

elc geophysics ltd.

250 NORTH GROSVENOR, VANCOUVER, CANADA TELEPHONE: (604) 298-9619

ELC Geophysics Ltd. Report No. 73-310
 GC and MLM Claims Group
 For Mamit Lake Mines Ltd.
 3 miles north and west of Mamit Lake, B.C.
 Highland Valley Area, 50° N - 120° W
 August 7, 1973 to October 24, 1973.

GOVERNMENT OF
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Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. **4828** MAP

PLANS

#1 Magnetometer Profile Plan	73-310-F-M
#2 Electromagnetic Profile Plan	73-310-F-EM
#3 Geochemical Contour Plan	73-310-F-GC
#4 Topographical Plan	73-310-F-C
#5 Location Plan	73-310-F-L

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250 NORTH GROSVENOR, VANCOUVER, CANADA TELEPHONE: (604) 298-9619

ELC GEOPHYSICS LTD. REPORT NO. 73-310 COVERING THE GC AND MLM CLAIMS GROUP FOR MAMIT LAKE MINES LTD. LOCATED APPROXIMATELY FIVE MILES NORTH AND WEST OF MAMIT LAKE, B.C. IN THE HIGHLAND VALLEY AREA. 50° N - 120° W
AUGUST 7, 1973 to OCTOBER 24, 1973.

Purpose:

The purpose of the survey was to cover in detail, areas omitted on previous surveys by means of magnetometer, electromagnetic and geochemical methods.

Previous surveys bordering on this area were reported in the ELC Geophysics Ltd. report No. GC-M-130-71 also covering the MLM-GC claims group. The geochemical anomalies from previous surveys warranted further work in this area. This survey was conducted for Mamit Lake Mines under the recommendations of A.F. Roberts, P. Eng.

Presentation:

The survey grid is presented with an east-west layout with control lines on the end of the grid lines. Station locations are at 100 foot intervals along the grid lines with grid line spacing at 200 feet with a total footage of 146,800 feet of grid line.

...2

Profile plans plotted on the grid lines with the respective anomalies are shown separately for the magnetometer on plan 73-310-F-M and for the electromagnetic on plan 73-310-F-EM.

The geochemical determinations for copper are shown in plan 73-310-F-GC with the evaluations in ppm located at the point of sampling and include the interpretations in contour form for anomalous features.

The claims, posts, and topographical features with respect to the grid lines are shown on plan no. 73-310-F-C and the location plan is 73-310-F-L.

Instrumentation:

Magnetometer:

The magnetometer survey was conducted with a vertical field fluxgate self levelling instrument model M-110 manufactured by Sabre Electronics of Vancouver, B.C.

Electromagnetometer:

The EM survey was conducted with the type EM16 Ronka instrument operating on 18.6 KHZ from the US Navy Station NPG located in Arlington, Washington.

Geochemical:

The samples were taken from the B horizon, first

by removal of any overlaying debris, then digging a hole using a round mouthed spade, approximately 15 inches below the surface. A sample from the hole was packaged using a standard kraft soil bag. The soil bags and sample determinations were supplied by Acme Analytical Laboratories, Burnaby, B.C.

Geological Reference:

British Columbia Department of Mines and Petroleum Resources Bulletin No. 56 on the Guichon Creek Batholith by K. E. Northcote.

Personnel:

Grid line survey, G. Olheiser and K. Pettersen, magnetometer operator, E. Wiggins, EM operator, W. Mather, and soil sampling by J. Krygsveld.

Location:

The GC and MLM claims group is located three miles northwest of Mamit Lake, B.C. on the highway between Merritt and Logan Lake, B.C. in the Nicola Mining Division 50° N - 120° W.

Geophysical Results:

Electromagnetic:

Refer to plan 73-310-F-EM. The linear profiles of significance, are determined from the phase relation and from prominent crossovers of the two components. Areas designated A1-EM through A3-EM are significant of increased conductivity on the surface.

The linear anomalies L1-EM, L1A-EM, L1B-EM and L1C-EM and the cross formation F1-EM, all show correlation with the geochemical anomalies in the northwest portion of the survey.

Also the linear anomalies L2-EM, L2A-EM and L3-EM show association with geochemical anomalies. The L4-EM follows west of a small valley, with C4-EM following the east slope. The valley appears to be a contact or formation change. To the east of the C4-EM linear anomaly the contour anomaly A1-EM forms the largest area of increased conductivity in the north middle portion of the survey. Although this coincides with the GC-6 and associated contoured geochemical anomalies it is also in an area, especially in the north, of increased moisture and swamp. However the F1-EM linear anomaly does coincides with the GC-A1 geochemical anomaly.

