

83-#674-#11558

GEOLOGICAL REPORT ON THE

1081

TRUE FISSURE PROPERTY

THOEN 1 - 8 CLAIMS

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**11,558**

GEOLOGICAL REPORT ON THE  
TRUE FISSURE PROPERTY  
THOEN 1 - 8 CLAIMS

Omineca Mining Division

For:

Amir Mines Ltd.  
Suite 510 - 475 Howe Street  
Vancouver, B. C.  
V6C 2B3

By:

Carl Edmunds, B.Sc. Geology

Bema Industries Ltd.  
203, 19945 - 56 Avenue  
Langley, B. C.  
V3A 3Y2

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## 1.0 INTRODUCTION

The True Fissure property consists of eight 2 post claims located on the south slopes of Mount Thoen. The claims are owned by Amir Mines Ltd. A silver-lead-zinc vein is present in hornfelsed sedimentary rock adjacent to the Mt. Thoen granodiorite intrusive.

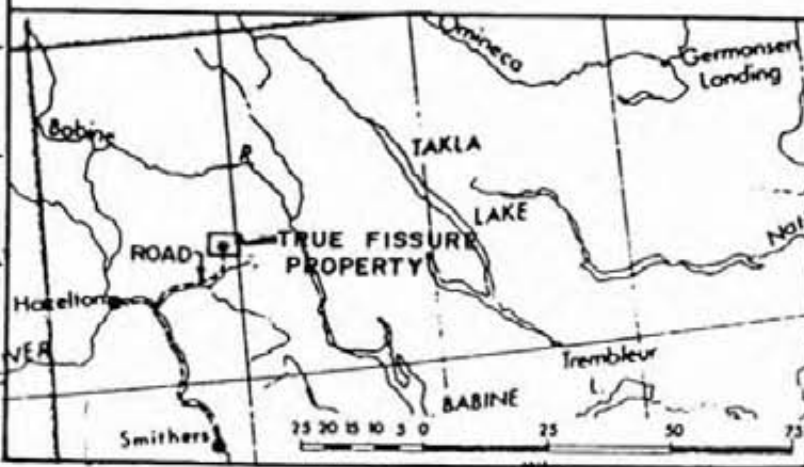
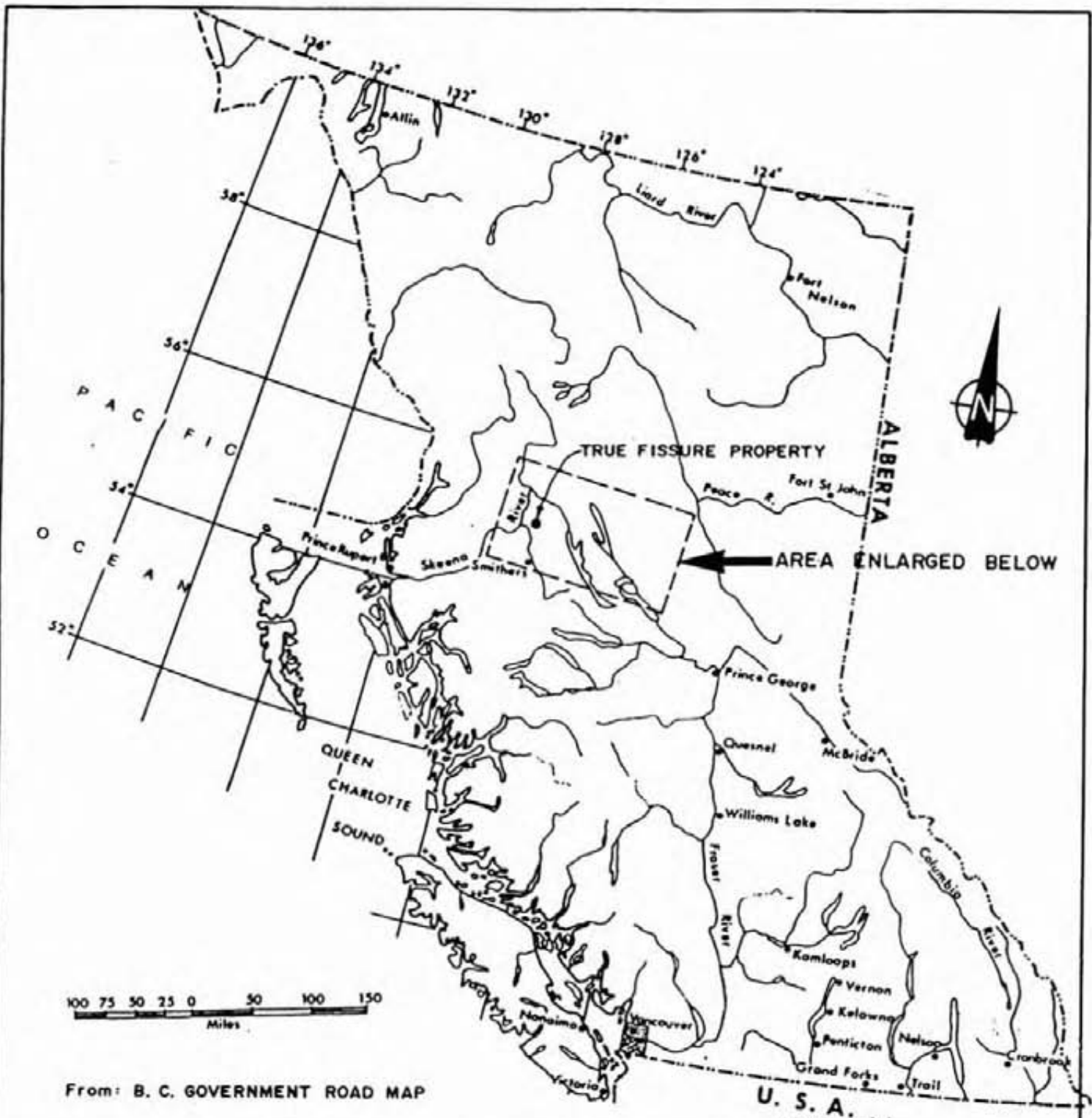
## 1.1 LOCATION AND ACCESS

The True Fissure property is located in the Omineca Mining Division approximately 64 kilometres north of Smithers, latitude  $55^{\circ}22'$ , longitude  $127^{\circ}00'$  (93M 6+7). Access at the present time is by helicopter from Smithers. An allweather logging road gives access to within 3 kilometres of the claims 32 kilometres east of Hazelton along the Suskwa River. (See Figure 1 and 2.)

## 1.2 PHYSIOGRAPHY

The property is located near the headwaters of a south flowing tributary of the Suskwa River on the south flank of Mount Thoen. The claims occupy a small southeasterly facing cirque basin at the 1480 m - 1970 metre elevation. The terrain is steep with 180 metre rock bluffs on the western claim margin, rocky felsenmeer and talus slopes of  $20 - 30^{\circ}$  to the north. To the east and south the steep slopes flatten into alpine meadows with slopes of  $5^{\circ} - 10^{\circ}$ .

Vegetation consists of alpine moss and grass with stunted juniper and mountain spruce on the south claim boundary.



