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URANIUM PROSPECTING IN NORRLAND INTERIM REPORT NOV. 1981

SUMMARY

During 1981 SGU has conducted uranium prospecting under contract to SKBF both in parts of S. Norrland and, from July 1st in northern Västerbotten and southern Norrbotten. The work in S. Norrland represents the fifth part of a five year project, started in 1977, while the work in S. Norrbotten represents a new venture, following the application by SKBF to take over the uranium exploration concessions which SGU had held for the Swedish State.

By the end of the summer of 1981 all airborne surveying ordered by SKBF had been undertaken. Following negotiations between SGU, SKBF and NSG there was a slight change in the area surveyed. Similarly all geochemical surveying ordered had been carried out.

Most of the uranium anomalies located have been followed up, and the remainder can be followed up in 1982. In addition there should be a continued follow up of the integrated geophysical, geochemical and geological surveys over the entire region. One new concession, Tjärdalsmyran, has been applied for - a further concession application is justified.

Evaluation of the uranium potential of SKBF concessions in S. Norrland continues. Excellent results have been obtained from the Häbbersklumpen and Rörvattnet concessions, where detailed work should continue for several years. Further work is required in the Högremmen/Näverån concessions although these are not judged to be of great promise. The concessions at Rosången, Ribberget and Stugberget are ready for drilling. Investigations of Höksjön, Trolltjärnshockeln and St. Gillingen are completed with negative results. No further work is planned for Bodsjö and Märreviken at present.

In northern Norrbotten geophysical, geochemical and geological indications were followed up and a number of minor showings re-evaluated. Minor drilling programmes were conducted at Pleutajokk (LKAB:s concession) and V. Rebraur. Most drilling activity has been at Skåpiesavon, which has given really excellent results. Semi-regional work around Skåpiesavon has now located at least four separate mineralisations. Although Kvarnån is judged to have a considerable potential drilling will not be resumed until a better evaluation of Skåpiesavon is available.

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Table 1. Summary of activities in the SKBF concession areas in southern Norrland

Concession	Concession application granted	Work done 1981-05-01--10-31			Planned work 1981-11-01--1982-04-30		
		Geology	Ground geophysics	Drilling	Geology	Ground geophysics	Drilling
Häbbersklumpen	Yes	X	X	X	X	X	X
Rörvattnet	Application for renewal	X	X	X	X	X	X
Sjaule	Applied for						
Flistjärn	Yes						
Prästrun	Yes						(X)
Valle	Yes	X					
Högremmen	Yes						
Näverån	Yes		X		X		X
Höksjön	Yes						
Bodsjö	Yes	X					
Rosången	Yes	X	X				X (NSG)
Märrviken	Yes						
Trolltjärnshockeln	Yes			X			
Riberget	Yes	X	X		X		X
St. Gillingen	Yes	X					
Tjärdalsmyran	Applied for	X					X (NSG)
Stugberget	Yes	X	X		X	X	X
Tossåsen	Applied for						

Table 2. Summary of activities in the SKBF concession areas in northern Norrland

Concession	Concession application granted	Work done 1981-05-01--10-31			Planned work 1981-11-01--1982-04-30		
		Geology	Ground geophysics	Drilling	Geology	Ground geophysics	Drilling
Björklund 1	Application for transfer						
Duobblon St 1	"						
Gervåive 1	"						
Sjiunjanjaure 1	"						
Vaksliden 1	"						
Autjak 1	"			X			
Labbas 8-9,11-12	"	X					
Virka 1	"						
Gervåive 2	"						
Gervåive 3	"						
Låktevare 1	"						
Viepsajokk 1	"						
Kvarnån 1	"	X		X			
Skåpiesavon 1-2	Yes	X	X	X		X	X
Vuotsas 1	Yes	X					
Rävaberget 1	Yes	X					
Rebraur V:a 1	Yes			X			
Vaksliden 2	Yes	X					
Skåpiesavon 3	Applied for	X				X	
Vuotsas 2	"	X				X	

HOTAGEN AREA AND SOUTHERN NORRLAND

REGIONAL PROSPECTING

6 map sheets were ordered jointly by SKBF and NSG. The area has been flown this summer (Map 1). 998 geochemical samples have been taken (Map 2) covering an area of 668 km².

Regional sampling (peat from stream banks):

14 F NO	395 km ²	369 samples
15 F SV	250 "	223 "

Detailed sampling (peat from bog edges):

Spjuttjärnen (21 E 0a)	6 km ²	128 samples
Snottatjärnen (15 F SW)	17 "	278 "

229 airborne radiometric anomalies and 46 geochemical anomalies have been followed up (Map 3). The following new prospects have been found (Map 4):

Losjön (14 G 9c). Uranium mineralised boulders found at a radiometric anomaly. A minor detailed boulder-tracing programme was conducted giving rise to some 90 boulders with activities between 200 and 2200 uR/h.

Långmyrtjärnberget (14 G 7d). A minor mineralisation was found in an outcrop of grey granitic rock, possibly of sedimentary origin. The activity was 200 uR/h in an area of 3x15 m and the maximum activity was about 2000 uR/h.

NW of Häsbosjön (14 G 5b). A few boulders of gneissic granite with low grade mineralisations have been found. The best boulder in the area reached a maximum activity of 400 uR/h.

Svensboberget (15 F 3-4g). A boulder train found by regional boulder-tracing. The object is described later in the report.

Apart from these prospects some single boulders have been found, that require follow-up next year.

HOTAGEN AREA

The following investigations have been carried out in the Hotagen area:

- a) Ground spectrometer measurements
- b) Ground geophysics at Valle, Prästrun and Lilljuthatten
- c) Detailed mapping of Stensjöån, area 7 and area 8
- d) Detailed boulder-tracing and mapping of Valle, Nöjdfjället and Kläppibäcken
- e) Diamond drilling at Lilljuthatten, Långtjärn, Nöjdfjället and Klockansexklumpen

RÖRVATTNET CONCESSION

Långtjärn

A total of 27 drillholes were completed during winter and spring 1980-1981. Drilling has been located to four different subareas within the Långtjärn zone (Map 5). The results have been negative and the area is judged to have no economic potential and therefore no further work is recommended. A separate report will be submitted in November.

Klockansexklumpen

The prospect is situated on the northern slope of the Klockansexklumpen mountain (Map 5) and was found in 1975 by snow-scooter survey. Detailed boulder-tracing and mapping was conducted in 1975-1976. During 1977-1980 most of the work in the Hotagen area was concentrated to Lilljuthatten but in summer 1981 this prospect was prepared for drilling and in August-September two holes were drilled (Map 6). Drillhole 81301 intersected a weak mineralisation but the overall result from the drilling was negative. Nevertheless at least three more drillholes are planned for 1982.

Spjuttjärnen

This autumn peat bog edges were sampled and during winter ground geophysics covering some 8 km² will be made. Next summers work on this prospect will include follow-up of geochemistry, boulder-tracing and mapping (for location, see Map 5).

HÄBBERSKLUMPEN CONCESSION

Lilljuthatten

During the summer of 1981 11 drillholes have been made, concentrated to the northeast and the southwest of the known mineralisation (Map 7). The last three holes from 1980 (i.e. 80026, 80028 and 80029) were completed with negative results. Another two holes (81004, 81006) in the southwestern part drilled towards the northwest were also negative. The remaining 5 holes were drilled in the northwestern part with mostly negative results although hole 81010 showed a minor mineralisation in contact with and above the gently dipping dolerite dyke. The same mineralisation has also been found in hole 80006, but as holes 78006, 80008 and 80007 do not show any mineralisation it is judged to be of minor interest.

In uranium report 1981-6 five prospecting areas were proposed (1981-6 Fig. 10). So far area 1 has been checked up with one drillhole (81005). The purpose of that drillhole and area was to investigate the northwest-southeast trending negative electromagnetic anomaly shown in Fig. 4, 1981-6. The anomaly was thought to be due to either a dolerite dyke or a water-bearing crush-zone, but neither of those features were detectable in drillcores. Areas 2-4 will be drilled during this winter with a total of 8 drillholes.

Three seismic profiles shown on the drillhole map were made to detect the overburden depth. All profiles show a vertical depth surface to bedrock of 20-40 metres. In spite of the great overburden thickness and drilling-water problems we will try to

complete the drilling programme of 8 holes in areas 2-4.

Completing the ground geophysical surveys VLF-measurements have been made over the Lilljuthatten area.

Nöjdfjället (Area 9)

The area is situated on the northern slope of the Nöjdfjället mountain (Map 5) and was found in 1974 by regional boulder-tracing. Detailed mapping and boulder-tracing took place in 1975 and 1976. The prospect was judged to be promising but since work was being concentrated to Lilljuthatten no more work was done. However in late 1980 ground geophysics was made and in summer 1981 the geological work restarted. After very intensive work an area of 0.15 km² was mapped and boulder-traced in detail (Map 8). This work extended the mineralised area and the number of boulders known from the 1976 work. A road was made to the area and in October 1981 drilling started with two rigs.

The main uranium mineralisations are of two different types both with activities up to 3000 μ R/h. The first type is very similar to that of Lilljuthatten with various stages of biotite altered, cataclastic granite and the other is a brecciated granite. There are also some dolerite boulders with activities between 200 and 1000 μ R/h. Samples from 1974 and 1976 show a uranium content of 0.1 % and there is occasionally fluorspar associated with up to 0.5 % F.

As mentioned earlier drilling started in October and a drilling programme of at least 14 holes will be carried out during the winter (Map 9). At this moment hole 81401 has been done with negative results, but uranium-bearing rocks have been intersected in holes 81402 and 81403 with activities up to 300 μ R/h on drill-cores. That activity would, in comparison with Lilljuthatten, suggest a grade of at least 1000 ppm U, but no analysis are yet available. At this stage the prospect looks very promising and extensive drilling with two rigs during winter and spring will

hopefully give results to increase the ore potential of the Lilljuthatten area.

Kläppibäcken

In 1976 some boulders were found by semi-regional boulder-tracing south of the Långtjärn zone (Map 5). This summer the area was revisited and some 60 boulders were found (Map 10). The boulders lie in a very limited area about 40x60 metres and are mostly very high in activity. Fluorspar and chalcopryrite are often associated with uranium mineralisation and the only sample from 1976 shows a uranium content of 0.6 % and 0.085 % Cu. The boulders look very much like those of Buretjakke, a prospect briefly described in uranium report 1979-16; Interim report October 1979.

This similarity and many other small findings with uranium-fluorspar association in Nöjdfjället-Stenfjällen region suggest further work on this type of mineralisation and on Buretjakke and Kläppibäcken prospects especially glacial and moraine studies.

Stensjöån

So far 11 diamond drillholes and 12 percussion drillholes have been made with mostly negative results although some minor mineralisations were found in three of the holes. However those intersections do not explain the boulders. This summer a new boulder-map was made on a very detailed basis (Map 11). The purpose of the new mapping was to get some new ideas of where further drilling should be done. On the new map one can see a clear trend in the boulder distribution that suggests drilling right in the middle of the densest boulder area. Ground geophysics, including magnetic, slingram and VLF surveys, will be done in winter 1981-1982 over the surrounding area (i.e. Spjuttjärnen area) and it is recommended to wait with drilling at Stensjöån until the results from the geophysics are available.

PRÄSTRUN CONCESSION

Ground geophysical survey, including magnetic and VLF, was made over a smaller part of the concession area in March 1981. No other work has been done on this prospect this year.

The mineralisation lies in rocks probably belonging to the Svecofennian nappe of the Caledonides and has quite different mineralogy than the Lilljuthatten mineralisation. Therefore sampling of the mineralisation will be made for flotation and leaching tests at Höghskolan, Luleå. If these tests are positive, the area is proposed for drilling in 1982.

VALLE CONCESSION

The mineralisation was found in 1979 and has this summer been investigated in detail with mapping, boulder-tracing and digging (Map 12). The map is drawn from the results of the 1979 work, but as no major new findings were done this summer, the map gives an accurate picture of the prospect. Unfortunately the deep weathering of the dolerite dyke and vegetation conditions made it impossible to excavate a cross-section over the dolerite dyke. Although a few boulders were found just north of the concession area the prospect is now judged to be of minor interest. If the ore potential of the Lilljuthatten area increases a few short drillholes through the dolerite dyke would be motivated.

SOUTHERN NORRLAND

STUGUN AREA

The interpretation of the ground geophysical measurements has been completed. Based on this a continuation of the drilling programme at Näverån is planned and will start in November or early December.

At Högremmen the geophysical measurements are disturbed by the many power lines, and in the critical area it is not possible to do any interpretation. In order to locate the mineralisation a deep radon investigation might be needed.

HÖKSJÖN CONCESSION

The drilling programme at Höksjön was completed in April 1981 and now all drillcores have been examined (Map 13). The results show that the mineralisation is very small and no further work is planned in the area. During the winter a more detailed report on the object will be prepared.

BODSJÖ AREA, Map 14

A final revision of the geological map was made by NSG during the summer. In the winter it will be drawn in its final form in cooperation between NSG and SKBF.

The other activities in the area were mainly restricted to the concession area "Rosängen 1" (Map 15). At Staverberget the detailed boulder-tracing was extended (Map 16) and a more detailed geological mapping of the surroundings was made. NW of the known boulder train some regional boulder-tracing was conducted but nothing interesting was found.

The first IP-measurements did not give any anomalies in close proximity to the boulder train and the survey area was therefore extended in the autumn. If a better result is obtained by this NSG will start drilling according to the agreement with SKBF.

TROLLTJÄRNSHOCKELN CONCESSION

A drilling programme of 7 drillholes with a total length of 561,40 metres was conducted at Trolltjärnshockeln during April and May 1981.

The aim of the drilling programme was to investigate a small magnetic anomaly in the probable source area of the uranium mineralised boulders at Trolltjärnshockeln.

The preliminary results are clearly negative, but since gamma-logging was not possible in some drillholes (due to crush zones)

a careful examination with hand instrument in connection with chemical analyses is needed. When these results are available a report of the detailed prospecting and the drillings at Trolltjärnshockeln will be prepared.

VOXNA AREA, Map 17

Hammarkesviken

No prospecting activities during the field season of 1981. A report will be prepared during the winter of 1981-1982.

Voxna station

No prospecting activities during the field season of 1981. A report will be prepared during the winter of 1981-1982.

Sandsjöån

The prospect has been revisited during the summer and minor prospecting activities (regional boulder-tracing) have been conducted in the surroundings. No new uranium mineralisation of economic potential was found. This in addition to the poor results from the ground geophysical test profiles conducted during the winter of 1980-1981 reduces the interest in the area. Therefore a report describing the prospecting activities so far conducted will be prepared during the winter of 1981-1982.

However it must be stated that the geological environment around Sandsjöån is very interesting for uranium prospecting and therefore it is motivated to conduct further work in this area when the airborne geophysical maps covering map sheet 15 E are available in the summer of 1982.

Riberget concession (Allajocksbäcken)

Geological mapping (regional and in detail) and regional boulder-tracing have been conducted in and around the Riberget concession area during the summer of 1981 (Map 18). The regional boulder-

tracing revealed a number of new uranium mineralised boulders southwest of the boulder train at Allajocksbäcken and it is therefore rather evident that there is more than one mineralisation present in the area.

As soon as the ground geophysical maps are available (field measurements completed during the end of October 1981) a decision about the continuation of the prospecting activities will be made. At present two different approaches seem possible: if the location of the mineralisation seems to be fairly evident from the geophysical maps a drilling programme will be planned for the area, if however the location of the mineralisation seems to be uncertain from the ground geophysical results it is believed that trenching would give valuable information prior to drilling.

Örlaxmyran (15 F, 2c)

A detailed boulder-tracing was conducted in this area in the beginning of the field season of 1981. The result was not encouraging since the boulder train is very narrow and the amount of boulders low. Therefore no further prospecting activities are planned in this area.

A report describing the prospect and the activities conducted will be prepared.

St Gillingen concession

Regional boulder tracing and mapping of outcrops have been conducted inside and in the surroundings of the St Gillingen concession area during the summer of 1981.

Some new uranium mineralised boulders and also a uranium mineralisation in outcrop were found. The uranium mineralisation found in outcrop is of the same type as the one found at Solberget but smaller. None of the new uranium mineralised boulders can be said to have economic interest (with one exception, see description of boulder train found at Svensboberget below).

Due to the negative results obtained from the St Gillingen concession area during the summer of 1981 no further prospecting activities are planned for this area.

A compilation of the results will be presented in a report and this report will probably result in a recommendation to withdraw the St Gillingen uranium concession.

Svensboberget

During regional boulder-tracing a boulder train of uranium mineralised pegmatite boulders was found at Svensboberget just south of the St Gillingen uranium concession.

A detailed boulder-tracing was conducted in the area at the end of the field season of 1981 revealing 257 uranium mineralised boulders with activities over or equal to 200 $\mu\text{R/h}$ (12 of them showing activities over or equal to 1000 $\mu\text{R/h}$). Three somewhat different types of uranium mineralised boulders occur: 1) A normal greyish-white uranium mineralised pegmatite resembling the type found at Sägtjärnen, 2) a quartz rich pegmatite and 3) a very biotite rich pegmatite. However it is most probable that all three types belong to the same pegmatite, just reflecting a variation in mineralogy.

No chemical analyses are available at present.

Tjärdalsmyran concession

In the interim report of November 1980 an occurrence of uranium mineralised skarn boulders near lake Hästtjärnen was mentioned. Although this prospect was not considered very promising at first, detailed boulder-tracing was conducted during the field season of 1981 and gave a very encouraging result. 367 uranium mineralised boulders with an activity over or equal to 200 $\mu\text{R/h}$ (48 of them showing activities over or equal to 1000 $\mu\text{R/h}$) were found in an area 400x200 metres. Besides the uranium, interesting amounts of molybdenite were found in the boulders. The information about the molybdenite was passed on the geologists

working for NSG in the area and the prospecting activities are now planned in cooperation with them.

The prospecting costs will be shared in that NSG will pay the ground geophysical measurements, and SKBF will pay the initial diamond drillings. (That is, the reverse of the cooperation at Staverberget, Rosången conc. area.) A uranium concession, named Tjördalsmyran, has been sought for the area.

STUGBERGET CONCESSION

The ground geophysical maps from the Stugberget area are now available and they show a positive magnetic anomaly in the area where it was believed that the sedimentary gneisses should occur. In order to see if it is possible to get an even better limitation of the initial drilling area, a minor radon survey will be conducted in early winter of 1981. This radon survey will be conducted as a profile from the proximal part of the boulder train towards the ice direction and covering the magnetic anomaly. In areas where interesting radon values are obtained further measurements will be made in order to delineate anomalous areas.

Drilling operations could then be started in late winter or early spring of 1982. Due to the land owners' appeal against the concession, the ground geophysical measurements were interrupted in the late spring of 1981. Since the appeal has now been rejected by the government ground geophysical measurements will be completed during the spring of 1982.

NIANFORS

In the Nianfors area the prospect Majsaberget south of lake Stornien (Finnsjön) proved to be much larger than expected (Map 19). The main part of the work in the area was therefore concentrated to this, and the other objects, Nissamyrbäcken and Nybodvallen, were left for the next field season.

At Majsaberget detailed boulder-tracing was conducted in an area of $\approx 450 \times 300$ metres. The boulder train is limited by lake Finnsjön to the north and the eastern margin of it seems to have been found, but to the west it is still not limited. This indicates that the mineralised area is at least 450 metres wide. So far 741 mineralised boulders (maximum activity ≥ 200 uR/h) have been found, the best ones with activities > 3000 uR/h. Boulders with activities ranging from 200 to 3000 uR/h have been sampled for chemical analysis and the results are expected during the winter.

In the largest of the mineralised outcrops in the eastern part of the area a mineralised zone which is about four metres wide is visible. The maximum activity is 2000 uR/h and the average 400-500 uR/h in the zone. This means that it is considerably better than any of the mineralised outcrops found for example at Sägtjärnen.

It has been suggested that SKBF apply for a uranium concession.

RÄTTVIK 14 F

In the 14 F Rättvik NE only rather limited regional boulder-tracing was done because of lack of time. More regional work will be done next field season in this area.

N. NORRLAND

This part of the report described work done during the whole of 1981, i.e. partly financed by the state and is a complement to uranium report 1980-15.

REGIONAL PROSPECTING

Geochemistry

As a part of NSG exploration programme in Jokkmokk community an extensive geochemical survey has been conducted. Samples taken have also been analysed on uranium and in some cases the result has been plotted on maps. The uranium anomalies in peat from

stream banks have continuously been followed up (by Sture Westerberg) while other sampling media have been left so far. The latter include the heavy mineral fraction from till samples. These are most interesting as they are based on the same theories as boulder-tracing. Follow up of these anomalies needs however special knowledge about the genesis of moraines and other types of soils. Therefore a glacial geologist with experience of exploration is needed. Interesting uranium anomalies have been received, which ought to be followed up if means permits.

During the follow up just one new prospect area has been found, south of Katnihaurre 27 I, 3 e-f-g (Urandok 27 I - 25, Map 21). Within an area of 2x5 km occur sparse radioactive boulders and spot mineralisation in outcrops, radioactive springs and peat-bogs. The radioactivity is unevenly distributed and may reach 3000 μ R/h in very small spots. Some association with fluorite and molybdenite exist. For further information see Sture Westerberg: "Uppföljning av geokemiska urananomalier på urananslaget, fältsäsongen 1981".

On mapsheet 25 K Harads a number of geochemical anomalies in peat from stream banks have been followed up giving no new findings.

On mapsheet 25 L Boden some till anomalies were followed up without any success.

Geophysics

In 1980 an airborne radiometric survey was carried out on mapsheets 27 I Tjåmotis SW and SE and part of 27 J Porjus SW. Some high altitude measurements have been conducted in the Caledonides. No results from the flights are available.

Regional radiometric uranium maps in scale 1:250 000 have been plotted over two areas. One comprising 23-25 H-J (Map 21) and the other 29-30 K-L. The maps are outstanding and point directly to areas of high interest in exploration not only for uranium but also for elements like Pb, W, Sn and Mo and probably other

metals too. Such maps can be plotted over most areas with existing airborne radiometric results: this should be given high priority.

Following up of sheet 25 K Harads gave no prospects.

