

MEMO TO: Don Cooper

COPY TO: Doug Bartlett

FROM: Bryan Cross

DATE: November 5, 1988

SUBJECT: ORGANIC AND INORGANIC ANALYSIS OF TRP SAMPLES.

Attached is the Laboratory Report with the analysis done on the samples obtained from the Tailings Retreatment Plant on August 23rd and 24th. The first page shows under titles of Feed and Tails numbers 1 and 2 what is actually from two slurry filtrates. Grab samples with no additives for preservation were taken from the CIL feed line and from the Safety Screen feed line. After filtration the solution samples from each was placed in 2 new, rinsed one litre polyethylene bottles for transportation to the lab. The lab analysed all 4 bottles.

On the second page the sample labelled RECL. SOLN is our process water from August 23rd, the water reclaimed from the Northwest Pond. The next two columns are for stripping solutions. The START sample is solution from the sample line for the barren solution coming from the electro-winning cells at the start of Strip number 88-12. The FINISH sample is the same only taken at the end of the same batch.

On the third page all of these samples are carbons. Left to right across the page they are: Regenerated carbon from batch 88-03, Stripped carbon from batch 88-09, Stripped carbon from batch 88-11, and loaded carbon from batch 88-04.

The 4th or last page has the analysis done on virgin carbon labelled SAMPLE BLANK and solids labelled FEED and TAILS. These are the two washed filtercakes from which the page one filtrates were taken namely CIL Plant Feed and Tailings

Bryan Cross

BARRINGER**Laboratories (Alberta) Ltd.**

4200B - 10 STREET N.E., CALGARY, ALBERTA, CANADA T2E 6K3
 PHONE: (403) 250-1901

AUTHORITY: B. CROSS

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EXPLORATION DEPARTMENT
BAG 3000
YELLOWKNIFE, NWT. X1A 2M2

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21-OCT-88

PAGE: 1 OF 4

COPY: 2 OF 2

P. O. : 105272, 320

WORK ORDER: 5281D-88
 *** FINAL REPORT ***

GEOCHEMICAL LABORATORY REPORT**SAMPLE TYPE: WATER**

S A M P L E N U M B E R		SAMPLE FEED 1 AUG.23	SAMPLE FEED 2 AUG.23	SAMPLE TAILS 1 AUG.23	SAMPLE TAILS 2 AUG.23
Calcium	-ppm	236.3	239.5	214.1	224.9
Potassium	-ppm	15.75	15.25	15.75	15.5
Silica	-ppm	4.86	4.42	3.66	3.66
Titanium	-ppm	<0.01	0.02	0.02	0.02
Copper	-ppm	7.9	7.88	9.35	8.35
Arsenic	-ppm	17.55	19.53	24.4	24.58
Iron	-ppm	0.4	0.53	1.03	1.18
Manganese	-ppm	0.02	0.01	0.01	0.01
Zinc	-ppm	<0.01	<0.01	<0.01	<0.01
Chromium	-ppm	<0.01	<0.01	<0.01	<0.01
Nickel	-ppm	0.85	0.95	1.08	1.05
Lead	-ppm	0.01	0.01	0.01	0.03
Cadmium	-ppm	<0.01	<0.01	<0.01	<0.01
Gold	-ppm	0.11	0.11	<0.01	<0.01
Silver	-ppm	0.04	0.01	0.11	0.12
Strontium	-ppm	0.43	0.39	0.35	0.4
Tungsten	-ppm	<0.1	<0.1	<0.1	<1.0
Antimony	-ppm	0.92	1.14	1.58	1.61
Thorium	-ppm	0.06	<0.05	<0.05	<0.05
Sulphur	-ppm	200.0	190.0	180.0	190.0
Tannic acid	-ppm	11.0	10.0	13.0	14.0
Humic acid	-ppm	<2.0	<2.0	6.0	8.0
T.O.C.	-ppm	18.0	18.0	19.0	19.0
Sulfide	-ppm	26.9	43.4	36.7	35.5

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WORK ORDER: 5281D-88
 *** FINAL REPORT ***

