



Bergvesenet

Postboks 3021, 7002 Trondheim

Rapportarkivet

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Tittel Evje - Iveland Project Report on an induced polarization and magnetic survey at Aavitslandsheia grid, Evje.				
Forfatter F Nixon		Dato vinter 1971	Bedrift Sulfidmalm A/S	
Kommune Evje og Hornnes	Fylke Aust-Agder	Bergdistrikt Østlandske	1: 50 000 kartblad 15123	1: 250 000 kartblad Mandal
Fagområde Geofysikk	Dokument type Rapport	Forekomster Aavitslandsheia (Åvitslandsheia)		
Råstofftype Malm/metall	Emneord Ni Cu			
Sammendrag				

A / S S U L F I D M A L M

EVJE-IVELAND PROJECT.

**REPORT ON AN INDUCED
POLARIZATION AND MAGNETIC
SURVEY AT AAVITSLANDSHEIA
GRID, EVJE.**

WINTER - 1971.

F. NIXON

SUMMARY OF PREVIOUS WORK

- 1) Minor blasting and trenching carried out on the Lomtjern nickel showing prior to 1914.
- 2) A/S Evje Nikkelverk carried out a magnetometer survey in the vicinity of the old showings in 1914.
- 3) The same company drilled 4 holes in 1914 in the vicinity of the Lomtjern showing. Best intersection 1,5 m of massive sulphides running 2% Ni.
- 4) In 1928 Raffineringsverket A/S drilled a total of 6 holes again in the vicinity of Lomtjern. The best intersection ran 0,63 % Ni over an unknown core length.
- 5) The area was mapped at a scale of 1 : 15000 in 1967 by V.H. Wiik of Sulfidmalm.
- 6) Geophysical work (E.M. see enclosure) was carried out by Sulfidmalm in August 1967 and further work was done on frozen lakes in March 1968.
- 7) Mapping and property examination was carried out by the writer in 1968 at a scale of 1: 5000.

WORK CARRIED OUT

The IP survey was carried out using a McPhar Variable Frequency Unit (Model P.680) with operating frequencies of 0,3 and 5 cps. McPhar supplied the operator (A.K. Wood), Sulfidmalm being responsible for supplying the rest of the four man crew. The grid lines were chained by local help hired by Sulfidmalm. The project was co-ordinated and supervised by the writer.

Interpretation of the IP plots has been undertaken by D.B. Sutherland Chief Geophysicist, Falconbridge Nickel Mines Ltd.

The following profiles were run:

Line	Dipole	E/W extension	Total length
600 S	50 m	250 E - 300 W	550 m
500 S	50 m	300 E - 300 W	600 m
400 S	50 m	300 E - 300 W	600 m
300 S	50 m	300 E - 300 W	600 m
200 S	50 m	300 E - 300 W	600 m
100 S	50 m	400 E - 400 W	800 m
50 S	50 m	150 E - 300 W	450 m
0/0	50 m	300 E - 400 W	700 m
100 N	50 m	200 E - 450 W	650 m
150 N	50 m	350 E - 100 W	450 m
200 N	50 m	100 E - 350 W	450 m
Total line distance			6450 m

The magnetometer survey was carried out by L. Nesvoll of Sulfidmalm, using a McPhar M.700 Fluxgate Magnetometer. A total of profile-kms were measured with approximately readings.

RESULTS

The IP anomalies discovered in the Evje-Iveland area have been divided into 3 classes. Class 1 anomalies being the strongest and most interesting, class 3 being the weakest. On the Aavitslandsheia grid only anomalies of class 2 and 3 were encountered.

In the following table the anomalies are numbered and their location and class given.

LIST OF I.P. ANOMALIES AAVITSLANDSHEIA GRID.

No.	Line	Dipoles	E/W co-ordinates	Class
1	200 S	50 m	20 E - 30 W	3
2	100 S	50 m	140 E - 200 E	3
3	50 S	50 m	25 E - 25 W	2
4	0/0	50 m	25 E - 25 W	2
5	100 N	50 m	75 E - 100 E	3

The magnetic data is presented as an isoanomaly map in scale 1: 1000.

INTERPRETATIONS

D.B. Sutherland's verbal and written comments to the writer have been incorporated in this section.

Anomalies 3, 4 and 5 correlate with E.M. anomalies discovered by Sulfidmalm in 1967/68. There are also surface sulphides that correlate with anomaly 4. Lines 150 N and 100 S do not indicate any extension to this zone. These three anomalies indicate narrow sources with moderate metallic content, the sources being quite shallow.

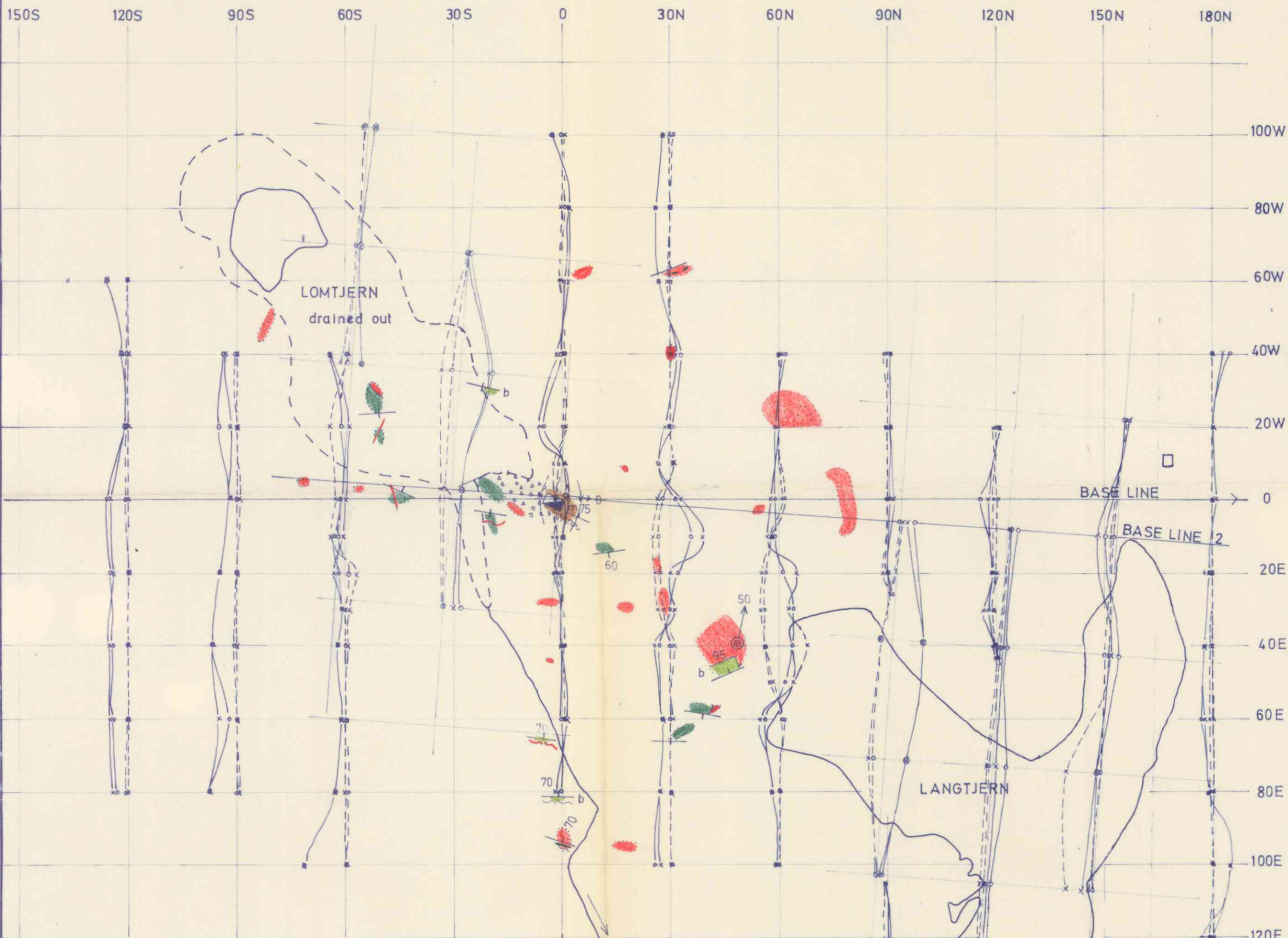
This I.P. anomaly zone is strongest on lines 50 S and 0/0, and the response is characterized by high MF's and low R's. The northernmost part of the zone, i.e. anomaly 5 on line 100 N, is much weaker and seems to be nearer surface.

