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Report on the Detailed
Geophysical Survey
on the
Gaspard Lake Property

N T S 920/7,10
 $51^{\circ} 30' N$, $122^{\circ} 45' W$

Fame 1, Fortune 1, Gas 1-9, 11, 14-20 Claims

Clinton Mining Division

Owner: B. K. Bowen, A. C. Gordon
Operator: Goldsmith Minerals Limited
Commodity: Au
Author: P.A. Cartwright, P. Geoph, D. Petersen, P. Eng.
Date: August, 1990

GEOLOGICAL BRANCH
ASSESSMENT REPORT

20,413

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1. Introduction

This report describes the detailed geophysical survey that was conducted on the property from 13th July through 22nd July. The object of the survey was to delineate as accurately as possible the VLF Resistivity anomalies that had been partially explored in February and March 1990 (Cartwright and Petersen, 1990). The current survey consisted of a total of 20.8 line-km of VLF Resistivity and magnetometry on five separate grids. See Fig.3, "Compilation Map".

Pacific Geophysical Limited of Vancouver conducted the survey. They supplied the instruments and a geophysicist, M.Cormier. P.A. Cartwright of Pacific Geophysical Limited interpreted the field data, together with D. Petersen.

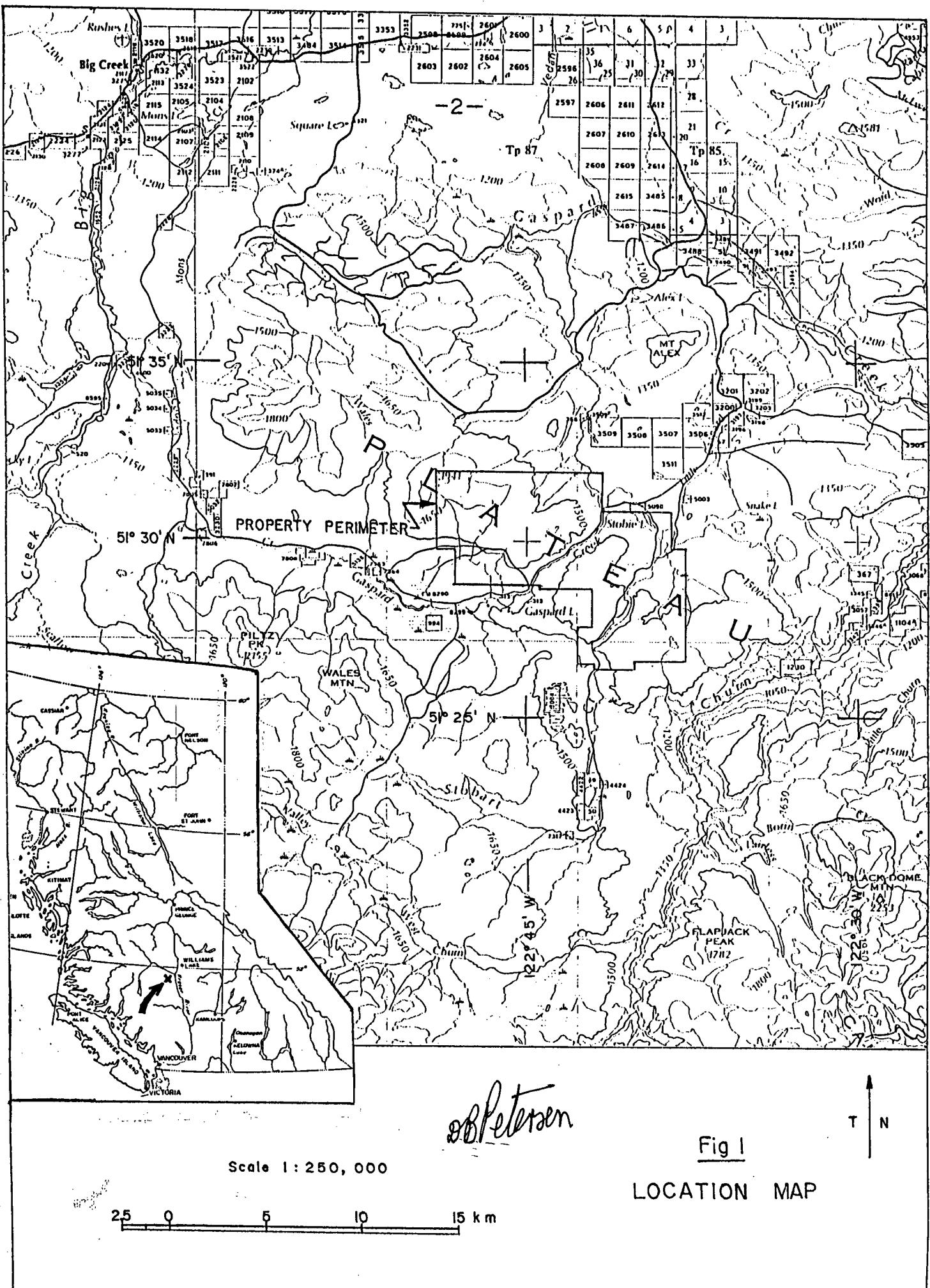
P.A. Cartwright and D.B. Petersen have co-authored the report; D. Petersen wrote Sections 1 through 7, 11, 12, and 13. P. Cartwright wrote Sections 8. Sections 9 and 10 were written jointly by both authors.

The report is intended for use as an assessment report to cover the work performed from 13 July through 22 July on the Fame 1, Gas 1 and 2, Gas 9 and Gas 18 and 19 claims.

2. Location and Access

The property is located in the Clinton Mining Division approximately 85 kilometres southwest of Williams Lake and 25 kilometres northwest of the Blackdome Mine. It is centred at geographic coordinates $51^{\circ} 30' N$, $122^{\circ} 45' W$. NTS is 920/7 and 10. See fig.1, "Location Map".

Access is by highway 20 from Williams Lake to Riske Creek and then southerly by good gravel road to the Fletcher Challenge logging camp 25 km northeast of the property. From there, main and side logging roads lead to various parts of the property. See fig.3, "Compilation Map". An alternative route is available from Clinton via the Gang Ranch.



3. Topography and Vegetation

The claims cover gently rolling up-land between elevations of 1300 and 1800m asl.

Vegetation consists almost exclusively of mature jack pine. Approximately one third of the area has been logged, in both selective and clear-cut manner.

4. Regional Geology

The property lies in a structurally controlled northwesterly trending belt of rocks known as the Intermontane Belt that extends with interruptions from the Yukon in the northwest to Mexico in the southeast. It varies from approximately 100 to 300km in width and in Canada is flanked by the Omineca Crystalline Belt to the East and the Coast Crystalline Belt to the West.

In British Columbia the rocks that comprise the belt consist essentially of Triassic volcanic rocks of intermediate composition that have been intruded by Triassic and Jurassic plutons and stocks of granitic composition. In Central British Columbia Tertiary activity is evident in the form of acidic to intermediate volcanic rocks that have been overlain by younger plateau type basalt flows.

The Intermontane Belt is of great economic importance and hosts a variety of mineral deposits. These include porphyry type copper and molybdenum (Highland Valley Copper, Brenda, Granisle, Gibralter), copper and gold (Copper Mountain, Continental Gold, Afton) and molybdenum deposits (Endako, Boss Mountain). Precious metal producers include silver and copper (Equity Silver) and several gold deposits (Bralorne-Pioneer, Silbak-Premier) and the epithermal Cheni, Baker, Dusty Mac and Blackdome mines.

5. Claim Geology

The property is overlain by an extensive cover of overburden. A few outcrops are exposed in rare, steep-walled creeks and in occasional logging cuts, and one area contains sharp-angled float that has probably been derived from a proximal source.

Geological mapping by Harris (1988) showed that the property is overlain mainly by Middle Jurassic andesitic and pyroclastic volcanics which have been intruded by a granodiorite stock in the northern portion of the claims and by smaller bodies elsewhere. These rocks have been cut by Tertiary mafic dykes, felsic tuffs and flow-banded rhyolite dykes. A northeasterly striking fault on the Gas 18 and 16 claims separates Jurassic volcanics to the northwest from a variety of felsic to intermediate Tertiary volcanics to the southeast.

Prospecting by Bowen and Gordon (Bowen, 1989) has shown that epithermal type gold mineralization is present in vuggy quartz veins that exhibit some degree of argillic alteration and have been exposed in logging cuts and in the sides of a steep-walled creek on the Fame 1 claim.

