

PHOENIX GEOPHYSICS LIMITED

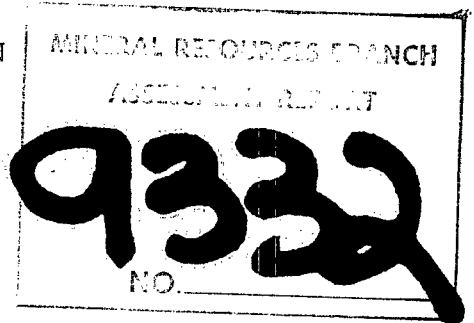
REPORT ON THE

PHASE INDUCED POLARIZATION

AND RESISTIVITY SURVEY

ON THE AFTON PROPERTY

KAMLOOPS MINING DIVISION



PROVINCE OF BRITISH COLUMBIA

FOR

GOLDEN GATE EXPLORATIONS LIMITED

N.T.S. 92I/10E

Latitude: $50^{\circ} 40' N$

Longitude: $120^{\circ} 30' W$

BY

Paul A. Cartwright, B.Sc., Geophysicist

June 12, 1981

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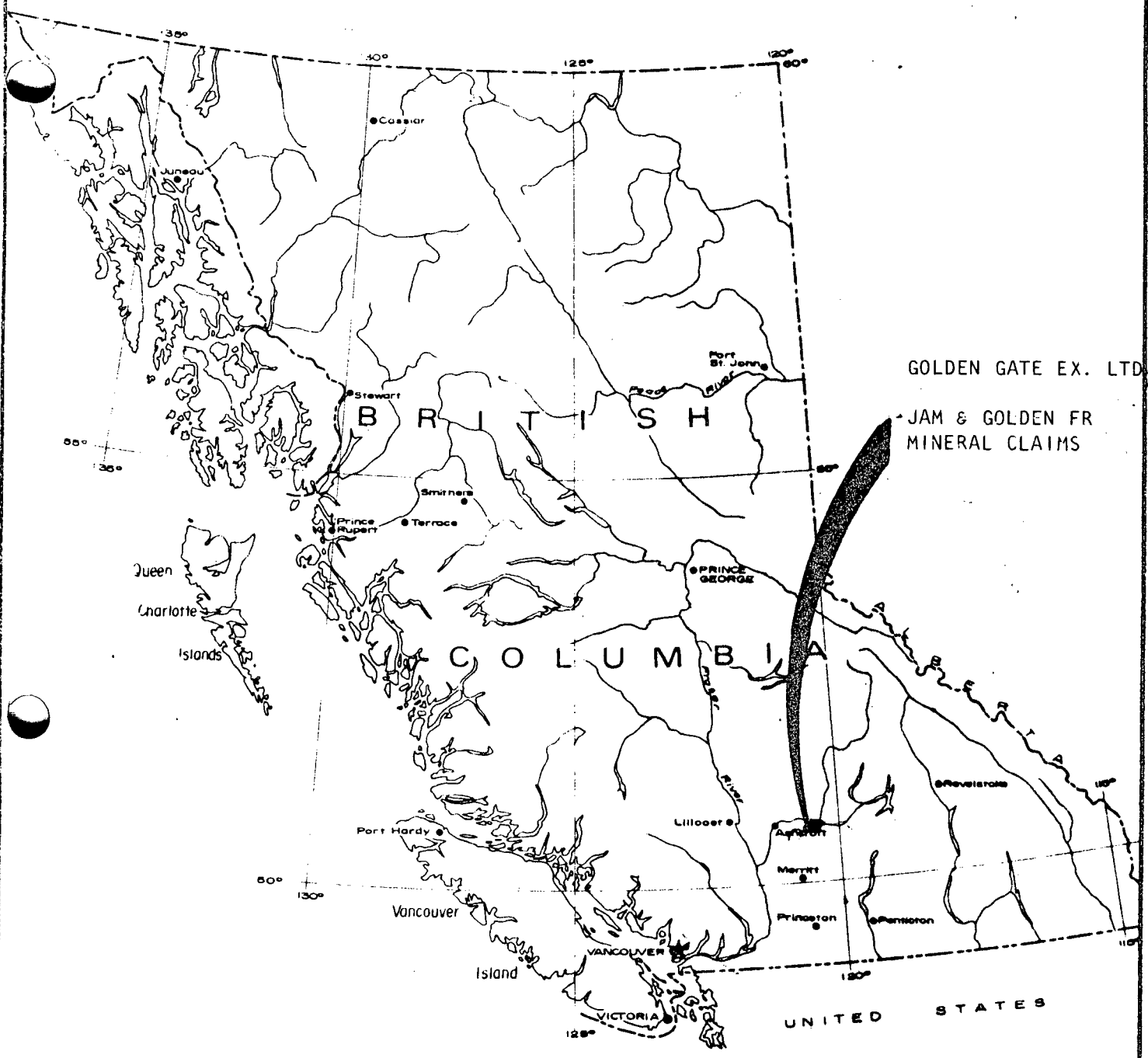
4 pieces

Plan Map (in pocket)

