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November 28, 2018

Licensing
Nunavut Water Board
P.O. Box 119
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Re: October 2018 – 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 CIRNAC.

During the subject period of this report the focus of activities at Doris North was underground and surface 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 5 at the end of this report.

In early October TMAC commenced with the Doris Crown Pillar Recovery activities. These activities included construction of the trench access road, stripping of overburden, and blasting and removal of waste rock and ore. All overburden, waste rock and ore was relocated to the permitted storage pads.

On October 23, 2018 an open drill hole was intersected following an underground development blast in the DCO (Doris Connector). The drill hole was from a 2014 exploration program that was plugged with bentonite clay. It is believed that blast damaged the plug which allowed for a brief inrush of water. The material was removed from the area in order to gain access and plug the hole. The Specific Performance Thresholds as outlined in the Hope Bay Project Ground water Management Plan were not triggered. The Doris Lake water level monitoring data was reviewed soon after the occurrence and no notable drawdown was observed.

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

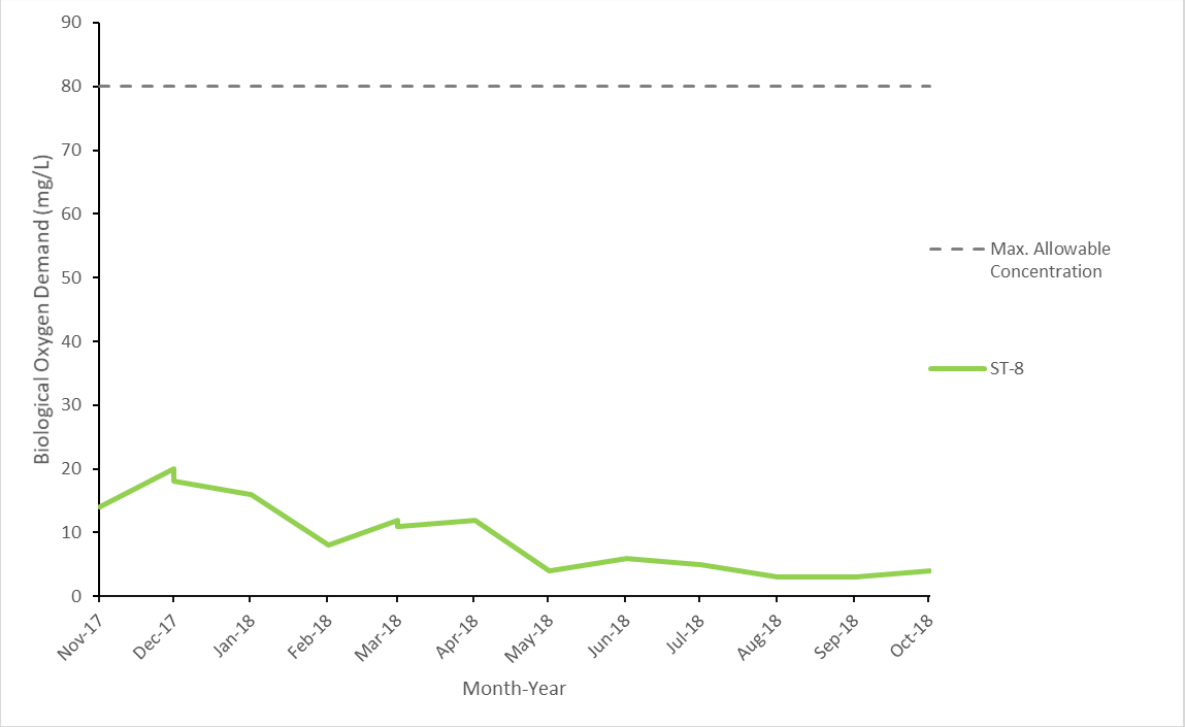
Water quality sampling was conducted in October at monitoring stations identified in Schedule J of the licence (ST-1 through ST-13, TL-1 through TL-12). Water quality samples were not collected for monitoring stations that were inactive during the month being reported (e.g., facilities that had not yet 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. No exceedances of effluent quality limits were observed in any

samples collected this month. Results of all water quality monitoring are provided in Appendix A attached to this report.

