STORE NORSKE GULL

Store Norske Gull AS
Karasjok Exploration Program 2006-2012

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EXECUTIVE SUMMARY

Store Norske Gull As started exploration in the Palaeoproterozoic Karasjok Greenstone Belt (KGB) in 2004. Original aim of the exploration programme was to explore for magmatic nickel deposits, orogenic gold deposits and layered intrusion hosted PGE-deposits in the Karasjok greenstone belt. The prospectivity of KGB for this style of deposits was considered highest at the time as the belt is continuation of the Lapland Greenstone Belt in Finnish Lapland. In addition, KGB as geological environment is permissive for volcanic hosted massive sulphide, porphyry Cu-systems, iron-oxide-copper-gold, sediment hosted copper, and palaeoplacer gold and magmatic mafic-ultramafic intrusion hosted Ni-Cu-deposits eg. the Kevitsa (First Quantum) and Sakatti (Anglo American) deposits, and Rompas (Mawson) style Au-U mineralisation.

Airborne geophysical surveys in 2007-2009 covered almost the whole KGB. Surveys were contracted to GTK (Finnish Geological Survey) and the surveys were conducted at high resolution with flight line spacing of 200 m. Nominal flight height was 30 m. Three main datasets were acquired; magnetic, radiometric (gamma-ray spectrometry) and frequency-domain electromagnetic dataset. In 2011, airborne gravity and and magnetic survey (Fugro Airborne Surveys) was done to cover the main part of the Gallojavri ultramafic complex.

In 2009-2011, the Mine On-Line Service company was contracted to scan with their mobile laboratory containing on-line elemental XRF analysis technology all historical holes of Karasjok greenstone belt stored in the NGU core library (about 9000 m).

During field seasons, 1819 rock samples, 3767 conventional till samples, 1367 selective leach samples, 1141 heavy mineral samples, 230 snow samples have been collected and assayed. In addition, 2008 and 2009 total of 5093 m of diamond was drilled to test Rivdnesvadda, Ravnnaluhhpu, Suolomaras and Raitevarri targets. All drilling, bedrock and till sampling observations and assay data, have been logged and stored into MS-Access based databases using “BD-logger” software.

Drilling at Raitevarri was to test Cu-Au and heavy mineral anomalies. A number of features at the Raitevarri target are consistent with porphyry-style including host rock, alteration mineralogy and zonation, metal association and zonation, Cu and Au grades in an extensive domain of mineralisation at 0.1–1 % and 0.1–1 g/t, respectively. The

Ravnnaluhppu was drilled to test a till Au-Cu anomaly and the results suggest that Cu-Au mineralisation is most likely related to blackshist-felsic schist package and is volcanogenic massive sulphide (VMS) occurrence. The alteration zone was Cu-mineralized over 100 m drill hole length with maximum Cu values being up to 1 % and Co up to 3000 ppm. Highest gold values are in the semi massive sulphide schist (highest value 1 m @ 1.7 g/t).

Rivdnjesvadda Ni-target was drilled to test a selective leach Cu anomaly in till on top of an ultramafic rock unit. The highest Cu value is just over 1000 ppm (0.1%) at the deformed contact zone between country rocks and ultramafic rock.

Suolomaras overburden and outcrop Au anomaly was drilled and it intersected tens of metres of slightly Au anomalous Banded Iron Formation with best assay at 1 m @ 1.46 g/t Au. Mineralisation in Suolomaras is related to weak sulphide dissemination in Banded Iron Formation unit.

Remaining target for follow up are Suolojavri (Ni), Adjaskaidi (Ni-Cu), Geassajohka (Ni), Galdnajarjohka (Ni), Gallojavri (Ni-Cu-PGE), Bieskenjarga (Au) and Gamehiseana (Au). Testing of these targets could be done with deep overburden sampling (bottom of till) or diamond drilling. The Gallojavri ultramafic complex, which was recognised during exploration, is prospective for world class Ni-Cu-PGE deposits (Sakatti/Petchenga style).

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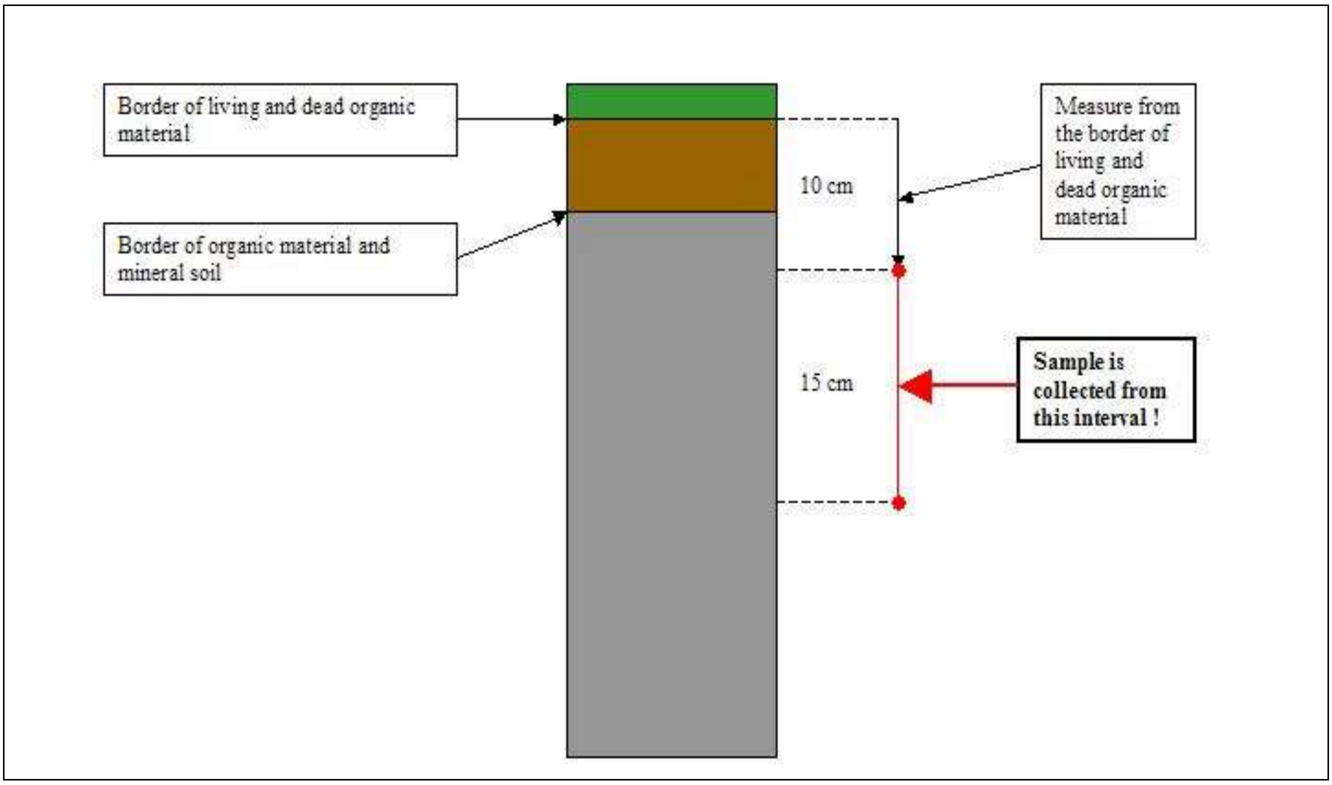

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Selective leach results for the overburden geochemical samples in the Geassaroavvi area on a processed aerogeophysical image highlighting bedrock structures and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo 2009).

1 INTRODUCTION

This report summarises the exploration work and results of the field seasons 2006-2012 conducted by the Store Norske Gull AS (SNG). Other company reports written between 2006 and 2012 are listed in the References.

1.1 Background

Original aim of the Store Norske exploration programme was targeting its exploration for komatiite hosted nickel deposits, orogenic gold deposits and layered intrusion hosted PGE-deposits in the Karasjok greenstone belt (Jokela, 2006). However, other styles of mineralisation were not to be ignored but previously mentioned styles are the most common styles in northern Fennoscadian Shield Paleoproterozoic greenstone belts.

1.2 Scope of Work

Based on lithological, stratigraphical and structural analogies to the other parts of the Central Lapland Greenstone Belt in Finland, the Karasjok Greenstone Belt is considered to be highly prospective for komatiite hosted nickel, orogenic gold and also layered intrusion hosted PGE-deposits eg. the Kevitsa (First Quantum) and Sakatti (Anglo American) deposits. In addition, there is a recent discovery of the Rompas style Au-U mineralisation in the Peräpohja Greenstone Belt where Mawson Resources has reported bonanza Au grades in grab samples and first drillholes along strike length of over 8 km. To date, only a few exploration campaigns for nickel, gold and PGE in the belt has been conducted and the belt is under-explored when compared to similar greenstone belts world-wide.

Modern exploration models are used on the base of the project planning, fieldwork and evolving interpretation of the exploration results. Sophisticated data processing and GIS (Geoscietific Information System) software are used to integrate, analyze, interpret and display all different geodata of the project.

The success of the project is greatly based on skillful and effective staff. One aim of this project is also to train students and junior geologists as competent field geologists with classical field skills combined with modern geological knowledge and technology.

Much of the 2008 till 2010 field seasons work was the continuation on the previously defined Ni targets which Jukka Jokela had generated (Jokela, 2006; Jokela, 2007; Jokela, 2007). However, since 2009 regional heavy mineral sampling and till geochemical sampling was also increasingly conducted also on the orogenic gold targets, defined using processed geophysics, structural geology and geochemistry. GIS analysis of spatial data was also used to generate targets for orogenic gold and magmatic nickel deposits in addition of using single dataset anomalies.

Aim of the first field seasons 2006-2008 had been to define more detailed targets for Au-, Ni- and PGE-exploration in KGB. During the office season 2009, field, geochemical and aerogeophysical data were processed and drilling targets were defined and drilled in the Rivdnesvadda, Ravnnaluhppu and Raitevarri areas. In addition to drill testing of these targets, in the field seasons 2009 - 2012 regional mapping, heavy mineral and geochemical work was continued to define additional exploration targets. Furthermore, targeted mapping and sampling over geophysical anomalies which are modelled to be ultramafic bodies was continued.

Another important aim has been on continuous training of the SNG's field staff to have access to competent field geologists with classical field skills combined with good knowledge of modern geology, geochemistry and technology.

1.3 Personel

The field work from 2006 till 2007 was supervised by Senior Geologist, MSc Jukka Jokela (JJK) and from 2008 till 2012 by Senior geologist, PhD Juhani Ojala (VJO). In addition, Harald Hansen (HAH) and Hannu Ahola (HJA) have worked as exploration geologists since 2008 and 2009 respectively. In addition, 2007-2011 logistics were conducted by Björn Fjukstad. Lars Anti has been assisting in sampling and core cutting 2008-2010. Halfdan Næss has been assisting in logistics since 2006. Lars Anti and Halftan Næss are both local residents in Karasjok.

In the field, work was done in 2 person teams. Members of the SNG field crews 2006-2012 are listed in the Table 1.

Table 1 Summary of field assistants and geologist who have worked in the Karasjok area for SNG since 2006.

FIRST	SURNAME	INITIALS	2013	2012	2011	2010	2009	2008	2007	2006
Riku	Aho	RVA		2012	2011					
Hannu	Ahola	HJA		2012	2011	2010	2009	2008	2007	2006
Audun	Andersen	AAN								2006
Jussi	Annanolli	JTA					2009	2008	2007	
Hallgeir	Elvenes	HGE		2012						
Jon	Frantzen	JHF								
Silje	Hagen	SHH				2010				
Harald	Hansen	HAH		2012	2011	2010	2009	2008	2007	2006
Emil	Husby	EDH						2008		
Jani	Jäsberg	JPJ			2011	2010				
Jukka	Jokela	JJK							2007	2006
Pekka	Kämäräinen	VPK							2007	2006
Teemu	Karlsson	TEK				2010	2009			
Tuomas	Kauti	TJK		2012						
Tiia	Kivisaari	TTK						2008		
Teemu	Lundgren	TAL			2011	2010	2009			
Kirsi	Luolavirta	KML					2009			
Anna	Meriluoto	AMM						2008	2007	
Kjersti	Moen	KMO			2011					
Juhani	Ojala	VJO		2012	2011	2010	2009	2008		
Juha	Ovaskainen	JMO						2008		
Jonna	Poikolainen	JAP					2009			
Eemeli	Rantanen	EHR					2009			
Henrik	Riise	HER					2009			
Birgit	Rustad	BKR					2009			
Håvard	Simonsen	HKS			2011	2010	2009			
Jörgen	Stenvold	JST					2009	2008		
Lene	Thorstensen	LTH			2011					
Göril	Tjetland	GTJ							2007	
Sara	Tviberg	SBT					2009			

1.4 Work Completed

Airborne geophysical surveys 2007-2009 were contracted to GTK (Finnish Geological Survey) and BGS (British Geological Survey). The surveys were conducted at high resolution with flight line spacing of 200 m. Nominal flight height was 30 m. Three main datasets were acquired; magnetic, radiometric (gamma-ray spectrometry) and frequency-domain electromagnetic dataset. The high resolution airborne geophysics has been in the key role defining the favourable structures and rock units for more detailed bedrock mapping and geochemical sampling. However, the Ravnnaluppu area is so close to the Karasjok town that it was not inside of the airborne survey conducted in 2007-2009. Aerogeophysical data have been processed by GTK, Aarnisalo Exploration, and Astrock.

In 2011, airborne gravity and and magnetic survey was contracted to Fugro Airborne Surveys and data was processed by Fugro, GTK and NGU.

Regional heavy mineral and till geochemical mapping were mainly done along the sample network designed to use access from the main roads and ATV tracks in 2006-2007. Since 2008 sampling was also directed to test new structural and GIS targets. Furthermore, sampling sites which returned anomalous nugget numbers in previous years sampling were resampled with additional samples around the original sampling site.

In 2008, core diamond drilling was done in Ravnnaluhhpu and Raitevarri. In Ravnnaluhppu, three holes totalling 493.64 m in one profile and in Raitevarri, six hole totalling 1067.19 m were drilled.

In 2009, a ground geophysical survey (magnetics and Slingram) was done to cover the Ravnnaluhppu target area. The data was processed by Astrock.

In 2009, cored diamond drilling was done in the Rivdnesvadda, Ravnnaluhhpu, Suolomaras and Raitevarri. In Rivdnesvadda, three holes, totalling of 370.5 m in one profile, Ravnnaluhppu, 6 holes totalling 873.3 m, Suolomaras 4 holes totalling 406.8 m, and Raitevarri 23 holes totalling 2376 m were drilled (total 4025.5 m drill lenght, about 3850 m core)

In 2009-2011, the Mine On-Line Service company was contracted to scan with their mobile laboratory containing on-line elemental XRF analysis technology all historical holes of Karasjok greenstone belt stored in the NGU core library. Almost 9000 m of core was scanned and the data are also stored in the Mine On-Line Service webserver and accessed using the RemoLog web application to which can also display charts from the measured data. (user name: sNsG9171, password: SaMMa2Kakka).

Table 2 Summary of sample types collected in the Karasjok Greenstone Belt

Year	2006	2007	2008	2009	2010	2011	2012	Total
Rock Samples	138	501	367	192	305	242	74	1819
Soil/till Samples	287	185	857	551	404	980	503	3767
Selective Leach Samples	0	302	652	342	0	68	0	1364
Heavy Mineral Samples	287	185	208	127	115	159	60	1141
Snow Samples	0	0	0	0	0	0	230	230
Drill Core assayed	0	0	1669	4024	0	0	0	5693
Yearly Total	712	1173	3753	5236	824	1449	867	14014

Table 3 Summary of MOLS XRF scanned drill holes in the Karasjok Greenstone Belt

MOLS Project ID	Year	NO holes	Boxes	Meters
117PO1	2009	2	78	400
PO2	2010	95	862	4536
117PO3	2011	95	803	3500
Njuocokka02	2011	2	18	162
Gallujavrep2	2011	3	78	361
Total 2009-2011				8959

- 1819 Rock samples assayed
- 3767 Overburden geochemical samples (till) assayed, from which 1141 are heavy mineral sample pairs
- 1141 Heavy mineral samples processed (5 liters from 1 meter depth)
- 1321 Overburden samples assayed for a selective leach method
- 230 Snow samples
- 5693 drill core samples assayed from 5586 Meters drilled to 4 different targets (3443 m to Raitevarri)
- Geophysics (Mag, EM, radiometrics) flown from the whole greenstone belt, Gallojavri area includes gravimetrics, ground survey in Ravnnaluhppu
- Geophysical data processed by GTK, Astrock and Jussi Aarnisalo (lithological control, spatial modeling for Au- and Ni- targets)
- Mine On-Line xrf scanning of 9000 m of historic holes drilled in Karajok and Porsvann commune

1.5 Limitations

This report is the result of using data gathered through SNG exploration and other public domain sources. SNG opinions within this document are based on the information available at the time and previous experiences of the personnel involved in similar areas in Fennoscandian Shield and other areas in the world. SNG does not guarantee the legitimacy or accuracy of any information utilized in this report that has been obtained from secondary sources.

SNG has done customer audits to the sample preparation laboratory of ALS Chemex in Piteå and the assay laboratories of Labtium in Sodankylä and Rovaniemi and has not found anything unusual to address.

SNG is not aware of any other information that would materially impact on the findings and conclusions of the report.

1.6 Disclaimer

SNG has done customer audits to the sample preparation laboratory of ALS Chemex in Piteå and the assay laboratories of Labtium in Sodankylä and Rovaniemi and has not found anything unusual to address.

SNG is not aware of any other information that would materially impact on the findings and conclusions of the report.

1.7 Qualification of Consultants

The Geological Survey of Finland (GTK) is a European centre of excellence in assessment, research and sustainable use of Earth resources. GTK has long-term expertise and experience in multi-purpose surveying methods, ground surveys, and processing and interpretation of results.

Astrock is an independent geophysical consulting company providing geophysical surveys and project management for airborne, ground and borehole geophysical surveys and processing (modeling and inversion) of acquired data, and reporting.

Mine On-Line Service (MOLS) holds different on-line mineral analysis technologies in one house and offers measurement and analysis as a service. MOLS employ experienced personnel in the fields of mining and mineral processing as well as mineralogical analysis technology. Mine On-Line Service and their partner IMA Engineering Ltd. offer services and equipment for analysis of till samples, drill cores, drill cuttings, and ore on the conveyor belt.

Fugro Airborne Surveys is an international geophysical survey company providing geophysical mapping including airborne gravity. Their FALCON system is the world's first airborne gravity gradiometer (AGG) and is the only operating AGG technology developed specifically for airborne purposes.

Juhani (Jussi) Aarnisalo is an independent consultant specialised image processing. He has over 40 year experience in image processing during his employment in Outokumpu Oy.

2 PROPERTY, LOCATION AND DESCRIPTION

2.1 Licence Location

During 2004-2012, Store Norske Gull have had rights for altogether 465 claims and preclaims in the Karasjok greenstone belt covering an area of 163.4 km^2. Location and distribution of the claims are shown in Figure 1.

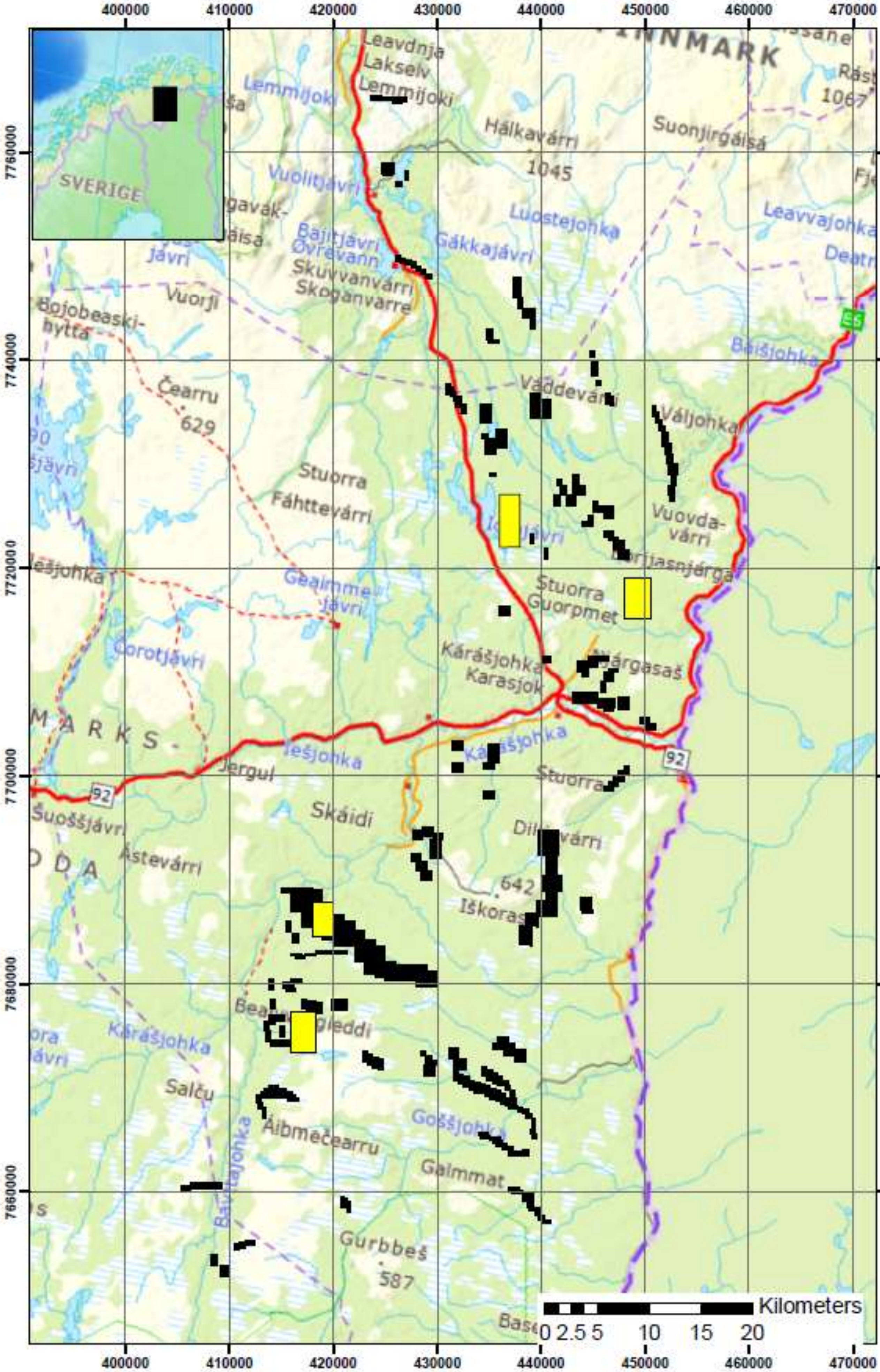

Figure 1 SNG's claims and preclaims 2004-2012. Most of the claims were relinquished in 2011. The claim areas valid in 2012 shown yellow.

2.2 License Status

Most of the Store Norske claims were acquired 2004-2006 and were securing Ni targets. In 2010, most claims were relinquished but also three new preclaims were done under the new mineral law that was introduced in 2010. One 10 km^2 claim to cover the Gallojavri PGE-Ni target after Anglo American relinquished their claims, one 10 km^2 claim over the Skierrevarri area based on a heavy mineral gold nugget anomaly, and one 10 km^2 claim to cover the Geassoroavvi Au anomaly (till geochemistry and heavy mineral).

2.3 Geomorphology

Although the Karasjok Greenstone Belt is in the pre-Caledonian plateau, there are some significant differences in the relief. The steepest slopes are found in the valley of the Karasjok River. The Karasjok River valley is approximately 150 meters above sea level (a.s.l.) and the highest mountain in the study area, Iskoras, is 642 m a.s.l. If river valleys are not considered, the topography of the area is gently or moderately sloping (Olsen, 1998).

3 ACCESSIBILITY, CLIMATE, INFRASTRUCTURE

3.1 Access

The Karasjok town is located in Finnmark northern Norway 13 km west from the Finnish border and can be accessed by paved roads from Alta (197 km), Kautokeino (128 km), Lakselv (78 km), Tana (180 km) and Karigasniemi in Finland (18 km). Transportation by bus is possible to previous locations, at least in summertime. The closest airport is in Lakselv with daily flights to Tromsø.

Most of the exploration targets in Karasjok have to be accessed with an ATV, a snowmobile in the winter or by a helicopter. The existing roads follow the main rivers Karasjohka, Iesjohka, Anarjohka and Gossjohka. North of Karasjok is easier to access, because of the paved road to Lakselv, whereas the southernmost parts of the greenstone belt are tens of kilometers from the closest roads. The ATV-track network is comprehensive, but only the licensed tracks can be used in regional style work. In special cases, a license to drive outside the official tracks can be applied from the municipality. Also a landing permit for the helicopter and a license to use a snowmobile are mandatory and can be applied from the municipal administration.

3.2 Climate

The climate is dry subarctic with 340 mm annual rainfall and a mean annual temperature of –1,5°C. (Olsen, et al., 1996)

3.3 Local Infrastructure

The Karasjok town is the municipal capital and all the basic consumables and services are available. In addition to the municipal administration, the head administrative center of the Sami people, the Sametinget, is located in Karasjok.

Altough the Karasjok municipality is the second largest in Norway, there are less than 3000 inhabitants. Most of the people live in the Karasjok town and along the Karasjohka and Tana rivers. There is no professional geological workforce available in Karasjok, but people for general tasks exist.

The mobile phone coverage is good close to the town and the link stations in Iskoras (south) and Rivdnjesvadda (north). Especially in the southernmost parts the coverage is limited outside the highest fjells. Near the Finnish border, Finnish mobile networks may be stronger than Norwegian ones. The Karasjok town and dwelling along major roads are within the fiber optic network and high speed broadband internet service is available.

4 HISTORY

4.1 History of Mining

There are no known records of historical mining other than small scale alluvial gold mining. Alluvial mining workings have been found along the rivers of Karasjok, Anarjohka and Sargejohka. In addition, there is a self-serve gold panning site for tourists in the Helligskogen, in the Anarjohka valley.

4.2 History of Exploration Licenses

In 2004, following the work done by Geologiske Tjenester AS, SNG got involved and did first claiming. Most of the claims were relinquished in 2010 mostly due to noticeable worsening of the local political climate, and lack of resources to explore all claim areas.

4.3 History of Exploration

Exploration in Karasjok and in Finnish Lapland started in 1866 when Norwegian geologist Tellef Dahl found the first gold nuggets from the river Niitosjohka just next to the centre of the Karasjok village. The focus after that was in alluvial gold mining until the late 1950’s when NGU started to explore the banded iron formations in the southern part of the greenstone belt (Prieseman 1983). Since then, several companies have been in Karasjok searching for base and precious metals. Most extensive regional work was done by AS Sydvaranger in the northern part of Karasjok in the late 1970’s and early 1980’s. Latest efforts have been Rio Tinto in the Raitevarri Cu-Au occurrence in the 1990’s, Tertiary Minerals and Anglo American in the Gallojavri Ni-Cu-PGE-target (early 2000). Store Norske Gull AS has been doing exploration work in Karasjok since 2004.

5 GEOLOGICAL SETTING

5.1 Regional

The Karasjok Greenstone Belt (KGB) is located in Finnmark, in the northern Fennoscandian Shield. North–South trending KGB is about 160 km long and 20-40 km wide. Direct southern continuities of KGB, in the Finnish side of the border are about 70 km long, and are called as the Pulju Greenstone Belt. In more regional scale Karasjok - and Pulju Greenstone Belts are part of the Proterozoic Central Lapland Greenstone Belt, or even broader contex the Lapland Greenstone Area. KGB stratigraphy and age can be correlated to the lower and middle parts of the Central Lapland Greenstone Belt stratigraphy and Peräpohja Greenstone Belt.

5.1.1 Bedrock Geology

KGB is part of the Karasjok-Levajok tectonic belt. Other segments in the belt are the Levajok Granulite Complex and the Tanaelv Migmatite Complex (TMC). The greenstone belt is about 160 km long and 20 to 40 km wide. The belt continues into Finland as the Central Lapland Greenstone Complex. Jergul Gneiss Complex is on the western side of KGB, which is partly under the overthrusted greenstone belt. On the eastern side KGB is partly under the overthrusted TMC. Different members in the tectonic belt are N-S striking, east dipping and separated by east-dipping thrust zones (Braathen & Davidsen, 2000).

KGB can be divided in to five different formations: the Vuomegielas , the Skuvvanvarri, the Gållebaike, the Bakkilvarri and the Raitegårzi Formations. The Vuomegielas Formation consists of fine-grained foliated amphibolites, biotite schists and ultramafic rocks. The Skuvvanvarri Formation is characterized by terrigenous clastic sediments. The Gållebaiki Formation is formed by intermediate tuffaceous rocks, with layers of metamorphosed mafic volcanic rocks and komatiites, intermingled with metamorphosed sedimentary rocks. The Bakkilvarri Formation consists of mafic and ultramafic volcanic rocks. The Raitegårzi Formation is characterized by aluminous mica schists and mafic volcanic and intrusive rocks (Braathen & Davidsen, 2000).

The Proterozoic Karasjok Greenstone Belt (KGB) is bordered in the west by the Jergull Gneiss Complex and in the east by the Tanaelv Migmatite Complex; both complexes are marked Archaean in age on the Geological map of the Fennoscandian Shield (Koistinen, et al., 2001). The Jergull Gneiss Complex is interpreted to be the base for KGB and it is most likely largely reworked during Proterozoic deformations like the Hetta Granitoid Complex in Finnish side.

Braathen and Davidsen (2000) divided Proterozoic deformation events are in four different stages (D1-D4) in the Karasjok greenstone belt. These are considered to be the main events defining the geometry of KGB. Deformation style varies from ductile to ductile-brittle and brittle (folding, shearing and faulting). They suggest a model in which the assembling of the Karasjok Greenstone Belt, the Tanaelv Migmatite Complex and the Levajok Granulite Complex occurred from major orogen-normal E–W contraction (collision) during the D1 episode. At this stage the greenstone belt was isoclinally folded and welded to overlying units during west-directed overthrusting of the medium- to high-grade complexes. From then on the greenstone belt acted as a basal detachment zone. The D2 episode of NNE–SSW shortening and SSW-directed thrust emplacement suggest dextral and orogen-oblique movement patterns, prior to continued orogen-perpendicular E–W shortening during the D3 episode. The final faulting (D4) may relate to a post-orogenic, shield-scale strike-slip event (Braathen & Davidsen, 2000).

Metamorphic grade varies from greenschist facies to amphibolite facies, with a general trend of increasing metamorphic grade to east (Braathen & Davidsen, 2000).

The new aerogeophysical surveys, interpretations of processed geophysics, geological mapping and geochemistry have provided some new insights to KGB geology. Main new interpretation is that the Gallojavri intrusion (and the PGE-Ni-mineralisation) is part of a larger mafic-ultramafic layered intrusion complex over 40 km length from Bieskenjarga in the south to Suolojavri in the north. It is obvious that the mafic-ultramafic magmatism is a significant part of the lower part of the KGB stratigraphy in it’s whole length and comparable to rock’s at the same stratigraphic levels in the Central Lapland Greenstone Belt.

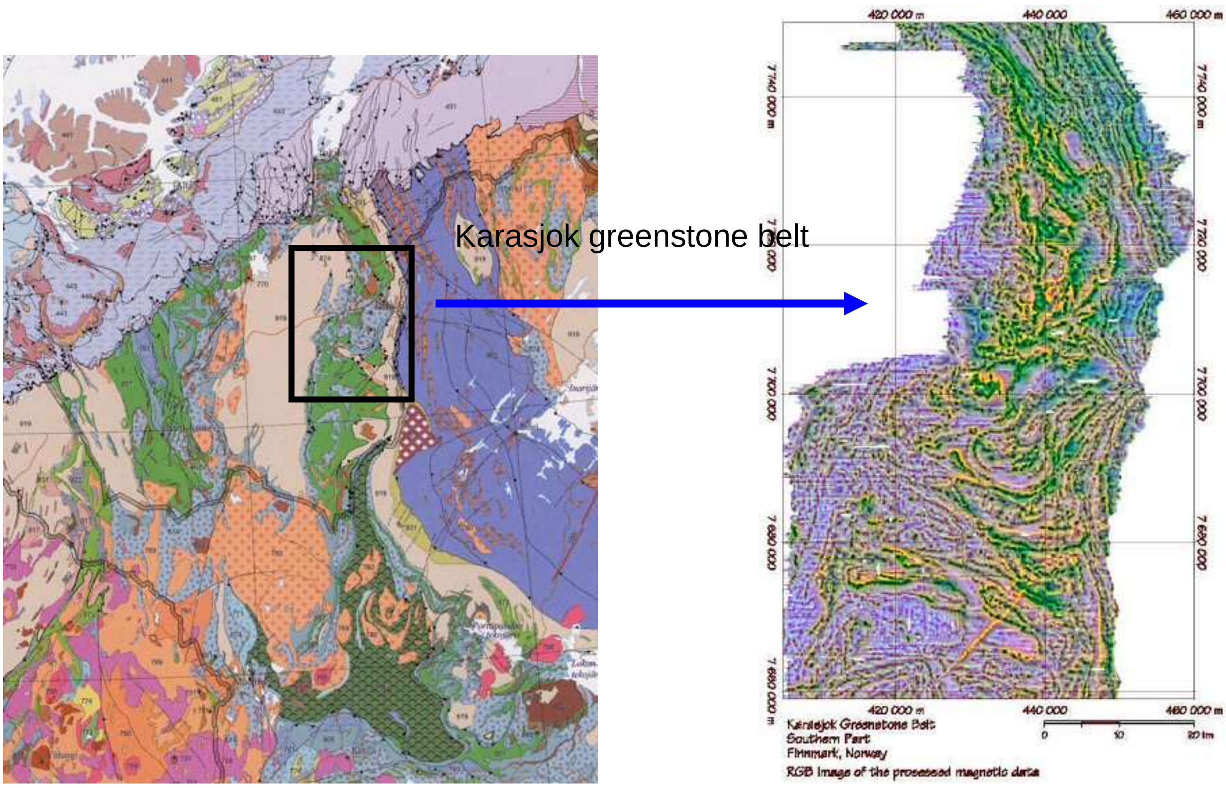

Figure 2 a) Central Lapland greenstone belt. b). Karasjok greenstone belt (processed magnetic image from NGU airborne geophysics).

5.1.2 Quaternary Geology

In the prevailing conditions of the Karasjok study area the predominant soil forming processes are gleying, podzolisation, brunification and oxidation (Olsen, 1998). Weathered bedrock can be found from topographic depressions and hill slopes under the drift deposits. The thickness of the pre-Quaternary weathered bedrock can reach 30-35m in some places (Olsen, et al., 1996). The thickness of the superficial deposits on top of the bedrock is usually at least 2-3 meters (Ihlen, 2005).

The glacial history of the area consists of several glacial and deglacial events. After Olsen et al. (1996), there have been at least seven glaciations during the last 300-340 ka. This argument is based on the glacial and deglacial deposits that were discovered from Finnmarksvidda by excavations made mainly by NGU (Olsen, et al., 1996). Ice flow directions in the research area are mostly towards the north or northeast. In the river valleys and other places with high relief the ice flow directions may differ from the general flow direction trend of the area. Especially when the thickness of the ice became smaller, the glacier started to flow along the valleys (Olsen, et al., 1996; Johansson & Kujansuu, 2005). In addition, according to Johansson and Kujansuu (2005) there is evidence of glacial flow towards the southeast. Fragments of Caledonian rocks have been found in the Tana River valley and in the western areas of Utsjoki and in the Lemmenjoki areas. This southeastern direction is considered to represent the early Weichselian glacial flow.

The uppermost till in the eastern area of Finnmarksvidda is predominately an ablation/melt-out till. It is normally thinner than the underlying glacial units, which have an approximate thickness of 2-3 m (Olsen, et al., 1996). In areas of high relief, debris flow and rock fall materials may constitute a major part of the superficial deposits. According to Olsen et al. (1996), the pre- and early Weichselian tills are more lodgement-type than the younger ones, which are more melt-out- type. Lodgement tills are more compact and finer grained than the melt-out/ablation tills. The average transport distance for the coarser material in till is 5-7 km in the study area (Olsen, et al., 1996). Observations made during fieldwork done by SNG showed a variety of superficial deposits in the study area. In general, the uppermost part of the drift was ablation/meltout till, but in the valleys and lowlands glaciofluvial/fluvial, glaciolacustrine, hummocky moraine and eolian sediments were identified. In addition, most of the outcrops were found in the river valleys. Observations were made only to a depth of 1 m, therefore there is no knowledge about the total thickness of the drift deposits. Some ideas about the thickness of the drift deposits and different beds are presented by Olsen et al. (1996) and Often and Olsen (1986). For example, Often and Olsen (1986) found glaciolacustrine material in the Sargejåk area during NGU's excavations. They reported a three-meter thick glaciolacustrine sediment suite. In the river valleys the thickness of the superficial deposits can be tens of meters. Over 40 m of drift deposits was found on top of the bedrock near the crossing of the Karasjok and Inarijoki rivers (Olsen, et al., 1996).

5.2 Local

Descriptions of local geology of different lease and exploration target areas are included under the Exploration section of the report.

5.3 Deposit Types

Based on lithological, stratigraphical and structural analogies to the other parts of the Central Lapland Greenstone Belt and greenstone belts world-wide, the Karasjok Greenstone Belt can be considered to be prospective for volcanic hosted massive sulphide, komatiite hosted nickel, orogenic gold and also layered intrusion hosted PGE- and magmatic mafic-ultramafic intrusion hosted Ni-Cu-deposits eg. the Kevitsa (First Quantum) and Sakatti (Anglo American) deposits. In addition, there is a recent discovery of the Rompas style Au-U mineralisation in the Peräpohja Greenstone Belt. Furthermore, the geological environment is permissive for porphyry Cu-systems, iron-oxide-copper-gold, sediment hosted copper, and palaeoplacer gold deposits. Historical records also mention discovery of 2.1 mm and 3.5 mm diamonds in the Sargejohka area by alluvial gold miner Robert Gulbrandsen in 1995.

5.4 Mineralisation

Different types of mineralisations have been detected during the current exploration program. These have been interpreted to represent ultramafic-mafic intrusion hosted Ni-Cu-PGE, Volcanic hosted massive sulphide, porphyry Cu, and orogenic gold mineralisation.

6 EXPLORATION

6.1 Introduction

Although the Karasjok Greenstone Belt is considered to be highly prospective for many metals, only a few exploration campaigns for nickel, gold and PGE in the belt has been conducted and the belt is under-explored when compared to similar greenstone belts world-wide.

6.2 Targetting – GIS Modelling

Prospectivity modelling of the Karasjok area for Au and Ni was conducted with Vesa Nykänen (Geological Survey of Finland, Rovaniemi) using geological map, regional gravity, processed aerogeophysical and NGU regional geochemical data. Modelling parameters were modified from the GIS modelling of Au and Ni prospectivity of the Central Lapland where 4 Au-mines and about 40 gold occurrences, and Kevitsa Ni-mine and Sakatti Ni discovery have been used to define critical parameters (Ojala & Nykänen, 2007) (Nykänen & Salmirinne, 2007) (Nykänen, 2008) (Nykänen, 2011). In addition to the structures derived from the geological maps, edge detection (“worms, or maxima of potential field horizontal gradients) of gravity and magnetic data were also used as a proxy for geological structures (Lahti, et al., 2010). For the gold prospectivity modelling, the main variables used were distance to faults, anticlines, worms (magnetic and gravity), distance to graditoids and surrounding gneisses, resistivity, geochemical sulphide indicators (Fe, Cu, Ni) in till, Au pathfinders (As, Te) in till, distance to contacts and lithodiversity (Figure 3). Thus, the GIS models are designed to combine large number of critical parameters into prospectivity maps (Figure 4). These have then been used in targeted sampling since 2009.

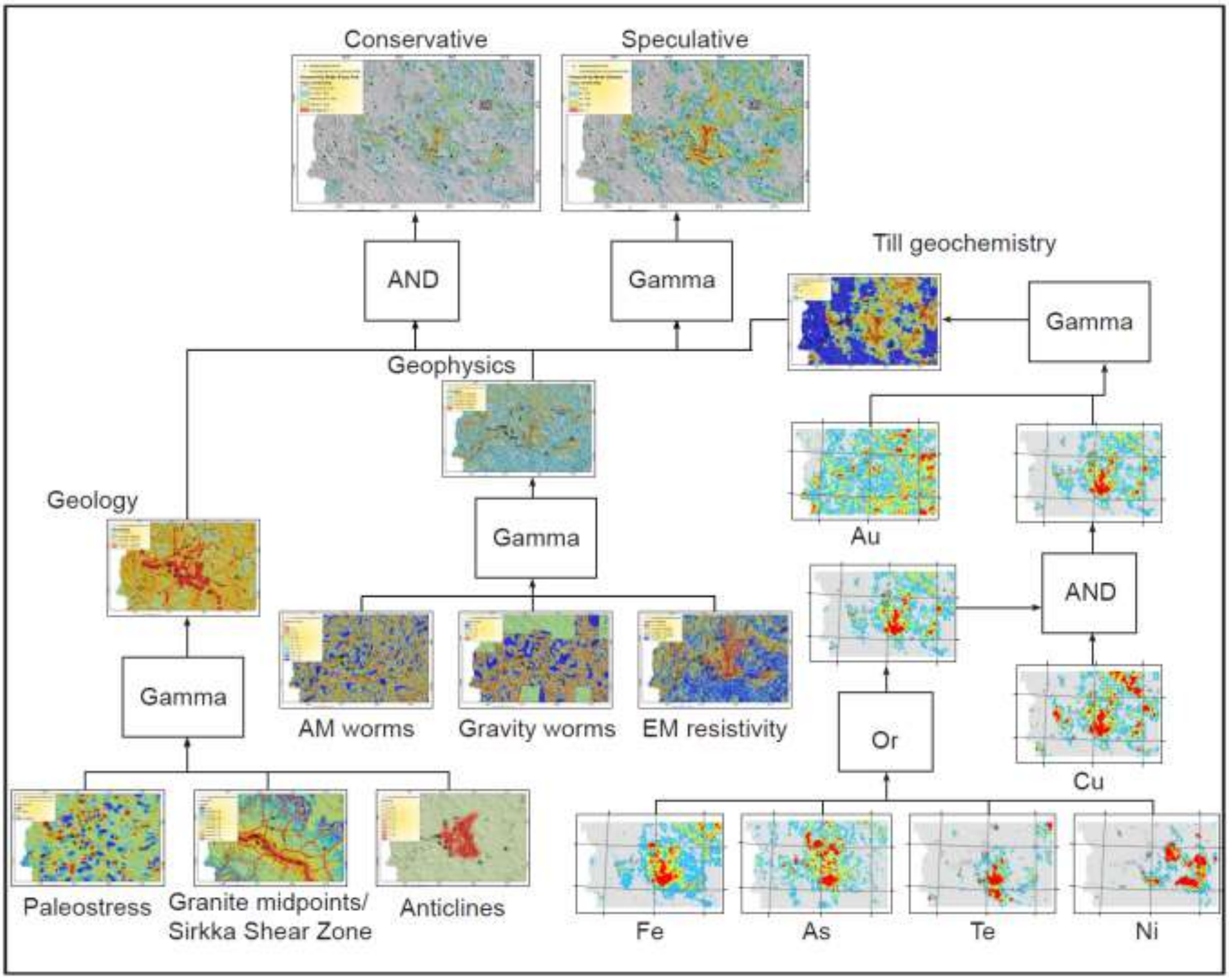

Figure 3 Central Lapland Greenstone Belt flow chart describing the data integration network used for the gold GIS model (Nykänen et al 2011). The same model was applied to the Karasjok Greenstone belt except the paleostress model was not used, and distance to contacts and lithodiversity were included in the models.

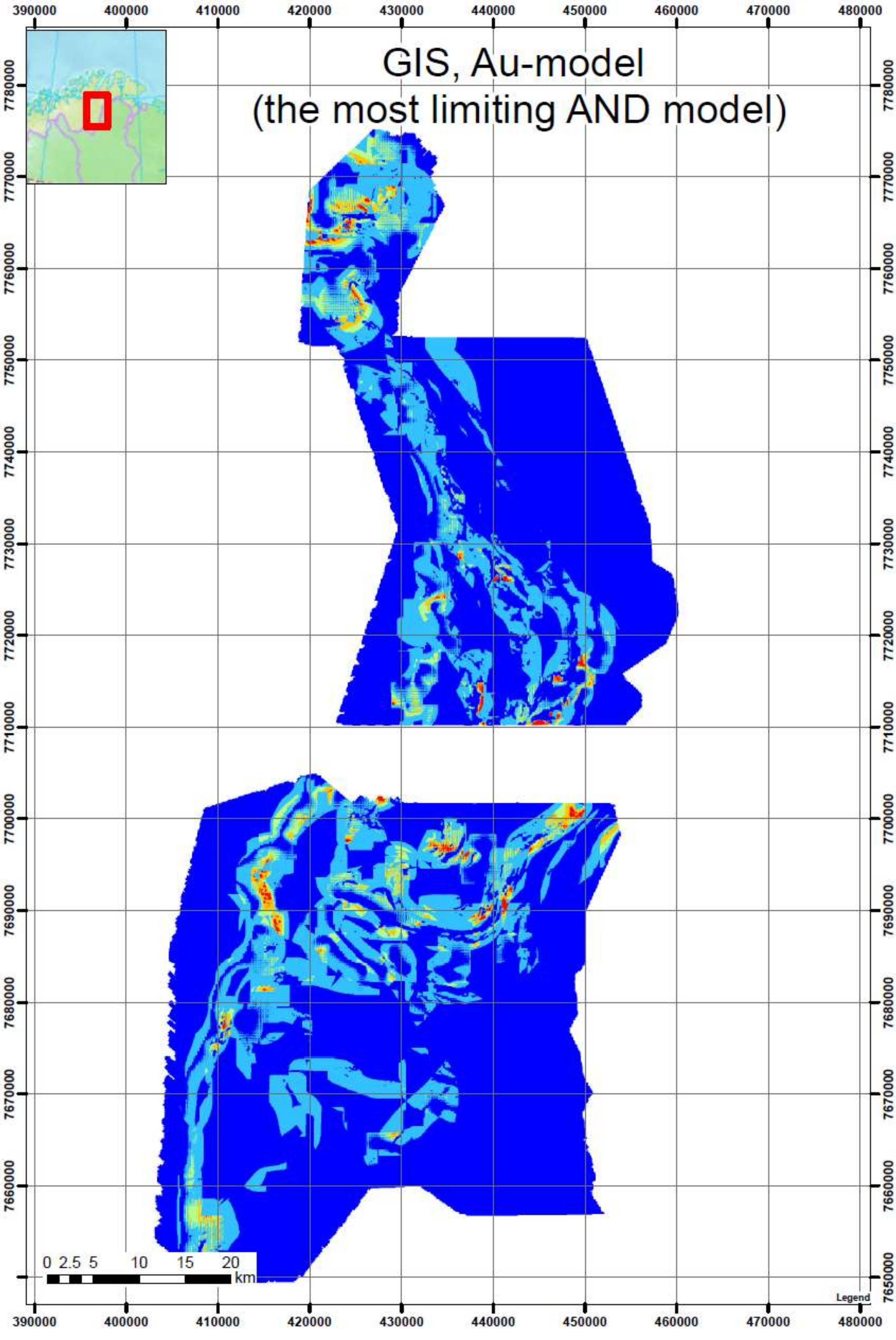

Figure 4. The most conservative Au prospetivity model for the Karasjok Greenstone Belt.

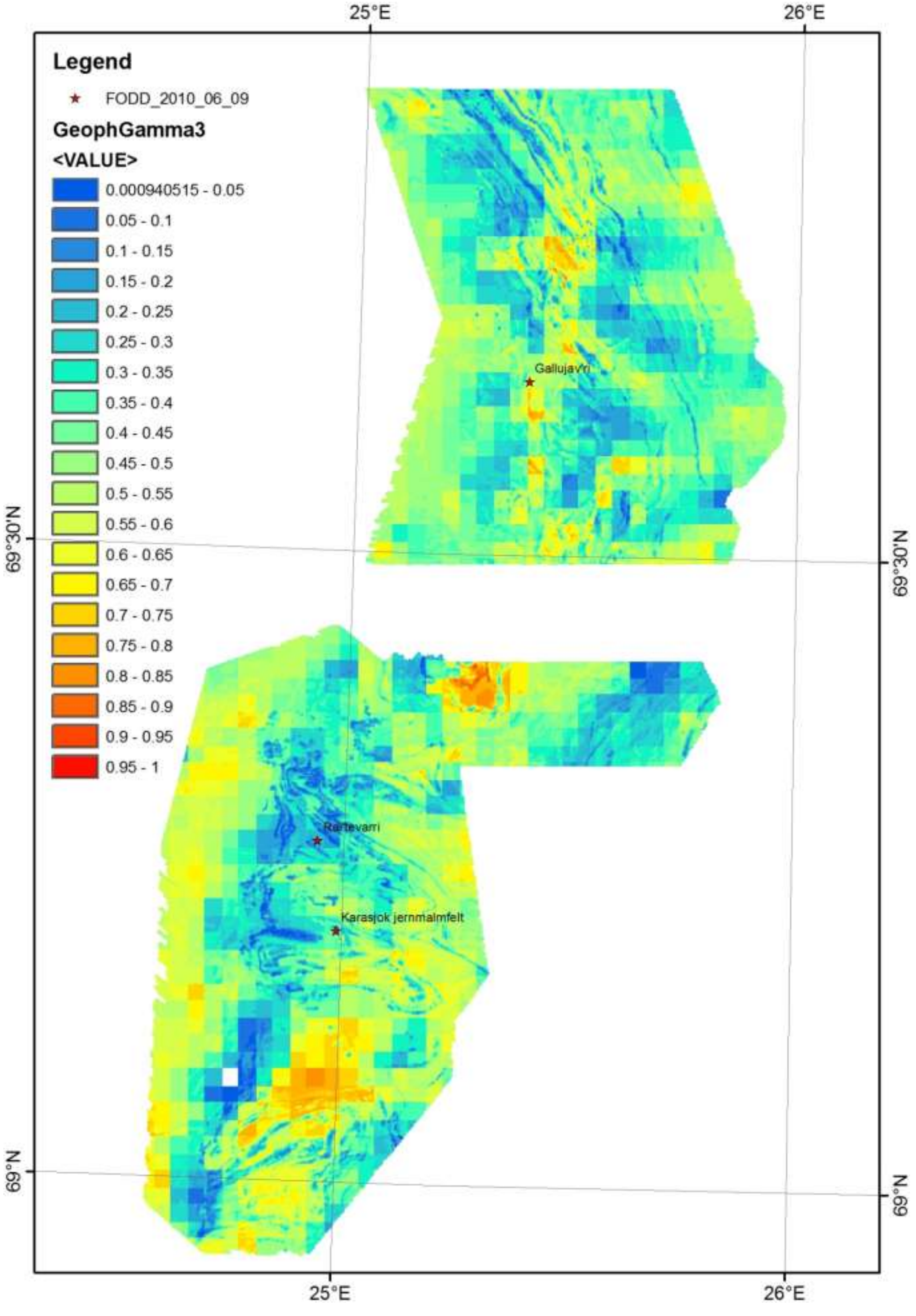

Figure 5 Nickel prospectivity model for the Karasjok Greenstone Belt.

6.3 Mapping and Sampling

Outcrops, boulders, overburden geochemical sample locations were measured by handheld GPS receivers, and the drill hole collars were measured with differential GPS. Magnetic susceptibility was measured on most outcrops. All bedrock and till sampling observations and assay data, have been logged and stored into MS-Access based database using “BD-logger” software programmed by Petri Rosenberg (File naming used: BD_KGB_Master.mdb). All heavy mineral observation and assay data, are logged and stored into MS-Access based database using “HM-logger” software programmed by Petri Rosenberg (File naming used: HM_Karasjok_Master.mdb).

Most samples have been submitted for analysis in the ALS Chemex laboratories in Piteå, Sweden (XRF, ICP, Ionic Leach). Some till samples have submitted to Labtium, Rovaniemi, Finland, where also a selection of of ALS Chemex assayed samples were reanalysed for cross laboratory checking.

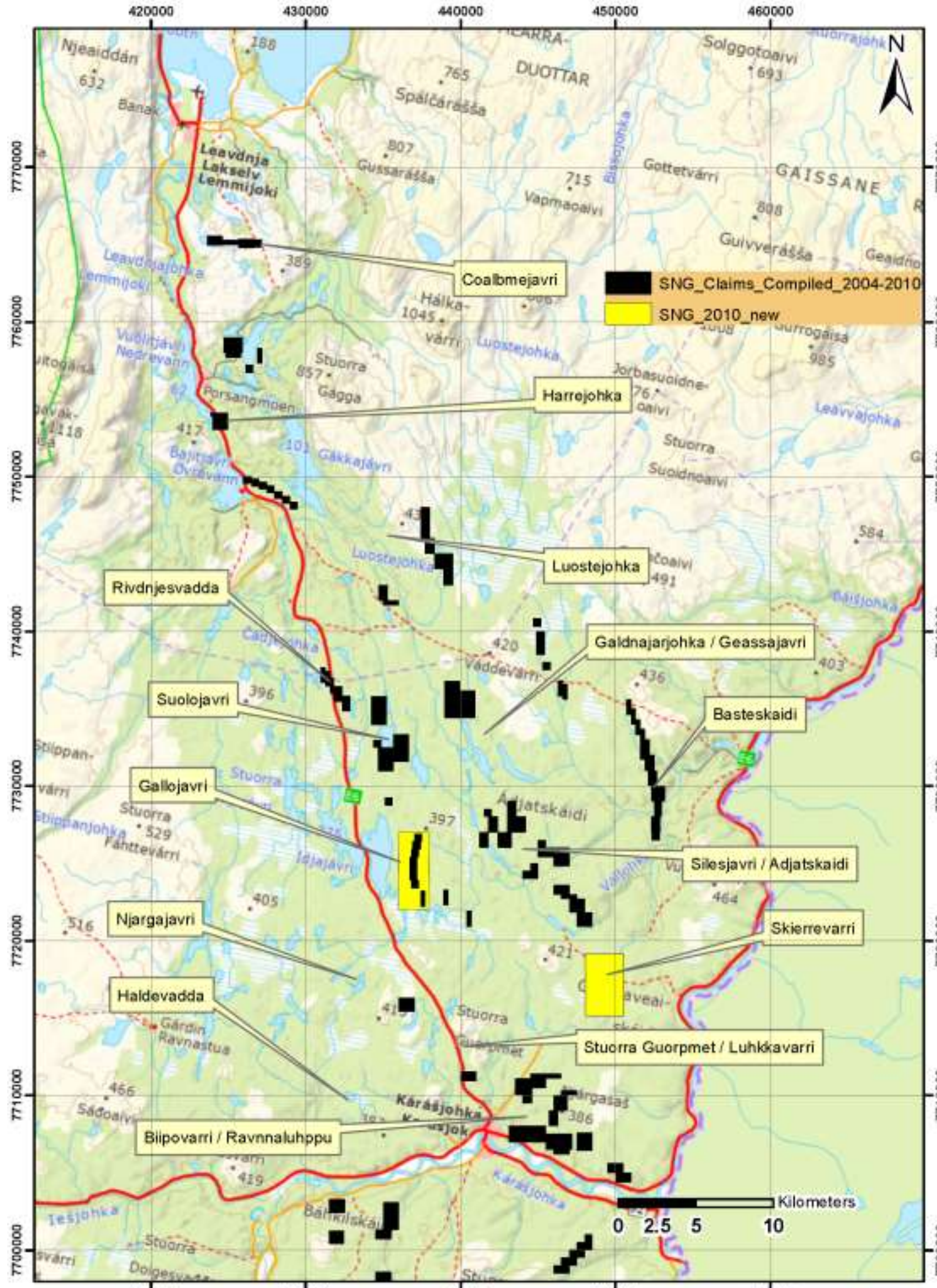

Figure 6 Target areas in the northern side of the greenstone belt.

