



Bergvesenet

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Rapportarkivet

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Tittel Detailed geological outcropmapping around the Stülberget ore horizon.				
Forfatter ROBERTS G.		Dato 1974	Bedrift Sulitjelma Gruber A/S	
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Råstofftype	Emneord			
Sammendrag Omradet som er kartlagt ligger på sorsida av Staalberget. Stratigrafisk tilhører feltet Furulund-skifrene og er delt inn i amfibolitt, glimmerskifre og granat-kloritt skifre. I glimmerskifrene finnes en mineralisert sone: disseminert sulfidmineralisering med hovedsaklig magnetkis - spor av pyritt og kopperkis. Sonen er opp til 1 m mektig, men har ikke økonomiske kvaliteter.				

A/S SULITJELMA GRUBER
PROSPEKTERING 1974
PROSJECT 7.402/B
FELTRAPPORT

TSH/CG/OJ
21.8.74

DETAILED GEOLOGICAL OUTCROP MAPPING AROUND THE STAALHAUGEN
ORE HORIZON (EE 212)

CONTENT:

1. Introduction
2. Previous work
3. Present work
4. Geology
5. Staalhaugen ore horizon
6. Other comments

ENCLOSURE:

1. Elektromagnetisk undersøkelse
2. " "
3. Situation of claims and posts on new map
4. Dips and strikes
5. Geological outcrop map, profile orientation
6. Geological profiles

ABSTRACT

Under a garnet-chlorite schist a sheetformed massive and impregnation ore is situated in a micaschist. The outcropping length is about 500 meters having a variable thickness of massive ore up to 1 m and up to 3 meters for the impregnation type. Sulphide minerals are pyrrhotite, pyrite, rarely chalcopyrite.

1. INTRODUCTION

- 1.1 This report describes an area situated about 16 km west of Furulund, Sulitjelma, on the southern slopes of Staalhaugen. The area covers approximately 0,3 sq.km and extends from 700 to 950 m in height.

The area lies on map sheet EE 212 between grid northings 1015500 to 1016600 and eastings 52000 to 52400.

The area is situated on the western limb of the Baldoaivve syncline. Therefore the structures are regular and have a N-S approximate direction. It lies in the Furulund schist unit.

- 1.2 Due to the altitude and to the thin soil cover, the vegetation in the whole region is very poor. There are no trees or bushes, only small flowers and grass.

2. PREVIOUS WORK

- 2.1 Along the ore horizon is evidence of early workings with two short tunnels (about 15 m long) and several shallow pits. Iron claims with Roman numerals from XV to XIX engraved on the side were staked on the first of March 1898 indicating the richer spots of the ore horizon.

- 2.2 In 1968 geophysical air and ground surveys were done. Wooden posts engraved on two sides with northings and eastings were placed according to two grid systems.

One of them, on which our work is based, runs NS and EW and is represented by three posts (11000 N, 00, 10500 N, 00, 10000 N, 00) placed 500 m apart.

A large electromagnetic anomaly was found by the ground survey, which corresponds with the "ore horizon" found at the surface.

(See fig. 1 and 2)

The hatched area represents the anomaly and the numbers in parenthesis the depth to the surface. Drilling is recommended in the D zone.

The limits to the North and to the South, given by the geophysical interpretation correspond quite well with the limits observed on the surface. The depth also seems to match well with the depth calculated from the dips observed on the surface.

- 2.3 Along with this survey, two Germans, Wunsch and Lebinger have mapped the ore horizon at the scale 1 : 5 000 and measured dips and strikes in the neighbourhood of the ore horizon.

3. THE PRESENT WORK

- 3.1 It becomes obvious that a detailed outcrop map at the scale 1 : 10 000 was needed to locate accurately this interesting horizon and the associated rocks.

This was done between the 10th and 13th of July 1974 by C. Gallay (CH), G. Roberts (GB) and M. Taylor (GB).

A geochemical analysis with soil sampling is also planned during this summer 1974.

- 3.2 Location of the early iron claims and geophysical wooden posts was done by airphotographs, ground measurements and triangulation with a piece of string 13 m long and a compass.

(See fig. 3)

- 3.3 The geology was mapped along II profiles in an E-W direction, starting at the geophysical N-S line, 00. Profiles were placed at intervals of 100 m from the post 11000 N, 00, to the post 10000 N, 00. The N-S line measured during this work disagrees by about 4° (on a 400° compass) with the geophysical N-S line.

- 3.4 The mapping was done using the Geomap system, but the coordinates were written according to the N-S geophysical grid system, and not from the topographical map. In the N-coordinates the first number was abbreviated (being the same for all the stations). For example the N-coordinate of the station 10100 N becomes on the geomap form 0100.

The W-coordinates represent the distance in meters from the station to the N-S line, 00. For example 22 means 22 m west of the NS line, 00.

If stations are situated on the east side of the 00 line, a minus sign lies in front of the numbers. For example -35 means that the station is situated 35 m east of the 00 line.

4. GEOLOGY

- 4.1 The rocks are always very close to the surface often forming continuous outcrops, parallel to the slope. Small cliffs 2 to 3 m high are very frequent. The easterly dip produces west facing scarps with a great number of N-S small valleys where small streams run.

The strikes were measured with a 400 degrees compass but the dips were measured with a 180 degrees scale. The strikes are all situated around 015°. The dips lie mostly between 18° and 35°. (See fig. 4).

- 4.2 The rocks found in the area were classified in three categories as follow:

Amphibolite
Micaschist
Garnet-chlorite schist

The ore horizon was distinguished from the micaschist on the map and in the descriptions.

The Amphibolite, composed mainly of amphibole and white feldspar, seems to form a "layer" in the micaschists. It forms the bottom unit of the area mapped. It is a dark green coarsed grained amphibolite with large crystals (3 mm in average but sometimes reaching 10 mm). Stations 24 and 51 are characteristic of the coarsed grained amphibolite.

