THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Natural Resources
DIVISION OF MINING, LAND, & WATER
Mining Section
Northern Office

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POGO MINE INSPECTION REPORT

Inspection Date:	October 3, 2018
Weather:	Clear skies, light wind, 35 ° F
Time of Inspection:	11:30am to 4:00pm
Operator Contact:	Jill Ladegard, Brad Valiukas
Agency Personnel:	ADNR – Steve Buckley, Brent Martellaro, Carolyn Curley, and William Groom
Inspection Objectives:	General Inspection

Agency personnel signed into the site prior to traveling on the Mine Access Road. The road was in good condition with little dust until after Mile 30. (Photo 1) Dry, windy conditions and low temperature precluded using water for dust suppression until later in the afternoon. Animal tracks were noted on the side of the road. Grouse were seen before Mile 5. Road work in preparation for winter was evident with the staging and use of equipment at numerous places along the access road. Regrowth in fire-burned area showed revegetation occurring naturally with birch, aspen, and small spruce trees. Upon arrival at the Administration Building, agency personnel were met and escorted to the "Chateau," environmental section offices, for safety briefings and company updates. Chris Kennedy, Luke Creagh, Jim Ward, and Jeremiah Drewel participated in the safety briefing, company updates, and discussion. After lunch, ADNR staff, escorted by Jill Ladegard and Brad Valiukas, inspected the site using two vehicles.

Photo 1: Access road headed to Pogo Mine.

Photo 2: View of exploration road from the Mill Bench.

From the Mill bench, evidence of the exploration drilling road program was visible. (Photo 2) The Mill bench and facilities were observed from the outside. (Photos 3 and 4)

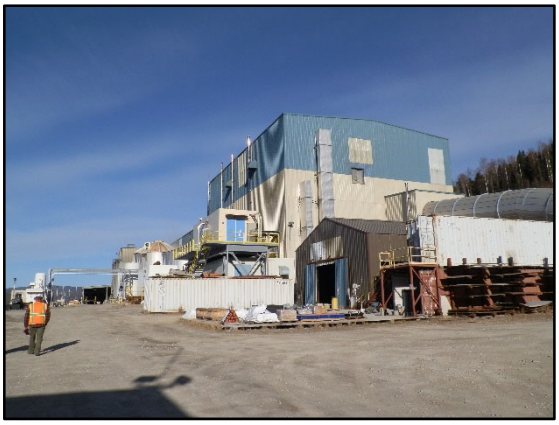

Photo 3: Mill buildings.

Photo 4: End of Blue Tube on the Mill bench.

We traveled from the Mill bench to the 2150 Portal bench. Photos 5 through 8 document the condition of the surface structures and laydown area. Next, we traveled to the Dry Stack.

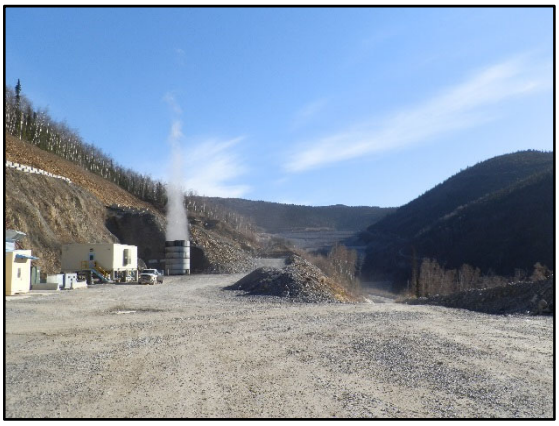

Photo 5: Vent raise at 2150 Bench

Photo 6: 2150 Portal.