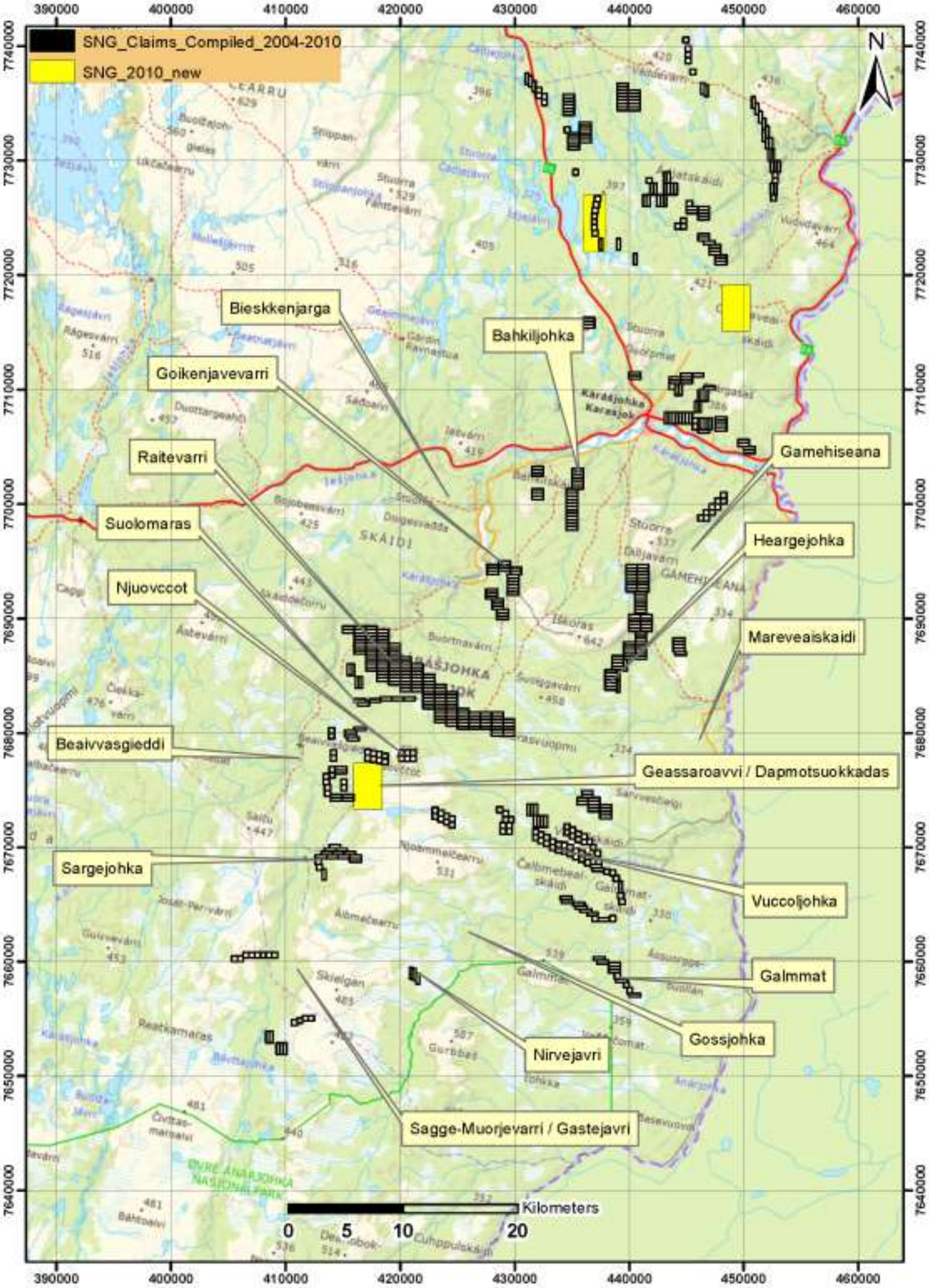

Figure 7 Target areas in the southern side of the greenstone belt.

6.3.1 Raitevarri Au-Cu-target area

Raitevarri area was the main area of interest since the field season 2007 (Figure 7, Figure 8) after a number of anomalous outcrop and overburden samples taken during the 2007-2008 field seasons (up to 1.9 g/t). This area has been under exploration interest already several times during earlier years (Sydvaranger AS, NGU, Aspro, and RTZ). The exploration of the Store Norske Gull is based on an orogenic gold deposit model (structurally hosted Au). The earlier exploration campaigns were based on geological models of metamorphosed primary Cu-mineralisation (not mentioned but implied a porphyry system, or a remobilised volcanic hosted mineralisation) hosted by hornblende gneiss (Raitevarri gneiss). Possibility of orogenic style gold mineralisation was based on the new interpretation of the results of earlier studies, especially on the lithogeochemical analysis data. In addition, the orogenic gold style is the most common in the Fennoscandian shield, and Central Lapland greenstone belt (Eilu, 2008; Ojala, 2007).In the old exploration reports there is information of significant Au-values (up to 12 g/t) both in hand samples and drill cores although these should be considered only anecdotal value as these are quoted as “unspecified core sample” or their coordinate information is missing. The drill targets tested in 2008-2009 were selected based on the results of geological mapping, geochemical sampling and interpretation of the aerogeophysical survey conducted in 2007. These suggested possibility of a structurally controlled orogenic style gold mineralisation overprinting low grade Cu-Au mineralisation. In addition, the year 2007-2008 Au-Cu-anomalous assay results of hand specimens of quartz veins and sheared quartz-carbonate-sericite altered hornblende gneiss suggested structurally controlled shear and quartz vein style gold Au-mineralisation in the area.

The quartz veins intersected in 2008 drilling were weakly mineralised (up to 0.3 g/t Au and 0.2 % Cu) and the alteration system appeared to be larger than that typical to the orogenic gold style as all drill holes were practically completely within altered rocks. Furthermore, geochemistry and alteration patterns and zonation were different from the expected for an orogenic lode gold mineralisation, eg very good correlation between Cu and Au. During the field season 2008, about two km NW from the 2008 drill target, at the contact zone between greenstones and Raitevarri gneiss, a gold grain and geochemical anomaly was located.

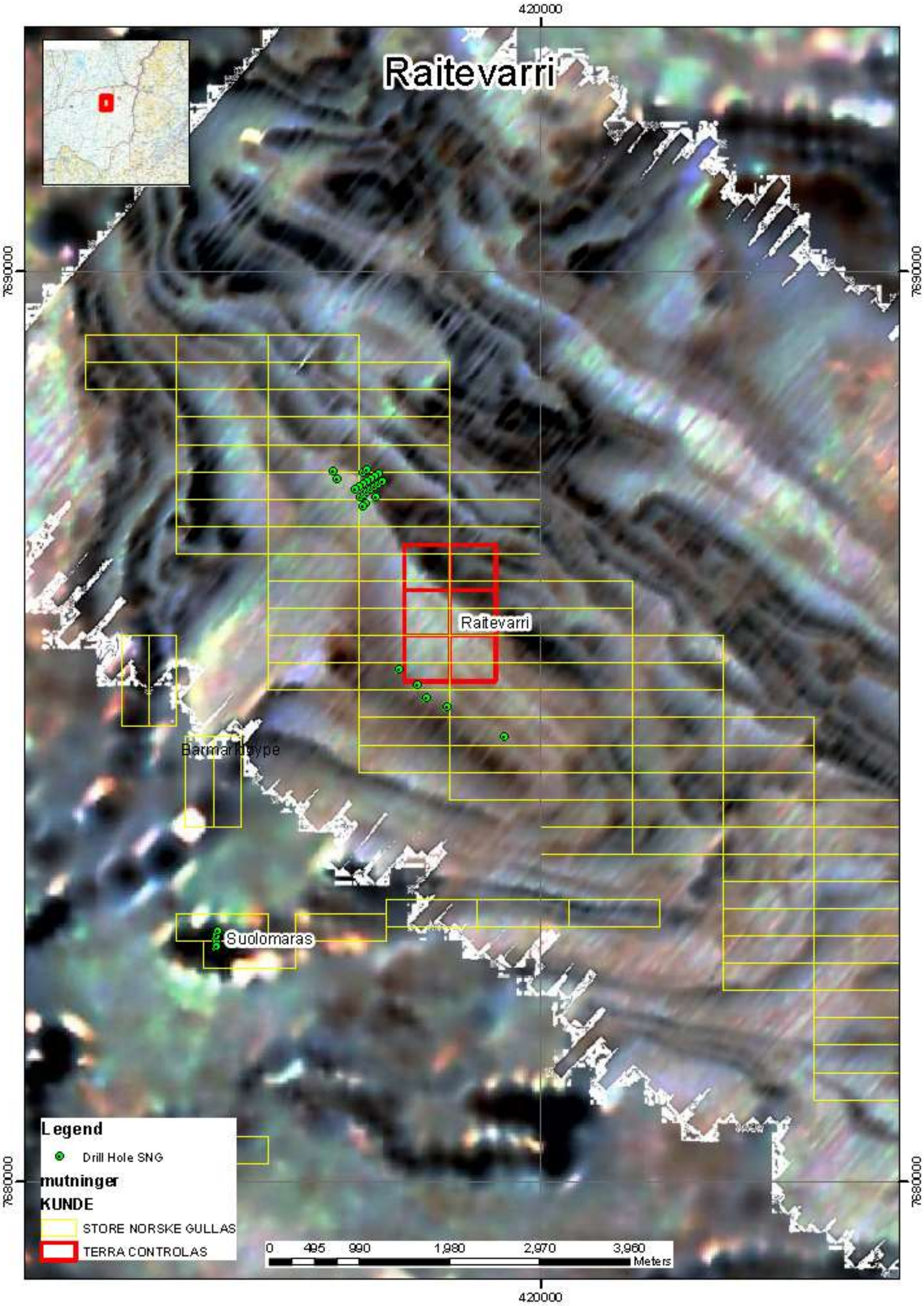

Figure 8 Raitevarri and Suolomaras target areas on a processed aerogeophysical map to highlight bedrock structures and conductors (combined magnetic and electromagnetic data, Aarnisalo image CRRIpPCAPC1PC1n.jpg). 2008-2009 drill holes shown as green dots. Yellow rectangles show SNG claims and red Terra Control claims.

Results

In 2007-2008, tens of meters wide and hundreds of meters long Au-Cu mineralized alteration zone (silicified, sericitized, sulphidized), with sulphide bearing quartz veins in places, was found in a boulder field and outcrops along the SW slope of the Raitevarri hill parallel to the Nåaidatjokka river (Figure 9, Figure 11). This zone was downhill from the Cu-mineralized zone defined by Sydvaranger and RTZ. In 2008, drilling and surface sampling confirmed the previous year's results, and surface sampling indicates that the Au-Cu anomalous zone in bedrock and overburden is several hundreds meters wide and over three kilometers long. In addition, mapping indicated that alteration zones and quartz veins are both parallel and cut the main shallowly NE dipping foliation and SE plunging lineation.

In 2009, after the tracks were opened in the beginning of July, a till geochemical sampling (100 x 20 m) was conducted over the Raitevarri NW target area (the strongest Au nugget anomaly). Sampling showed a large Au-Cu anomaly (Ahola, 2009) and several drill profiles were drilled in the area to test the anomalies (Figure 10). In addition, ionic leach anomalies along the SE-continuation of the Raitevarri trend, which was drilled 2008, were drilled (Holes RAI-1401 and 1501).

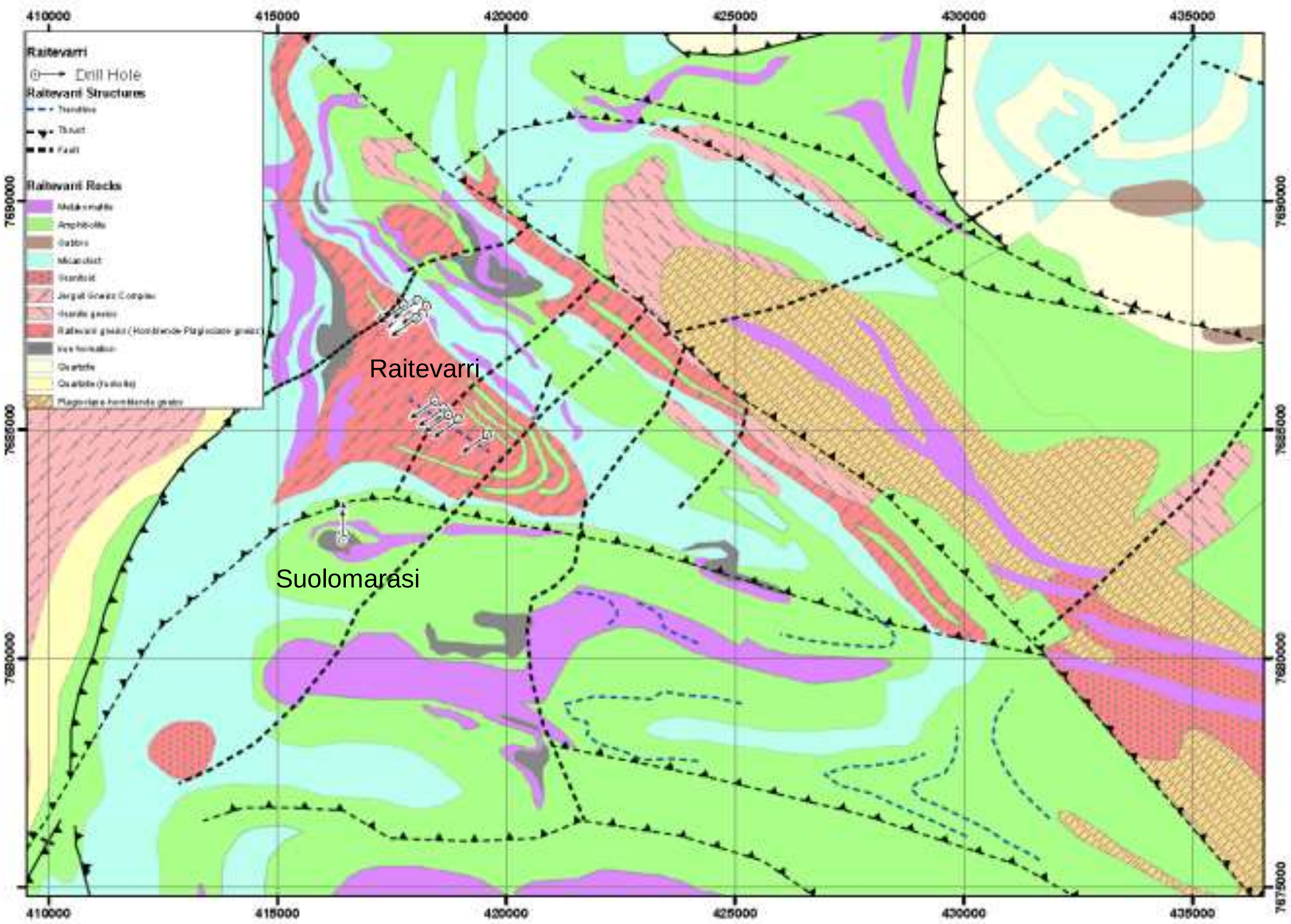

Figure 9 Raitevarri target area solid geology interpretation showing the diamond drill hole locations in Raitevarri and Suolomaras.

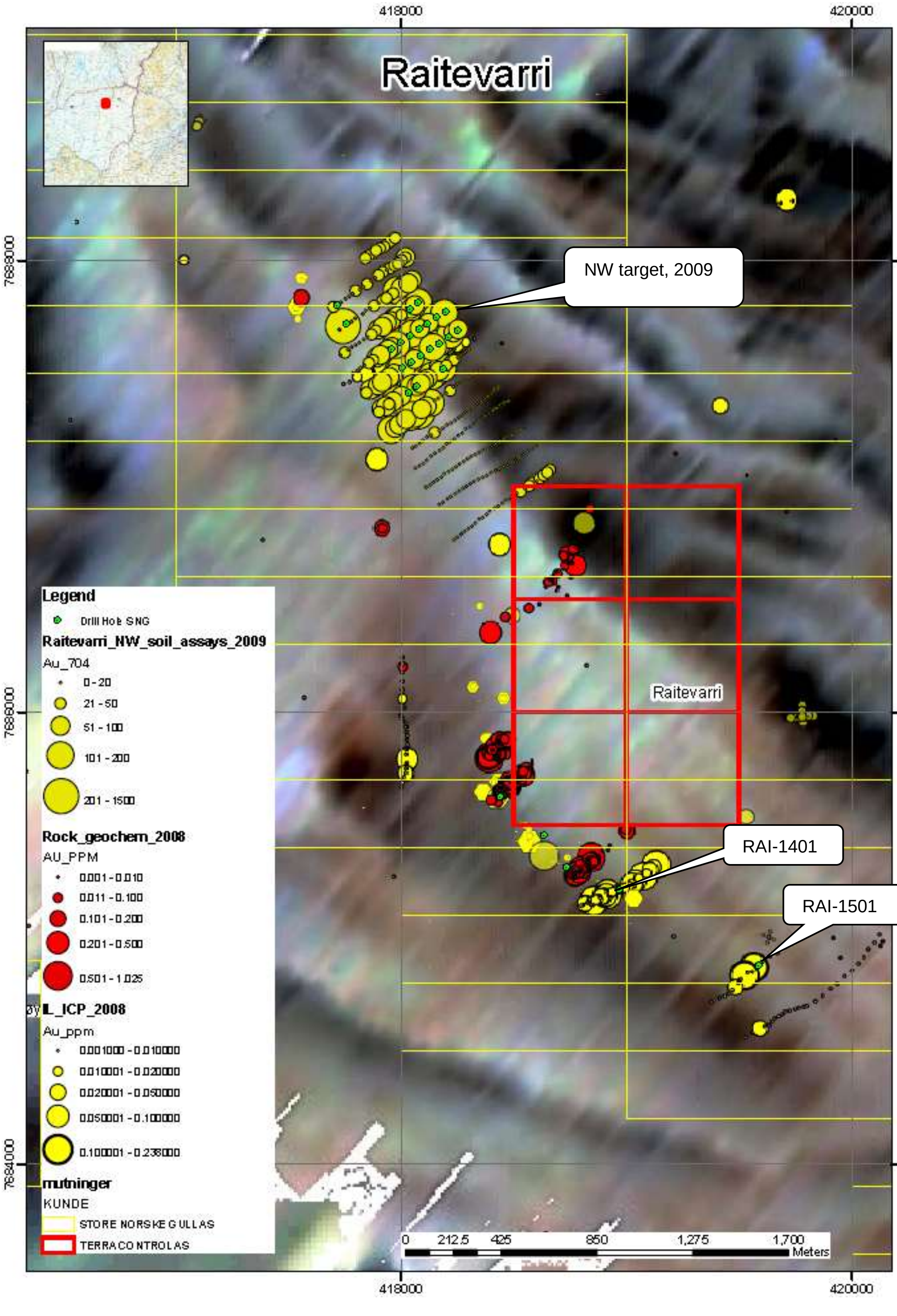

Figure 10 Raitevarri target area surface sampling results on a processed and combined magnetic and electromagnetic image (same as Figure 8). The 2008-2009 drill hole locations shown as green dots. The NW target holes and holes RAI 1401 and 1501 were drilled in 2009.

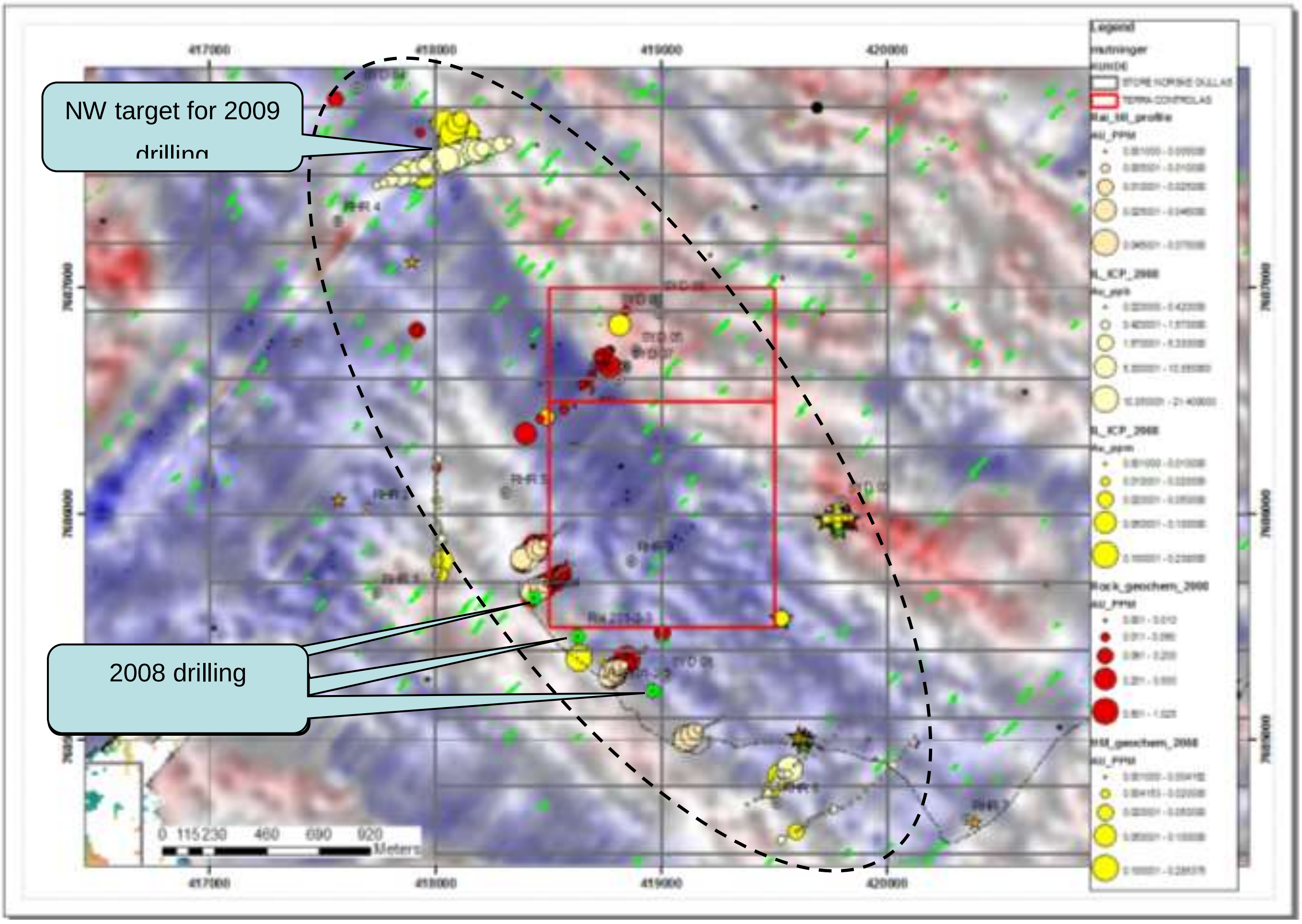

Figure 11 Raitevarri target area surface sampling on a processed and combined magnetic (Tilt derivative, grey), electromagnetic (red-blue) and radiometric image (green "worms"). Green "worms" indicate anomalous Th/K ratio and possible potassic alteration. Anomalous Au values on electromagnetic and magnetic gradient suggest structural control. Also shown are the drill hole locations drilled by Sydvaranger and RTZ (gray dots).

In 2008, assayed drill core samples returned 21 and in 2009, 25 samples with highly anomalous Au values (> 1 g/t, Table 4) and Cu values (Figure 12, Figure 13, Figure 14, Figure 15). The highest Au values over one metre intersection are 4.4 g/t, and Cu values about 0.7% (Table 5). In addition, many holes (eg. RAI-1001 and 902) had tens of metres long intersections over 0.1 g/t Au. As it was noted in the 2008 drilling results, the Au and Cu correlation is not linear and the highest values do not correlate. However, within the zones of elevated Cu values, gold is typically strongly anomalous (Table 5) but the values are not higher than 0.87 g/t. All previous Sydvaranger and RTZ drill holes are vertical and probably have not intersected similar Au-zones. All gold mineralized shears, or quartz veins, are not all parallel the shallowly dipping main foliation and vertical drill holes have probably missed them. Furthermore, Sydvaranger and RTZ have not targeted the same structures or geophysical anomalies. Another surprise was that the Au anomalous outcropping quartz veins, which were intersected in drill holes, had lower gold values than the grab samples taken from the outcrops (eg. Figure 14). 2009 drilling confirmed that the Raitevarri Au-Cu mineralisation is at least 3.5 km long and 500 m wide.

Discussion and Conclusions

The 2009 drilling results further indicated that Cu and Au values are zoned. In addition, the 2009 drill profiles showed additional zonation of many other elements, eg. Bi, Te, Sn, Mo, As, Zn, (Eilu, 2010). Zonation may represent different mineralisation events, different stages or zones of same mineralisation, or remobilation of earlier mineralisation in later metamorphic and deformations events.

Based on the more detailed investigation on the NW target it was concluded that the metal association, alteration, mineralisation and geochemical anomalies detected best fit with a porphyry-Cu-Au style of mineralisation (Eilu, 2010; Eilu & Ojala, 2011). The host rock Raitevarri gneiss has intruded into a supracrustal sequence, and was altered and mineralised before regional metamorphism and deformation, as indicated by the local structures and textures. Alteration started by biotitisation and sulphidation and was followed by veining, sericitisation and more sulphidation. The partial carbonatisation of the country rocks was a either a distal feature related to the alteration of the intrusion or was a syndeformational process.

A large number of features at Raitevarri are consistent with porphyry-style mineralisation (Kirkham & Sinclair, 1996; Sillitoe, 2000; Sillitoe, 2010): 1) mineralisation in a small calc-alkaline, intermediate to felsic intrusion; 2) extensive biotitisation, quartz-dominated veins with narrow to not easily recognisable alteration selvages; 3) metal association Au-Cu-Bi-Mo; 4) Cu and Au grades in an extensive domain of mineralisation at 0.1–1 % and 0.1–1 g/t, respectively; 5) pyrite-dominated sulphi-dation; 6) sericitisation ± chloritisation overprint producing a white rock with a pyrite dissemination (potentially similar to sericite-chlorite-clay mineral [SCC] alteration in young porphyry systems); 7) Mo enrichment somewhat distal to the main Au-Cu enrichment; 8) the clearly distal Zn enrichment (Eilu, 2010; Eilu & Ojala, 2011).

Features consistent with an orogenic gold-type of mineralisation include siting in a Palaeoproterozoic greenstone belt, presence of carbonation, sulphidation and quartz veins, and enrichment of Au, Ba, Bi, K, Rb, S and Te. However, these do not show a pattern typical for orogenic gold mineralisation: for example, carbonatisation shows a poor correlation with sericitisation and sulphidation; there is no obvious structural control on biotitisation, sericitisation, mineralisation and most of the veining; mineralisation is not in the locally most reactive lithological units (mafic to ultramafic volcanic rocks); also, Mo, Sn and Zn define distinct anomalies (McCuaig & Kerrich, 1998; Groves, et al., 2003).

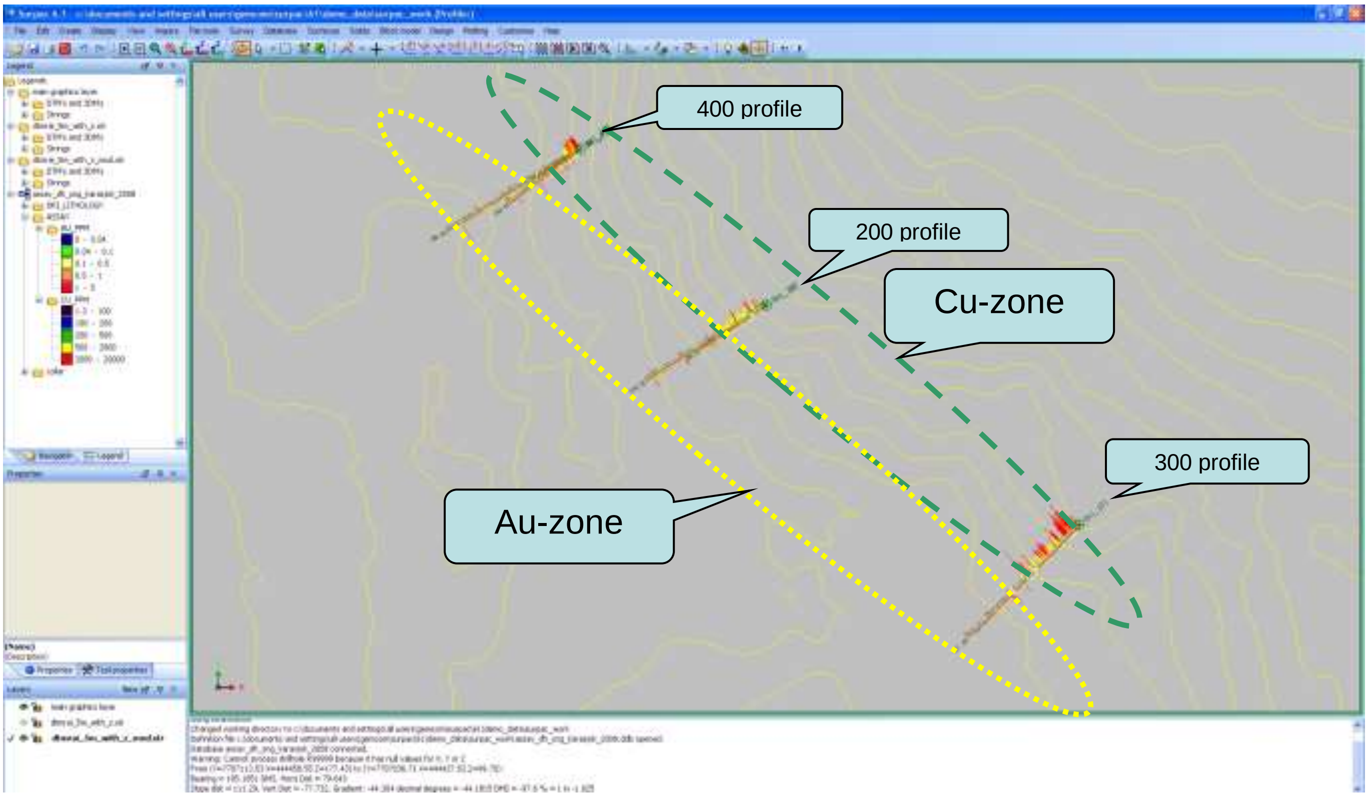

Figure 12 Raitevarri 2008 drill profiles plan view showing Cu (left side of holes) and Au assays (side of holes). Screen snapshot from Surpac software.

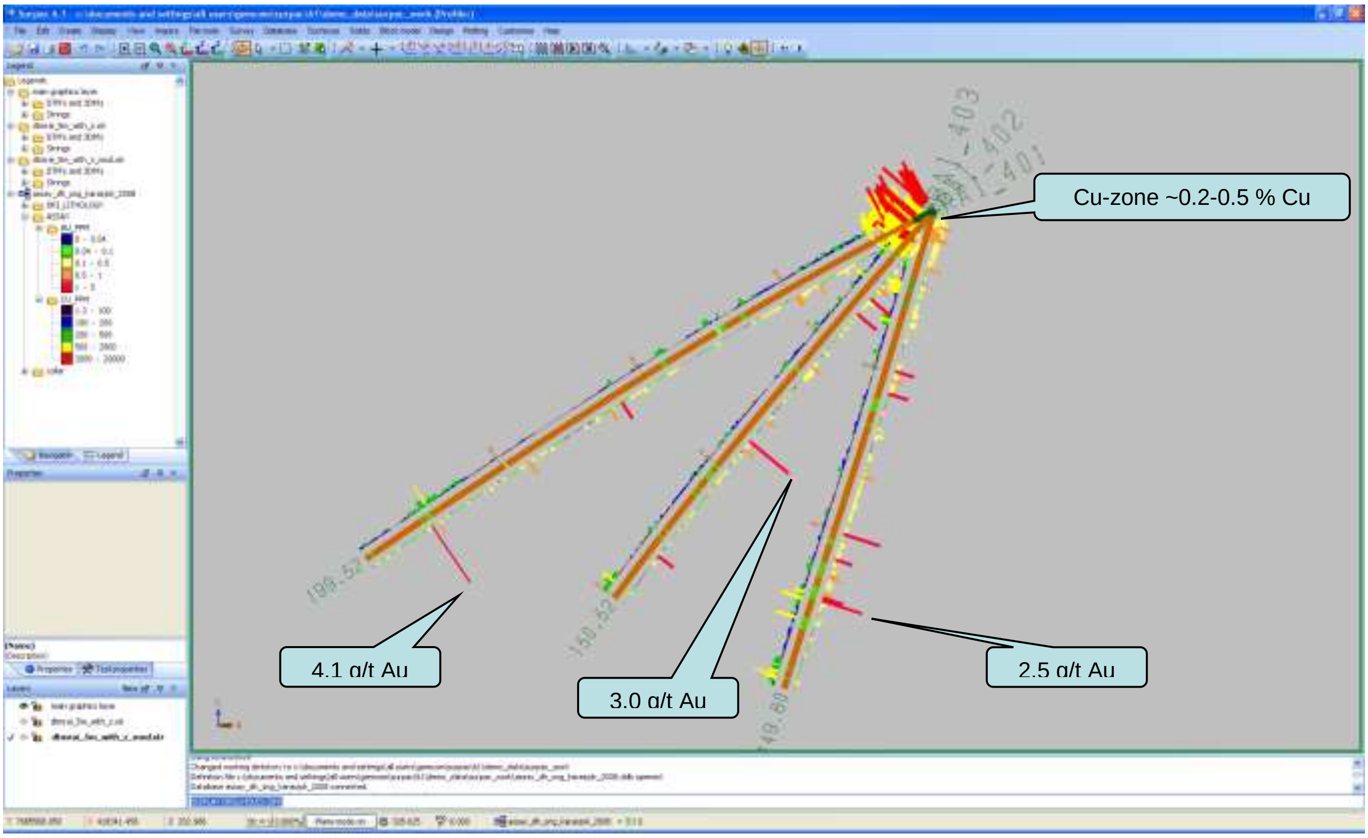

Figure 13 Raitevarri drill profile 400. Cu values left and Au values right side of the holes. View to NW.

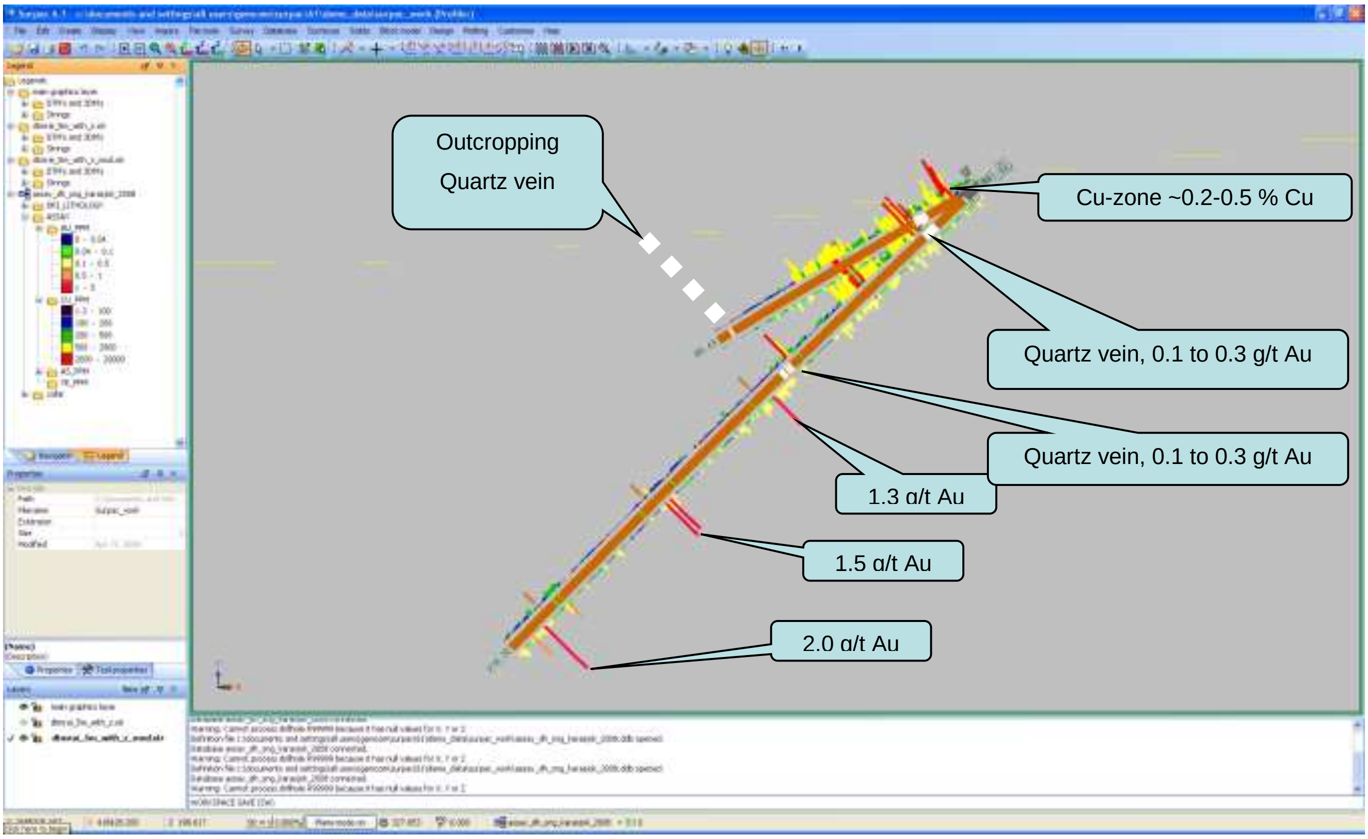

Figure 14 Raitevarri drill profile 200 showing Au and Cu zones. Note that the intersected quartz veins do not correlate with highest Au or Cu values.

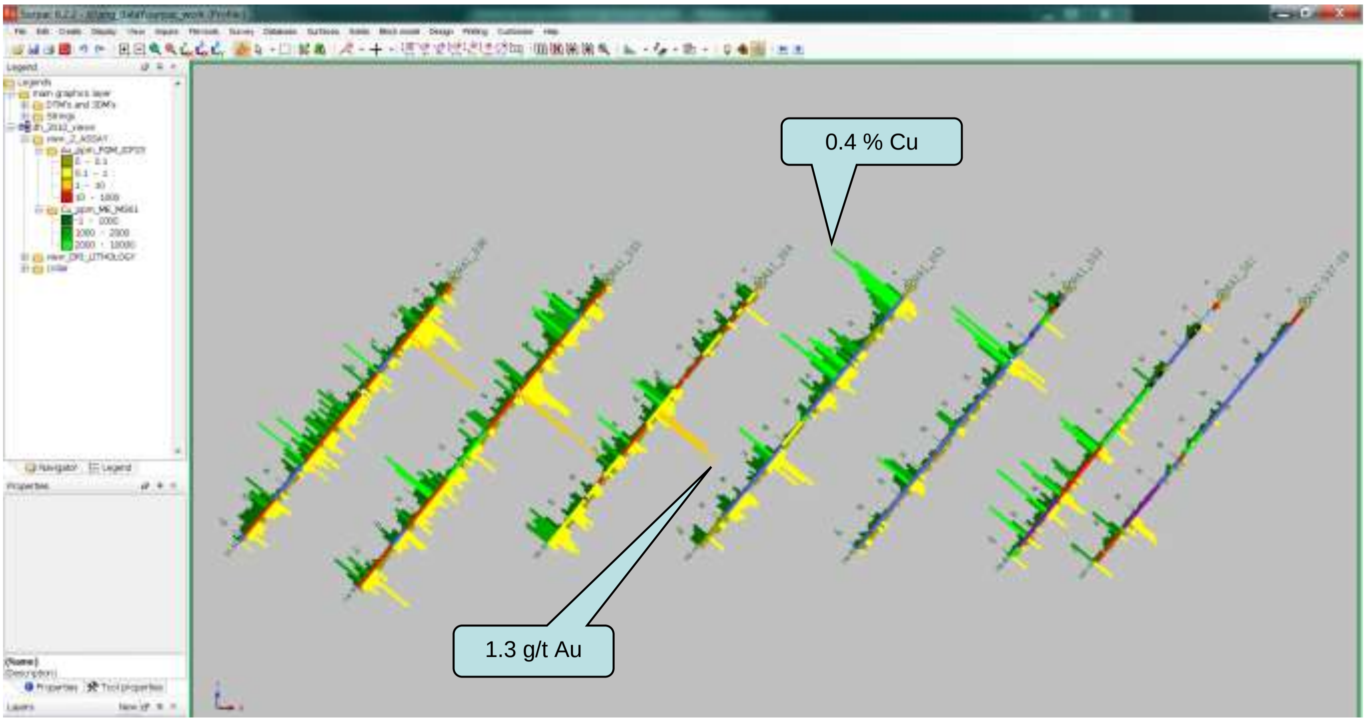

Figure 15 Raitevarri drill profile 500 showing Au and Cu variation along the drill holes.

Table 4 Raitevarri drilling 2008-2009, over 1 g/t Au intersections with common pathfinder elements.

HOLEID	FROM	TO	ASSAYID	Ag ppm ME-MS61	As ppm ME-MS61	Au ppm PGM-ICP23	Bi ppm ME-MS61	Cu ppm ME-MS61	Mo ppm ME-MS61	S % ME-MS61	Sb ppm ME-MS61	Te ppm ME-MS61	Th ppm ME-MS61	U ppm ME-MS61
RAI-1501-	60.00	61.00	200934339	0.16		4.41	0.37	153.5	0.80	1.00	0.08	0.33	5.1	3.8
RAI_401	177.00	177.59	200814249	4.17	8.10	4.09	6.63	495	0.81	4.48	0.36	28.50	1.5	1.7
RAI-801-	45.00	46.00	200934525	3.09	80.00	3.72	3.30	91.7	1.26	8.46	0.19	13.20	6	4.7
RAI-902-	37.00	38.00	200934740	1.31	70.10	3.21	2.30	307	0.94	8.10	0.16	9.09	3.4	2.8
RAI_402	88.00	89.00	200814368	0.69	33.10	3.03	3.37	182	1.00	4.43	0.15	5.28	3.2	2.8
RAI-604-	99.90	100.30	200939320	4.56	113.50	2.58	3.65	1060	6.81		0.45	16.95	3.3	2.9
RAI_301	151.00	152.00	200813957	0.63	72.60	2.55	1.20	219	0.65	4.02	0.17	2.44	3.5	3.5
RAI_403	121.00	121.89	200814568	2.58	38.70	2.52	5.18	223	0.72	7.71	0.14	13.95	1.1	1.3
RAI_403	100.00	101.00	200814543	0.17	8.90	2.30	0.24	114.5	0.59	2.20	0.22	0.38	3.6	3.1
RAI_301	125.00	125.68	200813928	0.21	1.10	2.17	0.35	135	0.89	0.86	0.47	0.71	6	3.8
RAI_301	149.00	150.00	200813955	0.80	33.00	2.09	1.85	160	0.76	2.49	0.23	1.85	4.8	3.9
RAI-901-	26.50	27.00	200934615	0.65	80.50	1.98	1.23	76.7	1.78	7.57	0.17	5.47	1.1	0.9
RAI_201	203.00	204.00	200813685	1.16	10.70	1.97	1.49	363	0.69	2.49	0.20	1.79	3.5	2.2
RAI_505	42.30	42.90	200936850	0.91	10.00	1.85	0.90	448	7.27	0.33	0.08	4.35	0.2	1.3
RAI-902-	36.00	37.00	200934739	1.12	41.20	1.81	1.94	312	0.42	6.14	0.31	5.62	3.8	3.3
RAI-606-	16.00	17.00	200939084	0.58	25.90	1.66	1.23	834	0.84	3.20	0.10	3.19	3.8	2.9
RAI_402	32.00	33.00	200814311	0.76	8.50	1.61	5.98	319	0.55	2.06	0.12	6.74	1.5	1.4
RAI_201	146.00	147.00	200813627	0.31	26.40	1.51	0.73	186.5	0.92	4.24	0.16	1.54	3	2.6
RAI_402	38.00	39.00	200814317	0.41	1.10	1.51	0.34	318	1.12	1.73	0.15	1.28	1.5	1.5
RAI-902-	11.00	11.55	200934711	1.38	21.00	1.51	0.60	874	0.77	2.39	0.13	2.35	3.6	4.4
RAI_506	21.30	22.30	200937523	0.25	40.40	1.49	1.28	142.5	0.52	5.44	0.12	4.21	4.3	4.2
RAI_1001	34.90	35.40	200938128	3.04	134.00	1.43	1.46	423	1.52		0.43	9.06	3.9	2.5
RAI_201	144.00	145.00	200813625	0.28		1.40	0.33	173.5	0.57	2.36	0.11	1.06	2	1.4
RAI-603-	70.00	71.00	200938938	1.15	19.70	1.35	0.99	609	17.45	2.45	0.16	3.73	2.8	1.9
RAI-606-	91.00	91.80	200939165	0.77	56.70	1.34	1.36	285	4.53	4.85	0.21	4.54	2.1	1.5
RAI_201	96.00	97.00	200813576	0.14	8.00	1.31	0.62	69.6	0.57	2.02	0.13	0.90	5	3.4
RAI-902-	33.00	34.00	200934736	1.84	78.20	1.31	1.36	379	1.80	6.70	0.22	6.36	4	2.9
RAI_504	49.00	50.00	200937661	0.56	20.30	1.29	1.08	277	2.01	2.87	0.11	3.58	3.5	3
RAI_403	120.00	121.00	200814567	1.35	11.70	1.27	1.64	562	0.71	4.30	0.13	18.75	1.2	1.1
RAI_403	56.00	57.00	200814495	0.36	41.40	1.24	2.70	21	0.97	5.22	0.20	3.60	3.5	2.9
RAI_401	109.00	110.00	200814177	0.69	7.20	1.19	1.88	354	0.91	3.16	0.11	2.64	3.7	2.7
RAI_403	49.00	50.00	200814488	0.42	17.00	1.18	0.89	207	0.84	4.23	0.17	1.73	3.5	3.1
RAI_402	132.00	133.00	200814415	0.37	5.40	1.16	0.24	88.1	0.54	1.03	0.56	0.72	3.4	2.9
RAI_505	42.90	43.60	200936851	0.74	24.70	1.15	0.91	317	6.71	4.14	0.09	3.29	3.4	2.7
RAI-902-	34.00	35.00	200934737	1.74	51.70	1.12	1.06	293	1.39	5.62	0.17	5.43	3.7	2.9
RAI_403	108.00	109.00	200814552	0.59	38.50	1.08	0.76	101	0.78	4.84	0.16	2.12	3.2	2.9
RAI-1501-	83.00	84.00	200934362	2.37	22.50	1.07	4.48	2580	2.03	3.97	0.12	2.79	3.2	2.8
RAI_504	48.00	49.00	200937660	0.47	32.80	1.06	1.28	346	13.75	5.79	0.12	4.00	2.3	2.3
RAI-902-	10.00	11.00	200934710	0.55	28.00	1.00	0.65	464	0.60	2.58	0.17	2.25	3.2	3.4
RAI-702-	93.00	94.00	200934469	0.90	25.80	0.99	0.81	109.5	0.48	2.30	0.44	5.29	5.3	3.8
RAI_402	5.00	6.00	200814280	3.03	9.80	0.98	0.32	2780	10.45	1.15	0.14	0.70	3.1	2.5
RAI-801-	50.00	51.00	200934530	14.75	46.30	0.97	6.08	351	1.10	3.52	0.21	16.50	5.3	4.4
RAI_505	38.50	39.50	200936846	2.08	21.20	0.96	0.89	1805	3.75	1.30	0.11	2.36	3.8	3.1
RAI_1001	48.00	49.00	200938143	1.44	97.8	0.96	1.26	105.5	0.54	7.85	0.29	9.33	3.4	2.5

Table 5 Raitevarri drilling 2008-2009, over 0.4 % Cu intersections

HOLEID	FROM	TO	ASSAYID	Ag ppm ME-MS61	As ppm ME-MS61	Au ppm PGM-ICP23	Bi ppm ME-MS61	Cu ppm ME-MS61	Mo ppm ME-MS61	S % ME-MS61	Sb ppm ME-MS61	Te ppm ME-MS61	Th ppm ME-MS61	U ppm ME-MS61
RAI-901-	59.00	60.00	200934651	4.21	45.50	0.32	0.84	7090	1.03	6.05	0.49	3.59	3.5	5.7
RAI_301	12.00	13.00	200813806	3.18	1.80	0.36	0.80	6890	59.40	1.09	0.12	1.04	4.0	2.4
RAI_301	20.00	21.00	200813814	2.11	2.30	0.39	0.34	5470	80.50	1.12	0.09	0.85	1.8	1.5
RAI-602-	25.00	26.00	200934024	3.25	1.90	0.87	0.25	5340	32.10	1.14	0.09	0.63	3.3	2.9
RAI_903	25.00	26.00	200937772	4.40	3.60	0.44	0.30	5190	19.10	1.57	0.11	0.92	3.9	2.7
RAI_301	13.00	14.00	200813807	3.66	1.10	0.41	1.76	5070	99.20	0.64	0.13	1.75	2.9	2.4
RAI_301	14.00	15.00	200813808	3.86	3.60	0.28	1.40	5000	71.40	1.04	0.12	1.79	1.6	2.9
RAI-1401	10.60	10.90	200934119	5.86	10.80	0.45	1.41	4630	12.05	2.05	0.12	2.01	1.0	1.2
RAI_301	19.00	20.00	200813813	2.98	0.50	0.30	0.30	4590	106.50	0.58	0.09	0.68	2.6	1.8
RAI_503	5.80	6.80	200936709	3.28	3.60	0.36	0.64	4530	51.70	1.80	0.11	1.36	3.7	3.7
RAI_301	39.00	40.00	200813833	3.28	2.60	0.39	0.50	4380	71.20	1.01	0.20	0.72	2.0	2.1
RAI_301	16.00	17.00	200813810	2.52	1.60	0.31	0.57	4380	69.60	0.84	0.11	1.14	1.9	2.2
RAI_502	26.10	27.10	200936629	1.74	10.40	0.69	0.27	4290	36.90	1.72	0.16	0.72	3.1	2.7
RAI-603-	7.00	8.00	200938875	2.32	16.20	0.34	0.46	4100	9.02	1.93	0.07	1.39	2.6	2.9
RAI_301	22.00	23.00	200813816	2.48	0.40	0.26	0.28	4090	46.40	0.68	0.10	0.53	1.8	1.2
RAI_301	95.11	95.68	200813892	2.55	2.5	0.496	0.4	3940	35.40	0.72	0.11	0.93	0.6	0.7

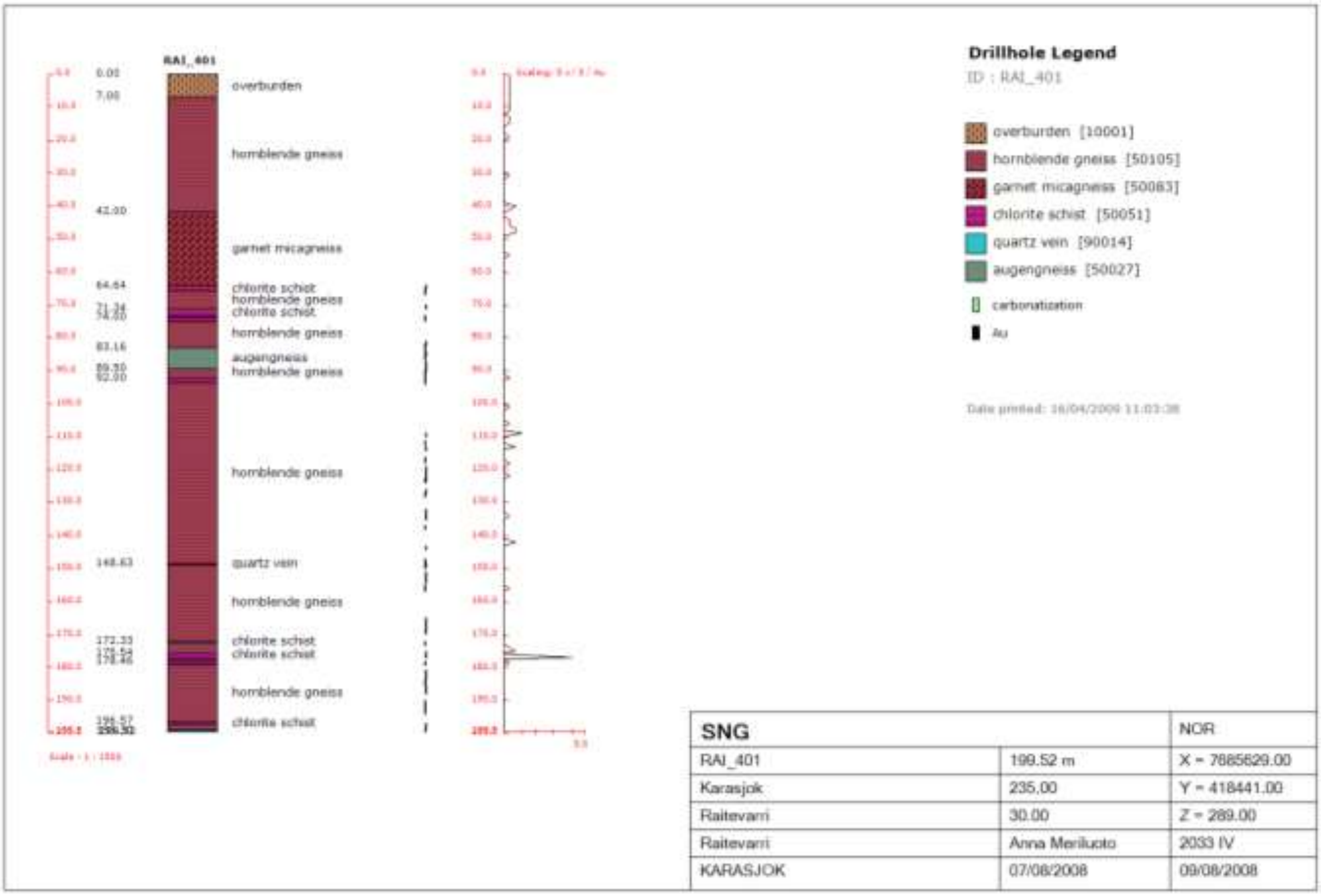

Figure 16 Graphic log of the Raitevarri drill hole RAI-401 showing the carbonate alteration and Au assays.

6.3.2 Suolomaras Au-Target area

Suolomaras target had been originally target as a Ni-target related to ultramafic rocks based on magnetic and geological maps (Figure 8). In 2008, 18 outcrop, 13 heavy mineral and overburden samples were taken in the. Mapping and sampling of the area revealed an Au litho and overburden geochemical and heavy mineral anomaly. The anomaly was on banded iron formation and it was drill tested in July 2009 with four drill holes (SLM-101 to 104, total drill lenght 406.8 m) in one profile.

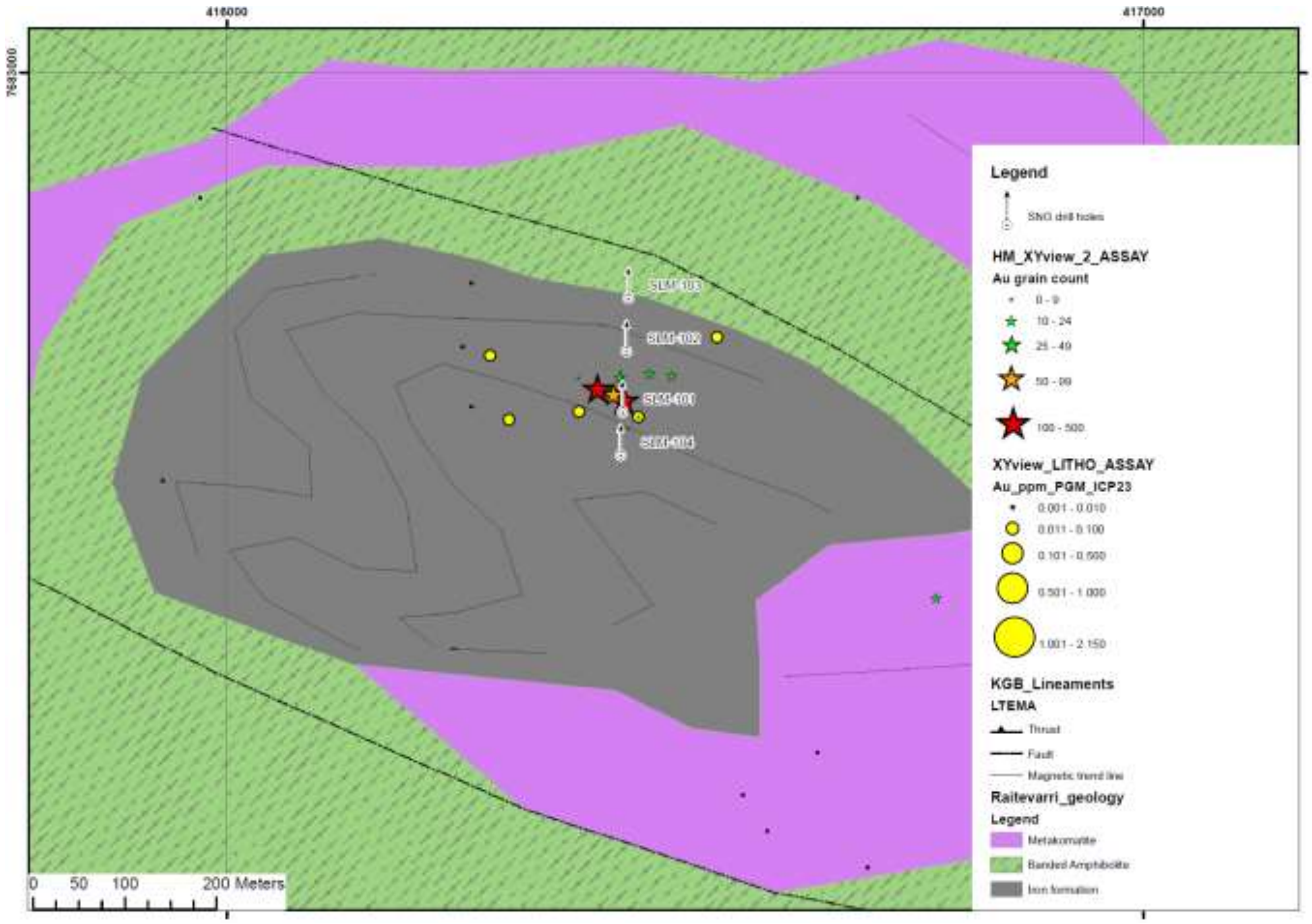

Figure 17. Bedrock, till and heavy mineral samples and drill holes of the Suolomaras area shown on a geological map.

