



MEADOWBANK DIVISION

Monitoring Program Summary Report

September 2011

Type A Water License 2AM-MEA0815

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SECTION 1 • BACKGROUND

As required under Part I, Item 25 of Type A Water License 2AM-MEA0815, this report documents the water management and monitoring activity at the mine site for the month. This activity includes: water usage, sewage treatment plant discharge water quality and dewatering monitoring.

Additionally, a summary of the AEM internal spill reporting for the month is included.

SECTION 2 • WATER MANAGEMENT

2.1 WATER USAGE

Freshwater usage for September 2011 is summarized in Table 2.1 below. Freshwater usage for the month totals 140,858 m³. The consumption of fresh water for mine and mill operations (including production drills, batch plant and dust control) was 136,458 m³ and the consumption of reclaim water in the mill was 172,168 m³.

Table 2-1: Freshwater Usage (m³)

	September
Camp	3,510
Mine & Mill Operations	136,458
Emulsion Plant	198
Water Truck	691
Total	140,858

2.2 SEWAGE TREATMENT PLANT MONITORING

An error occurred while collecting the samples in September; consequently no results are available.

2.3 DEWATERING

2.3.1 Northwest Arm of Second Portage Lake

Dewatering of the northwest arm of Second Portage Lake continued throughout the month. The water treatment plants were in operation for 22 of the 30 days.

The pH and Aluminum concentrations at the outlets of the TSS water treatment plants were as follows:

- pH 24 hour minimum/maximum: 7.10/7.25 units (Limit is 6-9 units)
- Al 24 hour maximum concentration: 0.628 mg/L (Limit is 3.0 mg/L)

Table 2.3 summarizes the dewatering monitoring results for pH and Aluminum for the month.

Table 2-2: Second Portage Arm Dewatering Monitoring – pH and Al

Date	DD-WTP-01		DD-WTP-02		Both WTP Outlets	
	pH	Total Al	pH	Total Al	pH 24-hour Mean	Al 24-hour Mean
	units	mg/L	units	mg/L	units	mg/L
2011-09-05	7.25	0.571			7.25	0.571
2011-09-07						
2011-09-12	7.10	0.368			7.10	0.368
2011-09-15						
2011-09-18						
2011-09-19	7.18	0.587	7.16	0.668	7.17	0.628
2011-09-29						

The turbidity and TSS concentrations at the outlets of the TSS water treatment plants were as follows:

- NTU 24 hour mean maximum concentration: 5.3 NTU (Maximum Limit is 30 NTU)
- TSS 24 hour mean maximum concentration: 11 mg/L (Maximum Limit is 22.5 mg/L)
- NTU 30 days mean maximum concentration: 2.2 NTU (Maximum Limit is 15 NTU)
- TSS 30 days mean maximum concentration: 10 mg/L (Maximum Limit is 15 mg/L)

Table 2.4 summarizes the dewatering monitoring results for turbidity and TSS for the month.

Table 2-3: Second Portage Arm Dewatering Monitoring – TSS and Turbidity

Date	DD-WTP-01(Out)		DD-WTP-02(Out)		Both WTP Outlets			
	24-hour Mean	Lab TSS	24-hour Mean	Lab TSS	NTU 24-hour Mean	TSS 24-hour Mean	NTU 30-day Mean	TSS 30-day Mean
	NTU	mg/L	NTU	mg/L	NTU	mg/L	NTU	mg/L
2011-09-01	1.6	8	Not in operation		1.6	8	2.0	10
2011-09-02	0.9	7	Not in operation		0.9	7	2.0	10
2011-09-03	1.1	8	Not in operation		1.1	8	2.0	10
2011-09-04	2.2	8	Not in operation		2.2	8	2.0	10
2011-09-05	4.1	4	Not in operation		4.1	4	2.2	10
2011-09-06	2.9	2	Not in operation		2.9	2	2.2	10
2011-09-07	1.9	6	Not in operation		1.9	6	2.2	10
2011-09-08	1.7	4	Not in operation		1.7	4	2.2	7
2011-09-09	2.2	1	Not in operation		2.2	1	2.2	7
2011-09-10	1.9	3	Not in operation		1.9	3	2.2	7
2011-09-11	1.5	4	Not in operation		1.5	4	2.2	7
2011-09-12	1.1	3	Not in operation		1.1	3	2.1	7
2011-09-13	Not in operation		Not in operation					
2011-09-14	4.3	10	Not in operation		4.3	10	2.1	7
2011-09-15	Not in operation		2.7	8	2.7	8	2.1	7
2011-09-16	Not in operation		2.7	8	2.7	8	2.1	7
2011-09-17	Not in operation		2.7	10	2.7	10	2.2	6
2011-09-18	1.2	10	Not in operation		1.2	10	2.1	6
2011-09-19	2.4	10	2.3	12	2.4	11	2.0	6
2011-09-20	3.6	4	6.9	1	5.3	3	2.2	6
2011-09-21	1.0	2	0.7	<1	0.9	2	2.1	6
2011-09-22	Not in operation		Not in operation					
2011-09-23	1.8	3	0.8	2	1.3	3	2.1	6
2011-09-24	1.1	7	Not in operation		1.1	7	2.1	6
2011-09-25	Not in operation		Not in operation					
2011-09-26	Not in operation		Not in operation					
2011-09-27	Not in operation		Not in operation					
2011-09-28	Not in operation		Not in operation					
2011-09-29	Not in operation		Not in operation					
2011-09-30	Not in operation		Not in operation					

2.3.2 Bay Goose Impoundment Area

Dewatering of the Bay Goose impoundment area continued throughout the month. The water intake pumps were in operation for 30 days.

