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**GEOPHYSICAL SURVEY REPORT
 ON THE
 NAT CLAIMS
 OMINECA MINING DIVISION**

Lat. 55 21' Long. 123 44'

NTS 93-O-5E

**SUB-RECORDER
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 VANCOUVER, B.C.

**GEOLOGICAL BRANCH
 ASSESSMENT REPORT**

19,432

H. Letient

November 1989

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INTRODUCTION

The following report describes the magnetometer and VLF-EM surveys conducted by Placer Dome Inc. on the Nat claims during the period of September 20-23, 1989. The property is located west of the Nation River and is directly west of MacKenzie, B.C. The survey covered 18.08 kms of extension lines, expanding the 1988 grid to the north, west, and south.

SUMMARY

The magnetometer survey delineated the western boundary of the unaltered ultramafic rock unit outlined during the 1988 survey. VLF-EM conductors were located in zones of low magnetic relief and are most likely associated with faults.

Both surveys proved to be useful mapping aids. There was, however, no correlation between the soil geochemical results and the ground geophysics.

LOCATION AND ACCESS

The Nat claims are located in Central British Columbia, 38 kilometres due west of the town of MacKenzie. Access to the property is by ferry across Williston Lake from MacKenzie and then by two wheel drive along gravel logging roads for a distance of approximately 60 kilometres.

PROPERTY STATUS

The Nat claims are as follows:

NAME	NUMBER	EXPIRY DATE	RECORD NUMBERS
Nat 1-16	16	Dec 21, 1993	9217-9232
Nat 17-22	6	July 9, 1990	10843-10838
Nat 23-27	5	July 5, 1990	10837-10833
Nat 28	1	July 5, 1990	10844
Nat 29-34	6	July 7, 1990	10845-10850

PREVIOUS WORK

Prospecting, silt sampling and outcrop sampling was conducted by Ruanco Enterprises. This led to the discovery of an altered and pyritized fault zone in outcrop. Rock samples taken from this area were anomalous for arsenic (up to 460 ppm), with some containing detectable gold up to 0.14 ppm. A silt sample from an east-west drainage across the northern projection of the fault returned 0.17 ppm Au.

In 1988, geochemical and geophysical field work was carried out by Placer Dome. The geochemical field work included grid soil sampling, limited stream sediment bulk sampling, and outcrop sampling. The geophysical field work included ground VLF-EM and magnetometer surveys conducted along 14.7 kms of line.

