

Geological Report 800118
Falkner Gold Property
Princess Royal Island, British Columbia
Skeena Mining Division 10511/2

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

1. Gold production at the Falkner property has been associated with sulphide lodes within quartz veins. Gold values within the sulphide lodes are erratic and sampling of the A vein failed to outline any significant Au values. However, sulphides are locally present and the economic potential of the property lies in the possibility of locating a gold-bearing massive sulphide lode.
2. A sporadically mineralized quartz vein known as the "A" vein crops out within the Falkner property. It can be traced over a true vertical distance of 50 meters and strikes northwesterly into the mountain slope. The vein occurs within a metasedimentary roof pendant and shows excellent potential for continuity both along strike and down dip. A geological survey is required to outline the area of the pendant, delineate veins and to indicate possible ore controls.
3. The vein is reportedly one of several parallel structures which are oriented such that hand trenching parallel to the topographic contours would cross cut the veins. A hand trenching program is proposed that would locate B and C veins as well as any others present.
4. The principal sulphide of the veins is pyrrhotite which is susceptible to detection by magnetic and electromagnetic methods. A proton precession magnetometer and a vectorpulse electromagnetic survey are recommended.

FALKNER GOLD PROPERTY

PRINCESS ROYAL ISLAND, BRITISH COLUMBIA

Skeena Mining Division 103 H/2

for

J.G. Falkner
c/o Bell Canada Law Department
25th Floor, 400 University Ave.
Toronto, Ontario

by

Stanley C. Bartlett, B.Sc.
BEMA INDUSTRIES LTD.
19945-56th Ave.
Langley, B.C.

October, 1980

FALKNER GOLD PROPERTY

PRINCESS ROYAL ISLAND

Skeena Mining Division, 103 H/2

1.0 INTRODUCTION

The Falkner Gold Property of Princess Royal Island was discovered during the early part of this century, but has had a relatively brief exploration history. The earliest work returned discouraging results and subsequently the property has remained idle ever since. The recent escalation in the price of gold has led to renewed interest in the property and as a result, Ms. J.G. Falkner contracted Bema Industries Ltd. to conduct an examination of the property to assess the economic potential of the gold-bearing veins. Two Bema Industries Ltd. geologists flew from Vancouver to the property on October 9, 1980 and spent 2 days examining and sampling the main workings and prospecting in the claim area. The two returned to Vancouver on October 12, 1980 and assessed the data collected. This report is the result of the examination and includes recommendations for further work.

1.1 LOCATION AND ACCESS

N.T.S.: 103 H/2

Latitude: $53^{\circ}06'N$; Longitude: $128^{\circ}35'W$

UTM: 5,882,000N; 528,000E

The property is located on the east coast of Princess Royal Island, approximately 180 air kilometers southeast of Prince Rupert (see Figure 1). Access to the property is via a 1 hour, 15 minute float plane flight from Prince Rupert by Grenville Channel, Fraser Reach and Graham Reach. The claims are situated on the north side of a creek valley which flows eastward into Graham Reach and lies due west of Asher Point on Khutze Inlet (see Figure 2).

The main showings are situated on a southeast facing hillside between 200 meters and 250 meters elevation. This site is 850 meters west of tidewater and lies approximately 200 meters northwest of the creek. Access is by a rough flagged trail which roughly parallels the north side of the creek.

Dense underbrush, a thick accumulation of dead-fall material and steep slopes make traversing the property difficult.

1.2 PHYSIOGRAPHY

The property is situated in the rugged coast mountains of the Kitimat Ranges. Mountains in the vicinity of the claims reach elevations of 950 meters with the claim elevation to approximately 575 meters. Slopes on the property are steep and those in the vicinity of the main showings average 45°. The area has a typical B.C. coastal climate with many days of low cloud and fog cover and heavy annual rainfall. Drainage in the area is poor and where flat the ground is very swampy. Below 500 meters elevation vegetation is typical of a coastal rainforest with cedar and hemlock to 1½ meters in diameter. Soil cover is thin, particularly on the upper slopes where much outcrop occurs. An organic cover is more commonly present on the slopes and talus accumulates at the base of slopes in the valley bottoms.

