



**2018**  
ANNUAL REPORT





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▼ **DISCLAIMER**

**This document contains accurate and sufficient information about Volcan Compañía Minera S.A.A.'s business activities in 2018. Regardless of the issuer's liability, the undersigned are responsible for the content herein, in accordance with applicable laws.**

Lima, March 20, 2019



**José Picasso Salinas**  
Chairman of the board



**Juan Ignacio Rosado  
Gómez de la Torre**  
Chief executive officer

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# 01.

## LETTER TO SHAREHOLDERS

### DEAR SHAREHOLDERS,

In 2018, our country maintained growth rates above the average for the region despite facing an exceedingly complex internal political scenario and volatile international outlook. The most important events occurring in the international political scene included the North Korea-South Korea agreement to denuclearize the Korean peninsula and begin a definitive peace process, the US-China trade war, Brexit negotiations, victories of the regime of Bashar al Assad supported by Russia in Syria, the ceasefire in Yemen in December, the political and economic crisis in Venezuela, and the presidential elections in Brazil won by right-wing candidate Jair Bolsonaro, in Mexico by left-wing candidate Andrés Manuel López Obrador and in Colombia by right-center candidate Iván Duque. Meanwhile in Europe, Giuseppe Conte is sworn in as new head of the Italian government and socialist Pedro Sánchez assumes power in Spain after ousting conservative Mariano Rajoy with an unparalleled move to censor, supported by the radical left and Basque and Catalan independents and nationalists.

In this context, the global economy grew 3.7% in 2018, a rate slightly below the 3.8% growth the prior year. This decreased dynamism is associated with the lower growth in China as a result of the high levels of uncertainty generated in global markets through the promotion of US protectionist policies. This was such that the Chinese government announced the adoption of tax cuts and financial measures such as increased loans to Chinese companies to stimulate higher growth. The Eurozone showed a recessive growth rate, from 2.2% in 2017 to 1.8% in 2018, due to weakened macroeconomic conditions in the primary economies of the region during the second half of the year. Specifically, growth in Germany was affected by geopolitical turbulence and the adoption of new environmental standards that affected automobile production.

The US economy showed greater dynamism, with a 2.9% growth in 2018 in comparison with 2.2% in 2017, a reduction in unemployment at historically low levels (3.9%), greater public spending and expansion of private investments.

India reached a growth rate of 7.2% in 2018, in comparison with 6.7% in 2017, thanks to the strong expansion in consumption and investment in response to reforms implemented since 2014.

2018 showed a certain degree of volatility in financial markets, due to US-China trade tensions and the change in expectations in the adjusted US Federal Reserve policy interest rate. European markets were affected by Brexit and the EU approval of Italy's public budget.

The national political sphere in 2018 was marked by several important events. After Congress again sought to impeach President Pedro Pablo Kuczynski, he resigned the presidency in March. On March 23, 2018, Congress accepted

**In 2018, our country maintained growth rates above the average for the region despite facing an exceedingly complex internal political scenario and volatile international outlook**



**The mining and hydrocarbon sector went from 3.2% growth in 2017 to a -1.3% contraction in 2018 as a result of lower gold production. Production of copper, silver and lead was lower on a national level**

president's resignation and, in accordance with the Constitution, the presidency was assumed by Martín Vizcarra, first Vice President of the Republic.

In July, media channels published audio recordings that revealed corruption in the justice system, which led to the resignation of Duberlí Rodríguez from the presidency of the Judicial Branch. President Martín Vizcarra addressed the nation on July 28 and announced four political and legal reforms to be submitted to referendum in December.

In October, the humanitarian pardon granted to Alberto Fujimori was annulled and Keiko Fujimori, leader of Fuerza Popular, was sentenced to 36 months of preventive detention for asset laundering. Regional and municipal elections were held in Peru, where Acción Popular candidate Mr. Jorge Muñoz was elected mayor of Lima and left-wing candidates triumphed in several parts of the country. In November, Congress approved the final report of the Lava Jato commission. Also in November, ex-President Alan García was ordered to remain in the country for 18 months for alleged crimes of collusion and asset laundering. The ex-President requested political asylum from the government of Uruguay, which was rejected days later. In December, the Supreme Court elected José Luis Lecaros as President of the Judicial Branch. Meanwhile the fiscal team and the ad hoc attorney's office culminated the negotiation of a plea bargain with Odebrecht, the company under investigation by the Lava Jato case, wherein the company agreed to provide proof to the Prosecutors' office and to pay the State for civil damages in the amount of 610 million Peruvian soles over 15 years.

By national referendum, the government approved the reform of the structure and duties of the National Justice Committee (Junta Nacional de Justicia), the no re-election of congresspeople, and the regulation of political party financing, while also rejecting the reform of a bicameral Congress. President Martín Vizcarra promoted the rejection of this last reform as this proposal was altered by Congress to include restrictions.

On December 31, 2018, national prosecutor Pedro Chávarry announced the removal of prosecutors Rafael Vela and José Domingo Pérez from the Lava Jato case. In light of this situation, President Vizcarra indicated that he would present a bill to Congress to declare the Public Ministry in a state of emergency. Finally, under pressure from all branches, national prosecutor Pedro Chavarry resigned from his position on January 8, 2019, and the special prosecutors assigned to the Lava Jato case were reinstated.

Despite this political situation in Peru, in 2018 the GDP showed a 4.0% expansion, an acceleration over the 2.5% growth rate from 2017. The increased growth is associated with greater dynamism in domestic demand, particularly

private consumption thanks to the recovery of the consumer confidence indexes and the accelerated growth of formal employment. Along these lines, investment also showed greater dynamism. Private investment went from 0.2% growth in 2017 to 4.4% growth in 2018 and public investment went from a 2.3% drop in 2017 to an 8.4% growth in 2018. In consequence, private investment went from representing 17.3% of the GDP in 2017 to representing 17.6% of the GDP in 2018, while public investment grew from 4.5% of the GDP in 2017 to 4.8% of the GDP in 2018.

Disaggregated by sector, the fishing sector grew 39.7%, thanks to greater extraction of anchovies (6.1 million MT), the highest level in the past seven years. Non-primary sectors grew 4.2%, greater than the 2.3% expansion in 2017, due to the greater dynamism in construction and manufacturing.

The mining and hydrocarbon sector went from 3.2% growth in 2017 to a -1.3% contraction in 2018 as a result of lower gold production. Production of copper, silver and lead was lower on a national level.

The current balance of payments had a deficit of -1.5% of the GDP, greater than the -1.2% deficit seen in 2017, however higher prices for raw materials, especially copper, gold and zinc enabled an increase in the balance of trade from USD 6,571 million in 2017 to USD 7,049 million in 2018. Because of the higher deficit, the Peruvian Sol depreciated 4.17%, closing 2018 at 3.37 PEN/USD. National inflation ended the year at 2.5%, within the target range of Peru's Central Bank (between 1.0% and 3.0%).

Metal prices during the early months of 2018 maintained the upward trend of the final months of 2017, both for precious metals and for base metals, which gave stability to the mining industry in general. Zinc prices reached 3,606 USD/MT in February 2018, reaching its historic high since July 2007. Lead followed suit, reaching a peak of 2,589 USD/MT. However, positive expectations were reverted both due to the uncertainty generated by the US-China trade war and the arrival of new productions on the supply end. In terms of precious metals, the US Federal Reserve continued its policy referential interest rate increase to normalize its monetary policy to the detriment of precious metal prices. Gold prices reached their lowest level in September 2018 at 1,198 USD/oz, breaking the 1,200 USD/oz barrier; followed by silver, which decreased to 14.26 USD/oz the same month.

The price of zinc decreased by 24.1% from 3,309 USD/MT at the end of 2017 to 2,511 USD/MT at the close of 2018. The price of lead decreased by -19.5% from 2,495 USD/MT at year-end 2017 to 2,009 USD/MT at the close of 2018, while copper saw a 16.7% decrease to 5,965 USD/MT, silver dropped 8.3% to 15.47 USD/oz and gold decreased by 1.1% to 1,280 USD/oz.

**Metal prices during the early months of 2018 maintained the upward trend that were reverted both due to the uncertainty generated by the US-China trade war and the arrival of new productions on the supply end**

As can be seen through our annual monitoring, according to the Fraser Institute's annual survey for 2018, this time Peru rose five positions in the ranking of attractiveness for mining investment, at 14 out of 83 jurisdictions evaluated. However, this annual ranking evaluates two factors: geological potential and political perception. In geological potential, Peru was ranked 8th, six positions above 2017. However, in terms of the perception of public policy and practices related to the sector, Peru was ranked a distant 43rd, an improvement of six positions, although we continue to be outranked by Botswana, Namibia and Chile, among others. Notably, our neighboring country Chile was ranked 6th, primarily due to better political perception and stability in the country, considering that in geological potential, this year it ranked 9th, one place below Peru. We need to place greater emphasis on promoting government policies to take advantage of Peru's mining potential, facilitate investment, and guarantee the start-up of important projects that continue to be stalled, including Tía María, Cuajone, Quellaveco, Conga, Río Blanco, Galeno, Michiquillay, and La Granja. Unfortunately, we must mention the case of Minera Las Bambas, permanently affected by social conflict and extremist leftist political interference which have gone so far as to halt operations.

Currently the mining sector represents 9% of the GDP and over 59% of total exports, which demands public policies that are stricter in the defense and promotion of this sector.

As we said years ago, it is our responsibility to stimulate the country's development, since opportunities don't come about every day, and we must remember that we have to compete around the world to attract new investments that ultimately go to countries offering the best conditions. We have observed that neighboring countries without a tradition of mining such as Ecuador, Colombia and Argentina are beginning to position themselves better to attract investors who will take advantage of their mining potential.

It is also important to reiterate that excessive pressure in terms of taxes and labor, environmental, and social issues has limited opportunities for developing the major potential of the country's mining industry. This, in addition to the damage caused by the Law of Prior Consultation and inefficient use of mining royalties, which should be distributed more efficiently in line with the needs of each region, has resulted in social conflicts that have yet to be resolved. The result is delayed private investment and higher costs faced by local mining companies. The executive branch has continued to attempt to carry out a series of reforms to reduce the excessive bureaucratic procedures that are currently required of the mining sector for exploration and project start-up, but with results that are yet to be seen.

**CURRENTLY THE MINING SECTOR REPRESENTS 9% OF THE GDP AND OVER 59% OF TOTAL EXPORTS, WHICH DEMANDS PUBLIC POLICIES THAT ARE STRICTER IN THE DEFENSE AND PROMOTION OF THIS SECTOR**



### In 2018 production reached



Zinc  
**241,000 FMT**

Silver  
**17 millions of ounces**

Lead  
**47,000 FMT**

In 2018, Volcan production reached 241,000 FMT of zinc, 17.0 million ounces of silver and 47,000 FMT of lead. These represent decreases of 5.5%, 1.7% and 7.9% respectively, compared to 2017. This is primarily explained by the stoppage of operations in the Chungar units for over three weeks and Yauli for two weeks to ensure compliance with the Company's high safety standards.

It is important to mention that the Company continues to focus on cost control and reduction in all operating units. The Company has identified specific opportunities for improvement related to the mine, supports, maintenance, transportation and administrative units, and these will be implemented in the coming months. As a result, unit cost in 2018 was 46.60 USD/MT, 2.6% less than the 47.90 USD/MT seen in 2017.

Investment in our operating units increased 2% from USD 172 million in 2017 to USD 175 million in 2018, mainly in local exploration and development. Meanwhile, investment in regional exploration was down 76.6%, from USD 14.8 million in 2017 to USD 3.5 million in 2018 and investment in the energy business rose 18.4% compared to the previous year, from USD 3.2 million in 2017 to USD 3 million in 2018. In total, Volcan invested USD 185 million in 2018, 4.2% less than the USD 193 million invested in 2017.

In 2018, net sales totaled USD 775 million, 9.5% lower than the USD 857 million in net sales in 2017. The Company's gross margin decreased from 34% in 2017 to 31% in 2018, as a result of the sales adjustments and negative final settlements due to the downward trend in metal prices, which were partially offset by the lower production cost and absence of third-party concentrate sales that generates a lower margin. EBITDA rose to USD 289 million, compared to USD 343 million in 2017, while net profits were USD 29 million.

Volcan holds 367,000 hectares of mining concessions for development of exploration activities and mining projects. An estimate of total reserves at Volcan was made using best industry practices and international standards established in the JORC CODE and also adapted to guidelines established by the technical area of Glencore (Glencore Technical Services). The estimation methodology for resources and reserves applied in this period shows some difference with those made previously. The resources listed also include resources that give rise to reserves. This reporting method differs from the method used in previous estimates, which did not include resources that gave rise to reserves.

In terms of mine development strategy, in 2018 Volcan concentrated its efforts on exploration at its current operations, with the aim of developing the value chain in mineral resources. For example, the diamond drilling program consisted of nearly 200,000 meters, primarily at the Yauli and Chungar units.

Volcan carried out exploration in three advanced projects: Romina, Carhuacayán, and Palma, as well as two projects in the initial stage: Zoraida and Shuco. In all, 54,211 meters of diamond-drilled boreholes were completed. At Romina, significant mineralization has been defined in the Puagjanca body with a significant zinc, lead and silver content. At Carhuacayán, significant mineralization has been defined in the La Tapada body with zinc, lead and silver. Both projects, Romina and Carhuacayán, will produce ore to be treated in the Alpamara plant, estimated to begin production in 2020. At Palma, a greenfield project, a significant mineralization of zinc, lead and silver has been defined, sufficient to begin a mining project separate from the other units. The pre-feasibility stage will be carried out in 2019, leaving a massive geological potential yet to be discovered.

In terms of the corporate safety policy, in 2018, the Company made improvements to the SSOMAC<sup>1</sup> Management System through the implementation of new safety tools such as the implementation of the SafeWork Program, proposed by Glencore. When Glencore merged with Volcan's SSOMAC system, it renewed and strengthened its thematic tools.

Even though we reduced the number of disabling accidents by 10% over 2017, we are deeply sorry to report an accident with a fatal outcome. Investigations were carried out to determine the causes of the incident and corrective measures were taken with an emphasis on supervision, training, and evaluation to strengthen oversight.

As of the close of 2018, Volcan's energy business consists of 13 hydroelectric plants, 350 km of transmission lines and 26 electrical substations. Energy generation in 2018 was 308 GWh, reflecting a 13% reduction over the prior year, explained by the lower production in the Chungar hydroelectric plants due to a lower availability of resources in water basins; and because the Rucuy hydroelectric plant was not in operation in 2018.

On the other hand, Company energy consumption rose to 712 GWh, with average power demand of 94 MW, up 1% over the previous year. This slight increase was primarily caused by greater vegetative demand from mining operations. Energy generation represented 43% of total energy consumption.

The Rucuy hydroelectric plant suffered damages to the penstock in March 2017, due to overflowing rivers and landslides, caused by the coastal El Niño phenomenon. This plant, with 20 MW, (120 GWh-year) began business operations in August 2016. Damages were promptly reported to the insurer to request recognition of the damages and lost profit. In 2018, repairs were made to the damaged penstock, which no longer crosses over the hillslope but rather through it with a raise borer. This new design minimizes the future risk

**Volcan carried out exploration in three advanced projects: Romina, Carhuacayán, and Palma, as well as two projects in the initial stage: Zoraida and Shuco**

<sup>1</sup> SSOMAC: Occupational Safety and Health, Environment and Quality Policy)



**In 2018 the Company invested USD 5 million in agreements with 60 communities in their area of influence. In addition, different Volcan units provided work to 17 community enterprises with total billing around USD 3.4 million per month**

of rockslide. The Company estimates that the hydroelectric plant will restart operations during the second half of 2019.

With respect to Volcan corporate social responsibility and care for its surroundings, the Company seeks to engage in dialog and strengthen its relations with community leaders, key authorities and social organizations to generate a positive impact on the development of the communities within its direct sphere of influence. Toward that end, in 2018 the Company invested USD 5 million in agreements with 60 communities in their area of influence. In addition, different Volcan units provided work to 17 community enterprises with total billing around USD 3.4 million per month for civil works, mining operations, and hauling services, among others. Through the Public Works and Tax Credit Program, the Company, at 2018 year-end, finalized the New Chancay Food Market Project, with more than 650 stands and a PEN 22 million investment. This is a very important project for the city of Chancay and will benefit 85,000 people.

In January 2019, in Davos (Switzerland), the Company signed agreements with the Chinese company Cosco Shipping Ports Limited (CSPL) for the development of the Chancay port, located 80 km north of Lima, through which, once operations are closed, this company will be incorporated as 60% shareholder of Terminales Portuarios Chancay (TPCH). Volcan will maintain 40% shares in TPCH.

CSPL is a subsidiary of Chinese company Cosco Shipping Corporation Ltd., the largest transnational company in the world in the integrated port, shipping and wood chip business, with USD 120 billion in assets. It holds first place globally in container management, with 104 million TEUs per year, and more than 60 ports operating in Asia, America, Europe and the Middle East. This group also owns the Company COSCO SHIPPING LINE, the largest shipping company in the world, with 1,285 vessels, forming the Ocean Alliance together with Evergreen, CMA-CMG and OOCL shipping companies.

The first stage of construction of the Chancay port, with an estimated investment of USD 1.3 billion includes the entrance complex, the underground viaduct tunnel and port operating zone, which also includes the container terminal with two docks and the bulk loading, general loading and mobile loading terminal with two more docks. This amount includes the contribution already made by Volcan and the CSPL contribution of USD 225 million for 60% of shares. The rest of the investment will be financed by debt.

The development of the Chancay port represents a major opportunity for economic development in Peru through a new network of connectivity made up of maritime and terrestrial economic trade routes between China and the rest of the world. The exceptional characteristics of the Chancay port will enable this to become the integrated port and logistical hub in the Pacific region in the medium term.

It is worthy of mention that during 2018, our company began a technological and mine practice integration process as a first year of joint venture with our main partner Glencore A.G., establishing the foundations for a lower cost mining operation with higher safety standards, environmental protection and sustainability policies and social responsibility.

Finally, I would like to take this opportunity, on behalf of our Board of Directors, to thank all of our employees, executives and partners for their hard work, dedication, and commitment to the Company's objectives. It's also important to mention that we now have a history of seven decades of investment in mining development in our country's central highlands, with a commitment to sustainable growth in harmony with surrounding communities and the environment. This hasn't been an easy undertaking, however. There have been numerous challenges, and thanks to the hard work of our founders and those who have enabled the Company to continue to grow—workers, engineers, executives and directors—we have successfully overcome them.

Finally, I would like to thank you, our shareholders, for your confidence, support and interest in Volcan's activities.

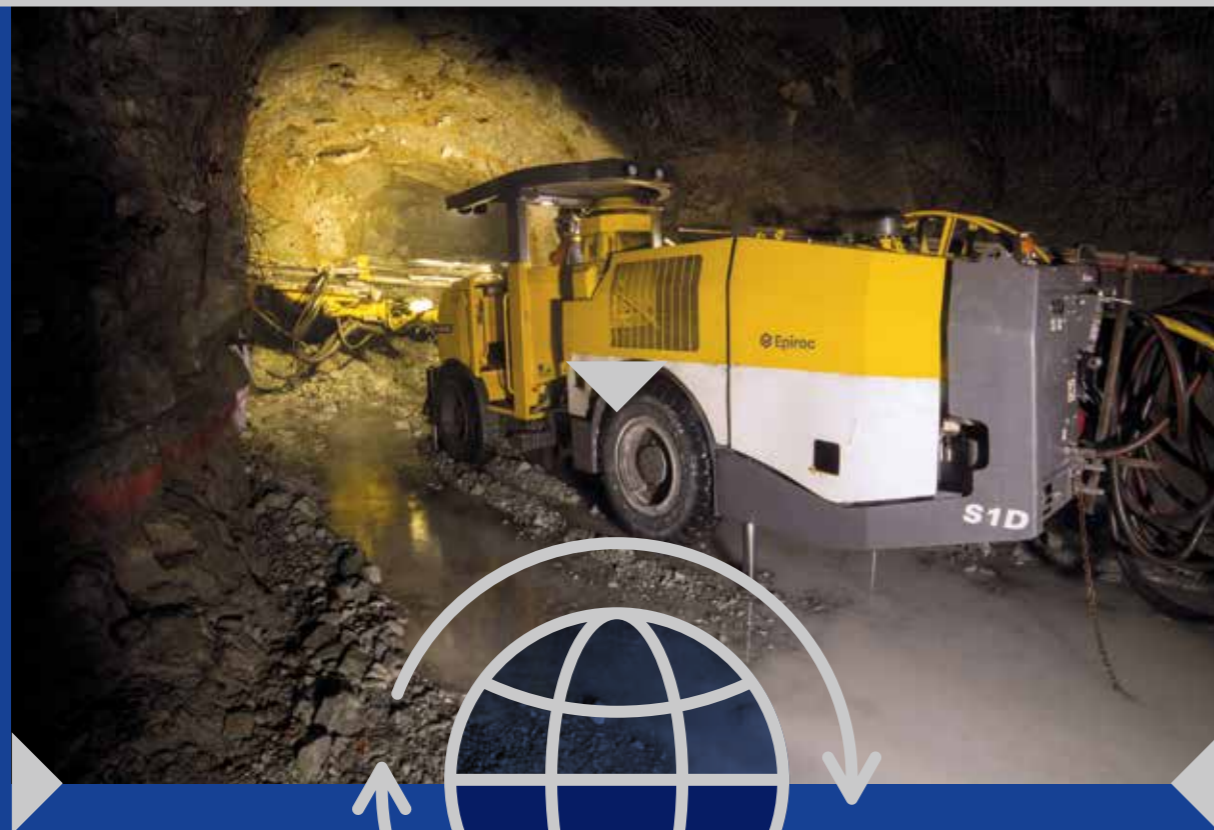


**José Picasso Salinas**  
Chairman of the Board

**The development of the Chancay port represents a major opportunity for economic development in Peru through a new network of connectivity made up of maritime and terrestrial economic trade routes between China and the rest of the world**

# 02.

## MACROECONOMIC ENVIRONMENT



### ▼ INTERNATIONAL OUTLOOK

In 2018, the global economy grew 3.7%, a rate slightly below the 3.8% growth the prior year. The lower dynamism is associated with the lower growth in China, whose GDP expansion rate went from 6.8% in 2017 to 6.6% in 2018, the lowest since 1990, as a result of the high level of uncertainty generated in global markets by the promotion of US protectionist policies, which has been reflected in the setback in the global manufacturing indicator. It was in this context that the Chinese government announced the adoption of tax cuts and financial measures such as increased loans to Chinese companies to stimulate higher growth. Along these lines, the Eurozone showed a recessive growth rate, from 2.2% in 2017 to 1.8% in 2018, due to weakened macroeconomic conditions in the primary economies of the region during the second half of the year. Specifically, growth in Germany was affected by geopolitical turbulence and the adoption of new environmental standards that affected automobile production.

The US economy showed greater dynamism, showing a 2.9% growth in 2018 in comparison with 2.2% in 2017, in a scenario of reduction in unemployment at historically low levels (3.9%), greater public spending and expansion of private investments. India reached a growth rate of 7.2% in 2018, in comparison with 6.7% in 2017, thanks to the strong expansion in consumption and investment in response to reforms implemented since 2014.



**In 2018, the global economy grew 3.7%, a rate slightly below the 3.8% growth the prior year**

2018 showed a certain degree of volatility in financial markets, accentuated during the last quarter of the year with the agent's increased aversion to risk due to US-China trade tensions and the change in expectations in the adjusted US Federal Reserve policy interest rate in a scenario with greater employment and economic growth. European markets were affected by the uncertainty generated by the possible exit of the United Kingdom from the European Union (Brexit) and the EU approval of Italy's public budget.

As a result of this increased uncertainty, the US dollar appreciated in relation to the main global currencies. Along these lines, most stock markets registered losses.\*

**Private investment went from 0.2% growth in 2017 to 4.4% growth in 2018 and public investment went from a 2.3% drop in 2017 to an 8.4% growth in 2018**

#### ▼ PERUVIAN ECONOMY

In 2018, the Peruvian GDP showed a 4.0% expansion, an acceleration over the 2.5% growth rate from 2017. The increased growth is associated with greater dynamism in domestic demand, particularly in private consumption thanks to the recovery of the consumer confidence indexes, the accelerated growth of formal employment and reduction in unemployment rates. Along these lines, investment also showed greater dynamism. Private investment went from 0.2% growth in 2017 to 4.4% growth in 2018 and public investment went from a 2.3% drop in 2017 to an 8.4% growth in 2018. In consequence, private investment went from representing 17.3% of the GDP in 2017 to representing 17.6% of the GDP in 2018, while public investment grew from 4.5% of the GDP in 2017 to 4.8% of the GDP in 2018.

In real terms, exports of goods and services grew 2.5% in 2018, lower than the 7.8% growth the previous year, due to lower exported volumes of traditional products like minerals, petroleum and natural gas. This was partially offset by greater dynamism in non-traditional exports, whose volumes went from 7.2% growth in 2017 to 10.8% growth in 2018. In nominal terms, exports of goods and services went from USD 52.7 million in 2017 to USD 56.3 million in 2018, an annual growth of 6.9%.

Specifically the mining and hydrocarbon sector went from 3.2% growth in 2017 to 1.3% contraction in 2018, as a result of the lower production of gold, particularly in the Barrick mines Lagunas Norte and Pierina, Poderosa, La Arena, Gold Fields, La Zanja and Orcopampa. Production of copper, silver and lead was lower on a national level. The fishing sector grew 39.7%, thanks to greater extraction of anchovies (6.1 million MT), the highest level in the past seven years. Non-primary sectors grew 4.2%, greater than the 2.3% expansion in 2017, due to the greater dynamism in construction and manufacturing.

#### Domestic Production of Principal Metals

	2017	2018	VAR %
Zinc (thousands of FMT)	1,473	<b>1,475</b>	0.1
Lead (thousands of FMT)	307	<b>289</b>	-5.7
Copper (thousands of FMT)	2,446	<b>2,437</b>	-0.4
Silver (thousands of Oz)	142	<b>134</b>	-5.8
Gold (thousands of Oz)	4,886	<b>4,586</b>	-6.1

Source: Ministry of Energy and Mines

Peru's current balance of payments had a deficit of 1.5% of GDP, greater than the 1.2% deficit seen in 2017. Higher prices for raw materials for export, especially copper, gold and zinc, enabled an increase in the balance of trade from USD 6.571 billion in 2017 to USD 7.049 billion in 2018, partially offset by the higher price of our imports (primarily petroleum and wheat) and the higher volume of imports in line with the greater dynamism of internal demand. This was offset by the higher deficit in the balance of services due to lower revenue from financial services. Because of the higher deficit, the Peruvian Sol depreciated 4.17%, closing 2018 at 3.37 PEN/USD.

Inflation in Peru ended the year at 2.5%, and inflation in Metropolitan Lima ended the year at 2.2%, both within the target range of Peru's Central Bank (between 1.0% and 3.0%).

#### ▼ METAL PRICES

The first half of the year maintained the upward trend in prices of the final months of 2017, both for precious metals and for base metals, which gave stability to the mining industry in general.

#### Evolution of Average Metals Prices

	2012	2013	2014	2015	2016	2017	2018
Zinc (USD/MT)	1,948	1,910	2,162	1,933	2,091	2,894	<b>2,925</b>
Lead (USD/MT)	2,062	2,142	2,096	1,786	1,871	2,318	<b>2,244</b>
Copper (USD/MT)	7,949	7,326	6,860	5,502	4,863	6,163	<b>6,525</b>
Silver (USD/oz)	31.2	23.9	19.1	15.7	17.1	17.1	<b>15.7</b>

**Higher prices for raw materials for export, especially copper, gold and zinc, enabled an increase in the balance of trade from USD 6.571 billion in 2017 to USD 7.049 billion in 2018**

\* Developed economies: S&P 500 - United States (-6.2%); Nikkei 225 - Japan (-12.1%); DAX - Germany (-18.3%); CAC 40 - France (-11.0%); FTSE 100 - U.K. (-12.5%) and IBEX 35 - Spain (-15.0%). Emerging economies: IPSA - Chile (-10.6%); SP/BVL Peru General - Peru (-3.1%); BOVESPA - Brazil (+15.0%); COLCAP - Colombia (-12.4%).

Zinc prices reached 3,606 USD/MT in February this year, reaching its historic high since July 2007

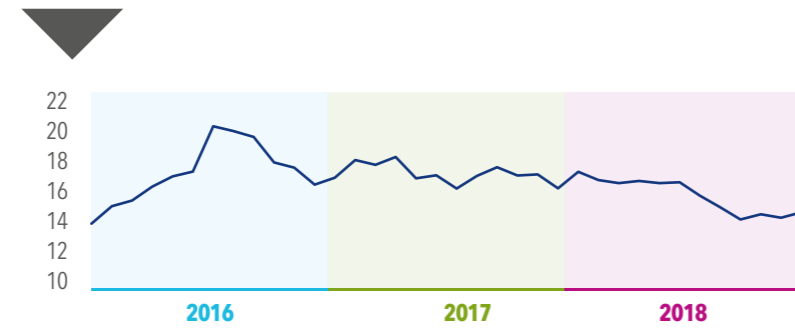
Zinc prices reached 3,606 USD/MT in February this year, reaching its historic high since July 2007. Lead followed suit, reaching a peak of 2,589 USD/MT. However, positive expectations were reverted due to both the uncertainty generated by the US-China trade war and the arrival of new productions on the supply end.

Zinc Price (USD/FMT)



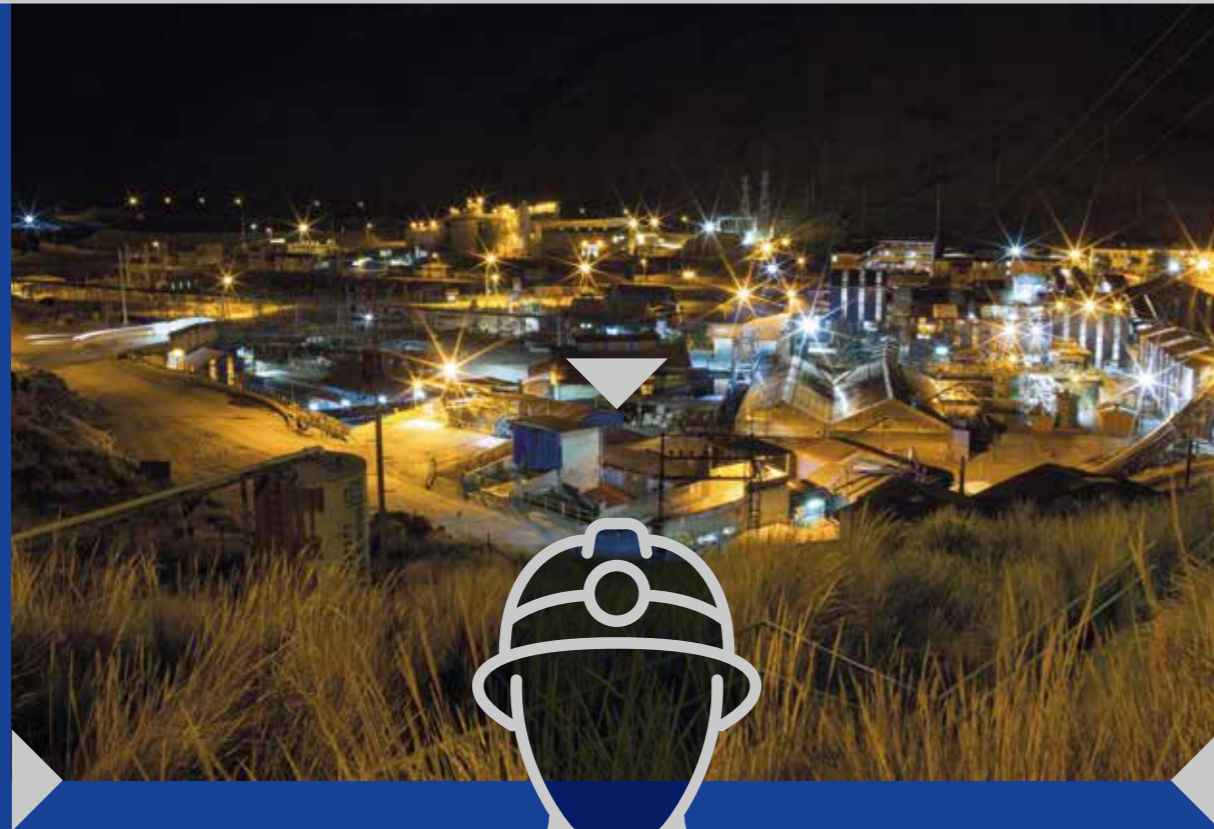
In terms of precious metals, the US Federal Reserve continued its policy referential interest rate increase to normalize its monetary policy to the detriment of precious metal prices. Gold prices reached their lowest level in September 2018 at 1,198 USD/oz, breaking the 1,200 USD/oz barrier; followed by silver, which decreased to 14.26 USD/oz the same month.

Silver Price (USD/oz)



# 03.

## OUR COMPANY



### ▼ HISTORY

The Company started mining operations in 1943 in the upper Ticlio pass. Through the continuous hard work and dedication of its directors and employees, Volcan has become one of the leading producers of silver, zinc and lead in Peru and the world.

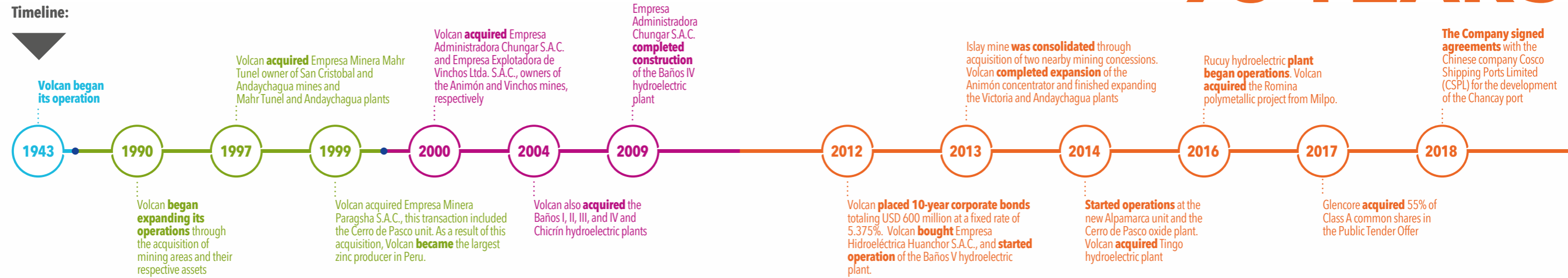
Initially, Volcan operations were limited to the Carahuacra and Ticlio mines, a group of 30 mining concessions. The ore extracted was sold to the Mahr Túnel concentrator plant, owned at the time by U.S. investment company Cerro de Pasco Copper Corporation, which was expropriated by the military government in the early 1970s.

In the 1990s, in the context of economic reforms implemented by the government and aimed at stimulating private investment in public companies, Volcan began expanding its operations through the acquisition of mining areas and their respective assets. The vision of the Board of Directors and the leadership of Dr. Roberto Letts were fundamental to the Company's growth.

Through an international public auction in 1997, Volcan Compañía Minera S.A. acquired the Mahr Túnel, San Cristóbal and Andaychagua mining operations and the Mahr Túnel and Andaychagua plants by purchasing Empresa Minera Mahr Túnel S.A., which then belonged to Centromin Perú. The acquisition was valued at USD 128 million plus an investment commitment of USD 60 million. One year later, Empresa Minera Mahr Túnel S.A. merged with Volcan Compañía Minera S.A. and the resulting company was named Volcan Compañía Minera S.A.A.

# 75 YEARS

## Timeline:



Subsequently, in 1999 Volcan acquired Empresa Minera Paragsha S.A.C. from Centromin Perú for USD 62 million plus an investment commitment of USD 70 million. In addition, Volcan agreed to take on USD 20 million of Centromin's financial debt. This transaction included the Cerro de Pasco UEA. As a result of this acquisition, Volcan became the largest zinc producer in Peru.

In 2000, Volcan acquired Empresa Administradora Chungar S.A.C. and Empresa Explotadora de Vinchos Ltda. S.A.C., owners of the Animón and Vinchos mines, respectively, in transactions with a total value of USD 20 million in cash and USD 16 million in Volcan Class B shares. This acquisition included the Françoise and San José II hydroelectric plants, with total generation capacity of 2.2 MW. Operations began at the Vinchos silver mine in 2004. Volcan also acquired the Baños I, II, III, and IV and Chicrín hydroelectric plants, with a combined capacity of 7.5 MW.

