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103H-G-022

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BALFOUR MINING LTD. (N.P.L.)

Gribbell Island Claims

103-H-7, Skeena M.D., B.C.

by

P.H. Sevensma, Ph.D., P.Eng.

PETER H. SEVEN SMA CONSULTANTS LTD.

June 9, 1971.

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Fig. 1 - Location map .

Fig. 2 - Claims and wor

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1. INTRODUCTION

A number of old mineral showings are known along the West flank of the Coast Intrusive in the area South of Prince Rupert. This area, actively explored around the turn of the century, has since that time only had cursory attention from exploration crews.

One of the reasons for this lack of interest has been the relative difficulty of access due to heavy forestation and the resulting difficulty of helicopter access and of prospecting on foot.

In addition, much metamorphic terrane is present, and in general this has been considered a terrane with less economic potential than the area of young intrusives on the East flank of the Coast Intrusives.

However, geological mapping during the last few years, geochemical reconnaissance and isotope dating suggest that the low-grade metamorphic belt on the SW side of the central gneiss core may have a better economical potential than hitherto estimated on the basis of the very scant earlier data.

The Gribbell Island showings of Balfour Mining Ltd., where the main mineralization consists of bornite and chalcocite, appear to be amongst those that may have a significant potential and that warrant further exploration.

2. PROPERTY, LOCATION, ACCESS

The following claims
Ltd. (N.P.L.):

OX 1 - 18 Tag
 Recc
 Expi

Ken 1 - 8 Tag
 Recc
 Expi

Claim locations are:

OX Group: Lat.
 Elev
 N.T.

Ken Group: Lat.
 Elev
 N.T.

Access is by boat or
Island on McKay Reach from Prince
miles, and hence up the slopes to

Access by boat from K
Timber and water are
areas there is little gravel, re
elevations of a few hundred feet

There is a helipad cl
is not accessible by helicopter.

The location of the p
has been checked by the writer i
are reported to have been placed
locations, resulting in a relati
groups on figure 2.

2. PROPERTY, LOCATION, ACCESS

The following claims have been acquired by Balfour Mining Ltd. (N.P.L.):

(N.P.L.)
Claims
D., B.C.

OX 1 - 18 Tag Nos. 751458 - 751475
Record Nos. 36434 - 36451
Expiry Date: March 22, 1972

Ken 1 - 8 Tag Nos. 827155 - 827162
Record Nos. 36128 - 36135
Expiry Date: November 16, 1971

Claim locations are as follows:

OX Group: Lat. $53^{\circ} 20' N$, Long. $128^{\circ} 57' W$
Elevation workings: 1,100' - 1,350'
N.T.S. 103-H-7

Ken Group: Lat. $53^{\circ} 21' N$, Long. $128^{\circ} 59' W$
Elevation workings: 650' - 1,200' (?)
N.T.S. 103-H-7

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potential and that warrant

Access is by boat or float plane to the South shore of Gribbell Island on McKay Reach from Prince Rupert, a flying distance of about 90 miles, and hence up the slopes to the old workings.

Access by boat from Kitimat is about 55 miles.

Timber and water are plentiful on the Island but in the showing areas there is little gravel, rendering road construction difficult above elevations of a few hundred feet.

There is a helipad close to the OX main workings; the Ken Group is not accessible by helicopter.

The location of the posts of the central claims on each group has been checked by the writer in the field; a number of the other posts are reported to have been placed by chaining on topographically recognizable locations, resulting in a relatively accurate positioning of the two claim groups on figure 2.

3. HISTORY

Staked in 1900, the Gribbell Island showings were then known as the Empress and Copper Cliff Groups. The following references have been used by the writer:

B.C. Minister of Mines, Annual Reports with pages for the years:
1899 - 656; 1900 - 787; 1901 - 992; 1902 - 47; 1903 - 51; 1904 - 102;
1905 - 85 to 87; 1910 - 246; 1911 - 287.

B.C. Dept. Mines, Index no. 3, Recorded Lode Metal Production, 1955.

Geol. Surv. Canada, Summary Report 1921, Pt. A, p. 39.

Geol. Surv. Canada, Paper 70 - 41, p. 52.

G.J. Woodsworth, Unpublished B. Sc. thesis, U.B.C., 1970.

