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Masi Project (N-81-4), Annual Report.

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Råstoffgruppe	Råstofftype
Malm/metall	Cu, Au, Mo, J Zn Pb REE

Sammendrag / innholdsfortegnelse

Oppfølging av arbeid i 1983, med geologi, bakkegeofysikk og boring. Det ble boret 2293 meter, men det ble ikke påvist mineralisering av økonomisk betydning.
2 av opprinnelig 33 områder anbefales blir fulgt opp videre.

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SUMMARY AND CONCLUSION

The second year of active field work in the Masi Project, northern Norway, concentrated primairly on drill testing EM-mag-geochemical anomalies outlined during the 1983 field season. A albitite hosted uranium - REE occurrence was a secondary priority target. A total of 2,293.35 m of diamond core drilling was performed during the season. In addition five EM-mag-VLF grids were established over airborne (-geo-chemical) anomalies, of which some were drilled during this years program. Geological mapping of geophysical - geochemical grids which were not drilled was carried out this year.

The project target is gold - copper mineralization in association with carbonate facies iron formations and talc - carbonate altered ultramafic volcanics. Potential also exists for massive sulphide (Cu - Zn - Au) in assiciation with volcanics. The program was conducted by Folldal Verk A/S in a grass roots joint venture with Amoco Norway Oil Company.

The drill program was unsuccessful in intersecting an economic section of precious and/or base metal mineralization. However two holes, each on separate grids, encountered subeconomic grades of mineralization across significant thicknesses. B.H.-M-84-Salg-N-02 intersected 26 meters (true thickness) which may return an average assay of 0,424 % Zn. Only 16 meters of the section has been split to date. Also within this same section six meters averaging 9.67 g/t Ag were detected. The second hole, B.H.-M-84-Dabm-01 intersected a 30 meter (true thickness) section with two anomalous Cu - Pb - Zn horizons. The upper (12,00 - 24,00 m) averages greater than 0,23 % Zn, 0,06 % Cu and 0,047 % Pb. The lower horizon (32,00 - 40,00 m) has averages of greater than 0.32 % Zn, 0.16 % Cu and 0.10 % Pb. Further work is recommended for both grids.

The sequence of rocks intersected in each hole tended to reflect those similar to well known submarine exhalative and volcanogenic Zn - Cu - pyrite - Au - Ag and Pb - Zn - Cu - pyrite - Ag deposits

Exploratory drilling on the Big'gejav'ri grid did not intersect any additional significant sections of albite hosted uranium - REE mineralization. Although closely spaced drilling in the area of last years find outlined 50,000 tonnes with a probable grade if less than or equal to 0.131 % U_3O_8 and 0.202 % REO. Geological - geochemical - VLF - field strength surveys have indicated two areas which may contain additional uraniferous - REE albitite. Extensive rock sampling has been carried out on the grid. Not all rock sample assays have been received but of those that have the highest values detected are 0.310 % U_3O_8 (outcrop) and 0.342 % REO (float). The Mountain Pass district of San Bernardino County, California, U.S.A. contains a REE-bearing carbonatite deposit which averages 12 % bastnäsite, 20 % baryte, 10 % quartz and silicate mineral and 60 % carbonate minerals, chiefly calcite. The REO content of the ore is usually in the range 5 to 15 % averaging 7 % but localized concentrations of up to 40 % are present. In January 1981 proved and probable ore reserves at Mountain Pass were reported to be about 40 Mt assaying 7,68 % REO (Nearly and Highley, 1983). Further drilling on the Big'gejav'ri grid should be dependant chiefly upon metal prices for uranium and to a lesser extent the REE. Microprobe work which is presently being done by the Norwegian Geological Survey (NGU) should determine wheter the REE are easily extractable.

The majority of the grids established within the Masi Project are no longer recommended for further work. However some may still warrant further investigation.

RECOMMENDATIONS

Of the 33 geophysical - geochemical grids established during the 1983 and 1984 field season 18 are no longer recommended for further work. The claims for these should now be dropped.

Two of these remaining grids have been recommend for further drilling in order to follow up anomalous Zn - Ag and Cu - Pb - Zn values detected in drill core. One grid is recommended for further drilling but the decision should be dependant upon metal prices for uranium and the REE. Three other lower priority grids may still warrant drilling. Five grids should be prospected and rock samples taken before their claims are dropped. One grid due to its close proximity to another with interesting Cu - Pb - Zn values in core is recommended for geological mapping and rock sampling. A regional geochemical survey is suggested south of this area (Aksujåkka - Dabmutvarri area). The remaining three are still awaiting Au and Ag assys. One of these latter three has had low grade copper detected in drill core over 8 meters. Further drilling along strike of this hole may be warranted if copper prices increase. The claims for the above mentioned areas should be dropped only if results from the recommended program are negative.

The majority of the recommended work could be accomplished by one geologist during a summer field season.

For a more detailed description of the recommended program and the grids which may or may not warrant further investigation please refer to the "Summary of Recommended Program" and the "1984 Program" sections.

INTRODUCTION

The second year of a grass roots exploration project, conducted in the Masi area, northern Norway, concentrated primairly on drill testing geophysical - geochemical anomalies and a uranium - REE occurrence outlined during the 1983 field season. In addition grid geophysics and geochemistry was conducted on five anomalies indicated by the 1982 airborne survey. Grids which were not scheduled for drilling and were unable to be mapped during last years program were done so this year. Also two grids, Vuovdejåkka and Suoluvarri, which had no VLF done during 1983 were surveyed this year. A detailed geological

and mag survey were performed over the Biggejav'ri - uranium - REE occurence. The project is one of several being conducted by Folldal Verk A/S in a joint venture with Amoco Norway Oil Company.

The primary objective is to locate Au - bearing sulphide horizons associated with carbonate facies iron formations and talc - carbonate altered ultramafic volcanics. From work performed it appears potential exists for locating Cu - Zn (Au) massive sulphides in association with volcanics as well as albitite hosted uranium - REE mineralization.

LOCATION, ACCESS AND TOPOGRAPHY

The project is located in the district of northern Norway known as Finnmark, centered at latitude 69°30'and longitude 23°25' (see Fig. 1).

The village of Masi, located in the east-central sector of the project area, is the nearest supply center. The village is situated on the Alta - Kautokeino river and serviced by a single paved highway running from Alta, in the north, to Kautokeino in the south. Both are approximentaly 70 km distance from Masi and act as the main supply centers. A power line parallels this highway. In addition a good gravel road which crosses the main highway in the north is for the most part paralleling and 5 km distance. Both run through the central part of the project area. At present a large hydro electric project is underway in the norteast sector. No railway service is available whatsoever.

Alta is serviced by jet flights from Oslo and Trondheim. Helicopter service is available from Lakselv, approximantaly 40 minutes by air from Masi. Fixed wing service is available within Masi as well as from Alta.

During the drilling period mainly a combination of muskeg and heavy duty truck were used for transporting the rig and its equipment from drill hole to drill hole. However a few inaccessible drill targets required helicopter support. The geophysical - geochemical crews utilized snowmobiles during winter months and predominantly foot during summer.

As in the case over much of Finnmarksvidda the topography is rather subdued with undulating relief between 300 and 650 m. Occassional mountains rise out of the general plateau-like surface, as for example Suonjeroai'vi (638 m). Certain rivers, such as the Kautokeino River are deeply entrenched in the topography, through often drainage is poor resulting in extensive areas of bog and numerous large to small shallow lakes. The main drainage is nevertheless to the north via the Kautekeino River which runs just west of the projects eastern boundary. The vegetation within the valleys consists mainly of stunted birch, pine and smaller bushes. Above the tree line, which generally begins above 400 m, only "tea-brush", reindeer moss and a few stunted birches exist.

LAND STATUS

Initially a total of 84 claims (each 500 m x 500 m) were staked in 16 groups in April 1983 in response to the preliminary airborne EM - mag results. An additional 194 in June, 177 in August, 1983 and 50 in January 1984 were staked in 9, 1 and 2 groups, respectively. Those staked during June 1983 and January 1984 were the result of a combination of factors, primarily good geophysical - geochemical response combined with interesting geology. To date Folldal Verk A/S - Amoco Norway hold 505 claims in 24 groups within the Masi project area. These claims are valid for seven years (see Grid Location and Claim Map in Box 1).

JOINT VENTURE AGREEMENT

A "Heads of Agreement" dated June 01, 1981, established a joint venture for exploration and development of mineral deposits in the Folldal area of Norway between Amoco Norway Oil Company and Folldal Verk A/S. Grass roots exploration in other areas of Norway was included in this agreement as an "exhibit". A separate "Heads of Agreement" covering grass roots exploration has since been drawn up. This agreement establishes a 50/50 joint venture over a six year period from 1981 to 1986, subject to withdrawal by either party after September 01, 1983. Withdrawal would be effected by providing a written notice prior to December 01 of any year after that date, effective the following January 01.

Suggested funding of the joint venture was as follows:

	NOK
1981	1.000.000
1982	2.000.000
1983	2.500.000
1984	2.500.000
1985	3.000.000
1986	4.000.000
	15.000.000

TOTAL NOK EXPENDITURES	AMOCO FUNDING OBLIGATION:	FOLLDAL VERK A/S FUNDING OBLICATION:
0 - 1.000.000	100 %	0 %
1 - 5.000.000	80 %	20 %
5 -15.000.000	65 %	35 %
Greater than 15.000.000	50 %	50 %

Folldal Verk is the destignated operator of the joint venture.

HISTORY AND PREVIOUS EXPLORATION WITHIN THE PROJECT AREA

Prior to 1982 no aggressive large scale exploration program had been conducted over the greenstone belt in the Masi area. As a result only a few published uneconomic mineral occurrences were known to occur. Holmsen et.al., (1957) classified these occurrences into two groups:

1. layered (sedimentary) deposits: mainly impregnations of pyrite-pyrrhotite- (chalcopyrite) in dark often graphitic schists.
2. epigenetic deposits: chalcopyrite, pyrite, hematite as vein fillings and in metasomatic alteration (albit-carbonate - (quartz) rocks) radioactive mineral (? uraniferous) also probably belongs here.

In 1974 A/S Sulfidmalm (Falconbridge) carried out an exploration program apparently for base and precious metals over a limited area within our present project boundaries. This consisted of an airborne survey followed up by detailed geochemical, geological and minor geophysical surveys. Diamond drilling was done but the locations and amount are not available. They no longer have any valid claims within the project area.

Intermittently from 1974 A/S Sydvaranger and most recently A/S Prospectering, a daughter of A/S Sydvaranger have also conducted minor exploration programs. They hold several small, scattered claim groups, some of which do not cover airborne conductors. It is suspected these claims were staked to cover attractive sulphide (Cu, Pb, Zn, Ag, Au) values in soil and/or bedrock.

The Geological Survey of Norway (Norges geologiske undersøkelse) have in the past and are presently carrying out geological investigations in the Masi area. Their surveys emphasise systematic geological mapping of the bedrock. Much attention is also given to the study of ore mineralization, especially

sulphide deposits. In areas found to be of possible economic interest ground geophysical and geochemical surveys are performed. No claims are held by NGU within the project area.

Tellef Dahll (1891) and O. Holtedahl (1918, 1953) have carried out similiar geological investigations.

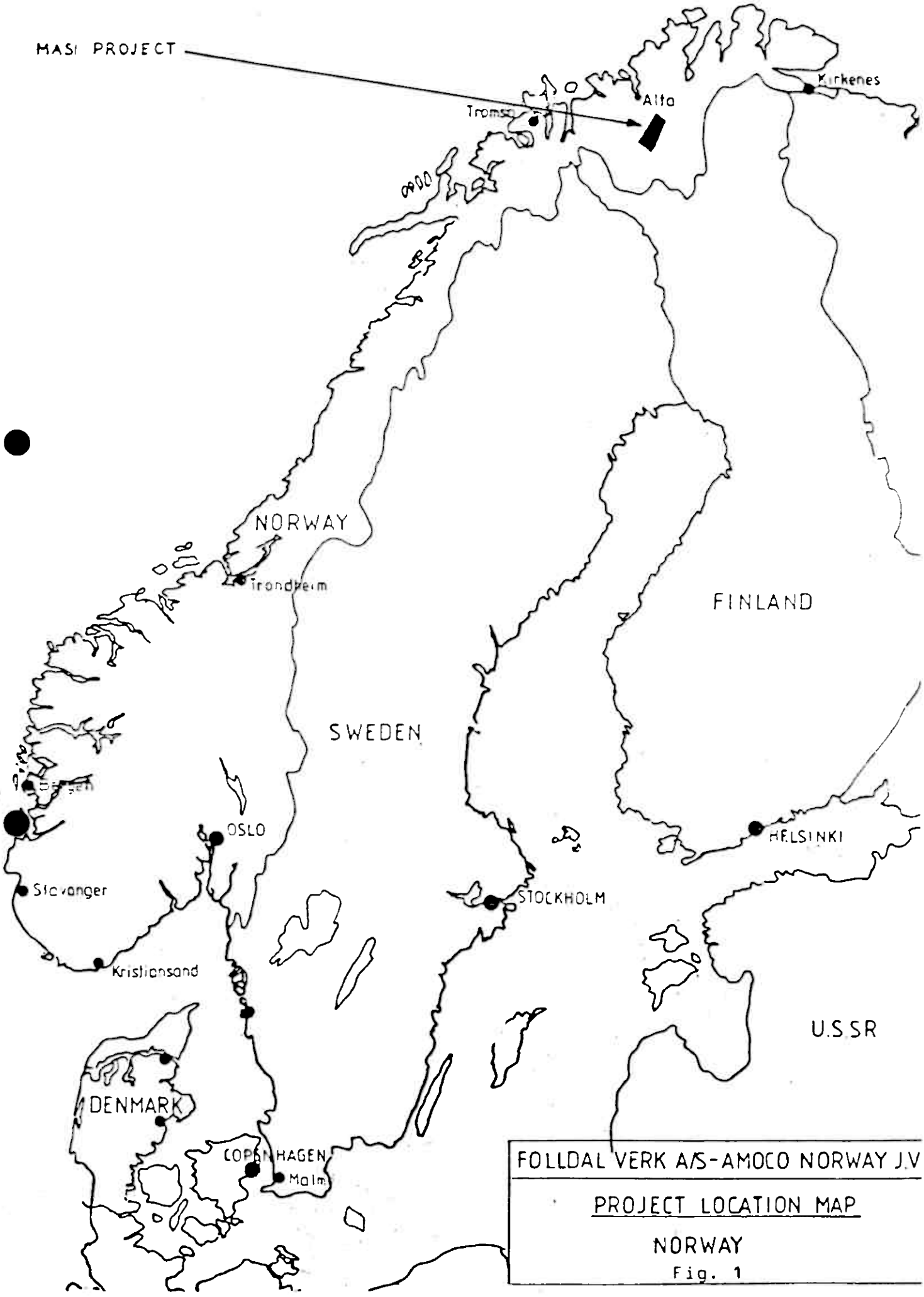
REGIONAL GEOLOGY INCLUDING ORE DEPOSITS AND MAJOR MINERAL OCCURRENCES

After a glance at the regional geology map of central and western Finnmarksvidda (Fig. 2) it becomes obvious the main features are the presence of a central Archean granite gneiss dome, a belt of gneisses of unknown age to the west and overlying Precambrian supracrustals which are later intruded by younger granites. The general structural trend is, from west to east, NW-SE to NS to NE-SW. This entire sequence is in turn unconformably overlain by SE - SW trending shales of the "Hyolithus zone" (autochtkonous or parautochthonous Caledonides) (Holmsen, et.al., 1957). The stratigraphy, structure and petrology of the Precambrian on Finnmarksvidda clearly shows similiarities with the extensive tracts of Precambrian in Northern Finland and Northern Sweden. (Fig. 3). The supracrustals consists predommiantly of greenstone, quartzites and mica schists.

A striking feature of the rocks of West Finnmark is the relative abudance of albite feldspar. It occurs in intrusive rocks with both mafic affinities (albite diabases) and acid affinities (granite). It is also introduced by metasomatic transfer as in granitized rocks and albite-carbonate rocks (albite felsite). At times up to 10 % magnetite can be present making these features easily recognizable from aeromagmetic maps (Holmsen, et.al., 1957) The albite felsite also frequently contains minor to abundant amounts of pyrite, chalcopyrite and occassionally molybdenite. At the Bidjovagge mine, located 47 km WSW of Masi, this rock type apparently hosts the copper - gold mineralization.

