W.A. No. .....

NAME Bibliography

SUBJECT .....

.....

.....

Lynx

(contains info on 92F071, 072, 073)

92F072-01

PROPERTY FILE

006874

49°125°

1350

309- Stanford Village
Stanford, California

May 10, 1963

Dr. M. Hedley
Mineralogical Branch
B.C. Department of Mines and
Petroleum Resources
Parliament Buildings
Victoria, B.C.

Dear Dr. Hedley:

I am seeking general information regarding the Department of Mines' plans for the Buttle Lake region. If I am incorrect in addressing this request to you, would you please give it to the person concerned.

I had planned to begin a study of Western Mines property this summer as a basis for a PhD dissertation. This plan was discussed with Western Mines and my superiors (Cominco) last summer and was sanctioned by both parties at that time. Recently I was pleased to learn from a brief conversation with Mr. Voll that the Department was considering a program for the Buttle Lake area.

It may be possible that my working in the area would be considered an infringement upon and/or duplication of work by the Department and as a result looked upon with disfavour both by the Department of Mines and Stanford University. I do not mean to offend, and I apologize for any misjudgement of the situation on my part.

A brief explanation of my intentions may facilitate a reply. My chief concern is the origin of the sulfide deposits; their structure, mineralogy, chemistry and alteration will be studied in detail. However, the area of study would be extended so as to provide detail on:

1. stratigraphy - in order to reveal manner and environment of emplacement of the host rocks
2. near by granitic rocks - to determine their chemical character
3. gabbroic "sills" and their relation to ores and granite

4. structure - in order to link ore-body structure to regional structure

An area of 20 to 30 square miles centered at Western's adit should provide this information.

At the risk of breaching propriety I would ask 1) what, in a general sense (stratigraphic, economic, regional, detail) are the Departments' plans for the Buttle Lake area and 2) would my plans present an undesirable situation.

For my own part I am truly pleased to hear that you are planning to work in the area.

Thank you.

Sincerely,

Ted Muraro

TWM:lm

Ted Muraro

May 14, 1963.

Mr. Ted Muraro,
309 Stanford Village,
Stanford, Calif.
U.S.A.

Dear Ted:

I am very glad to hear that you are going to do some work at Western Mines this summer. There is certainly no need for conflict between you and us and there should be no reason for Stanford to object to the fact that you will, to some degree, be working in parallel.

Dr. W.G. Jeffery will be starting work at the end of May and initially will be at Western camp. He will have one senior assistant. The area under consideration is about 200 square miles in extent from Wolf Creek south and from near the Golden Hinde east. We have had a photo interpretation made of the area by Sproule and Associates of Calgary as an aid to the work. Jeff. will do pretty well a standard job, namely getting all the information he can. We want to know all we can learn about the extent and continuity of mineralization and will have a particular problem regarding future development in a provincial park. You will be making a more intensive study of the mineralization of course than Jeff. will have time for.

I am sure that you and Jeff. will get along well together and he is very glad to know that you will be there too.

Jim Fyles is enclosing a note.

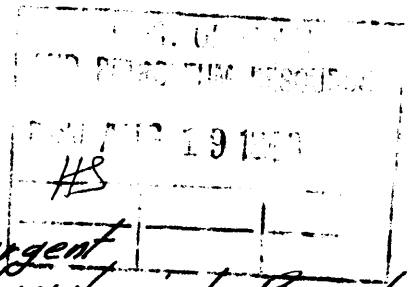
Yours very truly,

M.S. Hedley,
Senior Geologist.

MSH:ln

2572

c/o Western Mines
Box 8000
Campbell River, B.C.
Aug. 15, 1963



Dr. H. Sargent
Chief, Mineralogical Branch
Department of Mines and Petroleum Resources
Victoria, B.C.

Dear Dr. Sargent:

Thank you very much for Stevenson's paper. There are certainly some striking similarities between the Twin "C" and this property. I am particularly intrigued by the role of the sodic rocks. Some of the intrusives at this property could well be sodic varieties. I hope to spend a day examining surface exposures of the Twin C on my way out in early September.

I have taken the liberty of sending to you, under separat cover, some material which I believe may contain microfossils (Foraminifera). This material is from a section of laminated, in part limy, tuffaceous sediments thought to be a considerable but unknown distance below the Permian (Yoke) limestone. The important question at present is whether or not the material is fossiliferous.

I have not been in touch with Dr. de Pfyffer so I am assuming that such information could be of even more importance to him. One thing seems certain - some distance below the limestone there <u>are</u> calcareous sediments in sections where flows and pyroclastics are dominant.

It seemed to me that you would know best where to seek an early answer. If warranted a more complete collection can be made this season.

If results are positive I would like Jeff to know as early as possible. A note from your office would eliminate any possibility of delay at this end.

You may bill me for charges arising from this request.

Thank you.

Yours truly,

Jed Munaro

The advertisement re position as a geologist does interest me thank you but I feel at present and for possibly several years to come I would not be able to give it a fair consideration.

August 12, 1963.

Mr. Ted Muraro,
Geologist, Consolidated Mining & Smelting Co.
c/o Western Mines Limited,
P.O. Box 8000,
Campbell River, B.C.

Dear Mr. Muraro:

In accordance with our understanding of last week I am glad to send you herewith a reprint of the paper by Dr. Stevenson "Geology of the Twin "J" Mine".

The first page of the text gives the production credited to the three properties to the end of 1909. Production of the Tyee was recorded for the years 1943, 1944, 1947 and 1951. This includes the production of the Twin "J" Mining Company. No production was credited to either the Lenora nor the Richard III.

The total production credited to the Tyee, in our records in the period 1901 - 1951 is:-

Tonnage	Gold. oz.	Silver. oz.	Copper. lb.	Lead. lb.	Zinc. lb.	Cadmium. lb.
221,232	26,566	505,676	13,680,521	362,852	4,246,371	9,853.

Yours truly,

H. Sargent,
Chief, Mineralogical Branch.

HS:ln
Attach: Geology of Twin "J" Mine.

August 20, 1963.

Mr. Ted Muraro,
c/o Western Mines,
Box 8000,
Campbell River, B.C.

Dear Mr. Muraro:

Thank you for your letter of August 15. The package of specimens reached me a little before your letter. I telephoned Dr. Okulitch and he has kindly agreed to have work done on them. It will be very interesting to us, especially to Dr. Jeffery, if as you suppose, the specimens contain micro fossils. I hope you and Jeffery will have a chance for a talk before you leave the Buttle Lake area.

I do not know when the work on your specimens will be completed. Probably it would be well if you gave to me or to Dr. Okulitch an address to which the report could be sent when the work has been done.

It is interesting that you have found limy tuffaceous sediments, probably a considerable distance below the Permian limestone.

I am writing Dr. Okulitch per attached copy and hope it will be possible for you to have the results of the examination of your material before you leave Buttle Lake.

Yours truly,

H. Sargent,
Chief, Mineralogical Branch.

HS:ln

Attach: cc. letter to Dr. Okulitch

cc: Dr. W.G. Jeffery.

August 20, 1963.

Professor V.J. Okulitch,
Dept. of Geology,
University of British Columbia,
Vancouver 8, B.C.

Dear Dr. Okulitch:

Thank you for agreeing to look after Ted Muraro's Buttle Lake specimens, in which he suspects Foraminifera.

The specimens with his list are going to you under separate cover.

As you will note from the copy of his letter herewith he hopes that it will be possible to date limy bedded tuffaceous rocks presumed to be a considerable distance below the Permian(?) limestone in the area.

Dr. W.G. Jeffery is doing an areal mapping job for the Department of Mines and Petroleum Resources in a considerably larger area that includes the area in which Ted Muraro is working.

If possible to get the results of the study to Ted Muraro while he is still in the area it will be very helpful for him. The results would also be of great interest to our Dr. Jeffery.

Our branch will be glad to meet any charges.

Thank you for your kind attention to this matter. I hope you are feeling fit again.

Yours truly,

H. Sargent,
Chief, Mineralogical Branch

HS:ln

Attach: List of specimens
Copy of letter from T. Muraro.
cc: T. Muraro & W.G. Jeffery

August 20, 1963.

Dr. W.G. Jeffery,
Box 72,
Campbell River, B.C.

Dear Dr. Jeffery:

With this letter you will find a photo copy of one from Ted Muraro in which he refers to the possibility of micro fossils in banded limy tuffaceous sediments, presumed to be considerably below the Permian (?) limestone.

Also with this letter are copies of the related letters. I hope it is possible for a report on the study of the material to reach Ted Muraro and you while still in the field.

Weather continues rather changeable here. I hope you are getting a fair amount of good weather, it would certainly help in the field mapping and be vastly pleasanter. On a good day it should be very enjoyable up on top.

Yours truly,

HS:ln

H. Sargent,
Chief, Mineralogical Branch.

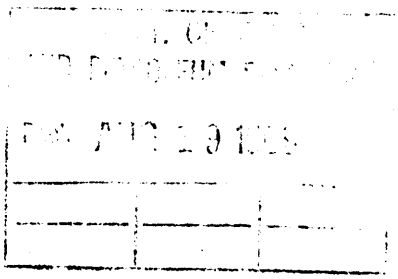
Attach: copy of letters Muraro - Sargent Aug.15
" " Sargent - Muraro Aug.20
" " " - Okulitch "

2653

Dear Dr. Sargent:

Enclosed are four samples which I would like to have checked for the presence of microfossils and which I referred to in my letter to you under separate cover.

Sample No.	
122	number of small fragments in bottom plastic bag
123	one piece, flee
124	number of small fragments including match box of chips all within upper part of plastic bag
127	& one piece, flee



B.C. Lab Project
Jeffery

2412

THE UNIVERSITY OF BRITISH COLUMBIA

VANCOUVER 8, CANADA

DEPARTMENT OF GEOLOGY

August 21,1963

Dr. Hartley Sargent
Chief, Mineralogical Branch
Dept. of Mines and Petroleum Resources
Victoria, B.C.

Dear Dr. Sargent:

Your letter and specimens from Ted Muraro arrived in the morning mail and were referred by Dr. Okulitch to me for study. Nothing was visible in hand specimen so I had Jim Donnan, our technician,make five thin sections.

No fossils were found in any of the sections except that there were a very few poorly preserved objects in # 124 which might be radiolaria. Radiolaria are mostly long ranging so that they are not used for age determinations to any extent and the specimens in the thin sections are too poorly preserved to be certain even that they are radiolaria. The two sections of 124 also contained a large quantity of thin spicule-like bodies which might be from siliceous sponges or from radiolarian tests. Then again they could be long slender crystals.They appear to have suffered some alteration and perhaps recrystallization.

My conclusions have to be that there is nothing of certain organic origin in the specimens. I hope that you will go on having your staff search for fossils on the Island in the Paleozoic sequences as something may turn up sometime. I am disappointed myself that I could find nothing in Ted Muraro's specimens.

There will be no charge.

Sincerely,

Wilbert R. Danner

Wilbert R. Danner
Assoc.Prof.,Geology

August 22, 1963.

Dr. W.G. Jeffery,
Box 72,
Campbell River, B.C.

Dear Jeff:

Further to Sargent's letter of August 20 re Ted Muraro's "microfossils", I am sending you a copy of W.R. Danner's report.

Yours truly,

A.F. Shepherd,
Assistant Geologist.

AFS:ln

Attach: W.R. Danner's letter.

August 22, 1963.

Mr. Ted Muraro,
c/o Western Mines,
Box 8000,
Campbell River, B.C.

Dear Sir:

In Dr. Sargent's absence I am enclosing a copy of a report on four samples #122 to 124 and 127 submitted by you which were checked for microfossils by Dr. W.R. Danner, University of British Columbia.

I am forwarding a copy to Dr. W.G. Jeffery.

Yours truly,

A.F. Shepherd,
Assistant Geologist.

AFS:ln

Attach: copy of W.R. Danner's letter.

August 22, 1963.

Dr. W.R. Danner,
Department of Geology,
University of British Columbia,
Vancouver 8, B.C.

Dear Dr. Danner:

On behalf of Dr. Sargent who is presently in the field I wish to thank you for the work you have done on Ted Muraro's "microfossils".

It is disappointing that nothing definite could be learned from the thin sections.

Yours truly,

A. F. Shepherd,
Assistant Geologist.

AFS:ln

Mr. P.J. Mulcahy,

Deputy Minister,

Department of Mines Jan. 20 60

Re: Application of Huestis et al
Mineral Claims on Myra Creek and
Thelwood Creek - Strathcona Park

Mineral occurrences are known in 3 groups of crown-granted mineral claims, referred to as Lynx, Paramount (Paw) and Price (Boulder) that have been held for many years.

Information on the properties is found in Reports of The Minister of Mines, in the report on the Buttle Lake Area, by H.C. Gunning, published in Summary Report, 1930 Part A, of the Geological Survey of Canada, and in material made available by the applicants.

see 49125 HW

Mineralization containing gold, silver, copper, lead and zinc, has been found at intervals in a broad zone or possibly in several zones over a distance of about three miles. Zinc is the most abundant metal and contributes more than half of the gross value to the best exposures on the three properties. Ore-grade mineralization in widths of 8 feet to 25 feet have been exposed by trenching. On the Paramount property a total of some 4400 feet diamond drilling has been done in 16 holes, cutting similar and even greater widths, one low-grade intersection being 70 feet across.

The difficulty of access has increased the cost of exploration and a combination of factors has resulted in considerable periods of inactivity.

Over the years a great deal of effort and money have been expended in the hope of ultimate reward through profitable sale or profitable operation of mines.

The properties are still in the prospect stage and a great deal would have to be done to prove that a profitable operation is possible. However, the data accumulated indicate mineralization that could well be mined profitably with metal prices in the medium range, provided that the obviously good possibilities for proving up ore in adequate quantity are realized.

The holders of the mineral claims have a right to expect that they will be allowed to operate under conditions that would allow them to mine profitably and would require them to ensure that the long term usefulness of the park would not be impaired.

A mining operation based on the ore in the belt on Myra Creek and Thelwood Creek would affect a small part of the park during the life of the operation. It would probably result in improved access to an area that has been difficult to reach. A tug boat and a barge or two on a lake 15 miles long cannot reasonably be said to crowd the lake or reduce its recreational value. On the contrary the operation would probably add interest to the area, and a road up Myra Creek from the lake would be a good start on a route to higher ground west of Buttle Lake.

Concern has been expressed about a flume system for diverting water from Myra Creek, mill tailings impoundment, and disposal of effluent.

These or other factors of an operation in that area should be arranged with the needs of the park in mind including conditions during the life of the operation, and requirements at the termination of mining operations.

If allowed to reach production, the operation would probably have a productive life of 10 years to 30 years, depending on how much ore is found. When the operation terminated, buildings could be dismantled and removed, mine openings could be permanently closed or fenced off, and nature would soon reduce the site of the former industry to a state no less useful for park purposes than other similar areas in the park. If proper foresight were exercised, level areas that had been prepared for buildings, or had been created by accumulating tailings or broken rock, could be used to advantage for campsites or other purposes.

The character of buildings and other installations, and disposal of tailings and effluent should have to meet reasonable requirements to preserve the beauty and usefulness of the park. The tailings should be securely impounded, and the out flowing water should be clarified if it is less clear than the normal water in the stream.

To deny access or to deny the right to explore and mine is to destroy the rights of the claim holders and the investments made over the years. It would also sterilize a prospect of real merit and prevent the use of mineral resources that would probably contribute significantly to the economy of British Columbia. Before further money is spent on exploration the property holders need assurance that they will be permitted to go into production if the exploration succeeds.

H. Sargent,
Chief, Mineralogical Branch.

HS:ln

D R A F T

Mr. P.J. Mulcahy,
Deputy Minister
Department of Mines,

Jan. 20, 1960.

Re: Application of Huestas et al
Mineral Claims on Myra Creek and
Thelwood Creek - Strathcona Park

Mineral occurrences are known in 3 groups of crown-granted mineral claims, referred to as Lynx, Paramount (~~Para~~ Paw) and Price (Boulder) that have been held for many years.

Information on the properties is found in Reports of The Minister of Mines, in the report on the Buttle Lake Area, by H.C. Gunning, published in Summary Report, 1930 Part A, of the Geological Survey of Canada, and in material made available by the applicants.

Mineralization containing gold, silver, copper, lead and zinc, has been found at intervals in a broad zone or possibly in several zones over a distance of about three miles. Zinc is the most abundant metal and contributes more than half the gross value to the best exposures on the three properties. ~~Mineralized widths of ore grade~~ Ore-grade mineralization in widths ~~to~~ of 8 ~~15~~ feet to 25 feet have been exposed by trenching. On the Paramount property a total of some 4400 feet diamond drilling has been done in 16 holes, cutting similar and even greater widths, one low-grade intersection being 70 feet across.