The A2-EM contour anomaly south of the GC-A1 anomaly correlates with the geochem GC-5 anomaly but also covers the swampy area as indicated on the plan 73-310-F-C.

The third area of increased conductivity is A3-EM to the north which shows some correlation with the geochem GC-7A anomaly however this is also a swampy area.

EM Survey Summary:

The correlation between the EM and geochemical anomalies are related beyond coincidence, however the susceptibility of the two systems to drainage may in some instances form a misleading link in these correlations.

Magnetometer Results:

Refer to plan 73-310-F-M. This profile plan of the vertical magnetic field intensity shows some strong anomalous features extending from north to south on the westerly portion of the survey. The magnetic contours of this magnitude usually indicate the presence of magnetite immediately south of the anomalous readings. The three prominent anomalies are in the areas shown as A1-M in the north, A2-M in the vicinity of coordinates 34+00 N and 42+00 W and the third below the linear L4 and L4-A.

The two linears F1-M and F2-M appear to be prominent faults and terminate a lot of the fracture patterns, as well as correlate with the highest enrichment of the geochemical surveys. The fracture patterns under the linear group designated L1 in the northwest portion of the survey cover an area of geochemical enrichment referred to as GC-1 with the best correlation occurring in the anomaly A1-M.

Generally speaking there is good correlation between the magnetometer and geochemical anomalies on the western side of the survey. The central linear group consisting with L5, L5A, L6, L6A, L7 and L7A correlate generally with the geochemicals GC5, GC6, and GC7, however these magnetometer features are much weaker than lower figures, therefore inconclusive when compared to the electromagnetic anomalies in the central western portion of the survey.

Magnetometer survey, Summary:

The A1-M anomalous zone extends to the northwest beyond the survey, and to the west. This anomaly includes areas of exceptionally high geochemical values and also includes in the southern portion, strong indications of magnetite. The magnetometer anomalies originating at greater depths, than the EM anomalies, validate this area as the prime target confirming the geochemical anomalies.

Geochemical Survey Results:

Refer to plan 73-310-F-GC. This contour plan indicates the value of the soil sample~~s~~ determinations in parts per million of copper, and the contours commence at 50 ppm, the second contour at 100 ppm and the third contour in excess of 1000 ppm. Generally speaking the whole area of interest covers the northwest half of the survey with the enrichment increasing to the northwest. The most prominent geophysical feature directly associated with the higher geochem enrichment is the F4-M magnetometer linear that extends through the geochem anomalies GC-1, GC-1C and GC-6.

The large magnetometer readings are not directly associated with the high enrichment anomalies although they do correlate with the lower enrichment anomalies. It should be noted that the linear anomaly F1-M cuts off the northern trending anomaly L1A, L1B and L1C that appear to be associated with magnetite anomalies.

The geochemical anomalies GC-3 and GC-7 have the same strike pattern to the northeast and southwest. The GC-3 anomaly is supported by the L1 magnetic linear and the GC-7 is partially supported by the L7-A magnetic linear, however the L7 magnetic linear which parallels the F1-M magnetic linear correlates with the geochem contour anomalies GC-7 and GC-7A.

Geochem Survey Summary:

The central portion of geochem enrichment including GC-5, GC-6 appears to be associated with drainage patterns and this might also include the periodic enrichment to the northeast.

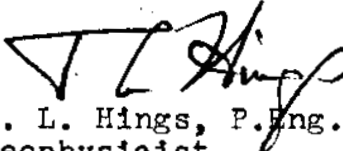
The increased enrichment to the north and west coincides with the increased fracture patterns of the magnetometer survey, with the highest enrichment occurring west of the magnetite indications and along the magnetometer linear Fl-M.

The contour magnetic anomaly Al-M apparently is over an area of little coverage and is therefore favourable with sufficient outcropping, for geological assessment.

