

GTK

Geological Survey of Finland

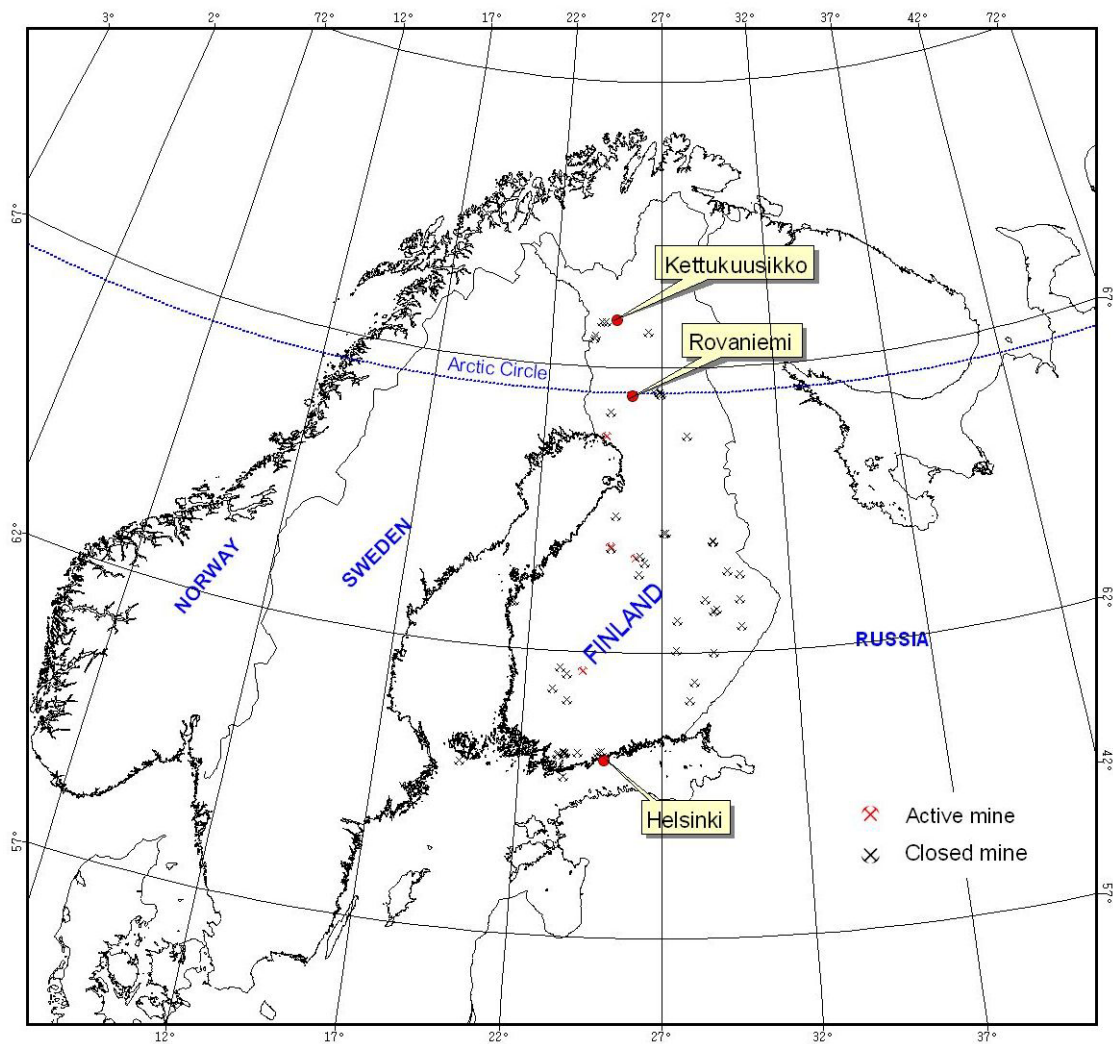
M06/2743/2003/1/10

Kittilä, Kettukuusikko

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Proterozoic Komatiite- Hosted Kettukuusikko Au Prospect



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Abstract <p>GTK has explored the Kettukuusikko area during 2001- 2003. The area is situated in the municipality of Kittilä, about 15 km northeast of the Kittilä town. Geologically, the area is within the Proterozoic Central Lapland Greenstone Belt.</p> <p>In the Kettukuusikko area, the exploration target has been a NNW-SSE trending weakly magnetic alteration and deformation zone. Diamond drilling has delineated a mineralized zone, which is about 300 m long and 50 m wide. The zone has been drilled to 85 m depth but remains open at depth. In the area, the thickness of till cover varies from a few metres to 20 m.</p> <p>The gold mineralization is hosted by hydrothermally altered komatiitic volcanic rock. Main alteration minerals are carbonates, talc, chlorite, albite, hematite and quartz. The main sulphide mineral is pyrite. Gold occurs as small free grains in the host rock and as inclusions and fracture fillings in pyrite. Other opaques include chalcopyrite, galena, tellurides, scheelite and tetrahedrite.</p> <p>Significant intersections are as follows:</p> <table border="0"> <tr> <td>R 4</td><td>4.3 m@ 6.55 g/t</td><td>from 32.20 m</td></tr> <tr> <td>R 2</td><td>2.9 m@ 6.14 g/t</td><td>from 46.20 m</td></tr> <tr> <td>R581</td><td>4.0 m@ 4.15 g/t</td><td>from 48.55 m</td></tr> <tr> <td>R 1</td><td>5.2 m@ 3.79 g/t</td><td>from 48.50 m</td></tr> <tr> <td>R574</td><td>3.0 m@ 2.90 g/t</td><td>from 21.35 m</td></tr> <tr> <td>R572</td><td>2.0 m@ 2.88 g/t</td><td>from 14.80 m</td></tr> <tr> <td>R577</td><td>3.2 m@ 2.57 g/t</td><td>from 7.50 m</td></tr> <tr> <td>R580</td><td>4.1 m@ 2.33 g/t</td><td>from 43.60 m</td></tr> <tr> <td>R581</td><td>14.0 m@ 2.28 g/t</td><td>from 41.50 m</td></tr> <tr> <td>R582</td><td>10.2 m@ 1.20 g/t</td><td>from 43.60 m</td></tr> </table>				R 4	4.3 m@ 6.55 g/t	from 32.20 m	R 2	2.9 m@ 6.14 g/t	from 46.20 m	R581	4.0 m@ 4.15 g/t	from 48.55 m	R 1	5.2 m@ 3.79 g/t	from 48.50 m	R574	3.0 m@ 2.90 g/t	from 21.35 m	R572	2.0 m@ 2.88 g/t	from 14.80 m	R577	3.2 m@ 2.57 g/t	from 7.50 m	R580	4.1 m@ 2.33 g/t	from 43.60 m	R581	14.0 m@ 2.28 g/t	from 41.50 m	R582	10.2 m@ 1.20 g/t	from 43.60 m
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INTRODUCTION

The Geological Survey of Finland (GTK) is a government organization under the Ministry of Trade and Industry. GTK's duties are based on the law, which defines the primary task of GTK as mapping using geological, geophysical and geochemical methods. GTK provides basic geological information for sustainable use of natural resources especially for exploration and mining industry, construction, land use planning, nature conservation and environmental studies. GTK has offices in Espoo (near Helsinki), Kuopio and Rovaniemi, with a permanent staff of 700, including about 300 geologists, geochemists and geophysicists.

Since its foundation, GTK has been involved in mineral exploration in Finland. Projects have ranged from regional to prospect scale and have led to the discovery of a number of significant deposits. Today GTK's role is to acquire data from new areas and prospects to encourage further evaluation by the private sector, and the Central Lapland Greenstone belt is one of the main GTK's gold exploration areas. All discoveries and prospects, which are considered to host a significant mineralization, are globally tendered to the private sector through the Ministry of Trade and Industry in the earliest exploration stage as possible; GTK has no direct role in the mining business. Finland can be considered to be an attractive exploration target in several respects. Geoscientific data coverage is excellent, but large areas can be considered under-explored. It is a modern western country with a highly educated population; infrastructure is highly developed with good port facilities, an extensive high-voltage power grid, and a comprehensive road and airport network. Taxation laws are favourable, and the mining law is strong. In addition, the country is close to major markets.

GTK's role is to provide confidential and customized expert services to exploration and mining companies in the Fennoscandian Shield and worldwide. These include all aspects and scales of mineral exploration and prospect evaluation, from planning and implementing regional exploration programs, to detailed mineralogical studies and deposit modelling.

The Outokumpu Mining discovered the Kettukuusikko Au occurrence in 1977. The area was targeted after the regional scale till geochemical survey, which showed anomalous Cu-, Cr-, Ni-, As- and Co values in the area. Lapin Malmi and Outokumpu Mining companies explored the area in 1984- 1985, 1986- 1987 and 1995- 1996. GTK re-evaluated the geochemical and geophysical data (especially gamma radiation) of the area, and drilled new targets at Kettukuusikko in 2003. The drilling results were promising and the area is considered to have potential for a significant gold mineralization and it is offered for purchase through an international tendering process.

GENERAL PROPERTY DESCRIPTION

Titles

GTK has currently two exploration leases in the Kettukuusikko area (Table 1 and Fig.1). Within these leases there are currently one known Au occurrence, which is named Kettukuusikko (partly overlapping with earlier leases known as Lälleänvuoma or Päivänenä, <http://www.gsf.fi/explor/gold/paivanena.htm>). The exploration leases cover

about 200 ha. The land within the exploration lease areas is both state (Kortemännikkö) or partly privately (Kettukuusikko) owned. An exploration licence entitles the holder (individual or company) to carry out exploration activities in the claim area with or without the consent of the landowner. The claimant must, however, compensate the landowner in full for any permanent or temporary damage or inconvenience caused by the exploration activities inside or outside the claim area. The claimant shall also act in compliance with environmental legislation and other laws and regulations.

