

Hope Bay Mining Ltd.
Suite 300
889 Harbourside Drive
North Vancouver, BC
V7P 3S1
Phone 604 985 - 2572
Facsimile 604 980 - 0731
www.newmont.com

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Technical Advisor – Mining Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

## Re: September 2008 –Monthly Monitoring Report for Water License 2BB-BOS0712

Following is the monthly report for September 2008 as required under Water license 2BB-BOS0712.

# 1. MONITORING PROGRAM

During the month of September 2008, water samples were collected four times at monitoring stations BOS-1, BOS-3 and BOS-4 for due diligence purposes. Under the current NWB Water Use Permit 2BB-BOS0712, HBML is only obligated to collect monthly samples when Boston Camp is operational. The analytical data for the month of September in presented in Table 2. Table 1 provides a summary of dates the samples were taken and the corresponding external laboratory analytical Certificate of Analysis (CoA). HBML is also only required to take and report on one sample per month from BOS-3. The company is currently taking weekly samples to help tune the operation of the STP. To be transparent, HBML is reporting on all of the samples taken so that the NWB and INAC have the same data available to them being used by the company.

HBML uses an external certified laboratory to carryout all the analyses for this report. Therefore, HBML uses the QAQC data produced by the ALS laboratory to determine the accuracy and precision of results in this report.

Station Number	Sampling Date	ALS Lab Reference # (CoA)	Comment and Lat./ Long. coordinates
BOS-1	Sept 3/08, Sept 8/08, Sept 15/08, Sept 29/08	677902, 679441, 682590, 679191, 681523, 685305, 688977, 691066	Spyder Lake Water Intake
BOS-3	Sept 3/08, Sept 8/08, Sept 15/08, Sept 29/08	677902, 679441, 682590, 679191, 681523, 685305, 688977, 691066	End of Pipe
BOS-4	Sept 3/08, Sept 8/08, Sept 15/08, Sept 29/08	677902, 679441, 682590, 679191, 681523, 685305, 688977, 691066	RBC effluent meets Spyder Lake

Table 1: SNP Water sampling summary, September 2008

## 2. RESULTS

The summary for the water samples collected at sampling locations indentified in the water use permit requirement for the Boston Project are summarized in Table 2. Non-compliant values are highlighted in bold font. HBML for due diligence purposes analyses for total coliforms and *E. coli* at all the sampling locations associated with water use and treatment.

For BOS-1, BOS-3 and BOS-4, though requested, Oil and Grease visibility was not reported by the lab, but an Oil and Grease value was reported in mg/L. This will be followed up with the external laboratory.

HBML was not in compliance for parameters; biological oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), and faecal coliforms at the treated sewage effluent discharge point (SNP BOS-3) during the month of

September. On-going issues with the capacity of the STP continue to frustrate efforts to bring the plant into compliance. A positive trend was observed at the beginning of the month due to increased sludge management, with reductions occurring in both BOD and TSS.

The non-compliance of regulatory requirement at SNP BOS-3 is a major concern, and HBML has made efforts to remedy this challenge. A regular maintenance program has been initiated in the later half of the year to identify the root causes of the non-compliances incidences at the Boston's RBC Unit.

Several options were identified and this included: (i) reducing the camp loading to the RBC Unit, to 45 individuals (ii) implementing an improved preventive maintenance plan including more regularly pumping of sludge, (iii) treatment of the sludge in the Doris North STP and (iv) operational changes to the system to help improve the quality of the treated grey water effluent to the natural environment. Details of the proposed operational changes were previously provided to the NWB Director of Technical Services and the INAC Water Resources Officer on August 20, 2008 and on September 29, 2008. These operational changes were completed on November 5, 2008.

HBML is committed to complying with all its legal requirements under WUP 2BB-BOS0712. HBML will continue to look for opportunities and proven engineering solutions to continuously improve on our environmental performances to achieve compliance at the Boston Camp STP.