The Micaschists cover the largest part of the area. They are biotite schists, schistose to very schistose often containing red garnets, small and not abundant (less than 1 %). Some outcrops are very rich in quartz crystals and look more like metasandstone than schists (e.g. stations 21, 28, 56 B). The micaschists are often heterogenous, with layers rich in biotite, alternating with layers rich in carbonates showing careous weathering (e.g. stations 7, 44 B).

Quartz veins and boudins are very frequent.

Small folds older than the schistosity are visible in stations 3, 5 and 11.

The boundary between the amphibolite and the micaschists is arbitrary and consists in an alternation of amphibolite layers and micaschist layers containing megacrysts of amphibole (probably hornblende).

The Garnet-chlorite schist situated above the ore horizon forms a very recognizable unit that can be seen easily on airphotographs. It consists of a schist rich in chlorite and red garnets. The abundance of the garnets, usually around 30 %, can reach 50 % in some places. The garnets are mostly well shaped, sometimes rounded, and quite large. Their average size is 3 to 5 mm, but 1 cm crystals can be found. The oxidation of this unit is high (R4 - R5). These schists can be seen at stations 24 - 40A - 49A.

5. STAALHAUGEN ORE HORIZON

The ore horizon situated in the micaschists is of variable thickness up to 1 m thick, but sometimes so thin that it is not apparent. Its composition varies also very markedly, the poorer parts consist of impregnations of the micaschists in which the minerals can still be recognized, but the rock is very strongly weathered, the richer parts consist of pure sulfides, mainly colorless pyrrhotite oxidized to a dark blue colour (and pyrite). But mostly, the minerals cannot be recognized because of the strong weathering. Chalcopyrite is rarely visible, it does not seem to be very abundant in the exposures.

To the north the ore horizon can be followed as far as claim XV. In the first profile, no trace of mineralisation can be found. But the extension of the known horizon, if there is one, might be covered by persistant snow patches (between stations 6 and 7).

To the south, the ore horizon disappears around claims XVIII and XIX. In the profiles 10 and 11 no evidence of ore can be found.

Between these points, the ore horizon can be followed without difficulty although it varies from place to place. In profile 3, for example, evidence of a mineralised horizon can be found between stations 21 and 22, in a small stream.

6. OTHER COMMENTS

During this short mapping period some difficulties were encountered.

The most important one was the rain. Using the geomap system, we found out that it is impossible to work properly when it is raining and windy. The paper of the forms has a great ability of retaining the water making writing and reading a difficult task.