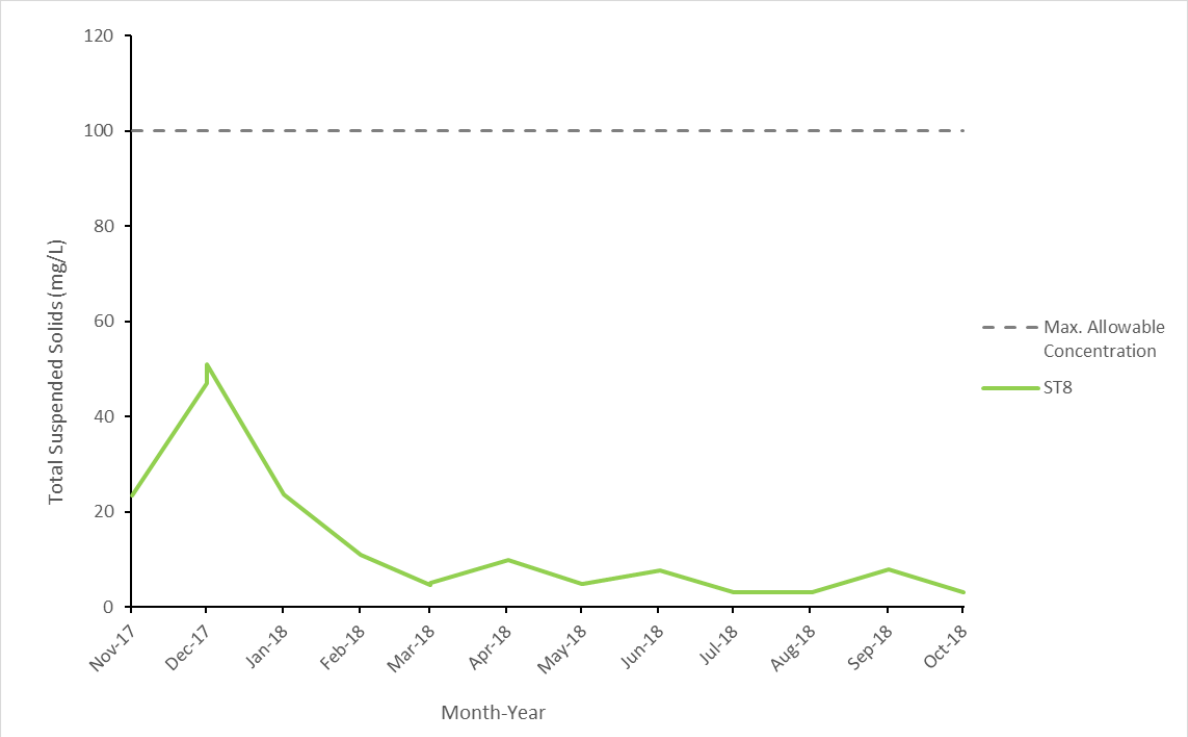
Figure 1 and 2 illustrates effluent quality characteristics for parameters of interest at select monitoring stations.

