

## Volcan Compañía Minera S.A.A. and Subsidiaries Management Discussion and Analysis Fourth Quarter 2019

### Principal Results:

Consolidated Volcan	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
<b>Sales Prices<sup>1</sup></b>									
Zinc (USD/MT)	2,694	2,760	2,348	2,378	2,636	-9.8	2,539	2,917	-13.0
Lead (USD/MT)	2,042	1,873	1,997	2,040	1,964	3.9	1,978	2,245	-11.9
Copper (USD/MT)	6,400	6,128	5,800	5,851	6,158	-5.0	6,022	6,464	-6.8
Silver (USD/Oz)	15.5	14.8	16.6	17.4	14.5	19.9	16.1	15.7	2.5
Gold (USD/Oz)	1,307	1,305	1,466	1,481	1,228	20.6	1,387	1,265	9.6
<b>Operating Results</b>									
Mineral treatment <sup>2</sup> (thousands MT)	1,969	2,202	2,254	2,384	2,132	11.9	8,809	8,077	9.1
Zinc Production (thousands FMT)	53.9	60.3	60.0	64.9	60.5	7.1	239.0	241.1	-0.8
Lead Production (thousands FMT)	11.5	11.8	12.3	13.8	12.3	12.3	49.4	47.2	4.6
Copper Production (thousands FMT)	1.0	1.2	1.2	1.1	1.1	0.0	4.5	4.6	-3.6
Silver Production (millions Oz)	3.4	3.8	4.0	4.4	4.2	3.9	15.6	17.0	-8.7
Gold Production (thousands Oz)	4.7	6.4	4.8	5.6	3.1	83.8	21.6	11.6	85.6
Unit Cost (USD/MT)	46.1	45.3	44.3	45.2	45.2	0.0	45.2	46.6	-3.1
Total Investments (MM USD)	37.3	47.2	46.7	62.9	60.0	4.7	194.0	184.9	4.9
<b>Financial Results (MM USD)</b>									
<b>Sales before adjustments</b>	<b>169.0</b>	<b>205.2</b>	<b>174.4</b>	<b>205.5</b>	<b>179.3</b>	<b>14.6</b>	<b>754.1</b>	<b>831.5</b>	<b>-9.3</b>
<b>Sales Adjustments</b>	<b>12.6</b>	<b>-19.8</b>	<b>-5.1</b>	<b>1.8</b>	<b>-6.3</b>		<b>-10.5</b>	<b>-56.4</b>	<b>-81.3</b>
Settlement of prior period adjustments	-0.2	6.0	-11.1	-10.4	-20.1	-48.1	-15.7	-34.5	-54.6
Adjustments for open positions <sup>3</sup>	12.7	-25.8	6.0	4.8	13.8	-65.2	-2.4	-8.0	-70.5
Hedging results	0.0	0.0	0.0	7.5	0.1		7.5	-13.9	
<b>Sales after adjustments</b>	<b>181.6</b>	<b>185.4</b>	<b>169.3</b>	<b>207.3</b>	<b>173.0</b>	<b>19.8</b>	<b>743.6</b>	<b>775.1</b>	<b>-4.1</b>
<b>Net profit before exceptionals</b>	<b>8.4</b>	<b>-11.5</b>	<b>-20.8</b>	<b>1.9</b>	<b>-13.3</b>		<b>-21.9</b>	<b>30.3</b>	
Exceptional adjustments	0.0	6.6	0.0	-55.0	1.4		-48.4	-0.9	
<b>Net profit after exceptionals</b>	<b>8.4</b>	<b>-4.9</b>	<b>-20.8</b>	<b>-53.0</b>	<b>-11.9</b>	<b>344.3</b>	<b>-70.3</b>	<b>29.4</b>	
<b>EBITDA<sup>4</sup></b>	<b>73.7</b>	<b>47.3</b>	<b>51.5</b>	<b>71.6</b>	<b>50.9</b>	<b>40.8</b>	<b>244.1</b>	<b>288.8</b>	<b>-15.5</b>

<sup>1</sup> These prices are the initial billing prices, which are provisional, as the adjustments are made when settlements of prior periods are received from customers.

<sup>2</sup> Includes treated tons at Oxides Plant

<sup>3</sup> Adjustments for open commercial positions refer to shipments without final settlement, which are therefore exposed to possible adjustments from variations of future metals prices. These financial provisions, embedded derivatives and sales adjustments, reflect this exposure according to a forward-price curve.

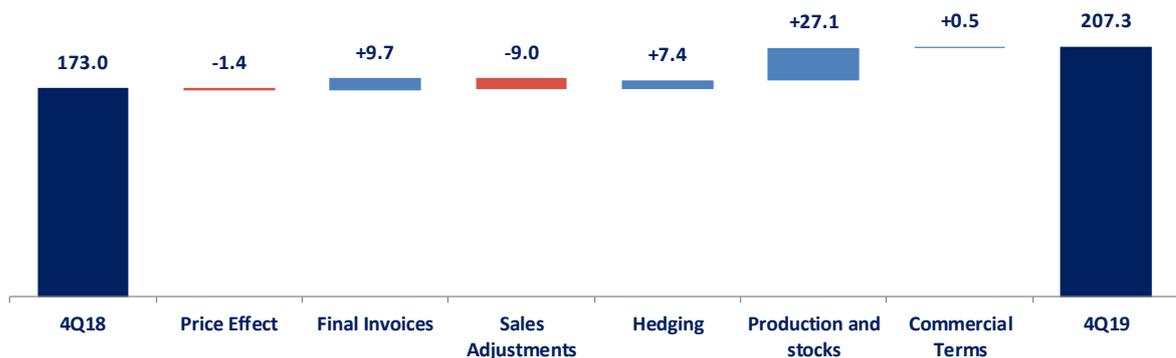
<sup>4</sup> Does not consider exceptional adjustments or the expenses associated with the closing of the sale of the Chancay port project.

Source: Volcan Cia. Minera

## 1. Executive Summary

- In 4Q19, the volume of metals produced by the Company grew, as compared to 4Q18. This is mainly explained by the increased volume of treated ore from the San Cristóbal, Carahuacra and Andaychagua mines in Yauli, as well as greater treatment of low-grade stockpiles at Cerro de Pasco. Treated consolidated volumes increased by 11.9%, from 2.1 MM MT in 4Q18 to 2.4 MM MT in 4Q19. As a result, zinc production increased by 7.1%, from 60.5 thousand FMT in 4Q18 to 64.9 thousand FMT in 4Q19; lead production increased by 12.3%, from 12.3 thousand FMT in 4Q18 to 13.8 thousand FMT in 4Q19, silver increased by 3.9%, from 4.2 MM Oz in 4Q18 to 4.4 MM Oz in 4Q19; and gold increased by 84%, from 3.1 thousand Oz in 4Q18 to 5.6 thousand Oz in 4Q19. This is also explained by the run-of-mine ore with higher gold grade processed at the Oxides Plant.
- In 4Q19, the prices of metals produced by the Company showed a different behavior. The price of zinc decreased by 9.8% (-258 USD/MT), from 2,636 USD/MT in 4Q18 to 2,378 USD/MT in 4Q19; lead increased by 3.9% (76 USD/MT), from 1,964 USD/MT to 2,040 USD/MT; copper decreased by 5.0% (-307 USD/MT), from 6,158 USD/MT to 5,851 USD/MT; silver increased by 19.9% (+2.9 USD/Oz), from 14.5 USD/Oz to 17.4 USD/Oz; and gold increased by 20.6% (+253 USD/Oz), from 1,228 USD/Oz in 4Q18 to 1,481 USD/Oz in 4Q19.
- The increased production, the reduced concentrate inventories and the mixed behavior of metal prices resulted in a 14.6% increase of sales before adjustments, from USD 179.3 MM in 4Q18 to USD 205.5 MM in 4Q19. Sales adjustments amounted to USD 1.8 MM (final settlements of USD -10.4 MM, open provisions of USD 4.8 MM, and positive hedge results of USD 7.5 MM), as compared to the negative adjustment of USD -6.3 MM in 4Q18. As a result, total sales after adjustments increased by 19.8%, from USD 173.0 MM in 4Q18 to USD 207.3 MM in 4Q19.

**Figure 1: 4Q19 vs 4Q18 variations impact on net sales (USD MM)**

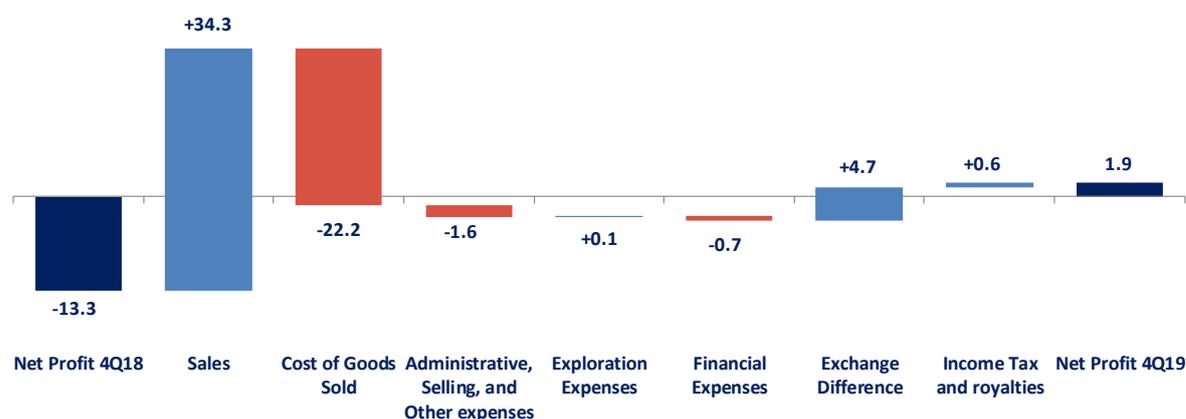


Source: Volcan Cía. Minera

- Consolidated unit cost decreased by 0.04%, from 45.18 USD/MT in 4Q18 to 45.16 USD/MT in 4Q19. This is mainly explained by increased lower-cost treated ore from stockpiles at Cerro de Pasco and the reclassification of operating leases, from cost to investment, in accordance with IFRS 16.

