POGO MINE
SUMITOMO METAL MINING POGO LLC
MINING DONE RIGHT

P.O. Box 145, Delta Junction, AK 99737, USA
3204 International Street, Fairbanks, AK 99701, USA

Tel: +1 907 895 2841
Fax: +1 907 895 2866

February 26, 2015
COR-14-015
Certified Mail #7011 1570 0001 1569 9232

Tim Pilon, Engineer II
Alaska Department of Environmental Conservation
Waste Water Discharge Program, Division of Water
610 University Avenue
Fairbanks, Alaska 99709-3643

Kyle Moselle, Large Mine Project Manager
Office of Project Management and Permitting
Alaska Department of Natural Resources
400 Willoughby Street
Juneau, Alaska 99801-0101

Re: **Sumitomo Metal Mining Pogo LLC 2014 Annual Activity and Monitoring Report**

Dear Mr. Pilon and Mr. Moselle:

Enclosed is Sumitomo Metal Mining Pogo LLC (Pogo's) 2014 Annual Activity and Monitoring Report. This report is prepared to fulfill the requirements of the *Alaska Department of Natural Resources (ADNR) Pogo Mine Millsite Lease ADL416949*, *Alaska Department of Environmental Conservation (ADEC) APDES Permit AK-005334-1,* and *ADEC Waste Management Permit 2011DB0012*. This report covers the period from January 1, 2014 through December 31, 2014. The Annual Meeting date and location are pending. I will notify you once these are confirmed.

If you have further questions please contact Stacy Staley at 907-895-2761; stacy.staley@smmpogo.com; or myself at 907-895-2879; keri.depalma@smmpogo.com.

Sincerely,

Keri DePalma, CPG
Environmental Manager

Enclosure: *2014 Annual Activity and Monitoring Report*

2014 ANNUAL ACTIVITY AND MONITORING REPORT

SUMITOMO METAL MINING POGO LLC

Submitted To:

Alaska Department of Conservation
Division of Water, Compliance Program
555 Cordova Street
Anchorage, Alaska 99501

Alaska Department of Natural Resources
Division of Mining, Land, and Water
550 West 7th Avenue, Suite 900D
Anchorage, AK 99501-3577

Prepared by:

Sumitomo Metal Mining Pogo LLC
P.O. Box 145
Delta Junction, Alaska 99737

March 1, 2015

Table of Contents

LIST OF CHARTS

List of Tables

List of Photos

Appendices

Electronic Appendices

List of Acronyms

***ADEC**: Alaska Department of Environmental Conservation*

***ADNR**: Alaska Department of Natural Resources*

***ADF&G**: Alaska Department Fish & Game*

***APDES**: Alaska Pollutant Discharge Elimination System*

***APMA**: Alaska Placer Mining Application*

***BMP**: Best Management Plan*

***BOD**: Biological Oxygen Demand*

***CIP**: Carbon in Pulp*

***CISWI**: Commercial and Industrial Solid Waste Incineration*

***COBC**: Compliance Order by Consent*

***COE**: Corp of Engineers*

***CRC**: Cultural Resources Consultants*

***DMR:** Discharge Monitoring Report*

***DSTF:** Dry Stack Tailing Facility*

***EPA:** Environmental Protection Agency*

***GPM**: Gallons per Minute*

***ISO14001**: International Standard Organization, Environmental Management*

***MDL**: Method Detection Limit*

***ORTW**: Off River Treatment Works*

***QAP**: Quality Assurance Plant*

***ROW**: Right of Way*

***RTP:** Recycle Tailing Pond*

***SHPO**: State Historical Preservation Office*

***SRCE**: Standardized Reclamation Cost Model*

***STP:** Sewage Treatment Plant*

***TDS**: Total Dissolved Solids*

***TKN**: Total Kjehldahl Nitrogen (ammonia)*

***TSS**: Total Suspended Solids*

***TU_c**: Toxicity Units, chronic*

***TWUP**: Temporary Water Use Permits*

***WAD**: Weak Acid Dissociable (cyanide)*

***WET**: Whole Effluent Toxicity test*

***WTP**: Water Treatment Plant*

***3PPI**: Three Parameters Plus*

1. Introduction

Sumitomo Metal Mining Pogo LLC (Pogo) prepared this report to fulfill the requirements of the *Alaska Department of Environmental Conservation (ADEC) APDES Permit AK005334-1 (5/1/11), Alaska Department of Environmental Conservation (ADEC) Waste Management Permit 2011DB0012 (2/7/2012), Alaska Department of Natural Resources (ADNR) Pogo Mine Millsite Lease ADL416949 (3/9/04)*, *and ADNR Plan of Operations Approval F20129500 (2/7/2012)*. This report covers the period from January 1, 2014 through December 31, 2014. A General Location Map can be found in **Figure 1, Appendix A**.

2. 2014 Monitoring

A prescriptive program of environmental monitoring is conducted as required by Pogo's permits and in accordance with Pogo's approved *Pogo Mine Monitoring Plan* and *Quality Assurance Plan (QAP)*.

The objectives of Pogo's monitoring programs are:

- ❑ To monitor the water quality of the effluent discharged from the facility,
- ❑ To monitor water quality changes in the Goodpaster River and in the groundwater below the facility that may occur as a result of mining activities or discharges from the facility,
- ❑ To monitor the CIP Tailings Processes associated with the underground paste backfill, and
- ❑ To monitor the Flotation Tailings and the materials placed in the Dry Stack Tailings Facility.

Samples collected from the Water Treatment Plant #2 (WTP#2), groundwater stations, surface water stations, the sewage treatment plant (STP) and the Off River Treatment Works (ORTW) effluent were submitted to Analytica Environmental Laboratories, Inc. Samples collected from PC002 to monitor mineralized waste rock and PC003 floatation

tailings were analyzed by ALS Chemex. Annual WET Test samples were submitted to AECOM Environmental Laboratory and CH2MHill Laboratory. Annual fish tissue samples were analyzed by Test America Laboratory, Tacoma.

2.1 ANNUAL VERIFICATION OF LABORATORY SPECIFIC MDL STUDY

ADEC Waste Management Permit 2011DB0012 (2/7/12), Section I.3.1.4, 1.7.3

Laboratories perform lab quality assurance and quality control procedures at regular intervals to verify the accuracy of the established MDLs. EPA-accredited laboratories' routinely spike and run replicate samples once or twice a year to either confirm or re-establish laboratory MDLs. A copy of the most recent MDL studies from the laboratories listed in Section 2 above are provided in **Appendix D**.

2.2 SUMMARY

A summary of the 2014 monitoring results show:

- **Outfall 011:** Pogo reported no exceedances at Outfall 011 during 2014. Refer to **Section 2.3.1** for more detail.
- **Outfall 001:** In June, Pogo reported a flood event that caused elevated turbidity in June. In August, Pogo reported two potential exceedances at Outfall 001 of the daily maximum effluent limit for copper and lead. Refer to **Section 2.3.2** for more detail.
- **Outfall 002:** Pogo reported no exceedances at Outfall 002 during 2014. Refer to **Section 2.3.3** for more detail.
- **Whole Effluent Toxicity (WET):** WET testing took place in June with two laboratories concurrently. The CH2MHill Laboratory bioassay was repeated in August due to potential laboratory errors. All final test results were within the permit limits. Refer to **Section 2.3.4** for more detail.

- **Compliance Order by Consent:** A Compliance Order by Consent (COBC) was executed between Pogo and ADEC on May 9, 2012. The COBC was amended on October 1, 2013 and June 30, 2014. All actions items are complete except for the construction of the additional waste water treatment plant. Refer to **Section 2.3.5** for more detail.

- **Surface Water:** No adverse trends were observed in the surface water samples collected during 2014. Refer to **Section 2.4.1** for more detail.

- **Fish Tissue:** Annual fish tissue sampling was completed during September. No adverse trends were observed. Refer to **Section 2.4.2** for more detail.

