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GEOLOGICAL REPORT
Claims MC 3, MC 5 → MG not MC
CARIBOO MINING DISTRICT

FOR

CENTRAL BRITISH COLUMBIA EXPL., Ltd.

by

JOHN G. PAYNE, PhD
July 1, 1975

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GEOLOGICAL REPORT
on claims
MC 3 and MC 5
Cariboo Mining Dist.
for
CENTRAL BRITISH COLUMBIA EXPL.
BY

JOHN G. PAYNE, PhD

Introduction

Claims MC 3 and MC 5 (part of a larger claim group called the Giscome property in previous reports) are 3 miles east of the now-being-abandoned village of Giscome. Giscome is connected to Prince George by paved road, and the mining property is accessible by gravel road which passes through the property en route to a forestry lookout tower.

This work was done on June 23 and 24, 1975 on claims MC 3 and MC 5 and on the surrounding country. The claims are held by Jack Gerlitzki in trust for Central B.C.Explorations, Ltd., who are paying for the work.

The location of the claims is shown in Fig. 1.

Geological Introduction

Previous work on the Giscome property has been extensive; however, much of it has not been guided by proper geological criteria, and has been of little value in assessing the deposit. The deposit consists of bands of sphalerite and galena in a banded skarn at the contact of a limestone (now marble) and greywacke (now biotite-gneiss). Most of the skarn has formed from the gneiss. Late quartz-plagioclase porphyry dikes crosscut the metamorphic terrain, and postdate skarn and sulfide formation. As an example of the lack of direction in previous work, on the basis of a magnetometer survey, one-year's drilling was done in a body of serpentinite a few hundred meters south of the skarn zone.

My first involvement with the property was in the spring of 1974, when I relogged the available drill core and submitted a geological report to Central B.C. Expl. This relogging showed that much of the previous geological work was of little value because of inconsistencies in logs of equivalent rock units, and many mistakes in identifying some units. On the basis of this study and with reinterpretation of previous geological surface maps, the geological model of the sphalerite and galena being formed in a skarn zone at the contact of gneiss and marble, was developed. The origin of the skarn and of the sulfides was not apparent; no suitable source of metasomatising fluids is exposed in the region.

Thus it was decided that the next step would be to study in detail the surface exposures of the contact of the marble and gneiss, and that study constitutes the bulk of this report.

