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COMINCO EXPLORATION PTY. LTD.

75-1136

PROGRESS REPORT

on

Exploration Licence 47/71, Queen Hill
for the 6 months ending 21/12/75.

D.C. Simpson

15/12/75.

SUMMARY

During the reporting period, work was directed to a pilot geophysical study of the Queen Hill mineralisation, which included induced polarisation, applied potential and self potential methods. Field work was conducted in the last period with interpretation and assessment being conducted this period.

The study concluded that I.P. gives a response over the Queen Hill body which is sufficiently characteristic to distinguish it from graphite. It is now proposed to extend I.P. into the more geologically favourable parts of the licence.

At present (December 14, 1975), survey lines are being extended eastward from Queen Hill into the licence. This is to provide a grid for a ground magnetic survey which is designed to locate accurately an airborne magnetic anomaly produced from survey in 1973.

GEOPHYSICS

An orientation surface geophysical survey was conducted at Queen Hill to calibrate several techniques via known mineralisation, to ascertain if these techniques have application to the environment.

The area had been surveyed previously by the Bureau of Mineral Resources with Turam and SP methods. Some preliminary Induced Polarisation surveys were inconclusive due to problems with survey procedure. The latest survey was designed to evaluate the misse-a-la-masse and induced polarisation techniques.

Induced Polarisation

Seven lines over the Queen Hill pyrite/cassiterite ore body were surveyed with the Induced Polarisation technique, using either 25 metre or 50 metre dipoles. The results of this work are attached as plans QH 48 to 55 (inclusive), pseudo-sections plotted in the standard method.

The pseudo-sections show a strong response due to the mineralisation, represented by a resistivity low and frequency effect high, as illustrated on plan QH 50 for traverse 1750N. This strong anomaly appears on shallow separations in the south and deeper on the northern lines, in accordance with the pitch of the ore body.

The anomaly pattern is complicated by the presence of a high background response, due to the amount of mineralisation present in the country rock. However, it is apparent that the anomaly due to the massive mineralisation is of sufficient intensity to be distinguished from the background response.

Misse-a-la-Masse

The conductivity of the massive mineralisation, as evidenced on line 1750N, indicates that the misse-a-la-masse technique may have application to the area. As none of the drill holes which intersected mineralisation were still open, due to caving, it was not possible to make contact with the mineralisation at depth. Electrodes were placed in the mineralisation via an adit and a surface pit. A further electrode was placed in a pit to make contact with the "Stormsdown" mineralisation. Each electrode was energised in turn and the resulting potential measured at a mobile electrode, to map the applied potential at the surface. Self-potential maps are a by-product of the technique. All data are represented on plans QH 56 to QH 60, inclusive.

The misse-a-la-masse pattern for the Queen Hill ore body is asymmetric, as would be expected for the ore distribution, and indicates the application of the technique. More diagnostic results would have been obtained if the electrode had been placed deeper into the ore body.

The pattern obtained from energising the Stormsdown mineralisation is incomplete, but does indicate that this ore zone may be larger than currently indicated from drilling. This survey will be extended in the new year (1976).

The SP pattern obtained in this survey is very complex and indicates the presence of many conductors - or mineralised bodies. The data may be influenced by the Pb-Ag veins which were worked extensively in the early history of the Zeehan field.

Conclusions

The orientation survey has indicated the efficacy of electrical techniques in the Queen Hill environment. This survey will be extended to cover a larger area and more mineral occurrences, to establish if these techniques can resolve this style of mineralisation from a multitude of sources and interference effects.

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EXPENDITURE

The following expenditures were incurred during the period 22nd June, 1975 to 21st December, 1975, on Exploration Licence 47/71.

Geology	2,405
Geophysics	2,783
	<u>5,188</u>
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In addition, \$118,886 was expended on a diamond drilling programme designed to test further the Queen Hill ore body within Consolidated Lease 43M173.

Submitted: W. Wood
for D.C. Simpson
Geologist.

Endorsed: L.V. Gentle
L.V. Gentle
Chief Geologist.

DCS, SSW:KMW
15/12/75.

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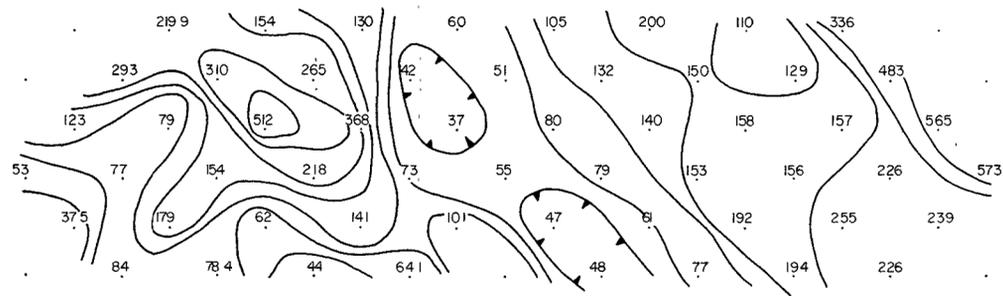
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ATTACHMENTS

Plans QH 48 to 55	Queen Hill I.P. Contours	1:2,500
Plans QH 56 and 57	Queen Hill S.P. Survey	1:2,500
58 to 60	Queen Hill Mise-a-la-Masse	1:2,500

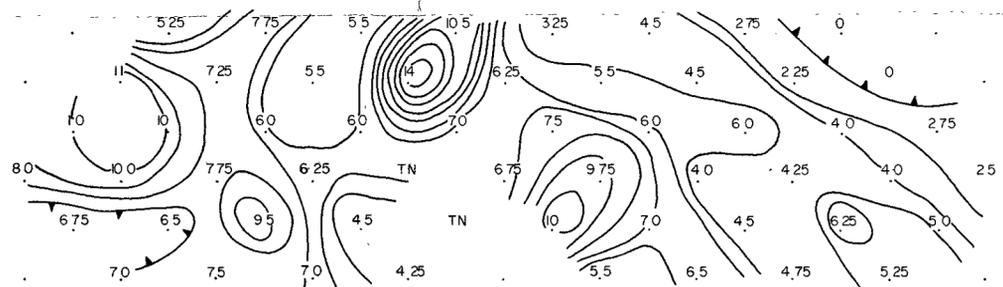
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n = 3 —
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n = 6 —