Table 2: Analytical Sampling Results for BOS-1 Raw Water Intake, BOS-3 SDF, and BOS-4 Treated Effluent Point of Entry into Spyder Lake for Sept 2008

Parameter	BOS-1	BOS-3	BOS-4	Boston Camp: 2BB-BOS0712
ALS Lab Reference #	L677902-1/L679191-6	L677902-2/L679191-7	L677902-3/L679191-8	Compliance Values
Field Sample Details	BOS-1	BOS-3	BOS-4	Part D: Item 10
Sample Date/Time	Sept 03/08 09:15 am	Sept 03/08 09:45 am	Sept 03/08 09:30 am	Part J: Item 2
Biochemical Oxygen Demand (BOD <sub>5</sub> )	<2	383	<2	80 mg/L
Total Suspended Solids (mg/L)	<3	237	4	100 mg/L
Fecal Coliform	1	>200	3	10,000 mL CFU/100 mL
Total Coliform	613	>2,419.6	488	-
Escherichia coli (E. coli)	1	>2,419.6	7	-
pH (pH unit)	7.2	7.6	6.8	Between 6 and 9
Oil & Grease (Visibility)	NVS	NVS	NVS	No visible sheen (NVS)
ALS Lab Reference #	L679441-6/L681523-24	L679441-7/L681523-25	L679441-8/L681523-26	Compliance Values
Field Sample Details	BOS-1	BOS-2	BOS-3	Part D: Item 10
Sample Date/Time	Sept 08/08 @ 9:45 am	Sept 08/08 @ 10:00 am	Sept 08/08 @ 10:45 am	Part J: Item 2
Biochemical Oxygen Demand (BOD <sub>5</sub> )	4	360	3	80 mg/L
Total Suspended Solids (mg/L)	3	184	47	100 mg/L
Fecal Coliform	1	2000000	3	10,000 mL CFU/100 mL
Total Coliform	196	>2,419.6	387	-
Escherichia coli (E. coli)	3	>2,419.6	5	-
pH (pH unit)	7.2	7.8	6.9	Between 6 and 9
Oil & Grease (Visibility)	NVS	NVS	NVS	No visible sheen (NVS)
ALS Lab Reference #	L685305-4/L682590-1	L685305-5/ L682590-2	L685305-6/ L682590-3	Compliance Values
Field Sample Details	BOS-1	BOS-3	BOS-4	Part D: Item 10
Sample Date/Time	Sept 15/08 no time	Sept 15/08 no time	Sept 15/08 no time	Part J: Item 2
Biochemical Oxygen Demand (BOD <sub>5</sub> )	<2	179	<2	80 mg/L
Total Suspended Solids (mg/L)	<3	62	14	100 mg/L
Fecal Coliform	<1	4,600,000	<1	10,000 mL CFU/100 mL
Total Coliform	162	>2,419.6	179	-
Escherichia coli (E. coli)	<1	>2,419.6	<1	-
pH (pH unit)	7.0	7.6	6.9	Between 6 and 9
Oil & Grease (Visibility)	<1	45	<1	15 mg/L <sup>1</sup> & No visible sheen (NVS)

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<sup>&</sup>lt;sup>1</sup> No requirement under Condition Part D Item 10 for reporting a numeric value. HBML chooses to apply Part D Item 17 as no visibility test was requested for this sample.

Table 2 Continued: Analytical Sampling Results for BOS-1 Raw Water Intake, BOS-3 SDF, and BOS-4 Treated Effluent Point of Entry into Spyder Lake for Sept 2008

Parameter	BOS-1	BOS-3	BOS-4	Boston Camp: 2BB-BOS0712
ALS Lab Reference #	L688977-1/L691066-7	L688977-3/ L691066-8	L688977-3/ L691066-8	Compliance Values
Field Sample Details	BOS-1	BOS-3	BOS-4	Part D: Item 10
Sample Date/Time	Sept 29/08 06:00 am	Sept 29/08 06:15 am	Sept 29/08 06:45 am	Part J: Item 2
Biochemical Oxygen Demand (BOD <sub>5</sub> )	4	413	3	80 mg/L
Total Suspended Solids (mg/L)	<3	67	6	100 mg/L
Fecal Coliform	<1	9000000	<1	10,000 mL CFU/100 mL
Total Coliform	14	>2,419.6	26	-
Escherichia coli (E. coli)	1	>2,419.6	<1	-
pH (pH unit)	7.3	7.7	7.0	Between 6 and 9
Oil & Grease (Visibility)	<1	25	<1	15 mg/L & No visible sheen (NVS)

