6021

CAM AND TREADWELL CLAIMS

Camborne, B. C.

METALLURGICAL REPORT

82K/13E

Prepared by:

John W. Britton, P.Eng.

Submitted by:

Douglas H. Hopper

INDEX

FORWARD

This report, written by Mr. John W. Britton, P. Eng., is additional work and results on the Cam and Treadwell Claims, Camborne, British Columbia.

For location and sample locations, see the report on the Tailings Pond on the above claims.

This report was written by Douglas H. Hopper, November 3, 1975 as is this additional report.

Douglas H. Hopper

PROPERTY AND LOCATION

This property is located near the old mining town of Camborne, B. C., in the Revelstoke Mining Division, just 1-1/2 units east of the junction of Paul Creek and Incomappleaux River, on the Map Sheet of M82-K13E.

Expenses

Invoice No. 626	$ 40.00
Invoice No. 622	400.00
Invoice 75-217	227.50
(Invoices enclosed)	
Taxis - 5 trips Vancouver	30.00
Sample preparation - 2 men @ $60/day	120.00
Report preparation - 1 man @ $60/day	60.00
Typing and photocopies	20.00
	$897.50

BRITTON RESEARCH LIMITED
Consulting Metallurgists
1612 WEST THIRD AVENUE
VANCOUVER, B.C. V6J 1K2
CANADA

JOHN W. BRITTON, A.R.S.M., B.Sc., P.Eng.
PRESIDENT

PHONE: 738-7195
AREA CODE: 604

Mr Darrell Reinke,
402-4288 Grange Street,
Burnaby, B.C. V5H 1N9

March 16, 1976

Dear Mr Reinke,

Re: Metallurgical tests on tailing sample

We give below the results obtained in our metallurgical tests on the sample of gold/silver-bearing tailings which you submitted to us on February 10, 1976:

1. Assay of sample as received (assays by General Testing Laboratories):

Direct assays:	Gold	(Au)	0.027 oz/ton
	Silver	(Ag)	1.67 oz/ton
Calculated assays (from test products):			
(a) Flotation test:	Gold	(Au)	0.038 oz/ton
	Silver	(Ag)	1.68 oz/ton
(b) Cyanidation test:	Gold	(Au)	0.040 oz/ton

It is obvious from the results of the tests that the direct gold assay on the sample as received was too low and that the correct figure is about 0.039 oz/ton; the silver assays, however, agree very well.

2. Screen analysis of sample as received and after grinding for tests:

Mesh size	Sample as received *	After grinding for flotation and cyanidation tests
(Tyler)	% passing screen	% passing screen
10	100.0	100.0
48	87.0	100.0
100	66.7	99.0
150	55.3	94.9
200	45.0	84.9
325	34.0	64.9

* After crushing oversize (mainly caked material) to minus 10 mesh.

Mr Darrell Reinke (cont.)

3. Flotation test

A 1000-gram sample of tailing was ground for 15 minutes in a laboratory ball mill at 60% solids, lime equivalent to 10 pounds per ton being added before grinding. The ground tailing was transferred to a Denver flotation machine and conditioned with 2 lb/ton lime, 0.1 lb/ton potassium amyl xanthate and 0.03 lb/ton M.I.B.C. frother. After frothing for 5 minutes, 0.04 lb/ton amyl xanthate was added and frothing was continued for a further 3 minutes. The concentrate was transferred to a smaller cell and retreated (cleaned); 0.02 lb/ton xanthate was added in cleaning, which continued for 5 minutes. The reagents used were chosen to give a maximum recovery of any free gold and silver minerals without floating excessive amounts of pyrite.