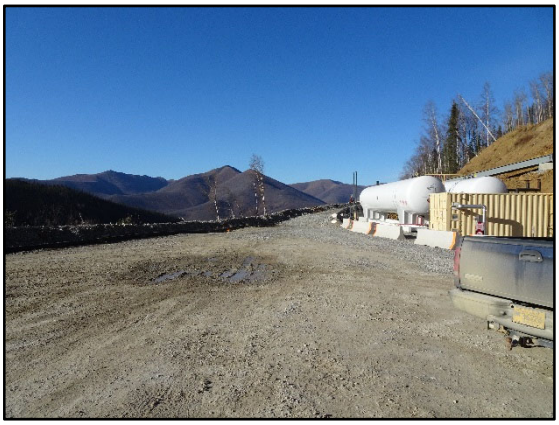

Photo 7: 2150 bench

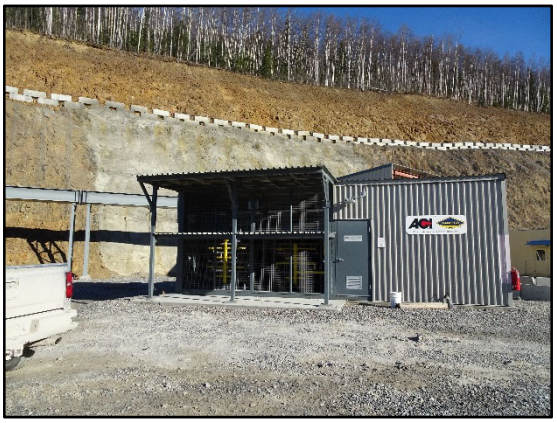

Photo 8: 2150 bench.

At the Dry Stack Tailings Facility (DSTF), we discussed placement practices and received information from Pogo employee, Joel. Red rock, dumped in 4 lifts of 8-12", is encapsulated with 3 to 4 lifts of tails. Red rock sections are separated with a 50' buffer with 3' of tails on top and a minimum of 100' from the dam. The tails are dumped and allowed to dry in the summer. In winter, tails are dumped during the night shift and spread during the next day shift. Compaction reaches approximately 95% with 6 passes of vehicles. Tests conducted by Pogo indicate that density requirements are met with current placement practices. We observed placement of tails (Photo 9) and red rock material (Photo 10) along with general conditions of the facility (Photos 11 and 12). We noted areas reworked this summer (Photo 13) as per instructions by Dam Safety. Surface cracks noted

earlier may have been caused by several very wet years. Areas were regraded to maintain a 2% grade sloping to the face of the DSTF to aid water shedding. The diversion ditches are checked weekly. Current spot repairs are in progress from the June 2017 flood event.

Photo 9: Tails drying on the dry stack facility.

Photo 10: Dry Stack dumping and staging of red rock material.

Photo 11: Dry stack area

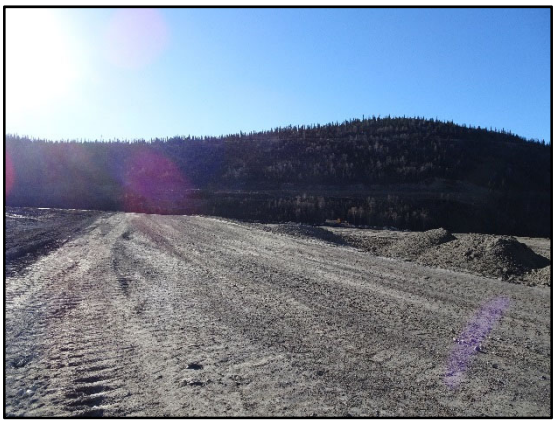

Photo 12: Dry stack haul road.

Photo 13: Dry stack tails section regraded.

Photo 14: RTP overview looking downstream from DSTF toe.

We viewed the DSTF from the toe (Photos 15 and 16). The cirlces in red on Photo 15 show where erosion on Shell #1 have been reworked.

Photo 15: DSTF viewed from the toe.

Photo 16: DSTF Shell #1

The Recycle Tailings Pond (RTP) and RTP Dam (Photos 17-20) were observed. The current volume is 28 million gallons with the expectation that it will hold 30 million gallons before winter. 43 million gallons is considered over capacity. Current water treatment removes the arsenic such that arsenic is monitored, but is no longer a reporting aspect for the APDES. Pogo is discussing with DEC how to tie non-detect volumes with the reporting limits. Pogo completed an emergency action plan last lear. This year, a table-top orientation exercise will be held. Photo 17 shows the growth media stockpile placed between the DSTF toe and the RTP pond. From the crest of the RTP Dam, we observed the spillway from the pond (Photo 19) and the repaired culvert downstream from the RTP Dam (Photo 20).