- **Ground Water:**

  - **2011 Series Wells:** Two wells are located below the Drystack Tailings Facility (DSTF), MW11-001A and MW11-001B. The wells monitor groundwater downstream of the DSTF and upstream of the Recycled Tailings Pond (RTP). Refer to **Section 2.5.1** for more detail.

  - **500 Series Wells:** Three wells are located below the Recycled Tailings Pond (RTP) Dam (MW12-500, MW12-501, and MW12-502). The wells monitor groundwater downstream of the RTP seepage collection system. Chloride, Sodium, Nitrate were detected above the trigger limits in all of the wells. Selenium was detected above the trigger limits in two of the wells. Refer to **Section 2.5.3** for more detail.

  - **200 Series Wells:** Two wells, MW04-213 and MW11-216, are located downgradient of the ore body to monitor groundwater quality. No adverse trends were observed. Refer to **Section 2.5.4** for more detail.

  - **LL Series Wells:** LL04-031 and LL04-032 are located downgradient of the Off River Treatment Works (ORTW) to monitor groundwater between the ORTW and Goodpaster River. Samples were collected during the third quarter. No adverse trends were observed. Refer to **Section 2.5.5** for more detail.

  - **2012 Series Wells:** Two wells are located adjacent to the Pogo Airstrip, MW12-

001A and MW12-001B. Refer to **Section 2.5.6** for more detail.

- **Process Control:**

  - **PC001:** PC001 monitors CIP tails prior to use in paste backfill. All samples are within limits and conditions set forth within the permit. Refer to **Section 2.6.4** for more detail.

  - **PC002, PC003 Solids:** PC002 samples monitor mineralized waste rock that is placed within the Drystack Tailings Facility (DSTF). PC003 Solids samples monitor floatation tailings that are placed within the DSTF. No adverse trends were observed. Refer to **Sections 2.6.5 and 2.6.6** for more detail.

  - **PC003 Liquid:** PC003 Liquid samples monitor interstitial water pressed from the flotation tailings prior to placement within the DSTF. Selenium values are trending downward. Refer to **Section 2.6.7** for more detail.

A discussion of the results for each sampling program is provided below. Time series graphs are provided in **Appendix C**.

2.3 TREATED EFFLUENT MONITORING

ADEC APDES AK0053341 (5/1/11), Appendix A, 3.0

Treated effluent data were previously submitted to ADEC via copies of the Discharge Monitoring Report**s (DMRs)** under the APDES Permit. The monitoring locations for treated effluent are shown on **Figure 2 in Appendix A**.

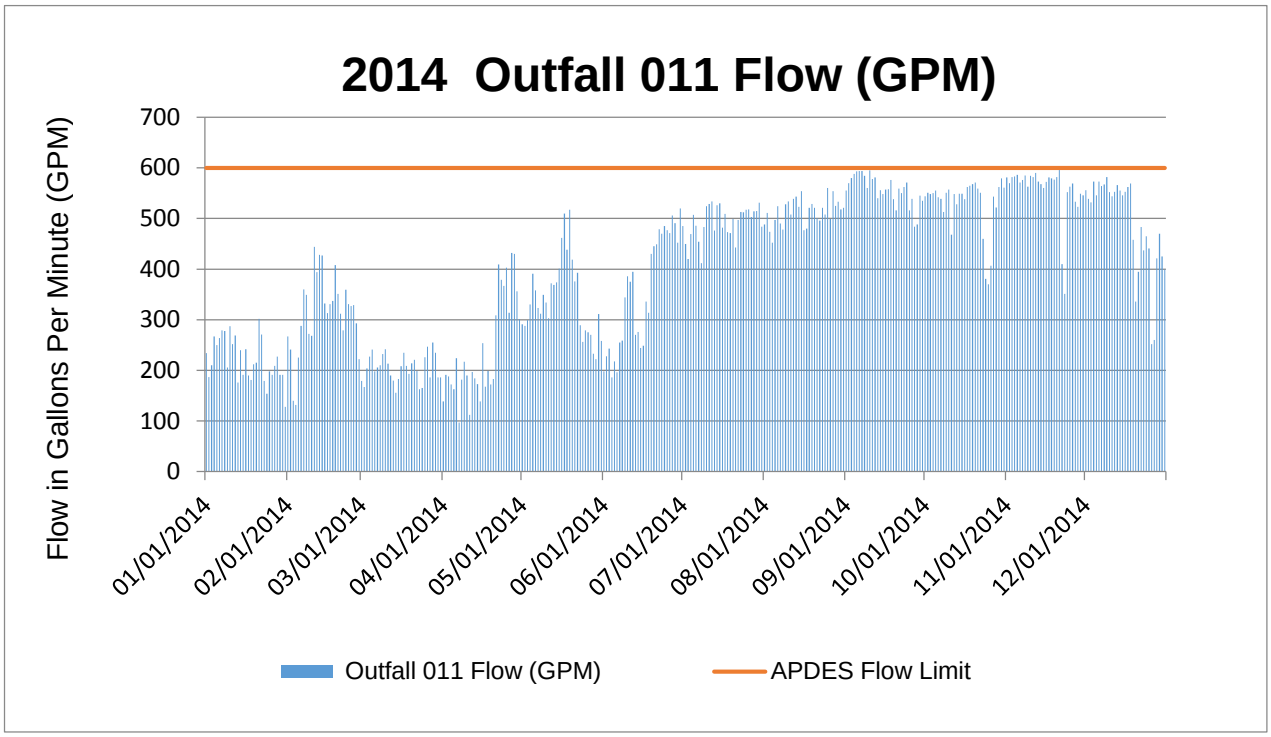
2.3.1 Outfall 011- Treated Effluent from Mine Water Treatment Plant

ADEC APDES AK0053341 (5/1/11), 1.2

Groundwater and drill water collected from the underground workings are sent to Water Treatment Plant #1 (WTP#1), treated and returned for use underground, sent to the mill to be used as process water, or sent to WTP#2 for discharge to the ORTW. Surface runoff and groundwater collected in the RTP, as well as some mine seepage water, are sent to

the WTP#2 (located near the 1525 portal), treated and then discharged to the ORTW or directed to the mill for use as process water. Discharge to the ORTW occurred throughout the year. The volume of water discharged from Outfall 011 in 2014 is shown below in **Chart 1.**

Chart 1: 2014 Water Treatment Plant #2 Outfall 011 Discharge to ORTW



Continuous pH data is collected at Outfall 011 along with weekly and quarterly laboratory samples for metals, Total Suspended Solids (TSS), Hardness, Weak-Acid Dissociable (WAD) Cyanide, Anions, Cations, and Total Dissolved Solids (TDS).

Outfall 011 has a dual system of continuous pH Meters. pH readings taken during the year all show compliance within permit limits.

All results are within the limits and conditions set forth within the permit. Time series graphs are provided in **Appendix C**. Monitoring and historic data are provided in **Appendix H**.

2.3.2 Outfall 001 – Discharge from Off River Treatment Works

ADEC APDES AK0053341 (5/1/11), 1.1

Treated effluent from WTP#2 is sent to the ORTW. After mixing in the ORTW, water flows over the weir of Pond 2 (Outfall 001) and into the Goodpaster River. The sampling location is at the weir.

Continuous turbidity data and twice-daily pH readings are collected along with weekly laboratory samples for metals, WAD Cyanide, TDS, Turbidity, Sulfate, and Hardness at Outfall 001. In addition, daily field parameters and weekly samples required by the permit, (Lead, Mercury, and Turbidity) and other parameters, were collected upstream from the discharge point (NPDES001B) to determine background water quality of the Goodpaster River.