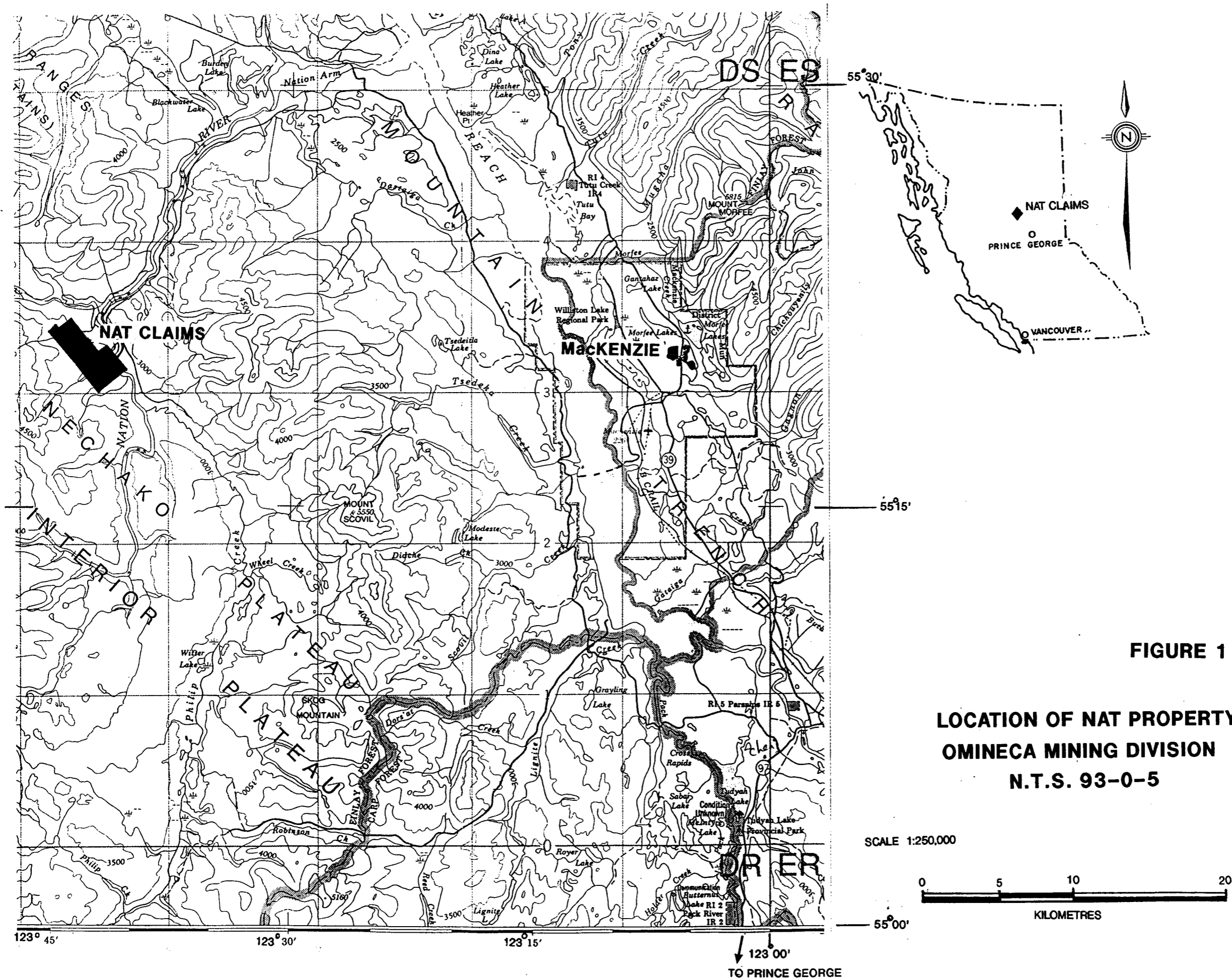
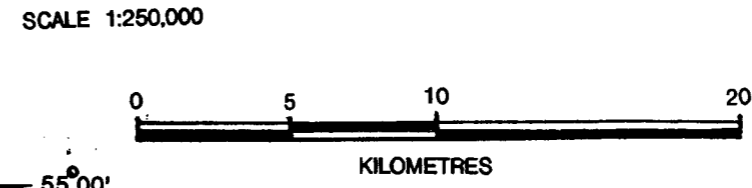


