



Bergvesenet

Postboks 3021, 7002 Trondheim

Rapportarkivet

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Kommer fra ..arkiv Falconbridge	Ekstern rapport nr Sul 126-71-13	Oversendt fra Sulfidmalm A/S	Fortrolig pga	Fortrolig fra dato:
Tittel The Vesle Tron Ni showing in Alvdal kommune				
Forfatter R Hovland, F Hansen		Dato 1971	Bedrift Sulfidmalm A/S	
Kommune Alvdal	Fylke Hedmark	Bergdistrikt Trondheimske	1: 50 000 kartblad 16192 16193	1: 250 000 kartblad Røros
Fagområde Geologi geofysikk geokjemi	Dokument type Rapport	Forekomster Vesle Tron		
Råstofftype Malm/metall	Emneord Ni Cu Co Fe S			
Sammendrag				

A/S SULFIDMALM
INTER-OFFICE MEMORANDUM

Date: May 18th, 1972

To: Falconbridge Nikkelverk A/S

cc: A.M. Clarke, D.R. Lochhead
R. Howland, D.B. Sutherland.

From:

Subject:

905-13, Vesle Tron Ni showing

Please find attached Hovland's report on the Vesle Tron Ni showing, in the Tronfjell area. He has done an excellent job of compiling information from the files to produce this report. The work recommended will be carried out during 1972.

du ppLB

Mottet 19 MAY 1972		Time	Loc.
Adults: all	Wf		
Eggs: none			
Chicks:			
Imm.			
Notes:			
2	2000		2000

FOR FALCONBRIDGE NIKKELVERK A/S

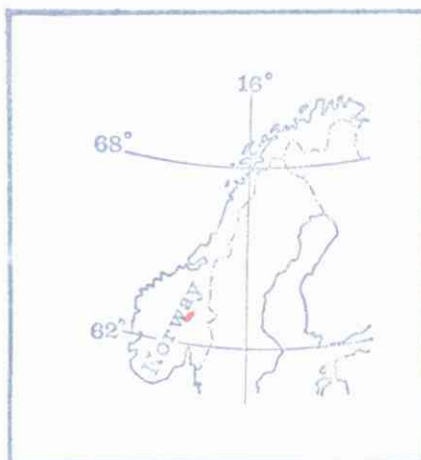
A/S SULFIDMALM

PROJECT 905-13

THE VESLETRON NI-SHOWING in
ALVDAL KOMMUNE, HEDMARK FYLKE,
NORWAY. 1971.

R. HOVLAND

F. HANSEN



INTRODUCTION

As a result of the geological and geochemical reconnaissance in the Tronfjell area, during the summer of 1970, it was recommended to do some follow-up work in three anomalous areas in Tronfjell and some regional work in the topographic map sheets of Tyllidal and Tynset in 1971.

This report only deals with one of the anomalous areas in the Tronfjell area, the Vesle Tron Ni-showing.

SULFIDMALM INVESTIGATIONS

In 1970, E. Overwien and J. Jacobsen did some work in the Vesle Tron area, the former doing geological observations, the latter mainly collecting stream sediments.

In 1971 E. Overwien together with four field assistants partly worked in this area. The work consisted of taking soil samples and doing geological mapping of the outcrops.

F. Hansen put in a grid and did ABEM-gun (Slingram) and magnetometric measurements.

GEOLOGY

Around the Velse Tron Ni-showing there are mainly two types of rocks, a fine-mediumgrained meta-gabbroic rock and a quartz-sericite schist.

The quartz-sericite schist, which is believed to be the oldest rock type, has a main strike NW-SE and dips 30-50° W.

The mapped area is in the west direction limited by a main fault. All around there are also minor faults and brecciated zones.

The attached map No. 905-13-1 gives some information of the geology of the area.

MINERALIZATION

The ore mineralization occurs in the gabbro and mainly in close connection with the brecciated zones. One is more seldom able to find visible ore mineralization in the ordinary gabbro outcrops.

The ore minerals are pyrrhotite, pyrite and chalcopyrite. The pyrrhotite is Ni-bearing. Together with the ore minerals, graphite very often occurs in the brecciated zones. (fragments of black schists).

The following samples from the area are analysed and gave these results:

<u>1970</u>		<u>Ni%</u>	<u>Co%</u>	<u>Cu%</u>	<u>Fe%</u>	<u>S%</u>
Pr. 57 A.	Massive sulph. from pit. A.	1,18	0,19	0,37	54,7	30,0
pr. 57	Massive sulph. from pit C.	0,88	0,14	0,81	34,8	18,0
pr. 57	Dissem. sulph. in metagabbro	0,13	0,018	0,11	9,6	2,4
<u>1971</u>						
	Massive sulph. eastern pit	1,06	0,20	1,54	44,4	29,8

GEOPHYSICAL SURVEY

The area around the Ni-showing was covered with ABEM-gun (Slingram) at high frequency 1760 Hz and with a McPhar M-700 Magnetometer. Together 9200 profilemetres were measured.

