

of Princeton Explorations and these are being returned to you under seperate cover.

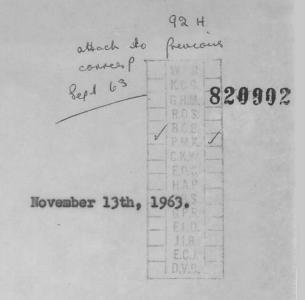
Kerr-Addison will not undertake any further exploration of this group but we are very pleased to have had the opportunity of reviewing the data and we wish you every success in arranging a satisfactory program.

Yours sincerely,

William M. Sirola.

WMS/iw. C.C. P.M.K. NOV 1,4,19633

COPY



Mr. Doug Hawkes : B.C. Mortgage Exchange Ltd., 408 Hornby Street, Vancouver 1, B.C.

Re: Princeton Explorations Property, Copper Matha, BC. Dear Doug :

We have thoroughly perused the various maps and reports you have submitted on the property of Princeton Explorations and these are being returned to you under seperate cover.

Kerr-Addison will not undertake any further exploration of this group but we are very pleased to have had the opportunity of reviewing the data and we wish you every success in arranging a satisfactory program.

Yours sincerely,

William M. Sirola.

WMS/iw.

C.C. P.M.K.

KERR-ADDISON GOLD MINES LIMITED

(FOR INTER-OFFICE USE ONLY)

attach to Revious

K.C.G.

To P.M. KAVANAGH From W.M. SIROLA

Subject PRINCETON EXPLORATIONS - FRIDAY CREEK PROPERTY (92 - H)

Date September 19th, 1963.

In my last communication on this property I stated that I would give you my final impressions on whether or not we should attempt to option this property. I do not feel that we should get into this situation on a stampede basis. If we can be given whatever time we need for a proper evaluation, which would involve a perusal of the Phelps Dodge geochemical and other information, then perhaps we could find the justification for further work on the property.

In my absence in the Yukon, perhaps you could advise Mrs. Wilson of your decision and she can then relay the message to Doug. Hawkes.

WMS/iw.

I told Mrs. Wilson (Serola's secretary)
by phone to achieve Hawkes that if he wanted an immediate yes or no, our answer would be no.) but that if wer could have more time, then we would attempt to sheek the property.

Philps Dodge dato u. the property. Sept. 23/63

SEP 1 8 1963

KERR-ADDISON GOLD MINES LIMITED

W.S.R K.C.G.

(FOR INTER-OFFICE USE ONLY)

To. P.M. KAVANAGH

From W.M. SIROLA

HAP

J.B.S.

Subject PRINCETON EXPLORATIONS - FRIDAY CREEK PROPERTY

(92-H)

Date September 13th, 1963. EL.O.

(92-H)

I have not been able to make what I consider a proper evaluation of this property but Doug. Hawkes is in a hurry for a decision. We will send you a map showing the disposition of cancelled claims in the Copper Mining Area and perhaps we can decide from this that there is ground available for staking which is equally well located geologically.

Hawkes would like to have a decision within one week from Kerr-Addison. My reaction at the moment is that the best mineralization found to date is very erratic and further search would involve finding completely new targets. Consequently, I am not overwhelmed with this situation but I will express a final opinion as soon as we have the complete picture of the currently available ground in that area.

William M. Sirola.

attack to previous, corper, Princeton Exf.

15,000 exp. to date 30-40% agenty desired until per year for seguers. Thence on weareld want us to assume the payments to Triday - have made 1 "Sion fayment next one due on June 1/64 4 on Dec 31 \$2,5,00 then \$5,000 payments on Dec 31 sty each year now a 32 claim property 26 + 6 recently stated. - work commitments by Prension to Friday being arunded.

REFERENCE MEMORANDUM

	DATE	Mug 13	1963
THE ATTACHED PAPERS AR		Va	e/
TO ///255	48 VV.	S-Row & K.C. &	ray
PLEASE REPLY DIRECT		PLEASE HANDLE	
PLEASE SEE ME RE THIS		YOUR COMMENTS	
FOR YOUR INFORMATION	b	FOR APPROVAL	
PLEASE RETAIN		PLEASE RETURN EC	JO
This refers to a	prope	ty which first	came
to my attention in	a show	treport in le	est
enceks Northern /			
is attached.			

Mill.

GOPY

Mr. W.M. Sirola

Mr. Paul M. Kavanagh

Princeton Explorations FRIDAY CREEK PROPERTY, Brinceton District, B.C. (92-H). August 13th, 1963.

This is further to our telephone conversation about this situation yesterday.

The following is the write-up re Princeton Exploration Limited in the 1963 Canadian Mines Handbook:

Executive Office, 10th floor,

850 W. Hastings St.

Vancouver.

Directors:

D.V. Hawkes, W. Dexter, Dr.D. Campbell, R. Jury, D. Hamelin, I. Todd, J. Wilson, R.C. Hawkes,

Secy-Treas:

S.D. Anfield.