The difficulty of access has increased the cost of exploration and a combination of factors has resulted in considerable periods of inactivity.

Over the years a great deal of effort and money have been expended in the hope of ultimate reward through profitable sale or profitable operation of mines.

The properties are still in the prospect stage and a great deal would have to be done to prove that a profitable operation is possible. However, the data accumulated indicate mineralization that could well be mined profitably with metal prices in the medium range, provided that the obviously good possibilities for proving up ore in adequate quantity are realized.

The holders of the mineral claims have a right to expect that they will be allowed to operate under conditions that would allow them to mine profitably and would require them to ensure that the long term usefulness of the park would not be impaired.

A mining operation based on the ore in the belt on Myra Creek and Thelwood Creek would affect a small part of the park during the life of the operation. It would probably result in improved access to an area that has been difficult to reach. A tug boat and a barge or two on a lake 15 miles long cannot reasonably be said to crowd the lake or reduce its recreational value. On the contrary the operation would probably add interst to the area, and a road up Myra Creek from the lake would be a good start on a route to higher ground west of Buttle Lake.

If allowed to reach production, the operation would probably have a productive life of 10 years to 30 years, depending on how much ore is found. When the operation terminated, buildings could be dismantled and removed, mine openings could be permanently closed or fenced off, and nature would soon reduce the site of the former industry to a state no less useful for park purposes than other similar areas in the park. If proper foresight were exercised, level areas that had been prepared for buildings, or had been created by accumulating tailings or brocken rock, could be used to advantage for campsites or ~~similar~~ other purposes.

Concern has been expressed about a flume system for directing water from Myra Creek, mill tailings impondment, and disposal of effluent.

These or other factors of an operation in that area should be arranged with the needs of the park in mind including ~~the ultimate termination of mining operations, as well as the use of the park~~ requirements at the conditions during the life of the operation, and requirements at the termination of mining operations.

~~Buildings, machinery and flumes or other installations should be dismantled and removed at the termination of the operation~~ The character of buildings and other installations, and disposal of tailings and effluent should have to meet reasonable requirements to preserve the beauty and usefulness of the park. ~~That is~~ The tailings should be securely impounded, and the out flowing water should be clarified if it is less clear than the normal water in the stream.

To deny access or to deny the right to explore and mine is to destroy the rights of the claim holders and the investments made over the years. It would also sterilize a prospect of real merit and prevent the use of mineral resources that would probably contribute significantly to the economy of British Columbia. Before further money is spent on exploration the property holders need assurance that they will be permitted to go into production if the exploration succeeds.

MEMORANDUM

TO Mr. J.E. McMynn,
Deputy Minister.

FROM THE
DEPARTMENT OF MINES
AND PETROLEUM RESOURCES

VICTORIA, B.C., December 16, 1974

WHEN REPLYING PLEASE REFER
TO FILE No. M-12

DEPUTY MINISTER OF MINES
& PETROLEUM RESOURCES
1576
REC'D DEC 17 '74

REFERRED	TO	DATE	INITIAL
ACCTS			
A. D. M.			
A. D. P.			
M. R.			
E. & P.			
A. D.			
FILE			

Re: Western Mines Reserves - December 1974

Present situation:

Reserves, December 1974 - approximately 1,520,000 tons*
Milled approximately 300,000 tons* during 1974
Reserves decreased by approximately 150,000 tons during 1974*

(* Information from Mr. R.O. Hampton, Western Mines Ltd.).

Breakdown of 1973 Reserves:

	Tons	Gold oz/T	Silver oz/T	Copper %	Lead %	Zinc %
Lynx (including stockpiles)	925,600	.06	2.2	1.3	0.9	7.3
Myra - Standard	613,500	.11	5.8	0.9	1.6	8.2
Myra - High Grade	132,000	.22	17.7	0.8	3.2	10.6
	1,671,100	0.09	4.7	1.1	1.3	7.9

Reserves and Mill Rates 1972-1974

	1974	1973	1972
Milled	300,000 tons (approx.)	354,240 tons	379,405 tons
Reserves	1,520,000 tons "	1,671,100 tons	1,746,000 tons

K.E. NORTHCOTE,
Geologist, Geological Division,
Mineral Resources Branch.

KEN/jr

PROPERTY FILE

93F072 Myra + Lynx

LYL.

January 24, 1963.

Mr. A.O. Hall,
1121 Marine Building,
355 Burrard St.,
Vancouver 1, B.C.

Dear Art:

This afternoon I have spoken with Mr. Mulcahy about the matter of getting record for claims on Phillips Creek draining into Buttle Lake. We are going to talk it over again on the first of the week. By that time the House will probably have settled down and prospects for doing something will be better.

When you got well away from my door I got out the file and found we had two copies of your memorandum on it, accordingly I am returning the one I got from you yesterday.

Yours truly,

H. Sargent,
Chief, Mineralogical Branch.

HS:ln

Attach: Memorandum 21/1/60 - A.O. Hall.

92 F/12 E
PROP. 198-200

Mr. P.J. Mulcahy,

Deputy Minister

March 3 64

Re: Mineralization and Prospecting Possibilities
Southern Buttle Lake Area, Strathcona Park.

1. A 12 page report and a coloured geological map scale 1 in. to 1/2 mile accompany this memorandum.

2. The principal known mineral occurrences, and discoveries of prospective interest, are indicated by areas circled in red on the map, and assigned numbers, written in red on the map and in the text of the report.

3. The area of prospective interest is west of the southern part of Buttle Lake, on the map most of it is coloured yellow (a layered sequence of volcanic origin); red and purple areas, consisting of massive limestone and associated thin-bedded sediments of Permian age, appear to be of lesser interest and the areas in brown in the northern part of the map consisting of massive volcanics, called the Karmutsen formation, have not been shown to be of economic interest.

4. Within the southwestern part of the area, a mass of granitic rock, reptesented in purplish-pink, cuts and is obviously younger than the other rocks.

5. Mineralization of commercial significance is found in or associated with, steeply dipping, northwesterly trending shears in the layered sequence (yellow) well below the Permian limestone formation (Western Mines, Lynx (6), Paramount (7) and Price (8) ore zones.)

6. In the southern part of the area erosion has removed all the Karmutsen formation and much of the Permian limestone and part of the layered volcanic sequence, leaving only separated remnants of the Permian limestone formation.

7. To the north the thickness of the Karmutsen volcanics is such that the prospects of ever reaching mineralization of the Lynx - Paramount - Price type are small indeed.

8. An area containing several shears, (#2) on the map on a tributary of Phillips Creek, has been incompletely prospected by Mastodon-Highland Bell. The company prospector found zinc float near the creek, and copper mineralization in place up the slope to the south, where the shear zones appear to die out or be cut off.

9. In the course of geological mapping our geological party found mineralization in place at localities 1, 3 and 4, and got results indicating the presence of heavy metal (zinc) from a sample of silt taken from a stream at locality (5).

10. The success of exploration on the ground held by Western Mines, indicates that evidence for similar mineralization should be sought in this area. Prospecting is difficult because much of the area is heavily timbered, and bedrock is covered by soil or moss. In recent years relatively limited prospecting has discovered several showings worthy of careful consideration and cautious further work.

11. Mastodon-Highland Bell, is of the opinion that Lynx - Paramount type mineralization may occur only at considerable depth below the Permian limestone. They are prepared to prospect their ground more extensively and intensively, to make geochemical surveys, and map the area geologically. They would then test parts that seem most favourable by a geophysical procedure - "Turam", expected to indicate areas for deep diamond drilling rather than necessarily to point directly to mineralization that might appear commercial at or near the surface.

12. Mastodon-Highland Bell will not do further work unless they can acquire title to the mineral they might discover.

Mr. P.J. Mulcahy, March 3, 1964.

13. Success by Mastodon-Highland Bell or by others in this area would stimulate interest in exploration to the south and southeast, beyond the boundaries of the park where there is reason to believe considerable areas of the pre-Permian sequence may exist.

14. Geological mapping and mineral exploration in the area west of the southern part of Buttle Lake, have not gone far enough to warrant pointing to parts of the Permian and pre-Permian sequence, as particularly favourable or unfavourable for the occurrence of ore of the Lynx - Paramount type, however it is unlikely that of the considerable area underlain by these rocks more than a few relatively small parts would be needed for mining.

15. I would refer you particularly to pages 10 - 12 of the report by Dr. Jeffery.

H. Sargent,
Chief, Mineralogical Branch.

HS:ln

Attach: report and coloured geological map

Western Mines Limited

(N. P. L.)

850 West Hastings Street
Vancouver 1, B.C.

January 16, 1962.

Mr. H. Sergent, Chief,
Mineralogical Branch,
Dept. of Mines & Petroleum Resources.

Dear Hartley:

Re: Buttle Lake Properties

With reference to your letter of January 12th, the co-ordinates of the Lynx and Paramount properties bear no relationship to one another.

A tie in survey is being carried out at the present time and when completed all maps will be based on the same co-ordinate system.

Yours very truly,

WESTERN MINES LIMITED,

J.A.C. Ross, Managing Director.

JACR/dr

August 22, 1962

N. E. McConnell, Esq.,
Hunting Survey Corporation Ltd.
West Coast Division,
1409 West Pender St.
Vancouver 5, B. C.

Dear Mr. McConnell:

re Air Photography
Price Creek, Buttle Lake Area

This will confirm our conversation of this afternoon in which,

(1) I proposed that you should do photography at 2500 feet to one inch, along a single line extending from the southwest corner of Love Lake, northwesterly through the junction of Thelwood and Price Creeks, and continuing on the same straight line for a total length of approximately ~~seven~~ eight miles, which would extend to Myra Creek.

(2) Our present interest is primarily in the geological data obtainable from the photographs. We think the eastern side of Price Creek is of more interest than the west side.

(3) You agreed that the work could be done in the very near future at a cost in the neighborhood of seventy-five dollars, that cost being possible because you would already be in the area for other work. (for about 7 mi)

(4) The strip covered would be about three miles wide.

(5) You would provide two sets of prints.

(6) You will advise me shortly concerning the progress of the work.

(7) Presumably the negatives will be ours. For the time being we would leave them with you, so that others working in the area could obtain prints.

(8) It will be possible to use other photography that you are doing in the area to aid in positioning our photos.

The attached sketch based on Map 92F, "Alberni, scale 1:250,000" Dept. of Lands and Forests, January 3rd, 1962, indicates the proposed flight line.

I thought it well to send you this in writing in case you should be in doubt about any point. If you have any doubt, or if you think any change is desirable, please telephone me. I shall probably be away from the office most or all of tomorrow (August 23), but shall be at home in the evening, where my telephone number is Evergreen 4-5607.

I realize that the flying may be done before this letter reaches you.

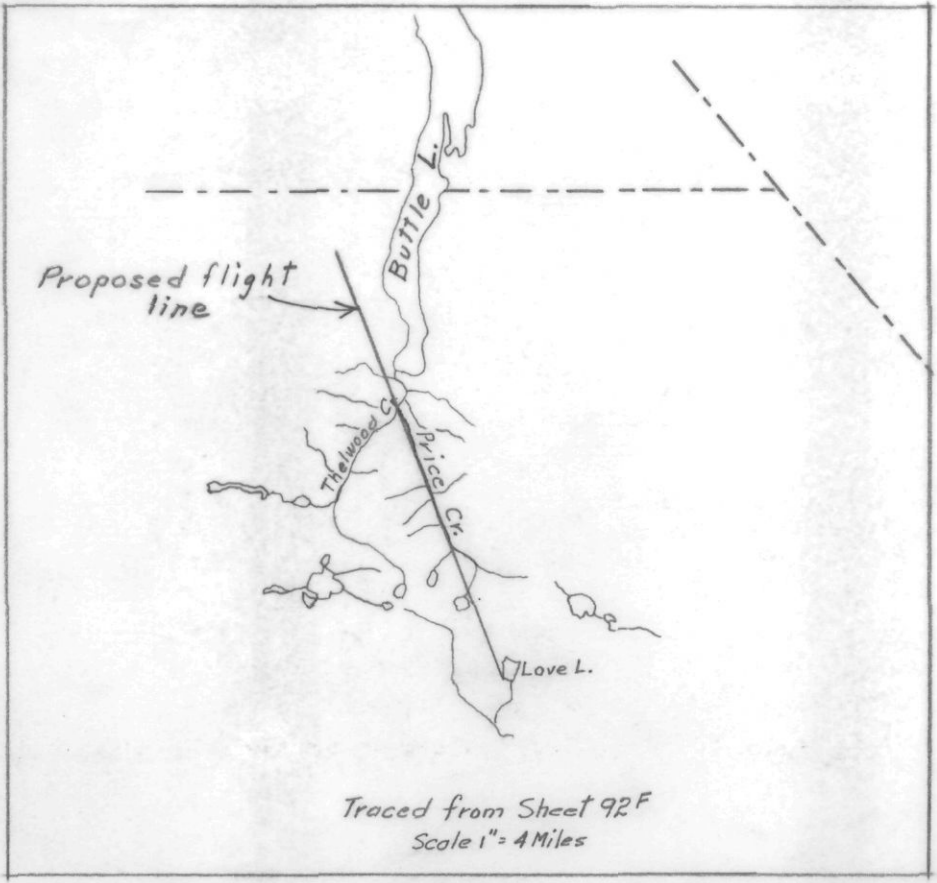
This letter confirms my request that you will do the photography as outlined, the cost to us including two prints of each photo to be in the neighborhood of $75. I assume that there will be ample overlap between adjacent photos.

Yours truly,

H. Sargent,
Chief, Mineralogical Branch

HS/rp

Attach: Print from tracing based on Map 92F (see above).



Traced from Sheet 92F
Scale 1" = 4 Miles

September 25, 1962.

Mr. Harold Wright,
c/o Wright Engineers Ltd.,
850 West Hastings Street,
Vancouver 1, B.C.

Dear Harold:

Re: Air Photography - Buttle Lake Area.

Following our conversation of several weeks ago I arranged with Hunting Surveys Corporation Limited to fly a single line of photos essentially along Price Creek from the south western corner of Buttle Lake approximately to Mount Septimus. I have received prints of the photos and also negatives. The negatives have been turned over to the Air Photo Library here and have been re-numbered B.C. 5056 - 210 to B.C. 5056 - 215.

At the same time I discussed with the Air Surveys Division of the Department of Lands, Forests and Water Resources the possibility of having new photographic coverage for part of the area west of Buttle Lake, which is of material interest to us because of the excellent exposures of limestone at high elevations. The limestone is a good marker and accordingly is very useful in working out the structure for stratigraphy. Fortunately it became possible to do this work a couple of weeks ago and we now have received a set of photographs. They are numbered B.C. 5056 -1 to B.C. 5056 - 81.

Both lots of photos will be covered by the Strathcona Park index and will be available from the Air photo Library, Department of Lands here. Both were taken under favourable conditions with minimal snow coverage.

Yours truly,

H. Sargent,
Chief, Mineralogical Branch.

HS:ln
cc: Mr. R.W. Yole.

Mr. P.J. Mulcahy,

Deputy Minister,

October 31 62

The discovery of a broad shear zone on Phillips Creek by Mastodon-Highland Bell is an extremely interesting development in the continuing exploration of the Buttle Lake shear zone. It cannot yet be stated positively that the new Phillips Creek zone and the Buttle Lake zone are one and the same, but it cannot be reasonably doubted that they are. The discovery adds considerably to the potential of the district by outlining a large new area that is definitely favourable to the occurrence of ore and also by indicating a possible solution to geological problems that have so far hampered exploration on Buttle Lake ground, north of Western Mines ground. We do not know of mineralization being discovered as yet at Phillips Creek, but from our knowledge of zones like the Buttle Lake shear, Britannia shear, and others, the discovery of the zone of quartz-sericite schist is far more important than the immediate appearance in it of mineral. The time and money currently being spent on Western Mines ground in exploration is a good measure of the difficulty of proving up a very important ore zone.

Mastodon-Highland Bell has made application to record a block of claims on Phillips Creek, beyond the presently permissible area of staking. It is in the interests of proper exploration of this important region that these claims be recorded so that examination of the ground can take place. If assurance of title is not obtained neither the present company nor any other will do the work that is necessary to make a proper estimate of the worth of the new discovery. Detailed geological mapping, in all probability followed by diamond drilling, would in any event be necessary to permit the company to decide whether to retain the ground with a view to operation or to relinquish it.