By 1906, three long adits are reported to have been driven, in each case from 200' - 300' below the then known showings. One of these, 724' long, has been examined by the writer on the OX Group (the old Empress Group) as well as one, 354' long, on the Ken claims, the former Copper Cliff Group. The third long adit, reported on the Copper Cliff Group, has not yet been relocated.

Crown Grants were issued as follows:

Eight grants on the Copper Cliff Group to the Gribbell Island Copper Co. on June 29, 1910.

Six grants on the Empress Group to the Canadian American Company on April 27, 1911.

These Grants have reverted to the Crown on some unknown date. More recent work has included a survey by Phelps Dodge in 1964.

The writer examined the OX Group on May 22nd, 1971, and the Ken Group on May 24th, 1971.

A topographical map on a scale of 1" = 1,320', prepared by Balfour Mining Ltd., proved of considerable value in accurately locating the workings and claims (fig. 2). On the OX Group, this map revealed what may be the key to the understanding of the structure in this area.

Crews working on these showings should wear rubber boots with corcs, as the trail to the OX Group workings follows the old tubbed road,

now partially in disrepair, and and very steep slopes render tr

The only recorded pr of ore from the Empress, Gribbe 42 ounces of silver and 820 lbs grade of .03 oz/t. Au, 1.08 oz/ been mined from the stope in th

4. AREAL and LOCAL GEOLOGY

The most recent geol G.S.C. in paper 70-41, which be which the Douglas Channel-Hecat Roddick.

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now partially in disrepair, and on the Ken Group moss-covered windfalls and very steep slopes render travelling hazardous.

The only recorded production from the area consists of 39 tons of ore from the Empress, Gribbell Island, and containing 1 ounce of gold, 42 ounces of silver and 820 lbs. of copper, representing a recovered grade of .03 oz./t. Au, 1.08 oz./t. Ag, and 1.05% Cu. This has presumably been mined from the stope in the adit on the present OX claims.

4. AREAL and LOCAL GEOLOGY

The most recent geological data have been published by the G.S.C. in paper 70-41, which became available early in 1971, and in which the Douglas Channel-Hecate Strait map-area is described by J.A. Roddick.

Metamorphic rocks form the framework of the area and are intruded by a variety of plutons.

The Palaeozoic comprises gneissic rocks, migmatites and agmatites with garnet and diopside skarns as the oldest formations, succeeded by schistose metasediments derived from both clastic and carbonate rocks of possibly Permian age.

Their trends are generally NW with steep East dips, and these formations are intruded by plutons varying from gabbro and diorites through quartz-diorites and granodiorites to quartz monzonites.

Some Upper Triassic greenstones lie in the North West part of the map area on Porcher Island, and in the North East part a band of Jurassic Hazelton volcanics and sediments trends NE.

From an economic geologic point of view, it may be noted that 10 out of the 16 showings recorded on map 23-1970 in paper 70-41 lie near or within a few miles of the granodiorite unit 9; principally the hornblende-biotite variety, and 4 near quartz-monzonites. Most are associated with the Palaeozoic gneisses and schists and many are of the garnet-diopside-epidote skarn type. Strata control is evident in some of them.

In view of the scarcity of outcrops in the area between the shoreline and approximately the 1,500' - 2,000' contour-line, geological mapping

is still only of a reconnaissance type, and it is believed that any discussions of the possible favorable loci for mineralization are still highly speculative and of little value at this stage.

Each showing should be examined on its own merits, but considerable attention should be paid to local geological features, like N-S or NE trends, folds, contacts and grades.

5. OX GROUP

a. Access

A tubbed road has been completed as early as 1904 from the shore line to the tunnel location at an elevation of 1,100'. This road, from 4' - 4.5' wide, consists of thick split cedar logs nailed individually to stringers on each side. This road is nearly a mile long and, although in poor condition, still provides the easiest access to the workings.

The remnants of an old boiler, of a large steam engine and of the blacksmith shop are present near the adit-entrance. The adit itself, of a 5' x 7' size, is in remarkably good shape and safely accessible for its full length of 754' driven about due East.

b. Workings

From bottom to top the following workings are present:

1. Main Adit, elevation 1,100'

At 425' in, a stope about 30' long, 25' high and 3 - 4' wide has been mined. It trends to the NW. It is estimated that some 2,500 - 3,000 c. ft. has been mined in a garnet-skarn lens carrying splotches and veinlets of bornite, some of which is still present in the stope face. Total tonnage was probably of the order of 200 - 300 tons, and the old chute is still in fair condition. On the SE side of the adit, the lens had died out. The dip of the vein in this area was about 75° - 80° NE; the wallrock is somewhat pegmatitic and sheared hornblende-biotite quartz diorite.

