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Rapportarkivet

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KONFIDENSIELL
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TARGET AREA GURROGAISSA LEAD MINERALIZATION.

INTRODUCTION.

The Gurrogaissa area which is incorporated in the joint venture agreement between Union Minerals and A/S Sydvaranger is situated 20-40 km's SE of Lakselv and approximately 60 km's N of Karasjok in Finnmark county (see map).

During 1965-1968 stream sediment sampling, solid rock geochemistry, IP-measurements and geological mapping were carried out.

In 1975 four areas of together 1,2 km² were staked over the actual area which is believed to be mineralized. If no work is done in the area the Gurrogaissa premining concessions will expire June 1982.

The existence of the Old Gurrogaissa showing, no. 1 at accompanying map, with galena fracture fillings in the Precambrian basement, and the fact that disseminated galena in Cambrian sandstone above the Precambrian basement is found several places in the boundary zone all the way from Finnmark to south Norway through Sweden were the reasons for the prospecting start in this area. In Sweden two mines of this type are in operation.

SUMMARY OF PROSPECTING WORK.

Geochemistry. In 1965 and 1966 stream sediment samples were taken over a large area along the boundary between Eocambrian and Precambrian rocks. This work revealed several lead anomalies which led to discoveries of 4 new lead showings (no. 2,3,4,5 at accompanying map).

Anomalies from the stream sediment survey also indicated that the fracture zone shown at the map continues at least 7 km's to the SE from the Old Gurrogaissa showing.

In 1966 and 1967 solid rock geochemistry was done in the sedimentary rocks along the boundary between the Cambrian and Precambrian. This investigation showed that all the rock units had normal background contents with lead except for the Cambrian sandstone above the Precambrian. Several of the sample profiles in this sandstone were anomalous on lead. Extreme anomalies and galene mineralizations, no. 3 and 4, were found in and up to 300 m away from fracture zones. It therefore can be concluded (as for the Swedish deposits) that the lead mineralizations are controlled by the fracture zones.

Geophysical work was done in 1960 with areal magnetometry and in 1968 with IP-measurements. The areal mag. measurements were regional and gave no direct support to the lead prospecting. It was believed that the IP-measurements would pick up galene dessiminations in the sandstone at depths from 300 to 500 m. No anomalies were revealed from these actual depths due to the fact that the electric power was lost in the overlying schists and thrust plane.

Geological mapping also was done in 1965 to 1967. Much attention was paid to get a picture of the Precambrian peneplane, thickness of the basal sandstone in which the galena mineralizations were found and important fracture zones.

The Precambrian peneplane is dipping gently with an average dip of $1,6^{\circ}$ to the NW. During the Caledonian orogen, the Precambrian basement was folded in large open folds which faded out towards the SE. An old synform, or down warp, which strikes from ROCI towards the NE is a depression of the Precambrian peneplane probably caused by the Caledonian orgenesis. See map.

The thickness of the basal sandstone varies from 20 to 30 m. In some cases it is more than 30 m thick especially in the depression zone in ROCI. This may indicate that the depressions in the Precambrian partly are pre-Caledonian.

Two important major fracture zones are registrated. The first fracture zone has a NW-SE strike (310° - 130°) and can be seen in three different rock units : in Precambrian rocks, basal Cambrian sandstone and Cambrian schists and in the Eocambrian nappe units. The lead mineralizations no. 1 and 2 are galena fracture fillings in Precambrian gneisses and no. 3 is galena in fracture fillings and some dessiminations in Cambrian basal sandstone. All these three mineralizations are on the fracture zone with NW-SE strike. From showing no. 1 and 7 km's towards the SE it is clearly indicated from the geochemical anomalies of the stream sediments that the fracture zone continues. In the oposite direction, towards the NW, a very steep canyon with brecciated rocks is found E of Kufjell. This fracture zone is more than 25 km's long and very persistant and it must be younger than the Caledonian orgenesis.

