Sarkanniemi

Occurence type: showing

Commodity	Rank	Total measure	Total production	Total resource	Importance
gold	1	NA	NA	NA	NA

Easting EUREF: 590840
Northing EUREF: 7350390

Easting YKJ: 3591049
Northing YKJ: 7353465

Discovery year: 1988
Discovered by: Geological Survey of Finland
Province: Kuusamo-Kuolajärvi (Co, Au)
District: Kuusamo (Co, Au)
Comments: Detected by glacial erratic boulder survey by GTK
References: 2, 10

Mineral deposit type

Group: Metallogenic deposit
Main type: Orogenic (metamorphic hydrothermal)
Sub type 1: Au-Co-Cu
Comments: The auriferous fluids were transported along deep, rift-tectonic faults up to the greenschist-metamorphic environment, concentrated on the antiform; thee metals precipitated in structurally controlled sites close to impermeable dolerites and metavolcanic units or, rather, in the more competent sericite quartzite units between the more plastic mafic units.
References: 3, 5, 6, 7, 8, 9, 11

Dimension

Expression: exposed
Form: discordant
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

Holder history

Previous holders:

Company	Years	Holding type	Comments
Polar Mining Oy	2010-2011	Claim reservation (old law)	NA
Geological Survey of Finland	1989-1992	Claim (old law)	NA

EXPLORATION ACTIVITY

Geological Survey of Finland

Years	Activity type	Geologist	Exploration result	Ref
1991-1991	core drilling	Erkki Vanhanen, Heikki Pankka	mineral occurrences	4
	Core drilling (reconnaissance drilling): 4 diamond-drill holes, total 303 m: up to 10 ppm Au detected, extent not reported. Core recovery was problematic with no recovery at all from two of the holes			
1989-1989	detailed geochemistry	Heikki Pankka	geochemical anomaly	4
	50 m grid sampling of till and saprock. Locally tens to hundreds of ppm Au in the regolith			
1989-1989	regional geochemistry	NA	geochemical anomaly	1, 3, 4, 5, 6, 7
	Country-wide till-geochemical survey			
1988-1992	excavation	Erkki Vanhanen, Heikki Pankka.	key geological features	1, 3, 4, 5, 6, 7
1988-1992	detailed geology	Erkki Vanhanen, Heikki Pankka.	key geological features	1, 3, 4, 5, 6, 7
	Up to 10 ppm Au detected in outcrop samples from amphibole-albite rock			
1988-1992	detailed geophysics	Erkki Vanhanen, Heikki Pankka	geophysical anomaly	4
	Ground magnetic, slingram, IP and VLF-R survey. The VLF-R seems to produce an anomaly related to mineralisation, but also anomalies (conductors) related to weathered, sulphide-bearing chlorite schist with apparently no gold, cobalt, or copper.			
1982-1982	regional geophysics	NA	key geological features	1, 3, 4, 5, 6, 7
	Low-altitude airborne magnetic, electromagnetic and radiometric survey; however, these seem not to show an anomaly related to the mineralised zone.			

GEOLOGY

Host rock: Sericite Paraschist
Wall rock: Dolerite, Meta-mafic-rock

Sericite Paraschist (Host rock)

Rock type: Host rock
Proportion: major
Grain size: NA
Color: NA
References: 3, 4, 5, 6, 7, 9, 11
Comments: The occurrence is in a N-trending shear zone in the axial plane of the Hyväniemi–Maaninkavaara anticline.

Ore minerals:

Mineral	Proportion	Mineral texture
Magnetite	present	
	Mostly occurs in the N part of the mineralised area	
Pyrite	major	
Pyrrhotite	major	

Other minerals:

Mineral	Proportion	Mineral texture
Actinolite	present	Alteration product
Albite	present	Alteration product
Biotite	present	Alteration product
Chlorite	present	Alteration product
Chloritoid	present	Alteration product
K-Feldspar	present	Alteration product
Magnetite	present	Alteration product
Quartz	present	Alteration product
Sericite	present	Alteration product
Talc	present	Alteration product
Tremolite	present	Alteration product

Alteration:	Distribution:	Degree:	Relation to mineralization:
silicification	NA	NA	Post
albitic alteration	Pervasive	Strong	Pre
Comments: Locally intense Albitization of clastic sediments and spilitisation of volcanic units when the 2.206 Ga mafic sills and dykes heated the evaporite-bearing sequence and put hot brines into circulation.			
carbonate alteration	NA	NA	Syn
chloritic alteration	NA	NA	Syn
biotite alteration	NA	NA	Syn
sulphidation	NA	Weak	Syn
sericitic alteration	NA	NA	Syn

Metamorphic description:

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

Geological age:

Geological era:	Max age - Minage (Ma):	Inferred age (Ma):	Age of mineralization:
Paleoproterozoic (2500-1600 Ma)	1800-2050		Y
Comments: Mineralisation between 2.05-1.8 Ga.			

