

FOR FALCONBRIDGE NIKKELVERK A/S
A/S SULFIDMALM
PROJECT 905-17m

Reconnaissance Geological Mapping
in the Masi area, 1975.

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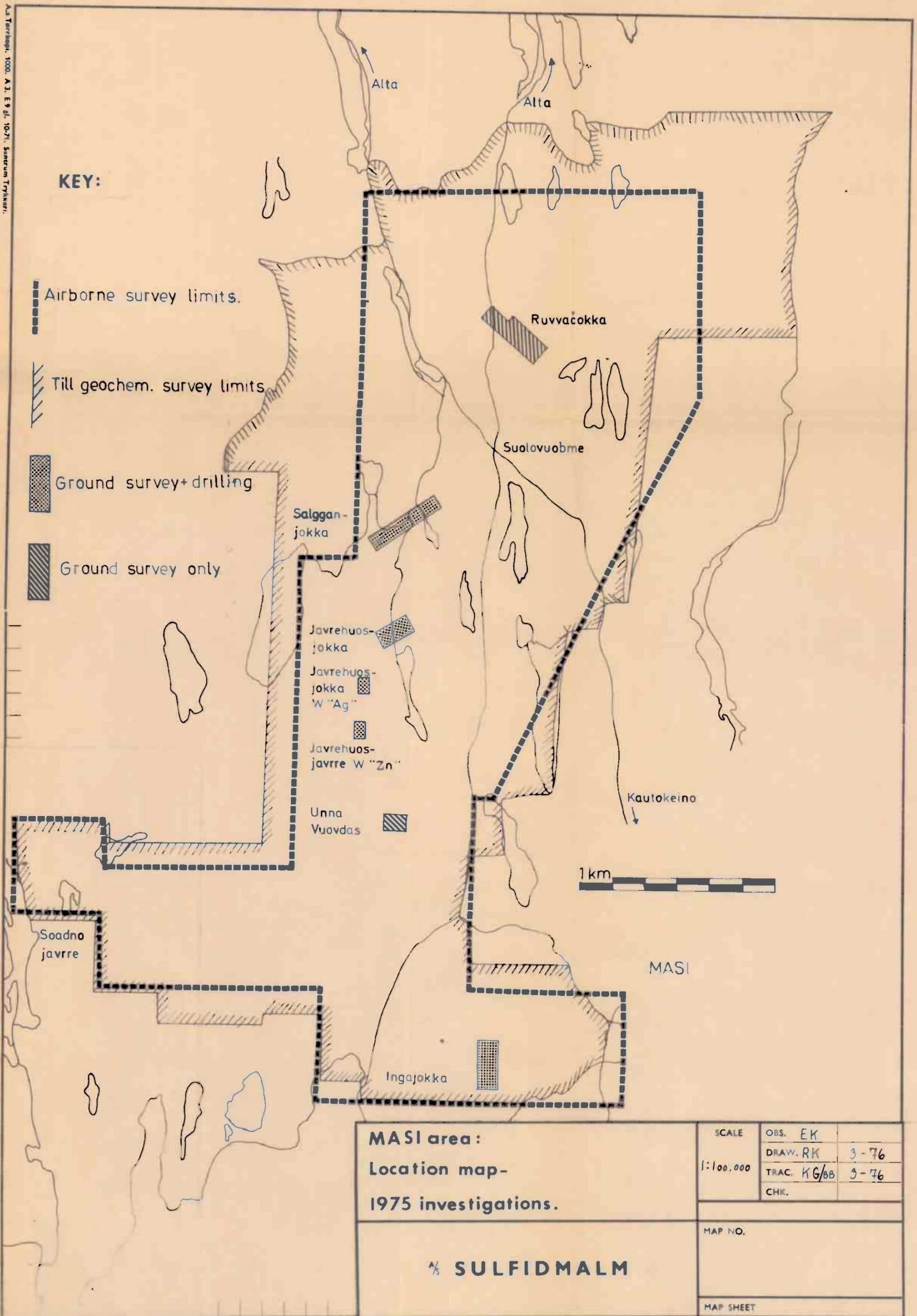
1. INTRODUCTION

