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Smith-Barrett Molybdenum Prospect
Omineca Mining Division

93 L 7

AMAX Vancouver Office

November, 1966

N. Shepherd

SMITH-BARRETT MOLYBDENUM PROSPECT

OMINECA MINING DIVISION B.C.

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SUMMARY

Previous work by Amax on the Barrett Prospect, located 10 miles west of Houston, B.C., revealed minor molybdenum mineralization in a diffuse quartz-pyrite stockwork developed in a highly argillized and pyritized feldspar porphyry intrusive.

Geological and geochemical exploration of the prospect was hampered by glacial overburden that obscures bedrock over most of the property.

An I.P. Survey and additional geochemical sampling were carried out in 1966.

Results of the I.P. Survey indicate that the altered feldspar porphyry intrusive is more extensive than originally mapped. Low resistivity values were obtained over the entire area of the survey (9,000 x 10,000 feet) and probably extend further to the west and south. These low resistivities suggest the presence of a highly altered and/or mineralized acid intrusive in subsurface outcrop.

Two 350 - 400 foot wide strong I.P. anomalies reflecting bands with very high metallic sulphide content trend northwest through the porphyry. These bands which may form a circular pattern are separated by 2,000 feet of less mineralized and/or altered porphyry. Glacial overburden in excess of ten feet overlies the strongly conductive zones. Previous trenching did not extend far enough west to expose bedrock.

Additional soil sampling substantiated the absence of a geochemical anomaly over the acid intrusive. This is considered to be, in part, due to the nature and depth of glacial overburden.

CONCLUSIONS

Geological mapping has indicated minor amounts of molybdenite in a diffuse stockwork of thin drusy quartz veins contained in a sericitized and pyritized feldspar porphyry intrusive. Outcrop is limited to a few trenches in an area representative of less than 10 per cent of the acid stock.

I.P. and Magnetometer Surveys over the prospect indicate that the altered feldspar porphyry intrusive is considerably more extensive than previously mapped. The two 400 foot wide zones of high metallic concentrations outlined in the I.P. Survey warrant further investigation.

INTRODUCTION

The Smith-Barrett Molybdenum Prospect was brought to the attention of Southwest Potash Corporation in July 1964. Mr. J.F. Allan visited the property and recommended negotiation of an option agreement.

In April 1965 the property was acquired by option and an additional 39 protective claims were staked by the Company.