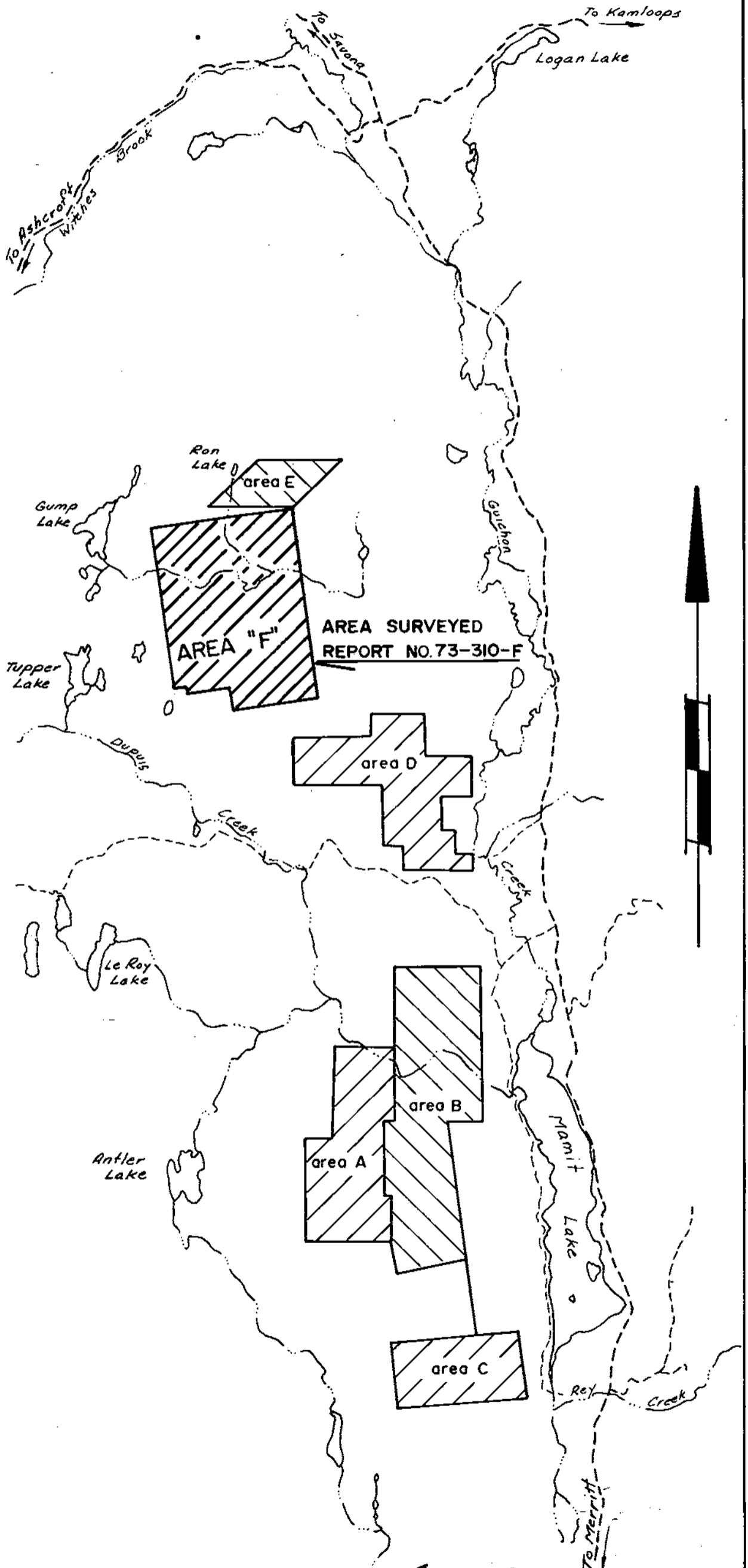
Recommendations:

The primary geological targets are in the region of the geochemical anomalies GC-1 and associated contours. This corresponds with the mag Al-M area.

The secondary targets are the central region of geochem anomalies GC-4, GC-5, GC-6 and GC-7.


D. L. Hings, P. Eng.
Geophysicist

LOCATION PLAN
SCALE 1:50,000
DWG. NO. 73-310-F-L



4828
M5

Department of
Mines and Petroleum Resources

ASSESSMENT REPORT

NO. **4828** MAP **#5**

A statement of Costs covering ELC Geophysics Ltd.
 Report No. 73-310
 GCM and MLM Claims Group
 North and West of Mamit Lake, B.C.
 for Mamit Lake Mines Ltd.
 August 7, 1973 to October 24, 1973.

