

Bergvesenet

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Rapportarkivet

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Kommer fra ..arkiv Sulitjelma Bergverk A/S	Ekstern rapport nr "532111001"	Oversendt fra	Fortrolig pga	Fortrolig fra dato:
Tittel Geochemical sampling of surface exposure. (Sydfeltet) a) Jakobsbakken -Sagmo b) North of Sagmo (Gjertrudfjell) Sporelement.				
Forfatter COOK N.		Dato 1984	Bedrift Sulitjelma Gruber A/S	
..ommune	Fylke	Bergdistrikt	1: 50 000 kartblad	1: 250 000 kartblad
Fagområde	Dokument type	Forekomster		
Råstofftype	Emneord			
Sammendrag Samples have been collected along the surface outcrop of ore zone schists in the sydfeltet area. They have been analysed for a range of trace-elements. The data is presented on profiles and interpreted to reveal anomalies along the profiles. Sporelement.				

Forfatter: IVAR LARSEN

Fordeling
Sulitjelma:

[illegible][illegible]

Resume:

SAMPLES HAVE BEEN COLLECTED ALONG THE SURFACE OUTCROP OF ORE ZONE SCHISTS IN THE SYDFELTET AREA. THEY HAVE BEEN ANALYSED FOR A RANGE OF TRACE-ELEMENTS. THE DATA IS PRESENTED ON PROFILES AND INTERPRETED TO REVEAL ANOMALIES ALONG THE PROFILES

Kommentar:

Geochemical Sampling of Surface exposure Jakobsbakken to Sagmo

The following interpretation is made upon analytical data for a series of samples collecting from ore horizons along a profile from Jakobsbakken to Sagmo. Both the upper and lower zones were sampled, the profile along -2200Y for the lower zone, and -2500Y for the upper zone. Profiles are shown for these profiles and the element in ppm is plotted against the X co-ordinate (at a scale of 1:10000).

LOWER ZONE

Three anomalies are recognised from these profiles from -4100X to -1700X. Different elements do not always show the same anomalies.

X	-2300	-2800	-3350
Cu	✓	(✓)	
Zn			✓
Ag	(✓)	✓	
Sb			✓
Pb	✓	(✓)	(✓)
Co	✓		
Cd			✓
Se		✓	

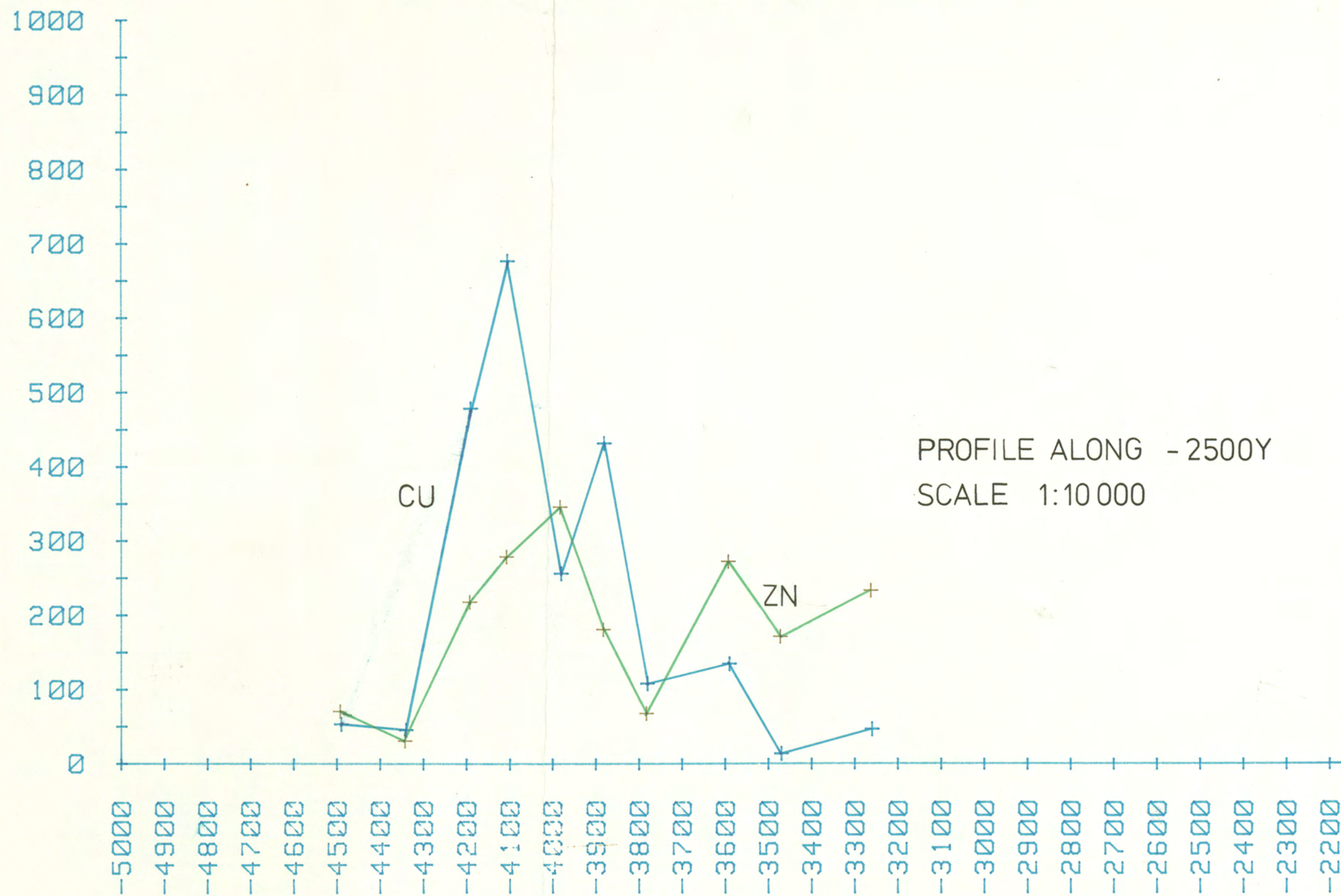
A multi-variant factor (see profile) shows all three. The data is interpreted to show that there is anomalous mineralization at these three points along the profile.

UPPER ZONE

The upper zone was sampled from -4500X to -3200X. Concentrations are generally lower than for the lower zone. No clear anomalies are seen but the following elements: Ag, Zn, Cu, and Co are anomalous in the area -4100 to -3900X.

