AngloGold Ashanti Limited
(Incorporated in the Republic of South Africa)
Reg. No. 1944/017354/06
ISIN: ZAE000043485 – JSE share code: ANG
CUSIP: 035128206 – NYSE share code: AU
("AngloGold Ashanti" or the "Company")

20 February 2018

NEWS RELEASE

Release of 1.8Moz Maiden Ore Reserve (Attributable) for Gramalote

The following market release contains information derived from the pre-feasibility study into the development of the Gramalote project. The project will now undergo a full feasibility study, during which all metrics, including capital and costs, will be optimised. No capital for development of the project has been committed.

AngloGold Ashanti Limited (AGA) is pleased to announce the first Ore Reserve for the Gramalote project in Colombia - with 63.7Mt @ 0.86 g/t gold comprising contained metal content of 1.8Moz, on an attributable basis. The Gramalote project is a Joint Venture between AGA (51% and manager) and B2Gold (49%). The project lies on the eastern flank of the Cordillera Central near the towns of Providencia and San Jose del Nus in the municipality of San Roque, in the north-west of the Antioquia Department. It is approximately 230km north-west of Bogota and 124km north-east of Medellin ***(see Figure 1).***

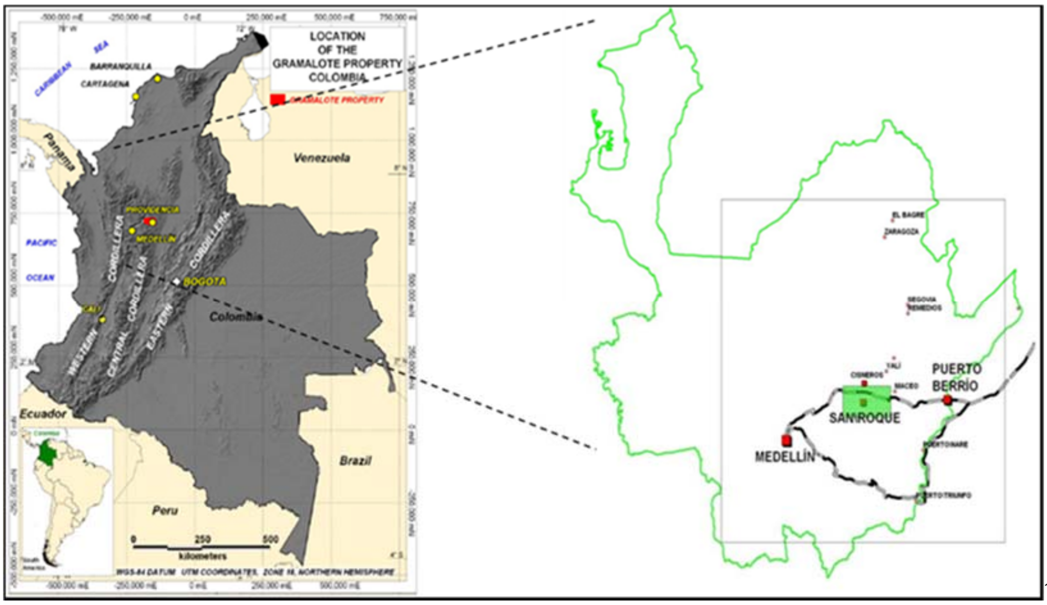
"We are developing this as a good long-term option in our pipeline, and will be working hard to optimise all of its key elements – including capital -- during the feasibility study phase," *Ludwig Eybers, AngloGold Ashanti's Chief Operating Officer-International said. "****While we are a long way from committing any capital to this project, it represents good value that we will realise over time."***

There is a lot of work to do, during the feasibility study

The region encompassing Gramalote has a long history of artisanal gold mining. Gramalote itself has had small scale artisanal mining for several decades prior to exploration work and mineral discovery by AGA. In view of the artisanal small-scale mining in the area, AGA has engaged with key stakeholders and managed to get community support for the project. The project aims to provide opportunities of alternative livelihood to the area once it is developed as planned. Drilling commenced in 2006. In 2010, AGA became the operator and manager of the project with a 51% share. Sufficient work was completed to enable a Pre-Feasibility study to be completed in late 2013. This study was then updated to reflect the growth of the Mineral Resource, significant mineral processing opportunities identified by the project team and ongoing capital and operating cost optimisation. The enhanced Pre-Feasibility study was completed in September 2017 and board has conditionally approved its progression to a full Feasibility Study.

"This project is technically robust and the metallurgy is particularly impressive in its amenability to processing." Eybers said. "The project is in line with our approach of developing projects at cost-effective levels with attractive payback periods for better margins."

Figure 1: Project Locality plan



[1]

Project Summary:

The project has several strengths, both external and intrinsic to the ore and to the orebody itself which include:

- Relatively low strip ratio of 2.5:1
- Ability to implement grade streaming to increase early cash flow
- Exceptionally good metallurgy, resulting in low processing costs and high recovery
- Adjacent to a National Highway, which connects to a river and seaports
- Close to the national electricity grid with ample low-cost power
- Technically capable workforce
- High levels of community support from an area with an established mining culture
- Located in a high-rainfall area with good water supply.

Mining will be conducted via open pits, starting in the high-grade portion of the main Gramalote Pit and progressing through a series of cut-backs in Gramalote and in the two satellite pits, Trinidad and Monjas West. Total rock movement rises close to 60Mtpa in the second year of operation, and remains at that level until the ninth year, before declining rapidly. The total material moved is expected to include material rehandled from the stockpiles.

The project concluded that a SAG-Ball mill circuit along with flotation and leaching is expected to provide the best economics. The Gramalote ore will be treated using a simple circuit and is expected to perform well metallurgically, as summarised below:

- The sulphide and oxide ores will be treated through separate grinding and flotation circuits, optimising operational performance.
- The plant nameplate feed rate will be 11 Mtpa of sulphide ore and 4 Mtpa of oxide. After oxide ore is depleted in year 9 of production, 15 Mtpa of sulphide ore will be fed.
- The process for both ores will involve floating the gold into a low-mass concentrate which is leached, while the benign flotation tails are placed in a Tailings Management Facility (TMF).
- The sulphide ore is expected to achieve close to 95% overall gold recovery with a very coarse grind size, minimising costs.
- Recovery from the oxide ore is anticipated to be lower at close to 82%, but the process is still expected to be more profitable than a whole ore leach process.

Key infrastructure highlights include:

- Existing port facilities, including sea ports (Cartagena at 640km and Barranquilla at 768km), river ports (73 km) and a national highway.
- On-site facilities to be constructed include the TMF, a creek diversion, a residential camp and offices.
- A high voltage power line, 26 km long, will be required to connect to the national grid. This is expected be constructed and operated by a major Colombian power distribution company.

The project aims at producing a total of 4.22Moz of gold over the life of mine (LOM) at a rate of between 300koz and 450koz for the first eight years.

Total nominal cash flow (undiscounted) over is $1,232m, of which $628m is attributable to AGA. The project has a very low AISC of $674/oz (real terms) over the LOM and has an AIC of $901 (real terms).

According to the pre-feasibility study, the Gramalote project yields a real, after-tax IRR of 13.62%, with an NPV_9 of $178m at PFS (real terms). The study envisages maximum nominal negative cash flow of $933m, to be reached in 2022. Payback is expected to be approximately achieved 6.7 years after the start o f project construction starts. The pre-feasibility study estimates project capital amounts to $960m (real value).

Mineral Resource:

The Gramalote deposit is located in the northern portion of the Central Cordillera of Colombia. The terrain is mainly composed of a metamorphic basement complex and the Antioquia Batholith. The terrane of the Cajamarca-Valdivia basement consists of metamorphic rocks, volcanic rocks, oceanic ophiolites and intrusive rocks. The Antioquia Batholith of Upper Cretaceous age covers an area of 7221 km^2 and constitutes the core of the Central Cordillera. About 92% of this intrusive corresponds to (normal phase) tonalite and granodiorite and 8% to two subordinate types of rocks - granodiorite to quartz-monzonite and gabbro. From a structural point of view, the Antioquia Batholith has a history of uprising complex and lasting. Major lineaments affect the batholith, especially in its eastern sector where traces of trend WNW varying to NW, recorded rotation and shear sinistral movement. Westward dextral transpression dominates along the Romeral Fault System.

Gramalote is an intrusive-hosted structurally controlled stockwork gold and silver deposit. Mineralisation is controlled by north-east/south-west trending shear zones and north-northwest to south-southeast trending shear extensional zones affecting the tonalites and granodiorites of the Antioquia Batholith. Gold mineralisation is associated with three overprinting texture destructive alteration assemblages including potassic, quartz-sericite and sericite carbonate. Within these alteration zones, anomalous gold mineralisation is associated with three specific types of stockwork quartz veining. These include quartz veinlets with fine-grained pyrite, quartz-carbonate veinlets and quartz veinlets with granular pyrite.

The Mineral Resource reported is from three main zones, Gramalote Central, Monjas West and Trinidad ***(see Table 1)***.

Table 1: Gramalote Mineral Resource (51% Attributable) as at 31 December 2017

Area	Category	Tonnes (Million)	Au Grade (g/t)	Au Content (tons)	Au Content (Moz)
Gramalote Central Oxides	Measured	-	-	-	-
	Indicated	3.49	0.60	2.10	0.07
	Inferred	6.61	0.55	3.62	0.12
	Total	**10.09**	**0.57**	**5.71**	**0.18**[2]
Trinidad Oxides	Measured	-	-	-	-
	Indicated	-	-	-	-
	Inferred	9.17	0.55	5.01	0.16
	Total	**9.17**	**0.55**	**5.01**	**0.16**
Monjas West Oxides	Measured				
	Indicated				0
	Inferred	2.73	0.51	1.39	0.04
	Total	**2.73**	**0.51**	**1.39**	**0.04**
Gramalote Central Sulphides	Measured	-	-	-	-
	Indicated	79.43	0.76	60.27	1.94
	Inferred	16.17	0.58	9.31	0.30
	Total	**95.60**	**0.73**	**69.58**	**2.24**
Trinidad Sulphides	Measured	-	-	-	-
	Indicated	-	-	-	-
	Inferred	17.91	0.41	7.42	0.24
	Total	**17.91**	**0.41**	**7.42**	**0.24**
Monjas West Sulphides	Measured	-	-	-	-
	Indicated	-	-	-	-
	Inferred	11.24	0.57	6.45	0.21
	Total	**11.24**	**0.57**	**6.45**	**0.21**
TOTAL					
Total Gramalote	Measured	-	-	-	-
	Indicated	82.92	0.75	62.36	2.01
	Inferred	63.84	0.52	33.20	1.07
	Total	**146.75**	**0.65**	**95.56**	**3.07**

Notes:

- *The Open Pit Mineral Resources have been estimated using the geostatistical technique of Localised Uniform Conditioning (LUC) using average drill-hole intercepts. Isatis software was used for the estimation.*
- *Rounding of the individual figures may result in computational discrepancies.*
- *The Open Pit Mineral Resources have been reported above a marginal (break-even) cut-off grade of 0.13g/t for oxide and 0.17g/t for transitional and fresh material.*
- *The Open Pit Mineral Resources are reported within optimisation shells, reflecting the current mine plan and the potential for additional Ore Reserves, should the gold price increase. All three pits are reported within a US$1,400/oz shell at current Pre-Feasibility cost estimates.*
- *The Mineral Resource was subject to an independent review. The review was conducted in October 2017. A certificate of sign off has been received by the auditor – SRK (Denver).*
- *The Mineral Resource is quoted inclusive of the Ore Reserve (Table 2).*

Table 2: Gramalote Ore Reserve (51% Attributable) as at 31 December 2017

Area	Category	Tonnes (Million)	Au Grade (g/t)	Au Content (Tonnes)	Au Content (Moz)
Gramalote Central Oxides	Proved[3]	-	-	-	-
	Probable	2.96	0.68	2.00	0.06
	Total	**2.96**	**0.68**	**2.00**	**0.06**
Gramalote Central Sulphides	Proved	-	-	-	-
	Probable	60.74	0.87	52.67	1.69
	Total	**60.74**	**0.87**	**52.67**	**1.69**
TOTAL					
Total Gramalote	Proved	-	-	-	-
	Probable	63.71	0.86	54.67	1.76
	Total	**63.71**	**0.86**	**54.67**	**1.76**

Notes:

- *The Open Pit Ore Reserve is based on the Mineral Resource model.*
- *The Open Pit Ore Reserve has been reported above a Full Grade cut-off grade of 0.16g/t for oxide and 0.22g/t for fresh and transitional material.*
- *The Open Pit Ore Reserves are reported within Pit Designs, reflecting the Pre-Feasibility mine plan*
- *Inferred Mineral Resource was included in the pit optimisation and a total of 188Koz of this material is included in the Pre-Feasibility study. The effect of this mining was tested by setting the grade to 0g/t and this did not materially affect the economics of the project.*
- *The Ore Reserve was subject to an independent review. The review was conducted in October 2017. A certificate of sign off has been received by the auditor – SRK (Denver).*

The details of the Ore Reserve and Mineral Resource estimate are provided in Table 1 and Table 2 above. The location of the Ore Reserves and Mineral Resources are outlined in Figure 1 above.

