



**MANAGEMENT'S DISCUSSION AND ANALYSIS**

**FOR THE QUARTER ENDED  
MARCH 31, 2019**

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## MANAGEMENT’S DISCUSSION AND ANALYSIS FOR THE FIRST QUARTER ENDED MARCH 31, 2019

*This Management’s Discussion and Analysis (“MD&A”) should be read in conjunction with the condensed interim consolidated financial statements for the three months ended March 31, 2019, and the annual audited consolidated financial statements and MD&A for the year ended December 31, 2018 and related notes thereto which have been prepared in accordance with International Financial Reporting Standards (“IFRS”) as issued by the International Accounting Standards Board (IASB). For further information on Jaguar Mining Inc., reference should be made to its public filings (including its most recently filed annual information form (“AIF”) which is available on SEDAR at [www.sedar.com](http://www.sedar.com)). Information on risks associated with investing in the Company’s securities and technical and scientific information under National Instrument 43-101 concerning the Company’s material properties, including information about mineral resources and reserves, are contained in the Company’s most recently filed AIF and technical reports.*

*All amounts included in this MD&A are in United States dollars (“\$”), unless otherwise specified. References to C\$ are to Canadian dollars and R\$ are to Brazilian Reals. This report is dated as at May 14, 2019.*

The Company has included certain non-GAAP financial measures, which the Company believes, that together with measures determined in accordance with IFRS, provide investors with an improved ability to evaluate the underlying performance of the Company. Non-GAAP financial measures do not have any standardized meaning prescribed under IFRS, and therefore they may not be comparable to similar measures employed by other companies. The data is intended to provide additional information and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS. The non-GAAP financial measures included in this MD&A include:

- Cash costs (per ounce sold);
- All-in sustaining costs (per ounce sold);
- Average realized price gold price (per ounce of gold sold);
- Adjusted operating cash flow;
- Adjusted EBITDA;
- Free cash flow (per ounce sold);
- Sustaining capital expenditures; and
- Non-sustaining capital expenditures.

Definitions and reconciliations associated with the above metrics can be found in Section Non-GAAP Performance Measures of this MD&A.

*Where we say “we,” “us,” “our,” the “Company” or “Jaguar,” we mean Jaguar Mining Inc. or Jaguar Mining Inc. and/or one or more or all of its subsidiaries, as it may apply. The following abbreviations are used to describe the periods under review throughout this MD&A:*

<b>Abbreviation</b>	<b>Period</b>	<b>Abbreviation</b>	<b>Period</b>
<b>YTD 2019</b>	January 1, 2019 – March 31, 2019	<b>YTD 2018</b>	January 1, 2018 – March 31, 2018
<b>Q1 2019</b>	January 1, 2019 – March 31, 2019	<b>Q1 2018</b>	January 1, 2018 – March 31, 2018

## OUR BUSINESS

Jaguar Mining Inc (“Jaguar” or the “Company”) is a Canadian-listed junior gold mining, development, and exploration company operating in Brazil with three gold mining complexes, and a large land package with significant upside exploration potential. The Company’s principal operating assets are located in the state of Minas Gerais and include the Turmalina Gold Mine Complex (“Turmalina Gold mine and plant”) and Caeté Gold Mine Complex (“Pilar Gold mine”, “Roça Grande Gold mine” and “Caeté plant”). The Company also owns the Paciência Gold Mine Complex (“Paciência”), which has been on care and maintenance since 2012. Jaguar’s Brazilian assets and operations are held by Jaguar’s wholly-owned subsidiary Mineração Serras dos Oeste EIRELI. (“MSOL”).

## Q1 2019 FINANCIAL & OPERATING SUMMARY

(\$ thousands, except where indicated)	For the three months ended	
	March 31,	
	2019	2018
<b>Financial Data</b>		
Revenue	\$ 21,416	\$ 25,228
Operating costs	14,630	15,399
Depreciation	3,610	4,885
Gross profit	3,176	4,944
Net loss	(1,839)	(1,781)
Per share (“EPS”)	(0.01)	(0.01)
EBITDA <sup>1</sup>	2,653	4,154
Adjusted EBITDA <sup>1,2</sup>	3,577	5,573
Adjusted EBITDA per share <sup>1</sup>	0.01	0.02
Cash operating costs (per ounce sold) <sup>1</sup>	870	800
All-in sustaining costs (per ounce sold) <sup>1</sup>	1,428	1,289
Average realized gold price (per ounce) <sup>1</sup>	1,273	1,311
Cash generated from operating activities	2,523	4,979
Free cash flow <sup>1</sup>	(4,563)	(1,688)
Free cash flow (per ounce sold) <sup>1</sup>	(271)	(88)
Sustaining capital expenditures <sup>1</sup>	7,086	6,667
Non-sustaining capital expenditures <sup>1</sup>	189	493
Total capital expenditures	7,275	7,160

<sup>1</sup> Average realized gold price, sustaining and non-sustaining capital expenditures, cash operating costs and all-in sustaining costs, adjusted operating cash flow, free cash flow, EBITDA and adjusted EBITDA, adjusted EBITDA per share, and gross profit (excluding depreciation) are non-GAAP financial performance measures with no standard definition under IFRS. Refer to the Non-GAAP Financial Performance Measures section of the MD&A.

<sup>2</sup> Adjusted EBITDA excludes non-cash items such as impairment and write downs. For more details refer to the Non-GAAP Performance Measures section of the MD&A.

	For the three months ended	
	March 31,	
	2019	2018
<b>Operating Data</b>		
Gold produced (ounces)	16,365	18,865
Gold sold (ounces)	16,821	19,237
Primary development (metres)	1,161	1,069
Secondary development (metres)	631	447
Definition, infill, and exploration drilling (metres)	6,632	9,439

## Financial and Operational Summary

### **Revenue, Gross Profit, Gold Ounces Sold, Operating Costs and Adjusted EBITDA<sup>1</sup>**

- Revenue for Q1 2019 decreased 15% to \$21.4 million, compared with \$25.2 million in Q1 2018, due to a 13% decline in gold sales, and a 3% decline in the average realized gold price of \$1,273/oz in Q1 2019 as compared to \$1,311/oz for Q1 2018.
- Gross profit for Q1 2019 was \$3.2 million, compared to \$4.9 million for Q1 2018. The decreased in profitability reflects the higher operating cash costs which occurred mainly due to the decrease in ounces sold.
- Gold ounces sold in Q1 2019 were 16,821 ounces, compared with 19,237 ounces sold for the comparative periods. The decrease in gold ounces sold reflects lower than anticipated production mainly from Turmalina Gold Mine as a result of lower tonnes processed year-over-year.
- Operating costs decreased 5% in Q1 2019, compared with \$15.4 million in Q1 2018, primarily due to the reduction in ounces sold.
- Adjusted EBITDA for Q1 2019 was \$3.6 million compared to \$5.6 million for Q1 2018.

### **Cash Operating Costs, Capital Expenditures, All-In-Sustaining Costs (“AISC”), Operating Cash Flow<sup>1</sup>**

- Cash operating costs increased 9% to \$870 per ounce of gold sold for Q1 2019, compared to \$800 per ounce sold during Q1 2018, primarily due a 13% decrease in gold ounces sold.
- In Q1 2019, sustaining capital investment increased 6% to \$7.1 million, compared to \$6.7 million in Q1 2018.
- AISC was \$1,428 per ounce of gold sold in Q1 2019, compared to \$1,289 per ounce sold during Q1 2018, due primarily to lower production.
- Operating cash flow was \$2.5 million for Q1 2019, compared to \$5.0 million in Q1 2018, mainly as a result of the decrease in ounces sold.

### **Cash Position and Working Capital**

- As at March 31, 2019, the Company had a cash position of \$7.9 million, compared to \$6.3 million as at December 31, 2018. The March 31, 2019, cash balance excludes a \$2 million restricted cash deposit held with Auramet, and also \$0.5 million margin deposit to Banco Votorantim S.A.
- As at March 31, 2019, working capital was negative \$8.3 million, compared to negative \$2.4 million as at December 31, 2018, which includes \$6.6 million (December 31, 2018 - \$7.3 million) in loans from Brazilian banks, which mature every six months and are expected to be rolled forward.

### **Tonnes Processed and Average Grade, Gold Production**

- Consolidated gold production decreased to 16,365 ounces in Q1 2019, compared to 18,865 ounces in Q1 2018, reflecting lower production from Turmalina year-over-year. Gold recovery was 87.7% in Q1 2019 compared to 89.9% in Q1 2018.
- Total processing was 160,000 tonnes in Q1 2019 (Q1 2018 – 174,000 tonnes) at an average head grade of 3.59 g/t (FY 2018 – 3.76 g/t).
  - In Q1 2019, Turmalina processed 65,000 tonnes (Q1 2018 – 81,000 tonnes) at an average head grade of 3.96 g/t (Q1 2018 – 3.57 g/t).
  - Pilar processed 95,000 tonnes in Q1 2019 (Q1 2018 – 81,000 tonnes) at an average head grade of 3.34 g/t (Q1 2018 – 4.13 g/t).
- Pilar production decreased 7% to 8,840 ounces in Q1 2019 compared to 9,553 ounces in Q1 2018. Turmalina produced 7,525 ounces in Q1 2019, compared to 8,442 ounces in Q1 2018.