FIGURE 1

LOCATION OF NAT PROPERTY
 OMINECA MINING DIVISION
 N.T.S. 93-0-5



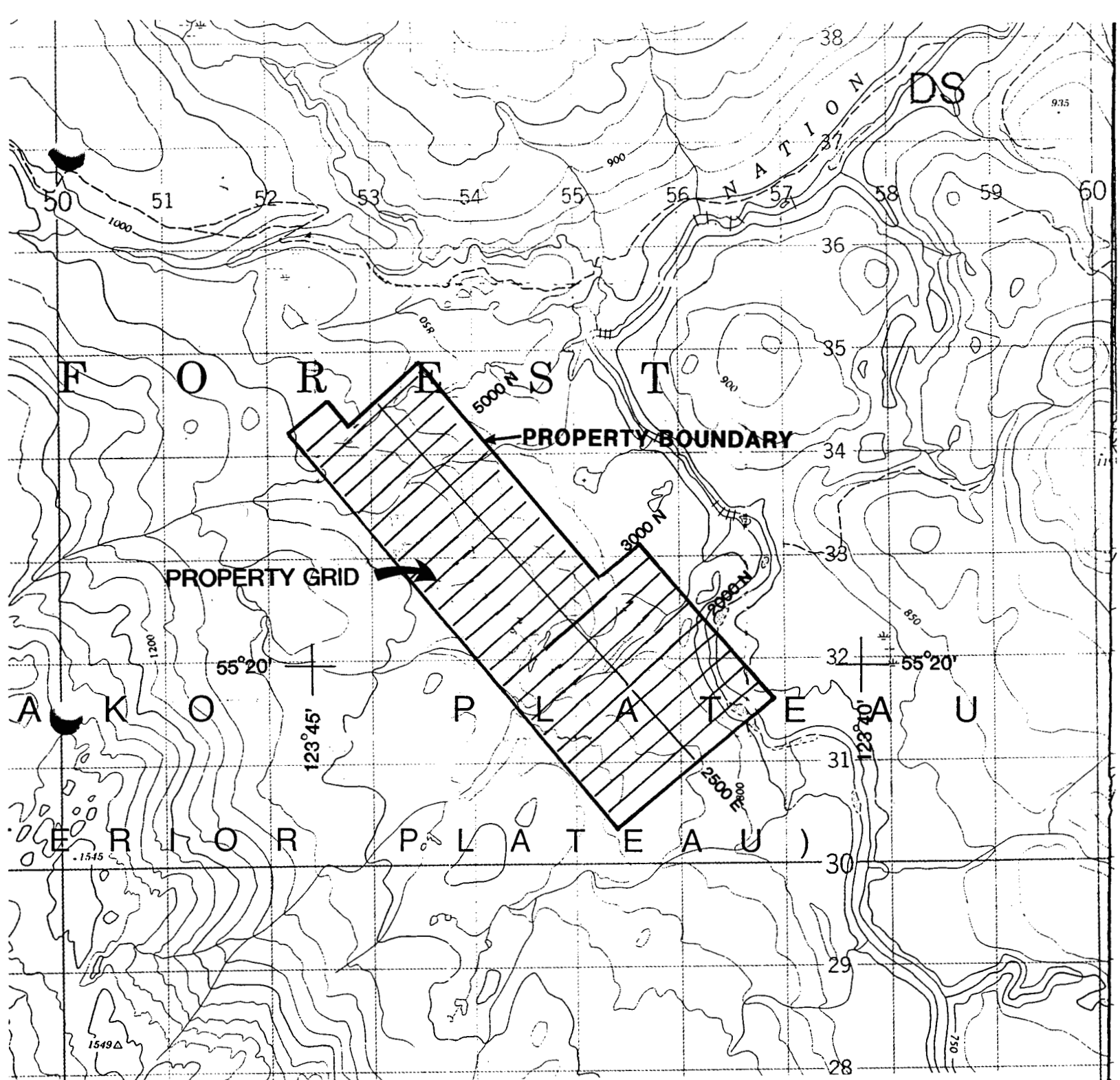
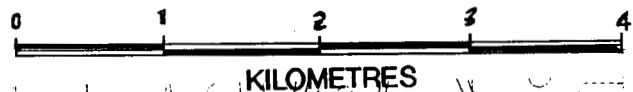


FIGURE 2

**CLAIM MAP - NAT PROPERTY
OMINECA MINING DIVISION**

N.T.S. 93-O-5

SCALE 1:50,000



PHYSIOGRAPHY

The property is located on an east facing side-hill which has a moderate gradient towards the Nation River. Several east-west drainages cut through the claim block. Small outcrops can be found in the sides of these gullies.

Forest cover on the grid consists of spruce, balsam, alder and lodgepole pine. Approximately 1/3 of the grid has been logged and a new growth of trees already started.

GEOLOGY

The claims are underlain by argillites and phyllites of the Slide Mountain Group which are of Mississippian age. A 50 m wide, altered and mineralized, northwest trending fault zone is coincidental with a magnetic low shown on the government aeromagnetic survey map. Some ultramafic rocks occur within this fault and there are ultramafic rocks occurring on the west side of the property.

GEOPHYSICAL SURVEY

VLF-EM and magnetometer surveys were conducted along 18.08 kms of line. The VLF survey was conducted using the Seattle transmitting station NLK (24.8 kHz) with readings being taken at 20 m stations. The direction to the Seattle station was 175° Az and therefore readings were taken facing 085° Az.

Magnetometer readings were taken at 10 m intervals and corrections for drift and diurnal changes were made by use of a base station recording magnetometer.

INSTRUMENTATION AND PROCEDURES

The magnetometer survey was conducted using two Geometrics G-856A portable proton magnetometers (memory-mags). One was used in the field mode while the other was used in a base station mode. The internal clocks were synchronized before commencement of the survey and subsequent daily readings were dumped out to floppy disk in a Zenith portable computer. The data from the two magnetometers was merged and corrected for diurnal drift from an established base station value. The corrected results were plotted as field profiles and also stored on disk for eventual transfer to a Sun Microsystem work station for final plotting

The VLF-EM survey employed a Geonics EM-16 which used the Seattle transmitting station. VLF readings were also entered onto floppy disk in a Zenith portable computer and field profiles of In-phase, Quadrature and Fraser Filter data were plotted. The stored data was transferred to a Sun Microsystems work station for final processing and plotting.