1.3 CLAIM STATUS

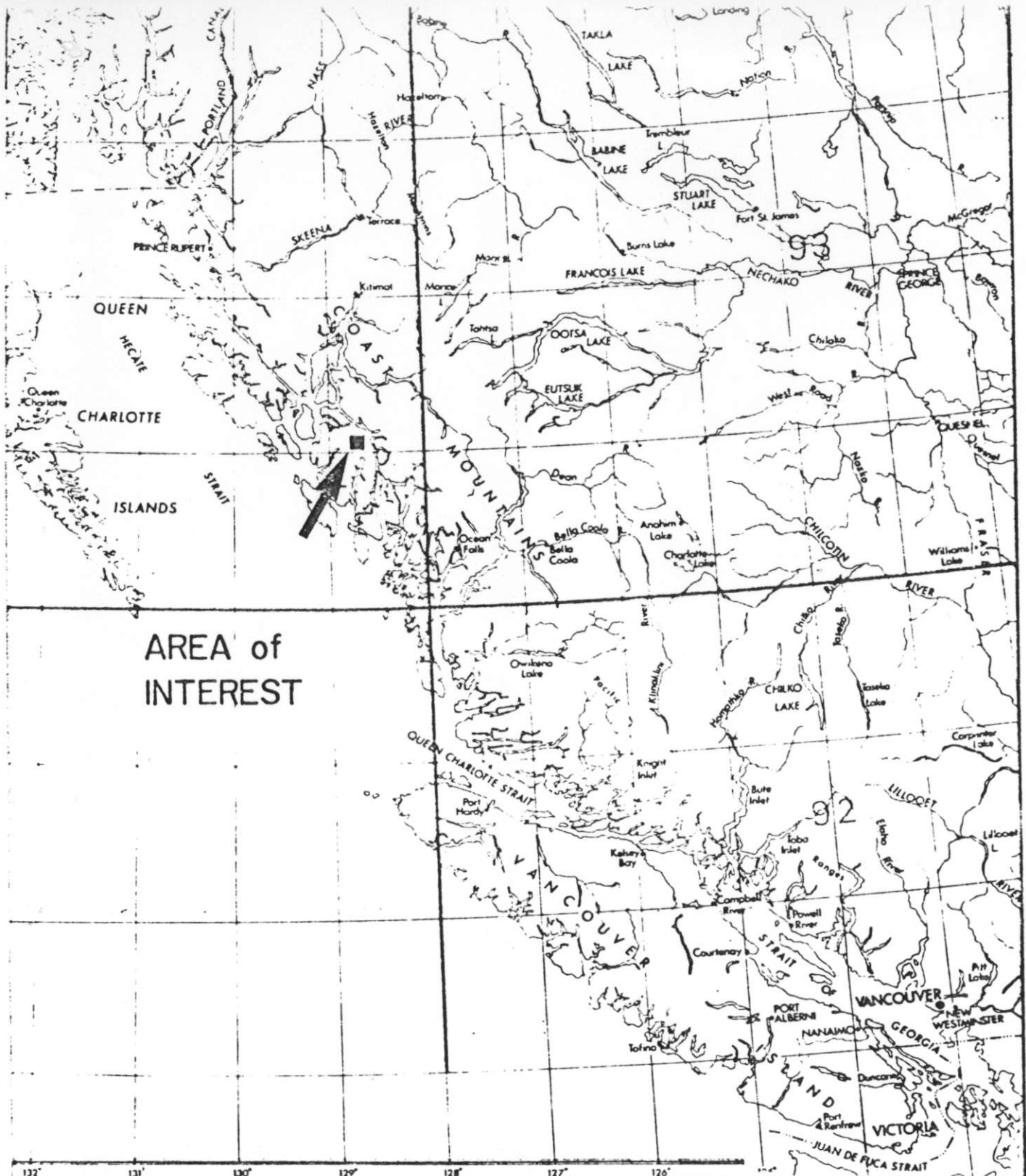
The property consists of eight contiguous crown granted mineral claims, which include the MOUNTAIN, FRENCH, GRAHAM, MALCOLM, KEITH, BERTHA, GLENGARRY No. 1 and GLENGARRY No. 2 claims (Lots 2232 to 2239). The claims, which cover approximately 271 acres, were acquired by Major J. Falkner in 1908 and are currently held by Ms. J.F. Falkner of Toronto.

1.4 HISTORY

The early history of the property was an active one during which several attempts were made to initiate a productive mining operation. The Princess Royal Mining Syndicate which was formed in 1913 delivered a 1.131 ton sample that assayed 0.87 ounces of gold per ton (30 grams per tonne) and 0.75 ounces of silver per ton (26 grams per tonne). The organization however, failed to develop the property for reasons which the owners attributed to "slack times and the war coming on". Another attempt in the early to mid-thirties, which led to the formation of the Princess Royal Free Golds Ltd. Syndicate, also failed and appears to have been the last promotion of the prospect. A geological report by H.H. Claudet to Melville F. Rogers of Ottawa, dated 1933, is the last record of an on-site property examination. The current interest in the property produced a preliminary evaluation based on the available data by Fox Geological Consultants Ltd. and the recent site examination by Bema Industries Ltd.

1.5 REFERENCES

- Claudet, H.H.; 1933, Preliminary letter and geological report of 1933 property examination.
- Falkner, Major J., 1933? Prospectus for Princess Royal Free Golds Ltd.
- Fox, P.E., 1980, Preliminary Evaluation of the Falkner Gold Property, British Columbia.