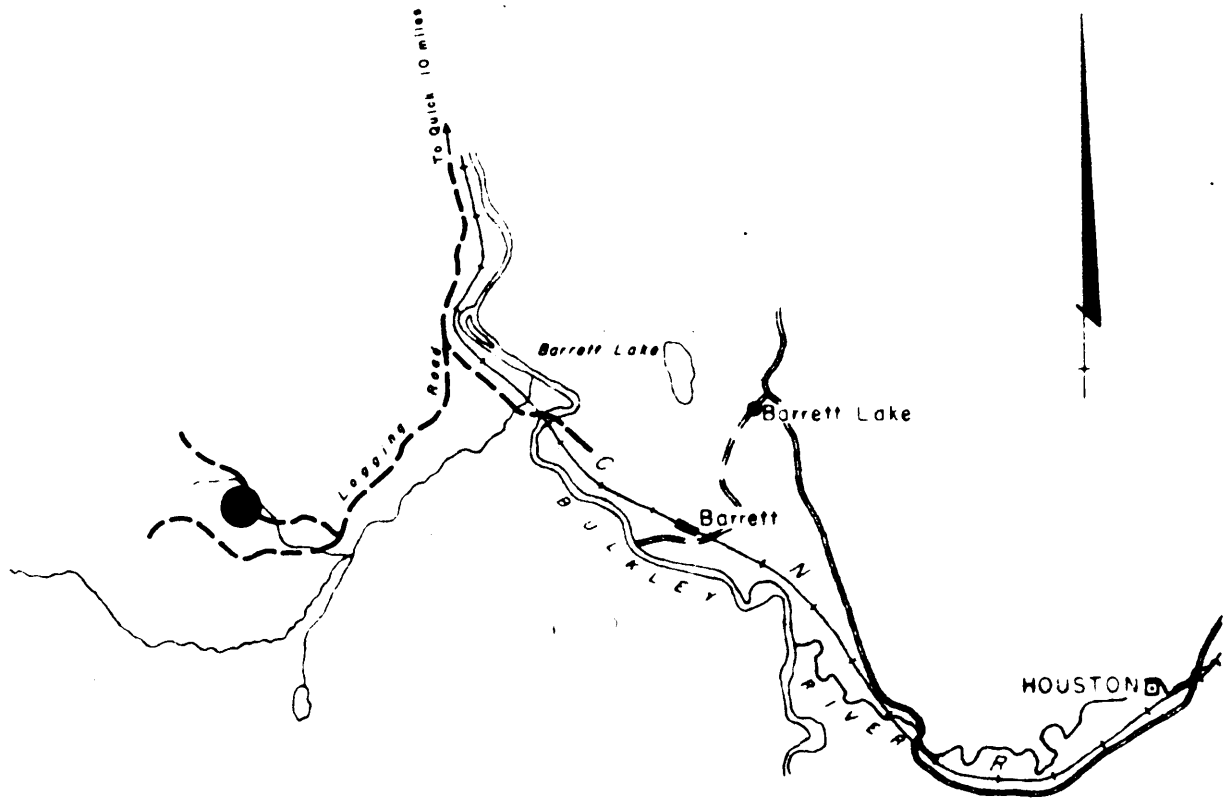
A program of geochemical sampling, geological mapping and magnetometer surveying was conducted over the property in 1965. A total of 1900 feet of bulldozer trenching was done over the central part of the claim group.

In 1966 an I.P. Survey totalling 6.1 line miles was conducted on the property by McPhar Geophysics Ltd. An additional 39 soil samples and stream sediment and water samples were collected to check previous results. An option payment of \$1,500.00 is due on December 31, 1966.

LOCATION AND ACCESS (Figure 1)

The Smith-Barrett Molybdenum Prospect is located on the east flank of the Telkwa Range approximately four miles west of Barrett, formerly a small sectional station on the C.N.R. mainline situated six miles west of Houston, British Columbia. The prospect is situated on a gentle, heavily wooded slope at an elevation of 3200 feet.

Access is by a 14 mile gravel logging road from Quick,



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LOCATION MAP

SCALE 1" = 2 MILES

Vancouver —

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the closest vehicle crossing over the Bulkley River. Alternatively, the property can be reached on foot along a five mile logging road leading from the C.N.R. Bridge across the Bulkley River at Barrett.

PROPERTY (Figure 2)

