

2285

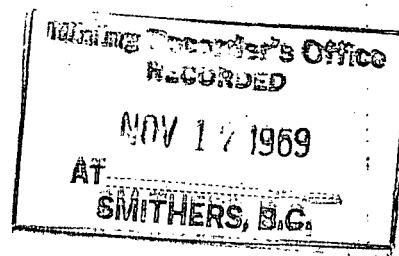
REPORT OF THE
INDUCED POLARIZATION & RESISTIVITY SURVEY
ON THE
MINERAL HILL PROPERTY, SMITHERS, B.C.
FOR
MANEX MINING LIMITED (N.P.L.)

AUGUST 24th - SEPTEMBER 4th
1969

Longitude $126^{\circ}00'W$
Latitude $54^{\circ}00'N$

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

NOVEMBER 1969



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ASSESSMENT REPORT

NO. **2285** MAP.....

INTRODUCTION

During the time period from August 24th to September 4th, 1969, inclusive, Barringer Research Limited completed an induced polarization/resistivity survey on the Huber Group of claims on the Mineral Hill property. The work consisted of a total of 5.54 line miles, most of which were covered by two electrode spacings. The work was carried out and supervised by Barringer's geophysicist, Roger Caven, P. Eng.

LOCATION AND ACCESS

The claims group is situated north of highway 16, approximately 12 miles NW of Houston, Omineca Mining Division, B.C. Access to property is by four-wheel drive vehicle trail from the highway for a distance of 2-3 miles

N.T.S. map Smithers 93L, with SE corner coordinates: Long. $126^{\circ}00'W$, and lat. $54^{\circ}00'N$.

SURVEY CONTROL

The grid was laid out with survey lines $N30^{\circ}W$, and cut at right angles to a previous grid over the property and approximately normal to geological strike as determined by previous work. Three additional lines were also surveyed in a direction $N60^{\circ}E$. The grid was cut and marked by personnel employed by Manex Mining Limited. Grid lines were spaced 400 feet apart.

GEOLOGY

The major part of the survey area is underlain by volcanic rocks of the Hazelton group, and covered by glacial deposits of Pleistocene age. Trenching and drilling has revealed a brecciated zone with a quartz matrix, and sporadic mineralization, striking apparently N60°E. Further to the east and south a quartz-feldspar porphyry and an alaskite intrusive appear. The area is mineralized mainly with pyrite, but concentrations of chalcopyrite and molybdenite have been found. Geochemical anomalies of Cu and Mo are also present.

SURVEY AND EQUIPMENT

The induced polarization survey employed a Hunttec 7.5 KW pulse type transmitter, and a '200' series receiver. Readings were taken at 200 foot station intervals. The electrode array used was a pole-dipole with a dipole length 'a' of 200 feet and pole to dipole separations, ('na') of 200 and 400 feet respectively (or $n = 1$ and 2). The direction of traversing was from NW to SE (grid north to grid south) with the potential dipole leading. The three additional lines, 10S, 14S, and 18S were traversed from SW to NE.

Two different pole-dipole separations were used to enable a comparison of the response from two different depths, thus gaining insight into the geological structure involved.

GEOPHYSICS

General

The area had been previously surveyed by the induced polarization method in 1966, across the breccia zone. The earlier work provided data for changing the direction of the grid. The present work confirms in general the findings of the previous survey, although shifting the anomalies and somewhat altering their shape. These effects can be seen as the result of the change in direction of the surveyed lines. The grid was also extended further SE toward and over the quartz-feldspar porphyry intrusive.

The lines 10S, 14S, and 18S were surveyed to provide additional information on an inferred tongue of the intrusive believed trending north, scattered outcrops of which had been found in trenches.

Chargeability

The surveyed area is characterized by a moderately high chargeability background at 4-5 milliseconds at $n = 1$ and slightly higher at $n = 2$. Above this background appear anomalies of up to 18 milliseconds, i.e. about 3 times background values.

From the survey it is also inferred that the sources of the induced polarization anomalies extend from near surface to depth. The high and broad anomalies, particularly at the larger electrode spacing indicate that the sources comprise relatively large ~~volume~~ ^{or} consist of several narrow veins in parallel. These would represent higher concentrations in a generally mineralized environment.

Further to the SE, or grid south, the chargeability rises quite sharply in the proximity at the quartz feldspar porphyry intrusive, and remains high until the traverse has again entered the volcanic rocks. It is significant, however, that the chargeability increase occurs approximately 1000 feet before the intrusive is found out-

cropping or in trenches. The chargeability also reaches a relative maximum within this distance.

Apparent Resistivity

The apparent resistivity background is typically 400-500 ohm-metres, with several points having higher values and some lower.

Over the north end of the grid the resistivity pattern clearly indicates a structure trending $N60^{\circ}E$. This structure is interpreted as containing the quartz-breccia zone.