Dolerite (Wall rock)

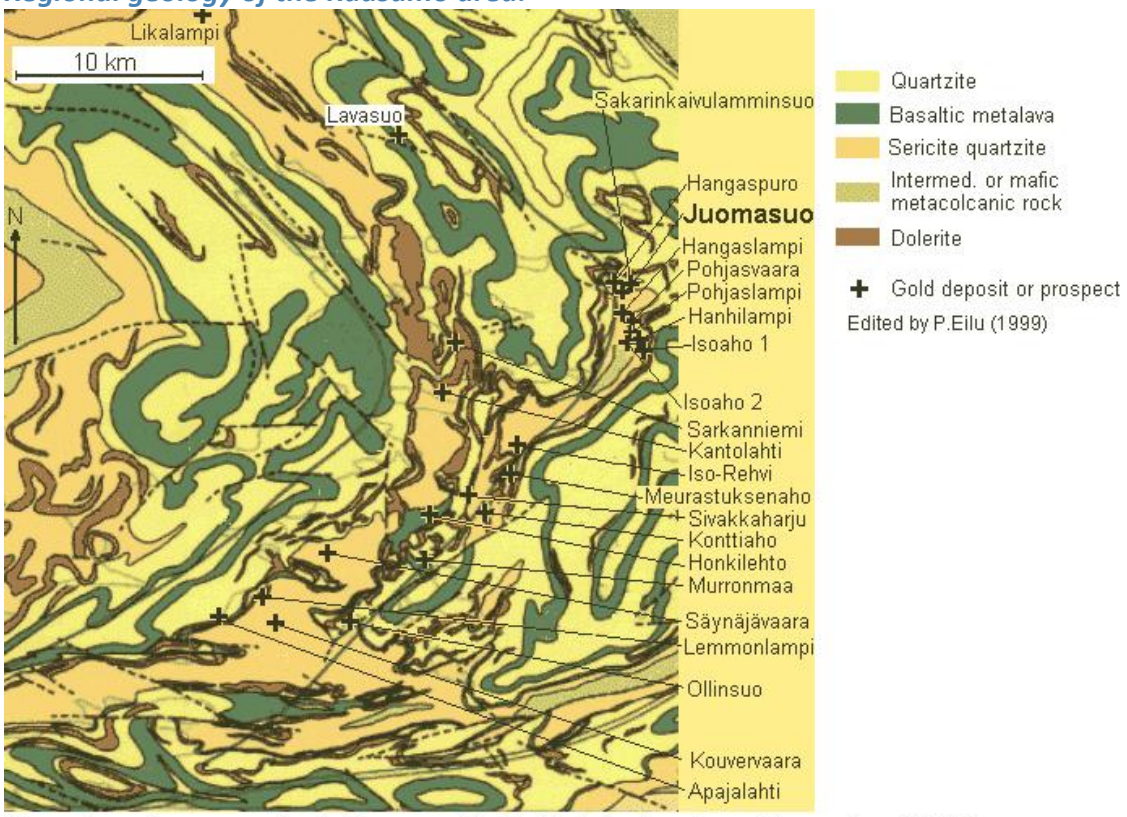
Rock type: Wall rock

Meta-mafic-rock (Wall rock)

Rock type: Wall rock

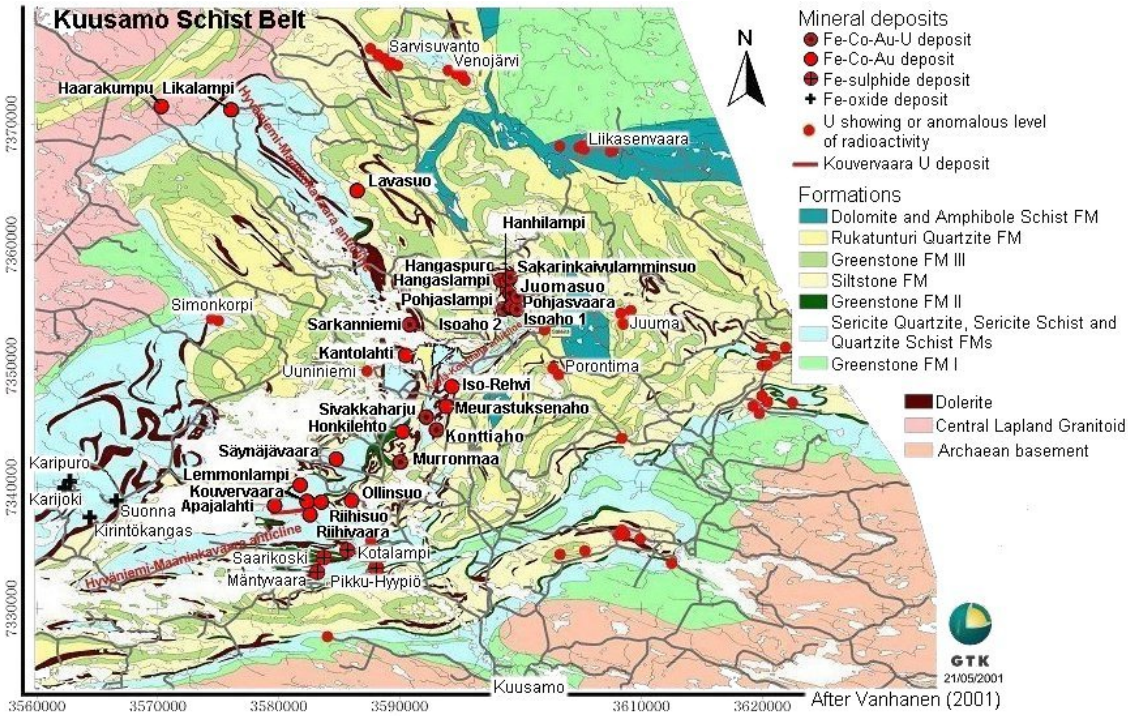
Figures

Regional geology of the Kuusamo area:



Deposits and prospects in the Kuusamo Schist Belt. Geology from Silvennoinen (1992).
Solid and dashed, curved lines indicate boundaries between lithological units, faults and shear zones

Regional geology and mineral deposits of the Kuusamo area:



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