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PRELIMINARY  
**REPORT**

ON  
MILLER CREEK

COPPER-MOLYBDENUM

TO DECEMBER 31, 1968

=====  
SKEENA

MINING DIVISION

J. J. MCDOUGALL

Vancouver, B.C.  
February, 1969

Original - Toronto Office (W.B.G. Walker)  
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1- J. J. McDougall

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1- E. Specognat

PRELIMINARY REPORT

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MILLER CREEK COPPER-MOLYBDENUM

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J. J. MCDOUGALL

P.N. 153

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PRELIMINARY REPORT

ON

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TO DECEMBER 31, 1968

J. J. MCDUGALL

NAME

Miller Creek Copper-Molybdenum (project #153)

PROPERTY AND OWNERSHIP

Block of 76 located claims (Mino claims plus others) in the name of Mr. E. Specogna, Juskatla, Graham Island, Q.C.I., B.C.

LOCATION AND ACCESS

Claim group runs from the lower two miles of Miller (Chinukundl) Creek northwesterly to the upper reaches of the Tlell River (map MC 1-68). The main showings are from 3 - 6,000 feet in on Miller Creek from the bridge on the paved highway connecting Queen Charlotte City 12 miles away with Masset and Juskatla.

A second mineralized zone (not visited because of exceptionally high water in the creeks) on the Tlell River is accessible by several miles of trail (overgrown access roads built during a settlement boom 60 years ago) leading from the highway a couple miles north of Miller Creek.

The area is heavily timbered and has not been logged thus travel is not yet impossible. Light to heavy overburden is the rule and outcrop is restricted to a few incised creek beds.

Maximum elevation on the claim group does not exceed 1,000 feet. In the vicinity of the Miller Creek showings creek elevation is about 2 - 300 feet and relief about 400.

## HISTORY AND DEVELOPMENT

The only recorded mining activity on this portion of Graham Island was at the old "Southeaster" camp located a couple miles north of Skidegate village (rapidly examined by the writer and Albert Jones in 1955 or 56) where "mustard gold" is associated with quartz and calcite veinlets (writeups in B.C.M.M.'s 1910 - 1936).

Specogna, a logger and self-taught prospector, noticed rusty weathering outcrop along the steep bank of Miller Creek. Blasting into these and several others found a few thousand feet further along revealed the presence of chalcopyrite, galena, sphalerite and molybdenite. Across narrow widths some impressive mineralization was evident and with the accompanying low grade disseminated material staking of the claims (1967) was warranted.

Mineralization on the Tlell River (where an old adit or prospect pit was discovered) suggested a northwesterly trending zone so the claim group was made to extend this far. Sutherland Brown of the B.C. Department of Mines reports (private conversation) finding molybdenite float on the upper Tlell.

One large company (Hudson's Bay Exploration & Development) examined the original prospect on Miller Creek in 1968 but found it too small, etc. Specogna (a co-worker of N. Bidiuk whose Rennell Sound property we examined early this year) then made some rather extensive Ponjar rock cuts in which somewhat better mineralization was noticed and because of our interest in Bidiuk's property contacted us for this examination. Coincidental with a salvage trip to Tasu, the writer and Jim Robertson accompanied by the owner spent October 9th and 10th going over the Miller Creek prospects. Exceptionally high water slowed the work down despite proximity to the highway. About 70 soil samples taken by Specogna have now been analyzed.

A preliminary option agreement was signed by Specogna in mid November. During the period November 18 - December 8 a crew consisting of John Schussler, Carl Holtz, and Nev Wilkinson enlarged on the earlier soil and silt work collecting some 600 additional samples. Included was the rounding out of the "Moly Grid" (map MC4/68) on and north of the Miller Ck. MoS<sub>2</sub> showings plus silt sampling of a few selected "crosscutting" creeks between Miller and the Upper Tlell. In addition, M.F.1 magnetometer readings were taken at the soil sample sites (map MC5/68) as some magnetic attraction was evident. Unfortunately hoped for prospecting work toward the headwaters of these creeks proved impossible due to exceptionally foul weather and shortage of daylight.

#### ORE

Chalcopyrite-molybdenite (minor PbS., ZnS.)