Field Crew:

W. Mather	23 days @ \$50.00	\$ 1150.00	
K. Pettersen	15 days @ \$50.00	750.00	
E. Wiggins	23 days @ \$40.00	920.00	
J. Krygsveld	23 days @ \$40.00	920.00	
G. Olheiser	23 days @ \$40.00	920.00	
S. Pranzl	10 days @ \$40.00	<u>400.00</u>	
			\$ 5060.00

Transportation

4 x 4 truck	23 days @ 12.00	276.00	
1/2 ton pick up	15 days @ 10.00	150.00	
3000 miles @ 12¢		<u>360.00</u>	
			786.00

Living Costs

117 mandays @ \$8.00			936.00
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Instrument & Equipment

EM 16	23 days @ 10.00	230.00	
Magnetometer	23 days @ 10.00	230.00	
Misc.	23 days @ 5.00	<u>115.00</u>	
			575.00

Plotting & Drafting

R.L. Reece	25 days @ 60.00	1500.00	
D.A. Cramer	7 days @ 60.00	<u>420.00</u>	
			1920.00

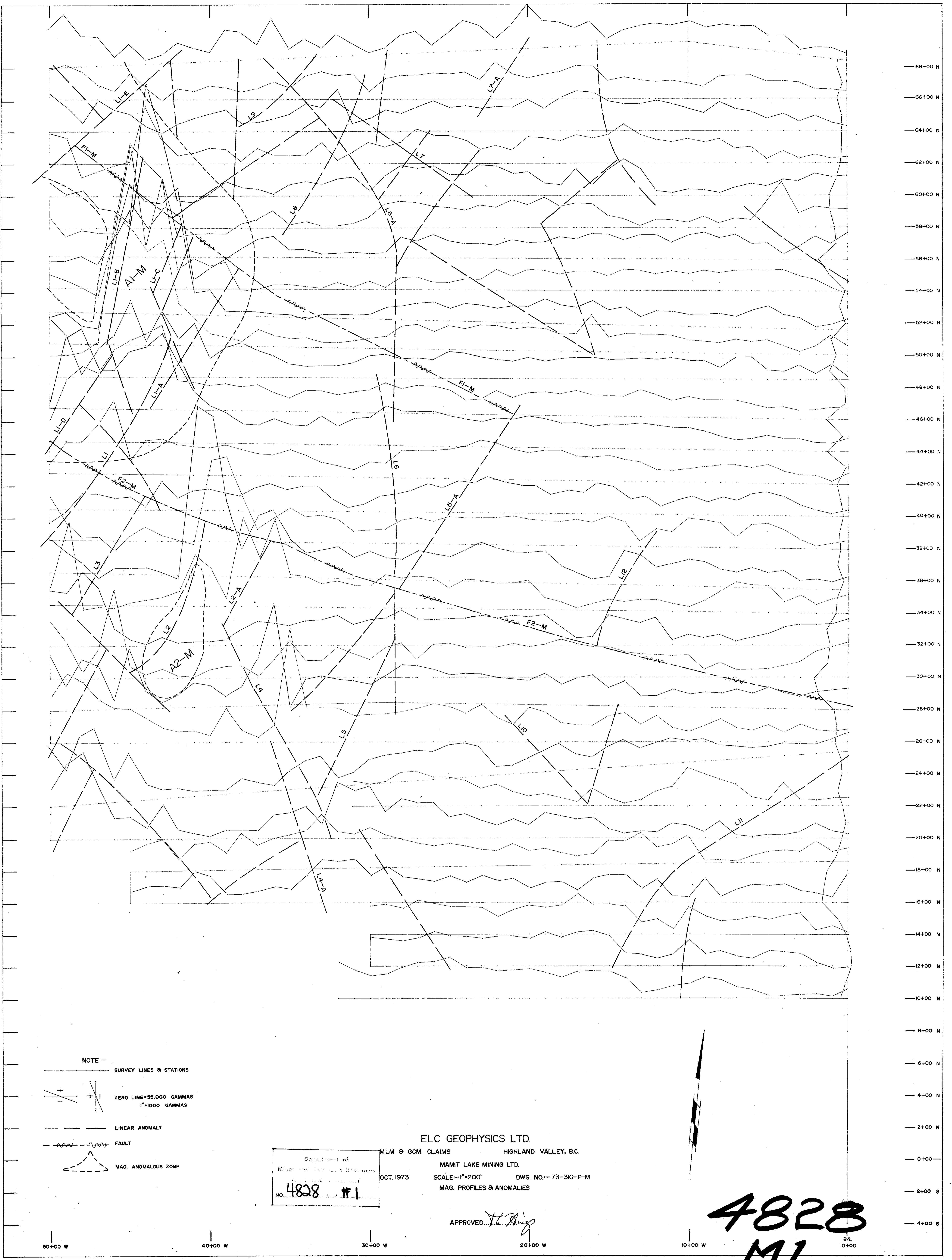
Interpretation & Report

D.L. Hings, P.Eng.	5 days @ 125.00	625.00	
C. Bowman	2 days @ 30.00	<u>60.00</u>	
			685.00

