

January 19, 2012

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

Re: 2AM-DOH0713 Tail Lake Discharge Monitoring Summary.

On July 19th, 2011 Hope Bay Mining Ltd (HBML) provided notification to the Nunavut Water Board and Aboriginal Affairs and Northern Development Canada (AANDC) of the intent to reduce the water level in Tail Lake; the future Doris North tailings impoundment area (TIA). The dewatering was undertaken to preserve the structural integrity of the partially constructed North Dam, the construction of which had caused lake levels to rise in spring of 2011. HBML had not deposited tailings or other mining-related substances in Tail Lake to date.

Ian Rumbolt, Regional Coordinator from AANDC responded to the July 19th notification, indicating that AANDC did not have any issues with the request, providing that the conditions of the water licence relating to TIA discharges were adhered to as closely as possible.

This supplemental report provides information on the dewatering monitoring in compliance with the applicable sections of Parts G (Conditions to Waste Management and Waste Management Plans) and Part J (Conditions Applying to General and Aquatic Effects Monitoring) of the water licence. Not all Schedule J listed samples were collected. This was because 1. The water was background Tail Lake water without any tailings or wastewater deposited, 2, there were tight timelines in starting the dewatering while Doris Creek flow was still high enough for discharging Tail Lake water and 3. sample collection and lab analysis oversights (which will be corrected for all future water discharges). None of the collected samples exceeded any sample-specific discharge criteria.

Dewatering began on August 2nd, 2011 and ceased on September 18, 2011. During this period, a total of 90,114 m³ of water was pumped from Tail Lake into the outflow of Doris Lake (see sections 4 and 5 of this report for details).

1. Part G: Conditions applying to Waste Management and Waste Management Plans (Item 26)

The water collected at site TL-4 did not exceed the water licence effluent quality limits (Table 1).

2. Part G: Conditions applying to Waste Management and Waste Management Plans (Item 27)

HBML did not deposit tailings or waste into Tail Lake, therefore the discharged water quality was representative of baseline Tail Lake water quality (Table 2); lake trout and stickleback inhabited the lake at the time of dewatering. Acute lethality testing was not conducted at monitoring station TL-1 prior to discharge. Acute lethality testing was conducted at TL-4 in August (Table 3).

3. Part G: Conditions applying to Waste Management and Waste Management Plans (Item 28)

Station TL-3 (Doris Outflow Creek – Downstream) did not exceed the greater of background water quality at TL-2 (Doris Outflow Creek – Upstream) or the discharge water quality limits (Tables 4 and 5). The detection limits for total cadmium and total mercury were higher than the discharge criteria, and the laboratory has been advised that a lower detection level will be required for all future samples.

4. Part G: Conditions applying to Waste Management and Waste Management Plans (Item 30)

Discharge from Tail Lake did not exceed 10% of the background flow in Doris Creek (as measured at station TL-2) at any point (Table 6).

5. Part J: Conditions Applying to General and Aquatics Effects Monitoring (Items 1 and 2)

Item 1: There was an in-line totalizing flow meter installed between the lake and the pump at the intake area of Tail Lake during discharge. These numbers were recorded daily. Additionally, the water discharge volumes were monitored using a v-notch weir placed on the bank near TL-4 in Doris Creek. The volumes presented in Table 6 are the average of these two flow recording devices.

Item 2: A flow meter installed at Station TL-2 provided continuous measurements in real time during the period of discharge. These measurements were used to determine the maximum allowable discharge from the Tail Lake.

Item 3: Refers to Schedule J. Conditions Applying to General and Aquatics Effects Monitoring. Tables 1 through 5 address various aspects of the conditions in Schedule J. Additionally, Table 7 provides the water quality sampling data for Station TL-10. None of the samples exceeded their site-specific criteria.

Should there be any questions regarding this Tail Lake dewatering summary report for 2011, please contact Angela Holzapfel at (604)345-3122 or Angela.Holzapfel@Newmont.com.

