

GEOLOGICAL REPORT

on the

FLO MINERAL CLAIMS

(FLO 1, 2, 7, 8, 9)

FLORES ISLAND, B.C.

N.T.S. 92E/8 EAST HALF

ALBERNI MINING DIVISION

WESFROB MINES LIMITED

APRIL 21 - 26, 1974

Vancouver, B.C.
May 2, 1974

S. H. Pilcher
D. H. Brown, P.Eng.

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I L L U S T R A T I O N S

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A. INTRODUCTION

Geological mapping was carried out on the Flo mineral claims, numbers 1, 2, 7, 8 and 9, during the period April 21 - 26, 1974. The claims are located in the south-central part of Flores Island (Fig. 1), which is located on the west coast of Vancouver Island. A fly camp was established near the central part of the claim group, with all personnel and material being transported there by helicopter.

The mapping was done by Dr. S. H. Pilcher who was assisted by R. Ridgway and L. Thomson. Both pace-and-compass and chain-and-compass methods were used. A 200-feet-to-the-inch base map was prepared from the National Topographic Series 1/50,000 scale topographic map (Hesquiat, 92E/8, east half). Steep terrain (many vertical cliffs), extremely thick vegetation, and the presence of relatively deep snow drifts, especially on the north-facing slopes, all combined to produce difficult mapping conditions. Most of the outcrops observed occur either along the creeks or along sections of cliffs which are present at higher elevations. Rock samples were collected from the locations indicated in Fig. 2 and were later examined microscopically for petrologic and alteration features.

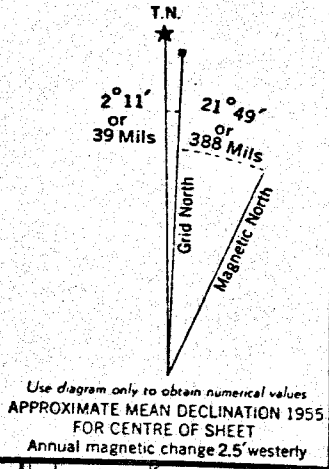
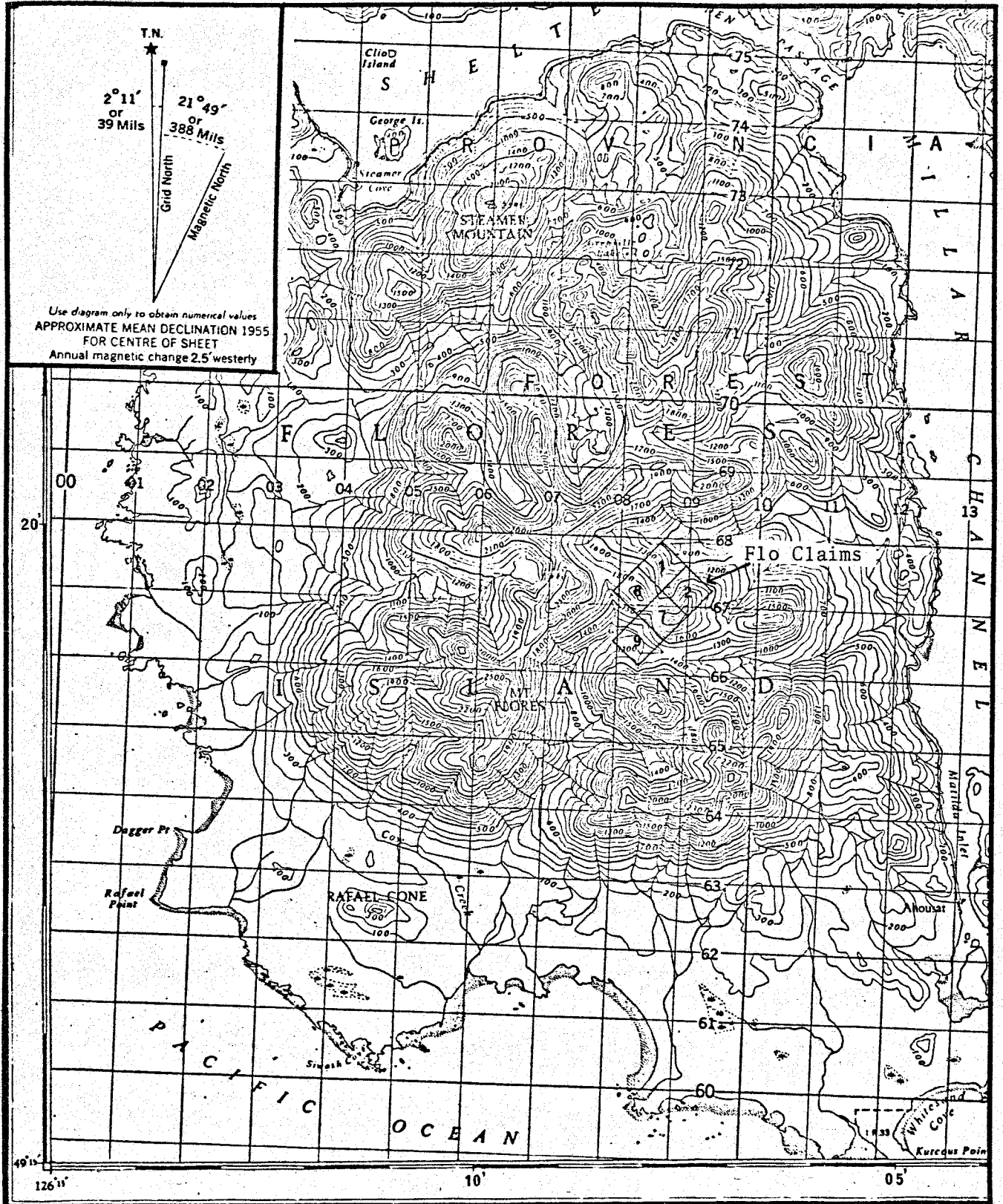
B. LITHOLOGIES