Table 1. Claims of the Kettukuusikko area

Kortemännikkö 1	7309/1	2743 01	100 ha	5.11.2001	5.11.2006
Kettukuusikko 1	7377/1	2743 01	98 ha	26.2.2002	26.2.2007

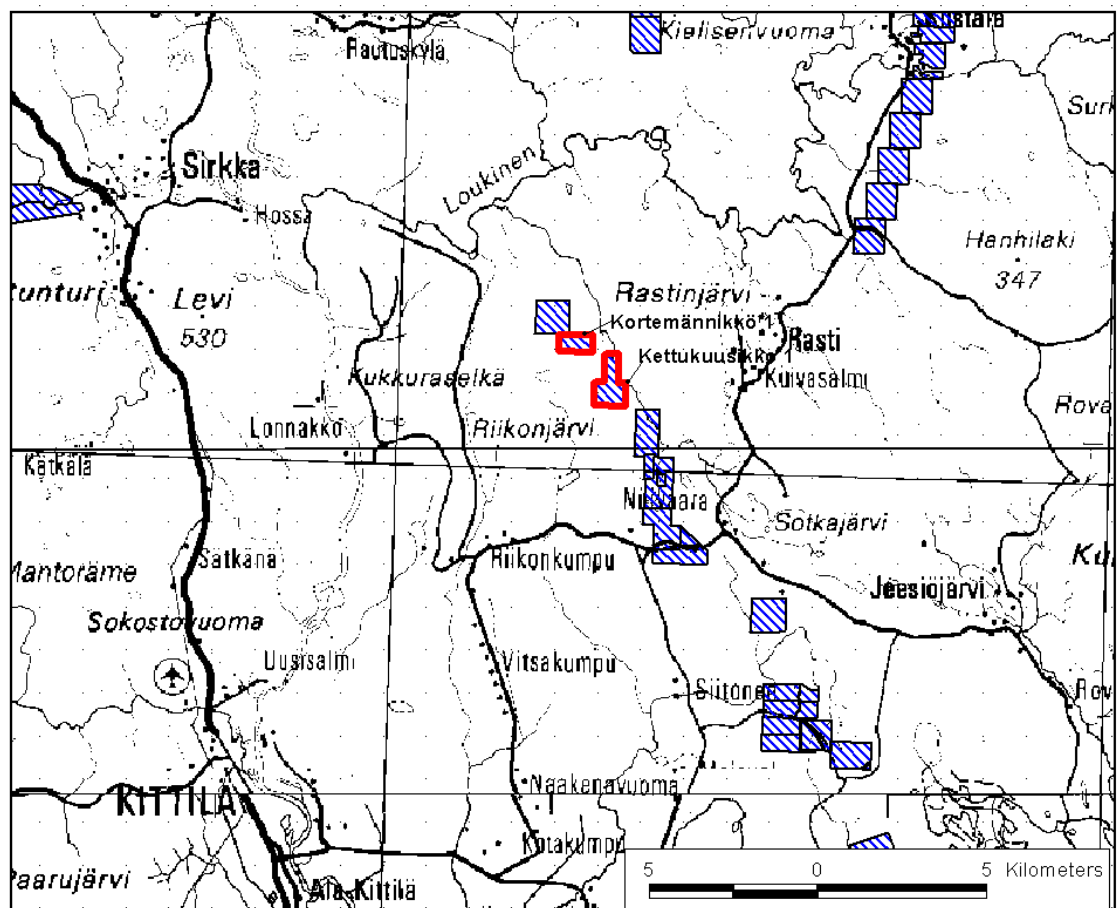


Figure 1. Location of the Kettukuusikko 1 and Kortemännikkö 1 claims (red boundary).

Location, access and infrastructure

The Kettukuusikko area is located about 15 kilometres northeast from Kittilä in the province of Lapland, northern Finland (Fig.1) at Lat.67.46322, Long. 25.08730 (decimal degrees), Finnish KKJ Zone 2 coordinates 7521000N 2548500E and Finnish KKJ Zone 3 coordinates 7521719N 3421802E (Fig.2). Kittilä (population 2500) is the administration centre of the municipality of Kittilä of which total population is about 6000. The claims of GTK are located on the national 1: 20 000 scale map sheet

2743 01. Access to the E side of the River Ounasjoki from Kittilä is by the paved roads 80 and 9552 to near the village Nilivaara (Fig.1) from where the last 4 km is a timber haulage road, which is passable for heavy vehicles only in winter when ground is in frost and in summer after road has dried. The nearest railway stations are at Kolari and Rovaniemi, 60 km and 150 km from Kittilä, respectively. In Kittilä, there is a modern airport, which is serviced by daily flights to Helsinki.

Physiography, climate and vegetation

The Kettukuusikko properties are located in a boggy land area, which has low relief (195- 220 m asl). The area is difficult terrain to pass during the summer time and the drilling should be conducted when the ground is in the frost. Narrow river Sotkajoki runs through the area from SSE to NNW(Fig. 4).

The weather conditions follow the typical northern Fennoscandian climate with temperate summer and cold winter. During the summer months (June- August) temperature is mostly between 10° C to 25°C, and during the winter months (November- April) between –5°C to –30°C. Snow covers the terrain, and bogs, lakes and rivers are frozen, annually 6 to 7 months, and the maximum snow thickness varies from 0.6 to 1.2 m in March.

Property history

The indications of the Au mineralization in the Kettukuusikko area were discovered in 1977 when Outokumpu Mining did a regional scale till geochemical study. The area was targeted based on anomalous Cu-, Cr-, Ni-, As- and Co values. Lapin Malmi and Outokumpu Mining left the area after exploration campaigns in 1984-1985, 1986-1987 and 1995- 1996. GTK re-evaluated the geochemical and geophysical data of the area and drilled the gold occurrence in 2001-2003. Especially the gamma radiation data were important for the new targeting (Väisänen et al, 2000).

REGIONAL GEOLOGY

Geological setting

In the northern part the Fennoscandian Shield, Paleoproterozoic supracrustal rocks cover the Archean basement as an almost complete zone extending from northern Norway through central Finnish Lapland and into Russia. This zone has been named the Lapland Greenstone Belt. The Finnish part of the Lapland Greenstone Belt extends from Enontekiö and Kolari through Kittilä and Sodankylä to Salla and is called the Central Lapland Greenstone Belt. The belt has been divided into five volcanic and sedimentary rock dominated lithostratigraphic groups which are from oldest to youngest the Salla, Onkamo, Sodankylä, Savukoski and Kittilä Groups.

These are separated by a major unconformity from the overlying Lainio and Kumpu Groups which are dominated by coarse-grained sedimentary rocks. In addition, the underlying rocks were folded before the deposition of Lainio and Kumpu Groups. The age of the Salla Group has been interpreted to be 2,52- 2,44 Ga, Onkamo Group 2,44- 2,40 Ga, Sodankylä Group 2,40- 2,20 Ga, Savukoski Group 2,20- 2,05 Ga, Kittilä

Group 2,05- 2,00 Ga, and Lainio and Kumpu Group 1,93- 1,85 Ga (Lehtonen et al. 1998 and references therein).

The contact between the Kittilä and Savukoski Groups is tectonic. It is an approximately E- W to SE- NW trending lineament which is called the Sirkka Shear Zone (SSZ). Several ore deposits and gold occurrences in the Central Lapland are spatially related to the SSZ. The SSZ is poorly exposed but it is well expressed on aeromagnetic and electromagnetic maps. Geological mapping indicates that the SSZ is an early structure, which has been reactivated and deformed in several stages (Hölttä et al., in prep.). Aerogeophysical images suggest that NW- SE and N- S trending faults cut it. Tectonic activity along the SSZ has generated a structural boundary between the sedimentary rock dominated stratigraphy to the south, and the volcanic rock dominated to the north. Cross cutting faults are interpreted to be important in localising gold mineralization in the area.

The Kettukuusikko area is in the southwestern part of the Central Lapland greenstone belt. Rocks in the area belong to the Matarakoski Formation of the Savukoski Group, which comprises komatiitic and tholeiitic volcanic rocks and fine- grained, in places graphitic, sedimentary rocks metamorphosed at greenschist facies conditions. The geology in the lease areas is strongly influenced by the Sirkka Shear Zone.

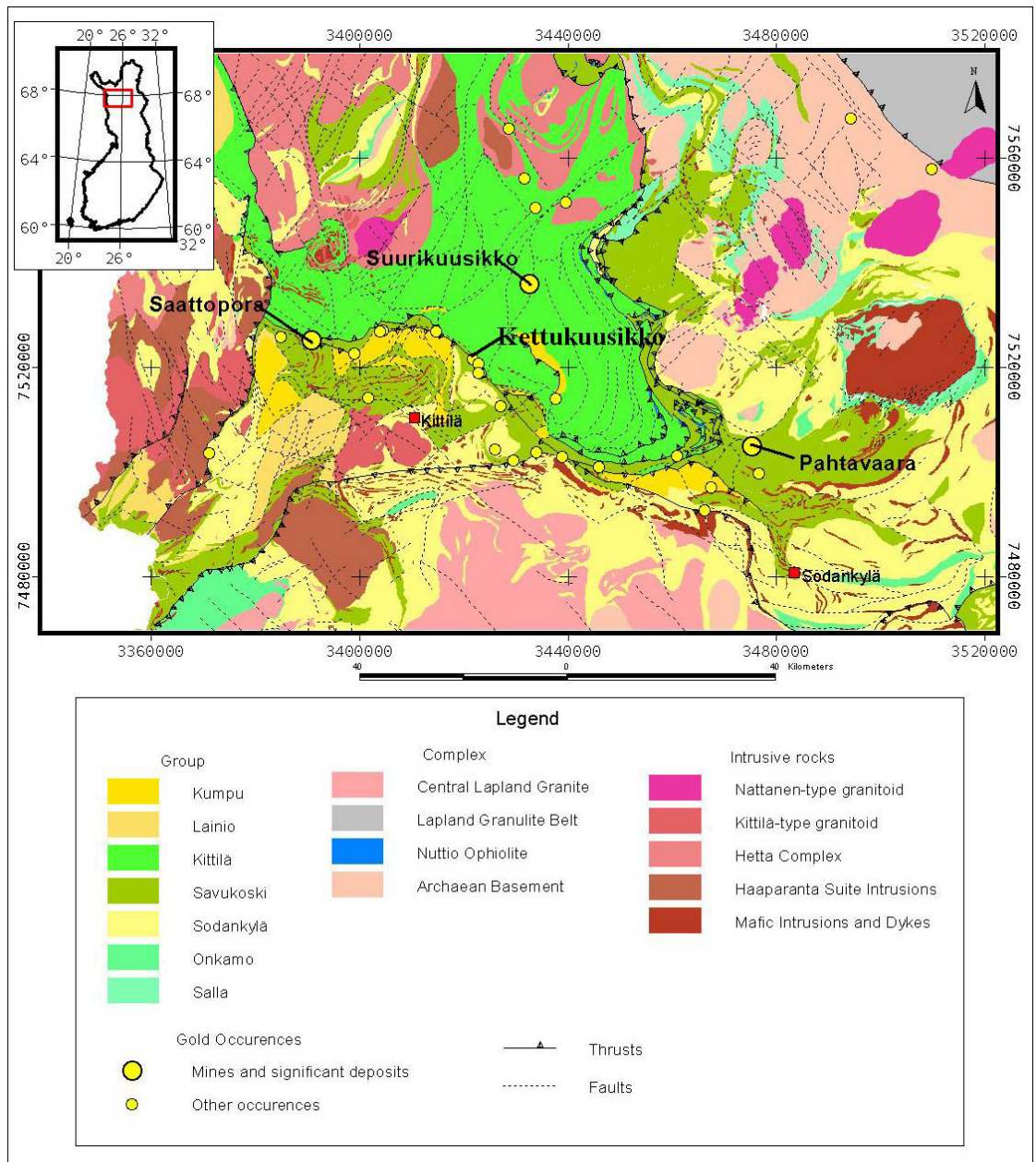


Figure 2. Location of the Kettukuusikko area on the geological map of Central Lapland Greenstone Belt.

Economic geology

Exploration in the Sirkka Shear Zone has a long history. Atri Oy conducted the first systematic investigations in 1939 focusing exploration along a graphitic schist horizon for several kilometres west and 20 km east of the Sirkka village. This led to the discovery of the Sirkka-kaivos Au-deposit (http://www.gsf.fi/explor/gold/sirkka_kaivos.htm), where Vuoksenniska Oy operated an underground mine in 1955- 1957. A shaft was sunk 60 m below surface, about 700 m of drives were developed at +45 mRL and 3000 tons of ore was mined and treated. However, the mine proved to be uneconomic due to mining difficulties of discontinues lodes (Räisänen 2001).

The Saattopora gold-copper deposit (<http://www.gsf.fi/explor/gold/saattopora.htm>), which was mined 1988- 1995 by Outokumpu Mining Oy, is located 13 km W of the Sirkka-kaivos Au-deposit. It is near the W end of the Sirkka Shear Zone. From 2,163 Mt of ore it produced 6279 kg Au (grade 2.9 g/t) and 5177 t Cu.

