Bergvesenet

Postboks 3021, N-7441 Trondheim

Rapportarkivet 2001

Bergvesenet rapport nr	Intern Journal nr	Gammelt internt rapp. nr.	Rapport lokalisering	Gradering
4778				Åpen

Kommer fra ..arkiv	Ekstern rapport nr	Oversendt fra	Fortrolig pga	Fortrolig fra dato:
Grong Gruber AS		Grong Gruber a.s.		

Tittel

Geophysicalmeasurement carried out in the surroundings of Grong Norway during october - december 1991. (Godejord, Skiftesmyr)

Forfatter	Dato	År	Bedrift
Laurila, Tero	15.01	1992	Soumen Malmi OY Grong Gruber AS

Kommune	Fylke	Bergdistrikt	1: 50 000 kartblad	1: 250 000 kartblad
Grong	Nord-Trøndelag		18234	Grong

Fagområde	Dokument type	Forekomster
Geofysikk		Godejord, Skiftesmyr

Råstoffgruppe	Råstofftype
Malm/metall	Cu Zn

Sammendrag / innholdsfortegnelse

Carged Potential and Slingram survey in Godejord and Skiftesmyr areas. Ground survey and borehole loggings

Se also BV ~~4778~~, partly new survey, with new groundings.
4787

BV 4778

GEOPHYSICAL MEASUREMENTS CARRIED OUT IN THE SURROUNDINGS OF GRONG, NORWAY DURING OCTOBER - DECEMBER 1991

Written by: *Tero Laurila, engineer*

Checked by: *Hannu Silvennoinen, M.Sc (Eng.)*

Espoo 15.1.1992

SUOMEN MALMI OY

FINNEXPLORATION

C O N T E N T S

1. INTRODUCTION

According to the quotation 221/91 005 to Norsulfid A/S Suomen Malmi Oy-Finnexploration carried out geophysical measurements in Grong, Norway, in the Godejord and Skiftesmyr areas, during the period October 31 - December 4,1991. The work was done under leadership of Mr. Aimo Hattula, Outokumpu Finnmines Oy Exploration. The field crew consisted of a foreman, an observer and for a part of the field work a field engineer; all of them took part in the field work. The duration of the field work was 476 manhours.

Following survey methods and instruments were used:

Method	Equipment
Charged potential (CP)	Gefinex 100
Borehole logging	KTP-84/DHI
Slingram surveys	Max Min I

Locating of the survey lines both in Skiftesmyr and Godejord was based on the existing boreholes and grids made by the Client. The lines were tied to the local coordinate systems. The direction of N-S-lines in Skiftesmyr turned out to be approx. 166 deg. Line N 5500 was directed and pegged according to the coordinates of the holes 106 and 112. The direction of this line only is approx. 84 deg. This shows that there may be slight inaccuracies in the coordinate system, but they may not affect in the reliability of the results as whole.

The quantity of measurements was 17.275 meters of ground surveys and 3.937 hole meters of CP with 3-5 active groundings, 1.235 meters of borehole loggings in 11 holes and 4.040 meters of slingram surveys.

The results of the measurements are portrayed in Appendices 5.4 - 5.10.

2. BOREHOLE LOGGINGS

Borehole loggings were made in Godejord in 6 and in Skiftesmyr in 5 holes. The measured holes are shown in Appendices 5.2 and 5.6.

The aim of the loggings was to acquire basic in-situ petrophysical data from the existing rock types and ore bodies as well as to give low resistivity zones for using as active grounding spots for the CP survey.

In the borehole survey, a borehole logging system consisting of a hand-held computer KTP-84 and a drill hole interface KTP-DHI made by Rautaruukki Oy, was used. Following parameters were measured:

-galvanic resistivity (wenner array)
-conductivity
-susceptibility

The electrode spacing of wenner sensor is a=31.4 cm. The unit of calibrated output value is ohm-m. The susceptibility sensor is an inductive sensor. The unit of the calibrated output value is a susceptibility unit in SI-system. The conductivity sensor is a modification of the susceptibility sensor. The output value is mV.

The measuring interval was 10 cm. The results are presented in Appendices 5.4 and 5.5.

3. GROUND SURVEYS

3.1 Charged potential measurements

Charged potential measurements were made in two separate areas; Godejord and Skiftesmyr.

For charged potential measurements, a Gefinex 100 equipment made by Outokumpu Oy was used.

The locations of remote groundings are shown in Appendix 5.1, the active groundings and the fixed reference potential electrode are shown in Appendices 5.2 and 5.6. Surface measurements were made by using a station separation of 10 or 20 meters. Line separation was either 25 or 50 meters accordingly. In the holes the station separation was either 5 or 10 meters. Equipotential maps are shown in Appendices 5.5 and 5.9. Section maps are shown in Appendices 5.4 and 5.8.

3.2 Slingram surveys

Five separate profiles were surveyed in the Skiftesmyr area.

The aim of the slingram survey was to test the usefulness of the method and to follow specific conducting zones.

A multifrequency, multicoil separation MaxMin I slingram made by Apex, was used.

Measuring frequencies were 111 Hz, 1777 Hz and 7100 Hz and the coil separation was 100 meters. The station separation was 20 meters. The results are presented in Appendix 5.10.

4. CONCLUSION

Technically the field work succeeded well in accordance with the advance planning. The methods used seem to give results with excellent resolution and clear anomalies. The actual usefulness of the results for exploration will be made by the project professionals.

APPENDIX 5.1

SURVEY AREAS

LINES OF SLINGRAM SURVEY

REMOTE GROUNDING

SUOMEN MALMI OY
FINNEXPLORATION

GRONG, N O R W A Y

1:50 000
INDEX MAP

NORSULFID A/S
1.1992 SMOY/aml

APPENDIX 5.2

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
1:2000
INDEX MAP

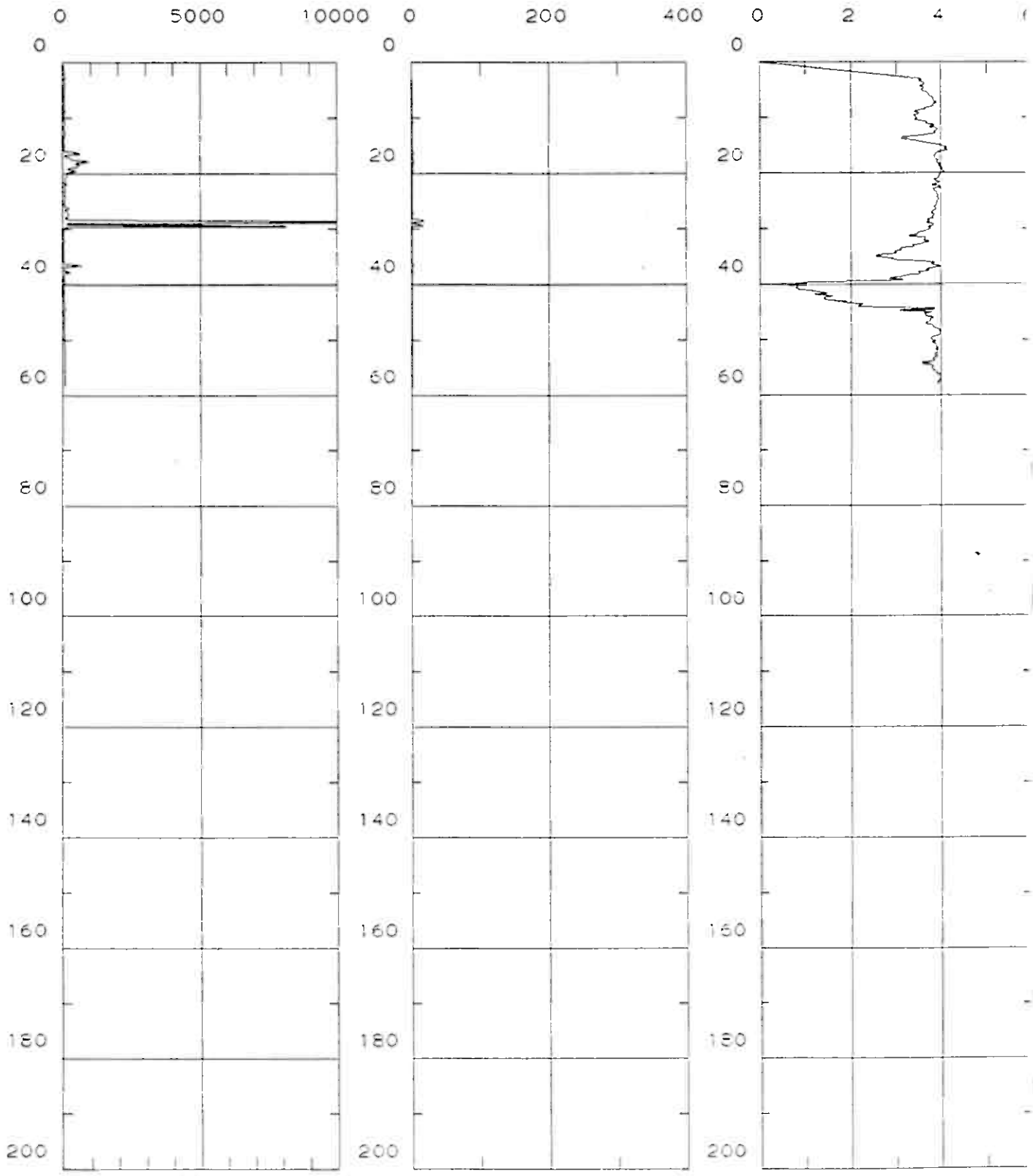
NORSULFID A/S
1.1992 SMOY/aml

Godejord

HOLE KR 101
DATE 1991-10-31
SUSC 10E-5 SI

HOLE KR 101
DATE 1991-10-31
CONDUCTIVITY mV

HOLE KR 101
DATE 1991-10-31
WENNER Lg Ohm-m



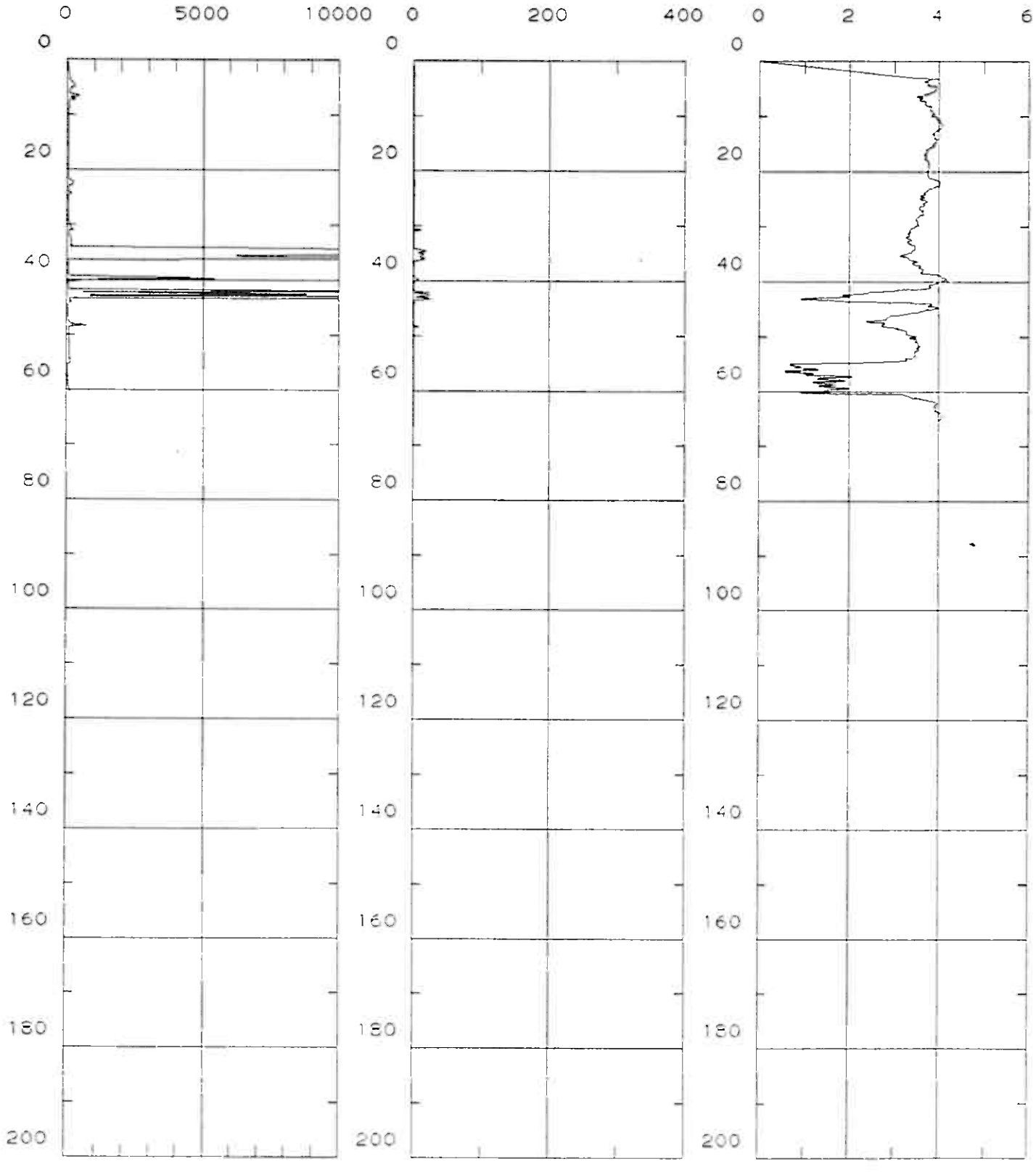
SCALE 1 : 1000

Godejord

HOLE KR 104
DATE 1991-10-31
SUSC. 10E-5 SI

HOLE KR 104
DATE 1991-10-31
CONDUCTIVITY mV

HOLE KR 104
DATE 1991-10-31
WENNER Lg Ohm-m



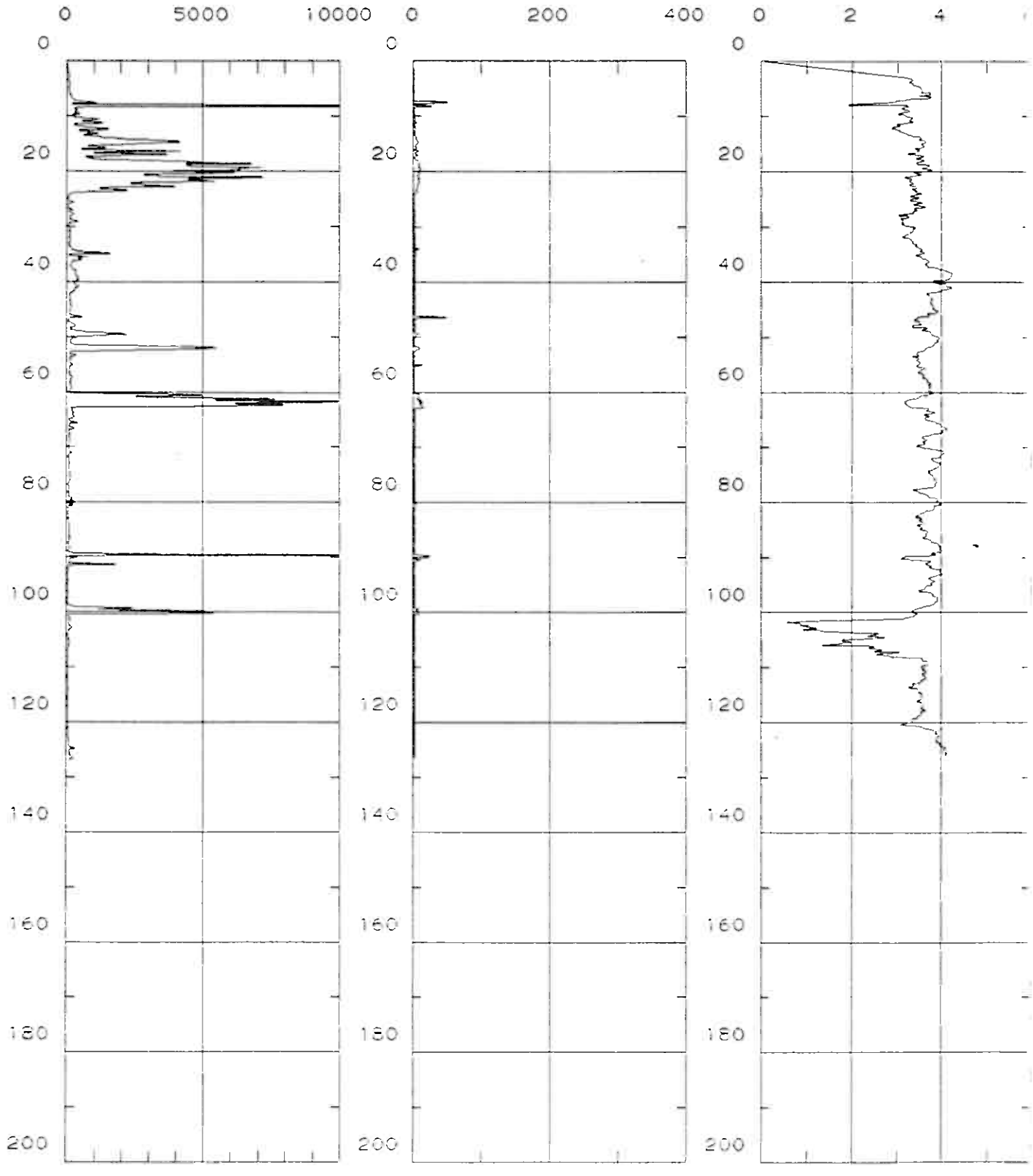
SCALE 1 : 1000

Godejord

HOLE KR 105
DATE 1991-10-31
SUSC. 10E-5 SI

HOLE KR 105
DATE 1991-10-31
CONDUCTIVITY mV

HOLE KR 105
DATE 1991-10-31
WENNER Lg Ohm-m



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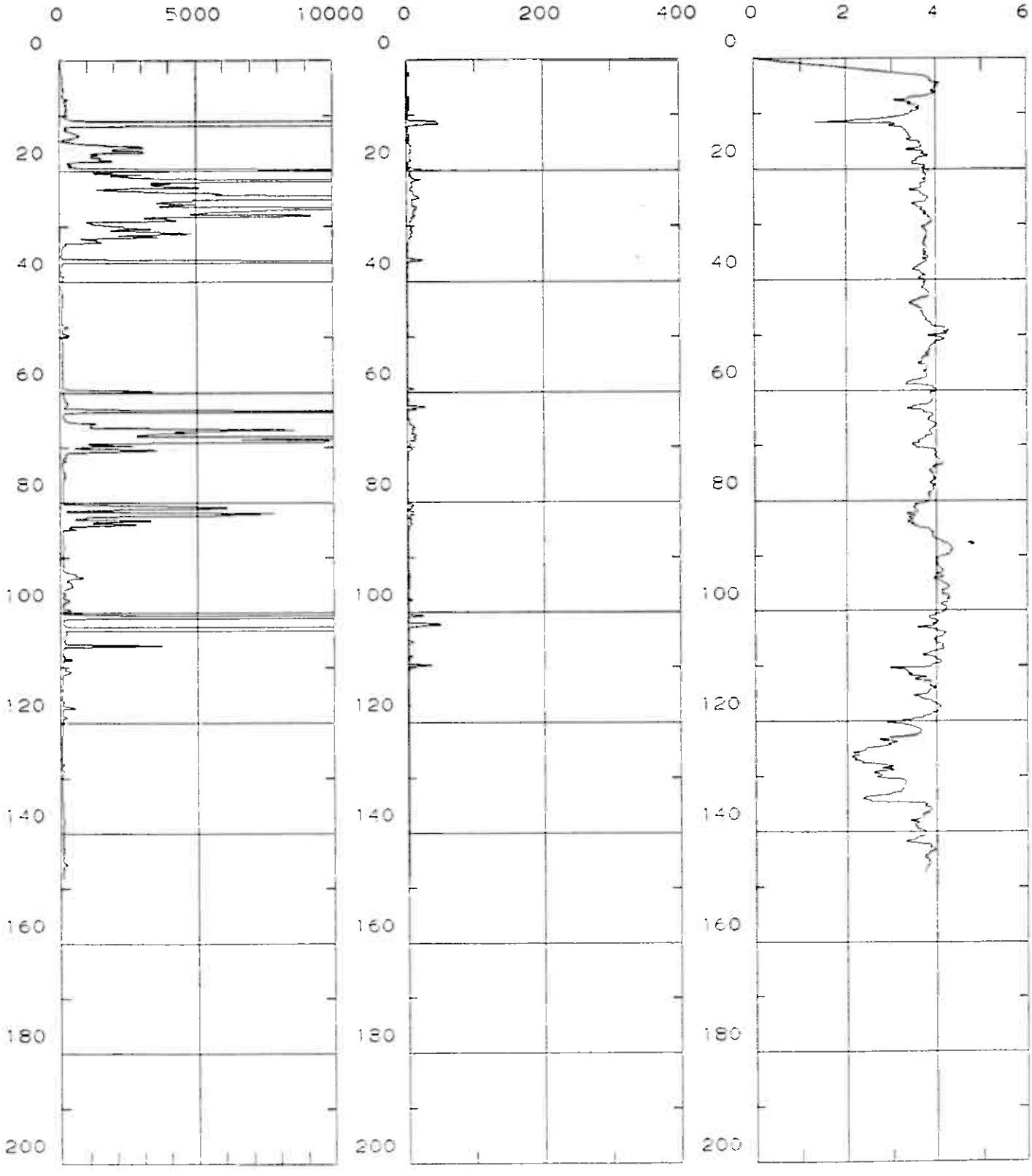
Godejord

HOLE KR 106
DATE 1991-10-31
SUSC. 10E-5 SI

HOLE KR 106
DATE 1991-10-31
CONDUCTIVITY mV

HOLE KR 106
DATE 1991-10-31
WENNER Lg Ohm-m



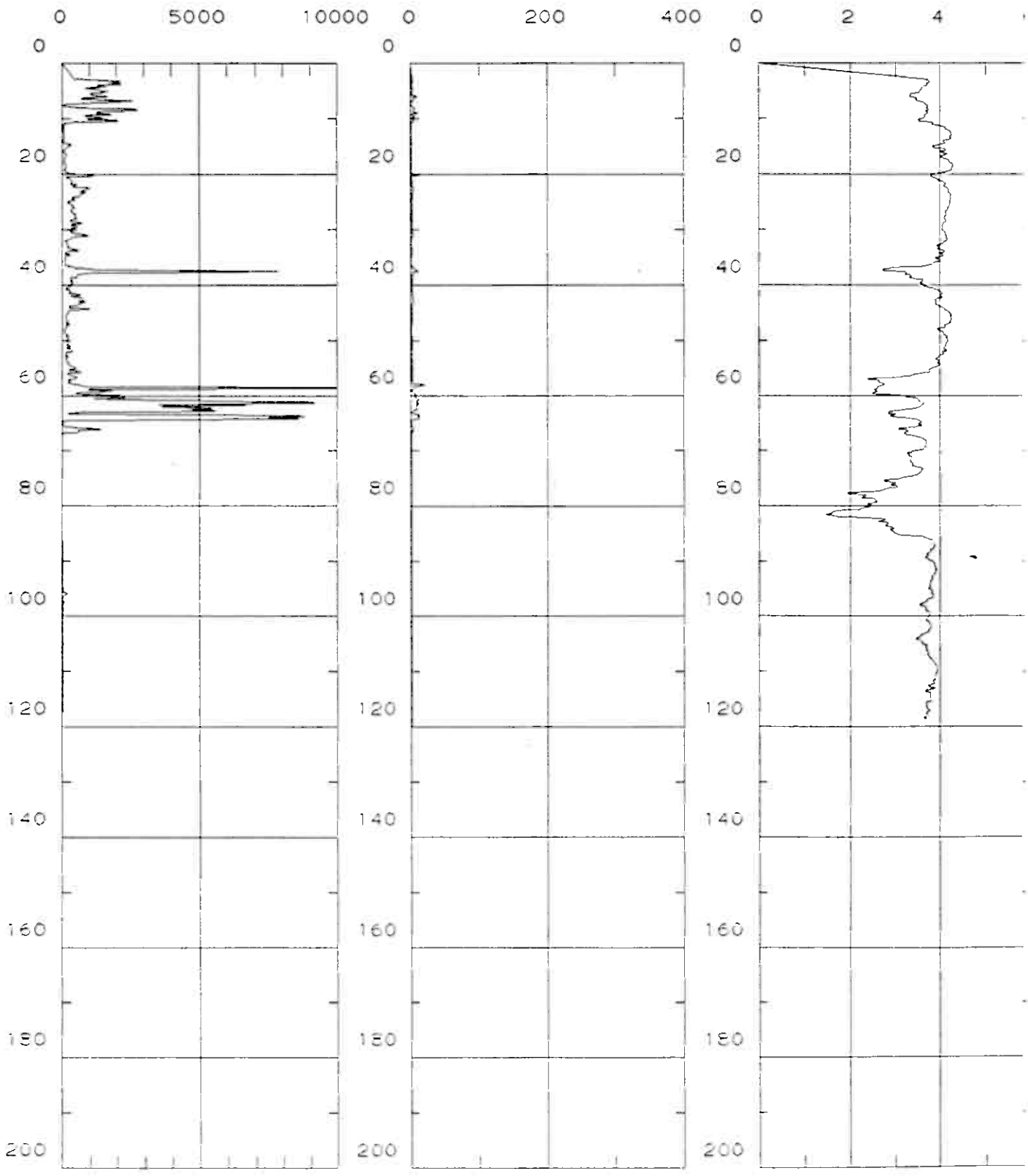
SCALE 1:1000

Godejord

HOLE KR 107
DATE 1991-10-31
SUSC. 10E-5 SI

HOLE KR 107
DATE 1991-10-31
CONDUCTIVITY mV

HOLE KR 107
DATE 1991-10-31
WENNER Lg Ohm-m



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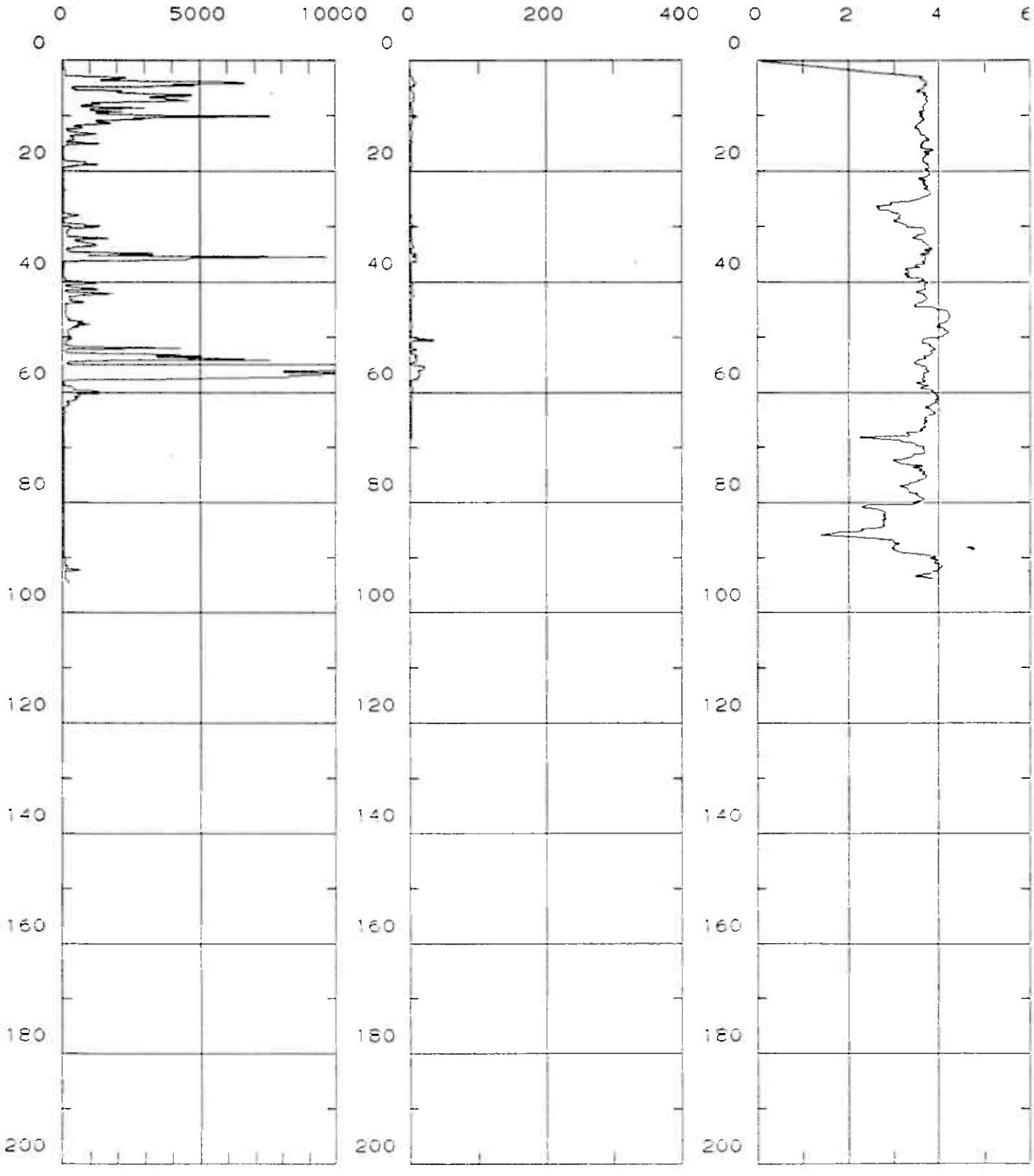
Godejord

HOLE KR 108
DATE 1991-10-31
SUSC. 10E-5 SI

HOLE KR 108
DATE 1991-10-31
CONDUCTIVITY mV

HOLE KR 108
DATE 1991-10-31
WENNER Lg Ohm-m



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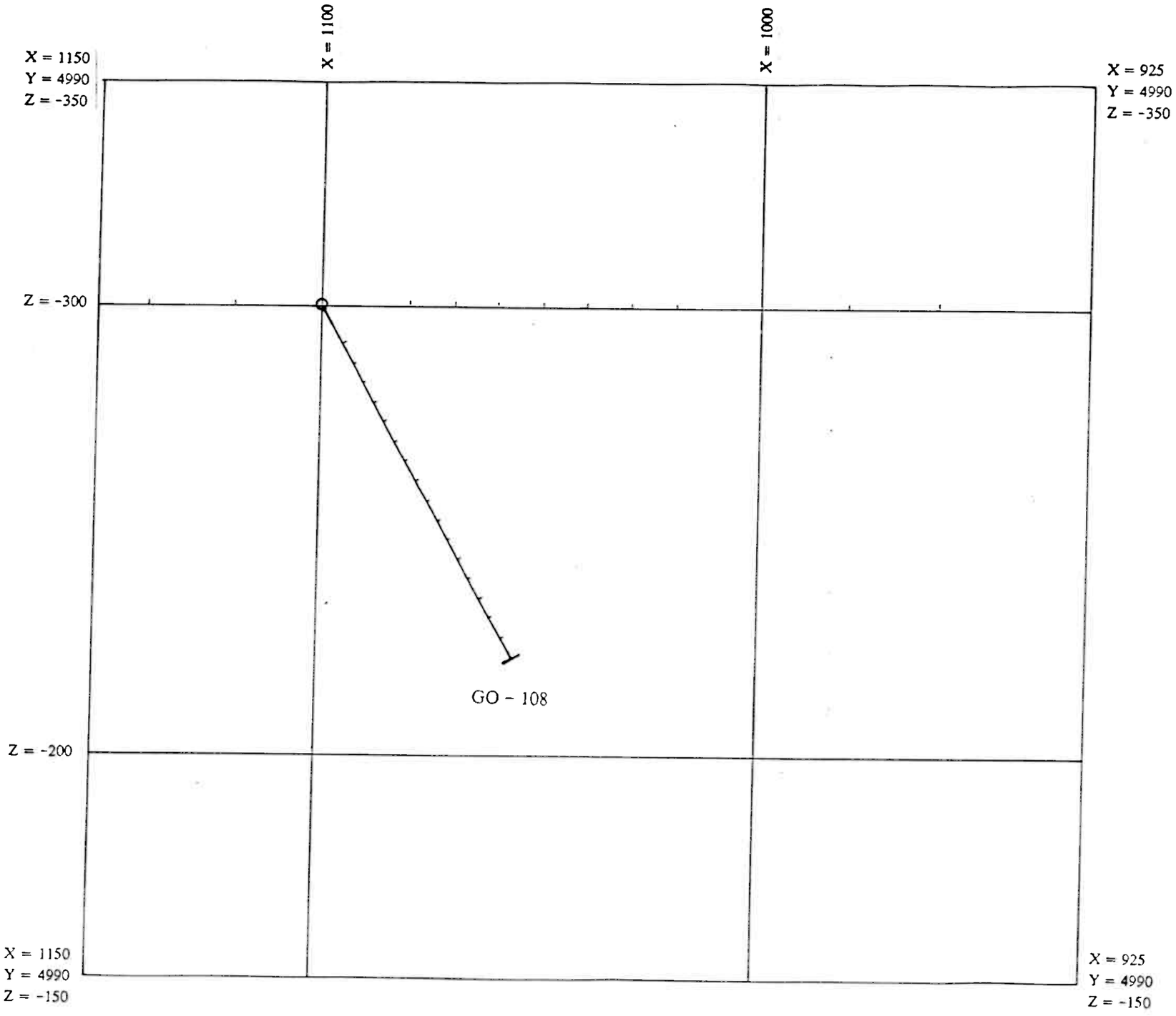
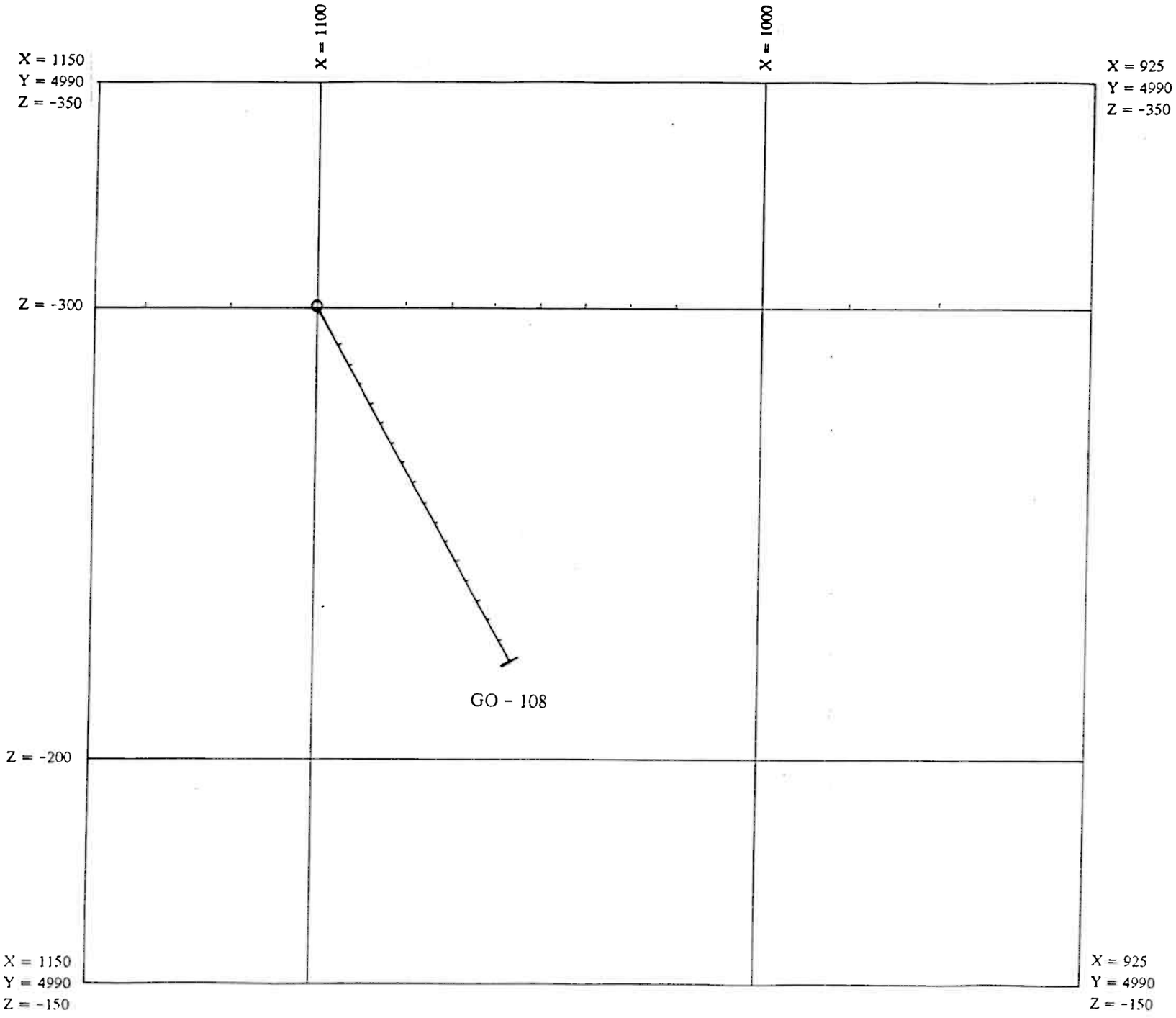


CORE HOLE	LENGHT
GO-108	90.00 m
Active grounding	GO-101 / 42 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 4990
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



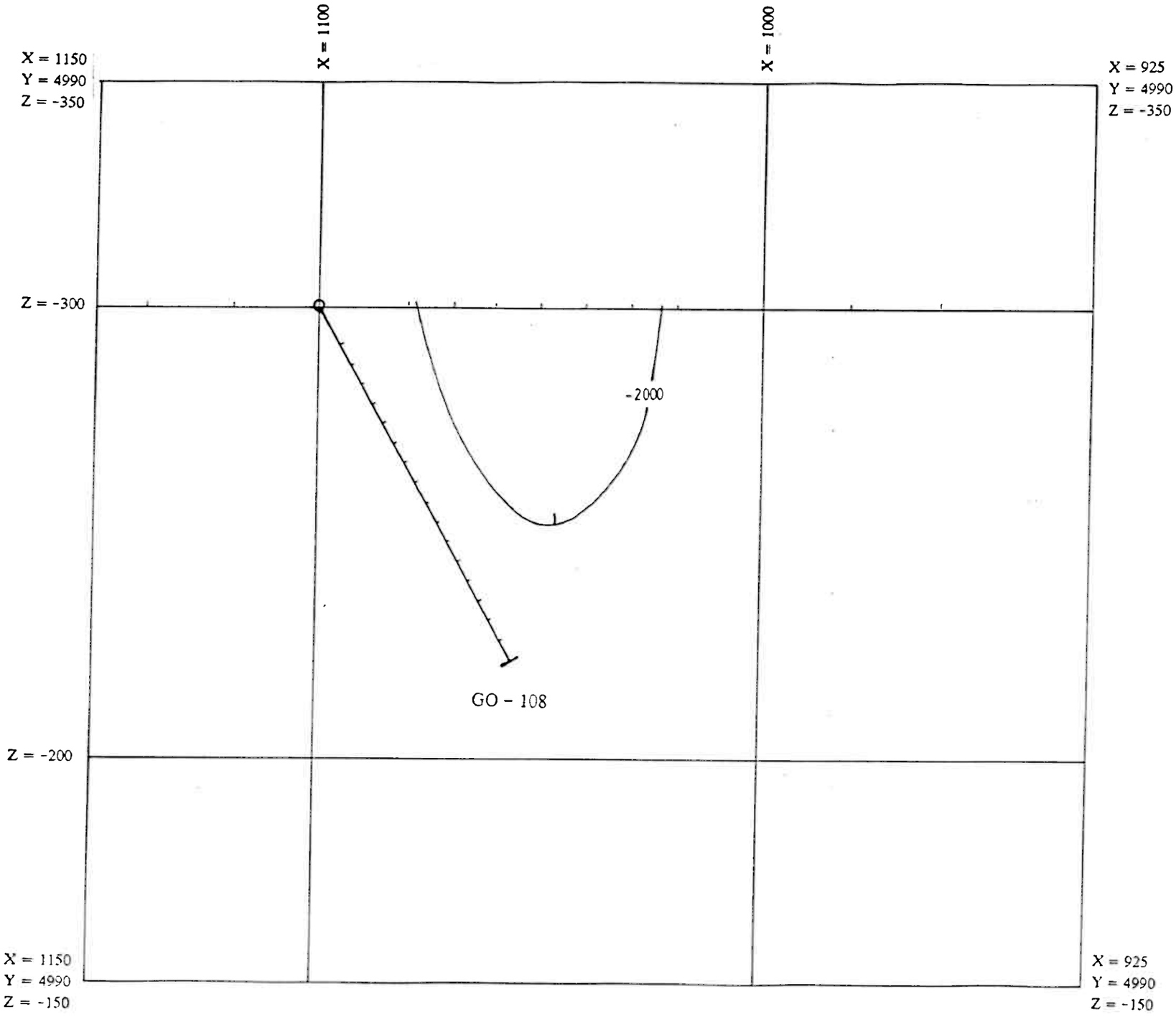
CORE HOLE	LENGHT
GO-108	90.00 m

Active grounding GO-104 / 43 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 4990
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



