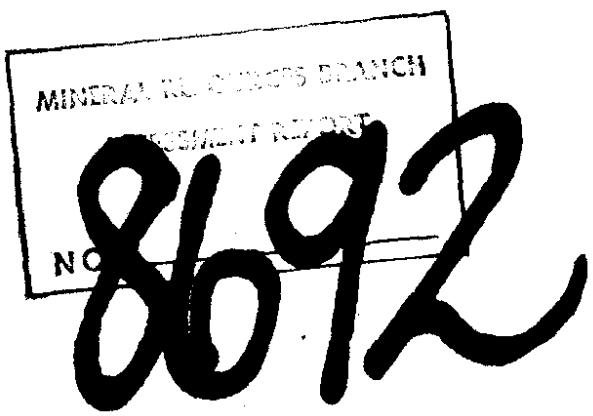
IP SURVEY REPORT

PRIME, HG 1, HG 2, HG 6 FR CLAIMS

SIMILKAMEEN MINING DIVISION



By

H. Limion

October 15, 1980

LOCATION:	40 kilometers north of Princeton, B.C. Latitude 49 44' Longitude 120 30' N.T.S. 92 H/9W, 16W.
CLAIMS OWNED BY:	Piper Petroleums Limited, Edward Mullin, W. Stevens, Newmont Exploration of Canada Limited
WORK DONE BY:	Newmont Exploration of Canada Limited
WORK DONE BETWEEN:	Sept. 4, 1980 and Sept. 24, 1980

TABLE OF CONTENTS

APPENDIX I

LIST OF ILLUSTRATIONS

LOCATION, ACCESS, TOPOGRAPHY

The Prime and HG claims are located in the Thompson Plateau of south-central British Columbia. The claims are centred approximately 4 kilometers south of Missezula Lake and are bordered to the west by Summers Creek. The property spans N.T.S. sheets 92 H/9 W and 92 H/16 W (49° 44' latitude, 120° 30' longitude).

Access is by the Missezula Lake road which branches off Highway 5, 8 kilometers north of Princeton, B.C. The distance off Missezula Lake from Highway 5 is 30 kilometers over a good but winding gravel road. The HG 1 and Prime claims can be reached by a 3 kilometer 4-wheel-drive road that branches to the east from the main road about 1.5 kilometers south of Missezula Lake. The road ends approximately 400 meters north of the HG 1 claim.

The terrain on the Prime and HG claims varies from the steeply incised Summers Creek valley on the western border (slopes up to 45°) to gently rolling hills towards the east. Elevations vary from 975 meters (3200') ASL at the valley floor to 1550 meters (5100') ASL near the east-central part of the claims. The property is forested with jackpine and fir, with lesser spruce and deciduous types.

HISTORY

The Prime, Prime 1 and Prime 2 claims are owned by Piper Petroleums Limited. The claims cover what was previously known as the "Primer Group" on which occur copper showings in fractured and altered volcanics and quartz-deficient intrusives of the Nicola Group.

A similar showing was found on the claim boundary between the Prime and HG 1 claims by Ed Mullin in 1979.

CLAIMS

The Prime and HG claims are recorded in the

Similkameen Mining Division. The work was done on portions of the Prime, HG 1, HG 2 and HG 6 Fr claims.

GEOLOGY

The Prime and HG claims are underlain by an assemblage of intermediate volcanic and quartz-deficient intrusive rocks of the Nicola Group. Large scale faulting played a major structural role in the area and may have been conducive to copper mineralization.

SUMMARY OF WORK

A three array IP survey was carried out over a portion of the claims.

The IP chargeability revealed an anomalously high zone of IP chargeability.

A total of 9.8 km of IP work was done.

IP SPECIFICATIONS

The IP work was carried out with rental equipment from Scintrex, Limited. A 2.5 kw transmitter system working on a 2 sec - 2 sec - 2 sec - 2 sec cycle provided the input power.

The IPR-8 receiver in the 3 channel mode provided the received signal. The M32 channel was plotted on the accompanying maps. Specifications for the instrument are provided in Appendix I.

The three array method was used for the survey. A dipole spacing of 80m was used on the survey, with n = 1 and 2. The current electrode was always north of the potential electrodes. On line 1+50E, a shorter dipole spacing of 40m was attempted in order to seek better resolution.

IP DATA PRESENTATION AND INTERPRETATION

Pseudo sections of IP chargeability and resistivity were prepared, and they accompany this report. Plans for the IP chargeability for n = 1 and n = 2 were also plotted.

A review of the contoured maps reveals a semi-circular anomaly pattern, with the diameter of the circle falling along line 1W. This leads to the observation that the anomaly is open to the west, but closed in the other direction.

On a broad scale, then, we can select one of the chargeability contours to divide "mineralized" from "non-mineralized" rock. On the n = 1 chargeability map, the 8 millisec contour line may be suitable and appears to be geologically feasible. Highs and lows within that contour may reflect changes in chargeable mineral, or changes in non-chargeable overburden depth.