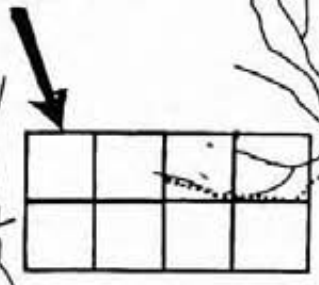
AMIR MINES LTD.  
 OMINECA MINING DIVISION, B.C.  
TRUE FISSURE PROPERTY  
 LOCATION MAP

SCALE  
 AS SHOWN

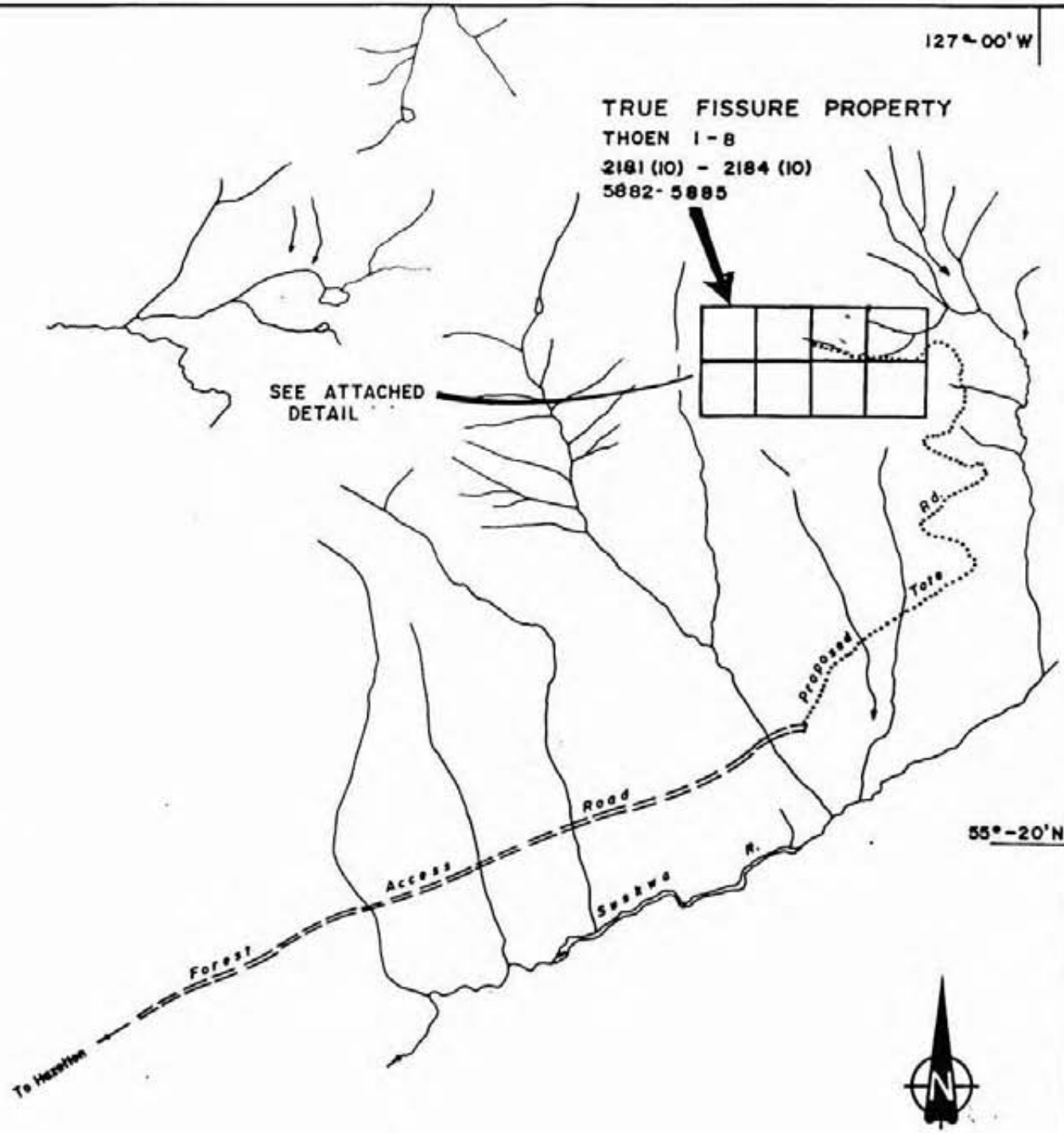
W.G. STEVENSON & ASSOCIATES LTD.	DATE: FEB. 1983	FIG. 1
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127° 00' W

TRUE FISSURE PROPERTY  
THOEN 1-8  
2181 (10) - 2184 (10)  
5882-5885



SEE ATTACHED  
DETAIL



55°-20' N

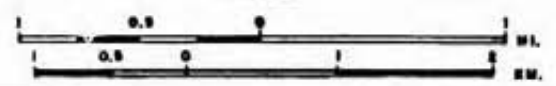
To Hazelton

APPENDIX 'B'

AMIR MINES LTD.  
OMINECA MINING DIVISION, BC.

TRUE FISSURE LODE CLAIMS  
CLAIM MAP

SCALE



From: 1:50,000 NTS 93 M/6

BEMA INDUSTRIES LTD.

DATE: FEB. 1983

FIG. 2

1.3      PROPERTY

The True Fissure property consists of eight 2 post mineral claims. A list of the claims follows: (See Figure 2.)

<u>CLAIM NAME</u>	<u>LODE CLAIMS</u> <u>RECORD NUMBER</u>	<u>EXPIRY DATE</u>
Thoen 1	2181 (10)	Oct. 31, 1987
Thoen 2	2182 (10)	Oct. 31, 1987
Thoen 3	2183 (10)	Oct. 31, 1987
Thoen 4	2184 (10)	Oct. 31, 1987
Thoen 5	5882	Sept. 17, 1987
Thoen 6	5883	Sept. 17, 1987
Thoen 7	5884	Sept. 17, 1987
Thoen 8	5885	Sept. 17, 1987

These claims are owned by Amir Mines Ltd.

1.4      HISTORY

Reference to the history are from B.C. Ministry of Mines reports 1922, 1927, 1929. The first recorded claims were located by Gordon McLennan and Pete Jennings sometime prior to 1922. The silver-lead-zinc vein was traced from the alpine meadows at 5,200 feet elevation to the west up the steep rock bluffs. Several open cuts were made and a short tunnel was driven at the 1,600 - 1,650 metre elevation. The vein was seen to strike northeast and to consist of galena, zinc-blende, pyrite and small amounts of tetrahedrite. During the period 1927 - 1929 the tunnel at the 1550 metre elevation was advanced 30 feet from the portal



following the vein which strikes  $62^{\circ}$  azimuth and dips  $60^{\circ}$  south-east. At 50 metres vertically above this point another tunnel was started on the vein where it shows a width of .49 - 0.80 metres with a gangue of rhodonite.

No other recorded work is available until Mr. Lorne Warren of Smithers staked the claim in 1979. Mr. Warren optioned the claims to D. Groot Logging Ltd. of Smithers, B. C. in 1980. D. Groot Logging Ltd. conducted a 10 day exploration program of geological mapping, chip sampling and an S.P. survey on the Thoen 1 - 4 claims. The sampling showed the vein to be 0.35 - 0.80 m. in width and to have a grade of 0.68 oz/ton Ag to 48.07 oz/ton Ag. The vein was traced by surface exposure for 300 metres to the west and beneath the overburden by an S.P. survey. This indicates an anomalous conductor approximately 100 metres to the east.