UPPER ZONE SURFACE SAMPLES

ELEMENT CU/ZN

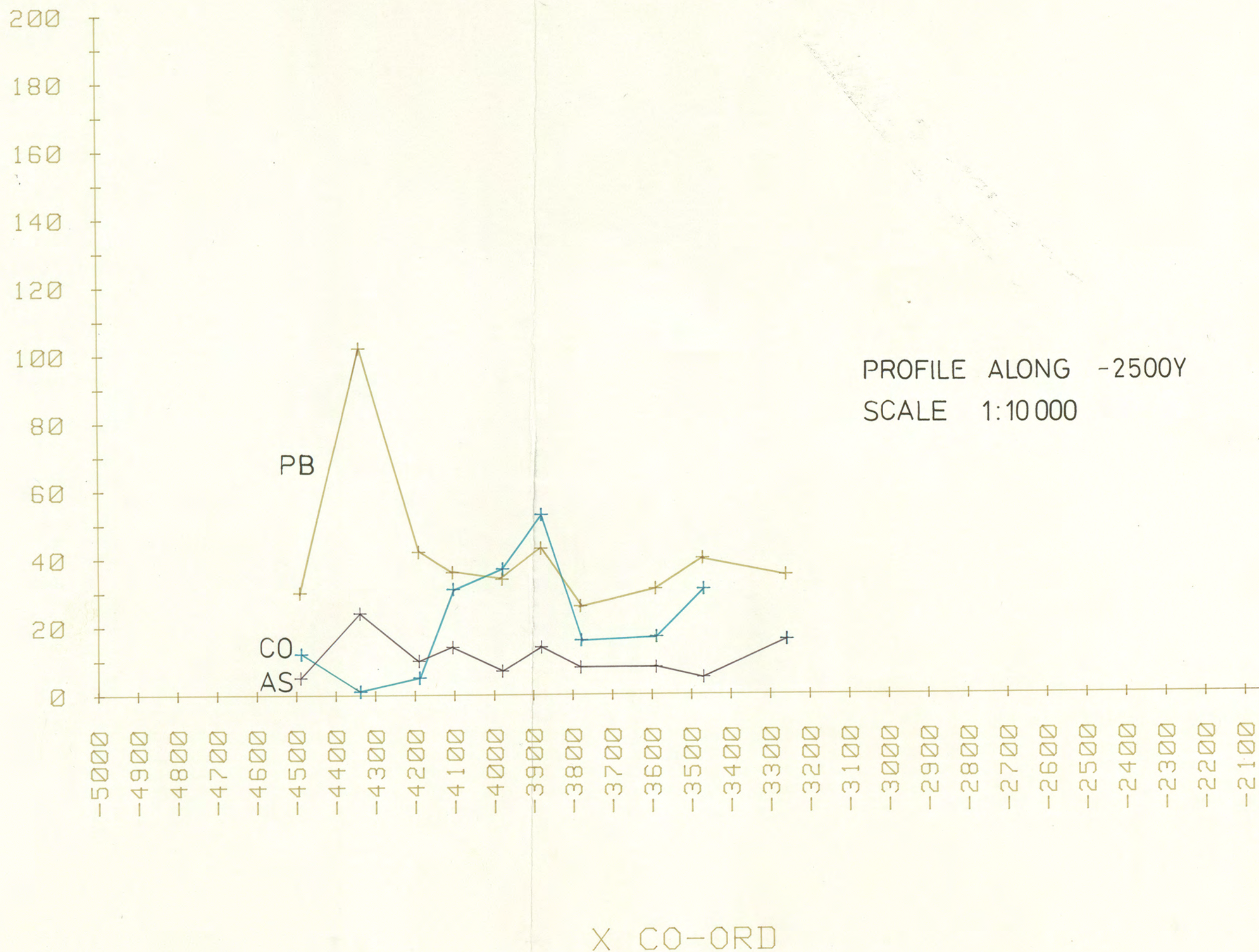


PROFILE ALONG -2500Y
SCALE 1:10 000

X CO-ORD

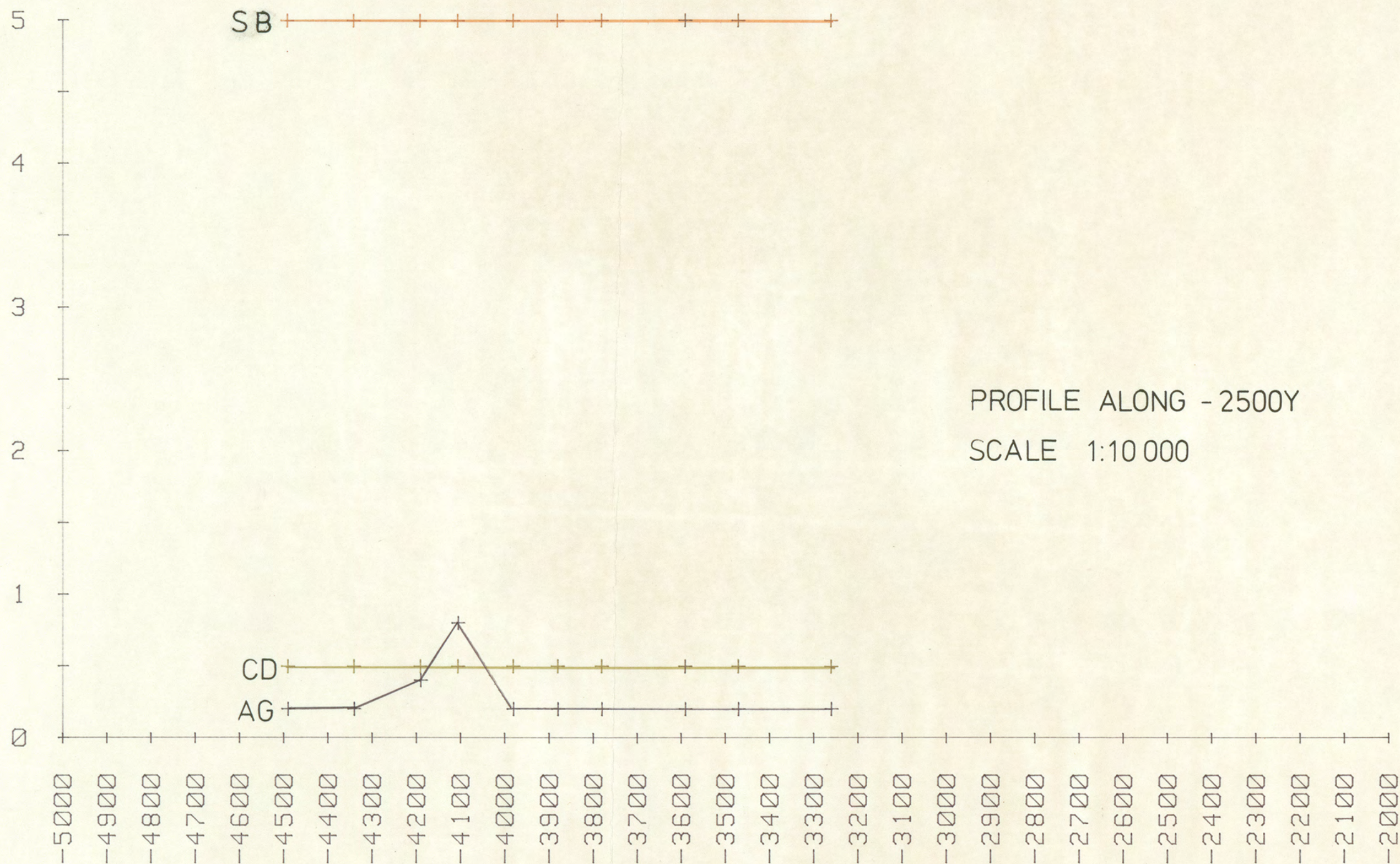
ELEMENT PB/CO/AS

UPPER ZONE SURFACE SAMPLES



ELEMENT AG/CD/SB

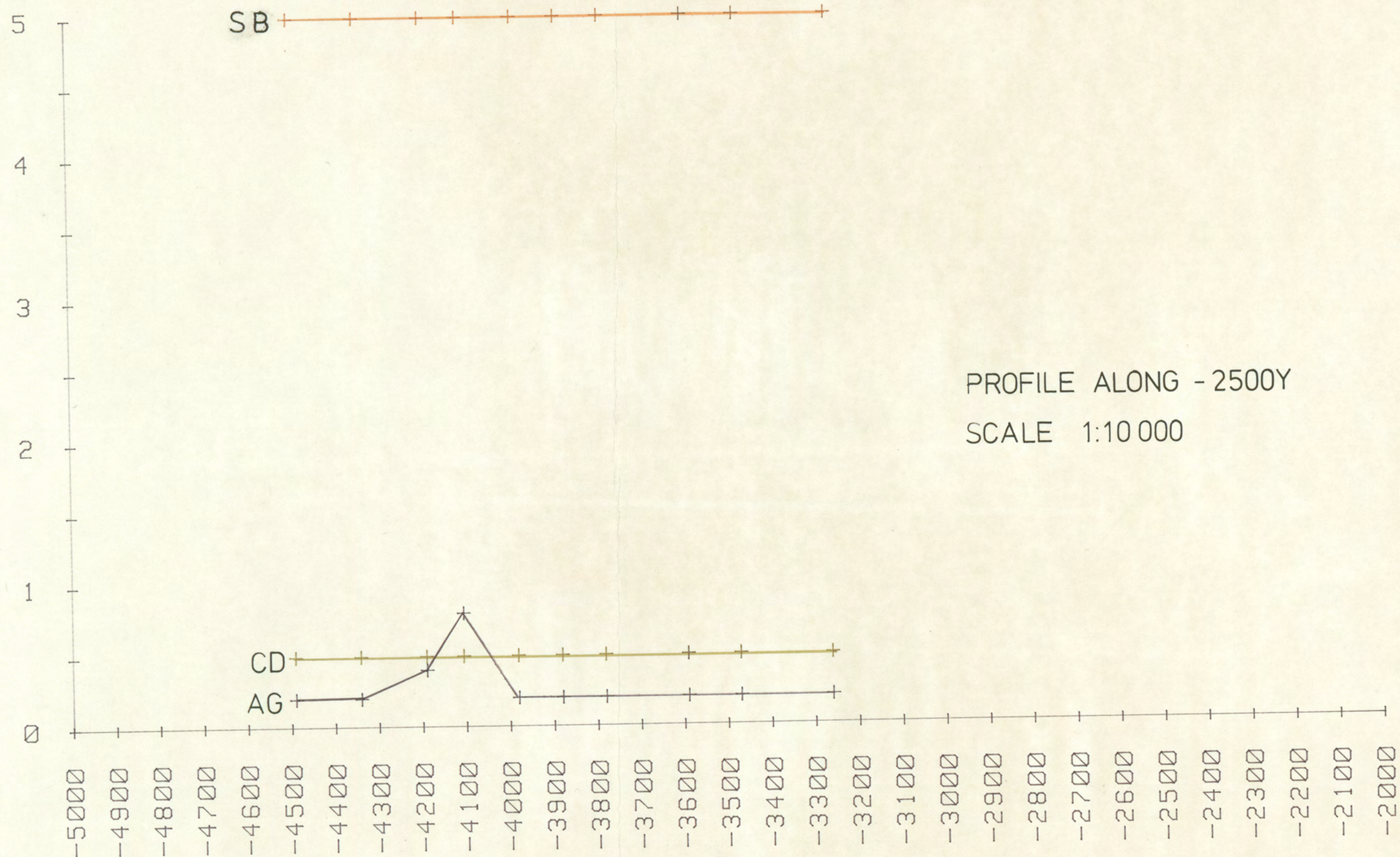
UPPER ZONE SURFACE SAMPLES



X CO-ORD

ELEMENT AG/CD/SB

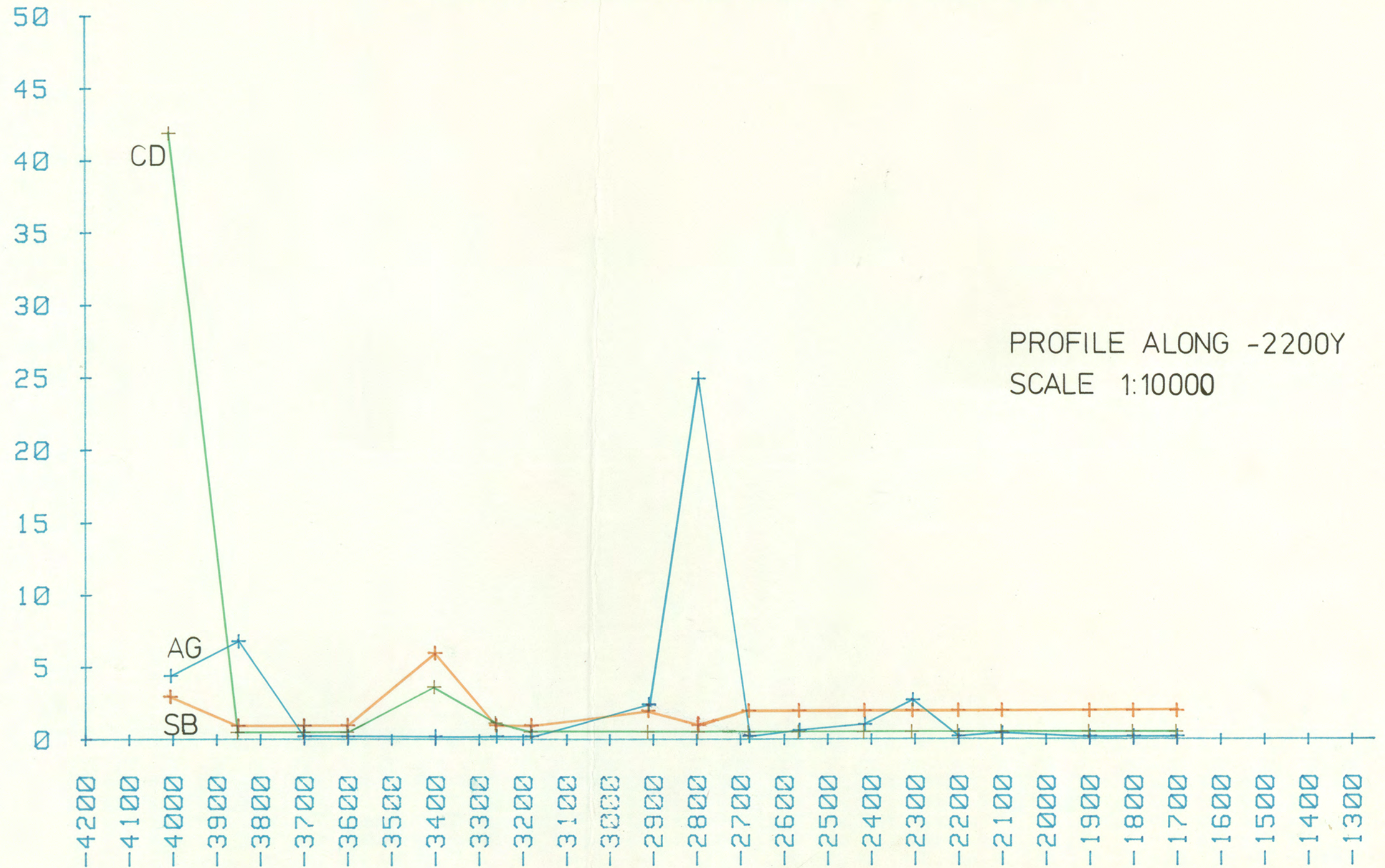
UPPER ZONE SURFACE SAMPLES



X CO-ORD

LOWER ZONE SURFACE SAMPLES

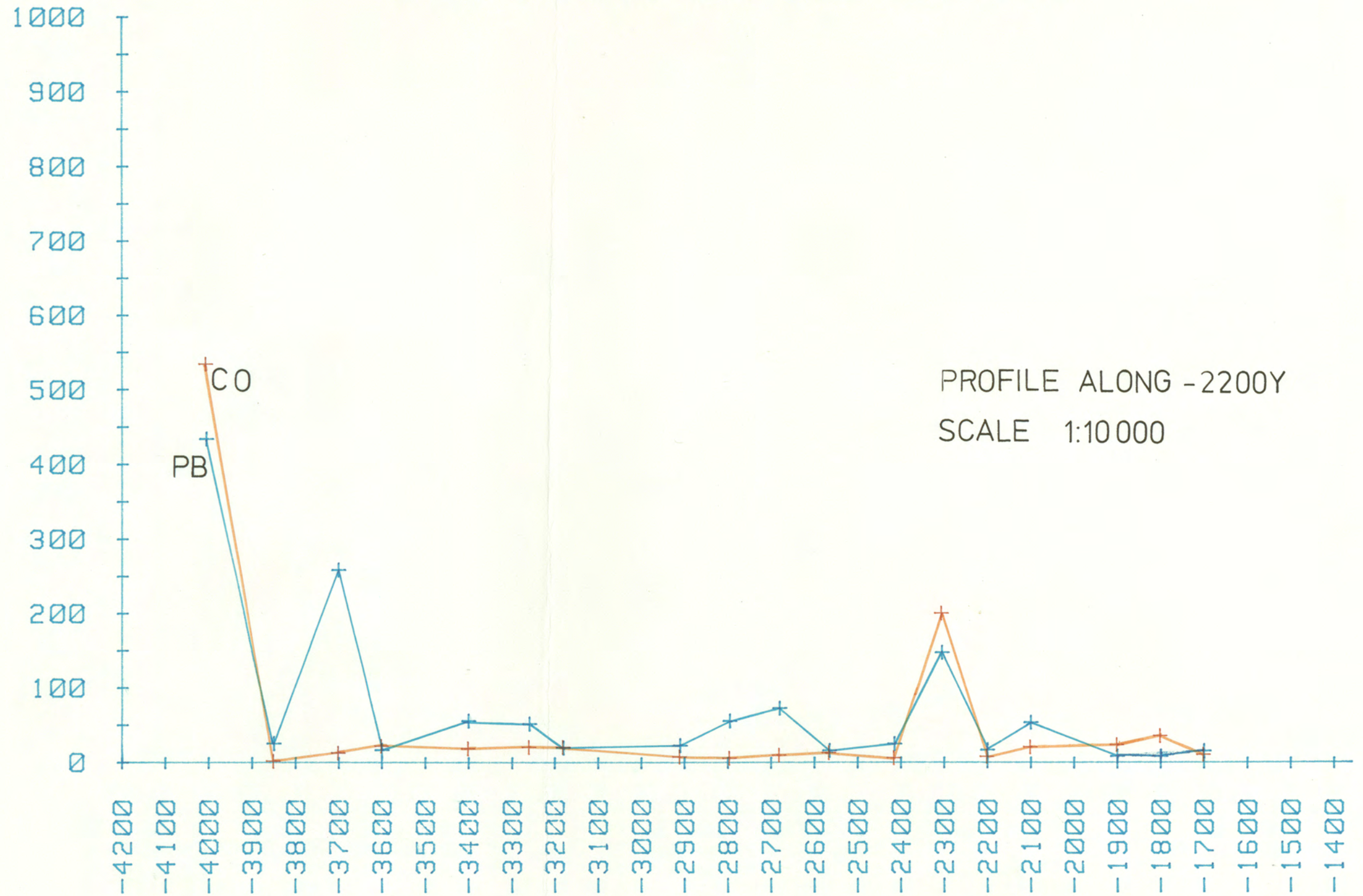
ELEMENT AG/CD/SB



X CO-ORD

LOWER ZONE SURFACE SAMPLES

ELEMENT PB/CO



X CO-ORD

LOWER ZONE SURFACE SAMPLES

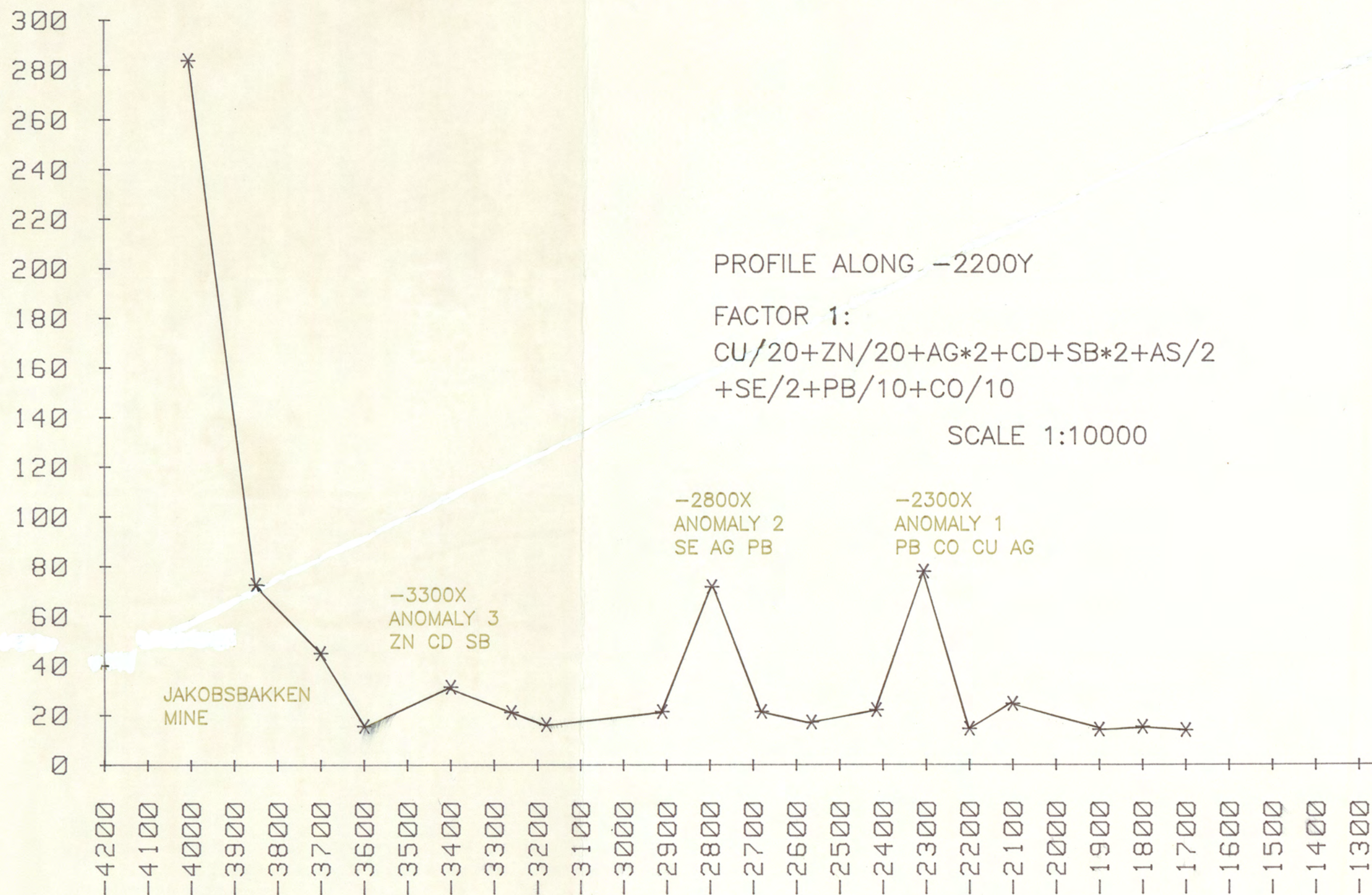
