

# **COLLAHUASI MINE**

## HIGH ALTITUDE MINING



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*Extracting minerals in the rarefied atmosphere  
of the high Andes is just one challenge for the  
world's fourth largest copper mine*

WRITTEN BY: **JOHN O'HANLON**  
RESEARCH BY: **CANDICE NICE AND ROBERT HODGSON**



**D**oña Inés de Collahuasi, a Chilean mining company, operates the world's fourth largest copper mine. The operation comprises two principal porphyry copper deposits, Ujina and Rosario, as well as a smaller deposit called Huinquintipa that contains only sulphide mineralisation and copper oxides. It is a joint venture owned by two mining majors, Swiss-based Xstrata and London-based Anglo American, with 44 percent of the shares apiece. The remaining equity is in the hands of a group of Japanese interests led by Mitsui & Co Ltd, one of Japan's largest trading companies that has under its umbrella both Nippon Mining & Metals and Mitsui Mining & Smelting. Not surprisingly, then, Japan is an important taker for the mine's products, mainly copper concentrate of which 245,288 tonnes were produced in 2012, with a smaller amount of copper in the form of 99.99 percent pure copper cathode, of which 36,808 tonnes were sold.

The mine is located in the Andean plateau 4,400 metres above sea level in the Tarapacá Region, a region in the north of Chile that is close to the border with Bolivia. It is a poor but fertile region, with some of the most significant vineyards in Chile and a very long history of mineral extraction, best known in the past for its production of saltpetre. Copper has been exploited since 1880 when the Tarapacá systems of high-grade copper and silver veins began attracting interest. Fast forward to 1991, when a combination of satellite, aerial photography and onsite studies, along with drilling activities, resulted in the discovery of the Ujina deposit. From the

concentrator plant in Ujina, a 203 kilometre slurry pipeline leads down to the filter plant and loading facilities in Punta Patache, 65 kilometres south of Iquique, Tarapacá's capital. The molybdenum plant is also located here as well as the port terminal from which processed products are shipped to markets around the world.

In all Anglo American produced 282,096 tonnes of copper in 2012, accounting for 5.1 percent of Chile's total output over that year. These figures were down on the previous year's production, as reported in the article we published in 2013,



however Anglo American announced last October that in the third-quarter of 2013 copper production went up by nearly a third compared to the same period in 2012, reaching a quarterly record mainly thanks to improved performance at the Collahuasi mine. Production of copper, the second-most important contributor to Anglo's balance sheet after iron ore, rose 32

percent to 207,300 tonnes in the three months to September, beating analysts' expectations – and Collahuasi more than doubled output to 63,600 tonnes in those three months. However Anglo American's plans for the future of the

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contribute - with its modern fleet of machinery - to the initiative to reach an output of more than one million tonnes of fine copper by 2017. ICV is present in the most important mining projects in Chile thanks to its policy of constantly renewing equipment and machinery with annual investments of over US\$70 million, transforming it into the company with the most modern and competitive mechanized fleet in its field.

The key factor in the consolidation of the company's prestige has, however, undoubtedly been its constant focus on recruiting and retaining the best human team.

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 ARCADIS Chile S.A.  
 Antonio Varas 621  
 Providencia, Santiago, Chile  
 CP: 750 0966  
 Ph: +56 2 23816000  
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mine are far more ambitious. An ongoing pre-feasibility study for the company's proposed \$6.5 million Phase III expansion project will pave the way towards a total copper production target of more than a million tonnes per annum (tpa) by 2017, which would make it the biggest mining project in Chile.

The Chilean, Japanese and Chinese markets together account for around 80 percent of Collahuasi's exports of copper concentrate, while over 70 percent of its copper

cathodes go to the Chinese market. In the case of the molybdenum, a by-product of which 1,953 tonnes were produced in 2011, 99 percent is sold within Chile and the remaining one percent exported to Thailand. In 2012 China accounted for 31 percent of Collahuasi's copper concentrate sales, Japanese and Chilean offtakers for 24 percent each, India for 18 percent, while three percent went to South Korea.

Sustainable development is a crucial pillar of Collahuasi's business strategy, guiding its approach to its production process and



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**4,400 METRES**

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 Altitude of the Collahuasi mine

relations with its surroundings. In 2012, the company implemented important measures related to sustainability. A key initiative was the creation of a Vice-Presidency for Sustainability to bring together all the areas of the company's activities that are related to sustainable development and to represent a common corporate vision of the concept of sustainability, taking into account aspects related to the exploitation of natural resources, the cultural and social diversity of the area where the company has its operations and economic aspects of its operations.

2012 was also a crucial year as regards community relations. In this context, the inclusion of environmental performance under the new Vice-Presidency for Sustainability enabled the company to establish even closer relations with communities, particularly as regards providing information, understanding their concerns and achieving reciprocal benefits. This approach, the company believes, has empowered local communities and boosted their engagement in the activities of the mine and the logistics corridor used by vehicles related to its operations. The communities which it has identified as coming under direct influence are Cádiz, Chanavayita, Caramucho, Huatacondo, Pica and Matilla. In 2012, the company's total social investment



reached \$15.2 million, up by around ten percent on the previous year. Most of this amount was devoted to education, the environment and community social development.

Education is the way out of the cycle of deprivation in these communities. In its relations with the Tarapacá Region, and as part of its promise to contribute to educational

improvement, the company continues to work through the Collahuasi Educational Foundation. In 2012, for the fourth consecutive year, the Foundation implemented its Educational Improvement Programme involving 18 state primary schools in seven municipal districts over a period of four years. In June 2013, in order to ensure the Programme's ongoing development, the company signed a new agreement with the municipal governments of Iquique, Alto Hospicio, Pica, Huara, Camiña and Pozo Almonte for the period 2013-2016 under which educational practices of excellence will be implemented and systematic work will take place with the communities of the schools in the Programme.

Healthcare is another area in which Collahuasi is involved, particularly in the case of the more vulnerable members of the community. Currently the company is participating in the improvement of the infrastructure of Tarapacá's health centres. To this end, it signed an agreement with the Regional Government to provide financial support for the design phase of state-funded projects in the Iquique and Alto Hospicio Hospitals and primary and family health centres around the region. **BE**

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