides reasonable access to the project site. EPA believes that all of the detailed alternatives in the Kensington DSEIS may be " capable of being done after taking into consideration...logistics."

As stated above, EPA believes that all of the alternatives considered in detail in the DSEIS may be "capable of being done after taking into consideration cost, existing technology, and logistics." Therefore, we believe that all of the alternatives may be practicable. More specifically, with respect to Alternative A in the DSEIS, our concerns reflect the following facts:

On May 5, 1998, DA issued a 404 permit, identified as POA-1990-0592-2 [Lynn Canal 31], to Coeur Alaska for the development of the Kensington gold mine on the east side of Lynn Canal near Comet Beach and Sherman Creek (hereinafter referred to as the "1998 project" or the "1998 permit"). The 1998 permit was based in part upon DA's factual determinations and findings of compliance with the restrictions on discharge as required under the Guidelines. Among other findings, DA found that the 1998 project is a practicable alternative, and EPA concurred with this finding. The applicant affirmed this finding of practicability by applying for the 1998 permit, and then reaffirmed it by accepting the terms and conditions of the 1998 permit.[1] In the absence of new information to negate the practicability of the 1998 project, EPA believes that it was and still may be a practicable alternative.

Less Adverse Impact on the Aquatic Ecosystem

The Kensington DSEIS includes four alternatives that are studied in detail. While the applicant has applied for a 404 permit for Alternative B, the federal agencies responsible for the development of the DSEIS did not identify a preferred alternative.

Alternative A is the No Action alternative (i.e., the 1998 project) and includes locating all of the mine facilities on the east side of Lynn Canal near Sherman Creek, a mining rate of 4,000 tons of ore per day, 20 million tons of tailings, a DTF, no mine backfill, a marine terminal at Comet beach, employee access by helicopter, and employee housing. Alternative A1 is similar to Alternative A, except that A1 includes a reduced mining rate (2,000 tons of ore per day), reduced tailings production (7.5 million tons), a smaller DTF (4.5 million tons), and 40% mine backfill (3 million tons).

Alternative B, which is the Proposed Action, includes locating most of the mine facilities on the northwest side of Berners Bay near Johnson Creek, a reduced mining rate (2,000 tons of ore per day), reduced tailings production (7.5 million tons), a Tailings Disposal Facility (TDF) in Lower Slate Lake (i.e., damming the lake and filling it with 4.5 million tons of tailings), 40% mine backfill (3 million tons), a tailings pipeline and access road, recycling of process water, no diversion of surface water around Lower Slate Lake, upgrading the existing Jualin Mine road, a marine terminal at Slate Creek Cove (including a landing craft ramp), a marine terminal at Cascade Point, employee access by ferry, and no employee housing. Alternative C is similar to Alternative B, except that C includes diversion of surface water around Lower Slate Lake, no recycling of process water (note that 40 CFR § 440.104(b)(1) requires no discharge of process water, which is generally accomplished by recycling the volume of process water), no landing craft ramp at the Slate Creek Cove marine terminal, and a marine terminal at Echo Cove instead of Cascade Point.

As the above description of the alternatives shows, the alternatives can be characterized according to their similarities and differences. Alternative A1 is a slight variation on the theme of Alternative A, and Alternative C is a variation of Alternative B. Hence, Alternatives A and A1 have more in common with each other than they do with Alternatives B and C, and vice versa. The same pattern holds true when comparing the adverse effects of the alternatives on the aquatic ecosystem.

Alternative A vs. Alternative A1

Alternative A1 is essentially a scaled-back version of Alternative A, with the total production volume reduced to match the production volume in the alternative the applicant now prefers (Alternative B), rather than the higher production originally proposed and permitted in 1998. Thus, the effects of Alternatives A and A1 on the aquatic ecosystem are generally the same; the only notable difference is in the direct effects related to the size of the DTF and the borrow sites. Under Alternative A, the DTF impacts 113.4 acres and the borrow sites impact 54.7 acres. Under Alternative A1, the DTF impacts 50 acres and the borrow sites impact 36.6 acres (see Table 2-3 in the DSEIS). The net effect is that Alternative A disturbs 81.5 acres more than Alternative A1.

Note that it is not clear how many of these acres are actually waters of the United States, including wetlands, due to the low resolution of wetlands mapping on the Kensington side of the project area. The DSEIS assumes that all of the acres disturbed under Alternatives A and A1 are wetlands. Refer to page 4-69 of the DSEIS, which states:

> "Section 3.12.3 notes that wetlands on the Kensington side of the project area were not mapped with the same level of detail as those on the Jualin side. The result is that 100 percent of the 268 acres of disturbance under Alternative A would occur within wetlands. By comparison, a smaller percentage of the total impacted area under Alternatives B and C are wetlands (60 percent and 65 percent respectively). Due to the differences in mapping, focusing on the extent of impacts within individual wetland types will provide a more realistic comparison across alternatives rather than simply comparing the overall percentage of wetlands impacted by each alternative."

Based on our experience in reviewing numerous projects in Southeast Alaska, wetlands typically cover less than half of the landscape and uplands tend to cover more than half of the landscape. Thus, we believe it is likely that the DSEIS overstates the acreage of jurisdictional wetlands impacted by Alternatives A and A1. Furthermore, the federal agencies have a legal obligation to "Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits" (40 CFR 1502.14(b)). EPA recommends correcting this deficiency by performing a comprehensive jurisdictional determination, consistent with the Wetlands Delineation Manual, for all alternatives before the Final SEIS.

Nonetheless, it is reasonable to conclude that Alternative A1 has less adverse impact on the aquatic ecosystem than Alternative A for two reasons. First, with respect to aquatic habitat quality, the general location of the DTF and borrow sites is the same under both alternatives. Second, in terms of aquatic habitat quantity, the DTF and borrow sites under Alternative A1 are approximately half the size of the DTF and borrow sites under Alternative A. Under these circumstances, it seems clear that Alternative A1 has less adverse effect on the aquatic ecosystem than Alternative A.

Alternative B vs. Alternative C

Likewise, the effects of Alternatives B and C on the aquatic ecosystem are mostly similar, with a few exceptions. The main differences between these two alternatives include wetland acres impacted, settling conditions in Lower Slate Lake, effects on fish habitat in Upper Slate Lake, and intertidal impacts in Slate Creek Cove. Some of these differences offset each other, whereas others tend to tip the balance in favor of Alternative C. However, the most significant difference in adverse aquatic effects is that Alternative B impacts herring spawning habitat at Cascade Point. Alternative C is specifically designed to avoid this impact. EPA has commented extensively on this issue in the past (see Enclosure 3). The assessment of herring in the Kensington DSEIS confirms our concerns. Therefore, we conclude that Alternative C has less adverse impact on the aquatic ecosystem than Alternative B.

Alternatives A and A1 vs. Alternatives B and C

Next, we compare the effects of Alternatives A and A1 to the effects of Alternatives B and C. The impacts of these two sets of alternatives are substantially different due to the design and location of the various project elements. The most notable differences between these alternatives pertain to wetland impacts, ecological risk of tailings disposal options, and adverse effects on marine mammals and recreation in Berners Bay.

At first glance, Alternatives A/A1 appear to impact more wetlands and lakes than Alternatives B/C. However, as discussed above, the wetlands analysis in the DSEIS is biased due to the lack of accurate and detailed wetlands mapping on the Kensington side of the project area. Therefore, there is insufficient information to make a reasonable judgement about the comparative effects of Alternatives A/A1 and Alternatives B/C on wetlands.

With regard to the ecological risk of the tailings disposal options, the DTF (Alternatives A/A1) minimizes the exposure pathways by lining the dry stack cells, capping the dewatered tailings, treating DTF runoff in a storm water detention and sediment pond, and discharging a very small volume of treated water into a small creek devoid of fish. In contrast, the Lower Slate Lake tailings impoundment (Alternatives B/C) directly exposes the entire lake to the tailings, which have exhibited considerable toxicity (per the failed amphipod bioassay). Alternatives B/C also include a very large NPDES discharge to Slate Creek, which supports anadromous fish and drains to Slate Creek estuary and Berners Bay. Therefore, in terms of the potential ecological pathways for exposure to pollutants, Alternatives B/C pose a higher risk than Alternatives A/A1.

The potential impacts of Alternatives B/C on marine mammals are well documented on pages 4-42 through 4-45 of the DSEIS. Humpback whales are listed as an endangered species under the Endangered Species Act, and Steller sea lions are listed as a threatened species (although populations of both species appear to be increasing in Southeast Alaska). As stated on page 4-42, "If the construction of the Slate Creek Cove marine terminal occurred in April-May, a significant impact on Steller sea lions could take place." The applicant can easily mitigate this construction impact by avoiding construction during April and May. However, the DSEIS also states that "The greatest potential for impact on marine mammals would come from boat traffic during the April-May eulachon spawning run." The adverse impact of boat traffic on marine mammals may be unavoidable and irreducible, unless the applicant is willing to temporarily shut down or minimize the number of boat trips during April and May.

The DSEIS also documents the potential impacts that each alternative may have on recreation, including noise, wakes, lights, safety issues, and visual impacts. The most significant adverse effects of Alternatives A/A1 on recreation are the visual impact of the DTF and occasional noise from helicopters. The impacts of Alternatives B/C include increased noise from construction and boat traffic, increased boat wakes, and increased visual impacts within Berners Bay. While some of these impacts are more significant than others, overall, Alternatives A/A1 have less impact on recreation than Alternatives B/C.

The information and analysis presented in the DSEIS support the conclusion that

Alternatives A/A1 avoid any significant impact on Berners Bay and Slate Lakes. Conversely, Alternatives B/C will likely result in significant impacts to aquatic resources in Berners Bay and Lower Slate Lake. Therefore, EPA believes that Alternatives A and A1 have less adverse impact on the aquatic ecosystem than Alternatives B and C.

Conclusion

For the reasons stated above, the relative ranking of the four alternatives (ranked from least impact on the aquatic ecosystem to most impact on the aquatic ecosystem) is as follows: A1, A, C, B. Thus, the proposed projects (Alternative B) may not be the least environmentally damaging practicable alternative, as required by 40 CFR § 230.10(a). Each of the other three alternatives analyzed in the DSEIS may be practicable, and each may have less adverse effects on the aquatic ecosystem.

The relative ranking of the four alternatives above is consistent with EPA's comments on the DSEIS. In those comments, we rated Alternatives A and A1 as "Lack of Objection" and Alternatives B and C as "Environmental Objections." Please refer to Enclosure 2 for a general description of EPA's national rating system and our specific basis for rating the Kensington alternatives.

Section 2. Water Quality

The Guidelines state that "No discharge of dredged or fill material shall be permitted if it causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable State water quality standard" (40 CFR 230.10(b)(1)). The Mine Tailings Memo affirms that this requirement does not apply within the disposal site (i.e., the Lower Slate Lake tailings impoundment), but that water quality standards must be met in waters outside the impoundment (i.e., East Fork Slate Creek).

EPA's National Pollutant Discharge Elimination System (NPDES) regulations, which implement Section 402 of the Clean Water Act, also include a similar requirement for the discharge of pollutants other than dredged or fill material:

> "No permit may be issued to a new source or a new discharger, if the discharge from its construction or operation will cause or contribute to the violation of water quality standards" (40 CFR § 122.4(i)).

This requirement applies to the discharge from Outfall 002 at the Lower Slate Lake dam into East Fork Slate Creek.

The NPDES Fact Sheet that accompanies the draft NPDES permit for Kensington includes EPA's tentative determination to issue the permit and a description of the proposed permit conditions. In the context of projected discharge chemistry versus effluent limitations for Outfall 002 at the Lower Slate Lake tailings impoundment under the proposed discharge, the Fact Sheet states:

"Evaluation of treatment performance is not necessary because the untreated quality is below the expected permit limits *except for TSS, aluminum, and lead with anticipated iron levels approaching the effluent limits*" (emphasis added).

