

3790

REPORT ON THE GEOLOGICAL SURVEY

of the

PATHFINDER RESOURCES LTD. PROPERTY
Highland Valley, B. C.

Kamloops Mining Division

92 I / 7W

Under Option to and Work Done by or on Behalf of

HIGHMONT MINING CORPORATION LTD.

by

G. D. Ulrich, B. A. Sc.
and
A. J. Reed, P. Eng.

<u>Claims:</u>	PRICE 13 & 14	<u>Record No.:</u>	49651 - 52
	PRICE 23 - 28		49618 - 23
	PRICE 55 - 58		49631 - 34
	RUBY 15 Fr. & 16 Fr.		51301 - 02
	RUBY 19 Fr. - 22 Fr.		51305 - 08

Location: Highland Valley, B. C.
Lat. 50°24' N. Long. 120°57' W.



August 7, 1972

Vancouver, B.C.

OPTC

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3790 M.P.

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INTRODUCTION

The following report is based on field work carried out by consultants to Highmont Mining Corporation Ltd. (N.P.L.) during the 1972 field season. The work was completed on 28 claims near Roscoe Lake in the Highland Valley area of southern British Columbia. The claims are owned by Pathfinder Resources Ltd. and are presently under option to Highmont Mining Corporation Ltd. (N.P.L.).

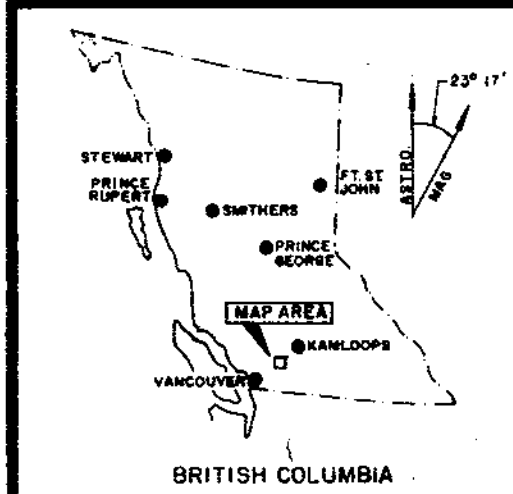
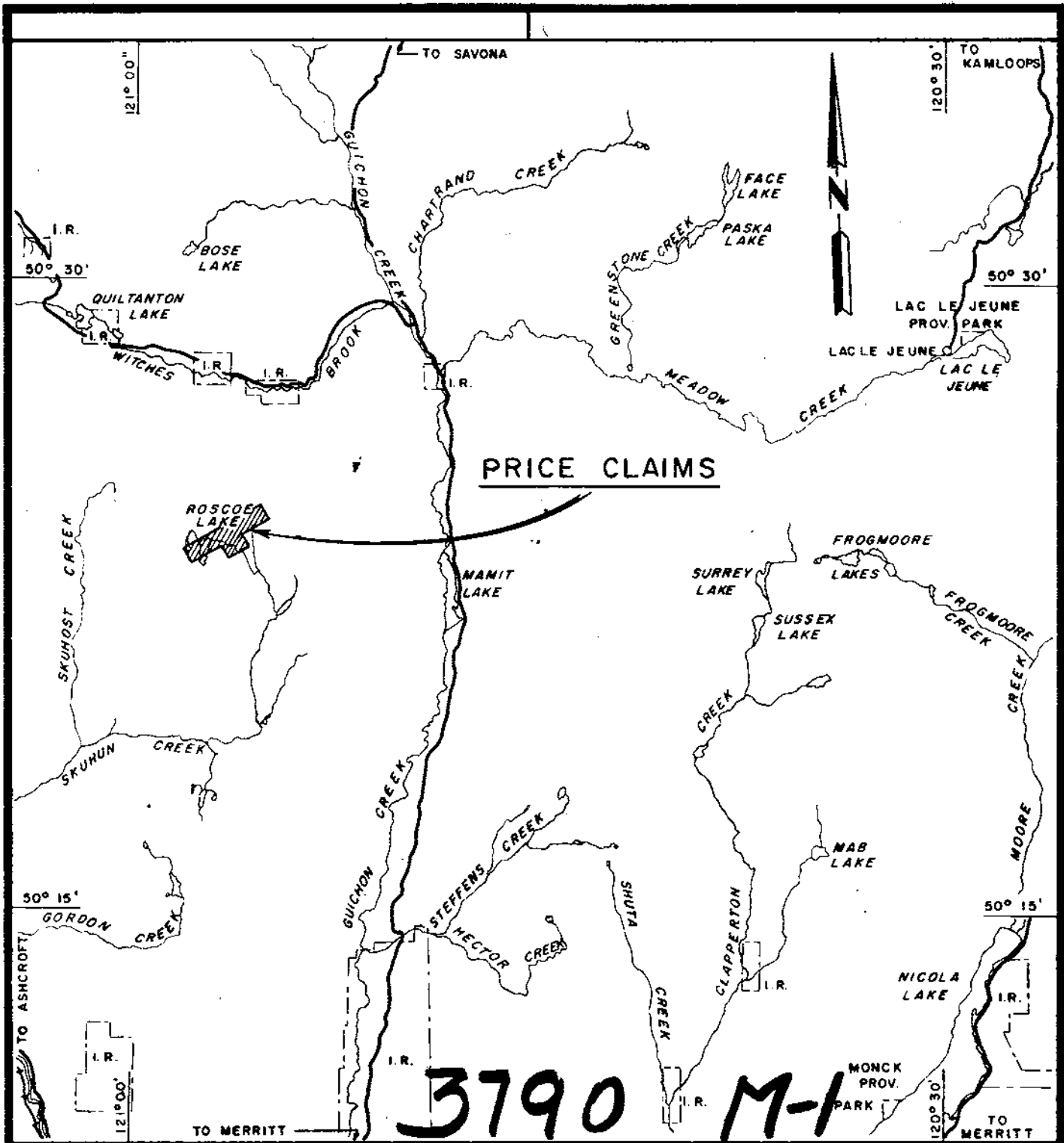
The initial programme was to chain and picket old grid lines for control. A detailed geological survey was then carried out with emphasis on alteration and structures. The nomenclature used for describing the lithic units was that generally accepted locally and based on the nomenclature of Dr. K. E. Northcote of the B. C. Department of Mines.

