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Råstofftype Malm/metall	Emneord Mo Pb Zn Cu			
Sammendrag Summary of work in two areas of activities in the Rombak area during 1972. Lappviklemmen (Mo), Kobbvann (Mo), Sildvik - Aksla (Pb Zn Cu), Skamdalen Cu Zn), Rosokkatoppen Cu Zn Pb).				

FOR FALCONBRIDGE NIKKELVERK A/S

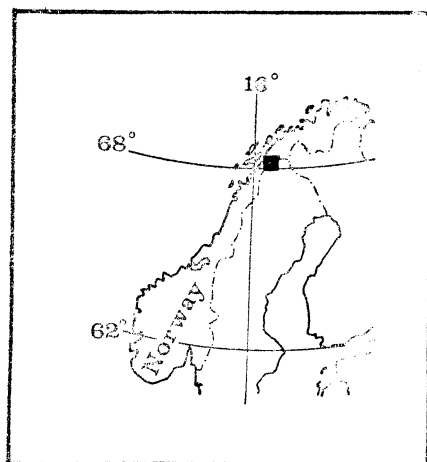
A/S SULFIDMALM

PROJECT 905-3

A SUMMARY ON 1972 INVESTIGATIONS
IN THE ROMBAK AREA, NORDLAND.

MARCH 1973

H. A. ROSENQVIST



INTRODUCTION.

A/S Sulfidmalm's investigations within the Rombak precambrian window E of Narvik began by a regional stream sediment survey in 1971. Several interesting follow up targets were reported (Ray Band 116-119/71/3), five of which were the object for further work in 1972.

Field work was carried out during 4 weeks in July-August under the leadership of Jan Jacobsen. The 5 selected targets and the approach were:

1. Lappviklemmen (Mo) Soil sampling/Prospecting
2. Kobbvann (Mo) Soil sampling
3. Sildvik-Aksla (Pb-Zn-Cu) Soil sampling
4. Skamdalen (Cu-Zn) Rec. soil sampling/Geol. mapping
5. Rosokkatoppen (Cu-Zn-Pb) Soil sampling/Geol. mapping.

The approximate locations of the targets are shown in fig. 1.

A separate report on the geological/prospecting work has been written by Tore Birkeland (208-72-3). This report presents the results of the soil surveys but is also intended as a general summary on the above listed targets.

1. LAPPVIKLEMMEN.

Background.

- Anomalous Mo-content in stream sediments up to 35 ppm.
- Highly anomalous Mo-content (up to 450 ppm) in soil along 4 reconnaissance profiles. (Map 03-71-2 in report 118). Soil is thought local, reflecting the Mo-level in bedrock (RBB).

Work 72.

(a) Geology:

2 days prospecting by T. Birkeland without encouragement MoS₂ not observed. Bedrock, a coarse grained grey granite, is commonly foliated (E-W/steep). A few minor inclusions of biotite schists as well as aplitic intrusions occur within the granite. Pegmatitic and quartz filled lenses (tension gashes?) were also reported. It could be noted that MoS₂ were observed within pegmatitic lenses in a nearby area(Lankvik) during the 1971 survey.

Ore minerals observed in the Lappviklemmen granite are small quantities but frequently occurring magnetite and pyrite grains.

(b) Soil geochemistry:

Soil sampling in a grid pattern was carried out in order to close off the anomaly revealed by RBB in 1971. Anomaly thresholds based on the frequency distribution are:

≥30 ppm Mo	High background	(80.0%)
≥40 " "	Poss. anomalous	88.9%
≥60 " "	Prob.	93.9%
≥90 " "	Anomalous	97.6%

Results are shown on map 1-226-72-3. The majority of anomalies lie E of the base line with a concentration of generally high values between lines 200S and 800N.

Comments.

The explanation for the geochemical anomalies is most likely to be found in the above outlined area and/or its eastern

up slope continuation. It could be noted that stream sediment values of the SE slope of this hill (960 m) are in the possibly anomalous range. A new prospecting attempt to find the Mo source should concentrate on late phases of the granitic rocks (pegmatite).

2. KOBVANN.

Background:

- Anomalous Mo-content in stream sediments, up to 30 ppm.
- 6 reconnaissance soil profiles revealed distinct Mo-anomalies, max 60 ppm (Map 03-71-3, report 118).

Work 72

Soil geochemistry:

Soil samples were collected in a grid with 100 m line spacing and sample interval. The results are plotted on map 2-226-72-3.