Soil geochemistry (Harris, 1988) has defined a broad arsenic and gold anomaly some 600m by 300m in area on the Gas 9 claim immediately west of Stobie Lake.

An URP stream sediment sample analyzed 23ppm As on the Gas 18 claim.

6. History

Interest in the property was first generated in the area of what is now the Gas 18 claim as a result of the URP sampling high. Equinox Resources staked approximately 40 units in two claims to cover the sample area and conducted a programme of reconnaissance geochemical soil sampling and prospecting. The results failed to justify expectations and the claims were abandoned.

Separately, in 1986, B.K. Bowen discovered a gold-bearing alteration zone, and follow-up prospecting in 1987 by Bowen and partner A.C. Gordon led to staking in stages of the Fame 1, Fortune 1 and Gas claims shortly thereafter.

The property was subsequently optioned to Canamax Resources Inc. In 1988, they carried out a program of additional staking, grid soil sampling, geological mapping, hand and limited backhoe trenching and 702 metres of NQ diamond drilling in 9 holes. They relinquished their option in 1989.

In early 1990 the property was optioned to Goldsmith Minerals Limited.

7. Work Done in 1990

In February and March, Goldsmith Minerals Limited conducted a reconnaissance VLF EM AND VLF Resistivity survey on three separate grids on the Fame 1, Gas 9 and Gas 18 claims. The object of the survey was to ascertain if the mineralised zones of quartz veining were detectable by geophysical methods. The results (Cartwright, Petersen, 1990) showed they are resistive and prompted the subject detailed programme.

M. Cormier, S. Counts, M. Gazetas and D. Petersen spent ten days from 13th July through 22nd July conducting detailed VLF Resistivity and magnetometry on five separate grids on the Fame 1, Gas 1 and 2, Gas 9, Gas 18 and Gas 19 claims. See Fig.3, "Compilation Map". The object was to survey in detail the partially explored resistivity anomalies on the Fame 1, Gas 9 and Gas 18 claims and to reconnoitre the geochemical anomalies on the Gas 1 and 2 (Harris, 1988) and Gas 19 (Bowen, 1989) claims.

D. Petersen supervised the project and flagged the base lines. M. Gazetas flagged the traverse lines at 20m intervals and took the magnetic readings using a GMS-19 Overhauser Memory magnometer. The readings were taken at 10m intervals along the lines and were recorded in a computer. No correction was made for diurnal drift.

M Cormier, geophysicist, conducted the VLF Resistivity survey and recorded the data in a computer. A Geonics model EM16R was used for the survey. Electrode spacing was 10m. Readings were taken at 10m intervals along the lines. S. Counts assisted M. Cormier with the resistivity survey.

Coverage was as follows:

<u>Grid</u>	<u>Zone</u>	<u>Line-Km</u>	<u>Days</u>
Fame 1	Twilight	3.4	1.5
Fame 1	Discovery	2.4	1
Fame 1	Kelsch	4.2	1.5
Gas 1		4.6	2
Gas 9		2.0	1.5
Gas 18		2.7	2
Gas 19		1.5	.5
		20.8	10 days

The results are documented in Section 8, below, and are illustrated in Figures 4 through 13.

8. Results of Work Done In 1990

Five separate grid areas have been surveyed using both the VLF Resistivity method, and the Total Field Magnetic method. The former technique measures the electric field induced across the earth by a VLF-EM transmitter station. One horizontal component of the magnetic field is also measured, in a direction perpendicular to the line joining the measurement point and the transmitter station. The ratio of the electric field (mv/km) over the magnetic field (mgamma) times the reverse of 5 times the transmitted frequency yields the "Caignard" resistivity in ohm-metre units. Gold bearing silicified rocks would generally be expected to give rise to higher than normal Caignard resistivity values.

The phase angle between the electric and magnetic fields is also recorded because this can provide valuable information as to the vertical resistivity distribution beneath the measurement site. For example, a phase angle of 45 degrees between the electric and magnetic fields indicates a homogeneous situation, whereas a phase value of less than 45 degrees points to increasing resistivity with increasing depth, and vice-versa.

Total field magnetic readings were recorded in an effort to map changes in rock magnetism. It was hoped that this would allow the detection of structural features, such as faults, as well as changes in rock types.

Results for each grid area are discussed below.

Fame 1 Grid

This grid has been further subdivided into 3 zones of interest: the Twilight Zone, the Discovery Zone, and the Kelsch Zone.

i) Twilight Zone

A very well defined zone of higher than background resistivity values is evident in the VLF data, enclosed by a much wider zone of less than 45 degree phase angle readings. A showing containing gold mineralization has been discovered by previous work to be located within this high resistivity trend. Interpretation of the magnetic data suggests that a number of east-west striking faults may be offsetting the source of the high resistivity values into several, almost separate blocks.

ii) Discovery Zone

One relatively narrow high resistivity zone is indicated to be present by the VLF data recorded over this area. Phase angle values are generally less than 45 degrees over much of the surveyed grid, which points to a somewhat conductive superficial layer overlying more resistive bedrock. Magnetic data indicate the northern part of the grid to be underlain by a more magnetic rock type.

iii) Kelsch Zone

A large number of narrow resistive trends are evident in the VLF data measured over the Kelsch grid area. In many instances, decreases in phase angle are noted coincident with the elevated resistivity values, which further points to the existence of narrow resistive zones, such as quartz veins.

The magnetic data appears to indicate that geologic strike is roughly NE-SW over much of the probably more east-west in direction.

GAS 1 Grid

As was the case with the Kelsch Zone area, the VLF data from this grid displays a number of narrow zones of high resistivity values accompanied by lower than normal phase angle readings. This signature is consistent with the presence of thin quartz veins, possibly carrying gold mineralization. Most of these zones appear to strike NE-SW. Magnetic response on this grid is relatively uniform, with a maximum variation of approximately 300 gammas over the entire area.

GAS 9 Grid

VLF phase angle results from this area suggest that most of the grid is covered with some thickness of lower resistivity material such as glacial overburden. However, several zones of higher than normal resistivity values can be seen in the data. It is thought that these features represent resistive units which could be of interest.

The magnetic data recorded here appears to indicate a contact between two rock types of different magnetic susceptibility. Higher susceptibilities are evident on the east side of this contact, which strikes roughly north-south.

GAS 18 Grid

A wide zone of distinctly lower than usual VLF phase angle results can be seen striking across all of the grid lines surveyed. Set within this region are one or two zones of elevated resistivity values that could represent the surface expression of gold bearing silicified zones.

An interesting magnetic feature is indicated in the data recorded on the south-eastern extension on Line 400W. One interpretation of this cross-over type of anomaly is that a relatively wide (50m-100m) magnetic structure is present dipping toward the north-west.

GAS 19 Grid

Two lines were surveyed in this area; Line 400W with both VLF resistivity and total field magnetics, and Line 0 with VLF resistivity alone. The only feature of interest detected is a 200 metre to 300 metre wide zone of less than 45 degree VLF phase angles located on the south-eastern end of Line 0. This signature could be outlining an area of generally higher than background bedrock resistivities similar to those seen enclosing narrower, higher resistivity zones on many of the other grids.

Paul A. Gantner, P.Geo.

9. Conclusions

It is concluded that -

1. the detailed resistivity survey has shown that resistivity anomalies on the Twilight, Kelsch and Discovery zones and the Gas 1 grid are present and may associate with gold bearing, epithermal type quartz veining exposed in outcrop (Twilight, Kelsch showings) and in angular float (Discovery, Gas 1).
2. the anomalies on the Gas 9 and Gas 18 grids, although not associated with observed float and outcrop are associated with soil and silt geochemical anomalies, respectively.

10. Recommendations

It is recommended that -

1. the Twilight and Discovery zones and the Gas 1 grid be explored by trenching, and, if justified, by follow up diamond drilling.
2. the Kelsch zone, and the Gas 9 and Gas 18 grids be explored by diamond drilling.

