

# Bergvesenet

Postboks 3021, 7002 Trondheim

# Rapportarkivet

Bergvesenet rapport nr	Inte	rn Journal nr	Interr	nt arkiv nr		Rapport lokalisering	Gradering
BV 514						Trondheim	Åpen
Kommer fraarkiv	.arkiv Ekstern rapport nr		Overs	Oversendt fra		Fortrolig pga	Fortrolig fra dato:
Falconbridge	Falconbridge Sul 414-76-17		Sulfid	Sulfidmalm A/S			
Tittel	*************************	<del>1986-199</del> 0-1990-1990-1990-1990-1990-1990-199	***************************************	***************************************	*******	<del>!</del>	***************************************
Masi 1776, Sumi	nary.						
Forfatter				ato		Bedrift	<u> </u>
E Kreivi				1976		Sulfidmalm A/S	
Kommune	Fylke	Fylke E			1:	: 50 000 kartblad	1: 250 000 kartblad
Kautokeino	Finnmark F		Finnmark			9343 18342 18331 18332 9321 18322 19333 19334	Nordreisa Enontekiø
Fagområde		Dokument ty	be	Foreko	mst	er	
Geologi geofysikk Rapport geokjemi		Biilacâro Salgganj Unna Vu		obal Nassajokka Silesjavre Dabmutjavre rot Muvrracorro Suolojavre Gærbmasoaive njavre Javrhuosjavre Javrehuosjokka-S Vuovdas Havggajavre Gaccanjavre Likca varre Mielgeasjavre Gæssemaras			
Råstofftype Emneord		Emneord	<u> </u>	Kivivaara			
Malm/metall Cu Ni Co 2		In Pb					
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#### Sammendrag

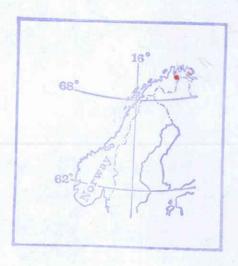
## **OPPSUMMERINGSRAPPORT**

- som inneholder rapport oversikt over tidligere arbeider i området og som inneholder oversiktskart over prosjekter stikningsnett og bergrettigheter ( prospecting claims).

Inneholder også et forslag om arbeider i sesongen 1977

FOR FALCONBRIDGE NIKKELVERK A/S
A/S SULFIDMALM
PROJECT 905-17
Masi 1776, Summary

By E. Kreivi



Ank. 19.10.77 EW

# A/S SULFIDMALM INTER-OFFICE MEMORANDUM

Date:

12th October, 1977

To:

Falconbridge Nikkelverk A/S

cc:

W. D. Harrison, H. T. Berry, R. Jahnsen, F. Nixon,

R. B. Band, E. Kreivi

From:

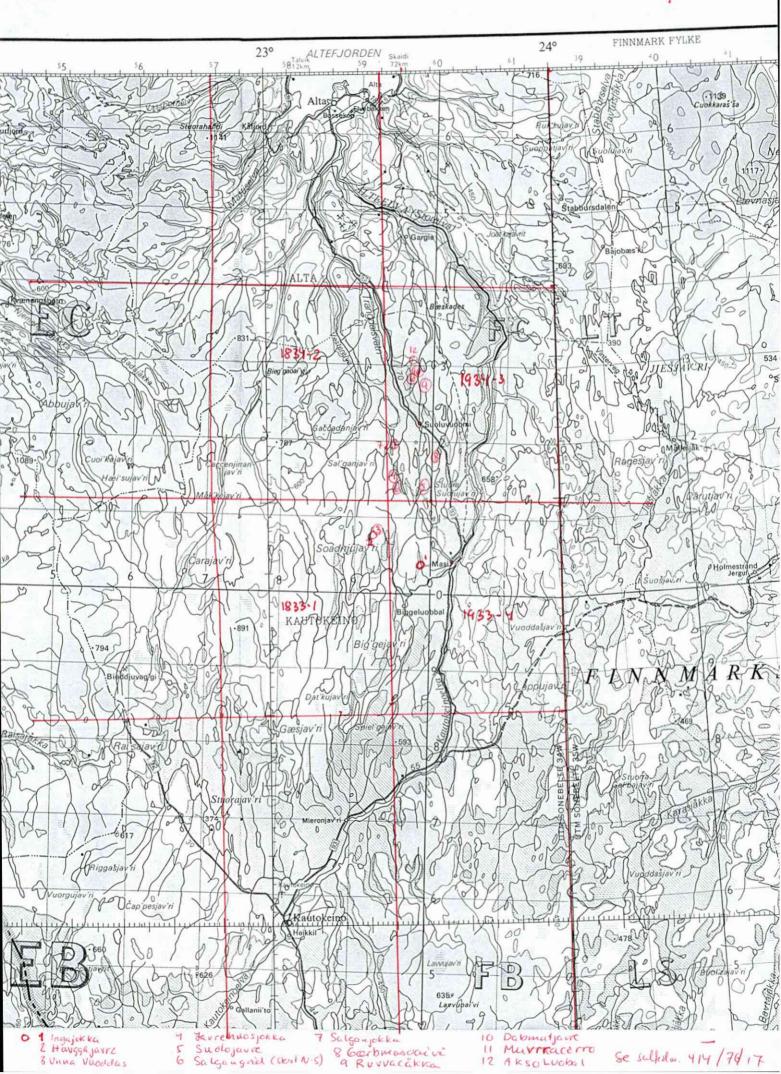
J. B. Gammon

Subject:

Report No. 414/76/17. Masi Summary.

Please find attached Kreivi's summary of work carried out to date in the Masi area. This listing provides a useful basis for future evaluation of which areas deserve additional work to be carried out.

Jo Bam ma



# Introduction (Fig.1, 2)

The following reports have been written for the Masi project so far in the period 1972-1976:

215/72	Masi mapsheet	NGU prospecting NGU geochemistry
216/72	Siebe mapsheet	NGU prospecting NGU geochemistry
217/72	Kautokeino mapsheet	NGU prospecting NGU geochemistry
218/72	Carajavrre mapsheet	NGU prospecting NGU geochemistry
219/72	Lappoluobbal mapsheet	NGU prospecting
220/72	Bæskadas mapsheet Braakvann	NGU prospecting NGU geochemistry
242/72	Agjet mapsheet	NGU prospecting NGU geochemistry
243/72	Lavvooaivve mapsheet	NGU prospecting
244/72	Roavvooaivve mapsheet	NGU prospecting
2 <b>7</b> 4/73	Ingajokka	Geochemistry
275/73	Mieronjokkka	Geology Geochemistry
276/73	Gæsjavrre	Geology Geophysics Geochemistry
277/73	Salggangrid	Geophysics Geochemistry Trenching
278/73	Salggangrid	Geochemistry
280/73	Ingajokka	Prospecting

335/74	Masi 1774	Helicopter geophysics
336/74	Masi 1774 - Masi - Salgganjokka - Javrehuosjokka - Salggangrid - Mieronjokka - Bajasvarre	Prospecting Detailed geology Detailed geochemistry Detailed geophysics
341/74	Masi 1774	Reconnaissance geochemistry
342/74	Masi 1774	Spectrograph. geochemistry
362/75	Salgganjokka	Drilling
363/75	Javrehuosjokka	Drilling
364/75	Ing <b>ajo</b> kka	Geology Geophysics Drilling
365/75	Salggangrid - Javrehuosjokka-W - Javrehuosjavrre-W	Geology Geophysics Drilling
366/75	Masi 1775	Reconnaissance Geology
367/75	Ruvvačokka	Geology Geophysics Geochemistry
368/75	Salgganjokka-E	Geology Geophysics Geochemistry
369/75	Unna Vuovdas	Geophysics
372/75	Masi 1775	Summary
376/75	Masi 1775	Status report
406/76	Havggajavrre	Geology Geophysics Geochemistry Drilling

407/76	Unna Vuovdas	Geology Geophysics Geochemistry Drilling
408/76	Javrehuosjokka-S	Geology Geophysics Geochemistry
409/76	Suolojavrre	Geology Geophysics
410/76	Gærbmasoaivve	Geology Geophysics
411/76	Ruvvačokka	Geophysics Drilling
412/76	Muvrračorro	Geology Geophysics Drilling
413/76	Dabmutjavrit	Geology Geophysics Geochemistry Drilling
414/76	Masi 1776	Summary (this report)

# Activity in 1976 (Fig. 2)

More detailed and reported work was done in the areas of: (see the reports)

Havggajvrre 406/76 Unna Vuovdas 407/76 Javrehuosjokka-S 408/76 Suolojavrre 409/76 Gærbmasoaivve 410/76 Ruvvačokka 411/76 Muvrracorro 412/76 Dabmutjavrit 413/76

In addition to those we did some detailed geophysical surveying at Aksoluobbal, some prospecting over the geochemical and geophysical targets in the Masi-area and some prospecting further afield in the areas of:

Gaččanjavrre
E of Masi
Likča
Merovarre - Mieronvarre
Mielgasjavrre - Gæssemaras

# Prospecting in Masi-area.

## Aksoluobbal

A grid with a one km long baseline in south-north direction and with one km long profiles was set out just south of a lake called Aksoluobbal.

The grid was sited to locate the helicopter anomalies on the Ni-Cu-Co-Zn-anomalies in till by a VLF-EM- and a Mag-survey. Half of the grid was surveyed so far. Very weak EM- and Mag-relief was releaved.