AREA of
INTEREST

132° 131° 130° 129° 128° 127° 126°



Scale 0 1000 2000 3000 Metres



1:50,000

J.G FALKNER
FALKNER GOLD PROPERTY

1980 PROPERTY EXAMINATION

PRINCESS ROYAL ISLAND
FRENCH CLAIM

KEY MAP

DATE **NOVEMBER 1980**

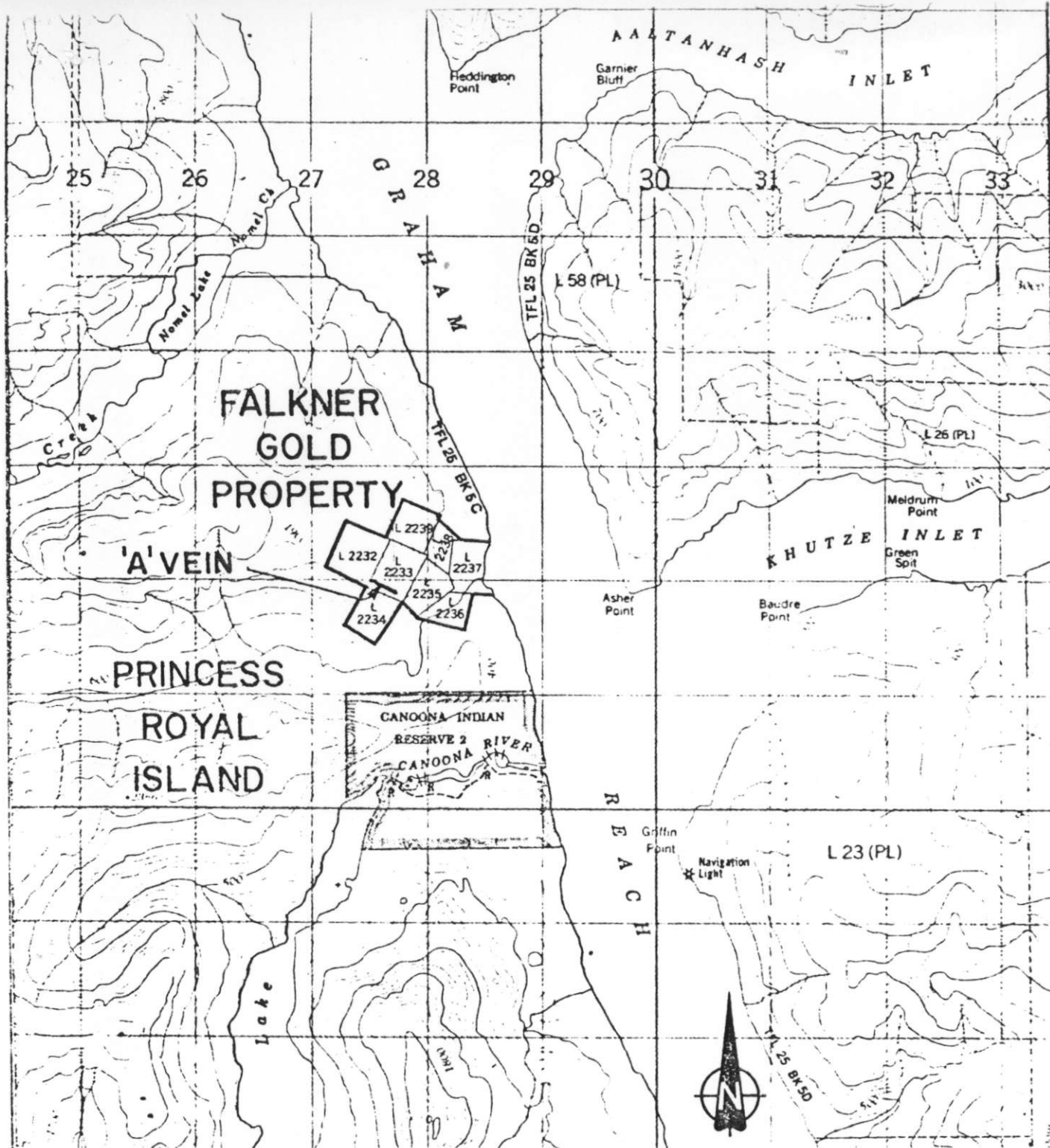
JOB NO **80-36**

REVIEWED BY

FIG NO **1**



BEMA INDUSTRIES LTD.

