

SOCIEDAD MINERA EL BROCAL

POWERING THE GROWTH OF PERU



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Sociedad Minera El Brocal's activities and achievements are prime examples of what makes Peru such an exciting and important epicentre for mining in South America

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Peru's rich mining history is well documented, with the roots of what has become a hugely attractive region for the industry dating back centuries. Such a legacy can be seen in the development of the Colquijirca mine, the origins of which pre-date the era of the Incas, when it has been documented that ancient tribes silver mined the surrounding foothills of Puntac-Marca.

Located in the Cerro de Pasco region of the country, the Colquijirca mine, and the adjoining Huaraucaca concentration plant, is today managed by Sociedad Minera El Brocal, a Peru-based company primarily active in the extraction, concentration and commercialisation of polymetallic ores, including zinc, silver, lead and copper.

In addition to the aforementioned activities the company conducts a number of other important operations including the open pit activities at the Tajo Norte mine and the running of the Marcapunta Norte underground mine. Furthermore, Sociedad Minera El Brocal is also engaged in exploration projects currently underway at the Marcapunta Oeste and San Gregorio mines.

At the Tajo Norte mine the company is presently involved in the exploiting of polymetallic mineral content and sulphides consisting mainly of silver, lead, zinc and copper. The Marcapunta Norte mine on the other hand is an underground operation that exploits copper ores consisting mainly of enargite and minor amounts of chalcocite, chalcopyrite, tennantite, luzonita, colusita and bismuthinite, and the bargain includes mainly pyrite, quartz, alunite, kaolinite and



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Fixed and Semi-mobile plants

In this method, trucks are used to transport material from the mine face to the in-pit crushing plant, just like the plant developed by Sandvik for Sociedad Minera El Brocal.

As mining advances, the hauling distance to the

crusher plant increases, eventually requiring the crusher and shiftable conveyors to be relocated. Sandvik semi-mobile crushing plants consist of movable modules and can be shifted to follow the development of the mine site. Crushers represent the core of semi-mobile crushing plants, with various types of crushers that can be utilized: sizer, hybrid, double-roll-, gyratory- or jaw crusher. The throughput capacity can be more than 10 000 mtpch, the maximum feed size up to 1500 mm and the crushing ratio up to 1:5. Feed materials include coal, ore, limestone, oil sands, gypsum, chalk and similar materials.

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“IN OUR ROLE AS NEIGHBOURS WE HAVE WORKED HARD TO ESTABLISH GOOD RELATIONSHIPS WITH THE LOCAL COMMUNITIES THAT LIVE CLOSE TO OUR OPERATIONS”

clays. Mineralisation is housed in carbonate rocks and clay horizons, and the daily production level at this particular asset is approximately 4,000 tonnes per day.

While important work across all of the aforementioned properties continues unabated, arguably the biggest current undertaking for the company involves the Huaraucaca concentration plant, an industrial facility where the company uses selective floatation processes to achieve the concentration of

economic mineralisation from the Marcapunta and Tajo Norte mines, and which currently boasts a treatment capacity level of 10,000 metric tonnes per day.

“It is here,” explains Project Director, Jesus Humberto Montes Chavez, “that we are now developing a hugely ambitious project that will treble the capacity of the plant to a design treatment capacity of 18,000 metric tonnes per day. This represents a massive undertaking on our part and is one where we are focusing

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Based in Zurich, Switzerland, ABB is a global leader in power and automation technologies, employing 145,000 people and operating in approximately 100 countries. The company in its current form was created in 1988, but its history dates back more than 120 years. ABB's success has been driven particularly by a strong focus on research and development, with the company maintaining seven corporate research centers around the world, while continuing to invest in R&D throughout all market conditions. The result has been a long track record of

innovation, with many of the technologies that underlie modern society, from high-voltage DC power transmission to a revolutionary approach to ship propulsion, being developed or commercialized by ABB. For its customers in the mining sector ABB offers comprehensive packages of competencies, products and services for the complete primary production chain in the mining and minerals processing. ABB's experience is unmatched, with a track record of supplying complete electrification for more than 60 plants worldwide.



Having been present in Peru for more than 60 years, ABB has long been intimately linked with the development of the country's mining sector, where the largest local and global companies have installed its power and automation technologies in every neural part of their processes.