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



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, October 2018

Facility	Station Code	Discharge Volume (m^3)	Exceedances of Discharge Criteria	Discharge Location	Licence Reference
Sedimentation Pond	ST-1	0	N/A	Tailings Impoundment Area	Schedule J Table 2
Pollution Control Pond #1	ST-2	0	N/A	Tailings Impoundment Area	Schedule J Table 2
Landfill Sump	ST-3	0	0	Facility not constructed	Part G Item 23 (a, b, g)
Landfarm Sump	ST-4	0	0	Tundra Discharge 13W 432450 7559600	Part G Item 23 (c, d, g)
Doris Tank Farm	ST-5	0	0	Tailings Impoundment Area	Part G Item 23 (e, f, g)
Rob Bay 5ML Tank Farm	ST-6a	0	0	Tailings Impoundment Area	Part G Item 23 (e, f, g)
Rob Bay Three 5ML Tank Farm	ST-6b	0	0	Tailings Impoundment Area	Part G Item 23 (e, f, g)
Wastewater Treatment Plant, Effluent	ST-8	1,216	0	Tundra Discharge 13W 432933 7559057	Part G Item 4 (b-d)
Wastewater Treatment Plant, Sewage Sludge	N/A	29.6	N/A	Tailings Impoundment Area	Part J Item 11 (g)
Reagent and Cyanide Storage Facility Sump	ST-11	0	0	Tailings Impoundment Area	Schedule J Table 2
Pollution Control Pond #2	ST-13	0	0	Facility not constructed	Schedule J Table 2
Mine Water Discharge	TL-12	18,940	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.

Note: Mine Water Discharge reported to the Sedimentation Pond in September. Water was pumped from the underground sump to the Sedimentation Pond and to the TIA through the Sedimentation Pond discharge pipeline. Volumes presented for discharge from the Sedimentation Pond include the volume of Mine Water Discharge. The Sedimentation Pond discharge line was shut down on September 18, 2018. At that time, Mine Water Discharge from underground was re-routed through the Mill Tailings Discharge pipeline to the Tailings Impoundment Area.

Table 2. Discharge from TIA to Doris Creek, October 2018

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
September	0	0	0
October	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 from the Tailings Impoundment Area to Doris Creek this month.

Table 3. Water usage, October 2018

Month	Windy Lake (ST-7A)	Doris Lake (ST-7)					Mine Inflow	Total Usage
	Domestic Water* (m^3)	Domestic Water* (m^3)	Surface Exploration (m^3)	Industrial Usage** (m^3)	Dust Suppression (m^3)	Winter Track (m^3)	Industrial Usage ^ (m^3)	
January	1,051	0	0	0	0	119	433	1,603
February	1,277	0	0	34	0	136	0	1,447
March	1,231	0	0	29	0	0	0	1,260
April	1,208	0	0	74	0	0	0	1,282
May	1,224	0	93	46	0	0	0	1,363
June	1,115	0	4	45	669	0	0	1,833
July	1,064	0	0	78	1,863	0	0	3,005
August	1,153	0	0	67	225	0	0	1,445
September	1,144	0	0	114	0	0	0	1,258
October	1,293	0	0	42	0	8	0	1,343
Annual Total	11,760	0	97	529	2,757	263	433	15,839
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.

^ Discharge of groundwater inflow from mine development in the Doris Connector zone to the Tailings Impoundment Area began in February. Mine water inflow is no longer being recycled into underground sumps for use in mining activities. The volume of inflow discharged to the TIA is presented in Table 1 above.

Table 4. Volume of Reclaim Water from the TIA, October 2018

Month	Reclaim Water (m^3) *
January	82,577
February	69,744
March	78,864
April	74,638
May	76,444
June	69,120
July	66,699
August	71,186
September	65,833
October	64,395
Annual Cumulative	**719,499**

* As per Part J Item 11(d)
Numbers rounded to the nearest cubic meter.

