83-#865 - ~~11607~~ 11706

Geological Report

RANCH CLAIM GROUP

Fort Steele Mining Division

82 G /5 W

49° 12' 30" N 115° 45' 00" W

by

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

November 30th, 1983

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 Lower-Middle Aldridge contact (Sullivan Horizon) is known to exist on the Ranch Claim group.

A two phase program is proposed involving a magnetometer survey over the trace of the Sullivan horizon and mercury vapour geochemistry along the Moyie Fault. Trenching to delineate a newly discovered quartz-sphalerite-galena vein would take place concurrently. First phase expenditures are estimated at $11,350. Subsequent drilling being contingent on the success of phase 1 is estimated to cost $49,250 for a total of $60,600.

Table of Contents

List of Illustrations

Fig. 1

LEASK ASSOCIATES

LOCATION MAP

100 50 0 100 200

SCALE IN MILES

ALTAIR drafting services ltd

INTRODUCTION

Location, Access and Physiography

The Ranch Group of mineral claims are located 4 km north of Moyie Lake and 10 km south of the city of Cranbrook on the western flank of the Rocky Mountain Trench. The claims comprise a single block containing 42 units lying mainly east of Peavine Creek in the vicinity of the confluence of Peavine Creek and Hogg Creek.

Access to the claim area is by Highway 3-95 south from Cranbrook or via the old Moyie highway which traverses the west side of the claim block. Numerous old logging roads lie within the claims.

Low rolling hills with few cliffs charachterize the topography within the claims. In the area of the claims elevations range between 870 meters A.S.L. and 1100 meters A.S.L. In general the area is quite heavily wooded, but as overburden usually forms a thin veneer with outcrops are numerous within the trees.

Climate is that of the Rocky Mountain Trench rain shadow with annual precipitation of approximately 40 cm. Snowpack in winter rarely exceeds 2 meters. Temperatures range from -40^{o}C in winter to 40^{o}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
Ranch 1	8 U	1733	29/11/82
Ranch 2	16 U	1734	29/11/82
Ranch 3	12 U	1735	29/11/82
Ranch 4	6 U	1736	29/11/82
Total:	42 U		

Claim locations outlined on Drawing. 2 of this report - scale 1:10,000.

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 occurrence uncovered a very impressive vein with widths from 2 to 6 meters. Strike length of at 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 the Lower-Middle Aldridge contact. Cominco dropped ground adjacent to the Vine showing even though the targeted horizon is mostly less than 500 meters below the surface. This ground was later staked by Leask and Associates as the Ranch Group.

At present Cominco holds some 400 units in the area north and west of the Vine showing.

Assessment Work - 1983

Geological mapping and prospecting were carried out during the period Oct 1st to Oct 18th, 1983. British Columbia government air photographs and 1:10,000 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 1200 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.

These rocks are transected by numerous longitudinal and transverse faults. In particular the tranverse faults appear to have been initiated in Helikian time and played a prominent role in controlling the thickness and distribution of Proterozoic sediments and the formation of bedded sulphide deposits within the Helikian Aldridge Formation.

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. 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.

Property Geology

Overall structure from detailed mapping consists of a northerly plunging anticline which is attenuated on the east by the Moyie Fault, a major transverse structure with some 10,000 meters of throw. This fault brings Lower and Middle Aldridge sediments in contact with Van Creek siltstone, shale, and argillite.

Correlation with other units within the Purcell Anticlinorium serves to indicate stratigraphic tops.

Lithologies present within the claims and adjacent areas include Lower Aldridge rusty weathering greenish siltite and quartzite with quartz wacke beds near the top. Thin to thick bedded grey quartzite with minor siltstone and argillite of the Middle Aldridge Formation gradationally overlies Lower Aldridge siltite. 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 features adjacent to growth faults active in Middle Aldridge time. East of the Moyie Fault thinnly bedded

green and purple siltstone, shale, and argillite with minor green silty quartzite of the Van Creek Formation is exposed.

