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**G-Resources Group Limited**  
**國際資源集團有限公司\***  
*(Incorporated in Bermuda with limited liability)*  
**(Stock Code: 1051)**

## **ANNOUNCEMENT**

### **G-RESOURCES – MARTABE MINE – MINERAL RESOURCES AND ORE RESERVES STATEMENT AT 31 DECEMBER 2015**

**Hong Kong, 17 February 2016**

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This announcement is made by G-Resources Group Limited (HKSE: 1051 – “G-Resources” or the “Company” and, together with its subsidiaries, the “**Group**”) pursuant to rule 13.09 (2) of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (“**Listing Rules**”) and the Inside Information Provisions (as defined in the Listing Rules) under Part XIVA of the Securities and Futures Ordinance (Chapter 571 of the Laws of Hong Kong).

The board of directors of the Company (the “**Board**”) is pleased to report the Group’s updated Mineral Resources and Ore Reserves Statement as at 31 December 2015 (“**Mineral Resources and Ore Reserves Statement**”).

A copy of the Report of Martabe Mineral Resources and Ore Reserves Statement dated 12 February 2016 (the “**Report**”) is annexed to this announcement.



Below is the Executive Summary extracted from the Report:–

## **EXECUTIVE SUMMARY**

PT Agincourt Resources (PT AR) and G-Resources Group Limited (G-Resources) commissioned AMC Consultants Pty Ltd (AMC) to prepare a Competent Person's Report (CPR) of the Martabe gold mine (Martabe). Martabe is located in North Sumatra, Indonesia, and is operated by PT AR.

AMC Competent Persons visited Martabe in May 2013 and October 2014 (Peter Stoker, Mineral Resources<sup>1</sup>), and in February 2014 and October 2015 (Glen Williamson, Ore Reserves<sup>1</sup>) to inspect key aspects of the operation and to discuss the current and future operation with the Martabe management team. In addition, AMC has recently completed Mineral Resource estimates for the Barani and Uluala Hulu deposits.

Purnama is the largest (and first to be mined) of a cluster of six mineral deposits at the Martabe gold mine. Three of these deposits (Purnama, Barani, and Ramba Joring) have published Ore Reserve estimates. A further three deposits (Tor Uluala, Uluala Hulu, and Horas) have published Mineral Resource estimates but do not have Ore Reserve estimates.

Martabe encompasses the Purnama open-pit mine, a conventional carbon-in-leach (CIL) gold ore-processing plant with 4.5 million tonnes per annum (Mtpa) nominal design capacity, a permanent accommodation facility for mine workers, haulage roads, high-voltage switchyard, on-site workshop and warehousing, and a tailings storage facility (TSF) with associated water catchment and diversion systems. The mine has a planned life of approximately 10 years, based on current ore reserves. Other potential pits include Ramba Joring, Barani, and other prospects, identified over an area of six kilometres north-south.

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<sup>1</sup> *As defined by the JORC Code.*



## MINERAL RESOURCE AND ORE RESERVE STATEMENT

The Mineral Resource, Ore Reserve, and underlying data inputs and interpretations are generally robust and are supported by high-quality data and industry standard practices. Production results show positive reconciliations against the 2013 Ore Reserve model, although this is not expected to continue with the new model. The Ramba Joring Mineral Resource has ongoing work to better define the geological interpretation and optimised pit shell.

To arrive at this 31 December 2015 Mineral Resources estimate, the work undertaken comprises the updating of the Purnama Mineral Resource estimate including a depletion to 31 December 2015 and changes to mine stockpiles. There are no changes to existing Mineral Resources for the other deposits. Ramba Joring and Tor Uluala Mineral Resource estimates issued in 2010 and 2012 are unchanged from previous announcements despite additional drilling and resource estimation programmes because ongoing mineral resource estimates are not yet accepted by PT AR for public release. While these drilling programmes are important stages in the processes of developing higher-quality Mineral Resource estimates, the recent work is not considered material in relation to the global Mineral Resources at the Martabe deposits.

The Mineral Resource for Purnama has been depleted to the 31 December 2015 mining surface. PT AR provided stockpile volumes and grades. The Mineral Resource by area is reported in Table ES.1 in accordance with the JORC Code<sup>2</sup>. Appendix A contains the JORC Code Table 1 “if not, why not” summary for the Purnama Mineral Resource, which is provided as a result of material changes in the drilling data available to support the new estimate.

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<sup>2</sup> *Australasian Joint Ore Reserves Committee (JORC), Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code), 2012 edition, effective December 2012, 44 pp., available <[http://www.jorc.org/docs/JORC\\_code\\_2012.pdf](http://www.jorc.org/docs/JORC_code_2012.pdf)>, viewed 5 January 2016.*



**Table ES.1 31 December 2015 Martabe Mineral Resource estimate by classification**

Deposit	Category	Tonnes (Mt)	Gold grade (g/t Au)	Silver grade (g/t Ag)	Contained metal	
					Gold (Moz <sup>A</sup> )	Silver (Moz)
Purnama	Measured	21	2.2	27	1.5	18
	Indicated	67	1.3	16	2.7	34
	Inferred	2	1.0	14	0.1	1.1
	<b>Total</b>	<b>90</b>	<b>1.5</b>	<b>18</b>	<b>4.3</b>	<b>53</b>
Mine stockpiles	Measured	2.7	1.2	11	0.1	0.9
	<b>Total</b>	<b>2.7</b>	<b>1.2</b>	<b>11</b>	<b>0.1</b>	<b>0.9</b>
Ramba Joring	Measured	–	–	–	–	–
	Indicated	34	1.0	4.1	1.1	4.5
	Inferred	4.6	0.80	3.7	0.12	0.55
	<b>Total</b>	<b>38</b>	<b>1.0</b>	<b>4.1</b>	<b>1.2</b>	<b>5.0</b>
Barani	Measured	–	–	–	–	–
	Indicated	8.0	1.4	2.1	0.36	0.55
	Inferred	0.23	0.83	1.6	0.01	0.01
	<b>Total</b>	<b>8.3</b>	<b>1.4</b>	<b>2.1</b>	<b>0.37</b>	<b>0.56</b>
Tor Uluala	Measured	–	–	–	–	–
	Indicated	–	–	–	–	–
	Inferred	32	0.90	7.7	0.92	7.8
	<b>Total</b>	<b>32</b>	<b>0.90</b>	<b>7.7</b>	<b>0.92</b>	<b>7.8</b>
Horas	Measured	–	–	–	–	–
	Indicated	–	–	–	–	–
	Inferred	16	0.80	1.7	0.40	0.88
	<b>Total</b>	<b>16</b>	<b>0.80</b>	<b>1.7</b>	<b>0.40</b>	<b>0.88</b>
Uluala Hulu	Measured	–	–	–	–	–
	Indicated	1.6	2.2	19	0.11	1.0
	Inferred	2.9	0.76	2.9	0.07	0.27
	<b>Total</b>	<b>4.5</b>	<b>1.2</b>	<b>8.6</b>	<b>0.18</b>	<b>1.3</b>
<b>Combined</b>	<b>Measured</b>	<b>23</b>	<b>2.1</b>	<b>25</b>	<b>1.6</b>	<b>19</b>
	<b>Indicated</b>	<b>111</b>	<b>1.2</b>	<b>11</b>	<b>4.3</b>	<b>40</b>
	<b>Inferred</b>	<b>58</b>	<b>0.86</b>	<b>6.0</b>	<b>1.6</b>	<b>11</b>
	<b>Total</b>	<b>192</b>	<b>1.2</b>	<b>11</b>	<b>7.4</b>	<b>69</b>

<sup>A</sup> million ounces



*Notes:*

- 1 Mineral Resources are inclusive of those Mineral Resources converted to Ore Reserves. The Mineral Resources have been reported in accordance with the JORC Code.*
- 2 Note on cut-off grade: With the exception of Tor Uluala, all resources are reported using a cut-off grade of 0.5 g/t gold, which maintains consistency with prior estimates for comparison purposes plus reflects the site's current approximate threshold for waste versus mineralised waste. Tor Uluala is reported using a combined gold and silver cut-off grade, where gold grams per tonne plus silver ÷ 60 g/t is greater than 0.5 for each estimated resource model block.*
- 3 Note on rounding: Figures are rounded to two significant figures. Rounding might result in apparent computational errors or differences.*
- 4 Note on Barani Mineral Resource: The Barani Mineral Resource is constrained by a US\$2,000 per ounce Au, US\$35 per ounce Ag Whittle optimization pit and further, to the area south of 166,600mN due to the position of the TSF. As with the other deposits, the resources are reported using a cut-off grade of 0.5 g/t gold.*
- 5 Note on Purnama Mineral Resource: The Purnama Mineral Resource has been depleted due to mining operations to the 31 December 2015 mining surface and is constrained by a US\$2,000 per ounce Au, US\$35 per ounce Ag Whittle optimization pit.*

The work undertaken to arrive at this updated Ore Reserves estimate comprised of an update to the Purnama open-pit Ore Reserves and completion of an Ore Reserve estimate for Barani. Additional changes for the Purnama open-pit Ore Reserves comprise mining depletion and ore stockpile inventory changes. The Ramba Joring Ore Reserves estimate is unchanged from December 2014.

The Martabe Ore Reserves as of 31 December 2015 is summarised in Table ES.2, and is reported in accordance with the JORC Code. The JORC Code Table 1 Section 4 “if not, why not” summary is included as Appendix B, although there has been no material change to the Purnama Ore Reserve. The Ore Reserves are reported as delivered to the coarse ore run-of-mine pad.