Soil Determinations

1300 samples at 1.25			<u>1625.00</u>
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TOTAL		\$	<u><u>11,587.00</u></u>
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NOTE -

- SURVEY LINES & STATIONS
- ZERO LINE = 55,000 GAMMAS
1" = 1000 GAMMAS
- LINEAR ANOMALY
- FAULT
- MAG. ANOMALOUS ZONE

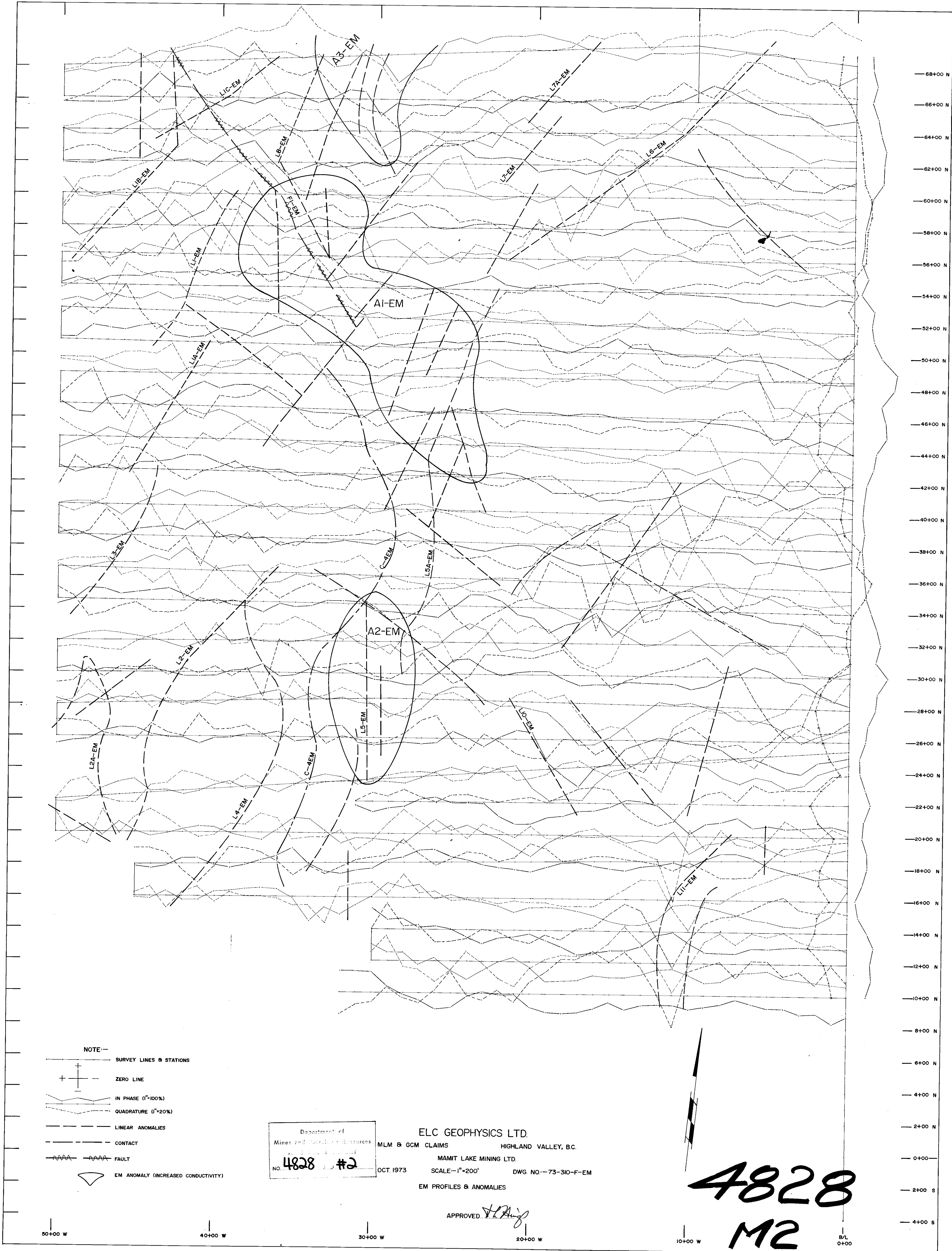
Department of
Mines and Geotechnical Resources
NO. 4828 #1