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<sup>1</sup> This is a non-GAAP financial performance measures with no standard definition under IFRS.  
MD&A – Quarter Ended March 31, 2019

## REVIEW OF OPERATING AND FINANCIAL RESULTS

### Turmalina Gold Mine Complex

#### Turmalina Quarterly Production

(\$ thousands, except where indicated)	Q1 2019	Q4 2018	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017
Tonnes of ore processed ('000)	65,000	75,000	88,000	77,000	81,000	95,000	107,000	112,000
Average head grade (g/t) <sup>1</sup>	3.96	3.56	3.62	3.46	3.57	4.41	3.10	3.37
Average recovery rate (%)	90%	90%	90%	91%	91%	91%	91%	91%
Gold (oz.)								
Produced	7,525	7,743	9,252	7,824	8,442	12,245	9,616	10,870
Sold	8,006	8,206	8,609	7,610	8,414	12,142	9,082	10,815
Cash operating cost (per oz. sold) <sup>2</sup>	\$ 868	\$ 787	\$ 722	\$ 761	\$ 749	\$ 646	\$ 749	\$ 695
All-in sustaining cost (per oz. sold) <sup>2</sup>	\$ 1,347	\$ 1,298	\$ 1,181	\$ 1,316	\$ 1,238	\$ 784	\$ 993	\$ 956
Cash operating cost (R\$ per tonne) <sup>2</sup>	\$ 264	\$ 328	\$ 279	\$ 184	\$ 252	\$ 268	\$ 201	\$ 216

<sup>1</sup> The 'average head grade' represents the recalculated head-grade milled.

<sup>2</sup> Cash operating costs, average realized cost and All-in sustaining costs are a non-IFRS financial performance measure with no standard definition under IFRS. Refer to the Non-IFRS Financial Performance Measures section of the MD&A.

During the first quarter of 2019, Turmalina produced 7,525 ounces of gold compared to 8,442 ounces in the corresponding 2018 period, a decrease of 11% or 917 ounces. The decrease in ounces produced was a result of a 20% decrease in the tonnes processed from 81,000 in Q1 2018 to 65,000 in Q1 2019, which was partial offset by an 11% increase in the average head grade (grams per ton) from 3.57 (g/t) in Q1 2018 to 3.96 (g/t) in Q1 2019. The cash operating cost per ounce sold for the first quarter of 2019 increased by 16%, or \$119 per ounce, as compared to the same period in 2018.

#### Turmalina Capital Expenditures

(\$ thousands)	Three months ended	
	March 31,	
	2019	2018
Sustaining capital <sup>1</sup>		
Primary development	\$ 3,161	\$ 3,512
Brownfield exploration	190	132
Mine-site sustaining	480	474
<b>Total sustaining capital<sup>1</sup></b>	<b>3,831</b>	<b>4,118</b>
<b>Total non-sustaining capital<sup>1</sup></b>	<b>141</b>	<b>392</b>
<b>Total capital expenditures</b>	<b>\$ 3,972</b>	<b>\$ 4,510</b>

<sup>1</sup> Sustaining and non-sustaining capital are non-IFRS financial measures with no standard definition under IFRS. Refer to the Non-IFRS Financial Performance Measures section of the MD&A. Capital expenditures are included in our calculation of all-in sustaining costs and all-in costs.

(metres)	Three months ended	
	March 31,	
	2019	2018
Primary development	573	648
Secondary development	321	91
<b>Total development</b>	<b>894</b>	<b>739</b>
Definition drilling	459	334
Infill drilling	2,845	2,262
Exploration drilling	986	2,949
<b>Total definition, infill, and exploration drilling</b>	<b>4,290</b>	<b>5,545</b>

### *Mining*

Turmalina is an underground mine utilizing the sub-level stoping mining method with a combination of rockfill and paste fill, with some areas of the mine previously using mechanized cut and fill mining methods. Production in Turmalina has recently been below historical averages. The first quarter production was affected by ground conditions on Level 11 which the mine must contend with as it transitions to the new mining method. Lack of developed reserves has constrained mine flexibility. The development contractor Toniolo Busnello (“TBSA”) is developing the Orebody A ramp. Jaguar crews are developing the Orebody C ramp as well as ore development in both orebodies. The mine has successfully converted the work schedule from 3 to 4 shifts/day to increase productive time/day.

New production levels in both A and C orebodies are planned to go into production in late 2019 to provide increased production rates and flexibility with greater control on geotechnical conditions. By properly sequencing stoping, using pastefill and respecting the geotechnical conditions of the orebody mining will be more predictable and productive.

Recent exploration drilling in C Central has identified a third potential stoping area that could add production capability next year. Turmalina Proven and Probable Mineral Reserve tonnes increased by 74% and grade increased by 12% to Orebody A. 1,408 tonnes at 5.05 g/t containing 228,000 ounces of gold.

### *Processing*

Ore produced at Turmalina is transported to the adjacent CIP processing plant. The Turmalina plant consists of three ball mills, with primary grinding done at Mill #3, which was rebuilt and commissioned at the end of 2016, with an estimated installed capacity of 1,600 tonnes per day. Using Mill #3, Turmalina is able to achieve the entire throughput of the plant and lower operating costs through electricity consumption savings, compared to using Mills #1 and #2 in 2016. Mills #1 and #2 have been taken off-line and can be used to occasionally supplement the capacity of Mill #3 if required.

In Q1 2019 the Turmalina plant processed 65,000 tonnes at a grade of 3.96 g/t compared with 81,000 tonnes a year earlier at 3.57 g/t.

## Turmalina Free Cash Flow<sup>1</sup>

(\$ thousands, except where indicated)	Three months ended March 31,	
	2019	2018
<b>Turmalina Complex</b>		
Revenue	\$ 10,193	\$ 11,034
Less cash operating costs	6,952	6,302
Less sustaining capital expenditures	3,831	4,118
<b>Free Cash Flow</b>	<b>\$ (590)</b>	<b>\$ 614</b>

<sup>1</sup> This is a non-GAAP financial performance measure with no standard definition under IFRS. For further information, refer to the Non-IFRS Financial Performance Measures section of the MD&A.

The free cash flow for the three months ended March 31, 2019, decreased compared to the same period in 2018, primarily as a result of the decrease in ounces sold.

## Caeté Gold Mine Complex

### Caeté Complex Quarterly Production

The Caeté Mining Complex includes the Pilar Mine and the Caete Processing Plant. On March 22, 2018, the Roça Grande mine was placed on care and maintenance. Ore from Pilar is trucked a total distance of approximately 40 kilometres by road to the Caeté plant. The Caeté plant has a capacity of 2,200 tonnes per day and includes gravity, flotation and CIP processing.

(\$ thousands, except where indicated)	Q1 2019	Q4 2018	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017
Tonnes of ore processed (t)	95,000	103,000	87,000	94,000	93,000	95,000	106,000	104,000
Average head grade (g/t) <sup>1</sup>	3.34	3.25	4.40	4.03	3.93	3.33	3.62	2.97
Average recovery rate (%)	86%	87%	90%	90%	89%	89%	90%	90%
Gold (oz.)								
Produced	8,840	9,301	11,068	10,995	10,423	9,067	11,164	8,899
Sold	8,815	9,416	11,832	9,620	10,823	8,699	11,339	7,638
Cash operating cost (per oz. sold) <sup>2</sup>	\$ 871	\$ 803	\$ 557	\$ 683	\$ 841	\$ 883	\$ 856	\$ 1,087
All-in sustaining cost (per oz. sold) <sup>2</sup>	\$ 1,240	\$ 1,050	\$ 888	\$ 967	\$ 1,076	\$ 1,252	\$ 1,068	\$ 1,315
Cash operating cost (R\$ per tonne) <sup>2</sup>	\$ 200	\$ 280	\$ 299	\$ 171	\$ 317	\$ 256	\$ 290	\$ 257

### Caeté Complex Free Cash Flow<sup>1</sup>

(\$ thousands, except where indicated)	Three months ended March 31,	
	2019	2018
<b>Caeté Complex</b>		
Revenue	\$ 11,223	\$ 14,194
Less cash operating costs	7,676	9,097
Less sustaining capital expenditures	3,255	2,549
<b>Free Cash Flow</b>	<b>\$ 292</b>	<b>\$ 2,548</b>

<sup>1</sup> This is a non-GAAP financial performance measure with no standard definition under IFRS. For further information, refer to the Non-IFRS Financial Performance Measures section of the MD&A.



## Pilar Quarterly Production

(\$ thousands, except where indicated)	Q1 2019	Q4 2018	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017
Tonnes of ore processed (t)	95,000	103,000	87,000	94,000	81,000	81,000	88,000	85,000
Average head grade (g/t) <sup>1</sup>	3.34	3.25	4.40	4.03	4.13	3.53	3.77	3.16
Average recovery rate (%)	86%	87%	90%	90%	89%	89%	90%	90%
Gold (ozs)								
Produced	8,840	9,301	11,068	10,995	9,553	8,156	9,674	7,702
Sold	8,815	9,416	11,832	9,620	9,929	7,880	9,820	6,625
Cash operating cost (per oz sold) <sup>2</sup>	\$ 871	\$ 803	\$ 557	\$ 683	\$ 805	\$ 835	\$ 804	\$ 1,033
All-in sustaining cost (per oz sold) <sup>2</sup>	\$ 1,240	\$ 1,050	\$ 888	\$ 967	\$ 1,062	\$ 1,198	\$ 1,042	\$ 1,235
Cash operating cost (R\$ per tonne) <sup>2</sup>	\$ 200	\$ 280	\$ 299	\$ 171	\$ 320	\$ 264	\$ 284	\$ 259

<sup>1</sup> The 'average head grade' represents the recalculated head-grade milled.