Sincerely,

Angela Holzapfel

Manager of Environmental Compliance
Hope Bay Mining Limited

Table 1: Water Quality Results from Station TL-4															
Station Name		TL-4 (licence criteria)	TL-4 (licence criteria)	TL-4	TL-4	TL-4	TL-4	TL-4	TL-4	TL-4	TL-4	TL-4	TL-4	TL-4	
Collect Date				7/5/2011	7/24/2011	7/30/2011	8/4/2011	8/6/2011	8/12/2011	8/20/2011	8/22/2011	8/27/2011	9/3/2011	9/10/2011	9/17/2011
Parameter	Units	Maximum Average Concentration	Maximum Concentration of Any Grab Sample												
pH-L	pH units	6.0-9.5		7.51	7.91	8.06			7.68	7.73		7.87	7.82	7.84	7.65
TDS	mg/L	-	-						72.9	73.4		71.9	75.5	75.9	123
TSS	mg/L	15.00	30.00	<3.0	<3.0	<3.0	<3.0	<3.0				<3.0	<3.0	<3.0	6.0
Cl-D	mg/L	-	-	22.6	26.8	59.8			25.6	25.1		25.0	25.9	25.8	60.2
CN-Free	mg/L	-	-	<0.010	<0.010							<0.0050			<0.0050
CN-T	mg/L	1.00	2.00	<0.0020	<0.0020	0.0234	0.0086	0.0066	0.0061	<0.0050			0.0072	<0.0050	<0.0050
P-D-Ortho	mg/L	-	-	<0.010	<0.010	<0.010		<0.010					<0.010	<0.010	<0.010
N-NH3	mg/L	6	-	<0.050	0.107		<0.050	<0.050	<0.050	<0.050			<0.050	<0.050	<0.050
N-NO2	mg/L	-	-			0.207			<0.050	<0.050		<0.050	<0.050	<0.050	<0.050
N-NO3	mg/L	-	-	<0.050	0.102	4.28			<0.050	<0.050		<0.050	<0.050	<0.050	<0.050
P-PO4-T	mg/L	-	-	<0.020						<0.020		<0.020	<0.020	<0.020	0.021
Ra-226	Bq/L	0.37	1.11	<1.01							<1.01			<0.005	
Coliform-Fecal	CFU/100mL	10,000	10,000	3	<1	<1									
BOD	mg/L	80	160	<2.0	<2.0	4.1				<2.0					
Ag-T	mg/L	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010
Al-T	mg/L	-	-	0.037	0.043	0.099	0.020	0.019	0.013	0.021		0.042	0.018	0.032	0.055
As-T	mg/L	0.50	1.00	<0.00040	<0.00040	0.00062	<0.00040	<0.00040	<0.00040	<0.00040		<0.00040	<0.00040	<0.00040	<0.00040
Ca-T	mg/L	-	-	6.84	8.89	15.7	8.25	7.86	7.84	6.31		6.70	6.47	7.52	7.61
Cd-T	mg/L	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050	<0.000050	<0.000050	<0.000050
Cr-T	mg/L	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		<0.0050	<0.0050	<0.0050	<0.0050
Cu-T	mg/L	0.30	0.60	0.0015	0.0018	0.0060	0.0012	0.0014	0.0010	0.0011		0.0010	<0.0010	0.0012	0.0015
Fe-T	mg/L	-	-	0.068	0.253	0.403	0.413	0.259	0.445	0.279		0.215	0.323	0.319	0.112
Hg-T	mg/L	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010
K-T	mg/L	-	-	1.15	1.94	4.25	1.81	1.80	1.70	1.42		1.28	1.40	1.65	1.74
Li-T	mg/L			<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010	<0.010	<0.010	<0.010
Mg-T	mg/L	-	-	4.00	5.25	10.3	5.26	4.93	5.33	4.40		4.85	4.59	4.93	5.20
Mo-T	mg/L	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		<0.0050	<0.0050	<0.0050	<0.0050
Na-T	mg/L	-	-	11.5	14.6	51.6	14.1	13.6	14.8	12.4		12.6	12.0	13.9	24.5
Ni-T	mg/L	0.50	1.00	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020		<0.0020	<0.0020	<0.0020	<0.0020
Pb-T	mg/L	0.20	0.40	<0.00010	<0.00010	0.00019	0.00013	0.00013	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010
Se-T	mg/L	-	-	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040		<0.00040	<0.00040	<0.00040	<0.00040
TI-T	mg/L	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010
Zn-T	mg/L	0.50	1.00	<0.0040	<0.0040	<0.0040	0.0798	0.0707	0.0946	0.0695		0.0687	0.0646	0.0598	<0.0040

Discharge began on August 2, 2011, and ended on September 18, 2011

Table 2: Water Quality from the Tailings Impoundment Area taken from Reclaim Pump Barge area* (TL-1)

