84-#873 - 12930

Geological Report

BAR CLAIM GROUP

Fort Steele Mining Division

82 G/5 W

49° 27' 00" N 115° 55' 00"

by

John M. Leask (B.A.Sc)
Geologist

September 1st, 1984

GEOLOGICAL BRANCH
ASSESSMENT REPORT

12,930

SUMMARY AND CONCLUSIONS

The objective of this project is to find another economic massive sulphide deposit in the Aldridge Formation which hosts the immense Sullivan deposit. The Sullivan horizon exists at depths of 700 meters + within the Bar Claim group.

A single phase involving an initial drill hole of approximately 700 meters to probe the Lower-Middle Aldridge contact is proposed. Impetus for this program arises from geological interpretation of nearby tourmalinite alteration, preponderance of lead-zinc veins , known massive sulphide at the target horizon in this structural block to the south, and overall structural setting with relation to supposed growth faults.

Table of Contents

List of Illustrations

Fig.1

LEASK ASSOCIATES

LOCATION MAP

100 50 0 100 200
SCALE IN MILES

ALTAIR drafting services inc

INTRODUCTION

Location, Access, and Physiography

The Bar Group of mineral claims are located 10 kilometers west of the city of Cranbrook on the western flank of the Rocky Mountain Trench. These claims comprise a single 60 unit block lying immediately north of Lumberton Reservoir between Kiakho Creek and Wuho Creek.

Access to the claim area is by Highway 3-95 south from Cranbrook then west on the Moyie River Forest Road.

Steep sided valleys with abundant cliffs both east and west of Lumberton Lookout Mtn. characterize the topography. In the area of the claims elevations range between 870 meters A.S.L. and 1700 meters A.S.L.. In general the area is heavily, but overburden usually forms a thin veneer with outcrops numerous within the trees.

Climate is that of the Rocky Mountain Trench rain shadow with annual precipitation of approximately 40 centimeters. Snowpack in winter rarely exceeds 2 meters. Temperatures range from -40°C in winter to +40°C in summer.

Claims and Ownership

All claims are within the Fort Steele Mining Division and are owned by:

John M. Leask
Apt. 402-4200 Mayberry St.
Burnaby, B.C.

Claim Name	Size	Record No.	Record Date
Vine 55	18 U	1871	July 18, 1983
Bar 1	20 U	2015	Nov. 10, 1983
Bar 6	16 U	2028	Dec. 14, 1983
Bar 7	6 U	2029	Dec. 14, 1983
	Total: 60 U		

Claims locations outlined on Drawing 2 of this report - scale 1:12,500.

History

During October 1976 D.L. Pighin, a Cominco employed geologist/prospector discovered massive sphalerite-galena-pyrrhotite boulders in a recently excavated road cut north of Moyie Lake. This discovery was immediately protected as the Vine 1 claim consisting of 20 units. Further excavation in the immediate vicinity of the boulder occurence uncovered a very impressive vein with widths from 2 to 6 meters. Strike length of least 1000 meters is inferred by geophysical methods.

As the Sullivan Mine horizon was known to exist a hundred meters or so below this new showing it was suggested that the sulphide vein may be leakage from a major bedded sulphide body below, likely at at the Lower-Middle Aldridge contact. Since 1976 several drill holes have probed the Lower-Middle Aldridge contact and returned at least narrow intersections of massive sulphide to the south and east of the Bar Group. On the strength of this evidence and geological theory , Leask and Associates staked the Bar Group claim

Assessment Work - 1984

Geological mapping was carried out during the period June 1st to July 15th , 1984. British Columbia government air photographs and 1:12,500 enlargements of standard NTS 1:50,000 maps were used for field control. Geological data is compiled on Drawing 1 of this report. Total area surveyed was approximately 1800 hectares.

GEOLOGY

Regional Setting

The claims lie within the central portion of the Purcell Anticlinorium a broad north-plunging structure in Helikian and Hadrynian aged rocks.