The mineralization is stratabound but consists mainly of fracture and vein fillings of iron sulphides in a albite -felsite breccia and graphite felsite. The dominant sulphides are chalcopyrite, pyrrhotite and pyrite with minor sphalerite, galena and magnetite. The deposit occurs as four separate lenses totalling approximately 5 million tonnes of 1.3 % Cu and 1.2 Au g/t. The mine has been closed since 1975, due to low copper prices, but is expected to resume production in summer 1985 at a capacity of 250,000 t/y for a scheduled four years. Outokumpu Oy of Finland has recently bought the operations from A/S Sydvaranger. This is the only mine in western Finnmark. A second, possibly significant, mineral occurrence is located 25 km south of Kautokeino on the north side of Riedijajav'ri. NGU followed this area up as a result of a recent gravity survey conducted by NGO (Norwegian Geographical Survey). The mine at Bidjovagge was observed to also lie within a similar gravity high. The mineralization occurs as 10 m thick fissure vein fillings within and along the contact of altered meta-diabase/basalt and graphite schists. The sulphides consists of pyrite, pyrrhotite and chalcopyrite with minor amounts of chalcocite, digenite, bornite and native copper. Gangue minerals are quartz , albite and/or carbonate. A 2 kg. sample of the altered meta-diabase/basalt contained 1.82 % Cu and 0.21 - 0.24 ppm Au. The graphite schist returned 0,16 % Cu and only trace Au. A synvolcanic, hydrothermal origin is suggested for the mineralization at Riednjajav'ri (Sandstad, Oleson, 1984). Such a theory is also suggested for the Cu - Au occurrence at Biedjovagge. A contrast between the two areas is the apparent absence of albite felsite at Riednjajav'ri. However it it believed they are indicated by anomalous La-value in soil samples near the mineralized area.

The grade of metamorphism apparently increases outwards, from the Carajav'ri area, in roughly concentric zones culminating in the eastern and western belts of granitic gneisses (Fig. 4). The range is very low greenschist to amphibolite facies.



FOLLDAL VERK A/S - AMOCO NORWAY J.V

PROJECT LOCATION MAP

NORWAY

Fig. 1

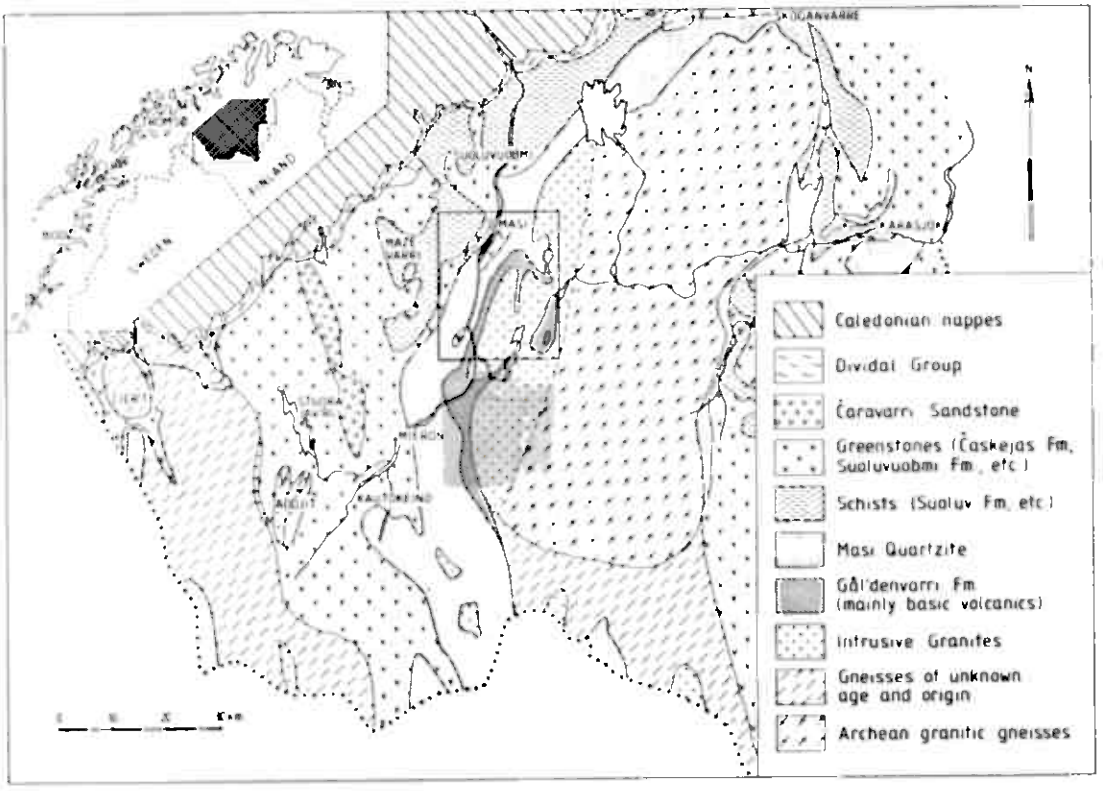


Fig. 2.
Regional Geology Map of Central and Western Finnmarksvidda (Solli, 1983).

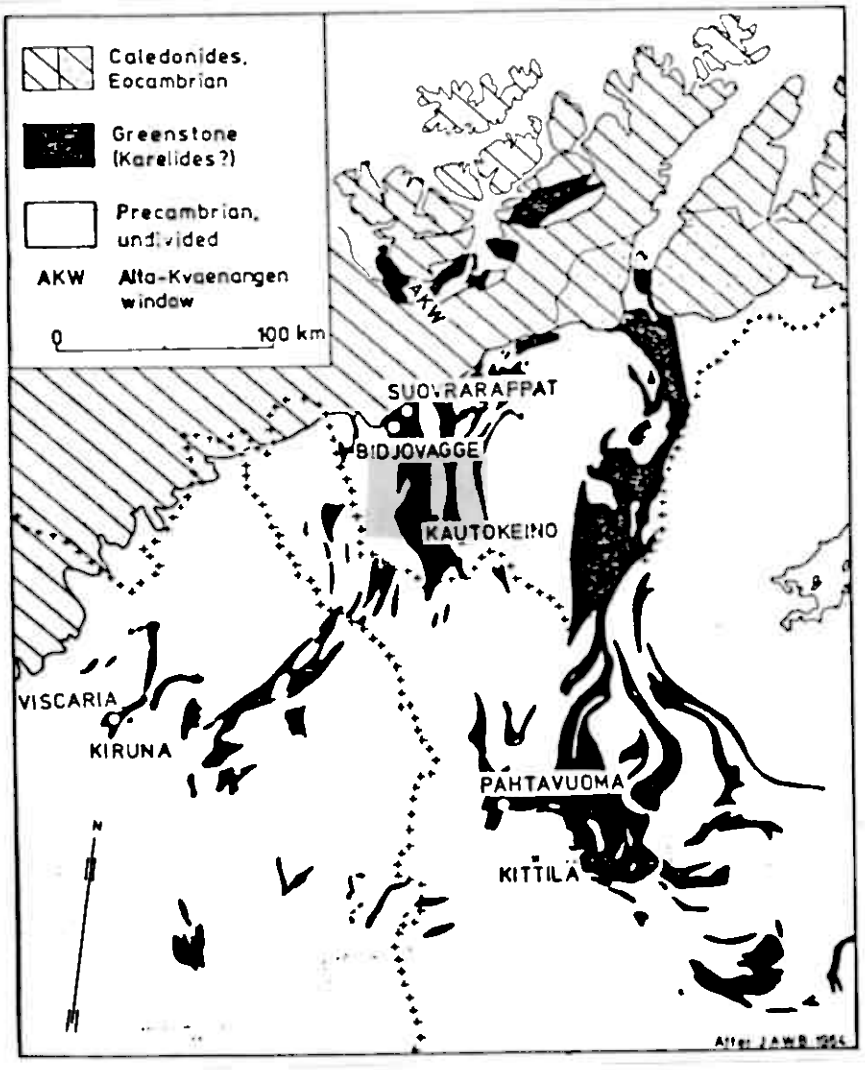


Fig. 3.

Precambrian Greenstone Belts of Northern Fennoscandia. (Hagen, 1982).

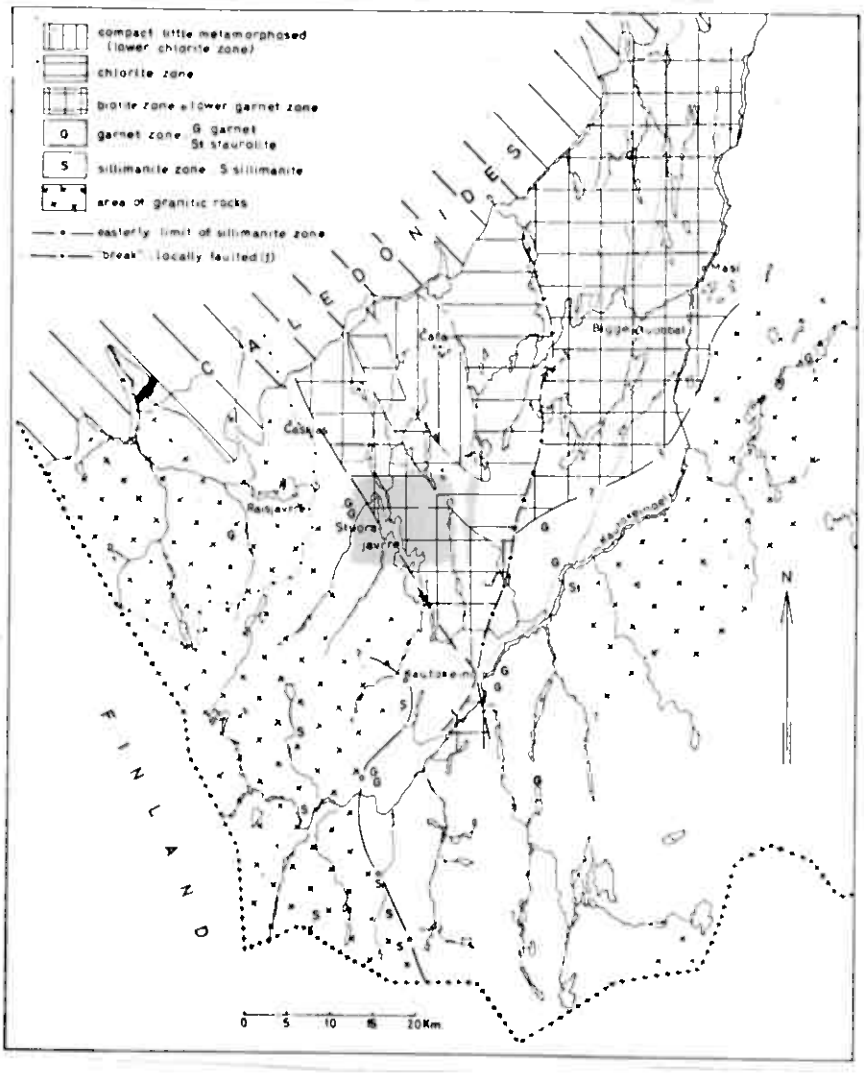


Fig. 4.

Map showing the distribution of the metamorphic zones and areas of granitic rocks.

GEOLOGY OF THE PROJECT AREA INCLUDING ORE DEPOSITS AND MAJOR MINERAL OCCURRENCES.

The rock within the project area consists of a comformable stratigraphic sequence containing three formations:

1. Gål'denvarri Formation.

This lowest unit is composed of amphibolites (metabasalts) with some associated volcanic breccia. Ultramatic rocks also exist and occur as elongated lenses up to 30 - 40 m thick and 200 - 300 m long. Chemically the amphibolites are classified as tholeiitic basalts as they are in the Suoluvuobmi Formation. The major differences between the two are as follows:

	Galdenvarri Fm. (means in %)	Suoluvuobmi Fm. (means in %)
TiO_2	0.5 for 16 samples	1.5 for 21 samples
MgO	12.3	8.5
SiO_2	52.3	47.3

Significant differences also occur in trace elements between the two formations. For example Cr and Ni contents are much higher in the Gål'denvarri Formation. Schists are a minor component of this formation but in some cases the minerals garnet, staurolite and sillimanite are found. The paragenesis cordierite-anthophyllite is found in both mafic rocks and quartz-rich schists. Except for garnet, none of the other minerals have been discovered elsewhere in the Masi area. Excluding sillimanite the mineralogical textures indicate that minerals were formed at an early stage of regional metamorphism.

Total thickness of the formation is about 1 - 1,5 km.

2. Masi Quartzite

Unconformably overlying the Gål'denvarri Formation is the Masi Quartzite. Generally it can be classified as a fine

to medium grained white, grey.-white or pink feldspathic quartzite. However when the chrome-bearing mica, fuchsite, is present a distinct sea green color prevails. At the base there is a conglomerate with pebbles consisting predominantly of granite gneiss and quartz. An interesting point is that no other types of pebbles are usually found, even when the conglomerate rests directly on the amphibolites of the Gål'denvarri Formations. The Masi Quartzite is a relatively thick (500-1000 m) and homogeneous formation of wide spacial distribution. Solli (1983) suggests it may be used as a correlating aid between geological units in different parts of Finnmarksvidda.

3. Suoluvuobmi Formation

By far the most extensive of all three formations is the Suoluvuobmi Formation. It lies stratigraphically above and to the west of the Masi Quartzite and contains mainly mafic metavolcanics and mica schists. Solli (1983) implies the Suoluvuobmi Formation is an equivalent to the Caskejas Group of Holmsen et.al., (1957). Since the correlation between the two is not obvious he suggest incorporating the two areas and refering to them as the Suoluvuobmi Formation (Fig. 2). The amphibolites appear to be of two types which may be of different origin. One type is thought to represent a meta basalt and the other a gabbro. Ultramafic rocks also occur which were probably lavas originally. Geochemically both types of amphibolites are identical with regard to both major and trace alements, so they may be closely related. The gabbro seems to be limited to the Suoluvuobmi Formation.

Mica schist is the other dominant rock type. It is often characterized by a prophyroblastic growth of biotite, the dominant mica.

On Finnmarksvidda graphite schists in connection with albite to quartz albite felsites have been of special interest as they often have ore minerals associated with them. These are particularly well known from the Bied'djuvaggi

Mines (Hagen, 1982) and also from mines in northern Sweden and Finland (Inkinen, 1979). Both a metasomatic and volcanic origin have been debated. The latter is accepted by most geologists.

As a result of local deformation and faulting, contact relations between the Suoluvuobmi Formation and underlying Masi Quartzite are very complicated. Generally a normal stratigraphic sequence occurs.

The total thickness of the formation is greater than 1 km..

The eastern part of the Masi area is occupied by granite rocks. Formerly these were thought to belong to the Archean basement but recent mapping has shown that they are younger intrusives. Compositionaly it is a homogenous red to white biotite granite at times containing strongly foliated rocks of granitic, granodioritic and tonalitic compostion. Xenoliths of the Gål'denvarri Formation and Masi Quartzite occur in many localities. These gneisses are thought to be remnant of the Arcean basement. The granite-basement contact is not known in detail. Albite granite intrusions are not common in the Suoluvuobmi Formation but at least three massifs occur as well as many veins.

The general strike is predominantly N - S tending to swing in the north, NE - SW, dips are usually moderate. Faults, breaks and fold axes are generally parallel to strike. In the vicinity of Masi there are numerous thrusts from east towards west.

The metamorphism within the project area is similar to that of the regional trend - lower greenschist to amphibolite facies. There are no known ore deposits within the project area although the uranium - REE occurrence at the Biggejav'ri grid may be classed as a major mineral occurrence.

1984 PROGRAM

The 1984 season was the second year of active field work in the project area. The primary target is Au - Cu mineralization in a ultramafic - mafic volcanic environment. A secondary target is uranium - REE mineralization hosted by albitite intrusive rocks.

This years program was set up principally to drill test grid geophysical - geochemical anomalies and to further delineate a albitite hosted uranium - REE occurrence outlined during 1983. A total of 2,293.35 m of diamond core drilling was completed during the season. Of the total amount, 1,880.05 m in 20 holes were drilled on 14 different geophysical - geochemical grids out of a possible thirty-two. Eleven holes comprising 413.30 m were drilled on the uranium - REE grid, Biggejav'ri. Drilling began March 17, stopped for break up on May 4, resummed May 29, and was completed on August 1. Terranor Nord A/S from Rødskjær was the drilling company.

In addition to the drill program minor ground follow up was performed over selected airborne EM - mag anomalies. One in particular, Salganjav'ri, had coincident high Cu - Zn (Au) values outlined from the 1983 reconnaissance geochemical program. A total of 5 grids were established and surveyed and approximately 800 samples, 475 of which were drill core, were collected for geochemical analysis.

VLF was also completed over the grids Voudejåkka and Suoluvarri. These two areas were worked on late in the 1983 season and due to wintery conditions VLF could not be completed.

Also in hope of understanding better the stratigraphy and structure of the rocks at the Biggejav'ri grid a detailed mag and geological survey were performed.