<sup>2</sup> Cash operating costs, average realized cost and All-in sustaining costs are a non-IFRS financial performance measure with no standard definition under IFRS. Refer to the Non-IFRS Financial Performance Measures section of the MD&A.

During the first quarter of 2019, Pilar produced 8,840 ounces of gold compared to 9,553 ounces in Q1 2018, a decrease of 7% due to the reduction in the average head grade from 4.13 (g/t) in Q1 2018 to 3.34 (g/t) in Q1 2019, which was offset by a 17% increase in the tonnes processed. Pilar has been using a specialized development contractor since 2016 to advance primary development. As the primary ramp advances ahead, the amount of secondary ore development completed by the contractor is reducing. The cash operating cost per ounce sold for Q1 2019 increased 8% as compared to Q1 2018.

## Pilar Capital Expenditures

(\$ thousands, except where indicated)	Three months ended March 31,	
	2019	2018
Sustaining capital <sup>1</sup>		
Primary development	\$ 2,693	\$ 2,132
Exploration - Brownfield	51	176
Minesite sustaining	511	241
<b>Total sustaining capital<sup>1</sup></b>	<b>3,255</b>	<b>2,549</b>
<b>Total non-sustaining capital<sup>1</sup></b>	<b>48</b>	<b>98</b>
<b>Total capital expenditures</b>	<b>\$ 3,303</b>	<b>\$ 2,647</b>

<sup>1</sup>Sustaining and non-sustaining capital are non-gaap financial measures with no standard definition under IFRS. Refer to the Non-IFRS Financial Performance Measures section of the MD&A. Capital expenditures are included in our calculation of all-in sustaining costs and all-in costs.

(metres)	Three months ended March 31,	
	2019	2018
Primary development	588	422
Secondary development	310	356
<b>Total development</b>	<b>898</b>	<b>778</b>
Definition drilling	1,621	782
Infill drilling	721	2,332
Exploration drilling	-	83
<b>Total definition, infill, and exploration drilling</b>	<b>2,342</b>	<b>3,197</b>

## Mining

Based on the strong exploration drilling results and increased reserves and resources, primary and secondary development that had been suspended since 2014 was resumed at Pilar during 2016. A development contractor arrived on site in 2016 to accelerate the main ramp below Level 10 to open up additional resources. The contractor continued to assist with primary and secondary development at Pilar during 2019. With the main ramp approximately 2 mining levels below current mining activities, the operation is well positioned with flexibility in the mine plan.

## Processing

During Q1 the Caete plant processed 95,000 tonnes at a grade of 3.34 g/t compared to 81,000 tonnes at 4.13 g/t for the same period last year.

## Pilar Free Cash Flow<sup>1</sup>

(\$ thousands, except where indicated)	Three months ended	
	March 31,	
	2019	2018
<b>Pilar</b>		
Revenue	\$ 11,223	\$ 13,021
Less cash operating costs	7,676	7,997
Less sustaining capital expenditures	3,255	2,549
<b>Free Cash Flow</b>	<b>\$ 292</b>	<b>\$ 2,475</b>

<sup>1</sup> This is a non-GAAP financial performance measure with no standard definition under IFRS. For further information, refer to the Non-IFRS Financial Performance Measures section of the MD&A”.

The free cash flow for the three ended March 31, 2019, decreased compared to the same period in 2018, primarily as a result of the decrease in ounces sold, from 8.815 ounces sold in Q1 2019 compared to 9,929 ounces sold in Q1 2018. The cash operating cost increased to \$871 per ounce of gold sold for Q1 2019, compared to \$805 per ounce sold during Q1 2018

## CONSOLIDATED FINANCIAL RESULTS

### Quarterly Financial Review<sup>1</sup>

	Q1 2019	Q4 2018	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017
Revenue	\$ 21,416	\$ 21,377	\$ 25,426	\$ 22,888	\$ 25,228	\$ 26,626	\$ 26,062	\$ 23,352
Cost of sales (excluding depreciation) <sup>2</sup>	(14,630)	(14,014)	(12,809)	(12,356)	(15,399)	(15,526)	(16,116)	(15,990)
Gross profit (excluding depreciation) <sup>2</sup>	6,786	7,363	12,617	10,532	9,829	11,100	9,946	7,362
Net income (loss)	(1,839)	(15,065)	2,208	(1,334)	(1,781)	16,034	(7,664)	(3,323)
Cash flows from operating activities	2,523	5,180	6,566	4,079	4,979	5,387	7,509	216
Total assets	183,352	178,667	178,560	177,262	178,779	183,679	177,806	182,399
Total liabilities	81,205	74,811	60,145	61,471	61,783	65,293	75,591	72,671
Working Capital	(8,328)	(2,411)	1,590	4,025	10,978	14,132	23,171	9,561
Total Debt	14,885	9,743	8,070	9,049	14,908	17,525	19,997	24,299
Average realized gold price (per oz.) <sup>2</sup>	\$ 1,273	\$ 1,213	\$ 1,244	\$ 1,328	\$ 1,311	\$ 1,278	\$ 1,276	\$ 1,266
Cash operating cost (per oz. sold) <sup>2</sup>	\$ 870	\$ 795	\$ 627	\$ 717	\$ 800	\$ 745	\$ 809	\$ 857

<sup>1</sup> Sum of all the quarters may not add up to the annual total due to rounding.

<sup>2</sup> Average realized gold price, cost of sales (excluding depreciation), gross profit (excluding depreciation) and cash operating costs are all non-IFRS financial performance measures with no standard definition under IFRS. For further information, refer to the Non-IFRS Financial Performance Measures section of the MD&A.

The relative strength in the global gold market positively impacted the Company's revenue in Q1 2019. Current assets decreased \$0.8 million as at March 31, 2019, compared to December 31, 2018, primarily as a result of the decrease in inventory. Current liabilities increased \$5.2 million as at March 31, 2019, compared to December 31, 2018, due to the senior secured loan facility ("Auramet loan facility") agreement with lender Auramet International LLC totaling \$7.9 million to fund working capital, executed on March 15, 2019. Non-current liabilities decreased \$1.2 million as at March 31, 2019, compared to December 31, 2018, resulting from increases in Right-of-use lease liabilities.

### Revenue

(\$ thousands, except where indicated)	Three months ended		
	March 31,		
	2019	2018	Change
Revenue	\$ 21,416	\$ 25,228	(15%)
Ounces sold	16,821	19,237	(13%)
Average realized gold price <sup>1</sup>	\$ 1,273	\$ 1,311	(3%)

<sup>1</sup> Average realized gold price is a non-IFRS financial performance measure with no standard definition under IFRS. For further information, refer to the Non-IFRS Financial Performance Measures section of the MD&A.

Revenue for the three months ended March 31, 2019 decreased 15%, compared to the same period in 2018, primarily as a result of a 13% decrease in ounces sold. The market price of gold is a primary driver of our profitability and our ability to generate free cash flow. During the three months ended March 31, 2019, the market price of gold (London PM Fix) traded in a range of \$1,279–\$1,344, averaged \$1,304 per ounce, and closed at \$1,295 per ounce on March 31, 2019. The average market price during the first quarter of 2019 was lower compared to the average market price of \$1,311 per ounce for the first quarter of 2018.

## Production

A total of 160,000 tonnes were processed in Q1 2019 (Q1 2018 – 174,000 tonnes) at an average head grade of 3.59 g/t (Q1 2018 – 3.76 g/t), a 5% decrease in average head grade compared to the same period in 2018.

### Consolidated Production Costs

(\$ thousands, except where indicated)	Three months ended		
	March 31,		
	2019	2018	Change
Direct mining and processing cost	\$ 13,685	\$ 14,459	(5%)
Mining	9,181	9,061	1%
Processing	4,504	5,398	(17%)
Royalties, production taxes and others	945	940	1%
Royalty expense and CFEM taxes	938	926	1%
NRV adjustment and others	7	14	(50%)
<b>Total operating expenses</b>	<b>\$ 14,630</b>	<b>\$ 15,399</b>	<b>(5%)</b>
Depreciation	3,610	4,885	(26%)
<b>Total cost of sales</b>	<b>\$ 18,240</b>	<b>\$ 20,284</b>	<b>(10%)</b>

<sup>1</sup> Cash operating costs is a non-IFRS financial performance measure with no standard definition under IFRS. Refer to the Non-IFRS Financial Performance Measures section of the MD&A.

Total operating expenses decreased 5% from \$15.4 million in the three months ended March 31, 2018, to \$14.6 million in 2019, primarily as a result of the reduction in the ounces sold from 19,237 ounces in Q1 2018, compared to 16,821 ounces in the same period of 2019. Also, the sharp devaluation of the Brazilian Real versus the US dollar, with the average exchange rate during Q1 2019 being R\$3.77 per US dollar compared to R\$3.24 per US dollar in Q1 2018.