#### GEOLOGY

The eastern half of Graham Island, unlike Moresby, has low relief and extensive soil and vegetation cover. Thus geological mapping and investigations have been skimpy. An early composite G.S.C. geological map (#278A) using considerable interpolation, outlines two Jura-Cretaceous (?) plug-like granitic bodies along the Tlell River. The southernmost of these is believed to cut older (Yakoun formation) rocks but clarity is masked, at least in accessible areas, by Tertiary sedimentary and volcanic cover. A recent unpublished sketch map by Sutherland Brown (M 62/68) indicates northwesterly trending faults in the area. Specogna's property probably occurs near the easternmost exposure of this granitic body (grano-diorite to diorite?) near an infaulted (?) wedge of Yakoun volcanics. Certainly Tertiary sediments and basalts cover the intrusive immediately east of the mineralized zones.

Outcrop is so limited that even the directions of the contacts are uncertain although Brown postulates a northwest trending fault contact marking the eastern side of his wedge and a northerly one on the west is suggested.

#### DESCRIPTION OF PROSPECT

Mineralization occurs within altered sections of the granitic rock and in somewhat skarnified sedimentary and volcanic rocks. On the north side of Miller Creek about 3,000 feet in from the road a 50 - 100 foot exposure of altered (chloritized hornblende?) grano-diorite exhibits a spaghetti-textured appearance caused by a myriad of narrow calcite (plus possible laumontite) quartz veinlets (#1 showing). At least one 5 - 10 foot section of this much faulted rock shows increased alteration consisting of somewhat brecciated material containing less mafics and more (later) flesh coloured feldspars (orthoclase?) (feldspathized??). Irregular gobs and splotches of molybdenite with minor pyrite occur across a couple feet of the northwesterly trending zone worked on. Narrow (1/32") but irregular and often slickensided coatings occur on a few of the fractures.

There has not been enough work done on this molybdenite occurrence to prove it more than a local feature limited to the couple feet of fresh rock as exposed. About 50 feet of cliff to the south shows feldspathization (introduction of orthoclase); low grade mineralization may be present beyond the weathered surface. Overall attitude is unknown. Several rather strong faults parallel the creek (map MC 3/68) but a generalized northwesterly trend is indicated. Specogna reports recent discovery of  $\text{MoS}_2$  in place in granitic rock 2,500 feet to the northwest. Miller Creek in this area makes a number of bends thus mineralization can not be related to any one paralleling fault.



The copper zone (#2) as presently exposed is located along the north bank of the Miller some 600 feet above the molybdenite showing (map MC3/68). Here a rusty weathering and much shattered zone of (included) highly altered basic volcanics is exposed for a couple hundred feet along the steep creek bank. Altered pyrite plus weak chalcopyrite is evident across a width of 50 - 60 feet but mineralization of consequence (chalcopyrite) is limited to a 5 - 10 foot somewhat fault controlled section.

The myriad of white veinlets so noticeable in this area is composed largely of laumontite, a zeolite-type mineral resembling calcite. It occurs largely as breccia filling in altered basic volcanic rocks (petrographic description enclosed).

#3 showing, exposed in the bed of Miller Creek several thousand feet upstream from #2, consists of narrow stringers of galena-sphalerite chalcopyrite mineralization again related to faults and shears in the much fractured granitic rock. Numerous skarn-like inclusions plus the network of calcite (laumontite?) veinlets suggest proximity to a contact. Better mineralization is related to northerly trending faults as is the case at #2 showing but a minor amount of sulphides do occur in the country rock within a few feet of these stronger structures.

#### ASSAYS AND RESERVES

Our sampling across 20 feet of the much fractured main copper zone (#2) returned two ten-foot sections running 0.32 and 0.77 percent copper respectively. Judging by results of a central five-foot section (0.94 Cu., 0.4 Ag.), a silver content of about 0.3 is probable.

A six-foot sample across the "lead-zinc" zone (#3) (3,000 feet further up the creek - altered granitic rock) ran 0.68 copper, 0.12 lead and 0.25 zinc.

On the molybdenite zone (#1) - in granitic rock 600 feet downstream from the copper - assays over the central twelve inches ran 0.88% MoS<sub>2</sub> but the overall six feet returned only 0.03% MoS<sub>2</sub> and the outer twelve feet only 0.015%.

#### SOIL SURVEYS

Sufficient soil sampling has not yet been done to establish an overall picture but, in the absence of appreciable copper or silver and assuming values of 3 ppm Mo. to be anomalous, a northwest trending zone is definitely suggested (map MC4/68). Specogna has, while doing further soil sampling along this trend, found MoS<sub>2</sub> in granitic rock 2,500 feet to the northwest. The area has not been geologically checked. A third occurrence of MoS<sub>2</sub> 600 feet south has been reported as has the presence of MoS<sub>2</sub> in place on the Tlell end of the claim group. Early snow and shortage of daylight prevented useful examination of the latter.