**Table ES.2 31 December 2015 Martabe open-pit Ore Reserves estimate by classification and mining area**

Deposit	Ore Reserves classification	Ore tonnes (Mt)	Gold grade (g/t Au)	Silver grade (g/t Ag)	Contained metal	
					Gold (Moz)	Silver (Moz)
Purnama	Proved	16.1	2.6	30	1.3	16
Purnama	Probable	13.4	1.9	21	0.83	9.1
Barani	Probable	3.6	1.9	2.4	0.22	0.28
Ramba Joring	Probable	5.2	1.8	4.4	0.29	0.74
Purnama stockpile	Proved	2.7	1.2	11	0.11	0.94
Total Proved		18.8	2.4	27	1.4	17
Total Probable		22.2	1.9	14	1.3	10
Total Proved and Probable Ore Reserves		<b>41.0</b>	<b>2.1</b>	<b>20</b>	<b>2.8</b>	<b>27</b>

Notes:

- 1 Totals might not equal the sum of the component parts due to rounding adjustments.
- 2 Estimates are rounded to the nearest 0.1 Mt and two significant figures for gold grade, silver grade; gold metal, and silver metal.
- 3 The Ore Reserves were estimated using a projected 2016 gold price, based on three-year average of the gold and silver metal prices, of US\$1,250 per ounce and silver price of US\$16 per ounce for Purnama and Barani pits, and a gold price of US\$1,433 per ounce and silver price of US\$26.90 per ounce for the later developed Ramba Joring pit, given the lead time to production.
- 4 Ore Reserves are based on an expected value calculation to report tonnages above a zero \$/t net expected value. The cut-off to define ore is therefore variable in metal grades, but equates to an average cut-off grade of approximately 0.8 to 0.9 g/t Au, depending upon the accompanying silver grades.





## ABOUT MARTABE

The Martabe mine is located on the western side of the Indonesian island of Sumatra in the Province of North Sumatra, in the Batangtoru sub-district (Figure 1). Martabe is established under a sixth generation CoW signed in April 1997. The CoW defines all of the terms, conditions and obligations of both G-Resources and the Government of Indonesia for the life of the CoW.

*Martabe Mine Aerial view.*



Martabe, with a resource base of 7.4 million ounces of gold and 69 million ounces of silver, is G-Resources Group's core asset. Martabe's operating capacity is to mine and mill the equivalent of 4.5 mtpa ore to produce some 250,000 ounces gold and 2 million ounces silver per annum. Costs are competitive when compared to global gold producers.



G-Resources is seeking to organically grow gold production through continued exploration success on the large and highly prospective CoW area (Figure 2). The Martabe mine enjoys the strong support of the Indonesian Central, Provincial and Local Governments and the nearby communities of Batangtoru.

By Order of the Board  
**G-Resources Group Limited**  
**Chiu Tao**

*Chairman and Acting Chief Executive Officer*

Hong Kong, 17 February 2016

*As at the date of this announcement, the Board comprises:*

- (i) Mr. Chiu Tao, Mr. Owen L Hegarty, Mr. Ma Xiao, Mr. Wah Wang Kei, Jackie and Mr. Hui Richard Rui as executive directors of the Company; and*
- (ii) Dr. Or Ching Fai, Ms. Ma Yin Fan and Mr. Leung Hoi Ying as independent non-executive directors of the Company.*

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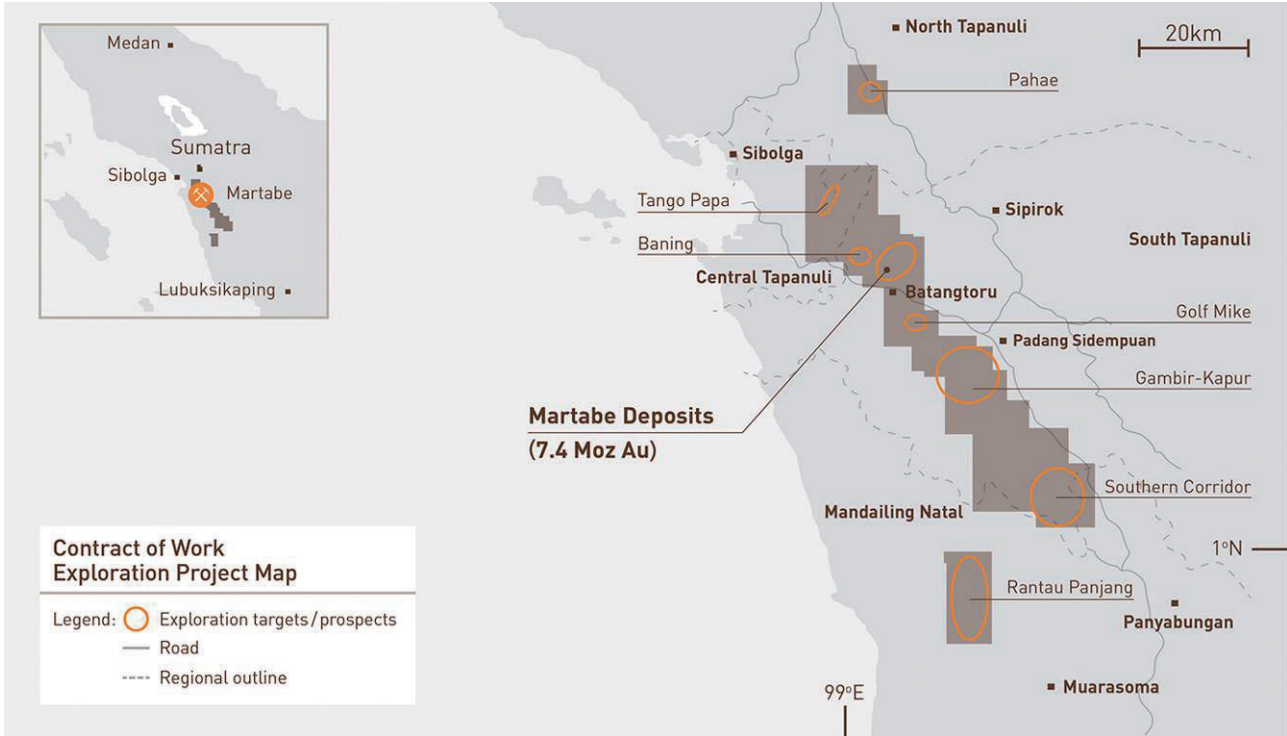


**Figure 1: Martabe Mine Location.**





**Figure 2: Martabe CoW.**





## ANNEXURE

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# Report

## Martabe Mineral Resource and Ore Reserve Statement at 31 December 2015 G-Resources Group Limited

AMC Project 315053  
12 February 2016

### EXECUTIVE SUMMARY

PT Agincourt Resources (PT AR) and G-Resources Group Limited (G-Resources) commissioned AMC Consultants Pty Ltd (AMC) to prepare a Competent Person's Report (CPR) of the Martabe gold mine (Martabe). Martabe is located in North Sumatra, Indonesia, and is operated by PT AR.

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Purnama is the largest (and first to be mined) of a cluster of six mineral deposits at the Martabe gold mine. Three of these deposits (Purnama, Barani, and Ramba Joring) have published Ore Reserve estimates. A further three deposits (Tor Uluala, Uluala Hulu, and Horas) have published Mineral Resource estimates but do not have Ore Reserve estimates.

<sup>1</sup> As defined by the JORC Code.



Martabe encompasses the Purnama open-pit mine, a conventional carbon-in-leach (CIL) gold ore-processing plant with 4.5 million tonnes per annum (Mtpa) nominal design capacity, a permanent accommodation facility for mine workers, haulage roads, high-voltage switchyard, on-site workshop and warehousing, and a tailings storage facility (TSF) with associated water catchment and diversion systems. The mine has a planned life of approximately 10 years, based on current ore reserves. Other potential pits include Ramba Joring, Barani, and other prospects, identified over an area of six kilometres north-south.

### **Mineral Resource and Ore Reserve statement**

The Mineral Resource, Ore Reserve, and underlying data inputs and interpretations are generally robust and are supported by high-quality data and industry standard practices. Production results show positive reconciliations against the 2013 Ore Reserve model, although this is not expected to continue with the new model. The Ramba Joring Mineral Resource has ongoing work to better define the geological interpretation and optimised pit shell.

To arrive at this 31 December 2015 Mineral Resources estimate, the work undertaken comprises the updating of the Purnama Mineral Resource estimate including a depletion to 31 December 2015 and changes to mine stockpiles. There are no changes to existing Mineral Resources for the other deposits. Ramba Joring and Tor Uluala Mineral Resource estimates issued in 2010 and 2012 are unchanged from previous announcements despite additional drilling and resource estimation programmes because ongoing mineral resource estimates are not yet accepted by PT AR for public release. While these drilling programmes are important stages in the processes of developing higher-quality Mineral Resource estimates, the recent work is not considered material in relation to the global Mineral Resources at the Martabe deposits.

The Mineral Resource for Purnama has been depleted to the 31 December 2015 mining surface. PT AR provided stockpile volumes and grades. The Mineral Resource by area is reported in Table ES.1 in accordance with the JORC Code<sup>2</sup>. Appendix A contains the JORC Code Table 1 “if not, why not” summary for the Purnama Mineral Resource, which is provided as a result of material changes in the drilling data available to support the new estimate.

