STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
610 UNIVERSITY AVE.
FAIRBANKS, AK 99709-3643

WASTE MANAGEMENT PERMIT

for

Sumitomo Metal Mining Pogo LLC

Permit 2011DB0012 **Date: February 7, 2012**

This Waste Management Permit is issued to Sumitomo Metal Mining Pogo LLC (Pogo Mine), P.O. Box 145, Delta Junction, Alaska 99737, for the disposal of mine tailings, waste rock and other solid wastes as defined in section 1.2 of this permit, from a gold recovery facility to an approximately 81-acre tailings drystack surface disposal facility (drystack), and the mine underground workings located within Sections 13, 14, 22-27 and 34-36, T5S, R14E; Sections 18, 19 and 29-34, T5S, R15E; Sections 1-3, 10-15 and 36, T6S, R14E; Sections 3-11, 14-23 and 29-32, T6S, R14E, Fairbanks Meridian. This permit is issued under the provisions of Alaska Statute (AS) 46.03.100, AS 46.03.110, and AS 46.03.120, and the Alaska Administrative Code (AAC), 18 AAC 15, 18 AAC 60, 18 AAC 70 and 18 AAC 72, as amended or revised, and other applicable state laws and regulations. This permit is effective February 7, 2012 and expires after February 6, 2017. It may be terminated or modified in accordance with AS 46.03.120.

This permit is subject to the conditions and requirements contained in sections 1 - 5. This permit incorporates by reference Pogo Mine's November 12, 2008 Waste Management Permit renewal application, the Description of Facilities in section 3.0 and the Water Management Plan in section 8.0 of *Pogo Plan of Operations* (November 2011), *Pogo Reclamation and Closure Plan* (November 2011), *Pogo Mine Monitoring Plan* (November 2011), and *Pogo DSTF*[1] *Construction and Maintenance Plan* (November 2011). Changes to the documents incorporated herein must be approved by the Department of Environmental Conservation (department) if they affect this permit. If the department approves the changes, they become part of this permit.

After completing reclamation activities and terminating active wastewater treatment, the department requires the permittee to conduct post-closure maintenance and monitoring for a minimum of 30 years after closure. The permittee shall assess conditions at the facility and respond accordingly throughout the post-closure care period. At the end of the post-closure period, the department will determine whether post-closure care and monitoring should be extended beyond 30 years, based upon the information collected by that time.

Sharon Morgan
Program Manager

[1] Drystack Tailings Facility

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1 SPECIFIC PERMIT CONDITIONS

1.1 PERMIT COVERAGE

1.1.1 This permit covers disposal and containment of waste in the drystack, underground mine workings, waste rock and ore stockpiles, and Recycle Tailings Pond (RTP). In addition to disposal of wastes listed above, this permit covers hazardous chemical storage and containment, groundwater and surface water containment systems used to prevent the discharge of wastewater, reclamation and closure activities related to all the facilities at the mine site, and financial responsibility. This permit also requires monitoring and reporting associated with waste disposal. This permit does not allow the discharge of wastewater.

1.1.2 In addition to conditions of this permit, the permittee shall adhere to the applicable requirements of 18 AAC 60 Solid Waste Management Regulations, 18 AAC 70 Alaska Water Quality Standards (WQS), and 18 AAC 72.500–600 Non-Domestic Wastewater Disposal Regulations. The permittee shall also adhere to requirements of sections 3.0 and 8.0 of the *Pogo Plan of Operations*, the *Pogo Reclamation and Closure Plan*, the *Pogo Mine Monitoring Plan*, and the *Pogo DSTF Construction and Maintenance Plan* as approved by the department. When the terms of this permit differ from the terms of the mine documents, the most recent term, approved in writing by the department, is controlling. If there is doubt as to which conflicting term is newer, this permit shall control. Mine documents must also be updated within 90 days from the date of issuance of this permit incorporating any changes necessary to be consistent with the terms of this permit.

1.1.3 While this permit is in effect, the permittee is authorized to dispose of solid and liquid waste as specified in this permit into the drystack, underground mine workings, RTP, waste rock stockpiles, and associated drainage and seepage control systems at Pogo Mine, which are considered treatment works. Under 18 AAC 70.010(c), WQS contained in 18 AAC 70 do not apply to treatment works.

1.1.4 For purposes of this permit, compliance points are identified as monitoring wells MW03-500, MW03-501, MW03-502, MW11-001A, MW11-001B, MW04-213, and MW11-216. See the facility map in section 5.

1.2 LIMITATIONS

1.2.1 The drystack is limited to a maximum of 20 million tons of inert solid waste, consisting of approximately 12,500 tons per week of flotation tailings and approximately 10,000 tons per week of waste rock and meeting the conditions in this permit. Also covered under this section is the non-mineralized waste rock stockpile, which can store up to 355,000 tons of non-mineralized waste rock. Waste rock with a content greater than 0.5 percent sulfur or exceeding

600 milligrams per kilogram arsenic shall be classified as mineralized; whereas, waste rock below both of those criteria shall be classified as non-mineralized. Mineralized waste rock must be disposed of in either the drystack or underground. The permittee is expected to place wastes underground to the maximum extent practicable over the life of the facility. To promote this activity, no volume limit is placed on disposal of paste backfill tailings (consisting of about half of the total flotation tailings and all of Carbon-in-Pulp [CIP] tailings from the cyanidation circuit) or waste rock in the underground workings.

