

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

# **Principal Results:**

Consolidated Volcan	Jan-Mar 2019	Jan-Mar 2018	var %
Sales Prices			
Zinc (USD/MT)	2,694	3,404	-20.9
Lead (USD/MT)	2,042	2,511	-18.7
Copper (USD/MT)	6,400	6,931	-7.7
Silver (USD/Oz)	15.5	16.7	-7.6
Gold (USD/Oz)	1,307	1,330	-1.8
Operating Results			
Mineral treatment <sup>1</sup> (thousands MT)	1,969	1,921	2.5
Zinc Production (thousands FMT)	53.9	58.8	-8.4
Lead Production (thousands FMT)	11.5	12.0	-4.6
Copper Production (thousands FMT)	1.0	1.1	-8.1
Silver Production (millions Oz)	3.4	4.2	-19.4
Gold Production (thousands Oz)	4.7	2.5	89.5
Unit Cost (USD/MT)	48.7	48.0	1.3
Total Investments (MM USD)	32.2	35.2	-8.4
Financial Results (MM USD)			
Sales before adjustments	169.0	220.2	-23.2
Sales Adjustments	12.6	-17.6	
Settlement of prior period adjustments	-0.2	2.6	
Adjustments for open positions <sup>2</sup>	12.7	-7.8	
Hedging results	0.0	-12.4	
Sales after adjustments	181.6	202.6	-10.4
Net profit before exceptionals	8.4	24.5	-65.7
Exceptional adjustments	0.0	-2.3	-100.0
Net profit after exceptionals	8.4	22.2	-62.2
EBITDA <sup>3</sup>	73.7	91.8	-19.7

<sup>&</sup>lt;sup>1</sup> Includes treated tons at Oxides Plant

Source: Volcan Cia. Minera

<sup>&</sup>lt;sup>2</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.

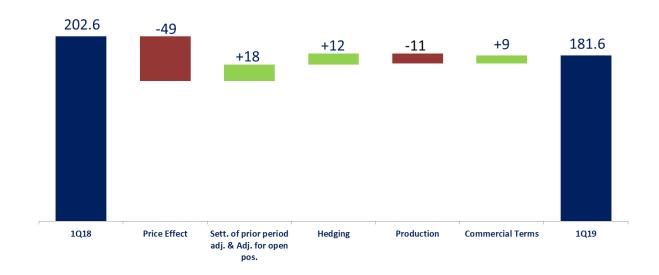
<sup>&</sup>lt;sup>3</sup> Does not consider exceptional adjustments.



# 1. Executive Summary

- The average sales price of all metals produced by the Company fell significantly in 1Q19 as compared to 1Q18: zinc decreased from 3,404 USD/MT to 2,694 USD/MT (-20.9%), lead from 2,511 USD/MT to 2,042 USD/MT (-18.7%), copper from 6,931 USD/MT to 6,400 USD/MT (-7.7%), silver from 16.7 USD/Oz to 15.5 USD/Oz (-7.6%), and gold from 1,330 USD/Oz to 1,307 USD/Oz (-1.8%).
- Production in 1Q19 was lower than in 1Q18 mainly due to: i) the gradual recovery of production at the Carahuacra Mine after the suspension of operations in 4Q18 for ensuring compliance with safety standards, ii) lower production at Alpamarca as a result of sequencing in the open pit, iii) lower grades at Animón, in line with the geological model, and, iv) on-site oxide exploitation of lower silver grade, but higher gold grade ore. Zinc production decreased by 8.4%, from 58.8 thousand FMT in 1Q18 to 53.9 thousand FMT in 1Q19; lead production decreased by 4.6%, from 12.0 thousand FMT to 11.5 thousand FMT, copper production decreased by 8.1%, from 1.1 thousand FMT to 1.0 thousand FMT, silver decreased by 19.4% from 4.2 MM Oz to 3.4 MM Oz, and gold production increased by 89.5%, from 2.5 thousand Oz in 1Q18 to 4.7 thousand Oz 1Q19.
- The reduced metals prices and lower production explain the 10.4% reduction in net sales, from USD 202.6 MM in 1Q18 to USD 181.6 MM in 1Q19, as shown in the figure below:

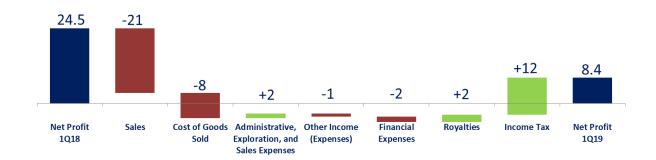
Figure 1: 1Q19 vs 1Q18 variations impact on sales (USD MM)



- Consolidated unit cost increased by 1.3%, from 48.0 USD/MT in 1Q18 to 48.7 USD/MT in 1Q19. This increase is mainly explained by a lower extraction volume at Yauli and Chungar, and higher costs at Alpamarca resulting from greater stripping rates due to the open pit expansion, and higher costs at the Oxides Plant resulting from the on-site oxide extraction costs.
- The lower sales and higher cost of goods sold resulting from the increase in depreciation explain the lower net profit before exceptional items, which fell from USD 24.5 MM in 1Q18 to USD 8.4 MM in 1Q19.