In 2006, Volcan acquired Minera Santa Clara and Llacsacocha S.A., owner of the Zoraida Mine. One year later, Volcan bought Compañía Minera El Pilar, owner of El Pilar Mine, adjacent to Cerro de Pasco Mine and pit.



In 2009, Empresa Administradora Chungar S.A.C. completed construction of the Baños IV hydroelectric plant, giving Volcan a total of 13 MW of installed capacity.

Then, in 2010 Volcan acquired Compañía Minera San Sebastián, whose mining concessions are also located near Cerro de Pasco.

In January 2011, the Company approved a simple reorganization of the Cerro de Pasco UEA. As a result, that unit was renamed Empresa Administradora Cerro S.A.C. and it became a subsidiary of Volcan Compañía Minera S.A.A. The goal of the reorganization was to enable each mine unit to be managed independently.

In January 2012, as part of an international bond issue under Rule 144A and Regulation S of the United States Securities Act of 1933, Volcan placed 10-year corporate bonds totaling USD 600 million at a fixed rate of 5.375%. This bond issue provided financing for the oxide plant growth projects at Cerro de Pasco and the new Alpamarca operating unit.

Later, in February 2012, Volcan bought Empresa Hidroeléctrica Huanchor S.A.C., with a capacity of 19.6 MW, from Sociedad Minera Corona S.A. for USD 47 million. Also that year, Empresa Administradora Chungar S.A.C. completed construction and started operation of the Baños V hydroelectric plant. The 9.2-MW plant required a total investment of USD 24 million.

In 2013, the Islay mine was consolidated into the Chungar operating unit through acquisition of two nearby mining concessions—Islay and Islay 4—for USD 17 million. Early that year the Company completed expansion of the Animón concentrator plant from 4,200 to 5,200 tpd (tons per day). Also in 2013, the Company finished expanding the Victoria and Andaychagua plants in the Yauli UEA, increasing capacity to 10,500 tpd.

In 2014, Volcan continued expanding the treatment capacity of Yauli UEA plants to reach 10,800 tpd. Also, operations began in the Jacob Timmers shaft (Chungar UEA), with a nominal capacity of 4,000 tpd.

In July 2014, Volcan acquired the 1.25-MW Tingo hydroelectric plant and 82 km of 22.9-kV and 50-kV transmission lines, for a total of USD 13.5 million. The Company plans to expand this plant to approximately 15 MW and connect it to the Alpamarca and Chungar UEAs.

In 2014, the company started operations at the new Alpamarca unit and the Cerro de Pasco oxide plant, which reached full capacity in June 2015. Investment in those projects totaled USD 280 million.

In 2015, the following company reorganizations were undertaken: the merger through which Chungar absorbed the assets of El Pilar, Huascarán, Santa Clara,

Shalca, and Troy, which took effect on September 1, 2015; the splitting from Empresa Administradora Cerro S.A.C. of a block of equity composed of assets and liabilities related to the oxide plant, which took effect on October 1, 2015; and the merger in which Compañía Minera Alparmarca S.A.C. absorbed Empresa Administradora Chungar S.A.C., which took effect on January 1, 2016. Finally, this company changed its business name to Compañía Minera Chungar S.A.C.

It is important to note that in August 2016 the Rucuy 20-MW hydroelectric plant (120 GWh/year) began operations. The total investment in this unit was USD 50 million. With this latest addition, the Company now has 13 hydroelectric plants in operation with a total capacity of 63 MW.

Also in 2016, Volcan acquired the Romina polymetallic project from Milpo. From 2008 to 2012, more than 13,000 meters of diamond drilling was carried out at the deposit. This project will provide operational continuity to the Alparmarca unit.

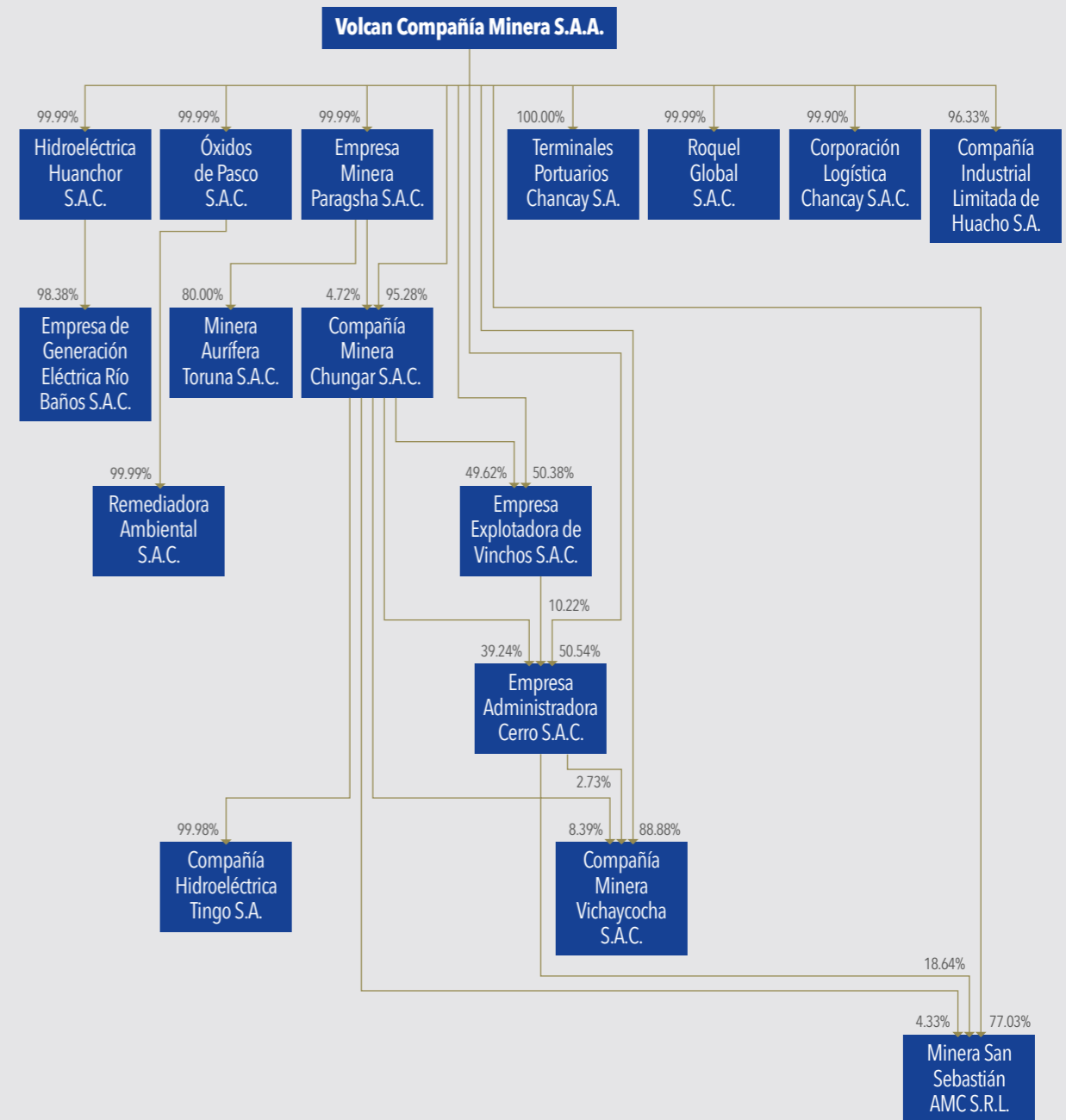
In November 2017, Glencore International AG carried out a public tender offer to acquire class A common shares, eventually purchasing a total of 603,077,387 shares. As of the launch date of the public offer, Glencore International AG and its affiliated companies already held 295,754,888 shares. The share acquisition brought the total number of class A shares it holds to 898,832,275, or 55.028% of class A shares and 23.29% of total company equity (considering the class A shares and class B shares that the Company has in its portfolio).

Through the Public Works and Tax Credit Program, the Company, at 2018 year end, finalized the New Chancay Food Market Project, with more than 650 stands and a PEN 22 million investment. This is a very important project for the city of Chancay and will benefit 85,000 people.

In January 2019, in Davos (Switzerland), the Company signed agreements with the Chinese company Cosco Shipping Ports Limited (CSPL) for the development of the Chancay port, located 80 km north of Lima, through which, once operations are closed, this company will be incorporated as 60% shareholder of Terminales Portuarios Chancay (TPCH). Volcan will maintain the remaining 40% shares in TPCH.

As a result, Volcan celebrates 75 years in operation since its founding and has more than 367,000 hectares of mining concessions, 12 mines, seven concentrator plants and a lixiviation plant, and is a truly diversified, international leader in zinc, lead, and silver production.

▼ CORPORATE STRUCTURE 2018

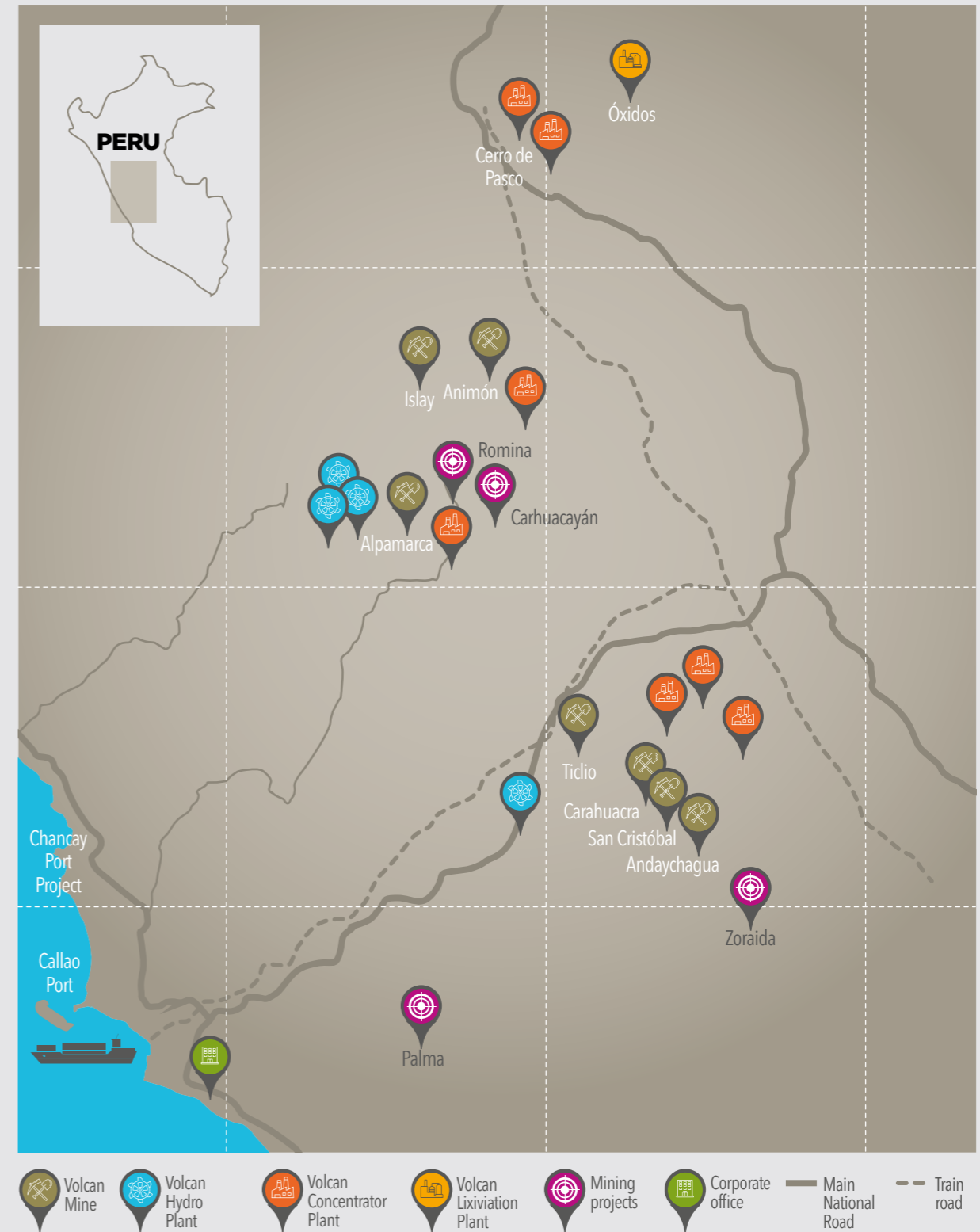




▼ BUSINESS GROUP AND CORPORATE PURPOSE

COMPANY NAME	COMPANY ID	CORPORATE PURPOSE
Volcan Compañía Minera S.A.A.	20383045267	Mining of other non-ferrous metal ores
Compañía Minera Chungar S.A.C.	20514608041	Production of other mines and quarries
Empresa Administradora Cerro S.A.C.	20538848060	Mining of other non-ferrous metal ores
Óxidos de Pasco S.A.C.	20600715187	Smelting of non-ferrous metals
Empresa Exploradora de Vinchos Ltda. S.A.C.	20100539439	Mining of other non-ferrous metal ores
Empresa Minera Paragsha S.A.C.	20347644502	Mining of other non-ferrous metal ores
Minera Aurífera Toruna S.A.C.	20510318227	Production of other mines and quarries
Minera San Sebastián AMC S.R.L	20447348421	Production of other mines and quarries
Compañía Industrial Limitada de Huacho S.A.	20102200170	Real estate activities
Compañía Minera Vichaycocha S.A.C	20504972241	Production of other mines and quarries
Hidroeléctrica Huanchor S.A.C.	20546236073	Electric power generation, transmission and distribution
Empresa de Generación Eléctrica Río Baños S.A.C.	20537761670	Electric power generation, transmission and distribution
Compañía Hidroeléctrica Tingo S.A.	20521371103	Electric power generation, transmission and distribution
Terminales Portuarios Chancay S.A.C.	20543244300	Other business activities
Roquel Global S.A.C.	20602370748	Other transportation support activities
Corporación Logística Chancay S.A.C.	20602314392	Other transportation support activities
Remediadora Ambiental S.A.C.	20600655133	Other professional, scientific, technical activities

▼ LOCATION OF PRINCIPAL MINING HOLDINGS



# 04.

## BOARD OF DIRECTORS AND SENIOR MANAGEMENT



### ▼ BOARD OF DIRECTORS

Board of Directors as of December 31, 2018

NAME AND LAST NAME	POSITION
José Picasso Salinas	Chairman
José Ignacio De Romaña Letts	Vice Chairman
Christopher Eskdale	Director
Irene Letts Colmenares de De Romaña	Director
Daniel Maté Badenes	Director
Carlos Perezagua Marín	Director
Victoria Soyer Toche	Director

Professional Background of the Board of Directors:

#### **José Picasso Salinas**

Director and member of the Executive Committee since March 1996. Vice chairman of the Board of Directors; since April 2010, chairman of the Board and the Executive Committee.

Mr. Picasso is also Chairman of the Board of Reactivos Nacionales S.A., Vice Chairman of the Board of Compañía Minera Poderosa and member of the boards of Bodegas Vista Alegre, Cemento Polpaico S.A and the National Society of Mining, Petroleum and Energy. He previously served as Vice Chairman of Embotelladora Latinoamericana S.A.A. (Coca-Cola) and member of the boards of Compañía Minera Atacocha S.A., EXSA, S.A., Castrovirreyna Compañía Minera, Compañía Molinera del Perú, Compañía de Seguros La Fénix Peruana S.A., Bolsa de Valores de Lima and Acción Comunitaria.

**José Ignacio De Romaña Letts**

Director desde 1993 y vicepresidente del Directorio desde septiembre de 2014. Es miembro del Comité Ejecutivo. Trabajó en la subgerencia comercial de Compañía de Minas Buenaventura desde 1992 hasta 1999, estuvo a cargo de la gerencia comercial de Volcan entre 2000 y 2010. También se desempeñó como director de Castrovirreyna Compañía Minera S.A. y de Corporación Minera Castrovirreyna desde 2002 hasta el 2012.

Mr. De Romaña holds a business administration degree from Universidad del Pacífico.

Mr. José Ignacio De Romaña Letts is the son of the director Irene Letts Colmenares de De Romaña.

**Christopher Eskdale**

Director since March 2012. A certified public accountant, he worked at Deloitte & Touche in London and Moscow and has been with Glencore since 1996.

He holds a master's degree from Oxford University and is a public accountant certified by the Institute of Chartered Accountants in England and Wales. He is in charge of worldwide zinc marketing for Glencore.

**Irene Letts Colmenares de De Romaña**

Director since March 2012. She has also served on the boards of Ferrocarril Central Andino S.A. and Ferrovías Central Andina S.A. since 2004, on the boards of Proyectos Médicos and Clínica Montesur since 2002, and the board of Nueva Ginecología y Vida S.A.C. at Jockey Salud since 2007.

Mrs. Letts studied social work at Universidad Nacional Mayor de San Marcos and economics at Universidad de Lima.

Mrs. Irene Letts Colmenares de De Romaña is the mother of vice chairman José Ignacio De Romaña.

**Daniel Maté Badenes**

Director since March 2006. He has served as co-director of the zinc, lead, and copper divisions at Glencore International since February 2000, overseeing marketing and industrial assets, including strategy and operations. Mr. Maté has worked at Glencore since 1988, starting at the office in Madrid and later obtaining experience in metals transactions and logistics in Spain and North Africa. After three years at Glencore's Madrid office, he joined the zinc and lead department in Switzerland in August 1991. In February 2002, he transferred to the copper department, where he was responsible for zinc concentrate operations

in Spain, North Africa, and South America. He was subsequently placed in charge of worldwide zinc marketing for Glencore.

Mr. Maté is an economist and has a law degree from Universidad de Deusto in Spain.

**Carlos Perezagua Marín**

Director since November 2017. He is co-director of corporate finance and capital markets at Glencore. Since December 2013 he has also served as general director of risk at Glencore. He has been with Glencore since 2009. Prior to that, he spent 11 years in investment banking with Morgan Stanley and Citigroup, in the corporate financing and high risk bond departments in London and Madrid.

Mr. Perezagua is an economist and has a law degree from Universidad Pontificia de Comillas (ICADE) in Spain.

**Victoria Soyer Toche**

Director since November 2017. She holds a degree in business from Universidad del Pacífico and an MBA from Thunderbird School of Management.

Prior to joining the Glencore group in 2010, she spent seven years in various positions with Tyco International in the United States, most recently as finance director from 2008 until leaving the company in 2010.

Ms. Soyer is also a member of the board of directors of Textil del Valle, Perubar, and Transportadora Callao.

**▼ SENIOR MANAGEMENT**

In 2018, the following people left the Company:

- Juan Carlos Ortiz Zevallos, Chief operations officer
- José Luis Alcalá Valencia, Occupational health and safety manager
- David Brian Gleit, Investor relations manager



## Management

NAMES AND LAST NAMES	POSITION
Juan Ignacio Rosado Gómez de la Torre	Chief executive officer
Carlos Francisco Fernández Navarro	Executive vice president
Aldo de la Cruz Peceros	Vice president of operations
Jorge Leoncio Murillo Núñez	Vice president of administration and finance
Vanessa Alta de Marzi	Sales manager
Alberto Víctor Manuel Gazzo Baca	Human resources manager
Roberto Juan Servat Pereira de Sousa	Corporate social responsibility and labor relations manager
Juan Alberto Begazo Vizcarra	Audit manager
Alfonso Rebaza Gonzales	Legal counsel
Mario Eduardo de las Casas Vizquerra	Logistics manager
Álvaro Luis Cabrera Ramírez	Energy manager
José Edmundo Montoya Stahl	Chief mining development officer
Eduardo Enrique Malpartida Espinoza	Occupational health and safety manager
Juan Luis Arenas Gómez Sánchez	Industrial plant manager
Edgardo Zamora Pérez	Corporate planning manager
Carlos Manuel Garda Zapata	San Cristóbal - Carahuacra operations CEO
Francisco Grimaldo Zapata	Alpamarca operations manager
Adrián Felipe Corihuamán Mayta	San Cristóbal Mine operations manager
Reynol Renzo Fuentes Fernández	Ticlio operations manager
James Atalaya Chacón	Chungar operations manager
Julio César Beraún Sánchez	Cerro de Pasco operations manager
Percy Mamani Ureta	Chungar operations manager
César Augusto Velazco Cornelio	Geology manager
Eduardo Julio Magnasco La Torre	Maintenance and quality manager
Percy Luis Rivera López	Environmental affairs manager
Pedro Simón Navarro Neyra	Finance manager
Willy Antonio Montalvo Callirgos	Accounting and tax manager
Dayan Gustavo Segura Vandervelde	Information technology manager
Mauricio Scerpella Iturburu	Budgeting and management control manager
César Emilio Farfán Bernales	Regional explorations manager
Renzo Muenta Barzotti	Employee development manager
Ronald Martín Castillo Ángeles	Contract manager
Jorge Luis Cotrina Luna	Securities manager





Chungar Plant, Cerro de Pasco.

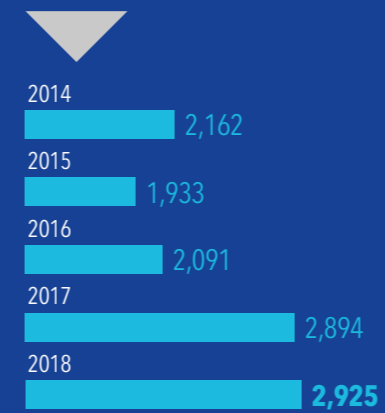
# 05.

## PRINCIPAL INDICATORS

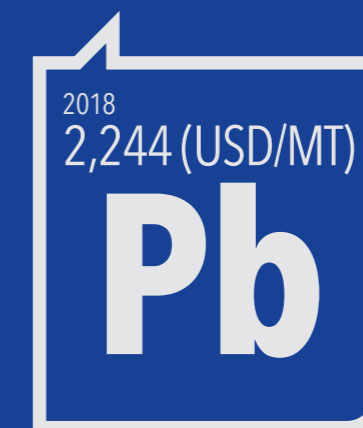
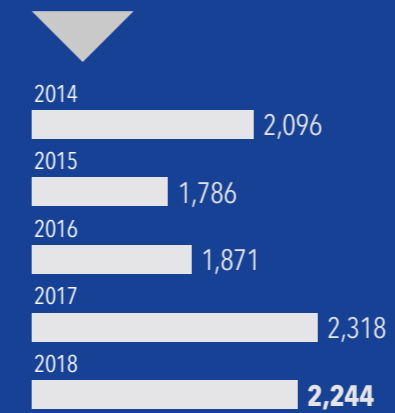


### ▼ MARKET INDICATORS

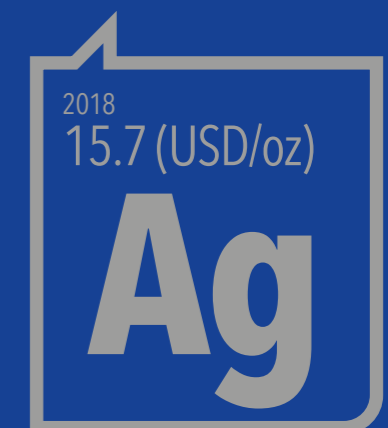
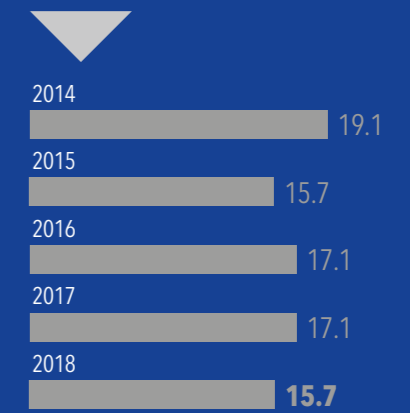
Evolution of the Average Spot Price for Zinc (USD/MT)



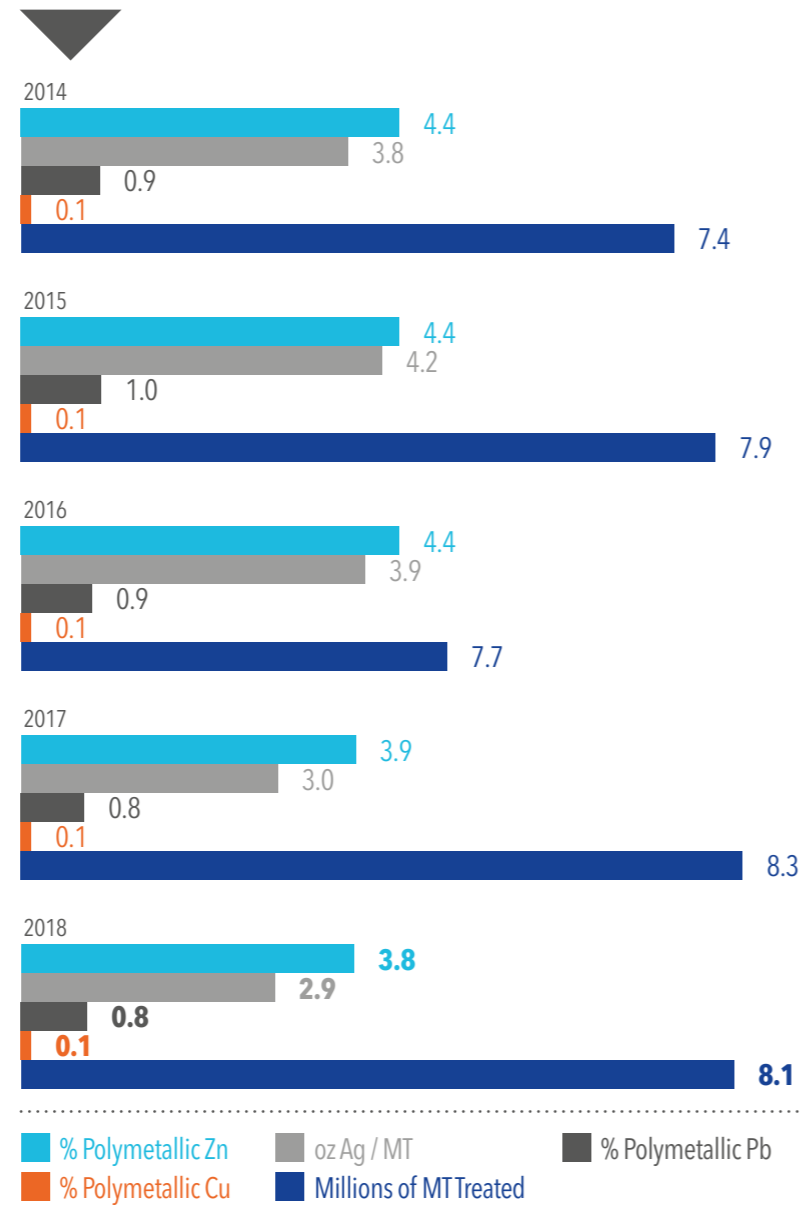
Evolution of the Average Spot Price for Lead (USD/TM)



Evolution of the Average Spot Price for Silver (USD/oz)



**Production Indicators**



**8.1 millions MT treated**

**2018 Ranking of Production in Peru - Fines**

ZINC	THOUSANDS OF MT
Compañía Minera Antamina S.A. <sup>1</sup>	475.7
<b>Volcan Compañía Minera S.A.A. and Subsidiaries</b>	<b>241.1</b>
Nexa Resources Perú S.A.A. and Subsidiaries <sup>1</sup>	214.9
Compañía de Minas Buenaventura S.A.A. <sup>2</sup>	66.9
Compañía Minera Raura S.A. <sup>1</sup>	47.3

LEAD	THOUSANDS OF MT
Nexa resources Perú S.A.A. and Subsidiaries <sup>1</sup>	49.5
<b>Volcan Compañía Minera S.A.A. and Subsidiaries</b>	<b>47.2</b>
Compañía de Minas Buenaventura S.A.A. <sup>2</sup>	42.1
Compañía Minera Raura S.A. <sup>1</sup>	19.7
Compañía Minera Corona S.A. <sup>1</sup>	13.3

SILVER	MILLIONS OF OZ
Compañía de Minas Buenaventura S.A.A. <sup>2</sup>	23.4
Compañía Minera Antamina S.A. <sup>1</sup>	17.5
<b>Volcan Compañía Minera S.A.A. and Subsidiaries</b>	<b>17.0</b>
Hochschild Perú <sup>3</sup>	16.6
Nexa Resources Perú S.A.A. and Subsidiaries <sup>1</sup>	8.9

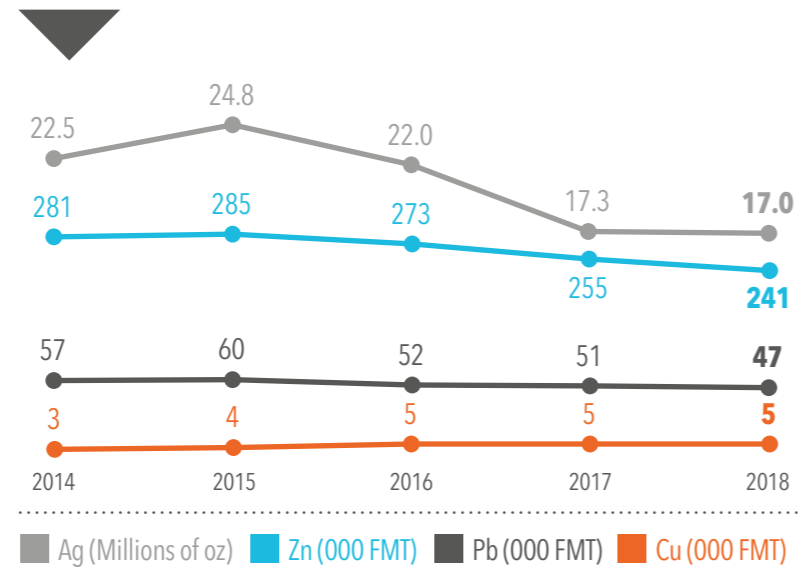
241.1 thousand of MT  
**Zn**

47.2 thousand of MT  
**Pb**

17 millions of oz  
**Ag**

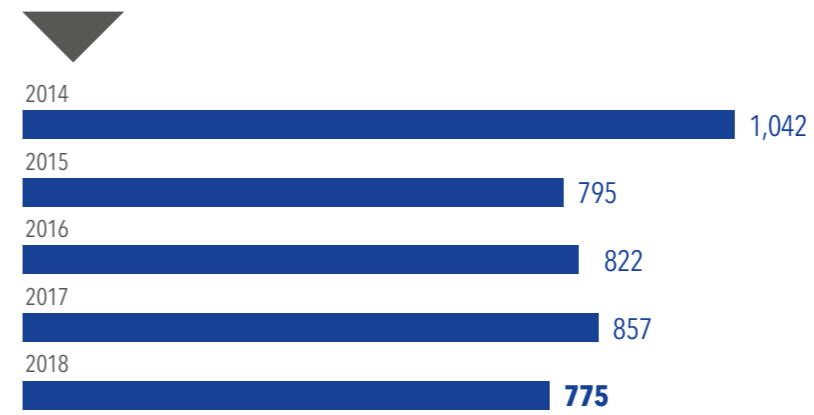
<sup>1</sup> Considers amount reported to MINEM  
<sup>2</sup> Considers amount reported to MINEM. Includes the 61.37% owned by El Brocal.  
<sup>3</sup> Total production of Hochschild is 19.7 million ounces, including its shares in San José in Argentina.  
 Source: company reports, Ministry of Energy and Mines

Evolution of Fines Production

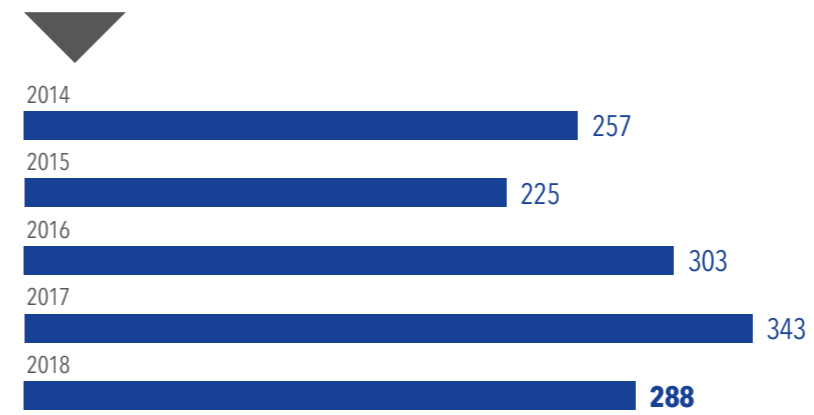


FINANCIAL INDICATORS

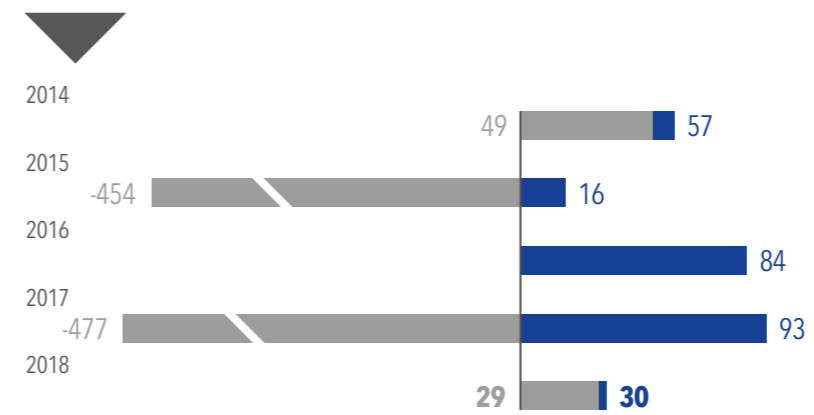
Evolution of Sales (millions of USD)



Evolution of EBITDA (millions of USD)



Evolution of Net Profit (millions of USD)



■ Net Profit before Exceptional Charges  
 ■ Net Profit after Exceptional Charges



# 06.

## ORE RESERVES AND RESOURCES



Ore reserves and resources for Volcan Compañía Minera have been estimated as of December 31, 2018 in accordance with best industry practices and the international standards of the JORC CODE.\* This estimate has been part of the official report of Glencore Zinc, which required that the estimation process be adapted to the guidelines established by the technical area of Glencore (Glencore Technical Services).

**The resources listed in this report also include resources that give rise to reserves**

The estimation methodology for resources and reserves applied in this period shows some difference with those made previously. The resources listed in this report also include resources that give rise to reserves. This reporting method differs from the method used in previous estimates, which did not include resources that gave rise to reserves.

Evolution of Metal Prices Applied to Reserve Estimates

PRICES	2010	2011	2012	2013	2014	2015	2016	2017	2018
Zinc (USD/MT)	1,800	1,800	1,800	1,900	2,200	2,200	2,300	2,450	<b>2,440</b>
Lead (USD/MT)	1,800	1,800	1,800	2,000	2,000	2,000	2,100	2,100	<b>2,030</b>
Copper (USD/MT)	5,000	6,500	6,500	6,500	6,500	6,500	5,800	6,400	<b>6,500</b>
Silver (USD/oz)	12.0	15.0	15.0	20.0	18.0	18.0	18.0	18.5	<b>16.0</b>
Gold (USD/oz)	900	1,000	1,000	1,200	1,200	1,200	1,200	1,250	<b>1,250</b>

<sup>2</sup>The Statement of Zinc Mineral Resources and Ore Reserves as of December 31, 2018, has been compiled in keeping with the Australasia Code of 2012 for the Reporting of Results of Ore Exploration, Resources, and Reserves (JORC Code). The term "ore reserves" as defined in Clause 28 of the JORC Code has the same meaning as "ore reserves" as defined by the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards when defining mineral resources and ore reserves. The declarations of Mineral Resources and Ore Reserves have been reviewed and the relevant data extracted and compiled by Aline Cote, Glencore Zinc (OGQ).

Zinc  
**2,440 USD/MT**

Lead  
**2,030 USD/MT**

Copper  
**6,500 USD/MT**

Silver  
**16 USD/oz**

Gold  
**1,250 USD/oz**

Specialized software was used in the process of defining the reserves to generate mining areas, achieving a more precise representation of the internal dilution in the volumes to be mined. This procedure obtained reserves that adapted with greater precision in tonnage and grade to expected production.

In 2018, the Company continued to develop its diamond drilling programs for exploration, definition of resources and infill drilling. The purpose of these programs is to replace and increase the Company's resources and reserves, to enable an adequate planning of production and ensure long-term stability.

Reserves and resources as of December 31, 2018 were calculated using long-term metal price annual projections for the life-of-mine of each operating unit. Average prices used were 2,440 USD/MT for zinc, 2,030 USD/MT for lead, 6,500 USD/MT for copper, 1,250 USD/oz for gold and 16 USD/oz for silver.

