

# Palosuo

**Alternative Names:** Rämepalo

**Occurrence type:** prospect

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

Easting EUREF: 717381,699

Northing EUREF: 6979993,861

Easting YKJ: 3717641

Northing YKJ: 6982918

**Discovery year:** 1993

**Discovered by:** Geological Survey of Finland

**Province:** Ilomantsi (Au)

**District:** Hattu (Au)

**Comments:** The occurrence is along strike about 1 km to the south from the Rämepuro deposit, in the same N-trending shear zone, in tuffite-greywacke contact zone

**References:** 4, 5, 10, 12, 13

## Mineral deposit type

**Group:** Metallogenetic deposit

**Main type:** Orogenic (metamorphic hydrothermal)

**Comments:** Precipitation of gold by desulphidation of fluid and, possibly, by decomposition of Au-bisulphide, -thiosulphide and -telluride complexes of fluid due to cooling and/or changes in pH and fO<sub>2</sub>. Probably, gold precipitated just below 500°C with sulphides due to reaction between the mineralising fluid and wall-rock (chiefly by sulphidation). The formation of the present low-temperature Te and Bi minerals probably took place as subsolidus reactions with cooling temperature.

**References:** 8

## Dimension

**Expression:** exposed

**Area (ha):** NA

**Form:** discordant

**Dip azim:** NA

**Shape:** NA

**Dip:** NA

**Length (m):** NA

**Plunge azim:** NA

**Width (m):** NA

**Plunge dip:** NA

**Thickness (m):** NA

**Orientation method:** NA

**Depth (m):** NA

**Dimension comments:** Dimensions not reported; the occurrence is open along strike and at the down-hole depth of 99 m, and comprises several, probably subparallel, gold mineralised zones.

## Holder history

**Current holder:** Endomines Oy

**Years:** 2020

**Holding type:** Application for exploration permit

**Previous holders:**

Company	Years	Holding type	Comments
Geological Survey of Finland	-2003	NA	NA
Endomines Oy	2011-2020	Application for exploration permit	NA

## EXPLORATION ACTIVITY

### Endomines Oy

Years	Activity type	Geologist	Exploration result	Ref
2018-2018	core drilling	Jari Juurela	mineral occurrences	4
<i>Drilling program at Palosuo tested a long consistent gold till anomaly. Four drill holes were completed with a total length of 346.9 meters. A wide mineralized zone was intersected at Palosuo located 1km south of the Räme puro deposit</i>				
<i><b>Intersections</b></i>				
	HoleID	PA-1		
	From-To	23-25,9		
	Length	2,9m		
	gold	2,1ppm		
	HoleID	PA-1		
	From-To	47,3-49,3		
	Length	2m		
	gold	1,5ppm		
	HoleID	PA-2		
	From-To	96,9-98,7		
	Length	1,8m		
	gold	0,7ppm		
	HoleID	PA-3		
	From-To	22,6-24,2		
	Length	1,6m		
	gold	0,9ppm		
	HoleID	PA-4		
	From-To	32,2-35		
	Length	2,8m		
	gold	0,8ppm		
2011-2011	detailed geophysics	Jaakko Liikanen	geophysical anomaly	3, 4
<i>Airborne low-altitude [VTEM] geophysical surveys were completed over the entire permit area</i>				

### Outokumpu Oy

Years	Activity type	Geologist	Exploration result	Ref
1994-1999	detailed geology	Esa Sandberg	key geological features	12
<i>Review of GTK work</i>				

### Geological Survey of Finland

Years	Activity type	Geologist	Exploration result	Ref
1989-1989	regional geophysics	Martti Damsten	key geological features	1, 2, 6
<i>Low-altitude airborne magnetic, electromagnetic and radiometric survey</i>				
1988-1993	detailed geochemistry	Aimo Hartikainen	geochemical anomaly	1, 2, 6, 12

	<i>Four sampling profiles across the Palosuo area: till-bedrock interface sampled, samples collected across the regional Au anomaly along traverses 100 m apart with sampling distance 10-30 m.</i>			
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1988-1993	regional geochemistry	Aimo Hartikainen	geochemical anomaly	1, 2, 6
<i>Sampling grid 250x250 m over the greenstone belt covering 400 km<sup>2</sup></i>				

1988-1993	detailed geology	Martti Damsten	mineral occurrences	1, 2, 9
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1988-1993	detailed geophysics	Martti Damsten	key geological features	1, 2
<i>Ground-magnetic, slingram and IP survey</i>				

1988-1993	core drilling	Martti Damsten	NA	1, 2, 12
<i>Drilling into a till geochemical anomaly in the structural continuation of the Räme puro deposit. Diamond drilling (reconnaissance drilling): 5 diamond-drill holes, total 142 m.</i>				
<b>Intersections</b>				
HoleID		NA		
From-To		NA		
Length		1m		
gold		2,7ppm		