It is highly desirable that the Dept. of Mines and Petroleum Resources undertake field work in this area, work that has been impossible with our shortness of staff, but even then it is not the Department's function to prospect, and, without diamond drilling in this region it is impossible to make a reasonable inventory of potential worth of the Phillips Creek ground. Development of our mineral resources requires that ground as important as this now appears to be, should be fully explored, and it is desirable that the Department should not only keep well informed at first hand but actively participate in exploration by geological mapping and by correlating information gathered by various companies.

Mr. P.J. Mulcahy, October 31, 1962.

The importance of the Phillips Creek shear zone is best judged by comperison with Britannia. It, together with the Buttle Lake zone as now known, compares quite accurately with the Britannia shear zone, in terms of essential geology and size. The known mineralization is more diverse and of higher grade than Britannia. The Britannia zone has, since 1905, produced about 45 million tons of ore containing about 978 million pounds of copper and 247 million pounds of zinc. Even after 57 years of operation the company is still expanding its ore horizons.

I strongly urge that representation be made to allow Mastodon-Highland Bell to record mineral claims in the block of ground outlined by them on Phillips Creek. A zone of potential mineralization as important as this turns up so rarely that it cannot be ignored, in the best interests of the economy of the country. If a mining operation of reasonable size is assured, then all is justified. If surface exploration fails to warrant continuance then the ground could revert to the Crown, without damage. If mineral claims are not allowed the question will always remain, is the decision in the best interests of the country?

M.S. Hedley,
for the Chief, Mineralogical Branch.

MSH:ln

Art Hall re Bottle Lake. Mining Co property
North & Western Lease Ground.

Bottle Lake has two pieces of ground 1 to north
the Shaw Southeast of the Western Ground.
North they has been found to the SE and they
would consider surrendering it if they could
get access to the north block via Phillips Co

Mastodon Highland Bell have discovered the
sericite schist & some mineralization on
claims staked but no record given.
These claims are south of Upper Phillips Co
adjoining Bottle Lake Co's N. block.

Bottle Lake is prepared to go in with
Mastodon H B. on exploration in 1963. with
the thought that Access to Bottle Lakes
north block could be from the Mastodon H B Ground

The north block cannot be explored at reasonable
cost by drilling from the surface because the
favorable sericite schist zone is overlain by
unsheared layered Gneiss.

suggest approach should be made to
Recr. & Cons. re obtaining mineral rights
within a limited area on upper Phillips Cr.

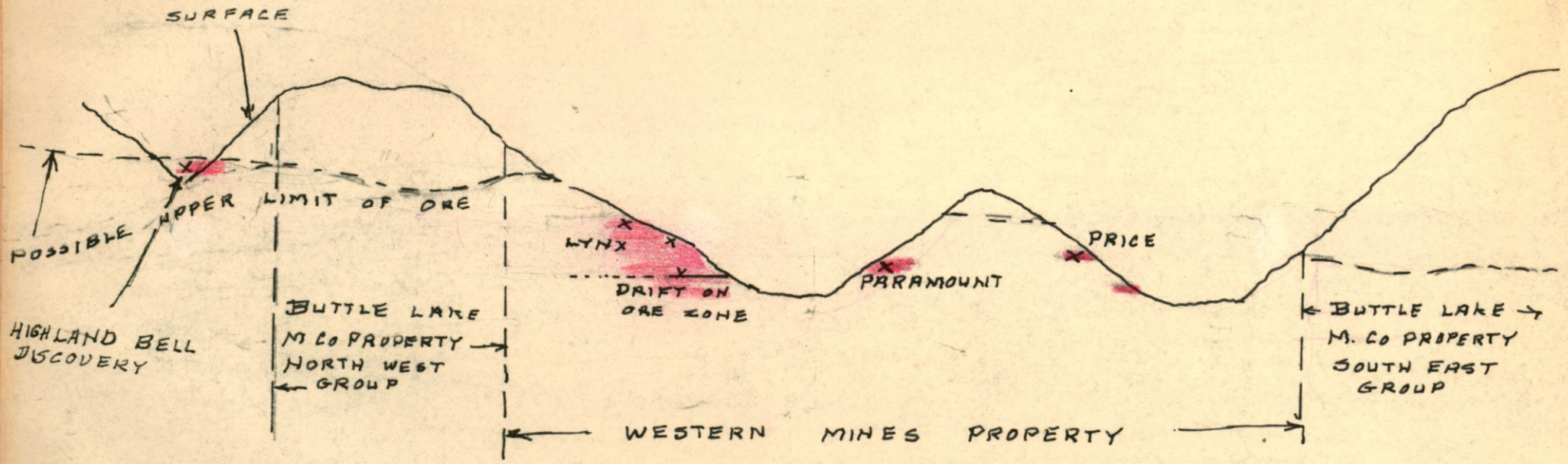
Failing success approach through Minister
& M & P R to Min of Recr & Cons or to
the cabinet.

Westerns are will yield at ~~last~~ $100,000,000
gross value on present information. They have
excellent exploration possibilities along strike
and at depth.

Steep Rock Iron Mines Ltd are associated with Buttle Lake
& are putting up 75% of costs.

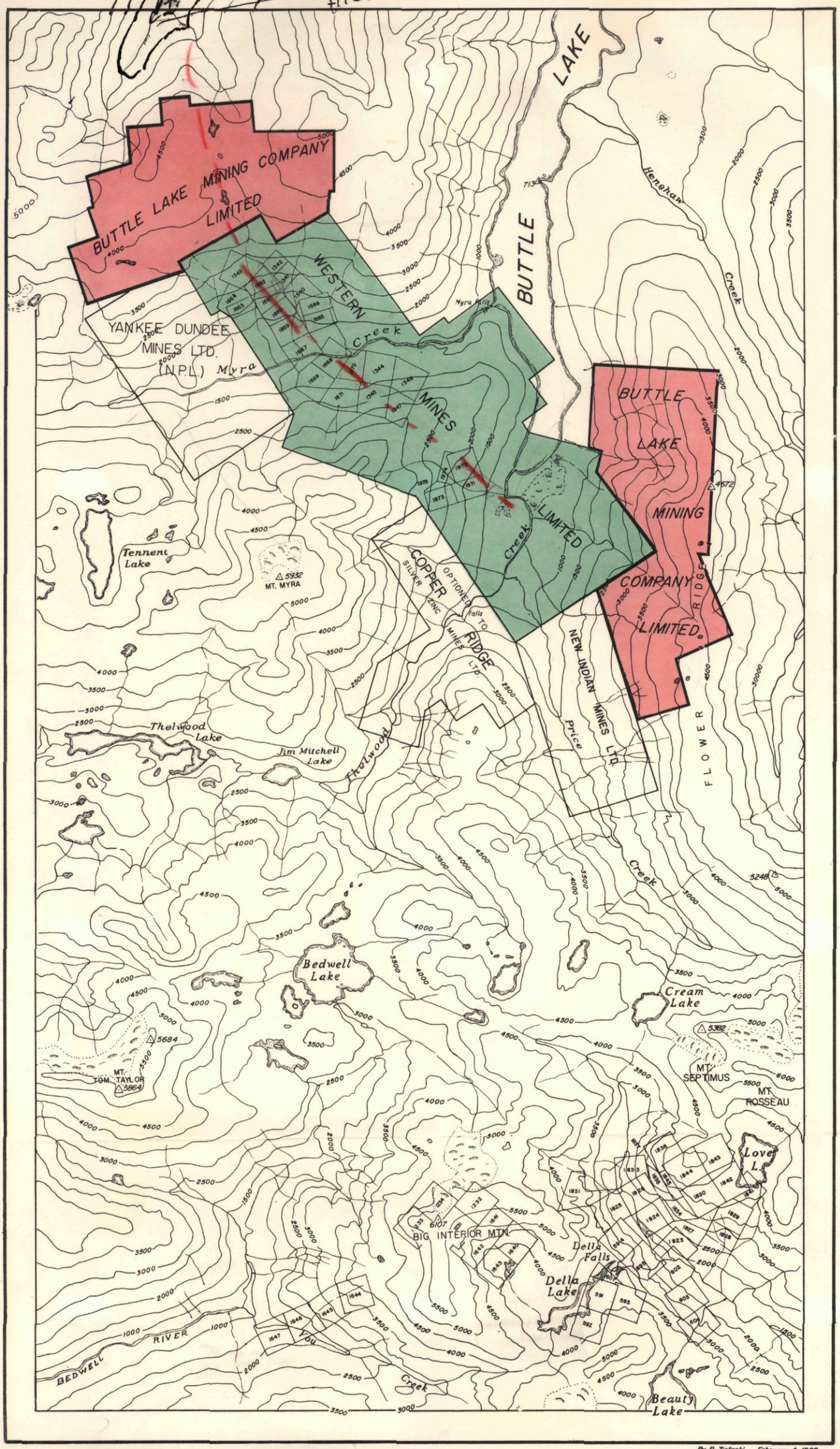
Buttle Lake Mining Company
A Hall
1121 Marine Bldg
355 Burrard ST.
Vncr 1. BC.

MU 1-7710



SECTION ALONG ORE BEARING SHEAR ZONE
SUGGESTING
HORIZONTAL MINERAL CONTROL
SCALE: HORIZONTAL 1 Mile = 1.25 INCHES
: VERTICAL 2000 Ft = 1 INCH
LOOKING NORTH EAST.
APPROXIMATE ONLY

OCT 1962 AOH



This map is prepared to serve as a guide only. Positions of unsurveyed claims are plotted from locators sketches and are not guaranteed.

BUTTLE LAKE MINERAL MAP

VANCOUVER ISLAND, B. C.

Scale: 1 inch = 1500 feet

By R. Zielinski February 4, 1962.

Dr. D.B. Turner,

Deputy Minister,

Dept. of Recreation & Conservation,

BUILDINGS.

PARKS BRANCH.

File: 0111930

Victoria, B.C. December 22nd, 59.

Re: Application by Mr. H.H. Huestis for certain concessions to facilitate the mining of the Lynx Paw and Boulder claims in Strathcona Park.

Strathcona Park was established by an Act of the Legislature assented to March 1st, 1911. The terms under which the park was created provided (Section 2) that the land "- - - is withdrawn from sale, settlement, and occupancy under provisions of the Land Act or any Act with respect to mining or any other matter."

An amendment to the Strathcona Park Act was assented to on March 28th, 1918, and provided for addition of the following to the Act:

"Section 8. Notwithstanding the provisions of this Act the lands within the limits of Strathcona Park shall, from and after the 15th day of April 1918 and subject to the conditions of Sections 10 and 11, be open to the location, acquisition and occupation of mineral claims therein under the provisions of the Mineral Act and the reserve of said lands under the provisions of this Act is to that extent only hereby cancelled."

Section 10 stated that Crown granted surface rights could not be obtained on mineral claims in Strathcona Park and Section 11 allowed for imposition of terms, conditions, and restrictions by the Lieutenant-Governor in Council on such matters as the cutting and use of timber.

The same amendment Act authorized by Section 9 that:

"In the case of any mineral claim heretofore located within the limits of Strathcona Park and recorded in good faith and without knowledge on the part of the locator that the same was within the limits of the park, and in respect of which claim all recording fees have been paid to and accepted by the Mining Recorder and assessment-work has been done thereon in compliance with the provisions of the Mineral Act. Then upon application to the Minister of Mines on or before the fifteenth day of April, 1918, accompanied by reasonable proof of such good faith, payment of fees and performance of work, a certificate may be granted by the Minister of Mines confirming the location and record of such mineral claim; and thereupon the mineral claim shall be deemed to have been duly located and recorded as from the date of its record, and shall, subject to the provisions of the Mineral Act and to the provisions of Section 10 and 11 of this Act, be deemed to be a valid and subsisting mineral claim as from the date of the certificate granted under this section, in all respects as if the foregoing sections of this Act had never been passed.

A further amendment assented to on December 19, 1925, extended the privilege of Section 9 by changing the date 1918 to 1926.

Chapter 84 of the Statutes of British Columbia repealed the Strathcona Park Act and on April 5, 1957, the Park was reclassified as a Provincial Park of Class "A". Thus with respect to mining the provisions of Order-in-Council 2055 approved September 17, 1949, now apply.

II. THE AREA OF INTEREST TO H.H. HUESTIS AND ASSOCIATES

At the present time the claims in good standing which interest the Messrs. Huestis, Hall and Associates are Lots 1340-42, 1344-47, 1659-1661, 1663-1671, 1971-1974, (group numbers inclusive), the Lynx, Paw and Boulder claims. These claims are Crown granted as to mineral rights only, some as early as 1923, and others as recently as 1956.

Exerpts from Annual Reports of the Minister of Mines for 1927, 1928, 1929 and 1952 are attached as is a portion of Dr. H.C. Gunnings' 1930 geological survey report on the Buttle Lake Area. Samplings from open cut exploration on the claims concerned indicate a favourable deposit with zinc predominant and lead, copper and other traces present. The findings of diamond drilling by the Paramount Mining Company have apparently not been made known. One report states "A systematic plan of diamond drilling would be the only feasible method of obtaining any conclusive data as to the possibilities of these big schist-belts." Dr. Gunning reports: "The proportion of zinc in the ore is high and all mineralization exposed is low grade; at the best it will require concentration before shipping." Elsewhere in connection with the Lynx Group Dr. Gunning states, "The area is generally fine grained and the sulphides with or without gaugue minerals are intimately intergrown so that concentration will entail fairly fine grinding." And, "The present workings, unless it be the undisclosed results of the diamond drilling of the Paramount Mining Company, do not prove continuity with commercial dimensions either vertically or horizontally."

Diamond drilling was undertaken in 1959 under the direction of Mr. Arthur Hall.

Apparently on the basis of information gained to date Mr. Huestis' Group is prepared to expend a further $200,000 in more intensive mineral exploration and understandably, are endeavouring, prior to this activity, to gain various concessions giving them strength of tenure, from the Department of Recreation and Conservation. This brings the Parks Branch face to face with an assessment of the possible effects of the mining being proposed.

III. EFFECT OF MINING IN THE MYRA CREEK AREA ON RECREATIONAL VALUES OF STRATHCONA PARK.

The mining development would probably require:

1. Tugboat and barge operations on Buttle Lake.
2. A wharf and storage buildings at Myra Creek mouth.
3. A road up Myra Creek to the mining properties and a road system on the property.
4. A camp establishment with cookhouse, bunkhouses and other living quarters, office, blacksmith shop, machine shop, fuel sheds, storage sheds, etc. in the Myra Creek Valley.
5. A mill establishment for crushing and concentrating ores for shipment.
6. The above will involve flume systems for water diversion from Myra Creek, mill tailing impoundments, effluent disposal.
7. The cutting of park timber for mining and associated use. (Myra Creek contains attractive, heavy stands of old growth Douglas fir and cedar particularly where the mineral claims are centered.
8. Disposal area for the other wastes of industry and occupancy in Myra Creek Valley.

effluent

It is obvious that the contemplated activity would wreak a considerable change in the appearance and atmosphere of an area in the heart of Strathcona Park. It would also tend to change the character of Buttle Lake which is the most important single attraction of the park.

IV. PARK CONSIDERATIONS

The main purpose in the setting aside of Strathcona Park was the preservation of some outstanding Vancouver Island scenery including forest cover types and waterways to enable continuing enjoyment of the natural out-of-doors. As the rest of the island is developed in residential occupancy, logging, mining, waterpower and other purposes, the attractions preserved in parks take on added meaning.

In the course of logging and flooding the shores of Buttle Lake, in Strathcona Park, for power development, considerable pains were taken to restore, insofar as possible, a natural appearance to the lake when the reservoir is full or nearly full. We are advised that to this end, and largely for the recreational advantages to be gained, about $6,000,000 have been spent in cleaning up the reservoir.

Grubbed areas have been provided at intervals on the shoreline, mainly at Myra Creek deltas, to permit safe landing by boat.

Last summer, the first in which public vehicular access to Buttle Lake has been possible, the lake drew appreciable recreational use. This was in spite of the fact that there was no development whatever in the

area to accommodate the public. Reports tell of 300 parties camped at the lakehead of a summer weekend and, at the same time, other parties were dispersed around the lake.

The topography of Strathcona Park is such that trail systems giving access to different parts of the park must begin and end on Buttle Lake. The Myra Creek valley provides a good route to the Golden Hind and interior portions of Strathcona Park. Thus, the lake is not only, in itself, a major attraction for boating, fishing and enjoyment of camping and scenic attractions, it is a key feature controlling access to the upland areas of the park. It is important to the park that the essential recreational character of traffic on the lake and the natural aspect of the surroundings be maintained. If such commercial purposes as appear economic are to be admitted to the Buttle Lake area, then the lake falls into the same category as any other on Vancouver Island and there would appear to be little virtue in retaining park status on the entire surrounding area.

