

3956

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 3956 MAP

REPORT ON  
A TURAM ELECTROMAGNETIC SURVEY  
HARRISON LAKE AREA, BRITISH COLUMBIA  
ON BEHALF OF  
GIANT EXPLORATIONS LIMITED (N.P.L.)  
92H/12E

by  
Peter J. Fominoff, B.A.Sc.  
and  
Michael J. Lewis, M.Sc.  
August 15, 1972

- CLAIMS:  
Name  
Ni 334 - 339 (inclusive)  
Ni 351, 357, 708, 709  
Ni 316 - 318 (inclusive)

LOCATION:  
About 20 miles north of Harrison Hot Springs, B. C.  
East Side of Harrison Lake  
New Westminster Mining Division  
121° 49° NW

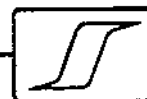
DATES:  
June 26 to July 14, 1972

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SUMMARY

A Turam type electromagnetic survey has been completed over Areas 4 and 7 over the present property. Three anomalous zones have been detected in each of the areas. To further investigate these areas three diamond drill holes totalling a minimum of 450 feet have been suggested.



REPORT ON  
A TURAM ELECTROMAGNETIC SURVEY  
HARRISON LAKE AREA, BRITISH COLUMBIA  
ON BEHALF OF  
GIANT EXPLORATIONS LIMITED (N.P.L.)

INTRODUCTION

During the period June 26 to July 14, 1972, a geophysical field party carried out a Turam electromagnetic survey in the Harrison Lake area, British Columbia, on behalf of Giant Explorations Limited (N.P.L.). The field work was under the direction of Mr. Michel Vallee, an experienced geophysical operator on staff with Seigel Associates Limited. Overall supervision was provided by the writers.

As shown on Figure 1, the survey area is located about 20 miles north of Harrison Hot Springs. The topography of the property is steep and forested, typical of the British Columbia Coast Mountains. Much of the two grid areas have been logged over and are difficult to negotiate.

The claims covered, in whole or part, by the present survey are listed on the front page of this report and are shown on Plates 3 and 4, on the scale of 1 inch = 500 feet. Two grids designated Area 4 and Area 7 were surveyed.

DESCRIPTION OF METHOD AND INSTRUMENTATION

The Turam fixed source compensation method was chosen for the electromagnetic survey since, in comparison with other electromagnetic techniques, it is relatively unaffected by orientation errors caused by rough topography, it provides deep penetration and allows accurate interpretation of anomaly characteristics.

Electromagnetic methods detect massive sulphide bodies by measuring the secondary electromagnetic field produced by eddy currents induced in



such bodies by a transmitted or primary electromagnetic field. The Turam method employs a large closed loop of wire as transmitter; the field strength ratio and phase difference, at two nearby observation points, are measured by means of two receiver coils.

The presence of a subsurface conductor is indicated by abnormal field strength ratios and phase differences. Typically, anomalies show a correspondence between positive values of the field strength ratio and negative phase differences.

A Scintrex SE-71 instrument was employed for the survey. The receiver coil separation was 100 feet. Five transmitting loops of the following dimensions were utilized:

1000 feet X 1500 feet  
 1500 feet X 1500 feet (2 loops)  
 2000 feet X 2000 feet  
 2000 feet X 2800 feet

The locations of their leading edges are shown on Plates 3 and 4. An energization frequency of 400 Hz was generally employed, though readings were also taken at 200 Hz on one line.

Approximately 9.0 line miles of profile were covered. Readings were taken every 100 feet along lines oriented east-west on two grids as illustrated on Plates 3 and 4.

#### GEOLOGY AND PURPOSE OF SURVEY

The local geology of Area 4 has been studied by personnel of Giant Explorations Limited (N.P.L.) and is summarized below:

The grid area is underlain by a complex assemblage of acidic, mafic and ultramafic rocks. The acidic rocks are mostly diorites. The mafic rocks are gabbros and the ultramafics



consist of pyroxenites, peridoties, hornblendites and undifferentiated ultramafics.