After the federal agencies published the DSEIS , but before EPA published the draft NPDES permit, EPA determined that the proposed effluent limits for some of the above pollutants could not be met without additional treatment. The applicant then revised the NPDES permit application to include a reverse osmosis (RO) wastewater treatment system and a pipeline diversion of Upper Slate Lake flows around Lower Slate Lake. The pipeline diversion (combined with polymers and other best management practices) should increase settling of Total Suspended Solids (TSS). The RO system should ensure compliance with the permit limits for TSS and the above metals downstream of the disposal site.

Subsequently, we also determined that without additional treatment, the proposed discharge may cause or contribute to violations of Alaska's water quality criterion for turbidity because of the higher TSS levels in the water which are projected. However, the RO system and pipeline diversion should be adequate measures to comply with Alaska's turbidity standard outside of the disposal site.

Based on the information provided in the 404 public notice, it appears that the applicant did not include the RO treatment and pipeline diversion in the 404 permit application. If that is the case, the applicant should correct these omissions in the permit application and DA should include the wastewater treatment system and pipeline diversion as permit conditions to provide a reasonable assurance of compliance with water quality standards for the pollutants of concern. Without this correction, we do not believe the record supports the conclusion that water quality standards will be met, as required by 40 CFR 230.10(b)(1).

EPA recommends that DA closely coordinate its 404 permit decision with EPA and the Alaska Department of Environmental Conservation so that the three agencies can harmonize the separate, but related actions under Sections 401, 402 and 404 of the Clean Water Act. The agencies should complete this water quality coordination step before each agency takes its final action on the Kensington project.

Section 3. Significant Degradation

The Guidelines state that "no discharge of dredged or fill material shall be permitted which will cause or contribute to significant degradation of the waters of the United States." In relation to findings of significant degradation, the Guidelines emphasize the persistence and permanence of the potential impacts on: physical, chemical and biological characteristics of the aquatic ecosystem; special aquatic sites; and human uses.

EPA is concerned about the permanent loss of the Lower Slate Lake ecosystem and the persistent effects of the tailings on the artificial lake created by the tailings impoundment. The fact that the proposed discharge will completely bury the natural lake with mine tailings is not in dispute. The DSEIS predicts that most aquatic life and all fish, including 500 to 1,000 Dolly Varden, will be unable to survive and reproduce during the tailings disposal operation (ten to

fifteen years). The only question is whether the artificial lake will be able to support a similar ecosystem after closure and reclamation. The answer to that question is uncertain, but the weight of the evidence suggests that restoring and "improving" the lake would take decades, not years.

Due to the demonstrated toxicity of the tailings samples in the bioassay tests, and the limited application of other standard tests on contaminant mobility and pathways, EPA believes that the tailings slurry is a carrier of contaminants (as defined in the Guidelines at 40 CFR 230.3). Therefore, the tailings are unsuitable for use as fill material without further treatment or management (e.g., capping). EPA recommends that DA enlist its considerable in-house expertise in sediment toxicology to review the results of the bioassays and the Ecological Risk Assessment and determine what additional tests should be conducted to develop treatment or management requirements necessary to ensure that the tailings can be made acceptable fill material.

Please refer to Enclosures 2 and 3 for more details about the potential for significantly adverse effects on waters of the United States.

Section 4. Minimize Harm to the Aquatic Ecosystem

Notwithstanding the concerns expressed above, should the proposal undergo further consideration, EPA believes that the proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem, as required by the Guidelines. The Guidelines state that "no discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem. Subpart H identifies such possible steps" (40 CFR § 230.10(d)). Therefore, we recommend that the proposed discharge be modified to include the following measures:

1. The 404 permit should require a post-closure lake restoration plan including: specific and measurable restoration objectives; specific restoration methods and techniques; a compliance schedule for implementing the plan; and a detailed monitoring and evaluation program to determine whether the specified methods are being implemented on schedule and whether they are effective in achieving the lake restoration objectives.

2. The 404 permit should require engineered capping of the tailings disposal site in Lower Slate Lake with clean material (see 40 CFR § 230.72(b)). The purpose of capping the tailings is to confine and isolate the toxic material from the aquatic environment, provide a suitable substrate for benthic organisms and to minimize contact between the tailings and the lake water. The tailings cap should be designed to be of sufficient depth or composition to provide an adequate margin of safety. The sediment quality and particle size distribution of the fill material used to cap the tailings should be conducive to the timely attainment of the lake restoration objectives referred to above. The Final SEIS must consider the source and suitability of the cap material, the environmental impact of extracting the material from the source area and placing it in Lower Slate Lake, and the added cost of capping the tailings.

3. The 404 permit should require diverting water from Upper Slate Lake around the Lower Slate Lake tailings disposal facility during mine operations. The purpose of the diversion is to enhance settling conditions and minimize contact between the high quality waters of Upper Slate Lake and the discharge of pollutants into Lower Slate Lake. This diversion should be done via a pipeline instead of a ditch. The intake should be located upstream of the impounded waters of Lower Slate Lake and the outfall should be located immediately downstream of the Lower Slate Lake dam. The Final SEIS should consider the environmental impact and added cost of the pipeline diversion.

4. The 404 permit should require an advanced wastewater treatment system, such as RO (or an equivalent technology), to ensure that the proposed discharge complies with applicable Alaska water quality standards, including but not limited to turbidity, aluminum, iron and lead.

5. The 404 permit should require using nontoxic chemical flocculants to enhance the deposition of suspended particles in the Lower Slate Lake disposal site (see 40 CFR § 230.71(d)). The need for this requirement is supported by the Total Suspended Solids analysis on pages A-63 through A-65 in Volume 2 of the DSEIS.

6. The 404 permit should require using silt screens or other appropriate methods to confine suspended particles and turbidity to a small area where settling can occur in Lower Slate Lake (see 40 CFR § 230.73(c)). Other methods include: baffles to decrease turbulence and increase retention time; a filter berm between the 404 discharge point and the 402 discharge point; and filter blankets and curtains to filter out suspended solids. The need for this requirement is supported by the Total Suspended Solids analysis on pages A-63 through A-65 in Volume 2 of the DSEIS.

7. The 404 permit should require designing water releases from Lower Slate Lake dam to accommodate the in-stream flow needs of downstream fish and wildlife (see 40 CFR § 230.77(b)).

8. The 404 permit should authorize the Echo Cove marine terminal instead of the Cascade Point marine terminal.

9. The 404 permit should minimize the footprint of the Slate Creek Cove marine terminal by eliminating the landing craft ramp.

10. The 404 permit should include timing restrictions for the construction of the marine terminals to avoid impacts to fish and marine mammals, especially during the eulachon run in late April and early May.

11. The 404 permit should include restrictions on timing, ferry speed and ferry routes during the eulachon run in late April and early May.

12. The 404 permit should include appropriate compensatory mitigation for unavoidable

[1] In the meantime, gold prices, which largely dictate revenues in this type of project, have increased from less than $300 per ounce when the applicant signed the 1998 permit to more than $400 per ounce today.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

Reply To
Attn Of: OWW-130

DEC - 1 2004

Forrest Cole
Forest Supervisor
648 Mission Street
Federal Building
Ketchikan, AK 99901-6591

RE: EPA's Environmentally Preferable and Preferred Alternatives
Kensington Gold Project

Dear Mr. Cole:

At the request of the Forest Service, EPA, a cooperating agency in the NEPA process for the Kensington Gold Project, is submitting our designation of an environmentally preferable alternative, and a preferred alternative, for inclusion in the Final Supplemental Environmental Impact Statement (FSEIS). It is EPA's understanding that the Forest Service intends to finalize the FSEIS on December 10, 2004, with publication of the document in the Federal Register on December 17, 2004.

Our selections of an environmentally preferable alternative and a preferred alternative, as outlined below and explained in the enclosures, are based on the current record, without the benefit of either a completed ESA analysis in conjunction with NOAA Fisheries addressing potential impacts to the herring population and marine mammals in Berners Bay, or a completed Clean Water Act (CWA) § 404(b)(1) analysis from the U.S. Army Corps of Engineers evaluating the least environmentally damaging practicable alternative. EPA's preference would be to incorporate those analyses, when they are performed, into the selection of environmentally preferable and preferred alternatives.

Based on current information and the collective analysis performed during the inter-agency meeting in Juneau on October 15, 2004, we conclude that Alternative A would have less adverse environmental impacts than Alternatives B, C or D. Alternative A is the only alternative that will avoid the habitat loss in Lower Slate Lake during mine operations, and the uncertainty in terms of the Lake's long term recovery. It is also the only alternative that avoids the significant impacts to sensitive habitat and resources in Berner's Bay that would result from Alternatives B, C and D.[1] In addition, if the project were to expand beyond the current proposal to mine only the smaller high-grade ore body, which is reasonably foreseeable, then

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[1]While we understand that there are some ongoing discussions among various state and federal agencies about possible measures to mitigate the ecological impacts on Berner's Bay, it is not yet clear what those measures will be because both the Alaska Department of Natural Resources and NOAA Fisheries have proposed measures, but no consensus has been reached as to which of the proposed measures will be implemented.

Alternative A's dry tailings facility would have the capacity to store the additional tailings material with far less additional impacts than would result from future mine expansion under the other alternatives. For these reasons, Alternative A is the environmentally preferable alternative.

Alternative A is also EPA's preferred alternative, because in addition to being environmentally preferable, it appears to be a practicable and feasible alternative. The dry tailings facility proposed under Alternative A is a standard industry technology in use at other mines in Alaska. In June 1996, when the applicant submitted a revised plan of operations, gold prices were at approximately $390 an ounce. In 1998, Alternative A, in the form proposed by the applicant, was fully permitted by all the relevant federal and state agencies, which involved a finding by the U.S. Army Corps of Engineers that Alternative A was practicable. Gold prices are at approximately $450 an ounce today, which is approximately 50% higher than they were in 1998.

The enclosed analyses, which factor into the evaluation our CWA § 402 and 404 statutory authorities and our Clean Air Act § 309 review authority, explain our rationale in more detail.

EPA requests that our preferences, justification, and the enclosed analyses of the environmentally preferable and preferred alternatives be included in the FSEIS to meet our NEPA compliance requirements and for purposes of public disclosure. Also, pursuant to paragraph C.8 of the Memorandum of Agreement (MOU) executed on July 29, 2003, EPA requests an opportunity to review the environmentally preferable and preferred alternatives discussion in the FSEIS prior to publication. If the Forest Service decides not to include our analyses in the FSEIS, then we request a written response with an explanation of your reasoning, as provided in the MOU (¶ C.4).

EPA appreciates all the hard work and dedication of the agencies and staff toward this project. Please feel free to contact me at (206) 553-7151 if you have any questions or would like to discuss this letter. If you would like to arrange a meeting, please have your staff contact Hanh Gold of my staff at (206) 553-0171.

Sincerely,

Michael F. Gearheard
Director
Office of Water and Watersheds

Enclosures

cc: Ed Fogels, ADNR
John Leeds, U.S. Army Corps of Engineers
Aleria Jensen, NOAA Fisheries

Kensington Gold Project
U.S. Environmental Protection Agency
Environmentally Preferable and Preferred Alternative Analyses

INTRODUCTION

This purpose of this analyses is to determine EPA's environmentally preferable and preferred alternatives for the Kensington Gold Project Supplemental Environmental Impact Statement (SEIS). The analyses are based on discussions among the U.S. Forest Service, the U.S. Army Corps of Engineers, NOAA Fisheries, the U.S. Fish and Wildlife Service, the Alaska Department of Natural Resources, and the Alaska Department of Environmental Conservation. EPA participated with those agencies in a collaborative process designed to achieve consensus on an environmentally preferable alternative, and thereafter a preferred alternative. As part of that process, the agencies identified various resources impacted by the alternatives identified in the Preliminary Final SEIS (PFSEIS, September 2004). The alternatives are summarized in Table 1. The agencies reached a general consensus, at staff level, on the degree of impact on each resource for each alternative, and also agreed on relative importance, or weighting, of each of the resource impacts (Table 2).