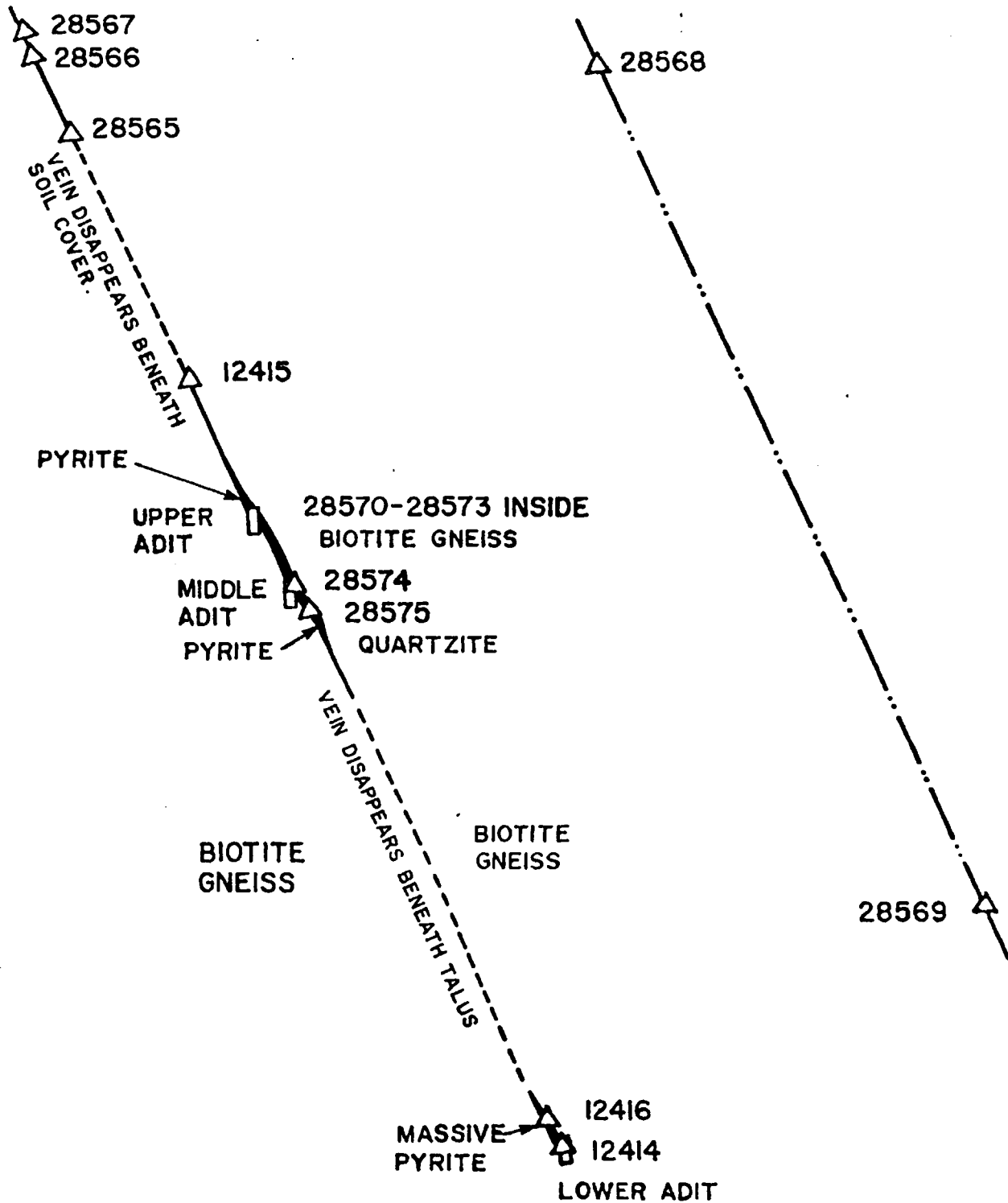


INDEX OF CROWN GRANTS

- L 2232 - MOUNTAIN
- L 2233 - FRENCH
- L 2234 - GRAHAM
- L 2235 - MALCOLM
- L 2236 - KEITH
- L 2237 - BERTHA
- L 2238 - GLENGARRY NO. 1
- L 2239 - GLENGARRY NO. 2



<p>J-G FALKNER FALKNER GOLD PROPERTY 1980 PROPERTY EXAMINATION</p>	
<p>PRINCESS ROYAL ISLAND FRENCH CLAIM</p>	
<p>LOCATION PLAN</p>	
DATE	NOVEMBER 1980
JOB NO.	80-36
REVISED BY	
FIG. NO.	2
<p>BEMA INDUSTRIES LTD</p>	



