Sakarinkaivulamminsuo

Alternative Names: Juomasuo II
Occurence type: occurrence

Commodity	Rank	Total measure	Total production	Total resource	Importance
gold	1	NA	NA	NA	NA
copper	3	NA	NA	NA	NA
cobalt	3	NA	NA	NA	NA

Easting EUREF: 598932,604
Northing EUREF: 7354249,891
Easting YKJ: 3599145
Northing YKJ: 7357326

Discovery year: 1989
Discovered by: Geological Survey of Finland
Province: Kuusamo-Kuolajärvi (Co, Au)
District: Kuusamo (Co, Au)
Comments: Discovery during a follow-up of exploration at Juomasuo: exploration in an area of a ground- magnetic+electric anomaly
References: 3, 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: 4, 5, 6, 7, 8, 9, 12

Dimension

Expression: exposed
Form: discordant
Shape: NA
Length (m): 1000
Width (m): 500
Thickness (m): NA
Depth (m): NA
Area (ha): NA
Dip azim: 180
Dip: NA
Plunge azim: NA
Plunge dip: NA
Orientation method: NA
Dimension comments: The four known lodes are in a E-trending area slightly more than 1 km long and 200-500 m wide, north of the Juomasuo deposit.

Holder history

Current holder: Latitude 66 Cobalt Oy
Years: 2020-2027

Holding type: Exploration permit

Previous holders:

Company	Years	Holding type	Comments
Latitude 66 Cobalt Oy	2019-2020	Application for exploration permit	NA
Kuusamo Gold Oy	2015-2018	Exploration permit	NA
Dragon Mining Oy	2014	Application for exploration permit	appl. for exploration permit in 2014 and appl. for mining permit in 2015
Polar Mining Oy	2003-2008	Claim (old law)	NA
Geological Survey of Finland	1989-1991	Claim (old law)	NA

EXPLORATION ACTIVITY

Geological Survey of Finland

Years	Activity type	Geologist	Exploration result	Ref
1989-1991	excavation	Erkki Vanhanen	mineral occurrences	1, 2, 4, 5, 6, 7, 10, 11, 12
	Nine trenches excavated			

1989-1990	core drilling	Erkki Vanhanen	mineral occurrences	10, 11
	Core drilling (reconnaissance drilling): 8 diamond-drill holes, total 741 m. Possibly four ore bodies, suggested by drilling and IP survey.			
	Intersections			
	HoleID	R351		
	From-To	NA		
	Length	9m		
	cobalt	0,13%		
	Comments	*Cu content dominantly <0.1 %*		
	HoleID	R351		
	From-To	NA		
	Length	1m		
	gold	5,2ppm		
	HoleID	R352		
	From-To	NA		
	Length	5,5m		
	copper	4500ppm		
	Comments	*Includes 3 m @ 2 ppm Au; Co dominantly <500 ppm*		
	HoleID	R374		
	From-To	NA		
	Length	2m		
	gold	1,8ppm		
	HoleID	NA		
	From-To	NA		
	Length	2m		
	gold	5ppm		

1989-1991	detailed geochemistry	Erkki Vanhanen	geochemical anomaly	1, 2, 4, 5, 6, 7, 10, 11, 12
	Part of the Käylä-Konttiaho area geochemical till survey (120 km2, 250 m grid sampling) + local till sampling; Co, Mo and Au anomalies in till.			

1989-1989	regional geochemistry	NA	geochemical anomaly	
	Country-wide till-geochemical survey			

1986-1991	detailed geology	Erkki Vanhanen	key geological features	1, 2, 4, 5, 6, 7, 10, 11, 12

1985-1990	detailed geophysics	Erkki Vanhanen	geophysical anomaly	2
	ground radiometric, IP, VLF-R, slingram and magnetic survey. An IP anomaly, that has an extent of hundreds of metres, is related to the western lode, whereas there is no response for the eastern lode.			