Results

The Suolomaras was the strongest heavy mineral Au anomaly in 2008 with 315 Au grains in a 5 litre sample. When the geochemical analyses were received, outcrop and overburden samples formed a clear anomaly pattern (Figure 17). Drill holes intersected banded iron formation (BIF), mica schist and graphitic to black schist, mafic and ultramafic rocks (Figure 18). Most of the BIF unit is slightly Au anomalous (>10 ppb Au) and the highest gold value assayed was 1 m @ 1.46 g/t Au and 3 other samples over 0.1 g/t Au. BIF is weakly deformed but not particularly sheared (Figure 19). The gold anomalous part is clearly associated with BIF which also has weak sulphide dissemination. BIF is also weakly Cu anomalous and values of typical Au pathfinder elements (Ag, As, Bi, Te, W) are also slightly elevated. This Au intersection probably explains the geochemical and heavy mineral anomaly.

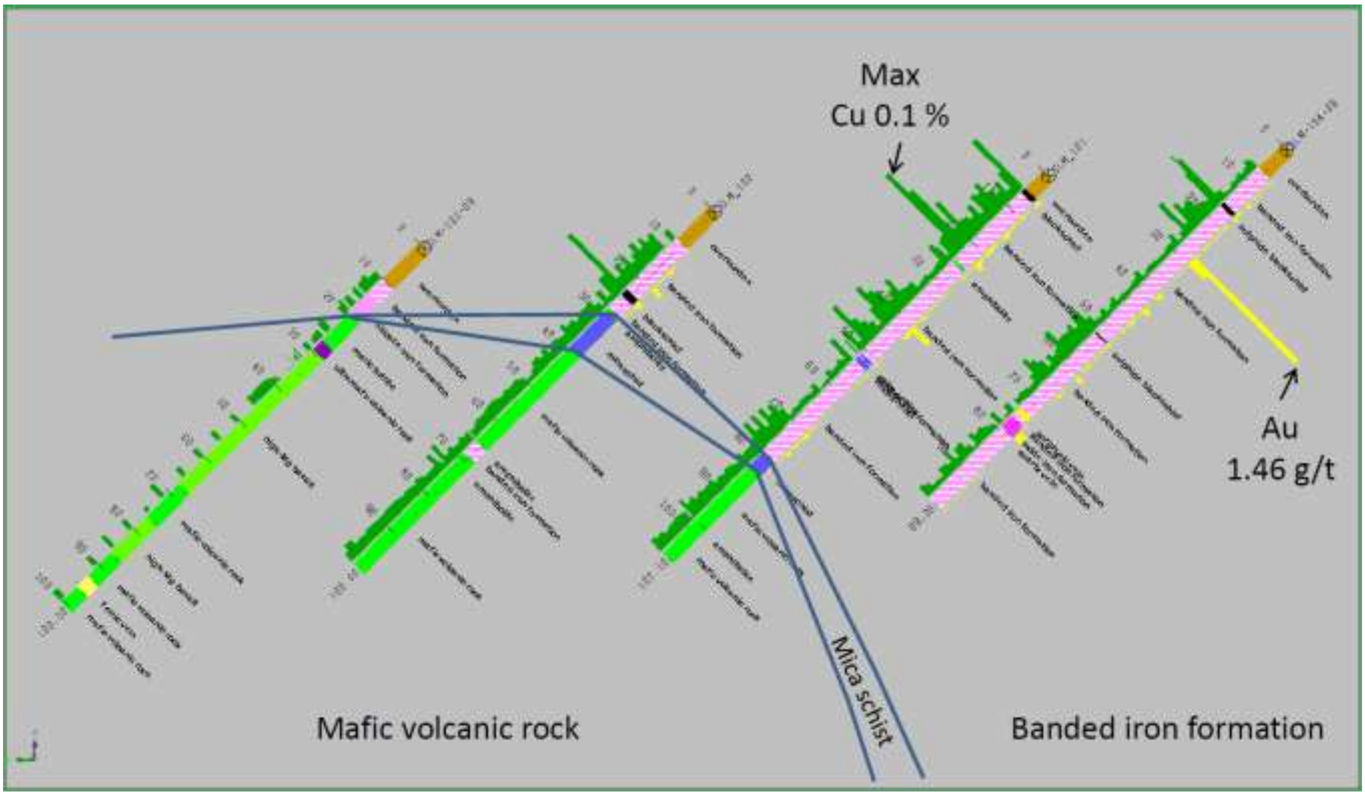

Figure 18. Cross section through the Suolomaras target showing graphically Au and Cu assays. The highest Au values are in the banded iron formation which is also weakly Cu anomalous.

Figure 19 Photograph showing drill core of banded iron formation, highest value 1.46 g/t Au is the sample interval 28-29 m.

6.3.3 Ravnnaluhppu Cu-Au-target area

Ravnnaluhppu area (Figure 6, Figure 20) has also been called the Karasjok town or Karasjok town east area in the previous reports (Jokela, 2006). It has been predefined as a target area because of anomalous Au- and Cu-values in some rock samples collected during the field seasons 2005 and 2007 with Au-values up to 0.5 g/t and Cu-values up to 0.4% (Rui, et al., 2005). In addition, 2004 and 2007 overburden sample profiles (till aqua regia and MMI-samples) showed quite clear anomalies. During the 2008 field season three holes were drilled in one profile (493.64 m, 483 samples), three heavy mineral samples collected along the drill profile, and ionic leach sample line (9 samples) collected along the 2007 MMI sample line 1. In addition, samples for ionic leach method were collected to compare the method to the MMI method. In April-May 2009, Suomen Malmi Oy was contracted to carry a ground geophysical survey (magnetics and Slingram) in the area. The results were processed by Tapio Lehtonen, Astrock Oy and Jussi Aarnisalo. Mapping and ground geophysics were used to produce geological interpretation of the Ravnnaluhppu area (Figure 21, Figure 22). In May-June, several till geochemical profiles were sampled across the 2004 geochemical anomaly and other targets interpreted from the ground geophysics (Figure 23). During sampling, a portable Niton XRF analyzer was also used to map the anomalous zone. In June 2009, the bedrock below the mapped overburden Cu-Au-anomalous zone (Figure 24) was drill tested.

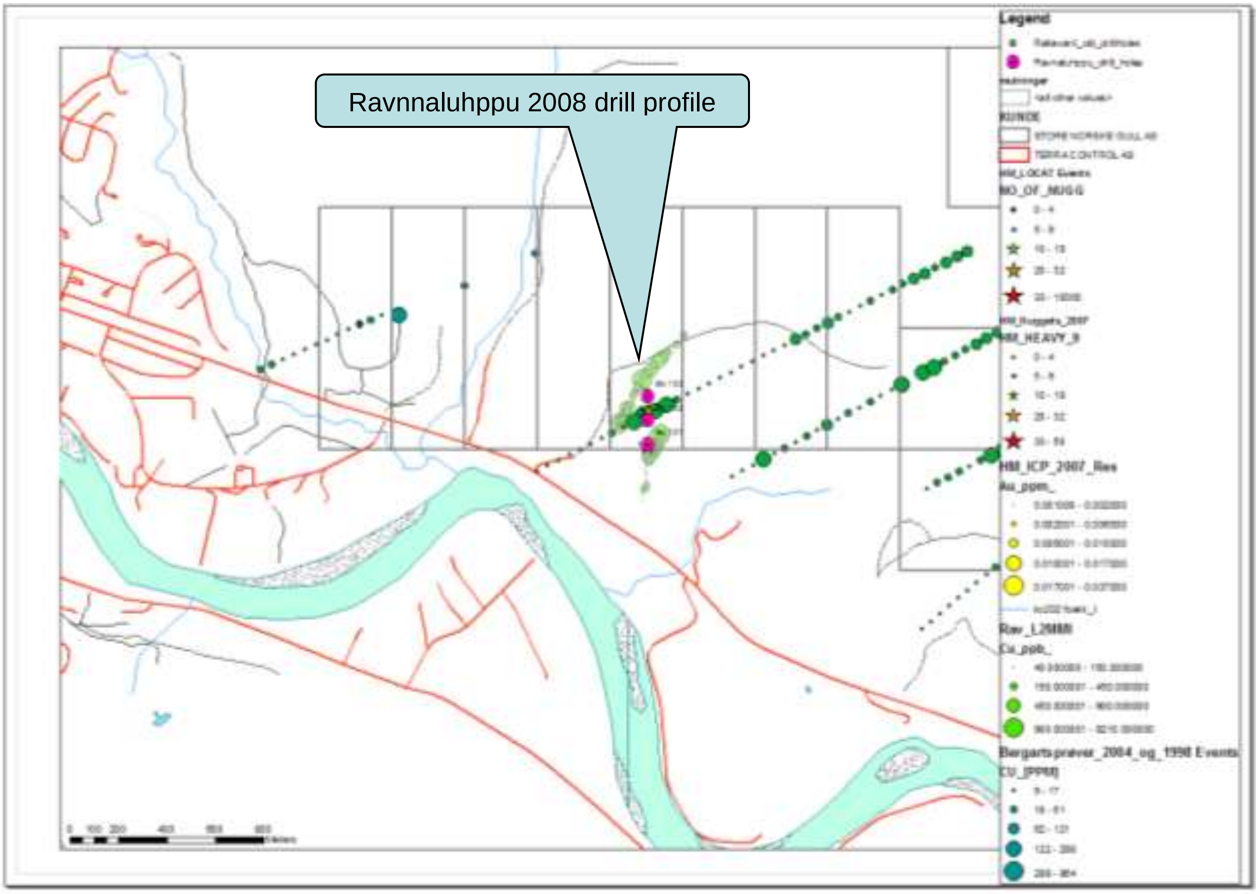

Figure 20 Ravnnaluhppu target area 2004 and 2007 geochemistry and 2008 drill hole locations.

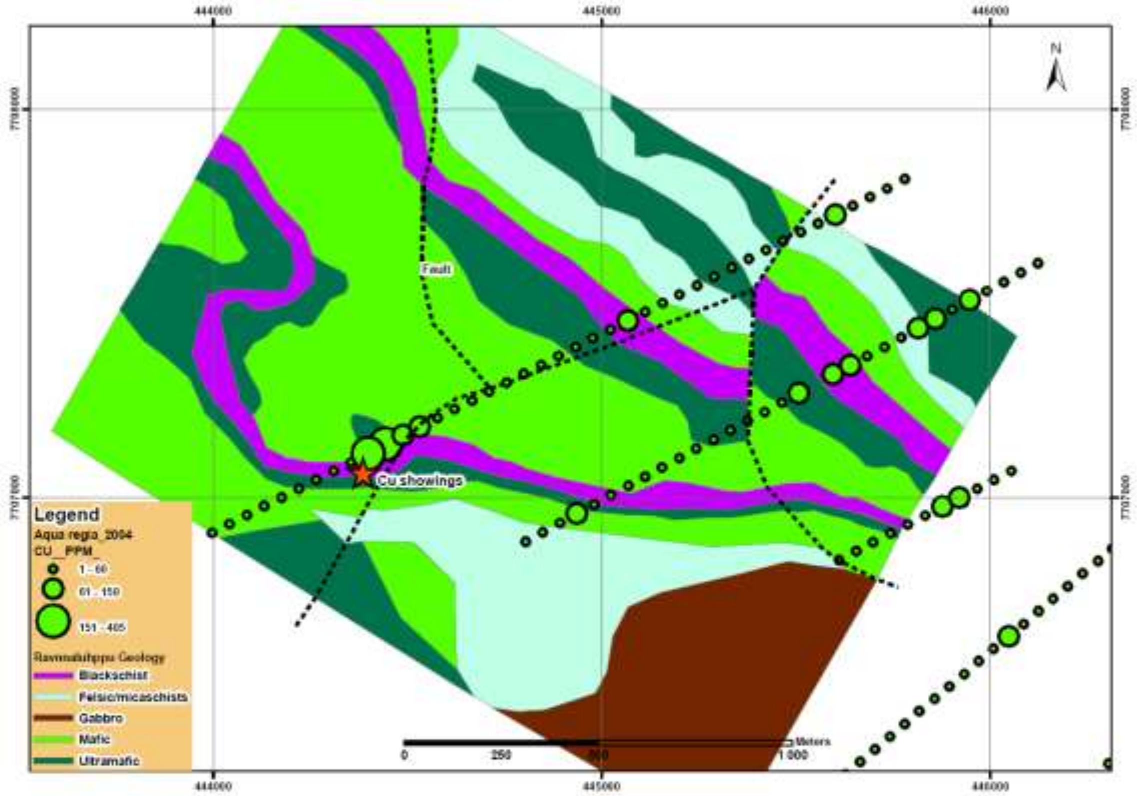

Figure 21 Geological map of the Ravnnaluhppu area showing 2004 till geochem lines.

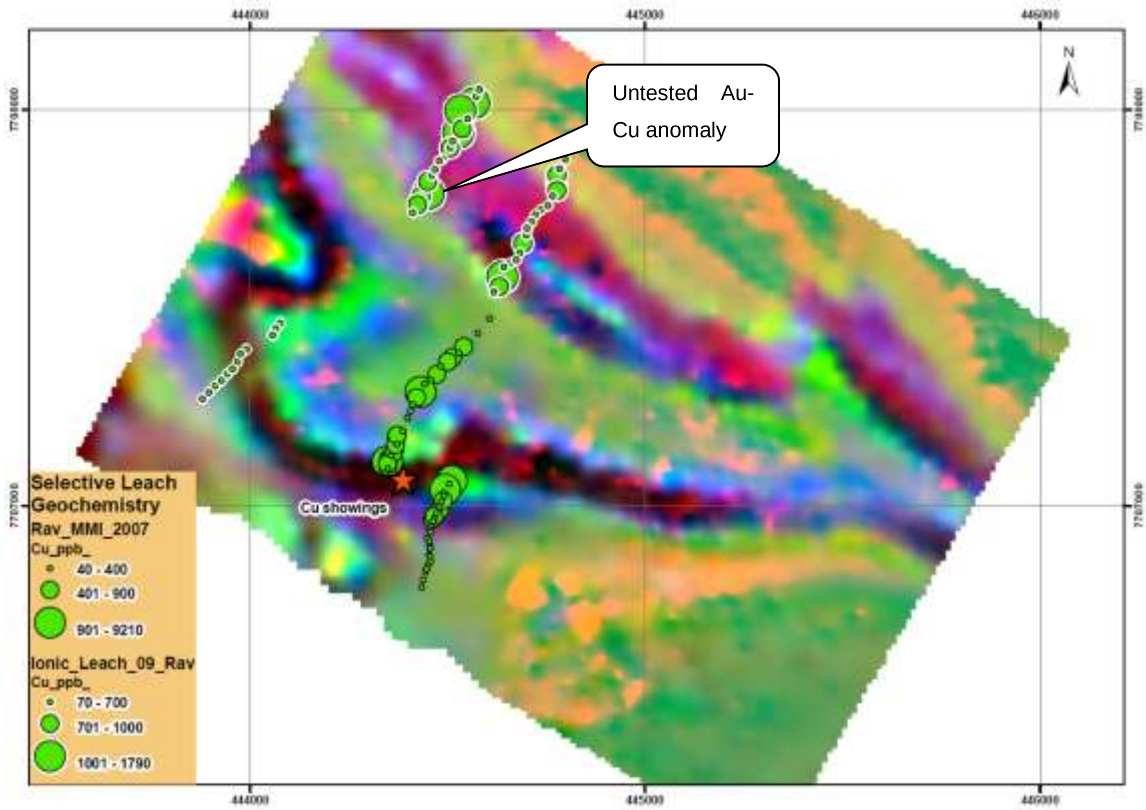

Figure 22 Ravnnaluhppu processed geophysics, combined magnetic and sligram, and 2009 ionic leach samples lines.

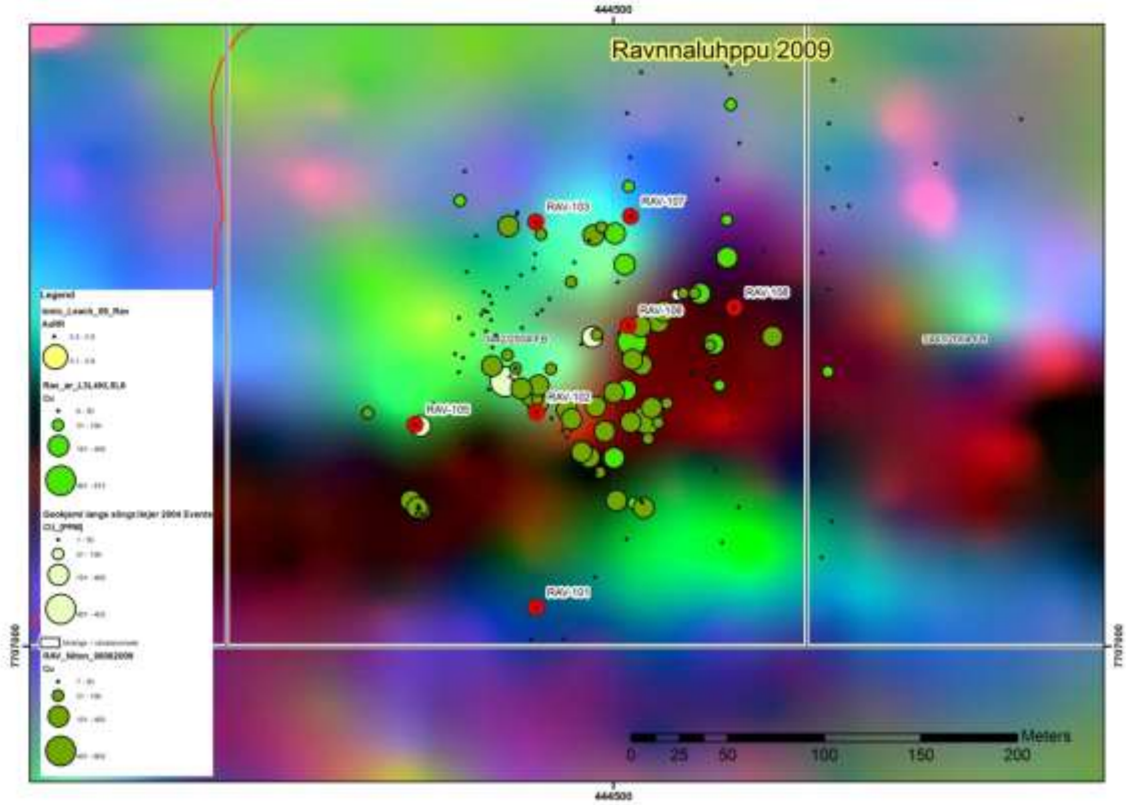

Figure 23 Ravnnaluhppu target detailed till geochemistry showing agua regia and Niton results, and drill hole locations.

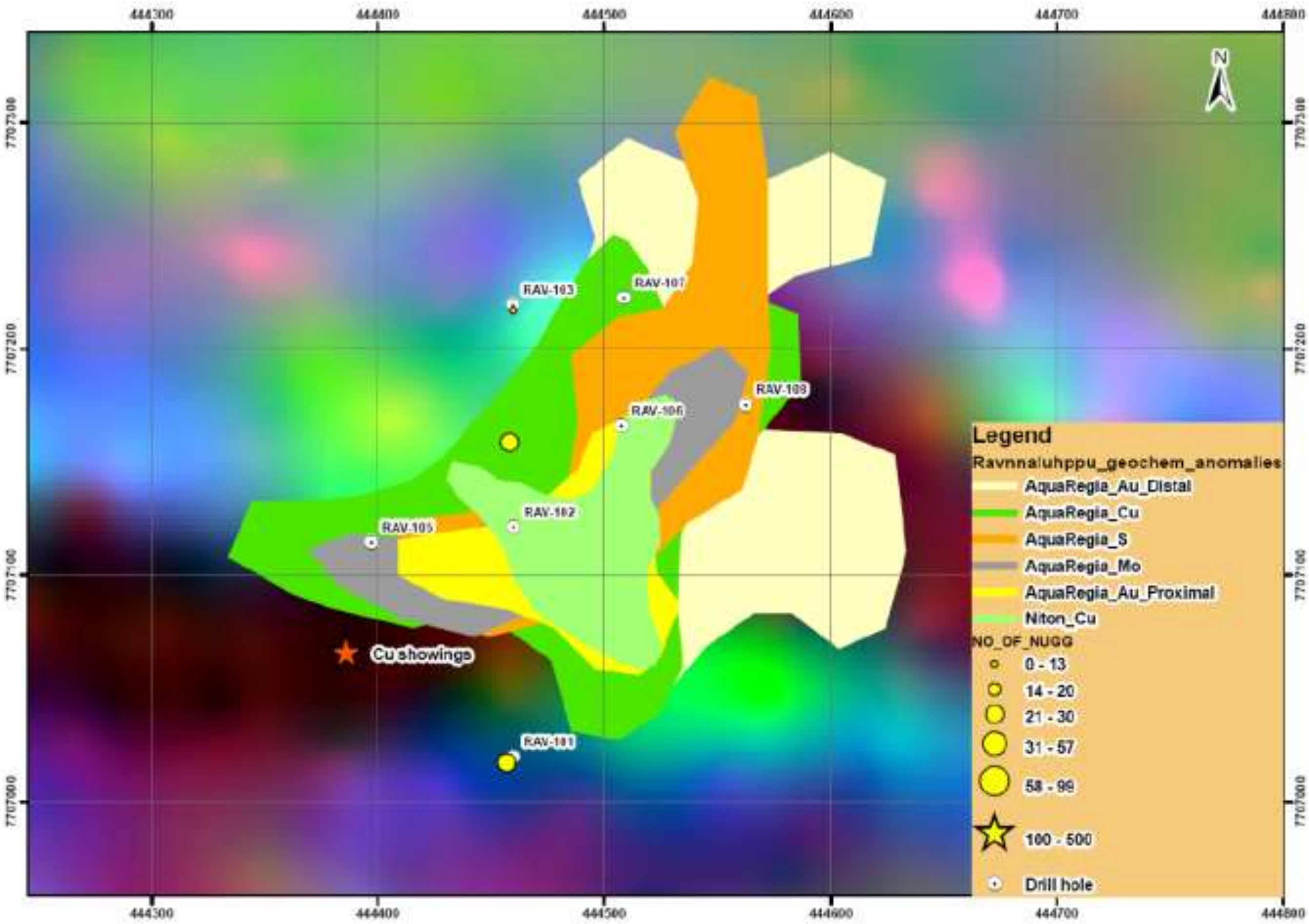

Figure 24 Compilation of the geochemical anomalies of the Ravnnaluhppu target area and drill hole locations.

Results

Ravnnaluhppu 2008 drill holes (RAV-101 to 103) were planned to test 2004 till (aqua regia) and 2007 MMI anomalies (Figure 20, Figure 25), and 2009 holes (RAV-105 to 108) the continuation of the Cu-Au anomaly defined by detailed geochemistry (Figure 23). In addition, two holes (RAV-109 and RAV-110) were drilled to test soil Cu-anomaly at the contact between ultramafic rocks and blackschists about one kilometre east of the main target area (Figure 25).

Most drill holes intersected weakly to strongly carbonate-sericite-sulphide altered greenstone (including mafic and ultramafic rocks) -blackshist-micashist sequence (Figure 31). The alteration zone in the drill holes RAV-102 and RAV-106 was Cu-mineralized over 100 m drill hole length with maximum Cu values being up to 1 % (Table 7). Cu values do not correlate well with any lithology and anomalous values are in all rock types, but the highest values are in blackschist-felsic schist package, which also in the drill hole RAV-106 has high Co (up to 3000 ppm) and elevated Ni (up over 500 ppm). Highest gold values are in the heavily disseminated to semimassive sulphide parts, highest value (1 m @ 1.7 g/t) being at the beginning of the hole RAV-102.

The Ravnnaluhppu drilling results suggest that Cu-Au mineralisation is most likely related to blackshist-felsic schist package and is volcanogenic massive sulphide (VMS) occurrence. However, may also be epigenetic and related to carbonate alteration, or it is remobilized. The correlation of Cu and Au is quite good across the altered zone. The correlation is not linear, all gold peaks correlate with elevated Cu but all elevated Cu zones do not have elevated Au. This strongly implies that Au and Cu are introduced during the same mineralizing event. The mineralized zone was intersected in the holes RAV-102, 105,106 and 108 (Figure 28). Difficulty to join grades, or rock types to other holes in the in same profiles and location of the geochemical anomalies at the structurally complex part of the sequence suggests some structural control, or at least modification and remobilization of the mineralisation during deformation. Within drilled area potential for economic Cu-Au mineralisation is poor. However, northern part of the ground survey area, there is a drill target indicated by ionic leach Au and Cu anomaly (Figure 22 and Ahola, 2009).

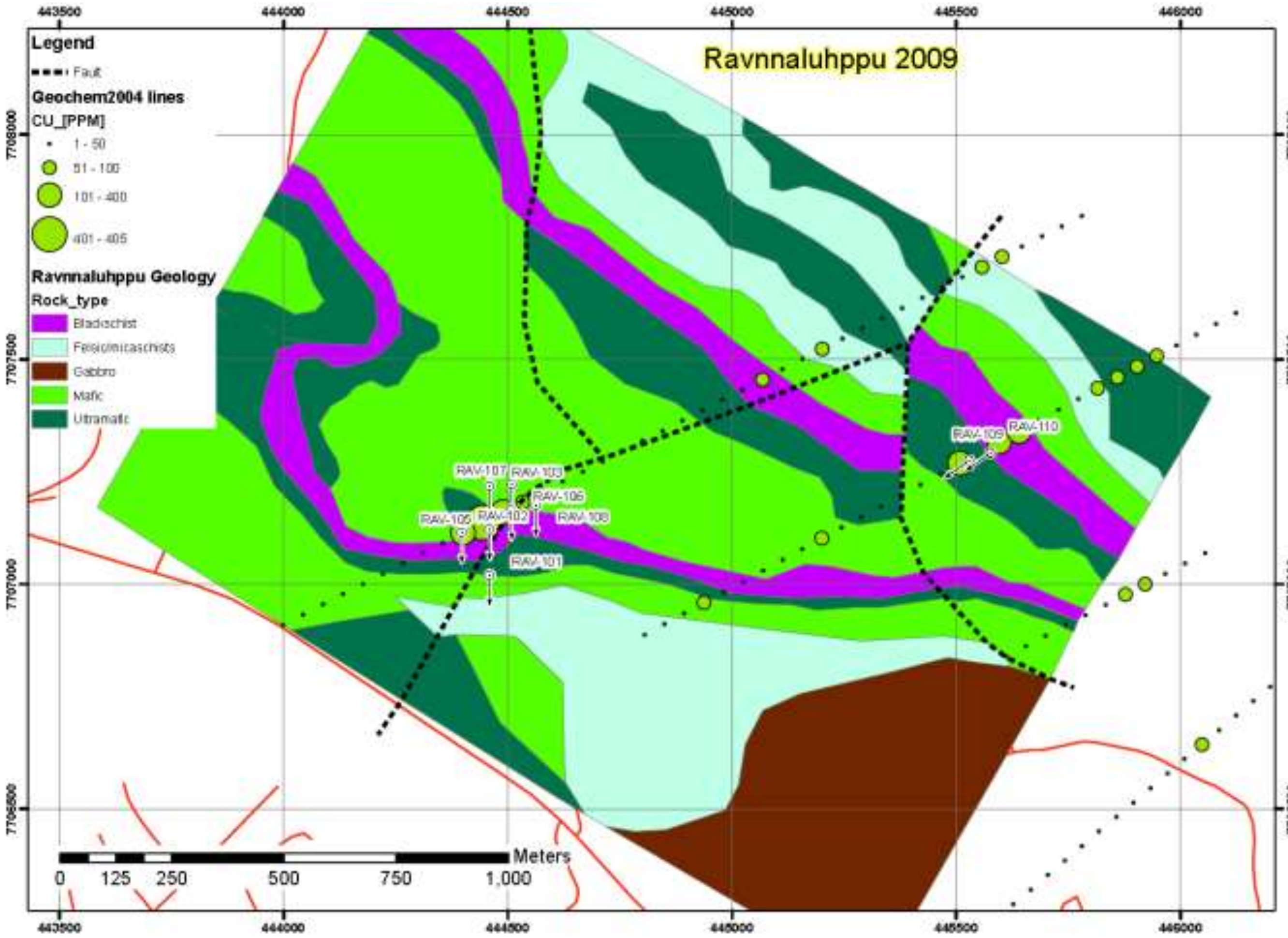

Figure 25 Geological interpretation of the Ravnnaluhppu area showing the drill hole locations the and 2004 till geochemical Cu anomalies.

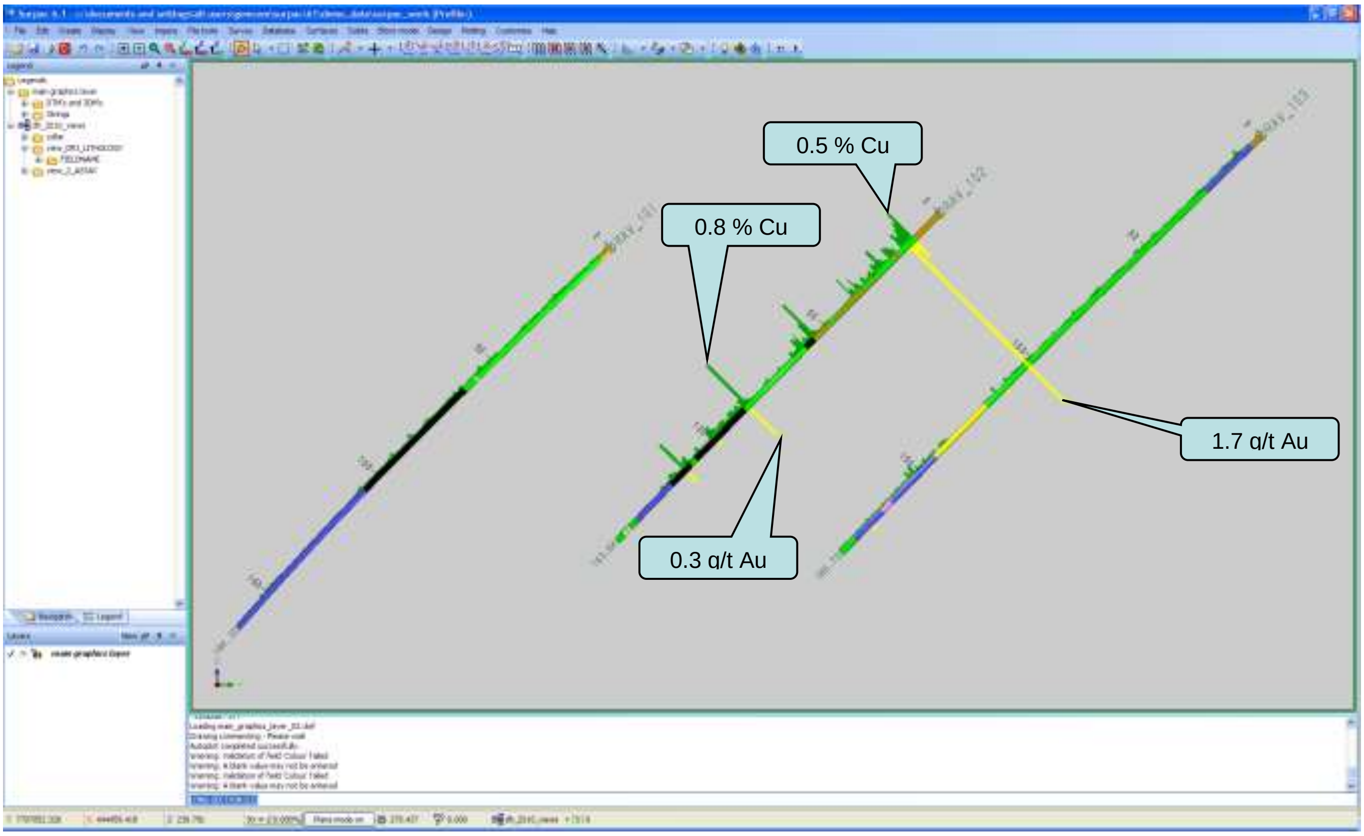

Figure 26 Cross section looking west showing drill holes RAV-101, 102, 103. Cu (green) and Au (yellow) values shown as histograms above and below the holes. Drill hole RAV-102 intersected over 100 m thick Cu mineralized zone (length of RAV-102 hole is 144 m).

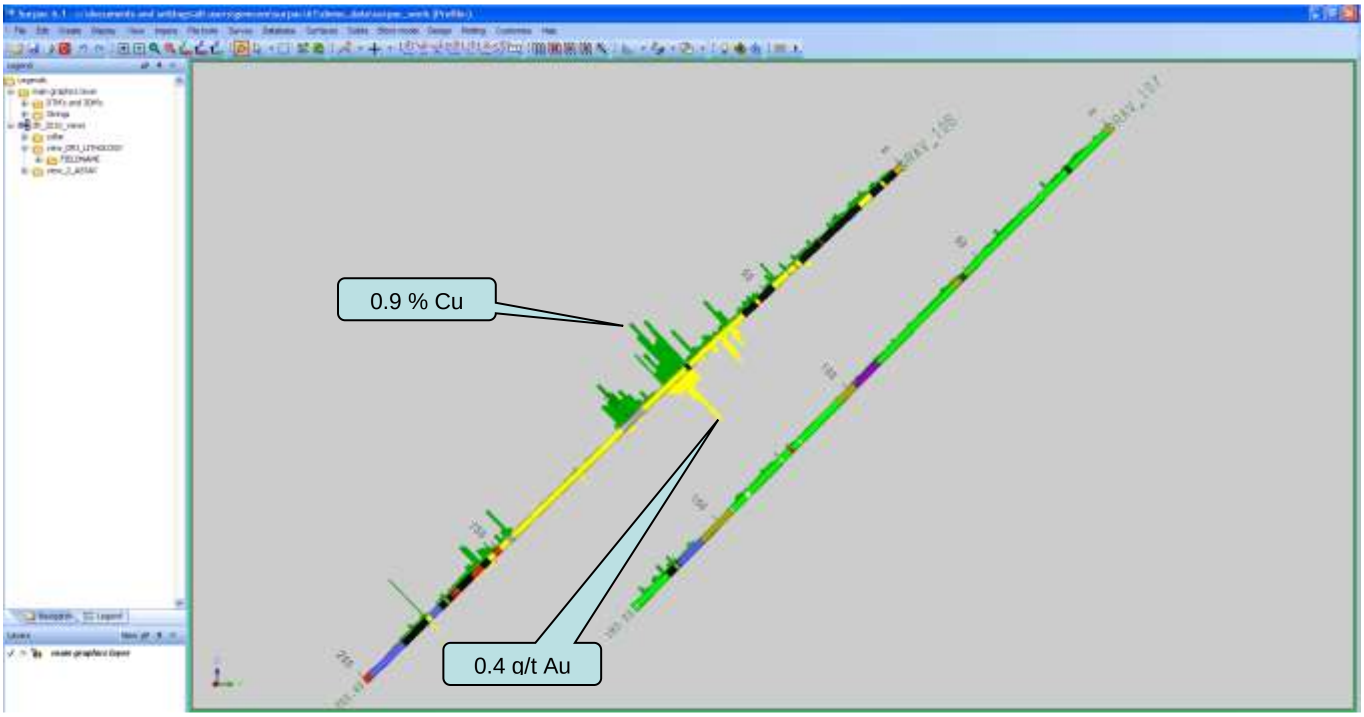

Figure 27 Cross section looking west showing drill holes RAV-106 and 107. Cu (green) and Au (yellow) values shown as histograms above and below the holes.

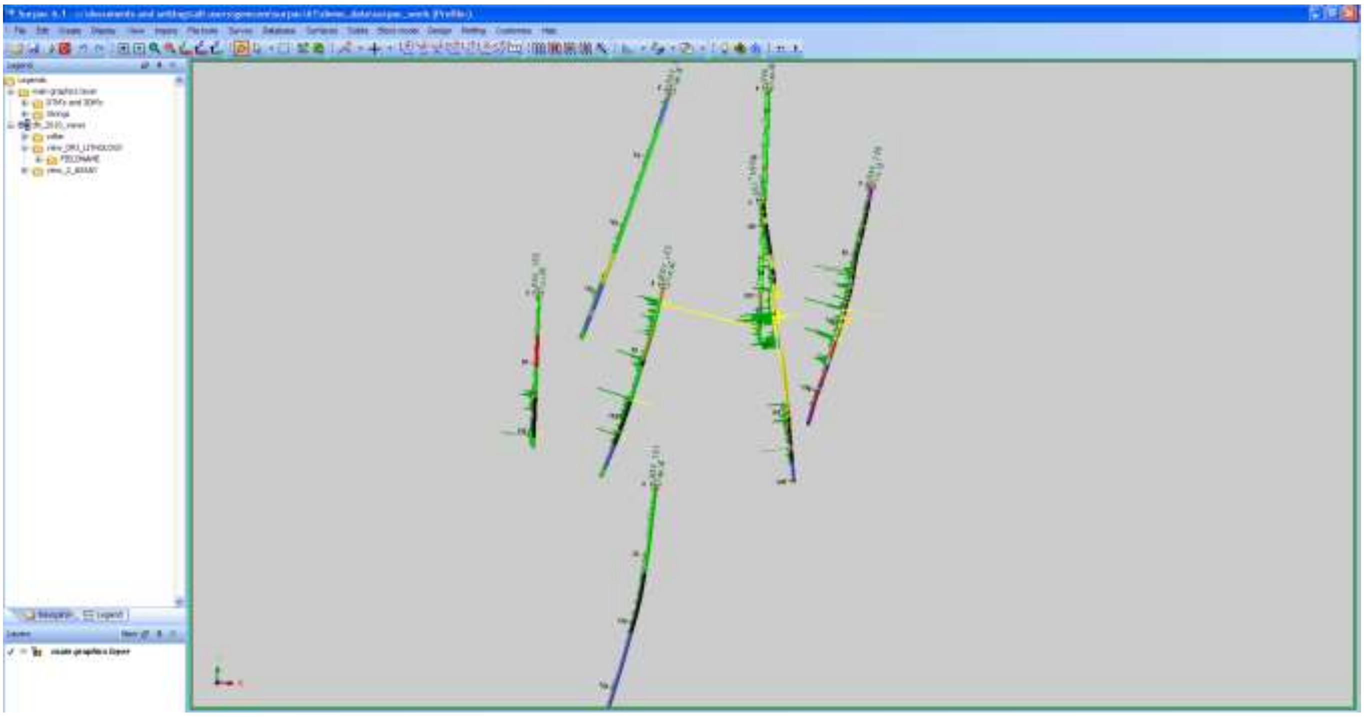

Figure 28 Plan view showing drill holes RAV-101 to 108. Cu values shown as green histograms and Au as yellow histograms.

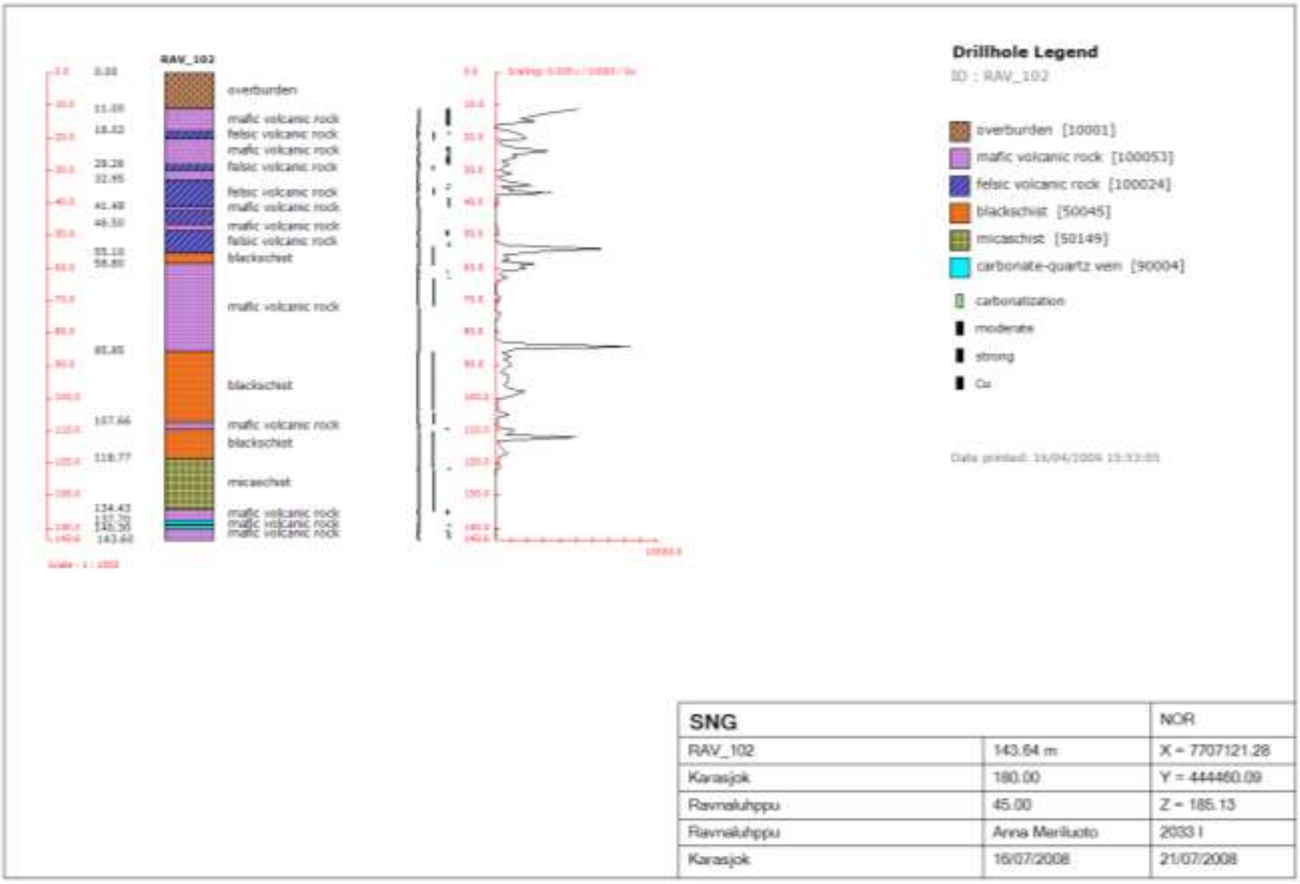

Figure 29 Ravnnaluhppu drill hole RAV-102 graphic log showing carbonate alteration and Cu values.

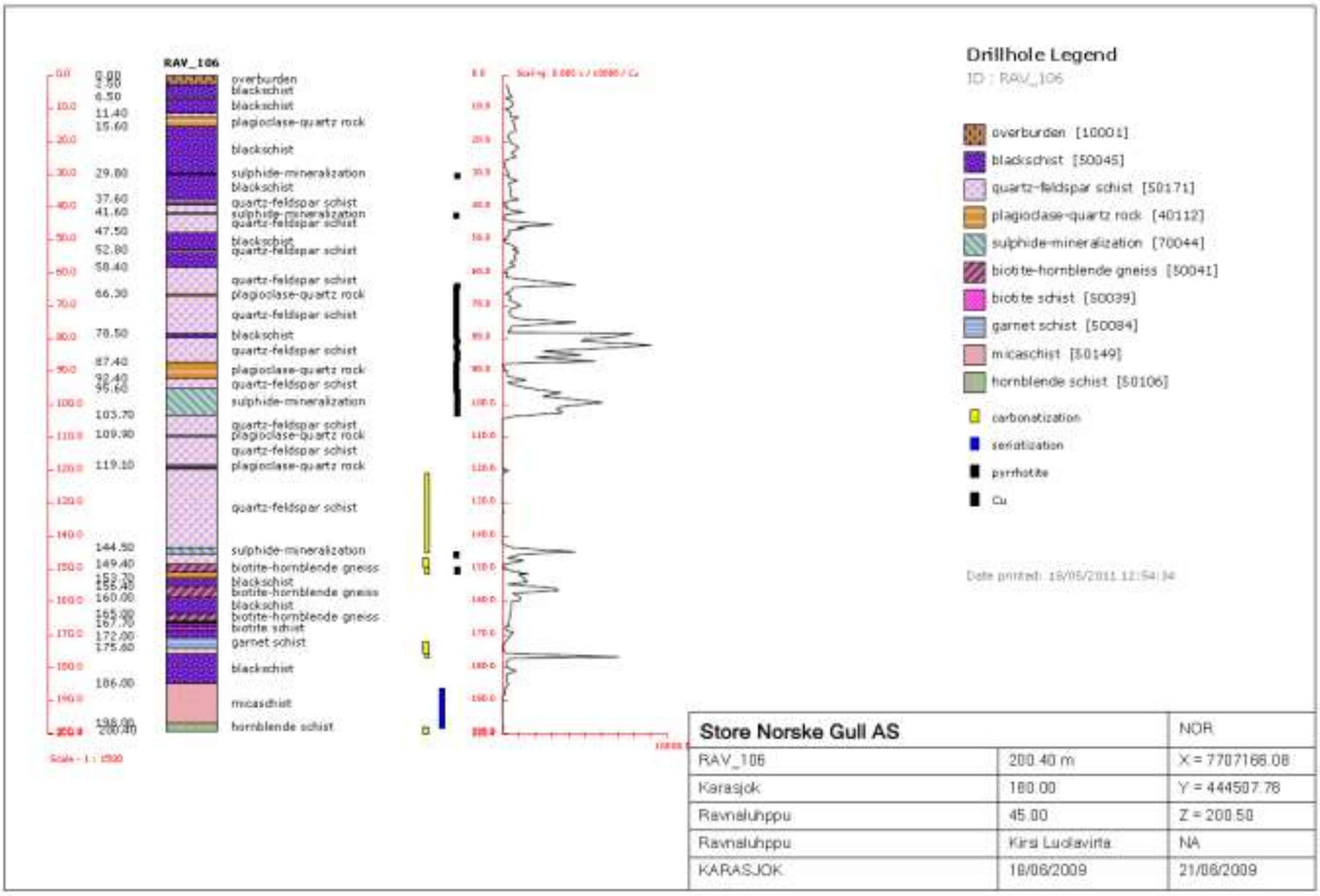

Figure 30 Ravnnaluhppu drill hole RAV-106 graphic log showing carbonate and sericite alteration and Cu values.

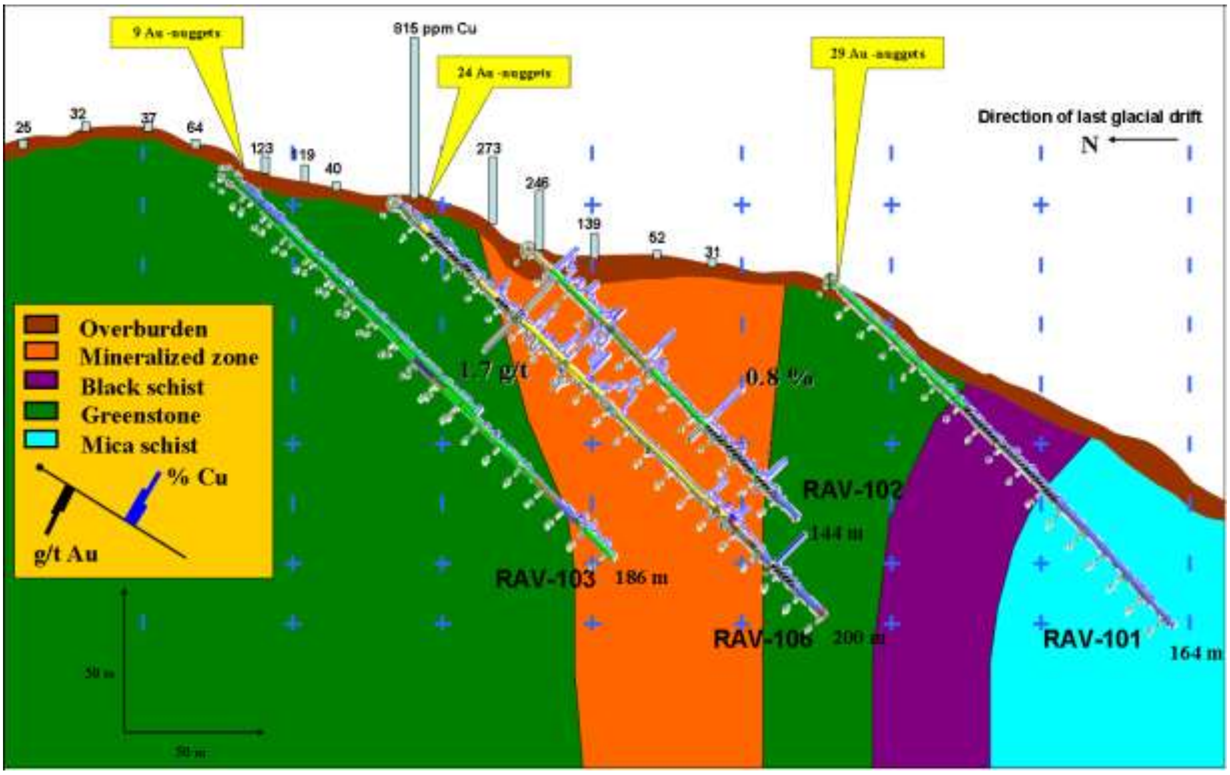

Figure 31 Ravnnaluhppu interpreted cross section looking E (projected between the two main profiles). Histograms of Cu grades above and Au grades below the drill hole traces. Also shown are overburden Cu anomalies and Au micronugget counts.

Table 6 Ravnnaluhppu drilling 2008-2009, over 0.1 g/t Au intersections with common pathfinder elements.

HOLEID	FROM	TO	ASSAYID	Ag ppm ME-MS61	As ppm ME-MS61	Au ppm PGM-ICP23	Bi ppm ME-MS61	Cu ppm ME-MS61	S % ME-MS61	Sb ppm ME-MS61	Te ppm ME-MS61	Th ppm ME-MS61	U ppm ME-MS61
RAV_102	13.00	14.00	200813003	0.39	3.5	1.7	421	2640	8.97		409	6	23.3
RAV_108	88.60	89.30	200937104	1.22	0.8	0.59	0.59	9950	4.02		1.18	2.5	5.2
RAV_106	81.80	82.80	200935089	1.14	222	0.416	1.13	9040		0.06	1.76	3.8	2.5
RAV_102	84.00	85.00	200813078	0.73	30.5	0.319	0.91	8380			1.37	3.3	16.6
RAV_106	67.00	68.00	200935073	0.06	1.6	0.218	48.1	543	2.33	0.1	50.1	5.7	9
RAV_106	82.80	83.80	200935090	0.81	130.5	0.213	1.24	7090		0.06	1.53	3.1	2
RAV_105	102.00	102.50	200936311	0.83	1.2	0.205	0.57	7730	2.16	0.07	0.71	5.7	2.9
RAV_108	94.80	95.80	200937112	0.11	0.2	0.199	9.69	983	3.27		19.6	8.6	7.6
RAV_108	61.80	62.40	200937070	1.74	10.2	0.19	1.03	9400		0.05	1.68	6.1	24.5
RAV_102	11.00	12.00	200813001	0.56	30.5	0.182	3.85	5070			5.51	6	28.8
RAV_108	111.60	111.70	200937132	2.41	65	0.18	0.82				2.04	1.4	2.5
RAV_106	66.30	67.00	200935072	0.07		0.172	109	119.5	0.5	0.08	102	13.7	18.9
RAV_105	100.80	102.00	200936310	0.29	4.2	0.15	0.57	906	3.75	0.07	0.59	7.2	8.7
RAV_106	63.40	64.40	200935069	0.63	26.6	0.148	12.45	4440	5.48		12.15	1.9	2.7
RAV_108	99.50	100.50	200937118	0.17	11.6	0.145	0.92	1770	3.77		1.23	3.6	2.3
RAV_102	112.00	113.00	200813108	0.48	38	0.137	0.21	5000	3.57	0.05	0.3	6	5.4
RAV_105	102.50	102.70	200936312	0.63	7	0.134	0.59	6420	7.41	0.06	0.8	1	6.2
RAV_106	80.80	81.80	200935088	0.67	44.9	0.132	0.15	4790	4.1	0.07	0.41	1.2	1.5
RAV_108	89.30	90.30	200937105	0.48	1.1	0.129	0.19	3840	1.22		0.34	1.6	2.1
RAV_106	176.60	177.00	200935191	0.55	1.9	0.128	0.31	7070	3.18		0.39	0.9	7.8

RAV_106	78.50	79.50	200935085	1.12	2.2	0.124	0.13	7950	1.81		0.35	3	16.6
RAV_108	111.70	112.70	200937133	0.52	26.8	0.122	0.41	4000	6.68		0.79	1.6	5.8
RAV_105	83.50	84.50	200936288	0.17	9.7	0.116	1.84	2040	6.15	0.14	1.57	3.9	7.8
RAV_106	79.80	80.80	200935087	0.59	32.5	0.113	0.59	5050			1.24	3	3.5
RAV_106	84.80	85.80	200935092	0.58	167.5	0.112	0.66	4790		0.07	0.99	5	2.1
RAV_108	59.80	60.10	200937067	0.3	0.2	0.11	0.23	3330	2.24		0.31	8.6	4
RAV_108	110.60	111.60	200937131	1.33	20.9	0.099	0.84	7770			1.93	1.1	5.8
RAV_102	12.00	13.00	200813002	0.24	1.7	0.098	1.57	3490	8.26	0.05	2.48	7.1	37.7
RAV_106	83.80	84.80	200935091	0.36	109.5	0.096	0.68	2470		0.08	1.01	4.2	2.3
RAV_106	120.10	120.50	200935130	0.09	45	0.095	2.71	404		0.07	3.96	0.9	0.4

Table 7 Ravnnaluhppu drilling 2008-2009, over 0.4 % Cu intersections with common pathfinder elements.

HOLEID	FROM	TO	ASSAYID	Ag ppm ME-MS61	As ppm ME-MS61	Au ppm PGM-ICP23	Bi ppm ME-MS61	Cu ppm ME-MS61	S % ME-MS61	Sb ppm ME-MS61	Te ppm ME-MS61	Th ppm ME-MS61	U ppm ME-MS61
RAV_108	88.60	89.30	200937104	1.22	0.8	0.59	0.59	9950	4.02		1.18	2.5	5.2
RAV_108	61.80	62.40	200937070	1.74	10.2	0.19	1.03	9400		0.05	1.68	6.1	24.5
RAV_106	81.80	82.80	200935089	1.14	222	0.416	1.13	9040		0.06	1.76	3.8	2.5
RAV_102	84.00	85.00	200813078	0.73	30.5	0.319	0.91	8380			1.37	3.3	16.6
RAV_106	78.50	79.50	200935085	1.12	2.2	0.124	0.13	7950	1.81		0.35	3	16.6
RAV_108	110.60	111.60	200937131	1.33	20.9	0.099	0.84	7770			1.93	1.1	5.8
RAV_105	102.00	102.50	200936311	0.83	1.2	0.205	0.57	7730	2.16	0.07	0.71	5.7	2.9
RAV_106	82.80	83.80	200935090	0.81	130.5	0.213	1.24	7090		0.06	1.53	3.1	2
RAV_106	176.60	177.00	200935191	0.55	1.9	0.128	0.31	7070	3.18		0.39	0.9	7.8
RAV_108	63.40	63.80	200937072	0.86		0.044	0.23	7050	4.13		0.79	1.5	1
RAV_102	54.00	55.00	200813047	0.13	4.4	0.021	0.28	6540	6.02		0.65	4.3	6.1
RAV_106	79.50	79.80	200935086	0.61		0.069	0.09	6520	0.82		0.27	1.2	7.7
RAV_105	102.50	102.70	200936312	0.63	7	0.134	0.59	6420	7.41	0.06	0.8	1	6.2
RAV_106	99.40	100.40	200935107	0.35	1.6	0.021	0.56	6080			1.42	1	2.6
RAV_106	86.80	87.40	200935094	0.55	93.3	0.063	1.28	5620		0.05	1.27	3.9	7.6
RAV_102	11.00	12.00	200813001	0.56	30.5	0.182	3.85	5070			5.51	6	28.8
RAV_106	79.80	80.80	200935087	0.59	32.5	0.113	0.59	5050			1.24	3	3.5
RAV_108	109.70	110.60	200937130	0.77	28.5	0.064	0.21	5010	5.23	0.05	0.86	1.3	4.7
RAV_102	112.00	113.00	200813108	0.48	38	0.137	0.21	5000	3.57	0.05	0.3	6	5.4
RAV_108	73.30	73.50	200937085	0.51	0.2	0.036	0.27	4970	1.61		0.55	4.8	8.5
RAV_106	80.80	81.80	200935088	0.67	44.9	0.132	0.15	4790	4.1	0.07	0.41	1.2	1.5
RAV_106	84.80	85.80	200935092	0.58	167.5	0.112	0.66	4790		0.07	0.99	5	2.1
RAV_106	75.00	76.00	200935081	0.5	8.1	0.039	0.16	4500	2.58	0.05	0.47	1.2	5
RAV_108	150.00	150.60	200937173	0.22	26.9	0.038	1.45	4480		0.07	2.06	0.6	0.4
RAV_106	63.40	64.40	200935069	0.63	26.6	0.148	12.45	4440	5.48		12.15	1.9	2.7
RAV_106	144.50	145.50	200935155	0.12	0.6	0.014	0.33	4390			0.96	1.2	6.7
RAV_106	98.40	99.40	200935106	0.31	2.3	0.033	0.81	4070		0.07	1.28	1.3	11.8
RAV_108	111.70	112.70	200937133	0.52	26.8	0.122	0.41	4000	6.68		0.79	1.6	5.8

6.3.4 Luostejohka As-Au-target

The target is located in the Porsanger commune along the river Luostejohka. Area was first visited in 2010, because of known As-anomalies (Ahola, 2010; Røsholt, 1983). The anomalous gold grain counts in the heavy mineral samples were rechecked and more extensive sampling was done in the area to locate the As-anomaly.