Figure 2: 1Q19 vs 1Q18 variations impact on net profit before exceptional items (USD MM)



- The reduction of sales also had an impact on EBITDA, which decreased by 19.7%, from USD 91.8 MM in 1Q18 to USD 73.7 MM in 1Q19.
- Total investments fell by 8.4%, from USD 35.2 MM in 1Q18 to USD 32.2 MM in 1Q19, mainly due to lower investments in developments and mine infrastructure, partially offset by greater investments in explorations and support areas.

#### 2. Consolidated Results

### 2.1 Production

**Table 1: Consolidated Production** 

Consolidated Production	Jan-Mar 2019	Jan-Mar 2018	var %
Mineral extraction (thousands MT)	1,957	1,938	0.9
Polymetallic ore	1,758	1,720	2.2
Oxides ore	198	218	-9.0
Mineral treatment (thousands MT)	1,969	1,921	2.5
Concentrator Plants	1,770	1,703	4.0
Silver Oxides Plant	198	218	-9.0
Fine Content			
Zinc (thousands FMT)	53.9	58.8	-8.4
Lead (thousands FMT)	11.5	12.0	-4.6
Copper (thousands FMT)	1.0	1.1	-8.1
Silver (millions Oz)	3.4	4.2	-19.4
Gold (thousands Oz)	4.7	2.5	89.5

Source: Volcan Cia. Minera

In the first quarter, extracted ore volumes increased by 0.9%, from 1.938 MM MT in 1Q18 to 1.957 MM MT in 1Q19. Similarly, treated volumes increased by 2.5%, from 1.921 MM MT in 1Q18 to 1.969 MM MT in 1Q19.

Fine zinc production decreased by 8.4%, from 58.8 thousand FMT in 1Q18 to 53.9 thousand FMT in 1Q19; fine lead production decreased by 4.6%, from 12.0 thousand FMT to 11.5



thousand FMT, fine copper production decreased by 8.1%, from 1.1 thousand FMT to 1.0 thousand FMT, and fine silver decreased by 19.4% from 4.2 MM Oz to 3.4 MM Oz, and fine gold production increased by 89.5%, from 2.5 thousand Oz in 1Q18 to 4.7 thousand Oz 1Q19. This is mainly due to: i) the gradual recovery of production at the Carahuacra Mine after the suspension of operations in 4Q18 for ensuring compliance with safety standards, ii) lower production at Alpamarca as a result of the new exploitation areas in the open pit, iii) lower grades at Animón, in line with the geological model, and, iv) on-site oxide exploitation of lower silver grade, but higher gold grade ore.

#### 2.2 Cost of Production

**Table 2: Consolidated Cost of Production** 

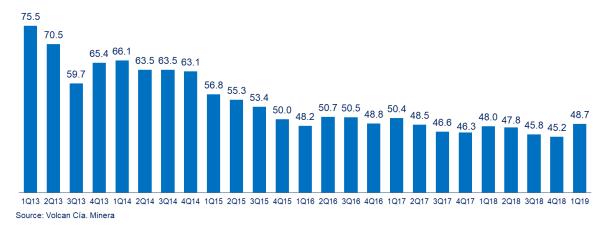
Consolidated Production Cost	Jan-Mar 2019	Jan-Mar 2018	var %
Production Cost (MM USD)	95.5	92.7	3.0
Mine Cost	49.6	48.0	3.3
Plant and Other Cost	45.9	44.7	2.8
Unit Cost (USD/MT)	48.7	48.0	1.3
Mine Cost	25.3	24.8	2.3
Plant and Other Cost	23.3	23.3	0.3

Source: Volcan Cia. Minera

The absolute cost of production rose by 3.0%, from USD 92.7 MM in 1Q18 to USD 95.5 MM in 1Q19, mainly due to greater extracted and treated volumes. Consolidated unit cost increased by 1.3%, from 48.0 USD/MT in 1Q18 to 48.7 USD/MT in 1Q19.

The Company is permanently focused on controlling and reducing operating costs across all operating units. The figure below shows a 35.5% unit cost decrease between 1Q13 and 1Q19.