For the environmentally preferable analysis, EPA considered the list of affected resources described in Table 2. The three categories listed correspond to the resource impacts given maximum weight (called "maximum resource considerations"), those given medium weight ("medium resource considerations"), and those given minimum weight ("minimum resource considerations"). The specific resource considerations listed in each category correspond either to one resource impact that the agencies identified, or to a small group of closely related impacts.

For each resource consideration, the environmentally preferable alternative analysis below uses the degree of impact to which the agencies' staff agreed ("low," "moderate," "high," etc.).

DESCRIPTION OF ALTERNATIVES

Table 1 - Description of Alternatives

Alternative	A	A1*	B (Proposed Alternative)	C	D
Alternative Description	1998 permitted project	Same as A w/ reduced mining rate	Recycle process water; no treatment of TSF effluent	Same as B except with no recycle	Same as B except with treatment of TSF effluent by reverse osmosis and capping of the sediment post-operation
Tailings Disposal	DTF 20 million tons; 25% backfilled	DTF 4.5 million tons; 40% backfilled	Lower Slate Lake TSF 4.5 million tons; 40% backfilled	Lower Slate Lake TSF 4.5 million tons; 40% backfilled	Lower Slate Lake TSF 4.5 million tons; 40% backfilled
Diversion	Stormwater diversion around DTF	Stormwater diversion around DTF	No diversion	Ditch diversion around TSF- would require damming of Upper Slate Lake and raising water level 20 ft. to allow gravity flow	Pipeline diversion around TSF- would require dam in Mid-lake East Fork Slate Creek
Access/Marine Facilities	On-site housing; workers transported by helicopter (12 RT per week); marine terminal at Comet Beach	Same as A	No on-site housing; daily crew shuttle between marine terminals at Cascade Point and Slate Creek Cove (4 RT per day)	Same as B except daily crew shuttle service between Echo Cove and Slate Creek Cove; no landing craft ramp at Slate Creek Cove	Same as B

* Alternative A1 was not evaluated in the environmentally preferable alternative analysis. Instead, mine expansion considerations and potential environmental impacts were incorporated into the evaluation of Alternatives B, C, and D.

DTF - drystack tailings facility
TSF - tailings storage facility
RT - round trip
CFS - cubic foot per second
gpm - gallons per minute

Table 2 - Environmentally Preferable Alternative Evaluation by Resource

RESOURCE	Alt. A	Alt. B	Alt. C	Alt. D	WEIGHTING
Air	X	X	X	X	
Geotechnical					
Probability of tailings disposal facility failure	Low	Low	Low	Low	Minimum
Consequence of tailings disposal facility failure	Low and short-term	High and mid- to long-term	High and mid- to long-term	High and mid- to long-term	Minimum
Surface Water Hydrology					
Instream flow	Meets instream flow requirements	Does not always meet instream flow requirements	Meets instream flow requirements	Meets instream flow requirements	
Potential sediment production	X	X	X	X	
Surface Water Quality (Fresh Water)					
Effluent quality	Meets NPDES permit limits	Does not meet NPDES permit limits	Does not meet NPDES permit limits	Meets NPDES permit limits	Maximum
Fuel spill probability	Low	Lower	Lower	Lower	Minimum
Fuel spill volume	High	Low	Low	Low	Minimum
Fuel spill consequence	High	High	High	High	Minimum
Groundwater Hydrology	X	X	X	X	
Groundwater Quality	X	X	X	X	
Aquatic Resources (Freshwater)					
Short-term habitat loss	Low	High	Highest	High	Medium
Long-term habitat loss	None	Low (Moderate)*	Low (Moderate)*	Very Low (Moderate)*	Medium
Dolly Varden char loss	100-200	1000 (2,380)	1000 (2,380)	1000 (2,380)	Minimum (Medium)
Marine Resources					

Herring habitat loss short-term	None	High	Low	High	Maximum
Herring habitat loss long-term	None	High	Low	High	Maximum
Marine mammals	Very Low	High	Moderate	High	Maximum
Birds	Low	High/ Seasonal	High/ Seasonal	High/ Seasonal	Maximum
Spill probability	Moderate	Low	Low	Low	Maximum
Spill volume	High [880 gallons]	Low [20 gallons]	Low [20 gallons]	Low [20 gallons]	Maximum
Spill consequences	Low	High	Moderate	High	Maximum
Wildlife	Mountain goats - Moderate; Others-Low	Low (Geese-Moderate)	Low (Geese-Moderate)	Low (Geese-Moderate)	Minimum
Acres of Disturbance/% Watershed	268 acres/ 3.0%	195 acres/ 2.1%	215 acres/ 2.2%	197 acres/ 2.1%	
Vegetation (Productive old growth [POG]/% POG)	135 acres/ 1.6%	140 acres/ 1.7%	149 acres/ 1.8%	142 acres/ 1.7%	
Wetlands					
Wetlands - On land (acres/type)**	265.8 [mostly forested, no palustrine emergent]	90.9 [9.6 palustrine emergent; 20 lacustrine]	111.3 [15 palustrine emergent; 20 lacustrine]	92.8 [9.8 palustrine emergent; 20 lacustrine]	Maximum
Wetlands - Marine (acres)	2.3	33.3	38.2	33.5	Minimum
Visual (short-term)	High	Low-Moderate	Low-Moderate	Low-Moderate	Medium
Visual (long-term)	Low	Low-Moderate	Low-Moderate	Low-Moderate	Medium
Recreation* **	Low-Moderate	Moderate	High	Moderate	Medium
Cultural Resources	X	X	X	X	

( ) = cumulative impacts from mine expansion
X = no impacts of consequence
* Small risk of restoration failure
** Table 4-22 of PFSEIS
*** There was some disagreement among the agencies as to whether recreation should be considered in the evaluation of the environmentally preferable alternative.

Alternatives B vs. D

While Alternative B is nearly identical to Alternative D, Alternative B cannot be the environmentally preferable alternative because the differences between the two alternatives all favor D over B. Three main considerations lead to this conclusion. First, D would meet NPDES requirements and B would not, because of B's lack of wastewater treatment. B also lacks a diversion, which would increase the volume of wastewater being discharged. Second, B would not always meet in-stream flow requirements for Slate Creek because of the lack of the diversion (which is a feature of D). Third, D would better ensure long-term protection of habitat and water quality of Lower Slate Lake because of the tailings cap. Alternative B has no environmental advantages over D and is eliminated from further analysis.

Alternatives A vs. C

Maximum Resource Considerations:

Effluent quality considerations favor Alternative A because its effluent would meet NPDES requirements, while effluent quality from Alternative C would not.

Setting aside fuel spills, marine resource considerations all favor A as well, taking into account herring habitat loss (none for A, low for C), marine mammal impacts (very low for A, medium for C), and impacts on birds (low for A, seasonally high for C).

Marine fuel spills involve a tradeoff. Alternative A has a higher spill probability and volume, but a lower impact due to less sensitive receiving environment in Lynn Canal as compared to Berner's Bay. In EPA's view, this consideration favors A because while it is reasonable to expect that over the life of the mine, there may be more spills under alternative A than C, the total number of spills would likely be small or zero in either case, but the impacts would be more significant under Alternative C. This seems to favor Alternative A from this standpoint.

Freshwater wetlands impacts also involve a tradeoff. Alternative A would impact over twice as many acres of wetlands overall (265.8 acres for A compared to 111.3 acres for C), but most are forested or scrub-shrub wetlands. While C affects fewer acres overall, it would affect 20 acres of lacustrine wetland and 15 acres of palustrine emergent wetlands (compared to none for A). EPA believes that forested wetlands are far more plentiful, and of far less ecological value at this location, than lacustrine and palustrine emergent wetlands, which are rare and ecologically important at this location. For that reason, EPA believes that this consideration favors Alternative A from an environmental perspective, though EPA recognizes that this consideration involves tradeoffs between the two alternatives.

In weighing these considerations against one another, the NPDES problems seem to

weigh heavily against C, and the marine considerations other than spills also strongly favor A. The marine spills considerations involve tradeoffs and do not seem to cut strongly either way; on balance we believe they favor A, but less strongly than the prior two considerations. The fresh water wetlands considerations also involve tradeoffs. While one could make a case for C based on the numbers of acres impacted, we believe the consideration of the type of wetlands impacted by the options makes it a much closer question, tilting in favor of A in our opinion but less decisively than the first two considerations. Overall, all of these factors either strongly favor A, or are closer calls that one could argue either way but which we believe favor A as well.

Medium Resource Considerations:

Impacts to fresh water aquatic resources all favor A over C. This includes short term habitat loss, long-term habitat loss,[1] and Dolly Varden char loss (100-200 fish for A, 1000-2380 fish for C[2]).

Visual impacts involve a tradeoff. Short-term impacts favor C because the dry stack facility would not be vegetated in the short-term, while long term impacts favor A due to revegetation of the tailings facility post-operation. The marine terminals in Berner's Bay (Echo Cove and Slate Creek Cove) would be permanently visible. Overall, long-term impacts seem more significant because they will be essentially permanent rather than temporary.

Recreation impacts favor A. There is some disagreement as to whether this is an environmental consideration, but from EPA's perspective, the 404 (b)(1) guidelines require consideration of affects on water-related recreation and aesthetics. Recreation and visual impacts are getting at largely the same considerations, and both should be taken into account in determining the environmentally preferred alternative. We note that recreation was one of the three main issues identified during the public NEPA scoping process.

Overall, these factors either clearly favor A (fresh water resources) or involved tradeoffs that weakly favor A but we recognize could be argued either way. Whatever the conclusion regarding the visual and recreational impacts, it appears to EPA that on balance these factors favor A, given the clear advantages in the area of fresh water aquatic resources.

Minimum Resource Considerations:

The impacts of a tailings disposal facility failure are more adverse for Alternative C than A. In both cases, the probability of failure is low, but for Alternative A the consequences are low

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[1]The impact is low based on the proposed mine size in alternative C, but medium taking into account cumulative impacts from reasonably foreseeable mine expansion.

[2]1000 fish lost as currently proposed, 2380 lost based on cumulative impacts from mine expansion.

and short term, whereas for Alternative C they are high and mid- to long-term.

The risks of a freshwater fuel spill favor Alternative C over Alternative A because the spill risk is lower for C, and the volume that would be spilled is much lower for C than A, though the consequences of a spill are comparable for the two alternatives.

Wildlife concerns favor Alternative C over A (moderate versus low), but only because C assumes a smaller mine than A assumed. If, for Alternative C, we take into account the cumulative impacts of continuing to develop the mine to its originally proposed size, as is assumed for Alternative A, then the wildlife impacts are comparable.

Marine wetlands considerations favor Alternative A because it would disturb only 2.3 acres, versus 38.2 acres for Alternative C.

Overall, these factors do not strongly favor either alternative. Two of the factors (tailings facility failure and marine wetlands impacts) favor A, one (freshwater fuel spills) favors C, and the remaining factor (wildlife impacts) either favors C or is a wash. All of these factors are of relatively minimum significance, and since they do not all favor the same alternative, they do not seem to affect the analysis based on the more heavily weighted factors.

Conclusion:

All of the maximum or medium environmental considerations favor Alternative A over Alternative C or are neutral. The only consideration favoring C over a is the risk from freshwater fuel spills, a minimum factor, which is balanced by other minimum factors favoring Alternative A. Overall, Alternative A is environmentally preferable to Alternative C.

Alternatives A vs. D

Maximum Resource Considerations:

Both alternatives would meet NPDES requirements, so effluent quality does not favor either alternative.

Marine resource impacts excluding fuel spills all favor A over D even more strongly than they favor A over C (as discussed above). Alternative D involves higher herring habitat loss than Alternative C, compared to no impacts for Alternative A. Marine mammal impacts are very low for A, but are medium for C and significantly higher still for D. Impacts on birds are seasonally high for D (as they are for C), and very low for A. Overall, adverse effects on marine resources are much higher for Alternative D than they are for Alternative A.