Granodiorite

This is the most abundant rock type in the area and it is most conspicuous on all claims except Flo 7 (Fig. 2).

The rock is medium grained, equigranular, and consists of 20% mafic minerals, 50% quartz, and 30% feldspar, of which the majority is plagioclase.

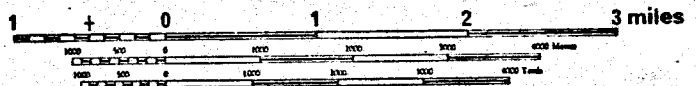
FIG. 1. LOCATION MAP
FLO CLAIMS
FLORES ISLAND, B.C.



INDEX TO ADJOINING SHEETS

126 15'	126 10'	126 05'
50 00'	50 00'	50 00'
ROOFTA	MICHAEL ISLET	BUTLE LAKE
51 15'	51 15'	51 15'
LEXEMAN POINT	HEXELAND	REDWELL
52 30'	52 30'	52 30'
WAGAS ISLANDS	TOPING	

HESQUIAT
BRITISH COLUMBIA



Contour Interval 100 Feet
 Elevations in Feet above Mean Sea Level

The mafic minerals include biotite (70%) and hornblende (30%). The biotite occurs as anhedral and irregular flakes and clots averaging 2 mm in size. The mineral is approximately 80% altered to chlorite. Hornblende forms euhedral to subhedral crystals averaging 3 mm in length. Individual crystals may be up to 40% chloritized. The chlorite is probably the result of deuteric alteration.

The feldspars are euhedral, measuring 2 - 3 mm in length. They are generally clear though some exhibit a slight clouding, probably due to weathering. The quartz forms rounded anhedral crystals measuring 2 - 4 mm across. They tend to be interstitial to the feldspar laths.

Quartz Monzonite

This rock crops out mostly on the Flo 7 claim. It is a medium grained, equigranular rock consisting of biotite (5%), quartz (35%), plagioclase (35%), and K-feldspar (25%).

The plagioclase occurs as slightly cloudy euhedral to subhedral crystals which are 3 - 4 mm in length. Quartz is present as rounded anhedral grains up to 3 mm across. The K-feldspar forms opaque, pink, anhedral crystals which are usually intergrown with the quartz as interstitial fillings between the plagioclase laths. They are commonly 2 mm or less in size. Biotite is present as fresh, flaky anhedral crystals approximately 1 mm in size.

Quartz Feldspar Porphyry

Most outcrops of this rock occur on the Flo 1 and 8 claims, though some are present elsewhere (Fig. 2). The porphyry probably represents a dyke rock, however this relationship was not definitely established in the field.

The rock consists of 5 - 10% quartz plus plagioclase phenocrysts set in a fine grained groundmass containing biotite, hornblende, plagioclase and quartz. Most of the minerals in the groundmass are approximately 1 mm in size.

Approximately 70% of the phenocrysts consist of plagioclase. It forms clear, euhedral crystals 2 - 5 mm in length. The quartz occurs as anhedral aggregates 2 - 3 mm across.