SURVEY RESULTS

The 1988 and 1989 magnetometer survey results were combined and plotted as plan maps of stacked profiles and posted data at scales of 1:5000 (see plates in folder at back of report).

The 1988 and 1989 VLF-EM survey results were combined and plotted as stacked In-phase, Quadrature and Fraser Filter profiles on a plan map at a scale of 1:5000. Plan maps of posted In-phase and Quadrature values were also plotted (see plates in the folder at the back of the report).

The Fraser Filter data was calculated as per the method put forth by D.C. Fraser (1969, Contouring of VLF-EM data: Geophysics, v. 34, p. 958-967).

DISCUSSION OF RESULTS

The 1989 magnetometer survey confirmed the presence of the magnetic unit on the western portion of the grid outlined by the 1988 survey. It also revealed that this unit, identified as unaltered ultramafic, is about 400 meters wide and extends north-south from L 2800 N to L 5800 N. The margins were also marked by VLF conductors and can be estimated to be as follow:

Western Margin	Eastern Margin
L2800 N,1800 E	L2900 N,2120 E
L3000 N,1810 E	L3000 N,2120 E
L3200 N,1890 E	L3200 N,2120 E
L3400 N,1870 E	L3400 N,2200 E
L3600 N,1870 E	L3600 N,2200 E
L3800 N,1800 E	L3800 N,2150 E
L4000 N,1760 E	L4000 N,2100 E
L4200 N,1840 E	L4200 N,2150 E
L4400 N,1750 E	L4400 N,2120 E
L4600 N,1640 E	L4600 N,2090 E
L4800 N,1640 E	L4800 N,2040 E
L5000 N,1800 E	L5000 N,2010 E
L5200 N,1760 E	L5200 N,2050 E
L5400 N,1700 E	L5400 N,1990 E
L5600 N,1700 E	L5600 N,1960 E
L5800 N,1700 E	L5800 N,2040 E

VLF EM conductors detected by the geophysical survey have a predominant north-south and north-northwest strikes and are generally located in zones of low magnetic relief. These conductors are most likely associated with faults. They appear to have been disrupted by east-west structures.

There appears to be no direct correlation between the geochemical anomalies and the geophysical results.

CONCLUSIONS AND RECOMMENDATIONS

It was concluded that the magnetic highs could be used to map the unaltered ultramafics and that the VLF conductors were expressions of fault zones which could possibly be mineralized. It is recommended that magnetic and VLF-EM surveys should be used to aid geological mapping in areas of sparse outcrop.

STATEMENT OF EXPENDITURES

The following expenditures were incurred for a geophysical program on the Nat 1-34 claims located west of Mackenzie, B.C. between September 19 and September 24, 1989.

1. FIELD DAYS (Salaries and Benefits)

H. Letient - Geophysicist	6 days @ \$225/day	1,350.00
J. Baril - Field Assistant	6 days @ \$225/day	1,350.00

2. EQUIPMENT CHARGES

2 G-856 magnetometer @ \$200 each/wk.	400.00
1 Geonics EM-16 @ \$200/wk.	200.00
1 Zenith portable computer @ \$100/wk.	100.00

3. TRANSPORTATION

Truck rental and gas for 6 days	390.00
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4. CAMP OPERATION

Accommodation in Mackenzie: 6 days @ \$45.75/day	274.50
Meals: 12 person days @ \$30/person day	360.00