Fuel spills are more likely, and also likely to involve larger volumes, under Alternative A as compared to Alternative D. However, the environmental consequences would be much

greater under D than A because of the sensitivity of the ecosystem in Berner's Bay compared to Lynn Canal. This is similar to the comparison of Alternatives A and C, except that the ecological sensitivity is even higher for Alternative D than C because even within Berner's Bay, Cascade Point is a much more ecologically sensitive area than Echo Cove. Because spill likelihood is relatively low under either alternative, but the consequences much more severe under Alternative D, EPA believes that the risk of fuel spills favors Alternative A over D from an environmental standpoint.

Regarding impacts to fresh water wetlands, the comparison between Alternatives A and D is similar to that discussed above for A and C, except that Alternative D impacts slightly fewer forested wetlands, and about 2/3 the number of palustrine emergent wetlands (9.8 acres for D, compared to 15 acres for C). For the same reasons discussed above for A vs. C, EPA believes that the 9.8 acres of palustrine emergent wetlands affected by Alternative D (compared to none for Alternative A) outweigh in ecological significance the fact that Alternative A impacts more forested wetlands than Alternative D (265.8 acres for A compared to 92.8 acres for D). Therefore, this consideration favors Alternative A from an environmental standpoint.

Overall, the marine impacts strongly favor Alternative A over D, while fresh water wetlands impacts weakly favor A and the effluent quality is neutral. These considerations as a group therefore favor Alternative A.

Medium Resource Considerations:

Impacts to fresh water aquatic resources all favor A over D, for the same reasons that they favor A over C, as discussed above, but less strongly since the impacts from D are slightly less than those from C. Short term habitat loss is less for D than C, but still greater than A. Long-term habitat loss is lower for D than C, but there is none under Alternative A. Dolly Varden char loss is the same for D as it is for C (1000-2380 fish[3]), compared to 100-200 fish for A.

Visual impacts are the same for Alternatives C and D, so the discussion above applies. Short-term impacts favor D, while long term impacts favor A. Overall, long-term impacts seem more significant because they will be essentially permanent rather than temporary.

Recreation impacts favor A over D, but less strongly than they favor A over C.

Overall, these considerations each favor A over D or are neutral.

Minimum Resource Considerations:

All of the considerations in this category are identical for Alternatives C and D, except

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[3]1000 fish lost as currently proposed, 2380 lost based on cumulative impacts from mine expansion.

for marine wetlands impacts. Marine wetlands impacts are nearly the same for Alternatives C and D, however (38.2 acres affected versus 33.5 acres), and for both alternatives are significantly greater than the impacts for Alternative A (2.3 acres impacted). For these factors, therefore, the comparison between Alternatives A and D is essentially the same as it is for Alternatives A and C, and for the reasons discussed above, these factors do not strongly favor either alternative, and do not change the analysis from the more significant considerations discussed previously.

Conclusion:

As for the comparison between Alternatives A and D, all of the maximum or medium environmental considerations favor Alternative A over Alternative D or are neutral. The only consideration favoring D over A is the risk from freshwater fuel spills, a minimum factor, which is balanced by other minimum factors favoring Alternative A. Overall, Alternative A is environmentally preferable to Alternative D.

Alternatives A vs. CD Composite

Alternatives B, C and D each contain environmental advantages and disadvantages compared to one another that could just as easily be recombined into a new composite alternative that contains the environmental advantages of each. There is no reason that the advantages of these to alternatives cannot be combined; they were distributed among those two alternatives simply for ease of analysis. To be specific, a composite alternative could involve NPDES treatment (as provided in Alternative D, but not B or C), dock facilities in Echo Cove rather than Cascade Point (as in Alternative C, but not B or D), and sediment capping (as in Alternative D, but not B or C). For discussion purposes, this composite alternative will be referred to as "CD."

Maximum Resource Considerations:

Both Alternatives A and CD will meet NPDES requirements, so that consideration is neutral as between these alternatives.

Marine impacts other than fuel spills are the same as discussed in the comparison between Alternatives A and C, because CD incorporates the Echo Cove location as in Alternative C. As discussed above, this consideration favors Alternative A over CD.

Marine impacts from the risk of fuel spills are also as discussed in the comparison between Alternatives A and C, since CD takes its marine configuration from Alternative C. As discussed above, this consideration weakly favors Alternative A over CD.

Impacts to fresh water wetlands are as discussed above in the comparison between Alternatives A and D, since CD incorporates the wetlands-related configuration from Alternative D. For the reasons discussed above, this consideration favors Alternative A over CD.

Overall, these maximum considerations all either clearly favor A (non-spill marine impacts), or weakly favor A or are neutral.

Medium Resource Considerations:

Impacts to fresh water aquatic resources are as discussed above in the comparison between Alternatives A and D, since CD incorporates the fresh water-related configuration from Alternative D. For the reasons discussed above, this consideration favors Alternative A over D.

Visual impacts are the same for Alternatives C and D, so the visual impacts discussion in both of the above comparisons applies. Short-term impacts favor CD, while long term impacts favor A. Overall, long-term impacts seem more significant because they will be essentially permanent rather than temporary.

Recreation impacts of Alternative CD are the same as those for Alternative C, so the discussion of recreation impacts in the comparison between Alternatives A and C applies here. For the reasons explained above, recreation considerations favor Alternative A over CD. There is some disagreement as to whether recreation is an environmental consideration, but it seems to EPA staff that recreation and visual impacts are getting at largely the same considerations, and both should be taken into account in determining the environmentally preferred alternative. We note that recreation was one of the three main issues identified during the public NEPA scoping process.

Overall, these considerations each favor Alternative A over CD or are neutral.

Minimum Resource Considerations:

All of the considerations in this category are identical for Alternatives C and D, and therefore for CD as well, except for marine wetlands impacts. The marine wetlands impacts for CD are the same as for Alternative C. So all of the minimum resource considerations for Alternative CD are the same as for Alternative C, and the comparison of minimum resource considerations for Alternatives A and C applies here in the comparison between Alternatives A and CD. For the reasons discussed in the comparison between Alternatives A and C, these factors do not strongly favor either alternative, and since they do not all favor the same alternative, they do not seem to affect the analysis based on the more heavily weighted factors.

Conclusion:

All of the maximum or medium environmental considerations favor Alternative A over Alternative CD or are neutral. The only consideration favoring CD over A is the risk from freshwater fuel spills, a minimum factor, which is balanced by other minimum factors favoring Alternative A. Overall, Alternative A is environmentally preferable to Alternative CD.

PREFERRED ALTERNATIVE ANALYSIS

The Council on Environmental quality (CEQ) Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations defines the "agency's preferred alternative" as "the alternative which the agency believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical and other factors." EPA's "statutory mission and responsibilities" in this case include NPDES permitting under CWA § 402, and review of the Corps of Engineers' application of the CWA § 404(b)(1) guidelines to this project in the CWA § 404 permitting action.

The EPA's mission, generally, is primarily environmental protection. The Congressional declaration of the goals and policy underlying the CWA is set forth in CWA § 101, and its focus is entirely on the prevention of pollution and degradation, and the restoration, of the nation's waters. For example, the CWA § 101(a)(3) states, "It is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." The § 404(b)(1) guidelines, however, do incorporate the concept of the practicability of particular alternatives, in that they require the permitting under CWA § 404 only of the "least environmentally damaging *practicable* alternative" (emphasis added), also known as the LEDPA.

The project proponent, Coeur Alaska, has asserted that Alternative A is not *practicable*. In EPA's view, however, the information submitted to date is not adequate to establish that Alternative A is not a practicable alternative. In June 1996, when the applicant submitted a revised plan of operations, gold prices were at approximately $390 an ounce. In 1998, Alternative A, in the form proposed by the applicant, was fully permitted by all the relevant federal and state agencies (including EPA, the U.S. Army Corps of Engineers, USFS, ADNR, and ADEC), gold prices were around $300 an ounce. Gold prices are at approximately $450 an ounce today, which is approximately 50% higher than they were in 1998. Based on the current gold prices, we cannot conclude that Alternative A is not practicable.

In selecting an Environmentally Preferable Alternative, EPA concluded that Alternative A is the least environmentally damaging alternative. Since Alternative A, based on the current record, appears to be practicable, it appears to be the LEDPA as well, and therefore the only alternative that may be permitted under CWA § 404.

The 404 (b)(1) guidelines also prohibit significant degradation of waters of the U.S. The Corps of Engineers previously determined that Alternative A would not cause or contribute to significant degradation of waters of the U.S. when they permitted the project in 1998. While Alternative D attempts to address significant degradation of Lower Slate Lake by capping the tailings, it does not entirely avoid significant degradation because of the permanent loss of the natural Lower Slate Lake ecosystem. Alternative D is also inconsistent with the national policy mandated by the Clean Water Act to prohibit the discharge of toxic pollutants in toxic amounts.

Alternative A is EPA's Preferred Alternative because, based on the current record, it

appears that: (1) it is the environmentally preferable alternative, (2) it is the least environmentally damaging practicable alternative, (3) it is the only alternative that avoids significant degradation, and (4) it is the only alternative that is consistent with the national policy that prohibits the discharge of toxic pollutants in toxic amounts.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

RECORD OF DECISION

KENSINGTON GOLD PROJECT

DECISION TO BE MADE

This Record of Decision (ROD) documents the decision by the U.S. Environmental Protection Agency (EPA) Region 10 to issue a National Pollutant Discharge Elimination System (NPDES) permit for discharges from the Kensington portal to Sherman Creek, discharges of treated domestic wastewater to Lynn Canal, and discharges from the proposed tailings storage facility (TSF) to East Fork Slate Creek. This project is considered a new source discharge and, in accordance with Section 511(c)(1) of the Clean Water Act, is subject to the provisions of the National Environmental Policy Act (NEPA).

The ROD is issued pursuant to NEPA (42 U.S.C. §4321 et seq.), the Council of Environmental Quality (CEQ) NEPA regulations (40 CFR Parts 1500-1508), and EPA's NEPA implementing regulations (40 CFR Part 6, Subpart F). EPA participated in the development of the Kensington Gold Project Final Supplemental Environmental Impact Statement (FSEIS) as a cooperating agency, with the U.S. Forest Service (USFS) as the lead agency. EPA's decision to issue an NPDES permit is based upon the analysis in the FSEIS as supplemented by the U.S. Army Corps of Engineers (USACE) Clean Water Act 404(b)(1) analysis, which identified alternative D as the least environmentally damaging practicable alternative. The Notice of Availability of the FSEIS was published in the Federal Register by the USFS on December 23, 2004. EPA issued the draft NPDES permit on June 21, 2004 for a 45-day comment period. Public hearings were held in Juneau, Alaska on July 26, 2004 and in Haines, Alaska on July 27, 2004. EPA's response to comments on the draft NPDES permit is included in Appendix A.

INTRODUCTION

The Kensington Gold Project is an underground gold mine located approximately 45 miles north-northwest of Juneau, Alaska, in the Tongass National Forest (Figure 1; FSEIS Figure 1-1). The Kensington project has undergone three iterations of environmental review and was previously permitted in 1998. In 1990, the Kensington Venture (a joint venture between Coeur Alaska, Inc. [Coeur] and Echo Bay Exploration) first submitted plans to develop the mine to the USFS. The USFS completed the Final Environmental Impact Statement (FEIS) in 1992. The 1990 plan included underground mining to recover the ore, processing the ore via flotation, cyanidation, gold refining, and disposal of the tailings in a tailings impoundment built in the Sherman Creek drainage. The impoundment would have been sized to accommodate 30 million tons of tailings. The proposal included discharging wastewater to Lynn Canal following treatment, and shuttling employees to the mine site using helicopters. The operation would have

used liquefied petroleum gas to fuel on-site generators. A marine terminal developed at Comet Beach in Lynn Canal would have handled supply deliveries and gold shipments. The Kensington Venture never obtained all the permits necessary to build the mine, and in 1995 Coeur became the sole stakeholder in the property. Coeur then, in 1995, submitted an amended plan of operations to the USFS. In June 1996 Coeur revised the 1995 plan in response to issues raised during scoping.