To the south the apparent resistivity increases in two steps, first around 16S and finally at 30S, where the quartz-feldspar porphyry is outcropping. At 44S the resistivity is again much lower coinciding with the exit from the intrusives.

In comparing the resistivity maps for $n = 1$ & 2 , it can be inferred that the structure in the north end of the grid is plunging approximately grid east, i.e. $N60^{\circ}E$, and in the vicinity of the intrusive an interface can be seen dipping to the north. The same pattern is also shown by the additional lines 10S, 14S, and 18S. The tongue of the intrusive, which was expected to extend northward, was not found. The data for the grid as a whole indicates that the intrusive may break out as isolated outcrops or near outcrops in several places, thus explaining the findings in the trenches.

CONCLUSIONS AND RECOMMENDATIONS

From the survey two main centres of interest emerge. The first one is in the area of the breccia zone in the north end of the grid. This resolves into three sub-parallel chargeability anomalies, peaking at 15.5, 13.4, and 14.9 milliseconds respectively counting from north to south, and $n = 1$. The third anomaly shows a shift of its peak to NE with $n = 2$, as well as an increase in maximum value to 15.5 milliseconds. At depth it is also associated with a relative resistivity minimum, and therefore a favourable target for further investigation by drilling.

The second interesting centre is in the south part of the grid where an underlying intrusive has been inferred. It is characterized by a ridge-like anomaly, which at $n = 1$ peaks at 17.2 and 18.2 at two points along the ridge. A part of this anomaly is associated with lower apparent resistivity. At $n = 2$ the chargeability anomaly remains but with decreased maximum as well as higher resistivities. The intrusive here has a high apparent resistivity and chargeability.

The relationship here is interpreted as one of a localized I.P. source superimposed upon the emerging quartz-feldspar intrusive. A geochemical soil sampling survey conducted earlier by Manex Mining Limited shows an anomaly for copper and molybdenum approximately coincident with the IP anomaly.

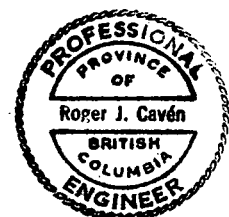
To further investigate these anomalies, the following drill-holes are recommended:

- 1) Line 8E, collar at station 0N, azimuth $N120^{\circ}E$, inclined 45° and a length of 500 feet.
- 2) Line 4E, collar at station 2S, azimuth $N120^{\circ}E$, inclined 45° and a length of 300 feet. *AC* *AC*
- 3) Line 4E, collar at station 23S, azimuth $N180^{\circ}E$, inclined 50° and a length of 350 feet.

October 12th, 1969

BARRINGER RESEARCH LIMITED

Roger Caven
Roger Caven, P. Eng.,
Geophysicist.



DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.

In the Matter of

To WIT:

The Huber Group of Mineral claims on the Mineral Hill Property, Omineca Mining Division

I, Roger J. Cavén

of Barringer Research Limited, 1198 West Pender Street, Vancouver 1, British Columbia.

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 Huber group of mineral claims of the Mineral Hill property in the Omineca Mining Division from on or about the 24th day of August 1969 to on or about the 4th day of September, 1969.

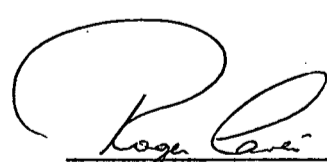
(2) The aforesaid work consisted of the following

10 days of I.P. survey at \$ 7250 per 25 day month	2900.00
Mobilization	<u>204.00</u>
Total Cost	3104.00

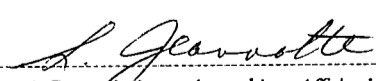
(3) All the aforesaid work was done for Manex Mining Ltd (W.P.L.)
200-535 Thurlow Street,
Vancouver 5, B.C.

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 10th
day of November, 1969, A.D.



Roger Cavén, P.Eng.



~~A Commissioner for taking Affidavits within British Columbia or
A Notary Public in and for the Province of British Columbia.~~
Sub-mining Recorder

In the Matter of

Statutory Declaration

(CANADA EVIDENCE ACT)

=====

BARRINGER RESEARCH LIMITED

304 CARLINGVIEW DRIVE
REXDALE, ONTARIO, CANADA
PHONE: 416-677-2491
CABLE: BARESEARCH

November 5, 1969

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

Gentlemen:

Re: The Huber Group of Mineral Claims
Omineca Mining Division B.C.

The following personnel were employed on the Induced Polarization survey on the above mentioned mineral claims during the period August 24th to September 4th, 1969.