Dwg. I.P.P. - B-2001

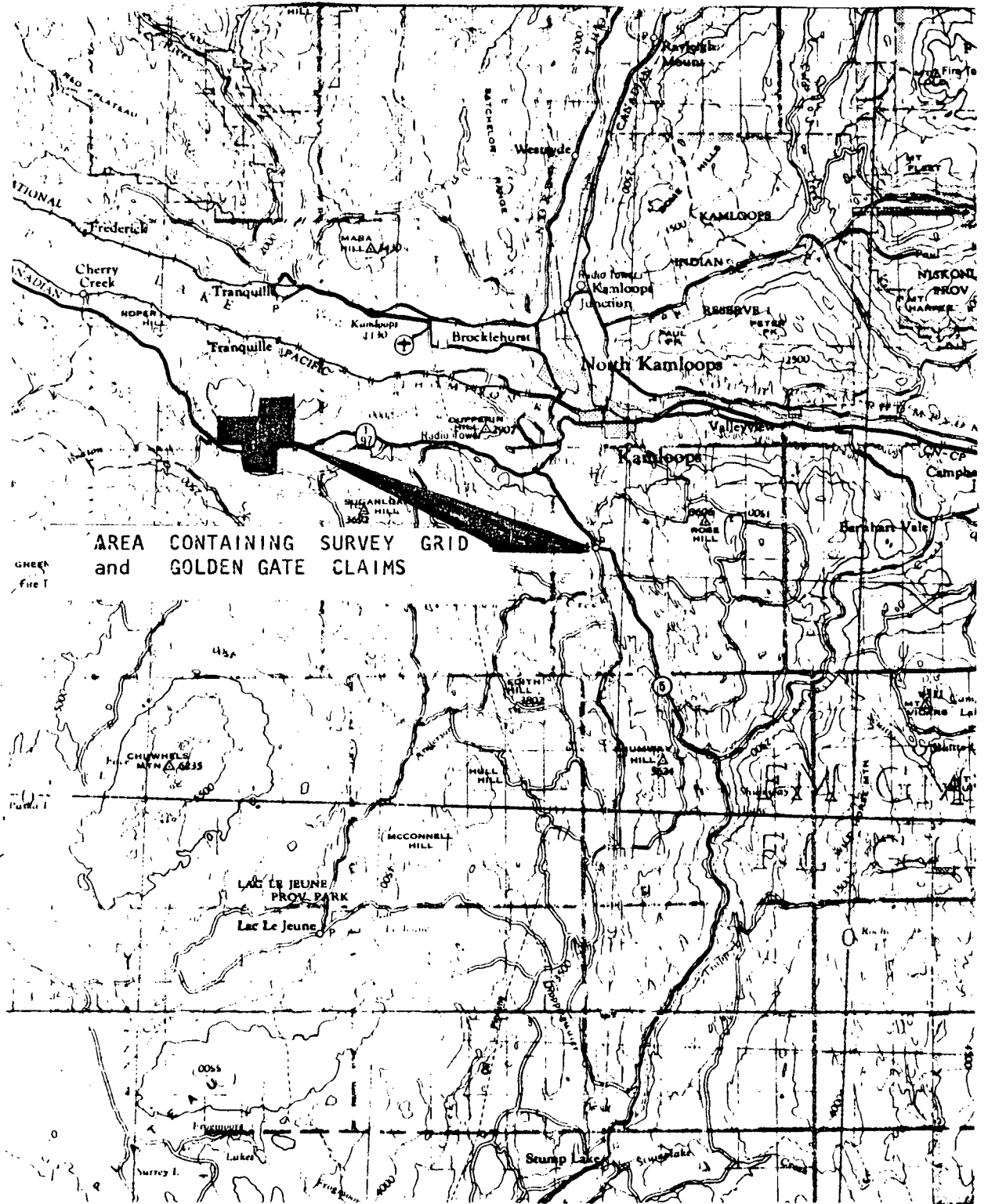
IP Data Plots

Dwgs. IP 5803-1 to -3



LOCATION MAP

SCALE:- 1" = 100 MI.



GOLDEN GATE EXPLORATIONS LTD

PROPERTY LOCATION MAP
KAMLOOPS, B.C. Area

Scale:- 1: 250,000

1.) INTRODUCTION

A short Phase Induced Polarization and Resistivity survey has been completed on the Afton property of Golden Gate Explorations Limited.

The property is situated approximately 15 kilometers west of the City of Kamloops, B.C., and is located immediately north of the Afton Mines property. The Trans-Canada Highway crosses the southern part of the area of interest and provides excellent access from Kamloops.

Geology in the grid area consists of Kamloops tertiary volcanic and sedimentary rocks unconformably overlying Nicola volcanics, which have been intruded by the Iron Mask batholith. The northwestern limit of the batholith is close to the southern part of the property. Economic mineralization in the form of native copper, chalcocite, bornite, chalcopyrite, cuprite and small amounts of gold are known to occur at the contact of the batholith. (Afton Mines).

Some diamond drill holes have been completed on the southern part of the Golden Gate property, which, together with geological evidence in the Afton pit, indicate the presence of a major fault down throwing the block underlying the southern part of the Golden Gate ground to a depth at least 1,000 feet.

The objective of the present survey was to utilize state of the art instrumentation in order to investigate the area of the claims from the vicinity of the southern boundary adjoining the Afton Mines property too close to the northern perimeter of the Golden Gate Explorations Ltd. claim block.

It was anticipated that the survey would encounter difficult conditions, due to the presence of at least two pipelines, a major power line, and the highway, all of which cross the southern limit of the property. A previous IP and Resistivity survey in the area in 1972 had recorded very low apparent resistivity values, even when using 400 foot dipole-dipole array.

To overcome the high noise levels inherent with attempting IP measurements in the area of high noise and low resistivities, the Phoenix Model IPV-2 Phase IP receiver was employed. This instrument has a very high degree of noise rejection due to signal stacking and active filters controlled by synchronous crystal oscillators. Dipole-dipole array was employed using a basic inter-electrode distance of 500 feet, and reading to four separations. The IP effect was recorded in milliradians of phase angle at frequencies of 9.0Hz, 3.0Hz, 1.0Hz, 0.33Hz and 0.11Hz on one line (Line 6000W) and at frequencies of 1.0Hz and 0.11Hz on another line (Line 8000W).

Field work was carried out during the latter part of April 1981, under the supervision of Paul A. Cartwright, crew leader and Geophysicist.

2. DESCRIPTION OF THE CLAIMS

The Afton property consists of the following claims:

<u>Claim Name</u>	<u>Record No.</u>	<u>Anniversary Date</u>
Golden 15 FR-Golden 21 FR. (Incl.)	120189-120195 (Incl.)	May 19
Jam 1 - Jam 10 (Incl.)	96795-96804 (Incl.)	May 13
Jam 15- Jam 20 (Incl.)	96805-96810 (Incl.)	May 13
Gate 2	120272	July
Gate 4	120274	July

The Gate 2 and Gate 4 claims are optioned from Mr. J. McPhee while the others are owned by Golden Gate Explorations Ltd.

3. PRESENTATION OF DATA

The induced polarization and resistivity results are shown on the following data plots.

