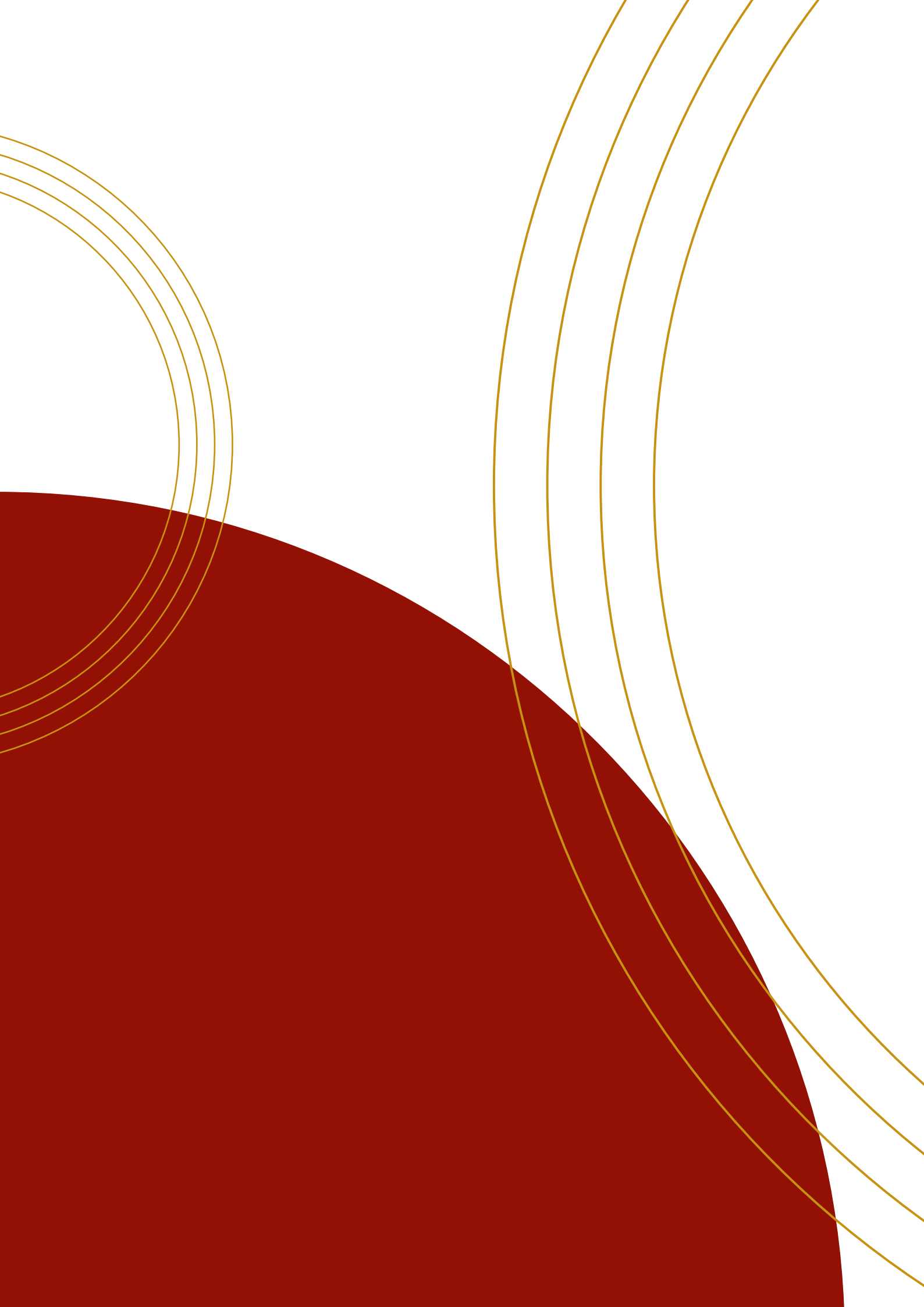




**SUSTAINABILITY  
AND IMPACT  
REPORT 2018**

**JAGUAR**  
MINING INC.



## MISSION

Create and grow sustainable value for our stakeholders through the application of best practices in mining and our commitment on protecting the health and wellbeing of our employees and the environment in the communities where we work.





## **OUR VISION**

To be a recognized gold mining company focused on growing sustainable production, delivering on our commitments for excellence and valuing and developing our employees.

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# LETTER FROM THE CEO

GRI 102-14 / 102-50



## CHAIRMAN GRI 102-23

Appointed as Jaguar's new CEO, Vernon Baker brings over 35 years of mining experience, with extensive management and operating expertise in medium and large global companies. Recently, he was general manager of Cerro Negro Mine in Argentina, where he led several operational efficiency programs reaching high productivity and content brands with improved health and safety indicators.

Baker has also held senior management positions at other companies as President of Duluth Metals Limited, Vice President of Operations at FNX Mining, General Manager at Barrick Goldstrike Mines Inc. and also at Hemlo Operations (joint venture between Teck Cominco and Barrick Gold).

Jaguar Mining values the relationship with its stakeholders and understands that it can leave a positive legacy for the people and communities where it operates and of which it is part. Mining has been a continuous activity in the State of Minas Gerais since the 16th century, but individual mines have a finite history. That's why we focus on extending the life of our mines and making them profitable, enabling the communities around us where we operate to build local businesses that will remain strong and prosperous when mining is depleted.

Relations with these communities are guided by the principle of transparency. This Report deals with all Jaguar Mining activities for the period from January 1 to December 31, 2018, presenting the social, environmental and operational indicators based on the Global Reporting Initiative (GRI). To report these indicators, workshops, surveys and interviews were conducted, involving employees at all levels of the company, as well as communities and suppliers.

Jaguar Mining is always seeking to improve its processes and this would be no different in building the Sustainability Report. Following the publication of the 2016 and 2017 reports, in 2018, we chose to build an innovative model, focusing not only on the tripod of sustainability (social, environmental and economic aspects), but in line with global impact measurement trends and the 2030 Schedule.

We invite you to learn more about our company in the following pages, in which we present a more detailed study of Jaguar and how its activities connect with the UN Sustainable Development Goals (SDGs).

We have adopted several international references and standards that will be explained in the following chapters. Good reading!

***"I am motivated to take over Jaguar's leadership and work in partnership with our employees and the Board of Directors to continue the advancement of the Turmalina and Pilar Mines, as well as focusing on our strategic goals to increase production of our assets in Brazil, which are very high quality."***

Vernon Baker – CEO Jaguar Mining

## GLOSSARY

**The 2030 Agenda:** The 2030 Agenda is an action plan for people, the planet and prosperity that seeks to strengthen the global commitment to complex solutions. The plan outlines the Sustainable Development Goals (SDGs).

**SDG:** The 17 Sustainable Development Goals materialize a United Nations-led study on key social, environmental and economic issues in the world. 193 countries are part of this agreement, which contains a list of guidelines and targets to be met by governments, civil society, by private sector and all citizens on the collective journey towards sustainability. The SDGs are broken down into 169 goals that will stimulate and support action in areas of crucial importance to humanity: people, planet, prosperity, peace and partnership.

# 01

ABOUT  
**JAGUAR**







# ABOUT US

GRI 102-1 / 102-3

Jaguar is a Brazilian company, with foreign capital, that produces and explores gold in the Iron Quadrangle in Minas Gerais. Its history in Brazil began in 2002, with the acquisition of Mineração Serras do Oeste Ltda. (MSOL). The activities began in the city of Sabará (MG) in 2005.

Over the years, the company acquired mining rights that allowed the expansion of activities in Minas Gerais. In 2018, the main assets in operation were the CCA Complex, formed by the Pilar and Roça Grande Mines, and the MTL Unit, which operates the Turmalina Mine. Together, they produced 75,048 ounces of gold in the year.

Jaguar also has potential future assets for exploration and operation.

## VALUES GRI 102-16



### Zero Harm

Zero harm to our employees, the environment and communities is our goal.

### Dignity and Respect

Equal treatment and opportunity for all employees with transparent processes founded on dignity and respect and encouraging a sense of ownership.



### Sustainability

Sustainable growth supported by a safe, profitable and socially responsible business while developing long-term resources.

### Collaboration

Productive and ethical working relationships, transparent and responsive dialogue with surrounding communities and public agencies for the benefit of all stakeholders.



### Excellence

A commitment to focus on a culture of best business practices.

## WHERE ARE WE ?

GRI 102-4

### CANADA

Headquarters  
(Toronto)

### BRAZIL

Pedra Branca Project  
(Ceará)

Corporate Office (BH)

CCA Complex  
(Santa Bárbara and Caeté)

MTL Unit  
(Conceição do Pará)

Basal Zone Project  
(Conceição do Pará)

CPA Unit  
(Itabirito)








## VALUE AWARD OUR PRIDE


In order to further spread our values, and to highlight employees who share them with excellence in their daily routines, since 2017, Jaguar has been promoting the Value Award, where employees vote for colleagues they believe to be reference in each of Jaguar's values. In 2018, the program had 72% adherence to the vote, and has motivated people to seek to be more and more aligned with company values, consolidating their organizational culture. Meet the winners of Value Award:




- 

Zero Harm:  
**José Geraldo Godoy**  
(ADM - Corporate Office BH)
- 

Dignity and Respect:  
**Wesley César Gonçalves**  
(Plant - MTL Unit)
- 

Sustainability:  
**Fabiana Márcia Caldeira**  
(Environment - CCA Complex - Pilar Unit)
- 

Collaboration:  
**Bruno Augusto da Silva e Sousa**  
(Information Technology - MTL Unit)
- 

Excellence:  
**Carmelo dos Santos Firmino**  
(Plant - CCA Complex - RG Unit)

Unit	Number of valid votes
CCA - PILAR	177
CCA - RG	136
Corporate Office (BH)	63
MTL	298
<b>Total</b>	<b>674</b>



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## CORPORATE GOVERNANCE

GRI 102-11 / 102-18 / 102-22 / 102-24 / 102-25 / 102-26 / 102-33 / 103-2

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Jaguar bases its actions on good corporate governance practices and believes that compliance and accountability are the main components of the company's culture. To this end, it has a Board of Directors and an Executive Committee. The Board is made up of seven directors. In order to advise the Board's activities, the company has the following support committees: Governance Committee, Safety and Environment Committee, Technical and Reserve Committee, and the Audit and Risk Committee. The latter is comprised of three independent members who ensure the integrity of the Financial Statements and ensure that management develops reliable internal controls to support the company's strategic decisions.

The internal audit is independent and reports directly to the Audit and Risk Committee, having the responsibility to monitor and evaluate the adequacy of internal controls to the procedures established by management. The audit

proactively recommends that controls be improved in line with best market practices and investigated the Reporting Channel. **In 2018, Jaguar started to have the Compliance area, responsible for maintaining the Compliance Program in the company and ensuring compliance with the Code of Ethics and Conduct.**

On the other hand, the Executive Committee is directed to guiding the procedures and principles that govern all Jaguar processes. It is responsible for complying with and monitoring the strategic guidelines defined by the Board of Directors and establishing support guidelines for the development of our business activities. It is composed of the CEO, CFO, two geology and exploration specialists and three general managers. Jaguar will continue to act to ensure that its corporate governance practices are guided by the ethics and best conduct of its employees and suppliers.

## Board of Directors

### President

Rodney Lamond

### Officers

Benjamin Guenther

Jeff Kennedy

John Ellis

Luiz Ricardo Miraglia

Thomas S. Weng

## Executive Committee

### CEO President

Vernon Baker

### CFO Chief Financial Officer

Hashim Ahmed

### Geology and Exploration Specialist

Jonathan Victor Hill

### Vice-President of Operations

Eric Duarte



## ON INTEGRITY, ETHICS AND TRANSPARENCY

Integrity and ethics are two values that have always been present in Jaguar's daily life. In a constantly changing business environment, maintaining a culture of transparency, honesty and respect.

## DELEGATION OF AUTHORITY

Jaguar has a Delegation of Authority policy that establishes guidelines, responsibilities and procedures for compliance with the company's authority matrix.

The policy also determines the extent of employee liability and authority granted by Jaguar.

## TRANSPARENCY

Jaguar provides public means of contact, including a Reporting Channel (telephone and internet), Speak Easy and a Community Relations Channel. We comply with the Extractive Sector Transparency Measures Act (ESTMA). This law meets Canada's international commitments to participate in global efforts to increase transparency and prevent corruption in the extractive sector by annually disclosing payments made to all governments inside and outside Canada.

## VOLUNTARY INITIATIVES GRI 102-12 / 102-13

Jaguar believes that sharing best practices for promoting integrity against any kind of corruption is a way of making a commitment to the development of people, the company and the country.

We support the Business Pact for Integrity and Against Corruption, which aims to work with companies to promote a more honest and ethical market. Jaguar makes a public and voluntary commitment to government and society to take measures to prevent and combat corruption in favor of business ethics. For this reason, the company has a number of tools: code of conduct, internal policies that support the government in the fight against corruption and money laundering, internal control systems and auditing.

To make our commitment to ethics and the fight against corruption, we are voluntarily part of Pró-Ética, an initiative of the Ethos Institute and the Office of the Federal Controller General (CGU). The objective of this initiative is to evaluate, consolidate and publicize companies that spontaneously adopt measures to build an environment of integrity and trust in commercial relations and raise awareness of the fight against corruption, prevention and fight against illegal and unethical practices and in defense of socially responsible relations.

The Global Reporting Initiative (GRI), an international, multi-stakeholder, nonprofit organization that helps institutions understand and communicate the impact of their business on sustainability issues, also inspires the company. GRI promotes the use of reporting so that companies can identify the impacts of their operations on the environment, the economy and civil society.

# COMPLIANCE

GRI 102-17 / 102-29

Jaguar believes that transparent, ethical and moral actions contribute to the improvement of processes, results and an ever better society. With that in mind, in 2018 the company launched its Compliance Program with the intention of reinforcing and publicly positioning itself in favor of promoting integrity and combating corruption and bribery, making a clear and public commitment to ethics.

**The Compliance Program** has guidelines that aim to ensure and maintain the highest standards of ethics and transparency in the company relationships, whether internal or external, focusing on combating corruption and anti-bribery practices, nationally and internationally. The program has the responsibility of senior management, employees and third parties, and is divided into seven pillars.

## JAGUAR COMPLIANCE PROGRAM



## COMPLIANCE WEEK

From December 3rd to 7th, Jaguar held the Compliance Week, with the objective of launching and officially announcing the company's Compliance Program in all its units. The company called its employees to participate in training on the Code of Ethics and Conduct, reinforcing the importance of complying with its rules and knowledge of the Reporting Channel.

This week, several discussions were held in the Daily Safety Dialogues (DSDs), via email and through playful interventions, about ethical situations and how to act in compliance with the company guidelines.

## ROLES AND RESPONSIBILITIES

### SENIOR MANAGEMENT

The senior management of Jaguar is responsible for ensuring the implementation, development, maintenance and continuous improvement of the Compliance Program. All actions are focused on combating corruption and bribery, as well as strengthening and disseminating sound and ethical relationships to ensure collaboration for an increasingly fair society.

### EMPLOYEES

Is up to employees to respect and uphold the principles of behavior established by Jaguar inside and outside the company. It is also necessary to comply with and respect the guidelines governing standardized processes, professional conduct and ethics in the development of their responsibilities and report any and all non-compliance with company rules that are known.

### THIRD PARTIES

Third parties are responsible for respecting the principles of behavior established by Jaguar within the company, as well

as obeying the guidelines governing standardized processes and professional and ethical conduct in fulfilling their responsibilities.

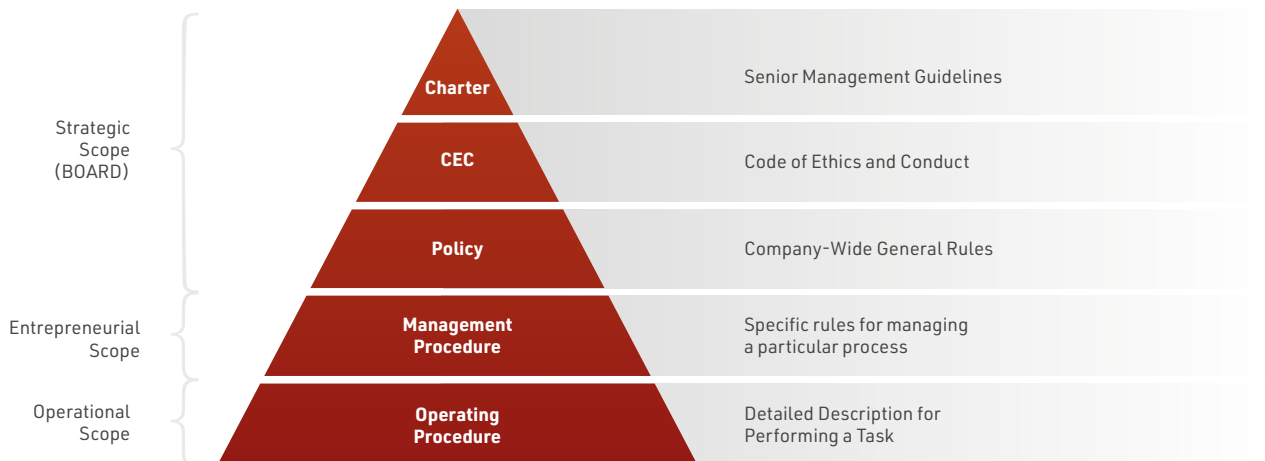
### RISKS

Risk management is carried out at the strategic level and its final rating is made through a weighted average of the impact and probability of risk. Jaguar Mining has determined assessment criteria for existing impacts, probabilities and controls. In this Risk Matrix, it is possible to increase its visibility and assist in the management decision-making. The risk groups in the company are: Strategic, Financial, Operational and Compliance.

### LAWS AND REGULATIONS

We carry out our activities in accordance with the laws and regulations in force in the countries in which we operate, and abide by our internal rules, standards and procedures, based on best market practices.

The company's procedures are structured as shown below:





## CODE OF ETHICS AND CONDUCT

Our Code of Ethics and Conduct, prepared by the Executive Committee, defines social and environmental responsibilities that must be assumed by all employees and suppliers. The document establishes guidelines for compliance with the standards, norms and legislations that the company is exposed to and must obey, as well as providing means for reporting breaches and irregularities and for resolving ethical dilemmas in a transparent manner, reflecting the organization's culture.

In 2018, Jaguar updated its Code of Ethics and made extensive disclosure to its employees and the communities where it operates, to reinforce its guidelines and position against any kind of non-ethical attitudes.

## GUIDELINES AND GUIDANCE LETTERS OF THE BOARD OF DIRECTORS

GRI 102-37

- Corporate Governance Guidelines
- Corporate Governance Guide
- Statute of the Compensation Committee
- Statute of the Audit and Risk Committee
- Statute of Internal Audit
- Statute of the Health, Safety and Environment Committee

## INTERNAL CONTROLS GRI 102-17 / 102-34

Jaguar management maintains a system of internal controls to promote and monitor compliance with the law and compliance with the Code of Ethics and Conduct, laws, policies and procedures, with a view to increasingly promoting a culture of integrity while maintaining ethical standards throughout the Company. The internal control structure is composed of: Corporate Governance Committee, Audit Committee, Compliance and Internal Audit Committee.

## COMMUNICATION AND TRAINING

Jaguar values proactive and constant communication to raise awareness of the importance of a sound and ethical culture. To reinforce compliance practices, periodic training is conducted, adapted to the participants' activities.

## DUE DILIGENCE

The Company has a process to assess and monitor the risks of third parties based on technical, economic-financial, legal-fiscal, integrity and HSE (Health, Safety and Environment) requirements. This register serves as the basis for the selection of suppliers in bids and contracts, both the parent company and its subsidiaries. The evaluation criteria vary according to the criticality of the delivery items and the type of supplier and may include in-person technical evaluations to the candidates.

## REPORTING CHANNEL AND DISCIPLINARY MEASURES

GRI 102-17

The Company has an independent Reporting Channel (Ethics Point) in order to become aware of and immediately stop possible situations of fraud, corruption or any other non-conformity. This Reporting Channel is available to internal and external audiences, with 24-hour service, via web (website and intranet) and telephone service.

