

2444

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2444 MAP

GEOPHYSICAL REPORT
ON THE
BOT-BRENDA PROPERTY, NR. SMITHERS, B.C.
FOR
MANEX MINING LIMITED (N.P.L.)
93L/10E

September 5th - September 25th
1969

Longitude 126°00'W
Latitude 54°00'N

PREPARED BY:
R. CAVEN
BARRINGER RESEARCH LIMITED
304 CARLINGVIEW DRIVE
REXDALE, ONTARIO

NOVEMBER 1969

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	#10 Mineral Outcrops	1" = 1500'

INTRODUCTION

During the month of September, 1969, Barringer Research Limited completed an induced polarization/ resistivity survey on the Bot-Brenda group of claims, near Smithers, Omineca Mining Division, British Columbia. The claims are held by Manex Mining Limited. The scope of the work consisted of 10.6 line-miles of double profile traverses and detail work. This work was carried out from September 5th to September 25th, 1969, inclusive, by Barringer geophysicist Roger Cavén, P. Eng.

Location and Access

The claims surveyed are situated approximately 2 miles S.E. of Deception Lake, and 4,000 feet above sea level, in the Omineca Mining Division, British Columbia.

Access to the property is from highway 16, east of Quick, by 12 miles of gravel and four-wheel drive vehicle road.

NTS map: Smithers 93L, with S.E. corner co-ordinates:
longitude $126^{\circ}00'W$, and latitude $54^{\circ}00'N$.

Property and Survey Control

The grid lines were cut in direction of $N 55^{\circ}E$ normal to the baseline $N 145^{\circ}E$, by personnel from Manex Mining Limited.

GEOLOGY

The property is located on the east side of a monzonite -diorite intrusive. Only a small part of the grid is on the intrusive. The intruded rocks consist of tuffs and andesites belonging to the Hazelton group. The volcanic beds appear to be dipping very steeply. In a few observed places the dip is approximately vertical, but it may be variable over the property. Mineralization has been observed in a few outcrops and was part of the reason for the induced polarization survey.

SURVEY AND EQUIPMENT

The work was carried out on a grid with lines 200-400 feet apart.

The induced polarization survey employed a Hunttec 7.5 kW pulse type transmitter and a Hunttec 200 series receiver, providing a current-on time of 1.5 seconds and a 400 millisecond measuring interval for secondary voltage. Readings were taken at 200 foot station intervals. The electrode array used was a pole - dipole with an 'a' spacing of 200 feet and $n = 1$ & 2 for a distance of 200 and 400 feet respectively between current and the near potential electrodes. For detail work the pole-dipole array was expanded to $n=3$ and 4 . The direction of traversing was grid west to grid east, with the potential dipole leading.

GEOFYSICS

General

The induced polarization and resistivity survey has revealed a variety of response pattern which can be related to the geology, the resistivity readings are seen to give some geologic definition while the location of chargeability highs are controlled to a certain extent by geology.

A ground magnetic survey undertaken by Manex Mining Limited features high values of the vertical component of the earth's magnetic field over parts of the intrusive and also to the east in the vicinity of a sharp change in elevation. No definite correlation exists between the induced polarization and the ground magnetic surveys, although the chargeability highs tend to occur in a magnetically inactive zone. Magnetite as a source of the chargeability high can therefore be discounted. An exception is the magnetic correlation on the doubtful anomaly on n=2 at L8N, 8W.

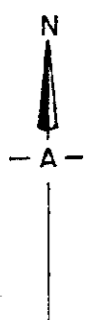
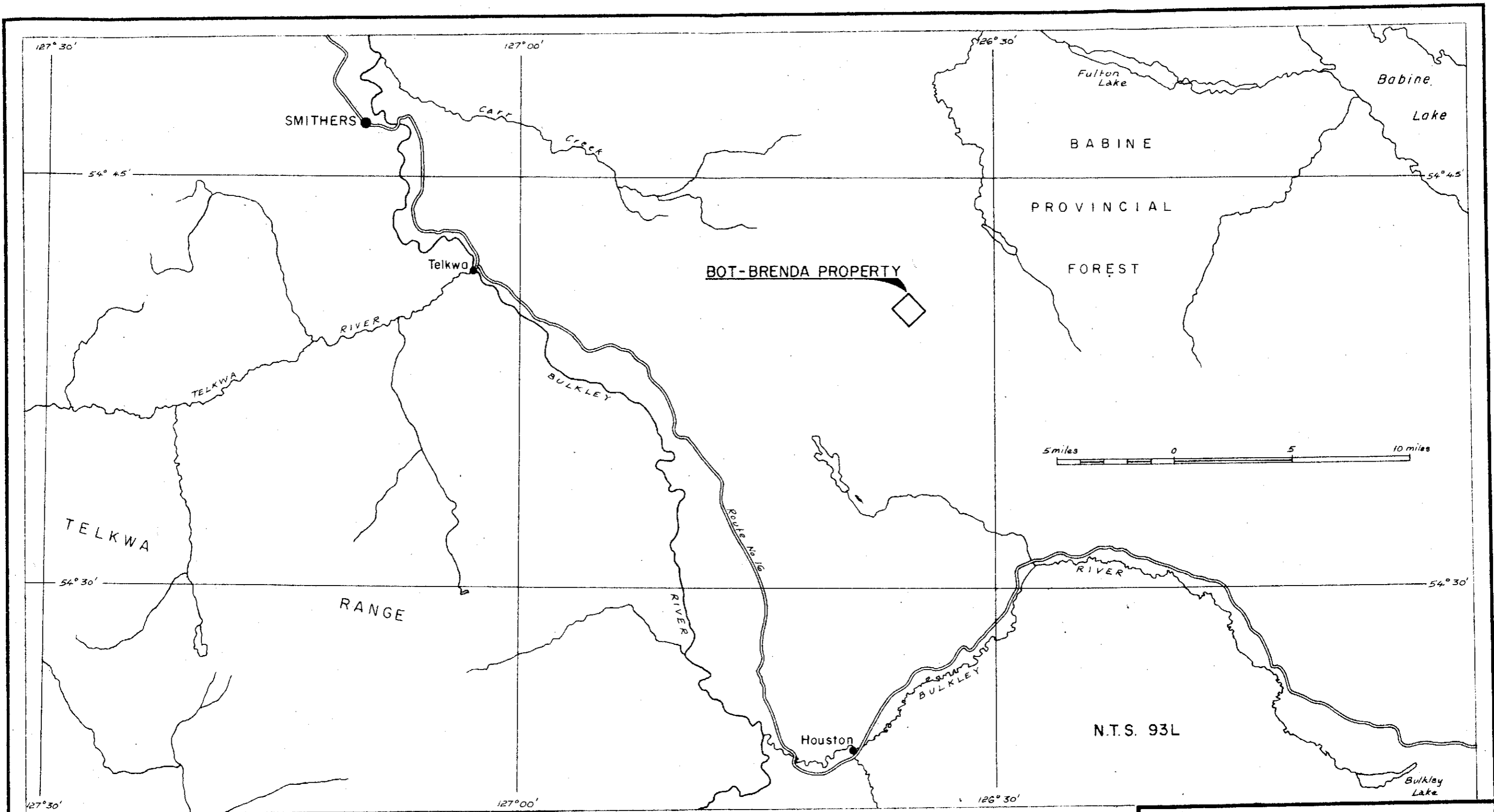
Resistivity

The apparent resistivity is generally high over the surveyed area, with values ranging from 200 to 9,500 ohm-metres. The highest values occur in the western corner of the claims group where the diorite intrusive outcrops, the 2000 ohm-metre resistivity contour approximately outlines the outcropping intrusive. Elsewhere on the property locally high values of apparent resistivity may be interpreted as tongues or sills of the intrusive. This view is supported by the geology.