The oldest rocks exposed in the Purcell Anticlinorium are rusty weathering greenish siltstone and quartzite of the Lower Aldridge Formation. These are overlain by about 3000 meters of quartz wacke and sub-wacke turbidite beds and interbedded siltstone of the Middle Aldridge. Within this monotonous section of clastic sediments of the Middle Aldridge several finely laminated varved argillites occur. These may be correlated varve for varve across several hundred kilometers and provide the only known stratigraphic control within the Middle Aldridge.

Overlying the Middle Aldridge is 300-400 meters of thin bedded to fissile rusty weathering black argillite and siltstone of the Upper Aldridge Formation.

Overlying Upper Purcell rocks are platformal in nature including clean quartzites and siltstone of the Creston Formation and shallow water platformal carbonates, argillites, and siltstones of the Kitchener-Siyeh and Van Creek formations. These are in turn overlain by purple and green amygdyloidal and vesicular basalt with interbedded green tuff beds and minor green and purple siltstone of the Nichol Creek Formation. Overlying the Nichol Creek are stromatolitic dolomite and grey-green siltstone conformably overlain by green siltstone and purple argillite of the Sheppard and Gateway formations respectively.

A number of longitudinal and transverse faults transect the Purcell Anticlinorium. Some of these faults appear to have been active in Helikian time; they affected the thickness and distribution of Proterozoic sediments and were likely a controlling factor in the localization of bedded sulphide deposits within the Aldridge Formation (Hoy 1982). The Sullivan deposit lies near a triple junction defined by the Rocky Mountain Trench and Kanasewich's graben(Kanasewich et al.1969). It apparently formed above a brine vent formed above a thermal anomaly within the rift basin (Cambell and Ethier, 1983). Evidence of penecontemperanous movement on these major faults is evident up until at least the Devonian. This is significant as the plumbing system that

channeled boron rich fluids resulting in tourmalinite alteration below the Sullivan orebody was very deep seated. The tendency is for these old zones of weakness to continue to accomadate strain in the system.

Property Geology

Overall structure from detailed mapping consists of a notherly plunging anticline which is attenuated to the north by the Cranbrook Fault, a major transverse structure with some 2000 meters of throw. This fault brings Middle Aldridge quartzite wackes in contact with Creston platformal quartzites. Correlation with other units within the Purcell Anticlinorium serves to indicate stratigraphic tops.

Lithologies present within claims include thin to thick bedded grey quartzite wacke with minor siltstone and argillite of the Middle Aldridge Formation. In the Bouma designation these correspond to AE turbidites and are indicative of a rapid depositional environment. Rare polymictic conglomerates are present within the Middle Aldridge and represent slump adjacent to growth faults active in Middle Aldridge time.

Numerous Moyie metadiorite sills and dykes are present within the Middle Aldridge. A few of the major sills provide rough stratigraphic markers as they are largely concordant.

A Cretaceous granitic stock is exposed in the northeast section of the property , adjacent to and south of the Cranbrook Fault. This rock is dominantly porphyritic with large plagioclase rhombs in quartz-biotite groundmass.

Mineralization

Several lead-zinc-silver veins are present on the property, some of which have recieved considerable attention by previous owners in the form of numerous open cuts and two short adits. These veins strike at 135° azimuth and dips steeply, as do all important vein systems within the Aldridge. These structures tend to be very persistant along strike with pinch and swell characteristics resulting in tabular steeply dipping ore shoots. Occurrences of this type with major economic importance in the Aldridge include the St. Eugene from which approximately 1 million tonnes grading 7 oz/tonne Ag. and 8% combined lead-zinc was mined. North Star-Stemwinder produced 160,000 tonnes grading 20 oz/tonne Ag. with 40% combined lead-zinc,and Estella Mine which produced 250,000 tonnes grading 10 oz/tonne Ag. with 10% lead+zinc. The Vine deposit has reserves approaching the grade and tonnage mined at the St. Eugene but has yet to be exploited. A .5 meter thick massive sulphide bed is confirmed by drilling at the Sullivan horizon 200 meters below the Vine vein showing.