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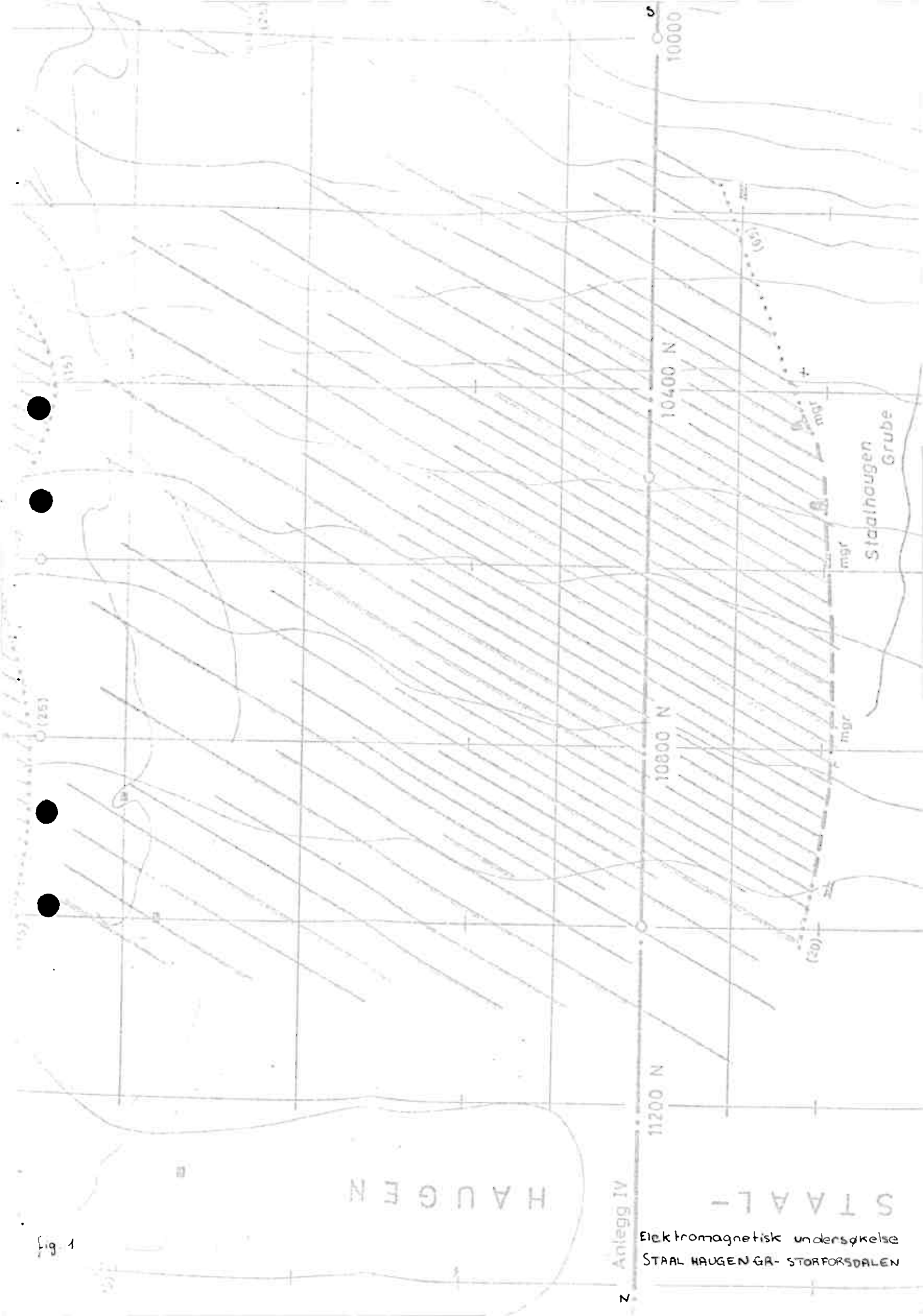
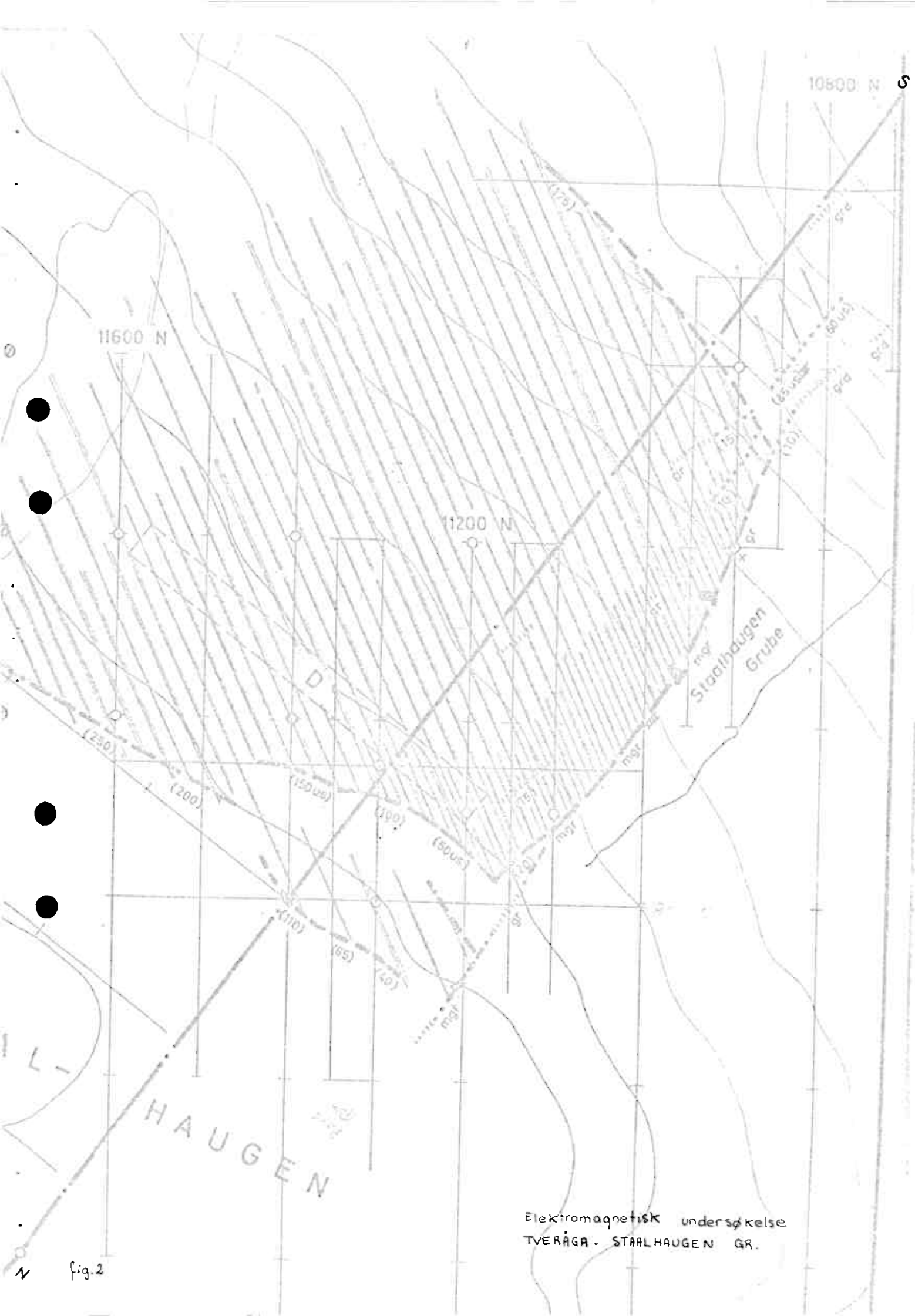