		TL-1 (licence criteria)												
Station Name			TL-1	TL-1	TL-1	TL-1	TL-1	TL-1	TL-1	TL-1	TL-1	TL-1	TL-1	TL-1
Collect Date			7/30/2011	8/1/2011	8/4/2011	8/6/2011	8/8/2011	8/11/2011	8/12/2011	8/20/2011	8/27/2011	9/3/2011	9/10/2011	9/17/2011
Parameter	Units													
pH-L	pH units	-	7.89	7.80				7.73	7.68	7.71	7.89	7.86	7.85	7.65
TDS	mg/L	-		119				79.3	74.6	71.2	72.0	77.2	71.8	78.9
TSS	mg/L	-	10.0		<3.0	<3.0	<3.0				<3.0	<3.0	<3.0	<3.0
Cl-D	mg/L	-	27.5	37.5				26.5	25.2	25.0	25.1	26.1	25.6	28.1
CN-Free	mg/L	-									<0.0050			<0.0050
CN-T	mg/L	-	0.0059	0.0082	0.0081	0.0080	0.0086	0.0084	0.0070	<0.0050		0.0054	<0.0050	0.0054
P-D-Ortho	mg/L	-	<0.010			<0.010	<0.010					<0.010	<0.010	<0.010
N-NH3	mg/L	-			<0.050	<0.050	<0.050	<0.050	<0.050	<0.050		<0.050	<0.050	<0.050
N-NO2	mg/L	-	<0.050	<0.050				<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
N-NO3	mg/L	-	<0.050	1.17				<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
P-PO4-T	mg/L	-		<0.020						<0.020	<0.020	<0.020	<0.020	<0.020
Ag-T	mg/L	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Al-T	mg/L	-	0.058	0.050	0.020	0.019	0.018	0.019	0.020	0.015	0.038	0.018	0.035	0.026
As-T	mg/L	-	<0.00040	<0.00040	0.00087	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ca-T	mg/L	-	7.40	9.99	7.99	8.40	8.30	8.08	7.51	6.67	6.51	6.77	7.33	7.11
Cd-T	mg/L	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Cr-T	mg/L	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cu-T	mg/L	-	0.0017	0.0022	0.0059	0.0015	0.0025	0.0015	0.0013	0.0013	0.0015	0.0011	0.0014	0.0013
Fe-T	mg/L	-	0.537	0.308	0.415	0.284	0.538	0.526	0.463	0.224	0.218	0.319	0.275	0.175
Hg-T	mg/L	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
K-T	mg/L	-	1.62	2.20	1.89	1.87	1.85	1.67	1.73	1.40	1.31	1.55	1.63	1.50
Mg-T	mg/L	-	4.96	6.02	5.17	5.35	5.18	5.13	5.17	4.71	4.62	4.76	4.82	4.62
Mo-T	mg/L	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Na-T	mg/L	-	13.8	18.3	14.1	14.9	14.2	13.5	13.9	13.3	12.4	12.7	14.1	12.9
Ni-T	mg/L	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Pb-T	mg/L	-	<0.00010	<0.00010	0.00181	0.00025	0.00031	0.00019	0.00018	0.00024	0.00021	<0.00010	0.00013	0.00011
Se-T	mg/L	-	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
TI-T	mg/L	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Zn-T	mg/L	-	<0.0040	<0.0040	0.0321	0.0210	0.0284	0.0228	0.0195	0.0166	0.0165	0.0135	0.0128	0.0104

Discharge began on August 2, 2011, and ended on September 18, 2011

*Reclaim barge has not yet been constructed; water sample was taken from raw water at north end of Tail Lake

Dissolved oxygen and redox potential was not collected for this site.

Table 3: Acute Toxicity Bioassay at sampling station TL-4

Parameter	TL-4	
ALS Lab Reference #	L1049686-4	L1049686-6
Sample Date/Time	20-Aug-11@ 10:15	20-Aug-11@ 10:15
Test Organism	Rainbow Trout	Daphnia magna
Test Description	Acute, 96 hour, Static, LC50	Acute, 48 hour, Static, Pass/Fail
Sublethal Biological effects		
Mortality/Immobility observed	No	No
Toxicity observed	No	No
Pass/Fail	Pass	Pass

