



OPERATIONAL PROFILE 2017



AGA MINERAÇÃO
BRAZIL

AngloGold Ashanti Córrego do Sítio Mineração (AGA Mineração), which is wholly owned, comprises two operating units located in the state of Minas Gerais, close to the city of Belo Horizonte. The two units are the Cuiabá complex and the Córrego do Sítio complex.

HIGHLIGHTS

PRODUCTION 4% UP

FOCUS ON COST

and efficiency improvements maintained

INCREASED CAPITAL EXPENDITURE

aimed at improved mine flexibility

As at 31 December 2017:

- **MINERAL RESOURCE** of 13.57Moz (inclusive) (7.30Moz below infrastructure)
- **ORE RESERVE** of 2.06Moz (0.62Moz below infrastructure)

- The **Cuiabá complex** includes the Cuiabá and Lamego mines and the Cuiabá and Queiroz plants. Cuiabá has been in operation for over 30 years while Lamego, also an underground mine, has been in operation for eight years. The Cuiabá mine has changed from cut-and-fill to sub-level stoping, increasing the contribution from narrow-vein ore bodies from 15% to 40% of the mine's total production and improving rock engineering controls (support, design and monitoring). Ore from the Cuiabá and Lamego mines is processed at the Cuiabá gold plant. The concentrate produced is transported 15km by aerial ropeway to the Queiroz plant for processing and refining. Total annual capacity of the complete Cuiabá circuit is 1.75Mt. The Queiroz hydrometallurgical plant also produces around 200,000t of sulphuric acid as a by-product that is sold commercially in local Brazilian markets.
- **Córrego do Sítio**, in operation since 1989, consists of one oxide open-pit mine and one underground sulphide mine. The oxide ore is treated by heap leach and a pressure leaching plant treats the sulphide ore. The sub-level stoping mining method is used underground. The distance from the main underground mine (Mina I) to the metallurgical plant is around 15km. Annual plant capacity is 1.1Mt. Gold produced at both operations is refined at the Queiroz plant (141km away).

Operational performance

Production

AGA Mineração's production increased 4% year-on-year, boosted by Córrego do Sítio's strong

performance, a result of improved geological modelling that assisted the recovery from the geotechnical challenges faced at the start of the year at the Córrego do Sítio complex. After a challenging start to 2017, various initiatives were implemented at the Cuiabá complex to improve future performance. These initiatives included the appointment of a new management team and adoption of an integrated planning system. The operation saw a 7% increase year-on-year in ore treated, an improvement which we believe to be sustainable. The challenges at Cuiabá were due to delays in development of infrastructure that hindered access to high-grade areas.

Costs

Despite the continued focus on cost management and production improvements, total cash costs were higher in 2017, due mainly to inflationary pressures, particularly salary adjustments. Costs were also impacted by the lower grade feed and the 9% appreciation in the local currency (the Brazilian real) against the US dollar compared with the previous year.

Growth and improvement

Application of the Operational Excellence principles to exploration, Ore Reserve development, mining and metallurgy is expected to yield improvements in productivity, with the region benefitting from ongoing asset optimisation work.

At AGA Mineração's Cuiabá complex, a fourth working shift is to be introduced during 2018, which will assist in driving productivity gains. Plans are also underway to increase the annual tonnage of ore treated and to expand mill/plant throughput to 1.9Mt, followed by a further

ramp-up towards 2.1Mtpa. An increased Ore Reserve conversion programme is expected to improve the mine plan's reliability.

At Córrego do Sítio, work is underway to further improve development productivity levels. The rates at which the Mineral Resource is converted to Ore Reserve are increasing and work is underway to improve recovery rates to 94% in the coming years, from 31.03% currently. Drilling campaigns continue to confirm the Ore Reserve that will extend the life of mine, including work on a new open-pit (Córrego do Sítio III) and the new underground mines at Mina II and São Bento Deep. Production increases will also be evaluated.

Capital expenditure

AGA Mineração's capital expenditure increased by more than 11%, mainly a result of the high level of planned sustaining capital investment, inflation and the stronger local currency. Most of the capital expenditure was on Ore Reserve Development to improve mine flexibility and access ore stopes. A more aggressive capital management approach was implemented with all discretionary capital items being under strict review.

Sustainability performance

For further information on sustainable development activities related to AGA Mineração, including that on safety and health, the environment and communities, refer to:

- *Regional reviews – Americas* in the <IR>, available at www.aga-reports.com
- <SDR>, also available at www.aga-reports.com

AGA MINERAÇÃO – KEY STATISTICS

	Units	2017	2016	2015
Operational performance				
Cut-off grade ⁽¹⁾	oz/t	0.088	0.081	0.102
	g/t	3.02	2.78	3.48
Recovered grade	oz/t	0.145	0.155	0.164
	g/t	4.97	5.31	5.63
Tonnes treated/milled	Mt	3.0	2.8	2.6
Gold production	000oz	424	407	421
Total cash cost	\$/oz	671	562	518
All-in sustaining cost	\$/oz	1,006	893	712
Capital expenditure	\$m	136	122	89
Productivity	oz/TEC	11.66	12.36	13.58
Safety				
No. of fatalities		0	1	1
All injury frequency rate (AIFR)	per million hours worked	3.48	3.46	5.51
People				
Total average no. of employees		4,932	4,662	4,546
– Permanent		3,465	3,293	3,198
– Contractors		1,467	1,369	1,348
Environment				
Water use	ML	5,292	5,292	5,959
Water use efficiency	kL/t	1.76	1.90	2.29
Energy consumption	PJ	1.77	1.64	1.53
Energy intensity	GJ/t	0.59	0.59	0.59
Greenhouse gas (GHG) emissions	000t	52	41	41
GHG emissions intensity	t CO ₂ e/t	17	15	16
Cyanide use	t	878	728	746
No. of reportable environmental incidents		0	1	1
Total rehabilitation liabilities	\$m	57	61	58

⁽¹⁾ Based on the Ore Reserve.