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September 29, 2017

Licensing
Nunavut Water Board
P.O. Box 119
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Re: August 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, ore processing, water management and environmental compliance. Sampling locations monitored under this licence (seasonally or when facilities are operational) are provided in Figure 3 at the end of this report.

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

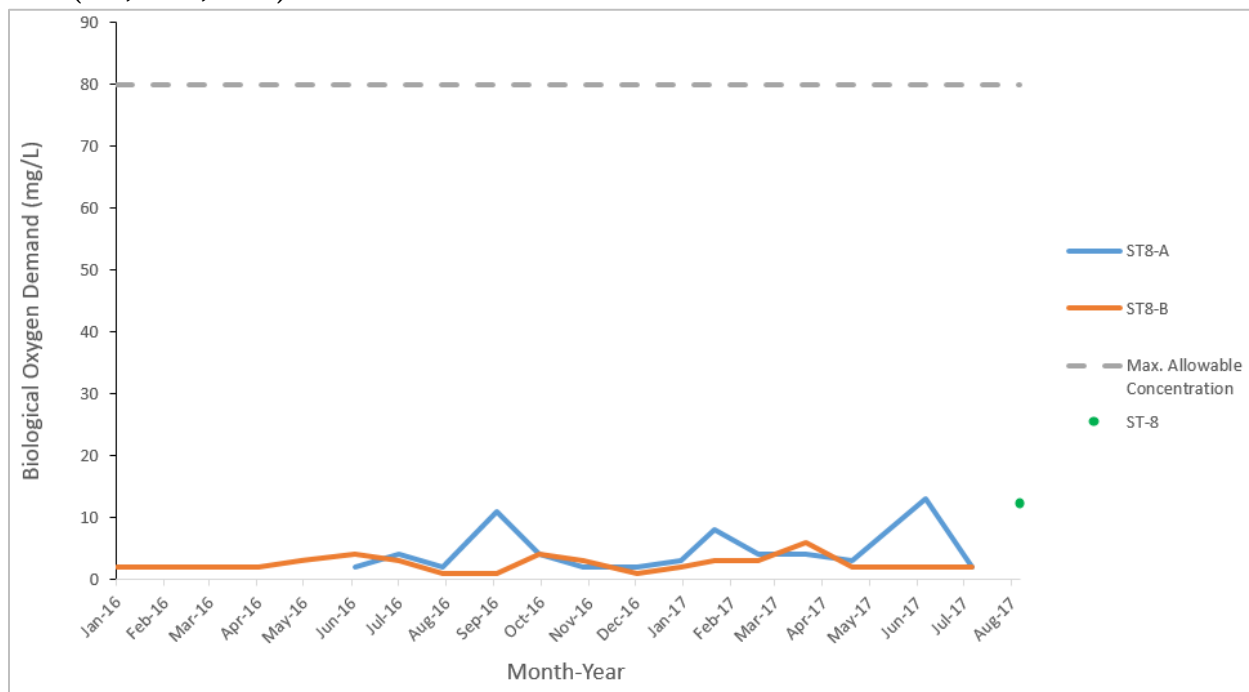
Water quality sampling was conducted in August at monitoring stations identified in Schedule J of the licence (ST-1 through ST-13, TL-1 through TL-12). Water quality samples were not collected for monitoring stations that were inactive during the month being reported (e.g., facilities that had not yet been constructed, were frozen during the month, or were not operationally active). All parameters were compared to the applicable effluent quality limits outlined in Part G of the licence and no exceedances were observed. Results of this monitoring are attached to the report in Appendix A. Beginning this month, water quality samples for the entire calendar year will be included in Appendix A of the monthly monitoring reports. TMAC believes this will assist regulatory parties in assessing trends for parameters of interest at each compliance monitoring station.

A visual inspection of the backfilled stopes underground was conducted in August to identify seepage from the stopes. Four stopes have been backfilled at this time; one seep was identified emanating from one backfilled stope. A flow measurement could not be completed due to the low volume of this seep. A sample was collected at this location (TL-11) and submitted for analysis. Results of this sampling are provided in Appendix A. No seepage was identified at the other three backfilled stopes.

Starting in August 2017, compliance samples collected from the Doris Wastewater Treatment Plant (ST-8) will be collected from a tank where the effluent from the parallel systems within the Wastewater Treatment Plant (previously reported as ST-8A and ST-8B) is combined prior to discharge. Collecting samples from the combined effluent provides a more representative sample of the effluent quality discharged from this facility. This was communicated to the Inspector on August 4, 2017.