During the visit a sulphide mineralization was discovered in a narrow swamp and the mineralized trend continues at least 600 m in NW-SE direction. Mineralization is located between mafic/ultramafic package and quartzites. The mafic package consists of chlorite schists, amphibolites and some black graphitic schists. Also some pyroxenite boulders are found in the area, some with small amount of sulphides.

Typically, the overburden in the area is thin (less than a metre) and consists mainly of tightly packed till with large boulders on top at places. Lower in the topography there is finer material in depressions. One meter silt layer was encountered while augering a geochemical sample. The dominating landforms are drumlinoids with paleovalleys (swamps) in between and outcropping areas.

Results

The reason for the As-anomalies is the narrow sulphide mineralization of possible VMS or other exhalative type (Figure 32). Main sulphide minerals were pyrite and pyrrhotite. Highest As assays are found from the semi-massive pyrite samples (up to 1160 ppm). The mineralization is not economical, but at least the right process of forming a VMS or exhalative type deposit has occurred at this stratigraphic level. The overburden geochemistry indicates ultramafic rocks in the area as well (Cr up to 2110 ppm, Ni up to 545 ppm).

Heavy mineral samples count up to 68 gold grains (Figure 32). One sample contains 0.67 mm grain (plated, rounded). Some silvery heavy minerals are found as well (PGM?).

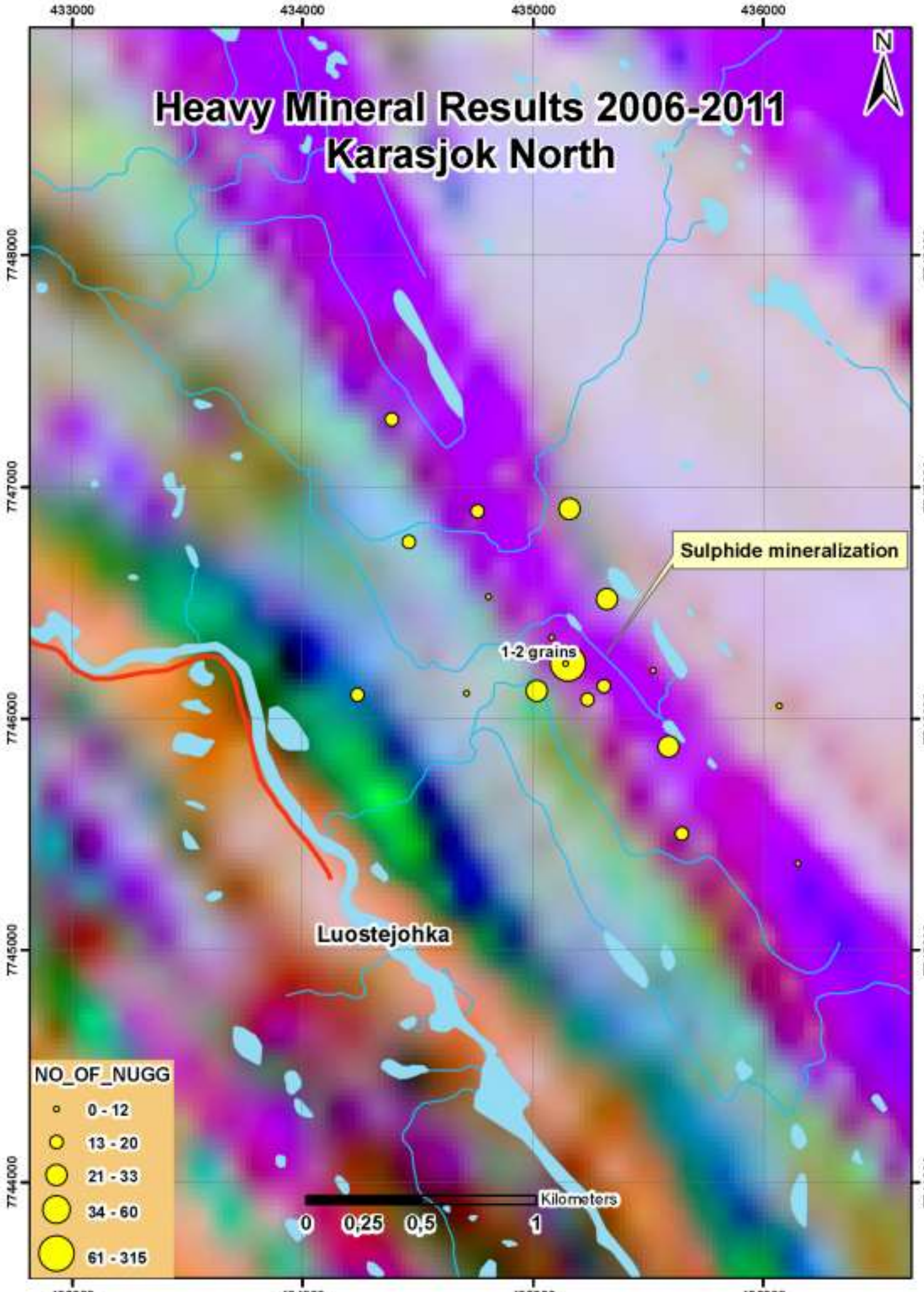

Figure 32 Location of the sulphide mineralisation and heavy mineral results (gold micrograin count and scheelite grains) on a processed aerogeophysical image highlighting bedrock structures and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009).

6.3.5 Suolojavri Ni-target area

Mapping and sampling of the ultramafic rocks (komatiitic cumulate, olivine meso-adcumulates) was carried out in the Suolojavri target area (includes Suolojavri and Guhkesjavri claims) early June (Figure 6). Komatiitic sequence was localized in the field with the help of processed geophysical data. In 2008, altogether 23 observations (9 outcrop and 14 boulder observations) were made in this area. All 23 rock samples were sent for analysis to ALSChemex laboratories.

Few of the 2008 samples showed anomalous Pd+Pt values, and it was decided to have a second look. In 2010, the area was revisited and 32 rock and 77 overburden samples were collected.

Results

Ultramafic rocks, which have been interpreted to be komatiitic cumulate rocks, were localized along the geophysical anomalies along the zone which is several kilometres long (Kivisaari, 2008). Their high Ni, Mg, and Cr confirm their ultramafic nature and 2010 samples show several PGM+Au anomalies in outcrops and soils (Figure 34). Anomalies are typically on the gradients of the magnetic anomalies. Even though direct evidence of nickel sulphides was not found in outcrops or boulders, in places malachite staining and sulphides were observed (eg. 115, 117, 118-JPJ-2010). Furthermore, anomalous Cu and PGM+Au values assayed in rocks and overburden suggest that ultramafic sequence in area is mineralized. In addition, anomalous Cu values assayed from a sample collected in the IDJAJARVUOVDI 1 claim is a positive for sulphides. Although there are some outcrops in the area, next steps in the exploration would be systematic till geochemical sampling, ground geophysics, and drilling.

Cu anomaly in the IDJAJARVUOVDI 1 claim should be checked and Ionic Leach/MMI sample lines planned across the anomaly.

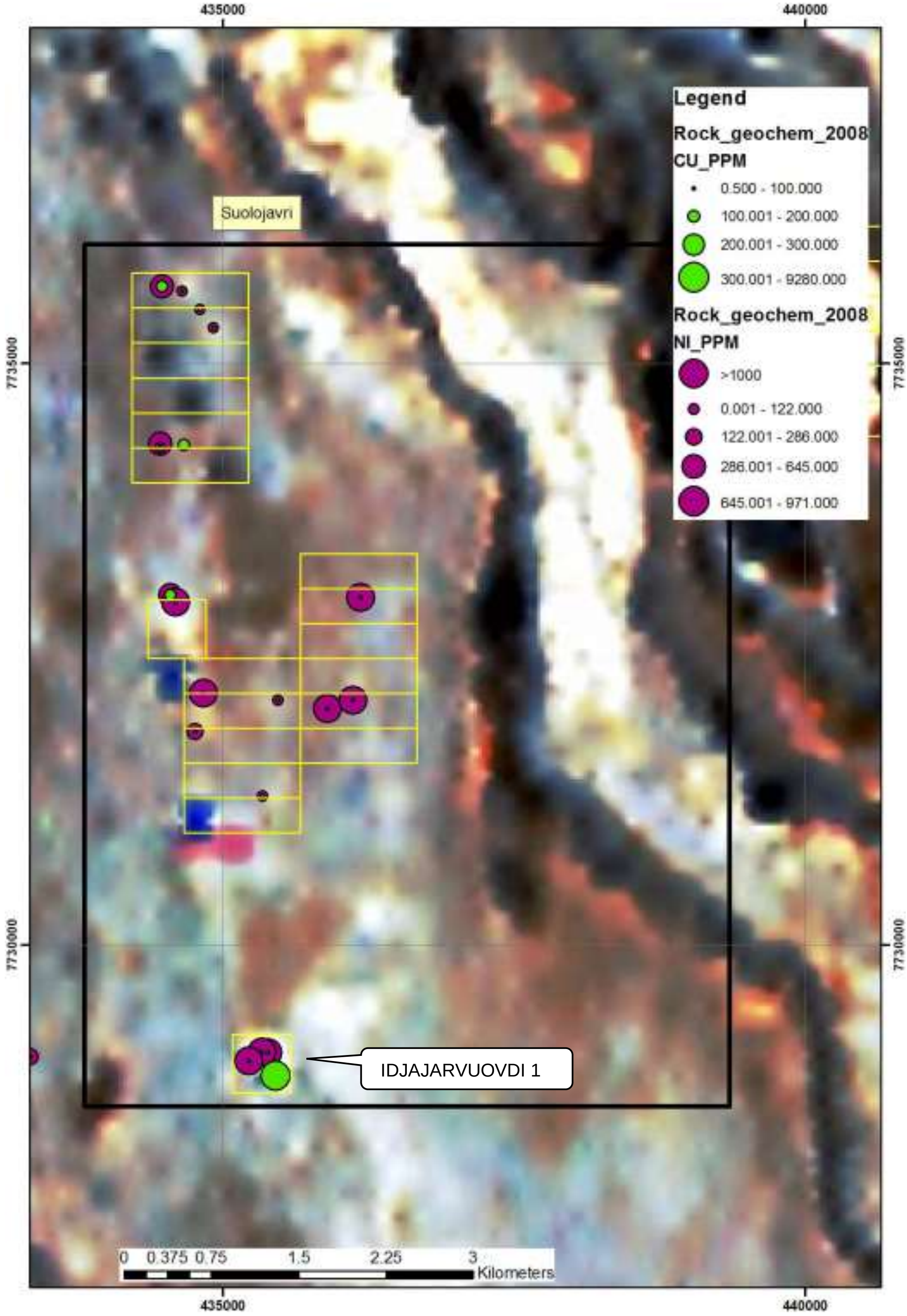

Figure 33 Suolojavri Ni-target area, 2008 outcrop and boulder samples Ni and Cu on a processed aerogeophysical map (principal component analysed and combined EM and magnetics colour image). Dark colours indicate strong conductors (eg. black schists), white strong magnetic anomalies, different colours indicate EM anomalies with different frequencies.

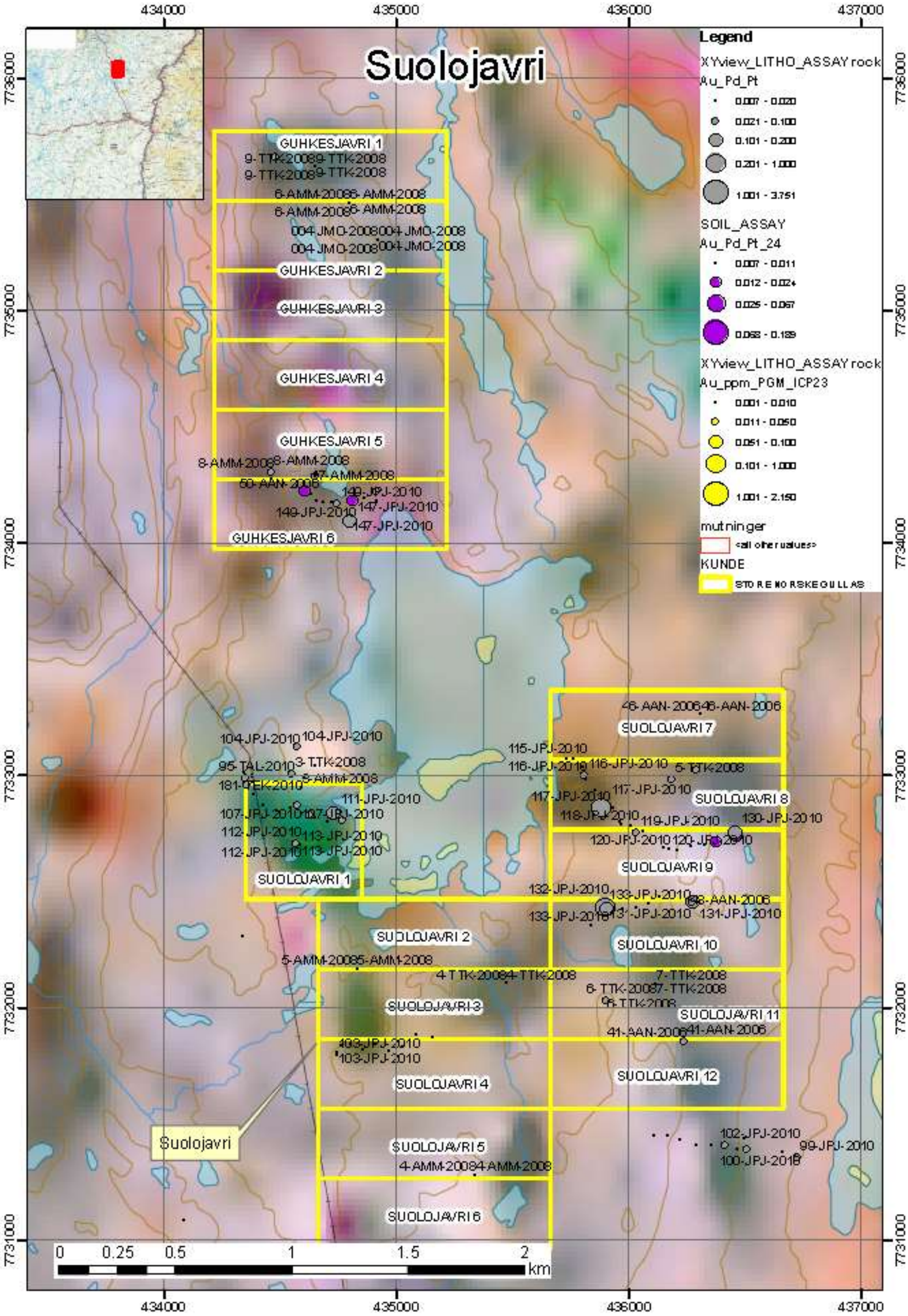

Figure 34 Bedrock, till and heavy mineral samples of the Suolojavri area shown on a processed geophysical image. Image processed to highlight bedrock structure and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009). Green colour typically correspond with ultramafic rocks and red to purple colour with more conductive rocks like black schists and black colour to highly magnetic rocks like iron formations.

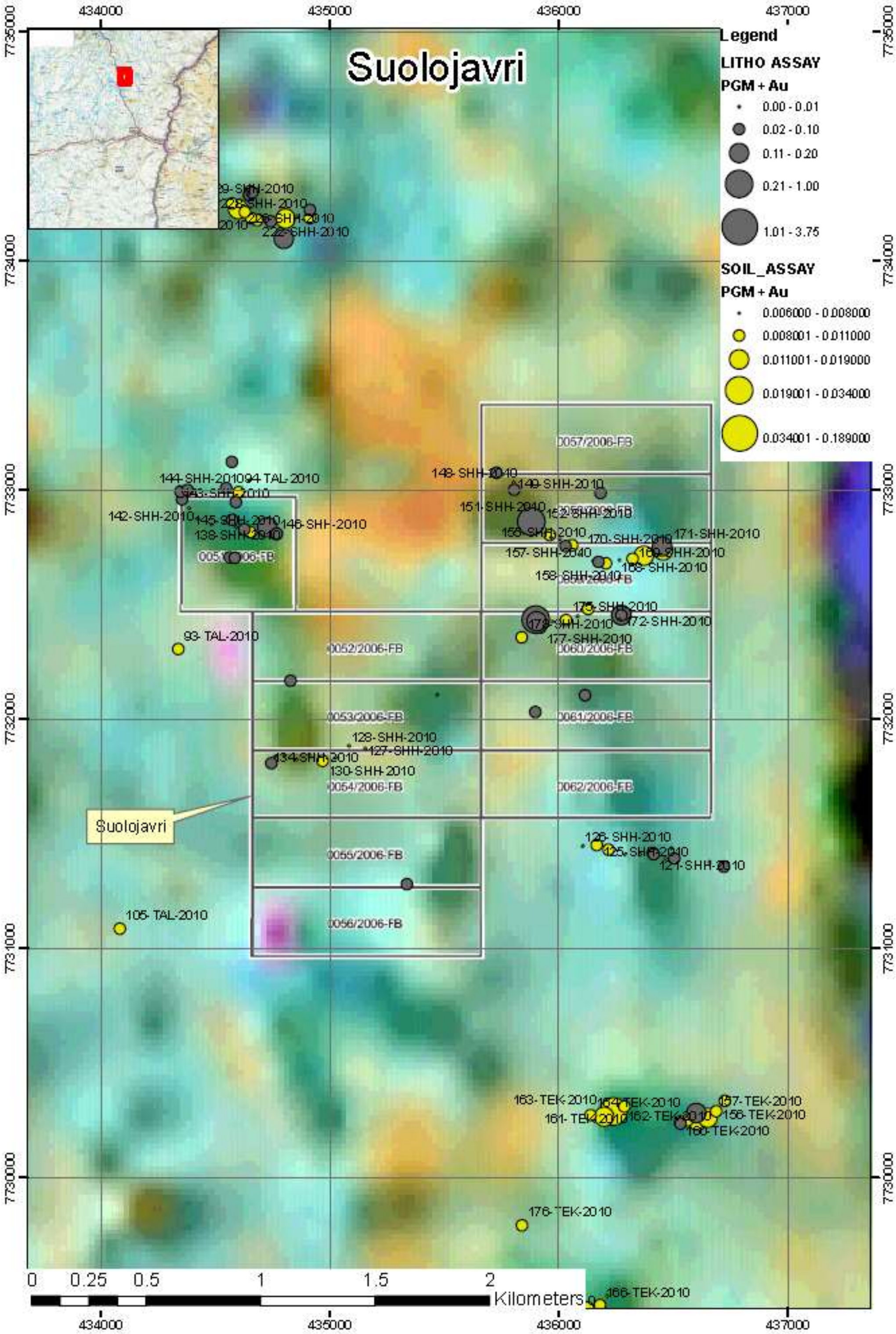

Figure 35 Suolojavri Ni-target area, outcrop and boulder samples PGM+Au of rock grab samples and overburden samples on a processed aerogeophysical map (principal component analysed and combined EM and magnetics colour image (Aarnisalo, 2009). Dark green colours indicate magnetic anomalies (eg. ultramafic rocks), orange high frequency (surface conductors: eg lakes, swamps etc), blue and purple colours indicate EM anomalies mid and low frequencies. The 2010 results show several PGM+Au rock and soil anomalies.

6.3.6 Gastejávri and Ságge-Muorjevárri Ni-target areas

Bedrock mapping in the area was done during the first half of the July. 23 outcrops and 4 boulder observations were done (Kivisaari, 2008). The work was concentrated on the eastern side of the Bavtajåkka river valley as it is best outcropped (Figure 36). The river was never crossed because of the high water level. Also few outcrops were found along the tributary brooks. Otherwise the area doesn't have steep topographic variations and is covered. The ASKASJÆG'GI claims on southern and NE side of Akkasjeaggi are totally covered by swamp and there are no outcrops. Rock types in the area are amphibolite, ultramafic volcanic rocks, mica schist, quartzite and tonalite.

Two Ionic Leach-sample lines were made GAS-L1 on Gastejávri claim: 28 samples, SAG-L1 on Ságge-Muorjevárri claim: 19 samples.

Results

Ultramafic rocks, which have been interpreted to be komatiitic cumulate rocks, were mapped in the Gastejavri claims geophysical anomaly. Their geochemistry also supports their ultramafic nature but no direct evidence of Ni-sulphides was observed and Cu contents of analyzed samples are low. Highest Cu content was in a mafic rock (Figure 36).

Ionic Leach sample line defines a clear Ni anomaly on the Gastejavri claim magnetic anomaly (Figure 37). In addition, on the western side of the anomaly Cu is also elevated suggesting presence of sulphides.

Ionic Leach sample line crosses the east-west magnetic anomaly in the Ságge-Muorjevárri claims on the eastern bank of the Bavtajåkka river. Ni and Cu are slightly elevated in couple of samples. This further suggests that the mafic rock outcropping (Kivisaari, 2008) on the magnetic anomaly is a mafic dyke (dolerite) which is younger than the greenstone belt and it is unlikely to be mineralised.

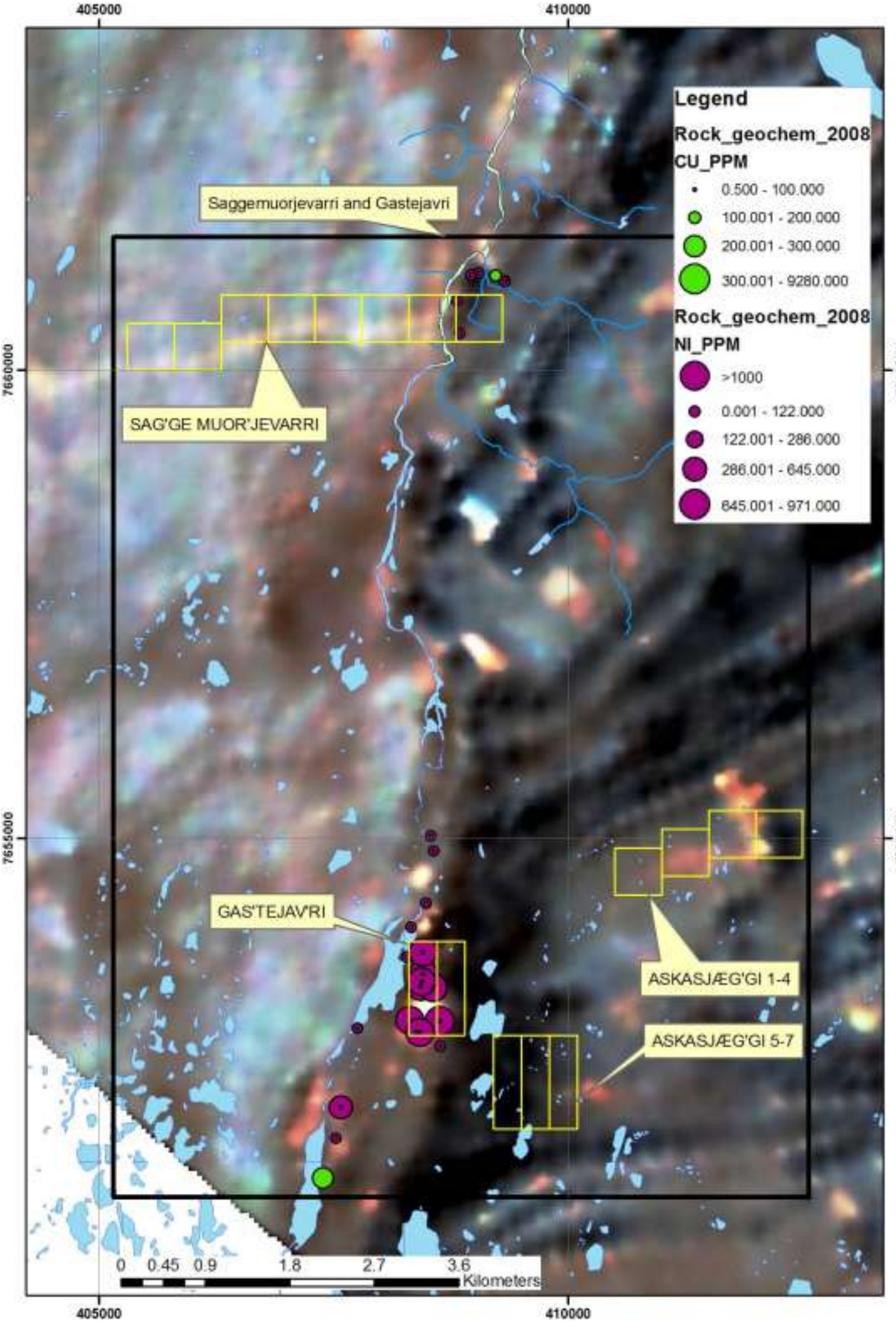

Figure 36 Gastejávri and Ságge-Muorjevárri Ni -target area 2008 outcrop and boulder samples Ni and Cu on a processed aerogeophysical map (same as Figure 33).

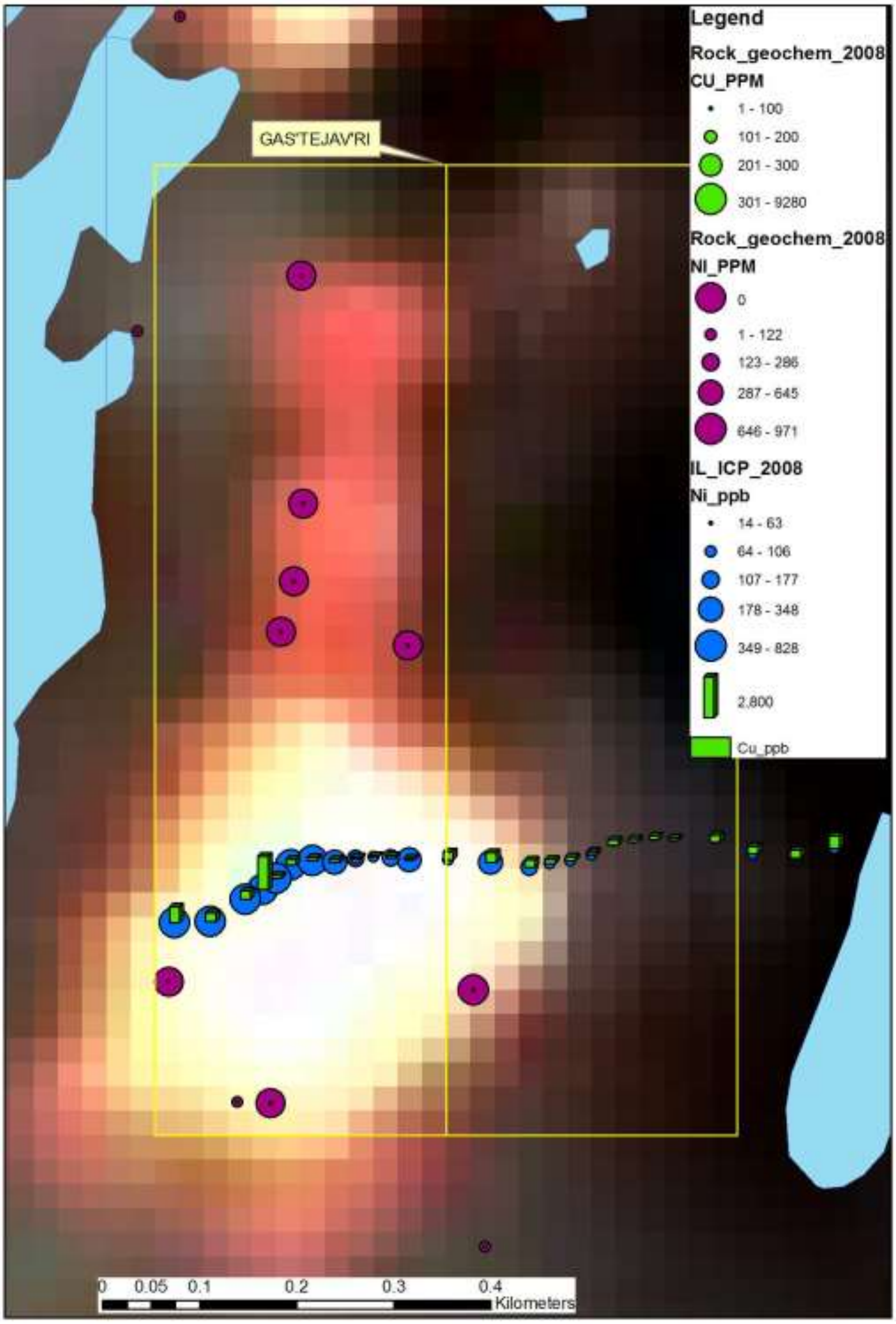

Figure 37 Gastejávri claim bedrock, boulder and Ionic Leach Ni and Cu results on processed aerogeophysical image.

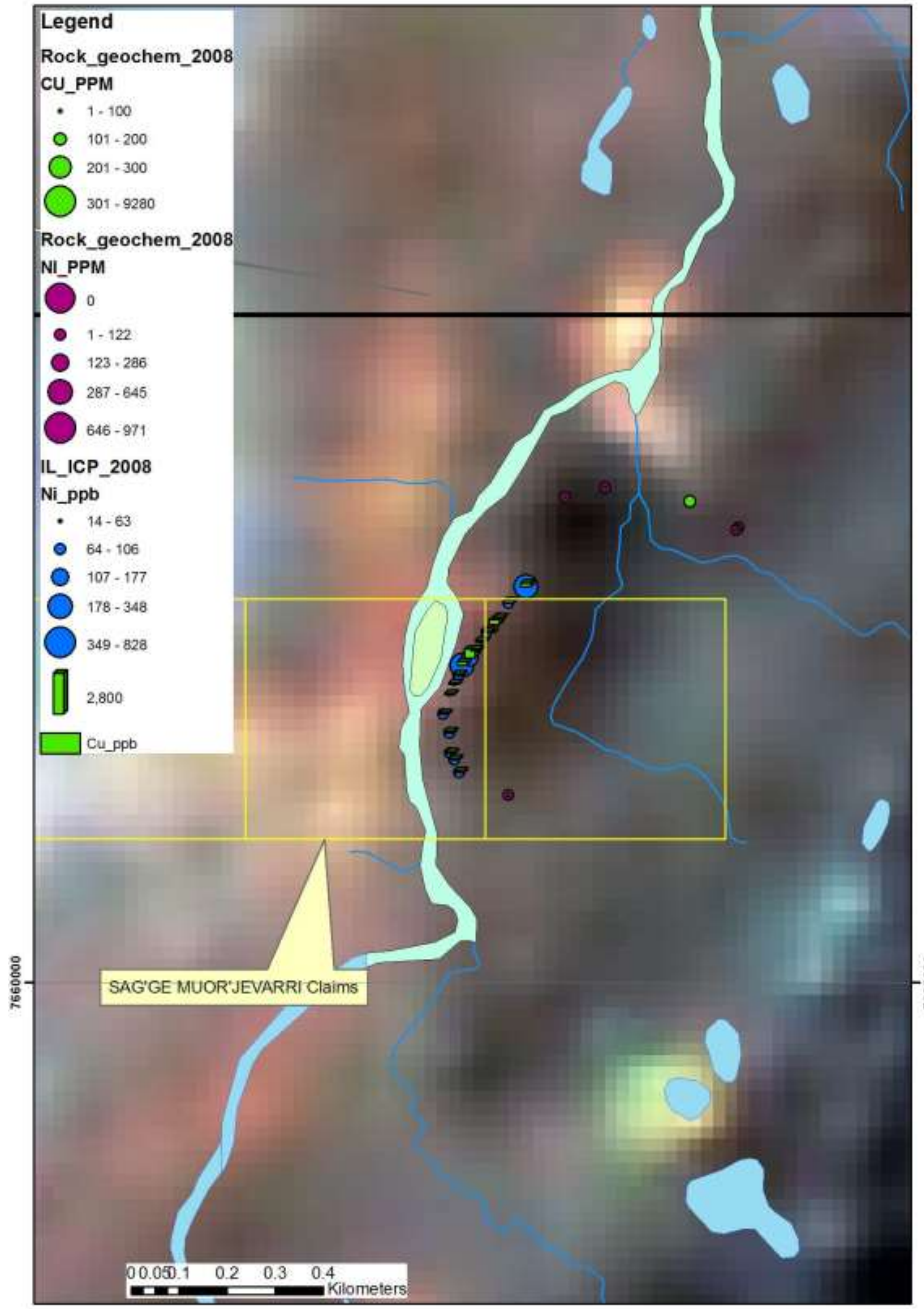

Figure 38 Ságge-Muorjevárri claim bedrock, boulder and Ionic Leach results on a processed aerogeophysical image.

6.3.7 Nirvejávri Ni-target and Gåššjåkka Au-target

Bedrock mapping was done during the second half of the July and 14 outcrops and 7 boulder observations were done in the area (Figure 39).

In the area, topography is quite gentle or flat and mostly swamps. Outcrops were found only on the river valley and in the marginal channels to south from the claims and NE side of the mapping area. The bedrock in the MUOI'DONVARRI claims in the area is not exposed and the terrain is suitable for MMI-sampling, as the claim area is covered by swampy birch forest with more than 30 cm of peat (Kivisaari, 2008).

Three Ionic Leach-sample lines were made on eastern side of Nirvejávri across the “Gåššjåkka-dilational jog” –structure (Figure 41): NIR-L1: 33 samples, NIR-L2: 34 sample pits, NIR-L3, 33 samples. Gåššjåkka dilational jog is at the SW end of the NE-SW trending magnetic anomaly near the Anarjohka national park border (eg. Figure 7 SE corner and Figure 40).

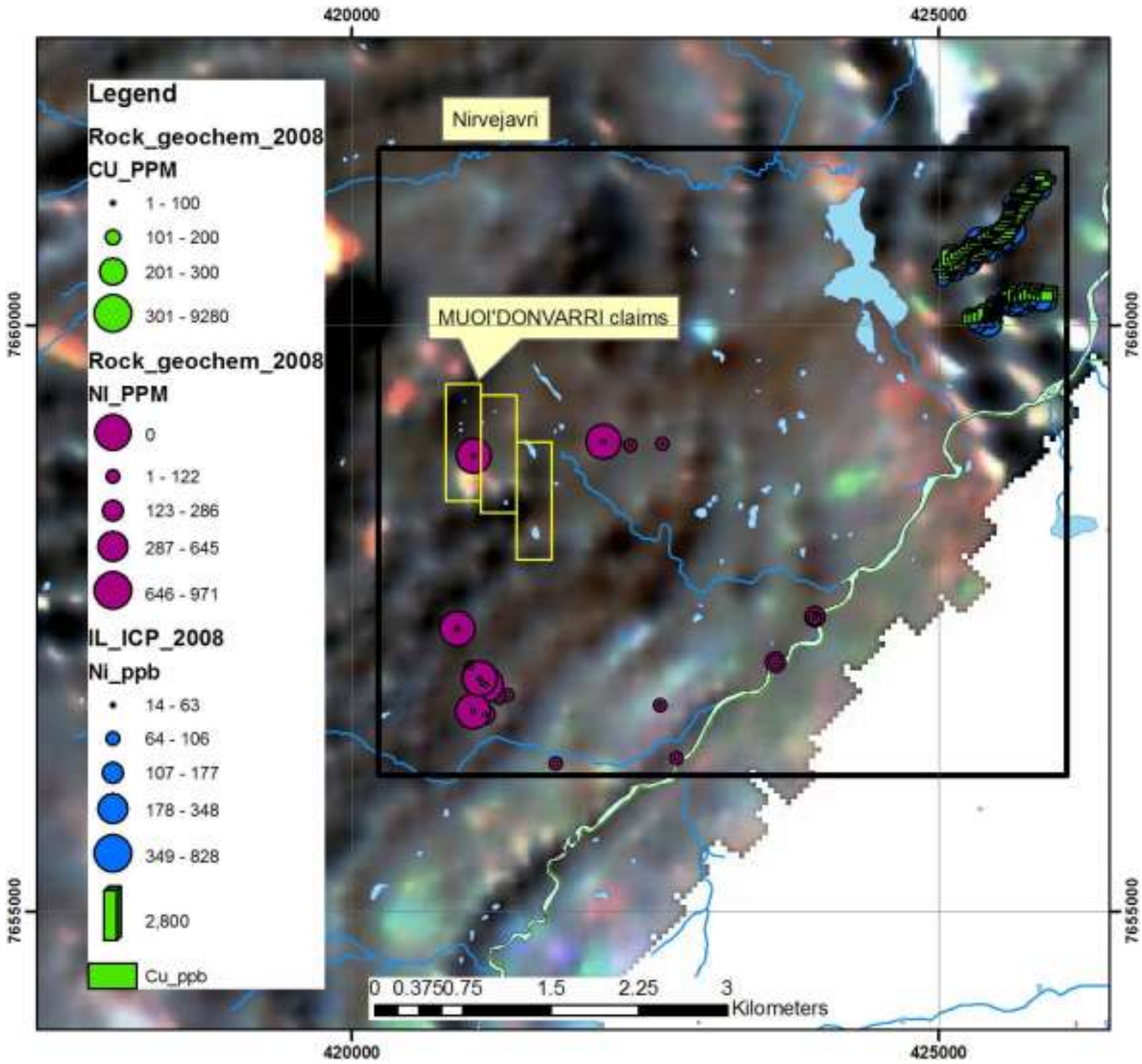

Figure 39 Nirvejávri Ni-target and Gåššjåkka Au-target Ni and Cu results of outcrop, boulder and Ionic Leach samples.

Results

The bedrock in the target area is composed amphibolites, gneissic granites, garnet-mica schists and tonalites. All observed ultramafic cumulate rocks are boulders and their geochemistry (eg. Ni, Figure 39) confirms their ultramafic nature. However, no direct indications of Ni-sulphides were made during mapping, and Cu and S values are low. Therefore the MUOI'DONVARRI claim are is not favorable for Ni exploration.

Ionic Leach samples lines across the Gåššjåkka dilational jog structure revealed interesting results (Figure 41). Gold and As values are anomalous in several places along the sample lines, especially at the SW end of lines where As values are highest of all Ionic Leach samples collected in 2008. This As anomaly coincide with elevated Au values.

Geochemical results suggest that the Gåššjåkka dilational jog structure is gold mineralized and worth of more sampling. It is interesting that the magnetic is in the same orientation as the Laanila dyke in near Ivalo, Finland, which is one of the first alluvial gold panning areas discovered in Finland.

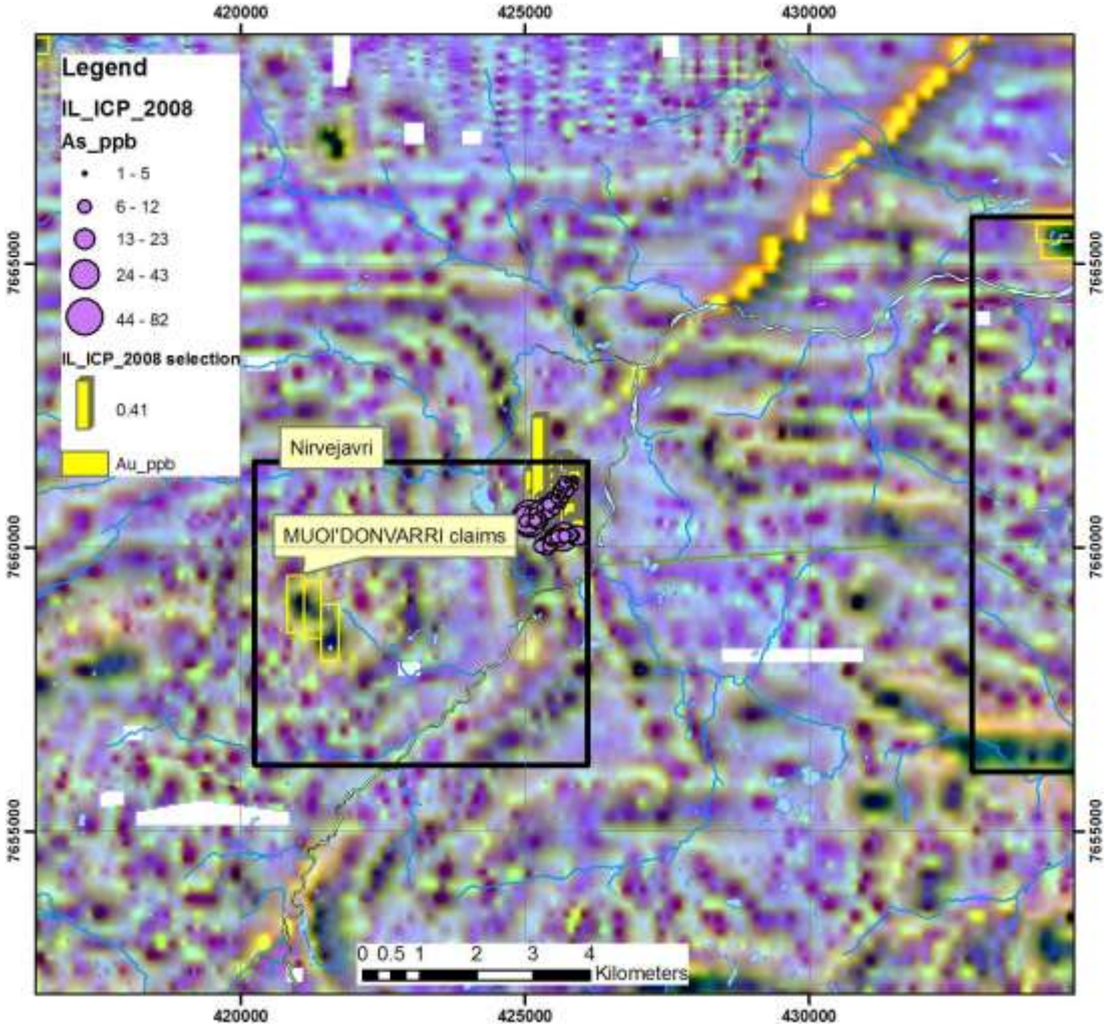

Figure 40 Gåššjåkka Au-target on a processed magnetic map.

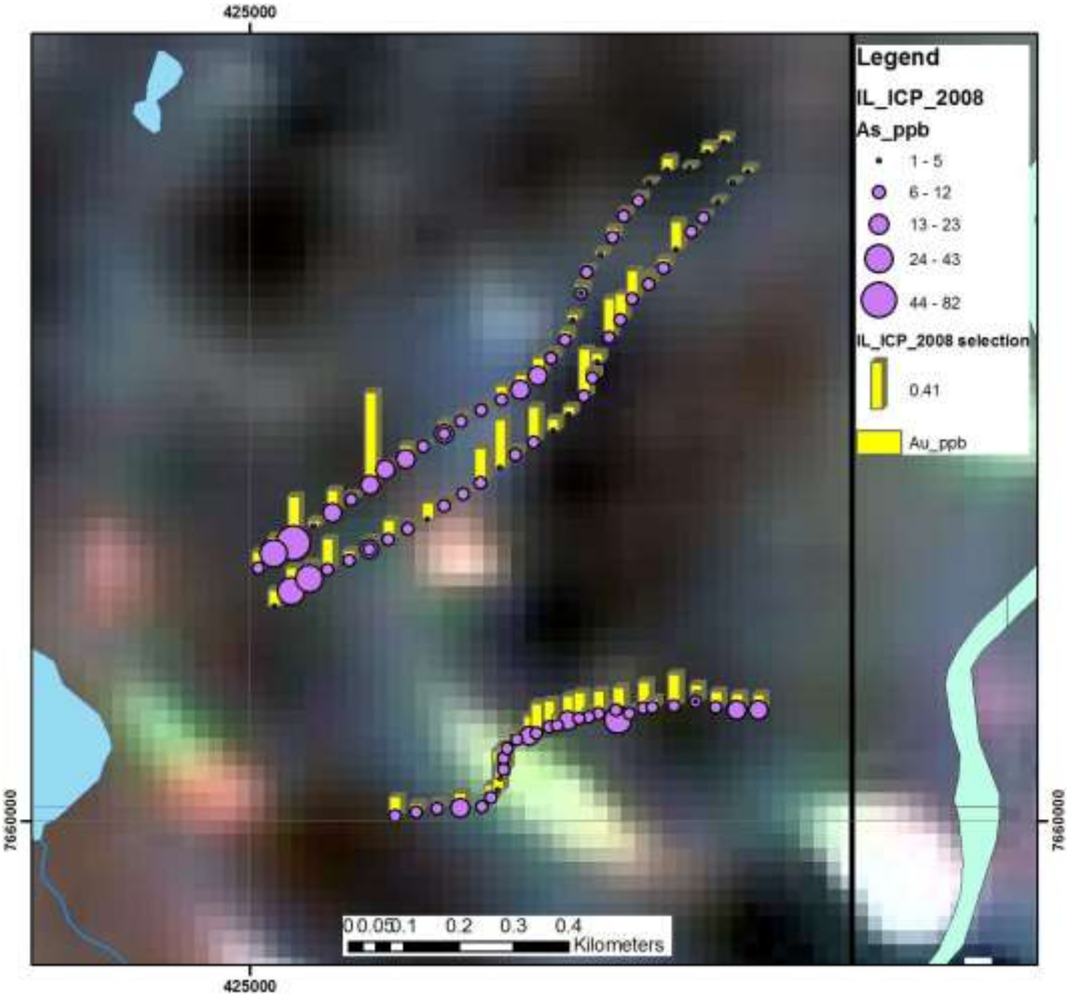

Figure 41 Gåššjåkka Au-target, As and Au Ionic Leach results.

6.3.8 Galmat Ni-target

Mapping of the area was done during the first half of the August. Area is poorly outcropping and only three outcrop observations done in the area (Kivisaari, 2008). Therefore field work concentrated six Ionic Leach-sample lines were made on the southern and northern claims across the magnetic anomalies.

GAL-L1: between Ássuorčielgi and Gavdnjája, 30 samples

GAL-L2: NE from Galmmatvuovdi near Goššjohka, 25 samples

GAL-L3, SW from Stohkkečaŋŋá 21 samples

GAL-L4, W from Stohkkečaŋŋá 33 samples

GAL-L5, NW from Stohkkečaŋŋá, 29 samples

GAL-L6, SW from Lávgačohkka, 29 samples

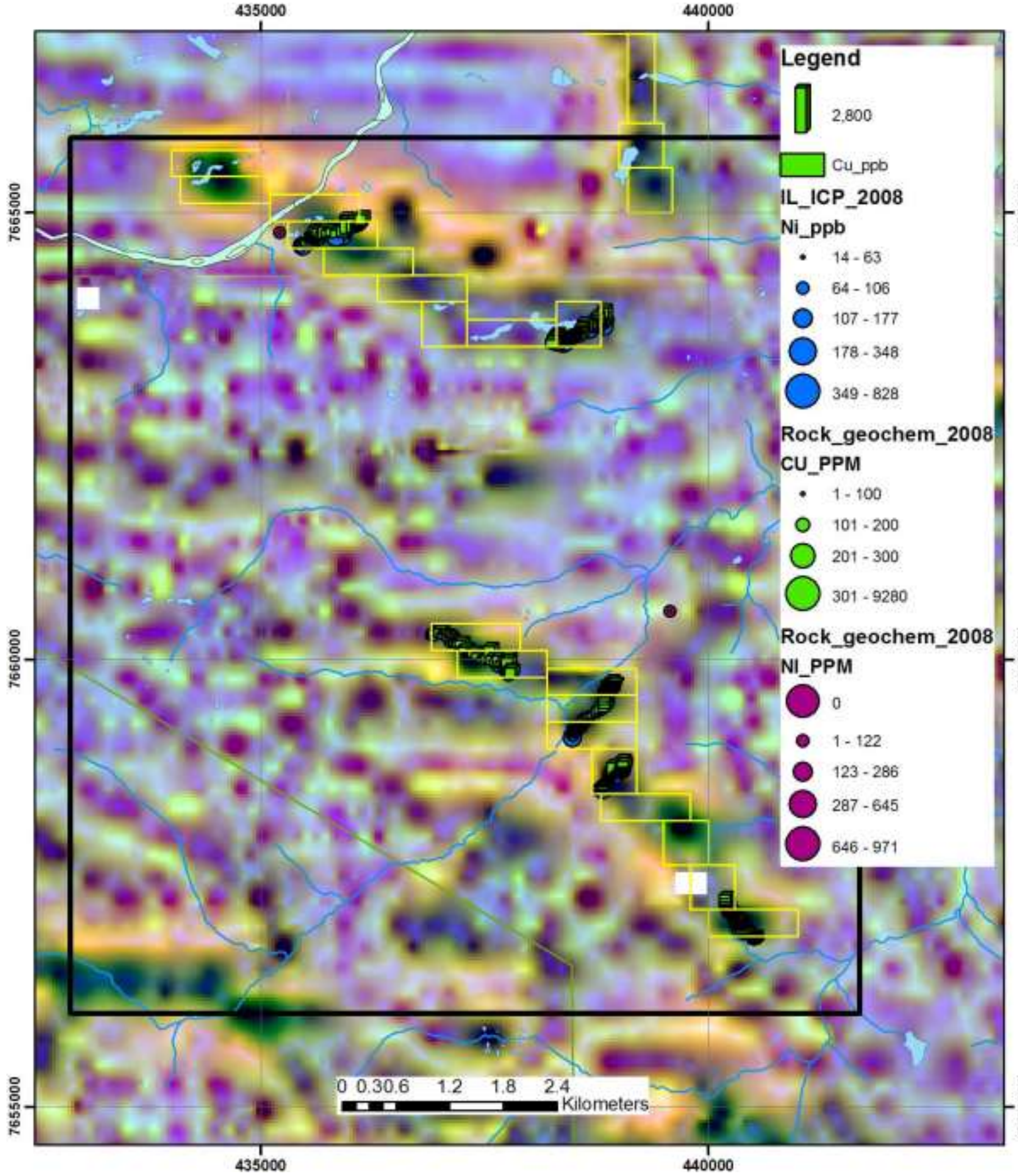

Figure 42 Galmat area claims and Ionic Leach samples on a processed magnetic image.

Results

On the northern claims two outcrops were found: one on the riverbank of Goššjohka and other on Lávgačohkka, and they both were amphibolites (Kivisaari 2008). Areas of magnetic anomalies northern and eastern sides of the southern claims outcrop areas tonalitic gneiss of were found.

Ionic Leach results suggest that the magnetic anomalies are black schists. The Ni levels in this area are low compared to other areas and Ni anomalies are only 2-4 times local background. However, Cu, Zn and Co anomalies are up to 10 times the background.

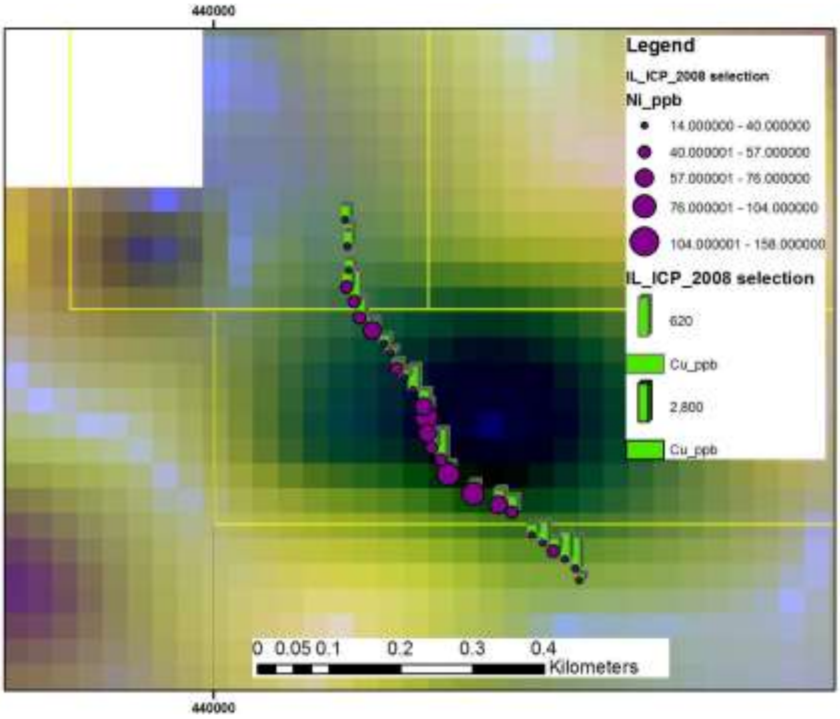

Figure 43 Galmat Ionic Leach Line-1 Ni-Cu results.

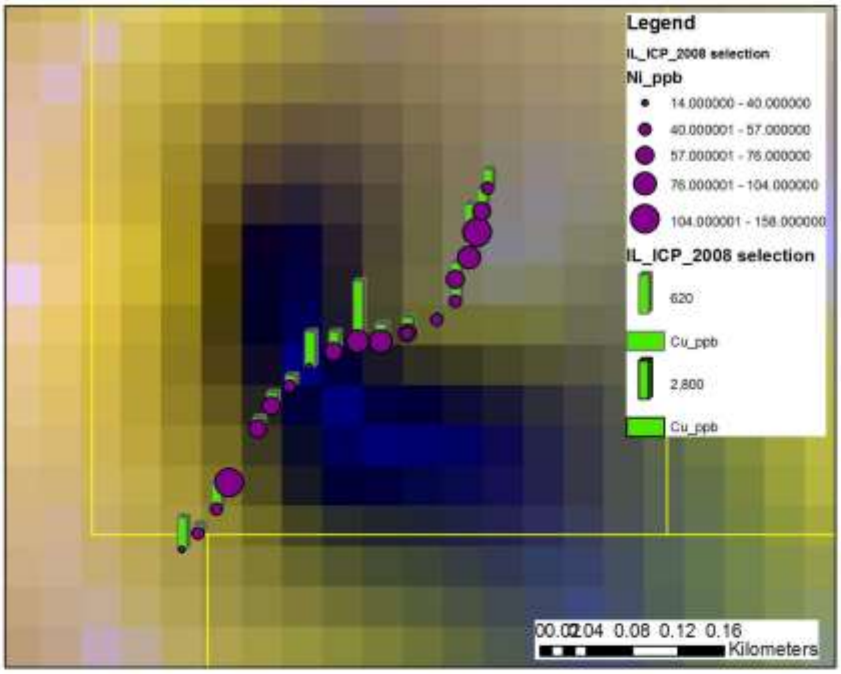

Figure 44 Galmat Ionic Leach Line-2 Ni-Cu results

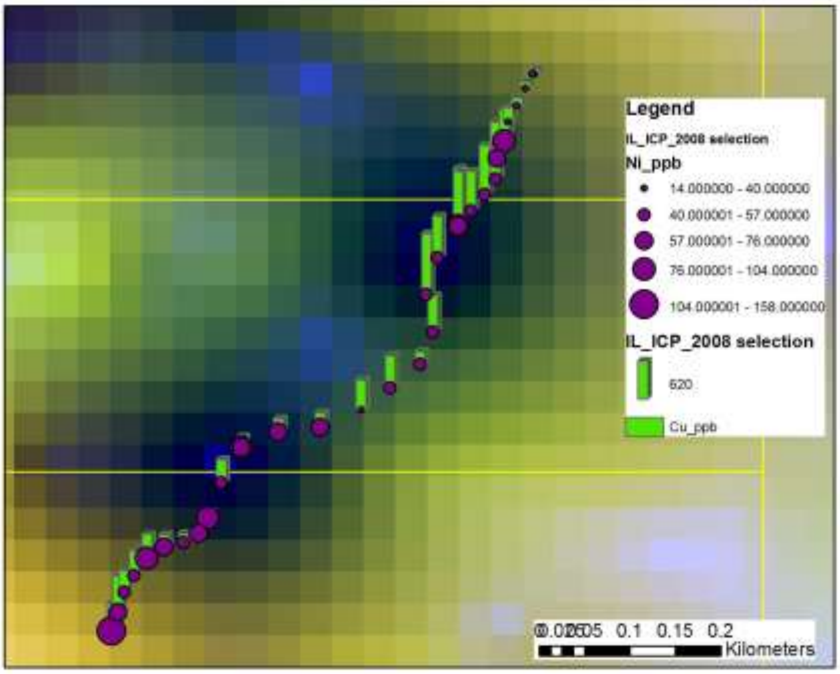

Figure 45 Galmat Ionic Leach Line-3 Ni-Cu results

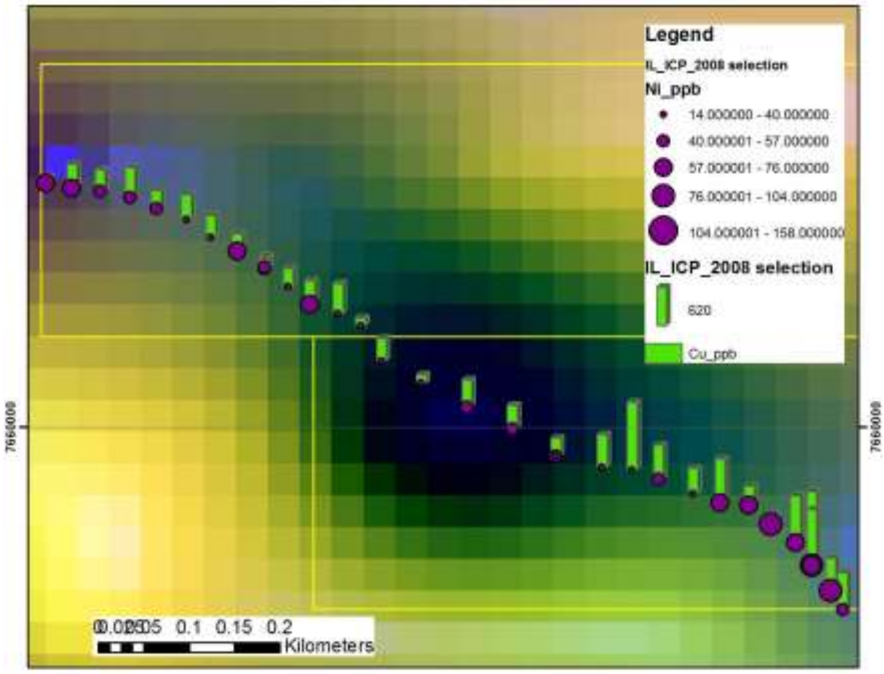

Figure 46 Galmat Ionic Leach Line-4 Ni-Cu results.