The second major fracture zone is N-S striking and is shown at the map. A minor fracture zone with a N-S strike occurs at the NE side of Kaggefj. in the basal sandstone. This fracture zone contains some galena, sphalerite and chalcopyrite as fracture fillings and

dessiminations (showing no. 4). It should be noted that this mineralized minor fracture zone is parallel to the major fracture zone in Luostjokka valley.

Showing no. 1, Gml. Gurrogaissa (=Old Gurrogaissa) is known for several years. Here galena, barite, calcite and a little sphalerite and chalcopryrite are found in 0-3 cm vein and fracture fillings about 750 m along the 130° strike of the fracture zone.

Showing no. 2, Nye Gurrogaissa (=The New Gurrogaissa) is found only 1500 m to the NW (on the strike of the fracture zone) of showing no.1. Here a 0,4-0,5 m thick vein of only galena was found. The vein can be followed in the strike direction over 15-20 m. To the west of the galena vein there is a parallel and in size a similar vein of barite.

Showing no. 3. The Luostegaissa minr. is found in the basal sandstone exactly where the 130° - 310° -fracture zone "hits" the basal sandstone. Here the galena is found mostly as fracture fillings, but partly also as dessiminations in the sandstone. The width of the fracturing in the basal sandstone is nearly 300 m, and along the section the lead content is much higher than the background lead content in this sandstone.

Showing no. 4, Kaggeminr., is similar to no. 3, but it is connected to a smaller fracture zone and this fracture zone strikes N-S.

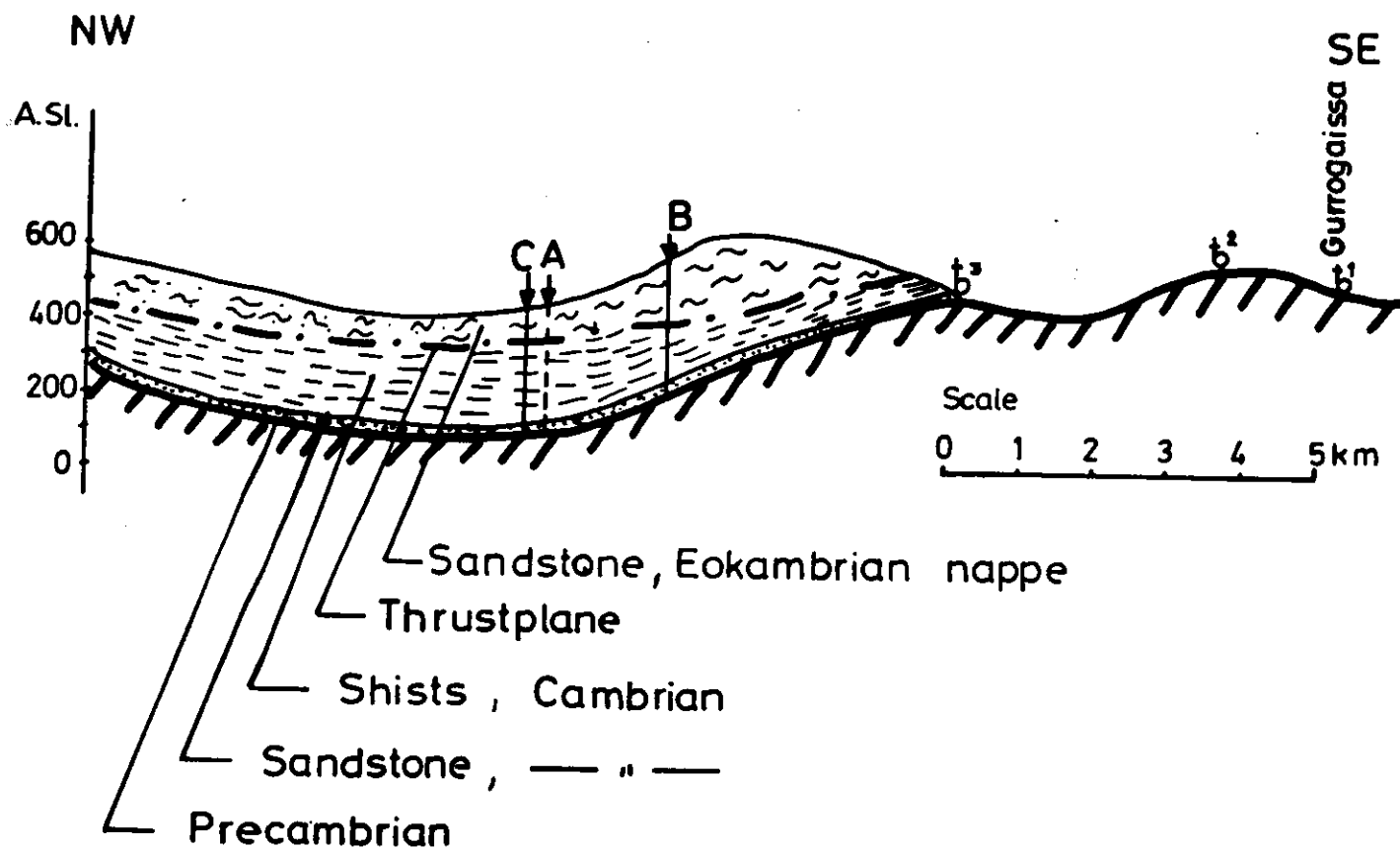
Showing no. 5, Caskelminr., is also in the basal sandstone, but this is a complete dessiminated type. It is a small location, but still important since it is found on the NW-flank of a Precambrian ridge. This localization seems to be similar to the localization of the Laisvall deposit in Sweden.