1.2.2 The following materials may not be disposed into the drystack, underground, or any department-approved inert solid waste landfill, unless specifically approved by the department in writing.

1.2.2.1 Other than interstitial waters entrained in the tailings or paste backfill tailings, treated or untreated process water with a constituent concentration exceeding WQS in 18 AAC 70;

1.2.2.2 Chemical containers with fewer than three rinses, and discarded, unused chemicals;

1.2.2.3 Uncombusted household waste;

1.2.2.4 Laboratory wastes other than wash waters, neutralized acids and neutralized bases; however, disposal or recycling of refinery slag, fire assay crucibles, and cupels through the grinding and leaching circuit is permitted;

1.2.2.5 Sewage solids that are untreated or have less than 10% solids by weight;

1.2.2.6 Asbestos waste;

1.2.2.7 Hazardous wastes, as defined by 40 CFR Part 261, and radioactive material, explosives, strong acids, untreated pathogenic waste, glycol, solvents, oily wastes, waste oil, greases, paints, chemical wastes, transformers, and packing material or associated equipment; however, this prohibition does not preclude disposal of Bevill excluded waste, natural minerals found in mine rock or residual wastes included as byproducts of the beneficiation process, which may be discarded into the drystack or underground mine, as long as they are in quantities that would not cause significant impact on mine closure, reclamation, or water quality;

1.2.2.8 Fuels, oil, transformers, paint, equipment, and packing material;

1.2.2.9 Glycol and solvents;

1.2.2.10 Batteries; or

1.2.2.11 CIP tailings, which have not been subjected to cyanide detoxification as required by section 1.2.3.

1.2.3 Prior to disposal as paste backfill tailings, the CIP tailings shall be subjected to cyanide detoxification using the SO_2 /air process or other suitable cyanide detoxification process approved by the department. The interstitial water samples from detoxified CIP tailings shall contain fewer than 10 milligrams per liter (mg/L) of weak acid dissociable (WAD) cyanide as a monthly average and none of the samples shall contain more than 20 mg/L of WAD cyanide.

1.2.4 Washwater from the vehicle maintenance shop may go into the RTP provided that oily water goes through an oil/water separator, and it does not have a sheen prior to entering the RTP. Dry methods of cleanup shall be used for initial cleanup of oil spills in the maintenance shop.

1.2.5 Activities at the site, which will cause a greater amount of waste material to be treated and disposed of above than contemplated in this section of the permit, are prohibited without the prior approval by the department.

1.2.6 The water in compliance monitoring wells MW03-500, MW03-501, and MW03-502 must not exceed the triggers listed in Table 1. MW03-500, MW03-501, and MW03-502 serve to detect escape of water from the RTP, which is a zero discharge facility. Monitor compliance wells MW03-500, MW03-501, and MW03-502 according to section 1.6.4. If any of those triggers are exceeded, corrective action designated in section 0 must be implemented.

Table 1: Upper Tolerance Limit Concentrations Triggering Corrective Action

Parameter[1]	Units	Location		
		MW03-500	MW03-501	MW03-502
Antimony	µg/L[2]	0.36	0.35	0.35
Arsenic	µg/L	47.8	47.6	45.0
Chloride	mg/L[3]	0.79	1.23	1.06
cyanide, WAD[4]	µg/L	5.2	5.2	5.2
nitrate as nitrogen	mg/L	1.28	2.66	2.39
Potassium	mg/L	3.18	3.69	3.27
Selenium	µg/L	1.35	0.99	0.64
Sodium	mg/L	5.41	5.27	3.90

[1] Measure dissolved concentrations because water samples come from monitoring wells, and the presence of non-dissolved constituents, including antimony and arsenic, is considered negligible.
[2] micrograms per liter
[3] milligrams per liter
[4] weak acid dissociable

1.2.7 The water in compliance monitoring wells MW11-001A, MW11-001B, MW04-213, and MW11-216 must not demonstrate a statistically significant increase in constituent concentrations above background groundwater quality and exceed WQS. Monitor compliance wells according to section 1.6.4. If these thresholds are surpassed, corrective action designated in section 0 must be implemented.

1.2.8 The permittee must comply with 18 AAC 60.815 and prevent the escape of waste or leachate from disposal facilities. Monitor according to section 1.6.2.1. If damage or potential damage to a waste disposal-related facility is discovered that could lead to an exceedance of WQS or harm to wildlife, corrective action designated in section 0 must be implemented.

1.2.9 The limitations in section 1.2 do not preclude the surface storage prior to treatment/disposal of waste rock or the stockpiling of non-mineralized waste rock prior to use in construction or erosion control. Mineralized waste rock shall be disposed in the drystack or underground as soon as practicable. The limitations also do not preclude, and authorization is hereby given for, disposal of non-hazardous incidental wastes, such as (i) settled solids from sumps, ditches, and degritting basins; (ii) settled solids from the water treatment plant; (iii) dewatered water treatment plant sludge; (iv) dewatered sewage sludge

meeting the requirements of section 1.2.2.5; (v) incinerator ash and residue; (vi) ash from combustion of scrap wood material; (vii) iron (drill steel, balls, empty case, etc.); (viii) used ventilation tubing and used filter press cloth; (ix) empty plastic and glass containers; (x) inert domestic waste; (xi) construction debris; (xii) tires; (xiii) spill cleanup debris approved by the department; (xiv) non-terne plated used oil filters that have been gravity hot-drained; and (xv) such other material as would otherwise be disposed of in a surface landfill without special handling.