1984-1984	regional geophysics	Erkki Vanhanen	key geological features	1, 2, 4, 5, 6, 7, 10, 11, 12
	Low-altitude airborne magnetic, electromagnetic and radiometric survey			

GEOLOGY

Host rock: Quartzite, Quartz vein, Meta-mafic-rock

Quartzite (Host rock)

Rock type: Host rock
Proportion: major
Grain size: NA
Color: NA
References: 2, 4, 5, 6, 7, 9, 10, 11, 12
Comments: The deposit is hosted by sericite quartzite, and comprises four lodes and is controlled by WNW-trending faults which cross the NE-trending Käylä–Konttiaho anticline.

Ore minerals:

Mineral	Proportion	Mineral texture
Chalcopyrite	minor	
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	
Sericite	present	
Talc	present	Alteration product
Tourmaline	present	
Tremolite	present	Alteration product

Alteration:	Distribution:	Degree:	Relation to mineralization:
silicification	NA	NA	Post
albitic alteration	NA	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.			
biotite alteration	NA	NA	Syn
sulphidation	NA	NA	Syn
carbonate alteration	NA	NA	Syn
sericitic alteration	NA	NA	Syn
chloritic alteration	NA	NA	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	Syn		

Comments: Peak regional metamorphism at lower-amphibolite facies: staurolite porphyroblasts in Al-rich rocks, during D1?. This was followed by retrograde greenschist-facies metamorphism: sericitisation of staurolite, during D2?, related to NW-trending shear zones and gold mineralisation? Quartz-albite-sericite-biotite ± chlorite.

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.			

Quartz vein (Host rock)

Rock type: Host rock
Proportion: minor
Grain size: NA
Color: NA
References: 10
Comments: Quartz-carbonate veins

Ore minerals:

Mineral	Proportion	Mineral texture
Dolomite	minor	

Other minerals:

Mineral	Proportion	Mineral texture
Quartz	major	

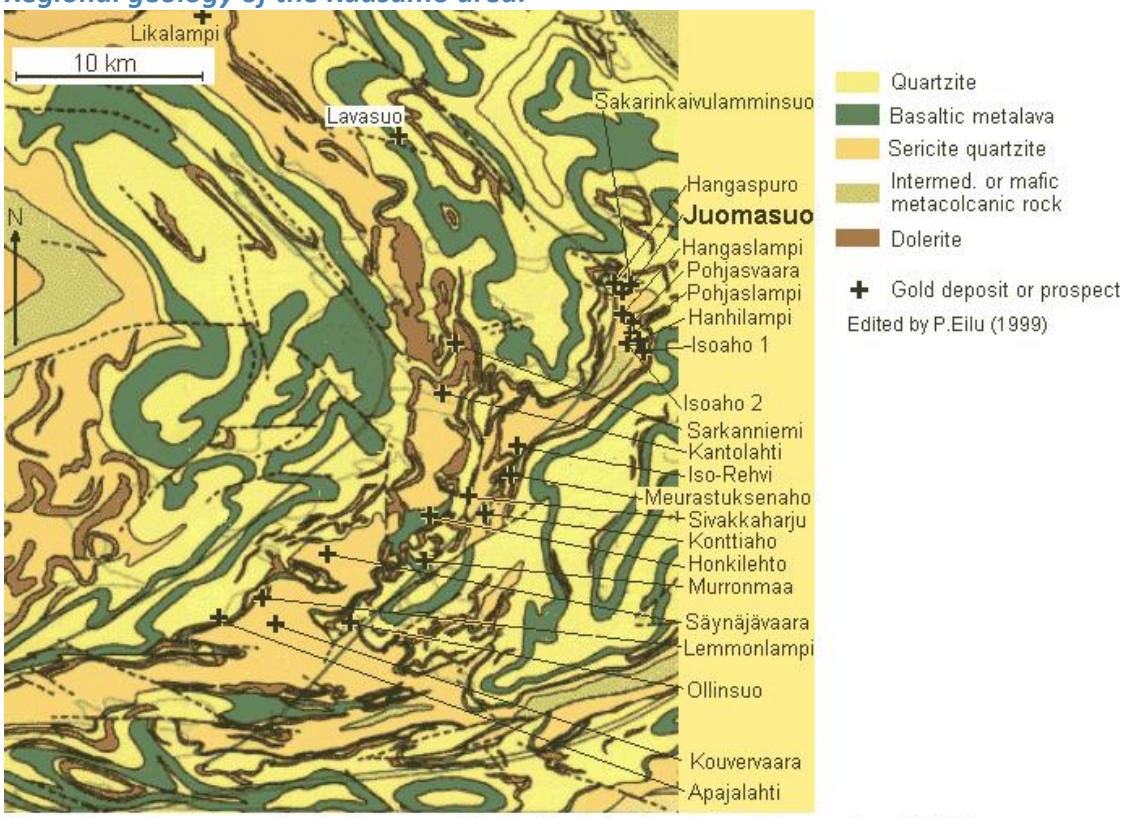
Alteration:	Distribution:	Degree:	Relation to mineralization:
argillic alteration	Pervasive	Moderate	Syn
Comments: Outer proximal alteratio			
sericitic alteration	Pervasive	Moderate	Syn
Comments: Inner proximal alteration			