The conglomerates and schists of the Caledonides were found  $1.5\ kms$  S of the Caledonian mountains and about  $0.5\ km$  N of Dabmutjavrit.

There was also found some cpy-bearing blocks and almost massive py-horizons (41/EK-76) and jasper-banded magnetite-horizons (24/EK-76), 3 ms thick at least.

## Nassajokka Zn-anomaly.

4 kms W of Silesjavrre. A couple of metres wide zone of a carbonate-breccia in mica schist was found in the most anomalous areas. No trace of sphalerite was found so far.

## W of Silesjavrre.

Several iron-sulphide-horizons with minor chalcopyrite were found. Two horizons (28 and 29/EK-76) were sampled by a Homelite-diamond-drill (2.5 ms core). Iron sulphides with minor chalcopyrite in acid volcanics and qtz-vein was found in the core. The best analyzes in the drill core gave:

0.18% Ni in 28/EK 0.58% Cu in 28/EK

The best analyzes in the hand specimens gave:

1.10% Cu in 43/MP

1.26% Cu in 56/MP

## Dabmutjavrit

5.2% Zn and 1.05% Pb in the hand specimens from an outcrop (39/EK-76) was found in geochemically anomalous area. Detailed surveyed and drilled 3 holes, totalling 104.50 ms in 1976.

# Biilačarot,

inside Dabmutjavrit-grid. See report 413/76/17. Two sulphiderich horizons (20 and 34/EK-76) were sampled by a portable Homelite-diamond-drill with three holes (4.5 ms core). The core had a little chalcopyrite and much iron sulphides in acid volcanics.

The best analyses in the drill-core gave:

0.11% Ni in 34/EK

0.24% Cu in 34/EK

# Muvrracorro,

1 kms NE of Biilacorot. 4.2% Zn, 0.93% Pb and 1.0% Cu in the hand specimens from the local blocks, 16/EK-76, were found in the geochemically anomalous areas. Detailed surveyed and drilled 5 holes, totalling 220.1 m. See report 412/76/17.

# Suolojavrre,

3.9% Zn, 0.29% Pb in a hand specimen from a block, 31/MP-76, was found in a geochemically anomalous area. Detailed surveyed in 1976. See report 409/76/17.

## Gærbmasoaivve

A few iron-sulphide-rich and iron-oxide-rich horizons and blocks with minor cpy were found on the geophysical and geochemical anomalies. Partly detailed surveyed in 1976. See report 410/76/17.

# Between Salgganjavrre and Javrehuosjavrre

The prospecting over the geophysical and geochemical anomalies in till turned out lots of mineralized blocks and some outcrops (186-187/KT-76) of almost massive iron sulphides with minor cpy.

# Javrehuosjokka-S

Some cpy-bearing blocks, two magnetite-horizons and several iron-sulphide-rich outcrops were found south of the grid, layed out in 1974. Detailed surveyed in 1976. See report 408/76/17.

#### Unna Vuovdas

About 1% Cu in several blocks (26, 150b, 162/KT-76) and 0.88% Cu in a sample from an exposure were found in the geochemically and geophysically anomalous areas. Detailed surveyed and drilled 4 holes, totalling 173 ms in 1976. See report 407/76/17.

## Havggajavrrc

Lots of gossan, but no strongly mineralized blocks or outcrop was found on the geochemical and geophysical anomalies. Detailed surveyed and drilled 3 holes, totalling 120.05 ms in 1976. See report 406/76/12.

# Gaččanjavrre,

8 kms NW of Salgganjavrre. The prospecting around a big granite-complex near the Caledonides frontier and prospecting around Gaččanjavrre itself, where Lappish people have told to be "something", did not turn up anything, which would be of an economic interest. Most of the area is very poorly exposed.

# E of Masi

Prospecting on the geophysical anomalies did not turn up any interesting rock.

# <u>Likča-area</u>,

5 kms W of Sodnajavrre. Prospecting on NGU's stream sediment and geophysical anomalies. The geochemical anomalies are located in fractured zones on rocky hills. Some weak iron-sulphide mineralization were found in the weathered, fractured bottoms and walls of valleys. Also a similar mineralization was found on the top of a hill. It was not an impressive are from an economical pint of view.

## Merovarre - Mieronvarre,

W of Mieron. Prospecting on strong airborne-Em-anomalies indicated that the anomalies are probably caused by the graphitic schists, found in a couple of exposures. The schists are sometimes rich in pyrrhotite. One gossan-area was found near the highest top of Mieronvarre. The area is well covered by moraine.

## Mielgasjavrre,

7 kms S of Gæssemaras, 7 kms SW of Kautokeino. Some prospecting was done in the area, where NGU had found copper-rich blocks in 1961. The area is in an up-ice-direction from Gæssemaras, where also lots of copper-rich blocks have been found by NGU.