None of the showings in the area are believed to be of any economic significance. But it is quite certain that the "Gurrogaissa-type" belongs to the type of lead mineralizations that are found along the boundry of the Caledonian Mountain range. The boundry of the Caledonian Mountain range is about 2500 km's long from Finnmark through Sweden to South Norway. Along this boundry about 20 lead deposits are known and two of those are in operation. That is Laisvall with 80 mill. tons of 4,5 % Pb ore and Vassbo with 4 mill. tons of 6,0 % Pb ore.

CONCLUSIONS AND RECOMMENDATIONS.

It is stated that the mineralizations in the Swedish mines are controlled by the fracture pattern. This must also be said about the

NW-SE-section showing lead mineralizations and drill proposals at Gurrogaissa, Lakselv.



fracture zone pattern with relation to the lead mineralization at Gurrogaissa.

In, and near the crosspoint of the two important fracture zones (C at map and section), it should be good possibilities of galena concentrations in the basal sandstone. Both fracture directions 130° - 310° and N-S are proved to be galenabearing in the area. In addition the crosspoint of the fracture zones is located at the lower part of a Precambrian hill facing to the NW (see section). The Laisvall deposit in Sweden has a similar location at the hillside of a Precambrian ridge.

It should also be mentioned that the distance to the sea only is 15 km's and that the distance to the center of Lakselv only is 20 km's.

Under geophysical work it is mentioned that IP-measurements were carried out in 1968. These results were negative due to the thrust-plane and Cambrian schist. Other geophysical measurements are now discussed, but it is likely to believe that they will turn out with the same negative results.

To get a clear answer to the possible mineralization of disseminated galena in the basal Cambrian sandstone in this area, it should be drilled. Three drillholes, A,B,C, are suggested (see map and section).

Drillhole C is located near the cross point of the two major fracture zones and drillhole A and B are located close to each fracture zone in the slope of a Precambrian ridge. The total meters to be drilled will be 1000 m and the costs are then estimated to be N.Kr. 1 mill.

Stabekk, December 17th, 1980.

Bernt Røsholt

Bernt Røsholt.

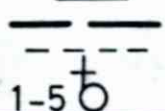
MAP SHOWING LEAD MINERALISATIONS SE OF LAKSELV.

KEY:



Eocambrian and cambrian rocks
Precambrian rocks

A-C O Drillhole proposals



Important fracture zone
The precambrian peneplane
Lead showings

B.R. 1978