Meta-mafic-rock (Host rock)

Rock type: Host rock

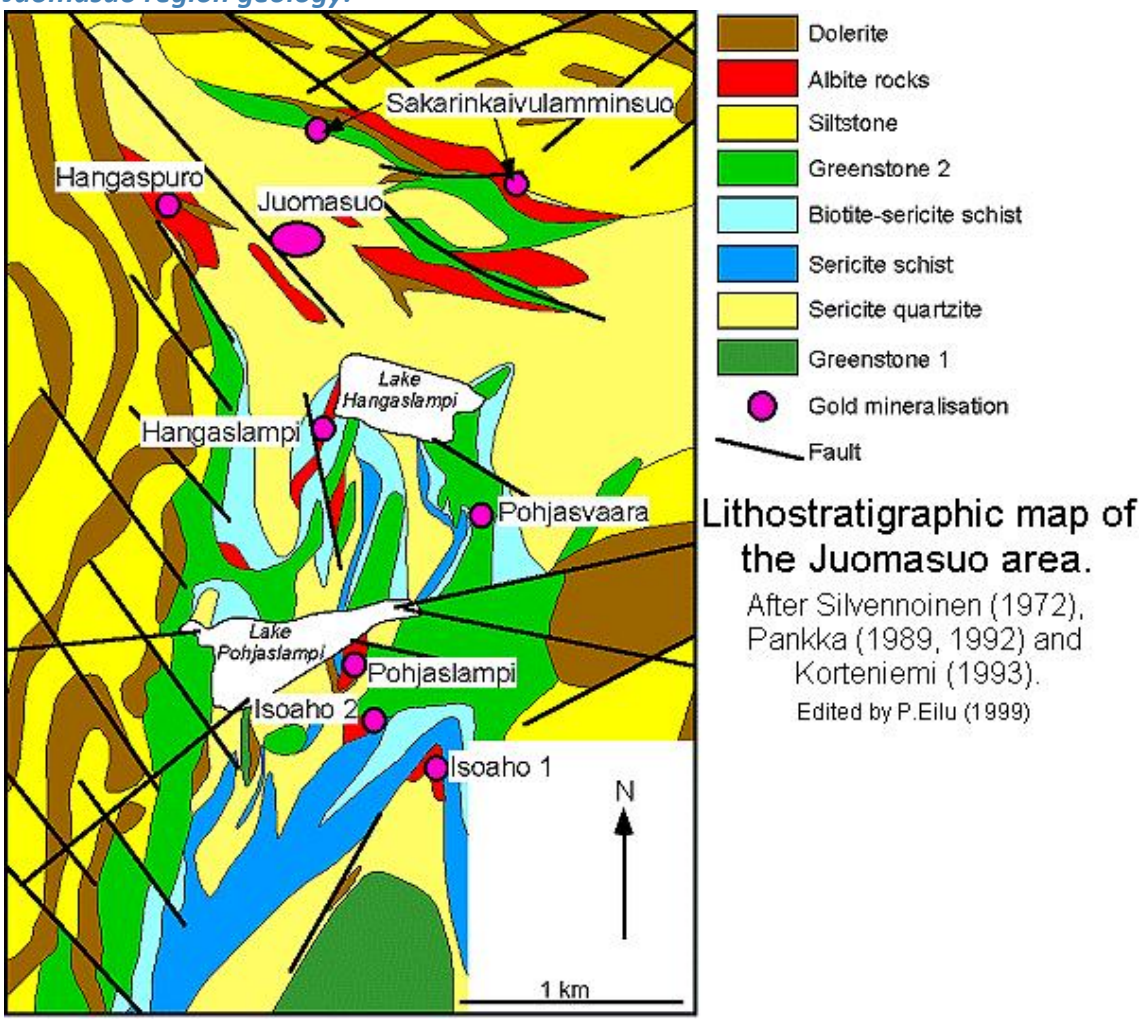
Figures

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

