

GEOLOGICAL, GEOCHEMICAL AND PROSPECTING REPORT

ON THE

FOG AND PEAK CLAIMS

OMINECA MINING DIVISION

NTS 93M/13, 14

LAT. 55° 54'

LONG. 127° 30'

OWNER: A. HORNE

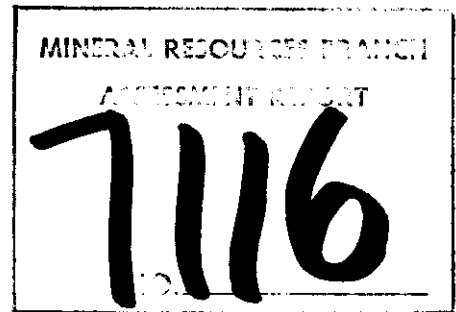
OPERATOR: ST. JOSEPH EXPLORATIONS LTD.

REPORT BY: D.C. MILLER, P. ENG.

December 15, 1978

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INTRODUCTION

Location and Access

The Fog and Peak claims are located 3 km southwesterly of Shedin Peak between two westward flowing tributaries of Rosenthal Creek. Hazelton and Smithers lie 73 km and 133 km respectively, southward of the property. A gravel road leading northward from Hazelton to the Kisegas Indian Reserve passes within 24 km of the property.

Access to the property is by helicopter. Okanogan Helicopters Ltd. maintain a base at Smithers.

Physiography

The property lies in rugged mountainous terrain of the Atna Range with elevations on the property ranging between 1280 and 2100 m. Timberline is at 1370 m. Approximately 20% of the property is covered by active glaciers or permanent snow. Numerous glacial features such as steep-walled flat-bottomed valleys, cirques, moraines and polished striated outcrops attest to previous glaciation in the area. With reference to the accompanying geological map, individual outcrops have not been shown as over 75% of the area mapped is either outcrop or ice-snow. Talus, moraines and soil comprise the remainder of the area.

Property, Ownership and Previous Work

The property comprises the Fog claims (8 units), legal post 42943 and the Peak claim (12 units), legal post 42946. The property, which is owned by A. Horne and operated by St. Joseph Explorations, covers occurrences of molybdenite-chalcopyrite mineralization. Both porphyry

and vein type mineralization are present associated with a stock of approximate granodiorite composition and adjacent pre-intrusive sediments.

The property was discovered by Mr. Horne in 1969, while prospecting for Sicintine Mines Ltd. During 1969 hand trenching, sampling and prospecting were done on the property. The claims were subsequently allowed to lapse and were restaked in June 1978 by Mr. Horne.

1978 Program

During August 1978, the writer and A. Horne spent five days mapping and sampling mineralization and prospecting for new mineralization. Total area covered by prospecting was 6 sq. km. Total area mapped was 12 sq. km at a scale of 1:20,000 utilizing topofil chain and compass and pace and compass. Geologic contacts in the western part of the area are based on aerial observations. A total of nineteen rock chip samples comprising samples H-17-2 to 10, H-19-1 and 2 and H-20-1 to 7 were collected and submitted for copper, molybdenum and silver analyses at the Karloops Research and Assay Laboratory Ltd. As well, five rock samples of better mineralization, including samples H-18-1 to 5, were submitted for assay for gold, silver, copper, molybdenum and tungsten.

Geological Setting

Porphyry type chalcopyrite-molybdenite mineralization is associated with a northeast trending felsic stock. Vein type molybdenite-chalcopyrite mineralization, associated with a felsic dyke, is found 500 m. east of the stock. Pre-intrusive host rocks comprise sediments of the Jurassic Age Bowser group.

Pre-Intrusive Rocks

Pre-intrusive rocks were examined only along the eastern margin of the stock. Here they are predominantly brown and grey weathered siltstones. Within 200 m of the stock they have been metamorphosed to hornfels and calc-silicate rocks and locally contain pyrite, chalcopyrite and molybdenite mineralization. In the vicinity of the vein showing they strike north to northwest and dip westward. Along the southeast margin of the stock they strike northeast and dip southeast. About 1 km eastward, they strike northeast and dip northwest. A synclinal structure is indicated in this area.

To the north, west and south, sediments are well exposed on steep bare hillsides. Here they are seen to be generally intensely folded although some sections of only minor deformation are present.

Intrusive Rocks

No detailed petrographic work was done to establish rock compositions, however, nineteen rock specimens were collected from rock chip sample sites and were examined with a binocular microscope. The main intrusion, which trends northeast and has dimensions of 4.5 x 2.5 km is tentatively named granodiorite. This rock has much the same composition and texture throughout the area sampled. It is light grey, generally fine to medium grained, granular, with subhedral crystals except for occasional, large (1 to 2 cm) zoned euhedral feldspar crystals. These larger crystals comprise less than 5% of the rock and commonly enclose fine mafic minerals. Composition of the granodiorite is about 20% quartz, 15% mafics (mainly biotite) and the remainder feldspar

and accessory minerals.