Parts of the area were also covered by the Crone CEM electromagnetic instrument. It was the horizontal shootback method which was used, medium frequency 1830 Hz.

The attached map 905-13-2 shows the magnetometric measurement (vertical field) and the map 905-13-3 and 4 show the Slingram measurements (real and imaginary).

The magnetometric map shows no great anomalies. The known Ni-bearing zone gives an obvious anomaly (40 E/30 N - 240 W/30 N). The prospect pits and most of the minor blasts are located in close connection with the anomalies. The two pits are situated in negative anomaly zones, five of the blasts lie in the same positive anomaly zone. Since the distribution of magnetite in the surrounding rocks is thought to be poor, one could believe that also other anomaly zones, besides the one already mentioned, could be caused by pyrrhotite mineralization. The possible areas seem to be 320W/ 300 N, 320-560W/100-200 N, 80E-380W/50-100N, 160W/200-250 S, 40E-200W/300 S, 40E-120W/400S and 240W/560 S.

The two Slingram maps (real and imaginary) show the same anomalies. On the imaginary map, each anomaly is a strongly restricted area, but on the real map each anomaly represents a maximum in a larger zone.

The known pits and minor blasts all lie in the found anomaly zones. From the imaginary map, it looks as if the pits are sunken on different ore zones.

The anomalies 120E-160W/ 50N-260N have length axis which correspond well with the observed strike of the rocks.

In addition to the anomaly zone around the pits and the mentioned anomalies 120E-160W / 50 N-260N, there are also several other EM anomalies in the area. They are located at 280W-560W / 40N-160N, 80W-280W/ 280S-200S, 160W/360S and 0/300 S.

SOIL GEOCHEMISTRY

A

180 soil samples were taken along four profiles in the grid, (B-horizon). The samples were later analysed on Ni, Co, Cu, Zn and Mn. The results from this work are shown on the map 905-13-71-5 and the map 905-13-71-6.

In general one might say that both the nickel and the copper maps show the same anomaly zones. The ice direction was NW here, and one might therefore expect a geochemical anomaly to occur a little north of a possible deposit.

The known Ni-bearing zone lies in the southern part of an anomalous area. The maximum Cu-value is here 157 ppm and the maximum Ni-value 73 ppm.

In the southern part of the area, one has an interesting anomaly (120 E-200W/ 180S-480S). The maximum Cu value is here 48 ppm and the Ni-value 751 ppm.

DISCUSSION OF RESULTS

On the map 905-13-71-7 all the results from the geological mapping, the geophysical survey and the soil geochemistry (Ni) are put together.

The following list shows what kind of anomalies one has in the different places:

.../4

	Surrounding rocks	Magn. anom.		EM anom.		Geochem. anom.		Priority
		+	+	real	imag.	Cu	Ni	
An.1	gabbro	x		x	x			3
" 2	"	x		x	x			3
" 3	"		x	x	x			3
" 4	"		x	x		?	?	3
" 5	"		x	x	x	?	?	2
" 6	"			x		x	x	2
" 7	"	x	x	x		?	?	2
" 8	"	x			x	x	x	1
" 9	"		x			?	?	3
" 10	"		x					3
" 11	"	x		x		x	x	2
" 12	"			x		x	x	2
" 13	"	x		x				3
" 14	"			x	x	x	x	2
" 15	"	x	x	x	x	x	x	1
" 16	"	x						3
" 17	"	x	x	x	x			2
" 18	"	x	x	x	x			2
" 19	schists	x		x				3
" 20	gabbro/schists	x		x	x			2
" 21	schists			x	x			2
" 22	gabbro	x	x	x	x			2
" 23	"	x		x		x	x	2
" 24	"	x	x	x	x	x	x	1
" 25	"		x	x				3
" 26	"	x				x	x	2
" 27	"	x	x	x	x	x	x	1

As one can see, there are four anomalous zones that have got priority 1.

An. zone 8

Magnetic anomaly, Slingram anomaly and geochemical anomaly. The geochemical anomaly on nickel is ten times larger than anywhere else in this field.

An. zone 15

Here we already know of a Ni-bearing zone, and this zone has given an anomaly with all the used methods.

An. zone 24

Magnetic anomaly, Slingram anomaly and a bit dubious geochemical anomaly.