## Operating Expenses

(\$ thousands)	Three months ended		
	March 31,		
	2019	2018	Change
Changes in other provisions and VAT taxes	\$ 882	\$ 636	39%
General and administrative expenses	2,168	2,303	(6%)
Exploration and evaluation costs	41	326	(87%)
Care & maintenance costs (Paciência and Roça Grande mines)	302	928	(67%)
Stock-based compensation	130	391	(67%)
Amortization	34	43	(21%)
Other operating expenses	786	617	27%
<b>Total operating expenses</b>	<b>\$ 4,343</b>	<b>\$ 5,244</b>	<b>(17%)</b>

## Care and Maintenance Costs

### Paciência Gold Mine Complex

The Paciência Gold Mine Complex remained on care and maintenance during the first quarter of 2019. No gold has been produced since the third quarter of 2012. No underground development or drilling work was carried out by the Company at Paciência during Q1 2019. The complex has been secured and the facilities are preserved and patrolled. A limited maintenance staff turns on the mills and equipment on a monthly basis to maintain the plant in working order. Paciência's carrying amount was written down to nil.

### Roça Grande Gold Mine

Due to high operating costs, the Roça Grande Mine was placed on care and maintenance on March 22, 2018. No underground development or drilling work was carried out by the Company at Roça Grande during Q1 2019. Roça Grande's carrying amount was written down to nil.

## General and Administration Expenses

The general and administration ("G&A") expenses exclude mine-site administrative costs that are charged directly to operations and include legal, accounting, costs to maintain offices and personnel in Belo Horizonte, Brazil and Toronto, Canada, and other corporate costs associated with being a publicly-traded company.

(\$ thousands)	Three months ended		
	March 31,		
	2019	2018	Change
Directors' fees	\$ 68	\$ 122	(44%)
Audit related and insurance	291	200	46%
Corporate office (Toronto)	457	609	(25%)
Belo Horizonte office	1,352	1,372	(1%)
<b>Total G&amp;A expenses</b>	<b>\$ 2,168</b>	<b>\$ 2,303</b>	<b>(6%)</b>

For the three months ended March 31, 2019, the total G&A expenses decreased 6% compared to the same period in 2018. Costs associated with the Belo Horizonte office were 1% lower in the three months ended in March 31, 2019. Costs for the corporate office in Toronto were 25% lower for the three months of 2019 compared to the same period of 2018, due to cost cutting measures.

## Changes in Other Provisions and VAT Taxes

(\$ thousands)	Three months ended		
	March 31,		
	2019	2018	Change
Changes to legal provisions	\$ 999	\$ 513	95%
Changes to recoverable taxes provision	(117)	123	(195%)
<b>Changes to legal provisions and recoverable VAT</b>	<b>\$ 882</b>	<b>\$ 636</b>	<b>39%</b>

## Legal Provisions

As at March 31, 2019, there were 360 employee-initiated active lawsuits (March 31, 2018 – 422) against the Company, largely related to disputed overtime, break/interval and time at disposal. Based on Management's assessment of the likelihood of loss related to 282 lawsuits (March 31, 2018 – 299), the Company has recorded approximately \$10 million as labour legal provisions, with \$4.6 million classified as a current liability as at March 31, 2019 (March 31, 2018 – \$9.1 million and \$4.6 million, respectively).

During Q1 2019, 10 new lawsuits were initiated. The Company paid approximately \$372,000 in appeal deposits and escrow payments, \$323,000 in settlement installments, and \$117,000 for other costs such as social security, income tax, legal fees and expert fees. The total amount spent in Q1 2019 was \$812,000 compared to \$953,000 in Q1 2018.

## Recoverable Taxes Provision

As at March 31, 2019, gross recoverable taxes that are primarily denominated in Brazilian Reais amounted to \$22 million (December 31, 2018 – \$23.2 million). As at March 31, 2019, the provision for recoverable taxes was approximately \$4 million (December 31, 2018 – \$4.1 million). Consequently, the net book value of recoverable taxes as at March 31, 2019 was \$18 million (December 31, 2018 – \$19.1 million).

Certain taxes paid in Brazil on consumables and property, plant and equipment generate tax credits through various mechanisms. The Company is currently working on several initiatives to ensure optimum utilization of those tax credits, which include assessment of the tax credits for offset against taxes otherwise payable and restitution in cash.

The Company has recorded a provision against its recoverable taxes in Brazil given the limited methods available to recover such taxes and the length of time it will take to recover such taxes. The provision reduces the net carrying amount of value added taxes and other taxes to their estimated recoverable value.

The Company continues to pursue approval of Federal VAT input tax credits with respect to the years 2008 through 2011 for its MSOL operating subsidiary. MSOL is the operating subsidiary for the Turmalina complex comprising the Turmalina mine and the Caeté complex comprising the Pilar and Roça Grande mines. The Company received a cash refund in the amount of R\$3.5 million (approximately \$1.0 million) in March 2016, related to MSOL. In July 2016, the Company initiated a lawsuit to obtain a court order to force the tax authority to review the Company's remaining tax credits for MSOL with respect to the years 2008 to 2011, amounting to R\$36.0 million (approximately \$11.0 million). A court order was granted and by November 2016, the Tax Authority reviewed the claim and granted a favourable decision to partially recognize the amount claimed, deeming R\$1.5 million (approximately \$0.5 million) due to the Company. The Company collected this amount and proceeded to appeal the Tax Authority's review result in pursuit of further tax credit refund recognition on the remainder of this claim. At March 31, 2019, the Company is awaiting the Tax Authority's review result of its appeal to receive the remainder.

ICMS is a type of value added tax which can either be sold to other companies (usually at a discount rate of 15% – 30%) or be used to purchase specified machinery and equipment, as subject to approval by government authority. The ICMS credits can only be realized in the state where they were generated; in the case of Jaguar, this is in the state of Minas Gerais, Brazil. In the three months ended March 31, 2019, the Company sold R\$4.3 million (approximately \$1.1 million) in ICMS export tax credits. The Company received approval from the state tax authority to sell an additional R\$8.9 million (approximately \$2.3 million) in ICMS export tax credits. As at March 31, 2019, the Company held R\$9.5 million (approximately \$2.4 million) in ICMS export tax credits authorized for sale but not yet sold (December 31, 2018 – R\$5 million, approximately \$1.3 million).

## Impairment

The Turmalina, Caeté, and Paciência projects are each cash generating units ("CGUs") which include property, plant and equipment, mineral rights, deferred exploration costs, and asset retirement obligations net of amortization. The CGUs also include mineral exploration project assets relating to properties not in production such as mineral rights and deferred exploration costs. A CGU is generally an individual operating mine or development project.

For the three months ended March 31, 2019, there were no indicators of impairment or reversal of past impairment charges.

## Non-Operating Expenses (Recoveries)

(\$ thousands)	Three months ended		
	March 31,		
	2019	2018	Change
Foreign Exchange (Gain) Loss	\$ (133)	\$ 290	(146%)
Financial instruments loss	45	102	(56%)
Finance costs	848	776	9%
Other non-operating (recoveries) expenses	(88)	82	(207%)
<b>Non-operating expenses</b>	<b>\$ 672</b>	<b>\$ 1,250</b>	<b>(46%)</b>

During the three months ended March 31, 2019, finance costs mainly represent interest on debt and accretion expense.

### Auramet Advance

On May 9th, 2018, the Company entered into an agreement with Auramet International LLC for an unsecured customer advance (“Auramet advance”) in the form of a gold purchase and sale agreement whereby Auramet extended up to \$7 million in minimum prepayment amounts each of \$1 million to Jaguar. As part of the agreement, the Company is required to maintain a \$2 million margin deposit with Auramet. Funds advanced under the Auramet advance are subject to interest at 1-month LIBOR + 7.5%, and hold a covenant to maintain a minimum net cash balance of \$5 million, including a margin deposit. The Auramet advance requires settlement in full at maturity, and on November 9th, 2018, the Company restructured its customer advance contract with Auramet International LLC to extend its maturity from May 31, 2019 to October 31, 2019.

On May 9th, 2018, the Company also agreed to a European style gold call options agreement with Auramet whereby Auramet holds an option to purchase up to 7,000 ounces of gold (1,000 ounces per month) at a strike price of US\$1,450 per ounce on expiration dates maturing monthly between May 2019 and November 2019. As at and for three months ended March 31, 2019, the call options remained outstanding.

### Auramet loan facility

On March 15, 2019, the Company entered into a senior secured loan facility (“Auramet loan facility”) agreement with lender Auramet International LLC totaling \$7.9 million to fund working capital. The Auramet loan facility was provided by security agreements comprising the Company’s and MSOL’s present and future assets, the shares of MSOL, and a loan guarantee by MSOL. As per the agreement, interest shall be prepaid and non-reimbursable in the amount of \$350,000, and principal is due at maturity on July 15, 2019. The Auramet loan facility holds a covenant which requires the Company to maintain a minimum net cash balance of \$3 million. To obtain the Auramet loan facility, the Company incurred transaction costs, totaling \$79,000, as an upfront fee due to Auramet and awarded Auramet a set of European style gold call options whereby Auramet holds an option to purchase up to 5,000 ounces of gold at a strike price of US\$1,350 per ounce, expiring January 2020. As at and for the three months ended March 31, 2019, these options remained outstanding.

