

Original

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Cyprus Exploration Corporation, Ltd.

SCUM LAKE PROJECT

GEOLOGY

92-0

November 1971

P. F. Lewis

CYPRUS EXPLORATION CORPORATION, LTD.

SCUM LAKE PROJECT

THE GEOLOGY OF THE SCUM LAKE PROSPECT

CLINTON M.D. , BRITISH COLUMBIA

P. F. LEWIS

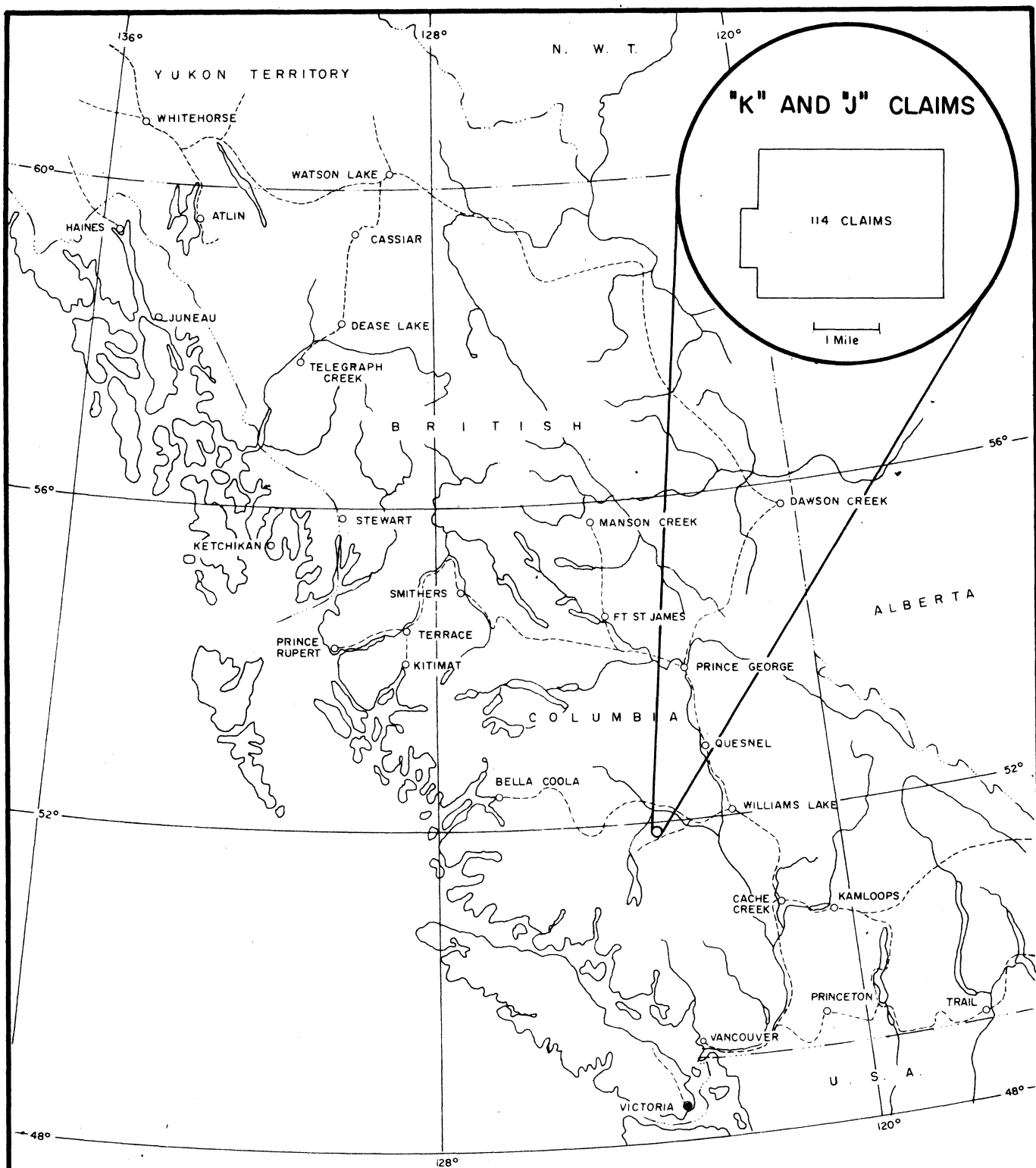
NOVEMBER, 1971

CONTENTS

	<u>Page</u>
Introduction	1
Location	1
Claims	1
Previous Work	1
Physiography	2
Glaciation	2
Climate	2
Access and Accommodation	2
Regional Geology	3
Property Geology	4
Mineralization	4
Conclusion	6
Recommendations	6

MAPS

B. C. Location Map	after page 1
1: 50,000 Claims & Geology	after page 2
Regional Geology	after page 3
Claims	inside back flap
Geology	inside back flap



CYPRUS EXPLORATION CORPORATION LTD.
SCUM LAKE PROJECT

PROPERTY LOCATION MAP

BRITISH COLUMBIA
SCALE: 1" = 125 MILES

Livingstone did some preliminary geology while staking and his results are shown on the 1: 50,000 map overleaf.

PHYSIOGRAPHY

The Property constitutes a hill - Newton Hill - which rises 500 feet above the flat, forested Chilcotin Plateau at ca. 4000 feet. The west flank of the hill falls 1000 feet into the Taseko river valley - a steep sided gorge running north-south. The plateau is dotted with small lakes which appear to be melt-water traps - many are dry by the fall.

GLACIATION

Most of the Property and surrounding country is covered by glacial debris. Many NNE trending lineaments are seen on the aerial photos, indicating the direction of transport. Evidence from elsewhere on the Taseko Lakes sheet (Tipper, 1963) indicates transport of material from the south.