Geology

Boulder tracing on 25 K Harads in areas with acid supracrustals resulted in a new prospect at the lake Rödingträsket (Urandok. 25 K-3) 5 km SE of Kvarnå prospect (Map 29). It is 8 U-bearing boulders of the Kvarnå type. The boulders are probably rather local and make together a small boulder train, 800 metres long in NW direction and suggest a small mineralisation not far from the proximal boulders. 6 analyses gave very low U-content. Only 2 gave more than 500 ppm, the best one 835 ppm U.

DETAILED PROSPECTING

SKBF CONCESSION AREAS (MAP 20)

Duobblon, Urandok. 24 H-5

Two holes have been drilled. One on each side of hole 77012, 100 metres apart, in between previous profiles. The aim was to check if there is a uranium concentration towards a small hill in the basement to the uranium-bearing supracrustals. The uranium mineralisation showed no tendency to increase towards this hill but was identical to that in the nearby drillholes.

Björklund (Map 22) Urandok. 24 I-2

A drilling programme of 11 initial drillholes was interrupted after 7 drillholes due to negative results. Three of the new drillholes cut minor mineralisations which however do not fit with a previous hypothetical ore construction.

A detailed geophysical test showed no significant correlation between the mineralisation and various geophysical characters except with magnetism which was known from before. See SGU geophysical report FM 8028.

Rävaberget (Map 23) Urandok. 24 I-8

During the summer semi-regional boulder-tracing was undertaken in the Rävaberget area. 2 new U-mineralised boulders were found (acid volcanic rocks). One of these has a uranium content of 0.90 % U, but is very small and well-rounded. No mineralisation of Rävaberget-type (episyenite) was found.

During the autumn a 300 metres long trench was made along the boulder train, which occur southeast to the mineralised outcrops. No mineralisation was found close to the two marked concentrations of boulders (0/150 E and 100 N/0) in the boulder train. Exposing of a known small mineralised outcrop at 515 N/400 W shows a mineralisation of 10x15 metres and a thickness of at least 2.0 metres. Further excavations will be carried out next summer.

Långträsk (Map 24-25) Urandok. 24 I-3

The source to the boulders has been excavated 50 metres proximal to the boulders. It coincides with a distinct low magnetic anomaly indicating the ore-bearing crush zone. Some other crossing dislocations can be traced within the same area.

A surficial soil air emanometry has been conducted. Anomalies appeared in connection to the boulders. A weak anomaly elongated in ice-transport direction occurs 100 metres NE of the boulder area. This has probably nothing to do with the mineralisation.

Virka (Maps 26-27) Urandok. 25 I-18

So far 20 diamond drill holes have been drilled. A 300 metres long uranium mineralisation is indicated. The width varies between 0.2-2 metres. It extends to at least 100 metres depth but

the quality tends to be weaker downwards. The mineralisation might be delimited towards NE but is still open towards SW although it is weaker. The VLF maps indicate that the uranium bearing structure continues towards SW but the bedrock disturbances are overprinted by power lines towards NE.

A preliminary ore reserve calculation results in 35 tonne U at a grade of 0.11 % U over 1.6 metre width. The calculation comprises only some small richer parts according to the maps.

Gervåive, Urandok. 25 I-9

Altogether 29 samples from the Gervåive boulder train and sub-outcrop have been analysed by XRF and Jumbo. The uranium content varies between 0.004-0.7 % U with 11 samples over 0.1 % U. Two boulders have been analysed for gold and silver:

1) 0.3 % U, 5 ppg Ag and no Au, 2) 0.7 % U, 130 ppm Ag and 1.9 ppm Au. The latter boulder differ from the other in host-rock type. It is an acid metasupracrustal while the other boulders are granitoids. Its source is probably not the same as for the other.

V. Rebraur (Map 28), Urandok. 25 I-5

3 shallow diamond drillholes were drilled just behind the excavated mineralisation. The first 2 holes contain a very weak and narrow mineralisation while the last drillhole was empty. A rough calculation gives 5 tonne U at 0.07 % U. No further investigations are planned.

Kvarnån (Map 29-31), Urandok. 25 K-1

During the year 1981, 14 holes with a total length of about 2600 metres were drilled. 13 of the holes intersected the U-mineralisation and 9 were pulse gamma logged. One of these, in the SW part, showed more than 0.1 % U over more than 2.0 metres. The drillings have extended (about 70 metres) and defined the mineralisation to the northeast. 8 holes were drilled in the southwest part of the mineralisation and shows further mineralisation down to 200 metre vertical depth and to the southwest.

Detailed results from the prospecting activities, mostly drillings will be reported separately later.
Further drillings are recommended.

During the summer detailed boulder-tracing was carried out. 4 new U-mineralised boulders were found down-stream from the northern boulder train. They are similar to the boulders in that boulder train and belong in all probability to the same mineralisation. The maximum activity measured in one of the boulders was more than 3000 $\mu\text{R/h}$.

Autjak (Maps 32-33), Urandok. 26 H-12

10 diamond drillholes have been drilled. No mineralisation has been found. The bedrock and its rock types are very regular and well defined. From the boulders it is known that the uranium occurs in a conglomerate and to a minor extent in a regolith. From the drillings it is known that this conglomerate is 2 metres thick and is overlying and in contact with the more or less regolithic basement of diorite and monzonite composition. With high significance the source must occur under the lake Grutaure within 100 metres from the shore proximal to the boulders. At the end of the drilling in May it was impossible to drill from the ice. This type of mineralisation has a horizontal extension. The drilling have limited the mineralisation to an area less than 200x200 metres. The thickness does probably not exceed 1 metre. The grade is probably around 0.05 % U. At a maximum there may be 50 tonne U. The real tonnage is probably less.

Pleutajokk (Map 34)

A programme of 1800 diamond drill metres were suddenly interrupted. Two drillholes together little more than 400 metres were drilled. The first one north of the B-zone in order to catch a possible extension towards the north and towards depth. This drillhole was empty with exception of a minor mineralisation near the surface. The second drillhole was on E₂ in order to catch an eventual mineralisation indicated by local boulders in

nearby pits. No mineralisation at all was found. The drilling programme is still up to date and drilling can be resumed at any time.

Labbas (Map 35), Urandok. 26 H-7

A new ore reserve calculation using the polygone method has been done with respect to all drillholes. The calculation gives 88 tonne U at a grade of 0.10 % U and the thickness 3.4 metres or 4 metres horizontally.

An unsuccessful attempt was made to excavate the presumed subglacial outcrop of the mineralisation discovered SW from the "main body". The trenching was done recently and there were a lot of difficulties with water in the trenches. The detailed magnetometer measurement is finished and the result plotted.

Sjiunjanjaure (Map 34), Urandok. 26 H-16

The till spectrometry contributed with no new information. A ground magnetic map has been produced. This prospect is waiting for drilling.

Vuotsas (Map 34), Urandok. 26 H-19

Minor excavations have been done by hand on the outcrops in the northern part. Further activities include detailed radiometric surveys and drillings which should be done after the exploration in Skåpie area.

Skåpiesavon Syd (Maps 36-37), Urandok. 26 I-29

Diamond drilling is for the moment being carried out by three machines. So far some 20 drillholes have been completed. They indicate a mineralisation 200 metres long at surface in a NNE direction. The ore body may be shaped like a ruler dipping 60-90° towards the west plunging perhaps 45° towards the south. The body is known down to 200 metres depth and shows no tendencies to disappear. A rough calculation gives so far 500 tonne U at a grade of 0.1 % U and a width of 7 metres.

A semi-regional boulder-tracing has been conducted towards the south comprising 2x3 km. Two boulders of Skåpie Syd type have been found 1 km SSE of the orebody. One of the boulders contains 1.2 % U.

2.5 km S of the orebody, at the lake Äggomjaure, a number of low radioactive boulders of the Skåpie Syd type occurs. These boulders indicate that the ore-bearing structure may continue at least 3 km south of Skåpie Syd.

Late in the autumn till spectrometry measurements started in profiles from Skåpie Syd southwards, but the winter came and the measurements were soon interrupted. A ground magnetic and VLF map exist but need to be extended to the south. The concession area needs to be extended to the south.

Skåpiesavon Norr (Maps 34, 36), Urandok. 26 I-28

A diamond drill programme is planned for the prospect at the river in 1982.

Due to new findings the detailed boulder-tracing has been extended towards the north. So far some 60 boulders have been found in one (or two?) new 200-300 metres wide boulder train. The uranium content varies between 0.04-0.4 % with 0.17 % as a mean value. In some big radioactive boulders the radioactive zone is 0.5 metre wide. As to the rest it is of Skåpie Syd. An extension of the ground-geophysics to the north is necessary. A concession has been applied for.

OTHER BOULDER TRAINS AND MINOR MINERALISATIONS

Laisbäck, Urandok. 23 H-2

6 holes were drilled during the budget year 1980/81. Uranium mineralisation similar to the boulders has been found in 2 holes. The mineralisation in the holes probably does not correspond to the source of the boulders. Further exploration should start

with excavating the suboutcrop proximal to the boulders, but priority has been given to other prospects.

Ravenberget (Map 38), Urandok. 24 I-7

On separate occasions during 1973-1981 several U-mineralised episyenite boulders have been found in the Ravenberg area.

During last summer parts of the area were more closely investigated by boulder-tracing. About 10 new mineralised episyenite boulders were found, which together make about 30 during the years, along a 4.5 km long boulder train. A marked concentration seems to appear on the southeast shore of lake Trappojaure. 8 rock samples from boulders were collected and the chemical analyses gave following results for uranium and thorium:

sample	U ppm	Th ppm	Maximum activity in situ (uR/h)
BUAC 81591	2394	54	650
" 81592	2042	58	850
" 81593	1966	55	700
" 81594	1535	59	300
" 81595	2770	65	400
" 81597	2564	65	1500
" 81598	170	59	600
" 81608	618	49	600

6 U-mineralised boulders of supracrustal type (different volcanic rocks) have also been found in the area. 3 samples were collected and the chemical analyses gave following results:

sample	U ppm	Th ppm	Maximum activity in situ (uR/h)
BUAC 81586	845	79	500
" 81588	959	127	200
" 81589	515	54	200

Further prospecting activities are recommended, especially detailed boulder-tracing in the area of Trappojaure.

Brännspiken (Map 39), Urandok. 25 K-2

In 1971 a small U-mineralisation was found as a result of the follow-up of anomalies from the airborne radiometric survey, about 5 km south-southeast of Kvarnån on the hillside of Brännspiken. A small mineralised zone (5x40 metres and a thickness of at least 1 metre) occur in a larger outcrop in the area. The mineralisation occurs in a light-grey, fine-grained, calcareous, banded volcanic rock (tuff), slightly schistose. Here and there epidote-spots occur sometimes together with garnet. The zone strikes east-west and dips slightly to the south. To the north the same tuffitic rock continues without any epidote, but there are spots with an activity of 50-80, maximum 110 uR/h. To the south, after about 50 metres, a red, fine-grained, intermediate volcanite occur, without any mineralisation.

The maximum activities can be related to epidote-spots, but also to biotite orientated parallel to schistosity. The best part of the mineralisation has an activity of 100-300, maximum 1000 uR/h.

During the summer a radiometric map was made over the mineralised zone. 8 rock samples were collected for chemical analyses and gave the following results for uranium and thorium:

sample	U ppm	Th ppm
BUAC 81514	549	34
" 81515	248	42
" 81516	1757	50
" 81517	1204	41
" 81517	803	37
" 81519	223	34
" 81520	1072	39
" 81521	275	44

Further prospecting activities are recommended. Most necessary seems to be do dig a trench in order to get information about the extension of the mineralised zone to the west.

Guoudelis (Map 34), Urandok. 26 H-22

Detailed boulder-tracing which had been planned could not be carried out for lack of time. This prospect will probably wait some years. Analyses show a uranium content of about 0.1 % in the boulders.

SINGLE OR FEW BOULDERS

Lomtjärn (Map 25 I 0b)

Analyses of the boulder gave only 0.03 % U which makes the prospect uninteresting. No further work can be recommended.

Flakabergsmyran, Urandok. 25 I-32

The boulder at Flakabergsmyran carries 0.6 % U. All efforts with semi-regional boulder-tracing in the terrain up to 3 km proximal to the boulder to find additional boulders or mineralisation of this type has failed. During this work a new radioactive meta-supracrustal boulder with 0.2 % U was found 2 km NW of the previous one.

Rinko, Urandok. 25 I-27

The boulders contain 0.07-0.12 % U. No further investigations are planned.

Gilpas (Map 34), Urandok. 26 I-30

The previously recorded boulder contained 29 % U. A second boulder of the same type was found 300 metres SE of the first one. Semi-regional boulder-tracing has been carried out up to the Bergnäsroad to the NW without any further findings. A detailed glacial geological survey with use of a backhoe is planned for 1982.

Jeutum, Urandok. 26 I-32

This boulder has the following content: 8.5 % U, 0.12 % Mo, 0.1 % W, 0.12 % Bi and 345 ppm Ag. No follow up has been done but can be strongly recommended.

N. Bergnäs, Urandok. 26 I-31

One previous boulder found 6 km W of Norra Bergnäs chapel contains 0.14 % U, 1.6 % Th, 0.8 % W and 7 % Y. A mineralogical analysis is in progress. Semi-regional boulder-tracing has not contributed with further findings of this type.

Tapmuk (Map 34), Urandok. 26 I-33

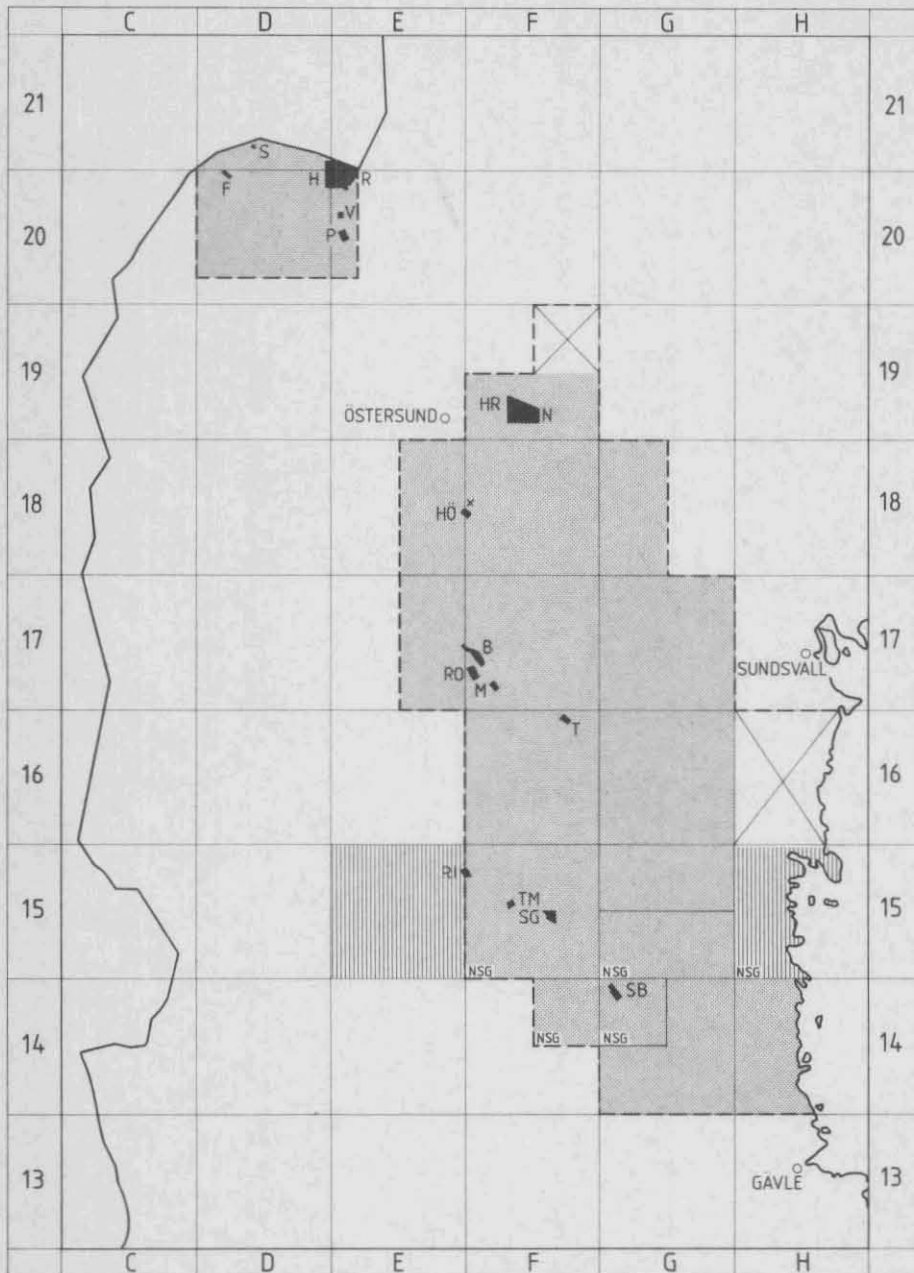
A previously known boulder of interesting type, similar to Skåpie Syd. The uranium content is low: 0.06 %. The source is thought to be close to Nietajaure, 8 km towards NW.

Majtum, Urandok. 26 J-5

An extended till spectrometry survey conducted over 200x500 metres gave no additional information. No further work is planned.

Kuosa, Urandok. 27 I-24

The previously known boulder at Kuosa contains 11 % U and 0.1 % Mo but the mineralisation is restricted to a thin fissure discordant to bedding. No further work is planned.



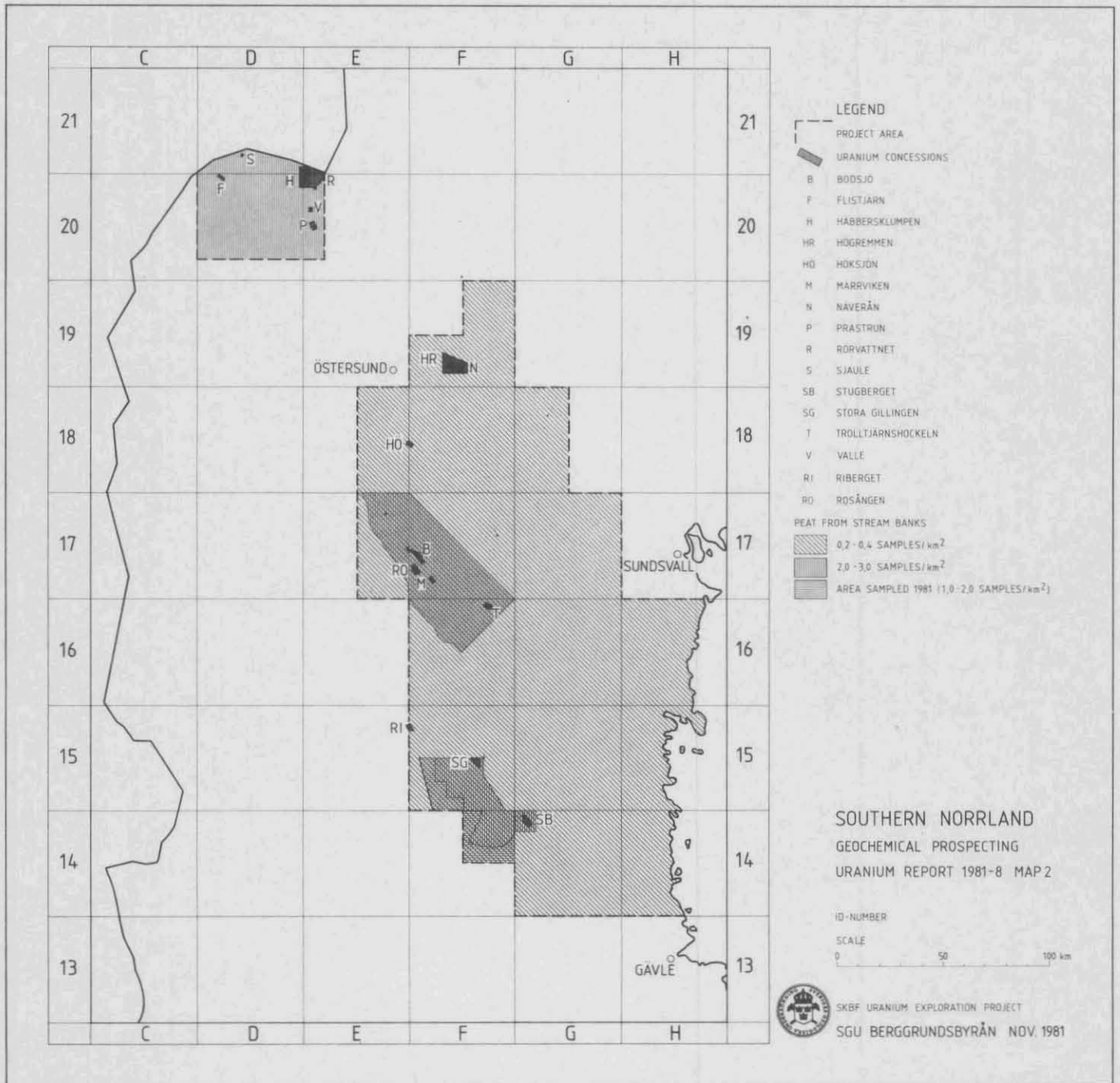
- LEGEND**
- PROJECT AREA
 - URANIUM CONCESSIONS
 - B BÖDSJÖ
 - F FLISTJÄRN
 - H HÄBBERSKLUMPEN
 - HR HÖGREMMEN
 - HÖ HÖKSJÖN
 - M MARRVIKEN
 - N NAVERÄN
 - P PRASTRUN
 - R RÖRVATTNET
 - S SJÄULE
 - SB STUGBERGET
 - SG STORA GILLINGEN
 - T TROLLTJÄRNSHÖCKELN
 - V VALLE
 - RI RIBERGET
 - RO ROSÄNGEN
 - TM TJÄRDALSMYRAN
 - MAP SHEETS FLOWN 1976-1980
 - MAP SHEETS FLOWN 1981
 - MAP SHEETS NOT TO BE FLOWN
 - NSG MAP SHEETS FLOWN FOR NSG