The programme was supervised by A. J. Reed, geologist, of Highmont Mining Corporation Ltd. (N.P.L.). Field mapping was carried out by G. D. Ulrich, geologist, and G. Davidson, Assistant, of W. Meyer & Associates Ltd. The chaining and picketing was done by V. Norman and F. Mantle of Highmont Mining Corporation Ltd.

LOCATION AND ACCESS

Highmont Mining Corporation Ltd. (N.P.L.) holds under option 85 contiguous mineral claims in the Roscoe Lake area of southern British Columbia. The 28 claims surveyed cover about 2 square miles on both sides of Roscoe Lake centred around Lat. $50^{\circ}24'$ N, Long. $120^{\circ}57'$ W.

The claims are accessible by the Trans-Canada Highway to Ashcroft and east by 28 miles of paved road to the Highland Valley area. From the Highland Valley the property is southwest by 4 miles by good gravel road and then 8 miles of 4-wheel drive road across the Highmont property.



HIGHMONT MINING CORPORATION LTD. (NPL)

LOCATION MAP
OF
PATHFINDER RESOURCES LTD.
ROSCOE LAKE PROPERTY

LAT. 50° 24' N LONG. 120° 57' W

4 0 4 8
SCALE IN MILES

W. MEYER & ASSOC. LTD. AUGUST 2, 1972

Department of
Mines and Petroleum Resources

ASSESSMENT REPORT

NO. 3790 MP #1

CLAIMS

A list of the 28 claims on which the work was done is tabulated below. They are all within the Kamloops Mining Division.