Incorporated in 1963 with a B.C. charter.

Capitalization:

3,000,000 shares authorized -

\$1.00 par value.

Property &

Development:

a 26 claim copper prospect near Princeton, B.C. optioned from Friday Creek Development Company; surface exploration and diamond drilling in progress in June 1963.

The following is a write-up re Friday Creek Development Company Limited in the 1963 Canadian Mines Handbook:

Address: 1614, 1030 West Georgia St. Vancouver.

- D.F. Hamelin, President; W.J. Birney, Secretary,

a private company.

a 26 claim copper - gold - silver prospect 15 miles south of Princeton, B.C. optioned in May, 1963 to Princeton Exploration Limited.

The above data show several things:

- (1) The D.F. Hamelin who is president of Friday Creek Development is most likely the D. Hamelin who is a director of Princeton Explorations.
- (2) Doug. Campbell is a director of Princeton Explorations, not only a consultant.
- (3) Princeton Explorations does not own the property but merely has an option on it.

Mr. W.M. Sirola.

Mr. Paul M. Kavanagh

Princeton Explorations FRIDAY CREEK PROPERTY, Princeton District, B,C. (92-H).

August 13th, 1963.

Page 2.

I don't know whether Princeton Explorations or Friday Creek Development are traded in Vancouver or not; the August 8th issue of The Northern Miner does not list either of these in either its Vancouver listed list or unlisted list in column one on page eight.

I think that before you would examine the property you should determine several things:

- (1) What are the terms of the Princeton Explorations option?
- (2) Can Princeton Exploration assign its option?
- (3) If so, what terms of a deal would it want?
- (4) If not, and if it would let its option lapse, what terms of a new option deal would Friday Creek Development want?
- (5) Is the stock of either company being traded, and if so at what prices?

Please let me know what you find out.

Paul M. Kavanagh

Muk.

Chief Geologist - Exploration

PMK/sm.

AUG 1 3 1963

W.S.R.

KERR-ADDISON GOLD MINES LIMITED

(FOR INTER-OFFICE USE ONLY)

ToP.M. KAN	/ANAGH	From	W.M. SIROLA		GHM.
Subject Princet	on Explorations Frid	ay Creek Proper	ty, Date	August 12th, 1	B.C.S. PM.K.
Princet	con Area, B.C. (92 -	н)			HAP J.B.S. G.P.R. ELD. J.B. E.C.J. D.V.B.

I discussed the situation with Doug Campbell who is the geological consultant for Princeton Explorations. Doug advises that while some interesting widths and grades have been found, they have no continuity. None the less, he feels that the property is definitely deserving of additional work by a large company. He is in the process of writing a report which he expects to complete by the middle of next week. He will contact the directors and tell them that it is his recommendation that Kerr-Addison be given first refusal.

The property is of course not new and has been investigated by a number of companies, the last of which was Phelphs-Dodge. However, Campbell feels that the mineralization being worked on at the moment is not the target studied by Phelphs- Dodge.

Upon receipt of Campbell's report, I will plan on visiting the property.

William M. Sirola.

KERR-ADDISON GOLD MINES LIMITED

44 KING STREET WEST
TORONTO 1, ONTARIO

Mr. W.M. Sirola

Mr. P.M. Kavanagh

Princeton Explorations Friday Creek Property, Princeton Area, B.C. (92-H).

August 9th, 1963.

1963.

H.A.P

Please refer to a report on this property in Column 1, Page 2 of the August 8th, 1963 issue of The Northern Miner. That report makes the property sound like something we should investigate.

Please let me know what you know of the situation, and advise as to whether or not you consider it something you should look in to.

Daul M. Kayanad

Paul M. Kavanagh Chief Geologist - Exploration

PMK/sm.

Copy of write-up on Page Two, Column One - "THE NORTHERN MINER" August 8th, 1963 issue.

"PRINCETON EXPLORATIONS has uncovered a wide zone of mineralization at the south end of the Friday Creek open-cut, on its property $2\frac{1}{2}$ miles from the Copper Mountain mine in the Princeton area, B.C. A 20-ft. width of this mineralization, lying between two parallel faults, 44 ft. apart, assayed 0.5 oz. gold, 1.5 oz. silver and 3.7% copper. At the north end of the open-cut, a glory hole, 30 ft. across, was exposed by a bulldozer. An 18 ft. sample assayed 0.04 oz. gold, 0.8 oz. silver and 3.7% copper. This exposure showed widths up to 75 ft. with sulphide mineralization. The two zones are 450 ft. apart. Work is being planned to explore their extensions."

PRINCETON EXPLORATION LTD.