In December 1982 the claims were purchased by Mr. Richard Barclay of Langley and vended to Amir Mines Ltd. A property examination was carried out on February 10, 1983.

#### 1.5 PRESENT WORK

Amir Mines Ltd. contracted Bema Industries Ltd. to carry out a 4 day property examination. A geologist and assistant were placed on the property from September 14th to September 18th, 1983 for the purpose of sampling, mapping and prospecting the area.

For three out of the four days on the property, exposure was obscured by a 10 cm. snow covering. This made climbing difficult, but did not hinder evaluation of the property.

Samples of mineralization and country rock were collected in order to confirm Plecash's 1980 results.

#### 1.6 BIBLIOGRAPHY

B.C. Ministry of Mines

Annual Reports 1922 pp. 98 -99;  
1927 pp. 133; 1929 pp. 159 - 160.



- Nordin, G. D. Geological Report, True Fissure Property, Thoen 1 - 4 Claims (Feb. 1983).
- Plecash, D. C. Private Report, D. Groot Logging Ltd. (1980), True Fissure Project (1980).
- Richards, T. A. and Jeletzky, O. L. G.S.C. Paper 75-1 Part A; A Preliminary Study of the Upper Jurassic Bowser Assemblage in the Hazelton West Half Map Area, British Columbia (93M - W $\frac{1}{2}$ ).
- Richards, T. A. F.S.C. Paper 77-1A pp. 247; Geology of Hazelton Map Area, British Columbia.
- G.S.C. Paper 78-1A pp. 59; Geology of Hazelton (West Half) Map Area, British Columbia.

## 2.0 REGIONAL GEOLOGY

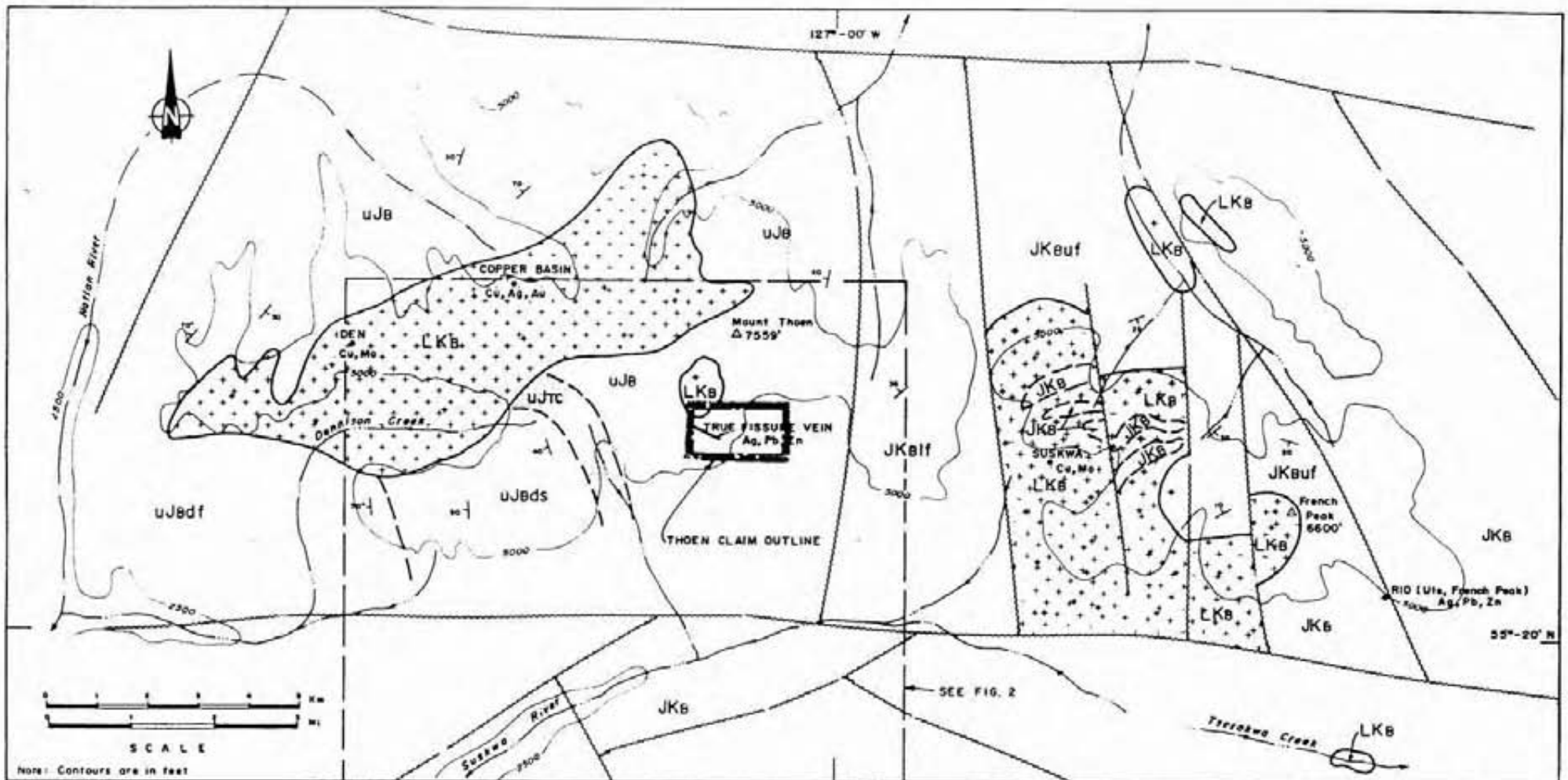
The True Fissure property lies within the Intermontane Tectonic Belt in Upper Jurassic rocks of the Bowser Lake Group, adjacent to the Mount Thoen intrusive (Bulkley Intrusive). (See Figure 3.)

The structure of the area is dominated by block faults with the major mountain massifs representing an uplifted block underlain by granitic rocks and older facies of the Bowser Lake Group. Younger rock assemblages occupy the major valleys. The major river valleys represent grabens described as large polygonal blocks with northerly elongation. Fold trends northwest with overturning to the northeast. Structures around the Bulkley Valley Intrusive are controlled by these bodies and do not conform to the regional patterns.

The intrusive rocks of the area are Upper Cretaceous Bulkley Intrusives with ages from 60 - 84 million years. Two types are present, a mesocratic hornblende-biotite diorite and syenodiorite, and a mesocratic to leucocratic biotite-hornblende monzonite to quartz monzonite. With the more acid phases are quartz-feldspar-biotite porphyries rich in K-spar.

Each stock is encircled by hornfels sediments in zones up to 2,000 feet wide. Adjacent to the acid stocks are rocks recrystallized to garnet, hornblende, actinolite, epidote and biotite. Intrusives are epizonal with parts of their roofs preserved.

Metallic mineral prospects in the area are closely related to the Bulkley Intrusives. Each of the major stocks (Blunt, Thomlinson, Thoen) has copper-molybdenite prospects in veins or pegmatites within the generally unaltered intrusions and veins and replacements in the adjacent sediments. Silver mineralization is known at Nine Mile Mountain, Mount Thoen, Natlan and French Peak. Much of the mineralization is related to the upper, barely unroofed parts of the intrusive bodies.