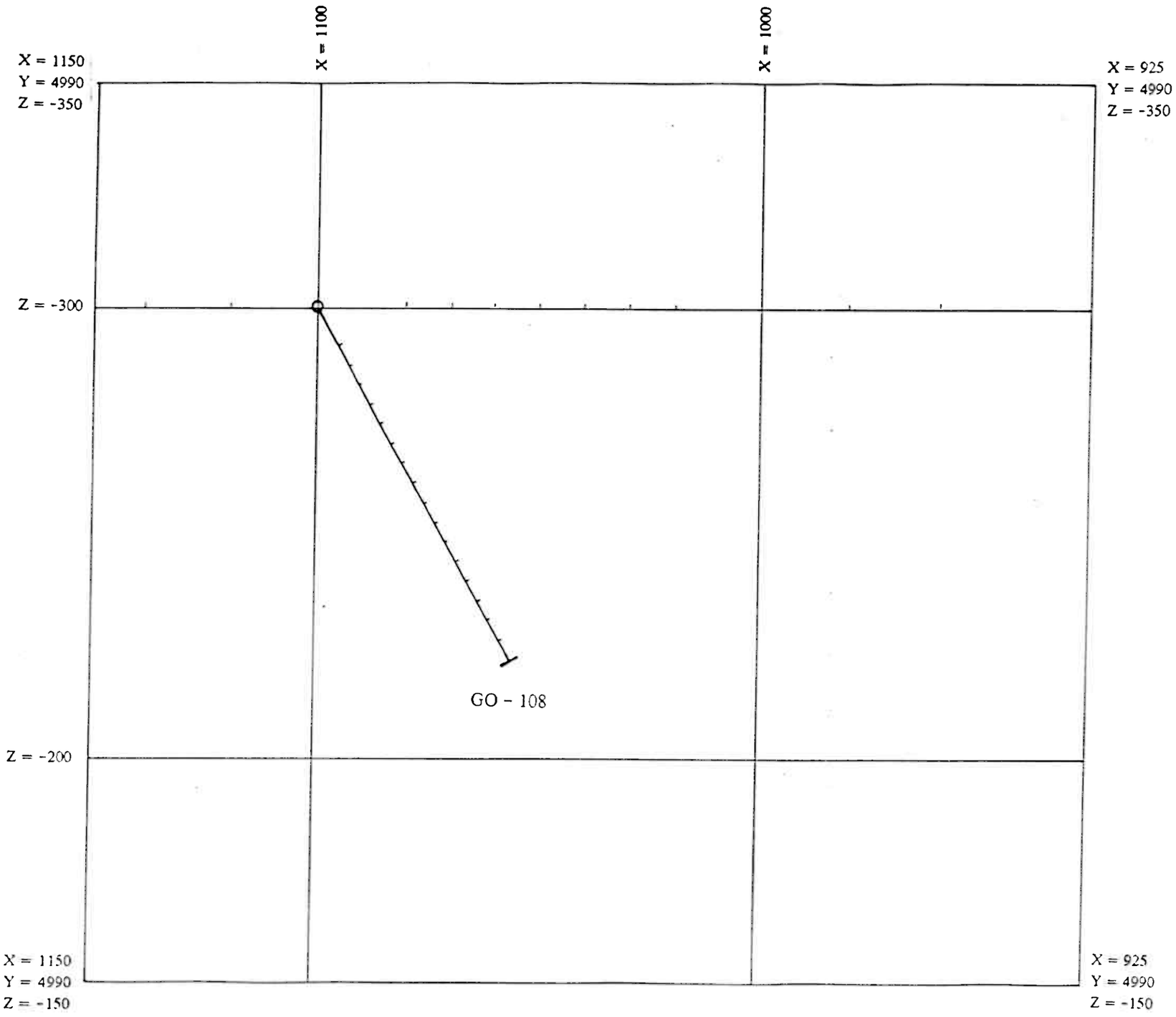
CORE HOLE	LENGHT
GO-108	90.00 m

Active grounding GO-104 / 56 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 4990
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



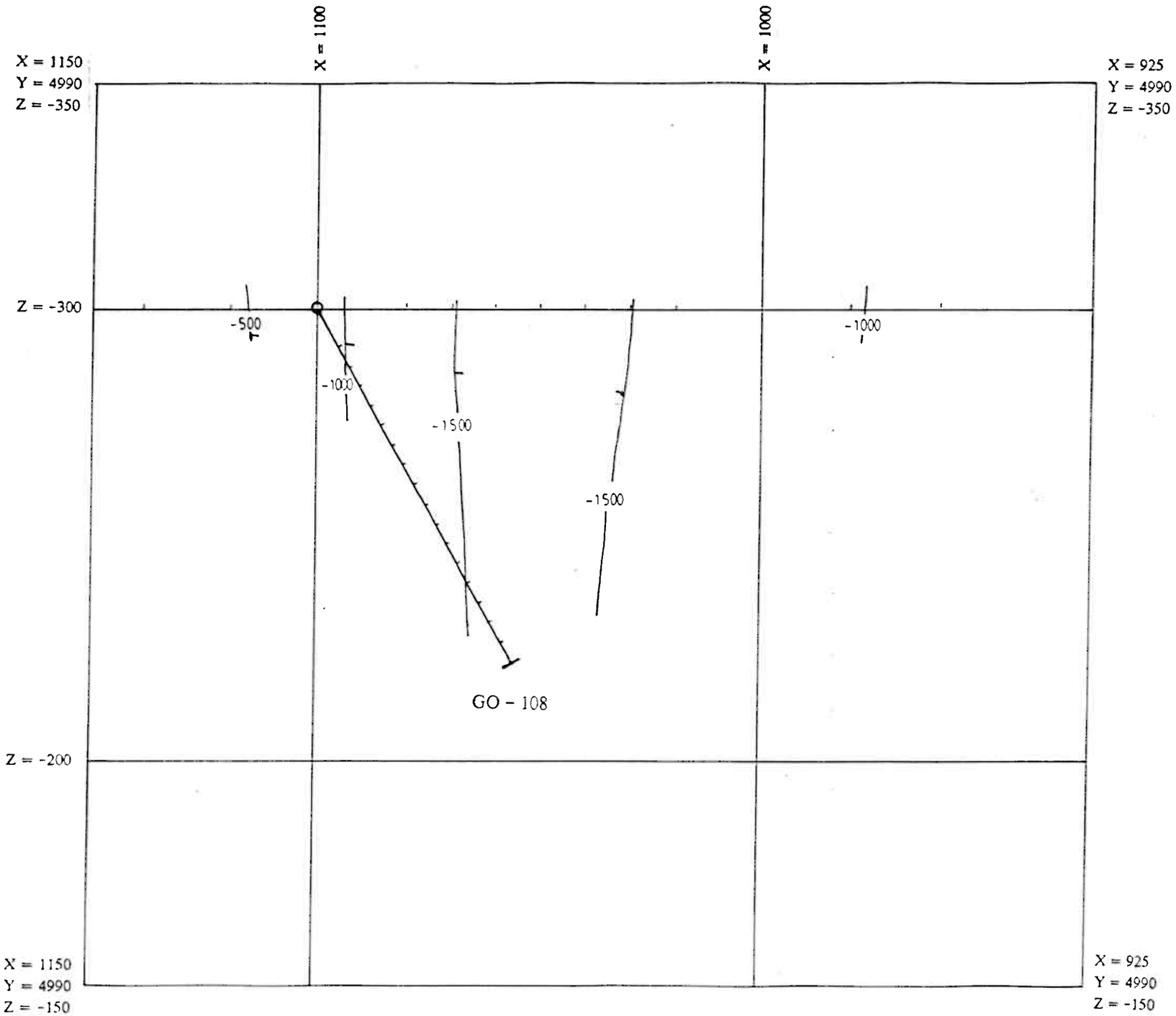
CORE HOLE	LENGHT
GO-108	90.00 m

Active grounding GO-105 / 101 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 4990
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



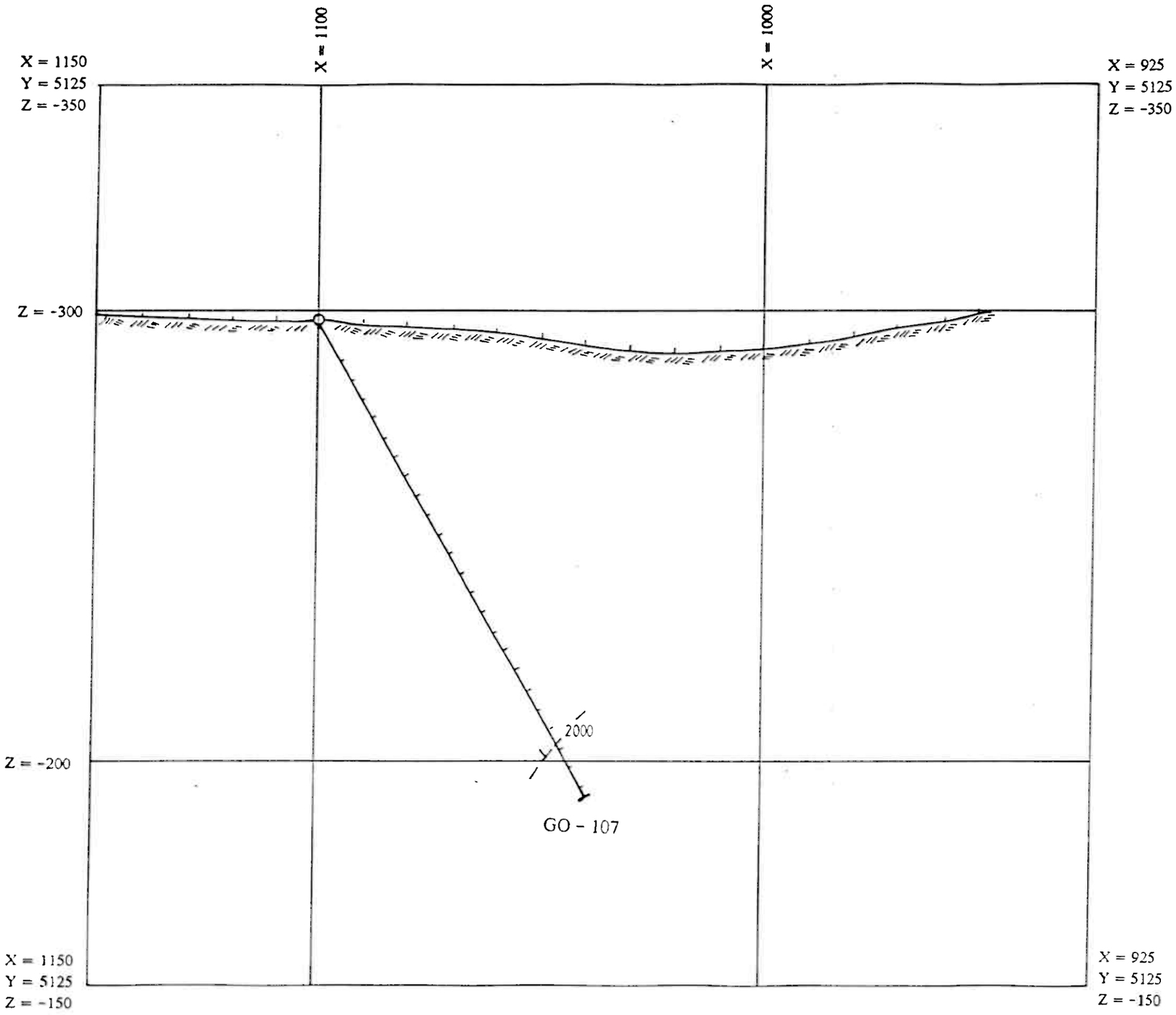
CORE HOLE	LENGHT
GO-108	90.00 m

Active grounding GO-107 / 81m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 4990
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



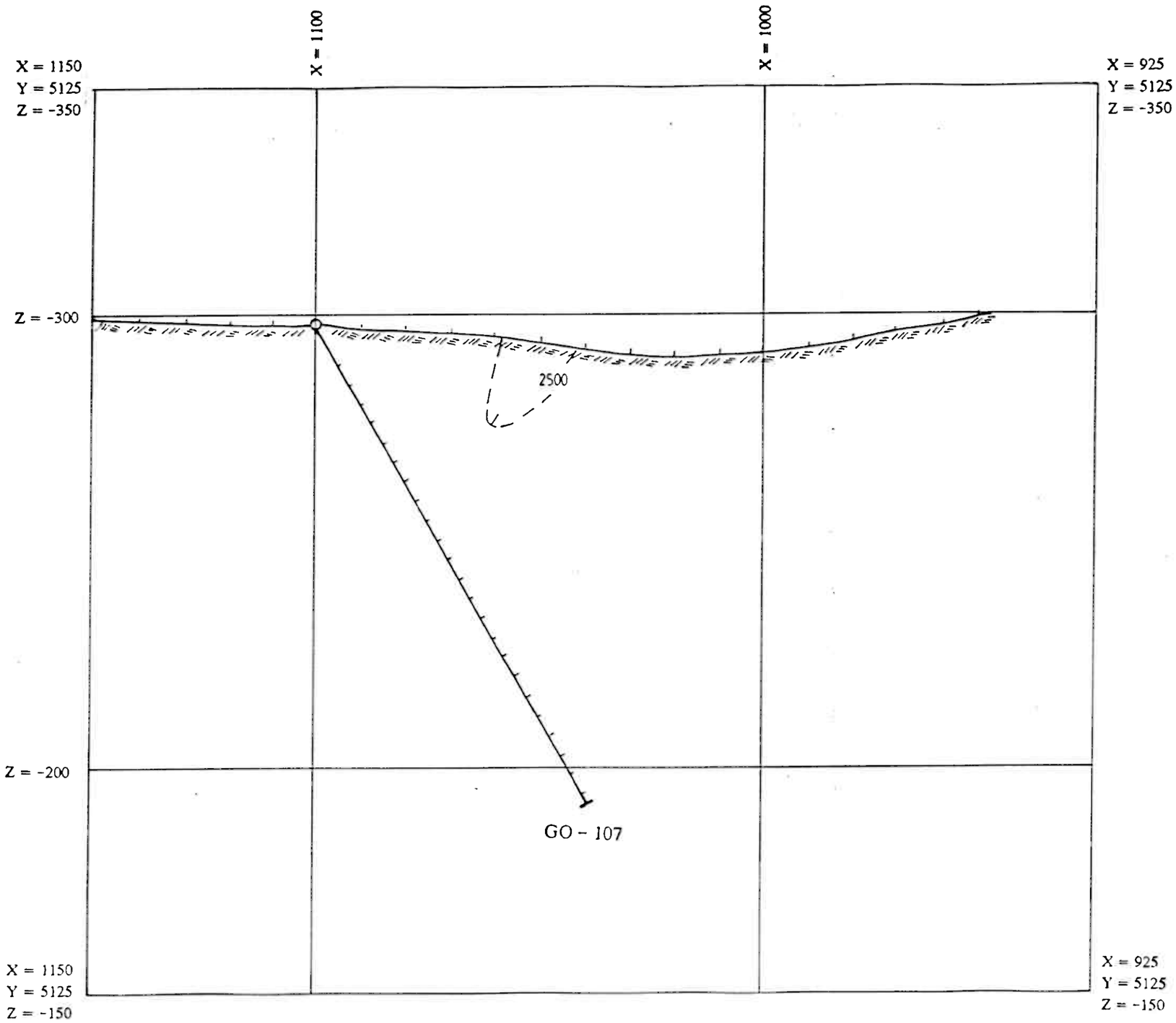
CORE HOLE	LENGHT
GO-107	122.30 m

Active grounding GO-101 / 42 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5125
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



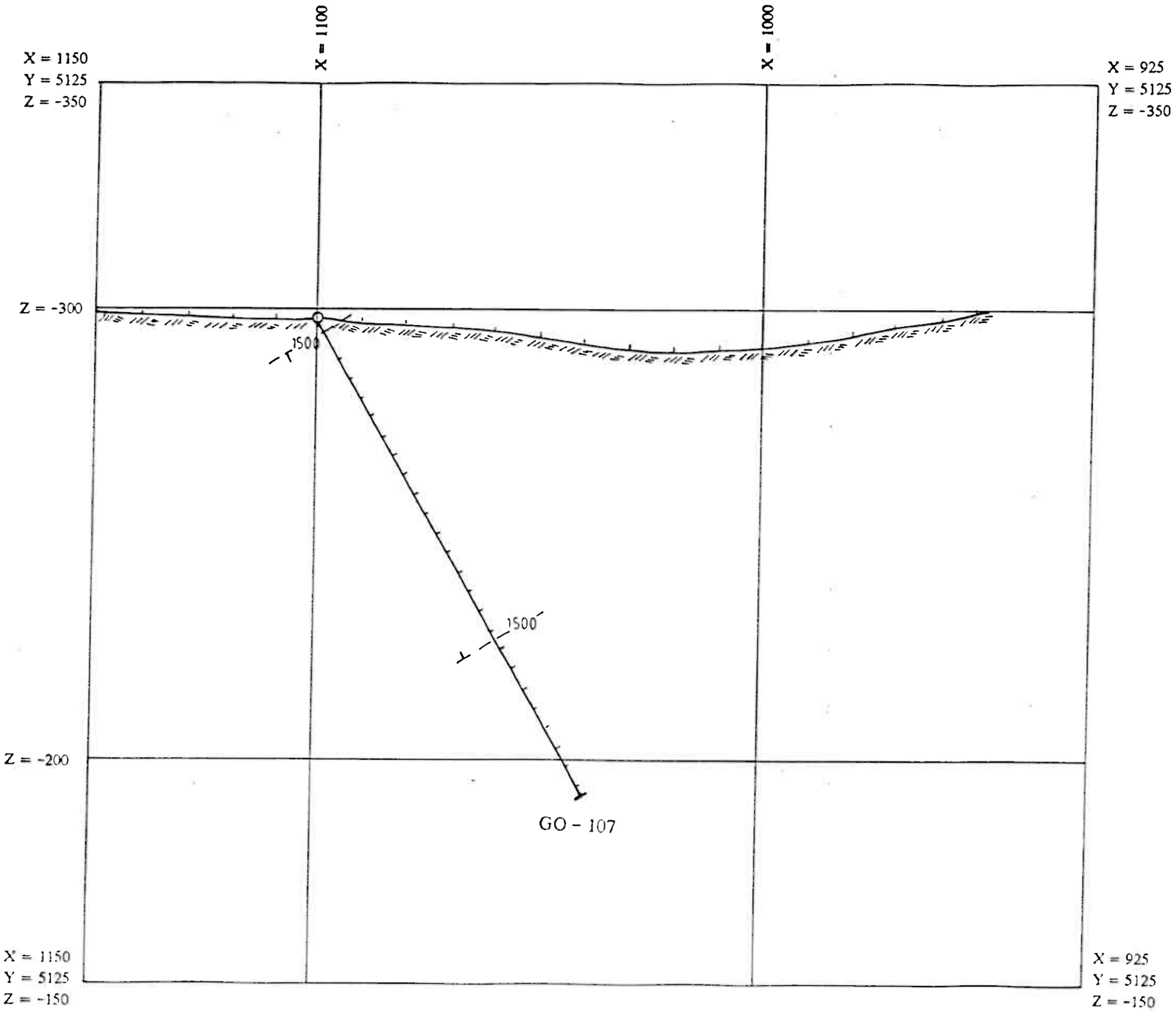
CORE HOLE	LENGHT
GO-107	122.30 m

Active grounding GO-104 / 43 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5125
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE	LENGHT
GO-107	122.30 m

Active grounding GO-105 / 101 m

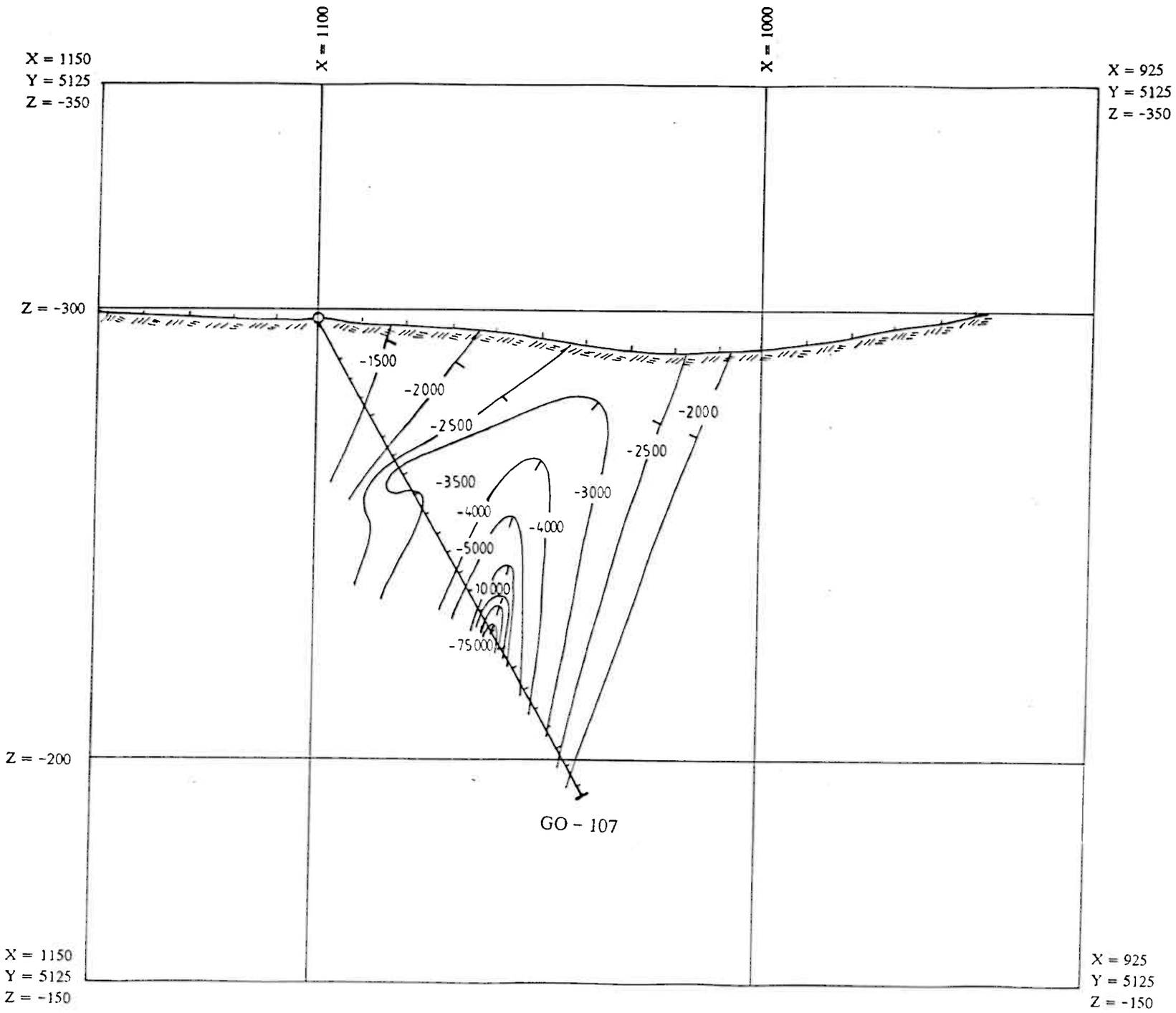
SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5125
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml

CORE HOLE	LENGHT
GO-107	122.30 m

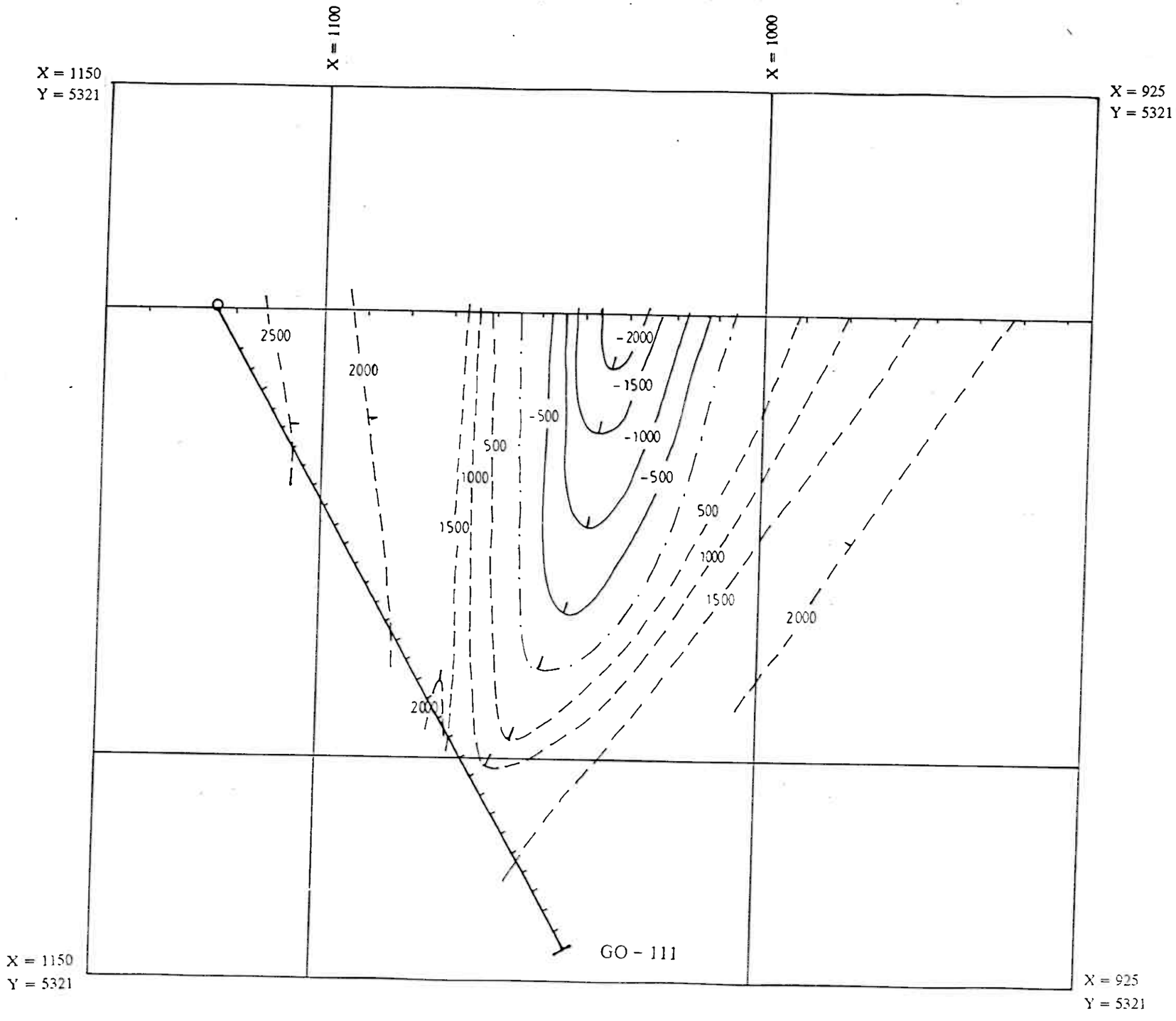
Active grounding GO-107 / 81 m



SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5125
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE	LENGHT
GO-111	165.00 m

Active grounding GO-104 / 43 m

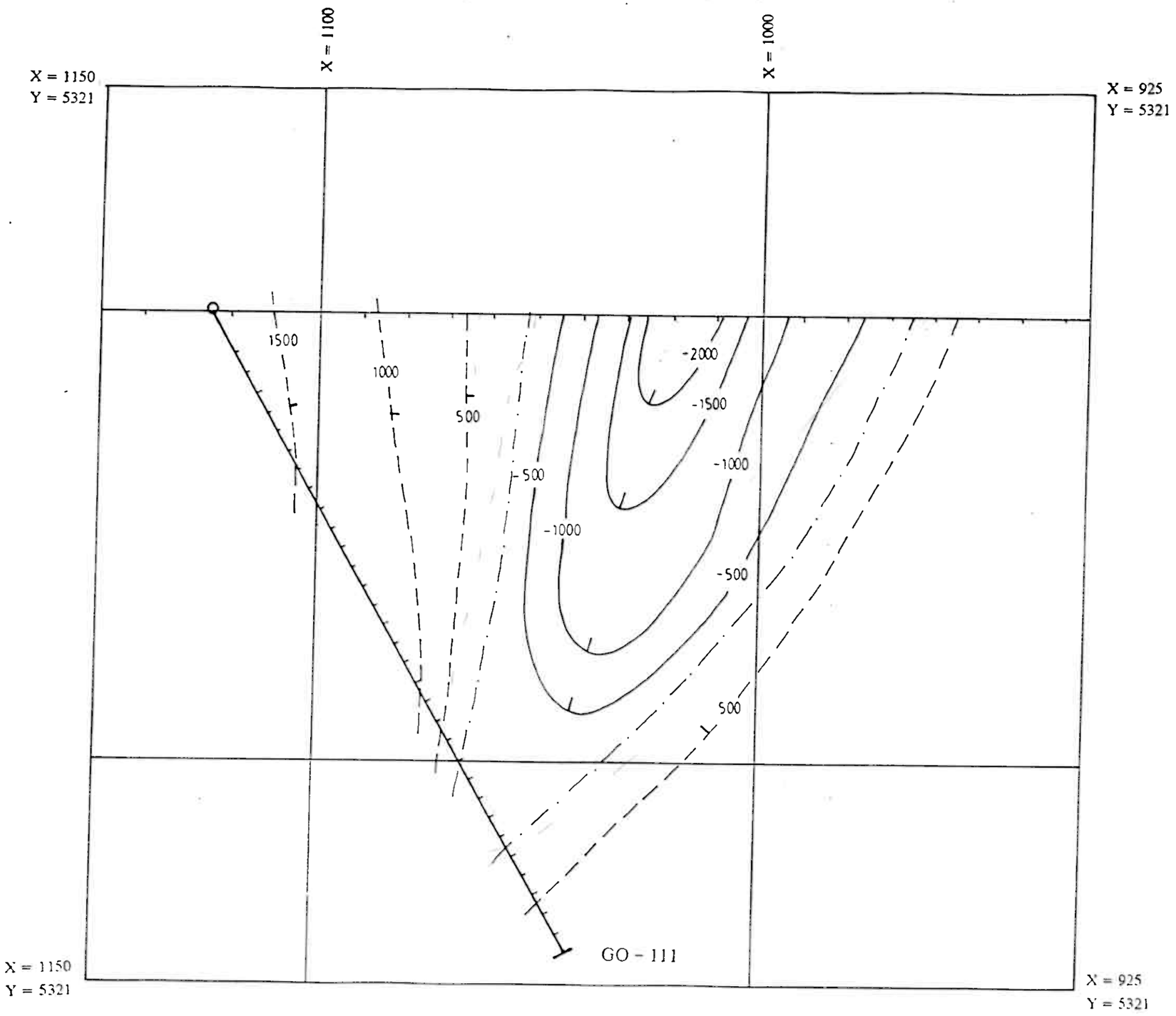
SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5321
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml

CORE HOLE	LENGHT
GO-111	165.00 m

Active grounding GO-104 / 56 m



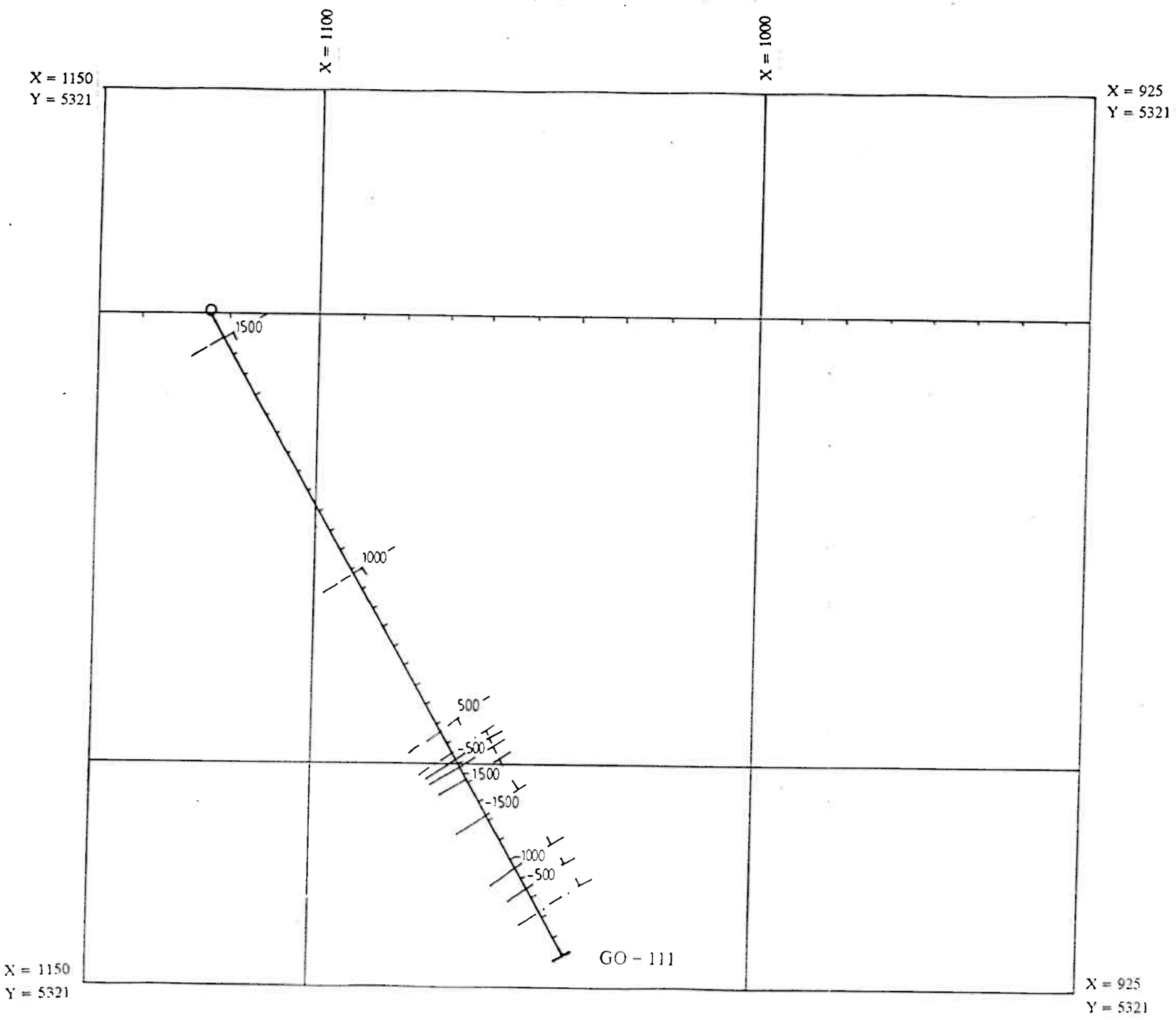
SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5321
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml

CORE HOLE	LENGHT
GO-111	165.00 m

Active grounding GO-105 / 101 m



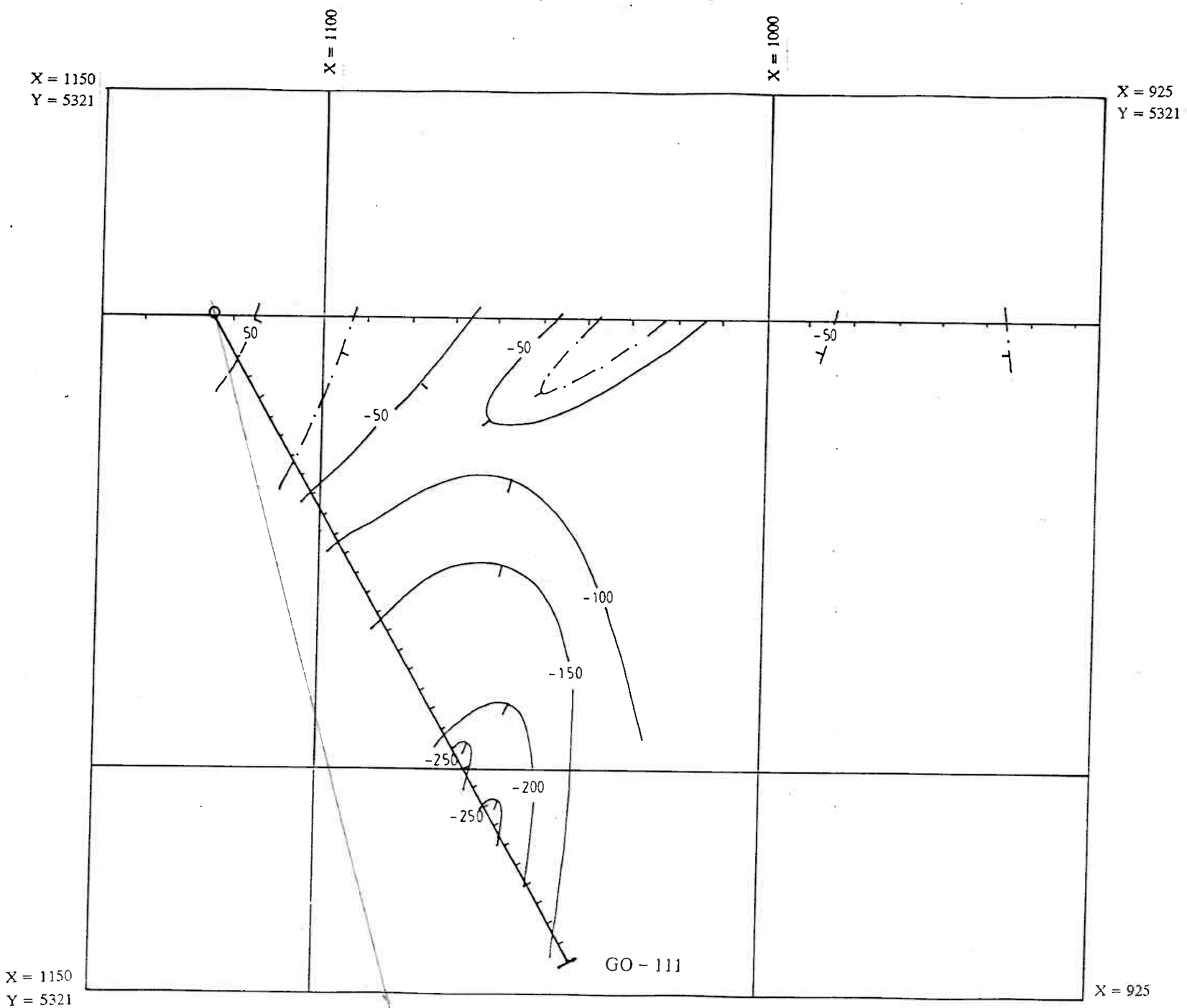
SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5321
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml

CORE HOLE	LENGHT
GO-111	165.00 m

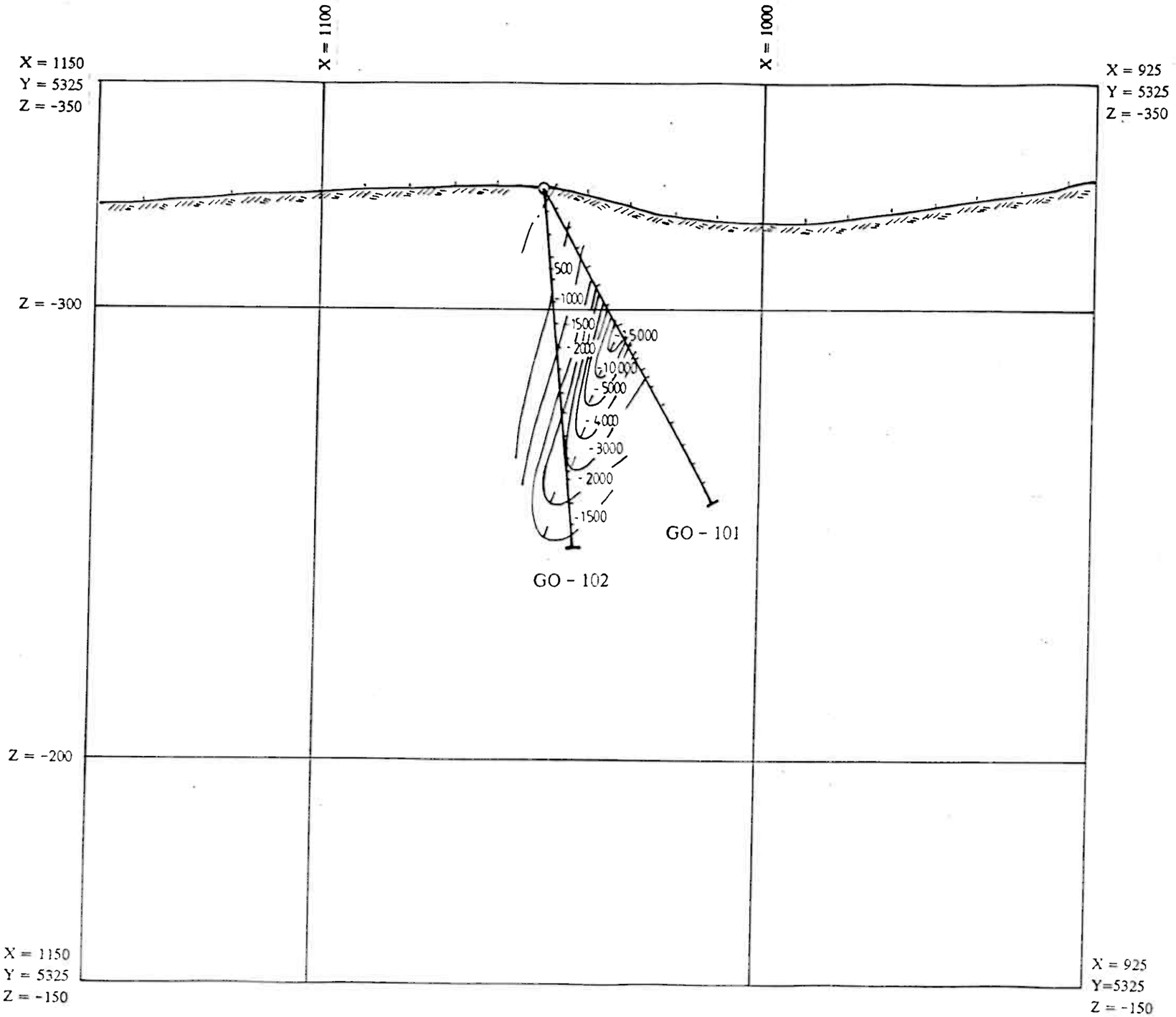
Active grounding GO-107 / 81 m



SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5321
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