The targets of the present survey are high-grade, conductive copper-nickel sulphide deposits associated with the mafic and ultramafic rocks. The mineralization sought is similar to that of the nearby producing Giant Mascot Mine.

The geology of Area 7 is likely similar to Area 4.

In September 1971 Area 4 was subjected to an Induced Polarization Survey. The results of this work are contained in "Report on an Induced Polarization Survey, Harrison Lake area, British Columbia on behalf of G. M. Explorations Limited (N.P.L.)" by Peter J. Fominoff, B.A.Sc. and Richard O. Crosby, B.Sc., P.Eng. dated September 27, 1971. They have been considered in the present interpretation.

PRESENTATION OF RESULTS

Plates 3 and 4, on the scale of 1 inch = 500 feet, show the grid plans, claims and interpretation of Areas 4 and 7, respectively.

Plates 1 and 2 show the geophysical profiles, on the scale of 1 inch = 200 feet, for Areas 4 and 7, respectively. The vertical scales are 1 inch = 20% for field strength ratio and 1 inch = 10° for phase difference.

DISCUSSION OF RESULTS

Area 4

Area 4 contains 3 Zones of interest. These have been labelled Zones 4-A to 4-C on Plate 2.

Zone 4-A - extends from L-49 (6 + 50 W) to L-48 (13 + 50 W) for a minimum length of 800 feet. It strikes approximately N 55° E. The anomaly



has a negative field strength ratio falling to 88% at L-48; 13 + 50 W. The phase difference shows only a minor fluctuation of  $-2.0^{\circ}$  at L-48; 13 + 50 W. The reversed ratios and phase are interpreted as being due to a combination of loop location, and the dip and magnetic content of the conductor. The apparent dip is likely grid east, toward the current loop. The current axis appears to be about 100 feet below ground surface.

Zone 4-B - has a negative field strength ratio of 82% and a positive phase shift of  $14^{\circ}$ . Such reverse anomalies may occur when a conductor dips toward the energizing loop. Zone 4-B appears to reflect a localized conductor with a current axis coming to within about 100 feet of the ground surface at L-22; 9 + 50 W. The 200 Hz data show no definitely anomalous response corresponding to the 400 Hz indication suggesting a poorly conducting source.

Zone 4-C - is located on the lower road centred on station 24 + 50 W. The peak field strength ratio is 118%. There is no associated phase difference distortion. The anomaly is present on one line only and likely reflects a multiple conductor probably giving rise to the broad ratio distortion. Since the anomaly is not definitely present on adjacent lines the source is interpreted to be shallow, local and less than 100 feet deep.

#### Area 7

Area 7 contains 3 zones of interest. These have been labelled Zones 7-A to 7-C on Plate 3.

Zone 7-A - is a single line occurrence located at L-31; 18 + 50 E. The field strength ratio reaches a maximum of 115%, the phase shift  $+3^{\circ}$ . The source is likely a magnetic conductor. It appears to be localized and steeply dipping with a current axis depth of about 100 feet.



Magnetic surveying over the area should show anomalous responses over the conductor location.

Zone 7-B - is located east of station 18 E on Lines 30, 31 and 32. The field strength ratio reaches a maximum of 108% at 20 + 50 E on L-30. The lack of a strong coincident phase shift indicates good conduction. The depth to the current axis appears to be more than 200 feet on all lines.

Zone 7-C - is a prominent phase distortion ranging from  $-6^{\circ}$  at 15 + 50 E to  $+6^{\circ}$  at 18 + 50 E occurs on L-28. There is no apparent corresponding ratio distortion probably indicating low conductivity and suggesting a lower priority in further investigations.

#### CONCLUSIONS AND RECOMMENDATIONS

In Area 4, three anomalous zones designated 4-A, 4-B and 4-C (Plate 3) have been outlined. The highest priority is given to Zone 4-A, in view of its interline continuity and geophysical characteristics. Zones 4-B and 4-C are of lower priority.

Three anomalous zones were also detected in Area 7. These are designated 7-A, 7-B and 7-C (Plate 4) in order of decreasing priority.

In both survey areas the observed anomalies appear to reflect localized near surface (less than 100 feet) magnetic anomalies, excepting Zone 7-B which may represent a relatively deep conductor.