The Auramet loan facility is a financial liability initially measured at fair value and subsequently measured at amortized cost using the effective interest method.

## Taxes

### Brazilian Taxes

Brazilian tax regulation involves three jurisdictions and tax collection levels: Federal, State and Municipal. The main taxes levied are: corporate income tax with companies generally subject to income tax at a rate of 25%, social contribution tax on the net profit at a current rate of 9%, and VAT taxes at a rate of 9.25% for PIS/CONFINS and 12–18% for ICMS.

PIS and COFINS are Federal taxes imposed monthly on gross revenue earned by legal entities. The calculation method is, in the Company's case, non-cumulative, under which PIS and COFINS are levied on gross revenue at 1.65% and 7.6%, respectively, with deductions of input tax credits for expenses strictly connected to the company's business and prescribed by the regulating laws. The export of goods and services are exempt provided funds effectively enter the country. PIS and COFINS are due on importations of goods and services from abroad (i.e. PIS-Import and CO-FINS-Import).

In June 2018, the Company decided to enter into an Administrative Agreement with the Minas Gerais State Tax Authority in order to pay an historical debt (2008 – 2014) of R\$8.3 million (approximately \$2.2 million) in ICMS taxes. The agreement was ratified by the parties in July 2018. This debt has its origin in ICMS levied on electricity ("Demanda Contratada") in which the Superior Courts have been ruled in the taxpayer's favour. The Company had filed an appeal against the levy of the ICMS and the likelihood of the Company losing the appeal was assessed as remote. Although the Company would likely win the judicial lawsuit, the Company took the decision to pay the mentioned debt in instalments, using its tax credits (non-cash), in order to facilitate and accelerate its ICMS tax credits recovery as cash.

In September 2018, the Company received a social security tax (INSS – Instituto Nacional do Seguro Social) assessment from Brazil's Federal Tax Authority with respect to fiscal years 2014 and 2015, challenging the social security tax rate basis applied by the Company, which as per Brazilian tax legislation is variable based on the Company's historical work accident rate. The tax assessment claimed entitlement to a total additional R\$1.9 million (approximately \$0.5 million) due from the Company. Upon review, the Company and its legal counsel assessed its probability of loss as more likely than not and entered a settlement agreement with the Federal Tax Authority to reduce its exposure to fines and interest and extend its cash flow impact, agreeing to pay a total of R\$1.5 million (approximately \$0.4 million), in cash, over 60 (sixty) equal monthly installments starting in October 2018.

#### Government Royalty

In July 2018, an executive decree was published increasing the Brazilian royalty that is levied on gold sales, *Compensação Financeira pela Exploração de Recursos Minerais* ("CFEM"), from 1% to 1.5% effective November 1, 2018. The legislation also outlines a change in the methodology for calculating the royalty from being calculated on gross revenue, less refining charges and insurance, as well as any applicable sales taxes, to being calculated on gross revenue only.



## REVIEW OF FINANCIAL CONDITION

### Outstanding Debt, Liquidity and Cash Flow

Total debt outstanding as at March 31, 2019, was \$21.9 million (of which \$7.0 million was the unsecured customer advance with Auramet International LLC - "Auramet advance"), compared to \$15.3 million as at December 31, 2018 (of which \$7.0 million was the unsecured customer advance with Auramet International LLC - "Auramet advance").

As at March 31, 2019, the Company had a negative working capital of \$8.3 million as at March 31, 2019 (\$2.4 million negative as at December 31, 2018). Working capital as at March 31, 2019, includes \$6.6 million in loans from Brazilian banks (\$7.3 million as at December 31, 2018), which mature every six months and are expected to continue to be rolled forward.

	<b>March 31, 2019</b>	December 31, 2018
Cash and cash equivalents	\$ 7,867	\$ 6,275
Non-cash working capital		
Other current assets:		
Restricted cash	4,857	5,262
Inventory	10,934	12,136
Recoverable taxes	9,702	10,421
Other accounts receivable	599	566
Prepaid expenses and advances	2,043	1,920
Derivatives	144	331
Current liabilities:		
Accounts payable and accrued liabilities	(15,313)	(17,506)
Notes payable	(14,656)	(8,119)
Right-of-use lease liabilities	(1,500)	(1,381)
Customer advances	(7,000)	(7,000)
Other taxes payable	(499)	(503)
Reclamation provisions	(311)	(335)
Contingent liabilities	(4,586)	(3,871)
Derivative liabilities	(609)	(607)
<b>Working capital<sup>1</sup></b>	<b>\$ (8,328)</b>	<b>\$ (2,411)</b>

<sup>1</sup> This is a non-GAAP financial performance measure with no standard definition under IFRS.

The use of funds during the three months ended March 31, 2019, is outlined below:

(\$ thousands)	Three months ended	
	March 31,	
	2019	2018
<b>Cash generated from operating activities</b>	\$ 2,523	\$ 4,979
<b>Investing activities</b>		
Capital expenditures on equipment and brownfield exploration		
Mineral exploration projects	\$ -	\$ (73)
Purchase of property, plant and equipment	(6,873)	(6,825)
Proceeds from disposition of property, plant and equipment	4	132
<b>Cash used in investing activities</b>	\$ (6,869)	\$ (6,766)
<b>Financing activities</b>		
Cash received upon issuance of debt	\$ 7,340	\$ -
Repayment of debt	(1,257)	(2,744)
Interest paid	(220)	(256)
<b>Cash provided by (used in) financing activities</b>	\$ 5,863	\$ (3,000)
Effect of exchange rate changes on cash balances	75	503
<b>Net increase (decrease) in cash and equivalents</b>	\$ 1,592	\$ (4,284)

The \$3.2 million decrease in operating cash flows for Q1 2019 compared to Q1 2018 is primarily due to the decrease in ounces sold. The cash received upon issuance of debt, refers to the senior secured loan facility (“Auramet loan facility”) agreement with lender Auramet International LLC totaling \$7.9 million to fund working capital, executed on March 15, 2019.

The Company is reliant on both external and internal sources of cash for its current short term and long term working capital requirements and to fund its exploration programs and business development activities. Without additional financing or other satisfactory arrangements by no later than the second half of 2019, the Company’s financial resources may not be sufficient to adequately maintain and/or further develop its projects. The Company’s current liquidity and capital resources raise doubt about the Company’s ability to continue as a going concern beyond 2019 without an inflow of new funds during the year. See Note 1 to the Company’s audited annual financial statements for the three months ended March 31, 2019. The Company’s ability to continue as a going concern is dependent upon the ability of the Company to obtain necessary financing or other satisfactory arrangements to fund its operating and capital expenses until business circumstances improve so as to allow the Company to be self-sufficient and internally funded. The Company’s ability to continue its exploration, development and production activities is dependent on management’s ability to secure additional financing in the future, which may be completed by way of traditional equity or debt financings or in a number of alternative ways including, but not limited to, a combination of: new strategic partnerships; joint venture arrangements; project-level or subsidiary-level third-party financings; royalty or streaming financing; the sale of non-core assets; a convertible debt financing; a rights offering; and/or other capital market alternatives. Management is pursuing additional financial sources, and while the Company’s management has been successful in obtaining financing for the Company in the past, there can be no assurance it will be able to do so in the future or that these sources of funding or initiatives will be available for the Company or that they will be available on terms which are acceptable to the Company.

## Contractual Obligations and Commitments

The Company's contractual obligations as at March 31, 2019, are summarized as follows:

As at March 31, 2019	Less than 1 year	1 - 3 years	3 - 5 years	More than 5 years	Total
<b>Financial Liabilities</b>					
Accounts payable and accrued liabilities <sup>1</sup>	\$ 15,313	\$ -	\$ -	\$ -	\$ 15,313
Other Taxes Payable					
ICMS Settlement Due	441	882	294	-	1,617
INSS	86	173	130	-	389
Withholding taxes	-	8,170	-	-	8,170
Notes payable					
Principal					
Bank indebtedness <sup>2</sup>	6,627	-	-	-	6,627
Vale note	875	250	-	-	1,125
Auramet loan facility	7,172	-	-	-	7,172
Interest	245	31	-	-	276
Right-of-use lease liabilities	1,246	1,491	-	-	2,737
Reclamation provisions <sup>3</sup>	1,952	5,486	4,920	6,663	19,021
Contingent liabilities	4,586	7,191	-	-	11,777
Derivatives liabilities	609	-	-	-	609
Other liabilities	-	3,396	-	-	3,396
<b>Total financial liabilities</b>	<b>\$ 39,152</b>	<b>\$ 27,070</b>	<b>\$ 5,344</b>	<b>\$ 6,663</b>	<b>\$ 78,229</b>
<b>Other Commitments</b>					
Customer advances					
Principal					
Auramet advance	\$ 7,000	\$ -	\$ -	\$ -	\$ 7,000
Interest	483	-	-	-	483
Suppliers' agreements <sup>4</sup>	431	-	-	-	431
<b>Total other commitments</b>	<b>\$ 7,914</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 7,914</b>
<b>Total</b>	<b>\$ 47,066</b>	<b>\$ 27,070</b>	<b>\$ 5,344</b>	<b>\$ 6,663</b>	<b>\$ 86,143</b>

<sup>1</sup> Amounts payable as at March 31, 2019.