The other two anomalies discovered are weak one line anomalies without correlation. Anomaly 1 is a feeble indication of a narrow source and anomaly 2 is a slightly stronger indication of a narrow source.

The magnetic data indicate the regional strike direction in the area NE/SW but there is no direct correlation between I.P. and mag. data.

RECOMMENDATIONS

I.P. has verified the fact that we are dealing at Aavitsland with an approximately 200 m long narrow sulphide zone that has been worked at the Lomtjern prospect pit and drilled by the Evje Nikkelverk and Raffineringsverket A/S without any positive results. No further work is recommended.



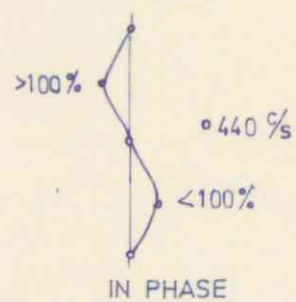
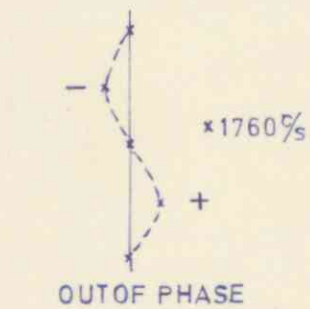
LEGEND

- PEGMATITE
- ▬ GRANITIC DYKE
- GRANITE (fine grained)
- HORNBLLENDE GNEISS
- AMPHIBOLITE
- META GABBRO

- b biotite
- ▬ exploration shaft
- prospect pit
- ⊙ dumps
- ⊙ diamond drill hole
- ▬ foliation
- ▬ lineation
- ▬ shear
- ▬ migmatitic structure

angles recorded in 400° system

E.M. ANOMALIES



1mm=1%
length of cable 40m

ELECTROMAGNETIC MAP FROM LOMTJERN

IN AAVESLANDHEIA, EVJE

NORWAY

A S SULFIDMALM
KRISTIANSAND S

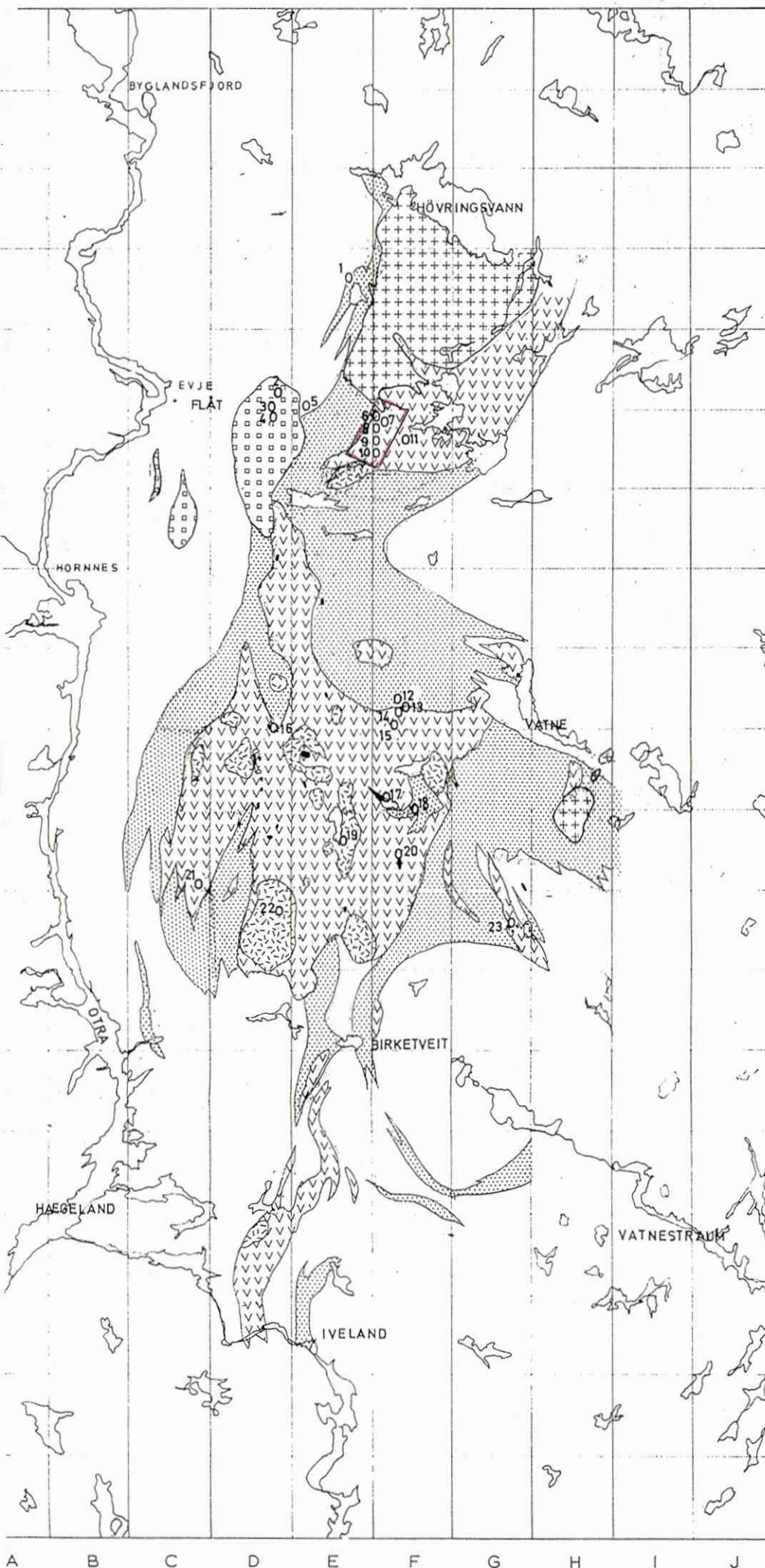
SCALE
1:1000

OBS: EEH, E.O. AUG '67
DRAW: E.O. NOV '67
TRAC: FN. DEC '67
ADDITIONS MAR '68

EGH.FN.VHW.

MAP SHEET
1512 III

EVJE-IVELAND ARE



- GRANITIC AND DIORITIC GNEISS
- AMPHIBOLITE FOLIATED AND MASSIVE
- HORNBLende GNEISS
- GABBRO
- HORNBLende DIORITE
- ULTRABASIC
- GRANITE

- 1 st. AAF LAU PROSPECT
- 2 FLATERYGD "
- 3 FLÅT MINE "
- 4 MYKLEÅSEN PROSPECT
- 5 STABBESTEN "
- 6 HESTÅSEN "
- 7 LANGTJERN "
- 8 LOMTJERN "
- 9 GULREGN "
- 10 BYTTINGSMYR "
- 11 VIKSTÖL "
- 12 N. PAASCHE "
- 13 S. PAASCHE "
- 14 BEKKEN "
- 15 ORREKNAPPEN "
- 16 LITJERN "
- 17 KLEPTJERN "
- 18 EPTVASSMYR "
- 19 MÖLLAND (hjellevassmyr)
- 20 HAALAND "
- 21 LANDAAS "
- 22 SKRIPELAND "
- 23 ELSHAUGEN

AAVITSLANDSHEIA GRID AREA

0 1 2 3 4 5 KM

List of enclosures

- ✓ 1. Geological map of Evje-Iveland showing location of area.
- ✓ 2. Map showing location of I.P. anomalies.
- ✓ 3. Transparent overlay showing contours of apparent resistivity for $n = 1$ on 50 m spreads.
- ✓ 4. Transparent overlay showing contours of metal factor at $n = 1$ on 50 m spreads.
- ✓ 5. Electromagnetic map from Lomtjern in Aavitslandsheia.
- ✓ 6. Magnetic map of grid area.
- ✓ 7 - II. Individual I.P. Plots.

7th Oct., 1971
FN/hm



STEMTJERN

A/S SULFIDMALM

AAVITSLANDSHEIA GRID EWJE, NORWAY
MAP SHOWING LOCATION OF I.P.
ANOMALIES.