R. Caven - P.Eng. Geophysicist	Aug 24th - Sept. 4th
J. Johnston - instrument operator	Aug 28th - Sept. 4th
J. Hickman - Transmitter operator, Field Helper	Aug 24th - Sept. 4th
E. Lee - Transmitter operator Field Helper	Aug 24th - Sept. 4th

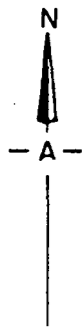
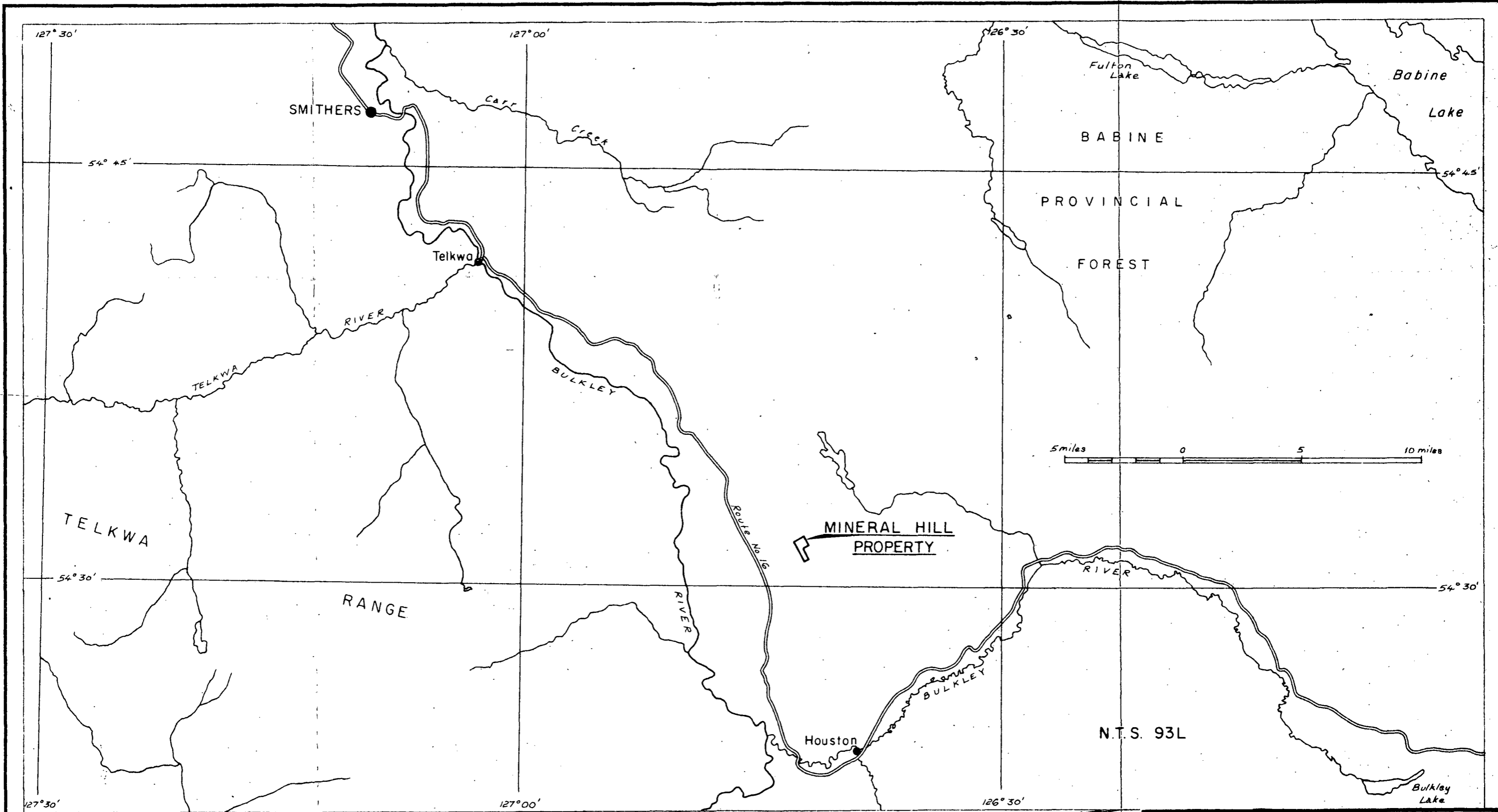
Personnel supplied by Manex Mining Ltd.