Finaly, geophysical - geochemical grids which were not drilled this or last year and were unable to be mapped during 1983,

were done so this year.

Ground geophysical instruments consisted of Duncan Crone's CEM, Geometrics proton-magnetometer and a VLF manufactured in Trondheim, Norway, by Steinar Paulsen. A few grids were surveyed using the Phoenix built VLF. All ground geophysical grids were constructed using a 150 meter line spacing and 25 meter station spacing. CEM surveys were performed using a 100 meter coil seperation. All readings were taken at 25 meter intervals.

CEM curves tended to reflect those characterizing relatively shallow, gently to moderate dipping conductors (see fig. 5 a, b, c).

Magnetic background over the project area averaged 52800 γ. Good anomalous values tended to be 1000 γ above background. Where a good conductor existed the VLF responded quite well. The cross-over usually occurred up dip or directly coincident with the main EM body. For N - S striking conductor Bordeux, France (BOF) and Rugby, Scotland (GYD) were used. For E - W conductors Hegaland, Norway (JXZ) and Cutler, Maine (NAA) in the United States was utilized.

All samples for geochemical analysis, including core samples, were shipped to X-Ray Laboratories in Don Mills, Ontario, Canada. Soils were analysed for Cu, Pb, Zn, Ag, and Au by DCP and FADCP methods, respectively. In addition some selected samples were analysed for Mo (SCP method) and U (DNC method). Humus samples were analysed for Au by neutron-activation method. Core samples were analysed for Cu and Zn by XRF, Au and Ag by FA technuque and Pb by standard DCP method. The majority of the Biggejav'ri core samples were analysed only for Sc, La,Ce, Nd, V and Y. The former four were done by neutron activation while the latter two DCP and XRF-G, respectively. Some cores, however, were analyzed under what X-Ray calls an "Exploration Package". This consists of 28 elements of which all except two, V and Y, were analyzed by neutron activation. Vanadium

and Yttrium were done using the previously mentioned method. The elements included in the "Exploration Package" are Au, Na, Sc, V, Cr, Fe %, Co, As, Se, Br, Rb, Sr, Y, Mo, Sb, Cs, Ba, La, Nd, Sm, Eu, Tb, Lu, Hf, Ta, W, Th and finally U.

Due to wide spread overburden cover the majority of the grids exposed only a small percentage of outcrop. However, outcrop which was observed tended to be found mainly along rivers and small brooks, following the sides and tops of ridges and the more prominent hills.

1984 AIRBORNE FOLLOW UP PROGRAM

The discussion of each individual grid will be done in a alphabetical order. The majority of the following grids were drilled but the results only briefly discussed. For a more detailed discussion refer to the "1984 Diamond Drill Program" section.

1. Cuol'laroavvi Grid (330.244).

As observed from the airborne geophysical map this grid has covered a 3 km long, isolated NE-SW trending conductive body.

Ground geophysics detected, from east to west, a single moderately strong conductor developing into several very strong multiple conductors at the center of the grid and eventually thinning to a single conductor again in the west end. The majority of the anomalies are characterized by high and low positive resultant dip angles reflecting several closely spaced, steeply dipping conductors. Mag and VLF were found to be generally erratic in both location and strength when attemting to correlate with the CEM. Combined with the long return rate for geochemical analysis and the possibility of drilling this grid shortly after geophysics was completed soils samples were taken only along every other profile. Some coincident, low order, sporadic, Cu, Zn, Pb values were detected. Although

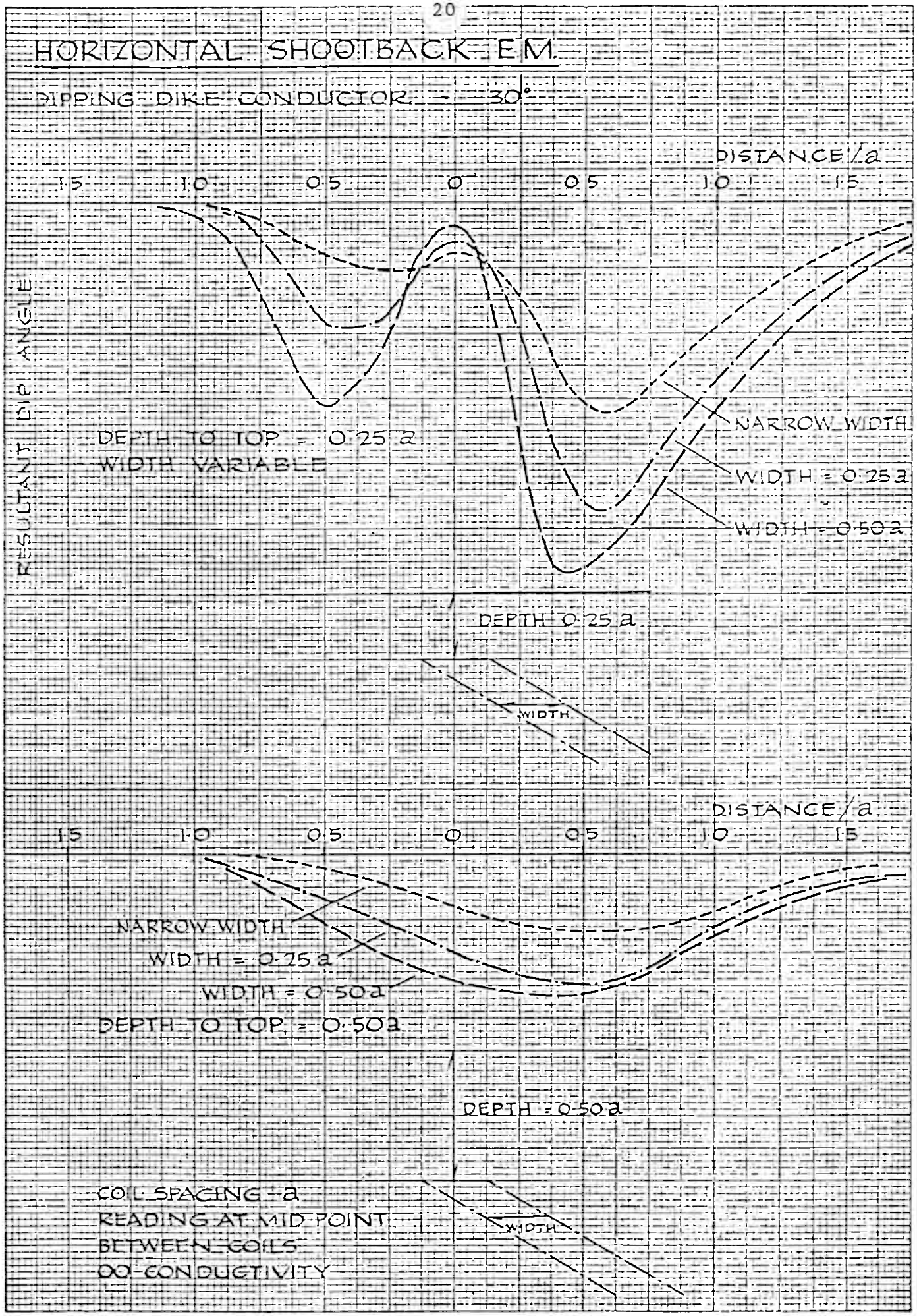


Fig. 5 a. (Crone Gephysics Ltd.)

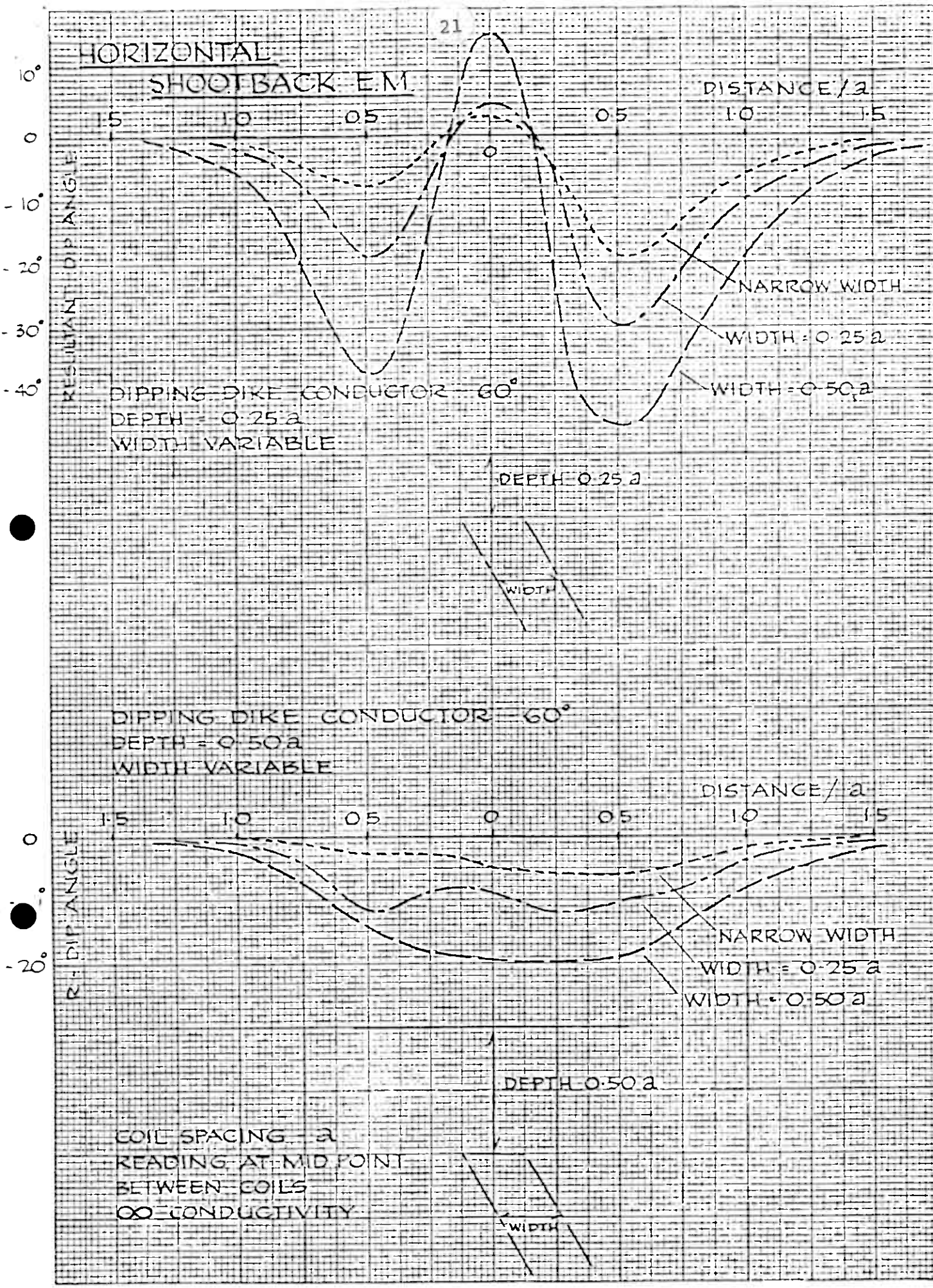


Fig. 5 b. (Crone Geophysics Ltd.)

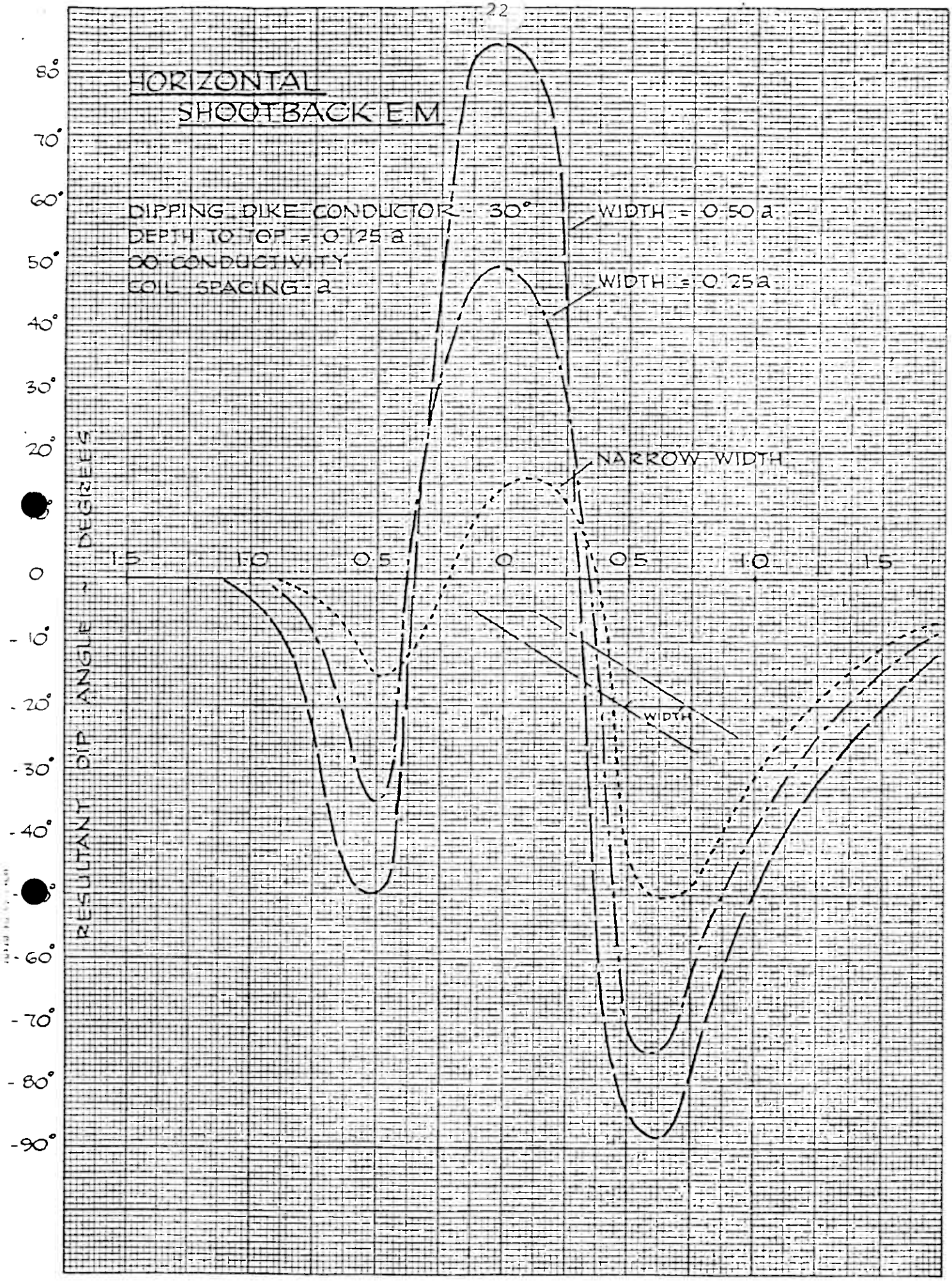


Fig. 5 c. (Crone Geophysics Ltd.)

Au values were low every profile returned anomalous values which appear slightly coincident with the EM - mag conductors. If the remaining profiles were sampled it is suspected several continous, low order the anomalies would arise.

Combined with its isolated nature and strong geophysical response diamond drilling was recommended. The main conductors intersected were a sulphide - graphite mix from 68.70 - 8.45 m and a sulphide-rich rhyotite to dacite tuff from 88.95 - 103.23 m. Of the two zones the former returned the higher Cu content - 0.16 % Cu over six meters. No significant Au, Ag, Pb, Zn value were detected. Geology has not been done on this grid.

No further work is recommended and the claims covering the anomaly can be dropped.

2. Gunnasai'va Grid (330.241)

A 1350 m baseline and adjoining profiles were established to survey this very strong airborne EM - mag anomaly. Several other parallelling conductors occur near by although with no associated mag. A noticeable very weak response appears in the south end.

From the airborne it appears this is a single continous conductor. The 1983 ground geophysical survey delineated two separate on strike EM - mag anomalies. A moderately weak EM - mag and VLF response was detected in the south. This may reflect the weaker airborne response in this area. It dips shallowly to the west has a strike length of approximately 200 meters and is cut off at both ends. The EM is accompanied by a weak down dip mag and a very weak VLF response. Extremely high negative resultant dip angles were determined from the conductor to the north. These have resulted in generally a wide "saucer shaped curves" with a conspicnous "bump" (lower negative resultant dip angles) near the middle. The mag is generally higher

in the north than in the south. However VLF response remains weak in the north as it does over the entire grid.

Geochemical results only produced low erratic results although the overburden thickness may be thick in this area.