The first 120' feet in marble, showing a NW the quartz diorite.

The last 100' feet North and follows a mixture some intrusive striking East. Some low-grade cut in a lens about 3' wide epidote skarn. Grade is See assay-table, no. 15'

2. Cut and old 35' adit (or

This cut, blasted on writer's examination, exposed marble and skarn, striking SE. These beds are overlain by grey thin-bedded marble. deep had been blasted.

Two samples of this elevation 50' higher than flowing creek, averaged Au. See assay table, no.

The mineralization patches of bornite associated marble. When garnet present

3. Upper tunnel and raise

These workings, on were in poor and unsafe or sampled. The raise to surface and reputedly purpose of the tunnel was ward projection of the cut, lying about 35' high

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75° - 80° NE; the wallrock is
red hornblende-biotite quartz

The first 120' feet of the adit have been driven
in marble, showing a NW - SE contact with garnet against
the quartz diorite.

The last 100' feet of adit turns sharply to the
North and follows a mixed zone of schist and marble with
some intrusive striking about N-S with a 70° dip to the
East. Some low-grade copper mineralization is present
in a lens about 3' wide and 6' long of garnet-diopside-
epidote skarn. Grade is .06% Cu and trace Au and Ag.
See assay-table, no. 157.

2. Cut and old 35' adit (or shaft, now caved)

This cut, blasted open by Mr. J. Graham before the
writer's examination, exposed a 6.5' width of mineralized
marble and skarn, striking N 40° E with a 55° dip to the
SE. These beds are overlain by pyrite-biotite laminated
grey thin-bedded marble. A cut 8' long, 4' wide and 4'
deep had been blasted.

Two samples of this occurrence, which lies at an
elevation 50' higher than the adit, and along the same SW
flowing creek, averaged: 0.60% Cu, 0.24 oz/t. Ag, .005 oz/t.
Au. See assay table, nos. 59951 and 59952.

The mineralization consists mainly of streaks and
patches of bornite associated with thin "beds" of epidotized
marble. When garnet predominates, mineralization diminishes.

3. Upper tunnel and raise at elevation 1,340' (altimeter)

These workings, on a lens of skarn in the quartz-diorite,
were in poor and unsafe condition and could not be examined
or sampled. The raise at the end of the tunnel was driven
to surface and reputedly followed three feet of ore. The
purpose of the tunnel was obviously to intersect the down-
ward projection of the mineralization exposed in the main
cut, lying about 35' higher in elevation.

4. Main showing

This is exposed in a curved cut, the face of which measures 25' along the curve and about 20' along the cord of the curve. It is located at elevation 1,375' by altimeter, i.e. about 275' in elevation above the main adit.

The face shows a bedded sequence of red garnet and white quartz, marble epidote skarn and diopside skarn, irregularly mineralized with bornite, chalcocite and some covellite, mostly in disseminations, streaks and splotches. The central marble zone, about 10' wide on the face, consists of a fine grained creamish marble and carries the best mineralization.

Blasting by Mr. John Graham revealed some very high grade chalcocite material, and on the dump, still covered by 3' of snow at the time of the writer's visit, there is a high grade block of copper-sulphides measuring about 3' across, reportedly consisting of intrusive rock.

Several representative samples were taken of the face. One taken in October 1970 by Mr. V. Cukor assayed: 1.02% Cu, tr. Au, 0.4 oz/t. Ag. See sample no. 70204 in assay table.

After blasting, samples taken by Mr. John Graham and checked by the writer, averaged for the same distance: 1.01% Cu, 0.55 oz/t. Ag, .003 oz/t. Au.

The attitude of this occurrence suggests a fold, as the West-end of the showing strikes N-S with an 80° East dip, and the SE end strikes about E-W with a 65° South dip.

These attitudes suggest a NE plunging anticline, and the true width of the mineralization is difficult to determine. Measured along the cord, it appears to be 13.5' and along the most recent face 20'.