This is expected to cost:

Trenching: 50 hours @ \$250 per hour inclusive.....	\$ 12,500
Drilling: 10 holes (1000m) @ \$130 per metre inclusive..	<u>\$130,000</u>
Total: \$142,500	

AB Petersen

11. Costs Incurred

The following costs were incurred in the subject programme:

Project Preparation

D.B. Petersen, Geologist, 10th, 11th July	2 days @ \$345	690
	Sub-total	<u>690</u>

Mobilization (12th July) and Demobilization (23rd July)

D.B. Petersen	2 days @ \$345	690
M. Gazetas	2 days @ \$169	338
S. Counts	2 days @ \$125	250
Pacific Geophysical	2 days @ \$550	1,100
Truck Rental	2 days @ \$108	216
Gasoline		140
Meals		48
	Sub-Total	<u>2,782</u>

Field Costs

D.B. Petersen 13th - 22nd July	10 days @ \$345	3,450
M. Gazetas 13th - 22nd July	10 days @ \$169	1,690
S. Counts 13th - 22nd July	10 days @ \$125	1,250
Pacific Geophysical 13th - 22nd July	10 days @ \$550	5,500
Meals and Accommodation	40 man days @ \$ 55	2,200
Truck Rental	10 days @ \$108	1,080
Gasoline		124
Supplies		326
	Sub-Total	<u>15,620</u>

Reporting

D.B. Petersen 24-26 July	3 days @ \$345	1,035
P.A. Cartwright 24-27 July	4 days @ \$400	1,600
Data Plotting 5 grids @ \$100		500
Profiling 20.8 km @ \$45		936
Printing		240
Typing 6hrs. @ \$35		210
	Sub-Total	<u>4,521</u>

Total \$23,613

DB Petersen

12. Claims

The following contiguous claims comprise the property. They are located in the Clinton Mining Division. See Fig. 2, "Claim Map".

<u>Group Name</u>	<u>Claim Name</u>	<u>Record No.</u>	<u>Units</u>	<u>Anniversary</u>
Fame 1	Fame 1	2147	20	18 Feb
Fame 1	Gas 3	2553	20	10 Mar
Fame 1	Gas 5	2555	16	10 Mar
Fame 1	Gas 7	2557	20	10 Mar
Fame 1	Gas 8	2558	12	10 Mar
Gas 9	Gas 9	2559	20	10 Mar
Gas 9	Gas 11	2561	20	10 Mar
Gas 9	Gas 15	2565	20	10 Mar
Gas 9	Gas 16	2566	20	10 Mar
Gas 14	Gas 14	2564	20	10 Mar
Gas 14	Gas 17	2567	20	10 Mar
Gas 14	Gas 18	2654	20	5 Aug
Gas 14	Gas 19	2655	20	5 Aug
Gas 14	Gas 20	2656	20	5 Aug
Gas 1	Fortune 1	2489	20	10 Dec
Gas 1	Gas 1	2551	20	10 Mar
Gas 1	Gas 2	2552	20	10 Mar
Gas 1	Gas 4	2554	16	10 Mar
Gas 1	Gas 6	2556	16	10 Mar
Total 19			360	

13. References

Bowen, B.K., Prospecting and Soil Geochemical Surveys on the Gaspard Lake Property.

Cartwright, P.A., Petersen, D.B., 1990, Report on the Reconnaissance Geophysical Survey on the Gaspard Lake Property; Assessment Report no. 19884.

Harris, F.R., 1988, 1988 Property Report; Canamax Resources Inc. Report.

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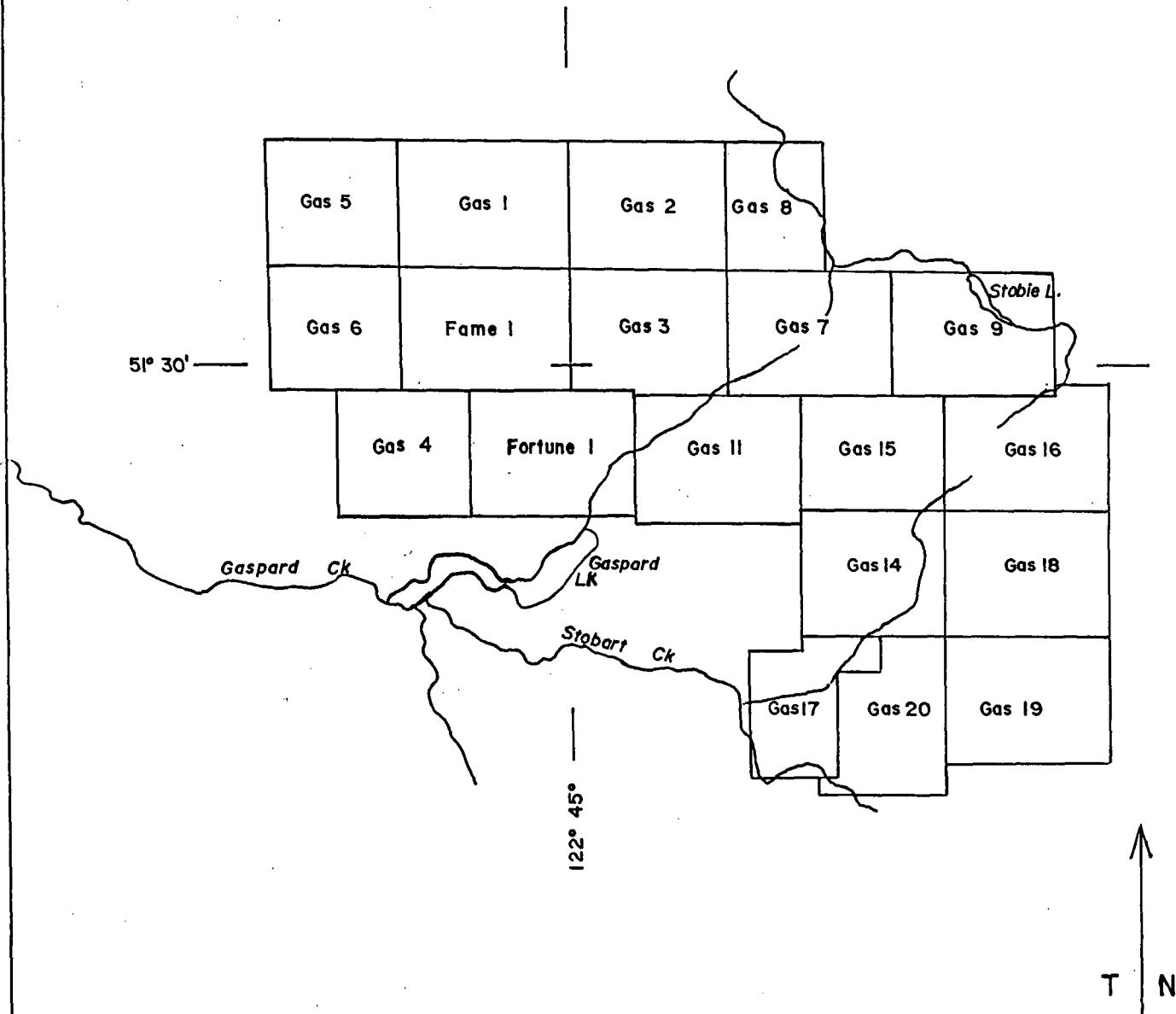