Grid mapping was done this year but was unsuccessful in explaining the anomalies due the extensive glacial cover. Only two outcrop were observed on the grid. These consist of a quartz mica schist, one of which is amphibole rich, the other containing trace pyrite. Both indicate shallow opposite dips. Float consists of amphibole schists, creamy quartzite and greywacke at times highly carbonaceous and with trace pyrite. Iron staining in soil and a small pond was observed in the vicinity of L 9+00 N 1+00 E.

Combined with the negative geophysical - geochamical response no further work is recommend. The claims covering this anomaly may be dropped.

3. Gai'dnesvarri Grid (330.241)

This is very short isolated airborne EM - mag anomaly situated in the north end of the project area. A very high mag is flanking to slightly overlapping the EM conductor on the east end.

A short (300 m) weak, EM - mag - VLF conductor was detected with a coinciding low order Au anomaly. There are also a few low order Cu, Zn, Pb values but all are sporadic and non-coincident. The conductor is further interpreted as being thin, near surface and dipping shallowly (less than 30°) to the west. No outcrop occurs along strike of the conductor. The dominant rock-type observed over most of the grid, is a m.- c.g. gabbro to

amphibolite usually containing greater than 5 vol % magnetite. A large single outcrop of chlorite schist and a few of biotite schist occur in the southwest and southern areas of the grid, respectively.

As a result of the unattractive geophysical - geochemical response this conductor is not recommended for drilling and the claims may be dropped.

4. Sal'ganjav'ri - Nord Grid (330.242)

This geophysical grid is one of two which were established to survey selected areas of an extensive series of airborne anomalies which had coincident Cu - Zn (Au) values detected from the 1983 reconnaissance geochemical survey-

Ground geophysical results consisted predominanty of very high negative resultant dip angle with periodic high positive angles occuring along the entire length of most profiles. VLF and mag were usually coincident with the CEM positive peaks but many more VLF cross-overs and mag peaks occur, at times coincident.

The geophysical results were interpreted as reflecting a large NS trending weakly folded ? flat lying basinal feature composed mainly of graphite-bearing to graphite meta-sediments. The strong and extensive Cu - Zn (Au) horizons, indicated by the recon geochemical survey, were thought to represent iron sulphide horizons within the meta-sedimentary unit.

Geological investigations confirmed the dominance of a graphite meta-sedimentary unit as well as interbedded massive sulphide breccia horizons. These horizons consisted of near massive po, py with minor fuchsite and trace cp. One particular horizon could be traced for 150 meters. B.H.-M-84-Salg-01 occurs along strike and 150 m south of

these sulphide breccia outcrops. Other rock types observed were medium to coarse grained amphibolites and a fine to medium grained quartzite. Neither contained any significant amounts of sulphide. Strikes and dips were highly variable but this is expected for flat-lying strata. The contact relations between the different rock types were not exposed in outcrop.

Two diamond drill holes were put down to intersect the down dip extension of two separate geophysical - geochemical anomalies. These also happen to be drilling the eastern and western edges of this basinal feature. The first hole, M-84-Salg-01, cut a section consisting of, from top to bottom, felsic tuff (minor rhyolitic sections), graphite schists (grading into graphite-rich lapilli and agglomerate felsic tuffs),felsic tuffs (minor graphite layers) and a graphitic argillite (po-rich). Each unit contains iron sulphides but the majority is concentrated in the former (bottom) two units. The highest Cu value was 0.17 %/2 m. No significant Au, Ag, Pb or Zn occur. The second hole intersected a similar sequence but in addition encountered a banded iron formation (cherty banded garnet quartz carbonate cummingtonite) and was terminated in a banded mafic tuff. The Cu content is slightly higher in this hole - 0.18 %/2 m, while the Zn is considerably higher. A sulphide-rich graphitic phyllite to argillite is host to a zinc-rich horizon of approximately 34 m thickness. Several zinc values are greater than 0.4 % with the majority greater than 0.3 %. Silver values are also significantly higher and closely follow zinc values. Twelve ppm Ag over two meters was the highest value detected. Au and Pb prove to be insignificant.

Zn - Ag potential exists in this area. A/S Sydvaranger should be approached in order to aquire information about their claim block. Additional drilling in this area may therefore be supported by this information. However if they are not cooperative additional drilling is still recommended.

5. Sal'ganjav'ri Syd Grid (330.242)

This is the second and most southerly geophysical grid established to cover an area with coinciding airborne - geochemical anomalies. This was outlined from the 1983 Sal'ganjav'ri reconnaissance geochemical survey. Ground geophysics outlined a non-conductive tongue-shaped body parallelling the baseline and extending through the majority of the grid with a conductive unit appearing to wrap around this feature. It is suggested, due to a similar geological response, we are dealing with the same rock types as there are at Sal'ganjav'ri Nord. To the east the conductive unit is continous and characterized by very high negatives. To the west the unit terminates and the contact is reflected by a continous EM - mag horizon locally with coincident low to medium order Au - Cu - Zn - Pb values. The horizon is interpreted as being near surface (less than 10 m), dipping shallowly to the east and at least 50 m wide at surface.

A diamond drill hole located at L 4+50 S 1+10 W was drilled at a 60° angle to the west in order to investigate an area of the western conductive horizon which had coincident geochemical values. A 18.00 m thick banded quartz hornblende magnetite - cummingtonite - rich unit (banded iron formation) is believed to be the cause for the conductor in this area. No significant values were detected.

Prospecting was done over the grid but no outcrop were found. A few scattered f.g. dark green chlorite ? schist boulders were observed.

No further work is recommended for this area and the claims can be dropped.

6. Suoluvari Grid (330.242)

The airborne survey shows this as an isolated, short, weak to moderately strong EM conductor which is situated in an area of wide strong magneties.

Due to difficult weather conditions last year only CEM and mag were performed. VLF and geology were done this year. CEM detected a weak 600 m long, NS striking EM conductor. It has a shallow easterly dip and cut off at both ends. The majority of the conductor lies within a large wide magnetic zone but on L 3+00 S and L 1+50 S a distinctly higher mag is present down dip of the main EM body. On adjacent profiles the mag is much more subtle. The VLF cross overs are quite strong with coincident field strength up to 140% over a background of 85%. From geology the EM-mag-VLF appears to follow a mafic-meta-sedimentary contact. No conductor was found to explain the EM - mag response. Unfortunately,no soils have been taken over the grid. However, several rock samples have been taken close to the outcropping edge of the conductor. Results are pending.

Soil sampling should be done directly over the expected outcropping edge of the conductor in order to determine if anomalous soils exist. Diamond drilling should be dependant upon soil and rock geochmeical results. This conductor, along with three others, is covered by a single large claim block. A small group of claims should be kept over this conductor and should not be dropped unless negative results are received from the recommended program.

7. Varitvarri Grid(330.242).

A 2850 meter baseline with adjoining profiles were put in to cover several strong EM - mag and EM anomalies.

The northern half of the grid is occupied by two large lakes. Due to earlier than expected spring-time conditions approximately half of the grid could not be surveyed. However in the southern half ground geophysics outlined two parallelling conductors. The western conductor is continous

throughout the grid while the eastern has a strike length of approximately 800 m. Both have a coincident weak mag, strong VLF and weak Au anomaly. They were interpreted to be dipping very shallowly west, to be near surface (less than 10 m) and no greater than 50 m in thickness.

The drill was set up on L 18+00 S 5+25 E drilling 60° to the east for 90 meters. No significant conductive units were intersected. A highly silicified argillaceous unit (felsic tuff ?) possibly with minor very fine grained disseminated graphite was intersected from 9.73 - 14.48 m and thus may be the source for the western conductor. A possible sulphide-graphite outcrop was observed at L 18+00S, 5+75E, exactly where the western conductor was detected.

Prospecting in the area of these EM - mag conductors is recommended. The overburden appears to be relatively thin and therefore a outcrop may exist which may explain the strong geophysical response. If no outcrop are found no further work is recommended and the claim group may be dropped.

8. Vouvdejåkka Grid (330.242)

This airborne EM - mag conductor belongs to the same group of regional EM - mag and EM conductors as does the Suoluvarri, Dalamåk'ki and Gunnasai'va grids. A large quartz-carbonate-pyrite rich keratophyre (albite felsite ?) unit is present in the east central end of the grid. A 30-40 cm massive carbonate-pyrite lense ? is present as a conformable phase.

Due to wintery conditions last year VLF and geology had to be postponed until this year. CEM - mag - VLF have detected a wide anomalous zone consisting of several parallelling conductors. This occurs to the west of the baseline and is observed to be cut off in the north but

continous to the south where surveying is terminated by the Suolujav'ri (lake). The conductor strikes NE and dips shallow to southeast. CEM results consist of low to high negatives producing wide "saucer shape curves". The EM is associated with a wide mag zone comprising up to three closely spaced moderately to extremely strong (max - 5700 γ above background) mags. Several lense-like mags appear to make up this zone as they appear, from profile to profile, to pinch out from three to two to one broad mag. Therefore the EM always has a coincident to slightly coincident mag. The VLF tends to coincide with the positive or low negative peaks.

From geological mapping it appears the cause for these erratic geophysical results is a cummingtonite quartz magnetite argillite unit. This unit includes minor quartzite, sugary felsic tuff and graphite. Amphibolite is the dominant rock type on the grid. However a large quartz - carbonate - pyriteferous felsic tuff to flow body (albite felsite ?) with some locallized spotty concentrations of chalcopyrite is present in the east central area of the grid. A few argillites to quartzites and calcareous greywackes to arkoses are found in the north and central areas of the grid.

The western conductive zone does have several weak to moderately strong at times coincident geochemical values. In other parts of the grid only weak or noncoincident values were detected.

Combined with the relatively negative, geochemical (soils and rocks) and geological results no further work is recommended for this grid. The claims covering this anomaly may be dropped.

1984 DIAMOND DRILL PROGRAM

1. B.H.-M-84-ASKU-01 (Ak'sujåkka Grid)

This hole is located at L 12+00 E 1+25 S was drilled grid south at 45° for 90.00 meters. A very good EM - mag anomaly with coinciding Au, Cu, Zn, Pb in a soil sample was the target.

The hole intersected four distinct units. From bottom to top - a banded iron formation, a banded sequence consisting of brecciated pyrrhotite, quartz andesite and rhyolitic tuff to lapilli tuff, then intermediate to mafic tuffs, flows and lapilli tuffs (minor graphite breccia) and finally a cap of porphyroblastic biotite - hornblende schist (basalt flow ?). The graphite breccia units may represent local faulting as the dacite to chert lapilli flow ? unit, which occurs between the two graphite breccia units, also contains several sulphide - graphite breccia veins. Quartz-carbonate is observed in most rock types.Usually as fine grained interstitial material and coating planes of schistosity often associated with disseminated sulphide. The intermediate to mafic units, above the main conductive zone, are observed to usually contain disseminated to tiny masses of pyrite (pred.) and pyrrhotite. Locallized higher concentrations do occur as in the case of periodic quartz - carbonate and sulphide - graphite breccia veins. None of the units, in particular the banded iron formation contain any extensive quartz veining. Very minor disseminated flakes of fuchsite was observed in the andesite to quartz andesite lapilli tuff unit overlying the main conductive zone. The banded section from 34.45 - 51.61 m is believed to represent the EM - mag - geochemical anomaly. The pyrrhotite bands in this unit are of special interest. Massive pyrrhotite bands occur as well as brecciated bands. These brecciated bands consist of very fine grained pyrrhotite breccia (lapilli ?), black mafic rich lapilli and minor

felsic tuff lapilli resting in a matrix of coarser grained pyrrhotite. A similar texture was encountered in a nearby hole — Datmutvarri-01. The sulphide content averages 50-60 vol % throughout the section. The dominant sulphide is pyrrhotite with trace pyrite, magnetite and to a lesser extent chalcopyrite.

A sulphide-rich submarine exhalative volcanic environment is theorized for this area.

All assays have been received. Low grade zinc was detected in the banded unit of massive pyrrhotite, sulphide-rich quartz andesite to rhylotic tuff. Four two meter samples sampling the zone between 33.00 and 47.00 meters ranged from 0.12 to 0.18 % Zn and averaged 0.145 % Zn. A 0.13 % Cu value was detected within this zone. All other elements returned lower values.

Although zinc values are low a distinct zinc horizon does occur. Also, combined with the very interesting geology and copper, lead, zinc values intersected in the first hole at Dabmut-varri it is suggested this general area has good potential for economic Cu - Pb - Zn mineralization. Therefore it is recommended geological mapping and rock sampling be conducted over this grid and the claims should not be dropped. In addition a recon geochemical grid should be established to investigate the numerous airborne EM - mag anomalies to the south and southwest of this area. This will act as screening technique in order to locate areas for further detailed follow up. A/S Syd-varanger has several small claim blocks in the area which obviously cover some near surface mineralized hori-zons.

2. B.H.-M-84-Bår-01 (Bårri Grid).

The hole is located at L 6+00 W 2+50 S was drilled 45° grid south for 98.68 meters. A good EM - mag conductor with anomalous Cu values in soil was drilled. N.G.U. has reported a copper occurrence (0.63 % Cu) in the area. A company, A/S Sulfidmalm, has previously drilled at least two holes through this same conductor.

A shallow dipping alternating series of mafic and felsic volcanics are the predominant rock types within the section. The felsic volcanics (tuffs, lapilli tuffs and flow banded rhyolites) frequently contain significant amounts of disseminated and at times thin sections of massive sulphide. The section from 21.07 - 45.45 m is believed to be responsible for the EM - mag - geochemical anomaly. This section is domminated by flow banded rhyolite at the bottom and felsic tuffs at the top. Thin units if highly siliceous sulphide rich argillite, pyrrhotite rich massive quartz and a banded carbonate biotite schist occur between these two dommiant units. Pyrrhotite and pyrite are the main sulphides and occur mostly as dissemmiations and fracture fillings but thin massive sections are observed. Graphite is a minor component of this section. Some cherty zones appears. Underlying this conductive horizon is a thick sequence of amphibolite tuffs. Overlying are two mafic tuff to amphibolite units separated by intermediate to felsic tuffs similar to the main conductive horizon. The mafic rocks usually contain only trace amounts of pyrite present as disseminations and fracture fillings. Only negative results have been detected from core assays.

No further work is recommended and the claim group may be dropped.

3. B.H.-M-84-Cuol-01A (Cuol'laroavvi Grid)

The hole is located at L 3+00 E 0+75 S and was drilled vertical. A vertical hole was drilled initially as the original geophysical interpretation suggested as steeply sided synclinal feature. As drilling proceeded core angle measurements indicated a steep southerly dip after which the hole was stopped and second hole (B.H.-M-84-Cuol-01B) was drilled at a 45° angle to the north. The rock types encountered in this hole can be correlated with those of the second hole and therefore please refer to the descriptions given in B.H.-M-84-Cuol-01B .

No samples for geochemical analysis were taken from this hole.

4. B.H.-M-84-Cuol-01B (Cuol'laroavvi Grid)

This hole is located at L 3+00 E 0+74 S was drilled grid north 45° to a depth of 109.40 meters. Of those lines which were sampled several adjucent anomalous Au values often coincided with the EM - mag zones. A few high to low, sporadic, at times coincident Cu, Pb, Zn values were also detected.

The rock type intersected consisted predomiantly of mafic volcanics in the upper section (15.80 - 56.57 m) and sulphide-rich felsic volcanics in the lower section (56.57 - 109.40m) The mafics are composed essentially of andesite tuffs to flows which are highly biotitic and/or chloritic. Thin biotite-rich bands often occur resulting in a distinct banded texture. Variable amounts of qtz-carbonate and carbonate occur as interstitial material, veins and/or coating schistosity planes. Slump folding is often present. Sulphide content is low, usually <1 vol% and consists of pyrite and pyrrhotite. They occur as disseminations and coatings along schistosity planes. A

magnetite-rich diabase dyke ? was intersected at the top of the hole. The compostion of the felsic volcanics ranges from rhyolitic to dacitic (to quartz andesitic). The textures indicate they are a combination of tuffs and lapilli (breccia ?) tuffs with minor agglomerates. The sulphide content is generally high (10 - 50 vol %) in all units and occur as disseminations, tiny masses, fracture fillings and coating schistosity planes along with quartz-carbonate and/or carbonate material. In the sulphide-graphite-rich mix from 68.70 - 84.45 m the sulphide also occurs as very fine grained pyrite, pyrrhotite, rhyolite and graphite fragments in a matrix of graphite, graphite-rich argillite and coarser grained pyrite and pyrrhotite. Infrequent thin (< 15 cm) massive sulphide bands were also observed. A similar texture is observed in several other sulphide-rich holes drilled this year. Slump folding was evident in the sulphide - graphite rich mix unit. The dominant sulphide tends to be pyrrhotite then pyrite and to a much lesser extent chalcopyrite. Locallized thin (1 cm) high grade chalcopyrite periodically occurs, minor sulphide - bearing to sulphide-rich quartz veining is present from 92.40 to 96.90 meters.

