

Sent by Email

March 30, 2017

Licensing  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU  
X0B 1J0

**Re: February 2017 – Monthly Monitoring Report for Water Licence 2AM-DOH1323**

This report is comprised of monitoring requirements as set out in Part J and Schedule J of water licence 2AM-DOH1323 Amendment 1, and additional requirements from INAC.

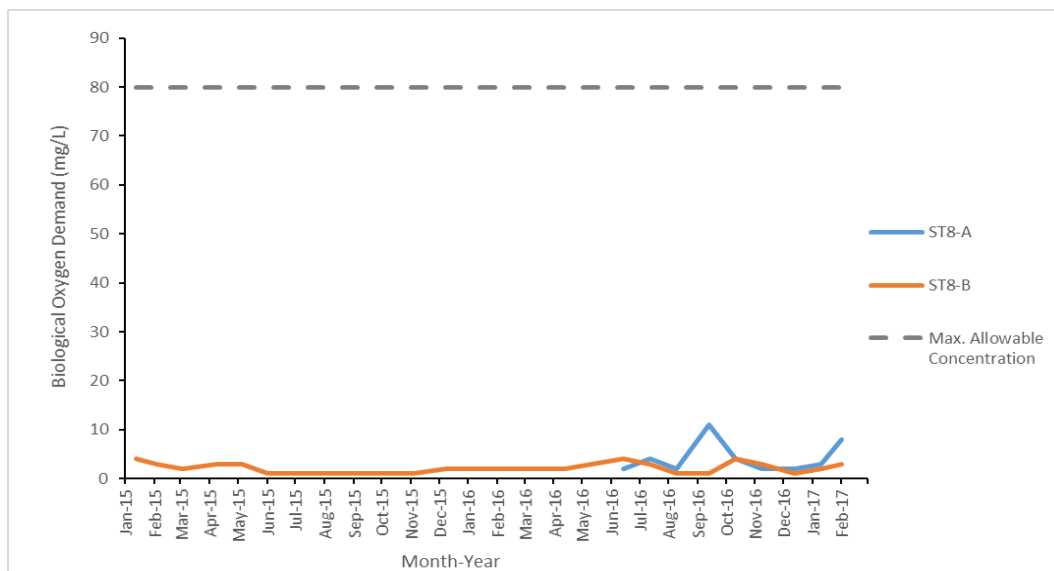
During the subject period of this report the focus of activities at Doris North was underground mining, construction, commencement of processing ore in the process plant, water management and environmental compliance. Sampling locations monitored under this licence (seasonally or when facilities are operational) are provided in Figure 2 at the end of this report.

**Site Wide Water Quality Monitoring Program (Part J Items 3, 8, and Schedule J)**

Water quality sampling was conducted in February at monitoring stations identified in Schedule J of the licence (ST-1 through ST-13, TL-1 through TL-12). Water quality samples were not collected for monitoring stations that were inactive during the month being reported (e.g., facilities that had not yet been constructed, were frozen during the month, or were not operationally active). All parameters were compared to the applicable effluent quality limits with no exceedances observed. Results of this monitoring are attached to the report in Appendix A.

Figure 1 illustrates effluent quality characteristics for parameters of interest at select monitoring stations.

**Figure 1. Biological Oxygen Demand Results Consistently Below Discharge Criteria for Wastewater Treatment Plant (ST-8A, ST8B)**



Note: Maximum Average Concentration as per Part G Item 4(b).

### Flow and Volume Measurements (Part J Items 11, 12, and Schedule J)

**Table 1. Effluent discharge, February 2017**

Facility	Station Code	Discharge Volume (m <sup>3</sup> )	Exceedances of Discharge Criteria	Discharge Location	Licence Reference
Sedimentation Pond	ST-1	0	0	Tailings Impoundment Area	Part G Item 22
Pollution Control Pond #1	ST-2	0	N/A	Tailings Impoundment Area	Part G Item 22
Landfill Sump	ST-3	0	0	Facility not constructed	Part G Item 24 (a, b, g)
Landfarm Sump	ST-4	0	0	Sedimentation Control Pond	Part G Item 24 (c, d, g)
Doris Tank Farm	ST-5	0	0	Sedimentation Control Pond	Part G Item 24 (e, f, g)
Rob Bay 5ML Tank Farm	ST-6a	0	0	Sedimentation Control Pond	Part G Item 24 (e, f, g)
Rob Bay Three 5ML Tank Farm	ST-6b	0	0	Sedimentation Control Pond	Part G Item 24 (e, f, g)
Wastewater Treatment Plant, Effluent	ST-8	753	0	Tundra Discharge 13W 432933 7559057	Part G Item 23(b-d)
Wastewater Treatment Plant, Sewage Cake	N/A	1.58	N/A	Tailings Impoundment Area	Part J Item 12 (f)
Reagent and Cyanide Storage Facility Sump	ST-11	0	0	Facility not constructed	Part G Item 23 (a)
Polution Control Pond #2	ST-13	0	0	Tailings Impoundment Area	Part G Item 22
Mine Water Discharge	TL-12	0	N/A	Tailings Impoundment Area	Schedule J Table 2

Records of daily visual monitoring of discharged to tundra are maintained on file as per Part J Item 18.