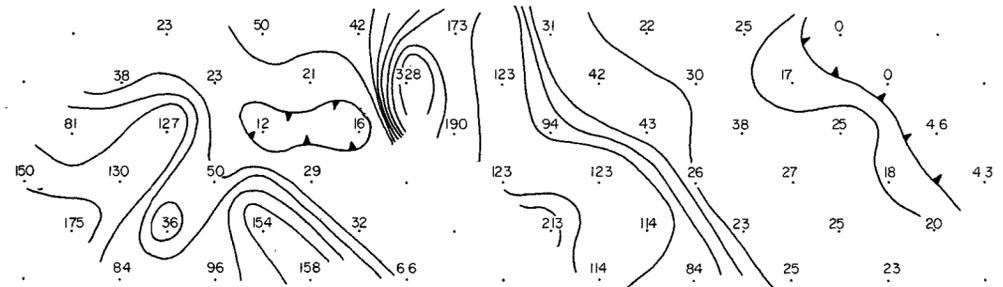
APPARENT RESISTIVITY - OHM METRES
(Logarithmic contours)

n = 1 —
n = 2 —
n = 3 —
n = 4 —
n = 5 —
n = 6 —



PERCENTAGE FREQUENCY EFFECT
(Linear contour interval)

n = 1 —
n = 2 —
n = 3 —
n = 4 —
n = 5 —
n = 6 —



METALLIC CONDUCTION FACTOR
(Logarithmic contours)

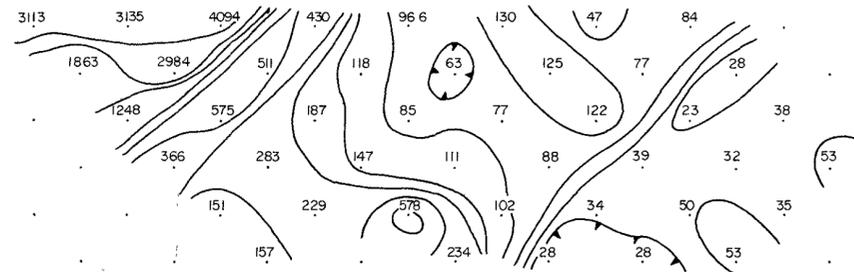


75-1136

COMINCO EXPLORATION PTY. LTD.			
Drawn by RMSW	Traced by RJE	NORTH WEST TASMANIA	
Checked by		QUEEN HILL AREA 3315	
		TRAVERSE 1650N	
		FREQUENCY 3-3 Hz	SPACING 50 m
Location code K-5/5 50	Scale 1:2500	Date June, 1975	File QH 48

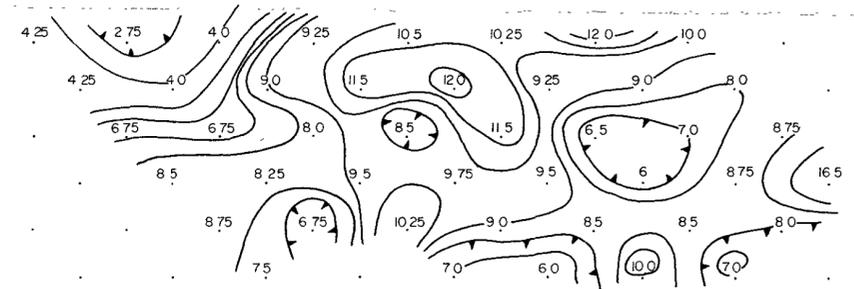
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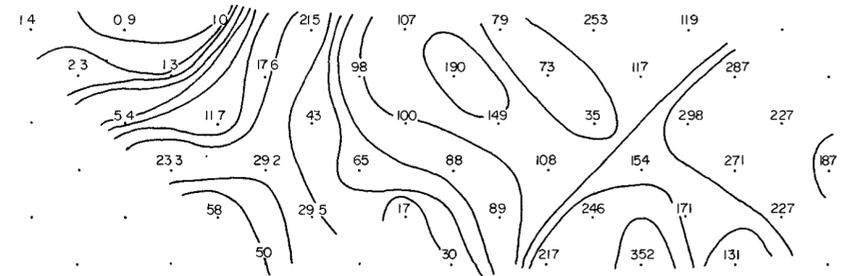
APPARENT RESISTIVITY - OHM METRES
(Logarithmic contours)

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n = 2 —
n = 3 —
n = 4 —
n = 5 —
n = 6 —



PERCENTAGE FREQUENCY EFFECT
(Linear contour interval)

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n = 2 —
n = 3 —
n = 4 —
n = 5 —
n = 6 —



METALLIC CONDUCTION FACTOR
(Logarithmic contours)

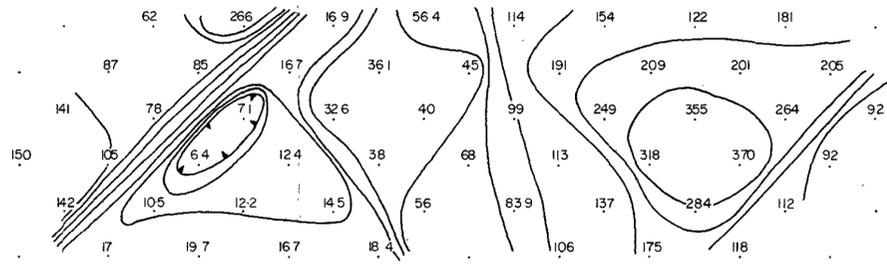


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Location code	K55 / 5 / 50	Scale	1 : 250
		Date	13, June, 1975
		Plate	QH49

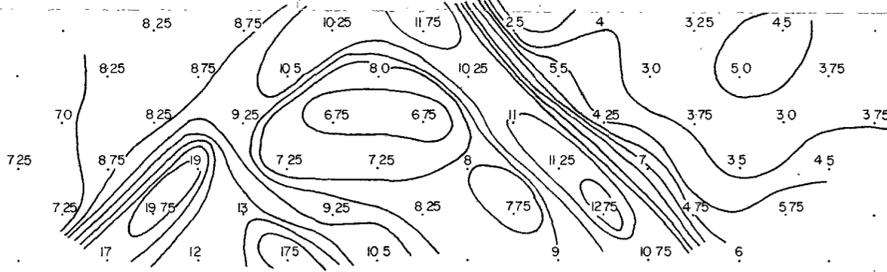
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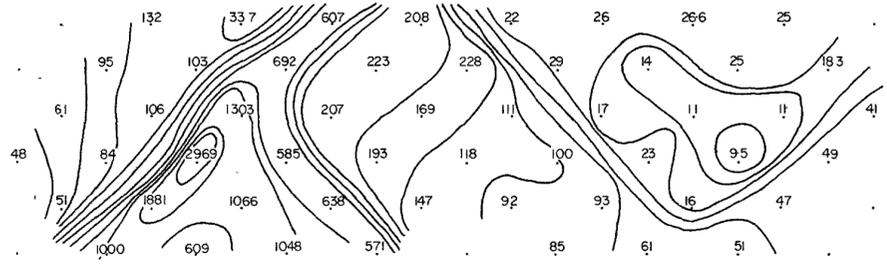
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(Logarithmic contours)