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

Stratigraphy

Stratigraphy of the Lower and Middle Aldridge members is reasonably well exposed within the project area. Lithologies present in stratigraphic succession are:

Unit 1 - Lower Aldridge Formation - Rusty weathering thinly bedded greenish siltite with minor quartzite interbeds.

Unit 2 - "Mud Zone" - Poorly sorted micaceous silica horizon. This is not regional in nature and where exposed it is less than a meter thick.

Unit 3 - Middle Aldridge Formation - Characteristically medium to thick bedded AE turbidites of poorly sorted clastic material with minor interbedded finely laminated varved argillites. Metadiorite sills occur throughout the exposed section.

Structure

Structure in the claim area is dominated by a large open anticlinal fold that plunges gently to the north. In the eastern portion adjacent to the Moyie Fault axial plane cleavage is well developed suggesting this area was a zone of compression. This axial plane cleavage is extremely pronounced next to the fault and often obliterates bedding features.

Mineralization

During the execution of this mapping project a 1 meter wide quartz-sphalerite-galena vein was discovered. This vein strikes 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, 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.

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 stratigraphic horizon sub-crops and occurs at shallow depths over much of the southern part of the claim group.

2. An attractive looking vein occurrence similar to the Vine vein is present on the property. This showing has no previous exploration history.

PROPOSED EXPLORATION ON THE RANCH CLAIM GROUP

1. Magnetometer surveys over the projected trace of the Lower-Middle Aldridge contact.

2. Mercury sniffer survey along the Moyie Fault as it has been suggested that continued and periodic movement along these faults may have released mercury vapor from a sulphide body below.

3. Trenching with a cat or backhoe along strike of the newly discovered vein showing.

4. Drilling would be contingent upon favourable results in any of the afformentioned.

Statement of Expenditures

Expenses

Gas	432.87.
Truck maintenance	46.98
Helicopter	400.00
Miscellaneous	19.68
Supplies (flagging,sample bags,maps,ect.)	123.37

Truck Rental (1979 Chev 3/4 ton 4x4)

15 days at $25/day	375.00

Room and Board

13 days at $20/day per man	520.00

Wages

John M. Leask- Geological Engineer		
Mapping	13 days at $175/day	2275.00
Report preparation	4 days at $175/day	700.00
Terry L. Eldridge- Prospector		
Prospecting	13 days at $125/day	1625.00

Drafting maps + supplies	300.00
TOTAL	$ 6817.90

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.

RESPECTFULLY SUBMITTED

John M. Leask

John M. Leask

EXPLORATION BUDGET

First Phase		
Salaries		
1 geologist : 1 month at 3000/month		3000
1 assistant : 1 month at 1500/month		1500
Support		
Trenching	D7 Cat 2 days at $1000/day	2000
Food		1000
Accomadation		1000
Magnetometer Rental		250
Mercury Detector Rental		2000
Miscellaneous		600
		11,350
Second Phase		
Drilling	650 meters at $75/meter	48,750
Assay	25 samples at $20/sample	500
		49,250
	TOTAL	$60,600