(NON-PERSONAL LIABILITY)

PROSPECTUS

PRINCETON EXPLORATION LTD. (NON-PERSONAL LIABILITY)

PROSPECTUS

- (a) Princeton Exploration Ltd. (Non-Personal Liability) (hereinafter called "the Company") has its head office at 411 850 West Hastings Street, City of Vancouver, Province of British Columbia, and its registered office at 10th Floor, Credit Foncier Building, 850 West Hastings Street, City of Vancouver, Province of British Columbia.
- (b) The Company was incorporated by Memorandum of Association under the Companies Act of the Province of British Columbia, on the 2nd day of April, A.D. 1963.
- (c) There have been no amendments to the Memorandum of Association since incorporation.
- (d) The full name, address and occupation of the directors are:-

NAME AND ADDRESS

OCCUPATION

D. V. Hawkes 408 Hornby Street Vancouver, B.C.

Mortgage Broker

Rae Jury 1215 Comox Street Vancouver, B.C.

Geologist

Douglas F. Hamelin 1055 Eyremont Drive West Vancouver, B.C.

Geologist

William A. Dexter 905 Fairmile Road West Vancouver, B.C.

Civil Engineer

Ivan Todd 1161 Melville Street Vancouver, B.C.

Lumber Broker

Robert C. Hawkes 122 Lytton Boulevard Toronto 12, Ontario

Vice-President of Canadian SKF Co. Ltd.

James Wilson 1074 - 51 A Street R.R. #2 Ladner, B.C.

Contractor

S. David Anfield 2010 Queens West Vancouver, B.C.

Solicitor

There is no promoter.

(e) The auditors of the Company are:-

Field Brothers & Co. Chartered Accountants 310 - 850 West Hastings Street Vancouver 1, B.C.

(f) The Registrar and Transfer Agent is:-

National Trust Company, Limited 510 Burrard Street Vancouver 1, B.C.

- (g) The authorized capital of the Company is \$3,000,000.00, divided into 3,000,000 shares with a nominal or par value of \$1.00 each, of which 866,000 shares have been issued as fully paid and non-assessable. There is no other class of shares.
- (h) The Company has not created or issued any bonds or debentures, nor does it propose to do so, and no bonds or debentures are offered by this Prospectus.

- (i) Certificates representing 750,000 shares of the Company are held in escrow by the National Trust Company, Limited, at Vancouver, B.C., subject to release only with the consent of the British Columbia Securities Commission.
- (j) The Company has sold the following shares for cash to date:-

Number of Shares	Price per Share	Discount	Total Cash Received
2 116,000	\$1.00	nil	\$ 2.00
	\$0.10	\$0.90	\$11,600.00

No commission has been paid on the allotment of the above shares.

30,000 shares at 10 cents per share have been sold since the 30th day of April, A.D. 1963, the date of the balance sheet attached hereto and forming part of this Prospectus.

- (k) No securities other than shares have been sold for cash to date.
- (1) D.V. Hawkes & Associates have received 350,000 shares in the capital stock of the Company in consideration of assigning his rights as Optionee in an option agreement between Friday Creek Development Co. Ltd. (therein called "the Optionor") and D.V. Hawkes (therein called "the Optionee"), dated for reference the 12th day of March, A.D. 1963, (hereinafter called "the said agreement"). The said 350,000 shares are part of the 750,000 shares described in Paragraph (i) herein.
- (m) (i) The Company is the Assignee of the Optionee's rights set forth in the said agreement. As a result of the assignment the Company has acquired an option to purchase the following mineral claims in the Similkameen Mining Division:-

Name of Claim	Record No.	Name of Claim	Record No.
Elk Fraction 8	7836	ILK 5	7655

Name of Claim	Record No.	Name of Claim	Record No.
Elk Fraction 7	7814	ILK 3	7570
6	7816	2	7654
5	7815	1	7547
4	7789	ILK	7380
3	7788	Ni	7376
2	8535	Ni 2	7377
1	7786	. 4	7381
ILK 11	7649	. 5	7382
10	7648	1	8994
8	7647	3	8976
7	7657	6	8977
6	7656	7	8978

(hereinafter called "the said claims").

- (ii) The Vendor/Optionor of the claims described in Paragraph (m) (i) above is Friday Creek Development Co. Ltd., a Company incorporated under the laws of the Province of British Columbia. The purchase price for the said claims is \$75,000.00 to be paid as follows:-
 - (a) \$500.00 within 15 days of the execution of the said agreement (this sum has been paid to the Optionor by the Company);
 - (b) the sum of \$2,000.00 on or before the 1st day of June, A.D. 1963;
 - (c) the sum of \$2,500.00 on or before the 30th day of September, A.D. 1963;
 - (d) the sum of \$2,500.00 on or before the 1st day of June, A.D. 1964;
 - (e) the sum of \$2,500.00 on or before the 31st day of December, A.D. 1964;
 - (f) the sum of \$5,000.00 on the 31st day of December, A.D. 1965, and thereafter the sum of \$5,000.00 on

the 31st day of December in each and every year until the full balance has been paid, provided that 10% of the net smelter returns received from the property shall be paid to the Optionor and shall apply towards the purchase price.

