Petäjävaara

Alternative Names: Rosvohotu
Occurence type: occurrence

Commodity	Rank	Total measure	Total production	Total resource	Importance
gold	1	NA	NA	NA	NA
copper	2	NA	NA	NA	NA

Easting EUREF: 429425
Northing EUREF: 7355520
Easting YKJ: 3429569
Northing YKJ: 7358597

Discovery year: 1992
Discovered by: Geological Survey of Finland
Province: Peräpohja (Cu, Co, Fe)
References: 1, 2, 3, 4, 6, 8, 9

Mineral deposit type

Group: Metallogenic deposit
Main type: Orogenic (metamorphic hydrothermal)
Sub type 1: Au-Cu
Comments: All mineralogical and textural data suggest epigenetic mesothermal origin, mineralisation under mid- or upper-greenschist facies conditions during metamorphism.
References: 4, 8, 10

Dimension

Expression: exposed
Form: discordant
Shape: NA
Length (m): 1000
Width (m): 20
Thickness (m): NA
Depth (m): NA
Area (ha): NA
Dip azim: 225
Dip: NA
Plunge azim: NA
Plunge dip: NA
Orientation method: NA
Dimension comments: About a 20 m wide, possibly 1 km long, SW-NE trending zone; it may be part of mineralised and sheared zones in en echelon setting extending in E-W direction for >10 km

Holder history

Previous holders:

Company	Years	Holding type	Comments
Mawson Oy	2014	Application for exploration permit	NA
Geological Survey of Finland	1995-1997	Claim (old law)	Petäjävaara claim
Geological Survey of Finland	1989	Claim (old law)	Rosvohotu claim

EXPLORATION ACTIVITY

Geological Survey of Finland

Years	Activity type	Geologist	Exploration result	Ref
2002-2002	core drilling	J. Isomaa?	NA	
	15 diamond drill holes, total ?			

1994-1994	core drilling	Seppo Rossi.	NA	4, 6, 8
	The mineralisation was detected by trenching and drilling into a till geochemical and ground-geophysical anomaly; Core drilling (reconnaissance drilling): 10 diamond-drill holes, total 592 m.			
	Intersections			
	HoleID	NA		
	From-To	NA		
	Length	1m		
	gold	19,6ppm		
	HoleID	NA		
	From-To	NA		
	Length	0,8m		
	gold	1,5ppm		
	copper	4,4%		
	HoleID	NA		
	From-To	NA		
	Length	1m		
	gold	3ppm		

1992-1993	excavation	Seppo Rossi.	key geological features	4, 5, 6, 8, 9, 10, 11, 12, 13
	Trenching through the overburden into bedrock surface			

1990-1990	regional geophysics	Seppo Rossi	key geological features	4, 5, 6, 8, 9, 10, 11, 12, 13
	Low-altitude airborne magnetic, electromagnetic and radiometric survey			

1990-1990	core drilling	Seppo Rossi	NA	
	7 vertical drill holes, total145.80 m			

1989-1990	detailed geophysics	Seppo Rossi.	NA	4, 5, 6, 8
	A ground-SP anomaly 1 km long, no response on other electromagnetic or magnetic methods.			

1982-1989	detailed geochemistry	Seppo Rossi.	NA	4, 6, 10, 11, 12, 13
	Several hundreds of metres long Au-Cu-Co anomaly in till extends to the SE of the occurrence. In till, the best indicators for the mineralisation are Au, Cu, Co and Te anomalies.No correlation between Au and As in till.			

1981-1981	detailed geology	Seppo Rossi.	NA	4, 5, 6, 8, 9, 10, 11, 12, 13

GEOLOGY

Host rock: Dolerite, Quartz vein, Mafic volcanic rock
Wall rock: Quartzite

Dolerite (Host rock)

Rock type: Host rock
Proportion: major
Grain size: NA
Color: NA
References: 4, 5, 6, 8, 9, 10
Comments: The mineralisation is in the contact zone (a shear zone) between dolerite + mafic volcanic rock and quartzite sequences.