Competent Persons Statement

The information in this report has been reviewed and approved by Vaughan Chamberlain (MSc (Mining Engineering), BSc (Geology), MGSSA, FAusIMM) who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr. Chamberlain has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person, as defined in the 2016 edition of the SAMREC Code. Vaughan Chamberlain is a full-time employee of the Company and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The updated Ore Reserve and Mineral Resource estimates are reported in accordance with the South African Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2016 (SAMREC Code) and Johannesburg Stock Exchange (JSE) Listing Rules.

As such the reported increases relating to Gramalote require the additional supporting information set out in this document and its appendices.

SAMREC TABLE 1					
			Exploration Results	Mineral Resources	Mineral Reserves
Section 1: Project Outline					
1.1	Property Description	(i)	Brief description of the scope of project (i.e. whether in preliminary sampling, advanced exploration, scoping, pre-feasibility, or feasibility phase, Life of Mine plan for an ongoing mining operation or closure). The Gramalote project has completed the pre-feasibility (PFS) phase.		
		(ii)	Describe (noting any conditions that may affect possible prospecting/mining activities) topography, elevation, drainage, fauna and flora and vegetation, the means and ease of access to the property, the proximity of the property to a population centre, and the nature of transport, the climate, known associated climatic risks and the length of the operating season and to the extent relevant to the mineral project, the sufficiency of surface rights for mining operations including the availability and sources of power, water, mining personnel, potential tailings storage areas, potential waste disposal areas, heap leach pad areas, and potential processing plant sites. The Gramalote project is located in the Nus River valley which is about 230 km north-west of Bogota, 110 km (by road) north-east of Medellin and about 1 km southwest of the village of Providencia, Department of Antioquia, Colombia. Daily international flights are available to Bogota and Medellin, and there are several flights a day from Bogota to Medellin. Access to the site is by well-maintained paved roads from Medellin (3-4 hours driving time) or Bogota (8-10 hours driving time). The climate at the Gramalote project is mildly tropical with daytime temperatures throughout the year averaging about 24°C. Yearly rainfall averages about 200 cm and falls mostly during two rainy seasons extending from March to May and from September to December. Several small towns with a long history in ranching and small scale mining are located near the project site making labour readily available. Local labour is not trained in modern exploration and mining techniques, indicating the need to provide training and importation of some expatriates. Most requirements (personnel, equipment, contractors) for project exploration and development, can be acquired or contracted out of Medellin and/or surrounding towns. Direct water access is available from Puerto Berrio (55 km from the project) to Barranquilla, a major ocean port on the Caribbean coast. Providencia is the closest town to the project site and was a historic railway station and mining supply centre, administered by the Municipality of San Roque, which is 12 km to the southwest of the Gramalote project. An inactive freight/passenger railway line and high tension electricity lines pass within one km of the project area. Regionally, central Antioquia Department is a hub for the generation of large-scale hydro-electricity. A 2.5 megawatt hydroelectric plant is presently generating electricity at the Guacas Creek, within the Gramalote property. Water resources are abundant throughout the region. Elevations in the Gramalote project area range from 800 to 1,500 metres above sea level, while elevations over the Antioquia plateau are generally between 2,300 and 2,500 metres above sea level. Except in areas of historic artisanal mining, the region is covered in grass pasture and cropland with limited, isolated extensions of natural vegetation, dominated by lush, low-growth Andean forest, mostly preserved along the courses and headwaters of the drainages. Natural outcrop is rarely observed. Tropical weathered latosol profiles are common and average 15 metres thick in undisturbed areas.		
		(iii)	Specify the details of the personal inspection on the property by each CP or, if applicable, the reason why a personal inspection has not been completed. The Mineral Resource is signed off by a Competent Person (CP), who is the site based Geology Manager. The work of the site team is reviewed regularly by corporate-based personnel, with these people visiting the site regularly. The Ore Reserve estimation was done by site based personal, with the Competent Person for the Ore Reserve being the Mining Studies Manager.		
1.2	Location	(i)	Description of location and map (country, province, and closest town/city, coordinate systems and ranges, etc.). The Gramalote property is located near the town of Providencia and San Jose del Nus belonging to the municipality of San Roque, northwest of the Department of Antioquia, Colombia, on the eastern flank of the Cordillera Central. It is approximately 230 km northwest of the Colombian capital of Bogota and 124 km northeast of Medellin which is the regional capital of Antioquia Department, with a population of more than two million people. The municipalities of San Roque and Maceo are within 20 km of the project site. The geographic center of the Project is located at UTM Zone 18N (WGS84): 509,180 East; 720,330 North (6°31’ N, 74°55’ W).		

		(ii)	Country Profile: describe information pertaining to the project host country that is pertinent to the project, including relevant applicable legislation, environmental and social context etc. Assess, at a high level, relevant technical, environmental, social, economic, political and other key risks. Mining regulations in Colombia follow the principle that (with limited exceptions) the subsoil and all the Mineral Resource are property of the state and therefore may only be exploited with the permission of the relevant mining authority which, is the National Mining Agency. According to Colombian regulations, any person and public or private entity which expressly includes in its object mining exploration and exploitation may apply for a mining title. There are two main bodies of law that regulate mining titles that are in force in Colombia: Decree 2655 of 1988, which is the former mining code, which still governs mining titles issued since 23 December 1988 and until 17 August 2001; and Law 685 of 2001, which is the current mining code. Law 685 was amended in 2010 by Law 1382 of 2010, which was declared unconstitutional and which is no longer in force. Therefore, Law 685 as issued in 2001 is the primary source of mining law in Colombia. Colombian regulations declare the mining industry as of public utility and social interest and efficient development of this industry is necessary. In order to begin and perform construction and exploitation operations, the title holder must obtain an environmental licence. Environmental licences may include all the necessary permits, authorisations and concessions for the use of natural renewable resources in the execution of the mining project. In order to obtain an environmental licence, the applicant must file an environmental impact assessment which includes among others; information of the project, the natural renewable resources to be used, information related with the evaluation of the environmental impacts, economic evaluation of the positive and negative impacts of the project, environmental management plan, decommissioning and abandonment plan, investment plan and compensation plan for the loss of biodiversity. Depending on the production of the mining project, the relevant authority to issue the environmental licence may be Environmental Licences Agency or the Regional Environmental Authority.		
		(iii)	Provide a general topocadastral map	Provide a Topo-cadastral map in sufficient detail to support the assessment of eventual economics. State the known associated climatic risks. .	Provide a detailed topo-cadastral map. Confirm that applicable aerial surveys have been checked with ground controls and surveys, particularly in areas of rugged terrain, dense vegetation or high altitude. Topographic survey is based on the national geographic institute (IGAC) scale 1:2000 , and two techniques were used: . Topography and survey with GNSS method . Differential static positioning method
1.3	Adjacent Properties	(i)	Discuss details of relevant adjacent properties If adjacent or nearby properties have an important bearing on the report, then their location and common mineralized structures should be included on the maps. Reference all information used from other sources. There are no adjacent properties that have an important bearing on this report.		
1.4	History	(i)	State historical background to the project and adjacent areas concerned, including known results of previous exploration and mining activities (type, amount, quantity and development work), previous ownership and changes thereto. The district of Gramalote has a long history of artisanal gold mining, dating back probably from pre-Columbian times to the present. Production was mainly carried out through hydraulic techniques, and by the early 1900s many operations were producing gold around the Nus River valley, including Gramalote, Guacharacas, La Trinidad, Cisneros and El Limón. In January 2003, the Colombian subsidiary of AngloGold Ashanti (AGA), Kedahda, reviewed the prospect and consolidated the mining exploration property by signing a joint venture agreement with Grupo Nus in 2005. During 2006 and 2007, AGA conducted a regional exploration program and drilled 43 diamond drill holes. It also excavated and sampled a 240-meter underground tunnel. In 2007 and 2008, B2Gold signed an agreement with AGA that granted B2Gold the responsibility for the exploration management. In 2008, B2Gold carried out a regional exploration program and drilled 89 diamond drill holes, re-sampled the underground tunnel and prepared a preliminary estimate of Mineral Resources. In 2010, AGA became the operator, with a 51% share and ultimately took the project to PFS through amongst other things, improving the Mineral Resource confidence by infill drilling, conducting metallurgical testing, sterilising suitable infrastructure areas and developing the engineering and environmental studies.		
		(ii)	Present details of previous successes or failures with reasons why the project may now be considered potentially economic. A Mineral Resource was first reported in 2012 and since then continued exploration has increased the Mineral Resource and the confidence in the Mineral Resource to the point that a PFS can be successfully completed.		

		(iii)		Present details of previous successes or failures with reasons why the project may now be considered potentially economic. An earlier PFS conducted in 2012 and enhanced in 2013 showed that while the Gramalote project had low to moderate social, environmental and technical challenges at that time it did not meet the economic hurdle rates of the Company but that there existed sufficient positive potential to improve potential returns. In response, the Gramalote Project team completed an enhanced PFS in 2017 that established a compelling case for Gramalote.	
		(iv)		Discuss known or existing historical Mineral Resource estimates and performance statistics on actual production for past and current operations. No historical data are yet available.	Discuss known or existing historical Mineral Reserve estimates and performance statistics on actual production for past and current operations. No historical data are yet available.
1.5	Legal Aspects and Permitting	Confirm the legal tenure to the satisfaction of the Competent Person, including a description of the following:			
		(i)	Discuss the nature of the issuer's rights (e.g. prospecting and/or mining) and the right to use the surface of the properties to which these rights relate. Disclose the date of expiry and other relevant details. The Gramalote project area is covered by one (1) integrated contract concession, that supports extraction (14292), of 8720.7095 Ha, which expires in 2043-04-02, one (1) preference right (4894), of 2,292.81 Ha and three (3) applications of 11,845 Ha (LJC-08012, QHQ-16081 and SF9-09031). The tenure is secure at the time of reporting. No known impediments exist to operate in the area.		
		(ii)	Present the principal terms and conditions of all existing agreements, and details of those still to be obtained, (such as, but not limited to, concessions, partnerships, joint ventures, access rights, leases, historical and cultural sites, wilderness or national park and environmental settings, royalties, consents, permission, permits or authorisations) Shareholders´ Agreement for the Gramalote JV, AngloGold Ashanti (51%) and B2Gold (49%) Gramalote has executed all promise sales and easement with land owners for land access. Gramalote has lease contracts for Medellín Office (administrative personnel), San Roque lodgement for field staff and Community Relationship Service. The development of the project requires the approval of the work program (PTO) and the global environmental license; currently the two permits are approved.		
		(iii)	Present the security of the tenure held at the time of reporting or that is reasonably expected to be granted in the future along with any known impediments to obtaining the right to operate in the area. State details of applications that have been made. All requirements for the granting of mining titles have been updated and presented to the authorities. No inconsistences presented and Gramalote has the right to operate and has fulfilled the obligations derived from the concession contract and the environmental license allowing the mining operation. In 2016 Gramalote has approved a Work Program (PTO) and environmental license for the principal mining title (14292). An Environmental License applies over 14292 area. Trinidad is another right (preference right turning to Concession Contract).		
		(iv)	Provide a statement of any legal proceedings for example; land claims, that may have an influence on the rights to prospect or mine for minerals, or an appropriate negative statement. Gramalote has 17 Land Restitution Proceedings and although the risk is low the legal processes could hinder or delay some activities. To the date of this report, the legal proceeding that was filed by a third party (Natalia Nohaba Vallejo) against the administrative act issued by the Mining Authority (Antioquia Secretary of Mines) is underway. The Mining Authority (Antioquia Secretary of Mines) did not grant to third parties mining rights requested over some "corridors" existing within Mining Title 14292 area, which title holder is Gramalote. It is worth noting that the "corridors" arise from graphic defects of the Mining National Cadastre. Gramalote requested to become a party of the judicial proceeding abovementioned and recently it was accepted as such. With this, Gramalote will be able to support the legal and technical thesis stated by the Mining Authority (Antioquia Secretary of Mines) throughout the proceeding. Gramalote´s legal counsel undertook a risk assessment categorizing the risk of potential impact to the Project, as low. If the legal precedent maintains, the status quo of the mining area should maintain as well. The "corridors" or graphic defects of the National Mining Cadastre are not considered as free areas, and in case they should be considered a free area, Gramalote would have a first right in time as it is the first applicant.		

