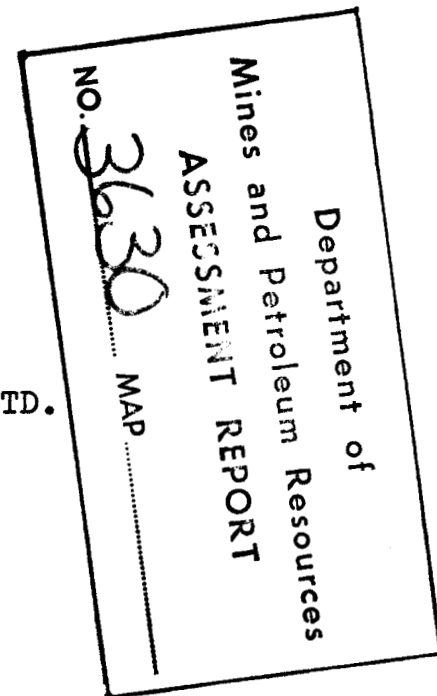


3630

GEOLOGICAL REPORT
AND
MAGNETIC SURVEY
ON
ROLLING HILLS CLAIMS
JACKO LAKE
KAMLOOPS M.D.
held by
ROLLING HILLS COPPER MINES LTD.
and
MINEX DEVELOPMENT LTD.
by
R.H. SERAPHIM, Ph.D. P.Eng.
April 24, 1972.



CLAIMS

PAM 20 to 24 inc.
PAM 30 to 33 inc.
FOX 7 to 10 inc.
FOX 11 Fr., FOX 12 Fr., FOX 13
X 31 to 34 inc.
B 1 to 6 inc.

RECORD NUMBERS

41338 to 41342 inc.
41348 to 41351 inc.
41937 to 41940 inc.
41941, 41942, 41943
41240, 41241, 75887, 75888
41244 to 41249 inc.

LOCATION - Near Jacko Lake and Peterson Creek, 8 miles southwest of Kamloops, and at 50° 120° N.E.

DATES - March 29 to April 15, 1972.

KAMLOOPS

APR 27 1972

MINING RECORDER

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R. H. SERAPHIM ENGINEERING LIMITED
GEOLOGICAL ENGINEERING

316 - 470 GRANVILLE STREET
VANCOUVER 2, B.C.

SUMMARY AND CONCLUSIONS

The geological survey of the claims has shown that the contact of the Iron Mask intrusives and the Nicola rocks is in the Peterson Creek Valley bottom. Overburden prevents the determination of the contact within limits of approximately five hundred to fifteen hundred feet. The outcrops northwest of Jacko Lake indicate that the contact is gradational, with the Iron Mask intrusives containing many undigested or partly digested remnants of Nicola rocks. The picrite and other basic rocks are more widespread and scattered than expected from the B.C. Department of Mines maps.

The magnetic work confirms the gradational and phasey nature of the contact zone. The altered and mineralized parts of the Iron Mask produce magnetic lows, but the Nicola rocks in places give a similar level of magnetic response. The picrite bodies produce local highs, and the discontinuity of these highs suggests that the picrite exists as scattered lenses rather than as larger continuous bodies.

Drilling would be necessary to determine the extent of Iron Mask intrusives and mineralization on the claim group.

INTRODUCTION

The area was examined briefly on April 23 and 24, 1971. Previous examinations of other showings in the Iron Mask batholith had been made in May, 1956, September, 1956, and December, 1964. The field work providing the basis for this report and accompanying map was completed by the writer on April 5 to 8 inclusive 1972.

The previous geological work in the area by J.M. Carr and V. Preto published in the B.C. Department of Mines Reports for 1967 page 142 and 1956 page 47, and by P.C. Badgely in 1956 was correlated in a report by Seraphim dated March 13, 1972. Some of this information, where based on diamond drill results not presently available, is added to fill in the information obtained from the mapping of outcrops.

The magnetometer survey was completed by Mr. U. Leis of Strato Geological Ltd. The magnetics were employed principally to help determine the location of the contacts between the Nicola volcanics, the picrite (peridotite) bodies and the dioritic to syenitic rocks of the Iron Mask batholith.