CONCLUSIONS

IP work on the property has revealed a mineral zoning that may have exploration significance. The mineralized zone is open to the west.

Drilling, and analysis of the core for total sulphide content, is the best way to ascertain the cause of the mineralization and the reason for variations in chargeability.

NEWMONT EXPLORATION OF CANADA LTD.		
PRIME-HG CLAIMS - INDEX MAP		
SCALE 1:50,000	LOCATION 92H/9W, 16W	DATE OCT. 15, 1980
SURVEY BY JN	DRAWN BY JG	NO. FIGURE 1

H. LIMION

STATEMENT OF QUALIFICATIONS

I, Heikki Limion, received my B.A.Sc degree in Engineering Science (Geophysics Option) from the University of Toronto in 1965.

I spent two summers in geophysical field work; one with Hudson's Bay Oil and Gas, and one with INCo exploration.

In 1965-66 I worked for one year with Hudson's Bay Oil & Gas as a Junior Geophysicist in seismic field work.

From 1967-1976 I worked with INCo Exploration, on ground and airborne geophysical surveys. I was in charge of airborne geophysical operations for four years, and worked on research and development of airborne geophysical systems. I conducted ground geophysical surveys in Canada, U.S.A., and Brazil.

In 1977 and 1978 I was the head of the geophysics section in the Kenya Department of Mines and Geology. During this time, I was under contract to CIDA (the Canadian International Development Agency).

Since the beginning of 1979, I have held the position of Chief Geophysicist of Newmont Exploration of Canada Limited.

I am a member of the Society of Exploration Geophysicists, the Association of Professional Engineers of Ontario, the Prospectors and Developers Association.

H. Limion

I, Heikki Limion, do hereby certify that I supervised the work described in this report.

H. Limion

H. Limion - P. Eng
Chief Geophysicist
Newmont Exploration of Canada Ltd

STATEMENT OF COSTS

Personnel	Dates (1980)	Days Worked	Daily Wage	Cost
Instrument Operator	Sept 4 - 22	19	$77.00	$1,463
Geophysical Assistant	Sept 4 - 21	18	62.50	1,125
Geophysical Assistant & Linecutter	Aug 26 - 30, Sept 4 - 24	26	58.00	1,508
Geophysical Assistant & Linecutter	Aug 26 - 30, Sept 4 - 21	23	58.00	1,334
Senior Geophysicist	Sept 29 - 30	2	160.00	320
				5,750
Motel Accommodations	58 days @ $15.00/day			870
Food	61 days @ $16.00/day			976
4WD Vehicle and Fuel	23 days @ $35.00/day			805
Instrument Rental	Scintrex IPR-8 Analogue Time Domain Receiver and 2.5 KW Transmitter			4,998
Report Typing, Printing, etc.				100
			Total Cost	$13,499

Cost Allocation:

Prime Claim	$6,466
HG 1 and HG 2 Claims	6,115
HG 6 Fr	918

SCINTREX

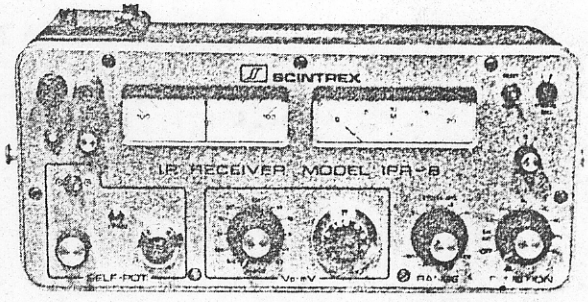
induced polarization time domain receiver

IPR-8

features

- Up to 20 standard selectable integration channels
- 4, 3 or 6 channels simultaneously integrated
- Automatic memory register storage for up to 6 channels
- Reads directly in Vs/Vp normalized for channel width and number of pulses selected
- Automatic programmer for 2, 4 and 8 cycles
- Multiple channel readouts normalized for standard decay curve shape, providing immediate field indication of anomalous curve shape
- Synchronous gating to reduce mistriggering by noise
- Automatic self-potential tracking, calibrated manual S.P. bucking for S.P. measurements
- Useable with any time domain transmitter
- High input impedance
- Built in external circuit tester
- Excellent power line noise rejection
- Latest COS/MOS circuitry permits long battery life using dry cells
- Very lightweight

The IPR-8 Time Domain Induced Polarization receiver provides a maximum of transient curve shape information in a remarkably small and flexible format. Many calculations are automatically performed, including normalization for channel width, pulse number and standard decay curve form. The use of state-of-the-art COS/MOS circuitry permits long battery life using universally available D cells.