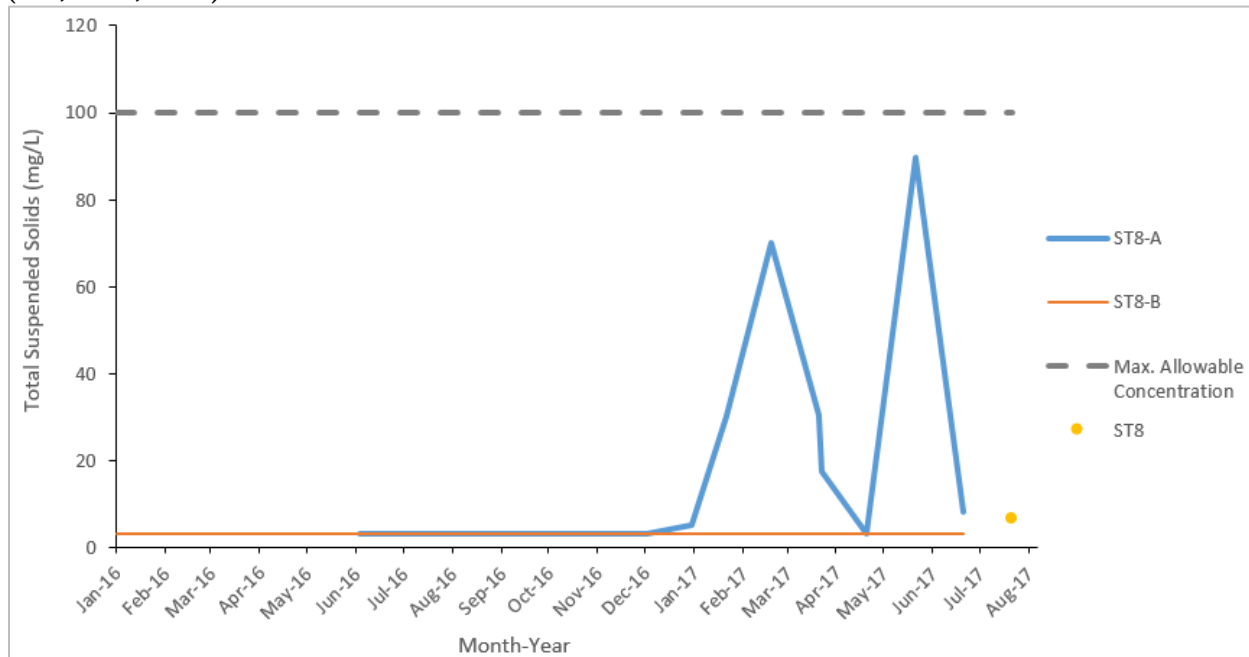
Figure 1 and 2 illustrates effluent quality characteristics for parameters of interest at select monitoring stations.

Figure 1. Biological Oxygen Demand Results Consistently Below Discharge Criteria for Wastewater Treatment Plant (ST8, ST8A, ST8B)



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

Figure 2. Total Suspended Solids Results Consistently Below Discharge Criteria for Wastewater Treatment Plant (ST8, ST8A, 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, August 2017

Facility	Station Code	Discharge Volume (m ³)	Exceedances of Discharge Criteria	Discharge Location	Licence Reference
Sedimentation Pond	ST-1	2,984	0	Tailings Impoundment Area	Part G Item 22
Pollution Control Pond #1	ST-2	26	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	Tundra Discharge 13W 432450 7559600	Part G Item 24 (c, d, g)
Doris Tank Farm	ST-5	0	0	Tundra Discharge 13W 432960 7559270	Part G Item 24 (e, f, g)
Rob Bay 5ML Tank Farm	ST-6a	0	0	Tundra Discharge 13W 432973 7563440	Part G Item 24 (e, f, g)
Rob Bay Three 5ML Tank Farm	ST-6b	0	0	Tundra Discharge 13W 432730 7563200	Part G Item 24 (e, f, g)
Wastewater Treatment Plant, Effluent	ST-8	828	0	Tundra Discharge 13W 432933 7559057	Part G Item 23(b-d)
Wastewater Treatment Plant, Sewage Cake	N/A	7.56	N/A	Tailings Impoundment Area	Part J Item 12 (g)
Reagent and Cyanide Storage Facility Sump	ST-11	0	0	Tailings Impoundment Area	Part G Item 23 (a)
Pollution Control Pond #2	ST-13	0	0	Facility not constructed	Part G Item 22
Mine Water Discharge	TL-12	0	N/A	Tailings Impoundment Area	Schedule J Table 2