- Net profit before exceptional items increased from USD -13.3 MM in 4Q18 to USD 1.9 MM in 4Q19, mainly due to increased gross profit as a result of the sales growth explained above. The variations that had an impact on net profit are shown in detail in the figure below.

**Figure 2: 4Q19 vs 4Q18 variations impact on net profit before exceptional items (USD MM)**



Source: Volcan Cía. Minera

- Similarly, EBITDA increased by 42%, from USD 50.9 MM in 4Q18 to USD 71.6 MM in 4Q19.
- It is important to note that, in line with the conservative policy adopted for the Company's financial statements, exceptional adjustments worth USD -55 MM were recorded in 4Q19, mainly at Cerro de Pasco and non-operative companies. These have no effect on the Company's cash balance. For this reason, in 4Q19, net profit after exceptional items amounted to USD -53.0 MM.
- Year-to-date (Jan-Dec), sales after adjustments declined from USD 775.1 MM in 2018 to USD 743.6 MM in 2019, mainly explained by lower base metal prices and a reduced silver production. Net profit before exceptional items decreased from USD 30.3 MM in 2018 to USD -21.9 MM in 2019, mainly explained by lower sales, increased absolute cost of production as a result of greater treated volumes, and increased depreciation. Cumulative EBITDA decreased from USD 288.8 MM in 2018 to USD 244.1 MM in 2019.
- Total investments increased from USD 60.0 MM in 4Q18 to USD 62.9 MM in 4Q19. Year-to-date, total investments increased from USD 184.9 MM in 2018 to USD 194.0 MM in 2019, mainly due to greater investments in current operations, regional explorations and the Romina project.
- It is important to note that, in November 2019, Volcan executed an agreement to sell the shares held in Empresa Administradora Cerro S.A.C., Óxidos de Pasco S.A.C. and Remediadora Ambiental S.A.C. to Cerro de Pasco Resources Inc. from Canada. This agreement is subject to certain conditions precedent that must be met in 2020.

Cerro de Pasco Resources Inc. is listed in the Canadian Securities Exchange and it has been present in Cerro de Pasco for several years. It holds the El Metalurgista concession in the district. The transaction stipulates an initial payment of USD 30 MM, a 2% NSR on the concessions held by Administradora Cerro S.A.C., and a percentage of future Au and

Ag sales of the Oxides Plant throughout its operation. Moreover, Cerro de Pasco Resources has the obligation to sell 100% of the concentrates produced at Administradora Cerro S.A.C. concessions to Volcan. Finally, the agreement guarantees the continuity of the health, safety, environment and social projection programs currently executed by Volcan in the area.

## 2. Consolidated Results

### 2.1 Production

**Table 1: Consolidated Production**

Consolidated Production	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
<b>Mineral extraction (thousands MT)</b>	<b>1,957</b>	<b>2,201</b>	<b>2,238</b>	<b>2,357</b>	<b>2,086</b>	<b>13.0</b>	<b>8,752</b>	<b>8,057</b>	<b>8.6</b>
Polymetallic ore	1,758	1,963	2,003	2,116	1,847	14.6	7,841	7,143	9.8
Oxides ore	198	237	235	241	239	0.9	911	914	-0.3
<b>Mineral treatment (thousands MT)</b>	<b>1,969</b>	<b>2,202</b>	<b>2,254</b>	<b>2,384</b>	<b>2,132</b>	<b>11.9</b>	<b>8,809</b>	<b>8,077</b>	<b>9.1</b>
Concentrator Plants	1,770	1,965	2,019	2,144	1,893	13.2	7,898	7,164	10.2
Silver Oxides Plant	198	237	235	241	239	0.9	911	914	-0.3
<b>Fine Content</b>									
Zinc (thousands FMT)	53.9	60.3	60.0	64.9	60.5	7.1	239.0	241.1	-0.8
Lead (thousands FMT)	11.5	11.8	12.3	13.8	12.3	12.3	49.4	47.2	4.6
Copper (thousands FMT)	1.0	1.2	1.2	1.1	1.1	-1.0	4.5	4.6	-3.6
Silver (millions Oz)	3.4	3.8	4.0	4.4	4.2	3.9	15.6	17.0	-8.7
Gold (thousands Oz)	4.7	6.4	4.8	5.6	3.1	83.8	21.6	11.6	85.6

Source: Volcan Cia. Minera

In 4Q19, extracted ore volumes increased by 13.0% compared to the same quarter of the previous year, from 2.086 MM MT in 4Q18 to 2.357 MM MT in 4Q19. Similarly, treated volumes increased by 11.9%, from 2.132 MM MT in 4Q18 to 2.384 MM MT in 4Q19. This is mainly explained by the increased volume of treated ore from the San Cristóbal, Carahuacra and Andaychagua mines in Yauli, as well as greater treatment of low-grade stockpiles at Cerro de Pasco.

As a result, zinc production increased by 7.1%, from 60.5 thousand FMT in 4Q18 to 64.9 thousand FMT in 4Q19; lead production increased by 12.3%, from 12.3 thousand FMT in 4Q18 to 13.8 thousand FMT in 4Q19, silver increased by 3.9%, from 4.2 MM Oz in 4Q18 to 4.4 MM Oz in 4Q19; and gold increased by 83.8%, from 3.1 thousand Oz in 4Q18 to 5.6 thousand Oz in 4Q19. This is also explained by the run-of-mine ore with higher gold grade processed at the Oxides Plant.

Year-to-date (Jan-Dec), the extraction volume increased by 8.6% as compared to the same period in the previous year, while treated volume increased by 9.1%, from 8.077 MM MT in 2018 to 8.809 MM MT in 2019.

## 2.2 Cost of Production

**Table 2: Consolidated Cost of Production**

Consolidated Production Cost	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
<b>Production Cost (MM USD)<sup>1</sup></b>	<b>90.5</b>	<b>99.7</b>	<b>99.5</b>	<b>107.1</b>	<b>95.2</b>	<b>12.4</b>	<b>396.7</b>	<b>376.3</b>	<b>5.4</b>
Mine Cost	44.6	49.1	50.5	53.7	48.7	10.2	197.9	194.5	1.8
Plant and Other Cost	45.9	50.5	49.0	53.3	46.5	14.7	198.8	181.8	9.4
<b>Unit Cost (USD/MT)<sup>1</sup></b>	<b>46.1</b>	<b>45.3</b>	<b>44.3</b>	<b>45.2</b>	<b>45.2</b>	<b>0.0</b>	<b>45.2</b>	<b>46.6</b>	<b>-3.1</b>
Mine Cost	22.8	22.3	22.6	22.8	23.4	-2.5	22.6	24.1	-6.3
Plant and Other Cost	23.3	22.9	21.7	22.4	21.8	2.6	22.6	22.5	0.3

<sup>1</sup> The production cost has been adjusted from January to June 2019, removing the operating leases fee according to NIIF 16: USD 5.0 MM in 1Q19 and USD 4.3 MM in 2Q19. These amounts are reflected in the operational investments now.

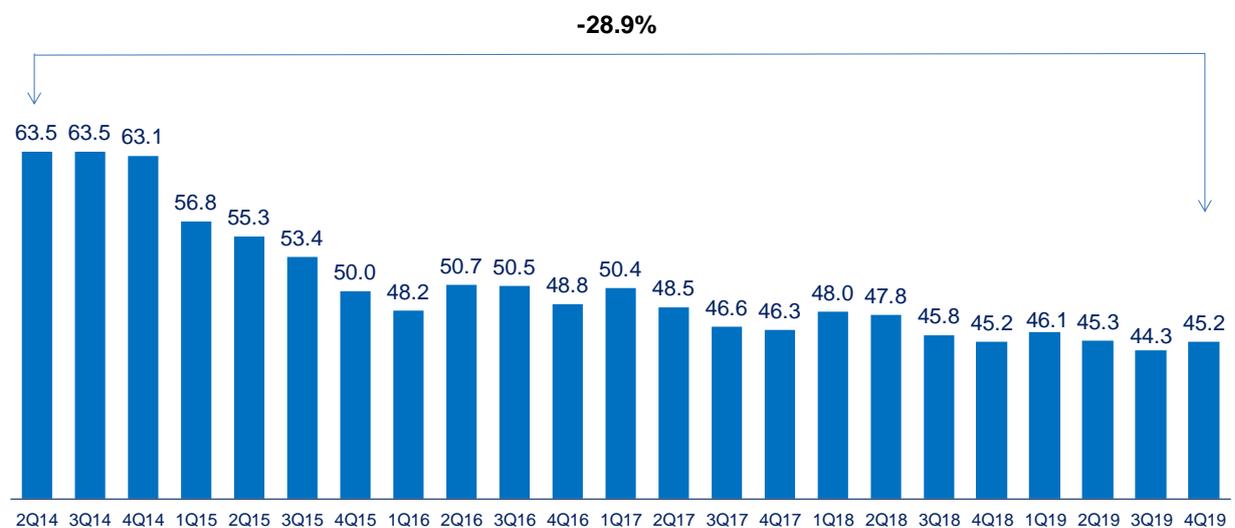
Source: Volcan Cia. Minera

The absolute cost of production rose by 12.4%, from USD 95.2 MM in 4Q18 to USD 107.1 MM in 4Q19, mainly due to greater extracted and treated volumes, and expenses related to the improvement of operating and safety standards implemented across all mining units. Consolidated unit cost decreased by 0.04%, from 45.18 USD/MT in 4Q18 to 45.16 USD/MT in 4Q19. This is mainly explained by increased lower-cost treated ore from stockpiles at Cerro de Pasco and the reclassification of operating leases, from cost to investment, in accordance with IFRS 16.

