# Ahvenjärvi

**Alternative Names:** Isomaa, Kultarakka
**Occurence type:** occurrence

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

**Easting EUREF:** 425924,426
**Northing EUREF:** 7501227,291
**Easting YKJ:** 3426067
**Northing YKJ:** 7504362

**Discovery year:** 1984
**Discovered by:** Geological Survey of Finland
**Province:** Kittilä (Au, Cu)
**District:** Sirkka (Cu, Au, Ni, Co)
**Comments:** A mineralised outcrop detected by a GTK field assistant during regional bedrock mapping.
**References:** 1, 2, 3, 5, 7, 8, 9, 10, 11, 12

## Mineral deposit type

**Group:** Metallogenic deposit
**Main type:** Orogenic (metamorphic hydrothermal)
**Comments:** Clearly epigenetic, orogenic mineralisation with a distinct structural control. Deposition in a dilatant zone of a strike-slip shear zone.
**References:** 7

## Dimension

**Expression:** exposed
**Form:** discordant
**Shape:** lensoidal
**Length (m):** 500
**Width (m):** 150
**Thickness (m):** NA
**Depth (m):** 25
**Area (ha):** NA
**Dip azim:** 180
**Dip:** 5
**Plunge azim:** NA
**Plunge dip:** NA
**Orientation method:** NA
**Dimension comments:** At least two separate mineralised zones within the occurrence about 100 m apart, hence width given as 150 m. Open at 25 m depth

## Holder history

**Current holder:** B2Fingold Oy
**Years:** 2023
**Holding type:** Application for exploration permit

**Previous holders:**

| Company | Years | Holding type | Comments |
|---|---|---|---|
| B2Fingold Oy | 2020-2023 | Exploration permit | NA |

| | | | |
|---|---|---|---|
| B2Fingold Oy | 2015-2019 | Exploration permit | Joint Venture agreement with Aurion Resources in 13 Aug 2019 (51 % B2Gold) |
| Tailtiu Oy | 2007 | NA | NA |
| private enterprise | 2003 | NA | Korhonen Tuomo |
| Geological Survey of Finland | 1995-1999 | Claim (old law) | NA |
| Outokumpu Oy | 1991-1992 | Claim (old law) | NA |

# EXPLORATION ACTIVITY

## Aurion Resources Oy

| Years | Activity type | Geologist | Exploration result | Ref |
|---|---|---|---|---|
| 2020-2020 | detailed geochemistry | NA | NA | 4 |
| | *Base-of-till sampling* | | | |

| | | | | |
|---|---|---|---|---|
| 2016-2016 | detailed surface exploration | NA | favorable geological environment | 3 |
| | *New mineralization forms several parallel trends greater than 500 m long over a greater than 2 km distance in a NE-SW orientation. This trend of mineralization appears to be associated with an interpreted fault system along or parallel to the NE-SW oriented axial plane or center line of a folded sequence of quartzites and mafic volcanics.* | | | |

| | | | | |
|---|---|---|---|---|
| 2015-2015 | detailed surface exploration | NA | mineral occurrences | 1, 2 |
| | *The second lode detected by outcrop sampling: the best grab sample gave 28.3 ppm Au. The Zone is comprised of a stockwork of mm to meter scale quartz-tourmaline-pyrite veins hosted by quartz-carbonate altered sandstone and conglomerate within a minimum 100 m wide zone of strong potassic (sericite and k-feldspar) alteration and iron oxide (magnetite and specular hematite) mineralization.* | | | |

| | | | | |
|---|---|---|---|---|
| 2015-2015 | excavation | NA | key geological features | 5 |
| | *A total of 206 individual (mostly 1m-wide) channel samples were collected from seven trenches dug through the overburden till* | | | |