One of the previously tendered prospects discovered by GTK in the Central Lapland Greenstone belt, the Suurikuusikko gold deposit, where Riddarhyttan Ab has defined a 1,6 Moz resource, is located about 20 km NE of the Kettukuusikko area (<http://www.gsf.fi/explor/gold/suurikuusikko.htm>). The current (published 15.11.2002) resource (indicated and inferred category) of the Suurikuusikko deposit is 11,5 million tons at 5,4 g/t Au.

Quaternary geology

During the last glaciation the glacial erosion was weak in Central Lapland and glacial transport distances are short. Due to weak glacial erosion several metres of saprock has commonly been preserved in the low-lying areas. In the Kettukuusikko area, the fresh bedrock is covered by till, mixture of till and saprock, or saprock. There are a few outcrops in higher land areas in Kettukuusikko and Kortemännikkö, but usually thickness of the overburden on the fresh bedrock varies from a few metres to over 20 m.

EXPLORATION

Exploration history

During the late 1940's, Atri Oy conducted bedrock mapping, ground magnetic and electromagnetic surveys in the area. Outokumpu Mining had several exploration campaigns in the area in 1977- 1996. This work included bedrock mapping, till geochemical studies, ground slingram, magnetic and IP surveys and diamond drilling (<http://www.gsf.fi/explor/paivanena.htm>).

Current exploration program

During 1999-2000, the previous work was re-evaluated and geophysical data interpreted. In addition, a 669 sample till geochemical survey was conducted and 41 old samples were re-assayed.

During the winter 2001, 25 short diamond holes (M52/2743/01/R29- R53, 13.7-28.3 m long) were drilled in the profiles 7522500N and 7522400N, and 7.22 km² ground magnetic and VLF-R surveys were conducted.

During the winter 2002, the drilling campaign included 15 short diamond holes (10.2-44.7 m) and eight deeper diamond holes (81 –136.2 m) in several profiles.

During the winter 2003, 12 diamond holes (47-104 m) were drilled and 2.68 km² ground magnetic and VLF-R surveys were conducted. The single IP profile was measured during the summer 2003.

Exploration techniques and results

Sampling, drilling, sample preparation and assaying

The used diamond drill core size was 45 mm (T56 bit) in the all drill holes (Appendix 1). The diamond drill core was halved with a diamond saw, and the samples were divided for the assay using the geological contacts with a maximum sample length of one metre. The half core was crushed in a jaw crusher and pulverised in a ring or a disc mill depending on sample weight. For gold assays, the Geological Survey of Finland Geolaboratory method 522U (GFAAS; aqua regia leach, Hg-coprecipitation, 20 g of sample material) and 704U (GFAAS, Pb-Fire Assay, 25 g sample) were used (Appendix 2).

The elements Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, La, Li, Mg, Mo, Na, Ni, P, Pb, S, Sb, Sc, Si, Sr, Th, Ti, V, Y, and Zn were analysed with the method 511P, which is based on the ICP-AES technique with aqua regia digestion.

Geological mapping

GTK has not done any additional geological mapping during the current exploration program.

Geophysical surveys

Whole Central Lapland Greenstone belt is covered by high resolution, low altitude airborne geophysical magnetic, electromagnetic and radiometric surveys. The survey altitude is 30 to 40 meters, line spacing 200 meters and data point separation 5 to 50 meters depending on method.

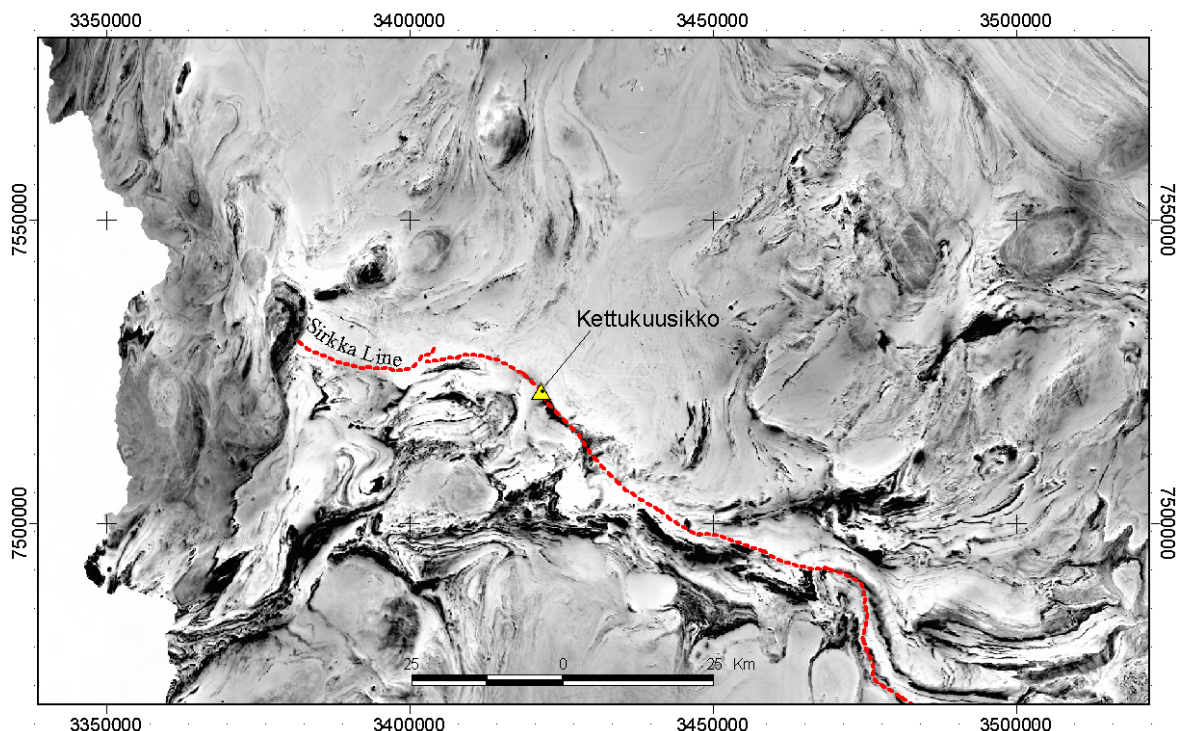


Figure 3. Aeromagnetic map of the Central Lapland Greenstone Belt, Sirkka Shear Zone and Kettukuusikko Au-occurrence.

Magnetic, electromagnetic VLF-R and Induced Polarization (IP) methods have been used for ground geophysical surveys (Appendix 3). N-S trending metakomatiitic rocks (talc-chlorite-carbonate schist) stand out as a resistive zone in the middle of the area. The contacts between metakomatiites and conductive graphitic phyllites can be signified quite accurately using magnetic and VLF-R data together. In the Kettukuusikko area, there is a magnetic minimum where ferromagnetic minerals have been destroyed by strong alteration related to the Au mineralization. DC-IP data shows that rocks in the proximal alteration zone are more resistive than rock in the distal alteration zones and that IP anomalies are weak even though the amount of disseminated sulphides is 0.5 to 3.5%.

Down hole petrophysical loggings have been done in 3 hole intersecting the Au mineralization (Appendix 3, 5/5). Density, susceptibility, apparent resistivity, chargeability, total gamma and spectral gamma have been measured. Susceptibility lows and resistivity highs are the most significant characteristics of the Au mineralized zone. Chargeability shows also some weak anomalies.

Geochemical survey

Reconnaissance scale geochemical data is available for whole Finland. Surveys have been conducted using glacial till (1 sample/4 km²), groundwater, surface water and organic stream sediments as sampling media. There have been three local scale geochemical surveys in the area. Sampling has been done in 50 m grid in two campaigns and one was 20 m spaced sampling in 50 m profiles.

In addition to the above –mentioned surveys two separate 2 km sampling profiles with 100m line spacing and 10 m point spacing along the profiles were carried out (Fig.4).

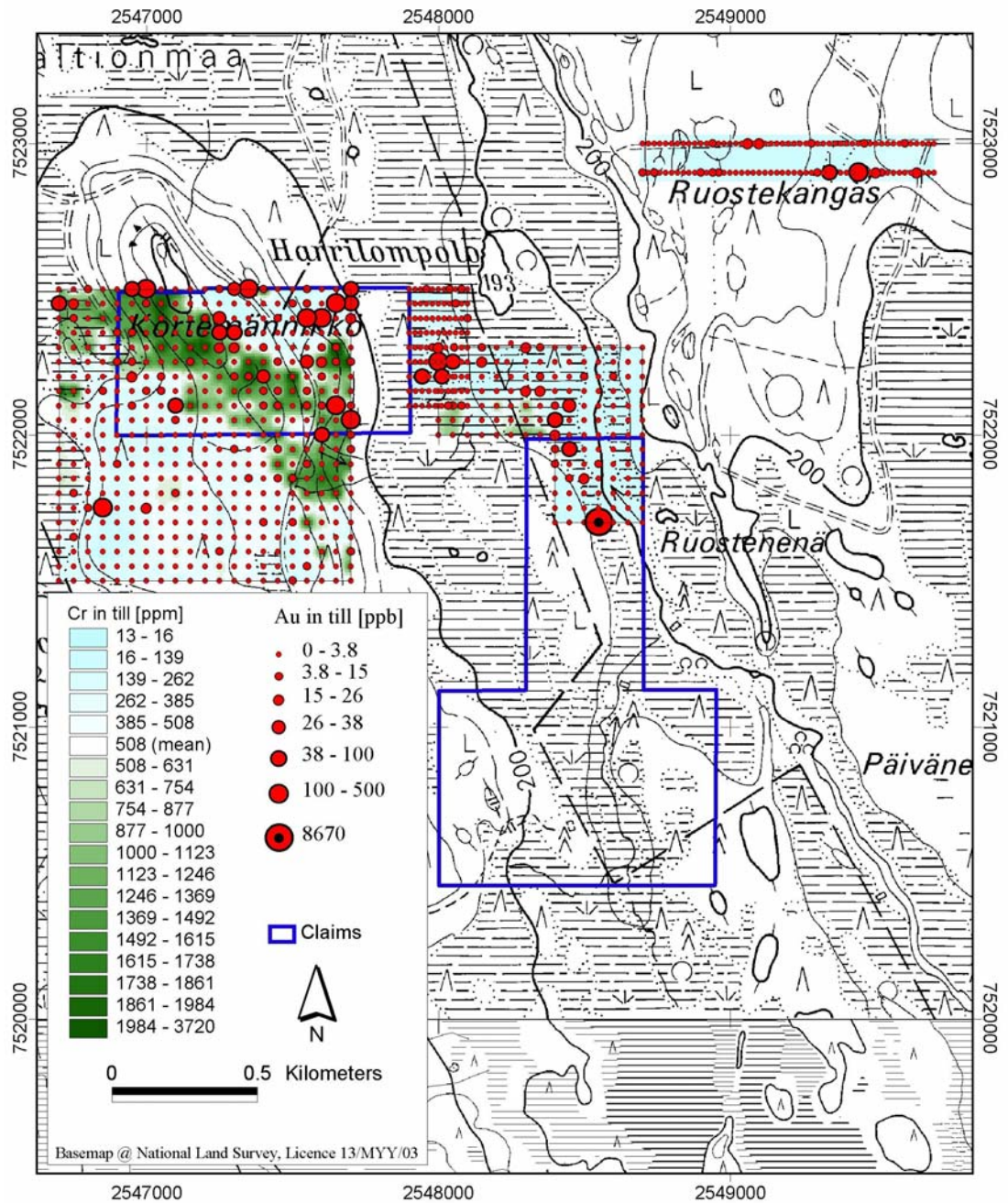


Figure 4. Au and Cr in till (\pm saprock) in the Kettukuusikko prospect.