An average of
but the showing cle

Representative
view of the irregul

Several freshl
a tennis-ball conte
collected by the wr
sample to be around
15% sulphide.

The actual ass
16.3 oz/t. Ag, 0.02
table.

c. Structure

Mineralization occurs o
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occurrences is E-W to ENE, and not
old reports. Within the areal NW
anomalous, and the main showing su

Examination of the airp
(figure 2) shows that the main cre
South of the showing area, and tha
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d. Summary

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s difficult to determine.
be 13.5' and along the

An average of about 17' is the most realistic figure,
but the showing clearly widens at depth and to the NE.

Representative sampling is exceedingly difficult in
view of the irregular nature of the high grade streaks.

Several freshly blasted pieces of about the size of
a tennis-ball containing big streaks of high-grade were
collected by the writer, who estimated the grade of this
sample to be around 12% copper on the basis of an estimated
15% sulphide.

The actual assay of this sample was: 31.69% Cu,
16.3 oz/t. Ag, 0.02 oz/t. Au. See sample 158 in assay
table.

c. Structure

Mineralization occurs over a vertical distance of some 275' and
a horizontal length of approximately 500'. The overall strike of these
occurrences is E-W to ENE, and not N-S or NW, as may be inferred from the
old reports. Within the areal NW trend, this overall strike is definitely
anomalous, and the main showing suggests the presence of a NE plunging fold.

Examination of the airphoto-topo map on a scale of 1" = 1,320'
(figure 2) shows that the main creek flowing South originates somewhere
South of the showing area, and that the WSW flowing creek South of which
the showings lie, is a rather outstanding lineament not duplicated elsewhere
on the map, on which most lineaments are N-S.

d. Summary

On the OX Group there is a significant structural anomaly assoc-
iated with marble, skarn and near-commercial copper-silver mineralization
of a type capable of producing a high-grade copper-concentrate.

Further investigation of the economic possibilities of this
showing is warranted.

6. KEN GROUP

a. Access

No trace of the old trail was found, but the main tunnel and the middle showing were examined. The upper showings could not be relocated at the time of the writer's examination. Due to heavy and old windfalls in the first 200' vertical feet from the shore-line, access is at present difficult.

b. Workings

1. The adit, driven slightly East of North is located on the West bank of the Creek. The portal is accessible, but not in good condition and slough has blocked about 50% of the entrance. The 5' x 7' drift is otherwise in excellent condition for its full length of 354'. It was driven along an altered sericitized dacitic dyke; at an elevation of 675' (altimeter). The dyke and the associated shearing strike N 5° E and dip 65° - 70° West. The dyke was observed while crossing the creek at an elevation of about 1,200', and is remarkably continuous for its narrow width of about 1'. The wallrock is quartz diorite.
2. An 8' x 8' adit was driven for a length of about 30' at an elevation of 860' on a N 30° E bearing. It cuts a strongly foliated zone in the quartz diorite, strike N 40° W, dip 55° - 60° NE, about 25' wide and carrying zones of diopside-garnet-quartz skarn with small lenses of disseminated chalcopyrite. These lenses are up to 3" wide and 1' long and a sample of one of them showed:

0.28% Cu, tr. Au, tr. Ag.

The adit is in poor condition and could not be safely examined and sampled in a proper manner. The ore-making possibility of this structure does not appear attractive.

3. Upper showings

These were missed should be located around to the old report (M.P. which states that a mi 3,000' in 6 locations, 1.79% Cu, 0.19 oz/t. A

The writer's travel to find this structure this ground and staked upper trenches and to skarn with bornite in the lower workings assay around 0.5% Cu.

4. Summary

Garnet-diopside-e a NW trending, NE dipping Accessibility to the old upper showings interesting copper and on the economic possibility till this work is done

3. Upper showings

These were missed on the writer's traverse and should be located around elevation 1,200', according to the old report (M.M. of B.C., Ann. Rep. 1905, p. J87), which states that a mineralized zone has been traced for 3,000' in 6 locations, and that a typical sample assayed 1.79% Cu, 0.19 oz/t. Au and 0.70 oz/t. Ag.

The writer's traverse, up to elevation 1,400', failed to find this structure, but Mr. John Graham, who prospected this ground and staked the claims, located one of these upper trenches and took specimens consisting of garnet skarn with bornite similar to the mineralization occurring in the lower workings of the OX Group and estimated to assay around 0.5% Cu.