Fig 2

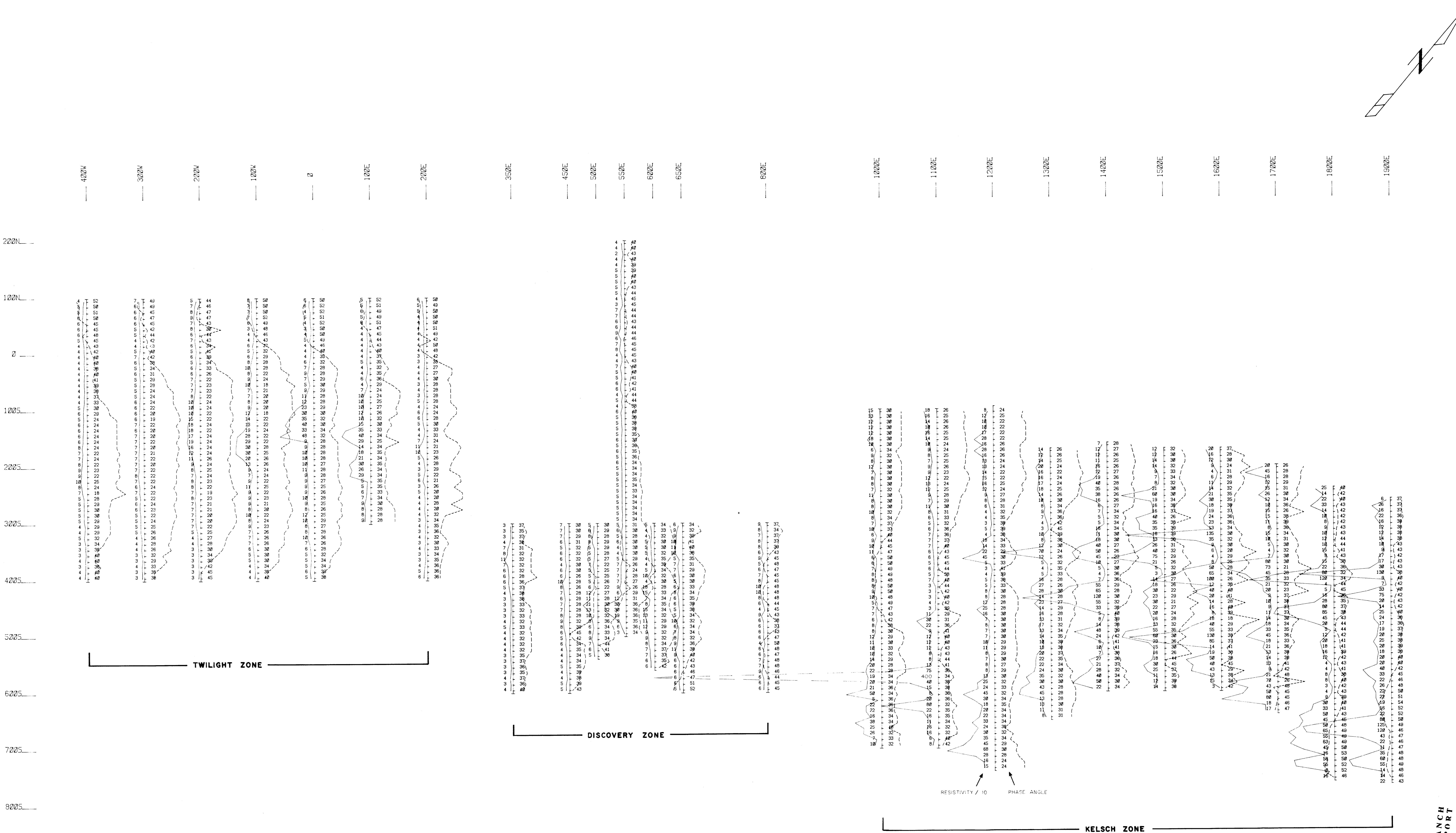
SB Petersen

Scale 1: 100,000
2 0 2 4 km

CLAIM MAP

NTS 920/7,10





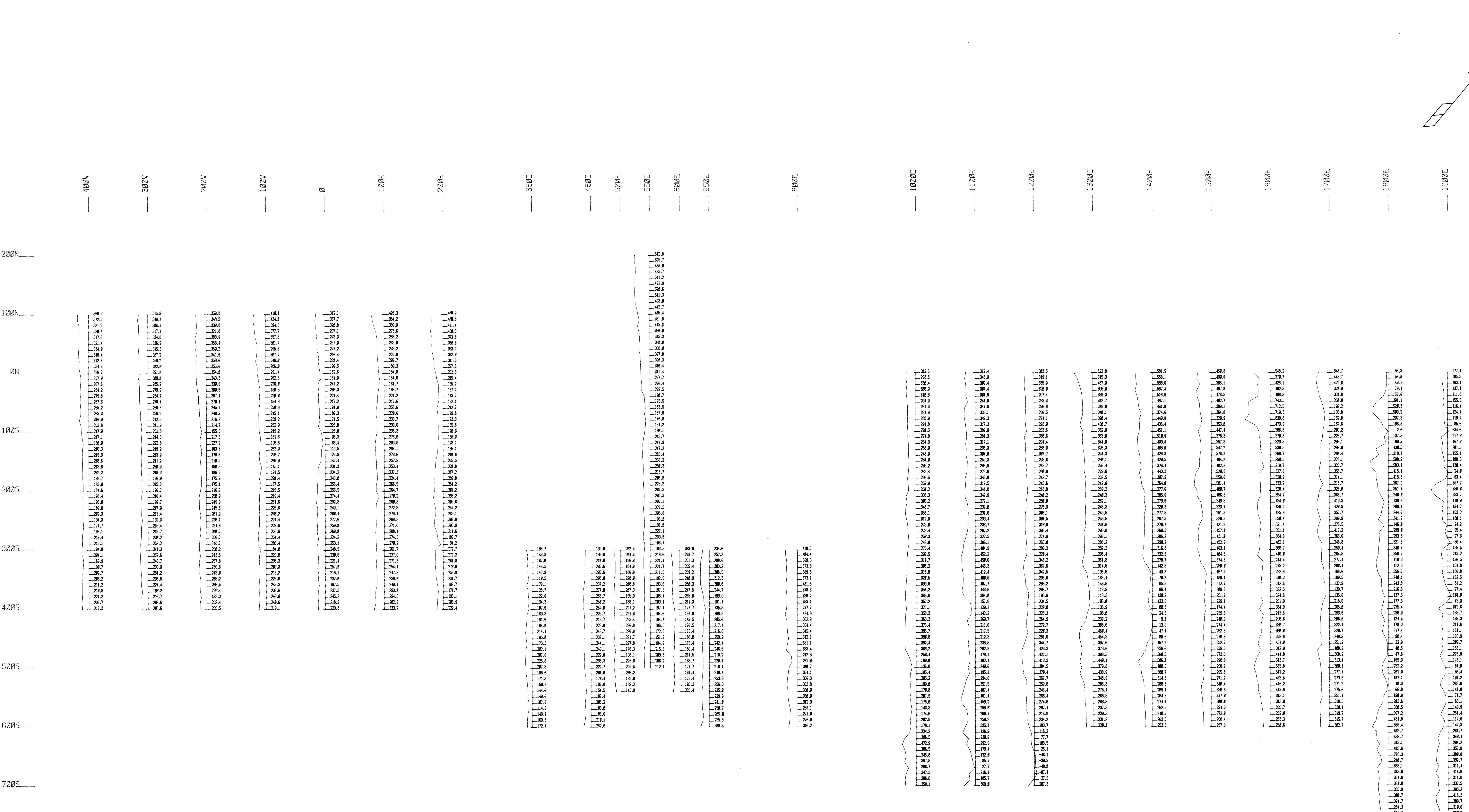
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Fig. 4

GOLDSMITH MINERALS LTD.	
VLF-RESISTIVITY SURVEY	
Instrument: EM38	Vertical Scale-RESISTIVITY: 1 cm = 200 ohms
Vertical Scale-PHASE ANGLE: 1 cm = 10°	PHASE ANGLE Profile Spacing: 45°
Tx Location: NLK Seattle, Wash.	Baseline Azimuth: S80°E
RESISTIVITY: _____	DATE: July, 1990.
PHASE ANGLE: _____	SURVEY BY: MJC NTS: 920/10
SCALE: 1:2500 FILE: VNAME1 FREQ.: 24.8 KHz.	Pacific Geophysical

Fig. 5

GOLDSMITH MINERALS LTD.	
MAGNETOMETER SURVEY	
Instrument : GSH-19	DATE : July, 1990.
Field : TOTAL	SURVEY BY : MG
Date : S6880.0 nT	NTS : 920/10
Baseline Azimuth : 58 Deg.	FILE: MFAME1
Profile Scale : 500 m / Cm	Pacific Geophysical
SCALE = 1:2500	DATE : July, 1990.
SURVEY BY : MG	NTS : 920/10



1000E
1100E
1200E
1300E
1400E
1500E
1600E
1700E
1800E

200N
0N
100S
200S
300S
400S
500S
600S
700S
800S

400W
300W
200W
100E
200E
350E
450E
500E
550E
600E
650E
800E
1000E
1100E
1200E
1300E
1400E
1500E
1600E
1700E
1800E

Instrument : GSH-19
Field : TOTAL
Date : S6880.0 nT
Baseline Azimuth : 58 Deg.
Profile Scale : 500 m / Cm
SCALE = 1:2500
SURVEY BY : MG
NTS : 920/10
FILE: MFAME1
Pacific Geophysical