1.2.10 The department may set or modify permit conditions based on monitoring results or changes in facility processes, after consultation with the permittee, and according to permit amendment or modification procedures.

1.3 MODIFIED LIMITS & REPORTING

1.3.1 A lab-specific method detection limit (MDL) and minimum level of quantification (ML) may be established for the measurement of WAD cyanide according to 18 AAC 70.020(c)(7).

1.3.1.1 Test Method - Standard Method 4500-CN^- I. WAD Cyanide (SM 4500-WAD) is the best method for measuring low concentrations of WAD cyanide. SM 4500-WAD is not an Environmental Protection Agency (EPA)-approved test method. However, under 40 CFR 136.5, Approval of Alternate Test Procedures, EPA Region 10 has approved SM 4500-WAD for measuring free or available cyanide. Since SM 4500-WAD has no published MDL, each EPA-accredited lab performing the procedure must establish its own MDL according to procedures set forth in 40 CFR Part 136. Additionally, guidance in EPA-821-B-04-005 offers laboratories procedures for determining the MDL and ML.

1.3.1.2 Changing MDL and ML – If lab data submitted to the department supports changing the lab-specific MDL and ML, then this permit may be automatically modified to the new MDL and ML through written approval from the department.

1.3.1.3 Reporting – Under section 1.7.2, WAD cyanide results less than the ML shall be reported as "Less than {numeric value of ML}," and only reported values greater than or equal to the ML are considered as noncompliance.

1.3.1.4 Annual Renewal – The permittee must annually verify that the lab MDL is current through an audit. As part of lab quality assurance and quality control procedures, EPA-accredited labs routinely spike and run replicate samples once or twice per year either confirming or re-establishing lab-specific MDLs. The permittee shall provide a copy of the lab report and the most recent MDL and supporting data as part of the annual report required in section 1.7.3.

1.3.2 Site MDL and ML for WAD Cyanide Concentrations

1.3.2.1 During the life of this permit, a new or revised site specific MDL for WAD cyanide unique to a site specific water chemistry may be established in accordance with 18 AAC 70.020(c)(7) and EPA guidance document no. EPA-821-B-04-005 for a pollutant present in this discharge. Upon the effective date of the department-approved MDL, this permit is automatically modified to require reporting of measurements at or above the MDL.

1.3.2.2 During the life of this permit, a new or revised site specific ML for WAD cyanide unique to a site specific water chemistry may be established in accordance with 18 AAC 70.020(c)(7) and EPA guidance document no. EPA-821-B-04-005 for a pollutant present in this discharge. Upon the effective date of the department-approved ML, this permit is automatically modified for compliance purposes in accordance with the detection level specified in the ML. Exceedance of a ML shall be reported according to section 1.7.

1.3.2.3 Values between the MDL and ML provide a margin of safety indicating increasing trends prior to any exceedances. Based on the rate and magnitude of a trend, the department may require corrective action according to section 0 to prevent environmental harm. When lab results are between the MDL and ML, the permittee shall verbally notify the department within 60 days of the end of the calendar quarter when it occurred and provide written notification within 7 days of verbal notice.

1.4 SITE MAINTENANCE

1.4.1 Information on engineering changes to the mill, changes to the waste treatment processes, changes to the groundwater monitoring well system, and addition of new point sources that discharge into the RTP must be submitted to the department, and approval must be obtained prior to any such changes or discharges.

1.4.2 The permittee must provide and maintain secondary containment for all process piping and chemical mix tanks containing hazardous or toxic materials. Secondary containment must be at least 110% of the largest tank volume within a given containment or the total volume of manifolded tanks. The permittee must design and install secondary containment structures in a manner that ensures that solid waste and leachate will not escape from the structures. Facilities to prevent such discharges shall be maintained in good working condition at all times by the permittee.

1.4.3 Secondary containment of all hazardous substances, as defined at AS 46.03.826(5), must be impermeable to those stored hazardous substances.

1.4.4 The permittee must design all process piping and chemical mix tanks to allow for routine inspections for leaks. Process piping outside of the mill building must not be buried unless secondary containment is used that provides the ability to inspect for leaks. This stipulation does not apply to the RTP water return lines.

1.4.5 The permittee shall develop the site in accordance with the plans submitted by the applicant as required by this permit and approved by the department, and approved amendments to those plans.

1.5 SITE CONSTRUCTION & OPERATION

1.5.1 Discharge of water from the facility is prohibited unless permitted under Alaska Pollutant Discharge Elimination System (APDES) Permit No. AK0053341 or APDES Multi-Sector General Permit No. AKR050000.