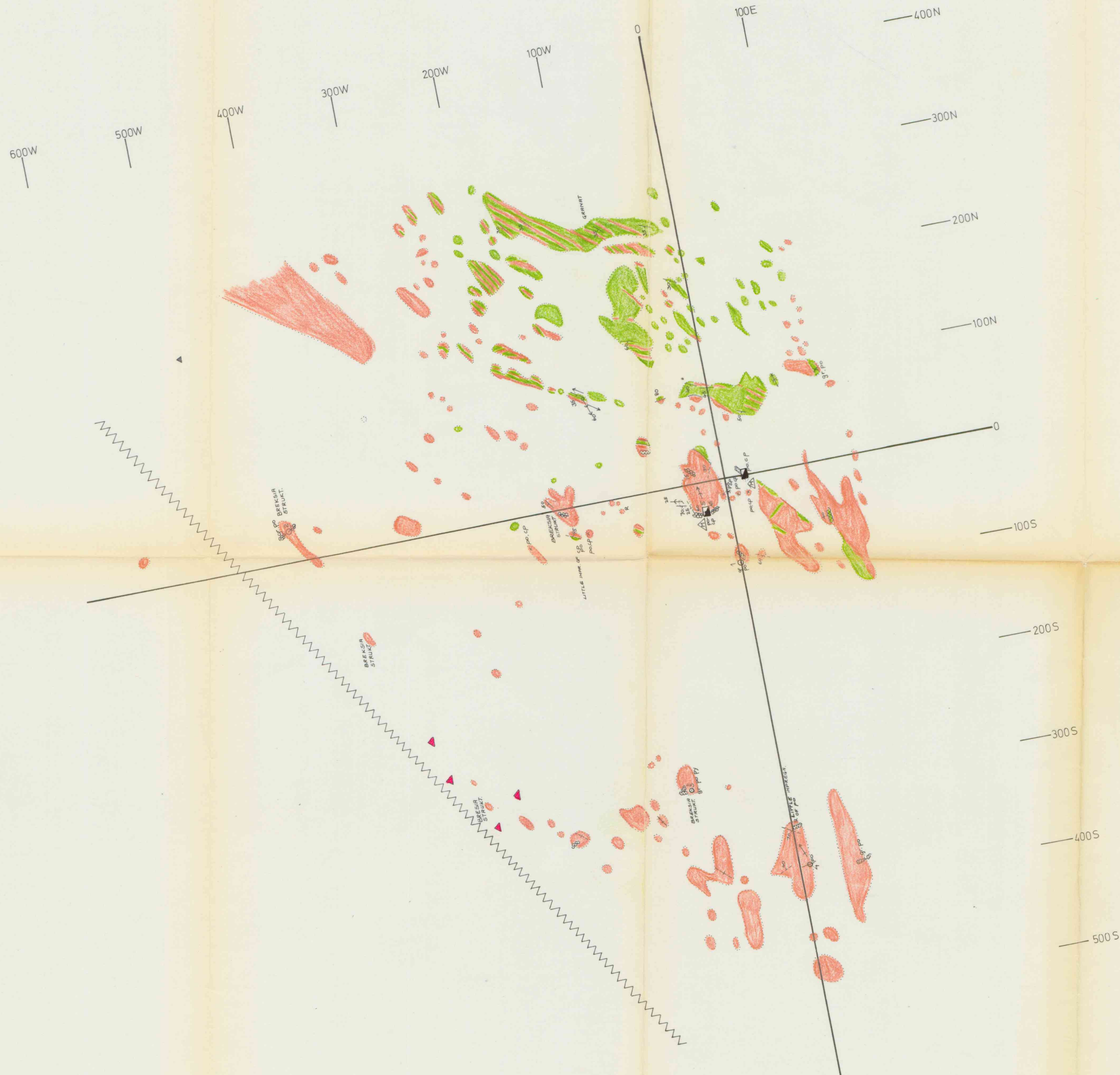
An. zone 27

Magnetic anomaly, Slingram anomaly and a geochemical anomaly (nearby). All these anomalous areas lie in gabbro.

RECOMMENDATIONS FOR FURTHER WORK

1. A diamond drill hole (Winkie) in anomaly zone No. 15.
2. If the first drill hole gives positive indications, another hole should be drilled in zone 24 and in zone 27.
3. Geophysical detail work around zone No. 8 (VLF). Later it might be necessary to drill a Winkie hole here as well.

Lea Lowland



KEY

- GABBROIC ROCKS
- QUARTZ-SERICITE SCHIST (MAINLY)
- GABBROIC BOULDER
- BOULDERS OF META ULTRABASIC ROCKS
- BOULDERS OF MAFIC, MINERALIZED
- SHEAR
- MARKS OF ICE
- FOLIATION
- CLEAVAGE
- OLD MINE (NI) PROSPECT PIT
- FAULT
- NO FOLD
- DISTINCT STRUCTURAL FEATURES
- PROSPECT PIT
- OUTCROP
- graphite
- pyrrhotite
- chalcopyrite
- pyrite
- LOCATION
- KIDDISSEMINATION