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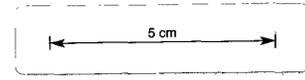


PERCENTAGE FREQUENCY EFFECT
(Linear contour interval)

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METALLIC CONDUCTION FACTOR
(Logarithmic contours)



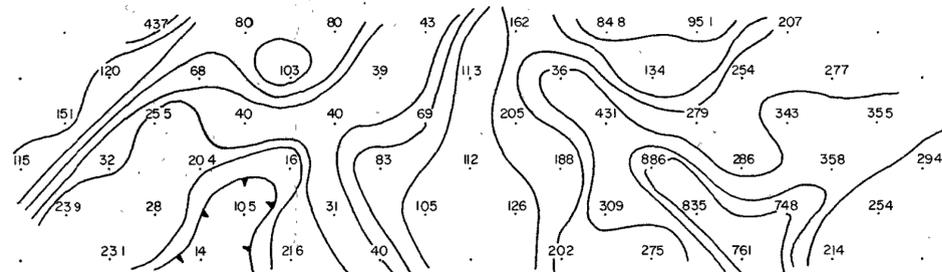
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		TRAVERSE 1750N	
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485008

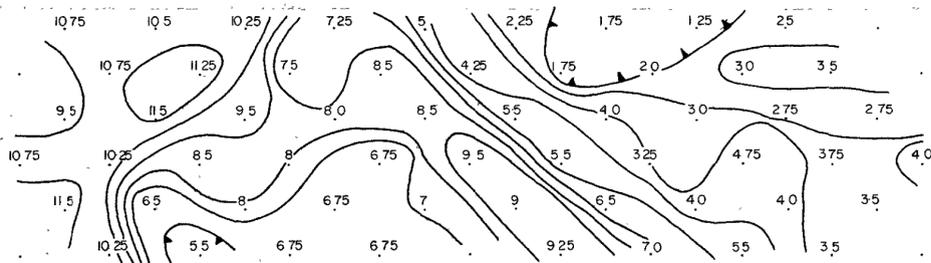
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n = 3 —
n = 4 —
n = 5 —
n = 6 —



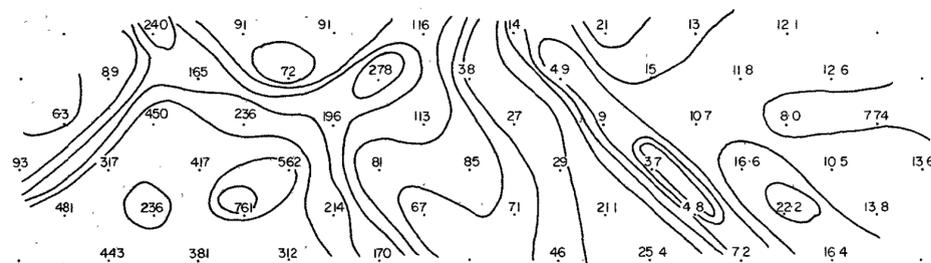
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(Logarithmic contours)

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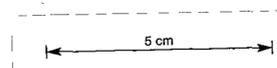


PERCENTAGE FREQUENCY EFFECT
(Linear contour interval)

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n = 6 —



METALLIC CONDUCTION FACTOR
(Logarithmic contours)



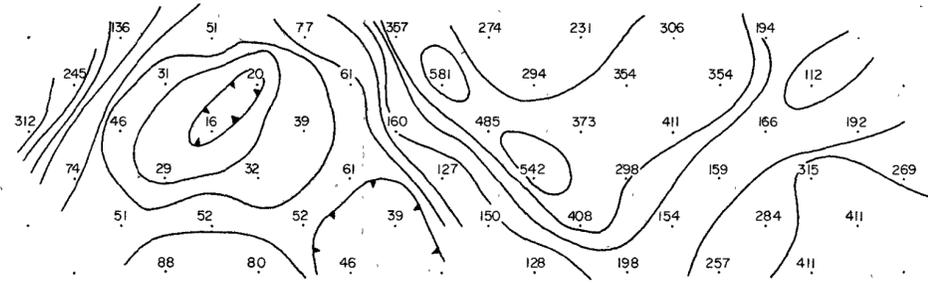
75-1136

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Checked by		QUEEN HILL AREA	3318
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		FREQUENCY 3-3 Hz	SPACING : 25 m
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485009

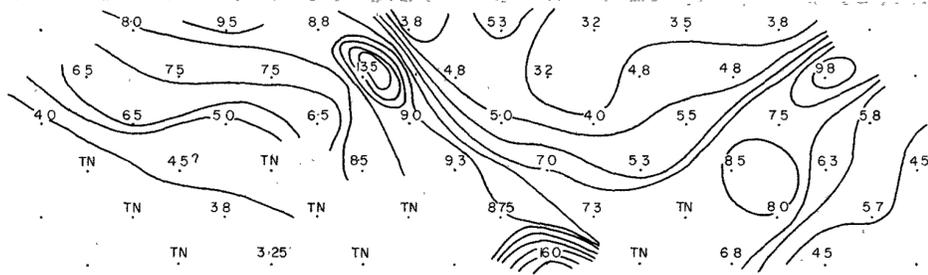
800E 750E 700E 650E 600E 550E 500E 450E 400E 350E 300E 250E

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 n = 4 —
 n = 5 —
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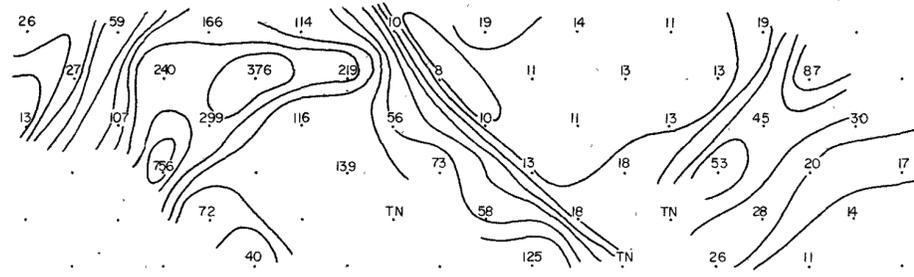
APPARENT RESISTIVITY - OHM METRES
 (Logarithmic contours)

n = 1 —
 n = 2 —
 n = 3 —
 n = 4 —
 n = 5 —
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PERCENTAGE FREQUENCY EFFECT
 (Linear contour interval)

n = 1 —
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 n = 3 —
 n = 4 —
 n = 5 —
 n = 6 —