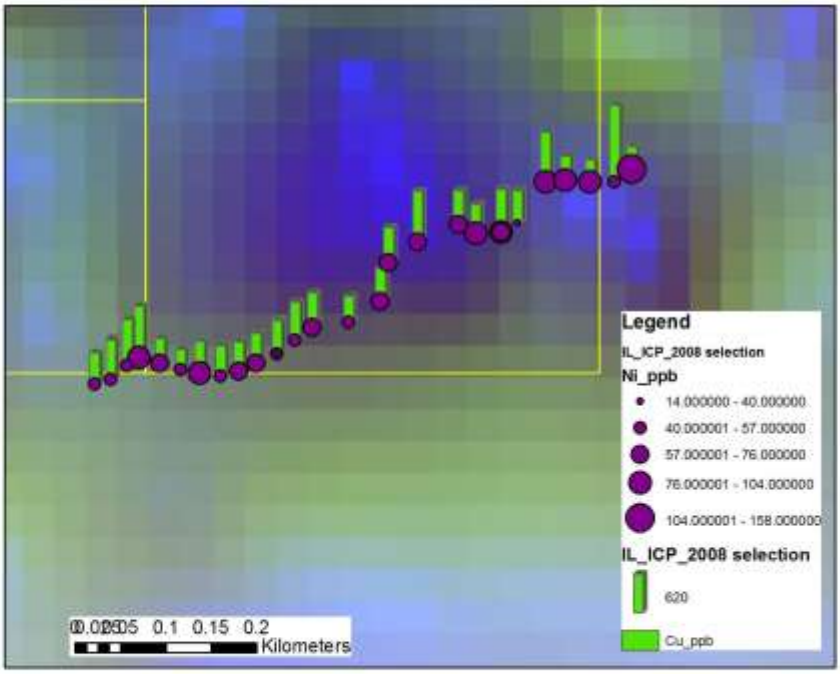

Figure 47 Galmat Ionic Leach Line-5 Ni-Cu results.

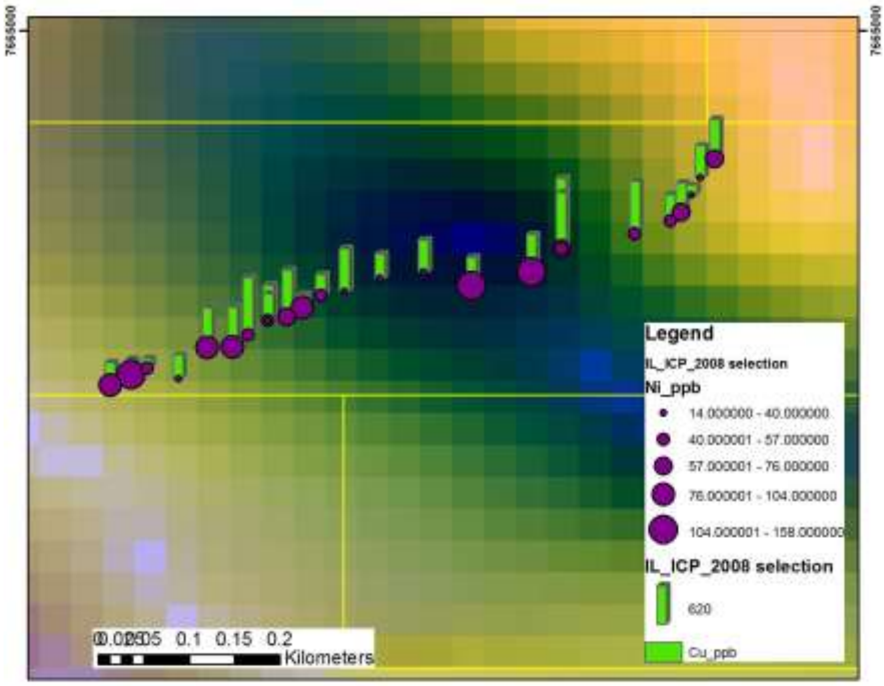

Figure 48 Galmat Ionic Leach Line-6 Ni-Cu results.

6.3.9 Heargejohka Ni-target

Bedrock mapping was done during the second half of the August and 3 outcrops and 1 boulder observation were done (Figure 49). Four Ionic Leach-sample lines were made on Heargejohka target area:

HEA-L1: at Lávžejokjeaggi, 26 samples, HEA-L2: on Roavvevárri, 27 samples, HEA-L3, northern side of Heargejohka, 32 samples, HEA-L4, northern side of Heargejohka, 33 samples (Kivisaari, 2008).

Two more MMI-sample lines were planned, but they were excluded: one on the claims on eastern side of Iškorasjohka was covered by brushy wetland and the other planned line was next to a large serpentinite outcrop.

Results

The main rock types in the area are quartzite, granite, komatiitic cumulate and amphibolite-chlorite rock, amphibolite and mica schist. Outcropping ultramafic rocks are serpentinites or tremolite-serpentinites which are interpreted to be cumulate komatiites. No direct evidence of Ni-sulphides was found.

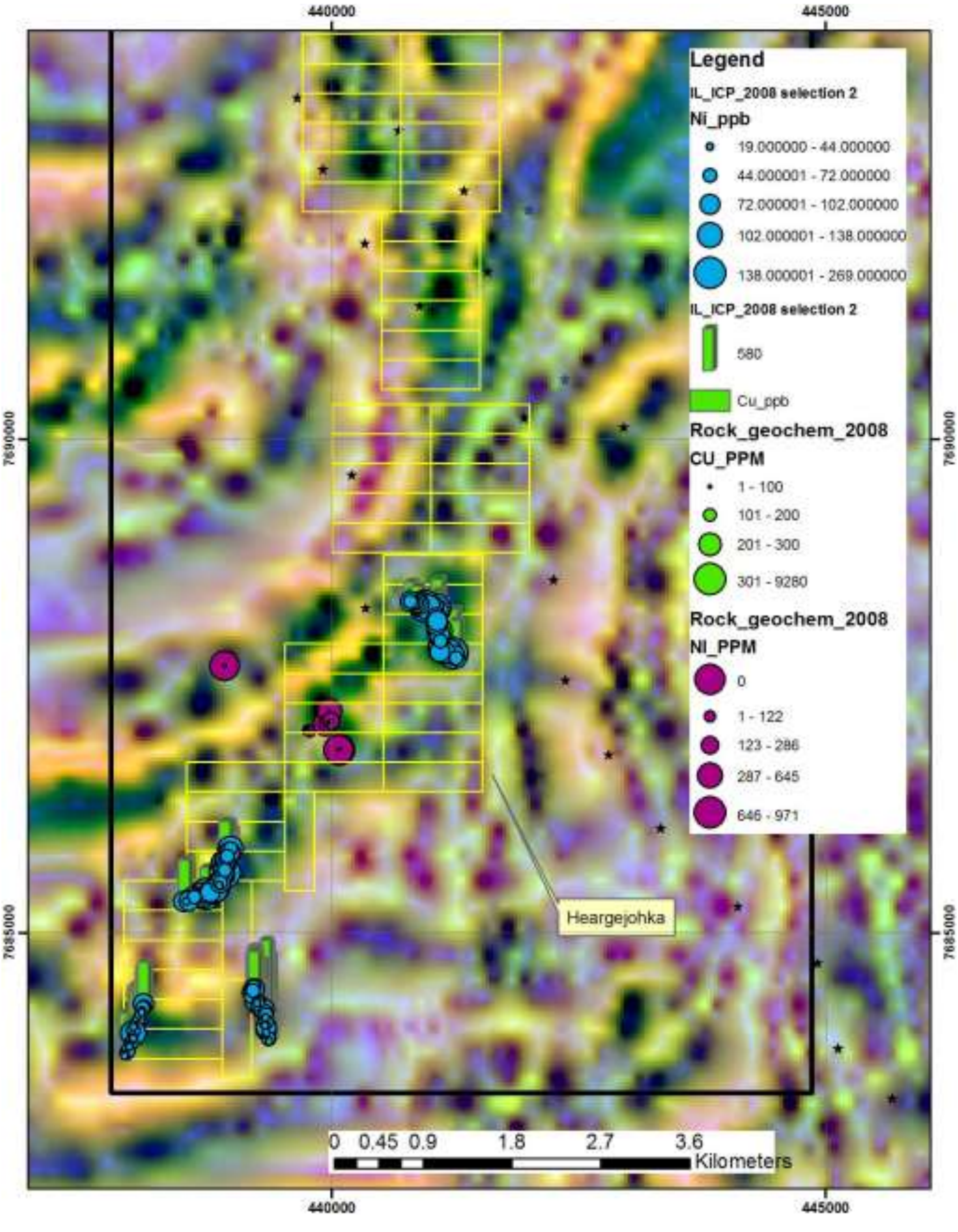

Figure 49 Heargejohka Ni-target area outcrop, boulder and Ionic Leach samples on a processed aeromagnetic image.

Geochemistry supports ultramafic nature of the outcropping rocks. Ionic Leach results done over the magnetic anomalies also suggest ultramafic rocks. In addition, Line-3 has a significant multielement Ni-Cu-REE-Ca-Mg-Pd-anomaly (Figure 50). These may suggest sulphidic source for the ionic leach anomaly.

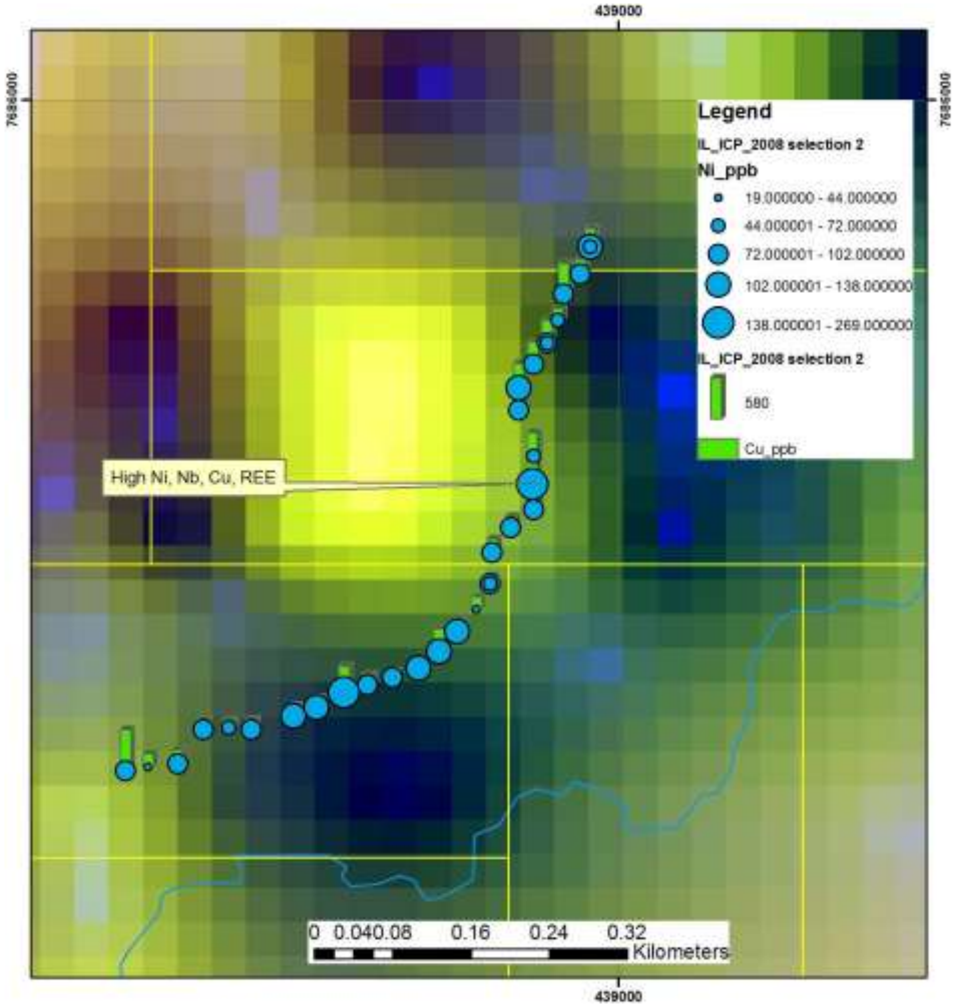

Figure 50 Heargejohka Ni-target area, Ionic Leach Line-3. High Ni, Nb, Cu and REE values correlate with the magnetic anomaly.

6.3.10 Harrejohka Au target

Harrejohka claims are near Vuolitjavri which name Kivisaari (2008) used for the description of the target in 2008. In 2008, road cuts along the E6 road from Karasjok to Lakselv were investigated. It was noticed that all rocks (feldspar rich quartzite, mafic metavolcanic rocks, mica schist) in the road cut are variably sheared and hydrothermally alterated. In places alteration is very strong (biotite, chlorite, carbonate and albitite alteration). The area was claimed later in year 2008 to cover the interpreted NNE trending fault structure and got the name Harrejohka.

Results

The area is on the border of the Porsanger Military area, and the access to the eastern side of the road is limited. Consequently the continuation of the structure from the road cut could not be sampled as it was planned (Figure 51). Two of the 9 samples taken in 2008 were weakly anomalous (up to 12 ppb Au). Gold values in the samples taken in 2009 (15 samples) were not anomalous, but Bi values were weakly anomalous (up to 260 ppb). However, due to the difficult and restricted access along the structure in the military area, no further work was conducted in the area, and the claims were relinquished in 2010.

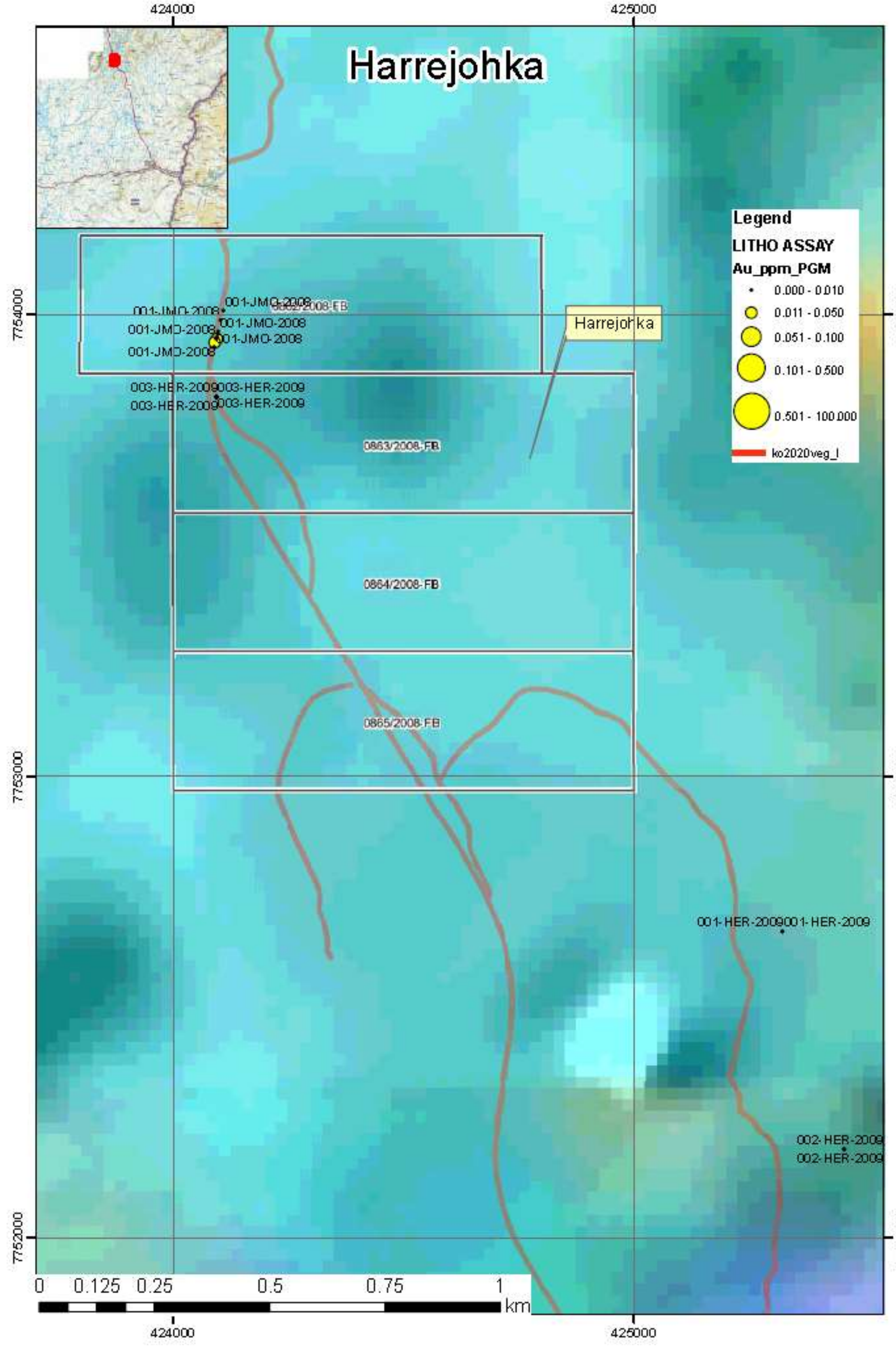

Figure 51 Harrejohka Au-target area, Au of rock grab samples and overburden samples on a processed aerogeophysical map (principal component analysed and combined EM and magnetics colour image, Aarnisalo 2009). Dark green colours indicate magnetic anomalies (eg. ultramafic rocks), orange high frequency (surface conductors: eg lakes, swamps etc), blue and purple colours indicate EM anomalies mid and low frequencies. The samples from the road cut show a weak Au anomaly (12 ppb Au).

6.3.11 Adjatskaidi-Silesjavri Ni-Cu target

Sydvaranger had several Ni-Cu targets in the Adjatskaidi area (Objects 11, 21, 23, 25-30, 33-40, 42) and Store Norske Gull AS had claims to cover some of those targets. In addition to anomalous Au, Cu, Ti, As and S, gold nugget counts (>20) in the Silesjavri-Adjatskaidi area, scheelite grains are found in the heavy mineral samples as well (Ahola, 2010).

The area next to the lake Geassajavri was selected because of a gravity anomaly and geochemical anomalies (Cu) detected during previous field seasons. Landscape is dominated by gentle hummocks which interpreted as basal or ablation type formations. Rock types include at least gabbros and ultramafic volcanic rocks.

In Adjatskaidi more sampling was done around the gold anomalous and scheelite bearing heavy mineral samples. Area is covered by a rocky till, which made sampling a bit harder. Area is poorly outcropping but surface boulders are mostly mica schists and gabbros.

Results

Adjaskaidi-Silesjavri area has a multi element overburden anomaly. Cu and also Au form a large anomaly pattern in the area (Figure 52). In addition Ti, Fe, S, Ta, P, Sn, W, Ce, Y, V, Ni, Nb, Mo, Cr, Co, Ba, As, Ag, Zr and Zn have some elevated assay values in the area. The reason for this multi element anomaly pattern is not clear, but some of them could be explained with the black schists found in the area. One strongly weathered black schist sample (3-HJA-2009, analyzed as overburden sample) had highly anomalous As values (>1000 ppm). In addition, ultramafic boulders were found in the area, so the presence of such rock types could explain the Ni, Co and Cr anomalies. Area is structurally complex, and geophysics indicates potential ultramafic rocks with EM anomalies. Area has potential and several of drill targets could be defined from the existing data, but area would need also more detailed basal till sampling to cover the wet areas as well.

In the Adjatskaidi target area, a combined Li- and Cs-anomaly is found (Appendix 2) just few hundred meters south from the known scheelite heavy mineral anomaly. Anomalies are probably rock type related.

Best heavy mineral samples count up to 35 gold grains and ~20 grains of scheelite (Appendix 1). To locate the source for the gold-scheelite anomaly, deep overburden sampling should be done. One sample contains a large (0.55mm) angular gold grain located outside the scheelite anomalous area.

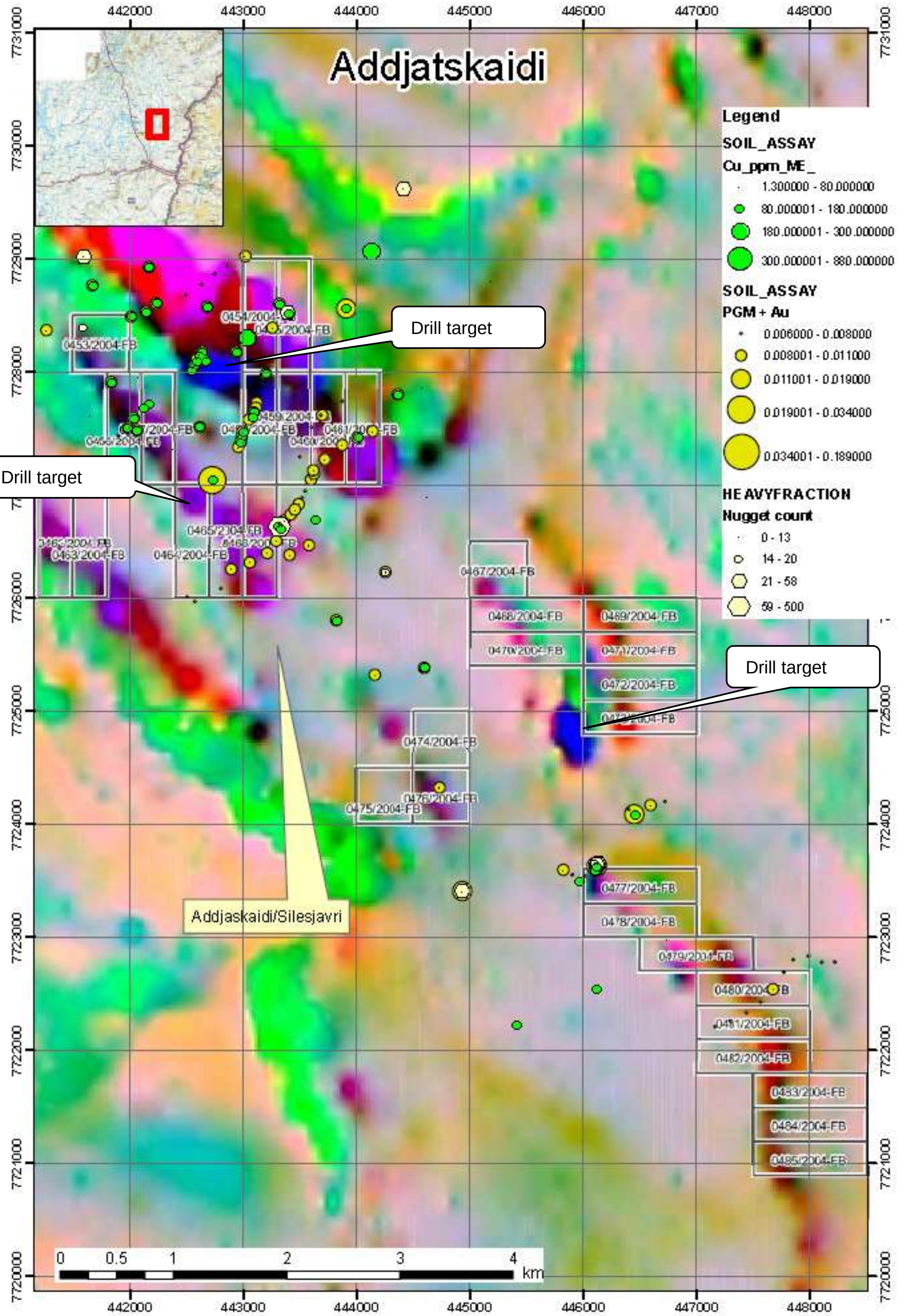

Figure 52 Addjatskaidi target area on a processed aerogeophysical image highlighting bedrock structure and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009). Purple colour indicate good conductors (black schists), green colours indicate strong magnetic anomalies (commonly ultramafic rocks), blue colour indicates a deep conductor with magnetic anomaly.

6.3.12 Basteskaidi Ni target

The ultramafic unit can clearly be delineated on the processed areromagnetic images (Figure 53). Like most areas, outcrop conditions are poor. Three Ionic Leach sampling lines were taken across the unit in addition to few outcrop and heavy mineral samples.

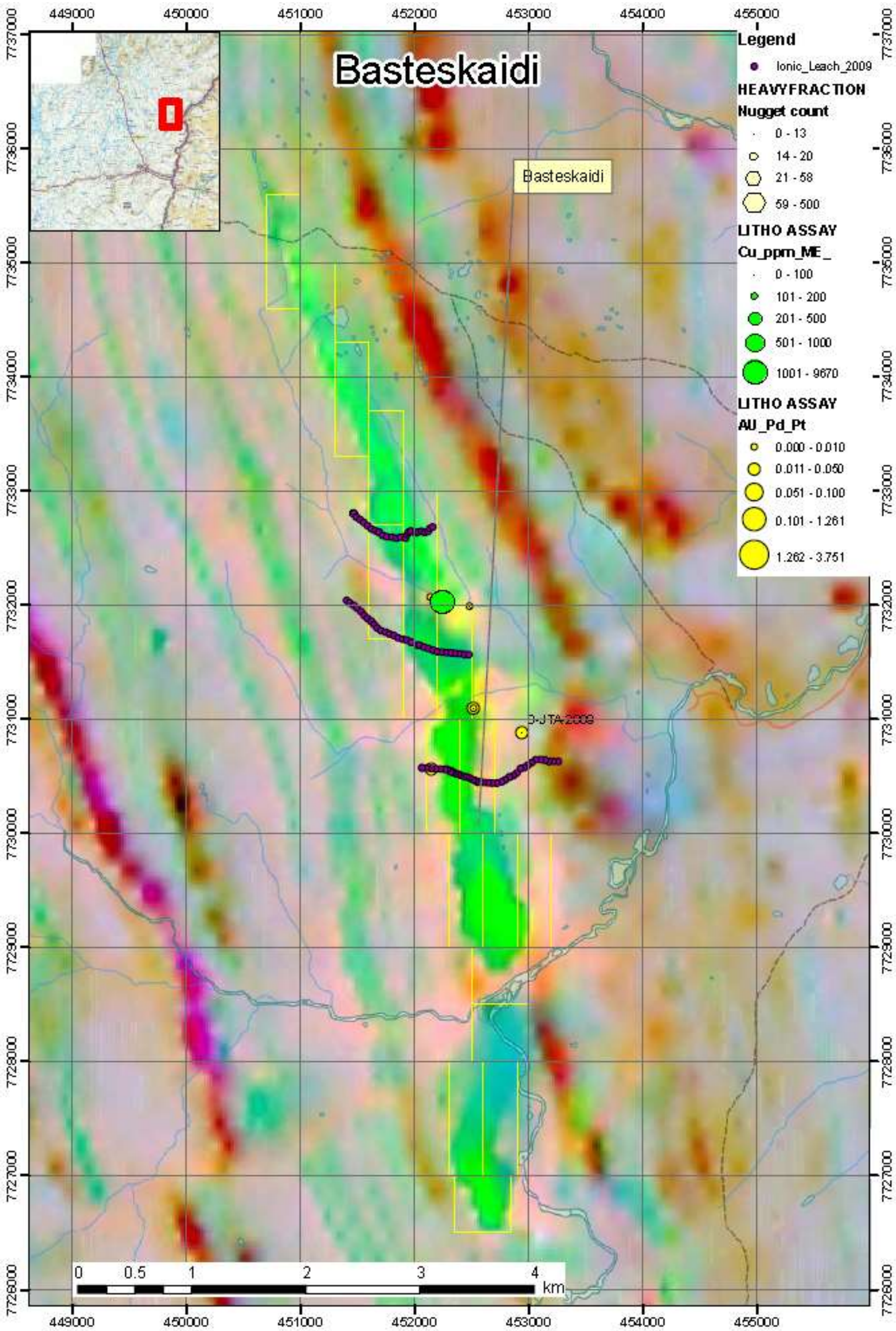

Figure 53 Processed geophysical image of the Basteskaidi area, image processed to highlight bedrock structure and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009). Also shown are Ionic Leach sample lines, bedrock and heavy mineral samples.

Results

One outcrop sample showed a strong Cu anomaly (Figure 53, 1595 ppm Cu, Obs id: 5-JTA-2009, Assay id: 200935854) with weak Au and Pd anomalies (Au 17 ppb, Pd 7 ppb). Although the samples were taken in the middle of geophysical anomaly, it has been logged as garnet micagneiss. Ultramafic rocks (high Cr) do not have anomalous Cu, Au or PGE values. Nugget counts of the heavy mineral samples were not anomalous. Ionic Leach sampling lines show weak anomalies (Cu, Ni, Pd response ratios > 5) near the margins of geophysical anomalies (Figure 54). Further work would require basal till sampling, ground geophysics or drilling the margins of the geophysical anomaly. Existing geochemical data does not suggest significant mineralisation in the area and the access to the area is also difficult and further work was not recommended.

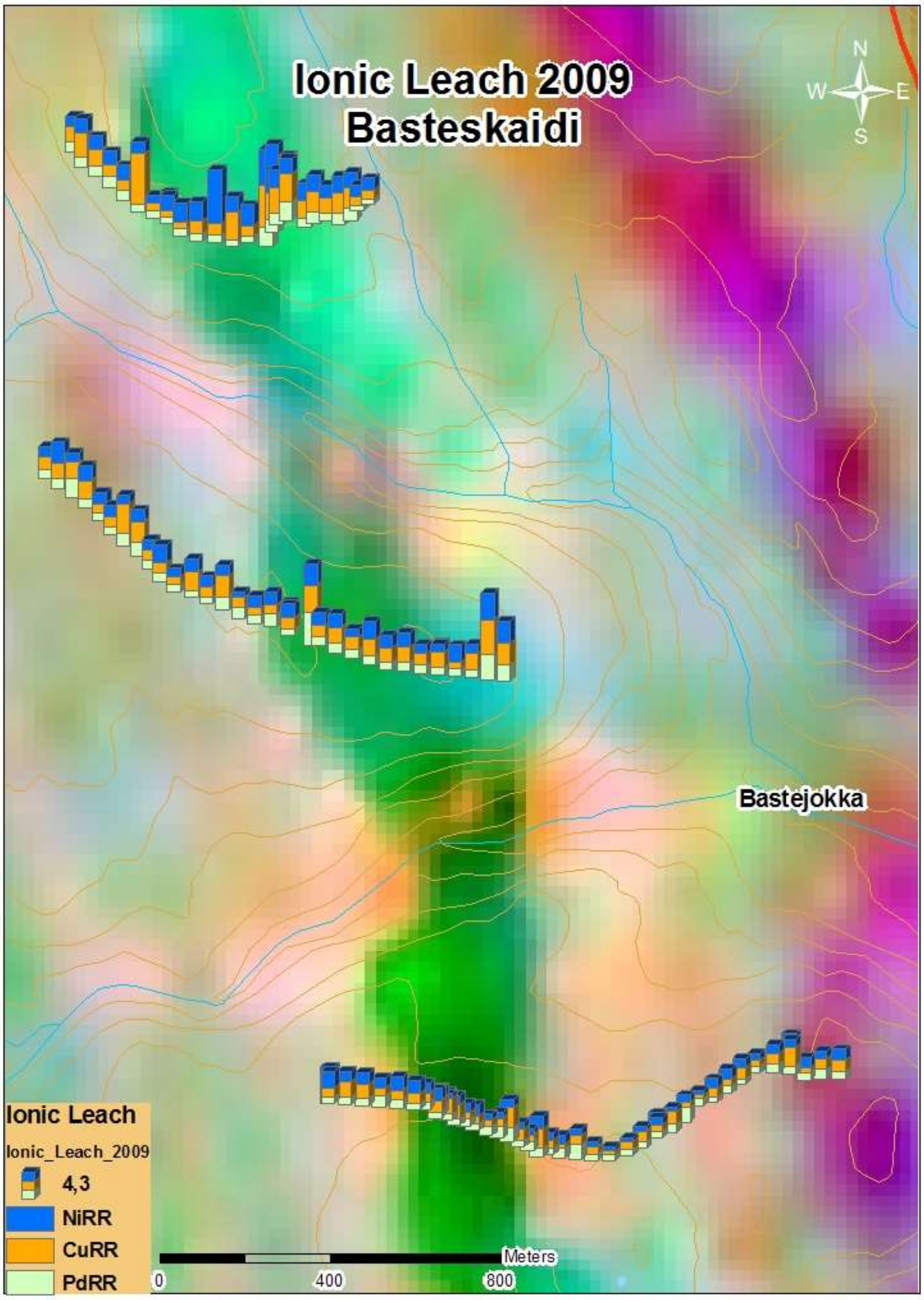

Figure 54 Ionic Leach response ratios of nickel copper and palladium on the Basteskaidi target. Cu, Ni and Pd resoponse ratios are weakly anomalous in the two northernmost lines.

6.3.13 Goikenjavevarri Ni target

Goikenjavevarri is mainly a Ni target with potential for structurally controlled gold mineralisation. The ultramafic unit can clearly be delineated on the processed aeromagnetic images (Figure 55). In addition to bedrock mapping and sampling, some till C-horizon samples were collected where suitable soil conditions were found.

Results

Bedrock mapping showed that the main magnetic target is an ultramafic unit. However, the analysed bedrock or soil samples do not have significant geochemical anomalies, and heavy mineral samples do not have anomalous nugget counts. Existing sampling data does not indicate significant geochemical anomalies in the area.

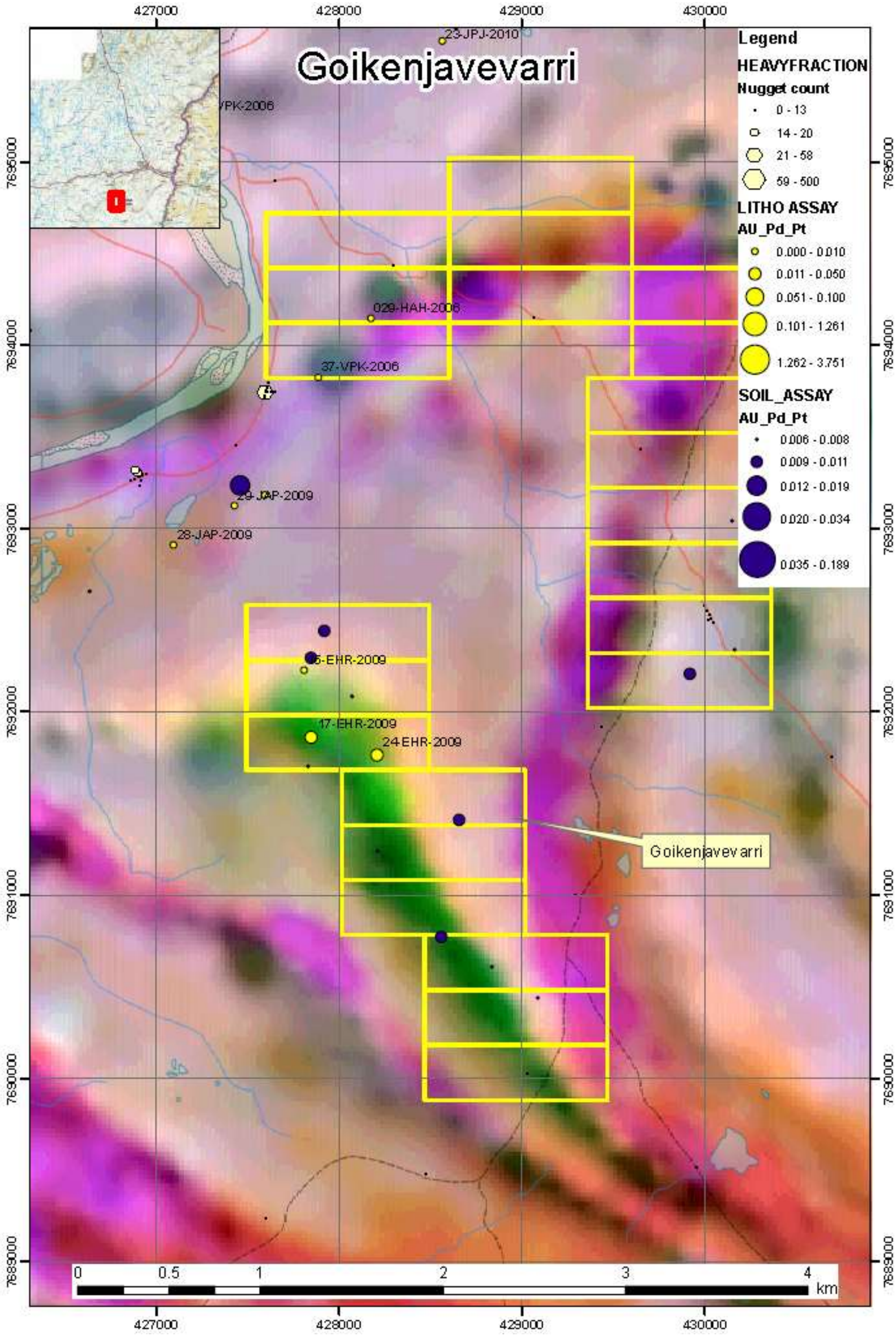

Figure 55 Processed geophysical image of the Goikenjavevarri area, image processed to highlight bedrock structure and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009). Green colour typically correspond with ultramafic rocks and red to

purple colour with more conductive rocks like black schists. Also shown are bedrock, overburden and heavy mineral samples.

6.3.14 Njuovcut Ni (Au) target

Njuovcut ("NJUOVCUTLADDO" and "NJUOVCUT" claims) is a magnetic target (ultramafic rocks and iron formations, (some magnetic targets drilled by NGU in 1957) which has been re-evaluated as a potential for structurally hosted Au target. In 2009, bedrock mapping, overburden sampling and re-sampling heavy mineral anomalies has been carried out in the area. None of the heavy mineral samples are within the claims and 10 samples were collected within the claims.

Results

Heavy mineral sampling shows several anomalous gold grain counts (up to 21-23 grains) in the area. In addition, in the Geassajohka ("GÆS'SAJÅKKA" and GESSAROAVVI claims) there are 73 and 77 grain heavy mineral anomalies. However, the Au assays are lower than expected, highest values being 9 ppb. Gold contents of the bedrock samples are also normal background levels (1-5 ppb). Bedrock sample 8-BKR-2009 is an ultramafic rock and its Pd content is weakly anomalous (13 ppb). Based on the existing samples it is not possible to define any reasonable Au or Ni targets without deep overburden sampling, and further work on these claim is not high priority.

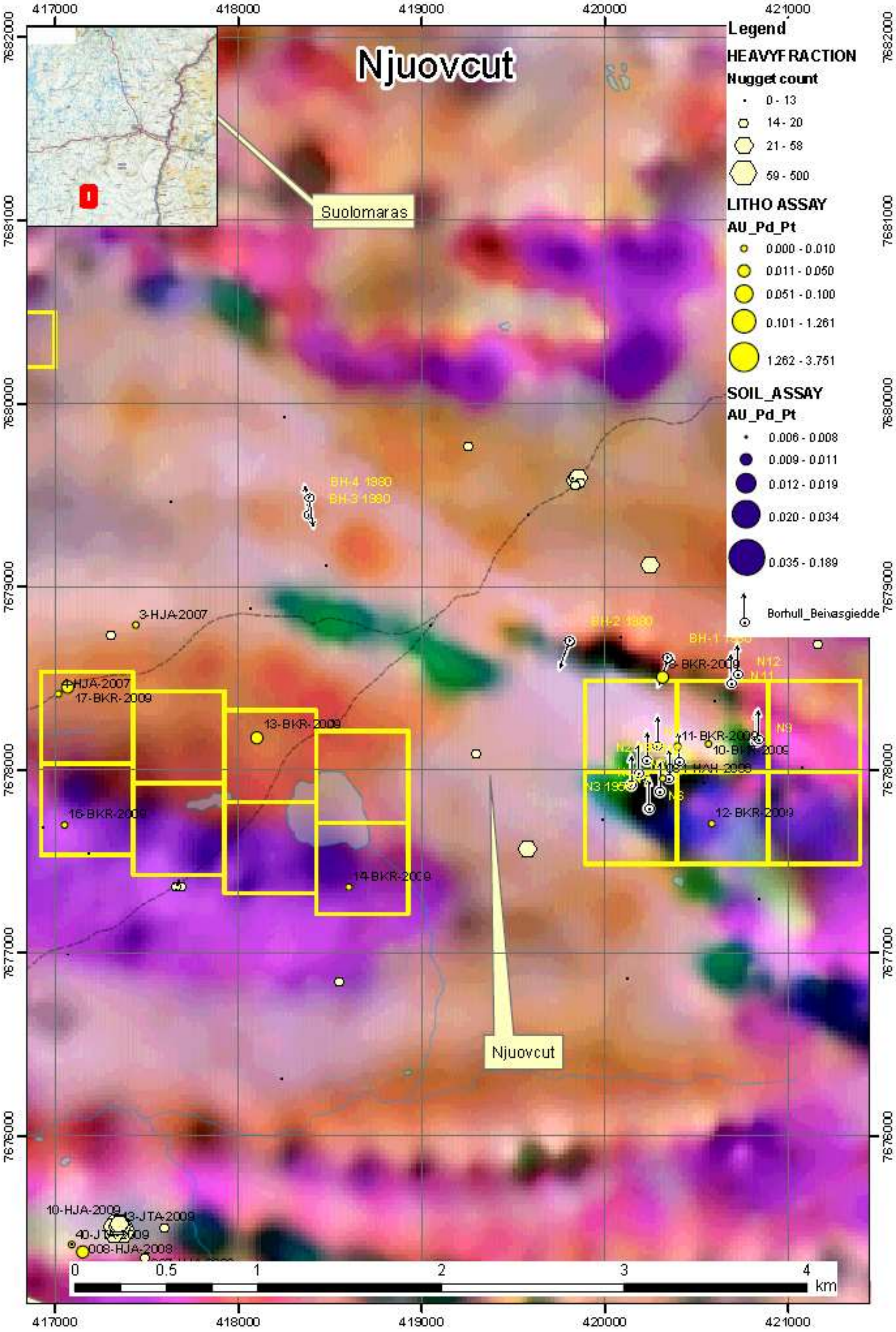

Figure 56 Processed geophysical image of the Njuovcut area, image processed to highlight bedrock structure and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009). Green colour typically correspond with ultramafic rocks and red to purple colour with more conductive rocks like black schists and black colour to highly magnetic rocks like iron formations. Also shown are bedrock, overburden and heavy mineral samples.

6.3.15 Geassajohka Ni (Au) target

Geassajohka ("GÆS'SAJÅKKA" claims) is a magnetic target (ultramafic rocks and iron formations) which has potential for orogenic gold mineralisation. Other names used in reports and maps are also Geassajohka, Geassavarri and Geassaroavvi (Ahola, 2009). It is an old Foldal Verk target and they drilled one diamond hole to intersect the magnetic horizon. Within Store Norske claims, 6 outcrop samples and 9 heavy mineral samples have been collected.

Heavy mineral and geochemical anomalies in the area were sampled more extensively by taking two lines with 68 samples for selective leach assay. Some infill heavy mineral samples were taken to test the extent of known anomalies.

Generally, the area is covered by glacial sediments and the thickness of the drift cover can be up to 20-30 m. Outcrops are found in the slopes of the hills and in the river valleys. Rock types include mafic and ultramafic rocks and banded iron formations. In addition, on the geological map, there is a granite body marked on the western side of the lake Dapmotjavri.

Results

Gold values of all bedrock and traditional till fine fraction geochemistry samples collected in the claim areas are within background levels (1-5 ppb). However, gold grain counts are up to 22 micronuggets within claims and up to 46 mirconuggets (and 8 ppb) in the area between the claim blocks (Figure 59). In addition, just two kilometres to the east of the claims, in the Geassaroavvi, there is a 77 gold grain heavy mineral anomaly. However, elevated Ni and Cr indicate ultramafic rocks and As, Co and Co suggest sulphide mineralisation (Appendix 2). Although geology and geophysics suggest structurally favourable location, the heavy mineral anomaly and the available geochemical sampling data do not show major anomalies indicating Au mineralisation and further work would require additional geochemical sampling. Area is suitable for either selective leach or deep overburden sampling.

Although the traditional till geochemistry is not anomalous, the area shows combined Au, As, Co, Cu, Mn, Mo and Ni anomalies with the selective leach method (Appendix 4). The eastern line is clearly more anomalous (Figure 57) and could be a possible drill target if the other heavy mineral anomaly in the area is drilled. The heavy mineral samples are anomalous the Dapmotjavri and Geassaroavvi areas (Figure 58). In Geassaroavvi, some heavy mineral samples have potential PGM's as well.

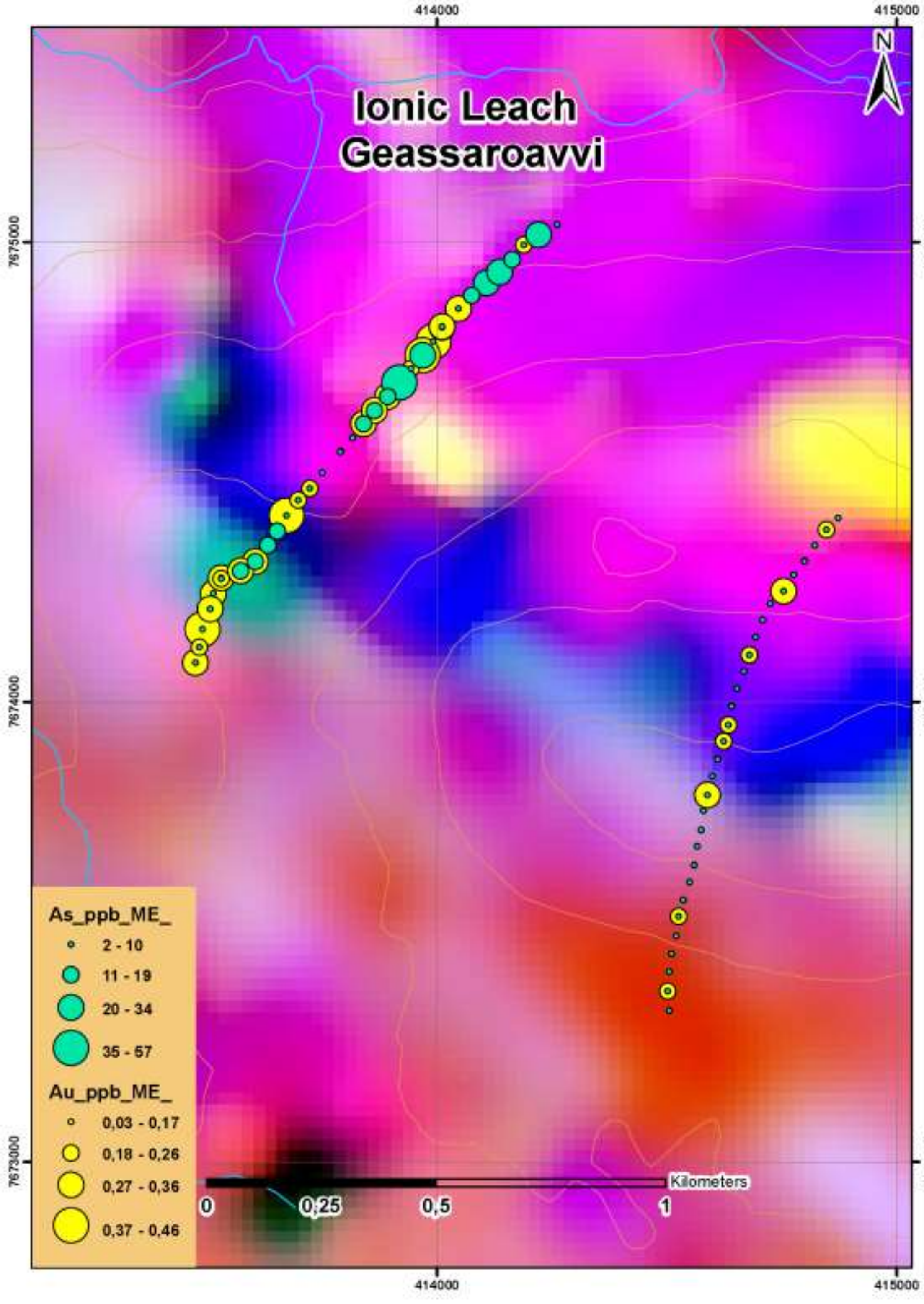

Figure 57 Results for overburden geochemical samples assayed with a selective leach method in Geassaroavvi area, south of Karasjok town on a processed aerogeophysical image highlighting bedrock structures and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009).

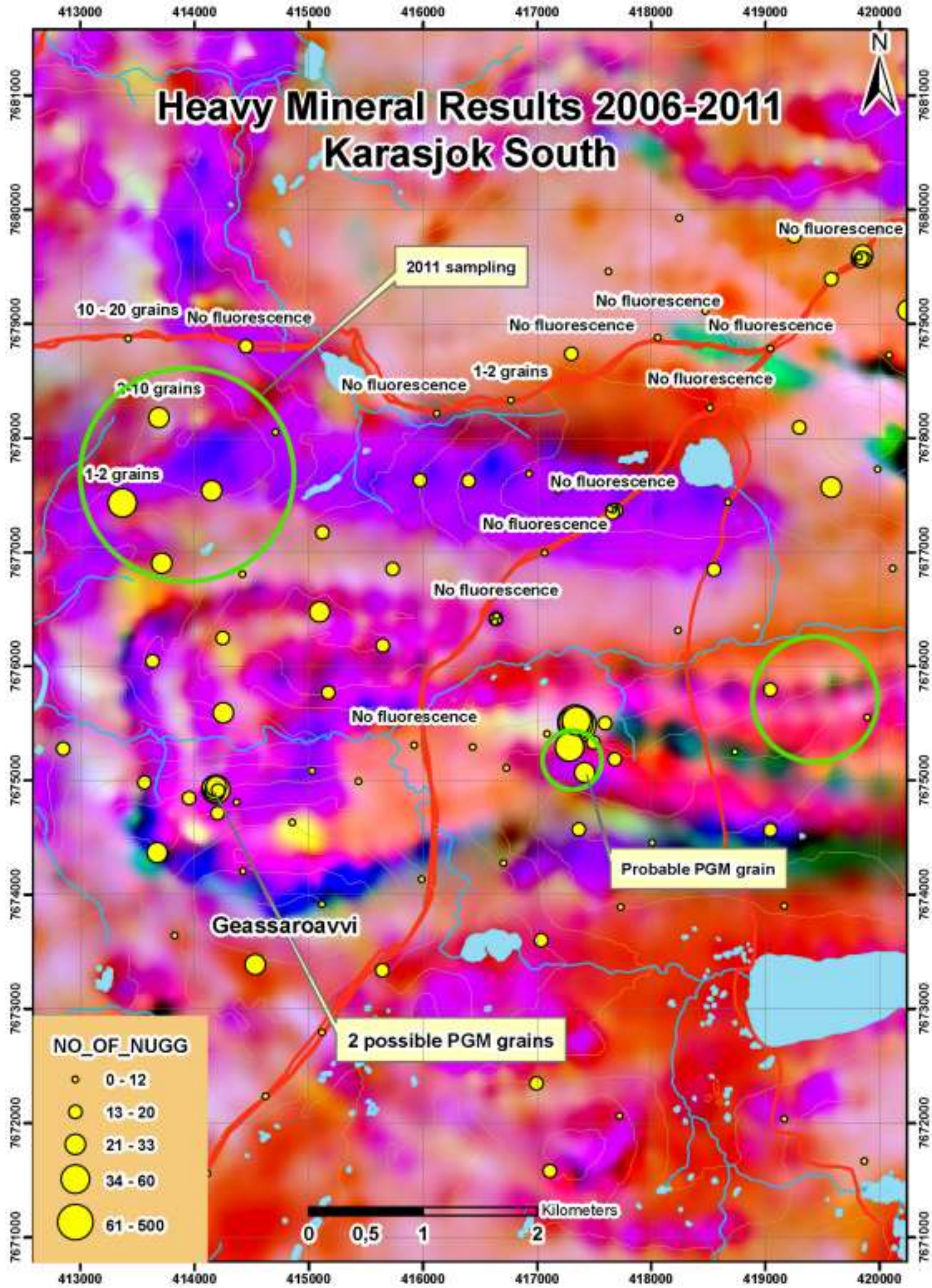

Figure 58 Heavy mineral results (gold micrograin count as symbol size and scheelite grain counts as number of grains) on a processed aerogeophysical image highlighting bedrock structures and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009).

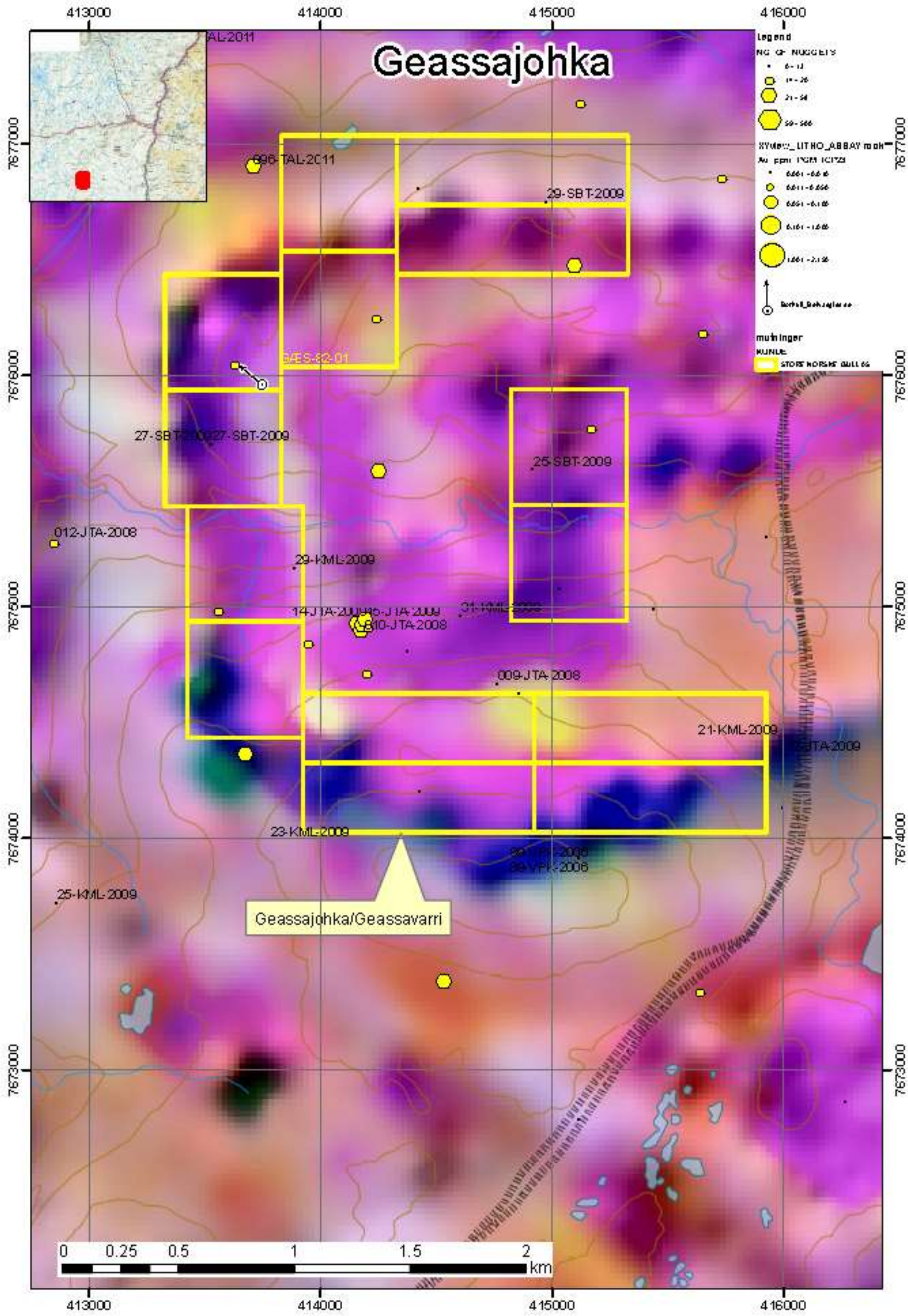

Figure 59 The Geassajohka bedrock and heavy mineral samples shown on a processed geophysical image. Image processed to highlight bedrock structure and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009). Green colour typically correspond with ultramafic rocks and red to purple colour with more conductive rocks like black schists and black colour to highly magnetic rocks like iron formations.