		(v)	Provide a statement relating to governmental/statutory requirements and permits as may be required, have been applied for, approved or can be reasonably be expected to be obtained. Gramalote has all relevant governmental requirements and permits, including an approved Work Program (PTO) and environmental license for the principal mining title (14292). Outstanding is the Modification for Environmental Impact Study (EIA in Spanish) and the Signed of preference right 4894 "Trinidad area". Both of which there is reasonable expectation to be obtained.
1.6	Royalties	(i)	Describe the royalties that are payable in respect of each property. Surface fee payment per year during exploration phase and construction and assembly (US$ 75,000). Royalty payment per quarter of 4% during exploitation phase. The project will generate royalty payments when the exploitation stage begins.
1.7	Liabilities	(i)	Describe any liabilities, including rehabilitation guarantees that are pertinent to the project. Provide a description of the rehabilitation liability, including, but not limited to, legislative requirements, assumptions and limitations. In terms of Law 685/2001 - All mining and environmental policies are in place.
Section 2: Geological Setting, Deposit, Mineralisation			
2.1	Geological Setting, Deposit, Mineralisation	(i)	Describe the regional geology. The Gramalote deposit is located in the northern portion of the Central Cordillera of Colombia. The terrain is mainly composed of a metamorphic basement complex and by the Antioquia Batholith. The terrane of the Cajamarca-Valdivia basement consists of metamorphic rocks, volcanic rocks, oceanic ophiolites and intrusive rocks. The Antioquia Batholith of Upper Cretaceous age covers an area of 7221 km^2 and constitutes, the core of the Central Cordillera. About 92% of this intrusive corresponds to (normal phase) tonalite and granodiorite and 8% to two subordinate types of rocks - granodiorite to quartz-monzonite and gabbro. Major lineaments affect the batholith, especially in its eastern sector where traces of trend WNW varying to NW, recorded rotation and shear sinistral movement. Westward dextral transpression dominates along the Romeral Fault System.
		(ii)	Describe the project geology including deposit type, geological setting and style of mineralisation. Gramalote is considered to be an intrusive-hosted structurally controlled stockwork gold and silver deposit. Mineralisation is controlled by north-east/south-west trending shear zones and north-northwest to south-southeast trending shear extensional zones affecting the tonalites and granodiorites of the Antioquia Batholith. Gold mineralisation is associated with three overprinting texture destructive alteration assemblages including potassic, quartz-sericite and sericite carbonate. Within these alteration zones, anomalous gold mineralisation is associated with three specific types of stockwork quartz veining. These include quartz veinlets with fine-grained pyrite, quartz-carbonate veinlets and quartz veinlets with granular pyrite. Gramalote is a pluton-related, mesothermal gold prospect related genetically to the host intrusion. The alteration and mineralization is structurally controlled, restricted to small haloes along veins, sheeted veins and stockworks arrays. The sulphides content is less than 5%. Some evidence indicates that the host rock is directly related to fluids evolved from the cooling pluton, including pegmatite, aplite and K-feldspar alteration.
		(iii)	Discuss the geological model or concepts being applied in the investigation and on the basis of which the exploration program is planned. Describe the inferences made from this model. Geological model is based on alteration, vein abundance and gold grade. Statistical and geological domains are used for interpolation process and ore envelope wireframe creation. Leapfrog was used to refine the contacts and geometries of the orebodies while respecting the major interpretations and volumes.
		(iv)	Discuss data density, distribution and reliability and whether the quality and quantity of information are sufficient to support statements, made or inferred, concerning the Exploration Target or Mineralisation. Drill hole spacing ranges from 25m x 25m in the central area to 100m x 100m in the edges of the deposit, specifically in the low grade domains. Supporting the mineralisation interpretation and geological understanding is a 240m underground tunnel that crosscuts the orebody and tight Grade Control block that has been drilled into the high grade zone to understand the short scale mineralisation continuity.

		(v)	Discuss the significant minerals present in the deposit, their frequency, size and other characteristics. Includes minor and gangue minerals where these will have an effect on the processing steps. Indicate the variability of each important mineral within the deposit. Five important ore minerals were identified in the analysis, which appear in veinlets or disseminated mineralization. These are: pyrite (Py), chalcopyrite (Cpy) and sphalerite (Sph), free gold (Au) and rutile (Rt). Also, titaniferous materials were observed as secondary minerals. Coarse gold is not observed in the drill core. Petrographic work to date indicates the gold occurs in 5 to 20 micron sizes associated with fractures and inclusions within pyrite and cavities associated with sulphosalts (aikinite PbCuBiS3, matildite AgBiS2) and tellurides (hessite (Ag2Te).
		(vi)	Describe the significant mineralised zones encountered on the property, including a summary of the surrounding rock types, relevant geological controls, and the length, width, depth, and continuity of the mineralisation, together with a description of the type, character, and distribution of the mineralisation. Gold mineralization occurs within altered and mineralized tonalite of the Antioquia batholith. Anomalous gold grades are associated with three overprinting texture destructive alteration assemblages including potassic, quartz-sericite and sericite-carbonate. Within these alteration zones, anomalous gold mineralization is associated with three specific types of stockwork quartz veining. These include quartz veinlets with fine grained pyrite (Type 1), quartz-carbonate veinlets (Type 2) and quartz veinlets with granular pyrite (Type 5). The main zone of mineralization defined by drilling has been traced along strike to the northeast (azimuth 70º) for approximately 1,800m. Mineralization occurs within several zones that periodically coalesce both along strike and down-dip. Zones vary in width from tens of meters to 200 meters in true width with vertical to sub-vertical dips to the south-southeast. The Trinidad mineralized zone is located approximately three km north-northwest of the Gramalote Central. Monjas West is located 2.6km along the westward strike extension of the Gramalote Central zone. The style of alteration and mineralization of both satellite orebodies is similar to the Gramalote Central area.
		(vii)	Confirm that reliable geological models and / or maps and cross sections that support interpretations exist. Appropriate map and plans exists and are available.

Section 3: Exploration and Drilling, Sampling Techniques and Data

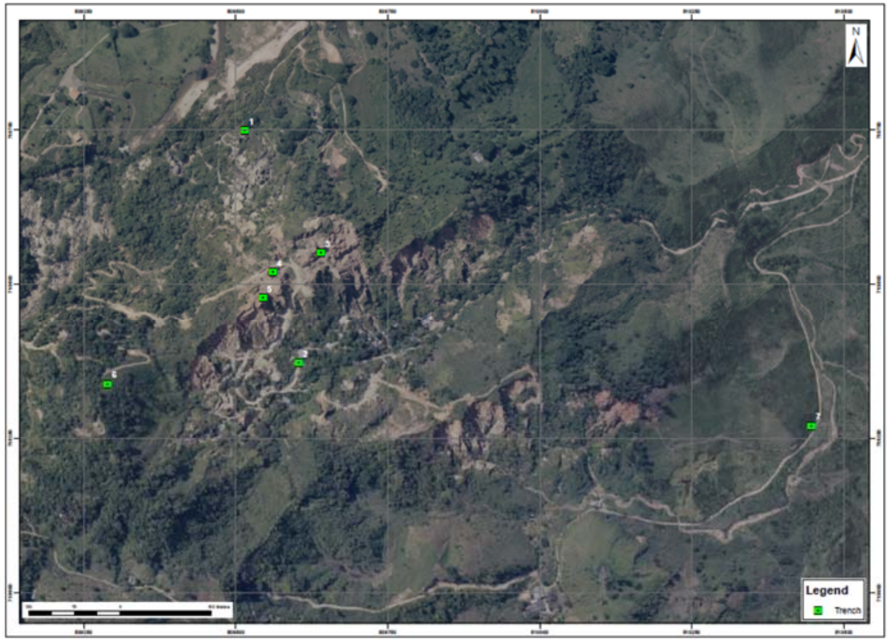
3.1	Exploration	(i)	Describe the data acquisition or exploration techniques and the nature, level of detail, and confidence in the geological data used (i.e. geological observations, remote sensing results, stratigraphy, lithology, structure, alteration, mineralisation, hydrology, geophysical, geochemical, petrography, mineralogy, geochronology, bulk density, potential deleterious or contaminating substances, geotechnical and rock characteristics, moisture content, bulk samples etc.). Confirm that data sets include all relevant metadata, such as unique sample number, sample mass, collection date, spatial location etc. Logging is done by geologists against predefined logging codes, QAQC is performed on data entry and by a series of database control scripts and by the Database Manager. Data validation starts from the drillhole, checking the position in the field, contractor (or own drilling) quality, recovery and depth control. Logging codes used and defined, Qa / Qc in the lab assays and scripts in the database. A dedicated Database Manager is employed to ensure quality and integrity of the data entering in the database. Data sets include all relevant metadata, such as unique sample number, sample mass, collection date, spatial location etc.
		(ii)	Identify and comment on the primary data elements (observation and measurements) used for the project and describe the management and verification of these data or the database. This should describe the following relevant processes: acquisition (capture or transfer), validation, integration, control, storage, retrieval and backup processes. It is assumed that data are stored digitally but hand-printed tables with well organized data and information may also constitute a database. Drilling data is captured in the field directly into laptop computers under the supervision of the Database administrator. Each section is checked by Senior Geologists for consistency and errors on collar, surveys, meta data, sample information, geological coding and sample QAQC insertion. User access to the database is regulated by specific user permissions and once data have been validated only the Database Manager can overwrite data. Finally, the database is backed up as part of the IT protocol.
		(iii)	Acknowledge and appraise data from other parties and reference all data and information used from other sources. No data from other parties is used in Mineral Resource estimation. Regional geology compiled from the Colombian Geological Association.
		(iv)	Clearly distinguish between data / information from the property under discussion and that derived from surrounding properties. No data from surrounding properties is used in Mineral Resource estimation.

