

**Department of Environmental Conservation
Response to Comments
for
Coeur Alaska, Inc.
Kensington Gold Mine Project
APDES Permit No. AK0043206**



June 28, 2024

**Alaska Department of Environmental Conservation
Wastewater Discharge Authorization Program**

Summary of Facility / Permit

The Kensington Gold Mine is an underground gold mine located 45 miles north of Juneau, Alaska on a peninsula between Berners Bay and Lynn Canal. Coeur Alaska, Inc. (Coeur) operates the mine. Kensington started production in 2010 with an estimated mine life of 10.5 years. The permit was originally issued as a National Pollutant Discharge Elimination System (NPDES) permit in 1998 and reissued in 2005. Two more reissuances occurred in 2011 and 2017 under the Alaska Pollutant Discharge Elimination System (APDES) Program.

The facility is located at the southern end of the Kakuhan Range of the coastal mountains in the Tongass National Forest on the small peninsula formed between Lynn Canal and Berners Bay. The site is accessible by floatplane, helicopter, or boat. The mine is within the administrative boundary of the City and Borough of Juneau.

The mine produces approximately 2,000 tons per day of ore. Milling began in 2010. Exploration activities have extended the life of the operation beyond the originally estimated 10.5 years. Permitting is underway for extending the life of mine by adding 10 additional years of tailings and waste rock disposal capacity. The mill and mine operate 24 hours per day, seven days a week. A gold concentrate is produced at the mill, packed in containers, and transported for off-site processing. Tailings from the mill are either 1) sent to the paste backfill plant, combined with cement and used to fill voids in the underground mine, or 2) are disposed in the tailings treatment facility (TTF). Kensington lies in the Sherman, Johnson, and Slate Creek drainages. Mine infrastructure in the Sherman Creek drainage includes an adit, waste rock dump, warehouse, and water treatment plant. Drainage from the mine is treated and discharged to Sherman Creek through Outfall 001. Sherman Creek drains to Lynn Canal.

A mine portal, mill, waste rock dump, and man camp are located in the Johnson Creek drainage. The TTF is located in the Slate Creek drainage. Wastewater from the TTF is treated and discharged to the East Fork of Slate Creek through Outfall 002. Johnson and Slate Creeks drain to Berners Bay.

Opportunity for Public Participation

The Alaska Department of Environmental Conservation (DEC or the department) reissues an APDES wastewater discharge permit to Coeur Alaska Inc. Kensington Gold Mine. To ensure public, agency, and tribal notification and opportunities for participation, the department:

- identified the permit via online posting on the DEC Wastewater Permit Issuance Plan website at: [Permit Issuance Plan \(alaska.gov\)](https://www.dec.state.ak.us/Permit/IssuancePlan.aspx),
- notified potentially affected tribes and local governments and other agencies that the department would be working on this permit via letter, fax and/or email,
- published a public notice in the Juneau Empire newspaper on April 13, 2024 and April 17, 2024,
- posted a public notice of the draft permit on the department's public notice webpage and notified tribes, local governments, and other agencies,
- sent email notifications via the APDES Program List Serve when the preliminary draft, draft, and proposed final permits were available for review.

The department received comments from the following parties on the draft permit.

- Center for Science in Public Participation (CSP2)
- Southeast Alaska Conservation Council (SEACC)
- Alaska Department of Fish & Game (ADF&G)
- Alaska Miners Association
- Alaska Metal Mines, and
- Individual members of the public

This document summarizes the comments submitted and the justification for any action taken or not taken by DEC in response to the comments. Substantive comments requiring explanation or comments that have resulted in changes to the permit and/or Fact Sheet are fully explained in the pages in this document. Generalized comments of overall support or opposition to the project or non-substantive corrections to the permit and Fact Sheet are not included in this document.

Final Permit

The final permit was issued by the department on June 28, 2024. Significant issues are identified in the response to comments and have been addressed in the final permit and Fact Sheet.

Comments & Responses

CSP2 Comment #1: Tables 4 and 5 of the Fact Sheet show that aluminum was a contaminant of concern with permit limits in the 2017 APDES permit. However, permit limits for aluminum are being removed from the 2024 permit.