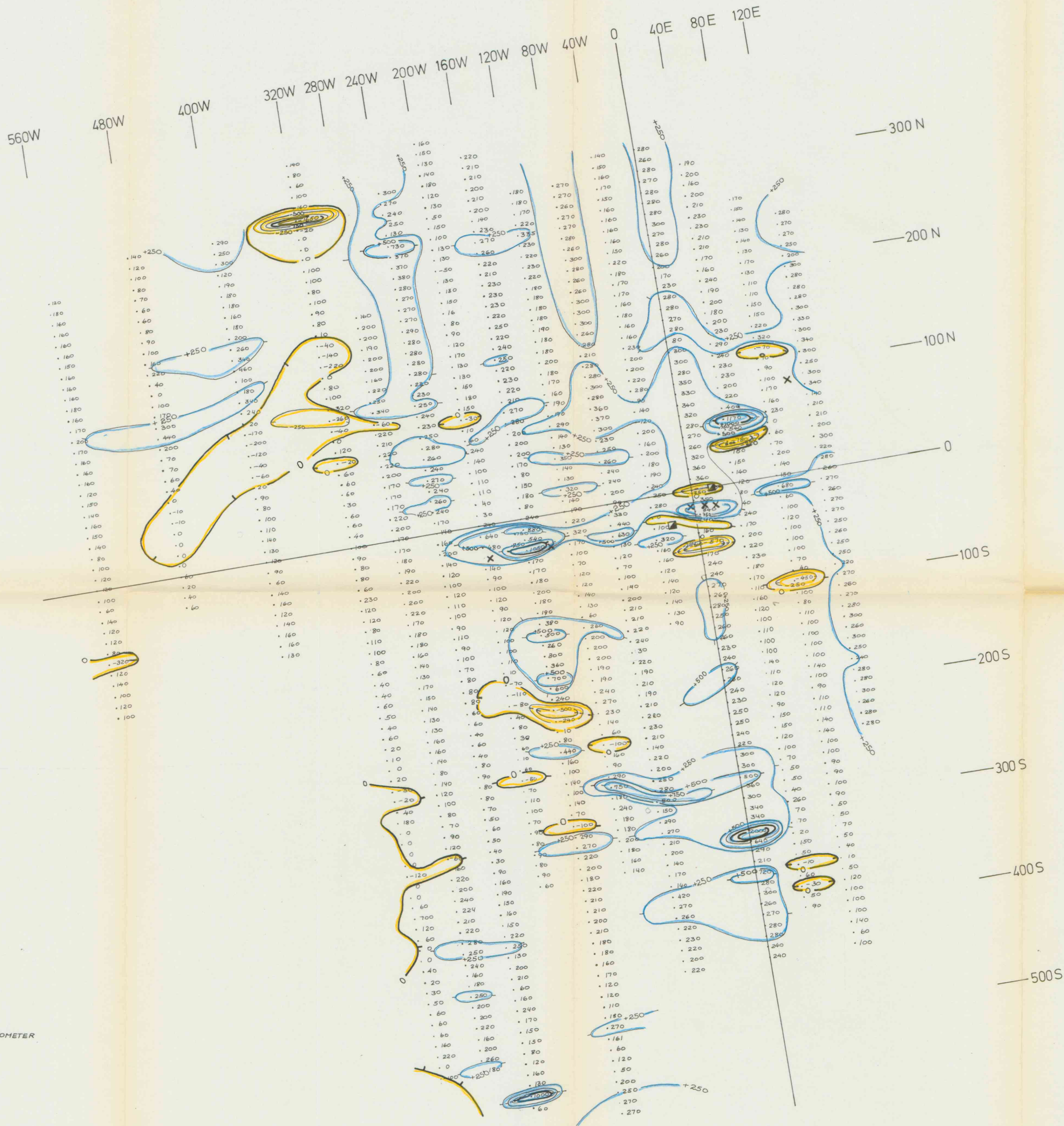
GEOLOGY
VESLE TRON GRID
Ni - showing

SCALE	OBS.	
1:2000	DRAW.	
	TRAC. U.T	4-72
	CHK.	