1982-1982	regional geology	NA	geochemical anomaly	8, 9
<i>Country-wide till-geochemical survey</i>				

## GEOLOGY

**Host rock:** Greywacke, Intermediate tuff

### Greywacke (Host rock)

**Rock type:** Host rock

**Proportion:** major

**References:** 4, 12

**Comments:** Mineralisation in a shear zone along tuffite-greywacke contact

#### Metamorphic description:

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

### Intermediate tuff (Host rock)

**Rock type:** Host rock

**Proportion:** major

**Grain size:** NA

**Color:** NA

**References:** 1, 4, 7, 8, 9

**Comments:** A sequence of andesitic tuffites, minor silicate-facies iron formations. Mineralisation in the N-trending Tsurkkila shear zone along tuffite-greywacke contact

#### Metamorphic description:

Type:	Facies:	Degree:	Relation to mineralization:	Min P- Max P (kbar)	Min T- Max T (°C)
Regional	epidote amphibolite metamorphic facies	medium metamorphic grade	Post		390-550

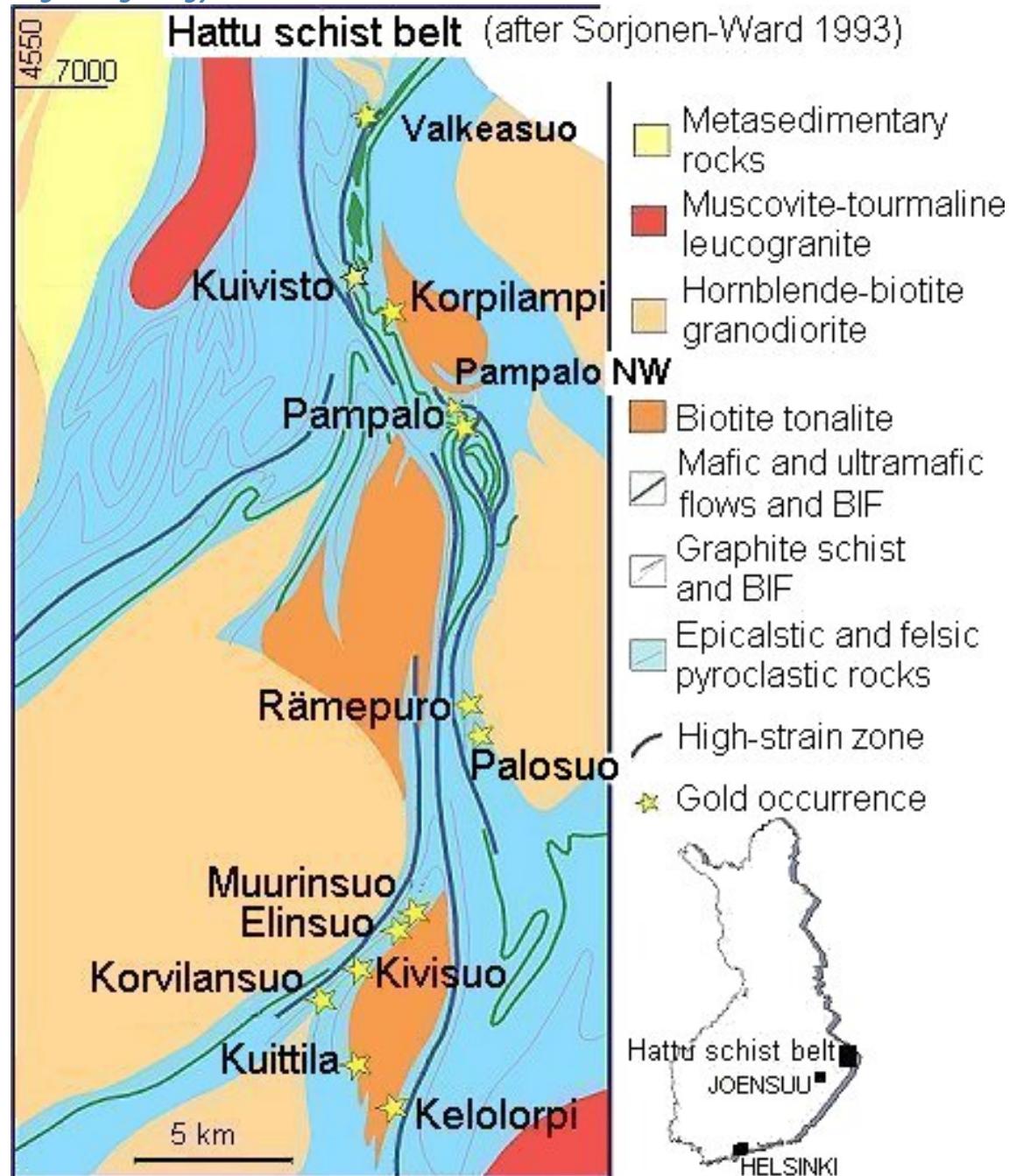
*Comments: Progressive regional metamorphism on ca. 2750-2700 Ma, apparently peaked soon after gold mineralisation, at a temperature of about 550±50°C. Garnet-biotite pairs indicate metamorphic temperature variation from 390 to 580 °C, suggesting polyphase metamorphism with a strong retrograde content. The thermal peak was synchronous or outlasted deformation.*