CLIMATE

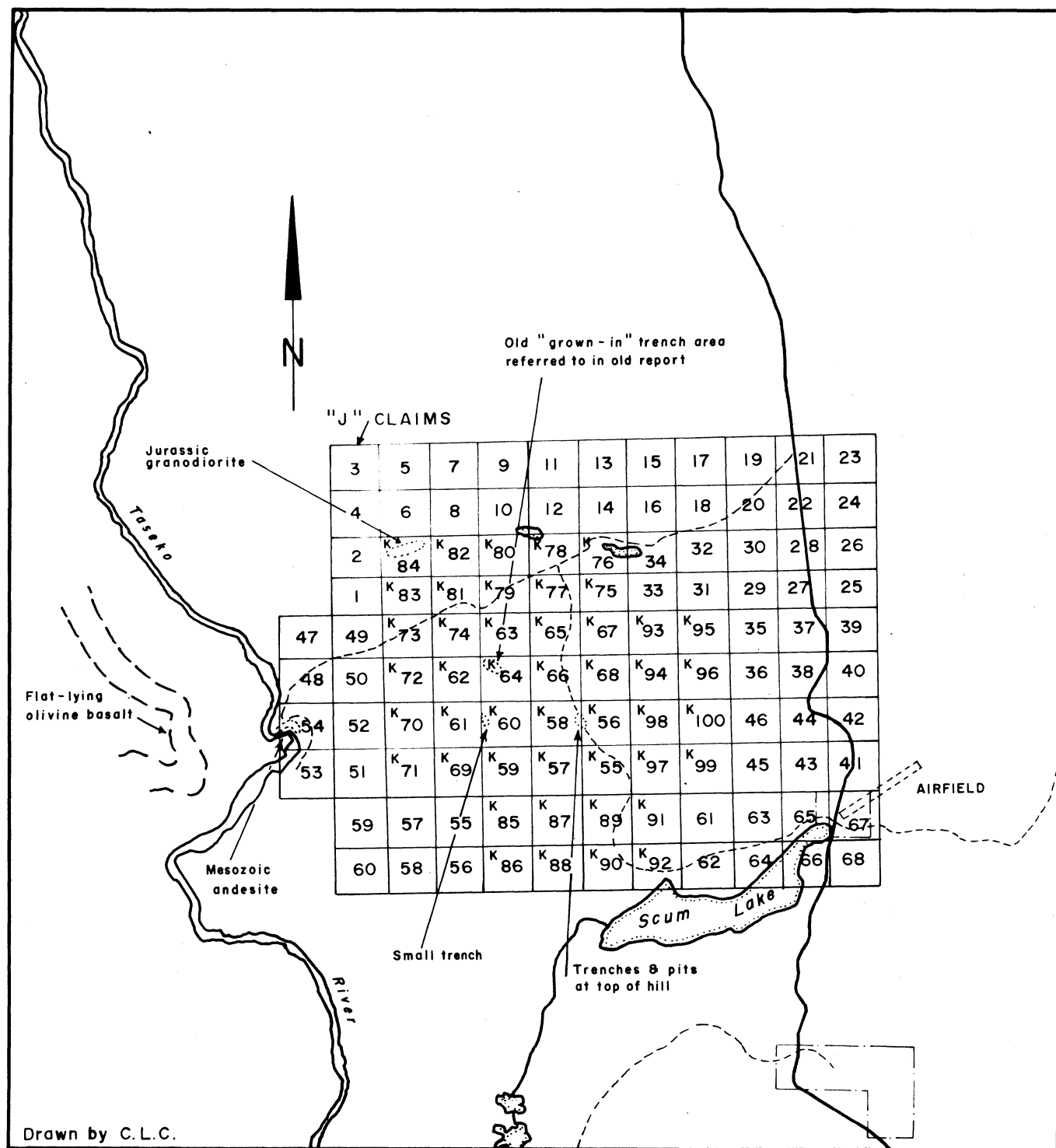
The Property is fortunate in having a very dry climate, apparently because of its position in the "rain shadow" of the Coast Ranges. Work would probably be possible well into November if the Williams Lake road was not necessary for access. The weather deteriorates markedly to the east and west, and some difficulty was experienced near Williams Lake on withdrawal on November 2nd, due to icy roads.

ACCESS AND ACCOMMODATION

Access to the Property is excellent. There is an airstrip on the edge of the Property suitable for light aircraft, while Scum Lake has been used for float planes despite contention by the owners of the fishing camp that it is too short.

Road access is very good: from Williams Lake it is 60 miles west along the Bella Coola road to Lee's Corner, where a left turn is made to cross the Chilcotin River. A mile after the river a right turn is made by a large ranch, and a further 20-25 miles brings one to the Scum Lake turn-off to the right. This turn is difficult to spot but is landmarked 100 yards before by a burnt-out blue car, lying on its side, 50 feet off the road on the right side.

The Scum Lake road is dirt, narrow and winding and the Property is reached after 5 miles (ca. 1 hour). As shown on the 1: 50,000 map the Property is traversed by roads suitable for 4-wheel-drive vehicles. The present work was undertaken using a 4-wheel-drive camper which gave excellent service - the only limitation being the width of the roads through the forest.



I : 50,000 CLAIMS & GEOLOGY
(AFTER K.W. LIVINGSTONE)

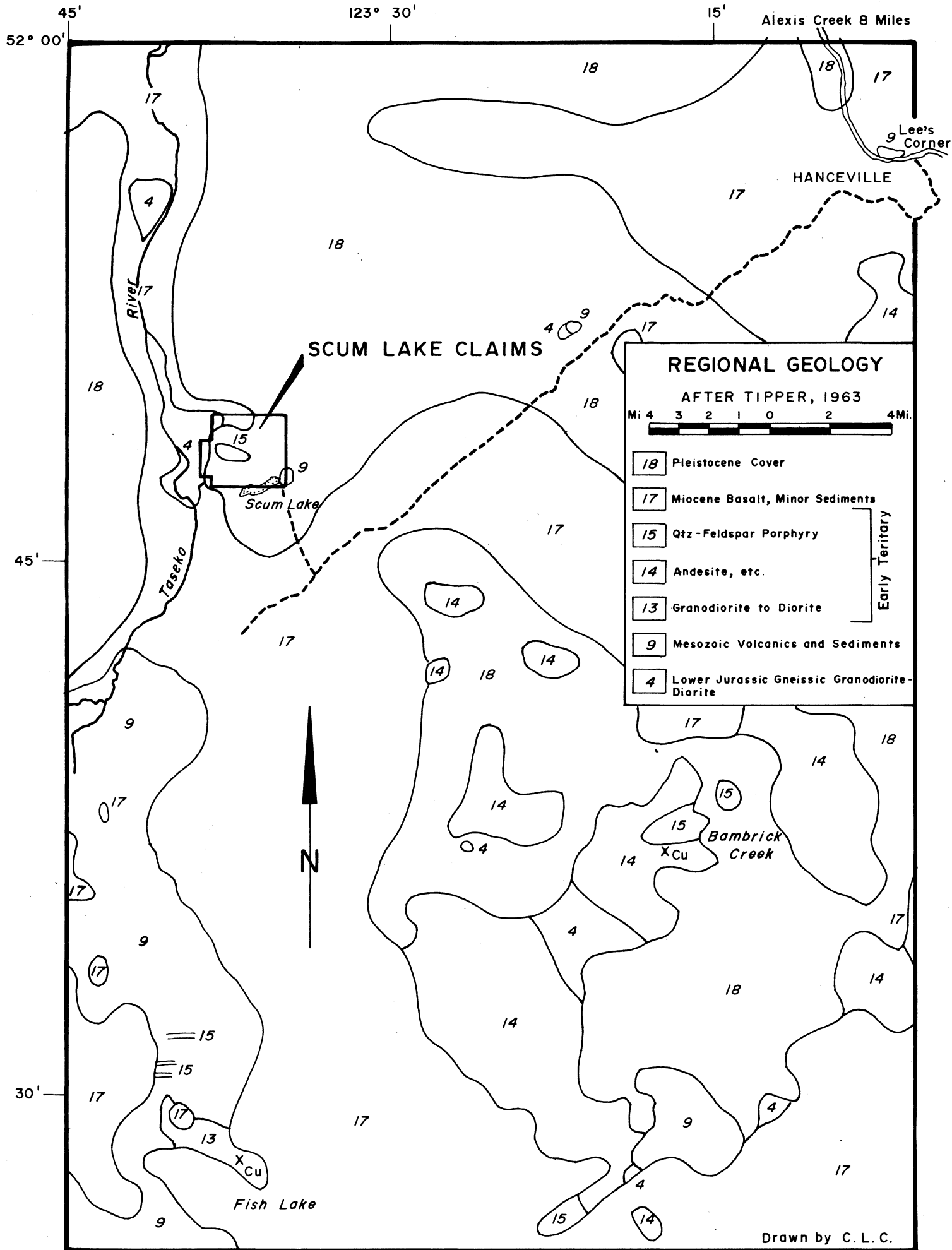
Enquiries were made as to the feasibility of accommodation at the Eleven Sisters Fishing Camp (proprietor - Daryl McCall). Rates quoted were \$250/week/person for a party of two, or \$325 with meals - these prices include transport in the area and the services of a guide. In view of the threat to his business the owner refused to give us special consideration with regard to accommodation. He was however, helpful and friendly during the course of our stay.