Fig. 1

Anlegg IV

Elektromagnetisk undersøkelse
STAAL HAUGEN GR- STORFORSDALEN



Situation of claims and posts

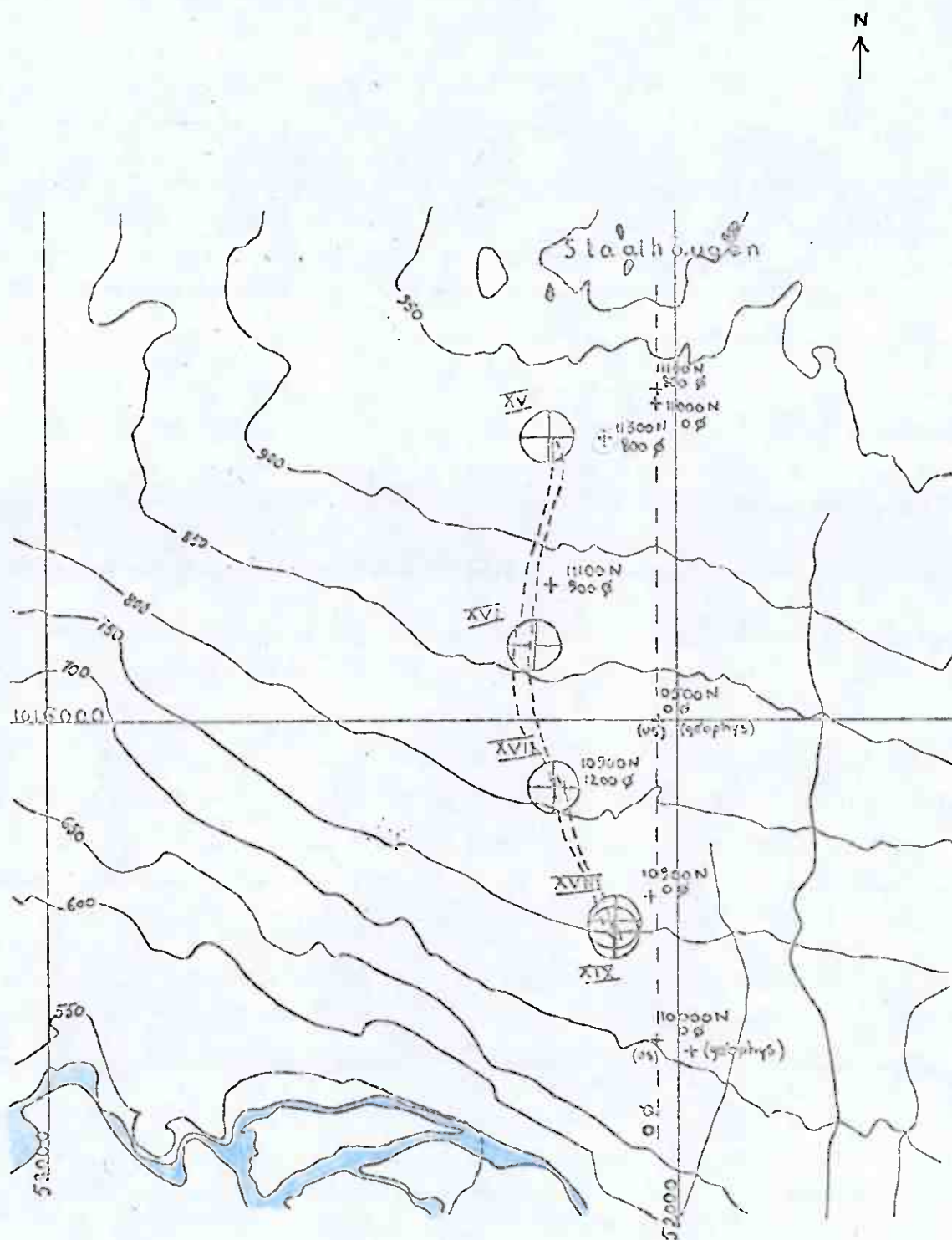


fig 3

Dips and strikes

