

**Department of Environmental Conservation
Response to Comments**

For

Sumitomo Metal Mining Pogo LLC., Pogo Mine

APDES Permit No. AK0053341

Public Noticed March 7, 2017 – April 6, 2017

May 18, 2017



**Alaska Department of Environmental Conservation
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501**

1 Introduction

1.1 Summary of Facility / Permit

The Pogo Mine (Pogo) is an underground gold mine that has been in production since 2006. The mine produces approximately 3,000 tons of ore per day (tpd) and is permitted to feed gold ore at a rate of up to 3,500 tpd. The mine produces between 280,000 to 350,000 ounces of gold annually. The facility consists of the underground mine, a surface gold mill, a drystack tailings facility, two man camps, road access and power distribution, and a water management system for water treatment and discharge.

The Alaska Pollutant Discharge Elimination System (APDES) permit authorizes wastewater discharge to the Goodpaster River from two outfalls. Discharge from Outfall 001 consists of treated contact water from the mine site and drainage from the underground mine. After treatment, this water is augmented with fresh water from the Goodpaster River and subsequently discharged. Discharge from Outfall 002 consists of treated domestic wastewater (human body wastes from toilets and urinals, as well as wastewater from sinks, showers, laundries, safety showers, eyewash stations, and galleys). The permit also discusses effluent limitations, monitoring and reporting for internal Outfall 011.

The permit authorizes a mixing zone in the Goodpaster River associated with the discharge from Outfall 002 for fecal coliform bacteria, nitrate/nitrite, pH, dissolved oxygen, arsenic, cadmium, copper, lead, manganese, mercury, and zinc. The maximum size of the authorized mixing zone is 30 square feet.

1.2 Opportunities for Public Participation

The Alaska Department of Environmental Conservation (DEC or the Department) proposed to reissue an APDES wastewater discharge permit to Pogo. To ensure public, agency, and tribal notification and opportunities for participation during the permit development process, the Department completed the following:

- identified the permit on the annual Permit Issuance Plan posted online at: <http://www.dec.state.ak.us/water/wwdp/index.htm>
- notified potentially affected tribes and local governments that the Department would be working on this permit via letter, fax and/or email
- posted a preliminary draft of the permit on-line for a 10-day applicant review from January 31 through February 13, 2017 and notified tribes, local government(s), and other agencies
- formally published public notice of the draft permit on March 8, 2017 in the Fairbanks Daily News-Miner and posted the public notice on the Department's public notice web page
- sent email notifications via the APDES Program List Serve when the preliminary draft, draft, and proposed final permits were available for review
- posted a five-day applicant review period on the proposed final permit documents on May 5, 2017

The Department also requested comment from the Alaska Department of Natural Resources, Alaska Department of Fish and Game, the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, and the Environmental Protection Agency (EPA).

The Department received comments from 24 interested parties on the draft permit and supporting documents: 1) Aaron Plumbing & Heating Company, 2) Alaska Miners Association, 3) Alaska State Chamber of Commerce, 4) Alaska Support Industry Alliance, 5) Arctic Fire & Safety, 6) Roger Burggraf, 7) Center for Science in Public Participation (CSP2), 8) City of Delta Junction, 9) Council of Alaska Producers, 10) Denali Industrial Supply, Inc., 11) Jack Detzel, 12) EPA, 13) Fairbanks Economic Development Corporation, 14) Fairbanks North Star Borough, 15) Frontier Supply, 16) Golden Valley Electric Association, 17) Lynden Incorporated, 18) Mining and Petroleum Training Service, 19) Parker/Smith/Feek, 20) Pogo Mine, 21) Resource Development Council, 22) Senator Mark Dunleavy and Representative George Rauscher, 23) Senator Cathy Giessel, and 24) Vivlamore Companies.

This document summarizes the comments submitted and the justification for any action taken or not taken by DEC in response to the comments.

1.3 Final Permit

The final permit was adopted by the Department effective July 1, 2017. There were changes to the public noticed permit. Significant changes are identified in the response to comments and reflected in the final fact sheet for the permit.

2 Minor Comments

The Department received several comments that were minor typographical/formatting comments or were the same or very similar to comments that were submitted by other entities. The Department did not include the minor comments nor response in this Response to Comments document, but as appropriate, did make revisions to the permit and fact sheet as determined necessary.