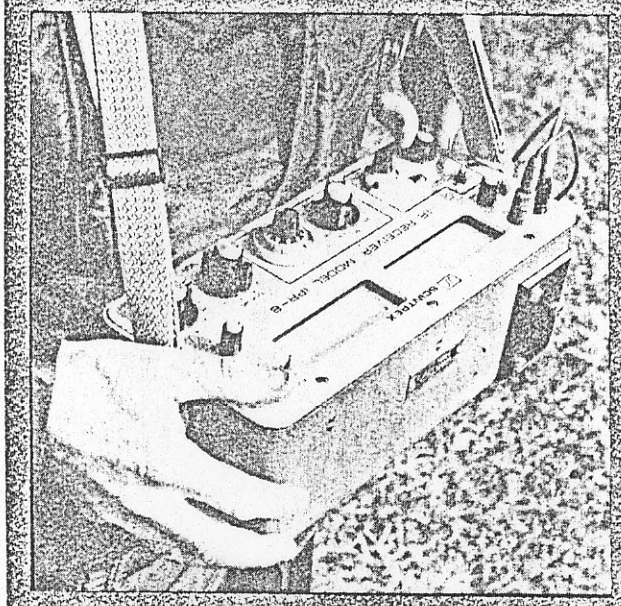


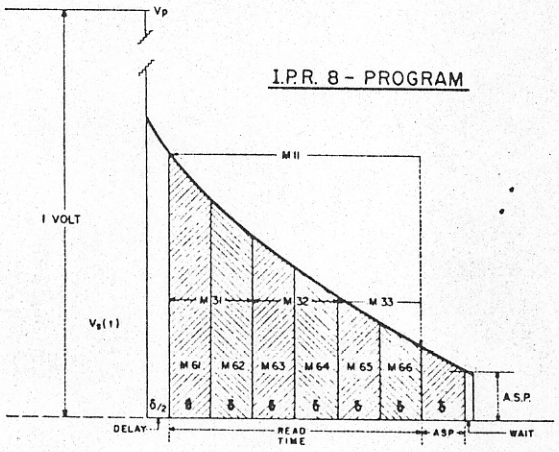
SCINTREX LIMITED
222 Snidercroft Rd.,
Concord, Ontario, Canada, L4K 1B5

TECHNICAL DESCRIPTION OF IPR-8 RECEIVER

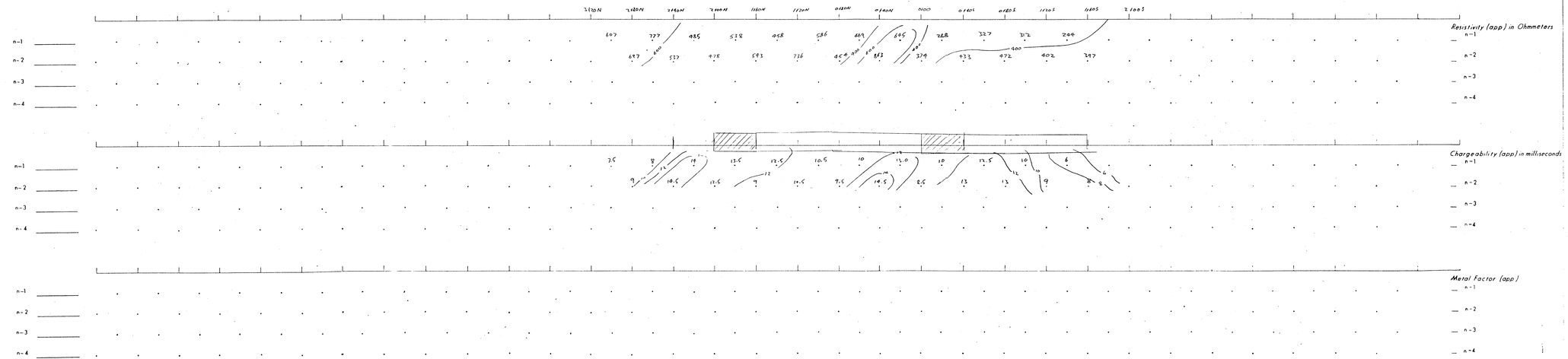
SCINTREX

Input Impedance	3.3 megohms
50 or 60 Hz Powerline Rejection	-50 db (300x)
Primary Voltage Range	300 microvolts to 40 volts in 10 ranges
Accuracy of Vp Measurement	±3% of full scale
Vs/Vp Range	2% and 10% (20 and 100 per mil) full scale
Vs/Vp Accuracy	3% of full scale
Primary SP Buckout Range	± 1 volt
Automatic SP Tracking Range	6 x Vp, maximum ± 1 volt
Continuity Meter Reading	0 - 500 k ohms
Required Stability of Transmitter Timing	Need only exceed measuring program selected (1 second or 2 seconds)
Operating Temperature Range	-30°C to + 60°C
Dimensions	31 cm x 15 cm x 17 cm
Weight, Complete With Lid and Batteries	3.6 kg
Power Supply	4 D cells; estimated battery life 2 months intermittent duty at 25°C