CSP2 Response #1: Permit Tables 2, 3, and 4 (and corresponding Fact Sheet Tables) represent monitoring and limits for Outfalls 001, 002 and 003, respectively. The comment is correct that aluminum was a pollutant of concern that had limits established in the 2017 permit, and the comment expressed concern that limits were removed in this permit. When an APDES permit is reissued, the effluent data collected from the previous permit cycle is statistically evaluated in a reasonable potential analysis (RPA) to determine if a pollutant will exceed water quality standards (WQS). In the 2017 permit, the data for aluminum indicated reasonable potential to exceed WQS and a limit was established in that permit. For this permit, the data for aluminum did not indicate reasonable potential and thus a limit was not established. An explanation of the RPA process is provided in Fact Sheet, Appendix C, Reasonable Potential Determination. In order to reduce or eliminate limits in a reissued permit, the department must also perform an antibacksliding analysis as required under 18 AAC 83.480. This analysis is provided in Fact Sheet Section 6.0. No change to the Permit or Fact Sheet were made as a result of this comment.

CSP2 Comment #2: In Appendix B, Fact Sheet, Tables B-2 and B-3 list the chronic aquatic life criterion for aluminum as N/A. The *Alaska Water Quality Criteria Manual for Toxic and other Deleterious Organic and Inorganic Substances*, lists the chronic aquatic life criterion for aluminum as 87 micrograms per liter ($\mu\text{g/L}$). There is no explanation in the Fact Sheet discussing the reasoning applied in removing the aquatic life criteria from the discharges at Kensington. The Fact Sheet needs to include an explanation of the reasoning applied in removing the 87 $\mu\text{g/L}$ chronic criterion for aluminum at Kensington.

CSP2 Response #2: According to endnote 13 of the manual, when the receiving water hardness is greater than or equal to 50 milligrams per liter (mg/L) as CaCO_3 and the pH is greater than or equal to 7.0 standard units, the chronic aquatic life criterion for aluminum is removed. The endnotes for Tables B-2 and B-3 have been supplemented by adding receiving water pH data indicating that the hardness and pH receiving water data exceed the thresholds required to apply the 87 $\mu\text{g/L}$ chronic criterion for aluminum.

CSP2 Comment #3: A tailings spill occurred at the Kensington Mine on January 31, 2024, and a portion of the spill reached Johnson Creek (Coeur 2024). Cu, Zn, Pb, Cd, Fe, and Mn were all above WQS at the point of the spill, and at monitoring station JS5 (except Cd), on the day of the spill (Coeur 2024, Table 1). Based on the information provided in the Coeur report, I have calculated that approximately 94 tons of tailings solids reached and were deposited in Johnson Creek. This is significant amount of contaminated material, and it will take some time for this material to flush through the Johnson Creek system, into Berners Bay. In the draft permit, Table 6, only sediment sampling is proposed for upper Johnson Creek, and only benthic invertebrates for lower Johnson Creek. Because of possible impacts from the tailings spill, sediment sampling, benthic invertebrates, and periphyton should be sampled at both the Upper and Lower Johnson Creek sites.

CSP2 Response #3: The tailings spill that occurred at the Kensington Mine in January, 2024, was responded to by the Alaska Division of Spill Prevention and Response (SPAR) who is

currently overseeing site management required for site closure which includes monitoring and assessing closure requirements. Once long-term monitoring objectives have been determined, monitoring requirements are typically incorporated through the approval of revised monitoring plans that are developed under the approval of land-management agency, the U.S. Forest Service. Monitoring at Johnson Creek is performed under Waste Management Permit 2022DB0001. Long-term monitoring requirements derived from the January 2024 spill will be incorporated into the monitoring plan once it is determined. Since this request cannot be satisfied through this permit action, no changes have been made to the Permit or Fact Sheet as a result of this comment.

Public Comment #1: On Fact Sheet page 6, section 2.1, paragraph 1, the 2005 permit was issued by EPA as an NPDES permit not as an APDES permit. On paragraph 3, the mine life is already beyond the 10.5 years stated here. This section should be updated to indicate the exploration activities and other factors that have contributed to that as well as the status of the POA permit for an additional 10 years of mine life (the ROD was signed by the USFS on Feb 24, 2022).

Public Response #1: The Fact Sheet was corrected as suggested.

Public Comment #2: On Fact Sheet, page 7, section 2.2, Outfall 001, Paragraph 1, “MWTP” is not spelled out until it appears on Figure 1.3 in Appendix A Paragraph 2 “Design parameters the treatment system expansion . . .” doesn’t seem to make sense.

Public Response #2: The Fact Sheet was corrected as suggested. MWTP is the acronym used for mine water treatment plant in the permit documents.

Public Comment #3: On Fact Sheet page 8, section 2.2, Outfall 002, paragraph 2, “the TTF may receive seepage from graphitic phyllite (See Section 3.0) + Section 3.0 doesn’t mention this (seems to be a relic of the 2017 FS) + Since seepage is not stormwater and Lower Slate Lake is still a WOTUS, the discharge of this seepage is not authorized by this permit.

