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Rapportarkivet

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FOR FALCONBRIDGE NIKKELVERK A/S
A/S SULFIDMALM
PROJECT 905-1

Snowscooter-borne radiometric
survey in Sørli, Norway

By
F. Hansen

Snitzlicker

A/S SUKFIDMALM
INTER-OFFICE MEMORANDUM

Date: 1st February, 1978
To: Falconbridge Nikkelverk A/S
cc: W. D. Harrison, H. T. Berry, F. Hansen
From: F. Nixon
Subject:

Report no. 464/77/1. Radiometric survey in Sorli region

Please find enclosed a short report on a snowscooter-borne radiometric survey in the Sorli region close to the Swedish border. The survey was prompted by reports of uranium findings on the Swedish side of the border and by a wish to test the equipment and method. Although only two anomalous boulders were found which carried subeconomic mineralization, the method in itself proved to be a success and is well worth considering for future surveys.

Frank Nixon

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As a result of information provided by SGU during visits to their headquarters in 1976 and 1977 it became apparent that significant uranium mineralization had been discovered close to the Norwegian border in the Sørli area.

Arrangements were made to rent a snowscooter-borne scintillometer unit and operator for a 10 day period from SGU. This apparatus and its usage are described by Dr. Bo Lundberg, SGU in the IMM journal: "Prospecting in areas of glacial terrain", paper presented at a symposium held in Trondheim, Norway on 21st and 22nd August 1973.

The undersigned was Sulfidmalms representative, participated in the survey and decided traverse locations, these were placed to cover the most potential geology, based on a knowledge of the Swedish discoveries. Traverse locations are shown on enclosure 4. Anomalous boulders were found and locations marked on airphotos and on the ground. samples were found to carry only subeconomic uranium mineralization.

Additional follow up work would be best carried out in the summer with conventional hand held scintillometers in the more difficult terrain areas not covered by this reconnaissance survey.

List of enclosures:

1. Cut from IMM journal.
2. Pictures showing the equipment.
3. " " " survey.
4. Summary map of the surveyed area.
5. Panorama views from the surveyed area.
6. " " " " " "
7. " " " " " "

Prospecting in glacial terrain, paper presented at a symposium held in Trondheim, Norway on 21st and 22nd August 1973 by Dr. Bo Lundberg, SGU

Snowscooter-borne measurements

To enable the investigation of inaccessible and remote areas, experiments were initiated during the winter with a lightweight scintillometer mounted on a snowscooter. The trial was successful and a number of snowscooters were rebuilt to house more sensitive scintillometers with automatic analogue recording (Fig.6). The analysing crystal is 3 in x 3 in in size. The shielding effect of the snow layer, which normally varies between $\frac{1}{2}$ and 1 m in depth (December-March), has no significant influence on the result. This prospecting method works well in most areas with gentle topography. It is particularly useful in swampy terrain, where summer access is limited. Moreover, it is advantageous to be able to continue the hunt for prospects even during the winter, as the summer field season only lasts for three months in this region.

Like the car-borne surveys, this method aims at the direct discovery of radioactive anomalies, which are immediately investigated, as far as that is possible, the positions being marked in the terrain and on maps. The normal radioactivity, which is recorded continuously, serves as a background for judging the anomalies, but it cannot be used for the preparation of regional radiometric maps as rapid variations in snow depth and topography render measuring conditions very non-uniform (Fig.7).

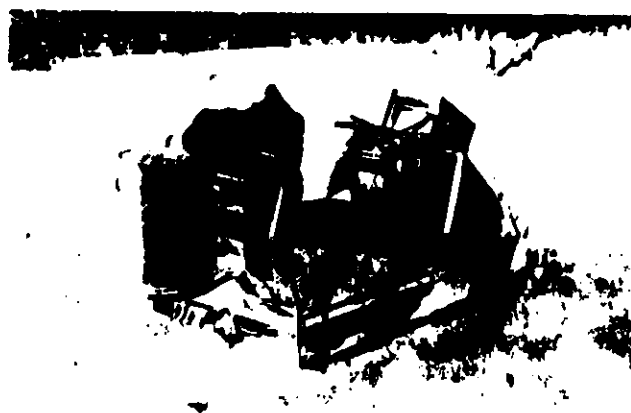


Fig.6 Snowscooter for radiometric surveying: analysing crystal is embedded in cylinder at back; electronics are under seat. Analogue recorder is visible at top front