4. Summary

Garnet-diopside-epidote skarn with bornite occurs in a NW trending, NE dipping structure said to be 3,000' long. Accessibility to the old workings should be improved and the old upper showings relocated and trenched in view of the interesting copper and gold values reported. No statement on the economic possibility of these showings can be made till this work is done.

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7. CONCLUSIONS

The main showing on the OX Group exhibits a true width of 17' assaying 1.01% Cu, 0.55 ^{oz}/t. Ag and minor gold, the mineralization consisting of bornite and chalcocite in skarn and marble. The showing occurs in a strong NE plunging fold; grade and size increase with depth and the mineralization is of a type providing a high grade concentrate. Smaller showings of about the same grade occur within several hundred feet laterally and vertically.

The potential of this showing cannot be predicted without further work, but in view of the outstanding structural anomaly present, the probability of a significant increase in both size and grade in a North Easterly direction is considered very good.

The edit demonstrates a substantial width of marble and a highly variable intrusive, from fine grained to coarse grained to pegmatitic with large clusters of biotite. Cleaning of the walls would be required to map the details.

The Ken workings, with some known mineralization of the same grade is said to cover workings extending over a length of 3,000'; the centre of these are located 2 miles to the NW of the OX showings.

The widespread mineralization starting only a mile West of the edge of the Butedale Pluton supports the hypothesis that the occurrence of at least one commercial body of bornite-chalcocite in this area is a reasonable expectancy.

8. PROPOSED FIELDWORK

a. General Outline

The proposed program includes physical surveying and subsequent trails, surveying and geological mapping, trenching both by hydraulicking and drilling with a light drill.

This work should occur in a second phase of development. This work should occur in a second phase of development. positions of all old workings, to gain an understanding of the

Routine prospecting carried out along blazed trails progress and geological mapping

This would initially be carried out by men on the Ken Group. Commencing 2 miles to the SE along Princess

b. Cost Estimate

The following costs

(1) OX Group

Trail work to old workings
Linecutting in area

Surveying of area

Geological mapping,
Trenching, 2 men-mo

Winkie-drilling, 1,
Assaying, 100 assay
Communications, radio
Camp construction,
Camp operation, 600
Fixed-wing transport
Helicopter transport
Boat rental

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 skarn and shale. The showing
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8. PROPOSED FIELDWORK

a. General Outline

The proposed program should consist of re-establishing trails, surveying and geological mapping using a cut line system, trenching both by hydraulicking and blasting, prospecting, sampling and drilling with a light drill of the Packseck or Winkie-type.

This work should outline target areas for possible geophysical surveying and subsequent drilling with a heavier machine in a second phase of development. Accurate surveying of the relative positions of all old workings, especially on the OX Group, is essential to gain an understanding of the geological structure.

Routine prospecting both on and of the claims should be carried out along blazed traverses while work on the showings is in progress and geological mapping should follow the same blazed traverses.

This would initially entail a nine-man crew on the OX and two men on the Ken Group. Communications can be maintained to Butedale, 15 miles to the SE along Princess Royal Channel, and by radio.

b. Cost Estimate

The following costs are estimated for the field-program.

(1) OX Group

Trail work to old adit, 2 men-months	\$2,000.00
Linecutting in area of old workings, 2 men-months	2,000.00
Surveying of area of old workings, 2 men-months	3,000.00
Geological mapping, 4 men-months	8,000.00
Trenching, 2 men-months, drill, powder high pressure pump	3,500.00
Winkie-drilling, 1,000' @ \$12.00	12,000.00
Assaying, 100 assays @ \$10.00	1,000.00
Communications, radio, telephone	1,000.00
Camp construction, miscellaneous equipment	4,000.00
Camp operation, 600 man-days @ \$6.00	3,600.00
Fixed-wing transportation	3,000.00
Helicopter transportation, 30 hrs. @ \$140.	4,200.00
Boat rental	<u>1,000.00</u>