<sup>2</sup> Bank indebtedness represents the principal on Brazilian short-term bank loans which are renewed in 180 day periods.

<sup>3</sup> Reclamation provisions - amounts presented in the table represent the undiscounted uninflated future payments for the expected cost of reclamation.

<sup>4</sup> Purchase obligations for supplies and consumables - includes commitments related to new purchase obligations to secure a supply of cyanide, reagents, mill balls and other spares. The Company has the contractual right to cancel the mine operation contracts with 30 days advance notice. The amount included in the commitments table represents the contractual amount due within 30 days.

## CAPITAL STRUCTURE

The capital structure of the Company as at March 31, 2019, is outlined below:

All amounts in \$ thousands, except number of common shares		As at March 31, 2019
Bank indebtedness	\$	6,627
Leasing		2,467
Vale note		1,086
Auramet loan		7,172
Customer advances		7,000
<b>Total debt</b>	<b>\$</b>	<b>24,352</b>
Less: cash and cash equivalents		(7,867)
<b>Total net debt<sup>1</sup></b>	<b>\$</b>	<b>16,485</b>
Number of common shares outstanding		328.5 million

<sup>1</sup> Net debt is a Non-IFRS Performance Measure and is defined as total indebtedness excluding unamortized transaction costs and premiums or discounts associated with debt, less cash and cash equivalents. Net debt provides a measure of indebtedness in excess of the current cash available. The Company reduces gross indebtedness by cash and cash equivalents on the basis that they could be used to pay down debt.

## OFF-BALANCE SHEET ITEMS

The Company does not have any off-balance sheet investment or debt arrangements.

## RELATED PARTY TRANSACTIONS

The Company incurred legal fees from Azevedo Sette Advogados (“ASA”), a law firm where Luis Miraglia, a director of Jaguar is a partner. Fees paid to ASA are recorded at the exchange amount, representing the amount agreed to by the parties and included in general and administrative expenses in the interim condensed consolidated statements of operations and comprehensive loss. Legal fees paid to ASA for the three months ended March 31, 2019 were \$19,000 (three months ended March 31, 2018 – \$44,000).

During the three months ended March 31, 2019, the Company also engaged advisory services from John Ellis, a director of Jaguar. Fees paid to Mr. Ellis are recorded in general and administrative expenses in the interim condensed consolidated statements of operations and comprehensive loss and were \$30,000 for the three months ended March 31, 2019 (three months ended March 31, 2018 – \$nil).

## DEVELOPMENT AND EXPLORATION PROJECTS

### Development Project – Gurupi

#### Avanco – Gurupi Project Earn-In Agreement

On October 4, 2016, the Company announced that it entered into an earn-in agreement with Avanco Resources Limited (“Avanco”), pursuant to which Avanco may earn up to a 100% interest in the Gurupi Project. On September 17, 2018, Jaguar and Avanco agreed to a revised, accelerated earn-in agreement with Avanco, pursuant to which Avanco will earn up to a 100% ownership interest in the Gurupi Project after meeting some short-term milestones and making a series of payments to Jaguar.

## Main Terms of the Revised Accelerated Earn-in Agreement

Upon the satisfactory completion of certain closing conditions, the agreement provides Avanco with the right to acquire 100% of Jaguar's interest in the Gurupi Project by paying to Jaguar an aggregate cash payment of \$4 million in two installments of \$2 million each (\$2 million, due immediately upon signature and \$2 million due immediately upon transfer of ownership) and committing to a net smelter royalty due to Jaguar. Jaguar received an initial aggregate cash payment of \$4 million, in two installments of \$2 million each in September and October 2018. The Company expects to collect the additional \$5 million from Avanco in a series of 10 instalments of \$500,000 during fiscal year 2019, starting in the month in which Avanco receives "clear title and access" to the project.

Within 24 months of the initial \$4 million payment, Avanco will arrange to have published an Australian Joint Ore Reserve Committee (JORC) code compliant technical report regarding the Project with mineral reserves in excess of 500,000 ounces of gold. Any delay in this milestone will result in a project delay fee payable to Jaguar of \$250,000 per nine months of delayed period. Within 60 months of the initial \$4 million payment, Avanco will aim to commission the Gurupi mine and plant. Any delay in this commissioning milestone will result in a separate project delay fee payable to Jaguar of \$250,000 per nine months of delayed period.

Consistent with the original earn-in agreement, Jaguar will retain a life of mine Net Smelter Return ("NSR") royalty ("Royalty") from production at Gurupi. The royalty will be 1% NSR on the first 500,000 ounces of gold or gold ounce equivalents sold; 2% NSR on sales from 500,001 to 1,500,000 ounces of gold or gold ounce equivalents; and 1% NSR on gold sales exceeding 1,500,000 ounces of gold or gold ounce equivalents.

## **Greenfield Exploration**

Jaguar currently holds approximately 64,000 hectares of mineral rights in Brazil. New mining legislation in Brazil has been tabled and the outcome of any mining law reform is, as of yet, unknown. The Company is currently reviewing its greater tenement portfolio with the aim of highlighting opportunities to unlock and leverage unrealized value that can be attributed to a strategic portfolio of advanced, partially tested or untested exploration targets in these areas. This review will inform discussions on future exploration or divestment decisions for these areas. Holding costs of the assets which are considered strategic remain minimal.

Apart from properties in relatively close proximity to the existing mining operations, the only significant greenfield asset within the exploration portfolio is the Pedra Branca target where good grade surface expressions were identified by mapping and channel samples and have led to some 8,000 metres of exploration drilling to date. Due to prior financial constraints, this prospect has remained dormant but offers opportunity for further exploration should funds be available.

## **Pedra Branca Project**

The Pedra Branca Project is located in the State of Ceará in northeastern Brazil and is currently comprised of 24 exploration licences, totalling 38,926 hectares covering a 38-kilometre section of a regional shear zone. Final exploration reports and a Preliminary Economic Analysis ("PEA") have been delivered to the National Department of Mineral Production (DNPM) for three of these licences. The concessions are located in and around municipal areas with good infrastructure. The mineralized structures are open along strike with potential for significant gold mineralization.

The Pedra Branca Project is 100% owned by Jaguar. Based on the acquisition agreement of the project entered into with Glencore Xstrata plc. ("Glencore"), Glencore holds rights to a NSR of 1% on future gold production and rights of first refusal on any Base Metal Dominant Deposit (as defined in the amendment) discovered which, if exercised, would allow Glencore to hold 70% of equity in a newly formed legal entity to hold such rights upon payment of 300% of the Company's exploration expenditures incurred exclusively on the relevant Base Metal Dominant Area of the property.

## QUALIFIED PERSON

Scientific and technical information contained in this MD&A have been reviewed and approved by Jonathan Victor Hill, BSc (Hons) (Economic Geology - UCT), Senior Expert Advisor Geology and Exploration to the Jaguar Mining Management Committee, who is also an employee of Jaguar Mining Inc., and is a “qualified person” as defined by National Instrument 43-101 - *Standards of Disclosure for Mineral Projects* (“NI 43-101”).

## OUTSTANDING SHARE DATA

The following are the issued and outstanding common shares and numbers of shares issuable under share-based compensation and warrants:

	<b>As at May 14, 2019</b>
Issued and outstanding common shares	328,505,675
Stock options	2,817,148
Deferred share units	5,670,768
<b>Total</b>	<b>336,993,591</b>

## NON-IFRS PERFORMANCE MEASURES

The Company has included the following non-IFRS performance measures in this document: cash operating costs per tonne of ore processed, cash operating costs per ounce of gold sold, all-in sustaining costs per ounce of gold sold, cash operating margin per ounce of gold sold, all-in sustaining margin per ounce sold, adjusted operating cash flow, free cash flow, earnings before tax, depreciation and amortization (“EBITDA”), Working Capital, and adjusted EBITDA. These non-IFRS performance measures do not have any standardized meaning prescribed by IFRS and, therefore, may not be comparable to similar measures presented by other companies.

The Company believes that, in addition to conventional measures prepared in accordance with IFRS, certain investors use this information to evaluate the Company’s performance. Accordingly, they are intended to provide additional information and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS. More specifically, Management believes that these figures are a useful indicator to investors and management of a mine’s performance as they provide: (i) a measure of the mine’s cash margin per ounce, by comparison of the cash operating costs per ounce to the price of gold; (ii) the trend in costs as the mine matures; and (iii) an internal benchmark of performance to allow for comparison against other mines. The definitions of these performance measures and reconciliation of the non-IFRS measures to reported IFRS measures are outlined below.