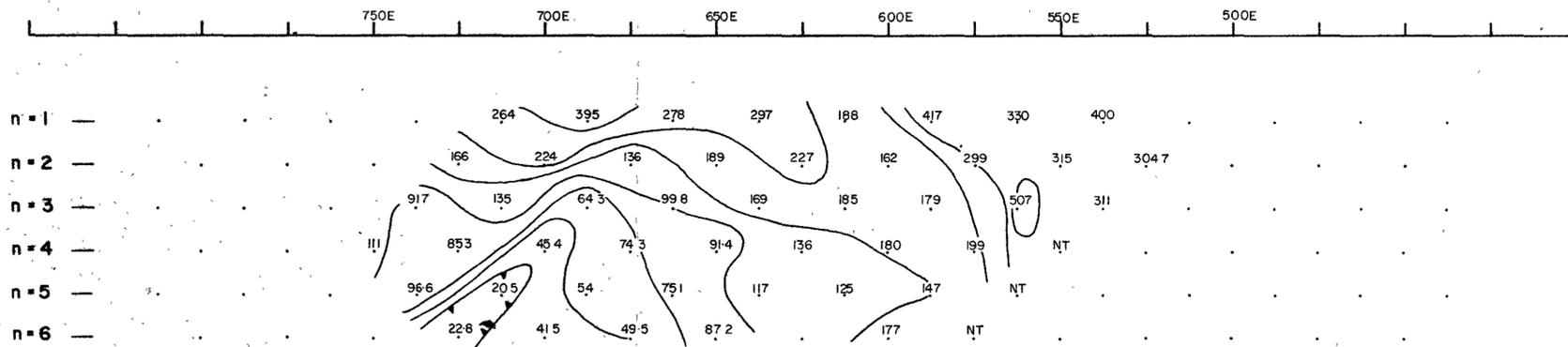
METALLIC CONDUCTION FACTOR
 (Logarithmic contours)



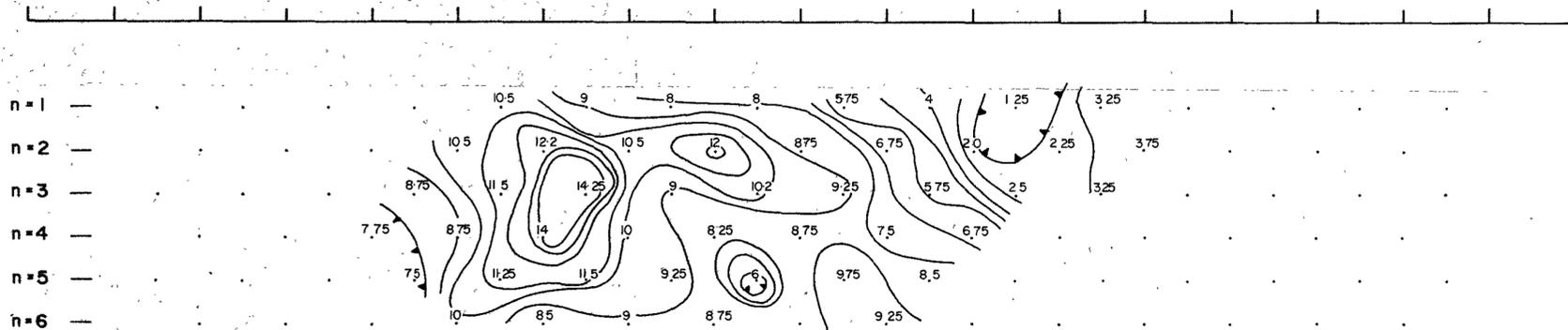
75-1136

COMINCO EXPLORATION PTY. LTD.			
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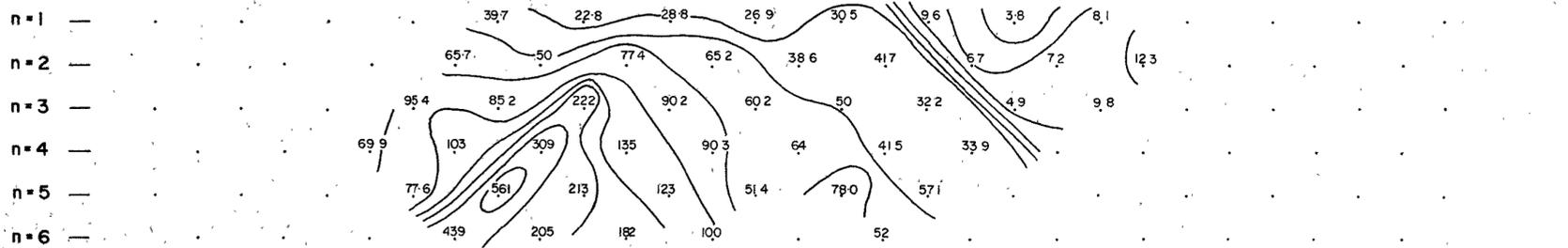
485010



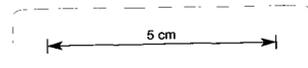
APPARENT RESISTIVITY - OHM METRES
 (Logarithmic contours)



PERCENTAGE FREQUENCY EFFECT
 (Linear contour interval)



METALLIC CONDUCTION FACTOR
 (Logarithmic contours)



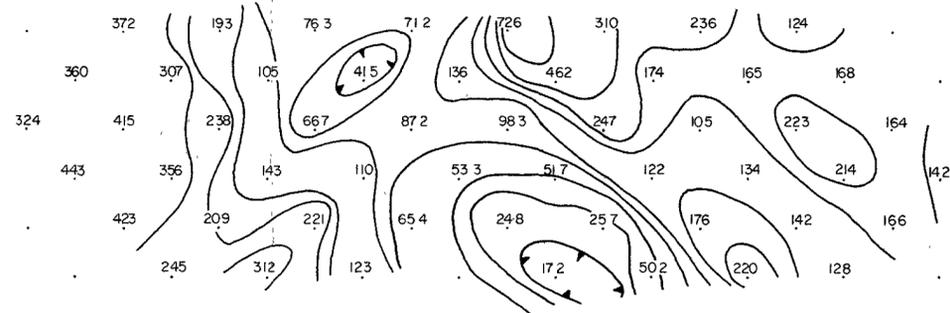
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Location code K55 /5 /50	Scale 1:1250	Date June, 1975	Plate QH53

485011

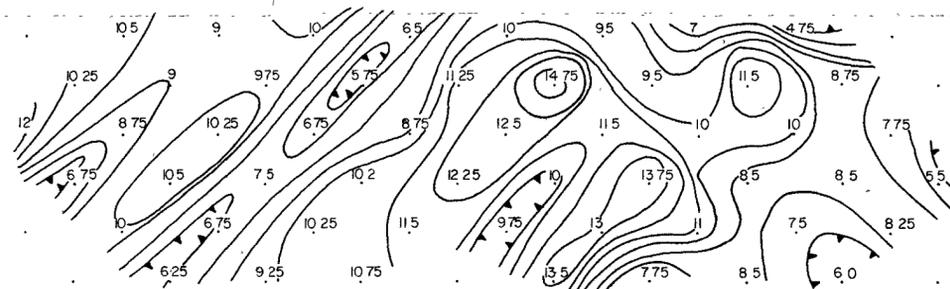
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 n = 5 —
 n = 6 —