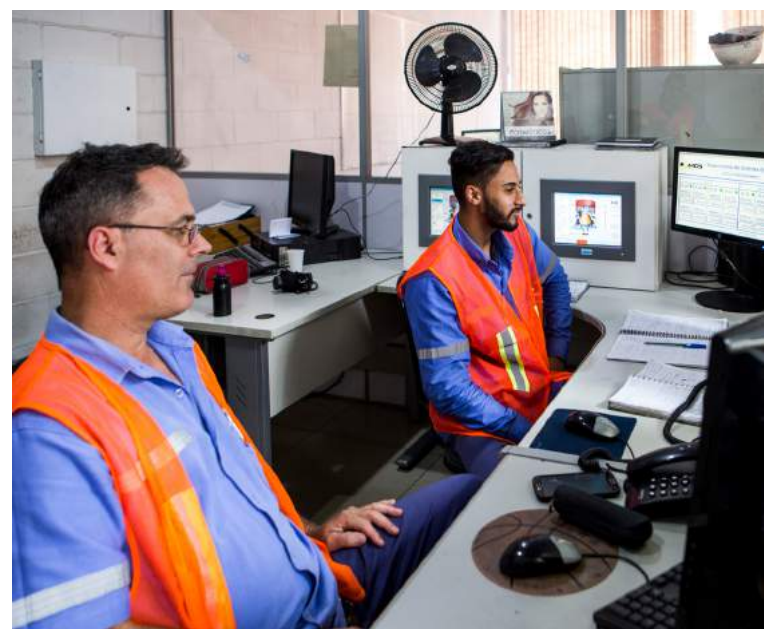
In case of non-compliance with the Code of Ethics and Conduct, policies and procedures, Jaguar determines disciplinary measures for employees and third parties. These should be analyzed and applied as soon as the confirmed reports are verified.

All reports are independently recorded and investigated, ensuring whistleblowers anonymity and non-retaliation. In the last year, several initiatives were carried out for employees with information about the Reporting Channel. In 2018, the Channel received 37 complaints that had investigations duly carried out and completed.

## MONITORING

In order to monitor the Compliance Program, the company has established indicators that are monitored through management meetings and the Audit Committee.

In addition, Jaguar fulfills Ethos Indicators for Sustainable and Responsible Business. This tool is an evaluation of practices and promotion of continuous improvement of organizations in matters related to sustainability, social responsibility, integrity and ethics.



## TIMELINE

**2002**

Creation of Jaguar and incorporation of Mineração Serras do Oeste Ltda. (MSOL)  
Shares listed on Toronto Stock Exchange (Canada)

**2012**

Suspension of activities in CPA Unit

**2013**

Jaguar financial restructuring

**2015**

Requirement of new areas of Gurupi Project (Gold Center) and Pedra Branca Project

**2005**

Sabar Mine starts operations

**2006**

MTL Unit starts operations

**2009**

Acquisition of MCT and start of Gurupi Project  
Suspension of operations at Sabar Mine

**2008**

CCA Complex starts operations

**2007**

CPA Unit starts operations

**2016**

Formation of the joint venture with Avanco Resources to manage the Gurupi Project, which is currently called Gold Center Project  
Launch of New Brand, Jaguar Mining, and Mission, Vision and Values Redefined

**2017**

Sale of Gurupi Project (Gold Center)  
Spread of the new culture of Jaguar

**2018**

Suspension of operations at Roa Grande Mine (Caet)

# WHAT AND HOW WE DO

GRI 102-2 / 102-7

Jaguar's gold mining operating units are located in Minas Gerais and are comprised of: MTL Unit, CCA Complex (Pilar and RG Units) and CPA Unit. All our operations are located in the Iron Quadrangle, a prolific greenstone belt near the city of Belo Horizonte. The capital of the State of Minas Gerais serves as a commercial hub for Brazil's mining industry and has excellent infrastructure to support world-class operations.

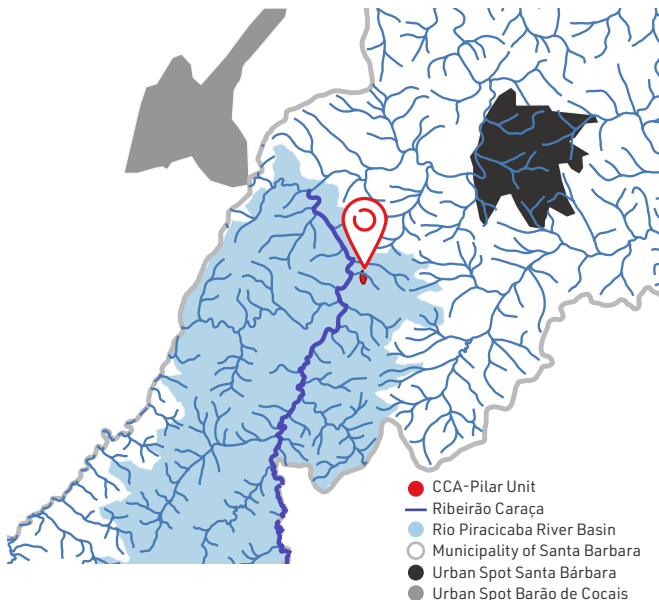
## CCA COMPLEX: ROÇA GRANDE MINE AND PILAR MINE

CCA Complex is formed by Pilar Mine in Brumal, in the district of Santa Bárbara, and Roça Grande Mine, in the municipality of Caeté, the latter being temporarily suspended. Roça Grande also has a metallurgical plant in operation.

## PILAR MINE

GRI 303-1 1.2.2

Pilar Mine is located in the Ribeirão Caraça River Basin, a tributary of the Piracicaba River, a component of the Rio Doce River Basin. The area of influence of this mine encompasses the municipalities of Barão de Cocais and Santa Bárbara.



Number of Employees Pilar	
Barão de Cocais	123
Santa Bárbara	136
Totals	299
Locals (%)	87%

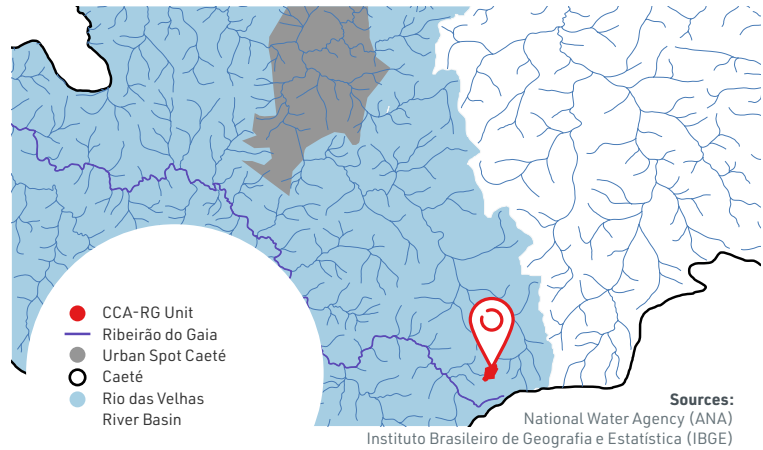


## ROÇA GRANDE MINE

GRI 303-1 1.2.2

With temporary suspension since April 2018, the CCA-RG Unit located in the municipality of Caeté, currently houses the metallurgical plant, responsible for the processing of material extracted from Pilar Mine. The enterprise is located in the watershed of Ribeirão do Gaia, a tributary of Ribeirão Sabará River, which is part of Rio das Velhas River Basin.

Jaguar has **temporarily suspended operations at Roça Grande Mine** to focus on new exploration programs. However, from early 2018 until its suspension, the mine was able to produce **870 ounces of gold**.



Number of Employees Caeté	
Caeté	124
Totals	166
Locals (%)	75%

**365,077**

tons of material were extracted from the CCA complex, and 375,232 tons were transported to the plant. 377,066 tons were processed at the metallurgical plant, with

**A FINAL STOCK OF 1,870 TONS**



The CCA Complex was responsible for producing

**41,778**

ounces of gold



It has

**465**

direct employees

**83%**

of the direct employees are from the region, from the municipalities of Barão de Cocais, Santa Bárbara, Caeté or live within 10km of the Mine



## 2018 SUCCESS CASES

### CCA UNIT

#### Maintenance - Pilar:

- Increasing the availability of the fandrill fleet, enabling an increase in the stock of drilled ore and consequently stabilizing and improving production.
- Adequate pumping of the main ramp, reducing delays in the production cycle and increasing the advance in the ramp.
- Implementation of the 52 weeks preventive maintenance plan, increasing the adherence of preventive maintenance and reducing the time between mechanical breakdowns.
- Structural adaptation of the surface mechanic workshop, improving working conditions and safety in maintenance activities.
- Beginning of construction of the underground maintenance workshop, aiming to reduce equipment downtime.

#### Operation - Pilar:

- 20% growth in production at Pilar underground mine, from 34,017 ounces in 2017 to 40,918 ounces in 2018. Total CCA production in 2018 was 41,788 ounces; 40,918 oz. from Pilar and 870 oz. produced in RG from January to March.
- Improvement in drilling and dismantling of mining slots, reducing losses and delays in the production cycle.
- Improvement in the drilling of enhancement blast fans, leading to reduced dilution and ore losses in mining.
- Improvement of rock blasting, reducing the use of explosives and accessories in the mine, as well as improving the advance on development fronts.

- Implementation of partial pillar dismantling in mining enhancements, increasing ore recovery.
- Improved mine ventilation by installing higher power fans along the ramp.
- Expansion of the drilling, loading and transportation equipment fleet: the acquisition of a Fandrill Sandvik D-321, Volvo L120 Loader, Volvo A30G Truck.
- Record monthly production of 4,639 ounces.

#### Plant - Roça Grande:

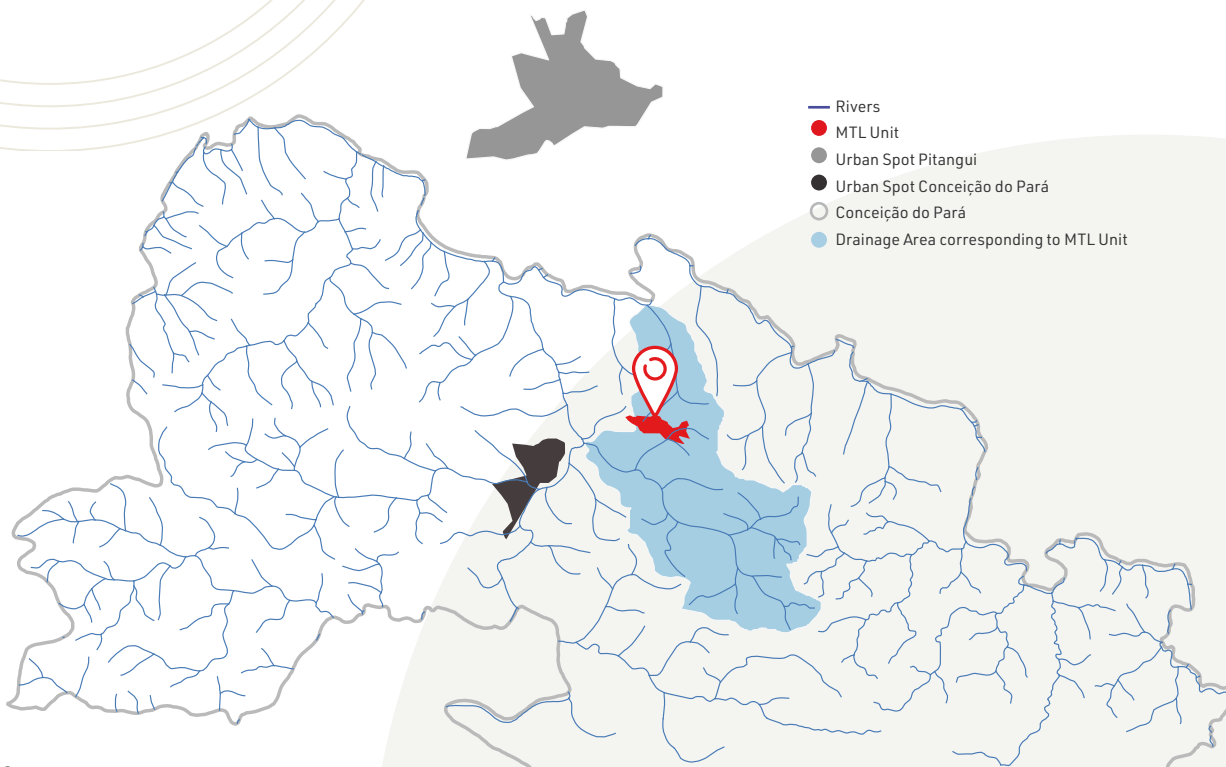
- Adjustment of the shift schedule of the metallurgical plant, improving working relationships and monitoring of operational activities.
- Beginning of the repowering project of leaching and adsorption circuit stirrer.
- Adequacy of the leaching circuit lung tank, improving the ore treatment process.
- Improvement of the gravimetry circuit sieving system, increasing the gravimetry feed rate.
- Changing the ore receiving system in the stockyard, allowing better control of the feed content of the plant.
- Implementation of the mill ball dispenser, providing better control of the specific consumption of these balls.
- Installation of the waste sieve in the leach feed, reducing the contamination of the adsorption circuit.
- Closure of reagent storage area, bringing more security to the area.



## MTL UNIT

GRI 102-2 / 303-1 1.2.2

The Turmalina Unit (MTL), maintained by Jaguar in the municipality of Conceição do Pará, in the central-west region of the state, is formed by the Underground Mine, the Metallurgical Plant and the Paste Fill plant. The venture also has the area of influence the city of Pitangui and is in the Pará River Basin, a tributary of the São Francisco River.



**Sources:**  
 National Water Agency (ANA)  
 Instituto Brasileiro de Geografia e Estatística (IBGE)

The unit has

474



direct employees. Out of these,



88%

are from the following region: municipalities of Conceição do Pará and Pitangui. Most of them live within a 10km radius of the mine.

In 2018, the Turmalina Mine produced

33,261

ounces of gold.



Number of Employees MTL	
Conceição do Pará	46
Pitangui	369
Totals	474
Locals (%)	88%

***“Jaguar is a very good company, especially for job creation in the city. I have nothing to complain about. The company brought many opportunities, people were interested in continuing their studies to be able to qualify. In addition, it offers workers training and demands that they comply with their values.”***

Cíntia Gonçalves de Faria  
 Nutritionist Sapore  
 MTL Unit



## TURMALINA MINE

Turmalina Mine deposits are located in the Western part of the Iron Quadrangle, the main region for hard rock gold mining in Brazil until 1983, responsible for approximately 40% of the country's total gold production. Gold was produced from numerous deposits, mainly in the northern and southeastern parts of the Iron Quadrangle, mostly hosted by Archean or early Proterozoic banded iron formations (BIFs) contained in supracrustal sequences of the greenstone belt.



## 2018 SUCCESS CASES MTL UNIT

### Maintenance:

- Significant increase in the adherence rate of preventive maintenance in the mobile mining equipment (HME) fleet, resulting in better equipment performance.
- Mitigation of occurrences of soil contamination by lubricants in the vicinity of maintenance workshops.
- Adequacy of tools to increase safety in activities, such as the incorporation of a tire-dismantling machine.

### Metallurgical Plant:

- Beginning of the fourth filter operation in the filtration stage of the metallurgical plant. Average reduction from 4.81% to 1.64% of solids directed to the MTL dam, increasing its useful life.
- Measurement campaign of mine call factor (factor / ratio of geological contents compared to plant feed rates) by body of the mine. This action raised the mine planning reliability level in relation to the metallurgical response of the ore in the metallurgical plant.

### Operation:

- Work begins to improve the underground mine infrastructure to support increased development in bodies A and C.
- Partial shutdown of underground operations for 11 days for completion of restoration work on gallery containment in critical areas along the main ramp. This intervention aimed to ensure the safety of all employees to enter the mine in continuity with the production process.

### Planning:

- Detailing and integrating information from different areas into quarterly and monthly plans, resulting in improved management of variables throughout the process.
- With the evolution of quarterly plans, there was greater adherence of production to planning, representing gains in the areas of Supplies and Maintenance, which had greater security to support their demands.
- Adherence to survey volume currently stands at 85% and gallery development at 70%. These indicators enable greater assertiveness between planning and operation.



## CORPORATE OFFICE (BH)

GRI 102-8b / 102-10

Jaguar Mining Corporate Office (BH) is in the capital of the State of Minas Gerais, Belo Horizonte (BH). The Corporate Office (BH) employs 75 workers, of which 93% live in Belo Horizonte and the Metropolitan Region of the capital.

### Number of Employees at Corporate Office (BH)

Belo Horizonte	46
Betim	1
Brumadinho	1
Caeté	1
Contagem	2
Nova Lima	13
Brumadinho	1
Sabará	4
Santa Luzia	1
Totals	75
Locals (%)	93%

## OTHER POTENTIAL ASSETS

GRI 102-8

### CPA UNIT

It is located in the district of Acuruí, municipality of Itabirito, 90km from Belo Horizonte and brings together five mines: Marzagão, Ouro Fino, Palmital, Rio de Peixe and Santa Isabel. In temporary suspension since May 2012, the unit is part of a care and maintenance program, employing eight people (all residents of Itabirito and Ouro Preto region) and is undergoing a feasibility reevaluation process.

### BASAL ZONE PROJECT

Located in Conceição do Pará, Central-West Region of the State of Minas Gerais, this exploration target aims to increase production at MTL Unit by filling the capacity of the unit's metallurgical plant that currently operates below its maximum efficiency. Early results demonstrate the opportunity of mine development, adding more longevity and operational flexibility to MTL.

### GOLD CENTER PROJECT

In 2017, Jaguar sold its stake in the project, no longer acting in the management of the enterprise located in the city of Centro Novo do Maranhão (MA). However, according to the terms agreed upon in the negotiation, Jaguar still has a stake in the royalties.

### PEDRA BRANCA PROJECT

Located in the state of Ceará, Pedra Branca project and its mining rights comprise 21 research permits and three mining concession applications. Licensing work on this project, which is wholly owned by Jaguar, is ongoing. In addition, the company maintains the payment of the necessary fees for the maintenance of the licenses and rights of this enterprise, in accordance with the legislation in force.

# 02

ABOUT THE  
**SDG**  
**REPORT**



# JAGUAR'S SUSTAINABILITY AND IMPACT REPORT

GRI 102-46 / 102-47 / 102-48 / 102-49 / 102-51 / 102-52 / 103-1

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**Since 2016, Jaguar Mining has prepared its Sustainability Report in order to present the results of its operations to all those directly and indirectly involved in its operation. Annually, it reaffirms its commitment to the transparency and preservation of close communication with the communities of which it is part.**

In 2018, the company sought to deepen its active listening process with all stakeholders, in order to further raise its understanding of the demands and needs of each one. Thus, it conducted a more refined and innovative study on the impacts arising from its operation, structuring the foundations for the improvement of organizational impact management. This innovation materialized in the preparation of a materiality matrix connected to global parameters of sustainable development. In this sense, it advanced the diagnosis of the relationship between its activities and results with each of the 17 UN Sustainable Development Goals (SDG), triggering internal and external stakeholder groups in this process.

The company's activities, always based on responsible management and the development of positive economic and social and environmental impacts, contribute in an articulated manner to the achievement of global development goals. Such direction demonstrates Jaguar Mining's commitment to achieving initiatives that are increasingly aligned with a global movement to address complex problems within nations. It reflects the company's contribution to achieving an even greater purpose.