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





#### 2.3 Total Investments

**Table 3: Consolidated Investment** 

Consolidated Investment (MM USD)	Jan-Mar 2019	Jan-Mar 2018	var %
Mining	31.4	34.0	-7.7
Mining Units	30.1	33.7	-10.6
Local Exploration	5.0	3.8	32.1
Development	15.7	18.5	-14.9
Plants and Tailings Facilities	4.5	4.8	-6.2
Mine and Infrastructure	2.4	4.0	-40.2
Electrical Infrastructure in Units	0.5	1.6	-67.9
Support and Others	2.0	1.0	94.9
Regional Explorations	0.3	0.1	288.5
Growth and Others	1.0	0.3	248.5
Energy	0.8	1.1	-29.2
Total	32.2	35.2	-8.4

Source: Volcan Cia. Minera

In the first quarter, total mining investments were reduced by 7.7%, from USD 34.0 MM in 1Q18 to USD 31.4 MM in 1Q19. Operating unit investments fell by 10.6%, from USD 33.7 MM in 1Q18 to USD 30.1 MM in 1Q19, mainly due to lower investments in developments, mine infrastructure and electric infrastructure, partially offset by greater investments in local explorations and support areas. The development of the Romina project resulted in increased regional explorations, which rose from USD 0.1 MM in 1Q18 to USD 0.3 MM in 1Q19, and an increase in growth investments, from USD 0.3 MM in 1Q18 to USD 1.0 MM in 1Q19.

Investments in the energy business decreased by 29.2%, from USD 1.1 MM in 1Q18 to USD 0.8 MM in 1Q19, mainly due to lower investments in repairs at the Rucuy Hydroelectric Plant. This plant is expected to resume operations in the first half of 2019.

As a result, total investments decreased by 8.4%, from USD 35.2 MM in 1Q18 to USD 32.2 MM in 1Q19.



### 2.4 Income Statement

**Table 4: Income Statement** 

Income Statement (MM USD)	Jan-Mar 2019	Jan-Mar 2018	var %
Sales before adjust.	169.0	220.2	-23.2
Sett. of prior periods adjust.	-0.2	2.6	
Adj. open positions	12.7	-7.8	
Hedging	0.0	-12.4	
Sales after adjust.	181.6	202.6	-10.4
Cost of Goods Sold	-136.2	-127.9	6.5
Gross Profit	45.4	74.7	-39.2
Gross Margin	25%	37%	-12 pp
Administrative Expenses	-9.8	-10.6	-7.7
Exploration Expenses	-2.4	-1.5	58.6
Sales Expenses	-4.7	-6.2	-24.6
Other Income (Expenses) 1	-3.9	-2.9	36.0
Operating Profit	24.7	53.5	-53.9
Operating Margin	14%	26%	-13 pp
Financial Income (Expense)	-11.1	-9.3	18.7
Exchange Difference (net)	0.7	0.2	286.2
Royalties	-2.1	-4.0	-48.6
Income Tax	-3.8	-15.9	-76.1
Net Profit before Exceptionals	8.4	24.5	-65.7
Net Margin	5%	12%	-7 pp
Exceptional adjustments <sup>2</sup>	0.0	-2.3	-100.0
Net Profit after Exceptionals	8.4	22.2	-62.2
EBITDA <sup>3</sup>	73.7	91.8	-19.7
EBITDA Margin	41%	45%	-5 pp

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

Source: Volcan Cia. Minera

 $<sup>^2</sup>$  The exceptional adjustment of USD 2.3 MM in 1Q18 is related to the provision of an old account receivable in a subsidiary of Volcan.

<sup>&</sup>lt;sup>3</sup> Does not consider exceptional adjustments.



### Sales Analysis

**Table 5: Average Sales Prices** 

Sales Prices	Jan-Mar 2019	Jan-Mar 2018	var %
Zinc (USD/MT)	2,694	3,404	-20.9
Lead (USD/MT)	2,042	2,511	-18.7
Copper (USD/MT)	6,400	6,931	-7.7
Silver (USD/Oz)	15.5	16.7	-7.6
Gold (USD/Oz)	1,307	1,330	-1.8

Source: Volcan Cia. Minera

**Table 6: Fine Contents Sales Volumes** 

Fines Sales	Jan-Mar 2019	Jan-Mar 2018	var %
Zinc (thousands FMT)	56.8	59.3	-4.2
Lead (thousands FMT)	9.2	10.1	-9.5
Copper (thousands FMT)	0.7	0.7	5.4
Silver (millions Oz)	3.0	3.9	-22.4
Gold (thousands Oz)	4.9	3.1	60.1

Source: Volcan Cia. Minera

Table 7: Sales in USD

Sales (millions USD)	Jan-Mar 2019	Jan-Mar 2018	var %
Zinc	107.2	139.7	-23.3
Lead	15.9	21.4	-25.9
Copper	3.3	3.2	3.2
Silver	37.2	53.2	-30.0
Gold	5.4	2.6	104.9
Sales before adjust.	169.0	220.2	-23.2
Sett. of prior period adjust.	-0.2	2.6	
Adjust. for open positions	12.7	-7.8	
Hedging results	0.0	-12.4	
Sales after adjust.	181.6	202.6	-10.4

Source: Volcan Cia. Minera

In 1Q19, total sales before adjustments decreased by 23.2%, USD 169.0 MM as compared to USD 220.2 MM in 1Q18, due to lower prices for all metals and reduced sales volume of zinc, silver and lead.