In addition, Friday Creek Development Co. Ltd. received as fully paid and non-assessable 400,000 shares in the capital stock of the Company. These shares are held in escrow by the National Trust Company, Limited, and are part of the shares referred to in Paragraph (i) hereof. To keep the said agreement in good standing the Company must spend \$20,000.00 on the said claims in 1963 on exploration and development work.

- (iii) So far as the signatories hereto are aware no person or company has received a greater than a 5% interest in the consideration received by the Vendor/Optionor.
- (iv) The said claims are located 12 miles southeast of the town of Princeton. The claim group lies along and west of the Similkameen River extending for a distance of $2\frac{1}{2}$ miles between Friday Creek and Saturday Creek. The group extends up the mountainside west of the Similkameen River for a distance of 1 mile nearly to the Hope-Princeton highway. The property is reached by a dirt road that joins the Hope-Princeton highway near the Kennedy Lake turnoff.
- (v) In the early days of the Copper Mountain camp occurrences of bornite and other copper minerals were discovered near the mouth of Friday Creek at the edge of the intrusive stock. At least five short adits were excavated to explore these deposits near Friday Creek.
- (vi) In 1959 Phelps-Dodge Ltd. optioned the claims and put a number of bulldozer cuts along the hillsides above the adits to expose more rock. Subsequent to the work by Phelps-Dodge, Mr. Hamelin and Associates endeavoured to further expose the area of high copper and gold values by stripping of the overburden between the South Trench and Friday Creek. The resulting opencut has a plan dimension of about 300 feet x 300 feet and in it bedrock is exposed as a series of benches

covering a vertical distance of about 150 feet.

- (vii) For the history of the property see the report of Dr. Douglas D. Campbell, dated the 22nd day of April, A.D. 1963, attached hereto and forming part of this Prospectus.
- (viii) The Company has not, prior to the 1st day of May, A.D. 1963, done any work on the property, though work is being undertaken at the date hereof as described in Paragraph (o) hereof.
- (n) No securities of the Company are the subject of an underwriting. The Company offers by this Prospectus 100,000 shares. The amount payable on application for allotment of such shares is 20 cents and a discount of 80 cents per share is to be allowed with a maximum commission of 25% to be payable. The Company intends to use the proceeds from the sale of these shares as follows:-

Payment of commissions (maximum)	\$ 5,000.00
Driving adit as recommended by Dr. Campbell	6,000.00
Legal and audit	1,500.00
Office and administration	3,000.00
Property payment	2,000.00
Reserve for future exploration	2,500.00
TOTAL	\$ 20,000.00

⁽o) The Company intends to carry out the recommendations contained in the report of Dr. Douglas D. Campbell and has let a contract to drive a 6 x 7 foot adit into the contact zone

at the lower bench of the Hamelin opencut. Work on the said adit commenced on the 8th day of May, A.D. 1963. The cost of this work will approximate \$6,000.00.

Further work on the property will depend on the results obtained in driving the said adit and the further recommendations of Dr. Douglas. D. Campbell.

- (p) The Company has incurred an expense of \$1,400.00 in incorporation and has committed itself to \$6,000.00 for the preliminary work referred to in Paragraph (o) above. An estimate of future expenditures in preliminary matters is \$1,500.00.
- (q) There is no substantial indebtedness to be created or assumed that is not shown on the balance sheet, dated the 30th day of April, A.D. 1963; and attached hereto and forming part of this Prospectus.
- (r) The principal business of each director and officer of the Company for the past three years and their present business is as follows:-

D.V. Hawkes - Mortgage Broker

S.D. Anfield - Solicitor

Rae Jury - Exploration Geologist
now Consulting Geoligist
and Contractor

Douglas F. Hamelin - Consulting Geologist and Driller

William A. Dexter - Consulting Civil Engineer

Ivan Todd - Lumber Broker

Robert C. Hawkes - Vice-President of Canadian SKF Co. Ltd.

James Wilson

- Manager of Contracting Firm

- (s) Douglas F. Hamelin, William A. Dexter and James Wilson are directors and officers of Friday Creek Development Co. Ltd., the Vendor/Optionor of the said claims.
- (t) No remuneration has been paid to the directors or officers of the Company since the date of incorporation.
- (u) It is anticipated that no remuneration will be paid during the current fiscal year to the directors of the Company, other than to a manager who will be paid a salary not in excess of \$500.00 per month.
- (v) No person by reason of beneficial ownership of shares is able and entitled to elect or cause to be elected a majority of the directors of the Company.
- (x) No dividends have been paid by the Company.
- (y) If and when the shares referred to in Paragraph (1) hereof are released from escrow and are sold by the owners thereof to the public, none of the proceeds of such shares will accrue to the benefit of the Company's treasury.

There are no further material facts which are not disclosed under this Prospectus.

The foregoing constitutes full, true and plain disclosure of all material facts in respect of the offer of the securities referred to above and as required by the Securities Act of the Province of British Columbia and there is no further material or information applicable, other than in the financial statements or reports, where required.