Public Response #3: The Fact Sheet at Section 2.2, Outfall 002, was corrected.

Public Comment #4: On Fact Sheet paragraph 3, “allowing a discharge without flow augmentation” If this is the case then the dilution water shown entering the treatment plant (lower left corner of the figure) in Appendix A, Figure 4 should be eliminated.

Public Response #4: The comment is addressed in Permit Section Part 1.4.6 which authorizes flow augmentation for sulfate at newly designated Outfall 003. Fact Sheet Section 2.2, Outfall 003, provides the analysis and justification authorizing flow augmentation in accordance with 40 CFR 125.3(f) and EPA guidance.

Public Comment #5: On Fact Sheet page 9, top paragraph, while the previous page says the discharge will not need flow augmentation, this paragraph says that it will eventually be phased out by the fall of 2025 even though Section 8.4.3 states that the flow has not been augmented since May 11, 2022 (the last line on page 30 states that flow augmentation has not been needed since the startup of the RO plant). If flow augmentation may continue, it’s use should be evaluated according to EPA Guidance: Use of Low Flow Augmentation by Point Source to Meet Water Quality Standards which can be found online at <https://www3.epa.gov/npdes/pubs/owm501.pdf>.

Public Response #6: See Public Response #4.

Public Comment #7: On Fact Sheet page 13, section 4.5, the proper implementation of the flow augmentation guidance would require influent monitoring prior to augmenting the flow to determine if the TBELs are being met. “. . .for each outfall are summarized in .” A reference is missing.

Public Response #7: See Public Response #4.

Public Comment #8: On page 15, section 4.7, paragraph 1, “receives runoff from a waste rock pile” - if this runoff is regulated under the MSGP, this section should say it.

Public Response #8: Permit Part 2.4 has been revised to include a special condition schedule to address discharge concerns from Comet Development Rock Stockpile (CDRS) affecting the water quality in Ophir Creek. The background and basis for special condition schedule is provided in Fact Sheet Section 8.4.3.

Public Comment #9: On Fact Sheet page 17, table 9, the 3rd column references the 2023 Permit but should be 2024.

Public Response #9: The Fact Sheet was corrected as suggested.

Public Comment #10: On Fact Sheet page 29, section 8.3, if the MSGP only covers aspects of the facility related to storm water and not those parts of the facility that may be subject to accidental spills that could reach WOTUS, then deleting the BMP requirements of this permit should not occur. A more thorough explanation of how the MSGP requirements are comparable to the previous BMP requirements should be included.

Public Response #10: The BMP requirements from the 2017 permit were re-introduced into the permit.

Public Comment #11: On Fact Sheet page 29, section 8.4.1, paragraph 1 says that a compliance schedule was implemented to determine the source and cause of the white residue formation, yet this section does not indicate what the source or the cause was.

Public Response #12: Additional information was provided in Fact Sheet Section 8.4.1 providing additional explanation of the source of the residue formation.

Public Comment #13: On Fact Sheet page 30, section 8.4.1, paragraph 1, of course there weren't exceedances of sulfate during the last permit cycle, the flow was being augmented with fresh water specifically to avoid this. With the changes in circumstances, it would be prudent to keep the sulfate limits during this permit cycle to evaluate the efficacy of the RO plant.

Public Response #13: The comment concerns the removal of the sulfate limits between the public-notice draft and the 2017 permits. Revisions to Permit Section Part 1.4.6 address the concern expressed in comment and establishes monitoring and limits for sulfate under flow augmentation treatment at Outfall 003. In the Fact Sheet, Section 2.2, Outfall 003, it provides the analysis and justification authorizing flow augmentation according to 40 CFR 125.3(f) and EPA guidance.

Public Comment #14: On Fact Sheet page 36, figure 4, this figure still shows “Dilution” going into the TTF WTP - see previous comments about evaluating flow augmentation if it is meant to continue for the duration or partial duration of the new permit.

Public Response #14: See Public Response #4.

Public Comment #15: On Fact Sheet page 39, table B-2, the 2017 permit used an Al criterion of 87 ug/L and this says the most stringent is 750 ug/L While the WQS do contain an exemption from 87 ug/L, it is based on the hardness of the receiving water being over 50 and the pH being over 7. This table indicates that the 15th percentile hardness meets the exemption requirement, but the pH of the receiving water is not listed so there is no way of knowing whether that requirement is met so no way of knowing whether the criterion should be 87 or 750 ug/L.

Public Response #15: The endnotes for Tables B-2 and B-3 have been supplemented by adding receiving water pH data indicating that the hardness and pH receiving water data exceed the thresholds required to apply the 87 µg/L chronic criterion for aluminum.