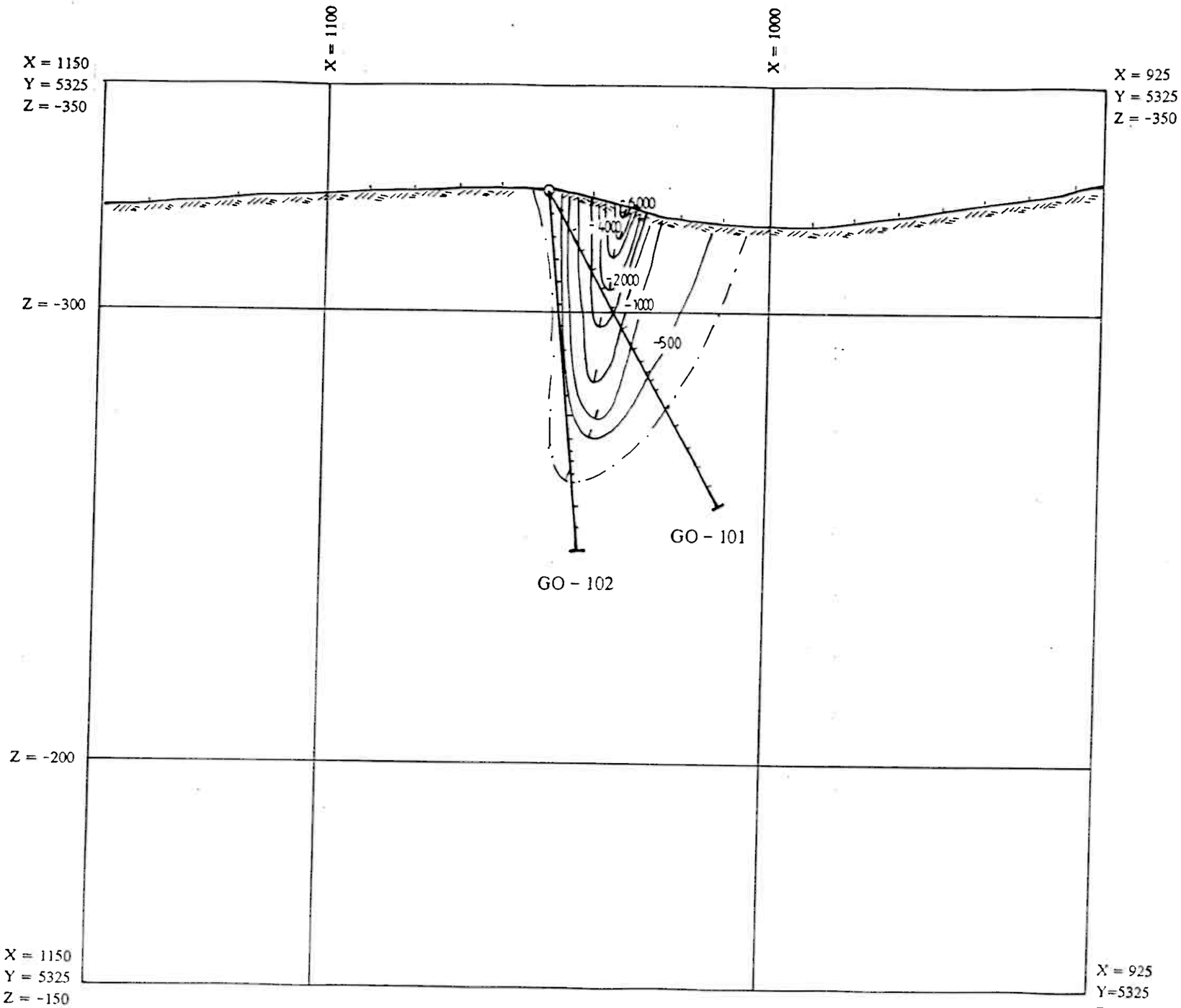
CORE HOLE	LENGHT
GO-101	80.00 m
GO-102	80.00 m

Active grounding GO-101 / 42 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5325
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



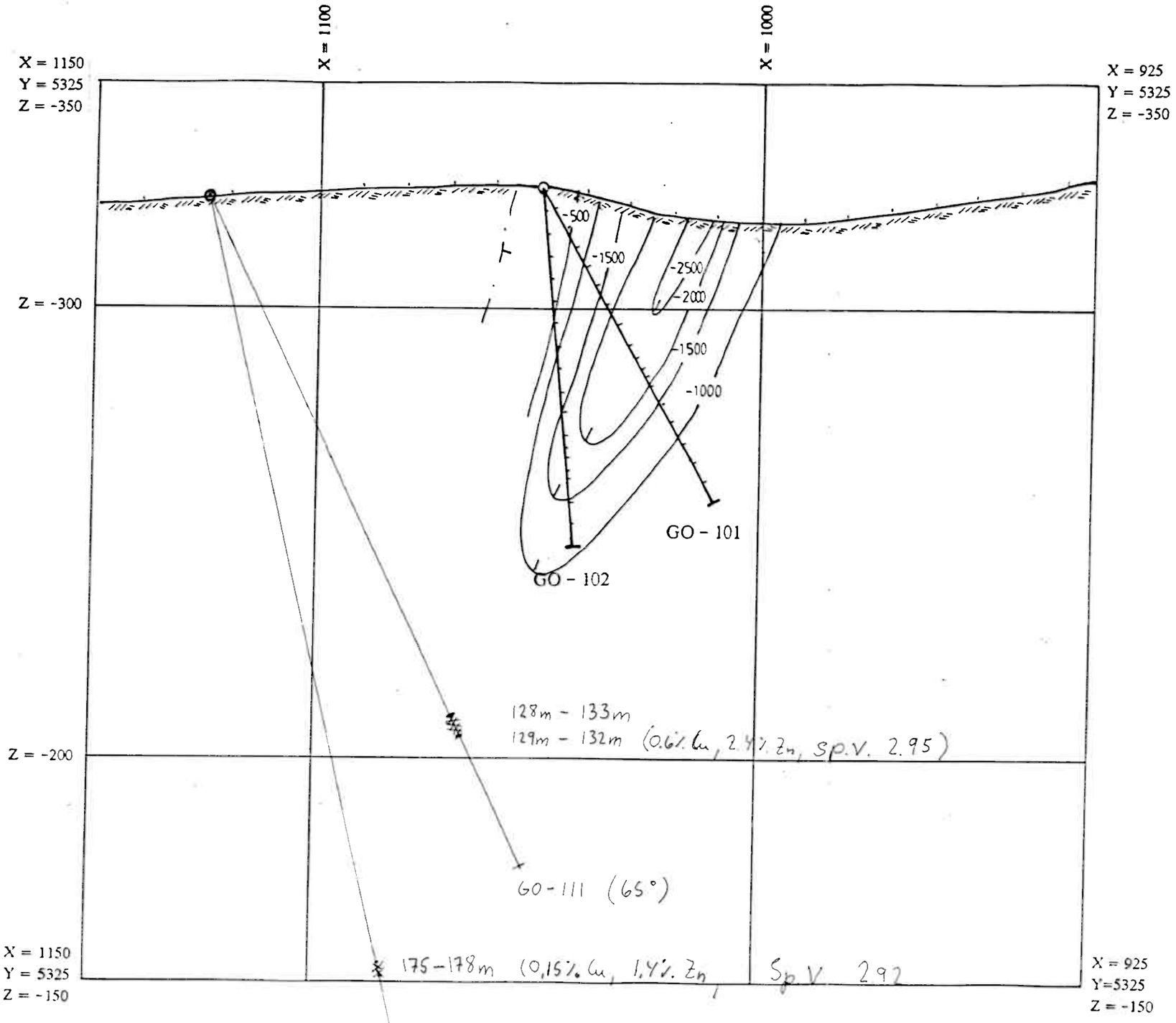
CORE HOLE	LENGHT
GO-101	80.00 m
GO-102	80.00 m

Active grounding GO-104/ 43 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5325
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



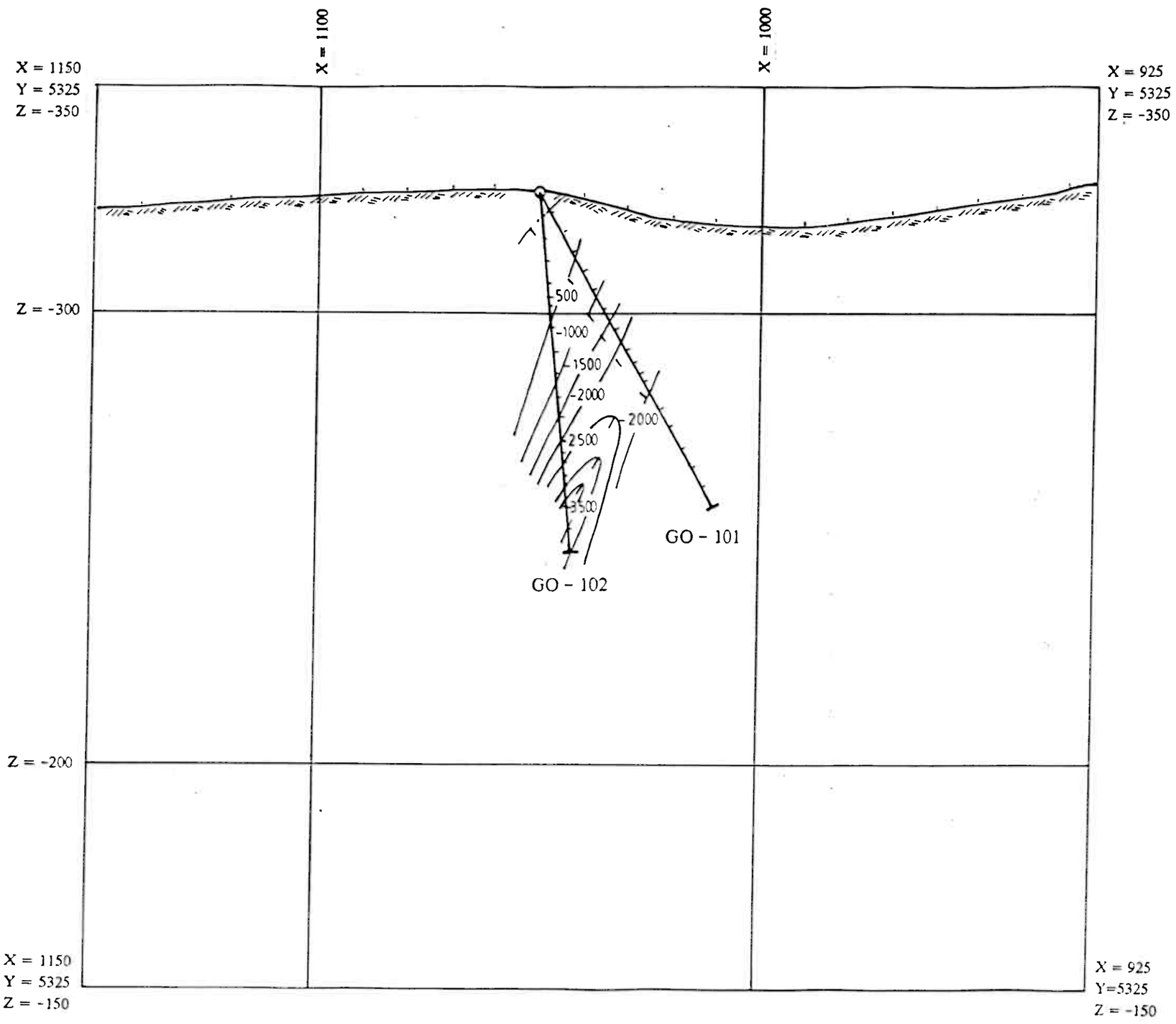
CORE HOLE	LENGHT
GO-101	80.00 m
GO-102	80.00 m

Active grounding GO-104 / 56 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5325
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



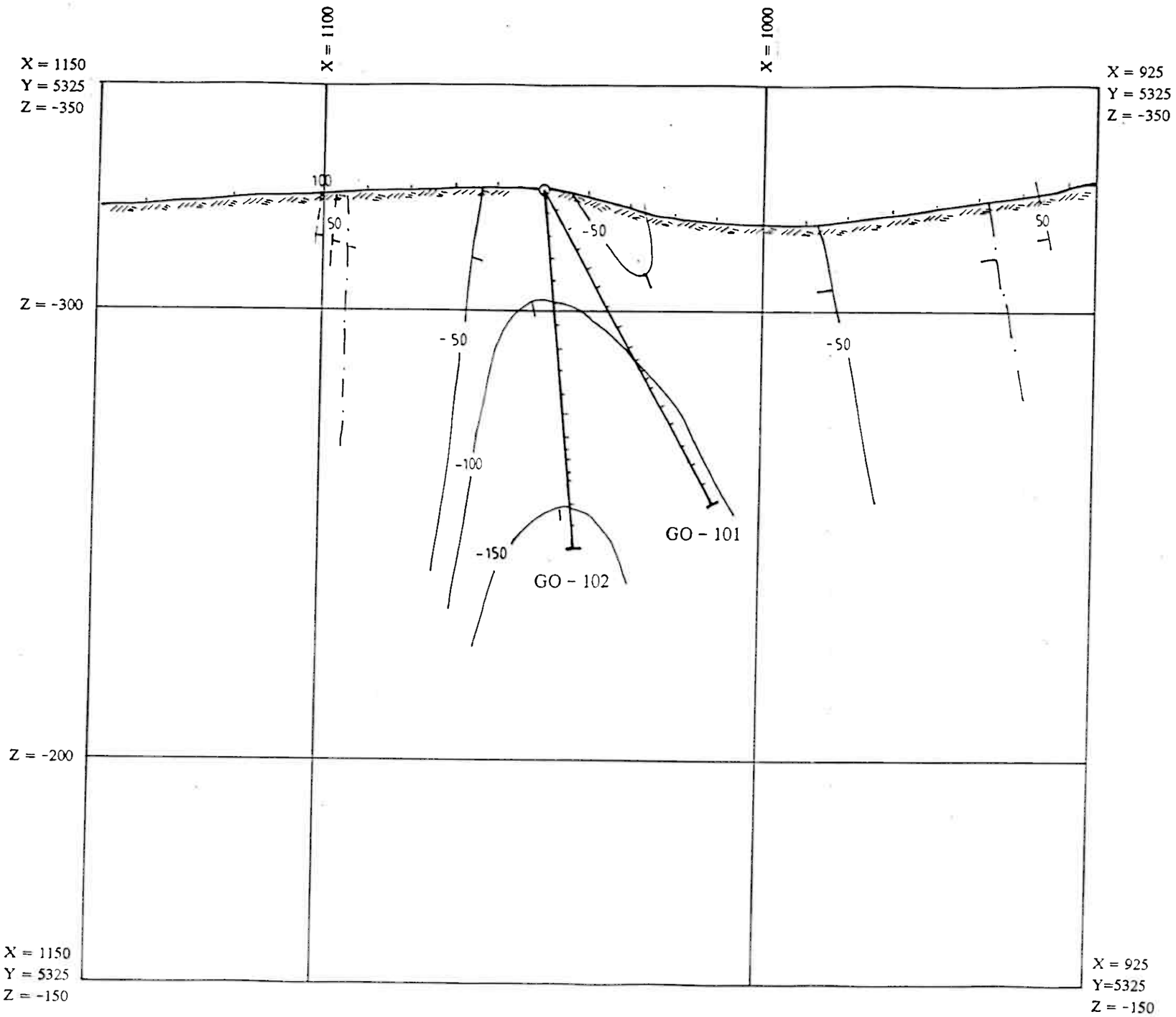
CORE HOLE	LENGHT
GO-101	80.00 m
GO-102	80.00 m

Active grounding GO-105 / 101 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5325
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE	LENGHT
GO-101	80.00 m
GO-102	80.00 m

Active grounding GO-107 / 81 m

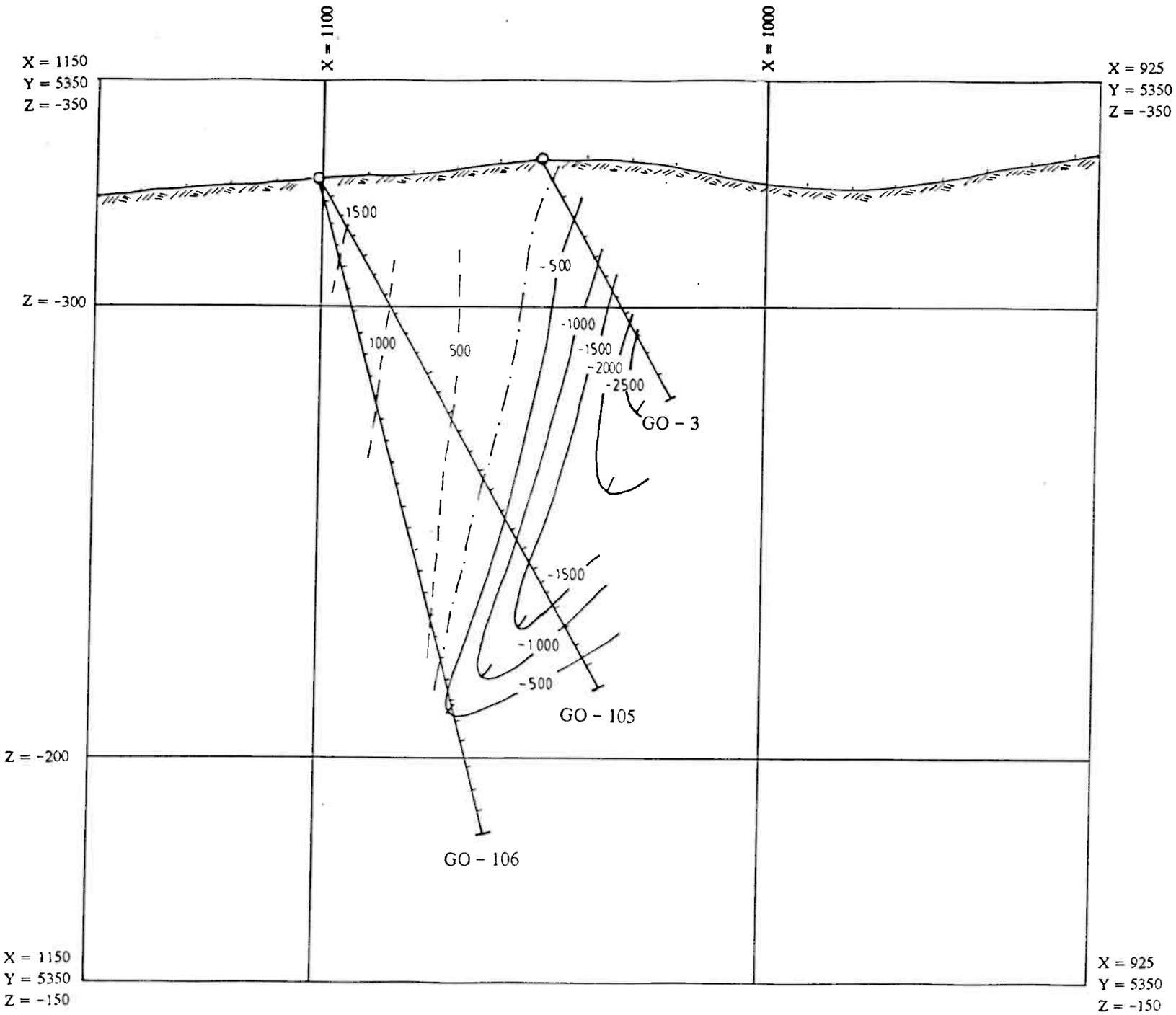
SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5325
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml

CORE HOLE	LENGHT
GO-3	60.00 m
GO-105	125.70 m
GO-106	149.50 m

Active grounding GO-101 / 42 m



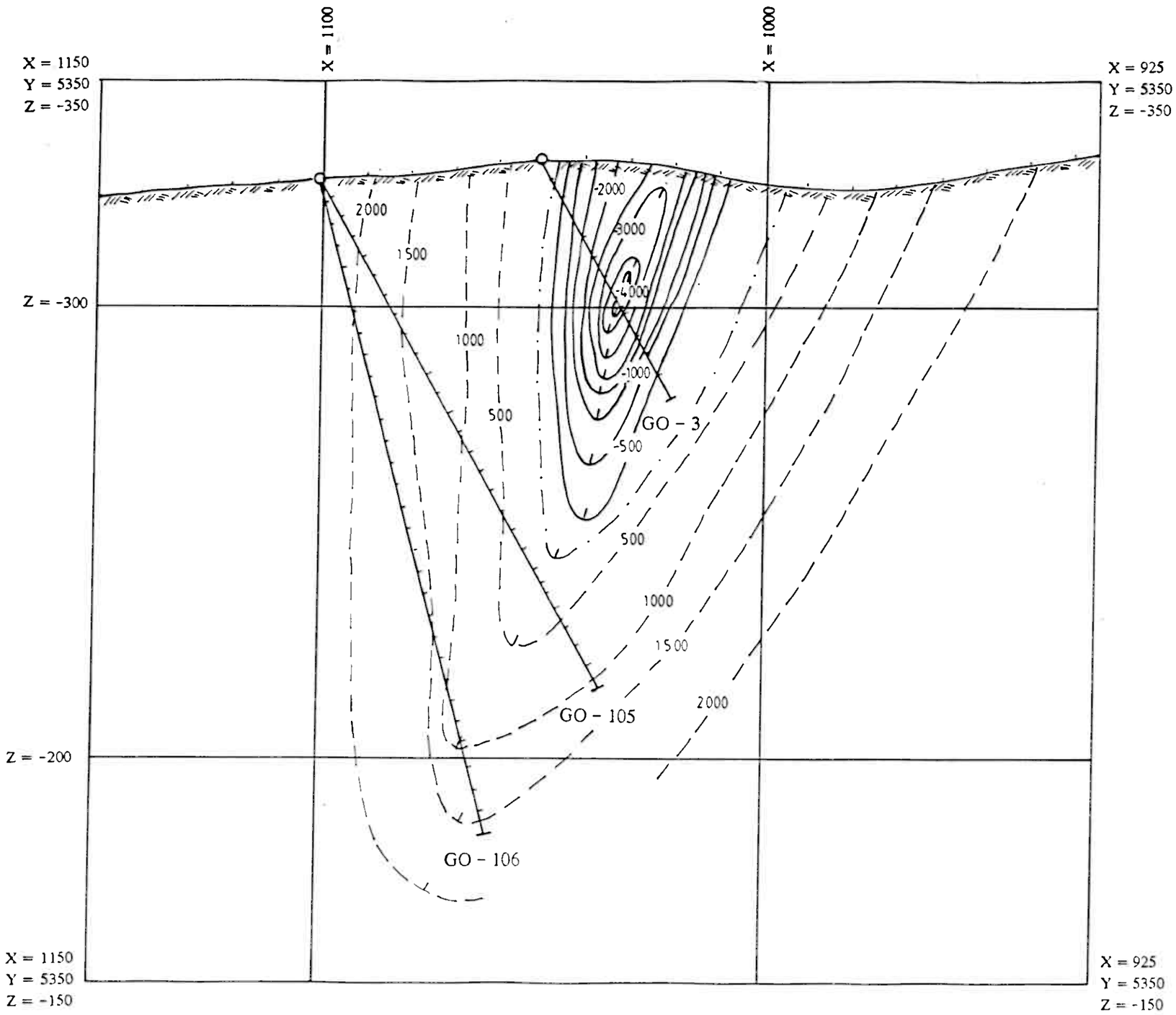
SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5350
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml

CORE HOLE	LENGHT
GO-3	60.00 m
GO-105	125.70 m
GO-106	149.50 m

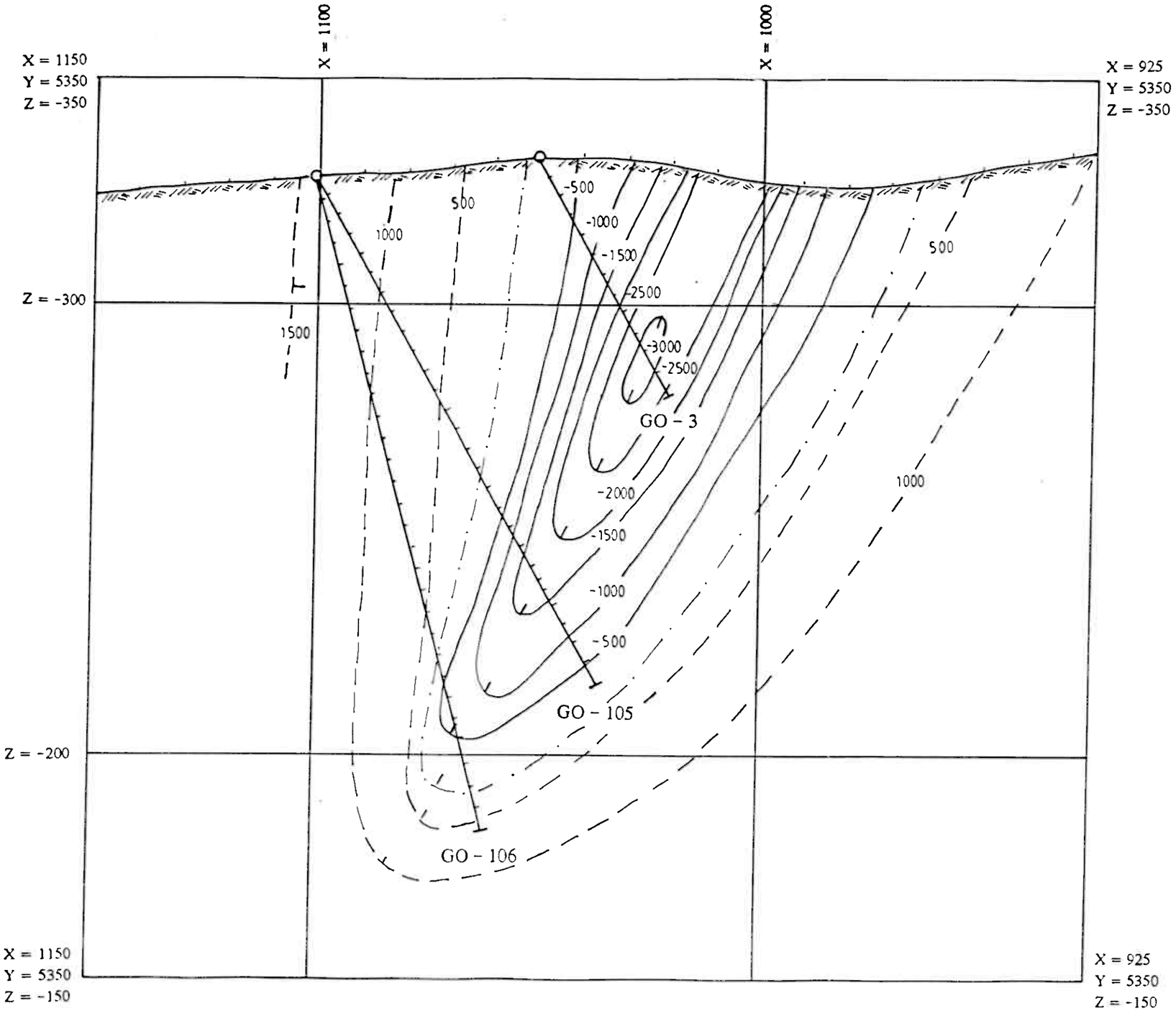
Active grounding GO-104 / 43 m



SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5350
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



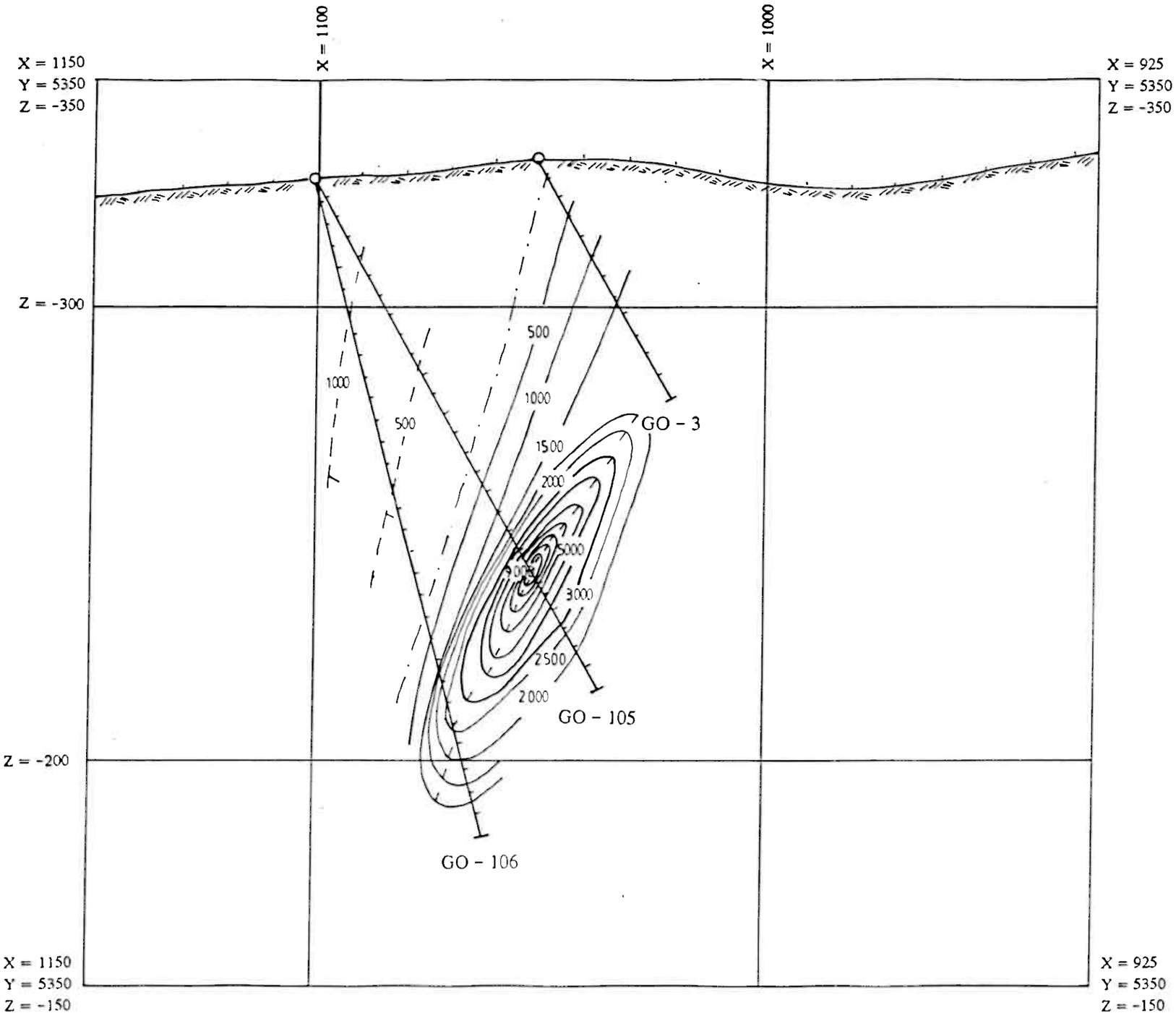
CORE HOLE	LENGHT
GO-3	60.00 m
GO-105	125.70 m
GO-106	149.50 m

Active grounding GO-104 / 56 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5350
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE	LENGHT
GO-3	60.00 m
GO-105	125.70 m
GO-106	149.50 m

Active grounding GO-105 / 101 m

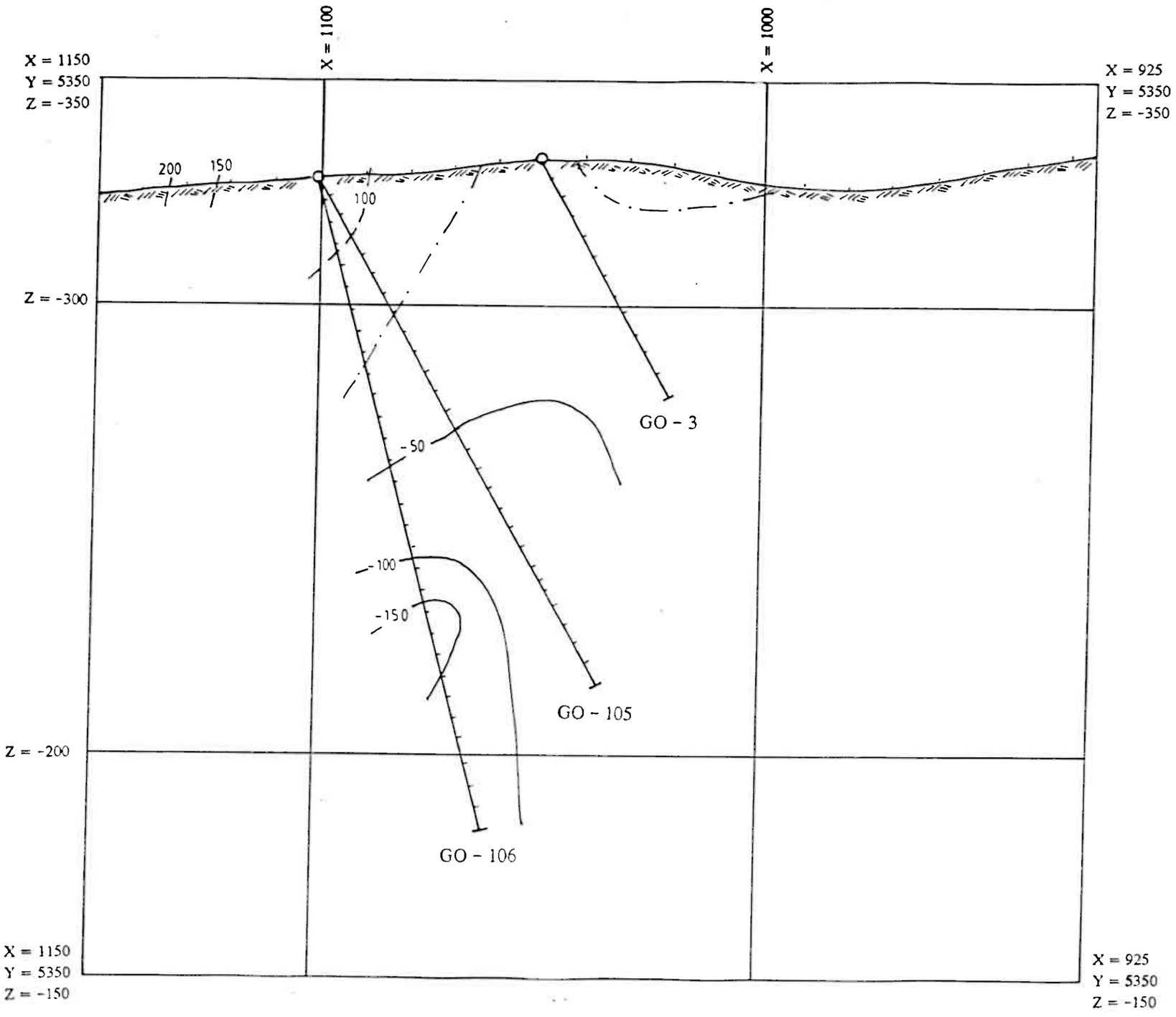
SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5350
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml

CORE HOLE	LENGHT
GO-3	60.00 m
GO-105	125.70 m
GO-106	149.50 m

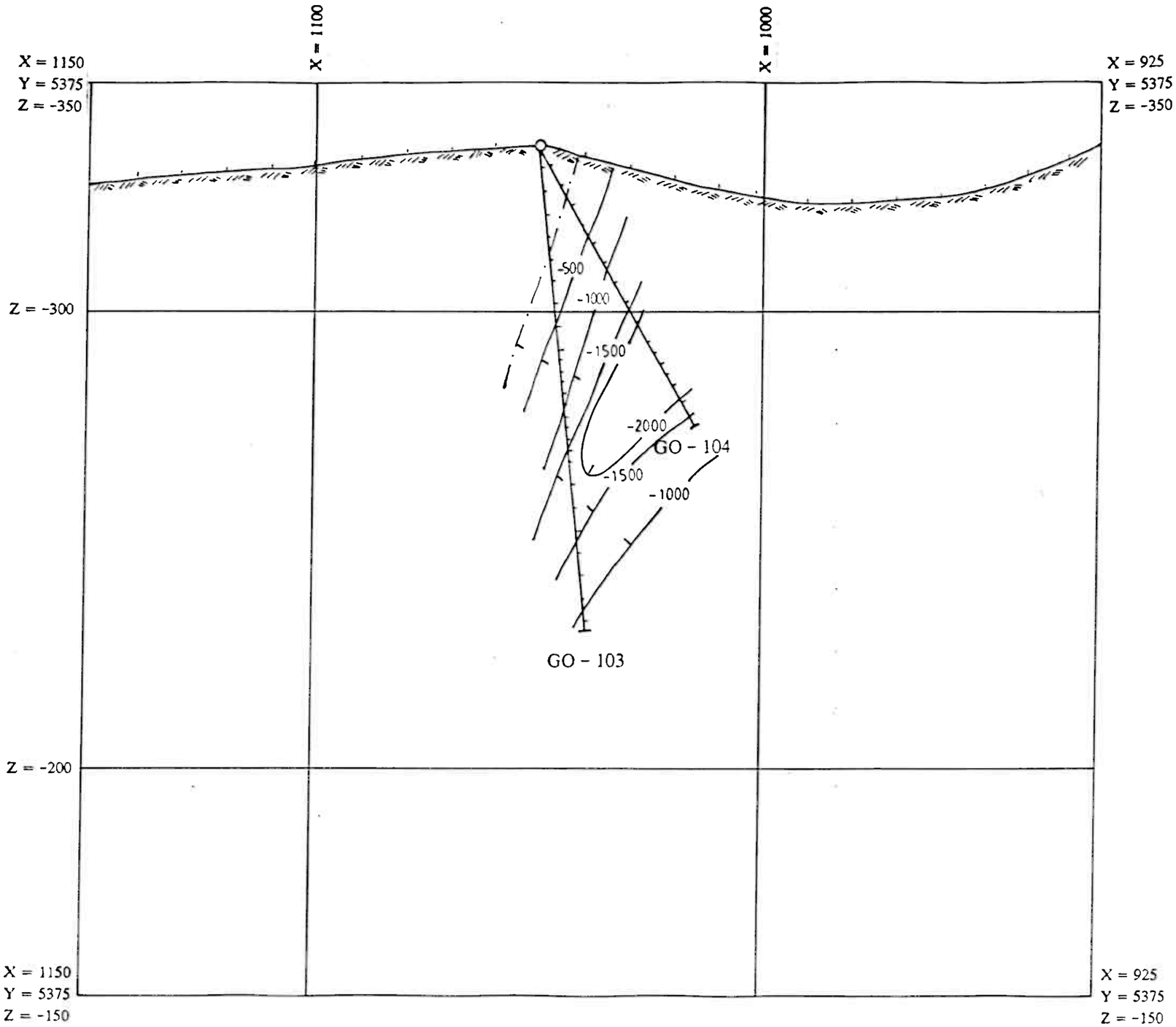
Active grounding GO-107 / 81 m



SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5350
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE	LENGHT
GO-103	106.30 m
GO-104	70.00 m