δ = 130 ms (FOR 1 SECOND PROGRAM)
δ = 260 ms (FOR 2 SECOND PROGRAM)



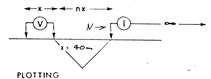
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

8692

GRID. PRIME, M61, M62 CLAIMS

LINE NO.- 1150E

ELECTRODE CONFIGURATION



PLOTTING POINT
n = 1,2,3 & 4
SURFACE PROJECTION OF ANOMALOUS ZONES

DATE SURVEYED: Sept 11 1980
APPROVED:
DATE:
SCALE: Horiz. = 200'
FIGURE NO:

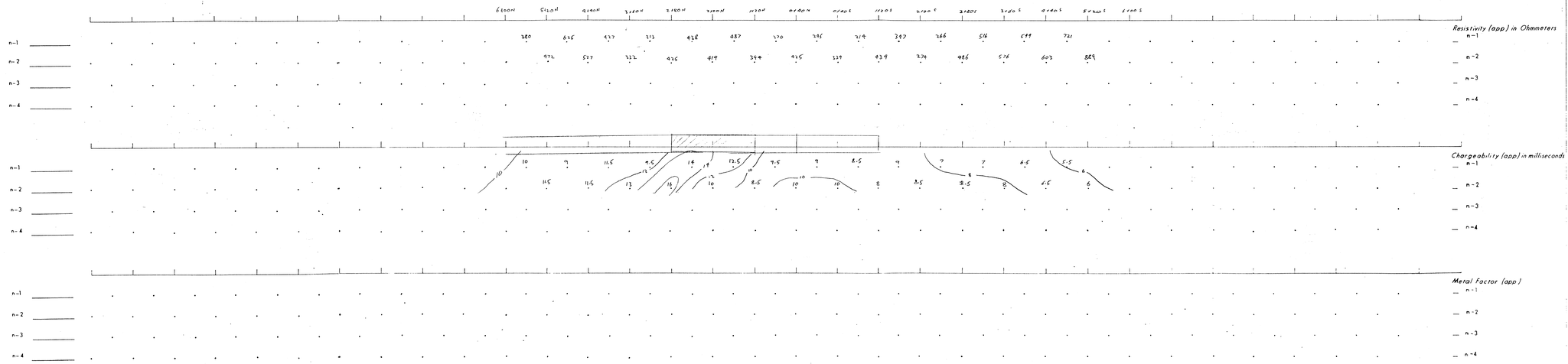
INDUCED POLARIZATION AND RESISTIVITY SURVEY

SURVEYED BY: David Lenk

LINE NO.

N75 82H/9W-1182

Figure 2



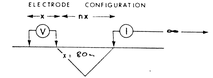
MINERAL RESOURCES BR... ASSESSMENT R...

8692

GRID. PRIME, HG1, HG2 CLAIMS

LINE NO.- 1100N

ELECTRODE CONFIGURATION



PLOTTING POINT
n = 1,2,3 & 4
SURFACE PROJECTION OF ANOMALOUS ZONES

DATE SURVEYED: 10/80N/80
APPROVED:
DATE:
SCALE: 1:2500 Remarks
FIGURE NO.:

INDUCED POLARIZATION AND RESISTIVITY SURVEY

SURVEYED BY: D.J. Cook

NTS 92H/8W/NE

LINE NO.

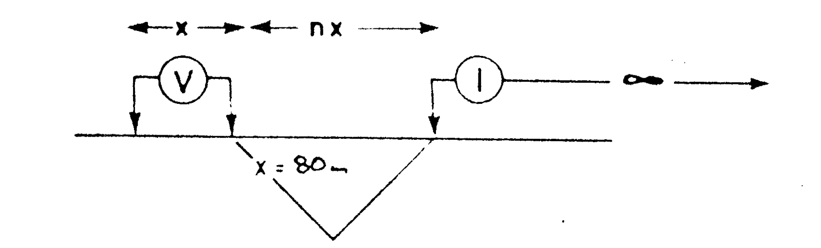
Figure 3

8692

GRID. PRIME, HG1, HG2 CLAIMS

LINE NO.- 0+00

ELECTRODE CONFIGURATION



PLOTTING POINT n — 1,2,3 & 4

SURFACE PROJECTION OF ANOMALOUS ZONES

DATE SURVEYED: 18/oct/80

APPROVED:

DATE:

SCALE: 1 inch 80 meters

FIGURE NO.