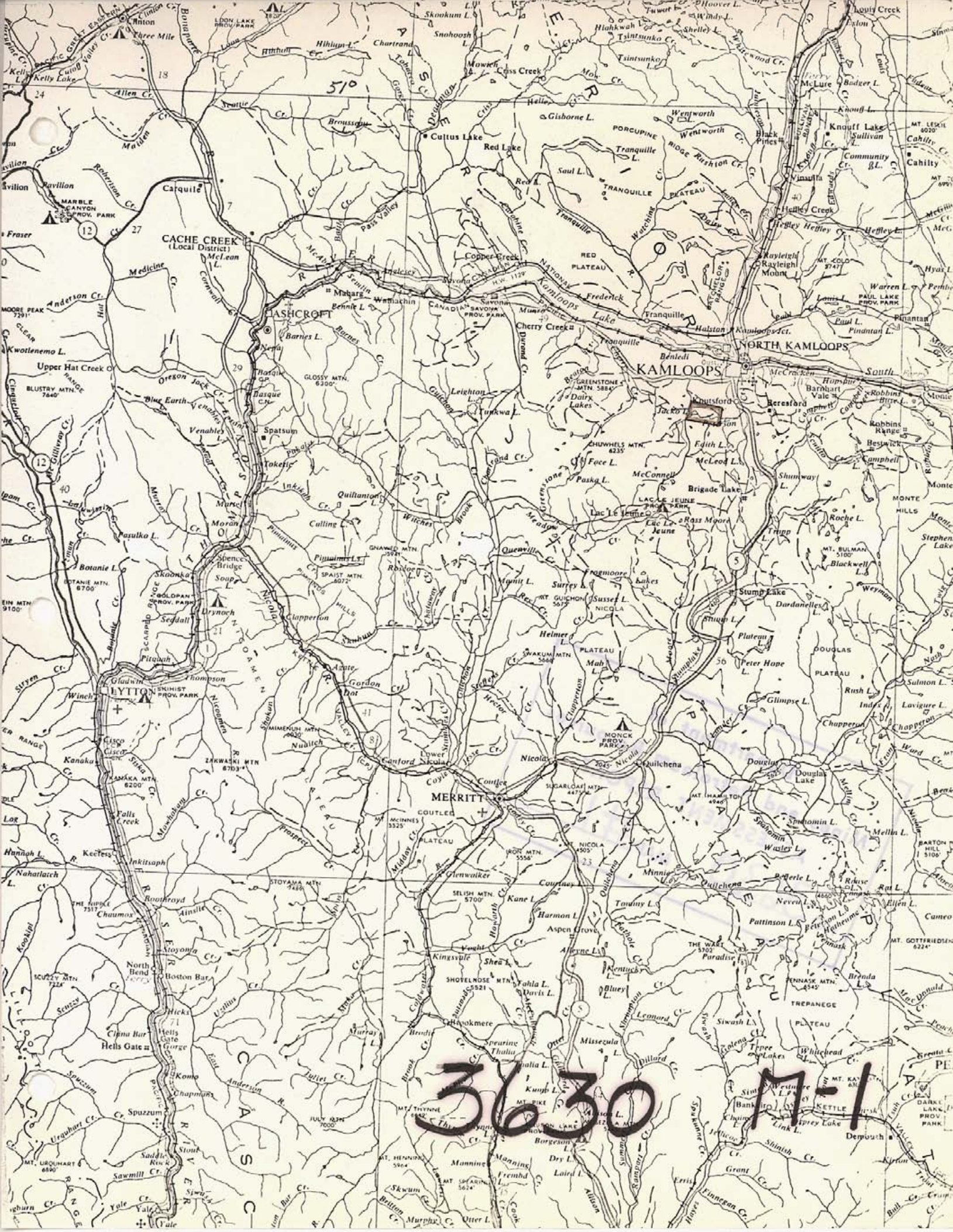
CLAIMS

The Rolling Hills claims were located at intervals over the past five to ten years, and had not been surveyed until 1972. The Dave claims are located in 1972, and at least in part are in partial conflict with the R.H. claims. Since the Dave claims are in the process of being abandoned and relocated, the location of the individual Dave claims is not shown on the accompanying map.

Cominco currently holds a group of claims, mostly crown granted, to the north of the R.H. and Dave claims, and parts of these were examined because of the copper mineralization located there.

LOCATION, ACCESS, TOPOGRAPHY

The claims are in the rolling upland approximately eight miles southwest of Kamloops. Most of the area is open grazing land, with several small lakes and with a few clumps of timber.