Active grounding GO-101 / 42 m

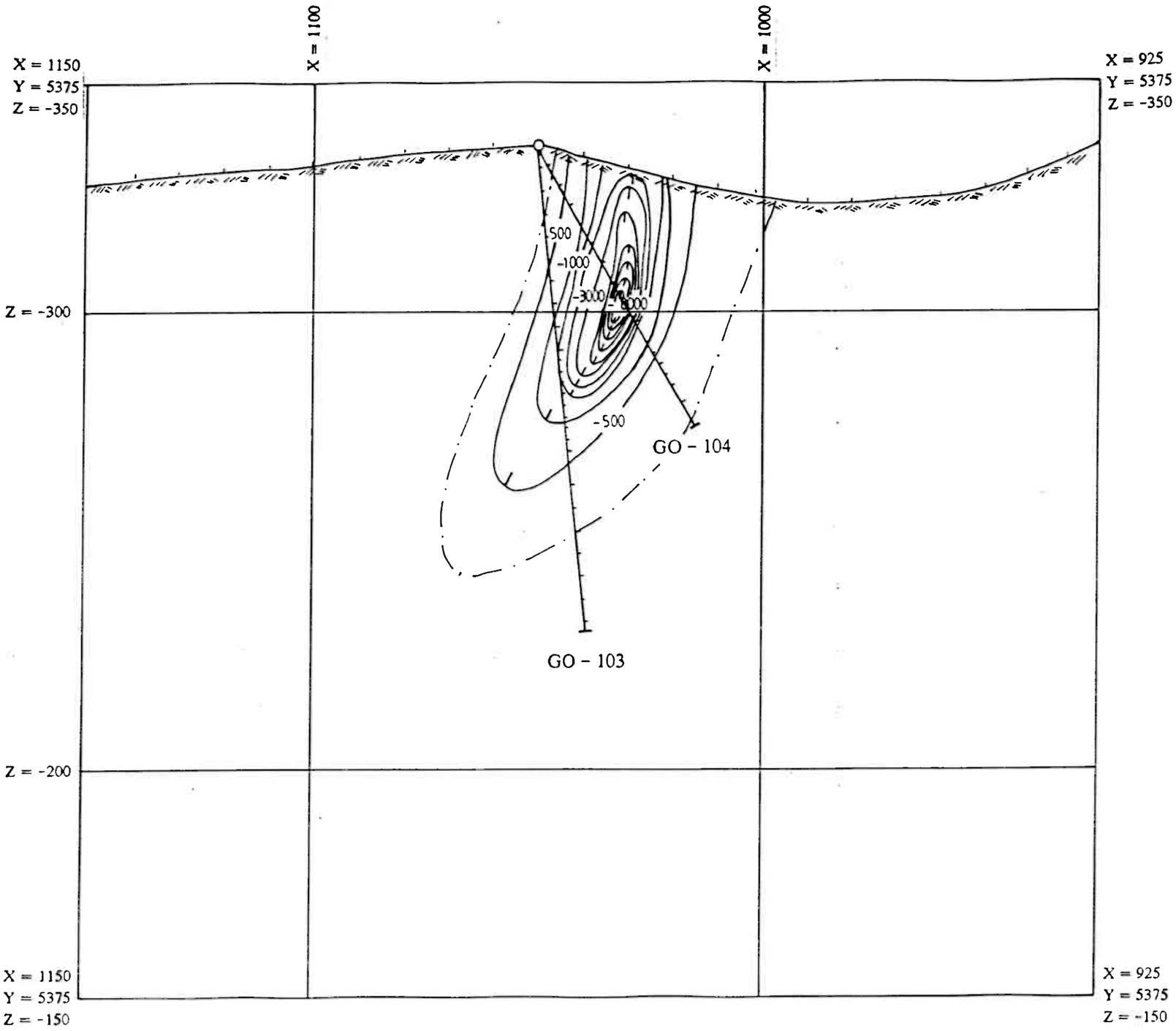
SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5375
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml

CORE HOLE	LENGHT
GO-103	106.30 m
GO-104	70.00 m

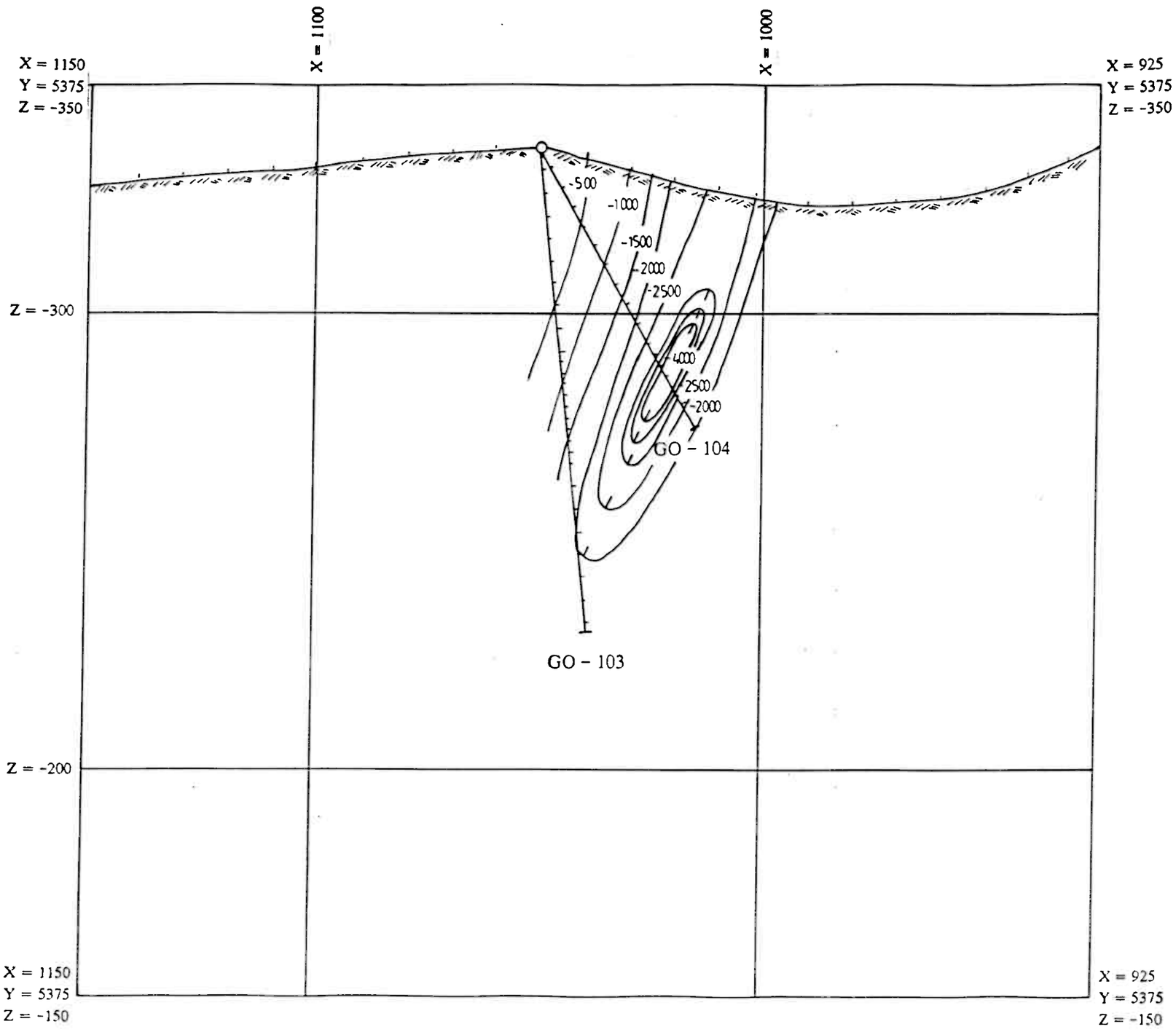
Active grounding GO-104 / 43 m



SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5375
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



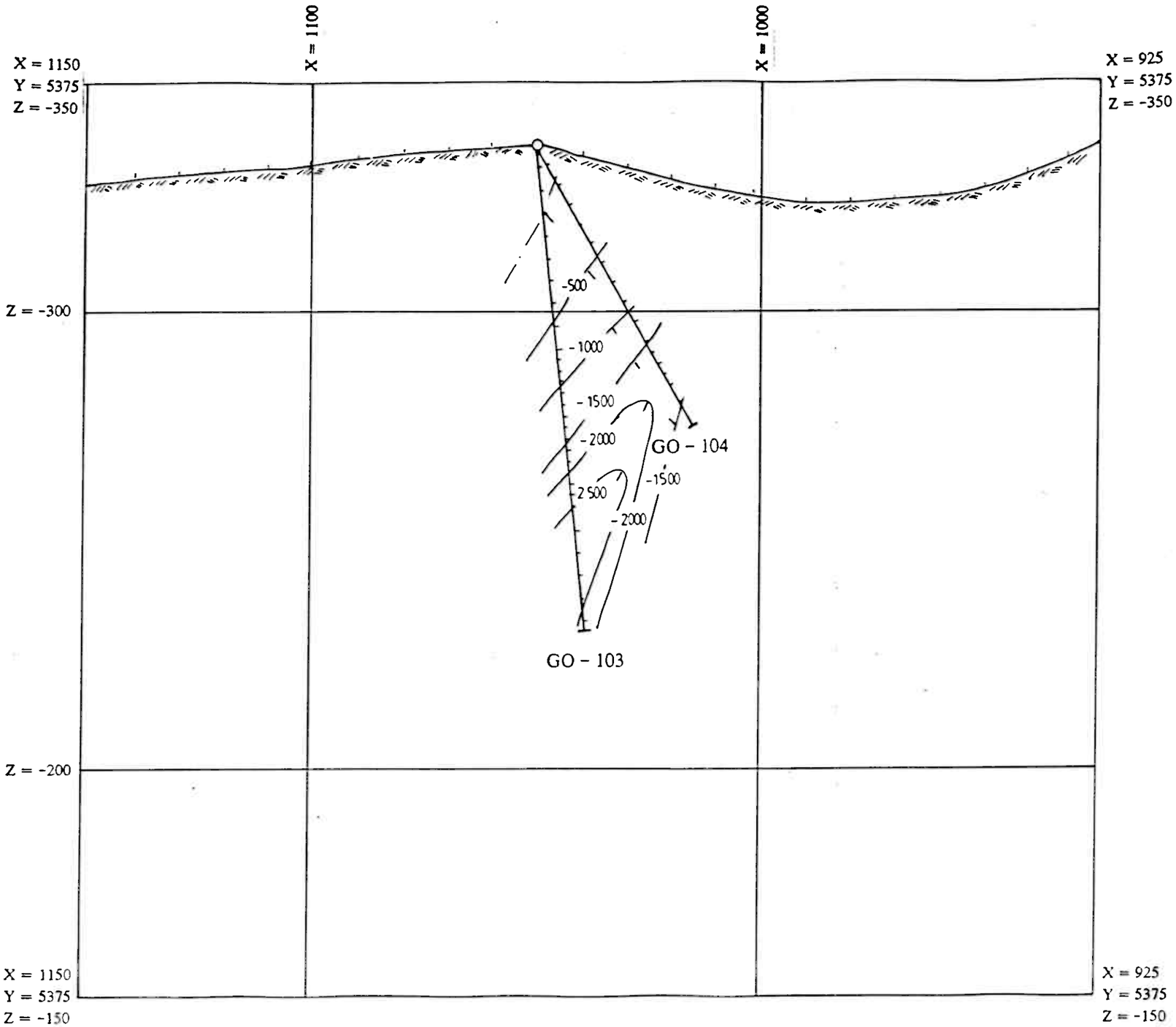
CORE HOLE	LENGHT
GO-103	106.30 m
GO-104	70.00 m

Active grounding GO-104 / 56 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5375
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



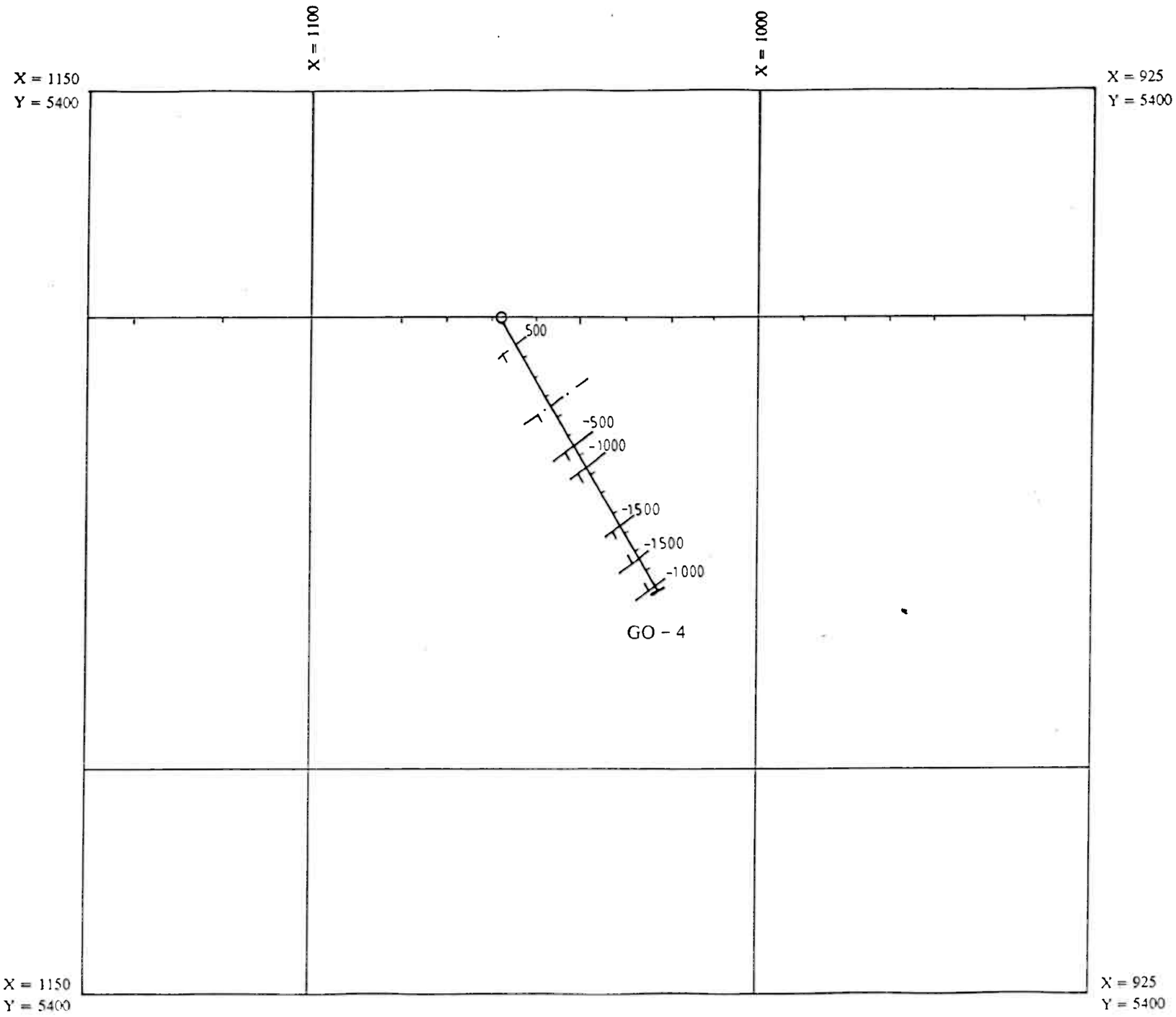
CORE HOLE	LENGHT
GO-103	106.30 m
GO-104	70.00 m

Active grounding GO-105 / 101 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5375
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



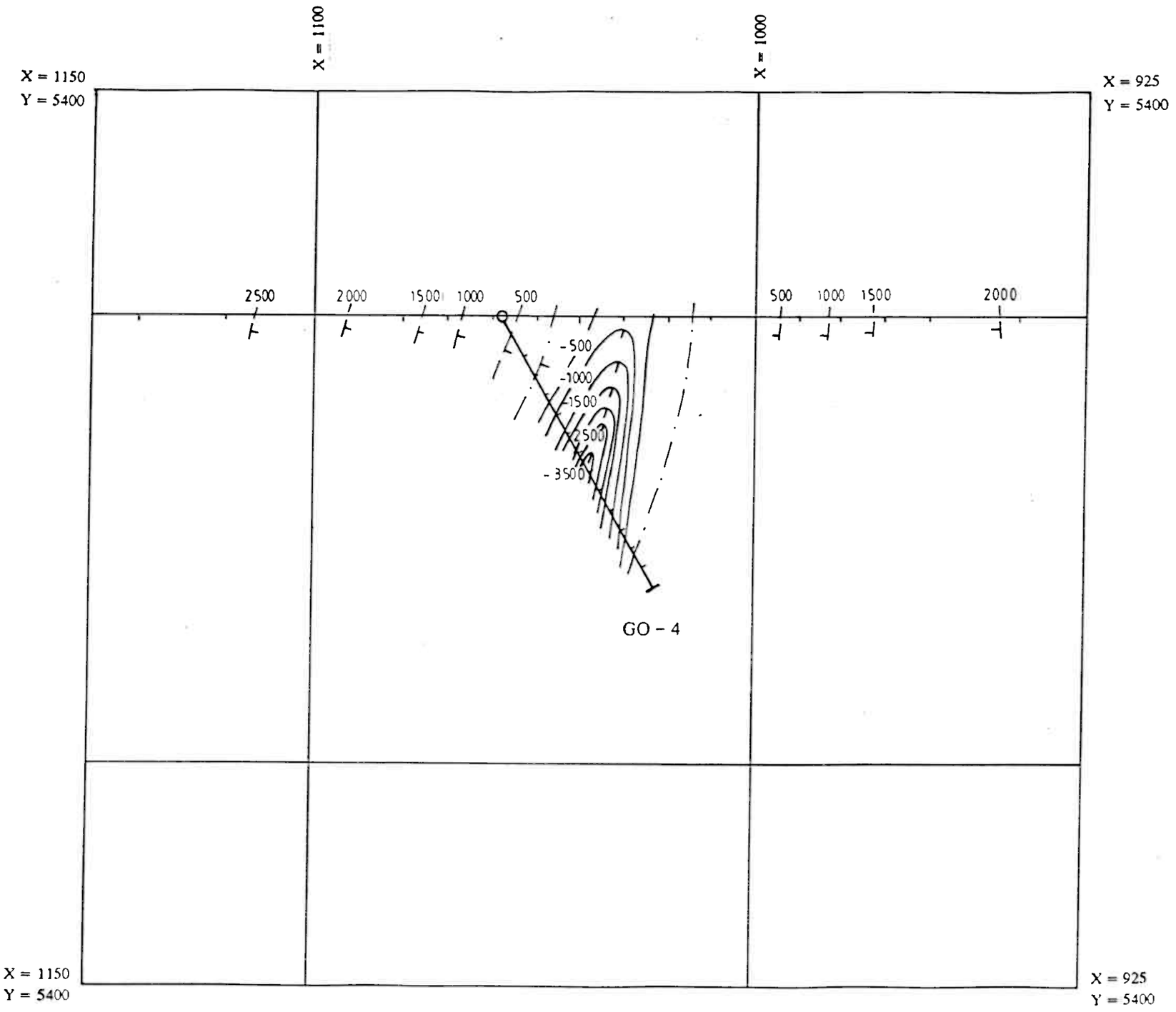
CORE HOLE	LENGHT
GO-4	70.00 m

Active grounding GO-101 / 40 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5400
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



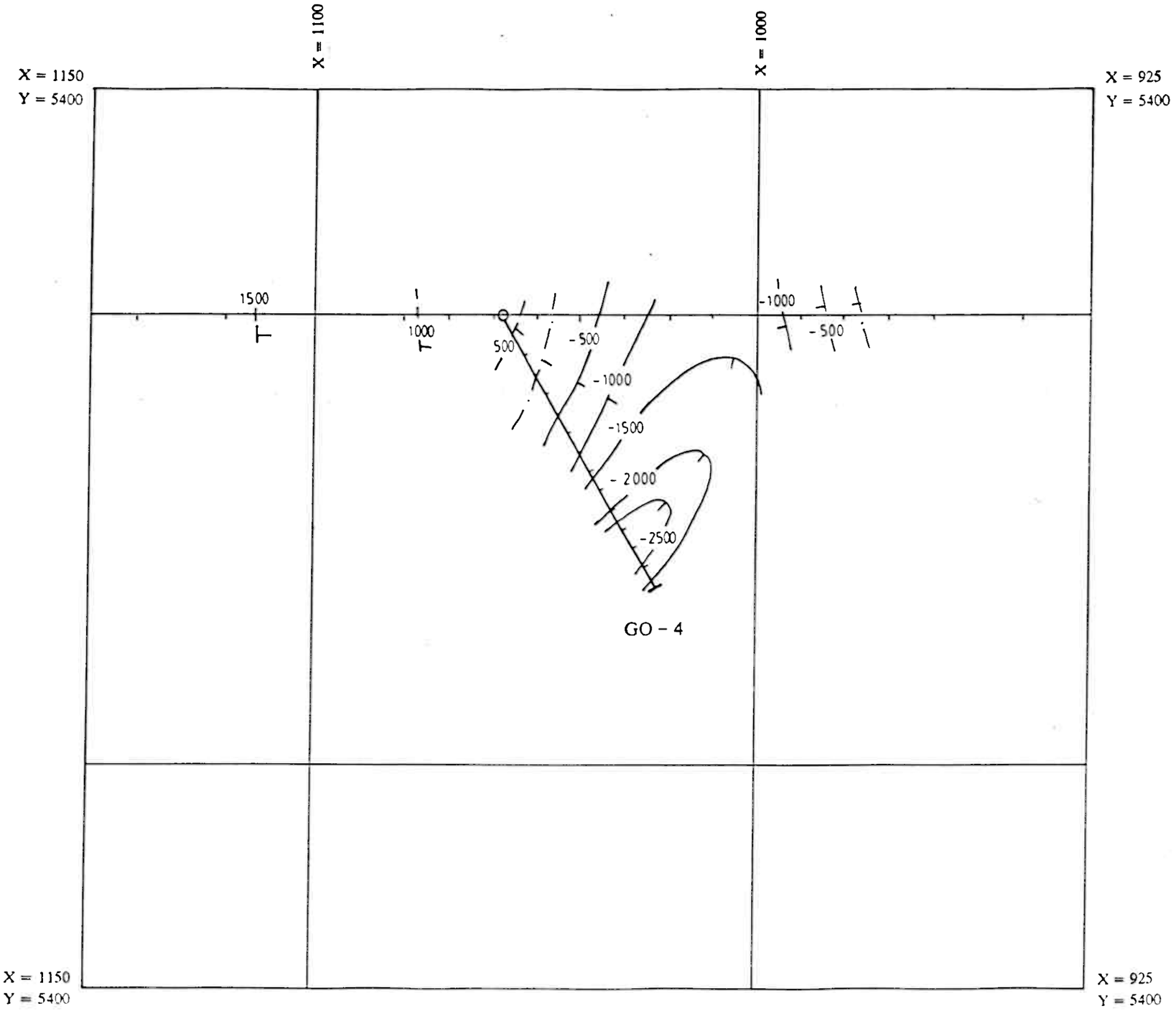
CORE HOLE	LENGHT
GO-4	70.00 m

Active grounding GO-104 / 43 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5400
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



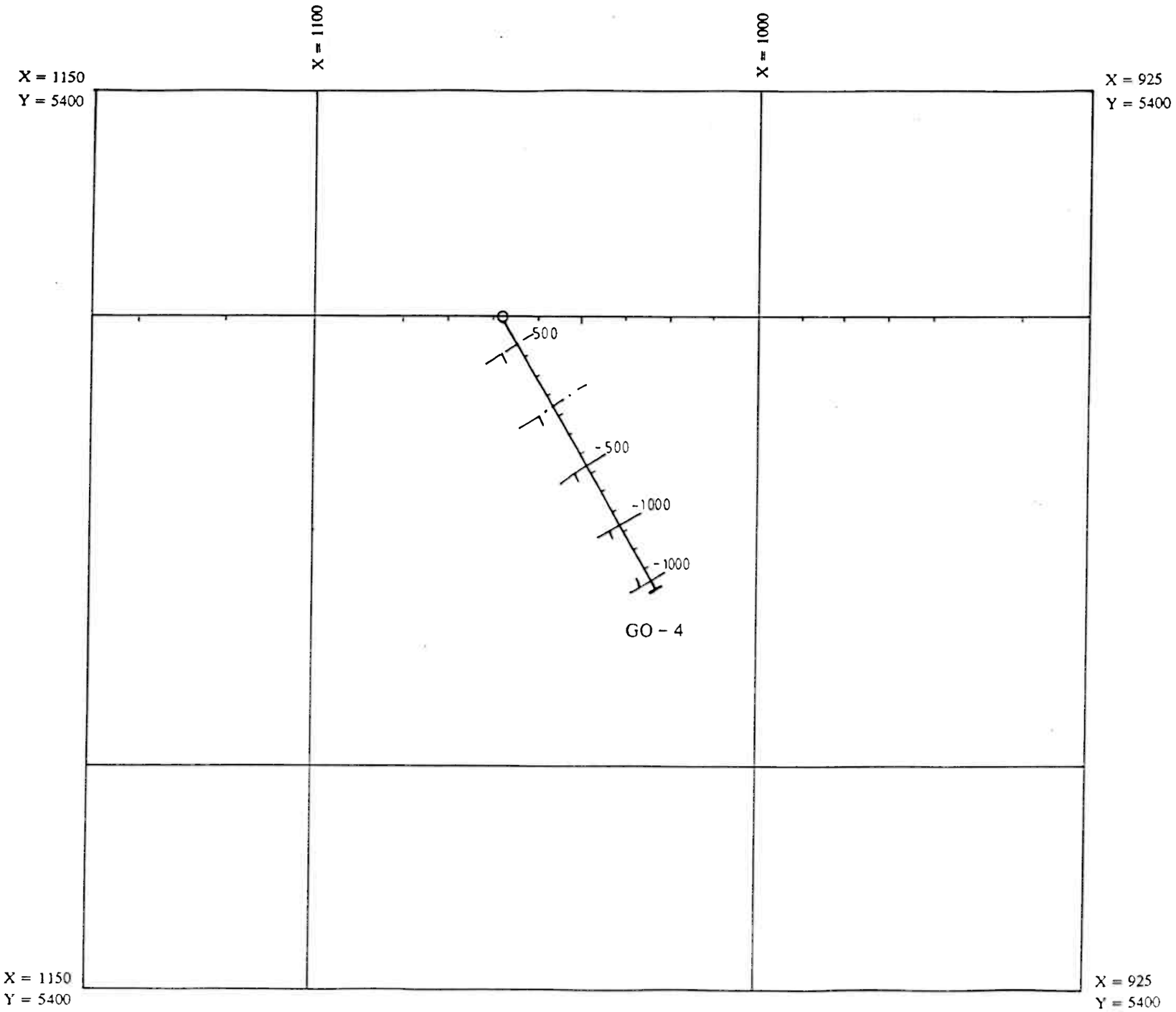
CORE HOLE	LENGHT
GO-4	70.00 m

Active grounding GO-104 / 56 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5400
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



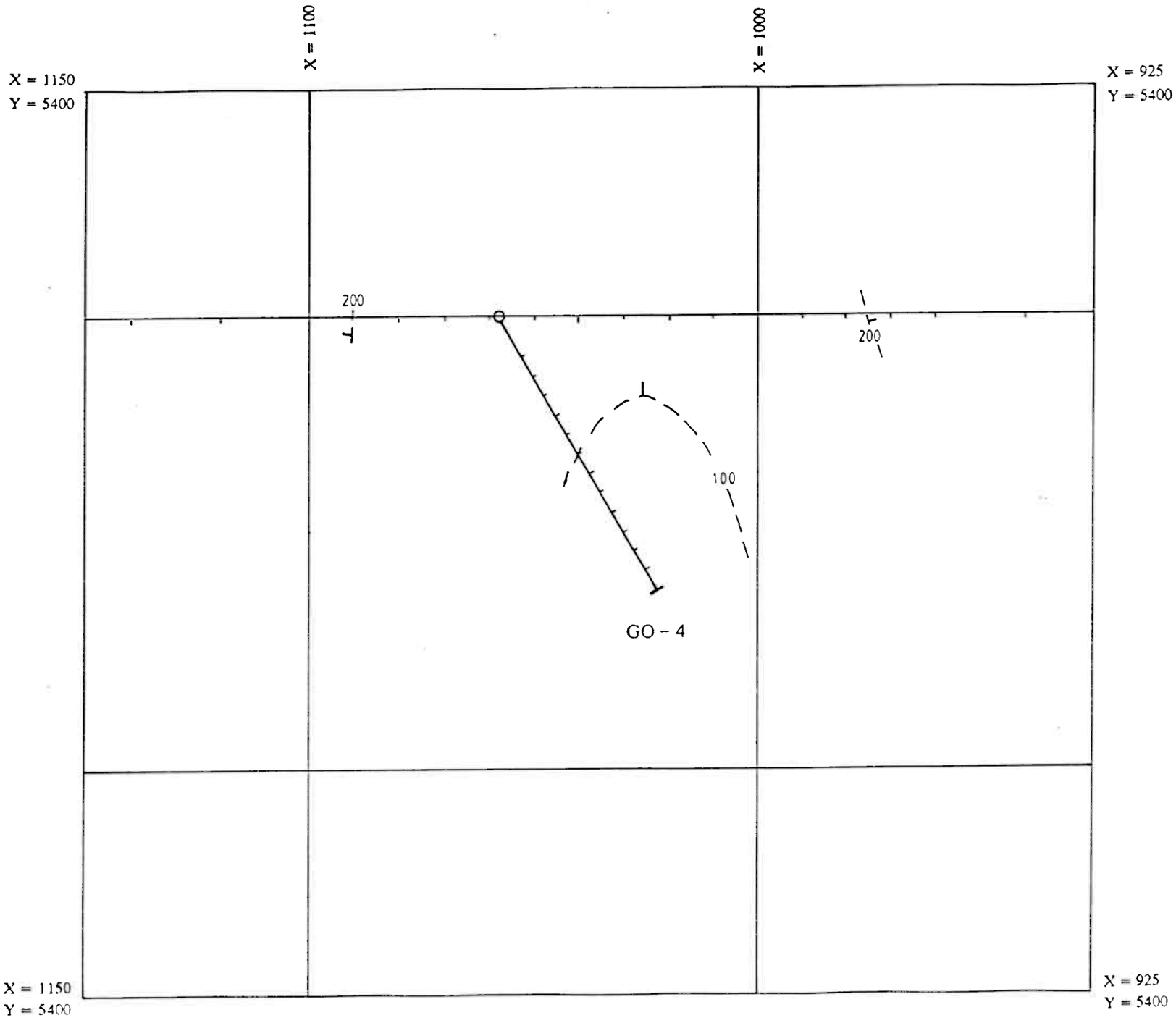
CORE HOLE	LENGHT
GO-4	70.00 m

Active grounding GO-105 / 101 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5400
1:1000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



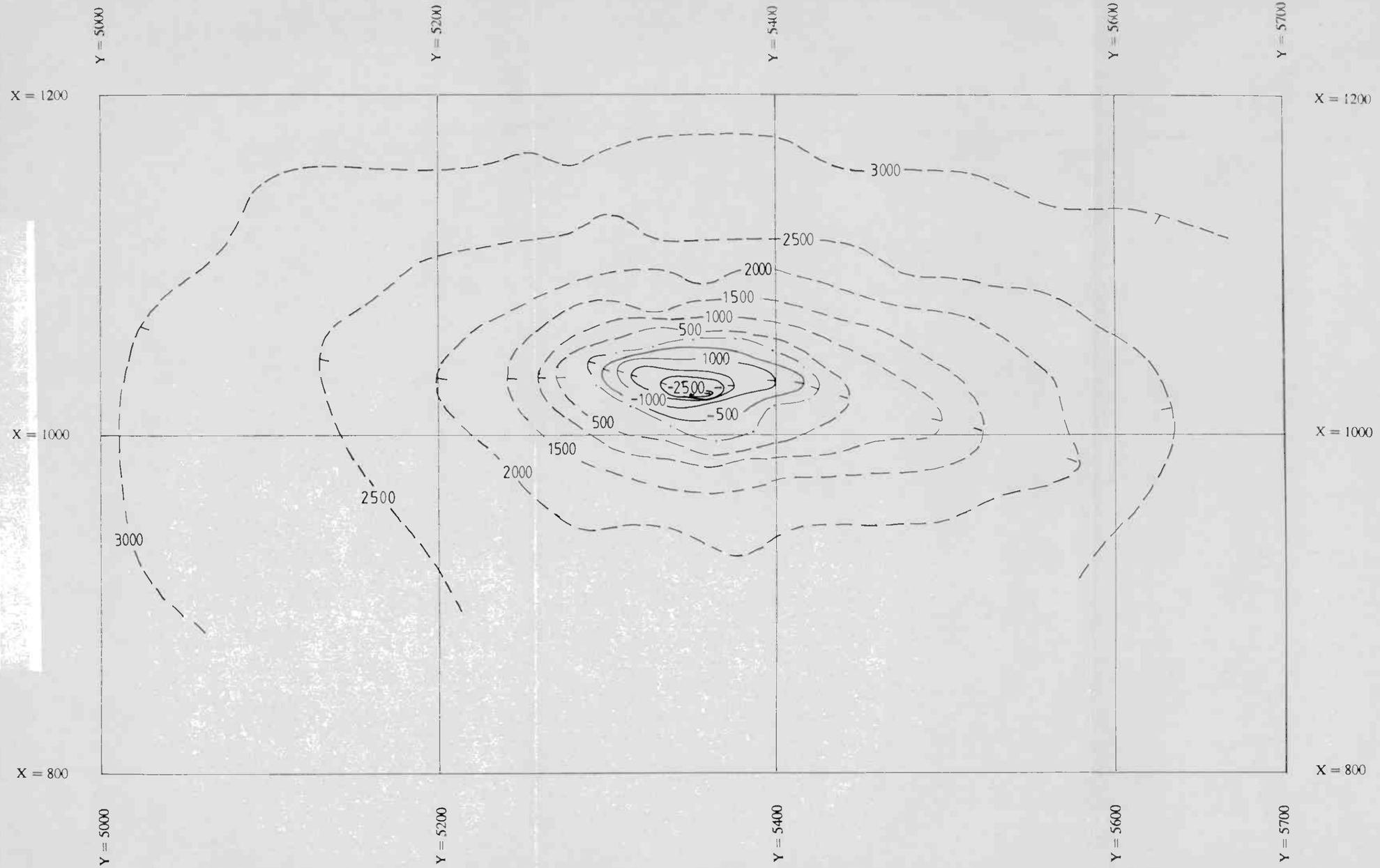
CORE HOLE	LENGHT
GO-4	70.00 m

Active grounding GO-107 / 81 m

SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
Y = 5400
1:1000
CHARGED POTENTIAL SECTION

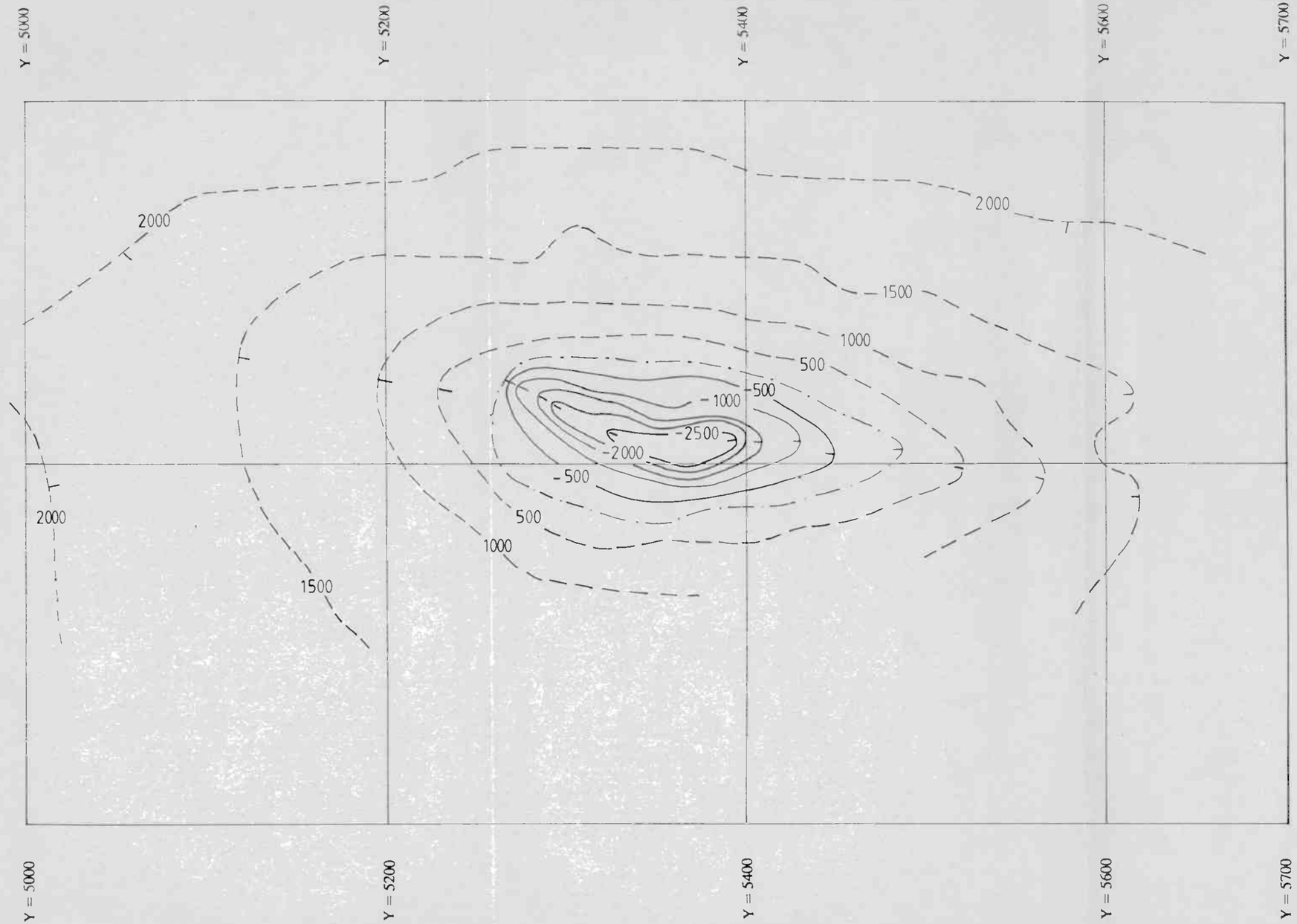
NORSULFID A/S
1.1992 SMOY/aml



SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
1:2000
CHARGED POTENTIAL MAP
Active grounding SK-104 / 43 m

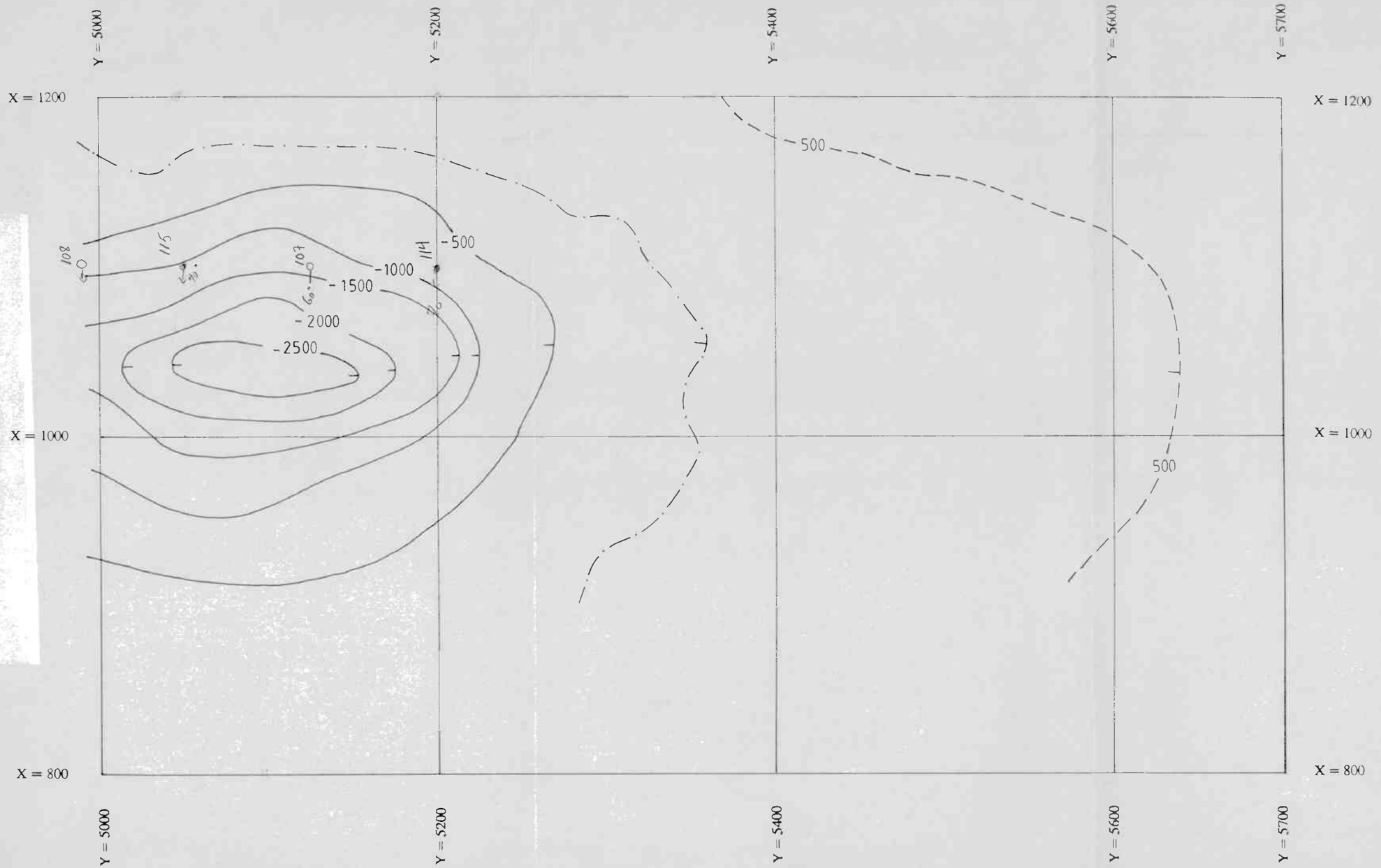
NORSULFID A/S
1.1992 SMOY/aml



SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
1:2000
CHARGED POTENTIAL MAP
Active grounding SK-104 / 56 m

NORSULFID A/S
1.1992 SMOY/aml



SUOMEN MALMI OY
FINNEXPLORATION

GODEJORD
GRONG, N O R W A Y
1:2000
CHARGED POTENTIAL MAP
Active grounding SK-107 / 81 m