DATED at Vancouver, British Columbia, this 23rd day of May, A.D. 1963.

"D.V. HAWKES"	"RAE G. JURY"
D.V. Hawkes	Rae Jury
"DOUGLAS F. HAMELIN" by his Attorney in fact "D.V. HAWKES"	"WILLIAM A. DEXTER"
Douglas F. Hamelin	William A. Dexter
"I. TODD"	"ROBERT C. HAWKES" by his Attorney in fact "D.V. HAWKES"
Ivan Todd	Robert C. Hawkes
"JAMES WILSO	"MC

James Wilson

"S.D. ANFIELD"

S. David Anfield

PRINCETON EXPLORATION LTD. (NON-PERSONAL LIABILITY)

BALANCE SHEET AS AT APRIL 30, 1963

ASSETS

Current:	
Cash	7,020.07
Mineral Claims - at cost (Note 1)	825,000.00
Deferred Development - per Schedule "1" (Note 2)	323.93
<u>Incorporation Expense</u> - at cost	1,413.30
\$	833,757.30
LIABILITIES	
Current:	
Accounts Payable 655.30 Option Payable - current portion 4,500.00	5,155.30
Option payable on mineral claims 74,500.00 Deduct: current portion 4,500.00	70,000.00
Share Capital:	
Authorized: 3,000,000 common shares of \$1.00 each par value \$3,000,000.00	
Issued: 86,002 common shares for cash 86,002.00 Less discount 77,400.00 8,602.00	
750,000 common shares for mineral claims 750,000.00	
836,002 common shares	758,602.00
\$	833,757.30

Schedule "1"

SCHEDULE OF EXPENSES FROM APRIL 2, 1963, TO APRIL 30, 1963

Development Expense:	
Geological fees and licence	\$ 200.00
Insurance	42.00
Sundry	81.93
Total Expenses - to Balance Sheet	\$ 323.93

NOTES TO FINANCIAL STATEMENTS AS AT APRIL 30, 1963

1. The Company acquired from Friday Creek
Development Co. Ltd. the mineral claims
Elk Fraction 1-8, Ilk 1 to 3, 5 to 11,
Ilk, Ni, Ni 1-7, as the assignee of an
agreement, for consideration of:

750,000 common shares of \$1.00 par value each

\$ 750,000.00

Cash payments

75,000.00

\$ 825,000.00

2. The Company, to keep the above agreements in good order, agrees to spend on the claims prior to December 31, 1963, not less than \$20,000.00 for exploration and development. It also agrees to spend \$20,000.00 for exploration and development during the calendar year, 1964.

We have examined the Balance Sheet of Princeton Explorations Ltd. (Non-Personal Liability) as at April 30, 1963, and have obtained all the information and explanations

we required. Our examination included a general review of the accounting procedures and such tests of the accounting records and other supporting evidence as we considered necessary in the circumstances.

In our opinion, the above Balance Sheet, supplemented by the accompanying notes and Schedule, is properly drawn up in accordance with generally accepted accounting principles so as to present fairly the financial position of the Company as at April 30, 1963, according to the best of our information and explanations given to us and as shown by the records of the Company.

Vancouver, B.C. May 15, 1963.

"Ross B. Field, For Field Brothers & Co."

Chartered Accountant.

DOUGLAS D. CAMPBELL Consulting Geologist 1119 Marine Building Vancouver 1, B. C.

CERTIFICATE

I, Douglas D. Campbell, with business and residential addresses in Vancouver, British Columbia, do hereby certify that:

- 1. I am a consulting geological engineer.
- 2. I am a graduate of the University of British Columbia, (B.A.Sc., Geological Engineering, 1946) and of the California Institute of Technology (PhD., Economic Geology and Geophysics, 1955).
- 3. I am a registered Professional Engineer of the Province of British Columbia.
- 4. From 1946 until 1957 I was engaged in mining and mining exploration in Canada and the United States as geologist for a number of companies. I was chief geologist for Eldorado Mining & Refining Co. Ltd., when I retired in 1957 to begin private practice as a consulting geologist.
- 5. I personally visited the properties of the Princeton Exploration Ltd. in May, June and October, 1962.
- 6. I have not received nor do I expect to receive any interest directly or indirectly in the properties or securities of Princeton Exploration Ltd.

Respectfully submitted,

"DOUGLAS D. CAMPBELL"

Douglas D. Campbell, BASc., PhD., P.Eng.

Vancouver, B.C.

April 22, 1963.

INTRODUCTION

The writer, Dr. Douglas Campbell, visited the Friday Creek property of Princeton Exploration Ltd. in company with Mr. D. Hamelin on May 31 and June 1, 1962, and briefly again on June 11. In the course of the examination the writer mapped and sampled the large opencut on Friday Creek that had been excavated under Mr. Hamelin's direction and also made a reconnaissance of the general vicinity of the opencut.