The final concentrate, cleaner tailing and rougher tailing were filtered, dried, weighed and assayed for gold and silver; results were as follows:

Product	Weight %	Assays - Ounces per ton		Distribution %	
		Gold	Silver	Gold	Silver
Concentrate	3.25	0.47	18.71	40.7	36.2
Cleaner tailing	5.26	0.11	6.28	15.4	19.7
Rougher tailing	91.49	0.018	0.81	43.9	44.1
Head (calculated)	100.00	0.038	1.68	100.0	100.0
Rougher concentrate (calc.)	8.51	0.25	11.03	56.1	55.9

Comments: 56.1% of the gold and 55.9% of the silver were recovered in the rougher concentrate, which assayed 0.25 oz/ton gold and 11.03 oz/ton silver. Fairly heavy losses of the gold and silver occurred in cleaning, the recoveries in the final concentrate being 40.7% and 36.2% respectively, with grades of 0.47 oz/ton gold and 18.71 oz/ton silver. In practice, the cleaner tailing would be recirculated to the head of the flotation circuit and part of its gold and silver contents would ultimately be recovered in the concentrate. It is therefore expected that at least 48% of the gold and 46% of the silver could be recovered in a full-scale mill.

Mr Darrell Reinke (cont.)

4. Cyanidation test

A 1000-gram sample of tailing was ground at 60% solids for 15 minutes with lime equivalent to 8 pounds per ton of feed. The pulp was settled and excess water was taken off, followed by agitation of the pulp for 48 hours; cyanide and lime equivalent to 12 and 4 pounds per ton of tailing respectively were added before agitation. At the end of the cyanidation period the pulp was filtered and the residue was washed, followed by assaying of the solution and residue. Results were as follows:

Product	Amount	Assays		Distribution %	
		Gold	Silver	Gold	Silver
Cyanide filtrate	3030 ml	0.358 mg/l	9.85 mg/l*	80.0	52.1
" residue	987.7 g	0.008 oz/ton	0.81 oz/ton	20.0	47.9
Head (calculated)	1000.0 g	0.040 oz/ton	1.67 oz/ton**	100.0	100.0

* By difference. ** Direct assay.

Overall lime consumption: 12 pounds per ton of tailing, i.e the whole of the lime added.

Cyanide consumption: 4.33 pounds NaCN per ton of tailing.

Comments: 80.0% of the gold and 52.1% of the silver were recovered by cyanidation. The material had an acid reaction and contained soluble salts, formed by weathering. This resulted in a high lime consumption and a fairly high cyanide consumption, the latter being partly due to all of the lime having been consumed, leaving no protective alkalinity. In practice, it may be necessary to pre-aerate the tailing in the presence of lime before cyaniding in order to reduce the cyanide consumption and fouling of the solution; the lime consumption would, however, be relatively high.

Summary Appreciably higher extractions of the gold and silver were obtained by cyanidation as compared with flotation. On the other hand, flotation would involve appreciably lower capital and operating costs, which in turn would be at least partially offset by higher shipping and smelting costs.

Mr Darrell Reinke (cont.)

You will appreciate that considerably more laboratory work would be required to determine the best method of treating the tailing and even to decide whether an economic method can be developed. We would be happy to assist you further if you so desire.

Yours sincerely,
BRITTON RESEARCH LIMITED

John W. Britton, P.Eng.
Consulting Metallurgist

JWB/t
Mr Darrell Reinke (2)

TELEX: 04-50604

TELEPHONE: 980-1115

FRASER LABORATORIES LIMITED

1175 15th STREET, NORTH VANCOUVER, B.C.

November 27, 1975.

Report 75 - 217

Attn : Mr. D. Reinke

Bulk flotation tests or composite tailing sample from Camborne Property by Bacon, Donaldson & Associates Ltd. (File No. 678)

Test A. - no grinding before bulk sulphide flotation

	Weight %	Gold Oz/T	Silver Oz/T
Head		0.029	1.52
Concentrate	22.5	0.12	3.29
Tailing	77.5	0.009	1.03

Test B. - two minute grind to freshen surfaces before bulk sulphide flotation

	Weight %	Gold Oz/T	Silver Oz/T
Head		0.029	1.52
Concentrate	23.1	0.12	3.42
Tailing	76.9	0.008	0.96

Copy to: Mr D. Reinke

GENERAL TESTING LABORATORIES

DIVISION SUPERINTENDENCE COMPANY (CANADA) LTD
1001 EAST PENDER ST., VANCOUVER, B.C., CANADA. V6A 1W2
PHONE (604) 254-1647 TELEX 04-507514 CABLE SUPERVISE