ELC GEOPHYSICS LTD.
MLM & GCM CLAIMS HIGHLAND VALLEY, B.C.
MAMIT LAKE MINING LTD.
OCT. 1973 SCALE: 1" = 200' DWG. NO. -73-310-F-M
MAG. PROFILES & ANOMALIES

APPROVED: *[Signature]*

4828
MI

50+00 W 40+00 W 30+00 W 20+00 W 10+00 W 8+00 N 6+00 N 4+00 N 2+00 N 0+00 2+00 S 4+00 S



NOTE:-

- SURVEY LINES & STATIONS
- ZERO LINE
- IN PHASE (1"=100%)
- QUADRATURE (1"=20%)
- LINEAR ANOMALIES
- CONTACT
- FAULT
- EM ANOMALY (INCREASED CONDUCTIVITY)

Department of
Mines and Technical Resources
NO. 4828 #2

ELC GEOPHYSICS LTD.
MLM & GCM CLAIMS HIGHLAND VALLEY, B.C.
MAMIT LAKE MINING LTD.
OCT. 1973 SCALE=1"=200' DWG NO. 73-310-F-EM
EM PROFILES & ANOMALIES

APPROVED:

4828
M2

50+00 W

40+00 W

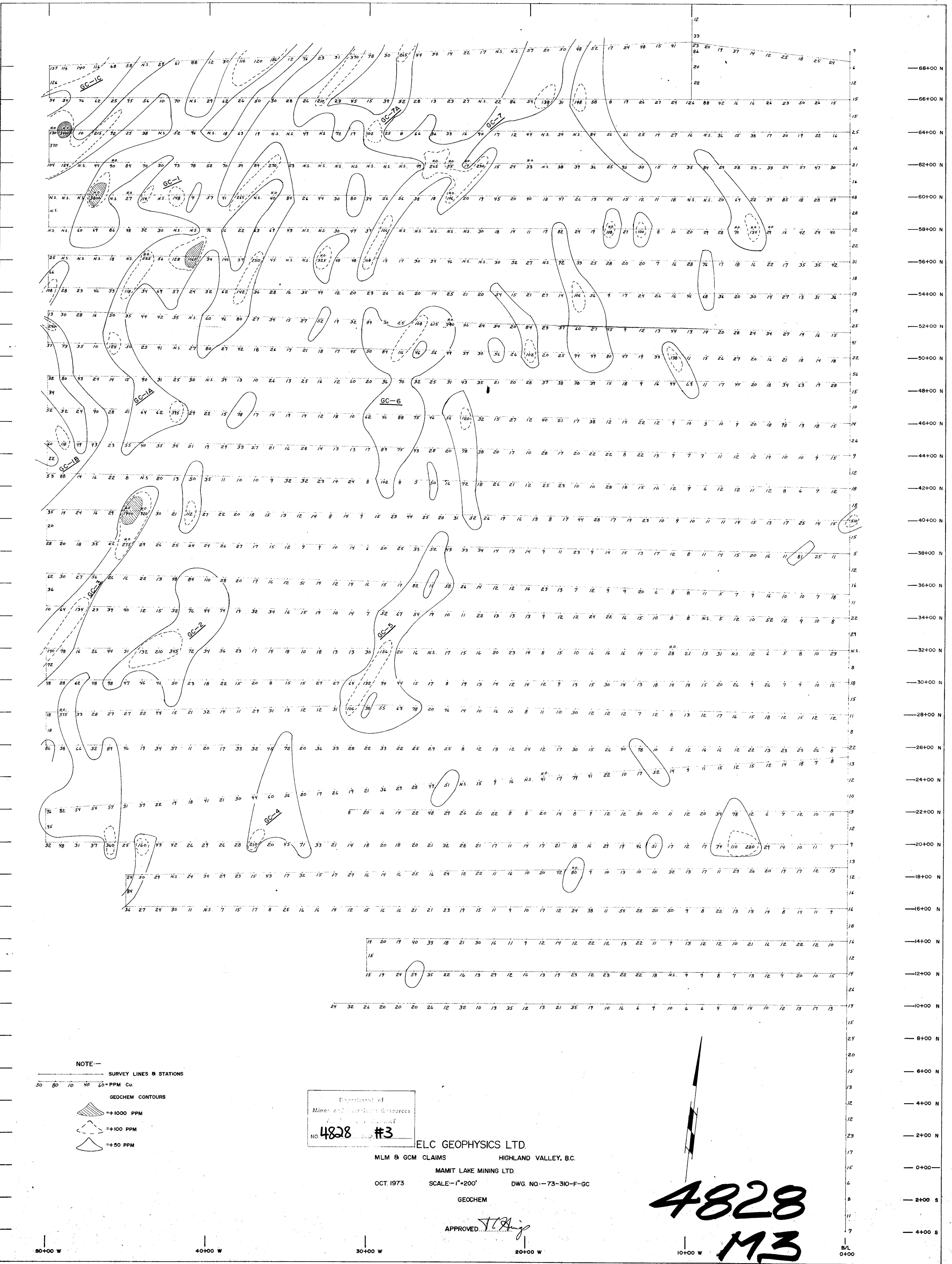
30+00 W