Table 5. Waste Rock and Process Volumes, October 2018

Month	Waste Rock Management					Underground Void Space			Ore Processing and Tailings Management		
	Produced from Mining Activity (tonnes)*	Backfilled Directly to Underground Stopes (tonnes)*	Returned Underground from Temporary Waste Rock Pile* (tonnes)	Moved to Temporary Waste Rock Pile (tonnes)*	Cumulative on Temporary Waste Rock Pile (tonnes)	Volume Created from Mining Activities (tonnes)	Cumulative Volume Available for Backfill (tonnes)	Cumulative Volume Available for Backfill (m^3)	Quantity of Ore Processed** (tonnes)	Total Dry Tailings Placed in TIA** (tonnes)	Total Dry Cyanide Leach Tailings Placed Underground** (tonnes)
December Balance	-	-	-	-	542,884	-	774,674	277,762	-	-	-
January	22,951	25,584	0	0	542,884	16,558	791,232	283,676	25,219	23,916	1,304
February	21,415	20,308	0	1,107	543,991	22,438	813,670	291,689	27,036	25,615	1,434
March	27,092	20,360	0	6,732	550,723	24,236	837,906	300,345	31,375	30,366	1,008
April	25,068	17,536	0	7,532	558,255	22,069	859,975	308,227	33,619	32,209	1,403
May	34,829	9,392	0	25,437	583,692	40,314	900,289	322,625	28,869	27,692	1,150
June	26,985	16,856	0	10,129	593,821	31,176	931,465	333,759	25,826	24,527	1,296
July	25,330	17,480	0	7,850	601,671	28,043	959,508	343,774	31,843	30,030	1,453
August	24,420	22,648	0	1,772	603,443	19,571	979,079	350,764	45,276	42,973	2,300
September	29,216	22,424	0	6,792	610,235	34,823	1,013,902	363,201	50,645	48,426	2,219
October	97,090	25,624	0	71,446	681,681	211,387	1,225,289	438,696	58,885	57,379	1,583
Cumulative Total	334,396	198,212	0	138,797	681,681	450,615	1,225,289	438,696	358,593	343,133	15,150

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

** As per Part J Item 12.

Note: Void space created from mining activities 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 in a month 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. The significant increase in waste rock production and the associated void space can be attributed to the Doris Crown Pillar Recovery activities that commended in October 2018.

Table 7. Doris Lake Water Level (ST-12), October 2018

Month	Minimum Water Level (masl)	Maximum Water Level (masl)	Mean Water Level (masl)	Monthly Water Level Variation (masl)**	Comparison of Mean Water Level from Month to Month (masl)^	Low Action Level Trigger (masl)*
January	21.672	21.689	21.679	0.017	0.003	21.346
February	21.674	21.689	21.681	0.015	0.002	21.346
March	21.681	21.694	21.686	0.013	0.005	21.346
April	21.680	21.692	21.687	0.012	0.001	21.346
May	21.703	21.711	21.707	0.008	0.020	21.346
June	21.709	22.389	22.073	0.680	0.366	21.346
July	21.902	22.244	22.063	0.342	-0.010	21.346
August	21.815	21.926	21.861	0.111	-0.202	21.346
September	21.755	21.781	21.764	0.026	-0.097	21.347
October	21.704	21.770	21.739	0.066	-0.025	21.347

* Low action level trigger is relative to the average water level value (September 10-30, 2018) measured in Doris Lake. Low action level trigger (-0.42 m) outlined in Section 5.4 of the Doris Aquatic Effects Monitoring Plan, September 2016.

** Monthly Water Level Variation is calculated as the difference between the Maximum Water Level and the Minimum Water Level measured during the month.

^ Comparison of the change in water level from month to month. This value is calculated by subtracting the Mean Water Level of the current month from the Mean Water Level of the previous month (e.g. February Mean Water level - January Mean Water level). A positive value from this calculation indicates a rise in water level since the previous month; a negative value from this calculation indicates a drop in water level since the previous month.

Note: Water level surveys were performed in June to calibrate the two pressure transducer stations installed in Doris Lake. Based on these surveys there was an adjustment of +2.0cm to the constant added to the data to determine the water elevation. This has resulted in a 2cm step increase between the data from April and May.

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 October. 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 2018.