The sulphide-rich felsic sequence is obviously responsible for the EM - mag - geochemical anomaly.

Several normally higher than background (0.05 - 0.10 % Cu) values were detected throughout the felsic volcanic section with the highest values comming from the sulphide - graphite - rich mix unit. A distinct copper zone is present within this unit from 66.00 to 76.00 meters. The entire section has been split and the average assay is 0.133 % Cu.

Returning to the geophysical results it is now evident we have at least two main conductive horizons of which only one has been drilled. From field observations it is believed overburden may be quite thick and extensive in the immediate vicinity and to the east of the drill hole

locations. Poor geochemical results are therefore expected. To the west of the drill hole locations the terrain appears to become more rugged. The rock types and amount of mineralization encountered indicates a very good environment for economic sulphide deposition. Therefore all conductive horizons should be investigated. Prospecting and rock sampling is suggested along strike and directly over the EM - mag horizons to the west of the drill locations. If the southerly conductive zone is not exposed in this area then a drill hole located at L 3+00 E 1+75 S drilling 45° N is higly recommended. The status of the claim group should be based upon the prospecting - rock sampling and/or drilling results.

5. B.H.-M-84-Dabm-01 (Dabmutvarri Grid)

This hole is located at L 4+50 S 0+25 W. It was drilled grid east at a 45° angle for 77.85 meters. A very strong EM-mag with two high down slope copper - zinc, lead values was the target.

A very shallow, westerly dipping, sequence of predomiantly fuchsitic, brecciated, felsic to intermediate volcanics and a massive mafic volcanic section was intersected. The lower half of the hole consists of a thick massive unit of chlorite amphibole schists to amphibolites. Only very minor (< vol %) disseminated pyrrhotite and pyrite was observed. The contact between the mafic volcanic unit and overlying felsic to intermediate sequence is gradational and marked by a biotite-rich rhyolite lapilli tuff. The dominant rock type in the upper volcanic section is a brecciated fuchsite-bearing carbonaceous sulphide rich rhyolite to quartz andesite tuff to lapilli tuff. Two other thin but distinct units are a fuchsite-bearing sulphide graphite slate and a carbonaceous sulphide -graphite phyllite mixed with quartz andesite to dacite tuff. Slump structures and zones with moderate to strong distortion are evident in each. They occur in the lower part

of this felsic to intermediate volcanic section. The majority of the sulphides are concentrated in two units. Firstly, the brecciated fuchsite-bearing carbonaceous sulphide rich rhyolite to quartz andesite tuff (3.90 - 25.40 m) and secondly the fuchsite-bearing carbonaceous sulphide-rich rhyolitic tuff to lapilli tiff (32.00 - 39.60 m).In the former the upper section exhibits a thinly (< 1 cm) banded texture consisting of alternating pyrrhotite and/or py with carbonaceous rhyolite, dacite and quartz andesite tuffaceous material. In the lower section several thin to thick (0.32 to 2.67 m) sections of brecciated massive sulphide occur. At close inspection of these sections one observes they consists of variable sized, rounded to angular breccia and fragments of v.f.g. massive pyrrhotite (pred.), pyrite ? (or pyriterous bleached meta-sediments ?) and graphitic slate in a graphitic-bearing carbonaceous rhyolitic sulphide matrix. Traces of chalcopyrite are observed. In the latter rock unit an average of 60-70 vol % pyrrhotite (pred.) with minor pyrite and chalcopyrite and trace Mo ? is present. The sulphide occurs as disseminations throughout the host rock, as matrix in conjunction with rhyolitic tuff material in lapilli zones and as vein and fracture filling material. All of the other units contain less than 10 vol % pyrrhotite (pred.) with minor to trace amounts of pyrite and/or chalcopyrite.

Most likely the entire combined sequence from 3.90 to 39.60 meters is responsible for the EM - mag - geochemical anomaly.

All core assays have been received and numerous highly anomalous copper, lead and zinc values are present. Two samples returned greater than 0.40 % Zn while the highest detected lead and copper values were 0.20 % and 0.22 %, respectively. Also some distinct copper, lead, zinc horizons exist, for example, from meters 32.00 to 40.00 m.

The averages in this section are 0.16 % Cu, 0.10 % Pb and greater than 0.32 % Zn. These values are by no means economic but one can see the entire felsic to intermediate volcanic sequence is abnormably anomalous in all three elements. A section similar in thickness and in which copper, lead and zinc are together highly anomalous is not observed in any other holes drilled during the 1983 or 1984 program. With this in mind and a second look at the geophysical - geochemical maps a prime drill target arises. The conductor at L 1+50 S 1+50 W is a good EM conductor with a very strong associated mag and VLF. A large, wide, copper, lead, zinc geochemical anomaly is found to also coincide and overlap. The anomaly has a strike length of greater than 750 m and an average width of 100 meters. Copper values are slightly to two times above background. Zinc values are usually two to four times above and lead is twice to four and up to nine times above background. Prospecting discovered a prominant banded iron formation ridge which appears to be responsible for that part of the geochemical anomaly from L 0+00 2+00 W northwards and along strike. This ridge abruptly stops a few meters south of L 0+00 2+00 W. The area south of this location exposes only a few possible outcrops.

Two rock samples, RK-Dabm-07 and 08, located just south of this good looking EM - mag - geochemical anomaly, returned greater than 0.40 % Zn , 0.17 % Pb and 0.045 % Pb, respectively.

In conclusion the results from this area including the nearby Ak'sujåkka area, suggest an environment where potential economic base metal (Au)sulphide depostion, in particular zinc, may exist. At present zinc is the stronger of the base metals on the world market.

Investigating the EM - mag - geochemical conductor at L 1+50 S 1+50 W by diamond drilling is highly recommended, if not in the near future, then when the market price for base metals is healthier. The claims should be dropped

only if the drill results prove negative. Geological mapping and rock sampling is also recommended.

6. B.H.-M-84-Dabm-02 (Dabmutvarri Grid)

This is the second hole of two drilled on the Dabmutvarri grid. The hole is located at L 1+55 N 1+70 W was drilled 45^{o} grid east for 96.25 meters. A moderately strong EM - mag with very strong soil geochemistry was the target.

Again a shallow westerly dipping sequence of rocks was intersected. However mafic rocks and banded iron formations dominate the section. Two banded iron formation units (garnetiferous - bearing magnetite-pyrrhotite hornblende - cummingtonite schist) are present which are separatet by a thin biotitic dacite to quartz andesite tuff to agglomerate. Together these units are probably responsible for the EM - mag conductor. The only other rock types intersected were a unchloritized black quartz-carbonaceous mafic-rich slate with a thin graphite unit at its base and a rhyolitic to quartz andesite lapilli to agglomerate tuff. The former overlies the upper and thicker band iron formation unit while the latter is the section in which the hole was terminated. From bottom to top the sequence begins with the rhyolite to quartz andesite lapilli to agglomerate tuff, followed by a chlorite andesite tuff to flow to schist unit, a banded iron formation, a biotitic dacite to quartz andesite tuff to agglomerate, back into a banded iron formation, then a unchloritized mafic-rich slate ? and finally a thick section of chlorite andesite tuffs to flows to schists. The sequence, with several similar rock types, may suggest tight isoclinal folding in the area.

Combined with core observations and assays the strong coinciding geochemical anomaly is not explained. If tight, flat lying, isoclinal folding is plausible for this area

and if one can correlate the mafic-felsic contact (85.40 m) in the second hole to some point above the upper felsic intermediate (3.90 - 25.40 m) horizon in this first hole then the rhyolitic to quartz andesite lapilli to agglomerate tuff unit in the second hole may reflect the upper part of the fuchsitic-sulphide rich felsic to intermediate volcanic sequence. Therefore the second hole should have been drilled deeper and the reason for the strong geochemical at this location may have been verified.

All core assays returned only low values for all elements.

Deepening this hole by diamond drilling should be dependent upon drill results from the proposed site at L 1+50 S 1+50 W. Geological mapping and rock sampling is recommended.

7. B.H.-M-84-Dala-01 (Dalamåkki Grid)

This hole is located at L 6+00 N 0+50 E was drilled grid east at an angle of 45° for 95.65 meters. A weak EM - mag with strong gold geochemistry was the target.

The rock types intersected, from bottom to top, are a quartz carbonate banded mafic tuff (includes minor mafic flow and sericitic-rich felsic horizons), a highly siliceous argillitic unit, again the quartz carbonate banded mafic tuff and lastly an intermediate tuff with minor amounts of graphitic-argillite and thin bands of sulphide. The conductor may be reflected by the thin (26.95 - 28.23 m) sulphide zone and/or graphitic-argillite material in the intermediate tuff unit. The sulphide consists of generally disseminated pyrrhotite and pyrite with trace chalcopyrite. All the other units are barren or contain very little pyrite as disseminations and/or fracture fillings.

All assay results were negative.

No further work is recommended and the claims covering the anomaly may be dropped.

8. B.H.-M-84-Gamm-01 (Gam'meČák'ka Grid)

The drill hole is located at BL 9+00 E 0+00 was drilled 45° grid north for 110.00 meters. A section of two closely parallelling EM - mag geochemical horizons was the drill target.

A radiometric anomaly occurs in the south of the grid.

From the rocks intersected two volcanic and one intrusive ? sequence is obvious. The first (lower) volcanic sequence represents one complete cycle of volcanism - ultramafics to mafic to intermediate to felsic volcanic rocks (45.28 - 96.00 m). A thin magnetite-rich quartzite unit is also present in the lower part of this sequence. The hole was terminated in a medium grained equigranular pyrite magnetite-rich albite ? monzonite (felsite ?) which is observed to have an intrusive contact with the lower most magnetite-rich talc-schist (96.00 - 110.00 m). This first cycle is capped predominantly by a graphitic unit (28.00 to 45.28 m). A second, although just mafic to intermediate in compostion volcanic cycle gradationally overlies the graphitic unit (2.20 - 28.00 m). The ultramafics consists of magnetite-rich talc schist with minor interstitial and vein-like carbonate. The mafics to intermediate to felsic volcanics consists of predominantly tuffs and occasionally lapilli tuffs and flows. They are often observed to be interbedded with one another. The graphitic unit is composed of unchloritized graphite-bearing to graphitic slate. Slump folds are common. Most units contain variable amounts of interstitial and fracture filling quartz-carbonate and carbonate. The sulphide content in all units is generally less than 5 vol % and consists of disseminated, tiny masses and fracture fillings of predominantly pyrite with minor to trace pyrrhotite and chalcopyrite. In addition a thin (75.90 - 76.00 m) bornite-

chalcopyrite zone in a biotitic andesite was observed. Magnetite and small amounts of pyrite are present in the talc schists and albite ? monzonite (felsite). The total sulphide content in both varies from 10 to 20 vol %. The graphitic unit may be responsible for the first EM conductor while magnetite-rich talc schists are probably reflecting the second.

All core assays have been received. As expected the bornite -chalcopyrite horizon returned the higher values. The average copper value is 0.12 % Cu/4 m with a high of 0.3 % Cu/1 m. All other elements are none anomalous.

Prospecting and rock sampling may be warranted as there are several strong coincident geochemical anomalies present. The soils were also analysed for uranium. A weak zone was detected on L 1+50 W from 0+50 S to 1+00 S. The values detected were 3.0, 4.0 and 5.8 ppm U, respectively. To north and on the same profile (0+50 N) a 28 ppm U value occurs. The rest of the grid usually has less than 2 ppm U values. The claim group should be kept if further uranium - REE prospection is to be done within the project area.

9. B.H.-M-84-Gamj-01 (Gam'mejav'ri Grid)

The hole is located at L 3+00 W 0+25 N was drilled grid south at a 45° angle for 60.00 meters. A very strong, short, EM - mag was the target. Only a few sporadic, non-coincident, Au-values are present. Overburden thickness is 16.40 meters.

From bottom to top the intersected sequence of rocks is - quartz diorite, rhyolitic tuff to massive rhyolite, chloritic quartz andesite, flow banded rhyolite to rhyolitic tuff, massive to fragmented sulphide-graphite zone, rhyolitic tuff to flow banded rhyolite, rhyolitic-dacite to quartz andesite lapilli tuff and finally a andesitic to quartz andesitic tuff. The conductor is obviously explained by

the 5.30 meter section of massive to fragmented sulphide-graphite. This section is composed of a distorted mixture of graphite, massive sulphide and felsic fragments in a graphite-sulphide matrix. The predominant sulphide is pyrrhotite with trace to minor pyrite and chalcopyrite This sulphide - graphite horizon appears to have interrupted a normal felsic volcanic depositional sequence. Most other units contain only minor disseminated to tiny masses of predominantly pyrrhotite and minor to trace pyrite and/or chalcopyrite. Quartz and quartz-carbonate is usually quite abundant in the felsic units and lesser so in the mafic units. In the felsic units it is present as interstitial material and thin (< 1 cm) veins and boundins. While in the mafic units it is found as thin to thick (< 1 cm) wispy features along with biotite and minor sulphide. The contact between the quartz biotite and felsic volcanic is intrusive and partially assimilated. Distortion and brecciation is present in all units below and including the sulphide-graphite zone.

As indicated from the core assays a weak copper horizon exists from 32.00 to 38.00 meters. The highest value is 0.13 % Cu while the average is 0.12 % Cu/6 m. Zinc and lead are not anomalous.. Gold, silver, nickel and cobalt assays are yet to be received.

Further work and the status of the claim block will be dependant upon those remaining assays.

10. B.H.-M-84-Mad-01 (Madiimäkki Grid).

This hole is located at L 3+00 N 3+40 E was drilled 45° on an azimuth of 230° for 82.95 meters. A very good isolated EM - mag conductor with good strike length was the target. No anomalous soils are indicated. N.G.U. indicated a 0.45 % Cu value from outcrop in this area.

A rather simple section of rocks was intersected. These consisted of from bottom to top - a amphibolite to quartz andesite tuff, a thin (2.10 m) unit of biotite tuff, then back into a amphibolite to quartz andesite tuff followed by a pyrrhotite - pyrite - graphite breccia mix and then again the amphibolite to quartz andesite. The pyrrhotite-pyrite - graphite mix explain the EM - mag conductor. This section consists of very fine grained pyrite and graphite breccia fragments in a matrix of coarser grained pyrite and minor pyrrhotite with occasional quartz - carbonate material. The sulphide content is less than 60 vol %. The remaining units contain less than 5 vol % disseminated and stringer pyrite and pyrrhotite with only trace chalcopyrite. Cummingtonite - rich to cummingtonite-bearing bands are observed in the amphibolite to quartz andesite tuff from 73.65 - 73.80 meters.

Only negative results were received from core assays.

No further work is recommended for this area and the claims covering this conductor may be dropped.

11. B.H.-M-84-Rais-N-01 (Raisutnjunni - Nord Grid)

This hole is located at L 0+00 1+25 W was drilled grid east at a 45° angle for 85.80 meters. An EM - mag - geochemical anomaly with 550 ppb Au in a rock sample was the target.