Although lands which control a basal development for the park at the north end of Buttle Lake are privately held, and the natural aspect of Buttle Lake has been seriously affected by logging of these timber limits at the north end, by the necessary salvage logging of the area burned over by the 10,000 acres, 1958 "Thel" fire at the south end, and by utilization of the lake as a water storage reservoir, it is still possible to develop the area as park and maintain some of its natural attraction. Further logging or mining activity with attendant pollution of the lake or tributary streams will see the area pass the point where it has any value for wilderness-type recreation. It is untenable to consider that in all of Vancouver Island there is no room for a park of this quality and that every last corner of the Island must be developed. Projection of park use for recreational activities in the next short period of 40 years promises and predicts at least ten times the present pressure in British Columbia. Strathcona Park is the only park of size on Vancouver Island to meet this tremendous pressure.

It should be noted that there has been no interference of the mining activity in Strathcona Park in the Mount Septimus-Love Lake area, the Big Interior Mountain area, and in the Bedwell River drainage. In recent years approval has been given for the issuing of mineral records on nearly all claims filed for in these portions of the park. The effects on the park of activity at these locations is less harmful than would be the effect of development of the Myra Creek claims, which would cut the hub or heart out of Strathcona Park as a unique and prized recreational possession of the people of British Columbia.

V. RECOMMENDATIONS

It is recommended that the privileges requested in Mr. Huestis' letter of last October 29 not be granted; that is, that no commitment be made by the Department which would give authority to the mining development company to build roads and docks at the south end of Buttle Lake and to gain the right to use the surface of a block of land in the Myra Creek area of Strathcona Park to cut timber, to build roads, to mine, to mill ores and to impound tailings. These mineral claims are in a Provincial park of long standing and the burden is properly on the mining company to show proof of mineral deposits of greater value to the welfare of the people of British Columbia than are the recreational amenities of a natural-area park at this location. It is recommended that the approval required under Clauses 10 and 12 of Order-in-Council 2055, 17th September 1949, be withheld in connection with the contemplated development of the Lynx, Paw and Boulder Claims at the south end of Buttle Lake.

H.G. McWilliams,
Director,
Provincial Parks Branch.

Dr. D.B. Turner,

Deputy Minister,

Dept. of Recreation & Conservation,

BUILDINGS.

PARKS BRANCH

File: 0111930

Victoria, B.C. 22nd December 59

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I. SOME BACKGROUND REGARDING MINING IN STRATHCONA PARK

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H.G. McWilliams,
Director,
Provincial Parks Branch.

Mr. McWilliams: An imp problem. After your consideration with Mr. Ahrens etc. then we can [illegible] you the [illegible] this matter promptly [illegible] [illegible]. Meanwhile ack receipt. [illegible]

810-402 West Pender Street,
Vancouver 3, B.C.,
October 29, 1959.

Dr. D. B. Turner,
Deputy Minister,
Department of Recreation and Conservation,
Parliament Buildings,
Victoria, B.C.

Ref. Your File 0111930

Dear Sir:

On July 13th, 1959, in a letter addressed to Mr. A.O. Hall of this address, you granted authority to transport portable drilling equipment from Buttle Lake to our mineral claims on Myra Creek for exploration purposes.

Stage 1 -

of our exploration program, as set out in Mr. Hall's letter to you on July 7th, 1959 has been completed. Results of this preliminary diamond drill exploration have confirmed the presence of a major geologic structure containing ecchomic concentrations of ore.

This structure is illustrated in relation to crown granted claims on the accompanying map.

Stage 2 - Exploration Program

The next stage of exploration involves intensive investigation for ore bodies along the entire length of this structure. Such investigation will be accomplished by geologic mapping, geophysical surveys, diamond drilling and possibly underground tunneling. Stage 2 should start early next spring and it is estimated that a minimum expenditure of $200,000.00 will be required for this purpose.

Stage 3 - Mine Development

Before undertaking an expenditure of the magnitude required for Stage 2, we would ask you to kindly give favourable consideration to admitting mining exploration which would

Continued . . . .

include the milling and shipping of ore and concentrates, provided that Step 2 shows that development of a mine is warranted.

Arrangements have been made to acquire all of the Crown Granted Mineral Claims in good standing, as shown on the accompanying map. However, at this time there is no way of predicting just where important concentrations of ore may occur along the course of this structure. For this reason and as a matter of normal protection, authorization is requested to acquire by claim location or otherwise, mining and surface rights to all Park land located within the perimeter of the block outlined on the accompanying map.

In order to make development and extraction of this potential resource of base metal possible the following privileges are applied for:

1. The right to mine and the right to use such surface as is necessary of the ground within the block of land outlined on the accompanying map.

2. The right to construct dock and loading facilities on the shore of Buttle Lake.

3. The right to impound mill tailings on the property in the block.

4. The right to construct access and surface roads to mine or mill sites.

5. The right to use sufficient timber for mining purposes.

6. The right to use water for milling purposes.

In order that we may proceed with plans for the spring of 1960, we would greatly appreciate you giving early consideration to our request. If there is additional information required, we shall be pleased to endeavour to promptly obtain it for you.

Yours very truly,

R. R. Bluette

Encl.
c.c. Minister of Mines
Deputy Minister of Mines

4707 Commonwealth Drive
South Vancouver
Oct 1959

PARAMOUNT PROJECT
BUTTLE LAKE DISTRICT
ALBERNI MINING DIV.

Mr. P.M.Spencer
Manager Mining &Exploration Div.,
Cerro de Pasco Corporation,
300 Park Avenue,
New York 22. N.Y.

Introduction

Dear Sir;

You are provided herewith a complete set of the pertinent information concerning the subject prospect. This letter-report does not ~~[illegible]~~ constitute a complete report in-itself but is intended to supplement and bring up to date the data accompanying.

History.

The property was acquired in about 1920 by the J.Errington and J.P.Bickell interests who formed the Paramount Mining Company. Surface prospecting and drilling of holes 1 to 10 was completed at this time and the claims surveyed and crown granted. Apparently nothing furthur was done until 1952 when Granby Consolidated optioned the property and drilled holes 11 to 14 inclusive before terminating their option. In my opinion the Granby exploration program was very incomplete and inadequate. Following this the Paramount property was optioned by Northwest Ventures a small exploration and promotional company. On their behalf Dr A.C.Skerl consultant completed examination and the report accompanying this letter. Due to adverse promotional conditions and a rather onerous deal Northwest were unable to handle the project and dropped their option. The property again reverted to the owners until early 1959 when P.M. Reynolds and associated secured an option from the National Trust Company administer the estate of J.P.Bickell, now deceased. By this time a rather favourable deal was possible.

J.Errington and Bickell were both very prominent and successful in Canadian mining. Errington brought the Steep Rock iron mines into production and Bickell was chairman of the board of McIntyre Porcupine Gold Mines.

Reynolds and associates undertook furthur examination and drilled holes 15 and 16 for the specific purpose of checking certain hi-grade intersections reported by Paramount and Granby drilling.

I examined this area including the Paramount, Price Creek and Lynx showings on behalf of American Smelting & Refining Co., in 1949. After due consideration I see no reason why my copy of this report should not be made available and it is therefore attached.

At that time the deal was handled directly with Mr. Bickell. Terms were difficult and for that and other

reasons not clearly recalled by me A.S&R. elected not to undertake the venture. I believe at that time I became heavily involved with other commitments for A.S&R.

At the time of my examination I engaged H.H.Huestis who was familiar with the property to accompany me during the field work. During ensuing years I have tried to keep in touch with developments on this prospect.

About one year ago Reynolds and Huestis with associates formulated plans to acquire the property and undertake the preliminary exploration and drilling referred to in a previous paragraph. The work done early this summer was essentially that recommended by me to A.S&R in 1949 and suggested verbally in discussions with Reynolds, Huestis and company. As you know my relations with this group is close and I have been in constant touch with the recent work.

Property & Ownership -Strathcona Park Problem-

The properties of interest are all situated within the limits of Strathcona Provincial Park. Prior to 1956 this was classified as a "B" park and as such was open to claim staking and mining etc,. In 1956 the park was re-classified to an "A" park and according to current advise staking of new claims and mining operations on new claims or the old Crown Granted claims will be allowed only at the discretion of the minister of the Department of Recreation and Conservation. So far as new claims are concerned this advise is probably correct however with respect to the old Crown Granted claims which have been held in good standing by payment of taxes and development work for a great many years it seems doubtfull that the Minister could or would wish to abbitrarily cancel mining activity and in effect entirely wipe out the value of these properties. It would seem that the Government must either allow access to and mining operations on and adjacent to these Crown Grants or must compensate the owners for their value.

In any case it appears obvious that all of the Crown Grants and a reasonable extent of adjoining ground must be made available before furthur expenditures for exploration can be made.

The Department of Recreation and Conservation granted Reynolds limited rights for exploration but indicated that full scale mining and production operations might be restricted or disallowed if in their opinion such operations adversely affected Recreation or Conservation conditions.

The extent and ownership of Crown Granted claims is indicated on the accompanying map. Reynolds and associates hold all of the Crown Grants under option (and seeking) from (and are seeking) the Department authorization to acquire certain adjoining ground as well as unrestricted mining privileges.

Transportation

Property to beach at south end of Buttle Lake. This section with exception of ¼ mile adjacent to the beach is of easy grade and lends itself to relatively cheap road construction. The section near the beach is steep and rocky and probably minor rock work would be involved to establish a desirable grade.	2 miles.
Beach to north end Buttle Lake. Water haul	18 miles
North end Buttle Lake to Campbell River town. All weather good gravel roads exist, and Concentrate loading facilities are available at Campbell River harbour for loading barges	20 miles
Campbell River harbour to Tacoma copper Smelter ocean haul	240 miles
Campbell River harbour to Seattle. Ocean haul	200 miles
Seattle to Kellog lead-zinc smelter. Rail haul	280 miles
Campbell River harbour to Vancouver. Ocean haul.	100 miles
Vancouver to Trail lead-zinc smelter Rail haul.	240 miles

Marketing Concentrates.

In addition to the obvious outlet for concentrates at Tacoma and Trail or Kellog it is becoming apparent that the Japanese buyers will compete for concentrates from West coast points. They are actively buying ore in this area and are receiving copper concentrates from the Cowichan Copper Mine on Vancouver Island. This producer is located barely 120 miles by ocean haul from Tacoma smelter.

Conclusions and Recommendations.

The information available to date suggests that this prospect holds reasonable possibilities of developing into a substantial and profitable producer.

On the basis of the following comparison it would appear that economics of this venture are favourable providing furthur tonnages of the drill indicated ore can be found. In the October 1959 issue of the Engineering and Mining Journal it is reported that the Idarado operation of the Newmont Company treated 382,100 tons of ore of the following grade.

Idarado	Au ozs	Ag Ozs	Lead %	Copper%	Zinc%	Gross $
	0.08	2.08	2.07	0.72	4.48	$22.00
Paramount	0.13	7.7	1.6	1.47	14.0	$51.00

Metal Prices used

Gold	$ 35.00	per oz
Silver	.90	" "
Lead	.10	per pound
Copper	.30	" "
Zinc	.10	" "

It is assumed that the Idarado operation is profitable and since other factors pertaining to economics such as mining and location with respect to smelters are comparable the outlook for Paramount is attractive.

On the basis of all assay results available it is expected that over-all average grade for any ~~substantial~~ substantial tonnage within this structure will be somewhat lower than the avarage used above.

Furthur investigation is recommended along the following lines.

1. Detailed geologic mapping along the three mile structure. So far as known this belt has not been closely mapped as a unit. Most of it is obscured by soil and vegetation etc, but higher portions may be sufficiently exposed to reveal signifigant and perhaps critical geologic information.

2. The base line used for geologic mapping should be used for for an electro-magnetic geophysical survey. The massive sulphide-replacement type character of the ore should respond well to this type of exploration.

3. The Paramount, Price Creek and Lynx showings are all targets for diamond drill exploration.

This exploration work should proceed simultaneously and an objective of course would be to do enough drilling in the first field season to permit a sound conclusion as to potentiality of this prospect.

The cost of this work is extimated at from $175,000.00 to $ 200,000.00

It is recommended that a mutually acceptable deal be developed with Reynolds and associated, so that exploration may be undertaken as, if and when workable arrangements are concluded with the Department of Recreation and Conservation.

It is not considered practical to start operations in this area until about May 1st of 1960. Thereafter work could proceed on a year around basis.

Sincerely,

Arthur O.Hall

October 1959

Appendix.

1. File memo. Paramount Exploration Project A.O.Hall.

2. Report. Myra Price Creek Properties
(Paramount, Price Cr. and Lynx)
Dated 19Dec 1949. by A.O.Hall Return

3. Geology by Gunning. Excerpt from Summary Report 1930 Part A. Geologic Suravey Cahada. Return

4. Buttle Lake 92 F/12 east half. Property Map

5. Geologic Report Paramount Lynx & Price Creek properties. July 1956 Dr.A.C.Skerl Return

6. Maps. Paramount.
1. Plan of Drilling and Assays 20 scale
1. Section A
1. Section B
1. Section C.

7. Maps. Granby Drilling on Paramount. Return
1. Section Drill Hole 10 40 scale
1. Section Drill Holes 11&12
1. Section Drill Hole 13
1. Section Drill Hole 3.
1. Section Drill Hole 14. Return

8. Maps Paramount.
1. Plan Crown Granted Claims 300 scale Return
1 Plan Paramount drilling and assays etc 40 scale Return

Note. The items marked "Return" have been borrowed and should be returned at your earliest convenience. Duplicates may be made.

Lynx Zone. Dec 1959.

Subsequent to Compilation of data on the Paramount zone the attached assay plan of the lynx zone was discovered among the old files.

This was evidently traced by Granby but the original authority for this map and sampling is unknown. Correlation of the assays by number as listed under "assays" with the numbers of cuts as listed under "description of cuts" indicates a very substantial zone of better grade mineralisation This zone of undetermined width is indicated to be at least 750 feet in length and open in each direction along strike.

Exploration and testing is limited to surface pits and trenches in an area where overburden could be penetrated.

On the attached sheet assays have been re-capitulated and dollar values computed over an area assumed to be represented by these pits and trenches.

As will be noted assays number 1 and 2 are sub-commercial and have been excluded. Also sample number 9 was discarded as being a "selected" sample and far above average grade.

Lead determinations were not made for samples 4 to 8 inclusive. It is reasonable to assume that Lead is present where associated values are so high and a lead assay of 2 % as allowed in each case.

It seems unlikely that the average grade of the zone will be as high as that indicated by the accompanying calculations. However the presence of heavy mineralisation in this zone has been confirmed by the sampling of Charles Hey (Pioneer) and Preston Locke (A.S&R) etc.

On the basis of the following comparison it would appear that economics of this venture are favourable providing further tonnages of ore can be found in this structure. In the October 1959 issue of Engineering and Mining Journal it is reported that the Idarado mine of Newmont company treated 582,000 tons of ore of the following grade

	oz/t Au.	oz/t Ag.	% Lead.	% Copper.	% Zinc.	Gross $.
Idarado	0.08	2.08	2.07	0.72	4.48	$22.00
Paramount Zone	0.13	7.7	1.6	1.47	14.0	$51.00
Lynx Zone	0.04	1.6	1.80	2.75	16.00	$54.00

Metal Prices used. Au. $35.00 Ag. 0.90 Cu. 0.30 ¢
Pb. 0.10¢ Zn 0.10¢

It is assumed the Idarado operation is profitable and since other factors pertaining to economics such as mining and location with respect to smelters are comparable, the outlook for Paramount-Lynx is attractive.

92F/12E
PROP. 198-200

Dec 1959

Lynx Zone. (See accompanying map with Assays.)

Assay No (Out No.)	Ft	Au.	Ag.	Cu.	Pb.	Zn.	Total $ Value.
3	20.0	.03	2.2	.23	.70	6.85	
		1.05	1.98	1.38	1.40	12.40	$18.20
4	?	.04	2.90	4.82	2.0	24.40	
		1.40	2.60	28.80	4.00	48.00	$84.80
5	8.0	.05	2.2	7.16	2.0	22.60	
		1.75	1.98	42.00	4.00	44.00	$93.72
6	8.0	.03	.50	.87	2.0	15.00	
		1.05	.45	5.22	4.00	30.00	$40.70
7	40.0	.03	16	1.55	2.0	6.85	
		1.05	.50	9.00	4.00	13.60	$28.00
8	?	.04	1.0	1.85	2.0	21.40	
		1.40	.90	11.00	4.00	42.00	$59.00
				Arithmetic Average			$54.00 (per ton)

Indicated minimum length 750 feet
Assume width 10 feet
Tonnage factor 10 c.f.t.

