

GLOBAL-PACIFIC MINERALS INC.  
GEOPHYSICAL REPORT ON A TOTAL FIELD MAGNETICS  
AND SOIL VLF-EM SURVEY  
ON THE  
DORA 2 & 3 CLAIMS  
CLINTON MINING DIVISION  
NTS 92 P/14E  
LATITUDE 51 56'N LONGITUDE 121 15'W  
AUTHOR: Markus B. Seywerd B.Sc.  
DATE OF WORK: January 23 - April 23, 1990  
DATE OF REPORT: December 16, 1990

LOG NO: 12-21	RD.
ACTION:	
FILE NO:	

SUB-RECORDER  
RECEIVED  
DEC 17 1990  
M.R. # ..... \$ .....  
VANCOUVER, B.C.

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

20,673

## TABLE OF CONTENTS

INTRODUCTION .....	1
PROPERTY .....	1
LOCATION AND ACCESS .....	1-2
SURVEY GRID .....	2
HISTORY AND PREVIOUS WORK .....	2
GEOLOGY .....	3
MAGNETOMETER AND VLF-EM SURVEY.....	3-5
DISCUSSION OF RESULTS .....	5-6
CONCLUSIONS AND RECOMMENDATIONS.....	6
COST BREAKDOWN .....	7
REFERENCES .....	8-9
STATEMENT OF QUALIFICATIONS	
Markus B. Seywerd, B.Sc. ....	10
CERTIFICATE	
Markus B. Seywerd, B.Sc. ....	11
INSTRUMENT SPECIFICATIONS .....	12-13

## ILLUSTRATIONS

FIGURE 1 - Location Map	
FIGURE 2 - Claim Map and Grid Location	
FIGURE 3 - Regional Geology	
FIGURE 4 - Regional Aeromagnetics	
FIGURE 5 - Diagrammatic Cross-Section	
FIGURE 6 - Total Field Magnetic Profiles	
FIGURE 7 - Contoured Total Field Magnetics	
FIGURE 8 - VLF-EM Profiles Seattle	
FIGURE 9 - VLF-EM Profiles Annapolis	

**INTRODUCTION:**

During the early spring of 1990 Euro-Canadian Geological Services was contracted by Global Pacific Minerals Inc. to conduct a total field magnetics and two station VLF-EM survey over the Dora 2 & 3 claims near Lac La Hache B.C.. The survey was conducted on lines spaced 100 meters apart and readings were taken every 12.5 metres. The lines were established by Action Mine Services. The purpose of this survey was to aid in the geological mapping of the property and target areas favorable to copper gold mineralization.

**PROPERTY:**

The Dora 2 & 3 claims are described in the table below and illustrated in Figure 2.

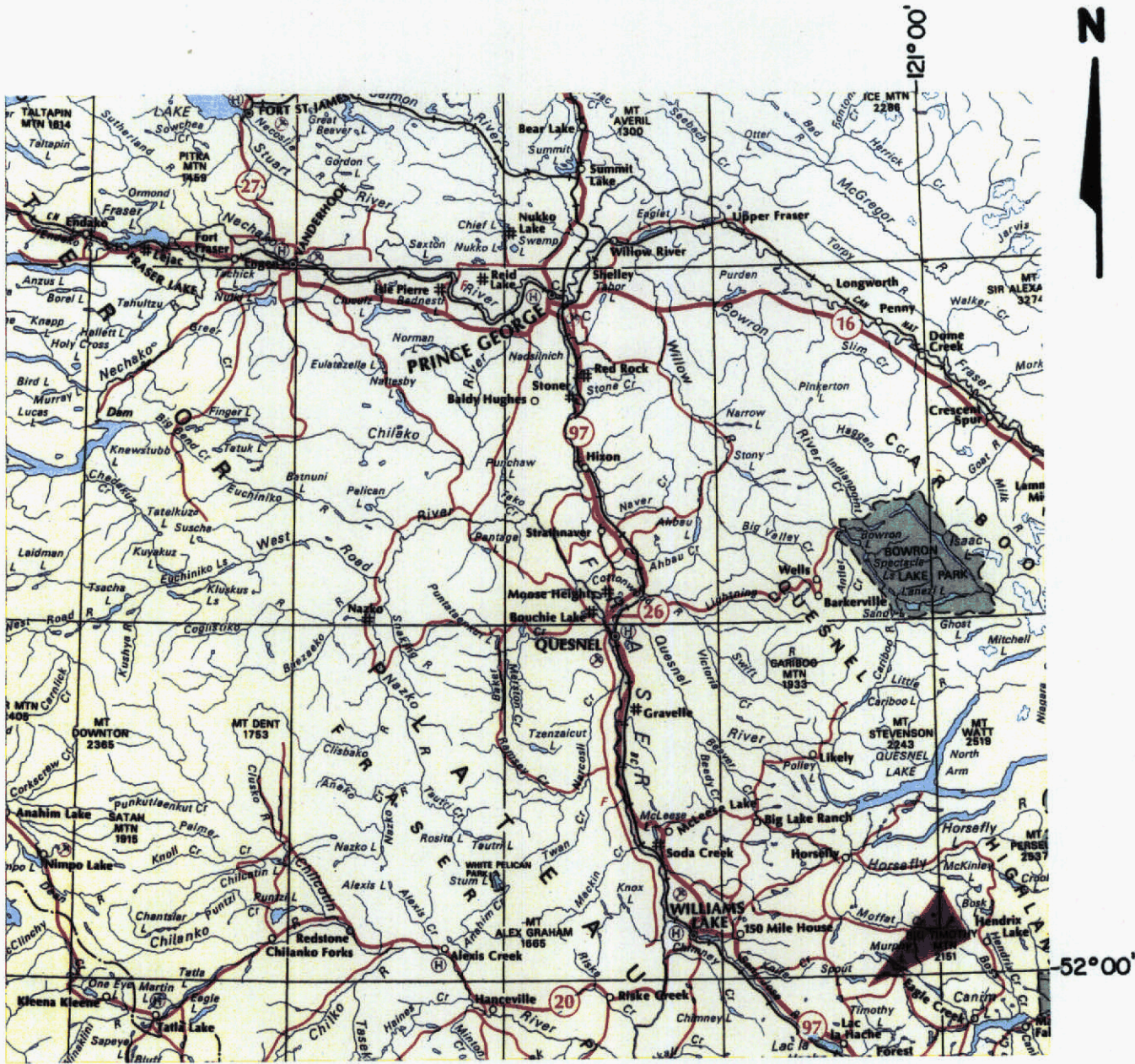
Claim Name	Units	Record No.	Record Date
Dora 2	16	2393	Sept. 9, 1987
Dora 3	16	2394	Sept. 9, 1987

**LOCATION AND ACCESS:**

The Dora claims area is located approximately 27 kilometres northeast of Lac La Hache in the Cariboo region of British Columbia. The Timothy Mountain road, a good gravel road, approaches the claims directly from the Lac La Hache townsite. This road, which is maintain year round, leads after approximately 21 kilometres, to a right fork onto a secondary logging road, which gives access to the property.