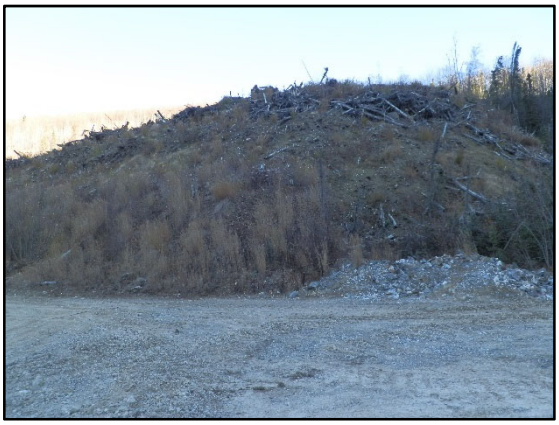

Photo 17: Growth media stockpile located below the DSTF

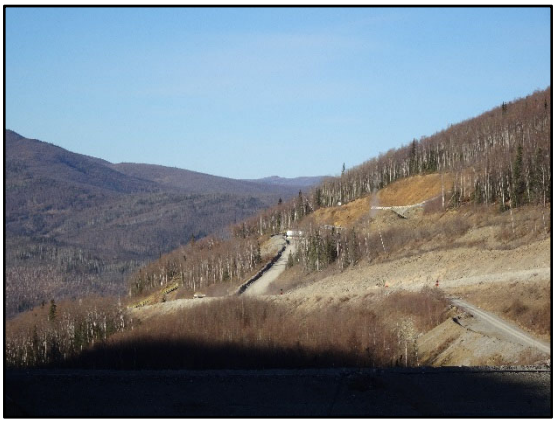

Photo 18: 2150 Portal Bench as viewed from RTP.

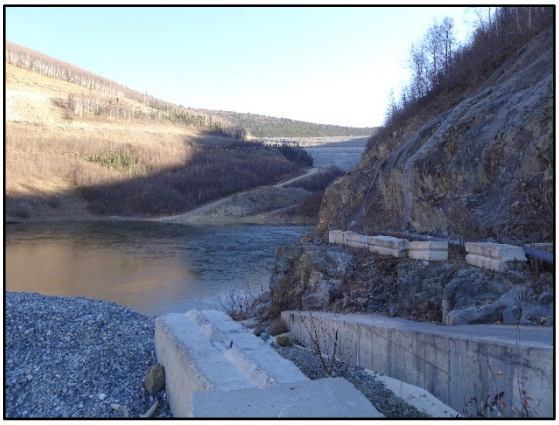

Photo 19: RTP Pond spillway

Photo 20: Repaired culvert with Mill Bench in the background.

We then headed to the Off-River Treatment Works (ORTW). The process begins with the ORTW fresh water inlet from the Goodpastor River (Photo 21). Water is pumped into the mixing pond (Photo 22) through the pump station (Photos 23-25). The intake water temperature at Outfall 011 was 39 °F at a pH of 7.04 (Photo 23). The treated water is discharged into the mixing zone (Photo 26) before entering the Goodpastor River. We discussed the system efficiency and water management.

Photo 21: ORTW fresh water intake

Photo 22: ORTW Mixing Pond.

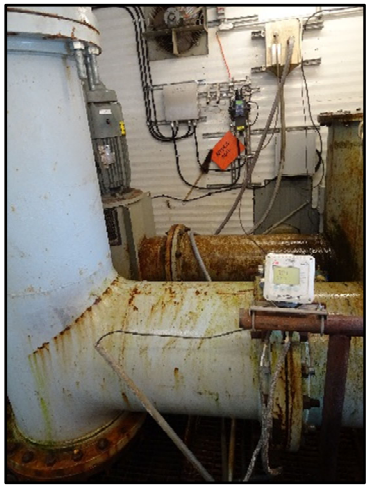

Photo 23: ORTW monitoring.