Covered swampy areas are generally defined by low resistivity.

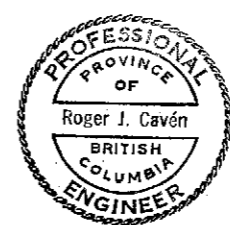
Chargeability

The most striking feature on the chargeability contour map (Dwg. 5-229-10) is the disconnected series of highs lying along the base line. These responses, generally 2 to 3 times background, are seen to lie over tuffs and diorite porphyry.



Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 2444 MAP #1

Roger Caven



Work undertaken by
BARRINGER RESEARCH LTD, Toronto, Canada.

MANEX MINING LIMITED (N.P.L.)		
BOT - BRENDA PROPERTY, SMITHERS, B.C.		
LOCALITY PLAN		
NOV. 1969	Scale 1:250,000	DWG. 5-229-7

Clearly these zones are mineralized. This is confirmed by the disseminated sulphides in tuffs, observed at L6S at the base line. Of additional interest is the copper noted in diorite porphyry on the northerly extent of zone 1.

Zones 1 and 2 are most likely part of one unit which has been offset by faulting. There is a reasonable correlation here between the geologic and anomalous trends. Zone 3 likely relates to 1 and 2 although this is less clear in the geology.

Fairly narrow, steeply dipping sources coming quite close to surface are suggested by the behaviour of the anomalous response on the various electrode arrays. In looking at the psuedo-sections (Dwg 5-224-14) it must be realized that the apparent dips to grid west of the bodies are for the most part an effect caused by electrode positioning. The increase in chargeabilities noted in the sections is indicative of a chargeable body continuing to depth.

Outside the main zones, scattered highs hold some residual interest, Generally however, these are of lower amplitude and often lack continuity in depth. Small sulphide occurrences having lower metallic contents are seen as a source of these highs. Given interesting values along the main zone however, these responses would warrant further attention. In this class of response are the higher values on L8S, grid west and the single high at L8N, 8W on the n=2 spacing.

CONCLUSIONS AND RECOMMENDATIONS

The induced polarization survey has shown that a band of high chargeabilities exists on the property. Although there is an association of high apparent resistivities this is not necessarily damaging since the observed mineralization occurs in a highly siliceous environment and may have been introduced in micro-fractures cutting through the bedding of the volcanics (personal communication by Mr. W. Sharp, Consulting Geologist). It was also observed that the anomalies increase in amplitude at depth, with the higher values towards the south end of the property.

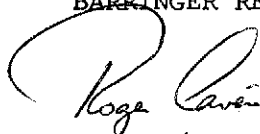
Although the sources of the induced polarization anomalies appear to be stronger or wider at depth they also are evident near surface.

To provide an assessment of the economic potential of these anomalies the following drillholes are recommended:

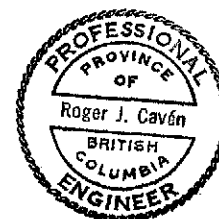
- Zone 1 Collar at Line 4N, station 2W, azimuth $N90^{\circ}E$, inclined 50° from the horizontal, length 350 feet.
- Zone 2 Collar at Line 8S, station 6+50W azimuth $N 55^{\circ} E$ (grid east), inclined 50° from the horizontal, length 400feet.
- Zone 3 Collar at Line 20S, station 3W, azimuth $N55^{\circ} E$, (grid east), inclined 45° from the horizontal, length 400 feet.

The above drilling programme is designed to test the various anomalies, and to serve as a basis for further work if the results so warrant.

BARRINGER RESEARCH LIMITED



R. Cavén, P. Eng
Geophysicist





BARRINGER RESEARCH LIMITED
 304 CARLINGVIEW DRIVE
 METROPOLITAN TORONTO
 REXDALE, ONTARIO, CANADA
 PHONE: 416-677-2491
 CABLE: BARESEARCH

November 28th, 1969

Manex Mining Limited (N.P.L)
 200-535 Thurlow Street
 Vancouver 5, B.C.

Gentlemen:

Re: The Bot-Brenda Group of Claims
Omineca Mining Division, B.C.

The following personnel were employed on the induced polarization survey on the above mentioned claims during the period September 5th to September 25th, 1969:

R. Caven - P. Eng, Geophysicist	Sept 5th - Sept 25th.
J. Johnston - Instrument Operator	Sept 5th - Sept 25th.
J. Hickman - Transmitter Operator	Sept 5th - Sept 25th.
E. Lee - Transmitter Operator	Sept 5th - Sept 6th.

Personnel supplied by Manex Mining Limited.

C. Taylor -	Sept 5th - Sept 25th
P. Hubert -	Sept 6th - Sept 23rd

Yours sincerely

BARRINGER RESEARCH LIMITED

Roger Caven, P. Eng.
 Geophysicist

RC:lh

Declared before me at the City
 of Vancouver, in the
 Province of British Columbia, this 19th
 day of May 1970, A.D.

SUB-MINING RECORDER

DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.
To Wit:

In the Matter of

The Bot-Brenda Group of Mineral Claims
on The Bot-Brenda Property, Omineca
Mining Division.

I, Roger Caven

of Barringer Research Limited, 1198 West Pender Street, Vancouver, B.C.

in the Province of British Columbia, do solemnly declare that

1) I am a geophysicist and I did and I supervised the induced polarization survey on the Bot-Brenda property in the Omineca Mining Division from on or about the 5th day of September 1969 to on or about the 25th day of September 1969.

2) The aforesaid work consisted of the following:-

17 days of I.P.	-	4930.00
Mobilization	-	<u>346.00</u>
Total Cost		\$5276.00

3) All the aforesaid work was done for Manex Mining Limited (N.P.L)
200 - 535 Thurlow Street, Vancouver 5, B.C.

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the *City*
of *Vancouver*, in the
Province of British Columbia, this *30*
day of *Dec.* *1969*, A.D.

Roger Caven

Juli Susser
Commissioner for taking Affidavits for British Columbia or
A Notary Public in and for the Province of British Columbia.

SUB-MINING RECORDER

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

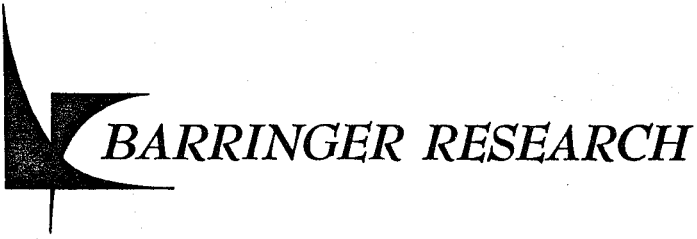
NO. 2444 MAP



20W	16E	20N
		18N
		16N
		14N
		12N
		10N
		8N
		6N
		4N
		2N
		0N
		2S
		4S
		6S
		8S
		10S
		12S
		14S
		16S
		18S
		20S
		22S
		24S

NOTE:
THE CLAIM BOUNDARIES
ARE SHOWN IN BARRINGER'S
REPORT + THE SKETCH
INCLUDED WITH ASSESSMENT
WORK.

MANEX MINING LTD (NPL)
GRID LAYOUT
BOT BRENDA PROJECT
FOR
BABINE INTERNATIONAL
RESOURCES LTD (NPL)
1" = 1000' JUNE 24/70



BARRINGER RESEARCH LIMITED
 304 CARLINGVIEW DRIVE
 METROPOLITAN TORONTO
 REXDALE, ONTARIO, CANADA
 PHONE: 416-677-2491
 CABLE: BARESEARCH

February 2, 1970

Manex Mining Limited (N.P.L)
 200-535 Thurlow Street
 Vancouver 5, B.C.