Heavy rains triggered a flood event on the Goodpaster River which began on June 18, 2014. To manage the heavy rainfall and river flow into the ORTW additional stop logs were added as needed to the weir at Outfall 001 to avoid exceeding the Maximum Daily Outfall 001 flow of 15,600 gpm. Normal discharge operations were stopped when flow approached the Maximum Daily limit from Outfall 001 at approximately 1140 hours on June 19, 2014. On June 19, Pogo received permission from ADEC to resume discharge at Outfall 001 to the Goodpaster River. Heavyrainfall and subsequent flooding resulted in high turbidity in the river that continued through June. Pogo did not report an exceedance of the turbidity limitation since it was the direct result of natural flood conditions versus treated mine water discharge.

Pogo reported potential exceedances at Outfall 001 of the daily maximum effluent limit for copper and lead from samples collected on August 20, 2014. Pogo investigated the potential exceedances. Pogo originally believed the source of copper and lead may have been the water from the incinerator scrubber. The water from the scrubber was delivered into WTP#2, as a temporary measure (as previously discussed with ADEC in an email on July 27), while the water line to the Sewage Treatment Plant was under construction. Analytical results of the scrubber water, collected on August 19, indicated elevated levels of copper and lead. However, further mass balance analysis seems to indicate the small amount of scrubber water introduced into the water treatment system was insufficient to cause the potential exceedances. Pogo has not been able to identify the specific source of the copper and lead. The incinerator scrubber water is being sampled and analyzed regularly as a precautionary measure. No additional exceedances of copper or lead have been observed. At this time, Pogo does not believe that the discharge from Outfall 001 resulted in any negative environmental impact.

Except as noted above, all results are within the limits and conditions set forth within the permit. Time series graphs are provided in **Appendix C**. Monitoring and historic data are provided in **Appendix H**.

2.3.3 Outfall 002 – Treated Effluent from Sewage Treatment Plant

ADEC APDES AK0053341 (5/1/11), 1.3

The Sewage Treatment Plant operated throughout 2014 with discharge flows ranging between 8,608 and 31,930 gallons per day. Daily field parameters were collected to assess quality of treated effluent prior to discharge in the mixing zone in the Goodpaster River. Weekly samples were also collected for Biological Oxygen Demand (BOD5), TSS, Fecal Coliform, Nitrates, and Chlorine. Influent data from STP002 were collected for BOD5 and TSS on a monthly basis to determine quarterly percent removal.

All results were within the limits and conditions set forth within the permit. Time series graphs are provided in **Appendix C.** Monitoring and historic data are provided in **Appendix H**.

2.3.4 Whole Effluent Toxicity

ADEC APDES Permit AK-005334-1 (5/1/11), 1.4

The annual Whole Effluent Toxicity test was conducted June 11 through June 15, 2014 by CH2M Hill's Aquatic Toxicology Laboratory in Corvallis, Oregon. A split of the same sample was also sent to TRE Environmental Strategies in Fort Collins, CO. TRE conducted the WET test on July 8 through the 15, no issues with the tests were noted and the results were <1.0 TU_c. However, the concurrently run test with CH2MHill was subject to a number of difficulties. Two water samples were delayed, and could not be used, the *Ceriodaphnia dubia* (water flea) cultures were off schedule and could not be used for the test. The *Pimephales promelas* (fathead minnow) culture, though within required parameters, were in fair to poor condition and later found to be subject to a fungal infestation which may have caused a negative impact on the test. On day three of the test a temperature deviation resulted in an interrupted dose response that may have provided an unreliable data set. This test results showed a 3.28 TU_c. The test was rerun, without

deviations, August 26 through September 2 and *C. dubia* was <1.0 TU_c and *P. promelas* was 1.04 TU_c.

Results from both laboratories are presented in **Appendix B, Table 1** and indicate that the toxicity for *C. dubia* and *P. promelas* were both <2.0 TU_c and therefore were within the limits and conditions set forth within the permit. Laboratory reports are provided in **Appendix E**.

2.3.5 Compliance Order by Consent

ADEC APDES Permit AK-005334-1 (5/1/11), 1.1, 1.2, 1.3, Appendix A 1.6, 2.6

In June 2012 Pogo and ADEC entered into COBC 11-0929-50-0002 to fully address several alleged violations from 2011. Under the COBC, Pogo agreed to complete corrective actions. All corrective action have been completed except for the construction of the additional waste water treatment plant. On October 1, 2013, ADEC amended the COBC to allow Pogo to construct an additional waste water treatment plan in lieu of upgrading WTP#2. On March 5, 2014 Pogo requested an extension of time to start construction of the additional waste water treatment plant (WTP#3). ADEC granted the extension of time on March 12, 2014. On June 30, 2014, ADEC also amended the COBC to allow Pogo an extension of time to complete construction of WTP#3. Completion of WTP#3 is now planned for the end of 2015. See **Section 4.3** for further details.

2.4 SURFACE WATER MONITORING

2.4.1 Goodpaster River

ADEC Waste Management Permit 2011DB0012 (2/7/12), 1.6.2.2 & 1.6.4; ADEC APDES AK0053341 (5/1/11), 1.5; Pogo Mine Monitoring Plan (6/13) 5.0

Four surface water stations are monitored to evaluate water quality along the Goodpaster River. They are SW01 located upstream of the Pogo Mine, SW41 located downstream of Outfall 001, SW42 downstream of Outfall 002, and SW15 located downstream from all Pogo facilities.

Surface water samples are analyzed for WAD cyanide, ionic balance, major cations and anions, and total and dissolved metals. Physical and aggregate properties of ammonia,

conductivity, hardness, nitrates, pH, TDS, TSS, Turbidity, TKN, and Temperature are also measured.

Surface water samples were collected on February 18, March 20, July 10, August 12, and September 23, of 2014. Fish Tissue samples were collected in conjunction with the September 23, 2014 sampling event. Results of the fish tissue sampling are provided in the next section.

All surface water sampling results were within the limits and conditions set forth within the permit. The locations of the surface water monitoring stations are shown in **Appendix A, Figure 2.** Time series graphs are provided in **Appendix C**. Monitoring and historic data are provided in **Appendix H**.

2.4.2 Fish Tissue

ADEC APDES Permit AK-005334-1 (5/1/11), 1.5.5

In order to help assess long term trends in Goodpaster River quality, annual whole body analysis of juvenile Chinook salmon are required at monitoring sites both upstream (SW01) and downstream (SW12) from the project facilities. Juvenile Chinook salmon were collected at these stations on September 23, 2014. In an effort to better assess any long term trends Pogo obtained permission to collect an additional 5 Slimy Sculpin from both SW01 and SW12.

The juvenile Chinook were collected at both locations, SW01 and SW12. Metals analysis was conducted on individual Chinook and a composite sample of fish for each location was also analyzed. One Slimy Sculpin were caught upstream in minnow traps, at SW01, and six more were caught with dip-nets at SW12 downstream. As required by **Fish Resource Permit SF2014-164** a report of collecting activities and data submission form was submitted to ADF&G on October 18, 2014.

All results are consistent with historical data and no statistical differences were observed. Time series graphs are provided in **Appendix C**. Monitoring and historic data are provided in **Appendix H**.

2.5 GROUNDWATER QUALITY MONITORING

Groundwater samples are analyzed for WAD cyanide, ionic balance, major cations and anions, and total and dissolved metals. Physical and aggregate properties of ammonia, conductivity, hardness, nitrates, pH, TDS, TSS Turbidity, TKN, and Temperature are also measured.