Mafic minerals make up approximately 40% of the groundmass. Of these 90% are fresh, flaky, anhedral biotite, the remainder being hornblende. The groundmass also contains 30% anhedral quartz and 30% euhedral, fresh plagioclase.

The porphyry is relatively fresh in all outcrops observed.

The field relationships between these various rock units have not been definitely established. It is probable that the granodiorite is the oldest rock and that it was followed by intrusion of the quartz monzonite. The porphyry probably cuts both these rocks.

C. ALTERATION

Granodiorite

Moderately Altered - This rock crops out at sample locations P-2, P-6, and P-14. It appears to be a hydrothermally altered equivalent of the granodiorite described above. This alteration has completely penetrated the rock. It is characterized by an 85 - 100% replacement of mafics by chlorite and sericite. In addition the feldspars are 50 - 75% altered to a mixture of green montmorillonite?, sericite, and kaolinite.

Extremely Altered - The outcrop at sample location P-4 exhibits an extreme alteration in which the original texture and all the original minerals except quartz have been completely destroyed. The rock consists of a somewhat schistose mass of sericite and chlorite containing remnant grains of quartz. Trace amounts of pyrite are also present.

The significance of this alteration is not known, however it is suggested that certain sections of the creek, along which most of these altered rocks occur, may represent fault zones which acted as a control to the alteration. Evidence of faulting in this area is not, however, obvious on the ground.

Quartz Monzonite

Weakly Altered - On some sections of the cliffs surrounding the prominent hill on Flo 7 claim weak alteration has developed along north-northeast trending shear zones. In these rocks the mafic minerals are chloritized and the feldspars are clouded. This clouding is the result of partial replacement by fine grained kaolinite and/or sericite.

Moderately Altered - At sample location R-19 a somewhat peculiar alteration has developed in which the mafic minerals are completely altered to sericite plus magnetite, whereas most of the feldspars remain clear and fresh.

D. STRUCTURE

Linear topographic features on Flores Island suggest northeast striking structures to be predominant. On the Flo claims the few structural features which could be mapped also indicate the trend to be of importance. The northeast trending section of the creek located on the

Flo 1 claim probably indicates a fault. This suggestion is substantiated by the N45⁰E trending closely spaced jointing or sheeting which occurs both to the northeast and to the southwest of the creek on line with the projection of its northeast trending section. Scattered steeply dipping joints of this trend occur elsewhere in the map area. In the cliff sections on the Flo 7 claim, north-northeast trending shears are present.

Another prominent set of joints strikes northwest to west-northwest and dips flatly to the south. These are probably a type of primary structures related to the intrusives themselves and may represent a type of release joint.

A weakly developed set of north-south striking joints is also present.

E. MINERALIZATION

The only mineralization observed during the mapping occurs in the cliff sections of quartz monzonite located on the Flo 7 claim. Pyrite and chalcopyrite are present here as narrow fracture fillings and as fine disseminations. In some cases magnetite is associated with the sulphides. Weathering and oxidation have resulted in the development of malachite along open fractures and rock faces.

The mineralized zones are narrow in width (up to 20 feet) and can be traced along strike only for distances of up to 50 feet. The mineralization is best described as being localized and discontinuous. Copper values range from 0.2 to 0.7 per cent.

F. CONCLUSION

Though the copper mineralization so far discovered on these claims is not significant the geology is quite favorable for porphyry type occurrences. The altered granodiorite is of particular interest. Further work here should include some geophysical surveys in covered areas adjacent to the outcrops which exhibit this alteration.

S. H. Pilcher

Vancouver, B.C.
May 2, 1974

DOMINION OF CANADA:
 PROVINCE OF BRITISH COLUMBIA.
 To Wit:

In the Matter of

Geological Map and Report on the
 FLO 1, 2, 7, 8 and 9 Mineral Claims
 of the FLO GROUP.

I, D. H. Brown

of #500 - 1112 West Pender Street, Vancouver, B.C. V6E 2S3

in the Province of British Columbia, do solemnly declare that a geological map and supporting report were produced by S.H. Pilcher, D.Sc., P.Eng. (Reg. No. 8868) on the Flo Group of Mineral Claims during April, 1974.

A. <u>Transportation</u> : Vancouver - Tofino and Return (S. Pilcher, L. Thomson, R. Ridgway)		
1. Truck	\$ 60.00	
2. Ferry	30.00	
3. Accommodations	40.00	\$ 130.00
B. <u>Transportation</u> (Helicopter): Campbell River - Tofino - Flores Island and Return (2 trips)		
Four trips @ 1 hr./trip @ \$260.00/hr.		1,040.00
C. <u>Salaries</u>		
Three men for 5 days (S. Pilcher, L. Thomson, R. Ridgway)		775.00
D. <u>Camp Supplies</u>		
Three men for 5 days @ \$10.00/man/day		150.00
		2,095.00
E. <u>Map and Report Preparation</u>		
		200.00
		\$2,295.00
		=====

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the City
 of Vancouver, in the
 Province of British Columbia, this 26
 day of April, A.D.
 1974.