Proposed genesis of bedded mineralization involves the initiation of deep-seated faults which channeled ore forming solutions to the sea floor where they ponded and precipitated massive sulphide deposits. These deposits are often very thick adjacent to the fault and thin rapidly away from it as the sub-basins are often formed by tectonically rotated blocks.

It is believed that the most likely place to find another major sulphide ore body is within the Central Transverse Zone which is bounded on the north by the St. Mary's-Boulder Creek Fault and on the south by the Moyie-Dibble Creek Fault. These faults are approximately coincident with the flanks of Kanasewich's hypothesized north-east trending Precambrian rift. Evidence for this rift zone is based primarily on a Bouguer gravity low and a magnetic lineation.

Some geologic features that are indicative of a mineralizing pulse and can be somewhat more arealy and vertically extensive include boron rich tourminalized black chert, poorly sorted micaceous silica exhalite, albtization, intraformational slump conglomerate, and a preponderance of lead-zinc-silver veins.

CONCLUSIONS

1. The targeted Lower-Middle Aldridge contact occurs at depths of 700 + meters within the claim group.

2. The major sills provide rough stratigraphic markers over distances of a few kilometers.

3. The structural setting of the property is analogous to the Sullivan area.

PROPOSED EXPLORATION ON THE BAR CLAIM GROUP

1. A single drill hole to test the Lower-Middle Aldridge contact. More drilling would be continnent upon success.

Statement of Expenditures (May 20th – June 16th)

Expenses

Gas		250.00
Truck maintenance		157.60
Miscellaneous		52.40
Supplies (flagging, sample bags, maps, ect.)		127.55
Truck Rental (1979 Chev 3/4 ton 4x4)		
26 days at $40/day		1040.00
Room and Board		
26 days at $40/day per man		2080.00
Wages		
John M. Leask- Geological Engineer		
Mapping	26 days at $250/day	6500.00
Report preparation	4 days at $250/day	1000.00
Gordon P. Leask - Geological Engineer		
Mapping	26 days at $200/day	3400.00
Drafting maps + supplies		300.00
TOTAL		$14907.55

STATEMENT OF QUALIFICATIONS

I, John M. Leask, do hereby certify that

1. I am a geologist with residence at 402-4200 Mayberry St., Burnaby B.C. V5H 4A7

2. I am a graduate of the University of British Columbia with a Bachelor of Applied Science in Geological Engineering (1980).

3. I have been active in mineral exploration as an independent since graduation.

EXPLORATION BUDGET

Drilling	750 meters at $75/meter	56,250
Assay	25 samples at $20/sample	500
	TOTAL	**56,750**

REFERENCES

Bishop, D.T. , Morris, H.C., and Edmunds, F.R., 1970, Turbidites and depositional features in the lower Belt-Purcell Supergroup (Abstr.): In Geological Society of America Program, Boulder, Colorado, pg. 797

Ethier, V.G. and Campbell F.A., 1977, Tourmaline concentrations in Proterozoic sediments of the southern Cordillera of Canada and their economic significance: Canadian Journal of Earth Sciences v. 14, pg. 2348-2363.

Gifford, R.G.,1971, Geological Survey,Hilo claim group, Fort Steele Mining Division: British Columbia Ministry of Mines and Resources Assessment Report 3300, 12 pages