1.5.2 The permittee shall construct and maintain a seepage collection system below the RTP dam. The seepage collection system shall be constructed and maintained such that all seepage from the RTP is captured and pumped back to the RTP. The seepage system shall be operated to ensure that the Pogo Mine operates as a zero discharge facility, except for the discharge permitted under APDES Permit No. AK0053341, which is excluded from this permit.

1.5.3 The permittee shall adhere to the *Pogo DSTF Construction and Maintenance Plan*, as approved by the department and adopted by reference in this permit, including:

1.5.3.1 The permittee shall take reasonable measures to control particulates that may occur from wind-blown tailings by wetting or other effective measures;

1.5.3.2 The permittee shall minimize run-on water from entering the drystack from upgradient sources of surface and groundwater;

1.5.3.3 The permittee shall minimize infiltration of water into the drystack tailings facility during the routine operations, closure, and post-closure care periods;

1.5.3.4 The permittee shall ensure geotechnical stability of waste materials and cover systems, including minimizing the potential for liquefaction within the drystack tailings facility in the event of a maximum credible earthquake event; and

1.5.3.5 The permittee shall minimize the potential for development of acid rock drainage conditions by entombing mineralized waste rock within the compacted tailings.

1.5.4 The permittee shall prevent disposal of waste materials from exceeding the design capacity of the disposal facilities.

1.5.5 The permittee shall control and treat surface water, groundwater, and leachate as necessary to prevent off-site water quality exceedances; shall not place solid waste in water; and shall not allow solid waste to wash away from the facility.

1.5.6 The permittee must notify the department in writing at least 15 days before the introduction of a new chemical into the process or waste treatment streams. Material Safety Data Sheets on new chemicals must be forwarded to the department and maintained on site.

1.5.7 The permittee must submit plans to the department and receive approval of any changes that will significantly modify the quality or quantity of a discharge, significantly modify the operation of a waste treatment component, significantly modify a disposal facility, or create a new disposal site at least 60 days before construction of the modification.

1.5.8 The permittee must notify the department in writing at least 15 days before introducing process solutions into an existing process or waste treatment component that has been significantly modified.

1.5.9 The permittee must submit to the department within 90 days after completing construction of a significant modification to an existing process component:

1.5.9.1 As built drawings of the process component(s), which show any changes of those aspects that would affect performance of that process component as required in 18 AAC 72.600;

1.5.9.2 A summary of the quality control activities that were carried out during construction; and

1.5.9.3 The final operating plans that reflect modifications made during construction.

1.5.10 The permittee shall report spills of hazardous substances according to an agreement with the department's Spill Prevention and Response Program at http://dec.alaska.gov/spar/spillreport.htm.

1.6 MONITORING

1.6.1 The *Pogo Mine Monitoring Plan,* submitted in November 2011 is incorporated into this permit. Otherwise, department-approved changes to the plan that do not increase detrimental environmental impacts will be included as amendments to the *Monitoring Plan* and do not require public notice.

1.6.2 The *Monitoring Plan* must be updated within 90 days of permit issuance, as necessary to be consistent with the terms of this permit and shall contain the following:

1.6.2.1 Conduct weekly visual monitoring of the facility checking for signs of damage or potential damage from settlement, ponding, leakage, erosion, or operations at the site. Visual monitoring shall be documented. If damage or potential damage to a waste disposal-related facility is discovered that could lead to an exceedance of WQS or harm to wildlife, corrective action designated in section 1.8 must be implemented;

1.6.2.2 Surface water and groundwater analyses for parameters at frequencies and locations that will ensure sample results are representative and statistically valid;

1.6.2.3 Monitoring of the CIP tailings prior to placement in the paste backfill to ensure that the limitations contained in section 1.2.3 are met;

1.6.2.4 A water balance including flow monitoring that accounts for all inflows to and outflows from facility water containment structures including water discharged into and from the RTP, water discharged into and from the mine, process water recycled to the mill, water treated, and water discharged;

1.6.2.5 A biological visual survey program to monitor wildlife interaction with the surface waste disposal facilities; and

1.6.2.6 A program to track the classification and segregation of the mineralized and non-mineralized waste rock produced at the facility to ensure that the cutoff criteria contained in section 1.2.1 are being met.

1.6.3 The permittee must develop a quality assurance plan (QAP) for all monitoring required by this permit. The QAP may be contained in an overall monitoring plan for the entire project. The QAP, or the QAP portion of an overall monitoring plan, must be completed within 60 days of the effective date of this permit and made available upon request. Any changes made to the existing QAP shall be completed according to section 1.6.3.3.

1.6.3.1 The QAP must be designed to assist in planning for the collection and analysis of effluent and receiving water samples in support of the permit and in explaining data anomalies when they occur.

1.6.3.2 Throughout all sample collection and analysis activities, the permittee must use Quality Assurance/Quality Control (QA/QC) chain-of-custody procedures described in the most recent editions of *Requirements for Quality Assurance Project Plans* (EPA/QA/R-5) and *Guidance for Quality*

Assurance Project Plans (EPA/QA/G-5). The QAP must be prepared in the format which is specified in these documents.

1.6.3.3 The permittee must amend the QAP whenever there is a modification in sample collection, sample analysis, or other procedure addressed by the QAP.