#### MAG. SURVEY

As local magnetic deviation was noticeable, a number of M.F.1 mag observations were taken. Except for possible alignment with Miller Creek, nothing anomalous was noted.

#### CONCLUSIONS AND RECOMMENDATIONS

The property as presented is one of a prospecting area and not a defined and limited prospect. The presence of molybdenite (rare on the Charlottes) in place on the Miller and as float four miles to the northwest

with at least one unexamined occurrence in between plus the association of copper (also found four miles away on the Tlell) within the much fractured granitic and included sedimentary rock suggests that such an area requires prospecting. Outcrop is limited to the occasional creek cut thus geochemistry and float prospecting would appear to be the tools required. Elliott suggests the weakly anomalous results to be meaningful in the area as described (forested with up to twenty feet of overburden) and Sutherland-Brown has hopes for this completely neglected zone. Others (Hudson's Bay, Pechiney Explorations, etc.) have plans for this area also.

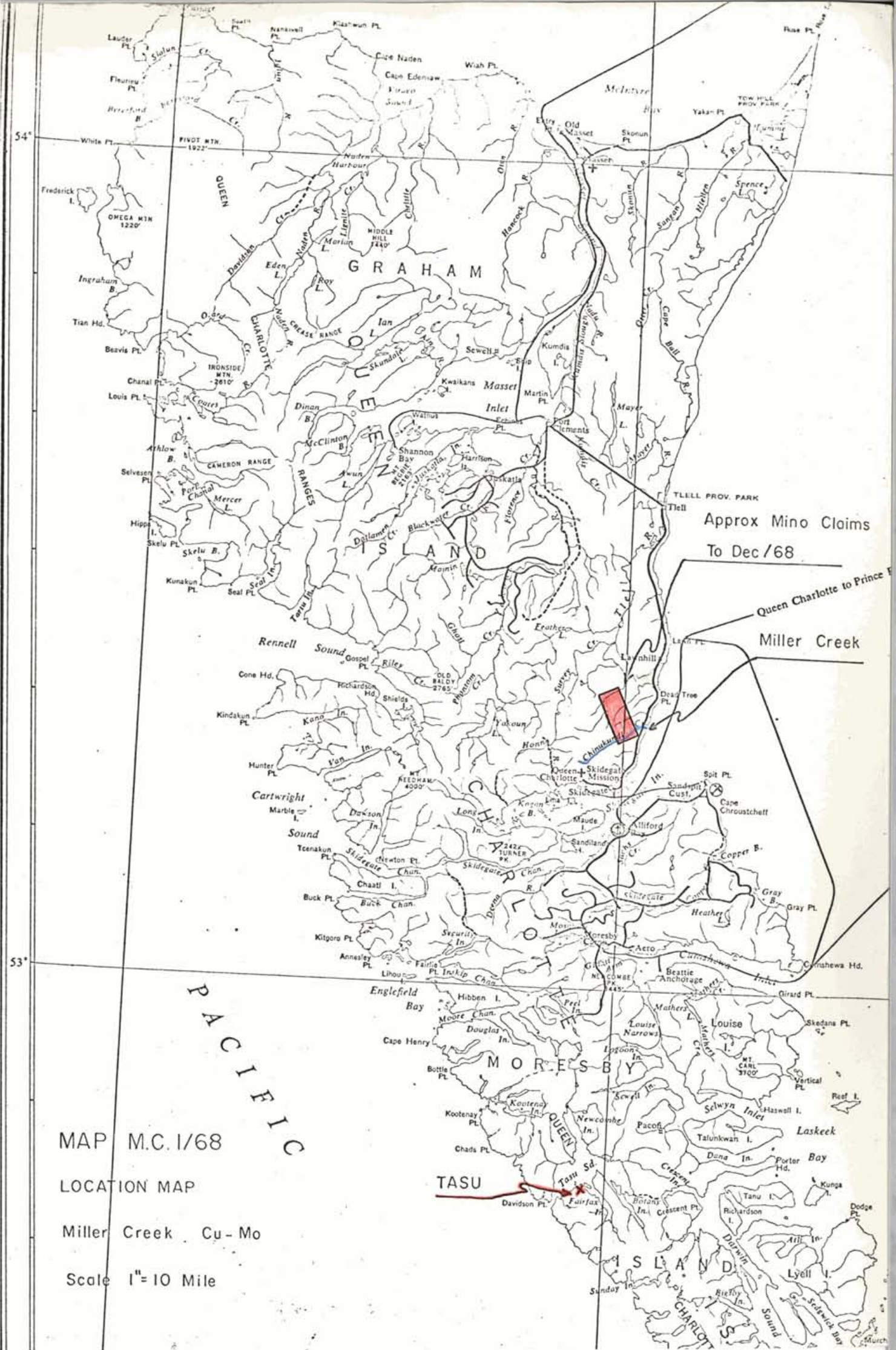
An option agreement has been drawn up with Specogna and a program, using our helicopter in part, will be undertaken when weather conditions are suitable. Specogna will try to locate a few more strategically located claims before other groups can get in and will continue casual silt sampling.