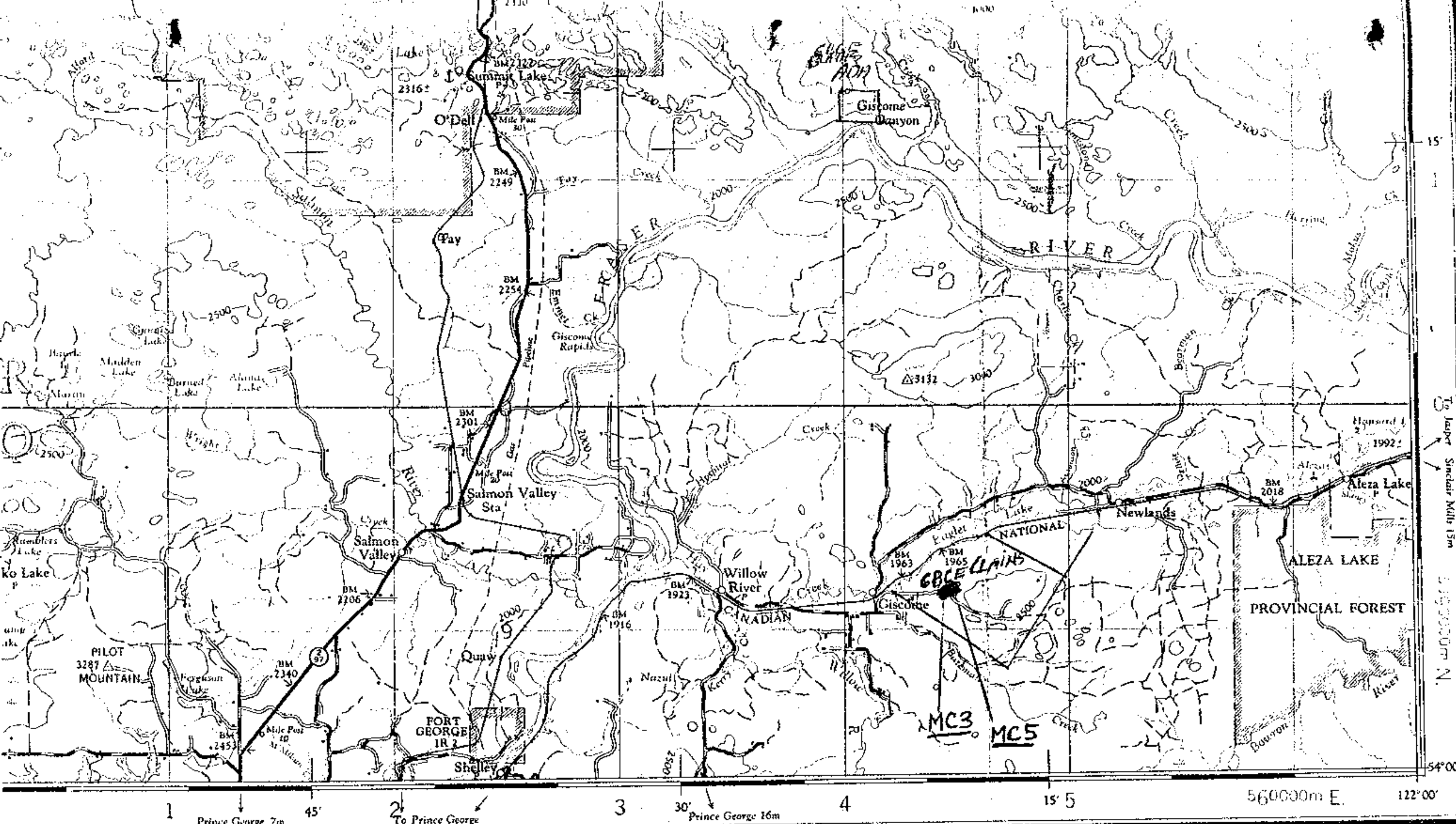

Figure 1. Index Map

LAKE

MBIA

Scale 1:250,000

Contour Interval 500 Feet
Elevations in Feet above Mean Sea Level
Transverse Mercator Projection
North American Datum 1927

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MAP 1

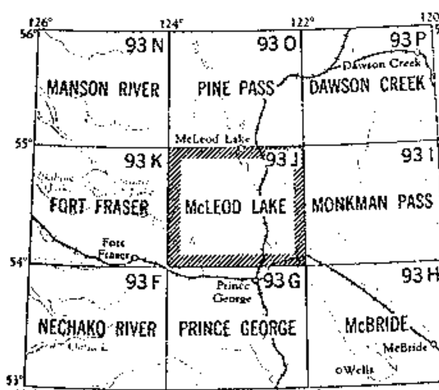
REFERENCE

- City or large town
- Town, 2000 to 10,000 population
- Town, 500 to 2000 population
- Village or settlement
- Post Office; School; Church
- Radio Station; Tower
- Well; Tank
- Lighthouse
- Contours: elevation, depression
- Foreshore flats
- Wharf or pier; Breakwater
- Lock; small, large
- Ferry
- Swamp or marsh
- Intermittent lake, stream
- Indefinite shoreline, stream
- Rapids, large, small; Bridge
- Airport
- Airfield or landing ground
- Seaplane base, anchorage

mately.