20+00 W

10+00 W

B/L
0+00

68+00 N
66+00 N
64+00 N
62+00 N
60+00 N
58+00 N
56+00 N
54+00 N
52+00 N
50+00 N
48+00 N
46+00 N
44+00 N
42+00 N
40+00 N
38+00 N
36+00 N
34+00 N
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26+00 N
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22+00 N
20+00 N
18+00 N
16+00 N
14+00 N
12+00 N
10+00 N
8+00 N
6+00 N
4+00 N
2+00 N
0+00
2+00 S
4+00 S



NOTE:—

— SURVEY LINES & STATIONS
 50 80 10 40 = PPM Cu.

GEOCHEM CONTOURS

- +1000 PPM
- +100 PPM
- +50 PPM

Department of
 Mineral and Geoscientific Resources
 No. 4828 #3

ELC GEOPHYSICS LTD.

MLM & GCM CLAIMS HIGHLAND VALLEY, B.C.

MAMIT LAKE MINING LTD.

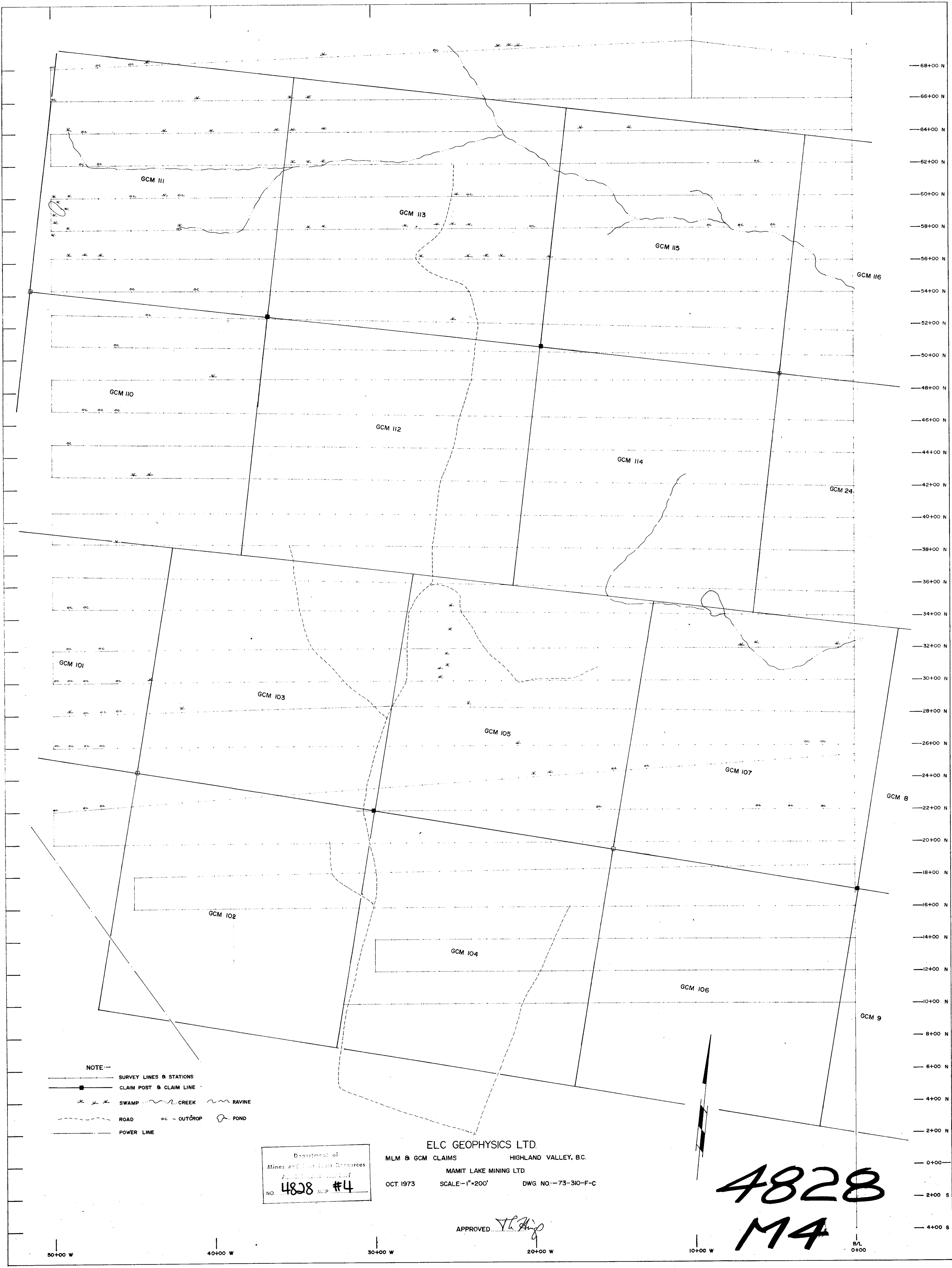
OCT. 1973 SCALE: 1"=200' DWG. NO.: 73-310-F-GC