1/2 SULFIDMALM

MAP NO.	
905-13-71-1	
MAP SHEET	

N



LEGEND

- Prospect pit
- X minor blasting
- base station

INSTRUMENT: MC PHAR M 700 FLUXGATE MAGNETOMETER

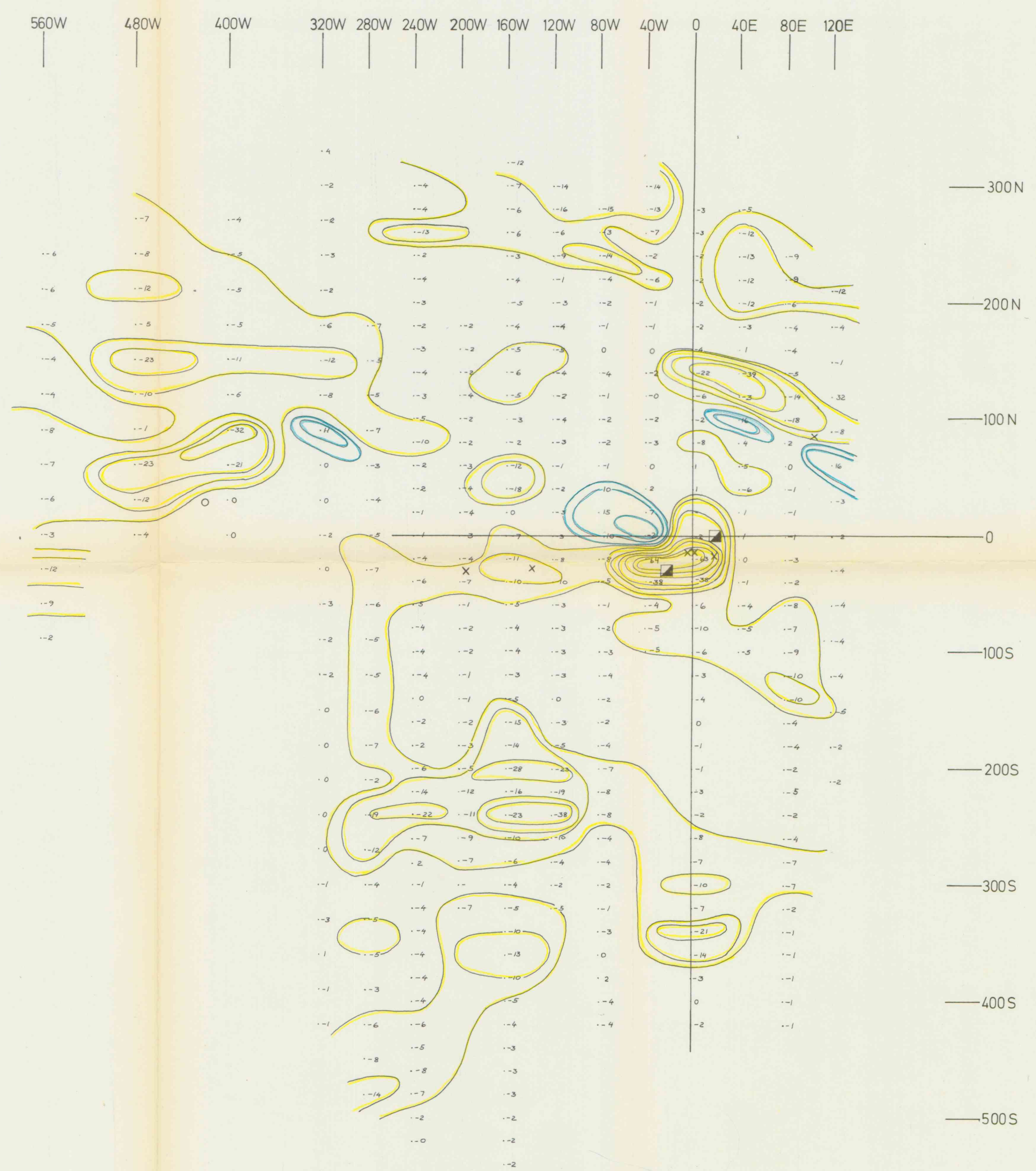
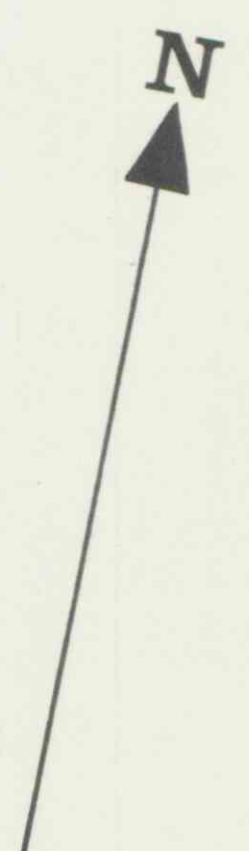
Intervals of 1000
 " " 500
 " " 250

MAGNETIC ANOMALIES
 VESLE TRON GRID
 Ni - showing

SCALE	OBS. F.H.
1:2000	DRAW. F.H.
	TRAC. U.T. 4-72
	CHK. R.H.