<sup>2</sup> *Australasian Joint Ore Reserves Committee (JORC), Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code), 2012 edition, effective December 2012, 44 pp., available <[http://www.jorc.org/docs/JORC\\_code\\_2012.pdf](http://www.jorc.org/docs/JORC_code_2012.pdf)>, viewed 5 January 2016.*



**Table ES.1 31 December 2015 Martabe Mineral Resource estimate by classification**

Deposit	Category	Tonnes (Mt)	Gold grade (g/t Au)	Silver grade (g/t Ag)	Contained metal	
					Gold (Moz <sup>A</sup> )	Silver (Moz)
Purnama	Measured	21	2.2	27	1.5	18
	Indicated	67	1.3	16	2.7	34
	Inferred	2	1.0	14	0.1	1.1
	<b>Total</b>	<b>90</b>	<b>1.5</b>	<b>18</b>	<b>4.3</b>	<b>53</b>
Mine stockpiles	Measured	2.7	1.2	11	0.1	0.9
	<b>Total</b>	<b>2.7</b>	<b>1.2</b>	<b>11</b>	<b>0.1</b>	<b>0.9</b>
Ramba Joring	Measured	–	–	–	–	–
	Indicated	34	1.0	4.1	1.1	4.5
	Inferred	4.6	0.80	3.7	0.12	0.55
	<b>Total</b>	<b>38</b>	<b>1.0</b>	<b>4.1</b>	<b>1.2</b>	<b>5.0</b>
Barani	Measured	–	–	–	–	–
	Indicated	8.0	1.4	2.1	0.36	0.55
	Inferred	0.23	0.83	1.6	0.01	0.01
	<b>Total</b>	<b>8.3</b>	<b>1.4</b>	<b>2.1</b>	<b>0.37</b>	<b>0.56</b>
Tor Uluala	Measured	–	–	–	–	–
	Indicated	–	–	–	–	–
	Inferred	32	0.90	7.7	0.92	7.8
	<b>Total</b>	<b>32</b>	<b>0.90</b>	<b>7.7</b>	<b>0.92</b>	<b>7.8</b>
Horas	Measured	–	–	–	–	–
	Indicated	–	–	–	–	–
	Inferred	16	0.80	1.7	0.40	0.88
	<b>Total</b>	<b>16</b>	<b>0.80</b>	<b>1.7</b>	<b>0.40</b>	<b>0.88</b>
Uluala Hulu	Measured	–	–	–	–	–
	Indicated	1.6	2.2	19	0.11	1.0
	Inferred	2.9	0.76	2.9	0.07	0.27
	<b>Total</b>	<b>4.5</b>	<b>1.2</b>	<b>8.6</b>	<b>0.18</b>	<b>1.3</b>
<b>Combined</b>	<b>Measured</b>	<b>23</b>	<b>2.1</b>	<b>25</b>	<b>1.6</b>	<b>19</b>
	<b>Indicated</b>	<b>111</b>	<b>1.2</b>	<b>11</b>	<b>4.3</b>	<b>40</b>
	<b>Inferred</b>	<b>58</b>	<b>0.86</b>	<b>6.0</b>	<b>1.6</b>	<b>11</b>
	<b>Total</b>	<b>192</b>	<b>1.2</b>	<b>11</b>	<b>7.4</b>	<b>69</b>

<sup>A</sup> million ounces



*Notes:*

- 1 Mineral Resources are inclusive of those Mineral Resources converted to Ore Reserves. The Mineral Resources have been reported in accordance with the JORC Code.
- 2 Note on cut-off grade: With the exception of Tor Uluala, all resources are reported using a cut-off grade of 0.5 g/t gold, which maintains consistency with prior estimates for comparison purposes plus reflects the site's current approximate threshold for waste versus mineralised waste. Tor Uluala is reported using a combined gold and silver cut-off grade, where gold grams per tonne plus silver ÷ 60 g/t is greater than 0.5 for each estimated resource model block.
- 3 Note on rounding: Figures are rounded to two significant figures. Rounding might result in apparent computational errors or differences.
- 4 Note on Barani Mineral Resource: The Barani Mineral Resource is constrained by a US\$2,000 per ounce Au, US\$35 per ounce Ag Whittle optimization pit and further, to the area south of 166,600 m N due to the position of the TSF. As with the other deposits, the resources are reported using a cut-off grade of 0.5 g/t gold.
- 5 Note on Purnama Mineral Resource: The Purnama Mineral Resource has been depleted due to mining operations to the 31 December 2015 mining surface and is constrained by a US\$2,000 per ounce Au, US\$35 per ounce Ag Whittle optimization pit.

The work undertaken to arrive at this updated Ore Reserves estimate comprised of an update to the Purnama open-pit Ore Reserves and completion of an Ore Reserve estimate for Barani. Additional changes for the Purnama open-pit Ore Reserves comprise mining depletion and ore stockpile inventory changes. The Ramba Joring Ore Reserves estimate is unchanged from December 2014.

The Martabe Ore Reserves as of 31 December 2015 is summarised in Table ES.2, and is reported in accordance with the JORC Code. The JORC Code Table 1 Section 4 "if not, why not" summary is included as Appendix B, although there has been no material change to the Purnama Ore Reserve. The Ore Reserves are reported as delivered to the coarse ore run-of-mine pad.

**Table ES.2 31 December 2015 Martabe open-pit Ore Reserves estimate by classification and mining area**

Deposit	Ore Reserves classification	Ore tonnes (Mt)	Gold grade (g/t Au)	Silver grade (g/t Ag)	Contained metal	
					Gold (Moz)	Silver (Moz)
Purnama	Proved	16.1	2.6	30	1.3	16
Purnama	Probable	13.4	1.9	21	0.83	9.1
Barani	Probable	3.6	1.9	2.4	0.22	0.28
Ramba Joring	Probable	5.2	1.8	4.4	0.29	0.74
Purnama stockpile	Proved	2.7	1.2	11	0.11	0.94
Total Proved		18.8	2.4	27	1.4	17
Total Probable		22.2	1.9	14	1.3	10
Total Proved and Probable Ore Reserves		41.0	2.1	20	2.8	27



*Notes:*

- 1 Totals might not equal the sum of the component parts due to rounding adjustments.
- 2 Estimates are rounded to the nearest 0.1 Mt and two significant figures for gold grade, silver grade; gold metal, and silver metal.
- 3 The Ore Reserves were estimated using a projected 2016 gold price, based on three-year average of the gold and silver metal prices, of US\$1,250 per ounce and silver price of US\$16 per ounce for Purnama and Barani pits, and a gold price of US\$1,433 per ounce and silver price of US\$26.90 per ounce for the later developed Ramba Joring pit, given the lead time to production.
- 4 Ore Reserves are based on an expected value calculation to report tonnages above a zero \$/t net expected value. The cut -off to define ore is therefore variable in metal grades, but equates to an average cut-off grade of approximately 0.8 to 0.9 g/t Au, depending upon the accompanying silver grades.

### **Competent Person's statements**

The information in this report that relates to Mineral Resources is based upon information reviewed and compiled by Mr. Peter Stoker, who is a full-time employee of AMC Consultants Pty Ltd, and an Honorary Fellow and Chartered Professional of the Australasian Institute of Mining and Metallurgy. Mr. Stoker has 47 years of experience, of which 25 years of experience is relevant to the style of mineralisation or type of deposit under consideration in respect of the activities undertaken by PT AR, so as to qualify as a Competent Person as defined in:

- (i) the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (the JORC Code), and
- (ii) Chapter 18 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited, which requires a minimum of five years of experience relevant to the style of mineralisation and type of deposit under consideration.

Mr. Stoker confirms that he is independent of, and is not an actual or proposed officer or employee of, PT AR, its holding companies (including G-Resources) and their respective directors, senior management and advisers, and has no potential for conflict of interest in relation to this report to G-Resources. AMC Consultants Pty Ltd confirms that it is not a group, holding, or associated company of PT AR or its holding or associated companies (including G-Resources), and has no potential for conflict of interest in relation to this report to G-Resources. In addition, each of Mr. Stoker and AMC Consultants Pty Ltd confirm that they (i) have no economic or beneficial interest in Martabe and the Mineral Resources being reported on in this report, and (ii) are not being remunerated with a fee depending on the outcome or findings of their work under this report. Both Mr. Stoker and AMC Consultants Pty Ltd consent to the inclusion of this report and/or any content therein in any public reporting (including any public announcement, circular, regulatory filing, and/or other disclosure document) by PT AR or its holding or associated companies (including G-Resources) in relation to the Mineral Resources, in the form and context in which it appears, provided prior written approval has been provided in each case, which consent must not be unreasonably withheld. Mr. Stoker will accept Competent Person and overall responsibility for the information in this report that relates to the Mineral Resources.





The information in this report that relates to Ore Reserves is based upon information reviewed and compiled by Mr. Glen Williamson, who is a full-time employee of AMC Consultants Pty Ltd, and a Chartered Professional (Mining) and Member of the Australasian Institute of Mining and Metallurgy. Mr. Williamson has 33 years of experience, of which 11 years of experience is relevant to the style of mineralisation or type of deposit under consideration in respect of the activities undertaken by PT AR, so as to qualify as a Competent Person as defined in:

- (i) the 2012 edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves” (JORC Code), and
- (ii) Chapter 18 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited, which requires a minimum of five years of experience relevant to the style of mineralisation and type of deposit under consideration.

Mr. Williamson confirms that he is independent of, and is not an actual or proposed officer or employee of, PT AR, its holding companies (including G-Resources) and their respective directors, senior management and advisers, and has no potential for conflict of interest in relation to this report to G-Resources. AMC Consultants Pty Ltd confirms that it is not a group, holding, or associated company of PT AR or its holding or associated companies (including G-Resources), and has no potential for conflict of interest in relation to this report to G-Resources. In addition, each of Mr. Williamson and AMC Consultants Pty Ltd confirm that they (i) have no economic or beneficial interest in Martabe and the Mineral Resources being reported on in this report, and (ii) are not being remunerated with a fee depending on the outcome or findings of their work under this report. Both Mr. Williamson and AMC Consultants Pty Ltd consent to the inclusion of this report and/or any content therein in any public reporting (including any public announcement, circular, regulatory filing, and/or other disclosure document) by PT AR or its holding or associated companies (including G-Resources) in relation to the Ore Reserves and/or the Martabe gold mine, in the form and context in which it appears, provided prior written approval has been provided in each case, which consent must not be unreasonably withheld. Mr. Williamson will accept Competent Person and overall responsibility for the information in this report that relates to the Ore Reserves and/or the Martabe gold mine.

#### **Report signature**

AMC is taking overall responsibility for the competent person’s report, and confirms that this report is the final version of the competent person’s report.

Yours sincerely

Rob Chesher  
General Manager



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## APPENDICES

Appendix A	Purnama Mineral Resource statement as at 31 December 2015
Appendix B	Martabe Ore Reserves JORC Code Table 1 Section 4

## DISTRIBUTION LIST

1 e-copy to Mr. Shawn Crispin, G-Resources Group Limited

1 e-copy to AMC Brisbane office



## 1 INTRODUCTION

### 1.1 AMC Consultants Pty Ltd's engagement

PT Agincourt Resources (PT AR) commissioned AMC Consultants Pty Ltd (AMC) to prepare a Competent Person's Report (CPR) of the Martabe gold mine (Martabe). Martabe is located in North Sumatra, Indonesia, and is operated by PT AR.