In addition to the main intrusion, there are a number of pale brown weathered, fine grained felsic dykes and sills intruding the sediments. None of these was seen to cut the main intrusion.

Mineralization and Alteration

Porphyry-type chalcopyrite-molybdenite mineralization is present over an area of at least 1000 x 500 m near the centre of the granodiorite. Chalcopyrite, molybdenite and pyrite are found in small quartz veins (2 cm) cutting granodiorite. Grain size of these minerals ranges from less than 1 mm to over 5 mm. Chalcopyrite and pyrite are partly oxidized to malachite and limonite. The density of mineralized quartz veins is low and hence economic concentrations of valuable minerals are not seen on surface. Some prominent mineralized quartz veins trend east-west and dip steeply southerly. In addition to mineralized quartz veins, minor fine grained pyrite and chalcopyrite are associated with biotite.

In general, hydrothermal alteration of feldspars and mafics is virtually nil. These minerals are fresh appearing, even near mineralization.

Vein-type molybdenite-chalcopyrite mineralization is present 500 metres east of the granodiorite. Mineralization comprises very fine grained molybdenite, chalcopyrite, pyrite and quartz associated with a felsic dyke. The mineralized zone consists of lenses of erratic width and grade. The vein attitude varies from $175^{\circ}/50^{\circ}$ SW to $40^{\circ}/10^{\circ}$ SE. Vein widths vary from 1.8 to 9.1 m. over a length of 130 m. The south

end of the vein is cut off by a glacier while the northeast end nearly pinches out prior to entering unnegotiable terrain. Average of five chip samples is 0.27% Mo. and 0.11% Cu. over an average true width of 3.9 m. (See samples H-18-1 to H-18-5 on accompanying geochemical maps.)

A summary of assay values follows:

Sample No.	True Width (m.)	Percent			Ounces Per Ton	
		Mo.	Cu.	W.	Au.	Ag.
H-18-1	9.1	.28	.05		* L .001	.06
H-18-2	0.3	2.79	.20		.001	.06
H-18-3	2.4	.53	.12		L .001	.06
H-18-4	1.8	.07	.14		L .001	.06
H-18-5	6.1	.09	.17		L .001	.06
H-18-1 to 5 Composite				.003	* L denotes less than	
H-17-2 to 10 Composite				.006		

Geochemistry

Nineteen rock chip samples were collected from within and beyond the area of porphyry-type mineralization. These samples consisted of about 5 lb. each of walnut size chips and were analyzed by the atomic absorption method for copper, molybdenum and silver at the Kamloops Research and Assay Laboratory. The samples were ground to -80 mesh prior to extraction with hot aqua regia. Samples within the mineralized area were taken at 50 to 200 m intervals along traverse lines and results are plotted on accompanying geochemical maps.

Tabulation of rock chip data follows:

	<u>SAMPLE NO</u>	<u>PPM Cu</u>	<u>PPM Mo</u>	<u>PPM Ag</u>	
(1) Porphyry Mineralization	H-17-2	363	548	0.6	
	H-17-3	483	54	0.6	
	H-17-3B	158	3	0.7	
	H-17-4	204	50	0.6	
	H-17-5	313	8	0.6	
	H-17-6	2240	25	2.1	
	H-17-7	1310	7	1.4	
	* H-17-8	800	102	0.6	
	* H-17-9	134	116	0.8	
	* H-17-10	75	28	0.9	
* Float on glacier	H-20-1	322	42	0.3	
	H-20-2	175	4	0.3	
	H-20-3	123	4	0.2	
	H-20-4	319	98	0.9	
	Average	<u>501</u>	<u>78</u>	<u>0.8</u>	
	(2) Beyond Porphyry Mineralization	H-19-1	189	8	0.5
		H-19-2	143	10	0.4
		H-20-5	161	9	0.3
H-20-6		99	4	0.3	
H-20-7		34	5	0.1	
Average		<u>125</u>	<u>7</u>	<u>0.3</u>	

Prospecting

Prospecting was conducted in conjunction with geochemical sampling and geological mapping. Steep, rugged terrain slowed walking and certain higher areas were inaccessible. Total area prospected was 6 sq. km. No significant new mineralization was found.

Conclusions and Recommendations

It is concluded that presently known mineralization is uneconomic and that drilling to determine grade at depth would be extremely costly in this location.

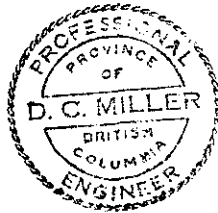
The projection of porphyry type mineralization to the west has not been thoroughly prospected nor sampled and this work is recommended.

Respectfully submitted,

D.C. Miller

D.C. Miller, P. Eng.