GEOCHEMICAL LABORATORY REPORT**SAMPLE TYPE: WATER**

S A M P L E N U M B E R		SAMPLE RECL. SOLN	SAMPLE START 88-12	SAMPLE FINISH 88-12
Calcium	-ppm	182.1	1.09	1.43
Potassium	-ppm	14.25	14.85	14.84
Silica	-ppm	3.32	NA	NA
Titanium	-ppm	0.03	0.04	0.03
Copper	-ppm	8.83	88.28	92.64
Arsenic	-ppm	13.8	112.6	165.8
Iron	-ppm	0.14	<0.01	0.06
Manganese	-ppm	<0.01	0.01	<0.01
Zinc	-ppm	<0.01	0.76	1.17
Chromium	-ppm	<0.01	0.15	0.15
Nickel	-ppm	0.9	288.1	211.9
Lead	-ppm	0.01	0.05	0.01
Cadmium	-ppm	<0.01	<0.01	0.11
Gold	-ppm	<0.01	7.1	1.27
Silver	-ppm	0.13	3.4	0.02
Strontium	-ppm	0.56	0.04	0.03
Tungsten	-ppm	<0.1	<0.1	<0.1
Antimony	-ppm	1.09	0.17	0.37
Thorium	-ppm	<0.05	<0.05	<0.05
Sulphur	-ppm	140.0	280.0	250.0
Tannic acid	-ppm	9.0	1300.0	740.0
Humic acid	-ppm	58.0	8800.0	500.0
T.O.C.	-ppm	19.0	5700.0	5800.0
Sulfide	-ppm	27.9	35.2	3.5

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WORK ORDER: 5281D-88
 *** FINAL REPORT ***

GEOCHEMICAL LABORATORY REPORT

SAMPLE TYPE: OTHER

SAMPLE TYPE: OTHER		After Kiln SAMPLE 88-03	Str. C SAMPLE 88-09	Str. C. SAMPLE 88-11	Loaded C SAMPLE C-4
S A M P L E N U M B E R					
Calcium	-ppm	2240.0	4600.0	6080.0	3620.0
Potassium	-ppm	64.0	24.0	32.0	24.0
Silica	-ppm	NA	NA	NA	NA
Titanium	-ppm	2.0	<1.0	<1.0	<1.0
Copper	-ppm	43.0	28.0	28.0	359.0
Arsenic	-ppm	20.0	200.0	182.0	342.0
Iron	-ppm	132.0	56.0	28.0	32.0
Manganese	-ppm	27.0	23.0	9.0	8.0
Zinc	-ppm	48.0	31.0	26.0	48.0
Chromium	-ppm	1.0	<1.0	<1.0	1.0
Nickel	-ppm	237.0	512.0	88.0	1200.0
Lead	-ppm	8.0	5.0	4.0	3.0
Cadmium	-ppm	<1.0	<1.0	<1.0	1.0
Gold	-ppm	<0.02	<0.02	<0.02	<0.02
Silver	-ppm	32.8	53.6	7.5	58.5
Strontium	-ppm	6.0	12.0	17.0	8.0
Tungsten	-ppm	<2.0	<2.0	<2.0	<2.0
Antimony	-ppm	<1.0	<1.0	<1.0	<1.0
Thorium	-ppm	<2.5	<2.5	<2.5	<2.5
Sulphur	-ppm	1700.0	1600.0	1400.0	3200.0
T.O.C.	-ppm	NA	NA	NA	NA

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P. O. : 105272, 320

WORK ORDER: 5281D-88

***** FINAL REPORT *******GEOCHEMICAL LABORATORY REPORT****SAMPLE TYPE: OTHER**

SAMPLE NUMBER		SAMPLE BLANK	SAMPLE FEED	SAMPLE TAILS
Calcium	-ppm	303.0	4.59%	4.1%
Potassium	-ppm	8920.0	88.0	96.0
Silica	-ppm	NA	NA	NA
Titanium	-ppm	1.0	3.0	2.0
Copper	-ppm	6.0	51.0	63.0
Arsenic	-ppm	1.0	3330.0	3490.0
Iron	-ppm	2.0	5.24%	4.74%
Manganese	-ppm	5.0	867.0	835.0
Zinc	-ppm	<1.0	606.0	624.0
Chromium	-ppm	<1.0	57.0	32.0
Nickel	-ppm	<1.0	70.0	67.0
Lead	-ppm	<1.0	431.0	466.0
Cadmium	-ppm	<1.0	4.0	4.0
Gold	-ppm	<0.02	1.28	1.56
Silver	-ppm	0.2	6.5	1.84
Strontium	-ppm	6.0	24.0	26.0
Tungsten	-ppm	<2.0	<2.0	<2.0
Antimony	-ppm	<1.0	5.0	6.0
Thorium	-ppm	<2.5	<2.5	<2.5
Sulphur	-ppm	900.0	7700.0	8300.0
T.O.C.	-ppm	NA	2000.0	2000.0