J. J. McDougall

Vancouver, B.C.

February, 1969



54°

53°

MAP M.C. I/68

LOCATION MAP

Miller Creek Cu-Mo

Scale 1" = 10 Mile

Approx Mino Claims  
To Dec/68

Queen Charlotte to Prince

Miller Creek

TASU

Tasu

Fairfax

PACIFIC

GRAHAM

ISLAND

MORESBY

QUEEN

ISLAND

CHARLOTTE



Dec 1  
Dec/68

MINERALOGY.

- Laeumontite: low grey birefringence; length - slow; 3 good cleavages; inclined extinction; perpendicular to Y = 30 deg.; biaxial negative  $2V = 30$  deg.; low negative relief; occurs as breccia filling.
- Plagioclase: neutral relief; polysynthetic twinning.
- Quartz: low positive relief; uniaxial positive.
- Epidote: high positive relief; high birefringence.
- Chlorite: anomalous blue and brown, flakes.
- Opaques:

DESCRIPTION.

Less than 30 mm breccia fragments, many contorted, occur in a filling of less than 3 mm, directed, subhedral laeumontite with f.g. subhedral opaques; anhedral, f.g. epidote and chlorite. Some rare, less than 1 mm, oval lithic chlorite fragments are present. A few vague lithic fragments, about 5 mm in size, contain epidote, chlorite, quartz, plagioclase and f.g. laeumontite. 5 mm lithic fragments are porphyritic. Vague albite in a v.f.g. feldspar matrix. Laeumontite is present here too, probably as a replacement.

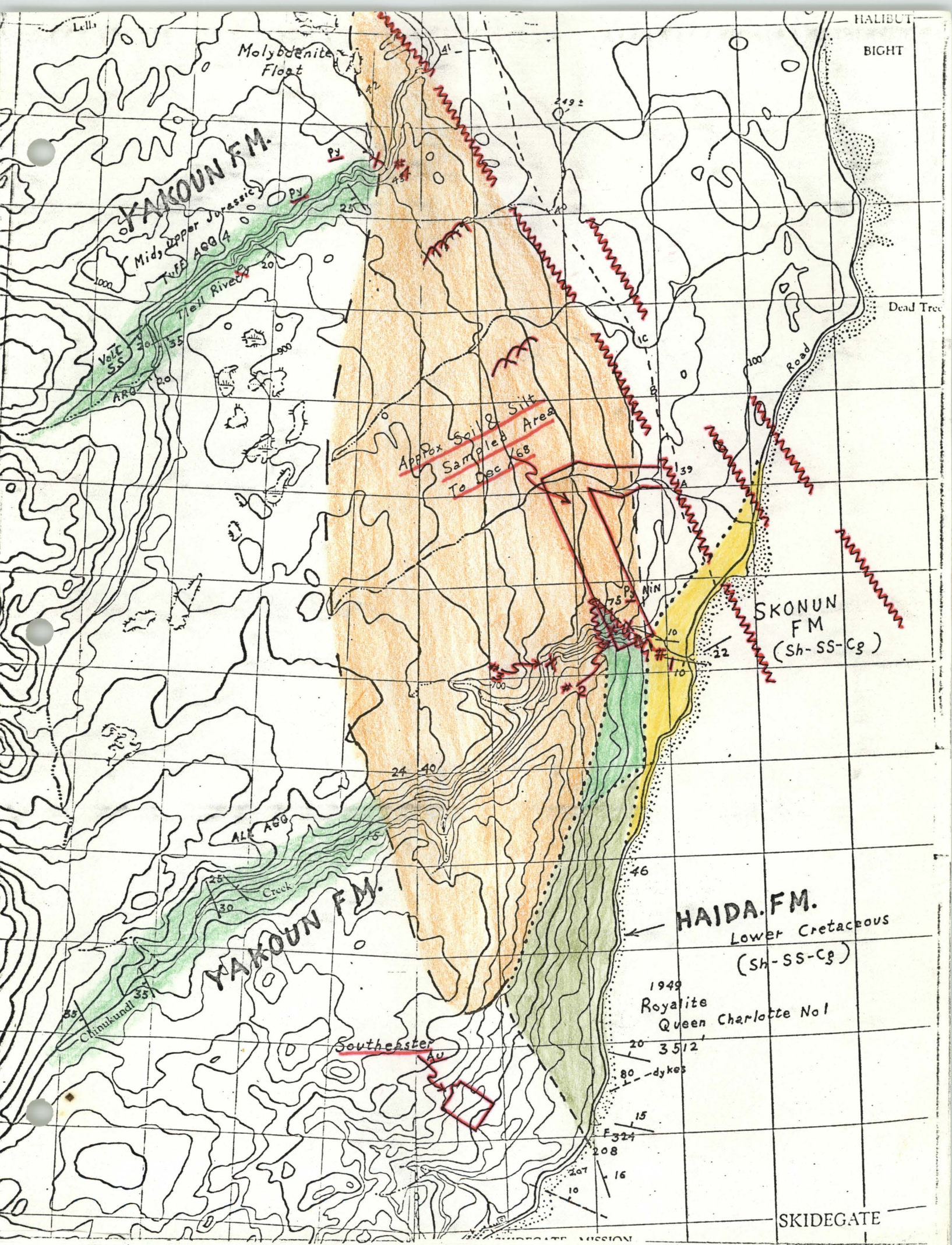
Laeumontite typically fills open space in igneous rocks.