NORSULFID A/S
1.1992 SMOY/aml

N = 6200

V = - 5700

V = - 4200

N = 6200

lines surveyd
holes surveyd
holes logged

SK-119

SK-122

SK-121 B

SK-121

SK-114

SK-115

SK-113

SK-102, 103

SK-105, 106

SK-108, 109

SK-111

SK-112

SK-101

SK-104

SK-107

SK-110

APPENDIX 5.6

N = 5100

V = - 5700

V = - 4200

N = 5100

SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
1:2000
INDEX MAP

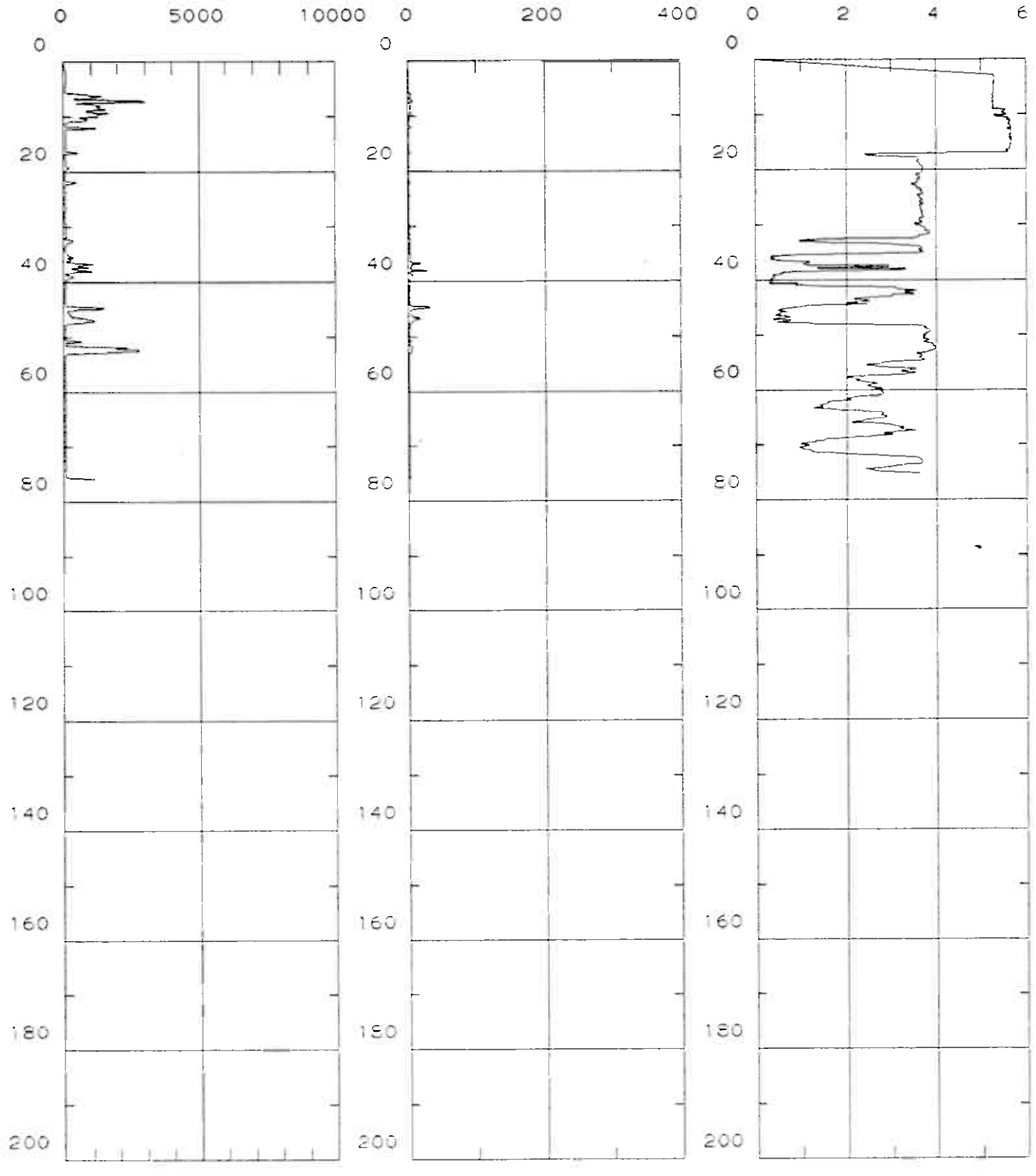
NORSULFID A/S
1.1992 SMOY/aml

Skiftesmyr

HOLE KR 101
DATE 1991-11-1
SUSC 10E-5 SI

HOLE KR 101
DATE 1991-11-1
CONDUCTIVITY mV

HOLE KR 101
DATE 1991-11-1
WENNER Lg Ohm-m



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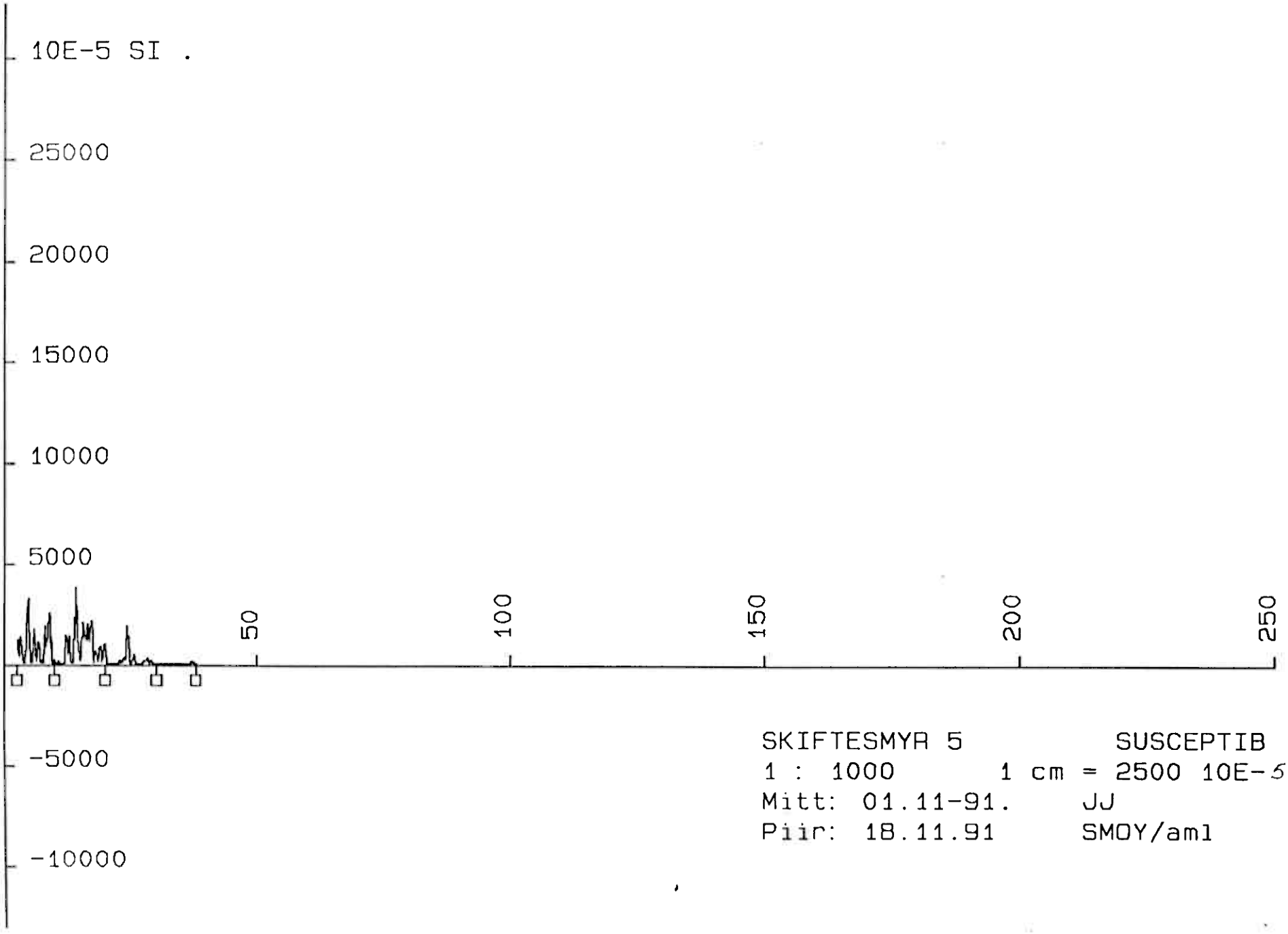
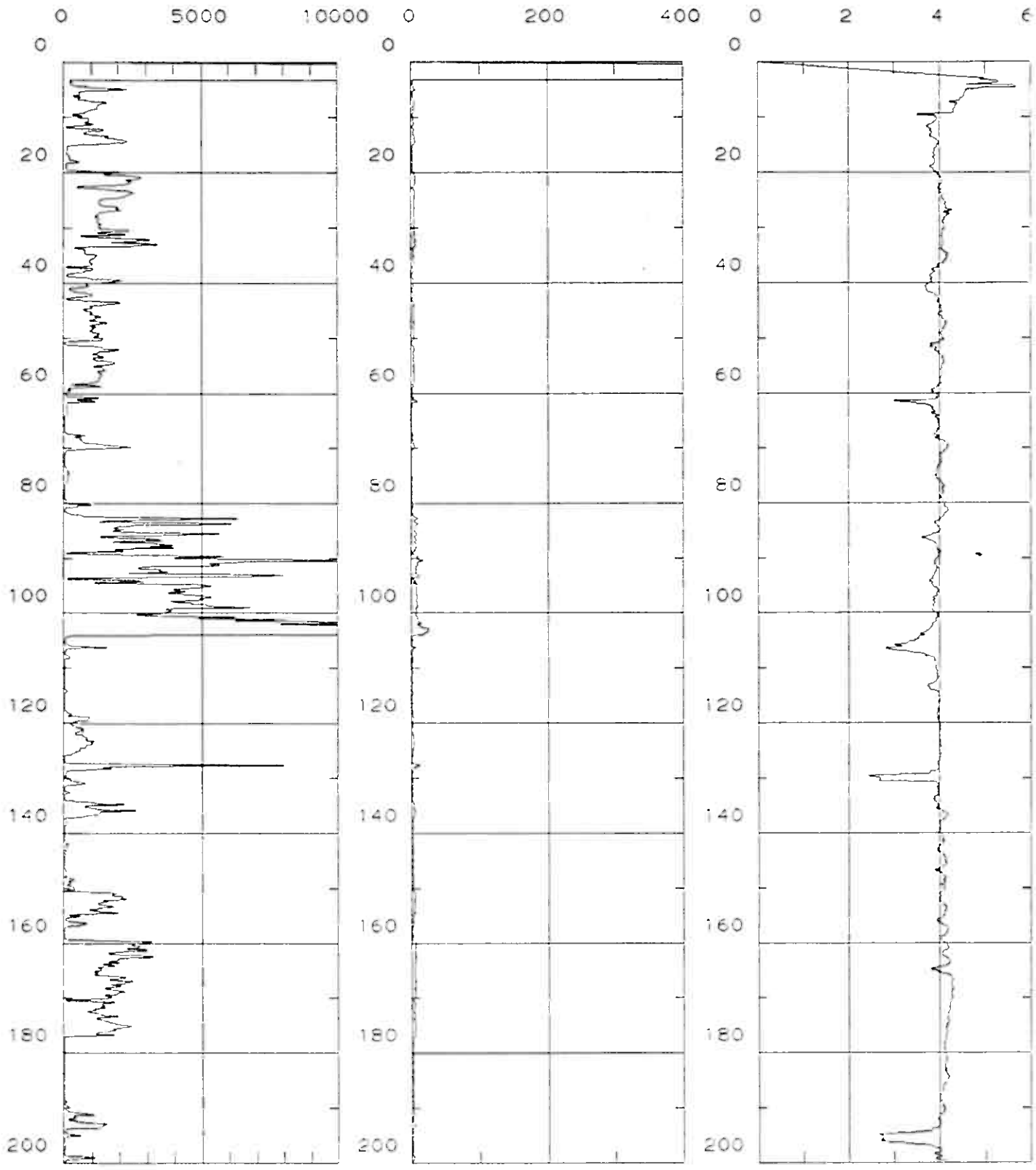

10E-5 SI .
25000
20000
15000
10000
5000
50
100
150
200
250
-5000
-10000
SKIFTESMYR 5
SUSCEPTIB
1 : 1000
1 cm = 2500 10E-5
Mitt: 01.11-91.
JJ
Piir: 18.11.91
SMOY/aml

Skiftesmyr

HOLE KR 106
DATE 1991-11-1
SUSC. 10E-5 SI

HOLE KR 106
DATE 1991-11-1
CONDUCTIVITY mV

HOLE KR 106
DATE 1991-11-1
WENNER Lg Ohm-m



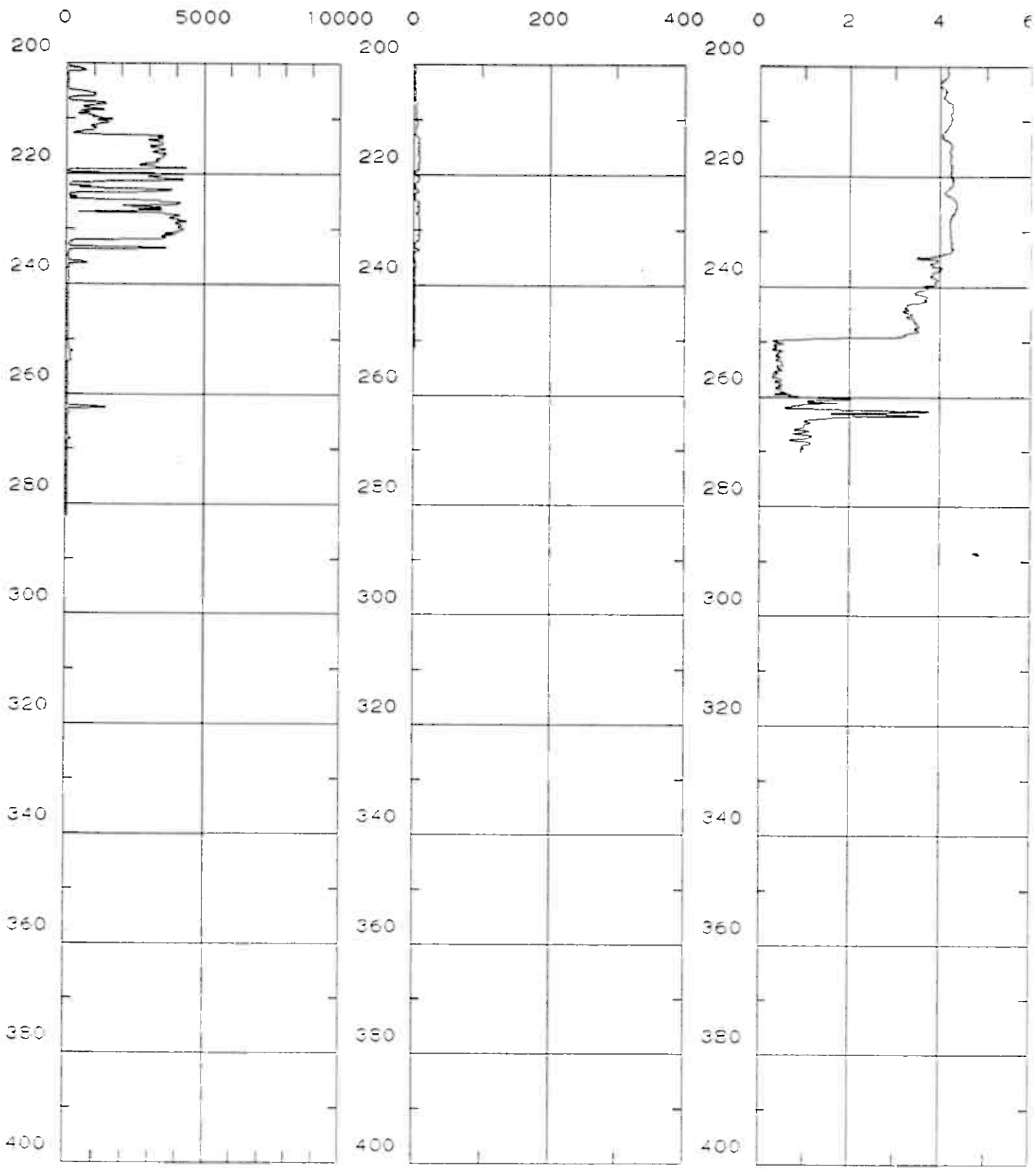
SCALE 1 : 1000

Skiftesmyr

HOLE KR 106
DATE 1991-11-1
SUSC. 10E-5 SI

HOLE KR 106
DATE 1991-11-1
CONDUCTIVITY mV

HOLE KR 106
DATE 1991-11-1
WENNER Lg Ohm-m



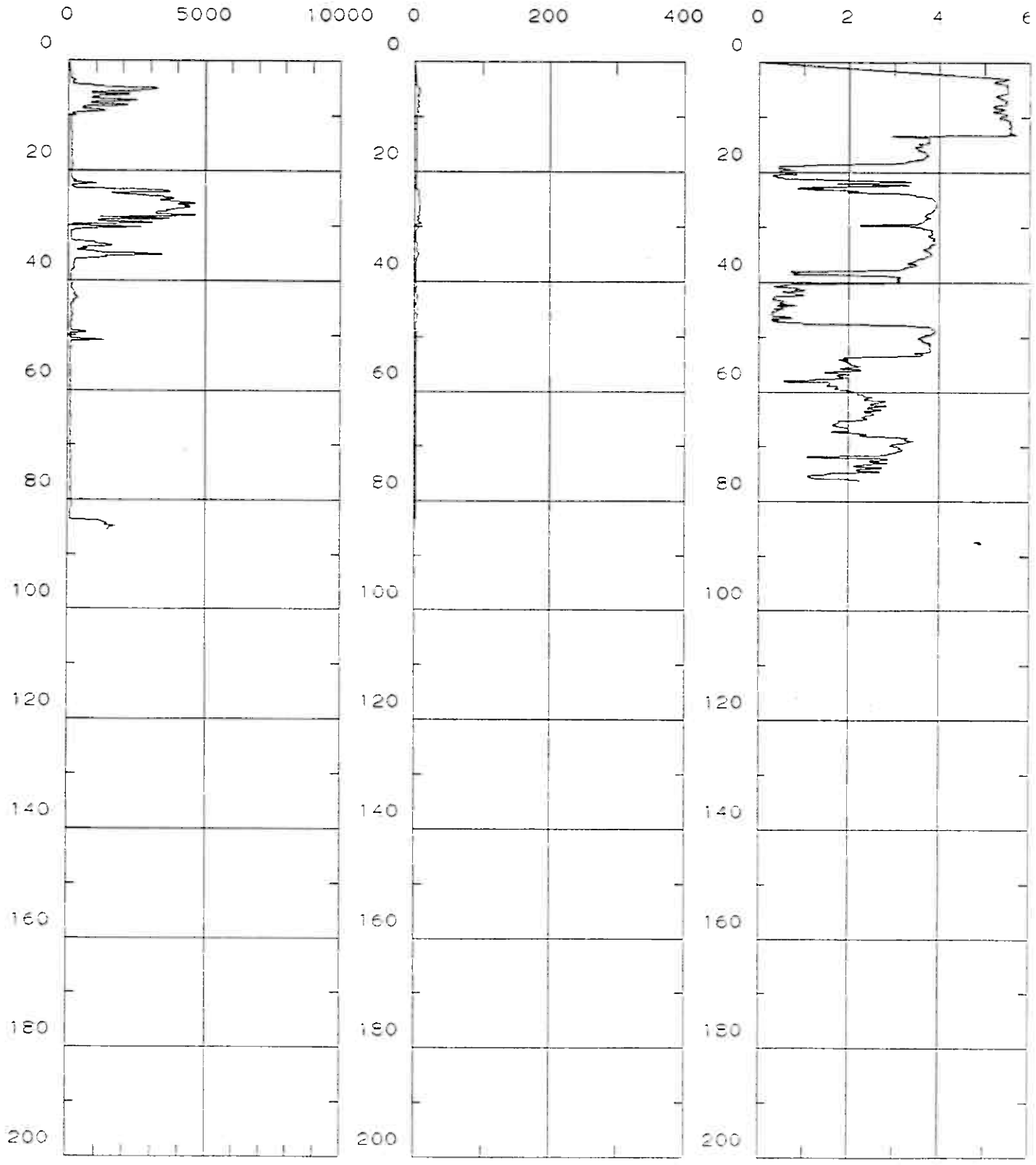
SCALE 1 : 1000

Skiftesmyr

HOLE KR 112
DATE 1991-11-2
SUSC. 10E-5 SI

HOLE KR 112
DATE 1991-11-2
CONDUCTIVITY mV

HOLE KR 112
DATE 1991-11-2
WENNER Lg Ohm-m



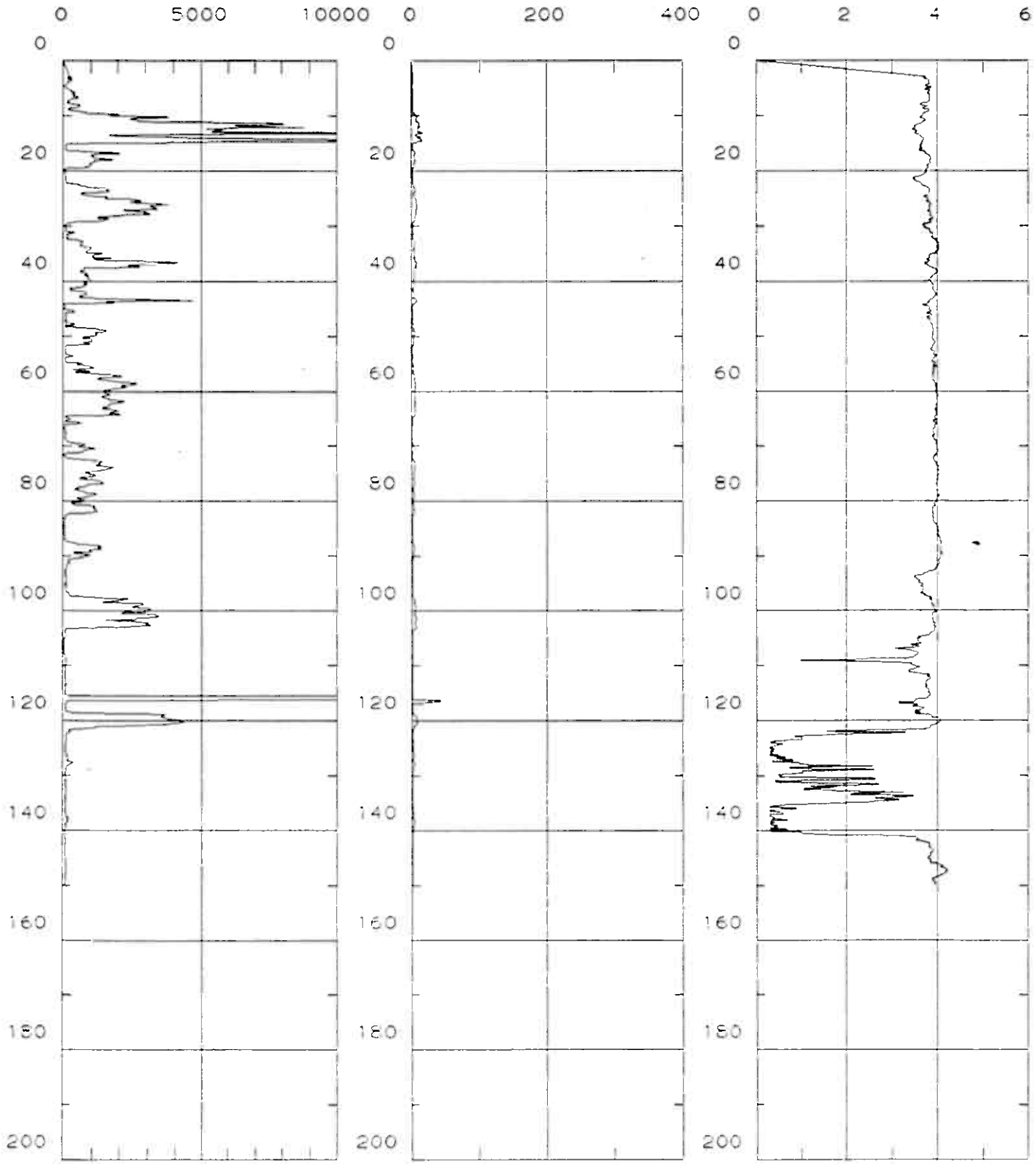
SCALE 1 : 1000

Skiftesmyr

HOLE KR 113
DATE 1991-11-2
SUSC. 10E-5 SI

HOLE KR 113
DATE 1991-11-2
CONDUCTIVITY mV

HOLE KR 113
DATE 1991-11-2
WENNER Lg Ohm-m

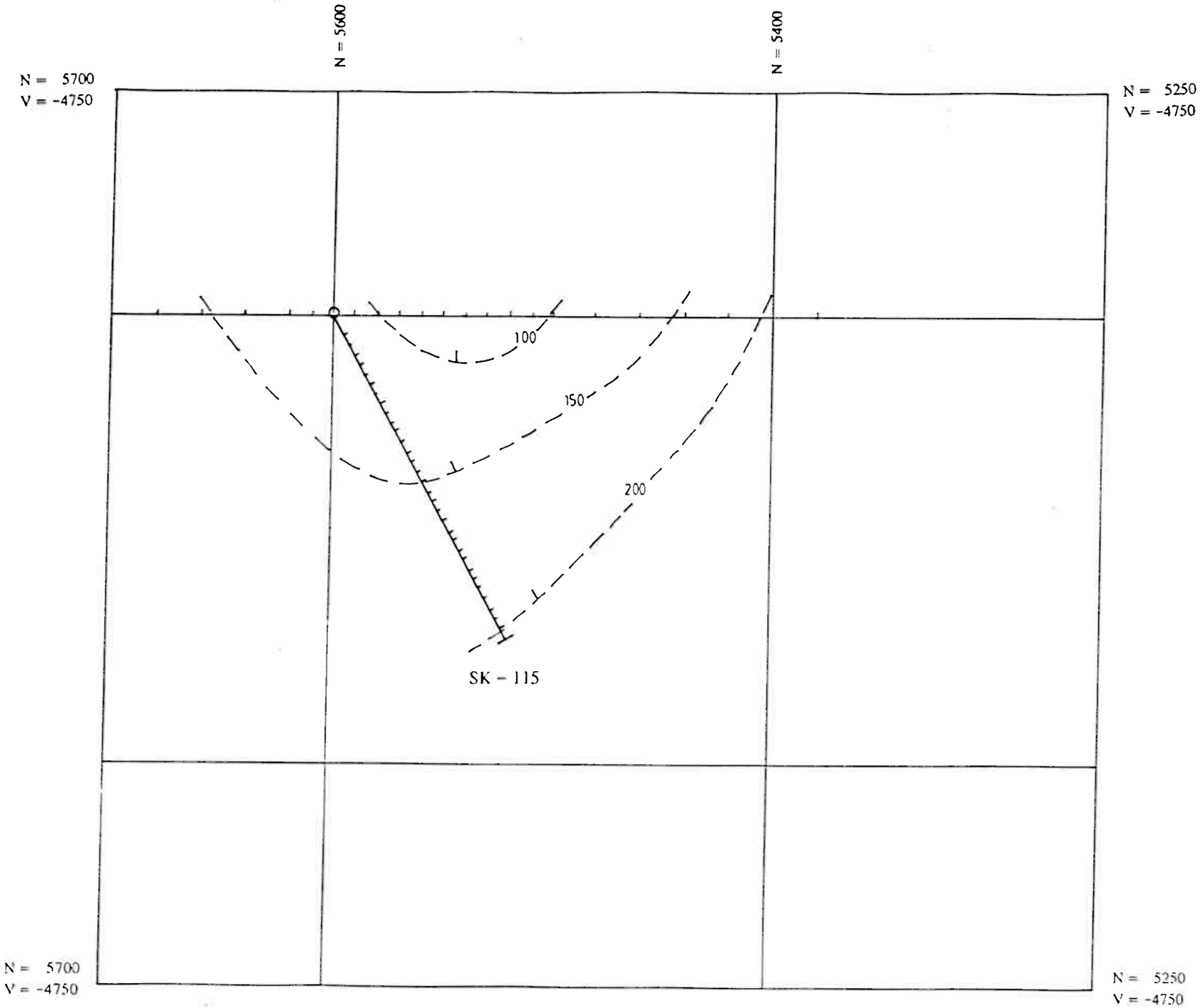


SCALE 1:1000

CORE HOLE

SK-115

Active grounding SK-106 / 257 m



SUOMEN MALMI OY
FINNEXPLORATION

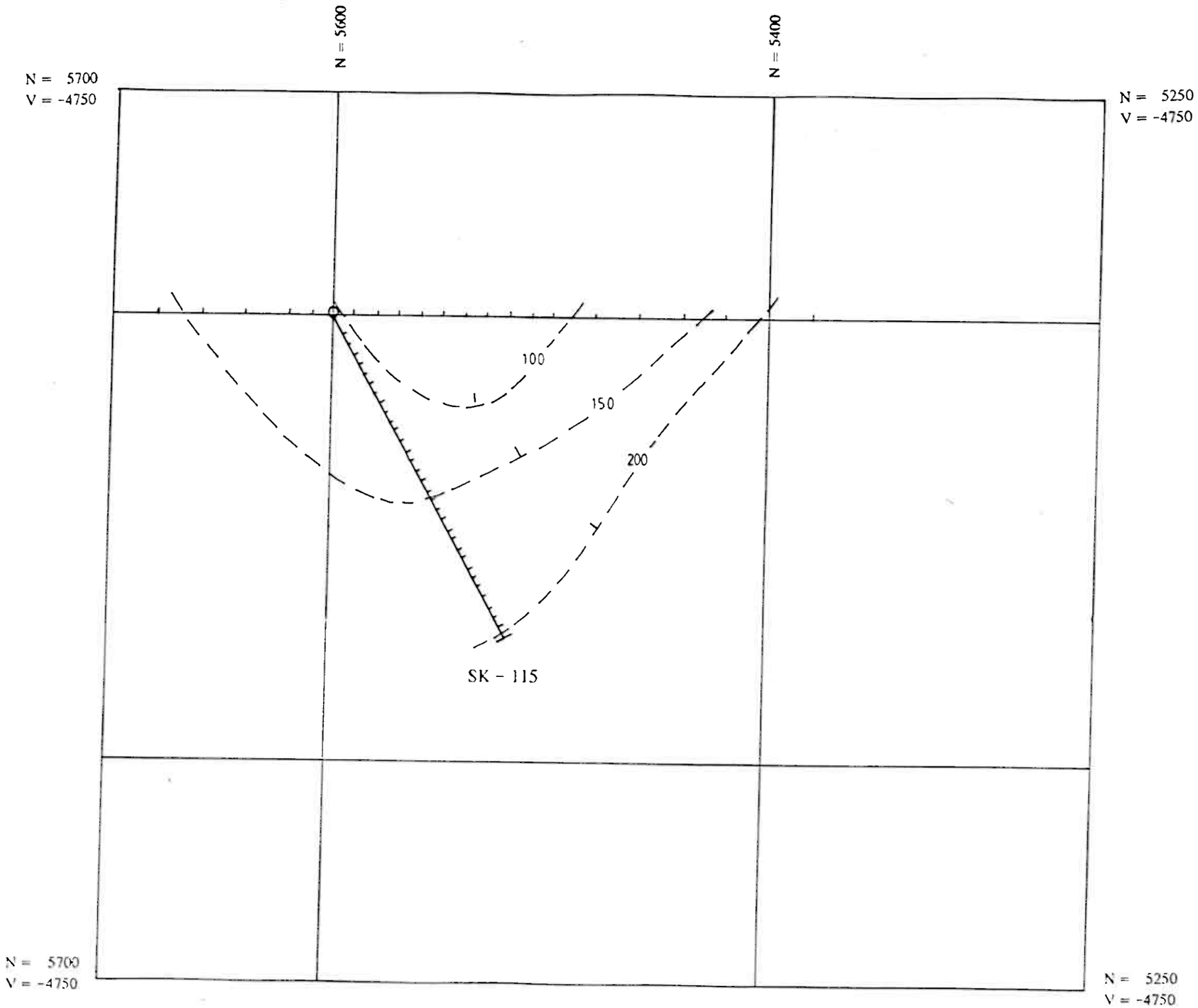
SKIFTESMYR
GRONG, N O R W A Y
V = -4750
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml

CORE HOLE

SK-115

Active grounding SK-112 / 46 m



SUOMEN MALMI OY
FINNEXPLORATION

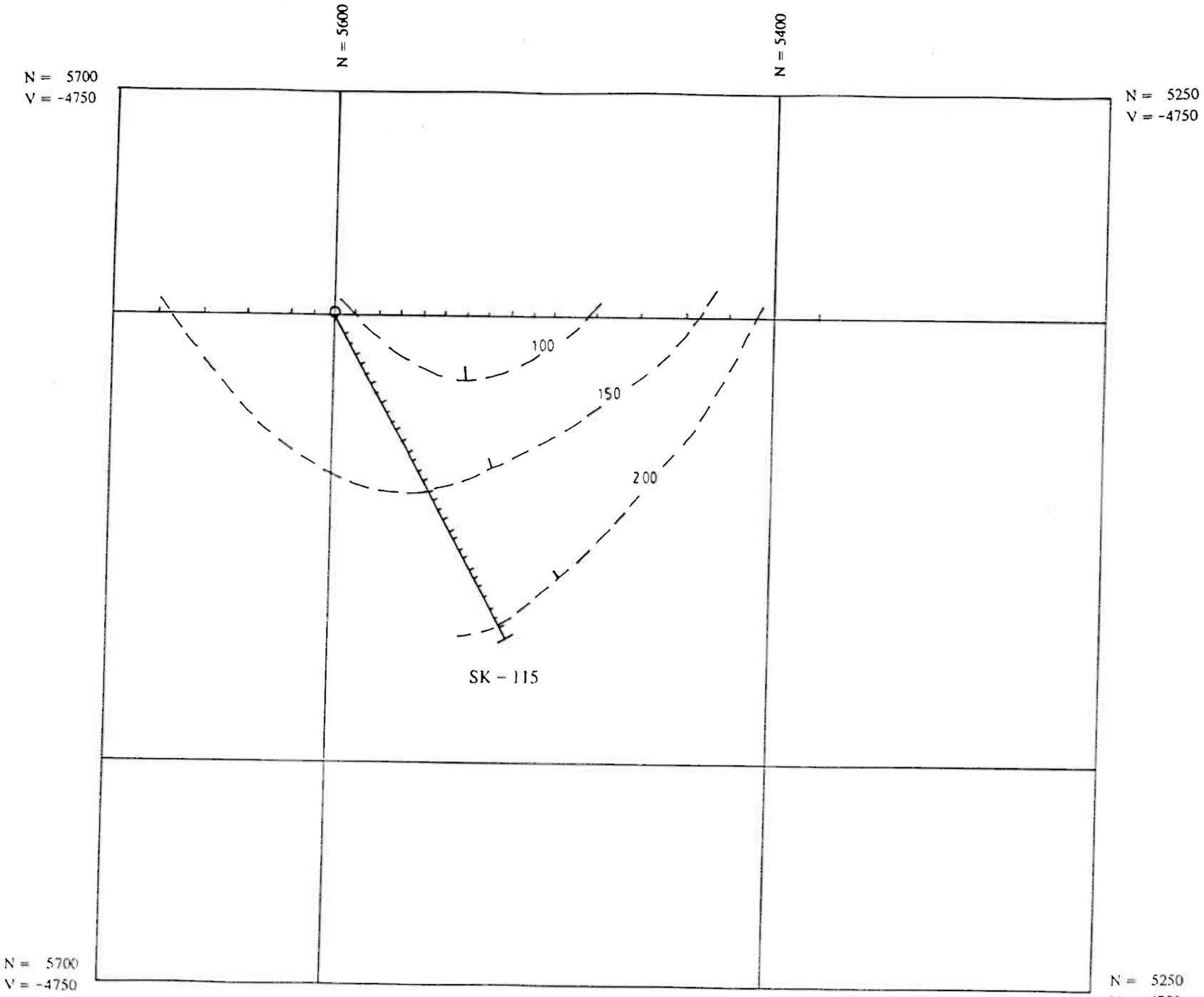
SKIFTESMYR
GRONG, N O R W A Y
V = -4750
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml

CORE HOLE

SK-115

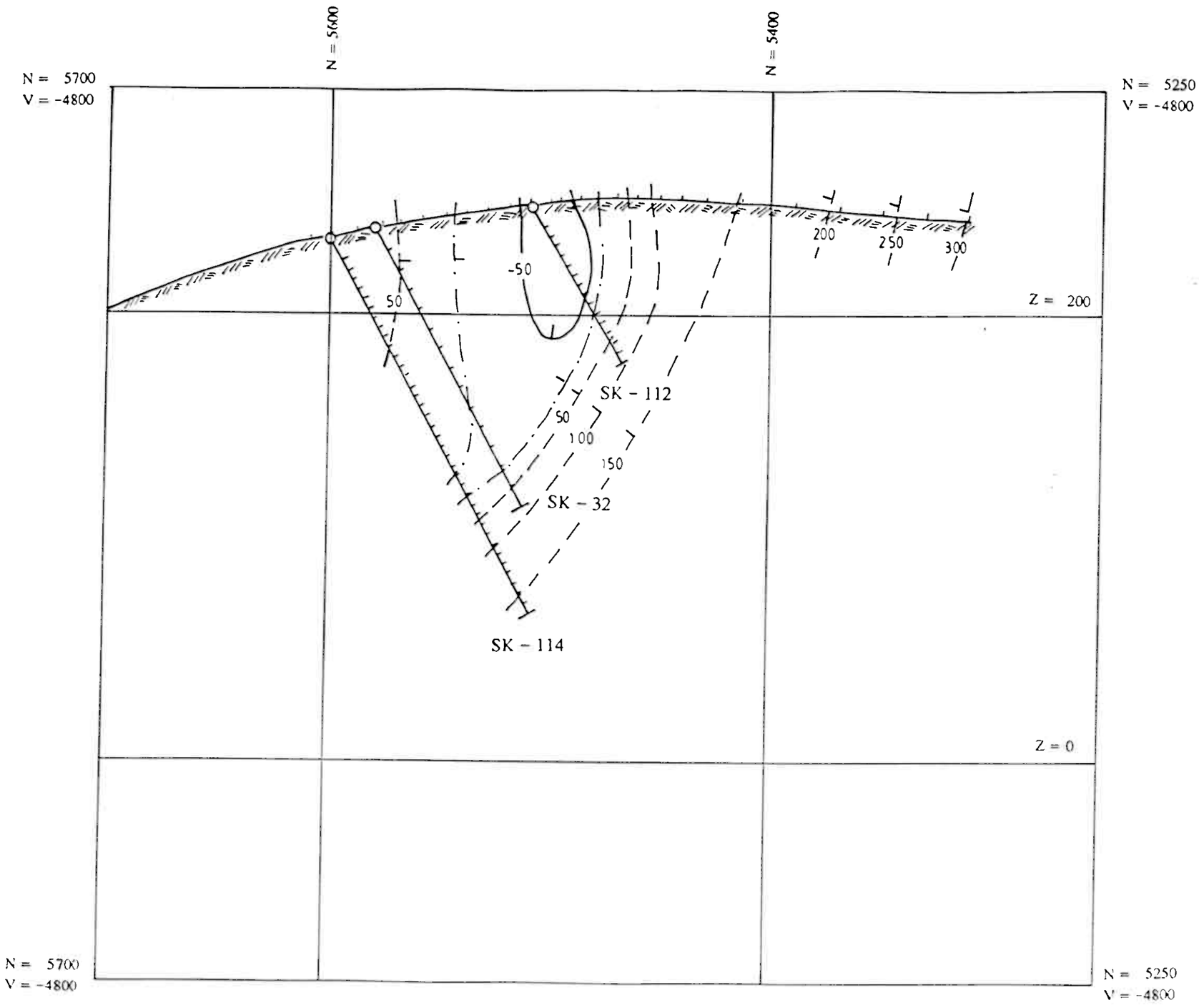
Active grounding SK-113 / 137 m



SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
V = -4750
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