The locations of the groundwater monitoring stations are shown in **Appendix A**, **Figure 2.**

2.5.1 Downgradient of DSTF

ADEC Waste Management Permit 2011DB0012 (2/7/12), 1.1.4, 1.2.7, 1.6.4; Pogo Mine Monitoring Plan (6/13), 6.0

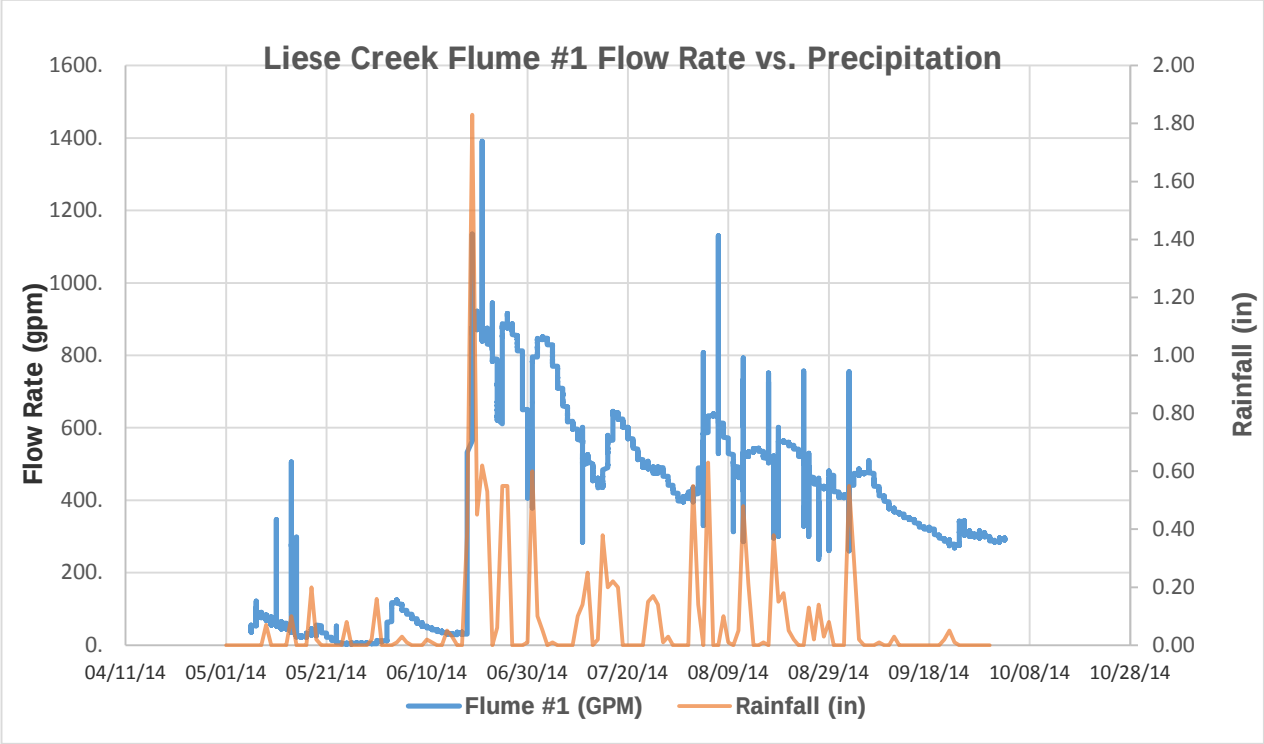
MW11-001A and MW11-001B provide information on water quality trends down-gradient from the DSTF and up-gradient of the RTP. MW11-001A is an alluvial well and MW11-001B is a bedrock well. MW11-001B was sampled March 11, June 23, July 22, August 26, September 9, and October 28, 2014. MW11-001A was sampled July 22, August 26, September 9, and October 28, in 2014 when water was present.

The copper and nitrate values for both wells have continued to fluctuate with no apparent trend. Piezometer well LT99-099 below the drystack is monitored for water elevation on a quarterly basis. Time series graphs are provided in **Appendix C**. Monitoring and historic data are provided in **Appendix H**.

2.5.2 Liese Creek Flumes

Four flumes were installed in Liese Creek in 2012. **Chart 2** provides flow data for Flume #1 (near the toe of the DSTF) versus precipitation rate in 2014.

Chart 2: 2014 Liese Creek Flume #1 Flow Rate vs. Precipitation



2.5.3 Downgradient of RTP Dam

ADEC Waste Management Permit 2011DB0012 (2/7/12), 1.1.4, 1.2.6, 1.6.4, Pogo Mine Monitoring Plan (6/13), 6.0

Three wells located below the RTP Dam, MW12-500, MW12-501, and MW12-502 monitor groundwater downstream of the RTP seepage collection system. Samples for these wells were collected monthly throughout 2014 (when they contained sufficient water to sample), however, the permit only requires a quarterly sampling. Trigger limits for groundwater monitoring at these locations are set forth in Pogo's ADEC Waste Management Permit 2011DB0012 and Pogo Mine Quality Assurance Project Plan.

Seven sampling events occurred in 2014 for MW12-500 when water was present in the well. Chloride, Sodium, and Nitrate were detected above the trigger limits on all sampling events.

Ten sampling events occurred in 2014 for MW12-501 when water was present in the well. Chloride, Sodium, Nitrate were detected above the trigger limits on all sampling events.

Selenium was detected above the trigger limits during three sampling events.

Seven sampling events occurred in 2014 for MW12-502 when water was present in the well. Chloride, Sodium, Nitrate were detected above the trigger limits [**on all sampling events**]. Selenium was detected above the trigger limits during five of sampling events.

Other parameters are also analyzed and compared to the Water Quality Standards. Except as noted above, all results are within the limits and conditions set forth within the permit. Time series graphs are provided in **Appendix C**. Monitoring and historic data are provided in **Appendix H**.

2.5.4 Downgradient of Ore Zone

ADEC Waste Management Permit 2011DB0012 (2/7/12), 1.1.4, 1.2.7, 1.6; Pogo Mine Monitoring Plan (6/13), 6.0

Monitoring wells MW04-213 and MW11-216 provide information on water quality trends down-gradient from the ore zones. Samples are collected semi-annually at MW04-213 and MW11-216. Samples were collected from MW04-213 on February 17, May 13, June 24, July 22 and September 10, 2014. A single sample was collected from MW11-216 on September 14, 2014, as the well was dry earlier in the year. No adverse trends were observed.

Piezometer well MW99-216 is monitored quarterly for water elevation. Time series graphs are provided in **Appendix C**. Monitoring and historic data are provided in **Appendix H**.

2.5.5 Downgradient of ORTW

Not required by permit.

Monitoring stations LL04-031 and LL04-032 are sampled annually and provide information on ground water quality trends between the ORTW and the Goodpaster River. Samples were collected June 11, 2014. No adverse trends were observed. Time series graphs are provided in **Appendix C**. Monitoring and historic data are provided in **Appendix H**.

2.5.6 Goodpaster River Area

Not required by permit.

MW12-001A and MW12-001B were established in support of the hydrogeologic study that was initiated during 2012. Dedicated pumps were installed in 2013 and samples were collected monthly during the entire year to establish background water quality data and continued through 2014 quarterly. Time series graphs are provided in **Appendix C**. Monitoring and historic data are provided in **Appendix H**.

2.6 PROCESS CONTROL MONITORING

Process facilities are monitored as follows.

2.6.1 Water Balance

ADEC Waste Management Permit 2011DB0012 (2/7/12), 1.6.2.4; Pogo Plan of Operations (11/1/2011), 8.0; Water Rights LAS 24611 – LAS 24617

At the beginning of the 2014, RTP reservoir volume was 16.2 million gallons. The ending RTP volume was 12.0 million gallons.

Added to RTP

- 110.1 million gallons of runoff and seepage water was collected in the RTP; and
- 21.4 million gallons of treated water was recycled to the RTP distribution system.

Removed from RTP distribution system

- 23.3 million gallons were pumped from the RTP for underground drill water;
- 34.9 million gallons were pumped from the RTP to the mill process; and
- 49.8 million gallons were pumped from the RTP to the WTP#2.

Recycled Treated Water

- 32.3 million gallons were recycled at the Mill from Water Treatment Plant; and
- 23.7 million gallons were recycled to the RTP distribution system from the Water Treatment Plant.

Discharge to ORTW

- 211.1 million gallons were treated and discharged via the ORTW.