Metamorphic description:
Ore minerals:

Mineral	Proportion	Mineral texture
Chalcopyrite	minor	
Magnetite	major	
Pyrite	major	
Pyrrhotite	minor	

Other minerals:

Mineral	Proportion	Mineral texture
Biotite	present	
Calcite	present	
Chlorite	present	Alteration product
Quartz	present	

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)	2200-2450		N

Quartz vein (Host rock)

Rock type: Host rock
Proportion: minor
Grain size: NA
Color: NA
References: 10

Comments: Pyrite-bearing quartz veins, concentrated in the contact zone between dolerite and quartzite

Mafic volcanic rock (Host rock)

Rock type: Host rock
Proportion: minor
Grain size: NA
Color: NA
References: 4, 5, 6, 8, 9, 10

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)	2200-2450		N

Quartzite (Wall rock)

Rock type: Wall rock
Proportion: minor
Grain size: NA
Color: NA
References: 4, 5, 6, 8, 9, 10

Metamorphic description:

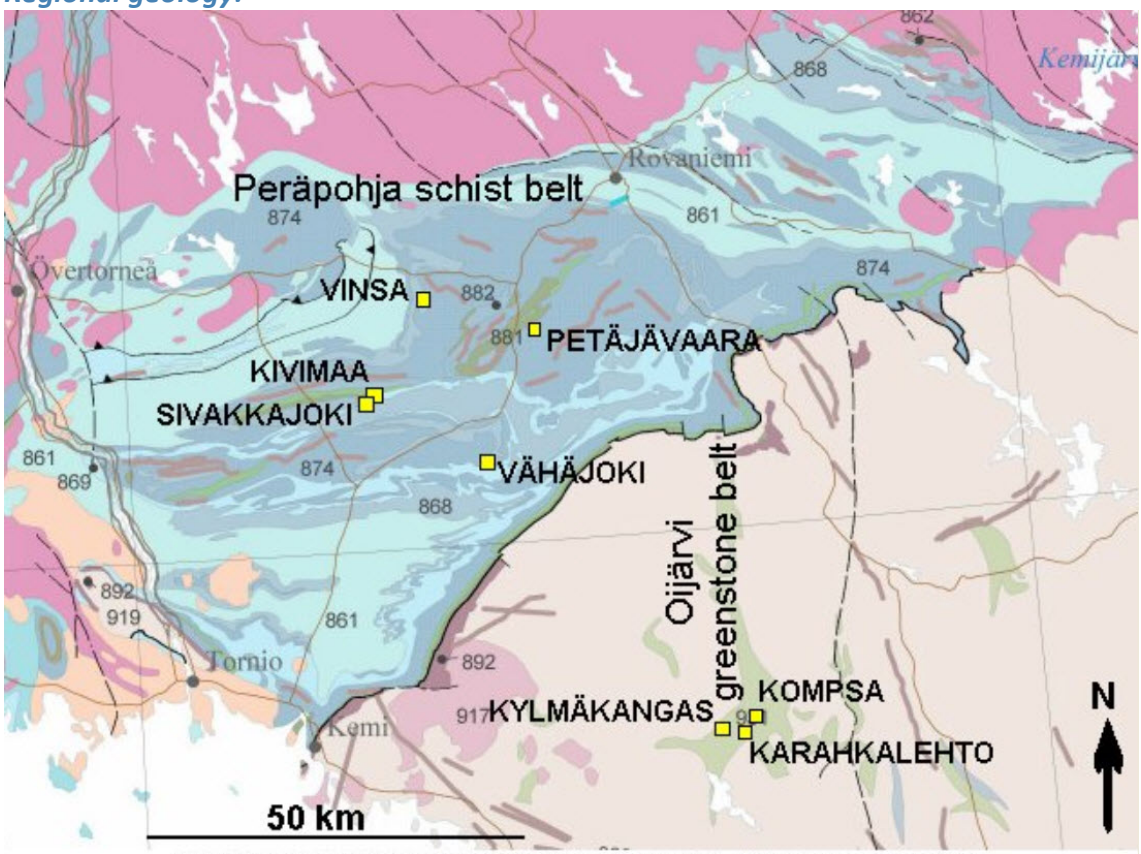
Type:	Facies:	Degree:	Relation to mineralization:	Min P- Max P (kbar)	MIn T- Max T (°C)
Regional	greenschist metamorphic facies	low metamorphic grade	NA		

Geological age:

Geological era:	Max age - Minage (Ma):	Inferred age (Ma):	Age of mineralization:
Paleoproterozoic (2500-1600 Ma)	2200-2450		N