Note: Contours are in feet

LEGEND

JKB

"Intermediate Bowser Lake Subdivision"  
JKBuf } Channel sandstone, conglomerate  
JKbif }

UJB

"Lower Bowser Lake Subdivision"  
Sandstone, conglomerate, siltstone, shale (volcanic derived)  
UJBdf - Dune rippled sandstone  
UJBds - Fine grained siltstone

UJTC

"Trout Creek Beds"  
Lower beach facies,  
Sandstone, conglomerate, siltstone

LKB

Bulkley Intrusive  
Granodiorite, quartz monzonite,  
hornblende, quartz porphyry

- Fault
- Stream
- Geological contact
- Surface contours (ft)
- Claim boundary
- DEN  
Cu, Mo - Mineral showing

SEE FIG. 2

AMIR MINES LTD.  
OMINECA MINING DIVISION, B.C.

TRUE FISSURE LODE CLAIMS  
REGIONAL GEOLOGY

DATE 83-10-25 JOB NO. 83-10

APPROVED BY FIG NO. 3

▲▲ BEMA INDUSTRIES LTD.

Geology by T.A. Richards (1974, 1975, 1977) with additions by Gary Nordin (1983)

### 3.0 PROPERTY GEOLOGY

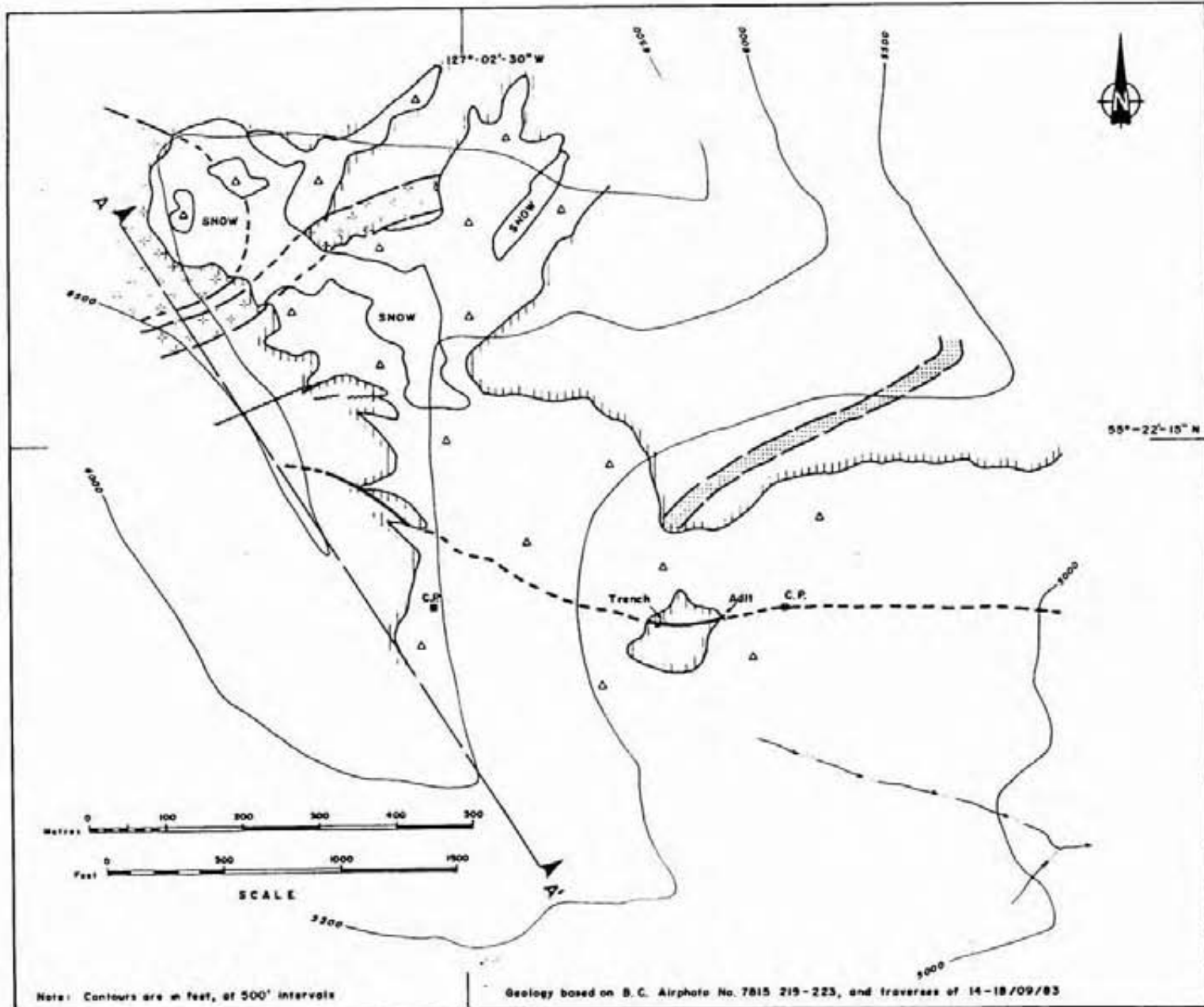
The True Fissure property lies within Lower Bowser Assemblage rocks predominantly sandstone-siltstone on the south ridges of Mount Thoen. Richards (1975) has mapped a westward dipping assemblage of four informal units on the south ridges of Mount Thoen. Lowest unit, to the east is a medium grained, crossbedded sandstone in part conglomerate. This grades upward and eastward into 30 metres of finely plane laminated argillaceous siltstone and fine sandstone. Overlying are 45 - 60 metres of fine impure sands and silts with shell beds. Tuff, feldspathic greywacke, siliceous limestone and volcanic cobble conglomerate overlie the shell beds. (See Figure 4.)

Rocks exposed at the base of steep bluffs on the western margin of the claims are fine grained argillaceous siltstones and chert which would correspond to the second or third informal units of Richards (1975) with sandstone exposed down section to the east and tuff, greywacke, limestone and volcanic conglomerate exposed upsection to the west. The rocks strike  $160^{\circ}$  to  $180^{\circ}$  azimuth and dip  $40^{\circ}$  to the west. A small leucocratic stock is exposed on the northwest corner of the claims in a small saddle. Rocks adjacent to it are hornfelsed outward from the stock for 300 metres and form a distinctive light brown gossan in the upper cirque valley.

The gossan ceases at the mineralized True Fissure shear. In the hornfelsed sediments, particularly the cm. scale interbedded sandstones and siltstones, there are areas of extremely disturbed bedding and brecciation (Figure 7). This may be a pre-intrusive sedimentary structure or more probably the result of intense fluid movement through the sediment during the thermal event.

The True Fissure vein trends  $060$  to  $080^{\circ}$  azimuth across the centre of the claims and is explored by a short tunnel and several open cuts near the centre of the claim within the alpine meadows. (D. Plecash 1980.) This trend parallels one of the more prominent joint sets in the hornfels.