\$48,300.00

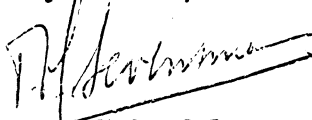
	Carried forward	\$48,300.00
(2) <u>Ken Group</u>		
Trail work	\$2,000.00	
Prospecting, trenching	3,000.00	
Minor mapping, surveying, assaying	<u>1,000.00</u>	\$6,000.00
(3) <u>General Prospecting</u>		
2 man-months, supplies, 10 hours helicopter	<u>\$3,000.00</u>	
Total direct expenses	\$57,300.00	
Engineering & Supervision, 10%	6,000.00	
Administration & Contingencies, 10%	<u>6,300.00</u>	
Total field budget	<u>\$69,600.00</u>	

9. SUMMARY and RECOMMENDATIONS

One main showing of 1.01% Cu and 0.55 oz/t. Ag and minor gold values across a true width of 17' and a number of smaller showings of about the same grade in a strong structural anomaly constitute a target that warrants further investigation. The valuable minerals consist mainly of chalcocite and bornite, which may be milled to an exceptionally high grade concentrate.

An initial field-budget of \$69,600.00 is recommended to investigate the economic potential of this two miles long belt in the most promising locations.

Respectfully submitted,



P.H. Sevensma, Ph.D., P.Eng.
PETER H. SEVENSMA CONSULTANTS LTD.

Vancouver, B.C.
June 9, 1971.

Source	Sample No.	Date	Location	True Width	Cu %	Ag oz/t.	Au oz/t.
B.C. M.M., A.R.	none	1905	Ken	?	1.79	.70	.19
V. Cukor	70214	Oct. 1970	DX, main sh.	17'	1.02	.40	tr.
P.H. Sevensma	157	May 1971	DX, tunnel	3'	.06	tr.	tr.
P.H. Sevensma	158	May 1971	DX, main	Dump	31.69	16.3	.02
P.H. Sevensma	159	May 1971	Ken, sh.	3"	.28	tr.	tr.
J. Graham	59951	May 1971	DX, middle sh.	3'	.84	0.5	.01

and

Carried forward \$48,300.00

\$2,000.00
3,000.00
1,000.00

\$6,000.00

Accepter \$3,000.00

Reserves \$57,300.00

Provision, 10% 6,000.00

Contingencies, 10% 6,300.00

\$69,600.00

5 oz/t. Ag and minor gold
of smaller showings of
may constitute a target
the minerals consist
filled to an exceptionally
is recommended to invest-
long, belt in the most

fully submitted,

P. H. Sevensma
Sevensma, Ph.D., P.Eng.
SEVEN SMA CONSULTANTS LTD.

List of Assays, OX and Ken Groups

Source	Sample No.	Date	Location	True Width	Cu %	Ag oz/t.	Au oz/t.
B.C. M.M., A.R.	none	1905	Ken	?	1.79	.70	.19
V. Cukor	70214	Oct. 1970	OX, main sh.	17'	1.02	.40	tr.
P.H. Sevensma	157	May 1971	OX, tunnel	3'	.06	tr.	tr.
P.H. Sevensma	158	May 1971	OX, main	Dump	31.69	16.3	.02
P.H. Sevensma	159	May 1971	Ken, sh.	3"	.28	tr.	tr.
J. Graham	59951	May 1971	OX, middle sh.	3'	.84	0.5	.01
and							
P.H. Sevensma	59952	May 1971	OX, middle sh.	3.3'	.39	tr.	tr.
			Average	6.3'	.60	.24	.005
"	"	59955	OX, main sh.	8.0' (6.5')	1.48	.5	tr.
"	"	59956	" "	5.0' (4')	0.12	tr.	.01
"	"	59957	" "	4.0' (3')	1.20	1.4	tr.
			Average	17.0'	1.01	.55	.003

All recent samples assayed by Crest Laboratories (B.C.) Ltd.
Lab. No. 1891 - October 30, 1970 - 70214
Lab. No. 2553 - June 2nd, 1971 - Others

Vancouver, B.C.
June 9, 1971.