In 1Q19, sales adjustments were positive (USD 12.6 MM), as compared to the negative adjustments recorded in 1Q18 (USD 17.4 MM). In 1Q19, sales adjustments included final settlements of USD -0.2 MM, and provisions related to open shipments of USD 12.7 MM explained by a forward price curve that exceeds the prices of open shipments at the end of 1Q19. Total sales after adjustments decreased by 10.4%, from USD 202.6 MM in 1Q18 to USD 181.6 MM in 1Q19.



#### Cost of Goods Sold

**Table 8: Cost of Goods Sold** 

Cost of Goods Sold (millions USD)	Jan-Mar 2019	Jan-Mar 2018	var %
Volcan Production <sup>1</sup>	134.9	125.0	7.9
Volcan Production Cost	90.5	92.7	-2.4
D&A from Production Cost	46.7	35.0	33.6
Extraordinary Costs	0.4	0.4	17.9
Variation of Inventories	-2.7	-3.1	-10.8
Workers Participation	1.3	2.9	-57.0
Total	136.2	127.9	6.5

 $<sup>^1</sup>$  Includes the effect of the adoption of IFRS 16 Operating Leases, equivalent to USD - 5.0 MM in the own cost of production and USD +4.7 MM in the D&A

Source: Volcan Cia. Minera

In 1Q19, the total cost of goods sold increased by 6.5%, from USD 127.9 MM in 1Q18 to USD 136.2 MM in 1Q19. This is mainly explained by the increase of depreciation and amortization by USD 11.7 MM, resulting from a larger base of depreciable assets totaling USD 7.1 MM and the USD 4.7 MM impact related to the new accounting treatment of operating leases after the application of IFRS 16. This was partially offset by a USD -2.2 MM decrease of the cost of production and a lower workers' participation provision in line with the Company's lower operating profit.

#### • Gross Margin and Gross Profit

The Company's gross margin decreased from 37% in 1Q18 to 25% in 1Q19, due to reduced metals prices and higher cost of goods sold resulting from increased depreciation. The decline of gross profit, from USD 74.7 MM in 1Q18 to USD 45.4 MM in 1Q19, is explained by the reduced gross margin and a lower sales volume.

#### Administrative Expenses

Administrative expenses decreased by 7.7%, from USD 10.6 MM in 1Q18 to USD 9.8 MM in 1Q19, mainly due to the lower workers' participation provision in line with the Company's lower profits.

### • Exploration Expenses

Exploration expenses increased from USD 1.5 MM in 1Q18 to USD 2.4 MM in 1Q19, according to the planned increase of greenfield or generative explorations.

#### Sale expenses

Sales expenses during 1Q19 decreased by 24.6%, from USD 6.2 MM in 1Q18 to USD 4.7 MM, due to lower transportation expenses, shipments and freights.

#### Other Income and Expenses (unadjusted)

In 1Q19, the net amount of other income and expenses was USD -3.9 MM versus USD -2.9 MM in 1Q18, mainly explained by higher permanent costs at Cerro de Pasco resulting from mine water treatment.



#### • Financial Expenses and Exchange-Rate Difference

During 1Q19, net financial expenses totaled USD 11.1 MM, an 18.7% increase if compared to the USD 9.3 MM reported in 1Q18. This increase results from the application of accounting standards whereby the variation of the present value of the mine closure plans and the implicit interests of operating leases must be reported as financial expenses.

Exchange-rate losses totaling USD 0.7 MM were registered in 1Q19, as compared to the exchange-rate gain reported in 1Q18 (USD 0.2 MM).

#### • Income Tax and Royalties

Royalties decreased from USD 4.0 MM in 1Q18 to USD 2.1 MM in 1Q19, while income tax decreased from USD 15.9 MM in 1Q18 to USD 3.8 MM in 1Q19, in line with the reduced profits and the exchange-rate conversion effect.

#### Net Profit and EBITDA

Net profit before exceptional items decreased from USD 24.5 MM in 1Q18 to USD 8.4 MM in 1Q19, and EBITDA decreased by 19.7%, from USD 91.8 MM in 1Q18 to USD 73.7 MM in 1Q19, mainly due to reduced sales as a result of lower metals prices.

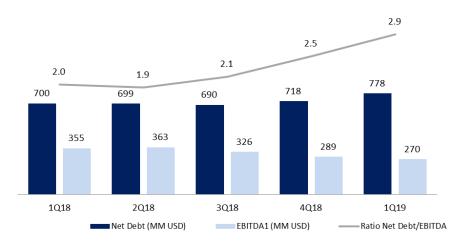
## 2.5 Liquidity and Creditworthiness

In 1Q19, cash generated by mining operations after operating investments totaled USD +8.5 MM. Growth investments in the mining and energy business, as well as investments in the Chancay port project, totaled USD -3.6 MM. Interests paid amounted to USD -17.9 MM and net financing cash flow for the period was negative and totaled USD -11.4 MM. Therefore, during 1Q19, the resulting total cash flow was USD -24.3 MM, and the total cash balance as of March 31, 2019, was USD 38.6 MM.