REGIONAL GEOLOGY (Tipper, 1963)

The area around Scum Lake is overlain predominantly by glacial debris and late Tertiary basic to intermediate volcanics. Through this cover windows of Late Cretaceous immature sediments (unit 9) and Lower Jurassic? granodiorite to diorite (unit 4) are exposed. Intrusive in these latter rocks are sills and stocks of andesitic to acid material such as quartz-feldspar porphyry and breccia of the same with a highly silicic matrix (unit 15). These sills and stocks have shown surface copper mineralization, and show special association with dioritic rocks of two ages according to Tipper. It may be that plutonic rocks mapped as Lower Jurassic gneissic granodiorite (unit 4), just west of Scum Lake, are in fact his unit 13 - Early Tertiary diorite and related porphyrys - and hence genetically related to the porphyritic rocks of Newton Hill.

An apparently completely analogous situation to the Scum Lake Property yet more deeply exposed?, exists about 20 miles SE of the Property at the head of Bambrick Creek (the regional structural trend is NW-SE). Here the window through the basalt/glacial debris cover is bigger as is the mapped outcrop of porphyry (unit 15) intruding andesites (unit 14) in spatial association with diorite (unit 4 or possibly 13?). Copper staining has been noted at the junction of units 14 and 15 and in unit 13 elsewhere in the region. Andesites on the Property probably correlate with these unit 14 andesites. This area was staked in 1970 by Emanuel Amendolagine of 750 Jervis Street, Vancouver (about 500 claims). There is no record of it in the 1966-1969 B.C. Dept. of Mines Bulletins. Work done in 1970-71 consisted of soil geochemistry, magnetometer survey, I.P. and drilling. Limited I.P. surveys were made over a number of copper soil anomalies and one of these anomalies drilled, intersecting barren conglomerates. Glacial effects will probably have rendered the soil anomalies suspect as drilling targets.

Twenty-five miles due south of Scum Lake, at Fish Lake, work has been done on chalcopryite mineralization in altered dioritic feldspar porphyry.



PROPERTY GEOLOGY

Exposure on the Property is limited and hence geological boundaries inferred are tentative.

Exposures on the summit of Newton Hill are of leached and/or silicified quartz-feldspar porphyry, probably sub-volcanic, and a breccia of the same in a silicic matrix. It is possible that the breccia is restricted to the summit of the hill and is responsible for the topographic expression. The rocks show supergene, argillic alteration, having kaolinite pseudomorphs after feldspar. The rocks are well fractured at surface, all fractures being coated with limonite, usually brick red and probably indicative of high hematite content. Turquoise is reported by K. W. Livingstone (joint owner) from one of the trenches. Some exposures are free of oxides except on fracture surfaces, and show voids due to the leaching of sulphides, other exposures are of massive oxides of brick red, maroon, brown, etc., colour with or without a brecciated texture. There is a complete gradation between the two types of exposure and limited exposure prevented any systematic mapping of the changes. It may be significant that oxide-free rocks were noted on the very summit of the hill and massive oxides formed the topographically lowest outcrops observed, of this rock type.

Quartz-diorite outcrops in the NW corner of the Property and may be genetically related to the porphyry. These outcrops are part of a large pluton, mapped by Tipper (1963) as Lower Jurassic granodiorite, bounding the west side of the Property. An andesite outcrop on the west flank of Newton Hill may represent the volcanic expression of this plutonism. Outcrops of apparently hornfelsed basalt occur on the banks of the Taseko below the andesite outcrop and probably represent the roof of the diorite intrusion. Basalts exposed on the west side of the Taseko canyon and low on the north slope of Newton Hill are part of the late Tertiary blanket over all the above mentioned rocks. The only other outcrop found on the Property occurs in the stream draining Scum Lake in the SE corner of the claim group. Here a coarse immature grey sandstone is overlain by conglomerate, the upper part of the sandstone being oxidized red. Tipper has mapped these rocks as Upper Cretaceous, thicknesses exposed are conglomerate - 2 feet; oxidized sandstone - 1 foot; unoxidized sandstone - 3 feet, and the rocks were unmetamorphosed.

MINERALIZATION

The porphyritic rocks, by their voids and abundant oxide, indicate that they once contained quantities of sulphides. X-ray work has been done on the gossan minerals at the University of British Columbia and hematite, limonite, jarosite and carphosiderite have been identified. The owners of this property have an interesting theory with regard to the mineralization. They envisage supergene enrichment of a primary chalcopyrite-pyrite assemblage taking place in an arid environment in Oligocene times. The porphyry is

assumed to have formed a topographic high at this time and to have been subsequently encased in the late Tertiary plateau basalts, which preserved the mineralization and protected the postulated enrichment zone from removal by glaciation. No evidence exists on the Property as to the age relations of the porphyry and the basalts. The reported presence of turquoise supports the presence of a primary chalcopyrite-pyrite assemblage and hence there is a possibility of primary and/or secondary ore below the leached zone.