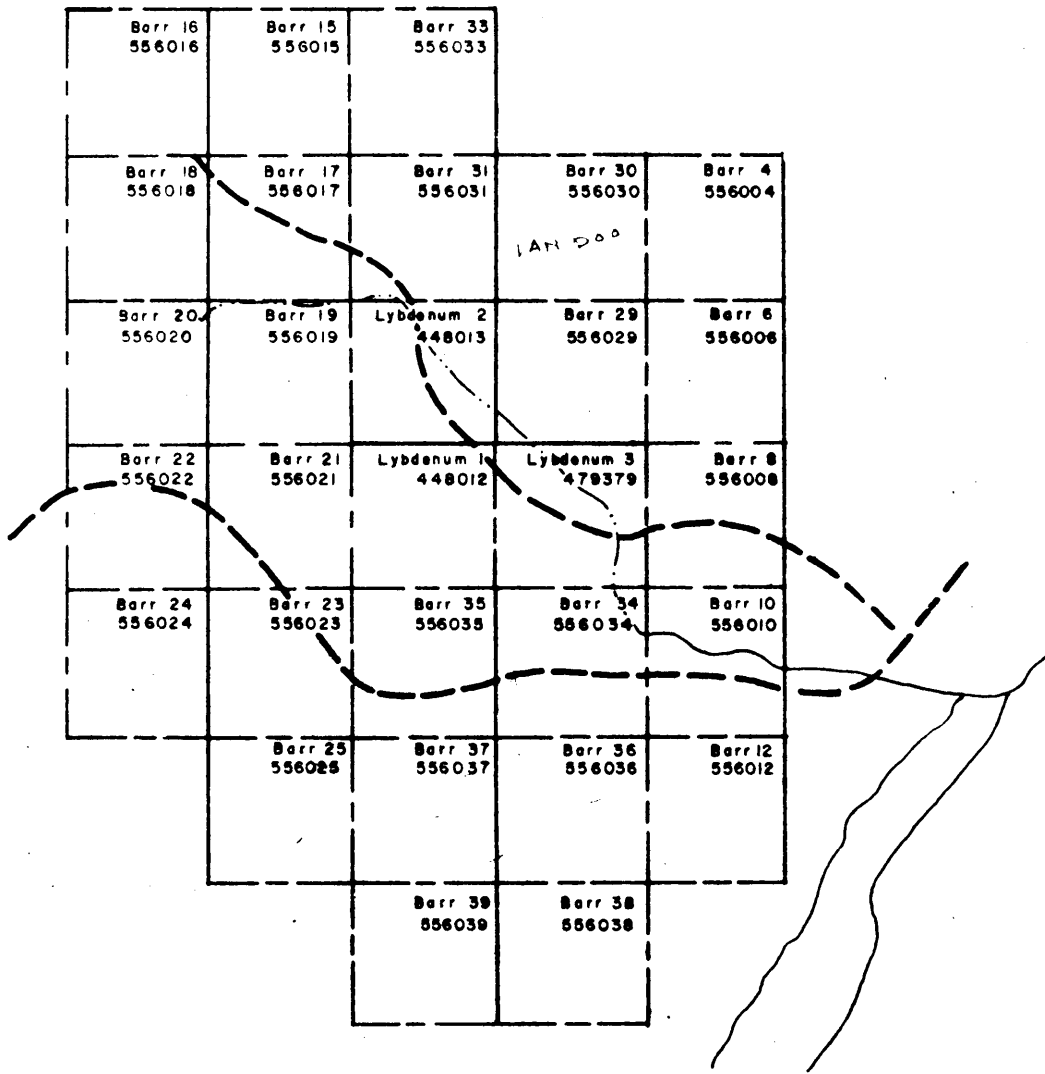
The original property consisted of three claims staked by Mr. W.H. Smith of Houston over a molybdenite showing exposed along a logging road cutbank. These claims were optioned by the Company in April 1965 and an additional 39 protective claims were obtained by direct staking around the initial block. Thirteen of these claims were allowed to lapse in April 1966.

HISTORY

Initial staking of the property was carried out in July 1964 when angular boulders of feldspar porphyry containing molybdenite-bearing quartz veins had been exposed along the cutbank of a logging road. The prospect was examined and sampled by Mr. J.F. Allan. Anomalous molybdenum values were obtained in several samples of residual soil and decayed bedrock collected along the cutbank. It was recommended that the prospect be optioned and a detailed program of geological, geochemical and magnetometer surveying be conducted.

In March 1965 Southwest Potash Corporation staked 39 protective claims around the prospect and acquired Smith's claims by an option agreement dated 15th April 1965.

Geological mapping, geochemical and magnetometer



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CLAIM MAP

SCALE 1" = 2000'

Vancouver —

H.P.

FIG. 2

surveying were conducted in 1965. Low values were obtained in the soil and rock chip sampling over the highly argillized and pyritized feldspar porphyry intrusive. Glacial overburden obscures most of the acid stock. An I.P. Survey was recommended to determine the size of the intrusive and the distribution and intensity of the sulphide mineralization.

GEOLOGY (Figure 3).

Minor amounts of molybdenite occur in a network of thin drusy quartz veins contained in a sericitized and pyritized feldspar porphyry stock intrusive into basic volcanics of the Hazelton Group. The porphyry stock has not been fully outlined on account of glacial overburden. Resistivity values obtained in an I.P. Survey, in conjunction with the magnetic pattern, suggest that the porphyry is more extensive than originally outlined and may possibly have a diameter of two miles.