2.6.2 Meteorological Monitoring

Pogo installed two new Meteorological Stations during August 2011. One is located near the Pogo Airstrip and the other on top of Pogo Ridge above the 1690 portal. On September 30, 2014 Pogo completed three years of air quality data collection and achieved a >90% recovery rate. The meteorological data will be used to support future dispersion modeling efforts. A copy of the Sumitomo Metal Mining Pogo LLC, 2014 Annual Data Report for the Pogo Meteorological Monitoring Program is provided in **Appendix F**.

2.6.3 Permits to Appropriate Water and Temporary Water Use Permit Summary

ADNR Permits to Appropriate Water, LAS 24616, 24613, 24611, 24612 Condition 6; ADNR Temporary Water Use Authorization TWUP F2011-131, F2011-76, F2011-130, F2013-023, F2013-143, Condition 14.

A summary of water usage for Permits to Appropriate Water and Temporary Water Use Permits is provided in **Table 1** and **Table 2.**

Table 1: Permits to Appropriate Water 2014 Monthly Total Flows

Month	LAS 24616 Surface Water Collected in Recycle Tailings Pond (RTP)	LAS 24617 Groundwater from Underground Mine Discharged to ORTW and Recycled Underground	LAS 24613 Goodpaster River ORTW Influent	LAS 24611 Drinking Water Wells DW02 & DW03	LAS 24612 Gravel Pit Pond*
	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)
January	160,755	13,759,846	179,783,696	733,383	0
February	0	15,199,315	282,439,746	695,421	0
March	584,895	11,649,609	175,447,765	727,335	0
April	69,808	13,271,260	199,991,518	737,132	0
May	4,072,726	17,916,098	289,817,942	741,855	0
June	25,505,364	18,961,759	298,413,106	787,584	0
July	28,923,091	24,232,393	375,890,707	770,151	0
August	23,019,550	27,389,761	419,758,832	788,745	0
September	13,753,998	28,177,954	406,425,369	754,165	0
October	8,355,854	26,909,850	394,959,988	823,117	0
November	3,671,621	27,690,548	406,965,412	744,175	0
December	1,987,947	25,558,253	382,854,462	681,850	0
Total (gallons)	**110,105,609**	**250,716,646**	**3,812,748,543**	**8,984,913**	**0**
Total in Acre-ft	**337.90**	**769**	**11,700.79**	**27.57**	**0.00**
Permit Limit Acre-ft	**387.12**		**24,195.11**	**81.77**	**241.95**

* includes water used for Mill make-up and for road dust control

** Please refer to TWUP F2013-023 to cover over use LAS24617

Table 2: Temporary Water Use Permits 2014 Monthly Total Flows

Month	TWUP F2011-131 RTP Seepage Collection System Wells	TWUP F2011-76 Rosa Creek, Caribou Creek, Gilles Creek, Shaw Creek	TWUP F2011-130 Diversion Ditches	TWUP F2013-023 Underground Water Recycle	TWUP F2013-143 2150 portal Underground Workings
	(gallons)	(gallons)	(acre-feet)	(gallons)	(gallons)
January	4,926,477	0	Annual Calculated Amount	22,239,117	153,849
February	4,019,710	0		18,477,161	220,296
March	3,445,568	0		21,929,550	226,152
April	2,974,027	0		20,790,822	11,686
May	2,840,269	268,000		22,863,088	221,742
June	3,103,176	272,000		21,865,195	262,235
July	5,360,448	220,000		13,703,129	328,376
August	6,321,994	240,000		17,103,305	201,961
September	6,444,586	160,000		20,698,854	182,449
October	6,666,267	0		24,532,960	183,154
November	6,112,333	0		25,637,166	234,514
December	5,357,080	0		25,095,777	194,506
Total Gallons	**57,571,933**	**1,160,000**		**254,936,125**	**2,420,920**
Total Acre-feet			**838**	**782.4**	**7.43**
Permit Limit	**1,945,000,000 gals**	**14,400,000 gals**	**1460 acre-ft**	**1613.3 acre-ft**	**646.97 acre-ft**

2.6.4 CIP Tailings Cyanide Destruction

ADEC Waste Management Permit 2011DB0012 (2/7/12), 1.2.3, 1.6.2.3; Pogo Mine Monitoring Plan (6/13), 4.2

After cyanide destruction, the CIP tailings are stored in the CIP tank prior to being mixed with cement and used as backfill in the mine. Pogo's Mine Monitoring Plan requires grab samples at station PC001 (CIP Stock Tank), which is located directly after the cyanide destruction circuit. Pogo collects a daily sample during a paste pour. The Waste Management Permit 2011DB0012 requires that samples must contain less than 10 mg/kg of WAD Cyanide as a monthly average and none of the samples can contain more than 20 mg/kg of WAD cyanide.

During 2014, 100% of the monthly averages of the PC001 samples measured less than 10 mg/kg WAD Cyanide and none were more than 20 mg/kg WAD cyanide. **[CAN WE SAY THIS?]**

Time series graphs are provided in **Appendix C**. Monitoring and historic data are provided in **Appendix H**.

2.6.5 Mineralized Development Rock Geochemistry

ADEC Waste Management Permit 2011DB0012 (2/7/12), 1.2.1, 1.6.2.6; Pogo Mine Monitoring Plan (6/13) 4.1.1, Appendix A

Samples of whole rock materials placed in the DSTF (PC002) are collected monthly and composited to form a quarterly sample which is then analyzed. Quarterly samples were analyzed and showed no adverse trends for 2014.

Appendix B, **Table 2**, shows selected parameters for the PC002 whole rock. Monitoring and historic data are provided in **Appendix H**.

2.6.6 Flotation Tailings Geochemistry

ADEC Waste Management Permit 2011DB0012 (2/7/12), 1.6.4; Pogo Mine Monitoring Plan (6/13) 4.0

Flotation tailings geochemistry samples were collected on March 21, June 29, September 27, and December 14, 2014 at PC003, the underflow of the filter-feed tank at the end of the mill circuit, prior to disposal on the DSTF. No adverse trends were observed. **Appendix B**, **Table 3**, shows selected parameters for the PC003 flotation Tailing. Monitoring and historic data are provided in **Appendix H**.

2.6.7 Flotation Tailings Interstitial Water Chemistry

ADEC Waste Management Permit 2011DB0012 (2/7/12), 1.6.4; Pogo Mine Monitoring Plan (6/13) 4.0

The interstitial water from the tailings samples was collected at PC003 on March 21, June 29, September 27, and December 12, 2014. Pogo transitioned to a low selenium mill reagent (Copper Sulfate) during the first quarter of 2014. Selenium concentration is currently trending downward in 2014. Nickel continues to trend downward as well. Pogo believes this is due to variation in ore chemistry.
Time series graphs are provided in **Appendix C**. Monitoring and historic data are provided in **Appendix H**.

2.7 VISUAL MONITORING

2.7.1 Facility Inspection

ADEC Waste Management Permit 2011DB0012 (2/7/12), 1.6.2.1, 1.6.9.3, 1.6.9.4; Pogo Mine Monitoring Plan (6/13) 2.0, 3.1; Pogo RTP Operating and Maintenance Manual (10/13), 4.0.

Visual inspections of the DSTF, RTP Dam, and monitoring wells were completed throughout 2014. No cracks, bulging, settlement, geotechnical concerns, erosion or damage were observed.

2.7.2 Biological Survey

ADEC Waste Management Permit 2011DB0012 (2/7/12), 1.6.2.5; Pogo Mine Monitoring Plan (6/13) 2.4

The objective of the visual biological survey program is to monitor wildlife interaction with the surface waste disposal facilities.

No wildlife issues with the surface waste disposal facilities occurred during 2014.

2.8 DEVELOPMENT ROCK SEGREGATION AND STORAGE

ADEC Waste Management Permit 2011DB0012 (2/7/12), 1.2.1, 1.6.2.6; Pogo Mine Monitoring Plan (6/13), 4.1.1, Appendix A

During 2014, 2,220 rounds were blasted underground and sampled in accordance with the Rock Segregation Procedure. Seven hundred and forty-one rounds (33%) exceeded either the Arsenic threshold of 600 mg/l or the Sulfide threshold of 0.5% and these were encapsulated in the DSTF. Three hundred and fifty-seven rounds were not sampled due to operational challenges and these rounds were also placed internally in the DSTF.