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 October 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

Spill #18-430 – On October 19, 2018 an operator was preparing to use a reach stacker to move a sea-can container from the upper laydown area to the main camp pad. During the pre-operational check of the equipment, the operator identified a pinhole leak in the coolant hose line. The operator contacted the mechanical shop to notify of the leak and a work order was generated to complete the repairs on the hose line.

The operator continued to use the reach stacker to complete the sea-can move and was then going to take the reach stacker to the mechanical shop when a larger hole formed in the hose line. A spill of 8L of ethylene glycol 60-40 coolant was released to the snow covered road surface.

Further investigation by the mechanics determined the hole in the hose line was a result of normal wear and tear on the equipment. Preventative maintenance is conducted on the reach stacker after every 500 operating hours and includes checks of all hose lines and hose clamps. Worn hose lines are replaced if integrity issues are identified. The preventative maintenance had been conducted within the recommended schedule for this equipment at the time of the spill.

Spill pads were placed beneath the leak to reduce the amount of spill contacting the ground surface. Mechanics were called to the scene of the spill and patched the coolant line to stop the leak. The reach stacker was then taken to the mechanical shop to replace the hose line. Contaminated materials were removed from the surface of the road (spill pads, snow and crush) and taken to the waste management facility to be stored for offsite disposal. Please refer to photos 1 through 4 showing the damaged hose line, and the spill location prior to and after clean-up.

TMAC internally reviewed the incident and identified the following corrective actions in order to reduce the likelihood of a reoccurrence:

- Continue performing pre-operational checks on all equipment prior to use to

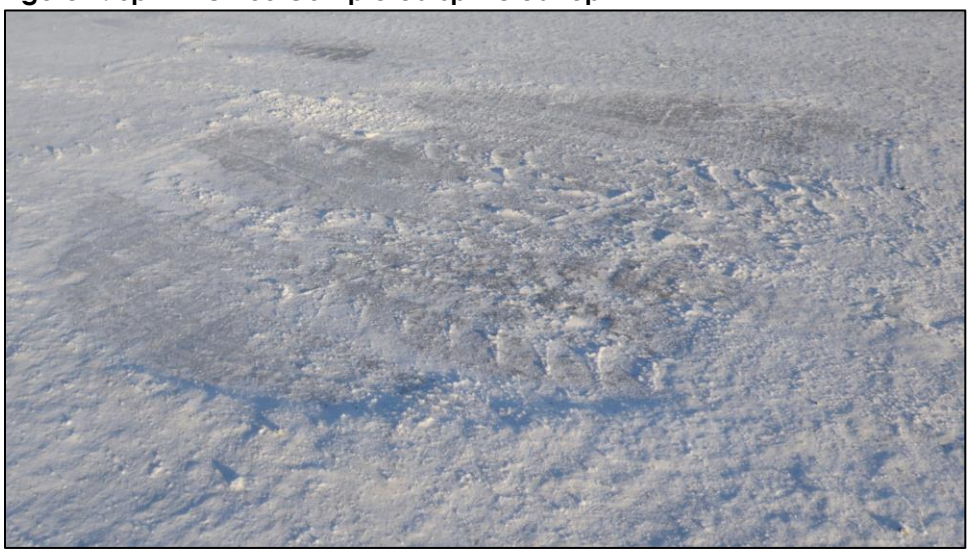
identify potential issues prior to using the equipment;

- If an issue is identified during the pre-operational check, use alternative equipment if available to conduct tasks until repairs can be completed; and
- Continue performing preventative maintenance programs on all equipment at the recommended interval (every 500 operating hours for the reach stacker).

Refer to Figures 3 through 4 below documenting the spill location, contamination area as well as pre and post cleanup.

Figure 3. Spill #18-430 contamination area

Figure 4. Spill #18-430 Completed spill cleanup



Should there be any questions regarding this monthly report, please contact enviro@tmacresources.com.

Yours sincerely,

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cc. Jeremy Fraser, Water Resources Officer, CIRNAC

Figure 5. 2AM-DOH-1323 SNP Monitoring Locations