Juomasuo region geology:

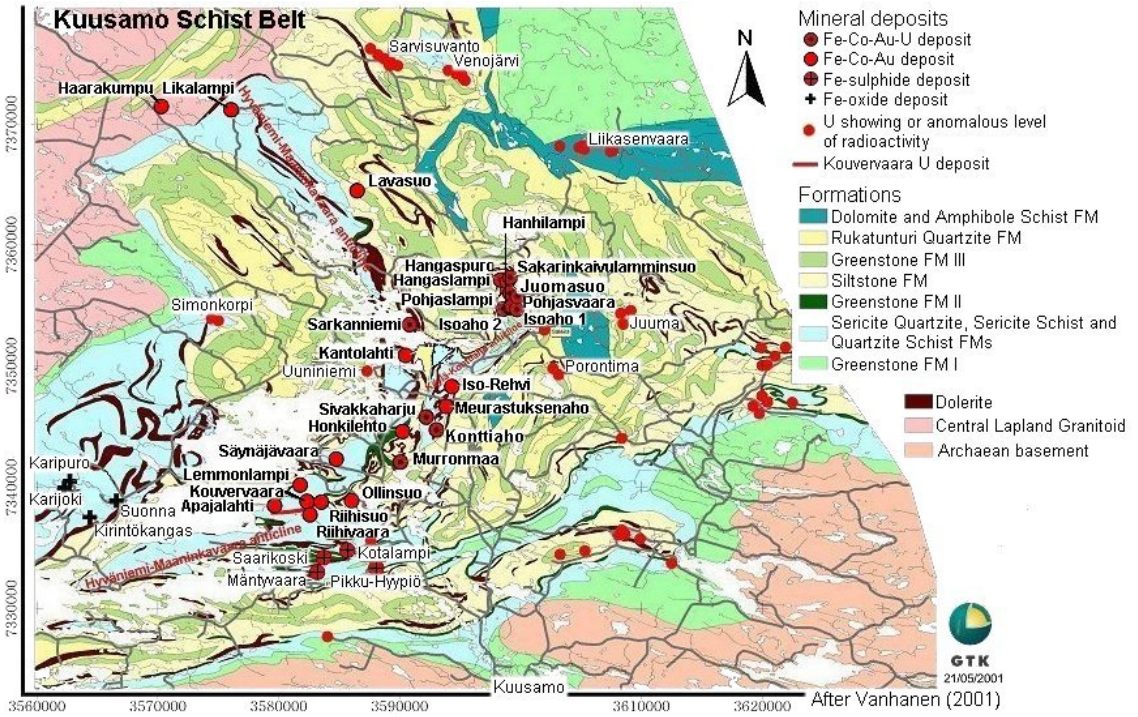


Lithostratigraphic map of the Juomasuo area.