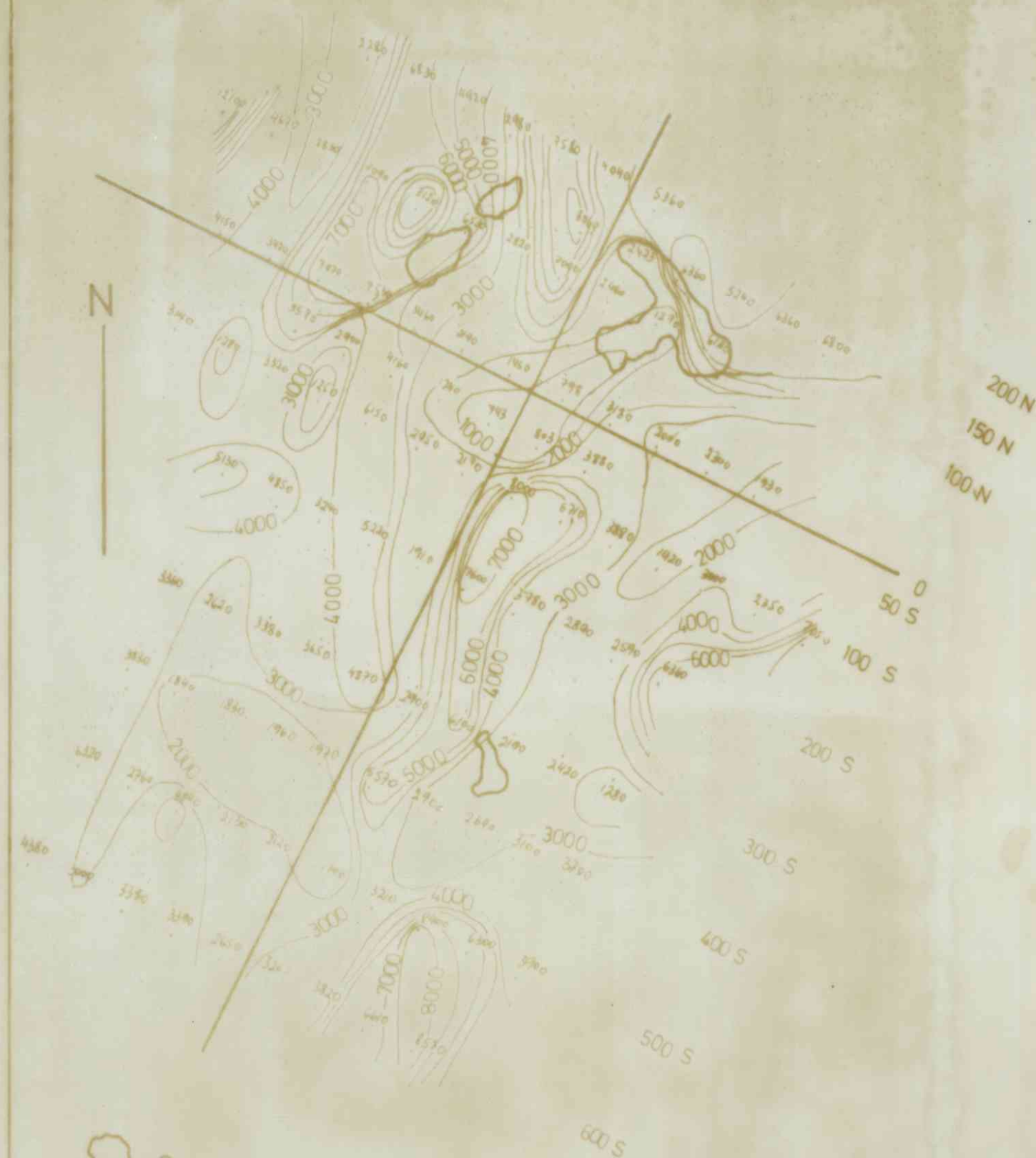
Bilag 2

SCALE 1:5,000

DRAWN FN

DATE SEPT. 71.

TRACED FN



FALCONBRIDGE NICKEL MINES LTD.

AAVITSLANDSHEIA GRID, EVJE- IVE-
LAND PROJECT, NORWAY. - Contours
of apparent resistivity ($\rho_a/2\pi$)
for $n=1$ on 50 metre spreads.

SCALE 1:5,000

DRAWN TN

DATE MAY 1971

TRACED RS

N

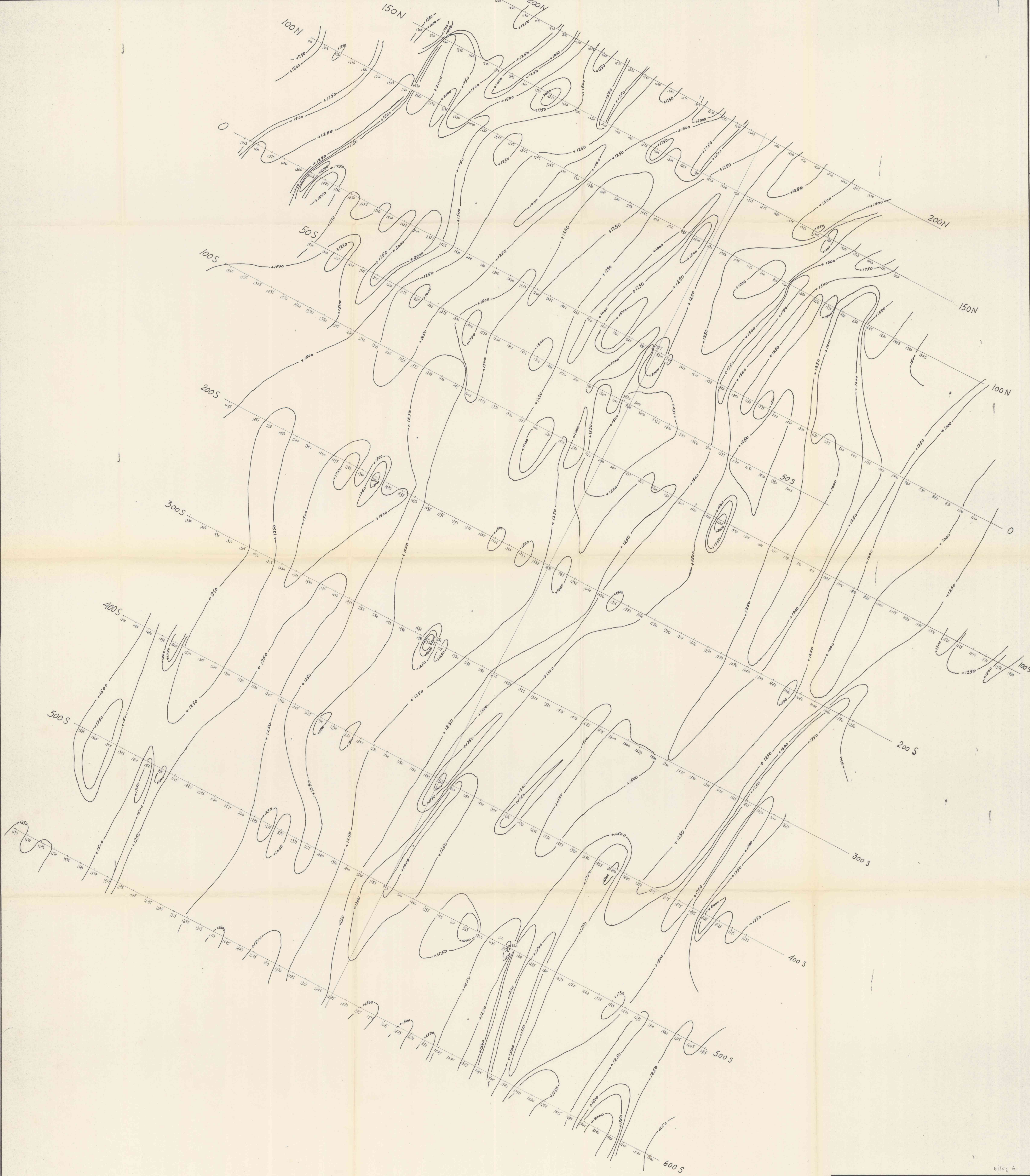


FALCONBRIDGE NICKEL MINES LTD.

AAVITSLANDSHEIA GRID, EVJE-
IVELAND PROJECT, NORWAY. -Contour
of Metal Factor at $n=1$ on 50
metre spreads.