AMC estimated the Mineral Resources for Uluala Hulu and Barani in December 2014 and has reviewed the December 2015 mineral resource estimate for Purnama (estimated by Dale Sims and James Pocoe) and the earlier mineral resource estimates for Ramba Joring, Tor Uluala, and Horas. The status of the resource and reserve estimates is summarised in Table 1.1.

**Table 1.1 Status of Mineral Resource and Ore Reserve estimates and this report**

Deposit	Version	Last published	Material change	Separate Competent Person Report	Table 1 'if not, why not'
Purnama Resource	Dec-15	New, material change	Yes	Yes	Yes
Purnama Reserve	Dec-15	New, minor change	No	No	Yes
Barani Resource	Dec-14	2 April 2015	No	No	No
Barani Reserve	Dec-14	2 April 2015	No	No	No
Ramba Joring Resource	Oct-12	2 April 2015	No	No	No
Ramba Joring Reserve	Dec-14	2 April 2015	No	No	No
Uluala Hulu Resource	Dec-14	2 April 2015	No	No	No
Tor Uluala Resource	Aug-12	2 April 2015	No	No	No
Horas Resource	Oct-11	2 April 2015	No	No	No

### 1.2 AMC's independence

AMC has no business relationship with PT AR other than carrying out individual consulting assignments as engaged. AMC has previously undertaken consulting assignments relating to the Martabe operation. These consulting assignments involved AMC reviewing studies, reports, and other documents produced by other parties. In carrying out these consulting assignments, AMC has acted as an independent consultant.



AMC confirms that it (i) is not a group, holding, or associated company of PT AR or its holding or associated companies (including G-Resources); (ii) has no officers who are also the actual or proposed officers of PT AR or its holding or associated companies (including G-Resources); (iii) has no economic or beneficial interest in Martabe and the Mineral Resources being reported on in this report; and (iv) is not being remunerated with a fee depending on the outcome or findings of its work under this report.

AMC assumed Competent Person responsibility for the Martabe Mineral Resources in 2014, which included completing Mineral Resource estimations for the Barani and Uluala Hulu deposits.

AMC has completed reviews on the Martabe life-of-mine plan and the Martabe 2013 and 2014 Ore Reserves, and has again assumed Competent Person responsibility for the Martabe Ore Reserves in 2015.

### **1.3 Compliance with codes**

AMC has prepared this report in accordance with the JORC Code.

### **1.4 Scope of work**

PT AR requested that AMC provide a Mineral Resource and Ore Reserve statement to 31 December 2015 for Martabe. Martabe is made up of the following Mineral Resource areas:

- Purnama
- Mine stockpiles
- Ramba Joring
- Barani
- Tor Uluala
- Horas
- Uluala Hulu

Ore Reserves are stated for:

- Purnama
- Mine stockpiles
- Ramba Joring
- Barani



AMC has been requested to:

- Report Mineral Resources and Ore Reserves as at 31 December 2015. The Mineral Resources and Ore Reserves statement is to incorporate the updated Purnama Mineral Resource and Ore Reserve and the update to the Barani Ore Reserve.
- Provide PT AR a letter to be lodged by G-Resources with the Hong Kong Stock Exchange stating the Mineral Resource and Ore Reserve, including explanatory notes to form the required CPR.

### 1.5 Project description

Martabe is located in the Province of North Sumatra in Indonesia (Figure 1.1). The operation encompasses the Purnama open-pit mine, a conventional carbon in leach (CIL) gold ore-processing plant with a design processing rate of 4.5 million tonnes per annum (Mtpa), a permanent accommodation facility for mine workers, haulage roads, high-voltage switchyard, on-site workshop and warehousing, and a tailings storage facility (TSF) with associated water catchment and diversion systems. The mine is estimated to have a minimum 10-year life, based on current ore reserves.

Purnama is the largest (and first to be mined) of a cluster of six mineral deposits at the Martabe gold mine. Three of these deposits (Purnama, Barani, and Ramba Joring) have published Ore Reserve estimates. A further three deposits (Tor Uluala, Uluala Hulu, and Horas) have published Mineral Resource estimates but do not have Ore Reserve estimates.

The mine is close to key infrastructure, including the Trans-Sumatra highway, and is about 350 km away by major arterial road from Medan, which is the regional centre of Sumatra and the third largest city in Indonesia. Martabe is only 40 km from the town of Sibolga, which has airport and port facilities available.

Martabe is located close to the equator and the climate is hot and tropical. Annual rainfall averages more than 4,000 mm, with annual evaporation estimated at 1,800 mm. Rain falls throughout the year, with the highest rainfall associated with the monsoonal period from October to December.

Martabe lies within a high-activity seismic area, related to the proximity to plate subduction zones, which parallel the west coast of Sumatra. The project is located approximately 10 km west of the Sumatran fault.

The topography is steep and rugged. Mining is currently taking place in the Purnama pit; other potential pits include Ramba Joring and Barani. Other prospects have been identified over a 6 km north-south strike. The deposits are associated with steep, silicified ridges or hills, covered in fairly dense vegetation.



Water is available on-site from streams and watercourses. Power is currently provided by an on-site power plant. The physical connection to the high-voltage grid is complete, although not yet operating effectively, and power from the grid is anticipated in the near future. International communications are provided through local providers and a back-up satellite system. The mine has access to a large pool of capable and professional Indonesian mining personnel.

The Martabe site layout plan is shown in Figure 1.2. Figure 1.3 shows a photograph of the mine and surrounding area.

**Figure 1.1 Geographic location of Martabe**







Figure 1.2 Martabe site layout

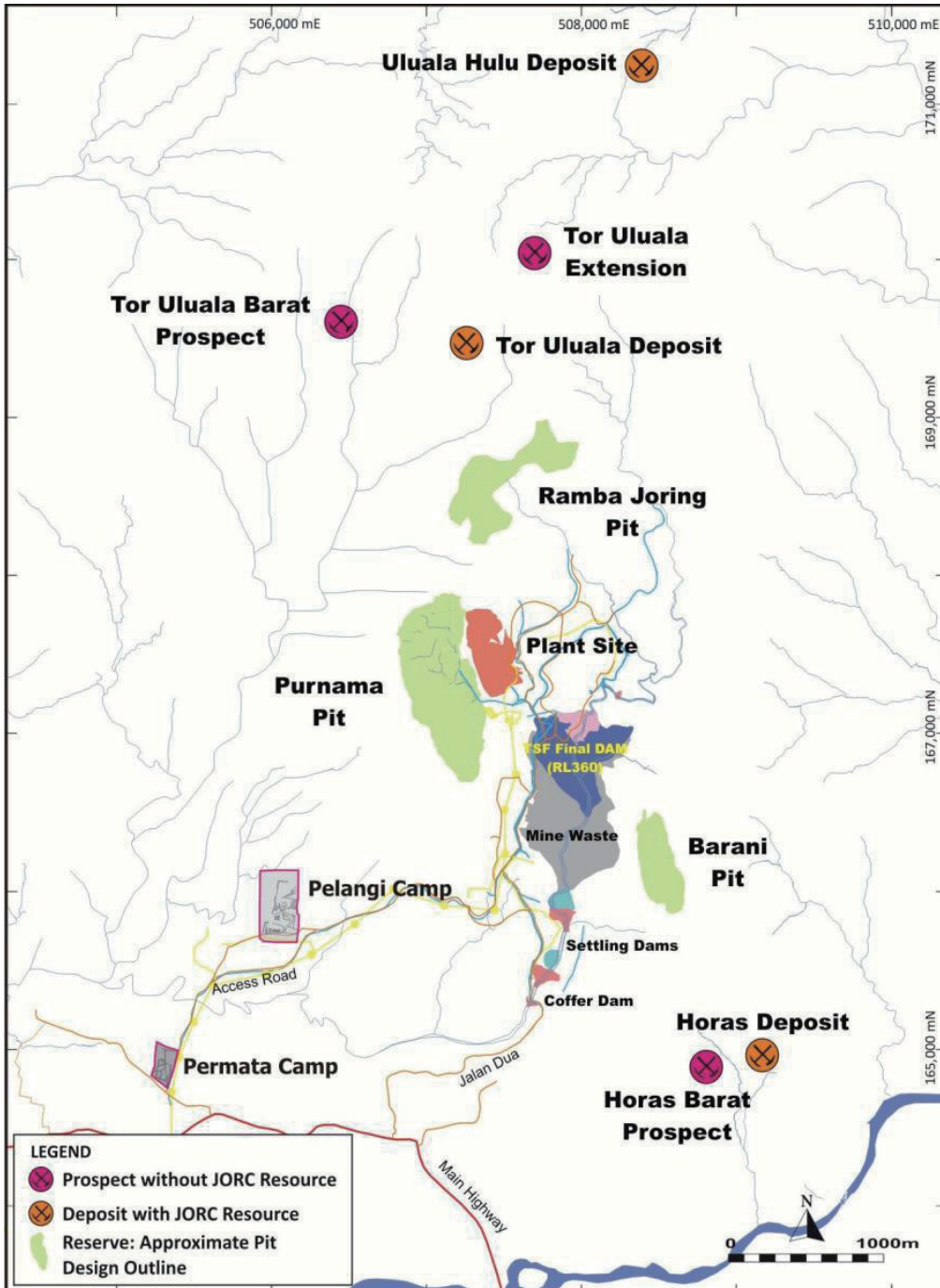
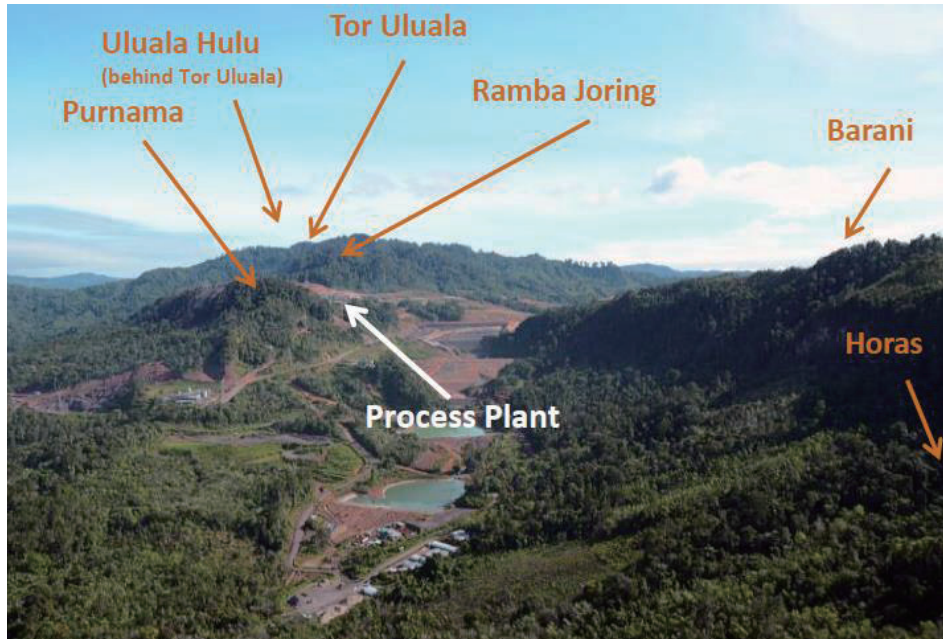