5. DATA INTERPRETATION AND REPORT WRITING

H. Letient - geophysicist 4 days @ \$225/day	900.00
Plotting, drafting, and computer cost	500.00

TOTAL EXPENDITURES: \$5,824.50

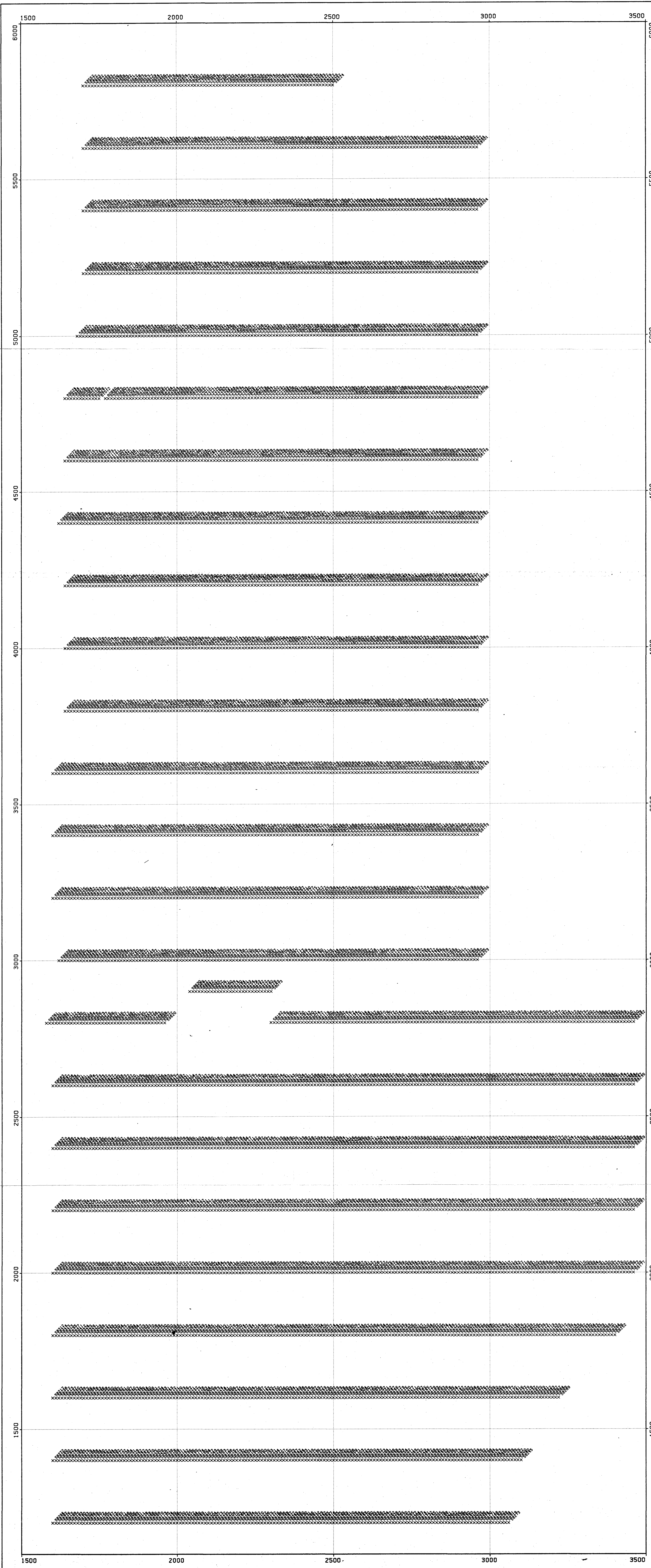
STATEMENT OF QUALIFICATIONS

I, Henri F. Letient, of the City of Vancouver, Province of British Columbia, hereby certify as follows:

1. I am a graduate of the University of British Columbia where I received a B. A. Sc. in Geological Engineering (Geophysics Option) in May 1989.
2. I am currently employed by Placer Dome Inc. under the supervision of Richard W. Cannon.
3. I was present for all the geophysical field work conducted on the Nat Claims in 1989. I have compiled and reviewed the data and written the submitted report.