LEGEND

△ 38565 SAMPLE SITE

— 'A' VEIN


- - - 'B' VEIN

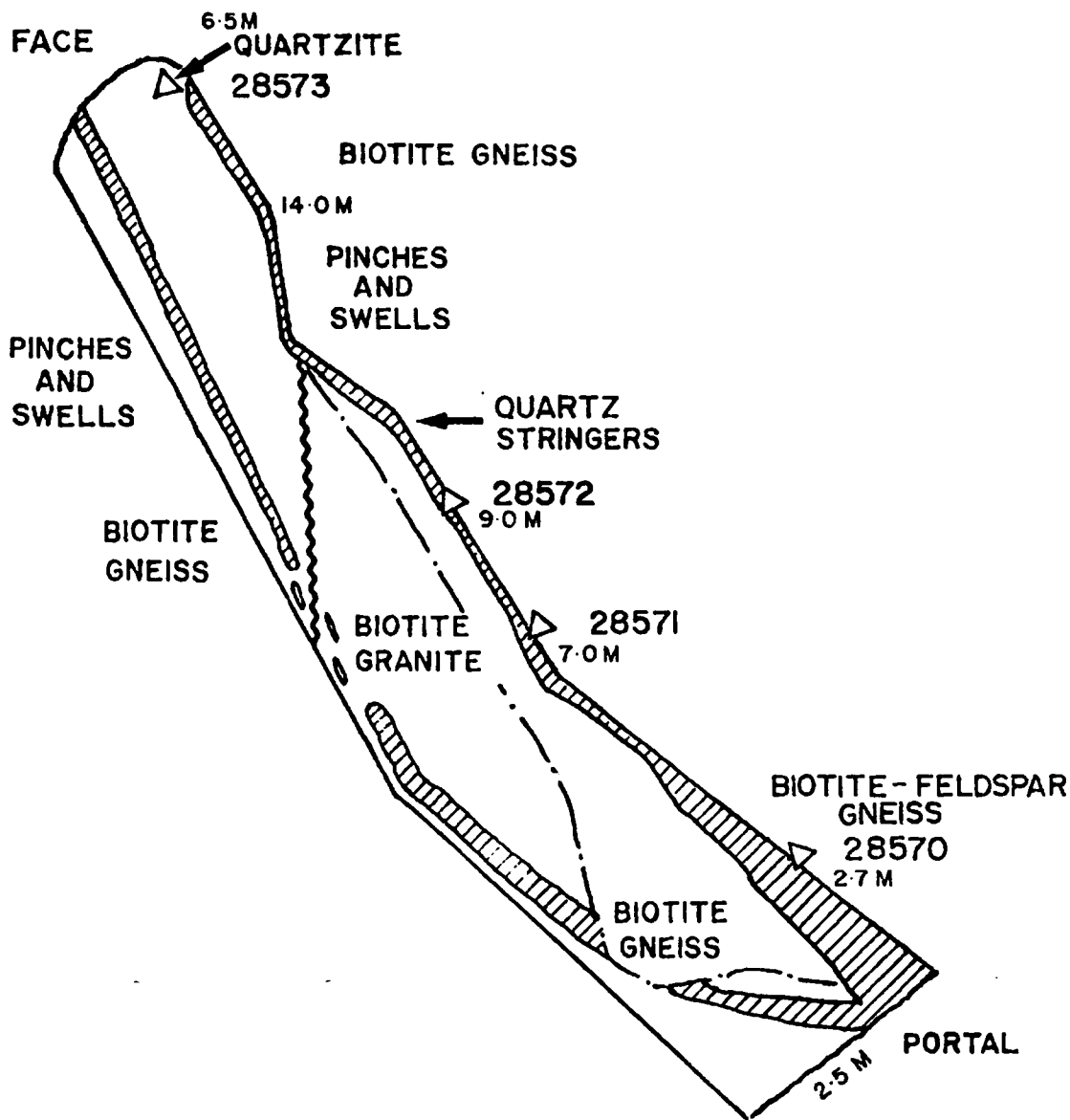


Scale 0 10 20 30 Metres




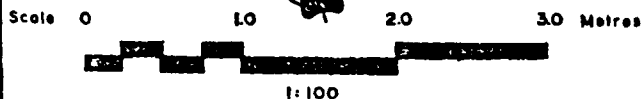
1:500


J. G. FALKNER FALKNER GOLD PROPERTY 1980 PROPERTY EXAMINATION	
PRINCESS ROYAL PROPERTY FRENCH CLAIM	
'A' VEIN SLOPE DETAIL	
DATE <i>NOVEMBER 1980</i>	JOB NO 80-36
REVISED BY	FIG NO 3
 BEMA INDUSTRIES LTD.	



LEGEND

-  QUARTZ VEIN
-  FAULT



J. G. FALKNER FALKNER GOLD PROPERTY 1980 PROPERTY EXAMINATION	
PRINCESS ROYAL ISLAND FRENCH CLAIM	
'A' VEIN IN UPPER ADIT	
DATE <i>NOVEMBER 1980</i>	JOB NO 80-36
REVISED BY	FIG NO 4
 BEMA INDUSTRIES LTD.	

2.0 GENERAL GEOLOGY

Princess Royal Island lies within the Coast Plutonic Complex and is largely underlain by granitic rocks of early to middle Cretaceous age. The Falkner Crown Grants are underlain by a north-south elongated pendant of metasedimentary rocks which occurs within a hornblende-granodiorite pluton. The pendant extends westward from the east coast of the island and is in contact with the granitic rocks on the MOUNTAIN claim. In the vicinity of the showings the pendant comprises a section of northwest striking schists and gneisses which dip 45° to the northeast. The metasedimentary units range in composition from siliceous quartzite to dioritic gneiss and are cut by numerous acid to basic dykes and sills; the most common of which are aplites and pegmatites.