Discharge began on August 2, 2011, and ended on September 18, 2011

Table 4: Water Quality Results of Station TL-2

Station Name		TL-2 (licence criteria)	TL-2											
Collect Date			7/30/2011	8/1/2011	8/4/2011	8/6/2011	8/8/2011	8/11/2011	8/12/2011	8/20/2011	8/27/2011	9/3/2011	9/10/2011	9/17/2011
Paramter	Units													
pH-L	pH units	-	7.86	7.66				7.74	7.73	7.68	7.81	7.76	7.83	7.57
TDS	mg/L	-		124				123	121	123	123	129	124	78.3
TSS	mg/L	-	<3.0		<3.0	<3.0	<3.0				5.0	7.0	<3.0	<3.0
Cl-D	mg/L	-	58.0	58.0				58.1	58.1	58.7	59.0	60.3	61.0	27.3
CN-Free	mg/L	-									<0.0050			<0.0050
CN-T	mg/L	-	<0.0050	0.0051	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		<0.0050	<0.0050	0.0050
P-D-Ortho	mg/L	-	<0.010			<0.010	<0.010					<0.010	<0.010	<0.010
N-NH3	mg/L	-			<0.050	<0.050	<0.050	<0.050	<0.050	<0.050		<0.050	<0.050	<0.050
N-NO2	mg/L	-	<0.050	<0.050				<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
N-NO3	mg/L	-	<0.050	<0.050				<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
P-PO4-T	mg/L	-		<0.020						<0.020	<0.020	0.027	<0.020	<0.020
Cr-6+	mg/L					<0.0010	<0.0010					<0.0010	<0.0010	<0.0010
Oil and Grease	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ag-T	mg/L	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Al-T	mg/L	-	0.051	0.048	0.044	0.034	0.041	0.043	0.037	0.069	0.036	0.143	0.049	0.027
As-T	mg/L	-	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ca-T	mg/L	-	7.79	7.75	7.90	7.65	7.64	8.01	8.18	7.90	8.22	8.26	8.83	7.06
Cd-T	mg/L	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Cr-T	mg/L	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cu-T	mg/L	-	0.0016	0.0013	0.0021	0.0015	0.0016	0.0017	0.0017	0.0014	0.0014	0.0017	0.0016	0.0012
Fe-T	mg/L	-	0.119	0.103	0.114	0.068	0.078	0.086	0.114	0.145	0.139	0.311	0.137	0.175
Hg-T	mg/L	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
K-T	mg/L	-	1.68	1.89	1.98	1.93	1.96	1.87	2.01	1.83	1.77	2.31	2.08	1.49
Mg-T	mg/L	-	5.48	5.58	5.73	5.74	5.62	5.78	6.02	5.64	5.95	5.79	5.98	4.54
Mo-T	mg/L	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Na-T	mg/L	-	23.9	25.2	25.7	27.0	26.7	26.6	27.7	24.9	26.9	25.6	29.9	12.6
Ni-T	mg/L	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Pb-T	mg/L	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00011	<0.00010	<0.00010
Se-T	mg/L	-	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Tl-T	mg/L	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Zn-T	mg/L	-	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0046	<0.0040	0.0467

Discharge began on August 2, 2011, and ended on September 18, 2011

There are no specified water quality criteria for station TL-2

Italicized values indicate detection limits above maximum allowable concentrations.