Access can also be had via the Spout Lake and Murphy Lake





**GLOBAL PACIFIC MINERALS INC.**

DORA 2 & 3 CLAIMS

**LOCATION MAP**

N.T.S. 92P/14W

SCALE = 1:2 000 000

FIG. 1



roads to Rail Lake. At Rail Lake the 1700 logging road turns eastward which after approximately 18 kilometres gives access to the property. A four wheel drive vehicle is required to traverse the roads on the property. The property is located at Latitude 51 56'N Longitude 121 15'W and is covered by N.T.S. sheet 92P/14W

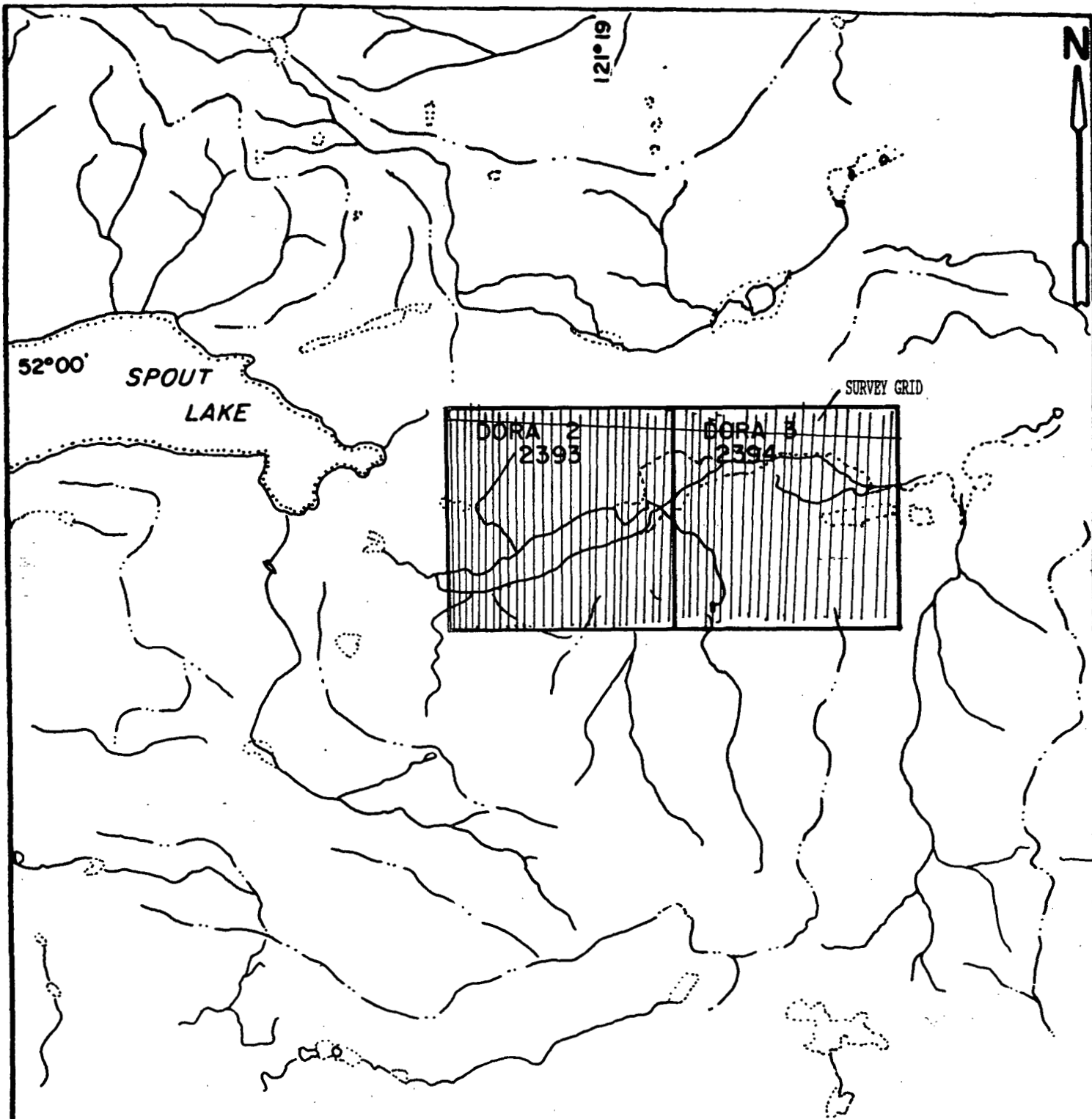
#### **SURVEY GRID:**

The survey grid was established in 1990 to conduct a blanket total field magnetics and VLF-EM survey. The east-west baseline was established on the property and 2000 metres lines turned off towards the north and the south every 100 metres. Stations were marked every 25 metres along the lines.

#### **History and Previous Work:**

The claims lie on the northern edge a large magnetic arc which curves eastward and is some 15 kilometres in length. Geological investigation has shown this feature is sourced in magnetite rich alkalic stocks and dykes. Initial investigations in the area began in the late 60's when regional soil sampling located extensive evidence of copper mineralization.

Two principle properties were located at that time; the WC claims near Spout Lake, and the Tim Claims (1967 by Coranex).



GLOBAL-PACIFIC MINERALS INC.

DORA 2 & DORA 3 CLAIMS

CLAIMS MAP

N.T.S. 92P/14W

SCALE = 1:50 000

FIG.2

**GEOLOGY:**

The regional geology of the area is depicted by G.S.C. Map 1278A, Bonaparte Lake Map Area, 1972. The Dora claims are situated near the eastern margin of the Intermontaine Belt. This belt is composed of a northwesterly trending assemblage of Upper Triassic - Lower Jurassic volcanic rocks belonging to the Nicola, Takla and Stuhini Groups and is often referred to as the Quesnel Trough.

Nicola volcanic rocks of Triassic age underlay the property. They have been mapped as augite, andesite flows and breccia; tuff, argillite, greywacke and grey limestone. The Takomkane granitic batholith of Triassic-Jurassic age lies to the east of this sequence of rocks. An extensive cover of Upper Tertiary (Miocene-Pliocene) basaltic lavas of the plateau type lie to the west.

The eastern edge of the Intermontane Belt contains a linear band of alkalic stocks composed of diorite, monzonite and syenite. These stocks intrude the volcanic strata and commonly alter the country rocks. They are hosts for several alkalic suite porphyry mineral deposits such as Copper Mountain, Afton, Cariboo-Bell and the recently discovered QR gold mine. The QR discovery is reported to contain some 6500 kilograms of gold reserves.