At the end of 1Q19, the net debt/EBITDA ratio was 2.9 higher, mainly due to a higher debt resulting from recognizing operating leases as financial debts, pursuant to IFRS 16, and the lower EBITDA accumulated in the last 12 months as a result of lower average metals prices.

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Figure 4: Net Debt / EBITDA Ratio Evolution



1 EBITDA for the last 12 months. Source: Volcan Cia. Minera

# 3. Results by Operating Unit

# 3.1 Yauli Unit Operating Results

**Table 9: Yauli Production** 

Yauli Production	Jan-Mar 2019	Jan-Mar 2018	var %
Mineral extraction (thousands MT) Mineral treatment (thousands MT)	743 737	757 751	-1.9 -1.9
Fines Content			
Zinc (thousands FMT)	31.0	33.7	-7.9
Lead (thousands FMT)	5.2	4.2	23.1
Copper (thousands FMT)	0.7	0.6	10.2
Silver (million Oz)	1.6	1.8	-8.4
Gold (thousands Oz)	1.4	1.6	-13.0

Source: Volcan Cia. Minera

In 1Q19, ore extracted at the Yauli Unit decreased by 1.9% as compared to the same quarter of the previous year, mainly explained by a lower contribution by Carahuacra and Ticlio mines as a consequence of the reformulation of mining plans and a delay caused by the suspension of operations in 4Q18 to ensure compliance with safety standards. The ore treated at the Yauli Unit concentrator plants decreased by 1.9% in 1Q19, as compared to the same period of the previous year.

In 1Q19, fine zinc production decreased by 7.9% and silver by 8.4% as compared to 1Q18, mainly due to lower grades at Carahuacra and Andaychagua. Lead production increased by 23.1%, explained by higher head grades at San Cristóbal; copper increased by 10.2% as a result of higher metallurgical recoveries.



**Table 10: Yauli Cost of Production** 

Yauli Production Cost	Jan-Mar 2019	Jan-Mar 2018	var %
Production Cost (MM USD)	51.4	52.0	-1.1
Extraction Cost	31.3	31.2	0.2
Treatment Cost	20.1	20.8	-3.2
Unit Cost (USD/MT)	69.4	68.9	0.7
Extraction Cost	42.1	41.2	2.1
Treatment Cost	27.3	27.7	-1.3

Source: Volcan Cia. Minera

In 1Q19, the absolute cost of production decreased by 1.1%, from USD 52.0 MM in 1Q18 to USD 51.4 MM in 1Q19. This is mainly explained by lower production volumes. For the same reason, the unit cost of production increased by 0.7%, from 68.9 USD/MT in 1Q18 to 69.4 USD/MT in 1Q19.

**Table 11: Yauli Operating Investments** 

Yauli Operating Investment (MM USD)	Jan-Mar 2019	Jan-Mar 2018	var %
Local Exploration	3.3	2.4	37.6
Mine Development	10.5	12.0	-12.7
Plants and Tailings Dams	1.0	1.1	-10.6
Mine and Infrastructure	1.6	1.8	-6.7
Electrical Infrastructure	0.2	8.0	-72.8
Support and Others	0.7	0.5	60.1
Total	17.3	18.5	-6.5

Source: Volcan Cia. Minera

In 1Q19, operating investments at the Yauli Unit totaled USD 17.3 MM, 6.5% lower than the USD 18.5 MM figure for 1Q18, explained by lower investments in developments and mine and electric infrastructure, partially offset by higher investment in local exploration.

### 3.2 Chungar Unit Operating Results

**Table 12: Chungar Production** 

Chungar Production	Jan-Mar 2019	Jan-Mar 2018	var %
Mineral extraction (thousands MT)	413	434	-4.8
Mineral treatment (thousands MT)	435	432	0.7
Fines Content			
Zinc (thousands FMT)	18.5	19.8	-6.5
Lead (thousands FMT)	4.4	5.0	-11.6
Copper (thousands FMT)	0.3	0.4	-32.1
Silver (million Oz)	8.0	1.0	-19.0

Source: Volcan Cia. Minera

In 1Q19, ore volumes extracted at Chungar declined by 4.8% as compared to 1Q18, mainly due to reduced activity at the Islay Mine. However, ore volumes treated in 1Q19 increased by 0.7%, as compared to the same quarter in the previous year, as a result of the use of stockpiles.



With regard to fines, in 1Q19, zinc, lead, copper and silver production decreased by 6.5%, 11.6%, 32.1% and 19.0%, respectively, as compared to 1Q18, mainly due to lower head grades at the Animón Mine.