Note:

Turquoise: $\text{CuAl}_6 (\text{PO}_4)_4 (\text{OH})_8 \cdot 2\text{H}_2\text{O}$

Carphosiderite: $3\text{Fe}_2\text{O}_3 \cdot 4\text{SO}_3 \cdot 7\text{H}_2\text{O}$ (doubtful species, may be jarosite)

CONCLUSIONS

Despite limited exposure the Scum Lake Prospect has the ingredients of a "typical" porphyry copper:

- (a) A porphyritic granitic intrusion into a quartz-diorite pluton (and/or andesites?), subsequent brecciation of the porphyry by more silicic magma/fluids in a probable pipe, and a possible genetic relation between the magmas.
- (b) Strong leaching of the primary sulphides in the porphyry and breccia.
- (c) The presence of turquoise along with hematite, jarosite, etc., in gossans.

The postulated supergene enrichment, although rare in B.C., is supported by the presence of such enrichment in the nearest worked porphyry at Gibraltar, 100 miles to the north-east.

RECOMMENDATIONS

Geochemical surveying on this property would be hampered by glacial overburden and lack of streams.

Geophysical techniques could be more useful. A ground magnetometer survey would serve to outline areas underlain by Late Tertiary basalts or perhaps to outline a possible magnetite alteration halo around the centre of mineralization. However it is probable that the topography achieves this already - the summit of Newton Hill being the centre. An I.P. survey would delineate areas underlain by disseminated sulphides which geology has shown were once present at surface. However the basalts may complicate this picture and also I.P. work would not discriminate between pyrite and chalcopyrite. The first step would be to ascertain the nature of sulphide mineralization by drilling. Since vertical cylindrical zoning may be expected in the primary mineralization an inclined hole, e.g. at 4000' on the north slope of the hill, inclination 45° south, may serve best to investigate the structure. Secondary mineralization is expected to form a roughly horizontal blanket and hence may be best investigated by vertical holes around the summit of the hill. Having established the nature of the mineralization I.P. may be useful in determining its extent.

Respectfully submitted,



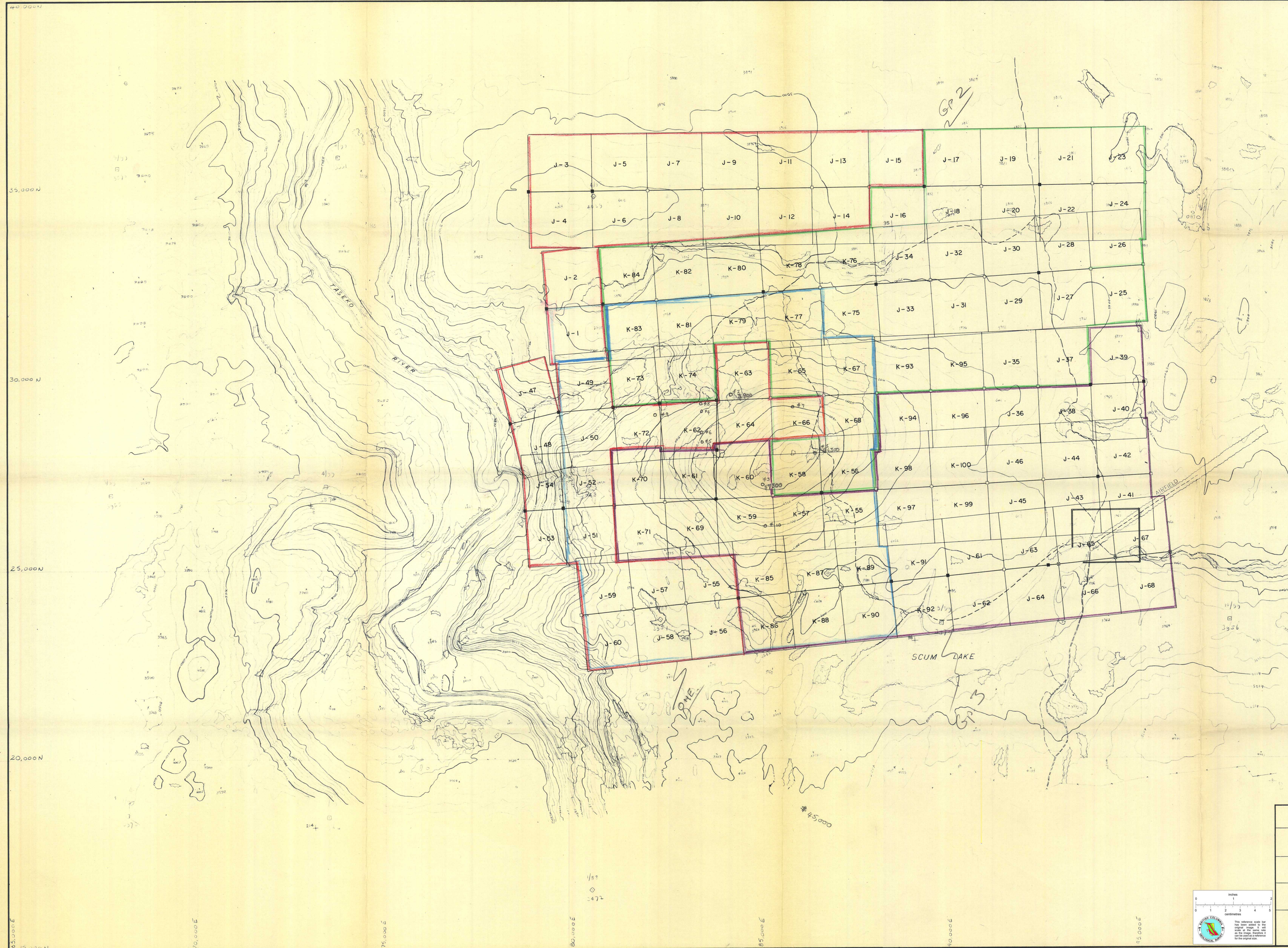
P. F. Lewis

APPENDIX I

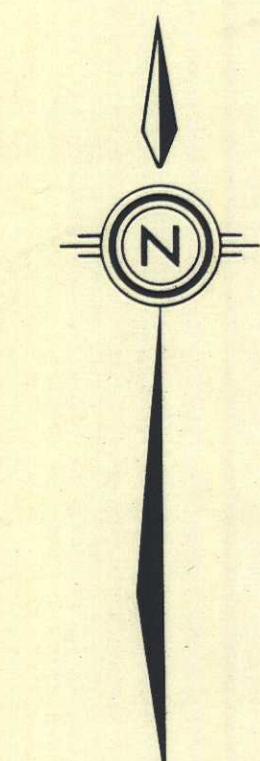
CLAIM DATA

<u>NAME</u>	<u>RECORD NUMBER</u>
K - 55 to 96 inc.	G - 26308-26349 inc.
K - 97 to 100 inc.	K - 26999-27002 inc.
J - 1 to 68 inc.	K - 27079-27146 inc.