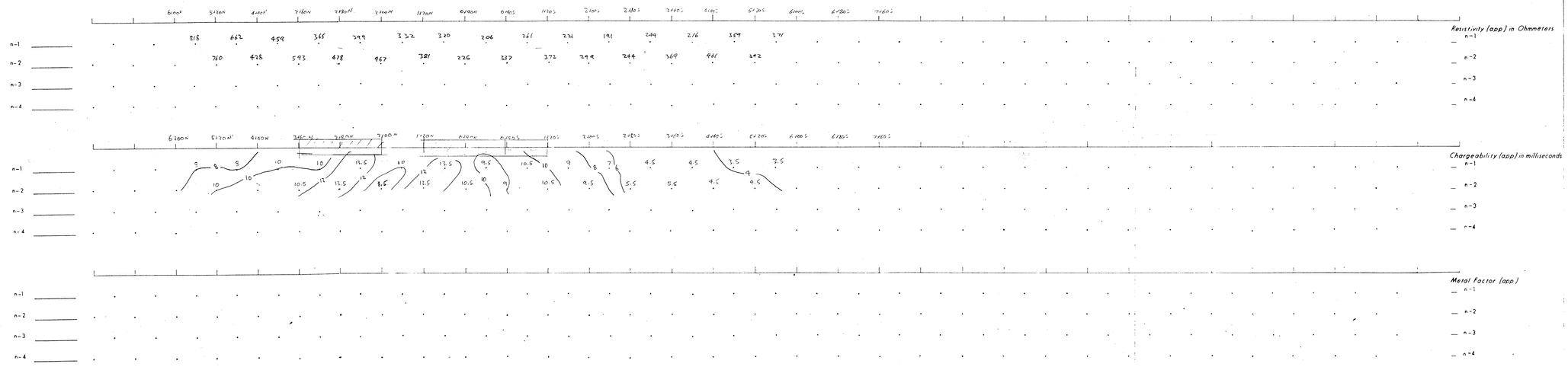
INDUCED POLARIZATION AND RESISTIVITY SURVEY

SURVEYED BY: David Leask

NTS 92H/9W 8/16W

LINE NO.

Figure 4

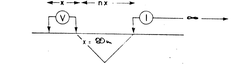


NO. 8692

GRID. Prime, HG1, HG2 CLAIMS

LINE NO.- 1100 E

ELECTRODE CONFIGURATION



PLOTTING POINT
n = 1,2,3 & 4
SURFACE PROJECTION OF ANOMALOUS ZONES

DATE SURVEYED: Sept 9 1980
APPROVED:
DATE:
SCALE: 1 inch = 80m
FIGURE NO.

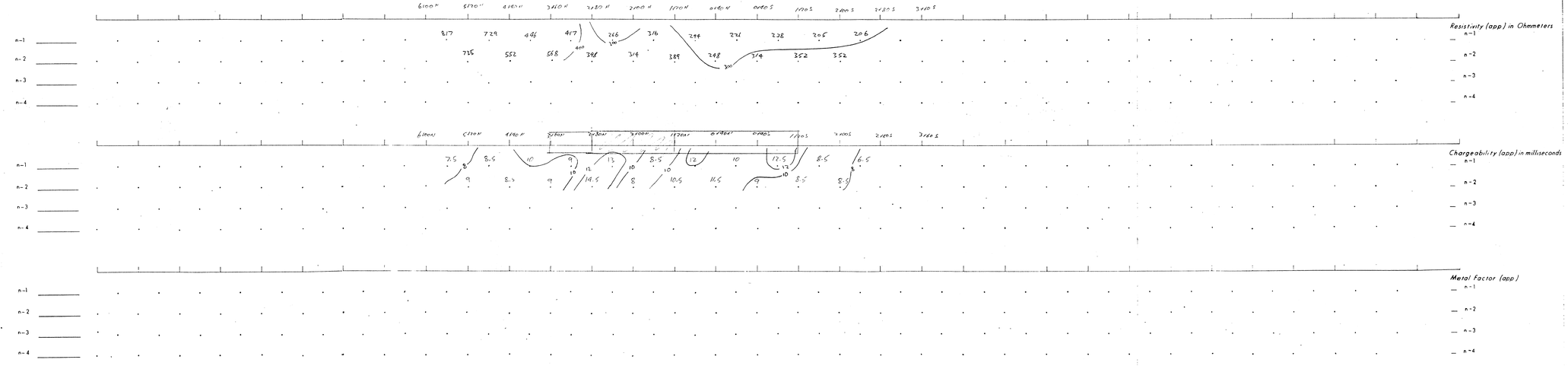
INDUCED POLARIZATION AND RESISTIVITY SURVEY

SURVEYED BY: David Leask

LINE NO.

ATS 0214/SN E/am

Figure 3



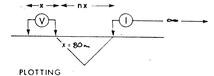
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

8692

GRID. Prime, HG1, HG2 CLAIMS

LINE NO. 1150 E

ELECTRODE CONFIGURATION



PLOTTING POINT
n = 1,2,3 & 4

SURFACE PROJECTION OF ANOMALOUS ZONES

DATE SURVEYED: Sept 10 1980
APPROVED:
DATE:
SCALE: 1 inch = 80m
FIGURE NO.