GEOCHEM

APPROVED: *J.R. King*

4828
M3

50+00 W 40+00 W 30+00 W 20+00 W 10+00 W 68+00 N 66+00 N 64+00 N 62+00 N 60+00 N 58+00 N 56+00 N 54+00 N 52+00 N 50+00 N 48+00 N 46+00 N 44+00 N 42+00 N 40+00 N 38+00 N 36+00 N 34+00 N 32+00 N 30+00 N 28+00 N 26+00 N 24+00 N 22+00 N 20+00 N 18+00 N 16+00 N 14+00 N 12+00 N 10+00 N 8+00 N 6+00 N 4+00 N 2+00 N 0+00 S 2+00 S 4+00 S 6+00 S 8+00 S 10+00 S 12+00 S 14+00 S 16+00 S 18+00 S 20+00 S 22+00 S 24+00 S 26+00 S 28+00 S 30+00 S 32+00 S 34+00 S 36+00 S 38+00 S 40+00 S 42+00 S 44+00 S 46+00 S 48+00 S 50+00 S 52+00 S 54+00 S 56+00 S 58+00 S 60+00 S 62+00 S 64+00 S 66+00 S 68+00 S



NOTE:—
 — SURVEY LINES & STATIONS
 — CLAIM POST & CLAIM LINE
 * * * SWAMP ~~~~~ CREEK ~~~~~ RAVINE
 - - - ROAD ec = OUTCROP ○ POND
 — POWER LINE

Department of
 Mines and Geology Resources
 APPROVED WORKSHEET
 NO. 4828 M.P. #4

ELC GEOPHYSICS LTD.
 MLM & GCM CLAIMS HIGHLAND VALLEY, B.C.
 MAMIT LAKE MINING LTD.
 OCT. 1973 SCALE—1"=200' DWG. NO.—73-310-F-C

APPROVED *V.L. King*

4828
 M4

50+00 W 40+00 W 30+00 W 20+00 W 10+00 W 0+00 W 68+00 N 66+00 N 64+00 N 62+00 N 60+00 N 58+00 N 56+00 N 54+00 N 52+00 N 50+00 N 48+00 N 46+00 N 44+00 N 42+00 N 40+00 N 38+00 N 36+00 N 34+00 N 32+00 N 30+00 N 28+00 N 26+00 N 24+00 N 22+00 N 20+00 N 18+00 N 16+00 N 14+00 N 12+00 N 10+00 N 8+00 N 6+00 N 4+00 N 2+00 N 0+00 N 2+00 S 4+00 S