## Geological Survey of Finland

| Years | Activity type | Geologist | Exploration result | Ref |
|---|---|---|---|---|
| 1997-1997 | excavation | Veikko Keinänen | key geological features | 8, 9 |
| | *Eight trenches dug through the overburden* | | | |

| | | | | |
|---|---|---|---|---|
| 1996-1996 | core drilling | Veikko Keinänen | key geological features | 8, 9 |
| | *11 RC holes, total 516 m.* | | | |
| | ***Intersections*** | | | |
| | HoleID | 2734/96/R713 | | |
| | From-To | 14-17 | | |
| | Length | 3m | | |
| | gold | 2,34ppm | | |
| | HoleID | 2734/96/R715 | | |
| | From-To | 16-21 | | |
| | Length | 5m | | |
| | gold | 1,3ppm | | |
| | HoleID | 2734/96/R716 | | |
| | From-To | 22-23 | | |
| | Length | 1m | | |
| | gold | 2,63ppm | | |
| | HoleID | 2734/96/R718 | | |
| | From-To | 7-18 | | |
| | Length | 11m | | |

| | | |
|---|---|---|
| | gold | 1,1ppm |
| | HoleID | 2734/96/R720 |
| | From-To | 6-12 |
| | Length | 6m |
| | gold | 1,56ppm |
| | HoleID | NA |
| | From-To | NA |
| | Length | 1m |
| | gold | 3,8ppm |
| | HoleID | NA |
| | From-To | NA |
| | Length | 1m |
| | gold | 4,9ppm |

## Outokumpu Mining Oy

| Years | Activity type | Geologist | Exploration result | Ref |
|---|---|---|---|---|
| 1991-1992 | detailed surface exploration | Erkki Ilvonen | key geological features | 7 |
| | *glacial erratic boulder survey and local geochemical till survey; Au anomalies in till in the area.* | | | |

## Geological Survey of Finland

| Years | Activity type | Geologist | Exploration result | Ref |
|---|---|---|---|---|
| 1985-1985 | core drilling | Veikko Keinänen | NA | 9 |
| | *11 holes drille, with a significant core loss* | | | |

| | | | | |
|---|---|---|---|---|
| 1985-1998 | detailed geophysics | Veikko Keinänen | key geological features | 8, 9 |
| | *Ground magnetic, slingram, VLF-R and IP surveys* | | | |

| | | | | |
|---|---|---|---|---|
| 1984-1998 | detailed geology | Veikko Keinänen | mineral occurrences | 8, 9 |
| | *A mineralised outcrop detected by a GTK field assistant during regional bedrock mapping. Intermittent reconnaissance exploration* | | | |