The major part of the geological programme in the Masi area was carried out by P. Ericsson, with assistance from J. Akselsen and B. Rinstad during July - August 1975. T. Alapieti and K. Taipale were engaged in the programme for a two-week period in September 1975. The mapping programme had two main objectives:

- a) Detailed mapping at a scale of 1:1000, in geophysical follow-up grids (Salgganjokka E, Salggangrid, Ingajokka, Ruvvaçokka).
- b) Reconnaissance geological mapping, at a scale of 1:20000, directed in part to ground-checking HEM anomalies.

Reconnaissance mapping results were recorded directly on 1:20000 fotomosaics, the same base used for plotting the 1974 HEM and reconnaissance till sampling surveys. Results of the detailed mapping are presented in separate reports (364, 365, 367, 368/17/75) but are incorporated in the reconnaissance geological map.

Compilation and interpretation of the reconnaissance mapping data was carried out by E. Kreivi. Due to sparse outcrop in the area, extensive use was made of the airborne geophysical results in interpolating between widely-scattered field observations.



MASI area:
Location map-
1975 investigations.

SCALE	OBS. EK	
1:100.000	DRAW. RK	3-76
	TRAC. KG/BB	3-76
	CHK.	

MAP NO.	
MAP SHEET	

1/8 SULFIDMALM

2. RECONNAISSANCE MAPPING RESULTS

Reconnaissance geological maps of the area are presented in figs. 2 and 3. The main units recognised during the mapping programme were:

- 1) Younger Gabbro intrusions.
- 2) { Mica Schist
Acid Volcanics
Graphite Schist
Mafic Volcanics } { Green Schist
Amphibolite

I. Mica Schist:

This unit grades from quartzite through the dominant quartz-mica schist to plagioclase-mica schist. The quartzite variant may be equivalent to the Masi quartzite unit mapped by Padget (Precambrian Geology of West Finnmark, NGU).

The mica schists are frequently intruded by younger gabbros, resulting in up-arching of the generally flat-lying mica-schist and the formation of local dome-structures. Contacts between the two rock-types are invariably highly sheared.

The mica schist unit is typically barren, but zones of intense shearing particularly along contacts with gabbros may carry minor pyrite, chalcopyrite and occasionally sphalerite. An example of this can be seen in the south of the Ruvva^âcokka grid. Mineralized shear zones of this type may give rise to weak geochemical anomalies, but are of no economic interest.

II. Acid volcanics:

These are dominantly pyroclastic, albite-rich quartz keratophyres. They form relatively narrow horizons up to 30 m thick, with flat dips $<20^{\circ}$. Drilling at Salgganjokka and Javrehuosjokka has shown that at these localities the acid volcanic horizons are interlayered in the dominant mafic volcanic suite. Locally intense carbonate-metasomatism produces a distinctive "albite-carbonate rock" from the quartz-keratophyre. Individual quartz keratophyre horizons may carry up to 70% sulphides, as pyrite and/or pyrrhotite. Only rare chalcopyrite has been found in the acid volcanics to date. Certain of the quartz keratophyre horizons may also contain sulphide-rich graphitic horizons, as for example at Salgganjokka and Javrehuosjokka. Where sufficiently well-developed the graphite horizons are recognised as a separate map unit. The acid volcanic unit is almost identical with the "albite-fels" host rock at the Bidjovagge copper mine.

III. Mafic volcanics:

Mafic volcanics form a dominant part of the Masi succession. They are clearly a submarine unit with pillow lavas recognised, for example at Ruvvaçokka. The mafic volcanics are often spilitised, and show heavy carbonate alteration. At other times, however, they may be difficult to distinguish from altered gabbros. Acid volcanics and metasediment horizons form repeated intercalations in the mafic volcanics.

IV. Younger Gabbros:

This unit contains a range of rock-types varying in mineralogy from pyroxenites to diorites and in texture from coarse hornblendites to fine-grained amphibolites and chlorite-schists.