2.9 WASTE DISPOSAL

ADEC Waste Management Permit 2011DB0012 (2/7/12), 1.2.1, 1.5.4

During 2014, 657,918 dry tons of flotation tailings and 288,140 tons of mineralized rock were placed in the DSTF. Also during 2014, 137,408 dry tons of CIP Tailing and 203,670 tons of filtered flotation tailings were placed underground as paste backfill.

The quantities of miscellaneous waste materials placed either into the DSTF or underground during the year are shown in **Table 3**.

Table 3: Miscellaneous Waste Disposal in DSTF and Underground

Material	Disposal Location	Quantity	unit
Grinding Media Flotation Debris Screen Residue	DSTF	243	tons
Filter Press Waste	DSTF	73	yds
Filter Press Waste	Underground	60	yds
Water Treatment Plant Sludge	Underground	349	yds
Lab Ore Samples	DSTF	141	lbs

2.10 SPILL REPORTING

ADEC APDES AK0053341 (5/1/11), Appendix A, 1.14; ADEC Waste Management Permit 2011DB0012 (2/7/12), 1.5.10

During 2014, reportable spills occurred. Please see **Table 4** below.

Table 4: 2014 Reportable Spills

Date	Time	Location	Material	Responsible Party	Quantity	Area	Equipment	Cause	Cleanup Measures	Disposal
1/7/2014	11:00	Main Camp	Engine Oil	Pogo	1.5 gallon	400 ft^2	SSE02 HVAC Pickup	Blown Oil Cooler Line	Contaminated ice & snow material was shoveled up.	Taken to washbay to go through oil water separator
2/3/2014	5:20	Cement Silo	Coolant	Alaska West	3 gallon	8 ft^2	Semi-tractor	heater line broke	Absorbs used to soak up coolant, contaminated ice and snow material was shoveled up.	Absorbs will be incinerated on-site, contaminated ice and snow deposited in wash bay to go through oil/water separator.
2/17/2014	10:30	1525 Road	ULS Diesel	Pogo	5 gallon	12 ft^2	Compressor	Vent Cap leaking fuel through vent and seal	Absorbs used to soak up coolant, contaminated ice and snow material was shoveled up.	Absorbs will be incinerated on-site, contaminated ice and snow deposited in wash bay to go through oil/water separator.
3/27/2014	14:00	Mile 47.8 Access Road	Diesel	Pogo	2 gallon	100 ft^2	Source of spill unknown	Diesel stain reported on road by Security, cause unknown.	Contaminated soil shoveled up	Contaminated soil was containerized and will be shipped off-site for incineration at OIT.
4/8/2014	19:00	E-Wing	Sewage/ grey water	Pogo	100 gallon	80 ft^2	Septic line	Snow slid off roof of E-wing caused septic line to fail.	Lime spread over area to decontaminate.	N/A
4/30/2014	14:00	Generator 4	Diesel	Pogo	5 gallon	15 ft^2	Generator 4 Fuel Tank	Unknown	Absorbs and shovel up contaminated dirt	Absorbs will be incinerated on-site, contaminated soil to be incinerated off-site

Date	Time	Location	Material	Responsible Party	Quantity	Area	Equipment	Cause	Cleanup Measures	Disposal
5/20/2014	4:00	Road 1 Blue Tube to 1875 shop	Hydraulic Oil	Pogo	2 gallon	unk* ft^2	Underground haul truck	Broken hose	Contaminated soil scraped up	Contaminated soil was containerized and will be shipped off-site for incineration at OIT.
6/1/2014	12:00	AST-28 Containment	Diesel	Pogo	130 gallon	N/A ft^2	Chateau Fuel Tank-AST 28	Possible leaky filter or piping.	Fuel skimmed off and water pumped off.	Fuel delivered to Used Oil Tanks for energy recycling offsite. Water taken to washbay to go through Water/Oil separator.
6/8/2014	23:30	Assay Lab Make-up Air Unit	Diesel	Pogo	2 gallon	9 ft^2	Assay Lab Make-up Air Unit	Fuel Pressure Gauge Failed	Absorbs and shovel up contaminated dirt	Absorbs will be incinerated on-site, contaminated soil to be incinerated off-site
6/23/2014	10:00	Dry Stack	Hydraulic Oil	Pogo	3 gallon	1.5 ft^2	VHT04	Hydraulic cylinder failed	Absorbs and shovel up contaminated dirt	Absorbs will be incinerated on-site, contaminated soil to be incinerated off-site
7/8/2014	17:00	41.75 Pogo Access Road	Engine Oil	Carlyle	5 gallon	400 ft^2	Truck tractor	Rod thru engine block	Absorbs and shovel up contaminated dirt	Absorbs to on-site incinerator, contaminated soil to be incinerated off-site
9/25/2014	7:30	1525 Bench	Coolant	Pogo	5 gallon	unk* ft^2	SSE100 Fuel Truck	Loose hose clamp	Absorbs and shovel up contaminated dirt	Absorbs to on-site incinerator, contaminated soil to be incinerated off-site
10/17/2014	18:45	Core Shack	Diesel	ESS	1.5 gallon	25 ft^2	Maintenance Truck	Hose clamp failure	Absorbs and shovel up contaminated snow dirt	Absorbs will be incinerated on-site, contaminated snow and dirt to be incinerated off-site

unk* = area of spill not determined

2.11 GEOTECHNICAL MONITORING

ADEC Waste Management Permit 2011DB0012 (2/7/12), 1.5.3, 1.5.3.4; Pogo Mine Plan of Operations F20129500 (11/3/11) Appendix F: Pogo DSTF Construction and Maintenance Plan

No shell construction took place at the DSTF during 2014; therefore, no geotechnical monitoring took place. Currently there are no plans to continue shell construction in 2015.

3. 2014 AS-BUILT REPORTS AND MAPS

ADEC Waste Management Permit 2011DB0012 (2/7/12), 1.5.9.1; ADNR Plan of Operations Approval F20129500 (2/7/12), pg. 5

- DSTF Expansion Final As-Built Report for Diversion Channels was submitted to ADNR and ADEC on January 31, 2015

Pogo Mine Site 2013 As-built maps are located in **Appendix A.** **Figure 3** provides an overview of all facilities within the Pogo Millsite lease boundary at end of 2013. **Figures 3a** through **3d Appendix A** provide additional detail for the major areas of the mine. As-built reports located in **Appendix H**.

4. RECLAMATION AND FINANCIAL RESPONSIBILITY

ADEC Waste Management Permit 2011DB0012 (2/7/12), 1.11, 3. ADNR Plan of Operations Approval F20129500 (2/7/12), pg. 3, 9; ADNR Pogo Mine Millsite Lease ADL416949 (3/9/04), Section 8

The Pogo Mine reclamation and closure bond is currently $52.29 million (refer to Table 4). The road/transmission line reclamation and closure cost estimate is currently at $4.8 million. Neither Bond changed during 2014 (refer to Table 5).

In 2014, SRK consulting was hired to convert the current bond to a Standardized Reclamation Cost Estimator (SRCE) model for a newer estimation of the reclamation bond. The SRCE model will more accurately estimate the bond using

updated techniques and calculations. An unofficial submittal of the SRCE model was given to ADNR on June 26, 2014 and ADEC and was accepted. However, a detailed analysis of the model will not be conducted until the ADEC Waste Management Permit is up for renewal, in 2017.