Anomaly thresholds have been set up on the basis of frequency distribution:

≥20 ppm	Mo	(89.5%)	possibly anomalous
≥30	"	"	(94.9%) probably "
≥35	"	"	(97.6%) anomalous

3 anomalies at 1000E, 200E and 1500W all of them approximately 600 m "north" of the base line plus some less extensive anomalies are shown on the map.

Comments

While the soil cover is very thin, soil geochemistry is thought to reflect the Mo-content of the bedrock (dominantly granite). Accordingly, if economic Mo-mineralization occurs in the Kobbvann area, it should be found closely associated with the soil anomalies. Careful prospecting of these anomalies is recommended. The target is of lower priority than Lapviklemmen, where soil anomalies are of a considerably higher magnitude.

3. SLIDVIK - AKSLA.

Background:

3 Pb-Zn showings known within a zone (from Kuberget to Sildvikskaret) of 3.5 km strike length. Sphalerite and galena occurs in narrow veins in sheared zones of a quartz-biotite schist. A picked sample assayed 14% Zn and 6.5% Pb.

The known Zn-Pb zone is characterized by a distinct stream sed. anomaly (Max 720 ppm Zn, 300 ppm Pb).

Stream sediment geochemistry indicated a continuation of the zone towards SSE, i.e. the strike direction. There is a slight decrease in Pb/Zn values whereas Cu-values become anomalous, max 116 ppm Cu. (RBB report 117-71-3).

Work 72

Geology:

Birkeland made a one day visit to the southernmost showing and the immediate (1 km) continuation towards SSE. He reported 2 small pits (Zn-Pb) and confirmed that the mineralization occurs in one stratigraphic level. He did not visit the potential Aksla area (further to the SSE) but concluded that "all possible exposed mineralization are investigated before, because of the earlier mining activities in the zone". (208-72-3).

Soil geochemistry:

Soil sampling was carried out in the potential extension of the known Pb-Zn zone, indicated by stream sediment geochemistry. Samples were collected with 100 m intervals and along lines 200 m apart. Assay results are shown on map 3-226-72-3.

Anomaly thresholds are set up on the basis of frequency distribution:

<u>Σ % f</u>	<u>Cu</u>	<u>Zn</u>	<u>Pb</u>	
80	≥ 75	≥300	≥ 70 ppm	"High background"
90	≥100	≥500	≥150 "	Possibly anomalous
95	≥120	≥ 650	≥200 "	Probably "
98	≥150	≥1000	≥300 "	Anomaly

It could be noted that these anomaly thresholds, in comparison with those of Bands (preliminary follow up 1971, map 03-71-6 in report 118), are similar for Cu but a lot higher for Pb and particularly Zn.

Comments.

The high Cu-values, especially occurring in the northern grid portion, are interesting and not explained by our present information from the area.

The majority of high Zn and Pb values can, without too much imagination, be said to form a NNW-SSE oriented belt over the grid area. Accordingly, it is considered that soil geochemistry has revealed the continuation of the known Pb-Zn zone as suggested by stream sediment geochemistry.

Whether this zone is of economic interest is another question, and cannot be answered without further investigations. However, it does not seem very likely when we consider

- 1) that the area during earlier "mining" activity must have been extensively prospected
- 2) that the anomaly zone is not homogeneous, but of scattered nature, suggesting the occurrence of vein type deposits of small sizes i.e. similar to the already known showings.

Not having been in the area I would recommend a brief geological check of the anomaly belt as well as the top anomalies (especially Cu) outside it.

4. SKAMDALEN.

Background

Cu and Zn anomaly (max 98 ppm Cu, 244 ppm Zn) in stream sediments. The area was partly followed up in 1971 by reconnaissance soil sampling. (RBB-report 118 map 03-71-5). This pointed to a rusty schist zone on the west slope of Torvikfjell as a possible source.

Work 1972.

(a) Geology:

Birkeland carried out geological mapping and prospecting in the area. His map (Report 208, Sælkacokka area) shows quartz-mica schists as intruded by granite.

He also noted and marked the rusty schist zones on his map. The rust is caused by pyrite dissemination, generally occupying 0.5-1% of volume. A slightly enriched sample (03/TB/72/1) was analysed for Cu, Zn, Pb and Mo with discouraging results (all elements < 0.1%).

- (b) Also the reconnaissance soil sampling was continued in 1972, whereby 20 + 64 samples were collected. Sample numbers as well as localities are however lost at present time and results therefore unknown.

Comments.