Mafic flows to tuffs to schists and argillites with minor felsic tuffs are the rock types intersected. Stratigraphically, from bottom to top, they occur as - a quartz amphibole biotite schist (with small lenses of argillaceous material), a argillaceous rich quartz carbonate micaceous sedimentary horizon (with minor felsic tuff and carbonate rich zones), a mafic volcanic flow (mith minor tuffaceous horizons, a highly banded quartz mica argillaceous schist (with possible graphite sections), a intermediate to mafic tuff and finally a mafic volcanic flow unit. Based on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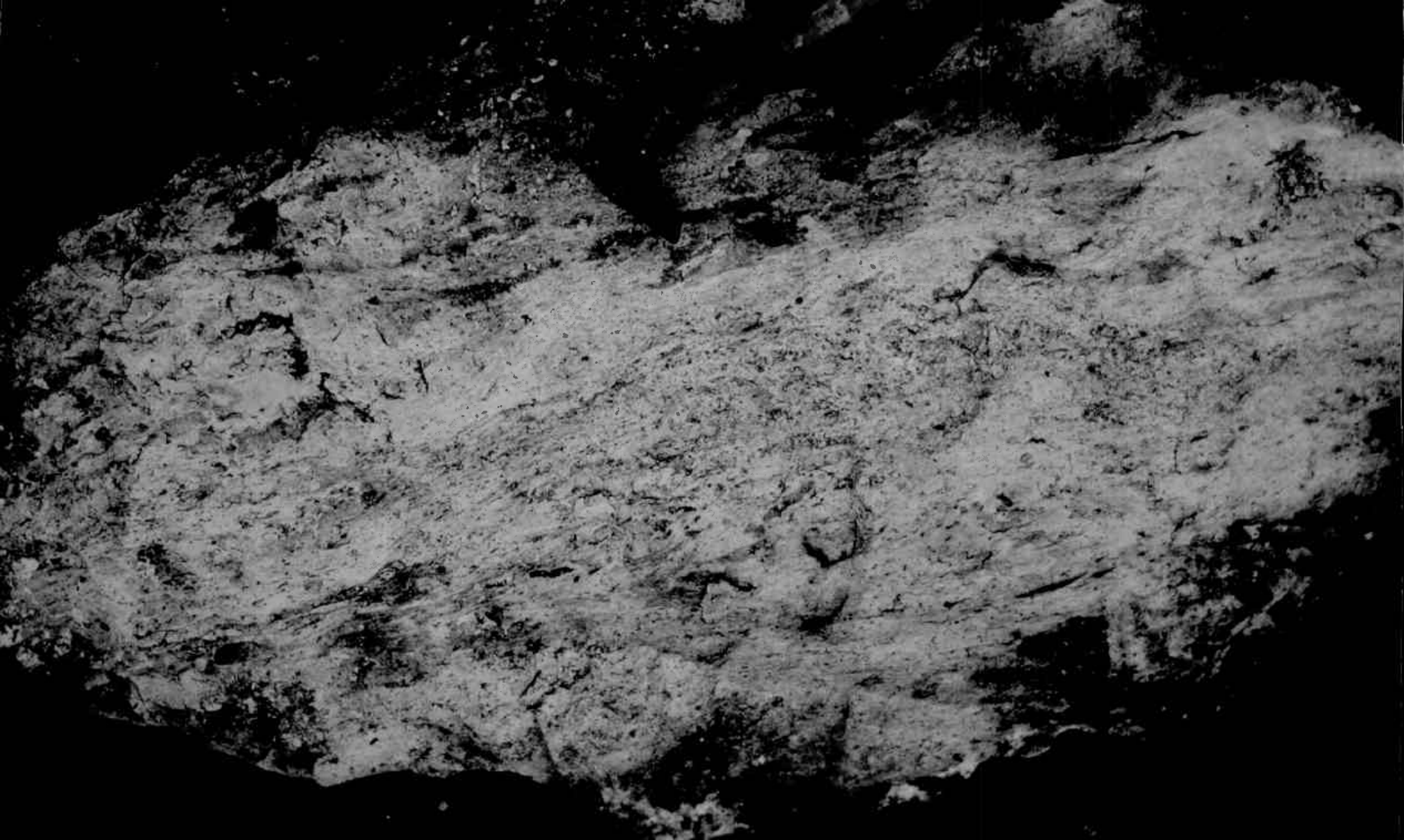

core angles the upper quartz mica argillaceous schist (with possible graphite-rich sections) is responsible for the EM - mag target. The lower sedimentary horizon (mith minor felsic tuff and carbonate-rich zones) may be reflected by the EM-(mag) at L 0+00 0+50 E. The sulphide is concentrated in both sedimentary horizons as stringers, coatings along fractures and in association with quartz and/or quartz carbonate boudins. Pyrite, chalcopyrite and magnetite tend to be associated with the thin felsic tuff horizon, quartz and quartz-carbonate boundins. Pyrite is also found coating fractures and when associated with pyrrhotite, they are found as stringers. Maximum sulphide content is 2 vol %. The mafic units contain trace to barren amounts of sulphide. Quartz-carbonate tends to be restricted to the mafic tuff zones.

All core assays have been received but with negative results. The low but slightly above background gold values which were detected tended to be associated with the mafic flow units probably related to the sulphide-bearing quartz and quartz-carbonate veins and boudins.

No further work is recommended. The claim block covering this grid and the other grids within it (Raisutnjunni-Syd, Gukkesjæg'gi Nord and Gukkesjæg'gi Syd) may be dropped.

12. B.H.-M-84-Salg-01 (Sal'ganjav'ri-Nord Grid)

This hole is located at L 4+50 S 8+00 W was drilled vertical for 142.30 meters. A westerly shallow dipping Cu - Zn - Pb (Au) horizon was the target.

Four thick units were intersected. They consists of from bottom to top, a felsic tuff (with minor rhyolite sections) a graphite schist (grading into graphite rich lapilli and agglomerate felsic tuffs), again a felsic tuff (minor graphitic layers) and lastly a graphitic argillite (with pyrrhotite-rich graphite schists) All units contain

sulphide but the majority is concentrated in the upper part of the lower most felsic tuff and the overlying graphitic schist units. This sulphide horizon is believed to be responsible for the Cu - Zn - Pb (Au) anomaly in the area. The lower felsic tuff is observed to be highly siliceous with some cherty and flow banded sections. Pyrite occurs as thin contemporaneous bands with the flow banded rhyolite. Thick (0.22 to 0.76 m) bands of predominantly massive pyrite periodically occurs. The overlying graphitic schists often grade into graphitic rich lapilli and agglomarate felsic tuffs. The felsic tuffs are frequently brecciated. Up to 60 vol % combined pyrrhotite and pyrite is present throughout the section as disseminations, fracture fills and near massive units. Chalcopyrite was found only in trace amounts. The upper two units have garnetiferous sections and contain on average less than 10 vol % pyrrhotite and pyrite as disseminations, tiny irregular masses and coatings along schistosity planes. Some thin higher grade (15 to 30 vol %) sections are present.

All core assays have been received.They have indicated the lower graphite schist unit is significantly more anomalous than any other.The highest value detected was 0.18 % Cu. Several thin (2 to 4 m) zones with approximately 0.11 % Cu also occur within this unit. Slightly higher than background zinc values were detected in the upper graphitic argillite. Gold, silver and lead were not anomalous.

Although these results are low the amount of sulphide and thicknesses intersected, in this hole and in B.H.-M-84-Salg-02, suggests a good environment for economic sulphide depostion.

13. B.H.-M-84-Salg-N-02 (Sal'ganjav'ri-Nord Grid) .

This vertical hole is located at L 13+50 S 8+50 W and was drilled to a depth of 130.65 meters. The hole was drilled opposite to the strong Au - Cu - Zn - Pb horizon A/S Sydvaranger has staked.

From bottom to top the sequence of rock types intersected is as follows - garnetiferous banded mafic tuff, biotite rich felsic lapilli tuff, argillaceous rich massive pyrite pyrrhotite horizon, cherty banded garnetiferous quartz carbonate cummingtonite unit (BIF), sulphide rich argillaceous horizon, cherty felsic lapilli tuff, sulphide-rich graphitic rich phyllites and argillites, cherty fragmented felsic lapilli tuff to agglomerate and finally a graphitic argillite unit. In contrast to the first hole a thick banded iron formation (cherty banded garnetiferous quartz carbonate cummingtonite unit) and banded garnetiferous mafic tuff were intersected. Also no extensive sulphide-rich felsic tuff unit is present. A similarity is they both contain thick sections of graphitic meta-sediments which are host to large quantities of iron sulphides. The most predominant sulphides in this hole are pyrite and pyrrhotite with usually minor to trace amounts of sphalerite and chalcopyrite. A few thick (up to 3.65 m) pyrite-pyrrhotite (50 vol % py, 2 vol % po) bands are present. The sulphides are observed as disseminations, fracture fillings and stringers. The felsic tuff units usually contain, only minor disseminated sulphide, although periodic higher concentrations (less than 10 vol %) do occur . The banded iron formation is found to be inter-bedded with several argillaceous units which have up to 7 vol % associated pyrrhotite. The banded mafic tuff has only trace pyrite and pyrrhotite.

All results from core assays have been received. The meta-sedimentary unit from 23.85 to 58.90 meters was found to be highly anomalous in zinc. Nine samples from this zone of which seven returned values of greater than 0.3 % Zn.

Four of these were greater than 0.4 % Zn (detection limit by geochemical means). Silver was also above normal background levels and may be related to the zinc content. The highest value detected is 12 g/t Ag over 2 meters. Two adjacent samples, each one meter away, returned 11 and 6 g/t Ag each over two meters. Potential exists for a eight meter section averaging approximately 10 g/t Ag from 44.00 to 52.00 meters. Copper is also slightly anomalous in this unit. The highest value is 0.18 % Cu. Gold and lead are non-anomalous. In addition weak, but above background, gold - copper values were detected in the lower most meta-sedimentary unit (102.20 - 114.30 m). Three samples ranged between 230 to 290 ppb Au over a background of 20 ppb Au. Two separate samples returned 0.14 and 0.08 % Cu.

Based on core data it is difficult to correlate this hole with B.H.-M-84-Salg-01. However if one assumes the Zn - Ag (Cu)-meta-sedimentary unit in this hole can be correlated with the Cu-meta-sedimentary unit in the first hole then it appears we may be dealing with proximal and distal forms of mineralization. Only additional drilling would prove or disprove this theory. However it should be noted the upper meta-sedimentary unit (4.28 - 74.10 m) in B.H.-M-84-Salg-01 also has relatively high zinc values and therefore may correlate better with the zinc-silver (copper) values in this hole. As in B.H.-M-84-Salg-04 these results are not ore grade. However based on the amount and thicknesses of sulphide intersected and when you compare the high zinc-silver (copper) values detected in this hole with the near by soil values, and those in other areas of the grid, then potential for economic sulphide depostion cannot be denied.

A/S Sydvaranger should be approached in order to aguire information they may have regarding their claim block and the general area. However if they are found to be uncooperative further drilling in the area is still recommended.

Four vertical diamond drill holes of approximately 100 - 150 meters in length are recommended. The proposed locations are L 13+50 S 5+50 W, L 9+00 S 6+00 W, L 9+00 S 8+50 W and L 1+50 N 8+00 W. The first three holes will determine 1. if the soils are reflecting economic sulphide at depth and along strike 2. if so are we dealing with a proximal - distal form of ore depostion or separate mineralized units and 3. a block diagram could be drawn illustrating structure. The latter hole will be attempting to explain the numerous anomalous values of copper, zinc, lead and gold in northern area.

14. B.H.-M-84-Salg-S-01 (Sal'gangjav'ri - Syd Grid)

This hole is located at L 4+50 S 1+00 W was drilled 60° grid west to a depth of 92.70 meters. A shallow, easterly dipping strong EM - mag with coincident geochemistry was the target.

The section intersected consists of, from bottom to top, flow banded rhyolite to rhyolite tuff, dacite tuff, intermixed mafic flows and tuffs, quartz biotite schist, a banded oxide(-iron) formation, sulphide rich felsic to intermediate tuff and lastly a intermixed mafic to andesitic tuff unit. The 18.40 meter section of banded garnetferous-bearing quartz hornblende magnetite cummingtonite (banded oxide (-iron) formation) explains the conductor. The unit consists of alternating bands of cummingtonite, magnetite, chert, hornblende and possibly agillite. Magnetite bands are up to 2 cm wide. The predominant iron sulphide is stringer pyrrhotite with traces of pyrite. All other units contain generally less than 1 vol % disseminated, stringer and coatings of pyrrhotite and pyrite. Some units contains variable amounts of sericite.

From VLF and to a lesser extent CEM two conductors were originally interpreted to be present. However based on core angles the dip of the conductor is either 15° or 45°. The CEM curves on this profile (L 4+50 S) and elsewhere

on the grid do not suggest a moderately steep 45° dip. When projecting the banded oxide (-iron) formation to surface, using a 15° dip, it is coincident with the most western ("second") CEM conductor.

All results have been received of which the highest value detected is 0.13 % Cu. All other elements returned negative values.

No further work is proposed and the section of the Sal'ganjav'ri claim block which covers this grid may be dropped.

15. B.H.-M-84-Silis-01 (Silisjav'ri Grid).

This first of two holes is located at L 0+00 1+50 W. The hole was drilled grid east to a depth of 190.55 meters. At least three closely parallelling EM - mag horizons with periodic, along strike, geochemical anomalies was the target. A cp - po - py rich quartz vein at BL 0+00 0+00 assayed 1.01 % Cu while a fuchsitic flow banded rhyolite at 1+00 S 1+75 E assayed 0.40 % Cu. No other elements returned anomalous values.

The stratigraphic sequence from bottom to top is - micaceous quartz ortho ? phyllite, massive to brecciated fuchsite - sulphide - rich rhyolite, micaceous quartz ortho ? phyllite, graphite - bearing micaceous quartz ortho ? phyllite, micaceous quartz ortho ? phyllite, graphitic slate, brecciated fuchsite-bearing sulphide rich rhyolite, micaceous quartz ortho ? phyllite, biotitic-sulphide rich rhyolitic lapilli tuff, banded oxide formation, graphitic to graphitic-bearing rhyolitic tuff, banded oxide formation, sulphide-rich rhyolitic lapilli tuff to flow banded rhyolite, intermediate volcanic tuff and finally a chloritic andesite to andesitic lapilli tuff. The fuchsitic sulphide-rich flow banded rhyolites, tuffs and lapilli tuffs banded oxide formation and graphitic to graphitic-bearing micaceous quartz ortho ? phyllite explain the several EM - mag -

geochemical anomalies. Sulphide (predominantly pyrrhotite with minor pyrite trace chalcopyrite, and the oxide magnetite and fuchsite acts as matrix material in the lapilli tuff sections as well as disseminations in the tuffaceous and flow banded sections. Both are also observed to coat fracture planes. The sulphide content ranges between less than 2 to 70 vol % in these sections. The banded oxide formation consists of continously alternating thin (2 mm to 4 cm) bands of chert, cummingtonite, magnetite, black mafic ? material and a mixture of cummingtonite and magnetite which are usually garnetiferous. No sulphide-quartz veining is present in this formation. All other units contain generally less than 2 vol % disseminated pyrrhotite with trace py and po.

As expected the fuchsitic - sulphide - rich felsic units returned the higher values. At present copper is the most anomalous of which a 0.074 % value was detected. Gold and silver results are pending.

Recommendations for this grid are discussed in the B.H.M-84-Silis-02 section.

16. B.H.-M-84-Silis-02 (Silisjav'ri Grid)

This hole is located at L 0+00 1+25 E was drilled grid east at a 60° angle for 82.50 meters. This hole was drilled to confirm the angle of dip of the felsic unit which assayed 0.40 % Cu.

The rock types intersected are, from bottom to top, a micaceous quartz ortho ? phyllite, highly brecciated fuchsite - sulphide - rich rhyolite, micaceous quartz ortho ? phyllite, highly brecciated to slightly massive fuchsite sulphide - rich rhyolite, fuchsite - sulphide - graphite-rich slate and a micaceous quartz ortho ? phyllite. The fuchsite - sulphide - graphite - rich slate and highly brecciated to slightly massive fuchsite - sulphide - rich

rhyolite section (19.46 to 22.45 m) clearly explains the conductor and strike extension of the 0.4 % Cu outcrop present 100 m to the south. The sulphide content ranges between 3 to 40 vol % and consists of predominantly pyrrhotite and pyrite with minor chalcopyrite. Along with quartz - carbonate and fuchsite sulphide is found as matrix material in brecciated zones, fracture fillings, boudins and coating cleavage planes. Thin (3 - 4 cm) massive sections are also observed.

All results have been received of which a 8 meter section averaged 0.20 % Cu. The highest value, which also occurs in this section, is 0.30 % Cu.

No further work is recommended at this time. However a small claim group should be kept to cover the majority of the conductors and their down dip extensions. If copper prices improve additional drilling of the 0.4 % Cu horizon may be justified. Based on assays in core from Hole-02 and from rocks it is likely anomalous gold and silver values will not be detected from core samples in Hole 1.

17. B.H.-M-84-Varit-01 (Varitvarri Grid).

This hole is located at L 18+00 S 5+25 E was drilled grid east at a 60° angle to a depth of 88.75 meters. What appeared to be two strong parallelling EM - mags with weak coincident gold geochemistry were the targets.

From bottom to top the rock types intersected are, quartz amphibole biotite schist, biotitic rich mafic tuff, quartz amphibole biotite schist, highly silicified argillaceous unit (felsic tuff ?) and a amphibole-rich biotite schist. No apparent conductors were intersected. The sulphide content in all units is low (< .1 vol %). The sulphide which is present is pyrrhotite and pyrite and occurs as disseminations, stringers and coating bedding ?

planes. A thin graphitic argillite unit was intersected at 11.35 - 11.95 meters which may be the down dip extension of a possible outgrop of graphite - sulphide mix located L 18+00 S 5+75 E (directly coincident with the western conductor). Minor graphite may also be present in the quartz amphibole biotite schist at 86.10 meter. No evidence exists for faulting in the core. The drill location has been double checked for proper location.