The 1996 amended plan, included removal of the cyanide circuit and off-site processing of the flotation concentrate, backfilling a portion of the tailings in the mine, and disposal of the remaining tailings in a 20 million ton dry tailings facility (DTF) constructed between Sherman and Sweeny creeks. Coeur's proposal also included using diesel instead of liquefied petroleum gas to fuel generators, and discharging mine water to Sherman Creek and DTF effluent to Camp Creek. The 1996 plan was analyzed in the Final Supplemental EIS and approved by the USFS in a ROD signed in August 1997. Coeur obtained all permits necessary for construction from federal, state, and local authorities, including an NPDES permit from EPA, issued on May 14, 1998 (Permit No. AK-005057-1). The permit authorized discharge of drainage from the Kensington portal, which is treated and discharged to Sherman Creek. It also authorized the discharge from the permitted DTF to Camp Creek and domestic wastewater discharge to Lynn Canal.

In November 2001, Coeur submitted another amendment to the plan of operations to the USFS. This plan, which initiated a second supplemental environmental impact statement, proposed a number of changes to the approved plan, including changing the location of the processing facilities, tailings disposal, and site access and employing a different means of transportation. The operation would also mine a smaller portion of the ore body containing higher average gold concentrations. This amendment also proposes to use a dock to be built at Cascade Point on property held by Goldbelt Incorporated, an Alaska Native corporation. The 2001 amended plan formed the basis for Alternative B for the December 2004 FSEIS. The USFS selected Alternative D in a ROD signed on December 9, 2004. Coeur revised its plan of operations to conform to Alternative D in May 2005. The USFS approved the plan of operations in June 2005.

The purpose of the proposed action is to consider changes to the previously permitted project. The changes were intended to improve efficiency and reduce the area of surface disturbance associated with the 1997 mining plan and to provide more reliable transportation and access by improving worker safety during transit to the site and eliminating shipping delays related to weather and sea conditions at Comet Beach. The improved reliability of access would allow Coeur to reduce the amount of diesel storage, as well as inventories of materials and supplies. Tailings disposal would require a smaller area of surface disturbance under the proposed action compared to the 1997 plan by utilizing a 20-acre lake for tailings storage (Lower Slate Lake).

The U.S. Forest Service was the lead agency for preparation of the Kensington Gold Project Final Supplemental EIS. EPA, the U.S. Army Corps of Engineers, and the State of Alaska Department of Natural Resources (ADNR) were cooperating agencies because of the federal and state authorizations and approvals required for this project. EPA was a cooperating agency because of a decision regarding NPDES permit issuance. In accordance with NEPA, the

FSEIS was prepared to reduce duplication, excessive paperwork and delay, and to address federal and state regulatory requirements. Through EPA's participation as a cooperating agency, we have determined that the FSEIS adequately describes the potential direct, indirect, and cumulative effects associated with the Kensington Mine Project.

Sections 301 and 306 of the Clean Water Act (CWA) require that EPA develop wastewater effluent standards for specific industries, including gold mines. These standards are established for both existing sources and "new sources". Because this project would be a new source, the New Source Performance Standards (NSPS) for gold mines and mills are applicable to the project (40 CFR 440.104). NPDES permit limits and requirements are established to ensure compliance with the NSPS and state water quality standards. The NSPS include effluent limits applicable to discharges of mine drainage; they also prohibit the discharge of process water (including mine tailings). An exception is provided for excess flows associated with net precipitation and/or co-mingled mine water where discharge of such flow is subject to the comparable effluent limits for mine drainage. In states that have not been delegated NPDES permitting authority, such as Alaska, EPA is authorized to permit point source discharges of effluent, including process wastewater and stormwater. Where EPA is the permitting agency, the regulations provide that issuance of a new source NPDES is subject to the environmental review requirements of NEPA.

The 5-year NPDES permit issued by EPA for the 1998 project expired on May 14, 2003, but was administratively extended until a new permit is issued because Coeur submitted a timely application in October 2002. Couer submitted a revised application for an NPDES permit on March 16, 2004. The final NPDES application submittal, consistent with the proposed project revisions, was made on June 15, 2004. The application addresses the current discharge to Sherman Creek, treated domestic wastewater discharge during construction, and the proposed discharge from the tailings storage facility (TSF) in Lower Slate Lake.

PROPOSED MINING OPERATION

The Kensington ore body extends from the surface to a depth of approximately 3,000 feet and is irregular in both shape and distribution of gold. After a two-year construction period, mining would be accomplished over a projected period of 10 years using a long hole, open stoping method. Ore would be mined at a rate of 2,000 tons per day targeting high-grade gold ore. Ore would be hauled by truck to the mill site located near the Jualin mining area. After crushing, the ore would be transferred to a grinding circuit. Following grinding, oversized material would be returned to the head of the grinding operation, while undersized material would be separated into coarse and fine materials using centrifugal cyclones. From the cyclones, heavy material would go to a gravity concentrator and light material would go to a conditioning tank that feeds a flotation circuit. Concentrate from the gravity concentrator and the flotation circuit would be dewatered, and approximately 700 tons per week of concentrate would be transported from the site. From 2,000 tons of ore per day, mining and processing would produce approximately 400 tons of waste rock per day and approximately 7.5 million tons of tailings over the lifetime of the proposed project.

Waste rock would be disposed in two disposal areas near the Kensington portal and near the Jualin mine area. Tailings would be separated into coarse and fine fractions. The coarse

tailings would be pumped to the mine areas that need backfill. At least 40% of the tailings would be backfilled. The fine fractions would be disposed in the tailings storage facility.

Mine drainage is currently combined with runoff from waste rock piles and other disturbed areas and discharged to Sherman Creek through Outfall 001, pursuant to the 1998 NPDES permit. Underground workings that produce mine drainage, as well as waste rock, were developed as part of exploration activities and will be expanded as active mining operations are initiated. Water from mine dewatering operations will continue to be collected, clarified, and filtered underground, if necessary, and then pumped to an above ground mine water treatment facility. Although the revised proposal includes access to the workings by tunnels from both the Kensington and Jualin sides of the property, all mine drainage would be collected and routed to Outfall 001.

Tailings slurry from the mill would flow through a 3.5 mile pipeline to the TSF, which would be formed by the natural lake basin of Lower Slate Lake and a dam constructed at the outlet of the lake. The dam would be a concrete-faced rockfill dam constructed in two phases. The TSF would be designed to hold 4.5 million tons of tailings. Mid-lake East Fork Slate Creek would be diverted around the TSF. Creek water would be removed from behind a constructed berm through a 20-inch diversion pipeline. The TSF will receive water from slurry transport of tailings as well as undiverted natural inflows from drainage areas immediately adjacent to the TSF and overflows from the berm. Water will be recycled from the TSF to the mill at a rate of approximately 100 gallons per minute (gpm). The discharge from the TSF (Outfall 002) will be treated via reverse osmosis then combined with the diverted natural flows and pumped into the East Fork Slate Creek drainage below the TSF.

DESCRIPTION OF PROJECT ALTERNATIVES

NEPA requires that agencies consider alternatives to the proposed action that address the significant issues identified during the scoping process. NEPA also requires that the alternatives analysis include a No Action Alternative. Because the FSEIS is a supplement to a NEPA analysis that resulted in a permitted project (the 1997 mining plan), the No Action Alternative in this case represents no changes to the approved project. The FSEIS also includes an alternative (Alternative A1) that reflects a mining scenario that could occur if the No Action Alternative was selected, i.e., the operator could choose to lower the production rate and pursue a smaller portion of “high-grade” gold ore similar to what is proposed in the proposed action. The following discussion and Table 1 provides a summary of the No Action Alternative (Alternative A), reduced mining rate of the No Action Alternative (A1), and three action alternatives (Alternatives B, C, and D). Section 2 of the 2004 FSEIS provides detailed descriptions of each of the following alternatives for the Kensington Gold Project.

Alternative A – No Action

The No Action Alternative functions as the baseline against which the effects of other alternatives are compared. As noted above, the No Action Alternative represents a previous action, which in this case is the 1997 mining plan that received agency approval and authorizations in 1998. Alternative A corresponds to the 1997 SEIS Alternative D. Alternative A includes mining the entire ore body and underground crushing of ore with aboveground

grinding and flotation. Flotation concentrate would be shipped to a processing facility off-site. There would be no on-site cyanidation circuit. Employees would be housed on-site and transported by helicopter for weekly rotations. Supplies, including fuel, would be delivered to a marine terminal constructed on Comet Beach. Approximately 25% of the tailings would be backfilled. The rest of the tailings would be dewatered before being placed in the DTF. The DTF would have the design capacity to hold 20 million tons of tailings and would include an engineered berm around each cell of the facility. Wastewater from tailings dewatering would be treated and discharged to Sherman Creek. The production rate would be 4,000 tons of ore per day and 400 tons of waste rock per day. The waste rock would be used in the construction of the DTF. Road and DTF construction would require the development of sand and gravel and till borrow areas.

Alternative A1 – Reduced Mining Rate, DTF

Alternative A1 reflects a mining plan similar to that described for Alternative A but uses the same mining rate and tailings production levels consistent with Alternatives B, C, and D (2,000 tons per day and 7.5 million tons total, respectively).

Alternative A1 would result in 4.5 million tons of tailings being placed in the DTF, assuming that 40 percent of the tailings would be backfilled. The DTF would be approximately 65 percent smaller than it would be under Alternative A. The reduced mining rate presented under Alternative A1 would produce very limited amounts of waste rock. Because waste rock would not be available for use in DTF construction under this alternative, the impact analysis assumes the same number of acres of sand and gravel borrow areas would be required as under Alternative A, although the coarse and fine till borrow areas would be reduced in size. Other aspects of Alternative A1, including wastewater management and transportation of employees and materials, would be the same as those described under Alternative A.

Alternative B – Coeur's Proposed Action

Alternative B reflects a number of changes to the mine plan compared to the No Action Alternative. These changes include construction of a TSF in Lower Slate Lake for tailings disposal instead of the dry tailings facility, relocating milling operations to the Johnson Creek drainage, and eliminating the personnel camp. The operation would mine a smaller amount of ore with a higher average gold concentration compared with that proposed under Alternative A. The production rate would be approximately 2,000 tons of ore per day. Alternative B would include the development of a tunnel connecting the Kensington and Jualin areas of the mine. Access to the site would be from marine terminals built in Slate Creek Cove and at Cascade Point (Figure 2; FSEIS Figure 1-2). A daily shuttle boat service would transport employees to and from the project site. The TSF would be sized to accommodate the disposal of 4.5 million tons of tailings (Figure 3; FSEIS Figure 2-6), while approximately 3.0 million tons of tailings would be used as backfill in the mine. Borrow areas would be developed for construction of the TSF dam and roads. This alternative includes recycling water from the TSF to the mill circuit. Alternative B would require upgrading the 5-mile-long access road and constructing a 3.5-mile pipeline access road and a 1-mile cutoff road connecting the other two roads.

Alternative C – Dock Location and Design/Diversion

Alternative C is the same as Alternative B except it includes surface water diversions around the TSF and a marine terminal at Echo Cove instead of Cascade Point. The dock in Echo Cove would be located approximately 0.75 mile north of the existing Echo Cove boat ramp (Figure 2; FSEIS Figure 1-2). Mine workers would use this dock to reach the shuttle boat that would transport them to the dock at Slate Creek Cove. The landing craft ramp at the Slate Creek Cove marine terminal would be eliminated, minimizing the amount of fill placed in the intertidal zone. Alternative C would not include recycling water from the TSF and the mill circuit. This alternative would include diversion channels to direct the flow from Mid-Lake East Fork Slate Creek and overland runoff from undisturbed areas around the TSF (Figure 4; FSEIS Figure 2-9). The diversion would discharge to a spillway at the top of the TSF dam. The diversion would require a dam on Upper Slate Lake to maintain water levels sufficient to reach the spillway at the TSF dam. The purpose of the diversion would be to minimize the volume of fresh water in contact with the tailings.