It seems likely that the faintly sulphide mineralized schists explain the geochemical anomalies. Further work is not recommended in the area.

5. SJANGELI - ROSOKKATOPPEN.

Background:

Several prospect pits and old workings occur, the majority of which lie on the Swedish side of the national border. Cu-mineralization (Bornite, chalcopyrite and chalcosite) occurs as dissemination in chlorite-mica schists or as stringers and impregnation in more massive amphibolites (interpreted as basic metavolcanics). Bornite also occurs together with magnetite in narrow but massive veins (ca 5 cm).

- 1971 - Stream sediment geochemistry outlined an anomalous area (Cu max 155 ppm) north of Rosokkatoppen.
- Geological mapping and a magnetic survey with the hope of detecting either an extension of the Sjangeli zone or "its sister". A strong mag. anomaly over the Sjangeli zone died out completely before reaching the Norwegian border. (Report 119-71-3).

Work 1972.

Geology:

T. Birkeland spent 8 days in the area in order to

- a) prospect the stream sed. anomalous (Cu) area NW of Rosokkatoppen

- b) remap the geology with emphasize on explaining the mag. picture from our 1971-survey.

As a summary of his report (208-72-3) the following can be said with reference to the above tasks:

- a) Coarse grained grey granite intruded into quartz-mica schists, parts of which were rusty. Cause of Cu-anomaly might be similar to that in Skamdalen, i.e. pyrite diss. schists. (Worth noting is that B only prospected the valley 3 km NW of Rosokkatoppen).
- b) Birkeland distinguishes between 2 supracrustal units; one dominated by basic metavolcanics and dolomite and one consisting of quartz-mica schists and greyvackes. The former unit is regarded as the ore potential one.

The dominating fold phase (F_1) is of isoclinal character, with NE-SW trending axis.

Two possibilities, for why the Sjangeli magnetic anomaly does not extend into Norway, are suggested:

- 1) The isoclinal folding
- 2) The southern granite contact.

Birkeland thus rejected the "Sælkajokka fault idea" (RBB report 119) for which he found no evidence in the field.

Soil geochemistry:

Soil sampling was carried out in a grid NW of Rosokkatoppen i.e. the stream sed. anomalous area, where also small magnetite/bornite prospect pits are located.

Dried and sieved (-80 mesh) samples were assayed for Cu, Zn and Pb. Anomaly thresholds were set up on the basis of frequency distribution.

<u>Σ % f</u>	<u>Cu</u>	<u>Zn</u>	<u>Pb</u>	
ca 80%	110	120	-	"High background"
90	125	160	50 ppm	Possibly anomalous
95	150	240	70 "	Probably "
98	175	500	100 "	Anomalous

Results are presented on the map 5-226-72-3. Cu-anomalies are in the same order of magnitude as in the Aksla-area. Slight "anomaly concentrations" occur near the base line in north and west of known prospect pits, but in general the anomalies occur in a rather erratic manner.

Pb/Zn anomalies are of a significantly lower level than in the Aksla-area, where Pb-Zn showings are known to occur. An interesting feature of the Pb-Zn anomalies in the Rosokkatoppen grid is that they form a clear belt, which crosses over the geology.

Comments:

The geological information we have, indicates that the amphibolitic/dolomitic sequence of the supracrustal rocks is the potential host for "Sjangeli type" copper mineralization.

Stream sediment geochemistry in 1971 revealed an Cu-anomalous area NNW of Rosokkatoppen. With the help of geology and geophysics (mag.) it also lowered down the potential of areas to the S of this mountain.

Soil geochemistry seems to further narrow down the target to an area close to the national border i.e. the NE portion of the northernmost belt of basic volcanics (see map in report 208). The soil anomaly for copper is open towards NE.

This area (see fig. 2) appears in fact to be drained by a highly Cu-anomalous stream. The Cu-content (155 ppm) is almost twice as high as that of the stream draining the known showings in Sweden.

It is recommended that further exploration efforts should be made in the outlined area (fig. 2). This should consist of

1. A detailed mag./EM survey (Crone shootback or VLF).
2. Rec. geology and prospecting.

Topographic conditions i.e. NE-slope more than 1200 - a.s.l., should be kept in mind when planning these activities.