6.3.16 Dabmutcåkkat Ni (Au) target

The claims in the Dabmutcåkkat (including Gieddevuovdi and Dabmutjavri claims) are on the same ultramafic-iron formation sequence as the claims in the Njuovcut area (Figure 60). The area has been considered to have potential for ultramafic hosted Ni and structurally hosted Au mineralisation. In 2009, four bedrock observations were made and seven rock samples were collected in the area. These are in addition to one bedrock observation (three samples) made in 2006. In 1982, Foldal Verk has drilled two holes in the area in early 1980’s, most likely to test a conductive horizon.

In addition, the area next to the lake Dapmotjavri was sampled in 2011, because exploration work done by Foldal in the 1980’s resulted in Au-anomalous overburden samples (up to 270 ppb) (Prieseman, 1983).

Results

Gold values of bedrock samples are mostly at background levels (1-5 ppb) with one sample being weakly anomalous (11 ppb). In addition, ultramafic rock samples (Observation 086-HAH-2006) in “Gieddevuovdi 1” claim have anomalous Cu values (193-227 ppm). Regional heavy mineral samples taken over the target have 22-35 gold grains (Figure 60).

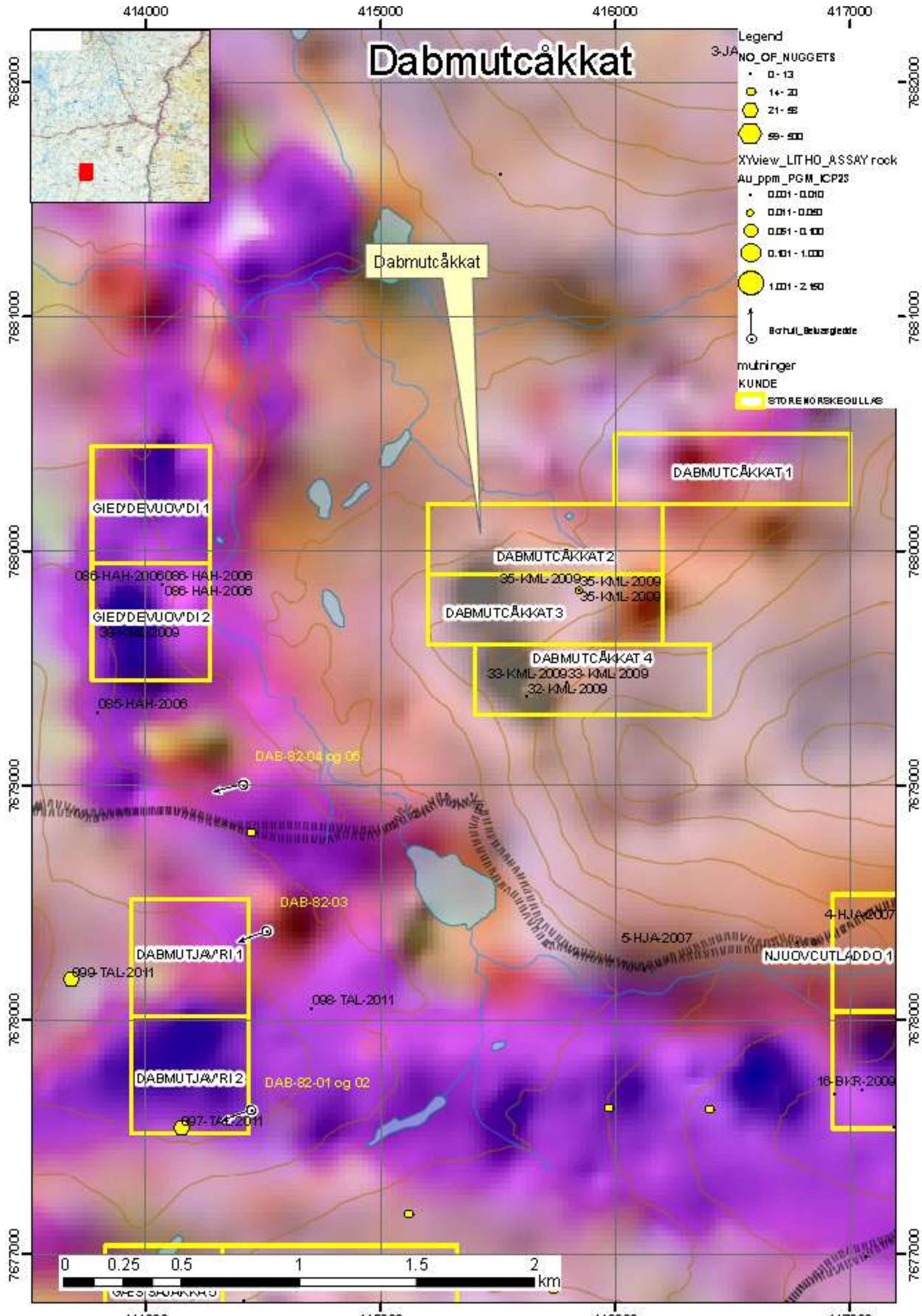

Figure 60 The Dabmutcåkkat area bedrock and heavy mineral samples shown on a processed geophysical image. Image processed to highlight bedrock structure and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009). Green colour typically correspond with ultramafic rocks and red to purple colour with more conductive rocks like black schists and black colour to highly magnetic rocks like iron formations.

6.3.17 Njargajavri Au (Ni) target

Njargajavri area is a gold target based on the GIS prospetivity modelling (Figure 61) done with Dr Vesa Nykänen, Geological Survey of Finland, Rovaniemi. Store Norske have not had any claims in the area. In 2009-2010, 10 heavy mineral, 41 overburden, and 41 rock samples were analysed from the area.

Positive results from previous heavy mineral sampling, spatial modeling and a rock sample assaying 2.2 g/t Au, 0.8 ppm Pd, 0.3 ppm Pt (sample 033-JPJ-2010) was the reason to cover more area with sampling around the lake Njargajavri in 2011. Also a license to use the existing ATV-track made the area easier to access.

Dominant rock types are mica schists, mafic and ultramafic volcanic rocks. The area is partly covered with moraine hummocks, most likely to be ribbed moraine type. In such a glacial environment the material is not transported far from the source. In places, a layer of silt is found above the till and also as lenses in till. The thickness of the overburden is hard to estimate outside the outcropping areas, because of the steep hummocks.

Results

Heavy mineral sample gold grain counts vary from 7 to 33, with 4 samples over 20 gold grains. In addition, some of the samples have gold grains 0.4 - 0.7 mm in longest axis. Mostly these grains were plated and rounded, except in the sample close to the gold anomalous outcrop (sample 033-JPJ-2010). However, the Au values of the till samples are at background levels (1-3 ppb). Rocks in the area are mostly mafic to ultramafic intrusive rocks. A pyroxenite sample with narrow (couple of cm thick) felsic veins with chalcopyrite dissemination assayed the highest Au value (2.2 g/t, observation 33-JPJ-2010). The reason for anomalous nugget counts without till fine fraction geochemical anomalies remain unresolved. Soil observations suggest that the till is more ablation till rather than basal till.

The overburden geochemistry shows Cr- (up to 592 ppm) and Ni-anomalies (up to 321 ppm) suggesting to the ultramafic rock source (Appendix 2). Also Pd, Pt and Cu are anomalous in few locations. The anomalies in the rock samples are caused by narrow chalcopyrite bearing veins.

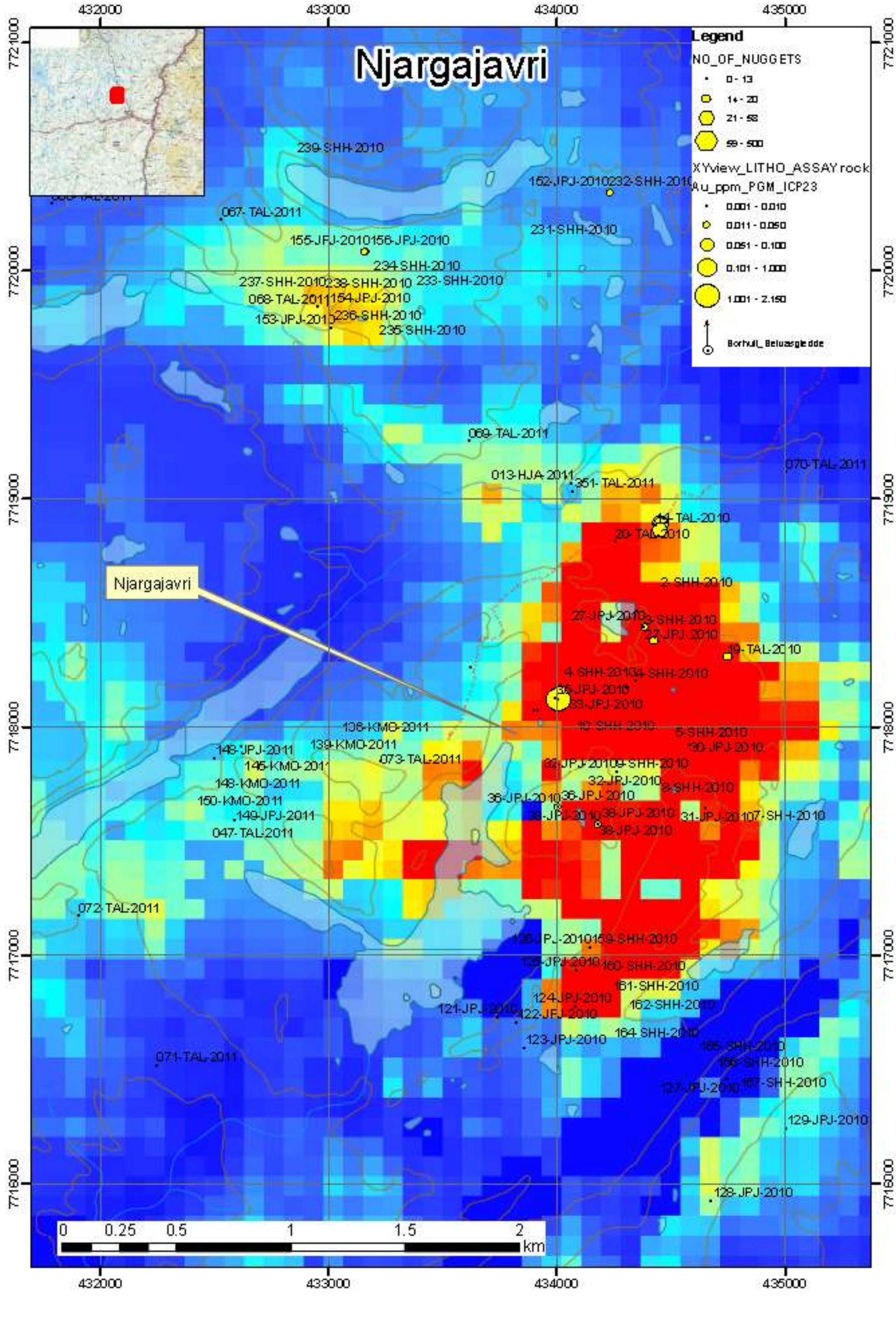

Figure 61 GIS prospectivity model of the Njargajavri area, red areas indicate high propectivity for gold.

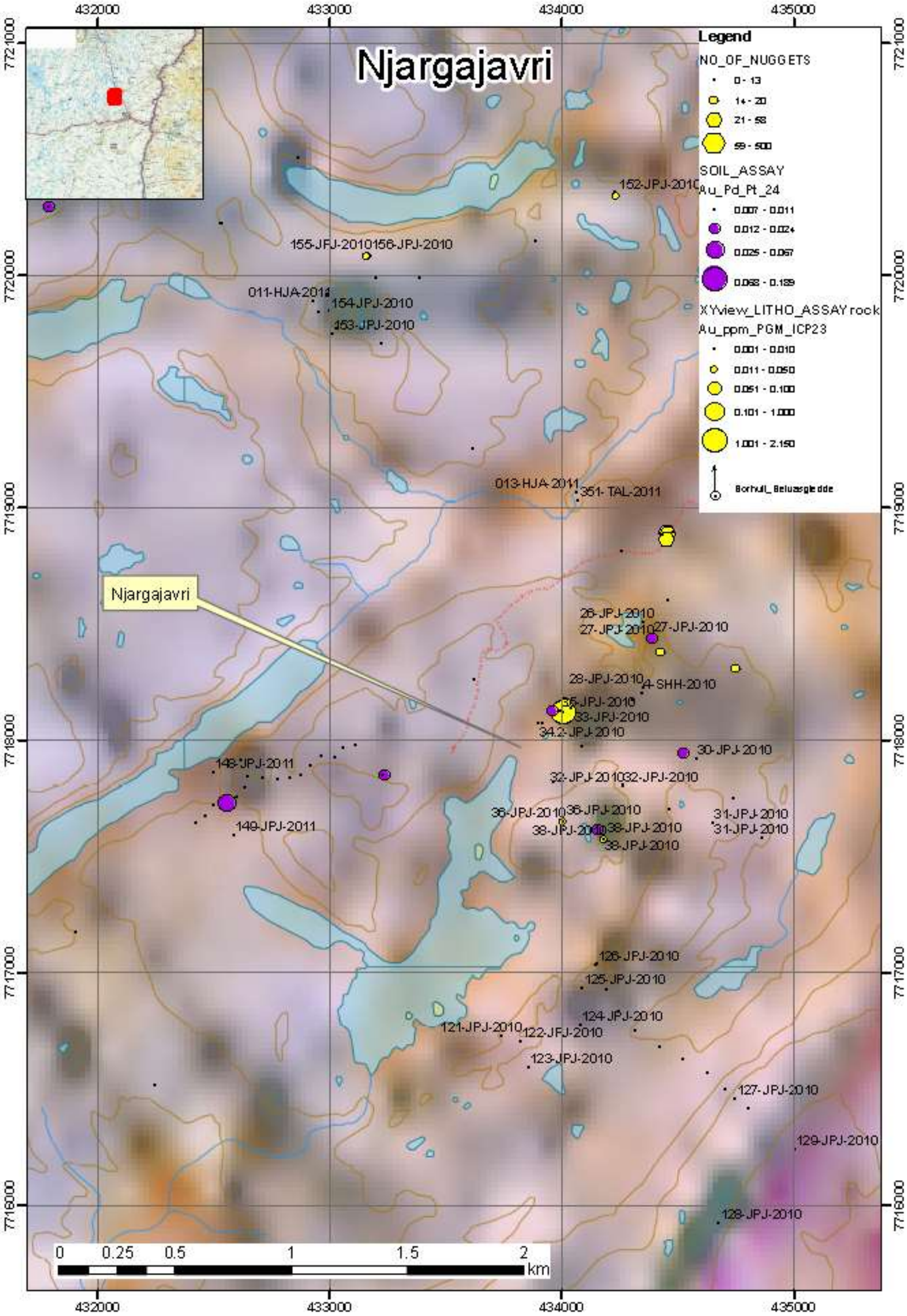

Figure 62 Bedrock, till and heavy mineral samples of the Njargajavri area shown on a processed geophysical image. Image processed to highlight bedrock structure and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009). Green colour typically correspond with ultramafic rocks and red to purple colour with more conductive rocks like black schists and black colour to highly magnetic rocks like iron formations.

6.3.18 Skierrevarri Au and Ni-target

Skierrevarri is gold and nickel target selected based on the GIS modelling and old Sydvaranger geochemistry data. 13 outcrop samples and 28 heavy mineral and their geochemistry sample pairs were sampled in the area.

Results

Heavy mineral samples suggested a 500 gold grain anomaly (sample 200930612) but that anomaly was later confirmed to be contamination from a very high grade test sample treated in the Knelson concentrator before the sample. Grain morphology examination indicated that the contamination tail include also samples 200930613-200930614. However, resampling in 2010 suggest that the area is weakly anomalous with nugget counts from 12 to 23 nuggets. Till fine fraction assays are at background values around 2-4 ppb with one sample at 11 ppb. In addition, till fine fraction Cu is weakly anomalous with 3 samples over 90 ppm and 6 bedrock and boulder samples with Cu from 120 to 437 ppm. However, the combined Ni-, Cr-, Co-, Mg-till geochemical anomalies indicates that ultramafic rock source rock (Appendix 1). The geochemical anomaly follows the geophysical feature (green colour), which highlights ultramafic rocks on processed geophysical images (Aarnisalo, 2009).

6.3.19 Galdnajarjohka Ni-target

Galdnajarjohka is a Ni-target selected based on the geophysics which indicate magnetic ultramafic rocks in the area. In 2010, two heavy mineral, 13 rock and 30 overburden samples were collected within, or very nearby, the claims.

Results

Rock sample confirmed that green colour on the processed geophysical map (Figure 63) indicates ultramafic rock units. There is a 38 nugget heavy mineral sample just outside of the claims but the gold content of the till fine fraction in this sample is only 4 ppb which is at background level. Two pyroxenite samples (90 and 97-JPJ-2010) can be considered clearly anomalous in Au > 10 ppb, Pd > 38 ppb, Pt > 49 ppb Au. In addition, Cu is elevated in several rock (Cu >120 ppm) and overburden samples (Cu > 80). Most of the anomalous samples are taken on, or near, combined magnetic and EM anomaly indicated by processed aerogeophysical map (Figure 63). Next steps in the exploration would be systematic basal till geochemical sampling, ground geophysics, and drilling.

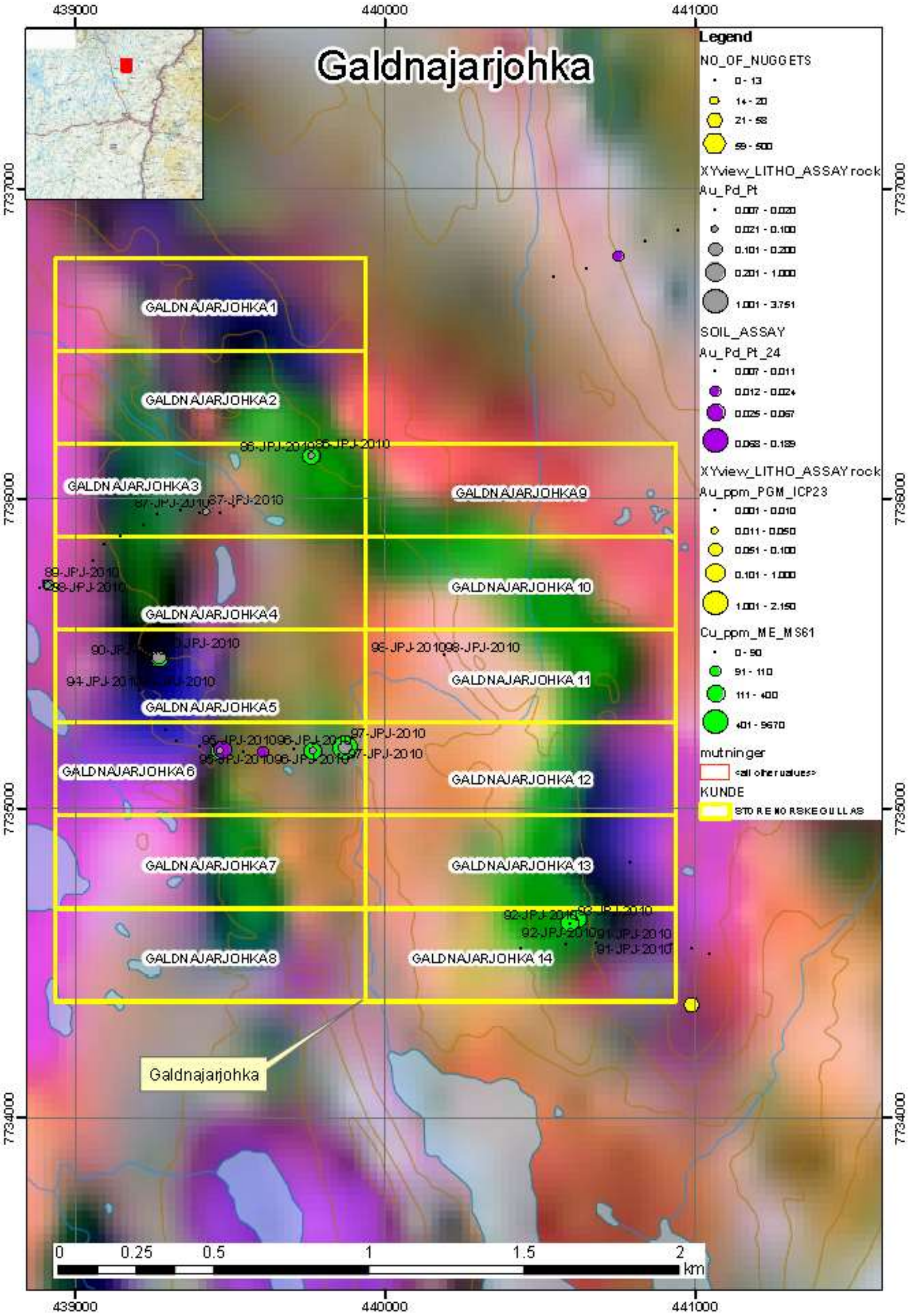

Figure 63 Bedrock, till and heavy mineral samples of the Galnajarjohka area shown on a processed geophysical image. Image processed to highlight bedrock structure and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009). Green colour typically correspond with ultramafic rocks and red to purple colour with more conductive rocks like black schists and black colour to highly magnetic rocks like iron formations. Deep blue colour indicates magnetic rocks with EM anomaly.

6.3.20 Galdnajavri Au-target

Galdnajavri (also called Vaddevarri on maps and reports, Ahola 2010) is a gold target selected for sampling because it a structurally complex area and there have not been any Store Norske claims. In 2009 and 2010, 13 heavy mineral, 20 overburden and 20 rock samples were collected in the area.

Results

Outcroping rocks in the area have been logged as mica schists, mafic and ultramafic rocks confirming structurally complex sequence. Heavy mineral samples have nugget count from 18 to 48 nuggets (Figure 64) and all of them could be considered anomalous in regional sampling (Ojalainen, 2008). However, Au content of the till fine fraction is at background levels with highest value being 7 ppb Au.

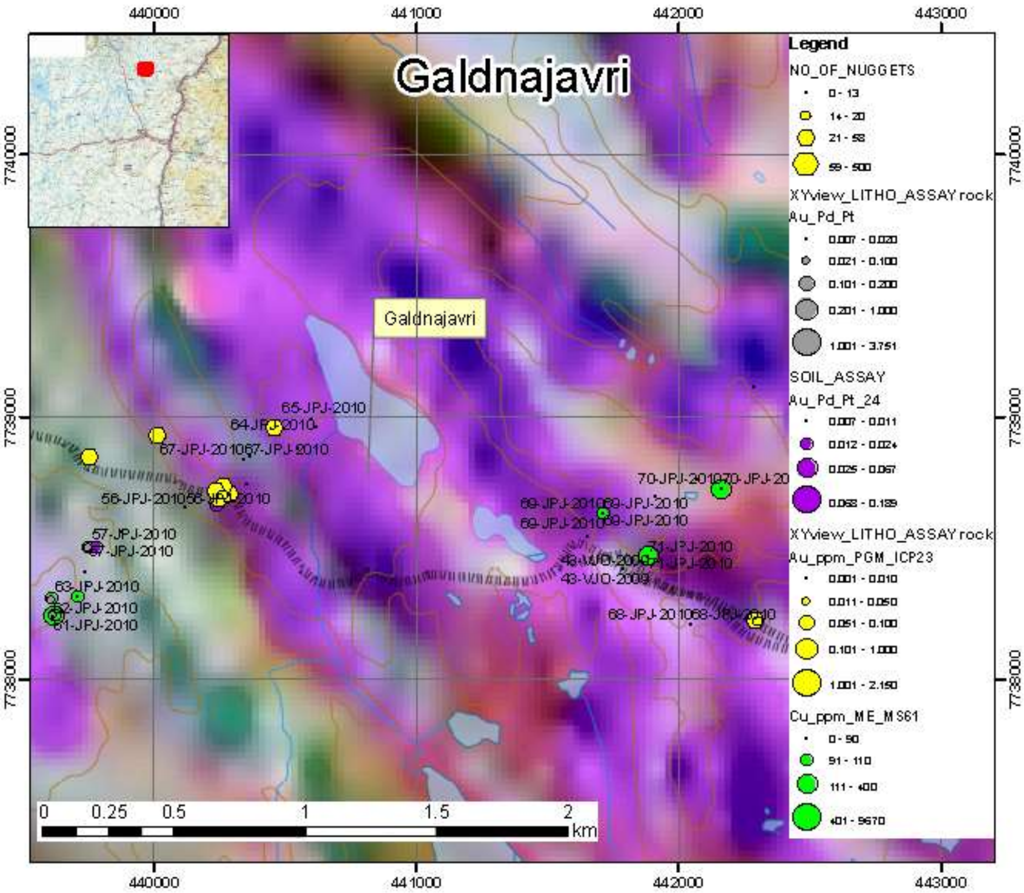

Figure 64 Bedrock, till and heavy mineral samples of the Galnajavri (Vaddevarri) area shown on a processed geophysical image. Image processed to highlight bedrock structure and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009). Green colour typically correspond with ultramafic rocks and red to purple colour with more conductive rocks like black schists and black colour to highly magnetic rocks like iron formations. Deep blue colour indicates magnetic rocks with EM anomaly.

6.3.21 Rivdnjesvadda Ni-target

Rivdnesvadda has been targeted based on geophysical maps which indicated ultramafic rocks in area (Jokela, 2007). The Karasjok-Lakselv road goes over a chain of an ultramafic rock outcrops. Since 2007, 29 outcrop, 58 partial leach geochemistry and one heavy mineral samples have been collected in the area (Ahola & Annanolli, 2007; Ahola, 2008; Jokela, 2007). In 2009, three diamond drill holes (RDV-101, 102 and 103) were drilled with total length of 370.5 m to test the strong MMI geochemical anomaly (method ME_MS18) along the Line 1 which coincided with a weak magnetic anomaly caused by ultramafic rock (Figure 66, Figure 67). The MMI analysis suggested that the Cu values are up to 40 times higher than the background with Co, Ni, Pd anomalies which were several time higher than the background.

Results

Drill holes intersected an ultramafic rock unit under 2-3 m thick overburden but sulphide contents were low and no ore grade intersections or Cu, Ni, or PGE+Au were made (Table 8). The highest Cu value is just over 1000 ppm (0.1%) at the sheared contact zone between country rocks and ultramafic rock. The highest Ni values are about 2000 ppm. In ultramafic rocks Ni values below 3000 ppm are typically mostly silicate bound. Noble metals are weakly anomalous with maximum Pd at 19 ppb, Pt at 16 ppb and Au at 94 ppb. Results indicate that the MMI partial leach method is very sensitive and at this location high anomaly level may be explained by thin overburden.

Table 8 Rivdnjesvadda drilling results over 200 ppm Cu values with Au, Cr, Ni, Pd, Pt and S.

HOLEID	FROM_	TO_	ASSAYID	Au ppm PGM-ICP23	Cr ppm ME-MS61	Cu ppm ME-MS61	Ni ppm ME-MS61	Pd ppm PGM-ICP23	Pt ppm PGM-ICP23	S % ME-MS61
RDV-101	3	3.4	200936001	0.042	754	1165	437	0.007	0.008	0.16
RDV-103	64	65.4	200939551	0.01	769	456	481	0.007	0.005	0.05
RDV-101	40	41	200936041	0.022	477	435	410	0.004	0.005	1.16
RDV-101	7.1	8.2	200936007	0.02	84	429	140.5	0.005	0.005	0.22
RDV-101	67.8	70	200936070	0.003	48	402	43.1		0.006	1.69
RDV-101	37	37.6	200936037	0.042	37	395	31.2			0.08
RDV-102	98	99	200939417	0.009	265	390	208	0.003	0.005	0.17
RDV-102	73.9	75	200939393	0.005	6	390	3.7		0.005	0.15
RDV-102	91	92.4	200939410	0.02	62	378	41.9	0.001	0.005	0.95
RDV-102	90	91	200939409		51	371	49.7		0.005	1.35
RDV-101	38	39	200936039	0.021	358	338	189.5	0.004		0.97
RDV-101	46	47	200936047	0.004	566	331	375	0.006	0.007	0.31
RDV-101	45	46	200936046	0.018	329	322	165.5	0.015	0.016	0.09
RDV-102	28.1	28.7	200939347	0.018	81	303	126.5	0.003		0.06
RDV-101	56	57.1	200936057	0.002	138	280	122			0.35
RDV-101	78.7	79.2	200936079	0.002	20	254	85			0.18
RDV-102	17	18	200939336	0.004	904	252	1515	0.003	0.005	0.52
RDV-102	19	20	200939338	0.004	638	244	1620	0.002	0.005	0.89
RDV-103	96	96.7	200939567	0.002	133	237	85.4	0.003	0.005	0.42
RDV-102	18	19	200939337	0.003	1680	219	1720	0.003	0.005	0.68
RDV-101	51	52	200936052	0.005	191	216	148	0.005	0.007	0.17
RDV-103	50	51	200939536	0.01	117	213	92.4	0.014	0.013	0.08
RDV-103	83	84	200939563	0.006	505	205	205	0.006	0.005	0.1
RDV-103	49.3	50	200939535	0.006	87	200	99.4	0.01	0.008	0.6

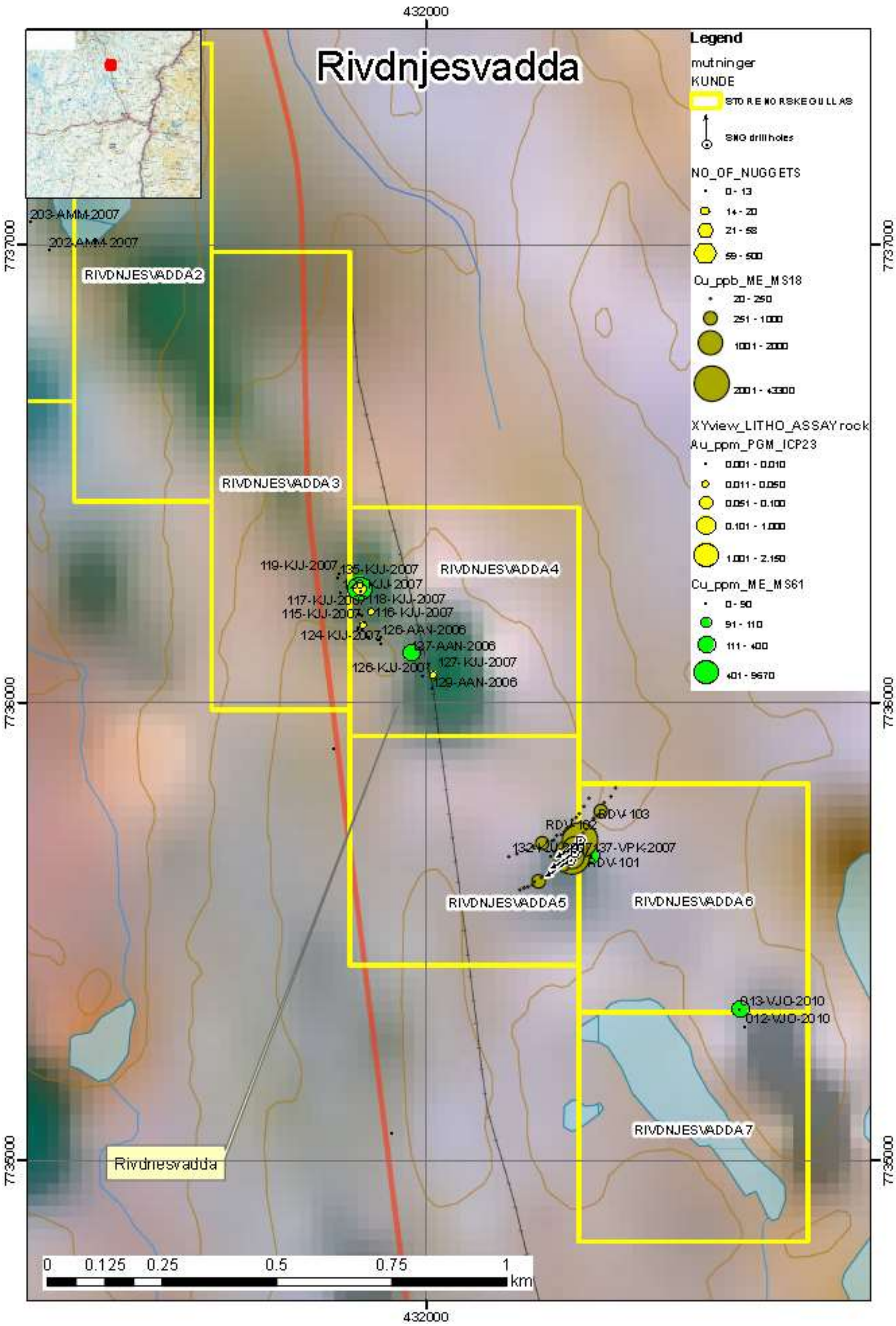

Figure 65 Bedrock, till and heavy mineral samples of the Rivdnjesvadda area shown on a processed geophysical image. Image processed to highlight bedrock structure and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009). Green colour typically correspond with ultramafic rocks and red to purple colour with more conductive rocks like black schists and black colour to highly magnetic rocks like iron formations. Deep blue colour indicates magnetic rocks with EM anomaly.

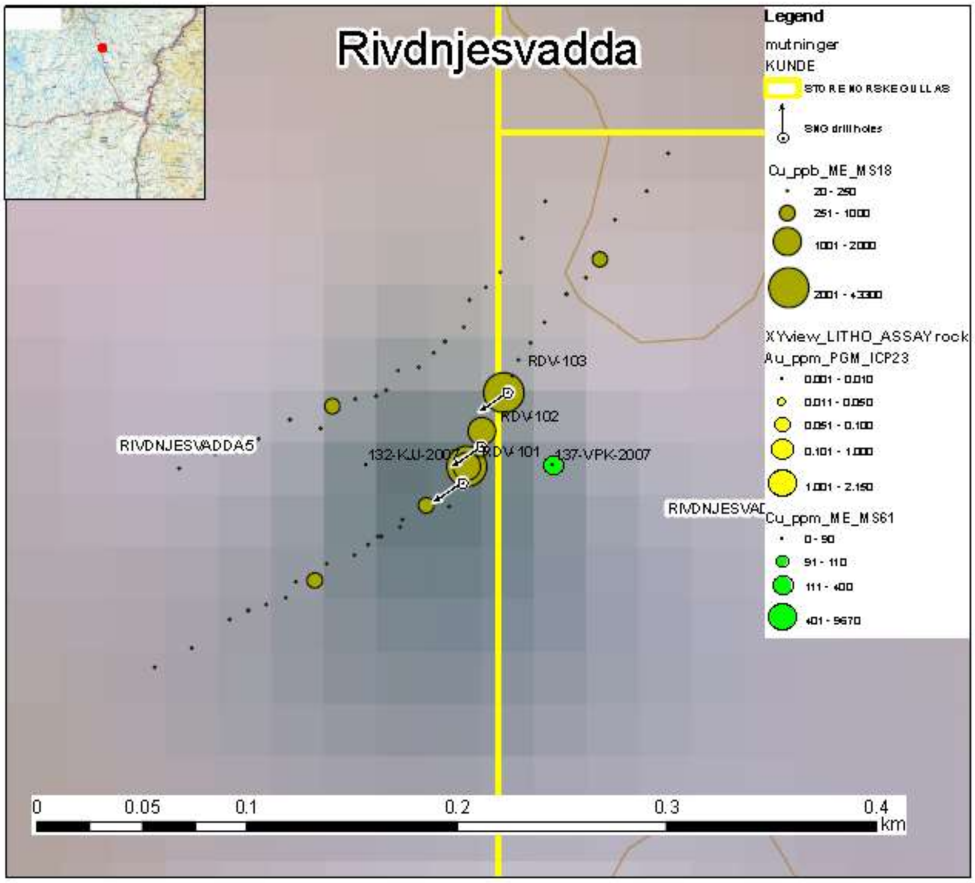

Figure 66 Copper contents of the Rivdnjesvadda Mobile Metal Ion (MMI) partial leach samples lines on a processed aerogeophysical map showing a magnetic anomaly which is caused by ultramafic rock. Also shown are the the Rivdnjesvadda diamond drill hole locations which were drilled to test the MMI anomaly (Cu values up to 40 times background).

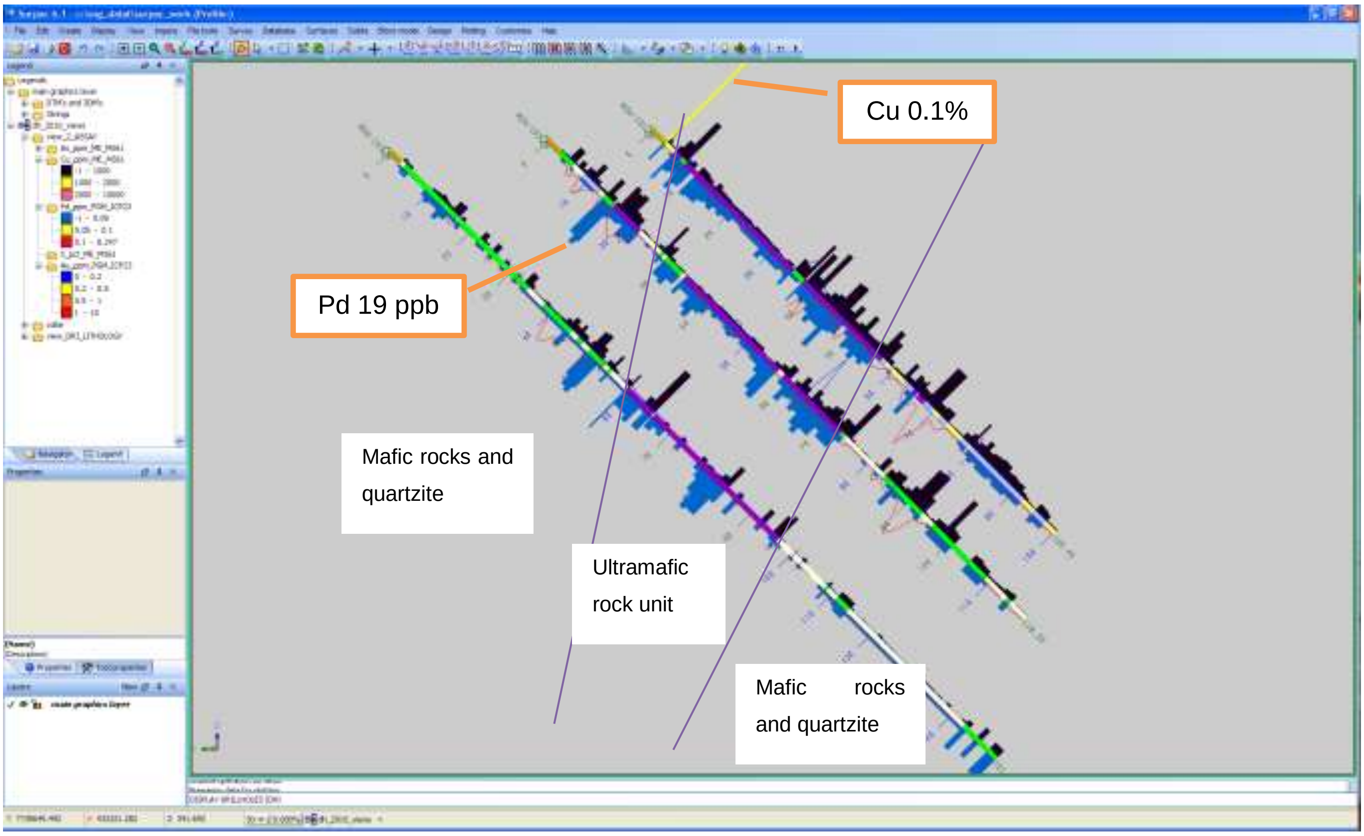

Figure 67 Cross section through the Ridnjesvadda target showing Cu, Pd, S and Au graphically along the drill holes.

6.3.22 Gallojavri-Idjajavri area Ni-Cu-PGE-target

Main target is located in SNG claim next to the lake Gallojavri. The ultramafic body is known as a Ni-Cu-PGE-target. In 2011, SNG expanded the exploration to cover larger areas around Gallojavri, especially in the south, since the new geophysics suggested that the intrusion is part of a much larger system than previously interpreted. In spring 2012, a snow sampling orientation study was carried out in the southern part of the claim to test gravity anomalies. During the summer 2012, some heavy mineral sampling and geochemical sampling (Auger, Cobra) was done. Rock samples were taken both in spring and summer time.

Thickness of the overburden varies between 0-12 m according to deep till drilling done by Anglo American (Appendix 3). Up in the hills and on the known Ni-Cu-PGE-mineralization there is not much overburden. In depressions and especially in the break of slopes there is more cover on top of the bedrock. According to SNG geologists and field assistants the top most part of the overburden next to the lake Gallojavri is influenced by ablation or water action.

Results

The results from the Anglo American till survey in Gallojavri suggest continuation of the mineralized rock towards the south. Till geochemistry suggests that also the eastern contact between ultramafic rocks and quartzites is mineralized (Figure 68).

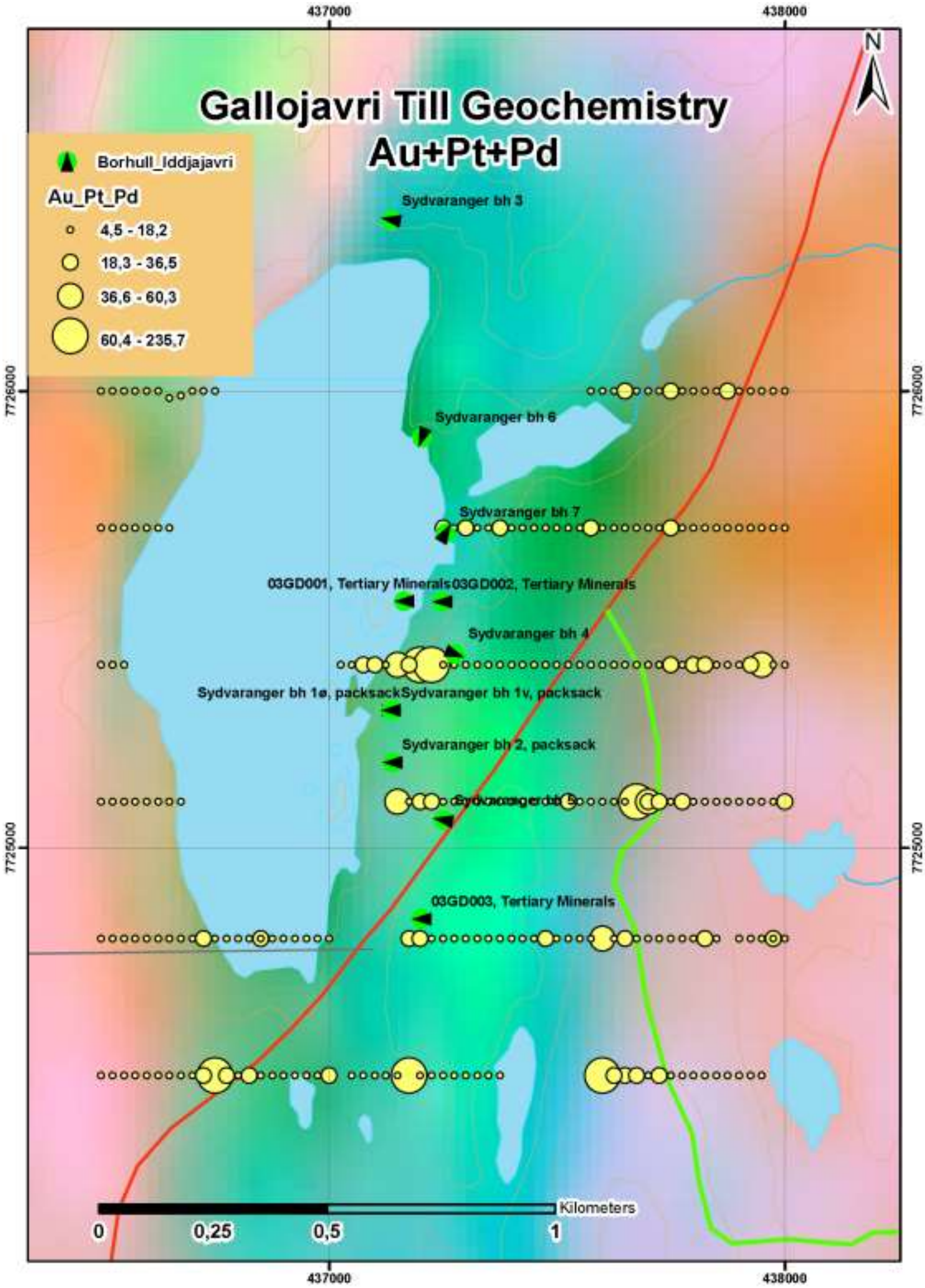

Figure 68 Anglo American till C-horizon geochemical sampling results with old drillhole data in the Gallojavri area on a processed aerogeophysical image highlighting bedrock structures and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009).

For some reason Cu contents of SNG's overburden samples taken in 2011 and 2012 is lower than those taken by Anglo American, except few samples taken with the cobra hammer drill. The anomalous samples contained weathered bedrock, which could explain the high Cu values. Anglo American data shows several Cu-anomalies in the drilled samples. There is no information whether these samples contained weathered bedrock. Even so, the anomalies which are outside the old drill sites should be drill tested. (Figure 69).

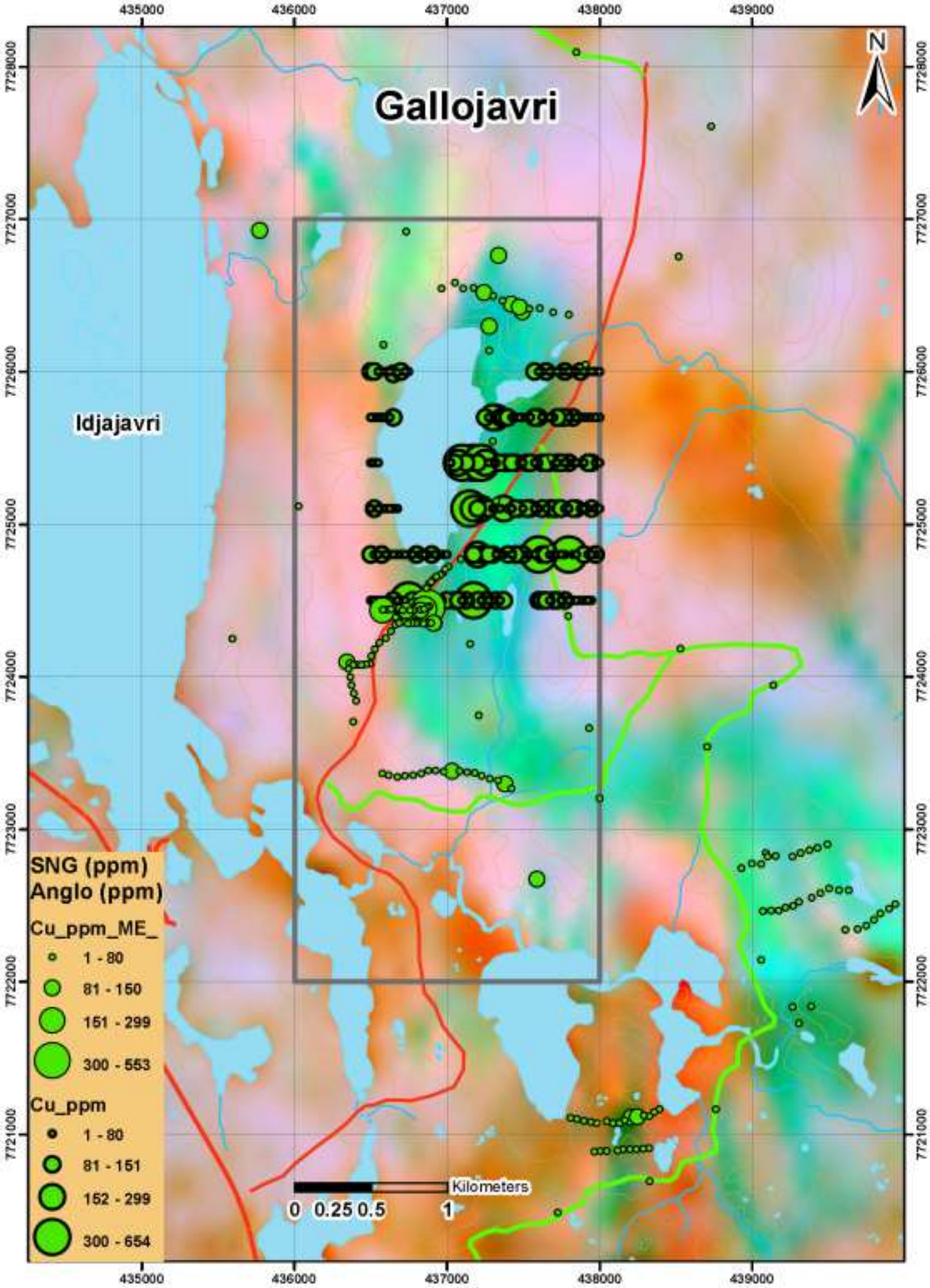

Figure 69 Till C-horizon sampling and Anglo American till drilling results in the Gallojavri area on a processed aerogeophysical image highlighting bedrock structures and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009).

The ultramafic body seems to continue to the north, when looking at the results of Cr, Ni, Co, Pd and Pt (Appendix 3). They suggest that the mineralization also continues further than previously known, and more important, to an area which has not been drilled yet. Another interesting feature in the northern part of the Gallojavri intrusion, is the higher MgO and Cr content of the rock compared to samples taken from the southern side of the lake (Appendix 3). This suggests that the bottom part of the intrusion could be located in the northern part of the lake. SNG's best crab samples (Ni up to 0.8 %; Cu up to 0.5 %; Pt up to 1.7 ppm; Pd up to 1.9 ppm) in the Gallojavri claim come from the same area as well.

The heavy mineral samples returned low gold grain counts with only a couple of minor anomalies. Instead, several samples have possible PGM's (Appendix 1).

6.3.23 Stuorra Guorpmet and Luhkkavarri area Fe-V-target

AS Sydvaranger identified two separate overburden Cu-anomalies in the Stuorra Guormet fjell just few kilometres north of the Karasjok village (Røsholt, 1983). Based on the Cu-anomalies and geophysics, SNG assistants took heavy mineral, geochemical and rock samples.

Main rock type in the area is gabbro, which varies in grain size from medium to pegmatitic in places. In some places, the gabbro has a high magnetite content, which is also shown as a high susceptibility. In the eastern side of the area, few ultramafic boulders are found.

Overburden in the area is almost lacking, at least in the hilltops. In many places the sample was scraped from top of the bedrock. Up in the topography, frostboils are the best option to collect sample material.

Luhkkavarri was revisited because of anomalous gold grain counts in a couple of heavy mineral samples. In addition, Dr. Louis Cabri identified PGM's (Erlichmanite, Os-mineral) and pentlandite, native tin and tantalite in one of the samples. Gabbro boulders with layers of magnetite and chalcopyrite dissemination are found near the heavy mineral anomaly.

Results

In the Stuorra Guorpmet area, the known copper anomalies (Røsholt, 1983) are verified and the results (Figure 70, Figure 71) indicate that the area is anomalous for gold as well. The reason for the anomalies is probably the magnetite bearing gabbro unit/units, which is seen for example in the vanadium results (Appendix 2). Several rock samples taken in the gabbro returned over 0,2 % V, from which two assayed ~ 0,33 % (from the same location). These values are in the same level as in the old Mustavaara vanadium mine in Finland (Juopperi, 1977). In addition, these two samples have high Fe-content (~50 %). The existing overburden copper anomalies are explained by the fact that there is not much cover on top of the bedrock in the area. The gabbro is assaying over 500 ppm Cu in many places (up to 3400 ppm) and when the drift is mostly fragmented gabbro, almost similar values are typical for the overburden geochemical samples. This could be the case with overburden geochemical gold anomalies as well, even though few rock samples carry clearly anomalous amounts of gold.

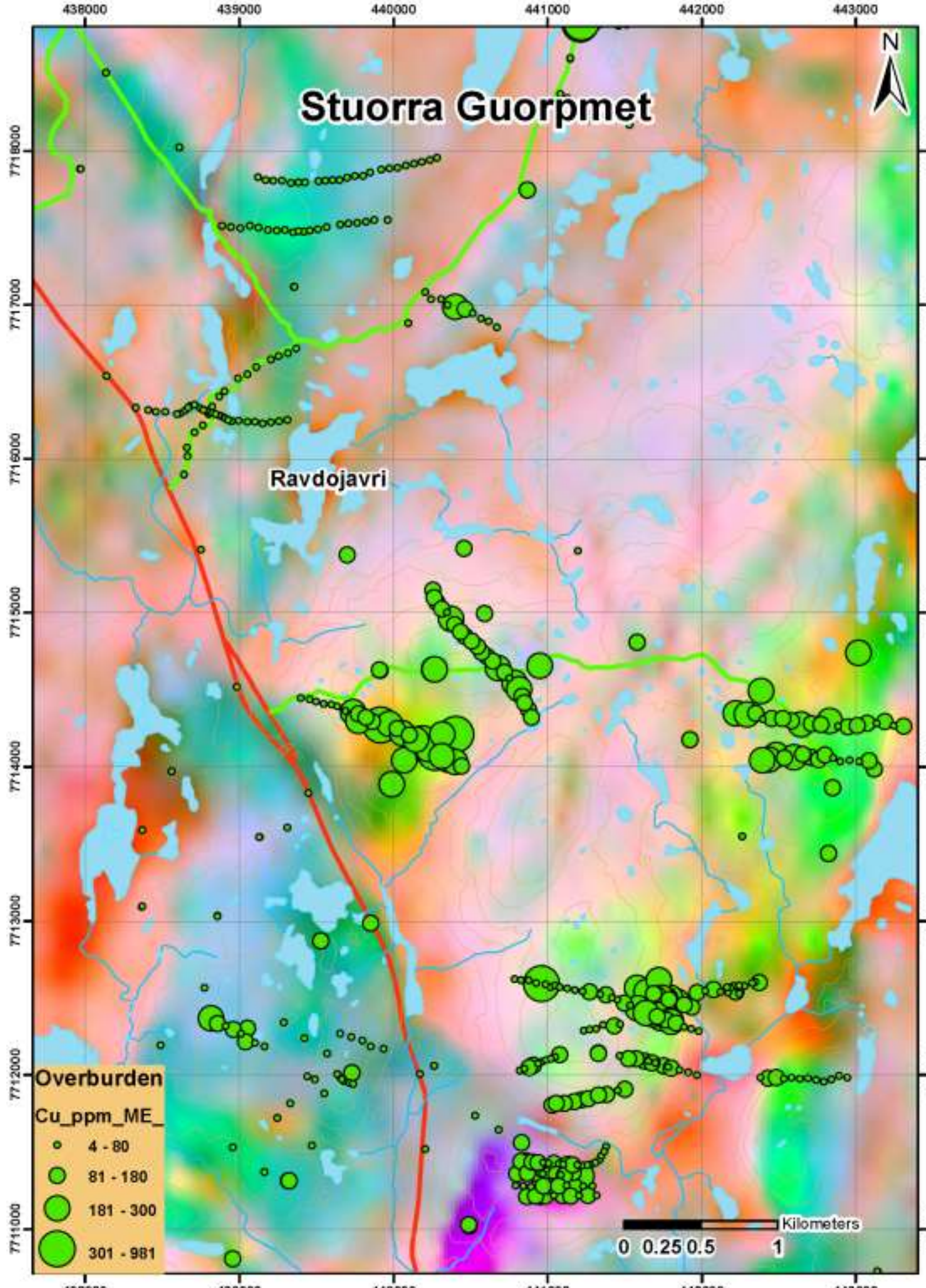

Figure 70 Till C-horizon geochemical sampling results in the Stuorra Guorpmet area on a processed aerogeophysical image highlighting bedrock structures and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009).