If on the basis of geological, geochemical and magnetic considerations, the anomalous zones should warrant further investigation, the following diamond drilling programme is tentatively suggested.



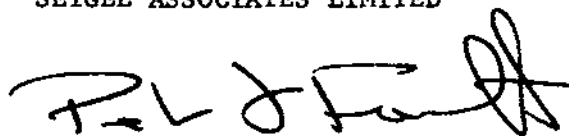


<u>COLLAR</u>	<u>DIP</u>	<u>DIRECTION</u>	<u>MINIMUM DEPTH</u>
L-48; 13 + 00 W	-45°	West	150 feet
Lower Road; 24 + 00 W	-45°	West along road	150 feet
L-31; 25 + 00 E	-45°	West	150 feet

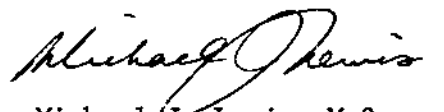
Additional diamond drilling and/or geophysical coverage would be predicated upon the presently suggested diamond drilling agenda.

Respectfully submitted,

SEIGEL ASSOCIATES LIMITED



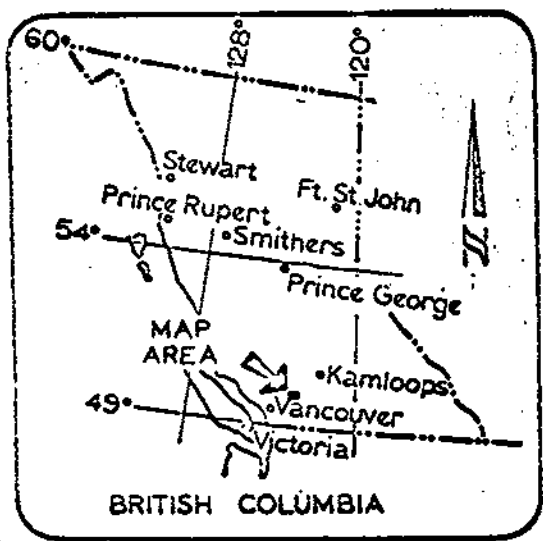
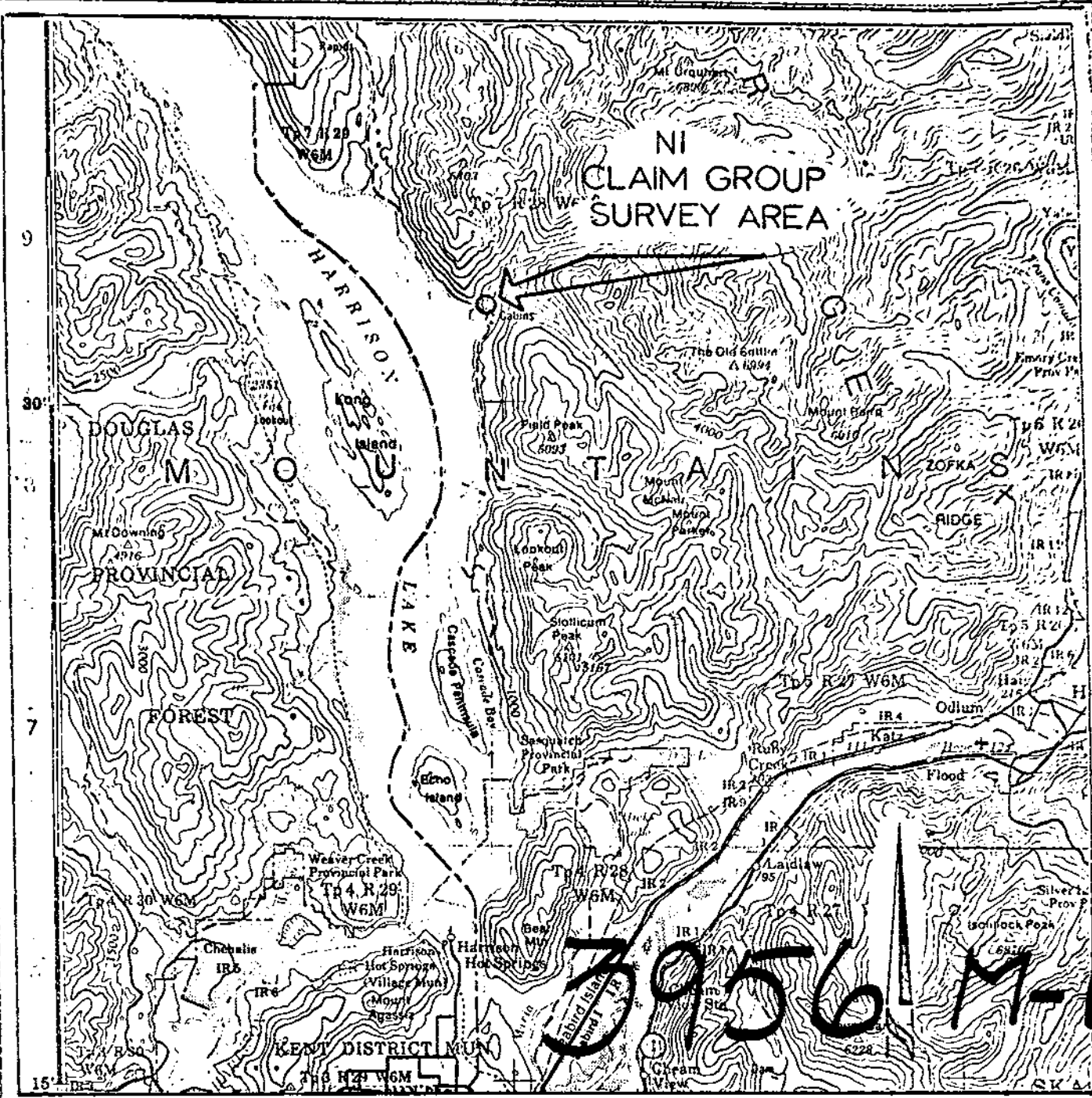
Peter J. Fominoff, B.A.Sc., P. Eng.  
Geophysicist