N
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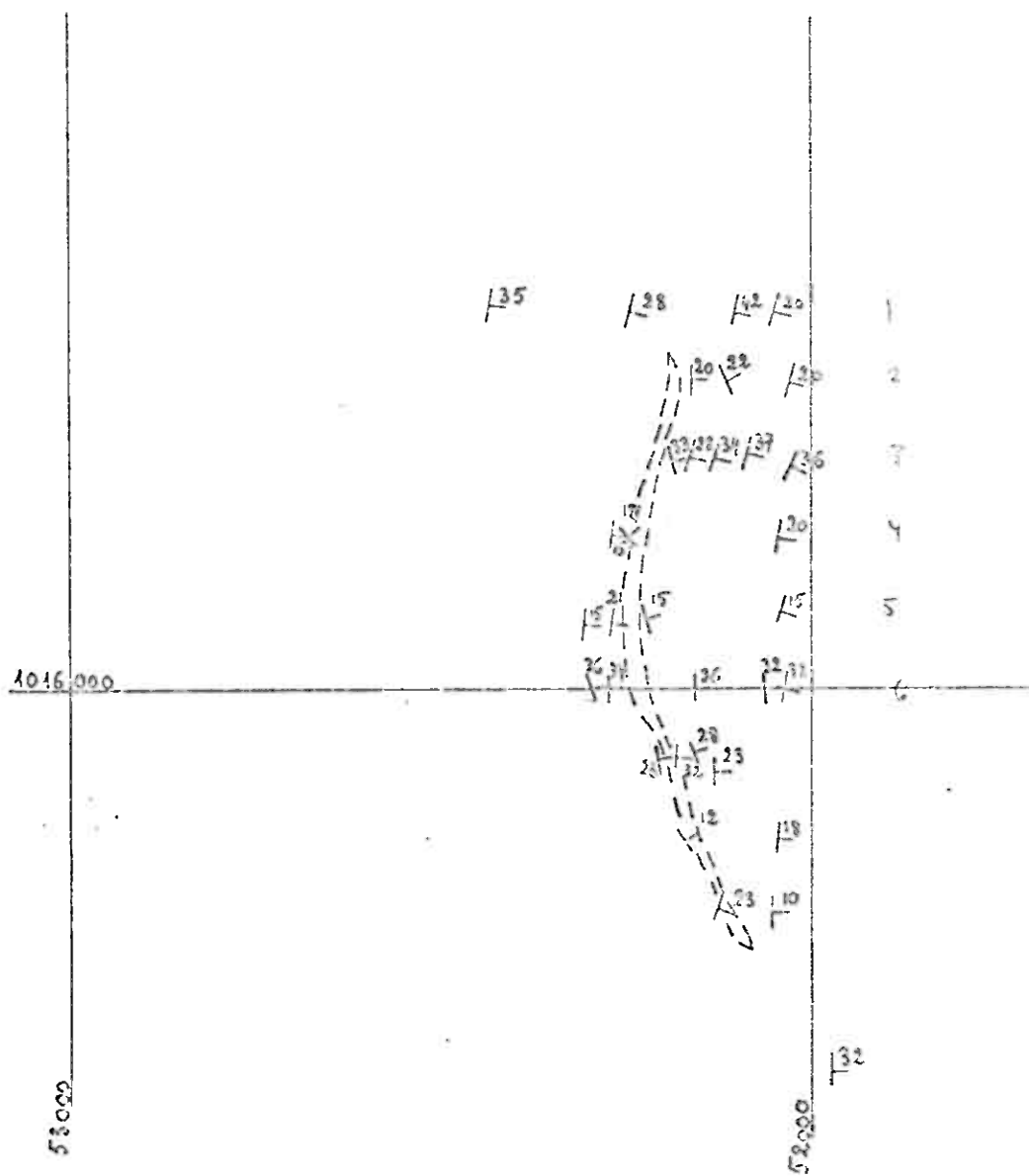


fig 4

SITUATION OF PROFILES

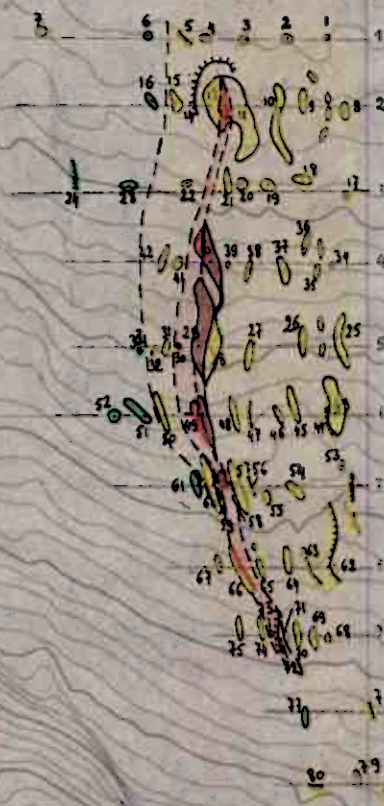
Fig.5.

