# Kirakka-aapa

**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 |
| nickel | 3 | NA | NA | NA | NA |

**Easting EUREF:** 473748,407
**Northing EUREF:** 7545347,629

**Easting YKJ:** 3473910
**Northing YKJ:** 7548500

**Discovery year:** 2001
**Discovered by:** Geological Survey of Finland
**Comments:** Discovery by drilling into overlapping magnetic and geochemical (polymetallic) anomalies.
**References:** 3

## Mineral deposit type

**Group:** Metallogenic deposit
**Main type:** Orogenic (metamorphic hydrothermal)

## 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 |
|---|---|---|---|
| Boliden AB | 2014 | Application for exploration permit | NA |
| First Quantum Minerals Ltd | 2013-2014 | Application for exploration permit | NA |
| Belvedere Resources Ltd | 2006 | Claim (old law) | NA |

# EXPLORATION ACTIVITY

## Geological Survey of Finland

| Years | Activity type | Geologist | Exploration result | Ref |
|---|---|---|---|---|
| 2005-2005 | detailed geophysics | Eelis Pulkkinen | NA | 3 |
| | *No response to mineralized rock, but clear magnetic and electromagnetic anomalies show contact between volcanite and black schist.* | | | |

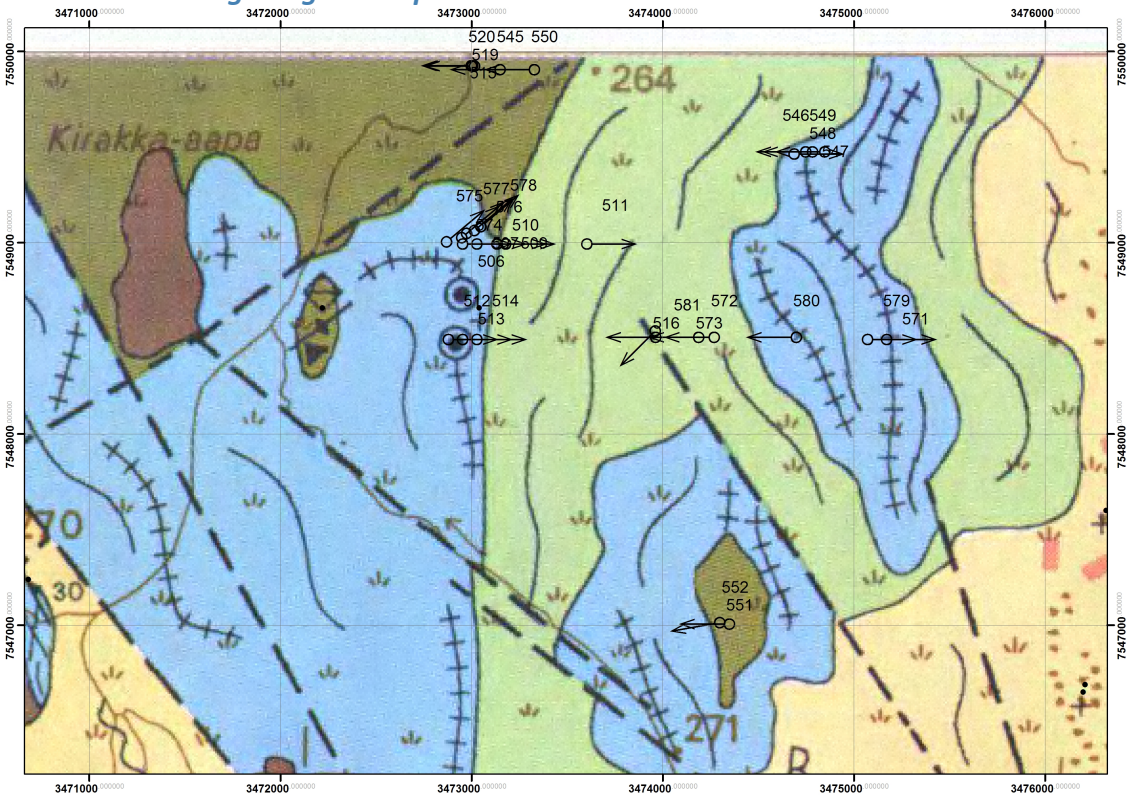
| | | | | |
|---|---|---|---|---|
| 2005-2005 | core drilling | Eelis Pulkkinen | NA | |
| | *11 Diamond drill holes 719 m.* | | | |