Year-to-date, the absolute cost of production increased by 5.4%, from USD 376.3 MM in 2018 to USD 396.7 MM in 2019, while the unit cost decreased by 3.1% from 46.6 USD/MT in 2018 to 45.2 USD/MT in 2019.

The Company is permanently focused on controlling and reducing operating costs across all units, while making significant investments in the continuous improvement of operating and safety standards. The figure below shows a 28.4% unit cost decrease between 4Q14 and 4Q19.

**Figure 3: Evolution of the Unit Cost of Production (USD/MT)**



Source: Volcan Cia. Minera

## 2.3 Total Investments

**Table 3: Consolidated Investment**

Consolidated Investment (MM USD)	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
<b>Mining</b>	<b>36.5</b>	<b>46.5</b>	<b>46.0</b>	<b>62.6</b>	<b>58.8</b>	<b>6.4</b>	<b>191.5</b>	<b>181.1</b>	<b>5.7</b>
<b>Mining Units</b>	<b>35.2</b>	<b>44.0</b>	<b>43.5</b>	<b>56.8</b>	<b>54.3</b>	<b>4.6</b>	<b>179.5</b>	<b>174.9</b>	<b>2.6</b>
Local Exploration	5.0	6.4	5.7	6.1	6.5	-6.2	23.1	22.4	3.5
Development	15.7	18.7	19.1	17.3	19.6	-11.7	70.8	76.9	-7.9
Plants and Tailings Facilities	4.5	4.7	7.1	14.5	13.0	11.9	30.8	35.3	-12.6
Mine and Infrastructure	7.0	10.1	7.0	10.2	7.4	37.5	34.3	24.2	41.6
Electrical Infrastructure in Units	0.5	1.4	1.5	2.9	4.0	-28.2	6.3	8.2	-23.9
Support and Others	2.4	2.8	3.1	5.9	3.9	51.5	14.2	7.9	79.2
<b>Regional Explorations</b>	<b>0.3</b>	<b>1.0</b>	<b>1.9</b>	<b>1.1</b>	<b>3.0</b>	<b>-62.2</b>	<b>4.2</b>	<b>3.5</b>	<b>22.6</b>
<b>Growth and Others</b>	<b>1.0</b>	<b>1.5</b>	<b>0.6</b>	<b>4.7</b>	<b>1.5</b>	<b>205.3</b>	<b>7.8</b>	<b>2.8</b>	<b>179.4</b>
<b>Energy</b>	<b>0.8</b>	<b>0.7</b>	<b>0.7</b>	<b>0.3</b>	<b>1.3</b>	<b>-76.0</b>	<b>2.5</b>	<b>3.8</b>	<b>-32.6</b>
<b>Total</b>	<b>37.3</b>	<b>47.2</b>	<b>46.7</b>	<b>62.9</b>	<b>60.0</b>	<b>4.7</b>	<b>194.0</b>	<b>184.9</b>	<b>4.9</b>

<sup>1</sup> The investments include the operating leases fee in 2019 according to NIIF 16: USD 5.0 MM in 1Q19, USD 4.3 MM in 2Q19, USD 4.5 MM in 3Q19, USD 4.1 MM in 4Q19 and USD 18.0 cumulatively.

Source: Volcan Cia. Minera

In 4Q19, total mining investments increased by 6.4%, from USD 58.8 MM in 4Q18 to USD 62.6 MM in 4Q19. Operating unit investments grew by 4.6%, from USD 54.3 MM in 4Q18 to USD 56.8 MM in 4Q19, and regional explorations decreased from USD 3 MM to 1.1 MM and investment in the Romina project increased from USD 1.5 MM to USD 4.7 MM.

Investments in the energy business decreased from USD 1.3 MM in 4Q18 to USD 0.3 MM in 4Q19, mainly due to the completion of repairs at the Rucuy Hydroelectric Plant, affected by the coastal El Niño in March 2017.

Total investments increased by 4.7%, from USD 60.0 MM in 4Q18 to USD 62.9 MM in 4Q19. Year-to-date, total investments increased by 4.9%, from USD 184.9 MM in 2018 to USD 194.0 MM in 2019. It is important to note that, as a result of the application of IFRS 16, since 2019, the operating leases are recorded under operating investments, instead of cost of production.

## 2.4 Income Statement

**Table 4: Income Statement**

Income Statement (MM USD)	Jan-Mar 2019	Apr-Jun 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
<b>Sales before adjust.</b>	<b>169.0</b>	<b>205.2</b>	<b>205.5</b>	<b>179.3</b>	<b>14.6</b>	<b>754.1</b>	<b>831.5</b>	<b>-9.3</b>
<i>Sett. of prior periods adjust.</i>	-0.2	6.0	-10.4	-20.1	-48.1	-15.7	-34.5	-54.6
<i>Adj. open positions</i>	12.7	-25.8	4.8	13.8	-65.4	-2.4	-8.0	-70.5
<i>Hedging</i>	0.0	0.0	7.5	0.1		7.5	-13.9	
<b>Sales after adjust.</b>	<b>181.6</b>	<b>185.4</b>	<b>207.3</b>	<b>173.0</b>	<b>19.8</b>	<b>743.6</b>	<b>775.1</b>	<b>-4.1</b>
<b>Cost of Goods Sold</b>	<b>-136.2</b>	<b>-157.6</b>	<b>-161.7</b>	<b>-139.4</b>	<b>15.9</b>	<b>-596.4</b>	<b>-534.1</b>	<b>11.7</b>
<b>Gross Profit</b>	<b>45.4</b>	<b>27.8</b>	<b>45.6</b>	<b>33.6</b>	<b>35.9</b>	<b>147.2</b>	<b>241.0</b>	<b>-38.9</b>
<i>Gross Margin</i>	25%	15%	22%	19%	3 pp	20%	31%	-11 pp
Administrative Expenses	-9.8	-9.3	-13.3	-14.5	-8.3	-38.3	-48.1	-20.5
Exploration Expenses	-2.4	-4.0	-6.6	-6.7	-1.4	-18.9	-13.7	37.8
Sales Expenses	-4.7	-6.5	-6.5	-7.6	-15.4	-23.2	-27.2	-14.7
Other Income (Expenses) <sup>1</sup>	-3.9	-9.8	-0.3	3.7		-24.0	-18.8	27.5
<b>Operating Profit</b>	<b>24.7</b>	<b>-1.8</b>	<b>19.0</b>	<b>8.5</b>	<b>124.6</b>	<b>42.8</b>	<b>133.2</b>	<b>-67.9</b>
<i>Operating Margin</i>	14%	-1%	9%	5%	4 pp	6%	17%	-11 pp
Financial Income (Expense)	-11.1	-11.0	-13.0	-12.3	5.6	-47.7	-40.8	16.9
Exchange Difference (net)	0.7	0.4	2.4	-2.3		1.1	-4.4	
Royalties	-2.1	-2.7	-2.1	-1.6	34.1	-8.6	-13.3	-35.0
Income Tax	-3.8	3.6	-4.5	-5.6	-20.2	-9.5	-44.4	-78.6
<b>Net Profit before Exceptionals</b>	<b>8.4</b>	<b>-11.5</b>	<b>1.9</b>	<b>-13.3</b>		<b>-21.9</b>	<b>30.3</b>	
<i>Net Margin</i>	5%	-6%	1%	-8%	9 pp	-3%	4%	-7 pp
Exceptional adjustments <sup>2</sup>	0.0	6.6	-55.0	1.4		-48.4	-0.9	
<b>Net Profit after Exceptionals</b>	<b>8.4</b>	<b>-4.9</b>	<b>-53.0</b>	<b>-11.9</b>	<b>344.3</b>	<b>-70.3</b>	<b>29.4</b>	
<i>Net Margin</i>	5%	-3%	-26%	-7%	-19 pp	-9%	4%	-13 pp
<b>EBITDA<sup>3</sup></b>	<b>73.7</b>	<b>47.3</b>	<b>71.6</b>	<b>50.9</b>	<b>40.8</b>	<b>244.1</b>	<b>288.8</b>	<b>-15.5</b>
<i>EBITDA Margin</i>	41%	26%	35%	29%	5 pp	33%	37%	-4 pp

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

<sup>2</sup> 2019 exceptional adjustment are USD +18.3 MM in the cost of good sold, USD -1.1 MM in the administrative expenses, USD -31.4 in other income (expenses), USD -34.2 MM in the income tax and -48.4 cumulatively.

<sup>3</sup> Does not consider exceptional adjustments.

Source: Volcan Cia. Minera

### • Sales Analysis

**Table 5: Average Sales Prices**

Sales Prices	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
Zinc (USD/MT)	2,694	2,760	2,348	2,378	2,636	-9.8	2,539	2,917	-13.0
Lead (USD/MT)	2,042	1,873	1,997	2,040	1,964	3.9	1,978	2,245	-11.9
Copper (USD/MT)	6,400	6,128	5,800	5,851	6,158	-5.0	6,022	6,464	-6.8
Silver (USD/Oz)	15.5	14.8	16.6	17.4	14.5	19.9	16.1	15.7	2.5
Gold (USD/Oz)	1,307	1,305	1,466	1,481	1,228	20.6	1,387	1,265	9.6

Source: Volcan Cia. Minera

These prices are initial invoice prices, provisional in nature, and they are adjusted when the final liquidation is received from the clients. Open commercial provisions at the end of each period estimate adjustments on open shipments resulting from future metals prices variations, using a specific forward prices curve.