December 15, 1978



COST STATEMENT

(a) Wages:

D. Miller - Aug. 14-24, Sept. 13, Nov. 2, 3, Dec. 12, 1978	
15 days @ \$120/day.....	\$ 1,800.00
A. Horne - Aug. 14-21, 1978	
8 days @ \$80/day.....	640.00
	<hr/>
TOTAL	2,440.00

(b) Food and Accomodation:

D. Miller and A. Horne August 14 - 21, 1978.....	234.89
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(c) Travel:

Truck Rental.....	215.88
Fuel.....	58.90
Charter Aircraft.....	1,075.70
	<hr/>
TOTAL	1,350.48

(d) Maps, Photos, Field Supplies: 137.94

(e) Analyses and Assays:

57 geochemical analyses	
22 assays	181.75

(f) Photographic enlargements, drafting,
typing, reproduction, telephone 208.28

TOTAL

 4,553.34

STATEMENT OF QUALIFICATIONS

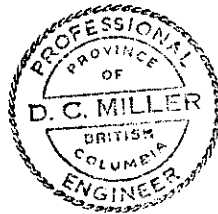
I, David C. Miller, of 769 Fraser Street, Kamloops, B.C., do hereby certify that:

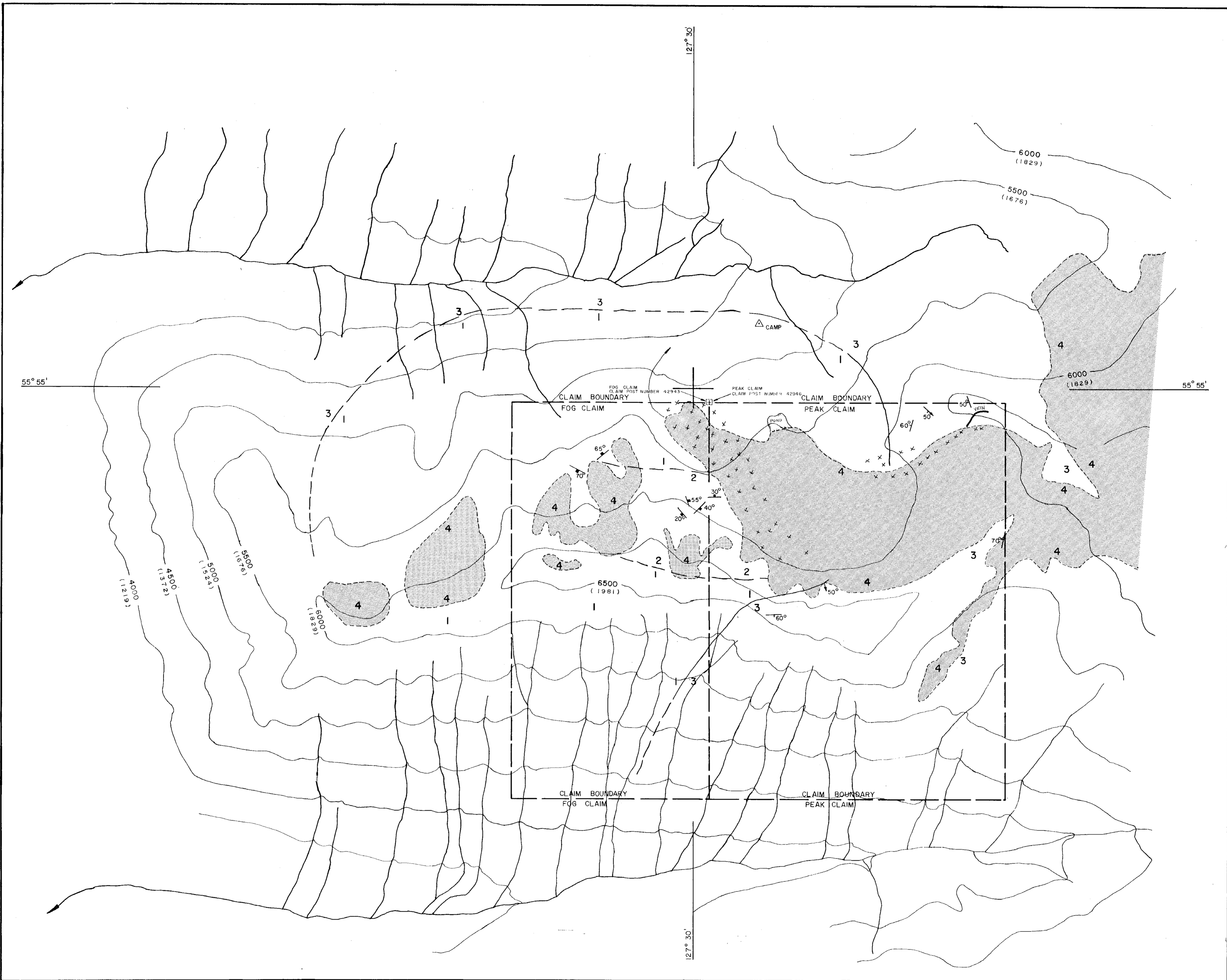
- (1) I am a graduate of the University of British Columbia and obtained a B.A. Sc. degree in Geological Engineering in 1959.
- (2) I have had 20 years experience in mining geology and mineral exploration.
- (3) I am a registered Professional Engineer in the Province of British Columbia.
- (4) I have examined the property discussed in this report, and the report dated December 15, 1978 is based on this examination.
- (5) I have no interest, directly or indirectly, in the property.