10 15 20 Miles

15 20 25 30 Kilometres



INDEX TO ADJOINING MAPS

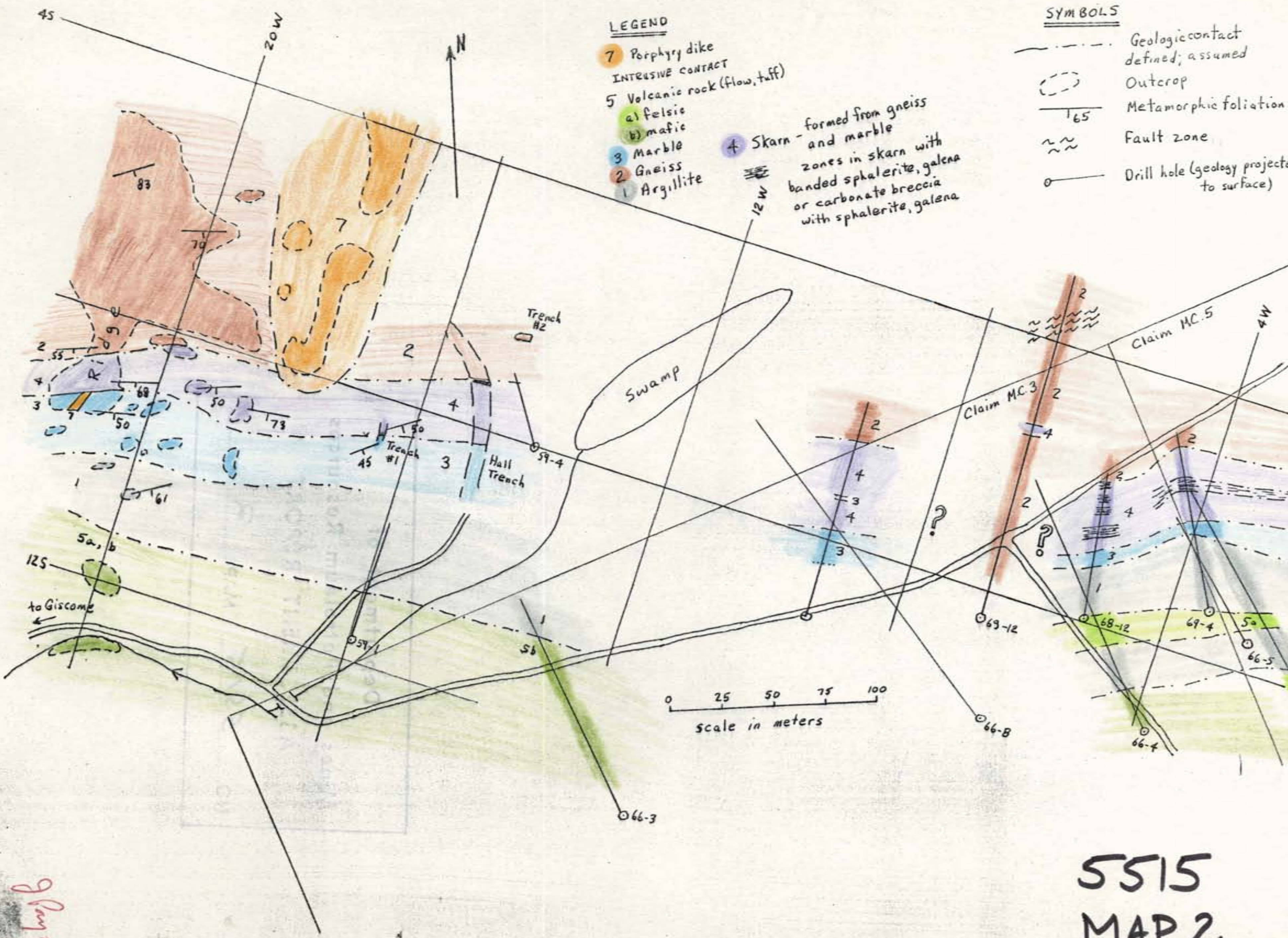


Figure 2. Location map and local geology

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MAP 2

This contact is not exposed on the claims MC 3 and MC 5, but is exposed on strike just northwest on claim MC 4. Figure 2 reproduces part of the geological map from my previous report, and locates the exposures of the marble-gneiss contact.