**Table 6: Fine Contents Sales Volumes**

Fines Sales	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
Zinc (thousands FMT)	56.8	59.4	58.8	66.3	58.0	14.5	241.3	238.7	1.1
Lead (thousands FMT)	9.2	16.1	11.2	14.0	11.4	22.4	50.5	47.8	5.6
Copper (thousands FMT)	0.7	1.4	1.1	1.0	1.2	-10.2	4.3	4.2	1.8
Silver (millions Oz)	3.0	4.3	3.8	4.5	4.0	11.1	15.6	17.0	-8.3
Gold (thousands Oz)	4.9	7.7	5.4	6.4	4.0	58.3	24.4	15.0	62.7

<sup>1</sup> Includes Oxides Plant silver and gold sales  
 Source: Volcan Cia. Minera

**Table 7: Sales in USD**

Sales (millions USD)	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
Zinc	107.2	114.5	92.6	107.0	103.8	3.1	421.4	488.6	-13.8
Lead	15.9	25.2	18.8	23.9	20.1	18.8	83.8	92.5	-9.3
Copper	3.3	4.0	3.4	3.2	3.9	-19.9	13.9	16.3	-14.6
Silver	37.2	53.0	52.8	63.4	47.7	32.8	206.5	220.7	-6.4
Gold	5.4	8.5	6.7	8.0	3.7	114.2	28.5	13.4	112.0
<b>Sales before adjust.</b>	<b>169.0</b>	<b>205.2</b>	<b>174.4</b>	<b>205.5</b>	<b>179.3</b>	<b>14.6</b>	<b>754.1</b>	<b>831.5</b>	<b>-9.3</b>
Sett. of prior period adjust.	-0.2	6.0	-11.1	-10.4	-20.1	-48.1	-15.7	-34.5	-54.6
Adjust. for open positions	12.7	-25.8	6.0	4.8	13.8	-65.2	-2.4	-8.0	-70.5
Hedging results	0.0	0.0	0.0	7.5	0.1	7.5	7.5	-13.9	
<b>Sales after adjust.</b>	<b>181.6</b>	<b>185.4</b>	<b>169.3</b>	<b>207.3</b>	<b>173.0</b>	<b>19.8</b>	<b>743.6</b>	<b>775.1</b>	<b>-4.1</b>

Source: Volcan Cia. Minera

In 4Q19, total sales before adjustments amounted to USD 205.5 MM, an increase of 14.6% as compared to the USD 179.3 MM recorded in 4Q18. This was mainly due to the increased volume of metals produced by the Company, the reduced concentrate inventories, and higher prices of precious metals.

In 4Q19, sales adjustments were positive (USD 1.8 MM), as compared to the negative adjustments recorded in 4Q18 (USD 6.3 MM). That is, quarter versus quarter, there was a positive effect of USD 8.0 MM. In 4Q19, sales adjustments included final settlements of USD -10.4 MM, and provisions related to open shipments of USD 4.8 MM explained by an improved forward price curve at the end of December, and positive hedge results of USD 7.5 MM. As a result, total sales after adjustments increased by 19.8%, from USD 173.0 MM in 4Q18 to USD 207.3 MM in 4Q19.

Year-to-date (Jan-Dec), sales before adjustments decreased by 9.3%, from USD 831.5 MM in 2018 to USD 754.1 MM in 2019, while sales after adjustments decreased by 4.1%, from USD 775.1 MM in 2018 to USD 743.6 MM in 2019, mainly explained by lower base metal prices and reduced silver production.

- **Cost of Goods Sold**

**Table 8: Cost of Goods Sold**

Cost of Goods Sold (millions USD)	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
<b>Volcan Production</b>	<b>134.9</b>	<b>156.2</b>	<b>142.8</b>	<b>160.8</b>	<b>139.6</b>	<b>15.2</b>	<b>594.7</b>	<b>527.2</b>	<b>12.8</b>
Volcan Production Cost <sup>1</sup>	90.5	99.7	99.5	107.1	95.2	12.4	396.7	376.3	5.4
D&A from Production Cost <sup>2</sup>	46.7	46.5	46.9	49.9	48.2	3.6	190.0	148.0	28.4
Ore Purchase	0.0	1.0	0.0	0.0	1.1	-100.0	1.0	1.7	-40.6
Extraordinary Costs	0.4	0.6	0.9	0.3	0.4	-20.7	2.2	1.4	60.0
Variation of Inventories	-2.7	8.4	-4.5	3.5	-5.4		4.7	-0.1	
<b>Workers Participation</b>	<b>1.3</b>	<b>1.4</b>	<b>-1.8</b>	<b>0.8</b>	<b>-0.1</b>		<b>1.7</b>	<b>6.8</b>	<b>-75.6</b>
<b>Total</b>	<b>136.2</b>	<b>157.6</b>	<b>141.0</b>	<b>161.7</b>	<b>139.4</b>	<b>15.9</b>	<b>596.4</b>	<b>534.1</b>	<b>11.7</b>

<sup>1</sup> Does not include the amortization of operating leases according to NIIF 16.

<sup>2</sup> Includes the amortization of operating leases according to NIIF 16, equivalent to USD 4.4 MM in 4Q19 and USD 18.3 MM cumulatively.

Source: Volcan Cia. Minera

Total cost of goods sold increased by 15.9%, from USD 139.4 MM in 4Q18 to USD 161.7 MM in 4Q19. This is mainly explained by: i) the USD 11.9 MM increase in the cost of production due to greater processed volumes, and expenses related to the improvement of operating and safety standards, ii) reduced concentrate inventories, and iii) increased depreciation and amortization by USD 1.7 MM.

Year-to-date (Jan-Dec), the total cost of goods sold increased from USD 534.1 MM in 2018 to USD 596.4 MM in 2019, mainly explained by the greater cost of production due to increased processed volumes and increased depreciation (USD 42.0 MM), as a result of greater capitalization of ongoing works and the amortization of operating leases after the application of IFRS 16.

- **Gross Margin and Gross Profit**

The Company's gross margin increased from 19% in 4Q18 to 22% in 4Q19, due to higher precious metals prices and the positive effect of sales adjustments. Gross profit increased from USD 33.6 MM in 4Q18 to USD 45.6 MM in 4Q19, as a result of the increased gross margin and greater production of all metals.

Year-to-date (Jan-Dec), gross margin decreased from 31% in 2018 to 20% in 2019. Gross profit decreased from USD 241.0 MM in 2018 to USD 147.2 MM in 2019, mainly due to lower base metals prices and reduced silver production.

- **Administrative Expenses**

Administrative expenses decreased by 8.3%, from USD 14.5 MM in 4Q18 to USD 13.3 MM in 4Q19, mainly due to the lower personnel expenses provisions and workers' participation provisions as a result of the Company's lower annual profits. Year-to-date (Jan-Dec), the administrative expenses decreased from USD 48.1 MM in 2018 to USD 38.3 MM in 2019.

- **Exploration Expenses**

Exploration expenses decreased slightly from USD 6.7 MM in 4Q18 to USD 6.6 MM in 4Q19. However, year-to-date (Jan-Dec), explorations expenses increased by 38%, from USD 13.7

MM in 2018 to USD 18.9 MM in 2019, due to greater investments in explorations at the main projects.

- **Sale expenses**

Sales expenses during 4Q19 decreased by 15.4%, from USD 7.6 MM in 4Q18 to USD 6.5 MM, due to lower transportation expenses, shipments and freights. Year-to-date (Jan-Dec), the sales expenses decreased from USD 27.2 MM in 2018 to USD 23.2 MM in 2019.

- **Other Income and Expenses**

In 4Q19, the net amount of other income and expenses was negative, USD 0.3 MM versus a positive amount of USD 3.7 MM in 4Q18. Year-to-date (Jan-Dec), the net amount of other income and expenses was negative, USD 24.0 MM in 2019 versus a negative amount of USD 18.8 MM in 2018. The higher negative result is mainly explained by lower extraordinary income, partially offset by greater net income from services and the energy business. It is important to note that the main items reported under this category of the income statement are the energy business, expenses resulting from suspended operations at Cerro de Pasco, Vinchos, Río Pallanga, Paragsha and Mahr Túnel, non-deductible expenses, and contributions to OEFA and OSINERGMIN.

- **Financial Expenses and Exchange-Rate Difference**

Net financial expenses totaled USD 13.0 MM in 4Q19, compared to net financial expenses worth USD 12.3 MM in 4Q18. Year-to-date (Jan-Dec), net financial expenses amounted to USD 47.7 MM in 2019 versus USD 40.8 MM in 2018. This increase is explained by the application of financial reporting standards on operating leases interests (IFRS 16) and the present value of variations in the mine closure plans.

An exchange-rate gain totaling USD 2.4 MM was registered in 4Q19, as compared to the USD 2.3 MM exchange-rate loss reported in 4Q18. Year-to-date (Jan-Dec), an exchange-rate variation gain totaling USD 1.1 MM was registered in 2019, as compared to the exchange-rate loss reported in 2018 (USD 4.4 MM).

- **Income Tax and Royalties**

Royalties increased from USD 1.6 MM in 4Q18 to USD 2.1 MM in 4Q19, while income tax decreased from USD 5.6 MM in 4Q18 to USD 4.5 MM in 4Q19.