Figure 1.3 Photograph showing the mine and surrounding area



## 2 GEOLOGY AND MINERAL RESOURCES

### 2.1 Geology

#### 2.1.1 Regional geology

The Martabe deposits are located in northern Sumatra to the south-west of the major north-west-south-east- trending Sumatra fault system. This fault system extends the full length of the island of Sumatra, on the western side of the island parallel to the coast. The majority of known metal occurrences on Sumatra are located around this fault system.

#### 2.1.2 Local geology

The Martabe district forms one of a series of gold and minor copper mineralised prospects extending the length of the Contract of Work (CoW) and beyond. Mineralisation styles within the prospects include epithermals, intrusive silica breccias, replacement silicification in limestones, and deep-level magnetite skarns. The major prospects are confined to within 2 km of a north-west-south-east-trending structural corridor that occurs subparallel to the main Sumatra fault, located to the north-east.



The Martabe deposits are interpreted to be emplaced within an extensional site, associated with a jog in the fault system parallel to the Sumatra fault. The geometry of the extension enables magma to move upwards from the subducting plate zone, with the associated emplacement of gold-bearing hydrothermal fluids.

The local district geology at Martabe (Figure 2.1) consists of an older basement sequence (the Mesozoic Tapanuli group and the Sibolga Granite), which is unconformably overlain by a Miocene sedimentary and volcanic sequence.

### *2.1.3 Mineralisation*

The Martabe deposits are considered to be high-sulphidation epithermal systems derived from a buried volcanic intrusive centre, and emplaced into a volcanic and sedimentary complex. The complex comprises interfingered sediments, and andesitic and basaltic volcanics, and is intruded by volcanic/diatreme breccias.

The deposits are surrounded by large alteration systems, comprising an outer halo of argillic alteration around zones of advanced argillic alteration, and central zones of silica alteration. The current interpretation is that silica-rich alteration zones were emplaced in and around subvertical structures (feeder zones), which were the conduits for epithermal fluid flow from deep in the system. The feeder zones generally contain higher gold and silver grades, and are therefore economically significant. Fluids channelled up the feeder zones are interpreted to have spread laterally into a multiphase volcanic breccia, interpreted as a diatreme complex.

At Purnama, this breccia is the primary gold- and silver-bearing unit (main zone), dips at a shallow angle to the east, and mineralisation is characterised by generally moderate grades (1–3 g/t gold) with high continuity. A brecciated clay layer (contact zone) at the top of the main zone is interpreted to have trapped and concentrated mineralising fluids, resulting in a zone of intense silicification associated with significantly higher gold grades (greater than 5 g/t Au). A halo of low-grade mineralisation (low-grade zone), with a lower limit of 0.2 g/t gold, is broadly coincident with the outer limit of argillic alteration.

The Purnama deposit is strongly weathered to depths of up to 250 m below surface. The weathering profile is complex, and oxidation tends to follow high-grade zones and fractured structures to depth. Weathering has had the effect of liberating gold from its primary form into microscopic colloidal form, associated with iron oxide deposition from oxidized sulphides. In this form, gold is highly amenable to recovery in a standard CIL plant. There is no significant upgrading of gold in the weathering profile, and silver is observed to be depleted in the top 50 m of the deposit.



Gold mineralisation at Ramba Joring occurs in north-east-trending subvertical zones, defined by the combination of advanced argillic alteration (silica-alunite) and gold grade. These zones are often but not always coincident with breccia zones. A background alteration zone of argillic illite facies occurs as a halo to the advanced argillic zone. Copper mineralisation has a similar distribution to gold mineralisation in the primary zone. Leaching and supergene enrichment have affected the copper distribution in the oxidized zone. Primary sulphide mineralisation comprises pyrite, enargite-luzonite, tennantite-tetrahedrite and other sulphosalts.

At Barani, high-sulphidation epithermal mineralisation occurs along north-south-trending structures in a sequence of phreatomagmatic breccias, volcanics, and sediments. The structures can be traced vertically and along strike as zones of siliceous alteration and hydrothermal breccia characterised by gold grades in excess of 1 g/t. Silver grades are relatively low compared to other deposits at Martabe. The deposit is deeply weathered to depths of greater than 100 m, and testwork shows similar metallurgical characteristics to the oxidised portions of the other Martabe deposits.

The Uluala Hulu deposit lies within a structurally complex zone at the junction of a north-west-south-east strike slip fault zone (parallel to the Sumatra fault) and north-east-south-west strike slip faults. Mineralisation at Uluala Hulu is hosted in a volcanic andesite and volcanic dacite sequence. In the areas of mineralisation, the lithology is dominated by a polymict breccia cemented by a sandy matrix. At Uluala Hulu, the highest gold grades occur in a brecciated central silicic alteration zone. Around this silicic alteration zone, the grades progressively reduce outwards into an enveloping advanced argillic zone, then an argillic zone. The high grades also occur in steeply dipping to near-vertical continuous zones of greater than 1 g/t gold intersections in drillholes. Individual zones are 5 to 20 m wide with vertical continuity up to 150 m and continue along strike for hundreds of metres.

The Horas deposit is a high-sulphidation epithermal deposit similar to the other Martabe deposits. High-grade gold-silver mineralisation is correlated with intense silicification and lower-grade mineralisation, with less intense silicification and clay alteration. The mineralisation and alteration are both structurally controlled. The mineralisation outcrops and dips approximately 30° to the west along a strike length of about 600 m. Average true width is at least 20 m to a known depth of 250 m.

The geology at Tor Uluala is characterised by a series of breccias that dip gently to the east. The breccias overlay an andesitic volcanic unit, and both have been subject to weak argillic to advanced argillic alteration. Mineralisation is closely associated with advanced argillic alteration after extreme acid sulphate leaching of the wall rock. Highest grades are focused at major structures and the immediate wall rocks.

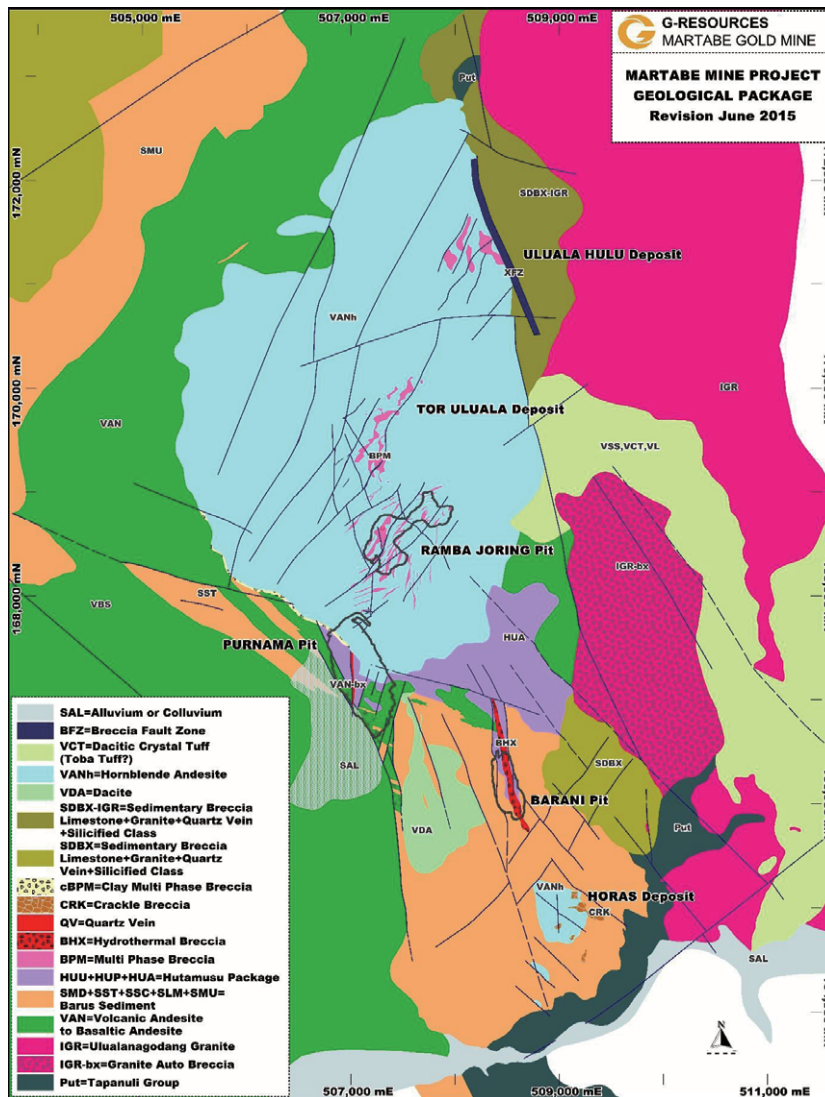
AMC considers that the geology at both a regional and local scale, and the controls on mineralisation, are generally well-understood for the Martabe deposits.