Tons per vertical foot = 750
Take depth 100 feet

Gross Value.

Indicated tonnage 75,000 @ $54.00 per ton = $4,050,000.00

File Memo. A.O.Hall

Subject. Paramount Exploration Project

A review of the maps accompanying this letter and the various maps and data appended hereto, will provide a fairly comprehensive picture of this exploration project.

Based on information available this venture may be summarsized as follows;

(1) Important mineralization has been found at three widely separated points along a structure suspected to be continuous or recurring for at least three miles.

(2) At two of these points i,e,; the Price Creek and Lynx showings only limited exposures have been made by means of small surface trenches and pits. These limited exposures reveal most encouraging mineralization.

(3) At the Paramount Zone a similiar surface exposure has been subjected to more adequate testing by diamond drilling the structure for a length of over 1000 ft. 200 feet of this length is estimated to contain a minimum of 60,000 tons of ore having a gross value of $ 47.00 per ton "indicated by drilling"

(4) Available geologic information suggests that pronounced horisontal ore controls may exist and that the ore bearing horizon or horizons may occur as flately inclined pipe-like shapes of great horizontal extent. In fact it may be inferred that two or more of the known mineral showings are related to the extent that they occur in a common geologic horizon. An attempt has been made to illustrate this situation on the accompanying " profile along trace of Break". Reference is also made to Gunnings description of geology.

§5) Estimates of ore tonnage and gutcome is premature at this time, however as an index to potentiality of this business there is roughly computed a tonnage-grade figure and outcome for a drill tested 200 ft length of the zone (see accompanying estimate sheet). The currently tested 200 foot length of zone has indicated nearly 60,000 tons of ore. If it can be judged that the three mile long structure will be productive for 50% of its length there would result an ore resource of about 2.5 million tons. Possibly two or three times this figure if ore bearing horizons repeat. Obviously if an operating profit of $13.00 per ton is possible the venture becomes extremely attractive. With respect to estimates it is interesting to note that Dr Skerl allows a much greater tonnage of ore of lower grade for a similiar length of zone.

(6) To this point consideration has been limited to the relatively restricted hi-grade bodies of ore within the zone. In addition to this type of deposit there is evidence to suggest that this structure may produce very large low grade tonnages. Holes 11,4 and 1 have each intersected what might be termed encouraging mineralization over considerable widths. Hole 11 averages nearly 1% copper and has a $12.00 per ton gross value across 70 ft of width.

(7) It is seldom that a prospect becomes available upon which
(a) enough ore has been drill indicated to show a profit after returns of $ 700,000.00 capital expenditure.
(b) reasonable exploration possibilities exist for producing very large additional tonnages of relatively hi-grade ore.

The reward potential of this venture would appear to justify a serious exploration effort. Such effort should comprise(a) geophysical E-M type survey of structure. (b) limited initial underground opening of the indicated ore zone. (C) Extensive diamond drill exploration. Minimum expenditure for this first phase program will be $75,000.00.

This prospect has been considered by many and very inadequately prospected by a few.

OUTCOME ON ORE INDICATED AT PARAMOUNT ZONE

Tonnage & Grade	Width		Gross Value	Product.
Hole 10	13'	x	$ 65.00	84,500
Hole 15	8'	x	$ 55.00	44,000
hole 13	15'	x	$ 57.00	85,500
hole 16	9'	x	$ 30.00	27,000
hole 3	25'	x	$ 36.00	90,000
	70'			331,000

Average width 14 feet Average grade $ 47.00

Length taken $\frac{\text{200 feet x width 14 feet}}{\text{factor 10}}$ = 280 T.P.V.F.

Depth taken 200'x280' = 56,000 tons @ $47.00 per ton

Recovery $\frac{90}{100}$ x $47.00 = $42.00 per ton

Take net smelter after treatment and freight $\frac{60}{100}$ x $42.00

= $25.20 per ton

Cost Mining Milling Overhead $18.00 " "
Operating profit before taxes depreciateion etc $7.20 " "

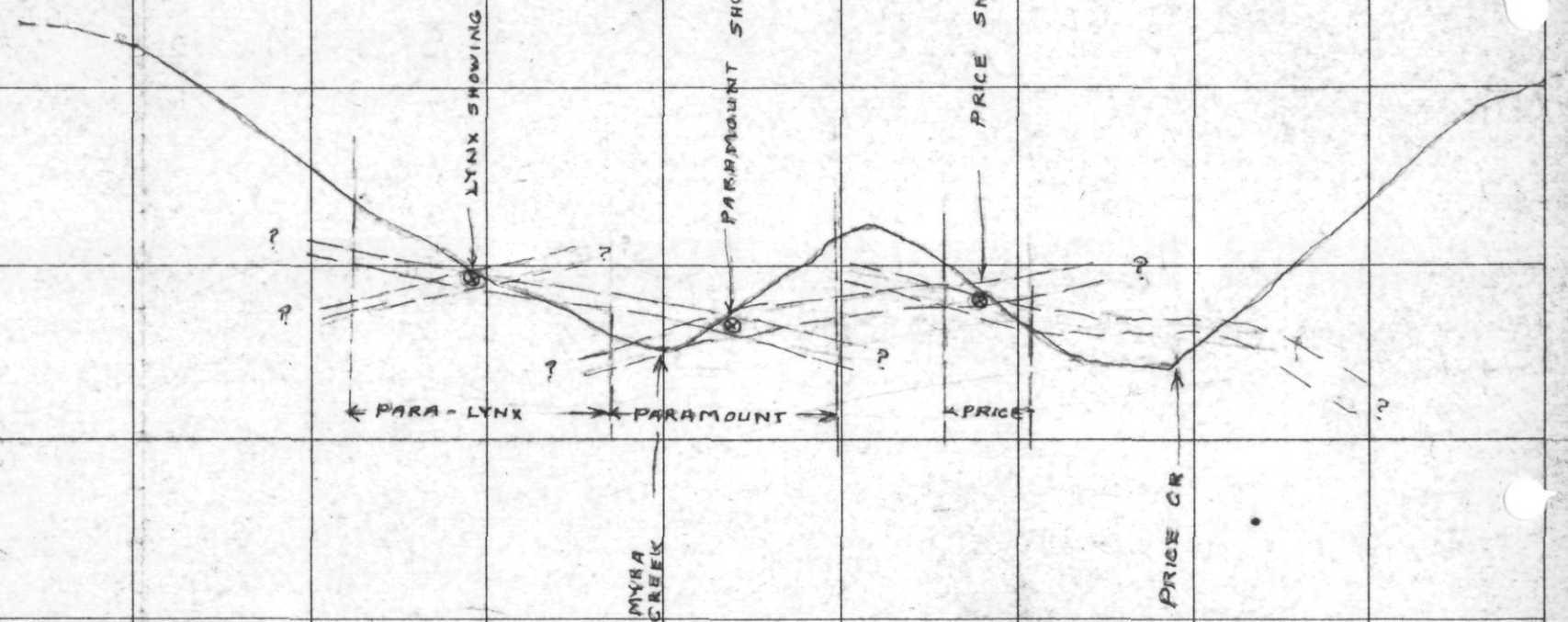
56,000 tons @ $13220 $ 739,200.00

Cost for 150 to 200 T.P.D. mining & milling plant complete, including housing, roads, power, etc. $ 600,000.00

Profit on presently indicated ore $ 139,200.00

Metal prices used

Copper	.30	cents pound
Lead	.10	" "
Zinc	.10	" "
Gold	$35.00	per oz
Silver	.90	cents oz.



PROFILE ALONG TRACE OF "BREAK"
Suggesting
HORIZONTAL STRUCTURE & MINERAL CONTROL
Scale Horizontal 1 Mile = 1.25 Inches
Vertical 2000 Ft = 1 Inche
Looking North East.

HUNTING SURVEY CORPORATION LIMITED

1409 West Pender Street Vancouver 5 B.C. Canada • MUtual 3-6501 Cables: Canhunt

successor to: The Photographic Survey Corporation Limited • Hunting Airborne Geophysics Limited • Hunting Technical & Exploration Services Limited

Our Ref: B1/4.1/DepMines

4th March, 1963.

Department of Mines & Petroleum Resources,
418 Douglas Building,
Victoria, B. C.

For the attention of Dr. Hartley Sargent,
Chief, Mineralogical Branch.

Dear Dr. Sargent,

Re: Proposed Photogeological Study, Buttle Lake Area - Our Quotation No. Q59/63.

In reply to your letter of the 27th February we have prepared the following information and estimate of costs:

1. AREA A:

   165 square miles - our estimate of cost..... $840.00

   Delivery ten days from receipt of photos.

2. AREA B:

   77 square miles - our estimate of cost..... $575.00

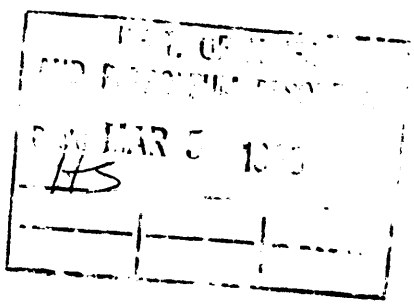
   Delivery seven days from receipt of photos.

3. AREAS A AND B:

   233 square miles - our estimate of cost.....$1,150.00

   Delivery thirteen days from receipt of photos.

In the above costs we have included the cost of the photos covering the areas, but would ask for your help in expediting delivery of the photos from the Air Survey Division.



92 F/12 E
PROP. 198-200

We propose to use the 2640 ft/in manuscript mapping as a base. Two ozalids copies would be required and you would receive the annotated photos and one coloured fairdrawn print of the geological map. Alternatively, and at an extra cost of $100.00 in the case of the combined areas A and B, if we received Cronaflex positives of the 2640 ft/in manuscript mapping, we would add the geology to these symbolized in such a manner that you could run off ozalid copies.

In addition, we would furnish a reduction of the areas to 4-miles to 1-inch since we would be doing this in any event, to fit in with the reductions of the work we have done to the East of your area of interest.

The above work would be carried out by our Chief Geologist, Dr. Alex Jones.

We trust the above information covers your requirement and that we will have the pleasure of providing these services.

Yours very truly,
Hunting Survey Corporation Limited,
West Coast Division,

N. E. McConnell,
Manager.

NEM:ip

cc: Dr. Alex Jones.

March 7, 1963.

Mr. N.E. McConnell,
Manager,
Hunting Survey Corporation Limited,
1409 West Pender Street,
Vancouver 5, B.C.

Dear Mr. McConnell:

Thank you for your letter of March 4th. We have another bid at a substantially lower rate and I do not see that we have any option but to place the order there. Thank you for the attention you have given to this matter.

Yours truly,

H. Sargent,
Chief, Mineralogical Branch.

HS:ln

February 27, 1963.

Mr. N.E. McConnell, P. Eng. Manager,
West Coast Division,
Hunting Survey Corporation Limited,
1409 West Pender St.,
Vancouver 5, B.C.

Dear Mr. McConnell:

Re: Proposed Photogeological Study
Buttle Lake Area.

A sheet with map attached outlines the proposal. An index to air photos, made last autumn accompanies this letter.

Air photo mosaics at 1 mile to 1 inch exist. We have ordered a set and could provide it for use in the study or compilation. Presumably the mosaics are made from 1957 air photos.

Please let me have your estimate of the cost of doing the work proposed, also your estimate of time required.

An early reply to this letter will be appreciated. I shall be away from Victoria in the period March 9 - March 17.

Thanking you.

Yours truly,

H. Sargent,
Chief, Mineralogical Branch.

HS:ln

Attach: Index Map 92 F, revised Nov. 1962, Index Map 92 F, revised May 1960, Index Map 92 F, revised Nov. 1962.
: outline of proposal
: index to air photos.

see letter
F.C. Sprenke

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397

J. C. SPROULE AND ASSOCIATES LTD.

GEOLOGICAL & ENGINEERING CONSULTANTS

1009 FOURTH AVENUE S.W.
CALGARY - ALBERTA
TELEPHONE 269-7951

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G. H. JONES
C. H. SMITH

P.O. Box 2525,
March 5, 1963.

Dr. H. Sargent,
Chief, Mineralogical Branch,
Department of Mines and Petroleum Resources,
Victoria, British Columbia.

Re: Proposed Photogical Study, Buttle Lake Area

Dear Dr. Sargent:

Thank you for your letter of February 27, 1963, with illustrated enclosures relative to the above, asking us for an estimate of the cost of conducting a photogeological study of the area indicated on the index maps.

As a result of our preliminary study of the situation, we would say that the total cost of handling both of these projects would be $750. If Area "A" and "B" were done separately, Area "A" would cost $600 and Area "B" would cost $300. As you are aware there is an apparent discrepancy here which can be attributed to the time it will take to become thoroughly familiar with the geology of the area prior to conducting the actual photogeological work.

If we were assigned this work, it could be completed within two weeks following the receipt of the photographs and photomosaics. It is assumed that these would be supplied by the Department.

With respect to the scale of the maps on which the geology is to be plotted, it is suggested that topographic maps on both the one-half mile to one inch and the 1:50,000 scale be sent us and we can then decide which would be easiest to use as a base.

For your further information, Dr. G. H. Jones, by whom this photogeological work would be done, plans to be in Victoria early in April. If, therefore, the work is assigned to us he would be very pleased to call at your office and discuss details of the interpretation made with your field geologists.

With sincere personal good wishes, I remain,

Yours very truly,

J. C. Sproule, P. Geol.

JCS/co

March 7, 1963.

Dr. J.C. Sproule,
J.C.Sproule and Associates Ltd.
P.O. Box 2525,
Calgary, Alta.

Dear Dr. Sproule:

Re: Proposed Photogeological Study,
Buttle Lake Area.

Thank you for your letter of March 5th and for the tender you have made in response to my letter of February 27.

We are assigning the job to you on the basis of your tender and expect to get away to you today, the air photos from the 1962 flying. They are numbered:- BC 5056 1 to 81, 210 to 215 inclusive, with index map.

We also expect to get away this afternoon, one copy of each of the topographic sheets at 1/2 inch to one mile. They are ozalid prints of sheets 92 F/12 and 92 F/13.

The photomosaics will follow as soon as possible. I suppose you will not need them for a few days.

We prefer to have the compilation on the 1/2 mile to one inch but shall send a 1:50,000 map for your information.

I am glad that Dr. Jones will be here in April. I think it would be very useful if Dr. Jeffery, who will be doing the work in the Buttle Lake area, can discuss the photogeology with him.

I think my earlier letter made it clear that time is essential for us on two accounts. Please let me have your invoice by the end of March. Please do areas A and B.

Yours truly,

H. Sargent,
Chief, Mineralogical Branch.

HS:ln

Send: Air Photos BC 5056 1 to 81, 210 to 215 inc. & index map
maps 92 F/12 and 92 F/13

A fresh set of prints

92 F/13, 92 F/11 W½, 92 F/5 E½,
92 F/6 W½

ordered by phone 4 p.m. March 20
Should be available March 21.

CSJ

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GEOLOGICAL & ENGINEERING CONSULTANTS

1009 FOURTH AVENUE S.W.
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P.O. Box 2525,
March 19, 1963.

Dr. Hartley Sargent,
Mineralogical Branch,
Dept. of Mines and Petroleum Resources,
Victoria, B.C.

Dear Dr. Sargent:

Re: Photogeological Study, Battle Lake Area

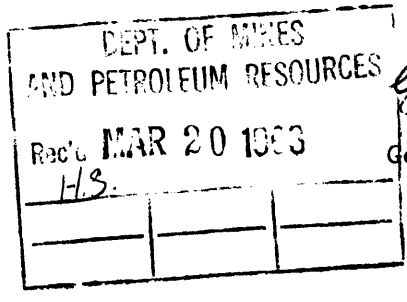
We have received the various maps, photographs and the mosaic as a basis for the photogeological study of the Battle Lake Area. We are now making good progress on the interpretation, after spending some time on familiarization with the area.

We note that the 1962 photography does not fully cover the project area. A gap of perhaps six square miles occurs in the northeastern corner of Block A and another of perhaps one to two square miles occurs in the southwestern corner of the same block. If you wish us to cover these small areas, kindly supply us with photos nos. BC 2316 79-82, BC 2317 43 and 44, and BC 2243 32 and 33. Another problem concerns the two-inch to one-mile base maps. With the exception of Map 92 F/12 you supplied only one copy of these sheets. As we need one copy of these maps as a work sheet, which is liable to incorporate untidy erasures and corrections, we would prefer to plot the final maps for presentation to you on a second set of sheets. The sheets concerned are 92 F/13, 92 F/11, 92 F/5 E. 1/2 and 92 F/6 W. 1/2.

With respect to the final presentation, do you have any preference for receiving the geology plotted on portions of the large individual sheets or would you prefer to have the relevant portions spliced together as a single compact interpreted area?