D.C. Miller

D.C. Miller, P. Eng.

December 15, 1978

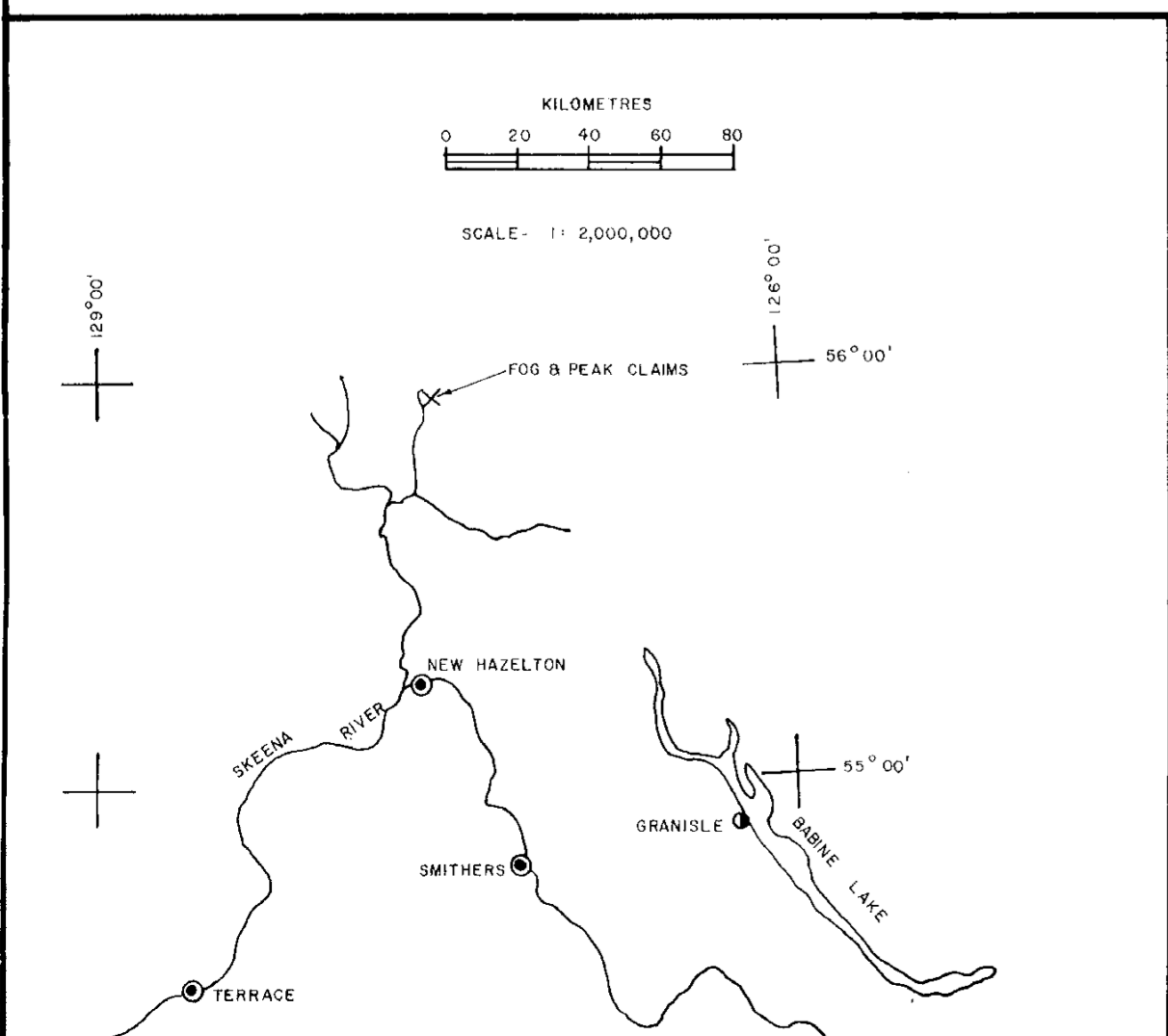




LEGEND

- 1 GRANODIORITE
- 2 WEAKLY MINERALIZED WITH MOLYBDENITE & CHALCOPYRITE IN QUARTZ VEINS
- 3 HORNFELS, CALC-SILICATE ROCKS, SILTSTONE
- 4 GLACIER OR SNOWPATCH
- 60° BEDDING ATTITUDE
- 70° JOINT ATTITUDE
- xxx FLOAT TRAIN
- VEIN
- - - GEOLOGIC BOUNDARY (DEFINED, APPROXIMATE)
- DRAINAGE
- 6000 (1829) ELEVATION IN FEET (METRES)