D.H. Brown

Jan Dune
 A Commissioner for taking Affidavits within British Columbia or
 A Notary Public in and for the Province of British Columbia.

Subscribing Recorder



WESFROB MINES LIMITED

(A wholly owned subsidiary of Falconbridge Nickel Mines Limited)

1112 West Pender Street
Vancouver 1, B.C., Canada

Tel. (604) 682-6242

Telex 04-53245

May 2, 1974

Mining Recorder
Port Alberni, B.C.

Dear Sir:

This is to certify that the geological mapping covered by the appended report on the Flo Group of Mineral Claims was done under my supervision.

Dr. S. H. Pilcher, the author of this work, obtained his Ph.D. (Geological Engineering) Degree from Colorado School of Mines in 1968. He is a registered Professional Engineer in the Province of B.C. (Reg. No. 8868).

Dr. Pilcher has worked for Falconbridge Nickel Mines Limited since 1967 and is employed as Senior Geologist.

Yours very truly,

WESFROB MINES LIMITED

D. H. Brown, P.Eng.

DHB:fn

B. ROAD or TRAIL WORK (Give length and average width of road or trail.)

	COST
TOTAL	

I wish to apply \$ _____ of this work to the claims listed below.
 (One year only to each claim and within the first three years of its life.) (Sec. 51 (3) M.A.)

C. GEOLOGICAL, GEOCHEMICAL, GEOPHYSICAL (Includes line cutting)
 (State type of work)

	COST
Geological Report on the Flo Group of Mineral Claims (to be submitted before May 14, 1974)	
TOTAL	

I wish to apply \$ 2,000 of this work to the claims listed below.
 (State number of years to be applied to each claim.)

2 years to be applied to each of:

Flo 1, 2, 7, 8 and 9 mineral claims	\$2,000.00
Record Nos. 12567, 12568, 12573, 12574, 12575	=====