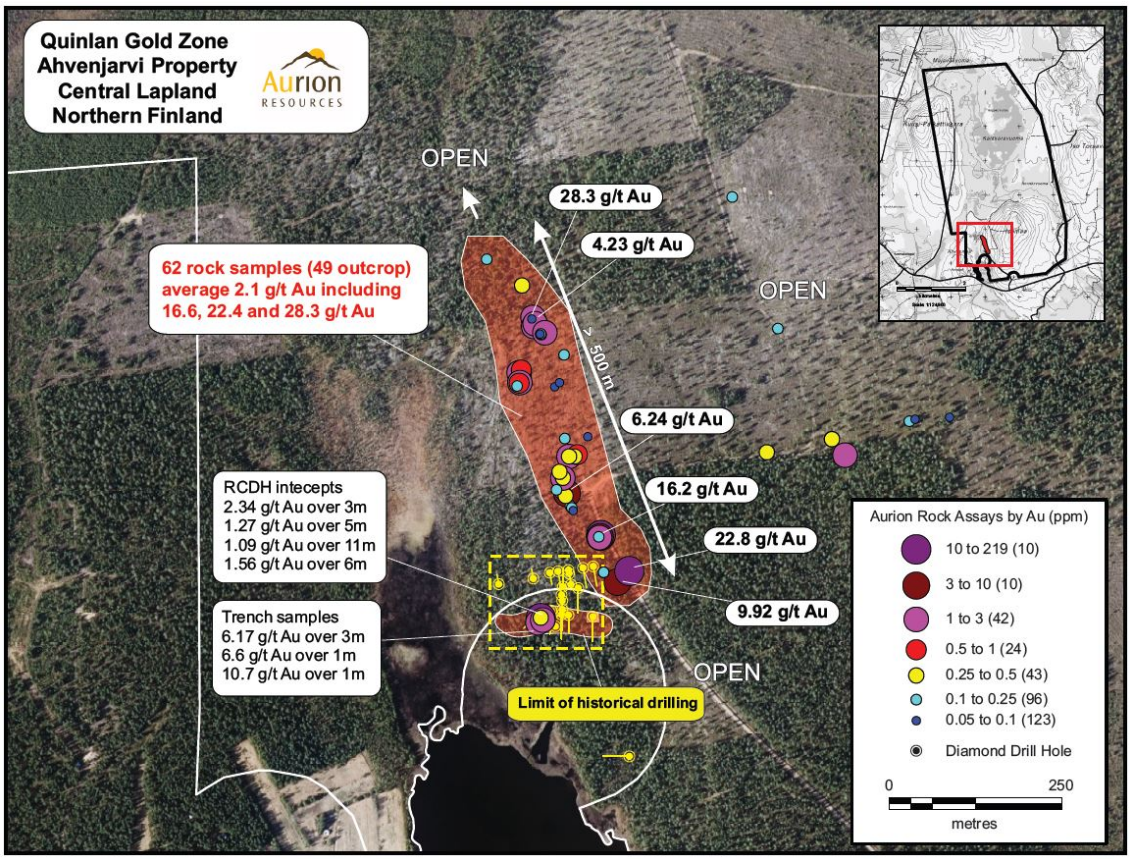
| | | | | |
|---|---|---|---|---|
| 1984-1998 | detailed geochemistry | Veikko Keinänen | NA | 7, 8 |

## Figures

***a mineralized outcrop and exploration trench:***

Outcrops and an exploration trench at Ahvenjärvi (Isomaa). Photo Pasi Eilu, 20/8/1998.

***The detected mineralized zones (from Aurion Resources Ltd web page):***



# GEOLOGY

**Host rock:** Quartz vein
**Wall rock:** Quartzite, Silicate-siltstone

## Quartz vein (Host rock)

**Rock type:** Host rock
**Proportion:** major
**Grain size:** NA
**Color:** White
**References:** 8, 9
**Comments:** WNW-trending, auriferous quartz-tourmaline-pyrite veins brecciate the host rock, quartz-hematite veins are not auriferous. The auriferous breccia is in or near an E-striking bend of a NE_striking shear zone.

**Ore minerals:**

| Mineral | Proportion | Mineral texture |
|---|---|---|
| Gold | present | |
| Molybdenite | present | |
| Pyrite | major | |
| Telluride | present | |

**Other minerals:**

| Mineral | Proportion | Mineral texture |
|---|---|---|
| Quartz | major | |
| Tourmaline | major | |
| | *Occurs in variable amounts* | |

## Quartzite (Wall rock)

**Rock type:** Wall rock
**Proportion:** major
**Grain size:** NA
**Color:** White
**References:** 6, 8, 9

**Other minerals:**

| Mineral | Proportion | Mineral texture |
|---|---|---|
| Albite | minor | Alteration product |
| Dolomite | minor | Alteration product |
| | *carbonate, the type is not specified* | |
| Quartz | major | |
| Sericite | minor | Alteration product |

| Structures |
|---|
| Sheared |

| |
|---|
| *Comments: clear shearing associated with Au-bearing pyrite-tourmaline-quaitz veins* |

| Alteration: | Distribution: | Degree: | Relation to mineralization: |
|---|---|---|---|
| sericitic alteration | NA | Strong | NA |
| *Comments: associated with auriferous quartz-tourmaline-pyrite veins* | | | |
| albitic alteration | | | |
| *Comments: + weak carbonate and sericite alteration associated with non-auriferous quartz-hematite veins,* | | | |

### 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 | | |
| *Comments: Metamorphic peak during D2, thrusting during D3 was at least partly post-peak, late metamorphic.* | | | | | |