TO:
BRITTON RESEARCH LIMITED
1612 West 3rd Avenue
Vancouver, B.C.
V6J 1K2

CERTIFICATE OF ASSAY

No.: 7603-3054 DATE: Apr. 2/76

We hereby certify that the following are the results of assays on: Pulp

MARKED	GOLD OZ/ST ~~GRAMS/TON~~	SILVER OZ/ST ~~GRAMS/TON~~	XXX	XXX	XXX	XXX	XXX	XXX
Project B434								
ASSAYS OF SCREEN FRACTIONS OF TAILING SAMPLE AS RECEIVED								
(See our letter report dated March 16, 1976)								
434 D (Minus 200 plus 325 mesh)	0.058	1.50						
434 E (Minus 325 mesh fraction)	0.037	2.69						

(Confirmation of telephoned results)
John W. Britton, P.Eng.
April 6, 1976

Remark : One assay ton was used for each result.

NOTE: REJECTS RETAINED ONE MONTH. PULPS RETAINED THREE MONTHS. ON REQUEST PULPS AND REJECTS WILL BE STORED FOR A MAXIMUM OF ONE YEAR

REPORTS ARE THE CONFIDENTIAL PROPERTY OF CLIENTS PUBLICATION OF STATEMENTS, CONCLUSION OR EXTRACTS FROM OR REGARDING OUR REPORTS IS NOT PERMITTED WITHOUT OUR WRITTEN APPROVAL. ANY LIABILITY ATTACHED THERETO IS LIMITED TO THE FEE CHARGED.

L. WONG PROVINCIAL ASSAYER

Copy to: Mr D. Reinke

GENERAL TESTING LABORATORIES

DIVISION SUPERINTENDENCE COMPANY (CANADA) LTD

1001 EAST PENDER ST., VANCOUVER, B.C., CANADA V6A 1W2

PHONE (604) 254-1647 TELEX 04-507514 CABLE SUPERVISE

TO:
BRITTON RESEARCH LIMITED
1612 West 3rd Avenue
Vancouver, B.C.
V6J 1K2

CERTIFICATE OF ASSAY

No.: 7602-26525 | DATE: April 1/76

We hereby certify that the following are the results of assays on: Pulp

MARKED	~~GOLD~~ OZ/ST GR/MT	~~SILVER~~ OZ/ST GR/MT	Lead Pb (%)	Zinc Zn (%)	XXX	XXX	XXX	XXX
Project B434								
ADDITIONAL ASSAYS ON FLOTATION CONCENTRATE (Confirmation)								
(See our letter report dated March 16, 1976)								
[illegible] - 1.			6.50	17.87				

John W. Britton, P.Eng.
April 6, 1976

C. WONG PROVINCIAL ASSAYER

PHONE: 738-7195

AREA CODE 604

INVOICE

BRITTON RESEARCH LIMITED
Consulting Metallurgists
1612 WEST THIRD AVENUE
VANCOUVER 9, B.C.
CANADA

TO: Mr D. Reinke,
402-4288 Grange Street,
Burnaby, B.C. V5H 1N9

April 6 19 76

№ 626

Re: Professional services rendered - Additional assays on test products. See enclosed copies of assay reports by General Testing Laboratories:

$40.00

Received with thanks, March 29, 1976

John W. Britton

TERMS:

PHONE: 738-7195

INVOICE

AREA CODE 604

BRITTON RESEARCH LIMITED
Consulting Metallurgists
1612 WEST THIRD AVENUE
VANCOUVER 9, B.C.
CANADA

TO: Mr D. Reinke,
402-4288 Grange Street,
Burnaby, B.C. V5H 1N9

March 16 19 76

№ 622

Re: Professional services rendered, February 10 to March 16, 1976-
Metallurgical tests on a sample of gold/silver tailings, See our report dated March 16, 1976:

Staff time and disbursements (assays): - Agreed charge	$400.00

Received with thanks, February 23, 1976 ($200.00) and January 10, 1976 ($200.00)

John W. Britton, P.Eng.

TERMS:

TELEPHONE: 980-1115

FRASER LABORATORIES LIMITED

1175 W 15th STREET, NORTH VANCOUVER, B. C.

DATE: November 27, 1975.

Mr. D. Reinke
402 - 4288 Grange Street
Burnaby, B. C.