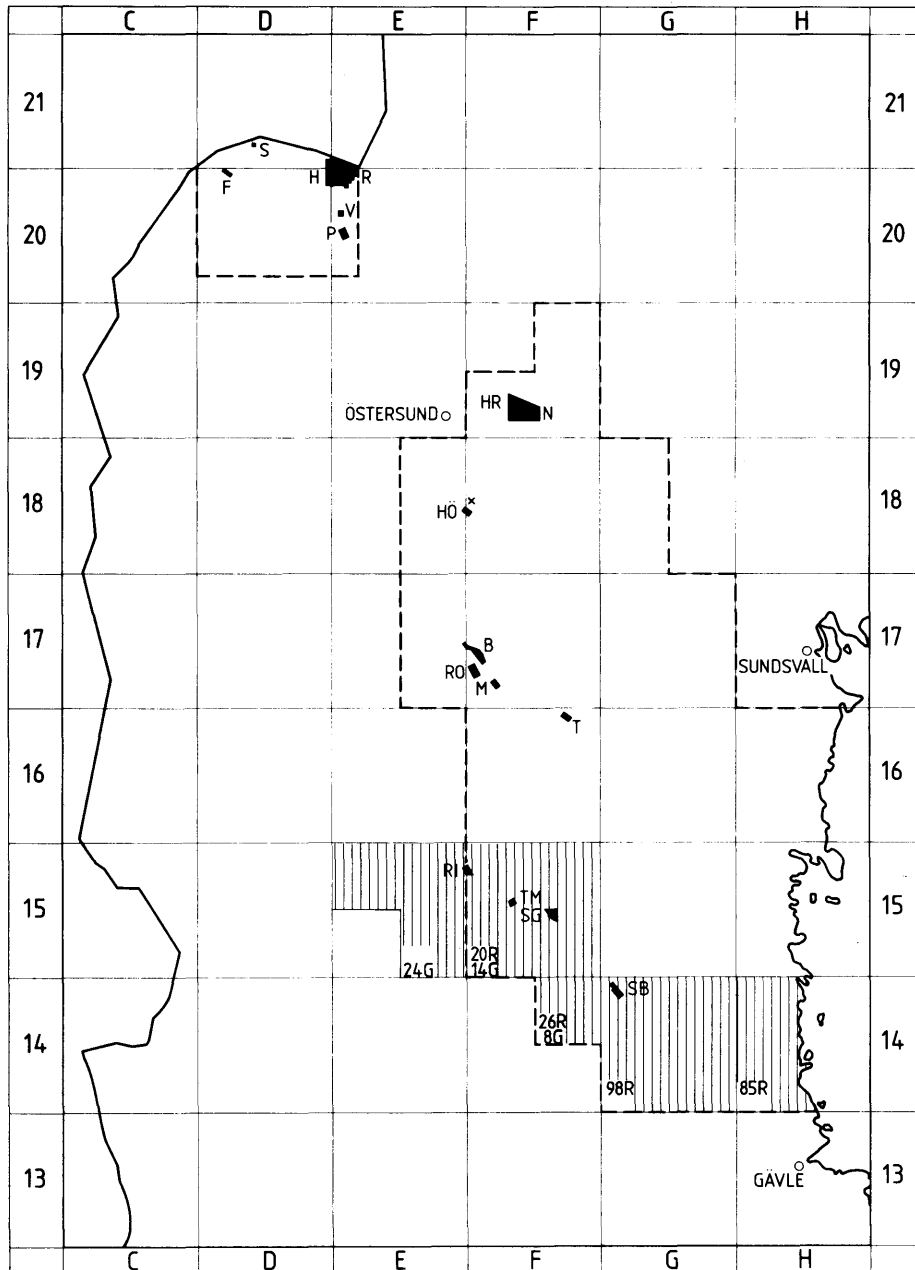
SOUTHERN NORRLAND
 AIRBORNE GEOPHYSICAL SURVEY
 URANIUM REPORT 1981-8 MAP 1



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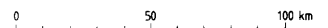
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- LEGEND**
- PROJECT AREA
 - URANIUM CONCESSIONS
 - B BODSJÖ
 - F FLISTJÄRN
 - H HÄBBERSKLUMPEN
 - HR HÖGREMMEN
 - HO HÖKSJÖN
 - M MÄRRVIKEN
 - N NAVERÅN
 - P PRASTRUN
 - R RÖRVATTNET
 - S SJÅULE
 - SB STUGBERGET
 - SG STORA GILLINGEN
 - T TROLLTJÄRNSHÖCKELN
 - V VALLE
 - RI RIBERGET
 - RO ROSÅNGEN
 - TM TJARDALSMYRAN
- AREA COVERED 1981
 20R NO. OF RADIOMETRIC AND GEO-CHEMICAL ANOMALIES
 14G

SOUTHERN NORRLAND
 FOLLOW UP REGIONAL SURVEYS
 URANIUM REPORT 1981-8 MAP 3

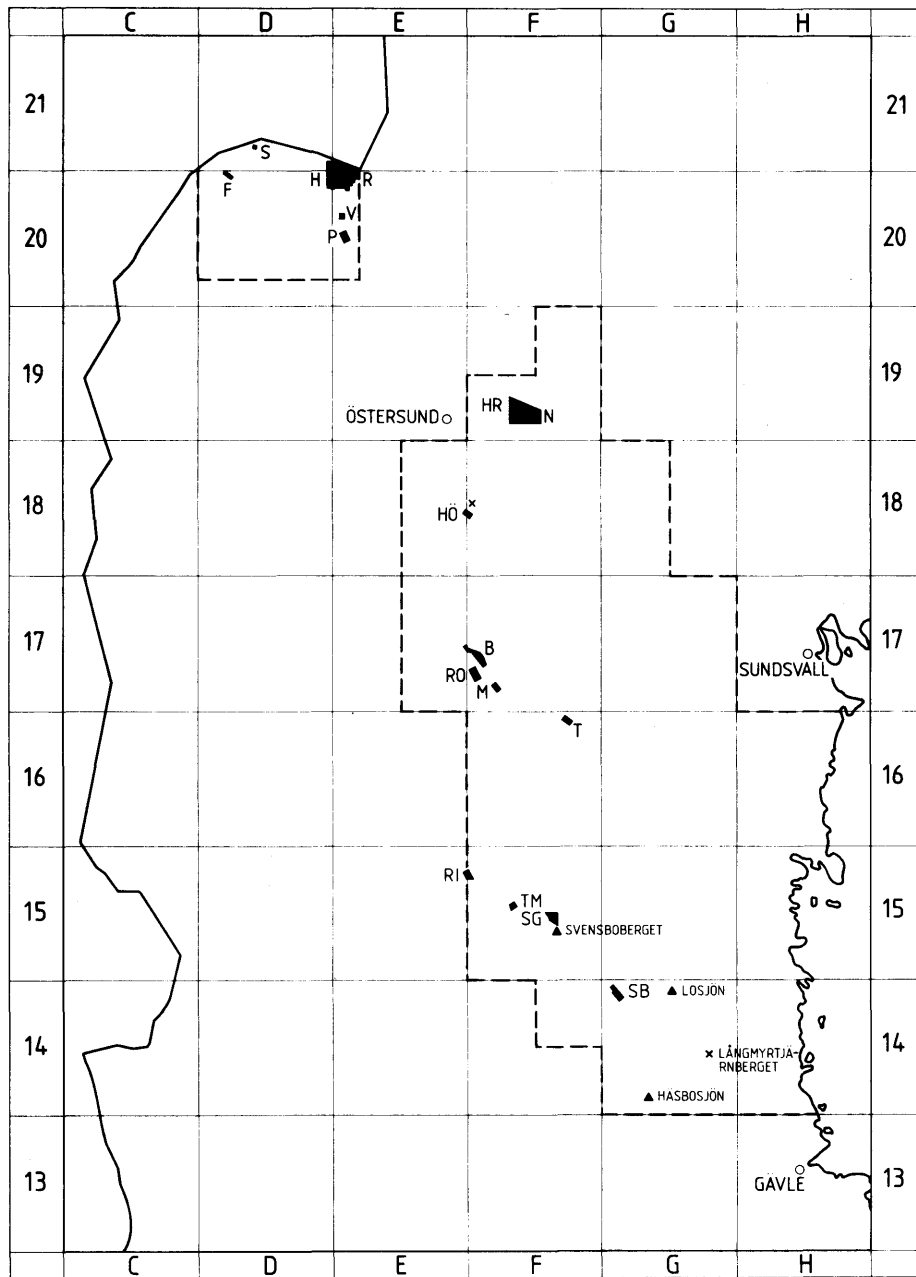


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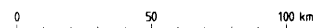
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- LEGEND**
- PROJECT AREA
 - URANIUM CONCESSIONS
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 - F FLISTJÄRN
 - H HABBERSKLUMPEN
 - HR HOGREMEN
 - HÖ HOKSJÖN
 - M MARRVIKEN
 - N NAVERÅN
 - P PRASTRUN
 - R RORVATTNET
 - S SJAULE
 - SB STUGBERGET
 - SG STORA GILLINGEN
 - T TROLLTJARNSHOCKELN
 - V VALLE
 - RI RIBERGET
 - RO ROSÅNGEN
 - TM TJARDALSMYRAN

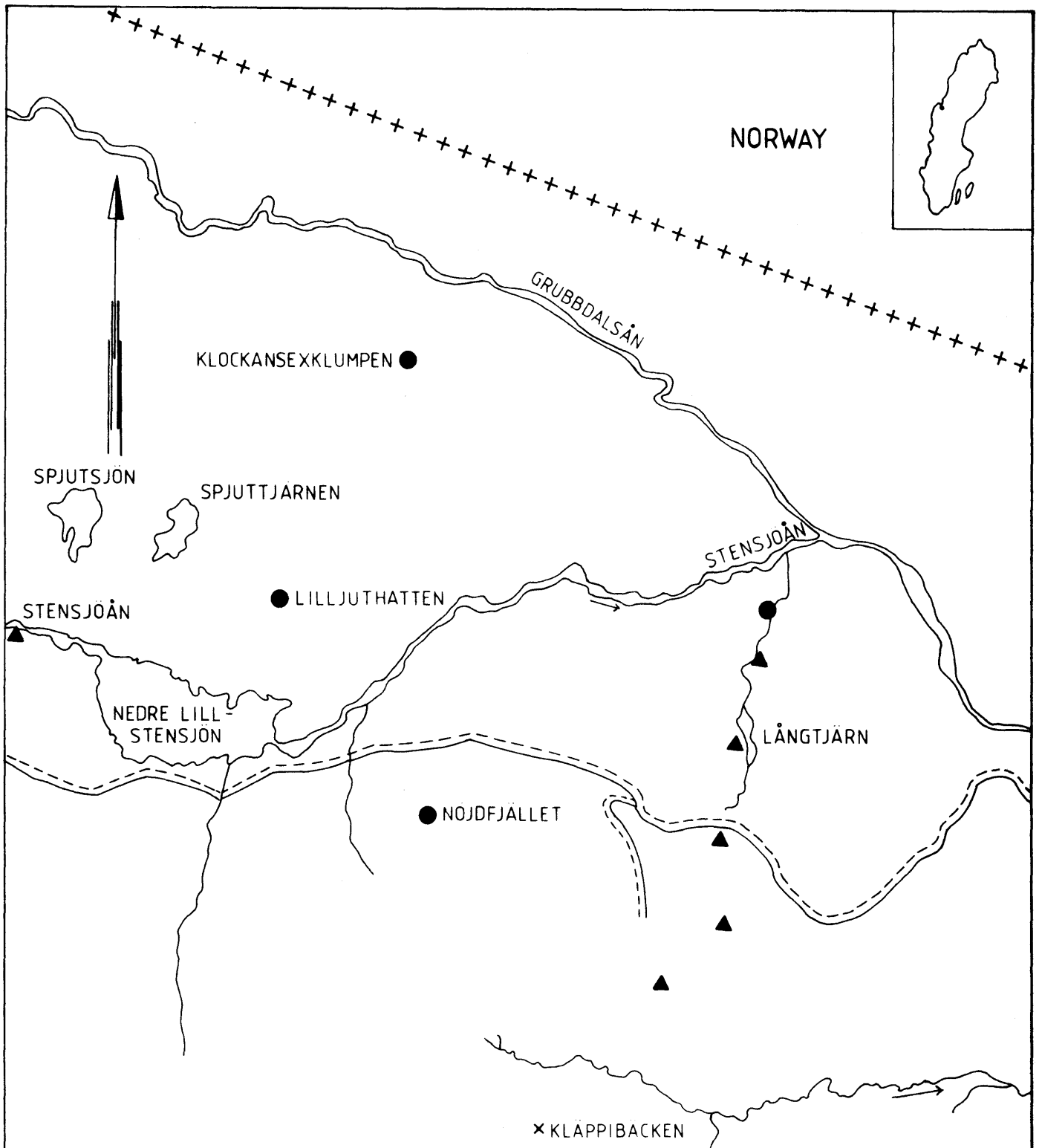
- NEW PROSPECT**
- OUTCROP
 - BOULDER

SOUTHERN NORRLAND
 FOLLOW UP NEW PROSPECTS
 URANIUM REPORT 1981-8 MAP 4



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LEGEND

- DRILLING AREA (MINERALIZED OUTCROPS)
- ▲ DRILLING AREA (MINERALIZED BOULDERS)

LOCATION MAP


URANIUM REPORT 1981-8 MAP 5

MAP SHEET 20E 8-9 a-b, 21E 0-1 a-b,
20D 8-9 i-j, 21D 0-1 i-j

ID-NUMBER

SCALE 1:50 000

0 2,5 km

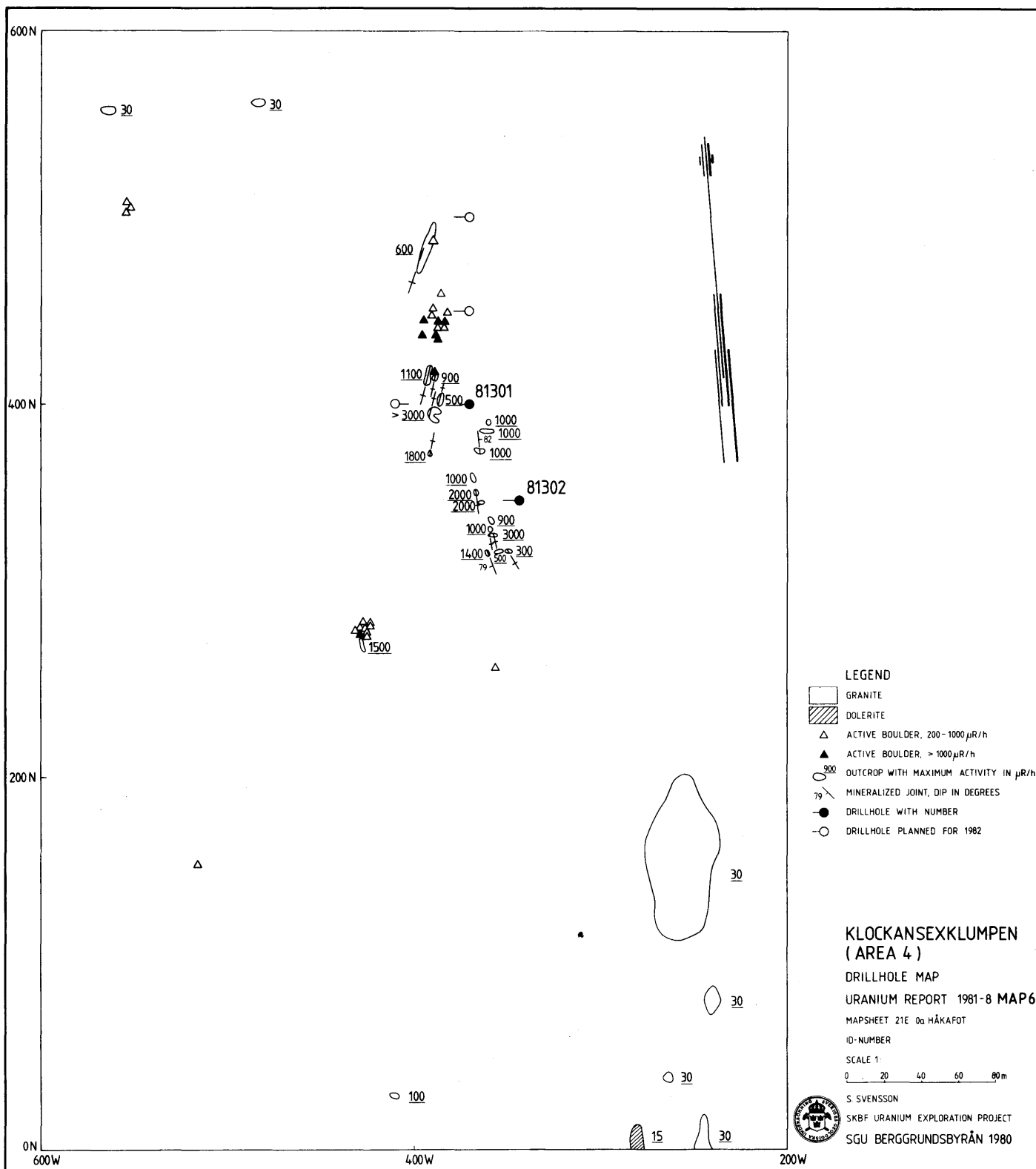

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- LEGEND**
- GRANITE
 - DOLERITE
 - ACTIVE BOULDER, 200-1000 µR/h
 - ACTIVE BOULDER, >1000 µR/h
 - OUTCROP WITH MAXIMUM ACTIVITY IN µR/h
 - MINERALIZED JOINT, DIP IN DEGREES
 - DRILLHOLE WITH NUMBER
 - DRILLHOLE PLANNED FOR 1982

**KLOCKANSEXKLUMPEN
(AREA 4)**
DRILLHOLE MAP
 URANIUM REPORT 1981-8 MAP 6
 MAPSHEET 21E 0a HÅKAFOT
 ID-NUMBER
 SCALE 1:
 0 20 40 60 80m
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1500 W

1300 W

1100 W

1400 S

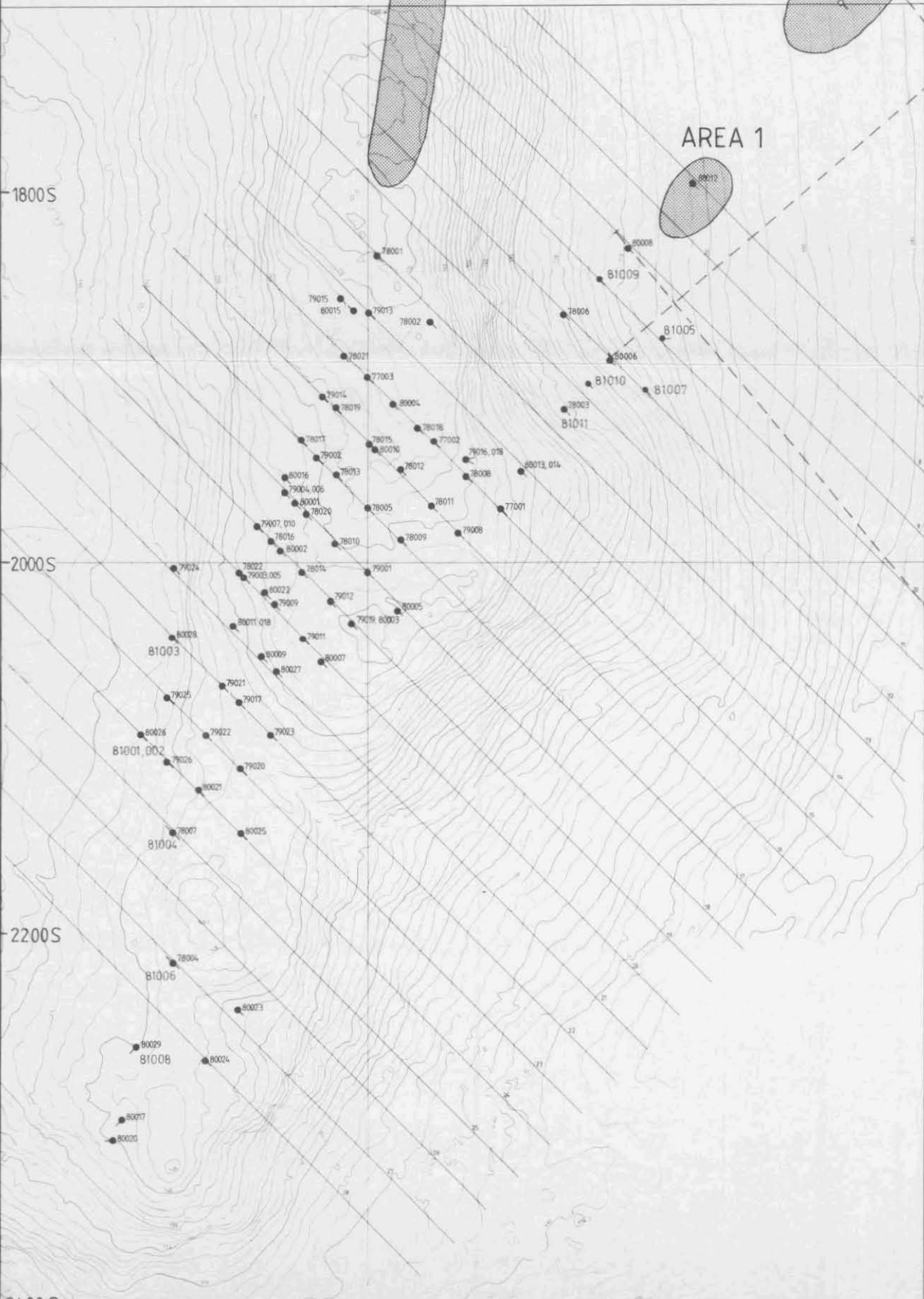
1600 S

1800 S

2000 S

2200 S

2400 S



AREA 3






AREA 5

AREA 2

AREA 1

AREA 4

LEGEND

-  RECOMMENDED DRILLING AREA
-  DRILLHOLE WITH NUMBER
-  DRILLHOLE PLANNED FOR 1982
-  PROFILE WITH NUMBER
-  SEISMIC PROFILE WITH NUMBER