Michael G. Lewis, M.Sc.  
Geophysicist

Vancouver, B. C.  
August 16, 1972





**GIANT EXPLORATIONS LIMITED**

**LOCATION MAP**

NI GROUP

*Pol J. Fuld*

HARRISON LAKE AREA BRITISH COLUMBIA

SCALE 1 : 250,000      4 miles      0      4 miles

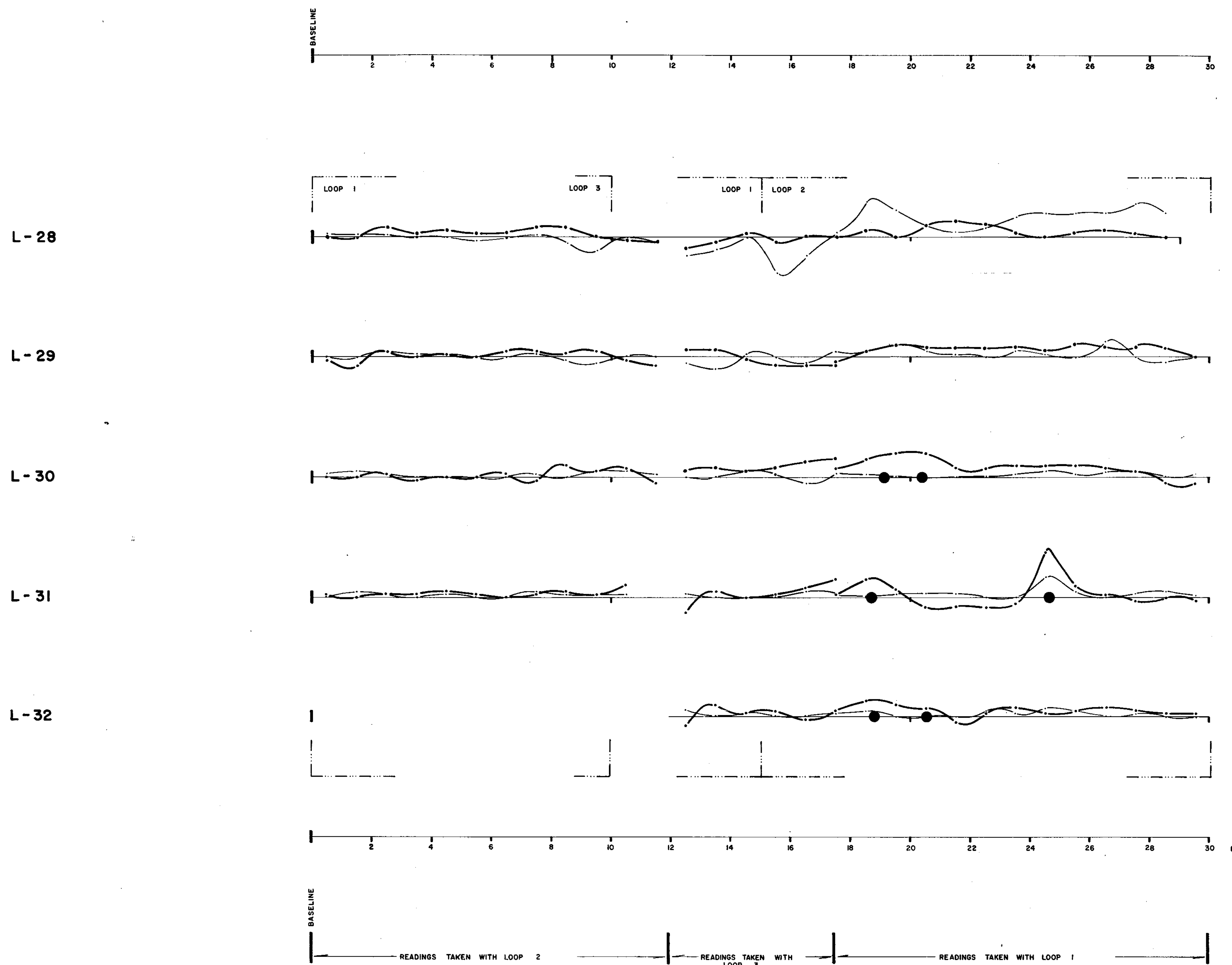
Survey by SEIGEL ASSOCIATES LIMITED AUGUST 1972

**FIG. 1**



1-M JCP

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LEGEND

- RATIO
- PHASE
- READINGS TAKEN 400 Hz, UNLESS INDICATED OTHERWISE.
- LEADING EDGE OF TRANSMITTING LOOP
- CURRENT AXIS INTERSECTION
- 100' RECEIVING COIL SEPARATION
- INTERLINE SPACING NOT TO SCALE.