% SULFIDMALM

MAP NO.
905-13-71-2
MAP SHEET



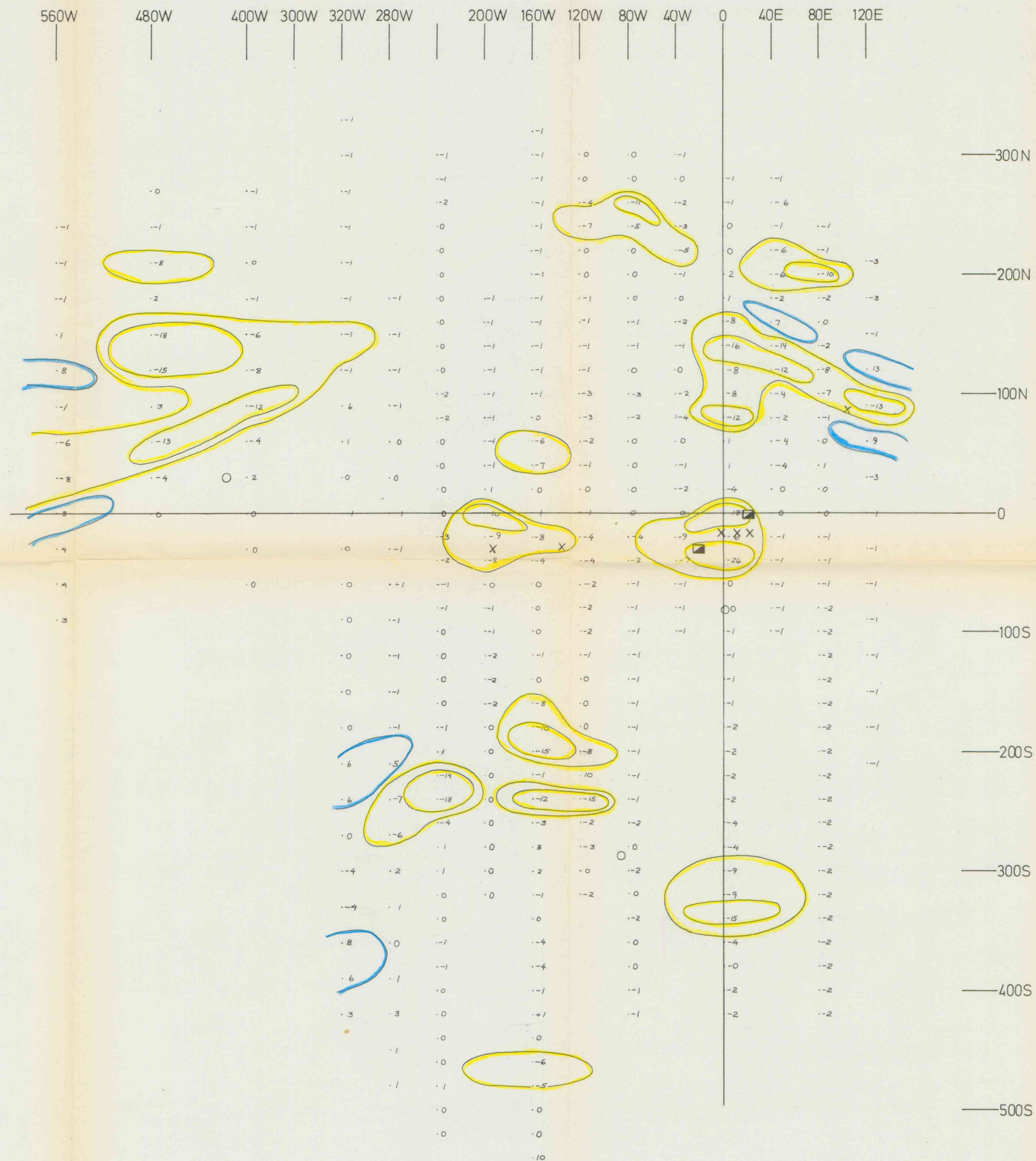
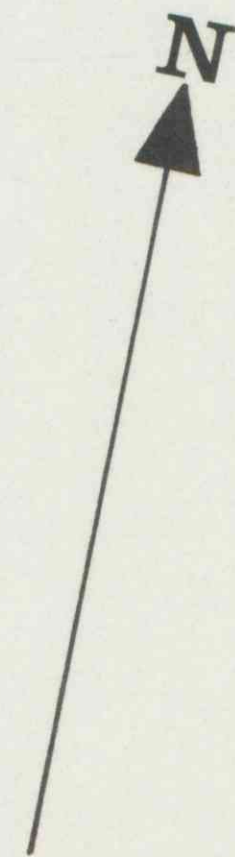
LEGEND

CONTOUR INTERVAL: 5% deviation from normal component

- SUBNORMAL
- ABOVENORMAL
- PROSPECT PIT
- MINOR BLASTING

ELEKTRO MAGNETIC ANOMALIES (REAL COMPONENT) VESLE TRON GRID	SCALE	OBS. F.I.H.	
	1:2000	DRAW. R.H.	
		TRAC. U.T.	4-72
		CHK. R.H.	
MAP NO.		905-13-71-3	
MAP SHEET			

1/2 SULFIDMALM



LEGEND

CONTOUR INTERVAL : 5% deviation from normal component

- SUBNORMAL
- ABOVENORMAL
- PROSPECT PIT
- X MINOR BLASTING

ELECTRO - MAGNETIC ANOMALIES
(IMAGINARY COMPONENT)
VESLE TRON GRID

SCALE	OBS. F. H.	
1:2000	DRAW. R. H.	
	TRAC. U. T.	4 - 72
	CHK. R. H.	