The various sub-units grade into one another, with the larger gabbro massifs having cores of fresh pyroxenite or gabbro, grading outwards to fine-grained amphibolite and finally to chlorite schist at the contacts. The latter types are difficult to distinguish from altered mafic volcanics in the field. The more mafic intrusives may contain up to several percent of pyrite and/or pyrrhotite, with rare chalcopyrite.

The known gabbros have a characteristic high magnetic signature on the aeromagnetic survey maps. This criterion was used to identify gabbro areas in compiling the reconnaissance geological maps.

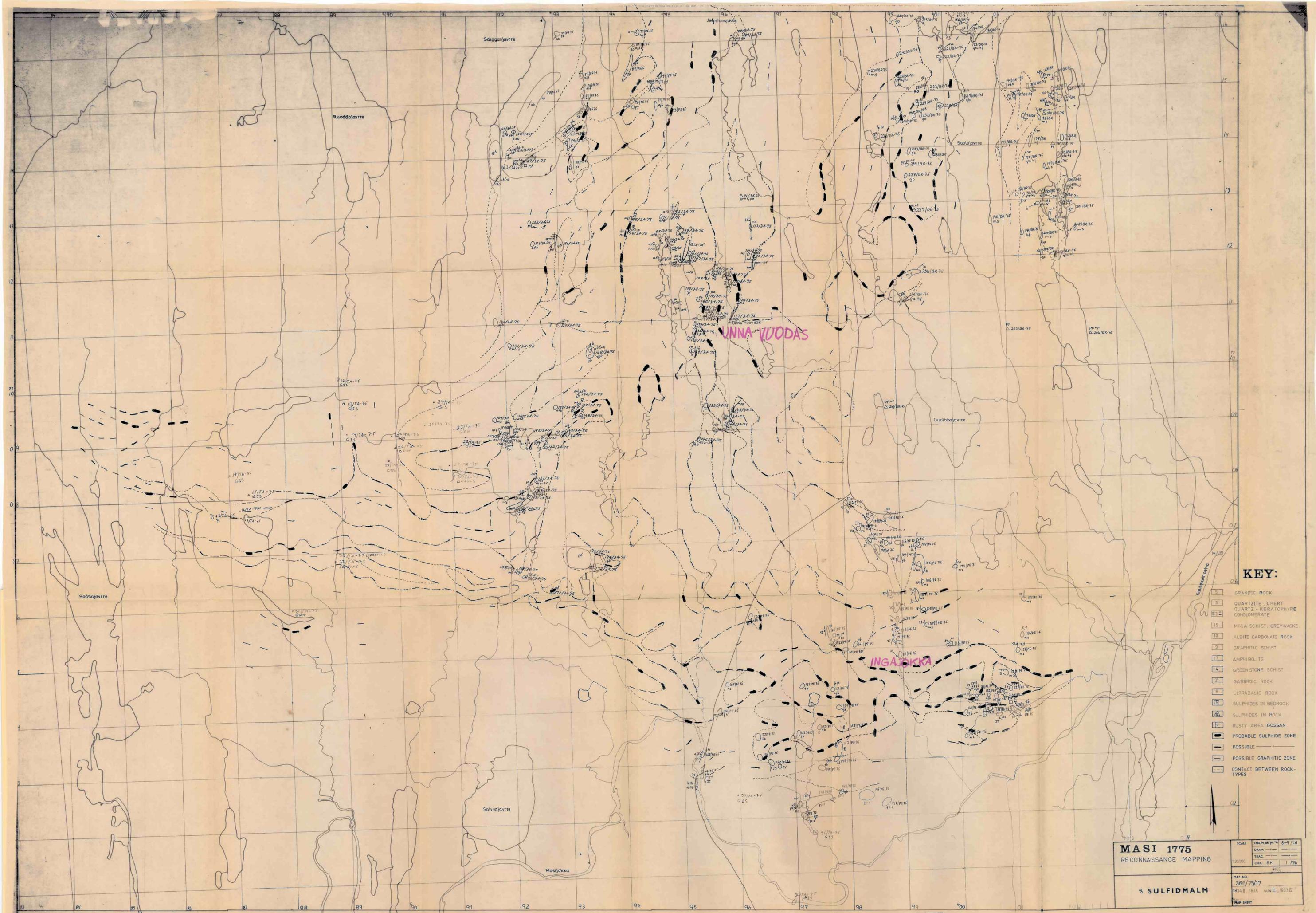
3. MINERALIZATION

The main mineralized localities found to date in the Masi area (Salgganjokka, Javrehuosjokka, Ingajokka, Ruvva[^]cokka) are described in separate reports. A number of new mineralized discoveries were made during the course of the regional mapping programme. Locations are shown on figs. 2 and 3, and brief descriptions are given in the attached table 1.