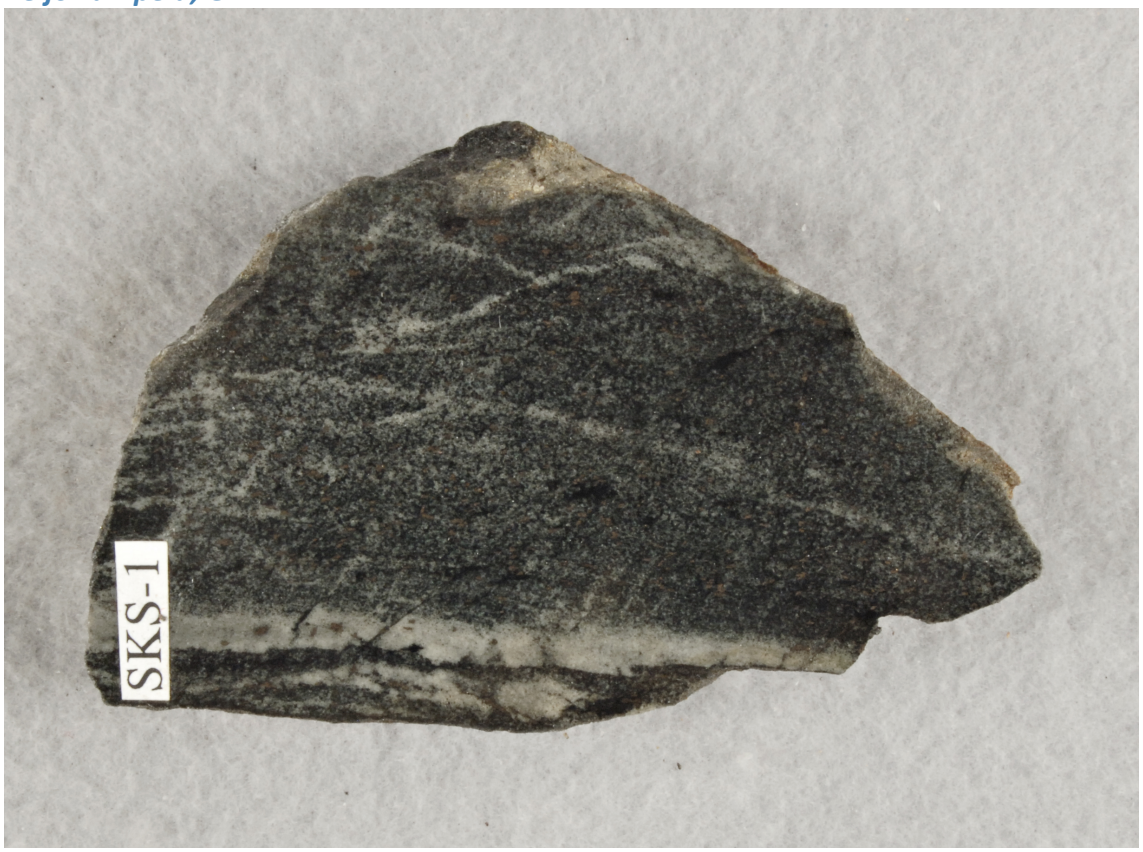
After Silvennoinen (1972), Pankka (1989, 1992) and Korteniemi (1993).

Edited by P.Eilu (1999)

Regional geology and mineral deposit of the Kuusamo area:



Proximal alteration and gold mineralisation in sericite quartzite. Mineral assemblage probably albite - quartz - sericite - biotite - pyrrhotite - pyrite. Sample length 9 cm. Photo Reijo Lampela, GTK:



Proximal alteration and gold mineralisation in sericite quartzite. Mineral assemblage

probably albite - quartz - sericite - biotite - pyrrhotite - pyrite. Sample length 12 cm. Photo Reijo Lampela, GTK:

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