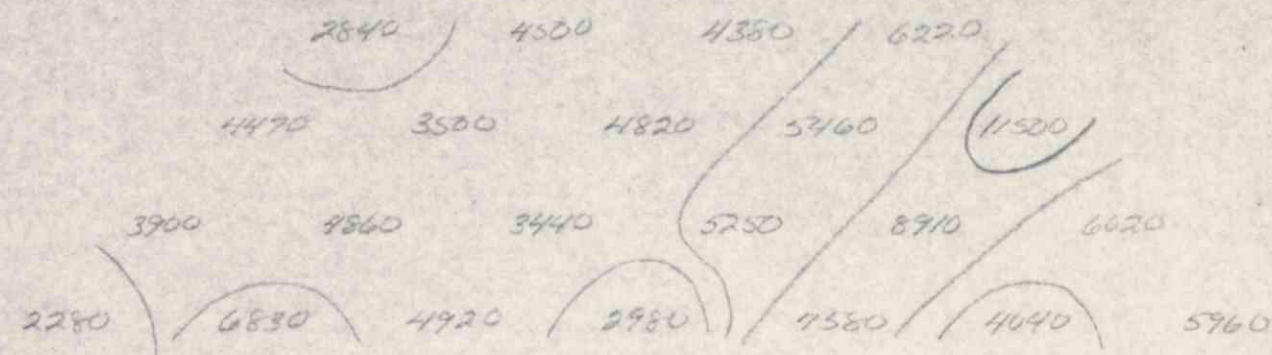
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DATE	MAY 1971	TRACED	RS

W. Lang 4



INSTRUMENT: M⁶PHAR, M 700, FLUXGATE MAGNETOMETER

MAGNETIC ANOMALIES, AAVITSLANDSHEIA GRID, EVJE, NORWAY.	OBS. L.N. APR. 70	
	DRAWN. OKT. 70	
	TRAC. J.J. OKT. 71	
A.S. SULFIDMALM, KRISTIANSAND	SCALE	1:1000
	MAP NO.	MAP SHEET 1512 III



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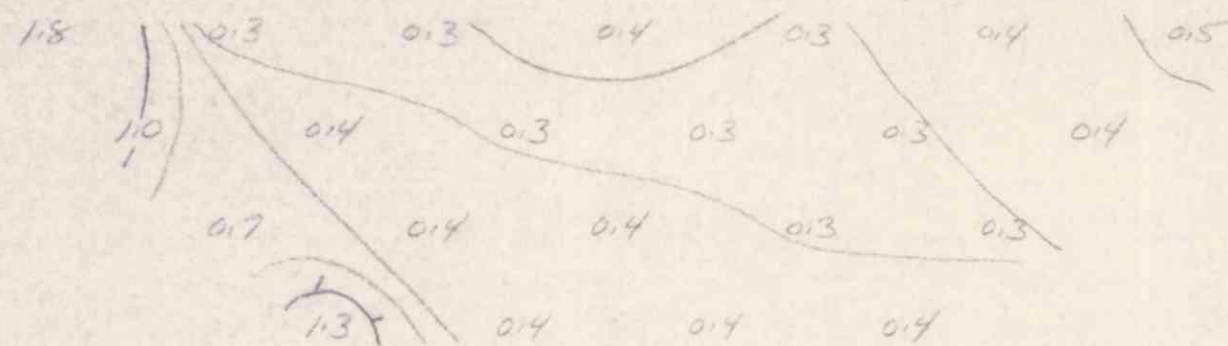
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 1011-FT

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 AAUVITSLANDSHEIA GRID
 IVELAND TOWNSHIP, NORWAY
 H.P.T.P. D-D
 0.345 GPS
 1" = 50 METRES
 MARCH 27, 1971
 A.K. WOOD - 017

350W 300W 250W 200W 150W 100W 50W 00 50E 100E



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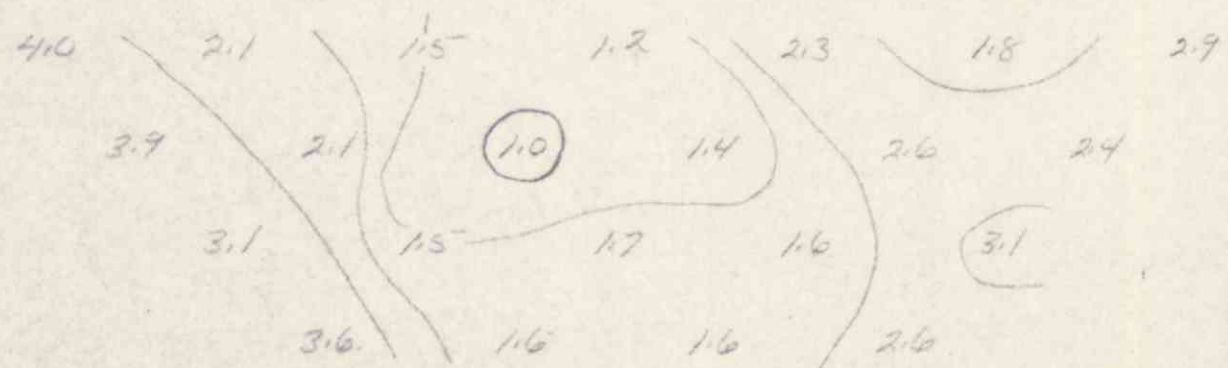
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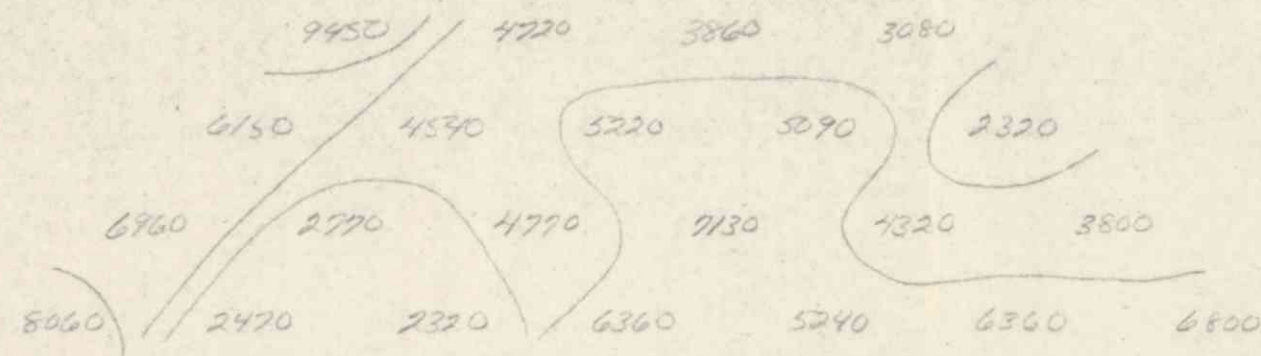
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350W 200W 00 100E



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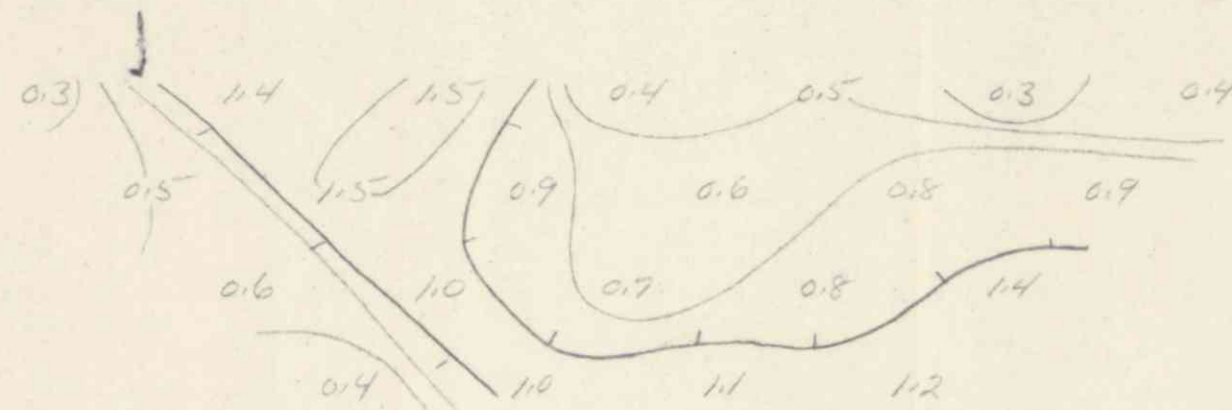
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(OHM-FT)

A/S SULFIDMALM
FALCONBRIDGE NIKKELVERK A/S
AAVITSLANDSHEIA GRID
EVJE, NORWAY
H.P.T.P. D-D
0.3 45 CPS
1" = 50 METRES
APRIL 2, 1991
A.K. WOOD - OP

