

G I A N T

YELLOWKNIFE MINES LIMITED

MEMO TO: J.S. McAlpine

CC: S.E. El-Alfy

FROM: Don Cooper

DATE: July 05, 1988

SUBJECT: TRP (PLANT) MONTH END REPORT - JUNE 1988

Operations and Metallurgy

Solid and solution recoveries were very low throughout most of June. Recoveries from the solid fraction were improved by increasing cyanide addition from 1.00 lb/ton to 1.25 lb/ton and finally to 1.50 lb/ton. Other items checked were dissolved oxygen levels and circuit pH. It was determined that to obtain a tailings pH of 10.0 a feed pH of 10.5 is required. Dissolved oxygen levels appeared to be normal but more work is needed to ensure accurate operation of the meter and probe. Solid recoveries averaged 35.0 for June 25 to 28. They again deteriorated for the last two days. It is not yet known why this happened but due to assays not being received until July 4 it was unknown that this had occurred. Circuit changes made during this time were reducing the feed pH set point from 11.0 to 10.5 and air addition to the CIL tanks was cut back due to low plant air pressure alarms. Feed density decreased on July 1 causing a drop in the tailings cyanide content which complicated matters.

Propane pipeline work delays delayed start-up of the strip system and problems with the acid wash system metering pump caused delays in running the acid wash system. It is possible that high solution losses or low solution recoveries are being caused by fouling of the carbon. This should improve once the stripping system is operating. This area will be operational in the first week of July. Testwork to prove the above was done and results should be in during the first week of July.

The carbon removed from the carbon columns will be stripped first and based on the assays of the samples taken 85 to 90 oz. of gold should be recovered.

CARBON DATA

Tank No.	Calculated Data		June 17		June 27	
	Tons Added	Density (gms/l)	Assay oz Au/ton	Density gms/l	Assay oz Au/ton	Density gms/l
2	24.8	8.46	31.5	2.08	23.3	2.7
3	25.4	8.66	24.5	2.44	43.5	2.53
4	34.2	11.67	7.9	7.75	21.7	3.25
5	125.8	42.91	5.0	28.5	6.6	13.50
6	2.6	0.89	5.9	0.58	7.7	0.83

TOTAL 212.8 14.52* 8.27* 4.56*

* Avg. gms/l over 5 tanks; each tank = 2,659,405 litres.

Carbon loading based on assays and calculated tons:

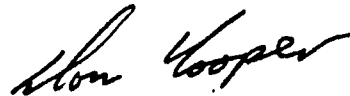
June 17 - 2,318.00 oz Au

June 27 - 3,275.18 oz Au

Due to the erratic nature of the assays the metallurgical balance data should be used to calculate carbon loading until stripping is started and a more accurate carbon assay can be obtained.

It was found that the launder screens on the CIL tanks were not seating properly and carbon was escaping between the screen frame and the launder framework. Although this does not result in a major carbon loss since escaping carbon is recovered on the safety screens it can add to small attrition losses. The screens were seated as well as possible but some continue to bypass small quantities of carbon.

Flow rates of 4000 USGPM to the surge tank were achieved but only on light density. The Trash screen underflow pump shutdown on overload at this flow rate. Maximum targets were set at 3500 USGPM for densities of 30 to 35% solids and 3200 USGPM at 35 to 40% solids. Amperage checks will be done on the 300 H.P. tailings pump motor to determine the possibility of interchanging these motors. Actual plant feed rates will need to be monitored since residence times and recoveries may be adversely affected by the high flow rates. At 2900 USGPM the residence time in the 6 tanks is 24.2 hours. At 3500 USGPM it is 20.1 hours.

A handwritten signature in cursive script, appearing to read "Don Cooper".

Don Cooper
Plant Superintendent

TRP METALLURGICAL BALANCE
(C.I.L.)

DATE: June 30/88

MONTH

FEED	SOLIDS			SOLUTION			TOTAL
TONS	% SOLIDS	OZ AU/TON	OZ AU	TONS	OZ AU/TON	OZ AU	OZ AU
158,333.3	32.32	0.083	13,129.87	331,621.7	0.0055	1823.34	14,953.21

TAILS	SOLIDS			SOLUTION			TOTAL
TONS	% SOLIDS	OZ AU/TON	OZ AU	TONS	OZ AU/TON	OZ AU	OZ AU
158,333.3	32.32	0.067	10,621.43	331,621.7	0.0031	1031.10	11,652.53

RECOVERIES (%)

COMBINED GRADES (OZ AU/TON)

AVAILABILITY (HRS/%)

SOLIDS: 19.10
SOLUTION: 43.45
TOTAL: 22.07

HEADS: 0.094
TAILS: 0.074
LOADED TO CARBON (OZ AU)
3300.68

OP HRS (BUDGET) 720.00
OP HRS (ACTUAL) 658.34
AVAILABILITY (%) 91.44
DOWNTIME (HRS) 61.66

YEAR TO DATE

FEED	SOLIDS			SOLUTION			TOTAL
TONS	% SOLIDS	OZ AU/TON	OZ AU	TONS	OZ AU/TON	OZ AU	OZ AU
212,840.3	23.98	0.077	16,400.29	674,743.7	0.0044	2989.95	19,390.24