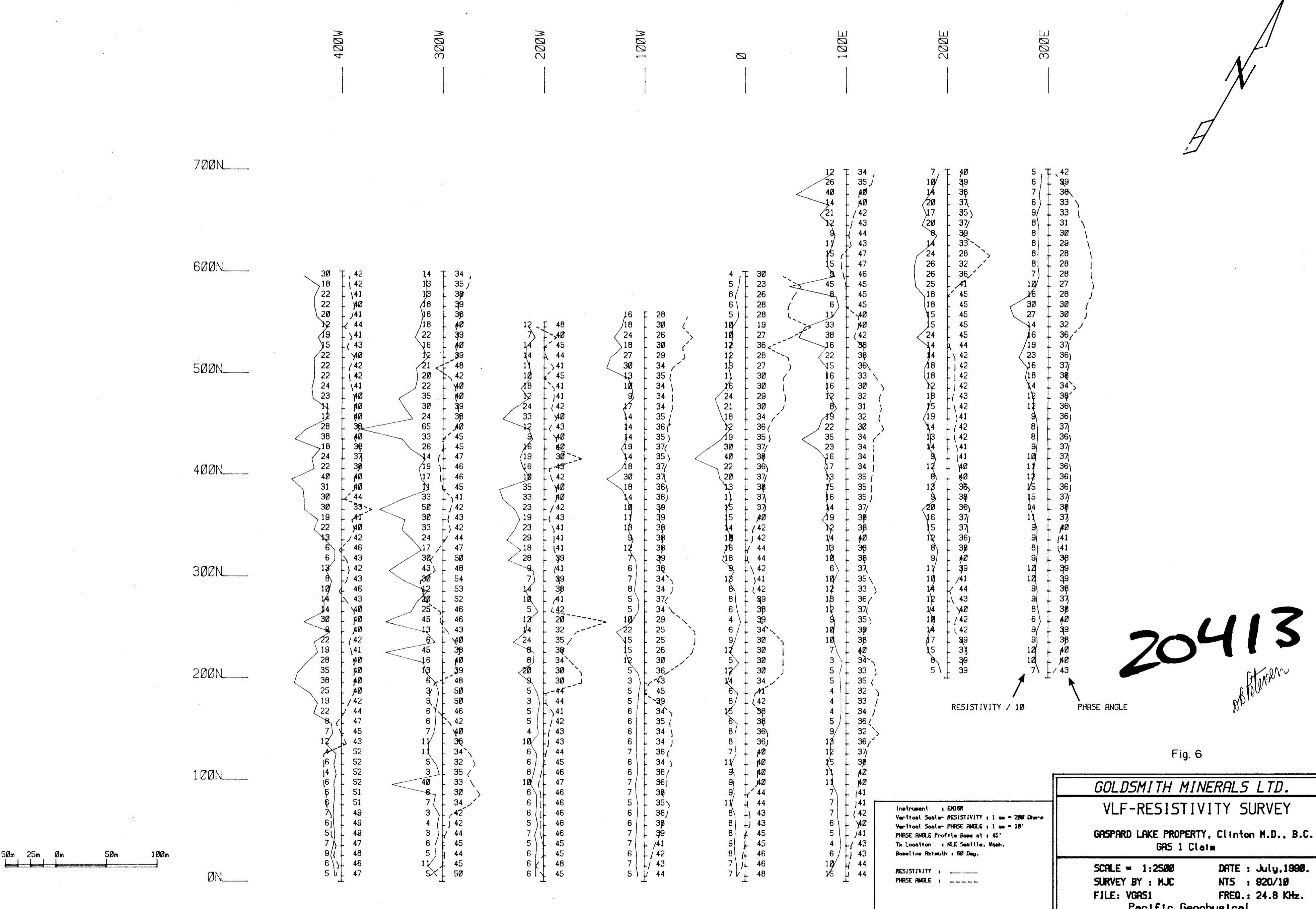
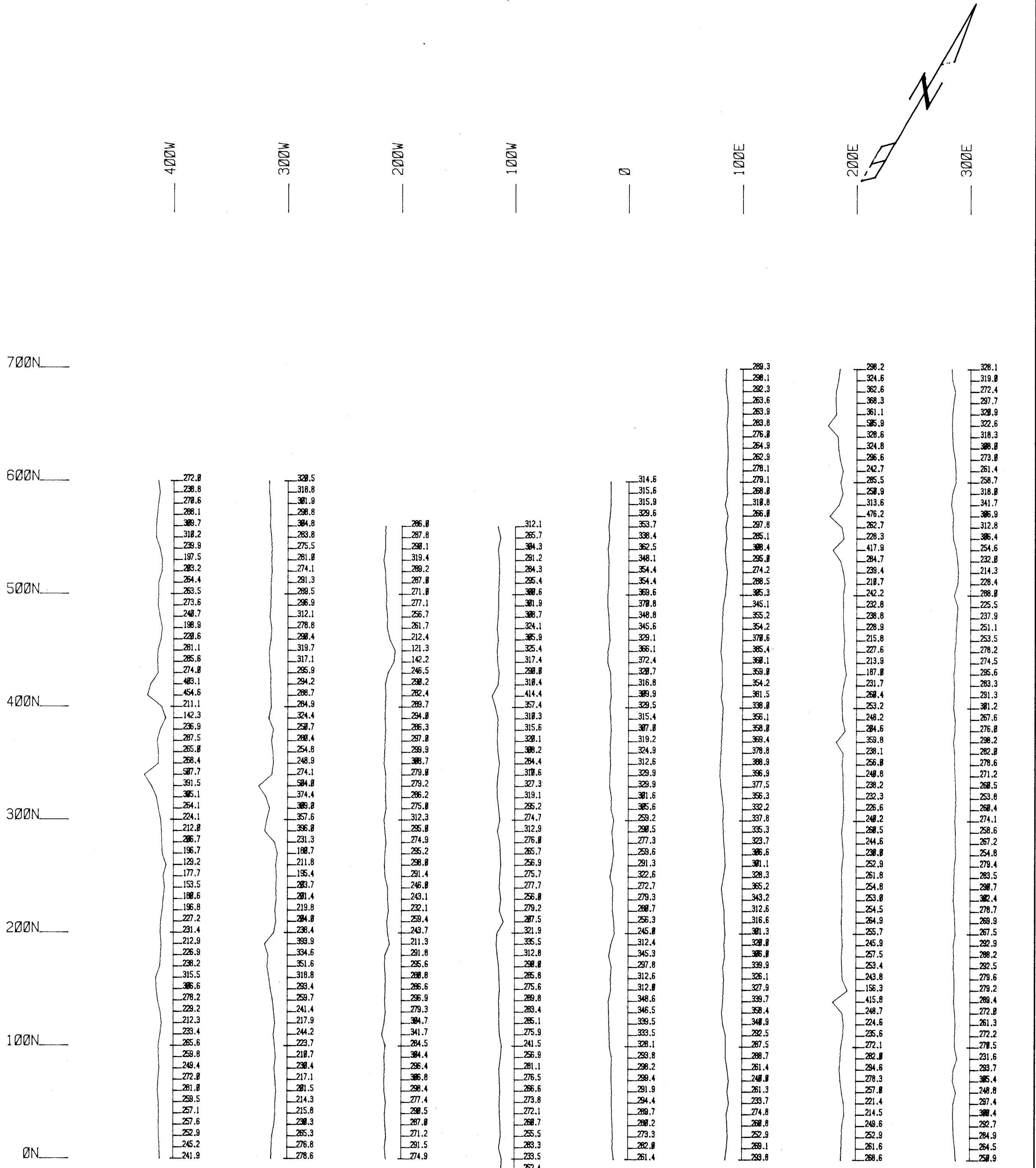
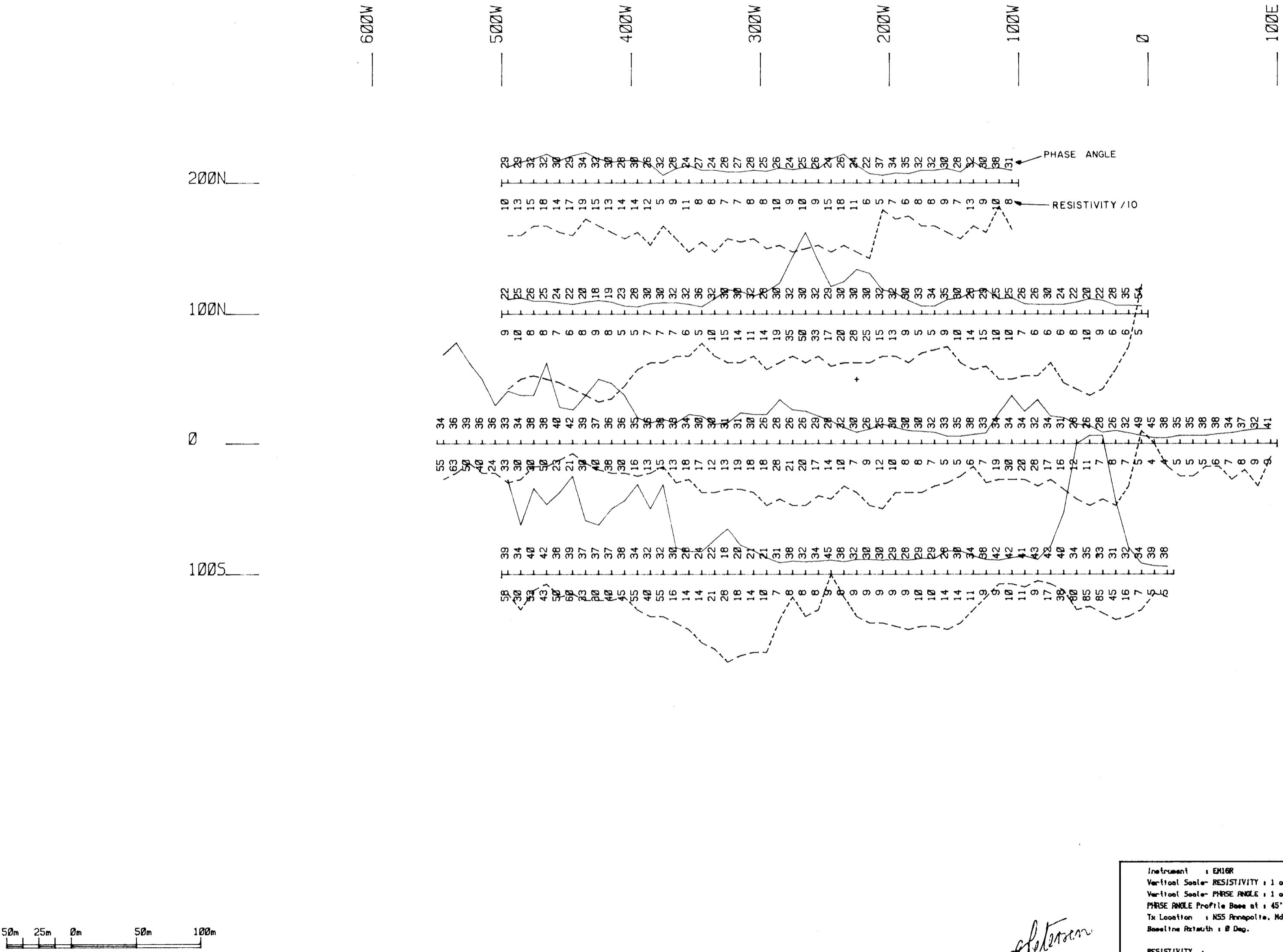