**Table 13: Chungar Cost of Production** 

Chungar Production Cost	Jan-Mar 2019	Jan-Mar 2018	var %
Production Cost (MM USD)	25.2	25.1	0.6
Extraction Cost	15.1	14.6	3.1
Treatment Cost	10.2	10.5	-2.9
Unit Cost (USD/MT)	59.9	57.9	3.4
Extraction Cost	36.5	33.7	8.3
Treatment Cost	23.4	24.3	-3.6

Source: Volcan Cia. Minera

In 1Q19, the cost of production in absolute terms increased by 0.6%, from USD 25.1 MM in 1Q18 to USD 25.2 MM in 1Q19, while the unit cost increased by 3.4%, from 57.9 USD/MT in 1Q18 to 59.9 USD/MT in 1Q19, due to lower extraction volumes.

**Table 14: Chungar Operating Investments** 

Chungar Operating Investment (MM USD)	Jan-Mar 2019	Jan-Mar 2018	var %
Local Exploration	1.6	1.4	14.8
Mine Development	5.3	6.5	-19.1
Plants and Tailings Dams	0.7	0.9	-21.7
Mine and Infrastructure	0.7	2.2	-66.4
Electrical Infrastructure	0.3	0.7	-61.7
Support and Others	8.0	0.2	400.0
Total	9.3	11.8	-21.3

Source: Volcan Cia. Minera

Operating investments fell by 21.3%, from USD 11.8 MM in 1Q18 to USD 9.3 MM in 1Q19, mainly due to lower investments in developments, mine and infrastructure, partially offset by greater investments in local explorations and support areas.

### 3.3 Alpamarca Unit Operating Results

**Table 15: Alpamarca Production** 

Alpamarca Production	Jan-Mar 2019	Jan-Mar 2018	var %
Mineral extraction (thousands MT)	227	239	-4.8
Mineral treatment (thousands MT)	224	229	-2.5
Fines Content			
Zinc (thousands FMT)	1.2	2.4	-48.0
Lead (thousands FMT)	0.9	1.8	-47.6
Copper (thousands FMT)	0.1	0.1	-20.8
Silver (million Oz)	0.3	0.4	-30.4

Source: Volcan Cia. Minera

In 1Q19, ore volumes extracted at the Alpamarca Unit decreased by 4.8% compared to the same quarter of the previous year, while treated volumes decreased by 2.5%.



Zinc, lead, silver and copper production decreased by 48.0%, 47.6%, 30.4% and 20.8%, respectively, mainly explained by lower head grades of the treated ore.

**Table 16: Alpamarca Cost of Production** 

Alpamarca Production Cost	Jan-Mar 2019	Jan-Mar 2018	var %
Production Cost (MM USD)	4.8	3.6	31.1
Extraction Cost	2.0	1.0	107.6
Treatment Cost	2.8	2.7	3.5
Unit Cost (USD/MT)	21.2	15.7	34.9
Extraction Cost	8.8	4.1	118.1
Treatment Cost	12.4	11.7	6.1

Source: Volcan Cia. Minera

In 1Q19, the absolute cost of production was USD 4.8 MM, 31.1% higher than the USD 3.6 MM figure for the same quarter of the previous year, due to a greater stripping cost at the Alpamarca open pit. The unit cost increased by 34.9%, from 15.7 USD/MT in 1Q18 to 21.2 USD/MT in 1Q19.

**Table 17: Alpamarca Operating Investments** 

Alpamarca Operating Inv. (MM USD)	Jan-Mar 2019	Jan-Mar 2018	var %
Plants and Tailings Dams	0.3	0.1	171.4
Support and Others	0.0	0.2	-77.3
Total	0.4	0.3	16.2

Source: Volcan Cia. Minera

Operating investments increased from USD 0.3 MM in 1Q18 to USD 0.4 MM in 1Q19, due to higher investments in the tailings dam.

# 3.4 Cerro de Pasco Unit Operating Results

**Table 18: Cerro de Pasco Production** 

Cerro de Pasco Production	Jan-Mar 2019	Jan-Mar 2018	var %
Mineral extraction (thousands MT) Mineral treatment (thousands MT)	375 375	291 291	29.1 29.1
Fines Content			
Zinc (thousands FMT)	3.1	2.9	6.8
Lead (thousands FMT)	0.9	1.0	-9.4
Silver (million Oz)	0.1	0.1	5.7

Source: Volcan Cia. Minera

Ore volumes extracted and treated at Cerro de Pasco increased by 29.1%, from 291 thousand MT in 1Q18 to 375 thousand MT in 1Q19.

In 1Q19, zinc production increased by 6.8%, and silver by 5.7%, as compared to 1Q18, due to greater treated volumes. Lead production decreased by 9.4% due to lower head grades in the ore treated.