1.6.3.4 A copy or copies of the QAP must be kept on site and made available to the department upon request.

1.6.4 Groundwater, surface water, process water, and tailings solids sampling locations and frequency shall be in conformance with the most recent *Pogo Mine Monitoring Plan* and QAP. Groundwater monitoring shall be conducted and provide water quality data used to evaluate impacts to the surrounding areas from the following wells: MW11-001A and MW11-001B (downgradient of the drystack and upgradient of the RTP); MW03-500, MW03-501, and MW03-502 (downgradient of the RTP); and MW04-213 and MW11-216 (downgradient of the mine).

1.6.5 All samples collected, as required by section 1.6.1, shall be analyzed in conformance with the most recently submitted *Pogo Mine Monitoring Plan* and QAP.

1.6.6 The permittee shall maintain a log of all wastes disposed into the drystack, underground mine workings, and the surface landfill. The log shall include the date of disposal, estimated volume of waste, and a description of the waste. A summary log of waste disposed shall be included in the annual report required in section 1.7.3.

1.6.7 In the event of corrective action, groundwater and surface water monitoring shall be conducted according to section 0, 18 AAC 60 Solid Waste Management Regulations, and the most recently submitted *Pogo Mine Monitoring Plan* and QAP.

1.6.8 The department may modify monitoring requirements, including the establishment of additional compliance points, after consultation with the permittee, in response to trends showing changes in the concentration of parameters being monitored.

1.6.9 The permittee shall establish and follow monitoring procedures to:

1.6.9.1 Ensure samples are analyzed by a laboratory that follows EPA-approved procedures, quality control requirements, reporting, and documentation procedures;

1.6.9.2 Analyze collected samples using methods set out in *Methods for Chemical Analysis of Water and Wastes* (EPA-600/4-79-020); *Methods for Organic*

Chemical Analysis of Municipal and Industrial Wastewater (EPA-600/4-82-057); *Standard Methods for the Examination of Water and Wastewater* (edition in effect at the time of sampling); or other methods approved by the department. Each result must be accompanied by a reference, such as the method number, to the method that was used to perform the analysis;

1.6.9.3 Conduct inspections of the drystack in conformance with the *Pogo DSTF Construction and Maintenance Plan*; and

1.6.9.4 Conduct inspections of the RTP in conformance with the current *Certificate of Approval to Operate a Dam* issued by Alaska Department of Natural Resources (ADNR), Division of Mining, Land and Water, Dam Safety and Construction Unit.

1.6.10 If the permittee monitors any influent, effluent, receiving water, or solid waste characteristic, in addition to those identified in this permit, more frequently than required, the results of such monitoring shall be available for inspection by the Commissioner or his/her representative at the project site, or other location proposed by the permittee and agreed upon by the department. The permittee shall provide copies of the results to the department upon request.

1.7 REPORTING

1.7.1 When a statistically significant increase in the concentration of a constituent above WQS is discovered at a groundwater monitoring location, or if an exceedance of the limits established in sections 1.2, 1.3, 1.4, or 1.5 is discovered, the permittee shall verbally notify the department no later than the end of the next State of Alaska working day after discovery and shall conduct corrective actions according to section 1.8.2.

1.7.2 The permittee shall provide the department with quarterly monitoring reports summarizing inspection and monitoring results required in section 1.6. Reports shall satisfy the following conditions.

1.7.2.1 Due Dates - Reports for the first three calendar quarters are due within 60 days after the quarter ends, and the report for the fourth calendar quarter shall be submitted by March 1st of the following year.

1.7.2.2 Form – Reports shall be provided in electronic form using commercially available software or according to other electronic reporting requirements approved by the department. Paper copies of the reports are not required unless specifically requested.

1.7.2.3 Content - Reports shall contain a narrative portion discussing data and information collected during the preceding quarter.

1.7.2.4 Graphing - Reports shall present water quality data in graphical form to indicate trends as well as the margin of compliance with limits.

1.7.2.4.1 Graphs of concentration measurement versus time must include at least the past five years' data, if available, and may contain all historic data.

1.7.2.4.2 The graphs must also include the parameter, units, and applicable permit limit or WQS.

1.7.2.4.3 Multiple stations, identified using symbols in a legend, may be included in the same graph.

1.7.2.4.4 Scales shall be proportioned to display the limit or WQS, as indicated by a highlighted line, near the top of the graph or when data exceeds the limit, the maximum value shall be near the top of the graph.

1.7.2.4.5 Formatting shall allow addition of new data to each graph's cumulative data when producing the next quarterly report.

1.7.2.4.6 Graphical data shall contain all historic water quality data.

1.7.2.4.7 For graphical purposes, non-detect values shall be plotted at one half the MDL, and values between the ML and MDL shall be plotted at the value of the qualified measurement.

1.7.3 Annual Report - In addition to meeting the requirements of section 1.7.2, the fourth quarter report, which serves as the annual report, shall contain an electronic copy (preferably Excel) of the water quality data for the reporting year, as well as, all historic data in spreadsheet form. When a value is less than the ML, it must be identified as less than the ML, and the ML must be provided. Non-detect values must be identified as less than the MDL or non-detect and the MDL provided in the electronic water quality data spreadsheets.