Year-to-date (Jan-Dec), royalties decreased from USD 13.3 MM in 2018 to USD 8.6 MM in 2019, while income tax decreased from USD 44.4 MM in 2018 to USD 9.5 MM in 2019, as a result of lower profits and the exchange-rate conversion effect.

- **Net Profit and EBITDA**

Net profit before exceptional items increased from USD -13.3 MM in 4Q18 to USD 1.9 MM in 4Q19, mainly due to greater gross profit as a result of increased sales. In line with the conservative policy adopted for the Company's financial statements, exceptional adjustments worth USD -55 MM were recorded in 4Q19, mainly at Cerro de Pasco and non-operative companies. These have no effect on the Company's cash balance. For this reason, in 4Q19, net profit after exceptional items amounted to USD -53.0 MM, as compared to USD -11.9 MM in 4Q18.

EBITDA increased from USD 50.9 MM in 4Q18 to USD 71.6 MM in 4Q19, as a result of the improved gross margin and lower operating expenses.

Year-to-date (Jan-Dec), net profit before exceptional items decreased from USD 30.3 MM in 2018 to USD -21.9 MM in 2019, mainly explained by lower sales, increased absolute cost of production as a result of greater treated volumes, and increased depreciation. Net profit after exceptional items decreased from USD 29.4 MM in 2018 to USD -70.3 MM in 2019.

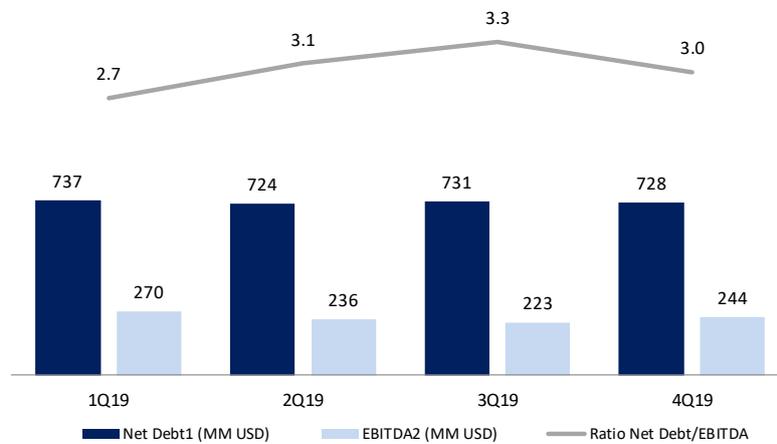
Cumulative EBITDA decreased from USD 288.8 MM in 2018 to USD 244.1 MM in 2019.

## 2.5 Liquidity and Creditworthiness

In 4Q19, cash generated by mining operations after operating investments totaled USD 14.1 MM. Interests paid amounted to USD -3.3 MM, a payment worth USD -0.8 MM was made as part of the legal clearing of lands close to the Chancay Port project, and the net flow of financial obligations for the period totaled USD -12.3 MM. Therefore, during 4Q19, the resulting total cash flow was USD -2.3 MM, and the total cash balance as of December 31, 2019, was USD 36.2 MM.

As of December 31, 2019, the net debt/EBITDA ratio was 3.0, an improvement over the previous quarter, mainly due to the greater EBITDA accumulated in the last 12 months.

**Figure 4: Net Debt / EBITDA Ratio Evolution**



1 Debt does not include the operating leases fee according to NIIF16 or the current interest

2 EBITDA for the last 12 months.

Source: Volcan Cia. Minera

## 2. Results by Operating Unit

### 3.1 Yauli Unit Operating Results

**Table 10: Yauli Production**

Yauli Production	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
Mineral extraction (thousands MT)	743	798	823	835	778	7.4	3,199	3,201	-0.1
Mineral treatment (thousands MT)	737	803	817	813	786	3.5	3,170	3,212	-1.3
<b>Fines Content</b>									
Zinc (thousands FMT)	31.0	35.1	36.6	38.2	35.0	9.2	140.9	146.6	-3.9
Lead (thousands FMT)	5.2	5.0	4.8	4.9	5.3	-7.7	20.0	19.1	4.5
Copper (thousands FMT)	0.7	0.8	0.8	0.7	0.7	-3.2	2.9	2.9	0.1
Silver (million Oz)	1.6	1.8	1.7	1.9	1.9	0.6	7.0	7.8	-11.1
Gold (thousands Oz)	1.4	1.6	1.5	1.4	1.9	-27.1	5.9	7.5	-22.0

Source: Volcan Cia. Minera

Ore volumes extracted at the Yauli Unit during 4Q19 grew by 7.4%, as compared to the same quarter of the previous year. The ore treated at the Yauli Unit concentrator plants increased by 3.5% in 4Q19, as compared to the same period of the previous year, in line with the increased extraction.

In 4Q19, zinc production increased by 9.2% mainly due to greater treatment and improved grades at San Cristóbal and Andaychagua mines. Silver production remained unchanged, and lead production decreased by 7.7%, as compared to 4Q18.

In annual terms, treated ore decreased by 1.3% as compared to the previous year. Lead production rose by 4.5% and zinc and silver production decreased by 3.9% and 11.1%, respectively.

**Table 11: Yauli Cost of Production**

Yauli Production Cost	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
<b>Production Cost (MM USD)<sup>1</sup></b>	<b>47.8</b>	<b>52.2</b>	<b>54.5</b>	<b>55.6</b>	<b>50.0</b>	<b>11.1</b>	<b>210.1</b>	<b>208.6</b>	<b>0.7</b>
Extraction Cost	27.7	30.6	31.8	32.2	30.1	7.1	122.2	126.3	-3.2
Treatment Cost	20.1	21.6	22.7	23.4	20.0	17.2	87.9	82.4	6.7
<b>Unit Cost (USD/MT)<sup>1</sup></b>	<b>64.6</b>	<b>65.3</b>	<b>66.4</b>	<b>67.3</b>	<b>64.1</b>	<b>5.1</b>	<b>65.9</b>	<b>65.1</b>	<b>1.3</b>
Extraction Cost	37.2	38.4	38.6	38.5	38.6	-0.3	38.2	39.4	-3.1
Treatment Cost	27.3	26.9	27.8	28.8	25.4	13.3	27.7	25.6	8.2

<sup>1</sup> The production cost has been adjusted from January to June 2019, removing the operating leases fee according to NIIF 16: USD 3.6 MM in 1Q19 and USD 3.0 MM in 2Q19. These amounts are reflected in the operational investments now.

Source: Volcan Cia. Minera

In 4Q19, the absolute cost of production increased by 11.1%, from USD 50.0 MM in 4Q18 to USD 55.6 MM in 4Q19.

The unit cost of production increased by 5.1%, from 64.1 USD/MT in 4Q18 to 67.3 USD/MT in 4Q19, due to increased costs related to the improved safety standards.

Year-to-date (Jan-Dec), the absolute cost of production increased by 0.7%, from USD 208.6 MM in 2018 to USD 210.1 MM in 2019. The unit cost of production increased by 1.3%, from 65.1 USD/MT in 2018 to 65.9 USD/MT in 2019.

**Table 12: Yauli Operating Investments**

Yauli Operating Investment (MM USD)	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
Local Exploration	3.3	3.7	3.7	3.3	4.4	-25.8	13.9	13.4	3.1
Mine Development	10.5	12.2	12.8	12.2	12.8	-5.2	47.7	47.6	0.0
Plants and Tailings Dams	1.0	1.9	4.2	6.8	4.7	43.9	13.9	12.1	15.2
Mine and Infrastructure	5.0	4.0	5.0	4.7	4.1	15.6	18.8	9.4	100.4
Electrical Infrastructure	0.2	1.1	1.2	1.7	3.0	-43.0	4.3	5.9	-27.5
Support and Others	1.0	1.2	1.7	2.4	2.0	16.9	6.7	3.8	77.1
<b>Total<sup>1</sup></b>	<b>20.9</b>	<b>24.2</b>	<b>28.7</b>	<b>31.0</b>	<b>31.0</b>	<b>-0.1</b>	<b>105.1</b>	<b>92.2</b>	<b>14.0</b>

<sup>1</sup> The investments include the operating leases fee in 2019 according to NIIF 16: USD 3.6 MM in 1Q19, USD 3.0 MM in 2Q19, USD 3.1 MM in 3Q19, USD 2.6 MM in 4Q19 and USD 12.3 cumulatively

Source: Volcan Cia. Minera

In 4Q19, operating investments at Yauli amounted to USD 31.0 MM, similar to those recorded in 4Q18. Greater investments were made in mining infrastructure and tailings dams, partially offset by reduced explorations and energy investments. Year-to-date (Jan-Dec), operating investments increased by 14.0%, from USD 92.2 MM in 2018 to USD 105.1 MM in 2019.

### 3.2 Chungar Unit Operating Results

**Table 13: Chungar Production**

Chungar Production	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
Mineral extraction (thousands MT)	413	413	376	446	469	-5.0	1,647	1,666	-1.1
Mineral treatment (thousands MT)	435	449	385	436	479	-9.0	1,705	1,690	0.9
<b>Fines Content</b>									
Zinc (thousands FMT)	18.5	19.6	17.1	19.5	21.0	-7.3	74.7	74.9	-0.2
Lead (thousands FMT)	4.4	4.3	4.4	5.3	4.9	7.7	18.4	18.1	1.5
Copper (thousands FMT)	0.3	0.3	0.3	0.3	0.3	6.5	1.2	1.3	-9.2
Silver (million Oz)	0.8	0.7	0.8	0.9	1.1	-21.1	3.2	3.9	-18.6

Source: Volcan Cia. Minera

In 4Q19, ore volumes extracted at Chungar declined by 5.0% as compared to 4Q18, due to lower ore volumes from the Islay Mine. Similarly, ore volumes treated in 4Q19 decreased by 9.0%, as compared to the same quarter in the previous year.