Gentlemen:

Re: The Bot-Brenda Group of Claims
Omineca Mining Division, B.C.

The following personnel were employed on the induced polarization survey on the above mentioned claims during the period September 5th to September 25th, 1969:

	<u>Days Worked</u>	<u>Period Worked (inclusive)</u>	<u>Total Salary</u>
R. Caven, P. Eng., Geophysicist	21 days	Sept 5/Sept 25	\$495.00
J. Johnston, Instrument Operator	21 "	"	375.75
J. Hickman, Transmitter Operator	21 "	"	363.00
E. Lee, Transmitter Operator	21 "	Sept 5/Sept 6	29.14

Personnel supplied by Manex Mining Limited.

C. Taylor	21 days	Sept 5/Sept 25	not known
P. Hubert	18 "	Sept 6/Sept 23	"
		Total	\$ 1262.89

Yours very truly

BARRINGER RESEARCH LIMITED

Roger Caven
 Roger Caven, P. Eng.
 Geophysicist
 of Vancouver

RC:lh

Province of British Columbia, this

City, in the
19th day of *May*, 1970, A.D.

CONFIDENTIAL

J. Phillips



BARRINGER RESEARCH LIMITED
 304 CARLINGVIEW DRIVE
 METROPOLITAN TORONTO
 REXDALE, ONTARIO, CANADA
 PHONE: 416-677-2491
 CABLE: BARESEARCH

February 2, 1970

Manex Mining Ltd.
 200-535 Thurlow Street
 Vancouver 5, B.C.

Re: Mineral Hill Project
 Omineca Mining Division, B.C.

Gentlemen:

The following is a breakdown of the cost of the Induced Polarization survey on the Mineral Hill project during the period Aug. 25th to Sept. 4th, 1969.

Wages		\$ 763.70
Equipment 10 days @ 64.00		640.00
4-wheel drive vehicle, including gasoline & service		176.50
Board and accommodation		52.82
Materials used on survey		80.29
Interpretation & data preparation 3 days @ 70.00		210.00
Report preparation 3 days @ 85.00		255.00
Office and payroll overheads		721.69
		<u>\$2900.00</u>

Yours very truly

BARRINGER RESEARCH LIMITED

Roger Caven, P. Eng.

Geophysicist

Declared before me at the

of

Province of British Columbia, this

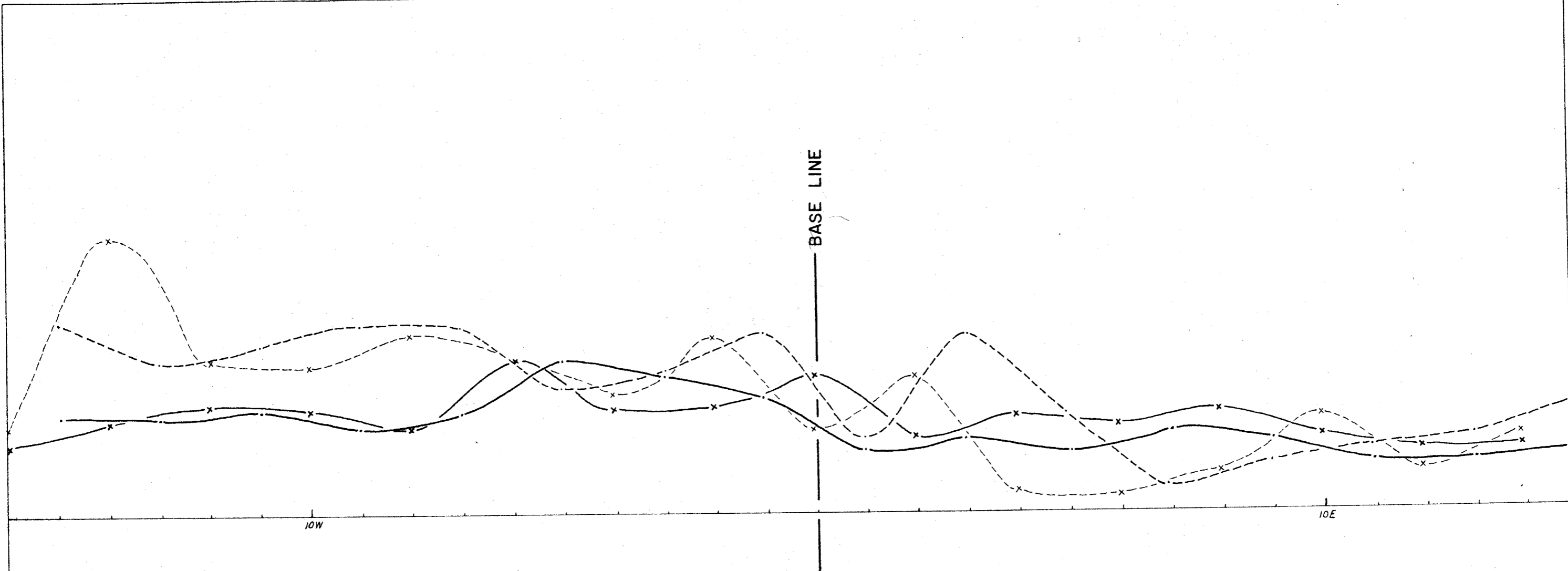
day of

Vancouver, in the
City
19th
May, 1970, A.D.

RC:kn

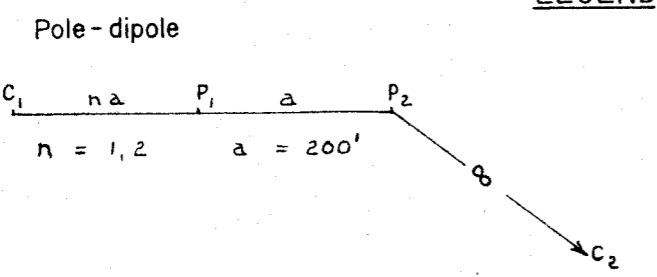
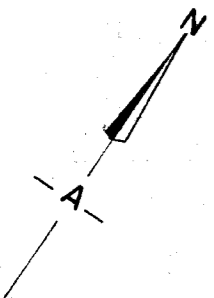
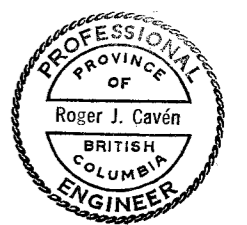
CONFIDENTIAL

A Commissioner of Affidavits within British Columbia
 A Notary Public in and for the Province of British Columbia.



Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 2444 MAP #9

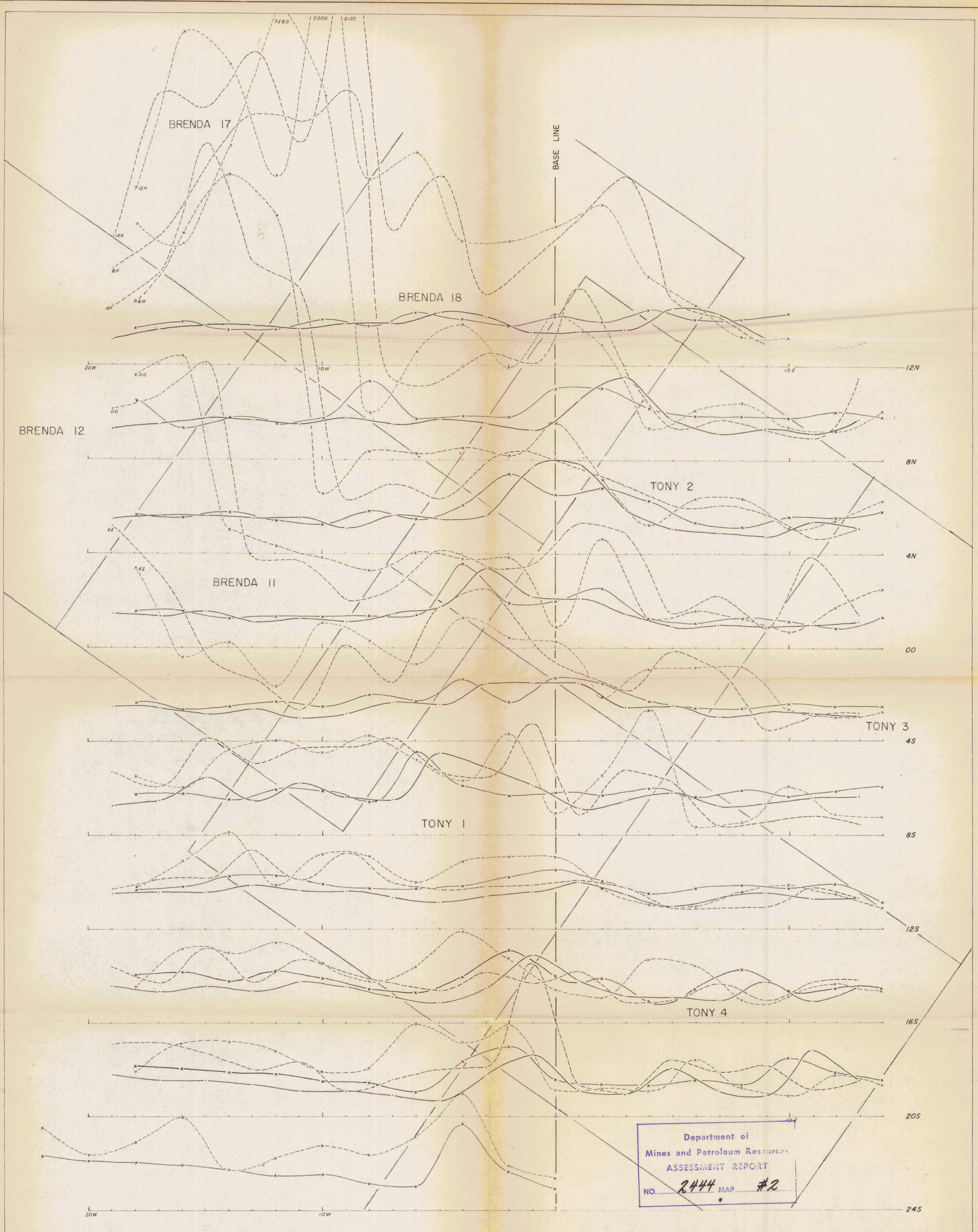
Roger Caven



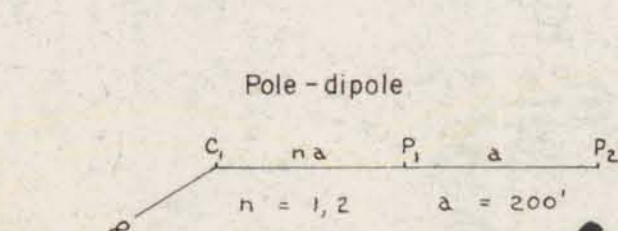
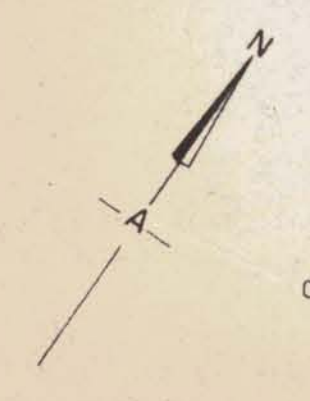
———— n = 1 Chargeability - Scale 1" = 5 millisees
 x ———— x n = 2
 - - - - - n = 1 Resistivity - Scale 1" = 1000 ohm metres
 x - - - - - x n = 2

Work undertaken by
BARRINGER RESEARCH LTD, Toronto, Canada.

MANEX MINING LIMITED (N.P.L.)		
BOT-BRENDA PROPERTY, SMITHERS - B.C.		
INDUCED POLARIZATION & RESISTIVITY SURVEY		
9 REVERSE TRAVERSE LINE 8S		
NOV. 1969	Scale 1" = 200'	DWG. 5-229-15



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NO. **2444** MAP # **2**



LEGEND

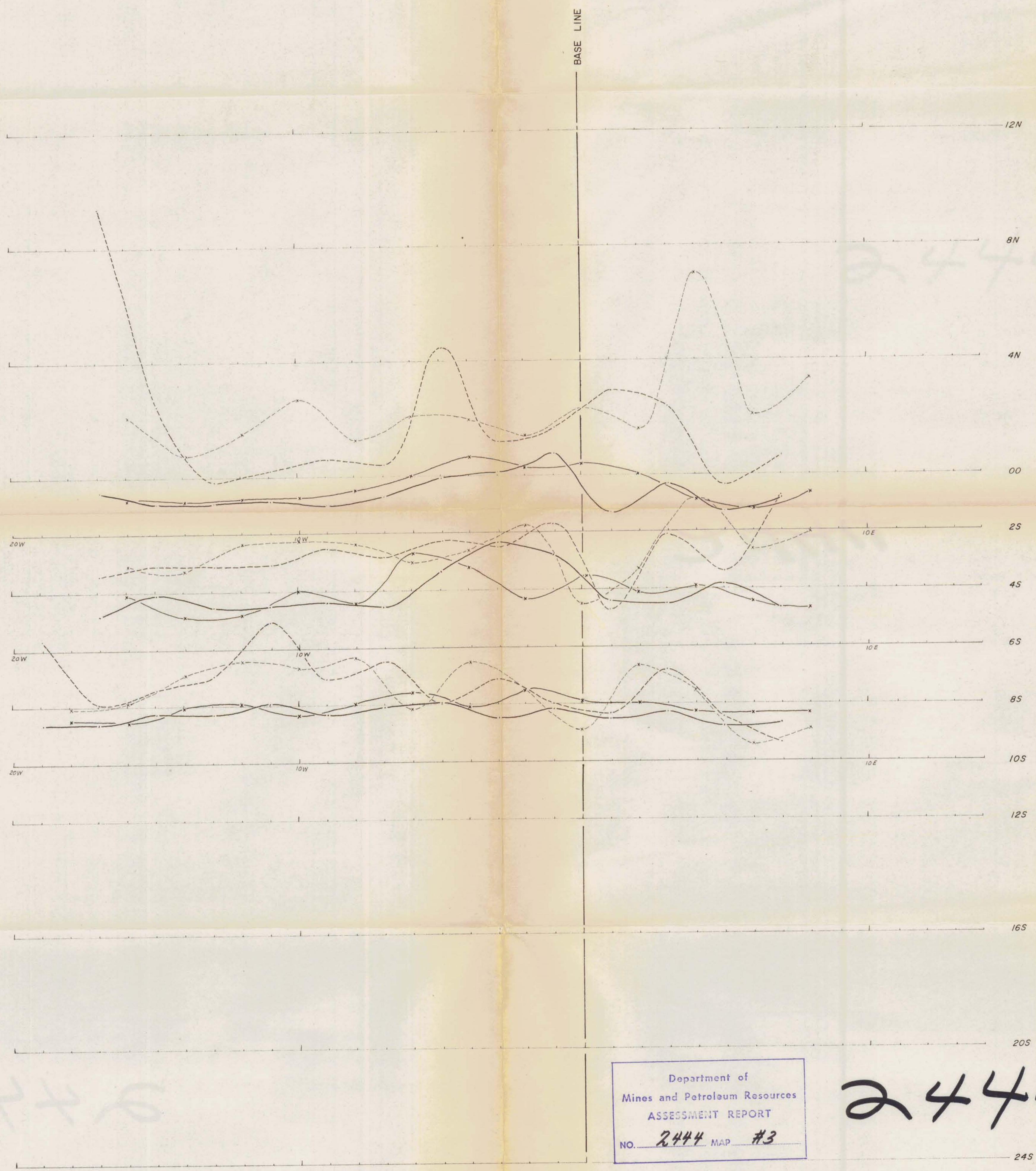
- n = 1 Chargeability - Scale 1" = 5 millisees
- x- n = 2
- n = 1 Resistivity - Scale 1" = 1000 ohm metres
- x- n = 2

Roger J. Cavin



Work undertaken by
BARRINGER RESEARCH LTD., Toronto, Canada.