		(v)	Describe the survey methods, techniques and expected accuracies of data. Specify the grid system used. Drill hole collar co-ordinates are initially located using handheld GPS units (1-2 m position accuracy). Once the drill pad is ready, the geologist supervises the setup of the azimuth angle and gives the final inclination using a Brunton type compass. When drilling has been completed, the collar location is re-surveyed using a Total Station or RTK GPS by in-house Gramalote survey team on site (normally 5 mm to 20 cm accuracy for Topcon or Trimble units). The grid system in use is UTM WGS84–Zone18N.
		(vi)	Discuss whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the estimation procedure(s) and classifications applied. Data spacing is used to define the Mineral Resource classification, with 15% error with 90% confidence rule used as a basis to determine the spacing. Drilling at Gramalote is from 25m x 25m spacing in the central part to 100m x 100m spacing in the adjacent low grade areas. In Trinidad and Monjas West the drilling spacing is mostly 100m x 100m. The data spacing is considered sufficient to justify the classification of the Mineral Resource by the following grid -100m x 100m for Inferred, 50m x 50m for Indicated and 25m x 25m for Measured.
		(vii)	Present representative models and / or maps and cross sections or other two or three dimensional illustrations of results, showing location of samples, accurate drill-hole collar positions, down-hole surveys, exploration pits, underground workings, relevant geological data, etc Models and Cross sections indicating results, location of samples, drillhole collar positions etc. are extensively documented in the Competent Persons Report issued for each model
		(viii)	Report the relationships between mineralisation widths and intercept lengths are particularly important, the geometry of the mineralisation with respect to the drill hole angle. If it is not known and only the down-hole lengths are reported, confirm it with a clear statement to this effect (e.g. 'down-hole length, true width not known'). Intercepts are reported as down hole lengths.
3.2	Drilling Techniques	(i)	Present the type of drilling undertaken (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Banka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc)Present the type of drilling undertaken (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Banka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc) Drilling is predominantly diamond, with some RC drilling having been done on a test Grade Control pattern. Gramalote has used a variety of core barrel sizes including NQ, NQ3, HQ, HQ3, PQ and, BTW for the diamond drill holes and 5 ½ inches for the RC holes. The DD holes were drilled predominantly with an azimuth northwest (315°), with minus 47°/55° degree dips and average of 442 meters in length. The drill spacing varies from 25 m to 100 m.
		(ii)	Describe whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, technical studies, mining studies and metallurgical studies. Diamond core and RC drill chips underwent detailed logging through the entire hole (at 2m intervals for RC chips), with record kept of lithology, structure, texture, mineralization, alteration type, weathering intensity, presence of quartz veining and sulphide, etc. Specific drill programs are designed and completed where data is required for Metallurgical and Geotechnical purposes. Geotechnical and detailed structural logging is carried out on orientated core with core orientation confidence recorded. Diamond core drilled for geotechnical purposes is logged for recovery, RQD and structural data required for geotechnical analysis. Samples are also taken for geotechnical strength testing. Core drilled for metallurgical purposes is logged as per standard exploration protocols and sampled as per AGA metallurgical guidelines.
		(iii)	Describe whether logging is qualitative or quantitative in nature; indicate if core photography. (or costean, channel, etc) was undertaken. Logging is both qualitative and quantitative; core photography is routinely made for all drill holes.
		(iv)	Present the total length and percentage of the relevant intersections logged. All drill holes are logged in full with a greater level of details for core drilling.
		(v)	Results of any downhole surveys of the drill hole to be discussed. Geologists check on the downhole Survey and request a maximum two extra reading if values are abnormal. All drill holes used in the geological model include down the hole survey.

3.3	Sample method, collection, capture and storage	(i)	Describe the nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. Samples used for Mineral Resource estimation are from Diamond Drill (DD) core and Reverse Circulation (RC) drilling. Most drill core sampling occurred on 2m sample lengths. In the case of DD, core has been halved while RC samples have been split with a cone splitter.
		(ii)	Describe the nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. All drill holes were sampled from top to bottom. Core samples are cut in half with a core saw in consistent 2.0m intervals. Minor sample length variability is due to obvious breaks in lithology or mineralization. Once the core was sawn, the sample destined for the laboratory was randomly selected and sealed into numbered plastic bags.
		(iii)	Appropriately describe each data set (e.g. geology, grade, density, quality, diamond breakage, geo-metallurgical characteristics etc.), sample type, sample-size selection and collection methods Data set (Geology, Assay, Density, Metallurgical data) sample size selection and collection methods are clearly described/explained in the Inhouse CPR Resources
		(iv)	Describe the method of recording and assessing core and chip sample recoveries and results assessed, measures taken to maximise sample recovery and ensure representative nature of the samples and whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material. Describe the method of recording and assessing core and chip sample recoveries and results assessed, measures taken to maximise sample recovery and ensure representative nature of the samples and whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material. For diamond, recovered core length for each drill run is recorded and measured against the expected core from that run. Core recovery is consistently very high. For RC, considerable effort has been put into improving the recoveries through the Saprolite, including using multiple drill types, drill sizes and angles. QQ plots over common areas have also been used to test for any relationships between recovery and grade and recovery and drill size.
		(v)	Describe retention policy and storage of physical samples (e.g. core, sample reject, etc.) - DD Core - Half of the core is retained indefinitely. Pulp and reject are stored in the warehouse facility. - RC Samples - Rejects and pulps are stored in the warehouse facility.
		(vi)	Describe the method of recording and assessing core and chip sample recoveries and results assessed, measures taken to maximise sample recovery and ensure representative nature of the samples and whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material. Diamond core was reconstructed into continuous runs for orientation marking, depths being checked against the depth marked on the core blocks and core recovery is calculated. Any core loss is recorded in the database. To check the recovery, mass balance measurements are taken for DD core. Recovery is about 95% in hard rock (tonalite) and 75 % in soft rock (saprolite).Through the implementation of different drilling practices (lower pressure and rotation speed) the recovery in soft rock has been improved with time up to 92%
		(vii)	If a drill-core sample is taken, state whether it was split or sawn and whether quarter, half or full core was submitted for analysis. If a non-core sample, state whether the sample was riffled, tube sampled, rotary split etc. and whether it was sampled wet or dry. Sampling processes Drill Core is sawn into Half core RC is split using a Rotary Cone Split (2m). If samples are wet, the entire sample is bagged and dried before splitting in the core yard.
3.4	Sample Preparation and Analysis	(i)	Identify the laboratory(s) and state the accreditation status and Registration Number of the laboratory or provide a statement that the laboratories are not accredited. The preparation and quartering of samples is carried out directly at the ALS laboratory located at Medellin, Colombia and after the sample preparation is completed the samples are shipped to the ALS Laboratory in Lima, Peru for analysis. Laboratory accreditation number “ISO CEI17025-2005”: 670

		(ii)	Identify the analytical method. Discuss the nature, quality and appropriateness of the assaying and laboratory processes and procedures used and whether the technique is considered partial or total. Gold is determined by AAS after fire assay of a 50 g charge (method code Au-AA24). Samples reporting more than 10 ppm Au are reanalysed gravimetrically (Au-GRA22). A broad suite of elements, including Cu, Mo, and potentially deleterious elements, is determined by ICP-OES and ICP-MS after four-acid digestion (method code ME-MS61). These methods are considered total for the economically important elements
		(iii)	Describe the process and method used for sample preparation, sub-sampling and size reduction, and likelihood of inadequate or non representative samples (i.e. improper size reduction, contamination, screen sizes, granulometry, mass balance, etc.). The preparation protocol is as follows: *Sample receipt and weight: Samples are logged into ALS Lima system directly during the reception. *Drying: samples are placed on stainless steel drying pans and placed into a dryer at 110 °C, heated with a digitally controlled gas-fired burner. *Crushing: Samples are crushed to more than 70 % < 2 mm. using terminator crusher. *Splitting: One kilogram is split using a riffle splitter. The lab is also requested to pulverize a second split to be used as coarse reject duplicate. *Pulverizing: The split is pulverized to more than 85% passing 75 micron using a LM2mill. A sub-sample of approximately 250 grams weight is split and shipped to the analytical laboratory, ALS in Lima Peru, for analysis.
3.5	Sampling Governance	(i)	Discuss the governance of the sampling campaign and process, to ensure quality and representivity of samples and data, such as sample recovery, high grading, selective losses or contamination, core/hole diameter, internal and external QA/QC, and any other factors that may have resulted in or identified sample bias. Sampling is as per the AGA sample collection protocols and procedures, which are in place to ensure the representivity of all sample selection practises. The critical aspect is to ensure every particle has the same opportunity to be sampled.
		(ii)	Describe the measures taken to ensure sample security and the Chain of Custody. Samples are sealed in plastic bags, which are in turn placed in larger poly-weave bags for transport. They are then transported via road freight to the laboratory, while being monitored by Site Security, with a corresponding submission form and consignment note. ALS checks the samples received against the submission form and notifies AGA of any missing, repeated or additional samples. Once ALS has completed the assaying, the pulp packets, pulp residues and coarse rejects are held in their secure warehouse.
		(iii)	Describe the validation procedures used to ensure the integrity of the data, e.g. transcription, input or other errors, between its initial collection and its future use for modelling (e.g. geology, grade, density, etc.) Logging: The project uses a custom data entry tool in MS Excel and MS Access for the first stage of data entry and validation. This tool is used by the geologists directly at logging stage and by the database assistant who is in charge of running the scripts that upload the data into Central database in Bogota. Drilling data entry: These are the daily drilling activities that need to be reported - the data entry of this information include drilling recovery; this data is uploaded into a customized SQL Server database through a set of script configured in MS Access. The data entry tool is the first stage of data validation through a set of scripts that displays to the data entry users any inconsistent data related with project logging rules. As a second QC stage, the data upload tool provides for database rules validation, as the keys constrain codes usage. The third stage of QC is a set of scripts configured for validation of log intervals, overlaps, gaps, final depth, missing data
		(iv)	Describe the audit process and frequency (including dates of these audits) and disclose any material risks identified All Mineral Resources models are peer reviewed by AGA Senior Regional Evaluation Manager before signoff. Gramalote has also been subject to three independent external reviews. All have found that the Mineral Resource estimation process, including sample governance to be equal or better than industry standard.

3.6	Quality Control/Quality Assurance	(i)	Demonstrate that adequate field sampling process verification techniques (QA/QC) have been applied, e.g. the level of duplicates, blanks, reference material standards, process audits, analysis, etc. If indirect methods of measurement were used (e.g. geophysical methods), these should be described, with attention given to the confidence of interpretation Quality control samples are included with each analytical batch. Two coarse blank samples are inserted at the start of the batch, and one is inserted every 25 samples. One certified reference material (CRM) is inserted every 25 samples. The reference sample is alternated between a certified Au standard and a certified Cu standard. A coarse reject duplicate is analysed every 25 samples and the laboratory-selected pulp duplicates are inserted every 20-25 samples. CRMs reporting more than two standard deviations from the expected value are reviewed. Remedial actions are based on the magnitude of the apparently erroneous result, the tenor of the routine samples with respect to the CRM, and the position within the batch of the CRMs. These data are reviewed during monthly meetings with the laboratory, during which any reanalysis programs are agreed. Precision is evaluated through analysis of a second split from the coarse crush. Analytical data are of acceptable precision and accuracy.
3.7	Bulk Density	(i)	Describe the method of bulk density determination with reference to the frequency of measurements, the size, nature and representativeness of the samples. Density measurements have been systematically conducted for core samples. A total of 7,800 samples have been tested across the site, giving an average density of 2.66 g/cm^3 with a standard deviation of 0.10. Test methods for density are immersion in water for unoxidized samples, and paraffin immersion for oxidized samples. The density measuring instrument is an electronic precision scale with 0.01 gram graduations. The results have been corroborated with the analysis of density by an external laboratory ALS (528 samples).The core segments used vary from 10 to 20 cm in length and the sample has been collected every 25 meters interval.
		(ii)	If target tonnage ranges are reported state the preliminary estimates or basis of assumptions made for bulk density. N/A
		(iii)	Discuss the representivity of bulk density samples of the material for which a grade range is reported Bulk density samples are not taken, core measurement are collected every 25 samples to cover the whole project area. Density reported in the model was estimated using Ordinay Kriging technique. Only for saprolite a fix value of 2.1 g/cm^3 was used.
		(iv)	Discuss the adequacy of the methods of bulk density determination for bulk material with special reference to accounting for void spaces (vugs, porosity etc.), moisture and differences between rock and alteration zones within the deposit. N/A

3.8	Bulk-Sampling and/or trial-mining	(i)	Indicate the location of individual samples (including map). Bulk mine samples were collected from a 240-metre adit with a two-by-two metre cross sectional area, in a fresh (unweathered) rock drifting into the northeast flank of Gramalote Central. Bulk oxide mine samples were collected from 7 trenches. 
		(ii)	Describe the size of samples, spacing/density of samples recovered and whether sample sizes and distribution are appropriate to the grain size of the material being sampled. Fresh material: A total of 250 t collected in 6 crosscuts in a 240m long adit. Oxide material: A total of 50 t collected in 7 trenches.
		(iii)	Describe the method of mining and treatment. Drilling and Blasting for fresh material and digging with backhoe for oxide material.
		(iv)	Indicate the degree to which the samples are representative of the various types and styles of mineralisation and the mineral deposit as a whole. Samples from a variety of geological types (mineralization and alteration) were collected as were samples from a range of gold grades.