Public Comment #16: The 2017 permit used a hardness of 51 for the calculation of the hardness-based metal limitations but the new value is 69.36. The sampling station should be evaluated to determine whether the station is still in a location unaffected by mining activity because this seems like a substantial change in the 15th percentile value (for contrast, the 2017 hardness for Outfall 002 was 74 and the current calculations use 73.75).

Public Response #16: When an APDES permit is reissued, the effluent and receiving water data collected from the previous permit cycle and is statistically evaluated to determine water quality criteria, reasonable potential, and permit limits. In the 2017 permit, the 15th percentile for hardness was calculated to be 51 mg/L and the hardness data for period of record for this permit was 69.36 mg/L. The method used to calculate hardness hasn’t changed and difference in hardness values between the permits appear to be within a reasonable range of variability for receiving waters in the area. The contrast in concentrations mentioned in the comment was noticed by the department, and great care was taken to assure that representative receiving water data were used. No change to the Permit or Fact Sheet were made as a result of this comment.

Public Comment #17: On Fact Sheet page 39, table B-3, see aluminum comments on Table B-2 above.

Public Response #17: See Public Response #15.

Public Comment #18: On Fact Sheet page 44, table C-2, the mean values for each parameter are not included in this table so the formulas shown on pages 41 & 42 cannot be independently calculated to determine if the RPM value is correct. Footnote a: how were the metals criteria converted to total recoverable (and for clarity’s sake, what are they being converted from).

Public Response #18: Standard deviation and mean values were added and the column for the coefficient of variation was removed. Also, additional information was provided to footnote “a” of Fact Sheet, Table C-2.

Public Comment #19: On Fact Sheet page 46, table C-4, see both comments on Table C-2.

Public Response #19: The standard deviation and mean values were added to Fact Sheet, Table C-4 and the coefficient of variation removed.

Public Comment #20: On Fact Sheet page 47, Appendix D, paragraph 1, “has a technology-based effluent limit (WQBEL)” - should be (TBEL).

Public Response #20: The Fact Sheet was corrected as suggested.

Public Comment #21: On Fact Sheet page 52, table D-2, the MDL for Copper calculates out to 10.5 ug/L. It seems that for the effluent limitations, DEC has utilized 2 significant figures regardless of how many significant figures in the values used to calculate the limitation. If this is the case, it should be stated.

Public Response #21: The Fact Sheet was corrected for rounding error and now shows the MDL for Copper as 11 ug/L.

Public Comment #22: On Fact Sheet page 53, table D-4, the MDL for lead should be 2.8 not 2..8 the AML for Outfall Flow has an X in this table while Table 5 and the permit both contain an effluent limitation of 2,000 gpd (the same protocol as the outfall flow limitations for Outfall 001).

Public Response #22: The Fact Sheet was corrected as suggested.

SEACC Comment #1: On January 31, 2024, the Kensington tailings pipeline ruptured and spilled tailings and mill process water slurry. Cu, Zn, Pb, Cd, Fe, and Mn were all above Alaska Water Quality Standards at the point of the spill. The tailings and mill process water slurry reached Upper Johnson Creek and Cu, Zn, Pb, Fe, and Mn were all above AWQS in Upper Johnson Creek at sample location JS5 on the day of the spill. Tailings reached Johnson Creek and Dr. David Chambers has calculated the volume of tailings solids entering the creek at 94 tons. It should be assumed that, despite clean-up efforts, a significant amount of tailings remained in Upper Johnson Creek after the spill.

Sediment sampling for Upper Johnson Creek is not included in Table 6 of the Draft Permit. Because of possible impacts from the tailing spill, the Draft Permit should include sampling for sediment along with benthic invertebrates and periphyton, in both Upper Johnson Creek and Lower Johnson Creek. Because of risks from the tailings spill, the Draft Permit should require that Upper and Lower Johnson Creek sediment samples be tested for acute toxicity as well as for chronic toxicity.

SEACC Response #1: See CSP2 Response #1.

SEACC Comment #2: Submission Schedule: The 2024 Draft Permit removes the previously required 1.4.5.3 Exceedance of chronic toxicity limits and 1.4.5.3 Accelerated testing results from Table 1: Schedule of Submissions. These are key testing requirements under the permit and are required under 1.4.5.3 and 1.4.7.2 to be submitted within two weeks of receipt of test results. Table 1: Schedule of Submission should be corrected to reflect that DEC must be notified within two weeks as required under 1.4.5.3.