The blocks at Mielgasjavrre are mainly of a very coarse grained calcite with massive chalcopyrite in pebbles, up to 30 cms in diameter. The chalcopyrite-bearing blocks on Gæssemaras are mainly of albite-carbonate rocks, which we also can find in the blocks at Mielgasjavrre, but without chalcopyrite.

The amount of copper-contained in the blocks at Mielgasjavrre did not seem very interesting from an economic point of view, especially because the area seems to be inside Sydvaranger's detailed grid.

The tracing of the blocks on Gæssemaras straight in up-ice-direction did not bring up any similar block between Agjet and Gæssemaras. The area is mainly covered by swamps and low glacial hills.

# S of Kautokeino

One days prospecting at the lakes and streams south of Kautokeino, near the highway to Finland did not turn up any interesting discoveries.

## Kivivaara,

at the Finnish border near Kautokeino-highway. The hill was prospected and one VLF-profile was run over it. A strong anomaly was picked up, but it seemed to be caused by a very weathered mica-layer. No mineralized block or outcrop was found there.

## Drilling in 1975

All the py- and po-rich cores of Salgganjokka, Javrehuosjokkaand Ingajokka drilling from 1975 (Reports 362, 363, 364, 365/75/17), which were not analysed yet, were split and analysed in Kristiansand for Cu and Zn, some also for Co and Au. The results were not impressive, but enclosed anyway.

Recommendations for summerseason 1977. (by Kalle Taipale)

### Geological mapping.

The Suolojavrre grid should be extended northwards to see the relations between acid plutonic rocks (syenite) and surrounding schists.

This needs about 1-1.5 km extention to the base line. The syenite outcrops are situated about 2 km S of Suolovuobme fjellstue, 200 m E of the old Alta - Kautokeino highway.

The same should be done to the Muvrračorro grid. Extention to the south or a new grid at the southern end of lake Biigaidjavri. The area between Muvrračorro and Dabmutjavrit needs more detailed mapping. Possibly there would be some use to map the fjelltops W of lake Silesjavri.

# Geochemical sampling.

Till sampling on the areas between Muvrracorro and Dabmutjavrit would bring new information of the Cu-, An and Pb-bearing horizons. Maybe the area between Ruvvačokka and Muvrračorro should be investigated and sampled. Detailed till sampling at Suolojavrre grid with Partner sampler would give better results than normal sampling with Kreivi Auger because the overburden is so thick in the valley of lake Suolojavrre. To sample the whole grid area would be too much time taking and therefore sampling should be done only from the most interesting places. This kind of place is about 3000N - 400E, 4200N-400E - line and areas E of it to the lake Stuorra Suolojavrre. This would show whether the boulders found at the shoreline are brought by the ice from the bottom of lake Stuorra Suolojavrre or not. This group of boulders contained a block with 3.9% Zn and 0.29% Cu and chalcopyrite was a quite common mineral in these blocks. In common the Partner sampling should test in all kind of areas; on the areas of thick overburden as well as on the areas of thin till veneer and compare the results to the normal sampling.

# 3. Boulder tracing and block searching.

Block searching at Suolojavrre grid on the area mentioned in connection with till sampling should be searched very carefully and if possible Proxan or a similar apparatus should be used, because the till is very poor in surface blocks.

Would be of some use to prospect the areas along the old Alta Kautokeino road from Ruvvacokka up to the Caledonides.

# 4. Sampling with Homelite-drill.

Some places at the Suolojavrre grid need drilling. They are places which adjoin to the observation numbers 267/KT-1776 and 268/KT-1776, 1110N/510E and 1240N/270E. They are both at the bottom of streams and so easy to drill.

# 5. Geophysical investigations.

Shoot-back work at the Suolojavrre grid is recommended between 3000N and 4500N-profiles. These measurements should be extended on the lake Stuorra Suolojavrre to make sure whether there is a conductive zone under the water.

Shoot-back survey at the Muvrracorro-Dabmutjavrit area should give good information from the sulphide bearing horizons. VLF-measurements on the fjelltops W of lake Silejavri are recommended too.

A tentative stratigraphic scheme for the Suolovuobme area.

By Kalle Taipale

Characteristi	c rocks
<u>Sediments</u>	Igneous rocks
THE MAIN PHASE OF FOLDING	Synorogenic granites (eg. Suolojavrre)
Conglomerates, Masijokka quartzite	Gabbroic rocks
Pyroclasts (greywackes), cherts, ironformations, carbonaceous schists (=graphite schists)	Spilitic greenstones
Mica schists, mica quartzites	
	====================DISCORDANCE
Granite gneiss	

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