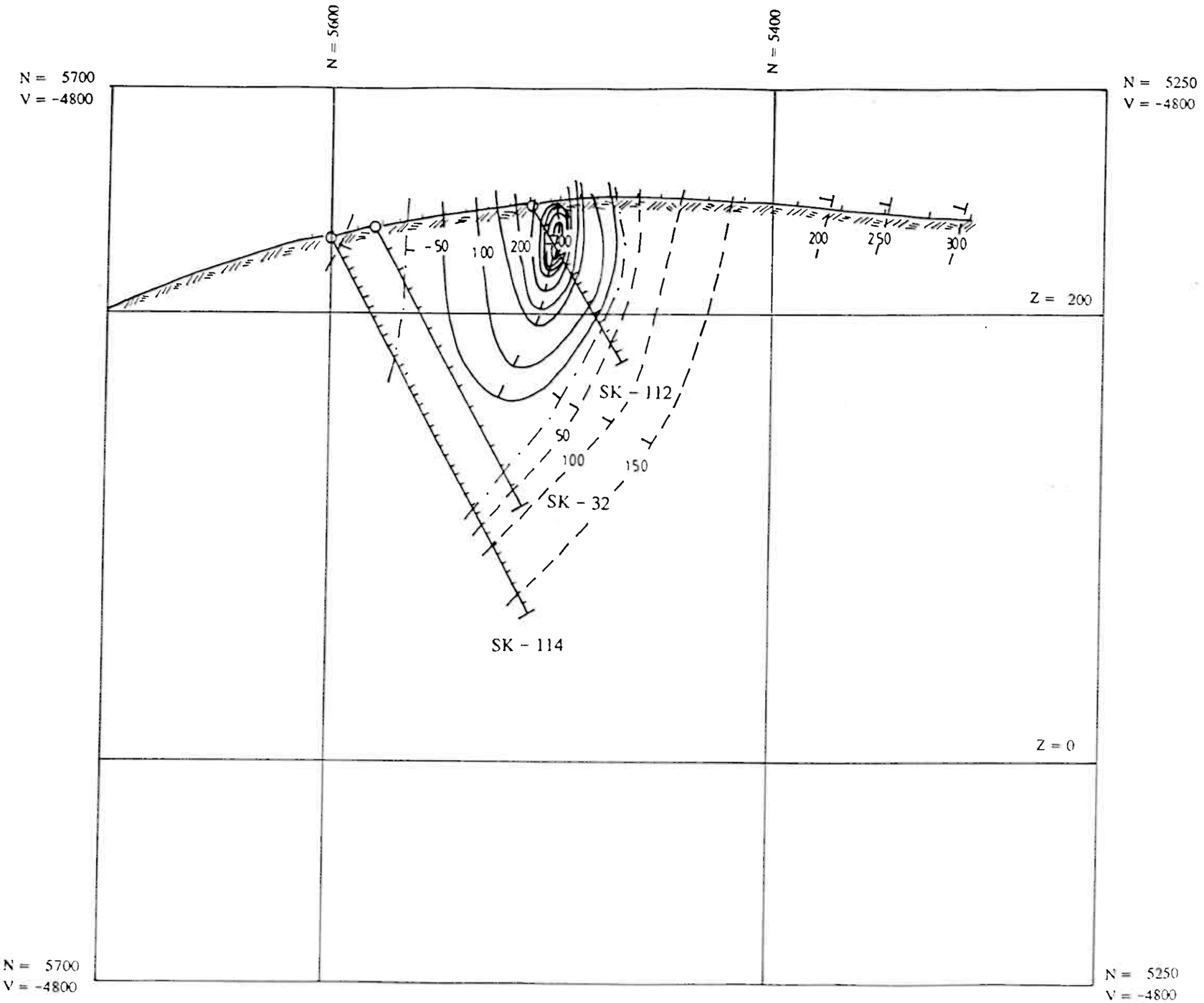
SK-32
SK-112
SK-114

Active grounding SK-106 / 256 m

SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
V = -4800
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

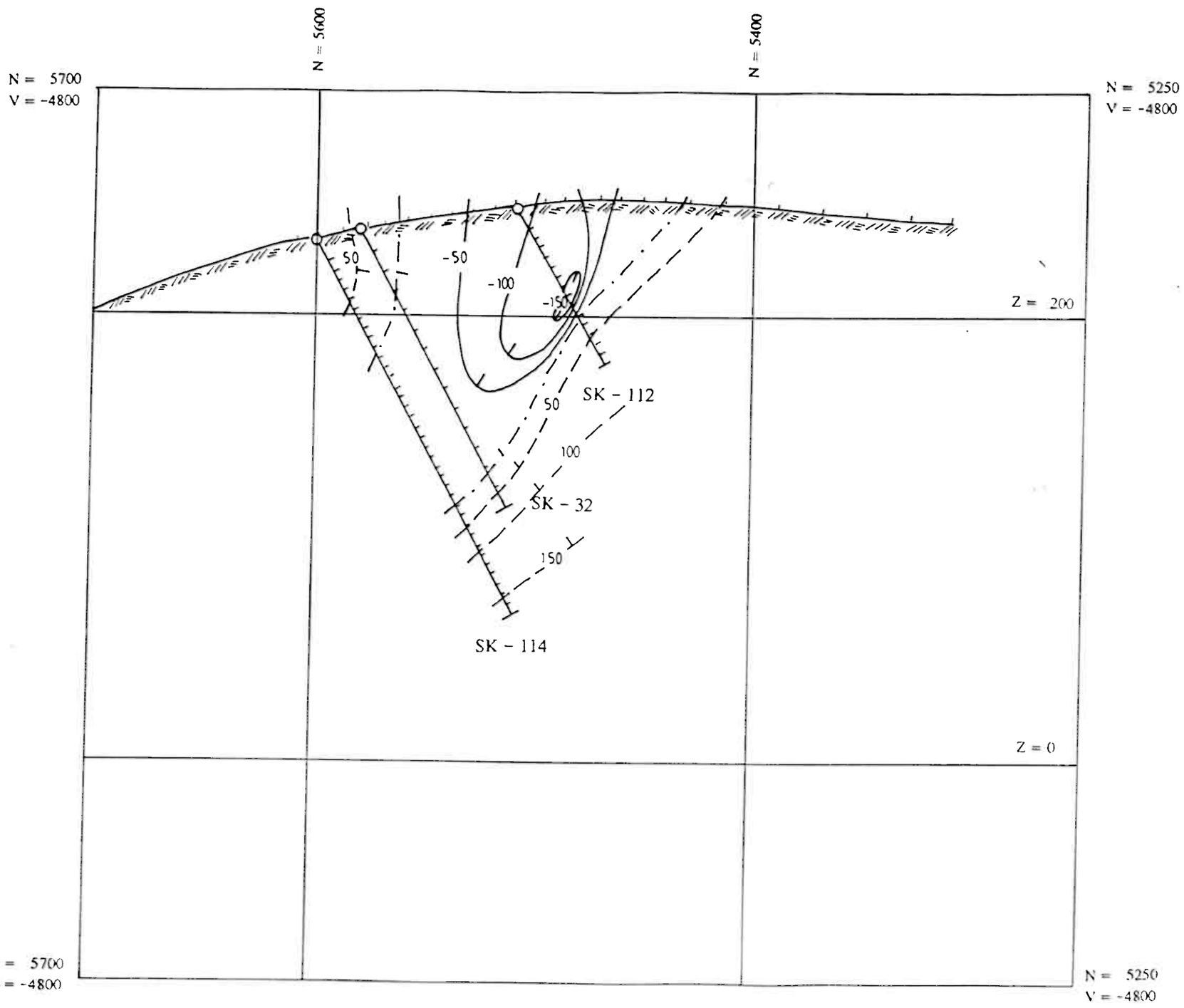
SK-32
SK-112
SK-114

Active grounding SK-112 / 21 m

SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
V = -4800
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

SK-32
SK-112
SK-114

Active grounding SK-112 / 46 m

SUOMEN MALMI OY
FINNEXPLORATION

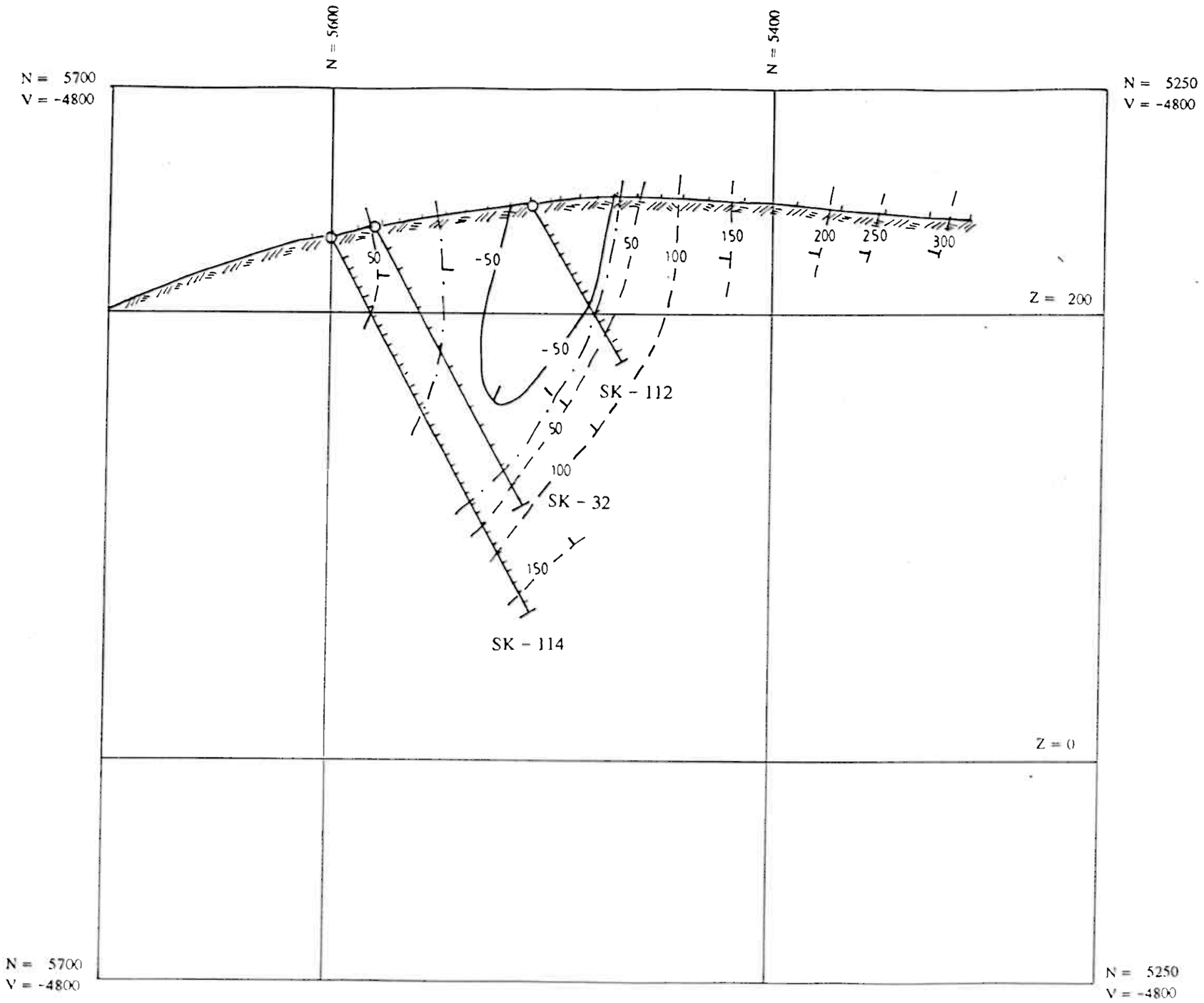
SKIFTESMYR
GRONG, N O R W A Y
V = -4800
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml

CORE HOLE

SK-32
SK-112
SK-114

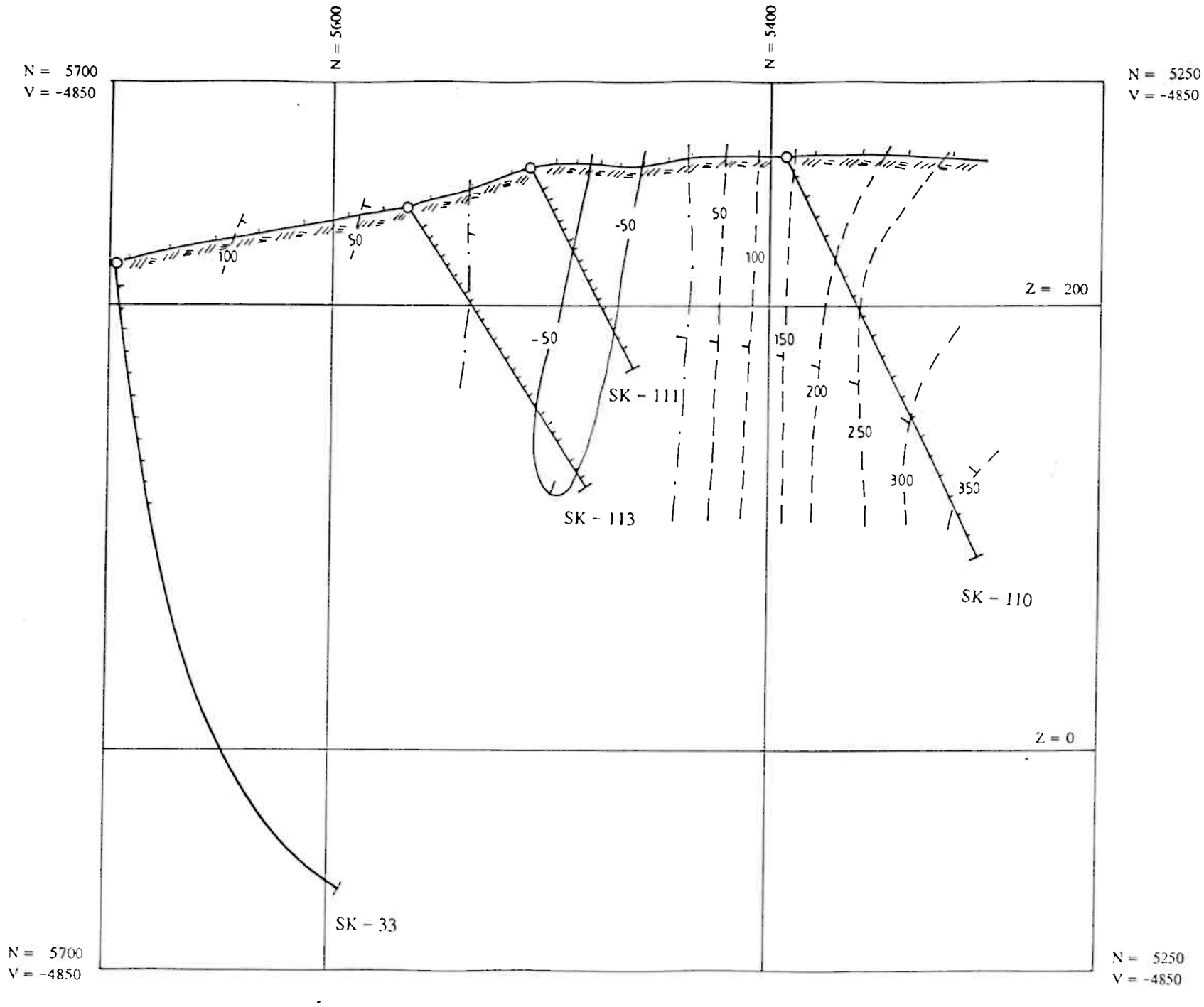
Active grounding SK-113 / 137 m



SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
V = -4800
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

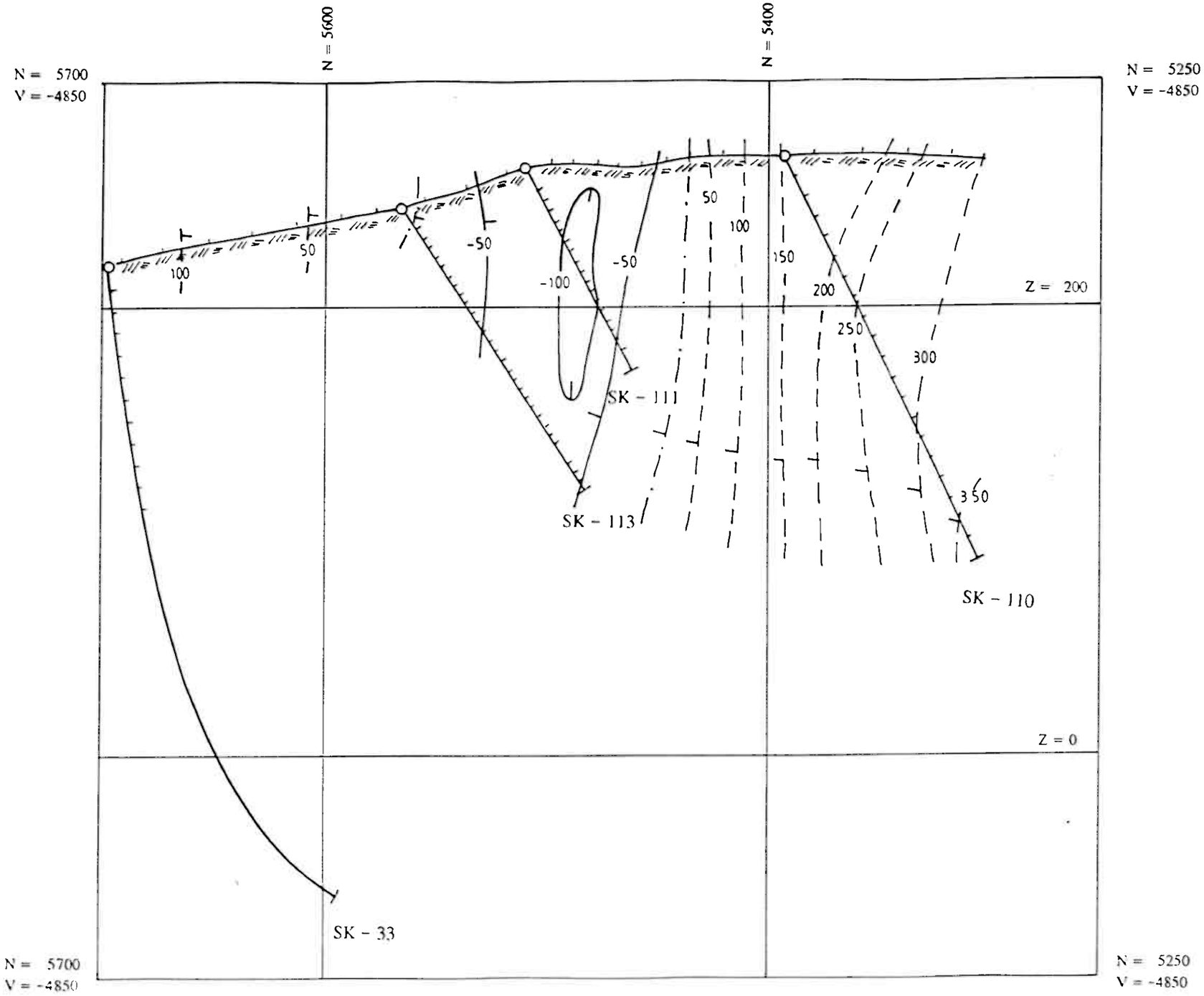
SK-33
SK-110
SK-111
SK-113

Active grounding SK-106 / 256 m

SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
V = -4850
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

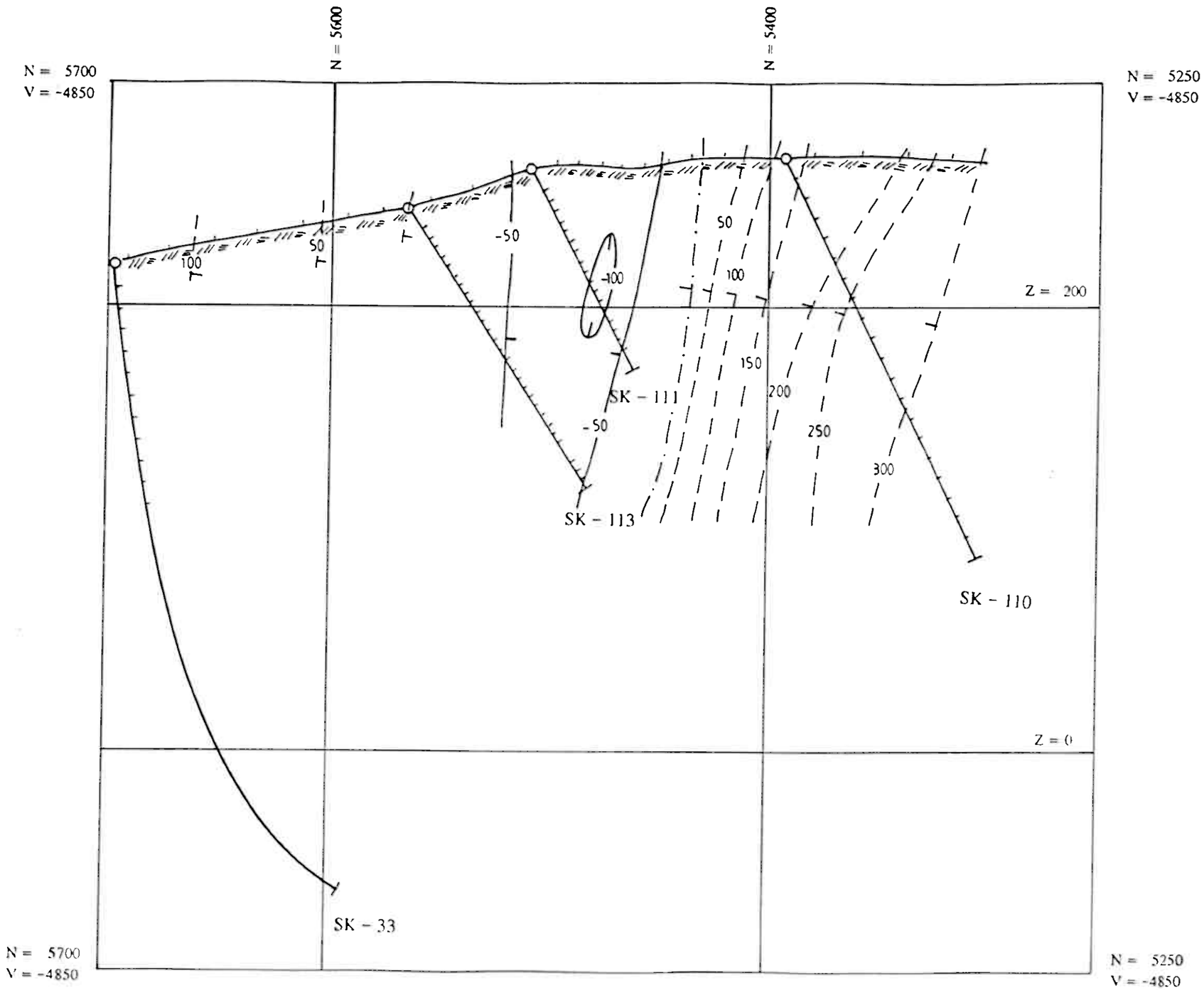
SK-33
SK-110
SK-111
SK-113

Active grounding SK-112 / 21 m

SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
V = -4850
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

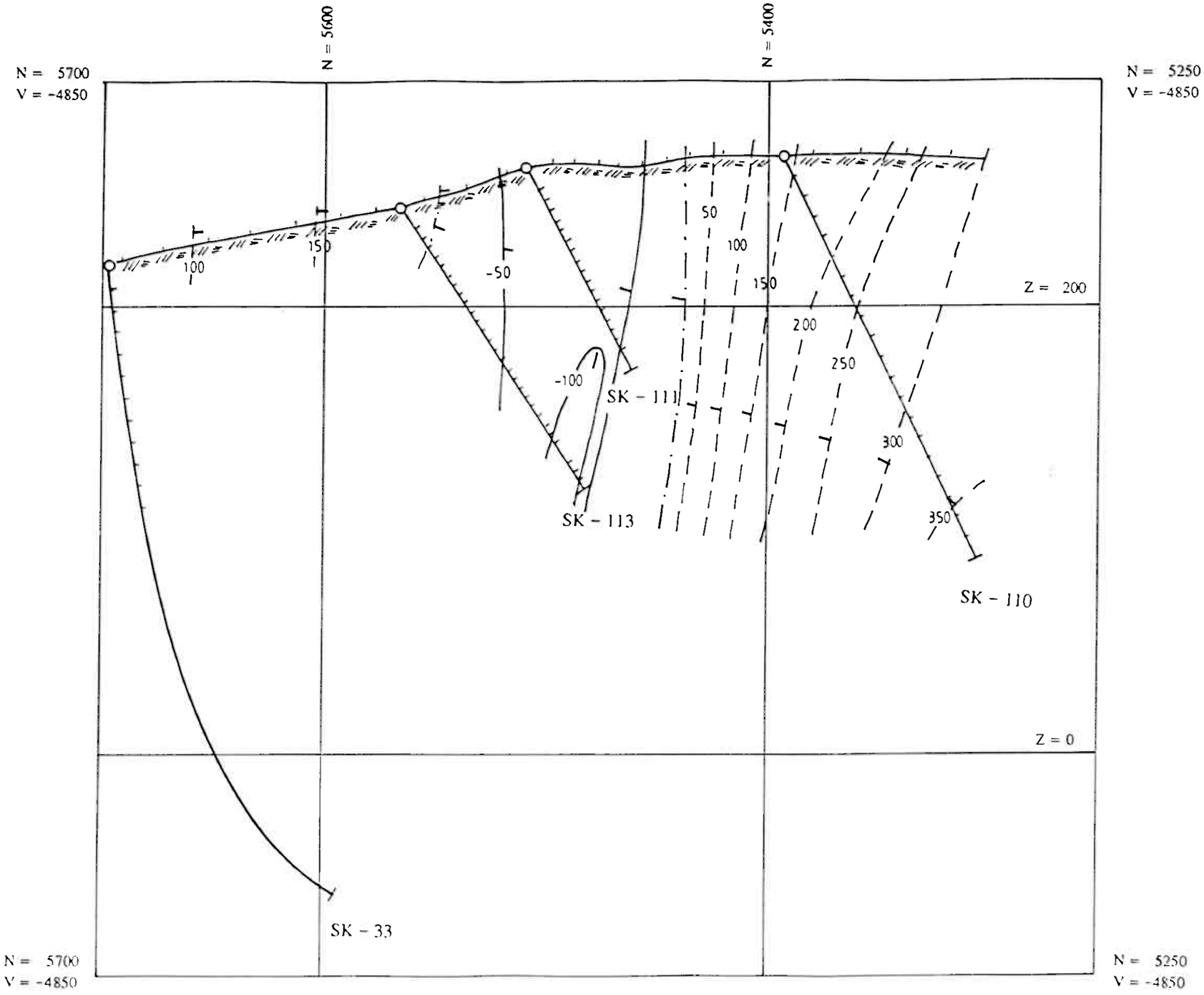
SK-33
SK-110
SK-111
SK-113

Active grounding SK-112 / 46 m

SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
V = –4850
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

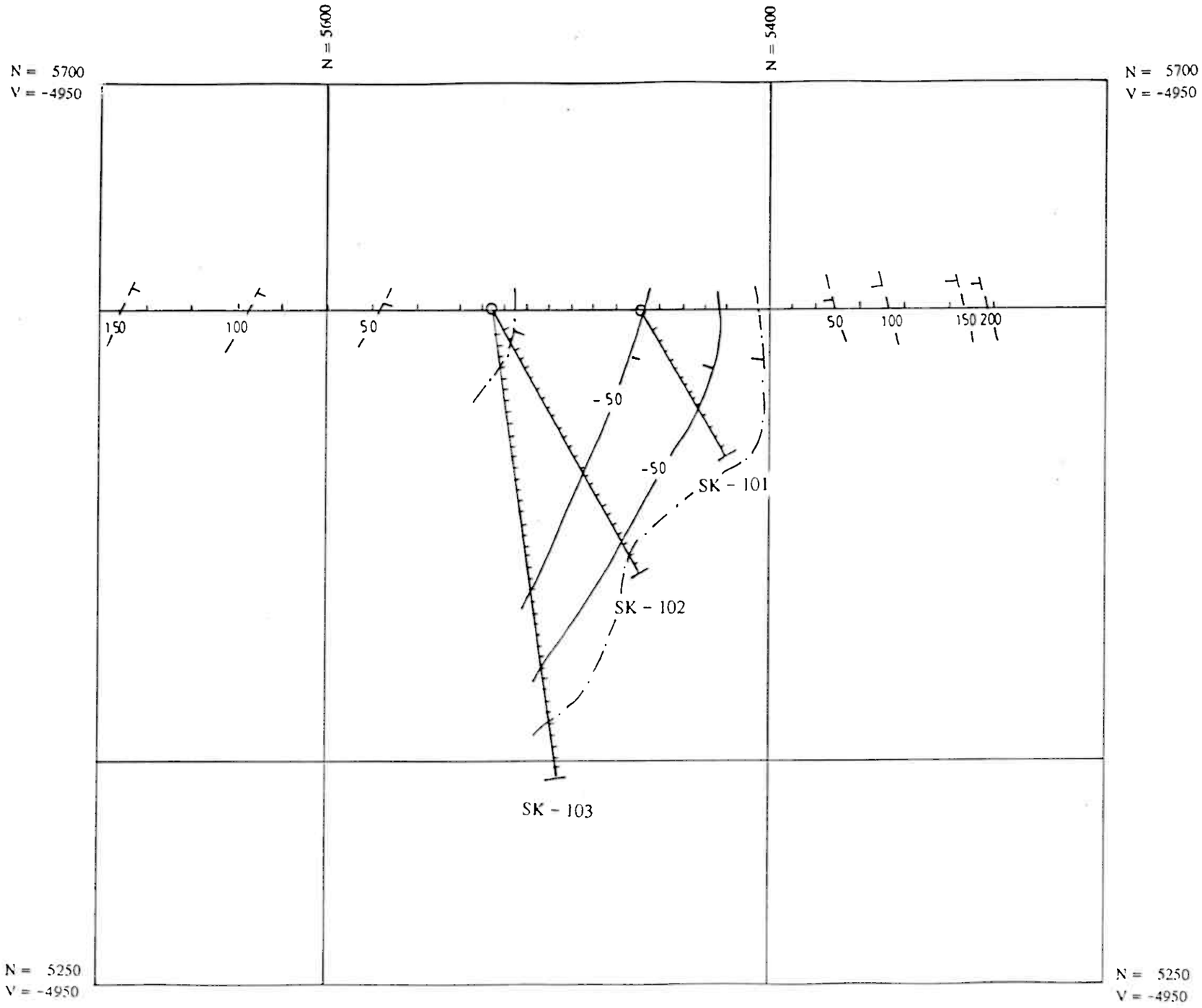
SK-33
SK-110
SK-111
SK-113

Active grounding SK-113 / 137 m

SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
V = -4850
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

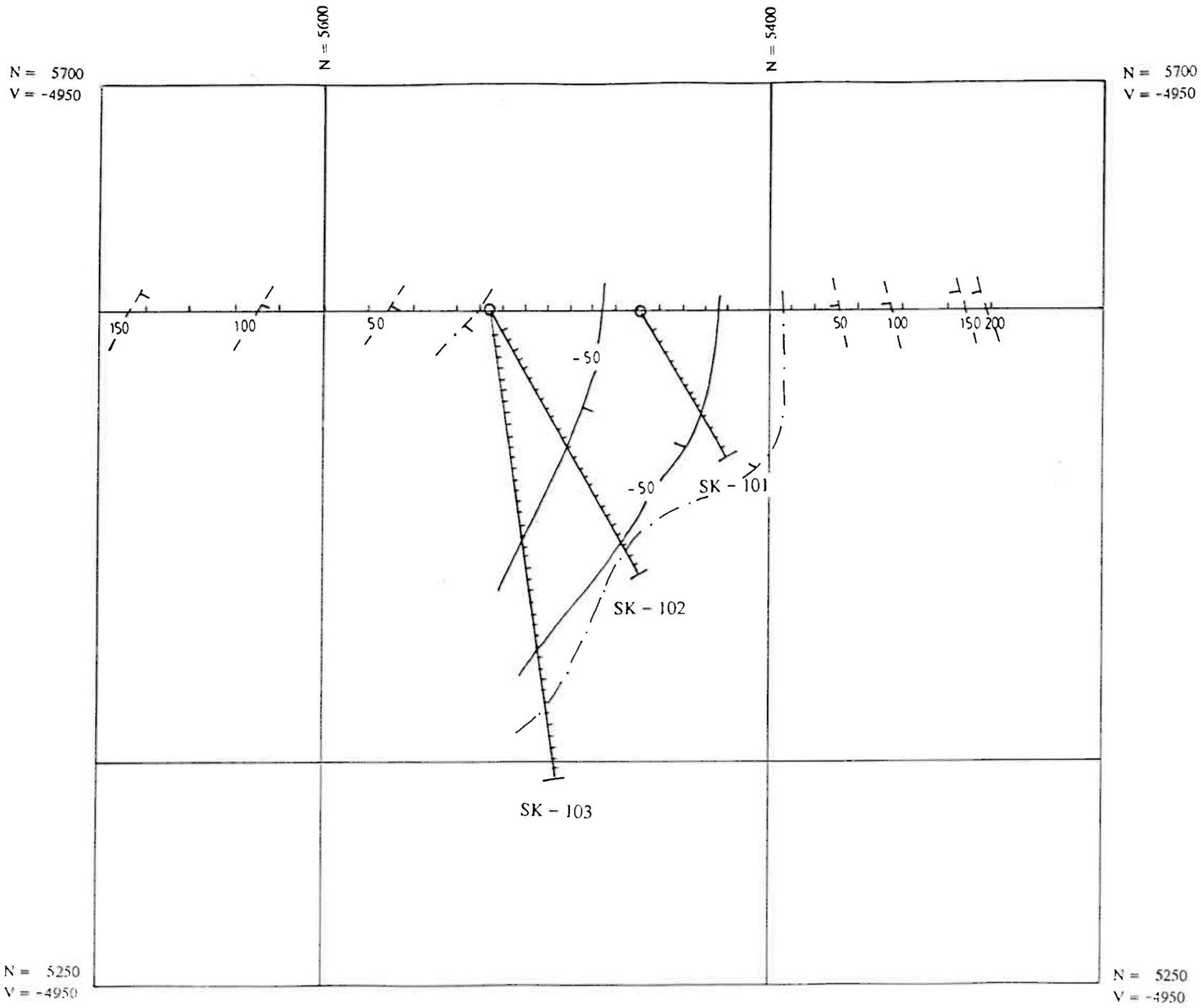
SK-101
SK-102
SK-103

Active grounding SK-106 / 257 m

SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
V = -4950
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

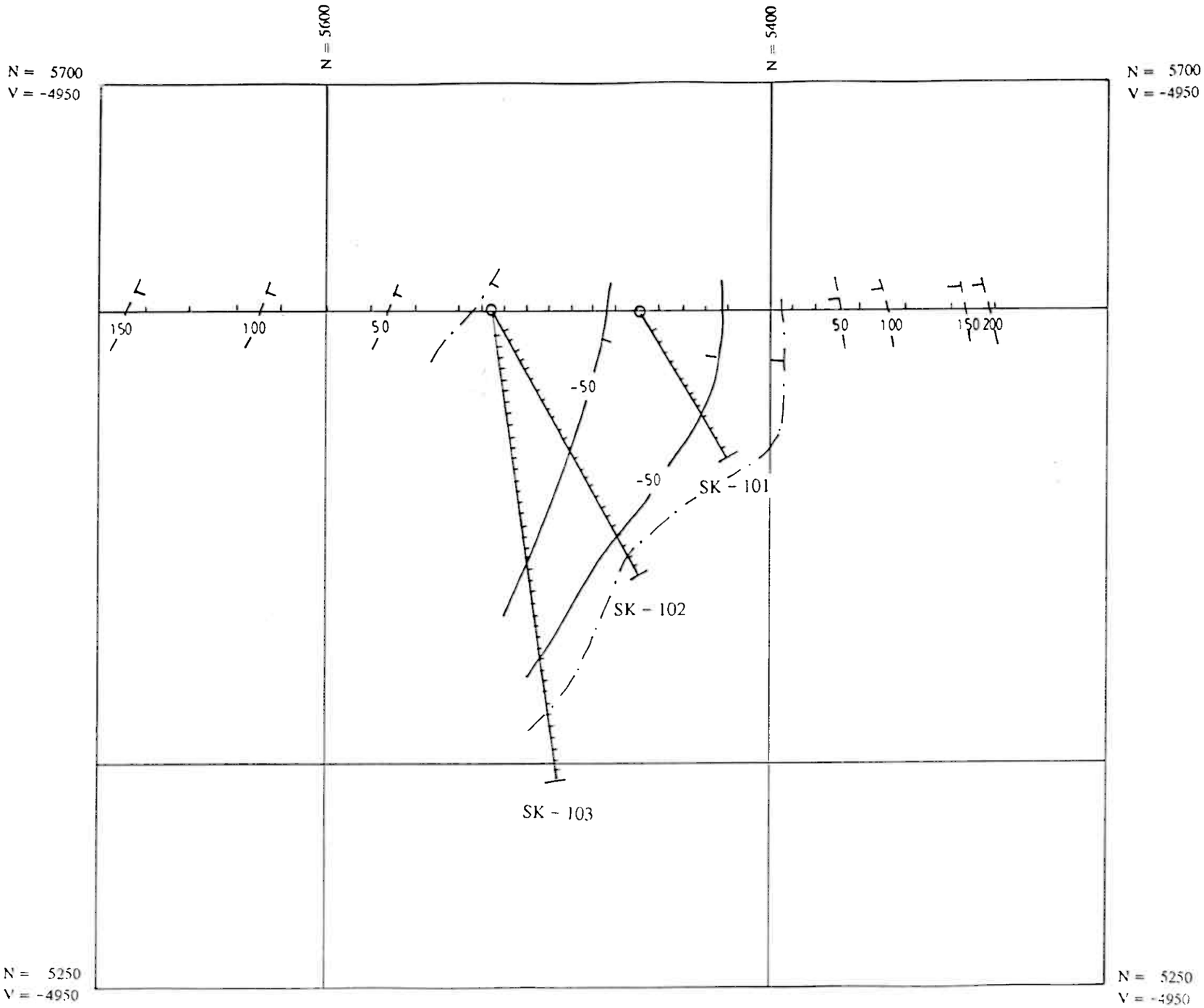
SK-101
SK-102
SK-103

Active grounding SK-112 / 46 m

SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
V = -4950
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

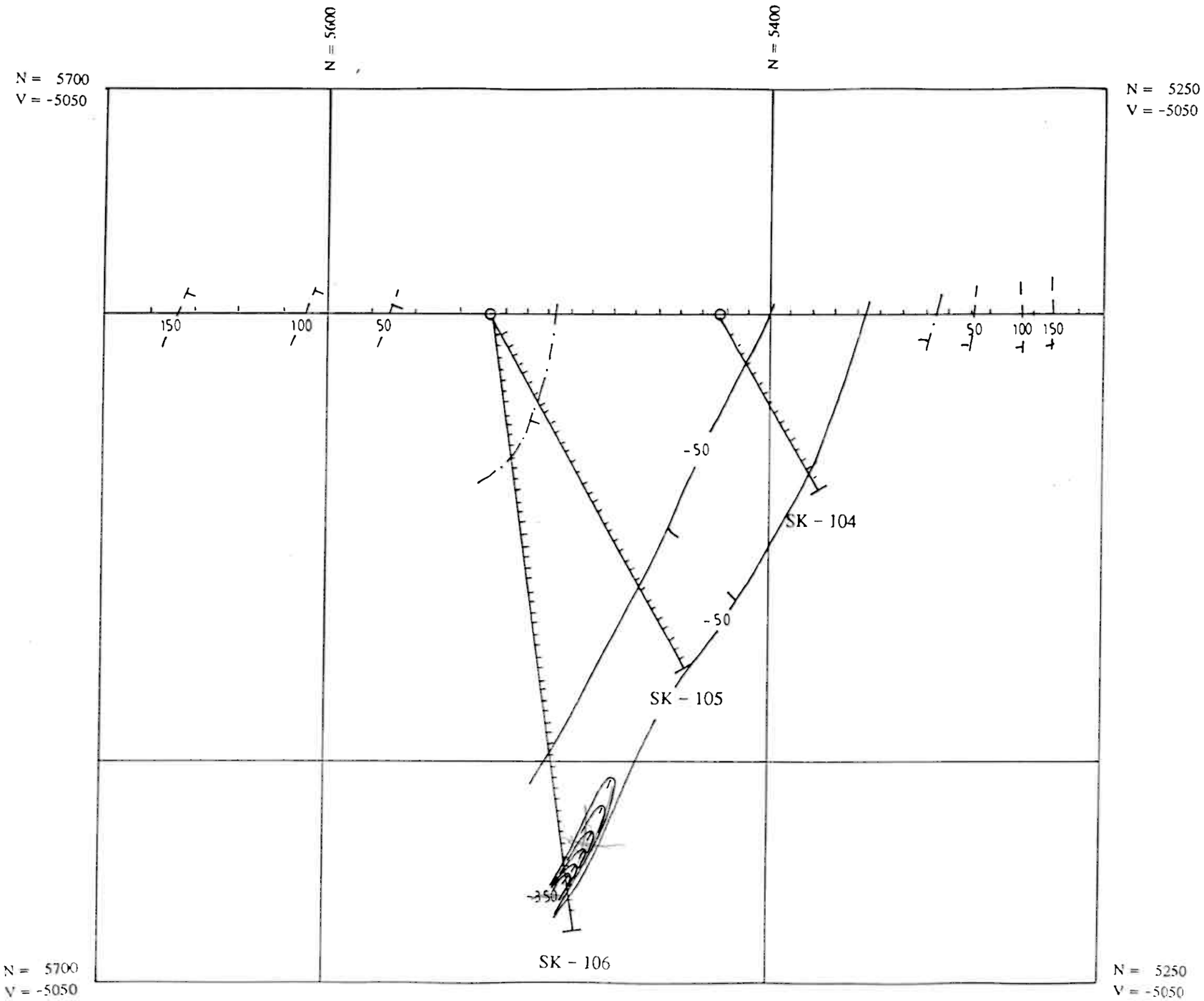
SK-101
SK-102
SK-103

Active grounding SK-113 / 137 m

SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
V = -4950
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