Alternative D – Modified TSF Design and Water Treatment

Alternative D was developed to address concerns about the TSF effluent meeting NPDES permit limits for protection of downstream water quality in East Fork Slate Creek below the TSF. Alternative D is the same as Alternative B, except it also includes diversion of stormwater and surface water around the TSF, TSF outfall water treatment, and a tailings cap at closure. Alternative D includes a dam in Mid-Lake East Fork Slate Creek that would gravity-feed a pipeline diversion around the TSF (Figure 5; FSEIS Figure 2-12). Water would be treated prior to discharge from the TSF via a reverse osmosis treatment system, which would provide solids and metals removal to ensure compliance with permit limits. Effluent from the treatment system would discharge to the diversion pipeline. Alternative D also requires a cap over the tailings at closure unless the operator could demonstrate to the USFS, USACE, ADNR, and EPA that the tailings are not toxic.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The environmentally preferable alternative "ordinarily, means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources" (CEQ, 1981: Forty Most Asked Questions, no. 6a).

On December 1, 2004, at the request of the U.S. Forest Service, EPA submitted its designation of an environmentally preferable alternative for inclusion in the FSEIS. EPA's selection of an environmentally preferable alternative was based on the record at the time, which lacked two important elements. First, the record lacked a completed ESA analysis by the National Marine Fisheries Service (NMFS) addressing potential impacts to listed species and designated critical habitat in Berners Bay. Second, the record lacked a completed Clean Water Act (CWA) § 404(b)(1) analysis from the U.S. Army Corps of Engineers, which must determine the least environmentally damaging practicable alternative and address significant degradation.

Based on information available at the time and on EPA's comparative analysis of the alternatives, EPA concluded that Alternative A is the Environmentally Preferable Alternative.

Alternative A is the only alternative that avoids the habitat loss and the loss of natural ecological functions in Lower Slate Lake during mine operations. Alternative A also avoids impacts to critical habitat and resources in Berners Bay that would result from dock construction, operation, and vessel activities. The USFS and the ADNR identified both Alternatives A and D as environmentally preferable.

Since that time, NMFS has issued a Biological Opinion (BO) and the Corps of Engineers has issued CWA 404 permits for the project. In the BO, issued on March 18, 2005, NMFS stated that individual Stellar sea lions and humpback whales within the action are may be adversely impacted. However, the BO concluded that Alternative D, as proposed, is not likely to jeopardize the continued existence of listed species, or destroy or adversely modify designated critical habitat found in proximity to the action area. NMFS maintained its earlier recommendation to use an alternative dock location to Cascade Point, preferably outside Berners Bay, to facilitate transportation of crews to the mine. The BO also included a list of conservation recommendations to minimize adverse effects to the listed species.

The Corps of Engineers CWA 404(b)(1) analysis, issued with the Record of Decision and CWA 404 permit, on June 17, 2005, concluded that Alternative D is the least environmentally damaging alternative based on acreages of wetland impacts. The Corps also concluded that Alternative D is economically more attractive than the previously permitted project.

The USFS selected Alternative D and approved the modifications to the 1997 Approved Plan of Operations in its Record of Decision (December 2005). The State of Alaska has also issued its decisions, authorizations, and certifications for Alternative D.

However, for the reasons discussed in our December 1, 2004 letter, EPA continues to believe that Alternative A is environmentally preferable.

EPA DECISION

EPA's decision regarding the Kensington Gold Project involves the issuance of an NPDES permit based on Coeur's NPDES permit application, which reflects Alternative D. The permit sets conditions on the discharges of pollutants from the mine to Sherman Creek (Outfall 001), from the TSF to East Fork Slate Creek (Outfall 002), and domestic wastewater to Lynn Canal (Outfall 003).

Outfall 001 represents the discharge from settling facilities that collect treated (metals precipitation and filtration) mine drainage from mine dewatering operations and runoff from waste rock piles and other disturbed areas in the Sherman Creek drainage. Outfall 002 will discharge water from the TSF, which includes the natural lake basin of Lower Slate Lake and a constructed retention embankment at the outlet of the lake. Outfall 003 will discharge treated domestic wastewater for the Kensington Mine camp during construction. No permanent camp is proposed to remain at the site during the operation phase of the project. The NPDES permit includes effluent limitations specific to each outfall and other requirements to ensure water quality protection in each of the water bodies mentioned above, including compliance with the Alaska Water Quality Standards (AWQS) for aquatic life and human health.

EPA made the draft NPDES permit and Fact Sheet available for a 45-day public review period on June 21, 2004. The draft permit contained effluent and receiving water (ambient) monitoring requirements as well as requirements that the permittee develop a Best Management Practices program for the control of toxic and hazardous pollutants.

The final permit and response to comments are included in this ROD in Appendix A.

FACTORS CONSIDERED IN THE DECISION

Scope of EPA's Clean Water Act § 402 Authority

EPA's NPDES permitting authority is limited to issuing permits based on NPDES permit applications we receive, so long as it is feasible for the project, as described in the application, to meet water-quality based limits. Coeur applied for an NPDES permit to discharge wastewater based on Alternative D. Coeur has gained approval to begin construction and operation of the Kensington Mine Project from the USFS, the USACE, and the State of Alaska, whose consent or authorization is necessary. Coeur has demonstrated their ability to implement treatment options (such as reverse osmosis for outfall 002) that will enable them to meet permit limits.

Receiving Waters

The permit authorizes discharges through three outfalls. Outfall 001 discharges mine water to Sherman Creek, and is located at latitude 58° 52' 04" North and longitude 135° 06' 55" West. Outfall 002 will discharge from the TSF to East Fork Slate Creek at latitude 58° 49' 58" North and longitude 134° 57' 58" West. Outfall 003 will discharge treated domestic wastewater to Lynn Canal at latitude 58° 51' 58" North and longitude 135° 8' 28" West.

East Fork Slate Creek and Sherman Creek are designated by the State as protected for water supply (drinking, culinary, and food processing; agricultural irrigation and stock watering; aquaculture; and industrial); contact and secondary recreation; and growth and propagation of fish, shellfish, other aquatic life, and wildlife (18 ACC 70.020(2)). Lynn Canal is protected for marine water supply (aquaculture, seafood processing and industrial); water recreation (contact and secondary); growth and propagation of fish, shellfish, other aquatic life, and wildlife; and harvesting for consumption of raw mollusks or other raw aquatic life.

Description of Discharges

Outfall 001

Outfall 001 represents the discharge from settling facilities into Sherman Creek. Inflows to the sediment ponds include treated mine drainage from mine dewatering operations and runoff from waste rock piles and other disturbed areas in the Sherman Creek drainage. The sediment pond has two cells. Stormwater runoff from waste rock and disturbed areas is routed to Cell 1 via a riprap lined spillway, which is sized to handle runoff from a 100-year, 24-hour precipitation event. A spillway, notched in the center berm, allows flow from Cell 1 to Cell 2. Cell 2, which is designed to treat water from mine dewatering operations and high flows from Cell 1, has been conservatively designed to hold settled solids for the life of the mine. Discharge from Cell 2 to Outfall 001 occurs through a perforated decant pipe with a design capacity to handle the 10-year, 24-hour storm event. Discharge flows from Outfall 001 will initially increase due to increased mine development area and will vary over time due to stormwater runoff.

Coeur estimates the rate of mine dewatering to generally range from 1.33 and 2.45 cubic foot per second (cfs). All of the flow will be collected in sumps within the mine where initial settling will occur. Mine drainage will be pumped to the mine water treatment system for metals precipitation and filtration. Settled solids will be added to tailings that are backfilled into the mine. Filter backwash will be recycled to the underground mine water treatment system.

Outfall 002

Outfall 002 will discharge water from the TSF to East Fork Slate Creek. The natural lake basin of Lower Slate Lake and a constructed retention embankment at the outlet of the lake will form the TSF. TSF inflows include tailings slurry from mill operations, precipitation that falls onto the lake, storm water runoff from upland areas adjacent to the TSF, and flows from Mid-Lake East Fork Slate Creek (if the flows are too high for the diversion to accommodate). The upstream flow in East Fork Slate Creek will be collected and transferred to a 20-inch diversion pipeline.

Tailings slurry will flow by gravity from the mill to the TSF in a 3.5-mile pipeline. The pipeline will be double-walled high density polyethylene (HDPE) and/or steel. The tailings slurry will be discharged into the TSF through perforations in a submerged portion of the tailing delivery pipeline. The pipeline will be operated so that a portion of the perforated segment is always above the bottom of the TSF, allowing the tailings to flow freely from the pipe.

The average slurry throughput to the TSF is projected to be 354 gpm with an average solids content of 55 percent by weight (i.e., the water component of the slurry will be approximately 247 gpm). A portion of the slurry water will be entrained in the tailings and will be unavailable for recycle. Coeur will recycle an average of 100 gpm out of the TSF back to the mill.

Coeur initially proposed to discharge effluent via Outfall 002 without treatment other than best management practices (BMPs) to enhance settling. However, water quality modeling

indicated that total suspended solids (TSS) limits may not be achieved without additional treatment. In addition, background levels of aluminum in East Fork Slate Creek and Lower Slate Lake occasionally exceed the permit limits. As a result, Coeur amended its NPDES permit application to incorporate a reverse osmosis (RO) treatment system into the TSF design. The RO system will reduce levels of both aluminum and TSS to below permit limits and provide additional removal of other pollutants. A maximum total of 1,100 gpm is authorized to be discharged out of Outfall 002.

Outfall 003

The discharge of treated domestic wastewater for the Kensington Mine camp was previously permitted for use during exploration, construction and production. The current project anticipates the use of the camp through exploration and construction. No permanent camp is proposed for the site during the operation phase of the project. Domestic wastewater will be treated and discharged from Outfall 003 to Lynn Canal. The average flow for the plant during construction is estimated at 30,000 gallons per day (gpd), or 20.8 gpm, based on sizing to accommodate 300 people.

Endangered Species Act (ESA)

Section 7(a)(2) of the Endangered Species Act (ESA) requires Federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), as appropriate, to ensure that their actions do not jeopardize the continued existence of species listed as threatened or endangered under ESA, or destroy or adversely modify their critical habitat.

Through the NEPA process, EPA obtained a list of threatened and endangered species. On June 21, 2004, EPA sent a copy of the draft NPDES permit and Fact Sheet to NMFS and USFWS. In the Fact Sheet, EPA stated we do not expect the discharges from the facility, which comply with the requirements of the permit, to adversely affect endangered species. On November 17, 2004, the U.S. Forest Service and the U.S. Army Corps of Engineers sent a copy of the Biological Assessment/Biological Evaluation (BA/BE) to NMFS and requested initiation of formal consultation. NMFS issued a final Biological Opinion (BO) on March 18, 2005. The BO did not include any specific conservation recommendation applicable to the NPDES permit issuance.

Essential Fish Habitat (EFH)

Section 305(b) of the Magnuson Stevens Fishery Conservation and Management Act of 1996 requires Federal agencies to consult with NMFS when any activity proposed to be permitted, funded, or undertaken by a federal agency may have an adverse effect on designated Essential Fish Habitat (EFH). As stated in the Fact Sheet, EPA has determined that the issuance of the permit is not likely to have an adverse effect on EFH in the vicinity of the discharge. Effluent limitations have been incorporated in the permit based on criteria considered to be protective of overall water quality in East Fork Slate Creek, Sherman Creek, and Lynn Canal.