To the west of the adit and open cuts the vein has been traced up the steep rock bluffs and is seen to be 0.33 to 0.88 metres in width. It consists of galena, sphalerite, pyrite, chalcopyrite



### LEGEND

- Bulkley intrusive Granodiorite
- Hornfelsed "Lower Bowser Lake Subdivision" - argillites, siltstones and sand units.
- Hornfelsed Chert unit in Lower Bowser Lake Subdivision
- Ag shear zone Defined, inferred
- Talus
- Geological contact Defined, inferred
- Edge of rock exposure

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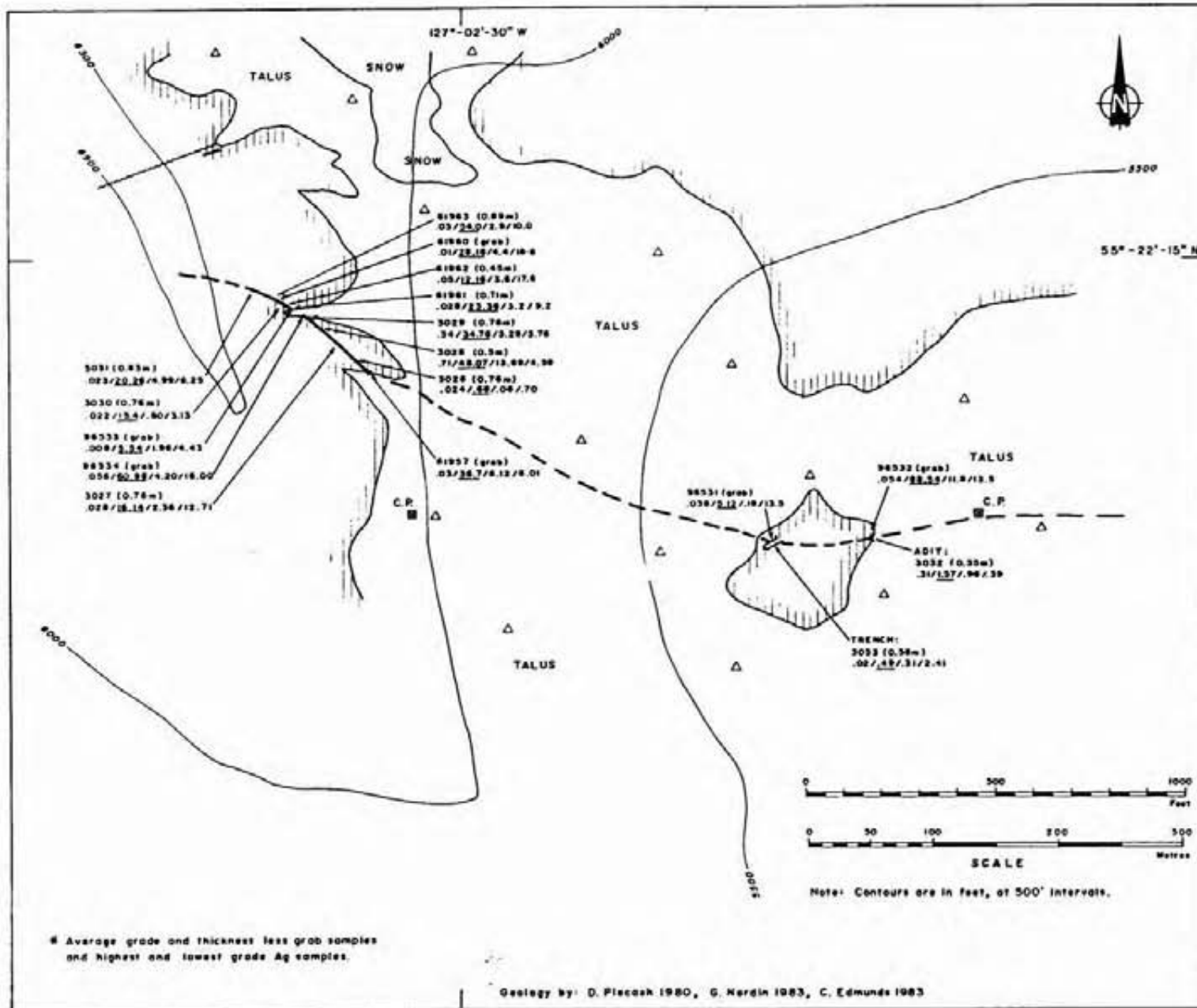
**AMIR MINES LTD.**  
OMINECA MINING DIVISION, B.C.

TRUE FISSURE LODE CLAIMS  
**GEOLOGY**

DATE	83-10-26	JOB NO.	83-10
APPROVED BY:		FIG NO	4a

**BEMA INDUSTRIES LTD.**





### LEGEND

- EDGE OF ROCK EXPOSURE
- MINERALIZED SHEAR EXPOSED / INFERRED
- FAULT
- TALUS COVER

3028 (0.78m)  
 .34/34.76/5.28/3.78  
 Au( $\frac{oz}{t}$ )/Ag( $\frac{oz}{t}$ )/Pb% / Zn%

3028 is 3033  
 D+GROOT SAMPLES 1981

- ADIT
- TRENCH

AVERAGE GRADE OF SAMPLES					
SAMPLE No.	Au (oz./T)	Ag (oz./T)	Pb %	Zn %	Thickness (m)
3028	.024	.88	.04	.70	.78
3027	.028	18.15	3.38	12.71	.78
3029	.71	48.07	13.88	4.58	.70
3029	.34	34.74	3.28	5.78	.78
3030	.022	13.4	.80	3.13	.78
3031	.023	20.28	4.32	8.13	.83
3034	.31	1.37	.08	.38	.33
3033	.02	.49	.31	2.41	.58
3197	.03	34.7	5.12	5.01	.98
3190	.01	18.18	4.4	18.8	.98
3191	.028	23.38	3.8	8.8	.71
3192	.03	12.14	3.8	17.8	.83
3193	.03	34.00	3.8	10.0	.89
3032	.026	3.12	.18	13.3	.98
3033	.023	28.34	11.8	18.7	-
3038	.008	5.34	1.88	4.53	-
3034	.028	20.88	4.70	16.00	-
$\Sigma$	1.741	491.83	84.81	148.18	7.33
AVG.	.104	28.38	3.88	9.24	.48