# SUSTAINABLE DEVELOPMENT GOALS

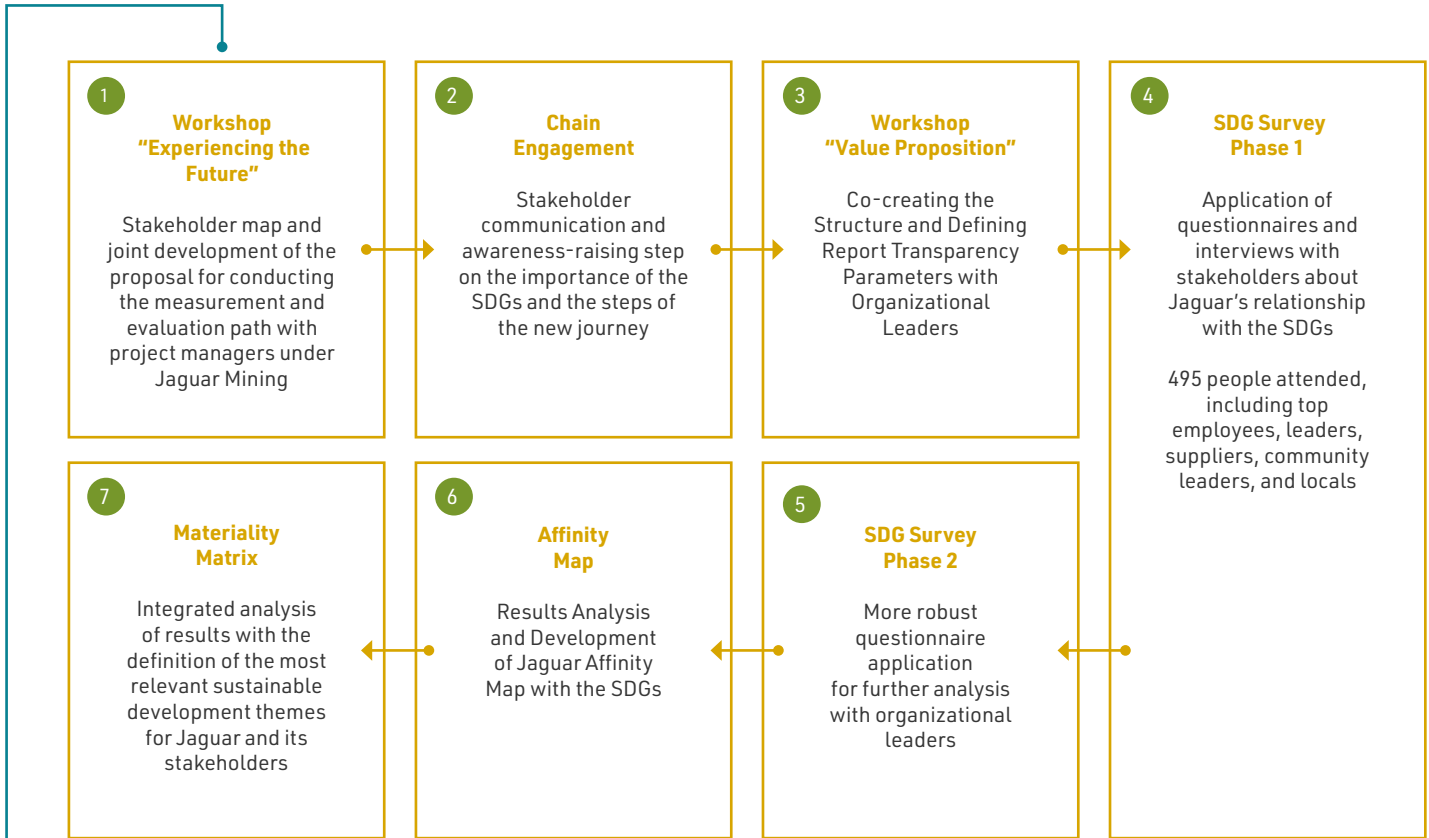
In 2015, leaders of the 193 United Nations member states had the opportunity to meet and decide on new ways to improve the lives of people worldwide. During the meeting on September 25, they approved a new sustainable development agenda for the coming decades, the 2030 Agenda. The construction of the Agenda resulted in the definition of 17 Sustainable Development Goals (SDGs), divided into 169 goals and 232 indicators. Since then, the SDGs have guided countries and institutions in taking measures to end poverty, fight inequality and injustice and combat climate change.

<b>1</b> NO POVERTY 	<b>2</b> ZERO HUNGER 	<b>3</b> GOOD HEALTH AND WELL-BEING 
<b>4</b> QUALITY EDUCATION 	<b>5</b> GENDER EQUALITY 	<b>6</b> CLEAN WATER AND SANITATION 
<b>7</b> AFFORDABLE AND CLEAN ENERGY 	<b>8</b> DECENT WORK AND ECONOMIC GROWTH 	<b>9</b> INDUSTRY, INNOVATION AND INFRASTRUCTURE 
<b>10</b> REDUCED INEQUALITIES 	<b>11</b> SUSTAINABLE CITIES AND COMMUNITIES 	<b>12</b> RESPONSIBLE CONSUMPTION AND PRODUCTION 
<b>13</b> CLIMATE ACTION 	<b>14</b> LIFE BELOW WATER 	<b>15</b> LIFE ON LAND 
<b>16</b> PEACE, JUSTICE AND STRONG INSTITUTIONS 	<b>17</b> PARTNERSHIPS FOR THE GOALS 	

## HOW THIS REPORT WAS BUILT

GRI 102-40 / 102-42 / 102-43 / 102-44

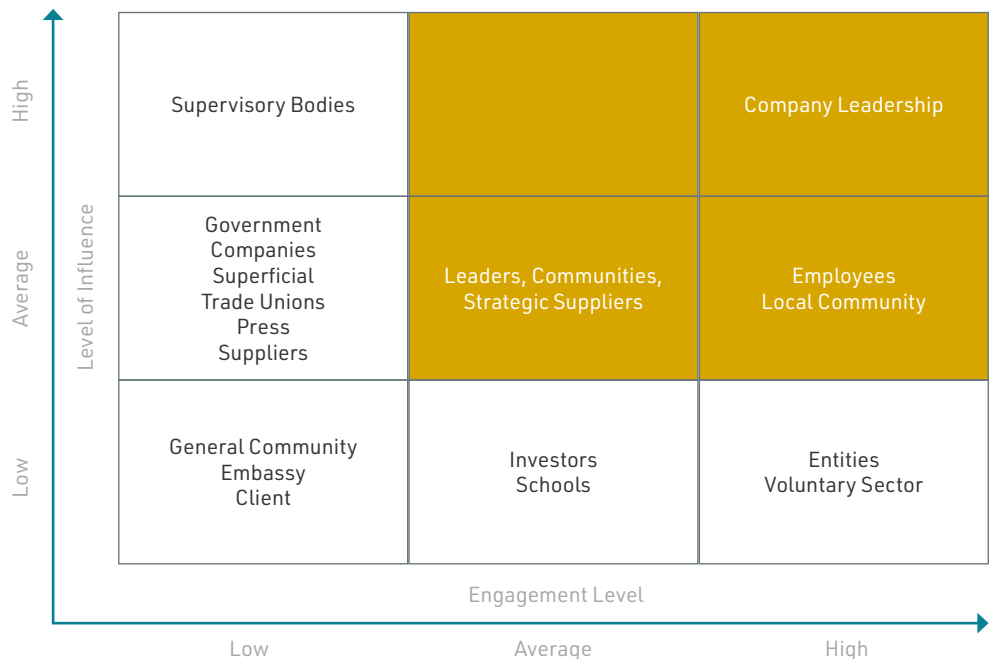
The development journey of this new proposal for measuring and assessing organizational impacts involved the active participation of several players in the operation chain of Jaguar Mining, especially listening to employees, communities and suppliers. The process was conducted in such a way as to enhance collaboration and innovative co-creation, contemplating the diverse perspectives and priorities of stakeholders.



### STAKEHOLDERS MAP

**Captions:**

Stakeholders prioritized for the participation of the SDG research process, considering the degree of engagement / influence of these groups in its execution. The performance / relationship with other stakeholders was considered in the scope of measurement of the Impact Matrix.



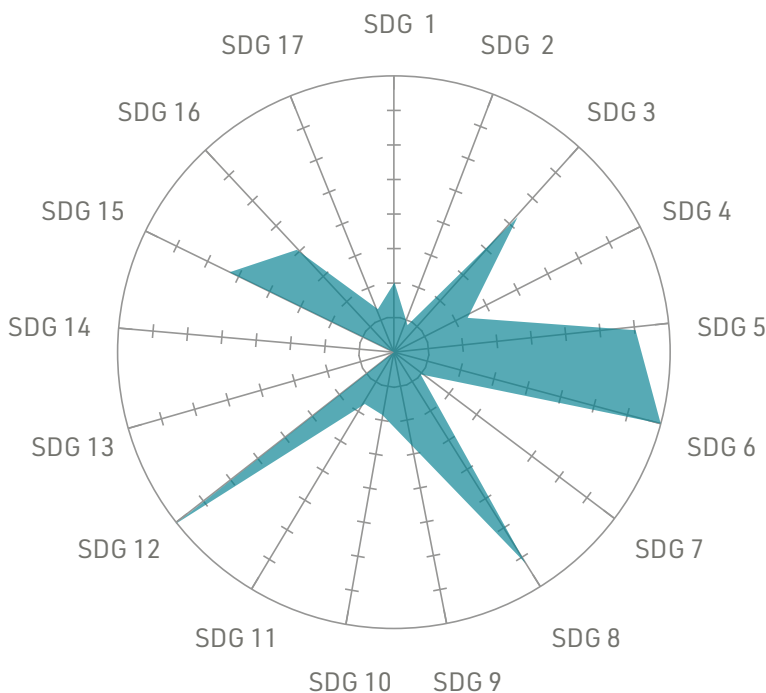


# AFFINITY MAP

The data and information raised in the research stages were analyzed based on the exclusive methodology developed by ImpactLAB, a consultancy that supported Jaguar Mining throughout the process, resulting in the preparation of the Affinity Map. The Map and Affinity Radar represent the relationship of Jaguar Mining's performance with the SDG. The proportionality presented reflects the degree of correlation of actions taken by the organization with the SDG prioritized by stakeholders.



## AFFINITY RADAR



The Map allowed the analysis to develop, culminating in the definition of the goals that most closely relate to the activities and results at the mining company. The most relevant goals for the stakeholders involved in this journey are presented below.

## 12 RESPONSIBLE CONSUMPTION AND PRODUCTION



### Ensure sustainable consumption and production patterns

**12.2** By 2030, achieve the sustainable management and efficient use of natural resources

**12.4** By 2020, achieve environmentally sound handling of chemicals and all wastes during their life cycle, in accordance with internationally agreed milestones, and significantly reduce their release to air, water and soil, to minimize its negative impacts on human health and the environment

**12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

**12.a** Supporting developing countries to strengthen their scientific and technological capacities towards more sustainable patterns of production and consumption

## 6 CLEAN WATER AND SANITATION



### Ensure availability and sustainable management of water and sanitation for everyone

**6.3** By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

**6.4** By 2030, substantially increase the efficiency of water use in all sectors and ensure sustainable withdrawals and fresh water supply to address water scarcity, and substantially reduce the number of people suffering from water scarcity

**6.a** By 2030, expand international cooperation and capacity-building support for developing countries in water – and sanitation – related activities and programs, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies

## 8 DECENT WORK AND ECONOMIC GROWTH



### Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for everyone

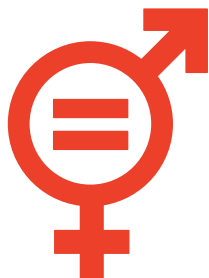
**8.4** Improve progressively, through 2030, global resource efficiency in consumption and production and endeavor to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programs on sustainable consumption and production, with developed countries taking the lead

**8.5** By 2030 achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value

**8.8** Protect both labor rights and working environments so that they are safe for all workers, including migrant workers, in particular migrant women, and for people in precarious employment conditions

**8.b** By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labor Organization [ILO]

## 5 GENDER EQUALITY



### Achieve gender equality and empower all women and girls

**5.1** End all forms of discrimination against all women and girls everywhere

**5.5** Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life

**5.c** Adopt and strengthen sound policies and applicable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels

## MATERIALITY MATRIX

The Materiality Matrix was developed with broad listening and stakeholder participation. The process was conducted in order to define the most relevant impact themes for Jaguar, combining, in the analysis performed, referential issues of the mining sector for the strategic differentiation of the business and the perception of stakeholders regarding the positive and negative impacts arising from Jaguar’s operation. All parameters used were connected to the UN Matrix, resulting in a materiality fully aligned with the global precepts of sustainable development.

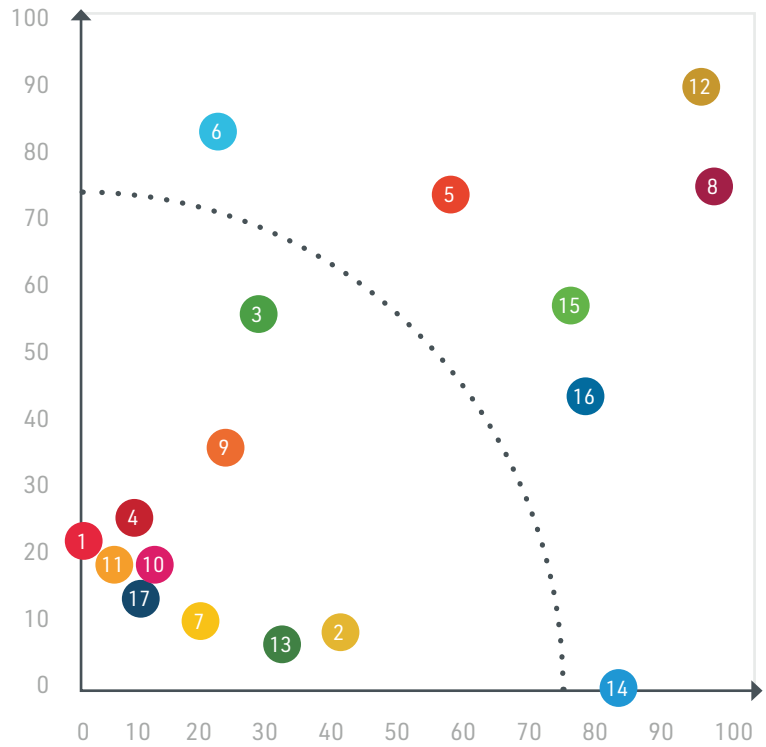


### DID YOU KNOW?

The Materiality Matrix is a tool that helps companies identify the most important sustainability issues for their business. It is a graphical representation of the prioritization of the economic and socio-environmental themes recognized by its stakeholders as the most relevant for the allocation of dealings and transparency efforts. From 2013, the Global Reporting Initiative, through G4 Guideline, advised organizations to better explain the construction methodology and results of the Materiality Matrix, as it directs the structure of monitoring and evaluation of organizational impacts.

### Y-axis

The Y-axis construction reflects the materiality of sustainability issues for Jaguar Mining. The prioritization came from the degree of relevance attributed by national and international reference initiatives to the economic and socio-environmental issues of the sector and the market in general. They are as follows: GRI – General Document and Document of Mines and Metals, International Council of Mines and Metals (ICMM), Bovespa Corporate Sustainability Index (ISE) and IRIS (see glossary).



### X-axis

The X-axis reflects the materiality of sustainability issues for stakeholders involved in the SDG research stage. It is the result of prioritization of this listening process using the UN Matrix.

The methodology applied to the definition of the material themes – of greater relevance to Jaguar and its stakeholders, started from the selection of the SDG impact themes that presented a minimum grade of 75% for one of the axes.

**SDG 12, 8, 6, 5, 15, 16 and 14 presented, in their overall objective and goals, the most important global impact themes for Jaguar Mining and its stakeholders.**

The material themes were broken down into the GRI indicators connected to them, resulting in the matrix that guided the measurement and assessment of impacts presented in this Report. The process was enriched by the definition and validation of impact hypotheses, connected to the material themes, through the use of methodologies that allowed a multidimensional understanding of the results.

## GLOSSARY

**Impact Reporting and Investment Standards (IRIS):** This is an initiative of GIIN (Global Impact Investing Network). It acts as a widely accepted catalog of performance metrics used by impact investors to measure the social, environmental and financial success of organizations, evaluate agreements and increase the credibility of the impact investment market.

**Global Reporting Initiative (GRI):** It is an independent international organization that has pioneered sustainability reporting since 1997. It helps companies and governments worldwide to understand and communicate their impact on critical sustainability issues such as climate change, human rights, governance and social welfare. This allows real actions to create social, environmental and economic benefits for everyone.

**Stakeholders:** Interest groups that may affect or be affected by the objectives and activities of the organization.

**Corporate Sustainability Index (GSI):** It is a tool for comparative analysis of the performance of companies listed on B3 (stock exchange product), under the aspect of corporate sustainability, based on economic efficiency, environmental balance, social justice and corporate governance. It also broadens understanding of companies and groups committed to sustainability by differentiating them in terms of quality, level of commitment to sustainable development, fairness, transparency and accountability, nature of the product, and business performance in the economic and financial, social, environmental and climate change dimensions.

# 03

**ECONOMIC**  
AXIS





# ON THE ECONOMIC AXIS

Monitoring Jaguar’s investments and financial performance is of utmost importance for a better understanding of the impacts and financial and economic results of its presence in the locations where it operates. This process allows the implementation of actions that are more in line with the mining company’s purpose and commitment to income generation and improving the quality of life of the surrounding communities.

## REVENUE DISTRIBUTION

GRI 201-1 / 401-2 / 202-1D / 202-1B / 409-1

In 2018, Jaguar’s activities resulted in the sale of **74,530 ounces of gold**, generating a net operating revenue of **BRL 348,064,000.00**, as shown below:

CCA Complex	MTL Unit	TOTAL
<p>Net operational revenue</p> <p><b>BRL 197,535,000.00</b></p> <p>Operational Costs</p> <p><b>BRL 126,663,000.00</b></p> <hr/> <p>Result</p> <p><b>BRL 70,872,000.00</b></p>	<p>Net operational revenue</p> <p><b>BRL 150,529,000.00</b></p> <p>Operational Costs</p> <p><b>BRL 113,479,000.00</b></p> <hr/> <p>Result</p> <p><b>BRL 37,051,000.00</b></p>	<p>Net operational revenue</p> <p><b>BRL 348,064,000.00</b></p> <p>Operational Costs</p> <p><b>BRL 240,142,000.00</b></p> <hr/> <p>Result</p> <p><b>BRL 107,922,000.00</b></p>

**23,5%**

of total revenue went to employees, considering regular salaries, charges, Christmas Bonus and vacation pay.

Total of  
**BRL 81,717,221.00**







## BRL 14,706,035.60

were invested in employee benefits, namely:

- Health insurance
- Dental plan
- Life Insurance
- Aid for the purchase of school supplies (for employees who receive up to BRL 3,507.72)
- Food allowance
- Meal voucher
- Transportation voucher

Jaguar's focus is on fostering the maintenance of decent and non-discriminatory working relationships throughout its entire production chain. It has management tracking tools to ensure that suppliers, interns and apprentices are paid above the minimum wage. In addition, supplier assessment and monitoring are periodically conducted through the Ministry of Labor's Transparency Portal, providing security for decision-makers on compliance with labor legislation and the absence of child and forced labor by service providers.

**None of Jaguar's current suppliers are on the register of employers who have subjected workers to slave labor conditions under the Ministry of Labor.**

**One of our core values is sustainability. Therefore, the concern for the environment could not be absent from the institution's financial planning.**



Water monitoring  
BRL 729,081.82



Forest Recomposition  
BRL 207,143.36



Management of Acid Drainage from the Mine  
BRL 21,880.00



Maintenance of Paralyzed Areas  
BRL 1,199,425.82



Monitoring of Atmospheric Emissions  
BRL 84,001.72



Waste Management  
BRL 1,566,179.58



Consultancy and Environmental Studies  
BRL 311,428.57

**Altogether, over  
BRL 4 million were  
invested in projects  
and actions related  
to environmental  
management**

## FINANCIAL RETURN OR DISTRIBUTION OF REVENUE TO LOCAL COMMUNITIES

GRI 202-1 / 203-1

Income generation for communities is materialized in Jaguar's various interaction, fundraising and investment formats. The diversification and economic movement in operating locations, especially in the service sector, are positive results of this relationship between the mining company and its stakeholders. For many local residents, part or their entire livelihood comes from the company's activities. This is the case of those who have their land leased by the mining company, for which BRL 6,646,382 was allocated, which is equivalent to about 2% of total revenue in 2018. Within the scope of the Government, an amount of BRL 19,577,913.00 was allocated, upon payment of federal and municipal taxes.

Over

**BRL 7,5 MILLION**

Tax Return to Local Communities

CFEM\*

**BRL 5,062,132.00**

ISS Withheld

**BRL 2,483,591.00**

\* Financial Compensation for Exploration of Mineral Resources



**BRL 400,000**

in direct investment in the development of local communities in 2018.