PLATE 2

**GIANT EXPLORATIONS LIMITED (NPL)**  
 HARRISON LAKE, BC  
 AREA 7

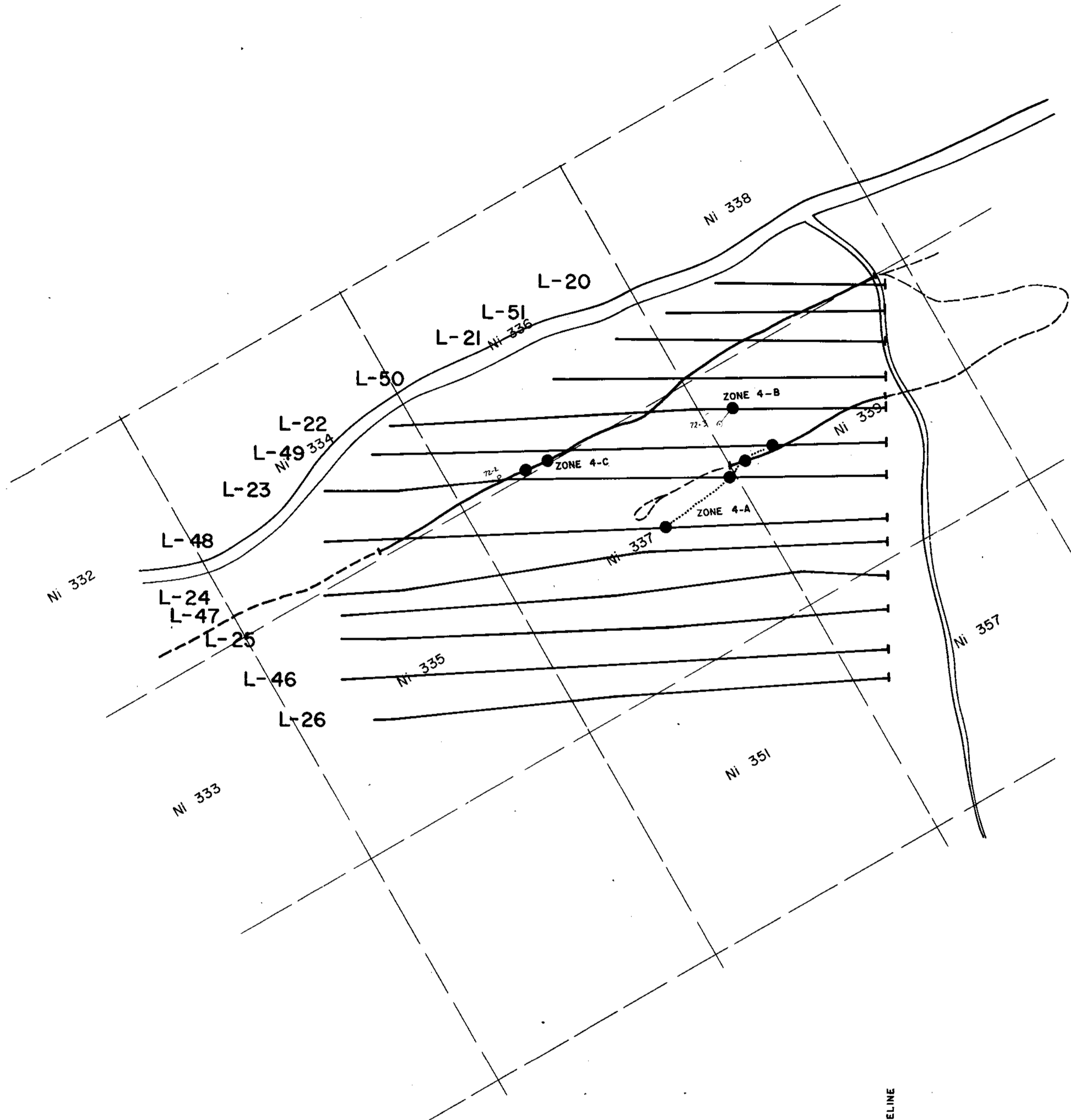
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PROFILES  
 OF  
**TURAM ELECTROMAGNETIC SURVEY**

SCALE 1" = 200'  
 BY  
 SEIGEL ASSOCIATES LIMITED  
 VANCOUVER B.C.

*R.J. F.*

TO ACCOMPANY A GEOPHYSICAL REPORT BY M. J. LEWIS AND P. J. FOMINOFF	WORK COMPLETED: 16 JULY 1972 DRAFTED: 24 JULY 1972 of REV: 10.8.72	JOB NUMBER 879	SHEET NUMBER 1 OF 1
DATED: 16. 8. 1972			