The porphyry is composed of 1-5 percent quartz eyes and 30 - 40 percent equant orthoclase phenocrysts (2 - 4 mm) embedded in a fine-grained grey matrix. A coarse grained phase with 20 percent hornblende and biotite occurs west of the base line on line 0+00N. This grey syenitic rock may be a coarser grained central phase of the intrusive.

A small quartz porphyry intrusive is exposed in a stream gorge approximately 8000 feet east of the Barrett intrusive. This porphyry is unaltered and contains minor chalcopyrite mineralization.

ALTERATION

The feldspar porphyry is characterized by intense sericite alteration with moderate argillic alteration which is accentuated by surface weathering.

Pyrite mineralization (5 - 8 percent) is widespread, both as a fine dissemination and as crystalline aggregates scattered throughout the porphyry. Pyrite also occurs as a coating on joint planes and as a core to narrow, vuggy quartz veins.

Quartz veining rarely attains a density of more than 3 veins per foot and is best developed in a diffuse stockwork in the three central trenches over an exposed area of 300 x 1000 feet. The quartz veins are generally less than 1 mm in thickness and frequently have a fine crystalline pyrite core.

MINERALIZATION

Pyrite mineralization, mainly as a fine dissemination, constitutes 5 - 8 percent of the feldspar porphyry.

Fine-grained molybdenite mineralization is very sparsely distributed in narrow quartz veins. Nowhere does the grade exceed 0.01% MoS_2 over an appreciable width in any of the trenches.

A two foot wide zone of anastomosing vuggy quartz veins containing clusters of fine molybdenite flakes in geodes lined with quartz prisms occurs near the west end of trench #2. Minor chalcopyrite and sphalerite are associated with the molybdenite in this vein system which may actually be a small pod or lens.

A representative grab sample of this zone assayed 0.49% MoS₂ and 0.05% Cu. A two foot fragment of bedrock with a 1 mm molybdenite smear on the wall of a 2 mm quartz vein was ripped from the bedrock 20 feet west of this high grade zone.

GEOCHEMISTRY

An additional 39 soil samples were collected over the porphyry intrusive. Results substantiated the negative values obtained in a previous extensive geochemical Survey over the property.

I.P. SURVEY

An I.P. Survey conducted over the area indicates that the acid intrusive and associated sulphide mineralization are more extensive than originally mapped. Unusually low resistivities were obtained over the entire area surveyed (9,000 x 10,000 feet) and probably extend further west and south. These low resistivities reflect widespread intense alteration and/or pyritization.

Two northwest trending strongly anomalous zones with a suggestion of a circular pattern occur within the survey area. These 300 - 400 feet wide zones with metal factors ranging from 200 to 1000 are separated by approximately 2000 feet of less strongly altered and/or mineralized porphyry. Trenching has not extended far enough west to explore these strongly conductive zones.