AMC has reviewed geological working cross-sections, three-dimensional (3D) geology interpretations, and representative drill core for Purnama, Barani, and Uluala Hulu, and is satisfied that, for the majority of the deposits, the current geological interpretation is appropriate, based on the information currently available. For Ramba Joring, AMC understands that the geological interpretation and domain strategy will be improved for future resource estimates as a result of the recent drilling.

Figure 2.1 Martabe geology plan



Source: PT Agincourt Resources, 02.06.01 Martabe district geology map.pdf, internal unpublished document.



### 3 INPUT DATA AND ESTIMATION

#### 3.1 Data point location

The main data source for input into the mineral resource estimates is PQ and HQ sized diamond drilling core, with some NQ size core. Drilling is mainly triple-tube. At Purnama, in 2015, significant reverse circulation (RC) resource definition drilling has been completed, while grade control RC drilling has been incorporated in the estimates for near-term production areas. Drill spacing for the deposits is summarised in Table 3.1.

**Table 3.1 Summary of drill spacing for Martabe deposits**

<b>Deposit</b>	<b>Average drill spacing (m)</b>
Purnama	50 m × 50 m with infill to 25 m × 25 m in the central zone, 6.257 m × 12.5 m grade control RC
Ramba Joring	25 m × 25 m
Barani	25 m × 25 m with fans and scissor holes
Tor Uluala	50 m × 100 m with some infill to 25 m centres
Horas	50 m × 50 m with some infill to 25 m centres
Uluala Hulu	50 m × 50 m with some infill to 25 m × 25 m

A 2010 LIDAR (light detection and ranging) survey provides topographic control across the deposits. The use of the LIDAR survey is discussed in Appendix A.

The Martabe mine employs the same methodology for location of drillholes and downhole surveying across each of the deposits. These methodologies are described in Appendix A.

#### 3.2 Sample preparation and assaying

Rigid procedures are in place to ensure high quality of sampling, assaying, and quality control. Sampling and assaying protocols are well-documented and diligently managed by site personnel. The Martabe mine employs the same methodology for sample preparation and assaying across each of the deposits. These methodologies are described in Appendix A.

#### 3.3 Bulk density

Bulk density (BD) is routinely measured at Martabe. Vuggy mineralisation at Martabe deposits causes difficulty in measuring BD with standard methods, and this has resulted in a well-developed procedure that has been routinely followed at all Martabe deposits. The procedure is described in Appendix A.



### 3.4 Quality assurance/quality control

Quality assurance is routinely conducted using the methods described in Appendix A.

### 3.5 Estimation process

The Martabe Mineral Resource estimates have been completed by several consultancies. AMC has assumed Competent Person responsibility for all of the Martabe Mineral Resources. Table 3.2 summarises the chronology of the current Martabe resource estimates and the company that compiled the most recent resource estimation.

**Table 3.2 Summary of chronology and company responsible for Martabe resource estimates**

Deposit	Company	Date
Purnama	Dale Sims Consulting and James Pocoe Consulting	December 2015
Ramba Joring	Cube Consulting Pty Ltd	September 2010
Barani	AMC	December 2014
Tor Uluala	Cube Consulting Pty Ltd	June 2012
Horas	Cube Consulting Pty Ltd	September 2011
Uluala Hulu	AMC	December 2014

With the exception of Purnama, geological interpretation and grade domain modelling for gold, silver, copper, arsenic, and sulphide sulphur (SxS) was initially completed on-site by PT AR geologists. The grade domain modelling is based on a nominal cut-off grade, which is dependent on the grade distribution of the relevant variable being modelled, with consideration given to lithology, alteration, and structure. For each deposit, an oxidation surface was interpreted, modelled, and used to assign material as either oxide or fresh in the final models. The grade domain wireframes were then passed onto the resource estimators, who reviewed and typically made some modifications for final use in the estimation process.

Grade shells were not utilised at Purnama. The estimation was constrained by domains based on a combination of lithology and mineralisation intensity and style of mineralisation.





The general process followed for the mineral resource estimations included statistical analysis of the data, compositing and flagging of the data by grade domain, grade capping or restriction, variography analysis, block model generation, grade estimation, block model validation, resource classification, and mineral resource reporting. Resource classification was assigned based on assessing geological continuity and volume, data quality, drillhole data and spacing, modelling technique, estimation statistical outputs, and risk or uncertainty present in the gold and silver grades.

Table 3.3 provides a high-level summary of the resource estimation process and parameters at the Martabe deposits. Specific parameters used for each deposit are reported in detail in the relevant Mineral Resource reports. AMC has reviewed the input data, resource models, and associated resource documentation for each deposit. AMC completed high-level validation checks of the models including visual checks of the composite data against the block grades; swath plots of composite data against block grades in northing, easting, and elevation profiles; and mineral resource reporting to validate the reported resources as documented.

It is AMC's opinion that, in general, the geological modelling, resource estimation parameters, and process used follow industry accepted practice and are appropriate for both the nature and style of mineralisation at the Martabe deposits. AMC has reviewed the resource model classification for the deposits and considers that for all deposits, it is suitable for the current drill density and appropriately reflects the confidence in geology and the resource estimate.



**Table 3.3 Summary of resource estimation process and parameters at the Martabe deposits**

Parameter	Purnama	Ramba Joring	Barani	Tor Uluala	Horas	Uluala Hulu
Domain type	All variables estimated within single set of wireframes based on lithology, alteration and mineralisation style.	Multiple alteration-based Au, Ag, As, mineralisation domains for Cu (100 ppm <sup>A</sup> Cu)	Multiple mineralisation domains for Au (0.2 and 1.0g/t), Ag (5 and 10 ppm), Cu (50 ppm), As (200 ppm), SxS (0.1 and 1%), Hg (Au domains)	Multiple mineralisation domains for Au/As (0.5 g/t Au), Ag (2.5 g/t Ag), Cu (200 ppm Cu), SxS (2% SxS)	Combination mineralisation and alteration domains for Au (2 g/t Au); Au/Ag (0.4 g/t Au); Cu/As (100 ppm Cu); SxS (1% SxS)	Multiple mineralisation domains for Au (0.2 and 1.0 g/t), Ag (10 ppm), Cu (100 ppm), As (600 ppm), SxS (0.5%), Hg (Au domains)
Estimated variables	Au, AuCN <sup>B</sup> , Ag, As, Cu, CuCN <sup>C</sup> , SxS, Ca	Au, Ag, Cu, density	Au, Ag, Cu, SxS, As, Hg, CuCN, AuCN, RQD <sup>D</sup>	Au, Ag, As, Cu, SxS, density	Au, Ag, As, Cu, SxS, density	Au, Ag, Cu, SxS, As, Hg, CuCN, AuCN, RQD
Composite interval	3 m (Au, AuCN Ag, AgCN, As, Cu, CuCN, SxS, Hg), density	2 m (Au, Ag, As, Cu); 1 m (Cu, oxidation), density	2 m	2 m (Au, Ag, As, Cu, SxS) density	2 m (Au, Ag, As, Cu, SxS) density	2 m
Grade capping	Grade restriction above a threshold	Yes	Yes	Yes	Yes	Yes
Parent block size	12.5 m N 6.25 m E 5 m RL <sup>E</sup>	25 m N 25 m E 5 m RL	12.5 m N 6.25 m E 10 m RL	12.5 m N 6.25 m E 20 m RL	12.5 m N 12.5 m E 5 m RL	10 m N 10 m E 5 m RL
Subcelling	No	Yes	Yes	Yes	Yes	Yes
Estimation method	Ordinary kriging (OK)	OK, Simple kriging (SK) (oxidation, density)	OK	OK (Au, Cu, S, As, density) Multiple indicator kriging (MIK) (Ag)	OK on weighted indicator kriging (IK) (single 2 g/t Au indicator), OK (Ag, Cu, SxS, As, density)	OK

<sup>A</sup> parts per million. <sup>B</sup> cyanide-soluble gold. <sup>C</sup> cyanide-soluble copper. <sup>D</sup> rock quality designation. <sup>E</sup> reduced level.



#### 4 MINERAL RESOURCE STATEMENT

The work undertaken to arrive at this 31 December 2015 updated Mineral Resources statement comprised an update of the Purnama Mineral Resource, depletion of the Purnama Mineral Resource, and changes to mine stockpiles. There are no changes to existing Mineral Resources for the other deposits.

The Mineral Resource for Purnama is depleted by the 31 December 2015 mining surface. Stockpile volumes and grades are as provided by PT AR. These changes are summarised in Table 4.1. The Mineral Resource by area is set out in Table 4.2.

**Table 4.1 Changes from December 2014 to December 2015  
Purnama Mineral Resource**

<b>Category</b>	<b>Ore tonnes (Mt)</b>	<b>Contained gold (Moz<sup>A</sup>)</b>
December 2014 Purnama Resource	93.0	4.20
Resource depletion December 14 to December 15	5.2	0.31
Old estimate December 2015	87.8	3.89
New model December 2015 Purnama Resource	90.4	4.26
New model addition	2.6	0.37

<sup>A</sup> million ounces.