## RESPONSIBLE AND COMMUNITY-FOCUSED INVESTMENT

Jaguar's role in strengthening communities has advanced with project implementation and support for activities already developed locally. In this sense, BRL 96 thousand were invested directly in consultancy activities to enhance the results of local projects, carried out under the Sustainability Seeds Program. The development of the entities through consultancy actions made possible the collection of BRL 178 thousand. In addition, almost BRL 223 thousand was invested in the form of donations and sponsorships.

## LOCAL ECONOMIC CONTRIBUTION: USE OF SUPPLIERS OR LOCAL LABOR

GRI 102-9 / 204-1

Jaguar is concerned with strengthening the local economy and the development of positive socioeconomic impacts throughout its production chain. It concentrates efforts to implement a policy of using suppliers and contracting local labor. Whenever possible, it prioritizes contracting in the cities in which it operates or in areas of direct influence. **In 2018, 20% of Minas Gerais suppliers were from local companies, totaling BRL 9,090,726.00 destined to service providers originating from the cities of influence of the mining operations.**

## PAYMENT TO LOCAL SUPPLIERS

CCA COMPLEX		
Barão de Cocais BRL 2,049,956.00	Santa Bárbara BRL 2,827,041.00	Caeté BRL 452,034.00
<b>BRL 5,329,031.00</b>		

MTL UNIT	
Conceição do Pará BRL 452,034.00	Pitangui BRL 2,090,313.00
<b>BRL 2,542,347.00</b>	

Payment to suppliers of Minas Gerais

# **BRL 168,374,765.00**

# 04

**SOCIAL**  
AXIS







# SOCIAL AXIS

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Valuing and caring for people is a fundamental commitment of Jaguar Mining. In order to promote positive relationships with its employees, suppliers and the communities directly and indirectly involved in its operations, the company advances in evaluations and monitoring of its actions in an increasingly structured manner. This clarity, which materializes in the findings presented in this Axis, guides the mining company in implementing measures that are more in line with the demands and needs of all those involved in its activities.

# JAGUAR WITH ITS EMPLOYEES

The understanding of Jaguar relation towards its employees is required for measuring the social transformation generated by the company.

Employees have the closest relationship with Jaguar, thus implying greater potential for their lives to be impacted by the company's operations.

## EMPLOYMENTS

GRI 102-8

Jaguar Mining employs a significant number of people in its production process and works with commitment and responsibility to promote the well being and development of everyone. In 2018, the Company reached the level of 1,022 direct employees. MTL Unit accounted for almost half of all employees, accounting for 46% of the jobs generated by the Company.

MTL	CCA-PILAR	CCA-RG	CORPORATE OFFICE (BH)	CPA
474	299	166	75	8

Jaguar does not hire freelancers and has 47 young people from the Apprenticeship Program, who undergo vocational training and have a great possibility of future hiring.

	MTL	CCA-PILAR	CCA-RG	CORPORATE OFFICE (BH)	CPA
Theoretical and practical training	0	0	5	0	0
Theoretical training	22	14	3	2	1
Total Number of Apprentices	22	14	8	2	1



## SUCCESS CASES

In August 2018, Jaguar entered into partnership with SENAI to start a group of apprentices in the city of Pitangui/MG, with the learning course in "Administrative Processes."

This course is exclusive for apprentices selected by the company. This initiative fostered the professional training of students in the communities surrounding Jaguar's operations.

Labor law imposes an age limit for underground work. Therefore, Jaguar employees are predominantly in the 30-50 age group. Also noteworthy is the significant number of young people up to 30 years of age, 29% of the total.

	MTL	CCA-PILAR	CCA-RG	CORPORATE OFFICE (BH)	CPA
Up to 30 years of age	163	83	31	17	0
Between 30 and 50 years of age	285	199	96	47	8
More than 50 years of age	26	17	39	11	0

## CONTRACTING

GRI 401-1a

In 2018, Jaguar generated 134 direct jobs, contracting 42 women and 92 men, including 83 workers, 41 apprentices and 10 interns.



Jaguar values diversity and inclusion in its hiring policy. In 2018, 36 people with disabilities were employed in their units.

MTL	CCA-PILAR	CCA-RG	CORPORATE OFFICE (BH)	CPA
18	10	4	4	0

### Hiring by age group



- Up to 30 years of age
- From 31 to 50 years of age
- More than 51 years of age

## TURNOVER (turnover of professionals)

GRI 401-1b

The company recorded an atypical reduction in the number of employees due to the suspension of the RG mine activities in April. This episode reflected directly in the unit's turnover increase, which reached 18,35% in 2018, with a reduction in the staff.

UNIT	TURNOVER (%)
CCA-PILAR	7,63
CCA-RG	18,35
CORPORATE OFFICE (BH)	23,63
MTL	11,65

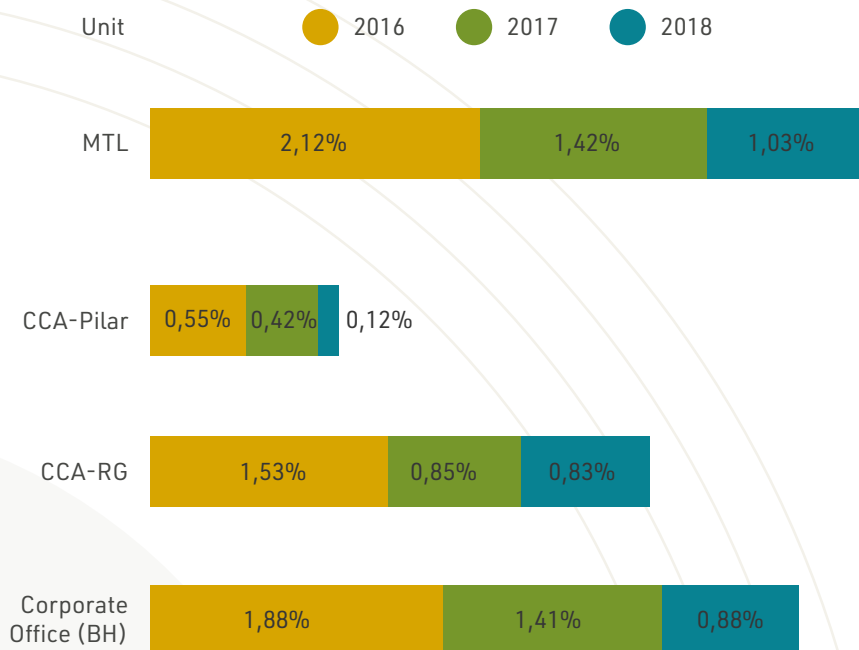


UNIT	CITY	NUMBER OF EMPLOYEES CONTRACTED
MTL	Conceição do Pará	3
	Pitangui	52
CCA-Pilar	Barão de Cocais	14
	Santa Bárbara	12
CCA-RG	Caeté	6
		<b>73</b>
		<b>31</b>
		<b>9</b>

## ABSENTEEISM

GRI MM4

The absenteeism rate has decreased over the last three years. In 2017, there was a decrease of 0,59% in the general average compared to the previous year. In 2018, this rate decreased by 0,28% compared to 2017.



For the past three years, there has been no strike by Jaguar employees.



## PROFESSIONAL GROWTH

GRI 404-1

Jaguar cares about the future of its employees. For this reason, it promotes continuous training actions to support individual development and enable the achievement of everyone's professional goals. In 2018, the company performed a total of 15,819 hours of technical and specific training, to train employees in new functions, in addition to mandatory safety, institutional training, among others.

UNIT	TOTAL AMOUNT OF HOURS
CORPORATE OFFICE (BH)	906
MTL	8,621
CCA-PILAR	4,661
CCA-RG	1,631
<b>TOTAL</b>	<b>15,819</b>



## HEALTH AND WELLBEING

GRI 403-6

The company's care for its employees is reflected in the development of projects and actions aimed at preserving the health and promoting the well being of everyone. Jaguar carries out the Health and Quality of Life Promotion Program, with the objective of preventing diseases, promoting the improvement of health and quality of life in the workplace. The program consists of several actions, such as lectures and distribution of information covering topics such as hypertension, obesity, respiratory diseases, diabetes, smoking, depression, breast and prostate cancers and the importance of physical activity. The primary objective of the Program is prevention, for early diagnosis and monitoring of health problems related to inadequate lifestyle.

27

actions

152

employees on  
average per action



# GOLD CUP PROJECT

## OUR PRIDE

GRI 403-6

At the Golden Cup Project, employees were invited to embark on the challenge of transforming their lives by adopting healthy habits. The project was a competition between teams of interested employees from all Jaguar units. The teams were evaluated for the results achieved in relation to engagement in activities and improvement of some of their team members' health indicators.

Jaguar supported the teams with the promotion of physical activities, evaluations and nutritional consultations accompanied by specialized professionals. In 2018, the competition was attended by 30% of employees, rewarding teams that won the challenges per unit and workers with the greatest reduction in body fat percentage.



# 277

Participants



# 731

consultations

### LOST KILOS

CCA-RG <b>74.2 Kg</b>	CCA-PILAR <b>104 Kg</b>
CORPORATE OFFICE (BH) <b>35.3 Kg</b>	MTL <b>184.7 Kg</b>



# 398.2

total kilos lost



# 169

activities executed



On average, **55,7%** of participants lost weight



### Winning Teams

CCA-RG <b>Go!Fit</b>	CCA-PILAR <b>2% Fat</b>
CORPORATE OFFICE (BH) <b>Sanfona</b>	MTL <b>Heavy Team</b>



***"The project helped in my daily motivation, as well as assisting in weight loss and measurements. I also started practicing jiu-jitsu, which has helped a lot in my fitness as well as keeping me steady on the diet."***

Ronaldo Ribeiro Leão  
Member of the "Heavy Team"  
Plant Operator  
MTL Unit

***"I had high cholesterol, needed to lose weight and I usually found myself very tired. The project helped me gain stamina and we set up a team to play shuttlecock."***

Daniel do Rosário Machado  
Member of "2% Fat"  
Electrical Maintenance Supervisor  
CCA-Pilar Unit

***"This project was very important. Collectively, it was beneficial to the health of those who participated and achieved positive results, as well as being a sign that the company is concerned about the physical and clinical health of its employees. Individually, I am happy to have achieved good results, because after reaching the peak of 140 kg and having two knee arthroscopies, I was able to reach 87 kg with health, less pain and without having to undergo surgical procedures. Congratulations to all those who participated in the project."***

Jasson de Souza Perez  
Plant Supervisor  
CCA-RG Unit

***"It was very significant for me, it made me reflect on my health and eating habits, providing a better quality of life through dietary re-education."***

Weberson Rodrigues de Souza  
Fat Percentage Champion  
1st place CCA-RG Unit  
Equipment Operator  
Lost 9.9% Body Fat



## MATERNITY AND PATERNITY LEAVE

GRI 401-3

Jaguar understands the importance of extended licensing for baby and family development. The company participates in the Government Citizen Company program. It grants 6-month maternity leave and 20-day paternity leave, both of which exceed the legal minimum required, reaffirming its commitment to care and appreciation of the families that are part of the mining company's history.

## OCCUPATION HEALTH

"Zero Harm" to employees, communities and the environment is one of the values that guide Jaguar's activities. The organization values the sustainable development and the responsibility and balance in the execution of its strategy. Over the years, Jaguar has established a set of policies and actions to reduce the risks to the safety and health of its employees, contributing to the prevention of occupational accidents.

### SAFETY MANAGEMENT SYSTEM

GRI 403-3a / 403-4

The Safety Management System review began with the aim of improving procedures and tools, as well as broadening behavioral approaches to developing a safe and sustainable work culture. The System consists of six fronts:

#### 1) Safety and Environment Committee

In 2018, the Safety and Environment Committee (*SMA, Segurança e Meio Ambiente*) was created in the operating units. The main objective is the discussion and analysis of items classified as high potential in inspections performed by the SMA team, streamlining the process of management and handling of deviations. For this purpose, monthly meetings are held with safety, environment, general management, area managers and coordinators. Discussions and conclusions are passed on to Jaguar's senior management and, for each item, mitigation and remediation strategies are defined.

#### 2) Emergency Brigade

Jaguar counts on the commitment of volunteer brigade members to act in emergency cases with first aid, combating the principles of fire and other accidents. They act as "guardian angels", also helping to prevent possible claims by conducting recurring inspections at the facilities and verifying risk situations. In 2018, the group of volunteer brigade members expanded their number per work shift and received training courses, focusing on the specific risks of the operating units.



### 3) SIPATMIN

The theme of Jaguar's Internal Mining Accident Prevention Week (SIPATMIN, *Semana Interna de Prevenção de Acidentes de Trabalho na Mineração*) in 2018 was:

**"I take care of myself, take care of you and allow myself to be taken care of".**

Theatrical presentations, safety quizzes, lectures, Good Practice Contest and various other activities were held, offering employees a reflection on active care, reinforcing their commitment to the process of evolution and maturity of the safety culture.

The company also opened its doors at SIPATMIN for the **Family Visit** in the CCA Complex. Family members participated in lectures on "Safety at Home and Healthy Habits", they visited the mine, got to know the work environment and the activities performed by their family members.





#### 4) Ergonomics

Jaguar believes that a healthy physical and psychosocial environment directly contributes to productivity gains, accident prevention and illness prevention. Thus, it began the implementation of Ergonomics Management in a corporate way in all units. This work has an external consultancy, whose objective is to conduct a systematic study of all work processes in order to analyze their conditions, raise awareness and engage employees and leaders and also recognize ergonomic risks that may negatively impact health, offering support for management decisions.

The ergonomic risks and opportunities for improvement of each activity are defined with a view to the observation and monitoring of the ergonomist in the routine of the sectors of all hierarchical levels of the units.

#### 5) Safety Inspections

In 2018, Jaguar adopted a system for controlling the occurrence of deviations from safety procedures. The action enabled a better management of occurrences by area, by improving the traceability of detected problems and analyzing the relevance of each deviation according to the identified theme.

Throughout the year, safety investigations were intensified, with cross-inspections at the units aimed at exchanging experiences, good practices and verifying legal requirements. Personal Protective Equipmen (PPE) blitz, vehicle and equipment blitz, chemical agent monitoring and general work front checks were performed.

Management inspections were also conducted by the operational managers of the units, with the participation of the other area managers, which reflects the visible commitment of the organizational leaders to the safety of everyone.

### 6) Safety Campaigns

#### Yellow May

Jaguar joined the Yellow May Movement to draw employee attention to the high rate of traffic accidents in Brazil. This movement aimed to raise awareness of safe traffic behavior inside and outside the mining units. Several actions were carried out, such as the dissemination of support material and incentive for campaign engagement, behavioral approaches to enforce traffic safety rules, blitz to check vehicle conditions and black smoke monitoring.

#### Safe behavior

Due to the occurrences of accidents recorded in the 3rd quarter of 2018, the company conducted the Safe Behavior campaign to reinforce safety care and commitment to life. Leaders joined the campaign by holding dialogues with the teams about the importance of constant vigilance and the elimination of risk behaviors. In addition, behavioral approaches were made at work fronts, with safety awareness and life enhancement videos.

#### Safe Traffic

In October 2018, the MTL Unit promoted the Safe Traffic campaign to raise the importance of road safety by encouraging employees to analyze their behavior when driving vehicles and operating equipment at the mine. Discussions were held in the DSDs about safe traffic practices, with the distribution of explanatory leaflets, and safety inspections. In the end, the signing of the "Commitment" banner was encouraged, an opportunity in which employees pledged to contribute to a safe transit.



**WORK ACCIDENT DATA**

GRI 403-9a

In 2018, despite all these efforts, there was a fatality with an employee of an outsourced company that works in the development of the MTL Unit. Jaguar provided all assistance to the injured family and psychological support to its employees and the contractor.

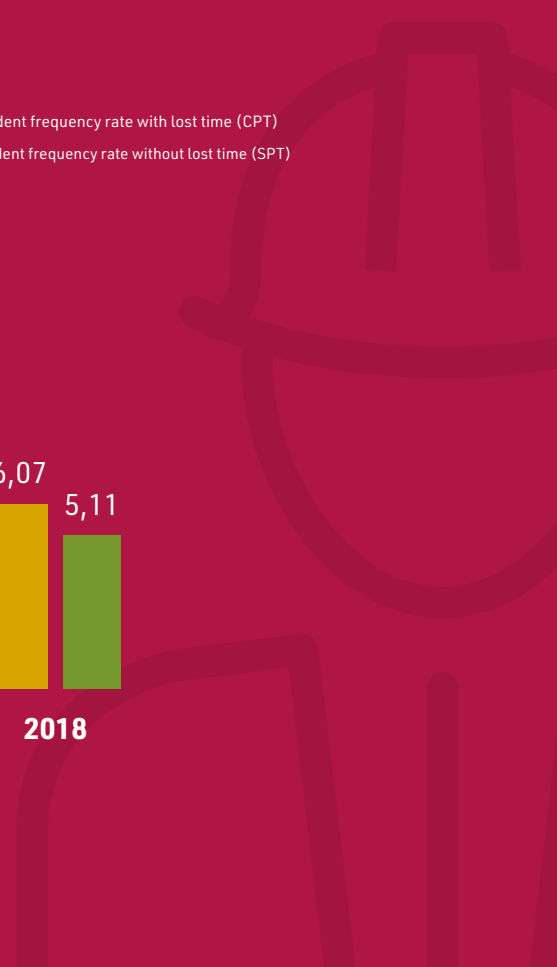
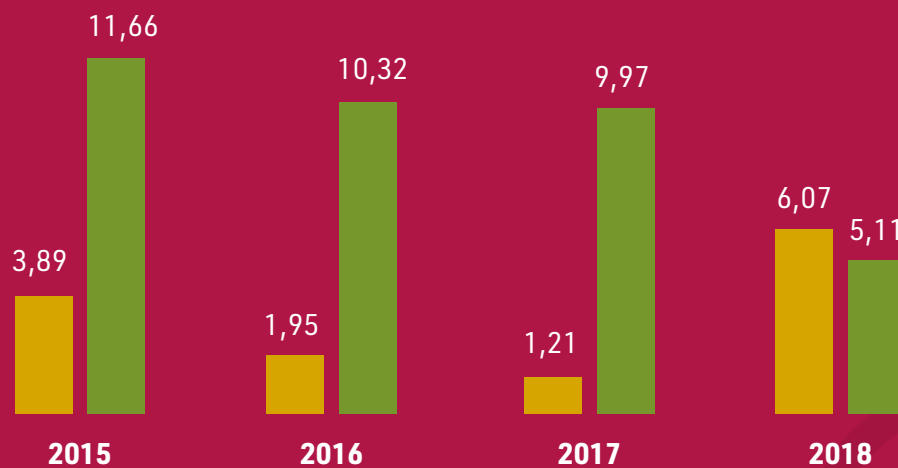
The fact finding and the gathering of statements were immediately carried out, under the coordination of managers and multidisciplinary team, in order to identify the causes of the accident. Preventive actions were disseminated and monitored to prevent recurrence, and lessons learned were widely discussed with the entire workforce at Jaguar units.

The accident frequency rate without lost time (SPT) in 2018 continued to follow the decreasing performance of previous years and was the lowest recorded since 2006. On the other hand, the accident frequency rate with lost time (CPT) increased.