51°

CACHE CREEK (Local District)

ASHCROFT

KAMLOOPS

NORTH KAMLOOPS

LYTTON

MERRITT

3630

M-1

GEOLOGY

SURVEY METHOD

The claim survey by McElhanney Associates was used as a partial base for the geological mapping, and to control a grid. The grid itself was used as a base for the magnetic survey, and also in part for control on the geological mapping. Aerial photographs magnified to approximately 500 feet to the inch were also used for the control of the geological mapping.

REGIONAL GEOLOGY

The claims lie near the southwest contact of the Iron Mask batholith. The grain of the country trends northwesterly, and has been emphasized by glacial scour. Outcrops are commonly found on the heads of drumlins i.e. on the northwest ends of the ridges. These drumlins obscure many of the fault zones in the area, and make it difficult to interpret structure from aerial photographs.

The Iron Mask batholith intrudes Nicola volcanics. Four principal rock types have been recognized within the batholith; coarse grained diorite, syenite to monzonite, peridotite or picrite, and hydrothermally altered

microdiorite (Sugarloaf intrusion?). Most of the copper mineralization in the district, including that on Cominco's crown granted claims, is hosted by the Iron Mask intrusive and is associated with strong fracturing on the flanks of the picrite bodies.

LOCAL GEOLOGY

The accompanying map shows the outcrops located by the writer. The work was directed primarily to determine areas where mineralized Iron Mask intrusives exist or might exist on the R.H. and Dave claims, consequently the location of the Iron Mask-Nicola contact is of prime importance. Most of the contact zone, however, is buried under the drift in Peterson Creek valley which trends southeasterly from Jacko Lake.

The Nicola volcanics on the southwest side of the valley are mostly aphanitic green andesites and basalts. Bedding was found in only one outcrop, near the south limit of the mapping, where a steep southerly dip was observed. A few rusty fracture or shear zones were found, and these locally carry a trace of copper mineralization, but nothing approaching economic size and grade.

The contact zone of the Nicola with Iron Mask intrusives is best exposed in outcrops to the northwest of Jacko Lake. As the intrusive is approached the Nicola volcanics show increased shearing and brecciation, accompanied by chloritic alteration. Veinlets of dioritic and pegmatitic material are found in increasing abundance towards the northeast. The outcrops on the northeast side of Jacko Lake are mostly of fine dioritic material, therefore are mapped as intrusive, but they contain andesitic and basaltic phases which may be undigested remnants of Nicola volcanics. Only a few weak shear zones, with local traces of copper mineralization were found in the contact zone.

The Iron Mask rocks show widespread fracturing with associated alteration and copper mineralization. The strongest set of fractures and shears strike 120 deg to 150 deg., with dips varying from steeply south to shallowly north. This set is parallel to the regional trend. A second set, which appeared to have less strength but closer spacing, strikes north to N 30 deg E., and dips steeply. Both of the fracture sets carry copper mineralization. Pale creamy feldspathic alteration and some clay minerals accompany the better mineralization on and near Cominco's Ajax claim. Epidote and pyrite are abundant further east, on and near the Monte Carlo and Sultan claims.

The picrite, peridotite and augite porphyry bodies are intrusive at least in part, judging by an irregular contact observed near the pipeline south of Peterson Creek. However, some of these bodies may be basic volcanics of Nicola age rather than part of the Iron Mask intrusives. Thus the picrite found within the Iron Mask intrusives may be undigested remnants of Nicola rather than younger intrusives. The sequence suggested by V. Preto (Minister of Mines 1967 page 138) appears valid on the basis of the present investigation.

Dark brown to black brecciated volcanics found near the northeast limit of the mapping are probably Tertiary in age. The outcrop appears related to a zone of irregular faulting.

The copper mineralization of importance, as indicated above, has all been found in dioritic rocks of the Iron Mask. The better grade of mineralization is accompanied by much bleaching, feldspathic, sericitic, and a little clay mineral alteration and minor quartz, and is related to strongly fractured areas. The copper zones in the district as a whole show a tendency to follow the flanks of the picrite bodies, and this tendency might be due to the shattering accompanying the picrite intrusion.

Exposures of Iron Mask rocks with associated copper mineralization on the R.H. claims are limited to those on PAM 21 claim near the Buda Shaft. Dioritic rocks exposed here are fractured, with a northwesterly trend predominating. Pink feldspathic alteration and copper and iron staining is relatively abundant.