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

Table 2. Discharge from TIA to Doris Creek, August 2017

Month	Number of days of discharge	Discharge Volume (m ³)	Exceedances of Discharge Criteria*
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
Annual Cumulative	0	0	0

* 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, August 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	801	0	0	0	0	0	0	0	801
March	925	1	0	0	0	0	32	0	958
April	873	0	2	0	0	0	608	0	1,483
May	892	0	3	0	0	0	512	32	1,439
June	946	0	1	0	0	0	26	838	1,811
July	844	0	7	0	0	0	0	1,356	2,207
August	849	0	0	0	0	0	34	1,784	2,667
Annual Total	6,979	1	28	0	0	0	1,212	4,010	12,230
Annual Allowance	22,995								480,000

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

** Includes industrial uses such as underground drilling, core processing, concrete batching, etc.
August Ice Road Development: 0m³. Cumulative total for Ice Road Development in 2017: 16m³.

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

Month	Reclaim Water (m³) *
January	31,200
February	94,080
March	107,880
April	100,800
May	107,880
June	104,400
July	81,721
August	96,586
Annual Cumulative	717,107

* As per Part J Item 11(d)

Table 5. Waste Rock and Process Volumes, August 2017

Month	Waste Rock Stored on 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)	Volume of Void Space Created Underground (tonnes)	Volume of Void Space Created Underground (m³)
January	24,811	0	2,020	600	0	-	-
February	22,584	1,392	6,174	5,927	247	-	-
March	23,917	5,060	11,177	10,970	207	618,048	220,731
April	23,437	11,226	19,058	17,761	1,297	-162	-58
May	24,341	7,660	20,867	20,418	449	4,269	1,525
June	22,189	4,320	20,662	19,867	796	25,491	9,104
July	19,121	11,960	18,464	17,652	812	-5,711	-2,040
August	8,164	1,380	23,995	23,075	913	27,180	9,707
Cumulative Total	567,531	42,998	122,417	116,270	4,721	669,115	238,969

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

** As per Part J Item 12.

Note: The cumulative total of void space underground is determined as the sum of the initial void space as calculated in March 2017 and void space created each month from mining activities. A negative volume of void space created indicates that a higher volume of waste rock and dry cyanide leach tailings was returned underground compared to the volume of void space created from new mining activities.

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

Month	Minimum Water Level (masl)	Maximum Water Level (masl)	Mean Water Level (masl)	Water Level Change (masl)	Low Action Level Trigger (masl)*
January	21.783	21.833	21.810	0.049	21.425
February	21.804	21.862	21.831	0.058	21.425
March	21.814	21.869	21.837	0.055	21.425
April	21.827	21.864	21.850	0.037	21.425
May	21.845	22.375	21.929	0.530	21.425
June	22.114	22.407	22.235	0.293	21.425
July	21.761	22.067	21.886	0.306	21.425
August	21.708	21.757	21.732	0.049	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 August. 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))

Visual monitoring was conducted during August to evaluate the diversion berm's efficacy of diverting runoff away from the camp pad. The diversion berm was observed to be functioning as per its design purpose.

Incident Reporting

On August 10, 2017, the Nunavut Spill Line was notified via email (spills@gov.nt.ca) of an estimated release of 20L of barren solution containing a concentration of 690ppm of sodium cyanide (13.8 grams) outside the Doris mill building.

A mill employee was hosing the floor with a barren solution line in the concentrate treatment plant area of the mill. The employee did not realize that a pool of the solution was forming behind them. Approximately 20L of the barren solution flowed beyond the threshold of the bay door. The employee's supervisor observed the spillage and immediately directed them to stop hosing and to collect the contaminated material with the use of a skid steer.

The use of the barren solution for this purpose is common practice in this area of the mill in order to clean up leach residue that can accumulate on the floor. As this material contains residual amounts of cyanide, the use of raw water for this purpose is strictly prohibited, as the lower pH has the potential to form hydrogen cyanide gas (HCN) when in contact with the leach residue.

TMAC internally reviewed the incident to identify root cause and any corrective actions. As this activity is common in this area, an impermeable concrete curb has been installed at this door in order to minimize the likelihood of another spill occurrence.

Yours sincerely,



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(416) 628-0216

cc. Eva Paul, Water Resources Officer, INAC

Figure 3. 2AM-DOH-1323 SNP Monitoring Locations