**MAGNETOMETER AND ELECTROMAGNETOMETER SURVEYS:**

The VLF-EM and Magnetic surveys were conducted simultaneously utilizing the Omni-Plus VLF/MAGNETOMETER system built by EDA Instruments Inc. This instrument contains several microprocessors and associated

# LEGEND FOR FIGURE 3

## QUATERNARY

### PLEISTOCENE AND RECENT

- 22 Glacial deposits and recent alluvium; till, gravel, sand, silt, and clay; few if any bedrock exposures

## TERTIARY

### MIOCENE AND/OR LATER

- 20 Basaltic flows; minor tuff, conglomerate, and sandstone

## JURASSIC AND/OR CRETACEOUS AND (?) EARLIER

- 17 17a, hornblende-biotite and biotite-quartz monzonite and granodiorite, minor hornblende-biotite syenite and monzonite; 17b, hornblende-biotite syenite and monzonite; 17c, hornblende diorite; 17d, muscovite granite and quartz monzonite including pegmatite; 17e, gneissose biotite granodiorite, altered and gneissose diorite, and augen granite (part of unit 17e may be Palaeozoic); 17f, trachyte porphyry (may be volcanic); 17g, green andesite and fine-grained diorite (may be volcanic)

## TRIASSIC

### UPPER TRIASSIC

- 10 10a, green and purplish brown pebble and cobble conglomerate and sandstone; 10b, green andesitic volcanic rocks, andesitic feldspar porphyry, argillite, limestone, and pebble conglomerate

## QUATERNARY

### PLEISTOCENE AND RECENT

- 28 Till, gravel, clay, silt, alluvium. (few if any bedrock exposures)

## TERTIARY

### MIOCENE AND/OR PIOCENE

- 25 Plateau lava; olivine basalt, basalt andesite, related ash and breccia beds; basaltic arenite; 25a, olivine gabbro plugs

### EOCENE AND (?) OLIGOCENE

#### KAMLOOPS GROUP (21, 22)

- 22 SKULL HILL FORMATION: dacite, trachyte, basalt, andesite, rhyolite, related breccias

## TRIASSIC OR JURASSIC

### RHAETIAN OR HETTANGIAN

- 14 THUYA AND TAKOMKANE BATHOLITHS AND SIMILAR GRANITIC ROCKS: hornblende-biotite quartz diorite and granodiorite, minor hornblende diorite, monzonite, gabbro, hornblendite; 14a, diorite and syenodiorite, 14b leuco-quartz monzonite and granodiorite

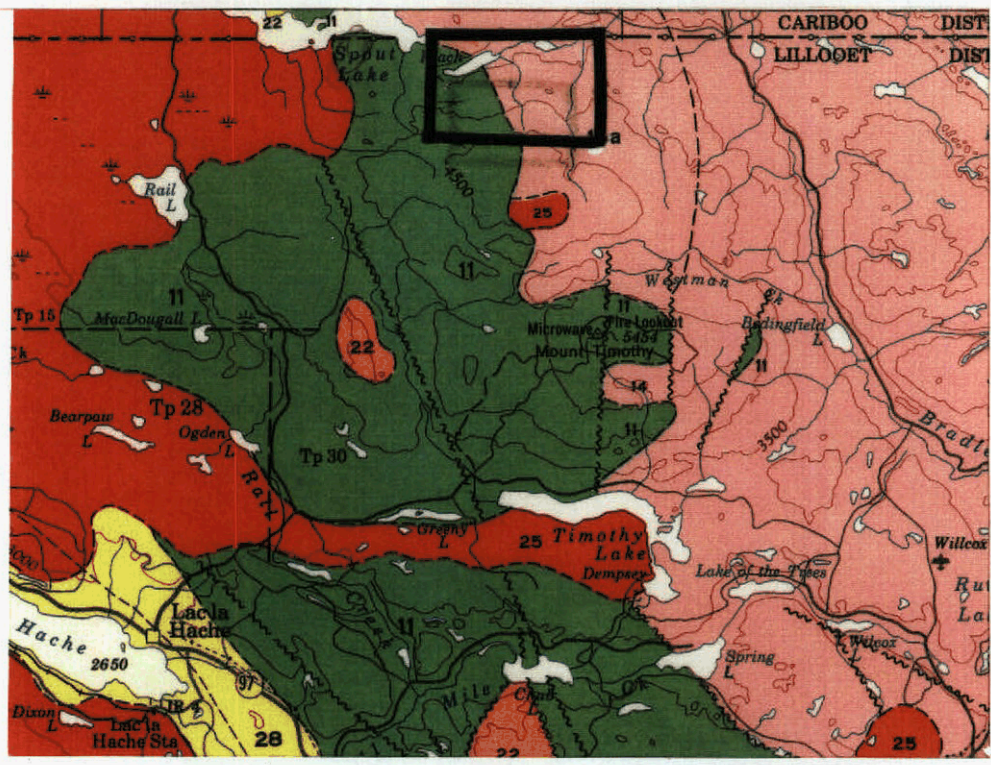
## TRIASSIC

### KARNIAN AND NORIAN

#### NICOLA GROUP

- 11a Augite andesite flows and breccia, tuff, argillite, greywacke, grey limestone; 11a, includes minor 3 and 10





GLOBAL PACIFIC MINERALS INC.