### Geological age:

| Geological era: | Max age - Minage (Ma): | Inferred age (Ma): | Age of mineralization: |
|---|---|---|---|
| Paleoproterozoic (2500-1600 Ma) | 2210-2500 | | N |

## Silicate-siltstone (Wall rock)

**Rock type:** Wall rock
**Proportion:** minor
**Grain size:** NA
**Color:** NA
**References:** 6, 8

### Metamorphic description:

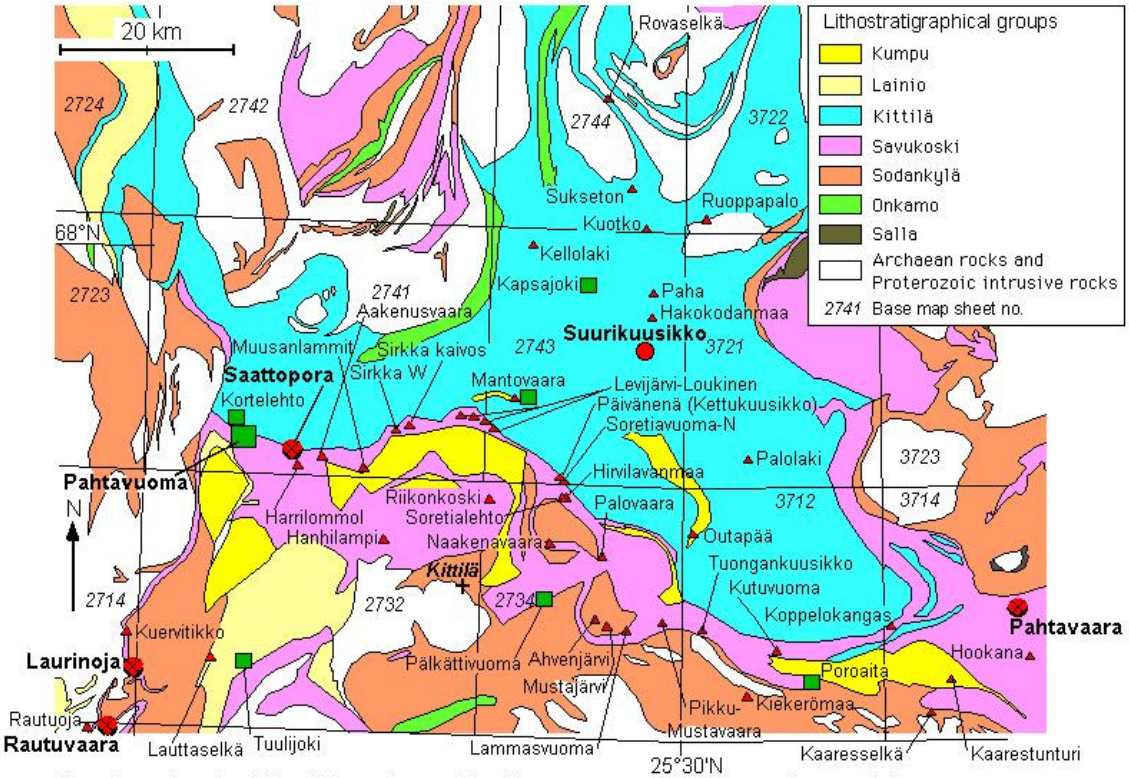
| Type: | Facies: | Degree: | Relation to mineralization: | Min P- Max P (kbar) | MIn T- Max T (°C) |
|---|---|---|---|---|---|
| Regional | greenschist metamorphic facies | low metamorphic grade | NA | | |
| *Comments: Metamorphic peak during D2, thrusting during D3 was at least partly post-peak, late metamorphic.* | | | | | |

### Geological age:

| Geological era: | Max age - Minage (Ma): | Inferred age (Ma): | Age of mineralization: |
|---|---|---|---|
| Paleoproterozoic (2500-1600 Ma) | 2210-2500 | | N |