LILLJUTHATTEN

DRILLING MAP

URANIUM REPORT 1981-8 MAP 7

MAP SHEET 20E HOTAGEN

ID-NUMBER

SCALE

0 50 100 m

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- LEGEND**
- GRANITE
 - DOLERITE
 - CATACLASTIC GRANITE, BIOTITE ALTERED
 - QUARTZ VEIN
 - ACTIVE BOULDER WITH ACTIVITY IN $\mu R/h$
 - JOINT, DIP IN DEGREES
 - FOLIATION, DIP IN DEGREES
 - FAULT WITH DIRECTION OF MOVEMENT
 - BOG
 - POND, LAKE
 - STREAM

NÖJDFJÄLLET (AREA 9)
 PROSPECTING MAP
 URANIUM REPORT 1981-8 MAP 8
 MAP SHEET 20E 9a HOTAGEN
 ID-NUMBER














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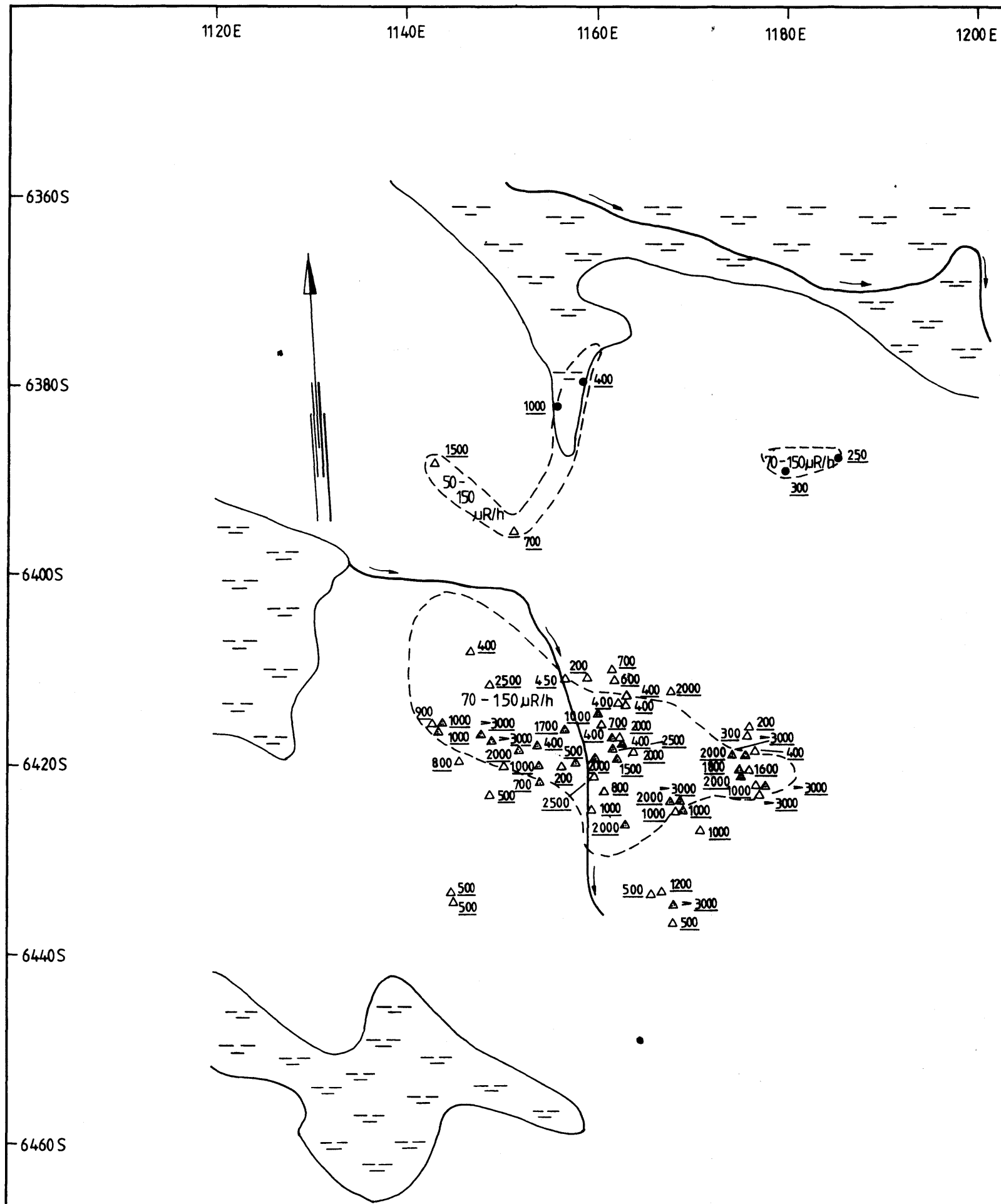


- LEGEND**
-  GRANITE
 -  DOLERITE
 -  MINERALISED OUTCROPS
 -  ACTIVE BOULDER WITH ACTIVITY 200-1000 µR/h
 -  ACTIVE BOULDER WITH ACTIVITY >1000 µR/h
 -  DRILLHOLE WITH NUMBER
 -  PLANNED DRILLHOLE
 -  DRILLING PROFILE WITH NUMBER
 -  BOG
 -  LAKE
 -  STREAM

NJODFJÄLLET
 DRILLHOLE MAP
 URANIUM REPORT 1981-8 MAP 9
 MAP SHEET 20E 9a HOTAGEN
 ID-NUMBER
 SCALE
 0 25m

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- LEGEND**
- △ ACTIVE BOULDER
 - ▲ ACTIVE BOULDER, FLUORITE MINERALIZED
 - ACTIVE PEAT
 - 500 ACTIVITY IN $\mu R/h$
 - (50-150 $\mu R/h$) AREA WITH INCREASED BACKGROUND ACTIVITY
 - MARSH
 - /// STREAM

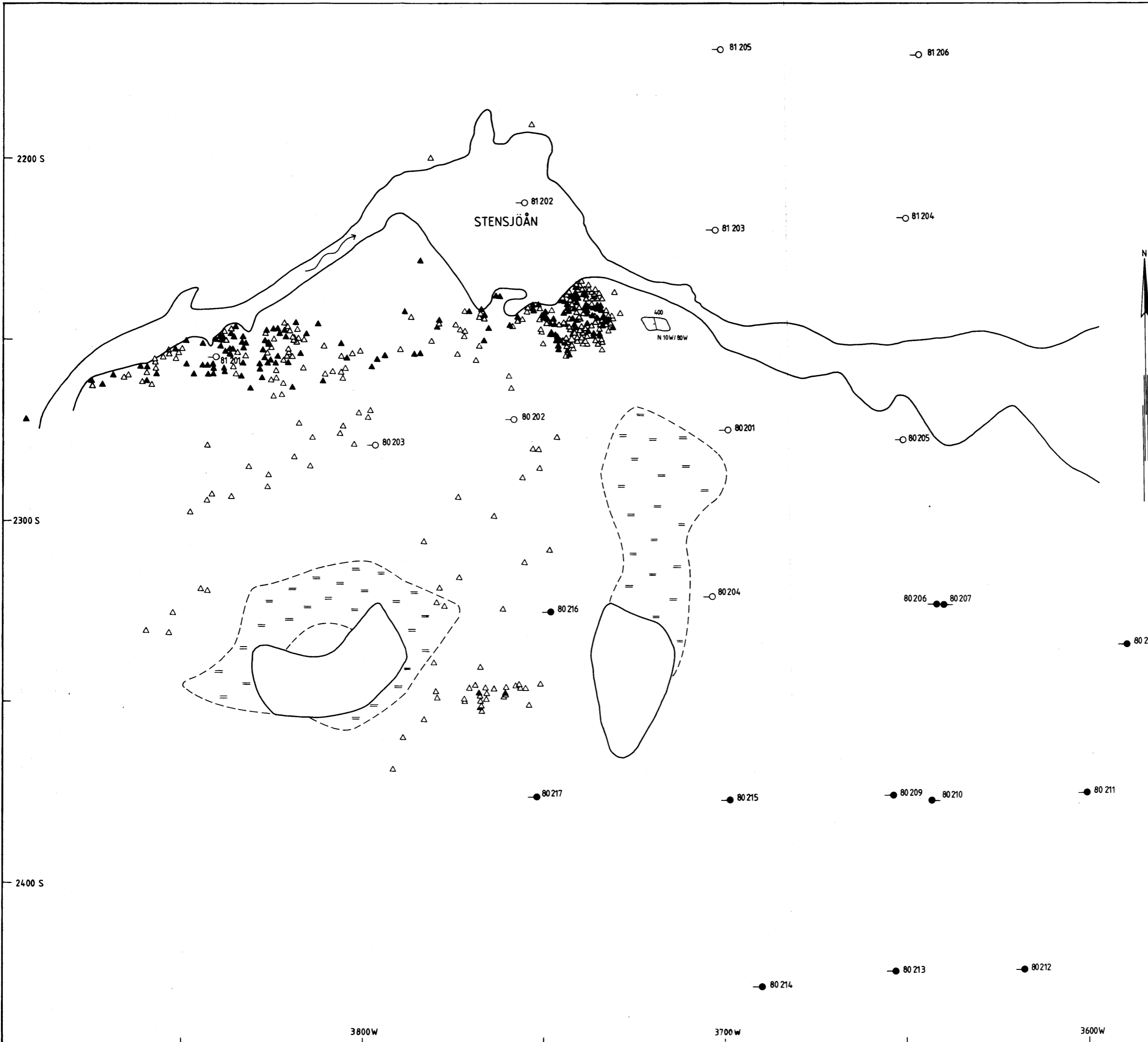
KLÄPPIBÄCKEN
BOULDER MAP
URANIUM REPORT 1981-8 MAP 10

MAP SHEET 20E HOTAGEN
 ID-NUMBER
 SCALE 1:500
 0 5 10 15 20 25m

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LEGEND

- △ BOULDER 200-1000 µR/h
- ▲ BOULDER > 1000 µR/h
- 400 ACTIVITY IN OUTCROP IN µR/h
- DIAMOND DRILLHOLE WITH NUMBER
- PERCUSSION DRILLHOLE
- MARSH
- LAKE

STENSJÖÅN (AREA 12)

DRILLHOLE MAP

URANIUM REPORT 1981-8 MAP11

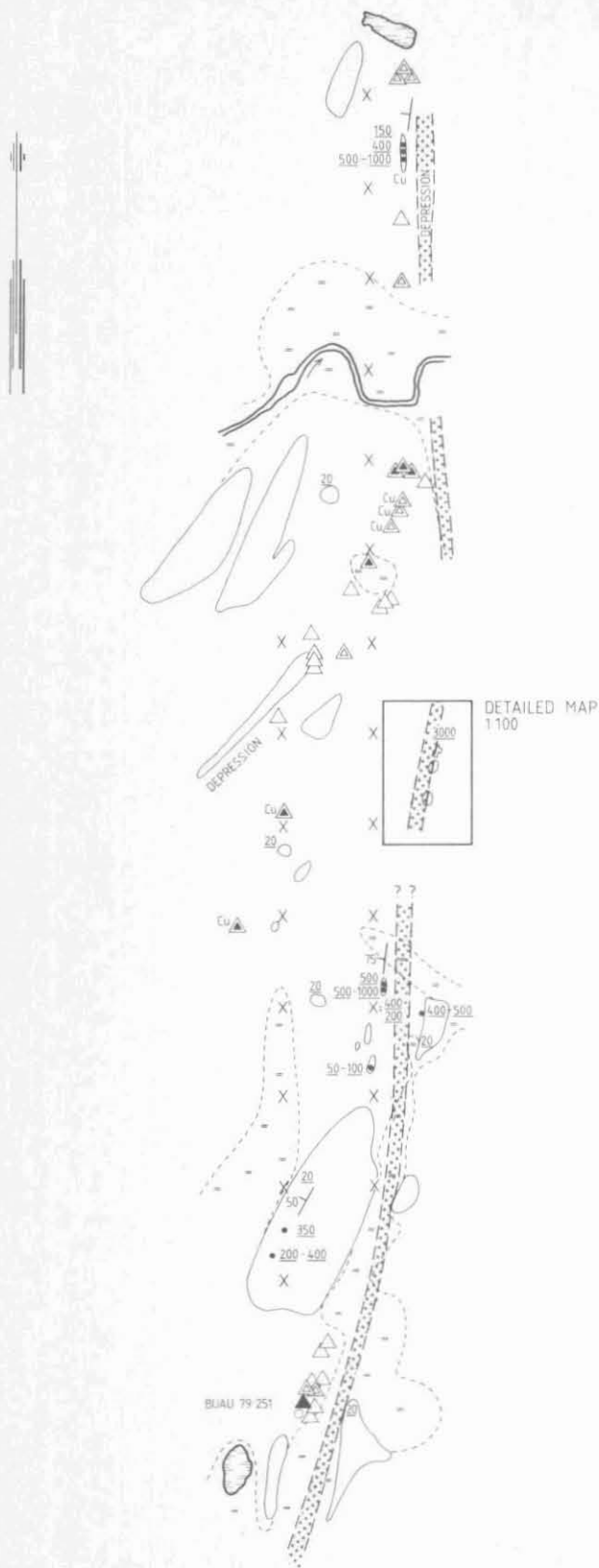
MAP SHEET 20D 9j KOLÅSEN


ID-NUMBER

SCALE
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LEGEND

-  GRANITE PORPHYRY
-  DOLERITE
-  URANIUM MINERALIZATION
-  COPPER
-  ROCK BOUNDARY
-  " " " INFERRED
-  JOINT, DIP IN DEGREES
-  OUTCROP
-  BOG
-  POND
-  STREAM
-  STAKE SYSTEM
-  GRANITE PORPHYRY BOULDER, ACTIVITY <1000 $\mu\text{R/h}$
-  DOLERITE BOULDER, ACTIVITY <1000 $\mu\text{R/h}$
-  GRANITE PORPHYRY BOULDER, ACTIVITY >1000 $\mu\text{R/h}$
-  DOLERITE BOULDER, ACTIVITY >1000 $\mu\text{R/h}$
-  ACTIVITY IN $\mu\text{R/h}$
-  BUAU 79 251 OBSERVATION NUMBER

VALLE

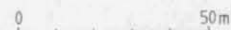
DETAILED MAP

URANIUM REPORT 1981-8 MAP12

MAP SHEET 20E 6a HOTAGEN

ID-NUMBER

SCALE



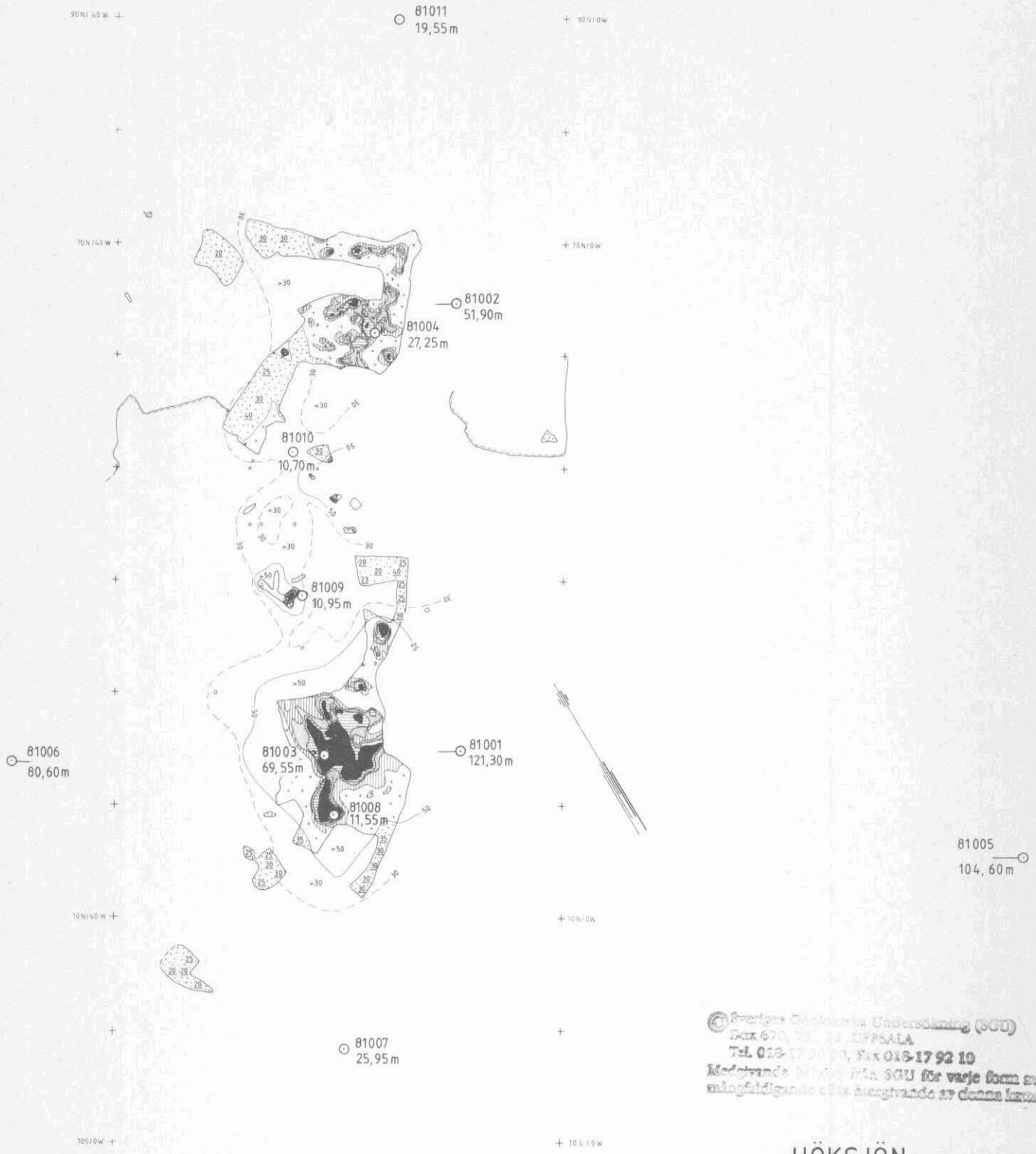
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DRILLHOLE AND RADIOACTIVITY MAP

URANIUM REPORT 1981 - 8 MAP 13

MAP SHEET 18F 4a BRÄCKE

ID-NUMBER

SCALE



F KULLMAN

- M S

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SGU BERGGRUNDSBYRÅN 1981



LEGEND

- OUTCROP BOUNDARY
- VERTICAL OUTCROP

RADIO ACTIVITIES ON OUTCROP

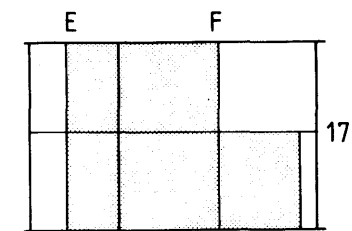
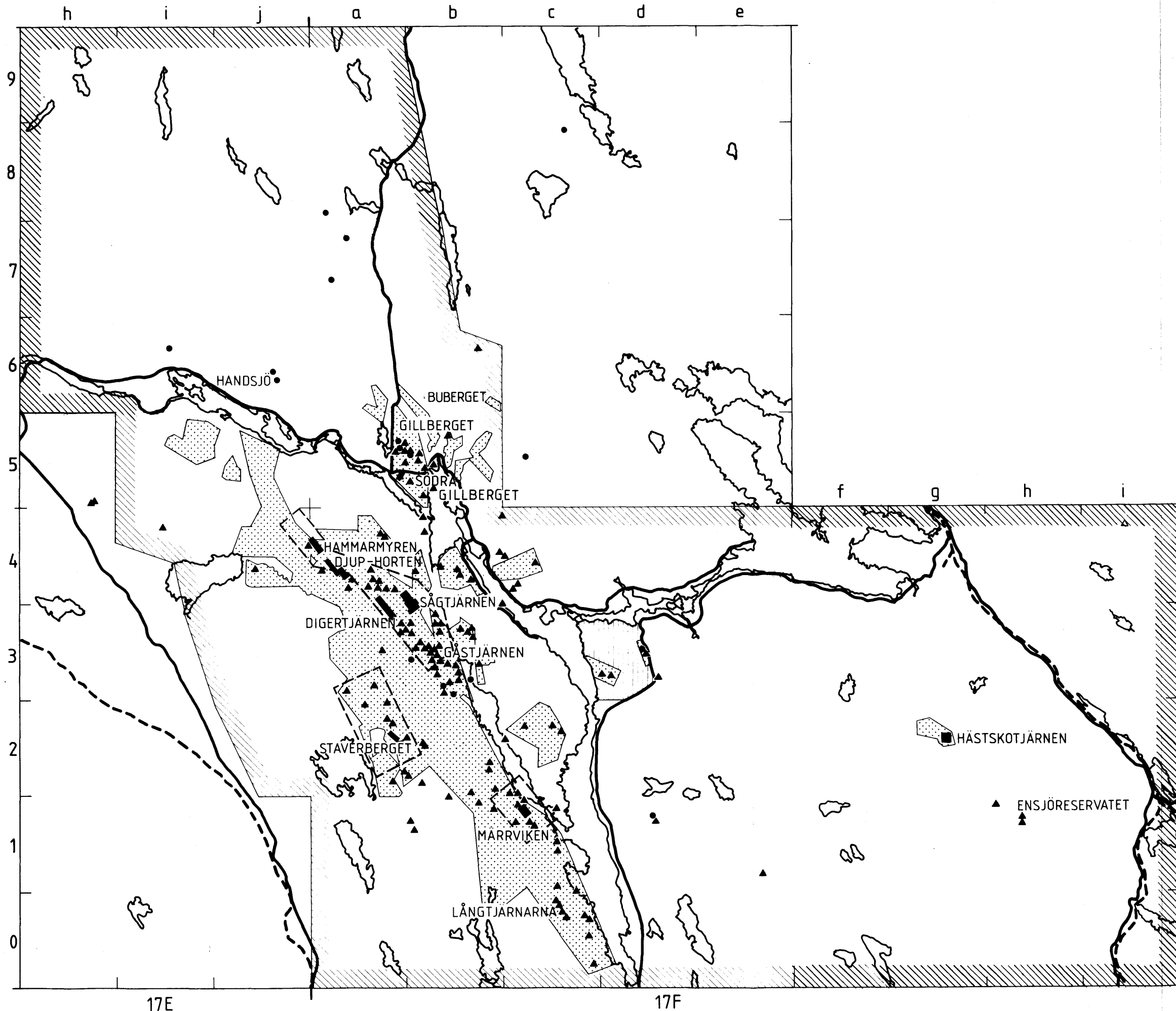
- $\approx 2000 \mu\text{R/h}$
- 2000 - 1000 " - "
- 1000 - 500 " - "