Table 5: Water Quality Results of Station TL-3

Station Name		TL-3 (licence criteria)	TL-3	TL-3	TL-3	TL-3	TL-3	TL-3	TL-3	TL-3	TL-3	TL-3	TL-3	
Collect Date			7/30/2011	8/1/2011	8/4/2011	8/6/2011	8/8/2011	8/11/2011	8/12/2011	8/22/2011	8/27/2011	9/3/2011	9/11/2011	9/17/2011
Paramter	Units	Max Concentration of Any Grab Sample												
pH-L	pH units	6.0-9.0	7.84	7.69				7.75	7.72	7.70	7.82	7.78	7.83	7.57
TDS	mg/L	-		124				121	122	123	122	127	126	127
TSS	mg/L	15.0	<3.0		<3.0	<3.0	<3.0				4.0	4.0	<3.0	4.0
Cl-D	mg/L	150	58.4	58.1				57.3	57.9	57.7	58.5	59.3	60.4	60.7
CN-Free	mg/L	0.005									<0.0050			<0.0050
CN-T	mg/L	0.10	<0.0050	<0.0050	0.0051	0.0083	0.0056	<0.0050	<0.0050	<0.0050		<0.0050	<0.0050	<0.0050
P-D-Ortho	mg/L	-	<0.010			<0.010	<0.010					<0.010	<0.010	<0.010
N-NH3	mg/L	1.54			<0.050	<0.050	<0.050	<0.050	<0.050	<0.050		<0.050	<0.050	<0.050
N-NO2	mg/L	0.06	<0.050	<0.050				<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
N-NO3	mg/L	2.9	<0.050	<0.050				<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
P-PO4-T	mg/L	-		<0.020						<0.020	<0.020	<0.020	<0.020	0.021
Cr-6+	mg/L	0.001				<0.0010	<0.0010					<0.0010	<0.0010	<0.0010
Oil and Grease	mg/L	5	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ag-T	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Al-T	mg/L	0.100	0.049	0.051	0.044	0.038	0.038	0.039	0.040	0.069	0.047	0.047	0.044	0.057
As-T	mg/L	0.0050	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ca-T	mg/L	-	7.87	7.90	7.84	7.94	7.99	8.28	8.67	8.19	8.58	8.09	10.1	8.28
Cd-T	mg/L	0.000017	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Cr-T	mg/L	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cu-T	mg/L	0.002	0.0026	0.0013	0.0018	0.0014	0.0016	0.0016	0.0014	0.0014	0.0018	0.0017	0.0017	0.0019
Fe-T	mg/L	0.300	0.116	0.136	0.131	0.090	0.105	0.125	0.138	0.201	0.188	0.170	0.153	0.144
Hg-T	mg/L	0.000026	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
K-T	mg/L	-	1.71	1.87	1.99	2.01	1.90	2.03	2.08	1.91	1.88	1.92	2.19	1.79
Mg-T	mg/L	-	5.50	5.90	5.90	5.70	5.61	6.08	6.16	5.78	5.99	5.48	6.54	5.36
Mo-T	mg/L	0.073	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Na-T	mg/L	-	24.6	25.3	26.1	26.5	26.2	27.9	28.1	25.0	25.7	23.5	30.0	24.5
Ni-T	mg/L	0.025	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Pb-T	mg/L	0.001	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Se-T	mg/L	-	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Tl-T	mg/L	0.0008	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Zn-T	mg/L	0.030	0.0040	<0.0040	0.0043	<0.0040	0.0042	0.0043	0.0047	0.0048	0.0056	0.0067	<0.0040	0.0071

Discharge began on August 2, 2011, and ended on September 18, 2011

Water quality at site TL-3 should not exceed the greater of background water quality at the time of discharge as measured at monitoring station TL-2, or the above water quality limits.

Italicized values indicate detection limits above maximum allowable concentrations.

Table 6: Daily volumes discharged from the Tailings Impoundment Area (TIA)			
Date	Maximum Allowable Discharge (10% of TL-2, m3)*	Water Quantity Discharged (m3)	Percentage of Allowable Volume Discharged (%)
1-Aug-11	6,409	0	0
2-Aug-11	6,155	49	1
3-Aug-11	5,949	470	8
4-Aug-11	5,816	43	1
5-Aug-11	5,642	645	11
6-Aug-11	5,533	1,783	32
7-Aug-11	5,372	2,091	39
8-Aug-11	5,192	2,097	40
9-Aug-11	5,034	2,035	40
10-Aug-11	4,887	2,079	43
11-Aug-11	4,758	2,068	43
12-Aug-11	4,650	2,102	45
13-Aug-11	4,558	2,089	46
14-Aug-11	4,444	2,098	47
15-Aug-11	4,334	2,093	48
16-Aug-11	4,167	2,083	50
17-Aug-11	4,060	2,084	51
18-Aug-11	4,166	2,061	49
19-Aug-11	4,149	2,071	50
20-Aug-11	4,075	2,031	50
21-Aug-11	4,032	2,063	51
22-Aug-11	4,001	1,980	49
23-Aug-11	3,958	2,050	52
24-Aug-11	3,952	2,064	52
25-Aug-11	3,870	2,087	54
26-Aug-11	3,828	2,073	54
27-Aug-11	3,796	2,089	55
28-Aug-11	3,740	2,036	54
29-Aug-11	3,747	2,046	55
30-Aug-11	3,706	2,029	55
31-Aug-11	3,665	2,023	55
1-Sep-11	3,613	1,942	54
2-Sep-11	3,567	1,972	55
3-Sep-11	3,542	1,924	54
4-Sep-11	3,518	1,980	56
5-Sep-11	3,468	1,988	57
6-Sep-11	3,457	1,917	55
7-Sep-11	3,791	1,785	47
8-Sep-11	4,250	1,780	42
9-Sep-11	4,420	1,851	42
10-Sep-11	4,506	2,038	45
11-Sep-11	4,552	2,061	45
12-Sep-11	4,614	2,078	45
13-Sep-11	4,679	2,018	43
14-Sep-11	4,779	2,051	43
15-Sep-11	4,733	2,014	43
16-Sep-11	4,798	2,030	42
17-Sep-11	4,823	2,043	42
18-Sep-11	4,885	2,030	42
19-Sep-11	4,910	0	0
TOTAL (m3)	222,550	90,114	