Section 4: Estimation and Reporting of Exploration Results and Mineral Resources

4.1	Geological model and interpretation	(i)	Describe the geological model, construction technique and assumptions that forms the basis for the Exploration Results or Mineral Resource estimate. Discuss the sufficiency of data density to assure continuity of mineralisation and geology and provide an adequate basis for the estimation and classification procedures applied. Alteration, vein abundance, and gold grade are the primary controls applied during the modeling process. Domaining was applied to prevent the undue smearing of densely veined high-grade zones into more sparsely veined medium and low-grade zones. Four different domains were defined and modeled: high grade zone, medium grade zone, low grade zone and saprolite zone. Drill spacing varies from 25m x 25m to 100m x 100m and is consider sufficient to assure continuity of mineralisation. To check the continuity of the grade areas, a simple 10m composite was created and then used for volumetric modelling and variograms modelled to check the spatial continuity.	
		(ii)	Describe the nature, detail and reliability of geological information with which lithological, structural, mineralogical, alteration or other geological, geotechnical and geo-metallurgical characteristics were recorded All diamond drill cores have been geologically logged for lithology, alteration, mineralisation, and structure utilising AGA's standard logging code library. Diamond drill cores are orientated, photographed and physical parameters logged (density, susceptibility, resistivity, chargeability and spectral signature). Geotechnical and detailed structural logging is carried out on orientated core with core orientation confidence recorded. Geotechnical data recorded includes QSI, RQD, matrix, and fracture categorisation. All logging data are digitally captured and uploaded to a Century Fusion relational SQL and related databases.	
		(iii)	Describe any obvious geological, mining, metallurgical, environmental, social, infrastructural, legal and economic factors that could have a significant effect on the prospects of any possible exploration target or deposit. Geological, mining and metallurgical factors for the project are very encouraging. Social factors in the form of ASM's and community are issues that need to be constantly monitored.	
		(iv)		Discuss all known geological data that could materially influence the estimated quantity and quality of the Mineral Resource. The variability of the deposit is not well defined yet, so there is some uncertainty, especially in the area of low grade (Inferred Mineral Resources)
		(v)		Discuss whether consideration was given to alternative interpretations or models and their possible effect (or potential risk) if any, on the Mineral Resource estimate. The geological model has been continuously updated as the knowledge of the deposit increased with drilling, Various internal and external reviews have postulated and tested alternative interpretations to various degrees and none have shown material differences.
		(vi)		Discuss geological discounts (e.g. magnitude, per reef, domain, etc.), applied in the model, whether applied to mineralized and / or un-mineralized material (e.g. potholes, faults, dykes, etc). No geological discount present in the model.
4.2	Estimation and modelling techniques	(i)	Describe in detail the estimation techniques and assumptions used to determine the grade and tonnage ranges.	
		(ii)		Discuss the nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values (cutting or capping), compositing (including by length and/or density), domaining, sample spacing, estimation unit size (block size), selective mining units, interpolation parameters and maximum distance of extrapolation from data points. Ordinary Kriging was used to estimate into a panel size of 60m x 60m x 10m, the non-linear estimation technique of Localised Uniform Conditioning was then used to provide a recoverable model at the SMU size of 20m x 20m x 10m. The block size of 60x60x10m fits in well with the overall drill spacing of 75mx75m. Typical searching are limited to 100m x 100m x100m (high grade example) or 120m x 240m x 60m (low grade example) depending on the spatial distribution modelled, the difference related to the differences observed in their spatial continuity. Actual selective mining units used for the change of support calculation was 20m x 20m x10m which represented a conservative view of the minimum mining unit and compares

				favourably with other AGA operations using similar equipment. Compositing was to 2m for Gramalote and Monjas West and 1.5m for Trinidad, reflecting the average length of the samples taken. The deposit has a high nugget effect 50-60 % and it is necessary to apply capping, this is done using probability plots, with the cutting limited normally to less than 0.1 % of the samples.
		(iii)		Describe assumptions and justification of correlations made between variables. Gramalote is a gold project with Ag as a by-product, however other variables have been estimated. The estimation includes separate and individual variography for AU-AG-CU-MO-S-AS. Density has also been estimated into the different domains using ordinary kriging.
		(iv)		Provide details of any relevant specialized computer program (software) used, with the version number, together with the estimation parameters used Datamine, Leapfrog and Isatis software were used for Mineral Resource estimation. Datamine, Whittle and OPMS were used for Ore Reserve modelling.
		(v)		State the processes of checking and validation, the comparison of model information to sample data and use of reconciliation data, and whether the Mineral Resource estimate takes account of such information. Validation is done by comparing different estimation methodologies (OK, LUC and CS) and visually comparing block model to drill hole, using swath plots and by comparing the estimates to the theoretical Discrete Gaussian curves.
		(vi)		Describe the assumptions made regarding the estimation of any co-products, by-products or deleterious elements All by products are independently estimated.
4.3	Reasonable prospects for eventual economic extraction	(i)		Disclose and discuss the geological parameters. These would include (but not be limited to) volume / tonnage, grade and value / quality estimates, cut-off grades, strip ratios, upper- and lower- screen sizes. For Mineral Resource reporting a cut-off of 0.17 g/t for sulphides and 0.13 g/t for oxides has been used.
		(ii)		Disclose and discuss the engineering parameters. These would include mining method, dilution, processing, geotechnical, geohydraulic and metallurgical) parameters. Gramalote is planned to be a relatively large scale open pit mining operation with an estimated LOM of 13 years (plus 1 year of pre-stripping) Total Plant throughput: 11.3 Mtpa (Fresh ore) + 4.1 Mtpa (Oxide), Gold produced: 4.3Moz, Average annual production: ~359 koz Gold recovery process: SAG/Flotation/leaching of concentrate, and a separate circuit for oxide treatment Conventional tailings deposition with sand dam.
		(iii)		Disclose and discuss the infrastructural including, but not limited to, power, water, site-access. The project area is very favorable for placing key project Tailings Storage Facility (TMF) and Waste Rock Facility (WRF) within 3km to 4km of the mine and process plant. The project is located in the main hydro-generation area of Colombia, near several hydropower substations and high voltage lines (within a range of 50km) all interconnected to the national transmission system. The high project area rainfall (~2.5m per year) and the Water Management system will imply a positive water balance (Discharge: ~1500 m3/h).
		(iv)		Disclose and discuss the legal, governmental, permitting, statutory parameters. The tenure is secure at the time of reporting. No known impediments exist to operate in the area. The concession contract for the Gramalote project was awarded for 30 years from April 3, 2013 to April 2, 2043 and has an option to extend for up to 20 years. The extension must be negotiated and will only be granted if it proves that it is a benefit to the granting state. For the development of the mining activity, the required environmental authorizations are in place.

		(v)		Disclose and discuss the environmental and social (or community) parameters. The company owns the surface rights of the proposed sites. ARD is not showing an issue in terms of environment. A substantial portion of the project area has already been environmentally affected by other activities (agriculture, animal husbandry, artisanal mining) and project implementation to closure represents an environmental opportunity. Project does not involve Forest Reserve, Paramos or sensitive lands or species. The project has been able to create a good relationship with all the communities and key stakeholders. Due to the social needs in the area, the project is seen as a key driver to social development that will bring prosperity to the entire area.
		(vi)		Disclose and discuss the marketing parameters. N/A, there is a transparent quoted derivative market for the sale of gold, however cost of selling and refining gold are included in cost models and modifying factors.
		(vii)		Disclose and discuss the economic assumptions and parameters. For Mineral Resource reporting a cut-off of 0.17 g/t for sulphides and 0.13 g/t for oxides has been used and a gold price of $1,400/oz.
		(viii)		Discuss any material risks. At the time of compiling this report there are no material risks identified that would prevent eventual economic extraction of the Mineral Resource and Ore Reserve
		(ix)		Discuss the parameters used to support the concept of "eventual" In terms of the Mineral Resource the concept of "eventual" economic extraction the key parameter being considered was a gold price of $1,400/oz.
4.4	Classification Criteria	(i)		Describe criteria and methods used as the basis for the classification of the Mineral Resources into varying confidence categories. Mineral Resource was classified based on the 2 indicators approach using the 90% confidence at 15% error rule. A Measured Mineral Resource should be expected to be within 15% of the metal estimated at least 90% of the time (three month periods), while for an Indicated Mineral Resource estimate the annual estimate should be within 15% of the metal estimated at least 90% of the time (yearly periods). For Inferred Mineral Resource the error may be greater than 15%, 90% of the time (yearly periods).
4.5	Reporting	(i)	Discuss the reported low and high-grades and widths together with their spatial location to avoid misleading the reporting of Exploration Results, Mineral Resources or Mineral Reserves. Reporting is on the basis of estimates calculated from the drill hole data.	
		(ii)	Discuss whether the reported grades are regional averages or if they are selected individual samples taken from the property under discussion. Grades are reported as the average geostatistically estimated block model grade reported above cut-off per deposit, determined from a Mineral Resource model.	
		(iii)	State assumptions regarding mining methods, infrastructure, metallurgy, environmental and social parameters. State and discuss where no mining related assumptions have been made Open pit mining operation with an estimated LOM of 14 years Total Plant throughput: 11 Mtpa (Fresh ore) + 4 Mtpa (Oxide), Gold produced: 4.3Moz, Average annual production: ~359 koz Gold recovery process: SAG/Flotation/leaching of concentrate including USC feed to the sulphide plant in year 3, and a separate circuit for oxide treatment Conventional tailings deposition with sand dam. Environmental and social scenario considered in the overall strategy.	
		(iv)	State the specific quantities and grades / qualities which are being reported in ranges and/or widths, and explain the basis of the reporting. No ranges are used, the Mineral Resource reporting is on the basis of recoverable resource estimate, using a localised uniform conditioning (LUC) estimate	

		(v)		Present the detail for example open pit, underground, residue stockpile, remnants, tailings, and existing pillars or other sources in the Mineral Resource statement'. Mineral Resource is all from a number of Open Pits and is reported within a Whittle optimized pit shells and assuming a gold price of US $1,400 per ounces.	
		(vi)		Present a reconciliation with any previous Mineral Resource estimates. Where appropriate, report and comment on any historic trends (e.g. global bias). Routine reconciliation is carried out between updated and previous models to quantity and explain the grade/tonnage difference. Mineral Resources grew from 2.4 Moz Au in 2010 to 6.8 Moz Au in 2016. Variations are mainly related to gold price, increased exploration and changes in geostatistical methodology.	
		(vii)		Present the defined reference point for the tonnages and grades reported as Mineral Resources. State the reference point if the point is where the run of mine material is delivered to the processing plant. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported. The Mineral Resource tonnages and grade are reported as in situ within an optimized Mineral Resource shell at a cut-off grade.	
		(viii)	If the CP is relying on a report, opinion, or statement of another expert who is not a CP, disclose the date, title, and author of the report, opinion, or statement, the qualifications of the other expert and why it is reasonable for the CP to rely on the other expert, any significant risks and any steps the CP took to verify the information provided Nil		
		(ix)	State the basis of equivalent metal formulae, if applied. N/A.		
Section 5: Technical Studies					
5.1	Introduction	(i)	Technical Studies are not applicable to Exploration Results	State the level of study – whether scoping, prefeasibility, feasibility or ongoing Life of Mine	State the level of study – whether prefeasibility, feasibility or ongoing Life of Mine. The Code requires that a study to at least a Pre-Feasibility level has been undertaken to convert Mineral Resource to Mineral Reserve. Such studies will have been carried out and will include a mine plan or production schedule that is technically achievable and economically viable, and that all Modifying Factors have been considered. Gramalote Pre-Feasibility Phase was completed in 2017 and the Ore Reserve Declaration is done on the basis of this work.
		(ii)			Provide a summary table of the Modifying Factors used to convert the Mineral Resource to Mineral Reserve for Pre-feasibility, Feasibility or on-going life-of-mine studies. The modifying factors are: Gold Prices Reserves USD 1,100 USD/oz Cut-Off grade of 0.16 g/t for Oxide and 0.22 g/t for Sulphide Not dilution into Planning Block Model 100% Mining Recovery Metallurgical Recovery 83.9% for Oxide and 95% for Sulphide