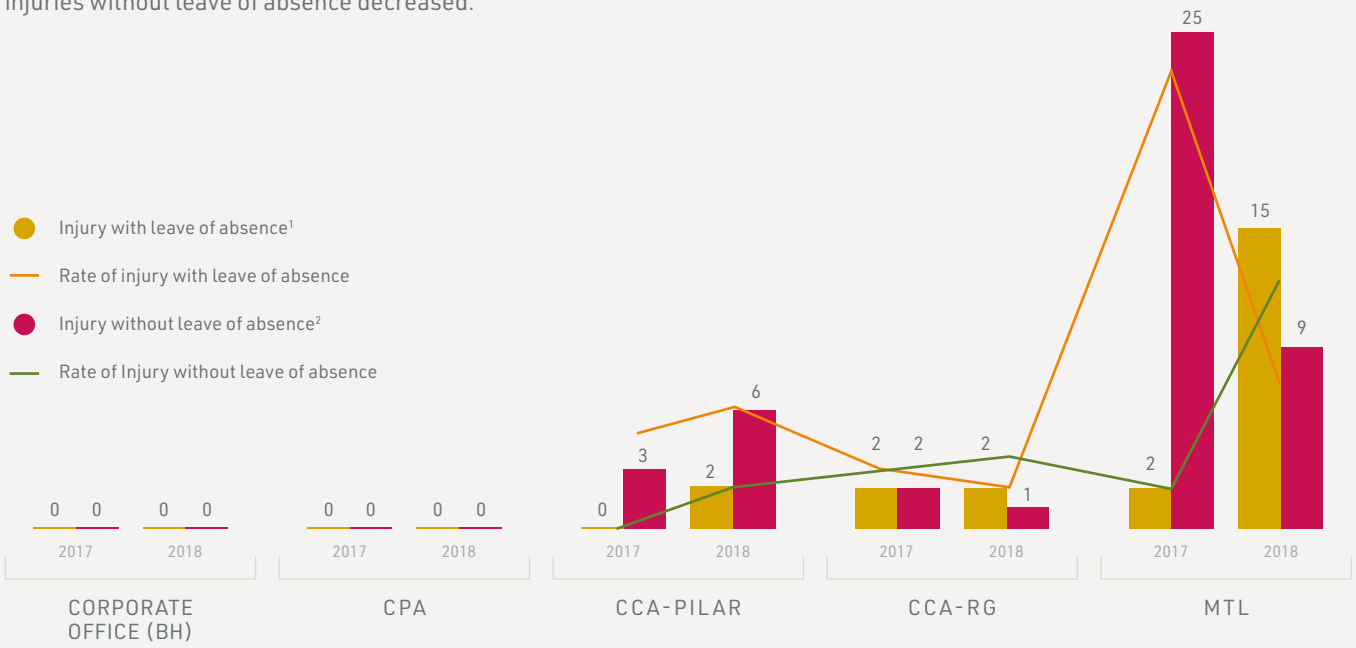


**SAFETY PERFORMANCE**

- Accident frequency rate with lost time (CPT)
- Accident frequency rate without lost time (SPT)



Overall, injuries with leave of absence increased in 2018 compared to 2017, especially in the MTL Unit. In contrast, injuries without leave of absence decreased.



<sup>1</sup> Frequency rate of CPT: Numbers of accidents with injuries that generate leave of absence, multiplied by 1 million hours divided by total hours worked in the period.

<sup>2</sup> Frequency rate of SPT: Numbers of accidents with injury that do not generate leave of absence, multiplied by 1 million hours divided by total hours worked in the period.

## LABOR CLAIMS

The number of labor claims is also an indicator of the quality of the relationship between the Company and its employees. The number of labor claims has fallen steadily since 2014, with a reduction from 301 cases initiated in that year to 44 cases initiated in 2018.

Compared to 2014, in 2018 there was an

**85%**

reduction of labor claims.

*“Before Jaguar arrives, a lot of people went to work in Nova Serrana and now they can work here. It is a company that has a better salary range that pays a fair salary.”*

Paulo Rodrigues Bahia  
 President of the Music Band José Viriato Bahia  
 Mascarenhas  
 Pitangui

## EXTERNAL PUBLIC

### LAND USE

GRI MM5 / MM6 / MM8 / MM9

In 2018, a lawsuit related to the discussion of royalties was registered, adding to two other existing lawsuits, which date from 2010 and 2011. There are three other lawsuits referring to 1997, 2003 and 2017, regarding lease and property agreements.

The projects were acquired from existing mines and there was no expansion of the units in occupied areas, so there was no need for family resettlement due to Jaguar operations.

Operating units are not located in territories, nor are they adjacent to areas of indigenous peoples. Therefore, there is no need for formal contracts with such communities. Although the gold mining activity has great potential to attract artisanal mining, its occurrence was not observed in 2018 around the units in operation.

### COMMUNICATION MECHANISMS WITH THE EXTERNAL PUBLIC

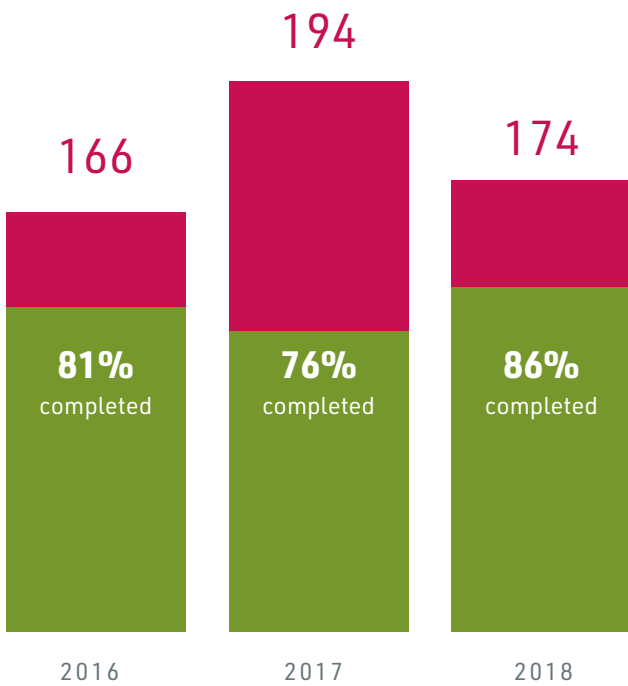
GRI MM7 / GRI 102-44

Jaguar believes that the promotion of a clear, effective and transparent communication with the external public is of paramount importance for the accomplishment of a more effective and fast attendance of the presented demands. In recent years, the company has invested in structuring the Institutional Relations area to get closer to local communities and ensure the effectiveness of this interface. In 2018, 174 demonstrations were registered, i.e., 20 less than in 2017.

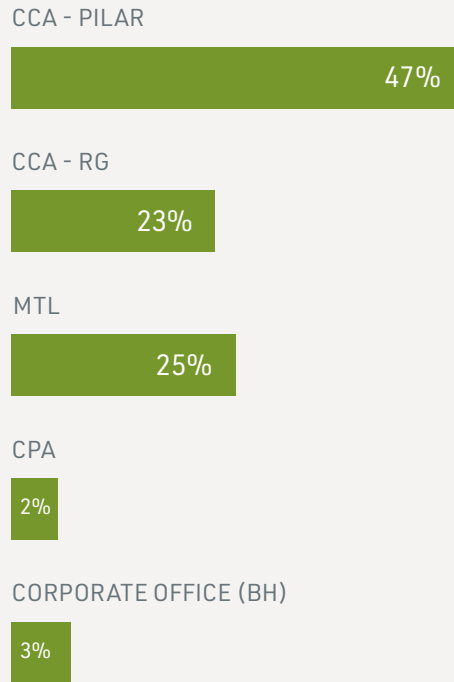
83%

of the demonstrations were completed in 2018, out of which 90% were resolved within three months.

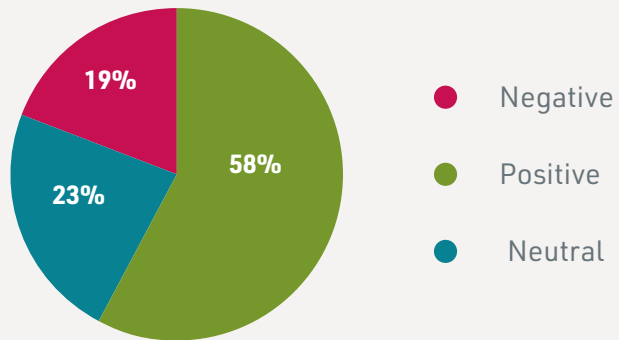
## MANIFESTATION MANAGEMENT



## MANIFESTATION PER UNIT



## REPERCUSSION



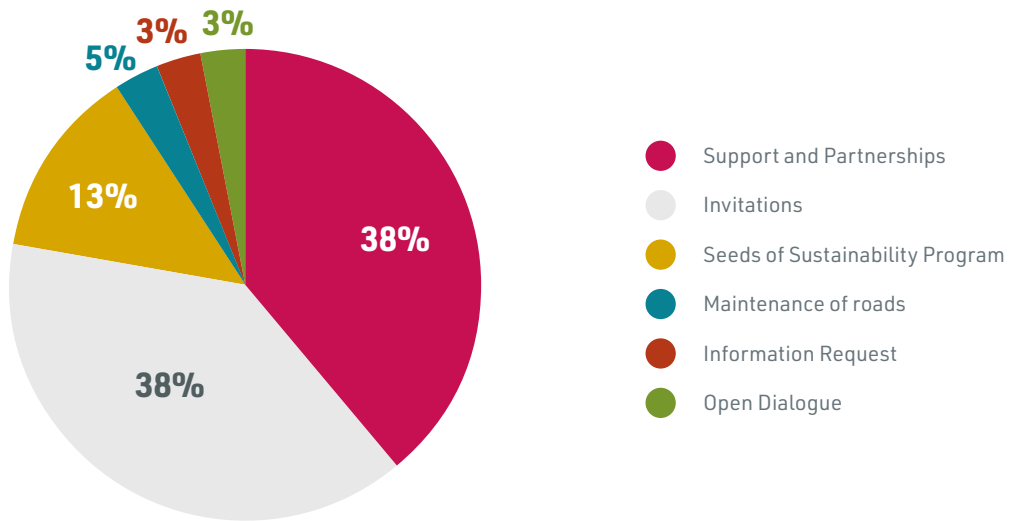
Manifestation Type	Representativity (%)
Relationship Actions	22%
Claims and Complaints	20%
Donations and Sponsorship	35%
Other Requests	23%

Overall, only 20% of the manifestations aimed at all Jaguar units were negative in nature. The company only filed four indemnity proceedings.

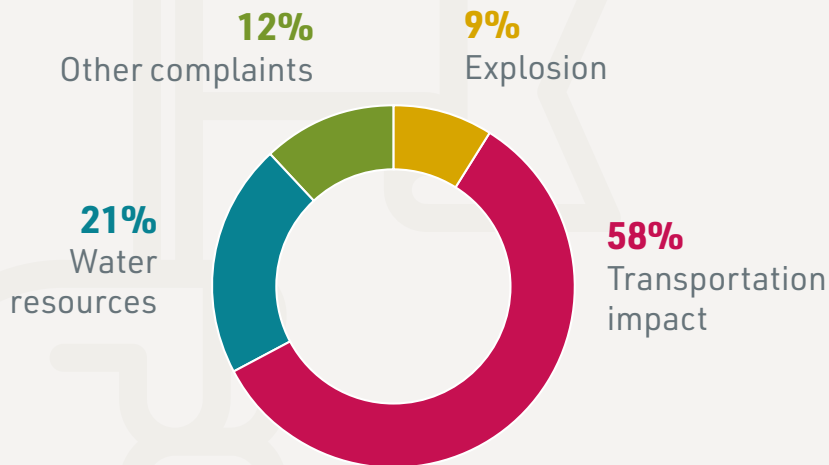
Jaguar's goal is to reach 90% completion of manifestations by 2019.

## DETAIL OF MANIFESTATION TYPES

### RELATIONSHIP ACTIONS



### DETAIL OF COMPLAINTS AND CLAIMS



### DONATIONS AND SPONSORSHIPS

**82%**

Sponsorship

**18%**

Donation

### OTHER REQUESTS

Throughout 2018, the stakeholder Relationship Channel received 41 manifestations classified as "Other Requests". In detailing this classification, the most recurring theme was Human Resources. The contacts are related to job opportunities. Which reflects the slowdown of the country's economy.



## SUPPORT FOR LOCAL DEVELOPMENT PROJECTS

Jaguar Mining seeks to foster new local development processes by integrating the cultural, social, environmental and financial dimensions, as well as valuing the tangible and intangible resources of the territories where it operates. This action defines its way of proposing initiatives, acting and engaging in the work of entrepreneurs who seek to improve the lives of communities.

In this perspective, participation in local projects has become even more intentional and focused on the needs and within the interests of community organizations. 1,500 young people were involved in the ongoing events and training and culture projects of the Seeds of Sustainability Program. Another 300 people participated in the Open Dialogue with the communities in Conceição do Pará and Santa Barbara. The Rua de Brincar events took place in the district of Brumal, in Santa Bárbara, and in the district of Rancho Novo, in Caeté. Together, they totaled 800 participants. Altogether, more than 10,000 people were involved in projects carried out with the support and sponsorship of Jaguar.

# SEEDS OF SUSTAINABILITY PROGRAM

The Seeds of Sustainability Program is the largest social initiative of the mining company. For Jaguar, every social organization is a “seed” ready to germinate and produce results for the places where they operate, consolidating itself as positive examples.

The program aims to support the work of organizations and stimulate local projects that contribute to the development of these communities, bringing social, cultural and economic vitality.



**Among the various activities carried out by the program, the following stand out:**

- Consulting for participating organizations, focusing on structuring projects and services.

- Training and mediation of entities' participation in incentive and financing mechanisms.

- Contribution in mapping, mobilizing and strengthening a partnership network.

- Promoting institutions through the creation of communication channels and support networks and partnerships.



## ENVIRONMENTAL IMPORTANCE

The natural heritage can be one of the strong attractions of the localities, both for residents and visitors, who come to value and take care of their legacy.



## SOCIAL IMPORTANCE

It enables multiple social articulations between different sectors, whether of stakeholders in the development of culture, tourism or the environment, putting together various types of resources.



## CULTURAL IMPORTANCE

It allows the identification, registration and promotion of cultural potentials in the region where it operates. By highlighting heritage aspects, the locality is also able to access public funds directed to culture and heritage.



## ECONOMIC IMPORTANCE

The Seeds of Sustainability Program contributes to increase the capacity to generate income among participants and communities, either through the commercialization of products or through the movement of services in the region.

The program served five different projects in the area of influence of the MTL Unit (Conceição do Pará and Pitangui) and five others around the CCA Complex (Barão de Cocais, Caeté and Santa Bárbara).

**Long Term results for communities**

**340**

hours of development advice

**152**

hours of in-person consulting

**17**

local projects generated



**PROJECTS**

In 2018, the actions of the Seeds of Sustainability Program were aligned with the UN Sustainable Development Goals, to positively impact the achievement of global sustainable development goals.

Jaguar works to ensure that each project reinforces its action within one or more objectives, according to its respective segments. Within the scope of the Seeds of Sustainability Program, the company strongly advances its support for SDG 17 (Partnerships and Means of Implementation), acting as an inducer of partnerships for community development.

Meet the projects that stood out in 2018.





## SUCCESS CASES

### PRÓ-AMOR CULTURAL CENTER

For 18 years, Pró-Amor has played a fundamental sociocultural role in Barão de Cocais/MG, especially in the district of São Benedito and the surrounding communities. Its performance contributes to strengthen and integrate society through art and culture with activities such as handicraft classes, ballet, music, theater and urban dance. Pró-Amor has a physical headquarters, with extensive infrastructure, which has two sheds, workshop rooms, library, computer room, among other spaces used to perform its activities. It has become a strong point of social and community-meeting place.

#### Main results of the year:

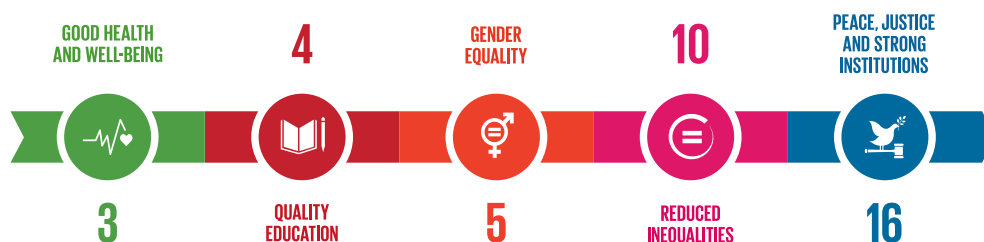
- Follow-up on the implementation of the project approved by FIA in 2017, which increased the attendance of children and young people by more than 100%
- Elaboration and approval of Pró-Amor em Movimento Project in the Fund for Children and Adolescence (FIA) of Barão de Cocais, in the amount of BRL 74,000.00
- Preparation of projects by area of expertise to foster new partners and expands the entity's activities

### CAMINHO MELHOR

Caminho Melhor plays a strategic social role in the district of Leão XIII, in Barão de Cocais and surrounding communities. It has been operating since 2017 through sports and culture initiatives that also seek to prevent and combat violence and drug use, especially strengthening participants' self-esteem.

#### Main results of the year:

- Defining the entity's strategy and holding multi-partner mobilization meetings
- Elaboration and launch of Caminho Melhor Campaign for Sport for fundraising
- Increase in service capacity, namely:
  - » 115 soccer lessons given - 20% increase over 2017
  - » 384 hours of volunteer work at soccer school - 30% increase over previous year
  - » 150 participants - 40% increase over 2017
  - » 7 volunteers - 120% increase over the previous year
  - » Social articulation meetings





## SUCCESS CASES

### ASSOCIAÇÃO DOS AMIGOS E MORADORES DE RANCHO NOVO

The Associação de Amigos e Moradores de Rancho Novo – AAMORN, was created in 2017, in view of the need to organize the community of Rancho Novo, to strengthen the dialogue among them and the government, companies and other organizations. One of AAMORN's first initiatives was the development of community diagnostics that mapped the demands of various sectors such as health, education, sport, environment, leisure, culture, infrastructure and communication. The situation of each of these sectors was analyzed and recommended solutions and referrals. The document was the basis for the generation of the entity's work plan, as well as integrating the studies for the Master Plan of Caeté.

#### Main results of the year:

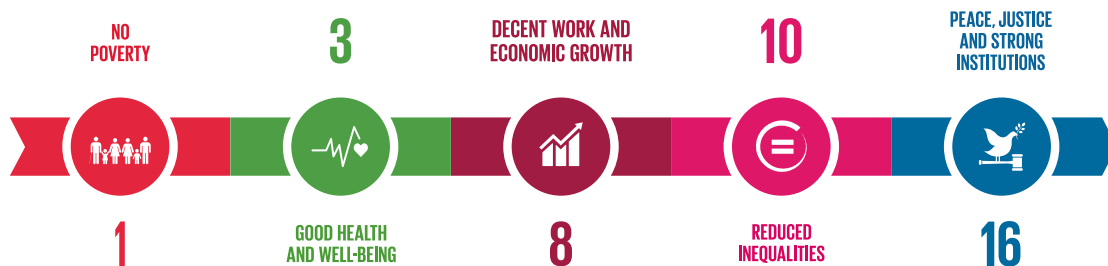
- Development and consolidation of community diagnosis - basis for project development and referrals
- Presentation of diagnostic results to the community and the government
- Support in elevating the village community to district
- Referral of strategic matters to the competent bodies

### CASQUILHO COMMUNITY COUNCIL

Casquilho community belongs to the municipality of Conceição do Pará in Minas Gerais, neighboring the MTL Unit. In 2018, this community also worked on the elaboration and development of the community diagnosis that identified projects of common interest aimed at improving the quality of life of residents. The population faces strong social problems in the region - such as increased drug use by young people. In addition, it seeks solutions to demands in the areas of education, infrastructure, health, leisure and environment.

#### Main results of the year:

- Preparation and consolidation of the Casquilho Community Diagnosis - base for the development of projects and referrals
- Creation of the entity's visual identity and social media
- Referral of strategic matters to the competent bodies





## SUCCESS CASES

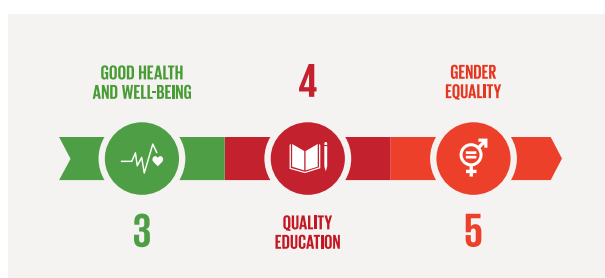
### MUSICAL BAND JOSÉ VIRIATO BAHIA MASCARENHAS

José Viriato Bahia Mascarenhas Music Band is an entity with more than 100 years of existence. It appeared in 1913 as CETEPENSE Music Band, maintained by the old fabric factory installed in Pitangui. Later, it was renamed "Santa Cecília Music Band" and, in the 1970s, it was named "Lira Musical José Viriato Bahia Mascarenhas" in honor of the famous Pitanguense musician. In 2013, it assumed the name "José Viriato Bahia Mascarenhas Music Band".

The Music Band has stood out in the music scene of the central-west region of Minas Gerais, performing in various festivities of the city, besides performing in events outside the city and in band meetings. With the participation of 35 to 40 musicians in their performances, the band has enchanted the audience, especially for the varied repertoire ranging from Frank Sinatra to Cristina Perry.