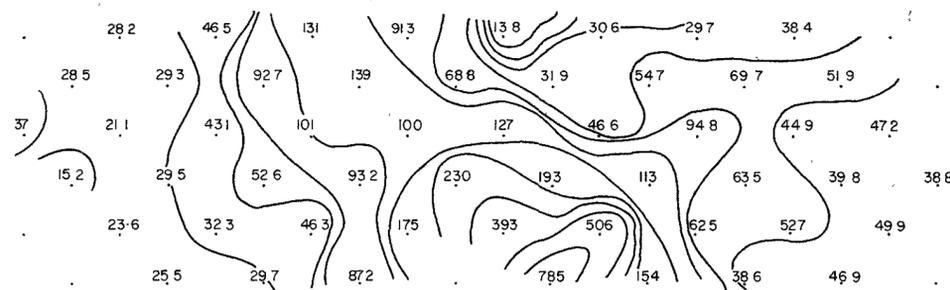
APPARENT RESISTIVITY - OHM METRES
 (Logarithmic contours)

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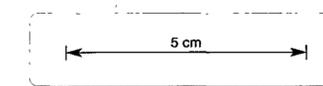


PERCENTAGE FREQUENCY EFFECT
 (Linear contour interval)

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 n = 4 —
 n = 5 —
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METALLIC CONDUCTION FACTOR
 (Logarithmic contours)

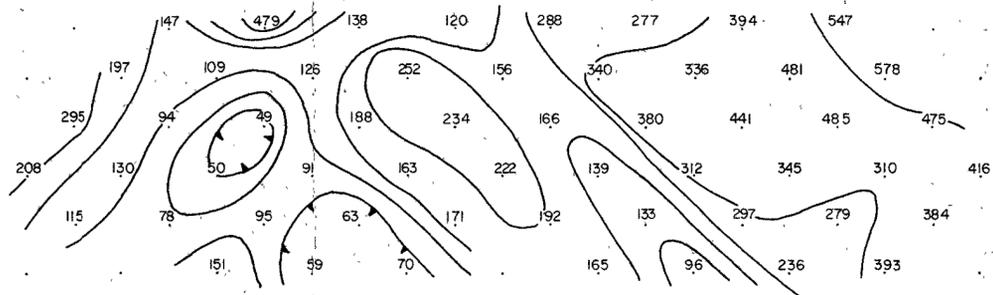


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COMINCO EXPLORATION PTY. LTD.			
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Checked by		QUEEN HILL AREA	3321
		TRAVERSE 1900N	
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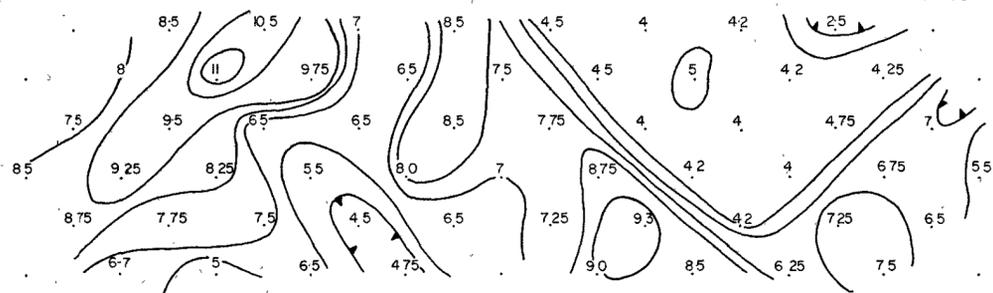
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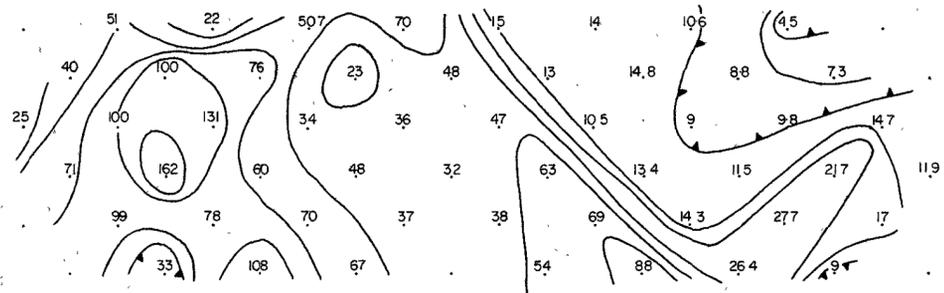
APPARENT RESISTIVITY - OHM METRES
(Logarithmic contours)

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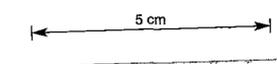


PERCENTAGE FREQUENCY EFFECT
(Linear contour interval)