2.1 ECONOMIC GEOLOGY

Gold production at the Falkner property has been associated with pyrrhotite-pyrite sulphide lodes within quartz veins. Gold values within the sulphide lodes are erratic and sampling of the A vein failed to outline any significant Au values. Four veins are situated on a southeast-facing hill which has an average slope of about 45°. Two quartz showings, the A vein and a showing 100 meters to the west, were examined and sampled during this property examination. The most significant of these was the A vein from which 13 of the 16 samples assayed were collected (see Figures 3 and 4).

The A vein crops out on a southeast-facing slope between the 200 meter and 250 meter elevations and generally strikes 120° and dips 45° to the northeast. From the lowest exposure in the lower adit the vein crops out discontinuously uphill on a trend of 270° for over 100 meters. It ranges from about 1 meter in width at its lowest exposure to 12 centimeters at the 250 meter elevation.

Where exposed, the vein lies parallel to the foliation of the host rocks. Usually the wall rocks show very little alteration but where present alteration consists of sericitization and pyritization. The hanging wall is normally a schistose biotite gneiss which, when altered, contains various amounts of sericite. The footwall is grey or pink biotitic quartzite

and biotite schist. This unit is approximately 30 centimeters thick and locally contains up to 2% of finely disseminated pyrrhotite.

Three exploration adits have been driven on the vein. The adits occur at 200 meters elevation and at 50 and 55 meters up the trace of the vein. The adits are referred to as the "lower", "middle" and "upper" respectively. All three adits drift along the vein, the lower for approximately 4 meters, the middle for 2 meters and the upper for 17 meters. All three adits are in fair condition allowing a proper examination to be performed.

On the slope to the left of the lower portal the vein is approximately 1 meter wide and consists of rusty quartz within which a pod of massive iron sulphide occurs. The pod measures approximately 40 centimeters by 30 centimeters and consists of coarse grained pyrrhotite with a minor amount of pyrite speckled through the pyrrhotite. The sulphide lode is deeply weathered and is stained pervasively by iron and manganese oxides. This material is represented by sample 12416 and was submitted for a 32 element spectrographic analysis. The results are listed in Appendix I. Inside the adit the vein pinches rapidly and toward the face, the vein is narrow and contorted. The vein is composed of milky white quartz and contains no sulphide. Sample 12414 is of this material and was collected from the left wall of the adit, immediately inside the portal.

Up the slope toward the middle adit the vein disappears beneath a talus and vegetation cover. At 6 meters below the middle adit the vein is weakly developed and occurs within a zone of alteration up to one meter wide. Rusty massive quartz contains coarse flakes of white mica and small 5 to 10 millimeter granules of iron sulphide. The altered host rocks consist of a pyritic, micaceous quartzite footwall and a sericitized biotite schist. Sample 28575 is from this site and comprises massive milky quartz with limonitic boxwork and minor iron sulphide. In the middle adit the massive unmineralized quartz is 30 centimeters wide. The vein is enclosed by gneissic country rocks which show some rust staining and minor iron sulphide. Sample 28574 is massive quartz from the middle adit.

The upper adit is located 55 meters up the slope from the lower adit. The adit trends northwesterly for 7 meters and then turns to trend northerly for 10 meters. At the portal the vein intersects the adit from the upper left and dips to reoccur on the lower right.

At this point the vein is 60 centimeters wide and consists of rusty, milky quartz with a few iron sulphide granules. From the portal 2.7 meters the vein thins to 15 centimeters wide and contains fragments of wall rock (sample 28570). The wall rock consists of schistose gneiss and is spockled with fine-grained iron sulphide. Further along the adit at 3.7 meters biotite granodiorite occurs on the floor. Seven meters from the portal the vein swells to 20 centimeters (sample 28571) and consists of rusty quartz enclosed in biotite schist. At this point the granodiorite appears as a thin sill showing sharp contacts parallel to the gneissic foliation. At 9 meters from the portal the vein pinches to 6 centimeters and continues in an irregular fashion to the end of the adit. The vein cuts the east wall at approximately 50 centimeters above the floor. The granitic rock disappears to reappear 1 meter off the floor, 14 meters from the portal. Toward the end of the drift the vein diverges into several irregular stringers which disappear before the end of the adit. Sample 28573 was collected 16.5 meters from the portal and consists of rusty, pyritic, hornfels banded gneiss.

Above the upper adit the vein crops out discontinuously for more than 44 meters. Where the vein crops out 13 meters above the adit it is 10 centimeters wide. Sample 12415 from this point consists of rusty, massive quartz with a trace of iron sulphide. The vein disappears above here to reappear 35 meters above the portal. Where it reappears the vein is 12 centimeters wide and consists of massive quartz containing blotches of chlorite, sericite and minor iron sulphide (sample 28565). A further 9 meters up dip the vein is 12 centimeters wide (sample 28566) and in places 30 centimeters wide (sample 28567). Massive milky quartz with pyritic vugs contains sections of grey quartz speckled with disseminated iron sulphide. Along this portion of the vein the footwall is a persistantly grey to pink pyritic quartzite.