ELEMENT NI/AS/SE



X CO-ORD

LOWER ZONE SURFACE SAMPLES

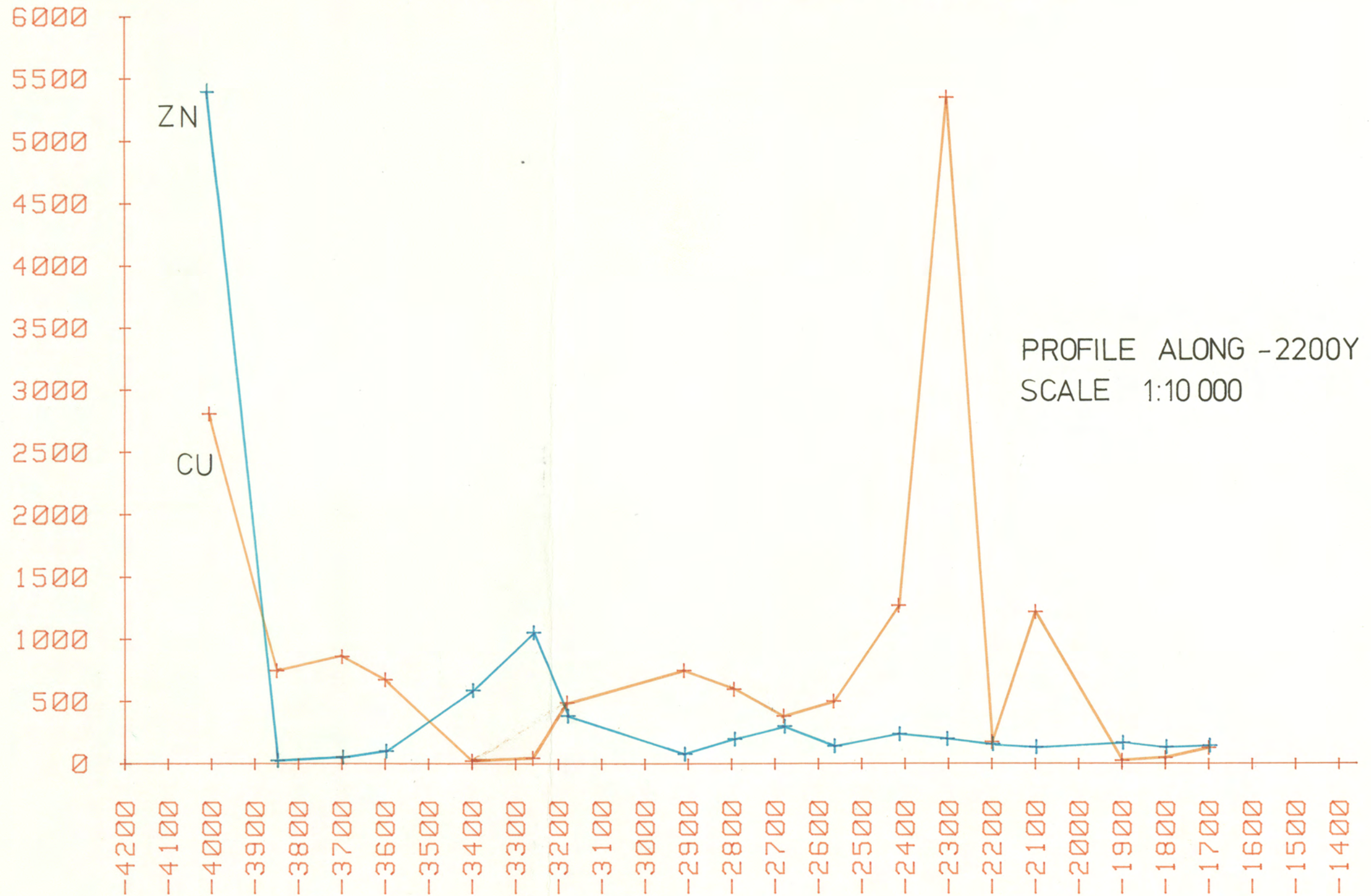
FACTOR 1



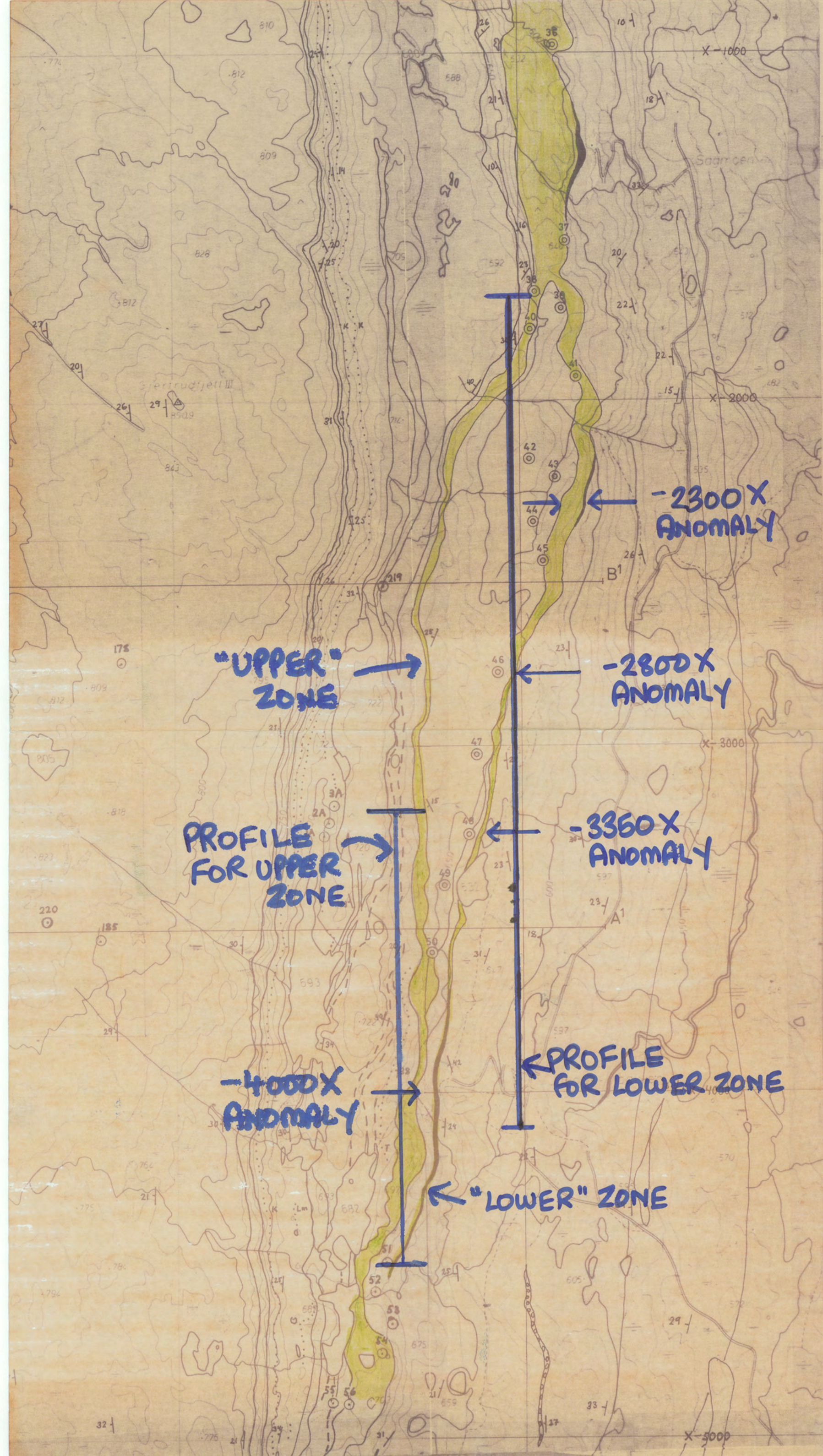
X CO-ORD

LOWER ZONE SURFACE SAMPLES

ELEMENT CU/ZN



X CO-ORD



Surface sampling II Gjertrudfjellet

A sequence of samples were collected in the area to the North West of Sagmoen in August 1984. Two different lithologies were collected whenever possible: Chlorite Schists and Keratophyres. The latter occurs as a narrow band towards the top of the ore zone schists. The samples were collected along the profile S-T (see fig i, a 1:10 000 map of the area.) Each sample was analysed