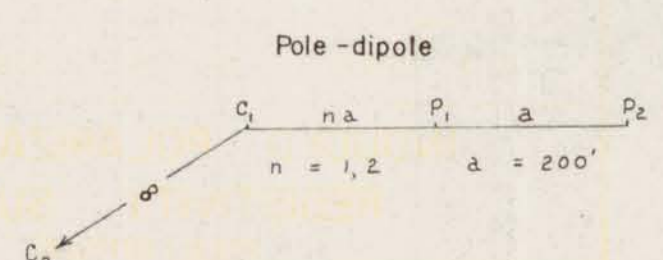
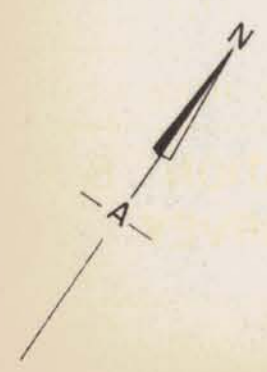
MANEX MINING LIMITED (N.P.L.)		
BOT-BRENDA PROPERTY, SMITHERS - B.C.		
INDUCED POLARIZATION & RESISTIVITY SURVEY		
POLE-DIPOLE		
OCT. 1969	Scale 1" = 200'	DWG. 5-229-8



2444

Department of
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ASSESSMENT REPORT
NO. 2444 MAP #3

2444



LEGEND

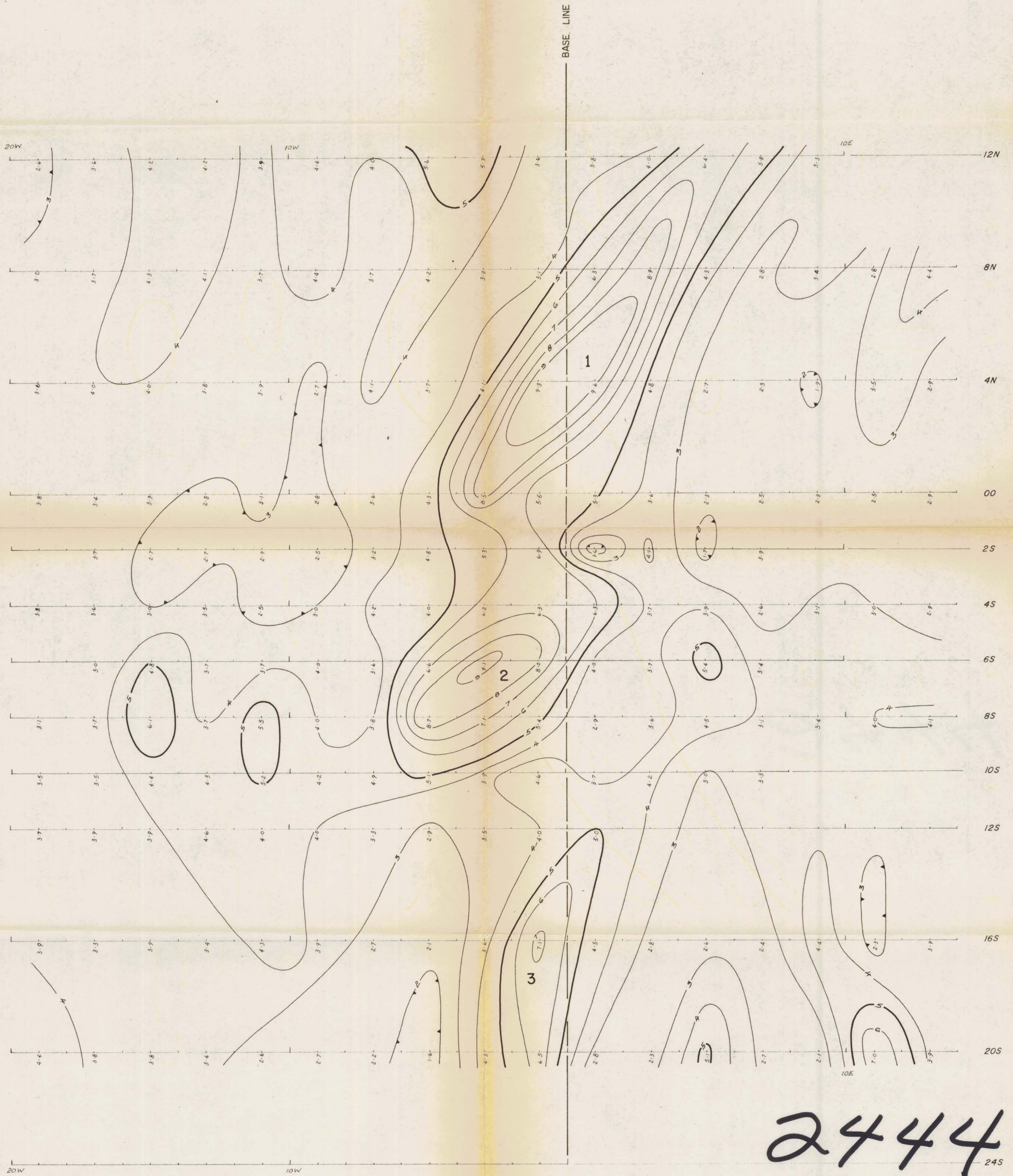
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- - - n = 2
- - - n = 1 Resistivity - Scale 1" = 1000 ohm metres
- - - x n = 2

Roger Cain

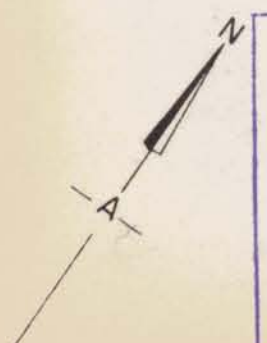


Work undertaken by
BARRINGER RESEARCH LTD., Toronto, Canada.