Table 5: Summary of Mine Reclamation and Closure Cost Estimates as of December 2012

SUMMARY OF ESTIMATED RECLAMATION AND CLOSURE COSTS-POGO MINE SITE									
Item Description		**1 year holding cost**	**Phase I**	**Phase II**	**Phase III**	**Phase IV Water Treatment**	**Phase IV Reclamation**	**Phase V**	**Total**
Direct Cost		$ 812,700	$ -	$ 952,400	$ 10,819,000	$ 6,298,300	$ 3,686,000	$ 109,500	$ 22,677,900
Site Management Cost		$ 1,221,900	$ -	$ 27,800	$ 2,953,800	$ 5,374,833	$ 2,001,700	$ -	$ 11,580,033
Subtotal Direct Cost		**$ 2,034,600**	**$ -**	**$ 980,200**	**$ 13,772,800**	**$ 11,673,133**	**$ 5,687,700**	**$ 109,500**	**$ 34,257,933**
Indirect Costs	**% of Subtotal**								
Mobilization/Demobilization	**5.0%**	$ -	$ -	$ 49,010	$ 688,640	$ -	$ 284,385	$ 5,475	$ 1,027,510
Subtotal		**$ 2,034,600**	**$ -**	**$ 1,029,210**	**$ 14,461,440**	**$ 11,673,133**	**$ 5,972,085**	**$ 114,975**	**$ 35,285,443**
Contractor Overhead and Profit	**15.0%**	$ 305,190	$ -	$ 154,382	$ 2,169,216	$ 1,750,970	$ 895,813	$ 17,246	$ 5,292,816
Subtotal		**$ 2,339,790**	**$ -**	**$ 1,183,592**	**$ 16,630,656**	**$ 13,424,103**	**$ 6,867,898**	**$ 132,221**	**$ 40,578,259**
Performance Bond	**3.0%**	$ 70,194	$ -	$ 35,508	$ 498,920	$ 402,723	$ 206,037	$ 3,967	$ 1,217,348
Insurance	**1.5%**	$ 35,097	$ -	$ 17,754	$ 249,460	$ 201,362	$ 103,018	$ 1,983	$ 608,674
Subtotal		**$ 2,445,081**	**$ -**	**$ 1,236,853**	**$ 17,379,036**	**$ 14,028,187**	**$ 7,176,953**	**$ 138,171**	**$ 42,404,281**
Contract Administration	**4.0%**	$ 97,803	$ -	$ 49,474	$ 695,161	$ 561,127	$ 287,078	$ 5,527	$ 1,696,171
Engineering Re-Design	**3.0%**	$ -	$ -	$ 37,106	$ 521,371	$ -	$ 215,309	$ 4,145	$ 777,930
Contingency	**15.0%**	$ 366,762	$ -	$ 185,528	$ 2,606,855	$ 2,104,228	$ 1,076,543	$ 20,726	$ 6,360,642
Total Indirects		**$ 875,046**	**$ -**	**$ 528,761**	**$ 7,429,623**	**$ 5,020,410**	**$ 3,068,183**	**$ 59,069**	**$ 16,981,092**
Total Direct + Indirect		$ 2,909,646	$ -	$ 1,508,961	$ 21,202,423	$ 16,693,543	$ 8,755,883	$ 168,569	$ 51,239,025
Inflation Proofing	**2.06%**	$ 59,926	$ -	$ 31,078	$ 436,676	$ 343,813	$ 180,332	$ 3,472	$ 1,055,297
Total Closure Cost		**$ 2,969,572**	**$ -**	**$ 1,540,039**	**$ 21,639,099**	**$ 17,037,356**	**$ 8,936,215**	**$ 172,041**	**$ 52,294,322**
								Rounded	$ 52,294,000

Table 6: Summary of Pogo Access Road/Transmission Line Reclamation and Closure Cost Estimates as of December 2012

Pogo Access Road and Transmission Line - Estimated Closure Cost							
		Phase I	Phase II	Phase III	Phase IV	Phase V	Total
Direct Cost		$ -	$ 13,666	$ -	$ 2,478,500	$ -	$ 2,492,167
Site Management Cost		$ -	$ 128	$ -	$ 582,645		$ 582,773
Subtotal Direct Cost		**$ -**	**$ 13,794**	**$ -**	**$ 3,061,145**	**$ -**	**$ 3,074,940**
Indirect Costs	% of Subtotal						
Mobilization/Demobilization	6.5%	$ -	$ 897	$ -	$ 198,974	$ -	$ 199,871
Subtotal		$ -	$ 14,691	$ -	$ 3,260,119	$ -	$ 3,274,811
Contractor Overhead and Profit	15.0%	$ -	$ 2,204	$ -	$ 489,018	$ -	$ 491,222
Subtotal		$ -	$ 16,895	$ -	$ 3,749,137	$ -	$ 3,766,032
Performance Bond	3.0%	$ -	$ 507	$ -	$ 112,474	$ -	$ 112,981
Insurance	1.5%	$ -	$ 253	$ -	$ 56,237	$ -	$ 56,490
Subtotal		$ -	$ 17,655	$ -	$ 3,917,849	$ -	$ 3,935,504
Contract Administration	4.0%	$ -	$ 706	$ -	$ 156,714	$ -	$ 157,420
Engineering Re-Design	4.0%	$ -	$ 706	$ -	$ 156,714	$ -	$ 157,420
Contingency	10.0%	$ -	$ 1,766	$ -	$ 391,785	$ -	$ 393,550
1 year holding cost			$ 41,000				$ 41,000
Total Indirects		**$ -**	**$ 48,038**	**$ -**	**$ 1,561,916**	**$ -**	**$ 1,609,955**
Total directs and indirects		$ -	$ 61,833	$ -	$ 4,623,061	$ -	$ 4,684,894
Inflation Proofing	2.66%	$ -	$ 1,645	$ -	$ 122,973	$ -	$ 124,618
Total Closure Cost		**$ -**	**$ 63,478**	**$ -**	**$ 4,746,035**	**$ -**	**$ 4,809,513**
						Rounded	**$ 4,810,000**

4.1 ALL-SEASON ROAD AND TRANSMISSION LINE

Right-of-Way permits for Pogo Access Road ADL 417066 and ADL 416809 (12/18/03), Transmission Line ADL 416817 (12/18/03), and Communication Site Access Road ADL 417247 (10/1/04).

4.1.1 Final Easement Permits

The Early Entry Authorizations for ADL 416809 and 416817 were extended to June 1, 2014 by ADNR. ADNR provided Pogo with the Final Easement Permits April 30, 2014 for signature. The final permits were in place on May 7, 2014.

4.1.2 Transmission Line Easement BMPs

During the month of March, Pogo conducted clearing activity within the Transmission Line Easement between Pogo Road Miles 18.5 and 23.75. This activity falls within use and maintenance of the utility line in ADL 416817. Pogo was conducting this one-time clearing activity to meet the Fire Prevention, Protection and Liability stipulation in its Early Entry Authorization. Due to miscommunication within Pogo, the work was initiated before sensitive areas were identified. This oversight was reported to ADNR on March 25. The extent of adverse impacts, if any occurred, were investigated by consultants with Cultural Resource Consultants (CRC) and Three Parameters Plus (3PPI). A clearing activities memo was submitted on April 1, 2014. 3PPI and CRC's field reports were submitted on April 15, 2014. BMPs were installed by April 30, 2014. SHPO approved Pogo's proposed mitigation plan on May 19. Pogo also installed signs, warning of environmentally sensitive areas that cannot be disturbed, along the entire Pogo access road.

Photo 1 and **Photo 2** show erosion control measures implemented near Mile 20 of the Pogo Access Road on July 12, 2014.

Photo 1: Erosion control under transmission line along Pogo Access Road

Photo 2: Erosion control under transmission line along Pogo Access Road

Pogo is taking proactive measures to insure no environmentally sensitive areas are disturbed while fire prevention clearing occurs along the transmission line. In 2015 Pogo will:

- Brief equipment operators as to the amount, type, and locations of brush clearing activities allowed along the transmission line.
- Flag and delineate boundaries of all clearing activities to prevent disturbing any environmentally sensitive areas.