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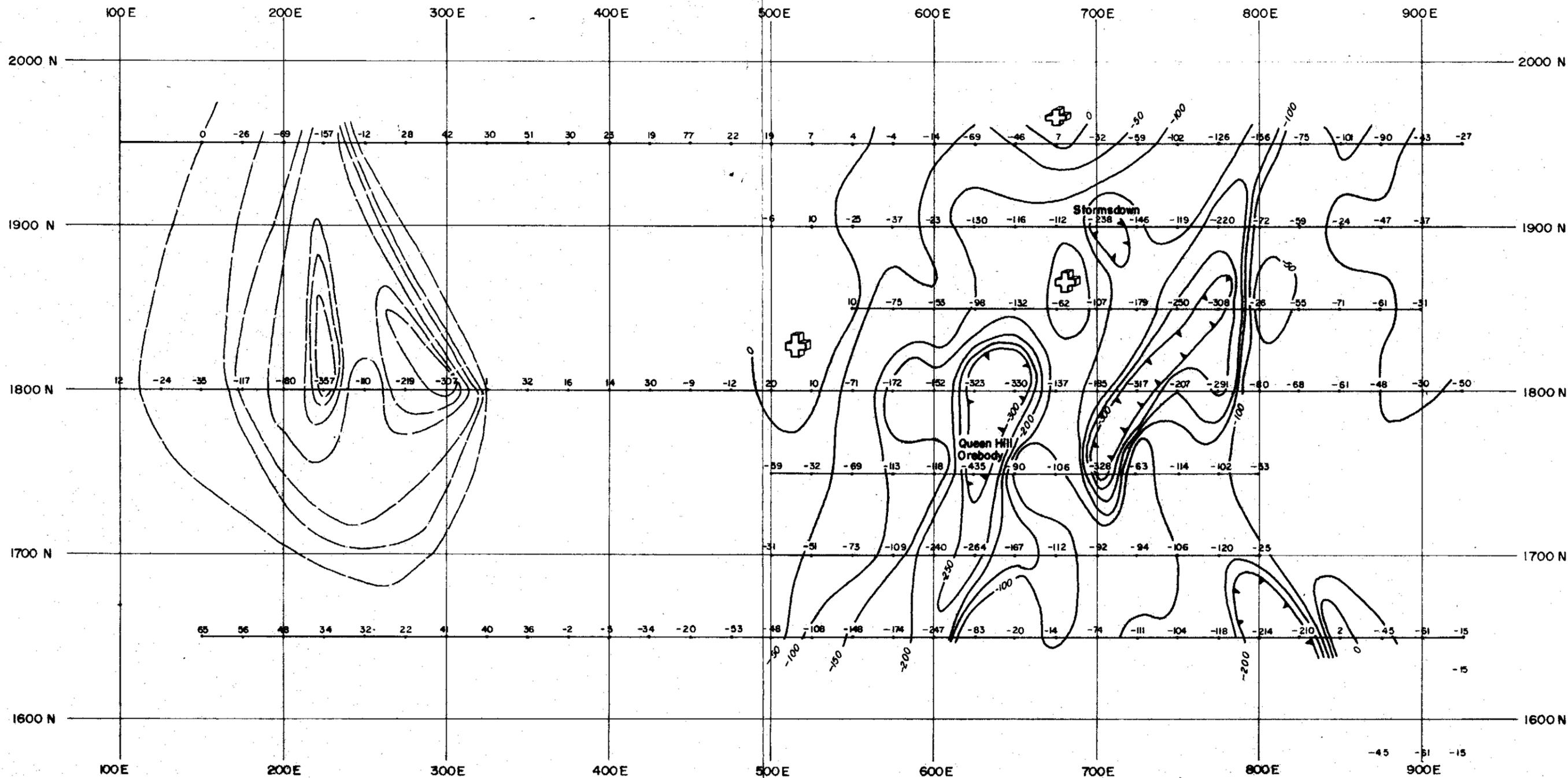


METALLIC CONDUCTION FACTOR
(Logarithmic contours)



75-1136

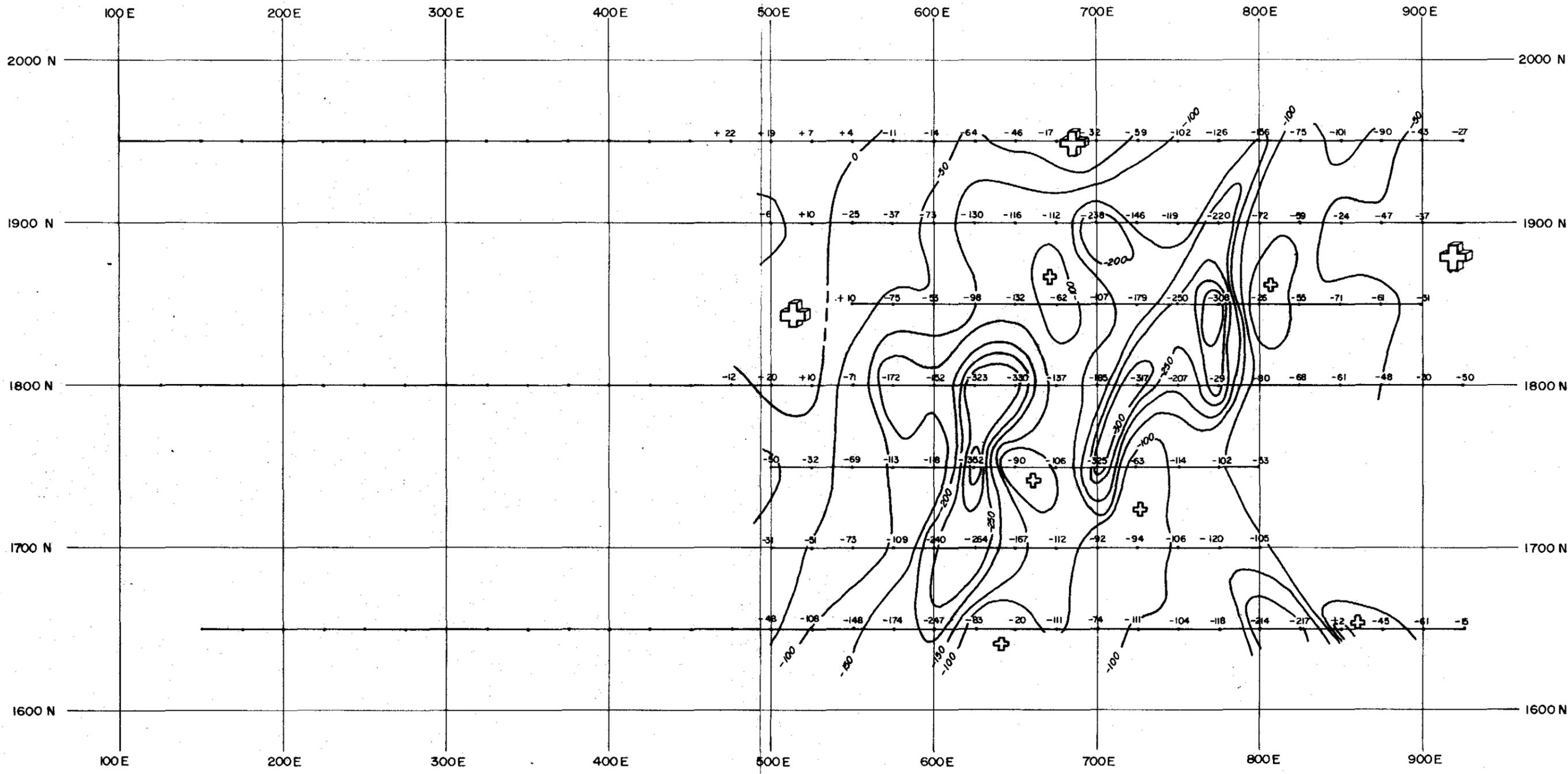
COMINGO EXPLORATION PTY. LTD.			
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Checked by		QUEEN HILL AREA	3322
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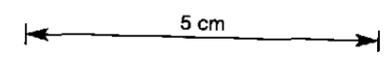
Contour interval = 50 mv

485014
 5 cm

COMINCO EXPLORATION PTY. LTD.		
Drawn: R.M.S.W.	NORTH WEST TASMANIA QUEEN HILL 3323 S.P. Survey	Location code: K 55/5/50
Traced: R.J.E.		Scale: 1:2,500
Checked:		Date: September, 1975
Revised: Date:		Plate N° QH 56