PROPERTY GEOLOGY

The Kettukuusikko Au occurrence

At Kettukuusikko, the Au mineralization is related to the NNW-SSE trending weakly magnetic alteration and deformation zone, which is about 300 m long and about 50 m wide. The mineralization has been intersected at 85 m but it is open at depth (Fig.4 and 5). The current drilling results indicate that the northern end of the mineralization is steeply east dipping and in the southern parts, it is more shallowly dipping.

The host rock of mineralization is hydrothermally altered komatiitic volcanic rock (Fig.6). Main alteration minerals are carbonates, talc, chlorite, albite, hematite and quartz. The main sulphide mineral is pyrite. The distal alteration zone comprises of magnetite bearing talc schist (Fig.6A). As the alteration intensity increases, the amount of pyrite, carbonate, chlorite and albite increases. In the proximal zone, there are also abundant quartz-carbonate veins and breccias (Fig.6C). Gold is as small free grains in the host rock and as inclusions and fracture fillings in pyrite (Fig.9). Other opaques include chalcopryrite, galena, tellurides (NiTe, Ag₂Te, AuAgTe), scheelite and tetrahedrite.

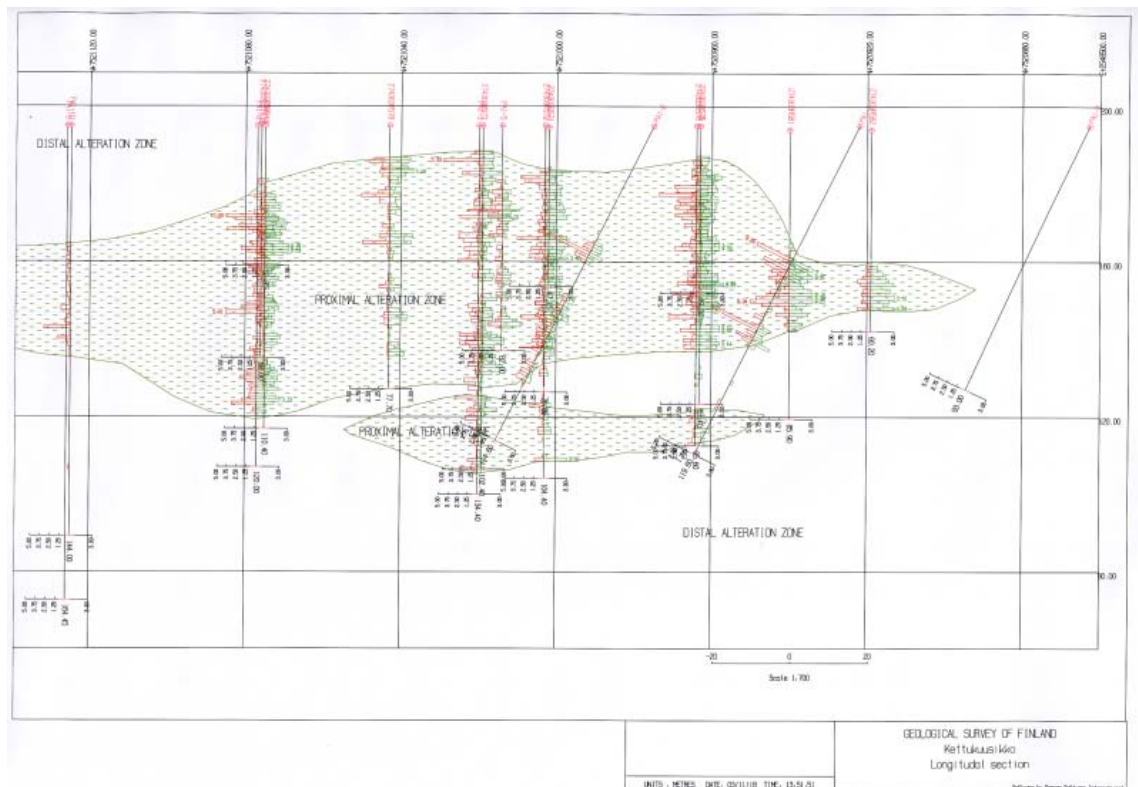


Figure 4. Long section of the Kettukuusikko Au-occurrence, E = 2548.500

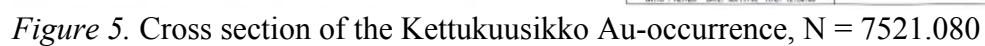
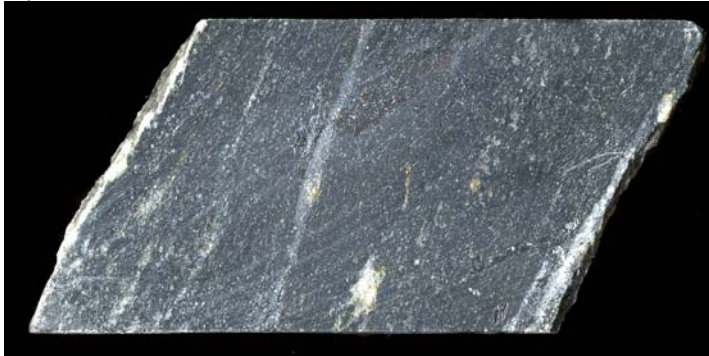


Figure 5. Cross section of the Kettukuusikko Au-occurrence, N = 7521.080

A)



B)



C)



Figure 6. Kettukuusikko altered komatiitic volcanic rocks:

A) Talc schist with impregnated magnetite and small carbonate veinlets and megacrysts. DH 579/ 25,90 m (Distal alteration zone)

B) Folded chlorite- talc- carbonate- rutile schist. DH 576/ 74,40 m (Intermediate alteration zone)

C) Carbonate- albite rock with pyrite impregnation and quartz- carbonate- talc veins. DH 576/ 34,25 m (Proximal alteration zone)

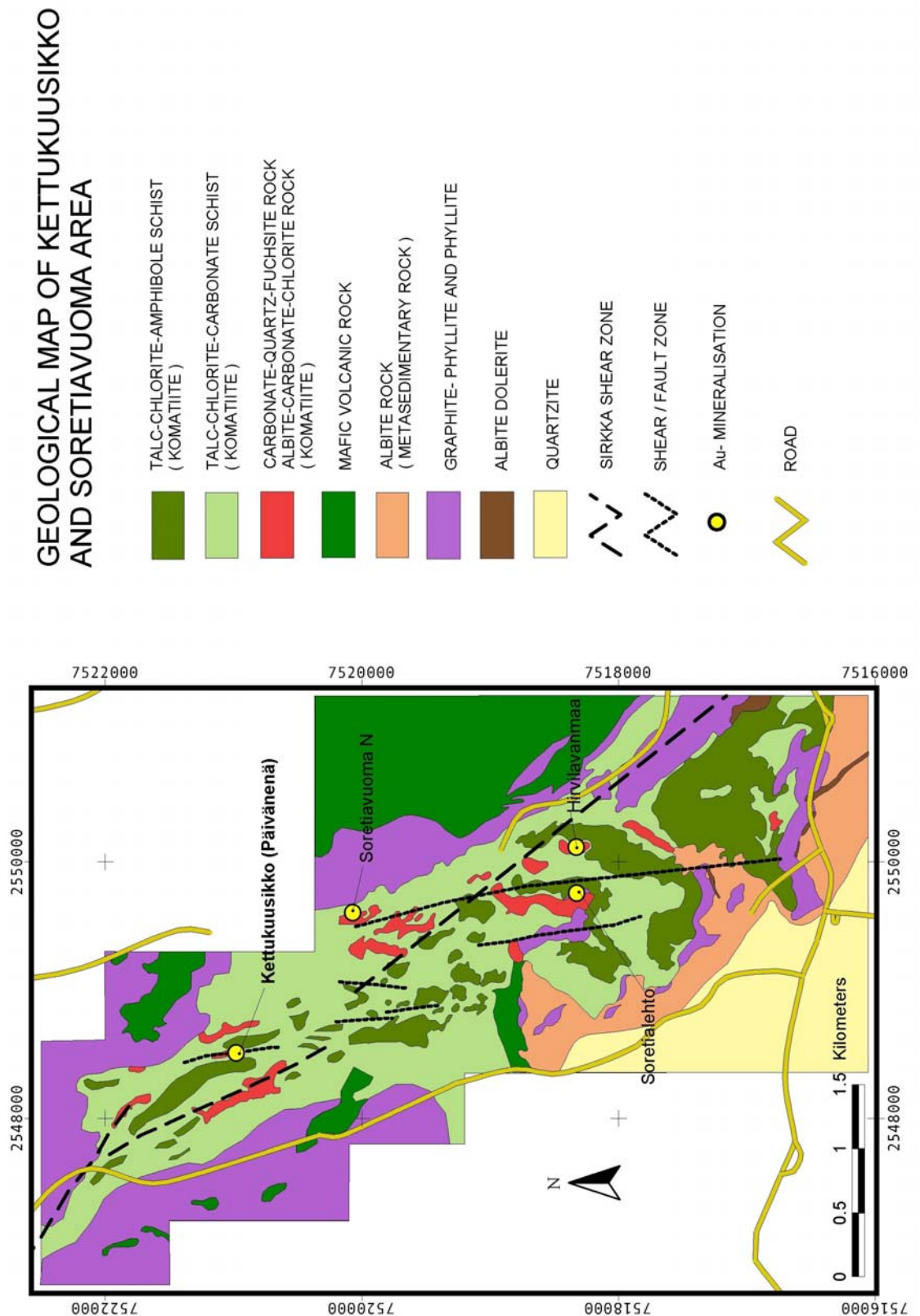


Figure 7. Geological map of Kettukuusikko and Soretiavuoma area.