Prospecting in the area of these EM - mags is recommended. The overburden appears to be relatively thin and therefore outcrop may exist which may explain these two conductors. If no outcrop are found no further work is recommend.

18. B.H.-M-84-Årv-01 (Årvasvarri Grid)

This hole is the first of three holes drilled on the large Årvusvarri grid. It is located at L 40+5+ N 4+50 W was drilled grid east at a 45^{o} angle to a depth of 79.94 meters. A strong EM - mag - geochemical (Au - Cu) anomaly was the target.

The rock types intersected are, from bottom to top, banded iron-oxide formation, a mixed felsic tuff ?, epidote-rich basalt to andesite, graphitic schist to phyllite, biotite-chlorite mafic tuff, massive pyrrhotite-graphite carbonate mix, intermediate to felsic tuff and a chloritic rich mafic tuff. The conductor is explained by the massive pyrrhotite - graphite carbonate mix unit (46.21 - 48.28 This horizon is brownish silver with heavy mixes of graphite, carbonate and felsic breccia clasts. Slump structures are evident. Up to 80 vol % of pyrrhotite with trace pyrite and no chalcopyrite was observed. Most of the other units contain sulphide, predominantly pyrrhotite (minor pyrite) in trace to less than 1 vol % disseminated to stringer amounts. The exceptions to this are firstly, the graphitic schist to phyllite unit which contains up to 15 % stringers and

massive pyrrhotite aggregates and secondly the highly variable and mixed felsic tuff ? which has up to 3 - 4 vol % stringer pyrrhotite.

No sulphide-quartz veining occurs in the banded iron-oxide formation.

All results, except cobalt and nickel, have been received. No anomalous values were detected.

Please refer to the B.H.-M-84-Årv-02 B section for recommendations.

19. B.H.-M-84-Årv-02 A (Årvusvarri Grid)

This hole is the first of the two drilled to investigate a strong EM - mag (?) conductor with a coincident gold, copper, lead geochemical anomaly. It is located at L 18+00 N 0+70 W was drilled grid east at 45° to a depth of 25.68 meters. Dip direction was very difficult to determine for this conductor as it was over the majority of the grid. Thus base on core angles, after drilling 26.68 meters, a dip to the east rather than to the west was determined. The hole was stopped and the rig moved to L 18+00 N 0+55 E and a new hole (B.H.-M-84-Årv-02B) was drilled.

From bottom to top the rock types intersected are intermediate tuff, garnet-rich amphibolite, intermediate tuff (minor intermixed graphite), felsic intrusive dyke (?), highly weathered graphite schist and a mafic tuff. As shown in hole 02B the highly weathered graphite schist (5.70 - 8.11 m) is not the conductor sought after. It may represent a thin be or lense parallel to the main body. Only the graphite schist contained any significant amount of sulphide (< 4 vol % pyrrhotite). All other units were barren or contained much less than 1 vol % pyrrhotite.

No samples for geochemical analysis were taken from this hole.

Please refer to the B.H.-M-84-Årv-02B section for recommendations.

20. B.H.-M-84-Årv-02B (Årvusvarri Grid).

As mentioned in the B.H.-M-84-Årv-02A section this hole was drilled after core angles in hole 02A determined an easterly rather than westerly dip for the conductor. A strong EM - mag (?) with coincident gold, copper, lead was the target.

A predominantly felsic to intermediate volcanic section of rocks was intersected. From bottom to top, the sequence consists of, dacite to rhyodacite tuff, graphitic phyllite, intermediate tuff, felsic tuff, dacite to rhyodacite tuff, mafic tuff, dacite tuff, dacite tuff with a high percentage of slumped meta-sediments and lastly a rhyodacite tuff with minor banded meta-sediments. The graphitic phyllite unit from 60.80 - 68.70 (7.90 m) is believed to be responsible for the EM - mag - geochemical anomaly. The section consists of a dark black, highly contorted (slump features evident) graphitic phyllite. Up to 30 vol % pyrrhotite as layered stringers with trace pyrite represents the mag. Most other units contain very little sulphide, predominantly pyrrhotite with traces of pyrite in disseminations and fracture fills. Carbonate and quartz carbonate is present as interstitial material and coating features and schistosity planes. It is variable from unit to unit. The mafic tuff is observed to be biotite rich and forms as thin bands resulting in a layered or banded taxture. Some felsic units are spotted with biotite.

All results, except gold and silver, have been received, however only negative results were detected.

Even if the gold - silver results in this hole and the cobalt - nickel results in B.H-M-84-Årv-01 are negative further work is still recommended for this grid. This is a very large gird with numerous EM - mag conductors, some with coincident to near coincident geochemical anomalies. The majority of the western side of the grid has thick accumulations of fine sand. The average overburden thickness is expected to be at least 4 meters in most areas of the grid. This thickness would significantly reduce the geochemical effect from economic sulphide horizons. A cliff at the south end of the grid exposes several bimodal volcanic sequences consisting of highly altered ultramafics, basalts, sulphate-rich felsic tuff-rhyolites and pyroclastics. A banded oxide formation occurs nearby. All of these factors suggests a good environment for Au - Cu - Zn - Pb massive sulphide depostion. Mapping or prospecting combined with rock sampling is recommendend. Priority areas would be those with coincident to near coincident geophysical - geochemical anomalies. Secondary areas would be those with good strong EM-mags. Several fences of anger sampling across those zones which are covered may be warranted.

SUMMARY, CONCLUSION AND COMMENTS

A total of twenty diamond drill holes were drilled this year in order to investigate interesting geophysical - geochemical anomalies outlined during the 1983 field season. The conductors intersected have been categorized as follows — sulphide or sulphide-graphite mix, banded iron formation or banded iron-oxide formation, graphitic meta-sediments, magnetite-talc schists and no conductor intersected. Table 1 indicates the main conductors intersected in each hole and which are responsible for the geophysical - geochemical results. Those holes with an X in brackets indicate the conductor(s), has characteristics of both categories. The two categories with graphite included indicate one is likely volcanogenic in origin and the other

BOREHOLE	S*or S - graph.mix:	BIF or BIOF:	Graph. meta-sed.:	Mt.-talc-schist:	No conductor
1. B.H.-M-84-Aksu-01	X				
2. B.H.-M-84-Bår-01	X				
3. B.H.-M-84-Cuol-01A					X
4. B.H.-M-84-Cuol-01B	X				
5. B.H.-M-84-Dabm-01	X				
6. B.H.-M-84-Dabm-02		X			
7. B.H.-M-84-Dala-01	(X)		(X)		
8. B.H.-M-84-Gamm-01			X	X	
9. B.H.-M-84-Gang-01	X				
10. B.H.-M-84-Mad-01	X				
11. B.H.-M-84-Rais--N-01			X		
12. B.H.-M-84-Salg-01	(X)		(X)		
13. B.H.-M-84-Salg-N-02	(X)		(X)		
14. B.H.-M-84-Salg-S-01		X			
15. B.H.-M-84-Silis-01	X	X			
16. B.H.-M-84-Silis-02	X				
17. B.H.-M-84-Varit-01					X
18. B.H.-M-84-Årv-01	X				
19. B.H.-M-84-Årv-02A					X
20. B.H.-M-84-Årv-02B			X		

Table 1. Conductors Intersected in each borehole.

sedimentary. The conductors in the first category (sulphide or sulphide - graphite mix) are generally felsic to intermediate tuffs, lapilli tuffs, flows and agglomerates which contain major amounts of sulphide and/or graphite. These units are at times brecciated and contain large amounts of fuchsite. The sulphide occurs as disseminations, stringer, aggregates, as bands with flow banded rhyolite, in massive form, as very fine grained lapilli and as matrix material often in association with graphite and felsic material. The predominant iron sulphides are pyrrhotite and pyrite with usually minor to traces of chalcopyrite and sphalerite. Magnetite can be found occassionally as localized disseminations. Trace molybdenum clusters were observed in a few hole. The banded iron formations or banded iron-oxide formations consist of thin (generally less than 2 cm) alternating bands of cummingtonite, pyrrhotite, magnetite, chert, mixtures of them and at times black argillaceous or mafic material. The graphitic meta-sediments consist usually of quartz-carbonaceous to carbonaceous, biotite rich graphitic-bearing to rich argillites, phyllites and slates. They are commonly distorted and show slump structures. At time they appear interbedded with felsic tuffs. The magnetite-rich talc schists are dark green carbonaceous pyritiferous magnetite rich altered schisty equivalents of ultramafics.

From core assays of the holes drilled the most promising areas for finding potential economic ore deposits are those areas covered by the Sal'ganjav'ri-Nord and Dabmutvarri grids. A 26 meter section in B.H.-M-84 -Salg-N-02 was found to be anomalously high in the zinc and silver. Several values are greater than 0.3 % Zn/2 meters while the highest detected value is 0.66 % Zn/2 meters. The entire section has not been assayed however based on the present results an average assay over the entire section may be approximately 0.424 % Zn. Within this section potential exists for a six meter section averaging 9.67 g/ton Ag. The highest value detected is 12 g/ton Ag. A 36.00 meter section (4.00 - 40.00 m) in B.H.-M-84-Dabm-01 contains two anomalously high Zn - Cu - Pb horizons. The first horizon, from 12.00 - 24.00 averages greater than 0.23 % Zn,

0.06 % Cu and 0.047 % Pb. The highest values detected in this horizon are greater than 0.4 % Zn, 0.11 % Cu and 0.11 % Pb. The second horizon is higher grade and is present from 32.00 - 40.00 meters. The averages are greater than 0.32 % Zn, 0.16 % Cu and 0.10 % Pb. The highest values were greater than 0.4 % Zn, 0.22 % Cu and 0.20 % Pb. An additional undrilled EM - mag with stronger geochemistry is present on the grid.

The highest gold value detected in the Masi project in core and rock are 290 ppm and 550 ppm, respectively. The former value is detected in a argillaceous - massive sulphide unit in B.H.-M-84-Salg-N-02. The latter is from a sulphide rich quartz pod in amphibolite on the Raisutnjunni-Nord grid. Drilling determined a graphitic-quartz mica argillaceous schist to be the cause of a conductor in the vicinity of this sulphide-rich quartz pod.

In conclusion no ore grade gold value in core or rock sample has been detected from the areas investigated. However potential exists for possibly economic massive sulphide (Cu - Pb - Zn - (Ag)) ore depostion in two areas within the project area. As in the Cu - Au deposit at Bidjovagge,gold may be a minor but significant constituent in any massive sulphide deposit found within the project area.

From the sequences of rocks intersected including the types and textures of mineralization and its preference to the felsic -intermediate rock types it is evident these characteristics are similar to those of well known submarine exhalative and volcanogenic Zn - Cu - pyrite - Au - Ag and Pb - Zn - Cu - pyrite - Ag deposits (see Tables 2 and 3 and Figure 6).

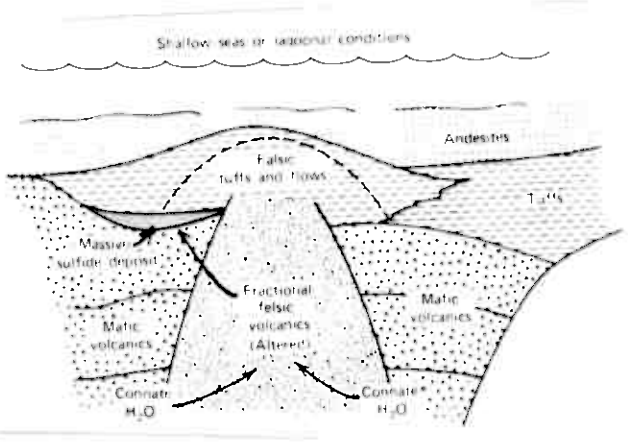

Fig.6. Idealized cross-section of typical Precambrian stratabound-volcanic massive sulfide deposit (Jensen and Bateman, 1979).

Base metal type	*Precious metal association*	*Associated volcanic rock types*	*Type of volcanism*	*Type of sedimentation*	*Tectonism*	*Age*	*Examples*
Zn-Cu-pyrite	Both Au (with high Cu) and Ag (with high Zn)	—Fully differentiated suites of intermediate bulk composition (?) —Tholeiitic to calc-alkaline —Basalt-andesite-dacite-rhyolite, etc	—Initial deep, subaqueous mafic platform, with differentiation toward felsic volcanism, building domical centers	—Chemical cherts —Clastic, immature, first cycle, volcanogenic, graywackes, volcanoclastics	—Early geosynclinal orogenic stage —Major subsidence	Archean Proterozoic (?)	Timmins, Ont Noranda, Que United Verde, Ariz
Zn-Cu-pyrite	ditto	ditto	ditto	ditto	ditto, early subduction	Pre-ordovician Mid-devonian	Rambler, Newfoundland W. Shasta, Calif
Pb-Zn-Cu pyrite	Mainly Ag	—Intermediate to felsic calc-alkaline volcanic suites —Andesite-doacite-rhyolite-porphyry crystal tuff, etc	—Felsic centers of explosive, pyroclastics and ignimbritic activity, subaqueous to subaerial	—Epiclastic predominates, immature volcanogenic graywackes, graphitic shales and argillitic siltlines —Chemical minor, cherts, iron formations —Sulfate	—Later eugeosynclinal-orogenic stage	Proterozoic Ordovicicin	Mt. Isa, Queensland Errington, Vermillion (Sudbury Basin) Bathurst, New Brunswick
Pb-Zn-Cu pyrite	ditto	ditto	ditto	ditto	ditto, later subduction	Triassic Tertiary	E. Shasta, Calif Kuroko, Japan
Cu-pyrite	Mainly Au	—Poorly differentiated mafic suites —Tholeiitic —Basaltic pillow lavas, serpentinite, etc	—Deep subaqueous quiescent fissure eruptions	—Chemical predominates, cherts, ironstones —Clastic insignificant	—Early stage of continental plate, rifting, tension, separation	L-Ordovician U-cretaceous Jura-cretaceous Cret-eocene	W. Newfoundland Cyprus Islan Mountain, Calif. Phillipines

Table 2. Some Geological Characteristics of Different Volcanogenic Sulfide Deposits (Jensen and Bateman, 1979).

Regional geologic setting	Keewatin eugeosynclinical belts—abundance of basic, pillowed volcanics
Local geologic setting	Volcanic complexes and lava piles within Keewatin belts In extrusives, both acidic and basic, toward top of piles At position in lava pile market by— (a) a break in volcanism, transition from acidic to basic volcanics (b) a thin-bedded, evenly laminated, siliceous and pyritic sediment, tuff or iron formation
Size	Widely variable, few thousand to 50 million tons (ore)
Shape	In regular, lenticular, podlike, elongated
Composition	Massive, underlying stringers sulfides
Economic metallization	0.5 to 5.0 % Cu, 0.5 to 12.0 % Zn 0.50 to 4.0 oz/ton Ag, 0.005 to 17 oz/ton Au, minor Pb
Rock alteration	Complex, several types
Mineralogy	Pyrite, chalcopyrite, marmatitic sphalerite, pyrrhotite common
Structural geology	All rocks deformed, intruded, regionally metamorphosed Structural control important
Attitude	Long dimension near vertical, conformable and locally cross-cutting
Wall-rock relationship	Sharp contacts, particularly above Numerous wall-rock inclusions
Textures	Colloform structure, pumiceous, dense and compact, 8 cu ft per ton, fine to coarse, paragenetic sequence pyr-sph-cpy, cataclastic pyrite, unmixed pyrrhotite

Table 3: The Geology of Canadian Massive Sulfide Deposits (Jensen and Bateman, 1979).

BIG'GEJAV'RI GRID - URANIUM - REE PROSPECT

The Big'gejav'ri grid was established to survey one of two radiometric anomalies detected from the 1982 airborne survey. The second is located on the Gam'mecåkka grid.

Late last year a petrographic and scanning electron microscope study has performed on four uraniferous samples from this grid. The consultant determined the majority of each rock sample consisted of microcline and therefore labeled these alkali syenites. Just recently the Geological Survey of Norway (NGU) has conducted chemical analysis on similar samples. Based on the very low K_2O, CaO and high Na_2O contents the rock is relabled a albitite (Ab-rich) (Table 4).

The 1983 program consisted of geological prospecting/rock sampling, scintillometer, mag and soil surveys and 741 meters of diamond core drilling. Prospecting/rock sampling determined the airborne survey was reflecting a large area containing many highly radioactive boulders including an outcrop which is believed to have been an exposed edge of the source. The scintillometer survey outlined several anomalous zones one in particular which is very strong. The soil/humus results had not been received prior to drilling. The preliminary ground magnetic data suggested the uraniferous intrusive rocks were related to slightly higher magnetics. A locallized, flat lying, low tonnage ? low grade lensoidal to sheet-like feature was indicated by drilling. Assays from the drill holes which intersected the feature returned values ranging from 0.101 % U_3O_8/21 m to 0.131 % U_3O_8/8 m.