Table I.

Mineralized outcrops discovered during Regional Mapping, 1975.

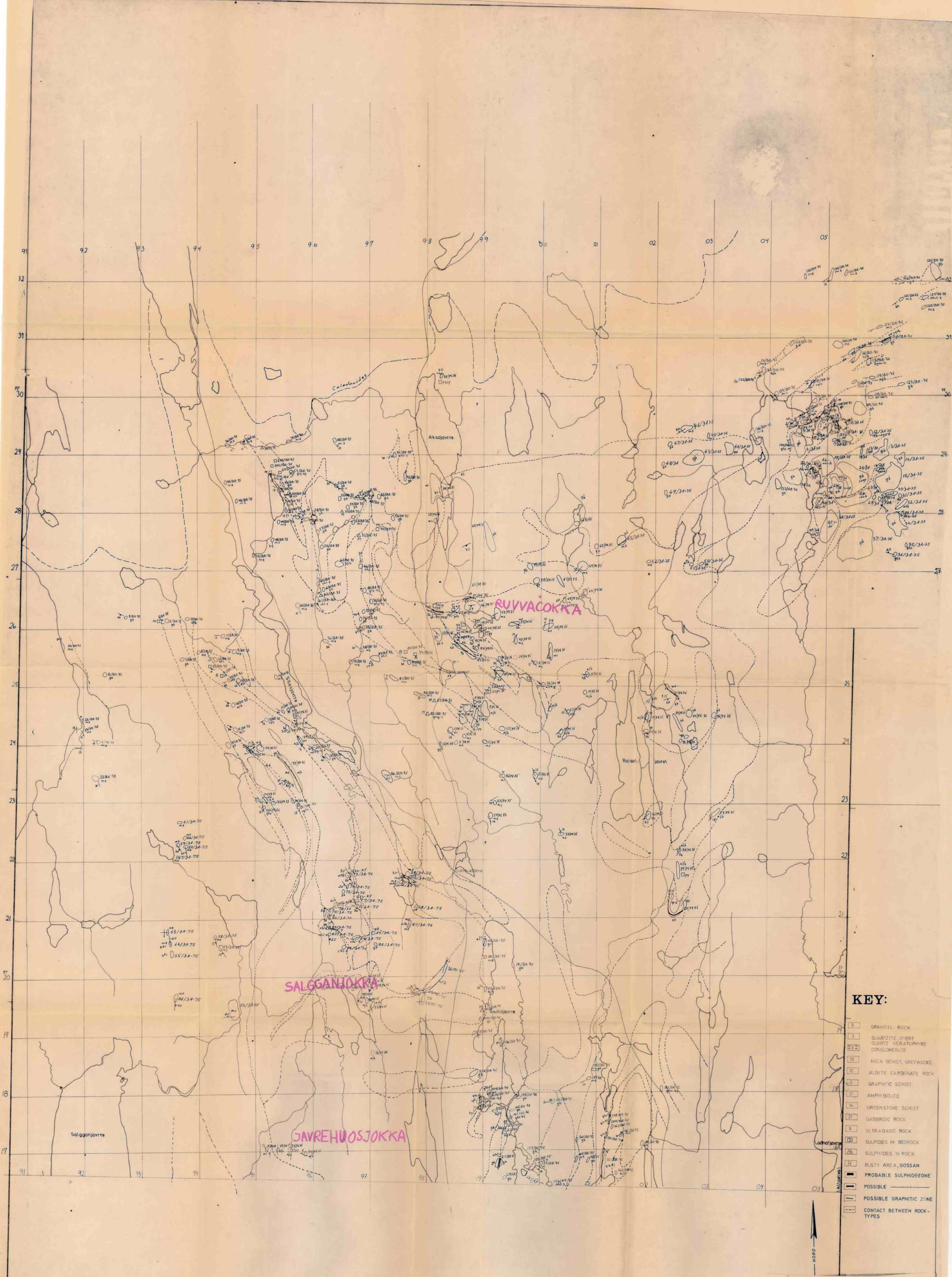
Locality/coords.	Ref. No.	Description
287/954	BR 59 BR 241-5	Massive pyrite and chalcopyrite in quartz-keratophyre and graphite schist.
255/977	BR 79&84	Extensive gossan area with massive pyrite in bedrock.
246/956	BR 10	Massive pyrite in graphite-breccia.
252/943	BR 21&34	Massive pyrite in graphite-breccia.
127/994	BR 239	Massive pyrite - pyrrhotite - chalcopyrite in graphite - quartz keratophyre horizon. Exposed thickness 2-3 m.
Havggajavrre 090/919	JA/156	Extensive gossan. One outcrop shows quartz-keratophyre with pyrite.
Havggajavrre Sodnajavre 089/890	26/TA	Pyrrhotite, pyrite, magnetite in greywacke.
092/905	25/TA	Greywacke with magnetite bands and occasionally with pyrrhotite, pyrite and rare chalcopyrite. The outcrop is just to the north of the airborne-EM anomaly.



