Kupsusselkä

Occurence type: occurrence

Commodity	Rank	Total measure	Total production	Total resource	Importance
gold	1	NA	NA	NA	NA
copper	2	NA	NA	NA	NA
sulphur	3	NA	NA	NA	NA
arsenic	4	NA	NA	NA	NA
zinc	5	NA	NA	NA	NA

Easting EUREF: 452746,404
Northing EUREF: 7250165,636

Easting YKJ: 3452900
Northing YKJ: 7253200

Discovery year: 2002
Discovered by: Geological Survey of Finland
Province: Oijärvi (Au, Ag)

Mineral deposit type

Group: Metallogenic deposit
Main type: Orogenic (metamorphic hydrothermal)
References: 4

Dimension

Expression: NA
Form: NA
Shape: NA
Length (m): NA
Width (m): NA
Thickness (m): NA
Depth (m): NA

Area (ha): NA
Dip azim: NA
Dip: NA
Plunge azim: NA
Plunge dip: NA
Orientation method: NA

Dimension comments: The occurrence is related to a N-S trending, 400-600 m wide, several km long shear zone along the eastern bounday of the greenstone belt. The shear zone comprises an anastomosing network of intensely seared and variably altered rock enclosing unaltered and weakly sheared blocks

Holder history

Current holder: Akkerman Finland Oy
Years: 2023
Holding type: Application for exploration permit

Previous holders:

Company	Years	Holding type	Comments
Akkerman Finland Oy	2021-2023	Reservation	NA
Geological Survey of Finland	2011-2014	Claim (old law)	NA

EXPLORATION ACTIVITY

Geological Survey of Finland

Years	Activity type	Geologist	Exploration result	Ref
2013-2013	core drilling	J. Konnunaho, P. Heikura	mineralized zone identified	
	Core drilling. 12 diamond drill holes, total 2021.60 m.			
	Intersections			
	HoleID	S4332013R10		
	From-To	135-137		
	Length	2m		
	sulphur	17,1%		
	HoleID	S4332013R2		
	From-To	154-155		
	Length	1m		
	sulphur	1,75ppm		
	HoleID	S4332013R3		
	From-To	92,2-93,2		
	Length	1m		
	gold	1,18ppm		
	HoleID	S4332013R6		
	From-To	163,3-164,2		
	Length	0,9m		
	gold	1,07ppm		
	HoleID	S4332013R9		
	From-To	173,2-183,2		
	Length	10m		
	sulphur	32%		

2005-2008	core drilling	O. Sarapää	mineralized zone identified	
	Core drilling. 11 diamond drill holes, total 1564.05 m.			
	Intersections			
	HoleID	35122007R0350		
	From-To	95,5-103,5		
	Length	8m		
	gold	1,93ppm		

2001-2004	core drilling	Seppo Rossi	mineral occurrences	4
	Core drilling (reconnaissance drilling): 10 diamond-drill holes, total 2089.6 m.			
	Intersections			
	HoleID	M351202R327		
	From-To	114,5-115,2		
	Length	0,7m		
	arsenic	4050ppm		
	HoleID	M351202R327		
	From-To	114,5-115,5		
	Length	1m		
	zinc	3150ppm		
	HoleID	M351202R333		
	From-To	193,4-194		
	Length	0,7m		
	copper	3770ppm		
	HoleID	M351202R341		
	From-To	234,9-236,9		

	Length	2m
	copper	3330ppm
	HoleID	M351202R341
	From-To	236,9-237,8
	Length	0,9m
	copper	2730ppm
	HoleID	NA
	From-To	NA
	Length	1m
	gold	1,7ppm

2001-2007	detailed geophysics	Seppo Rossi, Olli Sarapää	key geological features	4
	Magnetic, VLF-R, gravimetric and IP survey. A magnetic anomaly indicated the trend of the mineralised shear zone, as well as the trends of other shear zones and mafic volcanic rocks in the area.			

2001-2004	detailed geology	Seppo Rossi	key geological features	1, 2, 3, 4, 5, 6

2001-2004	detailed geochemistry	Seppo Rossi	geochemical anomaly	4

1994-1994	regional geophysics	Heikki Juopperi	key geological features	4
	Low-altitude airborne magnetic, electromagnetic and radiometric survey. The presence of the belt indicated by airborne geophysical survey: a magnetic high at a change in the intensity of a local gravity anomaly.			