In 4Q19, zinc and silver production declined by 7.3% and 21.1%, respectively, due to decreased treated volumes and lower silver grades.

In annual terms, treated ore decreased by 0.9%. Silver production decreased by 18.6% as compared to 2018, due to lower grades of this mineral in Islay and Animón.

**Table 14: Chungar Cost of Production**

Chungar Production Cost	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
<b>Production Cost (MM USD)<sup>1</sup></b>	<b>23.8</b>	<b>24.8</b>	<b>21.6</b>	<b>27.5</b>	<b>26.0</b>	<b>5.7</b>	<b>97.8</b>	<b>97.4</b>	<b>0.4</b>
Extraction Cost	13.6	13.7	12.1	15.5	15.6	-0.7	54.9	57.7	-4.9
Treatment Cost	10.2	11.2	9.5	12.0	10.4	15.5	42.8	39.6	8.1
<b>Unit Cost (USD/MT)<sup>1</sup></b>	<b>56.5</b>	<b>58.0</b>	<b>56.9</b>	<b>62.2</b>	<b>54.9</b>	<b>13.3</b>	<b>58.5</b>	<b>58.2</b>	<b>0.5</b>
Extraction Cost	33.1	33.1	32.2	34.8	33.3	4.4	33.3	34.7	-3.8
Treatment Cost	23.4	24.9	24.7	27.4	21.6	27.0	25.1	23.5	6.7

<sup>1</sup> The production cost has been adjusted from January to June 2019, removing the operating leases fee according to NIIF 16: USD 1.4 MM in 1Q19 and USD 1.2 MM in 2Q19. These amounts are reflected in the operational investments now.

Source: Volcan Cia. Minera

In 4Q19, the absolute cost of production increased by 5.7%, from USD 26.0 MM in 4Q18 to USD 27.5 MM in 4Q19, due to higher pumping costs at Islay, and the improvement of operating, safety and environmental standards. The unit cost of production increased by 13.3%, from 54.9 USD/MT in 4Q18 to 62.2 USD/MT in 4Q19, mainly explained by lower processed volumes.

Year-to-date (Jan-Dec), the absolute cost of production increased by 0.4%, from USD 97.4 MM in 2018 to USD 97.8 MM in 2019. The unit cost of production increased by 0.5%, from 58.2 USD/MT in 2018 to 58.5 USD/MT in 2019.

**Table 15: Chungar Operating Investments**

Chungar Operating Investment (MM USD)	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
Local Exploration	1.6	2.1	1.4	2.6	1.9	34.0	7.7	7.3	5.5
Mine Development	5.3	6.5	6.3	5.1	6.7	-24.2	23.2	29.3	-20.8
Plants and Tailings Dams	0.7	1.4	0.5	5.0	2.2	129.5	7.6	5.1	48.2
Mine and Infrastructure	2.0	3.0	2.8	5.0	2.9	71.1	12.8	9.4	35.5
Electrical Infrastructure	0.3	0.3	0.2	1.2	1.0	15.2	2.0	2.3	-14.3
Support and Others	0.9	0.9	0.8	1.8	0.8	120.8	4.7	1.7	183.2
<b>Total</b>	<b>10.7</b>	<b>14.2</b>	<b>12.0</b>	<b>20.6</b>	<b>15.6</b>	<b>32.4</b>	<b>57.9</b>	<b>55.1</b>	<b>5.2</b>

<sup>1</sup> The investments include the operating leases fee in 2019 according to NIIF 16: USD 3.6 MM in 1Q19, USD 3.0 MM in 2Q19, USD 3.1 MM in 3Q19, USD 1.1 MM in 4Q19 and USD 5.1 MM cumulatively

Source: Volcan Cia. Minera

Operating investments increased by 32.4%, from USD 15.6 MM in 4Q18 to USD 20.6 MM in 4Q19, due to greater investments in plants and tailings dams, explorations and mine infrastructure, partially offset by lower investments in developments. Year-to-date (Jan-Dec), operating investments increased by 5.2%, from USD 55.1 MM in 2018 to USD 57.9 MM in 2019.

### 3.3 Alparmarca Unit Operating Results

**Table 16: Alparmarca Production**

Alparmarca Production	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
Mineral extraction (thousands MT)	227	278	227	189	218	-13.1	921	962	-4.2
Mineral treatment (thousands MT)	224	238	240	249	246	1.1	950	948	0.3
<b>Fines Content</b>									
Zinc (thousands FMT)	1.2	1.5	1.5	1.7	1.6	5.2	5.9	8.4	-29.5
Lead (thousands FMT)	0.9	1.1	1.3	1.3	1.2	12.8	4.7	6.2	-25.3
Copper (thousands FMT)	0.1	0.1	0.1	0.1	0.1	-9.6	0.4	0.4	-12.3
Silver (million Oz)	0.3	0.3	0.3	0.3	0.3	-8.2	1.2	1.5	-17.3

Source: Volcan Cia. Minera

In 4Q19, ore volumes extracted at the Alparmarca Unit decreased by 13.1% compared to the same quarter of the previous year, due to the gradual decrease of the open pit's mineable resources. However, the volume of treated ore increased slightly as a result of the use of ore stocks available in the unit.

In 4Q19, silver and copper production decreased by 8.2% and 9.6%, respectively, as compared to 4Q18, explained by lower head grades of the ore from the new extraction zones in the open pit and from stockpiles.

In annual terms, in 2019, treated ore increased by 0.3%, while zinc, lead, copper and silver production fell by 29.5%, 25.3%, 12.3% and 17.3%, respectively.

**Table 17: Alparmarca Cost of Production**

Alparmarca Production Cost	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
<b>Production Cost (MM USD)<sup>1</sup></b>	<b>4.8</b>	<b>5.7</b>	<b>5.9</b>	<b>6.4</b>	<b>4.4</b>	<b>43.1</b>	<b>22.7</b>	<b>16.2</b>	<b>40.3</b>
Extraction Cost	2.0	2.7	2.8	3.0	1.7	80.0	10.6	5.3	99.1
Treatment Cost	2.8	3.0	3.0	3.3	2.8	20.7	12.1	10.9	11.5
<b>Unit Cost (USD/MT)<sup>1</sup></b>	<b>21.2</b>	<b>22.3</b>	<b>25.2</b>	<b>29.4</b>	<b>19.0</b>	<b>55.2</b>	<b>24.3</b>	<b>17.0</b>	<b>42.6</b>
Extraction Cost	8.8	9.9	12.4	16.0	7.7	107.2	11.5	5.5	107.8
Treatment Cost	12.4	12.4	12.7	13.4	11.2	19.4	12.8	11.5	11.2

<sup>1</sup> The production cost has been adjusted from January to June 2019, removing the operating leases fee according to NIIF 16: USD 0.06 MM in 2Q19. These amounts are reflected in the operational investments now.

Source: Volcan Cia. Minera

In 4Q19, the absolute cost of production was USD 6.4 MM, 43.1% higher than the USD 4.4 MM figure for the same quarter of the previous year, due to a greater stripping cost at the Alparmarca open pit and the improvement of operating and safety standards. The unit cost increased by 55.2%, from 19.0 USD/MT in 4Q18 to 29.4 USD/MT in 4Q19.

Year-to-date (Jan-Dec), the absolute cost of production increased by 40.3%, from USD 16.2 MM in 2018 to USD 22.7 MM in 2019, while the unit cost of production increased by 42.6%, from 17.0 USD/MT in 2018 to 24.3 USD/MT in 2019.

**Table 18: Alparmarca Operating Investments**

Alparmarca Operating Inv. (MM USD)	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
Local Exploration	0.0	0.4	0.6	0.1	0.0	252.9	1.2	1.1	9.7
Plants and Tailings Dams	0.3	0.2	1.0	1.5	2.0	-25.3	3.1	4.3	-28.6
Mine and Infrastructure	0.0	2.1	-1.6	0.2	0.0	826.1	0.7	0.2	218.0
Support and Others	0.0	0.1	0.3	0.4	0.1	269.0	0.8	0.3	149.8
<b>Total</b>	<b>0.4</b>	<b>2.8</b>	<b>0.3</b>	<b>2.2</b>	<b>2.2</b>	<b>-0.6</b>	<b>5.7</b>	<b>5.9</b>	<b>-3.2</b>

<sup>1</sup> The investments include the operating leases fee in 2019 according to NIIF 16: USD 0.06 MM in 2Q19, USD 0.05 MM in 3Q19, USD 0.07 MM in 4Q19 and USD 0.2 MM cumulatively.

Source: Volcan Cia. Minera

Operating investments decreased 0.6%, due to lower investments in the tailings dam, partly offset by greater investments in explorations, infrastructure and support. Year-to-date (Jan-Dec), operating investments declined from USD 5.9 MM in 2018 to USD 5.7 MM in 2019.

### 3.4 Cerro de Pasco Unit Operating Results

**Table 19: Cerro de Pasco Production**

Cerro de Pasco Production	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
Mineral extraction (thousands MT)	375	475	577	646	382	69.0	2,073	1,314	57.7
Mineral treatment (thousands MT)	375	475	577	646	382	69.0	2,073	1,314	57.7
<b>Fines Content</b>									
Zinc (thousands FMT)	3.1	4.0	4.8	5.5	3.0	87.0	17.5	11.2	56.3
Lead (thousands FMT)	0.9	1.4	1.8	2.2	0.8	168.5	6.3	3.7	70.4
Silver (million Oz)	0.1	0.2	0.2	0.3	0.1	133.8	0.8	0.4	94.5

Source: Volcan Cia. Minera

In 4Q19, ore volumes from stockpiles treated at Cerro de Pasco increased by 69.0% compared to the same quarter of the previous year, from 382 thousand MT in 4Q18 to 646 thousand MT in 4Q19.