5.2	Mining Design	(i)	Technical Studies are not applicable to Exploration Results	State assumptions regarding mining methods and parameters when estimating Mineral Resources or explain where no mining assumptions have been made. Key assumption was a SMU of 20m x 20m x 10m, with an open pit mining method and the final pit shell selected being US$1,400/oz .
		(ii)		State and justify all modifying factors and assumptions made regarding mining methods, minimum mining dimensions (or pit shell) and internal and, if applicable, external) mining dilution and mining losses used for the techno-economic study and signed-off, such as mining method, mine design criteria, infrastructure, capacities, production schedule, mining efficiencies, grade control, geotechnical and hydrological considerations, closure plans, and personnel requirements. The mining method is open pit, no dilution or losses was consider in the planning process. The selective mining unit SMU at 20mx20mx10m was defined according the mining equipment selection. The key infrastructure activities are aligned with the production schedule. Plant throughput at 4.1 Mtpa (oxide) and 11.3 Mtpa (sulphide). The mining efficiencies, grade control and personal requirements were validated against similar operations. Closure activities and costing were defined according the environmental licence.
		(iii)		State what Mineral Resource models have been used in the study. Three block models were used in the planning process updated in 2017: Gramalote: mdgr092017.dm Monjas West: mdmw092017.dm Trinidad: mdtri092017v1.dm
		(iv)		Explain the basis of (the adopted) cut-off grade(s) or quality parameters applied. Include metal equivalents if relevant A cut-off grade was calculated for both oxide and sulphide ore to identify the minimum ore grade that would generate a marginal benefit. The calculated cut-off grade for oxide ore was 0.16 g/t and for sulphide ore, 0.22 g/t.
		(v)		Description and justification of mining method(s) to be used. Gramalote is a semi-massive, low-grade gold deposit suitable to be operated as a conventional open pit truck and shovel operation. Standard open pit mining equipment has been selected, with conventional drilling, blasting, loading and hauling. The following criteria were used for the selection of mining equipment: • Large capacity units, consistent with the size of the operation. • Life of project. • Proven technology. • Maintenance strategy and reliability. • Flexibility in operations. • In-country support. • Operating cost.

		(vi)		For open-pit mines, include a discussion of pit slopes, slope stability, and strip ratio. The stripping ratio is 2.5. The recommended geotechnical design parameters for three planned open pits in the Gramalote Project, namely Gramalote (GRA), Monjas (MON) and Trinidad (TRI) pits are shown in the table below.	
		(vii)		For underground mines, discussion of mining method, geotechnical considerations, mine design characteristics, and ventilation/cooling requirements NA	
		(viii)		Discussion of mining rate, equipment selected, grade control methods, geotechnical and hydrogeological considerations, health and safety of the workforce, staffing requirements, dilution, and recovery. Mining rate: between 55-60 Mtpa according to the mining sequence and sinking rate. For the operation, the following equipment has been selected: • 3 x 520 ton class shovels • 2 x 200 ton class loaders • 19 x 228 ton class trucks • 4 x 7⅞” diameter drills for production • 4 x 5½” diameter drills for pre-splitting and grade control • Plus all necessary support and ancillary equipment. Grade control method: it is planned reverse circulation (RC) method Regular safety training and safety meetings will be conducted with all employees at the Project. All employees will be provided with appropriate Personal Protective Equipment (PPE) and task training for the job to which they are assigned, in accordance with the corporate values, AGA´s policies, and Colombian regulation. The mine will operate 365 days a year, 24 hours a day distributed in two 12-hour shifts with an assumed 15 days lost due to weather conditions. Three mining crews will rotate to cover the operation (two on and one off) in a roster system of 7x3-7x4, which means seven days on, three days off, followed by seven nights on and four days off. Management and technical staff would work only on day shift on a 5x2 roster. The ore displays exceptionally good metallurgical characteristics, achieving 95% gold recovery at a coarse grind size for sulphide and 81% for oxide material, using a low-cost flotation process producing a throw-away tail, with leaching of concentrate only.	

Medium Risk Geotechnical Design.

Design Sector	Slope Aspect Range (°)	Batter Height (m)	Bench Face Angle (°)	Bench Width (m)	Inter-Ramp Slope Angle (°)
Weathered	All	20	45	7.0	36
GRAMMED_DS1	085-150	20	75	6.7	59
TRINMED_DS1	265-330	20	75	6.7	59
MONMED_DS1	085-150	20	75	6.7	59
All Other Hard Rock (Gramalote and Monjas)	000-085 150-360	20	85	6.7	67
All Other Hard Rock (Trinidad)	000-265 330-360	20	85	6.7	67

Note: Offset from weathered domain to fresh rock is 25 metres.

		(ix)		State the optimisation methods used in planning, list of constraints (practicality, plant, access, exposed Mineral Reserves, stripped Mineral Reserves, bottlenecks, draw control). Mine plan was optimised using grade streaming strategy for the early years including an additional grade control rig, over loading capacity and increasing of powder factor to guarantee the diggability. Also, a good stockpile management and optimization of hauling distance. Key constraints were: . Nus River and national highway . Guacas diversion tunnel . Maximum sinking rate at 8 bench/year/phase
5.3	Metallurgical and Testwork	(i)	Technical Studies are not applicable to Exploration Results	Discuss the source of the sample and the techniques to obtain the sample, laboratory and metallurgical testing techniques. Samples for metallurgical testwork have been obtained by a number of techniques: • Diamond coring. This includes full PQ core for comminution testwork, half core and coarse reject material from assay sample preparation • Bulk samples obtained by blasting at multiple points along an exploration adit • Trenching of oxidised near surface material Samples have been selected to provide coverage of all three pits, of all depths through the regolith and for sulphide material. Standard metallurgical testing techniques have been used, with work conducted at large, reputable testing laboratories.
		(ii)		Explain the basis for assumptions or predictions regarding metallurgical amenability and any preliminary mineralogical test work already carried out Very extensive test programs have been carried out over a number of years. Metallurgical testwork on sulphide ore has been on eleven separate composites, each made up from multiple intercepts of multiple drill holes or from bulk mined material. For oxide ore, composites have been made from a proportional combination of drill core representing more competent material and bulk trench samples for shallower low competence material. Recovery testwork has included whole ore leaching, flotation and concentrate leaching, column and bottle roll testwork, material handling testwork, flocculation and thickening, carbon kinetics and equilibrium, cyanide destruction. Comminution testwork has included full JK Drop Weight tests, SMC, Bond CWI, Bond Abrasion Index, Bond ball mill work index at multiple closing screen sizes, Bond rod mill work indices and unconfined compressive strength, as well as mapping of ore hardness using the Equotip, Mineralogical work has included multiple studies using the QEMSCAN system, semi-quantitative XRD and gold deportment studies using a variety of techniques.

		(iii)		Discuss the possible processing methods and any processing factors that could have a material effect on the likelihood of eventual economic extraction. Discuss the appropriateness of the processing methods to the style of mineralisation. Describe the processing method(s) to be used, equipment, plant capacity, efficiencies, and personnel requirements. Two ore types are to be treated: sulphide ore and oxide ore. The dominant ore type is sulphide. The two ore types will be crushed, ground and a concentrate floated in separate circuits, since their processing requirements differ. The concentrates will then be combined for gold leaching. The design throughput of sulphide ore is 11 Mtpa and of oxide, 4 Mtpa. The process for the sulphide ore consists of a gyratory crusher feeding onto a primary ore stockpile. The ore is reclaimed from the stockpile and ground in a SAG mill, with pebble discharge, crushing and recycle. The SAG mill discharge is screened with the screen undersize going to a ball mill in closed circuit with hydrocyclones, producing a material 80% passing 300 µm for flotation. A flash flotation cell is included within the ball mill circuit to recover sulphides and gold as soon as they are liberated. A rougher-scavenger flotation bank consisting of ten 300 m^3 tank cells in two trains of five produces a concentrate which is cleaned in further flotation cells. The cleaned concentrate is reground in a two stage circuit using a Vertimill followed by Stirred Mineral Detritor, then leached using cyanide. The pregnant leach slurry goes to the counter current decantation thickeners, where most of the gold reports to the thickener overflow and is recovered in a Merrill Crowe circuit. The washed thickener underflow goes to a carbon in pulp adsorption circuit, where the remaining gold is recovered. The carbon is stripped and regenerated, with the gold bearing eluate going to the Merrill Crowe circuit for gold recovery. The process for the oxide ore consists of a feed bin feeding a wobbler feeder via an apron feeder. The wobbler feeder separates the potentially sticky fines from the coarser material. The fines report to a primary ore stockpile designed to handle the sticky material. The wobbler oversize is crushed in a jaw crusher, with the product reporting to the stockpile. The ore is reclaimed from the stockpile and ground in a single stage SAG mill, to 80% passing 106 µm. It is floated in tank cells, with the concentrate being cleaned in further flotation cells. The concentrate joins the reground sulphide ore concentrate for leaching and gold recovery. The combined sulphide and oxide flotation tails are pumped to the tailings management facility, where they are stored sub-aerially as they contain very low concentrations of sulphides. The combined leach tails are pumped through a separate line, as they need to be discharged and stored underwater to prevent oxidation of the contained sulphides. The Gramalote ore has exceptionally good metallurgical response, and is moderately hard so combined with low power costs this leads to much lower processing costs than a typical hard rock gold mine using whole ore leaching. Personnel requirements for plant operation are relatively low as the plant is fully automated and will be controlled from a central control room, typical of current practice. There will be a 7 people in the process and maintenance management team, 69 directly operating or in technical work and 79 working on plant maintenance.
		(iv)		Discuss the nature, amount and representativeness of metallurgical test work undertaken and the recovery factors used. A detailed flow sheet / diagram and a mass balance should exist, especially for multi-product operations from which the saleable materials are priced for different chemical and physical characteristics. As noted above, eleven sulphide ore composites have each been comprehensively tested to determine the optimum grind size and optimum flotation conditions. Five oxide ore composites have also been tested. For sulphide ore SMC tests were carried out on 62 variability samples, covering all pits. Bond ball work index tests were carried out on 61 composites. Due to variable nature of the oxide ore and the fact most is too incompetent for standard comminution testing, it was evaluated by measuring the fines content and Equotip hardness, relating the properties to geochemical and hyperspectral data and using the data to evaluate the proportion of the ore with different properties. The recovery factors vary with head grade, oxide or sulphide ore type and with source. Details are given in the relevant chapter. However, the main sulphide ore feed for the payback period is estimated to give 97.55 gold recovery in flotation, 98.1% in leaching and 99.95% of that recovered, for an overall recovery of 95.6%. For oxide ore, flotation recovery is lower at 83.0%, leach recovery is estimated to be 98.5% and solution recovery 99.95% for an overall gold recovery of 81.7%. The plant has been fully engineered at PFS level, with flowsheets, process design criteria, mass, material and water balances prepared, mechanical and electrical equipment lists, layouts and capital and operating costs estimated.