A/S SULFIDMALM
INTER-OFFICE MEMORANDUM

Date: 30th May, 1973

To: Falconbridge Nikkelverk A/S

cc: A. M. Clarke, H. T. Berry,
R. B. Band, H. A. Rosenqvist

From: J. B. Gammon

Subject:

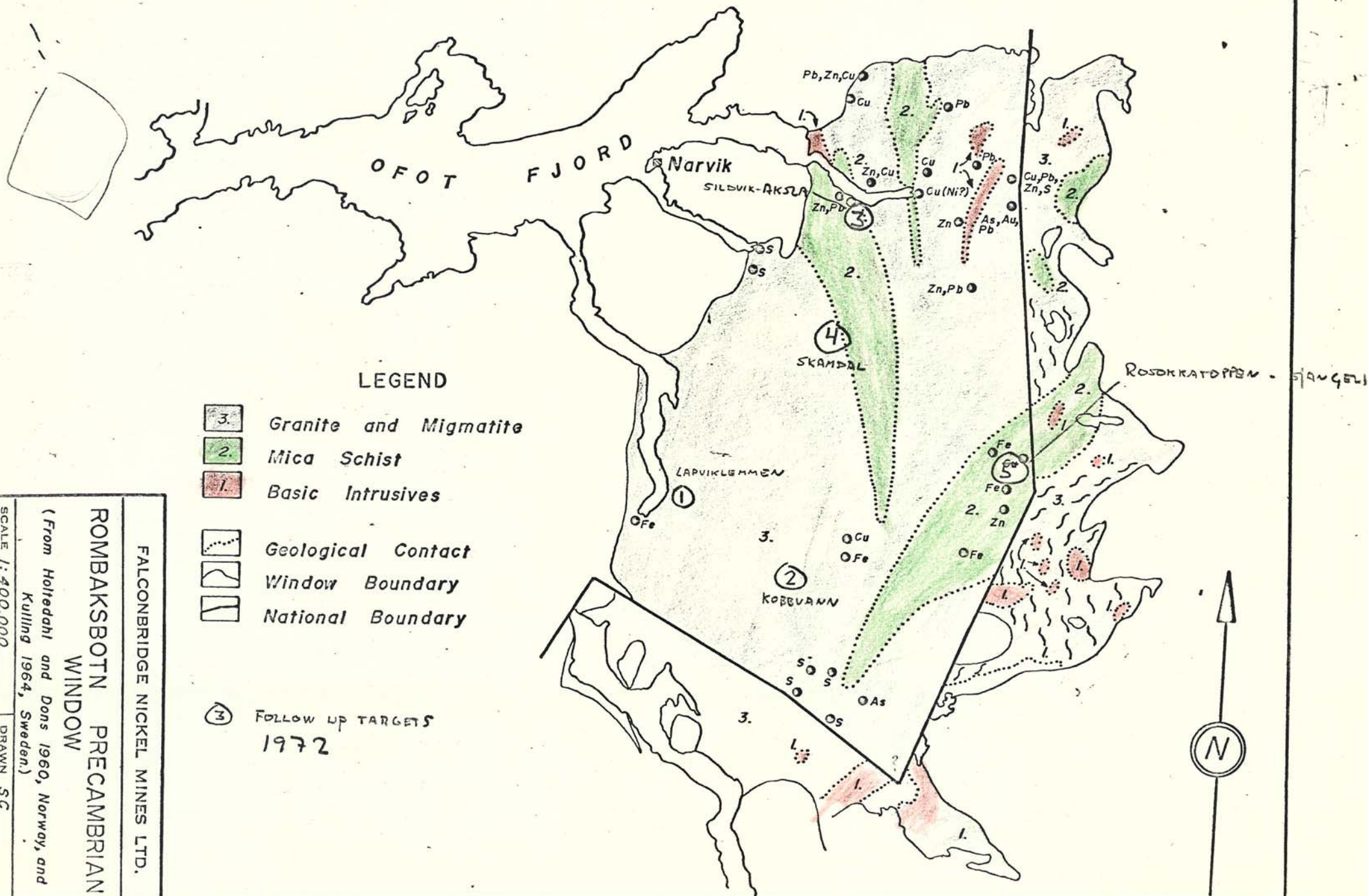
905-3, Rombaks area. Report no. 226-72-3.

Please find attached Rosenqvists summary of activities in the Rombak area during 1972. Two areas with molybdenum and one with lead-zinc-copper are recommended for brief prospecting to explain the indicated soil geochemical anomalies. The Rosokatoppen area is considered of greater potential and additional geophysics and prospecting is planned for this area during 1973.