- 500 - 250 $\mu\text{R/h}$
- 250 - 50 " - "
- ≈ 50 " - "








RADIO ACTIVITIES ON MORAIN

- 50 $\mu\text{R/h}$
- 30 " - "

- 81001 DRILLHOLE, DRILLHOLE NUMBER
10,70 DEPTH IN METRES

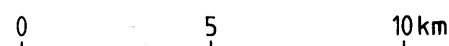


LEGEND

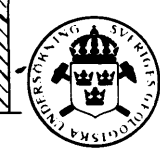
-  CONCESSION
 -  AREA MAPPED
 -  AREA WITH REGIONAL BOULDER TRACING
 -  AREA WITH DETAILED BOULDER TRACING
 -  AREA BOG PEAT SAMPLED 1979
- URANIUM MINERALIZATION
-  BOULDER
 -  OUTCROP

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BODSJÖ AREA
PROSPECTING MAP
URANIUM REPORT 1981-8 MAP 14

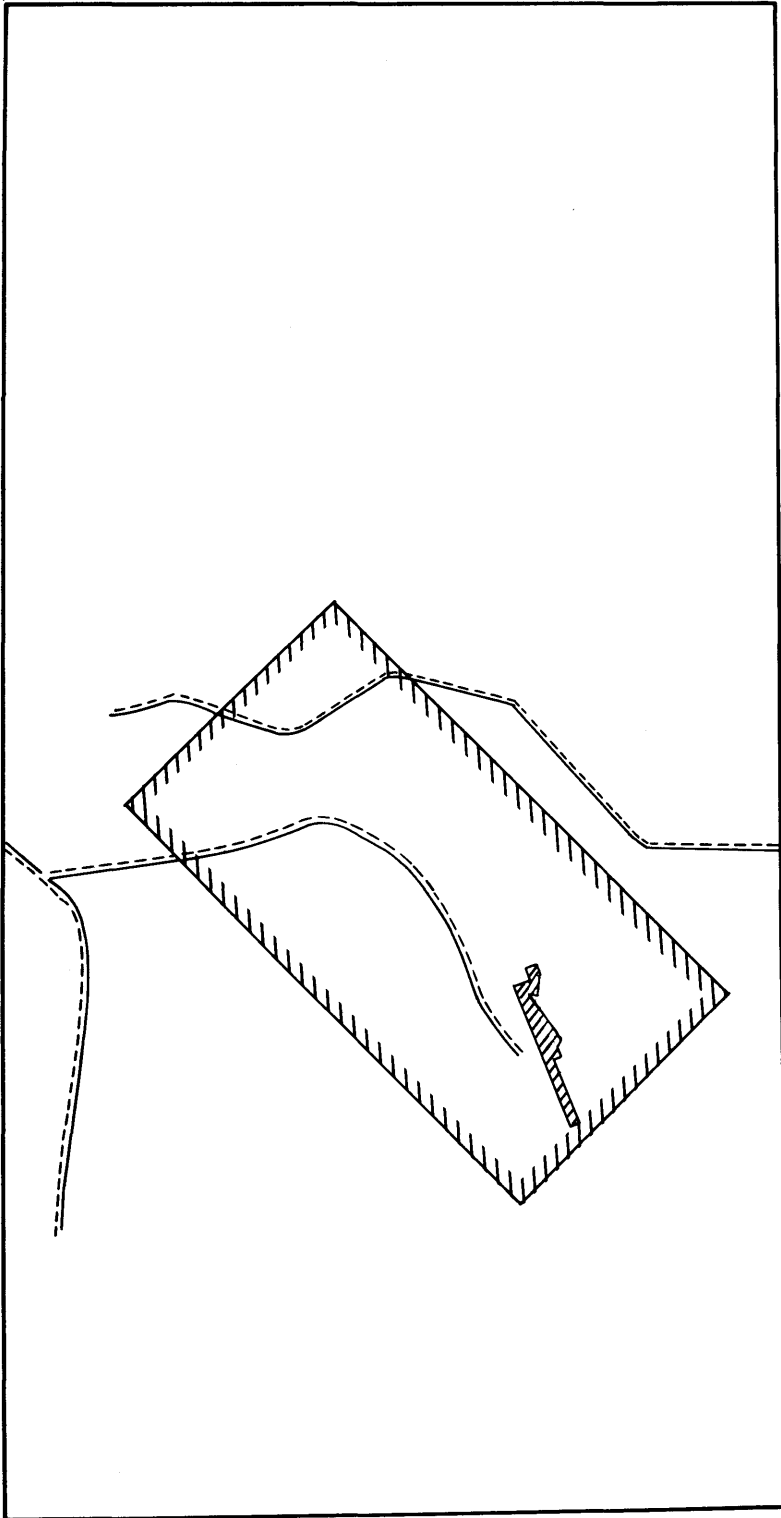
MAP SHEET 17E 0-9 h-j, 17F 0-9 a-i
 ID-NUMBER
 SCALE 1:200 000


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17E

17F



LEGEND



AREA WITH DETAILED BOULDER TRACING
 AREA WITH GROUND GEOPHYSICAL MEASUREMENTS

ROSÅNGEN
 URANIUM CONCESSION

PROSPECTING MAP
 URANIUM REPORT 1981-8 MAP15
 MAP SHEET 17F, 2a ÅNGE
 ID-NUMBER

SCALE
 0 _____ 1 km



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800 W 700 W 600 W 500 W 400 W 300 W 200 W

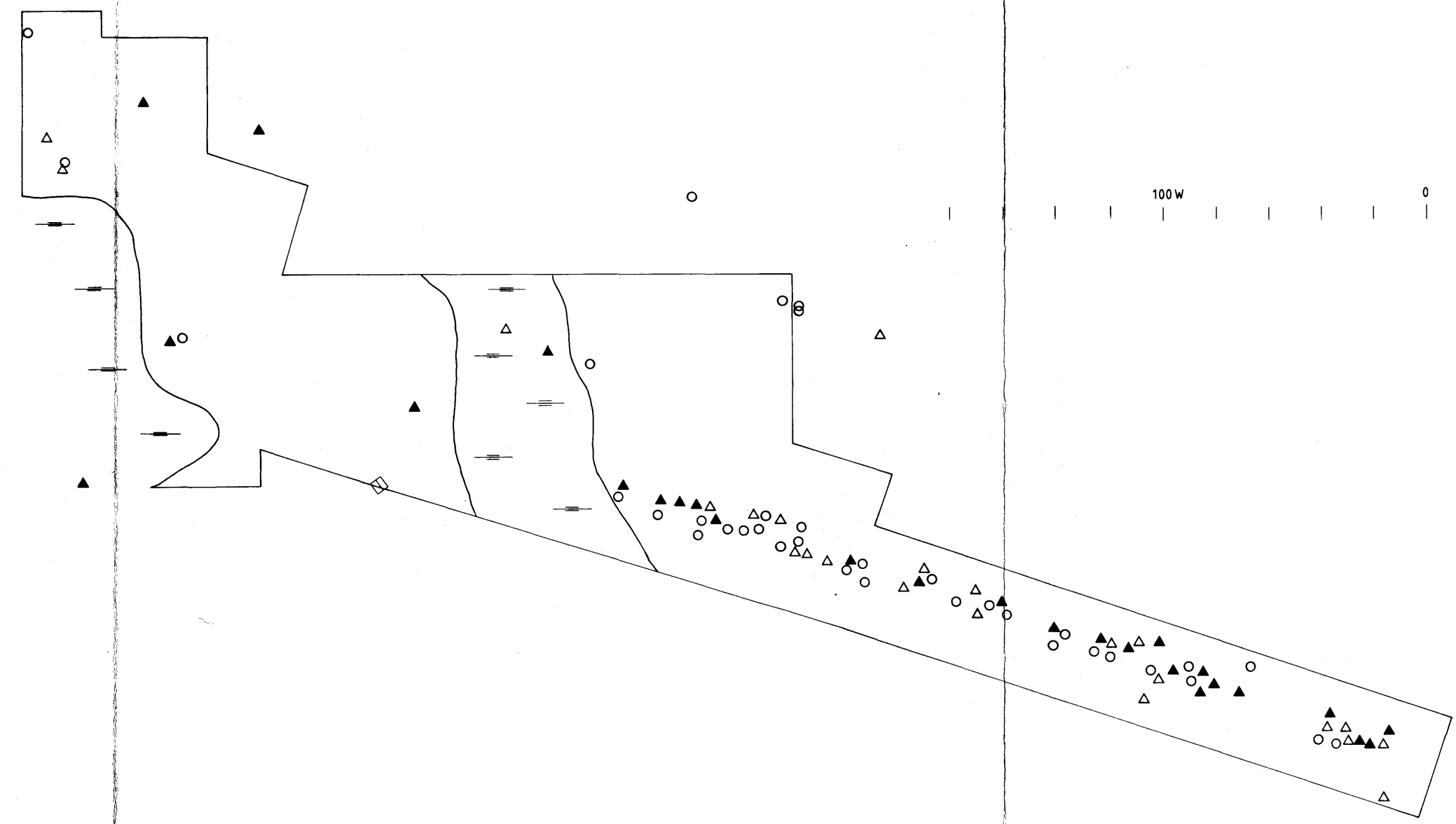
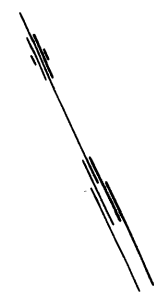
700 N

600 N

500 N

400 N

100 W 0 60 E



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LEGEND

- ACTIVE BOULDER 200 - 500 µR/h
- △ ACTIVE BOULDER 500 - 1000 µR/h
- ▲ ACTIVE BOULDER ≈ 1000 µR/h
- LIMIT OF AREA WITH DETAILED BOULDER TRACING
- BOG

STAVERBERGET

BOULDER MAP

URANIUM REPORT 1981-8 MAP 16

MAP SHEET 17F 2a ÅNGE

ID-NUMBER

SCALE

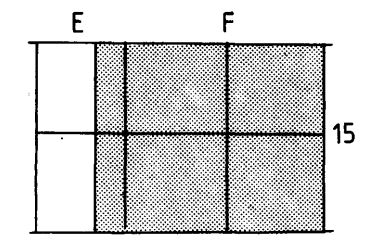
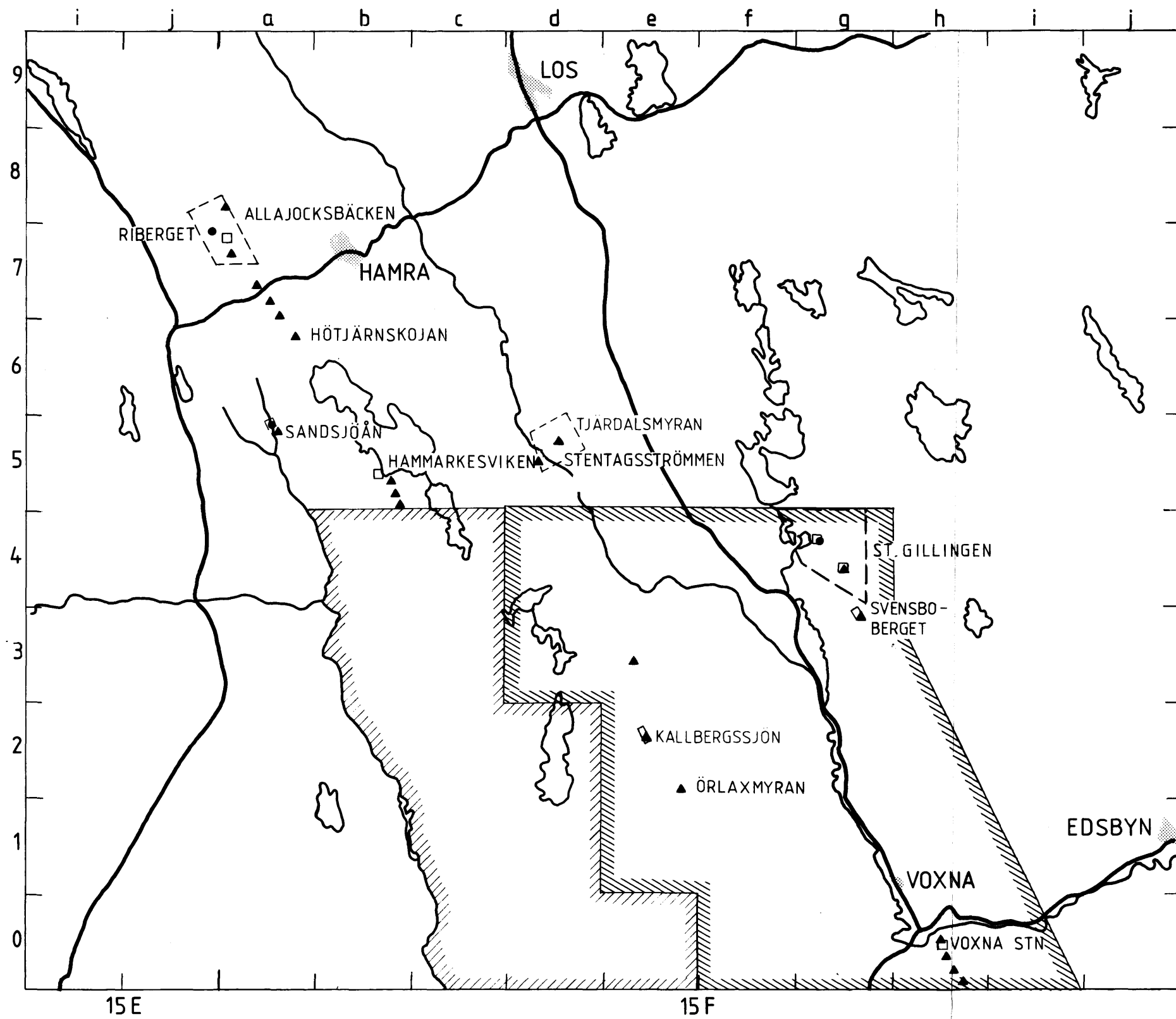
0 50 m

F KULLMAN







-MS



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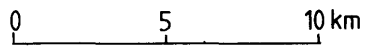
LEGEND

-  CONCESSION
-  AREA FOR GEOCHEMICAL SAMPLING 1981
-  AREA FOR GEOCHEMICAL SAMPLING 1980
-  AREA WITH DETAILED PROSPECTING
-  URANIUM MINERALIZED BOULDER
-  URANIUM MINERALIZATION IN OUTCROP

SGU Berggrundsbyrå (SGU)
 1981-8 MAP 17
 17 92 10
 för varje block av
 10 km x 10 km

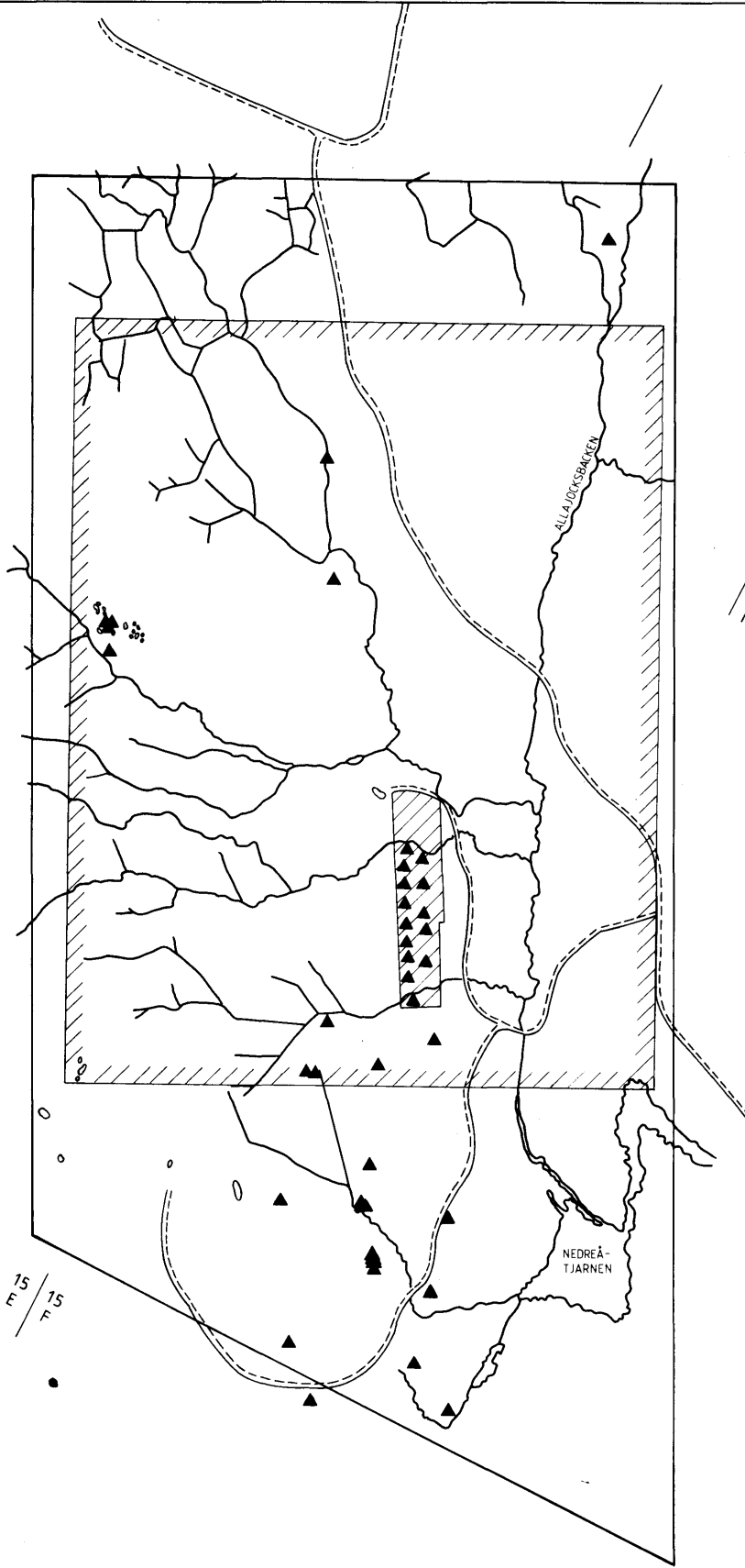
**VOXNA REGION
 PROSPECTING MAP**





URANIUM REPORT 1981-8 MAP 17
 MAP SHEET 15E 0-9 i-j, 15F 0-9 a-j
 ID-NUMBER

SCALE 1:250 000


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 SKBF URANIUM EXPLORATION PROJECT
 SGU BERGGRUNDSBYRÅN 1980





- LEGEND**
-  AREA WITH DETAILED BOULDER TRACING
 -  AREA WITH GROUND GEOPHYSICAL MEASUREMENTS
 -  URANIUM MINERALIZED BOULDER $\approx 200 \mu\text{R/h}$
 -  OUTCROP

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RIBERGET
URANIUM CONCESSION

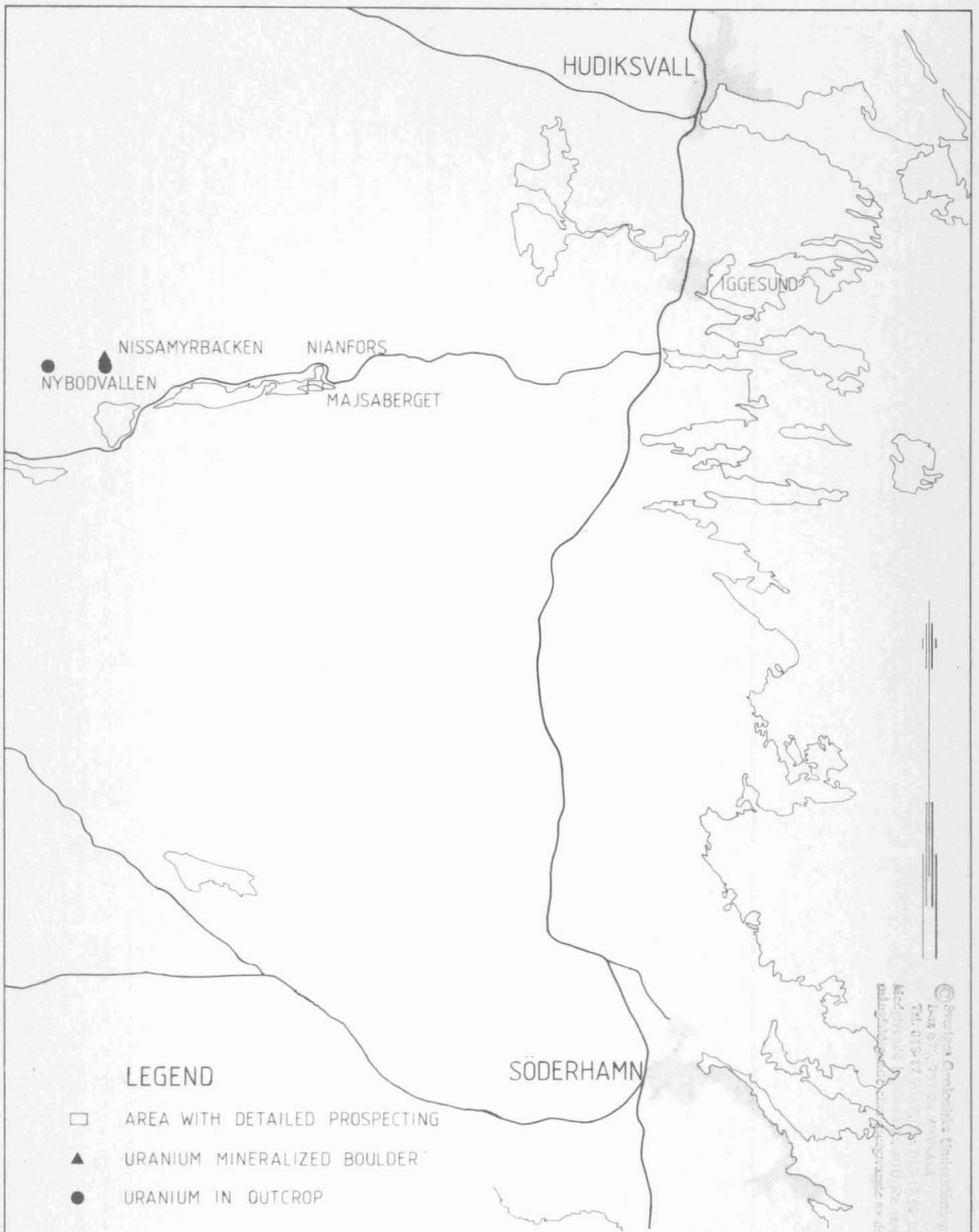
URANIUM REPORT 1981 - 8 MAP 18
 MAP SHEET 15E, 15 F

