Sakatti project

Nestled in the heart of central Lapland, the Sakatti project began with mineral exploration in 2004. The first signs of mineralisation were found in 2006, with the discovery of the Sakatti deposit confirmed in 2009. Sakatti is an exceptional deposit with high concentrations of future-enabling metals – these are the critical raw materials essential for building a cleaner, greener and more sustainable world. In addition to its primary product of copper, the Sakatti orebody also contains nickel, cobalt, platinum, palladium, gold and silver.

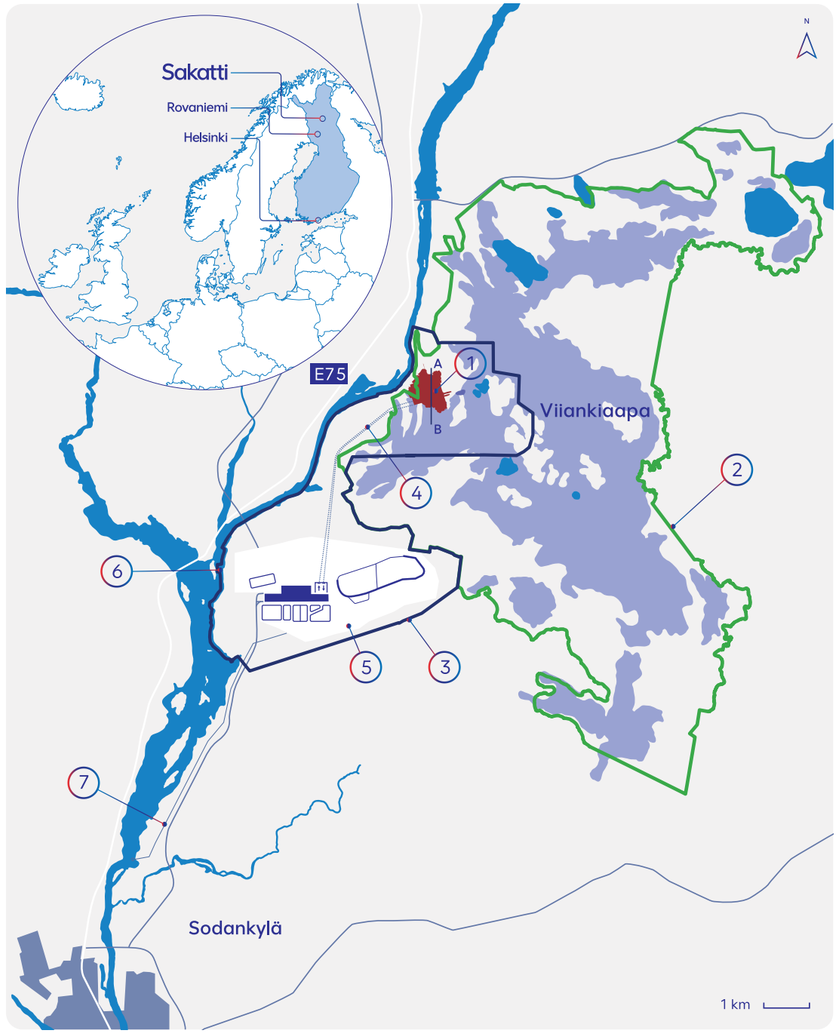
The project is located in northern Finland, approximately 15 km north of the county town of Sodankylä and borders a protected wetland area. The area is part of the Natura 2000 network – an extensive grid of protected land stretching across the European Union (EU), established to safeguard Europe's most valuable and threatened species and habitats.

In order to conserve this sensitive environment, we are designing the Sakatti project as an innovative underground mine with no visible above-ground structures. FutureSmart Mining™, our integrated approach to sustainability and innovation, is being implemented to minimise the project's footprint and place our respect for the natural surroundings at the centre of the mine's development.

The Sakatti deposit is located in the midst of the Central Lapland Greenstone Belt (CLGB). The lithostratigraphy comprises sedimentary, volcanic, and volcano-sedimentary rocks, which were deposited on Archaean rocks of the Karelian Craton. These supracrustal rocks are intruded by four stages of mafic magmatism.

Stratigraphically, the Sakatti deposit is hosted in the lowest part of the Savukoski Group of the CLGB, mainly by olivine cumulates and partly by fine-grained ultramafic volcanics. All cumulates are high in copper and nickel content. Primary silicate minerals are typically strongly altered to serpentine, talc, tremolite and carbonate; the cumulate texture is however well preserved.

Locality plan of the Sakatti project, north of Sodankylä, Finland



1 Orebody
2 Protected area boundary
3 Mine permit boundary
4 Access tunnel
5 Concentrator area
6 Fresh water intake
7 Release of cleaned process waters

Wetlands
Rivers/lakes
Municipality centre
Roads

Field safety co-ordinator Rami Lintula and mining sector lead sales executive Vere Ross-Gillespie collect samples for environmental DNA (eDNA) testing. The analysis of eDNA has applications such as biodiversity monitoring, invasive species detection and environmental health assessment.

The deposit comprises three separate bodies: Main, NE and SW. The mineralisation of the NE and SW satellite deposits are interpreted to be spatially distinct zones but current geological information is sparse and does not meet the requirements to classify as Mineral Resources; hence these deposits are not included in this report.

The Sakatti Main deposit has a strike length of approximately 1,600 m, is up to 1,000 m wide and extends to a depth of 1,200 m below the surface. The cumulate hosting the Main body has an approximate thickness of 300 m and plunges approximately 40° to the north–north west (340° dip direction).

Within the Main body, the sulphide mineralisation can be divided into three main types, namely disseminated, stockwork and most importantly, massive sulphide zones. The massive sulphides host the bulk of the Sakatti nickel mineralisation and are also enriched in copper, platinum group elements and gold. It dominates the central and northern parts of the Main body with individual units normally ranging in thickness between 1 m to 10 m but locally reaching up to 30 m.

Mineralisation in the Main body is strongly fractionated, with disseminated and vein-hosted chalcopyrite in the shallow southern and south eastern portion of the deposit, transitioning to pyrrhotite and pentlandite dominated massive sulphides at depth in the north and north west. The sulphide minerals are fresh and show no to very weak alteration. The techno-economic model shows that approximately 58% of the total revenue comes from copper and 33% from nickel.

Geological knowledge of this deposit is key to the success of the project and our extensive exploration activities between 2004 and 2023 include geophysical surveys and more than 242,000 m of diamond drilling. The formulation and construction of the resource model were executed through the application of our Rapid Resource Modelling (RRM) workflow, reflecting a methodological commitment to efficiency and precision. Subsequent to the initial model development, further exploratory analyses for the refinement of resource categorisation were adeptly conducted by employing RRM tools.

In the design of the Sakatti project, special attention is paid to minimise the groundwater impacts of mining on the wetland above. The 5.5 km long access tunnel from the concentrator area on surface to the mine therefore needs careful grouting, and tunnel boring machinery is considered as the main option for tunnelling. The mine plan includes an optimised strategy to effectively mine the high-value massive sulphide ore lenses and recover the wide disseminated and stockwork ore around and between the massive ore lenses.

At Sakatti, our proposed approach was endorsed in August 2023, when the Lapland Centre for Economic Development, Transport and the Environment approved our environmental impact assessment (EIA), marking a major milestone for the development of the project. The mining permit application was submitted to the mining authority on 20 July 2024 and other permitting processes are ongoing. The pre-feasibility study for the project is progressing.

For details on the Sakatti Mineral Resources, see the Copper section of this report (Anglo American Ore Reserves and Mineral Resources Report 2024).

South–north section through the Sakatti geological model