*RBBand
PP
J.B.G.*

MOTTATT 04.		BESV.	ARK.
ADM. DIR.	<i>Bp</i>	ORGE. / MOTIV.	
TEKNISK DIR.		ELL. / YEEK. / S.	
PERSONAL DIR.		REL. / YVD.	
ADM. / LEP.		R. & SM. / YVD.	
INSTR. / YVD.		EL. / TEKN. / YVD.	
REVIS. / YVD.		INSTR. / YVD.	
SKILL. / YVD.		YVD. / YVD.	
YVD. / YVD.		PROS. / YVD.	
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Fog 1

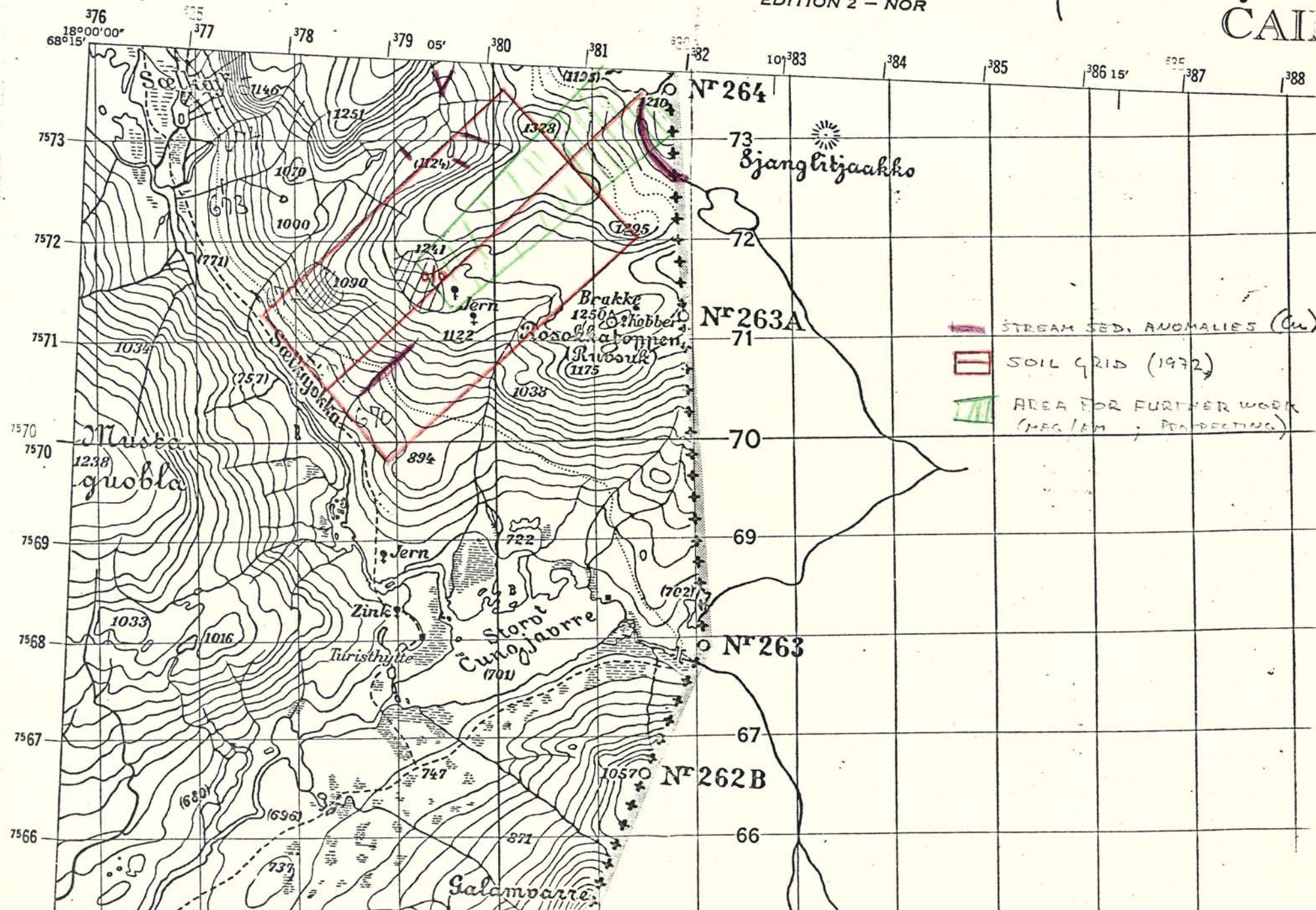


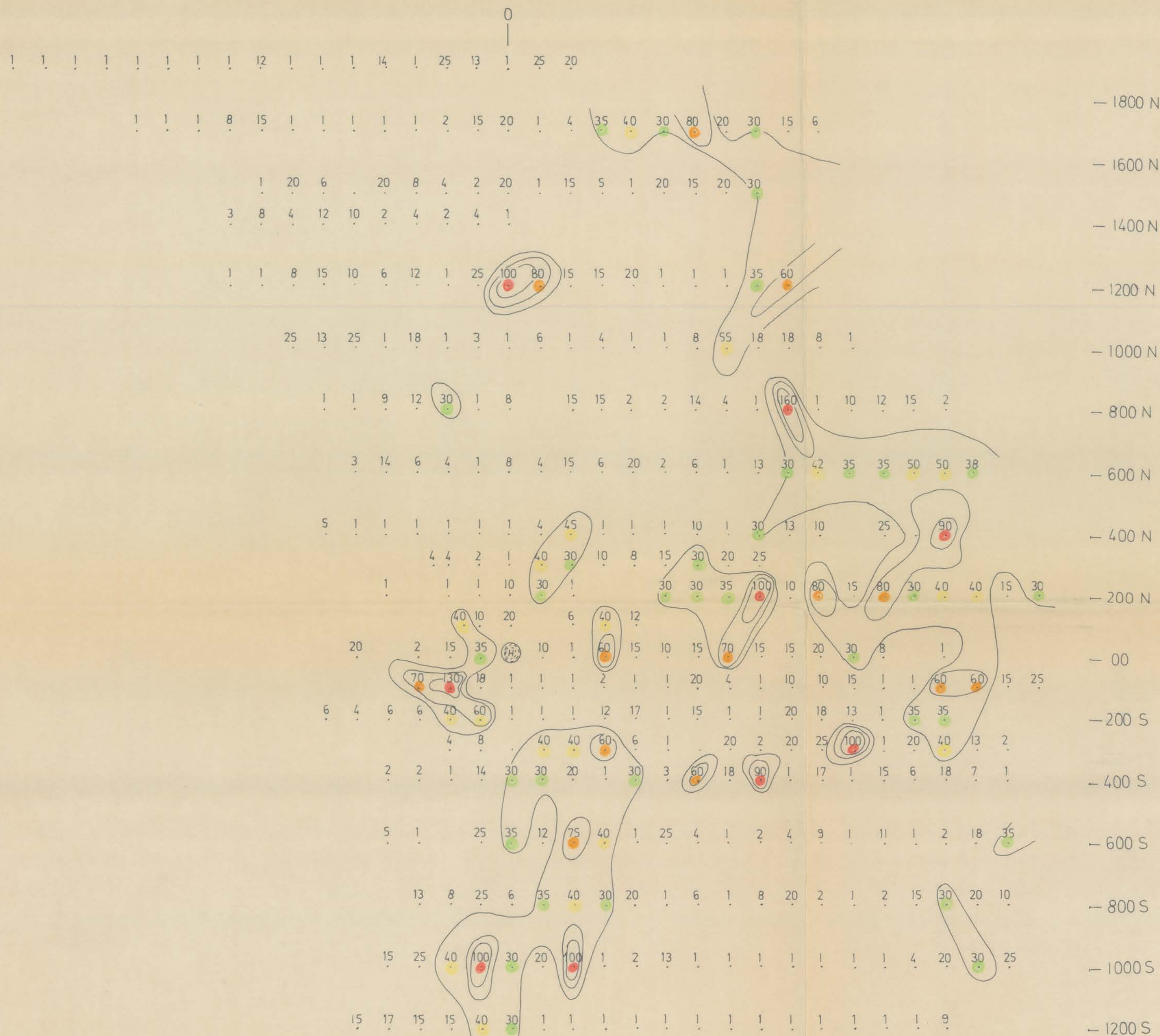
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EDITION 2 - NOR

Fog 2

CAI





KEY:

≥30 ppm	Mo	High background
≥40 "	"	Poss. anomalous
≥60 "	"	Prob. "
≥90 "	"	Anomalous

Contours : 30, 60 and 90 ppm
 Hydro tunnel portal



LAPVIKLEMMEN, ROMBAK Soil geochemistry <u>Mo</u>	SCALE	OBS. JJ	8-72
	1:10 000	DRAW. HaR	4-73
% SULFIDMALM		TRAC. BL	4-73
		CHK. HaR	4-73
MAP NO.		1-226-72-3	
MAP SHEET			