Yours very truly,

J. C. SPROULE AND ASSOCIATES LTD.



Gordon H. Jones, P. Geol.

GHJ/se

March 22, 1963.

Dr. G.H. Jones,
J.C. Sproule and Associates Ltd.,
P.O. Box 2525,
Calgary, Alta.

Dear Dr. Jones:

Thank you for your letter of March 19. The map sheets mentioned were ordered on receipt of your letter. They have been received this afternoon and are being mailed under separate cover.

Regarding two gaps mentioned in area A, we are prepared to let them go, assuming that they are the extreme northeast and southwest corners, neither of which is vital.

Regarding your final paragraph, please splice the sheets, trimming them down to the approximate areas used.

We assume that the set of air photos will be returned to us with the completed job.

We are looking forward to seeing you here in April as indicated in Dr. Sproule's letter of March 5.

Yours truly,

H. Sargent,
Chief, Mineralogical Branch.

HS:ln

Sent under separate cover:
Maps 92 F/13, F/11, F/5 E.1/2,and F/6 W.1/2.

CABLE ADDRESS
SPROULE

J. C. SPROULE AND ASSOCIATES LTD.

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D. L. CAMPBELL
A. N. EDGINGTON
H. A. GORRELL
G. H. JONES
C. H. SMITH

P. O. Box 2525,
April 1st, 1963.

Dr. Hartley Sargent,
Mineralogical Branch,
Department of Mines and Petroleum Resources,
Victoria, B. C.

Dear Dr. Sargent:

You will by now have received the map, which forms the principal part of the Buttle Lake Photogeological Study. This was mailed to you late last week as was the invoice, which you had requested before the end of March.

Due to an unexpected visit by important out-of-town clients, the final preparation of the enclosed brief report, commenting on certain features of the project, was delayed until the weekend.

We are now sending this report and apologize for this slight delay in submitting it. We are returning the photos, mosaic and unused 1:50,000 maps which you sent to us under separate cover.

I hopt to visit you in Victoria sometime during the week following Easter. My headquarters for most of that week will be in Duncan. If you have any preference for any particular day for my visit, kindly contact me at this office before Thursday, 11th April.

Yours very truly,

J. C. SPROULE AND ASSOCIATES LTD.

Gordon H. Jones

Gordon H. Jones, P. Geol.

GHJ:dk
Enc.

CABLE ADDRESS
SPROULE

J. C. SPROULE AND ASSOCIATES LTD.

GEOLOGICAL & ENGINEERING CONSULTANTS

1009 FOURTH AVENUE S.W.
CALGARY - ALBERTA
TELEPHONE 269-7951

J. C. SPROULE
O. D. BOGGS
M. B. CROCKFORD
R. DEWIT
S. R. L. HARDING
J. B. MAUGHAN

C. A. S. BULMER
D. L. CAMPBELL
A. N. EDGINGTON
H. A. GORRELL
G. H. JONES
C. H. SMITH

P.O. Box 2525,
March 27, 1963.

Dr. H. Sargent,
Mineralogical Branch,
Dept. of Mines and Petroleum Resources,
Victoria, B. C.

Dear Dr. Sargent:

Re: Photogeological Study, Battle Lake Area

The maps, photographs and a brief report forming the results of this project are expected to be mailed under separate cover tomorrow. Since these may not reach you before the week-end and you particularly requested us to invoice you before the end of March, we are submitting the invoice separately.

The invoice is for a total sum of $750 and covers both areas, A and B, in accordance with our letter of tender of March 5th and your letter of acceptance of March 7th.

I look forward to meeting you in Victoria during mid-April.

Yours very truly,

J. C. SPROULE AND ASSOCIATES LTD.

Gordon H. Jones

Gordon H. Jones, P. Geol.

GHJ/se

Encl.

April 4, 1963.

Dr. Gordon H. Jones,
J.C. Sproule and Associates Ltd.
P.O. Box 2525,
Calgary, Alta.

Re: Photogeological Study,
Buttle Lake Area.

Dear Dr. Jones:

Thank you for your letters of March 27 and April 1st, and for the map, report and air photos. No doubt the mosaic and unused map will arrive within the next few days. They had not arrived up to the last mail yesterday.

Dr. Jeffery has been away from the office since last week, he now has the map, report and air-photos.

We are looking forward to seeing you in the week of April 15. It might be helpful if we knew when to expect you, but either or both of us will be able to see you on short notice in any event.

The invoice went to our accounts office last week. I am not sure what stage processing has reached but would think that payment should be received by the end of April.

Yours truly,

H. Sargent,
Chief, Mineralogical Branch.

HS:ln

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SPROULE

J. C. SPROULE AND ASSOCIATES LTD.

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G. H. JONES
C. H. SMITH

May 22, 1963.

Dr. W. G. Jeffery,
Department of Mines and Petroleum
Resources,
Victoria, B.C.

Dear Dr. Jeffery,

Re: Photogeology, Buttle Lake Area

I apologize for not having returned your photographs earlier. I have studied them further but have delayed their return as I wished to re-examine them before submitting my final comments, and I have been delayed by several urgent projects. I will mail the photographs tomorrow with a brief covering discussion. I trust this will be in sufficient time for your needs.

My best wishes for a successful field season.

Yours sincerely,

J. C. SPROULE AND ASSOCIATES LTD.

Gordon H. Jones, P. Geol.

GHJ:dk

May 21, 1963.

Dr. Gordon H. Jones,
J.C. Sproule and Associates Ltd.,
P.O. Box 2525,
Calgary, Alta.

Dear Dr. Jones:

Re: Photogeology: Buttle Lake Area.

This is to remind you that I am going into the field early next week, and I shall be requiring the set of air photographs of the Buttle Lake area that you borrowed when you were in Victoria.

Yours sincerely,

W.G. Jeffery,
Geologist.

WGJ:ln

CABLE ADDRESS
SPROULE

J. C. SPROULE AND ASSOCIATES LTD.

GEOLOGICAL & ENGINEERING CONSULTANTS

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C. A. S. BULMER
D. L. CAMPBELL
A. N. EDGINGTON
H. A. GORRELL
G. H. JONES
C. H. SMITH

May 23rd, 1963.

Dr. H. Sargent,
Mineralogical Branch,
Dept. of Mines and Petroleum Resources,
Victoria, B. C.

Att: Dr. W. G. Jeffrey

Dear Dr. Sargent:

Re: Photogeological Project, Buttle Lake Area

Following our conversation last month in your office, in which you expressed some disappointment with our interpretation of the geology of a small portion of the Buttle Lake project area, with which you were familiar in the field, we have re-examined the area concerned and wish to submit the following remarks:

1. Mr. Bakhoven, one of our most experienced senior photogeologists, who originally carried out most of the interpretation, is now working for us in Australia and has therefore not been available for consultation. However, an independent examination of the area suggests that, in general, his interpretation seems to be a valid and useful attempt to decipher the geology in an area where there is limited surface control and where such control as exists is principally plotted on very generalized small-scale maps or consists of brief allusions in the written text of geological papers. If some of his stratigraphic units eventually turn out to be misplaced, the structural information should remain valid and necessary corrections will probably be relatively easy.

2. We feel that it is undesirable to alter Mr. Bakhoven's interpretation at this stage, pending the availability of more control, as it represents a unified interpretation from a single point of view. In country such as the Buttle Lake area, with its abundant forest cover, many areas of snow, and its highly jointed and fractured bedrock with few well-bedded continuous stratigraphic units and with the marked effects of the emplacement of granitic rocks and of shearing, it is almost certain that different photogeologists will place emphasis on different minor geological features. For this reason, we desire to avoid a composite or hybrid interpretation at this stage and have not amended Bakhoven's work. We have, however, added a certain amount of selected supplementary information on the alternate photographs. Such information will

naturally appear as part of the same stereoscopic models as Bakhoven's interpretation but can easily be separated from it when the individual photographs are examined separately. The symbols used are similar to those in the rest of the interpretation, with the addition of a double blue line for probable acidic dykes and a single blue line for possible basic dykes. Few of these intrusions are as clear as those in the Big Interior Mountain area for which you gave us control. It is very difficult to locate dykes with certainty, as so many of the joints and fractures could contain dykes especially where shadow, moisture or vegetation has given rise to a tonal difference along the line of break. We have limited our selection of possible dykes to narrow zones of marked tonal contrast or of upstanding resistant material, but some of these may be due to induration along faults, calcite veining or some other feature.

3. With regard to the area around Big Interior Mountain, for which some detailed control is available in your 1941 Supplementary Report on the Bedwell River Area (Bulletin No. 13, B.C. Dept. of Mines), we should note that, with the exception of about five square miles near Love and Cream lakes, this area is actually outside the project area. Bakhoven mapped Big Interior Mountain even although it was not included within the project boundary, as he felt it would provide useful control. Unfortunately, the map he used for control was less detailed than that in your Bulletin and proved somewhat misleading. Nevertheless, our re-examination of the Big Interior Mountain area has revealed that, for the most part, there seems virtually no photogeological basis for separating many of the rock units distinguished on your map of the area. Such contrasting rock types as quartz diorite, Permian limestone and Paleozoic and Mesozoic volcanics appear locally to be indistinguishable on the aerial photographs. This may be partly the result of phenomena associated with the emplacement of the quartz diorite and the other granitic rocks. Although the rocks may be distinct in the field, they are so similar in their joint pattern and general morphology that normal photogeological criteria do not appear to be adequate for mapping in this particular portion of the area. Although it would be possible to transfer the detail from the published geological map to the photographs, this would be completely arbitrary as the divisions do not appear to fit natural photogeological units and cannot, therefore, be extrapolated with any reasonable degree of accuracy. This situation of apparent impotence of normal photogeological techniques applies only to a relatively limited area, whose interpretation is made more difficult by the presence of snow, scree and recent deposits, as well as intense block faulting and a degree of metamorphism. If detailed observations were accurately pinpointed on the photographs while in the field, it might yet be possible to find a basis for photogeological extrapolation.

4. In summary, it may be said that, whereas this project is expected to be of value in guiding the planning of the field work and it is hoped it will form a framework into which the field observations may be fitted, it is felt that in view of the relative sparsity of control, a more satisfactory job of interpretation of this rather difficult area could be accomplished as a post-field season project.

We are returning your photographs under separate cover, together with the Bulletin (No. 13) which you lent us.

We trust that you will find this supplementary information and these remarks to be of some value.

My personal greetings to both you and Dr. Jeffrey.

Yours very truly,

J. C. SPROULE AND ASSOCIATES LTD.

Gordon H. Jones

GHJ/se

Gordon H. Jones, P. Geol.

May 27, 1963.

Dr. Gordon H. Jones,
J.C. Sptoule and Associates Ltd.
P.O. Box 2525,
Calgary, Alta.

Dear Dr. Jones:

Thank you for your letter of May 23rd in which you discuss frankly the problems of interpreting in a geological sense the air-photos from the Buttle Lake area.

The work done by Mr. Bakhoven appears useful, and I believe it will assist Dr. Jeffery in the field.

I agree that little or nothing would be gained in transferring the interpretation of previous field mapping to the photos, when the photos do not show recognizable differences between the units mapped.

It seems probable that as a result of the fieldwork this summer, more information may be derivable from the photos, even though their quality leaves something to be desired.

Dr. Jeffery leaves for the Buttle Lake area today. I shall give copies of this correspondence to him and expect he will take the air-photos.

Thank you for your frank discussion and for the extra attention you have given this project, and for return of the air-photos, which arrived today.

Yours truly,

H. Sargent,
Chief, Mineralogical Branch.

HS:ln

MEMORANDUM

TO Dr. H. Sargent,

Chief, Mineralogical Br.

FROM THE

DEPARTMENT OF MINES
AND PETROLEUM RESOURCES

VICTORIA, B.C., March 13, 1963

WHEN REPLYING PLEASE REFER
TO FILE No.

Re: Photomosaics: Buttle Lake Area.

Photomosaic sheet 92 F/12 of the six sheets sent by Air Division has been forwarded to J.C. Sproule & Associates (see letter).

Note that internal voucher accompanying the photomosaics is marked "Loan" and "Private".

W.G. Jeffery,
Geologist.

WGJ:ln

March 13, 1963.

Dr. J.C. Sproule,
J.C. Sproule and Associates Ltd.,
P.O. Box 2525,
Calgary, Alta.

Dear Dr. Sproule: Re: Photogeological Study
Buttle Lake Area.

In the temporary absence of Dr. Sargent I am sending to you a photomosaic of the Buttle Lake area as he indicated in his letter to you of March 7th. The coverage of the proposed study areas is not 100% on this one mosaic, but the parts of the areas which are missing are small and at the edges of the areas of interest.

Yours truly,

W.G. Jeffery,
Geologist.

WGJ:ln

Send: mosaic 92 F/12

February 27, 1963.

Mr. J.C. Sproule, P. Eng.
J.C. Sproule and Associates Ltd.
1009 Fourth Avenue,
P.O. Box 2525,
Calgary, Alta.

Dear Mr. Sproule:

Re: Proposed Photogeological Study
Buttle Lake Area.

A sheet with map attached outlines the proposal. An index to air photos - 3 sheets - including photos made in 1962, accompanies this letter.

Air photo mosaics at 1 mile to 1 inch exist. We have ordered a set and could provide it for use in the study or compilation. Presumably the mosaics are made from 1957 air photos.

Please let me have your estimate of the cost of doing the work proposed, also your estimate of time required.

An early reply to this letter will be appreciated. I shall be away from Victoria in the period March 9 - March 17.

Thanking you.

Yours truly,

H. Sargent,
Chief, Mineralogical Branch.

HS:ln

Attach: Index Map 92F, revised Nov. 1962, Index Map 92 F, revised May 1960, Index Map 92 F, revised Nov. 1962.
: outline of proposal
: index to air photos - 3 sheets.

Proposal for Photo - Geology Study

Buttle Lake Area, Vancouver Island.

Area to be mapped.

Study to be made of Area A and Area B per map herewith. Geology to be plotted in relation to topographic maps either ozalid sheets at 1/2 mi. to 1 inch, B.C. Department of Lands Nov. 1939, Parts of 92 F/12; 92 F/5 and 92 F/13 or lithographed sheets at 1:50,000, parts of National Top. Ser. 92 F/12 and 92 F/5.

Work to be completed as soon as possible.

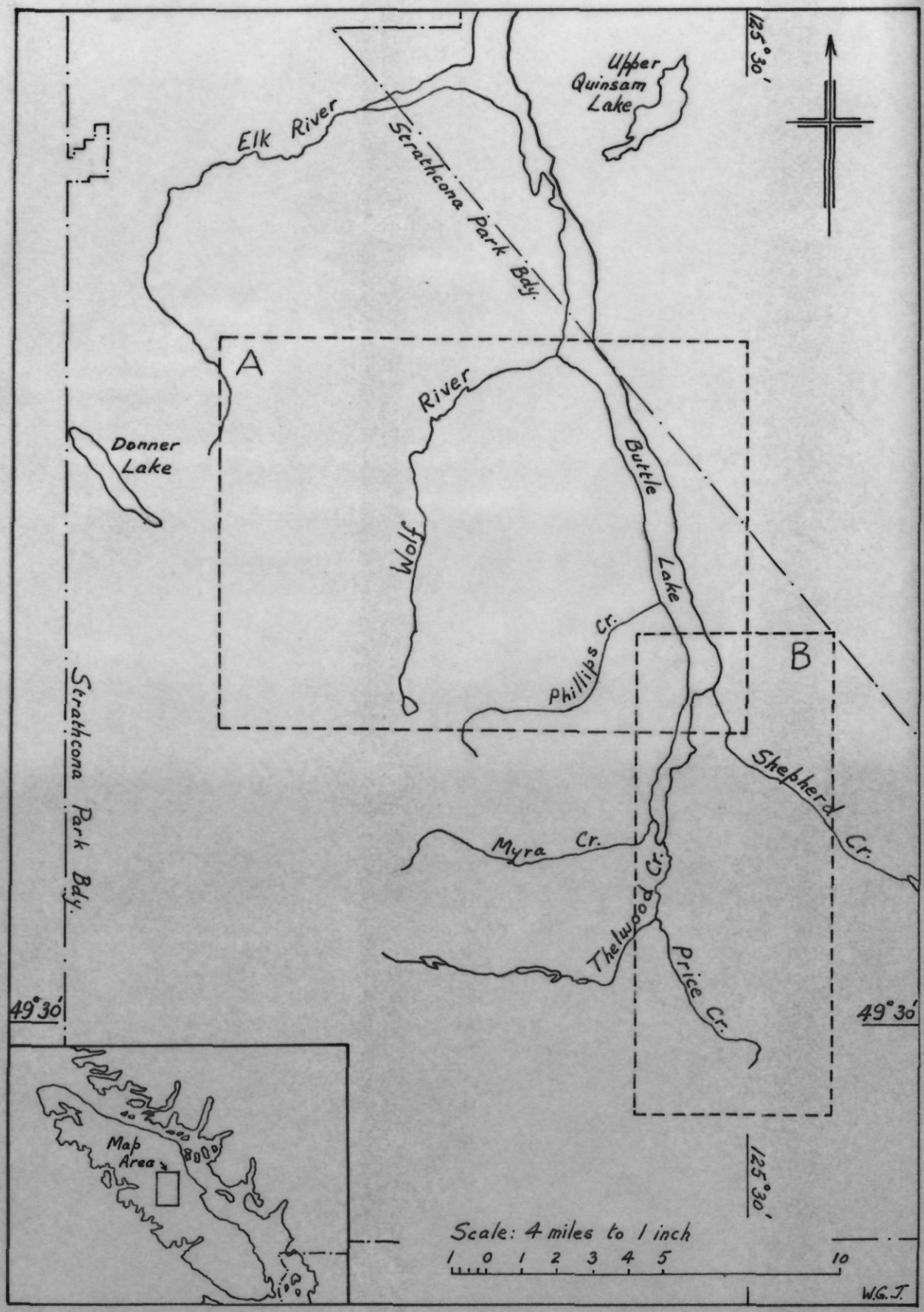
Geology. Published data will be found in Buttle Lake Map Area by H.C. Gunning, G.S.C. Summ. Rpt. 1930 Pt. A pp. 56-75 and Second Edition Map 932A, Geological Map of British Columbia - G.S.C. published 1962.