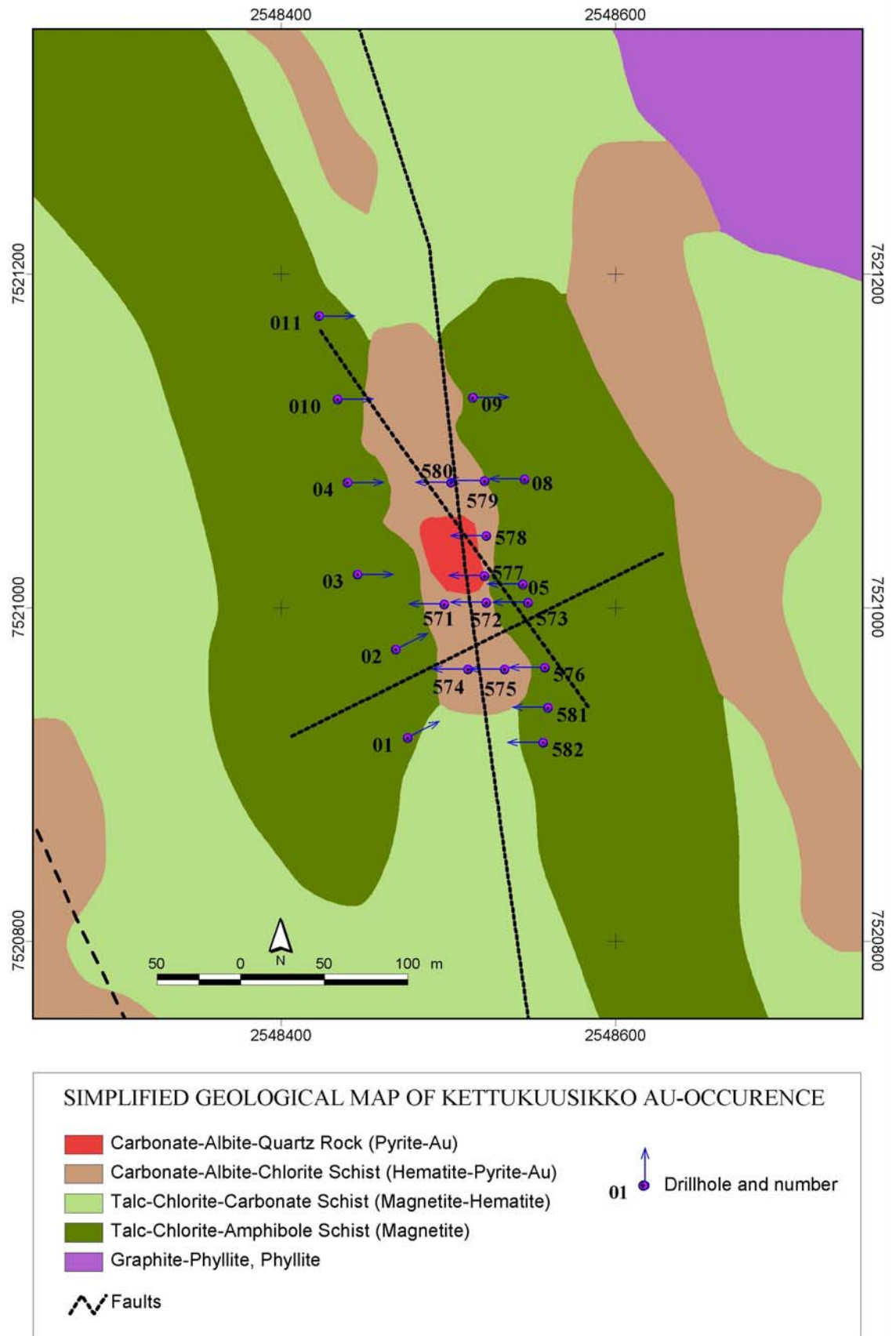


Figure 8. Simplified geological map of the Kettukuusikko Au-occurrence.

Table 2. Significant intersections from the Kettukuusikko occurrence include:

Drill Hole	Au content	From depth
R 4	4.3 m@ 6.55 g/t	32.20 m
R 2	2.9 m@ 6.14 g/t	46.20 m
R581	4.0 m@ 4.15 g/t	48.55 m
R 1	5.2 m@ 3.79 g/t	48.50 m
R574	3.0 m@ 2.90 g/t	21.35 m
R572	2.0 m@ 2.88 g/t	14.80 m
R577	3.2 m@ 2.57 g/t	7.50 m
R580	4.1 m@ 2.33 g/t	43.60 m
R581	14.0 m@ 2.28 g/t	41.50 m
R582	10.2 m@ 1.20 g/t	43.60 m

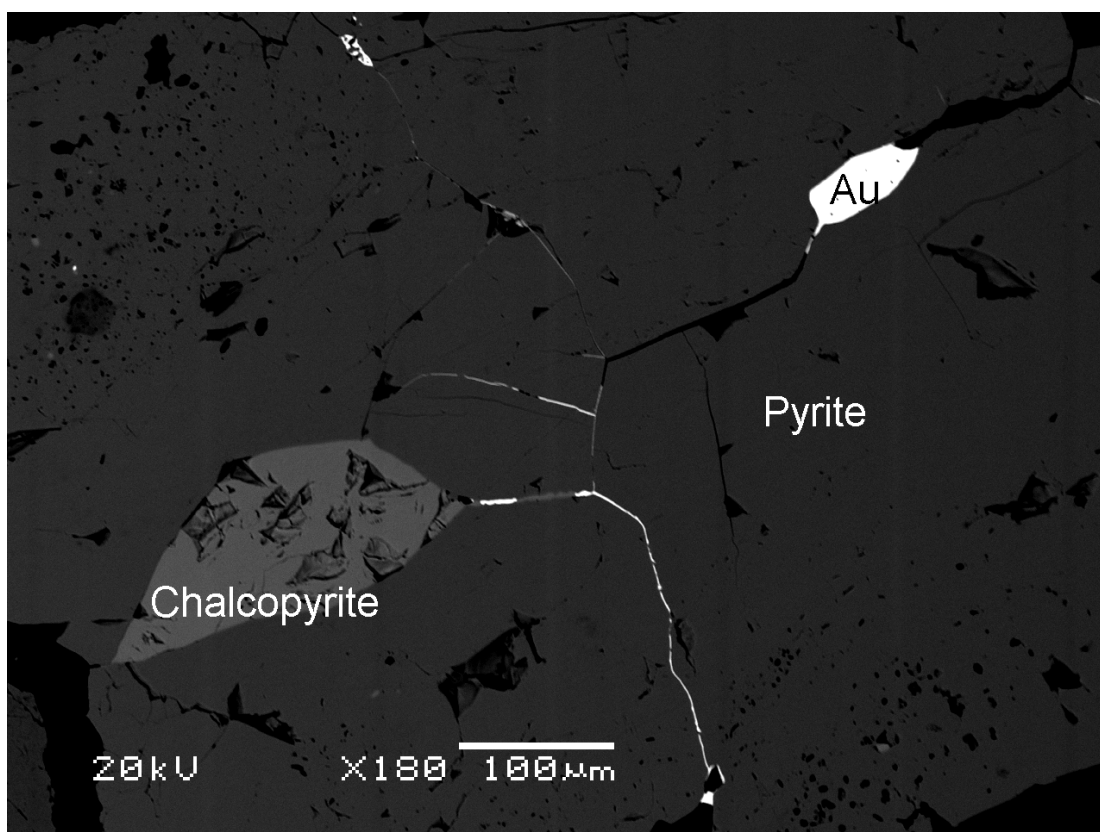


Figure 9. Gold and chalcopyrite inclusions and fracture fillings in pyrite. DH 576/ 52,0 m. SEM study has been made in GTK, Espoo. Photo by M.Sc. Heli Lallukka.

ENVIRONMENTAL STATEMENT

Environmental aspects

There are no nature reserves or conservation areas in the immediate vicinity of the Kettukuusikko prospect.

DISCUSSION AND CONCLUSIONS

One gold bearing occurrence has been discovered in the Kettukuusikko prospect area (Kettukuusikko 1).

Kettukuusikko Au occurrence resembles geologically, structurally and mineralogically Hirvilavanmaan Au mineralization 3 km SE from Kettukuusikko (<http://www.gsf.fi/explor/hirvilavanmaa.htm>).

The NNW – SSE trending mineralised zone in the Kettukuusikko prospect area is clearly cross cutting in respect to the NW – SE trending Sirkka Shear Zone. The Kettukuusikko Au occurrence is definitely controlled by this younger structure. The same structure has been identified by GTK also in the earlier studies in the Soretiavuoma prospect area some kilometers south of Kettukuusikko (Fig.7). A representative example of the importance of this cross cutting younger structure is the Kortemännikkö prospect, with strongly pyritized and sericited, green fuchsite bearing phyllites with nearly conform felsic dikes. These rocks within the Kortemännikkö prospect contain hardly any gold in spite of the considerable grade of the alteration, because of the absence of this younger structure. On the contrary the Au contents in the similar rocks of the Soretialehto prospect are, relatively high (Fig.7) (<http://www.gsf.fi/explor/soretialehto.htm>).

RECOMMENDATIONS FOR FURTHER WORK

The entire Kettukuusikko lode needs to be drilled by using a 20 m grid with several drilling directions to bear with the structural complexity. For example at Hirvilavanmaa there were used 5 different drilling directions of whom the N-S –direction was the best one.

REFERENCES

- Hugg, R. 1991. Kaivoslain 19 §:n mukainen tutkimustyöselostus; Päivänenä, kaiv.rek.nro 3750/2. (Exploration report: Päivänenä Mine reg. no.3750/2). Outokumpu Oy Finnmines, unpublished report 0870/2743 01/REH/91. 1 p. (in Finnish).
- Räisänen, K. 2001. Kun Kätkätunturin maisemissa vedettiin vesiperä. Vuorimies. 3:56-57.
- Väisänen, Markku & Airo, Meri-Liisa & **Hölttä, Pentti** 2000. Field investigations in the Central Lapland Greenstone Belt, northern Finland, 1998-1999. 19 s., 8 liites. Geologian tutkimuskeskus, arkistoraportti, K 21.43/2000/1.

APPENDICES

1. Drill hole details
2. Assay methods
3. Ground geophysical surveys and petrophysical logs

Drill hole details

List of the diamond drill holes from the claims Kortemännikkö 1 and Kettukuusikko 1

Hole-ID	Year	Northing	Easting	Elevation	Prospect	Length	Azimuth	Dip
M274386R1	1986	7520922	2548476	195.25	KETTUKUUSIKKO	119.60	63	45
M274386R2	1986	7520975	2548469	195.39	KETTUKUUSIKKO	114.60	63	45
M274386R3	1986	7521020	2548446	195.61	KETTUKUUSIKKO	134.40	90	45
M274386R4	1986	7521075	2548440	196.02	KETTUKUUSIKKO	110.40	90	45
M274386R5	1986	7521014	2548545	195.00	KETTUKUUSIKKO	82.00	270	45
M274387R10	1987	7521125	2548434	196.08	KETTUKUUSIKKO	144.00	90	47.3
M274387R11	1987	7521175	2548423	197.00	KETTUKUUSIKKO	103.75	90	45.8
M274387R8	1987	7521077	2548546	194.71	KETTUKUUSIKKO	120.00	270	46.3
M274387R9	1987	7521126	2548515	195.05	KETTUKUUSIKKO	164.45	90	46.2
M274302R562	2002	7521700	2548600	193.50	KETTUKUUSIKKO	136.20	270	61.1
M274302R563	2002	7521700	2548500	194.00	KETTUKUUSIKKO	102.30	270	61.2
M274302R564	2002	7521700	2548450	195.00	KETTUKUUSIKKO	144.00	270	60.2
M274302R565	2002	7521700	2548400	195.00	KETTUKUUSIKKO	81.05	270	61.8
M274302R566	2002	7521750	2548400	194.50	KETTUKUUSIKKO	122.40	270	60.2
M274302R567	2002	7521750	2548425	195.00	KETTUKUUSIKKO	85.00	270	61.2
M274302R568	2002	7521750	2548450	194.50	KETTUKUUSIKKO	113.45	90	60.4
M274302R569	2002	7521750	2548475	194.00	KETTUKUUSIKKO	93.75	90	60.4
M274302R570	2002	7521690	2548550	194.00	KETTUKUUSIKKO	119.05	0	61.4
M274302R66	2002	7520750	2548500	195.00	KETTUKUUSIKKO	44.70	270	60
M274302R67	2002	7520750	2548450	195.00	KETTUKUUSIKKO	36.70	270	60
M274302R68	2002	7520750	2548400	196.50	KETTUKUUSIKKO	28.70	270	60
M274302R69	2002	7520750	2548350	198.00	KETTUKUUSIKKO	30.00	270	60
M274302R70	2002	7520750	2548300	200.00	KETTUKUUSIKKO	29.50	270	60
M274302R71	2002	7520750	2548250	203.50	KETTUKUUSIKKO	32.80	270	60
M274302R72	2002	7520750	2548200	205.00	KETTUKUUSIKKO	37.60	270	60
M274302R73	2002	7520750	2548150	204.00	KETTUKUUSIKKO	27.60	270	60
M274302R74	2002	7520750	2548100	204.00	KETTUKUUSIKKO	35.30	270	60
M274302R75	2002	7520750	2548050	204.50	KETTUKUUSIKKO	25.00	270	60
M274302R76	2002	7520750	2548000	205.00	KETTUKUUSIKKO	39.10	270	60
M274302R77	2002	7520800	2548250	204.00	KETTUKUUSIKKO	27.70	270	60
M274302R78	2002	7520850	2548250	203.50	KETTUKUUSIKKO	28.50	270	60
M274302R79	2002	7520900	2548250	203.00	KETTUKUUSIKKO	25.80	270	60
M274302R81	2002	7521000	2548250	200.00	KETTUKUUSIKKO	10.20	270	60
M274303R582	2002	7520919	2548557	194.00	KETTUKUUSIKKO	60.20	270	59.1
M274302R80	2003	7520950	2548250	202.00	KETTUKUUSIKKO	24.35	270	60
M274303R571	2003	7521002	2548498	194.58	KETTUKUUSIKKO	47.15	270	60.2
M274303R572	2003	7521003	2548523	194.70	KETTUKUUSIKKO	78.85	270	60.5
M274303R573	2003	7521003	2548548	195.00	KETTUKUUSIKKO	104.40	270	59.8
M274303R574	2003	7520963	2548512	195.02	KETTUKUUSIKKO	49.00	270	61.5
M274303R575	2003	7520963	2548534	194.75	KETTUKUUSIKKO	83.40	270	58.8
M274303R576	2003	7520964	2548558	194.34	KETTUKUUSIKKO	95.60	270	59
M274303R577	2003	7521019	2548522	194.25	KETTUKUUSIKKO	102.40	270	59.8
M274303R578	2003	7521043	2548523	194.78	KETTUKUUSIKKO	77.70	270	60.9
M274303R579	2003	7521076	2548522	194.83	KETTUKUUSIKKO	86.00	270	45
M274303R580	2003	7521075	2548502	194.90	KETTUKUUSIKKO	52.35	270	45
M274303R581	2003	7520940	2548560	194.34	KETTUKUUSIKKO	85.90	270	59.2