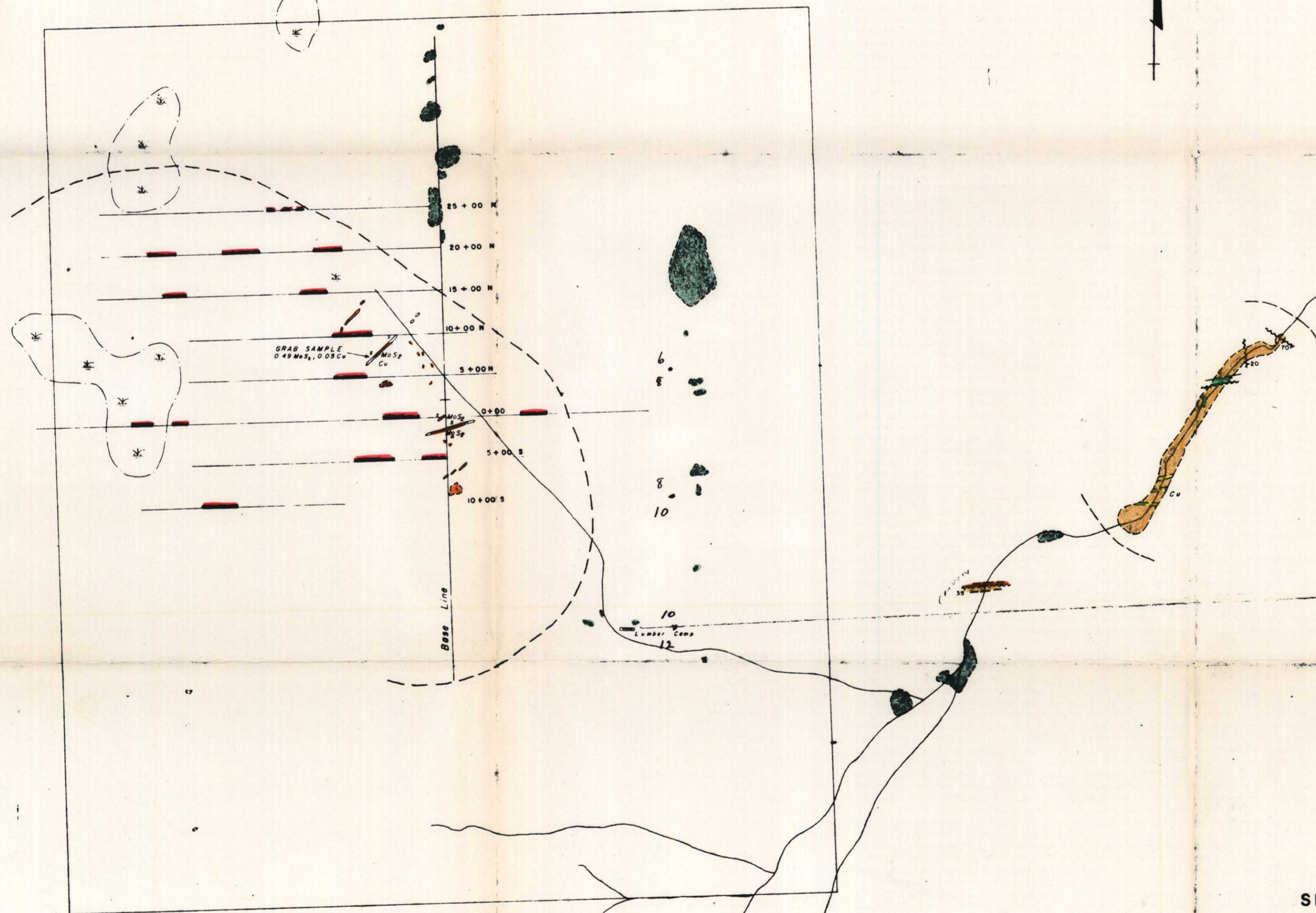
A characteristic of all I.P. profiles on the Barrett

Prospect is the increase in metallic content with depth. This feature, which is especially noticeable in the highly anomalous bands may be attributable to surface leaching, although only minor voids are evident on outcrops.

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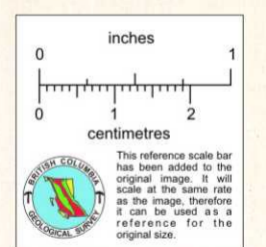


L E G E N D

- TERTIARY INTRUSIONS
- Quartz feldspar porphyry.
 - Quartz porphyry.
- HAZELTON GROUP
- Basalt.
 - Agglomerate.
 - Argillite.

S Y M B O L S

- Geological contact.
- Outcrop.
- Fault.
- Trench.
- Swamp.
- Stream.
- Silicification.
- MoS₂ Molybdenite mineralization.
- Cu Copper mineralization.
- I.P. Conductor.



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GEOLOGICAL MAP

SCALE 1" = 1000'

To accompany report "SMITH-BARRETT MOLYBDENITE PROSPECT" by:
 N. Shepherd