DORA 2 & 3 CLAIMS

REGIONAL GEOLOGY MAP

SCALE 1:100,000

FIG. 3

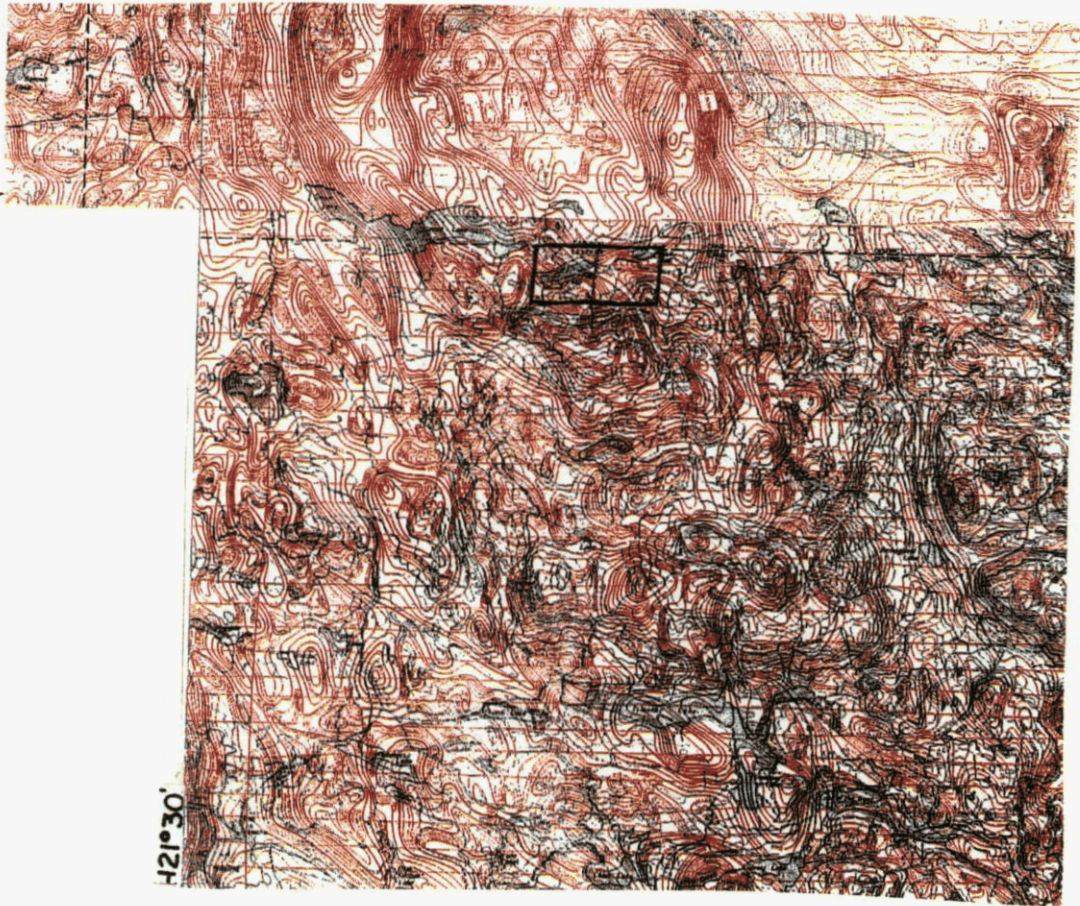
circuitry for monitoring, processing and storing data. The VLF-EM portion of this instrument utilizes the VLF-electromagnetic fields generated by submarine navigation and communication stations which operated in the 15-30 khz frequency band. The field generated by these stations is primarily horizontal. The instrument indicates the presence of a secondary field due to a conductor as a distortion in this horizontal field.

The distortion of this field produces an anomaly in the tilt angle, quadrature and total field intensity readings. VLF-EM data is corrected for facing direction during data processing and is edited for spurious noise spikes. For maximum coupling, a transmitter station located in the same direction as the geological strike of interest should be selected, since the direction of the horizontal electromagnetic field is perpendicular to the direction from the transmitting station. The advantage of the Omni-Plus is that several stations can be recorded simultaneously since the instrument automatically compensates for individual station direction.

The magnetics portion of the survey was conducted using the magnetometer system built into the Omni-Plus in conjunction with an EDA base magnetometer. The quartz clocks in the two instruments are synchronized in the morning. At the end of each survey day the field unit is connected to the base unit via an RS232C interface. At this time the base units readings are match to the field units and then dumped to a microprocessor via the RS232C interface. The microprocessor writes the data to a storage medium, most commonly magnetic disks or



52° 00'



42° 30'

GLOBAL PACIFIC MINERALS INC.

DORA 2 & 3 CLAIMS

REGIONAL AEROMAGNETICS

SCALE=1:250 000

FIG. 4

tape, for later processing. The solid state memory of this instrument and the microprocessors give rapid data gathering at a rate of some 5-10 kilometres per day at 12.5 metre intervals.

#### Discussion of Results:

During the early spring of 1990 Euro-Canadian Geological Services was contracted by Global Pacific Minerals Inc. to conduct a total field magnetics and two station VLF-EM survey over the Dora 2 & 3 claims near Lac La Hache B.C.. The survey was conducted on lines spaced 100 meters apart and readings were taken every 12.5 metres.

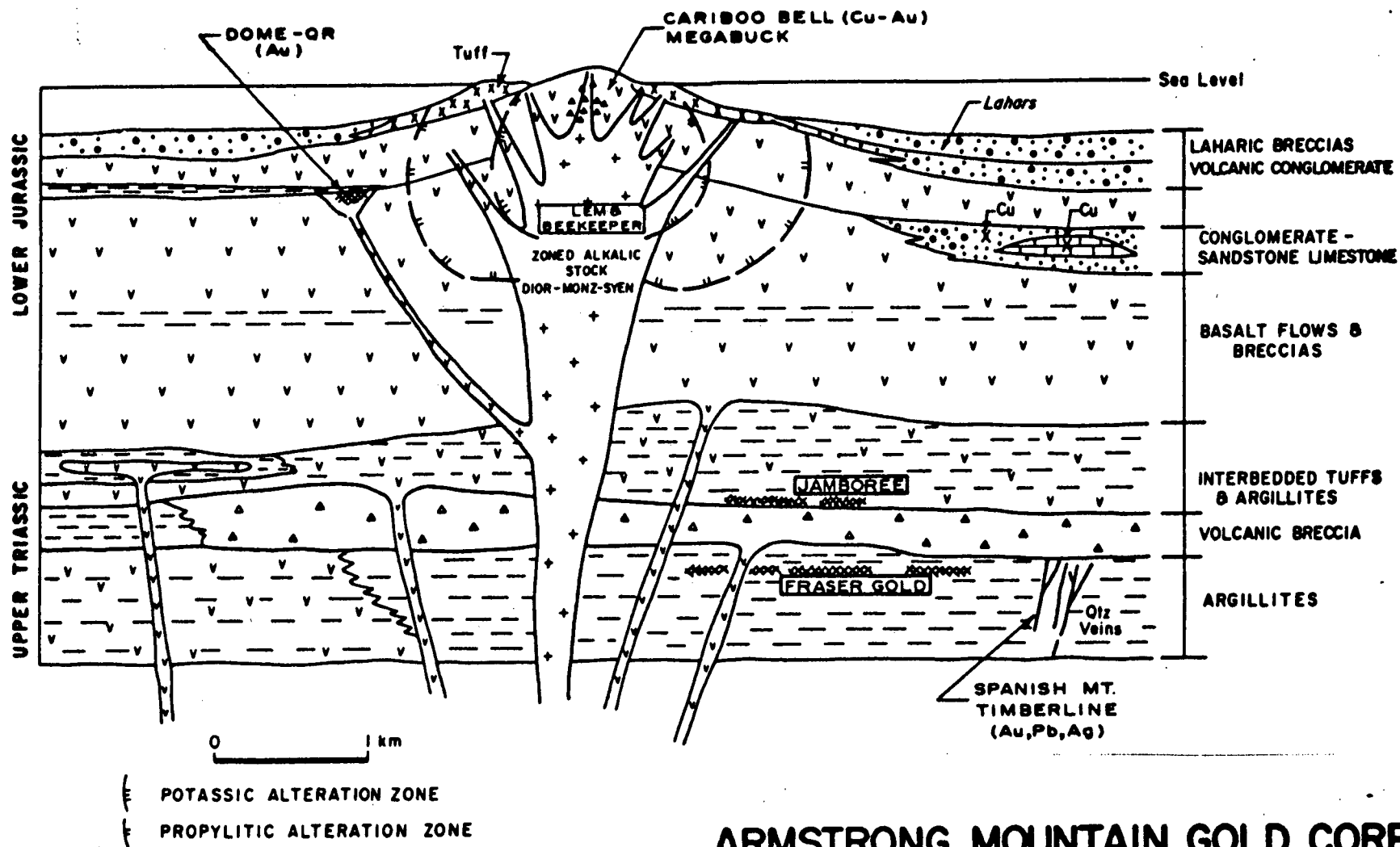
The two VLF-EM stations chosen for this survey were Annapolis, Maine and Seattle Washington. These two stations present very different EM-coupling angles with the result being all VLF-EM responses on the property being delineated.