**Table 4.2 31 December 2015 Martabe Mineral Resource estimate by classification**

Deposit	Category	Tonnes (Mt)	Gold grade (g/t Au)	Silver grade (g/t Ag)	Contained metal	
					Gold (Moz)	Silver (Moz)
Purnama	Measured	21	2.2	27	1.5	18
	Indicated	67	1.3	16	2.7	34
	Inferred	2	1.0	14	0.1	1.1
	<b>Total</b>	<b>90</b>	<b>1.5</b>	<b>18</b>	<b>4.3</b>	<b>53</b>
Mine stockpiles	Measured	2.7	1.2	11	0.1	0.9
	<b>Total</b>	<b>2.7</b>	<b>1.2</b>	<b>11</b>	<b>0.1</b>	<b>0.9</b>
Ramba Joring	Measured	–	–	–	–	–
	Indicated	34	1.0	4.1	1.1	4.5
	Inferred	4.6	0.80	3.7	0.12	0.55
	<b>Total</b>	<b>38</b>	<b>1.0</b>	<b>4.1</b>	<b>1.2</b>	<b>5.0</b>
Barani	Measured	–	–	–	–	–
	Indicated	8.0	1.4	2.1	0.36	0.55
	Inferred	0.23	0.83	1.6	0.01	0.01
	<b>Total</b>	<b>8.3</b>	<b>1.4</b>	<b>2.1</b>	<b>0.37</b>	<b>0.56</b>
Tor Uluala	Measured	–	–	–	–	–
	Indicated	–	–	–	–	–
	Inferred	32	0.90	7.7	0.92	7.8
	<b>Total</b>	<b>32</b>	<b>0.90</b>	<b>7.7</b>	<b>0.92</b>	<b>7.8</b>
Horas	Measured	–	–	–	–	–
	Indicated	–	–	–	–	–
	Inferred	16	0.80	1.7	0.40	0.88
	<b>Total</b>	<b>16</b>	<b>0.80</b>	<b>1.7</b>	<b>0.40</b>	<b>0.88</b>
Uluala Hulu	Measured	–	–	–	–	–
	Indicated	1.6	2.2	19	0.11	1.0
	Inferred	2.9	0.76	2.9	0.07	0.27
	<b>Total</b>	<b>4.5</b>	<b>1.2</b>	<b>8.6</b>	<b>0.18</b>	<b>1.3</b>
<b>Combined</b>	<b>Measured</b>	<b>23</b>	<b>2.1</b>	<b>25</b>	<b>1.6</b>	<b>19</b>
	<b>Indicated</b>	<b>111</b>	<b>1.2</b>	<b>11</b>	<b>4.3</b>	<b>40</b>
	<b>Inferred</b>	<b>58</b>	<b>0.86</b>	<b>6.0</b>	<b>1.6</b>	<b>11</b>
	<b>Total</b>	<b>192</b>	<b>1.2</b>	<b>11</b>	<b>7.4</b>	<b>69</b>



*Notes:*

- 1 Mineral Resources are inclusive of those Mineral Resources converted to Ore Reserves. The Mineral Resources have been reported in accordance with the JORC Code.
- 2 Note on cut-off grade: With the exception of Tor Uluala, all resources are reported using a cut-off grade of 0.5 g/t gold, this maintains consistency with prior estimates for comparison purposes plus reflects the site's current approximate threshold for waste versus mineralised waste. Tor Uluala is reported using a combined gold and silver cut-off grade, where gold g/t plus silver ÷ 60 g/t is greater than 0.5 for each estimated resource model block.
- 3 Note on rounding: Figures are rounded to the nearest two significant figures. Rounding might result in apparent computational errors or differences.
- 4 Note on Barani Mineral Resource: The Barani Mineral Resource is constrained by a US\$2,000 per ounce Au, US\$35 per ounce Ag Whittle optimisation pit and further, to the area south of 166,600 m N due to the position of the TSF. As with the other deposits, the resources are reported using a cut-off grade of 0.5 g/t gold.
- 5 Note on Purnama Mineral Resource: The Purnama Mineral Resource has been depleted due to mining operations to the 31 December 2015 mining surface and is constrained by a US\$2,000 per ounce Au, US\$35 per ounce Ag Whittle optimisation pit.

#### **4.1 Competent Person's statement**

The information in this report that relates to Mineral Resources is based upon information reviewed and compiled by Mr. Peter Stoker, who is a full-time employee of AMC Consultants Pty Ltd, and an Honorary Fellow and Chartered Professional of the Australasian Institute of Mining and Metallurgy. Mr. Stoker has 47 years of experience, of which 25 years of experience is relevant to the style of mineralisation or type of deposit under consideration in respect of the activities undertaken by PT AR, so as to qualify as a Competent Person as defined in:

- (i) the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (the JORC Code), and
- (ii) Chapter 18 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited, which requires a minimum of five years of experience relevant to the style of mineralisation and type of deposit under consideration.



Mr. Stoker confirms that he is independent of, and is not an actual or proposed officer or employee of, PT AR, its holding companies (including G-Resources) and their respective directors, senior management and advisers, and has no potential for conflict of interest in relation to this report to G-Resources. AMC Consultants Pty Ltd confirms that it is not a group, holding, or associated company of PT AR or its holding or associated companies (including G-Resources), and has no potential for conflict of interest in relation to this report to G-Resources. In addition, each of Mr. Stoker and AMC Consultants Pty Ltd confirm that they (i) have no economic or beneficial interest in Martabe and the Mineral Resources being reported on in this report, and (ii) are not being remunerated with a fee depending on the outcome or findings of their work under this report. Both Mr. Stoker and AMC Consultants Pty Ltd consent to the inclusion of this report and/or any content therein in any public reporting (including any public announcement, circular, regulatory filing, and/or other disclosure document) by PT AR or its holding or associated companies (including G-Resources) in relation to the Mineral Resources, in the form and context in which it appears, provided prior written approval has been provided in each case, which consent must not be unreasonably withheld. Mr. Stoker will accept Competent Person and overall responsibility for the information in this report that relates to the Mineral Resources.

The Purnama, Barani, and Uluala Hulu Mineral Resources are reported in accordance with the requirements of the 2012 JORC Code using accepted industry practice, including appropriate reference to the requirements and guidelines in the JORC Code, and have been signed off by a Competent Person as defined by the JORC Code. Appendix A contains the JORC Code Table 1 “if not, why not” summary for the Purnama Mineral Resource, which is provided as a result of material changes in the drilling data available to support the new mineral resource estimate. Table 1 “if not, why not” summaries are not provided for Barani and Uluala Hulu as there is no change to the previously reported Mineral Resources for these deposits since they were last reported in the December 2014 Mineral Resource statement on the 2 April 2015.

The Mineral Resources at Tor Uluala, Ramba Joring, and Horas were last reported in accordance with the requirements of the 2004 JORC Code<sup>3</sup> using accepted industry practice, including appropriate reference to the guidelines in the JORC Code, and have been signed off by a Competent Person as defined by the JORC Code. There has not been a material change to these resources since the implementation of the 2012 JORC Code and, thus, no Table 1 “if not, why not” appendix is required under the JORC Code or included in this CPR.

AMC considers that the processes utilised for the resource estimates are sound, meet industry accepted practice, and are appropriate for the Martabe deposits. AMC’s view is that the Purnama, Barani, and Ramba Joring Mineral Resources are suitable as input for Ore Reserve estimation and as an input for mine-planning purposes.

<sup>3</sup> *Australasian Joint Ore Reserves Committee (JORC), Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code), 2004 edition, effective December 2004, 32 pp., available <[http://www.jorc.org/docs/jorc2004web\\_v2.pdf](http://www.jorc.org/docs/jorc2004web_v2.pdf)>, viewed 5 January 2016.*



## 5 ORE RESERVE INPUT DATA AND PROCESS

### 5.1 Description of mining operations

The Purnama mining operation is mining benches to the topography in both east and west directions on a steeply dipping ridge. Mining operations are currently performed by a mining contractor using 80 t excavators and 40 t articulated dump trucks for ore and waste mining.

A combination of 10 m and 7.5 m blasted benches are excavated in 2.5 m flitches in bulk waste and selective ore zones respectively. Ancillary equipment utilised includes bulldozers, graders, and water carts. Drilling for blasting is performed with drills capable of 6 m one-pass drilling for holes with diameters varying between 89 mm and 127 mm. The blasting service is provided by a separate contractor. Grade control drilling is by contractor using a reverse circulation drill rig on a 12.5 m × 6.25 m pattern. Hole depths vary between 9 m and 24 m. Mining has been undertaken since May 2011 and no access issues exist.

All infrastructure to support the mining operation is in place. This includes a run-of-mine (ROM) stockpile located near the crusher, a waste rock disposal area within the TSF footprint, a mine office, and mobile plant workshop. Two magazines are in place to support the blasting operation. Power is provided by diesel generators. Connection to the national grid is in place, although to date, no grid power has been supplied. There is a positive water balance on-site, with excess water discharged after treatment through a polishing plant. All roads are in place, allowing access from one area to another.

The ROM pad, the processing plant, and the contractor's facilities are sited immediately to the east of the Purnama pit. The integrated waste management storage facility, comprising the waste rock dump and TSF, is located approximately 1 km to the south-east of the Purnama pit. Mine site offices and support facilities are located approximately 1.5 km to the south-west of the pit.

Additional open-pit operations are proposed for the Ramba Joring deposit (approximately 1 km north of Purnama) and the Barani south deposit (approximately 1.5 km south-east of Purnama).





## 5.2 Ore Reserve estimation process

Ore Reserve estimates were generated using Datamine, Surpac, and Whittle Four-X software, and an industry-standard approach to cut-off grade determination, pit optimisation, and pit design. The estimate was completed using the following steps:

- Calculate ore loss and waste dilution: include allowance in the resource model for ore loss and dilution by averaging the ore and waste proportions in a block to a single tonnage and grade. Resource model blocks contain ore tonnes and grade (within the ore wireframes) and waste tonnes and grade (outside ore wireframes). Additional ore loss was applied to Ramba Joring, to recognise the additional ore loss inherent in mining on a steep ridge, by removing any ore blocks that are less than 60% under the topography.
- Collate pit optimisation parameters: ore and waste mining costs were taken from the mining contract unit costs. Ore processing and general and administration costs were taken from the site budget, and metal prices were derived from long-term forecasts. Geotechnical parameters were taken from a geotechnical report, and metallurgical recoveries were estimated from testwork and hard-coded into the model.
- Create mining model: ore and waste blocks were determined through the use of a breakeven marginal economic cut-off value hard-coded into the model. A block is defined as ore when the revenue from the block exceeds the cost of mining and processing the block. High cyanide-consuming blocks are assigned additional cost by multiplying ore-processing costs, general and administration costs, and ore specific costs by a factor.
- Pit optimisation: the pit shell was optimised based on maximising undiscounted cash flow using Measured, Indicated, and Inferred Resource<sup>4</sup> blocks and the parameters listed above.
- Pit design: a pit optimisation shell was used as the basis of final pit design.
- Ore Reserve estimate: Measured and Indicated Reserve blocks within the pit design were reported as the Ore Reserve.