**Table 2. Discharge from TIA to Doris Creek, February 2017**

Month	Number of days of discharge	Discharge Volume (m <sup>3</sup> )	Exceedances of Discharge Criteria*
January	0	0	0
February	0	0	0
<b>Annual Cumulative</b>	<b>0</b>	<b>0</b>	<b>0</b>

\* Discharge criteria outlined in Part G Items 29, 30, 31 and Part J Item 8.

A comparison of flows between TL-4 and TL-2 as per Part G Item 32 of the licence was not conducted as no water was discharged for the Tailings Impoundment Area to Doris Creek this month.

**Table 3. Water usage, February 2017**

Month	Windy Lake (ST-7A)				Doris Lake (ST-7)				Total Usage
	Domestic Water* (m³)	Surface Exploration (m³)	Industrial Usage** (m³)	Dust Suppression (m³)	Domestic Water* (m³)	Surface Exploration (m³)	Industrial Usage** (m³)	Dust Suppression (m³)	
January	849	0	15	0	0	0	0	0	864
February	796	0	5	0	0	0	0	0	801
<b>Annual Total</b>	1,645	0	20	0	0	0	0	0	1,665
<b>Annual Allowance</b>	<b>22,995</b>								<b>480,000</b>

\* As permitted by water licences 2BE-HOP1222 and 2AM-DOH1323

\*\* Includes industrial uses such as underground drilling, core processing, mill commissioning, concrete batching, etc.

No water was applied for ice road development during the month. No water has been applied for ice road development in 2017.

**Table 4. Volume of Reclaim Water from the TIA, February 2017**

Month	Reclaim Water (m³) *
January	31,200
February	94,080
<b>Annual Cumulative</b>	<b>125,280</b>

\* As per Part J Item 11(d)

**Table 5. Waste Rock and Process Volumes, February 2017**

Month	Waste Rock Stored Temporary Waste Rock Pile(tonnes)*	Waste Rock Returned Underground*(tonnes)	Quantity of Ore Processed** (tonnes)	Dry Tailings Placed in TIA**(tonnes)	Dry Cyanide Leach Tailings Placed Underground**(tonnes)
January	24,811	0	0	0	0
February	22,584	1,392	6,174	5,927	247
<b>Cumulative Total</b>	<b>446,362</b>	<b>1,392</b>	<b>6,174</b>	<b>5,927</b>	<b>247</b>

\* As per Part J Item 11(e, f)

\*\* As per Part J Item 12.

**Table 6. Doris Lake Water Level (ST-12), February 2017**

<b>Month</b>	<b>Minimum Water Level (masl)</b>	<b>Maximum Water Level (masl)</b>	<b>Mean Water Level (masl)</b>	<b>Water Level Change (masl)</b>	<b>Low Action Level Trigger (masl)</b>
<b>January</b>	21.778	21.823	21.797	0.045	21.425
<b>February</b>	21.777	21.823	21.794	0.046	21.425

\* Low action level trigger is relative to the average water level value (September 10-30, 2016) measured in Doris Lake. Low action level trigger (-0.42 m) outlined in Section 5.4 of the Doris Aquatic Effects Monitoring Plan, August 2016.

**Summary of Assessments of Water Balance and Water Quality Model (Part G Item 34)**

Average monthly water quality, hydrologic, and climatic monitoring data were collected while in operations during February. Data will contribute to the assessment of the water and load balance model, and will be compared to the predicted water quality and elevation within the TIA and will be reported in the annual report for 2017.

**Thermal Monitoring (Part J Items 13 and 14)**

Thermal monitoring undertaken as per Part J Items 13, 14 and Schedule J is reported in the annual Geotechnical Report.

**Doris North Camp Diversion Berm Effectiveness (Part J Item 19(d))**

Monitoring was not conducted on the Diversion Berm this month due to freezing conditions.

**Incident Reporting**

February 11, 2017 – Spill #17-041. On February 11, 2017, a leak of ethylene glycol coolant was discovered on the west side of the main powerhouse building at Doris Camp. The coolant had leaked from the exterior section of a cooling line of one of the powerhouse generators. The fluid leaked onto the roof of the building and an estimated 20L of the coolant flowed over the side of the building onto the crush pad and concrete foundation below. Upon investigation, it was identified that the bolts on the flange connecting two sections of the pipe were loose, which allowed the coolant to leak. It is believed that expansion of the flange and contraction of the bolts occurred when the pipe temperature increased. This section of pipe was repaired prior to the generator being returned to service. Contaminated materials were removed from the area. A small amount of coolant (estimated to be less than 1L) was inaccessible to clean-up efforts. This material was located beneath a pipe that runs along the foundation beneath the building. TMAC internally reviewed the incident to identify corrective actions. The area is routinely inspected by the powerhouse operator (approximately every 2 hours) to identify any issues with the coolant and heat-exchange systems. Checks were also conducted of the pipe in this area to confirm no additional bolts were loose.

Should there be any questions regarding this monthly report, please contact John Roberts.

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Yours sincerely,



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Figure 2. 2AM-DOH-1323 SNP Monitoring Locations