Stadthaugen

N
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LEGEND

- Amphibolite
- Micaschist
- Garnet-chlorit schist
- Ore horizon
- Outcrops and stations
- Cliffs

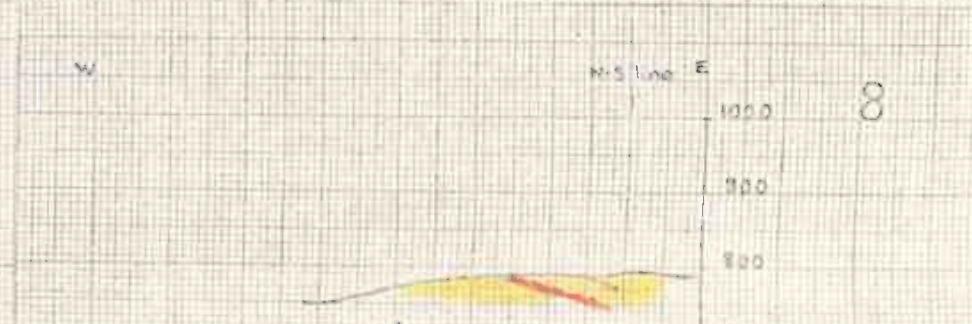
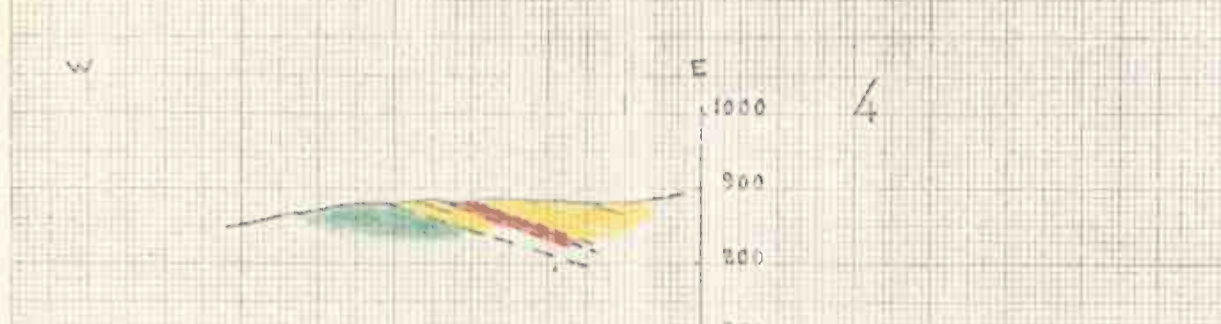
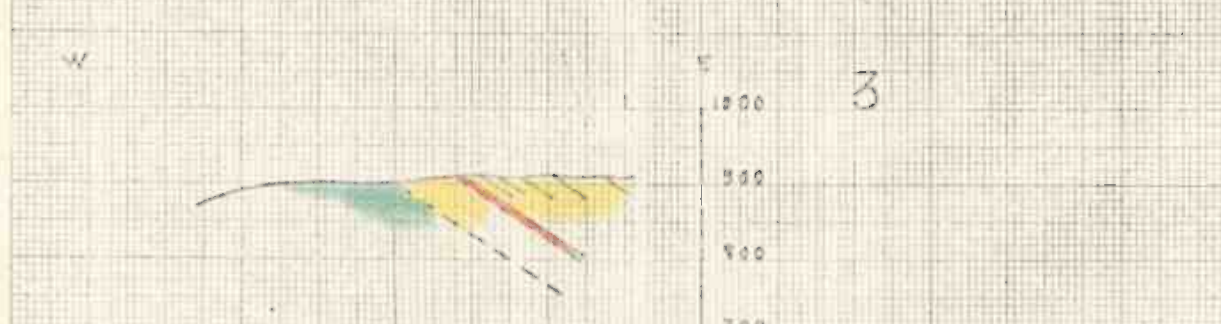
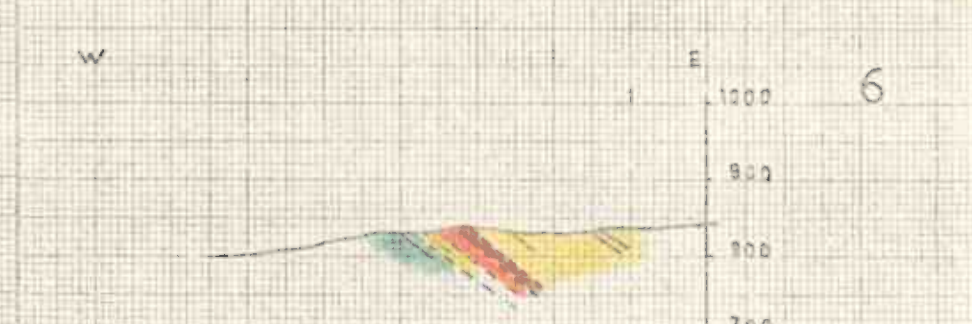
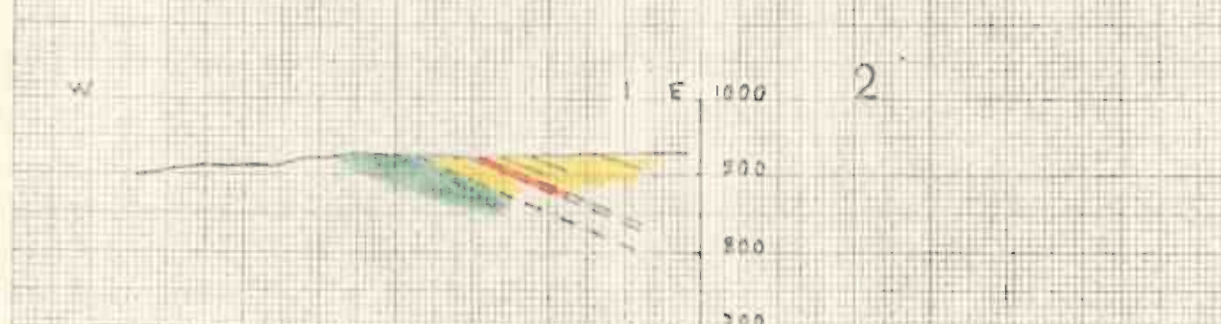
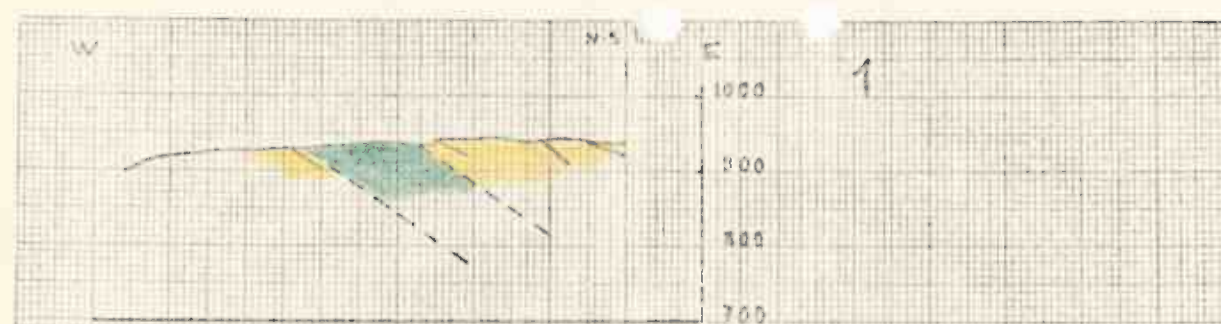