Table 19: Cerro de Pasco Cost of Production

Cerro de Pasco Production Cost	Jan-Mar 2019	Jan-Mar 2018	var %
Production Cost (MM USD)	6.0	3.7	63.2
Treatment Cost	6.0	3.7	63.7
Unit Cost (USD/MT)	16.0	12.6	26.4
Treatment Cost	16.0	12.6	26.8

Source: Volcan Cia. Minera

Absolute cost increased by 63.2%, from USD 3.7 MM in 1Q18 to USD 6.0 MM in 1Q19 due to higher treated volumes and higher fixed costs related to the larger magnitude of the operation. Unit cost increased by 26.4%, from 12.6 USD/MT in 1Q18 to 16.0 USD/MT in 1Q19.

**Table 20: Cerro de Pasco Operating Investments** 

Cerro de Pasco Operating Inv. (MM USD)	Jan-Mar 2019	Jan-Mar 2018	var %
Local Exploration	0.1	0.0	
Plants and Tailings Dams	1.2	1.3	-9.7
Support and Others	0.4	0.1	149.1
Total	1.7	1.5	13.0

Source: Volcan Cia. Minera

Operating investments increased from USD 1.5 MM in 1Q18 to USD 1.7 MM in 1Q19, due to higher investments in support areas.

#### 3.5 Oxides Plant Operating Results

**Table 21: Oxides Plant Production** 

Oxides Plant Production	Jan-Mar 2019	Jan-Mar 2018	var %
Mineral extraction (thousands MT) Mineral treatment (thousands MT)	198 198	218 218	-9.0 -9.0
Fines Content			
Silver (million Oz)	0.6	0.9	-39.5
Gold (Oz)	3,335	884	277.2

Source: Volcan Cia. Minera

In 1Q19, the volume of production at the Oxides Plant decreased by 9.0% as compared to 1Q18, mainly due to maintenance and improvements performed on the leaching plant.

Silver ounces production decreased from 0.9 MM in 1Q18 to 0.6 MM in 1Q19 due to lower treated volumes and lower silver grades in the ore from the oxides on-site. In contrast, the gold grade in the on-site ore is higher, and resulted in a 277.2% increase of produced gold ounces, from 884 in 1Q18 to 3,335 in 1Q19.



**Table 22: Oxides Plant Cost of Production** 

Oxides Plant Production Cost	Jan-Mar 2019	Jan-Mar 2018	var %
Production Cost (MM USD)	8.1	8.3	-2.3
Extraction Cost	1.3	1.2	1.8
Treatment Cost	6.9	7.1	-3.0
Unit Cost (USD/MT)	40.9	38.1	7.4
Extraction Cost	6.3	5.7	11.9
Treatment Cost	34.6	32.4	6.7

Source: Volcan Cia. Minera

In 1Q19, the absolute cost of production totaled USD 8.1 MM, 2.3% lower than in 1Q18, due to the lower treated volume. Unit cost increased by 7.4%, from 38.1 USD/MT in 1Q18 to 40.9 USD/MT in 1Q19, resulting from the on-site oxides ore extraction.

**Table 23: Oxides Plant Operating Investments** 

Oxides Plant Operating Inv. (MM USD)	Jan-Mar 2019	Jan-Mar 2018	var %
Plants and Tailings Dams	1.3	1.4	-6.1
Support and Others	0.1	0.1	3.0
Total	1.4	1.5	-5.7

Source: Volcan Cia. Minera

Operating investments decreased from USD 1.5 MM in 1Q18 to USD 1.4 MM in 1Q19, due to lower investments in tailings dams.



# 4. Energy

**Table 24: Volcan's Electric Power Balance** 

Electric Balance (GWh)	Jan-Mar 2019	Jan-Mar 2018	var %
Energy generation	86.0	84.0	2.3
Chungar	42.5	40.3	5.6
Tingo	2.3	2.2	3.4
Huanchor	41.1	41.5	-1.0
Rucuy	0.0	0.0	
Energy consumption	181.4	174.0	4.3
Energy purchase	136.6	131.4	3.9

Source: Volcan Cia. Minera

During 1Q19, Volcan's total consumption of electric power reached 181.4 GWh, with a maximum demand of 98.1 MW.

The 10 hydroelectric plants that belong to the Chungar Unit generated 42.5 GWh. This accounted for 23% of the Company's total consolidated consumption, at an average cost of 13.0 USD/MWh, including operating, maintenance and transmission costs. Moreover, the Tingo Hydroelectric Plant generated 2.3 GWh, which was sold directly to Chungar.

The Huanchor Hydroelectric Plant produced 41.1 GWh. All of this power was sold to third parties.

Volcan purchased 136.6 GWh from the national central grid system (the SEIN) in order to meet its total consumption demand, at an average cost of 58.8 USD/MWh.