## Figures

## *Regional geology:*




Zinc (green) and gold (red) deposits and significant prospects in the central parts of the Central Lapland greenstone belt. Lithostratigraphy from Lehtonen et al. (1998). Edited by P. Eilu (2007)

# REFERENCES

**1.** Aurion Resources 2015, Press Release 13.08.2015
*http://tupa.gtk.fi/karttasovellus/mdae/references/406_Ahvenj%C3%A4rvi/406_Aurion_PressRelease_13082015.pdf*

**2.** Aurion Resources 2015. Media release January 15, 2015.
*http://tupa.gtk.fi/karttasovellus/mdae/references/406_Ahvenj%C3%A4rvi/406_Aurion_PressRelease_15012015.pdf*

**3.** Aurion Resources 2016. Press release 06.09.2016
*http://tupa.gtk.fi/karttasovellus/mdae/references/406_Ahvenj%C3%A4rvi/406_Aurion_PressRelease_06092016.pdf*

**4.** Aurion Resources 2021. Media release 13 January 2021
*http://tupa.gtk.fi/karttasovellus/mdae/references/406_Ahvenj%C3%A4rvi/406_Aurion052_Sinerm%C3%A4_Kutuvuor*

**5.** Aurion Resources, Press Release 09.02.2016
*http://tupa.gtk.fi/karttasovellus/mdae/references/406_Ahvenj%C3%A4rvi/406_Aurion_PressRelease_09022016.pdf*

**6.** Hölttä, P., Väisänen, M., Väänänen, J. & Manninen, T. 2007. Paleoproterozoic metamorphism and deformation in Central Lapland, Finland. Geological Survey of Finland, Special Paper 44, 7-56.
*http://tupa.gtk.fi/julkaisu/specialpaper/sp_044_pages_007_056.pdf*

**7.** Ilvonen, E. 1994. Kaivoslain 19 pyk. mukainen tutkimustyöselostus: Kittilä, Ahvenjärvi. Outokumpu Oy, Report 080/2734 05/EI/94. 2 p. (in Finnish)*http://tupa.gtk.fi/raportti/valtaus/4867_1.pdf*

**8.** Keinänen, V. 1998. Personal communications on 20/8/1998 and 23/12/1998.

**9.** Keinänen, V. 2002. Tutkimustyöselostus Kittilän kunnassa valtausalueilla Pikku Mustavaara 1 (kaiv.rek.n:o 6512/1) ja Isomaa 1 (kaiv.rek.n:o 5699/1) suoritetuista malmitutkimuksista. Geological Survey of Finland, Report M06/2734/2002/2/10. 6 p. (in Finnish)
*http://tupa.gtk.fi/raportti/valtaus/m06_2734_2002_2_10.pdf*

**10.** Lehtonen, M., Airo, M.-L., Eilu, P., Hanski, E., Kortelainen, V., Lanne, E., Manninen, T., Rastas, P., Räsänen, J. & Virransalo, P. 1998. Kittilän vihreäkivialueen geologia: Lapin vulkaniittiprojektin raportti. Summary: The stratigraphy, petrology and geochemistry of the Kittilä greenstone area, northern Finland: a report of the Lapland Volcanite Project. Geological Survey of Finland, Report of Investigation 140. 144 p.*http://tupa.gtk.fi/julkaisu/tutkimusraportti/tr_140.pdf*

**11.** Patison, N.L. & Oliver, N.H.S. 2001. Structural features associated with Palaeoproterozoic gold deposits in the Central Lapland Greenstone Belt, northern Finland. In: P.J. Williams (ed) 2001: A Hydrothermal Odyssey. May 17-19th, 2001, Townsville. Extended abstracts. EGRU and JCU. 162-163.

**12.** Patison, N.L. 2007. Structural controls on gold mineralisation in the Central Lapland Greenstone Belt. Geological Survey of Finland, Special Paper 44, 107-124.
*http://tupa.gtk.fi/julkaisu/specialpaper/sp_044_pages_107_124.pdf*