C. Taylor, Field Helper	Aug 25th - Sept. 4th
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Yours sincerely


BARRINGER RESEARCH LIMITED

Roger Caven P. Eng.
Geophysicist

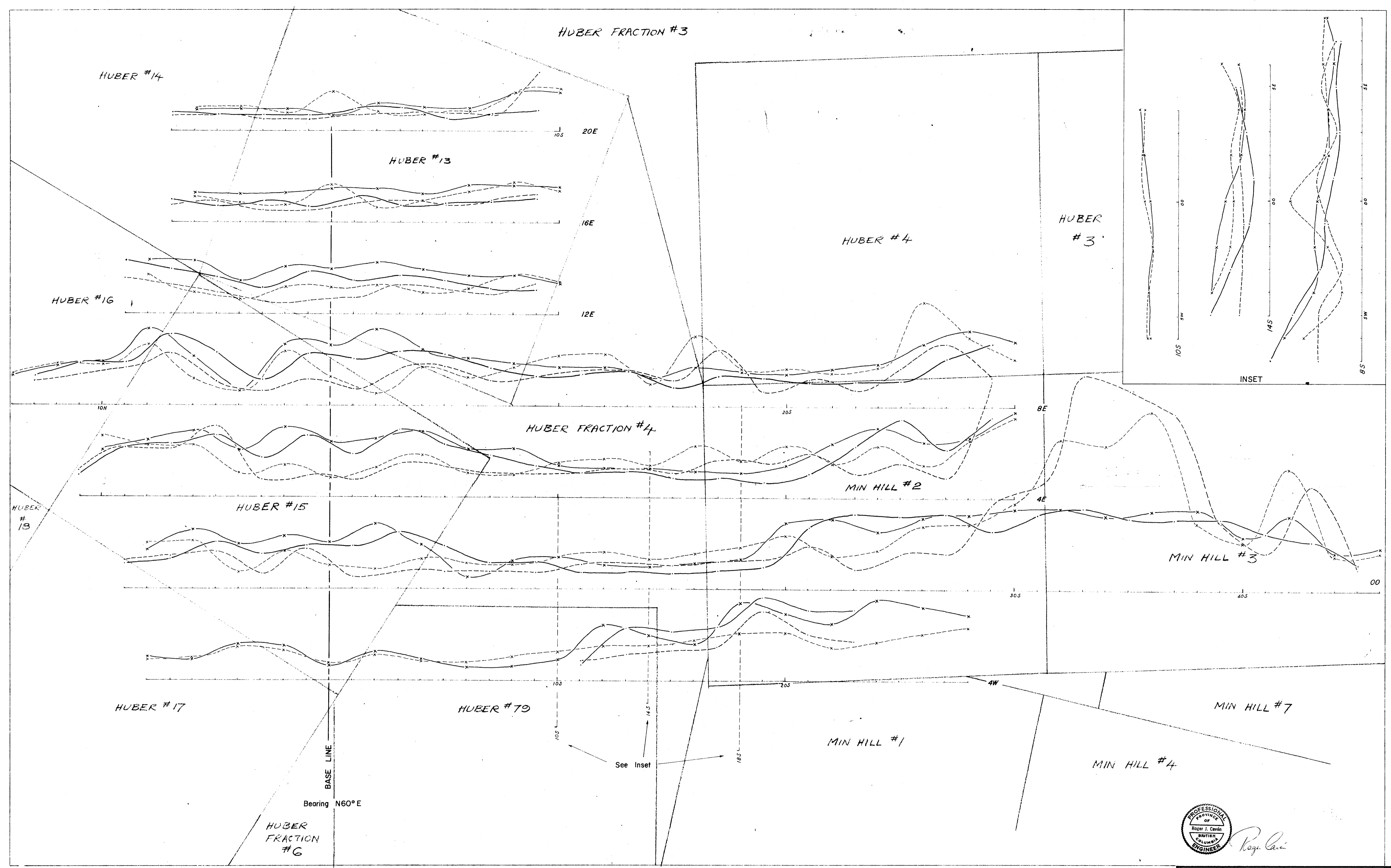


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MANEX MINING LIMITED (N.P.L.)		
HUBER CLAIMS, MINERAL HILL PROPERTY, B.C.		
LOCALITY PLAN		
NOV. 1969	Scale 1:250,000	DWG. 5-229-6

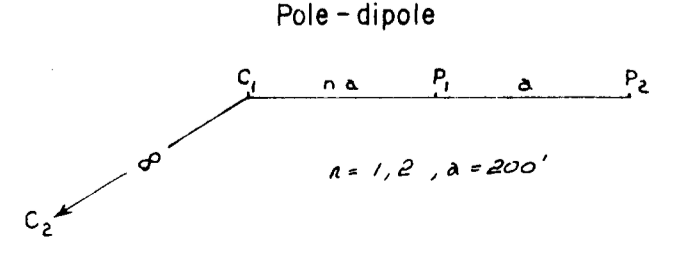
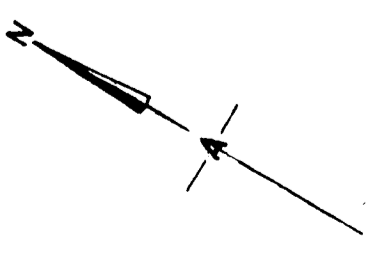
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ASSESSMENT REPORT
NO. **2285** MAP **#6**



LEGEND

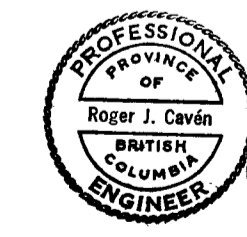
- (n=1) Chargeability - Scale 1"=10 millisees
- x- (n=2) Chargeability - Scale 1"=10 millisees
- (n=1) Resistivity - Scale 1"=1000 ohm metres
- x- (n=2) Resistivity - Scale 1"=1000 ohm metres