#### Geological age:

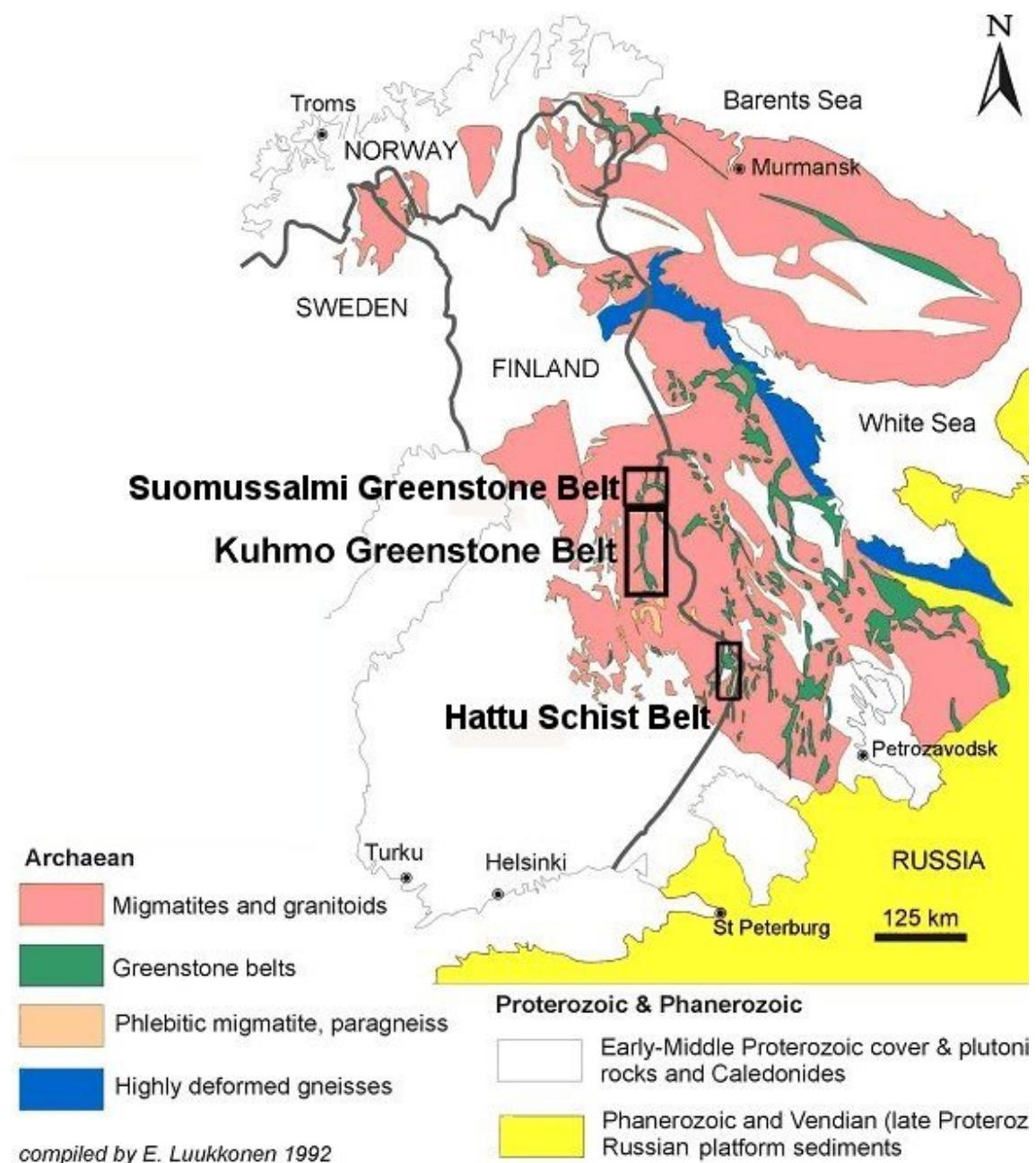
Geological era:	Max age - Min age (Ma):	Inferred age (Ma):	Age of mineralization:
Neoarchean (2800-2500 Ma)	2708-2708	2708	N
<i>Comments: Mineralisation either pre-peak metamorphic and formed under greenschist-facies conditions, or syn-peak metamorphic.</i>			
Radiometric age:	Method:	Age:	Error (Ma):
	U-Pb	2708	Titanite
			8, 11

### Figures

*Regional geology:*



**Location in the Carelian craton:**



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