3 General Support for the Permit

3.1 Comment Summary

Aaron Plumbing & Heating Company, Alaska Miners Association, Alaska State Chamber of Commerce, Alaska Support Industry Alliance, Arctic Fire & Safety, Roger Burggraf, City of Delta Junction, Council of Alaska Producers, Denali Industrial Supply, Inc., Jack Detzel, Fairbanks Economic Development Corporation, Fairbanks North Star Borough, Frontier Supply, Golden Valley Electric Association, Lynden Incorporated, Mining and Petroleum Training Service, Parker/Smith/Feek, Resource Development Council, Senator Mark Dunleavy and Representative George Rauscher, Senator Cathy Giessel, and Vivlamore Companies all expressed support for the permit.

Response:

DEC appreciates the comments of support.

4 Comments on Effluent Limits and Monitoring Requirements

4.1 Comment Summary

Pogo requested that the permit and the language in the fact sheet be revised to allow for continuous pH monitoring at each outfall. Currently, pH is continuously monitored at internal Outfall 011, but Pogo wants the option to monitor pH continuously at Outfalls 001 and 002.

Response:

Sections 1.2.9, 1.3.3, 1.4.2, and 1.5.3 were added to the permit and Tables 2, 3, and 4 were modified. These changes allow for continuous pH monitoring at each outfall. Tables 5, 6, and 7 of the fact sheet were revised to be consistent with these permit changes.

4.2 Comment Summary

EPA recommended monthly monitoring for technology based effluent limits (TBEL) parameters at Outfall 011 and had questions about the Department's rationale for quarterly monitoring.

Response:

During the development of the permit, DEC conducted a reasonable potential analysis (RPA) for all of the monitored parameters at Outfall 011. The RPA demonstrated that the five metals with TBELs (cadmium, copper, lead, mercury, and zinc) have no reasonable potential to exceed water quality standards (WQS) at Outfall 011. This is prior to dilution of the effluent at the off-river treatment works and discharge to the Goodpaster River at Outfall 001, where weekly or monthly monitoring for the TBEL parameters is required. Since all monitoring data at Outfall 011 demonstrates compliance with the TBELs, the Department is reissuing the permit with the same quarterly monitoring schedule as in the previous permit. Additional justification for quarterly monitoring was added to Section 4.3 of the fact sheet.

4.3 Comment Summary

EPA recommended that the permit require monitoring for temperature at each outfall.

Response:

Monitoring requirements for temperature have been added to the permit, and the fact sheet has been updated accordingly.

4.4 Comment Summary

EPA stated that the fact sheet fails to demonstrate that the pH limits at Outfall 002 are protective of WQS.

Response:

The pH limits at Outfall 002 have been retained from the previous permit. Receiving water monitoring has demonstrated that the relatively small discharge of wastewater from Outfall 002 has not changed background pH levels in the Goodpaster River. Additional justification for the pH limits, and how these limits are protective of WQS, has been added to Appendix B-III.C of the fact sheet.

5 Comments on Mixing Zone

5.1 Comment Summary

EPA requested clarification on the basis for the bacteria limits at Outfall 002 and the calculation of the chronic dilution in the mixing zone for fecal coliform bacteria.

Response:

The authorized dilution in the chronic mixing zone is based on the dilution required to meet the Alaska WQS for fecal coliform bacteria at the boundary of the mixing zone. The required dilution was calculated from the Alaska WQS for fecal coliform bacteria, the maximum expected concentration of fecal coliform bacteria in the effluent, and the background concentration of fecal coliform bacteria in the Goodpaster River (estimated as the 15th percentile of the Alaska WQS). More information on the basis for fecal coliform bacteria limits at Outfall 002 was added to Appendix BIII.B of the fact sheet.

5.2 Comment Summary

To avoid a mixing zone for metals in the Goodpaster River, CSP2 recommended that the effluent from the domestic wastewater treatment plant be routed through the mine water treatment plant or discharged to the mixing tank at the off-river treatment works.

Response:

The Department authorized a mixing zone at Outfall 002 in the Goodpaster River in 2004 and 2011. Pogo again requested a mixing zone for Outfall 002 during reissuance of the permit. The Department found that this request complies with the criteria in 18 AAC 70.240-70.260 and has accordingly continued a mixing zone authorization.