INDEX MAP



7116

SCALE IN METRES



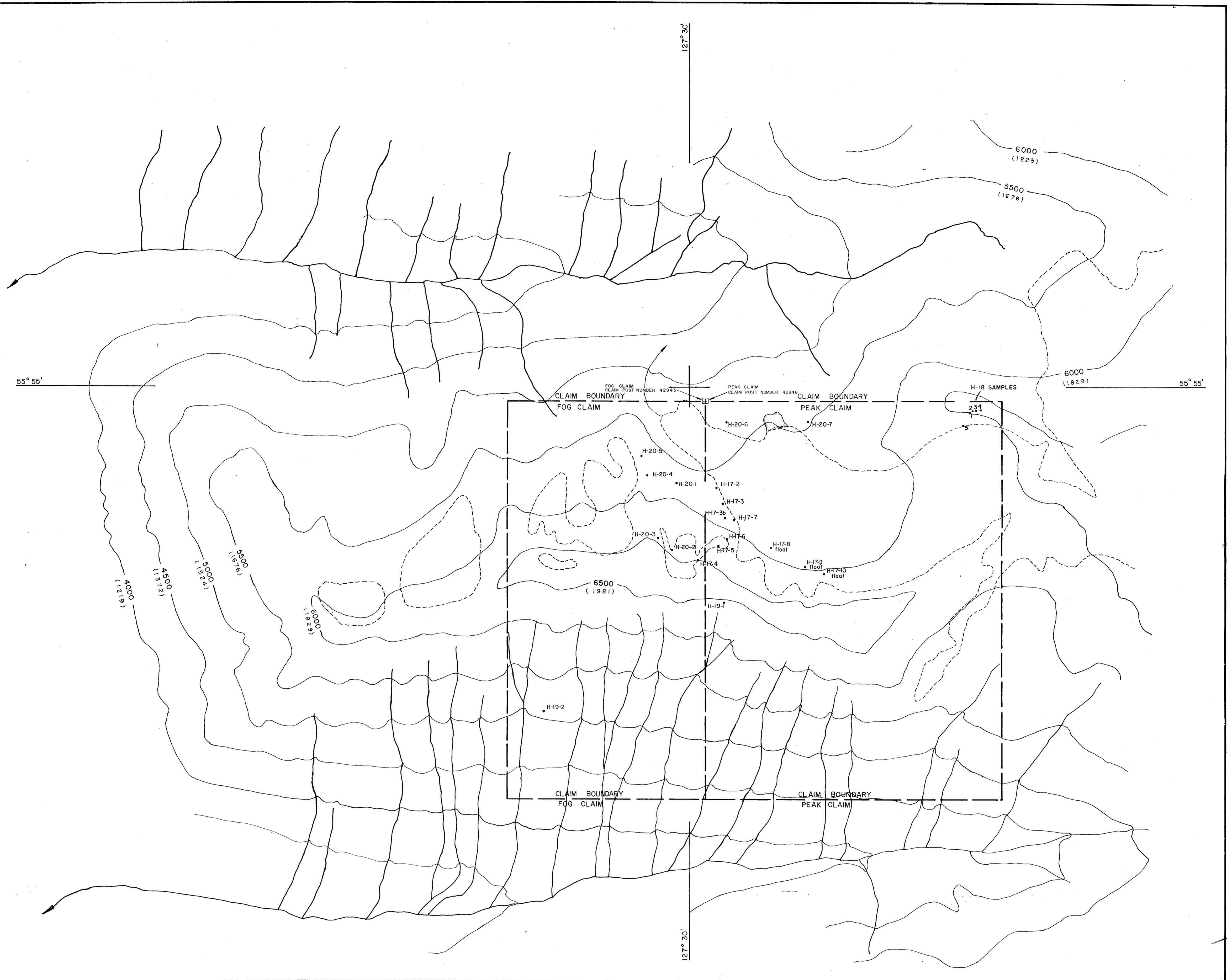
LEGAL POSTS LOCATED BY CHAIN AND COMPASS
 BASE MAP PHOTOGRAPHICALLY ENLARGED
 FROM 1:50,000 SCALE TOPOGRAPHIC MAP