W WEIGHTED AVERAGE					
$\Sigma$	1.535	172.4	34.94	60.33	5.88
AVG.	.170	19.18	3.88	8.70	.83

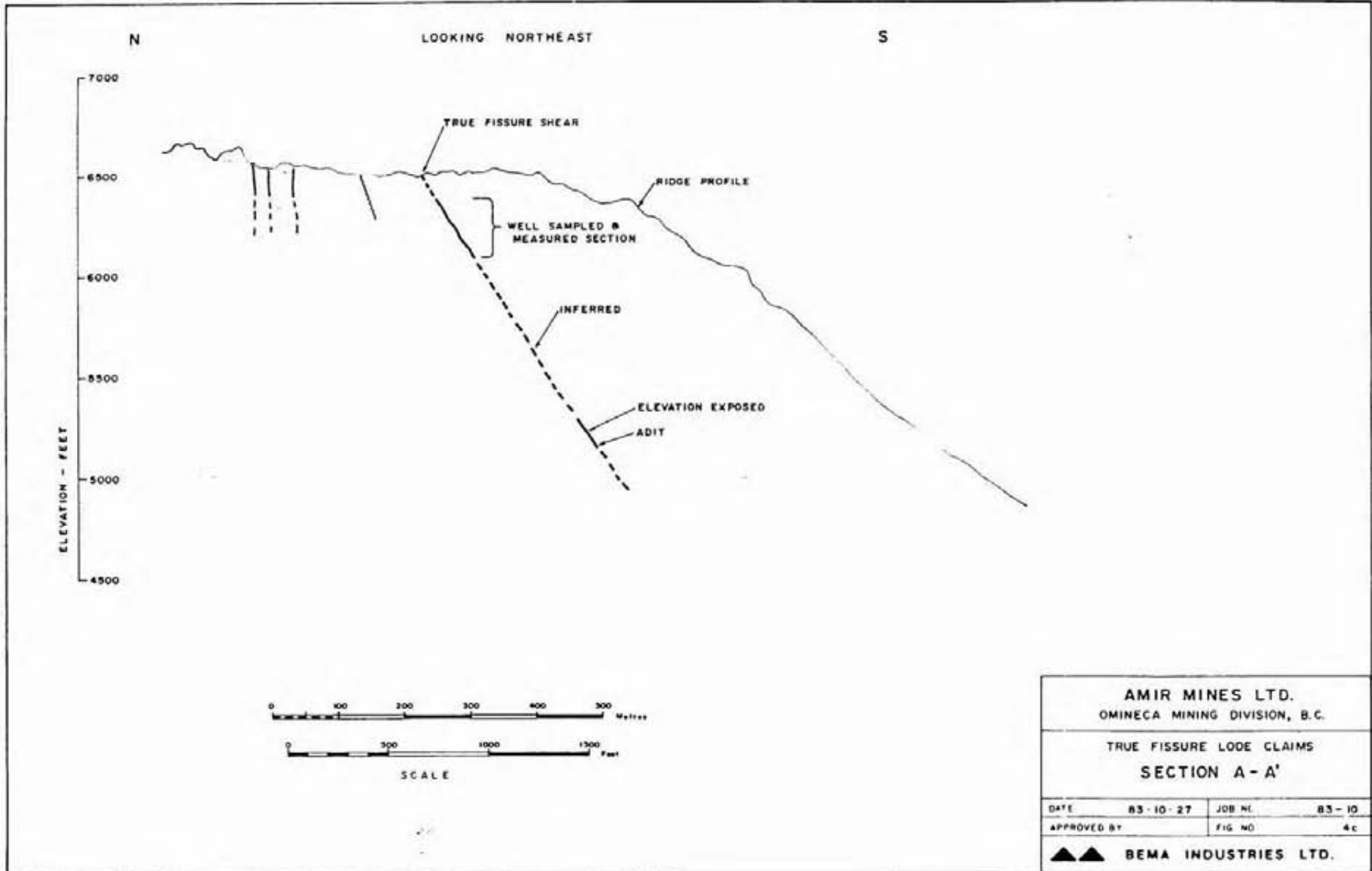
**AMIR MINES LTD.**  
OMINECA MINING DIVISION, B.C.

TRUE FISSURE LODE CLAIMS  
SAMPLE LOCATIONS  
AND ASSAY

DATE	83-10-25	JOB NO	83-10
APPROVED BY		FIG NO	48

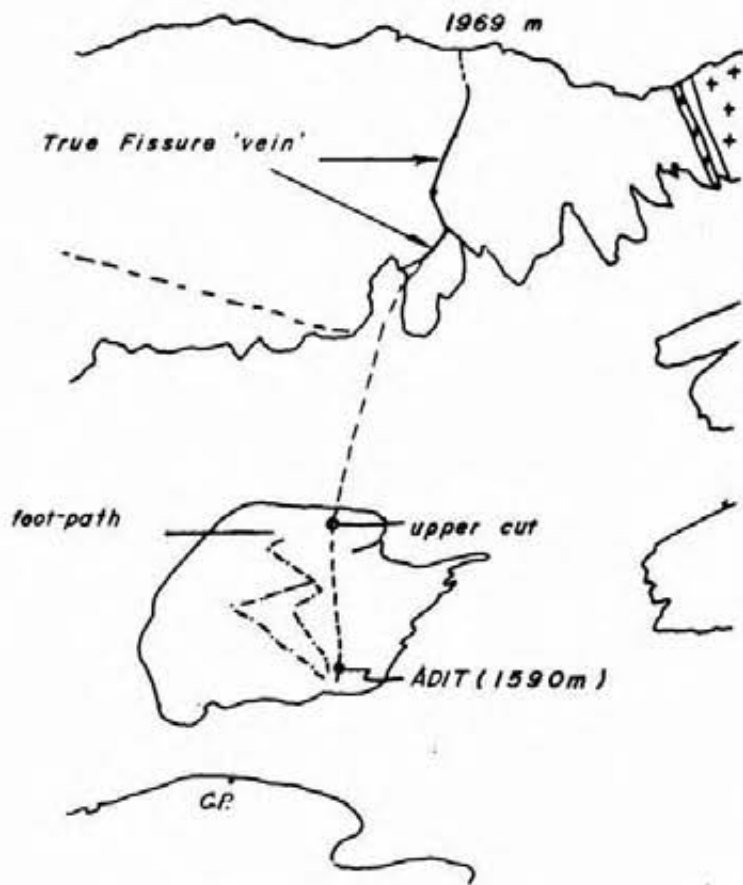
**BEMA INDUSTRIES LTD.**

Geology by: D. Piacash 1980, G. Nardin 1983, C. Edmunds 1983



<b>AMIR MINES LTD.</b>			
OMINECA MINING DIVISION, B.C.			
TRUE FISSURE LODE CLAIMS			
SECTION A-A'			
DATE	83-10-27	JOB NO.	83-10
APPROVED BY		FIG NO.	4c
▲▲ BEMA INDUSTRIES LTD.			





View on True Fissure  
looking West.