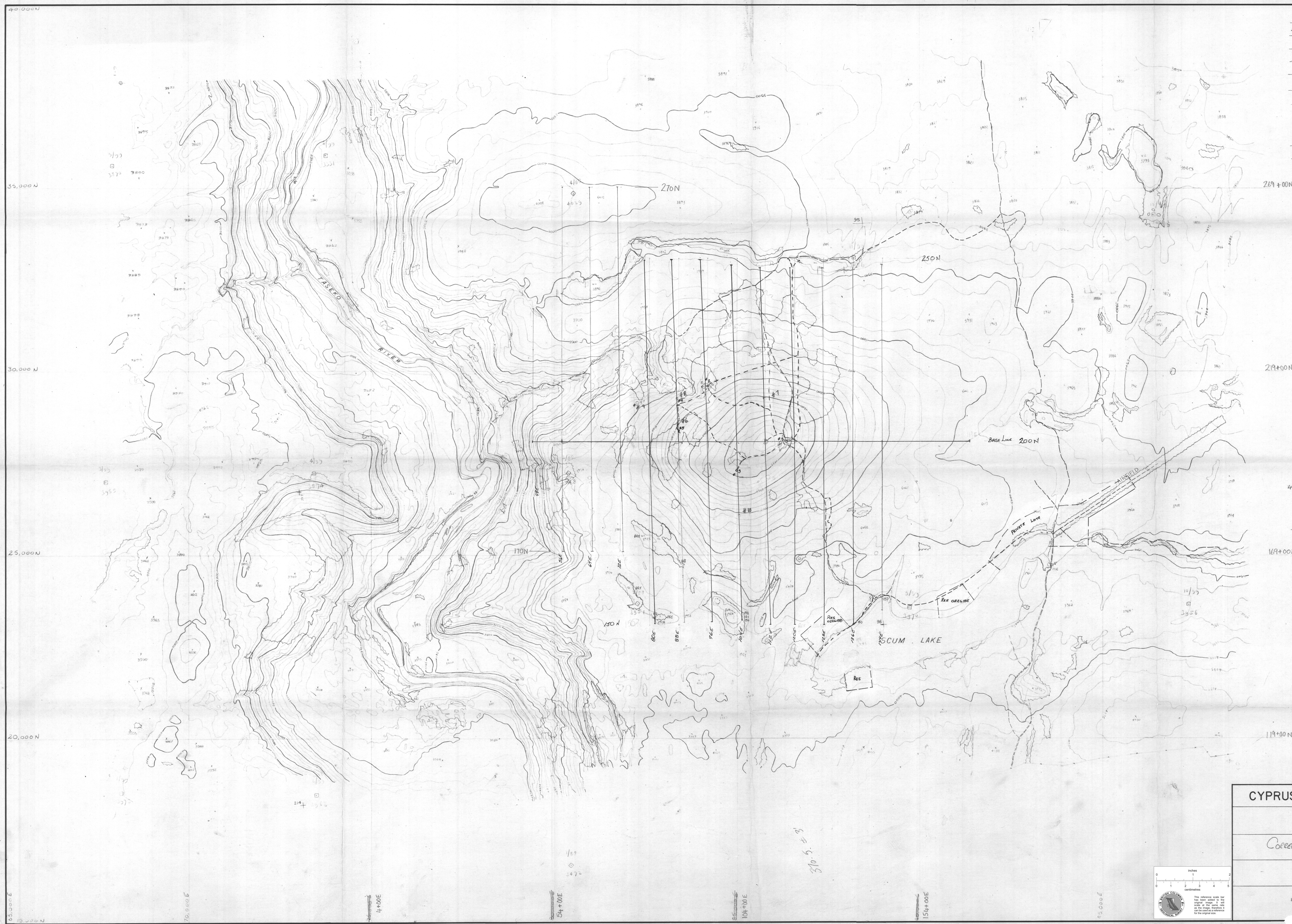
B.C. Dept. of Mines Claim Map No. 29C



- KEY:**
- POST FOUND AND LOCATED
 - POST FOUND
 - ✱ POST LOCATED BY WITNESS POST
 - CLAIM LOCATION LINE
 - APPROXIMATE BOUNDARY OF THE "ELEVEN SISTERS" FISHING CAMP'S SURFACE RIGHTS



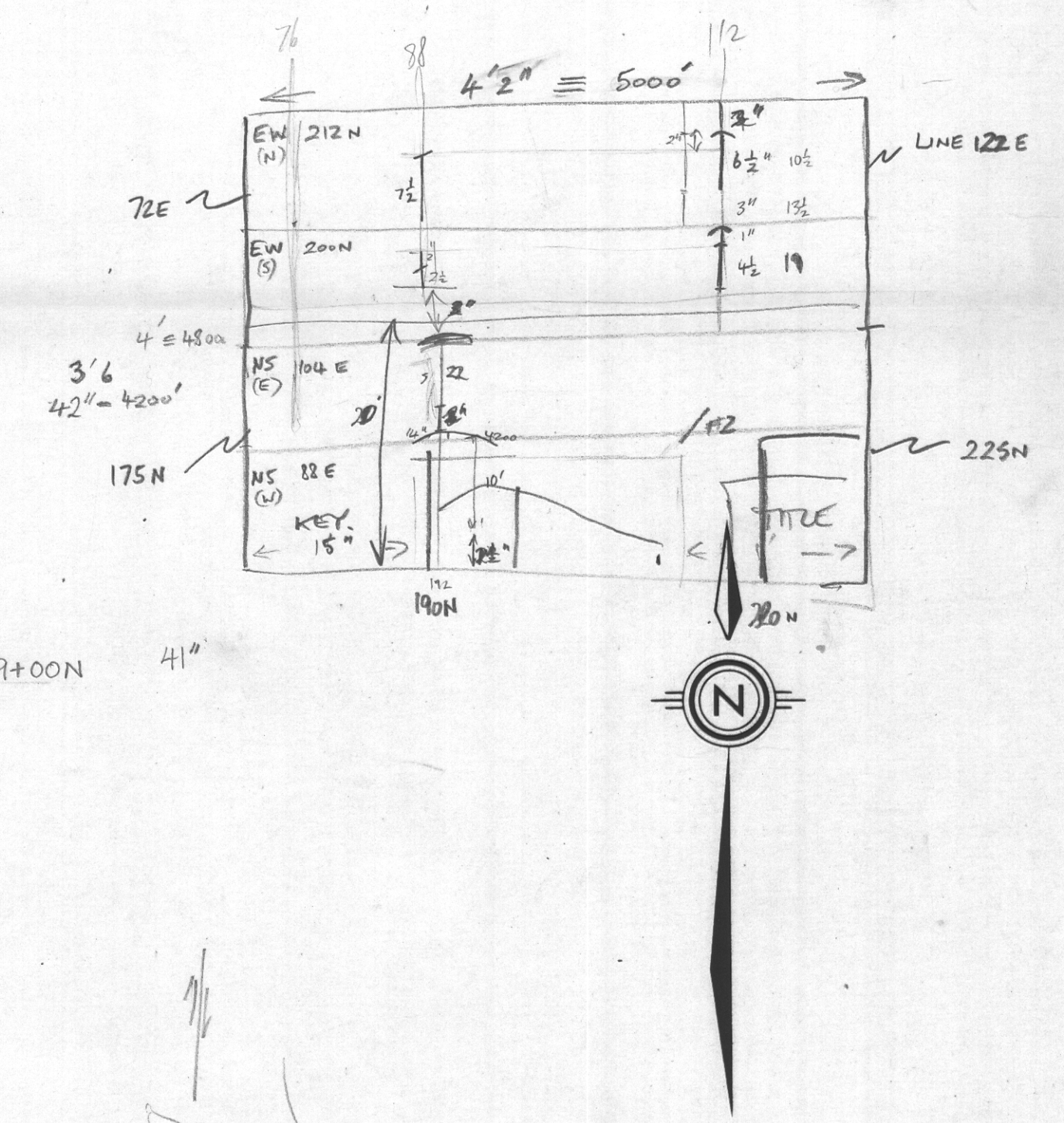
CYPRUS EXPLORATION CORPORATION LTD.	
SCUM LAKE PROJECT CLINTON M.D. BRITISH COLUMBIA	
CLAIMS	
JANUARY, 1972	MAP 1
SCALE 1 in. = 1000 ft.	
1000 0 1000 2000 3000 4000 FEET	