| | | | | |
|---|---|---|---|---|
| 2001-2002 | core drilling | Eelis Pulkkinen | NA | |
| | *20 Diamond drill holes totally 1136 m and in 2005 11 drill holes 719 m.* | | | |
| | ***Intersections*** | | | |
| | HoleID | 372301R516 | | |
| | From-To | 29,5-29,9 | | |
| | Length | 0,4m | | |
| | gold | 3,12ppm | | |
| | nickel | 0,26% | | |
| | cobalt | 0,08% | | |
| | HoleID | 372301R516 | | |
| | From-To | 29,9-31,5 | | |
| | Length | 1,6m | | |
| | gold | 4,96ppm | | |

| | | | | |
|---|---|---|---|---|
| 2001-2002 | detailed geophysics | Eelis Pulkkinen | NA | 3 |
| | *No response to mineralized rock, but clear magnetic and electromagnetic anomalies show contact between volcanite and black schist.* | | | |

## Figures

## *Drill holes on the geological map:*



# GEOLOGY

**Host rock:** Black schist, Komatiite

## Black schist (Host rock)

**Rock type:** Host rock
**Proportion:** minor
**Grain size:** NA
**Color:** NA
**References:** 1, 2, 3
**Comments:** The host rocks are mainly variably altered metakomatiiite with black schist and phyllites.

**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 | NA | | |

**Geological age:**

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

## Komatiite (Host rock)

**Rock type:** Host rock
**Proportion:** major
**Grain size:** NA
**Color:** NA
**References:** 1, 2, 3
**Comments:** The host rocks are mainly variably altered metakomatiiite with black schist and phyllites.

**Metamorphic description:**
**Ore minerals:**

| Mineral | Proportion | Mineral texture |
|---|---|---|
| Chalcopyrite | major | |
| Gold | present | |
| | *In violarite-bearing carconate veins and silicified parts.* | |
| Magnetite | major | |
| Pyrrhotite | major | |
| Violarite | major | |