The Vlf-EM Data is presented in Staked profile form in Figures 8 & 9. The Magnetometer data is presented in stacked profile form in Figure 7 and contoured form in Figure 8.

The magnetic data divides the property into several distinct regions marked in Figure 8. The property is divided roughly in half from northwest to southeast. The northeastern portion of the property appears to be underlain by Nicola Volcanics.

The southeastern portion of the property appears to be underlain by mafic rich alkalic stocks and dikes. A strong dike-like feature (marked A1) traverse the entire southwest region. To the north of this feature is another narrower





**ARMSTRONG MOUNTAIN GOLD CORP.**

**Diagrammatic Cross-section Through the Quesnel Trough Volcanic Complex,  
Showing Relative Stratigraphic Positions of Known Mineral Deposits**

dike-like feature intrudes the property from the north.

These two features are associated with the majority of the VLF-EM Responses on the property. These responses are sourced in faults and shears originating along with the intrusives. These faults may be mineralized.

In the northwest corner of the property exists a region of low magnetic relief. This magnetic repose may be sourced in non-mafic monzonite intrusives as are evident on the neighbouring property or in a zone of intense alteration where the mafic minerals have be broken down and leached away.

**Conclusion and Recommendations:**

The total field magnetics and two station VLF-EM survey has delineated several interesting facts. The property appears to straddle the contact between the zone of mafic rich alkalic stocks and dikes and the Nicola Volcanics. The area appears to have been tectonically active and thus has excellent potential to host significant mineral deposits. In the northwest corner of the property intense alteration may have taken place.

The next phase of exploration on the property should consist of a property wide geochemical survey and as detailed a geological mapping as overburden will allow.

Respectfully submitted

  
Markus B. Seywerd, B.Sc.

Geophysicist

**COST BREAKDOWN:**

Line Blazing and flagging 83.8 kilometres	
@ \$200.00/kilometres .....	\$16,770.00
Total Field magnetics and VLF-EM Survey	
83.5 km @ \$190/km .....	\$15,865.00
Report Writing .....	<u>0.00</u>
	<b>Total \$32,635.00</b>

**REFERENCES:**

- Campbell, R.B., Geology, Quesnel Lake (West Half), British Columbia, G.S.C. Map 3-1961, 1961.
- Campbell, R.B. and Tipper, H.W., Geology of the Bonaparte Lake Map Area, G.S.C. Memoir 363, 1972.
- Fox, P.E., Cameron, R.S., Hoffman, S.J., Geology and Soil Geochemistry of the Quesnel River Gold Deposit, British Columbia, GEOEXPO/86, The Association of Exploration Geochemists.
- Gamble, D., Geochemical Survey, Core Claims, Clinton Mining Division, Guichon Explorco Limited, August 1983.
- Gamble, A.P.D. and Hoffman, S.J., Assessment Report Soil Geochemical Survey on the Core 8 -13 Claims, Selco Division BP Resources Canada Limited, October 1984.
- Hodgson, C.J., and DePaoli, G.M., 1971 Property Report, Spout Lake Copper Property, Amax Potash Limited, January 1972.



Hodgson, C.J., and DePaoli, G.M., Final 1973 Property Report,  
Spout Lake Copper Property, Amax Potash Limited,  
November 1973.

Janes, R.H., A Report on the Geochemistry of the Peach North  
& South Groups, Clinton Mining Division, Coranex  
Limited, August 1967.

Jones, H. M. A Report on the Tim Claims, Mount Timothy, Lac  
La Hache Area, B.C. 1990

Saleken, L.W. and Simpson, R.G., Cariboo-Quesnel Gold Belt,  
A Geological Overview, Western Miner, April  
1981.

Vollo, N.B., Diamond Drilling Report, WC Group, Craigmont  
Mines Ltd., May 1975.

**STATEMENT OF QUALIFICATIONS**

**NAME:** SEYWERD, MARKUS B., B.Sc.

**PROFESSION:** Geophysicist

**EDUCATION:** University of British Columbia -  
B.Sc., Mathematics

**EXPERIENCE:** Three years of summer field work with Noranda  
Exploration Company Ltd. in British Columbia,  
Northwest Territories, and Yukon Territories.

Four year Geophysicist with White Geophysical  
Inc. with work in British Columbia,  
Saskatchewan, and Yukon Territories.

**CERTIFICATE:**

I, Markus B. Seywerd, with a business address of 11751 Bridgeport Road, Richmond B.C. do hereby certify that:

- 1) I am a consulting geophysicist.
- 2) I hold a B.Sc. degree (1985) in mathematics from the University of British Columbia.
- 3) I have been practising my profession as geophysicist for over 5 years.
- 4) I have no direct or indirect interest, nor do I expect to receive any interest directly or indirectly in the Tim Claims or securities of Global-Pacific Minerals Inc.
- 5) I have based this report on a review of available geological publications and exploration reports in the area of the Dora Claim Group and on the geophysical and geochemical data just acquired.
- 6) I consent to the use of this report in whole or in part by Global-Pacific Minerals Inc. for publication or any filing statement of Statement of Material Facts as long as the context of the report is not violated.