MAGNETICS

The magnetometer survey was completed with a Sabre Fluxgate magnetometer, distributed by Adams and Electronics Limited of Vancouver B.C. The baseline was traversed and the readings on it corrected for diurnal variation by frequent rechecking at the base station. Then the crosslines were run, and the readings adjusted to fit those obtained along the baseline.

The highest readings, from 1000 to above 1500 gammas, conform in several localities to picrite exposures. Consequently the high readings in areas of no exposure are expected to indicate picrite. The lowest readings were obtained over areas where feldspathic and argillic alteration (with accompanying mineralization) are found in Iron Mask rocks, but also over some of the exposures of Nicola andesites. Although in general the magnetic readings

are higher in or near the Iron Mask, this alteration, and the phasey variations of the intrusive itself appear to provide too much variation in magnetic response to indicate the Iron Mask-Nicola contact with the desired precision.

April 24, 1972.


R.H. Seraphim, Ph.D. P.Eng.

STATEMENT OF COSTS

Salaries (see Appendix B)	\$ 2,825.00
Expenses, transportation, etc. not yet compiled	
Total	<u><u>\$ 2,825.00</u></u>



R.H. Seraphim.

FEES, SALARIES, AND WAGES

Statement of Personnel Employed

<u>Personnel</u>	<u>Date</u>	<u>Days</u>	<u>Rate/day</u>	<u>Total</u>
Grid Line Marking				
Uno Leis	March 29 to April 2 = 5		@ \$65.00	\$325.00
Dave Gibbons	March 31 to April 7 = 8		@ \$65.00	520.00
Alfred Hicks	April 1 to April 4 = 4		@ \$45.00	180.00
Brian Cosens	April 1 to April 6 = 6		@ \$45.00	270.00
M. Cope	April 1 to April 4 = 4		@ \$45.00	180.00
				<u>1,475.00</u>
Magnetometer Survey				
Uno Leis	April 3 to 10 = 8		@ \$75.00	600.00
Geological Survey				
R.H. Seraphim		6	@ \$125.00	750.00
				<u>750.00</u>
		Total		<u><u>\$2,825.00</u></u>

(Note) - the above are exclusive of expenses, transportation, etc.


R.H. Seraphim, P.Eng.

APPENDIX C



STRATO GEOLOGICAL LTD.
MINERAL EXPLORATION CONTRACTORS
19 - 448 SEYMOUR STREET
VANCOUVER 2, BRITISH COLUMBIA, CANADA

TELEPHONE 688-3141

CERTIFICATE

I, Uno Leis, do hereby certify:

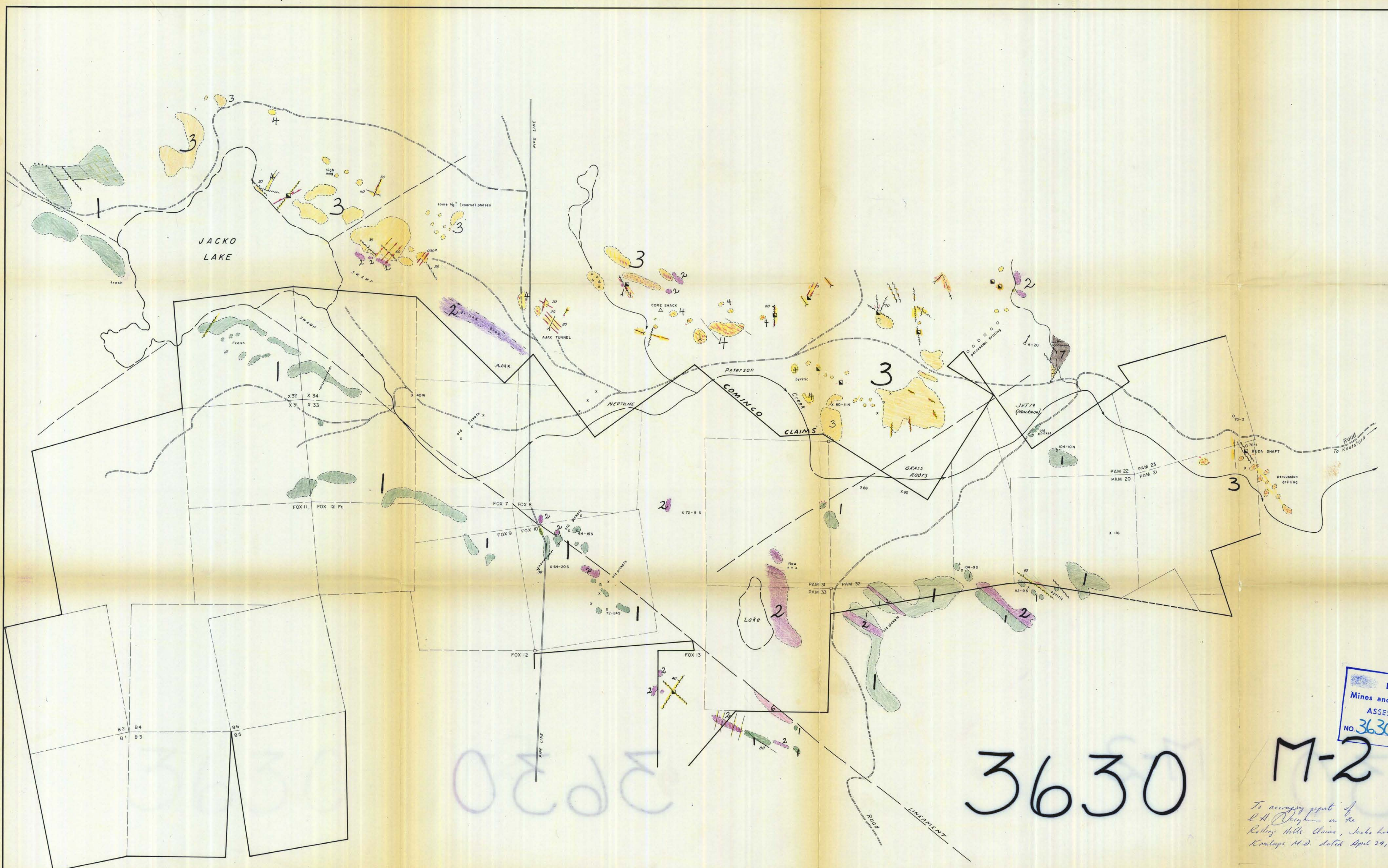
- (1) I am Manager of Strato Geological Ltd., with offices at # 19 - 448 Seymour Street, Vancouver 2, B. C.
- (2) I am a graduate of Carlton University, 1969, with the Degree of Bachelor of Science.
- (3) I am not a registered Engineer in the Province of British Columbia or of any province.
- (4) I have been engaged in geological exploration for three years throughout British Columbia, parts of Yukon Territory, and parts of Saskatchewan.
- (5) I have no direct, indirect, or contingent interest in the securities of Minex Development Ltd. (N.P.L.), or the properties thereof nor do I intend to receive any interest.
- (6) This report is based on personal field examination and examination of the data obtained as a result of the survey.

DATED AT VANCOUVER, British Columbia, this 19th day of April, 1972.

Uno Leis, B. Sc.

Signed: _____

U. Leis



LEGEND

- 7 TERTIARY VOLCANICS
 - 6 SYENITE (Dyke)
 - 5 COPPER MINERALIZATION
 - 4 ALTERATION (Felds, Epidote, Calcite, Pyrite)
 - 3 DIORITE, SYENITE etc. (Iron Mask)
 - 2 PICRITE, PERIDOTITE, AUGITE PORPHYRY
 - 1 NICOLA VOLCANICS
-
- ADIT
 - SHAFT
 - x PICKET
 - o CLAIM POST
 - ~ SHEARING
 - LINEAMENT
 - BEDDING
 - ROAD
 - o DRILL HOLES

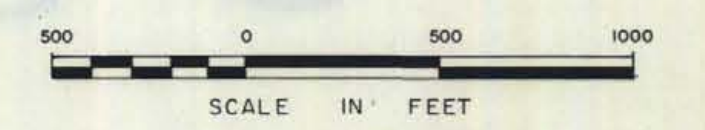
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3630 MAP #2