INDUCED POLARIZATION AND RESISTIVITY SURVEY

SURVEYED BY: David Leask

NTS 92H/3W/16W

LINE NO.

Figure 6

8692

GRID. PRIME HG1, HG2 CLAIMS

LINE NO.– 200E

ELECTRODE CONFIGURATION

x nx

V I ∞

x = 80m

PLOTTING POINT

n — 1,2,3 & 4

SURFACE PROJECTION OF ANOMALOUS ZONES

DATE SURVEYED: Sept 12 1980

APPROVED:

DATE:

SCALE: 1 inch = 80m

FIGURE NO.

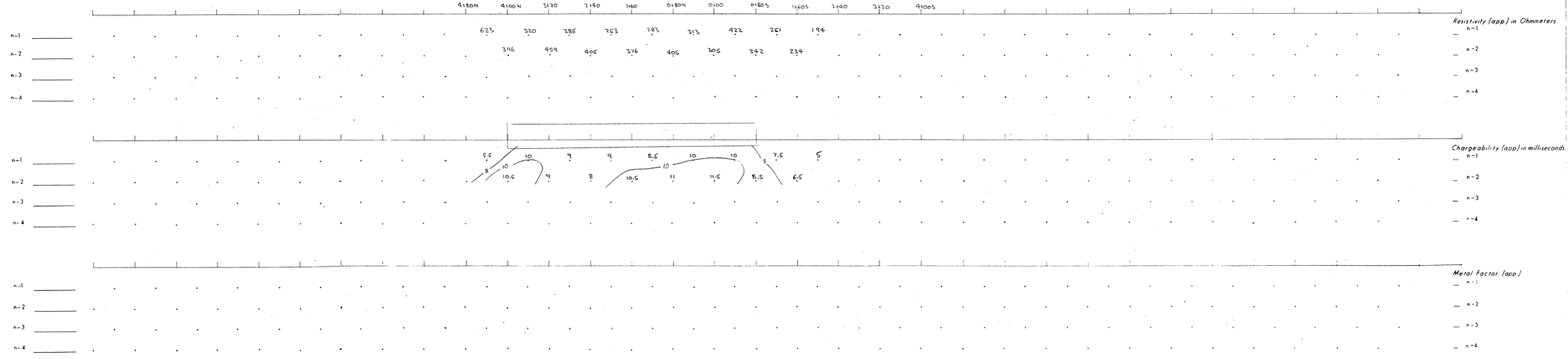
INDUCED POLARIZATION AND RESISTIVITY SURVEY

SURVEYED BY: David Leek

LINE NO.

NTS 92H/9W&16W

Figure 7

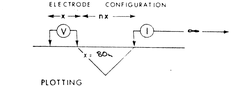


8692

GRID. Boine, NG1, NG2 CLAIMS

LINE NO. - 2150 E

ELECTRODE CONFIGURATION



PLOTTING POINT
n - 1,2,3 & 4
SURFACE PROJECTION OF ANOMALOUS ZONE

DATE SURVEYED: Sept. 19 1980
APPROVED:
DATE:
SCALE: 1inch = 80m
FIGURE NO.:

INDUCED POLARIZATION AND RESISTIVITY SURVEY

SURVEYED BY: D Leask

NTS 92H/3W/13W

LINE NO.

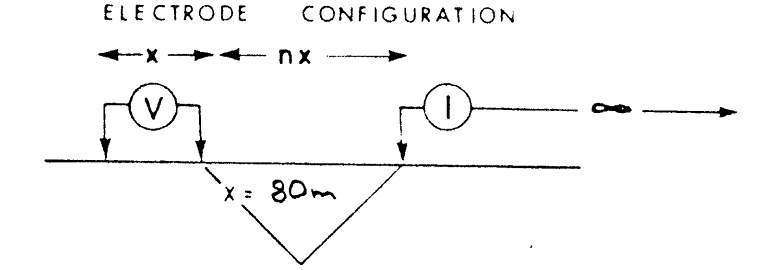
Figure 8

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 8692

GRID. PRIME HG1 HG2 CLAIMS

LINE NO. – 3+00 E

ELECTRODE CONFIGURATION



PLOTTING POINT
n — 1,2,3 & 4

SURFACE PROJECTION OF ANOMALOUS ZONES

DATE SURVEYED: Sept 15 1980
APPROVED:
DATE:
SCALE: 1 inch : 80 m
FIGURE NO.