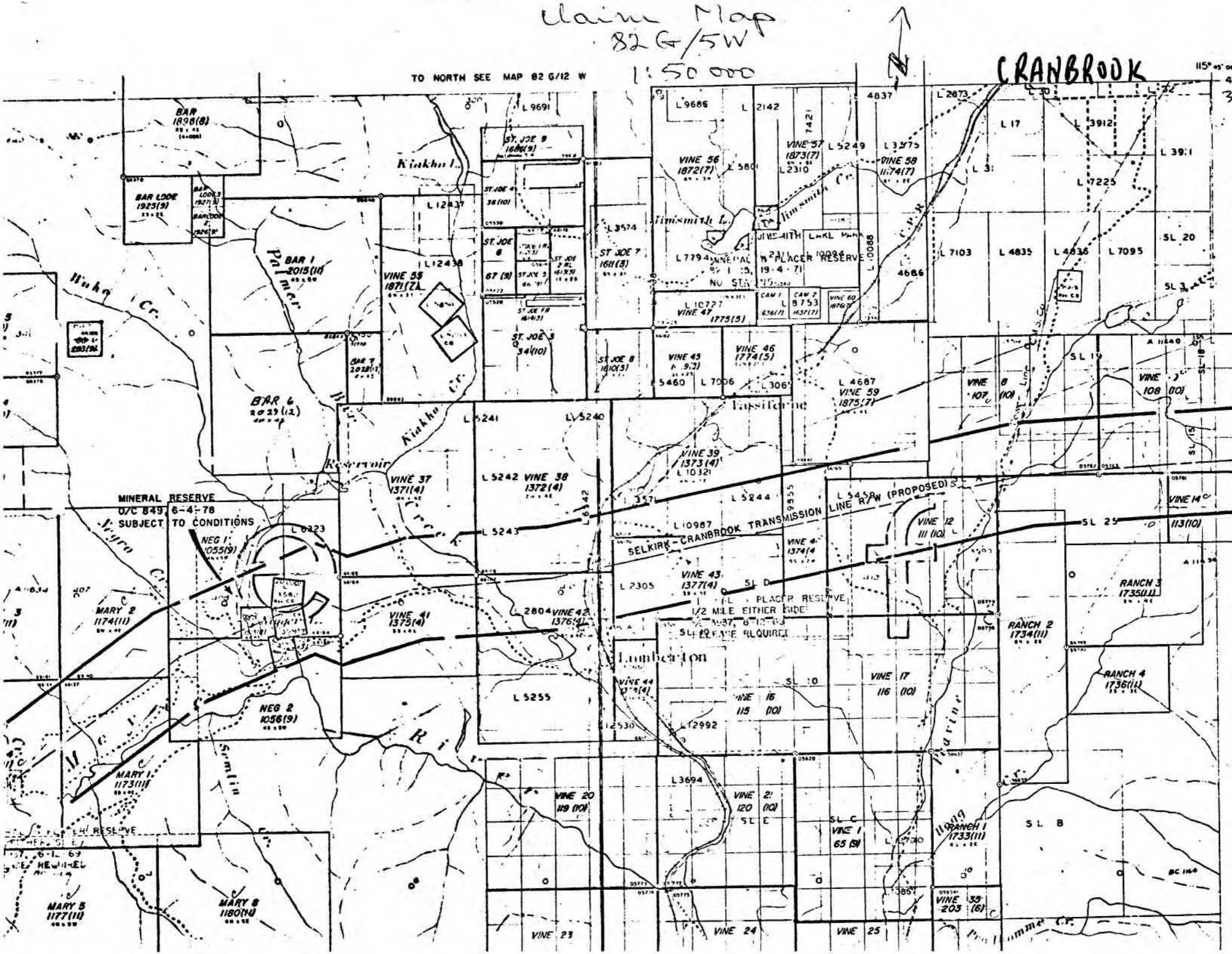
Hoy, T. and Diakow, L.,1980, Geology of the Moyie Lake Map Area, Preliminary Map No. 49, Ministry of Energy, Mines and Petroleum Resources.