Claim Name	Record No.	Title	Anniversary Date	Year of Expiry (before 1971 work applied)
PRICE 13-14	49651-52	Pathfinder	Apr. 28	1972
PRICE 23-28	49618-23	Resources Ltd.	Apr. 27	1972
PRICE 55-58	49631-34	"	Apr. 27	1972
RUBY 15 Fr. & 16 Fr.	51301-02	"	Aug. 20	1972
RUBY 19 Fr. & 22 Fr.	51305, 51308	"	Aug. 20	1972
RUBY 20 Fr. & 21 Fr.	51306-07	"	Aug. 20	1973

GEOLOGY

General

The property is underlain entirely by rocks of the Gulchon Creek batholith. The batholith has an age of Upper Triassic (198±8 years). It is a semi-concordant composite pluton composed of several nearly concentric phases. The three central phases outcrop on the property, being on the east-central side of the batholith.

The emplacement of the batholith supposedly took place as a series of intrusive pulses of a slowly cooling mixture of crystals and magma. Magnetic differentiation is evident. After each pulse, basic material was extracted from the magma, leaving a residual, more siliceous melt. The phases become more acidic and are younger towards the core.

Lithology

The units used in the mapping are described below:

Map Unit 1: "Highland Valley" Phase - "Chataway" Variety

The "Highland Valley" phase forms a concentric shell around the inner phases which are found on the property. The "Chataway" variety of this phase occurs in the very northeast corner of the Price claims. This variety is mainly a medium to coarse grained granodiorite, cream colored, with evenly distributed, euhedral mafics, "open interstitial" quartz, fine interstitial orthoclase and subhedral to euhedral plagioclase.



On the property it is composed of 20% quartz, 10% orthoclase, 55% plagioclase, 3% magnetite, and 12% mafics. Hornblende: biotite is 2:1.

Map Unit 2: "Bethlehem" Phase

The "Bethlehem" phase sits inside the "Chataway" variety and completely encircles the central core of the batholith. It covers 60% of the area covered by the survey. It is a coarse grained granodiorite, cream to pink, with unevenly distributed mafics, especially the hornblende which is characteristically poikilitic.

On the property the "Bethlehem" is composed of 60% plagioclase, 10% orthoclase, 16 - 20% quartz, 3% magnetite and 10% mafics. Hornblende: biotite is about 1:1.

Contact effects are evident in this phase. At the "Chataway" - "Bethlehem" contact some fine grained granodiorite was found with a typical "Bethlehem" mafic texture. Similar dykelets were found cutting the "Chataway" variety near the contact. This may likely be a fine grained variety of the "Bethlehem" phase. At the "Bethsaida" contact, the "Bethlehem" is altered partly to sericite, chlorite, kaolin and epidote.

Map Unit 3: "Bethsaida" Phase

The "Bethsaida" phase forms the central core of the batholith. It occurs in the southwest corner of the area mapped. On the property is a coarse grained, pink to cream colored granodiorite with medium to coarse grained porphyritic quartz crystals, small euhedral biotites, and poikilitic hornblendes. Its quartz is not strikingly coarse and porphyritic, nor is the biotite in large euhedral books, both very common features of the "Bethsaida" phase. However, the area on the property mapped as "Bethsaida" is distinctly different from the "Bethlehem" phase.

The quartz and biotites are possibly not as coarse grained as they are in other areas of "Bethsaida" because of contact effects with the "Bethlehem" phase. A contact effect could be explained either by more rapid chilling than usual of the "Bethsaida" or by the mixing of



the residual "Bethsaida" magma with the partially crystallized "Bethlehem" phase to form a gradational zone.

The "Bethsaida" on the property is composed of 30% quartz, 5% orthoclase, 50 - 55% plagioclase, 1 - 2% magnetite and 8-10% mafics. Hornblende: biotite is about 1:1.5.