Accordingly, in 4Q19, zinc, lead and silver production grew by 87.0%, 168.5% and 133.8%, respectively, as compared to 4Q18.

In annual terms, in 2019, treated ore increased by 57.7%, while zinc, lead and silver production grew by 56.3%, 70.4% and 94.5%, respectively.

**Table 20: Cerro de Pasco Cost of Production**

Cerro de Pasco Production Cost	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
<b>Production Cost (MM USD)<sup>1</sup></b>	<b>6.0</b>	<b>7.2</b>	<b>6.8</b>	<b>7.3</b>	<b>5.5</b>	<b>32.8</b>	<b>27.3</b>	<b>18.8</b>	<b>45.1</b>
Extraction Cost	0.0	0.9	1.1	1.1	0.0		3.1	0.0	
Treatment Cost	6.0	6.4	5.7	6.2	5.5	13.0	24.3	18.8	29.0
<b>Unit Cost (USD/MT)<sup>1</sup></b>	<b>16.0</b>	<b>15.2</b>	<b>11.8</b>	<b>11.2</b>	<b>14.3</b>	<b>-21.4</b>	<b>13.2</b>	<b>14.3</b>	<b>-8.0</b>
Extraction Cost	0.0	1.8	1.9	1.7	0.0		1.5	0.0	
Treatment Cost	16.0	13.4	9.9	9.6	14.3	-33.2	11.7	14.3	-18.2

<sup>1</sup> The production cost has been adjusted from January to June 2019, removing the operating leases fee according to NIIF 16: USD 0.01 MM in 2Q19. These amounts are reflected in the operational investments now.

Source: Volcan Cia. Minera

Absolute cost increased by 32.8%, from USD 5.5 MM in 4Q18 to USD 7.3 MM in 4Q19 due to higher treated volumes. Unit cost fell by 21.4%, from 14.3 USD/MT in 4Q18 to 11.2 USD/MT.

Year-to-date (Jan-Dec), the absolute cost of production increased by 45.1%, from USD 18.8 MM in 2018 to USD 27.3 MM in 2019. The unit cost of production decreased by 8.0%, from 14.3 USD/MT in 2018 to 13.2 USD/MT in 2019.

**Table 21: Cerro de Pasco Operating Investments**

Cerro de Pasco Operating Inv. (MM USD)	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
Local Exploration	0.1	0.1	0.1	0.1	0.1	-13.7	0.5	0.6	-22.0
Plants and Tailings Dams	1.2	0.6	0.2	0.5	2.0	-74.2	2.5	6.7	-63.2
Mine and Infrastructure	0.0	0.3	0.0	0.1	0.0		0.3	0.0	
Support and Others	0.4	0.3	0.3	0.6	0.7	-20.4	1.5	1.6	-8.3
<b>Total</b>	<b>1.7</b>	<b>1.3</b>	<b>0.5</b>	<b>1.3</b>	<b>2.8</b>	<b>-55.7</b>	<b>4.7</b>	<b>8.9</b>	<b>-46.8</b>

<sup>1</sup> The investments include the operating leases fee in 2019 according to NIIF 16: USD 0.01 MM in 2Q19, USD 0.04 MM in 3Q19, USD 0.03 MM in 4Q19 and USD 0.08 MM cumulatively.  
Source: Volcan Cia. Minera

Operating investments decreased from USD 2.8 MM in 4Q18 to USD 1.3 MM in 4Q19, due to lower investments in the Ocroyoc tailings dam. Year-to-date (Jan-Dec), operating investments declined from USD 8.9 MM in 2018 to USD 4.7 MM in 2019.

### 3.5 Oxides Plant Operating Results

**Table 22: Oxides Plant Production**

Oxides Plant Production	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
Mineral extraction (thousands MT)	198	237	235	241	239	0.9	911	914	-0.3
Mineral treatment (thousands MT)	198	237	235	241	239	0.9	911	914	-0.3
<b>Fines Content</b>									
Silver (million Oz)	0.6	0.8	1.0	1.0	0.8	35.5	3.4	3.4	-0.3
Gold (Oz)	3,335	4,810	3,335	3,900	1,121	248.0	15,380	4,110	274.2

Source: Volcan Cia. Minera

Ore volumes treated at the Oxides Plant increased by 0.9%, from 239 thousand MT in 4Q18 to 241 thousand MT in 4Q19.

In 4Q19, silver and gold production grew by 35.5% and 248.0%, respectively, due to higher head grades in the ore treated at the plant.

In annual terms, in 2019, silver production was similar to the one recorded the previous year, while gold production grew by 274.2% as compared to 2018, due to higher head grades in the run-of-mine ore from the open pit.

**Table 23: Oxides Plant Cost of Production**

Oxides Plant Production Cost	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
<b>Production Cost (MM USD)<sup>1</sup></b>	<b>8.1</b>	<b>9.1</b>	<b>11.2</b>	<b>10.3</b>	<b>9.3</b>	<b>11.4</b>	<b>38.8</b>	<b>35.2</b>	<b>10.3</b>
Extraction Cost	1.3	1.2	2.7	1.9	1.4	39.7	7.1	5.1	38.6
Treatment Cost	6.9	7.9	8.5	8.4	7.9	6.4	31.6	30.0	5.4
<b>Unit Cost (USD/MT)<sup>1</sup></b>	<b>40.9</b>	<b>38.3</b>	<b>47.7</b>	<b>43.0</b>	<b>39.0</b>	<b>10.4</b>	<b>42.5</b>	<b>38.5</b>	<b>10.6</b>
Extraction Cost	6.3	5.2	11.5	8.1	5.8	38.5	7.8	5.6	38.9
Treatment Cost	34.6	33.1	36.2	34.9	33.1	5.4	34.7	32.8	5.7

<sup>1</sup> The production cost has been adjusted from January to June 2019, removing the operating leases fee according to NIIF 16: USD 0.01 MM in 2Q19. These amounts are reflected in the operational investments now.  
Source: Volcan Cia. Minera

In 4Q19, the absolute cost of production totaled USD 10.3 MM, 11.4% higher than in 4Q18, due to higher costs of on-site ore extraction and greater use of reagents and supplies at the plant. Unit cost increased by 10.4%, from 39.0 USD/MT in 4Q18 to 43.0 USD/MT in 4Q19.

Year-to-date (Jan-Dec), the absolute cost of production increased by 10.3%, from USD 35.2 MM in 2018 to USD 38.8 MM in 2019. The operation's unit cost increased by 10.6%, from 38.5 USD/MT in 2018 to 42.5 USD/MT in 2019.

**Table 24: Oxides Plant Operating Investments**

Inv. Operativa Planta de Óxidos (MM USD)	Ene-Mar 2019	Abr-Jun 2019	Jul-Sep 2019	Oct-Dic 2019	Oct-Dic 2018	var %	Ene-Dic 2019	Ene-Dic 2018	var %
Plantas y Relaveras	1.3	0.6	1.2	0.7	2.1	-64.3	3.8	7.1	-46.6
Mina e Infraestructura	0.0	0.7	0.8	0.2	0.4	-35.2	1.7	5.2	-67.3
Soporte y Otros	0.1	0.3	0.1	0.0	0.2	-84.5	0.5	0.5	-6.4
<b>Total<sup>1</sup></b>	<b>1.4</b>	<b>1.5</b>	<b>2.0</b>	<b>1.0</b>	<b>2.7</b>	<b>-62.0</b>	<b>6.0</b>	<b>12.8</b>	<b>-53.3</b>

<sup>1</sup> Se está incluyendo en las inversiones del año 2019 la amortización de los arrendamientos operativos por aplicación de la NIIF 16, siendo USD 0.01 MM en el 2T19, USD 0.03 MM en el 3T19 y USD 0.03 MM en el 4T19 alcanzando USD 0.06 MM como acumulado.  
Fuente: Volcan Cia. Minera

Operating investments decreased by 62.0%, from USD 2.7 MM in 4Q18 to USD 1.0 MM in 4Q19, due to lower investments in the tailings dam. Year-to-date (Jan-Dec), operating investments decreased by 53.3%, from USD 12.8 MM in 2018 to USD 6.0 MM in 2019.

### 3. Energy

**Table 25: Volcan's Electric Power Balance**

Electric Balance (GWh)	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
<b>Energy generation</b>	<b>86.0</b>	<b>91.2</b>	<b>101.2</b>	<b>108.4</b>	<b>77.5</b>	<b>39.9</b>	<b>386.7</b>	<b>307.8</b>	<b>25.6</b>
Chungar	42.5	38.5	35.7	34.4	41.6	-17.3	151.2	153.0	-1.2
Tingo	2.3	2.3	2.2	1.9	2.3	-19.9	8.6	9.1	-5.4
Huanchor	41.1	40.2	37.0	40.7	33.5	21.3	159.1	145.6	9.3
Rucuy	0.0	10.1	26.3	31.4	0.0		67.7	0.0	
<b>Energy consumption</b>	<b>181.4</b>	<b>192.7</b>	<b>192.3</b>	<b>189.2</b>	<b>181.8</b>	<b>4.1</b>	<b>755.6</b>	<b>711.8</b>	<b>6.2</b>
<b>Energy purchase</b>	<b>136.6</b>	<b>151.9</b>	<b>154.4</b>	<b>152.9</b>	<b>137.8</b>	<b>10.9</b>	<b>595.8</b>	<b>549.6</b>	<b>8.4</b>

Source: Volcan Cia. Minera

During 4Q19, Volcan's total consumption of electric power reached 189.2 GWh, with a maximum demand of 98.8 MW.