National Historic Preservation Act (NHPA)

The USFS completed a cultural resource survey of the area of potential effect (APE) for the Kensington Gold Project in 2003, in compliance with the requirements of Section 106 of the National Historic Preservation Act (16 U.S.C. 470 et seq). The USFS sent determinations of eligibility of 43 historic sites within the APE to the State Historic Preservation Office for concurrence. Additionally, Coeur, the Alaska State Historic Preservation Office, and the Tongass National Forest entered into a Memorandum of Agreement (MOA) on November 29, 2004 to ensure compliance with Section 106 of the NHPA during mine construction, operation, and closure.

Coastal Zone Management Act (CZMA)

The State of Alaska, Office of Project Management and Permitting (OPMP), completed its review of the Kensington Gold Project for consistency with the Alaska Coastal Management Program (ACMP) on April 25, 2005. OPMP found the project, including the discharge of pollutants such as treated domestic wastewater and treated non-domestic wastewater from the Kensington Mine, to be consistent with the ACMP.

Wetlands (Executive Order 11990)

Wetlands throughout the project area would be affected by construction and operations. Section 404 of the Clean Water Act authorizes the U.S. Army Corps of Engineers to issue permits for activities that would result in the placement of dredge or fill material in waters of the U.S., including wetlands. Before a permit can be issued, Section 404(b)(1) Guidelines require that projects avoid impacts to the extent possible, minimize impacts that cannot be avoided, and provide compensatory mitigation for impacts that occur. Alternative D is estimated to impact a total of 61.7 acres of U.S. waters, including 41.5 acres of wetlands filled, 20 acres of open water filled, and 0.2 acres of marine waters filled (USACE ROD, June 17, 2005). The Corps, in their CWA 404 permit and Record of Decision, determined Alternative D was least environmentally damaging based on total wetland acreages of impact.

Floodplains (Executive Order 11988)

The Kensington Gold Project is not located within floodplains.

Environmental Justice (Executive Order 12898)

EPA's issuance of the NPDES permit will not result in disproportionate adverse human health or environmental effects to minority or low-income communities.

Tribal Consultation and Coordination (Executive Order 13175)

On January 23, 2004, EPA sent letters to Chilkat (Klukwan) Village, Chilkoot Indian Association, Douglas Indian Association, and Tlingit and Haida Central Council informing the Tribes that the preliminary permit will be sent for tribal review. EPA also invited the Tribes to initiate formal government-to-government consultation with EPA in developing the final draft permit prior to public release. EPA transmitted the preliminary draft permit and draft Fact Sheet

to the Tribes on April 8, 2004. EPA received no comments in response. Each Tribe also received a copy of the draft permit and Fact Sheet at the start of the public comment period on June 21, 2004. EPA did not receive any comments from these Tribes.

MITIGATION MEASURES

Section 2.5 and Tables 2-6 and 2-7 of the FSEIS identifies potential mitigation and monitoring measures required as part of Alternative D during construction, operation, and reclamation. Additional mitigation measures have been developed as part of stipulations, special conditions, monitoring requirements of other Federal and State permits and authorizations to ensure that environmental protection is being achieved.

Alternative D also includes the construction of a reverse osmosis treatment system to treat the TSF effluent water. The RO system would ensure compliance with permit limits for total suspended solids and metals. The treatment plant effluent would discharge into the diversion pipeline, which would flow to East Fork Slate Creek below the TSF dam.

Once tailings disposal is complete, the tailings would be capped to isolate any toxic contaminants unless Coeur could demonstrate to the satisfaction of EPA that tailings are not toxic. Although the FSEIS refers to a cover of approximately 4 inches of native material, the cap design (e.g., horizontal and vertical dimensions, types of materials, placement methods, etc.) will depend on the evaluation of the test results and the site characterization at closure.

The U.S. Army Corps of Engineers, in its CWA 404 permit, requires a special condition for Coeur to use nontoxic chemical flocculent to enhance the deposition of suspended particles and reduce turbidity levels in the Lower Slate Lake disposal site.

MONITORING

Under Section 308 of the Clean Water Act and 40 CFR 122.44(i), EPA must require a discharger to conduct monitoring whenever necessary to determine compliance with effluent limitations and assist in the development of effluent limitations. The permit contains both effluent and receiving water (ambient) monitoring requirements. The data from ambient monitoring is important for determining whether effluent limits in the proposed permit are adequate, and may be necessary for the development of water quality-based effluent limitations when the permit is reissued. The permit also requires that Coeur prepare a Quality Assurance Plan for all monitoring.

Outfall Monitoring

To ensure compliance with the effluent limitations, Coeur is required to monitor the discharges from Outfalls 001, 002, and 003 for metals, toxicity, and other parameters on a routine basis (See Permit Tables 1-4). The permit also requires that the percent removal for BOD and TSS be calculated on a quarterly basis for Outfall 003. This would entail measuring the influent as well as the effluent for these parameters.

Receiving Water (Ambient) Monitoring

The permit requires Coeur to conduct ambient monitoring in Sherman Creek, Slate Creek, and Johnson Creek.

Water Column Monitoring

The permit requires monthly water column monitoring for metals and other parameters at locations in Sherman Creek, Slate Creek, and Johnson Creek. The Sherman Creek and Slate Creek monitoring will provide data to assess the characteristics of the receiving stream below the discharges. Monitoring in Johnson Creek will be used to determine whether the process areas are affecting conditions in the creek.

Sediment Monitoring

The permit requires annual sediment monitoring for metals and other parameters and annual toxicity testing to assess the effect of mine effluent on sediments within the receiving streams. The permit requires sampling in Sherman Creek at a location immediately downstream of Outfall 001 and at another location below the fish barrier. Additional sampling is required at a location below Outfall 002 in East Fork Slate Creek and in lower Slate Creek below the fish barrier. Sediment sampling is also required at a location in upper Johnson Creek immediately below the process area.

Biological Testing and Monitoring of Aquatic Resources

Benthic Invertebrates – The permit requires benthic invertebrates monitoring using methods and locations established in baseline surveys in Sherman and Sweeny creeks. In Slate and Johnson Creeks, Coeur will define reaches to be sampled that are representative of potential impacts from Outfall 002 and the process area, respectively. Each reach will be delineated for all possible sampling sites. Every third or fourth sampling site will be sampled until a total of 6 samples are collected. Sampling will be conducted once during the construction period and annually thereafter.

Resident Fish – Abundance and condition of Dolly Varden char in Sherman, Slate, and Johnson creeks will be monitored using annual snorkel observations or electrofishing techniques comparable to those employed in previous baseline studies. Surveys will be conducted in: upper, middle, and lower Sherman Creek; East Fork Slate Creek and Lower Slate Creek; and Johnson Creek. These surveys will focus on fish greater than 25 mm. Data to be derived from the surveys include: 1) population estimates by species, habitat type, and stratum, and 2) condition factor by stratum.

Anadromous Fish – Annual surveys of spawning salmon in Sherman, Slate and Johnson creeks will be conducted to assess the size of the escapement. Surveys will consist of weekly stream counts throughout the spawning season documenting the distribution of salmon within the surveyed areas. Outmigrating juvenile pink salmon from the Sherman, Slate, and Johnson creek drainages will be sampled during the spring following each year of adult counts. Quantitative methods, such as screw trap or inclined plane trap will be used to estimate the relationship between adult escapement and fry protection.

The quality of spawning substrate used by pink salmon will be monitored to detect possible changes caused by potential introduction of fine sediments into lower Sherman, Slate, and Johnson creeks. Sediment samples will be collected in July prior to spawning activity.

Aquatic Vegetation – Annual visual surveys of visual impacts of aquatic vegetation in Sherman, Slate, and Johnson creeks will be conducted during the summer months.

RECLAMATION

Section 2.3.19 of the FSEIS discusses the general reclamation procedures for all the alternatives and summarizes how major mine components would be reclaimed. A more detailed closure and reclamation plan specific to Alternative D is presented in Appendix 1 of the Final Plan of Operations.

BEST MANAGEMENT PRACTICES (BMP) PLAN

Section 402 of the Clean Water Act and federal regulations at 40 CFR 122.44(k)(2) and (3) authorize EPA to require Best Management Practices (BMP) Plan in NPDES permits. The BMP Plan will be used to control the discharge of toxics or hazardous pollutants by way of spillage or leaks, sludge or waste disposal, and drainage from raw material storage. The BMP Plan must be maintained at the mine facility and amended whenever there is a change in the facility or in the operation of the mine which materially increases the potential for an increased discharge of pollutants. Annually, the BMP Plan must be reviewed and certified.

PUBLIC INVOLVEMENT

The public involvement process is presented in Section 1.5 of the FSEIS. The following is a chronology of the public involvement process for the FSEIS and NPDES permitting process:

September 13, 2002	The *Notice of Intent (NOI)* was published in the Federal Register and announced the USFS' intention to develop an SEIS under NEPA for the Kensington Gold Project. The NOI initiated the 30-day public scoping period.
Sept. 19 & 21, 2002	Scoping open houses held in Juneau and Haines, respectively.
January 23, 2004	Draft SEIS released to the public for review and comment.
Feb. 24 & 26, 2004	Public meetings on the Draft SEIS were held in Juneau and Haines, respectively.
June 21, 2004	EPA, U.S. Army Corps of Engineers, and the State of Alaska issued draft permits and draft decisions/authorizations (draft NPDES permit, CWA 404 public notices, draft State CWA 401 certifications, draft State decisions and authorizations) for public comment.

July 26 & 27, 2004 Public hearings on draft Federal and State permits and decisions/authorizations were held in Juneau and Haines, respectively.

CONCLUSIONS

Based on the NPDES permit application received by EPA, Coeur's demonstration that the project can meet permit limits, and the findings of the FSEIS, EPA is issuing an NPDES permit, with discharge limits, for Alternative D. The permit authorizes treated mine water discharges from Outfall 001 to Sherman Creek, treated TSF discharges from Outfall 002 to East Fork Slate Creek, and treated domestic wastewater discharge during construction from Outfall 003 to Lynn Canal. The final NPDES permit is included in Appendix A.

Further information regarding this Record of Decision (ROD) may be obtained by contacting:

Hanh Shaw
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
1200 Sixth Avenue, OWW-130
Seattle, WA 98101
E-mail: shaw.hanh@epa.gov
Telephone: (206) 553-0171
Facsimile: (206) 553-0165

Approving Official:

_/S/ Michael F. Gearheard_____ _6/28/2005_____
Michael F. Gearheard, Director Date
Office of Water and Watersheds

Alternative	**A**	**A1**	**B** (Coeur's Proposed Action)	**C**	**D**
Alternative Description	1998 permitted project	Same as A w/ reduced mining rate	Recycle process water; no treatment of TSF effluent	Same as B except with no recycle	Same as B except with treatment of TSF effluent by reverse osmosis and capping of the sediment post-operation
Tailings Disposal	DTF 20 million tons; 25% backfilled	DTF 4.5 million tons; 40% backfilled	Lower Slate Lake TSF 4.5 million tons; 40% backfilled	Lower Slate Lake TSF 4.5 million tons; 40% backfilled	Lower Slate Lake TSF 4.5 million tons; 40% backfilled
Diversion	Stormwater diversion around DTF	Stormwater diversion around DTF	No diversion	Ditch diversion around TSF- would require damming of Upper Slate Lake and raising water level 20 ft. to allow gravity flow	Pipeline diversion around TSF - would require dam in Mid-lake East Fork Slate Creek
Access/Marine Facilities	On-site housing; workers transported by helicopter (12 RT per week); marine terminal at Comet Beach	Same as A	No on-site housing; daily crew shuttle between marine terminals at Cascade Point and Slate Creek Cove (4 RT per day)	Same as B except daily crew shuttle service between Echo Cove and Slate Creek Cove; no landing craft ramp at Slate Creek Cove	Same as B

DTF - drystack tailings facility
TSF - tailings storage facility
RT - round trip

KENSINGTON MINE

Comet Paste Tailings Facility (PTF)