Dated Dec. 8, 1990



Markus B. Seywerd, B.Sc.  
Consulting Geophysicist

# OMNI-PLUS MAGNETOMETER/VLF SPECIFICATIONS

Dynamic Range .....	18,000 to 110,000 gammas. Roll over display feature suppresses first significant digit upon exceeding 100,000 gammas.
Tuning Method .....	Tuning value is calculated accurately utilizing a specially developed tuning algorithm
Automatic Fine Tuning .....	+ 15% relative to ambient field strength of last stored value
Display Resolution .....	0.1 gamma
Processing Sensitivity .....	+ 0.02 gamma
Statistical Error Resolution	0.01 gamma
Absolute Accuracy .....	+ 1 gamma at 50,000 gammas at 23°C + 2 gamma over total temperature range
Standard Memory Capacity	
Total Field or Gradient ..	1,200 data blocks or sets or readings
Tie-Line Points .....	100 data blocks or sets or readings
Base Station .....	5,000 data blocks or sets or readings
Display .....	Custom-designed, ruggedized liquid crystal display with an operating temp. range from -40°C to +55°C. The display contains six numeric digits, decimal point, battery status monitor, signal decay rate and signal amplitude monitor and function descriptors.
RS 232 Serial 1/0 interface	2400 baud, 8 data bits, 2 stop bits, no parity



## OMNI-PLUS MAGNETOMETER/VLF SPECIFICATIONS

Physical Dimensions	Wt(kg):	w x h x d(mm)
Instrument console only	3.8:	122 x 246 x 210
Battery belt	1.8:	540 x 100 x 40
Battery cartidge	1.8:	138 x 95 x 75

### Sensors

Magnetometer remote sensor	1.2:	56 dia x 220
Magnetometer gradient sensor	2.1:	56 dia x 790
VLF sensor module	2.6:	280 x 190 x 60

### Environment

#### Electronics

Operating temperature range	-40 C to +55 C
Relative humidity	0 to 100% (weather-proof)

#### Magnetometer Sensors

Temperature range	-45 C to +55 C
Relative humidity	0 to 100% (weather-proof)

#### VLF Sensor

Temperature range	-45 C to +55 C
Relative humidity	0 to 100% (weather-proof)

### Standard Memory Capacity

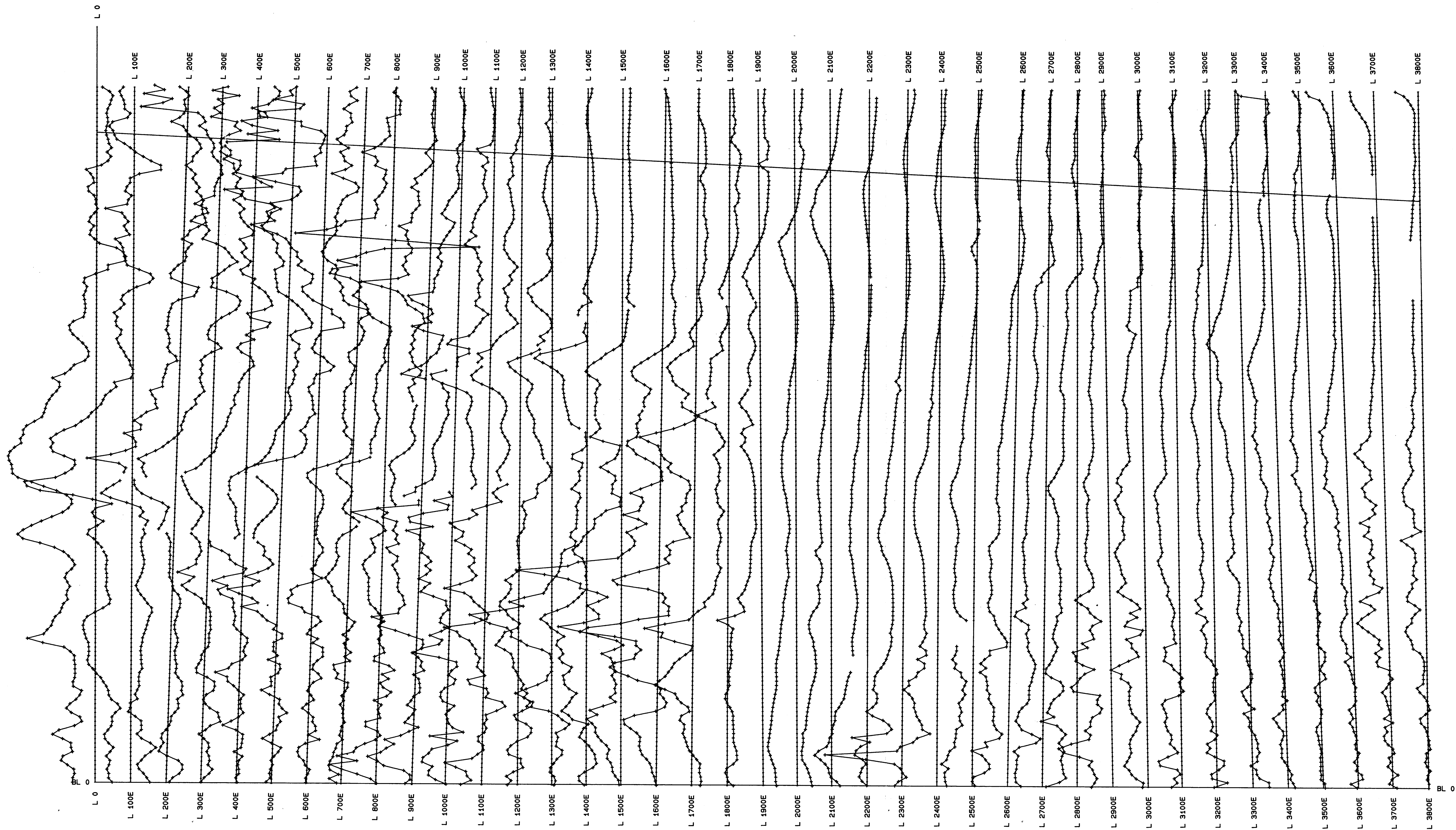
Field unit	1300 sets of readings
Tie-line points	100 sets of readings
Base stations	5500 sets of readings

### Electronics

RS-232C serial I/O	300 to 9600 baud(programmable); 8 data bits, 2 stop bits; no parity
--------------------	--

Electronics console .....Enclosure contains electronics and battery pack (if not contained in separate belt). Front panel includes liquid crystal display (LCD), and keypad.

Power Supply .....Internal battery pack or external battery belt; or 12V car battery (base station).



+ SCALE 500 nT/cm  
BASE 58000 nT

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

20,673

GLOBAL-PACIFIC MINERALS INC.