#### ▼ ORE RESERVES

Ore reserves are the economically extractable part of a measurable or indicated mineral resource. Reserves include the dilution of material and contingencies for losses that may occur during mining. Reserves are categorized as proven or probable depending on the degree of confidence.

This estimate was made by applying the guidelines established under best industry practices, and aligning Volcan procedures and methodologies with standards used by Glencore on a corporate level. Procedures have been aligned in the Chungar, Yauli and Alpamarca mines, and the Cerro de Pasco mine is currently in the alignment process.

Company reserves as of December 31, 2018, reduced their tonnage by 32% over the previous year. The tonnage reduction is basically due to changes at the Cerro de Pasco unit. Zn, Pb and Cu grades underwent almost no variation over the previous year, whereas the Ag grade reduced by 33%.

Reserves in the Yauli unit fell by 8% over the prior year, grades in general reduced by around 15% due to the precision obtained in the representation of the internal dilution in the volumes to be mined, with the software generation of mining areas.

Reserves at the Chungar unit fell by 20% over the previous year, due to a reduction in total resources measured and indicated, and a detailed exclusion of zones that

## SPECIALIZED SOFTWARE WAS USED IN THE PROCESS OF DEFINING THE RESERVES TO GENERATE MINING AREAS, ACHIEVING A MORE PRECISE REPRESENTATION OF THE INTERNAL DILUTION IN THE VOLUMES TO BE MINED



## Reserves per mining unit

**-8%**

Yauli

**-20%**

Chungar

**-86%**

Cerro de Pasco

**+135%**

Alpamarca

**-32%**

Total Company

are in viable for mining. Grades reduced due to the same internal dilution effect as Yauli.

Reserves at the Cerro de Pasco unit fell 86% from the previous year. Adjustment were primarily due to the reclassification of almost all reserves to the inferred resources category, which generated a reduction of 13.4 million MT, until these are confirmed with certainty. This reclassification is due to the fact that currently the Cerro de Pasco mine is in the adaptation process to Glencore procedures and standards in the resources area. When this process has finalized, reserves will be estimated. For the purposes of this report, reserves in the sulfides stockpile were reported.

An increase of 135% over the previous year was observed in the Alpamarca unit, thanks to geological infill drilling works, which raised the certainty of inferred ore to measured and indicated category, and later classified this as reserve in economic evaluation.

## Evolution of total mineral reserves- Volcan and subsidiaries (Millions of tons)

	THOUSANDS OF MT	GRADES				FINES		
		Zn %	PB %	Cu %	Ag oz/MT	Zn Thousands of MT	Pb Thousands of MT	Ag Millions of oz
2010	148,429	3.9	1.2	0.1	3.1	5,715	1,707	453
2011	135,691	3.9	1.1	0.1	3.2	5,238	1,520	438
2012	109,673	3.7	1.0	0.1	3.2	4,112	1,147	355
2013	69,417	3.9	1.0	0.1	4.0	2,728	676	276
2014	73,699	3.7	0.9	0.1	3.8	2,726	674	279
2015	76,891	3.7	0.9	0.1	3.5	2,840	701	267
2016	65,242	3.9	0.9	0.1	3.3	2,536	614	215
2017	50,296	4.1	0.9	0.2	3.6	2,039	465	179
<b>2018</b>	<b>34,300</b>	<b>4.0</b>	<b>0.9</b>	<b>0.1</b>	<b>2.4</b>	<b>1,388</b>	<b>306</b>	<b>81</b>

## Proven and probable mineral reserves per mining unit

PROVEN AND PROBABLE ORE RESERVES	MILLIONS OF MT	GRADES				FINES			
		Zn %	PB %	Cu %	Ag oz/TM	Zn Millions of MT	Pb Millions of MT	Cu Millions of MT	Ag Millions of Oz
<b>Yauli</b>	<b>21.5</b>	<b>4.5</b>	<b>0.7</b>	<b>0.1</b>	<b>2.7</b>	<b>972</b>	<b>157</b>	<b>21</b>	<b>59</b>
Proven	10.4	4.9	0.7	0.1	2.6	507	73	10	27
Probable	11.1	4.2	0.8	0.1	2.9	464	84	11	32
<b>Cerro</b>	<b>2.1</b>	<b>1.2</b>	<b>0.6</b>	<b>-</b>	<b>0.5</b>	<b>25</b>	<b>13</b>	<b>-</b>	<b>1</b>
Proven	2.1	1.2	0.6	-	0.5	25	13	-	1
<b>Chungar</b>	<b>8.3</b>	<b>4.5</b>	<b>1.5</b>	<b>0.1</b>	<b>2.2</b>	<b>371</b>	<b>121</b>	<b>10</b>	<b>18</b>
Proven	2.5	4.5	1.3	0.1	2.5	114	34	3	6
Probable	5.8	4.5	1.5	0.1	2.0	256	87	7	12
<b>Alpamarca</b>	<b>2.5</b>	<b>0.9</b>	<b>0.7</b>	<b>0.1</b>	<b>1.3</b>	<b>21</b>	<b>16</b>	<b>2</b>	<b>3</b>
Proven	0.9	0.9	0.7	0.1	1.5	8	6	1	1
Probable	1.6	0.8	0.6	0.1	1.2	13	10	2	2
Proven	15.9	4.1	0.8	0.1	2.3	655	126	14	36
Probable	18.4	4.0	1.0	0.1	2.5	733	180	21	46
<b>Total</b>	<b>34.3</b>	<b>4.0</b>	<b>0.9</b>	<b>0.1</b>	<b>2.4</b>	<b>1,388</b>	<b>306</b>	<b>35</b>	<b>81</b>



## Ore Reserves by Mining Method

	MILLIONS OF MT	GRADES			
		Zn %	PB %	Cu %	Ag Oz/MT
<b>Underground Mines</b>	<b>29.8</b>	<b>4.5</b>	<b>0.9</b>	<b>0.1</b>	<b>2.6</b>
Yauli					
San Cristóbal	11.6	5.2	0.8	0.1	3.2
Carahuacra	2.7	4.2	0.4	-	1.8
Andaychagua	5.8	3.3	0.8	0.1	2.8
Tidío	1.5	4.3	0.9	0.1	0.9
Chungar					
Animón	7.4	4.9	1.4	0.1	1.7
Islay	0.9	1.3	0.6	-	5.7
<b>Open Pits</b>	<b>2.5</b>	<b>0.9</b>	<b>0.7</b>	<b>0.1</b>	<b>1.3</b>
Alpamarca	2.5	0.9	0.7	0.1	1.3
<b>Stockpiles</b>	<b>2.1</b>	<b>1.2</b>	<b>0.6</b>	<b>0.0</b>	<b>0.5</b>
Cerro	2.1	1.2	0.6	-	0.5
<b>Total Reserves</b>	<b>34.3</b>	<b>4.0</b>	<b>0.9</b>	<b>0.1</b>	<b>2.4</b>



## Measured,\* Indicated and Inferred Resources

	MILLIONS OF MT	GRADES				FINES			
		Zn %	PB %	Cu %	Ag Oz/MT	Zn thousands of MT	Pb thousands of MT	Cu thousands of MT	Ag Millions of oz
<b>Yauli</b>	<b>83</b>	<b>5.3</b>	<b>0.9</b>	<b>0.2</b>	<b>3.3</b>	<b>4,424</b>	<b>721</b>	<b>125</b>	<b>272</b>
Measured	29	6.3	1	0.1	3.5	1,815	288	38	102
Indicated	28	5.2	0.9	0.2	3.4	1,452	242	50	94
Inferred	26	4.4	0.7	0.1	2.9	1,157	191	36	76
<b>Cerro</b>	<b>156.1</b>	<b>2.1</b>	<b>0.8</b>	<b>-</b>	<b>2.5</b>	<b>3,259</b>	<b>1245</b>	<b>-</b>	<b>386</b>
Measured	2.1	1.2	0.6	-	0.5	25	13	-	1
Inferred	154	2.1	0.8	-	2.5	3,234	1232	-	385
<b>Chungar</b>	<b>30.9</b>	<b>5.2</b>	<b>1.9</b>	<b>0.1</b>	<b>2.9</b>	<b>1,597</b>	<b>577</b>	<b>45</b>	<b>90</b>
Measured	5.2	7.2	2.2	0.2	4.9	372	115	10	25
Indicated	9.5	6	1.9	0.2	2.9	569	181	19	28
Inferred	16.2	4	1.7	0.1	2.3	656	281	16	37
<b>Alpamarca</b>	<b>4</b>	<b>1.1</b>	<b>0.8</b>	<b>0.1</b>	<b>1.8</b>	<b>44</b>	<b>33</b>	<b>2</b>	<b>7</b>
Measured	1	1	0.7	0.1	1.6	10	7	1	2
Indicated	2.4	1.1	0.9	0.1	1.7	27	21	1	4
Inferred	0.6	1.2	0.9	0.1	2.4	7	5	-	1
<b>Romina</b>	<b>8.3</b>	<b>5.3</b>	<b>2.7</b>	<b>0.1</b>	<b>1.3</b>	<b>436</b>	<b>224</b>	<b>8</b>	<b>11</b>
Indicated	5.5	6.1	2.9	0.1	1.5	336	160	6	8
Inferred	2.8	3.6	2.3	0.1	0.8	101	64	3	2
<b>Palma</b>	<b>14.5</b>	<b>5.3</b>	<b>0.6</b>	<b>-</b>	<b>0.7</b>	<b>764</b>	<b>92</b>	<b>-</b>	<b>10</b>
Indicated	9.6	5	0.7	-	0.7	480	67	-	7
Inferred	4.9	5.8	0.5	-	0.7	284	25	-	3
<b>La Tapada</b>	<b>7.7</b>	<b>3.4</b>	<b>1.3</b>	<b>-</b>	<b>1.2</b>	<b>262</b>	<b>100</b>	<b>-</b>	<b>9</b>
Inferred	7.7	3.4	1.3	-	1.2	262	100	-	9
<b>Rondoní</b>	<b>60.5</b>	<b>-</b>	<b>-</b>	<b>0.5</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>323</b>	<b>-</b>
Medidos	18.4	-	-	0.5	-	-	-	92	-
Indicated	34.3	-	-	0.6	-	-	-	192	-
Inferred	7.8	-	-	0.5	-	-	-	39	-
<b>Santa Bárbara</b>	<b>140.2</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Inferred	140.2	-	-	0.4	-	-	-	561	-
Measured	55.7	4	0.8	0.3	2.3	2,222	423	141	130
Indicated	89.3	3.2	0.8	0.3	1.6	2,864	670	268	141
Inferred	360.2	1.6	0.5	0.2	1.4	5,701	1,899	656	515
<b>Total Resources</b>	<b>505.2</b>	<b>2.1</b>	<b>0.6</b>	<b>0.2</b>	<b>1.6</b>	<b>10,787</b>	<b>2,992</b>	<b>1,065</b>	<b>785</b>

\*The measured and indicated resources reported include resources modified to generate reserves.

**A cut-off grade is used for reporting mineral resources to ensure that mineralized material with no economic interest is eliminated**

**▼ MINERAL RESOURCES**

The resources presented in the estimate from December 31, 2018, includes the resources that give rise to reserves. This resource reporting method differs from the method used by Volcan in previous estimates, which exclude resources that gave rise to reserves.

Both forms of reporting resources are accepted by the JORC code, as long as the method used is clearly established. This new reporting method is adopted to be aligned with the reporting methodology used by Glencore.

A cut-off grade is used for reporting mineral resources to ensure that mineralized material with no economic interest is eliminated.

Such resources are an important indicator of the capacity for growth and the future sustainability of operations. A significant portion of these resources will become reserves in the short and medium term.

The inferred resources of polymetallic mines represent 55% of the total and projects 45% of the 360.2 million MT.

**Measured and Indicated Mineral Resources by Mining Method**

BY MINING METHOD	MILLIONS OF MT	GRADES			
		Zn %	PB %	Cu %	Ag Oz/TM
<b>Underground Mines</b>	<b>71.7</b>	<b>5.9</b>	<b>1.2</b>	<b>0.2</b>	<b>3.5</b>
Yauli					
San Cristóbal	33.2	6.5	1.0	0.2	4.0
Carahuacra	6.6	6.9	0.7	0.1	2.7
Andaychagua	9.3	4.1	0.9	0.1	3.8
Ticlio	7.9	3.7	0.8	0.1	1.1
Chungar					
Animón	11.9	7.6	2.3	0.2	2.9
Islay	2.8	1.5	0.7	-	7.0
<b>Open Pit</b>	<b>3.4</b>	<b>1.1</b>	<b>0.8</b>	<b>0.1</b>	<b>1.7</b>
Alpamarca	3.4	1.1	0.8	0.1	1.7
<b>Stockpiles</b>	<b>2.1</b>	<b>1.2</b>	<b>0.6</b>	<b>-</b>	<b>0.5</b>
SP Sulfuros Piritas	2.1	1.2	0.6	-	0.5
<b>Projects</b>	<b>67.8</b>	<b>1.2</b>	<b>0.3</b>	<b>0.4</b>	<b>0.2</b>
Palma	9.6	5.0	0.7	-	0.7
Romina	5.5	6.1	2.9	0.1	1.5
Rondoní	52.7	-	-	0.5	-
<b>Total</b>	<b>145</b>	<b>3.5</b>	<b>0.8</b>	<b>0.3</b>	<b>1.9</b>

\*The measured and indicated resources reported include resources modified to generate reserves.

**Inferred Resources by Mining Method**

BY MINING METHOD	MILLIONS OF MT	GRADES			
		Zn %	PB %	Cu %	Ag Oz/MT
<b>Underground mines</b>	<b>42.2</b>	<b>4.3</b>	<b>1.1</b>	<b>0.1</b>	<b>2.7</b>
Yauli					
San Cristóbal	13.1	4.8	0.8	0.2	3
Carahuacra	3.4	6.7	1	0.1	3.7
Andaychagua	4.7	4.1	0.7	0.1	4.2
Ticlio	4.8	2.2	0.5	0.1	1
Chungar					
Animón	13.3	4.7	2	0.1	2.1
Islay	2.9	1	0.5	-	3.5
<b>Open Pit</b>	<b>154.6</b>	<b>2.1</b>	<b>0.8</b>	<b>-</b>	<b>2.5</b>
Cerro	154	2.1	0.8	-	2.5
Alpamarca	0.6	1.2	0.9	0.1	2.4
<b>Stockpiles</b>	<b>163.4</b>	<b>0.4</b>	<b>0.1</b>	<b>0.4</b>	<b>0.1</b>
Palma	4.9	5.8	0.5	-	0.7
Romina	2.8	3.6	2.3	0.1	0.8
La Tapada	7.7	3.4	1.3	-	1.2
Santa Bárbara	140.2	-	-	0.4	-
Rondoní	7.8	-	-	0.5	-
<b>Total Inferred Resources</b>	<b>360.2</b>	<b>1.6</b>	<b>0.5</b>	<b>0.2</b>	<b>1.4</b>

**Distribution of inferred resources**

		MILLIONS OF MT	%	%
Polymetallic mines	Yauli	26	7	55
	Chungar	16.2	4	
	Cerro	154	43	
	Alpamarca	0.6	-	
	Palma	4.9	1	
Projects	Romina	2.8	1	45
	La Tapada	7.7	2	
	Santa Bárbara	140.2	39	
	Rondoní	7.8	2	
<b>Total Inferred Resources</b>	<b>360.2</b>	<b>100</b>	<b>100</b>	

# 07.

## MINING OPERATIONS



Volcan mining operations are located in the central highlands of Peru. This region is particularly propitious for mining due to its geological characteristics, proximity to Lima, and easy access to principal highways.

Volcan has five operating units: Yauli, Chungar, Cerro de Pasco, Alpamarca and the Pasco oxides plant. Together, they have nine underground mines, three open pits, seven concentrator plants with a treatment capacity of 21,900 tpd and a lixiviation plant of 2,500 tpd. The composition of each unit is detailed below:

**Volcan mining operations are located in the central highlands of Peru**

### Operating units



**Operating Units, mines and plants**

UNIT	MINES			PLANTS		EXPLORATION AND EXTRACTION CONC*	
	NAME	TYPE	STATUS	NAME	TYPE	NUMBER	Hectares (000)
Yauli	San Cristóbal	Underground Mines	Active	Victoria	Concentrator	144	22
	Andaychagua			Mahr Túnel			
	Ticlio			Andaychagua			
	Carahuacra						
	Carahuacra Norte	Open Pits	Suspended				
Chungar	Animón	Underground Mines	Active	Animón	Concentrator	12	14
	Islay						
Cerro de Pasco	Mina Subterránea	Underground Mines	Suspended	Paragsha	Concentrator	29	18
	Raúl Rojas	Open Pits		San Expedito	Concentrator		
	Vinchos	Underground Mines					
Alpamarca	Río Palanga	Underground Mines	Suspended	Alpamarca	Concentrator	28	19
	Alpamarca	Open Pits	Active				
Óxidos de Pasco	Stockpiles	Stockpiles	Active	Óxidos	Lixiviation	1	0.1
Greenfield Explorations						652	294
<b>Total Concessions</b>						<b>866</b>	<b>367</b>

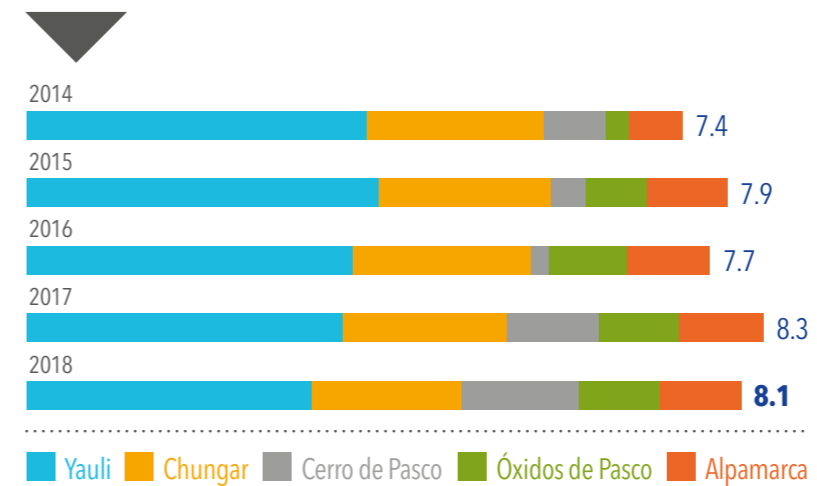
\*As of December 31, 2018, Volcan Compañía Minera S.A.A. and subsidiaries have a total of 866 mining concessions covering 367 thousand hectares of surface extension, geographically located in the central highlands of Peru. Volcan has complied with the obligation to pay Currency Dues for its mining concessions in accordance with articles 38 and 39 of the Unique Text of the General Mining Law approved by Supreme Decree N° 014-92-EM.

Treated tons reduced from 8.3 million in 2017 to 8.1 million in 2018, mainly due to stoppages in the Animón (24 days), Islay (22 days), San Cristóbal (12 days), Carahuacra (15 days), Andaychagua (5 days) and Ticlio (5 days) operations due to safety practices implemented. Mineral quality was prioritized in all Volcan mines and sulfide stockpile treatment in the Cerro de Pasco mine continued.

In 2018, average ore grades for Volcan Consolidated were 3.83% for zinc, 0.78% for lead, 0.12% for copper and 2.93 oz of silver per ton, similar to 2017 grades.

**Treated tons reduced from 8.3 million in 2017 to 8.1 million in 2018, mainly due to stoppages operations due to safety practices implemented**

**Evolution of Treated Tonnage (millions of tons)**



**241.1**  
thousand tons of zinc fines

**47.2**  
thousand tons of lead fines

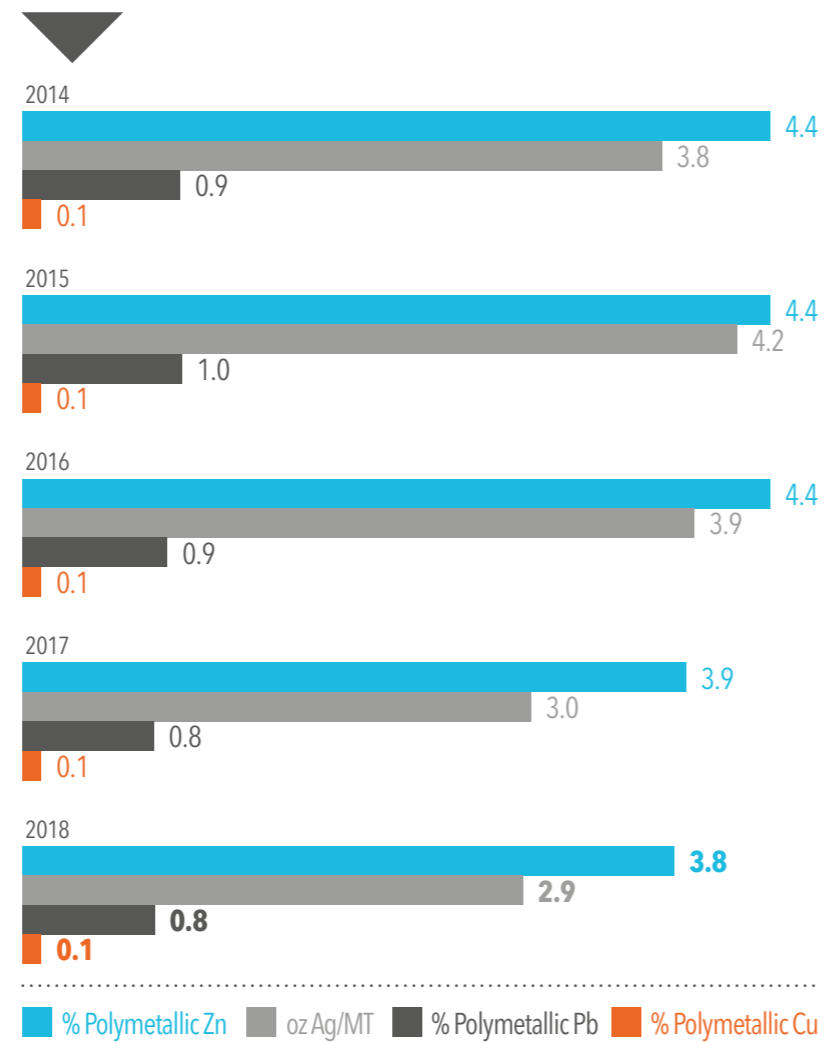
**4.6**  
thousand tons of copper fines

**17.0**  
millions ounces of silver

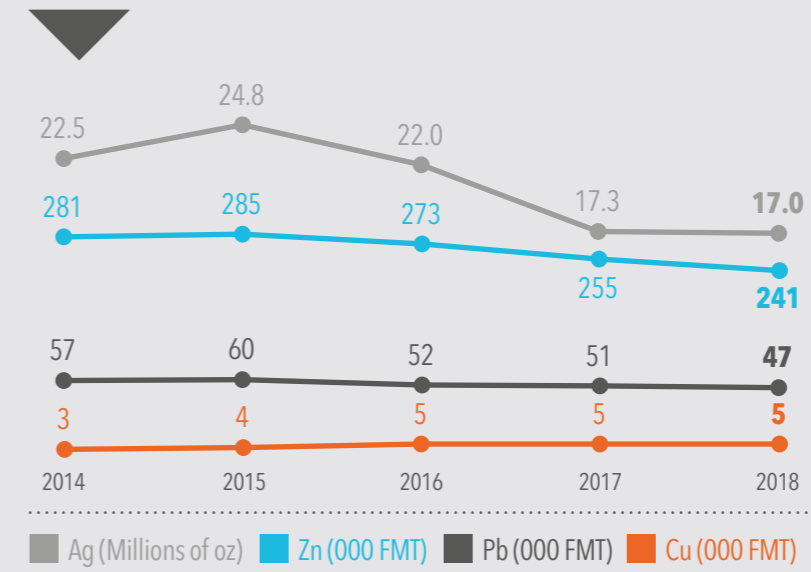
**11.6**  
million ounces of gold

In terms of fines, in 2018 the Company produced 241,100 tons of zinc fines, 47,200 tons of lead fines, 4,600 tons of copper fines, 17.0 million ounces of silver, and 11,600 ounces of gold. These figures represent reductions of 5.5% in zinc, 7.9% in lead, 14% in copper and 1.8% in silver compared to 2017, mainly due to stoppages in mine operations due to safety issues.

**Evolution of Average Grades Volcan Consolidated**



**Evolution of Fines Production Volcan Consolidated**







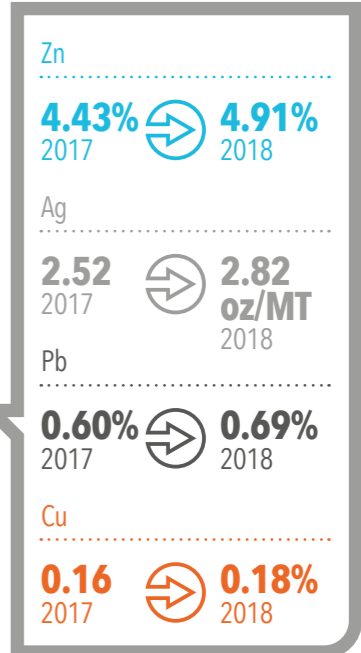
▼ **YAUJI UEA**

Yauli UEA is located in the Junín Region, 40 kilometers from the city of La Oroya and 170 kilometers from Lima, and it is accessible by road and rail.

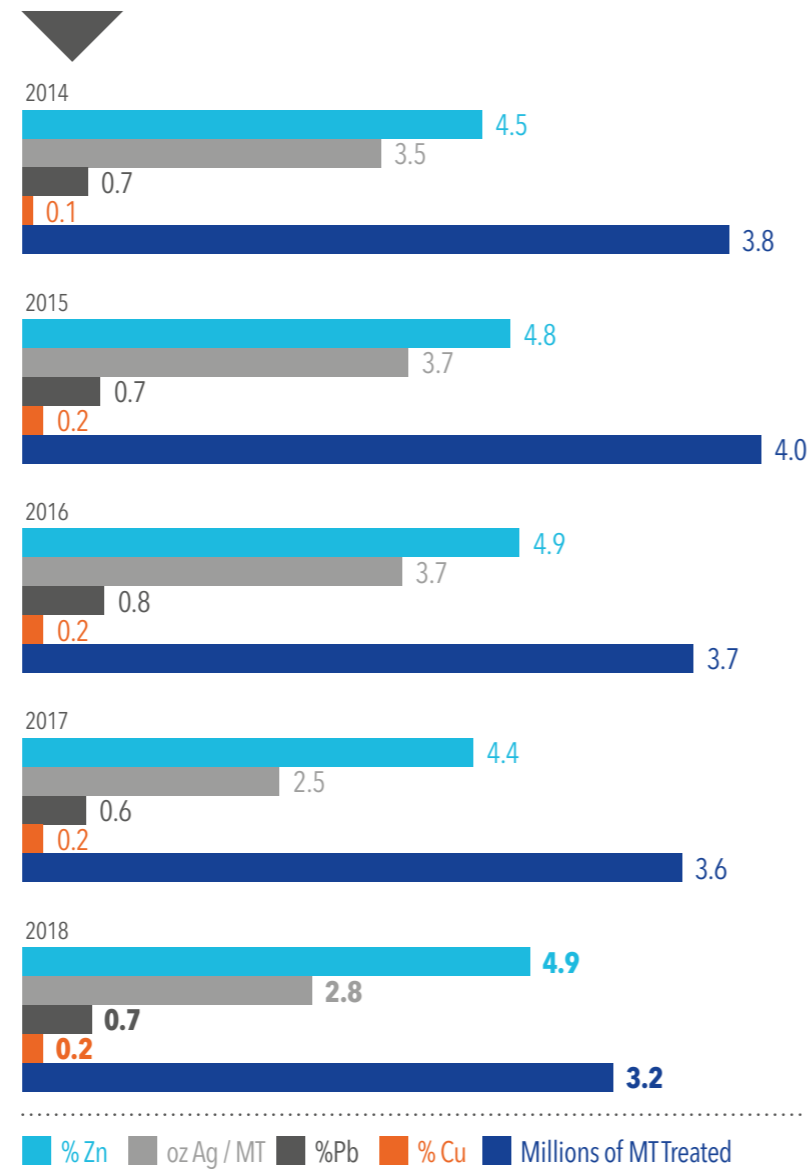
There are currently four underground mines in operation: San Cristóbal, Carahuacra, Andaychagua and Ticlio, where extracted ore is treated in three concentrator plants: Victoria, Mahr Tunnel and Andaychagua, with a total installed capacity of 11,400 tpd.

In 2018, the total volume of ore processed at the three concentrator plants was 3.2 million tons, which represents 40% of Volcan's consolidated treated ore. There was a significant increase in head grades in 2018, with 4.91% Zn, 0.69% Pb, 0.18% Cu and 2.82 oz Ag/MT in comparison with 2017 with 4.43% Zn, 0.6% Pb, 0.16% Cu and 2.52 oz Ag/MT, as a consequence of the quality control strategy with the reduction of sections.

Production of silver fines totaled 7.8 million ounces, an increase of 1.4% from 2017; zinc fines production was 146,600 tons, a 0.3% increase; and lead fines production increased 5.9% to 19,100 tons, despite the safety stoppages in the San Cristóbal (12 days), Carahuacra (15 days), Andaychagua (5 days) and Ticlio (5 days) mines.

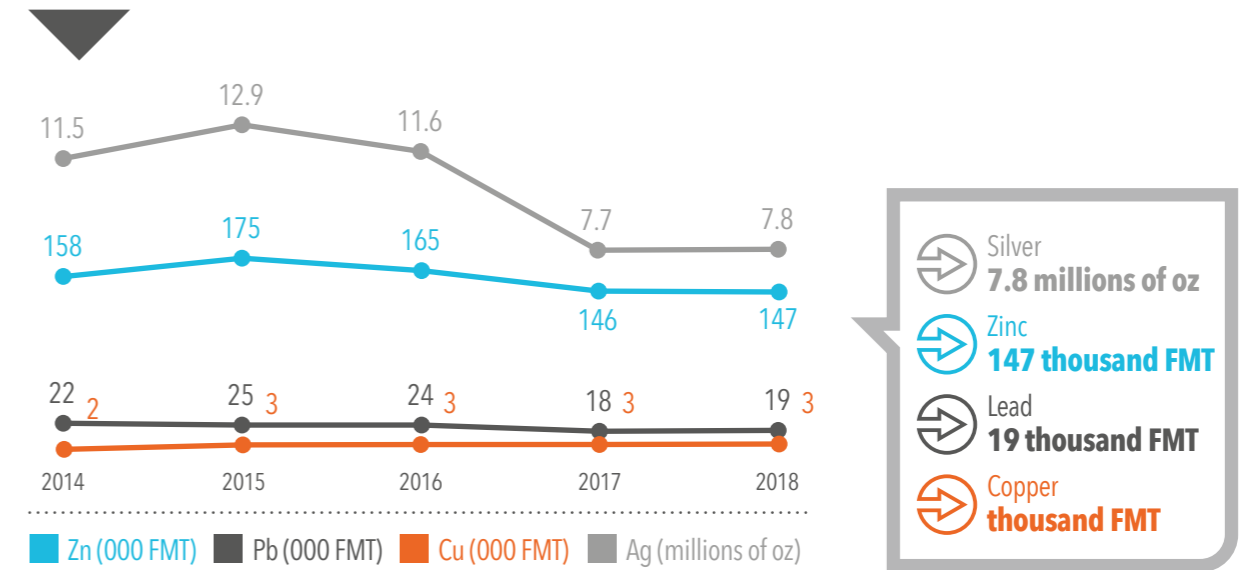


### Evolution of Treated Tonnage and Average Grades Yauli



3.2 million MT treated

### Evolution of Fines Production Yauli



- Silver **7.8 millions of oz**
- Zinc **147 thousand FMT**
- Lead **19 thousand FMT**
- Copper **thousand FMT**

### Yauli Production by Mine

	TREATED TONS (000 MT)		ZN GRADE (%)		PB GRADE (%)		CU GRADE (%)		AG GRADE (OZ/MT)	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
San Cristóbal	1,161	<b>1,098</b>	4.9	<b>5.4</b>	0.5	<b>0.5</b>	0.2	<b>0.2</b>	2.3	<b>2.7</b>
Andaychagua	963	<b>854</b>	3.8	<b>4.3</b>	0.7	<b>1.0</b>	0.1	<b>0.1</b>	3.8	<b>4.3</b>
Ticlo	385	<b>350</b>	4.7	<b>5.2</b>	1.2	<b>1.3</b>	0.5	<b>0.3</b>	1.7	<b>1.5</b>
Carahuacra	950	<b>857</b>	4.6	<b>4.9</b>	0.3	<b>0.3</b>	0.1	<b>0.1</b>	1.8	<b>2</b>
Carahuacra Norte Pit	105	<b>44</b>	1.9	<b>2.1</b>	0.4	<b>0.4</b>	-	-	2.3	<b>2.2</b>
<b>Total Yauli *</b>	3,585	<b>3,212</b>	4.4	<b>4.9</b>	0.6	<b>0.7</b>	0.2	<b>0.2</b>	2.5	<b>2.8</b>

\* 20,000 MT and 8,000 MT bought from third parties were processed in 2017 and 2018, respectively.

## MINES

Efficiencies in progress have continued to improve in 2018, aimed at increasing mine development and preparation, both in terms of depth and lateral developments. The development sequence has been coordinated with infill drilling, with a focus on the sustainability of the short-term plan, also aimed at the medium- and long-term plan.

In 2018, significant priority has been given to programs for raise borer chimneys, designed to improve coverage and ventilation for operations and comply with current regulations and standards in mine ventilation.



Implementation of the Personnel and Equipment Monitoring System (Newtrax) in the Carahuacra mine has been strengthened during the year. This system will enable, in real time: (i) detection of a worker who has fallen, (ii) location and traceability of personnel and mobile equipment, (iii) emission of an evacuation alert, (iv) emission of a vehicle proximity alert, (v) detection of carbon monoxide, temperature and humidity, and (vi) oversight of production and productivity.

The Company also implemented a strategic reduction of sections in mineral advancements and production pits, to improve the quality of the ore.

### San Cristóbal Mine

In 2018, the head grades increased by 10.0% and 17.4% in Zn and Ag, respectively, as a result of measures to improve ore quality.

The operating strategy for production continued, increasing the volume of the sublevel stopping mining method and reducing cut and fill.

Despite a 5.4% lower production of tons of ore, results of Zn and Ag fines production were higher than 2017, with 4.4% and 12.4%, respectively.

### Andaychagua Mine

In 2018, production was primarily from the Andaychagua vein at depths, production began through the sublevel stopping method in the Adriana vein, with mostly Zn, and the Prosperidad 1 and Prosperidad Techo veins, consolidating the aforementioned mining method.

Exploration focused on the Lorena and Vanesa veins, with favorable results in Zn.

Pump system project works culminated at level 1200, with a 180 l/s capacity that guarantees the depth of the Andaychagua vein and the other veins mentioned.

Although there was an 11.3% lower production of tons of ore when compared with 2017, Zn and Pb fines production was higher, with 2.9% and 41.7%, respectively.

### Ticlio Mine

In 2018, construction of the main pump system station, Level 11 west zone, with a 200 l/s capacity, guaranteeing the depth of the mine in the western part. The slope of the sludge deposit (old tailings dam) has been strengthened.

The 30% increase in DDH drilling in 2018 compared to 2017 has led to the discovery of new veins such as Borrachitos, Contacto, and the reinterpretation of existing veins.

**The Company implemented a strategic reduction of sections in mineral advancements and production pits, to improve the quality of the ore**

Production in tons of ore at Ticlio fell by 9.1% over 2017, and Zn fines production increased by 0.9%, Pb increased by 4.6% and Ag decreased by 17.1%.

#### Carahuacra Mine

Developments and preparations in 2018 increased by 7% and 2%, respectively, to ensure the short-term sustainability of the operation. This involved the development of main ramps, raise borer chimneys, bypasses, etc.

Ag head grade also increased 13.5% over 2017, which contributes to a greater extracted ore quality, controlling dilution in the sublevel stopping pits, implementing mass blasting, improving productivity and lower equipment exposure.

#### Carahuacra Norte Pit

The Carahuacra Norte Pit was halted in 2018; however, 43,000 tons from the stockpile were treated, obtaining a fines production of 700 tons of zinc, 100 tons of lead and 66,000 ounces of silver.

### CONCENTRATE PLANTS

In 2018, the metallurgical performance of the Tauli unit was higher than 2017. In 2018, the three concentrate plants made an average recovery of 92.9% for zinc, 86.6% for lead, 50.0% in copper and 86.8% for silver, better than 2017, where recoveries were 92.0% for zinc, 84.6% for lead, 52.2% in copper and 85.8% for silver.