SIGNED: _____

C. Douglas Read
 C. Douglas Read,
 LABORATORY MANAGER

FOOTNOTES:

P=QUESTIONABLE PRECISION; A=INTERFERENCE; TR=TRACE; ND=NOT DETECTED;
 IS=INSUFFICIENT SAMPLE; NA=NOT ANALYZED; MS=MISSING SAMPLE

ORIGINAL BARRINGER REPORT
SEVERAL ERRORS NOTED.

No. KM_{NO4} added to
these samples.

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GIANT YELLOWKNIFE MINES LTD.
EXPLORATION DEPARTMENT
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YELLOWKNIFE, NWT. X1A 2M2

P. O. : 105272, 320

WORK ORDER: 5281D-88 PRELIMINARY
*** REPORT ***

GEOCHEMICAL LABORATORY REPORT

SAMPLE TYPE: WATER

SAMPLE NUMBER		SAMPLE FEED 1	SAMPLE FEED 2	SAMPLE TAILS 1	SAMPLE TAILS 2
		AUG 23	AUG 23	AUG 23	AUG 23
Calcium	-ppm	236.3	239.5	214.1	224.9
Potassium	-ppm	15.75	15.25	15.75	15.5
Silica	-ppm	4.86	4.42	3.66	3.66
Titanium	-ppm	<0.01	0.02	0.02	0.02
Copper	-ppm	7.9	7.88	9.35	8.35
Arsenic	-ppm	17.55	19.53	24.4	24.58
Iron	-ppm	0.4	0.53	1.03	1.18
Manganese	-ppm	0.02	0.01	0.01	0.01
Zinc	-ppm	<0.01	<0.01	<0.01	<0.01
Chromium	-ppm	<0.01	<0.01	<0.01	<0.01
Nickel	-ppm	0.85	0.95	1.08	1.05
Lead	-ppm	0.01	0.01	0.01	0.03
Cadmium	-ppm	<0.01	<0.01	<0.01	<0.01
Gold	-ppm	0.11	0.11	<0.01	<0.01
Silver	-ppm	0.04	0.01	0.11	0.12
Strontium	-ppm	0.43	0.39	0.35	0.4
Tungsten	-ppm	<0.1	<0.1	<0.1	<1.0
Antimony	-ppm	0.92	1.14	1.58	1.61
Thorium	-ppm	0.06	<0.05	<0.05	<0.05
Total Sulphur	-ppm	200.0	190.0	180.0	190.0
Tannic acid	-ppm	11.0	10.0	13.0	14.0
Humic acid	-ppm	<2.0	<2.0	6.0	8.0
T.O.C.	-ppm	18.0	18.0	19.0	19.0

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YELLOWKNIFE, NWT. X1A 2M2

P. O. : 105272, 320

WORK ORDER: 5281D-88

REPORT ***

GEOCHEMICAL LABORATORY REPORT

SAMPLE TYPE: WATER

SAMPLE NUMBER		SAMPLE RECL. SOLN	SAMPLE START 88-12	SAMPLE FINISH 88-12
Calcium	-ppm	182.1	1.09	1.43
Potassium	-ppm	14.25	14.85	14.84
Silica	-ppm	3.32	NA	NA
Titanium	-ppm	0.03	0.04	0.03
Copper	-ppm	8.83	88.28	92.64
Arsenic	-ppm	13.8	112.6	165.8
Iron	-ppm	0.14	<0.01	0.06
Manganese	-ppm	<0.01	0.01	<0.01
Zinc	-ppm	<0.01	0.76	1.17
Chromium	-ppm	<0.01	0.15	0.15
Nickel	-ppm	0.9	288.1	211.9
Lead	-ppm	0.01	0.05	0.01
Cadmium	-ppm	<0.01	<0.01	0.11
Gold	-ppm	<0.01	7.1	1.27
Silver	-ppm	0.13	3.4	0.02
Strontium	-ppm	0.56	0.04	0.03
Tungsten	-ppm	<0.1	<0.1	<0.1
Antimony	-ppm	1.09	0.17	0.37
Thorium	-ppm	<0.05	<0.05	<0.05
<i>Total</i> Sulphur	-ppm	140.0	280.0	250.0
Tannic acid	-ppm	9.0	1300.0	740.0
Humic acid	-ppm	58.0	8800.0	500.0
T.O.C.	-ppm	19.0	5700.0	5800.0