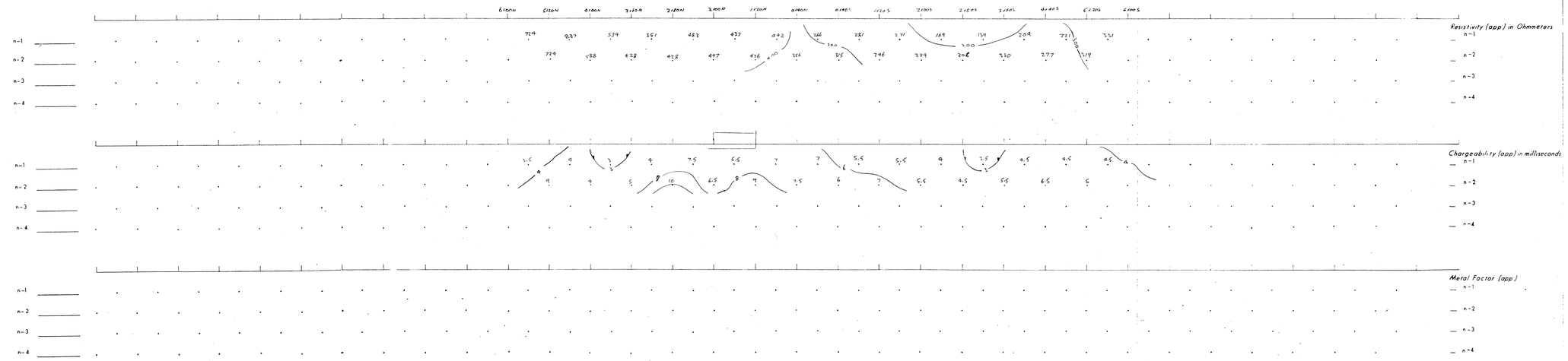
INDUCED POLARIZATION AND RESISTIVITY SURVEY

SURVEYED BY: Dave Leask

LINE NO.

NTS 92H/9W & 16W

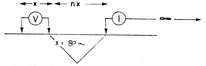
Figure 9



GRID. Prime, Ho 1, Ho 2 CLAIMS

LINE NO. - 9400 E

ELECTRODE CONFIGURATION



PLOTTING POINT
n = 1,2,3 & 4
SURFACE PROJECTION OF ANOMALOUS ZONES

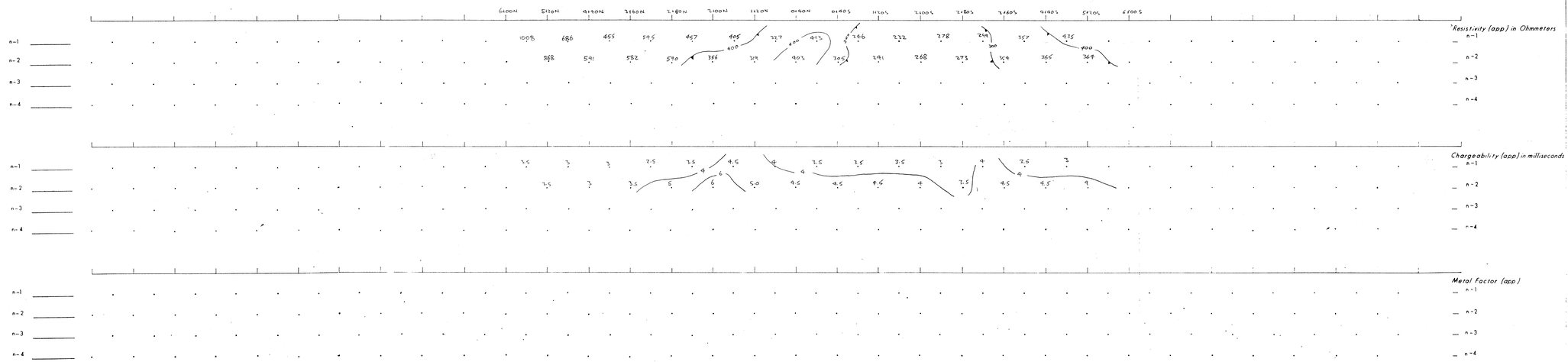
DATE SURVEYED: Sept 16, 1980
APPROVED:
DATE:
SCALE: 1 inch = 400 metres
FIGURE NO.

INDUCED POLARIZATION AND RESISTIVITY SURVEY

SURVEYED BY: D. A. Cook

NTS 92H/8W/8E

LINE NO.

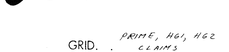


8692

GRID. PRIME, HG1, HG2 CLAIMS

LINE NO.- 5100E

ELECTRODE CONFIGURATION



PLOTTING POINT
n = 1,2,3 & 4

SURFACE PROJECTION OF ANOMALOUS ZONES

DATE SURVEYED: Sept 17/1980

APPROVED:

DATE:

SCALE: 1inch = 80 m

FIGURE NO.

INDUCED POLARIZATION AND RESISTIVITY SURVEY

SURVEYED BY: David Lamb

NTS 92H/3W/14E

LINE NO.