Appendix 1
M 06/2743/2003/1/10

M274301R29	2001	7522500	2547700	200.00	KORTEMÄNNIKKÖ	18.20	0	90
M274301R30	2001	7522450	2547650	201.00	KORTEMÄNNIKKÖ	19.00	0	90
M274301R31	2001	7522400	2547600	202.00	KORTEMÄNNIKKÖ	18.40	0	90
M274301R32	2001	7522400	2547500	205.00	KORTEMÄNNIKKÖ	15.60	0	90
M274301R33	2001	7522400	2547450	207.00	KORTEMÄNNIKKÖ	15.00	0	90
M274301R34	2001	7522400	2547400	210.00	KORTEMÄNNIKKÖ	18.40	0	90
M274301R35	2001	7522400	2547350	212.00	KORTEMÄNNIKKÖ	27.50	0	90
M274301R36	2001	7522400	2547300	215.00	KORTEMÄNNIKKÖ	18.00	0	90
M274301R37	2001	7522400	2547250	218.00	KORTEMÄNNIKKÖ	19.50	0	90
M274301R38	2001	7522400	2547200	220.00	KORTEMÄNNIKKÖ	13.70	0	90
M274301R39	2001	7522400	2547150	222.00	KORTEMÄNNIKKÖ	13.80	0	90
M274301R40	2001	7522400	2547100	222.00	KORTEMÄNNIKKÖ	14.10	0	90
M274301R41	2001	7522400	2547050	219.00	KORTEMÄNNIKKÖ	15.80	0	90
M274301R42	2001	7522400	2547000	215.00	KORTEMÄNNIKKÖ	13.70	0	90
M274301R43	2001	7522400	2546950	210.00	KORTEMÄNNIKKÖ	13.80	0	90
M274301R44	2001	7522400	2546900	209.00	KORTEMÄNNIKKÖ	16.80	0	90
M274301R45	2001	7522400	2546850	208.00	KORTEMÄNNIKKÖ	23.80	0	90
M274301R46	2001	7522500	2547750	199.00	KORTEMÄNNIKKÖ	28.30	0	90
M274301R47	2001	7522500	2547800	198.00	KORTEMÄNNIKKÖ	16.00	0	90
M274301R48	2001	7522500	2547850	197.00	KORTEMÄNNIKKÖ	13.70	0	90
M274301R49	2001	7522500	2547900	197.00	KORTEMÄNNIKKÖ	19.20	0	90
M274301R50	2001	7522500	2547950	196.00	KORTEMÄNNIKKÖ	21.80	0	90
M274301R51	2001	7522500	2548000	195.00	KORTEMÄNNIKKÖ	24.00	0	90
M274301R52	2001	7522500	2548050	194.00	KORTEMÄNNIKKÖ	15.60	0	90
M274301R53	2001	7522500	2548100	193.50	KORTEMÄNNIKKÖ	17.00	0	90

Assay Methods

Assays +511U (Ag, Al, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, La, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Si, Sr, Th, Ti, V, Y, Zn, Zr)

Hole-ID	Map	Year	Hole No	Prospect	Length	Samples
M274302R74	2743	2002	74	KETTUKUUSIKKO	35.3	16
M274302R76	2743	2002	76	KETTUKUUSIKKO	39.1	11
M274302R77	2743	2002	77	KETTUKUUSIKKO	27.7	21
M274302R78	2743	2002	78	KETTUKUUSIKKO	28.5	22
M274302R79	2743	2002	79	KETTUKUUSIKKO	25.8	19
M274302R80	2743	2002	80	KETTUKUUSIKKO	24.35	21
M274303R574	2743	2003	574	KETTUKUUSIKKO	49	27
M274303R575	2743	2003	575	KETTUKUUSIKKO	83.4	61
M274303R577	2743	2003	577	KETTUKUUSIKKO	102.4	86
M274303R578	2743	2003	578	KETTUKUUSIKKO	77.7	60
M274303R579	2743	2003	579	KETTUKUUSIKKO	86	52
M274303R580	2743	2003	580	KETTUKUUSIKKO	52.35	29
M274303R581	2743	2003	581	KETTUKUUSIKKO	85.9	32
M274303R582	2743	2003	582	KETTUKUUSIKKO	60.2	15
M274386R4	2743	1986	4	KETTUKUUSIKKO	110.4	85
M274387R8	2743	1987	8	KETTUKUUSIKKO	120	43
					total	600

Assays 511P (Ag, Al, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, La, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Si, Sr, Th, Ti, V, Y, Zn, Zr)

Hole-ID	Map	Year	Hole No	Prospect	Length	Samples
M274301R49	2743	2001	49	KORTEMÄNNIKKÖ	19.2	10
M274301R52	2743	2001	52	KORTEMÄNNIKKÖ	15.6	6
					total	16

Assays +511P (Ag, Al, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, La, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Si, Sr, Th, Ti, V, Y, Zn, Zr)

Hole-ID	Map	Year	Hole No	Prospect	Length	Samples
M274301R29	2743	2001	29	KORTEMÄNNIKKÖ	18.2	14
M274301R30	2743	2001	30	KORTEMÄNNIKKÖ	19	12
M274301R31	2743	2001	31	KORTEMÄNNIKKÖ	18.4	14
M274301R32	2743	2001	32	KORTEMÄNNIKKÖ	15.6	10
M274301R33	2743	2001	33	KORTEMÄNNIKKÖ	15	10
M274301R34	2743	2001	34	KORTEMÄNNIKKÖ	18.4	14
M274301R35	2743	2001	35	KORTEMÄNNIKKÖ	27.5	22
M274301R36	2743	2001	36	KORTEMÄNNIKKÖ	18	11
M274301R37	2743	2001	37	KORTEMÄNNIKKÖ	19.5	14
M274301R38	2743	2001	38	KORTEMÄNNIKKÖ	13.7	10
M274301R39	2743	2001	39	KORTEMÄNNIKKÖ	13.8	7
M274301R43	2743	2001	43	KORTEMÄNNIKKÖ	13.8	10
M274301R44	2743	2001	44	KORTEMÄNNIKKÖ	16.8	12
M274302R562	2743	2002	562	KETTUKUUSIKKO	136.2	93
M274302R563	2743	2002	563	KETTUKUUSIKKO	102.3	101
M274302R564	2743	2002	564	KETTUKUUSIKKO	144	128
M274302R565	2743	2002	565	KETTUKUUSIKKO	81.05	77
M274302R566	2743	2002	566	KETTUKUUSIKKO	122.4	81
M274302R567	2743	2002	567	KETTUKUUSIKKO	85	83
M274302R568	2743	2002	568	KETTUKUUSIKKO	113.45	109
M274302R569	2743	2002	569	KETTUKUUSIKKO	93.75	61
M274302R570	2743	2002	570	KETTUKUUSIKKO	119.05	101
M274302R66	2743	2002	66	KETTUKUUSIKKO	44.7	5
M274302R67	2743	2002	67	KETTUKUUSIKKO	36.7	4
M274302R68	2743	2002	68	KETTUKUUSIKKO	28.7	24
M274302R69	2743	2002	69	KETTUKUUSIKKO	30	4
M274302R70	2743	2002	70	KETTUKUUSIKKO	29.5	16
M274302R71	2743	2002	71	KETTUKUUSIKKO	32.8	28
M274302R72	2743	2002	72	KETTUKUUSIKKO	37.6	25
M274302R73	2743	2002	73	KETTUKUUSIKKO	27.6	24
M274302R74	2743	2002	74	KETTUKUUSIKKO	35.3	20
M274302R75	2743	2002	75	KETTUKUUSIKKO	25	9
M274302R76	2743	2002	76	KETTUKUUSIKKO	39.1	18
M274302R77	2743	2002	77	KETTUKUUSIKKO	27.7	25
M274302R78	2743	2002	78	KETTUKUUSIKKO	28.5	26
M274302R79	2743	2002	79	KETTUKUUSIKKO	25.8	23
M274302R80	2743	2002	80	KETTUKUUSIKKO	24.35	25
M274302R81	2743	2002	81	KETTUKUUSIKKO	10.2	1
M274303R571	2743	2003	571	KETTUKUUSIKKO	47.15	36
M274303R572	2743	2003	572	KETTUKUUSIKKO	78.85	55
M274303R573	2743	2003	573	KETTUKUUSIKKO	104.4	70
M274303R574	2743	2003	574	KETTUKUUSIKKO	49	27
M274303R575	2743	2003	575	KETTUKUUSIKKO	83.4	61
M274303R576	2743	2003	576	KETTUKUUSIKKO	95.6	77
M274303R577	2743	2003	577	KETTUKUUSIKKO	102.4	86
M274303R578	2743	2003	578	KETTUKUUSIKKO	77.7	60
M274303R579	2743	2003	579	KETTUKUUSIKKO	86	52

M274303R580	2743	2003	580 KETTUKUUSIKKO	52.35	29
M274303R581	2743	2003	581 KETTUKUUSIKKO	85.9	32
M274303R582	2743	2003	582 KETTUKUUSIKKO	60.2	15
M274386R4	2743	1986	4 KETTUKUUSIKKO	110.4	85
M274387R8	2743	1987	8 KETTUKUUSIKKO	120	43
				total	1999

Assays +522U (Au, Te)