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NO. **2285** MAP #1

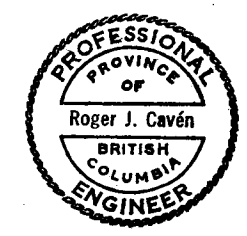
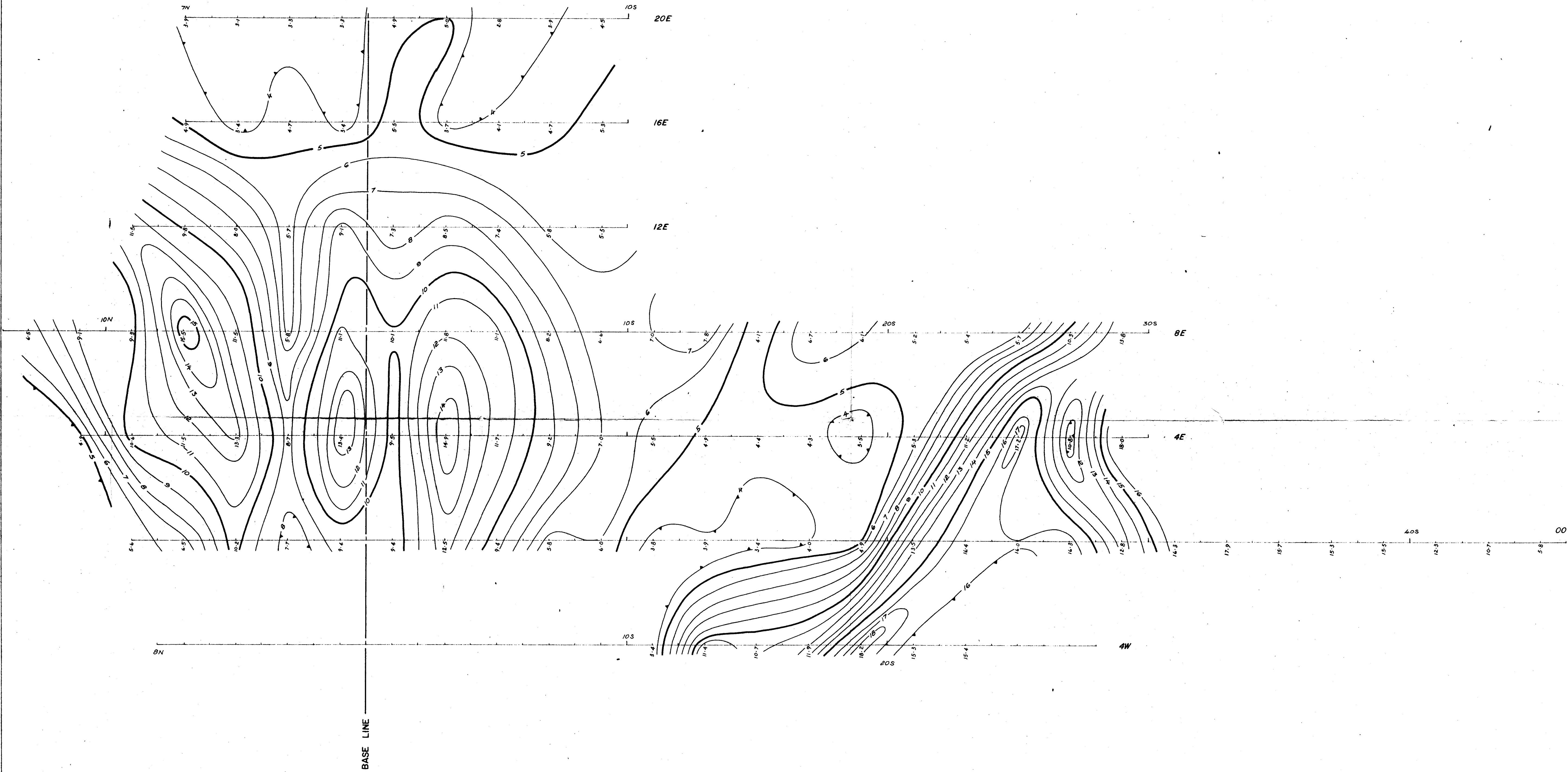
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2285