DORA 2 & 3 CLAIMS  
TOTAL FIELD MAGNETIC SURVEY

BASE = 57 000 nT SCALE = 1000 nT / cm

Scale 1: 5000.0

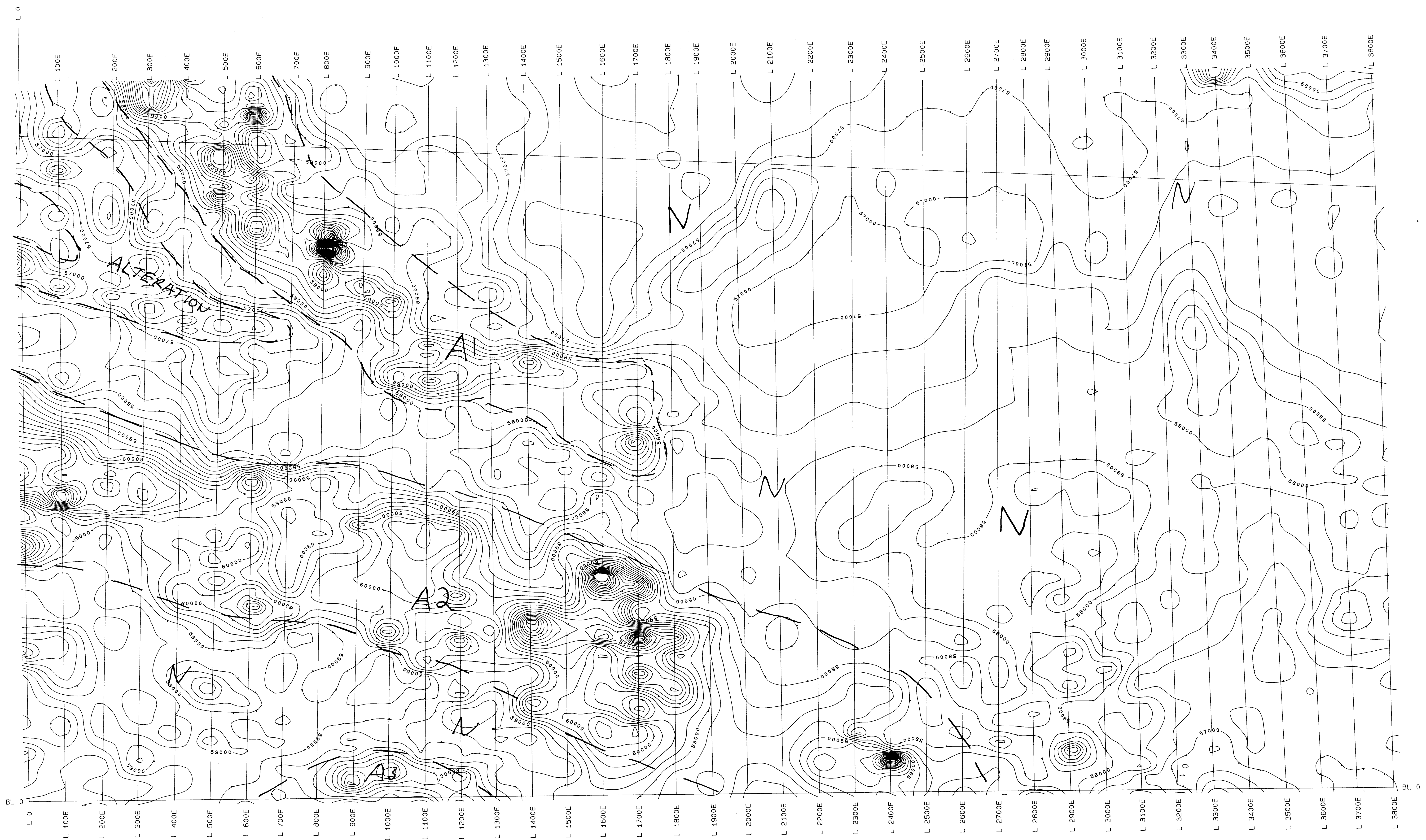


Date: APRIL 1990

Figure 6

EURO-CANADIAN GEOLOGICAL



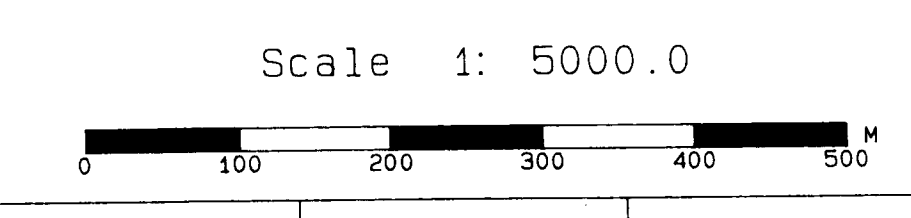


N Nicola Volcanics  
 A Alkaline stocks and dikes.

GEOLOGICAL BRANCH  
 ASSESSMENT REPORT

20,673

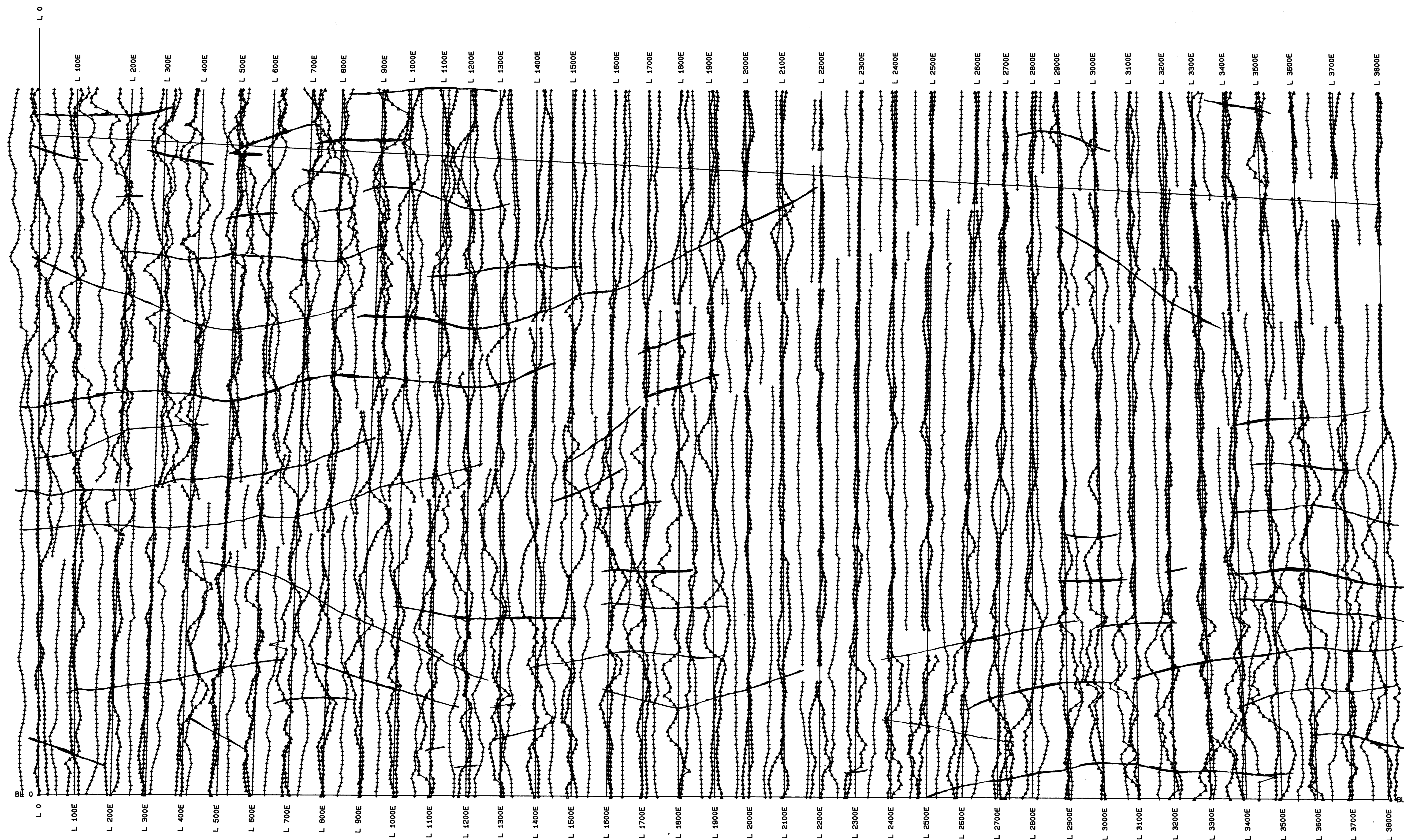
GLOBAL-PACIFIC MINERALS INC.  
 DORA 2 & 3 CLAIMS  
 CONTOURED TOTAL MAGNETIC FIELD