Aplite

On the property occasional aplite dykes occur in all the map units. The largest of these are plotted on the map. They are typically fine to medium grained and sometimes porphyritic. The composition varies but is usually that of a leucocratic granite. Since aplite is a major unit associated with showings on the PEN claims an attempt was made to map out any major weaknesses along which a zone of aplite might occur. A likely north-northeasterly trend to such a zone is suggested (fault along east side of Roscoe Lake), although this part of the property is underlain mostly by drift. The north shore of Roscoe Lake, which is close to this linear, is completely covered by sand and boulders of aplite.

Structure

Contacts on the property are abrupt and appear to be faulted. The "Chataway" - "Bethlehem" contact is paralleled by joints dipping shallowly (33°) to the west-southwest which suggests the "Bethlehem" has intruded as a shallow lopolith. The faulted contact between the "Bethlehem" and "Bethsaida" is paralleled by joints which dip steeply (80°) to the west-southwest suggesting the core is a plug type of intrusive. Both contacts are offset by right lateral and left lateral, steeply dipping faults which trend west-southwest.

The fault trending north-northeast along the east shore of Roscoe Lake is believed to be a major structure which parallels the principal stress direction in the Roscoe Lake area. The large aplite of the PEN claims is on this linear, suggesting a tensional nature to the structure. The striking difference between the topography on the east and west sides of the lake is probably due to uplift to the east along



faults parallel to the "Bethsaida" - "Skeena" contact and the fault along Roscoe Lake. Right and left lateral faults cutting the Roscoe Lake area are probably shear structures related to this major north-northeast striking compressional stress.

Alteration and Mineralization

Traces of hydrothermal alteration are evident along and near aplite dykes and fractures in the rock around the faulted "Bethsaida" - "Bethlehem" contact. Alteration minerals include sericite, chlorite, epidote and kaolin. The only copper mineralization observed was as traces of bornite in a quartz stringer near an aplite dyke at 42+00N - 8+00W.


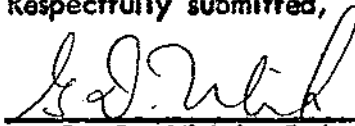
CONCLUSIONS

1. The 28 claims mapped are underlain by phases of the Guichon Creek batholith including the "Bethsaida" phase, "Bethlehem" phase and the "Chataway" variety of the "Highland Valley" phase.
2. An encouraging fault structure striking north-northeast occurs on the property along Roscoe Lake. The aplite dyke on the PEN claims may extend to the north along this linear.
3. In outcrop, only trace amounts of alteration and mineralization were observed. No significant alteration trends were found.
4. The areas with the best economic potential on the claims mapped are where the fault along Roscoe Lake intersects cross structures.

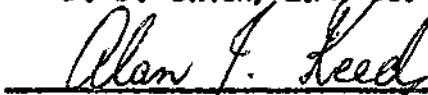
RECOMMENDATIONS

1. Do a full compilation of previous geochemical and geophysical surveys.
2. Re-do any surveys which are unreliable or obsolete and extend the surveys, where possible right across Roscoe Lake.
3. Percussion drill the best targets, combining the theories put forth in this report and the data obtained in the other surveys.

Respectfully submitted,

G. D. Ulrich, B.A. Sc.



A. J. Reed, P. Eng.

August 7, 1972



CERTIFICATE

I, Gordon Donald Ulrich, do hereby certify that:

1. I am a geologist with residence at 2020 Victoria Drive, Vancouver 12, B. C.
2. I am a graduate of the University of British Columbia, (B.A. Sc., 1970, Geological Engineering).
3. Since May, 1970, I have been enrolled with the Association of Professional Engineers of B. C. as an Engineer-in-Training.
4. I have been employed as a geologist from May 1, 1970 to December 31, 1971 with Western Geological Services Ltd., and from January, 1972 to present with W. Meyer & Associates Ltd.
5. During the period July 25 to August 7, 1972 I carried out the geological survey covered by this report.