#### Main results of the year:

- Service expansion by 20%
- Preparation and launch of the Pitangui Crescer com Arte campaign, together with the Associação dos Moradores de Brumado (AMOB)
- Project Enablement in Rouanet Law
- Partnership and agreement monitoring
- Deployment and management of social networks



***"I was very surprised. Jaguar is a large company that respects employees and has a great working climate [...]. In addition, it is very concerned about the entire surrounding community."***

Ana Carolina Caldeira Lopes

Intern

CCA Unit - Pillar

***"Jaguar gave us the loom that was the angel who took us from the basement. Before, we did not have enough space to work and store materials, unlike today. In addition, Jaguar contributes with the donation of old uniforms and with them we make the bags. It still takes us to fairs and interacts with us more than before."***

Silvanea Evangelista Crisóstomo Ferreira

President of Associação das Tecelãs de Brumal

Santa Bárbara

## RELATIONSHIP ACTIONS

### RUA DE BRINCAR

Rua de Brincar is a Jaguar initiative that aims to create leisure opportunities, culture and the strengthening of positive bonds between their employees, families and communities around the company. The first edition was held in 2016, in the district of Brumal, in Santa Bárbara, in partnership with the Cecília Alvares Duarte Municipal School.

In 2018, two events were held, one in Brumal - Santa Bárbara and another in Rancho Novo - Caeté, over **eight hundred people** attended it. The participants of Rua de Brincar experienced a special program, in which children and adults came together participating in play, theater, toys, games, musical performance and other playful activities.

The event disseminated important values such as creativity, collaboration, ethics, honesty, respect and sharing, reflecting positively on the daily life of the community.

It also created a good opportunity to promote local products and services, as well as to approach and strengthen the relationship between families and the Company, through direct interaction between employees and the neighborhood.

### OPEN DIALOGUE

GRI 413-1a / v / vi / viii

The Open Dialogue program consists of meetings with the community where themes chosen by the local population are treated. The program was started in 2016, seeking to strengthen the relationship through transparent and respectful dialogue. Thus, we work to improve the Company's listening processes, as well as understanding and mitigating the impacts of its operations.

In 2018, **four meetings** were held, all on the theme Human Resources. This subject provokes interests due to the economic moment of the country. The events were held in the community of Brumal, Santa Bárbara and Conceição do Pará.

Participating audiences are usually young people looking for a first job opportunity, learning course or internship, as well as experienced professionals who have been dismissed from their jobs due to the economic downturn.





In the meetings, we try to get to know better the people who are looking for a relocation in the job market, either for a possibility of vacancy in Jaguar and its contractors, or for a possibility of vacancy in some other partner.

Meetings are conducive to exchanging experiences and tips on posture and behavior in job interviews. The résumés and registration forms of the participants are filed in Jaguar database for contact when there are vacancies available for the candidate's profile. The process has already paid off: people from the region have been hired, and there are reports of young people who were discouraged by their studies and working life, but found inspiration after participating in the Open Dialogue.

***"I really enjoyed the initiative from the Company. I was flattered to be able to share a little of what I lived to get where I am and to encourage these young people. It was inspiring for me, because I stopped to reflect on my professional career and could see that it is worth persevering and being resilient, because the success belongs to those who seek it."***

Júlio Machado

Operation supervisor

MTL Unit

Speaker of the Open Dialogue Event

***"[...] one of the parts I liked most was when they said they needed women in mechanics and electrical. These are areas that I am very interested in, because I love math and physics and I know that many people still have prejudice with women in this type of position. Seeing that Jaguar is looking for women motivated me a lot [...]. What thrills me most is that it is not a company that only seeks profits and the like, it also cares about society. The talk was wonderful."***

Anatália Nunes Carvalho

Student of State School Dr. Isauro Epifânio

Conceição do Pará



## SUCCESS CASES

The Open Dialogue on Human Resources held in December at State School Dr. Isauro Epifânio, in Conceição do Pará, stood-out in the 2018 schedule. The meeting was aimed at high school youth and teachers, an audience of approximately 200 people and was attended by Jaguar Mining's Human Resources, Institutional Relations and Operation area. During the meeting there was talk about the company and its area of expertise, mission, vision and values, gateway programs such as Young Apprentice, internship, inclusion of people with disabilities (PCD, *Pessoas Com Deficiência*) and job opportunities. They also covered subjects such as professional positions and their required qualifications, focusing on completing high school for opportunities at Jaguar, as well as career tips.

Despite having a simple format, the event has a major impact on the lives of young people, as it arouses in many the desire to continue the journey and pursue their dreams.

Many participants talked to the Jaguar team and expressed interest in professionalizing in various areas. Including girls, in operation and maintenance activities.

The most rewarding thing about these meetings is to inspire young people to be better people, to have dreams and show that with dedication it is possible to make great achievements, regardless of their choices and professions.

## JAGUAR SUPPORT

In addition to the programs mentioned, Jaguar supported 27 other initiatives through donations and sponsorships.

Unit	Entity	Action
CCA - Pilar	Associação Comunitária de Brumal	81 <sup>st</sup> Cavalcade of Brumal
	Associação das Tecelãs de Brumal	Weaving the Cavalhada Weaves / Pallets / Santa Barbara Multisectoral Fair
	Associação de Desenvolvimento Comunitário do Socorro	Nossa Senhora Mãe Augusta do Socorro Party
	Associação dos Moradores dos Bairros Leão XIII, Brás Molina e Boa Esperança	Caminho Melhor - Donation of sports equipments
	Água Limpa Community	Road Maintenance
	Professor Nhanita State School	Genesis Project
	Professor Nhanita State School	Projeto Dito - Donation of sports equipment
	Cecília Alvares Duarte Municipal School / Associação Comunitária de Brumal	Children's Day
	Guilherme Franklin Reis - ME	Launch of the movie Herança - A Cavalhada em Brumal
	Ame Vidas NGO	Solidarity Christmas Social Action of the District São Vicente
	Pró Amor	Play Day
CCA - RG	Associação Comunitária do Bairro Bonsucesso	Children's Christmas
	Associação do André do Mato Dentro and Surroundings - ACRANDA	São Geraldo and Santo Antônio Party
	Caeté City Hall (Trio de Lá) Enilson Barcelos Junior Cota	Caeté Women's / Mothers' Day
	Caeté Culture House	Anniversary of the city / Cultural Events
	Israel Pinheiro Municipal School	Support Easter event, Children's Day and Tire Park Project
	Church Nossa Senhora do Bom Sucesso	Nossa Senhora do Bom Sucesso e São Caetano Party
	Church São João Paulo II	Santo Antônio de Pádua Party
CORPORATE OFFICE (BH)	Minérios e Minerales Magazine	Minerais Extraordinários Book
	Gold and Precious Metals Industry Workers Union of Nova Lima and Region	Worker Party - May 1 <sup>st</sup>
	Santa Barbara Gold and Precious Metals Industry Workers Union	Labor Party - May 1 <sup>st</sup>
MTL	Associação dos Moradores de Brumado	Campaign Pitangui Crescer com Arte
	Dimas Fidelles Campos City Center	June Party and Children's Day
	State School Dr. Isauro Epifânio	June Party
	Aurora Júlia da Fonseca Municipal School	June Party and Children's Day
	Casquilho Community Council	Materials for the painting of the Aurora Júlia da Fonseca Municipal School
	Casquilho Community Council	Donation of sporting goods to the Youth Team of Casquilho
	Pitangui Military Police	Fuel
Casquilho Community Council	Shackles for work in the Casquilho community	

***"We got Jaguar sponsorship for the Dito Project. The company donated a sum and we got uniforms, sneakers, soccer shoes and water bottles. It upgraded the project. [...] I certainly see Jaguar wanting to contribute to the community. [...] Jaguar cares about us, gives sustainability to our project and takes young people out of the wrong life in many cities."***

Adriano Jose Camilo César  
Dito Project Sounder and Creator  
CCA-Pilar Unit

***"From my point of view, Jaguar is a company focused on the welfare of the community, not just sustainably, but creating job, developing the local culture and supporting it in every way."***

Gicelma Francisca S. Oliveira  
Principal of Israel Pinheiro Municipal School  
Caeté



05

**ENVIRONMENTAL**

AXIS









# AXIS ENVIRONMENTAL

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Jaguar is concerned with creating and cultivating sustainable values for its stakeholders. Responsible environmental management and commitment to the balanced development of the organization guides the control systems of all its operations.

Jaguar has developed its environmental management system to allow the precise monitoring of the environmental obligations described in the licensing processes, legal requirements and other demands that may arise, such as requests from environmental agencies.

The company's commitment to sustainable development, coupled with the growing demands of environmental agencies and the expansion of legal requirements, drive Jaguar to increasingly integrated and effective management of its obligations. Its environmental management system is based on meeting all these requirements, always aiming at continuous process improvement with the mitigation of environmental risks and impacts. For the continuous maintenance of this system, procedures, reports, inspection sheets and letters are carried out regularly.

## SUPPLIER MANAGEMENT: SUSTAINABILITY IN THE PRODUCTION CHAIN

GRI 303-1 / 414-2 / 308-1 / 414-1

The Supplier Performance Index (IDF) program was implemented in March 2018. The strategy allows Jaguar to monthly evaluate its suppliers classified as critical, verifying their alignment with the company's values.

Out of 819 registered suppliers, 47 were classified as critical to the business of the mining company from the point of view of safety, environment, production and other axes considered crucial for employee well being.

Out of these critical suppliers, a total of 35 were evaluated by the IDF.

Once identified as "uncertified", i.e., when the supplier scores below 50% of the total, the contract manager holds periodic meetings to advance improvements through the development and

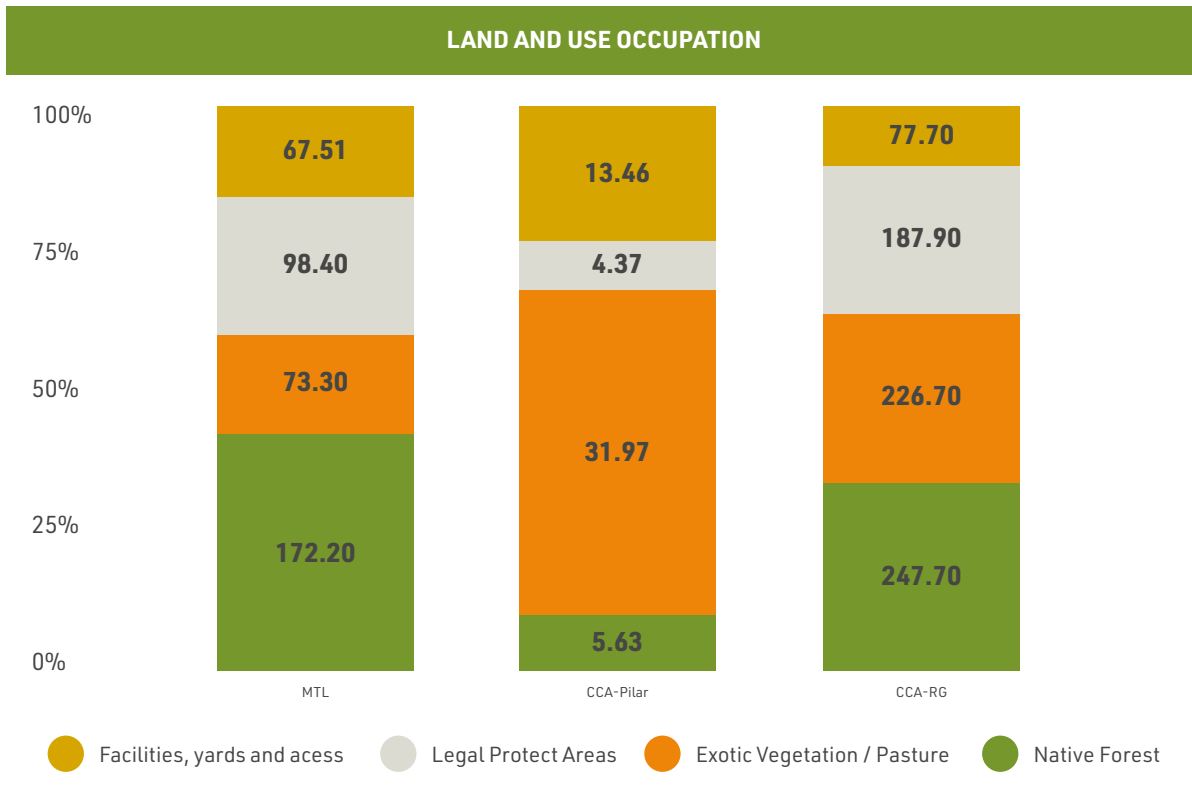
implementation of an action plan. After this joint effort, if the underperforming situation persists for the next three months, this supplier is blocked for the next 24 months. IDF is an important tool for decision-making and ensuring an effective sourcing process, aligned with organizational principles and values.

CLASSIFICATION CRITERIA	
IDF	Classification
90 to 100	Certificate
70 to 89	No restriction
50 to 69	Action Plan
0 to 19	Manager should meet frequently with the supplier. If there is no improvement within three months, the supplier will be blocked for 24 months.

# BIODIVERSITY

GRI 304-1 / 304-3d / 304-3a / 304-4 / MM1 / MM2

Jaguar's operating units occupy 982.1 hectares in total. The facilities, yards and access roads add up 158.6 hectares. Native forests occupy 425.5 hectares, part inside legal protected areas that amounts 286.3 hectares



Jaguar Mining acquired 135.4 hectares in the Mata do Cedro Ecological Station, a Conservation Unit located in the municipality of Carmópolis de Minas. A revitalization program of vegetation cover with native species is being implemented in the area, which will be donated to the state as environmental compensation.

Two of Jaguar's three operating units are located in Sustainable Use Conservation Units: the CCA-RG Unit in the Juca Vieira Environmental Protection Area; and the CPA Unit, in the Southern Environmental Protection Area, which encompasses a large part of the Metropolitan Region of Belo Horizonte.

Jaguar's operating regions are not located in areas with species of Red List of the International Union Conservation Nature (IUCN) or national

conservation list areas. Therefore, the need for a formal Biodiversity Management plan was not found. Even so, the company performs several other environmental monitoring, which shows its alignment with the "Zero Damage" value and the preservation of the environment.

Jaguar monitors the terrestrial fauna in order to evaluate possible impacts of the operation on the local fauna. This monitoring is carried out during the dry and rainy periods of each year in compliance with environmental conditions. Items such as diversity, frequency and resilience of species and fauna groups are evaluated by specific methods, always by qualified professionals, resulting in the listing of species found according to classification and risk of extinction.

In 2018, two campaigns were conducted, covering thirty sampling points for groups of mastofauna, herpetofauna and avifauna.

MONITORING PERFORMED BY TYPOLOGY	REPRESENTATIVITY (%)
Birdlife	5
Herpetology	9
Mastofauna	16
<b>Total</b>	<b>30</b>



## ATMOSPHERIC EMISSION

Jaguar cares about the air quality and well being of the population living around its operations. Therefore, it monitors the atmospheric emissions from the equipment of Roça Grande and Turmalina processing plants to ensure the absence of influence of its operations on air quality.

In addition, four points for air quality assessment are monitored by measuring the number of total suspended particles in the CCA-Pilar and MTL Units. There are two sampling campaigns per year.

## MATERIALS

GRI 301-1 / 301-2

The gold processing production chain has a high level of complexity. For this reason, the company has an extensive list of materials used throughout the process. Out of the top 10 inputs, 6 were used most in 2018 compared to the previous year.

2016	2017	2018	
507.900	633.650	766.350	Granulated Explosive (kg)
1.795.227	10.247	37.394	Diesel oil s500 (l)
428	1.092	1.083	Spherical grinding body <sup>1</sup> (t)
222	978	1.244	Sodium cyanide (t)
269.909	3.192.413	4.036.492	Diesel oil s10 - Ipiranga (l)

**Much of this material is intended for recycling, but there is no entry of recycled items in the process.**

<sup>1</sup> Diameter 75 mm. Chemical composition C 0.95-1.05 Cr 0.40-1.10 Mn 0.85-1.20 Si 0.1

## WASTE

GRI 306-2 / 306-4

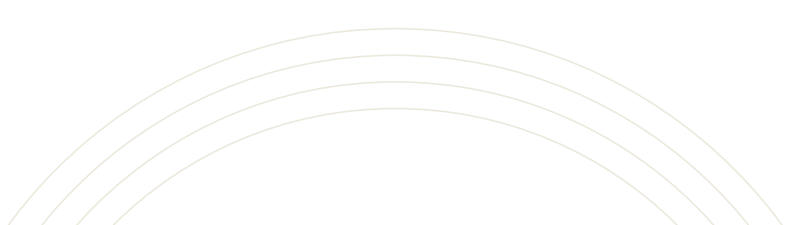
The Solid Waste Management Plan has operational guidelines for the temporary storage and proper disposal of solid waste generated in the production process. The plan aims to optimize management and increase the process traceability and valuation of items, prioritizing final destination in a circular economy logic, choosing recycling and composting whenever possible.

Jaguar has recorded a reduction in waste generation in recent years. In 2018, 97.2 tons less were generated than in the previous year. In the same year, 1,096.7 tons of waste were segregated, collected and destined. Out of these, 60,2% are in Class II (non-hazardous) and 39,8% in Class I (hazardous).

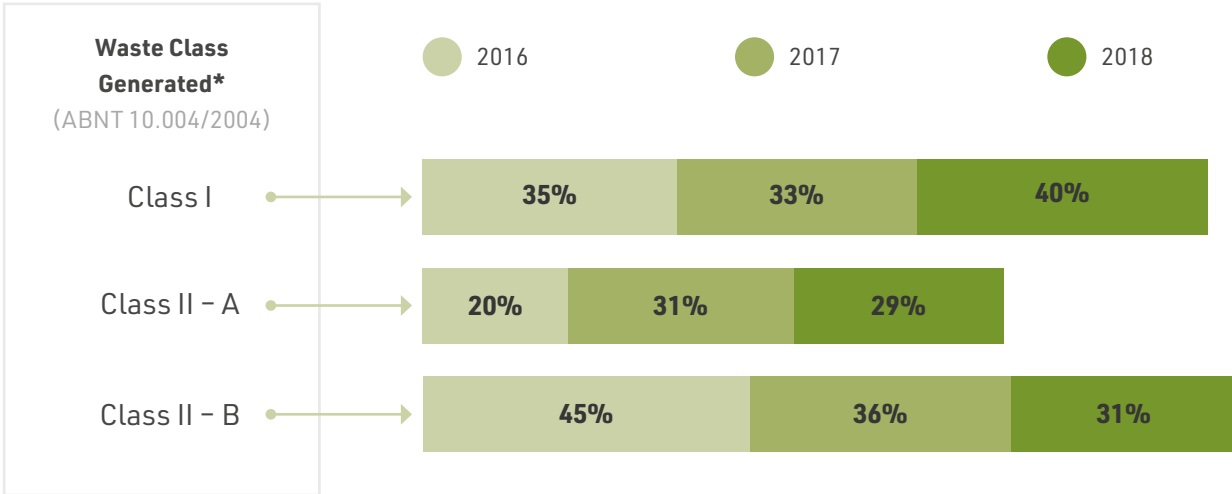


**97.2**

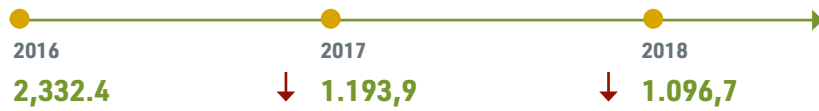
**TONS OF REDUCTION  
COMPARED TO 2017**



## AMOUNT OF WASTE GENERATED BY CLASS



### TOTAL TONS OF WASTE GENERATED IN THE LAST THREE YEARS



#### What are Class I, II-A and II-B?

ABNT NBR 10.004/04 is responsible for determining the classification of waste by dividing it into two classes:

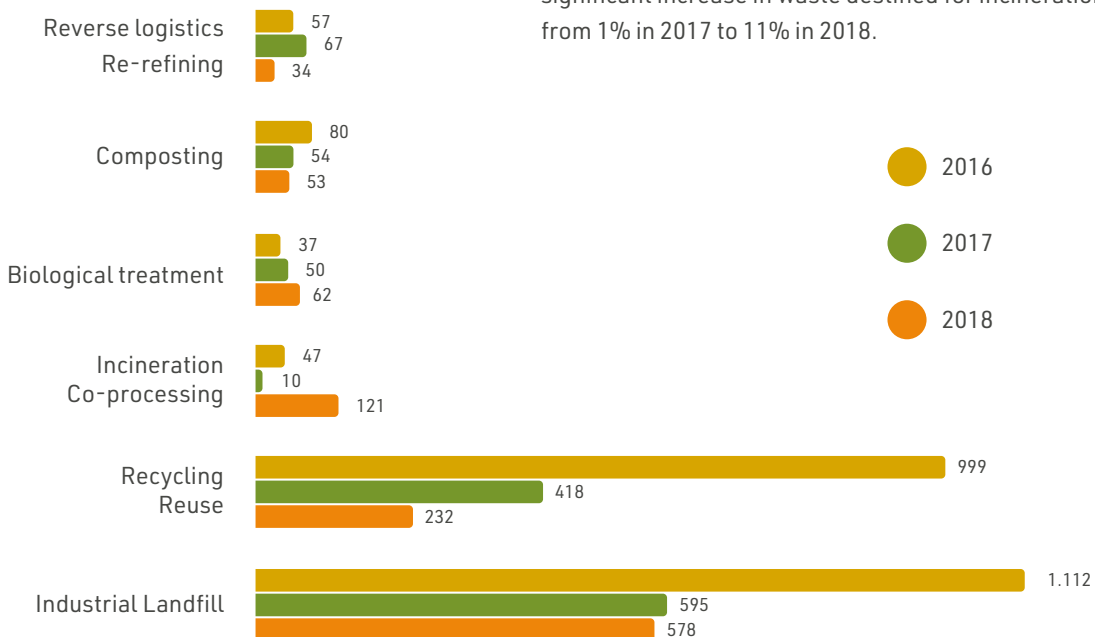
- Class I: hazardous waste, i.e., hazardous, health and environmental hazards
- Class II: non-hazardous waste

II-A: non-inert and non-hazardous waste. They have properties such as biodegradability, combustibility or water solubility, such as organic waste.