INTERPRETATION.

The following is a probable geological history of the rock.

1. Metamorphism - volcanic rocks (some pyroclastic) with a greenschist facies.
2. Redeposition and Consolidation.
3. Brecciation.
4. Filling in partial replacement of laeumontite.

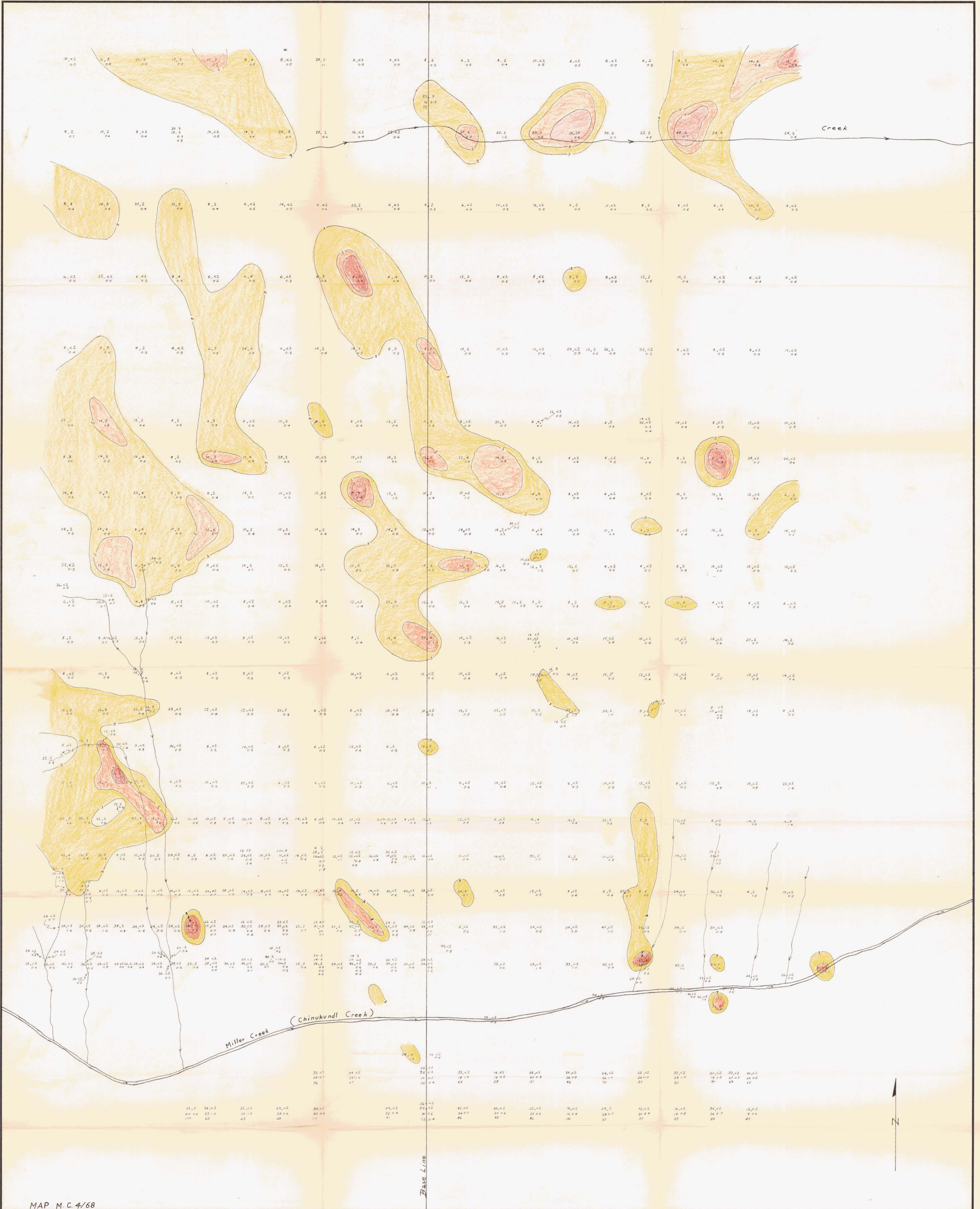
H. T. CARSWELL



MAP MC. 2/68

Generalized Geological - Locations Map  
 Miller Creek Area QCI.  
 Geology after B.C.D. Mines (A.S. Brown)  
 Scale 1:25" = 1 Mile