ABB covers the entire range of mining services, going from mine electrification at low, medium and high voltage in open pit or underground applications, all the way to the processing plant, where it has supplied Drive Systems for the highest power mills, both installed and to be installed, and Automation Systems that help control and optimize process variables, generating information in real time for business decision making, based upon transparent connectivity with company-wide IT systems. One of the many clients that ABB is currently engaged with is Sociedad Minera El Brocal. Two specific agreements underscore ABB's role in Sociedad Minera El Brocal's Huaraucaca concentration plant upgrade project, the first being its commitment to achieving an alignment between the scope of the project itself and the operational needs and capacities, while the second calls for ABB to effectively improve delivery times during the development process. Electrification and automation projects make up many of the most recently completed and on-going tasks being carried out by ABB on behalf

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of Sociedad Minera El Brocal. These include the delivery and/or installation of low-voltage power systems, medium-voltage switchgears, medium-voltage switchgear and control building equipment, and voltage and current transformers for high-voltage switchyards. From an automation perspective most of ABB's recent work has involved the automation of the Huachuacaja tailings plant and the automation, repowering and starting of the projects' Osborn Mill. As is the case with Sociedad Minera El Brocal, ABB's renewed organization, portfolio and corporate strategy will always be available to its clients, with whom the company will partner in their efforts to continue contributing to both the industry's and Peru's long-term development.

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▲ Overland Conveyors at Cerro de Pasco, Peru.



▲ Overland Conveyors at Cerro de Pasco, Peru.



▲ Copper Mineral Handling Plant, Ministro Hates, Chile.



▼ Ashes and gypsum transport systems, Compostilla, Spain.

the majority of our efforts at present. This project equates to a \$420 million investment and is one we hope to bring to a conclusion by the end of 2013.”

While it is by no means immune to the global economic pressures that continue to beset mining companies throughout the world, Sociedad Minera El Brocal does possess the advantage of being the holder and operator of a host of impressive properties, each of which possesses excellent medium-to-long term prospects. In addition to its existing assets the company is also continuing to explore for other opportunities



in the areas surrounding its operations. The results of this exploration have so far proven very promising, with the company optimistic that several new developments could be set to take place in very near future.

Being a Peru-based company with Peruvian values, it has always been the case that the concept of

social responsibility runs through the heart of everything that Sociedad Minera El Brocal does as a business. Indeed it is the policy of the company that its own pursuit of development always aligns itself with the growth and development of the communities who live and

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SOCIEDAD MINERA EL BROCAL SAA mining company has contracted the services of OHL Industrial for the design, supply, construction, commissioning and start-up of the bulk material (coarse mineral) transport system of an “Overland Belt Conveyor” and “Belt Conveyors for secondary and tertiary coarse material” as part of the “Expansion of Operations to 18000 TPD” project – Second Stage, which will be carried out in its facilities located in Cerro de Pasco, Peru. The OHL Industrial Mining & Cement line has been responsible for executing the contract, under the EPC system with high levels of compliance and professionalism demanded by the OHL Group in all of its projects. With our experience in the design of the solids handling material equipment, a speciality

of our subsidiary Sthim, Sociedad Minera El Brocal has achieved its aim of designing a facility which was needed to transport 18 000 TMD, to the client’s complete satisfaction. Based on the Projects Management, this has been developed in close collaboration with the client in order to optimise the time, cost and adaptation of the facility to the needs of Sociedad Minera El Brocal, with the ultimate aim and objective of complete customer satisfaction. In accordance with our company policy, all the processes have been properly monitored and analysed in order to continue advancing in our objective of continuous improvement.

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work in the areas surrounding its operations. In working to achieve this it runs a number of social development programmes that benefit neighbouring towns and villages. These programmes fall into vital fields such as health, education, training, sanitation and workforce development, each of which contribute towards providing a better quality of life local inhabitants.

This philosophy also extends to the company's

day-to-day operations where it has put into place specific requirements throughout its engineering design that highlight just how respectful it is of the environment and how conscious it is of its own footprint. One such requirement involves the regulating of all the water used across its operations to ensure sustainable usage is maintained at all times. Specific installations also exist amongst Sociedad Minera El Brocal's infrastructure, such as sewage treatment plants that make sure that all waste is treated accordingly before leaving its facilities.



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“In our role as neighbours we have worked hard to establish good relationships with the local communities that live close to our operations,” Montes states. “One particular community for instance has worked so closely with us over the years that they are today the owners and operators of vital heavy machinery and equipment which we utilise across several of our key projects. We believe that this example also highlights how we are trying to create a legacy that will exist after the mine operations end. By providing the opportunity for communities to develop certain skills and expertise we are helping them to prepare, and be equipped, for whatever new challenges await in the future.”

Speaking of the future, Montes is very much aware of what Sociedad Minera El Brocal needs to do in the short term to remain prosperous and why things look bright for the company as a whole. “We are focusing a great deal at the moment on reducing our costs. While this is never an easy thing to achieve, without doing so I believe we would find ourselves ill-prepared for other challenges that may lie ahead. It is therefore vital that we find ways of decreasing our unit consumption levels. Nevertheless, from an operational perspective we remain in a very good place, operating as we are with reserves that have set us up for the long-term and within an area rich in mineral prospects and potential.” **BE**

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