SULFIDMALM

MAP NO.
905-13-71-4

MAP SHEET



400W

200W

120E

0

300N

200N

100N

0

100S

200S

300S

400S

500S



LEGEND

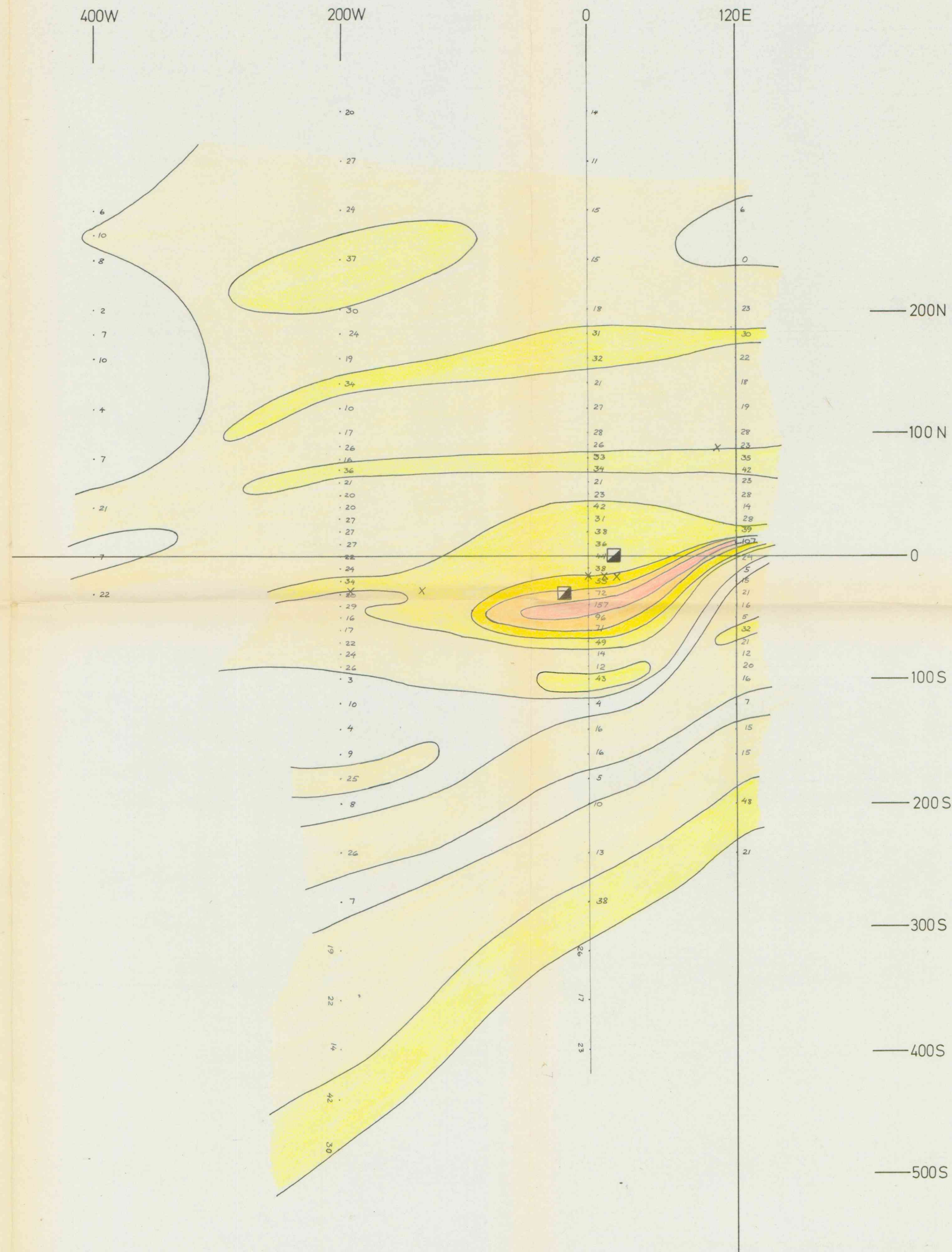
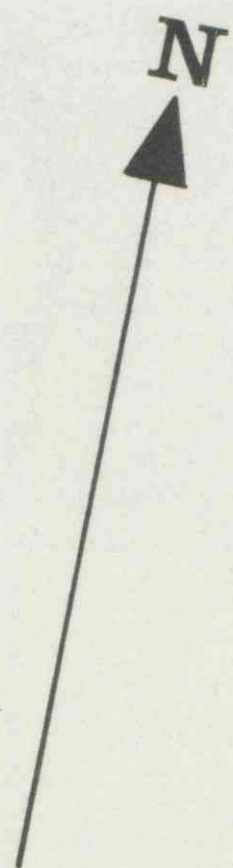
- 0-10ppm
- 10-30ppm
- 30-50ppm
- 50-70ppm
- 70-100ppm
- > 100ppm
- PROSPECT PIT
- MINOR BLASTING

SOIL GEOCHEMISTRY NICKEL
VESLE TRON GRID

SCALE	OBS.
1:2000	DRAW. RH
	TRAC. U.T.
	CHK. RH

% SULFIDMALM

MAP NO.
905-13-71-5
MAP SHEET



LEGEND

- 0 - 10ppm
- 10 - 30ppm
- 30 - 50ppm
- 50 - 70ppm
- 70 - 100ppm
- > 100ppm
- PROSPECT PIT
- MINOR BLASTING