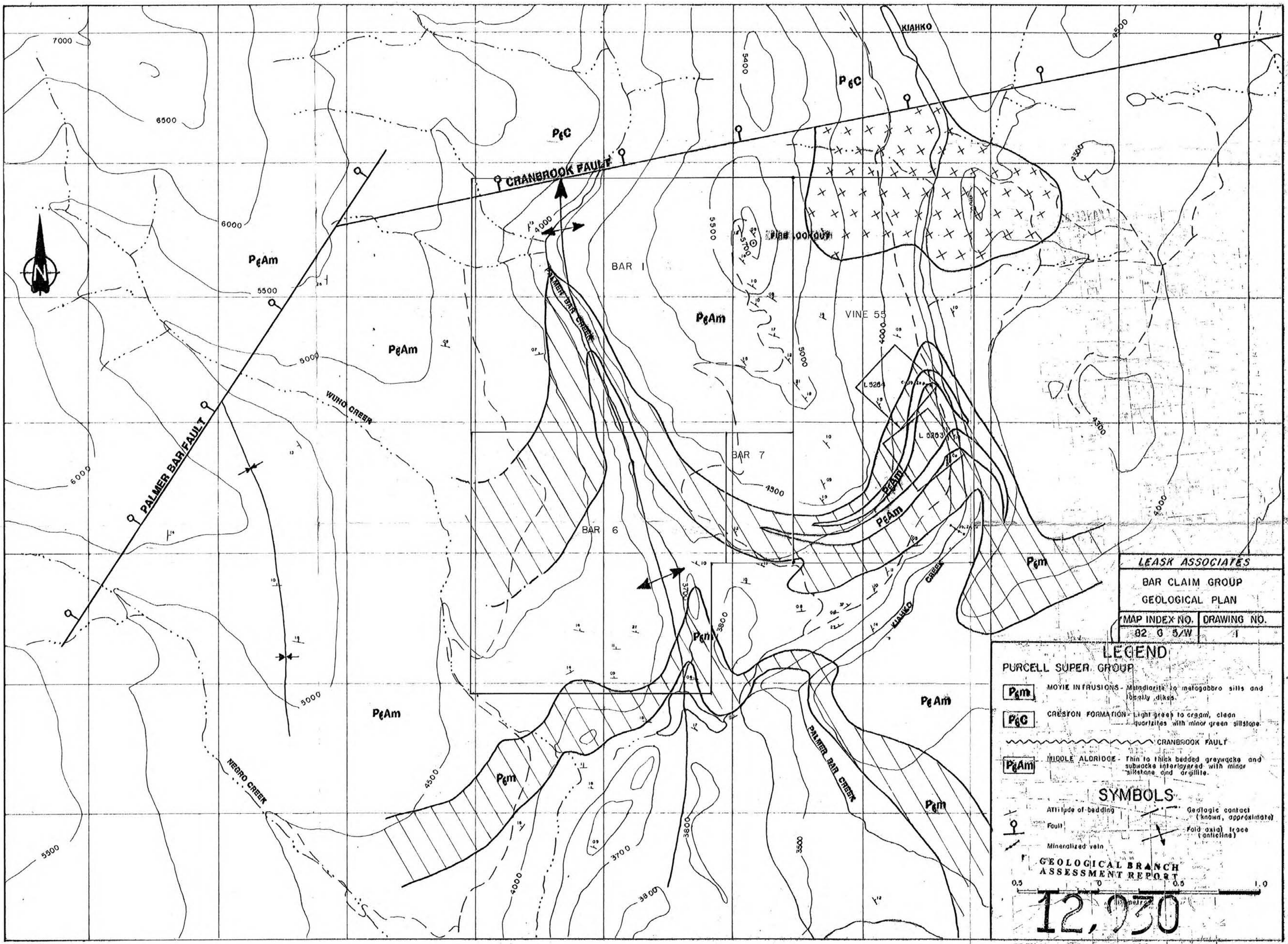
Hoy, T., 1982. The Purcell Supergroup in Southeastern British Columbia: Sedimentation, Tectonics, and Stratiform Lead-Zinc Deposits, H.S. Robinson Memorial Volume (eds. R.W. Hutchinson, C.D. Spence and J.M. Franklin), Geological Association of Canada, Special Paper 25, pg. 127-147.

Kanasewich, E.R., Clowes, R.M., and McClouqhan, C.H.,1969, A buried Precambrian Rift in Western Canada: Tectonophysics, V.8, pgs. 513-527.