<u>Line</u>	<u>Electrode Interval</u>	<u>Dwg. No.</u>
6000W	500 Feet	IP 5803-1
6000W	500 Feet	IP 5803-2
8000W	500 Feet	IP 5803-3

Also enclosed with this report is Dwg. I.P.P. - B-2001, a plan map of the Afton property grid at a scale of 1 inch = 400 feet. The probable induced polarization anomalies are indicated by bars, in the manner shown on the legend, on this plan map as well as on the data plots. These bars represent the surface projection of the anomalous zones as interpreted from the location of the transmitter and receiver electrodes when the anomalous values were measured.

The grid, claim and topographic information shown on Dwg. I.P.P. - B-2001 has been taken from maps made available by the staff of Golden Gate Explorations Limited.

4. DISCUSSION OF RESULTS

Two lines have been surveyed using the Phase Induced Polarization and Resistivity method on the Afton Property of Golden Gate Explorations Ltd. The locations of both lines is shown on the plan map Dwg. No. - I.P.P. - B-2001.

Line 6000W, the most westerly of the two, follows the dirt road alongside the concrete pipe transporting water from

Kamloops Lake to the Afton minesite, while Line 8000W is situated approximately 2000 feet further to the east.

The dominant feature of the apparent resistivity results is the low magnitude of these values, even at the deeper separations, with the majority of the readings being in the range of 10 ohm - meters to 50 ohm - meters. This would confirm the existence of substantial thicknesses of sediments, or very weathered rocks, underlying virtually all of the survey area sampled by the present IP program.

Because of these very low magnitude resistivity levels, the higher frequency Induced Polarization results are distorted by inductive coupling between the transmitter and receiver circuits. The effects manifest themselves throughout the data as quickly increasing phase values with increasing separation number (N).

Line 6000W was first measured using 5 different frequencies over the range 9.0Hz to 0.11Hz, in an effort to ascertain the highest frequency (and therefore the fastest) which could be employed, and still be relatively free of inductive interference. A comparison of the phase angle results at the various frequencies employed on Line 6000W indicates that the lowest frequency, 0.11Hz, is required to reduce the magnitude of coupling effects to a relatively insignificant level. Line 8000W was subsequently surveyed using only two frequencies, 0.11Hz and 1.0Hz.

The southern ends of the lines cross over a gas pipeline, which appears to give rise to moderately anomalous IP effects in the data from both lines. Any polarizable mineralization at depth under the pipeline would very likely be masked by the near surface

response from the pipeline itself.

However, a possibly anomalous response is evident in the data from Line 6000W in the interval between approximately 750 N and approximately 1750 N, at a depth of greater than 500 feet. In this area a very complicated signature exists, which is difficult to interpret with any certainty, in that several negative values are present in the N=4 data. Additional work would be required to check this area, which is north of the line of drill holes completed in 1972.

5. SUMMARY AND RECOMMENDATIONS

Two north-south lines have been surveyed across the Afton Property using the Phase Induced Polarization and Resistivity method.

Very low magnitude apparent resistivity values are recorded at virtually every data point, indicating the presence of substantial thicknesses of sedimentary or weathered rocks under all of the area sampled by the present survey.

The low ground resistivities give rise to considerable inductive coupling between the transmitting and receiving circuits at the higher frequencies. In order to eliminate these effects, which interfere with the IP readings, it is necessary to use quite low operating frequencies, such as 0.11Hz.

The 0.11Hz data from both survey lines shows moderate magnitude shallow anomalies correlating with the position of a gas pipeline which crosses the southern part of the property.

One other anomaly of interest is indicated by the data to lie immediately north of the pipeline response seen on Line 6000W. However, due to the complicated pattern formed by the possibly anomalous values which comprise this anomaly, it is recommended that any further work first take the form of more detailed Phase IP

and Resistivity Surveying on Line 6000W. Dipole-dipole array using 300 foot inter-electrode spacing should be used to make additional phase and amplitude measurements at frequencies of 0.11Hz and 1.0Hz in the area of interest on Line 6000W. Depending upon results, offset lines could then be considered to further outline a possible drilling target.

PHOENIX GEOPHYSICS LTD.

Paul A. Cartwright

Paul A. Cartwright, B.Sc.,
Geophysicist.

June 12, 1981.

STATEMENT OF COST

Golden Gate Explorations Limited
IP Survey - Afton Property, B.C.

CREW: P. Cartwright, D. Labrecque, G. Montpetit

PERIOD: April 20 - April 26, 1981.

3½ Operating days	@ \$925.00/day	\$3,237.50
1½ Organization days	@ N.C.	N.C.
Mobilization - demobilization		\$1,200.00
Extra Labour		562.50
		<u>\$5,000.00</u>

PHOENIX GEOPHYSICS LIMITED

Paul A. Cartwright

Paul A. Cartwright, B.Sc.,
Geophysicist.

Dated: June 12, 1981.

CERTIFICATE

I, Paul A. Cartwright, of the City of Vancouver,
Province of British Columbia, do hereby certify that:

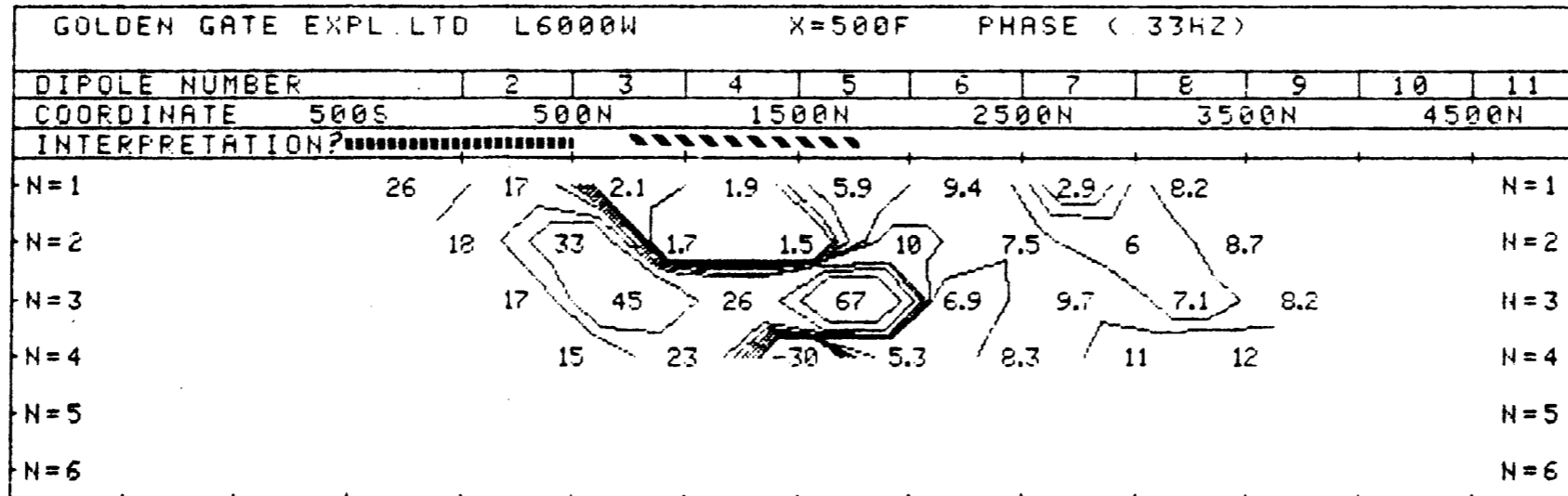
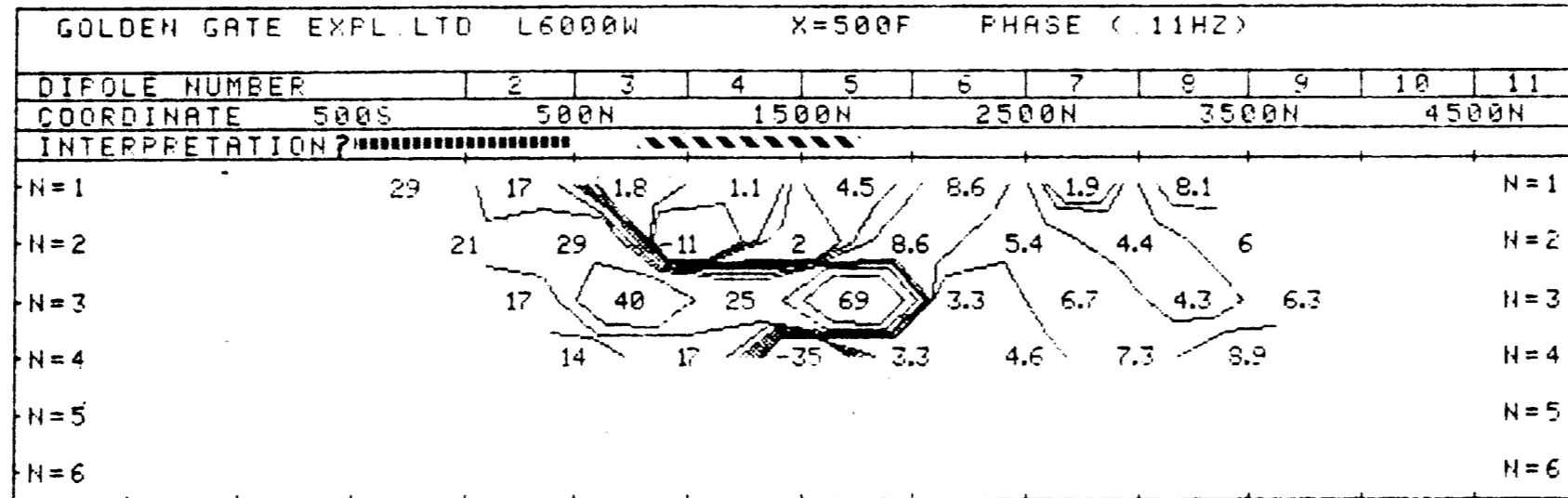
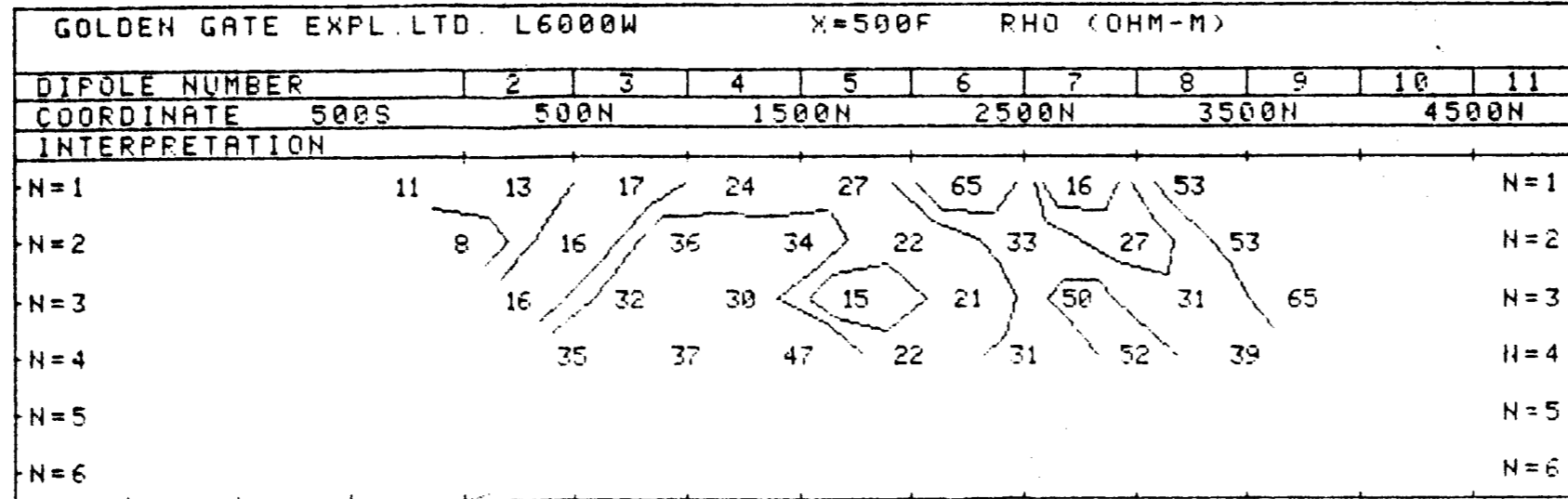
1. I am a geophysicist residing at 4238 West 11th Avenue,
Vancouver, B.C.
2. I am a graduate of the University of British Columbia,
B.C. with a B.Sc. Degree.
3. I am a member of the Society of Exploration Geophysicists.
4. I have been practising my profession about 10 years.
5. I have no direct or indirect interest, nor do I expect to
receive any interest directly or indirectly, in the
property or securities of Golden Gate Explorations Limited
or any affiliate.
6. The statements made in this report are based on a study of
published geological literature and unpublished private
reports.
7. Permission is granted to use in whole or in part for assess-
ment and qualification requirements but not for advertising
purposes.