SEACC Response #2: The comment expressed concern that removal of the triggered reporting requirements from the Schedule of Submissions removes the requirement from the permit. The Schedule of Submissions (Schedule) in the permit serves as quick reference for scheduled reporting requirements of the permit. However, not all of the reporting requirements contained in the permit are presented in the Schedule. Reports not included in the schedule but contained within the permit are enforceable. There were no changes to the Accelerated Testing or Toxicity

Reduction Evaluation (TRE) and toxicity identification evaluation (TIE) requirements between the 2017 permit and this permit. No changes to the permit or Fact Sheet were made as a result of this comment.

SEACC Comment #3: Effluent Limits for Outfall 001: Table 2 [of Permit]: Effluent Limits and Monitoring Frequencies for Outfall 001 removes the Maximum Daily Limit and Average Monthly Limit for Sulfate associated with Na & Mg and for Total Dissolved Solids. *The Fact Sheet includes the following section on sulfates associated with Na and Mg: Site-specific criteria as allowed by 18 AAC 70.235 have not been established for East Fork Slate Creek and are therefore not applicable. However, Sherman Creek is listed in 18 AAC 70.236(b)(3) for TDS from all sources may not exceed 1,000 mg/L, chlorides may not exceed 200 mg/L, and sulfates associated with magnesium and sodium may not exceed 200 mg/L. Permit limits established for TDS and sulfate at Outfall 001 address the SSC at Sherman Creek. The permit does not authorize short term variances or zones of deposit under 18 AAC 70.200 or 18 AAC 70.210; therefore, these provisions do not apply.* The Effluent Limits for Sulfate associated with Na and Mg, and TDS should be restored to the effluent limits in Table 2 of the 2017 permit.

SEACC Response #3: Permit Tables 2, 3, and 4 represent monitoring and limits for Outfalls 001, 002 and 003, respectively. The comment is correct that limits for sulfate associated with sodium and manganese for TDS at Outfall 001 and sodium, manganese and TDS at Outfall 002 had limits established in the 2017 permit that were removed in this permit. When an APDES permit is reissued, the effluent data collected from the previous permit cycle is statistically evaluated in an RPA to determine if a pollutant will exceed WQS. In the 2017 permit, the data in question indicated reasonable potential to exceed WQS and a limit was established in that permit. For this permit, representative data for parameters in question did not indicate reasonable potential and a limit was not merited or established. An explanation of the RPA process is provided in Fact Sheet Appendix C, Reasonable Potential Determination. In order to reduce or eliminate limits in a reissued permit from a previous permit, the department must also perform an antibacksliding analysis as required under 18 AAC 83.480 and is provided in Fact Sheet Section 6.0. No change to the Permit or Fact Sheet were made as a result of this comment.

SEACC Comment #4: WET Testing Frequency: The 2024 draft Permit drops the monthly requirement for Whole Effluent Testing to quarterly testing. WET testing should remain on a monthly schedule to better identify problems and initiate corrective actions promptly.

SEACC Response #4: See SEACC Response #3 for partial response to this comment. In addition, the department may, at its discretion, reduce the monitoring period of a parameter from the previous permit, if analysis of the effluent data indicates no reasonable potential to exceed WQS. In this case, WET testing did not have reasonable potential and thus, the monitoring frequency was reduced. In order to reduce or eliminate limits in a reissued permit from a previous permit, the department must also perform an antibacksliding analysis as required under 18 AAC 83.480. This analysis is provided in Fact Sheet Section 6.0. No change to the Permit or Fact Sheet were made as a result of this comment.

ADF&G Comment #1: Permit Section 1.6.4.1 left out “Three” to describe the amount of sediment samples taken at each site. Add "three" to the first sentence or somewhere in the section to detail the number of samples that will be taken at each site; this will also make it consistent with the periphyton and benthic macroinvertebrates sections as the number of samples are described for both. Three sediment samples are correctly detailed in the Fact Sheet.

ADF&G Response #1: Changes to the permit have been made as requested.

ADF&G Comment #2: In Permit Section 1.6.5.2 remove the space between macroinvertebrates in the first sentence.

ADF&G Response #2: Changes to the permit have been made as requested.

ADF&G Comment #3: Concerning Permit Section 1.6.6, Table 7, we just got back from our first biomonitoring trip and found the two new sites Upper Slate Creek SP2 and Upper Sherman Creek, add the latitude and longitude to the table for Upper Slate Creek SP2: 58.8206, -135.0446 and Upper Sherman Creek: 58.8619, -135.0983.

ADF&G Response #3: Changes to the permit have been made as requested.

ADF&G Comment #4 In Fact Sheet Section 4.9, please remove the “a” from first sentence, “**a** periphyton biomass and...”

ADF&G Response #4: Changes to the permit have been made as requested.