		(v)		State what assumptions or allowances have been made for deleterious elements and the existence of any bulk-sample or pilot-scale test work and the degree to which such samples are representative of the ore body as a whole. The Gramalote project ores contain very low concentrations of deleterious elements. The only one of relevance is copper, which is present in very low concentrations in the ore but is concentrated in flotation. Some copper is expected to leach with cyanide and does increase costs as the cyanide concentration must be kept higher to minimise copper loading onto carbon. Copper reporting in the CCD circuit overflow will consume zinc in the Merrill Crowe process. However, because the concentrate mass flow is low, the resulting additional costs are minor when considered on a $/t ore feed basis. A pilot scale test was carried out on the grinding circuit and two flotation pilot plant tests have been run. Batch flotation was also carried out in 20 L pilot scale cells to produce concentrate and tailings for vendor and rheology testwork and these tests were also used to gather kinetic and cleaning information. All tests have been carried out on samples selected to represent their respective orebodies. Each orebody is relatively homogenous metallurgically, although there are some mineralogical and metallurgical differences between the orebodies, but relatively small.	
		(vi)		State whether the metallurgical process is well-tested technology or novel in nature. All the processes, equipment and reagents used are widely used across the copper and/or gold industries. The front end of the Gramalote process (comminution and flotation) is typical of a moderately large copper plant, whilst the concentrate leach and gold recovery circuits are typical of gold plants containing elevated silver and/or moderate copper. The grind size for the sulphide ore, whilst coarser than is typical for most plants is in the range of current large scale industrial practice. The only novel aspect is to float gold from oxide ore rather than whole ore leaching. This is not considered a high risk as the test procedures, the equipment and the reagents are all standard for flotation and the conditions used are well within the range of normal industrial flotation practice. Thus the only risk would be if the results for oxide ore did not scale-up in the way that results for sulphide ores do, and there is no reason to believe this would be the case. The oxide ore has been tested at both bench and pilot scale.	
5.4	Infrastructure	(i)	Technical Studies are not applicable to Exploration Results	Comment regarding the current state of infrastructure or the ease with which the infrastructure can be provided or accessed.	
		(ii)		Report in sufficient detail to demonstrate that the necessary facilities have been allowed for (which may include, but not be limited to, processing plant, tailings dam, leaching facilities, waste dumps, road, rail or port facilities, water and power supply, offices, housing, security, resource sterilisation testing etc.). Provide detailed maps showing locations of facilities. A PFS Study and also a Front-End Engineering Design (FEED) Reports were completed to support the Environmental license already granted. Infrastructure and engineering for the Gramalote Project covers the support infrastructure for the Mine and the Plant, including: The tailings management facility (TMF), The waste rock facility (WRF), site water management, including a major creek diversion, roads, bridges and haul roads, Earthworks for major platforms – required given the steep topography, The central workshop and office area, The camp, high voltage power supply and MV distribution, utilities, fuel and lubs In addition to the technical features of the orebody and project design, the Project has several external advantages related to the infrastructure, which are: Good water supply – high rainfall region resulting in a positive water balance, Adjacent to the National Highway 62, which connects to a navigable river and sea ports, Close to the national electricity grid with ample low cost power and stable record (hydro-electric), Relatively low cost but technically capable workforce within Colombia.	

		(iii)		Statement showing that all necessary logistics have been considered. Colombia has the advantage of having suitable ports both on the Atlantic and Pacific oceans that are equipped to receive large equipment. These ports are located in Cartagena and Barranquilla on the Caribbean Sea (Atlantic Ocean) and in Buenaventura on the Pacific Ocean. The main access routes to Gramalote by road from the ports have been identified, and there are no issues to move normal or general cargo from the Atlantic or Pacific Ocean ports, using road routes as is done by the rest of other industries in Colombia. For oversized and overweight cargo, road transportation will not be possible, except if the cargo is reconfigured (dismantled) from its original configuration. Gramalote's location is conveniently close to Puerto Berrio, a fluvial port over the Magdalena River located 73 km downstream by National Route 62. This port is connected directly with Barranquilla and Cartagena by means of the Magdalena River and barge service in distance of 700 km from the ports and a barge travel time of 7 to 13 days depending on which shipping port is used.
5.5	Environmental and Social	(i)	Technical Studies are not applicable to Exploration Results	Confirm that the company holding the tenement has addressed the host country environmental legal compliance requirements and any mandatory and/or voluntary standards or guidelines to which it subscribes During the exploration phase the project obtained the environmental permits required to operate (water concessions, Forestry Use Permit, water discharge and water course occupation) and complied with the obligations and Colombian environmental standards. For the construction (including resettlement), operation and closure phases, on 25th of November of 2015 the National Environmental Authority granted the Environmental License for the project through resolution 1514; and the activation of the Environmental Licenses started on November 21st of 2016; currently the project is starting the implementation of activities allowed in the license to ensure it compliance". In Colombia the environmental license includes all the environmental permits required to operate in all the mining phases.
		(ii)		Identify the necessary permits that will be required and their status and where not yet obtained, confirm that there is a reasonable basis to believe that all permits required for the project will be obtained In Colombia for mining projects in the construction phase an Environmental License is required, on 25th of November of 2015 the National Environmental Authority (ANLA) granted the Environmental License for the project through resolution 1514; the License includes all the environmental permits required to operate in all the phases, so from the environmental point of view no other permit is required.
		(iii)		Identify and discuss any sensitive areas that may affect the project as well as any other environmental factors including I&AP and/or studies that could have a material effect on the likelihood of eventual economic extraction. Discuss possible means of mitigation. In the Gramalote project area there are no national or regional protected areas. Close to the project there is a local protected area (forestry reserve), but Gramalote project doesn't have any activity or infrastructure in that local environmental protected area.
		(iv)		Identify any legislated social management programmes that may be required and discuss the content and status of these Social management programmes are contained within the Environmental License 1514 of 2015 and 0309 of 2016. Formulation and design of the Resettlement Action Plan is in process and meets the IFC's Performance Standards on Social & Environmental Sustainability.
		(v)		Outline and quantify the material socio-economic and cultural impacts that need to be mitigated, and their mitigation measures and where appropriate the associated costs. The main socio-economic impact is the population involuntary resettlement that needs to take place; the manage measure is to restore the livelihood while the compensation measure and population eligibles will be define by the Resettlement Action Plan agreed with the community and government.

5.6	Market Studies and Economic criteria	(i)	Technical Studies are not applicable to Exploration Results	Describe the valuable and potentially valuable product(s) including suitability of products, co-products and by products to market. Gold production and silver production (as a by-product).
		(ii)		Describe product to be sold, customer specifications, testing, and acceptance requirements. Discuss whether there exists a ready market for the product and whether contracts for the sale of the product are in place or expected to be readily obtained. Gramalote Project will be producing Doré Bars derived from electro winning process, containing mostly gold and silver and lesser amounts of copper, lead, iron, nickel, palladium, zinc. The Doré Bar will then be sent to a refinery for final gold purification.
		(iii)		State and describe all economic criteria that have been used for the study such as capital and operating costs, exchange rates, revenue / price curves, royalties, cut-off grades, reserve pay limits. *Gold Price: USD$1.220/Oz Real Terms for 2022 onwards nominal terms price curves according AGA BP2018 version August 2017 *Exchange rate: 3025 (COP:USD) for 2018 and onwards curve according AGA BP2018 version August 2017 *Royalties: 4% payable on the value of the production at the mine gate (80% of the International Price LME) [As per current mining tax legislation]. *Capex and Operating Cost Estimate: The following points are applicable to all operating costs developed for the project unless stated otherwise: • Base date for the project is mid-year 2017, with the input costs updated to this date. • Costs are presented in US dollars undiscounted at input terms. • Base Exchange rate is of $COL 3,000 to US$ 1 for 2017, with fluctuation of the exchange in future years being captured by the financial model (as per BP2018 version August 2017). • Fuel cost corresponds to prices at the site and has been set at 0.65 US$/L. • The cost of electrical power was taken from the information supplied by IEB, in the file Precio Final kWh IEB 27-07-17, at $3000 COP:USD for 2017. The price for 2017 has been used and is US$0.0604/kWh. • A roster system of 7x4-7x3 rotations is used for the operative areas. Management and technical staff will work day shift only in a 5x2 roster. • The labour cost estimate for direct operating positions includes provision to cover personnel absences for holidays, vacation, training and sick leave. There is no similar coverage for support, professional and supervisory positions as coverage would be provided by other departmental employees with similar skills. The Capital Cost Estimate (CAPEX) for the project components have been developed by different consultants. Ausenco has been nominated as the Capex Integrator and third party reviewer and its scope was to compile the Capex into a single database, to review the depth and correctness of the overall project capital cost estimate, to perform a risk range analysis of the WBS packages and to calculate the contingency stochastically. The Operating Costs (OPEX) for the project were developed by the technical areas involved in the preparation of the PFS report, with support from specialists within AngloGold and B2Gold groups, specialized consultants, engineering companies and valuable service providers. Overarching services were provided to guarantee the full operational status of the project in support for the technical areas. Careful consideration was given to reviewing battery limits between technical areas as well as qualifications, inclusions and exclusions from the technical reports. The overarching services account for personnel services, sales costs, specialized consultants, fees and taxes and others, as will be further detailed.

		(iv)		Summary description, source and confidence of method used to estimate the commodity price/value profiles used for cut-off grade calculation, economic analysis and project valuation, including applicable taxes, inflation indices, discount rate and exchange rates. Pit optimisation and pit designs were developed using AGA planning guidelines. For financial evaluation the parameters are shown as following: Gold Price: USD$1.220/Oz Real Terms for 2022 onwards [AGA BP2018 version August 2017] Project Financial Valuation: Discounted Cash Flow (AGA standards) Discount Rate (WACC): 10% [AGA BP2018], Escalation / Inflation: AGA BP 2018 version August 2017 Exchange rate (Col:US$): AGA BP2018 version August 2017 Financial timeframe: Financial results presented at project approval date [Board Approval Date: November 2019] Royalties : 4% payable on the value of the production at the mine gate (80% of the International Price LME) [As per current mining tax legislation] Depreciation: Units of Production and Straight Line Meth as it corresponds Income Tax: 34% for 2017 and 33% from 2018 onwards [as per current tax legislation]
		(v)		Present the details of the point of reference for the tonnages and grades reported as Mineral Reserves (e.g. material delivered to the processing facility or saleable product(s)). It is important that, in any situation where the reference point is different, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported. The reference point for the Ore Reserves is the point where the run of mine material is delivered to the processing plant.
		(vi)		Justify assumptions made concerning production cost including transportation, treatment, penalties, exchange rates, marketing and other costs. Provide details of allowances that are made for the content of deleterious elements and the cost of penalties. Mining Mine operating costs were derived based on first principles estimation in a holistic cost model. The cost model connects production data to costs and its structure is based on each mining production task: • Direct: Drilling, blasting, loading, hauling, auxiliary services (such as bulldozers, wheeldozers, motorgraders, water trucks, etc.), pit dewatering. • Indirect: mine G&A. Each direct task was evaluated under the cost structure of labour, fuel, power, drill tools, explosives, tires, contractors and maintenance. Indirect tasks capture management, supervision, minor supplies such as safety wear, light mobile equipment, internal services such as maintenance of roads and mine pioneering; and external services. Plant Operating cost estimates have been derived for the two ore treatment circuits and the common processing circuit: Sulphide ore from crushing through flotation to the regrind circuit (11 Mt/y), Oxide ore from crushing through the flotation circuit (4 Mt/y) and Plant common from leaching to the gold room (15 Mt/y). The flotation concentrates are combined for treatment through a leach and gold recovery circuit. Flotation tailings are also combined for pumping. The reagent and utilities sections are also common to all ore treatment circuits. The operating costs for the common circuits are reported separately and are applicable to both sulphide and oxide ore, although this masks the fact that sulphide and oxide ore concentrates would have different concentrate treatment costs if they were treated separately. All maintenance costs have been allocated to the sulphide and oxide treatment circuits as these are based on a fixed $/t treated. The operating cost estimates are derived from the process design criteria, mass balance, mechanical equipment drive list, GCL provided manning schedule and cost of labor, quotations for reagents and major cost items and Ausenco's operating cost database. The operating costs were evaluated under the cost structure of labor, power, reagents, media and operating consumables, general & administration and miscellaneous costs. Infrastructure The operating costs have been derived for raising the TMF dam and associated infrastructure, for HV Power Connection costs and for overall buildings maintenance. The other infrastructure assets that will be built during implementation have their