100W 50W 00 50E 100E 150E 200E 250E 300E 350E



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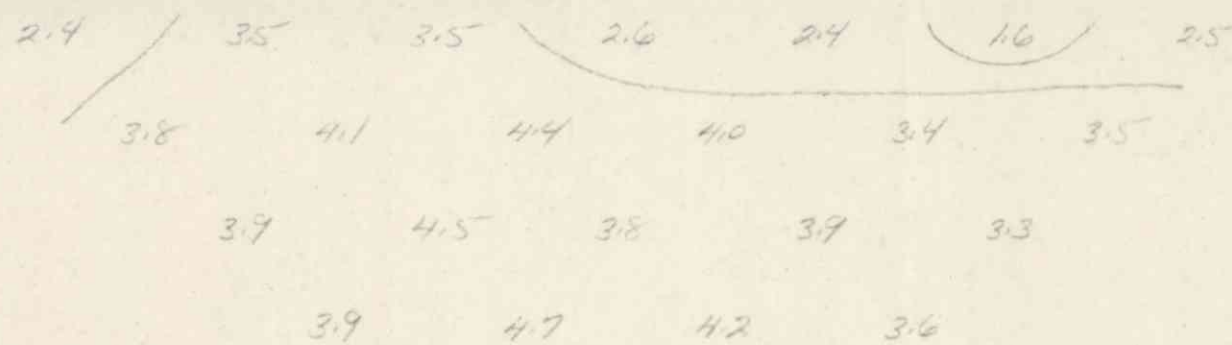
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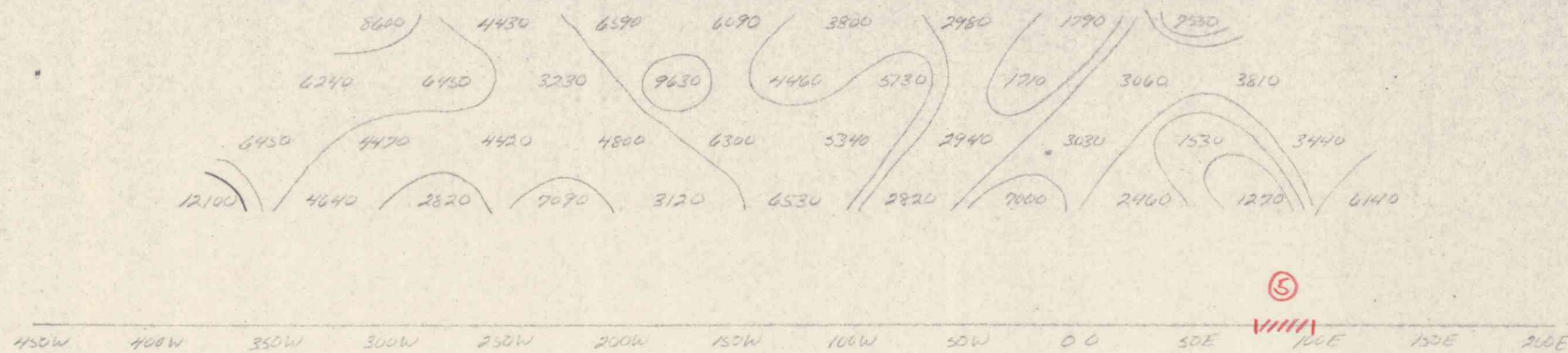
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BASELINE

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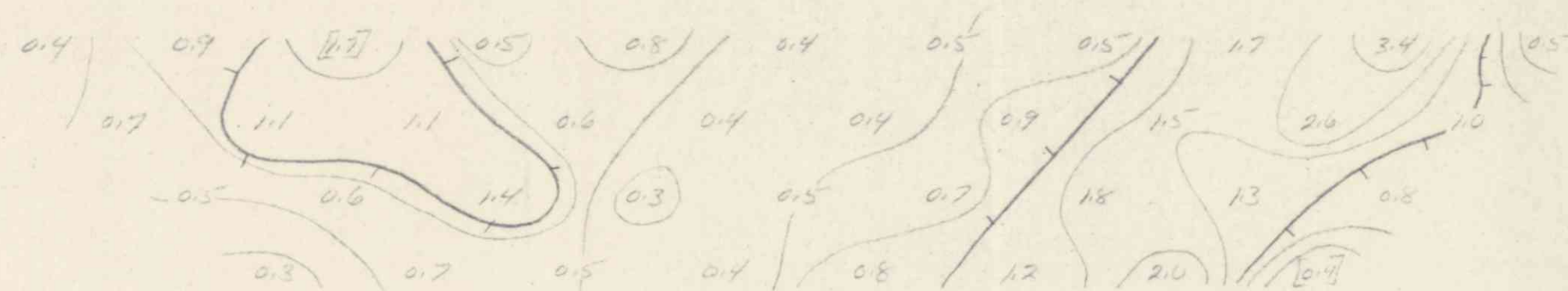
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(10MT-57)

A/S SULFIDMALM
FALCONBRIDGE NIKKELVERK A/S
AAVITSLANDSHEIA GRID
IUELAND TOWNSHIP NORWAY
H.I.P. D-D
0.345 CPS
1" = 50 METRES
MARCH 23, 1971
A.K. WOOD - GIP



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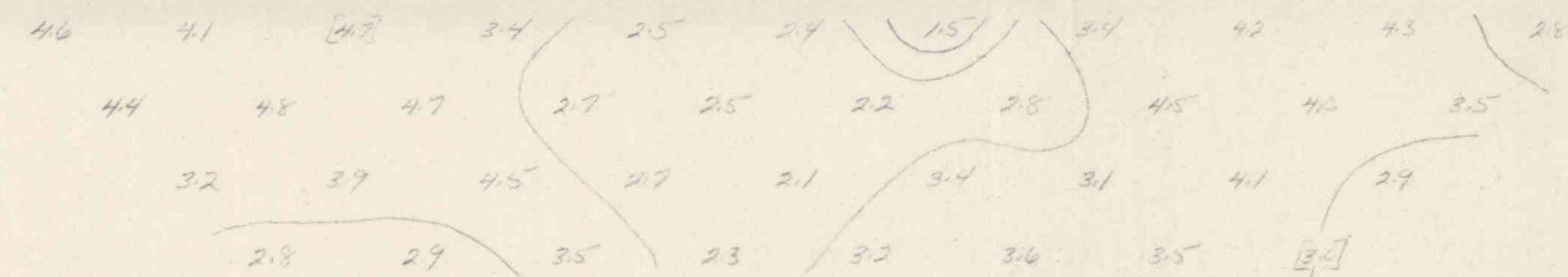
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NOTE
[] - INDICATES NOISY READING



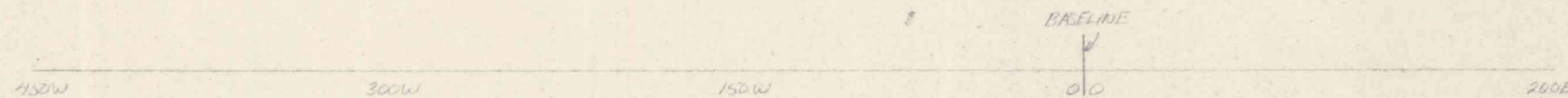
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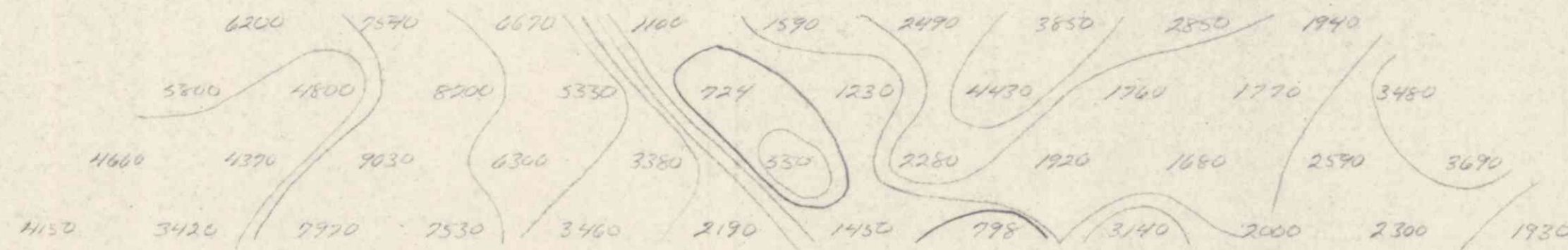
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F.E.