ST. JOSEPH EXPLORATIONS LIMITED
 TORONTO, CANADA

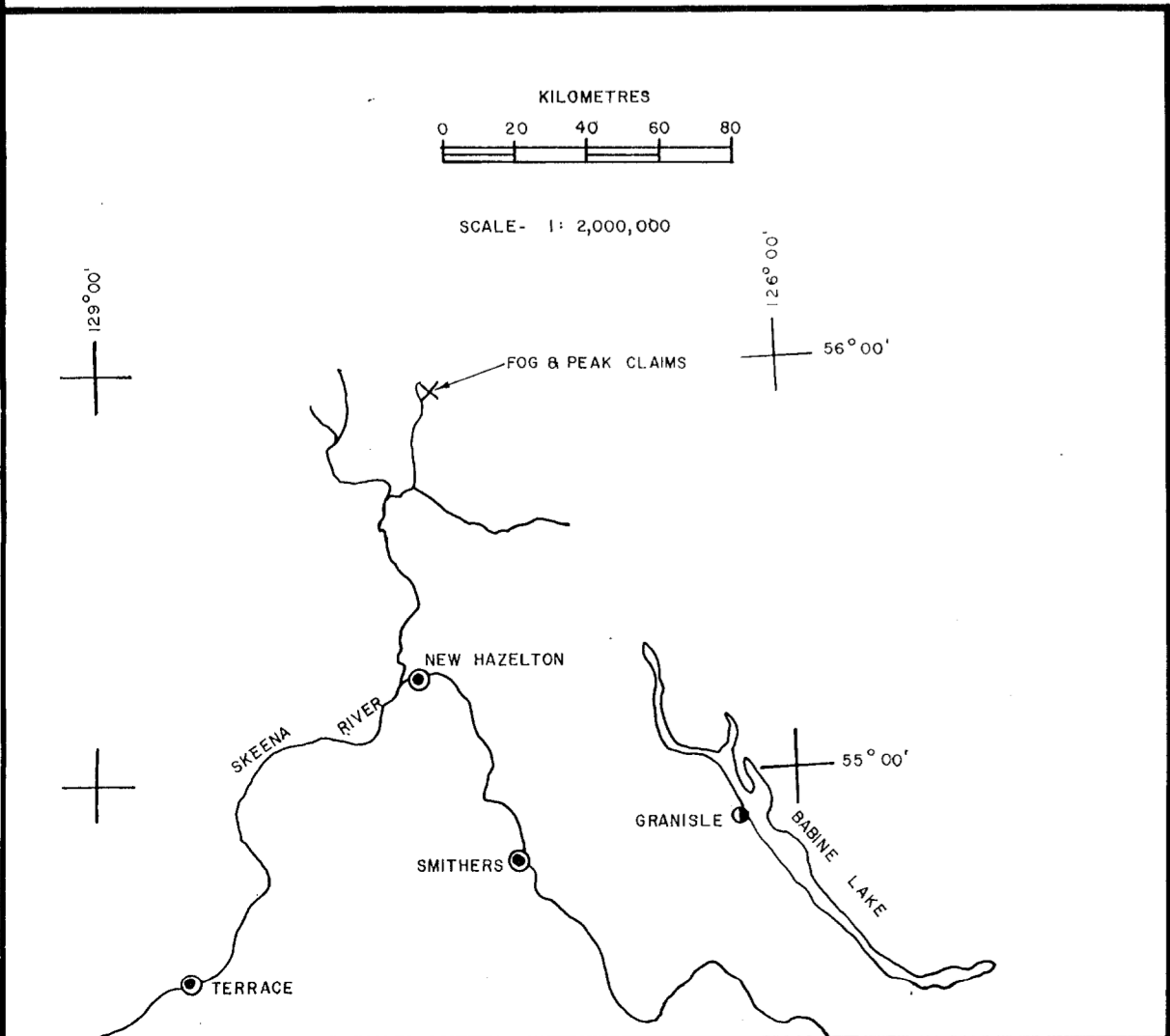
FOG & PEAK CLAIMS
 GEOLOGY

SCALE 1:10,000
 APPROX LAT 55° 55' N
 LOWER RI COR OF DWG

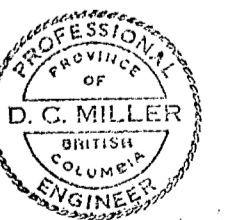
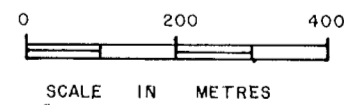
PROJECT NO. 364 SHEET NO. _____
 OF _____
 MAP 1 N.T.S. 93M-13,14