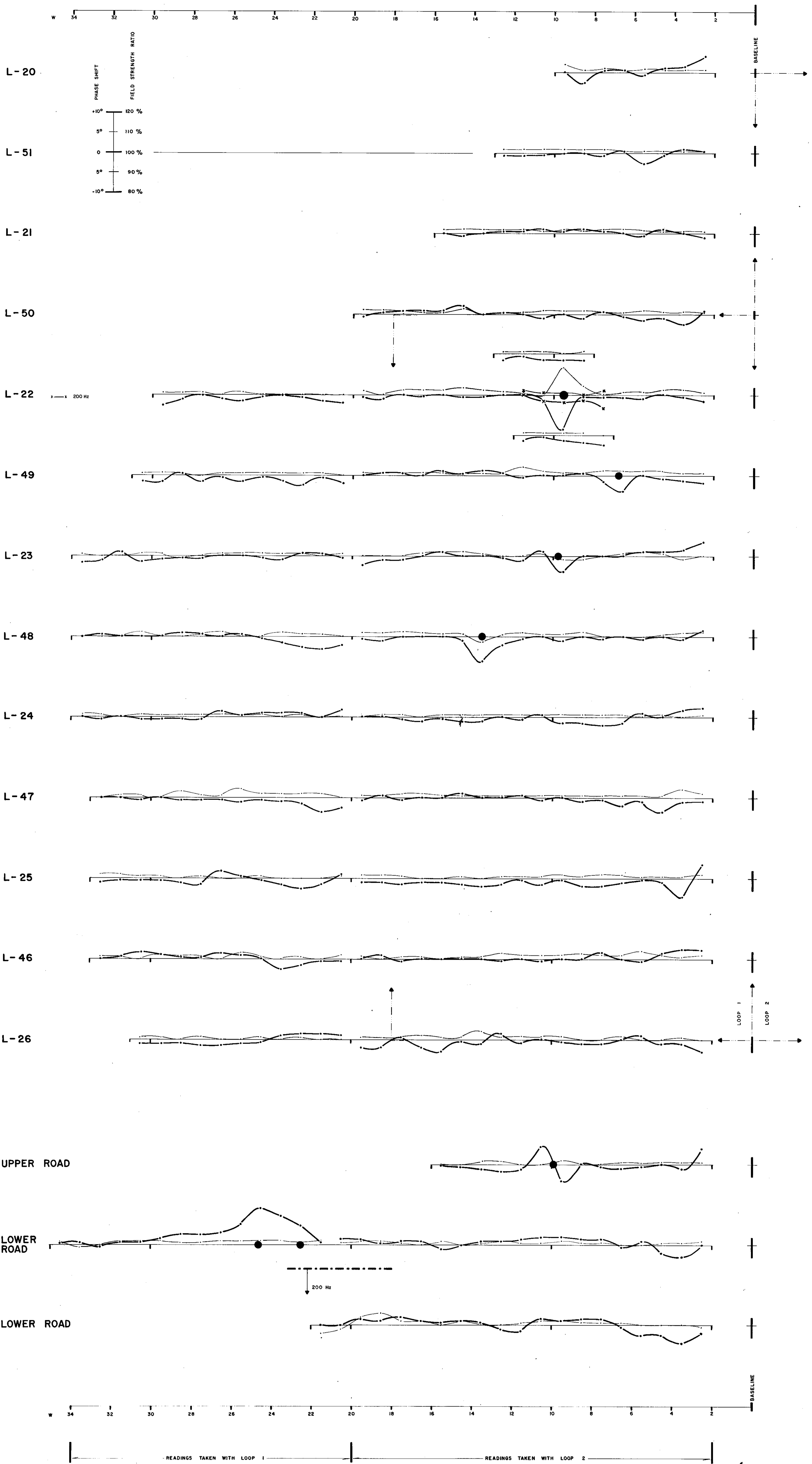


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PLATE 3  
**GIANT EXPLORATIONS LTD.**  
 HARRISON LAKE, B.C. AREA 4

GRID AND CLAIM LOCATION  
**TURAM ELECTROMAGNETIC SURVEY**  
 AUGUST 1972  
 SCALE 1" = 500'

*R.L.F.*



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**LEGEND**  
 --- RATIO  
 --- PHASE  
 --- READINGS TAKEN 400 HZ, UNLESS INDICATED OTHERWISE  
 --- LEADING EDGE OF TRANSMITTING LOOP  
 ● CURRENT AXIS INTERSECTION  
 --- 100' RECEIVING COIL SEPARATION  
 --- INTERLINE SPACING NOT TO SCALE.



PLATE 1  
 GIANT EXPLORATIONS LIMITED (N.P.L.)  
 HARRISON LAKE, B.C.  
 AREA 4  
 Department of  
 Mines and Petroleum Resources  
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 PROFILES OF  
 TURAM ELECTROMAGNETIC SURVEY  
 SCALE 1" = 200'  
 BY  
 SEIGEL ASSOCIATES LIMITED  
 VANCOUVER, B.C.