A detailed geological and magnetometer survey including 413.30 m if diamond drilling were completed this year. Several elements including uranium and REE were analysed from core and rock samples. After the geology was drawn up selected areas were surveyed with VLF-field strength. Two short lines of IP were done over the "ore zone". Soil/humus results were received for the grid this year.

	901-A	901-C	902-B	902-C	902-D	903
	%	%	%	%	%	%
SiO_2	63.52	63.62	65.01	62.44	66.08	61.41
Al_2O_3	18.53	18.35	18.89	18.40	19.34	18.37
Fe_2O_3	1.16	1.08	0.09	1.74	0.36	4.32
TiO_2	1.75	1.58	0.55	1.54	0.18	0.85
MgO	0.70	0.60	0.10	0.63	0.35	<0.62
CaO	0.61	0.76	0.91	0.81	0.57	2.92
Na_2O	10.3	10.3	11.1	10.5	10.7	6.9
K_2O	0.15	0.30	0.17	0.31	0.35	0.57
MnO	0.03	0.04	0.01	0.03	0.03	<0.01
P_2O_5	< 0.03	0.01	< 0.05	0.01	< 0.01	<0.01
Gl, tap	1.48	1.58	0.74	1.44	0.84	1.85
Sum	98.26	98.21	97.62	97.84	98.81	97.82

Table 4. Chemical compostions of zone Big'gejav'ri Albitite Samples (NGU, 1984).

Geological and drilling investigations determined there were generally three different rock types 1. uraniferous - REE albitite (Figs. 7a and 7b) 2. meta-sediments - f.g. graphitic - sulphide - bearing uraniferous argillites, quartzites to mica schists 3. amphibolites - f.g. chlorite amphibolite to chlorite amphibolite schist (representing massive lavas), f.g- quartz - carbonaceous biotite chlorite quartz andesite to andesite tuff (representing tuffs) and agglomerates.

The amphibolite - meta sedimentary contact is found slightly west of the baseline. In the south, central and northern ends it trends northeast, north-south, and northwest, respectively. The amphibolites are to the east and the meta-sediments to the west. From mag and geological data the general strike is north-south. In the east the dips are shallow to the west and slightly west of the baseline they are shallow to the east while further west a shallow westerly dip is indicated. A north-south trending open syncline - anticline structure is evident. Both units are cut by EW and NW-SE joints. The meta-sediments appear to conformably overlye the amphibolites. Two other thin discontinous ? meta-sedimentary units occur on the east end. The southern unit is also uraniferous and similar in compostion to the weatern meta-sediments. The central unit has a more quartzitic compostion and is not radioactive. Only one outcrop if uraniferous - REE albitite has been found on the grid and this represents the "ore zone" in which 50,000 tons of ore were outlined this year. A possible outcrop of albitite (20,000 cpm) occurs at 13+10 S 1+75 E. Several stages of veining were observed of which some may be interrelated. These are 1. brecciated albitite ? in a quartz-carbonate matrix which is non to slighty radioactive (observed only in drill core) 2. sea green quartz - carbonate veining at times associated with minor po, py and trace cp (observed in core and outcrop) 3. m -c.g. pink to pale white carbonate to quartz carbonate veining periodically associated with molybdenum clusters and large enhedral py cubes (in core and outcrop) 4. chalcedony ? veining (observed only in outcrop) 5. pale yellow carbonate veining and pods which is syn to post albitite intrusion (observed in core and from float boulders) 6. c.g. carbonate veining with abundant davidite

(outcrop only - Rx-84-Bigj-11 A and 11 B) 7. c.g. carbonate - amphibole veins with rounded patches of davidite (outcrop only - RX-84-Bigj-02). Veins 3 ?, 4, 6 and 7 are restricted to jointing while veins 1, 3 and 5 tend to be concordant to local schistosity (bedding ?). Vein 2 was observed to parallel both. Mapping was accompanied by a scintillimeter and any radioactive areas were noted and followed up thoroughly After plotting up these boulder trains on the geology map it became evident several of these trains were coincident with the amphibolite-meta-sedimentary contact. Uranium - lead geochemical anomalies were also found to coincide with some of these trains. The main boulder train which was originally outlined by the 1983 scintillometer survey, and thought to have been cut off at P 1+50 N, is now found to be continous to 10+00 N. The main concentration of boulders still occurs between L 7+50 S - L 3+75 S but several large angular to sub-angular boulder concentrations were found between L 2+00 S - L 1+00 S and L 5+00 N - L 9+00 N. Three U - Pb - (Cu) - (Zn) soil anomalies occurs within this main zone which reflect the areas with higher uraniferous - REE boulder concentration. Smaller boulder concentrations did not have coinciding geochemistry. Also several U - Pb - (Au) - (Cu) - (Mo) - (Zn) anomalies were detected but were found to be in non-radioactive areas.

Drilling this year was done in two sets. The first consisted of five holes and were drilled in order to investigate whether the uraniferous - REE albitite was correlatable to the slighty higher magnetics. Unfortunately this was not found and only thin (less than 1 m) lenses were intersected. The second set consisted of six closely spaced holes which were drilled in the vicinity of the "ore zone". Drilling outlined 50,000 tonnes with a probable grade of less than 0.131 % U_3O_8 and 0.202 % REO. The zone occurs in an area of approximately 3000 m^2 (50 m x 60 m), is not present beyond a depth of 21 m below surface and occurs entirely within amphibolites. The mode of emplacement is debatable.

Of the theories presented it seems likely the body is either an intrusive or a flow. Based on its size, some textures and its restriction to amphibolites an intrusive theory seems obvious. However S. Olerud, from NGU (pers.comm.) has indicated some mineraligocal textures, specifically "flow banded" chromite (chromite is difficult to remobilize), may suggest the body was originally a flow.

The detailed mag survey did not aid in outlining an areas where more uraniferous - REE albitite may be present in bedrock. NGU's susceptibility Survey determined the albitite was slightly more magnetic (10 gammes higher) than the amphibolite. Susceptibility values were found to range drastically over short intervals across north outcrops. The mag - susceptibility data could not be used to identify particular rock types and therefore did not aid in outlining rock units on the geology map.

The "ore zone" was surveyed by IP but the results were negative.

Numerous rock samples have been taken over the entire grid of which twenty-nine elements have been analysed. The highest values detected, the rock sample and the type are listed in Table 5.

Most of the drill core samples have been analysed only for six elements - Sc, V, Y, La, Ce and Nd (uranium analysis was not part of the REE package). The highest values for these elements are listed in Table 6.

Element	Highest value (ppm)	Rock sample:	Rock type:
U	1800	RX-84-Bigj-76	chips from Albitite boulders
Sc	190	RX-84-Bigj-57	Albitite boulder
Y	190	RX-84-Bigj-19	chips from Albitite boulders
La	1900	RX-84-Bigj-57	Albitite boulder
Ce	1000	RX-84-Bigj-57	Albitite boulder
Nd	220	RX-84-Bigj-75	chips from Albitite boulders
Sm	29	RX-84-Bigj-76	chips from Albitite boulders
En	9.2	RX-84-Bigj-19	chips from Albitite boulders
Yb	117	RX-84-Bigj-57	Albitite boulder
Lu	20.6	RX-84-Bigj-57	Albitite boulder
Th	31	RX-84-Bigj-66	chips from Albitite boulders
Au	< 100	all	
Na	100000	RX-84-Bigj-68	chips from Albitite boulders
V	1200	RX-84-Bigj-22	chips from Albitite boulders
Cr	6500	RX-84-Bigj-55	chips from Albitite boulders
Fe %	8.29	RX-84-Bigj-11C	assimilated andesite albitite vein
Co	110	RX-84-Bigj-11C	assimilated andesite - albitite vein
As	440	RX-84-Bigj-33	radioactive meta-sediment
Se	81	RX-84-Bigj-64	chips from Albitite boulders
Br	160	RX-84-Bigj-45	chalcedony-tremolite ? vein
Rb	260	RX-84-Bigj-70	slightly radioactive biotite granite boulder
Sr	< 1000	all	
Mo	300	RX-84-Bigj-03A	Albitite vein
Sb	4	RX-84-Bigj-67	chips from Albitite boulders
Cs	8	RX-84-Bigj-53	chips from Albitite boulders
Ba	1000	RX-84-Bigj-06	radioactive meta-sediment
Hf	16	RX-84-Bigj-14	Albitite vein
Ta	4	RX-84-Bigj-16	chips from Albitite boulders
W	63	RX-84-Bigj-14	Albitite vein

Table 5. Exploration package elements and their highest values.

Element	Highest value (ppm)	Borehole and sample number
Sc	200	M-84-Bigj-06-2
V	1200	M-84-Bigj-06-2
Y	340	M-84-Bigj-06-2
La	1000	M-84-Bigj-05-2-10 (composite sample)
Cr	580	M-84-Bigj-09-2
Nd	90	M-84-Bigj-03-2

Table 6. REE package elements, their highest values and locations.

All values except for Nd are reflecting the uranifereous - REE albitite.

The 90 ppm ND is from a sample section composed mainly of amphibolite with a 10 cm non-radioactive albitite ? vein.

The conclusion from work and results done to date on this grid is only a limited low grade uraniferous - REE albitite body has been outlined. This occurence appears to be the source for all of the uraniferous - REE boulders which comprise the boulder train north of its location. However this is a debatable statement as "the main body" may not be found as yet due to the extensive overburden cover. Geology, geochemistry and a VLF-field strength survey have outlined two promising areas in which the main source may be present. The first is located due south 300 m of the "ore zone" and consists of two soil anomalies located at L 10+50 S 0+75 W and 1+25 W. The former has a 3.2 ppm U value while the latter has 5.4 ppm U. The background for uranium is less than 1.5 ppm. The second area is located 400 m southwest of the "ore zone" and consists of a 350 m x 30 m radioactive boulder train with coincident VLF-field strength and partially overlapping geochemistry. This zone is situated very close to the western amphibolite - meta-sedimentary contact. Further north

along this contact other albitite boulder concentrations occur suggesting the source for these boulders may be present as a unit between the amphibolite and meta-sediments. "Between" meaning it may be an intrusive body, related to local plutonism, and moving up the amphibolite - meta sedimentary contact which reflects a plane of weakness. An intrusive theory is supported by two facts 1. the overlying meta-sediments are slightly radioactive and contain minor amounts of disseminated and stringer sulphide. A large boulder (RX-84-Bigj-61) was found at the north end of this boulder tain which has been described as a f.g. dark grey very siliceous sulphide rich radioactive meta-sediment (argiilite to quartzite) 2. The VLF-field strength anomaly occurs very close to the contact and may be reflecting a sulphide -rich halo, formed possibly by lateral secretion, above a once hot hydrous albitite body. The halo would occur only above the albitite body as the meta-sediments are the only unit likely to contain enough sulphide. In contrast to the "ore zone" and its associated boulders the albitite boulders in this area contain significant amounts of pyrite, pyrrhotite and chalcopyrite. Many of the boulders have a distinct rusty weathered surface. If a albitite body does exist along this amphibolite-meta-sedimentary contact and if the meta-sediments are overlying (younger) then in order to get the features described above the body would have to be intrusive.

In addition to this ccurrence, A Solli (pers.comm.) has mentioned two other uraniferous albitite occurrences within the project area. They also occur near amphibolite-meta-sedimentary contacts and are thought to be intrusive. One of these occurrences is nearly coincident with a third weaker, but obvious, airborne radiometric anomaly. The 1 : 50.000 grid reference for this occurence is 926230 and for the second it is near 874961 (both occur on the Carajav'ri sheet). This latter occurrence is just out of the project boundary and therefore our airborne survey did not cover this area. And to recall, a radiometric anomaly was detected on the Gam'macåkka claim block.

In conclusion, although no economic uranium-REE occurrence has been found to date, surveys performed this year indicate there may be potential for a larger tonnage similar grade occurrence in two areas of the grid. Potential also exists in other areas within the project. Further diamond drilling should be dependant upon metal prices primairly uranium and to a lesser extent the REE. The Norwegian Geological Survey is presently microprobing several core samples from the "ore zone". This work may aid in determining if the REE are easily extractable. If additional drilling is warranted at least three vertical holes are suggested. One located at L 10+50 S 5+00 W in order to test for a source of the albitite boulder train in this area which may exist along the amphibolite-meta-sedimentary contact. If this proves negative a second should be drilled at the end of this boulder train in the vicinity of L 11+50 S 4+50 W. A third would test the uranium soil anomalies south of the "ore zone" located at L 10+50 S 1+00 W.

SUMMARY OF RECOMMENDED PROGRAM

All of the grids established within the Masi Project have been listed below in alphabetical in order to up date their status. Recommendations are given for each.

1. Ak'sujåkka Grid - a low grade but distinct Zn horizon was detected by diamond drilling. Due to its close proximity to the Dabmutvarri area the claims should be kept. Geological mapping and rock sampling are recommended.

2. Big'gejav'ri Grid - depending upon metal prices for uranium and the REE additional drilling may be warranted. The large claim block covering this grid can be reduced however the majority of the grid should still be claimed.

3. Big'geluobbal Grid - no further work recommended and the claims may be dropped.

4. Burgunvarri Vest and Øst Grids - no further work was recommended and the claims should have been dropped last year.

5. Bårri Grid - no further work is recommended and the claims may be dropped.

6. Cuol'laroavvi Grid - prospecting and rock sampling are recommended. The claims should not be dropped.

7. Dabmutvarri Grid - interesting Cu-Pb-Zn values were detected from drill core. Further work is recommended. The claims should not be dropped.

8. Dalamåk'ki Grid - no further work is recommended and the claims may be dropped.

9. Gam'mečåk'ka Grid - prospecting and rock sampling may be warranted. In addition this grid contains a radiometric anomaly. The claim block should be kept if further uranium-REE prospecting is to be done within the project.

10. Gam'mejav'ri Grid - gold-silver assays have not been received. Further work and the status of the claim block should be dependant upon these.

11. Goas'tejav'ri Grid - no further work is recommended and the claims may be dropped.

12. Gukkesjæg'gi Nord and Syd Grid - no further work was recommended and the claims should have been dropped last year.

13. Gunnasai'va Grid - no further work is recommended and the claims may be dropped.

14. Gåi'dnesvarri Grid - no further work is recommended and the claims may be dropped.

15. Gårzimaras Grid - no further work was recommended an the claims should have been dropped last year.

16. Madiimåkki and Madiimåkki II Grid - no further work is recommended and the claims may be dropped.

17. Maidunskaidi Grid - no further work is recommended and the claims may be dropped.

18. Mavnusvarri Grid - drilling may still be warranted. The claims status should be dependant upon this decision.

19. Mazejav'ri Grid - drilling may still be warranted. The claims status should be dependant upon this decision.

20. Mazevarri Grid - drilling may still be warranted. The claims stauts should be dependant upond this decision.

21. Raisutnjunni Nord Grid - no further work is recommended and the claims may be dropped.

22. Raitutnjunni Syd Grid - no further work was recommended and the claims should have been dropped last year.

23. Ruoguroavvi Grid - prospecting and rock sampling may still be warranted. The claims status should be dependant upon this decision.

24. Sal'ganjav'ri Nord Grid - interesting Zn - Ag values were detected in drill core. The claims should not be dropped.

25. Sal'ganjav'ri Syd-Grid - no further work is recommended and the claims may be dropped.

26. Silisjav'ri Grid - no further work is recommended at this time but a small claim block is recommended to cover the majority of the conductors and their down dip extensions. Further drilling of the 0.4 % Cu horizon may be warranted if Cu prices improve.

27. Suoluvarri Grid - rock sample analysis have yet to be received. Soil sampling may be warranted. A small claim block should be kept until negetive results are received.

28. Varitvarri Grid - prospecting and rock sampling may be warranted. The status of the claim block should be dependant upon this decision.

29. Vuodejåkka Grid - no further work is recommended and the claims may be dropped.

30. Årvusvarri Grid - prospecting, rock sampling and auger sampling may be warranted. The claim group should not be dropped.

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A P P E N D I C I E S

- Diamond Drill holes -

(Sulphide holes)

(Big'gejav'ri holes)

- SULPHIDE HOLES -

- BIG'GEJAV'RI HOLES -

NOTE: - the quartz - bearing biotite chlorite schist to gneisses used in the 1983 log descriptions are re-classified as quartz carbonaceous biotite - chlorite quartz andesite to andesite tuffs.

- the chlorite schists are re-classified as chlorite amphibolite to chlorite amphibolite schists.

- the term alkalisyenite has been used throughout the 1983 and 1984 logs but is should be kept in mind these have been re-classified albitites based on geochemical analysis.