Fig. 6





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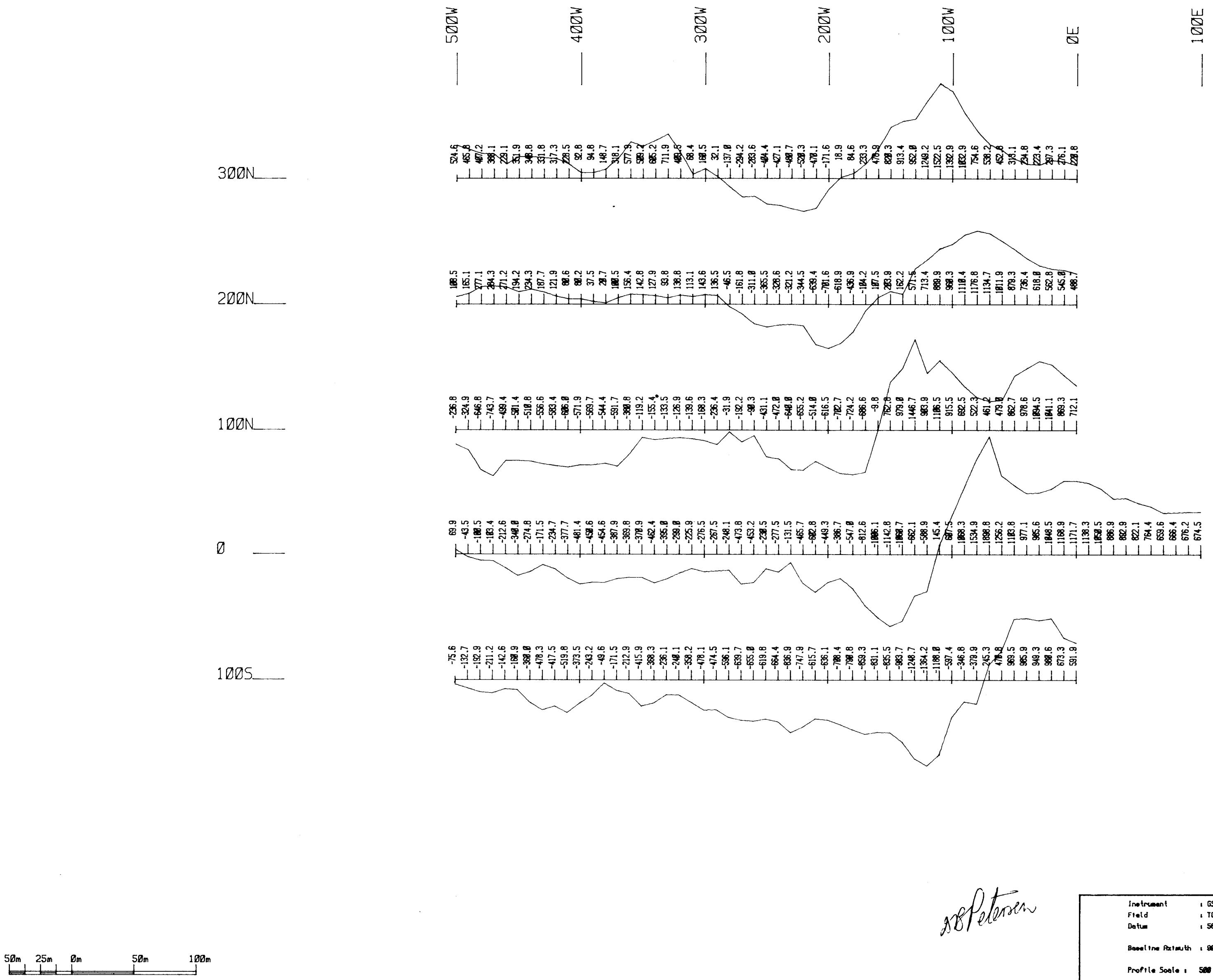
Fig. 8

Instrument : EM1GR
Vertical Sealer RESISTIVITY : 1 ohm = 288 Ohms
Vertical Sealer PHASE ANGLE : 1 ohm = 18°
PHASE ANGLE Profile Base at 45°
Tx Location : NSS Annapolis, Md.
Baseline Azimuth : 8 Deg.

RESISTIVITY : _____
PHASE ANGLE : _____

BB/2013cm

GOLDSMITH MINERALS LTD.	
VLF-RESISTIVITY SURVEY	
GASPARD LAKE PROPERTY, Clinton M.D., B.C.	
GAS 8 Claim	
SCALE : 1:2500	DATE : July, 1990.
SURVEY BY : MJC	NTS : 920/10
FILE: VGS9	FREQ.: 24.8 KHz.
Pacific Geophysical	



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Fig. 9

J.P. Petersen

Instrument : GSM-10
Field : TOTAL
Datum : 56000.0 nT
Baseline Azimuth : 90 Deg.
Profile Scale : 500 nT / Cm

GOLDSMITH MINERALS LTD.	
MAGNETOMETER SURVEY	
GASPARD LAKE PROPERTY, CLINTON M.D., B.C. GAS 8 Claim	
SCALE = 1:2500 DATE : July, 1990	
SURVEY BY : MG NTS : 920/10	
FILE: MGA59 Pacific Geophysical	