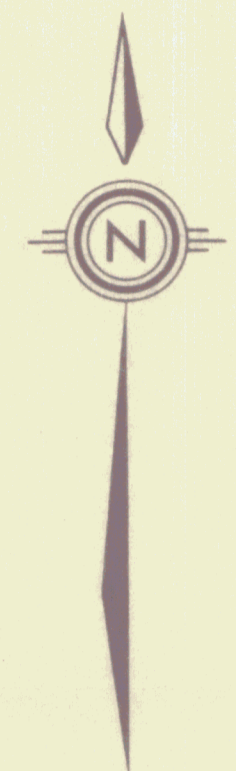
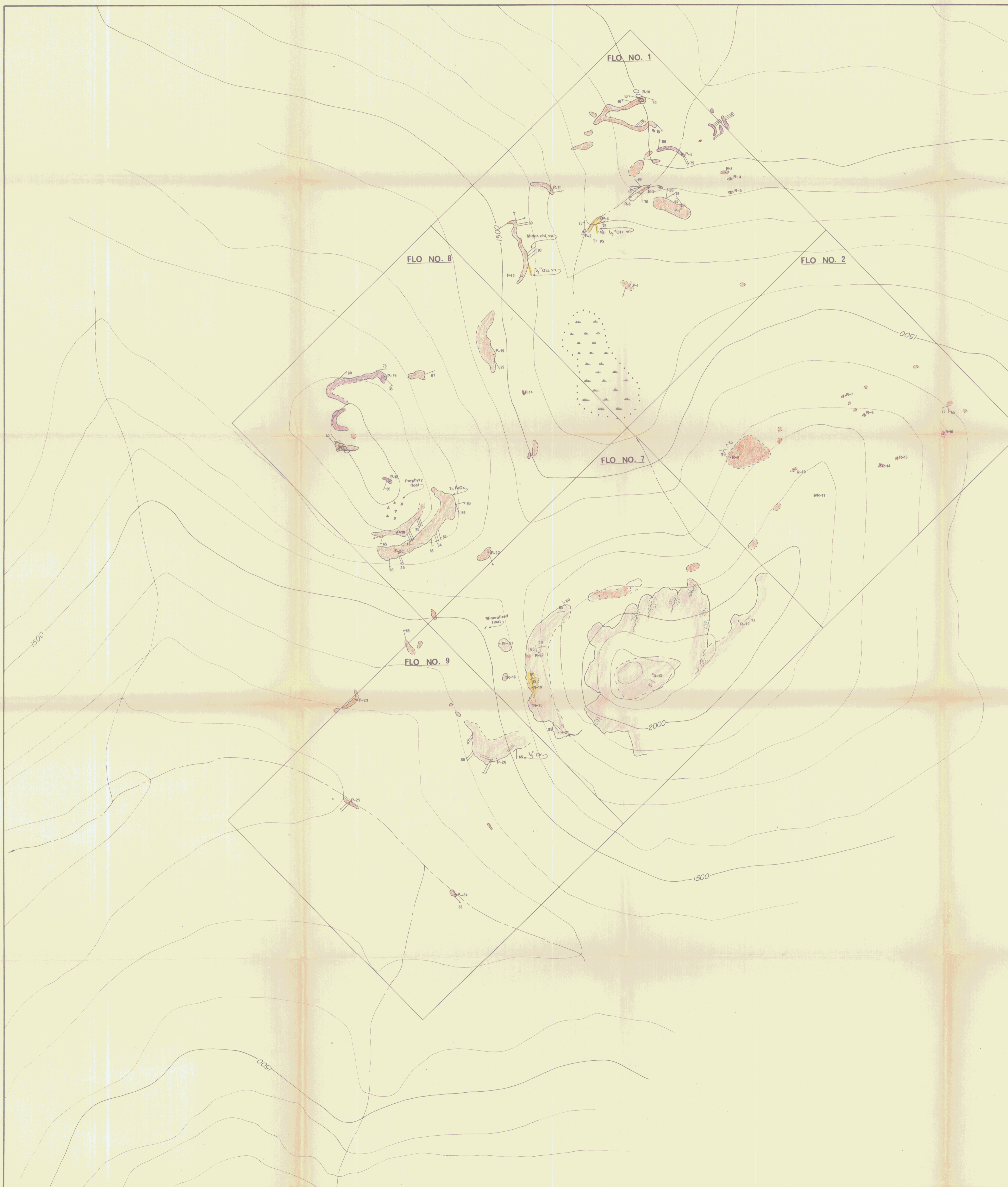
NOTE—Dollar value of work done under A, B, or C sections, totalling \$100, may be applied to a certificate of work.

Make a sketch of claims showing location of work declared in A or B above
 (if insufficient space, attach a sketch).

4. That I have not and will not use the work declared herein in any way for the purposes of obtaining tax exemption on a Crown-granted mineral claim under the terms of the *Taxation Act*.

SWORN and subscribed to at Vancouver, B.C.
 this 26th day of April
 19 74, before me—

L.H. Brown



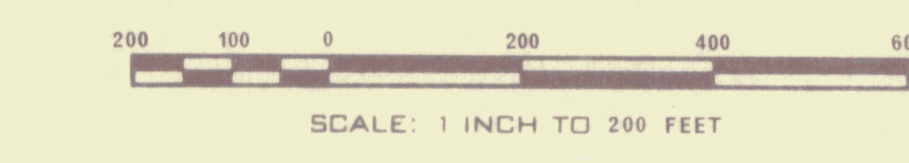
LEGEND

- Granodiorite (Fresh)
- Granodiorite (Moderately Altered)
- Granodiorite (Extremely Altered)
- Quartz Monzonite (Fresh)
- Quartz Monzonite (Slightly Altered)
- Quartz Monzonite (Moderately Altered)
- Quartz Feldspar Porphyry
- Pyrite, Chalcopyrite Mineralization
- Joint or Fracture Attitude
- Quartz Vein Attitude
- Fault or Shear Zone
- Rock Sample Location

Abbreviations

- tr Trace Amounts
- py Pyrite
- FeOx Iron Oxides
- ep Epidote
- qtz Quartz
- vn Vein
- chl Chlorite

To accompany geological report by S. Picher on the Flo Mineral Claims dated May 2, 1974



FALCONBRIDGE NICKEL MINES LIMITED		
FLO CLAIMS		
LOCATION: FLORES ISLAND		
TYPE OF MAP: GEOLOGICAL MAP		
WORKING PLACE:		
BASED ON: FIELD MAPPING		
DATE OF WORK: APRIL 21 to 25, 1974	MAP REF. NO.:	FIG. NO.:
DRAWN BY: S. W. Picher		2
DATE: MAY 2, 1974	N.T.S. NO. 92 E/8e	