G. D. Ulrich

August 7, 1972

CERTIFICATE

I, Alan James Reed of Ashcroft, British Columbia, do hereby certify that:

1. I am a geologist employed by Highmont Mining Corporation Ltd. of 700-1177 West Hastings Street, Vancouver 1, B. C.
2. I am a Professional Engineer registered in the Province of British Columbia and the Province of Ontario.
3. I am a graduate of the University of Leeds with a B. Sc. (Hons. 1963) in Geology.
4. I have practised my profession since 1963 while employed by the Geological Survey of Jamaica, Sisco Metals of Ontario Ltd., and Highmont Mining Corporation Ltd.
5. This report deals with work performed on the PRICE and RUBY claims under my supervision during the months of July and August, 1972.



Alan J. Reed, B. Sc., P. Eng.

August 15, 1972
Ashcroft, B. C.

PERSONNEL AND DATES

<u>Name & Address</u>	<u>Position</u>	<u>Dates</u>	<u>No. of Days</u>
G. D. Ulrich 2020 Victoria Dr. Vancouver 12, B. C.	Geologist	July 24 - Aug. 7, 1972	15
G. Davidson 1015 - 470 Granville St. Vancouver 2, B. C.	Geological Assistant	July 24 - Aug. 4, 1972	12
F. Mantle Box 700, Ashcroft, B. C.	Surveyor	July 13 - 24, 1972	12
V. Norman Box 700 Ashcroft, B. C.	Surveyor	July 13 - 24, 1972	12

COST OF SURVEYHighmont Mining Corporation Ltd. (N.P.L.)

Wages: F. Mantle	\$ 212.00
V. Norman	425.00
Truck rental and operation	409.36
Accommodation	<u>100.00</u>
	\$ 1,146.36

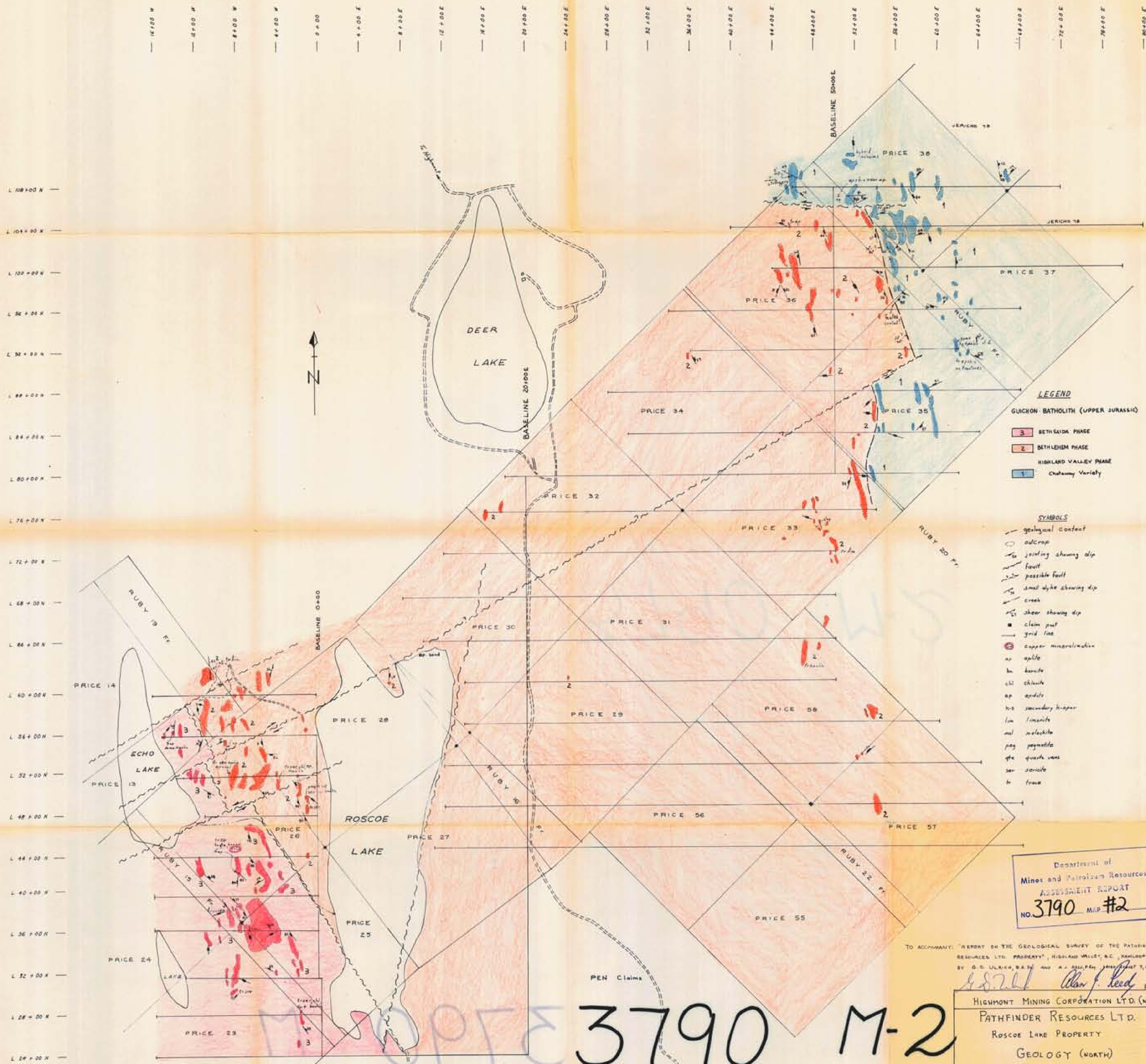
W. Meyer & Associates Ltd.