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P. O. : 105272, 320

WORK ORDER: 5281D-88

REPORT ***

GEOCHEMICAL LABORATORY REPORT

SAMPLE TYPE: OTHER

AFTER KILN
SAMPLE
88-03

STRIPPED
SAMPLE
88-09

STRIPPED
SAMPLE
88-11

LOADED
SAMPLE
C-4

SAMPLE NUMBER

Calcium	-ppm	2240.0	4600.0	6080.0	3620.0
Potassium	-ppm	64.0	24.0	32.0	24.0
Silica	-ppm	NA	NA	NA	NA
Titanium	-ppm	2.0	<1.0	<1.0	<1.0
Copper	-ppm	43.0	28.0	28.0	359.0
Arsenic	-ppm	20.0	200.0	182.0	342.0
Iron	-ppm	132.0	56.0	28.0	32.0
Manganese	-ppm	27.0	23.0	9.0	8.0
Zinc	-ppm	48.0	31.0	26.0	48.0
Chromium	-ppm	1.0	<1.0	<1.0	1.0
Nickel	-ppm	237.0	512.0	88.0	1200.0
Lead	-ppm	8.0	5.0	4.0	3.0
Cadmium	-ppm	<1.0	<1.0	<1.0	1.0
Gold	-ppm	<0.02	<0.02	<0.02	<0.02
Silver	-ppm	32.8	53.6	7.5	58.5
Strontium	-ppm	6.0	12.0	17.0	8.0
Tungsten	-ppm	<2.0	<2.0	<2.0	<2.0
Antimony	-ppm	<1.0	<1.0	<1.0	<1.0
Thorium	-ppm	<2.5	<2.5	<2.5	<2.5
Sulphur	-ppm	1,7 ⁰⁰	1,6 ⁰⁰	1,4 ⁰⁰	3,2 ⁰⁰
T.O.C.	-ppm	NA	NA	NA	NA

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PAGE: 4 OF 4

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P. O. : 105272, 320

WORK ORDER: 5281D-88

*** REPORT ***

GEOCHEMICAL LABORATORY REPORT

SAMPLE TYPE: OTHER

SAMPLE NUMBER		SAMPLE BLANK	SAMPLE FEED	SAMPLE TAILS
Calcium	-ppm	303.0	4.59%	4.1%
Potassium	-ppm	8920.0	88.0	96.0
Silica	-ppm	NA	NA	NA
Titanium	-ppm	1.0	3.0	2.0
Copper	-ppm	6.0	51.0	63.0
Arsenic	-ppm	1.0	3330.0	3490.0 0.35%
Iron	-ppm	2.0	5.24%	4.74%
Manganese	-ppm	5.0	867.0	835.0
Zinc	-ppm	<1.0	606.0	624.0
Chromium	-ppm	<1.0	57.0	32.0
Nickel	-ppm	<1.0	70.0	67.0
Lead	-ppm	<1.0	431.0	466.0
Cadmium	-ppm	<1.0	4.0	4.0
Gold	-ppm	<0.02	1.28	1.56 — fire assay
Silver	-ppm	0.2	6.5	1.84
Strontium	-ppm	6.0	24.0	26.0
Tungsten	-ppm	<2.0	<2.0	<2.0
Antimony	-ppm	<1.0	5.0	6.0
Thorium	-ppm	<2.5	<2.5	<2.5
Sulphur	-ppm	0.990	7.700	8.300 → 0.83 wt%
* T.O.C.	-ppm	NA	* 2.000	2.000
			0.2 wt%	0.2 wt%

SIGNED: _____

C. Douglas Read,
LABORATORY MANAGER

* Doug Read.

* Inorganic C removed by acidification
Sample dried, filtered. — run on
Leco for Total Carbon.

FOOTNOTES:

P=QUESTIONABLE PRECISION; * = INTERFERENCE; TR=TRACE; ND=NOT DETECTED;
IS=INSUFFICIENT SAMPLE; NA=NOT ANALYZED; MS=MISSING SAMPLE