The 10 hydroelectric plants that belong to the Chungar Unit generated 34.4 GWh. This accounted for 18.2% of the Company's total consolidated consumption, at an average cost of 22.6 USD/MWh, including operating, maintenance and transmission costs. Moreover, the Tingo Hydroelectric Plant generated 1.9 GWh, which was sold directly to Chungar.

Volcan purchased 152.9 GWh from the national central grid system (the SEIN) in order to meet its total consumption demand, at an average cost of 57.9 USD/MWh.

In 4Q19, the Huanchor Hydroelectric Plant produced 40.70 GWh, a 21.3% increase as compared to the same period of the previous year. The power of Huanchor Hydroelectric Plant was entirely sold to third parties.

The Rucuy Hydroelectric Plant produced 31.40 GWh in 4Q19, and the power was used to meet the commitments set forth in its renewable energy agreement (RER).

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## 4. Final Comments

- The Company continues investing significant resources on reaching and maintaining world-class operating and safety standards across all of its operations. This will ensure its sustainable and safe growth, in accordance with the Company's plans.
- The exploration plan was executed in 2019, as scheduled, to ensure the continuity and growth of the current operations and the development of the largest projects in the Company's portfolio, such as Romina, Palma, Zoraida and Carhuacayán. The results are encouraging and may permit to increase the volume and certainty of our resources. A new extensive exploration program has been scheduled for 2020.
- The Romina project is moving forward as planned. The identified resources amount to approximately 20 MM MT and the final studies are underway to obtain the project's full feasibility in the first half of next year. The production of this mine is expected to start in 2022. It will feed the Alpamarca plant with ore of greater value than the ore currently being treated.
- In November 2019, Volcan executed an agreement to sell the shares held in Empresa Administradora Cerro S.A.C., Óxidos de Pasco S.A.C. and Remediadora Ambiental S.A.C. to Cerro de Pasco Resources Inc. from Canada. This agreement is subject to certain conditions precedent that must be met in 2020.

Cerro de Pasco Resources Inc. is listed in the Canadian Securities Exchange and it has been present in Cerro de Pasco for several years. It holds the El Metalurgista concession in the district. The transaction stipulates an initial payment of USD 30 MM, a 2% NSR on the concessions held by Administradora Cerro S.A.C., and a percentage of future Au and Ag sales of the Oxides Plant throughout its operation. Moreover, Cerro de Pasco Resources has the obligation to sell 100% of the concentrates produced at Administradora Cerro S.A.C. concessions to Volcan. Finally, the agreement guarantees the continuity of the health, safety, environment and social projection programs currently executed by Volcan in the area.

- COSCO SHIPPING Ports Chancay PERÚ (CSPCP), the company that manages the Chancay Port project, and where Volcan holds a participation of 40% of shares, continues the construction of the first stage of the Chancay multi-purpose terminal. The works have already started at the underground pipeline entrance and the first multi-purpose dock in the maritime area. These works have all the necessary permits and licenses issued by national and local bodies.

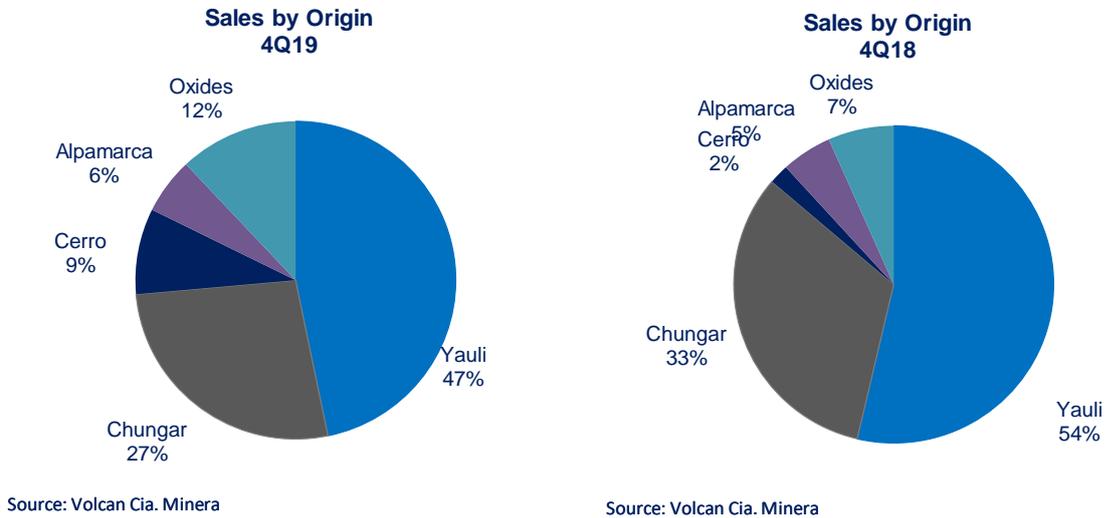
Simultaneously, the permitting process has been started exclusively for the operating area, in order to expand port capacities to four berths: two for multiple purposes and two for containers.

The works for the Chancay Port are within the established schedule. The estimated investment for the first stage amounts to USD 1.3 billion.

• Annexes

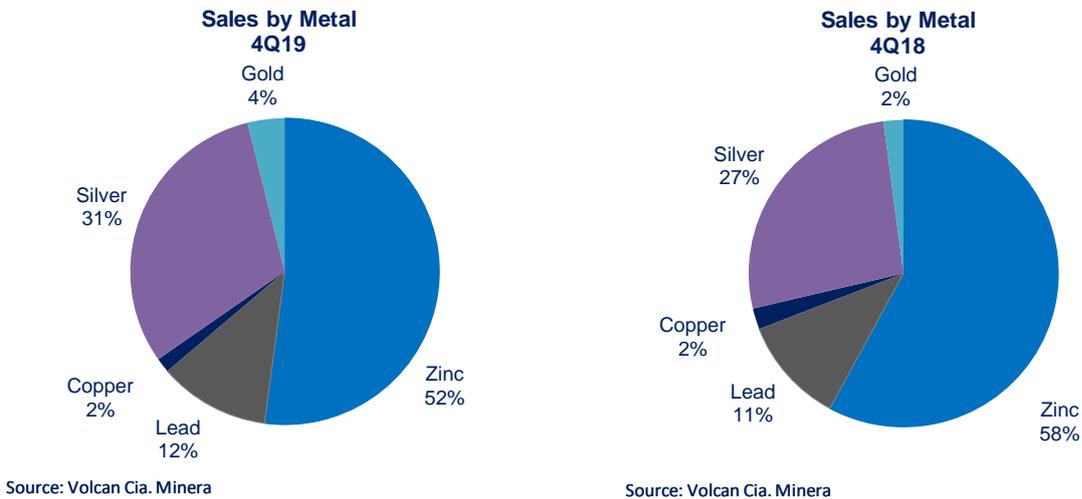
Annex 1: Sales Breakdown

Figure 5: Sales by Origin (percentage of value in USD)



The distribution of sales by origin reflects an increase in the contribution of the Oxides Plant to total sales due to greater gold production, as compared to a reduced contribution by Yauli and Chungar.

Figure 6: Sales by Metal (percentage of value in USD)



The distribution of sales by metal in 4Q19 reflects a decrease in the participation of zinc as compared to 4Q18, while the contribution of gold and silver increased, due to their higher prices.

## Annex 2: Average Spot Prices

Spot Prices	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
Zinc (USD/MT)	2,704	2,763	2,345	2,384	2,630	-9.4	2,549	2,925	-12.8
Lead (USD/MT)	2,037	1,886	2,029	2,038	1,964	3.8	1,998	2,244	-11.0
Copper (USD/MT)	6,220	6,114	5,798	5,888	6,168	-4.5	6,005	6,525	-8.0
Silver (USD/Oz)	15.6	14.9	17.0	17.3	14.5	19.0	16.2	15.7	3.1
Gold (USD/Oz)	1,305	1,310	1,474	1,482	1,229	20.7	1,393	1,270	9.7

Source: London Metal Exchange

## Annex 3: Macroeconomic Indicators

Macroeconomic Indicators	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Oct-Dec 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
Exchange Rate (S/ x USD)	3.32	3.32	3.34	3.36	3.36	0.1	3.34	3.29	1.5
Inflation	2.25	2.29	1.85	1.90	2.19	-13.3	1.90	2.19	-13.3

<sup>1</sup> Inflation of the last 12 months

Source: Central Reserve Bank of Peru

## Annex 4: Domestic Peruvian Metal Production

National Production	Jan-Mar 2019	Apr-Jun 2019	Jul-Sep 2019	Oct-Dic 2019	Oct-Dic 2018	var %	Jan-Dec 2019	Jan-Dec 2018	var %
Zinc (FMT)	327,381	351,210	348,269	377,521	349,905	7.9	1,404,382	1,474,383	-4.7
Lead (FMT)	69,710	79,655	78,559	80,192	75,844	5.7	308,116	289,123	6.6
Copper (FMT)	587,150	604,909	622,509	640,871	650,811	-1.5	2,455,440	2,437,035	0.8
Silver (Thousands Oz)	27,985	31,592	31,766	32,769	32,185	1.8	124,112	133,752	-7.2
Gold (Thousands Oz)	1,028	1,047	1,052	1,001	1,139	-12.1	4,129	4,508	-8.4

Source: Ministry of Energy and Mines

Volcan production represents 17% of national zinc production, 16% of national lead production and 13% of national silver production.