#### Treated Tonnage at Yauli, by Concentrate Plant

	TREATED TONS (000 MT)		ZN CONCENTRATE (000 MT)		PB CONCENTRATE (000 MT)		CU CONCENTRATE (000 MT)	
	2017	2018	2017	2018	2017	2018	2017	2018
Victoria	1,838	<b>1,768</b>	166	<b>177</b>	14	<b>14</b>	5	<b>8</b>
Andaychagua	1,032	<b>982</b>	69	<b>73</b>	15	<b>18</b>	-	<b>1</b>
Mahr Túnel	715	<b>462</b>	55	<b>39</b>	12	<b>9</b>	7	<b>3</b>
<b>Total Yauli</b>	<b>3,585</b>	<b>3,212</b>	<b>290</b>	<b>289</b>	<b>41</b>	<b>41</b>	<b>12</b>	<b>12</b>

#### Victoria Plant

In 2018, the processing capacity of the Victoria concentrator plant was maintained at 5,200 tpd.

The 1,000-MT fines hopper has been implemented, guaranteeing greater flexibility in maintenance of the primary crusher.

The implementation process of the online expert system began in 2018 for the first rougher cell, which automates the dosage of reagents (ZnSO<sub>4</sub> and MIBC) through an image processing chamber.

Copper flotation in the bulk circuit was improved, reducing the dosage of depressors in milling. Zinc recovery was 92.7%, lead was 78.6%, copper 53.4% and silver was 83.3%, higher than 2017.



**Andaychagua Plant**

The Andaychagua plant has a treatment capacity of 2,950 tpd.

In 2018, mill 1 began implementation, which produces greater fines content given that the current cut size is 64% below 75 microns (um) as a result of primary milling to flotation. The goal is to double-classify hydrocyclones and achieve a cut size of 72% below 75 microns that feeds into flotation, and to recover a greater amount of silver in the lead.

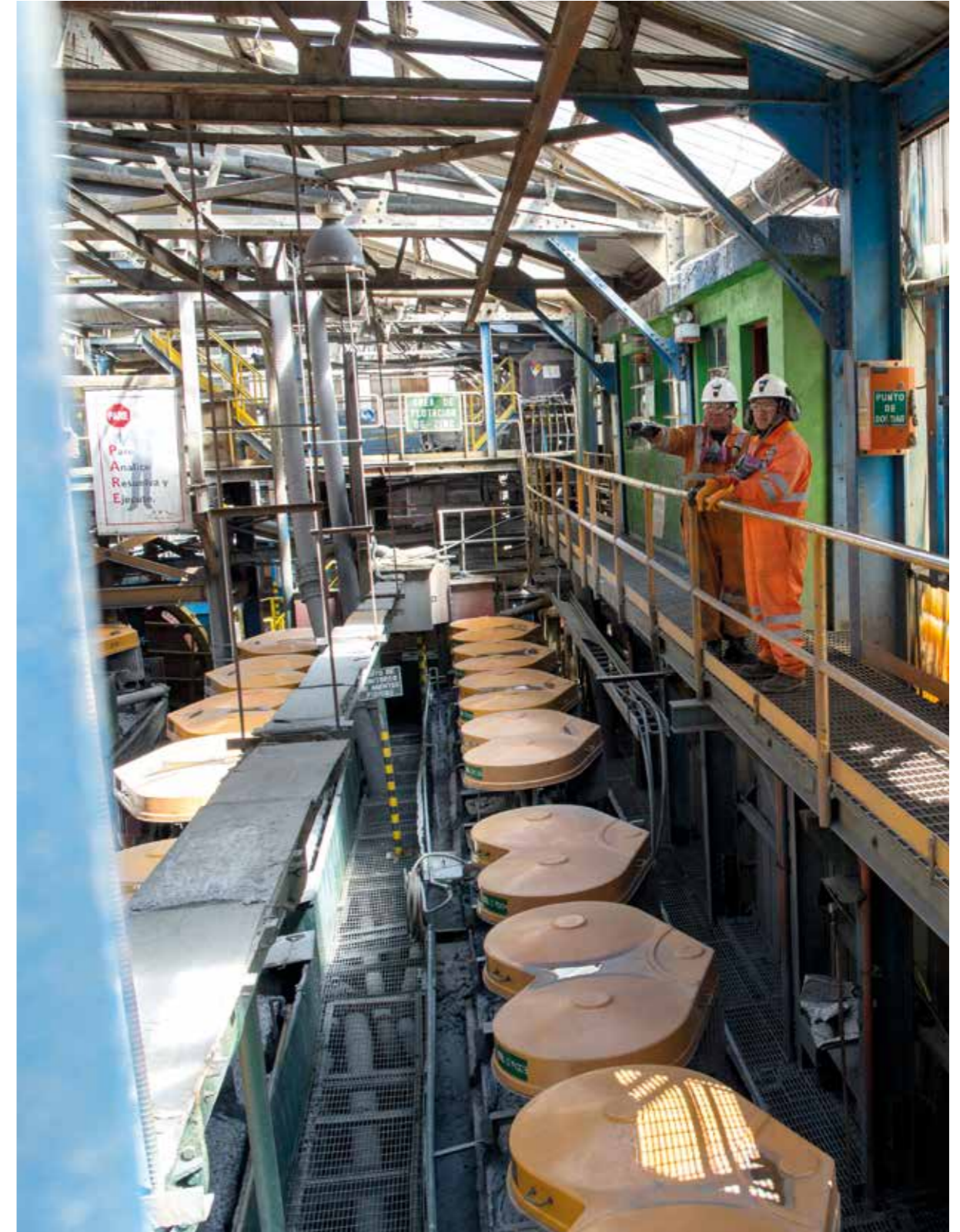
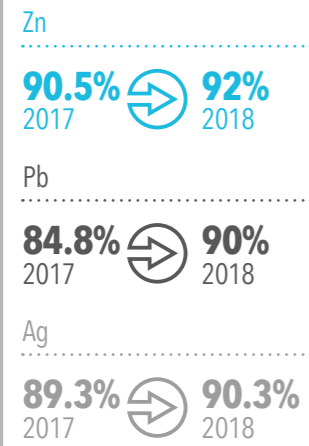
In 2018, zinc recovery was 92.0%, lead recovery was 90.0%, and silver recovery was 90.3%, whereas in 2017, zinc recovery was 90.5%, lead recovery was 84.8%, and silver recovery was 89.3%.

**Mahr Túnel Plant**

The Mahr Túnel plant has a treatment capacity of 2,750 tpd. During 2018, operations continued with application of new flotation reagents and the elimination of others to maintain or reduce costs.

During the year, the Mahr Túnel concentrator plant maintained significant metallurgical efficiency, with zinc recovery at 95.5%, lead recovery at 92.8%, copper at 71.0 %, and silver at 87.4% in 2018, compared to 2017, with zinc at 91.9%, lead at 84.7% and silver 83.6%.

In addition, final tailings classification efficiency continued, raising coarse separation from 45% to 54%; this reduces tailings volume deposited and lengthens the useful life of Tailings Dam 6.





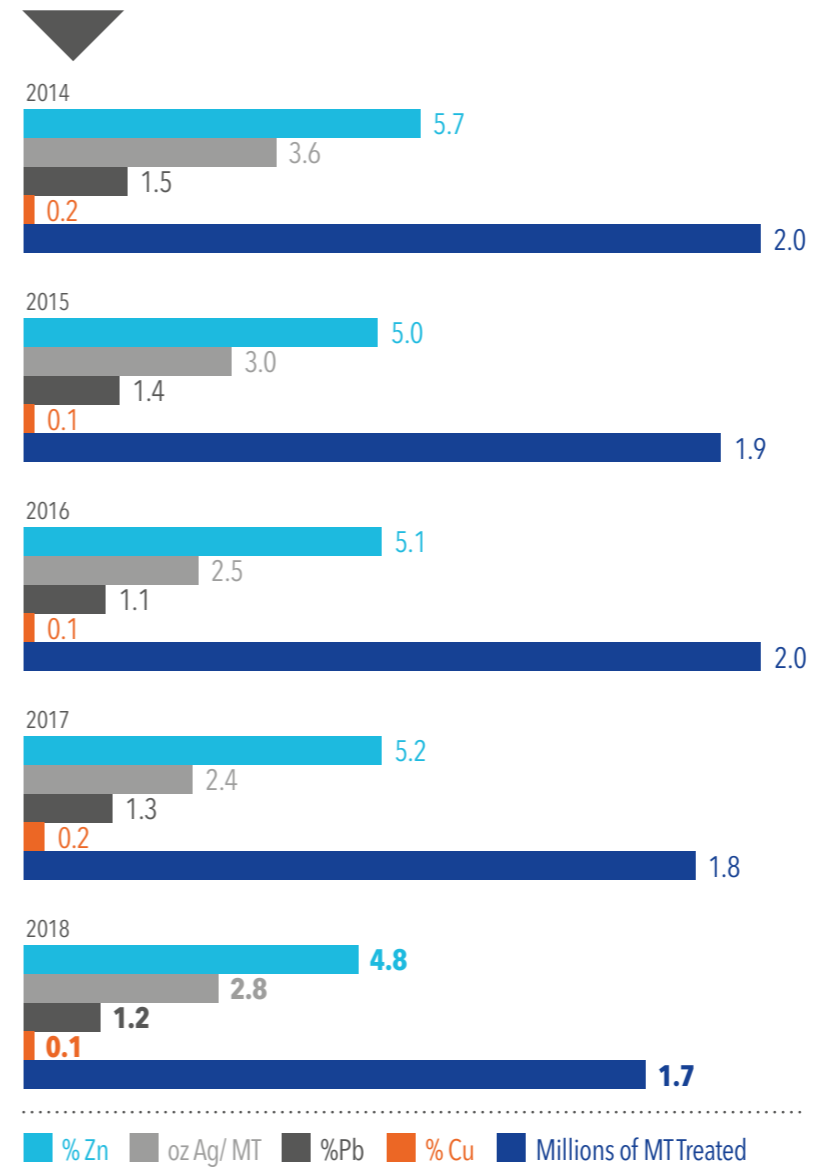
▼ **CHUNGAR UEA**

Chungar UEA is located in the Pasco Region, 219 kilometers east of Lima. It consists of two underground mines, Animón and Islay, and a concentrator plant also called Animón.

In 2018, the total volume of ore processed was 1.7 million tons, which represents 21% of Volcan's consolidated treated ore. In 2018, treatment was 8.1% less than

**Chungar UEA is consists of two underground mines, Animón and Islay, and a concentrator plant also called Animón**

Evolution of Treated Tonnage and Average Grades Chungar



2017, primarily due to stoppages in the Animón Mine (24 days) and Islay Mine (22 days) in June due to safety measures implemented.

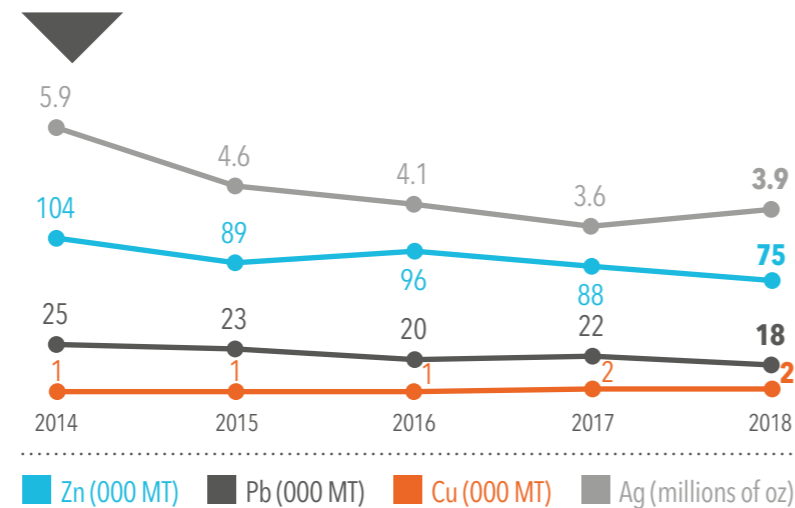
In 2018, ore treated from the Chungar unit was processed at the Animón Plant with grades of 4.80% Zn, 1.18% Pb, 0.13% Cu and 2.84 oz Ag/MT, less than grades from 2017 of 5.16% Zn, 1.34% Pb, 0.15% Cu and 2.43 oz Ag/MT, due to a reduction in geological grades in main zinc veins: Principal, Lourdes and María Rosa.

In addition, 5,639 tons of ore were sent from Islay mine to the Alparmarca plant for a pilot test.

In 2018, production of zinc fines fell to 74,900 tons, and silver production 3.9 million ounces, a reduction of 15% and increase of 9%, respectively, compared to 2017. The reduction of zinc fines was due to a lower treatment and reduction of reserves in the higher-grade zinc structures such as Principal, Lourdes and María Rosa.

## THE REDUCTION OF ZINC FINES WAS DUE TO A LOWER TREATMENT AND REDUCTION OF RESERVES IN THE HIGHER-GRADE ZINC STRUCTURES SUCH AS PRINCIPAL, LOURDES AND MARÍA ROSA

Evolution of Fines Production Chungar



- Silver  
3.9 millions oz
- Zinc  
75 thousand FMT
- Lead  
18 thousand FMT
- Cooper  
2 thousand FMT

Chungar Production, By Mine

	TREATED TONS (000 MT)		ZN GRADE (%)		PB GRADE (%)		CU GRADE (%)		AG GRADE (OZ/MT)	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
Animón	1,517	<b>1,387</b>	6.0	<b>5.6</b>	1.5	<b>1.3</b>	0.2	<b>0.1</b>	1.7	<b>2.2</b>
Islay	321	<b>303</b>	1.2	<b>1.2</b>	0.7	<b>0.7</b>	0.1	<b>0.1</b>	5.8	<b>5.7</b>
<b>Total Chungar</b>	<b>1,838</b>	<b>1,690</b>	<b>5.2</b>	<b>4.8</b>	<b>1.3</b>	<b>1.2</b>	<b>0.2</b>	<b>0.1</b>	<b>2.4</b>	<b>2.8</b>



## MINES

The Chungar UEA has two underground mines: the Animón mine, with a 4,140 tpd production capacity, and the Islay mine, with a 1,500 tpd production capacity. Tonnage produced by these two mines is treated by the Animón plant.

### Animón Mine

Due to the frequency of rockfall incidents in the first quarter, the Company made the firm decision to halt mine activities between May and June for 24 days, to reinforce operations discipline and safe production.

In 2018, the Animón mine consolidated its production at 4,140 tpd, with a better performance due to the established plan to develop and prepare the mine in the lateral zone, thereby continuing to deepen the mine.



In 2018, the Esperanza and Montenegro pump systems were reinforced to guarantee reliability of the main pump system for the Animón mine. Construction of the main raise borer chimneys was also completed, thereby guaranteeing the ventilation coverage required.

The slickline project was implemented to transport shotcrete inside the mine and optimize support costs.

### Islay Mine

Due to the frequency of rockfall incidents in the first quarter, the Company made the firm decision to halt mine activities between May and June for 22 days, to reinforce operations discipline and safe production.

Construction of the pump system infrastructure inside the mine on level 545 began, with a capacity of 300 l/s, to guarantee the lateral development and deepening of the mine.

In 2018, the Company strengthened its relationship with the community of Huaychao, its primary strategic partner in the area of influence.

Construction of the pump system infrastructure inside the mine began, to guarantee the lateral development and deepening of the mine

## CONCENTRATE PLANT

### Concentrate Production

TREATMENT ANIMÓN PLANT (000 MT)	2017	2018
Treated Tons	1,838	<b>1,690</b>
Zn Concentrate	160	<b>133</b>
Concentrate Bulk	47	<b>40</b>

### Animón Plant

In 2018 treated tonnage at the Animón plant fell 8.1% with respect to the previous year, owing mainly to a 24-day stoppage at the mine due to safety controls implemented.

To improve metallurgical indexes and understand metallurgy, the Company decided to treat ore from the Animón and Islay mines as separate campaigns.

During the year, the Animón concentrate plant maintained significant metallurgical efficiency, with zinc recovery at 92.3%, lead recovery at 91.0%, copper at 60.1%, and silver at 82.1%, similar when compared to 2017, with zinc recovery at 92.4%, lead at 91.0%, copper at 65.1% and silver at 81.3%.





#### ▼ ALPAMARCA UEA

The Alpamarca UEA is located in the Santa Bárbara area of Carhuacayán, Yauli Province, Junín Region, 182 kilometers east of Lima.

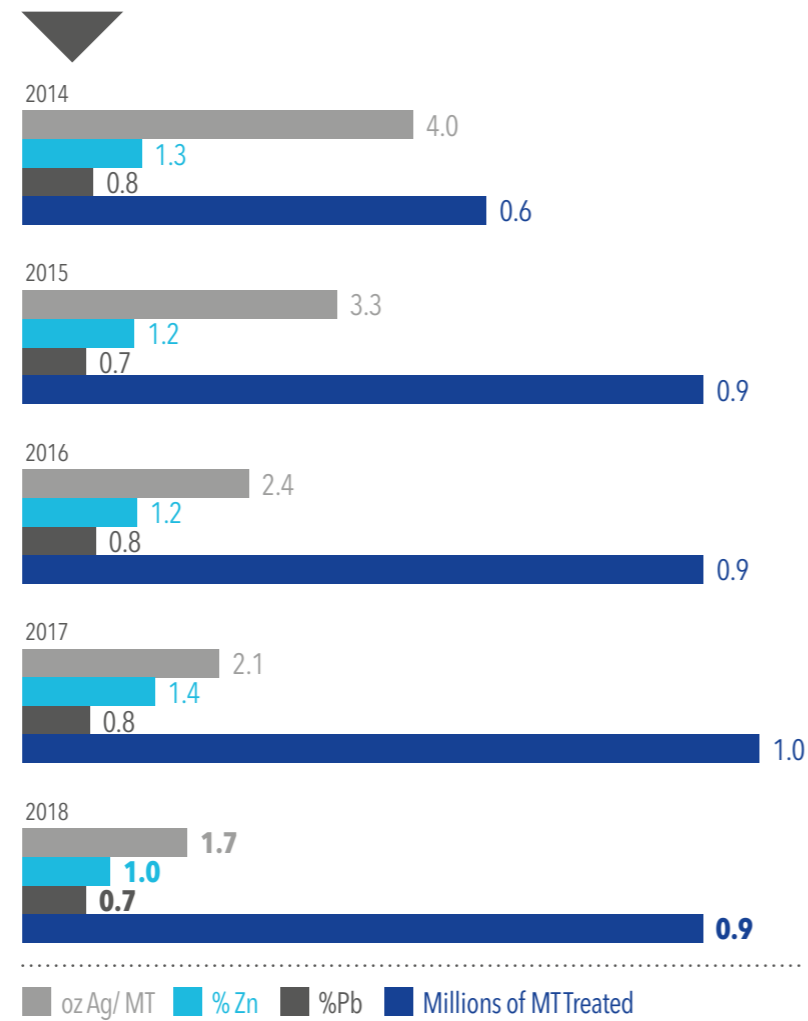
This unit, which consists of the Río Pallanga underground mine (temporarily halted), Alpamarca open pit, Alpamarca concentrate plant, and the Romina -Puagjanca project, began operations in April 2014.

The installed capacity of the plant as designed is 2,500 tpd.

**This unit consists of the Río Pallanga underground mine (temporarily halted), Alpamarca open pit, Alpamarca concentrate plant, and the Romina - Puagjanca**

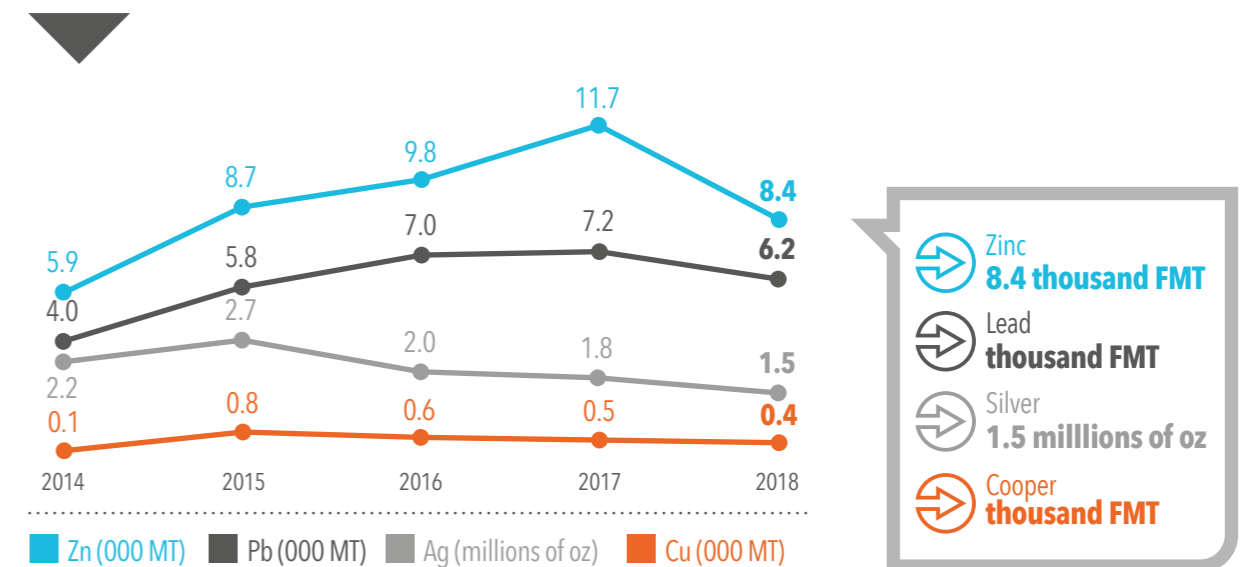


**Treated Tonnage and Average Grades Alpamarca**



In 2018, ore processed in the concentrator plant came from the Alpamarca open pit and stockpiles. Treatment totaled 948,000 tons, with average grades of 1.05% Zn, 0.72% Pb, and 1.73 oz. Ag/MT.

**Fines Production Alpamarca**



Zinc **8.4 thousand FMT**  
 Lead **thousand FMT**  
 Silver **1.5 millions of oz**  
 Copper **thousand FMT**

Alpamarca production in 2018 reached 8,390 tons of zinc and 6,230 tons of lead, decreases of 28.3% and 13.5% respectively compared to 2017. This was due to the reduction in head grade treated.

Meanwhile, silver production topped 1.46 million ounces of fines, a 20.6% decrease from 2017 due to lower head grades.

**MINES**

**Río Pallanga Mine**

Progress and production at the underground mine were temporarily suspended.

**Alpamarca Mine**

Initially, pit production was only considered until May 2018. However, systematic sampling and fieldwork, including diamond drilling, was able to prolong production until mid-2019.

Therefore, in 2018 ore production in the Alpamarca pit reached 438,000 tons based on removal of 1.93 million tons of overburden, for an average stripping ratio of 4.40.

### CONCENTRATE PLANT

#### Alpamarca Plant

##### Concentrate production

TREATMENT ALPAMARCA PLANT (000 MT)	2017	2018
Treated tonnage	958	<b>948</b>
Zn concentrate	22	<b>15</b>
Bulk concentrare	13	<b>10</b>

The Alpamarca concentrate plant processed 948,000 tons of polymetallic ore from the Alpamarca pit in 2018 and stockpiles. Metallurgical performance at the Alpamarca plant was strong, with metal recovery rates of 84.6% for zinc, 91.6% for lead, and 88.7% for silver.

This involves an Islay ore campaign between April 18 and 20, treating 5,639 MT, with the following metallurgical performance: 90.9% for zinc, 93.9% for lead and 87.2% for silver.

A total of 953,000 MT were treated in the Alpamarca plant in 2018.

### ROMINA - PUAGJANCA PROJECT

In 2018, the Alpamarca UEA developed the Romina project. The Semi-detailed Environmental Impact Study was approved, enabling exploration works involving diamond drilling and the construction of an 850-meter exploratory tunnel directed towards the Puagjanca deposit. The Detailed Environmental Impact Assessment is under processing for approval, which is expected for the second half of 2020.

Ore from Romina will be treated in the Alpamarca concentrate plant. Processing has begun to modify its process given that ore from Romina is mineralogically different than ore currently treated.

**In 2018 the Alpamarca concentrate plant processed 948,000 tons of polymetallic ore from the Alpamarca pit and stockpiles**





Alpamarca Plant.



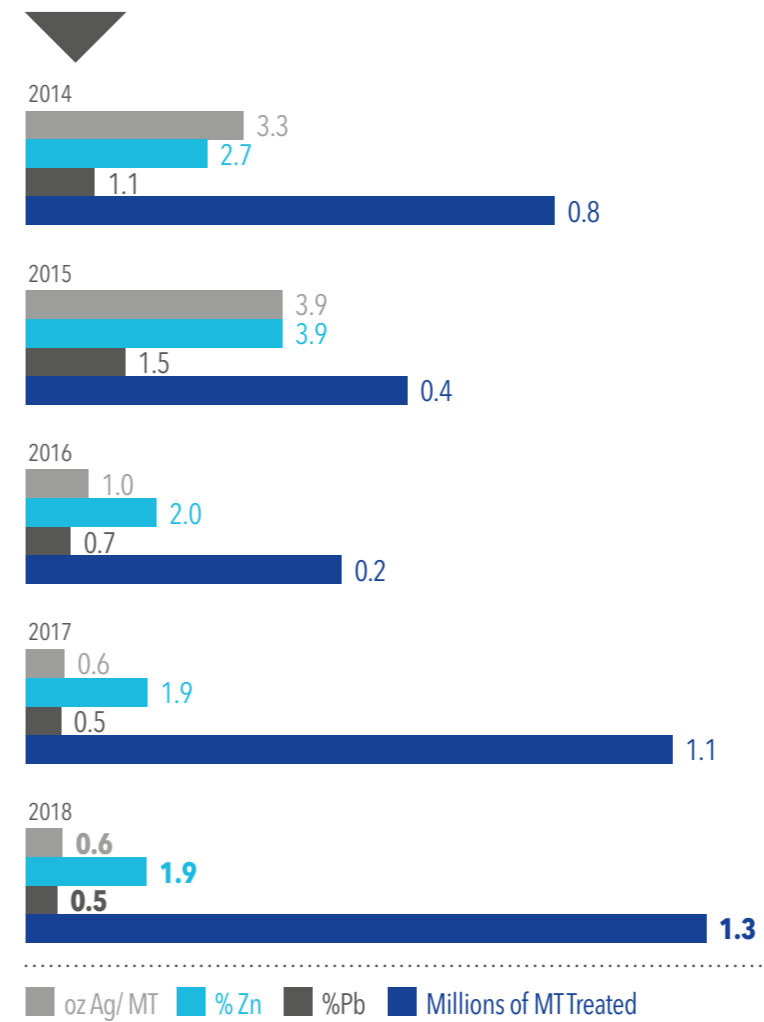
▼ CERRO DE PASCO UEA

The Cerro de Pasco UEA is located in the Pasco Region approximately 295 kilometers from Lima and can be reached via the Central Highway.

During 2018, 1.3 million tons of stockpiled ore were processed at the Paragsha-San Expedito plant, with ore grades of 1.94% Zn, 0.54% Pb, 0.02% Cu, and 0.58 oz Ag/MT. This ore corresponds to marginal ore from stripping from the Raúl Rojas pit.

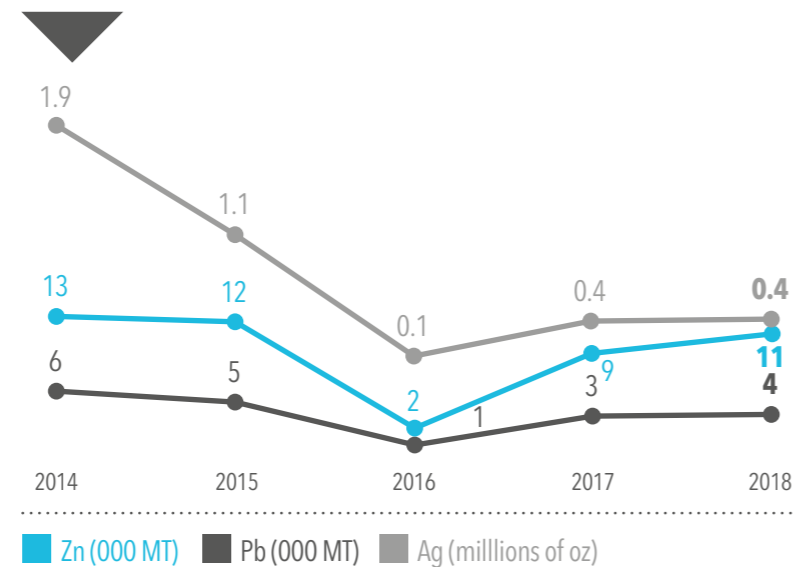
**1.3 million tons of stockpiled ore were processed at the Paragsha-San Expedito plant**

Evolution of Treated Tonnage and Average Grades Cerro de Pasco



In 2018, fines production totaled 11,200 tons of zinc, 3,700 tons of lead and 0.41 million ounces of silver, in comparison with the 2017 results of 9,300 tons of zinc, 3,500 tons of lead and 0.39 million ounces of silver.

**Evolution of Fines Production - Cerro de Pasco**



Silver  
**1.5 millions of oz**  
 Zinc  
**8.4 thousand FMT**  
 Lead  
**6.2 thousand FMT**

**MINES**

**Paragsha Underground Mine**

During 2018, the Paragsha underground mine was under temporary suspension. The mine is maintained in operating conditions, and, as a result of the implementation of the energy efficiency program and better cost controls, the energy costs for mine ventilation, compressed air, and water pumping were reduced.

**Raúl Rojas pit ore stockpiles**

In 2018, ore stockpiled from the Raúl Rojas pit in previous years was treated.

**Vinchos Mine**

In 2018, no ore was produced in the Vinchos mine. Operations in this mine are under temporary suspension.

**CONCENTRATOR PLANT**

**Concentrate production**

TREATMENT SAN EXPEDITO PLANT (000 MT)	2017	2018
Treated tonnage	1,059	<b>1,314</b>
Zn concentrate	22	<b>26</b>
Bulk concentrare	7	<b>8</b>

**San Expedito/Paragsha Plant**

During 2018, the crusher, milling and filtering circuits at the Paragsha concentrator plant continued to be operational, the Pb circuit at San Expedito was transferred to the Paragsha plant and the Zn circuit at San Expedito was expanded.

The Paragsha-San Expedito plants operated continuously, with treatment of marginal polymetallic ore from Cerro de Pasco's Raúl Rojas pit.

Tonnage was progressively raised from 4,000 tpd (August) to 5,000 tpd (December), due to the implementation of pulp pumps and reactivation of re-milling and ball mills.

Tonnage was progressively raised from 4,000 tpd (August) to 5,000 tpd (December)





▼ CERRO DE PASCO OXIDES UEA

The Cerro de Pasco oxide plant in the Pasco Region is located approximately 295 kilometers from Lima and can be reached via the Central Highway.

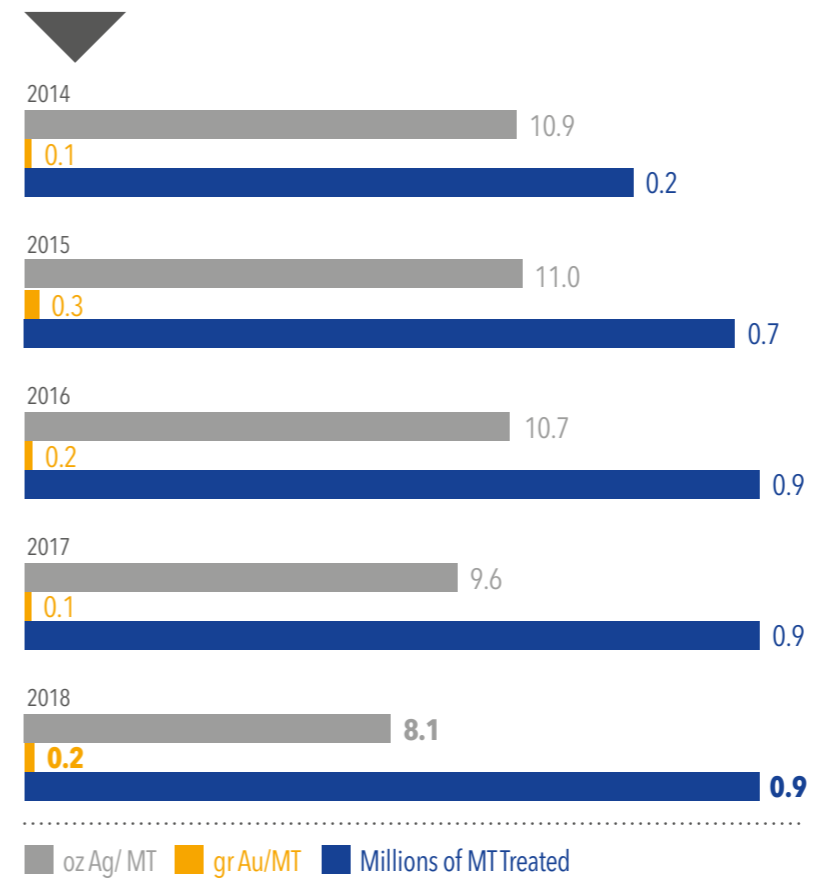
This operating unit, which includes Volcan's first lixiviation plant, began operations in 2014, with full production capacity reached in June 2015.

During 2018, 914,000 tons of stockpiled oxides were processed, with ore grades of 8.09 oz Ag/MT and 0.19 gr Au/MT.

Production of silver fines reached 3.4 million ounces, representing a reduction of 10% with respect to the 3.7 million ounces in 2017, due to the reduction in the silver grade in stockpiles.

During 2018, 914,000 tons of stockpiled oxides were processed, with ore grades of 8.09 oz Ag/MT and 0.19 gr Au/MT

Evolution of Treated Tonnage and Average Grades Oxides

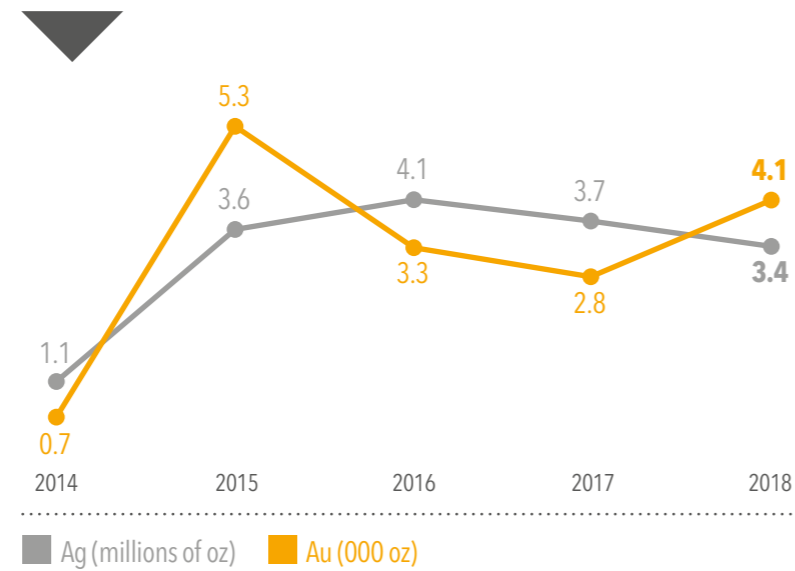


■ oz Ag/ MT ■ gr Au/MT ■ Millions of MT Treated

In situ oxide reserves and resources were updated for the production design south of the Raúl Rojas pit.

In 2018, operations began in the southern part for in situ oxides recovery to feed ore to the oxides plant in the upcoming years.

**Evolution of Fines Production Oxides**



Silver  
**3.4 millions of oz**  
 Gold  
**4.1 thousands of oz**

**OXIDES PLANT**

In 2018, an average processing rate of 2,500 tpd has been maintained.

During the year, the oxides plant maintained significant metallurgical efficiency, with silver recovery at 45.3% and gold recovery at 72.1%, compared to 2017, with silver recovery at 44.3% and gold at 69.5.

**Doré Production**

OXIDES PLANT TREATMENT	2017	2018
Treated Tons (000 MT)	872	<b>914</b>
Dore bars (000 kg)	142	<b>109</b>

**DURING THE YEAR, THE OXIDES PLANT MAINTAINED SIGNIFICANT METALLURGICAL EFFICIENCY, WITH SILVER RECOVERY AT 45.3% AND GOLD RECOVERY AT 72.1%**





# 08.

## EXPLORATIONS AND GROWTH



### ▼ EXPLORATIONS

In 2018, Volcan carried out exploration in three advanced projects: Romina, Carhuacayán, and Palma, as well as two projects in the initial stage: Zoraida and Shuco. In all, 54,211 meters of diamond-drilled boreholes were completed.