Date: APRIL 1990 Fig. 7

EURO-CANADIAN GEOLOGICAL





▲ INPHASE 10%/CM

◆ QUADRATURE 10%/CM

+ TOTAL FIELD  
SCALE 500/CM  
BASE 1000

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

20,673

GLOBAL-PACIFIC MINERALS INC.

DORA 2 & 3 CLAIMS  
VLF-EM: SEATTLE TRANSMITTER (24.8 kHz)

Scale 1: 5000.0

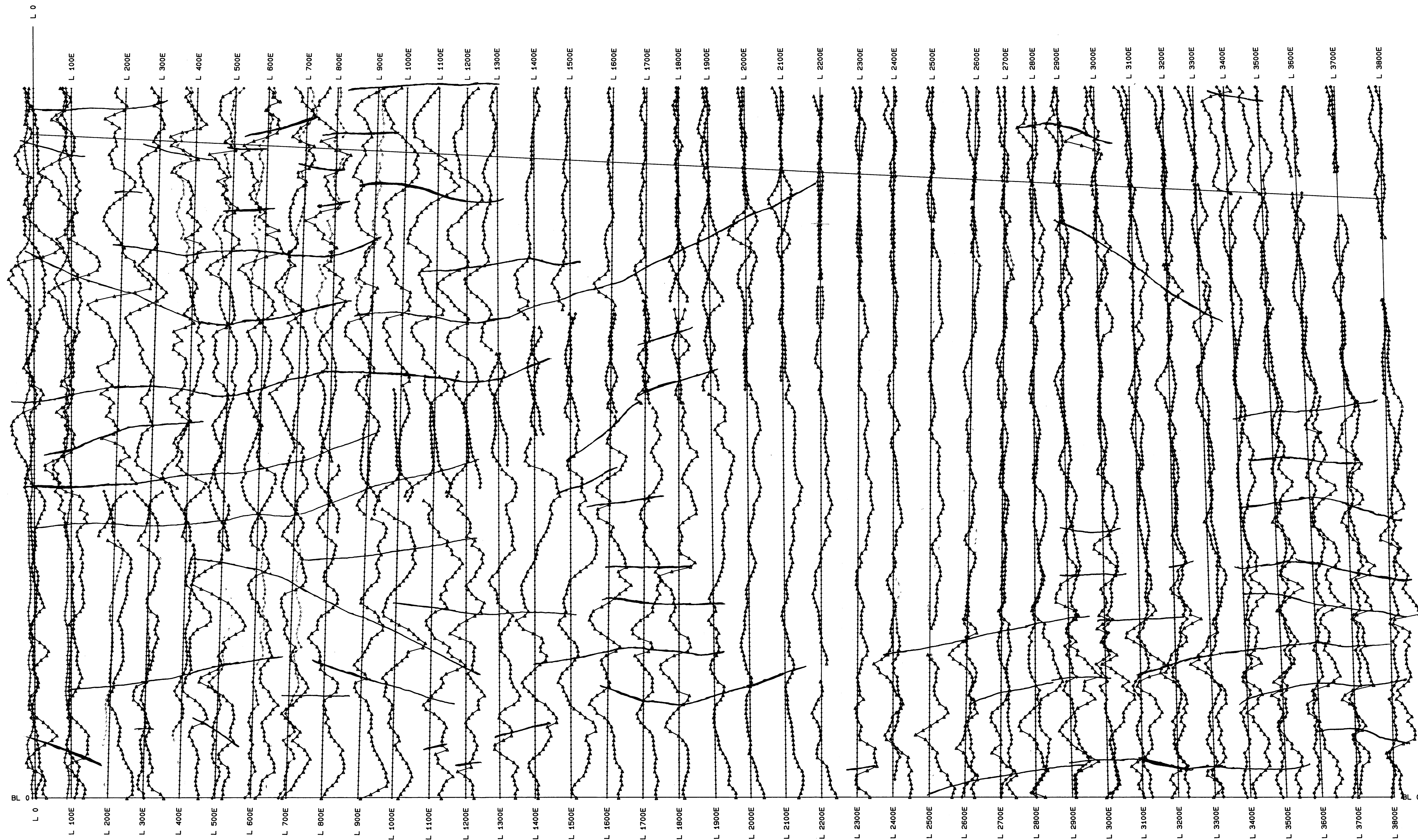


Date: APRIL 1990

Figure 6

EURO-CANADIAN GEOLOGICAL





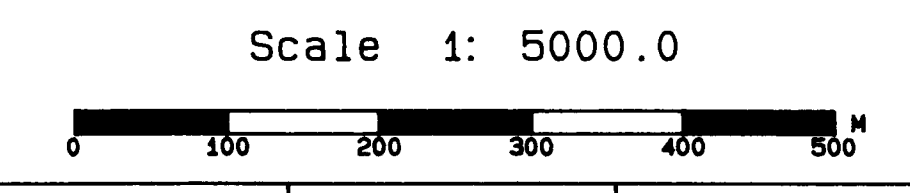
▲ INPHASE 20%/CM  
 ◆ QUADRATURE 20%/CM  
 + TOTAL FIELD  
 SCALE 50/CM  
 BASE 50

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

20,673

GLOBAL-PACIFIC MINERALS INC.

DORA 2 & 3 CLAIMS  
VLF-EM: ANNAPOLIS TRANSMITTER (21.4 kHz)



Date: APRIL 1990 Figure 9

EURO-CANADIAN GEOLOGICAL