MANEX MINING LIMITED (N.P.L.)		
BOT-BRENDA PROPERTY, SMITHERS - B.C.		
INDUCED POLARIZATION & RESISTIVITY SURVEY POLE-DIPOLE		
3		
OCT. 1969	Scale 1" = 200'	DWG. 5-229-9



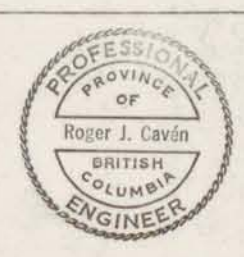
2444



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NO. 2444 MAP #4

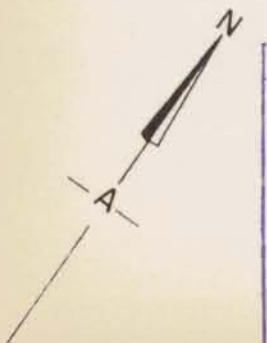
LEGEND
Contour interval 1 millisecc
5 Contour
1 Contour
Depression

Roger J. Cavin



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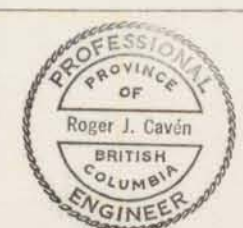
MANEX MINING LIMITED (N.P.L.)	
BOT-BRENDA PROPERTY, SMITHERS - B.C.	
CHARGEABILITY CONTOURS	
4	a = 200' n = 1
OCT. 1969	Scale 1" = 200' DWG. 5-229-10



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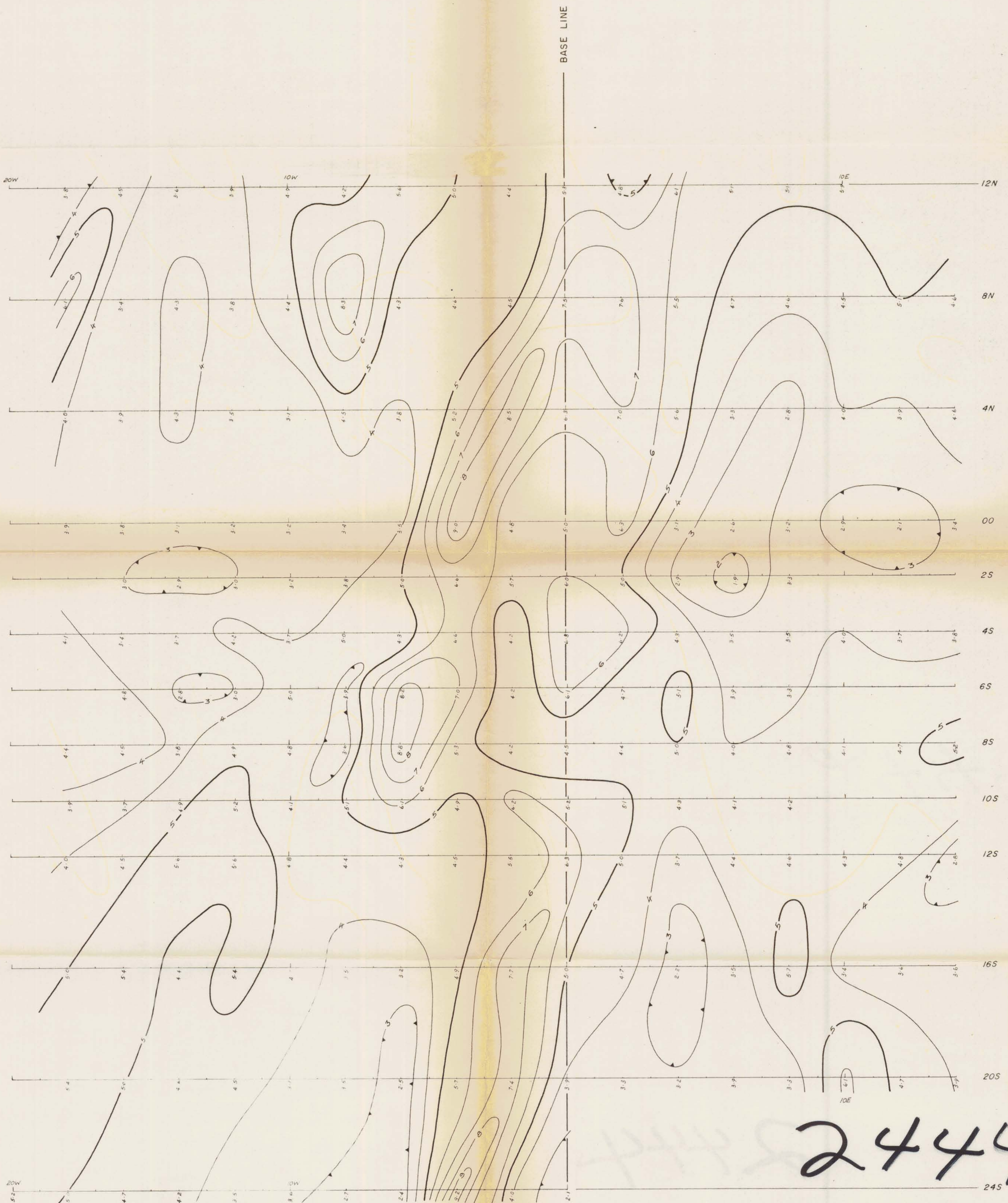
LEGEND
Contour interval 500 ohm metres
— 2500 Contour
— 500 Contour
○ Depression

Roger J. Carvin



Work undertaken by
BARRINGER RESEARCH LTD., Toronto, Canada.

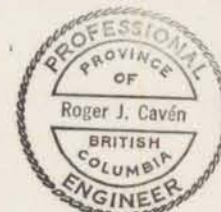
MANEX MINING LIMITED (N.P.L.)		
BOT-BRENDA PROPERTY, SMITHERS - B.C.		
RESISTIVITY CONTOURS		
$a = 200'$ $n = 1$		
OCT. 1969	Scale 1" = 200'	DWG. 5-229-11



LEGEND

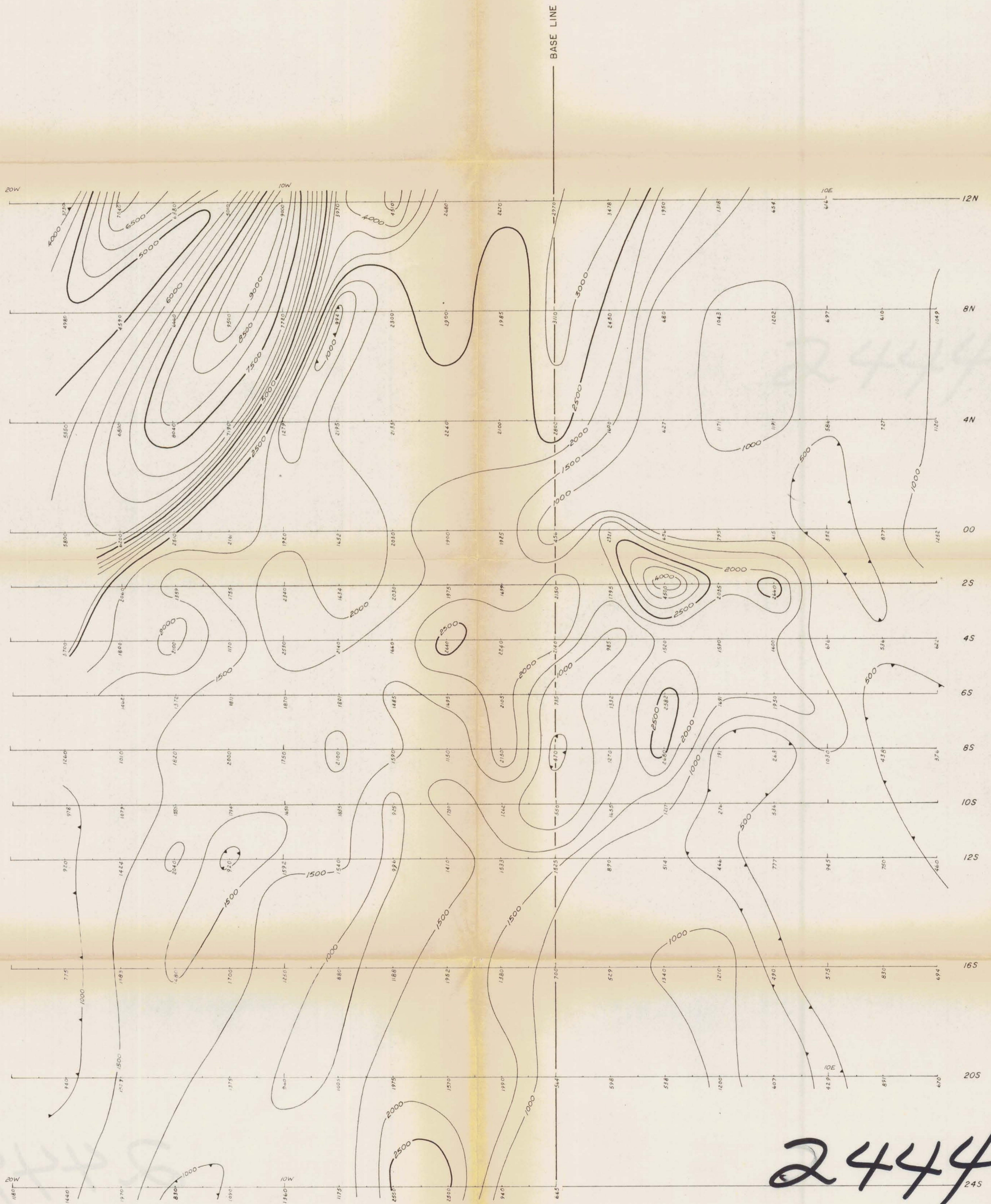
- Contour interval 1 millisecond
- 5 Contour
- 1 Contour
- Depression