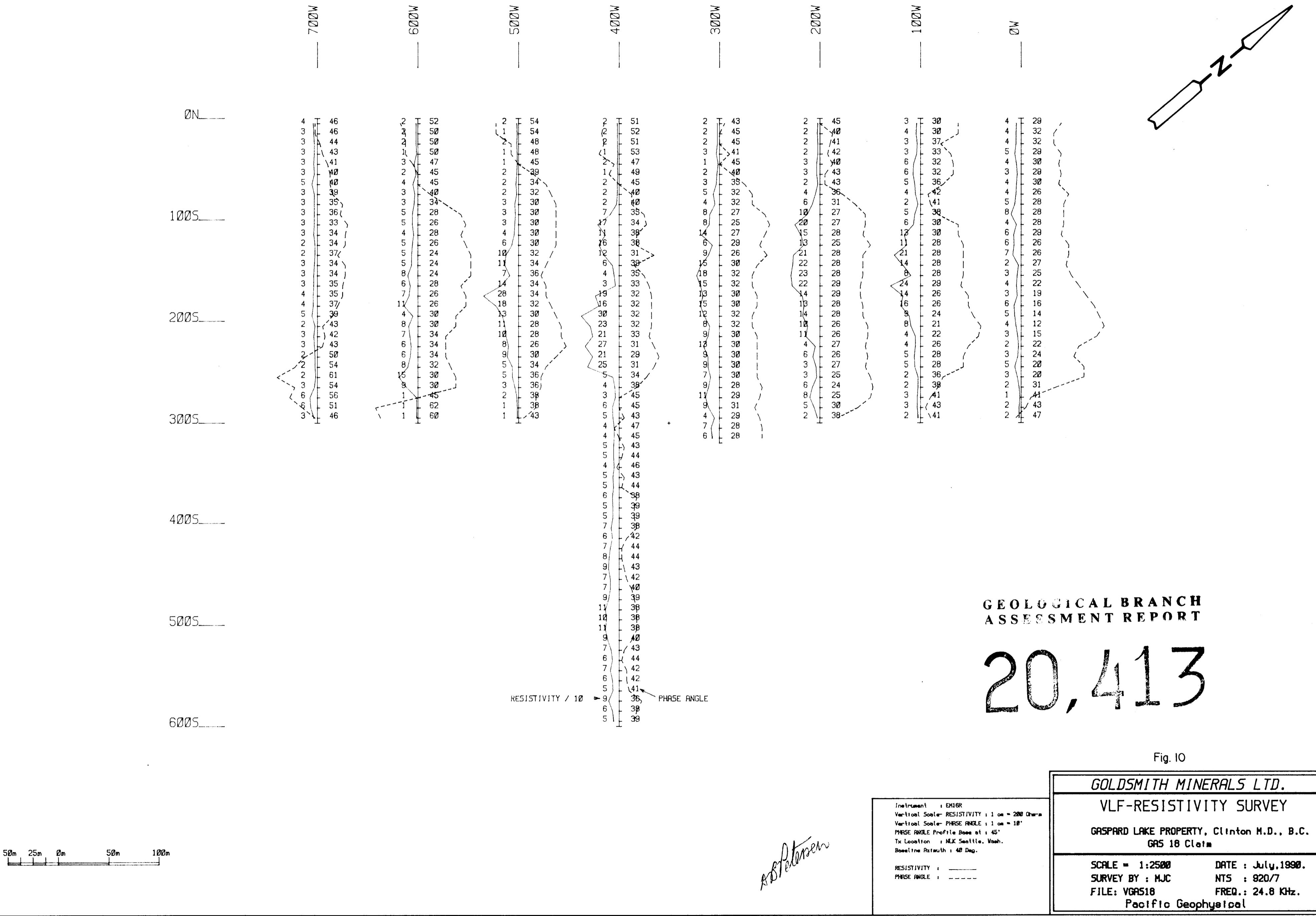
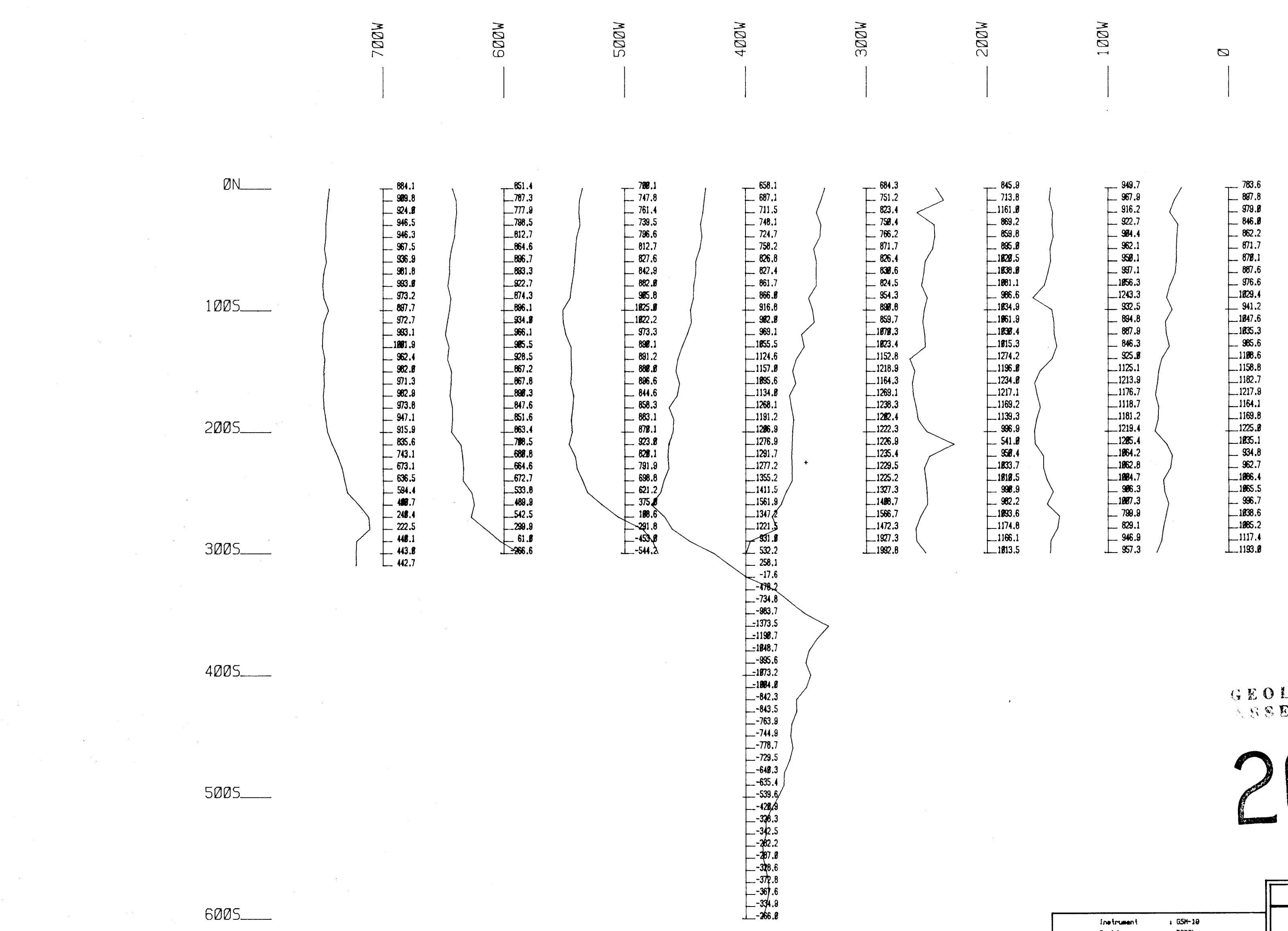