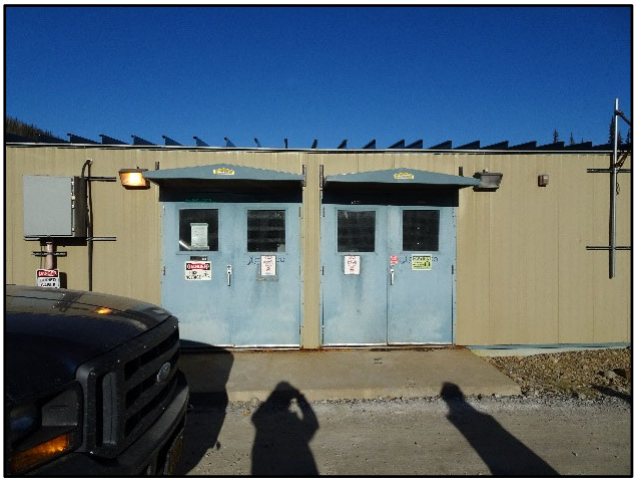

Photo 24: ORTW pumping facility building

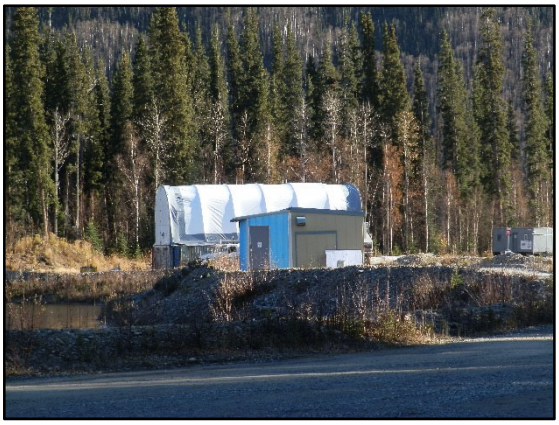

Photo 25: ORTW Facilities

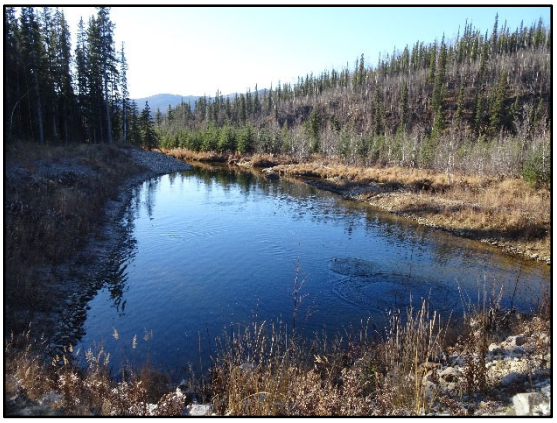

Photo 26: Discharge mixing zone

After the site tour, POGO employees reviewed the items seen on the site inspection and further discussed current and future site operation, maintenance, and construction. En route to the Pogo Access Road, bear dens were viewed near camp operations.

Due to time constrainsts, DNR asked Pogo employees to send photos of the diversion ditches and view of DSTF from above. Those photos were received October 10, 2018.

Conclusions:

Operations continue to be conducted in a manner consistent with the terms of the Plan of Operations. DTSF, dumps, stockpiles and haul roads appear to be maintained in a stable configuration that minimizes the potential for erosion.

Action Items:

Continue monitoring the DSTF surface for cracks
Discuss potential changes to the ORTW with DEC

Sincerely,
Carolyn Curley
Geologist

cc: Brent Martellaro, DNR
William Groom, DNR
Dave Schade, DNR
Tim Pilon, DEC
Jim Vohden (DNR)
Steve Buckley, DNR
Kyle Moselle DNR
Charlie Cobb, DNR
Allan Nakanishi (DEC)
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