#### Progress Regional Explorations (mts)

	2016	2017	2018
Carhuacayán	1,602	22,904	<b>14,110</b>
Romina II	5,125	10,688	<b>12,560</b>
Palma	-	7,920	<b>21,591</b>
Zoraida	-	-	<b>4,966</b>
Shuco	-	-	<b>984</b>
Santa Bárbara	-	9,087	-
Alpamarca Norte	-	10,409	-
Chumpe	-	875	-
Diamond Drill Hole (DDH)	6,727	61,883	<b>54,211</b>

Source: Volcan Cia Minera

In all,  
**54,211**  
meters of  
diamond-drilled  
boreholes were  
completed



**Romina is noteworthy among the advanced projects, where significant mineralization has been defined, specifically in the Puagjanca body with a significant zinc, lead and silver content**

Romina is noteworthy among the advanced projects, where significant mineralization has been defined, specifically in the Puagjanca body with a significant zinc, lead and silver content. In addition, a significant mineralization has been discovered near Puagjanca.

On the other hand, In Carhuacayán, a significant mineralization was defined in the La Tapada body (Zn-Pb-Ag), not just beneath the old pit, but also on other levels of this older mine. Both projects, Romina and Carhuacayán, will produce ore to be treated at the Alpamarca concentrate plant. These are estimated to begin production in 2020.

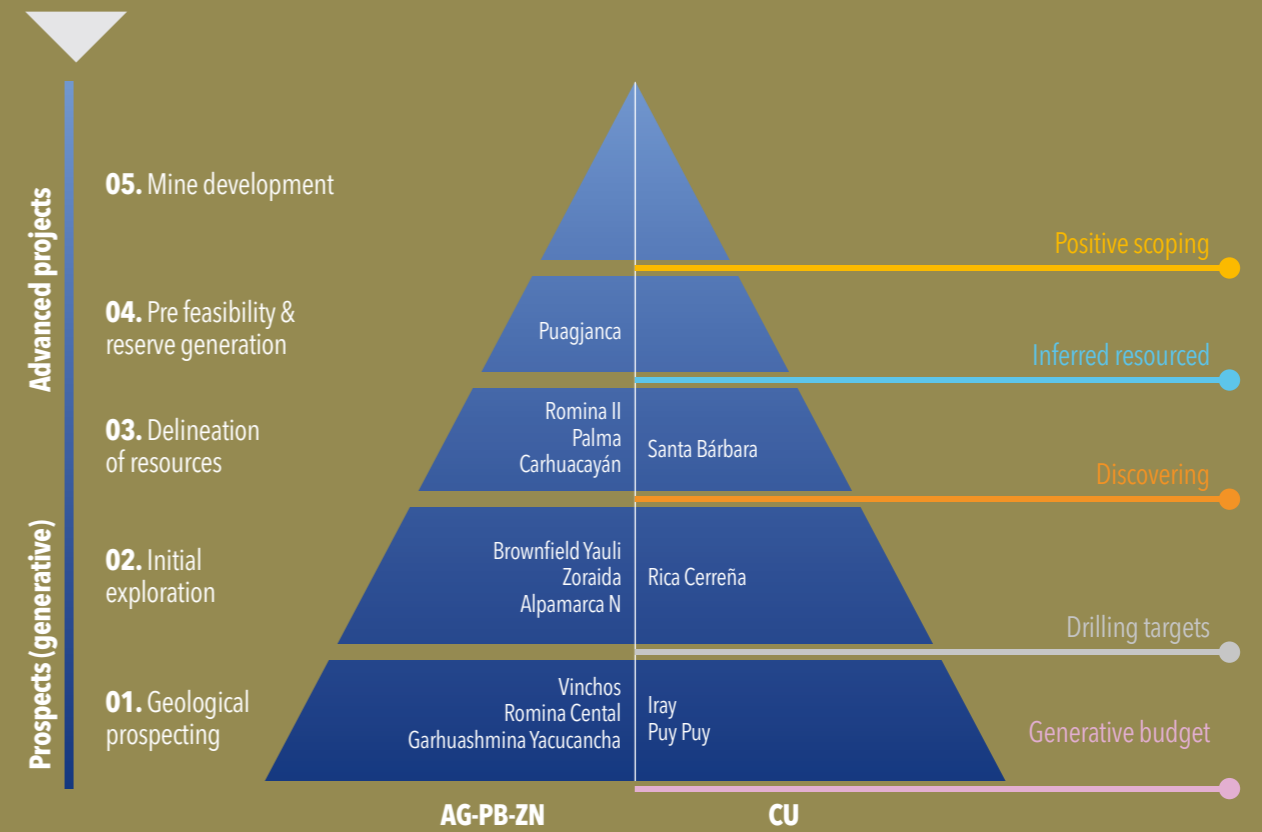
At Palma, a greenfield project, a significant mineralization of zinc, lead and silver has been defined, sufficient to begin a mining project separate from the other units. The pre-feasibility stage will be carried out in 2019, leaving a massive geological potential yet to be discovered.

At Zoraida, a geological reinterpretation of the project is underway, revealing a significant mineralization in zinc, lead and silver strata. Production at Zoraida will be treated in the Andaychagua concentrate plant.

Finally, Shuco as a prospect was thrown out, because its results did not meet Volcan expectations.



Progress on Exploration Projects (Puagjanca is part of Romina)



### ▼ GENERATING NEW PROJECTS

By the close of 2018, the Santa Bárbara and Garhuasmina – YacucanCHA mining prospects were identified for exploration in 2019, and will subsequently be confirmed if identified to move on to the next phase.

#### **Santa Bárbara Prospect**

Santa Bárbara is located 2 km east of the old Carhuacayán mine district and 20 km east of Alpamarca mine. RTZ explored this copper and gold porphyry project from 1990 to 2000. In the most recent reconnaissance work undertaken by Volcan, evidence was found of a larger lithocap that could increase the potential of the project.

Diamond drilling at the mine in 2017 totaled 9,085 meters. The first goal was to drill twin boreholes to confirm the finding from the 1990s. Later, a larger grid was made to increase the project potential, obtaining positive results.

The project was largely on hold during 2018, but towards the end of the year, laboratory metallurgical testing showed positive results. Preliminary studies on a conceptual level are currently being run to determine the project's economic viability.

#### **Garhuasmina – YacucanCHA Prospect**

Located 10 km east of the Cerro de Pasco mine, this prospect is in the initial stages. It is a zinc, lead and silver polymetallic mineralization project still in the environmental permitting phase. Permits should be ready in late 2019.

### POST-DISCOVERY DEVELOPMENT

The polymetallic project portfolio was evaluated in 2018, prioritizing those with the most economic potential. Romina and Carhuacayán were selected due to their proximity to the Alpamarca concentrate plant, and Palma was selected for its major potential.

#### **Romina Project**

Located in the Pacaraos District, 15 km west of Alpamarca Mine. It is a zinc, lead and silver polymetallic mineralization that outcrops in the form of replacement bodies.

The project is in the advanced exploration phase; the Puagjanca sector is the most advanced in terms of development. Initial explorations were conducted between 2008 and 2012 by Votorantin Metais and later by Milpo, who completed 13,263 meters of diamond drilling in 43 boreholes.

In 2017, an infill drilling program of 9,572 meters was completed in 27 boreholes on the Puagjanca body to refine the geological model and define the category of the resources.

In 2018, an additional infill drilling program of 5,830 meters was completed in 33 boreholes on the upper part of the Puagjanca body, including the surface. The results were very positive, which refined the geological model and increased the resource base.

In addition, after 6,729 meters of diamond drilling, significant mineralized bodies and strata were discovered in the Andrea, Ariana, Esperanza and Santa zones. These are found in the vicinity of the Puagjanca body and significantly increase the project potential.

A trade-off study was also conducted by REDCO Mining Consultants on a pre-feasibility level to determine the production method for the Puagjanca body. The company Klohn Crippen Berger initiated feasibility studies for the surface facilities and infrastructure.

In 2019, a mining technical-economical study will be conducted on a feasibility level, considering the studies conducted in prior years, as well as the results obtained in the last drilling campaign in 2018, where the resources model was re-categorized and updated. The feasibility study will provide relevant information for the presentation of the Detailed Environmental Impact Study (EISd). Finally, a 7,000-meter program will be implemented in the Andrea, Adriana, Esperanza and Santa bodies to define the morphology of the mineralization.

#### **Carhuacayán Project**

Situated 20 km east of the Alpamarca mine, this is a polymetallic project of zinc, lead, and silver located in a mountainous area. The mineralization is observed in veins, breccia bodies, replacement bodies and layers.

In 2017, a 21,811-meter diamond drilling program was completed in the areas of La Tapada, Candelaria and surroundings. Positive results were obtained, with significant mineralization primarily in La Tapada. In addition, new possible exploration zones were defined.

Replacement bodies were found in La Tapada, in an embedded lime block that had been mined previously. This half-table replacement zone has dimensions that are more than 500 meters long and 300 meters deep, with a width varying from 30 to 50 meters, located in very significant polymetallic mineralization areas.

In 2018, a program of 14,110 meters of diamond-drilled boreholes were completed in La Tapada. This was carried out primarily in the old production zone,

**In 2019, a mining technical-economical study will be conducted on a feasibility level, considering the studies conducted in prior years, as well as the results obtained in the last drilling campaign in 2018, where the resources model was re-categorized and updated**

showing significant mineralization in these older levels, defining a continuous mineralization over the older zone.

A study of the scope of the Carhuacayán Project will be conducted in 2019 to assess its technical and economic viability on a conceptual level. Additionally, a 4,600-meter drilling program will be carried out with a focus on infill drilling over La Tapada.

#### **Palma Project**

Located 60 km southeast of the city of Lima, this project is aimed at extracting volcanogenic massive sulfides (VMS) distributed in mineralized layers of zinc, lead, and silver.

The first stage of the project involved 17,000 meters of diamond drilling. Drilling enabled an estimate of inferred resources and identified that the ore is structured in layers, with optimal potencies and good rock quality, and mineralization open both at depth and towards the sides.

The second amendment to the semi-detailed EIS was approved by DGAAM in 2017, after which a diamond drilling program of 7,920 meters was carried out in the upper part of the deposit, confirming the continuity of the mineralization.

In 2018, a program involving 21,591 meters over the area was completed, with very positive results. The mineralization horizon increased by one kilometer, with over 600 meters in depth. Currently, the geological model is undergoing updates.

A pre-feasibility study is planned for the second half of 2019 to evaluate different potential scenarios, considering the updated resource model with DDH performed in 2018, as well as scope-level studies carried out by Ausenco in 2014.

In 2019, a 7,000-meters diamond drill-hole campaign will be conducted to define the depth of the deposit and define a new mineralization zone, Santa Lidia, which could significantly increase the project potential.

## **THE POLYMETALLIC PROJECT PORTFOLIO WAS EVALUATED IN 2018, PRIORITIZING THOSE WITH THE MOST ECONOMIC POTENTIAL. ROMINA AND CARHUACAYÁN WERE SELECTED**



A Brownfield Exploration was undertaken in 2018 in the Yauli unit, with a special emphasis on the Andaychagua mine and the Ticlio mine, to define new mineralization zones

**BROWNFIELD EXPLORATION**

**Andaychagua and Ticlio (Yauli)**

A Brownfield Exploration was undertaken in 2018 in the Yauli unit, with a special emphasis on the Andaychagua mine and the Ticlio mine, to define new mineralization zones and define the extent of current mines, generating a base to increase resources and replacement zones.

The work involved preparation of databases (compilation, standardization and integration of historic geological data), creation of 3D geological models (lithology, structural, alterations and mineralogy), defining drilling targets and exploring superficially (geological mapping, semi-detailed geochemical and mineralogical prospection and geophysical prospection).

This work provided the basis for defining several initial targets, both for the Andaychagua mine and the Ticlio mine. The first stage will involve 10,000 meters of diamond drilling.

**Zoraida Project (Yauli)**

Located 7 km south of the Andaychagua mine, this is primarily a silver project with lead and zinc content. Due to its geological characteristics, it may become the third polymetallic system in the Yauli dome, after the San Cristóbal mine and the Andaychagua mine.



In 2018, more than 23,000 meters of diamond drillholes performed from 2007 to 2014 were reviewed and re-interpreted with new standards. This review has assisted in defining part of the Zoraida vein and replacement strata with significant mineralization of silver, lead and zinc, generating a new geological model with high potential.

In 2019, 5,000 meters of diamond drillholes over strata and veins in this area are programmed to define the mineralization morphology and more precisely estimate resources.

**▼ CURRENT OPERATIONS**

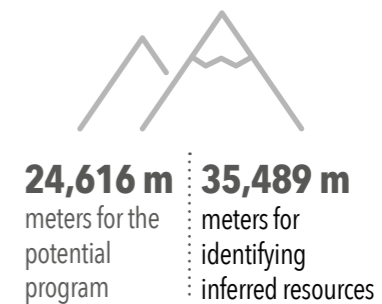
**Yauli**

Infill drilling campaigns and explorations performed in 2018 were mainly focused on defining ore potential, the discovery of new mineralized bodies and structures near operating areas and defining inferred resources to elevate these to the category of measured and indicated resources.

Development of the San Cristóbal mine has defined a continuity on the lateral mineralization of the Gavilán Pit, which will undergo economic evaluation. On the other hand, at the Andaychagua mine, the geological aspects of the Oyama project have been revealed.

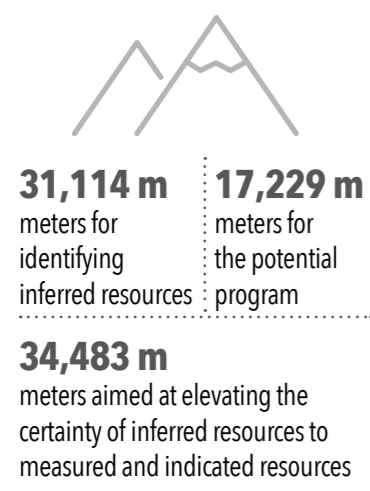
The geological evaluations in the metavolcanic sequence associated with hydrothermal structures have led to the discovery of new veins (Vanessa and Dolores), as well as new extensions in the mineralized bodies of the Andaychagua mine.

In 2018, 112,449 meters of diamond drillholes were carried out, distributed as follows:



**52,345 m** meters for raising the inferred resources category to measured and indicated in the San Cristóbal, Andaychagua, Carahuacra and Ticlio mines

Yauli Drilling				
MINE	METERS DRILLED 2018			
	POTENTIAL (M)	RESOURCES (M)	INFILL DRILLING (M)	TOTAL (M)
San Cristóbal	11,746	13,345	12,535	37,626
Andaychagua	7,540	12,164	13,871	33,574
Ticlio	5,171	1,169	5,301	11,641
Carahuacra	159	8,811	20,638	29,608
<b>Total</b>	<b>24,616</b>	<b>35,489</b>	<b>52,345</b>	<b>112,449</b>



The results confirmed the depth and lateral continuity of the resources in the main mineralized structures. The following new resources were determined: (i) in the Andaychagua mine, new mineralized structures associated with metavolcanic rock; (ii) in the San Cristóbal mine, increased depth and lateral extension of mineralization in the Split 658, 658, 722, Ramal floor 722 veins and increased depth of the San Cristobal vein; (iii) in the Carahuacra mine, increased depth of the Mary, ML and Diana veins, associated with the formation of mineralized strata in their intersections with limestone; and (iv) in the Ticlio mine, increased depth of the Ramal Techo vein, and discoveries of the Borrachitos, Katty and Veta Contacto veins. The results obtained provide a sound basis for continuing the exploration program planned for 2019.

**Chungar**

A brownfield exploration program was initiated towards the east of the lateral extensions of the Animón mine, accompanied by exploration of new structures to the northeast of the Islay mine. Mapping, geophysics and geochemistry of the surface will help set the drilling targets for 2020.

Mine exploration has been focused on the lateral extensions of the operating veins and on identifying new structures and strata with economic potential.

82,826 meters of diamond drillholes have been performed in the Animón and Islay mines, distributed as indicated below:

Drilling at Chungar				
MINE	METERS DRILLED 2018			
	POTENTIAL (M)	RESOURCES (M)	INFILL DRILLING (M)	TOTAL (M)
Animón	7,202	21,757	26,282	55,241
Islay	10,027	9,357	8,201	27,585
<b>Total</b>	<b>17,229</b>	<b>31,114</b>	<b>34,483</b>	<b>82,826</b>

These results have provided the necessary confirmation of continuity in the mineralized zones, both at depth and laterally. Furthermore, new mineralized bodies were defined and new structures and strata with economic potential were discovered.

**Alpamarca**

Local exploration at Alpamarca was primarily focused on developing a drilling program beneath the pit to elevate the certainty of inferred resources to measured and indicated resources and to evaluate increasing depth. In all, 8,313 meters were drilled. Results have been highly positive, thereby extending the life of mine.

**In total, 8,313 meters were drilled in Alpamarca**

**▼ INORGANIC GROWTH - ACQUISITIONS AND JOINT VENTURES**

As in years past, inorganic development remained a potential pathway for growth, prioritizing activities in the central highlands. In 2018, the Company continued to evaluate opportunities for acquiring new projects and mining operations that are aligned with the corporate strategy.

The Company prioritizes opportunities in the area of influence and the existence of competitive advantages that will support synergies with the current portfolio. Projects are evaluated with the goal of maintaining leadership in zinc, lead, and silver production.



# 09.

## BUSINESS MANAGEMENT



In business terms, the behaviors of zinc concentrates and lead concentrates have moved in opposite directions throughout the year, despite the fact that both began under similar scenarios, i.e., markets considered to be in deficit with commercial tolling in favor of mining producers.

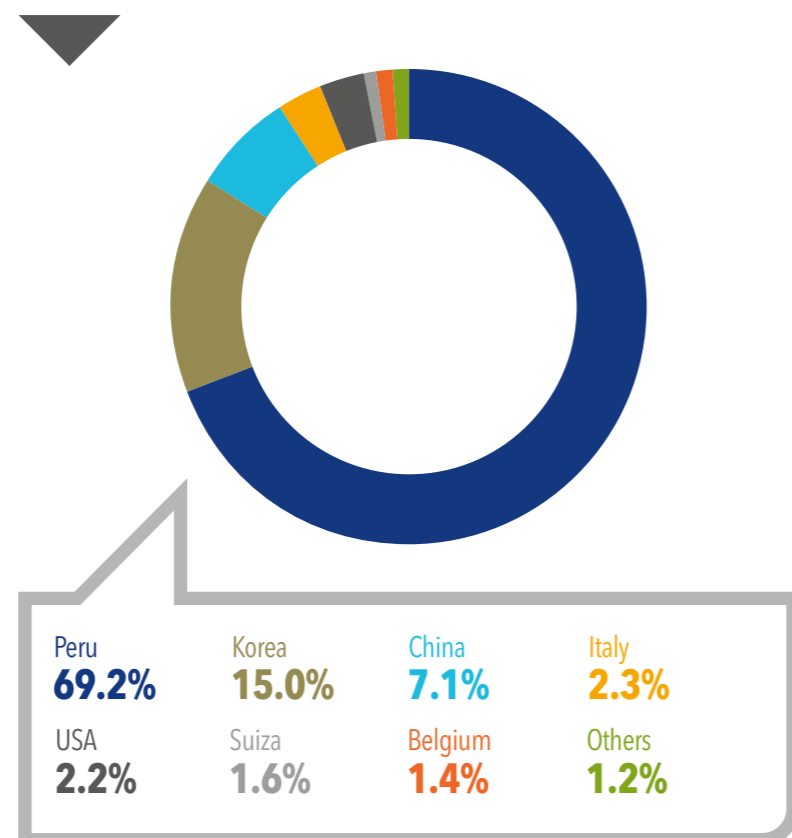
Regarding zinc, over the last five months of the year, the market reacted quickly to the reactivation of suspended operations, in addition to new productions motivated by a sustained price increase, after the price of zinc hit 1,500 USD/MT in late 2015. As reference, the average spot tolling in China from January to July, 2018 as published by Wood Mackenzie, was 26 USD/MT on a CIF basis, however, it closed out the year at 187 USD/MT. Both the kickoff of new mining operations and the opening of possible new zinc mining units in the next few months made it possible to sustain such a drastic change in the market. Furthermore, on the demand side new environmental restrictions forced refineries in China to reduce their production capacity, diminishing the appetite for concentrates. All of this led to a negative impact on the trade terms of zinc.

Regarding lead concentrates, considering the decrease in the deficit of lead units, the market is still in a favorable situation for mine producers, which is reflected in commercial tolling. The large number of different lead qualities and the particular recovery of each refinery generate different tolling costs for each specific ore quality.

Volcan maintained its market diversification policy and the search to optimize the ore value to improve trade conditions. Parallel to this, the Company sought to maximize the value per ton, which was based on finding the optimum degree of concentrates, focusing on a higher recovery of payable elements and reducing impurities in concentrates as much as possible. Finally, the Company continued with its efforts to reduce sales expenses through new, more efficient logistical strategies.

The total fines sales volume decreased mainly due to lower production during the year.

Sales percentage by destination 2018



Fines Sales Volume By Business				
	FINE SALES	2017	2018	VAR %
<b>Mining business</b>	Zinc (thousands FMT)	255.0	<b>238.7</b>	-6.4
	Lead (thousands FMT)	51.0	<b>47.8</b>	-6.3
	Copper (thousands FMT)	3.6	<b>4.2</b>	16.2
	Silver (million Oz)	17.4	<b>17.0</b>	-2.2
	Gold (thousands Oz)	9.9	<b>15.0</b>	51.9
<b>Commercialization business</b>	Zinc (thousands FMT)	2.6	-	-100
	Lead (thousands FMT)	0.6	-	-100
	Copper (thousands FMT)	1.5	-	-100
	Silver (million Oz)	0.7	-	-100
	Gold (thousands Oz)	0.2	-	-100
<b>Total</b>	Zinc (thousands FMT)	257.5	<b>238.7</b>	-7.3
	Lead (thousands FMT)	51.6	<b>47.8</b>	-7.3
	Copper (thousands FMT)	5.1	<b>4.2</b>	-17
	Silver (million Oz)	18.1	<b>17.0</b>	-5.9
	Gold (thousands Oz)	10.0	<b>15.0</b>	49.5

The average sales price of zinc increased from 2,836 USD/MT in 2017 to 2,917 USD/MT in 2018 (+2.9%), lead decreased from 2,311 USD/MT to 2,245 USD/MT (-2.8%) and silver decreased from 17.1 USD/oz to 15.7 USD/oz (-7.9%).

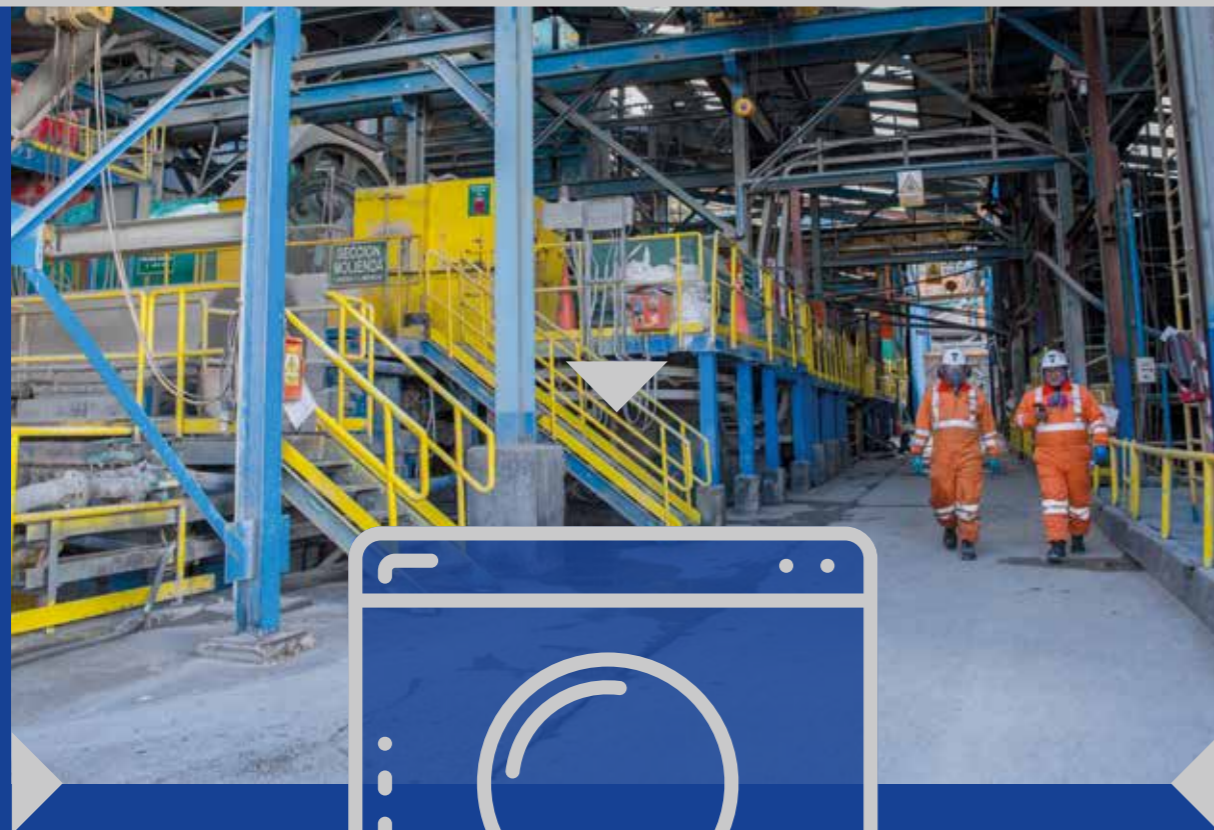
Sales Prices By Metal			
	2017	2018	VAR %
Zinc (USD/MT)	2,836	<b>2,917</b>	2.9
Lead (USD/MT)	2,311	<b>2,245</b>	-2.8
Cooper (USD/MT)	6,148	<b>6,464</b>	5.1
Silver (USD/oz)	17.1	<b>15.7</b>	-7.9

- Zinc **2,917 USD/MT**
- Lead **2,245 USD/MT**
- Cooper **6,464 USD/FMT**
- Silver **15.7 USD/oz**



# 10.

## ANALYSIS OF RESULTS AND INVESTMENTS



### ▼ SALES

Total sales in 2018, before adjustments, decreased 3.3% from USD 860.2 million in 2017 to USD 831.5 million. This decrease is primarily due to the finalization of third-party concentrate sales, which during 2017 was USD 22.8 million, and lower sales from Volcan production due to stoppages in the Chungar and Yauli mines.

Sales adjustments totaled USD -56.4 million, with negative final settlements of USD -34.5 million, adjustments due to provisions on open commercial positions, USD -8.0 million, and adjustments for hedging results were USD -13.9 million. As a consequence, in 2018 sales after adjustments totaled USD 775.1 million, a decrease of 9.5% compared to USD 856.7 million in 2017.

Net Sales Breakdown (millions of USD)				
	2017	2018	VAR %	
<b>Mining business</b>	Zinc	478.9	488.6	2
	Lead	95.2	92.5	-2.8
	Cooper	13.1	16.3	24.7
	Silver	243.3	220.7	-9.3
	Gold	6.8	13.4	96.2
	<b>Total</b>	<b>837.4</b>	<b>831.5</b>	<b>-0.7</b>
	Ajustes*	-7.2	-56.3	681.2
<b>Ventas Netas</b>	<b>830.1</b>	<b>775.2</b>	<b>-6.6</b>	
<b>Commercialization business</b>	Zinc	5.6	-	-99.6
	Lead	1.4	-	-100
	Cooper	6.4	-	-100
	Silver	9.4	-	-100
	Gold	0.1	-	-100
	<b>Total</b>	<b>22.8</b>	<b>-</b>	<b>-99.9</b>
	Adjustments*	3.8	-0.1	-
<b>Net sales</b>	<b>26.6</b>	<b>-0.1</b>	<b>-</b>	
<b>Total</b>	Zinc	484.5	488.6	0.8
	Lead	96.5	92.5	-4.2
	Cooper	19.5	16.3	-16.4
	Silver	252.7	220.7	-12.7
	Gold	6.9	13.4	94.1
	<b>Total</b>	<b>860.2</b>	<b>831.5</b>	<b>-3.3</b>
	Adjustments*	-3.4	-56.4	-
<b>Net sales</b>	<b>856.7</b>	<b>775.1</b>	<b>-9.5</b>	

\* Adjustments: i) final shipment liquidations of previous terms, ii) adjustment for open positions (embedded derivative and sales adjustment), iii) hedging results

## ▼ COSTS

In absolute terms, the cost of production fell 5.8%, from USD 399.5 million in 2017 to USD 376.3 million in 2018. Meanwhile, unit cost fell 2.6%, from 47.9 USD/MT in 2017 to 46.6 USD/MT in 2018, due to processing of a greater volume of stockpiled, low-grade polymetallic mineral at Cerro de Pasco.

Volcan continues to focus on cost control and reduction in all operating units. The Company continues with its policy of identifying specific opportunities for improvement related to mining, supports, maintenance, transportation, and administrative units.

Absolute Costs (millions of USD)				
UNIT	2017	2018	VAR %	
Yauli	232.9	<b>208.6</b>	-10.4	
Chungar	102.2	<b>97.4</b>	-4.6	
Cerro	14.3	<b>18.8</b>	32.0	
Óxidos	33.3	<b>35.2</b>	5.6	
Alpamarca	16.9	<b>16.2</b>	-4.0	
<b>Consolidated</b>	<b>399.5</b>	<b>376.3</b>	<b>-5.8</b>	

Unit Cost (USD/TMT)				
UNIT	2017	2018	VAR %	
Yauli	65.2	<b>65.1</b>	-0.2	
Chungar	55	<b>58.2</b>	5.7	
Cerro	13.5	<b>14.3</b>	6.4	
Óxidos	28.7	<b>30</b>	4.5	
Alpamarca	17.3	<b>17</b>	-1.9	
<b>Consolidated*</b>	<b>47.9</b>	<b>46.6</b>	<b>-2.6</b>	

\* The reported cost of production is the cost of production itself, which does not include the cost of buying ore and concentrates to third parties, nor those extra costs from the liquidation of staff.

In 2018, the cost of sales was USD 534.1 million, 5.7% lower than the 2017 cost of USD 566.1 million. This reduction is primarily explained by the finalization of third-party concentrate purchases, which during 2017 was USD 18.5 million, and the lower absolute production cost that decreased by 23.3 million due to stoppages in the Chungar and Yauli mines. These were partially offset by the increased depreciation and amortization of USD 17.5 million.

#### Sales Cost Breakdown By Business (millions of USD)

	2017	2018	VAR %
<b>Cost of Own Sales</b>	<b>539.8</b>	<b>527.2</b>	<b>-2.3</b>
Cost of Own Production	399.5	376.3	-5.8
D&A on Cost of Production	130.5	148	13.4
Ore Purchase	3.1	1.7	-43.9
Extraordinary Costs	2.7	1.4	-48.4
Variance in Own Inventory	4	-0.1	-
<b>Cost of Third-Party Sales</b>	<b>18.5</b>	<b>0</b>	<b>-100</b>
Concentrate Purchase	16.9	-	-100
Variance in Third-Party Inventory	1.6	-	-
<b>Worker Shares</b>	<b>7.8</b>	<b>6.8</b>	<b>-12.5</b>
<b>Total</b>	<b>566.1</b>	<b>534.1</b>	<b>-5.7</b>



#### ▼ INVESTMENTS

Total mining investment fell 4.6%, from USD 189.8 million in 2017 to USD 181.1 million in 2018. Operating investments grew 2.0% from USD 171.5 million in 2017 to USD 174.9 million in 2018, mainly through increases in local exploration and development. Investment in the energy business increased 18.3% over the previous year, from USD 3.2 million in 2017 to USD 3.7 million in 2018. Finally, overall investment was down 4.2%, from USD 193 million in 2017 to USD 184.9 million in 2018.

#### Investment Breakdown (MM USD)

	2017	2018	VAR %
<b>Mining Business</b>	<b>189.8</b>	<b>181.1</b>	<b>-4.6</b>
<b>Operating Units</b>	<b>171.5</b>	<b>174.9</b>	<b>2.0</b>
Local Exploration	13.2	22.4	69.4
Development	69.6	76.9	10.6
Plants and Tailings Dams	52.8	35.3	-33.2
Mine and Infrastructure	26.6	24.2	-9.0
Energy in Units	3.5	8.2	133.5
Administration and Others	5.8	7.9	35.3
<b>Regional Explorations</b>	<b>14.8</b>	<b>3.5</b>	<b>-76.6</b>
<b>Growth and Others</b>	<b>3.5</b>	<b>2.8</b>	<b>-20.2</b>
<b>Energy Business</b>	<b>3.2</b>	<b>3.7</b>	<b>18.4</b>
<b>Total</b>	<b>193</b>	<b>184.9</b>	<b>-4.2</b>

#### ▼ PROFITABILITY

The Company's gross margin in 2018 was 31%, lower than the 34% recorded in 2017. This decrease in the gross margin responded to the negative trend in the zinc, lead and silver prices, which give rise to negative sales adjustments. As a result, gross profits decreased 17.1%, from USD 290.6 million in 2017 to USD 241.0 million in 2018.

Administrative expenses increased from USD 43.5 million in 2017 to USD 48.1 million in 2018. Meanwhile, regional exploration expenses increased from USD 2.2 million in 2017 to USD 13.7 million in 2018, due to a change in reporting in 2018, wherein all regional exploration is reported as expenses for the period and are no longer capitalized.



#### Mining investment (USD)

**189.8** MM 2017 → **181.1** MM 2018

#### Energy investments (USD)

**3.2** MM 2017 → **3.7** MM 2018

#### Total investments (USD)

**193** MM 2017 → **184.9** MM 2018

**To adjust Company financial statements to Glencore's corporate accounting policies and standards, at the close of 2017, Volcan recorded an exceptional net charge of USD 0.9 million**

Meanwhile, sales expenses were down from USD 30.6 million in 2017 to USD 27.2 million in 2018. This drop mainly reflects lower sales volumes and lower freight and shipping costs resulting from logistical and commercial improvements.

As for other net revenue and expenditures, this line item fell from USD -10.5 million in 2017 to USD -19.1 million in 2018. This is primarily because in 2018, expenses were recorded as a result of stoppages related to safety issues in the Yauli and Chungar mines, as well as administrative sanctions.

Also, losses due to exchange rate fluctuations totaled USD -4.1 million in 2018, compared to gains of USD 1.2 million 2017.

All of this resulted in EBITDA decreasing from USD 343.0 million in 2017 to USD 288.6 million in 2018. Net profits rose from USD 92.7 million in 2017 to USD 30.3 million in 2018.

To adjust Company financial statements to Glencore's corporate accounting policies and standards, at the close of 2017, Volcan recorded an exceptional net charge of USD 0.9 million. The adjustments were mainly focused on i) evaluation of devaluation of fixed and intangible assets (impairment); ii) deferred taxes; iii) accounting provisions; and iv) cost of sales.

These exceptional charges did not have any effect on the Company's cash flow. Also, in the case of the devaluation of fixed assets and intangibles, in the future the adjustment may be reversed in the event of a scenario other than the one considered in the evaluation as of Monday, December 31, 2018.

#### ▼ LIQUIDITY AND SOLVENCY

In 2018 Volcan generated USD 83 million in cash flow from mine and energy operations, following operational investments. Disbursements for regional explorations and investment in mining and energy growth totaled USD 19 million, and USD 22 million were disbursed in other investments. The financing flow was negative by USD 81 million and includes USD 35 million in interest. As a consequence, total cash flow for the year was USD -39 million and the cash balance as of December 31, 2018 was USD 63 million.

Considering EBITDA, cash balance, and debt, the leverage ratio (net financial debt/ EBITDA\*) at year end was 2.5 to 1, compared to 2.0 to 1 in 2017.

\* This corresponds to cumulative EBITDA for the last 12 months.