#	ELEV	DEPTH	
1	4425	592	~ 3800
2	4160	284	~ 3900
3	4420	695	~ 3700
4	4120	721	~ 3400
5	4220	241	~ 4000
6	4200	927	~ 3250
7	4300	640	~ 3650
8	4075	154	~ 3900
9	3975	500	~ 3450
10	4190	547	~ 3100

SECTIONS: N-S: LINE 88E # 4,5,6,8
 MAX 4220
 MIN 3250
 > 5000' (9)
 > 1000' (2)
 LINE 104E # 3,10
 MAX 4450
 MIN 3600
 > 5000' (7)
 E-W: LINE 212N # 8,7,6,4,2
 MAX 4450
 MIN 3800
 > 5000' (5)
 LINE 200N # 1 (5)
 MAX 4450
 MIN 3800
 > 5000' (5)

SCALE OF SECTIONS
 1" = 100'

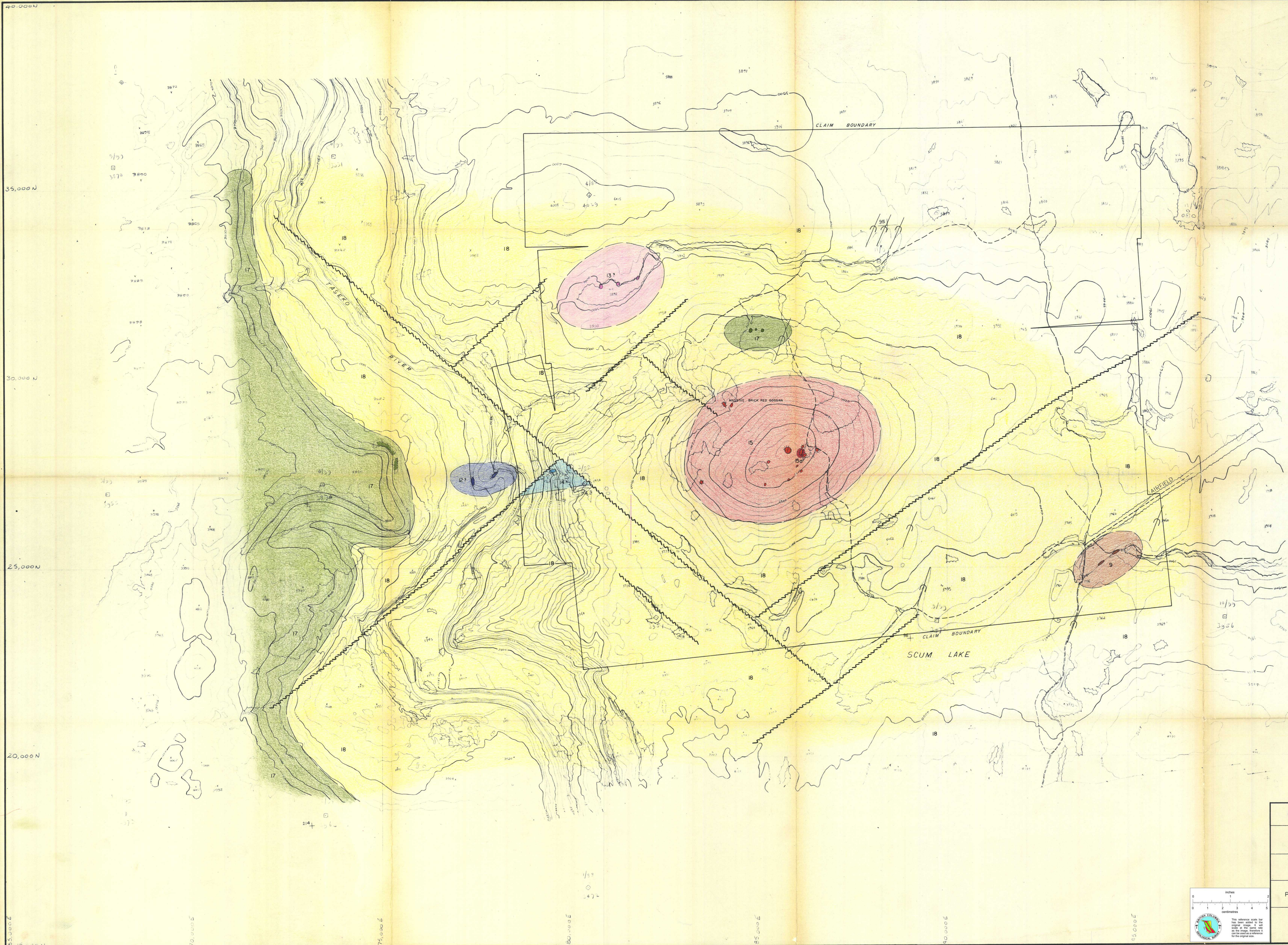


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SCUM LAKE PROJECT
 CLINTON M.D. BRITISH COLUMBIA

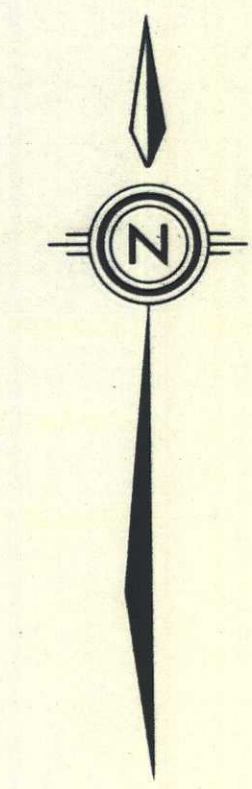
CORRECTED & ADJUSTED CONTROL & SURFACE FEATURES

