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

## Re: September 2011 - Monthly Monitoring Report for Water Licence 2AM-DOH0713

Following is the monthly report for September 2011 as required under the Doris North Type A Water Licence No. 2AM-DOH0713. The licence was issued on September 19, 2007 and will expire on September 30, 2013. The water licence is specific to Mining and Milling and associated uses and water usage shall not exceed 480,000 cubic meters (m³) annually.

This monthly report provides information on:

- Part D (Conditions Applying to Construction) Item 19;
- Part E (Conditions applying to Water Use) Item 1;
- Part G (Conditions Applying to Waste Management and Waste Management Plans) Item 3 and 22 (e);
- Part H (Conditions Applying to Modifications); and
- Part J (Conditions Applying to General and Aquatic Effects Monitoring) Items 12 and 14

The report also contains the relevant monitoring requirements as set out in Schedule J of the licence, plus additional requirements from INAC.

Other conditions stipulated in the licence refer specifically to mining and milling processes for which the facilities have not yet been constructed. As these facilities are constructed and activities commence, the required monitoring programs will be implemented and reported on.

## 1. Part D: Conditions Applying to Construction

## a. Item 7. Construction Monitoring

Construction monitoring is being undertaken and documented. A summary of this monitoring will be submitted with the annual Construction Monitoring report.

## b. Item 19. Surface Runoff Effluent Quality Limits

Surface runoff from construction was sampled by SRK as part of the Waste Rock and Ore, and Quarry Monitoring Management Plans. Results will be included in the annual report.

## 2. Part E: Item 1. Conditions Applying to Water Use

## a. Water Usage

Water was used for domestic camp use, underground mining and drilling, portable wash cars, all-weather road dust suppression, construction, and drilling. Total water usage is reported in Table 1.

Parameters	Water Use
Water Source	Doris Lake
Geographical Coordinates	On file
Annual Cumulative	26 219 9 m <sup>3</sup>

1,101.39 m<sup>3</sup>

 $480,000 \text{ m}^3$ 

Table 1: Water Usage for Doris North (m³), September 2011

## b. Water Quality Monitoring: Schedule J and Special Requirements

Monthly Cumulative

2AM-DOH0713 Permitted Water

Volume (Total Annual)

Monthly compliance samples, in accordance with Schedule J requirements of the licence, were taken from monitoring station ST-7 on September 18, 2011. September monitoring results are provided in Table 2.

Table 2. Monthly Compliance Sample Results for SNP Monitoring Station ST-7 in mg/L, September 2011

Parameter/SNP Sites	ST-7 <sup>1</sup> (mg/L)
ALS Lab Reference #	L1060574-1
Sample Date/Time	Sep 18/11 @ 20:15
BOD	<2.0
Total Cyanide <sup>2</sup>	-
Free Cyanide <sup>2</sup>	-
Fecal Coliforms	<1 CFU/100mL
Total Oil and Grease	<1.0
pН	7.70 (units)
TSS	6.0
Ammonia-N <sup>2</sup>	-
Nitrate-N	< 0.050
Nitrite-N	< 0.050
Orthophosphate-P <sup>2</sup>	-
Total Phosphate (as Tot P)	0.025
Total Aluminum	0.038
Total Arsenic	< 0.00040
Total Cadmium	< 0.000050
Total Copper	0.0036
Total Chromium	< 0.0050
Total Iron	0.119
Total Mercury	< 0.00010
Total Molybdenum	< 0.0050
Total Nickel	< 0.0020
Total Lead	0.00011
Total Selenium	< 0.00040
Total Silver	< 0.00010
Total Thallium	< 0.00010
Total Zinc	< 0.0040
Additional Parameters	
ALS Lab Reference #	L1055041-1
Sample Date/Time	Sept 5/11 @ 17:38
Blue-green Algae	125,000 cells/mL

<sup>1</sup>No specified water quality criteria; <sup>2</sup>Analysis for Total Ammonia-N, Orthophosphate-P, and Total and Free Cyanide was inadvertently omitted from the analytical requests for ST-7 in August and September due to an administrative error.