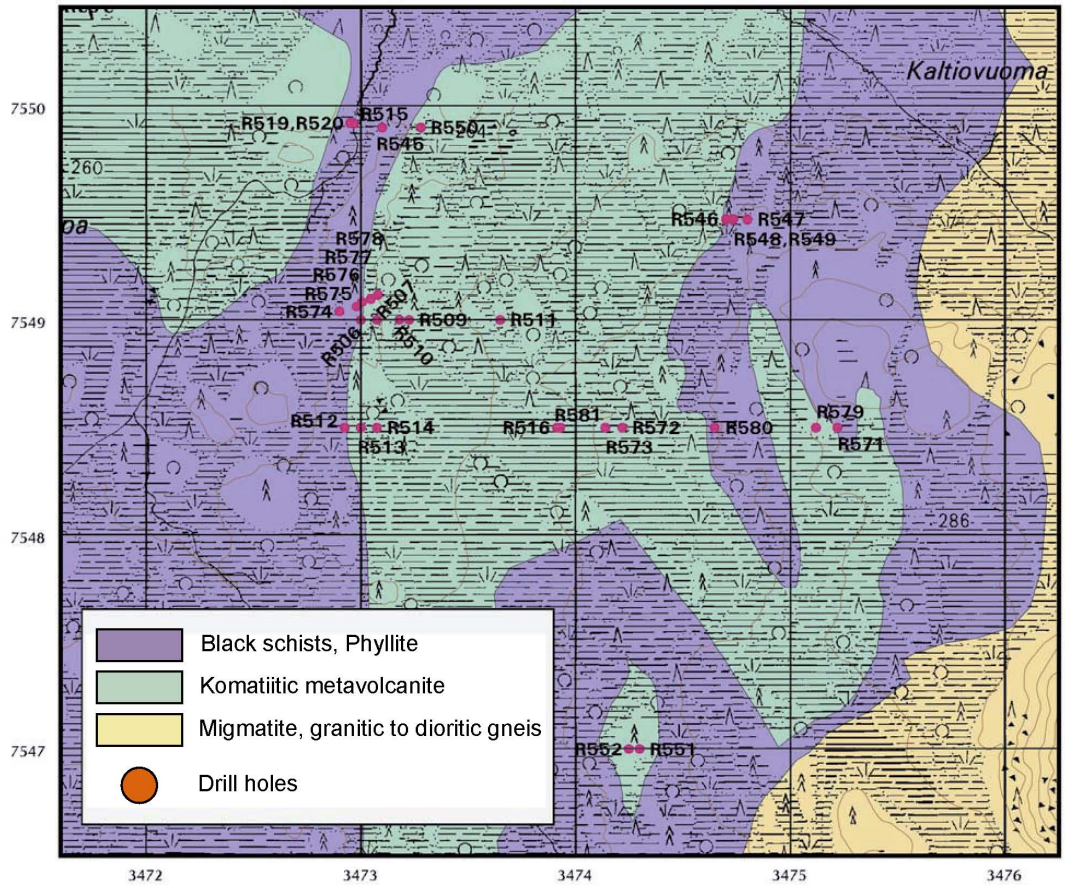
| Type: | Facies: | Degree: | Relation to mineralization: | Min P- Max P (kbar) | MIn T- Max T (°C) |
|---|---|---|---|---|---|
| Regional | amphibolite metamorphic facies | medium metamorphic grade | NA | | |