SCALE: 1 in. = 1000 ft. 10' x 10' 2' x 10' 1/2' x 10' 1/4' x 10'

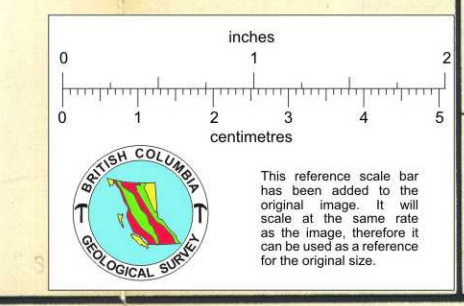


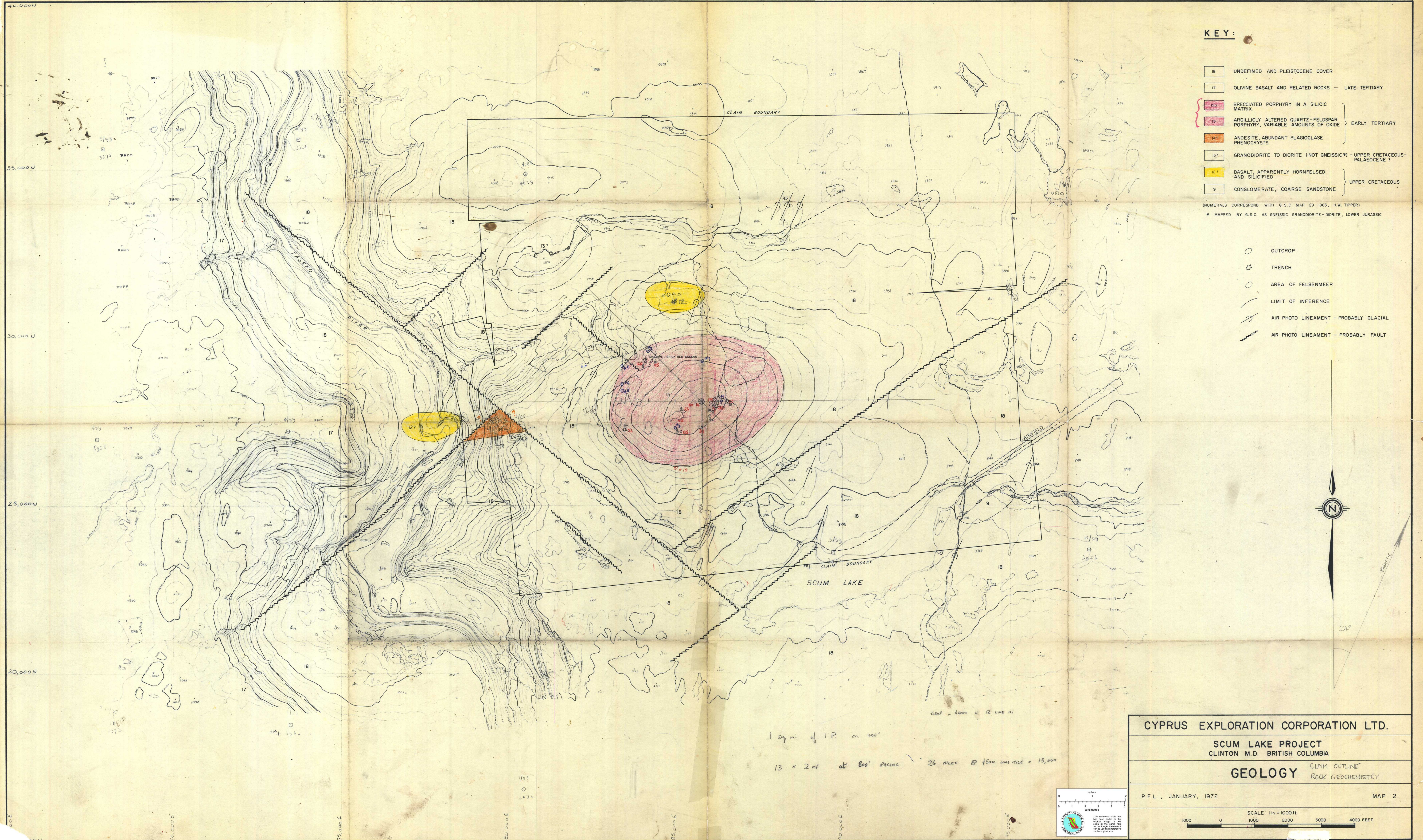
- KEY:**
- 18 UNDEFINED AND PLEISTOCENE COVER
 - 17 OLIVINE BASALT AND RELATED ROCKS - LATE TERTIARY
 - 15-9 BRECCIATED PORPHYRY IN A SILIC MATRIX
 - 15 ARGILLICALLY ALTERED QUARTZ-FELDSPAR PORPHYRY, VARIABLE AMOUNTS OF OXIDE
 - 14-9 ANDESITE, ABUNDANT PLAGIOCLASE PHENOCRYSTS
 - 13-9 GRANODIORITE TO DIORITE (NOT GNEISSIC*) - UPPER CRETACEOUS-PALAEOCENE ?
 - 12-9 BASALT, APPARENTLY HORNFELSED AND SILICIFIED
 - 9 CONGLOMERATE, COARSE SANDSTONE
- (NUMERALS CORRESPOND WITH G.S.C. MAP 29-1963, H.W. TIPPER)
* MAPPED BY G.S.C. AS GNEISSIC GRANODIORITE-DIORITE, LOWER JURASSIC

- OUTCROP
- ☆ TRENCH
- AREA OF FELSEMEER
- LIMIT OF INFERENCE
- AIR PHOTO LINEAMENT - PROBABLY GLACIAL
- AIR PHOTO LINEAMENT - PROBABLY FAULT



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SCUM LAKE PROJECT CLINTON M.D. BRITISH COLUMBIA	
GEOLOGY	
P.F.L., JANUARY, 1972	MAP 2
SCALE: 1 in. = 1000 ft. 1000 0 1000 2000 3000 4000 FEET	





- KEY:**
- 18 UNDEFINED AND PLEISTOCENE COVER
 - 17 OLIVINE BASALT AND RELATED ROCKS - LATE TERTIARY
 - 15 BRECCIATED PORPHYRY IN A SILICIC MATRIX
 - 15 ARGILLICALLY ALTERED QUARTZ-FELDSPAR PORPHYRY, VARIABLE AMOUNTS OF OXIDE
 - 14 ANDESITE, ABUNDANT PLAGIOCLASE PHENOCRYSTS
 - 13 GRANDIORITE TO DIORITE (NOT GNEISSIC) - UPPER CRETACEOUS-PALAEOCENE ?
 - 12 BASALT, APPARENTLY HORNFELSED AND SILICIFIED
 - 9 CONGLOMERATE, COARSE SANDSTONE
- (NUMERALS CORRESPOND WITH G.S.C. MAP 29-1963, H.W. TIPPER)
* MAPPED BY G.S.C. AS GNEISSIC GRANDIORITE-DIORITE, LOWER JURASSIC