The Marble-Gneiss Contact

The contact is exposed in three locations:

Trench #1
Trench #2
Ridge (a prominent ridge west of Trench #1)

The contact was previously exposed in the Hall trench, between trenches #1 and #2, but this has sluffed in completely.

Trench #1 (Figure 3)

This is the best exposure of the sulfide deposits in the skarn. Observations which relate to the geological map in Figure 3 include:

1) The marble is little affected by the skarn-forming process.
2) The main concentration of sphalerite and galena is at the contact with the marble, but in the skarn formed by alteration of the biotite gneiss.
3) Significant zones of sphalerite and galena occur in the skarn up to 6 m. away from the contact; these may be formed along limy lenses in the original rock.
4) Skarn commonly shows a strong metamorphic foliation parallel to the contact and parallel to similar foliation in relic patches of gneiss in the skarn.
5) The contact and metamorphic foliation dip more gently here than had been predicted or assumed from drill data to the east, and from attitudes of sedimentary and volcanic rocks in the southeast part of claim MC 5. This may reflect a local warp in the regional structural trend; within the trench area there is a rather wide variation in attitude of metamorphic foliation, and small-scale warps in foliation were mapped in the marble.
6) The porphyry dike (not mapped previously) crosscuts the skarn foliation. The dike is massive and appears to be much younger than the metamorphism.

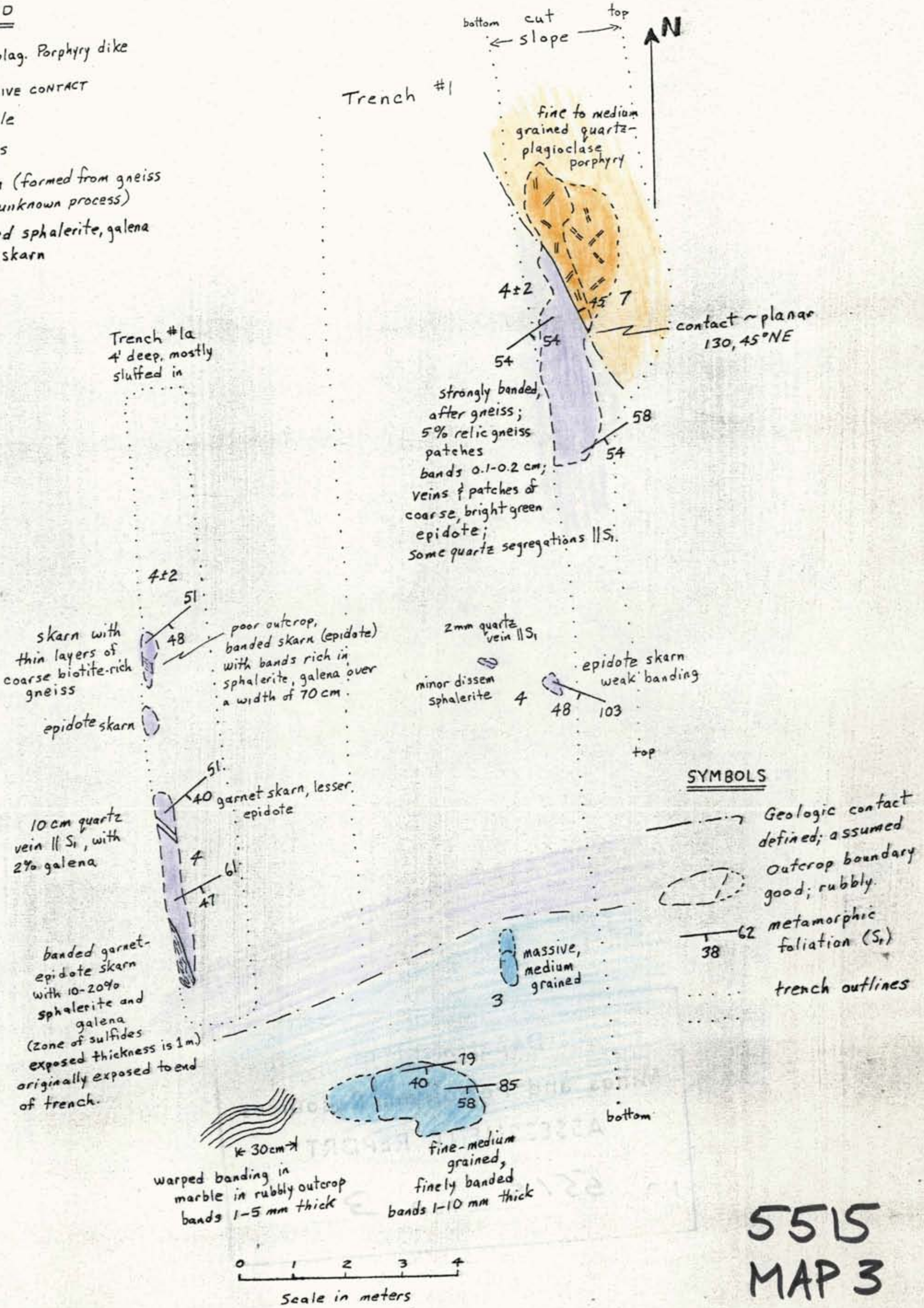
Trench #2 (Figure 4)