The key marker in the two areas is Upper Palaeozic limestone. The rock sequence of greatest interest underlies the Palaeozoic limestone. This sequence will be found in the western part of Area B and mainly east of Wolf River in the southern part of Area A.

The western part of Area A, is occupied by the Buttle Lake, granitic batholith.

The granitic contact, and the upper and lower contacts of the limestone, and major faults are of first importance.

Please quote on A and on B
Estimate date of completion.



Buttle Lake Area
Vancouver Island

EXCLUSIVE CONNECTION WITH WESTERN UNION CABLE SERVICE Form 6102

CANADIAN NATIONAL TELEGRAPHS

J. R. WHITE, GENERAL MANAGER
TORONTO

CANADIAN NATIONAL TELEGRAPHS

PLACE X OPPOSITE SERVICE DESIRED

FULL RATE	X
DAY LETTER	
NIGHT LETTER	

CHECK	CHARGE ACCOUNT NO. :	TOLLS
TIME AND DATE FILED	COMPANY ADDRESS CITY	

Send the following message, subject to the terms on back hereof, which are hereby agreed to

sent 11. A.M.

March 6, 1963.

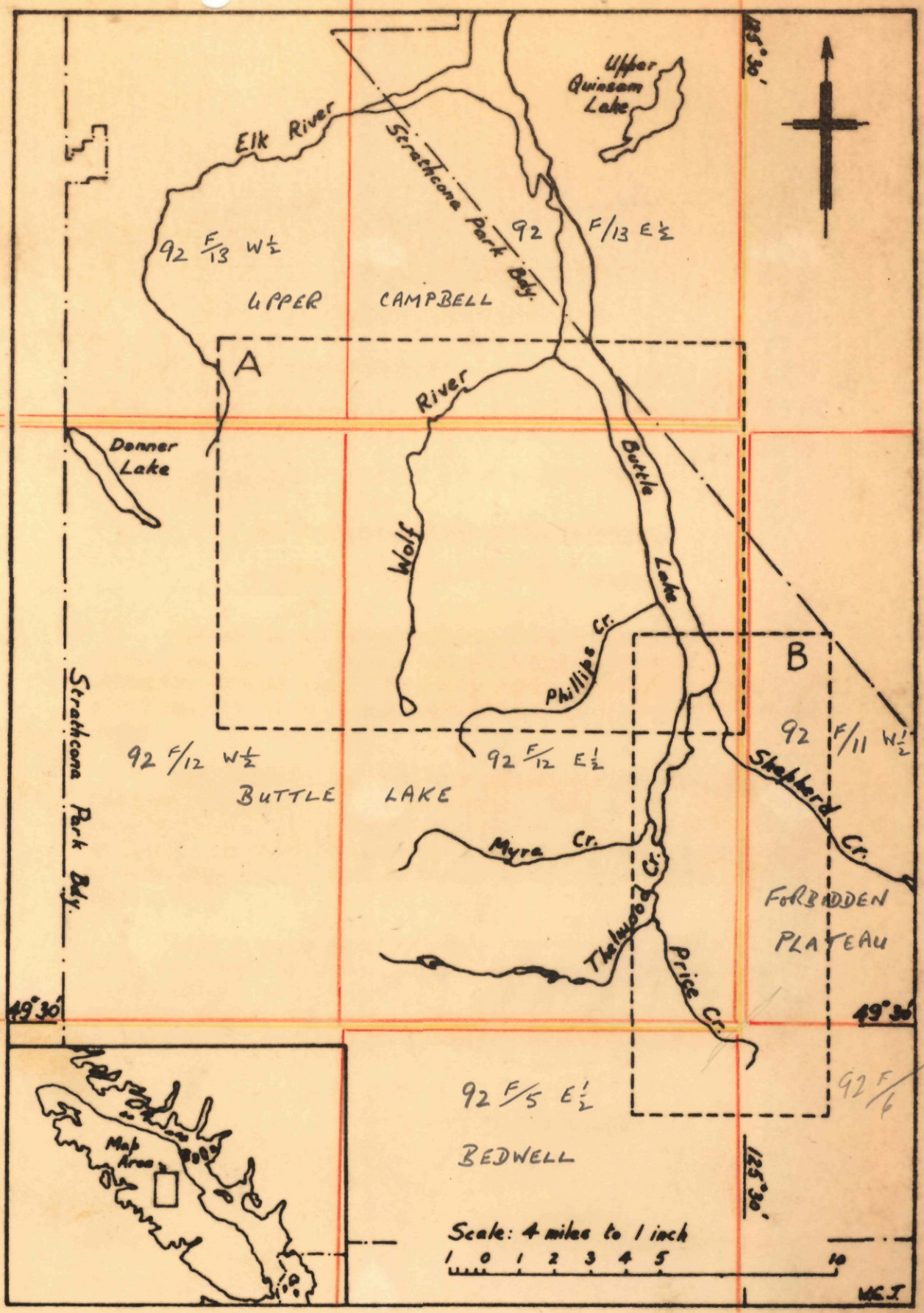
Dr. J.C. Sproule,
J.C. Sproule and Associates,
1009 Fourth Ave.,
Calgary, Alta.

DO YOU WISH TO BID ON PHOTOGEOLOGY BUTTLE LAKE AREA

REFERENCE MY LETTER OF FEBRUARY TWENTY SEVEN.

H. Sargent,
Chief, Mineralogical Branch.

HS:ln



— 1" = ½ MILE

— 1:50,000

Buttle Lake Area
Vancouver Island

March 8, 1963.

Dr. J.C. Sproule,
J.C. Sproule and Associates Ltd.
P.O. Box 2525,
Calgary, Alta.

Dear Dr. Sproule:

Re: Proposed Photogeological Study,
Buttle Lake Area.

Further to my letter of March 7th herewith, I have to advise that the 1/2 mile to the inch sheet mailed to you yesterday did not cover the enttre area. Parts of Sheets 92 F/11, 92 F/5 and 92 F/6 are also required and are being mailed to you today.

The material mailed to you yesterday included six National Topographic 1:50,000 sheets. They do not cover part of Area B, East of 125° 30" Longitude or South of 49° 30" Latitude. However, it does not seem necessary to supply these as we prefer to have the work done on the 1/2 mile to one inch maps.

Regarding the photomosaics, they were ordered some days back, last week in fact. However they may not be ready for a little while. I understand that half the staff in the lab that does the work is off sick. They will be sent to you as soon as possible. I trust that the work can go on without them.

Yours truly,

H. Sargent,
Chief, Mineralogical Branch.

HS:ln

Dr. H. Sargent,

Chief, Mineralogical Br.

March 13 63

Re: Photomosaics: Buttle Lake Area.

Photomosaic sheet 92 F/12 of the six sheets sent by Air Division has been forwarded to J.C. Sproule & Associates (see letter).

Note that internal voucher accompanying the photomosaics is marked "Loan" and "Private".

W.G. Jeffery,
Geologist.

WGJ:ln

January 21, 1960.

MEMORANDUM BY A. O. HALL

Subject: The conflict between park conservation and mineral development in an area at the south end of Buttle Lake, Strathcona Provincial Park.

An application by Huestis and Associates for right to proceed with exploration and development of a mineral belt at the south end of Buttle Lake has been denied by the Department of Conservation and Recreation. It is submitted that the considerations upon which this decision is based are neither complete nor valid. It is the purpose of this memorandum to further discuss these considerations and in particular to present information relating to the mining aspects of this conflict.

The mineral belt under discussion here has been the subject of attention by many engineers and geologists representing the B.C. Department of Mines, The Geological Survey of Canada and several mining companies. Many of the reports resulting from these investigations are available for reference. As a matter of convenient record these reports of investigations are listed in chronological order on the attached sheets with excerpts quoted or conclusions summarized. Interested parties are invited to review these references carefully.

Obviously a most important question is whether or not this mineral belt is likely to yield sufficient quantity of ore to justify entry to the Park for this specific mineral prospect. At the outset it must be clear that until further exploration is done it is impossible to predict ore reserves. However, on the basis of exploration completed to date it appears there is a mineral structure 3.5 miles or more in length. Much of the surface of this belt is obscured by overburden but wherever appreciable exploration has been done important and encouraging ore discoveries have been made. These showings have been developed at three widely separated points along the zone and are referred to as the Price Creek, Paramount and Lynx prospects. For details of these showings see attached data. Various interpretations or evaluations of this data are possible, however, for purposes of this problem we think it reasonable to assume that 50% of the structure will yield ore findings comparable to those indicated at the Paramount and Lynx showings. On this basis and with certain assumptions the following computation is made.

Continued ....

92F/11E
PROP. 198-200

Length of mineral belt taken 18,000 feet
Productive length is 50% = 9,000 feet
Width assumed (conservative) 10 feet
Vertical length (conservative) 300 feet
Weight-tonnage factor 10

$9,000 \times 300 \times \frac{10}{10} = 2,700,000$ tons

Gross dollar value per ton $45.00 per ton

Recoverable value $\frac{90}{100} \times \$45.00 = \$40.50$

Gross recoverable dollar value = 2,700,000 tons x $40.00 = $100,000,000.00

In general then perhaps we can conclude that if exploration is successful there will result a production of as much as One Hundred Million Dollars new wealth. Of this it is estimated that up to 90% would be distributed in British Columbia in the form of wages, supplies, services, taxes and benefits, etc., etc. We are not here concerned with the profits, however, in this connection it is doubtful that anything less than perhaps Fifty Million in gross value would provide the basis of an economically worthwhile mining operation. In other words economic dictates insure that a mining operation will not be undertaken unless sufficient ore is found to provide revenue of first magnitude for the Province or nation. The foregoing assessment of the mineral development aspect of this situation is made only as an attempt to establish a basis for an intelligent decision in this conflict. It is not presumed that the mineral development potentialities in this case are of more value to the country than the total preservation of the park. We are not qualified to assess the value of the park and we offer this discussion for consideration of the authorities and officials of the departments involved. At this point, however, it is certainly not clear why the problem is considered only from the standpoint that one national asset must be entirely sacrificed for another. It is suggested that consideration be given to exploiting both national assets with little or no loss to either.

It is difficult to reconcile the contention of the Department of Recreation and Conservation that establishment of a mining operation here "would cut the hub or heart out of Strathcona Park". Only a few acres of land would be involved in plant site, etc. and right-of-way for a road from the lake shore to the mine area. This mine area would be two or three miles from the lake shore. Possibly the access road which would extend three or four miles up Myra Creek would be regarded as an asset to the Park. It might be noted here also that the area involved has largely been devastated by a recent forest fire.

Pollution of the lake or streams is not regarded as a valid objection since this can be avoided. There are innumerable similar minor considerations. It is, however, difficult to see why development

Continued....

of this project will damage the Park to the extent that cancellation of this potential mineral resource forever can be justified. We believe it possible to modify or adjust park boundaries if necessary or desirable. It is not possible to move ore bodies. In the final analysis any decision must be based on whatever is best for the national welfare. Development of mineral resources has always been a predominant factor in Canadian welfare.

A. O. Hall

A. O. Hall

Reports of Investigations of the Mineral Belt
Near the South End of Buttle Lake

Statements relating to opinions or conclusions are direct quotations or summaries.

1. Minister of Mines Report B.C. 1927 - 349 G. Clothier
"All the ore exposures in this belt are indicative of extensive mineralization."

2. Minister of Mines Report B.C. 1929 - 384
Price Creek Showing
"This is not high grade ore and would not pay under present transportation conditions, but for the amount of work done the values and ore bodies are substantial and the area worth serious prospecting and development work."

"From the above it will be seen that there are very favourable possibilities in this area which have had comparatively little prospecting."

3. Geological Survey of Canada Summary Report 1930, Part A Buttle Lake Map Area, Vancouver Island, B.C. by H.C. Gunning
"In the area south and west of Buttle Lake between Phillip and Price Creeks the volcanic rock along several more or less definite zones striking in a north westerly direction are extensively sheared and altered to chlorite, sericite and quartz sericite schist and the alteration is accompanied by some important mineralization."

"Certain parts of the map area have however distinct possibility and some of the mineralization already discovered is quite encouraging."

"At the south end of Buttle Lake in the vicinity of Myra and Price Creeks extensive copper, zinc and lead mineralization has been developed."

"The proportion of zinc in the ore is high and all the mineralization exposed is low grade: at best it will require concentration."

Price Creek
"Thus there is some 27' of mineralized material which seems well worth more extensive exploration."

"It merits further exploration to the north west or up the hill."

Lynx - Cut No. 7
"The whole 26 feet would probably constitute a good grade of milling ore if all values could be saved and as mineralization growing gradually less extends east and west the ore width might be increased over that indicated."

Continued....

Summary for Myra and Price Creek Area

". . . that this zone or zones has been found at numerous intervals, over a distance, in a northwest-southeast direction, of about 3 miles, to contain copper-zinc-lead mineralization of probable milling grade over variable widths up to at least 25 feet; that the mineralization is in large part an exceedingly fine-grained intergrowth of sulphides, and has formed by replacing and veining of the more thoroughly schistified and silicified parts of the zone or zones. The present workings, unless it be the undisclosed results of the diamond drilling of the Paramount Mining Company, do not prove continuity, with commercial dimensions, either vertically or horizontally. But the showings are sufficiently good to encourage more extensive development than has yet been undertaken."

Note: Substantial continuity of commercial mineralization is indicated by drilling on the Paramount Zone. This drilling was done by Paramount Company and Granby Company and most recently by Huestis and Associates.

4. Letter by Charles Ney, Exploration Engineer, Pioneer Gold Mines, 1947

"I thought the whole mineralized belt was very interesting. Although my company were not sufficiently interested to do some work on it. I feel myself that it is a good prospect, and well worth an investigation."

"The three properties lie along a shear-zone which has a width of 100 to 300 ft. continuity of the zone along the entire $3\frac{1}{2}$ mile length embracing the three properties has not been proven, but looks very probable."

"At the three known localities along this shear, we find a good grade of zinc mineralization. It is almost obvious that there are other similar occurrences, equal to or better in size and grade than those we know, at other localities along the shear zone."

"Obviously there is no mine staring us in the face at this stage, but a good prospect that warrants exploration."

5. The Granby Company: Drilling of Paramount Zone 1952

The result of this drilling is fully covered in the attached reports and maps. Two of the four drill holes put down by Granby at the Paramount Zone encountered good ore and remarkably encouraging mineralization. A drill was moved to the Lynx Zone but before any drilling could be done it is reported that pressure from the Parks Department caused Granby to withdraw.

6. Geological Report Paramount, Lynx and Price Creek Properties, by Dr. A. C. Skerl, 1956

"The old diamond drilling on the Paramount property suggests that a possible block of ore amounting to 200,000 tons could be mined largely by open-pit methods over a width of 60 feet to give a net value of $15.00 per ton at present prices in copper, zinc, lead, silver and gold after allowing for smelter charges and deductions.