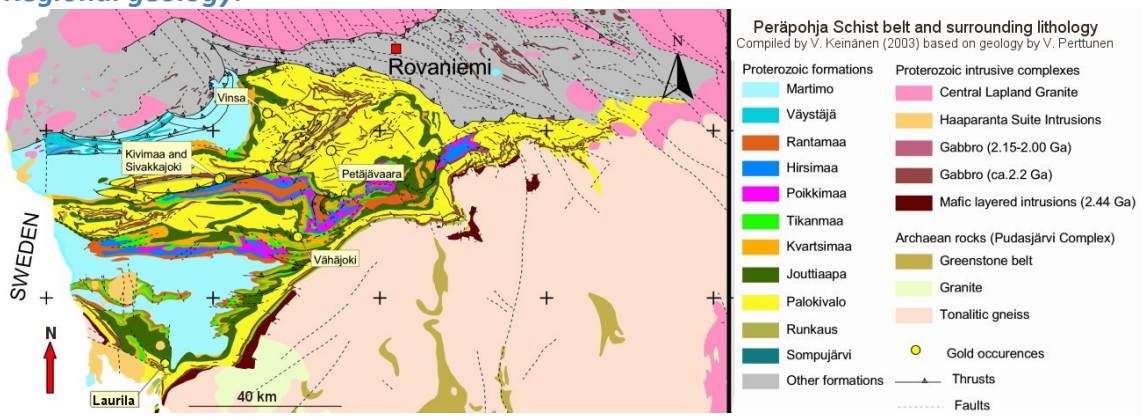
Figures

Regional geology:

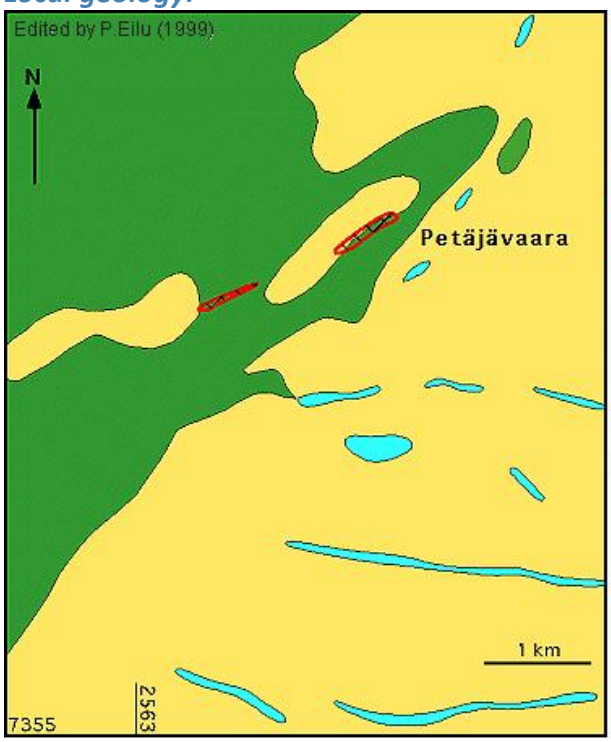


Drilling-indicated gold occurrences in Oijärvi greenstone belt and Peräpohja schist belt. Geology from Korsman et al. (1997).

Regional geology:



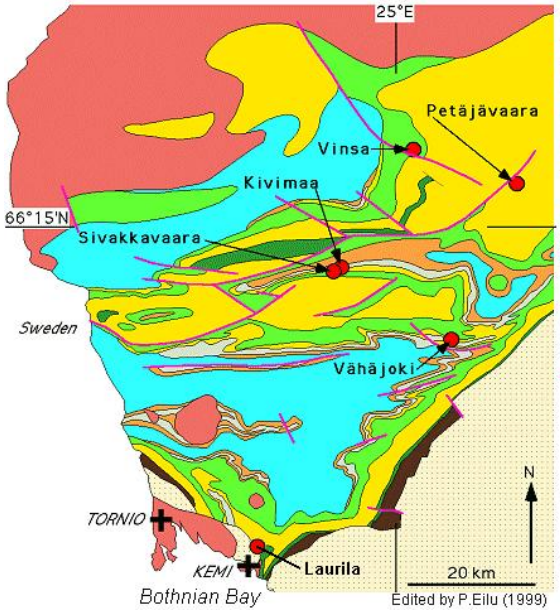
Local geology:



Mafic metavolcanic rocks and interlayered dolerite sills
Quartzite and conglomerate
Dolerite
Gold mineralisation (width exaggerated?)

Generalised geological map of the Petäjävaara area. After Sarala and Rossi (1998).

Regional geology:



Palaeoproterozoic supracrustal formations

- Martimo Formation (youngest): mica schist, phyllite, conglomerate
- Rantamaa Formation: dolomite, quartzite
- Tikanmaa Formation: mafic to intermediate metatuffite
- Jouttiaapa Formation: mafic metavolcanic rocks (MORB-like)
- Kivalo Formation: quartzite, dolomite
- Runkaus Formation (oldest): mafic metalava

Other units

- Proterozoic plutonic rocks
- 2440 Ma layered mafic intrusions
- Archaean rocks
- Shear or fault zone
- Gold mineralisation

Western part of the Peräpohja schist belt and gold deposits in the belt.

Geology from: Perttunen, V. (1989) Volcanic rocks in the Peräpohja area, northern Finland. Geol. Surv. Finland, Rep. Invest. 92. 40 p.

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