#### 3. CAMP WATER USAGE - BOS-1

During the month of September 2008, Windy camp was in operation for the whole month. The water extraction pump is located at Spyder Lake (BOS-1). Table 3 provides the water volume usage as required under Part J, Item 6 of the WUP number 2BB-BOS0712. Water consumptions rate are within compliance values.

Table 3: Water usage in cubic meters (m<sup>3</sup>) for Boston Camp (BOS-1), September 2008

Parameters	BOS-1	Remarks	2BB-BOS0712
Water Source	Boston Camp	Part J: Item 6	Compliance Values
Monthly Cumulative	169.54	3,100	3,100 m <sup>3</sup> monthly
Volume Average (Daily)	5.65	100	100 m <sup>3</sup> daily
Median	5.65	100	100 m <sup>3</sup> daily
Maximum	16.84	100	100 m <sup>3</sup> daily
Minimum	1.75	100	100 m <sup>3</sup> daily

### 4. TREATED GREY WATER EFFLUENT – BOS-3

Boston Camp treated sewage effluent flow meter was installed in late September and became operational in early October. There were no effluent flow volumes reported for September

Table 4: Treated Sewage Effluent release in cubic meters (m<sup>3</sup>) for Boston Camp (BOS-3), September 2008

Parameters	BOS-3	
Water Source	Boston Camp	
Monthly Cumulative	No reading	
Volume Average (Daily)	No reading	
Median	No reading	
Maximum	No reading	
Minimum	No reading	

## 5. DRILLING ACTIVITIES WATER USAGE

Drill rigs 1480 and 1483 were active southwest of Boston for 12 drill rig days. Water sources were drawn from southeast portion of Spyder Lake. Table 5 provides the recorded water volumes as required under Part J, Item 6 for the Boston Camp water license number 2BB-BOS0712. Total water usage for both operating drills was well below the licence compliance values.

Table 5: Drill rigs water usage (m<sup>3</sup>) for September 2008

Parameters	Rig 1480	1483	Daily Compliance	2BB-BOS0712
Water Source	Spyder Lake	Spyder Lake	Part J: Item 6	Compliance Values
Drilling Days	6	6	-	-
Monthly Cumulative	34.46	22.74	57.2	3,100 m <sup>3</sup> monthly
Vol. Average (Daily)	5.74	4.14	9.88	100 m <sup>3</sup> daily
Median	4.43	3.79	8.22	100 m <sup>3</sup> daily
Maximum	8.79	5.56	14.35	100 m <sup>3</sup> daily
Minimum	3.93	0.73	4.66	100 m <sup>3</sup> daily

### 6. HAZARDOUS WASTE MANAGEMENT

During the month of September, 20 barrels of sludge was removed from the Boston STP and transferred to the Doris membrane plant for treatment.

#### 7. ENVIRONMENTAL INCIDENTS

There were two environmental incidents reported at Boston Camp in September 2008.

- 1. Weekly sampling at SNP BOS-3 showed elevated concentrations of TSS, faecal coliform and BOD<sub>5</sub> in the treated sewage effluent.
- 2. Sewage effluent volumes not recorded due to lack of meter.

Should there be any questions regarding the monthly report for September 2008, **please** contact Matt Kawei, Senior Environmental Coordinator or Jill Turk, Environmental Technican, Hope Bay Mining Limited on phone number: 1-604-759-2292 or email: <a href="Matthew.Kawei@Newmont.com"><u>Matthew.Kawei@Newmont.com</u></a> or Jill.Turk@Newmont.com

Yours sincerely,

Matt Kawei

Senior Environmental Coordinator Hope Bay Mining Limited