- Tertiary Sandstones Skonun F.M.
- Yakoun F.M. upper Jurassic  
+ Masset ? Lavas  
Agglomerate, tuff, lava flows
- Granitic Intrusive Qtz Diorite (S)  
Monzonite (N) Late Cretaceous  
or Tertiary
- Haida F.M. (Lower Cretaceous) (Sh-SS-Cg)
- Mineral Showing (referred to)
- Fault (Probable)



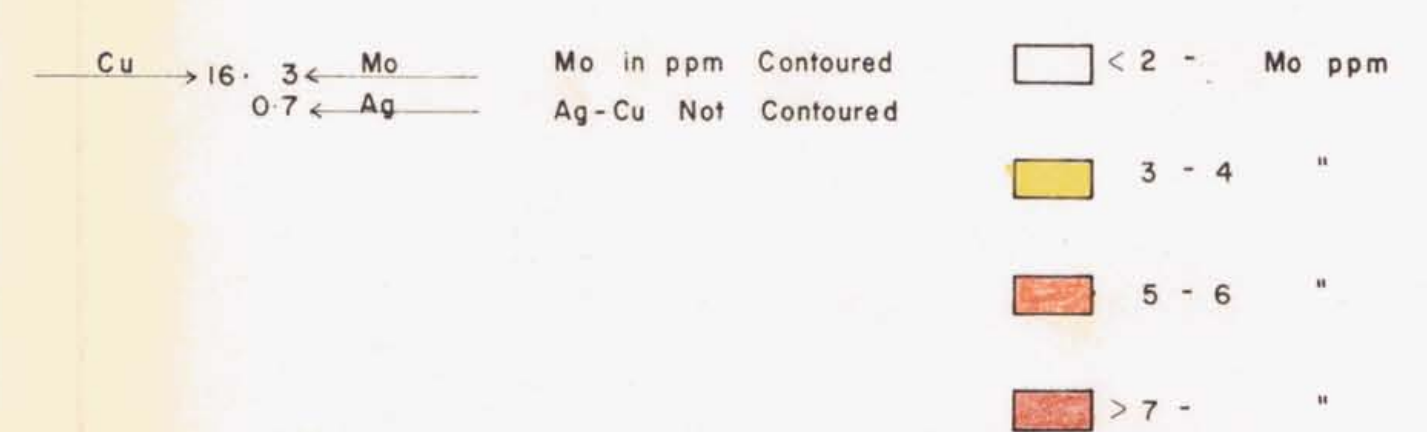
MAP M. C. 4/68

FALCONBRIDGE NICKEL MINES L.T.D.

Soil Sample Map Miller Creek QCI

Dec. 68

Scale 1"=100'



MAP REF. NO.:  
N. T. S.:

