Sub Highland Valley - Spences Bridge

MAMIT LAKE MINING LTD. (N.P.L.)

Summary Report - Geological Investigation
M.L.M. - G.C.M. Claim Groups

Mamit Lake, B.C.

June, 1968

801180

June 4th, 1968

Mr. George J. Saarse
President
Mamit Lake Mining Ltd. (N.P.L.)
Vancouver, B.C.

Dear Sir:

The accompanying "Summary Report on a Geological Investigation of the M.L.M. - G.C.M. Claim Groups, Mamit Lake Mining Ltd. (N.P.L.)" originates mainly from the writer's recent field examination and his study of previous reports and other relevant data.

With this, the writer also thankfully acknowledges your helpful guidance and cooperation, respectively, in regard to the recent field inspection and provision of the necessary background data.

Lastly, the writer requests that extracts or independent summaries of this report be submitted for his approval prior to making public information releases — in general accordance with such requirements of the B.C. Securities Commission.

Respectfully submitted,

W.M. Sharp, P.Eng.

WMS/hb
encl.

SUMMARY REPORT

on a

GEOLOGICAL INVESTIGATION

of the

M.L.M. - G.C.M. CLAIM GROUPS

Mamit Lake, B.C.

Nicola Mining Division

for

MAMIT LAKE MINING LTD. (N.P.L.)

by

W.M. Sharp, P.Eng.

June, 1968

I N D E X

REPORT MAPS:

Figs. 1 - Index Map and Regional Geology; 1 in. = 4 mi.
2 - Claim Map; 1 in. = 3000 ft.
3 - A-2 Zone; 1 in. = 100 ft.
4 - A-1 West Zone Exploration; 1 in. = 100 ft.
5 - South Diorite Zone; 1 in. = 100 ft.

Dwg. No. 1: Geophysical Exploration and Topography; 1 in. = 1040 ft.

Dwg. No. 2: Geology, per Ground Mapping and Air Photos; 1 in. = 1040 ft.

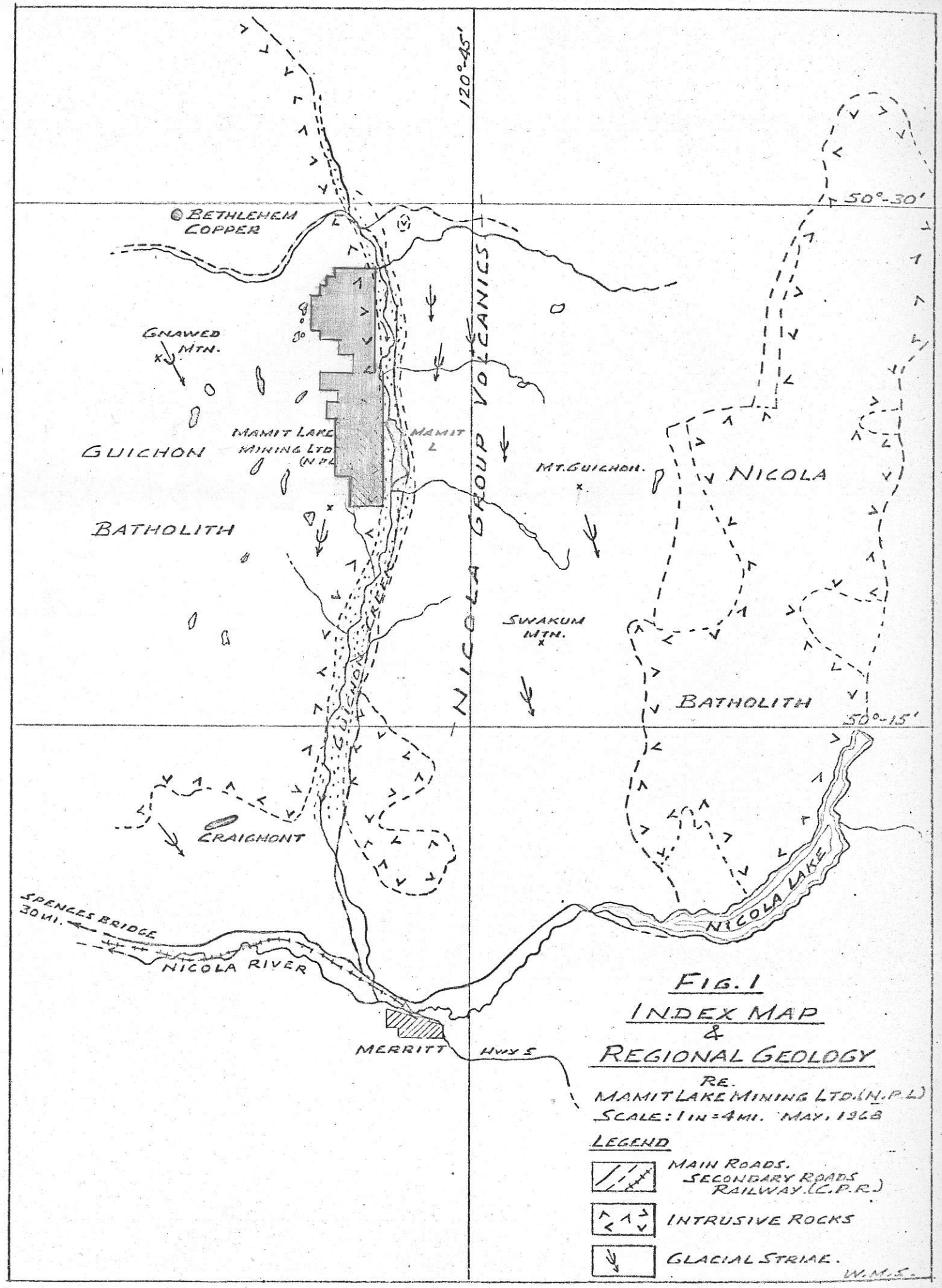


FIG. 1
INDEX MAP & REGIONAL GEOLOGY

RE.
MAMIT LAKE MINING LTD. (N.P.L.)
SCALE: 1 IN = 4 MI. MAY, 1968

LEGEND

- MAIN ROADS. SECONDARY ROADS RAILWAY. (C.P.R.)
- INTRUSIVE ROCKS
- GLACIAL STRIAE.

W.M.S.

SUMMARY, RECOMMENDATIONS, ESTIMATED COSTS

The writer has prepared the current "Summary Report on a Geological Investigation of the M.L.M. - G.C.M. Claim Groups, Mamit Lake Mining Ltd. (N.P.L.)" at the request, and by authorization of Mr. G.J. Saarse, President of this company. The contained information derives from the writer's May 25-26, 1968 examination of the principal showings and prospect areas within the property, and from his study of previous engineer's reports loaned by Mr. Saarse, plus relevant data from the writer's own sources.

The claim group is situated to the west of Mamit Lake and the immediately up-stream part of Guichon Creek. It lies 18 air-miles due north of Merritt, B.C. All but three claims are situated in the Nicola Mining Division; these others are in the Kamloops M.D. Access is by way of the all-weather Merritt-Kamloops secondary highway; thence by local mining and ranch roads onto the property.

The group consists of a roughly rectangular 7 by 2 mile block of 168 located claims — all apparently in good standing — and owned by Mamit Lake Mining Ltd. (N.P.L.).

Copper mineralization within the claims area was discovered about the year 1914; this was explored on a small scale by way of small pits and shallow shafts. A small amount of well mineralized sorted vein material (at shaft collars) resulted from this work. During 1958 Northwestern Explorations conducted geological, geophysical, and geochemical surveys over and beyond part of the present claims area. Between 1964 and 1967 a number of geophysical-geochemical-geological surveys of a minor fraction of the gross claims area were carried out. Subsequent drilling and trenching of certain anomalies disclosed nothing of major interest; however, at least one specific zone, the A-1, has been rather incompletely tested. In general, the former exploration has indicated only a minor ore potential for the basic intrusive phases of the Guichon body, and significant ore potential within areas of mixed older and younger intermediate to acidic intrusive rocks. More recently, exploration carried out in the G.C.M. Ridge — Gump Creek Section — has disclosed significant indications of true Highland Valley-type copper-molybdenite mineralization within a major area of compositionally favourable, well fractured intrusive rocks.

The northerly and, probably, westerly parts of the property are underlain by mixed older and younger intermediate-acidic intrusive facies of the Guichon batholith — the fractured parts of these comprising the optimum setting for the occurrence of widespread type copper-molybdenum mineralization of the Highland Valley camp. Exploration to date, as limited to the G.C.M. Ridge - Gump Creek area, has covered only a small fraction of the total potentially-mineralized intrusive rocks.

Induced polarization surveys within the G.C.M. Ridge - Gump Creek area have delineated a 6000' by 2500' anomaly with chargeabilities ranging from 8 to 13 milliseconds and attendant low resistivities; with this, and northerly along the same apparent belt of fracturing are two lesser, but significant I.P. anomalies.

A modest amount of trenching on G.C.M. Ridge, within the easterly part of the anomaly, has exposed good widths of well sericitized, kaolinized, and chloritized quartz diorite containing generally minor copper-molybdenite mineralization.

The writer's air-photo interpretations of possible fracturing over the extent of the property indicates the possible existence of five major zones of complex fracturing within the northerly claims area, and at least one within a southerly and westerly part of the property.

As a result of the relatively minor amount of drilling and trenching so far accomplished over the property, no economically significant mineralized zones have been actually delineated, in spite of locally favourable geological-geophysical indications.

The writer makes the following recommendations for additional, more comprehensive exploration of potentially mineralized areas.

1. Conduct reconnaissance-to-detailed geological and geochemical surveys of the westerly and northerly claims area — with emphasis on the latter. Initially, these should be directed to the current G.C.M. Ridge-Gump Creek (A) prospect zone; thence to the B, C, D, E and F zones of possible fracturing.
2. Carry out induced polarization surveys of possible mineralized areas resulting from 1 - above.
3. Explore significant geochemical -I.P. anomalies by diamond drilling, after due consideration of possible contributory physical-chemical factors.

The estimated costs of the above work are as follows:

Stage I	
Item 1 - sample collection and analyses (Cu and Mo) 2500 @ $3 gross cost per sample	$ 7,500
Item 2 - provisionally 20 line-miles @ $1000 per mile gross cost	20,000
General Provision, transportation, overhead, engineering-supervision	3,500
Sub-total	$31,000
Stage II	
Item 3 - Diamond drilling 3000 L.F. @ $10	30,000
General Provision for indirect and contingent direct expense	5,000
Gross Cost	$66,000

Respectfully submitted,

W.M. Sharp, P.Eng.

INTRODUCTION

The following report has been prepared in accordance with an initial request and authorization from Mr. G.J. Saarse, President, Mamit Lake Mining Ltd. (N.P.L.). The greater part of the reference data was furnished by Mr. Saarse from his Company files; these have been augmented by data from the writer's files and library, and which include relevant Government geological reports and maps.

The writer, guided and assisted by Mr. Saarse, inspected and mapped the currently significant sections of the property during May 25 and 26, 1968.

The accompanying drawings have been prepared via a 4X pantographic enlargement of 'Advance Print 92I/7, Mamit Lake, B.C.' This has been done to furnish a more convenient, comprehensive, and accurate base for the anticipated future additions and/or revisions. The currently shown position of the claim group will undoubtedly require some revision pending adequate ties to main topographic features; however, geophysical grids are plotted more-or-less independently of claim positions, and geological, geophysical etc. detail is referenced to these grids, or to recognizable topographic features.

The principal report reference material is listed:

A.D. Drummond, 1959: Thesis, Eastern Guichon Batholith and J.B. Group.

C.S. Ney, P.Eng., 1959: Geological, Geophysical and Geochemical Report on the J.B. Group.

D.W. Smellie, P.Eng., 1964 and 1966: Geophysical Reports, M.L.M. Group, G.C.M. Group.

E.S. Rugg, P.Eng., 1965: Geological Report M.L.M. Group.

D.R. Cochrane, P.Eng., Geo-X Surveys Ltd., 1967: Geophysical Report on Eight Claims of the M.L.M. Group, West of the South end of Mamit Lake, B.C.

PROPERTY

A. Location and Access

The property is situated on the east border of the Highland Valley camp, closely west of Mamit Lake, B.C., and occupying a general 7 x 2 mile rectangular area — the long dimension being northerly. Elevations over the property range from about 3200 to 4400 feet. The group is situated mainly within the Nicola Mining Division.

ASTRON.

KAMLOOPS M.D.

NICOLA M.D.

MAMIT LAKE

FIG. 2

MAMIT LAKE MINING LTD.

CLAIM MAP

MLM & GCM CLAIM GROUPS

MAMIT LAKE, B.C.

NICOLA & KAMLOOPS MIN. DIV'S.

SCALE: 1 IN. = 3000 FT. JUNE, 1968

REF'S CLAIM MAP, DEC. 1965 WITH CURRENT RECORDS.

REDUCED BY W.M.S.

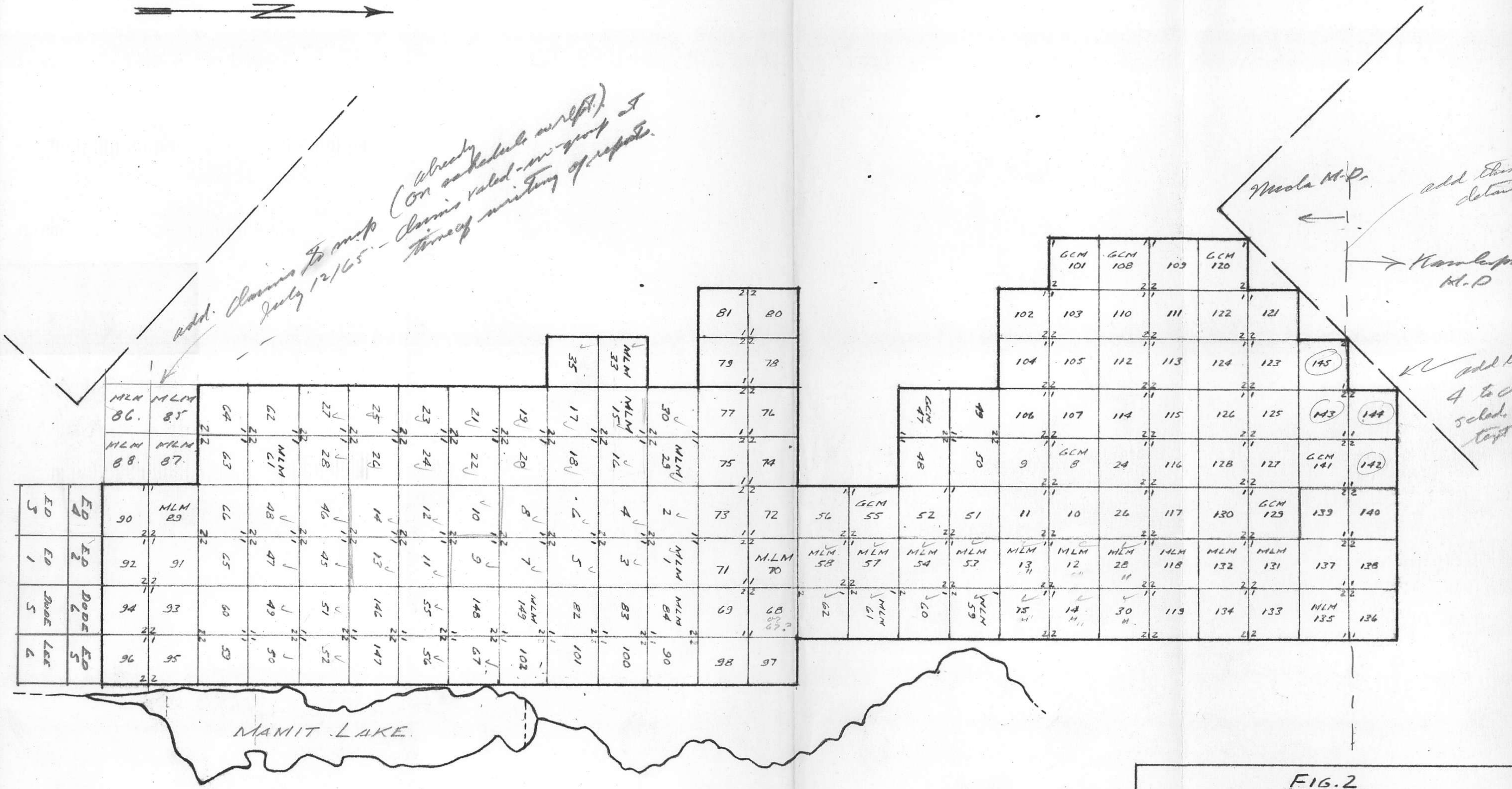


FIG. 2

MAMIT LAKE MINING LTD.

CLAIM MAP

MLM & GCM CLAIM GROUPS

MAMIT LAKE, B.C.

NICOLA & KAMLOOPS MIN. DIV'S.

SCALE: 1 IN. = 3000 FT. JUNE, 1968

REF.'S CLAIM MAP, DEC. 1965 WITH CURRENT RECORDS.

REDUCED BY W.M.S.

Regional access is via the Merritt-Kamloops all-weather gravel road; Mamit Lake adjoins the road at 18 miles due north of Merritt, B. C. -- the local supply-personnel centre.

Local access to northerly, and general upper parts of the property is via the Billy Lake road; the lower, southerly sections are accessible via local roads to the south end and west shore of Mamit Lake or via a northerly extension of the 'Aberdeen' road. The secondary roads are seasonally impassable without special efforts to maintain continuous access.

B. Claims

The property comprises 168 located claims, shown on Fig. 2, and as listed in the following schedule:

1. Nicola Mining Division:

Mineral Claims		Record No.'s		Record Dates
M.L.M.	#1 - #9, incl.	36075-83,	incl.	15 Jan. 1968
	#10-#30, "	21452-72,	"	23 Sept. 1963
	#33	21475		23 Sept. 1963
	#35	21477		23 Sept. 1963
	#12-#15, "	36533-36,	"	14 March, 1968
	#45-#50, "	21800-05,	"	28 Jan. 1964
	#28	36537		14 March, 1968
	#30	36538		"
	#51-#62, "	36539-50,	"	"
	#67-#69, "	36551-53,	"	"
	#82-#84, "	36554-56,	"	"
	#90	36557		"
	#97-#102, "	36558-62,	"	"
	#118-#119, "	36563-64,	"	"
	#131-#135, "	36565-69,	"	"
	#137	36570		"
	#139	36571		"
	#146-#149, "	36572-75,	"	"
	#59-#66, "	21813-20,	"	7 Feb. 1964
	#70-#81, "	23274-85,	"	14 Jan. 1965
	#85-#96, "	24801-12,	"	12 July, 1965
G.C.M.	#8 -#11, incl.	21832-35,	incl.	24 Feb. 1964
	#24	21848		"
	#26	21850		"
	#47-#52, "	21871-76,	"	27 Feb. 1964
	#55-#56, "	21889-90,	"	2 March, 1964
	#101-#117, "	23368-84,	"	25 Feb. 1965
	#120-#130, "	23387-97,	"	1 March, 1965
	#141	23465		3 March, 1965
	#143	23466		3 March, 1965
	#145	23467		3 March, 1965

1. Nicola Mining Division (cont'd):

The following were acquired via Bills of Sale dated 12 April, 1968; these lie in the Nicola Mining Division:

Mineral Claims	Record No.'s	Record Dates
Lee #6	20574	3 May, 1967
Dude #5-#6, incl.	20628-29, incl.	16 May, 1967
Ed #1-#5, "	29666-70, "	25 April, 1967

2. Kamloops Mining Division:

M.L.M. #136	68484	14 March, 1968
" #138	68485	"
" #140	68486	"
G.C.M. #142	48761	3 March, 1965
" #144	48762	"

All claims appear to be in good standing.

HISTORY

Copper mineralization within the present group was discovered about the year 1914; subsequent exploration comprised several hand-excavated trenches and two or more shallow shafts on narrow chalcopyrite veins.

The next recorded exploration was by Northwestern Explorations, Limited, who, during 1958, conducted geological, geophysical, and geochemical surveys over the original J.B. claim group.

During May, 1964 Huntec completed an Induced Polarization Survey on three-fourths of a narrow (2000') grid extending southerly through the claim groups. This was followed, later in 1964, by a geomagnetic survey over the full grid by Electronic Geophysical Surveys Ltd. of Burnaby.

Seven short AX diamond drill holes were put down in 1964 to test two geomagnetic anomalies (A-1 and A-2).

During 1965 Utah Construction & Mining Co. did geological, geophysical (magnetic and I.P.-resistivity) and geochemical exploration on south-central parts of the claim groups.

In 1965-66 the Utah Construction I.P. and magnetic anomalies (A-2 zone) were tested by five bulldozer trenches and four short diamond drill holes. This disclosed minor amounts of copper mineralization; however it appears that this work was not directed to test optimum sections of the diorite-quartz monzonite contact or anomalies.

During 1967 Geo-X Surveys Ltd., Vancouver, B.C. conducted a combined induced polarization, self potential, and resistivity survey on eight southerly M.L.M. claims. The principal anomaly was partly tested by trenching.

Regional access is via the Merritt-Kamloops all-weather gravel road; Mamit Lake adjoins the road at 18 miles due north of Merritt, B.C. -- the local supply-personnel centre.

Local access to northerly, and general upper parts of the property is via the Billy Lake road; the lower, southerly sections are accessible via local roads to the south end and west shore of Mamit Lake or via a northerly extension of the 'Aberdeen' road. The secondary roads are seasonally impassable without special efforts to maintain continuous access.

July 29 - not instructed by G Sears to change this.

B. Claims

The property comprises 168 located claims, shown on Fig. 2, and as listed in the following schedule:

1. Nicola Mining Division:

	Mineral Claims	Record No.'s	Record Dates
9	M.L.M. #1 - #9, incl.	36075-83, incl.	15 Jan. 1968
21	#10-#30, "	21452-72, "	23 Sept. 1963
1	#33	21475	23 Sept. 1963
1	#35	21477	23 Sept. 1963
4	#12-#15, "	36533-36, "	14 March, 1968
6	#45-#50, "	21800-05, "	28 Jan. 1964
1	#28	36537	14 March, 1968
1	#30	36538	"
12	#51-#62, "	36539-50, "	"
3	#67-#69, "	36551-53, "	"
3	#82-#84, "	36554-56, "	"
1	#90	36557	"
6	#97-#102, "	36558-62, "	"
2	#118-#119, "	36563-64, "	"
5	#131-#135, "	36565-69, "	"
1	#137	36570	"
1	#139	36571	"
4	#146-#149, "	36572-75, "	"
8	#59-#66, "	21813-20, "	7 Feb. 1964
12	#70-#81, "	23274-85, "	14 Jan. 1965
12	#85-#96, "	24801-12, "	12 July, 1965
4	G.C.M. #8 - #11, incl.	21832-35, incl.	24 Feb. 1964
1	#24	21848	"
1	#26 218	21850	"
6	#47-#52, "	21871-76, "	27 Feb. 1964
2	#55-#56, "	21889-90, "	2 March, 1964
17	#101-#117, "	23368-84, "	25 Feb. 1965
11	#120-#130, "	23387-97, "	1 March, 1965
1	#141	23465	3 March, 1965
1	#143	23466	3 March, 1965
1	#145	23467	3 March, 1965

1+4 on plan

must be typed

add'l 149

1. Nicola Mining Division (cont'd):

The following were acquired via Bills of Sale dated 12 April, 1968; these lie in the Nicola Mining Division:

	Mineral Claims	Record No.'s	Record Dates
1	Lee #6	20574	3 May, 1967
2	Dude #5-#6, incl.	20628-29, incl.	16 May, 1967
5	Ed #1-#5, "	29666-70, incl.	25 April, 1967

2. Kamloops Mining Division:

1	M.L.M. #136	68484	14 March, 1968
1	" #138	68485	"
1	(Insert) " #140	68486	"

All claims appear to be in good standing.

1	G.C.M. #142	48761	3 March, 1965
1	" #144	48762	3 March, 1965

HISTORY

Copper mineralization within the present group was discovered about the year 1914; subsequent exploration comprised several hand-excavated trenches and two or more shallow shafts on narrow chalcopyrite veins.

The next recorded exploration was by Northwestern Explorations, Limited, who, during 1958, conducted geological, geophysical, and geochemical surveys over the original J.B. claim group.

During May, 1964 Hunter completed an Induced Polarization Survey on three-fourths of a narrow (2000') grid extending southerly through the claim groups. This was followed, later in 1964, by a geomagnetic survey over the full grid by Electronic Geophysical Surveys Ltd. of Burnaby.

Seven short AX diamond drill holes were put down in 1964 to test two geomagnetic anomalies (A-1 and A-2).

During 1965 Utah Construction & Mining Co. did geological, geophysical (magnetic and I.P.-resistivity) and geochemical exploration on south-central parts of the claim groups.

In 1965-66 the Utah Construction I.P. and magnetic anomalies (A-2 zone) were tested by five bulldozer trenches and four short diamond drill holes. This disclosed minor amounts of copper mineralization; however it appears that this work was not directed to test optimum sections of the diorite-quartz monzonite contact or anomalies.

During 1967 Geo-X Surveys Ltd., Vancouver, B.C. conducted a combined induced polarization, self potential, and resistivity survey on eight southerly M.L.M. claims. The principal anomaly was partly tested by trenching.

In 1968 Mamit Lake Mining Ltd. did extensive bulldozer trenching on the A1-West geomagnetic anomaly --- specifically in the area of the old 1915 prospect workings.

GENERAL GEOLOGY

The copper deposits of the Highland Valley camp occur within the general Cordilleran porphyry copper belt which extends from Mexico to Alaska. The type-mineralization is rather consistently related to highly-fractured, complexly-intruded small batholiths and stocks of a general intermediate composition. Where the larger deposits occur, the favourable intrusive assemblage is also situated within zones of extreme structural deformation--characterized by regional faults and related intensely fractured and brecciated zones. Extensive hydrothermal alteration, typically involving potash-metasomatism, is a usual feature of the major deposits of this class. Local representatives of the porphyry copper belt include Copper Mountain, Brenda, Craigmont, Lornex, Bethlehem, Granisle, Endako, and others.

The Highland Valley copper-molybdenum deposits principally occur within structurally, and lithologically-favourable parts of the complex Guichon granitic batholith. These areas normally comprise a variety of older to younger intrusives, including; quartz diorite, granodiorite, monzonite, quartz monzonite, granite, and related younger injected bodies.

Southerly and easterly sections of the Company's Mamit Lake property are underlain by diorites to gabbroic rocks comprising an essentially basic complex along this easterly contact-section of the Guichon batholith. Westerly and northerly parts of the property are underlain by a variety of intrusives ranging between dioritic to sub-granitic in composition. Locally, these are bordered, or intruded by minor bodies of more alkaline-acidic composition, such as aplite, alaskite, and related 'felsitic' types.

Within the southerly half of the property the gabbros and diorites are succeeded, to the west, by a general granodiorite body. The northerly half of the group is characterized by an evident complex of intermediate to alkaline intrusives, including quartz diorite, granodiorite, and quartz monzonite. The assemblage within the northerly claim areas would appear to provide a highly favourable geologic setting for the occurrence of extensive disseminated-type copper-molybdenum deposits.

LOCAL GEOLOGY AND MINERALIZATION

The following descriptions are of localities visited by the writer:

A-2 Zone (Fig. 3)

This zone is at least partly delimited by magnetic and I.P. surveys. Some follow-up exploration has been accomplished by trenching, diamond drilling, and percussion drilling. Trenching and drilling to the west of the road disclosed an area of dark coloured dioritic rocks--veined, and marginally replaced by minor, but variable amounts of pyrite, chalcopyrite, and magnetite. The easterly trenches and drill holes indicate a general quartz monzonite body with minor copper mineralization occurring within a more extensive zone of small fractures and veinlets. The host rocks have been significantly altered, with the development of sericite, kaolin, chlorite, and some pink K-spar.

Current evidence suggests that the local (A-2 zone) diorite-quartz monzonite contact trends northerly to northwesterly between the easterly and westerly trenches. The current pattern of drill holes and trenches is too localized for an adequate test of the quartz monzonite body.

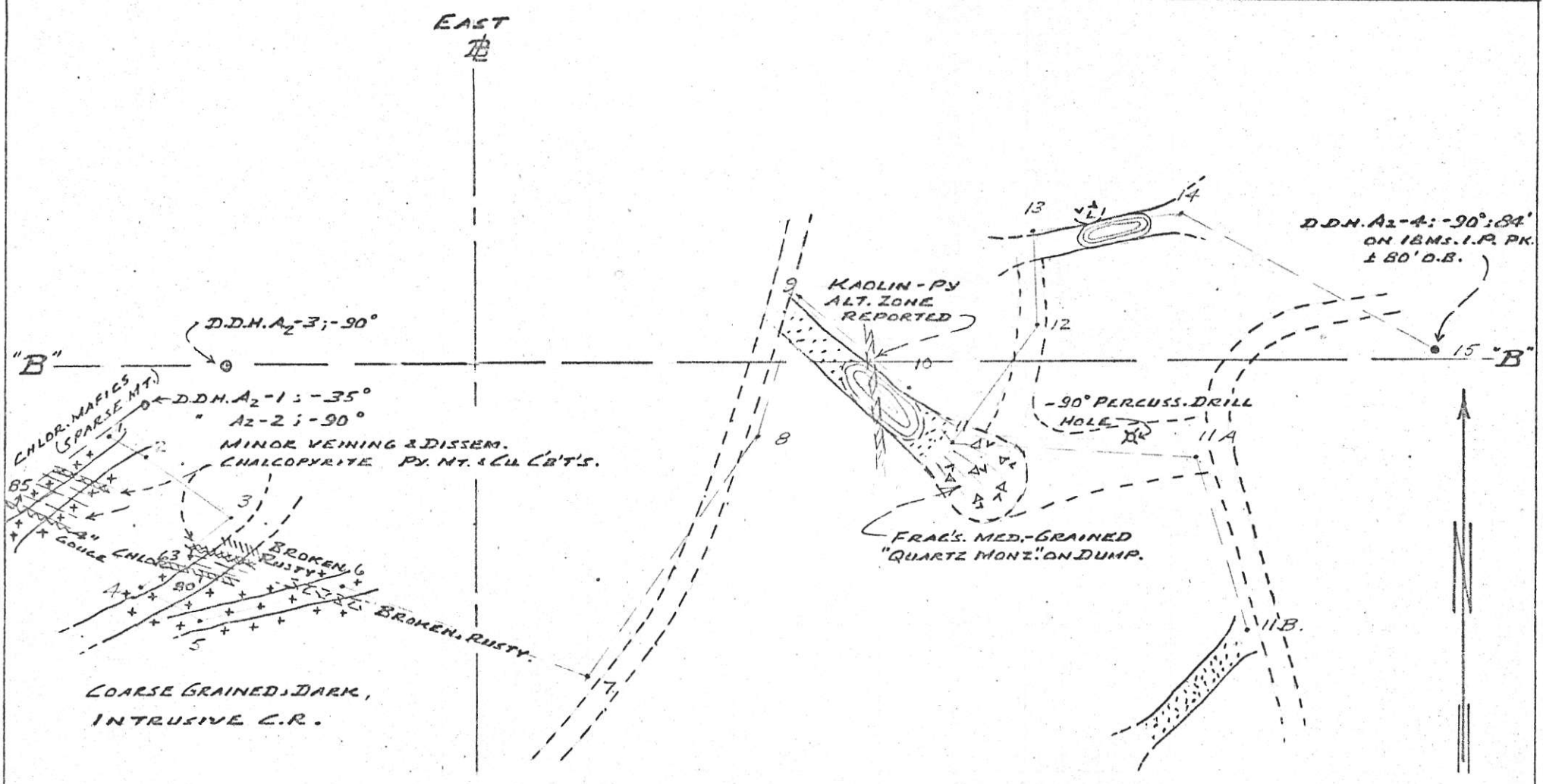
A-1 West Zone (Fig. 4)

The exploration area is principally underlain by rather fresh, massive dioritic rocks. Extensive bulldozer stripping and trenching has disclosed only minor amounts of chalcopyrite in minor open fractures and somewhat wider, siliceous fracture zones. The mineralization is essentially similar to that opened by the few old prospect shafts and hand-trenches.

On the basis of the generally unimpressive lithological-structural characteristics revealed, this immediate area does not warrant further exploration. It is probable that the coincident geomagnetic anomaly resulted from an umineralized conductor or conductive zone such as a fault, shear zone or geologic contact.

South Diorite Zone (Fig. 5)

This exploration area is situated closely northeast of a pronounced, northwesterly-trending fault gully and coincident geomagnetic anomaly which cut grid-line 'L' at about 400 ft. west of the East base-line. The area is underlain by dioritic, gabbroic, and pyroxenitic facies of the easterly basic intrusive complex. Trenching in this has exposed multiple zones of close-fracturing and jointing on N.N.E. trends and near-vertical dips. These have been sparsely mineralized, with minor replacements in the main body of the rock involving magnetite, pyrite, and chalcopyrite. A general, but not particularly relevant alteration feature, consists of a pervasive uralitic alteration of the mafic minerals within the basic country rock.



ABBREVIATIONS:
CP. CHALCOPYRITE
PY. PYRITE
MT. MAGNETITE
CBTS. (CU) CARBONATES
CHLOR. CHLORITE, ETC.
DDH. DIAMOND DRILL HOLE.

FIG. 3

A-2 ZONE

GEOLOGY, TRENCHES, DRILL HOLES

SCALE: 1" = 100' MAY, 1968.

MAMIT LAKE MINING LTD. - W.M. SHARP, P.ENG.

LEGEND:

DIORITIC / GRANODIORITIC ROCKS

FRACTURES: SHEAR, JOINT, RANDOM

CHALCOPYRITE, MAL. PY. & MT.
GOSSAN, MINOR CU CB'TS.

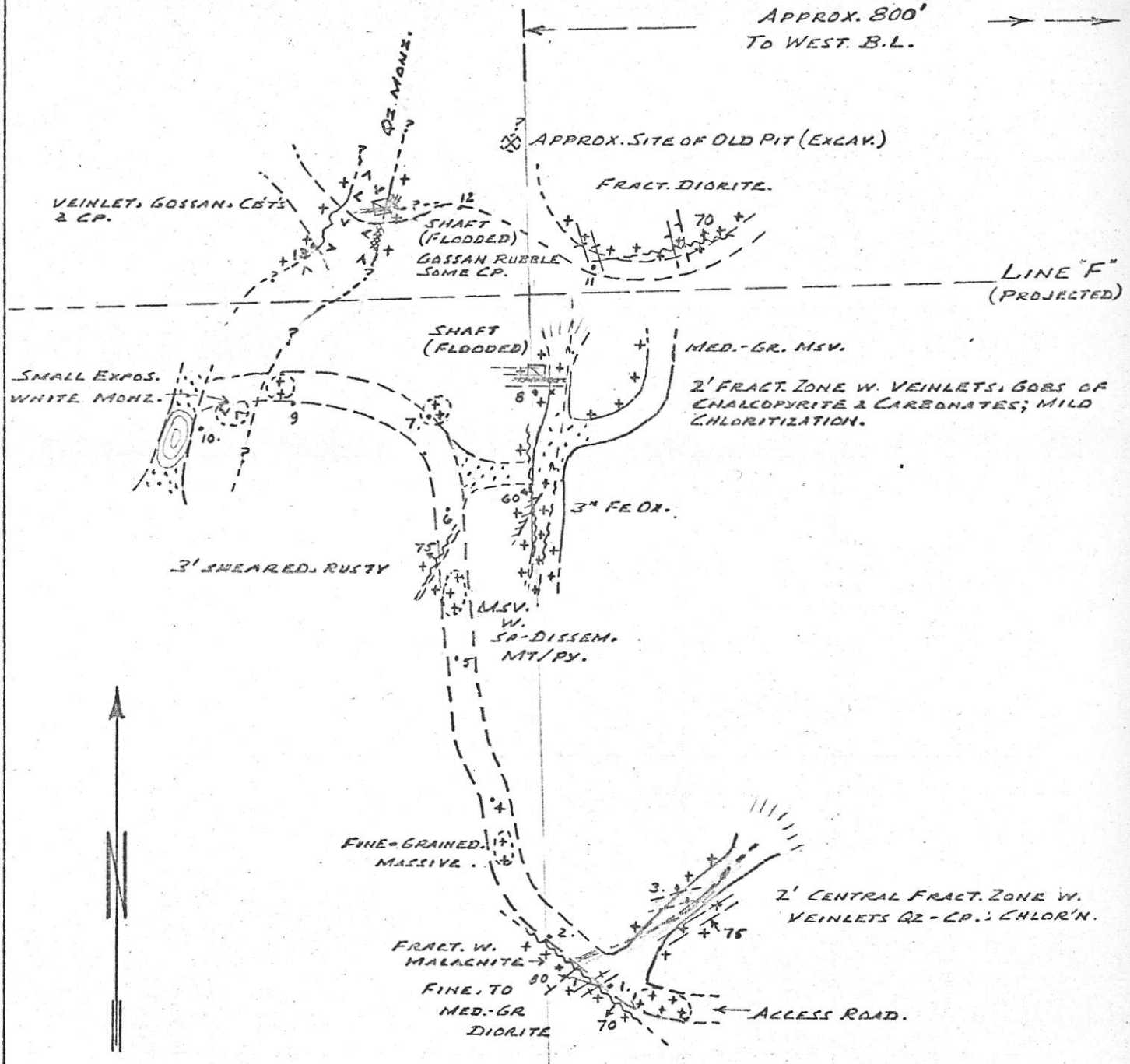


FIG. 4

A-1 WEST ZONE EXPLORATION

MAMIT LAKE MINING LTD. (N.P.L.)

SCALE: 1" = 100' MAY, 1968

LEGEND:

- DIORITE / QUARTZ MONZONITE, GRANODIORITE, EYE.
- FRACTURES: SHEAR, SLIP FRACT'S & JOINTS
- MINERALIZATION / ALTERATION (CP. PY. MT.) / (CHLOR., TALC, ETC)
- TRENCH, CAT ROAD, BEDROCK TILL.