KEY:

- 1 GRANITIC ROCK
- 2 QUARTZITE, CHERT
QUARTZ - KERATOPHYRE
CONGLOMERATE
- 3 MICA-SCHIST, GREY-WACKE
- 4 ALBITE CARBONATE ROCK
- 5 GRAPHITIC SCHIST
- 6 AMPHIBOLITE
- 7 GREENSTONE SCHIST
- 8 GABBROIC ROCK
- 9 ULTRABASIC ROCK
- 10 SULPHIDES IN BEDROCK
- 11 SULPHIDES IN ROCK
- 12 RUSTY AREA, GOSSAN
- 13 PROBABLE SULPHIDE ZONE
- 14 POSSIBLE
- 15 POSSIBLE GRAPHITIC ZONE
- 16 CONTACT BETWEEN ROCK-TYPES

MASI 1775	
RE CONNAISSANCE MAPPING	
SCALE	OBS. PE. M. TR. 8-9 / 76
1:20,000	TRAC. ---
CHK. E.H.	1 / 76
MAP NO. 365/75/17	
1834 I, 1834 II, 1834 III, 1834 IV	
% SULFIDMALM	
MAP SHEET	



KEY:

- 5 GRANITIC ROCK
- 3 QUARTZITE, CHERT
QUARTZ KERATOPHYRE
CONGLOMERATE
- 15 MICA SCHIST, GREYWACKE
- 10 ALBITE CARBONATE ROCK
- 8 GRAPHITIC SCHIST
- 17 AMPHIBOLITE
- 14 GREENSTONE SCHIST
- 21 GABBROIC ROCK
- 18 ULTRABASIC ROCK
- 19 SULFIDES IN BEDROCK
- 16 SULFIDES IN ROCK
- R RUSTY AREA, GOSSAN
- PROBABLE SULPHIDE ZONE
- POSSIBLE
- POSSIBLE GRAPHITIC ZONE
- CONTACT BETWEEN ROCK-TYPES

MASI 1775		SCALE	0:50000
RECONNAISSANCE MAPPING		DATE	7-8/75
		DRAWN	
		TRAC	
		CHK. EK	1/76
		MAP NO.	366/75/17
1/4 SULFIDMALM		MAP SHEET	R3 II 93-E