Roger Cavin

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



Roger Cavin

2285

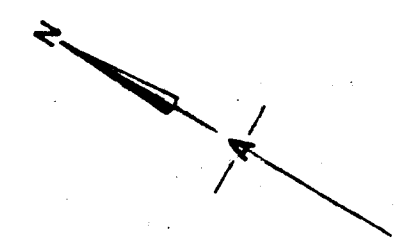
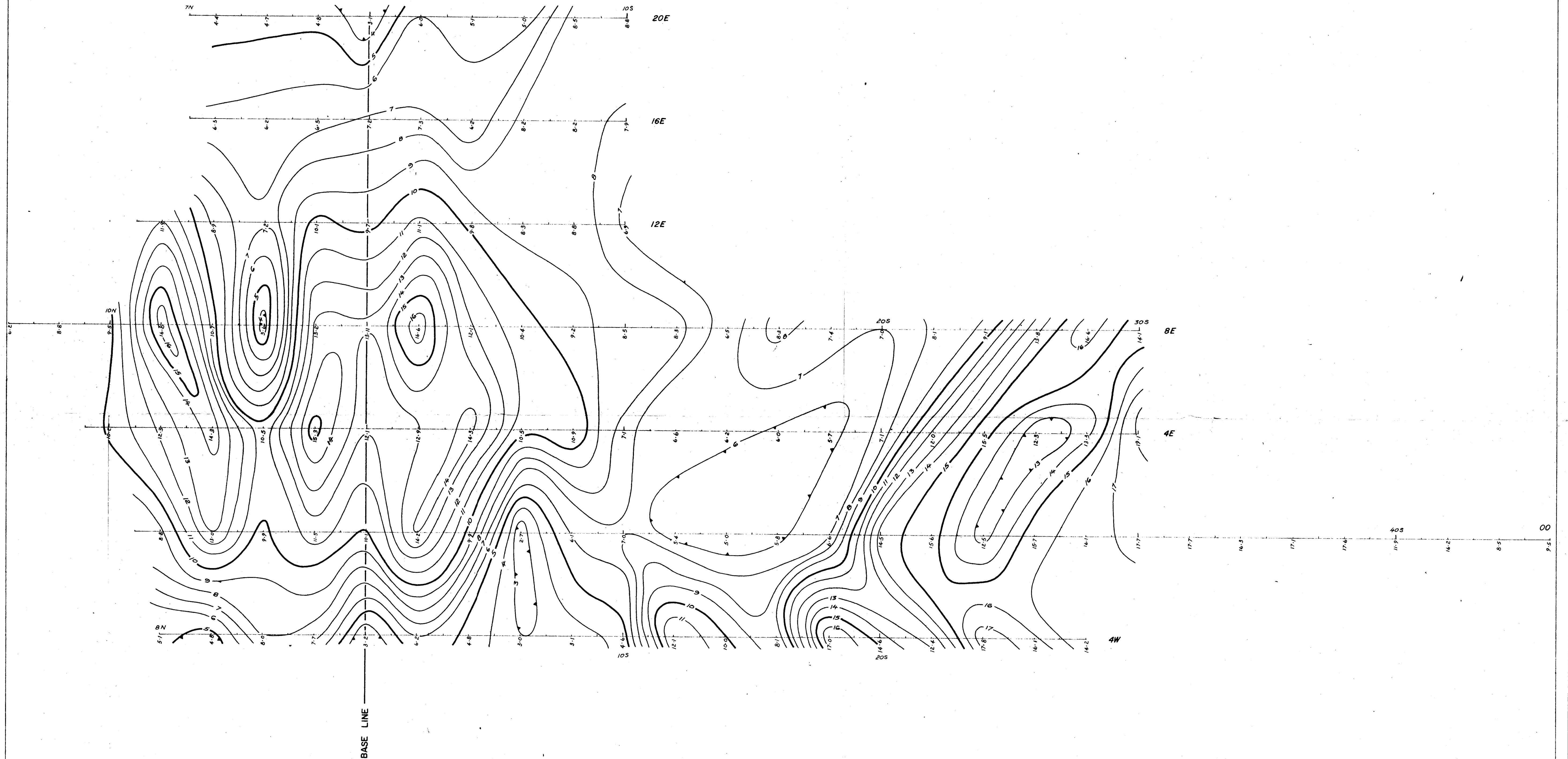
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2285 MAP #2

LEGEND

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

Work undertaken by
BARRINGER RESEARCH LTD, Toronto, Canada.

MANEX MINING LIMITED (N.P.L.)		
HUBER CLAIMS, MINERAL HILL PROPERTY - B.C.		
CHARGEABILITY CONTOURS		
a = 200' n = 1		
OCT. 1969	Scale 1" = 200'	DWG. 5-229-2



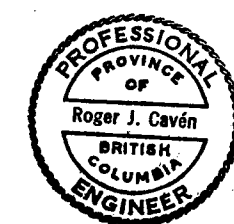
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. **2285** MAP **#3**