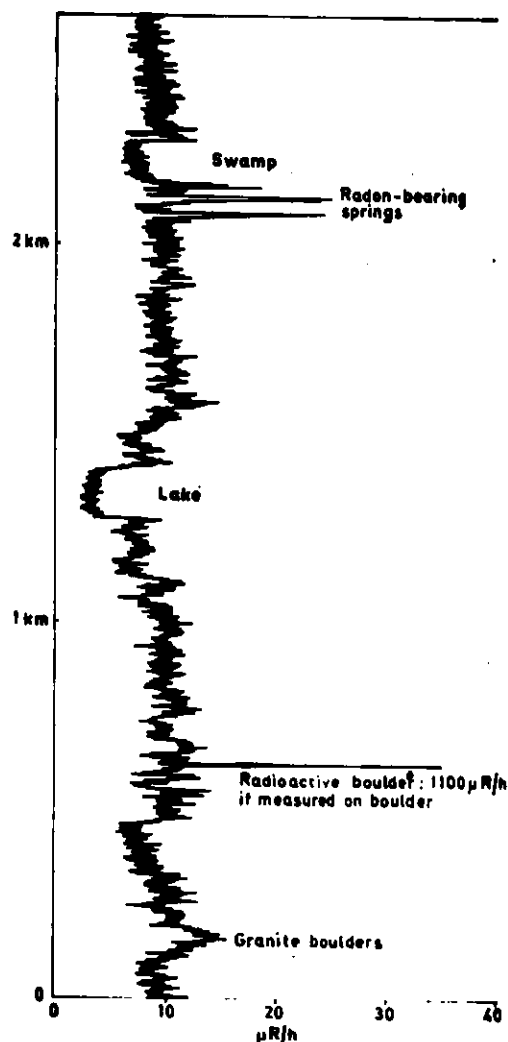


Fig.7 Typical analogue recording from snowscooter-borne radiometric survey in moraine-covered area of Arjeplog district. Snow depth, 0.5 m

The equipment:



Analog recorder

Switchboard

Electronics (under seat)

Honda generator 300 w

Analysing crystal 3 x 3 inch.
embedded in cylinder



Sevicing the snow scooter

Oklebo Trioman (long version)

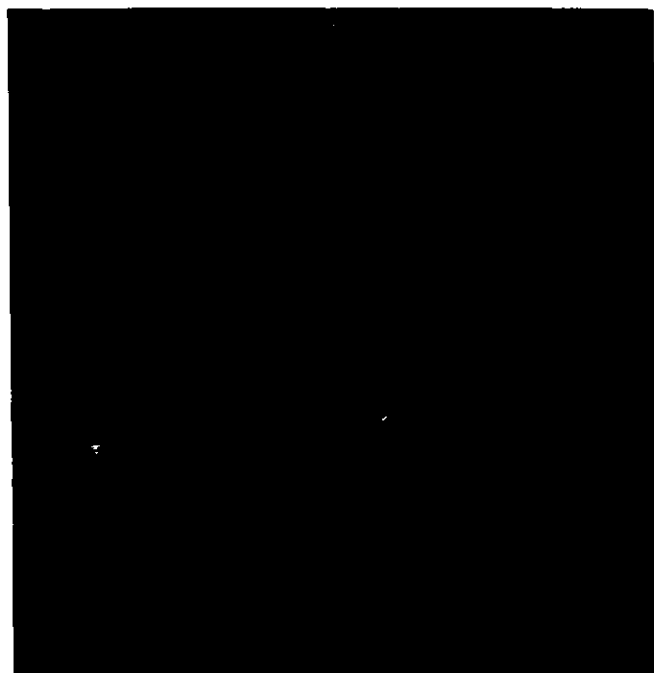
The survey:



1) Driving



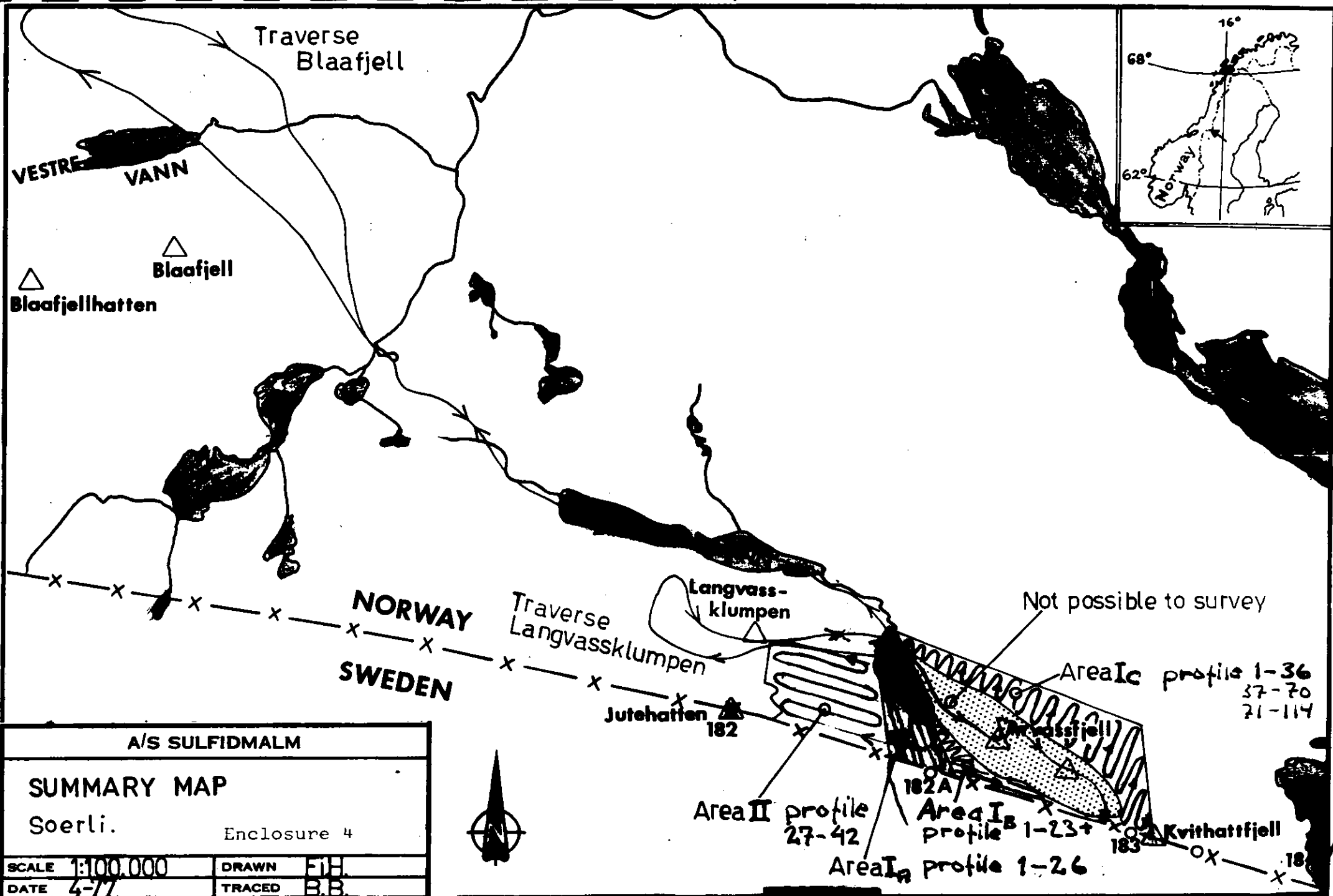
2) Scanning the area
(Zig-zag profiling)



3) Finding an anomaly spot -
exact location surveyed with
handheld scintillometer prior
to digging.



4) Digging out and sampling
the anomaly.



Panorama views from the surveyed area:

Arvasslihytta



Julehatten

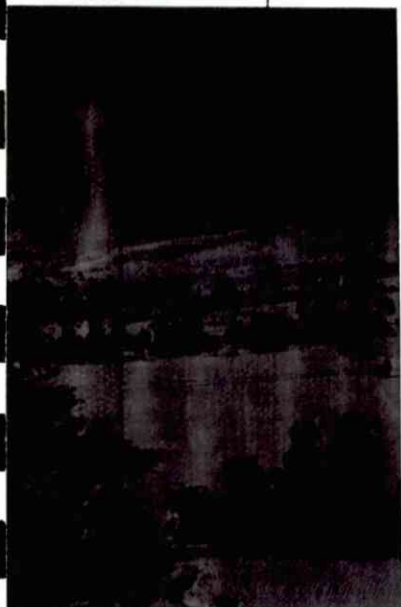


Langvassklumpen



Arvatnet

Høyde 862



Skardet



Arvassfjellet



Litleknulen 625

Arvassli hytta

Arvassfjellet



• Arvassflåa

Enclosure 6.



Hytte ved Vestre
Blåfjellvatnet.

Blåfjellet



Blåfjellhatten.