Fig. 10



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Fig. II

Instrument : GSM-10
Field : TOTAL
Datum : 56000.0 nT

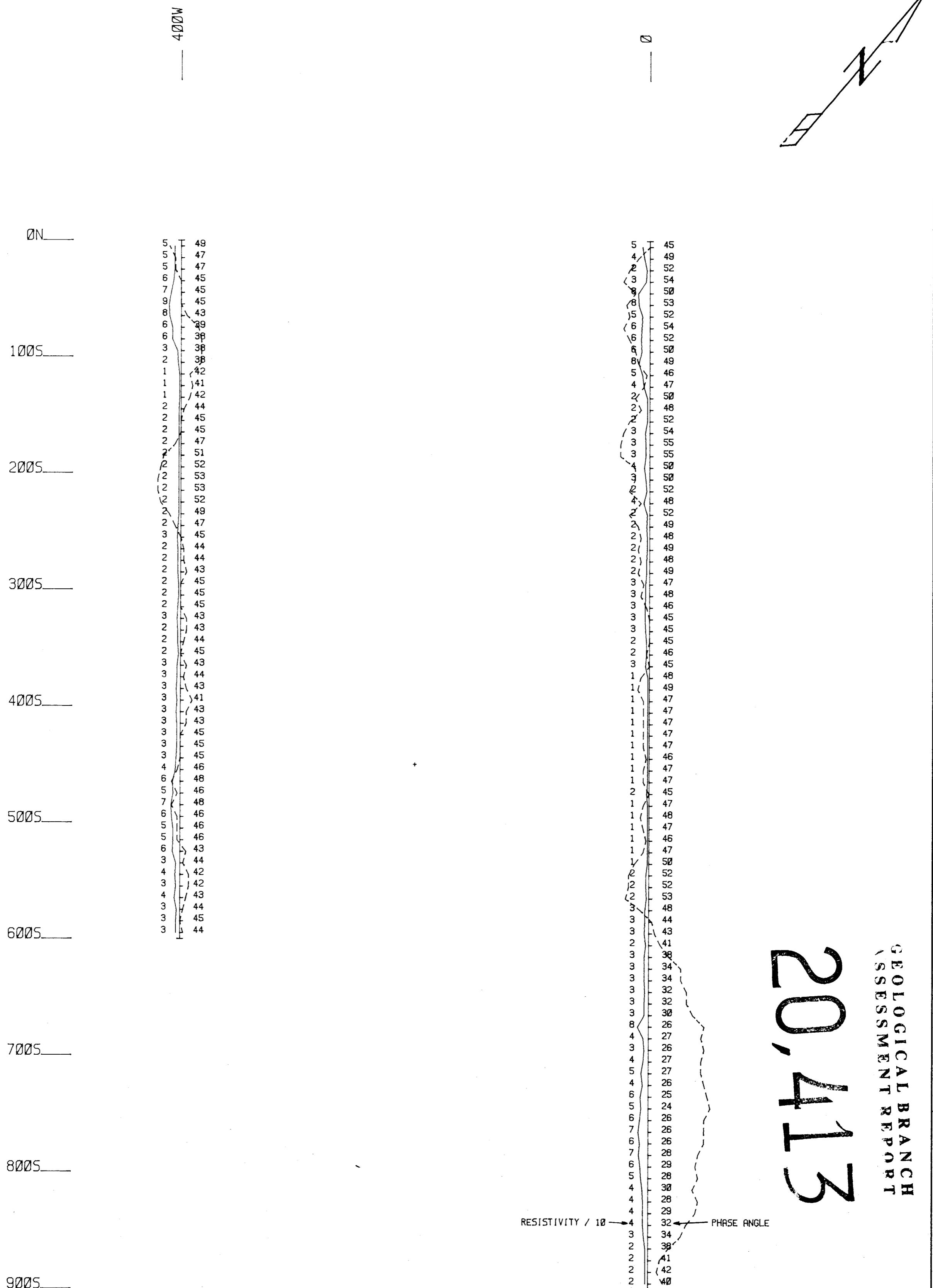
Baseline Azimuth : 40 Deg.

Profile Scale : 500 nT / Cm

GOLDSMITH MINERALS LTD.
MAGNETOMETER SURVEY
GASPARD LAKE PROPERTY, Clinton M.D., B.C.
GAS 18 Claim
SCALE = 1:2500 DATE : July, 1990.
SURVEY BY : MG NTS : 920/7
FILE: MGAS18
Pacific Geophysical

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AB Petersen

Fig. 12

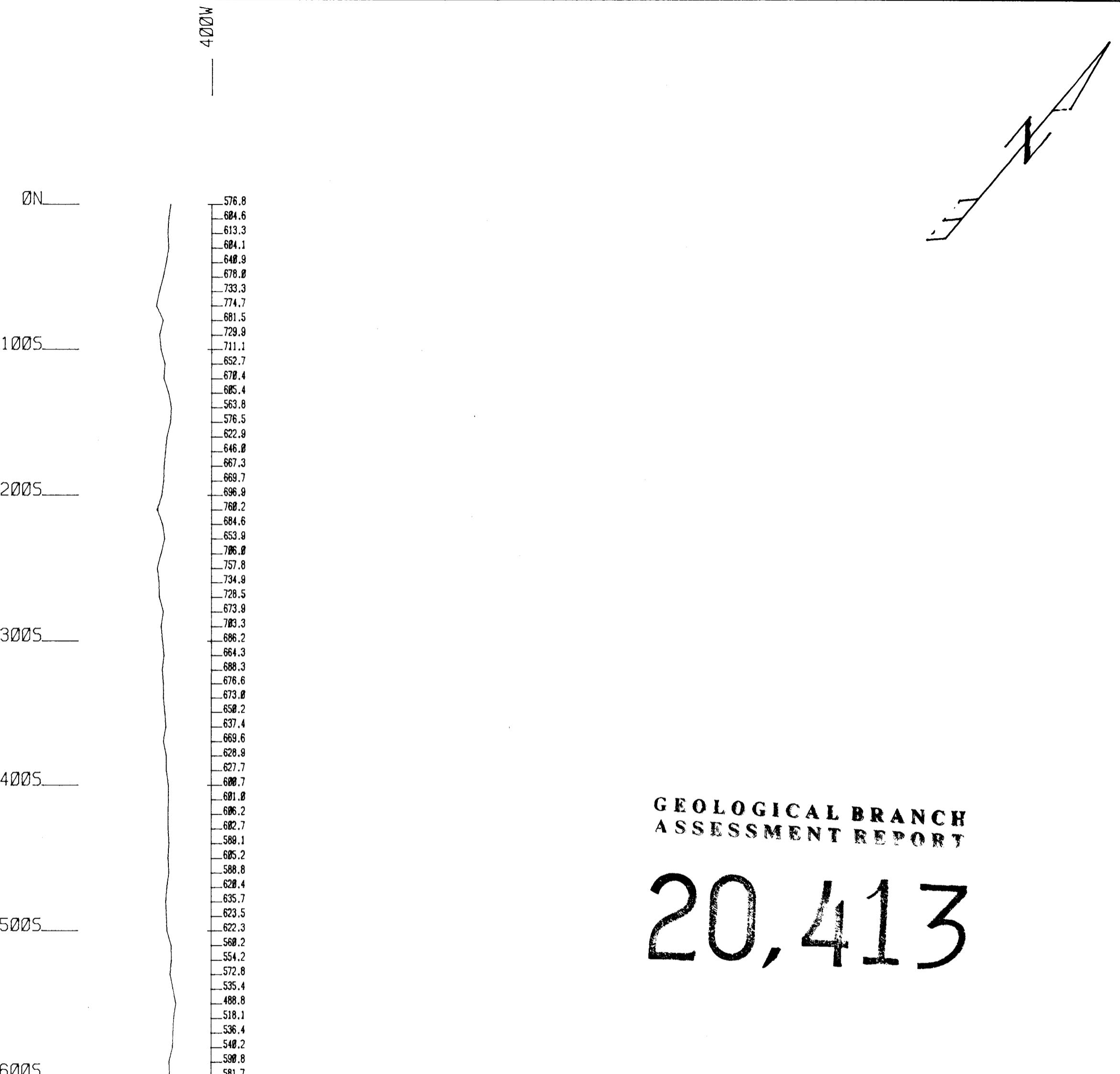
GOLDSMITH MINERALS LTD.	
VLF-RESISTIVITY SURVEY	
GASPARD LAKE PROPERTY, Clinton M.D., B.C.	
GRS 19 Claim	
SCALE = 1:2500	DATE : July, 1980.
SURVEY BY : MJC	NTS : 820/7
FILE: VGRS19	FREQ.: 24.8 KHz.
Pacific Geophysical	

50m 25m 0m 50m 100m

Instrument : EMIGR
Vertical Scale RESISTIVITY : 1 cm = 200 Ohms
Vertical Scale PHASE ANGLE : 1 cm = 18°
PHASE ANGLE Profile Base at : 45°
Tx Location : NLR Seattle, Wash.
Baseline Azimuth : 58 Deg.

RESISTIVITY : _____
PHASE ANGLE : _____

50m 25m 0m 50m 100m



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Fig. 13

GOLDSMITH MINERALS LTD.	
MAGNETOMETER SURVEY	
GASPARD LAKE PROPERTY, Clinton M.D., B.C. GAS 19 Claim	
Instrument : GSH-1B Field : TOTAL Datum : 566000.0 nT	
Survey Line Azimuth : 50 Deg. Profile Scale : 500 nT / Cm	
SCALE = 1:2500 DATE : July, 1990 SURVEY BY : MG NTS : 920/7 FILE: MGAS19 Pacific Geophysical	