The pH and Aluminum concentrations at the pump intakes were as follows:

- pH 24 hour minimum/maximum: 6.60/7.28 units (Limit is 6-9 units)
- Al 24 hour maximum concentration: 0.058 mg/L (Limit is 3.0 mg/L)

Table 2.5 summarizes the dewatering monitoring results for pH and Aluminum for the month.

Table 2-4: Bay Goose Impoundment Area Dewatering Monitoring – pH and Al

Date	BG-PUMP-1		BG-PUMP-2		Both PUMPS	
	pH	Total Al	pH	Total Al	pH 24-hour Mean	Al 24-hour Mean
	units	mg/L	units	mg/L	units	mg/L
2011-09-05	7.03	0.077	6.94	0.016	6.99	0.047
2011-09-12	7.30	0.049	7.26	0.066	7.28	0.058
2011-09-19	7.00	0.027	6.98	0.027	6.99	0.027
2011-09-26	6.64	0.041	6.55	0.042	6.60	0.042

The turbidity and TSS concentrations at the pump intakes were as follows:

- NTU 24 hour mean maximum concentration: 5.5 NTU (Maximum Limit is 30 NTU)
- TSS 24 hour mean maximum concentration: 18 mg/L (Maximum Limit is 22.5 mg/L)
- NTU 30 days mean maximum concentration: 3.0 NTU (Maximum Limit is 15 NTU)
- TSS 30 days mean maximum concentration: 3 mg/L (Maximum Limit is 15 mg/L)

Table 2.6 summarizes the dewatering monitoring results for turbidity and TSS for the month.

Table 2-5: Bay Goose Impoundment Area Dewatering Monitoring – TSS and Turbidity

Date	BG-PUMP-1		BG-PUMP-2		Both PUMPS			
	24-hour Mean	Lab TSS	24-hour Mean	Lab TSS	NTU 24-hour Mean	TSS 24-hour Mean	NTU 30-day Mean	TSS 30-day Mean
	NTU	mg/L	NTU	mg/L	NTU	mg/L	NTU	mg/L
2011-09-01	2.3	<1	1.9	1	2.1	1	2.8	2
2011-09-02	1.8	1	1.8	2	1.8	2	2.7	1
2011-09-03	1.7	2	1.9	2	1.8	2	2.6	1
2011-09-04	3.5	19	5.2	16	4.4	18	2.6	2
2011-09-05	2.0	1	2.0	2	2.0	2	2.6	2
2011-09-06	3.6	<1	2.0	<1	2.8	1	2.5	2
2011-09-07	1.8	2	2.2	2	2.0	2	2.5	2
2011-09-08	3.0	2	3.7	2	3.4	2	2.5	2
2011-09-09	3.0	<1	3.1	1	3.1	1	2.4	2
2011-09-10	2.5	<1	2.8	<1	2.7	1	2.4	2
2011-09-11	2.8	<1	3.8	15	3.3	8	2.4	2
2011-09-12	2.6	<1	2.0	1	2.3	1	2.4	2
2011-09-13	2.5	2	2.9	2	2.7	2	2.4	2
2011-09-14	2.4	1	2.7	1	2.6	1	2.4	2
2011-09-15	3.0	<1	2.9	1	2.9	1	2.4	2
2011-09-16	2.2	4	2.3	3	2.3	4	2.4	2
2011-09-17	2.0	4	2.8	4	2.4	4	2.3	2
2011-09-18	2.1	3	2.2	3	2.2	3	2.3	2
2011-09-19	2.0	4	2.0	3	2.0	4	2.3	2
2011-09-20	1.7	3	2.0	4	1.9	4	2.3	2
2011-09-21	1.6	1	1.6	<1	1.6	1	2.3	2
2011-09-22	2.8	2	Not in operation		2.8	2	2.3	2
2011-09-23	Not in operation		3.4	2	3.4	2	2.4	2
2011-09-24	3.3	3	2.6	4	3.0	4	2.4	3
2011-09-25	3.8	2	Not in operation		3.8	2	2.5	3
2011-09-26	4.0	2	3.4	1	3.7	2	2.5	3
2011-09-27	3.6	3	4.4	2	4.0	3	2.6	3
2011-09-28	5.4	6	5.5	6	5.4	6	2.7	3
2011-09-29	5.4	3	4.8	5	5.1	4	2.8	3
2011-09-30	5.2	5	5.7	3	5.5	4	3.0	3

SECTION 3 • SPILL MANAGEMENT SUMMARY

AEM has developed a system of tracking spills on-site. Table 3.1 summarizes the AEM internal spill reports for the month. Five spills occurred on site; none were reported to the GN spill hotline.

Table 3-1: Summary of AEM Internal Spill Reports

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2011-09-03	Hydraulic oil	10 L	TCG shop area	While performing maintenance on an excavator, a hydraulic oil leak occurred.	Contaminated soil taken to Hazmat area	N
2011-09-12	Hydraulic oil	85 L	Waste rock storage facility	Rock puncture hydraulic hose	Contaminated soil taken to Hazmat area	N
2011-09-13	Fuel	3 L	East dike	Rock puncture a fuel tank	Contaminated soil taken to Hazmat area	N
2011-09-15	Hydraulic oil	35 L	TCG shop area	Broken hinge has pinch the truck brake line	Contaminated soil taken to Hazmat area	N
2011-09-18	Hydraulic oil	20 L	Mid portage pit	Broken fitting	Contaminated soil taken to Hazmat area	N