## Reconciliation of Cash Operating Costs, All-In Sustaining Costs and All-In Costs per Ounce Sold

(\$ thousands, except where indicated)	Three months ended	
	March 31,	
	2019	2018
Operating costs (per note 20 of the consolidated FS)	\$ 14,630	\$ 15,399
Adjusted operating expenses	14,630	15,399
General & administration expenses	2,168	2,303
Corporate stock-based compensation	130	391
Sustaining capital expenditures	7,086	6,667
All-in sustaining cash costs	24,014	24,760
Reclamation - accretion (operating sites)	4	39
<b>All-in sustaining costs</b>	<b>\$ 24,018</b>	<b>\$ 24,799</b>
Non-sustaining capital expenditures	189	493
Exploration and evaluation costs (greenfield)	41	326
Reclamation - accretion (non-operating sites)	18	26
Care and maintenance (non-operating sites)	302	928
<b>All-in costs</b>	<b>\$ 24,568</b>	<b>\$ 26,572</b>
Ounces of gold sold	16,821	19,237
<b>Cash operating costs per ounce sold</b>	<b>\$ 870</b>	<b>\$ 800</b>
<b>All-in sustaining costs per ounce sold</b>	<b>\$ 1,428</b>	<b>\$ 1,289</b>
<b>All-in costs per ounce sold</b>	<b>\$ 1,461</b>	<b>\$ 1,381</b>
<b>Average realized gold price</b>	<b>\$ 1,273</b>	<b>\$ 1,311</b>
<b>Cash operating margin per ounce sold</b>	<b>\$ 403</b>	<b>\$ 511</b>
<b>All-in sustaining margin per ounce sold</b>	<b>\$ (155)</b>	<b>\$ 22</b>

## Reconciliation of Cash Operating Costs, All-In Sustaining Costs per Ounce Sold by Mine Complex/Site

(\$ thousands, except where indicated)	Three months ended	
	March 31,	
	2019	2018
<b>Turmalina Complex</b>		
Operating costs	\$ 6,952	\$ 6,302
Sustaining capital expenditures	3,831	4,118
<b>All-in sustaining costs<sup>1</sup></b>	<b>\$ 10,783</b>	<b>\$ 10,420</b>
Ounces of gold sold	8,006	8,414
<b>Cash operating costs per ounce sold<sup>1</sup></b>	<b>\$ 868</b>	<b>\$ 749</b>
<b>All-in sustaining cost per ounce sold<sup>1,2</sup></b>	<b>\$ 1,347</b>	<b>\$ 1,238</b>
<b>Caeté Complex</b>		
Operating costs	\$ 7,676	\$ 9,097
Sustaining capital expenditures	3,255	2,549
<b>All-in sustaining costs<sup>1</sup></b>	<b>\$ 10,931</b>	<b>\$ 11,646</b>
Ounces of gold sold	8,815	10,823
<b>Cash operating costs per ounce sold<sup>1</sup></b>	<b>\$ 871</b>	<b>\$ 841</b>
<b>All-in sustaining cost per ounce sold<sup>1,2</sup></b>	<b>\$ 1,240</b>	<b>\$ 1,076</b>

## Pilar Mine

Operating costs	\$ 7,676	\$ 7,997
Sustaining capital expenditures	3,255	2,549
<b>All-in sustaining costs<sup>1</sup></b>	<b>\$ 10,931</b>	<b>\$ 10,546</b>
Ounces of gold sold	8,815	9,929
<b>Cash operating costs per ounce sold<sup>1</sup></b>	<b>\$ 871</b>	<b>\$ 805</b>
<b>All-in sustaining cost per ounce sold<sup>1,2</sup></b>	<b>\$ 1,240</b>	<b>\$ 1,062</b>

<sup>1</sup> Results of individual mines may not add up to the consolidated numbers due to rounding.

<sup>1</sup> Cash operating costs and all-in sustaining costs are all non-gaap financial performance measures with no standard definition under IFRS. Results of individual mines may not add up to the consolidated numbers due to rounding.

<sup>2</sup> The AISC calculation by mine site does not include allocation of Corporate (Toronto and Belo Office G&A).

## Reconciliation of Free Cash Flow

(\$ thousands, except where indicated)	Three months ended	
	March 31,	
	2019	2018
Cash generated from operating activities	\$ 2,523	\$ 4,979
Sustaining capital expenditures	(7,086)	(6,667)
<b>Free cash flow</b>	<b>\$ (4,563)</b>	<b>\$ (1,688)</b>
Ounces of gold sold	16,821	19,237
<b>Free cash flow per ounce sold</b>	<b>\$ (271)</b>	<b>\$ (88)</b>

## Reconciliation of Net Loss to EBITDA and Adjusted EBITDA

(\$ thousands, except where indicated)	Three months ended	
	March 31,	
	2019	2018
Net loss	\$ (1,839)	\$ (1,781)
Income tax expense	-	231
Finance costs	848	776
Depreciation and amortization	3,644	4,928
<b>EBITDA</b>	<b>\$ 2,653</b>	<b>\$ 4,154</b>
Changes in other provisions and VAT taxes	882	636
Foreign exchange loss (gain)	(133)	290
Stock-based compensation	130	391
Financial instruments loss (gain)	45	102
<b>Adjusted EBITDA</b>	<b>\$ 3,577</b>	<b>\$ 5,573</b>

<sup>1</sup> This is a non-gaap financial performance measure with no standard definition under IFRS.

## RISKS AND UNCERTAINTIES

The business of the Company involves significant risk due to the nature of mining, exploration and development activities. Certain risk factors are related to the mining industry in general while others are specific to Jaguar. The Company's exposure to risks and other uncertainties are more particularly described in the Company's Annual Information Form for the year ended December 31, 2018, filed on SEDAR under the profile of Jaguar Mining Inc. Such risk factors could materially affect the future operating results of the Company and could cause actual events to differ materially from those described in forward-looking statements relating to the Company.



Further exploration on, and development of, the Company's properties will require additional capital. In addition, a positive production decision on any of the Company's development projects would require significant capital for project engineering and construction. Accordingly, the continuing development of the Company's properties will depend upon the Company's ability to either generate sufficient funds internally or to obtain financing through the joint venturing of projects, debt financing, equity financing or other means.

The Company's principal operations and mineral properties are located in Brazil. There are additional business and financial risks inherent in doing business in Brazil as compared to the United States or Canada. Since 1996, Transparency International has published the "Corruption Perceptions Index" ("CPI") annually ranking countries by their perceived levels of corruption, as determined by expert assessments and opinion surveys. The CPI ranks countries on a scale from 100 (very clean) to 0 (highly corrupt). In 2018 and out of 180 countries in the World, Canada was ranked 9th with CPI score of 81, the United States was ranked 22nd with a CPI score of 71, and Brazil was ranked 105th with a CPI score of 35. In 2016, Brazil had a score of 40 and was ranked 79th. The average score on the 2018 Corruption Perceptions Index was 43 out of 100. Anything below 50 indicates governments are failing to tackle corruption and it represents a challenge in those countries requiring extra attention by those who conduct business there.

Corruption does not only occur with the misuse of public, government or regulatory powers, it also can occur in business's supplies, inputs and procurement functions (such as illicit rebates, kickbacks and dubious vendor relationships) as well as the inventory and product sales functions (such as inventory shrinkage or skimming). Employees as well as external parties (such as suppliers, distributors and contractors) have opportunities to commit procurement fraud, theft, embezzlement and other wrongs against the Company. While corruption, bribery and fraud risks can never be fully eliminated, the Company reviews and implements controls to reduce the likelihood of these irregularities occurring. The Company utilizes an internal auditor, third-party security services and closed-circuit video surveillance at its operations in Brazil.

The Company has invested resources to document and assess its system of internal control over financial reporting and undertakes an evaluation process of such internal controls. Internal control over financial reporting are procedures designed to provide reasonable assurance that transactions are properly authorized, assets are safeguarded against unauthorized or improper use, and transactions are properly recorded and reported. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, safeguards with respect to the reliability of financial reporting and financial statement preparation.

The Company currently has a working capital deficit and will be reliant on external equity, long-term debt or other types of financing for its short-term and long-term working capital requirements and to fund its exploration and development programs. There is no assurance that a future significant financing will be available to the Company, or that it will be available on acceptable terms. If an equity or convertible securities financing is undertaken and completed by the Company, the Company's current stockholders will suffer immediate dilution to their equity and voting interests as a result of such a financing. If additional capital is not available in sufficient amounts or on a timely basis, the Company will experience liquidity problems, and the Company could face the need to significantly curtail current operations, change its planned business strategies and pursue other remedial measures. Any curtailment of business operations would have a material negative effect on operating results, the value of the Company's outstanding common shares and the Company's ability to continue as a going concern.

## **CRITICAL ACCOUNTING ESTIMATES**

The preparation of the condensed interim consolidated financial statements in conformity with IFRS requires Management to make estimates, judgments, and assumptions that affect the application of accounting policies and the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the period. Actual results could differ from those estimates. Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected. Certain estimates, such as those related to the assessment of recoverability of the carrying amount of property, plant, equipment and mineral exploration projects, royalty receivable, valuation of recoverable taxes, deferred tax assets and liabilities, reclamation provisions, derivatives, liabilities associated with certain long-term incentive plans, measurement of inventory, provisions for legal actions and contingencies, and disclosure of contingent assets and liabilities

depend on subjective or complex judgments about matters that may be uncertain. Changes in these estimates could materially impact the Company's condensed interim consolidated financial statements.