for a variety of major and trace elements. Plots are presented here on the same scale of 1: 10 000, showing the variation in element abundance along this profile S-T (a distance of about 2000 m.)

Chlorite Schists

Two principal anomalies are identified in the chlorite schists (figs. ii and iii):

Anomaly A (at about -900X) is identified by the enhanced abundance of Cu-Zn-Co-(Ag)-(Mo) and represents interference from the Sagmo deposit closeby.

Anomaly B (at about -300X) is identified by enhanced abundance of Cu-Zn-Co-Ag-(Pb). This broad anomaly possibly represents an unknown orebody.

The signals are fairly weak and can only clearly be seen on the plot of the multi-element factor:

$$\left(\frac{\text{Cu}+\text{Zn}}{100} + \text{Pb}.2 + \text{Co} + \text{Ag}.10 + \text{Fe}\%.4 \right) \quad (\text{fig. 4})$$

The problems associated with the sampling of the schists at this locality are many. Outcrop is no more than 25% of the surface and the schist sequence is so thick that it

becomes difficult to collect a truly representative sample at each point. However, the anomaly at -300X is interesting for the fact that it is indicated by five different elements.

The major elements do not show such clear trends. $\text{Na}_2\text{O}\%$ tends to increase with distance away from the Sagmo deposit, as does Sr. In both cases, there is a drop of abundances in the area around the anomaly at -300X. $\text{K}_2\text{O}\%$ does not show an easily interpretable trend.

The conclusion to be drawn is that the anomaly at -300X is worthy of further investigation and especially, comparison with geophysical maps of the area.

Keratophyres

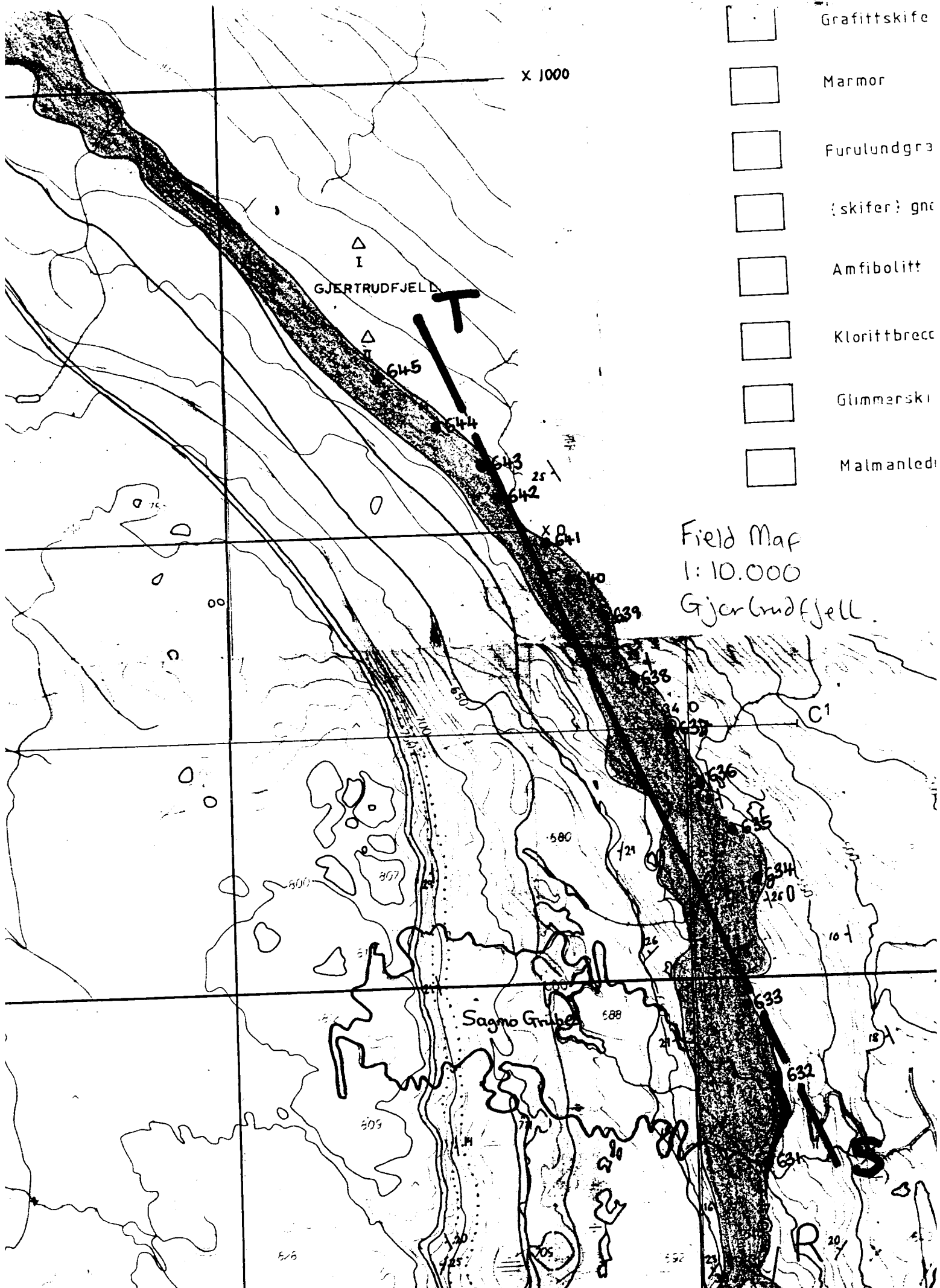
Good halo patterns are recognised in the keratophyre bands (fig v). The trace elements Cu, Zn, Pb, Co and Ag do not show any recognisable trend, but the major elements and alkali traces produce some interesting results:

$\text{K}_2\text{O}\%$ and Ba decrease over a distance of 1500 m. from the Sagmo deposit, whilst $\text{Na}_2\text{O}\%$ and Sr show a corresponding increase. The curves for all four elements are all smooth too, and illustrate haloes which are far larger than any previously described.

The anomaly at -300X, indicated by the chlorite schists, does NOT show up in the keratophyres (suggesting possibly that the mineralisation is not of significance???) That aside, the presence of these haloes in the keratophyre band is extremely interesting and worthy of further work. A halo of 1500 m. should not be ignored and it might be worth looking out

for laterally extensive keratophyre horizons in other localities. Generally, whilst such horizons are often seen underground and in core samples, they can rarely be traced over such large distances as at Gjertrudfjellet.

Numerous samples have been made into thin sections from this section to investigate the mineralogical manifestation of the chemical changes observed along the profile.



- ☐ Grafittskife
- ☐ Marmor
- ☐ Furulundgrø
- ☐ (skifer) gne
- ☐ Amphibolitt
- ☐ Klorittbrecc
- ☐ Glimmerski
- ☐ Malmanled

Field Map
1:10.000
Gjertrudfjell.

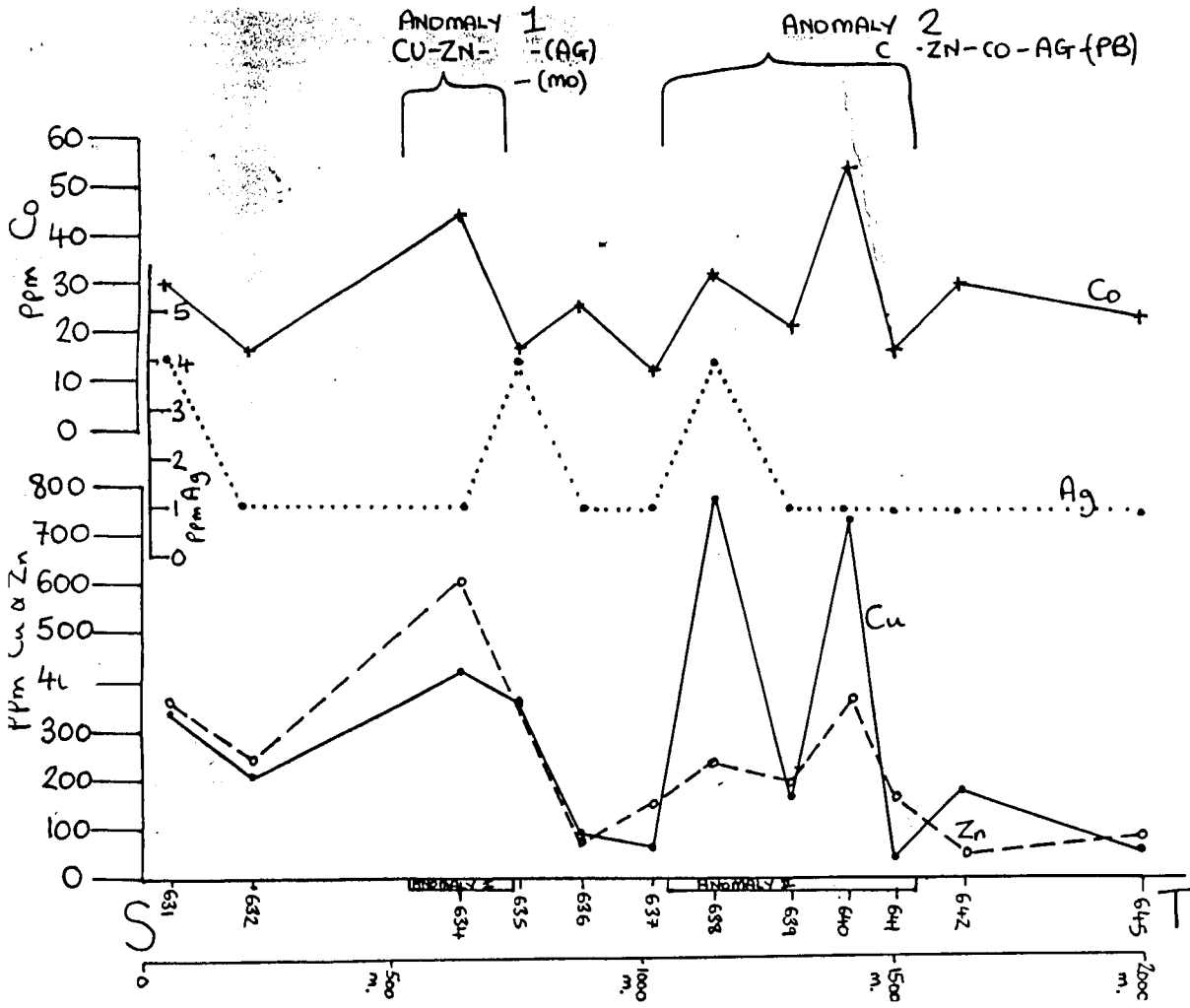


fig 2
PROFILE S-T
FOR CHLORITE
SCHISTS
(Cu, Zn, Ag, Co)