INDEX MAP

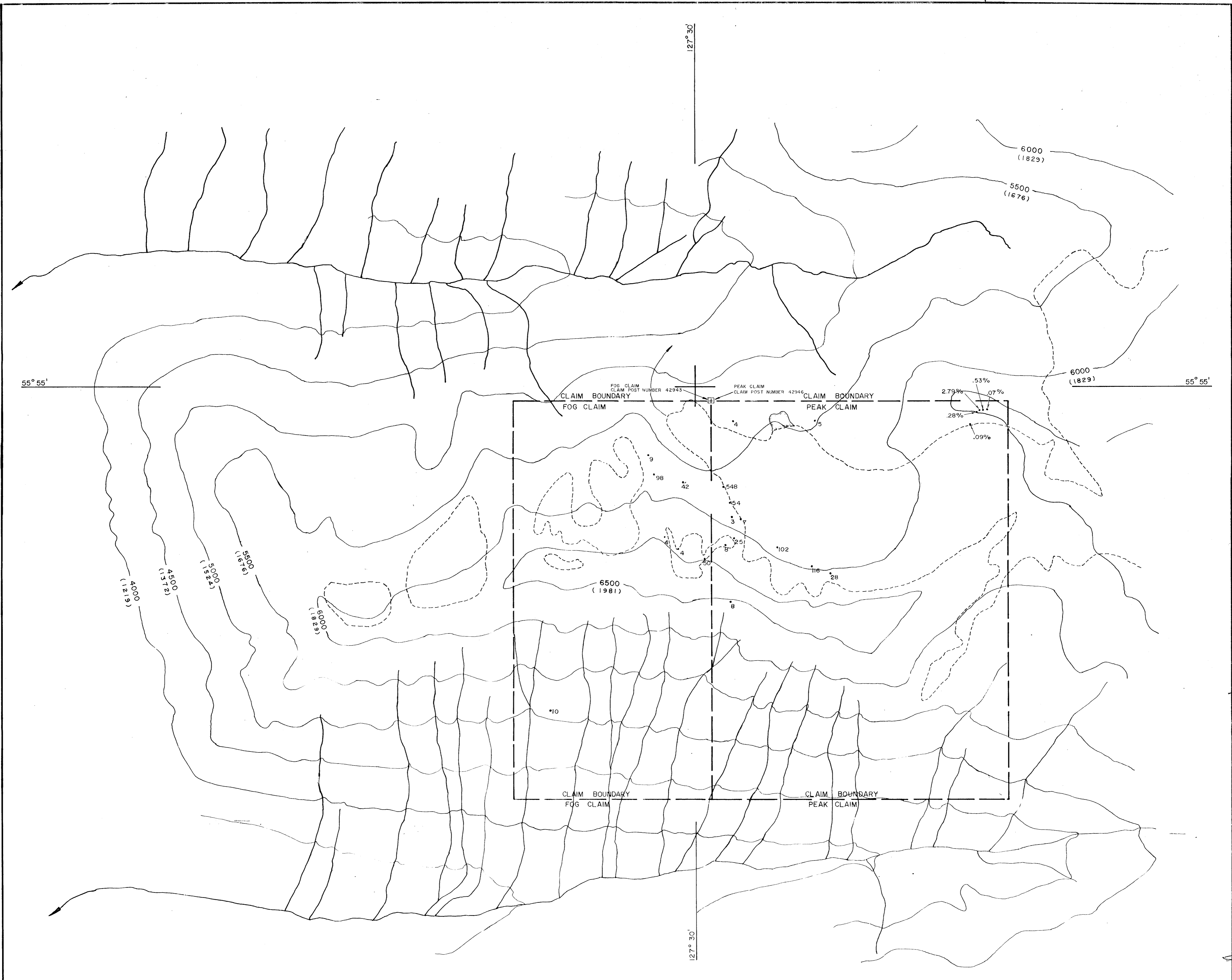


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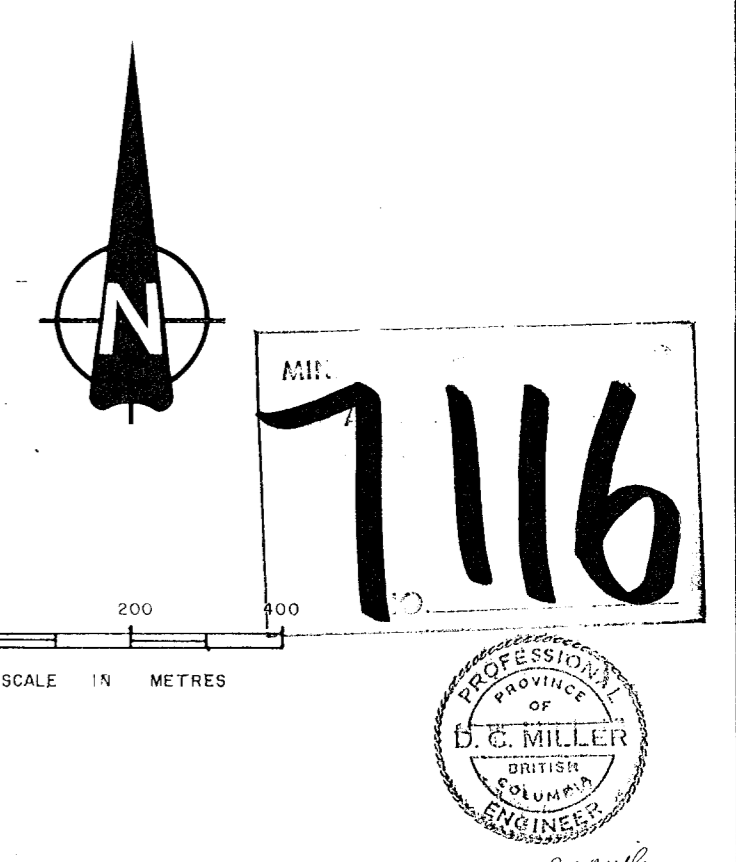
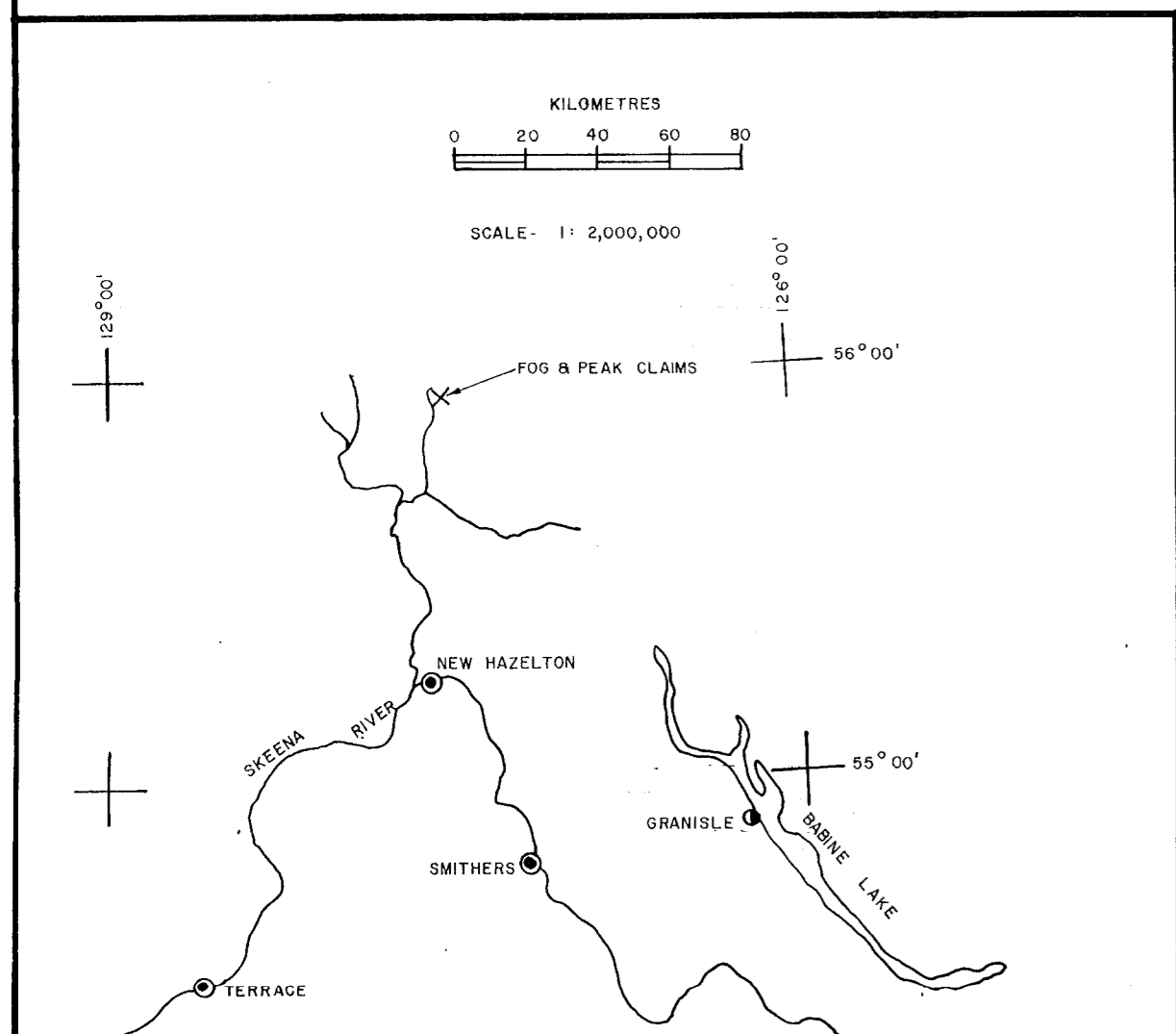


LEGAL POSTS LOCATED BY CHAIN AND COMPASS
 BASE MAP PHOTOGRAPHICALLY ENLARGED
 FROM 1:50,000 SCALE TOPOGRAPHIC MAP

ST. JOSEPH EXPLORATIONS LIMITED		
TORONTO, CANADA		
FOG & PEAK CLAIMS		
SAMPLE LOCATION POINTS		
SCALE: 1:10,000		
APPROX LAT & LONG OF LOWER RT COR OF DWG	PROJECT NO. 364	SHEET NO.
" " " " " " " "	" " " " " " " "	" " " " " " " "
" " " " " " " "	" " " " " " " "	" " " " " " " "
" " " " " " " "	MAP 2	NTS 93M-13,14



INDEX MAP



LEGAL POSTS LOCATED BY CHAIN AND COMPASS
 BASE MAP PHOTOGRAPHICALLY ENLARGED
 FROM 1:50,000 SCALE TOPOGRAPHIC MAP

ST. JOSEPH EXPLORATIONS LIMITED TORONTO, CANADA		
FOG & PEAK CLAIMS MOLYBDENUM ANALYSES OF ROCK CHIP SAMPLES (PPM Mo Except Where Indicated)		
SCALE 1:10,000		
APPROX LAT & LONG OF LOWER RT COR OF DWG	PROJECT NO. 364	SHEET NO. OF
° ' "		
— — —	LATITUDE	
— — —	LONGITUDE	
MAP 3		N 1 S 93M-13,14