LEGEND

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

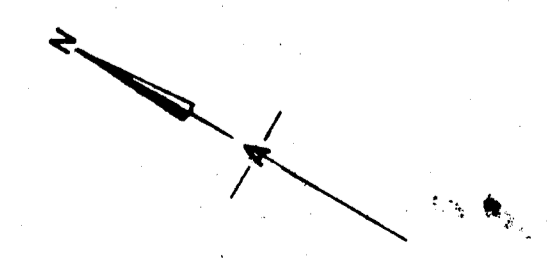
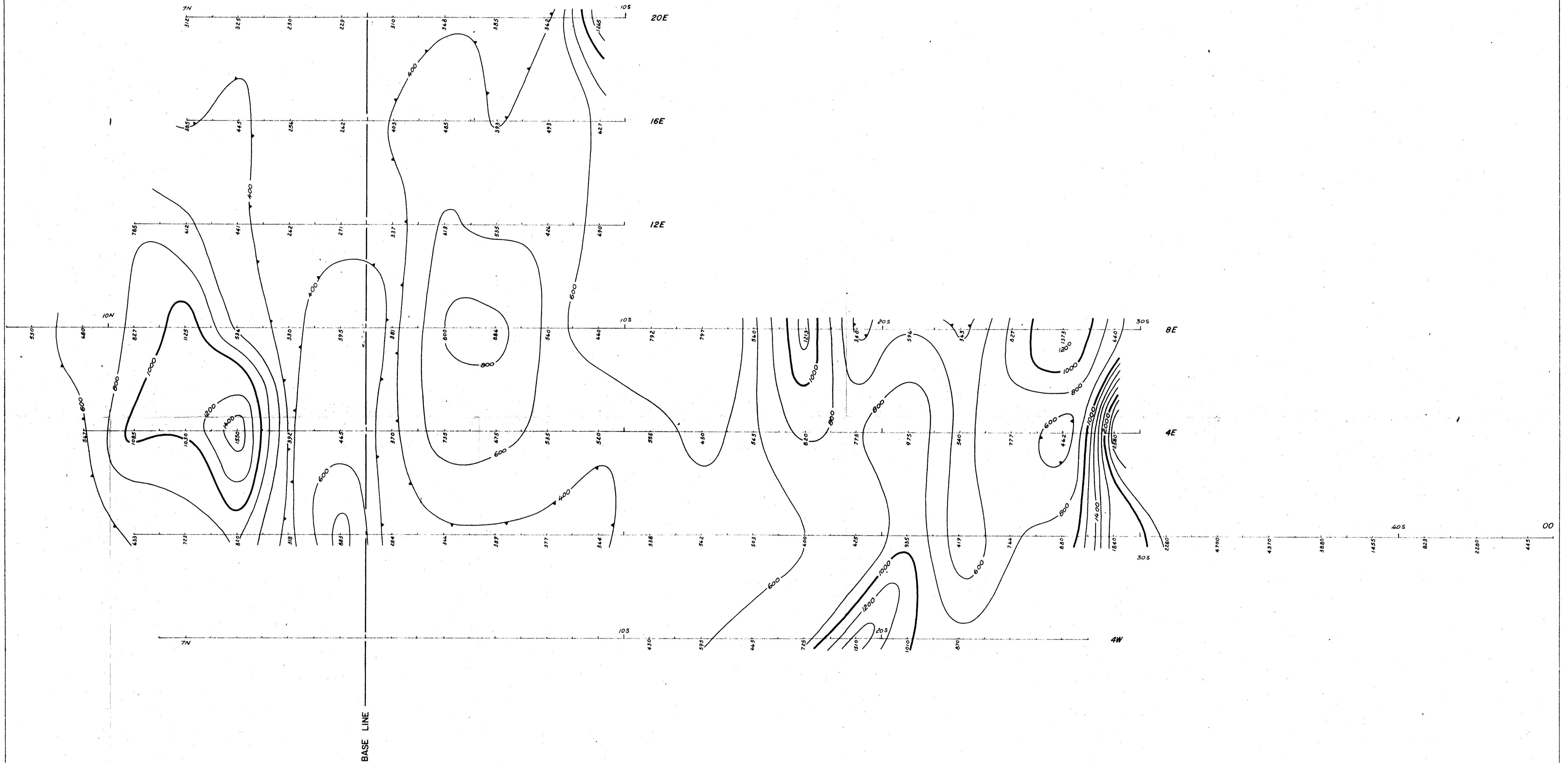
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Roger Cavin

MANEX MINING LIMITED (N.P.L.)		
HUBER CLAIMS, MINERAL HILL PROPERTY - B.C.		
CHARGEABILITY CONTOURS		
a = 200' n = 2		
OCT. 1969	Scale 1"=200'	DWG. 5-229-3

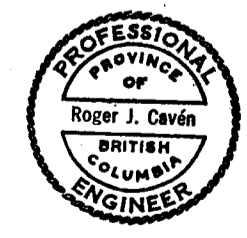


- LEGEND**
- Contour interval 200 ohm metres
 - 1000 Contour
 - 200 Contour
 - Depression

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Mines and Petroleum Resources
ASSESSMENT REPORT
NO. **2285** MAP **#4**