1.7.4 All written reports submitted under the requirements of this permit shall be sent to:

Dept. of Environmental Conservation
Division of Water, Compliance Program
555 Cordova St.
Anchorage, AK 99501

1.8 CORRECTIVE ACTIONS

1.8.1 The permittee shall comply with 18 AAC 60.820-860 if a statistically significant increase in a constituent concentration above background groundwater quality and an exceedance of a WQS in any of the groundwater sampling locations is discovered. Statistical significance shall be determined using one of the methods outlined in 18 AAC 60.830(h). The permittee shall comply with the notification requirements in 18 AAC 850(c) upon determining a statistically significant increase in a constituent concentration above WQS.

1.8.2 For a single constituent, a statistically significant increase in concentration is discovered at a surface water or groundwater monitoring station and an exceedance of a WQS, or if an exceedance of a limit set out in sections 1.2, 1.3, 1.4, or 1.5 is discovered, the permittee shall:

1.8.2.1 Orally notify the department no later than the end of the next State of Alaska working day;

1.8.2.2 Determine the extent of the exceedance;

1.8.2.3 In consultation with the department and documented in writing, implement a plan to determine the cause and/or source of the exceedance;

1.8.2.4 Submit to the department, within seven working days after an exceedance is verified, a corrective action plan to prevent adverse environmental impacts and further exceedances of applicable WQS or permit limits; and

1.8.2.5 Implement the corrective action plan as approved by the department.

1.9 SUSPENSION OF OPERATIONS

1.9.1 Suspension of operations is defined as a suspension of mining and milling/processing activities for more than 90 days but less than three years. The length of time for the period of suspension may be extended beyond three years by written authorization from the department. The permittee shall submit a conceptual suspension of operations study to the department within 90 days of permit issuance.

1.9.2 The permittee must notify the department within three days of suspending operations. The notice shall provide the nature of and reason for the suspension and its anticipated duration.

1.9.3 No later than 10 days after operations have been suspended, the permittee shall submit a suspension of operations plan that replaces the suspension of operations study with current information and specific details. The suspension of the operations plan shall address the following:

1.9.3.1 Explanation of what would reasonably result in resuming or permanently terminating mining or milling/processing activities;

1.9.3.2 Reclamation or construction activities during the period of temporary suspension;

1.9.3.3 Procedures, methods, and schedule to be implemented for the treatment, disposal, or storage of process water;

1.9.3.4 The control of surface and groundwater drainage to and from the facility and the surrounding area;

1.9.3.5 The control of erosion from the drystack, waste rock disposal areas, mill and camp site, and any other disturbed areas within the facility boundary;

1.9.3.6 The secure storage of chemicals during the period of suspended operations;

1.9.3.7 Procedures for maintaining and monitoring the RTP dam and water balance; and

1.9.3.8 Procedures for containing water at the facility and discharging water according to APDES Permit No. AK0053341.

1.9.4 The department shall have 15 days to review and approve or request modifications to the suspension of the operations plan.

1.9.5 Once a suspension of operations plan has been approved, it becomes enforceable under the conditions of this permit and full implementation of the approved suspension of operations plan is required. The suspension of operations plan can be amended by submitting a revised plan to the department for approval.

1.9.6 During suspension of operations, the permittee shall:

1.9.6.1 Continue pollution control activities associated with the drystack, including but not limited to: dust control, maintenance of the drainage diversion structures, maintenance of all discharge and leakage control structures and processes, and maintenance of the RTP as specified by this permit, the current *Certificate of Approval to Operate a Dam*, or the suspension plan;

1.9.6.2 Continue monitoring and reporting activities of all active portions of the site including the drystack and the RTP as specified by this permit or the of operations suspension plan; and

1.9.6.3 Continue reclamation and corrective action requirements under the *Pogo Mine Reclamation and Closure Plan* in light of the nature of the closure.

1.9.7 Written department approval is required before resuming operations after a period of temporary closure.

1.10 TERMINATION OF MINING & MILLING

1.10.1 Termination of mining and milling/processing activities is defined as the permanent cessation of those activities. Updated reclamation and monitoring plans must be submitted for approval within 90 days after commencing termination of mining and milling/processing. The updated plans must address current conditions at the facility. Updates and changes to those plans must be approved in writing by the department.

1.10.2 Termination of mining and milling at the site must be implemented and completed according to the conditions of this permit and with the *Pogo Mine Reclamation and Closure Plan* approved by the department and incorporated by reference into this permit.

1.10.3 Closure of the waste disposal facilities will be complete when the following criteria are met:

1.10.3.1 A department-approved engineered soil cover system is installed on the drystack and drainage channels are constructed and stable;

1.10.3.2 A stable vegetative cover is established on the waste rock, recontoured areas, and other infrastructure or other facilities as prescribed in the most recent *Pogo Mine Reclamation and Closure Plan* approved by the department and incorporated by reference into this permit; and

1.10.3.3 The department determines that active water treatment is no longer required for any water discharged from the facility. That is surface water discharge from the mine site and groundwater discharge below the RTP meet WQS (18 AAC 70) or do not exceed the triggers listed in Table 1.

1.10.4 Closure must be achieved before terminating any care and maintenance activities required by section 1.9.6 and the approved suspension of operations plan if a period of suspended operations immediately preceded termination of mining and milling.