BASELINE



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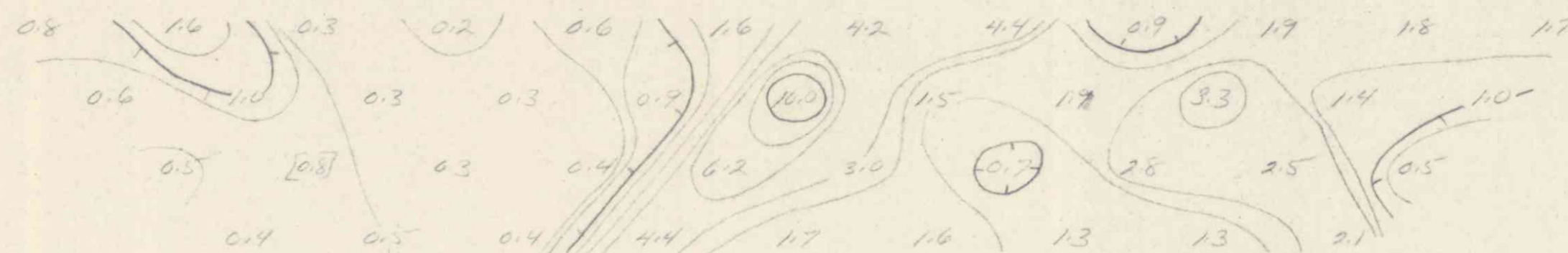
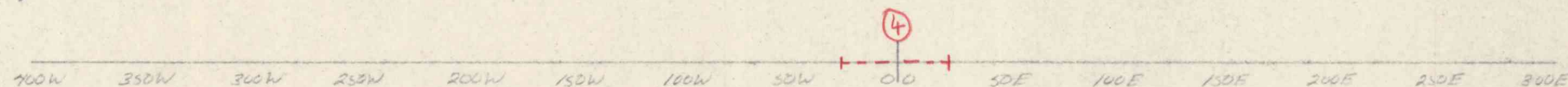
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N=1

(OHM-FT)

AL'S SULFIDMALM
FALCONBRIDGE NAKKELVERK AL'S
AAVITSLANDSHEIA GRID
IVELAND TOWNSHIP, NORWAY
H.P.T.P.D.-7
0.345 CPS
1" = 50 METRES
MARCH 29, 1971
A.K. WOOD - O.P.



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M.F.

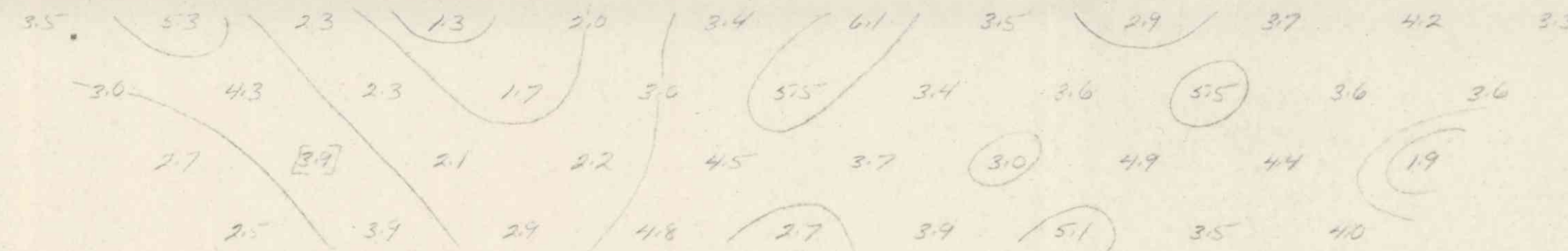
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NOTE
[] - INDICATES NOISY READING



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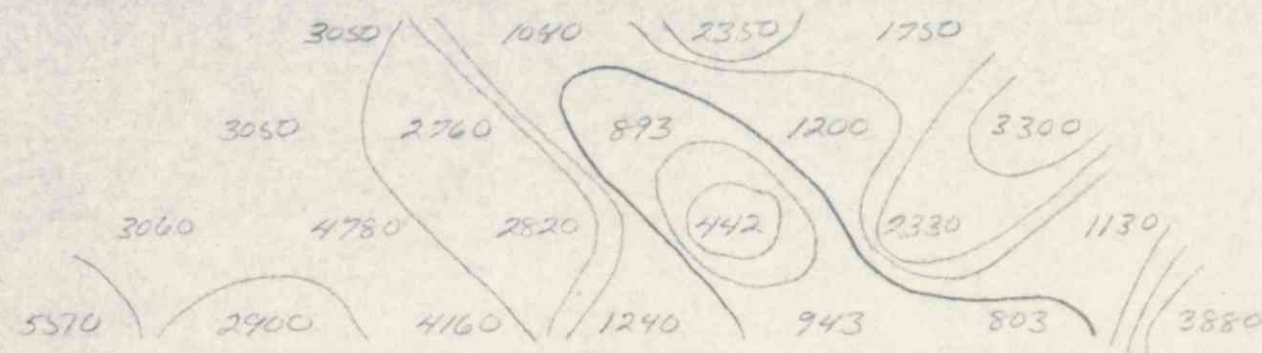
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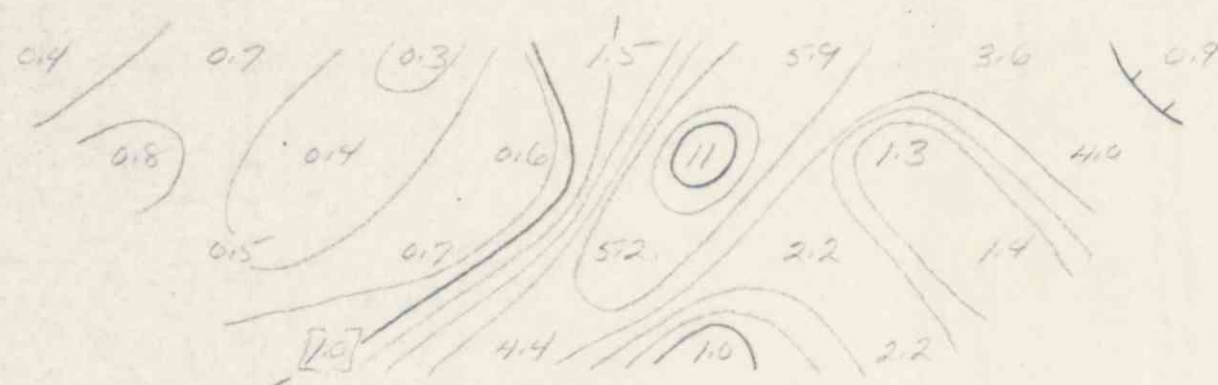
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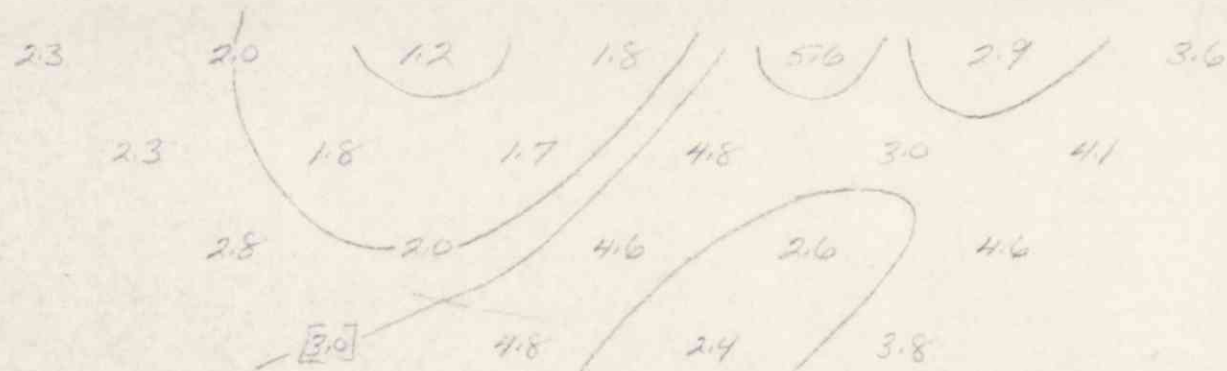
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300W 250W 200W 150W 100W 50W 00 50E 100E 150E



300W 150W 00 150E



300W 150W 00 150E

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N=3

N=2

N=1

6HM-FT)

A/S SULFIDMALM

FALCONBRIDGE NIKKELVEK A/S

AAVITSLANDSHEIA GRAD

EVSE, NORWAY

H.P.I.P.D.-D

0.345 CPS

1" = 50 METRES

APRIL 2, 1971

A.K. WOOD - CP

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M.F.