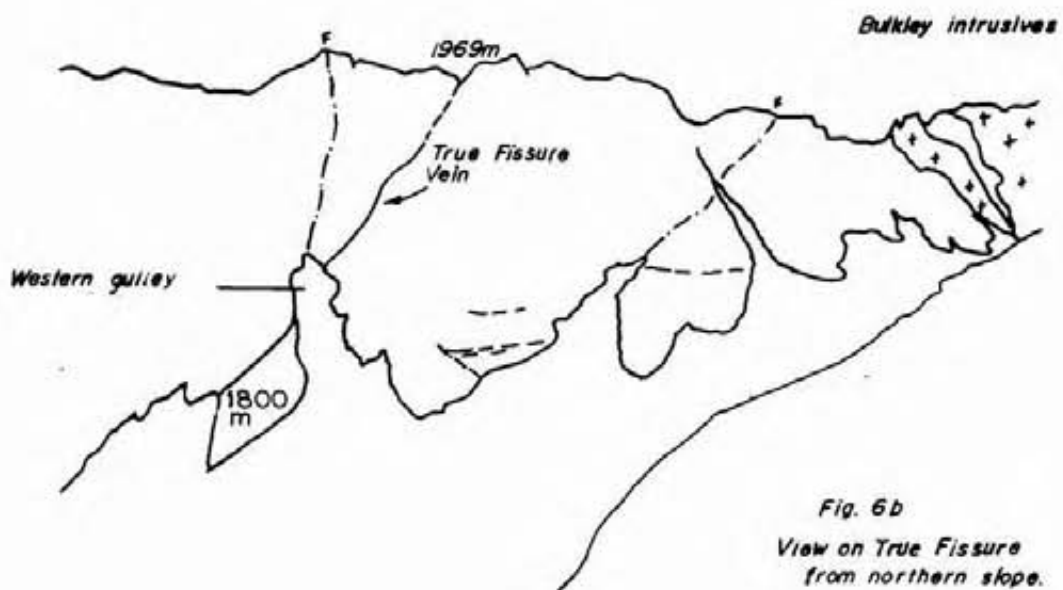
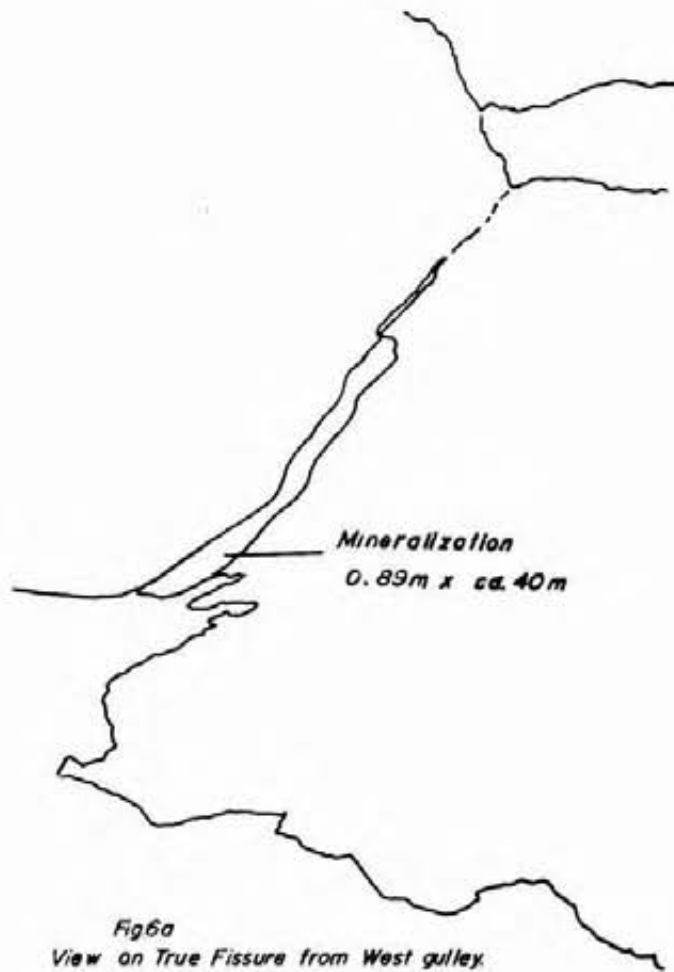
Fig. 5





View on True Fissure  
looking West.

Fig. 5







1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

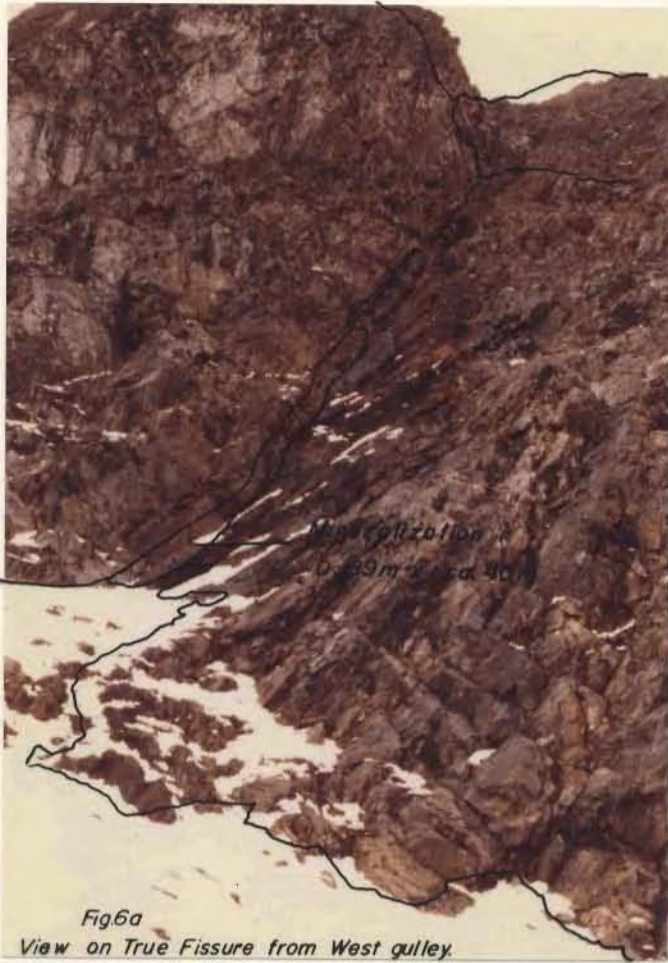


Fig6a  
View on True Fissure from West gulley.





and tetrahedrite in irregular masses within a quartz-carbonate gangue. The vein is basically a mineralized shear zone and is exposed in isolated patches over 150 metres west of the adit. Two isolated analyses for this 150 metre portion yield values of 0.44 - 1.57 oz/ton silver over widths 0.35 m - 0.58 m. West of this point it is assumed that the shear continues under talus, being exposed again at the base of the cliff above the cirque.

### 3.1 MINERALIZATION

Specimens of mineralization were sawn and polished at Vancouver Petrographics. Two polished sections were also made. The mineralization (pyrite-sphalerite-galena-tennantite-tetrahedrite-arsenopyrite-chalcopyrite) occurs as void infillings (ie. vein) and includes brecciated hornfels fragments (Figure 7b). Another specimen showed a vague symmetry in mineral distribution from hangingwall to footwall (Figure 8a). The mineralization-wall rock contact is very sharp.

Polished section studies revealed the following sulphide occurrences:

- Pyrite** Generally the most abundant sulphide usually occurring as large (0.5 - 1.0 cm.) fractured zoned euhedral crystals. The pyrite often contains very fine (0.001 - 0.008 mm.) inclusions which are difficult to identify. On outcrop scale the pyrite usually occurs very close to the wall rock contact.
- Sphalerite** Occurs as intergrowths with the gangue (quartz-carbonate) silicates and as massive (1 - 1.5 cm.) clusters of euhedral crystals.
- Galena** Occurs in the interstices between well formed silicate minerals and often as fine lattice inclusions within the silicates. The larger grains often contain minute inclusions of unidentified metallic minerals.