#### Income Statement (MM USD)

Income Statement (Millions of USD)	2017	2018	VAR %
<b>Sales before Adjustments</b>	<b>860.2</b>	<b>831.5</b>	<b>-3.3</b>
Final Settlements	9.4	-34.5	-
Provisions for Open Positions	-7.2	-8	10.6
Hedging	-5.6	-13.9	149.7
<b>Sales after Adjustments</b>	<b>856.7</b>	<b>775.1</b>	<b>-9.5</b>
<b>Cost of Sales</b>	<b>-566.1</b>	<b>-534.1</b>	<b>-5.7</b>
<b>Gross Profits</b>	<b>290.6</b>	<b>241</b>	<b>-17.1</b>
Gross Margin	34%	31%	-3 pp
Administrative Expenses	-43.5	-48.1	10.6
Exploration Expenses	-2.2	-13.7	524.3
Sales Expenses	-30.6	-27.2	-11.1
Other Income (Expenses) <sup>1</sup>	-10.5	-19.1	82.7
<b>Operating Profits</b>	<b>203.9</b>	<b>132.9</b>	<b>-34.8</b>
Operating Margin	24%	17%	-7 pp
Financial Expenses (net)	-40.3	-40.7	1.1
Exchange Difference (net)	1.2	-4.1	-
Royalties	-17.5	-13.3	-23.9
Income Tax	-54.6	-44.4	-18.6
<b>Net Profit before Exceptional Charges</b>	<b>92.7</b>	<b>30.3</b>	<b>-67.3</b>
Net Margin	11%	4%	-7 pp
Adjustments for Exceptional Charges <sup>2</sup>	-570.2	-0.9	-
<b>Net Profit after Exceptional Charges</b>	<b>-477.5</b>	<b>29.4</b>	<b>-</b>
<b>EBITDA<sup>3</sup></b>	<b>343</b>	<b>288.6</b>	<b>-15.9</b>
EBITDA Margin	40%	37%	-3 pp

<sup>1</sup> Includes sales and cost of sales for the energy division.

<sup>2</sup> Exceptional charges in 2018 are USD -12.3 million in cost of sales, USD 38.7 million in other net income (expenses) and USD -27.4 million in income tax, totaling USD 0.9 million.

<sup>3</sup> This does not consider exceptional adjustments.

Source: Volcan Cia. Minera

# 11.

## ENERGY



Volcan has hydroelectric generation plants and electrical transmission systems, which contribute to the generation of renewable energy by supplying energy not only for its own operations but also for third-party operations. This strategy enables Volcan to improve its operating costs, guarantee an energy supply to mining operations and contribute to the reduction of greenhouse gas emissions.

The total installed capacity of hydroelectric plants is 63 MW based on the following structure:

10 central hydroelectric Baños - Chungar (22 MW)	1 Central hydroelectric Tingo (1 MW)	1 Central hydroelectric from Huanchor (20 MW)	1 Central hydroelectric from Rucuy (20 MW)
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**The consolidated demand from Volcan and subsidiaries is 94 MW**

**Energy generation in 2018 was 308 GWh, a reduction of 13% over the 353 GWh of the previous year**

**▼ ENERGY GENERATION**

Energy generation in 2018 was 308 GWh, a reduction of 13% over the 353 GWh of the previous year. This reduction was primarily: (i) due to a lower production in the Chungar hydroelectric plants which together produced 153 GWh, reflecting a 6% reduction over the prior year, explained by the lower availability of resources in water basins; and (ii) because the Rucuy hydroelectric plant was not in operation in 2018.

Compañía Hidroeléctrica Tingo S.A.C., owner of the Tingo hydroelectric power plant, with 1.25 MW and 82 km of transmission lines in 50 and 22.9 kV, generated 9 GWh, which were all used for Chungar operations. This power plant is currently seeking production and environmental permits to expand the Tingo plant from 1.25 to 15 MW.

Hidroeléctrica Huanchor S.A.C. produced 146 GWh in 2018, representing a reduction of 1% over 2017. Huanchor is part of the Economic Operation Committee of the National Interconnected System (COES) and supplied electricity to ten clients through contracts in 2018.

Finally, Empresa de Generación Eléctrica Río Baños S.A.C., owner of the Rucuy hydroelectric power plant has been halted since March 2017 due to problems arising in the penstock and transmission line as a result of the Niño Costero phenomenon. Repairs to the power plant include the construction of a 430-m vertical shaft and a 620-m tunnel that will replace the penstock. Construction of these is underway and adheres to the Company's high safety standards. It estimates that operations will resume in the first half of 2019. The insurance adjuster has already issued a favorable final report on material damages and lost profits.

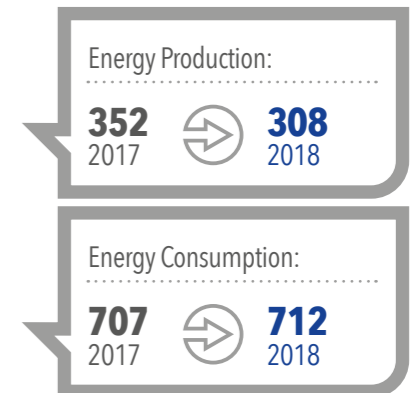
**▼ ENERGY CONSUMPTION**

In 2018, the Company's total energy consumption rose to 712 GWh, with a maximum demand of 94 MW, up 1% compared to 2017. This increase was primarily caused by greater vegetative demand from mining operations.

Energy generation represented 43% of total energy consumption. Additional energy required was purchased from Engie Perú S.A. and supplied via the National Interconnected System (SEIN), through a supply contract signed on January 1, 2018.

Finally, in 2018, 99.49% availability was recorded for the high tension electricity system in Yauli and 99.96% in Chungar-Alpamarca, excluding preventive maintenance work. This indicator reflects the degree of continuity and availability of electricity supply to mining operations.

Electricity Balance (GWh)			
	2017	2018	VAR %
<b>Energy Production</b>	<b>352</b>	<b>308</b>	<b>-13%</b>
CH's Chungar	162	153	-6%
CH Tingo	9	9	1%
CH Huanchor	147	146	-1%
CH Rucuy	35	-	-100%
<b>Energy Consumption</b>	<b>707</b>	<b>712</b>	<b>1%</b>
<b>Energy Purchased</b>	<b>541</b>	<b>550</b>	<b>2%</b>



# 12.

## SAFETY, HR, CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENT



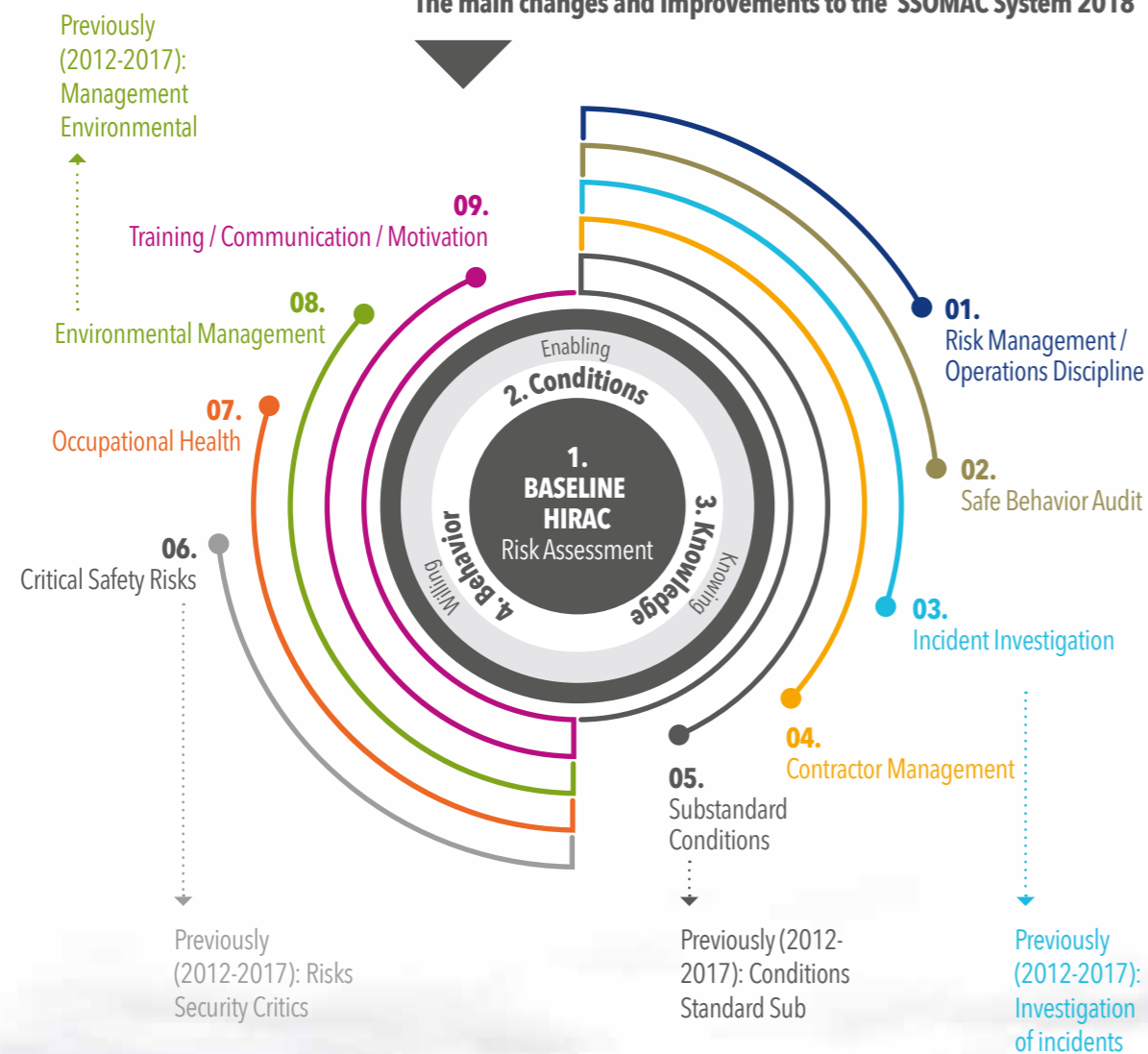
### ▼ SAFETY

#### IMPLEMENTATION OF THE SAFEWORK PROGRAM

For Volcan, 2018 was a year of improvements to the SSOMAC Management System through the implementation of new safety tools such as the implementation of the SafeWork Program, proposed by Glencore. When Glencore merged with Volcan's SSOMAC system, it renewed and strengthened its thematic tools.

The evolution of the Volcan security system is displayed in the following page.

**The main changes and improvements to the SSOMAC System 2018**



The most important changes and improvements made to the SSOMAC System through implementation of the SafeWork Program were the following:

1. Implementation of Thematic Tool N° 6: SafeWork
2. Update of Thematic Tool N° 5: Substandard Conditions and Critical Risks
3. Update of Thematic Tool N° 3: Incident and Accident Investigation

The SafeWork Program involves the implementation of the following tools:

1. 12 Fatal Hazard Protocols (FHP), which replace the "8 Critical Safety Risks"
  - a. The four remaining Critical Risks will be considered in Thematic Tool N°6
  - b. Each FHP involves three roll-out stages:
    - Stage 1: Compliance - target 2018
    - Stage 2: Mature Application - target 2019 and 2020
    - Stage 3: Advanced Application - target 2020 and 2021
  - c. 10 Life-saving Behaviors
    - In replacement of the 7 Golden Rules

New management methodologies were included within the Thematic Tools:

- Tool N°1: Risk Management / Operations Discipline
- Tool N°3: Incident and Accident Investigation
- Tool N°4: Contractor Management

The SafeWork Program was launched in April 2018, with the participation of all managers and employees from the Lima office and mine units.

The program was launched in May with managers of contractor companies and included the participation of Volcan management.

SafeWork Program Books were handed out at each launch and in each related activity.

- Fatal Hazard Protocols Book - for supervisors
- Commitment Book - for all employees

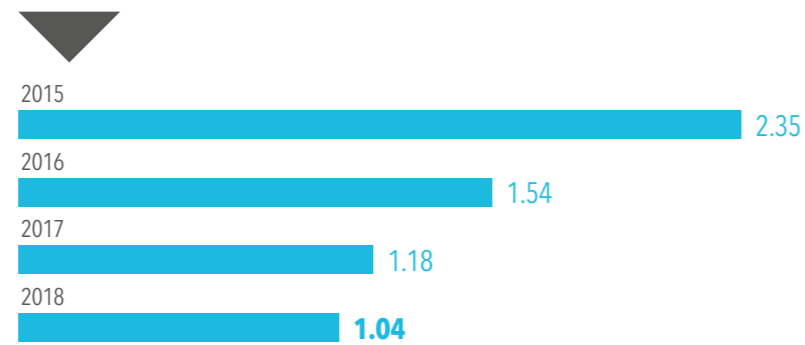
**The SafeWork Program was launched in April 2018, with the participation of all managers and employees**



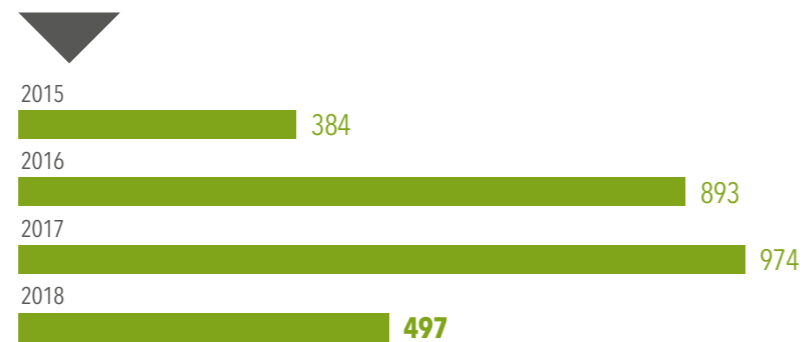


Safety indicators for 2018 were:

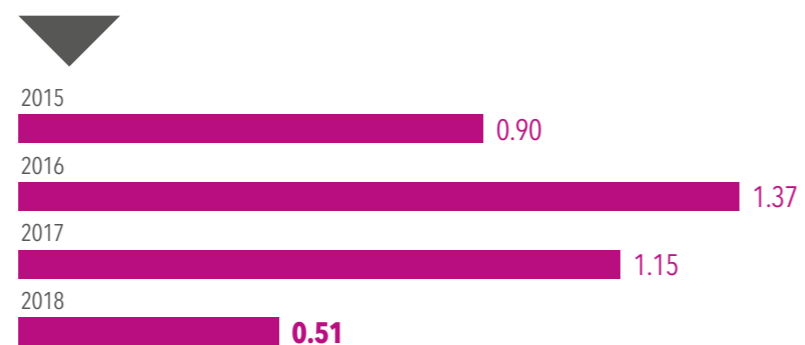
**Frequency indicator**



**Severity indicator**



**Incidence indicator**



Results of safety management in 2018 at Volcan and subsidiaries:

- 1 fatal accident in Carahuacra Mine
- 26 incapacitating accidents - 10% less than in 2017
- 69 minor accidents - 22% less than in 2017
- 34 accidents with damages to property - 42% less than in 2017
- 27 HPRI's\*, 16 of which were associated with failures in the rock massif

\* HPRI (High Potential Risk Incident): Incidentes con alto potencial de riesgo

Safety Indicators:

- Frequency Rate: 1.04 - 12% less than in 2017
- Severity Rate: 497 - 49% less than in 2017
- Accident Rate: 0.51 - 55% less than in 2017

The primary objective in 2019 is to ensure zero fatal accidents. This goes hand in hand with the search for an evolution in safety culture, which aims to begin a phase of independence regarding safety culture, where the leaders of each area assume an active and more important role in safety management, responsible for overall control management, continuing with the implementation of the SafeWork Program and being rigorous in compliance with fatal hazard protocols and the operative discipline.

**The primary objective in 2019 is to ensure zero fatal accidents**



**Volcan links together safety and human development processes, involving not only direct personnel but also suppliers and contractors**

**▼ HUMAN RESOURCES MANAGEMENT (HR MANAGEMENT)**

In 2018, as with previous years, work plans and improvement projects were developed for the different human-resource management processes. Volcan links together safety and human development processes, involving not only direct personnel but also suppliers and contractors. The Company is committed to consolidating a well-prepared and committed human group, with solid personal and corporate values and a focus on excellent results in all areas, with a primary focus on safety and production.

In 2018, efforts continued to optimize structures and standardize positions at all levels of the organization.

**TRAINING**

As every year, in early 2018 annual training plans were developed for all mine units. These plans are designed to meet development needs in alignment with the Company's strategic business objectives.

Programs such as operator training, supervisor development, fatal hazard protocols, critical risks and new methodologies and tools for analysis of incidents and accidents have contributed to closing the gaps in appropriate behavior and improving staff skills. These programs had a notable impact on SafeWork in operations and projects, and optimizations in the technical areas of all mine units.

**PERFORMANCE AND TALENT MANAGEMENT**

As in previous years, the performance management process is part of the employee management cycle and is manifested through recognition of individual contributions in the period evaluated.

The Company has its own tool for managing individual goals and assessing performance for recognition through Compensation Plans or in the Recognition Program.

In 2018, Volcan continued its talent retention plan, personal development plan, salary planning and prioritizing training activities for outstanding personnel.

In late 2018, Volcan designed the 2nd version of its Trainee Program, open to high-potential young professionals on a national level. Over 5,000 candidates from a wide range of universities were assessed, and 20 professionals were selected for the program. This program kicks off 2019 with a holistic training program in the classroom and in the field.

**COMPENSATION AND BENEFITS**

In 2018, roles and responsibilities were defined for operating and corporate areas, achieving efficiency in decision-making and promoting coordination between these areas.

As in previous years, the salary analysis was compared to the mining market to ensure external competitiveness and internal equity, followed by implementation of the necessary adjustments through salary planning.

The contractor personnel management team was created mid-year to ensure that specialized companies comply with labor obligations, accommodations, food and transportation standards.

**PERSONNEL MANAGEMENT**

2018 has been a year of increased control and monitoring of management indicators, with improvements in vacation management, reduction in absenteeism, improvements in overtime management and authorization, payroll and benefits payment, improvement in work schedule control. There was an adaptation of the company's internal policies and procedures to new legal standards, in an effort to eliminate work incidents, generating discipline and positive effects on the service provided to employees.

**INTERNAL COMMUNICATIONS**

In 2018, the Internal Communications Plan was reinforced in accordance with the established strategy. Closer ties were built between employees through internal programs and events, enabling an efficient work environment and promoting a better internal climate.

The SafeWork program was launched in 2018. Through a solid communication and outreach strategy, this program marks an important commitment between

## Volcan is concerned about the wellbeing and personal balance of all of its employees

the company and employees to ensure fulfillment of the goal of zero accidents through safe behavior.

### PERSONNEL WELLBEING AND WORKPLACE CLIMATE

Volcan is concerned about the wellbeing and personal balance of all of its employees. It measures workplace climate every year by looking at personnel satisfaction levels through the Organizational Climate Survey, which is based on a series of aspects that significantly influence employee satisfaction and commitment levels. It is divided into: Identification and Commitment, Leadership and Human Resources Management.

Its outcome was the development of plans such as: 2018 Volcan Olympics, Globalist Lottery, Volcan Marathon, Recognition of Safe Collaborators, leadership workshops, improvement of dining room service, improvement of employee transportation, monthly birthday celebrations, holiday celebrations, competitions, fairs, nutritional consultations, and others.

### OCCUPATIONAL HEALTH AND SAFETY

Volcan developed actions to identify, assess and control the risk of occupational illness among employees, mainly:

- Identification of groups who face similar types of exposure in all mine units to determine which agents may be causing occupational illnesses.
- Monitoring of physical, chemical, biological, ergonomic, and psychosocial agents.
- Design of control measures to minimize exposure to agents that may cause harm to people.
- Medical supervision based on GES information, monitoring agents and risk factors, reporting accidents and cases of chronic illness, as well as epidemiological reporting from medical centers.

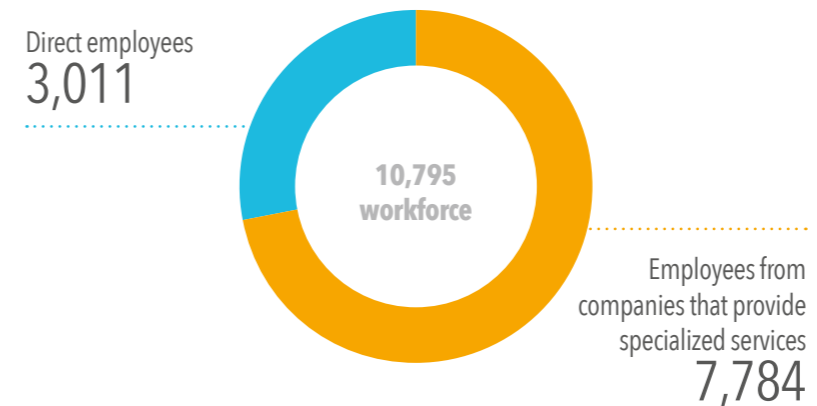
Occupational medical exams were given, with 100% participation of employees throughout the entire organization. Health campaigns were also implemented to rule out and prevent chronic or pathological illnesses, as well as biological monitoring due to heavy metal exposure.

The mine units are all staffed with doctors, nurses, psychologists, paramedics and dentists, who treat staff both on a walk-in basis and in emergencies. In addition,

the Company offers health plans through EPS for employees, their dependents, parents, and children over the age of 18, as well as ESSALUD and Complementary Workplace Risk Insurance coverage.

### VOLCAN WORKFORCE

As of December 31, 2018, the Company had a total of 3,011 direct employees. Of those, 2,186 are permanent employees (with contracts for an indefinite term) and 825 are temporary workers with fixed-term contracts. In addition, 7,784 employees are from companies that provide specialized services to Volcan, for a total workforce of 10,795 employees.



	WORKERS			EMPLOYEES			OFFICIALS			TOTAL		
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
Volcan Cía Minera S.A.A.	492	433	<b>442</b>	990	1,222	<b>1,228</b>	33	31	<b>32</b>	1,515	1,686	<b>1,702</b>
Cía. Minera Chungar S.A.C.	386	368	<b>366</b>	511	534	<b>558</b>	2	2	<b>3</b>	899	904	<b>927</b>
Emp. Admin. Cerro S.A.C.	156	167	<b>171</b>	52	62	<b>69</b>	-	-	<b>0</b>	208	229	<b>240</b>
Óxidos de Pasco S.A.C.	37	39	<b>39</b>	75	78	<b>80</b>	1	1	<b>1</b>	113	118	<b>120</b>
Hidroeléctrica Huanchor S.A.C.	-	-	-	22	22	<b>22</b>	-	-	-	22	22	<b>22</b>
<b>Total</b>	<b>1,071</b>	<b>1,007</b>	<b>1,018</b>	<b>1,650</b>	<b>1,918</b>	<b>1,957</b>	<b>36</b>	<b>34</b>	<b>36</b>	<b>2,757</b>	<b>2,959</b>	<b>3,011</b>



**Volcan invested USD 4.85 million in development of 38 communities in our area of direct influence**

**▼ SOCIAL RESPONSIBILITY**

In 2018, Volcan invested USD 4.85 million in development of 38 communities in our area of direct influence, mainly as a consequence of agreements and commitments to rural communities, sustainable development plans, and community relations plans contained in environmental impact studies. The investment is concentrated around five pillars: education, health, economic development, local employment development, and infrastructure. Also, to strengthen local economies Volcan does business with community enterprises. These enterprises are contracted to provide services such as civil works construction, mining operations, and load hauling, among others.

**01. CORPORATE**

**CORPORATE VOLUNTEER PROGRAM**

In 2018, Volcan continued its Corporate Volunteer Program. Employees from different areas of the Yauli and Chungar units, as well as from Lima, volunteer their time, becoming new change agents who, based on their professional experience, share their knowledge with children and youth in the communities near operations. This has helped generate spaces for improvements in education, development of green spaces, and school infrastructure.

Activities held		
UNIT	VOLUNTEER PROJECT	IMPACT
Lima	"Building a Sandbox"	A safe play area was built for children in the Belaunde Terry school - Callao
	"Recycling with Perú Champs"	Children from Perú Champs co-created alternative solutions to climate control with volunteers.
	"Painting a Future"	The children's vegetable patch in the San Juan Macías - Rimac school was repaired
Andaychagua	"Children's Day"	Children from the Ramiro Prialé School in Suitucancho school celebrated Children's Day
	"Andaychagua teaches you"	This project generated sustainable development through education.
	"Improving Lives"	This project improved quality of life for people in vulnerable situations in Huayhuay and Suitucancho.
Baños	"Make your mark - plant a tree"	Trees were planted with elementary and high school students at I.E. 20422 Nuestro Señor de Exaltación - C.C. Viscas and in the community of San José de Baños.

In 2018, there were three volunteer groups in Lima and four from units, supporting 1,196 people.

**NEWSLETTER**

The Company created an information channel for the communities, with a goal to reinforce basic values, providing safety and health advice, articles on educational topics, emphasizing the importance of caring for the environment, and informing the community about how the Company is complying with its commitments, among other information.

**CORPORATE RECYCLING PROGRAM**

The "Recycle Me" recycling program was implemented through a partnership with Aldeas Infantiles SOS. The purpose of the program is to promote awareness about the need to recycle paper and preserve the environment, as well as to generate funds that will provide meals for children served by Aldeas Infantiles SOS.

In 2018, the "Tapatón" campaign was implemented in conjunction with the NGO "Tierra y Ser" and the Lima and Unit offices. This program aims to create awareness about recycling and reuse, while supporting people with disabilities.

**CERRO UEA**

The unit formed a strategic partnership with the Peruvian Superintendent of Banks (SBS) to implement the "Finances at School" program. The program is designed to improve the financial knowledge of teachers so that they can pass on that knowledge to their students. The ultimate objective is to enable students to properly manage their finances and participate in the financial market, complying with the obligations they take on and ensuring that their consumer rights are respected. The first of these programs was carried out on May 19 and 20, 2017. In May 2018, the "Finances for you" workshop was implemented with more than 50 participants.

**CHUNGAR UEA**

In November the Company implemented an anemia intervention in the communities of Huaychao (Chungar), and Quiulacocha and Paragsha (Cerro Pasco). This intervention has a one-year horizon and will be implemented by NGO Prisma. Its objectives include working with families to increase the consumption of nutritious products and promote self-care and hygiene practices.

**Number of Editions**



**In partnership with the "Teach Peru" (Enseña Perú) program, we have directly benefited more than 600 students in primary and secondary schools, and indirectly more than 1,500 students**

**02. EDUCATION**

**ELEMENTARY AND HIGH SCHOOL EDUCATION**

The company has strengthened its partnership with the "Enseña Perú" (Teach Peru) program, an association that helps professionals work together to transform education. In 2018, this partnership was present at the Yauli, Chungar, and Cerro de Pasco units, directly benefiting more than 600 students in primary and secondary schools, and indirectly benefiting more than 1,500 students. This helped improve their performance in math, language comprehension, physics, English, science, and technology and the environment. This program has also been a key strategic partner in implementing the Volcan Corporate Volunteer program.

**Associated communities included in the program**

DEPT.	UNIT	COMMUNITY	NO. OF PROGRAMS
	Cerro	Rancas	1
Pasco	Chungar	Huayllay	5
		Huaychao	2
		Huayhuay	2
Junín	Yauli	SuitucanCHA	2
		Yauli	3
<b>Total</b>			<b>15</b>

**HIGHER EDUCATION**

**Yauli UEA**

The National Service for Industrial-Technical Training (SENATI) full scholarship program was continued, with scholarships awarded to two young people from the rural community of Yauli to study heavy machinery mechanics and industrial electronics.

In 2018, seven scholarships were given to young people from the rural farming community of Yauli to support their technical studies. Of these students, one dropped out during the first semester of the year and another graduated in heavy machinery mechanics in the second semester of 2018.

In the community of SuitucanCHA, in the second semester of 2018, the only two scholarship recipients completed their technical degree in maintenance mechanics.

**IN 2018, SEVEN SCHOLARSHIPS WERE GIVEN TO YOUNG PEOPLE FROM THE RURAL FARMING COMMUNITY OF YAULI TO SUPPORT THEIR TECHNICAL STUDIES (SENATI)**



**Cerro UEA**

In the San Antonio de Rancas Community, 22 students were awarded scholarships to Universidad Nacional Daniel Alcides Carrión (UNDAC) and 15 students were awarded full scholarships to SENATI.

In the Quiulacocha Community, three students were awarded scholarships to Universidad Nacional Daniel Alcides Carrión (UNDAC) and one student was awarded a full scholarship to SENATI.

**Chungar UEA**

At the end of the second semester 2018, there were two scholarship recipients in the community of Huaychao and 12 scholarship recipients in the community of Huayllay.

Computer and English classes were also offered, benefiting more than 58 students in the community of Huayllay.

**Baños Hydroelectric Plants**

In the community of San José de Baños, seven students received full scholarships to SENATI.

In the community of San José de Baños, one student received a full scholarship to SENATI.

**TRAINING****Yauli UEA**

- In 2018, nine women in the Yauli rural farming community were trained in a fine baking and breadmaking workshop, necessary for implementation of the community bakery.

**Chungar UEA**

- Annual heavy machinery operator training course for 20 community residents and children of residents of Huayllay and Huaychao.
- Computer and English classes were offered, benefiting more than 58 students in the community of Huayllay.
- The Continuing Education in Commercial Breadmaking and Baking program began for members of the Huayllay rural farming community to strengthen business skills in women. Thirteen female entrepreneurs participated in the program.
- Training in textile artisanry and work tools was offered to 42 women registered in the San Agustín de Huaychao rural farming community, district of Huayllay, Pasco.

**Cerro UEA**

- Trainings were given to contractor employees and employees of other local companies in the direct area of influence on the Code of Ethics and Conduct, in compliance with the Information and Communication Program of the Community Relations Plan.
- In coordination with DIRESA in Pasco, educational sessions were held for members of communities in the area of influence on nutritional health, adolescent health, healthy educational establishments, healthy homes.
- Dental hygiene talks were given, as well as environmental awareness and conservation sessions, targeted at students from local schools.
- Training in participative socio-environmental monitoring, targeted at communities and towns in the area of influence, followed by participative environmental monitoring.
- With the services of a livestock manager from NGO Prisma, labor and technical training modules were developed in the area of livestock, shearing, production and sale techniques. The purpose of this activity was to increase labor skills in the community to help integrate into the labor market in the region, while promoting the development of productive and sales chains.

Trainings were given to contractor employees and employees of other local companies in the direct area of influence on the Code of Ethics and Conduct

**Baños Hydroelectric Plants**

- Training workshops held on livestock dosage in Chuquiquirpay and San José de Baños.
- A workshop was given on livestock care (animal castration) in the community of Santa Cruz.
- Women’s empowerment workshops were developed in the communities of Santa Cruz and San José de Baños in partnership with the Ministry of Women and Vulnerable Populations.

**03. HEALTH**

**HEALTH CAMPAIGNS**

Volcan continued to partner with NGO Prisma to have a real impact and improve community health standards.

The project uses indicators in more than 10 medical specializations to identify the most prevalent diseases such as respiratory, musculoskeletal and gastrointestinal

**VOLCAN CONTINUED TO PARTNER WITH NGO PRISMA TO HAVE A REAL IMPACT AND IMPROVE COMMUNITY HEALTH STANDARDS**



Number of patients seen/visits per specialization

DEPARTMENT	UNIT	LOCATION (NO. OF PEOPLE)	CAMPAIGN	SERVICES	SPECIALIZED SERVICES
Mining	Yauli	Pachachaca	1°	214	721
		Pomacocha	1°	94	430
		Suitucancho	1°	203	727
		Yauli	2°	281	718
	Cerro	Quiulacocho	1°	197	623
			2°	243	880
		Yurajhuanca	1°	136	300
	Chungar	Huaychao	1°	241	834
		Huayllay	2°	203	888
	<b>Total Mining</b>				<b>2,811</b>
Energy	CH Baños	Ravira	1°	76	275
		Viscas	1°	101	377
<b>Total Energy</b>				<b>177</b>	<b>652</b>
<b>Total</b>				<b>2,988</b>	<b>9,648</b>

diseases, and to monitor their evolution over time. In addition to development of health campaigns to treat these diseases, the Company implemented preventive care through advocacy meetings, raising the awareness of authorities, and experiential educational sessions on topics that cater to local needs, such as personal care and hygiene, healthy eating, and anemia prevention.

Because the government plays a fundamental role in the sustainability of the project, Volcan seeks to involve authorities in its implementation and management. In that sense, during the various health campaigns patients have been identified who require immediate attention by public health services, and the Company has helped facilitate their access to proper treatment.

**Yauli UEA**

In 2018, five health campaigns were carried out in the communities of Suitucancha, Pomacocha, Yauli and Pachachaca. Health services were provided in general medicine, pediatrics, gynecology, ultrasound, psychology, nutrition, dentistry, physiotherapy, laboratory, pharmacy and triage.

Health Campaigns				
LOCATION	CAMPAIGN	NUMBER OF SESSIONS	NAME OF THE SESSION	TOTAL NUMBER OF PARTICIPANTS
Yauli	1st	1	Educational session and demonstration on proper hand washing technique	22
		1	Educational session and demonstration on proper dental health	19

**Cerro UEA**

Health Campaigns				
LOCATION	CAMPAIGN	NUMBER OF SESSIONS	NAME OF THE SESSION	TOTAL NUMBER OF PARTICIPANTS
Quiulacocha	1°	1	Dental health (demonstration with puppets)	17
		1	Child nutrition and food from 6 months to 2 years	15
		1	Dental health: proper tooth brushing technique	14
Yurajhuanca	2°	1	Dental health: proper tooth brushing technique	20
		1	Educational session - demonstration on proper hand washing technique	20
		1	Educational session on dental health, demonstration of proper tooth brushing technique	49

**Chungar UEA**

Health Campaigns				
LOCATION	CAMPAIGN	NUMBER OF SESSIONS	NAME OF THE SESSION	TOTAL NUMBER OF PARTICIPANTS
Huaychao	1st	1	Demonstration session on proper hand washing technique	32
		1	Demonstration session on dental health - proper tooth brushing technique	53
	2nd	1	Educational session on prevention of lead pollution	32
		1	Educational session - demonstration on proper hand washing technique	26
		1	Demonstration session on food and nutrition	19
			Educational session on proper dental health	34

**Baños Hydroelectric Plants**

Health Campaigns				
LOCATION	CAMPAIGN	NUMBER OF SESSIONS	NAME OF THE SESSION	TOTAL NUMBER OF PARTICIPANTS
Ravira	1st	1	Educational session on proper dental health	32
		1	Demonstration session on iron-rich foods	32
Viscas	1st	1	Educational session on proper dental health	15







Volcan has designed a strategy with NGO Prisma for the conservation and care of trad

## 04. ECONOMIC DEVELOPMENT

### FARMING DEVELOPMENT

Volcan has designed a strategy with NGO Prisma for the conservation and care of traditional enterprises and the development of their industry and innovative ideas.

Farming campaigns have been held to improve the productive chain in communities through technical assistance and monitoring the progress in the areas of influence.

Livestock were washed and treated for parasites in the Chungar UEA for the communities of influence. In the community of Huayllay, a total of 29,589 animals were treated for parasites and in the community of Huaychao, 64,018 animals were treated to prevent and control external parasites in sheep, camelids, cattle and horses, benefiting the communities.

#### Visits per location

UNIT	CAMPAIGN	MANAGEMENT/ COMMUNITY	TOTAL HEADS DOSED
Cerro	1st	Cooperativa Yanamate	11,929
	1st	Quiulacocho	13,613
	2nd	Quiulacocho	13,613
Chungar	1st	Yurajhuanca	6,664
	1st	Huayllay	9,105
	1st	Huaychao	30,503
	1st	San José de Baños	1,890
Baños	1st	Santa Cruz de Andamarca	2,200
	1st	San Miguel de Vichaycocha	7,911
	1st	San Juan de Chauca	216
	1st	Santa Catalina	1,698
	1st	Viscas	758
	1st	Ravira (includes Pacaraos)	1,927
Yauli	1st	Chauca	216
	1st	Pomacocha	7,784
	1st	Yauli	6,723
	1st	Suitucancho	25,926
	<b>Total</b>		

## FARMING CAMPAIGNS HAVE BEEN HELD TO IMPROVE THE PRODUCTIVE CHAIN IN COMMUNITIES THROUGH TECHNICAL ASSISTANCE AND MONITORING THE PROGRESS IN THE AREAS OF INFLUENCE



**The promotion of local employment helped reduce unemployment and increase income in the communities of influence**

**05. LOCAL EMPLOYMENT DEVELOPMENT**

The promotion of local employment helped reduce unemployment and increase income in the communities of influence, promoting an improvement in skills and contributing to human and professional development.

**CERRO UEA**

In 2018, Volcan worked with the following local companies:

- Empresa Comunal ECOSERM-Rancas
- Empresa Comunal Tingo Palca
- Empresa Comunidad Campesina Racracancha
- Empresa Comunal de Servicios Múltiples Quiulacocha - ECOSERM QUIULACOCHA
- Empresa Comunal de Servicios Múltiples Yurajhuanca - ECOSERM YURAJHUANCA.