II-B: inert and non-hazardous waste. They do not react physically or chemically, they are not soluble, they are not flammable, as is the case with debris.

## PROPORTION OF SOLID WASTE DISPOSAL\*

GRI MM3



Most of the waste generated by Jaguar in 2018 was landfilled. There was a significant increase in waste destined for incineration and co-processing: from 1% in 2017 to 11% in 2018.

\* Tons

Although composting represents a small percentage compared to other disposals, it is important to note that all organic waste from the Company's restaurant is sent for this type of treatment.

Waste production at the MTL Unit was higher compared to the other units, reaching a total of 195,472 tones in 2018. The RG mine produced substantially less than the other two units due to the stoppage of ore extraction in 2018.

**Total amount of waste per operating unit in 2018 tones**



## WATER RESOURCES

GRI 303-1b / 102-13

In 2018, reinforcing its commitment to responsible environmental stewardship, Jaguar Mining monitored water quality in accordance with state and national determinations at 117 fixed points distributed throughout all units, including areas in temporary suspension.

External and accredited laboratories prepared all reports. The periodicity of collections varies as determined by the environmental agency, however, for most points, it is performed monthly.



**806**

water quality analysis reports were generated, as follows:

**Mining activity has the potential for lowering the water table. Therefore, 675 readings were taken, in 2018, in the piezometers monitoring the level of the water table at different depths.**

In addition, Jaguar units have parshall gutters, i.e., equipment used to measure the flow of surface watercourses. In 2018, 362 readings were taken. In addition to the gutters, the meteorological stations are in operation, from which precipitation, air temperature, wind speed and radiation data are obtained. All these measurements are extremely important for the planning of the company's operations, supported by monitoring the quantity and quality of the waters under its influence.

Knowing of the importance of integrated management, Jaguar participates in the of water resources, taking an active part in the river basin committees in which its ventures are located: CBH Rio Pará and CBH Rio das Velhas. The latter through Caeté Sabará Subcommittee and the Nascentes Subcommittee.



**350** in effluents

**276** in surface water

**96** relating to potability

**66** for groundwater

**18** in hydrobiological monitoring



## FUEL

GRI 302-2 / 302-1a/b

Jaguar values the operational efficiency and adequate compliance with internal demands. Its employees have a specific fleet to move between units and answer calls more quickly and effectively. They have the power of choice to fill the vehicle with alcohol or gasoline, and 94% of consumption refers to gasoline.

UNIT	ETHANOL*	GASOLINE*	TOTAL*
CCA-PILAR	138.07	9,924.95	10,063.02
CCA-RG	298.48	11,638.19	11,936.67
Corporate Office (BH)	2,539.18	18,363.07	20,902.25
MTL	42.57	7,486.15	7,528.72
<b>Total</b>	<b>3,018.30</b>	<b>47,412.36</b>	<b>50,430.66</b>

\* Liters

We use more S10 diesel oil than S500 diesel oil. S10 diesel oil has 8% biodiesel in its composition and a sulfur content lower than S500, reducing the emission of harmful particles into the atmosphere. In 2018, 37,394 liters of S500 diesel oil and 4,036,492 liters of S10 diesel oil were consumed.



In the year in question (2018), fuel consumption in heavy vehicles corresponded to **98,77%** for all types of fuels used. Out of this consumption, **97,87%** corresponds to diesel S10, which has biodiesel in its composition.

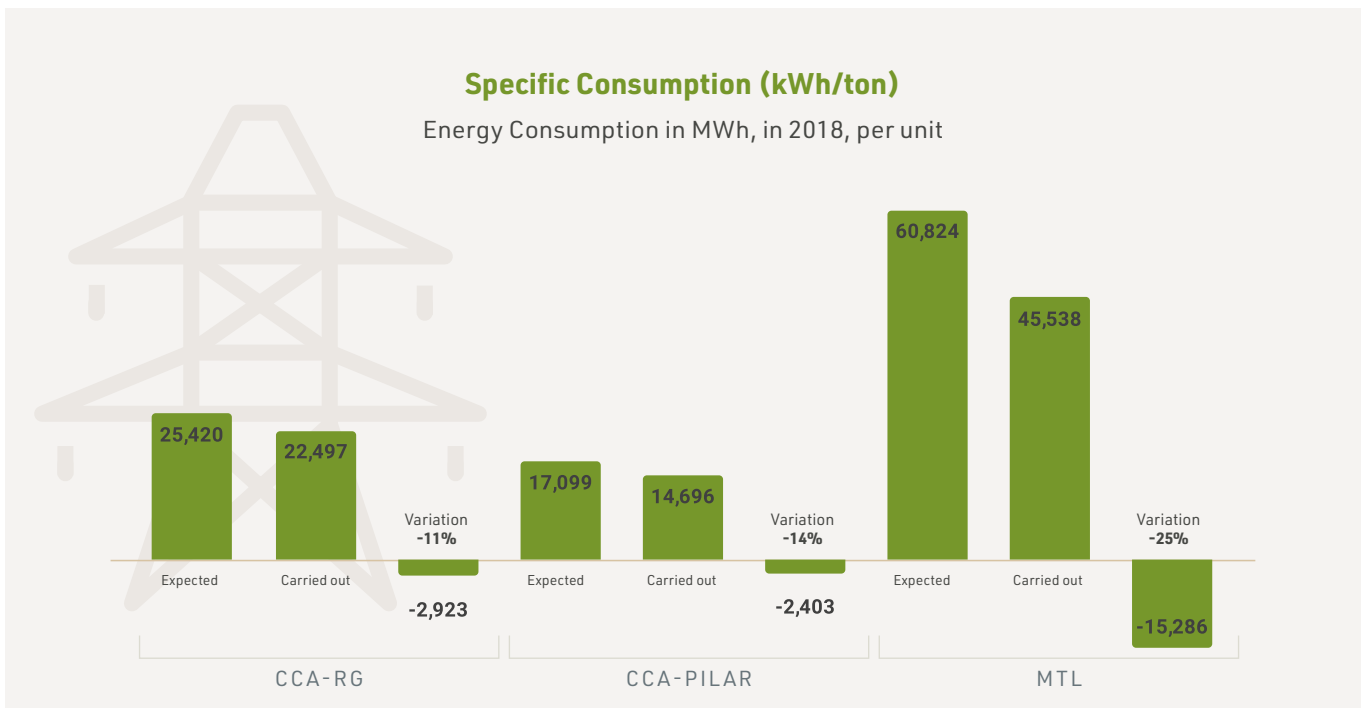


## ELECTRICITY

GRI 303-1c / 302-3 / 302-5

Jaguar Mining participates in the free energy market, which has saved BRL 38,674,000 over the last three years. In 2018 alone, this saving was BRL 15,155,000, even higher than 2017, totaling BRL 12.4 million. There was a reduction of 5,533 MWh in total electricity consumption over the previous year, i.e., 2017.

In contrast, specific consumption, i.e., the amount of energy consumed per amount of ore processed, increased in 2018 from 108 kWh/ton in 2017 to 121 kWh/ton, in this year herein analyzed.



## NOISE MONITORING

The noise monitoring process aims to check the sound pressure level in the vicinity of the project. More than a legal requirement, the activity is part of Jaguar's commitment to preventing and controlling the impacts of its operations.

In regions close to the community, monitoring takes place every six months with day and night measurement at previously established points around the units of the mining company. Thirteen measurements were taken during 2018.

## SEISMIC MONITORING

Seismic monitoring aims to know the vibrations caused by rock blasting with explosives. The results provide confidence in assessing possible surface reflections. Two seismographs are installed at strategic points in Jaguar Mining's active mines, namely: Pilar and Turmalina. Each week, the data generated by the equipment is collected and systematized.

## ACID DRAIN MONITORING

Preventing and controlling the generation of acid drainage from the mine (DAM, *Drenagem Ácida de Mina*) is part of Jaguar's ongoing environmental management. In relation to the units in operation, the company develops studies to identify the potential of generation of DAM through periodic laboratory tests.

Through the monitoring of specialized consultants, samples are taken at specific points of the mines, underground and surface, to evaluate the behavior of each material in relation to the DAM. The samples are sent to the external laboratory and subjected to static and kinetic tests.

These patterns are repeated in units where activities are in temporary suspension. Waters with acidity indication undergo treatment processes and periodic inspection for control.



Turmalina Dam - Conceição do Pará

## DAMS

The issue of tailings dams in the mining sector has always been tricky, requiring a very strict risk monitoring and management system. Jaguar focuses its efforts to ensure the safety of its dams and values transparency with the community.

Jaguar dams are rated as low risk by law enforcement agencies, especially for their conservation status and up-to-date studies.

From a constructive point of view, Turmalina, Moita and Paciência dams have a high-density polyethylene geomembrane (HDPE) waterproofing system, which makes the dam liquefaction process and the contact between the tailings and the soil and the water table more difficult.

Water from the Moita, RG2W and Turmalina dams is returned to the respective processing plants and is intended for reuse in the ore processing process. In this way, the Company reduces the use of water from watercourses, saving natural resources and contributing to the increase of the life of the dams. The water stored in Paciência dam comes from the precipitation that affects the structure and has sufficient quality parameters for its disposal in the natural watercourses.

Jaguar has the Dam Safety Plan (PSB, *Plano de Segurança de Barragem*) for each of its structures and periodically updates the Integrated Mining Dam Safety Management System (SIGBM, *Sistema Integrado de Gestão de Segurança de Barragens de Mineração*). In this system, all data verified in inspections and monitoring are posted, as detailed below.

## INSPECTIONS

- Daily inspections per shift
- Regular inspection (every 2-week) in conjunction with outsourced company Diefra as the dam's technical manager
- Issuance of quarterly report of stability condition
- Issuance of Regular Safety Inspection Report (RISR, *Relatório de Inspeção Segurança Regular*) by external auditor
- Data reporting to SIGBM (Integrated Mining Dam Management System) every 2-week

## MONITORING

- Piezometer
- Water level ruler
- Bottom drain
- Rainfall
- Milestone of displacement

## DAM TECHNICAL DATA

TURMALINA DAM Technical Specifications	
Massive Height (m):	17
Total Capacity (m <sup>3</sup> ):	790,682.7
Crest Length (m <sup>3</sup> ):	198
DPA:	High
CRI:	Low
Ordinance Class N <sup>o</sup> 70.389/2017:	B
DN Class N <sup>o</sup> 62/2002:	III
Tailings Class:	Class I
Construction Method:	Single Downstream Step
Spillway System:	Yes
PAEBM:	Yes
Construction Year:	2009
Waterproofing:	Yes



**RG2W DAM**

## Technical Specifications

Massive Height (m):	11
Pit Height (m):	50
Total Capacity (m <sup>3</sup> ):	632,531
Crest Length:	186
DPA:	Medium
CRI:	Low
Ordinance Class N° 70.389/2017:	C
DN Class N° 62/2002:	III
Tailings Class:	Class IIB
Constructive Method:	Upstream Elevation
Spillway System:	Yes
PAEBM:	Yes
Construction Year:	2010

**PACIÊNCIA DAM**

## Technical Specifications

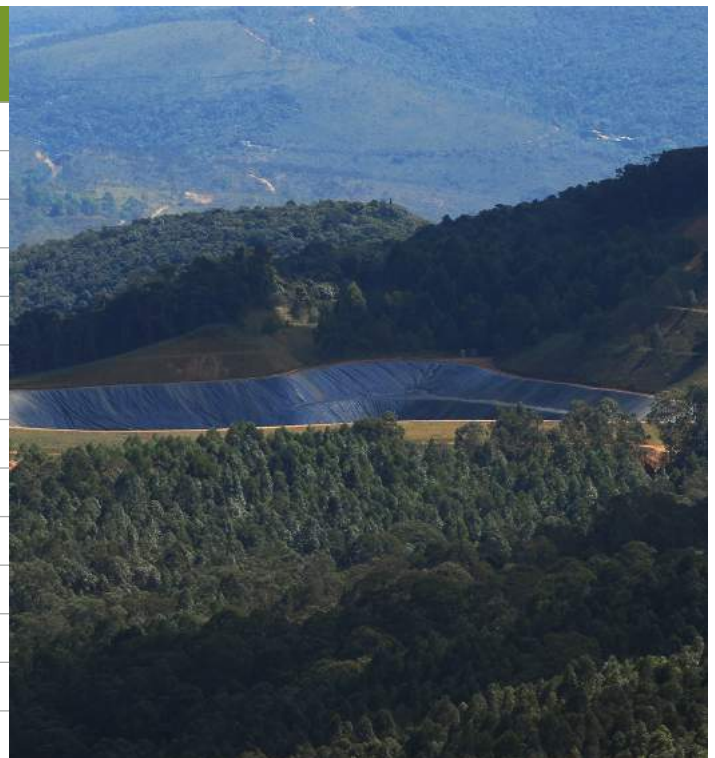
Massive Height (m):	34
Total Capacity (m <sup>3</sup> ):	1,700,000
Crest Length (m <sup>3</sup> ):	263
DPA:	High
CRI:	Low
Ordinance Class N° 70.389/2017:	B
DN Class N° 62/2002:	III
Tailings Class:	Class I
Construction Method:	Downstream Elevation
Spillway System:	No
PAEBM:	Yes
Construction Year:	2007 / 08
Waterproofing:	Yes





### MOITA DAM Technical Specifications

Massive Height (m):	19
Total Capacity (m <sup>3</sup> ):	366,181
Crest Length:	388
DPA:	High
CRI:	Low
Ordinance Class N <sup>o</sup> 70.389/2017:	B
DN Class N <sup>o</sup> 62/2002:	III
Tailings Class:	Class I
Construction Method:	Single Downstream Step
Spillway System:	Yes
PAEBM:	Yes
Construction Year:	2009
Waterproofing:	Yes



## GLOSSARY

**CRI:** Risk Category. It refers to aspects of the dam that may influence the likelihood of an accident: design aspects, integrity of the structure, condition, operation and maintenance, and compliance with the Safety Plan.

**DPA:** Associated Potential Damage. Damage that can occur due to collapse, leakage, soil infiltration or dam malfunction, regardless of its probability of occurrence, can be graded according to the potential for loss of human life and social, economic and environmental impacts.

**Source:** Sistema Nacional de Informações sobre Segurança de Barragens - SNISB. Available at: <http://www.snisb.gov.br/portal/snisb/perguntas-frequentes>

# ENVIRONMENTAL FINES

GRI 307-1

In 2018, Jaguar received four fines. Defenses were filed for all the notice of deficiency issued.

2016 - 1 fine	2017 - none	2018 - 4 fines
		BRL 287,074.84
		BRL 22,430.75
16,616.27	—	BRL 11,250.00
		BRL 3,587.52

## OFFICIAL DOCUMENTS CONCERNING ENVIRONMENTAL MANAGEMENT

Jaguar generated 1,064 official environmental management documents in 2018. They are part of a set of structures and procedures that provide the environmental agencies, employees and society with a large collection of data and information supporting the operation of controls used by the company. Most of the documents refer to the management of the 38 environmental licenses of the mining company.

VALID LICENSES	QUANTITY
Authorizations	7
Operating Environmental Authorization / LAS registration	2
Provisional Authorizations to Operate (APO, <i>Autorizações Provisórias para Operar</i> )	3
Operation Licenses	11
Concurrent Preliminary Licenses with Installation Licenses (LP+LI)	1
Grants / Insignificant Use	14
<b>Total</b>	<b>38</b>



# ENVIRONMENTAL AWARENESS

In order to achieve environmental goals, Jaguar relies on the collaboration of its employees and the surrounding communities. One of the actions that represents its alignment with sustainability is Raízes do Saber Program. The program consists of a set of educational actions of environmental nature, carried out in 12-month cycles with a main theme, worked through campaigns, environmental bulletins and promotion of training groups. In 2018, the central theme of the program was "Water." Six environmental bulletins were issued, and five more meetings with the Training Groups.

These actions are intended to inform and train the employees and external agents involved, encouraging them to achieve broad and effective environmental practices, in order to solve or minimize the needs of the region.

## AXIS OF RAÍZES DO SABER PROGRAM

### BULLETINS

Altogether, six newsletters were prepared to inform about the theme defined in the annual cycle. This line of work is developed exclusively with Jaguar's internal public, in periodic meetings, registered through attendance list. Bulletins are also displayed on bulletin boards and strategic points during the content period (approximately one month). The bulletins have:

- Didactic contextualization
- Interview with an employee who practices sustainable actions
- Disclosure of Jaguar's actions on the topic



### CAMPAIGNS

During the cycle, two campaigns related to the previously defined axes are developed. Besides the informative character, the campaigns bring diverse communicational resources in order to broaden the knowledge about the subjects approached. Along with the content, practical actions are part of the programming, with a view to expanding knowledge. Punctual actions, such as distribution of booklets and seedlings, for example, combine with lectures and other resources to propose mobilization milestones for target audiences, with activities compressed into a shorter action period and, therefore more intense.

Among the campaigns carried out by Raízes do Saber Program, Environment Week should be mentioned. It happens annually since 2011, always bringing the theme of the cycle addressed. Its eighth edition was held in June 2018.