AVS SULITJELMA CRUISE

SULITJELMA M 1:10000 EKV. 10 M

Tegn: sommeren 1974 Gallay, Claude

Fig.5



A/S SULITJELMA GRUBER
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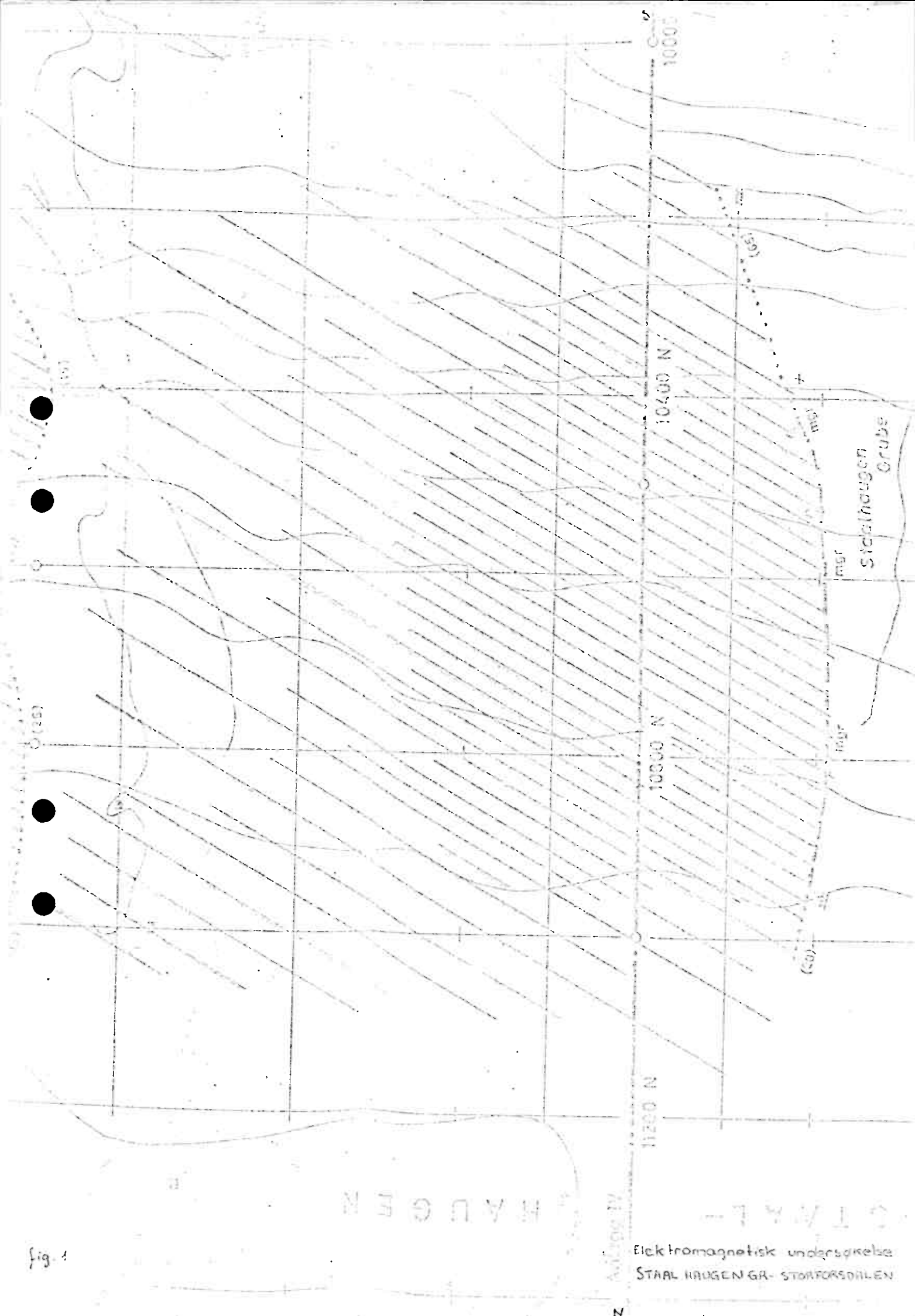
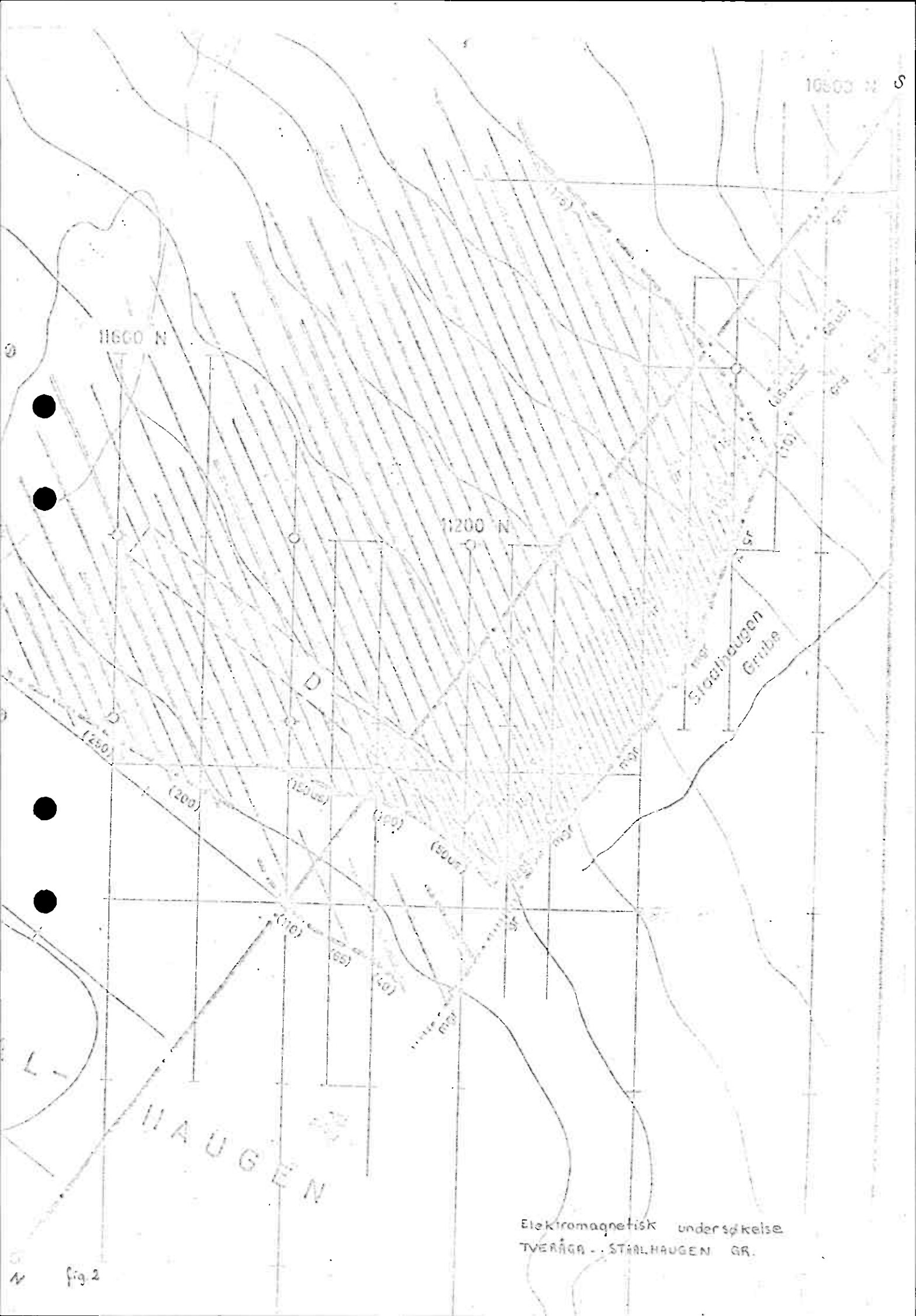


fig. 1

Elektromagnetisk undersøkelse
STAALE RAUGEN GR- STØRFORSØK



Elektromagnetisk undersøkelse
TVERÅGA - STALHAUGEN GR.