W. M. SHARP, P.ENG.

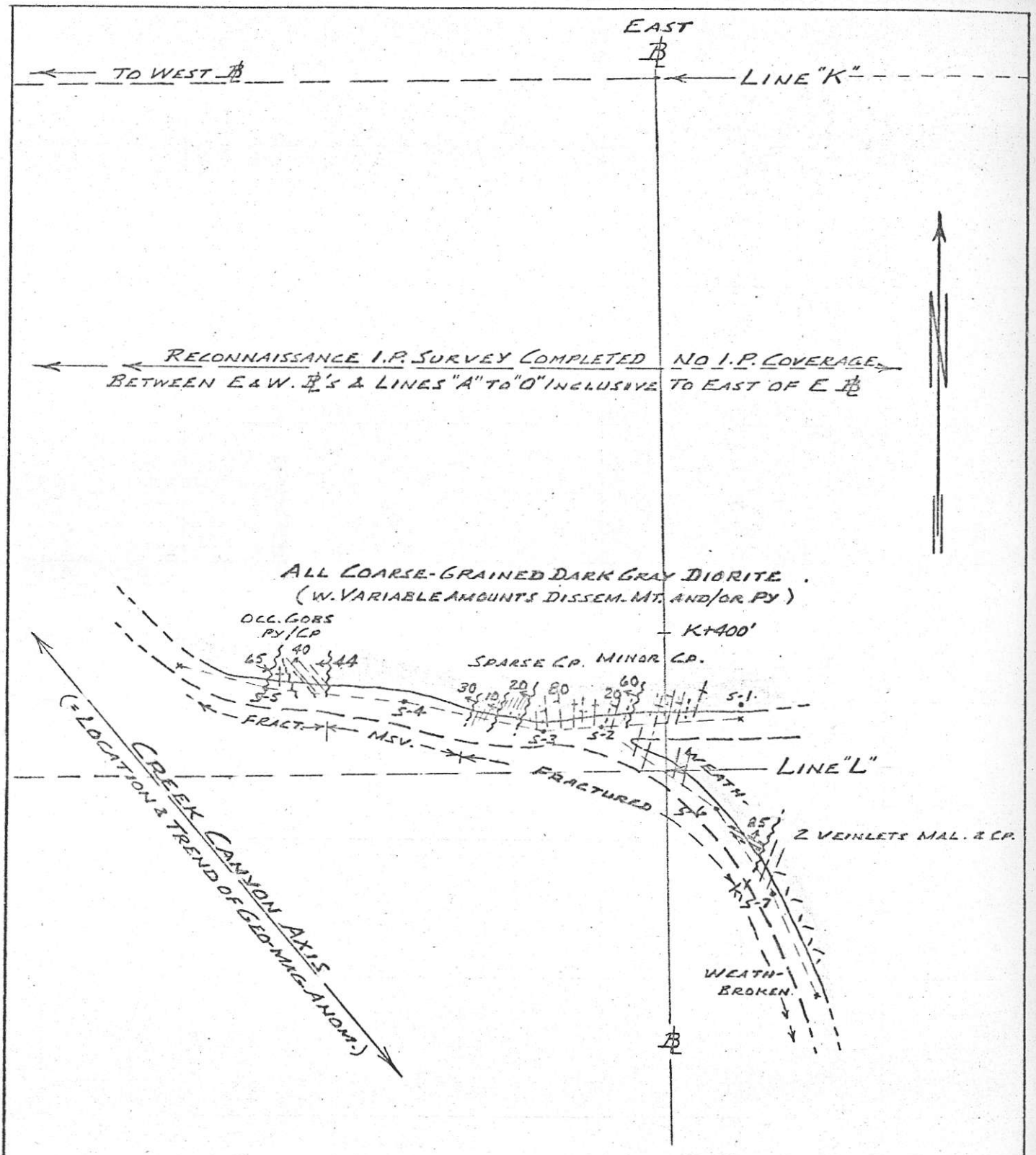


FIG. 5

TRENCHED EXPOSURES ON SOUTH DIORITE ZONE

MAMIT LAKE MINING LTD. (N.P.L.)

SCALE: 1" = 100' MAY, 1968

LEGEND

- DIORITE (PROB. GABERO SECTS) (HORNBLENDE, MAGNETITE, PYRITE)
- FRACTURES: SHEAR, SEAM, RANDOM.
- MINERALIZATION: CP./MAL. VEINING & DISSEMINATED.
- S-1, ETC SURVEY STA'S.

W. M. SHARP, P. ENG.

As the geomagnetic anomaly was not accompanied by a substantiating I.P. response in this area, and as the general locality does not appear markedly favourable for the occurrence of economic grades of disseminated copper mineralization, the writer suggests that all contemplated exploration be diverted to more promising target areas.

A-1 East Zone

Exploration of this area was possibly instigated by the co-occurrence of the "regional" anomaly and small, mild I.P. anomaly.

The predominantly dioritic rocks underlying this area are essentially part of the easterly basic complex. As within A1-West zone, they are not significantly fractured, altered, or mineralized, nor do they contain significant amounts of geologically favourable "granodioritic" intrusives. From recent exploration results, there appears to be very little incentive for continuing exploration in this specific locality.

G.C.M. Prospect Area

Details of the local geology and geophysical survey results are compiled on Dwgs. 1 and 2.

This locality, as well as most of the northerly claims area and adjoining properties, is underlain by a geologically-favourable intrusive complex consisting, primarily, of quartz diorite, quartz monzonite, and granodiorite. At various places, mainly in zones of pronounced faulting and fracturing, these have been intruded by smaller bodies of younger (Vimy) granodiorite, aplite, and leucogranitic rocks. This generally favourable 'Highland Valley complex' extends both to the west and north of the claims area.

The immediate G.C.M. Ridge zone comprises an extensive body of quartz diorite which is quite possibly closely related to the Gump Lake quartz monzonite body. The Gump Creek quartz diorite underlying G.C.M. Ridge exhibits conspicuous areas of hydrothermal alteration, with the development of sericite, kaolin, secondary K-feldspar, and some chlorite. In addition these altered zones locally carry significant amounts of disseminated chalcopyrite and bornite, with minor molybdenite, as exposed by the few rather widely-spaced trenches excavated along the crest and brow of the ridge. One major, and some minor zones of intense (to 70%) sericite alteration have been traced westerly across the creek canyon and up the opposite slope.

I.P. surveys within this area have resulted in the preliminary delineation of a major anomaly with a 6000 foot N-S length and 2500 foot E-W width. Further to the north, and between two apparent fracture linea-tions, other small anomalous areas have been delineated. To date, only a minor fraction of the potentially-mineralized Gump Creek body has been explored in any detail.

Major systems of intersecting and radiating fractures, as indicated by the writer's detailed stereoscopic examination of the air-photo sequence, suggest the possible existence of other major focii of fracturing, alteration, and mineralization.

PHOTOGEOLOGICAL FEATURES

These are denoted on Dwg. 2; the more significant of these are noted below:

A. The general area of convergence of N.N.W. and N.N.E. fractures with subordinate transverse fractures. This structural focus, associated with sericitized quartz diorite and evident copper mineralization, is suggestive of the Lornex North ore zone geology.

B. A zone of crudely concentric and radial fractures situated between a pair of N-S lineations (faults?).

C. In general a Vee of (fault?) lineations outward and northward of A. Two substantial I.P. anomalies occur, consecutively to the north, between the diverging lineations.

D. At the intersection of three apparent (fracture?) lineations--probably within the favourable quartz diorite and/or quartz monzonite.

E. At the intersection of widely-spaced radially-divergent (dome?) lineations.

F. A zone of curved concentric fractures between northerly-divergent (fracture?) lineations at some 2000-3000 feet west of zone A1-West.

All of the above warrant preliminary exploration by reconnaissance geological-geochemical procedures.

Respectfully submitted,

W.M. Sharp, P.Eng.

WMS/hb

C E R T I F I C A T E

I, William M. Sharp, with business address in Vancouver, British Columbia and residential address in North Vancouver, British Columbia, do hereby certify that:

1. I am a consulting geological engineer.

2. I am a graduate of the University of British Columbia with B.A.Sc. (1945) and M.A.Sc. (1950) degrees in Geological Engineering.

3. I am a registered Professional Engineer in the Province of British Columbia.

4. I have practiced my profession since 1946, in both geological and managerial capacities with Canadian mining companies until 1964, when I established my own consulting practice.

5. I have personally inspected the Mamit Lake Mining Ltd. (N.P.L.) property at Mamit Lake, B.C., and examined all company reports, drawings, and correspondence pertaining to the property, and interviewed the resident staff. I have also examined available government reports and bulletins pertaining to the property.

6. I have no interest, direct or indirect, in the properties or securities of the above Company, nor do I expect to have any such interest.

Vancouver, B.C.
June, 1968

Respectfully submitted,

W.M. Sharp, P.Eng.