The contact in the trench exposes skarn to the north and marble to the south. The contact is sharp and parallel to metamorphic foliation. No banded sulfides were seen, but minor massive galena and fine disseminated pyrite occur at the contact. This contact is not the main contact of skarn and marble, because its trend puts it about 50 m. north of the contact exposed in trench #1. Similar marble zones occur in the gneiss elsewhere along the zone; sphalerite and galena are concentrated in one such zone in drill holes 68-2 and 69-11, just east of the edge of the map in Fig. 2.

Figure 3. Trench #1

LEGEND

- 7 Qz-plag. Porphyry dike
- INTRUSIVE CONTACT
- 3 Marble
- 2 Gneiss
- 4 Skarn (formed from gneiss by unknown process)
- Banded sphalerite, galena in skarn



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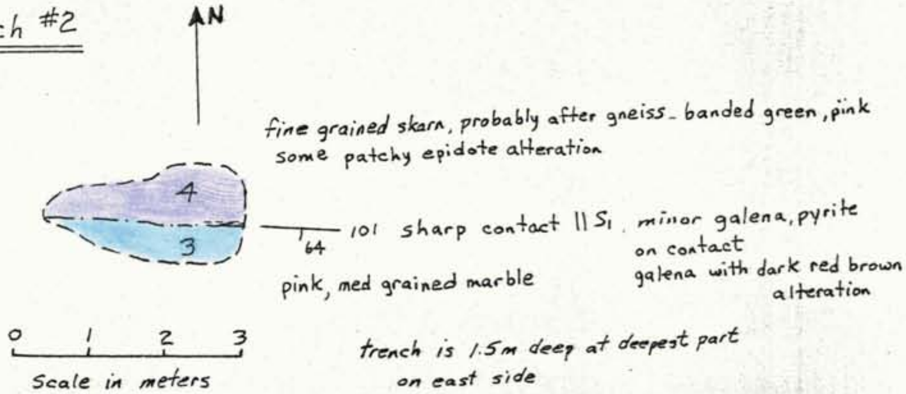
MAP 3