Price, R.A., and Lis M.G., 1975, Recurrent displacements of basement controlled faults across the the Cordilleran Miogeosyncline in Southern Canada: Geological Society of America, Abstracts with Programs., pg. 1234.

Ransom,P.W.,1977, Geology of the Sullivan Orebody: in Hoy T.,ed. Lead-Zinc Deposits of Southeastern British Columbia: Geological Association of Canada Fieldtrip Guidebook,pq.7-21.


Claim Map
82 G/5W
1:50 000
TO NORTH SEE MAP 82 G/12 W
CRANBROOK
MINERAL RESERVE
O/C 849, 6-4-78
SUBJECT TO CONDITIONS
SELKIRK - CRANBROOK TRANSMISSION LINE R/W (PROPOSED)
Kiakho L.
Kiakho Cr.
Kiakho Reservoir
Jimsmith L.
Jimsmith Cr.
Lumberton
Palmer
Palmer Cr.
Lussiforne
BAR 1 2015(11)
BAR 6 2029(12)
BAR LODE 1925(9)
ST. JOE 9 1686(9)
ST. JOE 4 38(10)
ST. JOE 6 67(9)
ST. JOE 7 1611(3)
ST. JOE 5 34(10)
ST. JOE 8 1610(3)
VINE 55 1871(7)
VINE 56 1872(7)
VINE 57 1873(7)
VINE 58 1874(7)
VINE 59 1875(7)
VINE 46 1774(5)
VINE 47 1775(5)
VINE 45
VINE 39 1373(4)
VINE 37 1371(4)
VINE 38 1372(4)
VINE 41 1375(4)
VINE 42 1376(4)
VINE 43 1377(4)
VINE 44
VINE 4 1374(4)
VINE 12 111(10)
VINE 14 113(10)
VINE 16 115(10)
VINE 17 116(10)
VINE 20 119(10)
VINE 21 120(10)
VINE 1 65(9)
VINE 8 107(10)
VINE 108(10)
VINE 203(6)
NEG 1 1055(9)
NEG 2 1056(9)
MARY 1 1173(11)
MARY 2 1174(11)
MARY 5 1177(11)
MARY 6 1180(11)
RANCH 1 1733(11)
RANCH 2 1734(11)
RANCH 3 1735(11)
RANCH 4 1736(11)
PLACER RESERVE
1/2 MILE EITHER SIDE
SL RELEASE REQUIRED
L 9691
L 9686
L 2142
L 2873
L 3912
L 7225
L 7103
L 4835
L 4836
L 7095
L 12837
L 12438
L 7794
L 10727
L 8753
L 5460
L 7006
L 4687
L 5241
L 5240
L 5242
L 5243
L 5244
L 5458
L 10987
L 10321
L 2305
L 5255
L 12530
L 12992
L 3694
L 7730
SL 20
SL 19
SL 25
SL 15
SL 3
SL B
SL C
SL D
SL E
A 11640
A 11634
A 11639
BC 1164



LEASK ASSOCIATES

BAR CLAIM GROUP
GEOLOGICAL PLAN

MAP INDEX NO.	DRAWING NO.
82 G 5/W	1

LEGEND

PURCELL SUPER. GROUP

- **Pεm** — MOYIE INTRUSIONS - Meladiorite to metagabbro sills and locally dikes.
- **PεC** — CRESTON FORMATION - Light green to cream, clean quartzites with minor green siltstone.
- CRANBROOK FAULT
- **PεAm** — MIDDLE ALDRIDGE - Thin to thick bedded greywacke and subwacke interlayered with minor siltstone and argillite.

SYMBOLS

- Attitude of bedding
- Geologic contact (known, approximate)
- Fault
- Fold axial trace (anticline)
- Mineralized vein

GEOLOGICAL BRANCH
ASSESSMENT REPORT

0.5 0 0.5 1.0 kilometres

12,930