A second, less extensive, quartz showing occurs an estimated 100 meters west of the A vein on the same hillside. This showing consists of a blob of quartz measuring 75 centimeters by 45 centimeters and contains minor amounts of sericite, and iron oxide. The quartz does not appear to be continuous in any strike direction but sample 28564 was collected for reference. Samples 28568 and 28569 are float material from a vein which occurs approximately 45 meters east of the A vein. This material includes massive unmineralized quartz and very likely represents the B vein. The float occurs over a vertical range of approximately 100 meters.

2.2 SAMPLE DATA

Sixteen samples collected from the property were chemically analysed by Bondar-Clegg & Co. Ltd. of North Vancouver, British Columbia. Of these samples 15 were analysed by fire assay for gold and by atomic absorption for silver. To be certain that no economically mineable elements were overlooked one sample was treated for a 32 element semi-quantitative spectrographic analysis. The materials collected are described on the ROCK CHIP SAMPLE DATA FORM in Appendix I. The results of these 16 analyses and the spectrographic analysis are listed in Appendix I.

The assay results for the samples collected at the Falkner Gold Property are low. The gold values range from 0.020 ounces per ton (0.69 grams per tonne) to a trace and silver values range from 0.05 ounces per ton (1.72 grams per tonne) to a trace. Before the significance of these assays can be realized the nature of the samples collected must be considered.

Eleven of the samples collected from the A vein are representative of the exposed portion of the vein. These samples were collected across the true width of the vein and are characteristic of the unmineralized quartz. The sample assay results from previous examinations of the property demonstrate that gold is associated with the sulphide-rich lodes which occur in the vein. The economic potential of the property lies in the possibility of locating economically exploitable lodes of massive sulphide material. Since small lodes are present on the vein, one of which occurs above and to the left of the lower adit (samples 12416 and 12417), it is conceivable that larger lodes exist. The 1.131 tons of hand-cobbled ore that was shipped in 1913 and which averaged 0.87 ounces per ton (30 grams per tonne) gold and 0.75 ounces per ton (26 grams per tonne) silver was likely mined from one or more of these lodes. The recommendations for further work are intended to evaluate this potential.

3.0 CONCLUSIONS

The following conclusions pertain to the Falkner Gold Property of Princess Royal Island based on the examination of the property and its showings.

1. The quartz veins are sporadically mineralized by sulphides including pyrrhotite and minor pyrite. Sections of the veins barren of sulphides do not carry gold and gold values within the mineralized sections are probably erratic. The one massive lode sampled during this examination assayed only 0.02 oz./ton gold. The economic potential of the property appears to be dependent upon the possibility of locating gold-bearing massive sulphide lodes.
2. The best developed but variably mineralized quartz vein, the A vein, crops out over a true vertical distance of 50 meters and strikes northwesterly into the mountain side. There is excellent potential for the continuity of the structure on strike, up dip and down dip. If, however, the vein is restricted to the metasedimentary roof pendant then the strike length continuity of the vein will be limited.
3. The A vein ranges from a width of 12 centimeters at its highest exposure to over 1 meter in width at its lowest exposure. It is possible that the vein may continue this trend and widen at depth. In each of the three adits the vein appears to narrow or pinch out towards the face. The irregular widths observed along the surface trace of the vein suggests that pinching and swelling is a characteristic of the vein.
4. The gold-bearing sulphides consist mainly of pyrrhotite with minor pyrite. Because of the magnetic properties of pyrrhotite it is possible that a magnetometer survey would serve to locate subsurface sulphide lodes.
5. Erratic gold probably occurs with massive sulphide lodes which may be amenable to detection by electro-magnetic methods.
6. The veins generally strike at right angles into the hillside, geophysical surveys would be best oriented across the strike of the veins and parallel to the contours.

7. The site is readily accessible as it lies within a kilometer of Graham Reach but the workings occur on a relatively steep slope. The steep slope and heavy timber cover would make development work, especially diamond drilling, difficult. Fallers and blasters would be required to prepare drill sites and helicopter landing pads. Drill moves would be best made by helicopter into properly prepared drill sites.

4.0 RECOMMENDATIONS

The following recommendations for further work would delimit favourable mineralized structures. The recommended work would be the minimum required to evaluate the economic potential of the Falkner Gold Property.