Paul A. Cartwright, B.Sc.

Dated at Vancouver

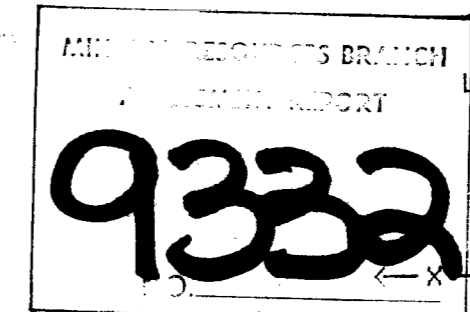
This 12th day of June, 1981.



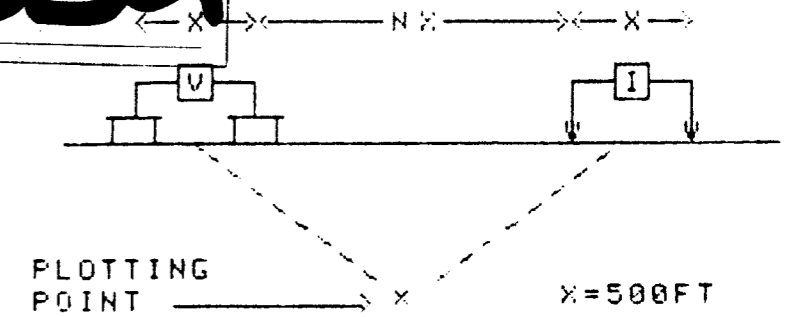
GOLDEN GATE EXPL. LTD.

AFTON PROPERTY

KAMLOOPS M.D. / KAMLOOPS B.C.