				operating and maintenance costs captured under the Mine, Plant and Maintenance organizational structures for operations. For the TMF, operating costs include on-going construction of the sand dam and sand stack, decant system, water reclaim system and tailings transport and distribution system, cyclone station, waste rock facility, and sediment ponds. The strategy has been defined to outsource the execution of these tasks as they are not considered “core business”, as per the discussion under Section 5.2 Operations Management. The HV Power Connection will be executed during implementation phase as a DBOO (Design, Built, Operate and Own) contract. It is planned to be executed by a Colombian Transmission Company and it will install a single 230 kV transmission line including a main substation on-site. Payment for the connection services, transmission line, substation and the removal of the connection service assets at the end of the LOM will be included in the energy bill as a tariff charge regardless of the kWh cost, in accordance with the usual best practices in projects of this nature. An allowance has been made for overall building maintenance through the life of mine: camps, administrative buildings, mine facilities and roads maintenance (as use of dozer and graders is contingent to availability from the mine fleet). Overarching Services Overarching services were provided to guarantee the full operational status of the project in support of the technical areas scope. The items specified in this section were derived from a review of the battery limits between technical areas, review of qualifications, inclusions and exclusions from the technical reports, benchmark to other Americas operations (Brazil and Argentina) as well as from a panel review with the GCL team.
		(vii)		Provide details of allowances made for royalties payable, both to Government and private. According to the current tax legislation mining companies in Colombia are required to pay a royalty on the value of the production at the mine gate at a rate of 4% for Gold and Silver. The value of the production at the mine gate is understood as the 80% of the International Price LME. The royalty payment has to be done for the main product of the mine and any other metal by-product produced. A management fee equal to 1.25% of gross revenue generated from the sale of all product, which is 100% of revenues earned or arising from the sale of all product on and after the date of commencement of commercial production, will be payable to the manager from the date of commencement of commercial production. (According Gramalote Shareholders Agreement).
		(viii)		State type, extent and condition of plant and equipment that is significant to the existing operation(s). Gramaote is a Greenfield Project and as such the equipment and plant will be purchased new (or refurbished).
		(ix)		Provide details of all environmental, social and labour costs considered Rehabilitation & Closure Costs has been calculated as part of the Environmental License granted in Nov 2016. It includes fencing of sensitive areas, revegetation, slope recontouring, demolition and salvage of the process plant and tailings pipeline, mitigation on roads, platforms and tunnel, revegetation and slope protection of backfilled areas, waste and potable water systems dismantling, installation of monitoring systems and all associated engineering for design and construction of the measures. (Cash-basis, no accruals considered on the financial evaluation). Environmental Management Plans (EMP or PMA in Spanish) have been generated as an obligation from the approved Environmental License to prevent, mitigate and repair negative impacts that could be generated from the social and economic resettlement, construction, operation or closure of the mine. The EMPs have been detailed by Social, HR and Environmental areas and represent the cost for monitoring and control the 29 approved EMPs. The Gramalote project will be predominantly owner operated, including areas such as mine operations and maintenance that are quite commonly contracted out
5.7	Risk Analysis	(i)	Technical Studies are not applicable to Exploration Results	Report an assessment of technical, environmental, social, economic, political and other key risks to the project. Describe actions that will be taken to mitigate and/or manage the identified risks. Gramalote maintains an active risk register and mitigation plan for risk management.

5.8	Economic Analysis	(i)	Technical Studies are not applicable to Exploration Results	At the relevant level (Scoping Study, Pre-feasibility, Feasibility or on-going Life-of Mine), provide an economic analysis for the project that includes:
		(ii)		Cash Flow forecast on an annual basis using Mineral Reserves or an annual production schedule for the life of the project The economic evaluation of the Gramalote Project has been developed on an Excel-based model, using post tax stand-alone discounted real term cash flows which generates a net present value (NPV), internal rate of return (IRR) and a payback period over the expected life of the project (without any Sunk Costs). The investment analysis received input in terms of operating costs, capital expenditure, physical activity, tax and macro-economic assumptions from the technical functional areas involved in the project and from AGA Corporate office.
		(iii)		A discussion of net present value (NPV), internal rate of return (IRR) and payback period of capital NPV10 at Fs US$172.3M - NPV10 at PFS: US$119M IRR at Fs 14.93% - IRR at PFS 13.15% Payback from project implementation: 6.69 years
		(iv)		Sensitivity or other analysis using variants in commodity price, grade, capital and operating costs, or other significant parameters, as appropriate and discuss the impact of the results. A combined sensitivity analysis for exchange rate and Gold price variation was done, the combined effect of forcing both variables to their minima (decrease of gold price by 10% and a COP appreciation by 10%) decreases the IRR from 14.83% to 6.89%. Increasing all variables to their maxima (increase of gold price by 10% and a COP depreciation by 10%) increases the IRR to 21.6%. A static sensitivity for project implementation Capex and Operating cost was also performed, where an increase of 10% on the Capex reduces the NPV9 value In US$82 M and Capex reduction of 10% rises the NPV9 to US$ 250M.
Section 6: Estimation and Reporting of Mineral Reserves				
6.1	Estimation and modelling techniques	(i)		Describe the Mineral Resource estimate used as a basis for the conversion to a Mineral Reserve The geological modelling was performed using a model based on alteration, vein abundance and gold grade. The estimation technique is Localised Uniform Conditioning (LUC) and is done into different geological domains defined by the geological modelling. Optimization of search and number of samples used by blocks is done using standard QKNA processes.
		(ii)		Report the Mineral Reserve Statement with sufficient detail indicating if the mining is open pit or underground plus the source and type of mineralisation, domain or ore body, surface dumps, stockpiles and all other sources. Ore Reserve is all from Gramalote Central Open Pit and is predominantly sulphide. 119.1 Mt at 0.87 g/t - 3.320 Moz for sulphide 5.8 Mt at 0.68 g/t - 0.126 Moz for oxide
		(iii)		Provide a reconciliation reporting historic reliability of the performance parameters, assumptions and modifying factors including a comparison with the previous Reserve quantity and qualities, if available. Where appropriate, report and comment on any historic trends (e.g. global bias) N/A. This is a maiden reporting of an Ore Reserve.

6.2	Classification Criteria	(i)		Describe and justify criteria and methods used as the basis for the classification of the Mineral Reserves into varying confidence categories, based on the Mineral Resource category, and including consideration of the confidence in all the modifying factors. The classification of the Gramalote Ore Reserve has been carried out in accordance with the AGA guidelines, which use the 15% error with 90% confidence rule as the standard for reporting. The Mineral Resource classification has been used as the basis for the Ore Reserve classification. All Probable Ore Reserves have been derived from Indicated Mineral Resources and no proved Ore Reserve has been reported.
6.3	Reporting	(i)		Discuss the proportion of Probable Mineral Reserves, which have been derived from Measured Mineral Resources (if any), including the reason(s) therefore. None reported
		(ii)		Present details of for example open pit, underground, residue stockpile, remnants, tailings, and existing pillars or other sources in respect of the Mineral Reserve statement The total Ore Reserves as at the end of December 2017 is from Open pit and totals: 124.9 Mt at 0.86g/t - 3.446 Million oz (attributable).
		(iii)		Present the details of the defined reference point for the Mineral Reserves. State where the reference point is the point where the run of mine material is delivered to the processing plant. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported. State clearly whether the tonnages and grades reported for Mineral Reserves are in respect of material delivered to the plant or after recovery. The reference point for the Ore Reserves is the point where the run of mine material is delivered to the processing plant.
		(iv)		Present a reconciliation with the previous Mineral Reserve estimates. Where appropriate, report and comment on any historic trends (e.g. global bias). N/A, this a maiden publication of the Ore Reserve.
		(v)		Only Measured and Indicated Mineral Resources can be considered for inclusion in the Mineral Reserve. All Probable Ore Reserves have been derived from Indicated Mineral Resources.
		(vi)		State whether the Mineral Resources are inclusive or exclusive of Mineral Reserves. The Mineral Resources are inclusive of the Ore Reserves.
Section 7: Audits and Reviews				
7.1	Audits and Reviews	(i)	State type of review/audit (e.g. independent, external), area (e.g. laboratory, drilling, data, environmental compliance etc), date and name of the reviewer(s) together with their recognized professional qualifications. External Audit: drilling, data , Mineral Resource model, February 2012, Quantitative Group (Scott Jackson). Independent audit: Mineral Resource model with main focus in the low grade domain, June 2013, AMEC (Harry Parker) External Review: Mineral Resources and Reserves. SRK Consulting, September 2017	

		(ii)	Disclose the conclusions of relevant audits or reviews. Note where significant deficiencies and remedial actions are required. The external audit performed in February 2012 by QG (or Quantitative Group, from Australia), did not support the classification methodology used that manually built volumes around different drilling grids (25x25 for measured, 50x50 for indicated and 100x100 for inferred). This was subsequently replaced with 15% Error with 90% confidence approach using conditional simulation. The Mineral Resource estimate was independently audited by AMEC (Harry Parker) in June 2013 with main focus in the low grade domain and recommended to reject the former Ordinary Kriging estimation as ultra conservative for the Prefeasibility study and replace it with a "recoverable resource" approach like Uniform Conditioning. In 2015, the Mineral Resource was re-estimated using Localised Uniform Conditioning (LUC) all the LUC curves demonstrate very high correlation with the change of support curves with information effect which means the interpolation and change of support processes are consistent. The Mineral Resource and Ore Reserve audit completed in 2017, found no material issues.
Section 8: Other Relevant Information			
8.1		(i)	Discuss all other relevant and material information not discussed elsewhere. All relevant and material information has been discussed.
Section 9: Qualification of Competent Person(s) and other key technical staff. Date and Signature Page			
9.1		(i)	State the full name, registration number and name of the professional body or RPO, for all the Competent Person(s). State the relevant experience of the Competent Person(s) and other key technical staff who prepared and are responsible for the Public Report. For Mineral Resource Competent Person - Claudio Devaux - AusIMM member number 315689. Technical and Regional Sign–Off:: Alessandro Henrique Medeiros Silva - AusIMM member number 224831. For Ore Reserve Data Capturer: Carlos Donoso - AusIMM member number 320604 Lead Competent Person: Miguel Marcelo Roldán - AusIMM member number 324958 Technical Sign-Off: Chris James - AusIMM member number 208379 Regional Sign-Off: Daniel Stevermer - SME member number 03095300
		(ii)	State the Competent Person's relationship to the issuer of the report. Both Mineral Resource and Ore Reserve CP's are full time employees.
		(iii)	Provide the Certificate of the Competent Person (Appendix 2), including the date of sign-off and the effective date, in the Public Report.
Section 13: Reporting using Metal Equivalents (N/A)			

SAMREC Code, 2016 Edition – Table 1

Ends

Johannesburg
20 February 2018
JSE Sponsor: Deutsche Securities (SA) Proprietary Limited

CONTACTS

Media

Chris Nthite	**+27 11 637 6388/+27 83 301 2481**	**cnthite@anglogoldashanti.com**
Stewart Bailey	**+27 81 032 2563 / +27 11 637 6031**	**sbailey@anglogoldashanti.com**
General inquiries	**media@anglogoldashanti.com**	

Investors

Stewart Bailey	**+27 81 032 2563 / +27 11 637 6031**	**sbailey@anglogoldashanti.com**
Sabrina Brockman	**+1 646 880 4526/ +1 646 379 2555** **sbrockman@anglogoldashanti.com**	
Fundisa Mgidi	**+27 11 6376763 / +27 82 821 5322**	**fmgidi@anglogoldashanti.com**

Incorporated in the Republic of South Africa Reg No: 1944/017354/06
ISIN. ZAE000043485 – JSE share code: ANG CUSIP: 035128206 – NYSE share code: AU

Website: www.anglogoldashanti.com