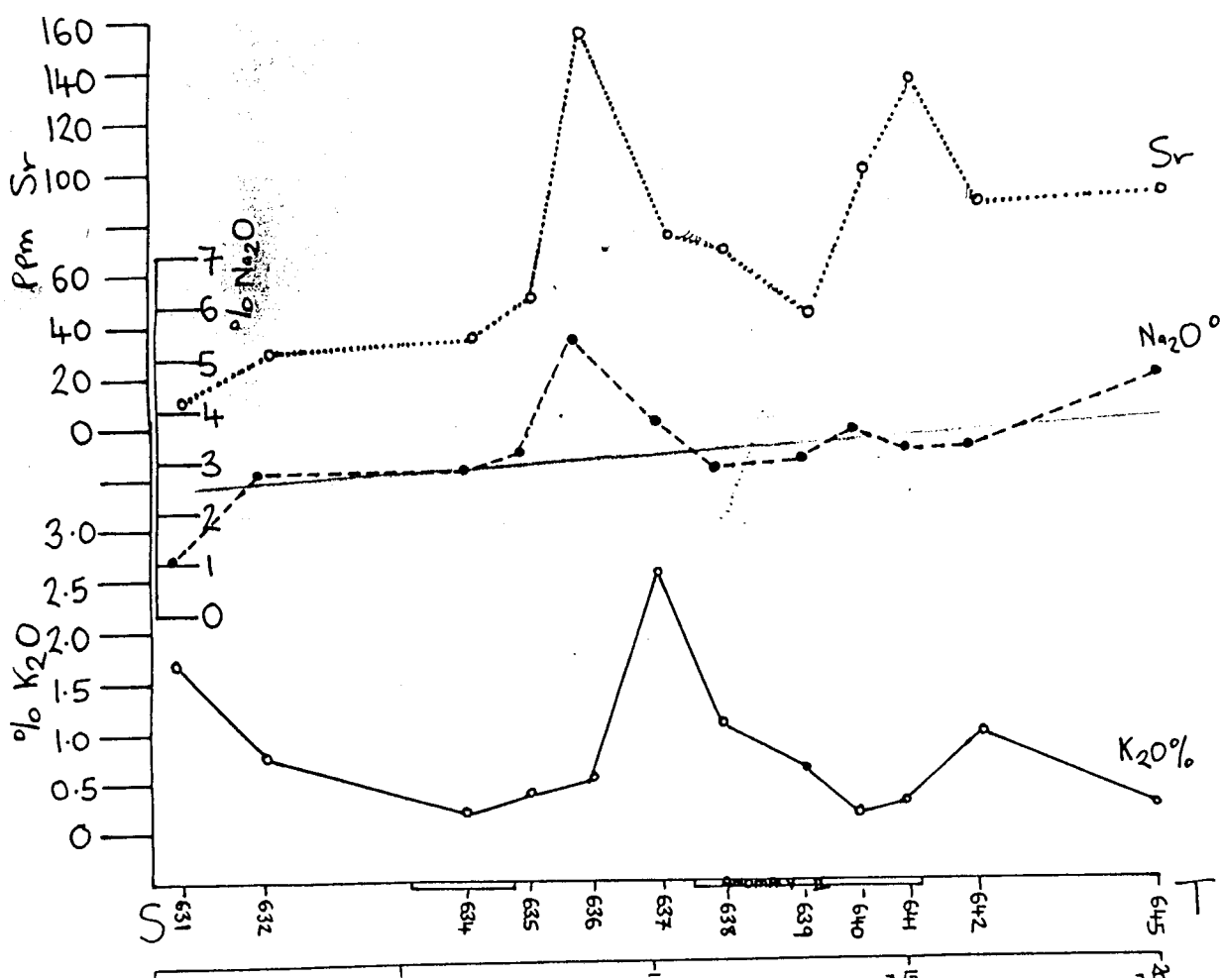


fig. 3
PROFILE S-T
FOR CHLORITE
SCHISTS
(K, Na, Sr.)

Fig 4 PROFILE S-T
FOR CHLORITE SCHISTS

$$\left[\frac{CU+ZN}{100} + PB \times 2 + CO + AG \times 10 + FE\% \times 4 \right]$$

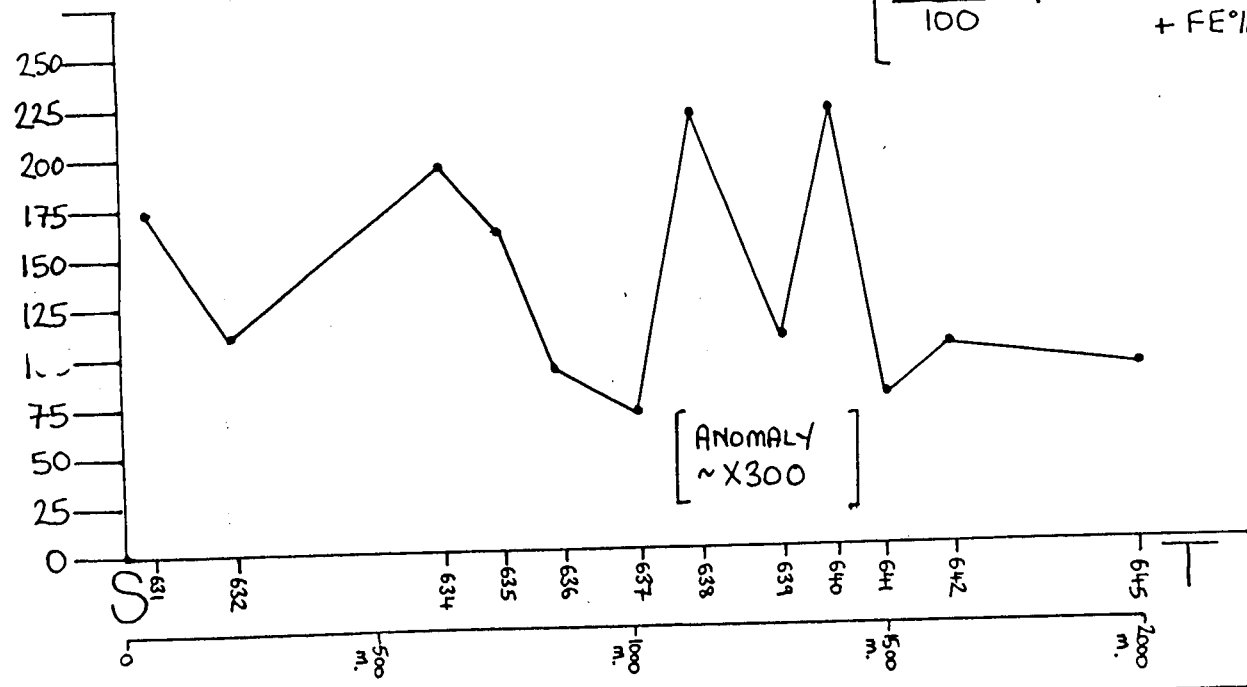


Fig. 5
PROFILE S-T FOR
KERATOPHYRES
(Sr, Ba, Na, K)

