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MEADOWBANK DIVISION

Monitoring Program Summary Report

June 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 June 2011 is summarized in Table 2.1 below. Freshwater usage for the month totals 90,666 m³. The consumption of fresh water for mine and mill operations (including production drills, batch plant and dust control) was 87,228 m³ and the consumption of reclaim water in the mill was 184,166 m³.

Table 2-1: Freshwater Usage (m³)

	June
Camp	3331
Mine & Mill Operations	87228
Emulsion Plant	0
Water Truck	107
Total	90666

2.2 SEWAGE TREATMENT PLANT MONITORING

Four water samples were taken at the effluent of the sewage treatment plants (STP) in June. The results showed the system is working well. Table 2.2 presents the monitoring results.

Table 2-2: STP Effluent Results

Date	Units	6-Jun-11	13-Jun-11	20-Jun-11	27-Jun-11
Ammonia	mg/L	17.0	16.4	NA	18.6
BOD-5	mg/L	4	3	6	9
COD (mg/L)	mg/L	30	41	74	66
Total Suspended Solids	mg/L	7	9	10	25
Nitrate-Nitrite	mg N/L	36.4	41.2	37.0	38.7
pH *	units	4.00	4.60	5.00	5.00
Total Phosphorus	mg/L	11.6	11.8	11.9	12.3
Fecal Coliform	UFC/100 mL	4	18	90	44
Total Coliform	UFC/100 mL	10	130	<1000	>20000

2.3 DEWATERING OF SECOND PORTAGE ARM

Dewatering of the northwest arm of Second Portage Lake continued throughout the month. The water treatment plants were in operation for 9 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: 6.56/7.06 units (Limit is 6-9 units)
- Al 24 hour maximum concentration: 0.345 mg/L (Limit is 1.5 mg/L)

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

Table 2-3: 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
2011-06-01	6.70		6.55		6.63	
2011-06-02	6.81		6.71		6.76	
2011-06-03	6.91		6.94		6.93	
2011-06-04	6.84		6.79		6.82	
2011-06-05	6.85		6.90		6.88	
2011-06-06	7.08	0.284	7.03	0.405	7.06	0.345
2011-06-10	6.62		6.72		6.67	
2011-06-11	6.60		6.60		6.60	
2011-06-12	6.60		6.52		6.56	

There were two exceedences of the 24 hour mean regulatory criteria (22.5 mg/L) for Total Suspended Solids (TSS); June 3 (24 mg/L) and June 10 (27 mg/L). In both events the plant operators took immediate mitigative measures to reduce the TSS concentrations at the outlet; the following days the TSS concentrations were below the regulatory criteria. The 30 day mean TSS concentration remained well below the regulatory criteria of 15 mg/L. A technician of the supplier of the water treatment plant will be working on the day shift as of the beginning of August to optimize the system; this technical assistance will remain throughout the dewatering of the Bay Goose impoundment area.

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

- NTU 24 hour mean maximum concentration: 10.3 NTU (Maximum Limit is 30 NTU)
- TSS 24 hour mean maximum concentration: 27 mg/L (Maximum Limit is 22.5 mg/L)
- NTU 30 days mean maximum concentration: 3.4 NTU (Maximum Limit is 15 NTU)
- TSS 30 days mean maximum concentration: 9.5 mg/L (Maximum Limit is 15 mg/L)

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

Table 2-4: 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
2011-06-01	5.9	15	5.4	20	5.6	18	2.0	6.6
2011-06-02	9.5	16	8.8	20	9.1	18	2.2	7.2
2011-06-03	9.3	25	8.8	23	9.1	24	2.5	7.9
2011-06-04	5.1	4	3.4	4	4.2	4	2.6	7.9
2011-06-05	1.6	4	1.5	6	1.6	5	2.6	7.8
2011-06-06	3.9	13	2.1	9	3.0	11	2.7	7.8
2011-06-07	Not in operation		Not in operation					
2011-06-08	Not in operation		Not in operation					
2011-06-09	Not in operation		Not in operation					
2011-06-10	8.5	26	11.0	28	9.7	27	3.0	8.5
2011-06-11	14.7	26	5.9	16	10.3	21	3.2	9.0
2011-06-12	8.4	18	6.1	18	7.2	18	3.4	9.5
2011-06-13	Not in operation		Not in operation					
2011-06-14	Not in operation		Not in operation					
2011-06-15	Not in operation		Not in operation					
2011-06-16	Not in operation		Not in operation					
2011-06-17	Not in operation		Not in operation					
2011-06-18	Not in operation		Not in operation					
2011-06-19	Not in operation		Not in operation					
2011-06-20	Not in operation		Not in operation					
2011-06-21	Not in operation		Not in operation					
2011-06-22	Not in operation		Not in operation					
2011-06-23	Not in operation		Not in operation					
2011-06-24	Not in operation		Not in operation					
2011-06-25	Not in operation		Not in operation					
2011-06-26	Not in operation		Not in operation					
2011-06-27	Not in operation		Not in operation					
2011-06-28	Not in operation		Not in operation					
2011-06-29	Not in operation		Not in operation					
2011-06-30	Not in operation		Not in operation					

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. One spill occurred and was 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
2011-06-30	Slurry containing cyanide	250 m ³	Mill garage door A and B	Generator failure caused power to shut off; unable to manually close overflow valve on CIP tank	Spill contained by building berms at doorways; slurry taken to the tailings pond; an emergency air tank was brought to the mill during cleanup	Y