4.1.3 Revegetation Test Trial Program at the Pogo Mine

Based on the *Revegetation Test Trial Program for Reclamation at Pogo Mine* submitted May 1, 2012, native seed collection, and purchase of grass seed, for the revegetation trials began in the summer and fall of 2013. Three test plot areas were developed during 2013 and 2014, for Alluvial Shrub, Wetland, and Broadleaf Forest establishment.

4.1.3.1 ALLUVIAL SHRUBS AND WETLANDS

Test plots were established for alluvial shrubs and wetlands revegetation between the Pogo gravel pond and burn pit, in an area previously disturbed during construction (see **Figure 3a Appendix A**). As-built plot plans were recorded, as well at a photo record of each plot and plot label. The seed mix described in the plan was adhered too, with Feltleaf Willow seed as the major willow species. Seeds were weighed out for each plot into labeled bags and were then hand-broadcast after test plots were measured, staked and labeled. However, because seeding took place just before freeze up, no fertilizer was applied. Fertilizer, and agrotain will be applied in the spring. Willow cuttings will be collected and planted in the wetland trial plots as well.

Photo 3 shows a large portion of the alluvial shrub trial plots with burn pit fence and 1525 portal road in the background.

Photo 3: Alluvial Shrub Trial Plots

Photo 4 shows the lower, wetter, portion of trial plot area next to gravel pond,

where wetland test plots are located.

Photo 4: Wetland Trial Plots

4.1.3.2 BROADLEAF FOREST

Test plots for the broadleaf forest revegetation were constructed above the south diversion ditch in an area disturbed by the drystack expansion project (see **Figure 3d, Appendix A**). Plots were measured, staked and labeled in the fall of 2014. Several large areas of woody debris were left in place and will be included in the trial. An as-built plot plan was recorded, photos of each plot and plot label were collected. However, due to an early snowfall, seeding and fertilizing will be delayed until spring of 2015.

Photo 5 shows the Broadleaf Forest trial plots, located at the end of the south diversion ditch road, where a road cut is in the process of being reclaimed.

Photo 5: Broadleaf Forest Trial Plots

In the late summer of 2015 percent cover and species data will be collected, and a photographic record kept for every trial plot established in 2014. Two more test plots, one for mesic and one for xeric, alpine meadow establishment, are scheduled to be developed in the summer of 2015 on, or near, the DSTF. Native seeds will be collected late summer and fall of 2015 as well.

4.2 POGO MILLSITE LEASE

ADNR Pogo Mine Millsite Lease ADL416949 (3/9/04), Section 23 Modifications

4.2.1 Plan of Operations F20129500 Revision 7

The Plan of Operations F20129500 Revision 7 for Construction of Mine Water Treatment Plant #3 (MWTP#3) was submitted to ADNR on October 31, 2013. It was approved on December 3, 2013.

- In February, 2014, Pogo paid an in lieu mitigation fee in the amount of $1,650 to The Conservation Fund for 0.15 acres of wetland disturbance for the MWTP#3.
- On March 5, 2014, Pogo requested an extension of time to start construction of MWTP#3. ADEC granted the extension of time on March 12, 2014.
- Pogo notified ADEC that construction of MWTP#3 had started on May 8. An extension of time was also requested to complete construction in 2015. ADEC granted the extension of time on June 30, 2014.

4.2.2 Plan of Operations F20129500 Revision 9

Pogo submitted POO Rev 9 for a new CIP Tailings Stock Tank on Feb 19, 2014. It was approved by ADEC on Feb 27. It was approved by ADNR on March 6. It was approved for construction by ADEC on Feb 27. Detailed design drawings were submitted to ADEC on May 22. Final approval was granted by ADEC on June 11. Construction is continuing through 2015.

5. PERMIT ACTIVITIES

5.1 2014 PERMIT ACTIVITIES

Permitting activities conducted during 2014 included:

Commercial Industrial Solid Waste Incinerator Rule

- On July 16, Pogo submitted an application to modify its Title V Air Quality Operating Permit to add its small, remote incinerator as required by the CISWI Rule. Approval is pending.
- A wet scrubber was installed and fully operational by July 11, 2014. Pogo requested authorization from ADEC to discharge the wet scrubber waste water at Outfall 002. ADEC approved the discharge of the wet scrubber waste water on July 29.
- Stack testing plans for the incinerator were submitted to ADEC on May 8, 2014. ADEC approved the stack testing plans on June 4.
- Stack testing was performed on October 7 through 9, 2014. Results of stack testing were submitted to the EPA and ADEC on December 9, 2014 and the stack test data was entered into the EPA CEDRI database. The Incinerator Operating Limits Report was submitted to EPA and ADEC on December 23, 2014. Incinerator began full-time operation on December 26, 2014. Weekly scrubber water sampling began on December 30, 2014.

Certificate of Approval to Operate RTP Dam was issued to Pogo on February 24, 2014 after the Periodic Safety Inspection Report (performed in 2013) was submitted to ADNR.

Pogo Lower Camp (formerly Pogo Contractor Camp)-2012 WTP Final Approval to Operate was received on April 25.

Plan of Operations F20129500 Revision 6 to Begin Mining East Deep Expansion was begun by Pogo for the East Deep expansion in 2012. Pogo submitted Plan of Operations Revision 6 to allow Pogo to begin mining the East Deep expansion on June 27, 2013. It was approved on September 19, 2013.

Pogo submitted the following reports in 2014:

- East Deep Underground Expansion Geochemical Characterization Report submitted to ADNR June 3, 2014.
- East Deep Underground Expansion Geochemical Characterization Report Transient State and Steady State Model Files also submitted to ADNR June 3, 2014.
- Detailed Engineer Drawings for Proposed New East Deep Paste Line submitted to ADNR and ADEC on June 17, 2014 and were approved July 30, 2014.
- DSTF Closure Plan Final Report for 2012-2013 was submitted to ADNR On July 3, 2014.
- UG Closure Study model input files to Melissa Hill at ADNR were submitted July 22, 2014.
- On June 18, 2014 Pogo requested additional time to complete the East Deep Underground Expansion Geochemical Characterization Study up to April 30, 2015.

On December 22, 2014 the State Large Mine Permitting Team sent an email stating that they had informally reviewed the:

- Drystack Closure Study,
- Underground Closure Study,
- Groundwater Hydrology Model,
- Pogo SRCE Reclamation Cost Model (Draft),

They communicated to Pogo that the studies had been done properly, were informative, and DNR would not be submitting any formal comments until the next permitting cycle ended in 2017.

Plan of Operations Revision 8 for the remaining ORTW Line was submitted to ADNR on January 23, 2014 and approved on February 7, 2014.

Minor Permit No. AQ0406MSS07 became effective on July 9 after Pogo submitted an application to ADEC to amend Pogo's Title I Air Quality Operating Permit Number AQ04406MSS06 for the new 2150 Portal mine heaters on April 16.

FY14 9500 APMA Exploration Plan was submitted to ADNR on January 23, 2014 during an Agency meeting (ADNR and COE). It was approved on February 10, 2014. The COE required a 404 Permit Modification. Three Parameters completed the Preliminary Jurisdictional Determination and a 404 Permit Application was submitted to COE during a meeting on April 11, 2014. Additional information was provided to COE on April 29, 2014. The COE went out to 15-day Agency Notice on June 18, 2014. On July 21, 2014, COE issued an amendment to the 404 Permit.

ISO 14001 Certification was received September 29, 2014.

5.2 FUTURE PERMIT ACTIVITIES

- Material Site Applications for extraction of material from two existing sites along Pogo Road (MS 7 and MS 18) were submitted by Pogo on April 22, 2014. Approval is pending.
- Prepared application for modification of the RTP Dam for RTP Head Tank #2 and sent it to Charlie Cobb, ADNR in December 2014. Approval is pending.
- On July 16, 2014 Pogo submitted an application to modify its Title V Air Quality Operating permit to add the incinerator as required by the CISWI Rule. Approval is pending.