- | | | |
|----|---|-------------|
| 1. | A re-survey of the claims by a qualified surveyor should be made to ensure that they are properly located and that the area of economic potential is adequately covered. Further staking is recommended as required. | \$ 4,000.00 |
| 2. | All mineralization observed and reported occurs within the metasedimentary roof pendant. Detailed geological mapping of the property is required to outline the pendant and to understand the ore controls. | 3,500.00 |
| 3. | Hand trenching parallel to the contours approximately 100 meters southeast of the boundary between the FRENCH and the MOUNTAIN claims would most likely uncover the B and C veins as well as any others that are present. The overburden in this area consists predominantly of organic debris and talus. The orientation of the veins is such that a continuous hand trench across the side hill would cross cut any significant vein structures. Veins located by this trenching should be traced and systematically sampled. | 3,500.00 |
| 4. | A proton precession magnetometer survey is recommended to delineate gold-bearing pyrrhotite-sulphide lodes. This survey should be oriented perpendicular to the strike of the veins and over a large portion of the area the survey can be oriented parallel to the contours. A continuous recording base station magnetometer should be used for diurnal corrections. Accurate drift corrections are required for proper interpretation of the survey under these topographic conditions. | 7,500.00 |
| 5. | A vector-pulse electromagnetic survey is recommended to detect gold-bearing pyrrhotite-sulphide lodes. This system should be effective in this type of terrain and could provide the most conclusive type of subsurface information prior to diamond drilling. | 9,000.00 |
| | Camp costs, including mobilization and demobilization of crews from Vancouver. | 6,750.00 |
| | TOTAL | \$34,250.00 |

Report by:



Stanley C. Bartlett, B.Sc.
Geologist

APPENDIX I

ROCK CHIP SAMPLE DATA AND ASSAYS



BONDAR-CLEGG & COMPANY LTD.

764 BELFAST ROAD, OTTAWA, ONTARIO, K1G 0Z5

PHONE: 237-3110

SEMI-QUANTITATIVE ANALYSIS

No. A20-165

Sample No. 12416

From: Bema Industries

Method: X. R. F.

Date: November 5, 19 80

No. of Elements: 32

Analyst: _____

MAJOR ELEMENTS (%)	<.003	.003-.01	.01-.03	.03-0.1	0.1-0.3	0.3-1.0	1.0-3.0	3.0-10.0	> 10.0	REMARKS
SiO ₂									X	
Al ₂ O ₃					X					
Total Fe (Fe ₂ O ₃)									X	
MgO			X							
CaO			X							
Na ₂ O			X							
K ₂ O							X			
TiO ₂	X									
TRACE ELEMENTS (%)										
V	X									
Cr		X								
Mn		X								
Co			X							
Ni		X								
Cu					X					
Zn	X									
As	X									
Sr	X									
Y	X									
Zr	X									
Nb	X									
Mo	X									
Ag	X									
Sn	X									
Sb	X									
Ba	X									
La	X									
Ce	X									
W	X									
Pb	X									
Bi	X									
Th	X									
U	X									

To: Bema Industries Ltd.

REPORT NO. A20 - 1655

PAGE No. 1

BONDAR-CLEGG & COMPANY LTD.

DATE: October 23, 1980

19945 - 56th Avenue
Langley, B.C. V3A 3Y2

CERTIFICATE OF ASSAY

Samples submitted: October 16, 1980

Results completed: October 23, 1980

PROJECT: P.O. #2221 Contract 80-36

I hereby certify that the following are the results of assays made by us upon the herein described ore samples.

MARKED	GOLD		SILVER		Percent	Percent	Percent	Percent	Percent	Percent	Percent
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton							
12414	<0.002		<0.02								
12415	<0.002		<0.02								
28564	0.005		0.05								
28565	0.002		0.02								
28566	0.003		0.02								
28567	0.002		0.02								
28568	<0.002		0.02								
28569	<0.002		<0.02								
28570	<0.002		<0.02								
28571	<0.002		<0.02								
28572	<0.002		<0.02								
28573	<0.002		<0.02								
28574	<0.002		<0.02								
28575	0.013		0.03								

NOTE:
Rejects retained three weeks
Pulps retained three months
unless otherwise arranged.

G.A. Dunlop
Registered Assayer, Province of British Columbia

To: Bema Industries Ltd.

REPORT NO. A20 - 1787

PAGE No. 1

BONDAR-CLEGG & COMPANY LTD.

DATE: November 14, 1980

19945 - 56th Avenue
Langley, B.C. V3A 3Y2

CERTIFICATE OF ASSAY

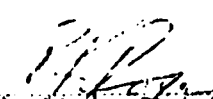
Samples submitted: November 8, 1980
Results completed: November 14, 1980

PROJECT: 80-36 P.O. # 2644 BARTLET

I hereby certify that the following are the results of assays made by us upon the herein described ore samples.

MARKED	GOLD		SILVER		Percent	Percent	Percent	Percent	Percent	Percent	Percent
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton							
12417	0.020		0.02								

NOTE:
Rejects retained three weeks
Pulps retained three months
unless otherwise arranged.


Registered Assayer, Province of British Columbia