LINE NO. - 6000W



SURFACE PROJECTION OF ANOMALOUS ZONE

DEFINITE
 PROBABLE
 POSSIBLE

FREQUENCY (HERTZ)
 0.11HZ) 0.33HZ

DATE SURVEYED: APRIL 1981

APPROVED

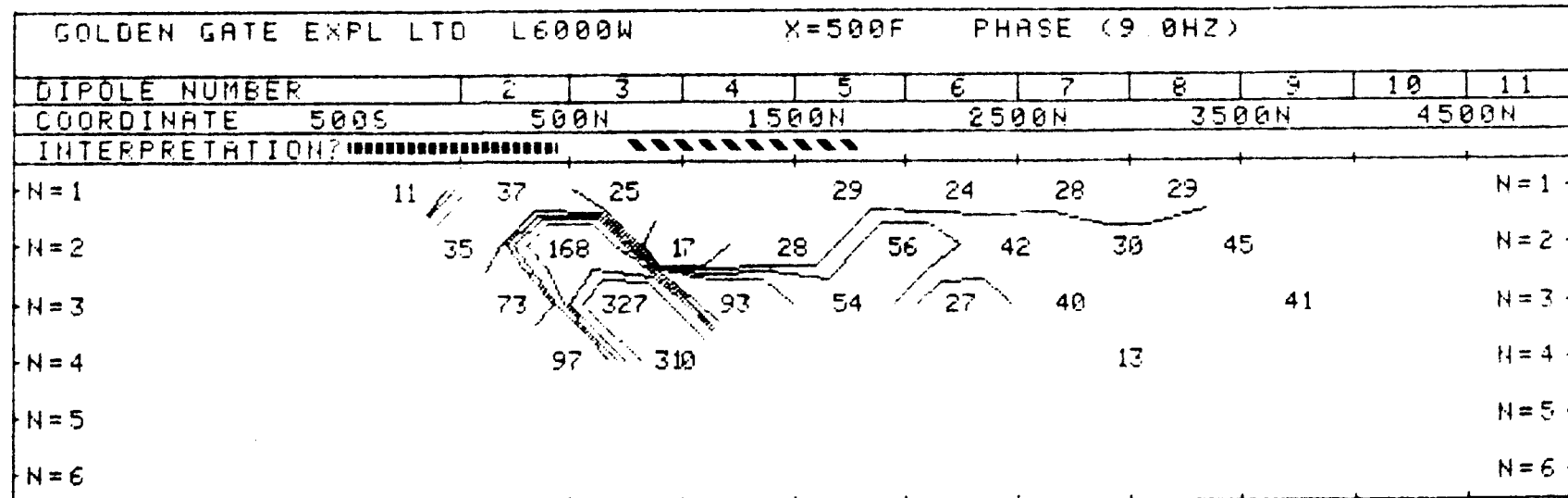
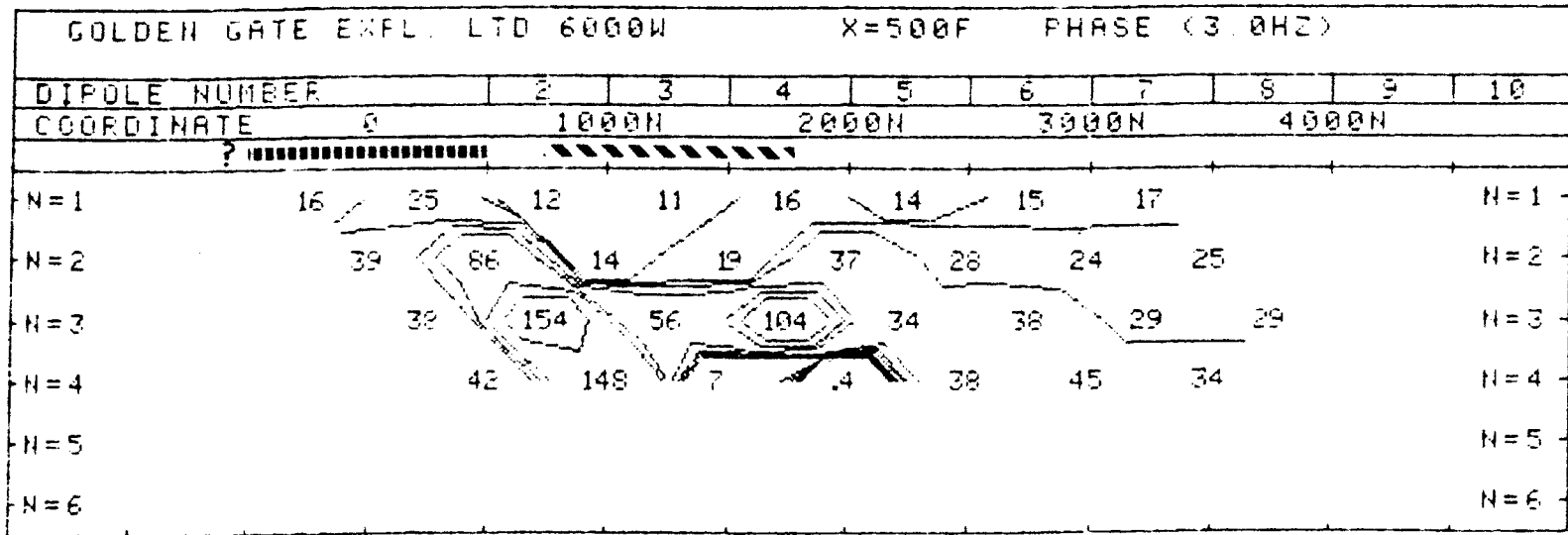
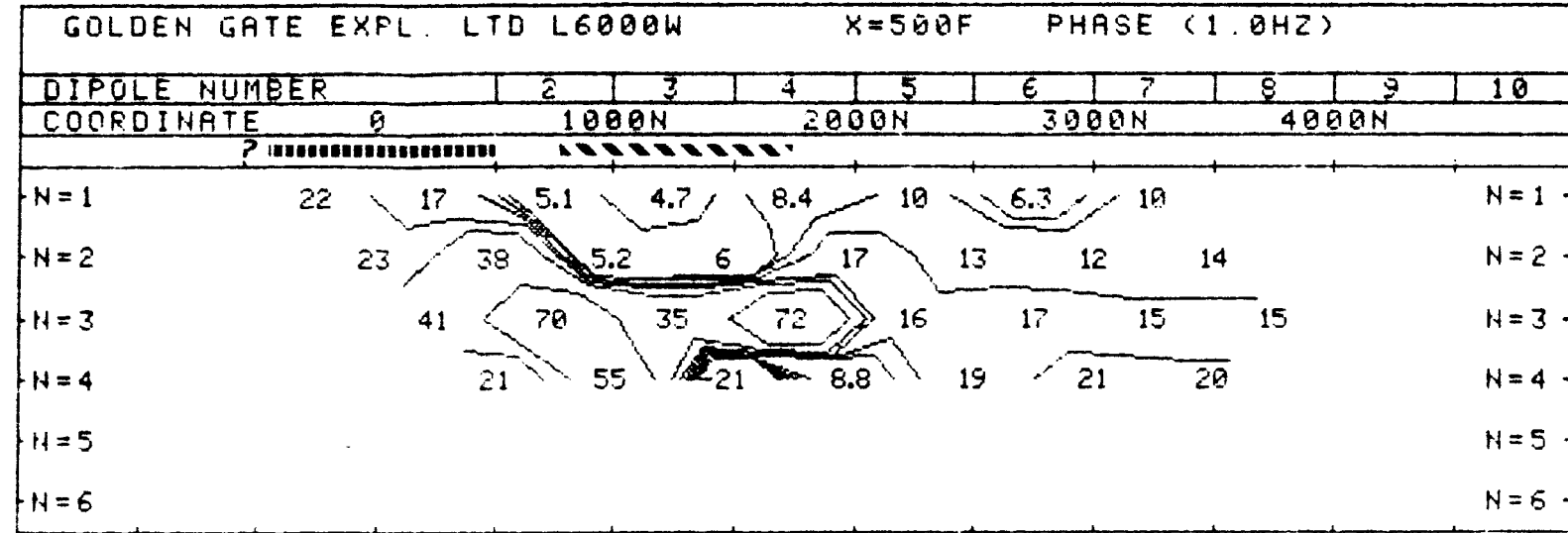
NOTE - CONTOURS
 AT LOGARITHMIC
 INTERVALS: 1, -1.5
 -2, -3, -5, -7.5, -10

Pac

DATE June 06/81

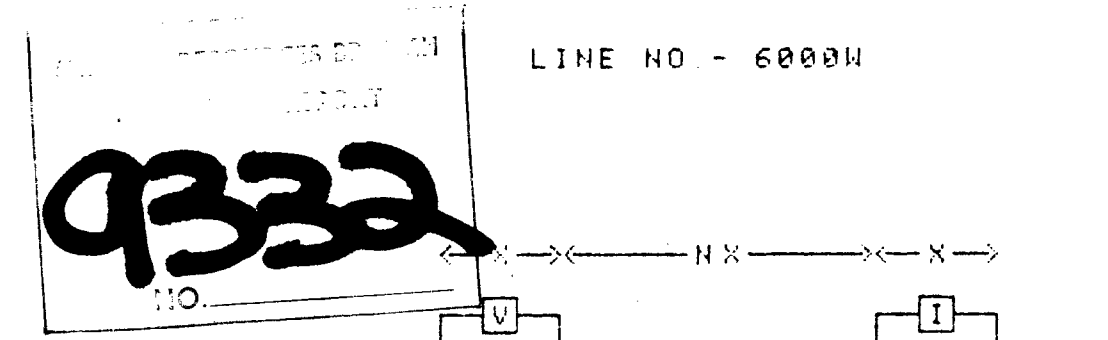
PHOENIX GEOPHYSICS LTD.