3630

M-2

DAVE & R.H. CLAIMS
GEOLOGY

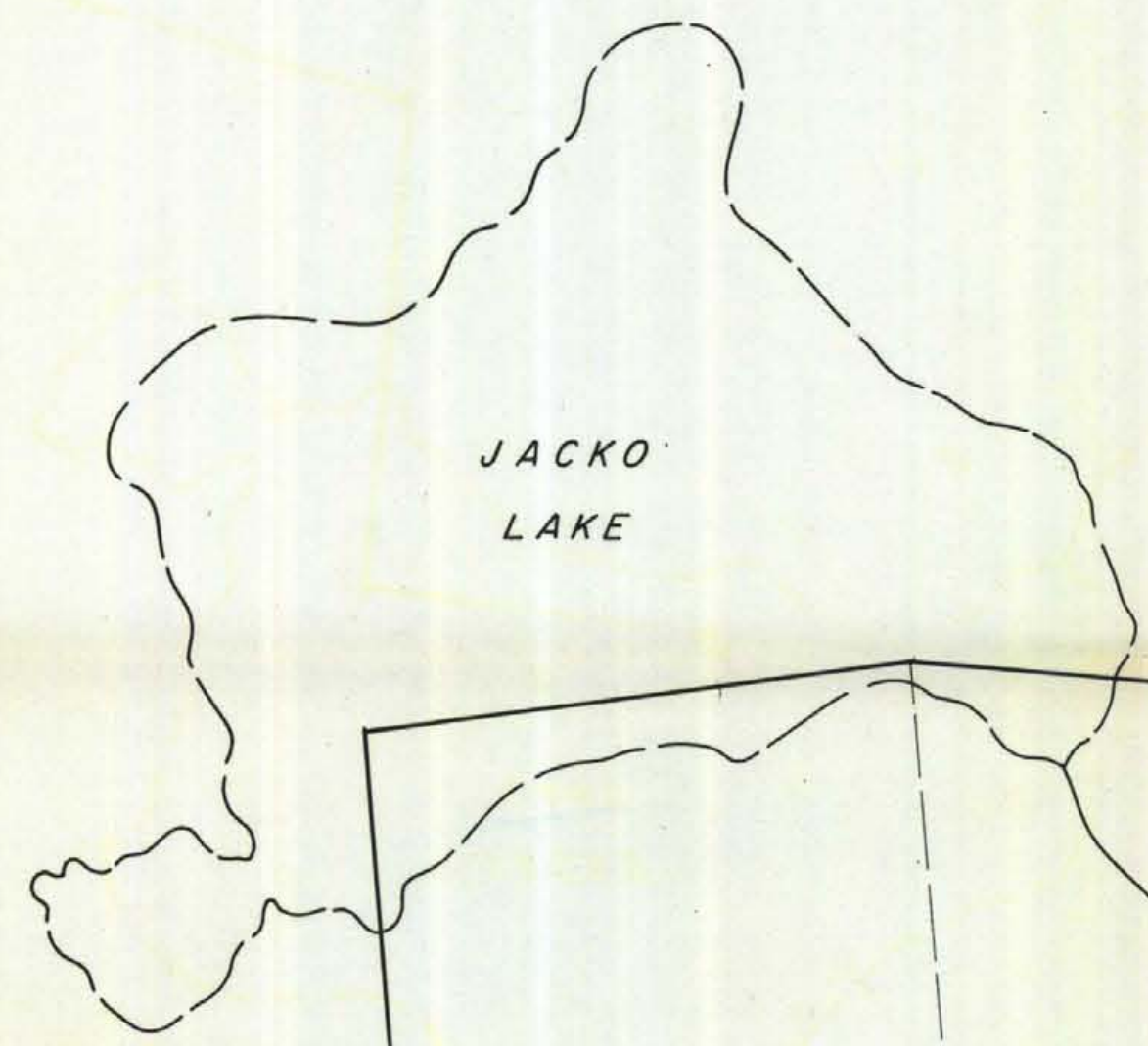
JACKO LAKE AREA, KAMLOOPS MINING DIVISION, B.C.