In October 1962 the writer again visited the opencut to map the new faces exposed by bulldozer subsequent to the first examinations.

LOCATION

Princeton Exploration Ltd. hold 26 mineral claims and fractional claims in one group located eight miles south of the town of Princeton. The claim group lies along and west of the Similkameen River extending for a distance of $2\frac{1}{2}$ miles between Friday Creek and Saturday Creek. The group extends up the mountainside west from the Similkameen River for a distance of one mile nearly to the Hope-Princeton Highway.

The principal exposures of interest on the property are located along Friday Creek at the north end of the group, approximately 1,500 feet west of the Similkameen River.

The following claims and fractions comprise the group:-

Name of Claim	Record No.	Name of Claim	Record No.
Elk Fraction 8 7 6	7836 7814 7816 7815	ILK 5 3 2	7655 7570 7654 7547
4 3 2 1	7789 7788 8535 7786	ILK Ni Ni 2 4	7380 7376 7377 7381

Name of Claim	Record No.	Name of Claim	Record No.
ILK 11	7649	Ni 5	7382
10	7648	1	8994
8	7647	3	8976
7	7657	6	8977
6	7656	7	8978

HISTORY

In 1959 the general geology of the property was recorded on plans by the staff of Phelps-Dodge Ltd. and from the limited amount of checking by the writer the geology appears to be correct. Phelps-Dodge had a number of extensive bull-dozer cuts excavated on the property during their option and the Hamelin opencut comprised an enlargement of the north end of their "South Trench", adjacent to Friday Creek. The Hamelin opencut was excavated to expose rock in an area of encouraging indications of gold and copper mineralization in both the South Trench, as well as several old adits near the creek.

This report deals entirely with the economic prospects of the area of the Hamelin opencut, which was of particular interest to the owners at the time of the examination; however, several interesting copper occurrences in the South Trench, $\frac{1}{2}$ mile southeast of the Hamelin opencut, as shown in the Phelps-Dodge plans, suggest a potential area for prospecting for a large, lowgrade copper deposit.

LOCATION AND HISTORY

The Princeton Exploration property is located 12 miles south of the town of Princeton, B.C., about 1,500 feet west of the Similkameen River. The Copper Mountain Mine lies across the Similkameen three miles to the northeast of Friday Mines (see Figure 1, Inset). The property is reached by a dirt road that joins the Hope-Princeton highway near the Kennedy Lake turnoff.

Because the copper mineralization of the Copper Mountain Mine occurs on the edge of a body of intrusive rock,

termed the Copper Mountain Stock, the periphery of that body has for years been the target of prospectors searching for further orebodies. In the early days of the Copper Mountain camp occurrences of bornite and other copper minerals were discovered near the mouth of Friday Creek at the edge of the intrusive stock. At least five short adits were excavated to explore these deposits near Friday Creek but no body of copper mineralization was found to be of sufficient size to make ore.

In 1959 Phelps-Dodge Ltd. optioned the claims and put in a number of bulldozer cuts along the hillsides above the adits to expose more rock. The exposures in these cuts, see Figure 1, indicated spotty lenses of relatively high grade copper and gold mineralization but none of sufficient continuity or size to warrant further work.

Subsequent to the withdrawal of Phelps-Dodge from the property Mr. Hamelin and associates endeavoured to further expose the area of the high copper-gold values by stripping off the overburden between the South Trench and Friday Creek. The resulting open cut has a plan dimension of about 300 ft. x 300 ft. and in it bedrock is exposed as a series of benches covering a vertical distance of about 150 ft.

GENERAL GEOLOGY

The Copper Mountain Stock is a complex body comprised of a number of basic igneous rock type which range from diorite to monzonite to gabbro, each in separate bodies. This stock of igneous bodies has intruded volcanic and sedimentary rocks belonging to the Nicola Group of Upper Triassic Age. The orebodies at Copper Mountain generally were comprised of copper minerals filling extensive fractures in the Nicola Group rocks, as well as the monzonite in the vicinity of the east contact of the stock.

At Friday Creek the stock is comprised mostly of a medium crystalline, hard, gray monzonite which is intimately associated with a coarsely crystalline, dark green augitebiotite gabbro. The gabbro seems to be the older of the two intrusive rocks and occurs as a minor body within the monzonite

close to the contact of the stock, Figure 1. Both the monzonite and the gabbro have been intensely fractured near their contacts and both have been extensively intruded by very irregularly shaped veins and dikes of a pegmatitic rock whose principal constituent is rusty red coloured feldspar.

STRUCTURE

At the Hamelin opencut the gabbro, for a distance of 300 feet from the contact with the monzonite, is closely fractured by a complex system of fractures and shears, the most dominant set of which strikes parallel to the contact (NE) and dips at various angles into the gabbro (NW). That there are several generations of these fractures is attested by the fact that the feldspar dikes trend along some sets and are cut by others. In general the dikes are more shattered than the surrounding rocks, probably because of their location along or near the fracture zones as well as their less competent nature.