LINE 50S

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NOTE

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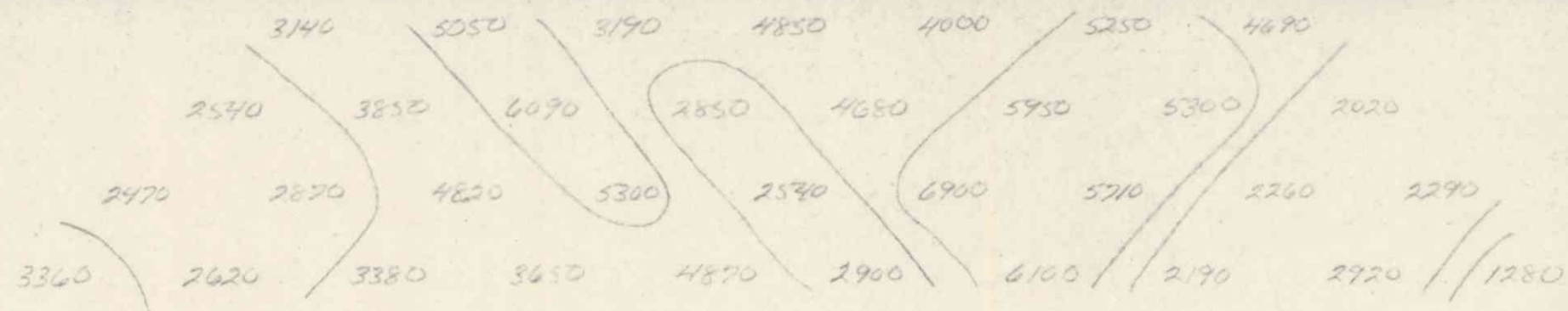
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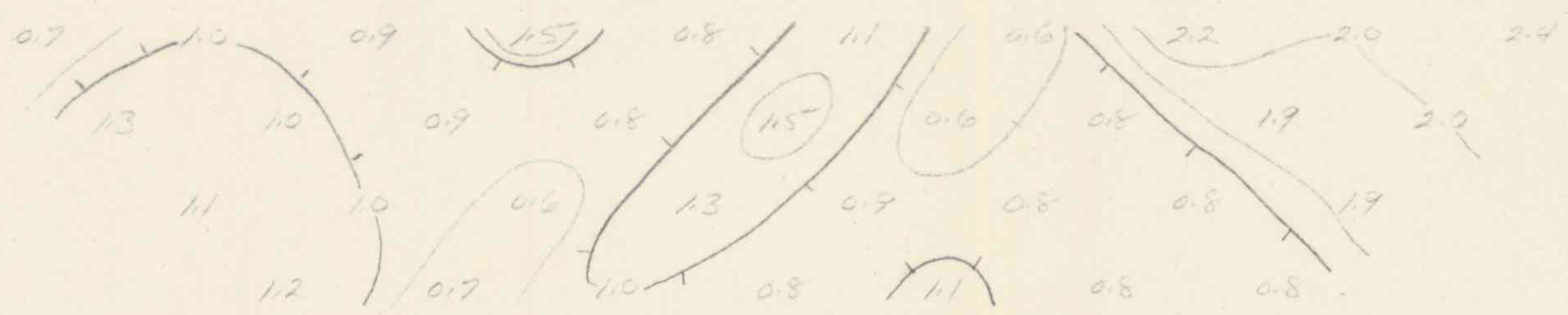
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300W 250W 200W 150W 100W 50W 0 0 50E 100E 150E 200E 250E 300E

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A/S SULFIDMALM
 FALCONBRIDGE NIKKELVERK AS
 AAVITSLANDSHFIA GRID
 IVELAND TOWNSHIP, NORWAY
 H.P.I.P.D.-D
 0.34 STOPS
 1" = 50 METRES
 MARCH 31, 1901
 A.K. WOOD - OP



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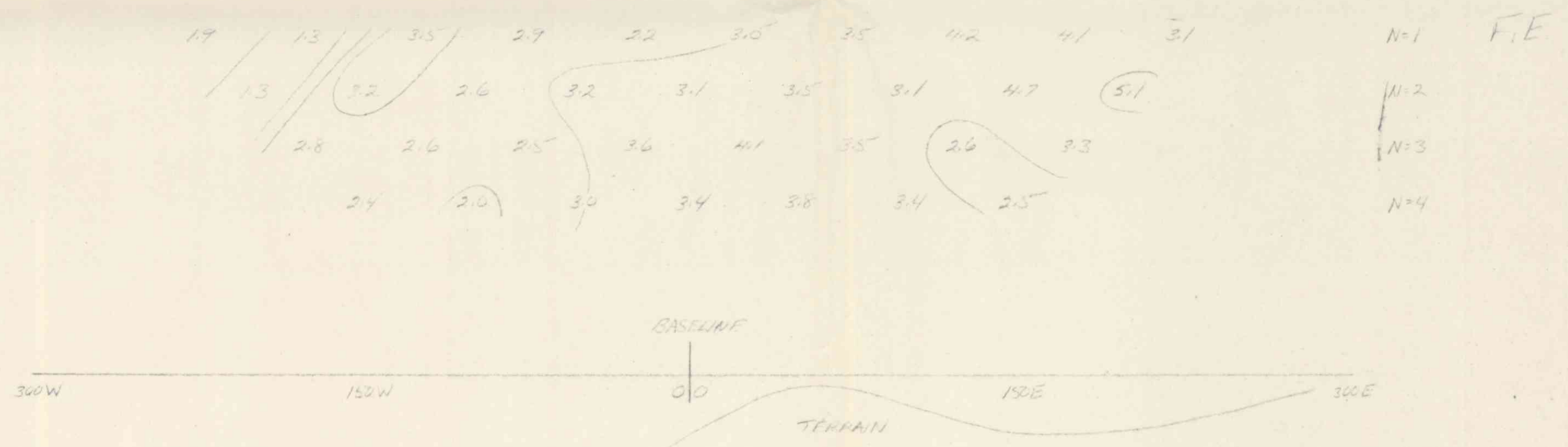
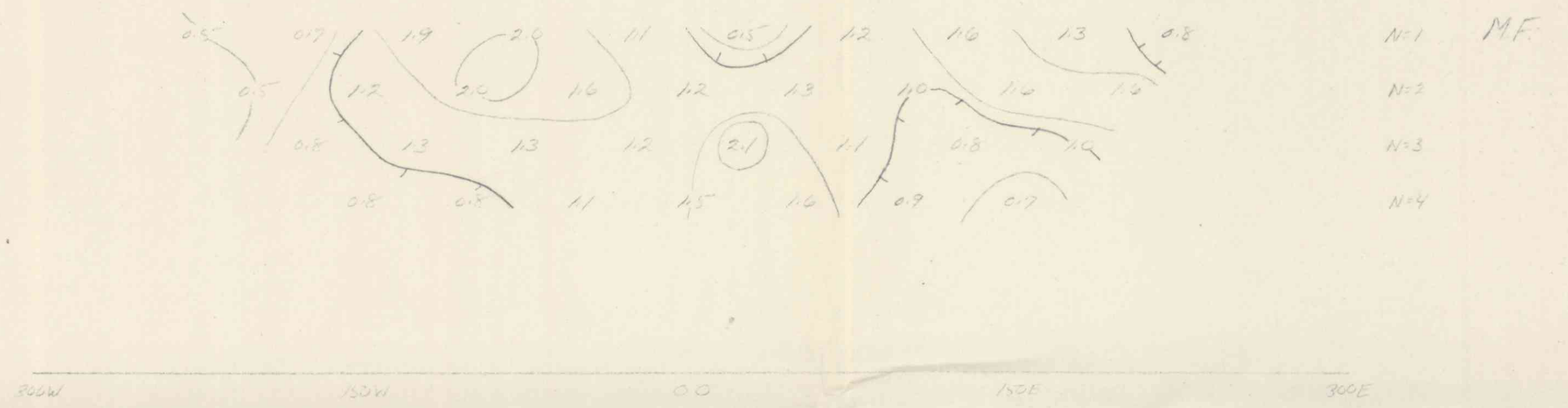
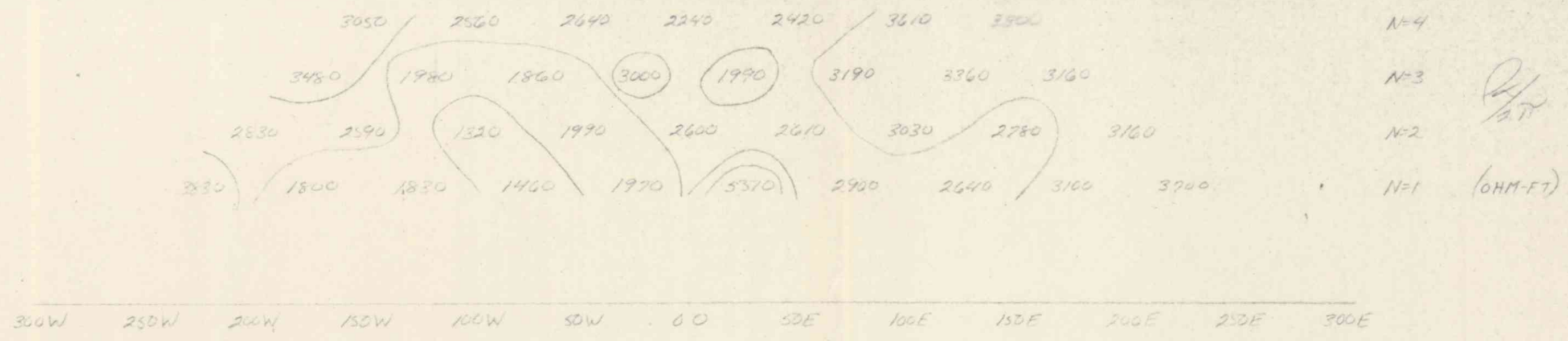
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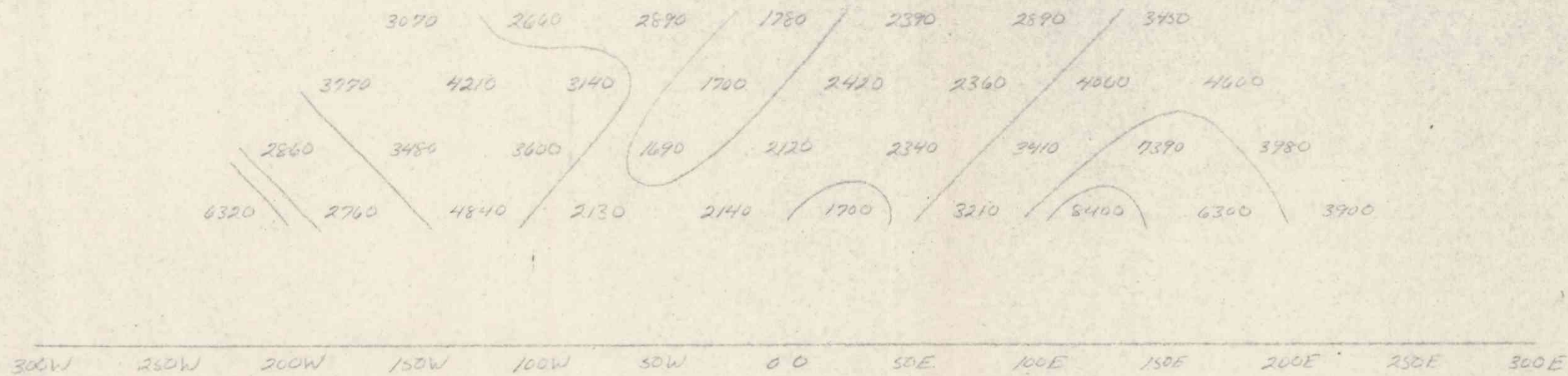