Nov 17, 1989
Date


H. F. Letient

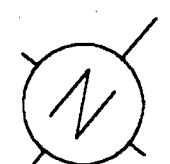


NAT CLAIMS
 POSTED MAGNETIC DATA
 COMBINED 1988 & 1989 DATA
 UNITS = NANOTESLAS

GEOLOGICAL BRANCH
 ASSIGNMENT REPORT

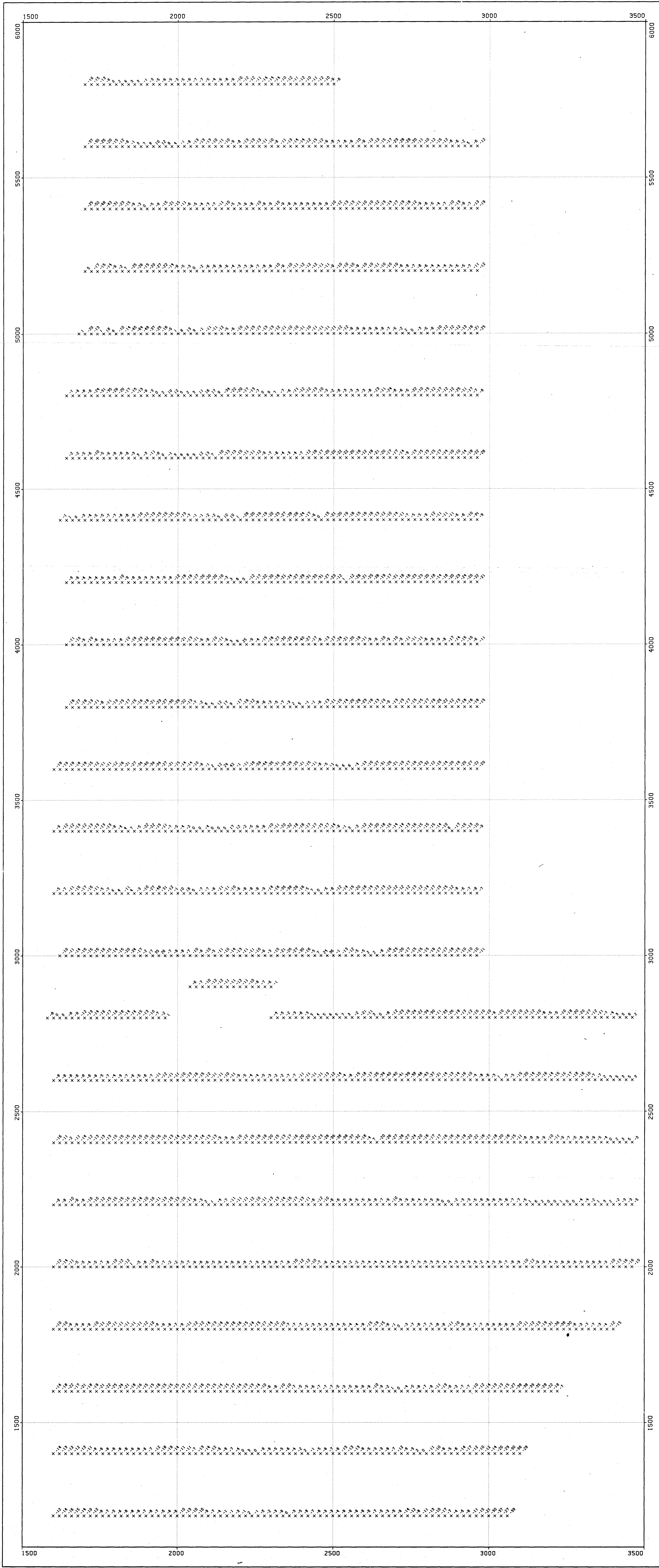
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DATA PLOTTED ON THIS MAP:
 DIRECTORY: 7PLACER1_3D/NAT/GP
 FIELD FILE
 + POINTS: MAG 88-89.MAGS



DRAWN HFL		PLACER DOME INC.	
DATE 89:10:08		NAT CLAIMS	
SCALE 1:5000		POSTED MAGNETIC DATA	
NO.			PLATE 01

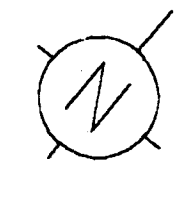
NAT CLAIMS
POSTED IN-PHASE DATA
COMBINED 1988 & 1989 DATA
UNITS = % OF PRIMARY FIELD