ID-NUMBER
 SCALE
 0 _____ 500

F KULLMAN - MS



SKBF URANIUM EXPLORATION PROJECT
 SGU BERGGRUNDSBYRÅN 1981



LEGEND

- AREA WITH DETAILED PROSPECTING
- ▲ URANIUM MINERALIZED BOULDER
- URANIUM IN OUTCROP

SCALE 1:250000

0 10km

F. KULLMAN

SKBF URANIUM EXPLORATION PROJECT

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NIANFORS REGION

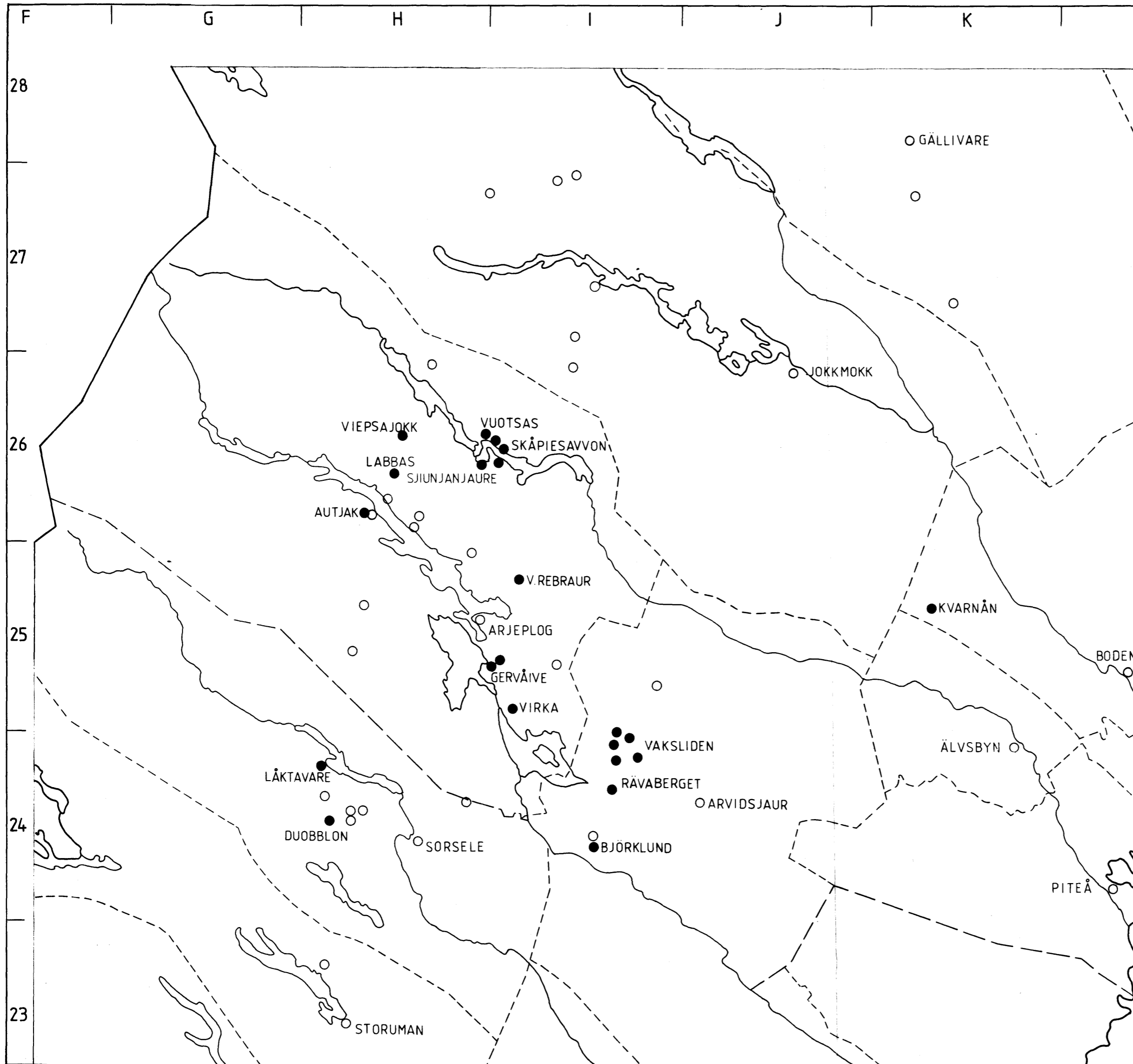
PROSPECTING MAP

URANIUM REPORT 1981-8 MAP 19

MAP SHEET 15G 0-9, f-j, 15H 0-9, a-e

ID-NUMBER

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LEGEND

- URANIUM PROSPECT
- URANIUM PROSPECT IN CONCESSION AREAS

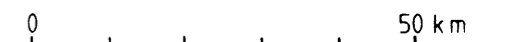
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 Box 918-17 92 10
 S-901 81 Umeå
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 S. NORRBOTTEN
 URANPROVINCE

SKBF CONCESSION AREAS
 URANIUM REPORT 1981-8

ID-NUMBER

SCALE 1:1000000

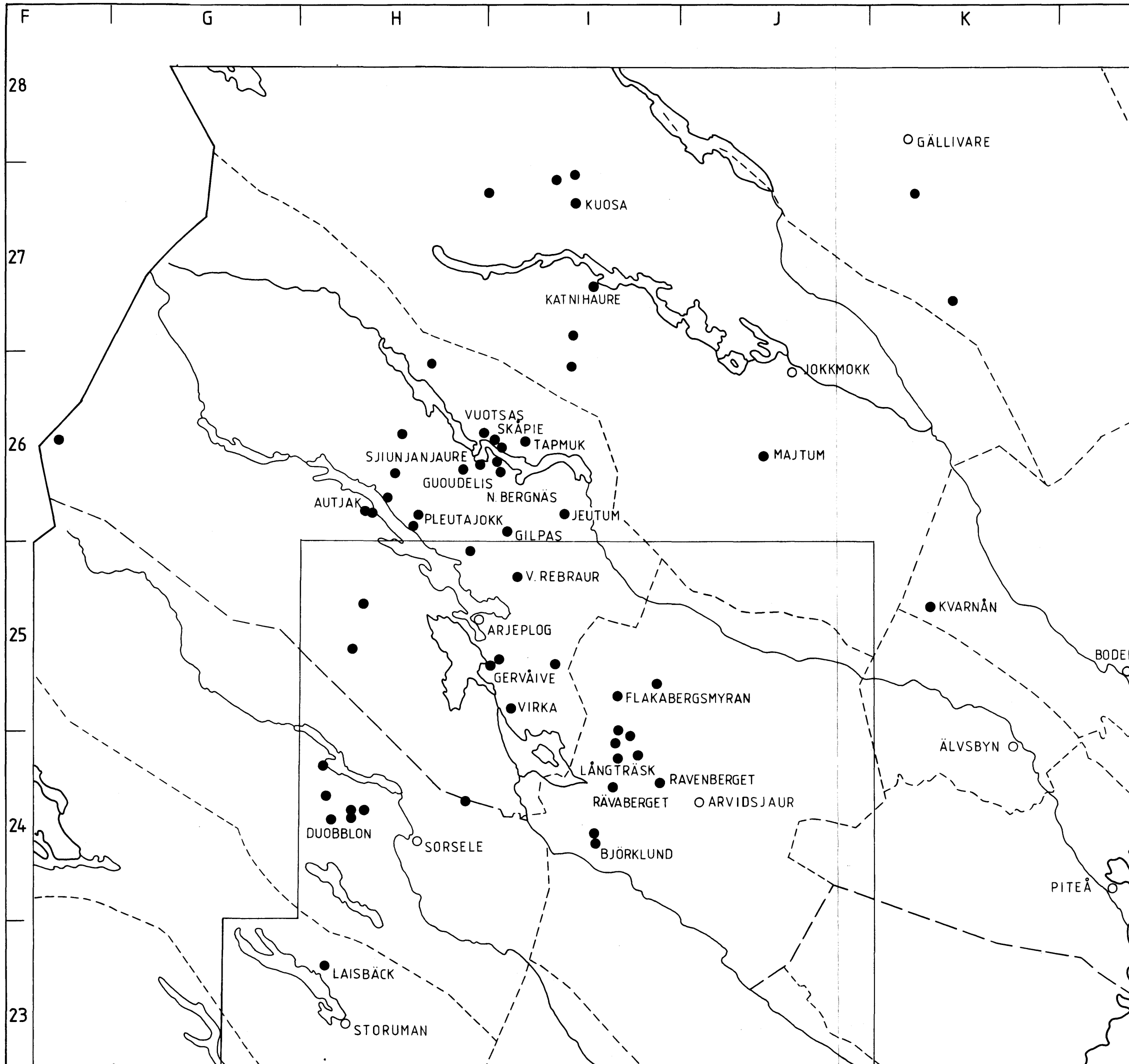



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 AIR RADIOMETRIC URANIUM
MAP 1:250 000

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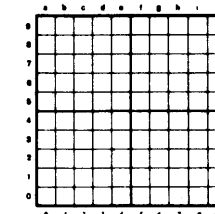
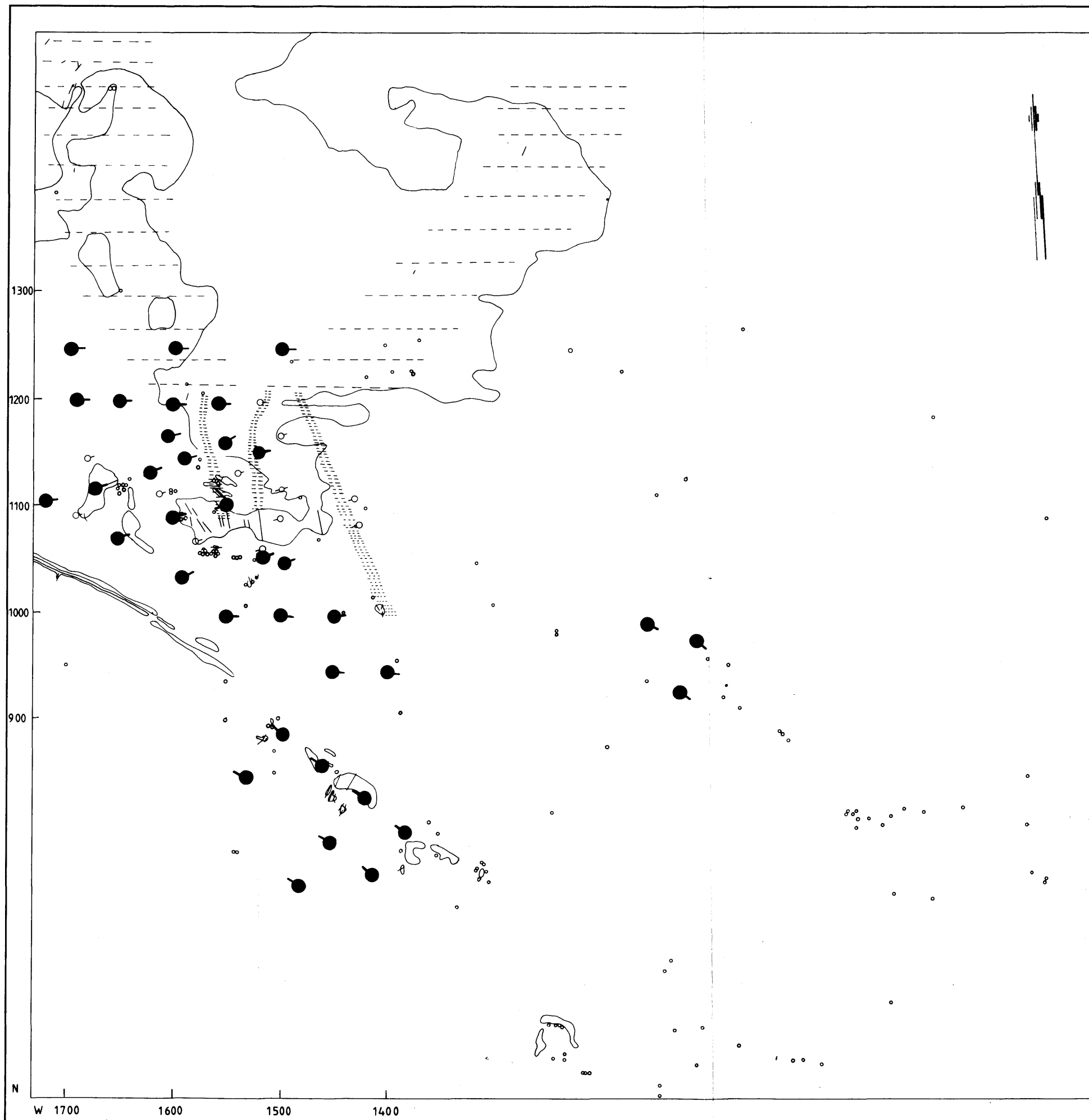
**N. VÄSTERBOTTEN -
S. NORRBOTTEN
URANPROVINCE**

URANIUM REPORT 1981-8

SCALE 1:1000 000
 0 10 20 30 km



BOSSE GUSTAFSSON
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LEGEND

- DDH DRILLED
- DDM PLANNED
- U-BEARING BOULDERS
- U-BEARING FISSURE
- ▨ U-MINERALIZATION HYPOTHETIC
- - - ZONE WITH U-INDICATIONS
- OUTCROP

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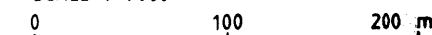
BJÖRKLUND

EXPLORATION MAP

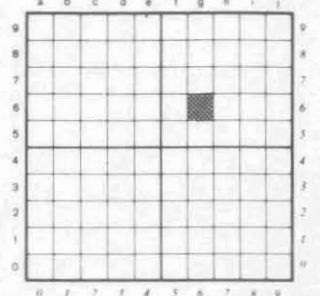
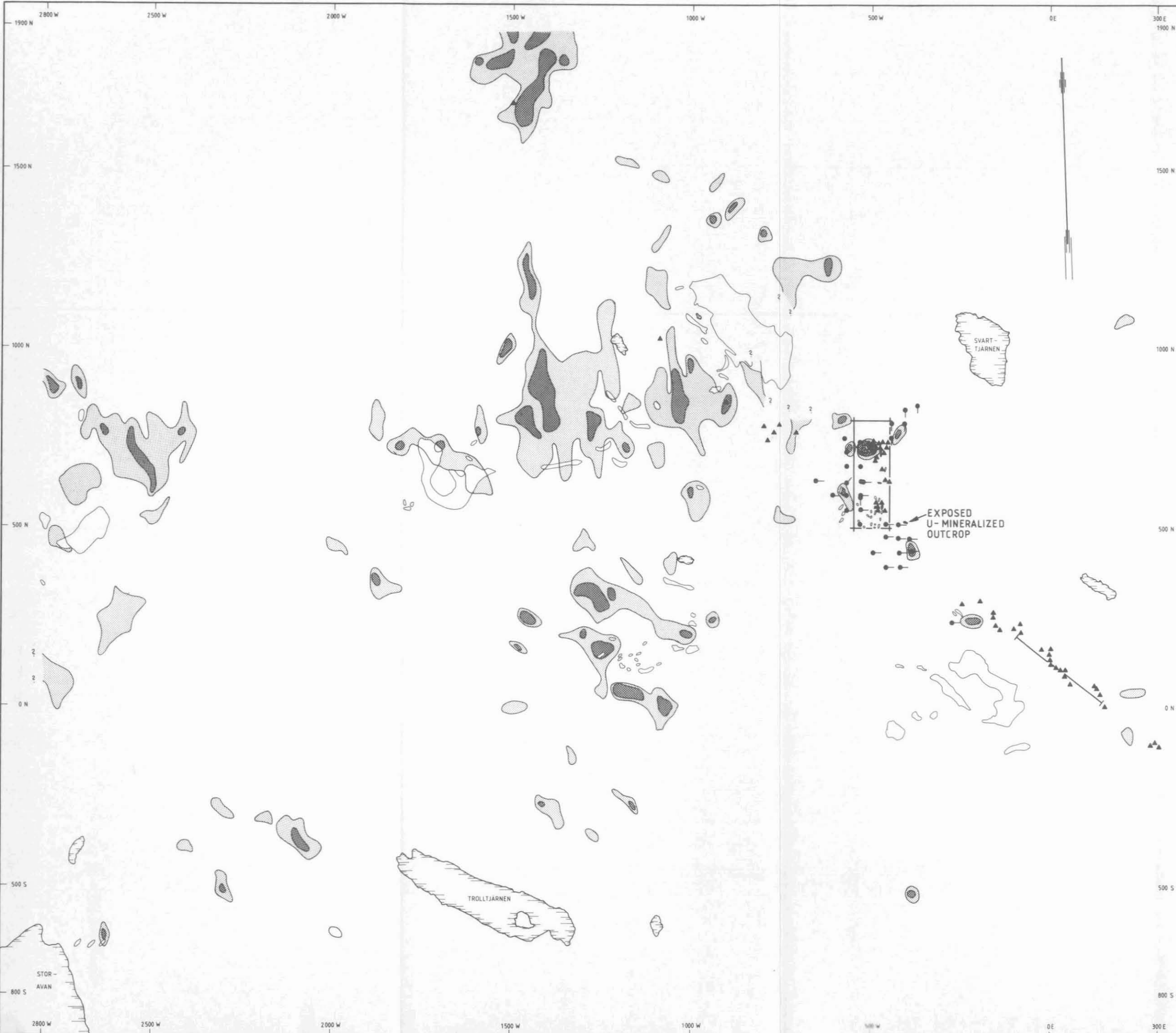
URANIUM REPORT 1981-8

MAP SHEET 24 I 3-4, e STORAVAN

SCALE 1:4 000



JUKI LAURIKKO
 PROJECT SKBF N NORRLAND
 SGU BERGGRUNDSBYRÅN 1981

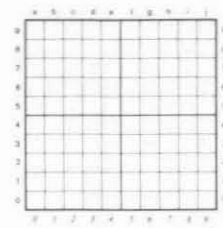
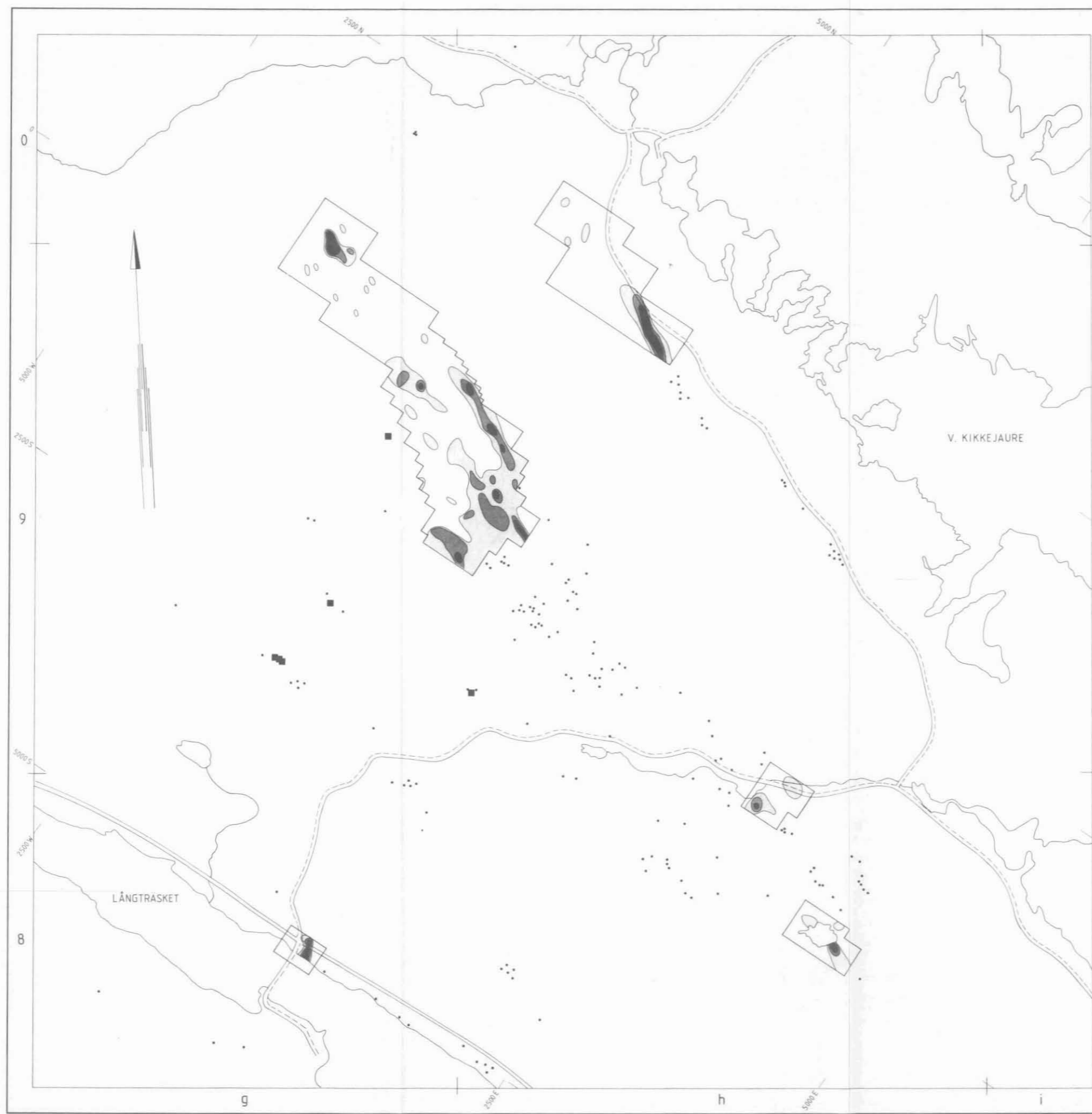


