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FOR IMMEDIATE RELEASE

NEWS RELEASE
TSX: JAG

Jaguar Mining Reports Third Quarter 2019 Operating Results

Toronto, October 17, 2019 – Jaguar Mining Inc. ("Jaguar" or the "Company") (TSX: JAG) today announced operating results for its operating gold mines, located in Minas Gerais, Brazil for the third quarter ("Q3 2019") and year-to-date ended September 30, 2019. Financial results for Q3 2019 will be reported and filed on SEDAR on or before November 14, 2019. All figures are in US dollars, unless otherwise expressed.

Q3 2019 Operating Highlights

Vern Baker, CEO, commented, *"Our operating mines are showing steady improvement as shown by the on-going increases in performance since the first quarter of the year. At Jaguar, our first goal is to safely strengthen our two operations into sustainable consistent mines. The third quarter of 2019 was a strong step toward this goal, and as a result, we experienced our best production quarter of the year for ounces produced, meters developed, and tonnage milled"*.

- Consolidated gold production of 19,324 ounces compared to 20,320 ounces in Q3 2018 (-5%), and is up 5% from our Q2 production, and is up 18% from Q1 production levels,
- Pilar Gold Mine ("Pilar") produced 11,044 ounces in line compared with the same period of 2018,
- Turmalina Gold Mine ("Turmalina") produced of 8,280 ounces compared to 9,252 ounces in Q3 2018 (-11%)
- Development metres increased to 2,526 total up from 2,089 in Q3 2018 (+21%); and up from 1,496 in Q1 2019 (+69%)

Vern continued: "Tonnes were at recent highs for both mines, reflecting the ability to handle increases in both development and ore quantities. Head grades continued well below mine reserve grades. At Pilar, grades remained close to reserve. At Turmalina, the grade was well below reserve levels as the sequence of stoping blocks was limited to lower grade portions of the mine, and dilution induced by prior development and stoping sequences continued plaguing the mine in July and August. September saw strong improvement in Turmalina's dilution indicators, as dilution was at the lowest level of the year. The team at Turmalina continues the development of new panels that will allow access to a stoping sequence more representative of mineral reserve grades. The completion of our financing in July, allowed us to achieve the highest levels of development metres and ore tonnages this year".

"In the third quarter of 2019, the team at Pilar moved forward in their mine plan to grow the production rate to 50,000 ounces per year by fiscal year end. The on-going trend of improving operations at Pilar reflects on the strong team developed there over the last two years. At Turmalina, we continue building a strong team that is showing significant progress on their plan to also reach a production rate of 50,000 ounces per year. Development rates have increased significantly, and ore tonnages have also begun to approach targeted levels. We expect continued improvement at Turmalina over the next three quarters as accessed mineral reserves increase and mine typical grades are available within the stoping sequence now under development".

Mr. Baker added, "The Jaguar teams have done an excellent job of adapting to recent management changes, the deployment of a major financing, and a challenging situation within the orebodies. During the fourth quarter of 2019, the team will be focused on executing the plan to safely achieve our targeted production rate, and to prepare our company to take advantage of excellent position in the Iron Quadrangle of Brazil".

Third Quarter and FY 2019 Operating Results

| Quarterly Summary | Q3 2019 | | | | Q3 2018 | | | |
|---|--------------|--------------|-------------|----------------|--------------|--------------|-------------|----------------|
| | Turmalina | Pilar | Roça Grande | Total | Turmalina | Pilar | Roça Grande | Total |
| Tonnes milled (t) | 94,000 | 114,000 | - | 208,000 | 88,000 | 87,000 | - | 175,000 |
| Average head grade (g/t) | 3.05 | 3.50 | - | 3.30 | 3.62 | 4.40 | - | 4.01 |
| Recovery % | 89.6% | 86.3% | - | 87.8% | 90.1% | 89.6% | - | 89.8% |
| Gold ounces | | | | | | | | |
| Produced (oz) | 8,280 | 11,044 | - | 19,324 | 9,252 | 11,068 | - | 20,320 |
| Sold (oz) | 7,399 | 10,018 | - | 17,418 | 8,609 | 11,832 | - | 20,441 |
| Development | | | | | | | | |
| Primary (m) | 1,001 | 515 | - | 1,516 | 780 | 656 | - | 1,436 |
| Secondary (m) | 436 | 575 | - | 1010 | 558 | 169 | - | 727 |
| Definition, infill, and exploration drilling (m) | 4,090 | 3,751 | - | 7,841 | 8,203 | 3,513 | - | 11,716 |