GEOLOGICAL BRANCH
ASSESSMENT REPORT

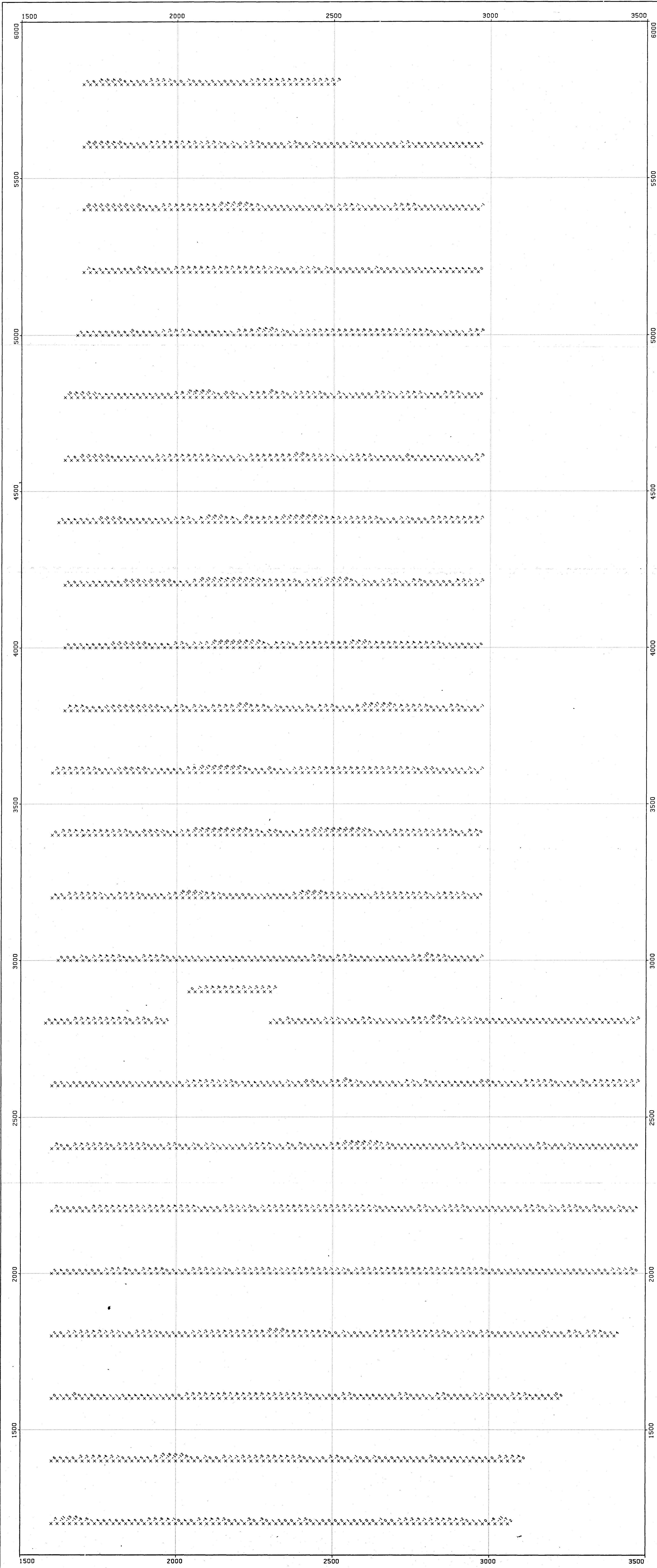
19,432

DATA PLOTTED ON THIS MAP:
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FIELD FILE
+ POINTS: IP 88-89.1PS



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DATE 89:10:06		NAT CLAIMS	
SCALE 1:5000		POSTED IN-PHASE DATA	
NO.			PLATE 02

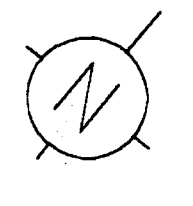
NAT CLAIMS
POSTED QUADRATURE DATA
COMBINED 1988 & 1989 DATA
UNITS = % OF PRIMARY FIELD