Outfall 002 was deliberately sited in an area of the Goodpaster River with steep, talus, slopes and a bottom that is not conducive to salmon spawning. As in previous permits, fecal coliform bacteria continues to be the controlling parameter for the mixing zone. The mixing zones, both acute and chronic, for all other parameters requiring dilution fall within the boundary of the small mixing zone for fecal coliform bacteria. The small volume of effluent from Outfall 002 is rapidly diluted, and all designated uses are met outside of an area of 30 square feet. Receiving water monitoring, which includes sampling of both water and fish tissue, has demonstrated that designated uses in the Goodpaster River have been protected.

Eliminating the discharge at Outfall 002 would require the installation of lift stations and several thousand feet of above-ground piping. This added infrastructure would increase the risk of spills and provide no tangible environmental benefit. DEC believes that the most effective method of reducing metals in the effluent from Outfall 002 is source identification and control. Pogo continues to work on identifying the sources of the metals at Outfall 002 and eliminating these sources. Section 5.3 of the fact sheet was updated in response to this comment.

6 Comments on Permit Conditions

6.1 Comment Summary

Pogo requested that Part 1.2.3 of the Permit, a narrative standard, be removed or clarified.

Response:

Permit Part 1.2.3, which prohibits contamination of surface or ground waters and violations of the WQS, is a narrative standard which has been included in other recently issued APDES permits (see AK0053635.) This provision is necessary to address violations of the Alaska WQS that are non-numeric or were not recognized during the development of the permit. The language in Part 1.2.3 was revised for clarification.

6.2 Comment Summary

Pogo requested that Part 1.2.4 of the Permit, a narrative standard, be removed or clarified.

Response:

The language in Part 1.2.4 was revised for clarification..

6.3 Comment Summary

Pogo requested that Part 1.2.8 of the Permit, which requires additional effluent samples to be reported and used for averaging, be revised. EPA also commented that the language in the fact sheet is inconsistent with federal standards.

Response:

Permit Part 1.2.8 was revised to reference the applicable provisions in Appendix A, Part 3.3 of the permit. Appendix A, Part 3.3 is a standard condition that is consistent with federal standards. Section 4.4 of the fact sheet was also revised to reference Appendix A, Part 3.3 of the permit.

7 Comments on the Permit and Fact Sheet Template**7.1 Comment Summary**

EPA had questions about which forms the applicant (Pogo) is required to submit during permit renewal and requested additional clarification in the fact sheet.

Response:

At this time, the applicant is required to submit APDES Form 1 (*General Information*) and APDES Form 2C (*Existing Manufacturing, Commercial, Mining, and Silvicultural Operations*) for permit renewal. The applicant is also required to submit APDES Form 2M (*Request for a Mixing Zone*) for the mixing zone at Outfall 002. The applicant is not required to submit APDES Form 2A (*Publicly Owned Treatment Works*). The domestic wastewater treatment system at Pogo is not a publicly owned treatment works. The Department determined that no change to the permit is necessary based on this comment.

7.2 Comment Summary

EPA requested that the permit and fact sheet use consistent units for the authorized dilution in the mixing zone, expressing dilution as either a dilution factor or a dilution ratio. EPA recommended using the dilution factor unit.

Response:

All references to dilution in the mixing zone have been expressed as a dilution factor in both the permit and the fact sheet.

7.3 Comment Summary

EPA asked for additional clarification in the fact sheet about the basis for the TBELs for total suspended solids (TSS) and biochemical oxygen demand, 5-day (BOD₅) at Outfall 002.

Response:

The TBELs for TSS and BOD₅ are based on Alaska's definition of secondary treatment for wastewater at 18 AAC 72.990(59). The fact sheet has been updated and now describes the basis for these TBELs in Section 4.1.

7.4 Comment Summary

EPA suggested adding additional justification for the increase in the flow limit at Outfall 001.

Response:

Section 6.0 of the fact sheet has been revised to clarify that the increase in the flow limit at Outfall 001 is based on a material and substantial alteration (the increased size of the underground workings) and is permissible under 18 AAC 83.135(b)(1).

7.5 Comment Summary

EPA commented that Table B-3 of the fact sheet fails to identify zinc as a hardness based WQS.

Response:

A footnote was added to Table B-3 in the fact sheet that explains that the standard for zinc is hardness based.

7.6 Comment Summary

EPA asked if the state WQS for mercury is expressed as total recoverable.

Response:

A footnote was added to Table B-3 in the fact sheet that explains the basis for the state WQS for mercury.