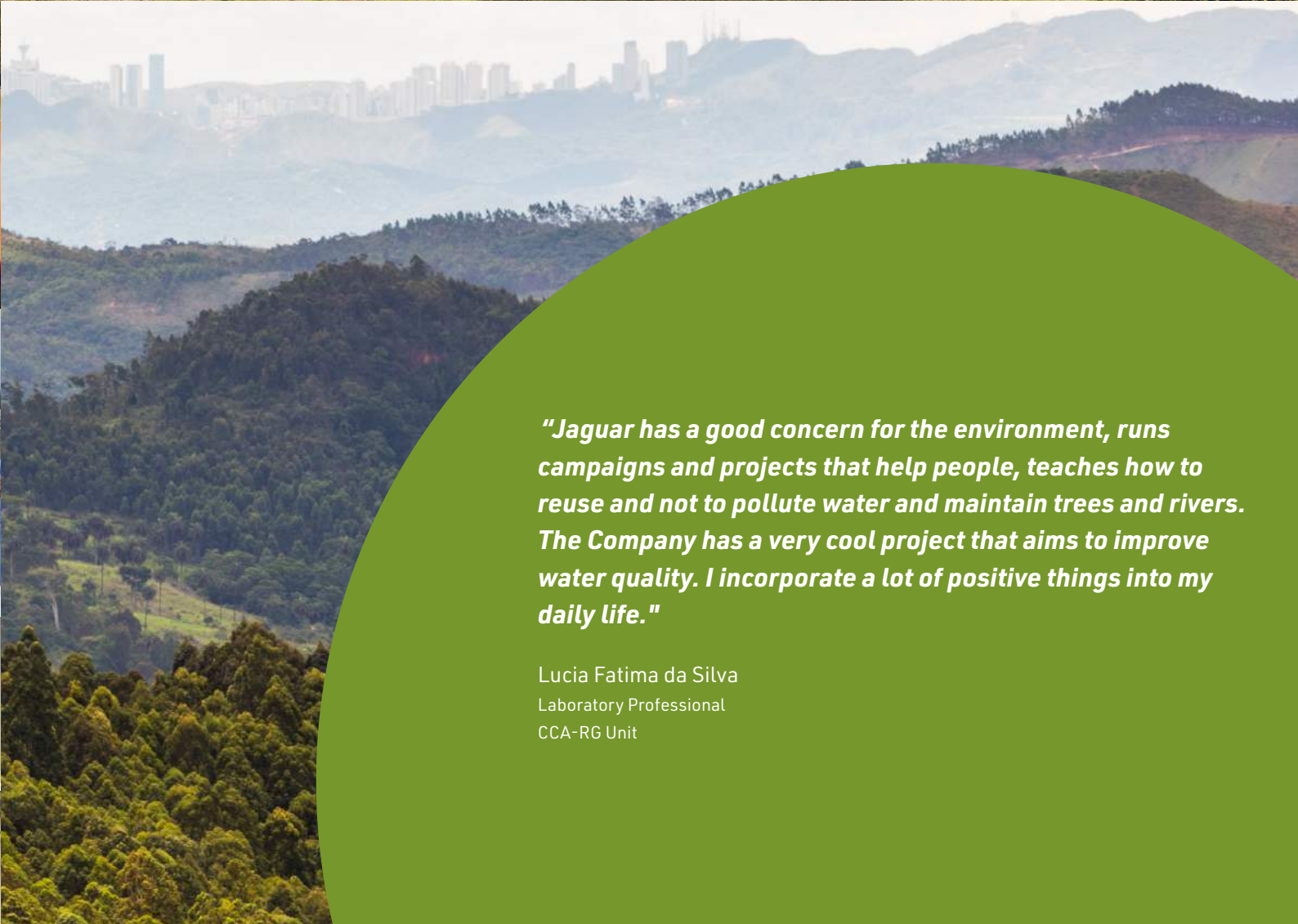
### TRAINING GROUP

The Training Group focuses on external audiences and is held in the communities of Rancho Novo, Casquilho and Brumal. The group's work favors the construction of practical lines of action to minimize or solve issues elected via Participatory Socio-Environmental Diagnosis (DSP) to be addressed.

The previously defined themes are debated within a year, in order to minimize or solve the problems pointed out. Participants have periodic meetings with facilitators to create projects detailing the theme to be addressed; the agents to be involved; the lines of action with the definitions of place, shape and persons assigned to develop it; besides raising the necessary resources for it. At the end of a year, effective results are achieved for the participating public and the wider community.

This encourages learning in relation to the topics developed and the training of participants as disseminators of sustainable practices in the community.





***"Jaguar has a good concern for the environment, runs campaigns and projects that help people, teaches how to reuse and not to pollute water and maintain trees and rivers. The Company has a very cool project that aims to improve water quality. I incorporate a lot of positive things into my daily life."***

Lucia Fatima da Silva  
Laboratory Professional  
CCA-RG Unit

# 06

OUR  
**FUTURE**







# OUR FUTURE

## WHERE DO WE WANT TO GO?

This Report reflects the importance attributed by Jaguar to the measurement and assessment of the socio-environmental and economic impacts arising from its operation. This movement aims at enhancing the positive results and mitigating the negative externalities of its activities for the communities and the environment. It allows greater transparency of organizational performance, with the expansion of communication and stakeholders involvement in its processes.

The deepening of impact management was marked by discussions about the Company's Theory of Change. This agenda had the broad participation of the organizational leaders in moments of immersion and individual alignment. The Theory of Change materialized based on the debate on Jaguar's legacy, with reference to the UN SDGs for its alignment with the achievement of global sustainable development goals.

# THEORY OF CHANGE

The Theory of Change spells out the logical model that connects the organization's processes to its short, medium and long term results. It captures the causal relationships that exist between the problems experienced by the organization, the goals defined for its treatment, the activities defined to reach it and the results actually achieved or planned.





## LOM (LIFE OF MINING) PROJECTION

Aiming at optimizing the currently exploited assets, Jaguar invests in underground drilling to update a geological model of the current blocks.

This survey may determine the proximity of other bodies or extensions of the bodies being explored and the feasibility of exploiting them, rather than searching distant areas or exploiting mining rights elsewhere. The importance given to this theme is such that the Company has an external advisor and a specific management.

Jaguar works forward-looking with the development of more innovative and efficient processes.

It seeks to extend the life of current mines to ensure employability, investor financial return and the health and growth of the Company.



## FILTERING SYSTEM

Currently, the ore processing process includes the release of part of the waste mixed with water, in the form of pulp destined for dams. Seeking to modernize the process and increase safety, Jaguar is studying the incorporation of tailings filtration. This technology consists of a known method, where the pulp passes through a filter, separating the solid and liquid parts. The liquid portion will undergo a treatment that allows the water to be reused in the process or it will be returned to the environment if the standards established by environmental legislation are proven. The solid part will be arranged in piles, with smaller volume and lower potential for negative impacts.

The installation of a filter at the Roça Grande Processing Plant in Caeté is scheduled to begin in 2020.

Given the need for employee training and possibly the hiring of skilled labor, the dialogue on this topic is already being maintained.

At Turmalina Unit, there is a filtration system that will be optimized and modernized in the near future.





## WOMEN IN OPERATIONS

GRI 102-8a / H8 / GRI 405-1

Jaguar treats diversity and inclusion in the workplace not only as a value, but also as a competitive differentiator. An example of the focus on broadening diversity is the concentration of efforts to increase the representativeness of women in the company's operating areas, as they account for only 10% of total employees.

MTL	CCA-PILAR	CCA-RG	CORPORATE OFFICE (BH)
9%	5%	10%	40%

Although the male majority still prevails in Jaguar's leadership, the company has advanced and holds 10% of the women's coordination, supervision and management positions.

In addition, in 2018, 134 people were hired, of which approximately 31% were women. For the first time in the company's history, there was the presence of women underground and the establishment of a specific committee to address the bottlenecks of female entry into the mining company.

The committee holds regular meetings attended by the vice president and representatives of the Human Resources area, the MTL Unit and the CCA Complex.

The committee discusses structuring actions to overcome the challenge of including more women in Jaguar's operation. A number of measures have been implemented, including expanding the women's locker room, conducting

specific gender equality training for leaders, expert advice to map women at the operational leadership level, and conducting specific women's empowerment classes. Jaguar also intends to expand these actions by participating in national and international committees and global pacts to promote the exchange of experiences on this issue.

Some of the actions taken were the result of a survey applied to all employees, with the purpose of mapping the perception of gender equality at the company. The survey had 37% adherence, of which 87% stated that their leadership treats men and women equally and 67% that the opportunities for professional growth at Jaguar are the same regardless of gender.

## MAINTAIN SOCIAL LICENSE

Social license is of great importance to the operation of the company and extremely strategic. It reflects the consent of the local communities regarding the organization. Part of the challenge to obtain and maintain it is to realize its importance.

The very context of operation and results of mining activity raise the level of complexity for the continuity of social license. Extensive relationship building work with local communities needs to be done to shape the projects according to the reality of each of them. It is also critical to create links that seek to preserve efficient and transparent communication in which the community is comfortable and invited to contact Jaguar if they have any issues to discuss.



In this context, the Institutional Relations area plays a fundamental role. With its constant interaction, active listening and availability, the community has understood and recognized the Company's role in the region. Jaguar approaches the communities in which it operates, building relationships of trust and mutual respect.

***"Today, the community is embracing Jaguar and Jaguar is embracing the community. I wanted to keep the relationship. The confidence has been matched and is getting better and better."***

**Aguinaldo Jorge dos Santos**  
 Associação de Amigos e Moradores de Rancho Novo  
 Caeté

## LEGAL SCENARIO AND LIABILITY REDUCTION

The challenge of legal insecurity is present in Jaguar's reality, in the environmental, criminal and tax areas. The company maintains a dialogue with the government, offering advice and advancing with several technical meetings to clarify and align more effectively. It favors the consensual and negotiating process, using the judicial route as a last resort. It values the good relationship between the Parties, always seeking to resolve conflicts, aiming at the well being of the communities in balance with its operation.

This concern translates into efforts to reduce the liabilities, and is considered another challenge faced by the company and which is in continuous treatment with the legal and environmental sectors.



# GRI TABLE

ODS GOALS	GRI CODE	DESCRIPTION	PRIORITY	REFERENCE
Not material	102-1	Name of the organization.	P5	Page 10
Not material	102-2	Primary brands, products, and/or services.	P5	Pages 20 & 23
Not material	102-3	Location of Company's.	P5	Page 10
Not material	102-4	Number of countries in which the organization operates and names of countries in which its main operations are located or are specifically relevant to the sustainability topics covered in the Report.	P5	Page 11
Not material	102-5	Nature of ownership and legal form of the organization.	P5	Jaguar Mining Inc. is a publicly held holding company traded on the Toronto Stock Exchange (TSX).
Not material	102-6	List of markets in which the organization operates (with geographic breakdown, sectors covered, and types of customers and beneficiaries).	P5	100% of production is for export and gold is traded in the United States.
Not material	102-7	Size of organization, including: total number of employees; total number of operations; liquid sales; total capitalization broken down in terms of debt and equity; quantity of products or services provided.	P5	Page 20
Not material	102-8	Total number of employees by employment contract and gender; total number of permanent employees by type of employment and gender; percentage of own and outsourced employees that make up the total workforce by gender; total workforce by region and gender; report that a substantial part of the organization's work may be performed by workers legally recognized as self-employed or as individual consultants; report any significant variations in the number of jobs generated.	P5	Pages 27, 47 & 98
Not material	102-9	Description of the organization's supply chain.	P5	Page 43
Not material	102-10	Significant changes during the reporting period regarding the organization's size, structure, ownership, or supply chain, including: changes in the organization's location or operations, such as opening, closing, or expanding facilities; changes in capital structure and other capital formation, maintenance or change activities (for private sector organizations); changes in supplier locations, supply chain structure, or relationships with suppliers, including their selection and exclusion process. The changes recorded are related to the competition dynamics, and there were no significant changes.	P5	Page 27
Not material	102-11	Report on how the organization adopts the precautionary approach or principle or if it occurs.	P5	Page 13

Not material	102-12	Letters, principles or other externally developed economic, environmental and social initiatives to which the organization subscribes or endorses.	P5	Page 15
Not material	102-13	Participation in national or international advocacy associations and organizations in which the organization: has a seat on the Governing Board; participates in projects or committees; contributes with financial resources beyond the base rate as an associated organization; considers as strategic its participation.	P5	Pages 15 & 80
Not material	102-14	Statement from the senior manager in the organization about the relevance of sustainability to the Company and its sustainability strategy.	P5	Page 7
16.6	102-16	Values, principles, standards and norms of behavior.	P3	Page 10
Not material	102-17	Internal and external mechanisms adopted by the organization to report concerns about unethical or inconsistent behavior, and issues related to organizational integrity, such as escalation of concerns through reporting channels, mechanisms for reporting irregularities, or reporting channels.	P5	Pages 15 & 17
Not material	102-18	Governance structure of the organization, including committees of the highest governance body. Identifying all committees responsible for advising the board on decisions that have economic, environmental and social impacts.	P5	Page 13
16.7	102-21	Stakeholders advice on economic, environmental and social topics.	P3	Process conducted by the Institutional Relations department.
5.5/16.7	102-22	Composition of the highest governance body and its committees.	P3	Page 13
16.7	102-23	President of the highest governance body.	P3	Page 7
16.7	102-24	Nominating and selecting the highest governance body.	P3	Page 13
16.7	102-25	Conflicts of interest.	P3	Page 13
Not material	102-26	Roles played by the highest governance body and senior executives in developing, approving and updating the purpose, mission statement, vision and values, and defining strategies, policies and goals related to the organization's economic, environmental and social impacts.	P5	Page 13
16.7	102-29	Identification and management of economic, environmental and social impacts.	P3	Page 15
Not material	102-33	Process adopted to communicate critical concerns to the highest level governing body.	P5	Page 13
Not material	102-34	Report of the nature and total number of critical issues reported to the highest governance body and the mechanism(s) used to address and resolve them.	P5	Page 17
16.7	102-37	Involvement of stakeholder engagement.	P3	Page 17
Not material	102-40	List of stakeholder groups engaged by the organization.	P5	Page 32
Not material	102-42	Basis used for the identification and selection of stakeholders for engagement.	P5	Page 32

Not material	102-43	Approach adopted by the organization to engage stakeholders, including frequency of engagement, broken down by type and group, with an indication that some engagement was specifically promoted as part of the report preparation process.	P5	Page 32. Strategic Information for the Company.
Not material	102-44	Key topics and concerns raised during stakeholders engagement and measures taken by the organization to address these topics and concerns, including the process of reporting them; stakeholder groups that raised each of the issues and concerns mentioned.	P5	Pages 32 & 59. Strategic Information for the Company.
Not material	102-45	Entities included in the consolidated financial statements or equivalent documents of the organization. Report if any entity included in the organization consolidated financial statements or equivalent documents has not been covered by the report.	P5	Available at: <a href="https://www.jaguarmining.com/en/investors/financialreports/">https://www.jaguarmining.com/en/investors/financialreports/</a> .
Not material	102-46	Process adopted for defining report content and boundaries of Aspects, and how the organization has implemented the Principles for Defining Report Content.	P5	Page 30
Not material	102-47	List of all material aspects identified in the report content definition process.	P5	Page 30
Not material	102-48	Report on the effect of any restatements of information provided in previous reports and the reasons for such restatements.	P5	Page 30
Not material	102-49	Significant changes from prior reporting periods in Scope and Aspect Limits.	P5	Page 30
Not material	102-50	Period covered by the report (e.g., fiscal or calendar year) for the information provided.	P5	Page 7
Not material	102-51	Date of most recent previous report (if any).	P5	Page 30
Not material	102-52	Reporting cycle (annual, biennial, etc.).	P5	Page 30
Not material	102-53	Contact for questions about the report or its contents.	P5	Page 107
Not material	102-56	Current policy and practice adopted by the organization to submit the report for external verification.	P5	It does not have.
Not material	103-1	For each material Aspect, report the Aspect Limit within the organization.	P5	Page 30
16.6	103-2	Management approach and its components.	P3	Page 13
8.2	201-1	Direct economic value generated and distributed.	P4	Page 40
Not material	203-1	Development and impact of investments in infrastructure and services offered.	P5	Page 42
12.7	204-1	Proportion of spend with local suppliers.	P4	Page 43
8.4 / 12.2	301-1	Materials used by weight or volume.	P1	Page 78
8.4	301-2	Used recycled input materials.	P2	Page 78
8.4 / 12.2	302-1	Energy consumption inside the organization.	P1	Page 78
08.4 / 12.2	302-2	Energy consumption outside the organization.	P1	Pages 81 & 82
8.4 / 12.2	302-3	Energy intensity.	P1	Page 82
8.4 / 12.2	302-5	Reductions in energy requirements of products and services.	P1	Page 82
6.4	303-1	Interactions with water as a shared resource.	P1	Pages 20 & 21
14.2 / 15.4 / 15.9	304-1	Operating sites owned, leased, managed in or adjacent to protected areas, and areas of high biodiversity value outside protected areas.	P4	Page 76
14.5 / 15.5 / 15.a	304-3	Protected or restored habitats.	P4	Page 76

14.6 / 15.5 / 15.7 / 15.c	304-4	Species of the Red List of IUCN and Species of the National Conservation List with habitats in areas affected by operations.	P4	Page 76
06.3 / 12.5	306-2	Waste, detailed by type and method of disposal.	P1	Page 78
6.3 / 12.4 / 14.c / 15.3	306-3	Significant spills.	P1	None
12.5	306-4	Transport of hazardous waste.	P1	Page 78
15.5	306-5	Watercourses affected by discharges and/or runoff.	P1	No significant discharge.
16.6	307-1	Non-compliance with environmental laws and regulations.	P1	Page 88
Not material	308-1	Percentage of new suppliers selected based on environmental criteria.	P5	Page 75
5.a / 8.3 / 8.5 / 8.6	401-1	New Employee Hiring and Employee Turnover [This Standard includes a Standard Interpretation on how to calculate new employee hiring and employee turnover rates.].	P1	Page 48
Not material	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees by major operating units of the organization.	P5	Page 40
5.4	401-3	Paternity leave.	P4	Page 54
8.8	403-3	Occupational health services.	P1	Page 54
8.8	403-4	Worker participation, consultation and communication on occupational health and safety.	P1	Page 54
Not material	403-6	Worker health promotion.	P5	Page 51
Not material	404-1	Average hours of training per year.	P5	Page 50
5.5 / 8.5	405-1	Diversity of governance bodies and employees.	P1	Page 98
5.a / 8.5	405-2	Ratio between basic salary and remuneration of women and men.	P1	Strategic Information for the Company.
8.7 / 8.8	409-1	Operations and Suppliers with Significant Risk of Forced or Compulsory Labor.	P2	Page 40
Not material	413-1	Percentage of operations with implemented programs of local community engagement, impact assessment and local development.	P5	Page 68
5.c / 16.b	414-1	New suppliers that were selected using social criteria.	P1	Page 75
16.b	414-2	Negative social impacts on supply chain and actions taken.	P1	Page 75
15.4 / 15.9 / 15.3	MM1	Amount of land (owned or leased and managed by activities) changed or rehabilitated.	P1	Page 76
12.6 / 15.1 / 15.4 / 15.5 / 15.9	MM2	Number (and percentage) of total places evaluated against the criteria for the need for a biodiversity management plan, number and percentage of places requiring a plan, and the number (percentage) of those sites with plan in progress.	P1	Page 76
1.5 / 11.b / 13.1	MM3	Total amount (in tones) of waste, rock, tailings and sludge and their associated risks.	P1	Page 80
8.8	MM4	Number of strikes and lockouts lasting more than one week.	P1	Page 49



-	MM5	Total number of operations in or adjacent to territories of indigenous peoples and number and percentage of operations or places in which formal contracts exist with indigenous communities.	P1	Page 59
17.17	MM6	Description and significant numbers related to land use dispute, rights of local communities and indigenous peoples.	P1	Page 59
17.17	MM7	To what extent have grievance mechanisms been used to resolve disputes related to land use, rights of local communities and indigenous peoples and what are the outcomes.	P1	Page 59
-	MM8	Number of company operating locations in or near small scale artisanal mining areas; associated risks and actions taken to manage and mitigate these risks.	P1	Page 59
-	MM9	Resettlement sites, number of families resettled in each of these sites and how their livelihoods were affected in the process.	P1	Page 59
15.3	MM10	Number and percentage of operations with closing plans.	P1	Jaguar Mining does not have any operations in the mine closure condition, therefore, neither has closing plan. The Company promotes constant maintenance actions, which gradually meet the environmental recovery of the areas.

## Caption

### Priority 1:

indicator disposed in the Materiality Matrix, affinity map and reported (wholly or partially)

### Priority 2:

indicator arranged in Materiality Matrix and affinity map but not yet available

### Priority 3:

indicator set in the Materiality Matrix and affinity map but was not prioritized because it does not belong to the specific mine and metal indicators. So it was not subject of information gathering

### Priority 4:

indicator presented in the Materiality Matrix but not in the affinity map and was therefore was not the subject of information gathering

### Priority 5:

indicator that is not in the Materiality Matrix

# TECHNICAL SPECIFICATIONS

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Adriano Jose Camilo Cesar • Driller

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Ana Thereza Nápoles Balbi • Administrative & Institutional Relations Coordinator

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Cassiana Machado Freitas Oliveira • People & Administration Manager

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