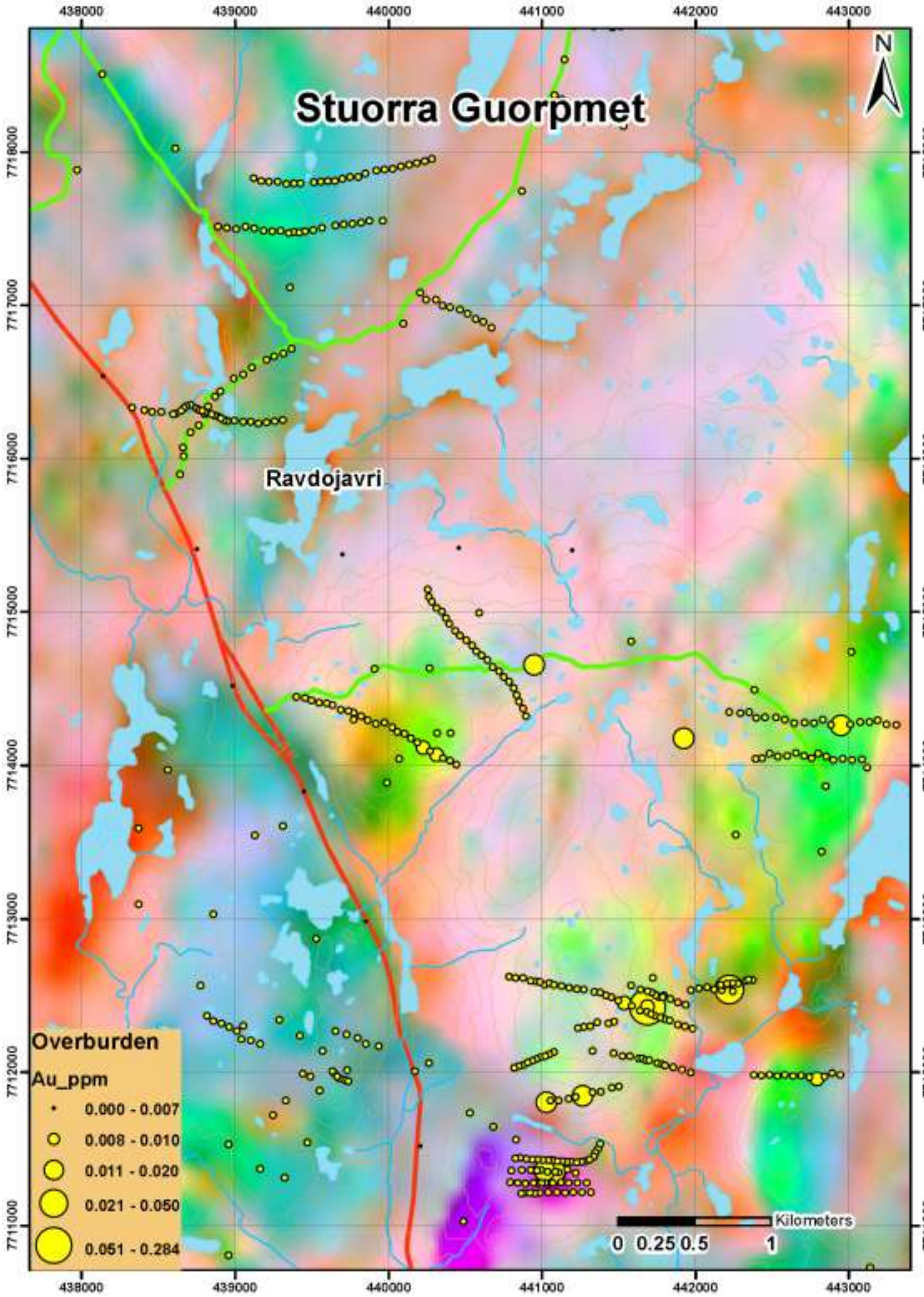

Figure 71 Till C-horizon geochemical sampling results in the Stuorra Guorpmet area on a processed aerogeophysical image highlighting bedrock structures and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009).

Few overburden samples with anomalous gold are assaying elevated amounts of As, Bi, Te and Mo (Appendix 2). It is not clear, if these are related to gabbros or not. The best combined Au-As-anomaly is outside the known gabbro and probably related to some other rock types or structures. The infill sampling in 2012 shows combined geochemical anomalies in the same area (Appendix 2). In addition, the highest tungsten anomaly (4400 ppm W) in the Karasjok overburden database is located at the end of one of the sampling lines (Appendix 2).

Combined geophysical and geochemical data of the northern area suggest that there is a large intrusion system that also includes the Gallojavri ultramafic body (Figure 72).

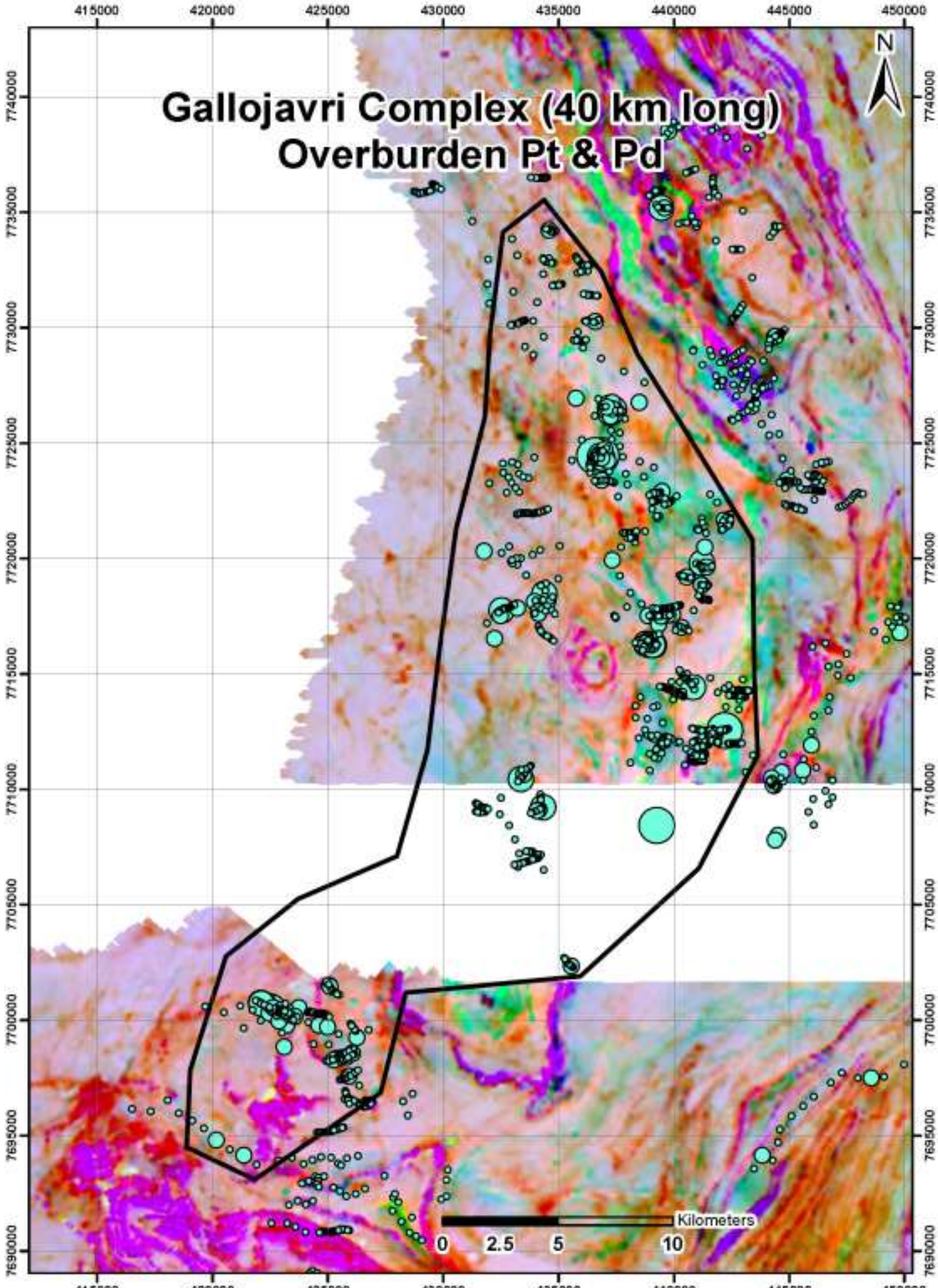

Figure 72 Till C-horizon geochemical sampling results and the extent of the possible ultramafic intrusion or sill complex on a processed aerogeophysical image highlighting bedrock structures and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009).

As seen in Finland and elsewhere (Maier & Groves, 2011), the V-Fe-Ti-gabbros are in the upper part of the layered intrusion stratigraphy. In other words, Stuorra Guorpmet could be an indication of a similar system in Karasjok and Silesjavri could be another example with combined Cu-V-Fe-Ti- (Fig. 6?, Appendices) anomalies. In Silesjavri, there is a Ni-depleted area inside the Cu-anomaly and Ni-anomalous area right next to the depleted area (Appendix 3). Possibly there is an ultramafic part in the area as well. The gravity data suggest that there should be a large volume of heavy rock in Silesjavri.

Several heavy mineral samples counted anomalous amounts of gold grains in the Stuorra Guorpmet area. Possible PGM's are found especially in the samples S-SW from the lake Biittejavri (Figure 73).

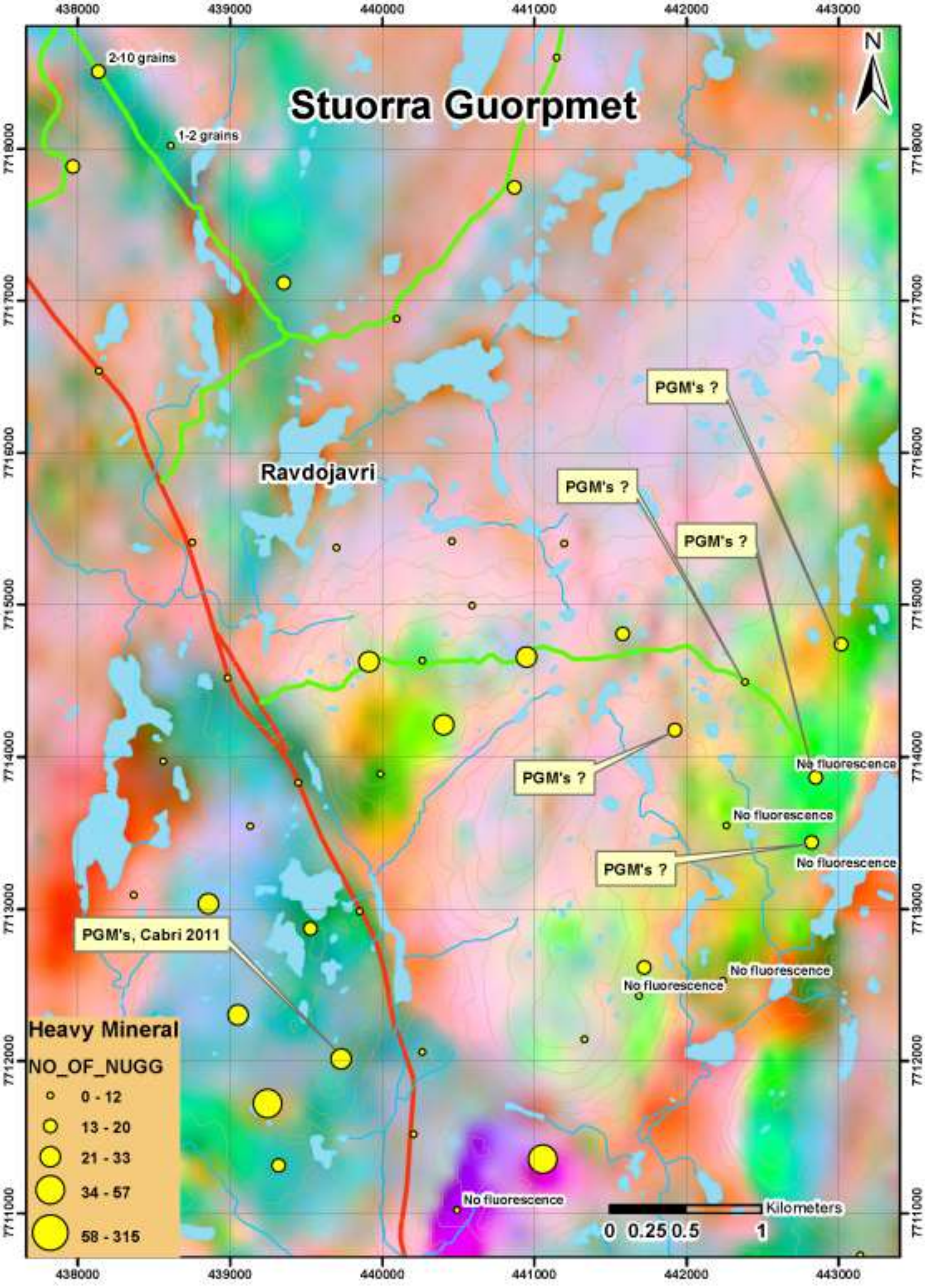

Figure 73 Heavy mineral results in the Stuorra Guorpmet area on a processed aerogeophysical image highlighting bedrock structures and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009).

6.3.24 Biipovarri Ni-Cu-target

The Biipovarri area was targeted because of anomalous overburden samples and new geophysics although SNG does not have claims in the area. Detailed geochemistry in the area was done already in 1998 and continued in 2004. The existing Cu-anomalies are rechecked, because it is possible that they are related to ultramafic rocks.

In 2011, ultramafic rocks were found outcropping in the slope. Overburden in the slope is mostly sandy till, during heavy mineral sampling a gravelly till was also found.

Results

In Biipovarri, the ultramafic rock is seen in the till geochemical results (elevated Cr, Ni, Mg, Co). Some Cu-anomalies are related to the ultramafic signal as well, which could be indicating mineralization (Figure 74). One of the rock samples from the ultramafic assayed 113 ppm Cu, which could be considered anomalous for this particular rock type. In addition, downhill from the ultramafic rock a combined Cu-V-Fe-Ti-Co-anomaly exists. This could indicate a similar type of gabbro, which is found from the Stuorra Guorpmet area.

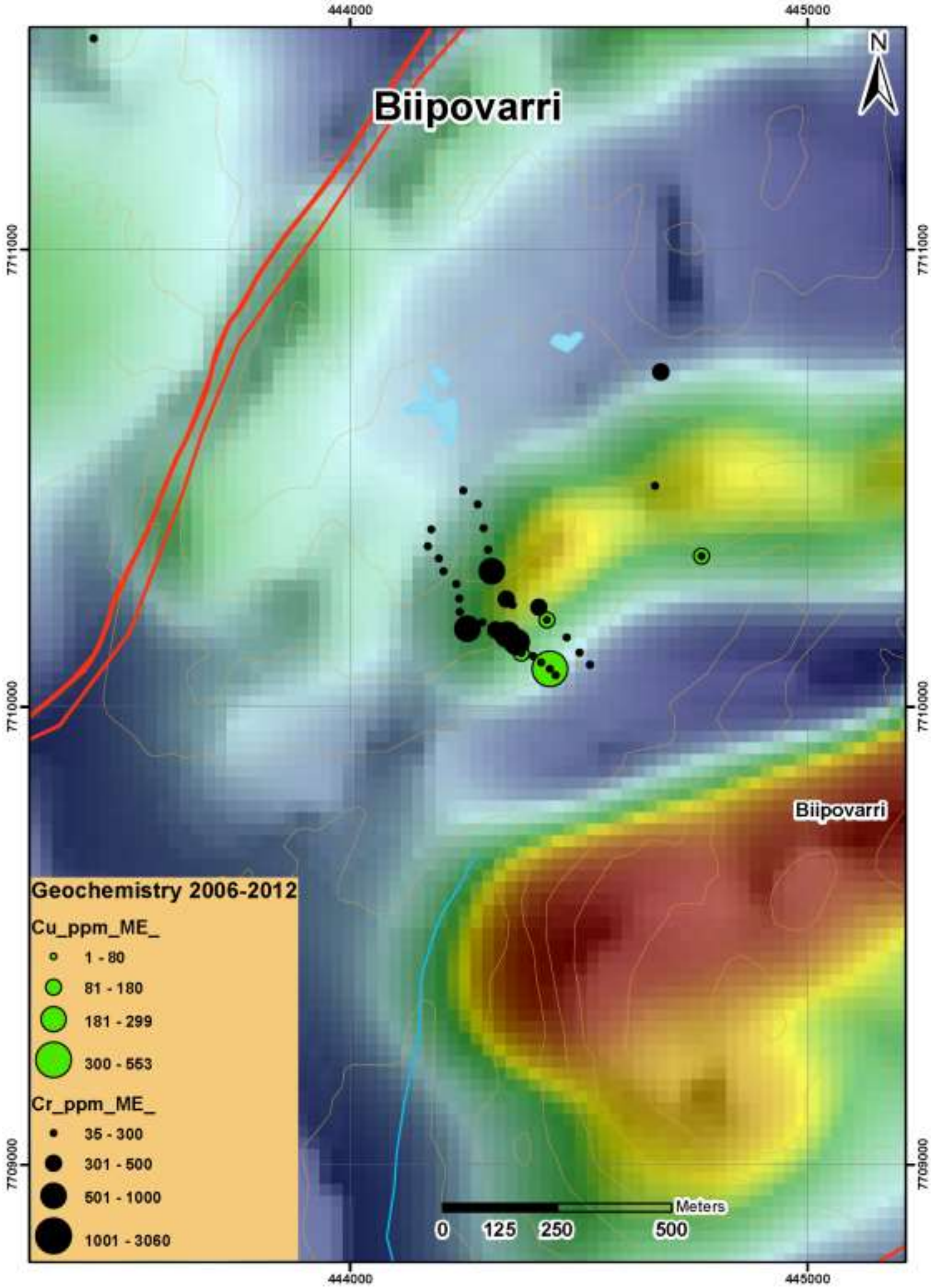

Figure 74 Till C-horizon geochemical sampling results in the Biipovarri area on a processed aerogeophysical image highlighting magnetic anomalies (Fugro, 2011).

6.3.25 Haldevadda Ni-Cu-PGE-target

Target in the area is an outcropping ultramafic rock with minor Cu-Ni-mineralization found already in the 1980's (Røsholt, 1983). Store Norske does not have claims in the area and the main idea was to test the PGE content of this rock. A ridge where the ultramafic is outcropping was found and sampled in 2011. Also few other ultramafic targets in the Haldevadda area were sampled. These were selected from the existing geological map and processed geophysical maps. However, there are several magnetic anomalies, which were not sampled.

Even though target is situated close to the Karasjok river valley, the topography is relatively flat up on the plateau. Cover on top of the bedrock is mostly sandy or gravelly till. Upper part of the till cover contain sand rich layers.

Results

Overburden and lithogeochemistry indicate ultramafic rock types with combined Cr-, Ni-, Co- and Mg-anomalies in areas with magnetic anomalies. Several ultramafic rock samples are anomalous in Au, Pd and Pt (10-50 ppb). Soil samples have also elevated Pt values which coinside with the magnetic anomalies as shown on Figure 75.

Some of the ultramafic rocks assayed >1000 ppm Cu, but are not particularly anomalous for PGE. In general, the Cu-bearing ultramafic rocks are PGE anomalous in Karasjok Greenstone Belt, especially in the Gallojavri area. In addition to low PGE, Ni values are also a bit lower in these rocks compared to other ultramafic rocks in the Haldevadda area. This kind of feature is thought to be related to the segregation of a sulphide liquid from the parental magma in layered intrusion environment (Barnes, et al., 1993). Cu/Pd-ratios of the ultramafic rocks vary from below or close to mantle values (1000-10000) to above (up to 100000's), which is a positive sign for PGE-exploration (Figure 76). In layered intrusions Cu/Pd-ratios are below or at mantle values before the PGE-mineralizing event and after the mineralization, the ratio rises clearly above the mantle values (Barnes, et al., 1993).

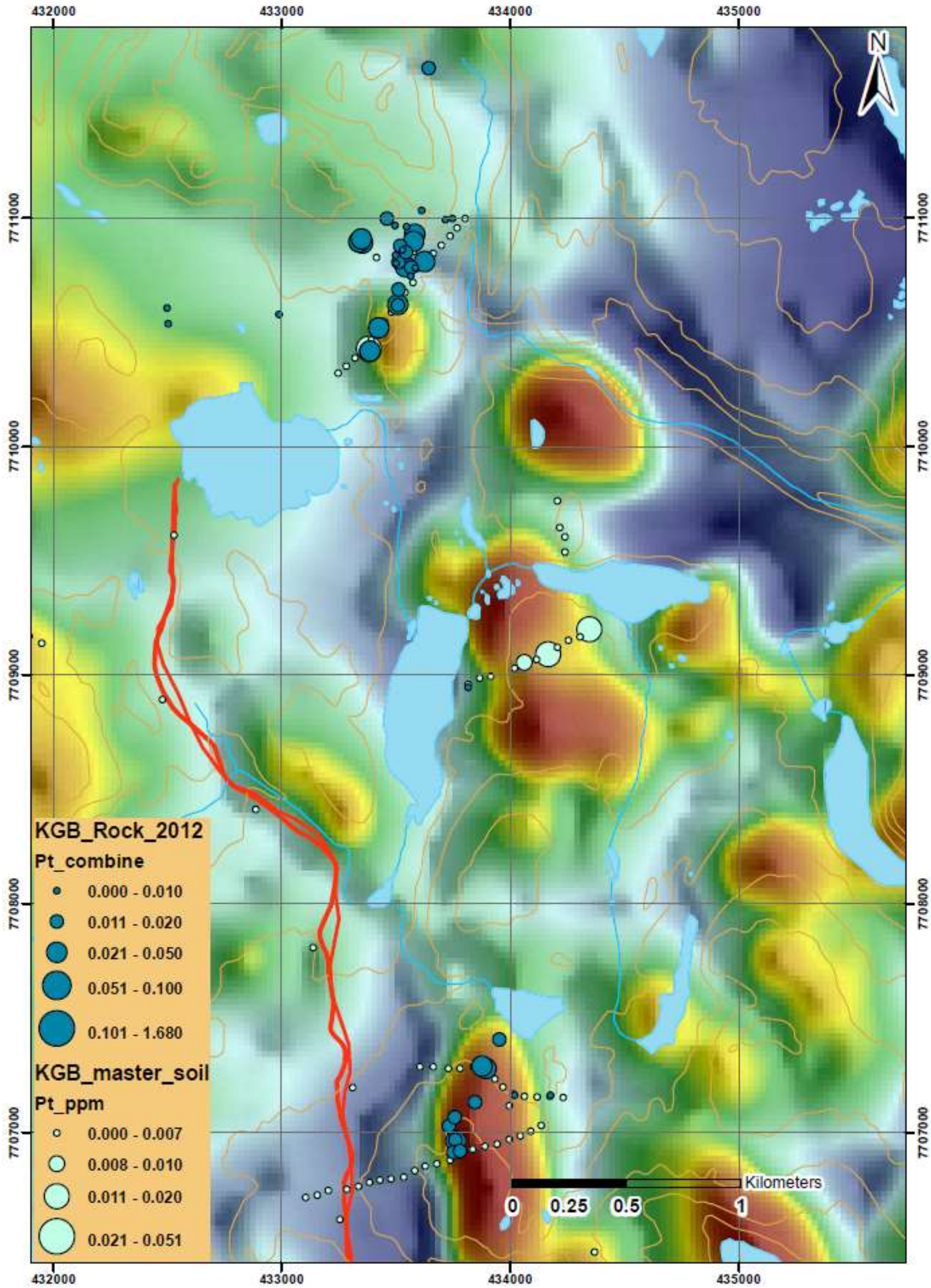

Figure 75 Platinum results of rock and overburden samples of the Haldevadda area on an aeromagnetic image (Fugro, 2011).

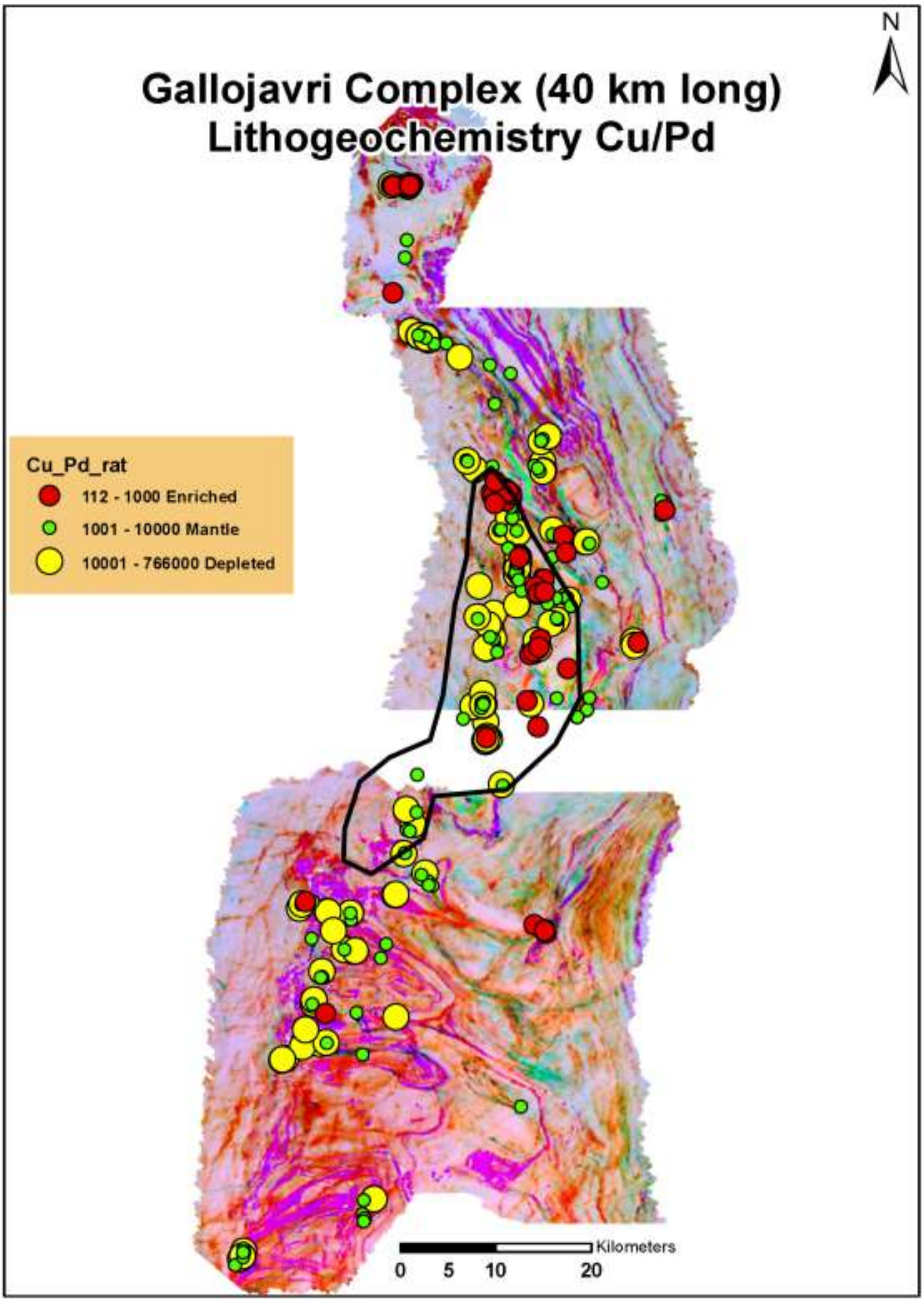

Figure 76 Cu/Pd-ratio of the ultramafic rocks in the Karasjok Greenstone Belt on a processed aerogeophysical image highlighting bedrock structures and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009).

6.3.26 Bieskkenjarga Au-target

GIS modeling shows the Bieskenjarga as prospective for gold and the area was first visited during an excursion with Mr. Bernt Rösholt in fall 2010. That time he mentioned about an outcrop with significant gold content (~2 g/t). In addition to normal geochemical sampling, cobra hammer drill was used in 2012 to reach the lower level of the stratigraphy.

Rock types in the area include mafic volcanic rocks, garnet-micaschists, gabbros, pyroxenites and banded iron formation. Boulders and outcrops are hard to find in the area, because of thick moss cover. Most of the bouders are found in the ATV-tracks where water action has exposed them.

Topography is relatively flat and cover on top of the bedrock is mostly sandy till. Top most part of the overburden is interpreted to be ablation till.

Results

Several overburden geochemical samples in the Bieskkenjarga area assayed anomalous gold, highest one 167 ppb (Figure 77). From gold pathfinder elements Sb is anomalous especially in the southern part of the target area (Appendix 2). Other pathfinder elements such as Bi, Te, Hg and Mo (Appendix 2) have few minor anomalies. Arsenic is not particularly anomalous in the overburden samples (Appendix 2), even though few rock samples assayed up to 188 ppm As. The highest gold assays (up to 0.6 ppm) in the rock samples are from rocks with a high Fe-content, suggesting that (banded) iron formation hosted gold mineralization could be one source for the overburden gold anomalies.

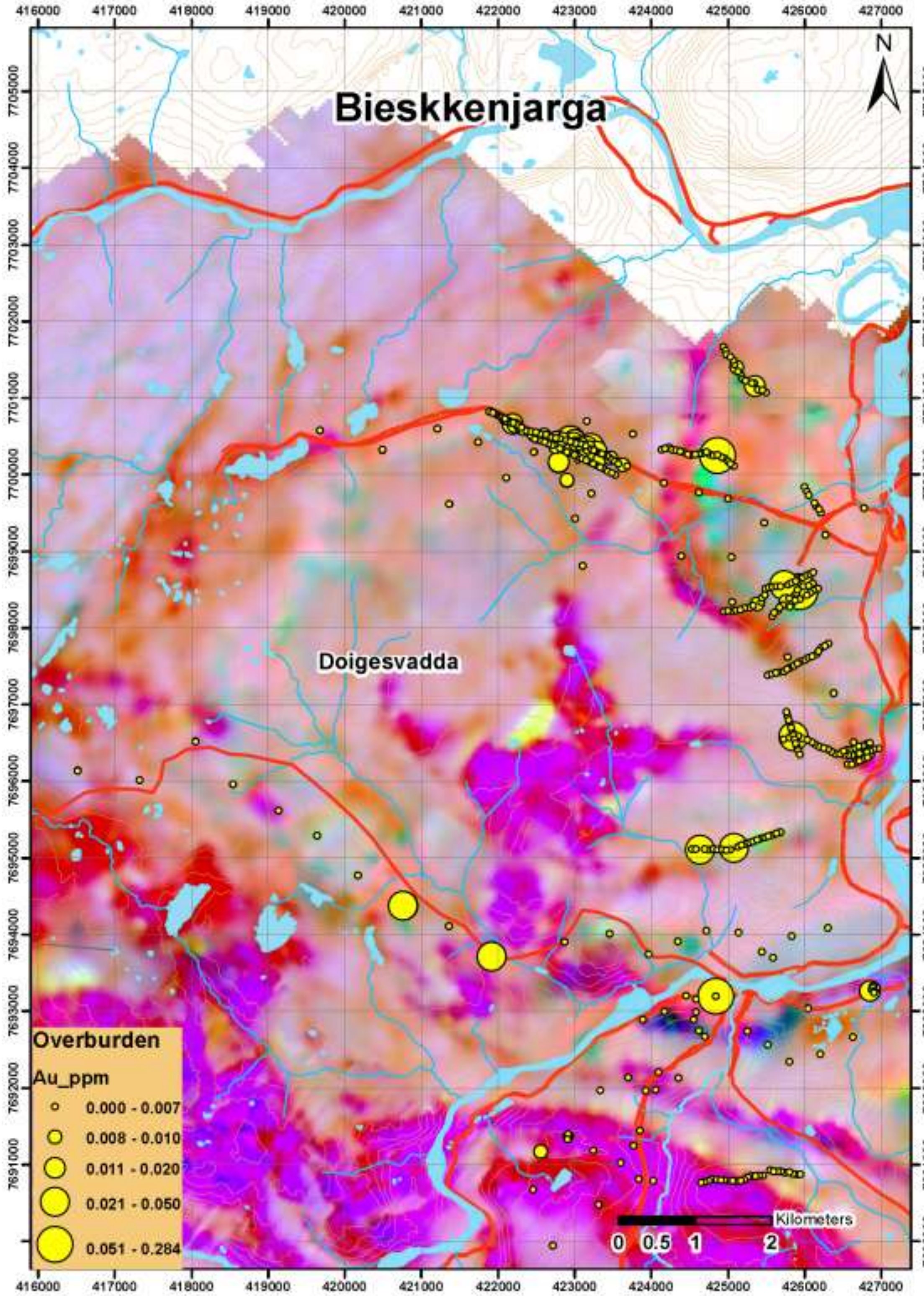

Figure 77 Till C-horizon fine fraction Au content in the Bieskkenjarga area on a processed aerogeophysical image highlighting bedrock structures and lithologies by combining magnetic and elec-tromagnetic anomalies (Aarnisalo, 2009).

The overburden Pt-anomalies (Figure 78) could indicate the existence of a mineralized ultramafic rock that could possibly carry gold as well. Platinum is particularly anomalous in the line that was sampled with the cobra hammer drill. Possibly the samples taken with the cobra are from a different till unit, which wasn't reached with a shovel or the Auger drill.

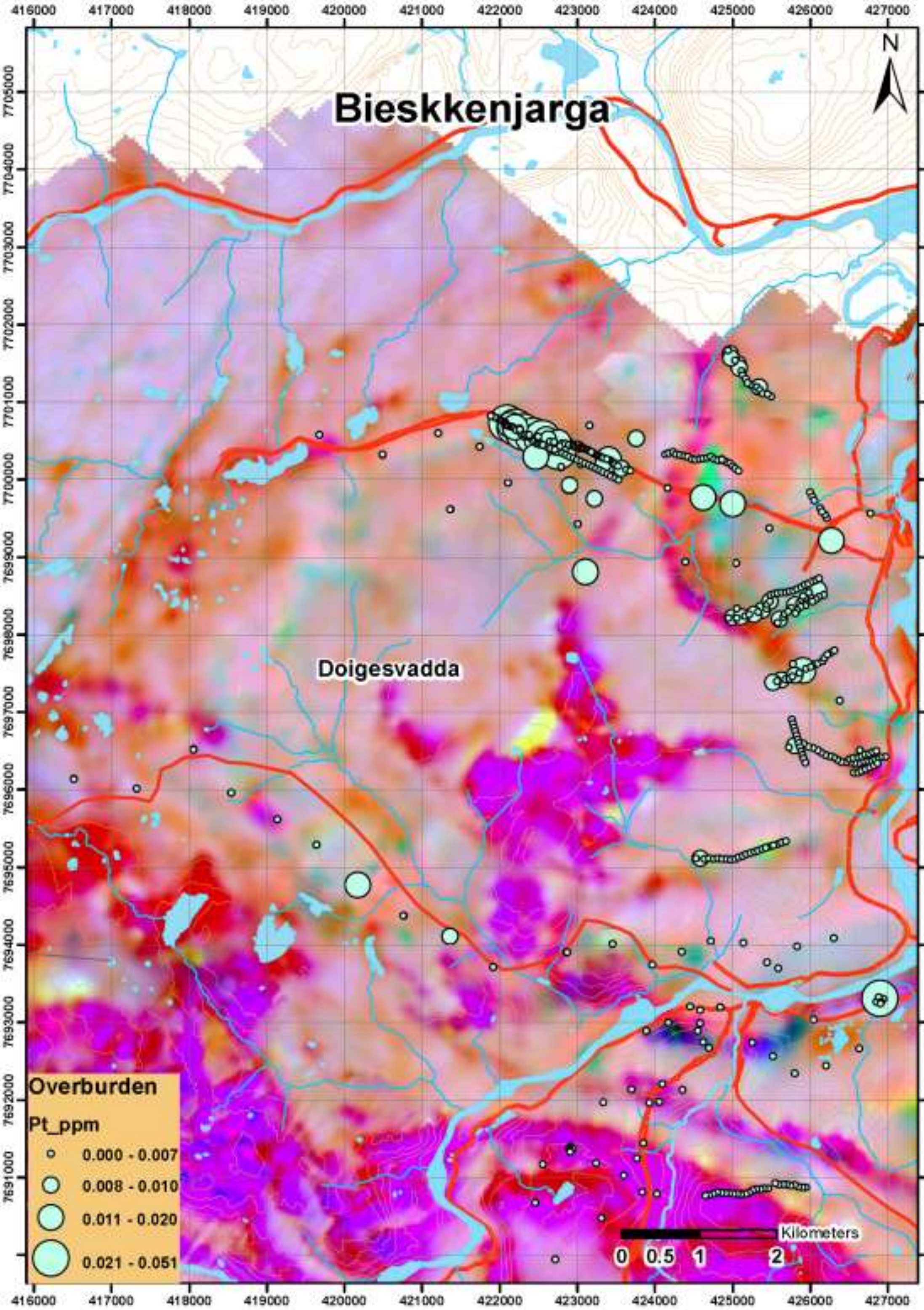

Figure 78 Till C-horizon fine fraction Pt content in the Bieskkenjarga area on a processed aerogeophysical image highlighting bedrock structures and lithologies by combining magnetic and elec-tromagnetic anomalies (Aarnisalo, 2009).

The heavy mineral samples are anomalous almost in the whole area; some samples have also possible PGM grains (Figure 79). Scheelite is found from several samples (up to 22 grains).

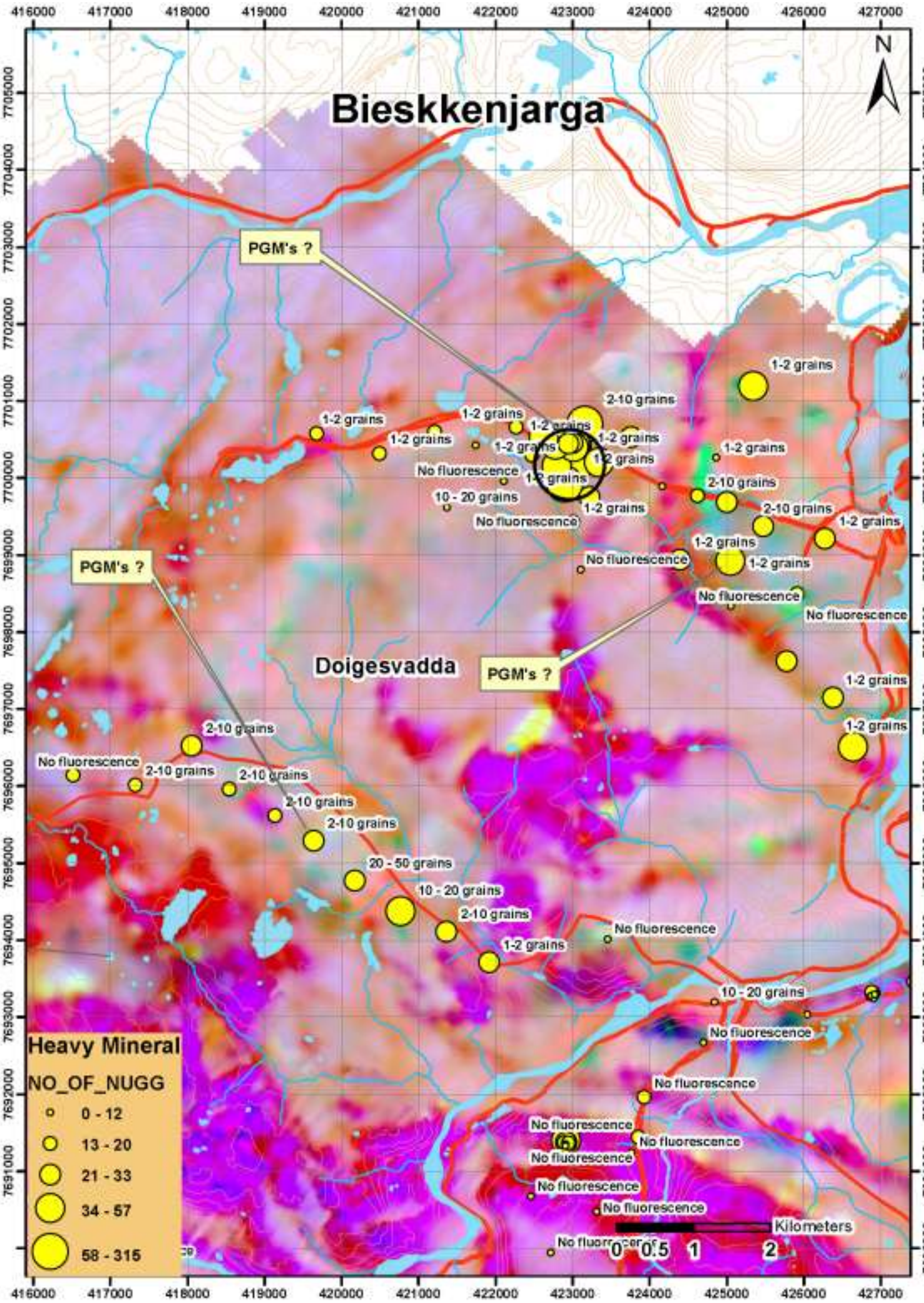

Figure 79 Heavy mineral results (gold micrograin count and scheelite grains) on a processed aerogeophysical image highlighting bedrock structures and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009).

6.3.27 Gamehiseana Au-target

The area east of the fell Iskoras was first visited in 2006. More sampling was done in 2011, because of the spatial modeling results. Mainly, because of the structures identified by geophysical measurements and existing geological knowledge, the area is highly prospective for gold. Since the area is flat in topography and lacking in outcrops, only geochemical and heavy mineral sampling was done in 2011.

The overburden is mostly sandy or gravelly till, with sandy layers in places. The top of the cover is most likely influenced by ablation processes.

Results

Like Bieskkenjarga, the Gamehiseana area was also selected based on the results of the spatial prospectivity model for orogenic gold deposits. One sample assayed anomalous gold in the overburden geochemical samples. Geochemically more interesting area is the southern part of the year 2011 sampling. In the area, several samples have an unusual geochemistry with high Y, Ce, P, Zr, Ta, Nb, Sn, Th and others (Appendix 2). There is no detail knowledge of the bedrock, so it is impossible to say if this geochemical pattern is related to rock type, mineralization, sample material, weathering, or some other surficial process. Similar geochemical anomaly pattern is found from the Mareveaiskaidi area (Figure 7), which was sampled in 2006 for the first time and revisited in 2011. The geochemical anomalies in Gamehiseana and Mareveaiskaidi areas have similarities with the Mäkäräselkä REE-Au-occurrence in the Finnish side of the Tana Belt (Sarapää & Sarala, 2011) and appinite suite of rocks in Central Lapland (Mutanen, 2003). Appinite suite has potential for phosphate and REE deposits and indications of PGE have been reported (Lauri, et al., 2011).

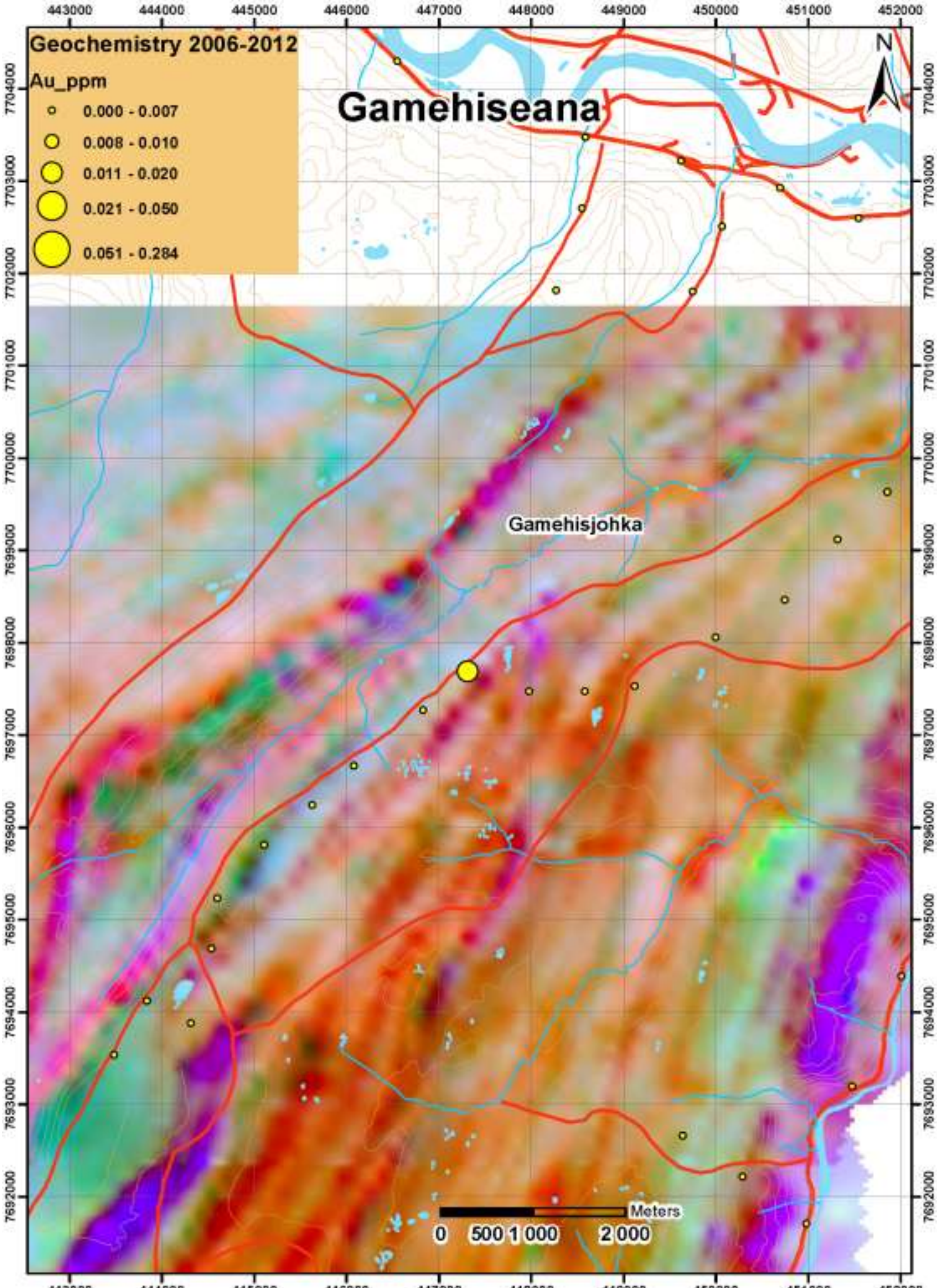

Figure 80 Till C-horizon geochemical sampling results in the Gamehiseana area on a processed aerogeophysical image highlighting bedrock structures and lithologies by combining magnetic and elec-tromagnetic anomalies (Aarnisalo, 2009).

Three heavy mineral samples are gold anomalous, in addition a possible PGM grain was found from the southernmost sample in Gamehiseana area (Figure 81). Eight samples counted up to 8 grains of scheelite as well.

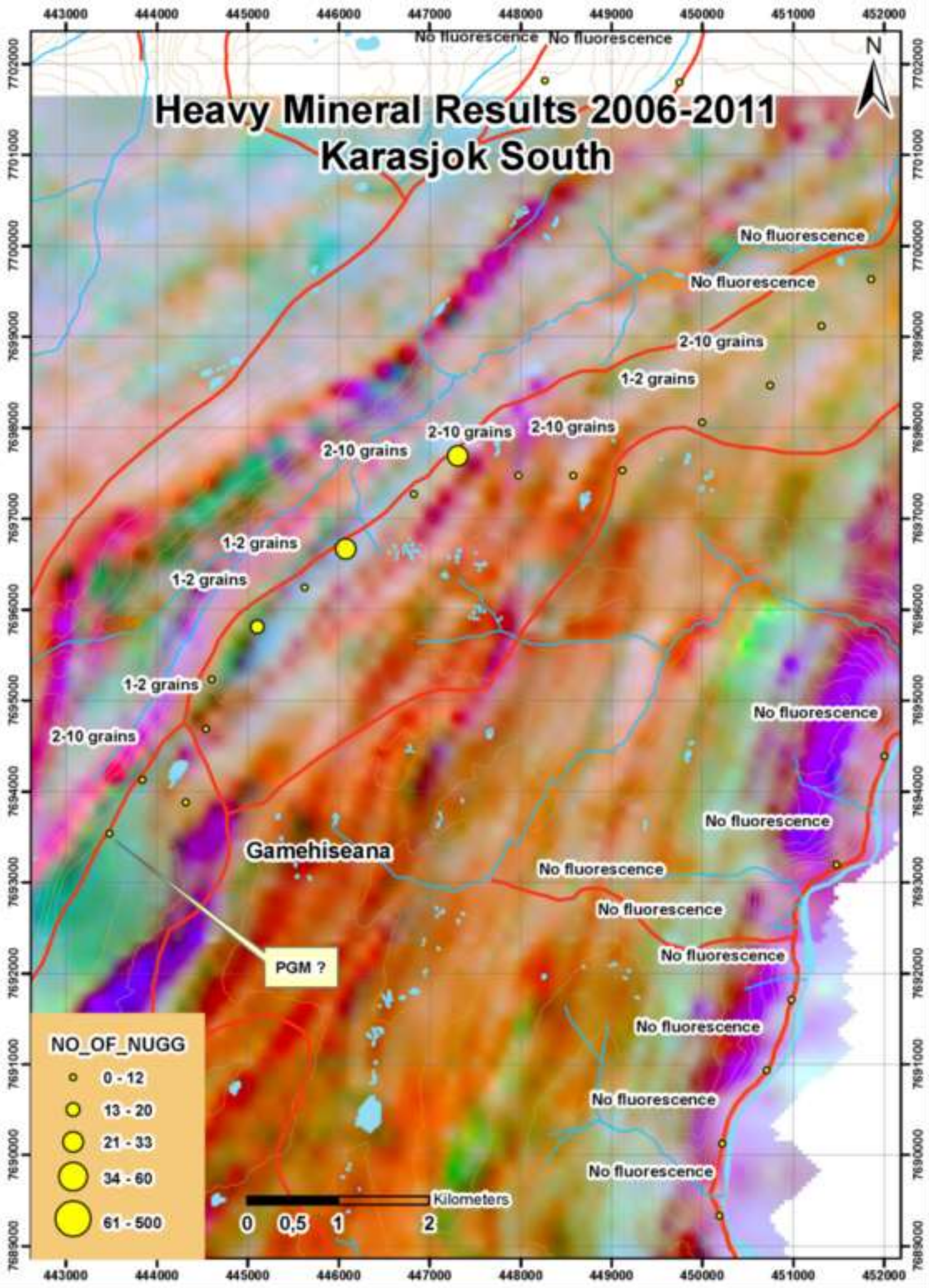

Figure 81 Heavy mineral results (gold micrograin count and scheelite grains) on a processed aerogeophysical image highlighting bedrock structures and lithologies by combining magnetic and electromagnetic anomalies (Aarnisalo, 2009).

6.4 Trenching

No trenching have been done in any of the SNG exploration areas.

6.5 Drilling

Drilling targets in Rivdnesvadda, Ravnnaluhppu, Suolomaras and Raitevarri were selected to test geochemical anomalies revealed in bedrock, till and ionic leach-sampling. In Rivdnesvadda, three holes, totalling of 370.5 m in one profile, Ravnnaluhppu, 6 holes totalling 873.3 m, Suolomaras 4 holes totalling 406.8 m, and Raitevarri 23 holes totalling 2376 m were drilled (Table 9). Drilling contractor (Arctic Drilling, Kautokeino) oriented the core using a spear. Most holes were surveyed by the drilling contractor with the Devitool-Multishot borehole survey tool. Contractor was not fully competent using the Devitool and in a large number of holes surveys were not successful. In addition, in some holes casing or drill rods caused disturbance to the measurements. If survey was considered too low quality, the starting angles and azimuths of the holes have been used in the drill hole database.

Table 9 Drill hole IDs of holes which surveys were not successful.

HOLEID	DEPTH	DIP	NATAZIMUTH
RAI_501	0	-45	235
RAI_502	0	-45	235
RAI_503	0	-45	235
RAI_504	0	-45	235
RAI_505	0	-45	235
RAI_506	0	-45	235
RAI_903	0	-45	235
RAI_1001	0	-45	235
RAI-1401-09	0	-45	235
RAI-1501-09	0	-45	235
RAI-507-09	0	-45	235
RAI-601-09	0	-45	235
RAI-602-09	0	-45	235
RAI-603-09	0	-45	235
RAI-604-09	0	-45	235
RAI-605-09	0	-45	235
RAI-606-09	0	-45	235
RAI-607-09	0	-45	235
RAI-701-09	0	-45	235
RAI-702-09	0	-45	235
RAI-801-09	0	-45	235
RAI-901-09	0	-45	235
RAI-902-09	0	-45	235
RAV_105	0	-45	180
RAV_107	0	-45	180
RDV-102	0	-45	190
RDV-103	0	-45	190
SLM_101	0	-45	360
SLM_102	0	-45	360
SLM-103-09	0	-45	0
SLM-104-09	0	-45	360
RDV-101	0	-45	190

6.6 Collar Surveys

All 2008 and 2009 drill hole collars were surveyed using the Trimble differential GPS. Repeated surveys indicate that the survey precision is well within 10 cm.

6.7 Downhole Surveys

Down hole surveys to define the drill hole paths were done in 2008 using DeviTool™ PeeWee Multishot intrument. Contractors were not fully competent using the Devitool instrument, although at the end all holes were finally surveyed. However, in several holes drill rods or casing caused disturbance to the measurements and drill paths are not reliable.

6.8 In Hole Geophysical Surveys - Bore Hole Geophysical Logging

In 2008, all bore holes were logged for magnetic susceptibility, density, natural gamma, IP, and resistivity. In addition, downhole videos were recorded for structural studies. These were recorded in the Astrock Hyperdata Software which is a database application to visualise borehole data.

7 SAMPLING METHODS AND APPROACH

7.1 SNG Exploration Procedures

Sampling methods used in SNG exploration are rock (grab), overburden (traditional till c-horizon, selective leach), heavy mineral and core drilling.

The impact to the environment and vegetation is kept minimal by covering all sampling pits and outcrops that are exposed during samping. The companies performing the core drilling are obligated by the contract with Store Norske Gull AS to take care of the environmental issues.

7.1.1 Basic Information

Minimum requirements for all type of surface sampling (rock, overburden, selective leach) include the following:

- **Coordinates** (UTM WGS84, In Karasjok Zone 35N)
- **Observation ID**, Number-Initials-Year (for example, 001-HJA-2011)
- **Sample labelling** (several markings, because many times the markings on bags wear out during the transport)

Heavy mineral samples are taken with a sample number; all the other samples (rock and geochemical) are given an observation ID. Although database structure allows many samples with the same observation ID, it is not recommended.

7.1.2 Rock Sampling (bedrock and boulder grab samples)

Samples are hammered from outcrops and boulders. Sample size is 1 kg on average. The use of protective eyewear is mandatory when hammering. The rock samples are labelled with rock tape and permanent marker. Since 2011, fabric sample bags are used. The notes from a rock sample should include the following:

- Rock type (somekind of description at least)
- Outcrop (size), boulder (size,shape, location), boulder field
- Strike/dip (right hand rule), other structural measurements
- Colour, grain size
- Susceptibility
- Alteration (acid for carbonate identification) and mineralization
- Photo, sketch of important features which might not show up in a photograph

Later the rock samples are cut with a diamond saw. Ideally 1/3 of the sample should be left for archive and 2/3 to be sent for analysis. Samples going to the laboratory for analysis are packed in plastic bags and tagged with the assay number. Last step is to input all the information into a MS Access database using the BDLogger software.

7.1.3 Overburden Sampling

Samples are mostly collected along field traverses, sampling interval varying between 20-100 m. Samples are dug with a paintless shovel or drilled with an Auger drill. Sampling depth is 0.3-0.4 m, except for the geochemical samples taken along with the heavy mineral samples, which are sampled from 1 m depth. Sample size is 0.3 l (~0.5 kg). Samples are sieved in the field with a 10 mm sieve and packed in plastic zip-lock bags. Overburden samples taken for a geochemical analysis should have the following information:

- Horizon (A, B, C)
- Depth
- Sample media (till, diamicton, weathered bedrock, sand…)
- Colour
- Environment if recognised (eg. hummocky moraine, drumlin field, paleochannel etc.)
- Photo or picture if there is something unusual (colour, soil type…)

Before sending the samples for analysis, the sample bags are tagged with an assay number and packed in plastic bags, i.e. they are double bagged. No archive samples are split from the overburden samples. All the information is stored in to a Microsoft Access database using the BDLogger sortware.

7.1.4 Core Drilling

All the drill holes are logged in Karasjok (the Mesta garage). Each core box is marked with the drill hole ID, box number, actual meters of core and loss. Assay numbers and intervals are marked on the boxes as well. The following information should have been logged from drill core:

- Lithology
- Alteration
- Mineralisation
- Core loss
- RQD
- Sample intervals
- Assay number
- Picture (wet and dry core)

After logging, the drill core is split with an automatic diamond drill core saw. After splitting the core, samples are packed in plastic sample bags tagged with assay numbers according to the marked sample intervals. A rugged computer (Panasonic Toughbook) equipped with the "BD-Logger" (code by Petri Rosenberg) logging software is used during the whole logging procedure. The software stores the data collected into the MS Access database while logging (file naming used: DH_KGB_Master.mdb).

7.1.5 Heavy Mineral Sampling

After the chosen sample point is reached and the moss or other plant material is removed from the sampling site a sample pit is dug with a shovel and aluminium bar (Figure 82).

Figure 82 Sample location is reached and digging of the sample pit starts.

Before sampling, the material has to be inspected if it is suitable or not for the heavy mineral method. (Figure 83)

Figure 83 Inspection of the overburden, which in this particular site is silt.

Sample depth has to reach the unaltered (not oxidized) sediments (Figure 84). One meter is the depth that can be reached with a shovel and aluminum bar with a reasonable effort. It is not always possible to reach the depth of one meter as the thickness of the overburden can be less or there can be very large boulders preventing the digging. Boulders up to the size of a small microwave oven can be in many cases lifted from the pit.

With a typical till the sampling takes is about one hour in addition to the time needed to travel to the sample point. In extremely tight and rocky or even boulder rich till the digging time can be over one and half hour.

Figure 84 Colour of the overburden changes when the unaltered till is reached.