Discharge began on August 2, 2011, and ended on September 18, 2011

*These values were calculated based on continuous and instantaneous readings from a flow meter installed at Station TL-2.

Table 7: Water Column Sampling at TL-10 (July – September, 2011)

Sample ID	TAIL LAKE-Surface1	TAIL LAKE-Surface2	TAIL LAKE-Surface3	TAIL LAKE-Deep1	TAIL LAKE-Deep2	TAIL LAKE-Deep3
Date Sampled	24-Jul-11					
Physical Tests						
pH	7.68	8.15	8.14	8.17	8.15	8.13
Total Suspended Solids	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Dissolved Solids	81	77	79	79	82	81
Turbidity	0.92	0.71	0.67	0.74	0.8	0.77
Anions and Nutrients						
Acidity (as CaCO ₃)	1.5	3.9	4.1	3.8	4	4.1
Alkalinity, Total (as CaCO ₃)	26.5	27.2	27.2	27	27	27.1
Ammonia (as N)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Bromide (Br)	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride (Cl)	24.5	24.5	24.5	24.5	24.5	24.6
Nitrate (as N)	-	-	-	-	-	-
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.484	0.453	0.393	0.441	0.348	0.305
Total Nitrogen	0.46	0.42	0.44	0.43	0.43	0.43
Orthophosphate-Dissolved (as P)	<0.0010	<0.0010	0.004	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total Dissolved	0.0045	0.0038	0.0066	0.0034	0.0034	0.0073
Phosphorus (P)-Total	0.0165	0.0074	0.0247	0.0255	0.0079	0.0198
Silicate (as SiO ₂)	1.3	1.4	1.4	1.4	1.4	1.4
Cyanides						
Cyanide, Weak Acid Diss	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cyanide, Total	0.0053	0.0042	0.0053	0.0048	0.005	0.0047
Organic Carbon						
Total Organic Carbon	6.56	6.44	6.47	6.46	6.58	6.51
Total Metals						
Aluminum (Al)-Total	0.0339	0.0317	0.0346	0.0371	0.0337	0.0339
Arsenic (As)-Total	0.000167	0.000157	0.000153	0.000155	0.000154	0.000134
Cadmium (Cd)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total	5.68	5.93	6.02	6.16	6.13	6.09
Chromium (Cr)-Total	0.00027	0.00035	0.00031	0.00031	0.00031	0.0003
Copper (Cu)-Total	0.00159	0.00188	0.00121	0.00132	0.00127	0.00251
Iron (Fe)-Total	0.086	0.085	0.085	0.085	0.087	0.09
Lead (Pb)-Total	0.000123	0.00635	0.00133	0.00232	0.00305	0.00348
Magnesium (Mg)-Total	4.65	4.57	4.59	4.82	4.47	4.45
Mercury (Hg)-Total	0.0016	0.0013	0.0012	0.0013	0.0013	0.0013
Molybdenum (Mo)-Total	0.000135	0.000137	0.000136	0.000152	0.000171	0.000159
Nickel (Ni)-Total	0.00068	0.00066	0.00064	0.00073	0.00069	0.00065
Potassium (K)-Total	1.46	1.44	1.44	1.52	1.41	1.4
Selenium (Se)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silver (Ag)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thallium (Tl)-Total	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Zinc (Zn)-Total	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Table 7: Water Column Sampling at TL-10 (July – September, 2011) continued