| Annual Summary | 2019 (YTD) | | | | 2018 (YTD) | | | |
|---|---------------|--------------|-------------|----------------|---------------|--------------|-------------|----------------|
| | Turmalina | Pilar | Roça Grande | Total | Turmalina | Pilar | Roça Grande | Total |
| Tonnes milled (t) | 235,000 | 318,000 | - | 553,000 | 247,000 | 262,000 | 12,000 | 521,000 |
| Average head grade (g/t) | 3.47 | 3.43 | - | 3.45 | 3.55 | 4.18 | 2.55 | 3.85 |
| Recovery % | 89.9% | 86.7% | - | 88.1% | 90.6% | 89.5% | 89.5% | 90.0% |
| Gold ounces | | | | | | | | |
| Produced (oz) | 23,628 | 30,426 | - | 54,054 | 25,517 | 31,616 | 870 | 58,004 |
| Sold (oz) | 23,405 | 29,432 | - | 52,837 | 24,632 | 31,381 | 894 | 56,908 |
| Development | | | | | | | | |
| Primary (m) | 2,357 | 1,630 | - | 3,987 | 2,167 | 1,615 | - | 3,782 |
| Secondary (m) | 1,087 | 1,254 | - | 2,341 | 951 | 800 | - | 1,751 |
| Definition, infill, and exploration drilling (m) | 13,343 | 9,319 | - | 22,661 | 19,370 | 9,850 | 697 | 29,917 |

The table below summarizes the gradual improvements at our consolidated operations over the past 2019 quarters.

| Quarterly Summary | 2019 | | | |
|----------------------------------|---------|---------|---------|----------------|
| | Q1 | Q2 | Q3 | YTD |
| Tonnes milled (t) | 161,000 | 184,000 | 208,000 | 553,000 |
| Average head grade (g/t) | 3.59 | 3.48 | 3.30 | 3.45 |
| Recovery % | 87.7% | 88.6% | 87.8% | 88.1% |
| Gold ounces | | | | |
| Produced (oz) | 16,364 | 18,366 | 19,324 | 54,054 |
| Sold (oz) | 16,821 | 18,598 | 17,418 | 52,837 |
| Primary Development (m) | | | | |
| Turmalina | 573 | 783 | 1,001 | 2,357 |
| Pilar | 588 | 527 | 515 | 1,630 |
| Secondary Development (m) | | | | |
| Turmalina | 321 | 330 | 436 | 1,087 |
| Pilar | 310 | 369 | 575 | 1,254 |

Qualified Persons

Scientific and technical information contained in this press release has 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").

The Iron Quadrangle

The Iron Quadrangle has been an area of mineral exploration dating back to the 16th century. The discovery in 1699–1701 of gold contaminated with iron and platinum-group metals in the southeastern corner of the Iron Quadrangle gave rise to the name of the town Ouro Preto (Black Gold). The Iron Quadrangle contains world-class multi-million-ounce gold deposits such as Morro Velho, Cuiabá, and São Bento. Jaguar holds the second largest gold land position in the Iron Quadrangle with just over 25,000 hectares.

About Jaguar Mining Inc.

Jaguar Mining Inc. is a Canadian-listed junior gold mining, development, and exploration company operating in Brazil with two gold mining complexes and a large land package with significant upside exploration potential from mineral claims covering an area of approximately 64,000 hectares. The Company's principal operating assets are located in the Iron Quadrangle, a prolific greenstone belt in the state of Minas Gerais and include the Turmalina Gold Mine Complex and Caeté Mining Complex (Pilar Mine and Caeté Plant). The Company also owns the Paciência Gold Mine Complex, which has been on care and maintenance since 2012. The Roça Grande Mine has been on care and maintenance since April 2018. Additional information is available on the Company's website at www.jaguarmining.com.