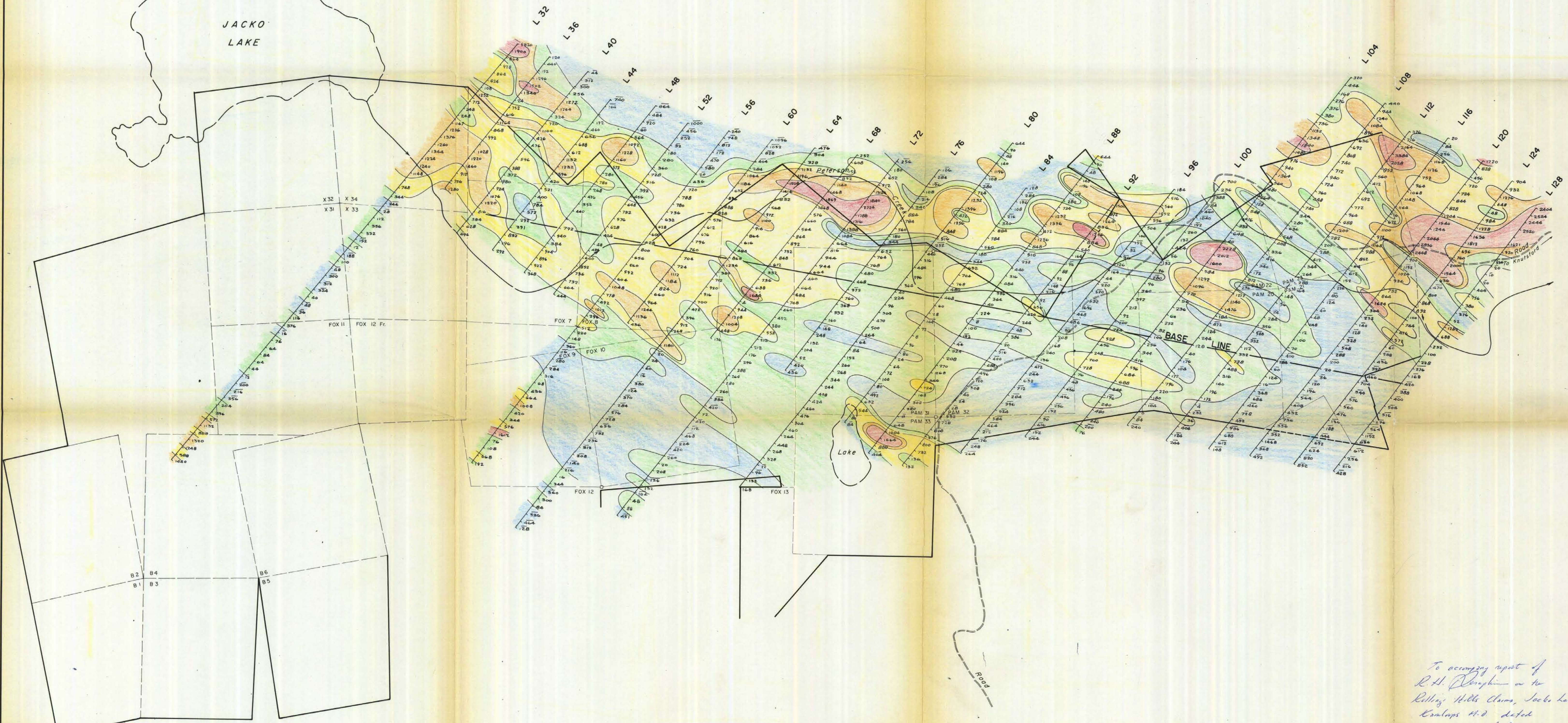
APRIL, 1972

R.H.S.

*To accompany report of
D.H. O'Brien on the
Rolling Hills Claims, Jacko Lake,
Kamloops M.D. dated April 29, 1972.*



JACKO LAKE



LEGEND

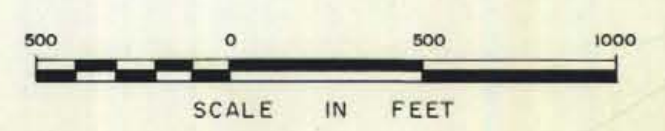
- OVER 1500 GAMMAS
- 1000 - 1500 GAMMAS
- 500 - 1000 GAMMAS
- 0 - 500 GAMMAS
- NEGATIVE

Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 3630 MAP #3

**DAVE & R.H. CLAIMS
MAGNETOMETER SURVEY**

JACKO LAKE AREA, KAMLOOPS MINING DIVISION, B.C.

*To accompany report of
 R.H. Blomquist on the
 Riddley Hills Claims, Jacko Lake,
 Kamloops N.D. dated
 April 24, 1972.*



APRIL, 1972

R.H.S.