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. **2444** MAP #**6**



Roger J. Cavin
Work undertaken by
BARRINGER RESEARCH LTD., Toronto, Canada.

MANEX MINING LIMITED (N.P.L.)		
BOT-BRENDA PROPERTY, SMITHERS - B.C.		
CHARGEABILITY CONTOURS		
$a = 200'$ $n = 2$		
OCT. 1969	Scale 1" = 200'	DWG. 5-229-12



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
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LEGEND

- Contour interval 500 ohm metres
- 2500 Contour
- 500 Contour
- Depression

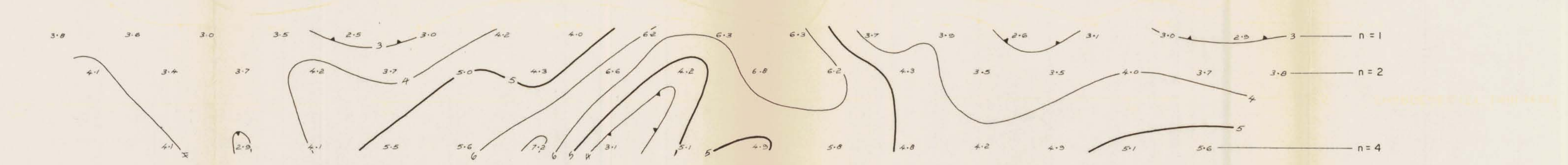
Raja Lal



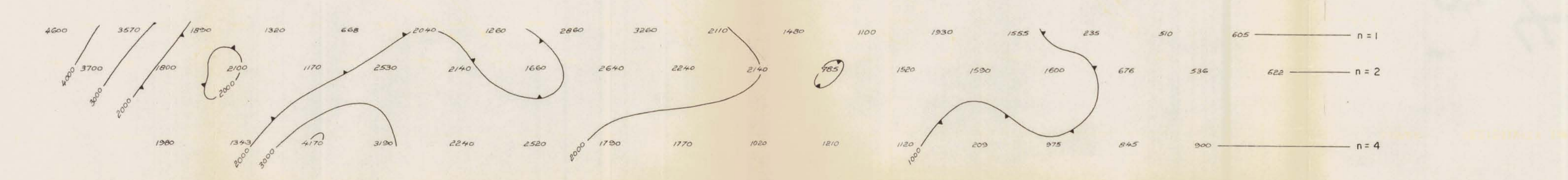
Work undertaken by
BARRINGER RESEARCH LTD., Toronto, Canada.

MANEX MINING LIMITED (N.P.L.)	
BOT-BRENDA PROPERTY, SMITHERS - B.C.	
RESISTIVITY CONTOURS	
$a = 200'$ $n = 2$	
OCT. 1969	DWG. 5-229-13

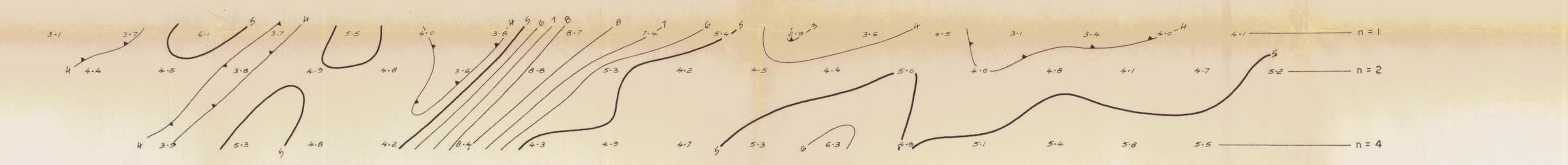
20W 10W 00 10E 45 CHARGEABILITY (milliseconds)



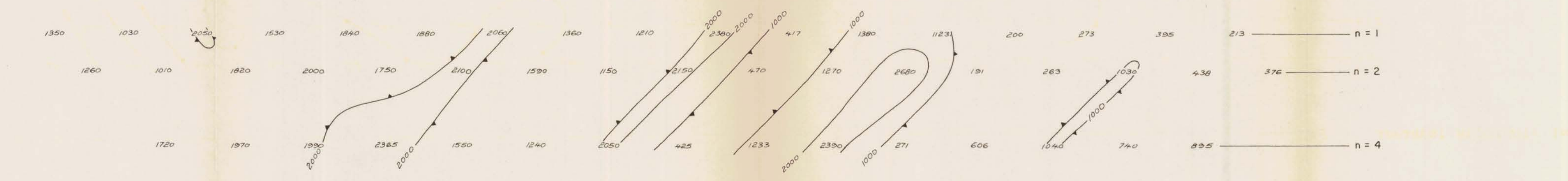
45 APPARENT RESISTIVITY (ohm metres)



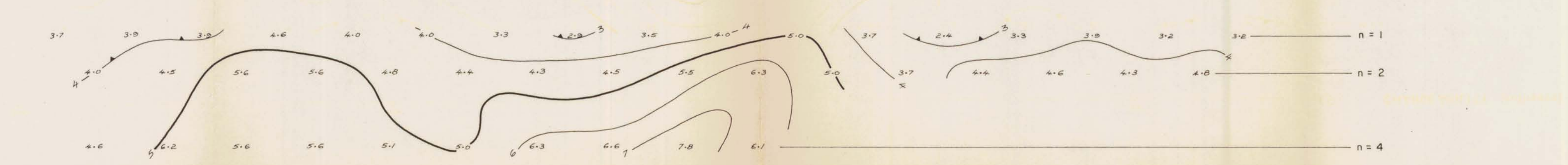
85 CHARGEABILITY (milliseconds)



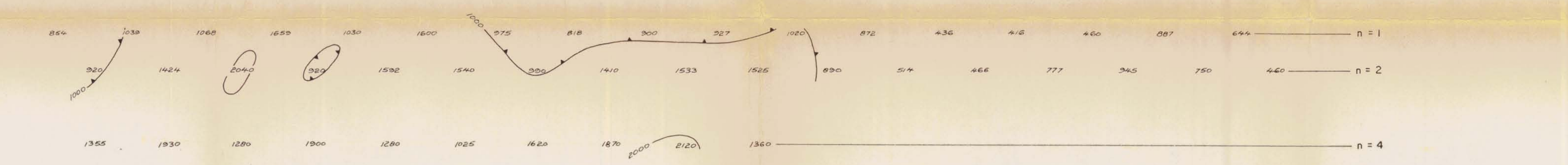
85 APPARENT RESISTIVITY (ohm metres)