1.10.5 The permittee shall maintain the facility correcting any erosion or settlement of the RTP dam, drystack, and waste rock disposal sites that may impair water quality or otherwise threaten the environment until the time that this permit or any successor permit is transferred to another entity or terminated by the department.

1.10.6 Demolition debris disposal in the drystack, waste rock piles, or underground may be approved during closure activities according to a plan approved by the department at the time.

1.10.7 Post-closure monitoring of ground and surface water quality and visual monitoring for settlement, seeps, and erosion is required in years 1, 2, 5, 10, 15, 20, and 30 after satisfying the criteria in section 1.10.3. Post-closure monitoring shall be performed according to the current *Pogo Mine Monitoring Plan* approved by the department. This schedule and the parameters monitored may be modified in writing by the department based on the monitoring results received.

1.11 PROOF OF FINANCIAL RESPONSIBILITY

1.11.1 The permittee shall provide the department with proof of financial

responsibility for closure of the facility and post-closure monitoring. The proof of financial responsibility shall cover costs incurred for closure and post-closure monitoring of the facility, shall cover the activities set out in section 3, and shall be in the amount shown in section 3. The area covered by the financial responsibility required in this section is shown on the map attached as section 5.

1.11.2 The department in consultation with ADNR will review, and modify if appropriate, the financial responsibility requirements, including adjustments for inflation, concurrent reclamation, expansion, or other changes to the operation of the facility annually or during the renewal, modification, or amendment of this permit. The permittee shall address the adequacy of the financial responsibility in the annual report required in section 1.7.3.

1.11.3 The proof of financial responsibility may be in the form of a trust fund, surety bond, letter of credit, insurance, or any other mechanism approved by the department.

1.11.4 Approved proof of financial responsibility must remain available through the post-closure period, up to 30 years, and may not be released until the department certifies in writing that closure of the facility and the required post-closure monitoring have been successfully concluded, or that another entity will assume responsibility for permit compliance and/or post-closure monitoring.

1.11.5 It shall be the responsibility of the permittee to provide acceptable proof of financial responsibility. The department will accept or reject the financial surety as expeditiously as possible, but in no event later than 30 days after its receipt.

1.11.6 If the permittee is unable to provide proof of financial responsibility, which is acceptable to the department and is approved by the department in writing within the time periods stated above, this permit will expire automatically at that time, notwithstanding any other approvals to the contrary, unless the department's failure to act is responsible for the delay in accepting or rejecting this proof.

1.11.7 If the permittee fails to comply with the terms and conditions of this permit, as written, modified, or amended and if the department concludes that such failure may prevent, inhibit or delay satisfactory closure or post-closure monitoring of the facility, then the department may exercise its rights under the approved mechanism for financial responsibility to access the funds and use them for appropriate closure and post-closure activities.

1.12 FACILITY AUDIT

1.12.1 Prior to the renewal of this permit every five years, in coordination with a review of the Pogo Mine Plan of Operations and prior to and in preparation for the termination of this permit, a facility audit shall be conducted at the expense of the permittee. The department, in consultation with other agencies having

land use management or regulatory authority over the facility and the permittee, shall mutually select a qualified auditor.

The intent of the audits will be to determine if both the facility management and regulatory controls of the facility provide reasonable assurances that the facility and controls are functioning as intended.

The scope of subsequent audit may be revised as mutually agreed upon prior to initiation of each audit to address specific issues or objectives not previously identified in this permit. Identification of such issues or objectives may be accomplished through a joint permittee/agency meeting prior to the audit.

1.12.2 The audit will be an objective, systematic, and documented review of the conditions, operations, and practices related to permit requirements and facility management conducted under this permit. The audit shall evaluate:

1.12.2.1 The permittee's compliance with all federal, state, and local permits and authorizations related to the permitted facility and specific compliance with the conditions of this permit;

1.12.2.2 The reliability and integrity of information relating to facility reporting and compliance;

1.12.2.3 The adequacy of the department's permit and other agencies' oversight of the facility;

1.12.2.4 The condition of chemical containment structures;

1.12.2.5 Laboratories and sample analysis procedures;

1.12.2.6 Implementation of the pollution prevention strategy in section 2.10 of this permit; and

1.12.2.7 The adequacy of the closure and post-closure financial responsibility, including the collection and treatment of contact water.

1.12.3 The department and permittee will use the audit results to assist in:

1.12.3.1 Updating, renewing, or amending this permit;

1.12.3.2 Updating policies, plans, and procedures;

1.12.3.3 Determining compliance with this permit; and

1.12.3.4 Determining the adequacy of the closure and post-closure financial responsibility, including the collection and treatment of contact water.

1.12.4 The facility audit shall be a component of or combined with the audit required by the ADNR Millsite Permit, ADL #416949.

2 GENERAL PERMIT CONDITIONS

2.1 ACCESS & INSPECTION

The permittee shall allow the Commissioner or his/her representative access to the permitted facility at reasonable times to conduct scheduled or unscheduled inspections or tests to determine compliance with this permit, state laws, and regulations.