TAILS	SOLIDS			SOLUTION			TOTAL
TONS	% SOLIDS	OZ AU/TON	OZ AU	TONS	OZ AU/TON	OZ AU	OZ AU
212,840.3	23.98	0.062	13,292.27	674,743.7	0.0028	1888.91	15,181.18

RECOVERIES (%)

COMBINED GRADES (OZ AU/TON)

AVAILABILITY (HRS/%)

SOLIDS: 18.95
SOLUTION: 36.82
TOTAL: 21.71

HEADS: 0.091
TAILS: 0.071
LOADED TO CARBON (OZ AU)
4209.06

OP HRS (BUDGET) 1464.00
OP HRS (ACTUAL) 1278.34
AVAILABILITY (%) 87.32
DOWNTIME (HRS) 185.66*

* ESTIMATED 124 HRS FOR MAY.

REAGENT CONSUMPTION - JUNE 1988

REAGENT	MONTH		YEAR TO DATE	
	LBS *(LITRES)	LBS/TON *(LITRES/TON)	LBS	LBS/TON
PROPANE*	---	---	---	---
CARBON	---	---	---	---
LIME	34,240	0.22	105,325	0.49
MURIATIC ACID	---	---	---	---
CAUSTIC SODA	16,865	0.11	19,345	0.09
SODIUM CYANIDE	167,953	1.06	196,816	0.92
STEEL WOOL	---	---	---	---

DOWNTIME RECORD**JUNE 1988**

DATE	HOURS DOWN	DESCRIPTION
June 1	5.00	Faulty CIL feed pump controller (10 min.). Moving monitors (4 hrs 50 min).
2	2.00	Repairs to tailings pump discharge pipe.
3	0.67	Moving Toyo pump.
4	0.92	Repairs to surge tank feed line.
5	1.33	Piping changes at monitors - low feed.
10	14.42	Advancing monitors (11 hrs 15 min). Repairs to surge tank feed line.
12	1.00	Power failure.
15	11.88	Replace gland seal on CIL feed pump. Toyo pump removed, bearings shot.
17	7.58	Raising causeway to barge - ran out of process water to plant - electrical problems in wiring to barge pumps.
18	2.27	Low feed - surge tank level too low.
19	3.27	Low feed.
20	1.42	Power failure.
21	6.08	Low feed - moving monitors.
25	1.00	Power failure.
28	1.00	Low feed - electrical - running on 50 hp Toyo for about 7 hrs.
30	1.82	Power failure.
TOTAL	61.66	

MAINTENANCE

a) Mechanical

1. Added new millwright to work force - now have 3.
2. Repaired tailings pump discharge line.
3. Extended trash screen pumpbox overflow to thickener area.
4. Moved CIL feed sampler.
5. Installed baffles in caustic mix tank.
6. Purchased Clark 720 mobile crane.
7. Repairs to Robar coupling on Trash Screen U/F pump discharge line.
8. Set up lubrication schedule.
9. Levelled all main agitator gearboxes.
10. Monitor water tank O/F box relocated to East tank.
11. Extended O/F pipe for monitor water tanks to thickener area.
12. Repaired 100 hp Toyo pump - replaced bearings.
13. Replaced gland seals in CIL feed pump - seals and shaft sleeve and modified grease addition to all Warman pumps.
14. Set up German-Rupp diesel pump to pump out spill water back to tailings pumpbox - pumped out east catch basin.
15. Started work on feed line diffuser pipe to surge tank.
16. Working on acid pump - not pumping.

b) Miscellaneous

1. Painting contractor (Polar Painting) completed Monitor and Process Water Tanks.
2. Raised access road to reclaim barge.
3. Propane line from vaporizer to plant building re-installed waiting for gas inspector at end of month.

c) Electrical

1. Connected Surge Tank agitator to spare vari-speed controller.
2. Hooked up capacitors at MCC 7 (Barge area).
3. Connected ORP cyanide probe to OPl.
4. Heat traced potable water line by tank.
5. Moved CIL feed sampler wiring.
6. Fire alarm test zone.
7. Installed motion alarm on 5 ton overhead crane in plant.
8. Training module made up for new barge pump control system using programmable controller.
9. Installed 110V receptacles in plant building.
10. Repaired faulty cable to barge pump 702.
11. Started to work on cyanide and caustic mix tank interlocks to shut down agitators on start-up of transfer pumps.
12. Worked on Acid Wash pump - some wiring incorrect.

d) Instrumentation

1. Flow switch installed on feed line to solution heater.
2. ORP cyanide probe and indicator installed.
3. Reconfigured cyanide addition for gallons/ton of solids originally was gallons of cyanide/U.S. gallon of feed.
4. Feedback resistors installed in 3 density meters.
5. Replaced lime system ball valve with pinch valve - ball valves and seats wearing out in 2 weeks of operation.
6. Optimization of pH control system for CIL feed.
7. Replaced pressure element modules - monitor water pressure transmitters - calibrated for 0-400 psi.
8. Calibrated main gearbox temperature indicators.
9. Worked on Acid Wash system pH controls.