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

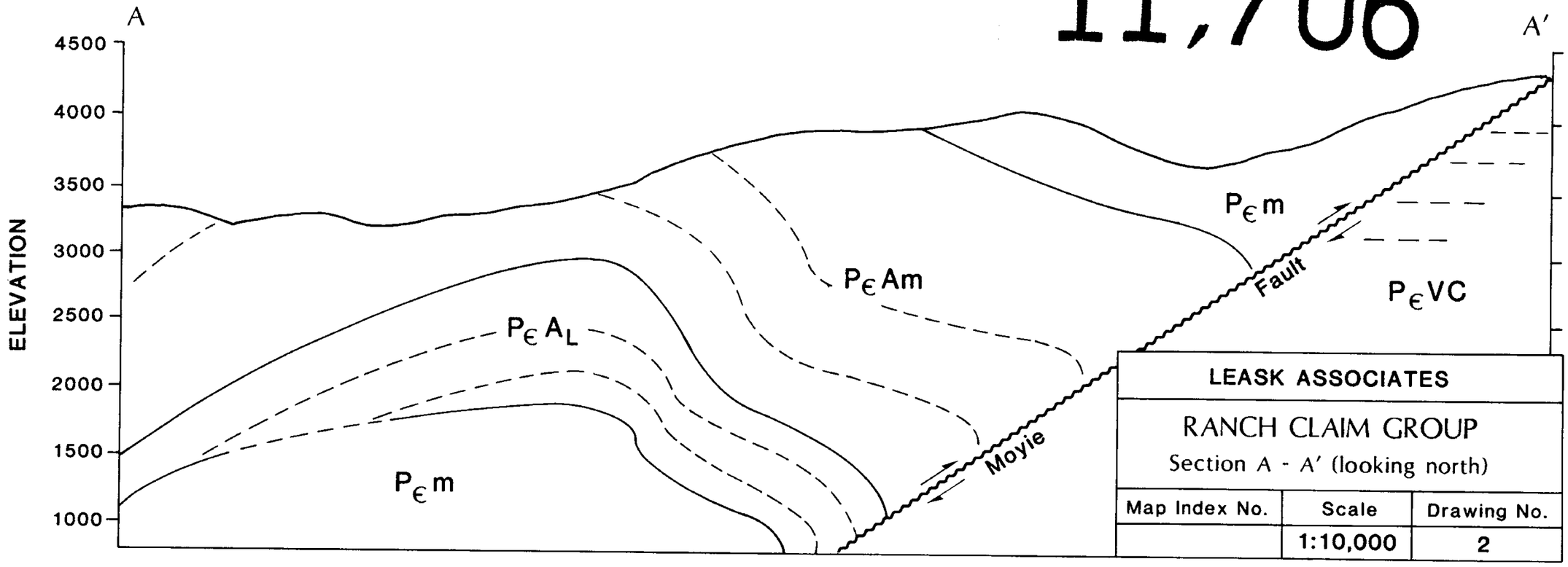
Hoy, T. and Diakow, L.,1980, Geology of the Moyie Lake Map Area, Preliminary Map No. 49, Ministry of Energy, Mines and Petroleum Resources.

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 McCloughan, 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,pg.7-21.



LEASK ASSOCIATES		
RANCH CLAIM GROUP Section A - A' (looking north)		
Map Index No.	Scale	Drawing No.
	1:10,000	2

LEGEND
Dp Peavine Conglomerate – Polymictic pebble to cobble conglomerate
PURCELL SUPER GROUP
P€m Moyie Intrusions – Metadiorite to metagabbro sills and locally dykes
P€VM Van Creek Formation – Thinnly bedded green and purple siltstone, shale, and argillite. Green silty quartzite.
P€K Kitchener Formation – Grey silty and argillaceous dolomite. Grey silty dolomite with minor black argillite. Minor green siltstone.
MOYIE FAULT
P€Am Middle Aldridge – Thin to thick bedded greywacke and subwacke interlayered with minor siltstone and argillite.
MZ Mud Zone – Poorly sorted muddy weathering silica exhalite.
P€AL Lower Aldridge – Rusty weathering greenish siltstone and quartzite with interbedded silty argillite. Interlayered rusty weathering quartz wacke near the top.
SYMBOLS
Attitude of bedding
Attitude of cleavage
Lineation
Thrust or reverse fault
Mineralized vein (showing trend)
Geologic contact (known, approx., inferred)
Fold axial trace (anticline)
Powerline
Outcrop
0.5 0 0.5 1.0
kilometres
11,706
GEOLOGICAL BRANCH
ASSESSMENT REPORT
LEASK ASSOCIATES
RANCH CLAIM GROUP
Geological Plan
Map Index No. 82 G 5/W
Drawing No. 1
L 4687
L 3065
SL 19
3800
3500
L 9855
L 5459
L 5590
4300
4000
3300
4500
5000
L 2790
L 1086
L 297
L 2800
BM 3052
SL 28
L 4591
SL 2
COLUMBIA
Gravel Pit
Tunnel
Moyie Lake
L 16321
L 16278
Hoge Creek
Peavine
Prudhomme