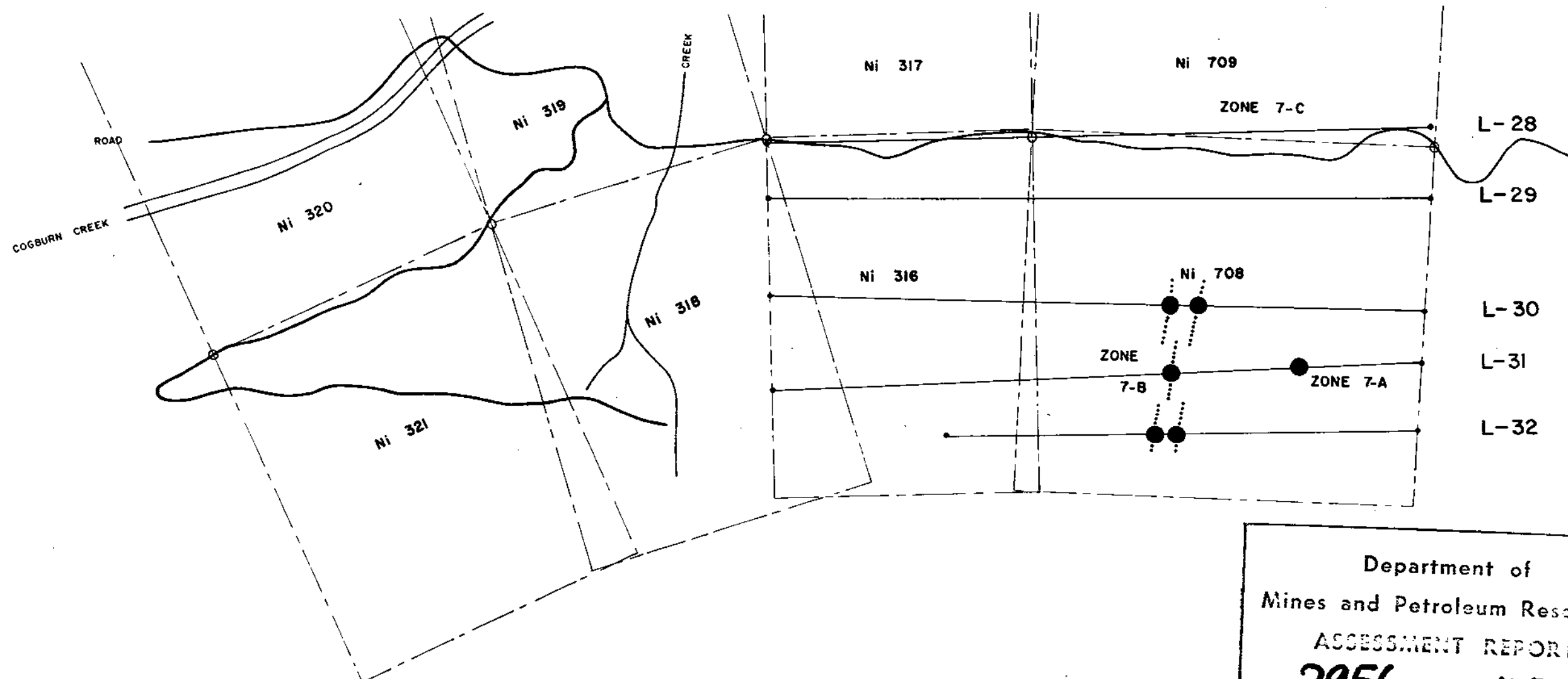
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 REV: 10.8.1972 of

JOB NUMBER  
 879

SHEET NUMBER  
 1 OF 1

*F. J. Ford*



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PLATE 4

**GIANT EXPLORATIONS LTD.**  
 HARRISON LAKE, B.C. AREA 7

GRID AND CLAIM LOCATION  
**TURAM ELECTROMAGNETIC SURVEY**

AUGUST 1972

SCALE 1" = 500'

*R.W.F.*