FOR PRESENTATION PURPOSES ONLY
SUBJECT TO CORRECTION AND UPDATE

January 7 & 8, 2008

COEUR
THE PRECIOUS METALS COMPANY

Objectives of Paste Tailings Management

- Provide for safe and environmentally responsible tailings storage
- Design a system that is cost effective, and integrates underground backfill needs with sound surface management of tailings
- Design a facility that is environmentally sound and permitable
- Design a system that has simple closure requirements and limits long-term care & maintenance needs
- Limit the environmental footprint
- Utilize the three previous EISs and permitting to accomplish an expedited permitting process

Comet Site Operating Strategy

- Environmental/permitting to build on prior approvals and submittals
- No substantial changes from DTF permitting
- Simplify construction and operating requirements
- Develop facility in stages, distribute capital costs and accommodate modifications
- Consolidate new surface disturbance to the extent feasible
- Consolidate water treatment facilities wherever feasible
- Staged development improves water management

Surface Paste Disposal

- Used extensively in the bauxite mining industry
- Hardrock projects using surface paste tails disposal
  - Mira Falls, Vancouver Island, British Columbia
  - Bulyanhulu Project, Tanzania
  - Kidd Creek, Timmons, Ontario
- Permitted at Rock Creek, Nome, Alaska

Corps 404 Permitting Considerations

- New or modified permit to be applied for
- No "process water" discharged into waters of the U.S. (uplands construction)
- No fish or fisheries habitat loss
- Previous 404(b)(1) analysis considered Comet PTF site and impacts
- Previously obtained State of Alaska 401 Certification for Comet site

Socioeconomic Considerations

- Annual wage payments - $15-18 M per year
- Total taxable property associated with mine operations - $43 M
- Construction jobs – 200 (average)
- Operational jobs – 200 (average)
- Average mine wage – $70,000
- Employment multiplier – 1.75
- Total tax receipts to CBJ and State during operation - $10.1 M
- Additional property taxes to local government - $1.4 M annually
- Additional earnings for CBJ - $36.2 M (reflects a 3% increase)
- Local & Native hire/Local Purchase policy
- Vocational training and education programs

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

REGIONAL ADMINISTRATOR

July 14, 2009

Colonel Reinhard W. Koenig
Department of the Army
U.S. Army Engineer District, Alaska
Post Office Box 6898
Elmendorf AFB, Alaska 99506-0898

Dear Colonel Koenig:

We are aware that the Army Corps of Engineers (Corps) is responding to a written request from Coeur Alaska to extend the Clean Water Act (CWA) Section 404 permit for the Kensington Mine Project. By this letter, the U.S. Environmental Protection Agency (EPA) is requesting that the Corps reevaluate the circumstances and conditions of the permit in view of new information related to the Kensington Mine and Lower Slate Lake disposal site.

According to 33 CFR § 325.6(d), a public notice for an extension request is generally required unless the district engineer determines that there have been no significant changes in the attendant circumstances since the authorization was issued. The Corps' regulations at 33 CFR 325.7(a) allow the district engineer to reevaluate the circumstances and conditions of any permit on his own or at the request of a third party when doing so is in the public interest. Among the factors to be considered are "whether or not circumstances relating to the authorized activity have changed since the permit was issued or extended." We believe that there have been significant changes; as described below, that not only requires the public notice for the extension request, but also requires the Corps to modify the permit.

In 2008, Coeur Alaska proposed a new tailings disposal alternative which included disposal of tailings as a paste in a Paste Tailings Facility (PTF) located near Comet Beach. Significant progress was made toward evaluating the PTF in a draft Environmental Assessment (EA) prepared by the U.S. Forest Service and EPA. In fact, EPA was within weeks of public noticing a draft National Pollutant Discharge Elimination System (NPDES) permit for the PTF when Coeur withdrew its application. EPA believes that the PTF would be permittable under both the Section 402 and 404 programs. However, the Corps did not evaluate the PTF in its analysis of alternatives at the time it issued the current Kensington 404 permit in 2005. EPA believes that the PTF could have less environmental impact than the Lower Slate Lake disposal site that was permitted, and therefore the permit should be reevaluated in view of the new information concerning this alternative.

In addition, the mining rate based on the as-built capacity of the mill is less than the proposed mining rate in the 2004 final Supplemental Environmental Impact Statement (FSEIS). The FSEIS specified a 2000 ton/day operation, whereas the actual mill capacity is 1250 tons/day. The reduced mining rate translates into a decrease in the amount of tailings produced; more than one million fewer tons overall. This change to the project presents opportunities to further avoid and minimize aquatic impacts, which could affect the appropriate permit conditions. This new information also could reduce the environmental impacts of disposal sites that were considered as alternatives to

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disposal in Slate Lake, which could change the analysis of which disposal alternative is the least environmentally damaging. For those reasons, this information also warrants reevaluation of the permit and its conditions.

Finally, Coeur Alaska excavated an area near Lower Slate Lake and exposed some sulfide-bearing rock. This newly exposed rock resulted in acid rock drainage that flowed into a settling pond near the outlet of the lake and into East Fork Slate Creek. The acid rock drainage is an unauthorized discharge that was not anticipated in the FSEIS or 404 permit process and is not authorized under the current 402 permit. This source of new environmental harm needs to be part of an assessment of the least environmentally damaging practicable alternative.

We think it is important for the public, and to provide certainty to the company and the Corps, for the Corps to review all the information before it and, consistent with its regulations, issue a public notice. Since we believe that a more environmentally protective alternative is available (the PTF), such an undertaking is consistent with the Corps own regulations and will ensure that the 404(b)(1) guidelines are fully complied with.

We appreciate the need to move quickly on this matter, particularly in light of the hardships being experienced by many in the native Alaskan community. When Coeur Alaska submitted its application for a permit for the PTF in April 2008, it requested that the permit process be completed by the end of 2008. EPA believes that eight months remains a workable time frame and commits to providing the resources to ensure that all necessary environmental analyses and permit regulatory processes are performed within that time frame. As stated above, significant progress has already been made on an EA and draft NPDES permit. We will work on an expedited basis and collaborate with the Corps and other agencies to complete the permitting process for the PTF in an expedited manner. While we appreciate that this will not allow work to resume this summer, we believe that in the long run everyone will be better off if we follow our regulations and go through the prescribed processes.

We look forward to working with you on this permit. Please feel free to give me a call at (206) 553-1234 or contact our experts in this matter, Rick Parkin, Director of the Office of Ecosystems, Tribal and Public Affairs at (206) 553-8573, or Patty McGrath, Region 10 Mining Coordinator at (206) 553-0979 if you have questions.

Sincerely,

Michael F. Gearheard
Acting Deputy Regional Administrator

cc: Mr. Michael H. Shapiro, EPA Acting Assistant Administrator for Water
Mr. Larry Hartig, Alaska Department of Environmental Conservation
Mr. Tom Irwin, Alaska Department of Natural Resources

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American Bird Conservancy · American Rivers · Clean Water Action · Earthjustice · EARTHWORKS · Environment America · Friends of the Earth · Greenpeace · League of Conservation Voters · National Wildlife Federation · Native American Rights Fund · Natural Resource Defense Council · Sierra Club · Southeast Alaska Conservation Council · Union of Concerned Scientists · Waterkeeper Alliance

July 17, 2009

President Barack Obama
The White House
1600 Pennsylvania Avenue
Washington, D.C. 20500

Dear Mr. President:

We write to request that you direct the Environmental Protection Agency (EPA), the Army Corps of Engineers (Corps), and the Council on Environmental Quality (CEQ) to take immediate coordinated action to avert the adverse effects of the Supreme Court's recent decision in *Coeur Alaska, Inc. v. Southeast Alaska Conservation Council*, No. 07-984 (June 22, 2009). This decision has significant national implications, threatening to undo decades of progress in improving water quality. We urge you to act quickly to prevent this threat to our nation's waters.

In *Coeur Alaska*, the Court upheld a Bush-era decision by the Corps to permit the discharge of over 200,000 gallons per day of toxic wastewater from a gold ore processing mill directly into a lake, with the effect of killing all the lake's fish and nearly all other aquatic life, despite the fact that the discharge violates EPA rules for the mining industry in effect since 1975. The agencies accomplished this by a ruse: they redefined the wastewater as "fill material." For about three decades, Corps regulations allowed "fill material" permits only for discharges intended for constructive purposes, typically to build useful structures like docks and levees in water. In 2002, however, EPA and the Corps jointly redefined "fill material" to include anything that would raise the bottom elevation of a water body, even industrial pollution and other wastes. The Supreme Court upheld the Bush Administration's position that any such "fill material" discharges are now exempt from the effluent limitations painstakingly adopted by EPA over the last 37 years to provide maximum feasible protection of water quality.

This decision poses a grave threat to the nation's lakes, rivers, streams, and wetlands. There are innumerable manufacturing industries that, like ore mills, generate pollution containing significant levels of suspended solids. To name just a few examples, coal-fired power plants, aluminum and copper smelters, cement manufacturing plants, beef cattle feedlots, and chemical manufacturers have, until now, been subject to EPA effluent limitations requiring settling ponds and other technologies to remove solids from their wastewater. The untreated effluents from these sources now frequently could meet the definition of "fill material" and are therefore potentially eligible for Corps permits that do not have to comply with EPA's effluent limitations. This approach turns the Clean Water Act on its head: pollution discharges with the highest levels of suspended solids are exempt from EPA's rules, providing a strong incentive for

polluters *not* to treat their wastewater. As the *Coeur Alaska* case illustrates, "fill material" permits can allow even massive discharges of toxic pollutants that may kill an entire water body.

This destructive result is entirely unnecessary. The growth of the nation's economy and the simultaneous great improvement in water quality since enactment of the Clean Water Act in 1972 show that clean water is good for business. For example, for the Kensington Mine at issue in *Coeur Alaska*, there is an alternative waste disposal option—a "paste tailings" facility—supported by conservation groups and EPA, which would require no discharge of process wastewater into any waters. We were pleased that EPA Region 10 recently wrote a letter asking the Corps to consider this viable and less damaging alternative. The use of a lake as a mine tailing disposal site is irresponsible, both in the case of the Kensington and for future mines.

Fortunately, the Court's decision provides a clear roadmap to solve the problem. The Court found that the Act as well as the agencies' regulations are ambiguous on the questions at issue in the case and therefore simply deferred to an internal 2004 Bush-era EPA guidance memorandum, called the Regas Memo. The *Coeur Alaska* ruling cries out for the agencies to amend and clarify their regulations and guidance.

For these reasons, we respectfully ask that you direct EPA, the Corps, and CEQ to work together to: (1) rescind immediately the Regas Memo, which directed that discharges of waste meeting the definition of "fill material" be exempt from applicable effluent limitations; and (2) initiate a process to amend the 2002 fill rule to reinstate the longstanding rule that "fill material" permits may not be used for waste disposal.

We would welcome the opportunity to meet with your staff and the heads of the relevant agencies at their earliest convenience to address the problems created by the *Coeur Alaska* decision.

Thank you for your prompt attention to this matter.

Respectfully Yours,

Carl Pope
Executive Director
Sierra Club

Trip Van Noppen
President
Earthjustice

Larry Schweiger
President and CEO
National Wildlife Federation

Kristine Stratton
Executive Director
Waterkeeper Alliance

Payal Sampat
Acting Executive Director
EARTHWORKS

Lindsey Ketchel
Executive Director
Southeast Alaska Conservation Council

George Fenwick
President
American Bird Conservancy

Brent Blackwelder
President
Friends of the Earth

Rebecca R. Wodder
President
American Rivers

John DeCock
President
Clean Water Action

Frances Beinecke
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John E. Echohawk
Executive Director
Native American Rights Fund

Kevin Knobloch
President
Union of Concerned Scientists

Margie Alt
Executive Director
Environment America

Phil Radford
Executive Director
Greenpeace

Gene Karpinski
President
League of Conservation Voters

cc: Lisa Jackson, Administrator, U.S. Environmental Protection Agency
Nancy Sutley, Chair, White House Council on Environmental Quality
Terrence Salt, Principal Deputy to the Assistant Secretary of the Army, Civil Works