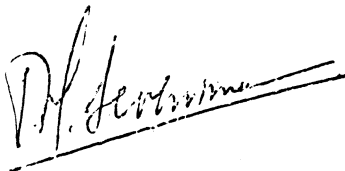
P. H. Sevensma TABLE 1

CERTIFICATE

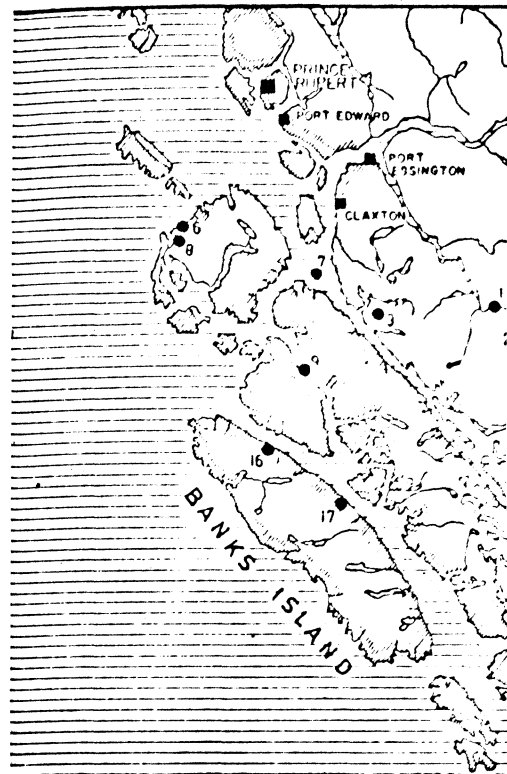
I, PIETER H. SEVENSMA, of 908 - 1280 Haro Street, in the City of Vancouver, in the Province of British Columbia, DO HEREBY CERTIFY:

1. THAT I am a Consulting Geologist, with a business address at 715 - 850 West Hastings Street, in the City of Vancouver, in the Province of British Columbia.
2. THAT I am a graduate of the University of Geneva, Switzerland (Physics and Chemistry, 1937; Geology and Mineralogy, 1937) where I obtained my Ph.D., in Geological and Mineralogical Sciences in 1941.
3. THAT I am a Registered Professional Engineer in the Geological Section of the Association of Professional Engineers of the Province of British Columbia and of the Association of Professional Engineers of Yukon Territory.
4. THAT I have practiced my profession as a Geologist for the past 32 years.
5. THAT I have personally examined the OX and Ken showings described in this report, respectively on May 22nd and May 24th, 1971.
6. THAT I have no interest, directly or indirectly, in any of the properties or securities of Balfour Mining Ltd. (N.P.L.), nor do I expect to receive or acquire any.

Dated this 9th day of June, 1971.



P.H. Sevensma, Ph.D., P.Eng.



1. Cu, Zn	Sulphide Gp. Bell - Helen
2. Cu, Zn	Packsack
3. Mica	Royal Magnetite Deposit, Kur
4. Au, Cu, Ag	Surf Inlet
5. Cu, Au	Western Copper (1910) Hun
6. Au, Ag	Surf Point (1906) Bell Moun
7. Cu, Zn, Pb, Ag	Gibson Girl (1922)
8. Au	McTavish
9. Au	Row Claims (1903)
10. Cu	Drum Lummon Mine
11. Cu	Gribbell Island Copper Co (
12. Au	Malcolm, Bute, Falkner (19
13. Cu	Stewart (Teckla)
14. Fe, Cu	Iron Mountain, Sacramento,
15. Cu	Canadian - American Copper
16. Cu, MoS ₂	Ban group
17. Cu, W	Henrietta and Margaret
18. Cu	Pink Rose



Ske

Jun

ro Street, in the City of
olumbia, DO HEREBY CERTIFY:

with a business address at
the City of Vancouver, in

sity of Geneva, Switzerland
logy and Mineralogy, 1937)
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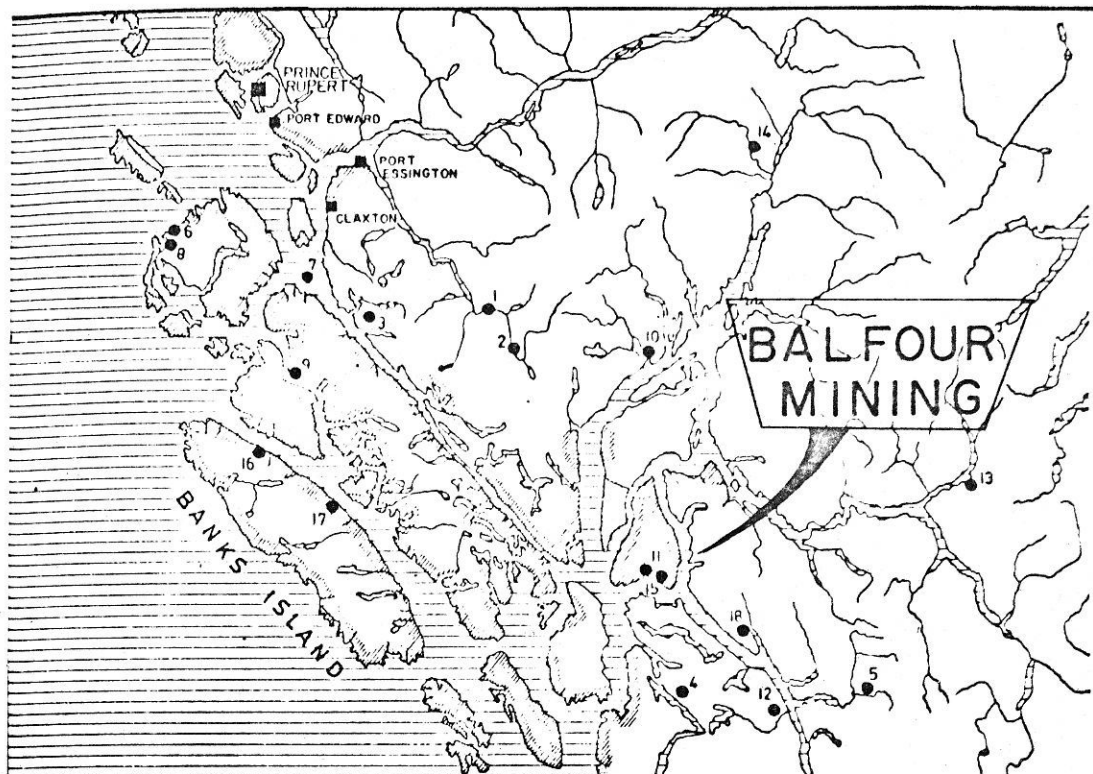
l Engineer in the Geological
essional Engineers of the
F the Association of
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as a Geologist for the past

OX and Ken showings described
y 22nd and May 24th, 1971.

ir indirectly, in any of the
Mining Ltd. (N.P.L.), nor
ny.

P.H. Sevensma, Ph.D., P.Eng.



- | | |
|--------------------------|---|
| 1. Cu, Zn | Sulphide Gp. Bell - Helen (Ecstall Mine (1899) |
| 2. Cu, Zn | Packsack |
| 3. Mica | Royal Magnetite Deposit, Kumealon, Mica Maid & Mica Boy |
| 4. Au, Cu, Ag | Surf Inlet |
| 5. Cu, Au | Western Copper (1910) Hunter |
| 6. Au, Ag | Surf Point (1906) Bell Mountain, Mammoth |
| 7. Cu, Zn, Pb, Ag | Gibson Girl (1922) |
| 8. Au | McTavish |
| 9. Au | Row Claims (1903) |
| 10. Cu | Drum Lummon Mine |
| 11. Cu | Gribbell Island Copper Co. (1887) |
| 12. Au | Malcolm, Bute, Falkner (1911) |
| 13. Cu | Stewart (Teckla) |
| 14. Fe, Cu | Iron Mountain, Sacramento, Kitimat Area |
| 15. Cu | Canadian - American Copper Mining Co. |
| 16. Cu, MoS ₂ | Bon group |
| 17. Cu, W | Henrietta and Margaret |
| 18. Cu | Pink Rose |

LEGEND

- | | |
|--------------------------|--|
| Mesozoic and/or Tertiary | Coast Range Batholith mainly granodiorite quartzdiorite, granite |
| Late Paleozoic | Prince Rupert Formation Sedimentary and volcanic rocks |

BALFOUR MINING LTD. (N.P.L.)	
GRIBBELL ISLAND CLAIMS	
Skeena M.D., B.C.	103 - H - 6.7
Peter H. Sevensma Consultants Ltd., Vancouver, B.C.	
June 1971.	Scale. 20 Mi Fig: 1

BALFOUR MI
RE
H
GREEN LAKE
N.T.S. 9
S. S. T_a

L. J. Manning & Associates L
610 - 890 West Pender Street
Vancouver 1, B. C.