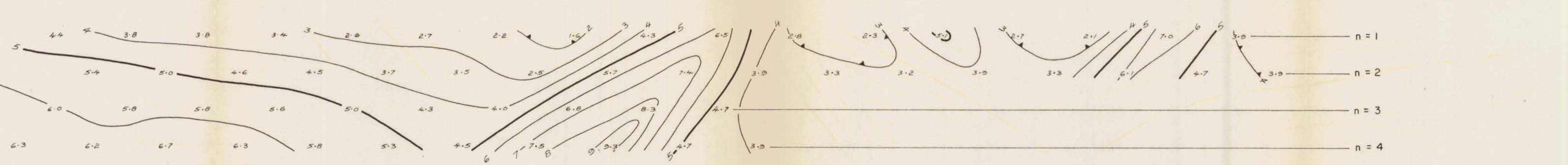
125 CHARGEABILITY (milliseconds)



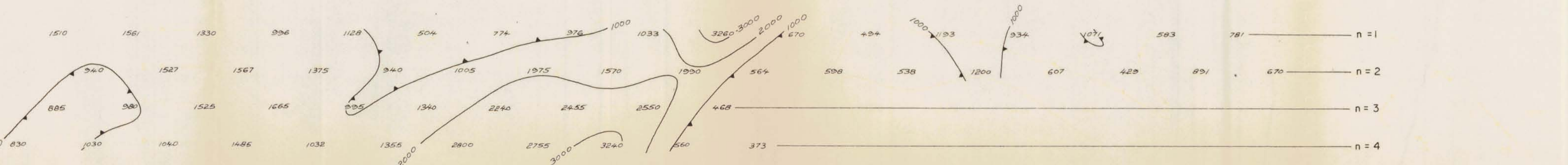
125 APPARENT RESISTIVITY (ohm metres)



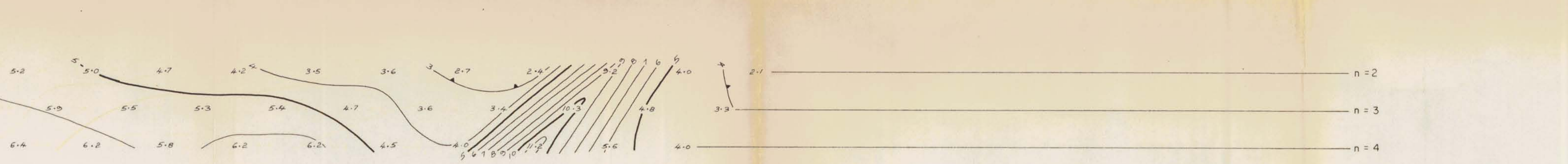
205 CHARGEABILITY (milliseconds)



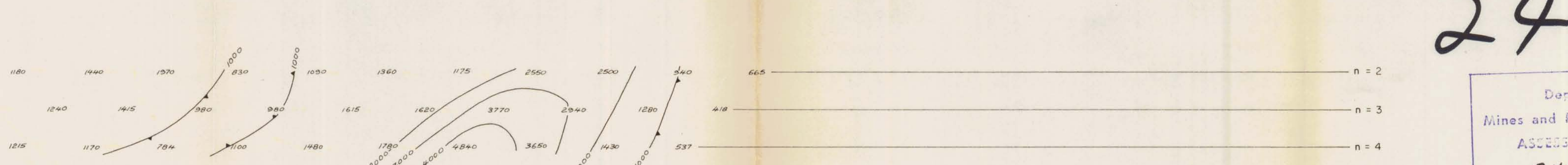
205 APPARENT RESISTIVITY (ohm metres)



245 CHARGEABILITY (milliseconds)



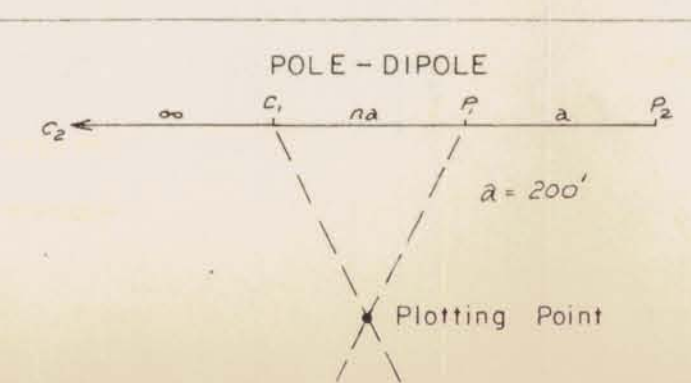
245 APPARENT RESISTIVITY (ohm metres)



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Department of
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NO. 2444 MAP #8

Roy Lee



Chargeability contour interval - 1milli-sec
Apparent Resistivity contour interval - 1000 ohm metres

Work undertaken by
BARRINGER RESEARCH LTD., Toronto, Canada

MANEX MINING LIMITED (N.P.L.)		
BOT-BRENDA PROPERTY, SMITHERS - B.C.		
INDUCED POLARIZATION & RESISTIVITY SECTIONS POLE-DIPOLE		
NOV. 1969	Scale 1" = 200'	DWG. 5-229-14

						TONY 27	TONY 28	TONY 30	TONY 29	TONY 34
		BRENDA 27	BRENDA 28	BRENDA 23	BRENDA 24	TONY 25	TONY 26	TONY 32	TONY 31	TONY 33
BRENDA 39	BRENDA 40	BRENDA 25	BRENDA 26	BRENDA 21	BRENDA 22	TONY 17	TONY 19	TONY 21	TONY 23	
BRENDA 37	BRENDA 38	BRENDA 9	BRENDA 10	BRENDA 19	BRENDA 20	TONY 18	TONY 20	TONY 22	TONY 24	
BRENDA 35	BRENDA 36	BRENDA 1	BRENDA 2	BRENDA 17	BRENDA 18	TONY 1	TONY 3	TONY 5	TONY 7	
BRENDA 30	BRENDA 29	BRENDA 4	BRENDA 3	BRENDA 12	BRENDA 11	TONY 2	TONY 4	TONY 6	TONY 8	
BRENDA 32	BRENDA 31	BRENDA 6	BRENDA 5	BRENDA 14	BRENDA 13	TONY 16	TONY 14	TONY 12	TONY 10	
BRENDA 34	BRENDA 33	BRENDA 8	BRENDA 7	BRENDA 16	BRENDA 15	TONY 15	TONY 13	TONY 11	TONY 9	

BUENO 19	BUENO 20	BUENO 3	BUENO 4	BUENO 22	BUENO 21
BUENO 17	BUENO 18	BUENO 1	BUENO 2	BUENO 24	BUENO 23
BUENO 15	BUENO 16	BUENO 6	BUENO 5	BUENO 26	BUENO 25
BUENO 13	BUENO 14	BUENO 8	BUENO 7	BUENO 28	BUENO 27
BUENO 11	BUENO 12	BUENO 10	BUENO 9	BUENO 30	BUENO 29

2444

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2444 MAP #10

To ACCOMPANY GEOPHYSICAL REPORT
By BARRINGER RESEARCH LTD. DATED NOV/69

MANEX MINING LTD (N.P.L.)

MINERAL CLAIMS
BOT BRENDA PROJECT
DOME BABINE MINES LTD

SCALE 1" = 1500' DATE JAN/70 DRAWN BY GYG