Sample ID	TAIL LAKE- Surface1	TAIL LAKE- Surface2	TAIL LAKE- Surface3	TAIL LAKE- Deep1	TAIL LAKE- Deep2	TAIL LAKE- Deep3
Date Sampled	18-Aug-11					
Physical Tests						
pH	7.8	7.8	7.81	7.81	7.81	7.82
Total Suspended Solids	<1.0	<1.0	<1.0	1.4	1.8	1.4
Total Dissolved Solids	69	86	89	90	85	87
Turbidity	0.86	1.1	0.7	0.65	0.67	0.71
Anions and Nutrients						
Acidity (as CaCO ₃)	2	2	2	2	2	2
Alkalinity, Total (as CaCO ₃)	28.3	28.9	28.7	28.5	28.3	28.8
Ammonia (as N)	<0.0050	0.0324	0.0183	0.0166	0.0159	0.0062
Bromide (Br)	<0.050	0.055	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	25	25.1	25	25	25	25
Nitrate (as N)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.419	0.34	0.336	0.313	0.352	0.405
Total Nitrogen	0.42	0.38	0.37	0.37	0.37	0.37
Orthophosphate-Dissolved (as P)	0.0016	0.0011	<0.0010	0.002	<0.0010	<0.0010
Phosphorus (P)-Total Dissolved	0.0048	0.0044	0.0041	0.0053	0.0036	0.0039
Phosphorus (P)-Total	0.0093	0.0118	0.0083	0.0106	0.0093	0.0235
Silicate (as SiO ₂)	<1.0	<1.0	1.1	<1.0	1	1.03
Cyanides						
Cyanide, Weak Acid Diss	0.0034	0.0027	0.0011	0.0013	0.0011	0.0011
Cyanide, Total	0.0042	0.0043	0.0044	0.0042	0.0044	0.0041
Organic Carbon						
Total Organic Carbon	7.76	7.46	7.49	7.29	7.3	7.34
Total Metals						
Aluminum (Al)-Total	0.0295	0.0315	0.032	0.032	0.0332	0.0343
Arsenic (As)-Total	0.000173	0.000179	0.000179	0.000157	0.000193	0.000177
Cadmium (Cd)-Total	<0.000010	0.000023	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total	6.78	6.33	6.46	6.5	6.76	6.48
Chromium (Cr)-Total	0.00019	0.00014	0.00017	0.00017	0.00024	0.00016
Copper (Cu)-Total	0.0012	0.00114	0.00118	0.00114	0.0012	0.00118
Iron (Fe)-Total	0.112	0.107	0.11	0.111	0.142	0.116
Lead (Pb)-Total	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium (Mg)-Total	4.68	4.53	4.53	4.53	4.65	4.52
Mercury (Hg)-Total	0.00137	0.00144	0.00145	0.00132	0.00149	0.00113
Molybdenum (Mo)-Total	0.00016	0.000153	0.00015	0.000166	0.000166	0.000154
Nickel (Ni)-Total	0.00066	0.00065	0.00066	0.00066	0.00067	0.00065
Potassium (K)-Total	1.47	1.42	1.42	1.45	1.49	1.46
Selenium (Se)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silver (Ag)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thallium (Tl)-Total	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Zinc (Zn)-Total	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Table 7: Water Column Sampling at TL-10 (July – September, 2011)- continued