The critical accounting estimates, judgments, and assumptions applied in the preparation of the Company's condensed interim consolidated financial statements for the three months ended March 31, 2019, are consistent with those applied and disclosed in the audited annual consolidated financial statements for the year ended December 31, 2018. For details of these estimates, judgments, and assumptions, please refer to the Company's audited annual consolidated financial statements for the year ended December 31, 2017, which are available on the Company's website and on SEDAR.

### **Going concern**

The Company's financial statements were prepared on a going concern basis (see Note 2 to the three months unaudited consolidated financial statements), assumes that the Company will continue its operations for the foreseeable future and will be able to realize its assets and discharge its liabilities in the normal course of business as they become due.

The Company has incurred a net loss of \$1.8 million for the three months ended March 31, 2019 (three months ended March 31, 2018 – \$1.8 million net loss), and, as at March 31, 2019, the Company has a working capital deficiency of \$8.3 million (December 31, 2018 – \$2.4 million) and an accumulated deficit of \$467.5 million (December 31, 2018 – \$465.6 million). The Company will need to obtain additional financing in order to meet its near-term operating cash requirements, debt payments, development and sustaining capital expenditures. There is no assurance that the Company's financing initiatives will be successful or sufficient.

The Company considers that the near term economic outlook presents challenges in terms of sustained commodity prices as well as maintaining production levels and acknowledges the development and sustaining capital requirements and foreign exchange risks associated with its business operations. Whilst the Company has instituted measures to preserve cash, improve operations and is seeking to secure additional financing, these circumstances create uncertainties over future results and cash flows.

On March 15, 2019, the Company entered into a senior secured loan facility ("Auramet loan facility") agreement with lender Auramet International LLC totaling \$7.9 million with a maturity date of July 15, 2019 to fund working capital requirements, under ground development at Turmalina and for general corporate purposes while it continues to explore its longer term financing options.

The business of mining and exploring for minerals involves a high degree of risk and there can be no assurance that current operations or exploration programs will result in profitable mining operations. This fact, along with the factors discussed in the preceding paragraphs results in a material uncertainty that casts significant doubt as to the Company's ability to continue to operate as a going concern. The recoverability of the carrying value of property, plant and equipment and mineral exploration projects is dependent upon the success of the above operating, exploration and financing activities and the future gold price. Changes in future conditions could require material write-downs of the carrying value of property, plant and equipment and mineral exploration projects.

If the going concern assumption was not appropriate for these condensed interim consolidated financial statements, then adjustments would be necessary to the carrying value of assets and liabilities, the reported expenses, and the statement of financial position classifications used, and such adjustments could be material. These condensed interim consolidated financial statements do not include any adjustment to the carrying amount, or classification of assets and liabilities, if the Company was unable to continue as a going concern.

## **CHANGES IN ACCOUNTING POLICIES**

The accounting policies and estimates applied in these condensed interim consolidated financial statements are consistent with those used in the Company's audited annual consolidated financial statements for the year ended December 31, 2018, except for the adoption of the following standards amended by the IASB that were effective and adopted as of January 1, 2019:

- IFRS 16 Leases (“IFRS 16”) – In January 2016, the IASB issued IFRS 16, which requires lessees to recognize assets and liabilities for most leases. The Company adopted IFRS 16 for the annual period beginning January 1, 2019 using the modified retrospective approach, as detailed in the Financial Statements for the quarter ended on March 31, 2019, Note 10. Under the modified retrospective approach, the Company recognizes transition adjustments, if any, in retained earnings on the date of initial application (January 1, 2019), without restating the financial statements on a retrospective basis. For comparative periods prior to 2019, the Company applied leases policies in accordance with IAS 17, Leases (IAS 17) and IFRIC 4, Determining Whether an Arrangement Contains a Lease (IFRIC 4). In the Financial Statements for the quarter ended on March 31, 2019, Note 10, outlines the effect of adopting IFRS 16 requirements on January 1, 2019. The following leases accounting policies have been applied as of January 1, 2019 on adoption of IFRS 16.

The Company has elected not to recognize right-of-use assets and lease liabilities for short-term leases that have a lease term of 12 months or less and leases of low-value assets. The lease payments associated with these leases are charged directly to the statement of operations and comprehensive income (loss) on a straight-line basis over the lease term.

At inception of a contract, the Company assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. The Company then assesses (i) whether the contract involves the use of an identified asset, (ii) whether it has the right to obtain substantially all of the economic benefits from use of the asset during the term of the arrangement and (iii) if it has the right to direct the use of the asset. At inception or on reassessment of a contract that contains a lease component, the consideration in the contract is allocated to each lease component proportionally on the basis of their relative standalone prices.

As a lessee, the Company recognizes a right-of-use asset, which is included in property, plant and equipment, and a right-of-use lease liability at the commencement date of a lease. The right-of-use asset is initially measured at cost, which is comprised of the initial amount of the right-of-use lease liability adjusted for any lease payments made at or before the commencement date, plus any decommissioning and restoration costs, less any lease incentives received.

The right-of-use asset is subsequently depreciated from the commencement date to the earlier of the end of the lease term, or the end of the useful life of the asset. In addition, the right-of-use asset may be reduced due to impairment losses, if any, and adjusted for certain remeasurements of the right-of-use lease liability.

## **DISCLOSURE CONTROLS AND PROCEDURES AND INTERNAL CONTROLS OVER FINANCIAL REPORTING**

### *Disclosure Controls and Procedures*

Disclosure controls and procedures are designed to provide reasonable assurance that material information is gathered and reported to senior management, including the President and Chief Executive Officer (“CEO”) and the Chief Financial Officer (“CFO”), as appropriate to permit timely decisions regarding public disclosure.

The Company’s Management, including the CEO and CFO, has as at March 31, 2019, designed Disclosure Controls and Procedures (as defined in National Instrument 52-109 of the Canadian Securities Administrators), or caused them to be designed under their supervision, to provide reasonable assurance that material information relating to the issuer is made known to them by others, particularly during the period in which the interim filings are being prepared; and information required to be disclosed by the issuer in its annual filings, interim filings or other reports filed or submitted by it under securities legislation is recorded, processed, summarized and reported within the time periods specified in securities legislation.

### *Internal Control over Financial Reporting*

The Company’s Management, including the CEO and CFO, is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed by, or under the supervision of, the CEO and CFO and effected by Management and other personnel to provide reasonable assurance regarding the

reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS. There have been no changes in the Company's internal control over financial reporting during the three months ended March 31, 2019, that have materially affected, or are reasonably likely to affect, the Company's internal control over financial reporting.

#### *Limitations of Controls and Procedures*

The Company's Management, including the CEO and CFO, believe that disclosure controls and procedures and internal control over financial reporting, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, they cannot provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been prevented or detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by unauthorized override of the controls. The design of any control system also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed.

## **CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS**

Certain statements in this MD&A constitute "forward-looking information" within the meaning of applicable Canadian securities legislation. This forward-looking information includes, but is not limited to, statements concerning the Company's future objectives, Measured and Indicated Mineral Resources, Proven and Probable Mineral Reserves, their average grade, the commencement period of production, cash operating costs per ounce and completion dates of feasibility studies, gold production and sales targets, capital expenditure costs, future profitability and growth in mineral reserves. Forward-looking information can be identified by the use of words such as "are expected," "is forecast," "is targeted," "approximately," "plans," "anticipates," "projects," "anticipates," "continue," "estimate," "believe" or variations of such words and phrases or statements that certain actions, events or results "may," "could," "would," "might," or "will" be taken, occur or be achieved. Forward-looking information involves known and unknown risks, uncertainties and other factors which may cause the actual results or performance to be materially different from any future results or performance expressed or implied by the forward-looking information. These factors include the inherent risks involved in the exploration and development of mineral properties, the uncertainties involved in interpreting drilling results and other geological data, fluctuating gold prices and monetary exchange rates, the possibility of project delays and cost overruns or unanticipated costs and expenses, uncertainties relating to the availability and costs of financing needed in the future, uncertainties related to production rates, timing of production and the cash and total costs of production, changes in applicable laws including laws related to mining development, environmental protection, and the protection of the health and safety of mine workers, the availability of labour and equipment, the possibility of civil insurrection, labour strikes and work stoppages and changes in general economic conditions. Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those contained in forward-looking information, there may be other factors that could cause actions, events or results to differ from those anticipated, estimated or intended.

This forward-looking information represents the Company's views as of the date of this MD&A. The Company anticipates that subsequent events and developments may cause the Company's views to change. The Company does not undertake to update any forward-looking information, either written or oral, that may be made from time to time by, or on behalf of the Company, subsequent to the date of this discussion, other than as required by law. For a discussion of important factors affecting the Company, including fluctuations in the price of gold and exchange rates, uncertainty in the calculation of mineral resources, competition, uncertainty concerning geological conditions and governmental regulations and assumptions underlying the Company's forward-looking information, see "CAUTIONARY NOTE REGARDING FORWARD LOOKING STATEMENTS" and "RISK FACTORS" in the Company's Annual Information Form for the year ended December 31, 2018 that can be accessed under the profile of Jaguar Mining Inc. on SEDAR at [www.sedar.com](http://www.sedar.com). Further information about the Company is available on its corporate website at [www.jaguarmining.com](http://www.jaguarmining.com).