INVOICE No.: 75 - 217

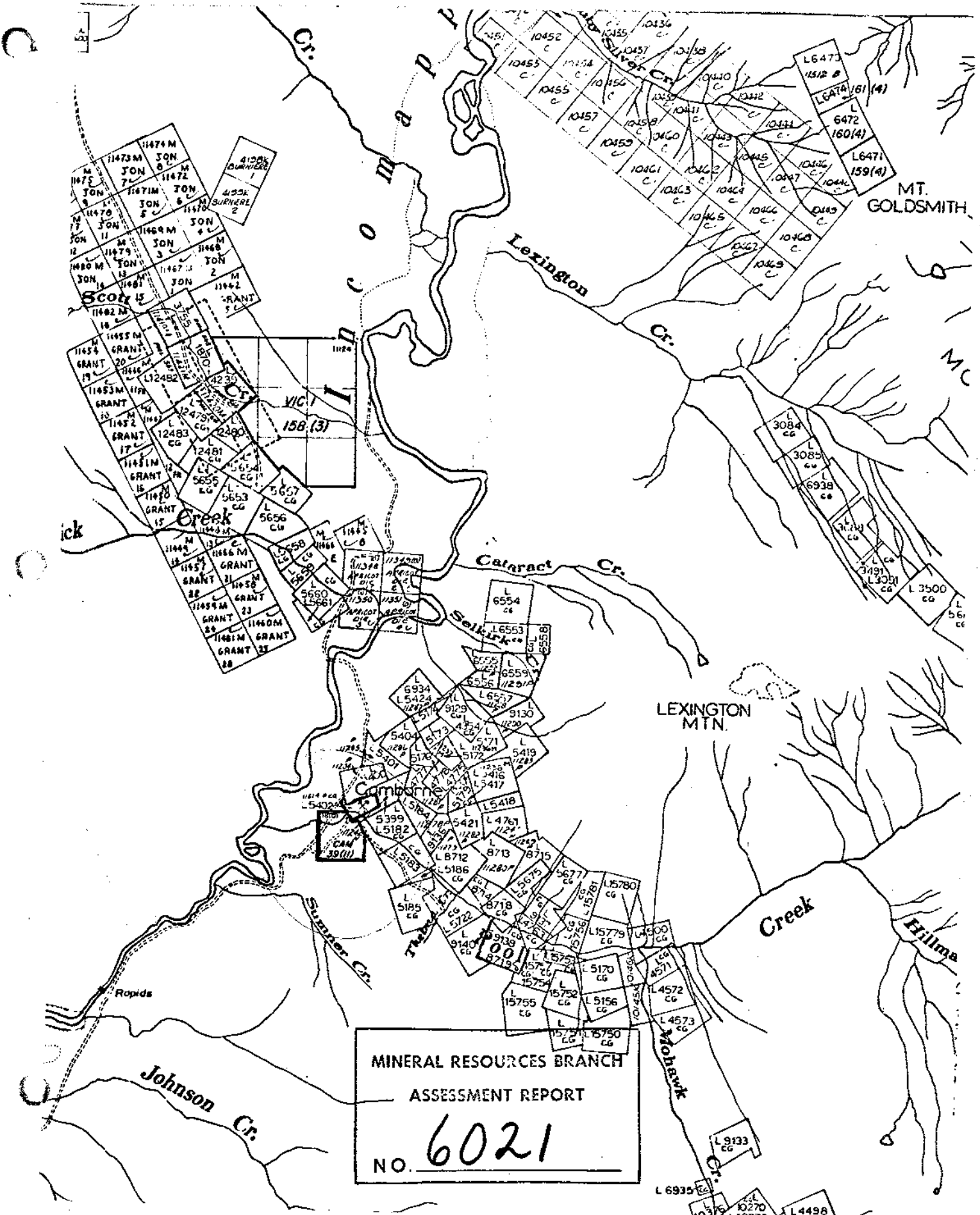
For Services Rendered: Re - Report 75 - 217 Flotation Tests - Camborne Property

Preparation of 3 composite tailing samples	$ 40.00
Bulk flotation tests (Bacon, Donaldson & Associates)	150.00
5 flotation products assayed for Gold & Silver	37.50
	$ 227.50

PAID

Date: .....

Cheque No.....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