### Geological age:

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

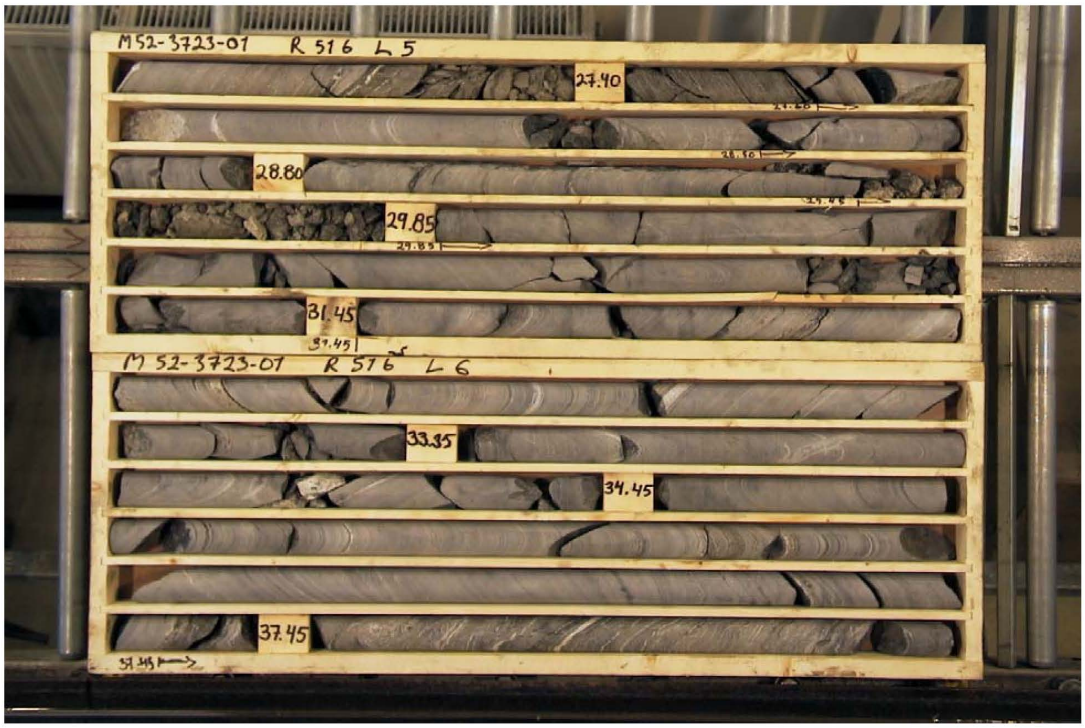
## Figures

### *Local geology:*



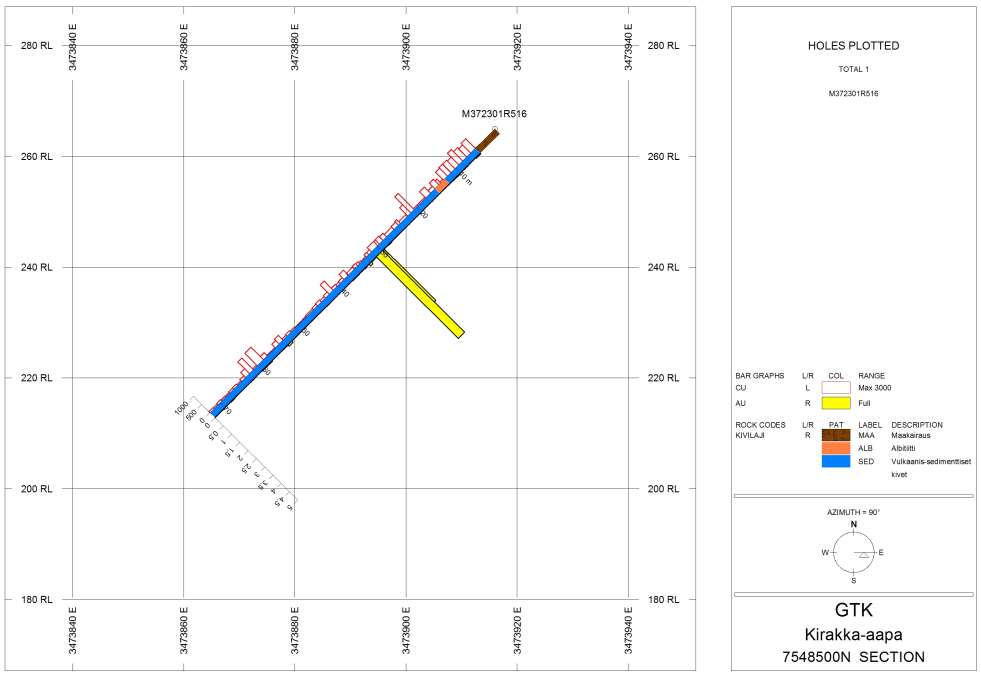

*Modified bedrock of the Kirakka-aapa area modified according to geophysics and drilling results.*

## *Gold-rich violarite veining in serisite schist:*




*Gold-rich violarite veining in serisite schist in the drill hole R516 between 26.45 – 31.45 m.*

## *Au and Cu content in drill hole 372301R516:*



# REFERENCES

**1.** Hölttä et al. 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*

**2.** Lehtonen, M., Airo, M-L., Eilu, P., Hanski, E., Kortelainen, v., Lanne, E., Manninen, T., Rastas, P. ja 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. Geologian tutkimuskeskus. Tutkimusraportti 140. 144 s.
*http://tupa.gtk.fi/julkaisu/tutkimusraportti/tr_140.pdf*

**3.** Pulkkinen, E., Hulkki, H., Keinänen, V. ja Salmirinne, H., 2007. Kultatutkimukset Sodankylän kunnassa Kirakka-aavalla vuosina 2001 - 2005. Geologian tutkimuskeskus. Pohjois-Suomen yksikkö M19/3723/2007/10/62. 11 s., 9 liitettä.2.2
*http://tupa.gtk.fi/raportti/arkisto/m19_3723_2007_10_62.pdf*