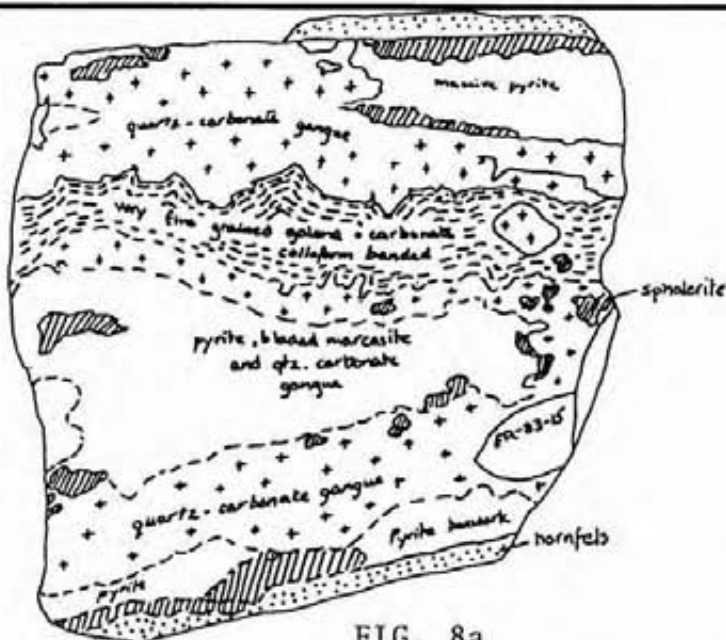


FIG. 8a

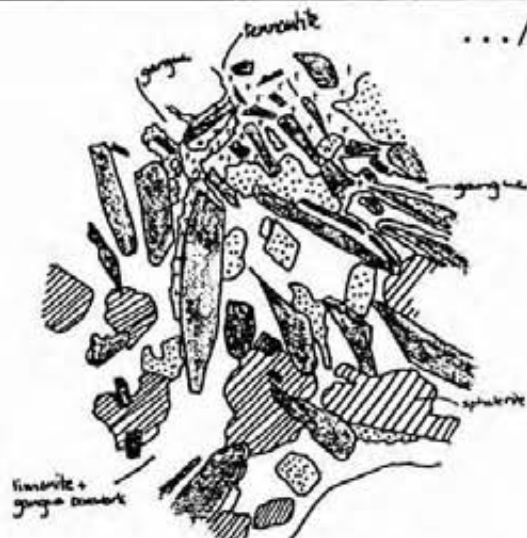


FIG. 8b

Typical Hand Specimen Ore Textures  
(True Scale)

**Tennantite-Tetrahedrite**

Occurs as euhedral crystals 1 - 3 mm. across often in immediate contact with hornfels fragments.

**Marcasite**

Occurs as long fractured blades 0.5 - 1 cm. and is possibly a late stage alteration from pyrrhotite.

**Chalcopyrite/pyrrhotite**

Both occur as minor shapeless blebs in close association with sphalerite and galena.

**Inclusions:**

Galena hosted: these occur as silver white, birefractant curving masses (0.002 - 0.003 mm.) and are softer than galena. They may be argentite exsolutions.

Pyrite hosted: these occur as 0.002 - 0.008 mm. sized shapeless blebs within euhedral pyrite crystals. They are softer than pyrite and vary in colour from those which are silver white and isotropic (galena?) to those which are deeper yellow and isotropic (gold?).

The mineralization traverses a prominent buttress for approximately 40 m. and then is obscured by a small talus run (Figure 5). From the edge of the talus, the shear zone can be traced up the cliff face by sight for approximately 40 m. During this study the lower 15 m. of this exposure were channel sampled (Figure 6) on 5 m. intervals. Grades and thickness are presented below in Figure 4 b.

Mineralization in the shear zone is variable in thickness and in grade along its strike length. Plecash's (1980) results show considerable variation in grade which may be due to the use of a Winkie drill for sampling or may be a real feature of the mineralization.

The mineralized portion of the shear does not cross the ridge separating True Fissure Basin from the adjacent cirque to the west. A narrow zone of quartz and calcite mineralization has been located on the ridge along strike from True Fissure. This is believed to be the extension of the shear zone but lacking Ag-Au mineralization. Another small "vein" is exposed three gullies to the west and is approximately 20 m. in length trending 072°. It is mineralized with pyrrhotite, pyrite and arsenopyrite.

To the east the True Fissure shear is covered by talus and shallow soil cover. An S.P. survey was conducted over this area by Plecash 1980 and one of the lines indicated the presence of an anomalous zone just north of the base line approximately 450 m. to the east of the adit.

### 3.2 PARAGENESIS AND SILVER VALUES

Pyrite-tetrahedrite-sphalerite usually occur as euhedral crystals and are believed to be the first sulphides to nucleate. Pyrrhotite may be included in this category. The others, galena, chalcopyrite and some pyrrhotite are thought to have occurred later on in the depositional process. Arsenopyrite was not seen in polished section.

Assays show no clear correlation between silver content and other elements, ie. Pb + Zn + Cu. The silver may be present in the following states:

1. As variable solid solution in galena
2. As argentite inclusions in galena
3. As Ag-rich inclusions in pyrite
4. As a component in the tennantite-tetrahedrite series.

Best silver values are in the upper, westernmost extension of the True Fissure shear.

4.0      CONCLUSIONS

1. Results of the sampling work by D. Plecash (1980) outlining a silver-gold bearing shear zone on the south ridges of Mount Thoen have been confirmed.
2. An argentiferous galena-sphalerite-pyrite-chalcopyrite-tetrahedrite mineralized shear has been traced for approximately 470 m. and has a width varying from 0.33 m. to 0.89 m. Average grade is 26.6 oz/ton Ag, 0.104 oz/ton Au, and 8.54% Zn.
3. There is geophysical evidence that the "vein" system continues into the alpine meadow to the east for another 500 m.
4. Mineralization is limited to the west only by its lack of exposure on the ridge between True Fissure Basin and the western cirque.
5. The mineralization in the shear has only been well sampled and measured along approximately 100 m. of its strike length, 200 m. west of the upper short trench.

5.0      RECOMMENDATIONS

A two week exploration program is recommended to definitively test the continuation of the vein beneath cover to the east of the adit. It may be necessary to drive a road into the property.

1. Geophysical testing should be done by an I.P. survey on the eastern portions. It may be useful to test survey on the talus between the adit and cliff exposure extending then into the meadow below.
2. Continued detailed property mapping and sampling of the shear zone. This should also include some reconnaissance in the cirque to the west and over the gossanous zones which occur along strike to the east of the True Fissure Basin, on the opposite mountain slope. Further sampling should be modified to panel chip sampling over 20 cm. widths or close spaced 4 hole winkie drill sampling.
3. The area between the upper cut and lower adit should be hand trenched and sampled every 20 m.
4. Cat trenching should be carried out to assess grades and thicknesses if mineralization continues, and bedrock is within easy reach. If overburden is too thick for trenching, shallow drill testing may be necessary.

THOEN 1 - 8 CLAIMS

STATEMENT OF COSTS

SUPPLY, ROOM AND BOARD

Groceries	\$ 200.00	
Camp Supplies	29.30	
Fuel	22.00	
Expediting	294.56	
Communication	54.35	
	<u>          </u>	\$ 600.21

MISCELLANEOUS

Assaying	43.20	
Maps and photos	6.42	
	<u>          </u>	49.62

FIELD LABOUR

C. Edmunds, Geologist		
Sept. 14 - 19, 6 days @ \$175/day	1,050.00	
B. Thacker, Geological Assistant		
Sept. 14 - 19, 6 days @ \$165/day	990.00	
	<u>          </u>	2,040.00

TRANSPORTATION COSTS

Helicopter	\$999.81 x 50%	499.90	
Vehicle	646.87 x 20%	129.37	
Misc.	127.86 x 20%	25.57	
		<u>          </u>	654.84

REPORT AND DRAFTING

C. Edmunds, Geologist		
Oct. 20, 21, 24, 3 days @ \$175/day	525.00	
B. Thacker, Draftsman		
Oct. 17, 19, 24, 25		
3.644 days @ \$185/day	674.14	
	<u>          </u>	1,199.14

TOTAL COST OF PROJECT	<u><u>\$4,543.81</u></u>
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