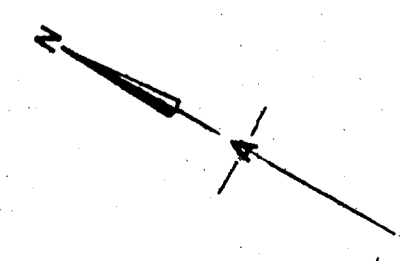
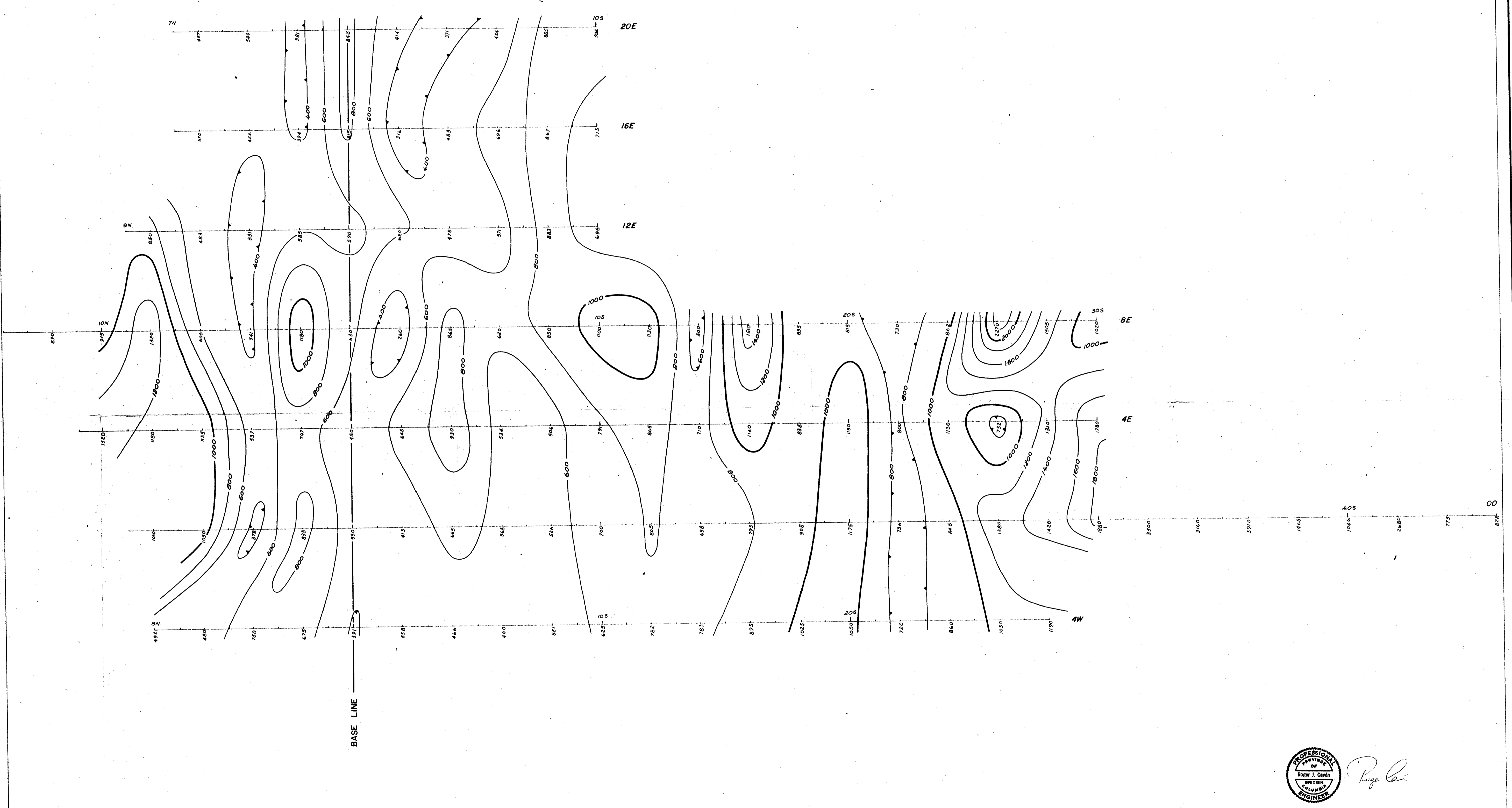
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BARRINGER RESEARCH LTD, Toronto, Canada.



Roper Caven

MANEX MINING LIMITED (N.P.L.)		
HUBER CLAIMS, MINERAL HILL PROPERTY - B.C.		
RESISTIVITY CONTOURS		
$\rho = 200'$ $n = 1$		
OCT. 1969	Scale 1"=200'	DWG. 5-229-4



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. **2285** MAP **#5**

LEGEND
Contour interval 200 ohm metres
 1000 Contour
 200 Contour
 Depression

2285

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Roger Cavin

MANEX MINING LIMITED (N.P.L.)		
HUBER CLAIMS, MINERAL HILL PROPERTY - B.C.		
RESISTIVITY CONTOURS a = 200' n = 2		
OCT. 1969	Scale 1" = 200'	DWG. 5-229-5