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- LEGEND**
- 300-500 GAMMA } MAGNETIC Z-ANOMALY
 - 500-4000 GAMMA }
 - URANIUM MINERALIZED OUTCROP
 - OUTCROP (GRANITE)
 - URANIUM MINERALIZED BOULDER
 - DIAMOND DRILLHOLE
 - DIAMOND DRILLHOLE, VERTICAL
 - LAKE
 - TRENCH

RÄVABERGET
 URANIUM MINERALIZATION
 PROSPECTING MAP
 MAP SHEET 241 6g STORAVAN
 ID-NUMMER
 SCALE 1:5000
 0 100 200 300 400 m
 RAGNAR GERLACH, T RYDBERG -SE
 PROJEKT URANIUM STATE FINANCED
 SGU BERGGRUNDSBYRÅN 1980
 URANIUM REPORT 1968 - 8

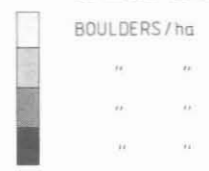




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LEGEND

DETAILED BOULDERTRACING



SEMIREGIONAL BOULDERTRACING

- RADIOACTIVE BOULDER(-S)
- RADIOACTIVE OUTCROP

LÅNGTRÄSK-V. KIKKEJAURE

BOULDER MAP

URANIUM REPORT 1981-8

MAP SHEET 24 | STORAVAN - 25 | STENSUND

ID-NUMMER

SCALE

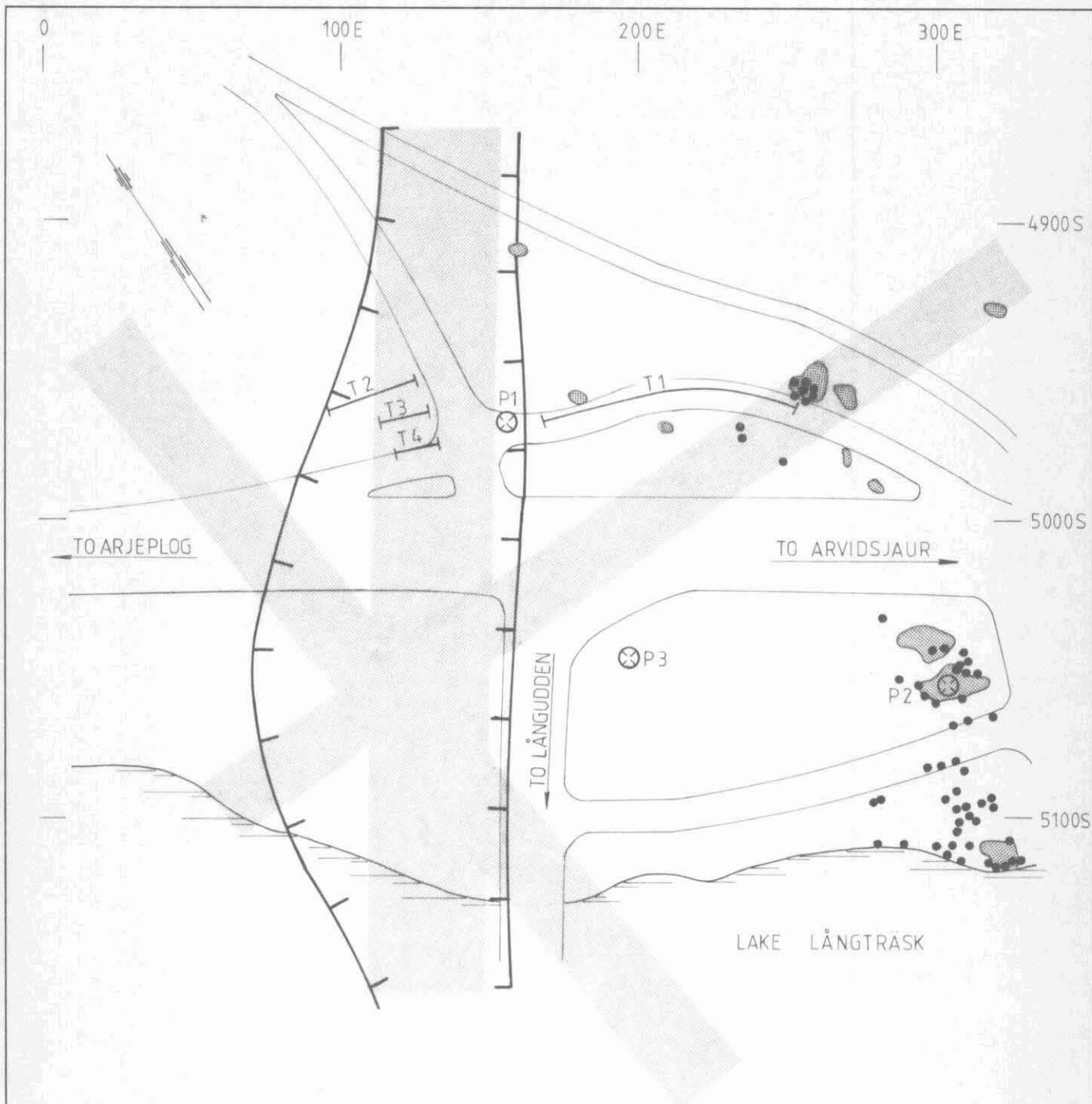


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LEGEND

- BOULDERS $\geq 1000 \mu R/h$
- RADON ANOMALIES
- TRENCH
- P1 PIT

- TECTONIC DISTURBANCE
- TARGET AREA

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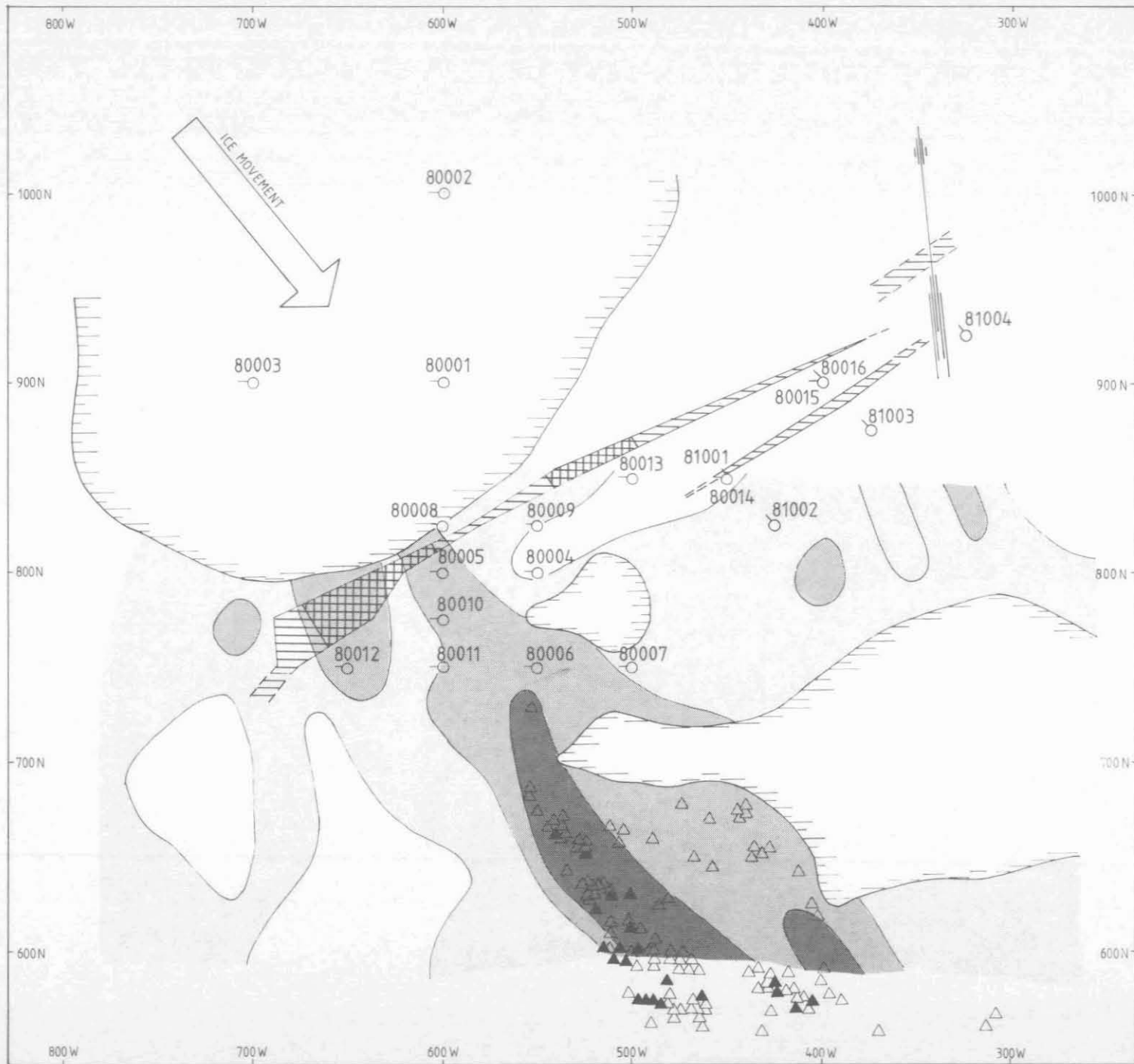


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LÅNGTRÄSK
 EXPLORATION MAP

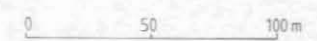
URANIUM REPORT 1981 - 8
 MAP SHEET 241 8g STORAVAN
 ID-NUMBER





- LEGEND**
- 0,3
 - 0,4 eU/eTh
 - 1,0
- RADIOACTIVE BOULDERS**
- < 1000 μ R/h
 - > 1000 μ R/h
- URANIUM MINERALIZATION**
- ORE ESTIMATED AREAS
- SWAMP, LAKE**
- DRILLHOLE

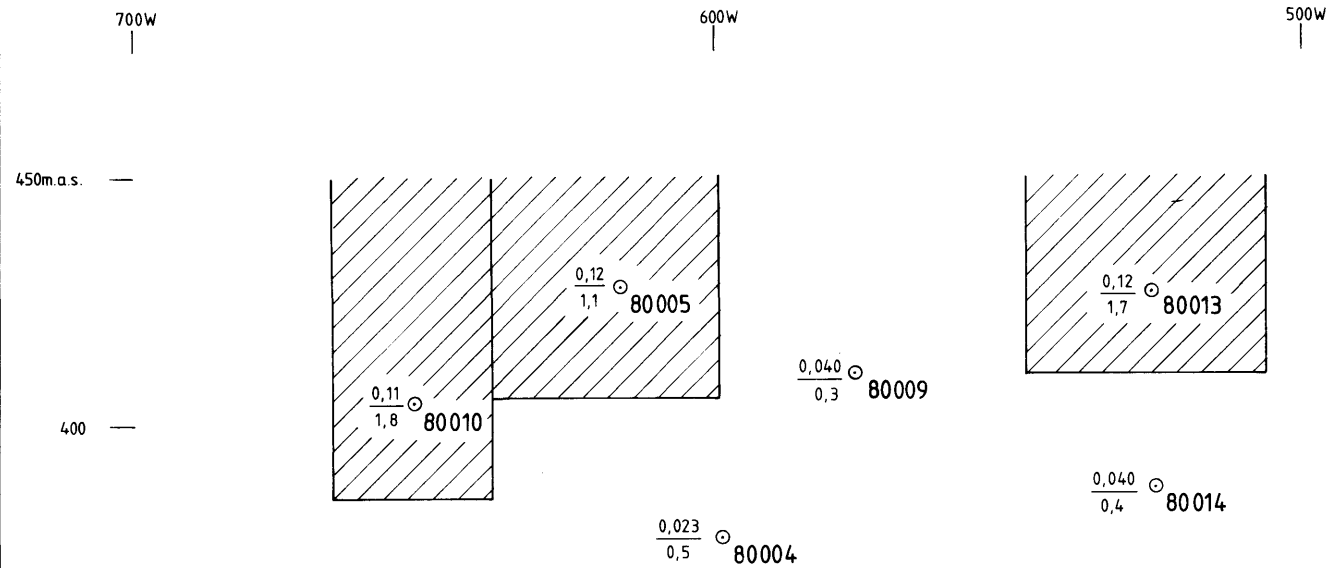
VIRKA
 EXPLORATION MAP
 URANIUM REPORT 1981- 8
 MAP SHEET 25 I 1b STENSUND
 ID-NUMBER




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MAP 26

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LEGEND
 ORE ESTIMATED AREAS
 $\frac{0,12}{1,7}$ GRADE IN % U
 WIDTH IN m

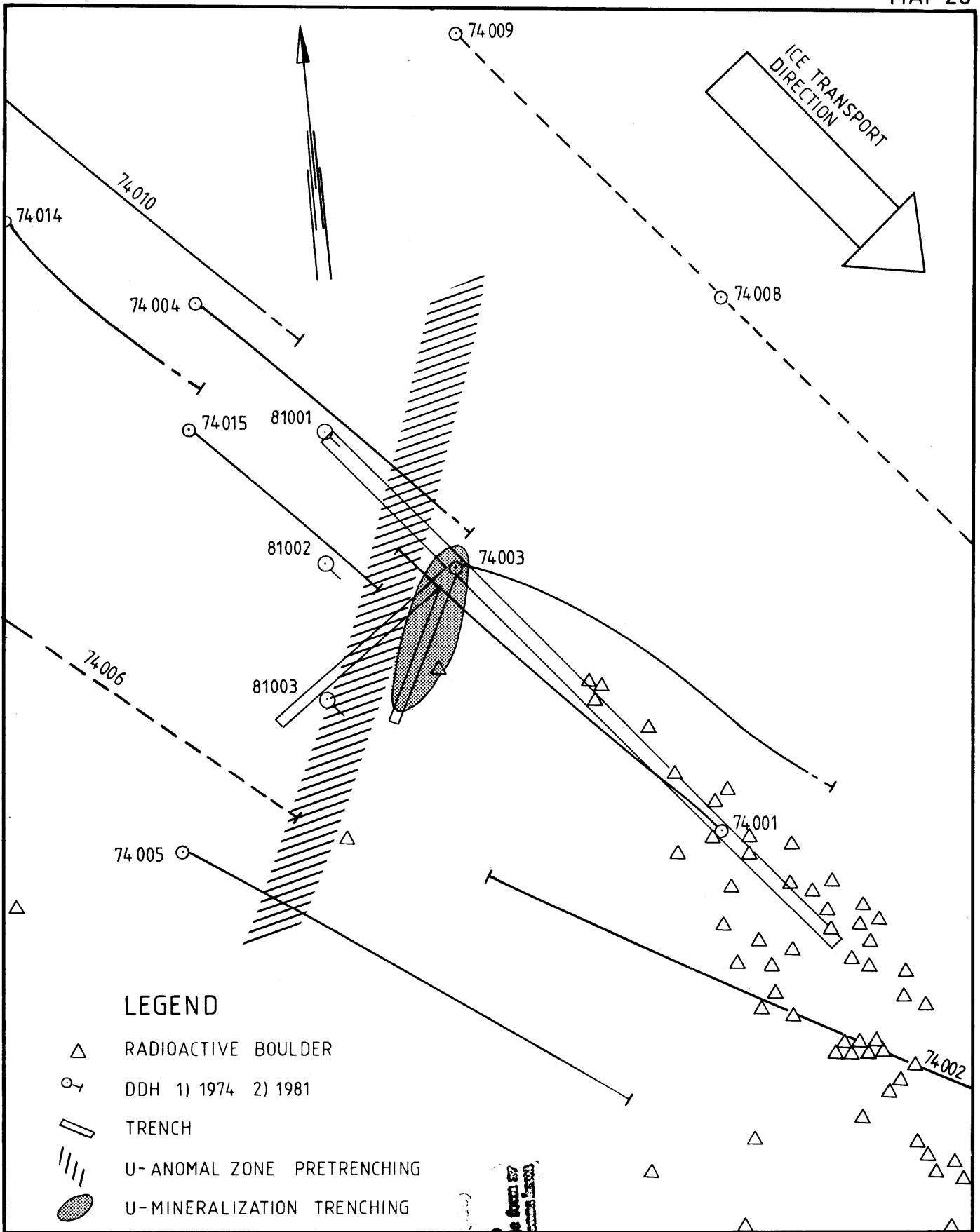
VIRKA
 VERTICAL PROFILE
 ALONG MINERALIZATION
 URANIUM REPORT 1981-8

SCALE
 0 ————— 50 m



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 Telefonmode byråer: 018 8311 (för varje land)
 1981-08-17



LEGEND

- △ RADIOACTIVE BOULDER
- DDH 1) 1974 2) 1981
- ▭ TRENCH
- ▨ U-ANOMAL ZONE PRETRENCHING
- U-MINERALIZATION TRENCHING

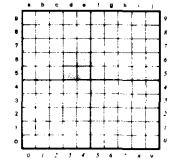
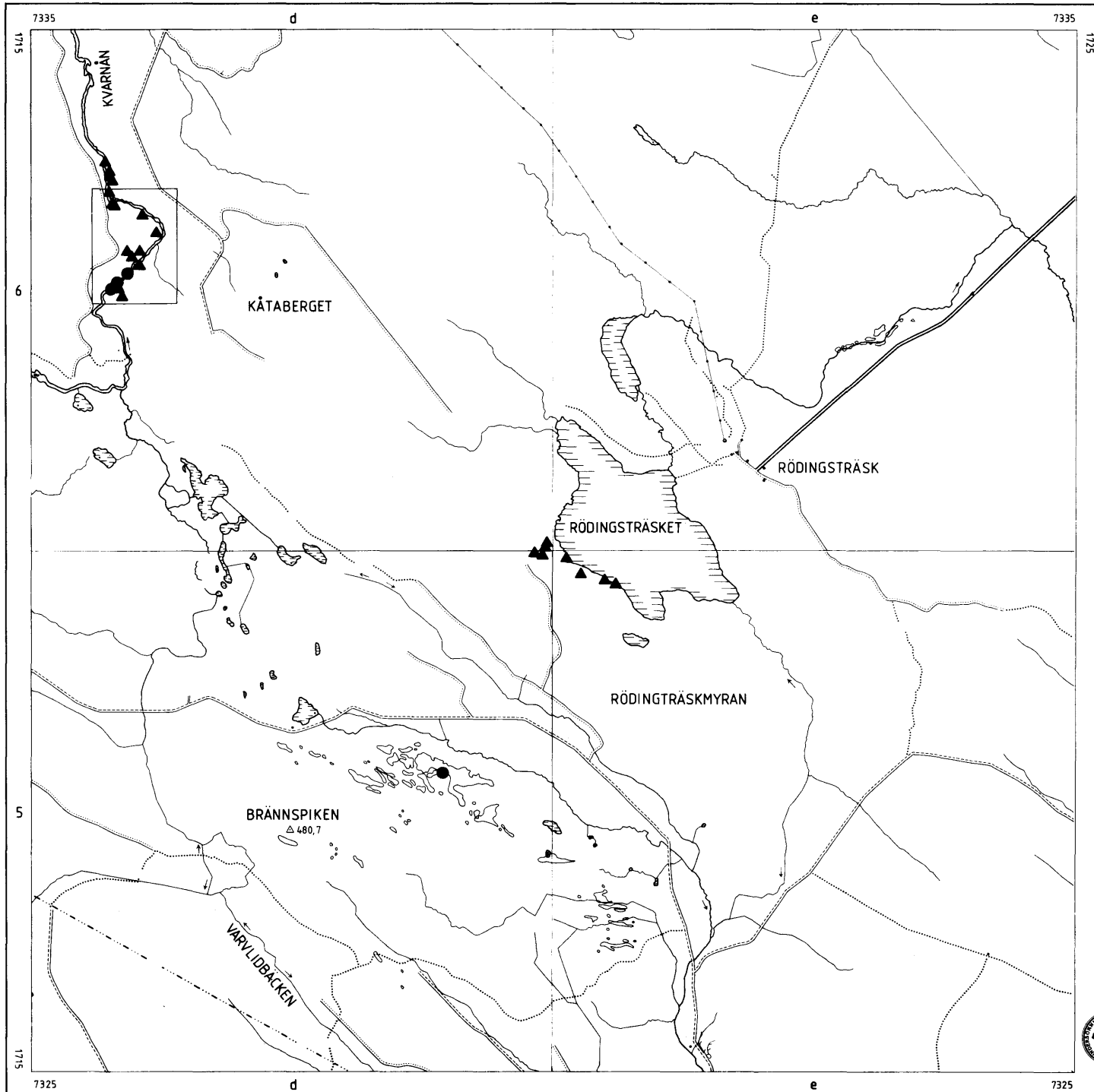
SCALE 1:1000
 0 25 50 m

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V. REBRAUR
 EXPLORATION MAP
 URANIUM REPORT 1981-8
 MAP SHEET 251, 8b STENSUND
 ID-NUMBER



- LEGEND**
- LAKE
 - DIRECTION OF CURRENT
 - DETAILED PROSPECTING MAP
 - OUTCROP
 - URANIUM IN BEDROCK
 - URANIUM IN BOULDER

