October 16th, 1969.

### CHEMAINUS RIVER AREA

#### PURPOSE

J.C. Stephen and Paul Stevenson investigated this area between October 9th and 13th, 1969, inclusive. This provided an assessment of the prospecting merits of an area held by Mr. George Smith under agreement from the E & N Land Grant.

### CONCLUSIONS

No apparently economic mineralization is indicated in the area under primary investigation. The area in general appears to be favourable prospecting ground.

#### METHOD

### Geochemistry

Only three silt samples were taken. Creeks were found to be steep with little or no silt available except in the lowest reaches where logging has disturbed the ground and possibly contaminated the streams.

Soil sampling would be feasible and useful in possible investigation of individual showings. A possible east and west extension of the Comego structure could be searched for using this method.

## Prospecting

It was assumed natural exposures in creeks and on steep slopes have been well prospected. Steep mountainsides provide extensive exposures which were examined from various vantage points, some by low power telescope. No indication of gossan zones was seen. Widespread talus also failed to indicate mineralized areas.

Air photos taken in 1968 were used to plot outcrops seen along the many logging roads. Only very short traverses were made away from roads.

### RESULTS

From southeast to northwest the following indications of mineralization were found:

#### Fracture Zone

About 3000 feet east of Reynard Creek the granodiorite is extensively fractured. Feldspar porphyry dykes in this area are also well fractured. Rusty weathering carbonate is present. There is no sulphide mineralization. The zone of fracturing is in marked contrast to the usually fresh massive grey granodiorite.

### Comego Showing

About 6000 feet east of Sherk Lake a strong skarn zone is exposed on the logging road. Some of this skarn is well mineralized with chalcopyrite. Along the general strike direction other significant showings were found at intervals for a total length of 2500'.

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Isolated fragments of skarn were found for an additional 1000 feet to the east. Additional mineralization was found in volcanics on the logging road about 500 feet north of this main zone.

The main zone appears to dip to the south. Reference should be made to Bulletin No. 37 pp 57-60 for description of the geology. Grade of 2% copper over 6 feet appears possible but the zone is probably not continuous.

Weak skarn was found in volcanics near the granodiorite contact about 10,000 feet to the east. Continuation of the zone to the west is possible. The main showing is presently staked and held by Hibernia Mining Co. A picket line grid has been established this year.

# Pyrite, Pyrrhotite Zone

In the creek at the north boundary of the Silver Leaf showing a silicified zone occurs which is mineralized with some pyrite and pyrrhotite with rare specks of chalcopyrite.

The zone is not well exposed except in the creek bottom.

It is probably over 300 feet in length and in excess of 20 feet in width. No indication of economic mineralization was found.

## Pyrite, Chalcopyrite Zone

On the north boundary of the "Area of Primary Investigation" the volcanics are fractured, silicified, mineralized with pyrite and minor chalcopyrite, and intruded by feldspar porphyry dykes. Some of the feldspar porphyry is mineralized with pyrite and there appears to be two types of this porphyry. The zone extends northwest and is probably over 1500 feet long and possibly 300-400 feet wide. Mineralization appears sparse however. No ore grade mineralization was found. Grab samples have yet to be assayed.

On the west side of the main creek flowing north, similar mineralization was found about 4500 feet to the northwest of the main exposures. This may or may not be the same structure.

Jump Creek No. 1

On the logging road 4500 feet north of Delphi Lake, the granodiorite is sparsely fractured with narrow quartz and quartz-pyrite fracture filling.

# Jump Creek No. 2

On the logging road 8000 feet north of Delphi Lake, sparse fracturing in a more basic intrusive (diorite) shows quartz veining with pyrite and chalcopyrite. Mineralization is sparse.

El Capitan, Cottonwood, Silver Leaf, Delphi

These showings were not individually examined. Reference should be made to Bulletin No. 37 for description. No evidence of widespread mineralization was found from float, talus and visual examination of mountain slopes.

#### GENERAL

The granodiorite normally is massive and fresh in appearance. Except on Jump Creek no mineralization was observed Contacts are sharp and "cold" with small dykes extending into the surrounding volcanics. There is no evident halo of alteration.

The volcanics designated "Volcanic Breccia" and assumed from Bulletin No. 37 to be Permian or older are not markedly different from volcanics seen to the west. Much more thorough examination would be required to find a contact. This did not appear to be economically feasible.

A number of south trending carbonate zones which weather to a rusty colour were seen cutting volcanics and granodiorite. There was no mineralization evident. These zones appear to follow south trending faults and shears. They are most common in the general vicinity of the Comego showing.

Minor pyrite mineralization with rare chalcopyrite is common in and near diabase. Minor pyrite is common in the cherty tuffs and sediments.

Courtesy and cooperation of the MacMillan Bloedel staff were much appreciated.