# 3. Part G: Item 3(b) Conditions Applying to Waste Management and Waste Management Plans.

Sampling point ST-8 is located within the Doris Camp sewage treatment plant, which is located directly east of the main building complex. Effluent samples were collected from two separate taps, ST-8A and ST-8B (formerly ST-8#1 and ST-8#2 respectively), located on the discharge lines after the UV disinfection system from the tandem sewage treatment plants. The effluent at both stations was in compliance for all parameters (Table 3). A notification to move the ST-8 discharge location was provided to the NWB on June 19, 2011 and the new discharge location is anticipated to be in use in November. The switch to the new discharge line was delayed due to an issue with the pump required for moving the effluent through the longer line. Data from sampling at ST-8 is reported in Table 3.

Parameter/SNP Sites	ST-8A	ST-8B	<b>Doris: 2AM-DOH0713</b> (Part G: Item 3 (b))		
ALS Lab Reference #	L1060574-2	L1060574-3	Maximum Average Concentration	Maximum Allowable Grab Sample Concentration	
Sample Date/Time	Sept 19/11 09:30	Sept 19/11 09:30			
$BOD_5$	13.9	6.1	80 mg/L	80 mg/L	
TSS (mg/L)	<3.0	<3.0	100 mg/L	100 mg/L	
Fecal Coliform	<1	<1	10,000 CFU/100mL	10,000 CFU/100mL	
pH (pH unit)	7.54	7.60	6-9	9	
Oil & Grease (Visible Sheen)	No Visible Sheen	No Visible Sheen	No Visible Sheen	No Visible Sheen	
Oil & Grease (mg/L)	<1.0	<1.0	5	10	

Table 3: Water Quality Data Summary for Monitoring Station ST-8A and ST-8B, September 2011

Station ST-9 was sampled during the month of September (Table 4). HBML anticipates that ST-9 will not need to be relocated as a result of the relocation of the ST-8 tundra discharge point.

Parameter/SNP Sites	ST-9*
ALS Lab Reference #	L1060574-4
Sample Date/Time	Sept 19/10 @ 10:20
$BOD_5$	<2.0
TSS (mg/L)	4.0
Fecal Coliform	18
pH (pH unit)	7.52
Oil & Grease (Visibility)	No visible sheen
Oil & Grease (mg/L)	<1.0

Table 4: Water Quality Data Summary for Monitoring Station ST-9, September 2011

# 4. Part G: Item 21 (a) Conditions Applying to Waste Management and Waste Management Plans.

The Sedimentation Pond, ST-1, was not discharged during September, but further to correspondence forwarded Sept 2, 2011 pertaining to a planned discharge of treated water from ST-1 in August, a non-compliant water discharge occurred between Aug 22 and Sept 1, 2011. Daily water samples were collected from the post-treatment holding tank located in the sedimentation pond and were sent to ALS Laboratory for rush analysis. Although the samples were sent as a rush, HBML only began to receive data for the daily samples on September 1, 2011. The sample results indicated that ammonia was above 4.0 mg/L discharge criteria for each daily grab sample between August 22 and Sept 1, 2011 and above the 0.02 mg/L discharge

<sup>\*</sup>No specified water quality criteria

criteria for each daily grab sample for zinc (Table 5). Prior to discharge the ammonia concentration was 3.97 mg/L, and zinc was below detection, which was subsequently approved for discharge by the Inspector.

Date	Lab Work Order	Ammonia (mg/L)	Zinc (mg/L)
22-Aug	L1049760	6.23	< 0.0020
23-Aug	L1049760	6.85	0.0365
24-Aug	L1050037	7.54	0.126
25-Aug	L1050037	7.83	0.127
26-Aug	L1050037	8.11	0.164
27-Aug	L1051255	9.39	0.237
28-Aug	L1051255	9.83	0.266
29-Aug	L1051255	10.9	0.222
30-Aug	L1053184	9.05	0.117
31-Aug	L1053184	9.70	0.144
01-Sept	L1053184	10.1	0.102

Table 5: Water Quality Data Summary for Monitoring Station ST-1, September 2011

HBML took immediate action to shut down the water treatment system and discharge pumps upon receipt of these non-compliant results. In total, 4130.56 m³ of water was discharged between August 22 and September 1, 2011.

# 5. Part G: Item 22 (e) Conditions Applying to Waste Management and Waste Management Plans.

During the month of September, water was discharged from monitoring station ST-5 (Doris Bulk Fuel Storage Facility) and ST-6a (Roberts Bay 5M Litre Fuel Storage Facility). This water was used for dust suppression. A total of 123 m³ was removed from ST-5 and 70 m³ was removed from ST-6a.

Table 1. Results of Monitoring Program Station Sampling for ST-5 (Doris Plant Site Fuel Storage Facility) and ST-6a (Roberts Bay Fuel Storage Facility)

Parameters	ST-5	ST-6a	Hope Bay: 2AM-DOH0713
Water Source	Doris Plant Site Fuel	Roberts Bay Fuel Storage	Monitoring Program Station
	Storage and Containment	Facility	Description
	Area		(avg. conc or any grab)
ALS Lab Reference #	L1010252-1	L1010252-1	Compliance Values
Field Sample Details			Part G: Item 22(e)
Sample Date/Time	Sept 11 07:00	Sept 11 07:00	
pН	8.35	8.24	6.0-9.0
TSS	<3.0	<3.0	15 mg/L or 30 mg/L
Oil & Grease	<1.0	<1.0	5 mg/L or 10 mg/L
Benzene	< 0.00050	< 0.00050	0.37 mg/L
Toluene	< 0.00050	< 0.00050	0.002 mg/L
Ethylbenzene	< 0.00050	< 0.00050	0.090 mg/L
Lead	< 0.00010	0.00011	0.01 mg/L or 0.02 mg/L

#### Part G: Conditions applying to Waste Management and Waste Management Plans (Item 3b)

## a. Part G: Item 3e (Treated Sewage Effluent Release in cubic meters)

Table 6 shows the volume of treated effluent released from the Doris Membrane Plant at SNP ST-8 and the volume of sludge removed and incinerated.

Table 6: Treated Sewage Effluent released in cubic meters (m³) through Doris Membrane Plant (ST-8) and total sludge volume removed, September 2011

Parameters	Effluent Released ST-8 (m <sup>3</sup> )	Sludge Volume (m <sup>3</sup> )
Annual Cumulative	7272	23.34
Monthly Cumulative	903	2.49

## 6. Tailing Impoundment Area Monitoring

a. Part G: Conditions applying to Waste Management and Waste Management Plans.

Item 26: TL-4 discharge criteria

Item 27: TL-1 and TL-4 toxicity testing (as per Part J, Item 8)

Item 28: TL-3 water quality criteria

Item 30: TL-4 discharge volume allowance

b. Part J: Conditions Applying to General and Aquatics Effects Monitoring

Item 2: TL-2 continuous flow monitoring

Item 8: TL-1 and TL-4 toxicity testing

c. Schedule J: SNP Monitoring parameters and frequencies

The Tail Lake north dam was partially completed between January and April 2011. To reduce the water level of the lake, prior to turning the lake into the Tailings Impoundment area (TIA), HBML dewatered the lake between August and September 2011. Discharge rate was determined based on the licence requirements, and although there has not been any deposition of project-related water or tailing into Tail Lake, water sampling was completed following the licence requirements as closely as possible. Sample results and discharge volumes for water discharged from the TIA at monitoring stations TL-1, TL-2, TL-3, and TL-4 and TL-10 between July and September 2011 are being compiled in a separate document.

## 7. Part J: Conditions Applying to General and Aquatics Effects Monitoring

a. Part J: Item 12d Tonnages of Waste Rock Stored on the Temporary Waste Rock Pad

Tonnages of waste rock material removed from underground and placed on the Temporary Waste Rock Pad to date are detailed in Table 7.