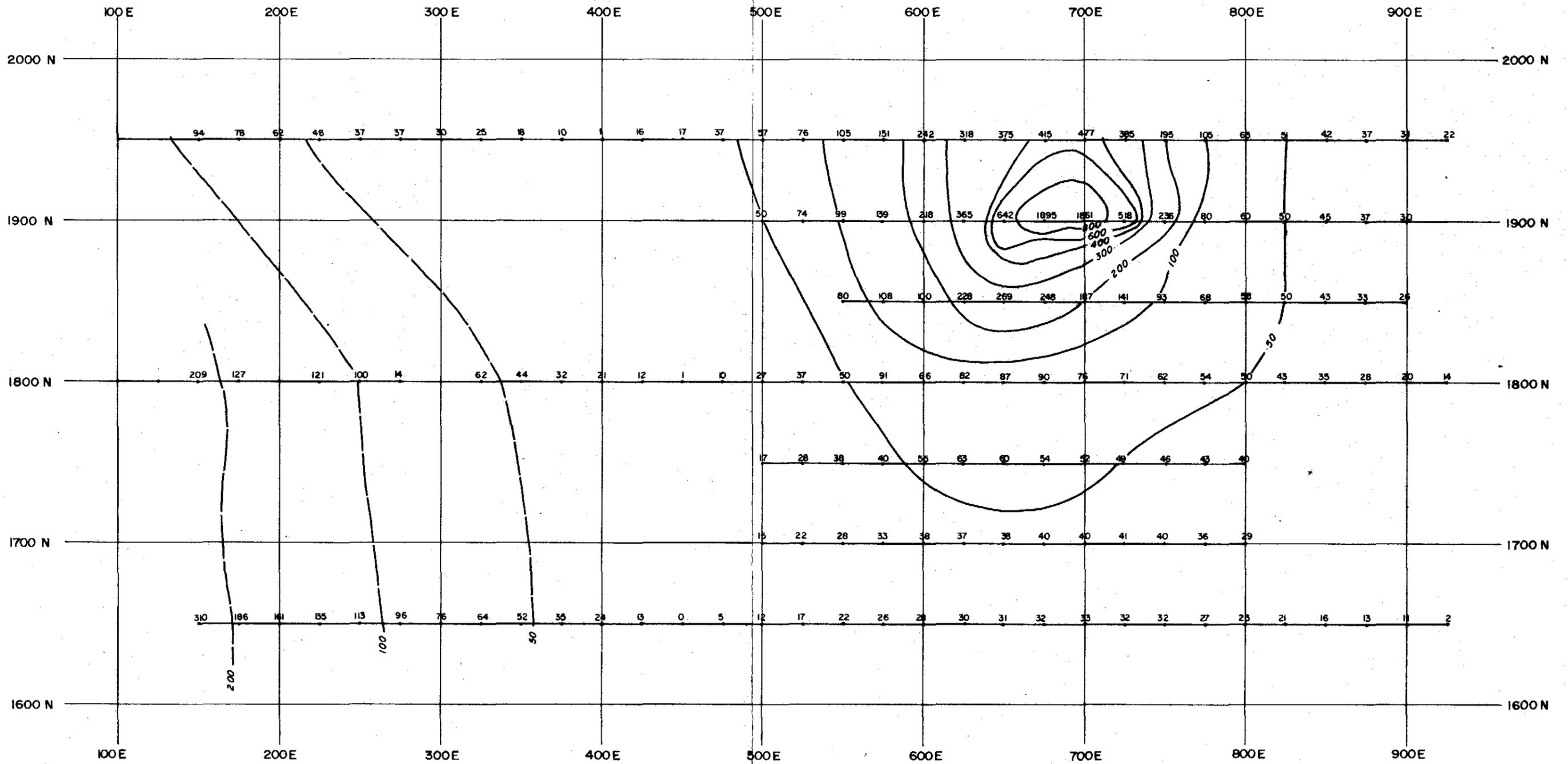


Contour interval = 50 mv



75-1136 485015

COMINCO EXPLORATION PTY. LTD.		
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Traced: R. J. E.	S.P. Survey	Scale: 1:2,500
Checked:		Date: September, 1975
Revised: Date:		Plate No QH 57



(mV/A)
2

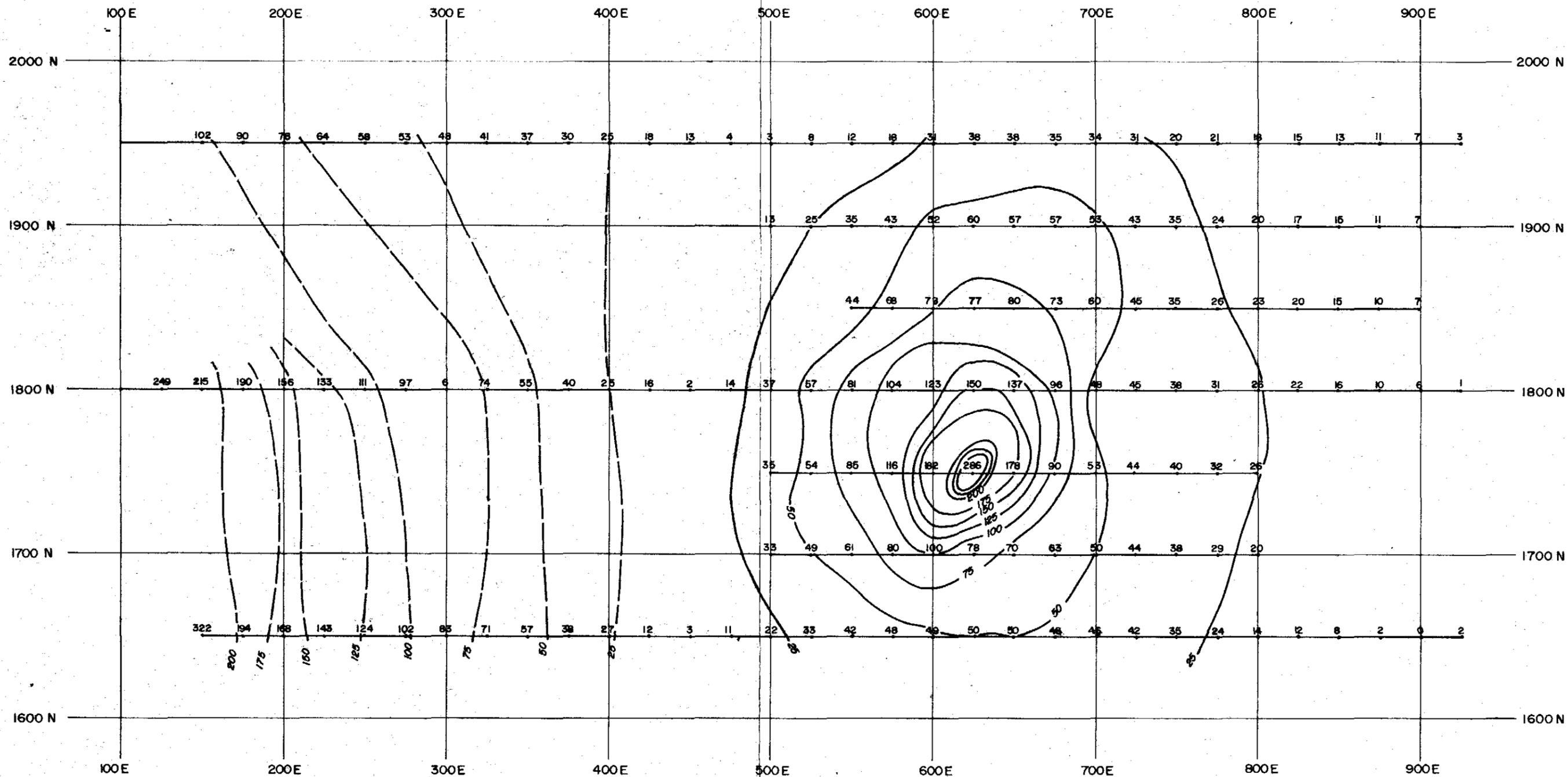
Electrode = on surface in "stormsdown" pit 1900N - 685 E
Far electrode = 1700N - 400 E