ECONOMIC GEOLOGY

The most encouraging mineral occurrences of possible economic importance on the Friday Creek property, aside from the aforementioned low grade copper showings south of Friday Creek, are the copper-gold occurrences in the vicinity of the old adits. Much of this area has been stripped and is now exposed in the Hamelin opencut. A number of grab samples and some scattered channel chip samples taken by numerous persons during the history of the property, particularly from places obviously rich in copper minerals, have returned various assays with notably high gold and/or copper values. Such high values are apparently not in continuous, obvious structures therefore are not economic in themselves; however, if a large-enough area of these erratic occurrences could be outlined then perhaps the whole block could be mined as ore. The study of the Hamelin cut was made with this object in mind and the results are as follows:-

GEOLOGICAL SETTING

The geology of the opencut is illustrated in Figure 2

by plan and section.

The zone of economic interest occurs mostly within the gabbro body of rock along its east contact with the main monzonite body. The monzonite tends to be blockily fractured near its border but otherwise is massive, unfractured and relatively unaltered. The gabbro rock is also very massive, unfractured and unaltered except for that portion adjoining the monzonite body which, in a width of 200 feet, is generally closely fractured and locally intensely sheared and extensively altered by feldspar, chlorite, limonite and argillic minerals.

Also within this contact zone of fractured rock, both in the monzonite as well as in the gabbro, are a multitude of very erratically shaped, generally discontinuous pink cloured pegmatitic dikes comprised of coarsely crystalline feldspar, with some biotite and minor quartz. These dikes are probably pegmatitic derivaties, however, most of them are chiefly composed of jasper-coloured feldspar and in most places can be more suitably described as feldspar veins. They appear to be more numerous within the gabbro than the monzonite.

STRUCTURE

The contact between the monzonite and the gabbro is irregular, tight and generally too poorly exposed to determine the relative ages of the two rocks.

From a point located approximately where the monzonite-gabbro contact intersects Friday Creek, northeast of the
opencut, an extensive system of shears and fractures fans out
to the south and southwest, along the contact and in the gabbro,
(see Figure 2). These fractures dip either (1) vertically or
very steeply to the east or, (2) flatly or very shallowly to
the east. A few are continuous across the opencut and exhibit
considerable gouge along their planes but most are clean fractures, generally in criss-crossing sets (Fig. 2). The feldspar
dikes tend to follow the trend of the fractures, both in strike
and dip and are themselves almost everywhere more densely fractured than their enclosing rocks. Most of the dikes have gougefilled fractures on one or both walls.

The rather disperse, complex character of the fracture pattern in the rocks in the opencut is illustrated in Figure 2.

MINERALIZATION

In many places throughout the opencut within the confines of the fracture zone disseminated chalcopyrite, lenses of bornite and smears of malachite ("copper stain") are common. Most of these occurrences are concentrated in the more heavily fractured areas and seem to be spatially related to the feldspar dikes. Most of the primary copper mineralization occurs as fracture-filling and because of the weathered and broken nature of the rock at the surface is easily lost in samples or drill core. For this reason a bulk sample below the surface weathering is the best measure of the worth of the rock.

GRADE (ASSAYS)

The writer took a number of selected channel samples from the top, middle and lower benches of the open cut. Sample sites were selected on the basis of visible copper mineralization with the realization that the samples would probably be higher than the average. Mr. Hamelin took a different set of samples in a different manner at practically the same places. The results of both these sets of samples are shown on the plan of Figure 2.

Even though the samples taken were from the most favourable sites on each bench the resulting copper values unfortunately seldom exceed one percent across appreciable widths in the middle and upper benches and are not over two percent in the lower bench. These represent the best material in the exposure and are not contiguous enough to comprise an orebody in themselves. It was hoped that they would be of sufficiently high grade to "carry" the lower grade material around them in view of the fact that it is impractical to mine them separately but the results of the surface samples do not indicate a sufficiently high grade. The averages for the copper only are as follows:-

	Width (Ft.)	Cu.
Top Bench	15 12	0.30 (Campbell) 1.30 (Hamelin)
Mid. Bench	26 42	0.46 (Campbell) 0.26 (Hamelin)
Bottom Bench	79	1.25 (Hamelin)

(Check samples by Campbell indicated somewhat lower values.)

CONTACT ZONE

Subsequent to the earlier examinations by the writer the property owners, under the direction of Mr. Hamelin, had the bottom bench excavated back into the hill (southward) by bulldozing and blasting for a distance of approximately 25 feet from the face shown on Fig. 2, Plan, (i.e.), about five feet south of DDH #1. A sketch section of the geology of this new cut, with sample results, is shown in Figure 3. The sampling was done by Mr. Hamelin on September 21, 1962, and the sample cuts were clearly visible on the rock at the time of the writer's October visit. In general the new exposures and sampling reveal that a zone of intensely fractured and altered gabbro extends for about 20 feet west from the monzonite contact and this zone averages approximately 3% Cu and 1 oz. Ag across the full width of the zone at this bench. West of this main zone of mineralization the gabbro, with and without pegmatic dikes, is locally mineralized along fracture concentrations which are generally flat or low eastward dipping.