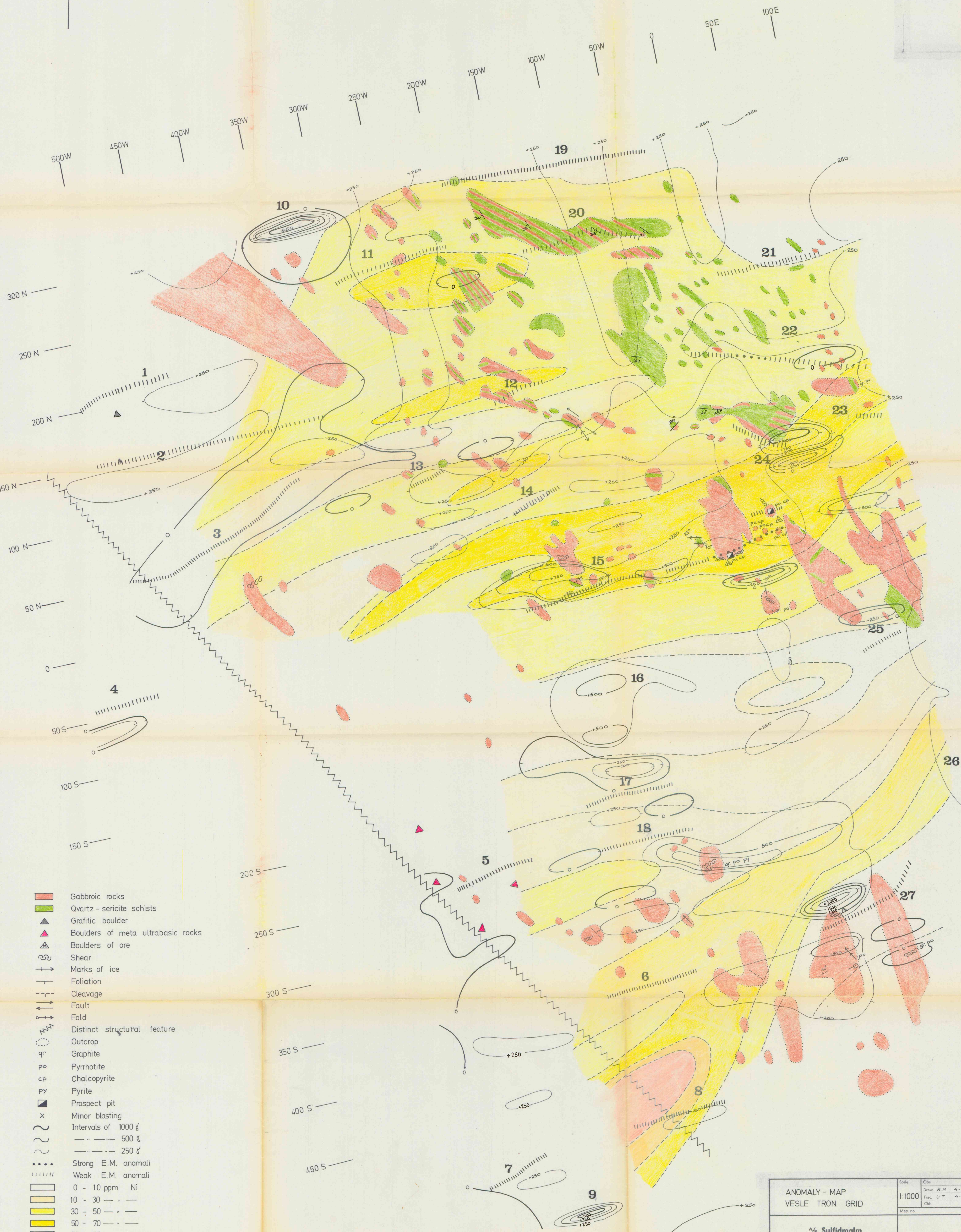
SOIL GEOCHEMISTRY COPPER
VESLE TRON GRID

1/2 SULFIDMALM

SCALE	OBS.
1:2000	DRAW. R.H.
	TRAC. U.T.
	CHK. R.H.

MAP NO.
905-13-71-6

MAP SHEET



- Gabbroic rocks
- Quartz-sericite schists
- Grafiic boulder
- Boulders of meta ultrabasic rocks
- Boulders of ore
- Shear
- Marks of ice
- Foliation
- Cleavage
- Fault
- Fold
- Distinct structural feature
- Outcrop
- Graphite
- Pyrrhotite
- Chalcopryite
- Pyrite
- Prospect pit
- Minor blasting
- Intervals of 1000 γ
- Intervals of 500 γ
- Intervals of 250 γ
- Strong E.M. anomaly
- Weak E.M. anomaly
- 0 - 10 ppm Ni
- 10 - 30 " "
- 30 - 50 " "
- 50 - 70 " "
- 70 - 100 " "
- > 100 " "

ANOMALY - MAP		Scale	Obs.
VESLE TRON GRID		1:1000	Draw. R.H. 4-72
			Trac. U.T. 4-72
			Chk.
		Map no.	
		Map sheet	