'A new interpretation of the geology reveals the possibility that dragfolding

Continued ....

could give an average dip that is much flatter than the steep cleavage which has previously been regarded as the ore direction. This explains why the minus 45° holes failed to cut ore and provides the key for disclosing much larger tonnages on further dragfolds by diamond drilling and underground exploration.

'The essentially similar but practically undeveloped Lynx and Price Creek prospects should respond to development in the same way as the Paramount.

'Further deposits could well exist between and beyond the known occurrences but hidden by overburden and should be searched for by means of a self potential and perhaps a geochemical survey."

7. Huestis and Associates: Drilling, 1959

In 1959 the Department of Recreation and Conservation granted permission to carry out preliminary drilling. At that time the Department of Recreation and Conservation stated, "If your findings are favourable and the mining development you contemplate proves feasible, further consideration, as provided in Park Regulations, will be given to admitting mining operations at Myra Creek in Strathcona Park, in light of the effects of such operations on the recreational values and attractions of the Park."

The drilling referred to consisted of two holes drilled specifically for the purpose of checking high values reported in the Paramount Zone. High grade ore was encountered in both holes and application was made for permission to proceed with further exploration and development to production stage. The most recent decision to deny further work was apparently made without regard to this new information, or for that matter, much of the previous information regarding potentialities of this mineral resource.

All of the available background information, including maps, estimates, reports, etc., has been assembled and is available for reference.

January 21, 1960.

MEMORANDUM BY A. O. HALL

Subject: The conflict between park conservation and mineral development in an area at the south end of Buttle Lake, Strathcona Provincial Park.

An application by Huestis and Associates for right to proceed with exploration and development of a mineral belt at the south end of Buttle Lake has been denied by the Department of Conservation and Recreation. It is submitted that the considerations upon which this decision is based are neither complete nor valid. It is the purpose of this memorandum to further discuss these considerations and in particular to present information relating to the mining aspects of this conflict.

The mineral belt under discussion here has been the subject of attention by many engineers and geologists representing the B.C. Department of Mines, The Geological Survey of Canada and several mining companies. Many of the reports resulting from these investigations are available for reference. As a matter of convenient record these reports of investigations are listed in chronological order on the attached sheets with excerpts quoted or conclusions summarized. Interested parties are invited to review these references carefully.

Obviously a most important question is whether or not this mineral belt is likely to yield sufficient quantity of ore to justify entry to the Park for this specific mineral prospect. At the outset it must be clear that until further exploration is done it is impossible to predict ore reserves. However, on the basis of exploration completed to date it appears there is a mineral structure 3.5 miles or more in length. Much of the surface of this belt is obscured by overburden but wherever appreciable exploration has been done important and encouraging ore discoveries have been made. These showings have been developed at three widely separated points along the zone and are referred to as the Price Creek, Paramount and Lynx prospects. For details of these showings see attached data. Various interpretations or evaluations of this data are possible, however, for purposes of this problem we think it reasonable to assume that 50% of the structure will yield ore findings comparable to those indicated at the Paramount and Lynx showings. On this basis and with certain assumptions the following computation is made.

Continued ....

Length of mineral belt taken 18,000 feet
Productive length is 50% = 9,000 feet
Width assumed (conservative) 10 feet
Vertical length (conservative) 300 feet
Weight-tonnage factor 10

$9,000 \times 300 \times \frac{10}{10} = 2,700,000$ tons

Gross dollar value per ton $45.00 per ton

Recoverable value $\frac{90}{100} \times \$45.00 = \$40.50$

Gross recoverable dollar value = 2,700,000 tons x $40.00 = $100,000,000.00

In general then perhaps we can conclude that if exploration is successful there will result a production of as much as One Hundred Million Dollars new wealth. Of this it is estimated that up to 90% would be distributed in British Columbia in the form of wages, supplies, services, taxes and benefits, etc., etc. We are not here concerned with the profits, however, in this connection it is doubtful that anything less than perhaps Fifty Million in gross value would provide the basis of an economically worthwhile mining operation. In other words economic dictates insure that a mining operation will not be undertaken unless sufficient ore is found to provide revenue of first magnitude for the Province or nation. The foregoing assessment of the mineral development aspect of this situation is made only as an attempt to establish a basis for an intelligent decision in this conflict. It is not presumed that the mineral development potentialities in this case are of more value to the country than the total preservation of the park. We are not qualified to assess the value of the park and we offer this discussion for consideration of the authorities and officials of the departments involved. At this point, however, it is certainly not clear why the problem is considered only from the standpoint that one national asset must be entirely sacrificed for another. It is suggested that consideration be given to exploiting both national assets with little or no loss to either.

It is difficult to reconcile the contention of the Department of Recreation and Conservation that establishment of a mining operation here "would cut the hub or heart out of Strathcona Park". Only a few acres of land would be involved in plant site, etc. and right-of-way for a road from the lake shore to the mine area. This mine area would be two or three miles from the lake shore. Possibly the access road which would extend three or four miles up Myra Creek would be regarded as an asset to the Park. It might be noted here also that the area involved has largely been devastated by a recent forest fire.

Pollution of the lake or streams is not regarded as a valid objection since this can be avoided. There are innumerable similar minor considerations. It is, however, difficult to see why development

Continued....

of this project will damage the Park to the extent that cancellation of this potential mineral resource forever can be justified. We believe it possible to modify or adjust park boundaries if necessary or desirable. It is not possible to move ore bodies. In the final analysis any decision must be based on whatever is best for the national welfare. Development of mineral resources has always been a predominant factor in Canadian welfare.

A. O. Hall

Reports of Investigations of the Mineral Belt
Near the South End of Buttle Lake

Statements relating to opinions or conclusions are direct quotations or summaries.

1. Minister of Mines Report B.C. 1927 - 349 G. Clothier
"All the ore exposures in this belt are indicative of extensive mineralization."

2. Minister of Mines Report B.C. 1929 - 384
Price Creek Showing
"This is not high grade ore and would not pay under present transportation conditions, but for the amount of work done the values and ore bodies are substantial and the area worth serious prospecting and development work."

"From the above it will be seen that there are very favourable possibilities in this area which have had comparatively little prospecting."

3. Geological Survey of Canada Summary Report 1930, Part A Buttle Lake Map Area, Vancouver Island, B.C. by H.C. Gunning
"In the area south and west of Buttle Lake between Phillip and Price Creeks the volcanic rock along several more or less definite zones striking in a north westerly direction are extensively sheared and altered to chlorite, sericite and quartz sericite schist and the alteration is accompanied by some important mineralization."

"Certain parts of the map area have however distinct possibility and some of the mineralization already discovered is quite encouraging."

"At the south end of Buttle Lake in the vicinity of Myra and Price Creeks extensive copper, zinc and lead mineralization has been developed."

"The proportion of zinc in the ore is high and all the mineralization exposed is low grade: at best it will require concentration."

Price Creek
"Thus there is some 27' of mineralized material which seems well worth more extensive exploration."

"It merits further exploration to the north west or up the hill."

Lynx - Cut No. 7
"The whole 26 feet would probably constitute a good grade of milling ore if all values could be saved and as mineralization growing gradually less extends east and west the ore width might be increased over that indicated."

Continued....

Summary for Myra and Price Creek Area

". . . that this zone or zones has been found at numerous intervals, over a distance, in a northwest-southeast direction, of about 3 miles, to contain copper-zinc-lead mineralization of probable milling grade over variable widths up to at least 25 feet; that the mineralization is in large part an exceedingly fine-grained intergrowth of sulphides, and has formed by replacing and veining of the more thoroughly schistified and silicified parts of the zone or zones. The present workings, unless it be the undisclosed results of the diamond drilling of the Paramount Mining Company, do not prove continuity, with commercial dimensions, either vertically or horizontally. But the showings are sufficiently good to encourage more extensive development than has yet been undertaken."

Note: Substantial continuity of commercial mineralization is indicated by drilling on the Paramount Zone. This drilling was done by Paramount Company and Granby Company and most recently by Huestis and Associates.

4. Letter by Charles Ney, Exploration Engineer, Pioneer Gold Mines, 1947

"I thought the whole mineralized belt was very interesting. Although my company were not sufficiently interested to do some work on it. I feel myself that it is a good prospect, and well worth an investigation."

"The three properties lie along a shear-zone which has a width of 100 to 300 ft. continuity of the zone along the entire $3\frac{1}{2}$ mile length embracing the three properties has not been proven, but looks very probable."

"At the three known localities along this shear, we find a good grade of zinc mineralization. It is almost obvious that there are other similar occurrences, equal to or better in size and grade than those we know, at other localities along the shear zone."

"Obviously there is no mine staring us in the face at this stage, but a good prospect that warrants exploration."

5. The Granby Company: Drilling of Paramount Zone 1952

The result of this drilling is fully covered in the attached reports and maps. Two of the four drill holes put down by Granby at the Paramount Zone encountered good ore and remarkably encouraging mineralization. A drill was moved to the Lynx Zone but before any drilling could be done it is reported that pressure from the Parks Department caused Granby to withdraw.

6. Geological Report Paramount, Lynx and Price Creek Properties, by Dr. A. C. Skerl, 1956

"The old diamond drilling on the Paramount property suggests that a possible block of ore amounting to 200,000 tons could be mined largely by open-pit methods over a width of 60 feet to give a net value of $16.00 per ton at present prices in copper, zinc, lead, silver and gold after allowing for smelter charges and deductions.

'A new interpretation of the geology reveals the possibility that dragfolding

Continued ....

could give an average dip that is much flatter than the steep cleavage which has previously been regarded as the ore direction. This explains why the minus 45° holes failed to cut ore and provides the key for disclosing much larger tonnages on further dragfolds by diamond drilling and underground exploration.

'The essentially similar but practically undeveloped Lynx and Price Creek prospects should respond to development in the same way as the Paramount.

'Further deposits could well exist between and beyond the known occurrences but hidden by overburden and should be searched for by means of a self potential and perhaps a geochemical survey."

7. Huestis and Associates: Drilling, 1959

In 1959 the Department of Recreation and Conservation granted permission to carry out preliminary drilling. At that time the Department of Recreation and Conservation stated, "If your findings are favourable and the mining development you contemplate proves feasible, further consideration, as provided in Park Regulations, will be given to admitting mining operations at Myra Creek in Strathcona Park, in light of the effects of such operations on the recreational values and attractions of the Park."

The drilling referred to consisted of two holes drilled specifically for the purpose of checking high values reported in the Paramount Zone. High grade ore was encountered in both holes and application was made for permission to proceed with further exploration and development to production stage. The most recent decision to deny further work was apparently made without regard to this new information, or for that matter, much of the previous information regarding potentialities of this mineral resource.

All of the available background information, including maps, estimates, reports, etc., has been assembled and is available for reference.

RECULATIONS

PROSPECTING, LOCATING AND MINING IN

CLASS A PARKS

Under authority of Order-in-Council No. 2055, approved on the 17th day of September 1949, prospecting, locating and mining is permitted in Class A parks according to the provisions of the "Mineral Act," "Placer-mining Act," and "Metalliferous Mines Regulation Act," except as follows:

(1) No free miner shall blaze or mark out the location line of any mineral claim or placer-mining lease or the boundary-lines of any placer claim until he has obtained a record of the mineral claim or placer claim or until he has obtained a lease.

(2) The free miner in applying for a record or a lease shall show the proper location of the mineral claim or placer claim or placer-mining lease on an official map acceptable to the Gold Commissioner or Mining Recorder.

(3) The free miner shall at the time of applying for a record or a lease, file with the Gold Commissioner or Mining Recorder an affidavit setting out the kind of mineral that he has found and if he has not found mineral he shall set out in full his reasons for staking the ground.

(4) No Gold Commissioner or Mining Recorder shall record a mineral claim or placer claim or issue a placer-mining lease until the approval of the Chief Gold Commissioner has been first obtained. The Chief Gold Commissioner shall give his approval only after reaching an agreement with the Chief Forester.

(5) The Gold Commissioner or Mining Recorder may before, or at any time after issuing a record for a mineral claim or placer claim, or before, or at any time after issuing a placer-mining lease, require the free miner to post security against damage in such amount as the Chief Gold Commissioner and the Chief Forester may agree upon.

If the free miner refuses or fails to give such security when so requested, his rights to any mining property in or upon the lands shall cease and determine, and the Gold Commissioner or Mining Recorder shall forthwith cancel any record thereof.

(6) Where there has been undue delay on the part of the Chief Gold Commissioner in granting approval the date of the record shall count as from the date of approval and not from the date of application.

(7) The free miner upon obtaining a record for a mineral claim or placer claim or on obtaining a placer-mining lease shall immediately mark the location line of his mineral claim or placer-mining lease or the boundary-lines of his placer claim according to the provisions of the "Mineral Act" and the "Placer-mining Act" unless otherwise instructed by the Gold Commissioner or Mining Recorder.

(8) No free miner shall hold a mineral claim or placer claim or placer-mining lease for more than two years from the date of record or issue of the lease unless he has shown to the satisfaction of an engineer of the Department of Mines that he has made a bona fide mineral discovery and then only with the approval of the Deputy Minister of Mines and the Deputy Minister of Forests.

(9) If the free miner has not proven within the two year period mentioned in clause 8 to the satisfaction of an engineer of the Department of Mines that he has made a bona fide mineral discovery or obtained the approval of the Deputy Minister of Mines and the Deputy Minister of Forests to continue his exploration, the mineral claim, placer claim, or the placer-mining lease, as the case may be, shall cease and determine notwithstanding the fact the free miner may have obtained a certificate of work.

(10) The erection and location of mine buildings and other mine structures shall be subject to the approval of the Chief Inspector of Mines. The Chief Inspector of Mines shall give his approval only after reaching an agreement with the Chief Forester. The erection and location of other buildings shall be subject to the approval of the Chief Forester.

(11) No free miner shall cut, remove, or destroy any timber, tree, shrub, or plant, for mining purposes or otherwise, except to make legal claim posts and as provided for in clause (7) until the permission of the Chief Forester has been first obtained.

(12) Subject to clause (10), no buildings shall be erected, no trails or roads constructed and no actual mining operation shall be carried out without first securing a "Park Use Permit" so to do.

(13) Where there is conflict between the regulations established under Section 160 of the "Forest Act", R.S.B.C. 1948 and the provisions of this Order-in-Council in respect of any Provincial Park of Class A, the provisions of this Order-in-Council shall govern.

(14) This Order-in-Council shall apply to all mineral claims, placer claims, and placer-mining leases heretofore made or issued for Class A parks as from the date of this Order-in-Council, insofar as the terms and conditions of this Order-in-Council are applicable thereto.

Paramount Mining vs Recreation re Myra Creek.

It seems obvious enough from the material supplied that the chances of developing a mine on this property are reasonably good.

The memo from The Director, Parks Branch, indicates that the Director has undertaken to pass an opinion on something he knows little or nothing about. This rather shaky position is further weakened by some of his statements concerning use of the park, viz, and to wit:

1. page 4, 2nd par. The implication that use of boats on the lake for mine purposes necessarily would lead to the "admission of such commercial purposes as appear economic" is far fetched.

2. page 4, 3rd and 4th par. There seems some question about the general state of the area as a park, e.g. "still possible --- to maintain some of its natural attraction". In view of relation & population to area, as well as habitable vs inhabitable areas, in B.C. makes the statement that this park is a "unique and prized recreational possession" somewhat debatable.

The Director's recommendations, p. 5 of this memo, indicate that it is the policy of the Dept. of Recreation and Conservation to attempt to abrogate existing property rights by denial of access. I doubt if such a stand would be upheld in the courts.

The most unhappy feature is that the recommendations of the Director, Parks Branch, or of anyone so situated, would be given more than passing consideration. Such a person is entirely unaware of such important factors as:

1. A minable mineral deposit is a very rare find, the proportion now being somewhat less than 1 in 100 of mineral showings tested, so that the same must be considered as the return on many times the amount spent directly in it. The community is entitled to this return.

2. The amounts of money spent on the exploration and development work necessary to actually prove or disprove a likely prospect are very large, in the hundreds of thousands of dollars. The bulk of this expenditure is on works which have no possibility of salvage should the deposit not prove minable for any reason. Security of rights and tenure are essential at the beginning.

3. An established underground operation does not necessarily greatly mar the surface. It is unlikely, for instance that any serious amount of mine timber would be drawn from the property because of factors of varying quantities, seasoning of the wood, etc. The surface plants of most established mines are neat and pleasing enough to the eye.

4. Paramount Mining is a subsidiary of Cerro de Pasco, one of the worlds major mining organizations. If they get ~~more~~ one profitable operation in the province they'll certainly be encouraged to look for more. Much of the province will be dependent on mining activity for development, it being very largely too high, too steep and too cold for anything else, except, perhaps, parks.

Notes by NDMcK - 18-1-60