The feature of most economic interest is this zone of copper-silver mineralization in the gabbro adjacent or close to the monzonite contact. In the cut in the bottom bench the zone is 20 feet in width and assays 3% Cu and 1 oz. Ag. The same zone where exposed above on the middle bench sampled by the writer in June assayed 1% Cu and trace Ag across 8 feet, (Fig. 2, Plan), and on the top bench it assayed 0.30% Cu and

trace Ag across 15 feet (Fig. 2, Plan). This zone is clearly visible from the top to the bottom of the opencut as a 20 ft. width of bleached and closely fractured gabbro exhibiting abundant copper stain on practically all exposures. The zone does not everywhere follow the contact but rather is more or less straight, striking southeast and dipping about 80° to the east. As shown in Figure 3 there is a suggestion that the values in the zone increase where the zone is adjacent to the monzonite and/or where the dike-fracture zones intersect it from the west.

The plan distance from the top bench to the lower bench is 150 feet. Further north along strike, in Friday Creek, a distance of 110 feet from the lower bench, Mr. Hamelin took a grab sample in June 1960 that assayed 9.5% Cu, 1.7 oz. Ag and 0.13 oz. Au. At the present time this gulch is filled with muck from the open cut so the location of this sample cannot be observed. Between the creek and the trench on the north side of the creek, on strike with the zone in the open cut. Dr. V. Dolmage of Vancouver took a sample across 18 ft. in 1948 which assayed 3.7% Cu and 0.80 oz. Ag. This location is also presently buried in muck bulldozed from the trench above (North Trench in Fig. 1). In this north trench an outcrop of malachitestained fractured gabbro was channel sampled by Mr. Hamelin in August 3, 1962, and the sample ran 5.4% Cu and 1.55 oz. Ag across 10 feet. From the appearance of the cut of this sample on the rock the sample appears to be representative.

CONCLUSIONS

GENERAL MINERALIZED ZONE

The best copper values occur in the fractured zone of gabbro within about 100 feet of the monzonite contact. The highest values are directly related to feldspar dikes and places of more intense fracturing.

Sampling of the top and middle benches of the open cut did not return values high enough in copper and/or gold to be of economic interest, particularly in view of the lack of continuity of the mineral-bearing structures, with the

exception of the contact zone.

To further test the mineralization of the Lower Bench of the Hamelin opencut three diamond drill holes were put down near the contact to probe below the zone of surface weathering. The first two holes were started but after a few tens of feet of drilling it became evident that core recovery was so low that results would be inconclusive. The third hole, inclined at -60° to the west, was cemented and although core recovery was still poor it was good enough to record the geology (entirely gabbro and feldspar dikes). Sludges were taken from this hole and were assayed for gold, silver and copper. One sludge from 11 to 16 ft., assayed o.54 oz. Au, 5 oz. Ag and considerable copper; however, none of the other samples returned such interesting values although the hole was drilled beyond 58 feet. The significance of this sludge is unknown at this time.

In general there is not enough continuity of structures and values throughout the opencut to consider the entire exposed fracture and alteration zone as ore.

CONTACT ZONE

Sample results indicate that the zone of alteration and fracturing, 20 feet in width, within the gabbro roughly adjacent to the monzonite contact may be ore-bearing zone. Six samples taken by various persons are in general agreement that the tenor of the mineralization in the zone could be about 3% Cu and 1 oz. Ag per ton along a strike length of 400 feet and a vertical height (from the top bench of the open cut to the creek), of 200 feet. This represents thinly spaced sampling, of course, but the indication are that a zone could exist that has a gross value (at present prices) in copper and silver of about \$20 per ton across 15 - 20 feet with higher grade sections available.

In view of the regional geological setting of this occurrence and the existence of widespread copper, silver and gold mineralization in the footwall of the contact zone, as well as the suggested continuity of the contact zone, the

writer feels that more work is warranted on this zone to better determine its continuity and grade.

RECOMMENDATIONS

The mineral occurrence of most interest and potential from present indications is the contact zone. Experience to date suggests that representative diamond drill core and sludge are very difficult to obtain in this highly fractured and weathered rock, therefore it is recommended for further explorations that a 6 x 7 ft. adit be driven into the contact zone at the lower bench of the Hamelin opencut. This will serve to expose the zone below the surface of weathering to obtain a dependable grade figure, and also it will serve to determine the continuity and width of the zone.

Surface geological features indicate that this zone is poorly defined, with many diverging fractures, therefore holding a drift on the zone will probably be difficult and may only be possible by using assay results.

Respectfully submitted,

"DOUGLAS D. CAMPBELL"

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