- OUTCROP
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- AREA OF FELSENMEER
- LIMIT OF INFERENCE
- AIR PHOTO LINEAMENT - PROBABLY GLACIAL
- AIR PHOTO LINEAMENT - PROBABLY FAULT

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SCUM LAKE PROJECT
CLINTON M.D. BRITISH COLUMBIA

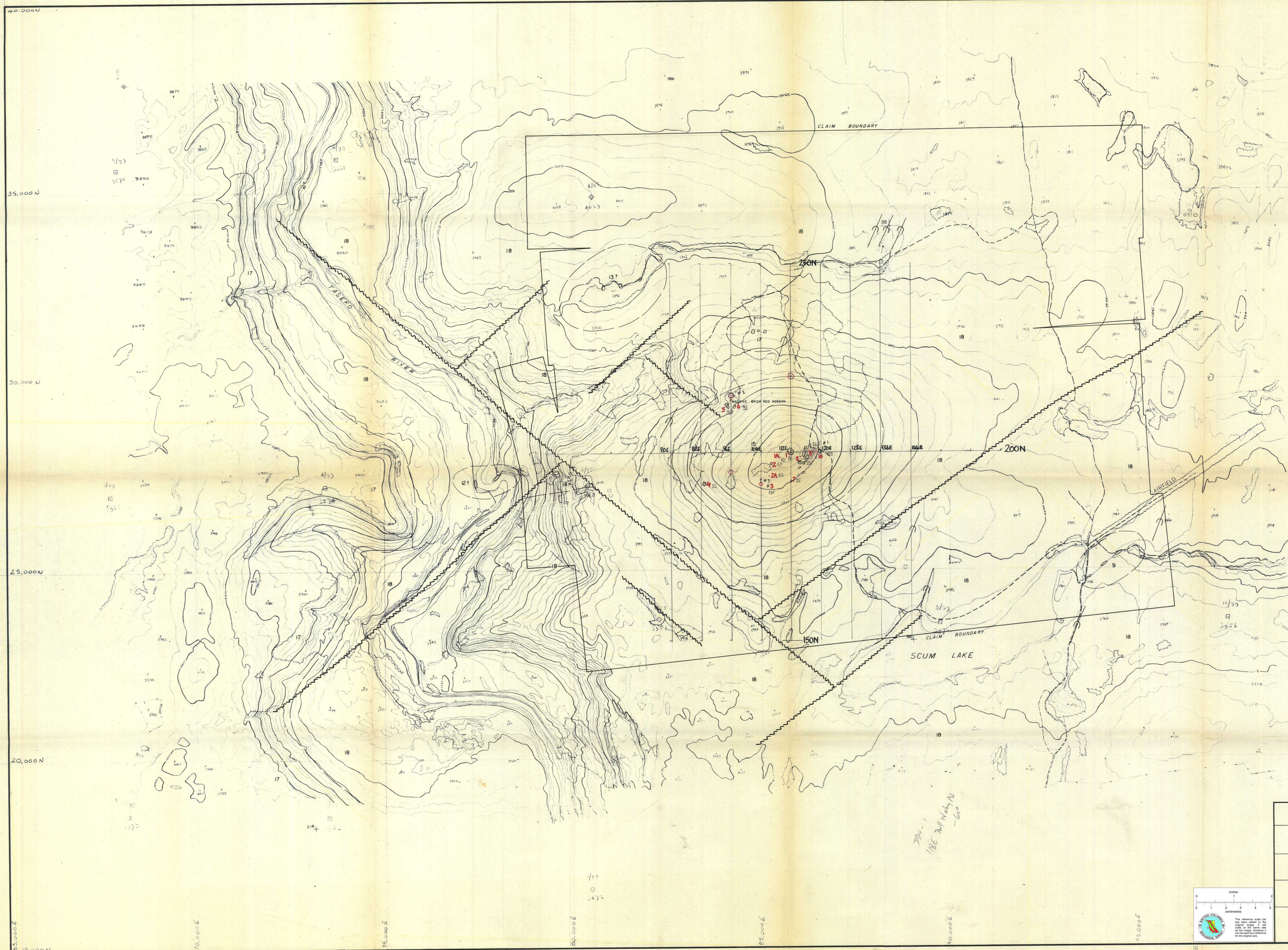
GEOLOGY CLAIM OUTLINE
ROCK GEOCHEMISTRY

P.F.L., JANUARY, 1972

MAP 2

SCALE: 1 in. = 1000 ft.

1000 0 1000 2000 3000 4000 FEET



KEY:

- 18 UNDEFINED AND PLEISTOCENE COVER
- 17 OLIVINE BASALT AND RELATED ROCKS - LATE TERTIARY
- 15a BRECCIATED PORPHYRY IN A SILICIC MATRIX
- 15 ARGILLICALLY ALTERED QUARTZ-FELDSPAR PORPHYRY, VARIABLE AMOUNTS OF OXIDE } EARLY TERTIARY
- 14a ANDESITE, ABUNDANT PLAGIOCLASE PHENOCRYSTS
- 13a GRANODIORITE TO DIORITE (NOT GNEISSIC*) - UPPER CRETACEOUS-PALAEOCENE ?
- 12a BASALT, APPARENTLY HORNFELSED AND SILICIFIED } UPPER CRETACEOUS
- 9 CONGLOMERATE, COARSE SANDSTONE

(NUMERALS CORRESPOND WITH G.S.C. MAP 29-1963, H.W. TIPPER)
* MAPPED BY G.S.C. AS GNEISSIC GRANODIORITE-DIORITE, LOWER JURASSIC

- OUTCROP
- ☆ TRENCH
- AREA OF FELSENMEER
- LIMIT OF INFERENCE
- AIR PHOTO LINEAMENT - PROBABLY GLACIAL
- AIR PHOTO LINEAMENT - PROBABLY FAULT

-2 COMPOSITE ROCK-SAMPLE NUMBERS AND SITES (WITH PREFIX 1479-72 ON SAMPLE BASES)



CYPRUS EXPLORATION CORPORATION LTD.

SCUM LAKE PROJECT
CLINTON M.D. BRITISH COLUMBIA

ROCK SAMPLE, GEOLOGY, AND GRID (APPROX.)

P.F.L., JANUARY, 1972

MAP 2

SCALE: 1 in. = 1000 ft.
1000 0 2000 3000 4000 FEET