5 cm

485016

75-1136

COMINCO EXPLORATION PTY. LTD.		Location code: K 55/5/50
Drawn: R.M.S.W.	NORTH WEST TASMANIA QUEEN HILL 3325	Scale: 1:2,500
Traced: R.J.E.		Date: September, 1975
Checked:	Mise-a-la-masse 'Stormsdown'	Plate N° QH 58
Revised: Date:		



$\frac{(mV/A)}{2}$

Electrode = below surface

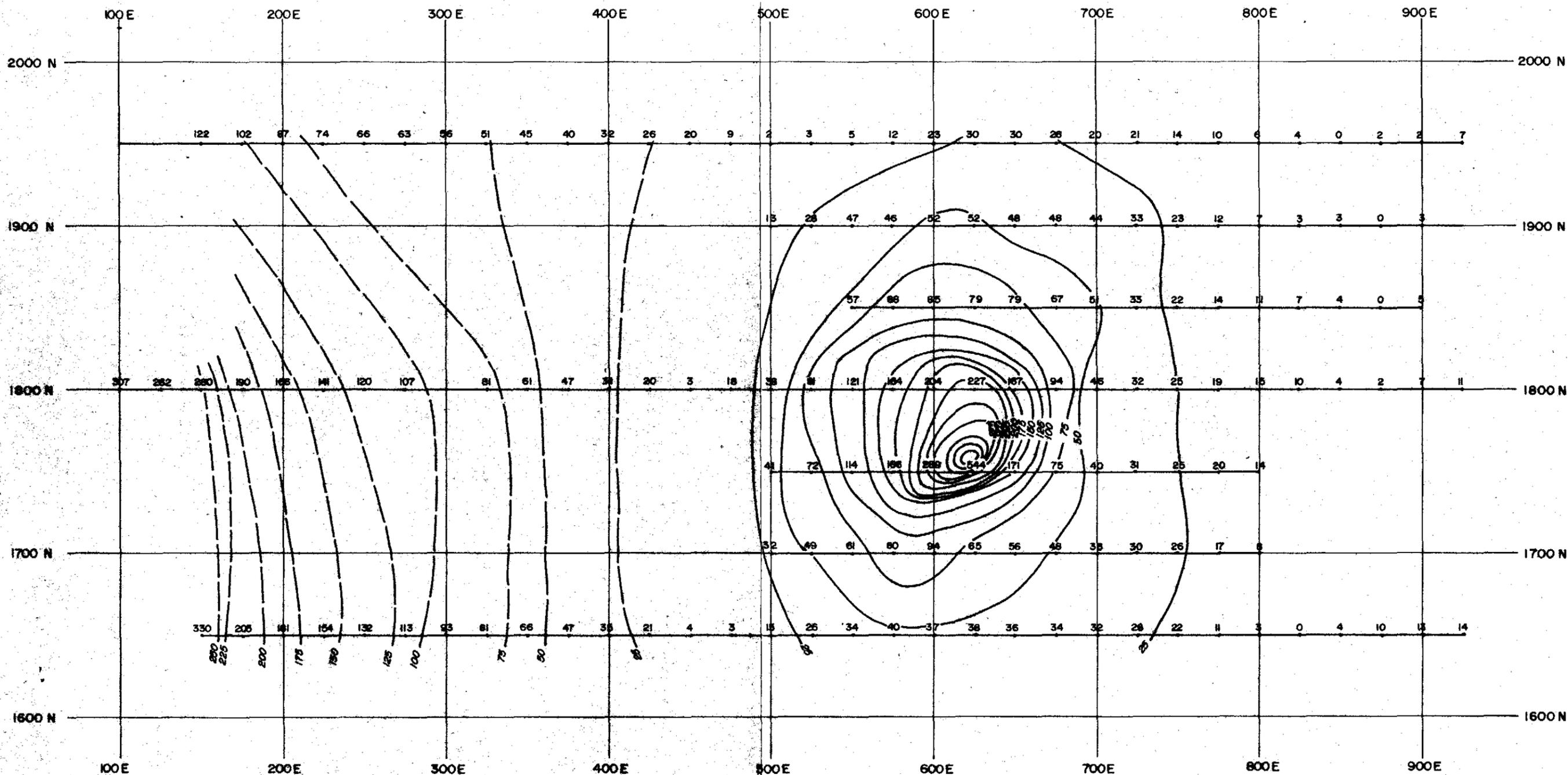
For electrode = 1700N - 400E

5 cm

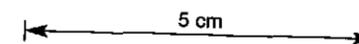
485017

75-1136

COMINCO EXPLORATION PTY. LTD.	
Drawn: RMS.W	NORTH WEST TASMANIA QUEEN HILL 3326
Traced: R.K.Y	Location code: K 55/5/50
Checked:	Scale: 1:2,500
Revised: Date:	Date: September 1975
Mise-a-la-masse (Electrode in adit)	
Plate N° QH 59	



485018



$\frac{(mV/A)}{2}$

Electrode = 1780N 620E on surface

Far electrode = 1700N -400E

COMINCO EXPLORATION PTY. LTD.		
Drawn: RMSW	NORTH WEST TASMANIA QUEEN HILL 3327	Location code: K 55/5/50
Traced: RKY		Scale: 1:2,500
Checked:		Date: September 1975
Revised: Date:	Mise-a-la-masse 'Queen Hill Orebody'	Plate N° QH 60