INDUCED POLARIZATION
 AND RESISTIVITY SURVEY



GOLDEN GATE EXPL. LTD.

AFTON PROPERTY
KAMLOOPS M.D.; KAMLOOPS B.C.



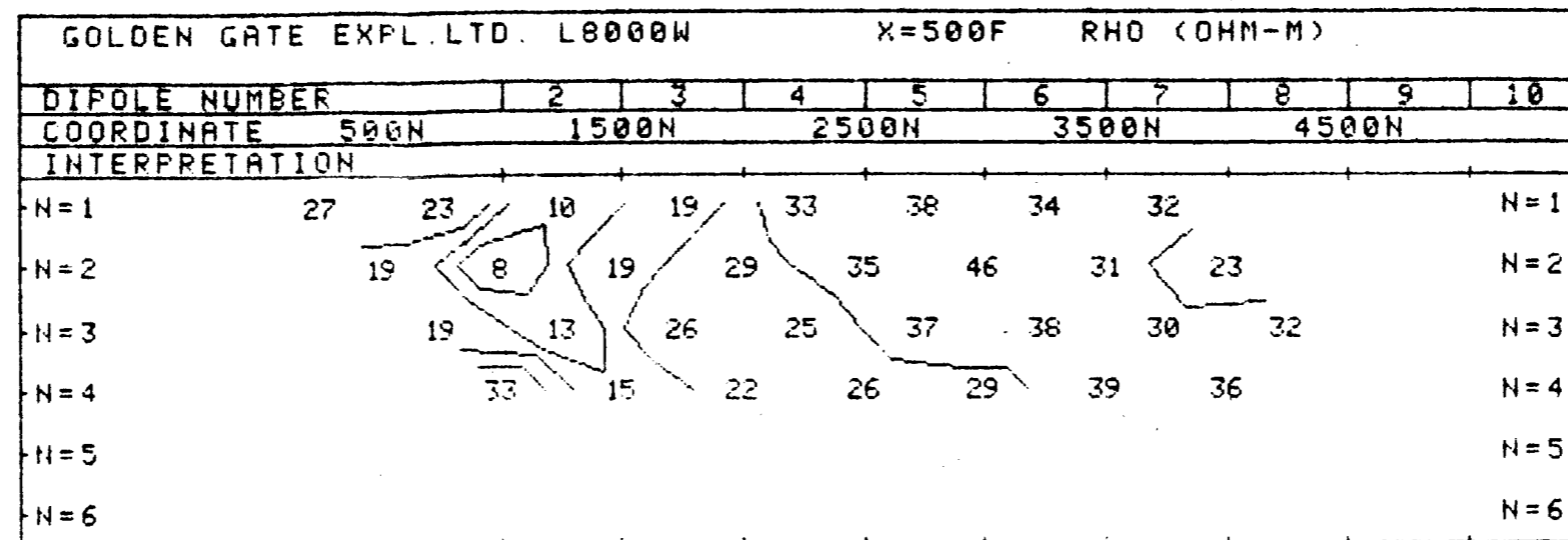
PLOTTING POINT X X=500FT
SURFACE PROJECTION OF ANOMALOUS ZONE
DEFINITE
PROBABLE
POSSIBLE

FREQUENCY (HERTZ) DATE SURVEYED: APRIL 1981
1.0HZ; 3.0HZ; 9.0HZ APPROVED

NOTE- CONTOURS AT LOGARITHMIC INTERVALS: 1, -1.5, -2, -3, -5, -7.5, -10
DATE JUNE 06/81

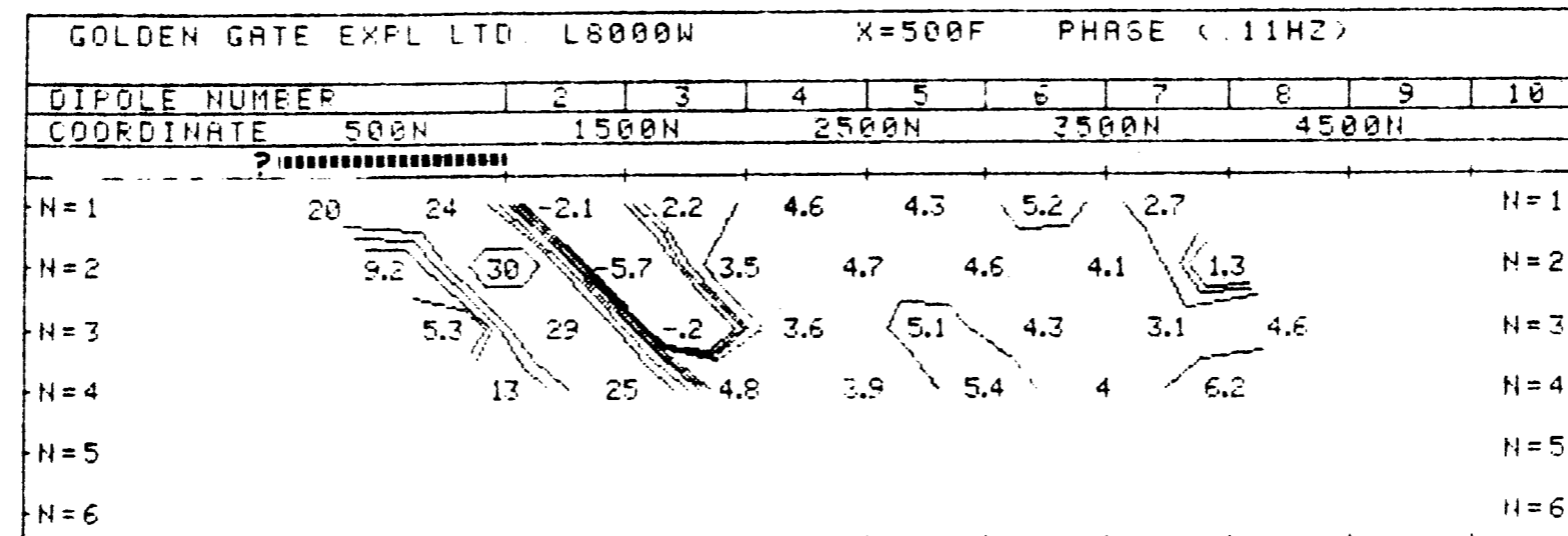
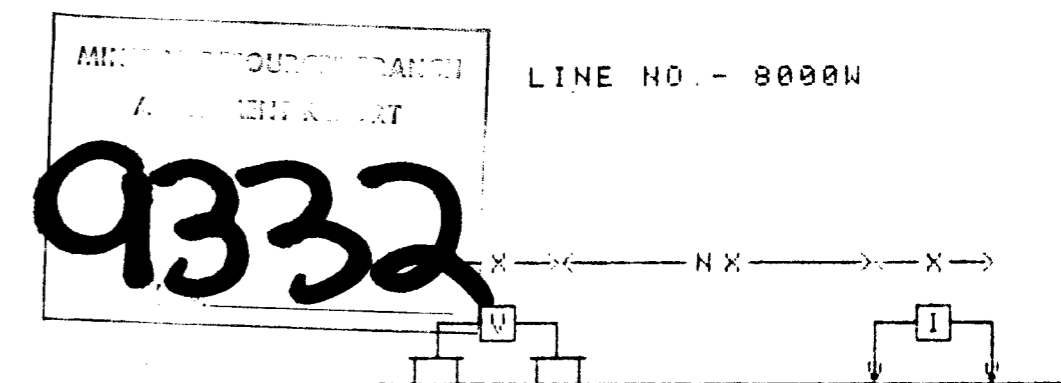
PHOENIX GEOPHYSICS LTD.