Figure 11

PRIME CLAIMS

PRIME 2E HG6 Fr. HG2 2E HG1 LCP HG1 1E PRIME 3E

ROAD

6+00N
4+00N
2+00N
0+00
2+00S
4+00S
6+00S

1W 0+00 1E 2E 3E 4E 5E

N

Scale 1:2500

0 50m 100m 150m

■ Claim Post

NEWMONT EXPLORATION OF CANADA LTD

PRIME, HG1, HG2 CLAIMS
IP SURVEY

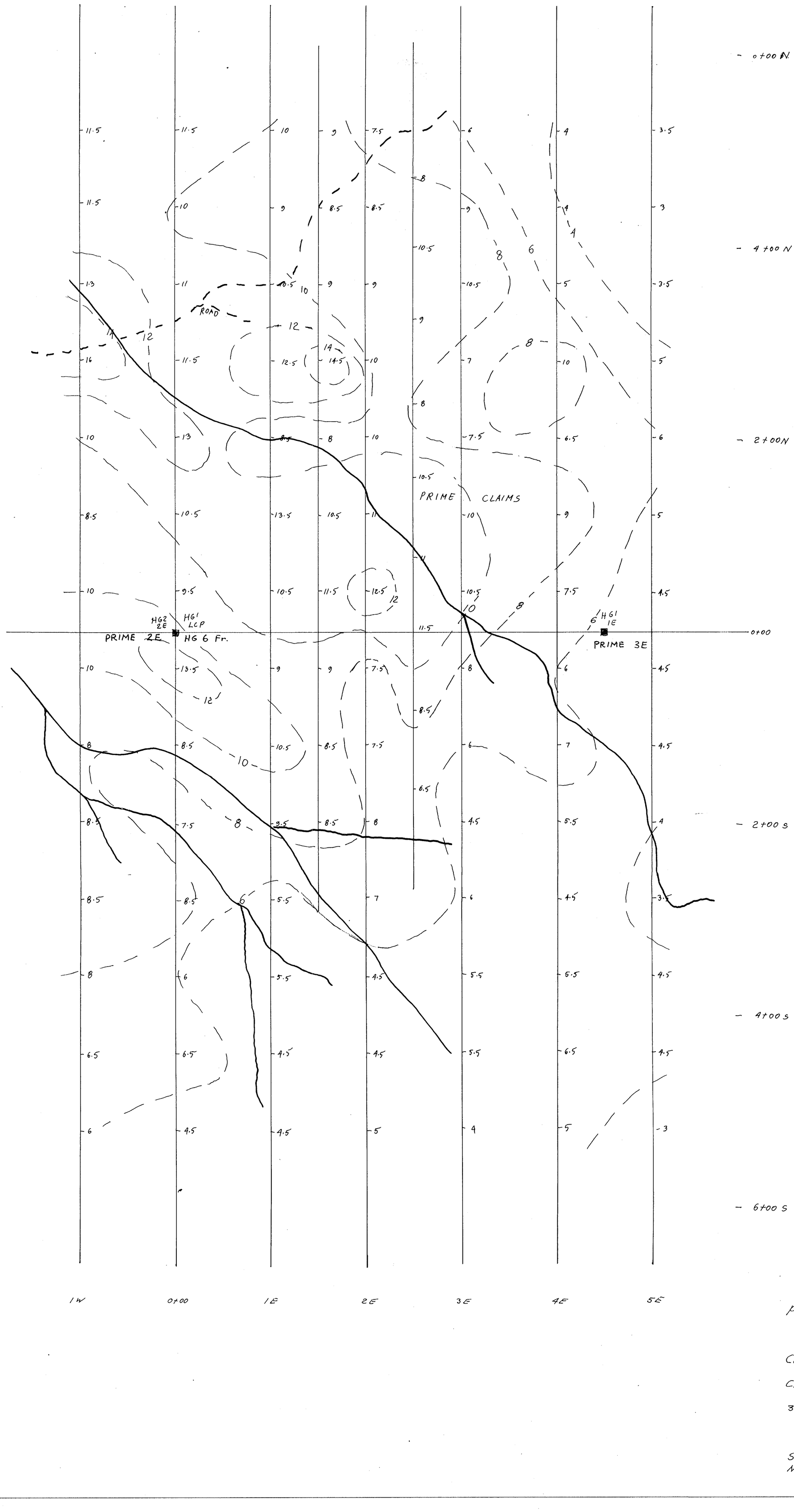
Contours of Chargeability at 2 msec contour interval
Chargeability is M32 chargeability as measured on Scintrex IPR8 3 Array a = 80m n = 1

Similkameen Mining District B.C.
NTS 92 H/9W & 16W Sept, Oct 1980 H.L.

Figure 12

W Lemon

Figure 13



8692

NEWMONT EXPLORATION OF CANADA LTD

PRIME, HG1, HG2 CLAIMS

IP SURVEY

Contours of Chargeability at 2 msec contour interval
Chargeability is M3E chargeability as measured on Scintrex IPR8
3 Array a = 80m n = 2

Similkameen Mining District B.C.
NTS 92H/9W & 16W Sept, Oct 1980 H.L.

Figure 13

H Limori