Situation of claims and posts

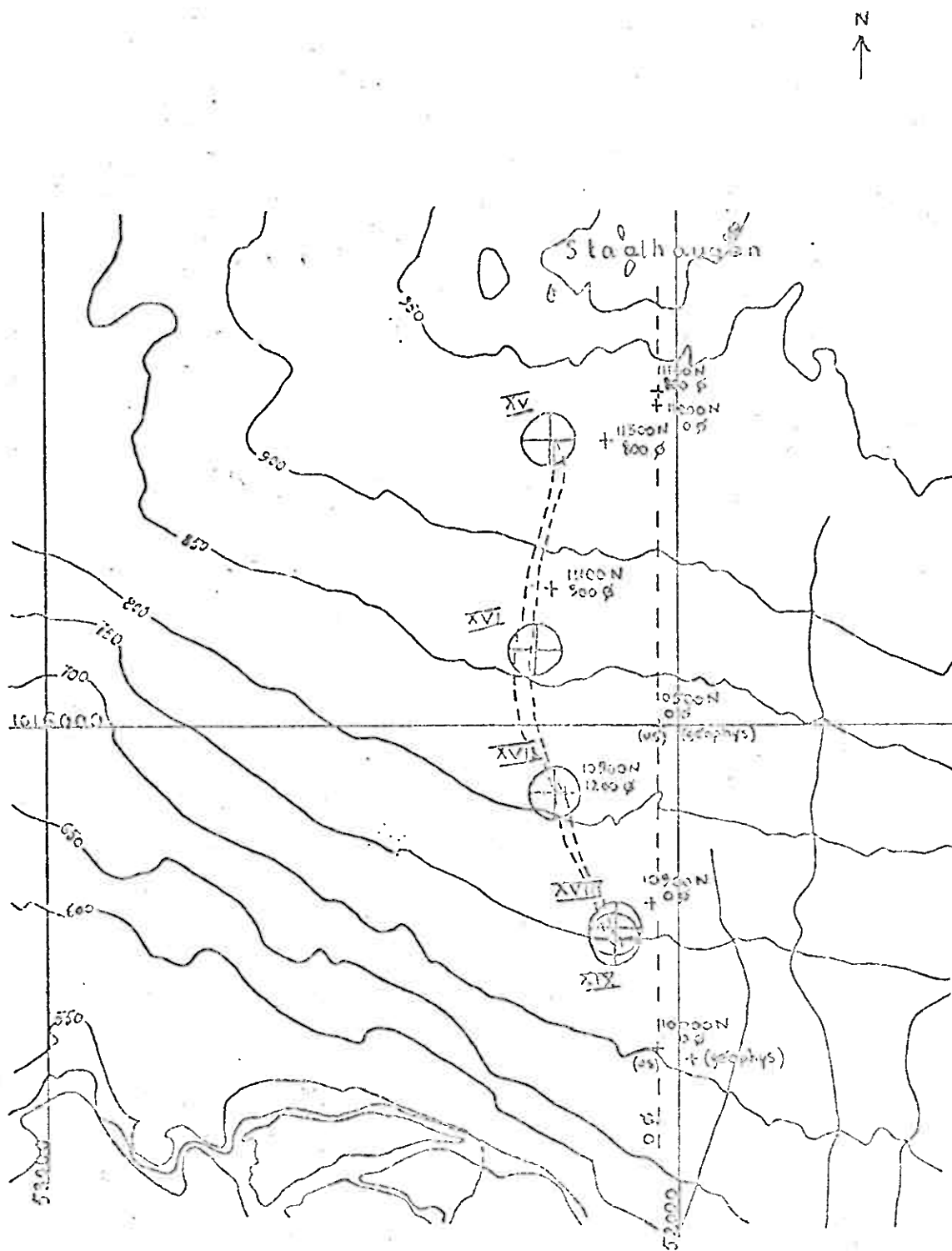


fig. 3

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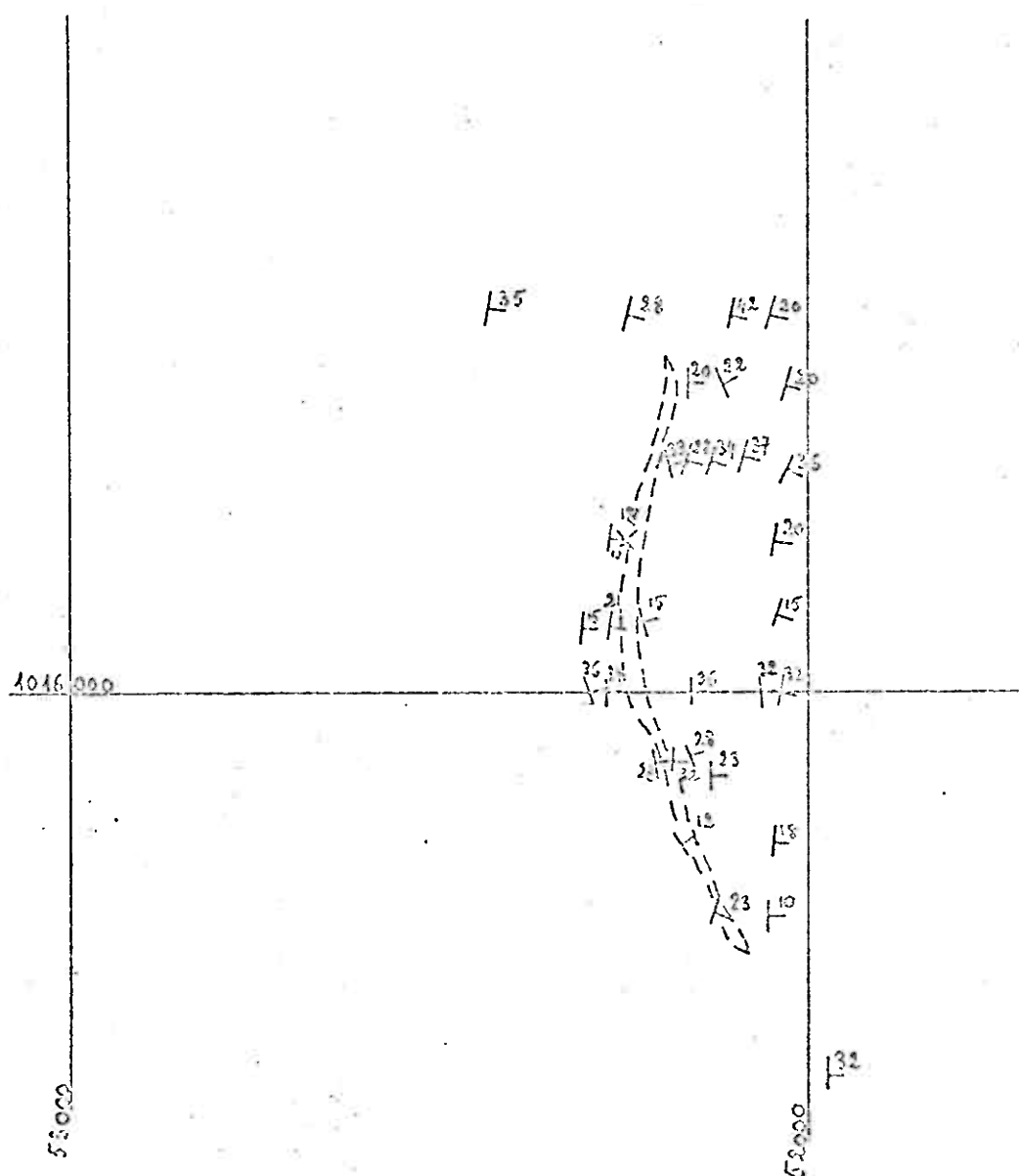


fig. 4