Table 7: Volume (metric tons) of waste rock stored on the Temporary Waste Rock Pad, September 2011

Parameters	Waste Rock on Pad (tonnes)
Waste Stockpile Mass as of Month	129,669
Prior	
Mass Added this Month	16,253
Mass Removed this Month	0
Total Tonnage	145,922

## a. Part J: Item 12g Tail Lake Ice Thickness

Tail Lake did not have ice cover in September. Ice thickness will be documented during periods when ice is measurable.

## b. Part J: Item 14 Thermal Monitoring Program

Thermistor monitoring undertaken during the month of September is provided in Table 8. Only stations that were operational are reported. Some thermistors do not appear to be working. HBML is in the process of verifying which thermistors are working. The complete list of active thermistors on the Hope Bay Belt will be reported in future SNP reports when the verification process is complete.

Table 8: Temperature Readings from Thermistor Monitoring, September 2011

Drill Hole String			Date of	CHANNEL (Degrees Celsius)							
Number/ Station	Serial Number	Location	Reading	1	2	3	4	5	6	7	8
SRK-14	690007	Tail Lake NW	Sept 13/11	0.2	-1.6	-3.8	-6.4	-8.1	-8.6		
SRK-22	690003	Airstrip	Sept 13/11	-1.8	-4.3	-5.7	-6.6	-7.3	-7.6		
SRK-24	690001	Quarry 2	Sept 18/11	-0.9	-3.8	-5.4	-6.5	-7.1	-7.2		
SRK-32	690010	Tail Lake South	Sept 18/11	0.1	-2.9	-7.9	-7.9	-8.1	-8.1		
SRK-38	TS0015	Tail Lake NW	Sept 13/11	5.7	1	-8.2	-8.1	-8.1	-8	-7.9	-7.9
SRK-39	TS0011	Tail Lake SW	Sept 13/11	-	-	-	-7.1	-	-	-	-
SRK-50	TS1618	Doris Lake NW	Sept18/11	02	-4.1	-6.7	-	-	-	-	-
SRK-53	TS1625	Tail Lake Shore W	Sept 13/11	-0.4	-1.8	-4.1	-5.8	-6	-6		
SRK-57	TS1623	Tail Lake Shore W	Sept 13/11	6.7	-	-	-4.4	-6.3	-7.2		
SRK-58	TS1622	Tail Lake Shore E	Sept 13/11	-0.7	-4.7	-6.6	-7.3	-6.8	-		
SRK-JT1-09	TS2667	Roberts Bay Jetty	Sept 5/11	6.70	6.56	6.32	4.51	2.25	-1.34	-3.54	-
SRK-JT2-09	TS2668	Roberts Bay Jetty	Sept 5/11	-	-	-	-	-	-	-5.01	-
29		North Dam/Tail Lake	Sept 14/11	-1.0							
24/32		North Dam/Tail Lake	Sept 14/11	-1.2							
30		North Dam/Tail Lake	Sept 14/11	-1.4							
25		North Dam/Tail Lake	Sept 14/11	-1.9							
31		North Dam/Tail Lake	Sept 14/11	-0.6							
27/52		North Dam/Tail Lake	Sept 14/11	-1.5							
34		North Dam/Tail Lake	Sept 14/11	-1.0							
26		North Dam/Tail Lake	Sept 14/11	-1.4							
35		North Dam/Tail Lake	Sept 14/11	-0.6							

# 8. Environmental Incident Reporting

There were no environmental incidents in September.

Should there be any questions regarding the monthly report for September 2011, please contact Chris Hanks, VP Environmental Affairs for Hope Bay Mining Limited at (720)917-4489 or <a href="Chris.Hanks@Newmont.com">Chris.Hanks@Newmont.com</a>.

Yours sincerely,

## for

## Chris Hanks

VP Environmental Affairs Hope Bay Mining Limited