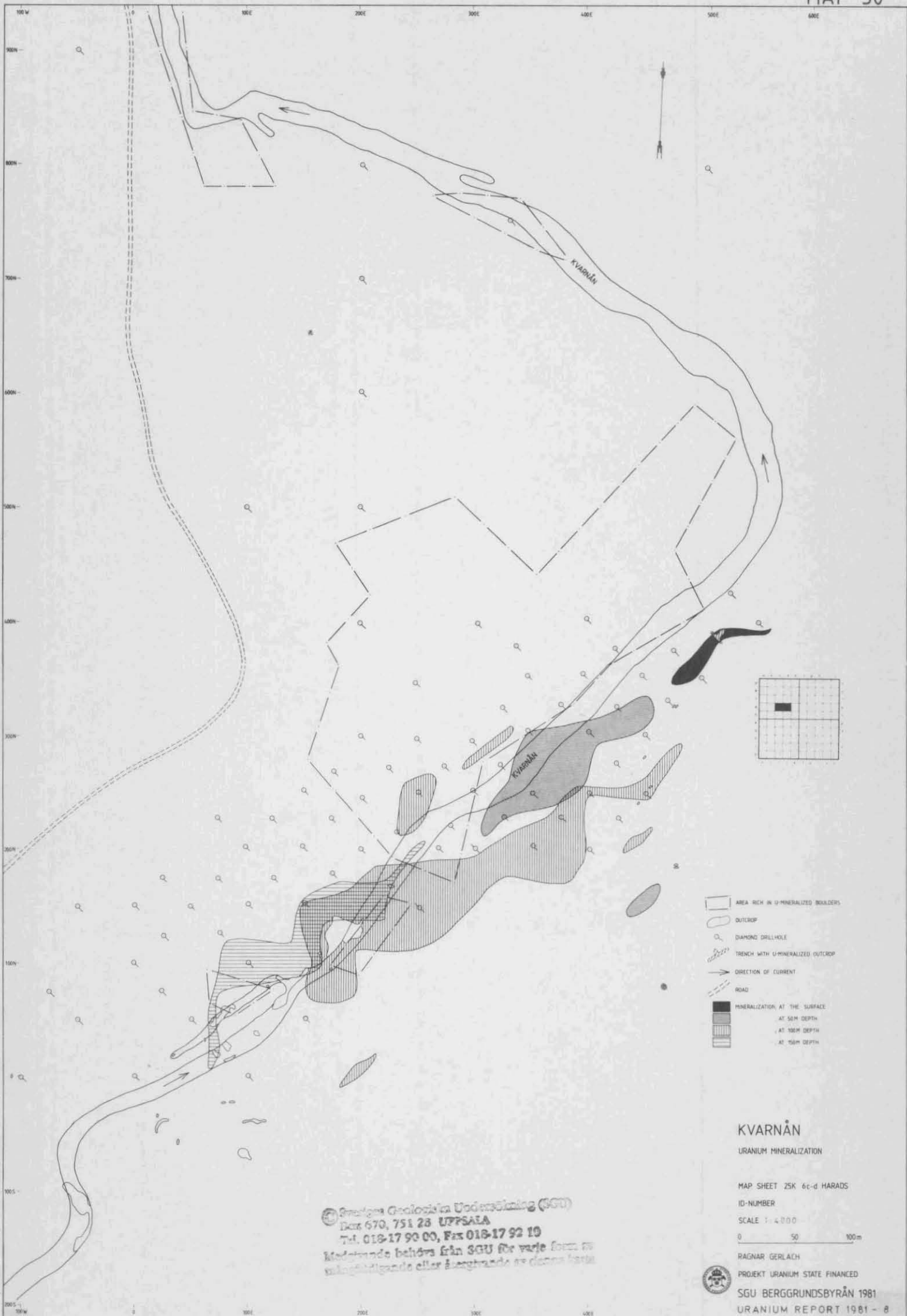
KVARNÅ AREA
LOCATION OF URANIUM
MINERALIZATIONS

MAP SHEET 25K 5-6, d-e
 ID-NUMBER
 SCALE
 0 1000 m



RAGNAR GERLACH -MS
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- AREA RICH IN U-MINERALIZED BOULDERS
- OUTCROP
- DIAMOND DRILL-HOLE
- TRENCH WITH U-MINERALIZED OUTCROP
- DIRECTION OF CURRENT
- ROAD
- MINERALIZATION AT THE SURFACE
- AT 50M DEPTH
- AT 100M DEPTH
- AT 150M DEPTH

KVARNÅN

URANIUM MINERALIZATION

MAP SHEET ZSK 6c-d HARADS
 ID-NUMBER
 SCALE 1:4000
 0 50 100m

RAGNAR GERLACH
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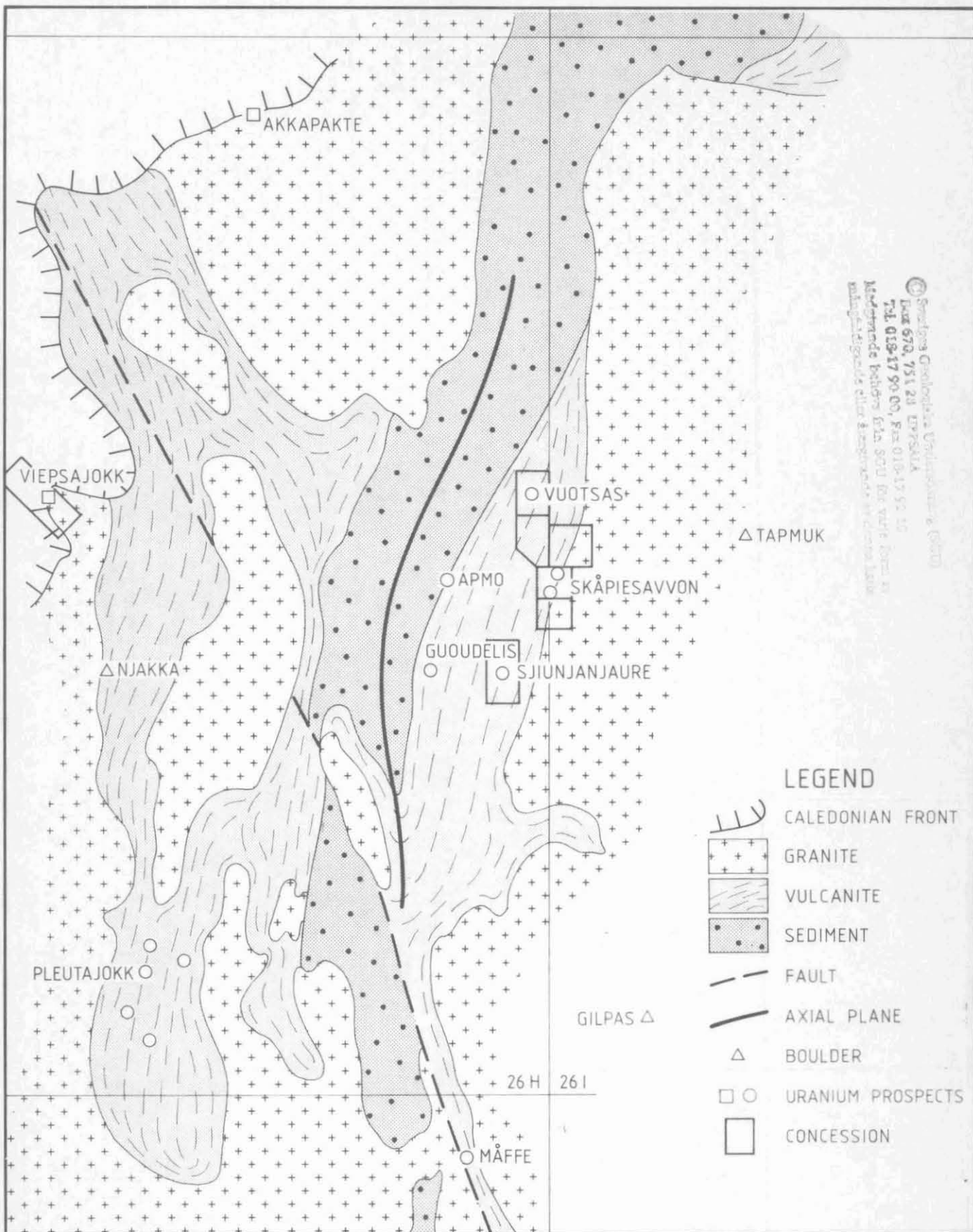


- LEGEND**
- - - FAULT
 - [Stippled Box] SANDSTONE } CALEDONIAN FRONT
 - [Dotted Box] CONGLOMERATE }
 - [Cross-hatched Box] PRECAMBRIAN CRYSTALLINE BASEMENT
 - - - CALEDONIAN THRUST PLANE
 - △ BOULDERS 100-500 μR/h CF TYPE
 - ▲ BOULDERS - 500 μR/h CF TYPE
 - BOULDERS - 200 μR/h PCB TYPE
 - ▬ OUTCROP
 - ▬ TRENCH
 - ▬ SEISMIC PROFILE
 - ▬ A GEOLOGICAL PROFILE
 - 81001 DRILLHOLE

AUTJAK
 URANIUM ANOMALY
 URANIUM REPORT 1981- B
 MAP SHEET 26H 0-1, d-e JÄKKVIK
 ID-NUMBER
 SCALE
 1 : 50000
 BOSSE GUSTAFSSON
 PROJECT 'SKBF N NORRLAND
 SGU BERGGRUNDSBYRÅN 1981










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MAP 32



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LEGEND

-  CALEDONIAN FRONT
-  GRANITE
-  VULCANITE
-  SEDIMENT
-  FAULT
-  AXIAL PLANE
-  BOULDER
-  URANIUM PROSPECTS
-  CONCESSION

SCALE 1:250 000

0 5 10 km



BOSSE GUSTAFSSON -SE -SE

PROJECT SKBF N.NORRLAND

SGU BERGGRUNDSBYRÅN 1981

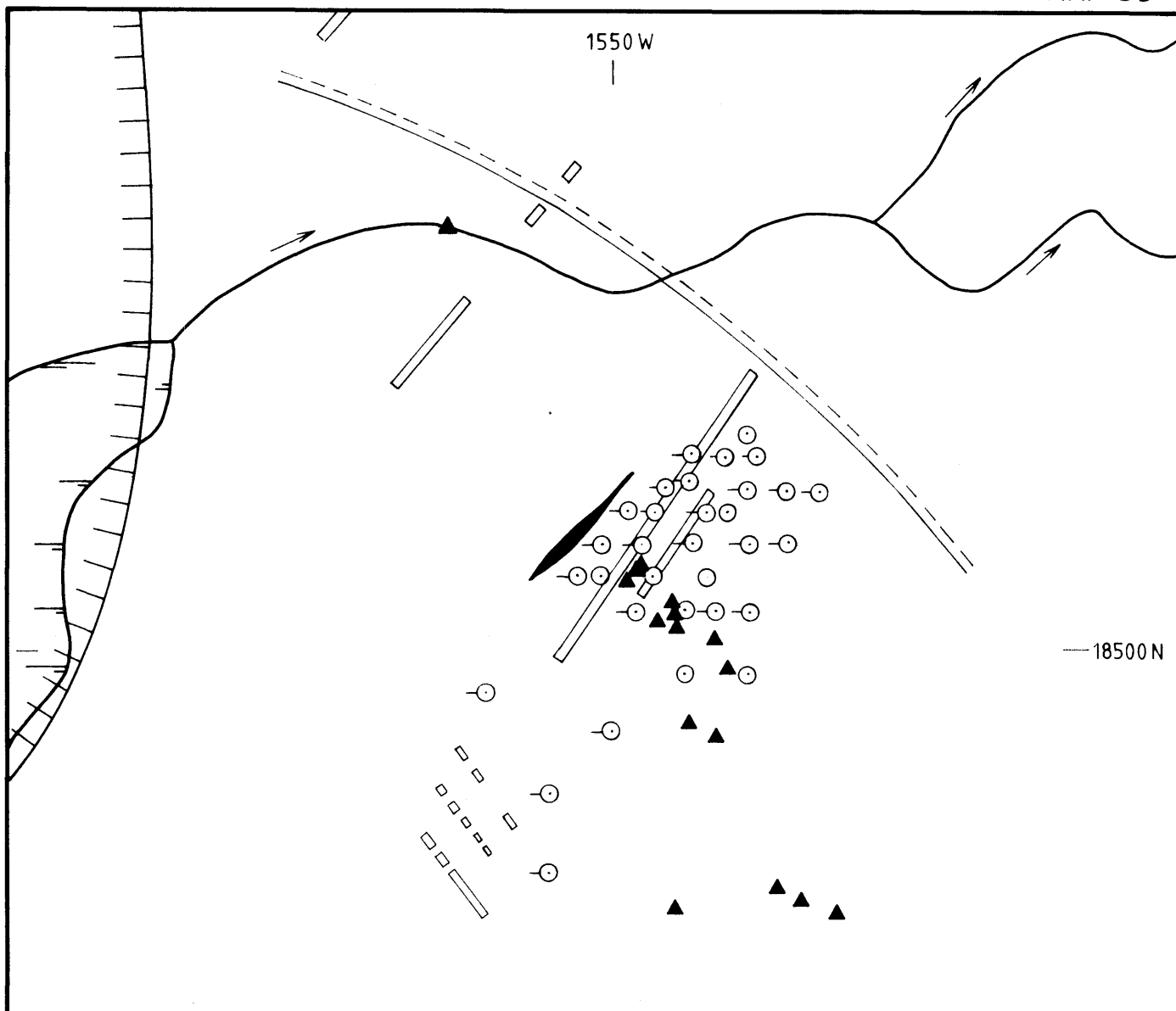
RAPPENFÄLTET

GEOLOGY









URANIUM REPORT 1981 - 8

MAP SHEET 26 H - I

ID-NUMBER



LEGEND

-  OREBODY
-  ROAD
-  STREAM
-  LAKE
-  CALEDONIAN FRONT
-  DDH
-  TRENCH
-  RADIOACTIVE BOULDER $\approx 1000 \mu\text{R/h}$

© Svenska Geologiska Byråns
 1981 070 23 23 07 23
 23 078 17 50 00 P
 Meddelande till

SCALE 1:5000

0 200 m



BÖSSE GUSTAVSSON - MS

PROJEKT SKBF N NORRLAND

SGU BERGGRUNDSBYRÅN 1981

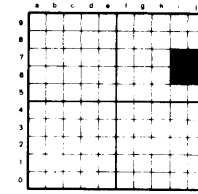
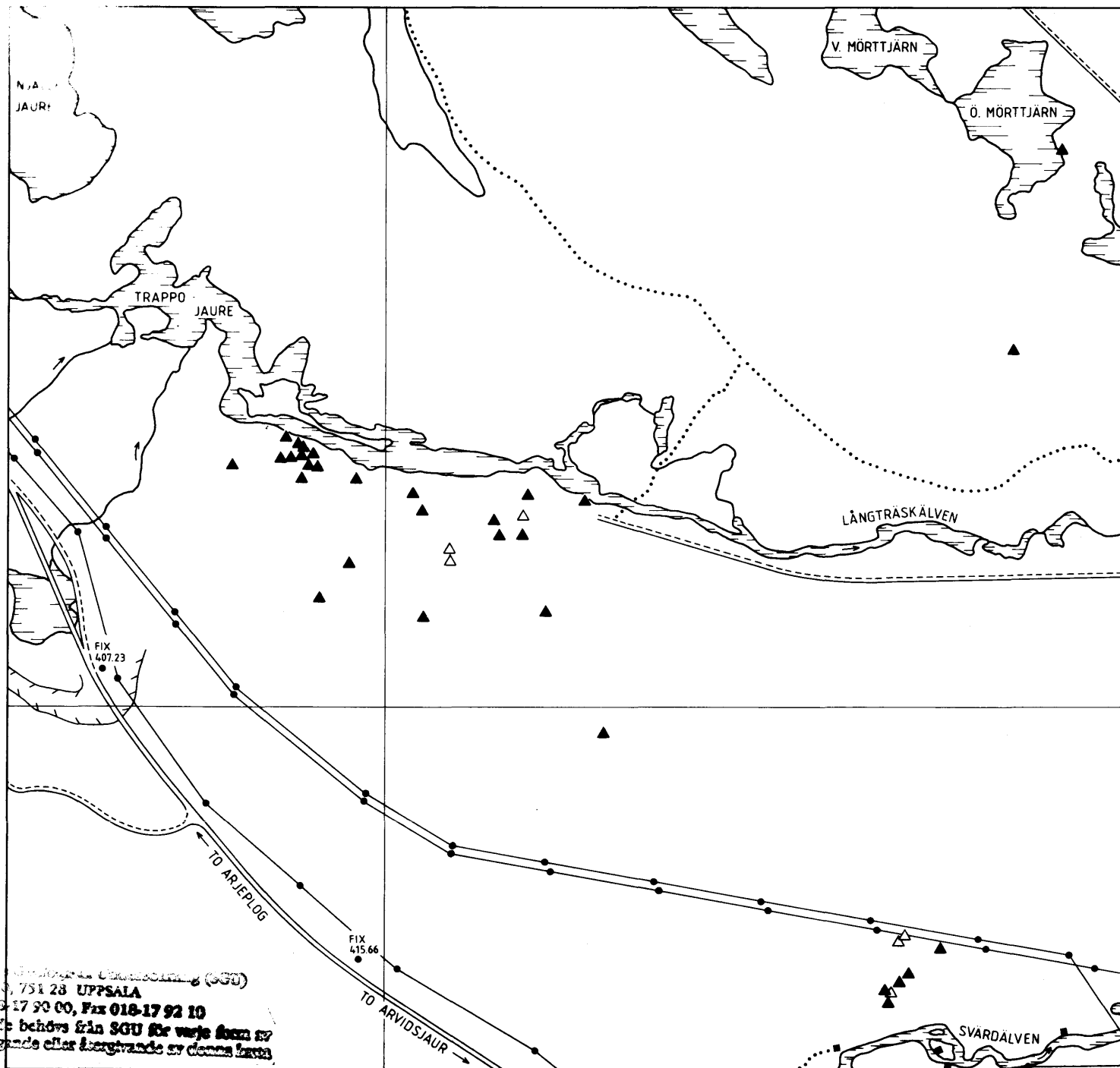
LABBAS

EXPLORATION MAP

URANIUM REPORT 1981 - 8

MAP SHEET 26H, 3e - f JÄKKVIK

ID - NUMBER



LEGEND

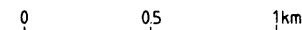
- ▲ U-MINERALIZED BOULDER (EPISYENITIC TYPE)
- △ U-MINERALIZED BOULDER (SUPRACRUSTAL TYPE)

RAVENBERGET
URANIUMBEARING
BOULDERS

MAP SHEET 241 6-7 i-j STORAVAN

ID-NUMBER

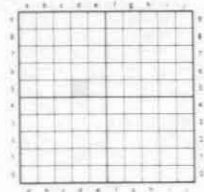
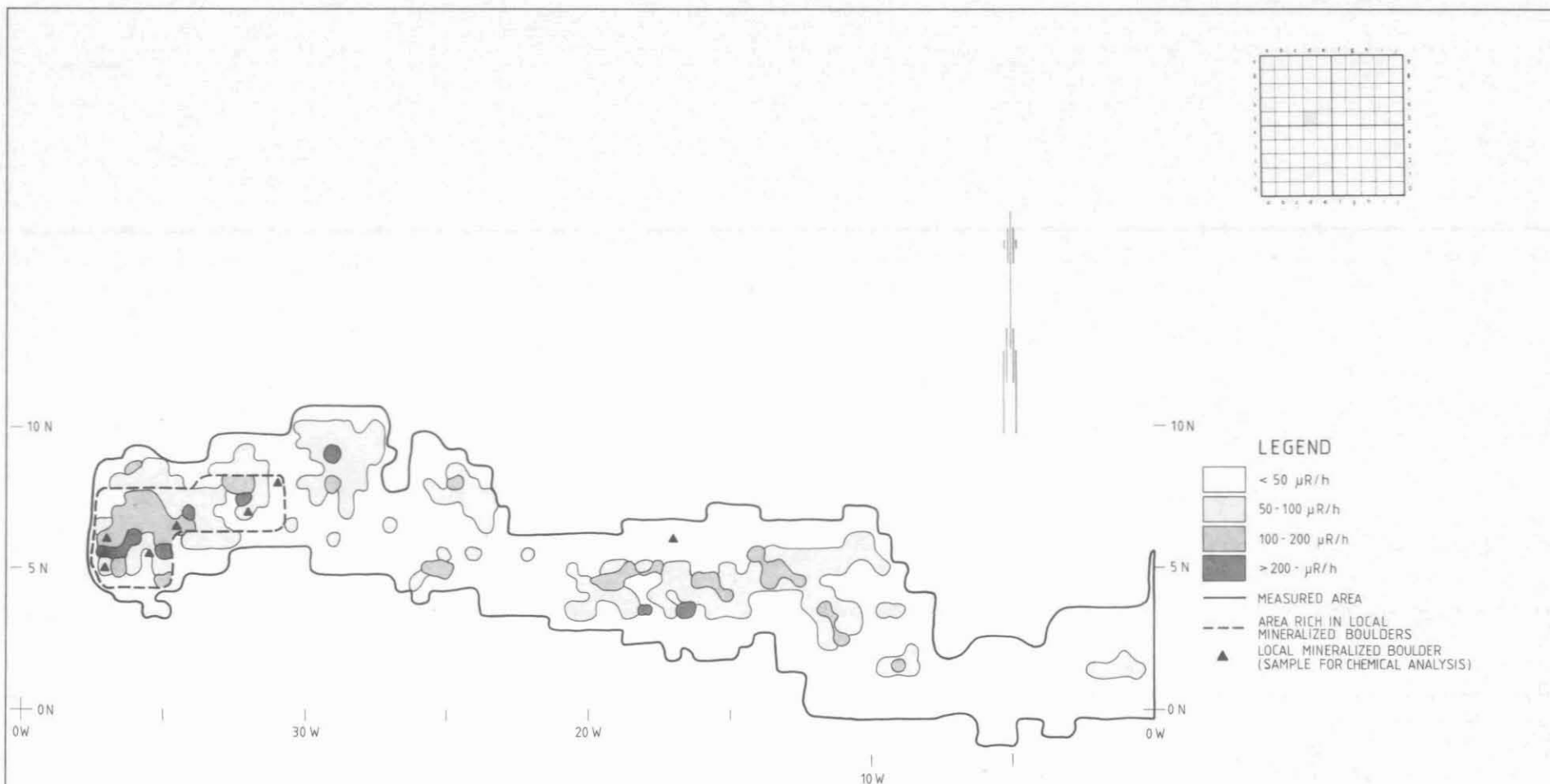
SCALE 1:



RAGNAR GERLACH -SE
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LEGEND

- < 50 $\mu\text{R/h}$
- 50-100 $\mu\text{R/h}$
- 100-200 $\mu\text{R/h}$
- > 200 $\mu\text{R/h}$
- MEASURED AREA
- AREA RICH IN LOCAL MINERALIZED BOULDERS
- LOCAL MINERALIZED BOULDER (SAMPLE FOR CHEMICAL ANALYSIS)

BRÄNNSPIKEN
 URANIUM MINERALIZATION
 ACTIVITY DISTRIBUTION MAP

MAP SHEET 25K 5d HARADS

ID-NUMBER

SCALE



TRYDBERG, A. OLSSON, R. GERLACH -MS

SKBF URANIUM EXPLORATION PROJECT

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