Hole-ID	Map	Year	Hole No	Prospect	Length	Samples
M274302R562	2743	2002	562	KETTUKUUSIKKO	136.2	93
M274302R563	2743	2002	563	KETTUKUUSIKKO	102.3	101
M274302R564	2743	2002	564	KETTUKUUSIKKO	144	128
					total	322

Assays 522U (Au, Te)

Hole-ID	Map	Year	Hole No	Prospect	Length	Samples
M274301R29	2743	2001	29	KORTEMÄNNIKKÖ	18.2	14
M274301R30	2743	2001	30	KORTEMÄNNIKKÖ	19	12
M274301R31	2743	2001	31	KORTEMÄNNIKKÖ	18.4	14
M274301R32	2743	2001	32	KORTEMÄNNIKKÖ	15.6	10
M274301R33	2743	2001	33	KORTEMÄNNIKKÖ	15	10
M274301R34	2743	2001	34	KORTEMÄNNIKKÖ	18.4	14
M274301R35	2743	2001	35	KORTEMÄNNIKKÖ	27.5	22
M274301R36	2743	2001	36	KORTEMÄNNIKKÖ	18	11
M274301R37	2743	2001	37	KORTEMÄNNIKKÖ	19.5	14
M274301R38	2743	2001	38	KORTEMÄNNIKKÖ	13.7	10
M274301R39	2743	2001	39	KORTEMÄNNIKKÖ	13.8	7
M274301R43	2743	2001	43	KORTEMÄNNIKKÖ	13.8	10
M274301R44	2743	2001	44	KORTEMÄNNIKKÖ	16.8	12
M274302R565	2743	2002	565	KETTUKUUSIKKO	81.05	77
M274302R566	2743	2002	566	KETTUKUUSIKKO	122.4	81
M274302R567	2743	2002	567	KETTUKUUSIKKO	85	83
M274302R568	2743	2002	568	KETTUKUUSIKKO	113.45	109
M274302R569	2743	2002	569	KETTUKUUSIKKO	93.75	61
M274302R570	2743	2002	570	KETTUKUUSIKKO	119.05	101
M274302R66	2743	2002	66	KETTUKUUSIKKO	44.7	5
M274302R67	2743	2002	67	KETTUKUUSIKKO	36.7	4
M274302R68	2743	2002	68	KETTUKUUSIKKO	28.7	24
M274302R69	2743	2002	69	KETTUKUUSIKKO	30	4
M274302R70	2743	2002	70	KETTUKUUSIKKO	29.5	16
M274302R71	2743	2002	71	KETTUKUUSIKKO	32.8	28
M274302R72	2743	2002	72	KETTUKUUSIKKO	37.6	25
M274302R73	2743	2002	73	KETTUKUUSIKKO	27.6	24
M274302R74	2743	2002	74	KETTUKUUSIKKO	35.3	4
M274302R75	2743	2002	75	KETTUKUUSIKKO	25	9
M274302R76	2743	2002	76	KETTUKUUSIKKO	39.1	7
M274302R77	2743	2002	77	KETTUKUUSIKKO	27.7	4
M274302R78	2743	2002	78	KETTUKUUSIKKO	28.5	4
M274302R79	2743	2002	79	KETTUKUUSIKKO	25.8	4
M274302R80	2743	2002	80	KETTUKUUSIKKO	24.35	4
M274302R81	2743	2002	81	KETTUKUUSIKKO	10.2	1
					total	839

Assays +175X (Na₂O, MgO, Al₂O₃, SiO₂, P₂O₅, K₂O, CaO, TiO₂, MnO, Fe₂O₃, S, Cl, Sc, V, Cr, Ni, Cu, Zn, Ga, As, Rb, Sr, Y, Zr, Nb, Mo, Sn, Sb, Ba, La, Ce, Pb, Bi, Th, U)

Hole-ID	Map	Year	Hole No	Prospect	Length	Samples
M274302R66	2743	2002	66	KETTUKUUSIKKO	44.7	5
M274302R67	2743	2002	67	KETTUKUUSIKKO	36.7	4
M274302R68	2743	2002	68	KETTUKUUSIKKO	28.7	4
M274302R69	2743	2002	69	KETTUKUUSIKKO	30	4
M274302R70	2743	2002	70	KETTUKUUSIKKO	29.5	3
M274302R71	2743	2002	71	KETTUKUUSIKKO	32.8	5
M274302R72	2743	2002	72	KETTUKUUSIKKO	37.6	4
M274302R73	2743	2002	73	KETTUKUUSIKKO	27.6	4
M274302R74	2743	2002	74	KETTUKUUSIKKO	35.3	4
M274302R75	2743	2002	75	KETTUKUUSIKKO	25	3
M274302R76	2743	2002	76	KETTUKUUSIKKO	39.1	7
M274302R77	2743	2002	77	KETTUKUUSIKKO	27.7	4
M274302R78	2743	2002	78	KETTUKUUSIKKO	28.5	4
M274302R79	2743	2002	79	KETTUKUUSIKKO	25.8	4
M274302R80	2743	2002	80	KETTUKUUSIKKO	24.35	4
M274302R81	2743	2002	81	KETTUKUUSIKKO	10.2	1
M274303R573	2743	2003	573	KETTUKUUSIKKO	104.4	5
					total	69

Assays +704A (Au)

Hole-ID	Map	Year	Hole No	Prospect	Length	Samples
M274303R571	2743	2003	571	KETTUKUUSIKKO	47.15	36
M274303R572	2743	2003	572	KETTUKUUSIKKO	78.85	55
M274303R573	2743	2003	573	KETTUKUUSIKKO	104.4	70
M274303R574	2743	2003	574	KETTUKUUSIKKO	49	27
M274303R575	2743	2003	575	KETTUKUUSIKKO	83.4	61
M274303R576	2743	2003	576	KETTUKUUSIKKO	95.6	77
M274303R577	2743	2003	577	KETTUKUUSIKKO	102.4	86
M274303R578	2743	2003	578	KETTUKUUSIKKO	77.7	60
M274303R579	2743	2003	579	KETTUKUUSIKKO	86	52
M274303R580	2743	2003	580	KETTUKUUSIKKO	52.35	29
M274303R581	2743	2003	581	KETTUKUUSIKKO	85.9	32
M274303R582	2743	2003	582	KETTUKUUSIKKO	60.2	15
					total	600

Assays +705A (Au)

Hole-ID	Map	Year	Hole No	Prospect	Length	Samples
M274302R74	2743	2002	74	KETTUKUUSIKKO	35.3	16
M274302R76	2743	2002	76	KETTUKUUSIKKO	39.1	11
M274302R77	2743	2002	77	KETTUKUUSIKKO	27.7	21
M274302R78	2743	2002	78	KETTUKUUSIKKO	28.5	22
M274302R79	2743	2002	79	KETTUKUUSIKKO	25.8	19
M274302R80	2743	2002	80	KETTUKUUSIKKO	24.35	21
M274386R4	2743	1986	4	KETTUKUUSIKKO	110.4	85
M274387R8	2743	1987	8	KETTUKUUSIKKO	120	43
					total	238

Assays 705A (Au)

Hole-ID	Map	Year	Hole No	Prospect	Length	Samples
M274301R49	2743	2001	49	KORTEMÄNNIKKÖ	19.2	10
M274301R52	2743	2001	52	KORTEMÄNNIKKÖ	15.6	6
					total	16

Assays GAAS (Au)

Hole-ID	Map	Year	Hole No	Prospect	Length	Samples
M274386R1	2743	1986	1	KETTUKUUSIKKO	119.6	43
M274386R2	2743	1986	2	KETTUKUUSIKKO	114.6	42
M274386R3	2743	1986	3	KETTUKUUSIKKO	134.4	70
M274386R4	2743	1986	4	KETTUKUUSIKKO	110.4	40
M274386R5	2743	1986	5	KETTUKUUSIKKO	82	55
M274387R10	2743	1987	10	KETTUKUUSIKKO	144	32
M274387R11	2743	1987	11	KETTUKUUSIKKO	103.75	21
M274387R8	2743	1987	8	KETTUKUUSIKKO	120	19
M274387R9	2743	1987	9	KETTUKUUSIKKO	164.45	7
					total	329

Assays RXRF (Na₂O, MgO, Al₂O₃, SiO₂, P₂O₅, K₂O, CaO, TiO₂, MnO, FeO, BaO, CO₂, Cr₂O₃, SrO, V₂O₃, ZrO, Bi, Ce, Cl, Co, Cs, Cu, La, Mo, Nb, Ni, Pb, S, Sb, Sn, Ta, Th, U, Y, Zn)

Hole-ID	Map	Year	Hole No	Prospect	Length	Samples
M274386R1	2743	1986	1	KETTUKUUSIKKO	119.6	43
M274386R2	2743	1986	2	KETTUKUUSIKKO	114.6	42
M274386R3	2743	1986	3	KETTUKUUSIKKO	134.4	70
M274386R4	2743	1986	4	KETTUKUUSIKKO	110.4	40
M274386R5	2743	1986	5	KETTUKUUSIKKO	82	55
					total	250

Kittilä; Kettukuusikko area Geophysical ground surveys

Magnetic

Data files: mg274301_1.xyz (2000-2001), 03mgd274301_1.xyz (2003)
Equipment: Proton magnetometer, GSM8
Area: X = 7519.200-7522.500, Y = 2546.700-2549.300
Line direction: E-W
Line spacing / Point separation: 50m / 10m

VLF-R

Data files: vr274301_1.xyz (2000-2001), 03vrd274301_1.xyz (2003)
Equipment: Geonics EM16R
VLF-R stations: GBR 16.0 kHz / DHO38 23.4 kHz
Area: X = 7519.200-7522.500, Y = 2546.700-2549.300
Line direction: E-W
Line spacing / Point separation: 50m / 10m

Induced Polarization

Data_file: b2743012.xyz (2003, 1 profile)
Equipment: Scintrex IPR12
Array: Dipole-dipole, a=10m, n=1-8
Area: 1 profile
Line direction: E-W
Point separation: 10 m

Data_file: b2743013.xyz (2003, 9 profiles)
Equipment: Scintrex IPR12
Array: 9 profiles
Line direction: E-W
Point separation: 20 m

Table 1. Geophysical ground measurements in Kettukuusikko study area.