1984-1984	regional geochemistry	NA	geochemical anomaly	
	Whole-country till geochemical survey			

GEOLOGY

Host rock: Tonalite, Tholeiitic basalt
Wall rock: Komatiite, Phyllite

Tonalite (Host rock)

Rock type: Host rock
Proportion: major
Grain size: NA
Color: NA
References: 4
Comments: The occurrence is related to a N-S trending, 400-600 m wide, several km long shear zone along the eastern bounday of the greenstone belt. The shear zone comprises an anastomosing network of intensely seared and variably altered rock enclosing unaltered and weakly sheared blocks

Alteration:	Distribution:	Degree:	Relation to mineralization:
sericitic alteration	Disseminated	Moderate	Syn

Metamorphic description:

Type:	Facies:	Degree:	Relation to mineralization:	Min P- Max P (kbar)	MIn T- Max T (°C)
Regional	amphibolite metamorphic facies	medium metamorphic grade	NA		

Geological age:

Geological era:	Max age - Minage (Ma):	Inferred age (Ma):	Age of mineralization:
Archean (4000-2500 Ma)	2500-4000		N

Tholeiitic basalt (Host rock)

Rock type: Host rock
Proportion: minor
Grain size: NA
Color: NA
References: 4
Comments: A tholeiitic basalt-dominated sequence interbedded by komatiite units. The mineralised and altered shear zone has a N-S trend, 400-600 m wide, several km long, and appears to follow the strike of the lithological units.

Alteration:	Distribution:	Degree:	Relation to mineralization:
carbonate alteration	Disseminated	Moderate	Syn
biotite alteration	Disseminated	Moderate	Syn

Metamorphic description:

Type:	Facies:	Degree:	Relation to mineralization:	Min P- Max P (kbar)	MIn T- Max T (°C)
Regional	amphibolite metamorphic facies	medium metamorphic grade	NA		
Comments: Metamorphic mineral assemblage: Plagioclase-amphibole-ilmenite-epidote-magnetite.					

Geological age:

Geological era:	Max age - Minage (Ma):	Inferred age (Ma):	Age of mineralization:
Archean (4000-2500 Ma)	2500-4000		N

Komatiite (Wall rock)

Rock type: Wall rock

Metamorphic description:

Type:	Facies:	Degree:	Relation to mineralization:	Min P- Max P (kbar)	MIn T- Max T (°C)
Regional	amphibolite metamorphic facies				
Comments: Metamorphic mineral assemblage: tremolite-chlorite-ilmenite-magnetite					

Phyllite (Wall rock)

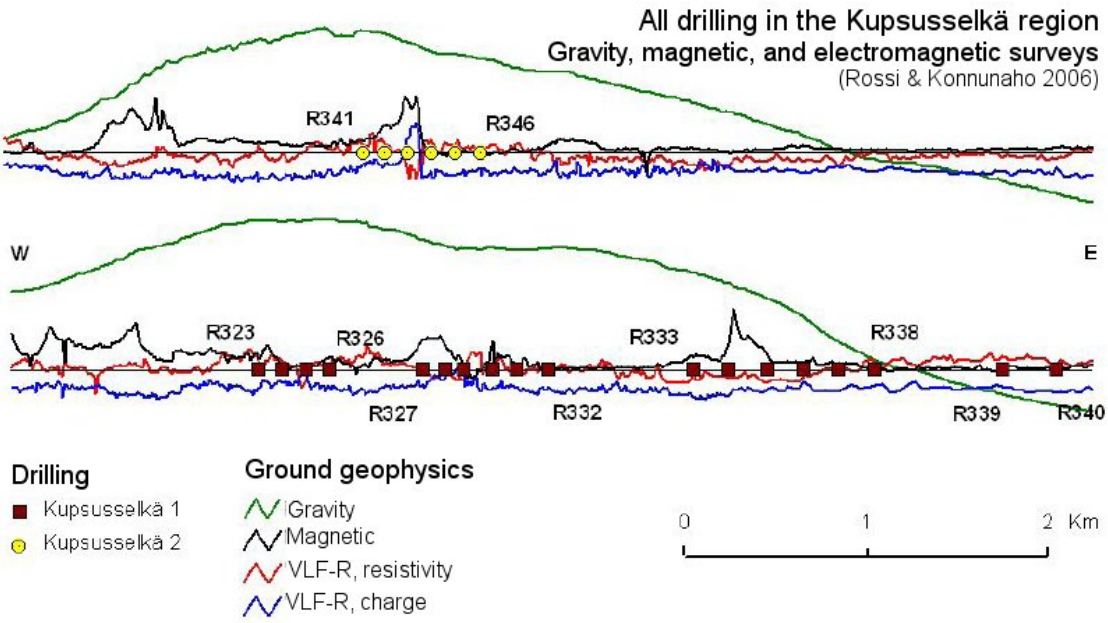
Rock type: Wall rock

Metamorphic description:

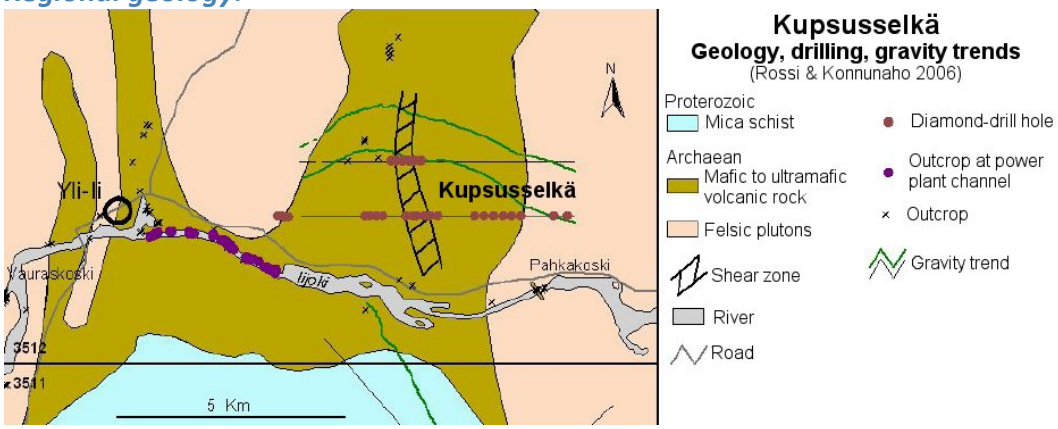
Type:	Facies:	Degree:	Relation to mineralization:	Min P- Max P (kbar)	MIn T- Max T (°C)
Regional	amphibolite metamorphic facies				
Comments: Metamorphic mineral assemblage: quartz-sericite-chlorite-plagioclase-biotite-magnetite					

Figures

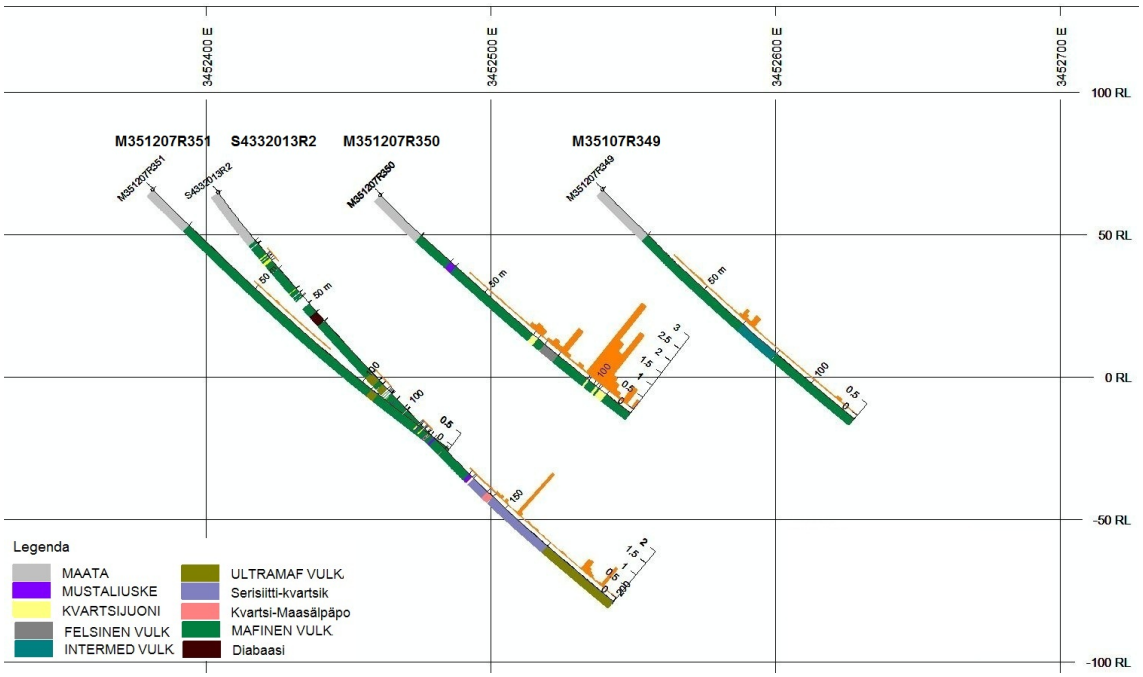
Primary anomaly:



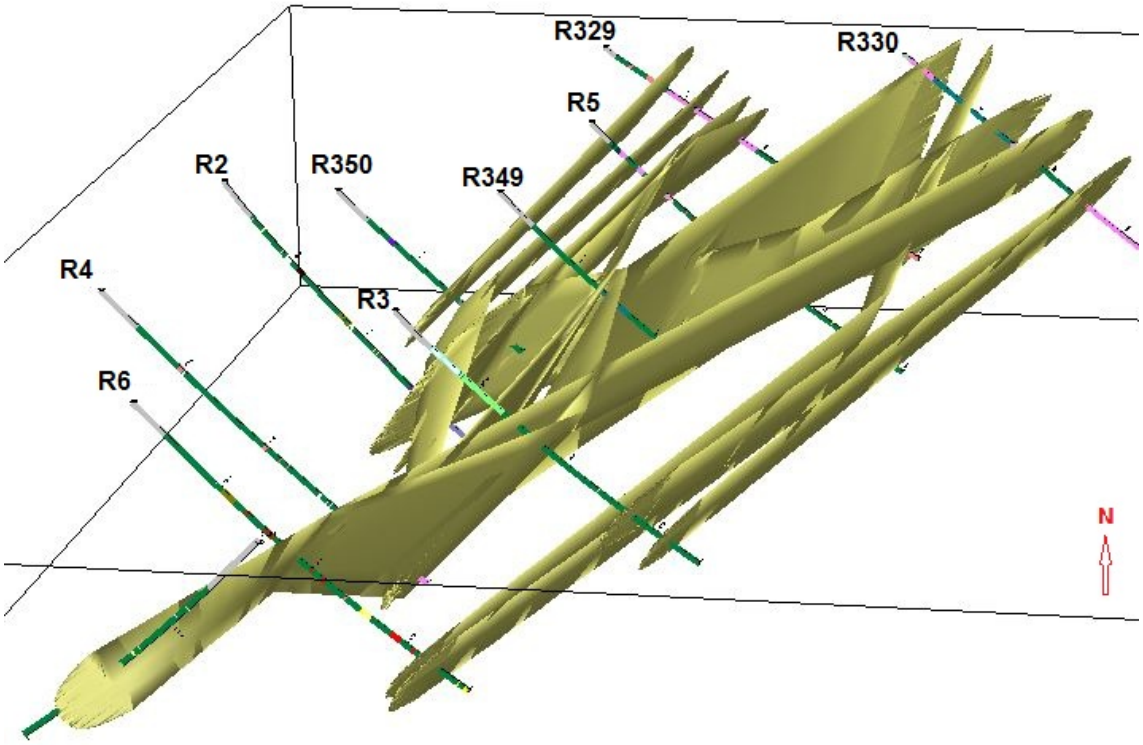
Regional geology:



Au (ppm):



Schematic 3D-illustration of gold mineralization in quartz veins:



REFERENCES

1. Heikura, Pertti; Lahti, Ilkka; Konnunaho Jukka; Sarapää Olli 2014. Tutkimustyöselostus Yli-Iin alueella Kupsusselkä 1 (kaivosrekisterinumero 8508/1)- nimisellä valtausalueella vuosina 2005-2008 ja 2013 tehdyistä kultatutkimuksista. Julkaisusarja: Valtausraportit *http://tupa.gtk.fi/raportti/valtaus/113_2014.pdf*

2. Hulkki, Helena; Keinänen, Veikko; Karinen, Tuomo; Karvinen, Antero; Sarala, Pertti; Sarapää, Olli; Salmirinne, Heikki; Sandgren, Eero; Lahti, Ilkka 2011. Pohjois-Suomen kultahankkeen 2551009 loppuraportti. 8 s., 9 liites.*http://tupa.gtk.fi/raportti/arkisto/50_2011.pdf*

3. Juopperi, Heikki 2005. Pohjois-Suomen arkeeiset alueet II. Loppuraportti. 20 s., 16 liites. *http://tupa.gtk.fi/raportti/arkisto/m10_4_2005_1.pdf*

4. Rossi, S. & Konnunaho, J. 2006. Ore-geological bedrock reserch in 2001-2004 at municipality of Yli-Ii in the province of Oulu. Geological Survey of Finland, Report M19/3512/1/10. 50 p, 231 appended pages (English summary)*http://tupa.gtk.fi/raportti/arkisto/m19_3512_2006_1_10.pdf*

5. Sarala, Pertti (toim); Hartikainen, Aimo; Sarapää, Olli; Iljina, Markku; Korkiakoski, Esko; Kousa, Jukka; Heikura, Pertti; Hulkki, Helena; Pulkkinen, Eelis; Törmänen, Tuomo; Sarala, Pertti 2008. Mobile Metal Ion (MMI) -menetelmän testaus malminetsintätutkimuksissa Itä- ja Pohjois-Suomessa vuonna 2007*http://tupa.gtk.fi/raportti/arkisto/s44_2008_37.pdf*

6. Sarapää, Olli; Pankka Heikki; Hulkki, Helena; Karvinen, Antero; Keinänen, Veikko; Pulkkinen, Eelis; Lahti, Ilkka; Salmirinne, Heikki; Sarala, Pertti 2008. Pohjois-Suomen kultavarojen kartoitus vuosina 2003-2008. Loppuraportti. Hanke 2108002, 2901005. 91 s. *http://tupa.gtk.fi/raportti/arkisto/m10_4_2008_77.pdf*