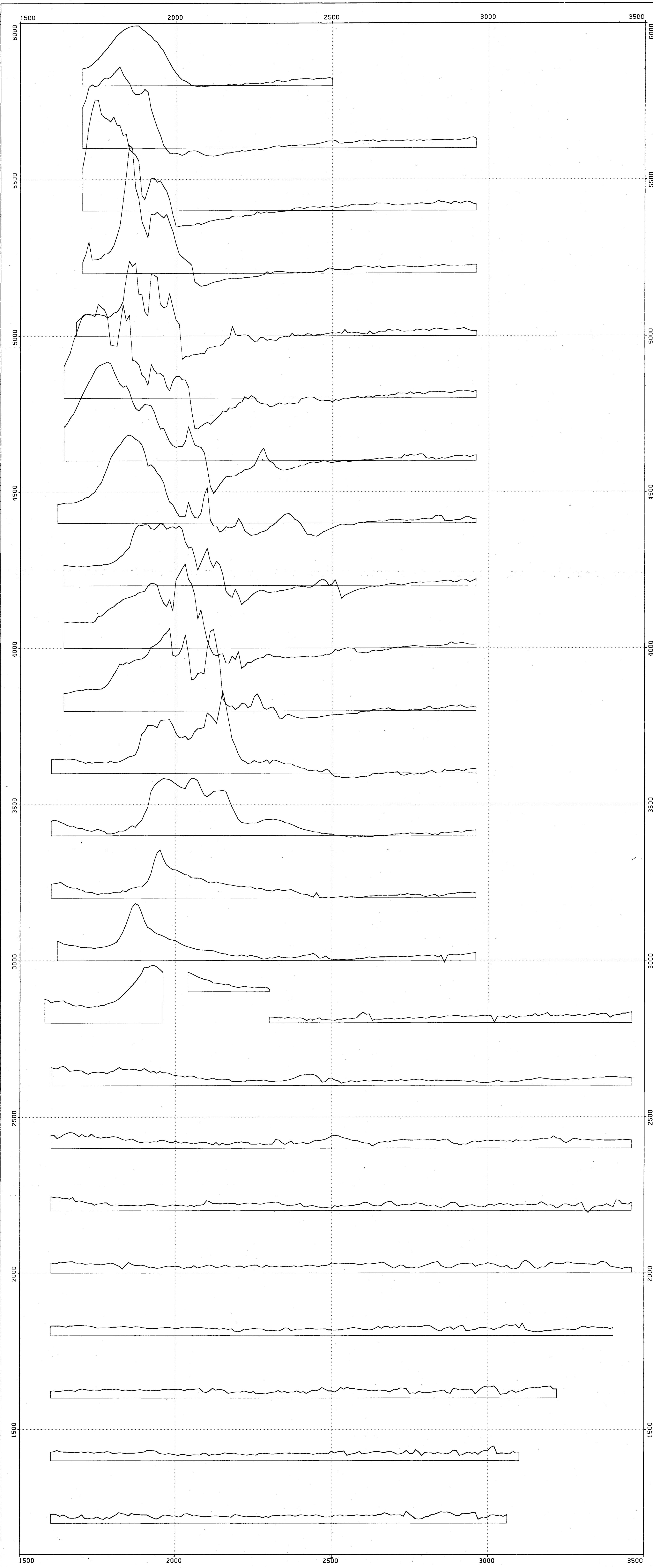
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DATA PLOTTED ON THIS MAP:
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FIELD FILE
+ POINTS: 00 88-89.005



DRAWN HFL		PLACER DOME INC.	
DATE 89:10:06		NAT CLAIMS	
SCALE 1:5000		POSTED QUADRATURE DATA	
NO.		PLATE 08	



NAT CLAIMS
 STACKED MAGNETIC PROFILES
 COMBINED 1988 & 1989 DATA
 UNITS = NANOTESLAS

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DATA PLOTTED ON THIS MAP:
 DIRECTORY: /PLACER1_3D/NAT/GP

FIELD FILE
 MAG 88-89.MAGS
 SCALE: 500 UNITS / CM
 BASE LEVEL: 58000



DRAWN HFL		PLACER DOME INC.	
DATE 89:10:06		NAT CLAIMS	
SCALE 1:5000		STACKED MAGNETIC PROFILES	
NO.		PLATE 04	

NAT CLAIMS
 STACKED VLF-EM PROFILES
 COMBINED 1988 & 1989 DATA

DARK LINE : FRASER FILTER
 MEDIUM LINE : IN-PHASE
 LIGHT LINE : QUADRATURE

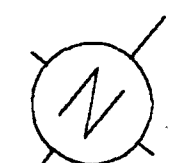
--- VLF CONDUCTOR

GEOLOGICAL BRANCH
 ASSESSMENT REPORT

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DATA PLOTTED ON THIS MAP:
 DIRECTORY: /PLACER1.3D/NAT/GP

█	FIELD	FILE
█	IP	88-89.IPS
█	SCALE:	20.0 UNITS / CM
█	BASE LEVEL:	0.0
█	FRASER FILTER APPLIED	
—	IP	88-89.IPS
—	SCALE:	20.0 UNITS / CM
—	BASE LEVEL:	0.0
—	DD	88-89.DDS
—	SCALE:	20.0 UNITS / CM
—	BASE LEVEL:	0.0



PLACER DOME INC.
 NAT CLAIMS
 STACKED VLF-EM PROFILES

DRAWN HFL
 DATE 89:10:06
 SCALE 1:5000

NO. PLATE 08

