

# Exploration in depth



Boliden has, by means of successful exploration, become a world-class metals company.

Copper and zinc ore from Sweden and Ireland are the primary focus of our exploration. Boliden currently has operational mines in the Skellefte District, Bergslagen and Norrbotten in Sweden, and in Ireland.

The key features of a successful exploration program are; geological expertise, access to prospective land areas, continuous technological development and a long-term strategy.



# Strategy

Securing operations in the long term requires a continuous supply of new mineral resources. The primary focus of Boliden's exploration work is on finding ore bodies that contain zinc, copper and precious metals. Boliden's exploration is currently divided into field exploration and near mine exploration.



## FIELD EXPLORATION

The aim of field exploration is to locate completely new finds that will secure the company's operations in the long term. Field exploration currently takes place in the Skellefte District, in Bergslagen, Norrbotten, Rockliden, the Dorotea area, and in the Irish Midland's Ore Field.

There are several stages to exploration work: choice of area, initial regional investigations, local investigations of selected areas of interest, and drilling. The results of the drilling, coupled with Boliden's technical expertise, determine whether it is economically feasible to expand a mining area or start new mining operations.

The best-case lead time from the initial investigations to any mining operations typically ranges from 5 to 10 years, but may exceed 15 years.

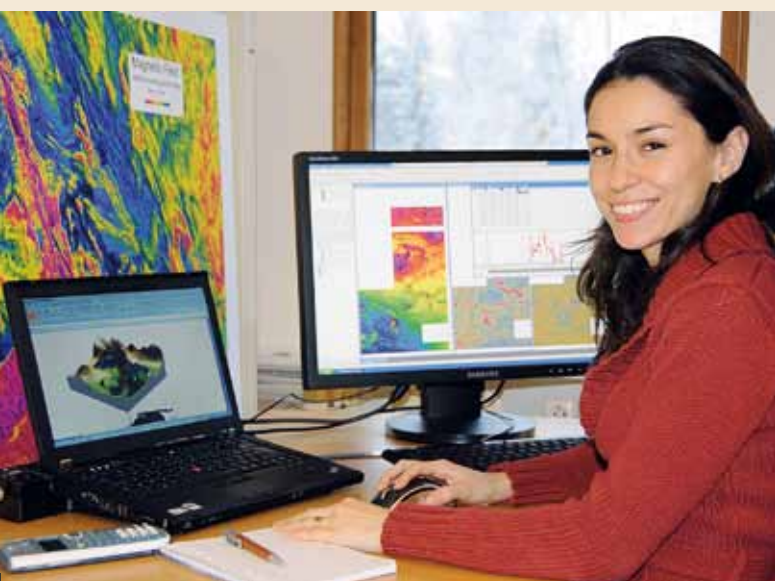
## NEAR MINE EXPLORATION

The company's strategy in recent years has been to prioritise near mine exploration. New finds in the vicinity of existing mines save both time and resources as the necessary infrastructure is already available. Near mine exploration is carried out at all mines in Sweden and Ireland.



# Technology and Geoscience

Several exploration methods are used to locate mineralisation, including boulder hunting, geological mapping in the field, geophysical measurements, geochemical sampling, and drilling. All of the data collected are processed and archived by our own Geodata department to ensure that it is readily available for subsequent interpretation.



## GEOPHYSICS

Boliden has extensive experience in exploration using advanced geophysical methods. Geophysical measurements are based on the fact that different rock types have different physical properties. The properties of mineralisation generally differ from those of the surrounding rock.

There are various different ways of carrying out geophysical measurements. Boliden uses geophysical data gathered from the air, the ground, and from drill holes. We develop instruments and carry out measurements in-house and can, with the aid of Boliden's electromagnetic method, find deposits located more than one kilometre below the surface.

## GEOLOGY

Geological models and theories are used in exploration to understand the ore forming processes and to identify prospective areas. Geological information is collected in the field by investigating rock outcrops, boulders and soil profiles.

Areas that could potentially contain ore are explored further by means of geophysical measurements and drilling. All of the data gathered are processed and interpreted with the aid of various computer programs, to produce multi-dimensional models.

There is a growing need to work with geology in multiple dimensions. In a well-explored area, new mineralisation are not likely to be discovered close to the surface in any great quantities. This makes it increasingly important to understand how the bedrock behaves at depth.

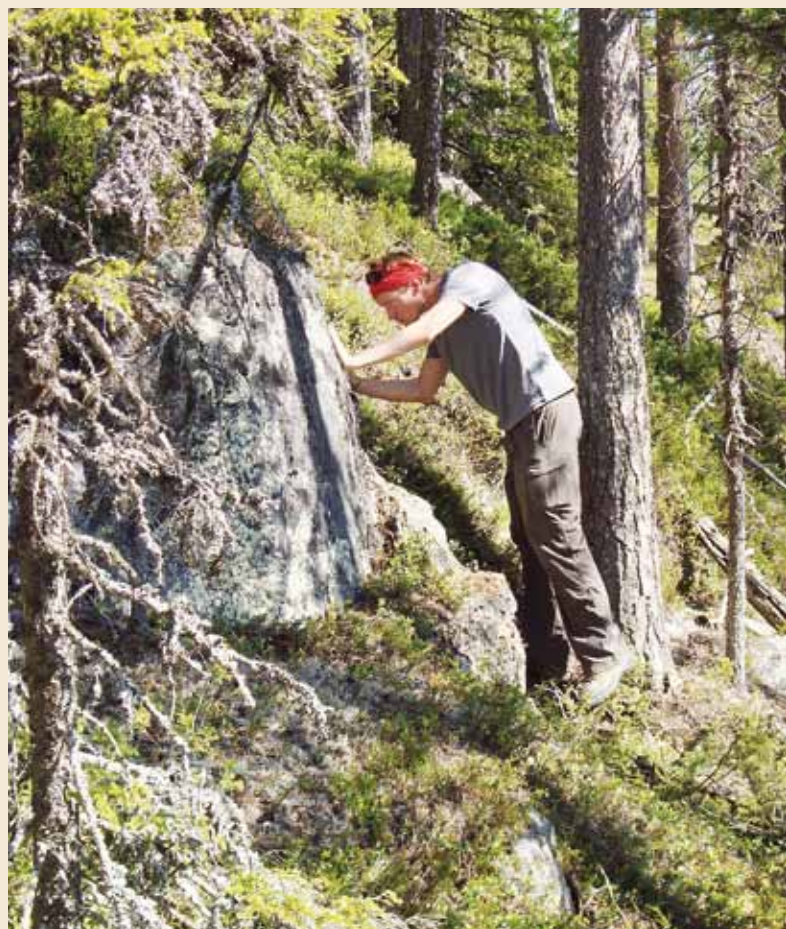




Photo: Michael Johansson

# Summary

**Boliden has built up a large in-house database on exploration and mining operations over its extensive operational history. With this information, the company's experienced personnel and its advanced technology, Boliden is ideally positioned to achieve exploration successes in the future.**

**For further information about exploration, visit our website at [www.boliden.com](http://www.boliden.com)**