The operations at the Rucuy Hydroelectric Plant were suspended since March 2017 as a consequence of the coastal El Niño, due to damage to part of the penstock and a section of the transmission line. Repair works at the plant include the construction of a 430 m vertical shaft and a 620 m tunnel to replace the penstock, which are being built in line with the high safety standards of the Company. Operations are expected to resume in the first half of 2019.



## 5. Final Comments

- The Company is permanently focused on maintaining a reliable production, ensuring the safety of all its employees, enforcing high environmental standards, and increasing its resources through exploration plans, with the objective of increasing the life of mine at its main operations and developing its main projects.
- During 2019, the Company plans to drill more than 300 thousand meters, with an approximate total investment of USD 50 MM. In 1Q19, over 50 thousand meters of diamond drilling were carried out at the current operations, and 5 thousand meters at regional explorations, mainly at Zoraida, Carhuacayán, Palma and Romina.
- Compared to 1Q18, the results were mainly affected by lower sales resulting from reduced average prices of all metals produced by the Company.
- The Rucuy Hydroelectric Plant should resume operations in the first half of 2019, after being suspended since March 2017, due to damage to part of the penstock and a section of the transmission line as a consequence of the coastal El Niño. Repair works at the plant include the construction of a 430 m vertical shaft and a 620 m tunnel to replace the penstock.
- The partnership agreements with China's Cosco Shipping Ports Limited (CSPL) for the
  development of the Chancay port project will be executed shortly. Upon the operation's
  closure, this company will join Terminales Portuarios Chancay (TPCH) as a shareholder
  owning 60% of representative shares of the capital stock, and Volcan will hold the
  remaining 40%.

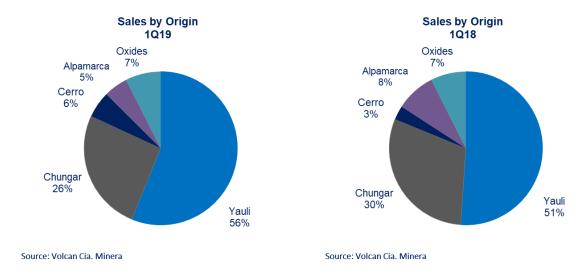
The first stage of construction of the Chancay port with an estimate investment of USD 1,300 MM includes the entrance facilities, the underground pipeline tunnel, and the port operational area, which in turn comprise the container terminal and its two docks, and the bulk, general and rolling cargo terminal with two additional docks. It is worth noting that, through this agreement with Cosco, Volcan will have no obligation to make additional payments for this project, which is a great opportunity to boost Peru's economic development through a new connectivity network of maritime and land economic corridors between China and the rest of the world.



#### **Annexes**

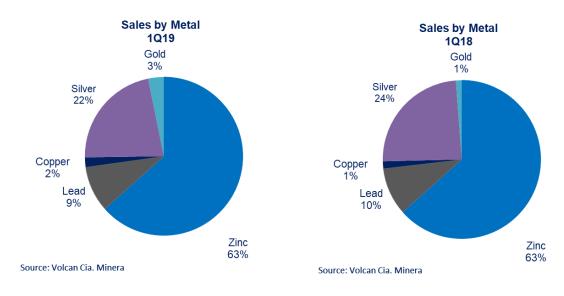
#### **Annex 1: Sales Breakdown**

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



The distribution of sales by origin reflects an increase in the contribution of Yauli and Cerro de Pasco in total sales, as compared to a reduced contribution by Chungar and Alpamarca.

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



The distribution of sales by metal in 1Q19 shows that the contribution of zinc is similar to the one recorded in 1Q18. The contribution of gold rose from 1% in 1Q18 to 3% in 1Q19, due to increased production of this metal at the Oxides Plant.



# **Annex 2: Average Spot Prices**

Spot Prices	Jan-Mar 2019	Jan-Mar 2018	var %
Zinc (USD/MT)	2,704	3,422	-21.0
Lead (USD/MT)	2,037	2,523	-19.3
Copper (USD/MT)	6,220	6,959	-10.6
Silver (USD/Oz)	15.6	16.8	-7.1
Gold (USD/Oz)	1,305	1,331	-2.0

Source: London Metal Exctange

# **Annex 3: Macroeconomic Indicators**

Macroeconomic Indicators	Jan-Mar 2019	Jan-Mar 2018	var %
Exctange Rate (S/ x USD)	3.32	3.24	2.6
Inflation	2.25	0.36	518.9

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

Source: Central Reserve Bank of Peru

**Annex 4: Domestic Peruvian Metal Production** 

National Production	Jan-Feb 2019	Jan-Feb 2018	var %
Silver (Thousands Oz)	17,910	21,304	-15.9
Zinc (FMT)	209,374	228,400	-8.3
Lead (FMT)	45,230	44,393	1.9
Copper (FMT)	377,286	366,543	2.9
Gold (Thousands Oz)	672	715	-6.0

Source: Ministry of Energy and Mines