It also worked with the following companies owned by locals:

- Empresa San Antonio de Rancas S.R.L. – EMSAR
- Francar S.A.C.
- ITRAN Cornelio & Muñoz S.R.L.
- Flores S.C.R.L.
- Devall S.A.C.

As a result of this, Volcan was able to increase skills and training in residents of the communities of influence.

**CHUNGAR UEA**

In 2018, Chungar continued its Local Employment Program thanks to the procedure established in May 2017. In 2018, the following results were obtained:

- Huayhuay Community  
1,000 positions were offered to promote local employment in specialized companies (Chungar suppliers).
  - 250 applicants from the community
  - 142 profiles of people hired by specialized companies that met requirements
- Huaychao Community  
134 positions were offered to promote local employment in specialized companies (Chungar suppliers).

- 48 applicants from the community
- 26 profiles of people hired by specialized companies that met requirements

**BAÑOS UEA**

Based on commitments assumed, work opportunities were given to communities in the area of influence, benefiting 22 members of the communities of Ravira and Viscas.

**06. INFRASTRUCTURE**

**YAULI UEA**

**Yauli Community**

The first and second stage of the Technical Institution Center were completed, with a total of more than USD 239,000 invested in 2018 as part of the "24-hectare Rumichaca Tailings Dam Expansion" agreement signed in 2012.

Base average of the work: PEN 579,000 to support education.

**Pomacocha Community**

Leveling works for the stadium began (20% complete) as part of the "10.9-hectare Rumichaca Tailings Dam Expansion" agreement signed in 2014.

**CERRO UEA**

- The "Healthy Homes" Program was carried out to improve the quality of life and provide a healthy environment to members of the San Antonio de Rancas community, located near the Ocroyoc tailings dam and other mining areas. Solar panels were given to the 13 families identified.
- Canal access routes underwent annual maintenance, in compliance with the agreement signed with the Racracancha rural farming community.

**CHUNGAR UEA**

- Works carried out in communities include the construction of a mini athletic field for C.E. Ricardo Palma. Work is currently underway and will be completed in 2019.

- Construction of two livestock sheds
- Opening of a carriageway in Huancohuaranga
- Construction of a perimeter fence in Quimacocha

#### BAÑOS HYDROELECTRIC PLANTS

- Volcan has actively participated in watering the Tingo bridge highway segment to the community of San Jose de Baños in May, June, July, August, September, October and November as part of its commitment to the environment to reduce pollution.
- 1,000 meters of fencing and 300 posts were given to the community of San José de Baños, and 250 meters of fencing was given to the community of Carhuacayán to improve livestock production.
- Riverbank protection was built in Baños Collpa in the community of Santa Catalina, as part of the "use of 426.47 hectares for mining purposes" agreement signed in 2017.
- The public safety office in the Ravira community was remodeled as part of the agreement "to constitute surface rights and easement rights for the development of hydroelectrical plants" signed in 2013.

## 07.

### PUBLIC WORKS AND TAX CREDIT PROGRAM

Since 2010, Volcan has provided PEN 108.5 million to finance 14 infrastructure and public utilities projects with major social impact, which have contributed to reducing the infrastructure gap in the country in sectors related to education, water and sanitation, solid waste management, transport and others. These projects have reached approximately 500,000 people with their benefits.

The reduction of PEN 17.5 million in relation to 2017 corresponds to the resolution of the landfill agreement with the Pasco Provincial Municipality. This follows a change in strategy in the organization; however it will work in conjunction with the new authorities on its portfolio of 15 new projects.

Volcan continues to participate and actively promote the Public Works and Tax Credit Program through new projects and by approaching new local, regional and national authorities. Projects carried out by the Company primarily benefit nearby communities and also align with an internal strategy to invest in important sectors that generate greater social impact.

Through the Public Works and Tax Credit Program, the Company, at 2018 year end, finalized the New Chancay Food Market Project, with more than 650 stands, with an investment of more than PEN 22 million. This is a very important project for the city of Chancay and will benefit 85,000 people.

In addition, 2018 marks the culmination of recovery of the investment in the water and sanitation project for the village of San Agustín de Huaychao (Huayllay-Pasco), totaling PEN 8.1 million and implemented in conjunction with Ferreyros and Unimaq.

Volcan is ranked third among mining companies in terms of the number of projects awarded and total investment amount committed in the Public Works and Tax Credit Program. It has the highest recovery percentage (80%) in comparison to the market. In addition, Volcan is a founding member of ALOXI, the Alliance for Public Works and Tax Credit (Alianza para Obras por Impuestos), which represents companies responsible for more than 80% of the projects executed as part of that program.

#### Rankings of companies by investment amount and number of projects (Millions of PEN between 2009-2018)

N°	COMPANY	TOTAL
1	Banco de Crédito del Perú-BCP	1,097.1
2	Southern Peru Copper Corporation	595.2
3	Compañía Minera Antamina S.A.	574.8
4	Telefónica del Perú S.A.A.	214.1
5	Banco Internacional del Perú S.A.A. - Interbank	179.1
6	Optical Technologies S.A.C.	160.9
<b>7</b>	<b>Volcan Compañía Minera S.A.A.</b>	<b>108.5</b>
8	Unión de Cervecerías Peruanas Backus y Johnston S.A.A. - BACKUS	97.0
9	Cementos Pacasmayo S.A.A.	84.3
10	Ferreyros S.A.	77.3

Source: Department of Decentralized Investments - ProInversión



**Volcan develops mining activities committed to the protection and care of the environment**

## ▼ ENVIRONMENT

Volcan develops mining activities committed to the protection and care of the environment, ensuring that any environmental impact resulting from its processes, activities and projects is prevented, reduced, controlled or mitigated.

In 2018, the Company outlined strategies and goals aligned with the corporate vision: implement world-class practices by 2021. The Company takes a preventive approach to environmental management.

### ENVIRONMENTAL MANAGEMENT SYSTEM

As part of Volcan's environmental management strategy, in 2018 the Company continued to implement the Critical Environmental Risks program with a focus on prevention and control efforts for main environmental risks, standardizing operational criteria in each mine unit.

The critical risks developed are:

1. New projects
2. Liquid effluent exceeding established limits
3. Inadequate waste disposal
4. Rupture of tailings dams
5. Degradation of the area
6. Atmospheric emissions
7. Transport of hazardous loads
8. Consumption of natural resources

Key corporate standards developed to manage critical environmental risks are:

1. Environmental management of new projects
2. Water and liquid effluent management
3. Solid waste management
4. Waste disposal management (waste dumps and tailings dams)
5. Guidelines for mine closure
6. Atmospheric emissions management
7. Emergency preparedness and response
8. Natural resources management

This system is measured in annual external audits, through the assessment and qualification of the 8 standards through audit protocols.

The last assessment made in December 2018 recorded a 66% completion of implementation. For 2019, Volcan anticipates 71% completion.

It also began implementation of the Environmental Performance Index (EPI). The EPI is an index that measures environmental performance of the operation in the processes and activities developed, operating variables in relation to environmental variables. This index primary draws its information from values reported in the Glencore Corporate Practices (GCP) portal. Implementation of the EPI enables management through reactive and proactive indicators that help set targets for 2019.

### ENVIRONMENTAL CERTIFICATIONS AND PERMITS

Given the dynamic nature of operations, with new projects, expansions, modifications, and technological improvements, modifications have been made as needed to comply with current laws.

Since 2016 the Company has been conducting legal environmental audits to measure the degree of compliance with environmental and legal obligations required by the Peruvian government.

The legal environmental audit for 2018 was conducted by an external consultant. The results exceeded projections for 2018 by 5% and control mechanisms showed an improvement in compliance with environmental obligations.

The Company complied with all requirements of the Ministry of Energy and Mines, OEFA, and the National Water Authority, including the following:

1. Annual Solid Waste Management Declaration
2. Environmental Monitoring Reports
3. Sustainability Report
4. Environmental Strategy Compliance Report
5. Annual Report on Significant Decreases during the period
6. Annual Report on Reagents and Operational Inputs

Environmental training was provided to personnel in all mining units in compliance with Article 153 of Supreme Decree No. 040-2014-MEM.

Environmental Obligations approved in the Environmental Management Instruments was among the training topics.

As part of the Company's growth, in 2018 it obtained the following environmental certifications and permits:

**Since 2016 the Company has been conducting legal environmental audits to measure the degree of compliance with environmental and legal obligations required by the Peruvian government**

## List of Certifications and Permits held by Volcan Compañía Minera Volcan and Subsidiaries - 2018

COMPANY	MINING UNIT/PROJECT	TYPE OF PERMIT	APPROVAL RESOLUTION	DESCRIPTION
Empresa Administradora Cerro S.A.C.	Cerro Pasco	ITS	R.D. N° 027-2018-SENACE-JEF-DEAR	Improvement of the environmental management plan
		Authorization to Operate	R.D. N° 0701-2018-MEM-DGM-V	Ocroyoc Tailings Dam to elevation 4,270, corresponding to stage II phase 1
		ITM	R.D. N° 0227-2018-MEM-DGM-V	Paragsha Ocroyoc Concession Modification Project to increase the installed capacity from 12,500 MTD to 17,500 MTD (Sorting)
Compañía Minera Chungar S.A.C.	Islay	ITS	R.D. N° 094-2018-SENACE-JEF-DEAR	Optimization of wastewater system, expansion of camps, a chimney
	Animón	ITS	R.D. N° 087-2018-SENACE-JEF-DEAR	Implementation of chimney, expansion of landfill, relocation of piezometric network, expansion of camps
	Alpamarca	EQS Soil	R.D. N° 096-2018-MEM-DGAAM	Identification of Contaminated Sites (IISC in Spanish)
	Animón-Islay	ITS	R.D. N° 016-2018-MEM-DGAAM	First Supporting Technical Report
	Romina	EISsd	R.D. N° 133-2018-MEM/DGAAM	Semi-detailed Environmental Impact Study - Exploration
	Palma	ITS	R.D. N° 116-2018-MEM-DGAAM	First Supporting Technical Report - Exploration
	Animón	MCP	R.D. N° 242-2018-MEM/DGAAM	2nd Modification of the MCP
	Animón	Authorization to Operate	R.D. N° 0426-2018-MEM/DGM-V	Authorization to Operate for Alpamarca tailings dam at elevation 4,676 masl - Stage II
	Romina	EISsd	R.D. N° 133-2018-MEM/DGAAM	Romina 2 Exploration Project
	Compañía Minera Vichaycocha S.A.C.	Carhuacayán	ITS	R.D. N° 042-2018-MEM-DGAAM

## List of Certifications and Permits held by Volcan Compañía Minera Volcan and Subsidiaries - 2018

COMPANY	MINING UNIT/PROJECT	TYPE OF PERMIT	APPROVAL RESOLUTION	DESCRIPTION
Empresa Explotadora de Vinchos	Vinchos	MCP	R.D. N° 007-2018-MEM-DGAAM	2nd Modification of the MCP
Volcan Compañía Minera S.A.A.	Andaychagua	ITS	R.D. N° 115-2018-SENACE-JEF/DEAR	2 Supporting Technical Reports-Add a chimney, eliminate pipeline that passes through the main dam of the tailings dam, optimize environmental control and surveillance
	Carahuacra	Authorization to Operate	R.D. N° 0913-2018-MEM-DGM-V	Rumichaca Tailings Dam at elevation 4,224

ITS (acronym in Spanish): Supporting Technical Report

MCP: Mine Closure Plan

EISsd: Semi-detailed Environmental Impact Study

ITM (acronym in Spanish): Mining Technical Report

## ▼ CLOSURE PLANS

As part of the execution of government-approved mine closure plans, the revegetation and progressive restoration program has been implemented to recover areas affected by mining activities, to benefit communities in the area of environmental influence. Progress in the activities executed and their results were reported to the Ministry of Energy and Mines. These are then enforced by the Agency for Environmental Assessment and Enforcement.

Mine closure plan commitments in 2018 were focused on implementation of activities on inoperative mining components and environmental liabilities that were incorporated as part of mine closure plans. Closure plans were implemented as part of the Company's progressive closure program.

**The revegetation and progressive restoration program has been implemented to recover areas affected by mining activities**



Oxides Plant.

# 13.

## AUDITED FINANCIAL STATEMENTS



There has been no resignation or dismissal of the chief accountant or auditor in the last two years.

### **VOLCAN COMPAÑÍA MINERA S.A.A. AND SUBSIDIARIES**

CONSOLIDATED FINANCIAL RESULTS AS OF DECEMBER 31, 2018 AND 2017

#### Contents

- Consolidated statement of financial position
- Consolidated statement of comprehensive income
- Statement of changes in consolidated net assets
- Consolidated cash flow statement
- Separate statement of financial position for Volcán Compañía Minera S.A.A.
- Separate statement of comprehensive income for Volcán Compañía Minera S.A.A.
- Separate statement of changes in consolidated net assets for Volcán Compañía Minera S.A.A.
- Separate cash flow statement for Volcán Compañía Minera S.A.A.

## VOLCAN COMPAÑÍA MINERA S.A.A. AND SUBSIDIARIES

**▼ VOLCAN COMPAÑÍA MINERA S.A.A. AND SUBSIDIARIES CONSOLIDATED STATEMENT OF FINANCIAL POSITION AS OF DECEMBER 31, 2018 AND 2017 (RE-EXPRESSED) AND JANUARY 1, 2017 (RE-EXPRESSED)**

(Expressed in thousands of US dollars)

ASSETS	2018	2017	01.01.2017
<b>CURRENT ASSETS</b>			
Cash and cash equivalent	62,950	101,829	140,945
Trade accounts receivable, net	41,842	66,167	63,165
Other accounts receivable	168,597	160,929	350,479
Other financial assets	640	42,454	38,295
Inventories, net	64,640	63,920	82,801
<b>Total current assets</b>	<b>338,669</b>	<b>435,299</b>	<b>675,685</b>
<b>NON-CURRENT ASSETS</b>			
Other accounts receivable	6,992	4,149	30,123
Other financial assets	-	-	21,159
Inventories, net	7,752	7,752	7,752
Financial investments	53,305	51,968	62,848
Property, plant and equipment, net (net)	978,205	922,040	1,027,819
Mining concessions, exploration and development costs and other intangibles (net)	840,067	752,788	626,816
Deferred income tax	-	-	83,092
<b>Total non-current assets</b>	<b>1,886,321</b>	<b>1,738,697</b>	<b>1,859,609</b>
<b>Total assets</b>	<b>2,224,990</b>	<b>2,173,996</b>	<b>2,535,294</b>

LIABILITIES AND EQUITY	2018	2017	01.01.2017
<b>CURRENT LIABILITIES</b>			
Bank overdrafts	34	4,005	30,256
Financial obligations	208,665	187,863	239,662
Trade accounts payable	202,544	209,962	211,244
Other accounts payable	96,969	94,951	122,422
Other financial liabilities	48,218	126,619	94,319
<b>Total current liabilities</b>	<b>556,430</b>	<b>623,400</b>	<b>697,903</b>
<b>NON-CURRENT LIABILITIES</b>			
Financial obligations	587,764	628,987	562,504
Other financial liabilities	-	-	24,570
Provisions	233,086	156,340	104,977
Deferred income tax	199,557	152,946	-
<b>Total non-current liabilities</b>	<b>1,020,407</b>	<b>938,273</b>	<b>692,051</b>
<b>Total liabilities</b>	<b>1,576,837</b>	<b>1,561,673</b>	<b>1,389,954</b>
<b>NET EQUITY</b>			
Issued capital	1,134,300	1,134,300	1,253,181
Treasury shares	-61,285	-61,222	-196,778
Legal reserves	1,055	1,055	3,553
Capital reserves	-172,801	-174,320	20,298
Revaluation surplus	30,307	30,307	-
Unrealized earnings	1,121	-20,511	-
Accumulated earnings	-284,544	-297,286	65,176
<b>Total net equity</b>	<b>648,153</b>	<b>612,323</b>	<b>1,145,430</b>
<b>Total liabilities and net equity</b>	<b>2,224,990</b>	<b>2,173,996</b>	<b>2,535,384</b>



## VOLCAN COMPAÑÍA MINERA S.A.A. AND SUBSIDIARIES

**▼ VOLCAN COMPAÑÍA MINERA S.A.A. AND  
SUBSIDIARIES CONSOLIDATED STATEMENT OF  
INCOME FOR YEARS ENDING DECEMBER 31, 2018  
AND 2017**

(Expressed in thousands of US dollars)

	2018	2017
Net sales	775,102	856,734
Cost of sales	-546,383	-566,118
<b>Gross profit</b>	<b>228,719</b>	<b>290,616</b>
Operating (expenses) income:		
Administrative expenses	-61,877	-45,718
Sales expenses	-27,185	-30,563
Other income	56,297	136,065
Other expenses	-77,361	-158,228
Income from reversal of non-financial asset impairment	109,972	74,315
Loss from non-financial asset impairment	-69,261	-432,147
<b>Profit (loss) of operation</b>	<b>159,304</b>	<b>-165,660</b>
Financial income	11,586	49,706
Financial expenses	-56,425	-82,765
<b>Profit (loss) before income tax</b>	<b>114,465</b>	<b>-198,719</b>
Profit from income tax	-85,090	-278,747
<b>Net profit (loss) for the year</b>	<b>29,375</b>	<b>-477,466</b>
Weighted average of the number of shares in circulation (in thousands)	3,857,668	3,858,230
<b>Basic and diluted profit (loss) per share</b>	<b>0.008</b>	<b>-0.124</b>

## VOLCAN COMPAÑÍA MINERA S.A.A. AND SUBSIDIARIES

**▼ VOLCAN COMPAÑÍA MINERA S.A.A. AND  
SUBSIDIARIES CONSOLIDATED STATEMENT  
OF OTHER COMPREHENSIVE INCOME FOR YEARS  
ENDING DECEMBER 31, 2018 AND 2017**

(Expressed in thousands of US dollars)

	2018	2017
<b>Net profit (loss) for the year</b>	<b>29,375</b>	<b>-477,466</b>
Other comprehensive income:		
<b>ITEMS THAT CAN NOT BE SUBSEQUENTLY RECLASSIFIED TO THE INCOME STATEMENT:</b>		
Unrealized earnings from investment in equity instruments	950	
Revaluation of property, plant and equipment		42,989
Deferred income tax	-280	-12,682
<b>Total other comprehensive income that can not be subsequently reclassified to the income statement</b>	<b>670</b>	<b>30,307</b>
<b>ITEMS THAT CAN BE SUBSEQUENTLY RECLASSIFIED TO THE INCOME STATEMENT:</b>		
Unrealized profit (loss) of derivative financial instruments	29,734	-29,094
Deferred income tax	-8,772	8,583
<b>Total other comprehensive income that can be subsequently reclassified to the income statement</b>	<b>20,962</b>	<b>-20,511</b>
<b>Other comprehensive income, net of income tax</b>	<b>21,632</b>	<b>9,796</b>
<b>Total comprehensive income</b>	<b>51,007</b>	<b>-467,670</b>

## VOLCAN COMPAÑÍA MINERA S.A.A. AND SUBSIDIARIES

**▼ VOLCAN COMPAÑÍA MINERA S.A.A. AND  
SUBSIDIARIES CONSOLIDATED STATEMENT  
OF CHANGES IN NET EQUITY FOR YEARS  
ENDING IN DECEMBER 31, 2018 AND 2017  
(RE-EXPRESSED) AND JANUARY 1, 2017 (RE-  
EXPRESSED)**

(Expressed in thousands of US dollars)

	ISSUED CAPITAL US\$(000)	TREASURY SHARES US\$(000)	OTHER CAPITAL RESERVES US\$(000)	CAPITAL RESERVES US\$(000)	REVALUATION SURPLUS US\$(000)	UNREALIZED EARNINGS US\$(000)	ACCUMULATED EARNINGS US\$(000)	TOTAL US\$(000)
<b>Balance as of January 1, 2017</b>	<b>1,253,181</b>	<b>-196,778</b>	<b>3,553</b>	<b>20,298</b>	<b>-</b>	<b>-</b>	<b>65,176</b>	<b>1,145,430</b>
Net profit for the year	-	-	-	-	-	-	-477,466	-477,466
Reclassification	-118,881	135,723	41,490	-194,337	-	-	136,005	-
Designation of legal reserves	-	-	11,845	-	-	-	-11,845	-
Other comprehensive income for the year	-	-	-	-	30,307	-20,511	-	9,796
Application of accumulated loss	-	-	-55,833	-	-	-	55,833	-
Distribution of dividends	-	-	-	-	-	-	-30,454	-30,454
Increase of treasury shares	-	-167	-	-281	-	-	-	-448
Accumulated earnings from subsidiaries incorporated in 2017	-	-	-	-	-	-	-15,261	-15,261
Adjustments	-	-	-	-	-	-	-19,274	-19,274
<b>Balance as of December 31, 2017</b>	<b>1,134,300</b>	<b>-61,222</b>	<b>1,055</b>	<b>-174,320</b>	<b>30,307</b>	<b>-20,511</b>	<b>-297,286</b>	<b>612,323</b>
Net profit for the year	-	-	-	-	-	-	29,375	29,375
Other comprehensive income for the year	-	-	-	-	-	21,632	-	21,632
Distribution of dividends	-	-	-	-	-	-	-16,641	-16,641
Adjustments	-	-63	-	1,519	-	-	8	1,464
<b>Balance as of December 31, 2018</b>	<b>1,134,300</b>	<b>-61,285</b>	<b>1,055</b>	<b>-172,801</b>	<b>30,307</b>	<b>1,121</b>	<b>-284,544</b>	<b>648,153</b>

## VOLCAN COMPAÑÍA MINERA S.A.A. AND SUBSIDIARIES

**▼ VOLCAN COMPAÑÍA MINERA S.A.A. AND  
SUBSIDIARIES CONSOLIDATED CASH FLOW  
STATEMENTS FOR YEARS ENDING DECEMBER  
31, 2018 AND 2017**

(Expressed in thousands of US dollars)

	2018	2017
<b>ACTIVIDADES DE OPERACIÓN:</b>		
OPERATING ACTIVITIES: Collections corresponding to:		
Sale of goods	909,295	961,891
Return of balance in favor of extracted material	20,456	49,054
Payments corresponding to:		
Suppliers of goods and services	-499,473	-559,271
Payments to and on behalf of employees	-103,668	-95,357
Income tax	-32,604	-22,359
Royalties	-16,827	-16,132
Financial hedging instruments, net	-16,869	-15,007
<b>Net cash and cash equivalents provided by operating activities</b>	<b>260,310</b>	<b>302,819</b>
<b>INVESTMENT ACTIVITIES:</b>		
Collections corresponding to:		
Other charges related to investment activities	1,689	1,920
Payments corresponding to:		
Acquisition of subsidiaries in prior years	-17,217	-18,017
Purchase of property, plant and equipment	-87,341	-108,486
Purchase of intangible assets	-114,522	-108,614
<b>NET CASH APPLIED TO INVESTMENT ACTIVITIES</b>	<b>-217,391</b>	<b>-233,197</b>

	2018	2017
<b>FINANCING ACTIVITIES:</b>		
Collections corresponding to:		
Acquisition of financial obligations	223,515	240,000
Acquisition of other financial liabilities	41,362	33,842
Payments corresponding to:		
Amortization of financial obligations	-244,513	-251,471
Amortization of overdrafts and other financial liabilities	-50,968	-64,129
Payment of interest	-36,286	-36,526
Payment of dividends	-14,908	-30,454
<b>NET CASH FROM FINANCING ACTIVITIES</b>	<b>-81,798</b>	<b>-108,738</b>
<b>NET REDUCTION IN CASH AND CASH EQUIVALENT</b>	<b>-38,879</b>	<b>-39,116</b>
CASH AND CASH EQUIVALENT AT YEAR OPENING	101,829	140,945
<b>CASH AND CASH EQUIVALENT AT YEAR END</b>	<b>62,950</b>	<b>101,829</b>

## VOLCAN COMPAÑÍA MINERA S.A.A. AND SUBSIDIARIES

**▼ VOLCAN COMPAÑÍA MINERA S.A.A.  
SEPARATE STATEMENTS OF FINANCIAL  
POSITION AS OF DECEMBER 31, 2018 AND 2017  
(RE-EXPRESSED) AND JANUARY 1, 2017 (RE-  
EXPRESSED)**

(Expressed in thousands of US dollars)

ASSETS	2018	2017	01.01.2017
<b>CURRENT ASSETS</b>			
Cash and cash equivalent	36,691	60,070	68,405
Trade accounts receivable, net	14,135	31,047	30,845
Accounts receivable from related parties	511,522	541,034	1,230,819
Other accounts receivable (net)	37,761	27,825	81,093
Other financial assets	640	42,454	38,295
Inventories, net	19,600	21,048	23,692
<b>Total current assets</b>	<b>620,349</b>	<b>723,478</b>	<b>1,473,149</b>
<b>NON-CURRENT ASSETS</b>			
Other accounts receivable	874	605	6,916
Other financial assets	-	-	21,159
Investment in subsidiaries	1,046,735	1,033,898	627,185
Property, plant and equipment, net	265,637	270,170	269,181
Mining concessions, exploration and development costs and other mining assets (net)	424,035	427,141	282,029
Deferred income tax	-	-	51,121
<b>Total non-current assets</b>	<b>1,737,281</b>	<b>1,731,814</b>	<b>1,257,591</b>
<b>Total assets</b>	<b>2,357,630</b>	<b>2,455,292</b>	<b>2,730,740</b>

LIABILITIES AND EQUITY	2018	2017	01.01.2017
<b>CURRENT LIABILITIES</b>			
Bank overdrafts	34	4,004	18,932
Financial obligations	204,759	187,601	258,727
Trade accounts payable	99,675	101,997	109,501
Accounts payable to related parties	32,563	85,981	361,490
Other accounts payable	52,032	35,188	45,279
Other financial liabilities	48,218	113,802	101,981
<b>Total current liabilities</b>	<b>437,281</b>	<b>528,573</b>	<b>895,910</b>
<b>NON-CURRENT LIABILITIES</b>			
Financial obligations	575,429	608,987	542,555
Other financial liabilities	-	-	24,570
Provisions	104,669	87,312	48,809
Deferred income tax	67,415	71,797	-
<b>Total non-current liabilities</b>	<b>747,513</b>	<b>768,096</b>	<b>615,934</b>
<b>Total liabilities</b>	<b>1,184,794</b>	<b>1,296,669</b>	<b>1,511,844</b>
<b>NET EQUITY</b>			
Issued capital	1,134,301	1,134,301	1,253,181
Treasury shares	-	-	-196,776
Legal reserves	-	-	12,349
Capital reserves	-	-	-
Revaluation surplus	-	-	-
Unrealized earnings	451	-12,190	-
Accumulated earnings	38,084	36,512	150,142
<b>Total net equity</b>	<b>1,172,836</b>	<b>1,158,623</b>	<b>1,218,896</b>
<b>Total liabilities and net equity</b>	<b>2,357,630</b>	<b>2,455,292</b>	<b>2,730,740</b>

## VOLCAN COMPAÑÍA MINERA S.A.A. AND SUBSIDIARIES

**▼ VOLCAN COMPAÑÍA MINERA S.A.A.  
SEPARATE STATEMENTS OF INCOME FOR  
YEARS ENDING DECEMBER 31, 2018 AND 2017**  
(Expressed in thousands of US dollars)

	2018	2017
Net sales	411,746	441,928
Cost of sales	-284,162	-318,980
<b>Gross profit</b>	<b>127,584</b>	<b>122,948</b>
Operating (expenses) income:		
Administrative expenses	-39,941	-36,473
Sales expenses	-14,367	-18,328
Dividends from subsidiaries	60,870	249,131
Other income	35,876	100,274
Other expenses	-39,582	-52,186
Income from reversal of non-financial asset impairment	0	12,825
Loss from non-financial asset impairment	-76,187	-345,357
<b>Operating income</b>	<b>54,253</b>	<b>32,834</b>
Financial income	26,309	61,577
Financial expenses	-52,688	-52,800
<b>Income before income tax</b>	<b>27,874</b>	<b>41,611</b>
Income tax	-18,018	-160,861
<b>Net profit (loss) for the year</b>	<b>9,856</b>	<b>-119,250</b>
Weighted average of the number of shares in circulation (in thousands)	3,857,975	3,858,230
<b>Basic and diluted profit (loss) per share</b>	<b>0.003</b>	<b>-0.031</b>

## VOLCAN COMPAÑÍA MINERA S.A.A. AND SUBSIDIARIES

**▼ VOLCAN COMPAÑÍA MINERA S.A.A.  
SEPARATE STATEMENTS OF OTHER  
COMPREHENSIVE INCOME FOR YEARS ENDING  
DECEMBER 31, 2018 AND 2017**  
(Expressed in thousands of US dollars)

	2018	2017
<b>Net profit (loss) for the year</b>	<b>9,856</b>	<b>-119,250</b>
Other comprehensive income:		
<b>ITEMS THAT CAN BE SUBSEQUENTLY RECLASSIFIED TO INCOME FOR THE YEAR:</b>		
Unrealized income from derivative financial instruments	17,931	-17,291
Income tax	-5,290	5,101
<b>Other comprehensive income, net of income tax</b>	<b>12,641</b>	<b>-12,190</b>
<b>Total comprehensive income</b>	<b>22,497</b>	<b>-131,440</b>

## VOLCAN COMPAÑÍA MINERA S.A.A. AND SUBSIDIARIES

▼ **VOLCAN COMPAÑÍA MINERA S.A.A.**  
**SEPARATE STATEMENTS OF CHANGES IN NET**  
**EQUITY AS OF DECEMBER 31, 2018 AND 2017 (RE-**  
**EXPRESSED) AND JANUARY 1, 2017**

(Expressed in thousands of US dollars)

	ISSUED CAPITAL US\$(000)	TREASURY SHARES US\$(000)	LEGAL RESERVES US\$(000)	CAPITAL RESERVES US\$(000)	UNREALIZED EARNINGS US\$(000)	ACCUMULATED EARNINGS US\$(000)	TOTAL US\$(000)
<b>Balance as of January 1, 2017</b>	<b>1,253,181</b>	<b>-196,776</b>	<b>-</b>	<b>12,349</b>	<b>-</b>	<b>150,142</b>	<b>1,218,896</b>
Net profit for the year	-	-	-	-	-	-119,250	-119,250
Transfer to legal reserves	-	-	9,364	-	-	-9,364	-
Repurchase of own shares	-118,881	196,776	-	-	-	-	77,895
Other comprehensive income	-	-	-	-	-12,190	-	-12,190
Application of accumulated loss	-	-	-9,364	-12,349	-	21,713	-
Distribution of dividends	-	-	-	-	-	-31,251	-31,251
Adjustments	-	-	-	-	-	24,523	24,523
<b>Balance as of December 31, 2017</b>	<b>1,134,300</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-12,190</b>	<b>36,513</b>	<b>1,158,623</b>
Net profit for the year	-	-	-	-	-	9,856	9,856
Other comprehensive income	-	-	-	-	12,641	-	12,641
Distribution of dividends	-	-	-	-	-	-16,641	-16,641
Adjustments	-	-	-	-	-	8,357	8,357
<b>Balance as of December 31, 2018</b>	<b>1,134,300</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>451</b>	<b>38,085</b>	<b>1,172,836</b>

## VOLCAN COMPAÑÍA MINERA S.A.A. AND SUBSIDIARIES

**▼ VOLCAN COMPAÑÍA MINERA S.A.A.  
SEPARATE CASH FLOW STATEMENTS FOR  
YEARS ENDING DECEMBER 31, 2018 AND 2017**  
(Expressed in thousands of US dollars)

	2018	2017
<b>ACTIVIDADES DE OPERACIÓN:</b>		
OPERATING ACTIVITIES: Collections corresponding to:		
Sales collections	490,000	536,888
Return of balance in favor of extracted material	-	10,988
Other operating charges	120,714	169,613
Payments corresponding to:		
Payments to suppliers and third parties	-351,337	-418,994
Payments to workers	-62,882	-62,199
Income tax payments	-10,919	-21,647
Royalty payments	-8,475	-6,530
Hedging expenditures	-10,175	-12,509
<b>Efectivo neto proveniente de las actividades de operación</b>	<b>166,926</b>	<b>195,610</b>
<b>NET CASH FROM OPERATING ACTIVITIES</b>		
INVESTMENT ACTIVITIES:		
Collections corresponding to:	1,689	1,640
Other cash charges related to investment activities		
Payments corresponding to:	-30,656	-30,559
Purchase of property, plant and equipment	-17,217	-18,017
Acquisition of subsidiaries in prior years	-65,943	-65,694
<b>Purchase of intangible assets</b>	<b>-112,127</b>	<b>-112,630</b>

	2018	2017
<b>NET CASH APPLIED TO INVESTMENT ACTIVITIES</b>		
FINANCING ACTIVITIES:		
Collections corresponding to:	223,515	220,000
Acquisition of financial obligations	41,362	33,842
Acquisition of other financial liabilities		
Payments corresponding to:	-240,489	-226,671
Amortization of financial obligations	-50,968	-52,806
Amortization of overdrafts and other financial liabilities	-34,957	-34,429
Payment of interest	-16,641	-31,251
<b>NET CASH FROM FINANCING ACTIVITIES</b>	<b>-78,178</b>	<b>-91,315</b>
<b>NET REDUCTION OF CASH AND CASH EQUIVALENT</b>	<b>-23,379</b>	<b>-8,335</b>
CASH AND CASH EQUIVALENT AT YEAR OPENING	60,070	68,405
<b>CASH AND CASH EQUIVALENT AT YEAR END</b>	<b>36,691</b>	<b>60,070</b>

# 14.

## LEGAL AFFAIRS



### ▼ VOLCAN COMPAÑÍA MINERA S.A.A.

Company Management, based on the opinion of external and internal legal counsel, has undertaken a review of all cases related to tax, labor, civil and administrative matters, among others, and has established a provision for probable contingencies of USD 14.3 million, which as of December 31, 2018 is assigned to the item Provisions (USD 11.9 million as of December 31, 2017). Company Management and its legal counsel are of the opinion that this provision covers probable contingencies and additional provisions are not necessary.

For possible contingencies, external and internal legal counsel for the Company has determined a total of USD 39.4 million as of December 31, 2018.



### LABOR CASES

As of December 31, 2018, the Company faces labor lawsuits with a probable contingencies level of USD 6.8 million, which is presented in the Provisions item, and with a possible contingency level of USD 14.0 million (USD 6.5 million and USD 23.5 million as of December 31, 2017, respectively) for compensation for occupational illness, reimbursement of social benefits, payment of profits, replacement of workers and others.

There are also two legal processes (labor actions and 1998 production bonuses) for which an amount claimed has not been determined. This amount may be determined on the date of sentencing, in the unlikely event that the ruling is unfavorable to the Company.

### TAX CASES

As of December 31, 2018 and 2017, the Company has several administrative cases pending with the National Superintendent of Tax Administration (SUNAT) and the Tax Court for rulings related to determination of taxes, fines and interest.

Rulings on taxes, fines and interest correspond mainly to differences in criteria regarding determination of the taxable bases for payment of the third-category income tax and general sales tax (VAT) for the 1998-2010 period, and in the opinion of the Superintendent of Tax Administration (SUNAT), failure to pay taxes and withhold taxes from third parties. The Company has probable contingencies for USD 4.2 million as of December 31, 2018.

In addition, as of December 31, 2018, the Company had two administrative tax cases pending before municipalities. Both contingencies, qualified as probable, total USD 0.3 million.

Company Management estimates that these processes represent a probably contingency of USD 4.5 million assigned to the Provisions line as of December 31, 2018 (USD 0.6 million as of December 31, 2017).

In addition, there are other tax cases qualified as possible, which include expenses questioned by the National Superintendent of Tax Administration (SUNAT) for not complying with the principle of causality or not having the necessary support, among other associated concepts. These possible contingencies total USD 22.6 million as of December 31, 2018.

### ADMINISTRATIVE SANCTION PROCEDURES AND ADMINISTRATIVE LITIGATION ACTIONS

The Company has several environmental, occupational health and safety and labor safety cases pending before the following regulatory entities: National Water Authority – Local Water Authorities, Ministry of Labor and Employment Promotion (National Superintendent of Labor Enforcement), Ministry of Energy and Mines, Ministry of Production, Supervisory Agency of Investment in Energy and Mining (OSINERGMIN), and the Environmental Evaluation and Enforcement Organism (OEFA) for alleged violations of various environmental regulations and the Occupational Health and Safety Regulation, with probable contingencies assigned to the Provisions item for USD 3.0 million and possible contingencies for USD 2.8 million as of December 31, 2018 (USD 4.7 million and USD 0.4 million as of December 31, 2017, respectively).

Company management and its legal counsel, based on reasons in fact and law, are of the opinion that final resolution of these cases will not result in significant additional liabilities for Volcan.