J Payne

Figure 4. Trench #2



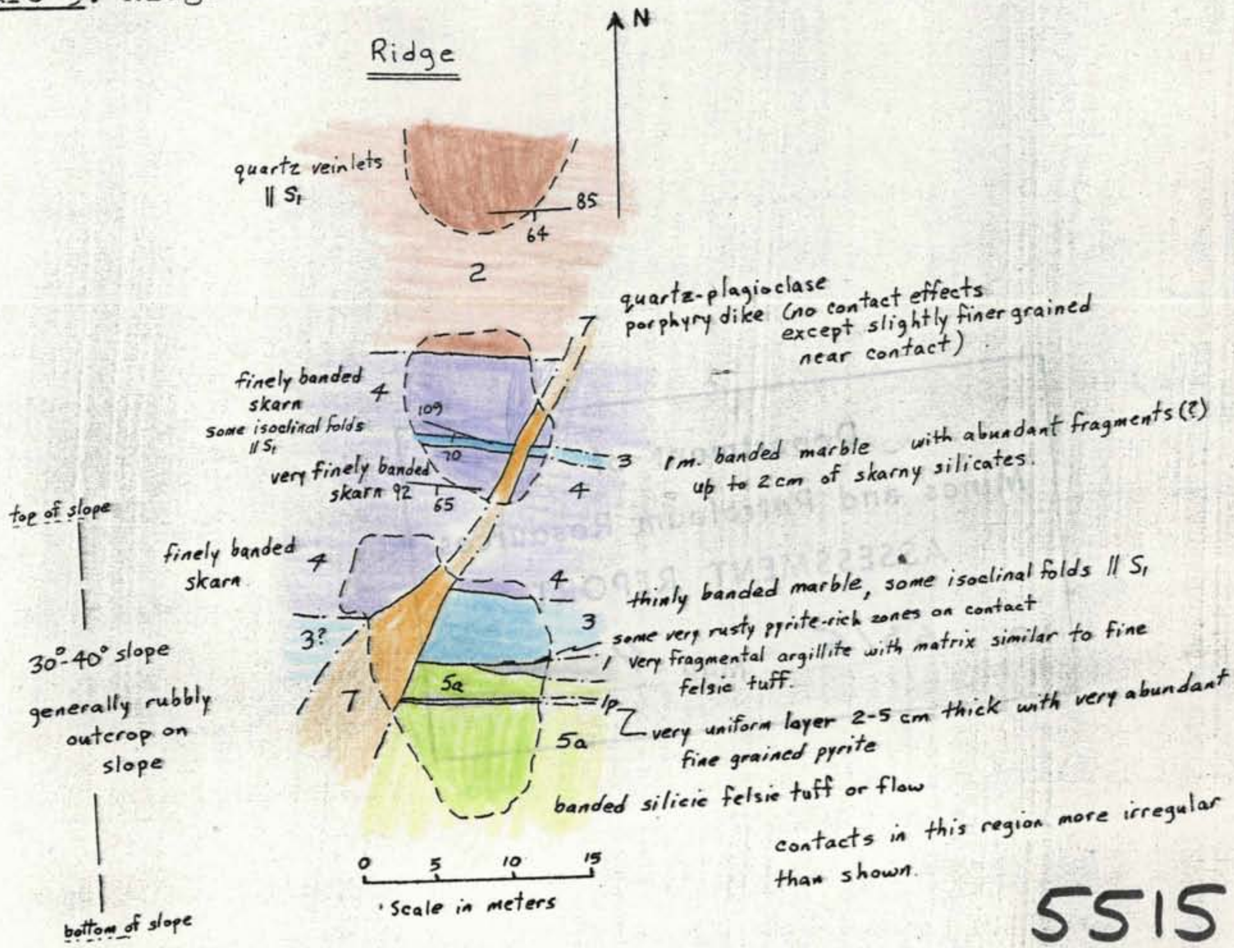
LEGEND

- 7 Quartz-plagioclase porphyry dike
- INTRUSIVE CONTACT
- 5a Felsic volcanic rocks
- 3 Marble
- 2 Gneiss
- 1 Argillite ; 1p pyritic argillite
- 4 Skarn (formed from gneiss)

SYMBOLS

- Geologic contact, defined; assumed
- Outcrop boundary
- 45 65 Metamorphic foliation, S_1

Figure 5. Ridge



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MAP 4

Ridge (Figure 5)

The skarn-marble contact is well exposed on the Ridge, as is the entire sequence from footwall gneiss to hangingwall volcanic rocks. Outcrop on the steep south-facing slope which marks the south end of the ridge is rubbly, and no accurate foliation measurements could be made. The following observations were made:

1) The contact between gneiss and skarn is sharp and parallel to metamorphic foliation in both rocks.
2) Contacts between skarn and marble, both the narrow band in skarn and the main unit south of the skarn, are sharp, with no sulfides. The narrow marble band contains abundant fragments(?) of skarny silicates (A similar texture was seen in marble in rubble above the Hall trench).
3) South of the marble is a wedge of very fragmental black argillite; fragments are up to 10 cm across and occupy 50% of the rock, and are set in a buff-colored matrix which appears to be a very fine felsic mud. On the marble-argillite contact are scattered lenses of very pyritic argillite which weather to give a very rusty surface. The contact is more irregular than shown on the map (Fig. 5).
4) South of the argillite and forming much of the nose of the ridge is a very fine grained finely banded silicic felsic tuff or flow. Within this unit is a 2-5 cm band of very pyritic argillite similar in composition and weathered surface to the rock between the marble and fragmental argillite, but much more continuous in form.
5) The porphyry dike is similar to that in Trench #1 in composition and in contact relations with the foliated rocks.

Southeast part of Claim MC 5

A brief examination of rocks in this region showed that rocks mapped previously as fine grained dacite are finely banded silicic felsic tuffs or flows similar to the rock at the south end of the ridge. Here they are separated from the limestone (marble) by an argillite unit 70 m. thick, and occur interlayered with argillite.

Conclusions

1) The study of the gneiss-skarn-marble zone on surface shows the same geologic relations as were seen in drill core, except that surface studies indicate that skarn is produced almost entirely from gneiss, whereas underground data from drill cores suggested that some skarn (about ¼ of the total) may have been formed from marble. Otherwise the conclusions are:

Sulfides (sphalerite, galena, and minor chalcopyrite) occur in skarn at the contact of marble, and scattered through the skarn away from the marble.

The skarn is mainly light green and rich in epidote; locally red garnet becomes a major phase. Chalcopyrite occurs mainly with garnet.

2) The presence of felsic volcanic rocks and local concentrations of pyrite with them suggests a possible source for the metasomatising fluids in the volcanic center which fed the felsic flows, tuffs, etc. If the rocks are righ-side-up, and face south, the volcanic rocks which outcrop are younger than the gneiss and marble. However, ascending hydrothermal solutions might have come up through the gneiss, and because of the sharp change in composition at the marble interface, might have been trapped and forced to react with the underlying gneiss, and at the same time depositing their sulfides. Probably the gneiss-marble sequence was still unmetamorphosed, so the reaction would be with greywackes below a limestone interface. Metamorphism then would realign the minerals, including the sulfides into parallelism with the metamorphic foliation. One factor which further supports this model is the presence of abundant carbonate breccia in drill hole 68-12, at about the center of the sulfide-mineralized zone. Another question that this model raises is: does the gneiss represent metamorphosed greywacke, or could it represent metamorphosed intermediate to felsic tuff?

In the absence of a suitable plutonic source for the metasomatising fluids, this model is considered a reasonable working model to be used as a basis for future geological and drilling programs.

John Payne

John Payne,
July 1, 1975.

Statement of Qualifications:

John G. Payne — Academic Training

BSc (Engineering)	Queen's University 1961	Geological Engineering
PhD	McMaster University 1966	Geochemistry

Industrial Experience

1967- 1973	Research Geologist	Anaconda Britannia Mines, Britannia Beach, B.C.
1973-1975	Consulting Geologist, address	877 Lillooet Road, North Vancouver, B.C. V7J 2H6 604-980-4764

Relationship to Central British Columbia Explorations

President and Geologist

List of Expenses

Salary

John G. Payne	3 days at $85.00 per day	$	255.00
Jack Gerlitzki	2 days at $22.50 per day	$	45.00
		$	300.00

Travel Expenses

Ground: Vancouver to Vancouver airport and return	$	10.00
Prince George to Giscome property and return	$	20.00
Air: Vancouver to Prince George and return (2 men)	$	165.80
	$	195.80

Living Expenses

Food	$	14.20

TOTAL EXPENSES $510.00

John Payne

John Payne,
July 1, 1975.