2.2 INFORMATION ACCESS

Except where protected from disclosure by applicable state or federal law, all records and reports submitted in accordance with the terms of this permit shall be available for public inspection at the State of Alaska, Department of Environmental Conservation, 610 University Ave., Fairbanks, Alaska.

2.3 CIVIL & CRIMINAL LIABILITY

Nothing in this permit shall relieve the permittee from any potential civil or criminal liability for noncompliance with the permit or with applicable laws.

2.4 AVAILABILITY

The permittee shall post or maintain a copy of this permit available to the public at the facility.

2.5 ADVERSE IMPACT

The permittee shall take all necessary means to minimize any adverse impacts to the receiving waters or lands resulting from noncompliance with any limitation specified in this permit, including any additional monitoring needed to determine the nature and impact of the noncompliant activity. The permittee shall cleanup and restore all areas adversely impacted by the noncompliance.

2.6 CULTURAL OR PALEONTOLOGICAL RESOURCES

Should cultural or paleontological resources be discovered as a result of this activity, work, which would disturb such resources, is to be stopped, and the State Historic Preservation Office, Division of Parks and Outdoor Recreation, Department of Natural Resources (907-465-4563), is to be notified promptly.

2.7 APPLICATIONS FOR RENEWAL

In accordance with 18 AAC 15.100(d), applications for renewal or amendment of this permit must be made no later than 30 days before the expiration date of the permit or the planned effective date of the amendment.

2.8 OTHER LEGAL OBLIGATIONS

This permit does not relieve the permittee from the duty to obtain any other necessary permits from the department or from other local, state, or federal agencies, and to comply with the requirements contained in any such permits. All activities conducted and all plans implemented by the permittee pursuant to the terms of this permit shall comply with all applicable local, state, and federal laws and regulations.

2.9 TRANSFER OF OWNERSHIP

In the event of any change in control or ownership of the permitted facility, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Director of the Division of Water at 555 Cordova Street, Anchorage, AK 99501. The original permittee remains responsible for permit compliance unless and until the succeeding owner or controller agrees in writing to assume such responsibility, and the department approves assignment of the permit. The department will not unreasonably withhold such approval.

As between the State and the permittee, no transfer of this permit shall relieve the permittee of any liability arising out of operations conducted prior to such transfer, regardless of whether such liability accrues before or after such transfer.

2.10 POLLUTION PREVENTION

In order to prevent and minimize present and future pollution, when making management decisions that affect waste generation, the permittee shall consider the following order of priority options as outlined in AS 46.06.021:

1st waste source reduction,
2nd recycling of waste,
3rd waste treatment, and
4th waste disposal

3 FINANCIAL RESPONSIBILITY FOR FACILITY RECLAMATION, MAINTENANCE, CLOSURE, & POST-CLOSURE MONITORING

Solid waste regulations (18 AAC 60) allow the department to require proof of financial responsibility for closure of the facility and post-closure monitoring. The proof of financial responsibility for the life of this permit, unless modified sooner, shall be **$44,430,000** and includes financial responsibility required by the department under 18 AAC 60 and by the ADNR under Title 11 of the Alaska Administrative Code for the mine site facility. The $44,430,000 financial responsibility amount excludes the financial responsibility for reclamation of the facility access road and power line, which is administered by ADNR separate from the mine facility financial responsibility. A detailed breakdown of the financial responsibility cost estimate can be found in the *Pogo Mine Reclamation and Closure Plan,* dated September 7, 2010. The permittee can apply to have the amount of the financial responsibility adjusted during the life of the permit, for example if concurrent reclamation has been completed. The Pogo Mine financial responsibility is based on the following.

CLOSURE MAINTENANCE ITEM	FINANCIAL RESPONSIBILITY
Direct Costs	
1 Year Holding Cost	$1,952,300
Phase II: Reclamation Concurrent with Mining	$797,400
Phase III: Reclamation and Closure of Mine Site	$10,622,300
Phase IV: Continued Water Treatment	$10,639,328
Phase IV: Continued Reclamation	$4,892,300
Phase V: Post Closure Monitoring	$104,800
Direct Cost Subtotal	**$29,008,428**
Indirect Costs	
Mobilization/Demobilization (5%)	$820,840
Contractor Profit and Overhead (15%)	$4,474,390
Performance Bond (3%)	$1,029,110
Insurance (1.5%)	$514,555
Contract Administration (4%)	$1,433,893
Engineering Redesign (3%)	$621,460
Contingency (15%)	$5,377,098
Indirect Cost Subtotal	**$14,271,346**
Direct + Indirect Total	$43,279,773
Inflation (2.66%)	$1,150,099
TOTAL	**$44,430,000**[1]

[1] The financial responsibility will be reevaluated and adjusted as allowed in section 1.11.2 or as requested by the permittee.

4 GLOSSARY OF ACRONYMS

AAC	Alaska Administrative Code
ADNR	Alaska Department of Natural Resources
CFR	Code of Federal Regulations
CIP	Carbon-in-Pulp
MDL	Method Detection Limit
ML	Minimum Level of Quantification
QAP	Quality Assurance Plan
RTP	Recycle Tailings Pond
WAD	Weak Acid Dissociable
WQS	Alaska Water Quality Standards (18 AAC 70)

5 FACILITY MAP