If the material is proven to be till (angular rocks with at least one dirty side and the material contains all grain sizes) and the desired sample depth of one meter is reached, sample material is sieved into a 5 liter bucket through a 10 mm sieve. Sample material needs to be compressed a few times while sieving so that the weight between samples wouldn't vary too much. In addition, a smaller sub-sample (0.3 l) is taken for a geochemical assay (Figure 85). Samples are transported from the field in thick and sealed plastic bags.

Figure 85 Heavy mineral (10-12 kg) and geochemical sample (~800 g) taken.

When an anomaly is found it should be rechecked. The detailed recheck is done as follows: one sample is taken just beside the original sample and 2 samples with 25 meter intervals to four directions from the original sample point according to the direction of the last glacial drift (Figure 86). Smaller scale recheck for a minor anomaly is done with the same basics, but with only 5 samples.

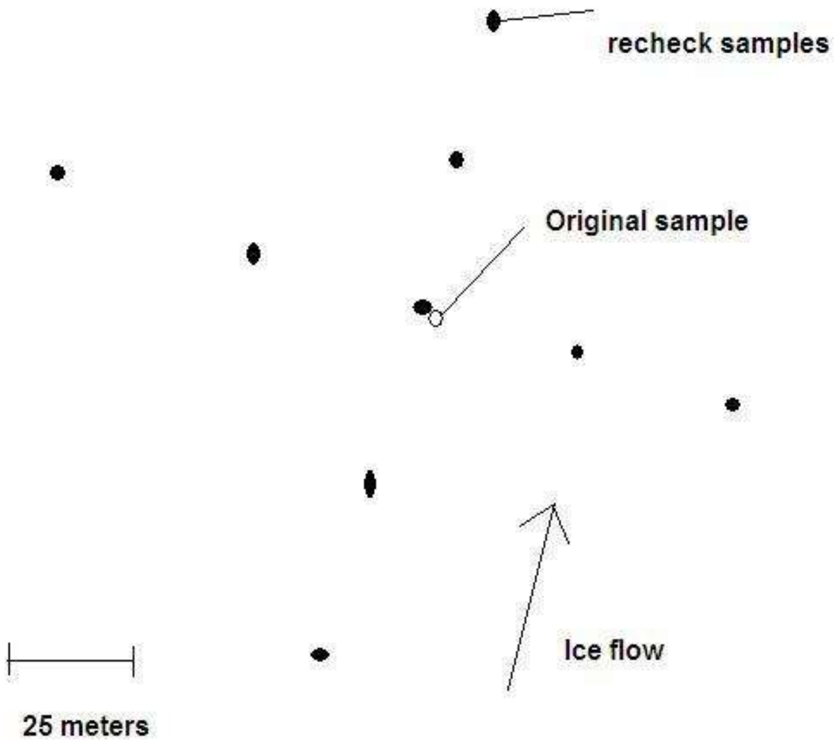

Figure 86 Detailed recheck sampling pattern used to sample around a heavy mineral anomaly.

One of the most important issues in sampling is the cleanliness of the sampling equipment. Before each sampling point the sample buckets and sieve have to be cleaned with a brush or water or some alternative method.

After sampling, every pit is marked with the sample number and coordinates and notes are taken. For the notes, the most important data is the sampling depth and information about the material. The coordinates are also written down to have a backup for the GPS device.

In the field base the documentation continues and all information is transferred and stored in to a Microsoft Access-database.

7.1.6 Cobra Sampling

Introduction

Cobra hammer drill with 35 mm sampling rods can be used to take about 0.5 dl (about 90 g) overburden samples at several meter depths. Practical sampling depth is around 2-3 m, but in good soil conditions over 10 m can be reached according to Mr Jukka Takalo (40 year soil sampling experience) from the Geological Survey of Finland. Equipment is relatively light weight; all equipment needed weights less than 50 kg. Environmental impact is very small with only a 35 mm hole in the ground.

Equipment (35 mm)

- Atlas Copco Combi drill
- Rods (1000 mm)
- Tip sampler (flow through bit)
- Adapter
- Jack
- Wrench (2x)
- Rod holder
- Stick for emptying the sample chamber

See Figure 87.

Figure 87 From left to right; Cobra Combi hammer drill, wrenches, stick to empty the sample chamber, rod holder, hammer and jack. Below; there is a rod with a tip sampler (flow through bit) and an adapter attached.

Safety

Hearing protection is mandatory when the machine is running. Safety glasses must be used when the sample is hammered out from the sample chamber with the steel rod. Steel fragments can be splintered from the hammer or steel rod if sample removal needs strong hammering. Vibration of the machine is not a problem when the handles are pressed down.

Work flow

- Pre-run the machine so it will start easily when mounted on top of the rod for drilling
- Lift the machine on the rod, start and drill (Figure 88)
- When adding a rod, stop the machine, lift it down, and screw the new rod in gently. Do not over tighten. Change the adapter top of the new rod Lift the machine on the rod and continue.
- When finished, use the jack and rod holder to get the sample up (Figure 89)
- Remove the sample from the flow through bit with the special made sample chamber emptying steel stick (Figure 90, Figure 91)

Figure 88 Starting position

Figure 89 Rods are pulled out with a jack. The adapter is attached to the coupling before the last rod is pulled put. This will keep the coupling clean.

Figure 90 Sample is ready to be taken out with the steel stick.

Figure 91 Sample is taken out with the steel stick with slight hammering.

Practical issues

- Do not over tighten the couplings since the hammering can make it hard to re-open them
- Modify the starter rope to be able to start the engine when the machine is on top of the rod (Figure 92). Otherwise the rope will fail at some point (Figure 93).
- While drilling and at end of the hole, remember to keep the couplings loose by turning the machine anti-clockwise quarter of a turn. This is easily seen as little dust blows off the coupling thread when it loosens.
- If the machine stops at shallow depth before bedrock, keep drilling for 10- 15 minutes in case of a boulder. The hammer drill might be able to break it and continue. If not, make a new hole next to the old one.
- If there is a stone on the tip of the flow through bit when the rods are pulled out, make a new hole next to the old one. Otherwise the sample material could be from any depth.
- When the last rod is to be pulled out, screw the adapter on the rod so no dirt will go to the coupling (Figure 89)
- Do not use any lubrication, since lubrication crease will eventually collect dirt and lock up the couplings.

Figure 92 The starter rope modification part made by the Geological Survey of Finland.

Figure 93 If not modified, the starter rope will eventually wear out and break, because of the pulling angle.

7.1.7 Selective Leach Sampling

First the sampling line is marked to the ground with flags. During the marking, places that might cause false anomalies such as swamps are avoided. After marking the line, sample intervals are measured. Sample pits can be marked with red flags (Figure 94). Pits are dug with paintless shovel to prevent any contamination from the paint (Figure 95). Since 2011, the samples are taken with observation ID's and the assay numbers are given in the headquarters. Before that the samples were labelled with a sample number already in the field.

Figure 94 Red flags marking the line and the sampling pits.

Figure 95 Digging sample pits in a test location in Central Finnish Lapland.

Sample is collected from a certain depth interval, which can be seen in

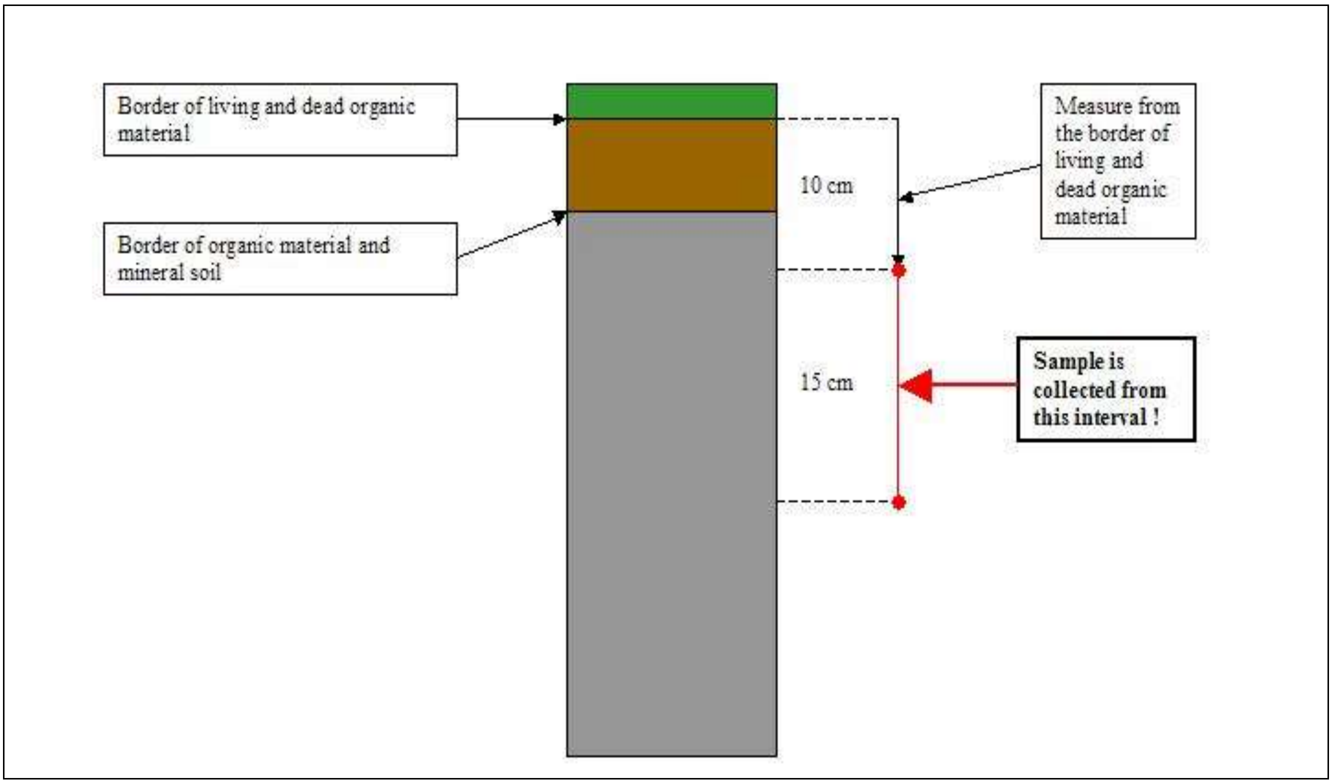

Figure 96. If the layer of organic material is thicker than 10 cm the sample is taken 25 cm down from the edge of mineral soil and organic layer. Then the sample interval is 25 cm instead of the normal 15 cm. Sample is collected with a plastic garden shovel to a 1 or 2 liter zip-lock plastic bag (Figure 97).

In addition, a duplicate sample is taken from every tenth pit to monitor the accuracy and precision of the analysis in laboratory. Notes about the soil, place and possible errors are done from every sample point. A picture is taken from each pit to help in the interpretation process (Figure 98).

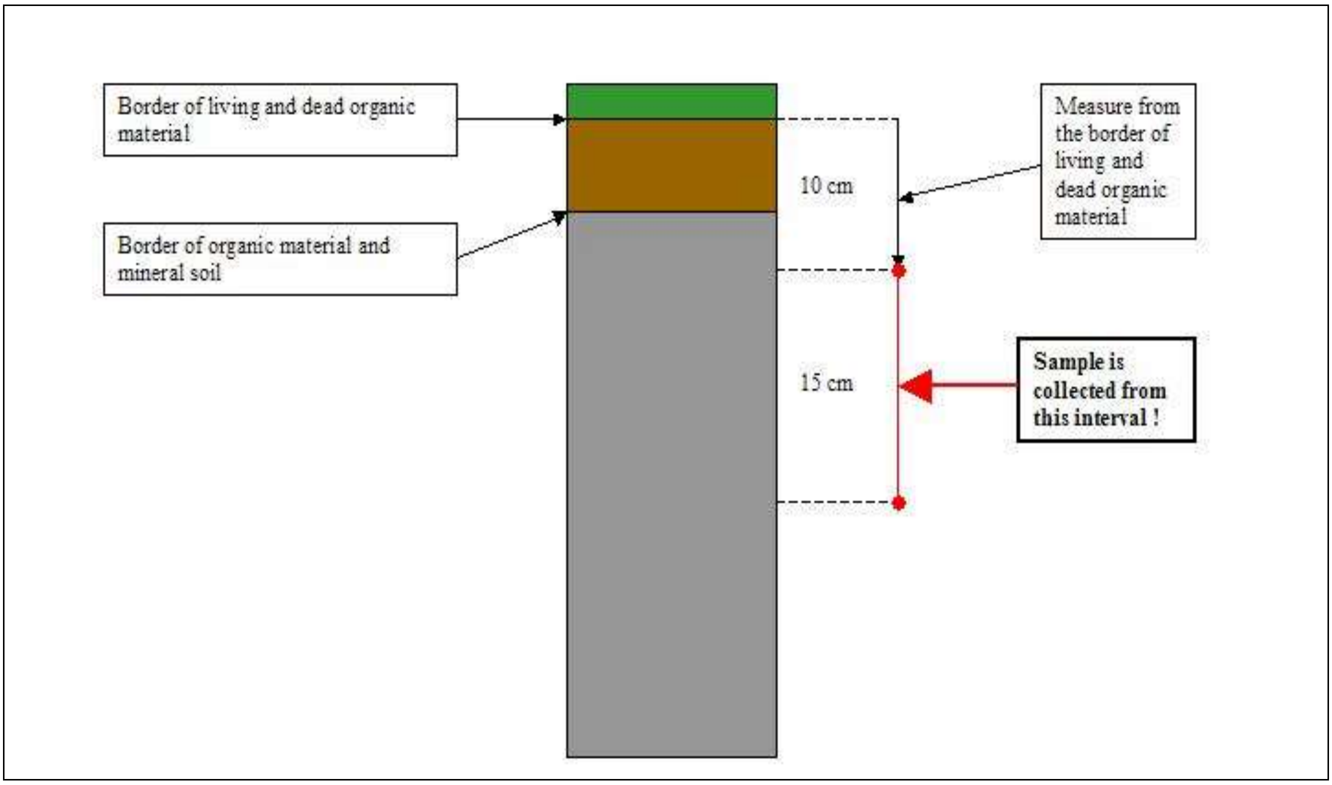

Figure 96 Right sampling depth.

Figure 97 Sample is collected to a zip-lock bag.

Figure 98 Similar photo is taken from every pit to help later in the interpretation process.

When the sampling is done the observations and other information is transferred to a computer in to a Microsoft Access database. Every photo is renamed after the sample number.

Results can be presented with response ratios, not just by absolute values (ppm’s and/or ppb’s). Basically, response ratio compares each value to a calculated background value and results are shown in whole numbers. The contrast between anomaly and background can vary with the environment and element, there for every sampling line or area can be calculated separately.

7.1.8 Snow Sampling

In Karasjok the snow samples are taken 25 cm to 45 cm above the snow-ground-interface, ie above ground surface. At this level the snow usually changes from fine grained snow on the top to coarse grained sugary snow at the bottom (Figure 99). With less than 60 cm of total snow depth, the sample has to be taken closer to the interface. The most important thing in the sampling is to avoid any organic material as it is a stronger hydrocarbon collector than snow (Sutherland 2011 pers comm). After digging the sample pit with a shovel, the sample is scooped with the sample container from the wall of the pit (Figure 100).

Figure 99 Typical sampling depth is about 45 cm above the snow-ground interface. At this level snow changed from coarse grained sugary snow at the bottom to fine grained snow on the top.

Figure 100 Juhani Ojala scooping the sample into the 120 ml container.

8 SAMPLE PREPARATION, ANALYSES AND SECURITY

8.1 Knelson Concentration

5 liter heavy mineral sample is placed on a metal funnel with a 2 mm sieve. This funnel is placed on top of a big container. Using a pressure washer the sample is sieved in to the container (Figure 101).

Figure 101 Heavy mineral sample is wet sieved in to a big container.

After the wet sieving a handful of 2-10 mm fraction (on top of the sieve) is put to a small zip-lock bag for later purposes. The Knelson concentrator (model KC-MD3) can be started and the water pressure (flow rate) is checked. A constant flow rate of ~4 l/min is used. Also the cone should be checked that it is properly installed and clean (Knelson, 2008).

Before turning the power on the water needs to be flowing because it operates as a lubricant for the machine. When the machine is running sample slurry from the big container can be poured to the machine. Slurry goes through a metal funnel that is on top of the cone (Figure 102). Rest of the sample needs to be washed from the big container (Figure 103).

Figure 102 Slurry goes to the device through a metal funnel. Knelson working.

Figure 103 Rest of the sample is washed from the container.

After the whole sample is fed to the machine water pressure is dropped to half. After a while the power and water are turned off at the same time. The sample is washed from the cone with a special tool that is attached to the device (Figure 104). After that the sample is washed to a small plastic jar and it is ready for the final step: panning and microscopying (Figure 105). The Knelson concentrator reduces the original 5 litre sample to ~0.6 dl.

Figure 104 Sample is flushed from the cone in to a kettle.

Figure 105 Sample is ready for final concentration.

8.2 Micropanning and Microscopy of the Heavy Mineral Samples

Micropanning starts with the sieving of the Knelson concentrated sample (~0.6 dl, Figure 105) to a <0.5 mm fraction. The 0.5-2 mm fraction is briefly checked for large gold grains. The sieving is done in a bowl, which is filled with mild soap water (Figure 106, Figure 107). The soap reduces the surface tension so that the small 10-20 micron (0.01-0.02 mm) grains won't float away.

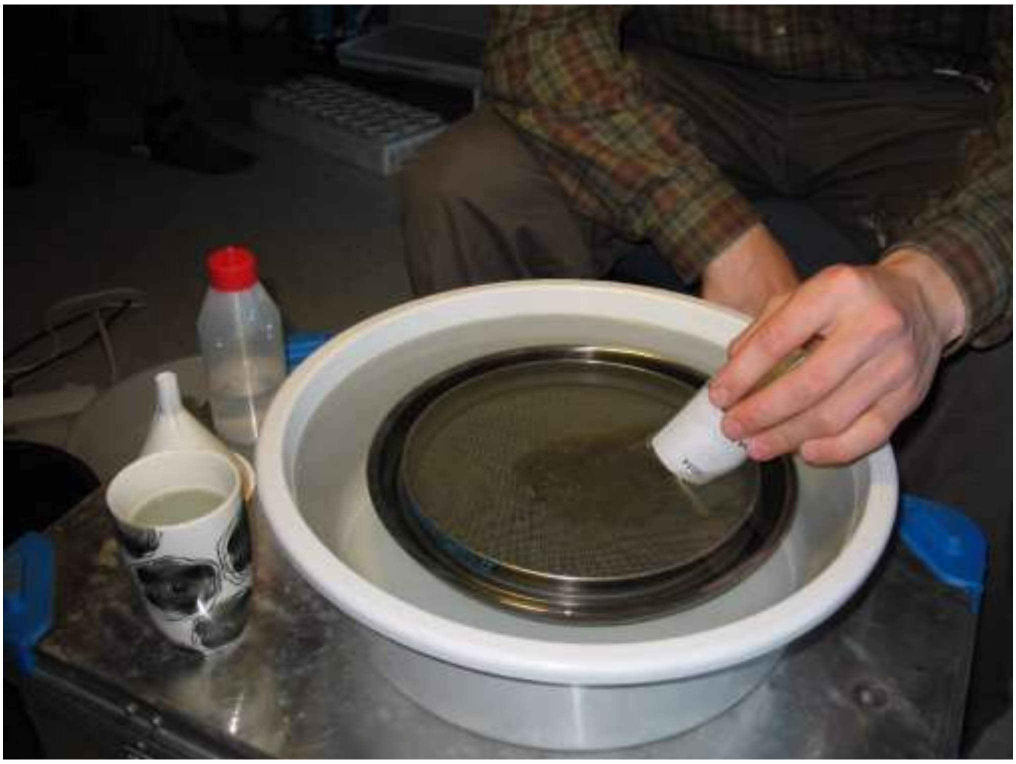

Figure 106 Pre-concentrated sample is sieved underwater using a 0.5 mm sieve.

Figure 107 The 0.5-2 mm fraction is observed briefly for gold grains.

After sieving the sample is washed in to a plastic plate, which is used to do the actual panning (Figure 108).

Figure 108 The sieved sample is washed in to the panning plate.

The sample is panned as long as there is about “half a tee spoon” left on the plate (Figure 109). Some soap water is added to the plate and the sample is “turned over.” It means that the heaviest grains (gold, PGM’s) are concentrated to a specific area in the pan. When the heaviest grains are in a small area they are easier to find and count within the remaining heavy minerals (Figure 110).

Figure 109 Sample is almost ready to be turned over. Gold grains are in the bottom.

Figure 110 Sample is turned over. The gold grains are found from the tip of the “grain fan.”

After panning the gold grains are counted and their size, shape and roundness are observed using a stereomicroscope (Figure 111).

Figure 111 Counting and observation of the grains with a stereomicroscope.

For describing the shapes of the gold particles the terms grain, plated, filiform and castform are used. To describe the roundness the terms angular, subangular and rounded are used (Figure 112). The typical size of a gold grain in SNG studies has been between 0.02-0.05 mm. Over 0.1 mm grains can be considered large.

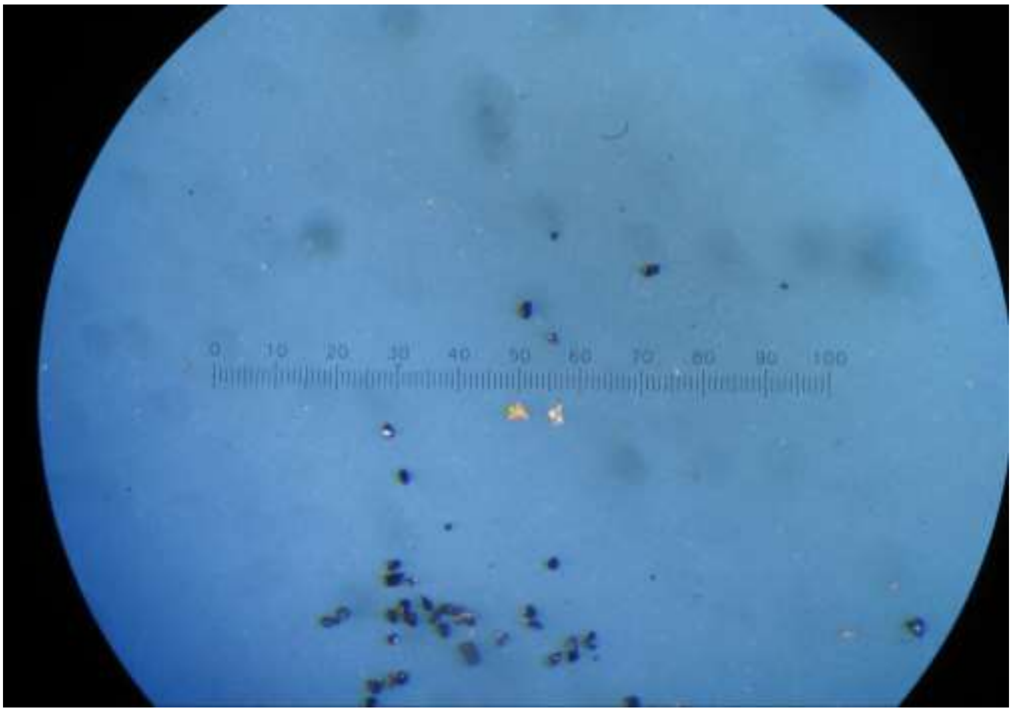

Figure 112 View from the microscope. An angular gold grain and a possible PGM, ~0.1 mm in size.

After the gold grain count, the sample is checked with a UV-light in case of fluorescent minerals. Most typical ones in Karasjok Greenstone Belt are scheelite and zircon (Figure 113). The coarse fraction is checked with the UV-light as well. Even though the 0.5-2 mm fraction is visually observed in the beginning of the procedure, it is also quickly panned to see the heavy minerals in this fraction. Typical ones are for example: garnets, sulphides (pyrite) and Fe-Ti-oxides (magnetite, ilmenite, rutile).

Figure 113 Scheelite grains under shortwave UV. Grain size 0.03-0.9 mm.

After the grains are counted the heaviest fraction (~half a tee spoon) is stored in a separate plastic tube for later use (Figure 111). The 0.5-2 mm and the tailings of the <0.5 mm fraction are combined and stored as well.

Figure 111 Final concentrate and tailings are stored in plastic vials.

Last stage is to input all the gold grain and heavy mineral data in to a Microsoft Access database.

8.3 Assay Analysis

8.3.1 Sample Preparation

Rock and drill core samples were prepared according to ALS Minerals laboratory method PREP-31, which includes:

- drying and weighing the samples
- crushing the samples to better than 70 % passing a 2 mm screen and
- pulverizing sample splits of up to 250 g to better than 85 % of the sample passing 75 microns.

Overburden samples were prepared according to the ALS Minerals laboratory method PREP-41, which includes:

- drying and weighing the samples
- sieving the samples to -180 microns (both fractions retained)

8.3.2 Assay Methods

For analysing gold, palladium, and platinum analyses, the ALS Minerals methods PGM-ICP23 and PGM-ICP24 were used. The difference between the two methods is the nominal sample weight (30 g for the ICP23 and 50 g for the ICP24). In these methods, samples were decomposed with fire assay fusion and analyses were conducted with Inductively Coupled Plasma – Atomic Emission Spectrometry (ICP-AES). The samples were fused with a mixture of lead oxide, sodium carbonate, borax, silica, and other reactants as required, inquarted with 6 mg of gold-free silver and then cupelled to yield a precious metal bead. The bead was first digested in 0.5 ml dilute nitric acid and after this 0.5 ml concentrated hydrochloric acid was added. The digested solution was cooled, diluted to a total volume of 4 ml with de-mineralised water, and analysed by ICP-AES against matrix-matched standards. (Jäsberg, 2013)

For determining major elements and barium, chromium, strontium, and volatiles (Loss On Ignition), X-Ray Fluorence Spectrography (XRF) was used for the rock and drill core samples. The code of the method is ME-XRF06. A calcined or ignited sample (0.9 g) was added to 9.0 g of lithium borate flux (50 % - 50 % $Li_2B_4O_7$- $LiBO_2$). The mixture was fused between 1050 and 1100 °C and a molten glass disc was prepared from the resulting melt. This disc was analysed by XRF. (Jäsberg, 2013)

Altogether, 48 major and trace elements were analysed with ICP-AES or Inductively Coupled Plasma –Mass Spectrometry (ICP-MS) methods after acid digestion. The code of the method is ME-MS61M (includes Hg with Hg-CV41 method). A sample (0.25 g) was digested in perchloric, nitric, hydrofluoric, and hydrochloric acids. The residue was topped with dilute hydrochloric acid and analysed by ICP-AES. After this, the results were reviewed for high concentrations of bismuth, molybdenum, silver, and tungsten and diluted accordingly. Samples meeting this criterion were analysed by ICP-MS and results were corrected for spectral inter-element interferences. (Jäsberg, 2013)

For the selective leach samples, the ALS Minerals Ionic Leach method was used. The leach is a sodium cyanide leach buffered to pH 8.5 using chelating agents ammonium chloride, citric acid and EDTA. 60 elements are analysed with ICP-MS including measuring the final pH. (ALS, 2011)

A small batch of overburden samples was assayed with the cyanide leach method to evaluate the amount of native gold in the sample material. Large sample size (500g) gives more reliable estimate than the other methods used with the Store Norske samples for detection of gold.

8.4 Core Storage

All the drill cores are stored in Karasjok in locked waterproof sea containers. Drill core boxes are placed and strapped on top of euro pallets, which can be moved with a forklift. Both plastic and wooden core boxes are used.

9 QUALITY ASSURANCE AND QUALITY CONTROL (QAQC)

9.1 QAQC Analysis

The goal of quality assurance and quality control (QA/QC) is to identify and implement sampling and analytical methodologies which limit the introduction of error into analytical data. During the Store Norske Gull AS exploration, the main method for the QAQC program has been analysis of field duplicates.

Since the exploration has been mainly a greenfield style, there has been little concern on most elements if values are near background and all anomalous samples have been rechecked. In heavy mineral sampling, field duplicates have been taken if an anomaly is found as shown in Figure 83. In the line geochemical overburden sampling the samples are so closely spaced (20-50 m) that need for the field duplicates is minimal as terrain and overburden conditions do not change very much and nearby samples are in practice the field duplicates. The selective leach methods are much more sensitive compared to conventional geochemistry and anomalies maybe caused by several processes, field duplicates have been taken systematically from every tenth sampling point.

Drill core sampling is very tightly spaced, ie maximum sample length has been one metre, and sampling is defined by lithological boundaries, samples of same lithology before and after each sample serve as duplicates. At this stage, as the drilling has been scout or first campaign exploration drilling and not resource evaluation, this has been regarded as good as assaying quarter core duplicates. In addition, all core has been assayed to define lithological background values and alteration zoning, consequently, reasonable amount of barren core has been included in the assay batches, and no additional field blanks have been included in the drill core assay batches.

The ALS Mineral laboratory has their own QC program, which includes analysis of certified reference materials as standards and blanks. These are monitored and checked that the assays of analysed reference material are within the target range (± 3 standard deviations, Fig. 112). The sample preparation (crushing, splitting) is monitored with duplicates. In addition, some of the client samples are split for a duplicate analysis.

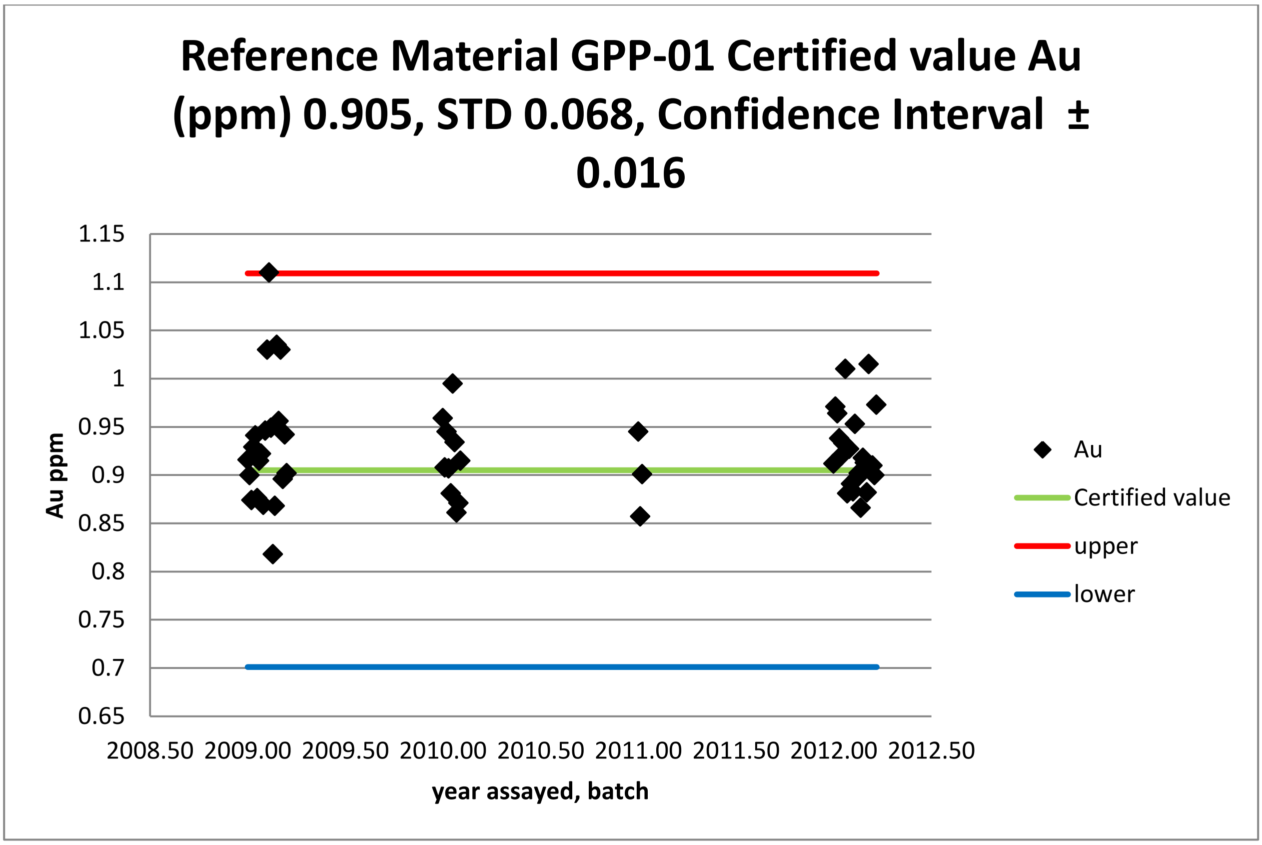

Figure 112 Au assays of Reference material GPP-01 (Geostats Pty Ltd) analysed with SNG assay batches in 2009-2012. Only one assay batch in 2009 is near the upper limit of the target range.

10 DATA VERIFICATION

After assay data have been received from the laboratories, accompanying QC certificate and QC data have been checked so that duplicates, blanks and standards are within the target range of the laboratory. Field duplicates are checked that their elemental assay values are in the same range.

11 ADJACENT PROPERTIES

Not applicable, SNG exploration has been greenfield and regional style.

12 MINERAL PROCESSING AND METALLURGICAL TESTING

Not applicable

13 MINERAL RESOURCE ESTIMATE

Not applicable

14 MINERAL RESOURCE STATEMENT

Not applicable

15 COMPARISON WITH PREVIOUS ESTIMATE

Not applicable

16 OTHER RELEVANT DATA AND INFORMATION

All relevant data and information regarding SNG exploration in the Karasjok area are included in other sections of this report.

17 CONCLUSIONS

The exploration conducted by Store Norske Gull AS in the Karasjok Greenstone Belt between 2006 and 2012 have included geophysical, geochemical, heavy mineral, geological mapping, GIS modelling and core diamond drilling. Targets were generated based on the processed aerogeophysical data and prospectivity models, which combine all available datasets, for orogenic gold and Ni-Cu-PGE deposits. In addition, some target areas were selected based on the previous work done by Foldal Verk and AS Sydvaranger AS in the 1970's and the 1980's, and Geologiste Tjenester AS in late 1990's. Furthermore, Store Norske Gull has done regional scale geochemical and heavy mineral work (one sample/km²) over the 160 km x 40 km greenstone belt. Some of the most remote areas have not been sampled, because of limited accessibility and time.

The main Store Norske Gull AS target areas in Karasjok have been: Raitevarri (Cu-Au), Gallojavri (Ni-Cu-PGE), Ravnnaluhppu (Cu-Au), Adjatskaidi-Silesjavri (Cu), Bieskkenjarga (Au), Gamehiseana (Au, REE) and Geassaroavvi (Au).

The Raitevarri Cu-Au mineralisation has been explored for decades by several companies. SNG started exploration in the Raitevarri area in 2007. The original idea was to locate a high grade Au-mineralisation of possible orogenic style overprinting the low grade Cu-Au-mineralisation. Two drilling campaigns were conducted in 2008 and 2009. The results suggest that the alteration styles, veining and geochemistry related to the Cu-Au mineralisation are typical to those related to porphyry copper systems. The anomalous area is large (20 km²) and the systematic sampling and drilling have not sufficiently covered the whole area to map the extents of the porphyry system and target it efficiently.

Before Store Norske Gull AS, the Gallojavri Ni-Cu-PGE target was claimed by Tertiary Minerals and Anglo American in the 2000's. The last drilling campaign was done by Tertiary Minerals in 2003. Anglo American did a basal till drilling campaign over the main intrusion in 2005. SNG has done more extensive surface sampling in the area and the highest crab sample assays include: Ni up to 0.8 %; Cu up to 0.5 %; Pt up to 1.7 ppm; Pd up to 1.9 ppm; Au up to 0.4 ppm. A new interpretation of the area is based on processed aerogeopysics, geolocical observations and geochemical data (lithogeochemistry, overburden geochemistry). According to the new model, Gallojavri is a part of a large (40-50 km long) ultramafic intrusive complex. The existence of similar rock types (intrusions) in other areas (Haldevadda, Suolojavri, Ravdojavri, Bieskkenjarga) and a possible overlying magnetite gabbro (Fe-Ti-V mineralised) in Stuorra Guorpmet supports the interpretation. Originally the ultramafic complex could have been a layered intrusion, which was deformed, modified and metamorphosed during the later geological events. On the other hand, it is also possible that the original magma formed numerous small sills and therefore the unit could be called a sill complex. The Ni-Cu-PGE potential of the whole Karasjok Greenstone belt increased regardless of whether the Gallojavri is a part of an intrusion or a sill complex.

The Ravnnaluhppu Cu-Au occurrence next to the Karasjok town was first visited in 2007 by SNG. The exploration in 2007, 2008 and 2009 detected surface anomalies, which were drill tested in 2008 and 2009. The core diamond drilling intersected an altered greenstone-blackschist-micaschist unit, with highest Cu (up to 1%), Au (up to 1.7 ppm) and Co (up to 0.3 %) values related to the blackschist-felsic schist package. The geological setting, the host rock sequence and the geochemistry suggest a possible VMS style of mineralisation for the Ravnnaluhppu occurrence. However, there probably has been some modification and remobiliation during deformation and metamorphism, since the highest Cu and Au grades are found in the structurally more complex parts.

The Adjatkaidi-Silesjavri Ni-Cu target was selected based on the work done by AS Sydvaranger. Multielement surface anomalies with similarities to the Stuorra Guopmet area suggest the existence of a magnetite gabbro in Silesjavri. On the other hand, such anomalies could be related to the As rich (~1200 ppm) blackschist found outcropping in the Silesjavri area. In addition to VMS deposits, the area is prospective for Ni-Cu-PGE, indicated by the ultramafic boulders found in the area. The processed aerogeophysical data indicate a large volume of rock with a high specific gravity.

The Bieskkenjarga area was first sampled in 2011 after the excursion in 2010 with Mr Bernt Røsholt. The area was highlighted in the prospectivity analysis for orogenic gold deposits. Gold anomalous surface samples are found in the area, especially the heavy mineral sample gold grain counts are anomalous. In addition to gold, Pt overburden anomalies suggest the existence of a mineralised ultramafic rock. Some of the heavy mineral samples contain possible platinum group minerals as well. Pyroxenites are found outcropping along the road following the Karasjok river.

The Gamehiseana target was highlighted in the prospectivity modelling results for orogenic gold deposits. Heavy mineral and geochemical results support the prospectivity model. In addition, the overburden geochemistry indicates the presence of a possible appinite suite (unsual ultramafic rock) or other alkali rock with uncommon element association (REE, Nb, Ta, Zr, P, Zn, Cu and others) in the area. Appinite suite rocks are potential for phosphate, REE and PGE deposit. Almost similar overburden geochemical anomaly pattern is found in the Mareveaiskaidi area, 15 km south from Gamehiseana.

The Geassaroavvi area has been among one of the first targets in the history of exploration in the Karasjok area if the alluvial gold mining is not considered. The main interest has been the banded iron formations. Store Norske Gull AS has identified two Au anomalous areas, where heavy mineral, till geochemistry and selective leach results suggest a possible gold mineralisation. Some of the heavy mineral samples contain possible PGM grains.

18 RECOMMENDATIONS

Store Norske Gull AS has defined several target areas, which would require either basal till or core drilling. Some areas are in a stage where ground geophysics would be needed before the drilling campaigns to define drill targets more accurately.

18.1 Drilling Targets

The geochemical and high resolution aerogeophysical anomalies in the Gallojavri and Raitevarri areas are the highest priority core drilling targets. In the Geassaroavvi area, there are heavy mineral and selective leach gold anomalies to be drill tested.

Basal till drilling should be considered in Bieskkenjarga, Gamehiseana and Adjatskaidi-Silesjavri areas as the next step to track the till geochemical anomalies to bedrock. The anomalous areas in the southern side of the greenstone belt are recommended for bottom of till drilling because of the relatively flat topography, thick overburden and complex Quaternary stratigraphy.

18.2 Other Work

Ground geophysics could be used to better define geochemical anomalies drill targets and possibly generate additional drill targets in the Bieskkenjarga, Geassaroavvi and Adjatskaidi-Silesjavri areas.

Regional scale work should be continued in the areas that are highlighted in the prospectivity modelling for orogenic gold and Ni-Cu-PGE deposits, and all the magnetic and EM anomalies possibly connected to the Gallojavri ultramafic complex should be mapped.

19 REFERENCES

Aarnisalo, J., 2009. *Image Processing of Karasjoki Aerogeophysical Data.,* s.l.: Aarnisalo Exploration.

Ahola, H., 2008. *Final report on field season 2008, SNG Geochemical survey group.,* s.l.: Store Norske Gull AS.

Ahola, H., 2009. *Geochemical group: Final report of field season 2009.,* s.l.: s.n.

Ahola, H., 2010. *Geochemical Group: Final Report of Field Season 2010.,* s.l.: Store Norske Gull AS.

Ahola, H. & Annanolli, J., 2007. *Final report on field season 2007, SNG Geochemical survey group.,* s.l.: Store Norske Gull AS.

ALS, 2011. *Schedule of Services & Fees,* s.l.: ALS Minerals.

Barnes, S.-J., Couture, J.-F., Sawyer, E. & Bouchaib, C., 1993. Nickel-Copper Occurrences in the Belleterre-Angliers Belt of the Pontiac Subprovince and the Use of Cu-Pd Ratios in Interpreting Platinum-Group Element Distributions.. *Economic Geology,* Osa/vuosikerta 88, pp. 1402-1418.

Braathen, A. & Davidsen, B., 2000. Structure and stratigraphy of the Palaeoproterozoic Karasjok Greenstone Belt, norh Norway, regional implications.. *Norsk Geologisk Tidskrift,* Osa/vuosikerta 80, pp. 33-50.

Eilu, P., 2008. Fennoskandian malmiesiintymätietokanta ja -kartta. Fennoscandian Ore Deposit Database and Map.. *Geologi,* Osa/vuosikerta 60, pp. 28-31.

Eilu, P., 2010. *Assessment of alteration and style of copper-gold mineralisation at Raitevarri, Karasjok, Norway.,* s.l.: Geological Survey Of Finland.

Eilu, P. & Ojala, V., 2011. *Cu-Au mineralisation at Raitevarri, Karasjok greenstone belt, northern Norway..* Antofagasta, Chile, Ediciones Universidad Catolica del Norte, Antofagasta, Chile, pp. 351-353.

Fugro, 2011. *Alta, Norway FALCONTM Airborne Gravity Gradiometer Survey for Store Norske Gull AS, Processing Report,* s.l.: FUGRO AIRBORNE SURVEYS Pty Ltd.

Groves, D., R.J, G., Robert, F. & Hart, C., 2003. Gold deposits in metamorphic belts: overview of current understanding, outstanding problems, future research, and exploration significance.. *Economic Geology,* Osa/vuosikerta 98, pp. 1-30.

Ihlen, P., 2005. *Gold deposits in the Karelian Craton and potential exploration targets in the Karasjohk Greenstone Belt.,* s.l.: NGU.

Jäsberg, J., 2013. *Alteration styles, related mineralisation and geochemical trends at Raitevarri Cu-Au mineralisation, Karasjok, Norway.* s.l.:Department of Geography and Geology, University of Turku.

Johansson, P. & Kujansuu, R., 2005. *Pohjois-Suomen maaperä: maaperäkarttojen 1: 400 000 selitys. Summary: Quaternary deposits of Northern Finland - Explanation to the maps of Quaternary deposits 1 : 400 000..* Espoo: Geological Survey of Finland.

Jokela, J., 2006. *Ni- and Au-exploration in the Karasjok Greenstone Belt, 2006,* s.l.: Store Norske Gull AS.

Jokela, J., 2007. *Ni- and Au-exploration in the Karasjok Greenstone Belt, 2007.,* s.l.: Store Norske Gull AS.

Jokela, J., 2007. *Notes on the Karasjok Greenstone Belt 2006 analysis data.,* s.l.: Store Norske Gull AS.

Juopperi, A., 1977. The Magnetite Gabbro and Related Mustavaara Vanadium Ore Deposit in The Porttivaara Layered Intrusion, North-Eastern Finland.. *Bulletin,* Osa/vuosikerta 288.

Kirkham, R. & Sinclair, W., 1996. *Porphyry copper, gold, molybdenum, tungsten, tin, silver. In: Geology of Canadian Mineral Deposit Types.* s.l.:Geological Survey of Canada.

Kivisaari, T., 2008. *Au-PGE-Ni exploration field work in the Karasjok region in summer 2008 - helicopter group.,* s.l.: Store Norske Gull AS.

Knelson, 2008. *Laboratory Knelson KC-MD3 specifications.* [Online] Available at: http://www.knelsongravitysolutions.com/sites/knelsongravity/files/Gravity/04201MD3VG.PDF

Koistinen, T. (. ym., 2001. *Geological map of the Fennoscandian Shield, scale 1:2 000 000..* s.l.:s.n.

Lauri, L., Sarapää, O. & Al-Ani, T., 2011. *Exploration potential in the appinitic rocks of the central Lapland granitoid complex, Finland.* Rovaniem, Vuorimiesyhdistys, pp. 108-109.

Maier, W. & Groves, D., 2011. Temporal and spatial controls on the formation of magmatic PGE and Ni-Cu deposits.. *Mineralium Deposita,* Osa/vuosikerta 46, pp. 841-857.

McCuaig, T. & Kerrich, R., 1998. P-T-t-deformation-fluid characteristics of lode gold deposits: evidence from alteration systematics.. *Ore Geology Reviews,* Osa/vuosikerta 12, pp. 381-453.

Mutanen, T., 2003. *Magmatism and ore-forming processes,* Rovaniemi: Geological Survey of Finland.

Nykänen, V., 2008. *Spatial Data Analysis as a Tool for Mineral Prospectivity Mapping.* Espoo: Geological survey of Finland.

Nykänen, V. & Salmirinne, H., 2007. Prospectivity analysis of gold using regional geophysical and geochemical data from the Central Lapland Greenstone Belt, Finland. *Special Paper,* Osa/vuosikerta 44, pp. 251-269.

Often, M. & Olsen, L., 1986. Gold transport in till in the complex glaciated Karasjok greenstone belt area, Finnmark, Norway.. *Prospecting in Areas of Glaciated Terrain.,* pp. 83-94.

Ojalainen, J., 2008. *Heavy mineral investigations in the Karasjok Greenstone Belt, Finnmark, Northern Norway in the field season 2008; final report.,* Espoo: Geological Survey of Finland.

Ojala, V. J., 2007. Gold in the Central Lapland Greenstone Belt.. Teoksessa: V. J. Ojala, toim. Espoo: Geological Survey of Finland, p. 267 pp..

Ojala, V. J. & Nykänen, V., 2007. Palaeo-stress modelling of the Central Lapland Greenstone Belt : implications for gold exploration. *Geological Survey of Finland Special Paper,* Osa/vuosikerta 44, pp. 225-250.

Olsen, L., 1998. Pleistocene paleosols in Norway: implications for past climate and glacial erosion.. *Catena,* Osa/vuosikerta 34, pp. 75-103.

Olsen, L., Mejdahl, V. & Selvik, S., 1996. Middle and late Pleistocene stratigraphy, Finnmark, North Norway. *Bulletin 429,* pp. 1-111.

Prieseman, F., 1983. *Summary Report, Finnmark Project (N-81-2).,* s.l.: Folldal Verk AS-Amoco Norway Oil Company.

Røsholt, B., 1983. *Summary of prospecting in Karasjok 1982 with results and plan for the 1983 season.,* s.l.: ASPRO.

Rui, I., Andersen, A. & Flood, B., 2005. *Geological observations and assessment covering geophysical/geochemical anomalies within the Karasjok greenstone belt, 2005.,* s.l.: Geologiske Tjenester.

Sarapää, O. & Sarala, P., 2011. *Mäkäräselkä REE-Au Exploration Target, Sodankylä, Northern Finland. In: Geochemical and indicator mineral exploration methods and ongoing projectsin the glaciated terrains in northern Finland..* s.l., Finnish Association of Mining and Metallurgical Engineers, p. 72.

Sillitoe, R., 2000. Gold-rich porphyry deposits: descriptive and genetic models and their role in exploration and discovery.. *Reviews in Economic Geology,* Osa/vuosikerta 13, pp. 315-345.

Sillitoe, R., 2010. Porphyry copper systems.. *Economic Geology,* Osa/vuosikerta 105, pp. 3-41.

19.1 List of the Reports prepared for Store Norske Gull AS

Aarnisalo, J., 2009. *Image Processing of Karasjoki Aerogeophysical Data February - April 2009.* Report for Store Norske Gull AS. Aarnisalo Exploration.

Aeroquest, 2008. *Report on a Helicopter-Borne AeroTEM System Electromagnetic & Magnetic Survey, Senja Island Project Senja Island, Norway.* Report for Store Norske Gull AS. Aeroquest Job # 08102.

Aho, R. & Kauti, T., 2012. *Heavy mineral –group Report 2012 Store Norske Gull As, Karasjok and Ringvassoya.* Confidential company report. Store Norske Gull AS.

Ahola, H., 2007. *Final report of MMI- and ICP-sampling 2007 Geochemical group.* Confidential company report. Store Norske Gull AS.

Ahola, H., 2008. *Final report on field season 2008, SNG Geochemical survey group.,* s.l.: Store Norske Gull AS.

Ahola, H., 2009. *Geochemical group: Final report of field season 2009.,* s.l.: s.n.

Ahola, H., 2009. *The Application Of The Mobile Metal Ion Technique in Mineral Exploration; Two Case Studies in Northern Fennoscandia.* M.Sc. –thesis. University Of Oulu, Institute of Geosciences.103 pp.

Ahola, H., 2010. *Geochemical Group: Final Report of Field Season 2010.,* s.l.: Store Norske Gull AS.

Ahola, H., 2012. *Geochemical Sampling in Karasjok, Season 2011.* Confidential company report. Store Norske Gull AS.

Ahola, H. & Annanolli, J., 2007. *Final report on field season 2007, SNG Geochemical survey group.,* s.l.: Store Norske Gull AS.

Ahola, H. & Ojala V.J., in prep. *Store Norske Gull AS Karasjok Exploration Program 2006-2012.* Confidential company report. Store Norske Gull AS.

Andersen, A., 2007. *Komatiittiske kumulater i Lakselvområdet: Petrologi, geokjemi og malmpotensial. Komatiitic cumulates in the Lakselv area: Petrology, geochemistry and ore* *forming potential.* Master Thesis. Norges teknisk-naturvitenskaplige universitet, Fakultet for ingeniørvitenskap og teknologi, Institutt for geologi og bergteknikk. University of Trondheim.

Cabri, L. J., 2010. *Laser Ablation ICP-MS analyses for Trace Gold in Pyrite and Arsenopyrite on Behalf of Store Norske Gull AS*. Report 2010-04. Cabri Consulting Inc.

Dahlsegg, E. & Koziel, J., 2012. *Geofysiske målinger Vannareid og Fakken, Vanna, Karlsøy kommune, Troms.* NGU Rapport 2012.060. Geological Survey of Norway.

Eilu, P. 2010. *Assessment of alteration and style of copper-gold mineralisation at Raitevarri, Karasjok, Norway.* Confidential Report for Store Norske Gull AS. Geological Survey of Finland Report M52E2010. 36. p. 6 appendices.

Fugro, 2011*. Alta, Norway FALCONTM Airborne Gravity Gradiometer Survey for Store Norske Gull AS.* Processing Report, s.l.: FUGRO AIRBORNE SURVEYS Pty Ltd.

Geotech Airborne Limited., 2009. *Survey and logistics report on a helicopter borne versatile time domain electromagnetic (VTEM) survey on the St Jonsfjord area, Norway.* Report for Store Norske Spitsbergen Kulkompani. Geotech Airborne Limited Project A556.

Geotech Airborne Malta Limited., 2010. *Survey and logistics report on a helicopter borne versatile time domain electromagnetic (VTEM) survey on the St Jonsfjord area, Norway.* Report for Store Norske Gull AS. Geotech Airborne Malta Limited Project A763.

Hansen, H., 2007*. End report season 2007*. Confidential company report. Store Norske Gull AS.

Hansen, H. & Often, M., 2013. *The Ringvassøy Gold Project.* Confidential company report. Store Norske Gull AS.

Hattula, A. & Lehtonen, T., 2009. *Geophysics at Senja 2008, Annual report.* Report for Store Norske Gull AS. Astrock.

Ihlen, P., 2005. *Gold deposits in the Karelian Craton and potential exploration targets in the Karasjohk Greenstone Belt.* Confidential report for Store Norske Gull AS. NGU report 2005.076. Geological Survey of Norway.

Jokela, J. 2006. *Ni- and Au-exploration in the Karasjok Greenstone Belt, 2006.* Store Norske Gull AS confidential company report. 12 p.

Jokela, J. 2007a*. Notes on the Karasjok Greenstone Belt 2006 analysis data.* Store Norske Gull AS confidential company report. 10 p.

Jokela, J. 2007b. *Ni- and Au-exploration in the Karasjok Greenstone Belt, 2007*. Store Norske Gull AS confidential company report. 26 p.

Jäsberg, J., 2011. *Summary of the JPJ field work activities at Karasjok summer 2011.* Confidential company report. Store Norske Gull AS.

Jäsberg, J., 2013*. Alteration styles, related mineralisation and geochemical trends at Raitevarri Cu-Au mineralisation, Karasjok, Norway.* s.l.:Department of Geography and Geology, University of Turku.

Jäsberg, J. & Hagen, S. 2010. *Report from field work at Karasjok Greenstone Belt summer 2010.* Confidential company report. Store Norske Gull AS.

Kivisaari, T. 2008. *Au-PGE-Ni exploration field work in the Karasjok region in summer 2008 - helicopter group.* Store Norske Gull AS confidential company report. 31 p.

Kojonen, K. & Johanson, B., 2010. *Mineralogical study of a gold prospect in Norwegian Spitsbergen.* Report of investigation to Store Norske Gull AS. Geological Survey of Finland.

Kurimo, M., 2008. *Airborne Geophysical Survey Skuvvanvarri Finnmark, Norway GTK July - August 2008.* Technical report. Geological Survey of Finland.

Kurimo. M. 2009. *Airborne Geophysical Survey Russevatna and Gosjohka Finnmark, Norway GTK June - July 2009.* Technical Report. 65 p.

Kurimo, M. & Leväniemi, H., 2007. *Airborne Geophysical Survey Finnmark, Norway.* Technical Report. Geological Survey of Finland.

Kämäräinen, V-P. & Hansen, H., 2006*. Final report of field season 2006.* Confidential company report. Store Norske Gull AS.

Kämäräinen, V-P. & Meriluoto, A., 2007. *Au-PGE-Ni exploration in Karasjok region at summer 2007.* Confidential company report. Store Norske Gull AS.

Lundgren, T. & Aho, R., 2011. *Heavy mineral-group report 2011 Store Norske Gull As. Karasjok.* Confidential company report. Store Norske Gull AS.

Makkonen, H., 2007. *Ore Geological Study of the Senja Mafic-ultramafic Intrusion, Norway.* Report for Store Norske Gull AS. Geological Survey of Finland.

Meriluoto, A., 2008. *Au-PGE-Ni exploration in Raitevarri at Karasjok region, Summer 2008.* Confidential company report. Store Norske Gull AS.

Ojala, V.J., 2008. *Store Norske Gull - Karasjok Field Season 2008*. Confidential company report. Store Norske Gull AS.

Ojala, V.J., 2008. *Notes on the visit to Spitsbergen 22-24th August 2008.* Confidential company report. Store Norske Gull AS.

Ojala, V.J., 2010. *Store Norske Gull - Karasjok Field Seasons 2009-2010*. Confidential company report. Store Norske Gull AS.

Ojalainen, J., 2008. *Heavy mineral investigations in the Karasjok Greenstone Belt, Finnmark, Northern Norway in the field season 2008; final report.* Confidential report for Store Norske Gull AS. Geological Survey of Finland.

Ojalainen. J. *2009 Evaluation of the heavy mineral exploration procedures used by the Store Norske Gull AS and glacial drift in Karasjok*. Confidential report for Store Norske Gull AS. 7 p.

Panttila, H. & Ahola, H., 2006*. Final report of field season 2006, Heavy minerals group.* Confidential company report. Store Norske Gull AS.

Rui, I.J., Andersen, A. & Flood, B., 2006. *Geological Observations and Assessment Covering Geophysical/Geochemical Anomalies within The Karasjok Greenstone Belt, 2005.* Confidential report for Store Norske Gull AS. Geologiske Tjenester report GT 06- 19- 01.

Simonsen, H.K., 2012. *Geology, mineralogy and geochemistry of the Holmsletfjella Au-As occurrence, West Spitsbergen Fold Belt, Svalbard.* Master's thesis in geology. Faculty of Science and Technology, Department of Geology. University of Tromsø.

Store Norske Gull AS., 2008. *Letevirksomhet i Finnmark og Troms.* Confidential company report. Store Norske Gull AS.

Turunen, M., 2012. *Referee Report on Konsekvenser for reindriften ved prøveboring og letevirksomhet etter gull i Ráitevárri og Suolomaras-områdene sesongen 2009. Rapport 2010:14. 29s.* Arctic Centre. University of Lapland.

Vistnes, I.I. & Nellemann, C., 2010. *Konsekvenser for reindriftenved prøveboring og letevirksomhet etter gull i Ráitevárri og Suolomaras-områdene sesongen 2009.* Rapport 2010:14. Norut Alta.