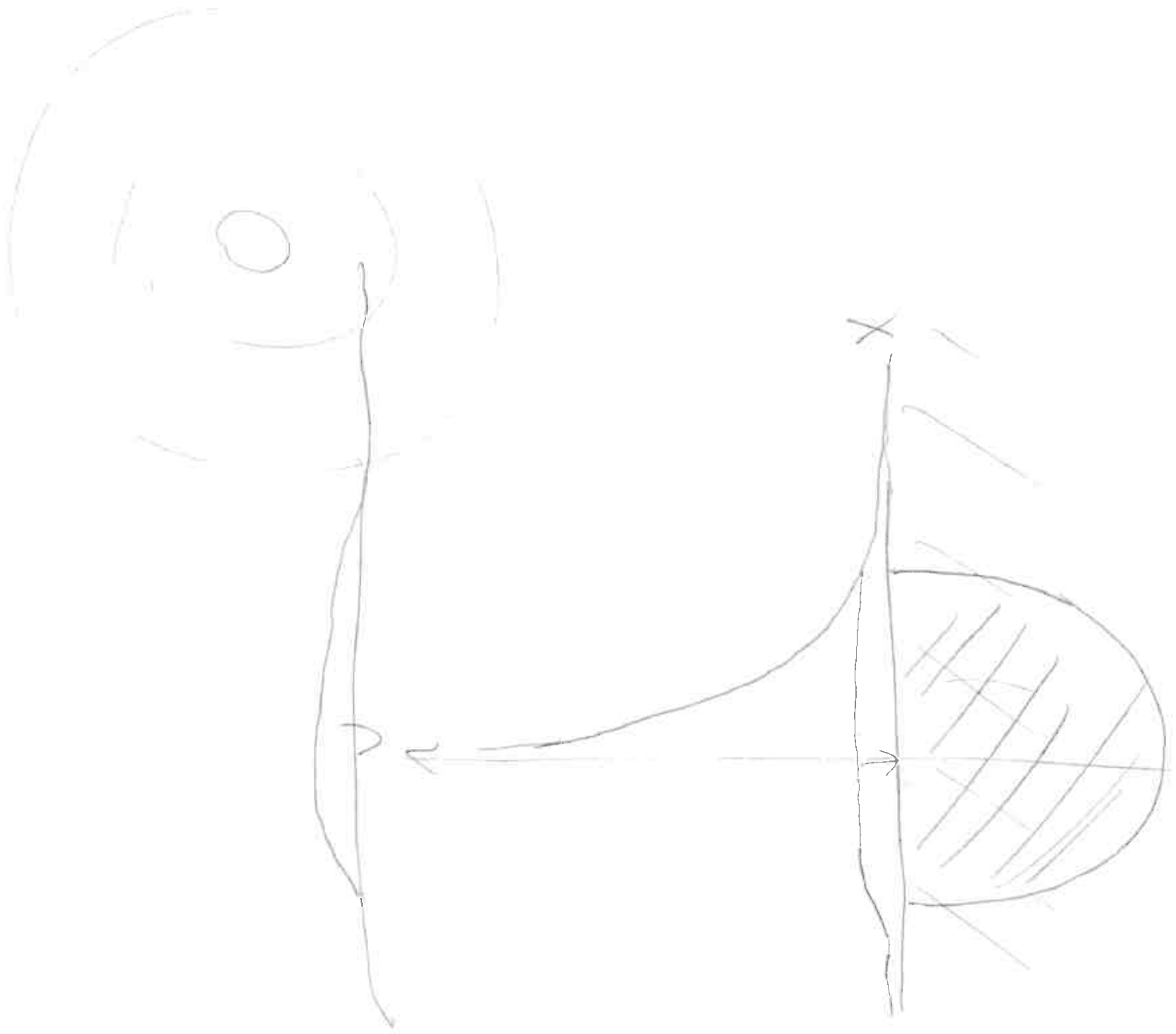
SK-104
SK-105
SK-106

Active grounding SK-106 / 257 m

SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
V = -5050
1:2000
CHARGED POTENTIAL SECTION

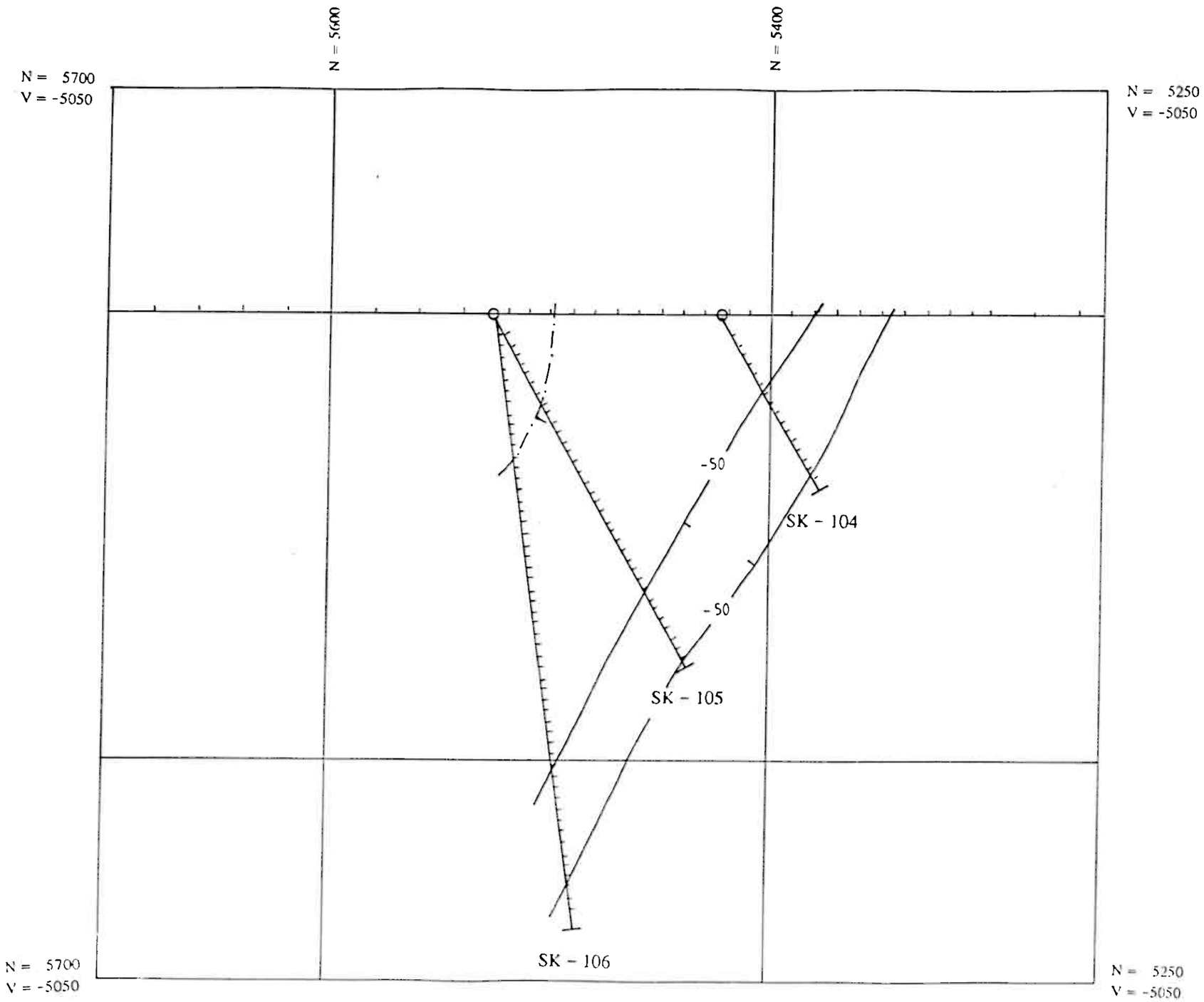
NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

SK-104
SK-105
SK-106

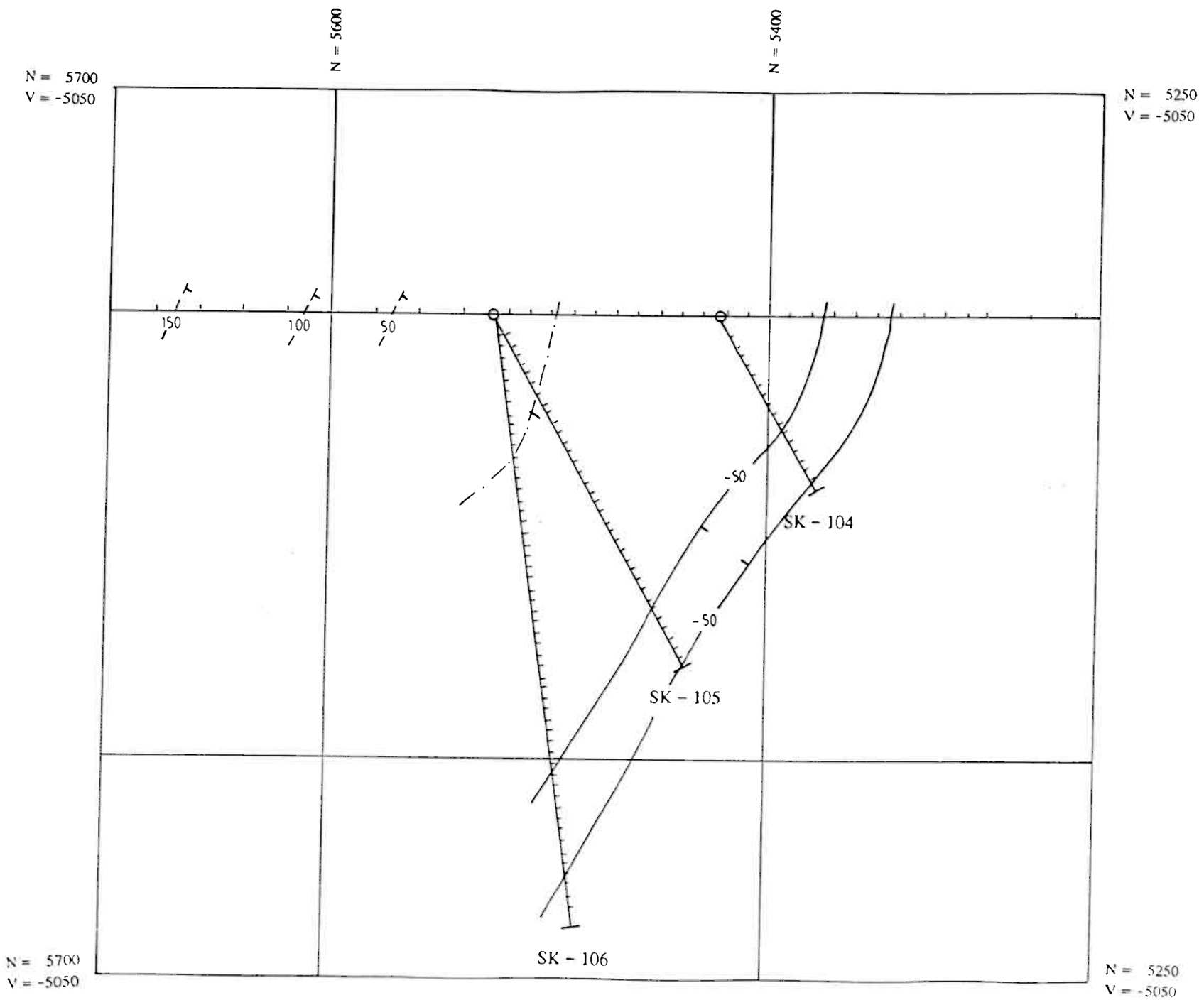
Active grounding SK-112 / 21 m



SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
V = -5050
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

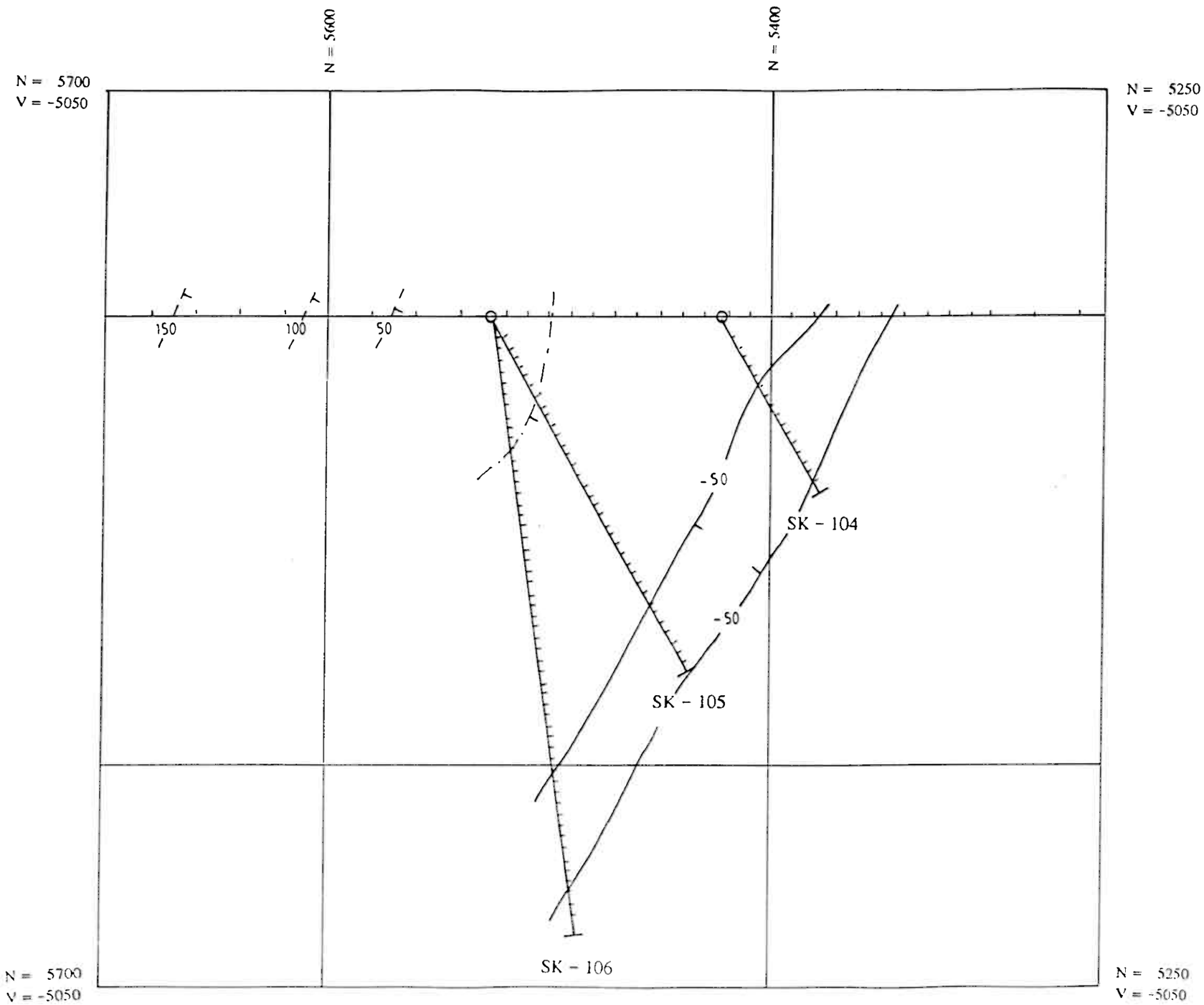
SK-104
SK-105
SK-106

Active grounding SK-112 / 46 m

SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
V = -5050
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

SK-104
SK-105
SK-106

Active grounding SK-113 / 137 m

SUOMEN MALMI OY
FINNEXPLORATION

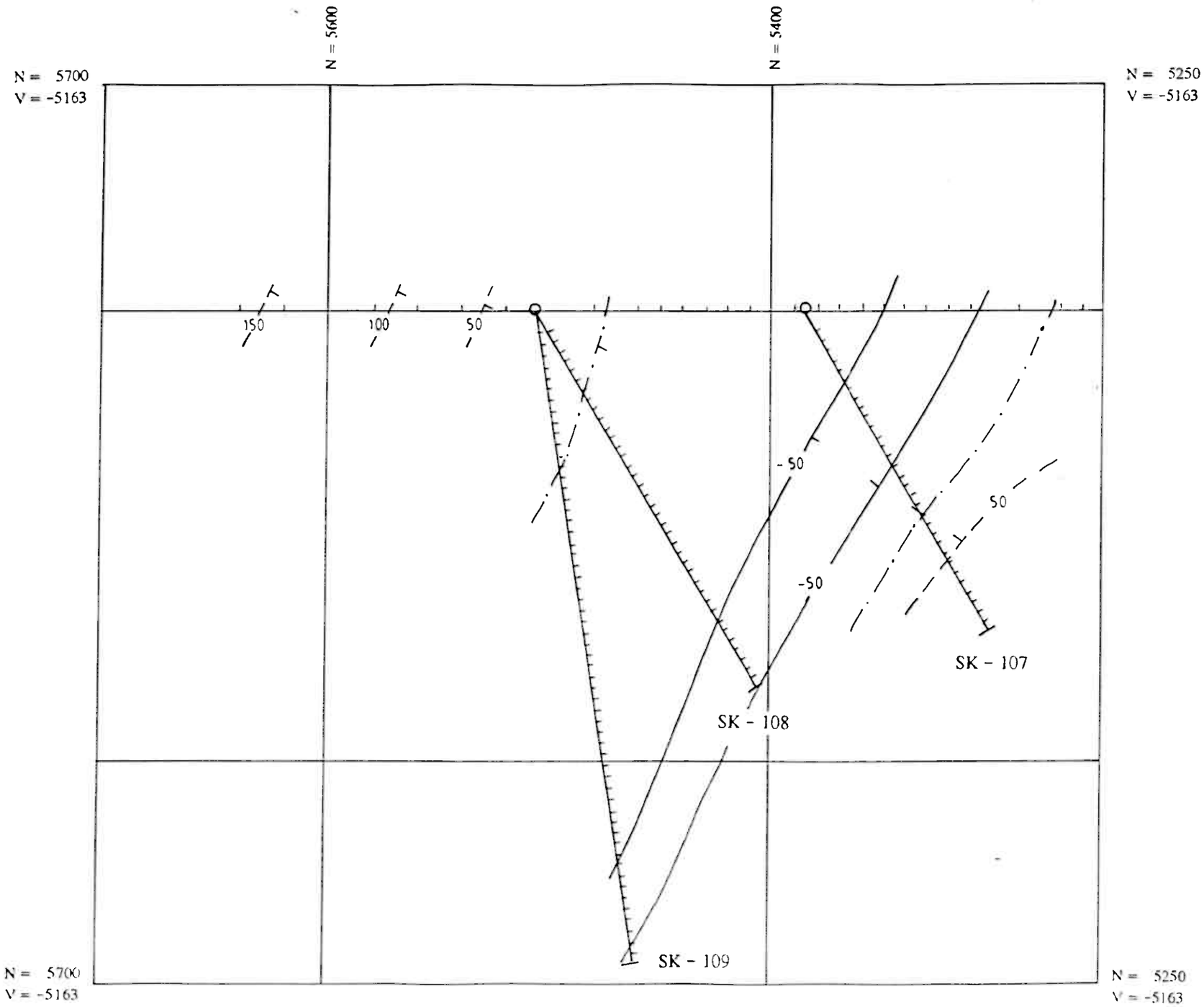
SKIFTESMYR
GRONG, N O R W A Y
V = -5050
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml

CORE HOLE

SK-107
SK-108
SK-109

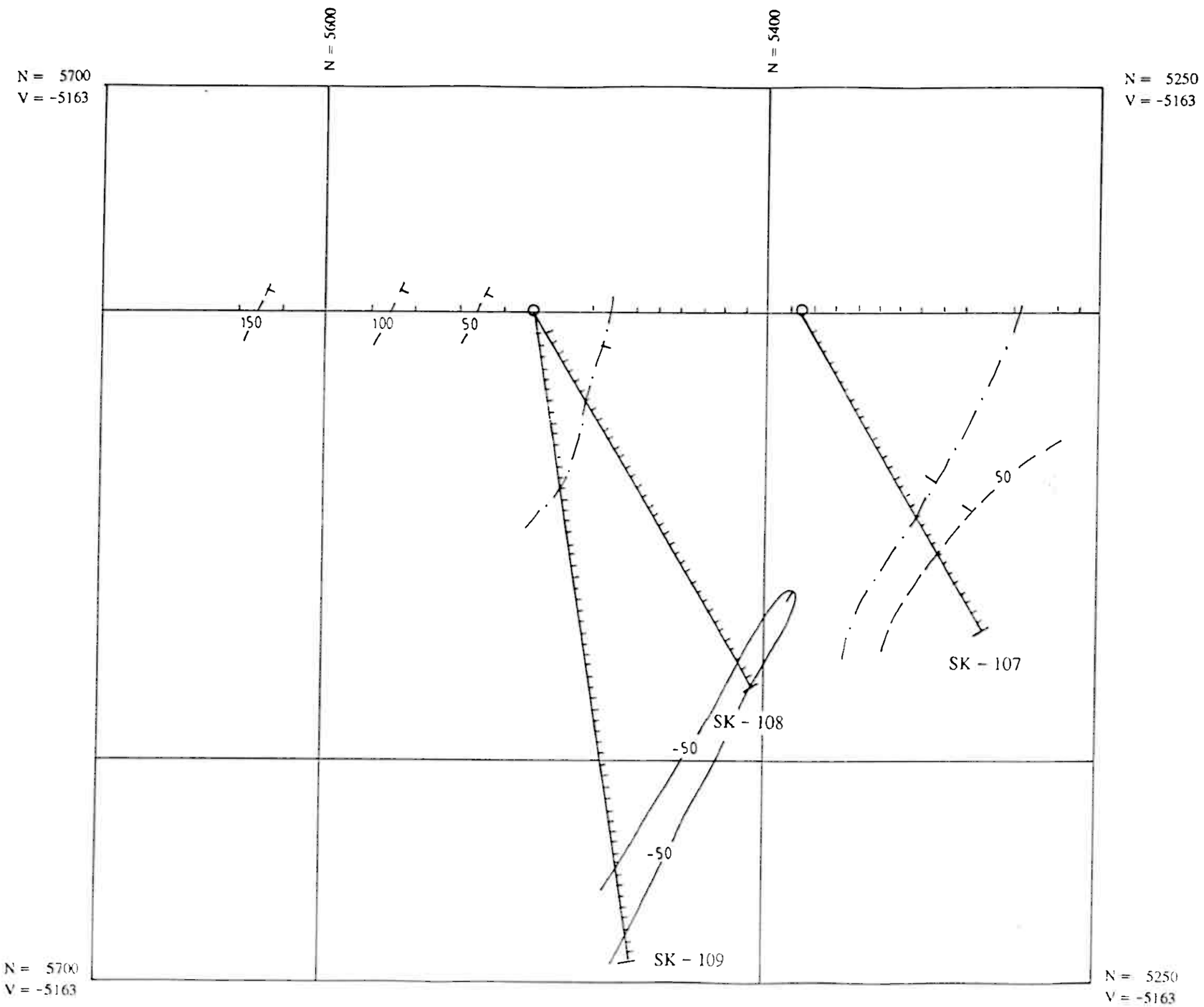
Active grounding SK-106 / 257 m



SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
V = -5163
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

SK-107
SK-108
SK-109

Active grounding SK-112 / 46 m

SUOMEN MALMI OY
FINNEXPLORATION

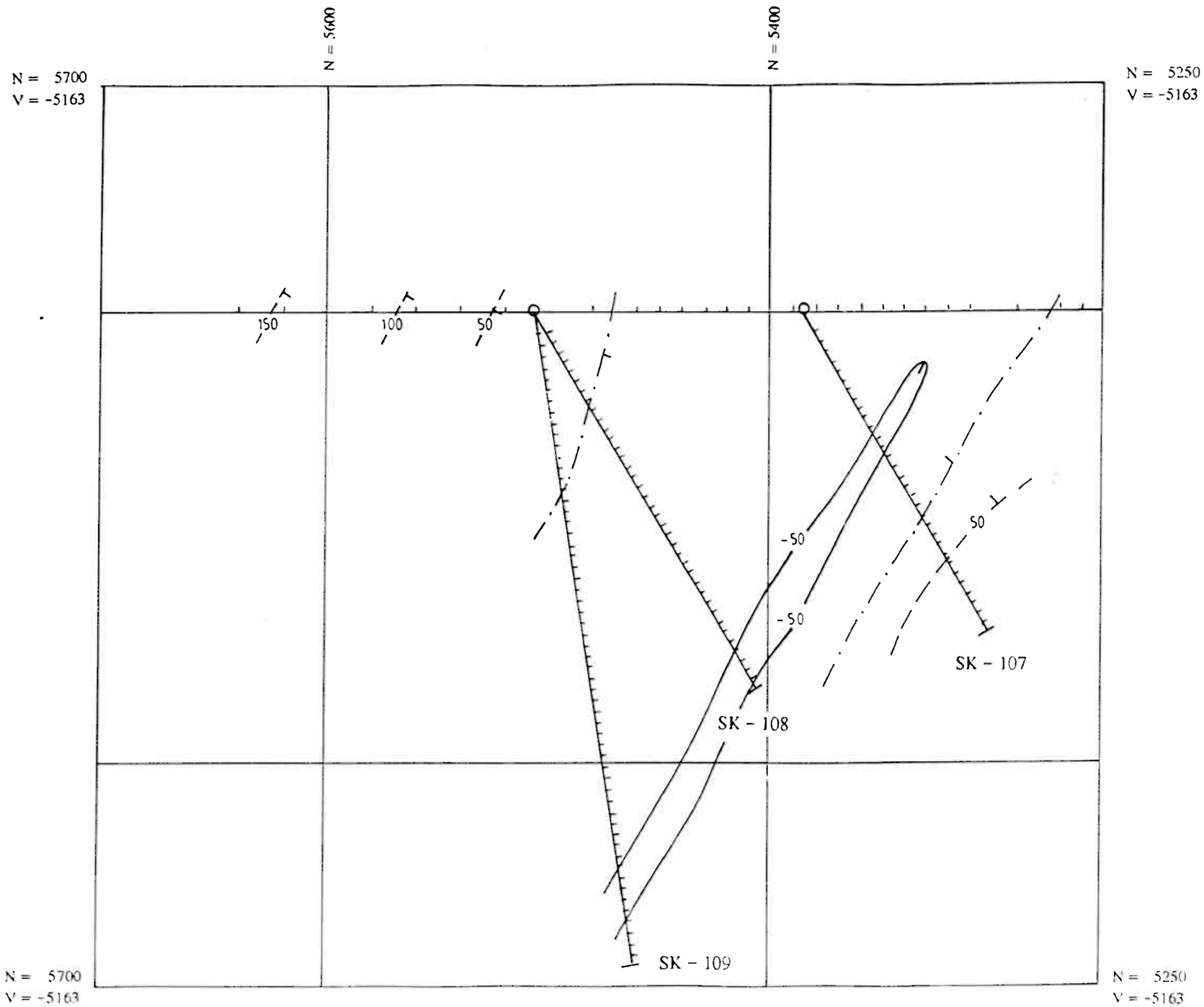
SKIFTESMYR
GRONG, N O R W A Y
V = -5163
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml

CORE HOLE

SK-107
SK-108
SK-109

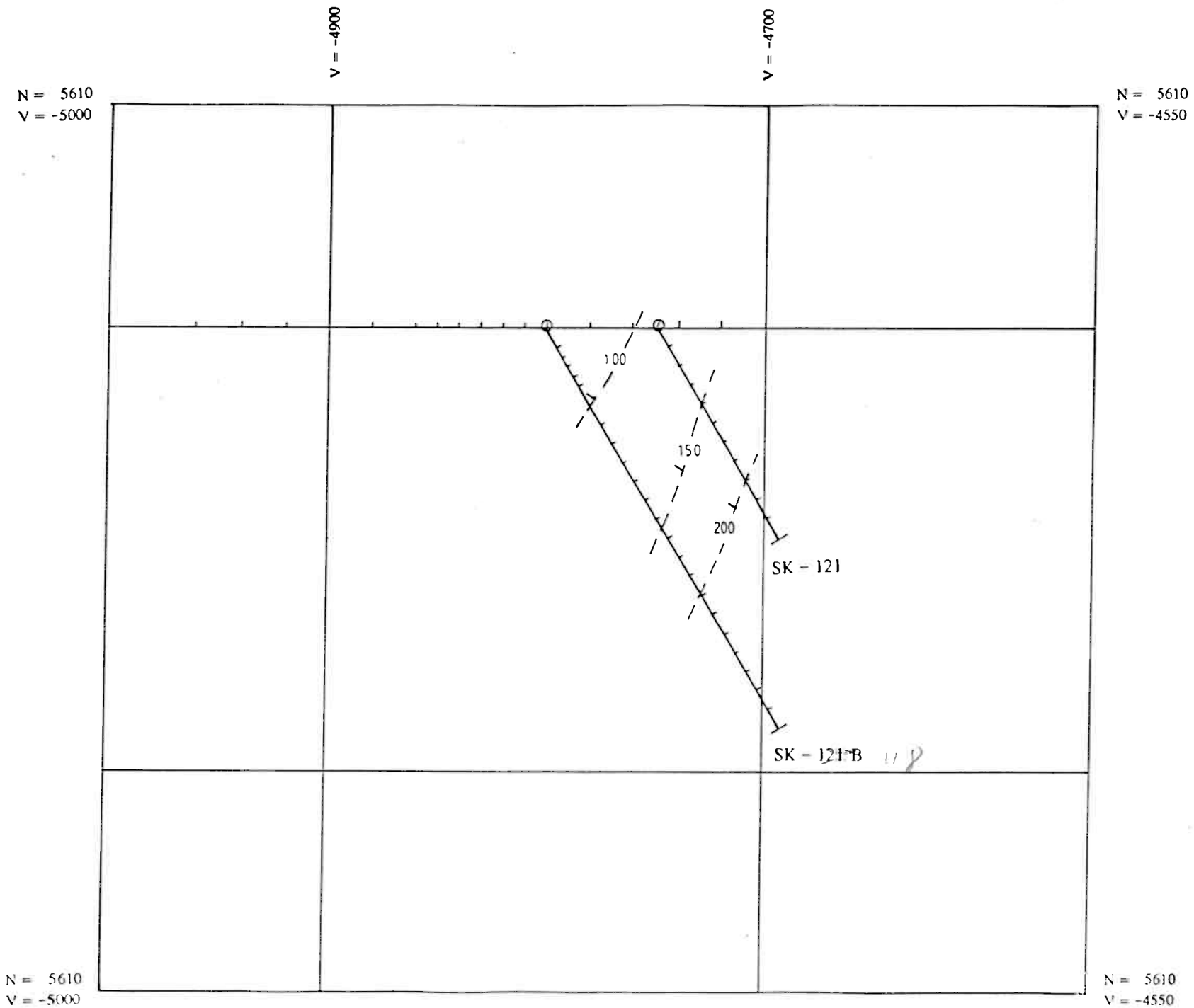
Active grounding SK-113 / 137 m



SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
V = -5163
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

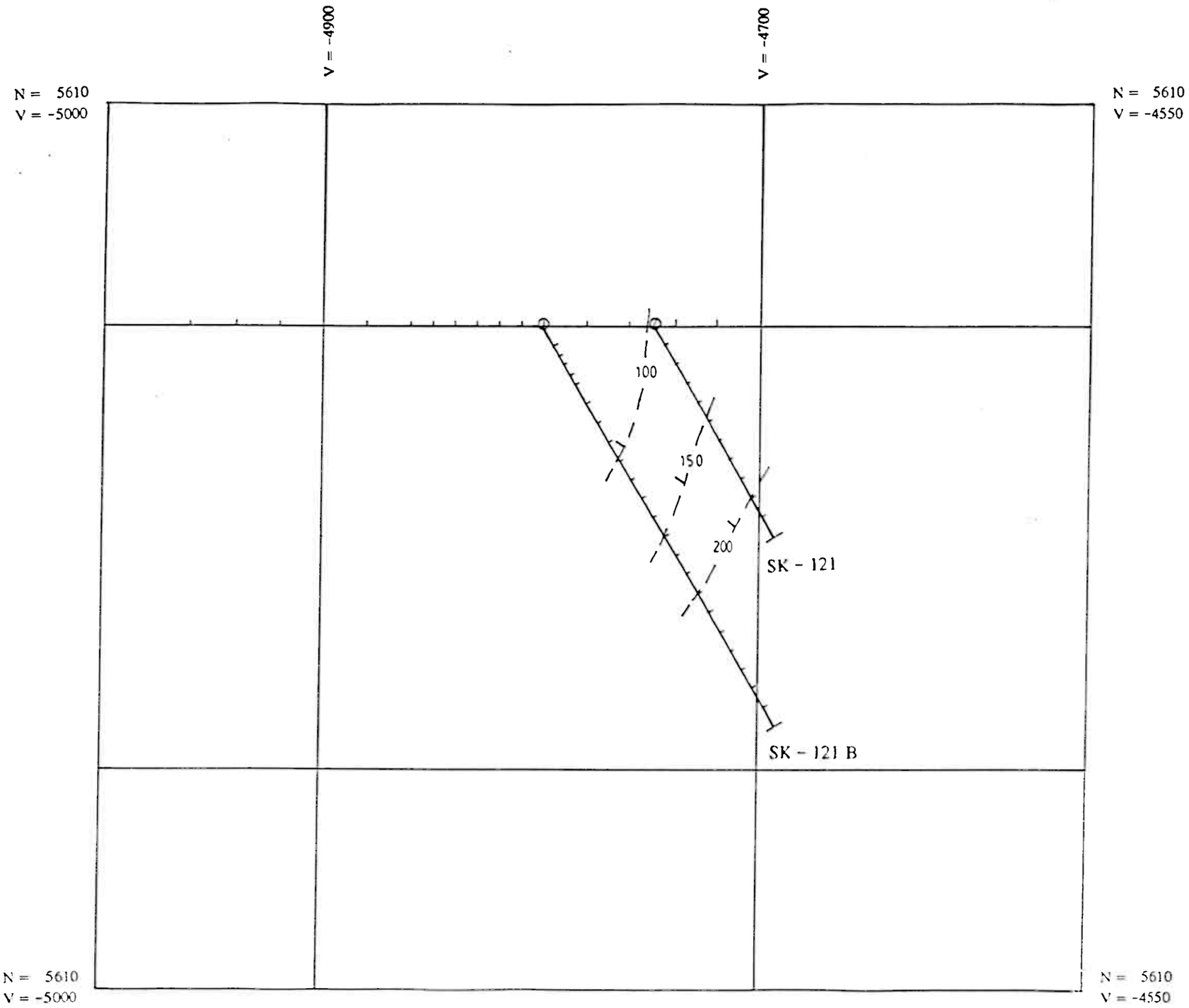
SK-121
SK-121B

Active grounding SK-106 / 257 m

SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
N = 5610
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

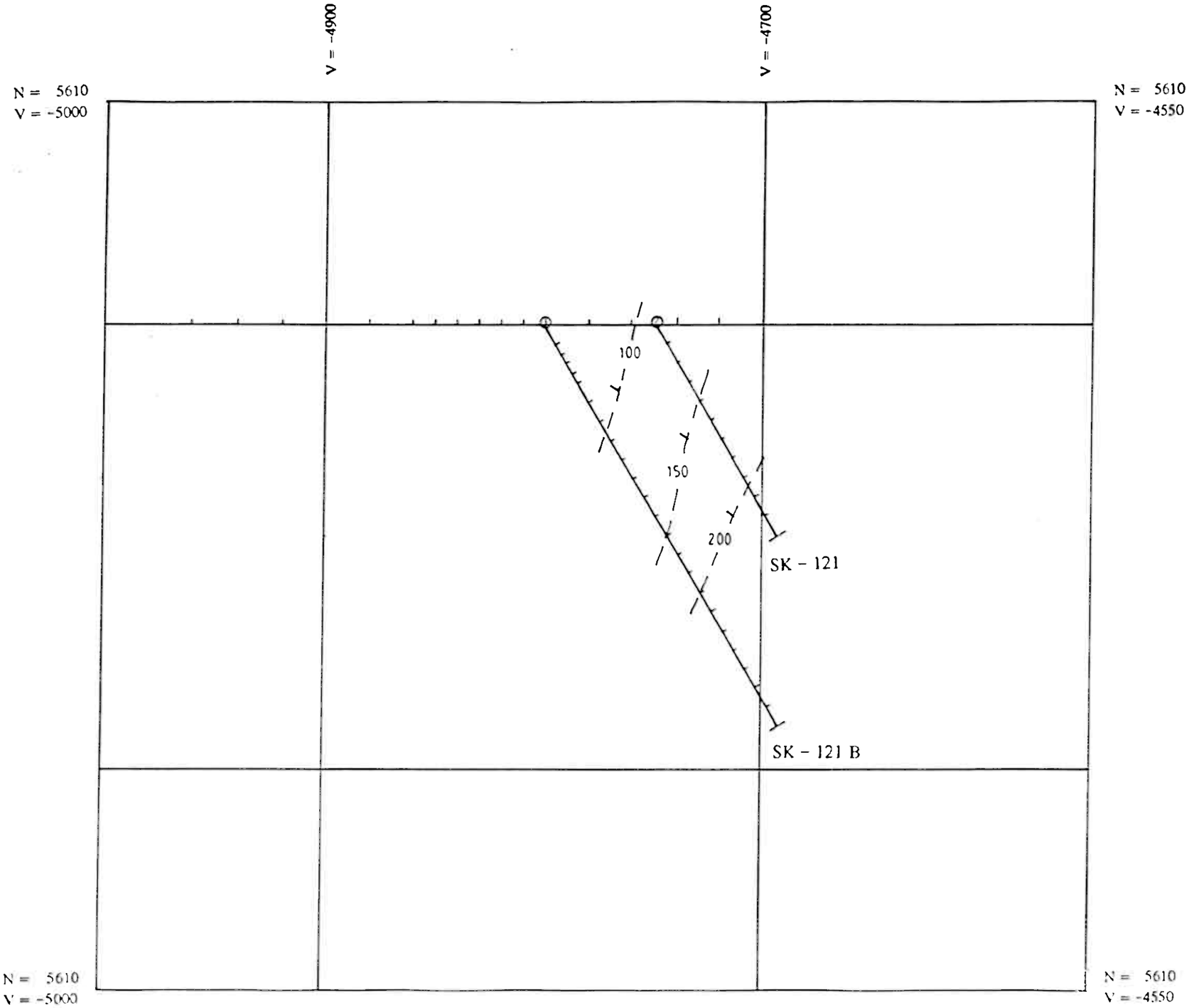
SK-121
SK-121B

Active grounding SK-112 / 46 m

SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
N = 5610
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

SK-121
SK-121B

Active grounding SK-113 / 137 m

SUOMEN MALMI OY
FINNEXPLORATION

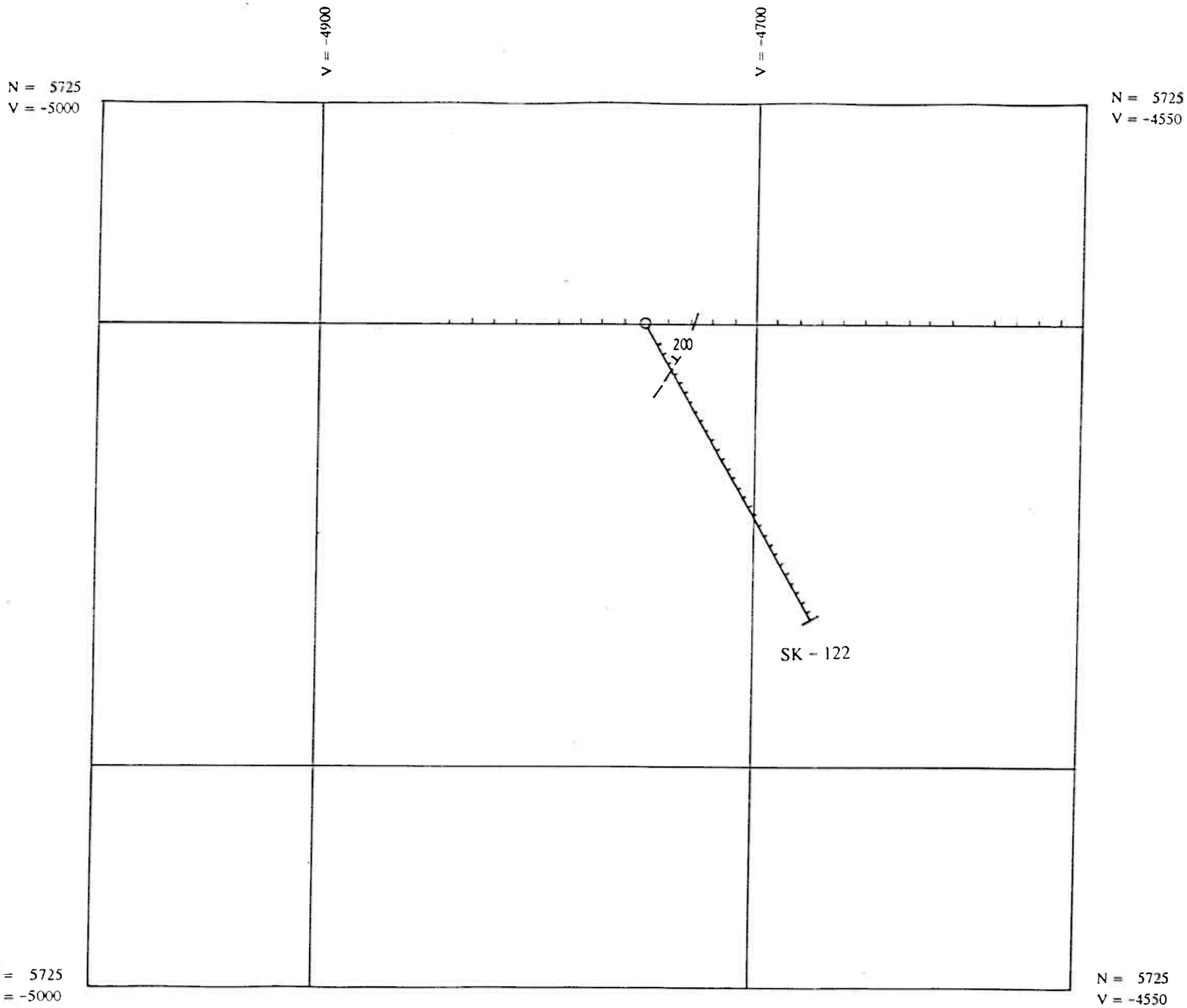
SKIFTESMYR
GRONG, N O R W A Y
N = 5610
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml

CORE HOLE

SK-122

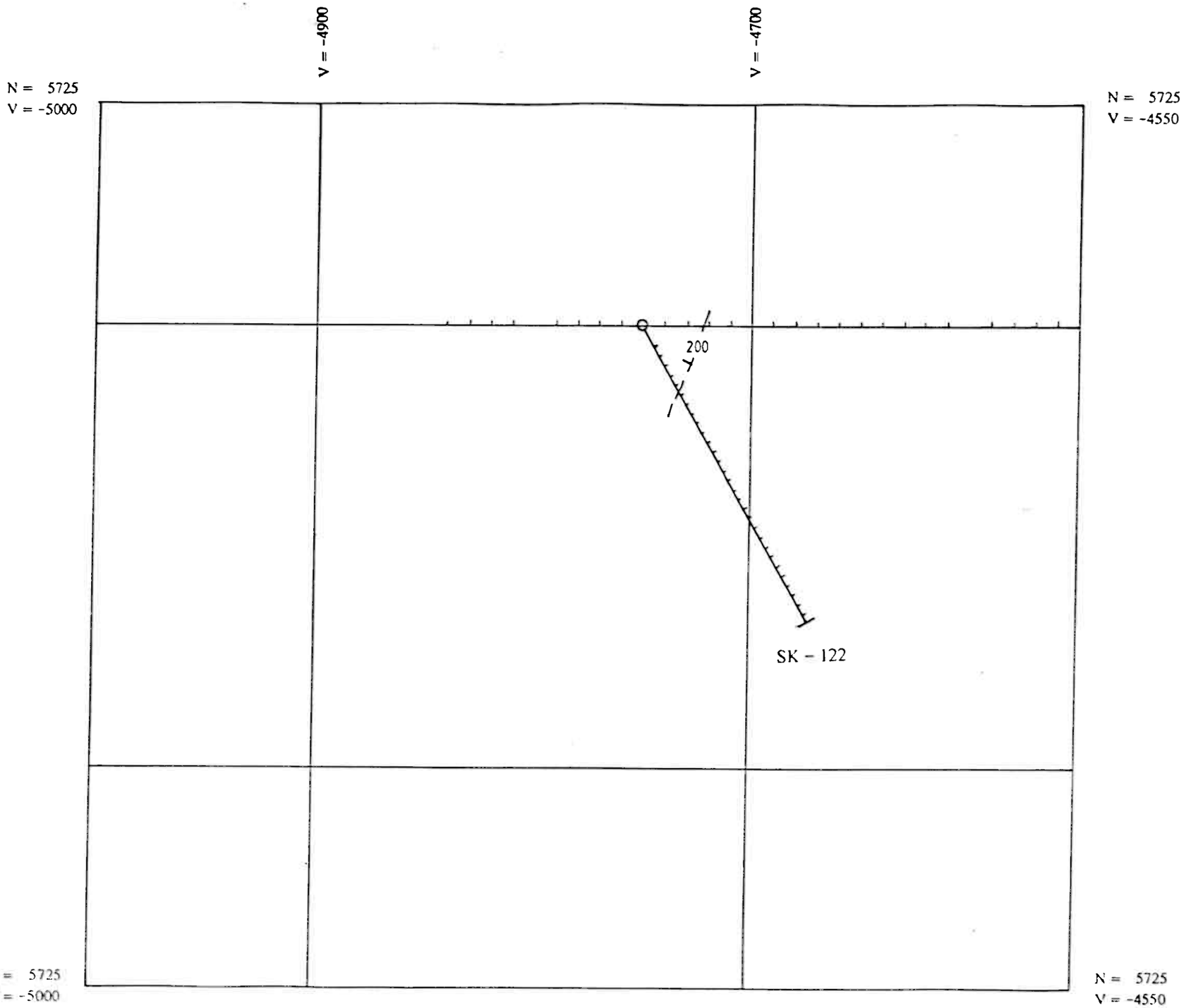
Active grounding SK-106 / 257 m



SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
N = 5725
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

SK-122

Active grounding SK-112 / 46 m

SUOMEN MALMI OY
FINNEXPLORATION

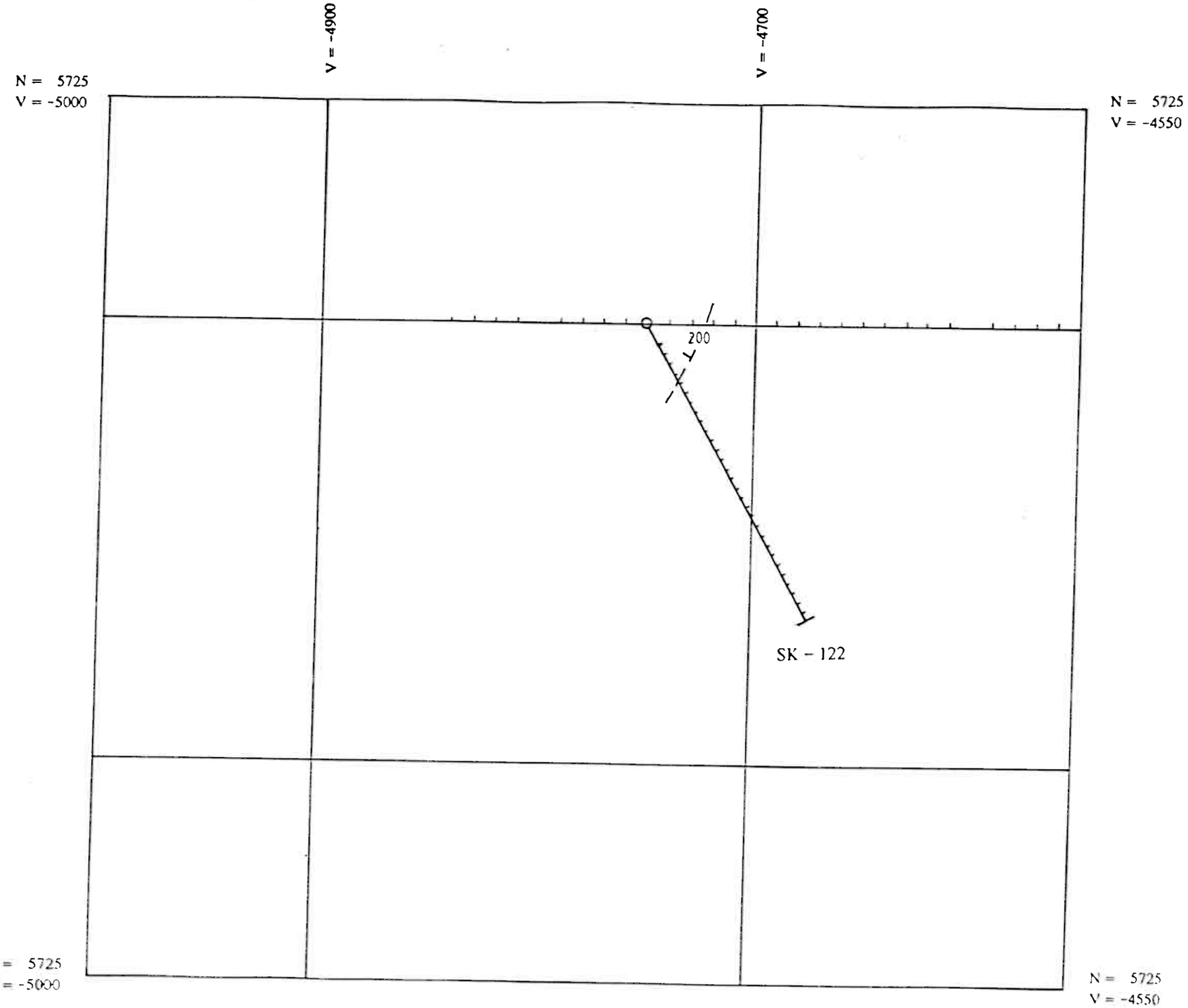
SKIFTESMYR
GRONG, N O R W A Y
N = 5725
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml

CORE HOLE

SK-122

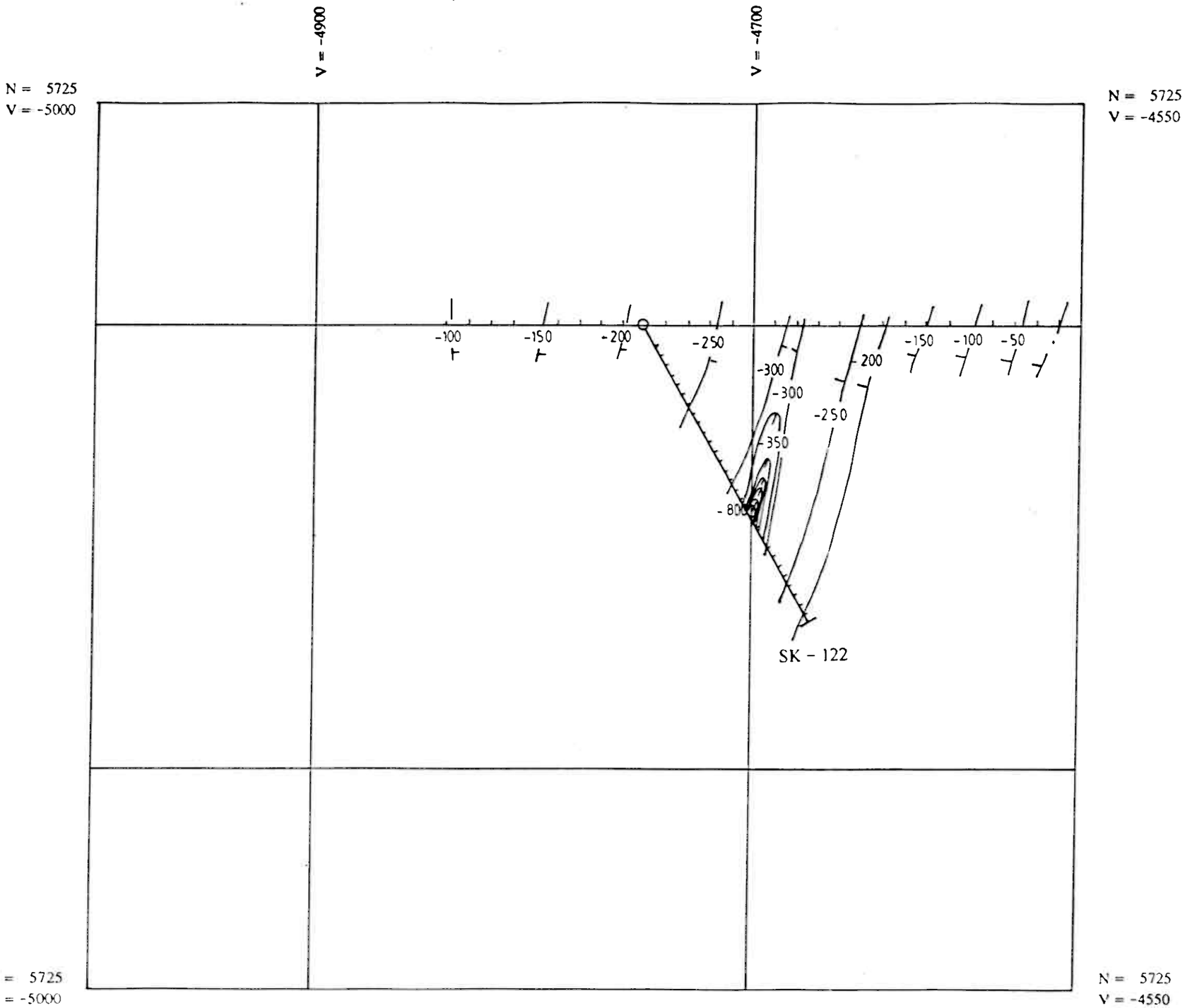
Active grounding SK-113 / 137 m



SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
N = 5725
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml



CORE HOLE

SK-122

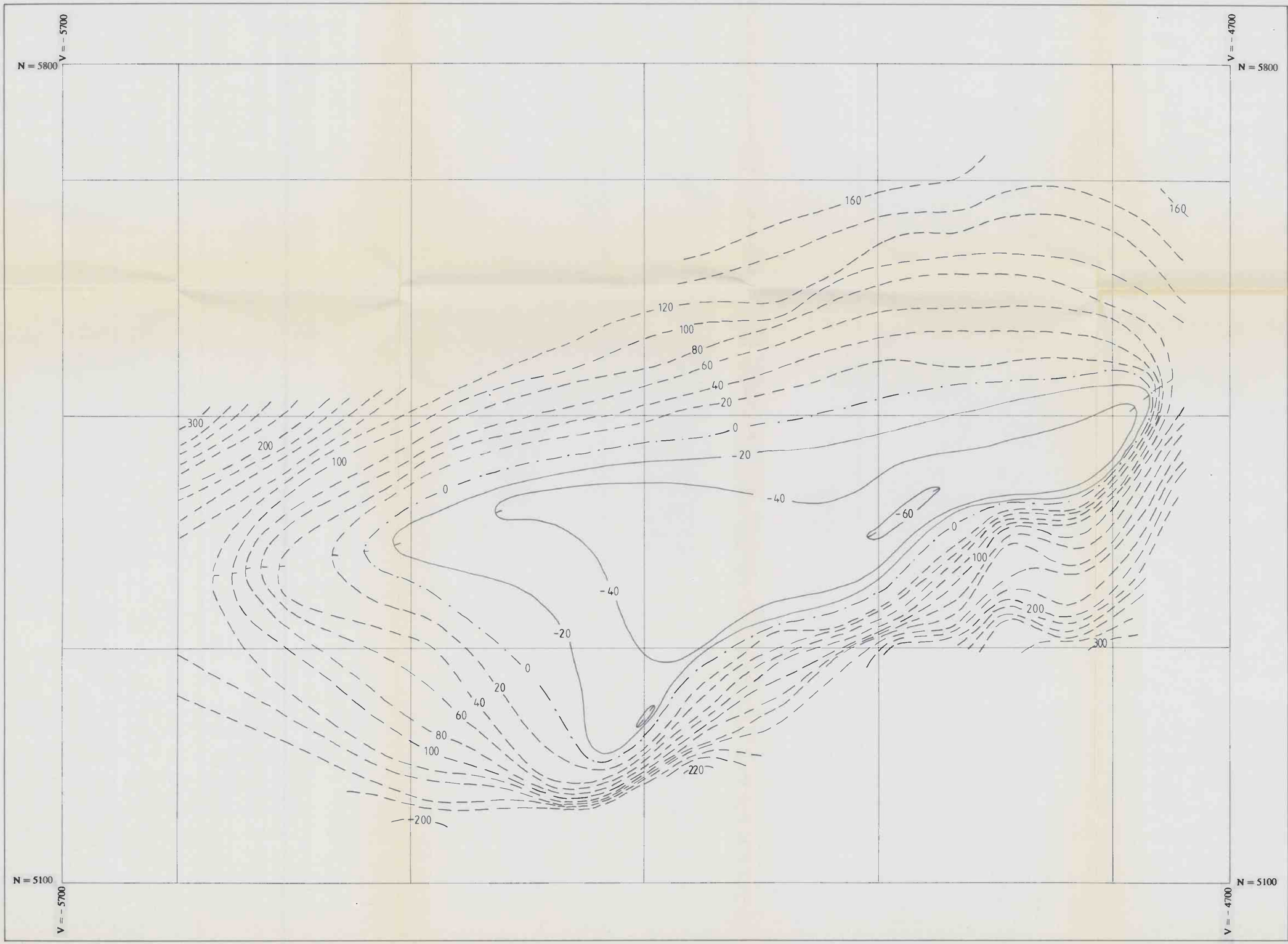
Active grounding SK-122 / 101 m

SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
N = 5725
1:2000
CHARGED POTENTIAL SECTION

NORSULFID A/S
1.1992 SMOY/aml

APPENDIX 5.9 (1/4)

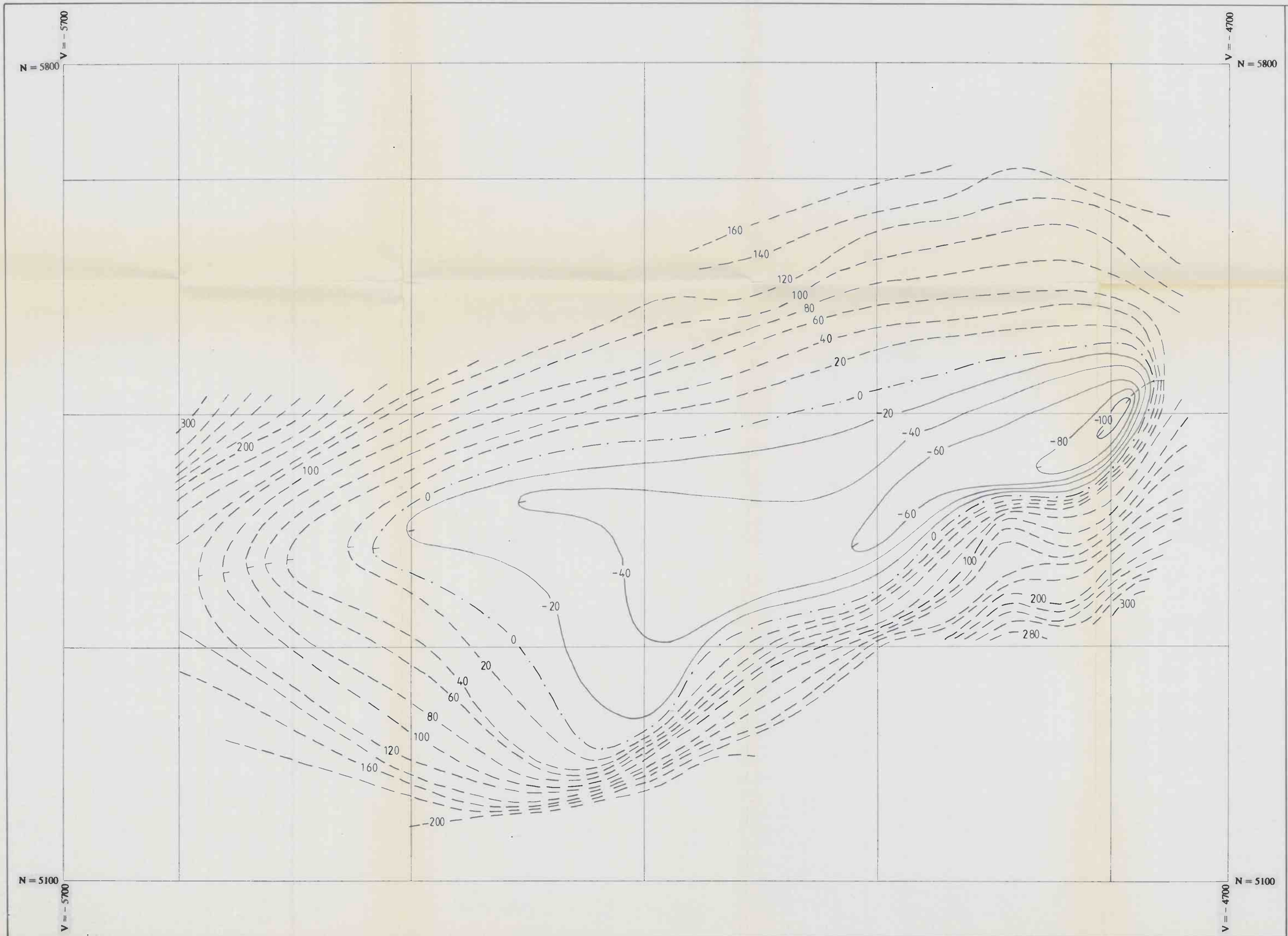


SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
1:2000
CHARGED POTENTIAL MAP
Active grounding SK-106 / 257 m

NORSULFID A/S
1.1992 SMOY/aml

APPENDIX 5.9 (2/4)

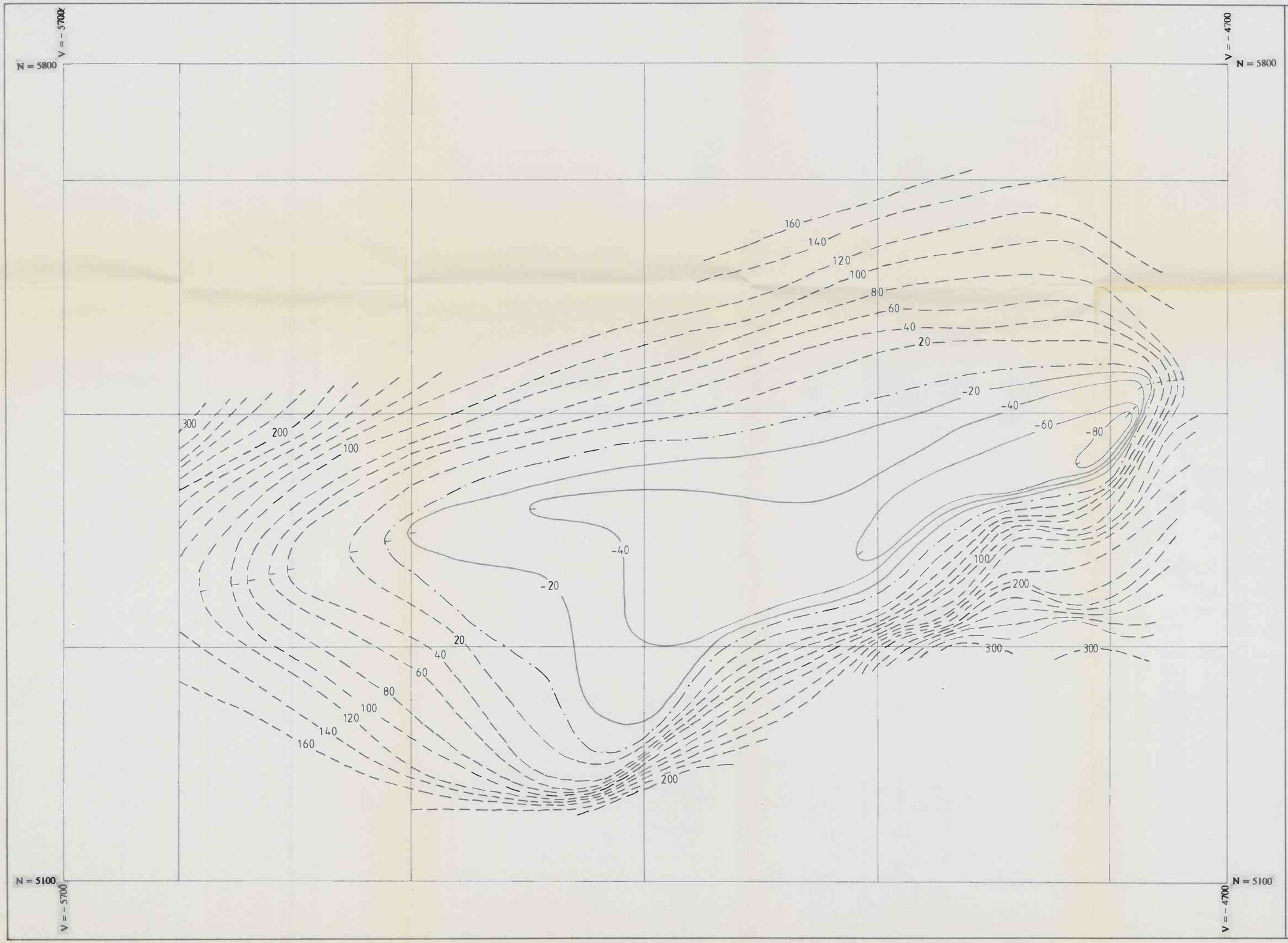


SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
1:2000
CHARGED POTENTIAL MAP
Active grounding SK-112 / 46 m

NORSULFID A/S
1.1992 SMOY/aml

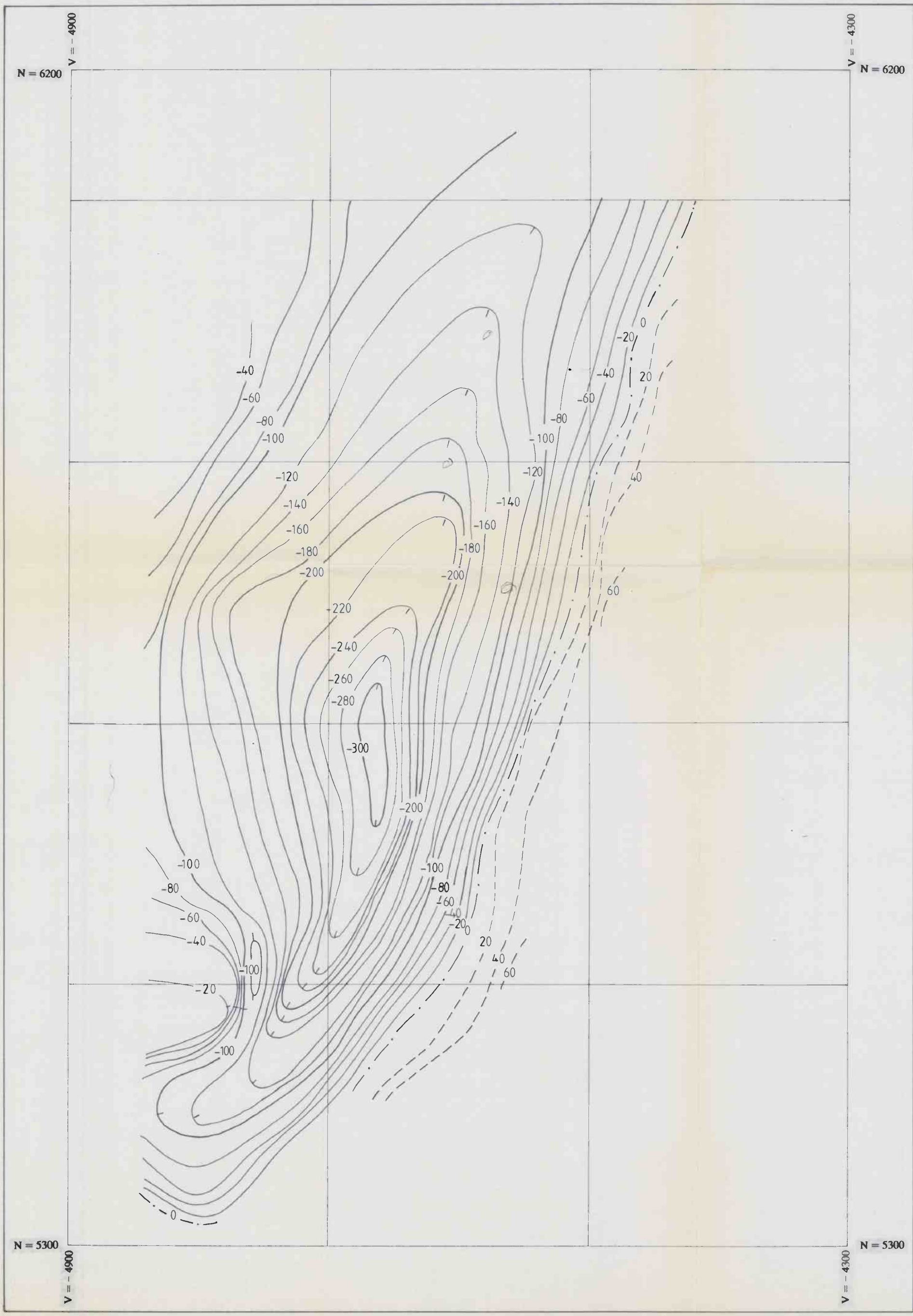
APPENDIX 5.9 (3/4)



SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
1:2000
CHARGED POTENTIAL MAP
Active grounding SK-113 / 137 m

NORSULFID A/S
1.1992 SMOY/aml

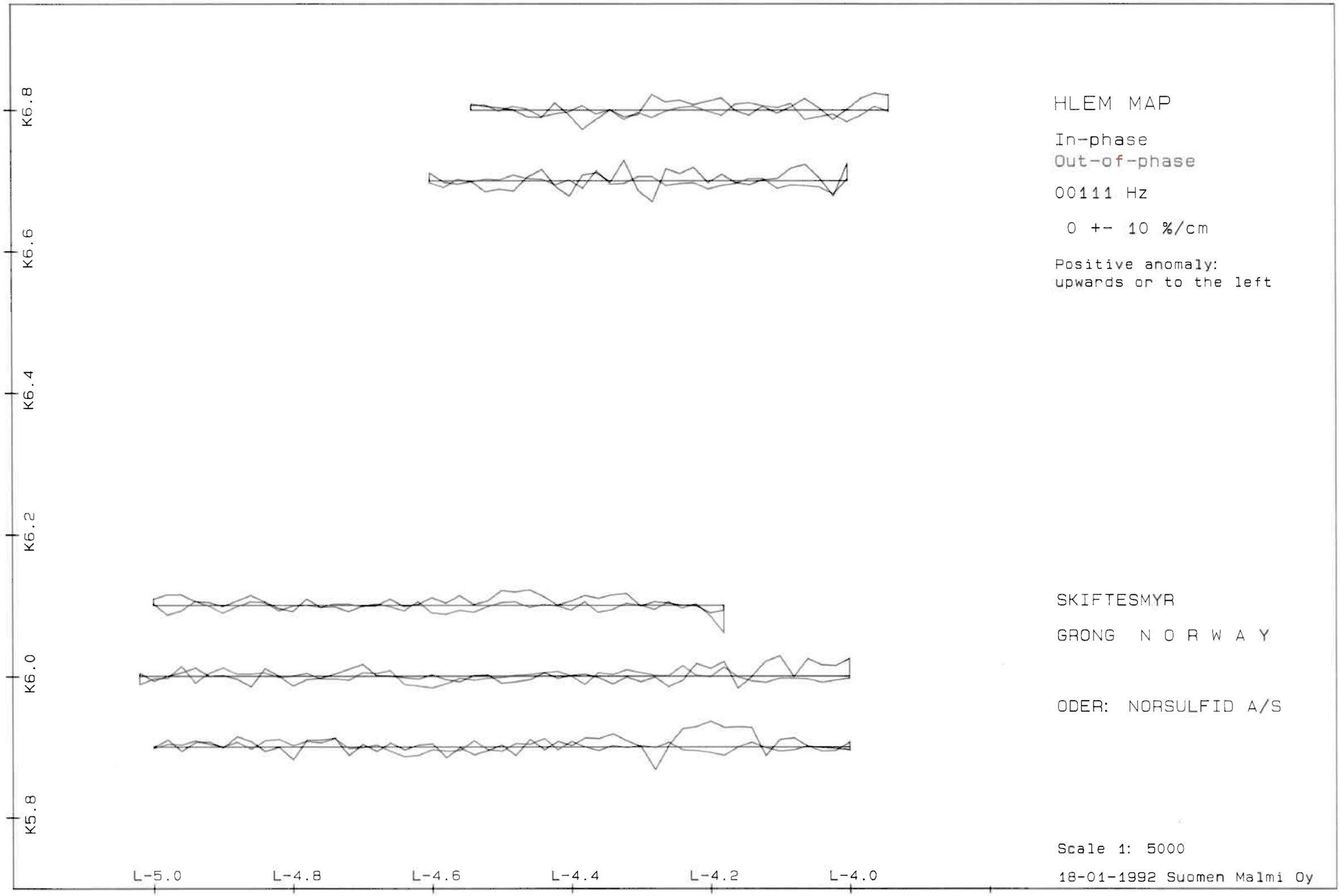


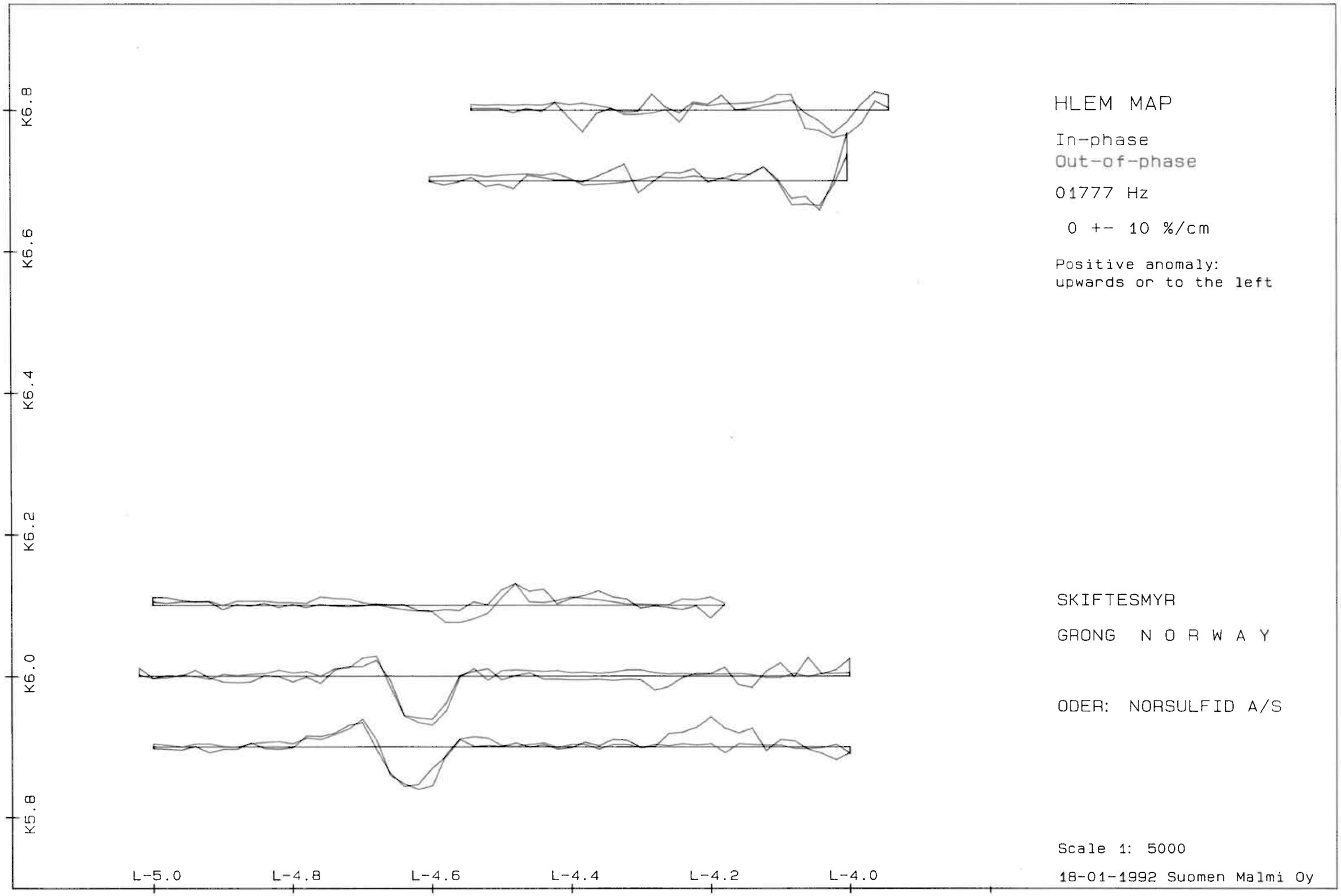
APPENDIX 5.9 (4/4)

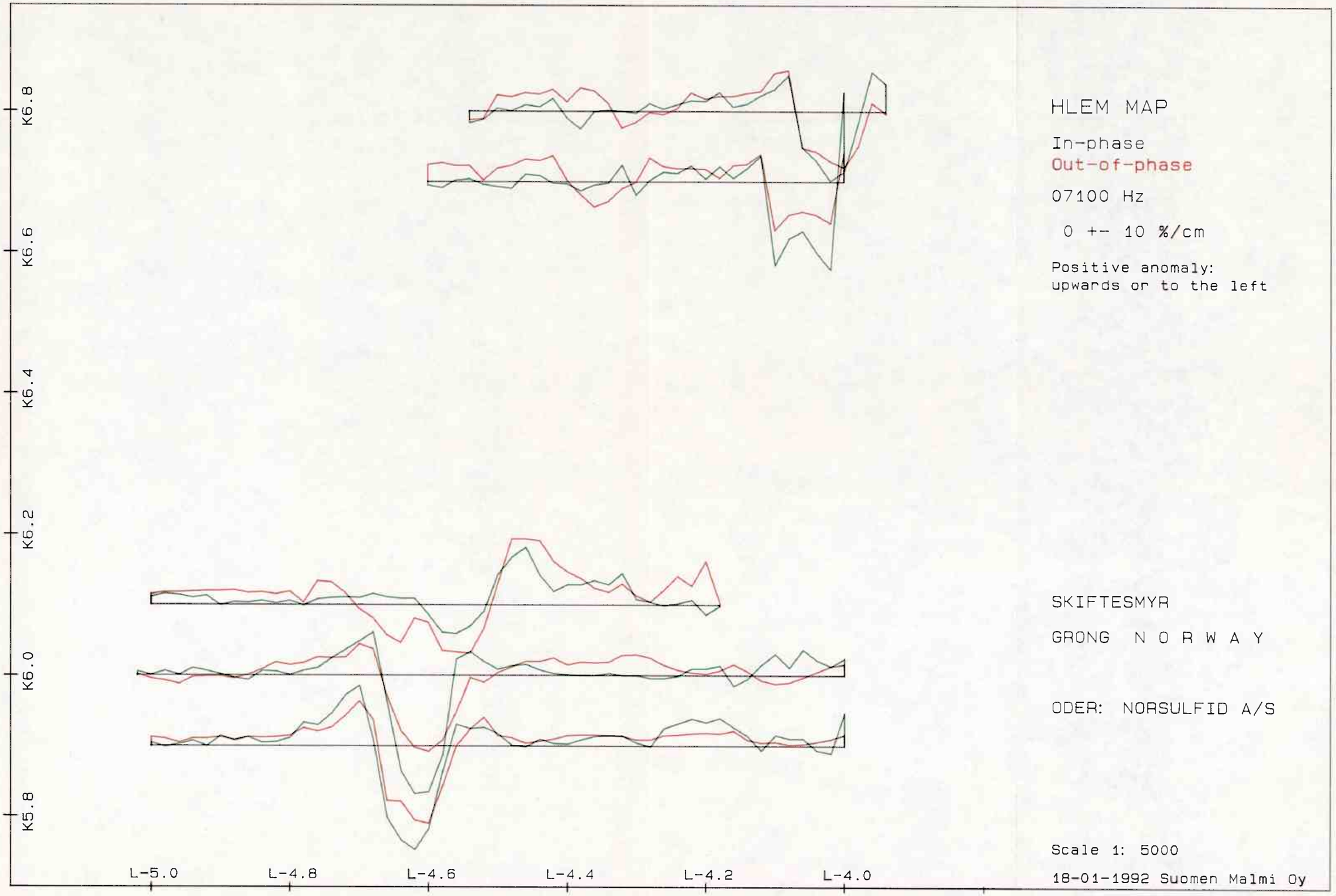
SUOMEN MALMI OY
FINNEXPLORATION

SKIFTESMYR
GRONG, N O R W A Y
1:2000
CHARGED POTENTIAL MAP
Active grounding SK-122 / 101 m

NORSULFID A/S
1.1992 SMOY/aml


K6.8
K6.6
K6.4
K6.2
K6.0
K5.8
L-5.0
L-4.8
L-4.6
L-4.4
L-4.2
L-4.0
HLEM MAP
In-phase
Out-of-phase
00111 Hz
0 +- 10 %/cm
Positive anomaly:
upwards or to the left
SKIFTESMYR
GRONG N O R W A Y
ODER: NORSULFID A/S
Scale 1: 5000
18-01-1992 Suomen Malmi Oy


K6.8
K6.6
K6.4
K6.2
K6.0
K5.8
L-5.0
L-4.8
L-4.6
L-4.4
L-4.2
L-4.0
HLEM MAP
In-phase
Out-of-phase
01777 Hz
0 +- 10 %/cm
Positive anomaly:
upwards or to the left
SKIFTESMYR
GRONG N O R W A Y
ODER: NORSULFID A/S
Scale 1: 5000
18-01-1992 Suomen Malmi Oy


K6.8
K6.6
K6.4
K6.2
K6.0
K5.8
L-5.0
L-4.8
L-4.6
L-4.4
L-4.2
L-4.0
HLEM MAP
In-phase
Out-of-phase
07100 Hz
0 +- 10 %/cm
Positive anomaly:
upwards or to the left
SKIFTESMYR
GRONG N O R W A Y
ODER: NORSULFID A/S
Scale 1: 5000
18-01-1992 Suomen Malmi Oy