### ▼ **COMPAÑÍA MINERA CHUNGAR S.A.C.**

Company Management, based on the opinion of external and internal legal counsel, has undertaken a review of all cases related to tax, labor, civil and administrative matters, among others, and has established a provision for probable contingencies of USD 3.0 million, which as of December 31, 2018 is assigned to the Provisions item (USD 4.2 million as of December 31, 2017). Company Management and its legal counsel are of the opinion that this provision covers probable contingencies and additional provisions are not necessary.

For possible contingencies, external legal counsel for the Company has determined a total of USD 2.5 million as of December 31, 2018.

#### **LABOR CASES**

As of December 31, 2018, Chungar faces labor lawsuits with a probable contingencies level of USD 0.3 million, which is presented in the Provisions item, and with a possible contingency level of USD 0.02 million (USD 0.5 million and USD 0.4 million as of December 31, 2017, respectively) for payment of compensation for damages for occupational illness, reimbursement of social benefits, and others currently in the appeals and/or sentencing stage.

#### **TAX CASES**

As of December 31, 2018 and 2017, Compañía Minera Chungar S.A.C. has several administrative cases pending with the National Superintendent of Tax Administration (SUNAT) and the Tax Court for rulings related to determination of taxes, fines and interest.

Rulings on taxes, fines and interest correspond mainly to differences in criteria regarding determination of the taxable bases for payment of the third-category income tax and general sales tax (VAT) for the 2001-2005 period and the 2012-2014 period, and in the opinion of the Superintendent of Tax Administration (SUNAT), failure to pay taxes and withhold taxes from third parties. To date, these cases are being challenged administratively in complaints filed with the National Superintendent of Tax Administration (SUNAT) and appeals before the Tax Court, as well as in the courts of law.

The Subsidiary has tax administrative procedures qualified as probable contingencies in the Provisions item for USD 0.5 million as of December 31, 2018 (USD 0.4 million as of December 31, 2017).

Finally, there are other contingencies originating in conceptual discrepancies with the Tax Administration, which have been qualified as possible and total USD 2.5 million.

#### **ADMINISTRATIVE SANCTION PROCEDURES AND ADMINISTRATIVE LITIGATION ACTIONS**

The Subsidiary has several environmental, occupational health and safety and labor safety cases pending before the following regulatory entities: National Water Authority - Local Water Authorities, Ministry of Labor and Employment Promotion (National Superintendent of Labor Enforcement), Ministry of Energy and Mines, Ministry of Production, OSINERGMIN, and OEFA, for alleged violations of various environmental standards and Occupational Health and Safety Regulations. These cases are qualified as probable with a total contingency of USD 2.2 million, which on December 31, 2018 was assigned to the Provisions line (USD 3.3 million as of December 31, 2017).

### ▼ **EMPRESA ADMINISTRADORA CERRO S.A.C.**

Company Management, based on the opinion of external and internal legal counsel, has undertaken a review of all cases related to tax, labor, civil and administrative matters, among others, and has established a provision for probable contingencies of USD 4.2 million, which as of December 31, 2018 is assigned to the Provisions item (USD 4.5 million as of December 31, 2017). Company Management and its legal counsel are of the opinion that this provision covers probable contingencies and additional provisions are not necessary.

For possible contingencies, external legal counsel for the Company has determined a total of USD 5.4 million as of December 31, 2018.

#### **LABOR CASES**

As of December 31, 2018, the Subsidiary faces labor lawsuits with a probable contingencies level of USD 3.0 million, which is presented in the Provisions item, and with a possible contingency level of USD 2.9 million (USD 3.3 million and USD 0.4 million as of December 31, 2017, respectively) for payment of compensation for damages for occupational illness, reimbursement of social benefits, reimbursement of profits, payment of production bonuses and others currently in the appeals and/or sentencing stage.

### TAX CASES

As of December 31, 2018 and 2017, the Subsidiary has several administrative cases pending with the National Superintendent of Tax Administration (SUNAT) and the Tax Court for rulings related to determination of taxes, fines and interest.

The rulings on taxes, fines and interest are due, in the opinion of the National Superintendent of Tax Administration (SUNAT), to failure to pay taxes, and also because of differences in criteria for determination of the taxable bases for payment of the third-category income tax for 2012 and 2014, as well as a tax refund for 2014. To date, these cases are being challenged administratively.

The Subsidiary has tax administrative procedures qualified as probable contingencies in the Provisions item for USD 1.1 million as of December 31, 2018 (USD 1.2 million as of December 31, 2017).

Finally, there are other contingencies originating in conceptual discrepancies with the Tax Administration, which have been qualified as possible and total USD 2.5



### ADMINISTRATIVE SANCTION PROCEDURES AND ADMINISTRATIVE LITIGATION ACTIONS

The Subsidiary has several environmental, occupational health and safety and labor safety cases pending before the following regulatory entities: National Water Authority – Local Water Authorities, Ministry of Labor and Employment Promotion (National Superintendent of Labor Enforcement), Ministry of Energy and Mines, Ministry of Production, OSINERGMIN, and OEFA, for alleged violations of various environmental standards and Occupational Health and Safety Regulations. These cases are qualified as probable with a total contingency of USD 0.08 million, which on December 31, 2018 was assigned to Provisions (USD 0.7 million as of December 31, 2017).

#### ▼ EMPRESA EXPLOTADORA DE VINCHOS LTDA S.A.C.

Company Management, based on the opinion of external and internal legal counsel, has undertaken a review of all cases related to tax, labor, civil and administrative matters, among others, and has established a provision for probable contingencies of USD 0.3 million, which as of December 31, 2018 is assigned to the Provisions item (USD 0.3 million as of December 31, 2017). Company Management and its legal counsel are of the opinion that this provision covers probable contingencies and additional provisions are not necessary.

#### ▼ HIDROELÉCTRICA HUANCHOR S.A.C.

Company Management, based on the opinion of external and internal legal counsel, has undertaken a review of all cases related to tax, labor, civil and administrative matters, among others, and has established a provision for probable contingencies of USD 0.1 million, which as of December 31, 2018 is assigned to the Provisions item (USD 0.1 million as of December 31, 2017). Company Management and its legal counsel are of the opinion that this provision covers probable contingencies and additional provisions are not necessary.

# 15.

## STOCK INFORMATION



Shares of Volcan Compañía Minera S.A.A. are traded on the Lima Stock Exchange, the Santiago Stock Exchange and the Latibex in Madrid.

### ▼ VOLCAN COMPAÑÍA MINERA S.A.A. STOCK SYMBOLS

Tickers			
STOCK	LIMA STOCK EXCHANGE	SANTIAGO STOCK EXCHANGE	BOLSA DE MADRID LATIBEX
Volcan Class A Common	VOLCAAC1	VCMAC1	
Volcan Class B Common	VOLCABC1	VCMBC1	XVOLB.MC

Subscribed, paid, and registered capital as of Monday, December 31, 2018 totals PEN 3,546,617,792, represented by 1,633,414,553 class A common shares and 2,443,157,622 class B common shares, each with a nominal value of PEN 0.87. The subsidiary Empresa Minera Paragsha S.A.C. holds 182,920,322 class A common shares and 12,234,901 class B common shares. The subsidiary Compañía Minera Chungar S.A.C. holds 23,442,345 class A common shares. The subsidiary Compañía Industrial Limitada De Huacho S.A. holds 306,283 Class A common shares.

### ▼ STOCK OWNERSHIP COMPOSITION

As of December 31, 2018, the share composition is as follows:

Class A Common Shares		
PERCENTAGE HELD	NUMBER OF SHAREHOLDERS	% SHARE
Less than 1%	449	1.41
From 1% to 5%	4	9.05
From 5% to 10%	3	26.10
More than 10%	3	63.44
<b>Total</b>	<b>459</b>	<b>100.00</b>

Class B Common Shares		
PERCENTAGE HELD	NUMBER OF SHAREHOLDERS	% Share
Less than 1%	7,932	37.15
From 1% to 5%	10	21.06
From 5% to 10%	4	31.16
More than 10%	1	10.63
<b>Total</b>	<b>7,947</b>	<b>100.00</b>

Of total company equity, 63.82% is held by domestic shareholders with 2,601,548,325 shares while 36.18% is held by foreign shareholders with 1,475,023,850 shares.

Shareholders holding more than 4.0% of the company's stock are as follows:

Class A Common Shares				
PRINCIPAL SHAREHOLDERS	%	PERSON/ ENTITY	NATIONALITY	CORPORATE GROUP
Glencore International AG (*)	41.91	Legal entity	Swiss	Glencore
Empresa Minera Paragsha S.A.C.	11.20	Legal entity	Peruvian	Volcan
De Romaña Letts José Ignacio	10.33	Individual	Peruvian	Does not apply
Letts Colmenares de De Romaña Irene Florencia	9.90	Individual	Peruvian	Does not apply
Blue Streak International N.V.	8.38	Legal entity	Netherlands Antilles	Does not apply
Sandown Resources S.A.	7.81	Legal entity	Panamanian	Glencore

(\*) The Glencore group, including all of its subsidiaries, owns a 55.03% share.

### Class B Common Shares

SHAREHOLDER	% OWNERSHIP INTEREST	PERSONA	NATIONALITY	CORPORATE GROUP
AFP Integra - Fondo 2	10.63	Legal entity	Peruvian	Does not apply
Prima AFP - Fondo 2	8.61	Legal entity	Peruvian	Does not apply
AFP Integra - Fondo 3	8.56	Legal entity	Peruvian	Does not apply
Prima AFP - Fondo 3	7.23	Legal entity	Peruvian	Does not apply
Profuturo AFP-PR Fondo 2	6.76	Legal entity	Peruvian	Does not apply
Profuturo AFP-PR Fondo 3	4.92	Legal entity	Peruvian	Does not apply
López De Romaña Dalmau Hernando Diego Francisco	4.08	Individual	Peruvian	Does not apply



### ▼ SHARE STRUCTURE PER TYPE OF INVESTOR

HOLDING BY TYPE OF SHAREHOLDER OF THE STOCK OR REPRESENTATIVE SHARE VALUE THAT MAKES UP THE S & P PERU SELECTIVE INDEX (AT YEAR-END)	STOCK:	VOLCAACT
	NUMBER OF SHAREHOLDERS	% OF SHARE (3)
1. Members of the board and senior management of the company, including relatives (1)	2	20.24%
2. Company employees, not considered in point 1 above	2	0.00%
3. Individuals, not considered in points 1 and 2 above	418	0.50%
4. Pension funds managed by the Pension Fund Administrators under the supervision of the Superintendency of Banking, Insurance and AFP	5	0.00%
5. Pension funds managed by the Pension Office (Oficina de Normalización Previsional, ONP)		0.00%
6. Entities associated with the Peruvian government, with the exception of those comprised in point 5 above		0.00%
7. Banks, financial institutions, municipal savings banks, SME development agencies, rural savings banks and credit unions under supervision of the Superintendency of Banking, Insurance and AFP		0.00%
8. Insurance companies under the supervision of the Superintendency of Banking, Insurance and AFP	1	0.00%
9. Brokers, under the supervision of the Superintendency of Securities Market (SMV)	2	0.00%
10. Investment funds, mutual funds and trust funds under the scope of the Securities Market Law and Investment Funds Law and banking trusts under the scope of the General Law of the Financial System		0.00%
11. Autonomous assets and bank trusts from abroad, where these can be identified		0.00%
12. Foreign depositories that appear as shareholders in the framework of ADR or ADS programs		0.00%
13. Foreign depositories that appear as shareholders and are not considered in point 12		0.00%
14. Foreign trustees listed as shareholders		0.00%
15. Entities not comprised in the points above (2)	29	79.27%
16. Shares owned by the S&P/BVL Peru Select Index or representative value of these shares, in the company's portfolio		0.00%
<b>Total</b>	<b>459</b>	<b>100.00%</b>

HOLDING BY TYPE OF STOCK OR REPRESENTATIVE SHARE VALUE THAT MAKES UP THE S&P/BVL PERU SELECT INDEX, BASED ON RESIDENCE (AT YEAR-END)	NUMBER OF SHAREHOLDERS	% OF SHARE
Domiciliados	423	33.56%
No domiciliados	36	66.44%
<b>Total</b>	<b>459</b>	<b>100.00%</b>

HOLDING BY TYPE OF SHAREHOLDER OF THE STOCK OR REPRESENTATIVE SHARE VALUE THAT MAKES UP THE S & P PERU SELECTIVE INDEX (AT YEAR-END)	STOCK:	VOLCABC1
	NUMBER OF SHAREHOLDERS	% OF SHARE (3)
1. Members of the board and senior management of the company, including relatives (1)	2	1.12%
2. Company employees, not considered in point 1 above	29	0.12%
3. Individuals, not considered in points 1 and 2 above	7,650	29.04%
4. Pension funds managed by the Pension Fund Administrators under the supervision of the Superintendency of Banking, Insurance and AFP	12	50.22%
5. Pension funds managed by the Pension Office (Oficina de Normalización Previsional, ONP)		0.00%
6. Entities associated with the Peruvian government, with the exception of those comprised in point 5 above	1	0.17%
7. Banks, financial institutions, municipal savings banks, SME development agencies, rural savings banks and credit unions under supervision of the Superintendency of Banking, Insurance and AFP	5	0.50%
8. Insurance companies under the supervision of the Superintendency of Banking, Insurance and AFP	3	0.51%
9. Brokers, under the supervision of the Superintendency of Securities Market (SMV)	4	0.09%
10. Investment funds, mutual funds and trust funds under the scope of the Securities Market Law and Investment Funds Law and banking trusts under the scope of the General Law of the Financial System	21	1.27%
11. Autonomous assets and bank trusts from abroad, where these can be identified		0.00%
12. Foreign depositories that appear as shareholders in the framework of ADR or ADS programs		0.00%
13. Foreign depositories that appear as shareholders and are not considered in point 12	4	1.35%
14. Foreign trustees listed as shareholders		0.00%
15. Entities not comprised in the points above (2)	216	15.62%
16. Shares owned by the S&P/BVL Peru Select Index or representative value of these shares, in the company's portfolio		0.00%
<b>Total</b>	<b>7,947</b>	<b>100.00%</b>

HOLDING BY TYPE OF STOCK OR REPRESENTATIVE SHARE VALUE THAT MAKES UP THE S&P/BVL PERU SELECT INDEX, BASED ON RESIDENCE (AT YEAR-END)	NUMBER OF SHAREHOLDERS	% OF SHARE
Domiciliados	7,657	84.05%
No domiciliados	290	15.95%
<b>Total</b>	<b>7,947</b>	<b>100.00%</b>

(1) The term "Relatives" according to the regulation on indirect ownership, relationship and economic groups.

(2) The term "Entities" according to the regulation on indirect ownership, relationship and economic groups.

(3) Two decimals.

## ▼ DIVIDENDS

Cash dividends paid to unrestricted profits as of June 30, 2018:

### Dividendos en efectivo pagados (PEN)

#### DIVIDENDOS PAGADOS

August 2018	PEN 0.0130 for each class A common share
August 2018	0.013650 por cada acción común clase "B"

## ▼ STOCK PRICES ON THE LIMA STOCK EXCHANGE

In 2018, the market prices of class A and class B common shares, expressed in Nuevos Soles, were as follows:

### Class A Common Shares

MONTH	OPENING PEN	CLOSING PEN	MAXIMUM PEN	MINIMUM PEN	PRICE AVERAGE PEN
January	4.200	4.200	4.200	4.200	4.229
February	--	--	--	--	4.200
March	4.000	3.590	4.000	3.590	3.708
April	3.600	3.590	3.600	3.590	3.592
May	3.590	3.590	3.590	3.590	3.590
June	3.590	3.590	3.590	3.590	3.589
July	3.590	3.590	3.590	3.590	3.590
August	3.580	3.580	3.580	3.580	3.580
September	3.580	3.580	3.580	3.580	3.580
October	3.580	3.580	3.580	3.580	3.580
November	3.580	3.500	3.580	3.500	3.567
December	--	--	--	--	--

Source: Lima Stock Exchange

### Class B Common Shares

MONTH	OPENING PEN	CLOSING PEN	MAXIMUM PEN	MINIMUM PEN	PRICE AVERAGE PEN
January	1.360	1.370	1.440	1.350	1.385
February	1.360	1.230	1.370	1.050	1.208
March	1.230	1.200	1.300	1.100	1.173
April	1.210	1.170	1.210	1.130	1.157
May	1.170	0.990	1.170	0.980	1.056
June	1.000	0.810	1.050	0.810	0.965
July	0.810	0.810	0.880	0.730	0.803
August	0.810	0.820	0.830	0.710	0.769
September	0.810	0.770	0.830	0.710	0.746
October	0.770	0.620	0.780	0.580	0.660
November	0.620	0.750	0.770	0.600	0.708
December	0.770	0.710	0.780	0.700	0.732

Source: Lima Stock Exchange

### Latibex Prices 2018

MONTH	OPENING PEN	CLOSING PEN	MAXIMUM PEN	MINIMUM PEN	PRICE AVERAGE PEN	PRECIO PROMEDIO
January	4.088	1.27	1.41	1.43	1.31	1.41
February	4.083	1.36	1.14	1.36	1.03	1.13
March	4.062	1.14	1.10	1.22	1.10	1.12
April	4.156	1.12	1.11	1.21	1.11	1.20
May	3.978	1.05	1.05	1.15	0.78	0.91
June	3.930	1.04	0.76	1.04	0.67	0.77
July	3.946	0.77	0.70	0.83	0.69	0.73
August	3.938	0.70	0.76	0.76	0.69	0.72
September	3.950	0.76	0.78	0.78	0.69	0.78
October	3.909	0.77	0.63	0.63	0.43	0.58
November	3.997	0.64	0.69	0.69	0.51	0.64
December	4.150	0.72	0.58	0.79	0.56	0.61

Sources: Madrid Stock Exchange, Peruvian Superintendent of Banks, Insurance and Private Pension Funds

## ▼ CORPORATE BONDS

On January 26, 2012, as part of an international bond issue under Rule 144 and Regulation S of the United States Securities Act of 1933, the Company placed corporate bonds for up to USD 600 million, with a 10-year term and a fixed annual interest rate of 5.375%.

# 16.

## CORPORATE INFORMATION



### ▼ PROFESSIONAL BACKGROUND OF SENIOR MANAGEMENT:

#### **Juan Ignacio Rosado Gómez de la Torre**

Chief executive officer since April 2014. He served as deputy chief executive officer from June 2010 until being appointed chief executive officer. He previously served as vice chairman and finance director at Hochschild Mining Plc. He was a senior project manager at McKinsey & Company from August 2000 to January 2005. He served on the Board of Lake Shore Gold Corp. from March 2008 to June 2010 and the Board of Zincore Metals in 2010 (both companies are listed on the Toronto Stock Exchange).

Mr. Rosado holds a degree in economics from Universidad del Pacifico and an MBA from Ross School of Business, University of Michigan.

#### **Carlos Francisco Fernández Navarro**

Executive vice president since January 2018. He has previously served as manager of business development - Zinc Division of Glencore International AG, asset manager of South America - Zinc Division of Glencore International AG and as investor relations manager for Glencore International AG. He has a degree in applied mathematics from Yale University.



**Aldo de la Cruz Peceros**

Vice president of operations since January 2018. He previously served as vice president of operations for Mina Sinchy Wayra Glencore Zinc, from October 2015 to December 2017. He was also senior technical advisor at Glencore Zinc South America from August 2012 to October 2015. He was vice president of operations at Mopani Copper Mines Plc Zambia of Glencore Copper from April 2010 to June 2012. Senior technical advisor at Glencore Copper from November 2009 to March 2010.

From 2003 to 2009 he worked in different positions at Glencore as general manager at Kamoto Underground Mine Congo DRC, general manager at Mufulira Mine Zambia, Project Manager at Nkana Mine, Mopani Copper Mines Plc Zambia. From 1999 to 2003, he served as mine supervisor in Mina Yauliyacu, Peru.

Mr. de la Cruz has a degree in mining engineering from Universidad Nacional de Ingeniería and holds a master's degree in mining management from GERENS. He has a postgraduate diploma in mining management from Universidad del Pacífico.

**Jorge Leoncio Murillo Núñez**

Vice president of administration and finance since January 2018. He served as central financial manager since December 2013 and as management control manager from January 2011 until December 2013.

His previous positions included financial consultant for KPMG Consulting, financial controller for Peru and Colombia at Bearing Point, deputy corporate financial planning director at Grupo Gloria and budget manager at Hochschild Mining Plc.

Mr. Murillo has an industrial engineering degree from Pontificia Universidad Católica de Perú, a certificate in finance from the same university, and an MBA from Universidad ESAN.

**Vanessa Aita de Marzi**

Sales manager since April 2018. She joined Volcan in May 2012, where she worked as contract administrator from February 2014 to May 2016, and was then appointed deputy manager of sales planning.

Ms. Aita holds a degree in international business and administration from the Universidad de Lima.

**Alberto Víctor Manuel Gazzo Baca**

Human resources manager since December 2012. Prior to that he was human resources manager for Latin America at American Cyanamid Company, human resources director for Latin America at NCH, and general manager of human and

organizational development at Votorantim Metais in Brazil and Peru.

Mr. Gazzo has a doctorate in human sciences from Pontificia Universidad Católica de Rio de Janeiro in Brazil. He holds a degree in law, philosophy, and theology. He has also earned master's degrees in business management, quality management, and human resources management in Rio de Janeiro.

**Roberto Juan Servat Pereira de Sousa**

Corporate social responsibility and labor relations manager since December 2010. He began working with Volcan in January 2007 as legal advisor to the chairman of the Board of Directors. He previously served as deputy minister of labor, deputy minister of social promotion, an advisor to the minister's office, general director of legal advising, and member of the Advisory Commission of Peru's Ministry of Labor and Employment Promotion, a judge in the Bankruptcy Division in Matters of Fair Competition and Intellectual Property of INDECOPI, and member of the Board of the Superintendency of Healthcare Service Providers.

He is currently a member of the Labor Affairs Commission of the Lima Chamber of Commerce and the Board of the Peruvian Society of Labor and Social Security Law. He is a professor at Universidad de Lima.

Mr. Servat earned a law degree from Universidad de Lima and a master's degree in public administration from the Instituto Ortega y Gasset, affiliated with Universidad Complutense de Madrid.

**Juan Alberto Begazo Vizcarra**

Audit manager since July 2010. He joined Volcan in December 2008 as administration and control manager. He previously served as CFO at Gold Fields, general controller at Doe Run, and accounting manager at Centromin.

Mr. Begazo is a certified public accountant and member of the Committee of Experts in Mining Accounting, and he teaches in the mining management certificate program at Universidad de Lima.

**Alfonso Rebaza González**

Legal counsel since September 2010. He has experience in corporate and mining law, arbitration and contracts. He was previously a partner with Estudio Osterling and professor of civil law at Pontificia Universidad Católica del Peru.

Mr. Rebaza earned a law degree from Pontificia Universidad Católica del Peru.

**Mario Eduardo De las Casas Vizquerra**

Logistics manager at Volcan since February 2010. From 2007 to 2010 he served as deputy manager of contracts, logistics and supplies for the Project Division of Votorantim Metais, Cajamarquilla Refinery, and from 1998 to 2007 he was

logistics manager for Volcan. He worked in the logistics division of Buenaventura S.A. and Minera Yanacocha S.A. from 1990 to 1998.

Mr. De las Casas has a degree in business administration from Universidad Ricardo Palma, completed the PADE program in logistics at Universidad ESAN, and has an MBA from Universidad de Piura.

#### **Álvaro Luis Cabrera Ramírez**

Energy manager. He joined Volcan in March 2012. During his career, he has served as energy operations manager and he has been the manager of his division at Sociedad Minera Corona since 2004.

Mr. Cabrera has a degree in electronic engineering from Universidad Peruana de Ciencias Aplicadas (UPC), a master's degree in business administration from EADA (Barcelona) and a postgraduate qualification in energy, electricity and gas law (UPC).

#### **José Edmundo Montoya Stahl**

Chief mining development officer since January 2018, he previously served as chief business development officer since June 2010. He previously worked at major corporations such as Votorantim Metais, Exsa S.A., and Minera Yanacocha S.R.L., occupying positions in production and planning for underground and open pit mines.

Mr. Montoya has a mining engineering degree from Pontificia Universidad Católica del Perú and a master's degree in mining economics from Colorado School of Mines. He participated in executive development programs at Universidad de Piura and Fundación Don Cabral (Brazil).

#### **Eduardo Malpartida Espinoza**

Occupational health and safety manager since January 2018, he was previously operations manager of the Alparmarca UEA since September 2014. He previously served as operations manager at BRECA Grupo Empresarial - Administración de Empresas S.A.C., general superintendent at Grupo ARUNTANI - Anabí and operations manager at the Arcata, Selene and Pallancata mines owned by Grupo Hochschild Mining Plc.

He has a degree in mining engineering from Universidad Nacional Daniel Alcides Carrión in Cerro de Pasco and a master's degree in operations and logistics management from EOI Escuela de Negocios in Madrid, Spain.

#### **Juan Luis Arenas Gómez Sánchez**

He joined the Company in September 2016 as industrial plant manager. He is a petrochemical engineer with a degree from Universidad Nacional de Ingeniería

and holds an MBA from ESAN. He also has completed postgraduate studies in project management at Pontificia Universidad Católica.

He has worked in companies such as Petroperú, Cervecería Backus y Johnston and Corporación José R. Lindley. From 2000 to 2016, he worked in San Miguel Industrias Pet S.A. in the plastics sector as corporate production manager.

#### **Edgardo Zamora Pérez**

Corporate planning manager since January 2018, he previously served as operations manager of the Yauli UEA since September 2012. He joined Volcan in May 2000. In 2007 he became general superintendent of Empresa Administradora Chungar S.A.C. and from 2010 to 2012 he served as operations manager.

He has 12 years of professional experience in mine operations. He served as planning superintendent until March 2007.

Mr. Zamora earned a degree in mining engineering from Universidad Nacional Mayor de San Marcos.

#### **Carlos Manuel García Zapata**

San Cristóbal - Carahuacra operations CEO since November 2018, he previously served as operations manager at Andaychagua since February 2014. He served in Volcan as production superintendent at the Yauli UEA in 2013-2014, superintendent of San Cristóbal mine in 2012, superintendent of safety and hygiene at Minera Yauli in 2011, and deputy superintendent of safety and hygiene at Minera Yauli (July 2009 to 2010).

During his career, he has worked as assistant vice chairman of operations for Doe Run Perú from 2005 to 2009, as head of security and other positions in mining operations in the Cobriza, Cerro de Pasco and Yauricocha.

Mr. Garcia is a mining engineer with a degree from the Universidad Nacional de Ingeniería, an MBA from Universidad Río de la Plata, and is a specialist in mining safety and hygiene and mine rescue (University of Missouri-Rolla/ USA) - Doe Run Company - MSHA USA

#### **Francisco Grimaldo Zapata**

Alparmarca operations manager since January 2018, he previously served as operations manager of the San Cristóbal (Yauli) since October 2016. From January 2006 to January 2016, he served as CEO of the Yauliyacu unit and operations and project manager of the Iscaycruz unit of Empresa Minera Los Quenuales - Grupo Glencore. He also served as general superintendent of Cerro de Pasco in Volcan from September 1999 to January 2005 and previously worked for Centromin Perú.

Mr. Grimaldo earned a degree in mining engineering from Universidad Nacional de Ingeniería and an MBA from ESAN.

**Adrián Felipe Corihuamán Mayta**

Gerente de Operaciones mina San Cristóbal desde diciembre 2018, antes gerente San Cristóbal Mine operations manager since December 2018, he was previously operations manager at Carahuacra (Yauli) since July 2017. He served as project manager at SAME and operations manager at Quiruvilca mine since June 2016. Prior to that, he was operations manager at Cía Minera Caylloma, Cía Minera Arcata, and Cía Minera Ares, all part of Grupo Hochschild Mining Plc, from January 2003 to May 2016.

Mr. Corihuamán has a mining engineering degree from Universidad Nacional de Tacna and studied business administration at CEPADE.

**Reynol Renzo Fuentes Fernández**

Operations manager at Tidio (Yauli) since September 2017. He previously worked at Compañía Minera Milpo S.A., in the Porvenir-UM Atacocha unit, as planning and development manager at Pasco.



Mr. Fuentes has a degree in mining engineering from Universidad Nacional Jorge Basadre Grohmann in Tacna, an international master's degree in leadership from EADA Business School and a master's degree in strategic management from CENTRUM Católica.

**James Atalaya Chacón**

Operations manager of the Chungar UEA since January 2016. Mr. Atalaya joined the Company in February 2015 as planning superintendent at the Chungar UEA.

Prior to that, he served as planning superintendent at Compañía Minera Ares S.A. and as mining superintendent at Minsur S.A.

Mr. Atalaya has a degree in mining engineering from Pontificia Universidad Católica del Perú, a diploma in mining company management from Universidad del Pacífico, a diploma in finance from the Monterrey Institute of Technology and Higher Education, Mexico, and he also graduated from the master's program in strategic company management at Centrum Católica.

**Julio César Beraún Sánchez**

Operations manager of the Cerro de Pasco unit since September 2017. Previously, he served as operations manager at Carahuacra starting in February 2016. Before that, he was technical services and mine manager at El Mochito - Nyrstar Honduras, from September 2014 to October 2016. He was also operations manager at Contonga - Nyrstar Perú from September 2013 to August 2014. He served as operations manager at PD&B Services LDT Grand Cayman from August 2012 to April 2013 and key accounts manager and chief engineer at Voladura, EXSA SA, from August 2005 to May 2012.

Mr. Beraún has a degree in mining engineering from Pontificia Universidad Católica del Perú and an MBA from Centrum, Pontificia Universidad Católica del Perú.

**Percy Mamani Ureta**

Operations manager of the Chungar UEA since March 2018. He previously served as superintendent of occupational safety and health in Chungar and Alpamarca in Zone II and in the same position in Andaychagua, San Cristobal and Carahuacra in Zone I of Yauli since 2008. He was also manager of occupational health, safety and the environment program at the Torrecillas UEA for Empresa Australiana Mundo Minerales SAC in Caraveli Arequipa in 2011. Mr. Mamani has a degree in geological engineering from the Universidad Nacional de San Agustín de Arequipa, holds a teaching degree in electronics at IS Pedro P. Diaz, is an authorized auditor for the periodic evaluation of the Health and Safety Management System System of the Ministry of Labor with the Registry N° 008-2017 with RD No. 149-2017-GRA-GRTPE-DPSC, holds a diploma in management skills from UPC and a master's degree in environment and integrated management systems from UNSA.

**César Augusto Velazco Cornelio**

Corporate geology manager since March 2018. He previously served as geology manager at Marcobre S.A.C. From October 2016 to February 2018. He previously served as deputy corporate manager of geology and brownfields - north cluster at Volcan Compañía Minera from October 2014 to September 2016. He was also corporate manager of brownfield explorations and advanced projects at Hochschild Mining PLC from December 2010 to July 2013. He was corporate manager of geology, planning and explorations at Compañía Minera Aruntani SAC from May 2008 to November 2010. He also served as general head of mine geology at Minera Yanacocha from January 1998 to August 2007 and project geologist at Newmont Peru Limited from January 1994 to December 1997.

Mr. Velazco has a degree in geological engineering from Universidad Nacional de Ingeniería.

**Eduardo Julio Magnasco La Torre**

Maintenance and quality manager since November 2010. In his career, he has served as deputy director of airworthiness at the General Directorate for Civil Aviation of Lima, director of quality assurance for Compañía de Aviación Faucett, maintenance manager at Americana de Aviación in Lima, quality control director at TANS Perú and maintenance manager of TACA Perú.

Mr. Magnasco is an aeronautical engineer with experience in operations, maintenance, logistics, regulations, quality, human resources, and administration. He has an MBA from Universidad Diego Portales in Chile.

**Percy Luis Rivera López**

Gerente de Asuntos Ambientales desde mayo de 2014. Anteriormente, se Environmental affairs manager since May 2014. Prior to joining Volcan, he was manager of safety, health and environment at Minsur S.A. and manager of safety, health and environment at Votorantim Metais Cajamarquilla S.A.

Mr. Rivera holds a master's degree in environmental management from Universidad Nacional de Ingeniería and a certificate in quality management and environmental auditing from Universidad Nacional Agraria La Molina. He also has a degree in sanitation engineering from Universidad Nacional de Ingeniería.

**Pedro Simón Navarro Neyra**

Gerente de Tesorería desde diciembre de 2010. Anteriormente, se desempeñó Treasury manager since December 2010. He served as deputy finance manager from 1998 to 2010.

He holds a degree in business administration and a master's degree in business management from Universidad de Piura, as well as a master's degree in strategic

financial management from Universidad Peruana de Ciencias Aplicadas in Peru and EOI of Spain.

**Willy Antonio Montalvo Callirgos**

Accounting and tax manager since September 2015. Prior to that he was a general accountant at Volcan from November 2010. During his career, he has worked as an accountant at the department store Ripley S.A., Cia. Minera Ares S.A.C. (Grupo Hochschild), Química Suiza S.A., Corporación Andina de Distribución S.A. (Carsa), and PricewaterhouseCoopers.

Mr. Montalvo is a certified public accountant who graduated from Universidad San Martín de Porres. He has a master's degree in strategic business administration from the Centrum Business School. He also holds certifications in International Financial Reporting Standards and International Accounting Standards from the Association of Chartered Certified Accountants (ACCA, London) and the Institute of Chartered Accountants in England and Wales (ICAEW, London), as well as a diploma in tax specialization from Universidad de Lima.

**Dayan Gustavo Segura Vandervelde**

Information technology manager since September 2017. Prior to that, he was deputy IT manager for infrastructure and communications at Volcan.

Mr. Segura has a degree in systems engineering from Universidad de Lima and a master's degree in strategic business management, with a specialization in innovation, from Monterrey Institute of Technology and Higher Education.

**Mauricio Scerpella Iturburu**

Budgeting and management control manager since February 2014. Previously, he was the mining projects controller and corporate head of cost and budget analysis at Volcan.

Mr. Scerpella obtained an MBA with a specialization in strategy from Monterrey Institute of Technology and Higher Education. He also has a degree in economics from Universidad San Ignacio de Loyola.

**César Emilio Farfán Bernales**

Regional explorations manager since December 2010. He served as corporate chief of regional explorations from 2007 to 2010 and general superintendent of the Vinchos mining unit from 2002 to 2007.

He has a degree in geological engineering from Universidad Nacional Mayor de San Marcos, with postgraduate studies in geology-metallogeny at Universidad Central in Quito, Ecuador.

**Renzo Muenta Barzotti**

Employee development manager since October 2014. Mr. Muenta joined the Company in April 2011 as deputy corporate manager of employee development.

Previously, he served as human resources manager at Unilever Perú, training manager for Unilever-Andean Region, and human resources manager for the food products division of Unilever Colombia.

He has a degree in industrial engineering from Universidad de Lima and a master's degree in strategic management of human capital from Universidad Peruana de Ciencias.

**Ronald Martín Castillo Ángeles**

Contracts manager since April 2017. He has served as deputy manager and contracts manager since February 2011, when he returned to the Company. Previously he was corporate contracts manager for Compañía Minera Milpo. He was also logistics-contracts manager at Compañía Minera Atacocha.

He began his career in 1997 as mine administrator with the Chungar unit, which was acquired by Volcan. He subsequently transferred to the Cerro de Pasco unit where he oversaw corporate contracts until May 2008.

Mr. Castillo holds a public accounting degree from Universidad Nacional Daniel Alcides Carrión and an MBA from Universidad del Pacifico and Esade Business School.

**Jorge Luis Cotrina Luna**

Head of shareholder services since November 1999. He held various positions in the banking sector from 1984 to 1999. He has a business administration degree from Universidad Nacional Mayor de San Marcos and studied banking and capital markets at Pontificia Universidad Católica del Perú.

**▼ GENERAL INFORMATION**

Volcan Compañía Minera S.A.A.

**Information about incorporation**

Volcan Compañía Minera S.A.A. is a mining company that was incorporated by public deed on February 1, 1998, executed before Notary Public Dr. Abraham Velarde Álvarez, as a result of the merger of Volcan Compañía Minera S.A. and Empresa Minera Mahr Tunel S.A. The company is registered in the Public Mining Registry under Entry 1, Record 41074, Card 11363057 of the Registry of Legal Entities of Lima.

The company is engaged in the exploration, production, and processing of its own ore and ore from subsidiaries that carry out extraction, concentration, treatment and commercialization of all products and concentrates.

Its activities are classified ISIC category 1320, Mining of non-ferrous metal ores. The Company is a going concern, limited by the availability of ore reserves that may vary according to investments made in explorations and their results.

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