	<i>points</i>	<i>line_km</i>	<i>Area [km²]</i>
Magnetic	13535	133.150	6.5
EM; VLF-R	13534	133.210	6.5
IP (IPR-12)	334	6.1	10 profiles

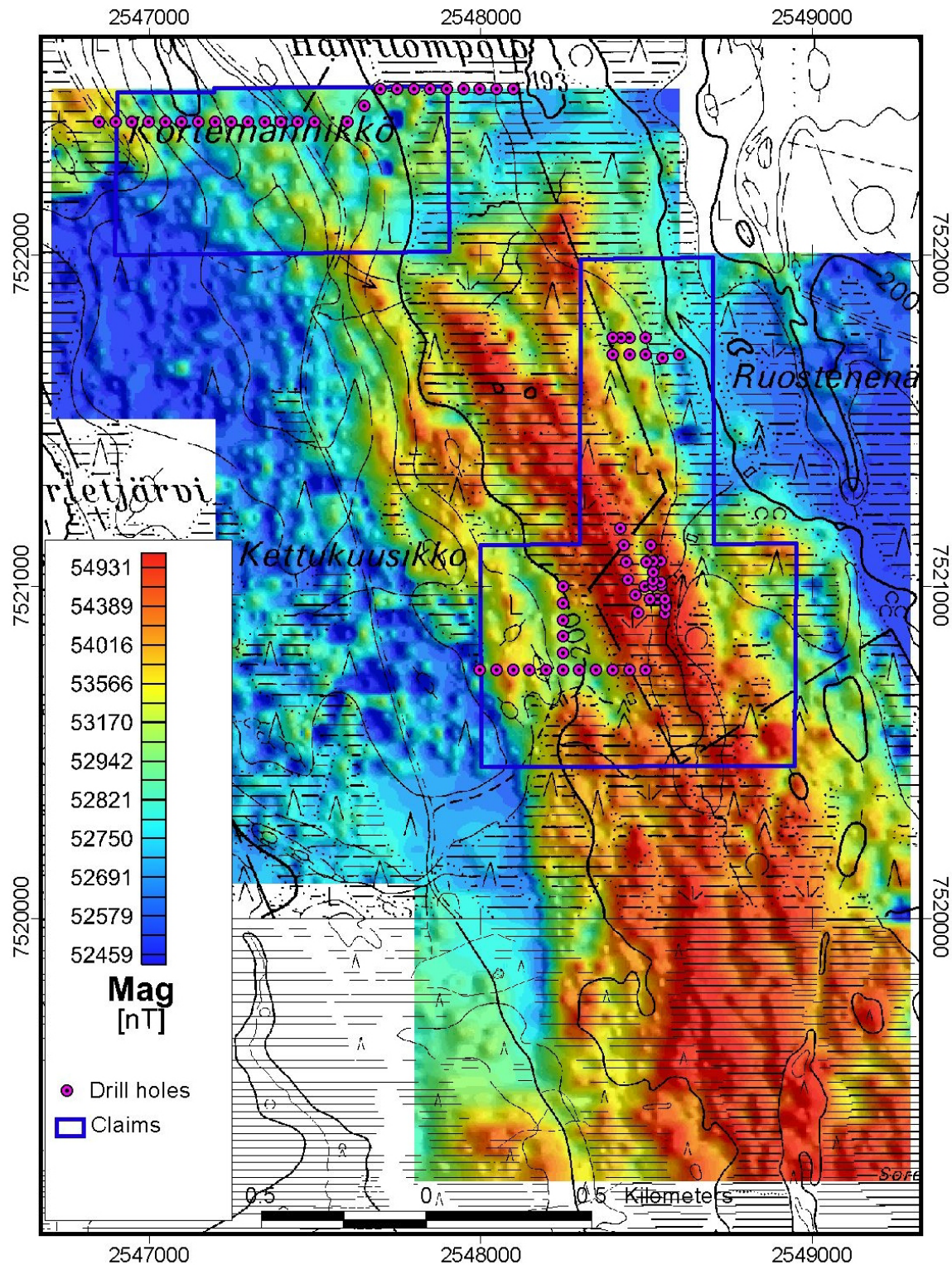


Figure 1. Shaded relief map of total magnetic field from Kettukuusikko area. Illuminated from northeast. Line spacing 50 m and station spacing 10 m

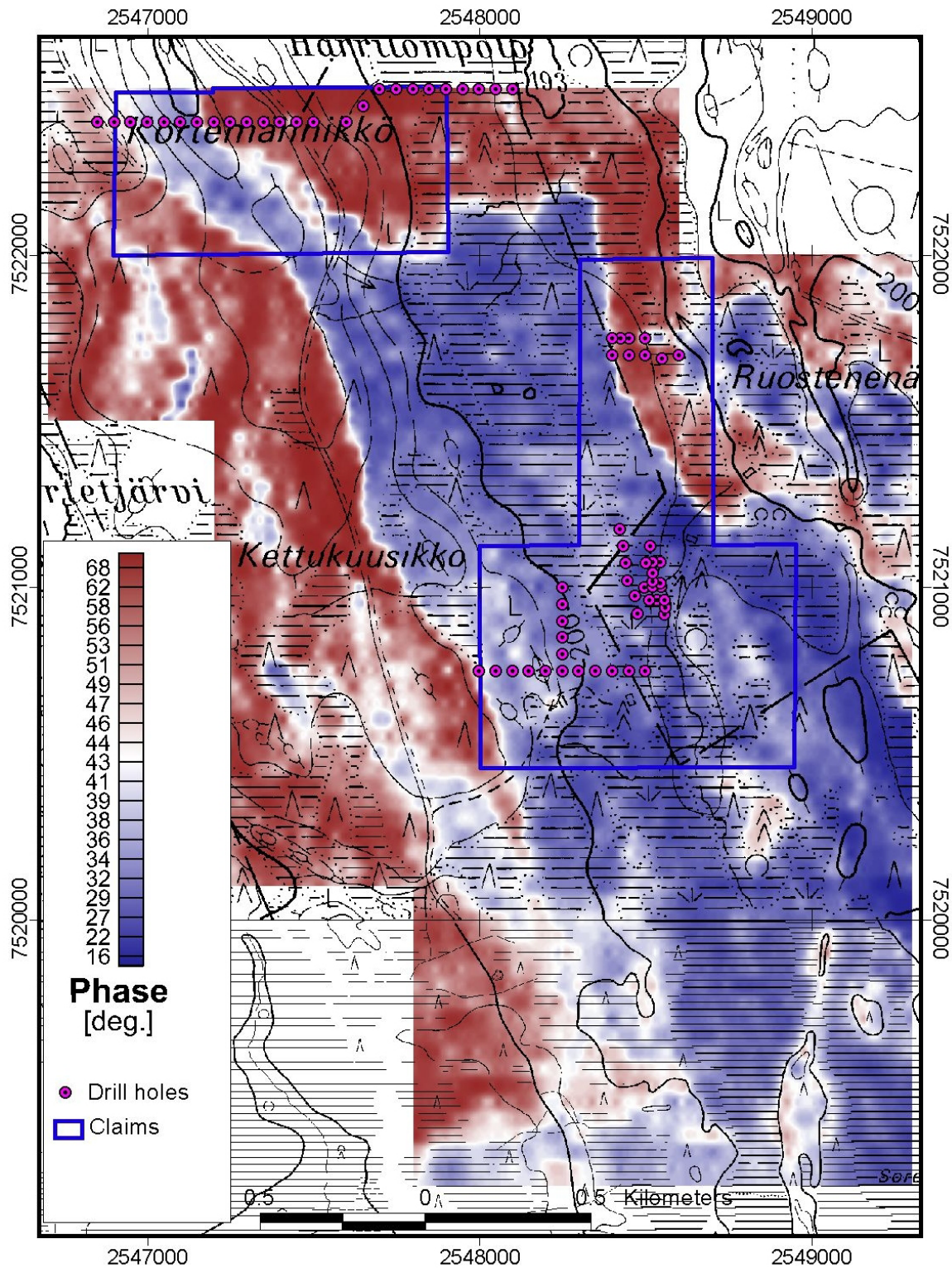


Figure 2. VLF-R phase map from Kettukuusikko area. Conductors can be seen as areas where phase angle is over 50 degrees. Line spacing 50 m, station spacing 10 m.

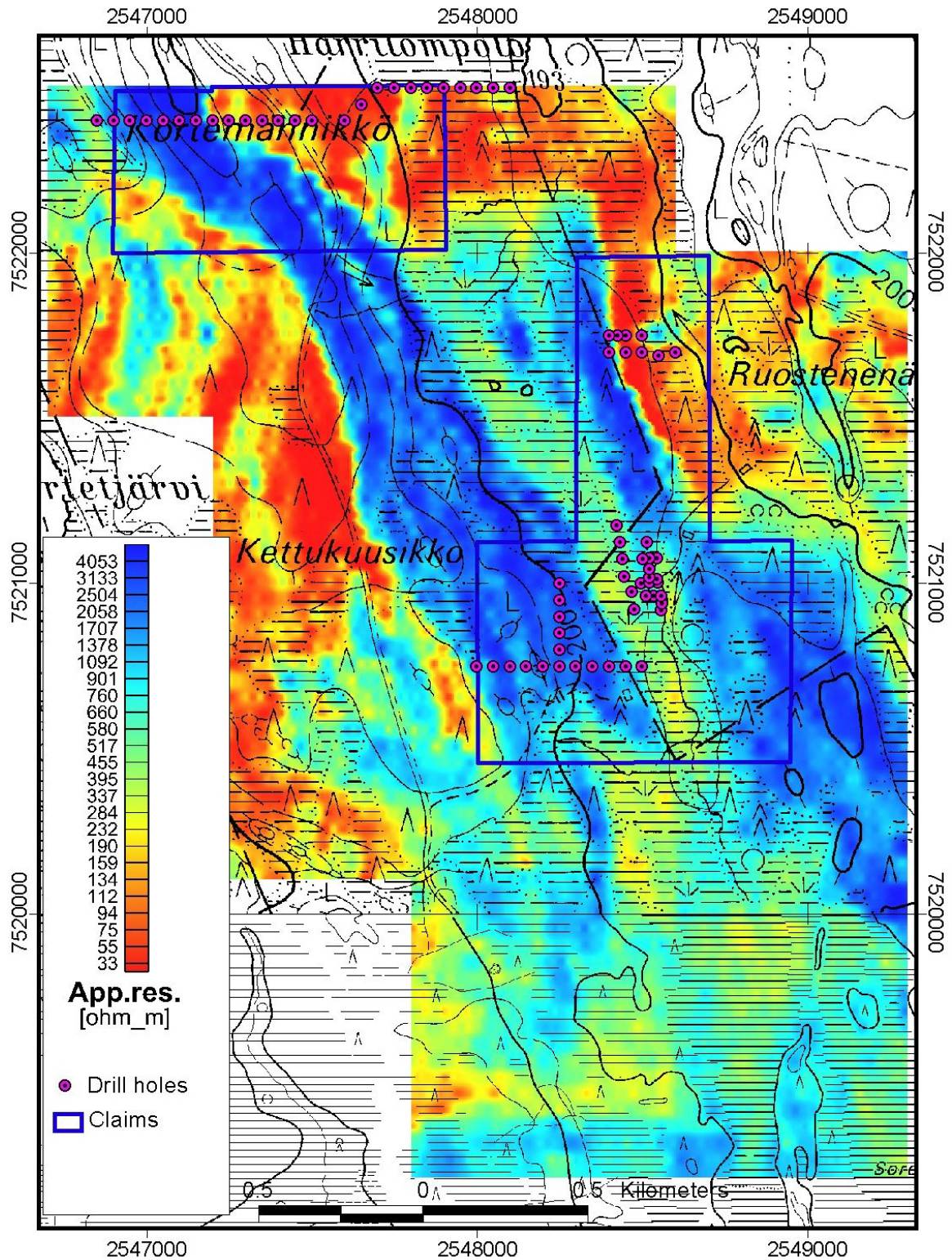


Figure 3. VLF-R apparent resistivity map from Kettukuusikko area. Line spacing 50 m, station spacing 10 m.

Petrophysical loggings from boreholes at Kettukuusikko

Hole	Density	Susceptibility	Resistivity	Chargeability	Gamma	Gamma
	spectrometry					
R571	46.6	45.5	46.1	46.1	44.4	45.918
R572	71.3	70.2	73.4	73.4	73.4	72.062
R573	103.9	103.0	103.7	103.7	102.0	104.915
Σ [m]	221.6	218.7	223.2	223.2	219.8	222.895

Quantity	Unit
Density	kg/m ³
Susceptibility	SI
Apparent resistivity	Ωm
Chargeability	%
Total gamma	μR/h
Spectral gamma	p/s % ppm
Depth	m