Sample ID	TAIL LAKE Surface1	TAIL LAKE- Surface2	TAIL LAKE- Surface3	TAIL LAKE- Deep1	TAIL LAKE- Deep2	TAIL LAKE- Deep3
Date Sampled	17-Sep-11					
Physical Tests						
pH	7.77	7.81	7.81	7.67	7.92	7.75
Total Suspended Solids	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Dissolved Solids	85	91	89	89	87	90
Turbidity	1.63	1.46	1.71	2.06	1.61	1.69
Anions and Nutrients						
Acidity (as CaCO ₃)	<1.0	<1.0	<1.0	<1.0	2.6	<1.0
Alkalinity, Total (as CaCO ₃)	29.6	30.8	30.2	30.1	29.9	29.8
Ammonia (as N)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Bromide (Br)	0.056	0.072	0.076	0.07	0.059	0.065
Chloride (Cl)	25.4	25.4	25.3	25.3	25.3	25.3
Nitrate (as N)	0.0781	<0.0050	<0.0050	0.0148	<0.0050	<0.0050
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.402	0.353	0.385	0.411	0.426	0.404
Total Nitrogen	0.25	0.19	0.18	0.23	0.22	0.21
Orthophosphate-Dissolved (as P)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total Dissolved	0.0044	0.0044	0.004	0.0043	0.0046	0.004
Phosphorus (P)-Total	0.0101	0.0096	0.0092	0.01	0.0097	0.0095
Silicate (as SiO ₂)	1.2	1.1	1.1	1.1	1.8	1.2
Cyanides						
Cyanide, Weak Acid Diss	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cyanide, Total	0.0053	0.0055	0.0034	0.0053	0.0051	0.0039
Organic Carbon						
Total Organic Carbon	6.96	6.95	6.93	7.01	6.97	6.93
Total Metals						
Aluminum (Al)-Total	0.0512	0.0485	0.0455	0.0484	0.0507	0.0515
Arsenic (As)-Total	0.000171	0.000189	0.000181	0.000181	0.000204	0.000177
Cadmium (Cd)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total	6.58	6.72	6.68	6.7	7.01	6.69
Chromium (Cr)-Total	0.00039	0.00038	0.00032	0.00037	0.0003	0.00025
Copper (Cu)-Total	0.00189	0.0014	0.00134	0.00141	0.00139	0.00126
Iron (Fe)-Total	0.117	0.11	0.107	0.109	0.111	0.107
Lead (Pb)-Total	0.00021	0.000203	0.000147	0.000101	0.000153	0.000088
Magnesium (Mg)-Total	4.68	4.82	4.85	4.89	5.05	4.87
Mercury (Hg)-Total	0.00242	0.00161	0.00207	0.00211	0.0024	0.00189
Molybdenum (Mo)-Total	0.000201	0.000181	0.000168	0.00038	0.000168	0.000167
Nickel (Ni)-Total	0.00081	0.00071	0.0007	0.00071	0.00072	0.00068
Potassium (K)-Total	1.44	1.5	1.51	1.5	1.57	1.51
Selenium (Se)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silver (Ag)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thallium (Tl)-Total	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Zinc (Zn)-Total	0.005	0.0033	0.003	<0.0030	<0.0030	<0.0030

Table 7: Water Column Sampling at TL-10 (July – September, 2011)- continued

Sample ID	TAIL LAKE-MID1	TAIL LAKE-MID2	TAIL LAKE MID3
Date Sampled	27-Sep-11		
Physical Tests			
pH	7.66	7.78	7.78
Total Suspended Solids	504	504	500
Total Dissolved Solids	1.4	<1.0	1.4
Turbidity	1.31	1.42	1.35
Anions and Nutrients			
Acidity (as CaCO ₃)	2.5	2.3	2.3
Alkalinity, Total (as CaCO ₃)	29.5	29.3	29.1
Ammonia (as N)	0.0068	0.0059	0.0187
Bromide (Br)	0.06	0.063	0.058
Chloride (Cl)	25	25.1	25
Nitrate (as N)	<0.0050	<0.0050	<0.0050
Nitrite (as N)	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.353	0.35	0.356
Total Nitrogen	0.39	0.41	0.35
Orthophosphate-Dissolved (as P)	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total Dissolved	0.0043	0.0043	0.0046
Phosphorus (P)-Total	0.0111	0.0103	0.0087
Silicate (as SiO ₂)	1.2	1.2	1.1
Cyanides			
Cyanide, Weak Acid Diss	<0.0011	<0.0011	<0.0011
Cyanide, Total	0.006	0.0058	0.0052
Organic Carbon			
Total Organic Carbon	7.03	7.02	7.09
Total Metals			
Aluminum (Al)-Total	0.0548	0.0607	0.0533
Arsenic (As)-Total	0.000196	0.000181	0.000189
Cadmium (Cd)-Total	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total	6.72	6.8	6.81
Chromium (Cr)-Total	0.00029	0.00028	0.00036
Copper (Cu)-Total	0.00122	0.00125	0.00123
Iron (Fe)-Total	0.108	0.111	0.109
Lead (Pb)-Total	0.00061	0.000083	0.000098
Magnesium (Mg)-Total	4.89	5.06	5.01
Mercury (Hg)-Total	0.00097	0.00111	0.00111
Molybdenum (Mo)-Total	0.000161	0.000172	0.000186
Nickel (Ni)-Total	0.00071	0.0007	0.00075
Potassium (K)-Total	1.48	1.54	1.51
Selenium (Se)-Total	<0.00010	<0.00010	<0.00010
Silver (Ag)-Total	<0.000010	<0.000010	<0.000010
Thallium (Tl)-Total	<0.000050	<0.000050	<0.000050
Zinc (Zn)-Total	<0.0030	<0.0030	<0.0030