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Forward-Looking Statements and Cautionary Notes

Certain statements in this news release constitute "forward-looking information" within the meaning of applicable Canadian securities legislation. Forward-looking statements and information are provided for the purpose of providing information about management's expectations and plans relating to the future. All of the forward-looking information made in this news release is qualified by the cautionary statements below and those made in our other filings with the securities regulators in Canada. Forward-looking information contained in forward-looking statements 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. All statements, other than statements of historical fact, may be considered to be or include forward-looking information. This news release contains forward-looking information regarding, among other things, expected sales, production statistics, ore grades, tonnes milled, recovery rates, cash operating costs, definition/delineation drilling, the timing and amount of estimated future production, costs of production, capital expenditures, costs and timing of the development of projects and new deposits, success of exploration, development and mining activities, currency fluctuations, capital requirements, project studies, mine life extensions, restarting suspended or disrupted operations, continuous improvement initiatives, and resolution of pending litigation. The Company has made numerous assumptions with respect to forward-looking information contained herein, including, among other things, assumptions about the estimated timeline for the development of its mineral properties; the supply and demand for, and the level and volatility of the price of, gold; the accuracy of reserve and resource estimates and the assumptions on which the reserve and resource estimates are based; the receipt of necessary permits; market competition; ongoing relations with employees and impacted communities; political and legal developments in any jurisdiction in which the Company operates being consistent with its current expectations including, without limitation, the impact of any potential power rationing, tailings facility regulation, exploration and mine operating licenses and permits being obtained or renewed and/or there being adverse amendments to mining or other laws in Brazil and any changes to general business and economic conditions. Forward-looking information involves a number of known and unknown risks and uncertainties, including among others: the risk of Jaguar not meeting the forecast plans regarding its operations and financial performance; uncertainties with respect to the price of gold, labour disruptions, mechanical failures, increase in costs, environmental compliance and change in environmental legislation and regulation, weather delays and increased costs or production delays due to natural disasters, power disruptions, procurement and delivery of parts and supplies to the operations; uncertainties inherent to capital markets in general (including the sometimes volatile valuation of securities and an uncertain ability to raise new capital) and other risks inherent to the gold exploration, development and production industry, which, if incorrect, may cause actual results to differ materially from those anticipated by the Company and described herein. In addition, there are risks and hazards associated with the business of gold exploration, development, mining and production, including environmental hazards, tailings dam failures, industrial accidents and workplace safety problems, unusual or unexpected geological formations, pressures, cave-ins, flooding, chemical spills, procurement fraud and gold bullion thefts and losses (and the risk of inadequate insurance, or the inability to obtain insurance, to cover these risks). In addition, the Company's principal operations and mineral properties are located in Brazil and there are additional business and financial risks inherent in doing business in Brazil as compared to the United States or Canada. In Brazil, corruption represents a challenge 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 a 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 theft, procurement fraud and other wrongs against the Company. While corruption, bribery and fraud and theft risks can never be fully eliminated, the Company reviews and implements controls to reduce the likelihood of these events occurring. The Company's present and future business operations face these risks. Accordingly, for all of the reasons above, readers should not place undue reliance on forward-looking information.

For additional information with respect to these and other factors and assumptions underlying the forward-looking information made in this news release, see the Company's most recent Annual Information Form and Management's Discussion and Analysis, as well as other public disclosure documents that can be accessed under the issuer profile of "Jaguar Mining Inc." on SEDAR at www.sedar.com. The forward-looking information set forth

herein reflects the Company's reasonable expectations as at the date of this news release and is subject to change after such date. The Company disclaims any intention or obligation to update or revise any forward-looking information, whether as a result of new information, future events or otherwise, other than as required by law. The forward-looking information contained in this news release is expressly qualified by this cautionary statement.