300W 150W 0 0 150E 300E

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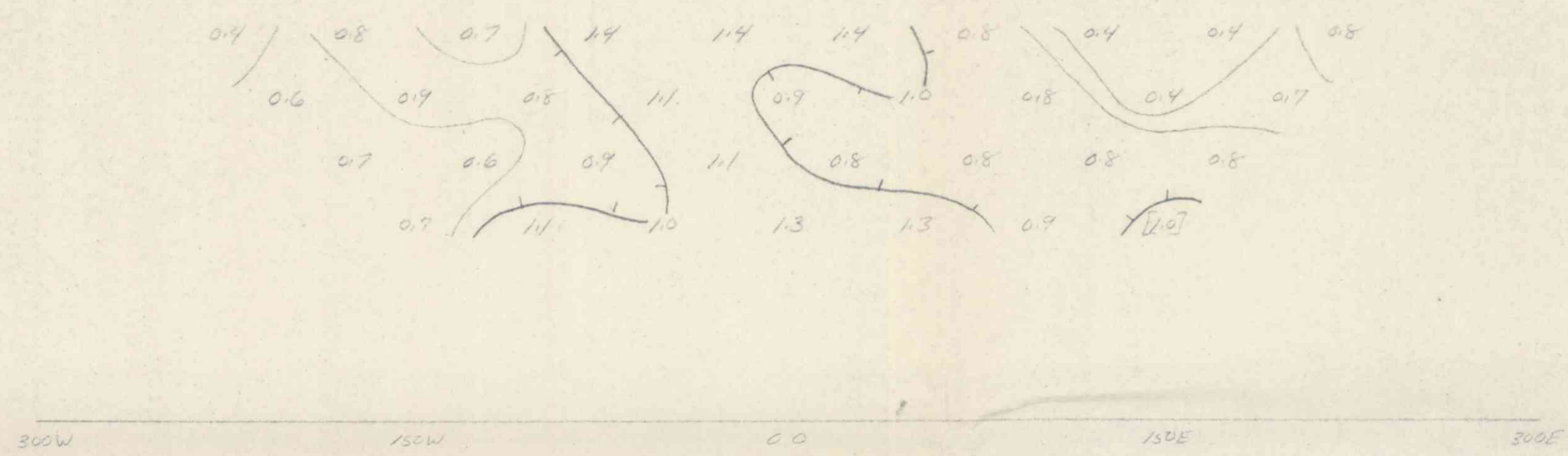
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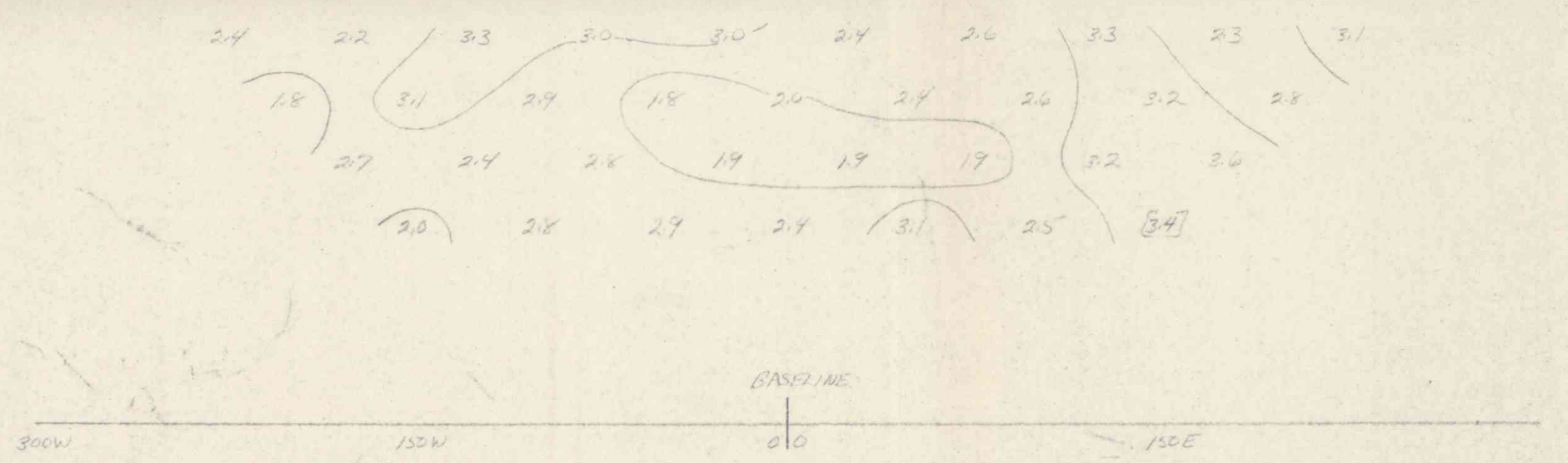
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A/S SULFIDMALM
 FALCONBRIDGE NIKKELVERK AS
 AAUTSLANDSHEIA GRID
 EVJE, NORWAY
 H.P.I.P.D.-D
 0.345 CPS
 1" = 50 METRES
 MARCH 31, 1971
 A.K. WOOD - OP



N=1 M.F.
 N=2
 N=3
 N=4

LINE 5003



N=1 F.E.
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 N=3
 N=4

BASELINE

A/S. SUIFIDMALM
 FALCONBRIDGE NIKKEIVERK A/S
 AAUTISLANDSHEIA GRID
 EVJE, NORWAY
 H.P.I.P. D-D
 0.345 CPS
 1" = 50 METRES
 APRIL 6 1971
 A.K. WOOD-OP

N=4
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 N=2
 N=1
 (OHM-FT)