Wages and fees	1,950.00
Truck and equipment rental	142.00
Gas for truck and accommodation	216.49
Maps, prints and miscellaneous field tools	<u>100.86</u>
	\$ 2,409.35

TOTAL	<u>\$ 3,555.71</u>
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The above costs are property related costs and do not include preliminary compilation of previous data, administration costs, transportation to and from Vancouver and other costs not normally applicable for assessment work.





LEGEND
 GUCHON BATHOLITH (UPPER JURASSIC)

3	BETHSAIDA PHASE
2	BETHLEHEM PHASE
	HIGHLAND VALLEY PHASE
1	Chukany Variety

SYMBOLS

- geological contact
- outcrop
- ↗ jointing showing dip
- fault
- possible fault
- ↗ small dyke showing dip
- ↗ creek
- ↗ shear showing dip
- claim post
- grid line
- ⊕ copper mineralization
- ap apatite
- bn barite
- chl chlorite
- ep epidote
- fs secondary fluorite
- lm limonite
- mal malachite
- py pyrite
- qtz quartz veins
- ser sericite
- tr tourmaline

Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 3790 MAP #2

TO ACCOMPANY: "REPORT ON THE GEOLOGICAL SURVEY OF THE PATHFINDER RESOURCES LTD. PROPERTY, HIGHLAND VALLEY, B.C., NANTLON'S M.D., BY G.C. ULICH, B.A.Sc. AND A.J. BELL, P.G.E., 1972"

Alan F. Leedy FIG. 2
 HIGHMONT MINING CORPORATION LTD. (N.R.L.)
 PATHFINDER RESOURCES LTD.
 ROSCOE LAKE PROPERTY
 GEOLOGY (NORTH)
 HIGHLAND VALLEY, B.C.
 W. NEVILL & ASSOC. LTD. AUGUST 2, 1972
 GEOLOGY BY G.C.U. SCALE 1" = 400'

3790 M-2