INDUCED POLARIZATION
AND RESISTIVITY SURVEY



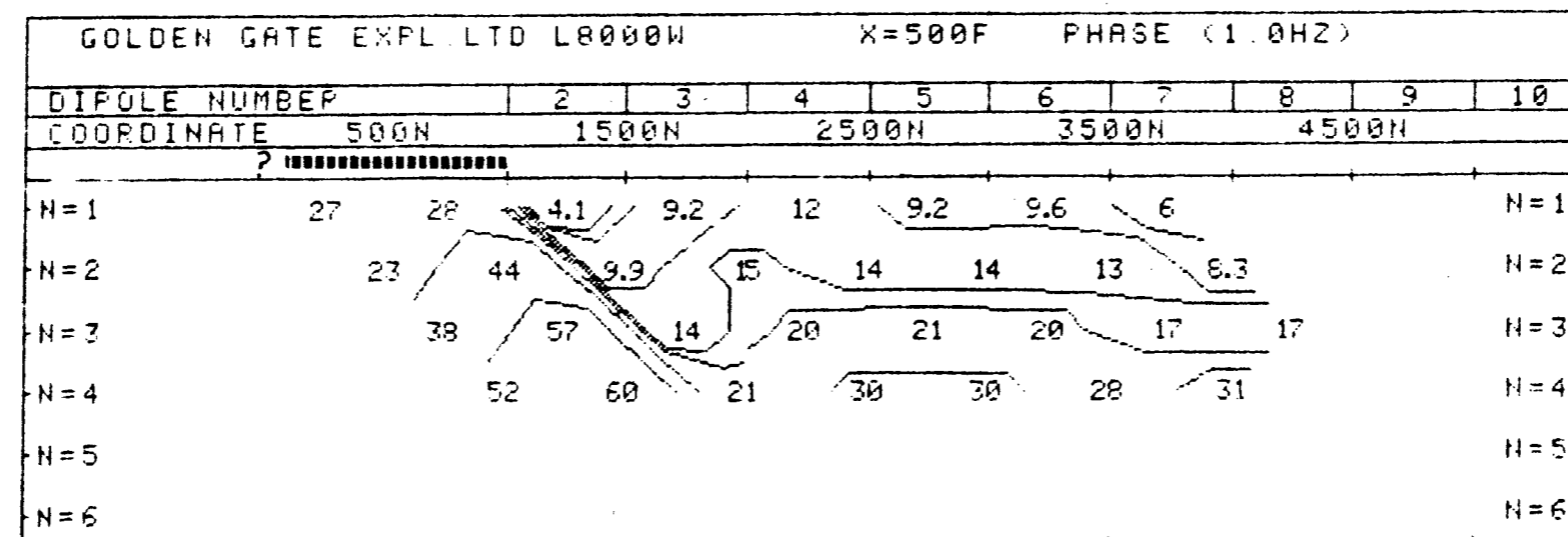
GOLDEN GATE EXPL. LTD.

AFTON PROPERTY
KAMLOOPS M.D. / KAMLOOPS B.C.



PLOTING POINT X X=500FT
SURFACE PROJECTION OF ANOMALOUS ZONE

DEFINITE
PROBABLE
POSSIBLE



FREQUENCY (HERTZ) 0.11HZ; 1.0HZ
DATE SURVEYED: APRIL 1981

NOTE- CONTOURS AT LOGARITHMIC INTERVALS 1, -1.5, -2, -3, -5, -7, 5, -10

APPROVED
PAC
DATE JUNE 06/81

PHOENIX GEOPHYSICS LTD.

INDUCED POLARIZATION
AND RESISTIVITY SURVEY

PHOENIX GEOPHYSICS LIMITED
INDUCED POLARIZATION AND RESISTIVITY PLAN MAP



APPROVED: PAC
DATE: JUNE 08/91

NOTE: TO ACCOMPANY GEOPHYSICAL REPORT
FOR GOLDEN GATE EXPLORATIONS LTD.
ON THE AFTON PROPERTY, KAMLOOPS
AREA IN THE KAMLOOPS M.D., B.C. BY
PAUL R. CARTWRIGHT, B.Sc., GEOPHYSICIST - DATED JUNE 1991

MINERAL PROSPECTING
ASSESSMENT REPORT
9332
NO. _____

GOLDEN GATE EXPLORATIONS LTD
AFTON PROPERTY
KAMLOOPS M.D., B.C.
PIBASE INDUCED POLARIZATION SURVEY

SURFACE PROJECTION OF
ANOMALOUS ZONES:
DEFINITE
PROBABLE
POSSIBLE

PHOENIX GEOPHYSICS LTD
DATE: APRIL 1991
SCALE: 1"=400'
N.T.S. 92 J/IOE