## 5.3 Modifying Factors

Modifying Factors<sup>5</sup> used in the estimation of Ore Reserves were compiled using a combination of feasibility study-level investigations and production figures from the operating mine and processing facility, providing a high level of confidence in the estimation process.

<sup>4</sup> As defined by the JORC Code.

<sup>5</sup> As defined by the JORC Code.



Ore Reserves were estimated using US\$1,250 per ounce Au and US\$16 per ounce Ag for Purnama and Barani, and a longer-term view of US\$1,433 per ounce Au and US\$26.90 per ounce Ag for Ramba Joring pits, which is yet to be mined. Metal recoveries were derived from a formula derived from extensive testwork and reconciled against production results. Operating costs were derived from site budgets and the schedule of rates for mining costs in the mining contract.

The cut-off value used in the estimation of Ore Reserves is the non-mining, breakeven value taking into account mining recovery and dilution, metallurgical recovery, site operating costs including processing and administration, doré transport, refining, royalties, and revenues.

Updated resource models were available for Purnama and Barani deposits following the completion of infill drilling programmes. Purnama and Barani pits were reoptimised on new cost and revenue parameters, including allowance for wider ramps to suit proposed truck upgrades. The design change honoured geotechnical recommendations, with inter-ramp angles remaining unchanged from previous designs.

The change in revenue and costs, and the effective marginal cut-off has, however, reduced the economic ore and increased the strip ratio for Barani. The Purnama pit strip ratio has reduced as a function of concentrated waste mining during 2015 and the improved reserve from the RC infill drilling programme. The strip ratio for Purnama has changed from 0.9:1 to 0.7:1 (waste:ore).

The Ramba Joring resource model was not updated and there was no material change in the expected operating parameters for the deposit. Therefore, no pit optimisations were performed, with the current pit designs deemed as valid for the reporting of the ore reserves.

Stockpiled ore, which was estimated through the current grade control practices, was included and listed separately in the stated Ore Reserves.

## **6 ORE RESERVE STATEMENT**

AMC Consultants Pty Ltd was engaged by PT Agincourt Resources, the Indonesian subsidiary of the Hong Kong listed company G-Resources Group Limited, to prepare an updated Ore Reserves statement as at 31 December 2015 for the Martabe gold mine in Indonesia.

The work undertaken to arrive at this updated Ore Reserves estimate comprised an update to the Purnama and Barani open-pit Ore Reserves only. Primary changes for both the Purnama and Barani open-pit Ore Reserves comprised updated resource models, economics, and pit optimisation. In addition, changes for Purnama included mining depletion and ore stockpile inventory changes.



The Martabe Ore Reserves status as of 31 December 2015 is summarised in Table 6.1, and is reported in accordance with the 2012 edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code). The Ore Reserves are reported as delivered to the coarse ore ROM pad.

**Table 6.1 31 December 2015 Martabe open-pit Ore Reserves by classification and mining area**

Deposit	Ore Reserves classification	Ore tonnes (Mt)	Gold grade (g/t Au)	Silver grade (g/t Ag)	Contained metal	
					Gold (Moz)	Silver (Moz)
Purnama	Proved	16.1	2.6	30	1.3	16
Purnama	Probable	13.4	1.9	21	0.83	9.1
Barani	Probable	3.6	1.9	2.4	0.22	0.28
Ramba Joring	Probable	5.2	1.8	4.4	0.29	0.74
Purnama stockpile	Proved	2.7	1.2	11	0.11	0.94
<b>Total Proved</b>		<b>18.8</b>	<b>2.4</b>	<b>27</b>	<b>1.4</b>	<b>17</b>
<b>Total Probable</b>		<b>22.2</b>	<b>1.9</b>	<b>14</b>	<b>1.3</b>	<b>10</b>
<b>Total Proved and Probable Ore Reserves</b>		<b>41.0</b>	<b>2.1</b>	<b>20</b>	<b>2.8</b>	<b>27</b>

Notes:

- 1 Totals might not equal the sum of the component parts due to rounding adjustments.
- 2 Estimates are rounded to the nearest 0.1 Mt and two significant figures for gold grade, silver grade; gold metal, and silver metal.
- 3 The Ore Reserves were estimated using a projected 2016 gold price, based on three-year average of the gold and silver metal prices, of US\$1,250 per ounce and silver price of US\$16 per ounce for Purnama and Barani pits, and a gold price of US\$1,433 per ounce and silver price of US\$26.90 per ounce for the later developed Ramba Joring pit, given the lead time to production.
- 4 Ore Reserves are based on an expected value calculation to report tonnages above a zero \$/t net expected value. The cut-off to define ore is therefore variable in metal grades, but equates to an average cut-off grade of approximately 0.8 to 0.9 g/t Au, depending upon the accompanying silver grades.

Approximately 52 Mt of associated waste material will be mined, including mineralised waste, for Purnama (20 Mt), Barani (12 Mt), and Ramba Joring (20 Mt) respectively, resulting in a waste material to economic ore reserves ratio of 1.3 to 1 (tonnes:tonnes).

The changes from the previous public Ore Reserves statement (31 December 2014) for Martabe are depletion of Purnama due to mining and processing operations and changes to Purnama and Barani due to resource drilling and pit optimisation. These changes are summarised in Table 6.2.



**Table 6.2 Changes from December 2014 to December 2015  
Martabe open-pit Ore Reserves**

<b>Category</b>	<b>Ore tonnes (Mt)</b>	<b>Contained gold (Moz)</b>
Mining and processing depletion	-5.1	-0.32
Stockpile changes	+0.2	+0.02
Purnama resource drilling and optimisation	+3.6	+0.40
Barani resource drilling and optimisation	+0.1	-0.01
<b>Total</b>	<b>-1.2</b>	<b>+0.09</b>

Totals might not equal the sum of the component parts due to rounding adjustments.

### **6.1 Competent Person's statement**

The information in this report that relates to Ore Reserves is based upon information reviewed and compiled by Mr. Glen Williamson, who is a full-time employee of AMC Consultants Pty Ltd, and a Chartered Professional (Mining) and Member of the Australasian Institute of Mining and Metallurgy. Mr. Williamson has 33 years of experience, of which 11 years of experience is relevant to the style of mineralisation or type of deposit under consideration in respect of the activities undertaken by PT AR, so as to qualify as a Competent Person as defined in:

- (i) the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (JORC Code), and
- (ii) Chapter 18 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited, which requires a minimum of five years of experience relevant to the style of mineralisation and type of deposit under consideration.

Mr. Williamson confirms that he is independent of, and is not an actual or proposed officer or employee of, PT AR, its holding companies (including G-Resources) and their respective directors, senior management and advisers, and has no potential for conflict of interest in relation to this report to G-Resources. AMC Consultants Pty Ltd confirms that it is not a group, holding, or associated company of PT AR or its holding or associated companies (including G-Resources), and has no potential for conflict of interest in relation to this report to G-Resources. In addition, each of Mr. Williamson and AMC Consultants Pty Ltd confirm that they (i) have no economic or beneficial interest in Martabe and the Mineral Resources being reported on in this report, and (ii) are not being remunerated with a fee depending on the outcome or findings of their work under this report. Both Mr. Williamson and AMC Consultants Pty Ltd consent to the inclusion of this report and/or any content therein in any public reporting (including any public announcement, circular, regulatory filing, and/or other disclosure document) by PT AR or its holding or associated companies (including G-Resources) in relation to the Ore Reserves and/or the Martabe gold mine, in the form and context in which it appears, provided prior written approval has been provided in each case, which consent must not be unreasonably withheld. Mr. Williamson will accept Competent Person and overall responsibility for the information in this report that relates to the Ore Reserves and/or the Martabe gold mine.



# Appendix A

## Purnama Mineral Resource statement as at 31 December 2015

Explanatory notes: Competent Person's Report for Purnama Dec15 Resource model

**Dale Sims Consulting**  
Mining geology, training and data analysis

**james pocoe consulting pty ltd**

To: Ken Grohs – Technical Services Manager G-Resources

CC: Shawn Crispin – Chief Geologist G-Resources  
John Warner – Mine Geology Manager G-Resources  
Janjan Hertrijana – Principal Geologist Operations G-Resources  
Agus Nur Kasnanto – Superintendent Resource Development Mine Geology  
G-Resources  
Glen Williamson – Manager Engineering AMC Consultants

Date: 20th December 2015

RE: **Competent Person's Report for Purnama Dec15 Resource model**

### SUMMARY

PT Agincourt Resources (PT AR) own and operate the Martabe Project in the North Sumatra Province of Indonesia.

This Resource estimate represents the first comprehensive update to the Mineral Resource estimate of the property since 2013. A substantial amount of additional data has been acquired since the 2013 estimate, along with an increased understanding of mineralisation controls and distribution and model performance gained during mining.

Completion of a Resource Development Reverse Circulation (RC) drilling programme in 2015 has added a substantial amount of quality data for geological interpretation and estimation of grades. The RC data acquired in 2015 has been used in the new estimate in combination with existing Diamond Drill (DD) samples and in some areas with Grade Control (GC) data. Diamond drilling remains the dominant data type throughout the Resource model.



A substantial effort has been made to understand and re-model the important geological controls of mineralisation, resulting in a robust, workable model as a basis for the Resource estimate. All mineralisation, lithology, alteration, density domains have been updated prior to use in this 2015 Resource estimate.

Grades estimates for all payable and other relevant metals have been completed. RC drilling is used in combination with DD for the estimation of grades. Projected mining areas to December 2016 are estimated using GC data along with Resource Development RC and DD.

A classification scheme reflecting confidence in grade continuity and reliability of estimates has been adopted for the external reporting of Mineral Resources.

This report summarises the geological understanding of the deposit, the data inputs to the Resource estimate, the estimation process adopted and the results of the estimation. It should be read in conjunction with the attached Table 1 (JORC 2012).

The Mineral Resources are reported within a volume representing reasonable prospects for eventual economic extraction based on an optimisation shell developed using long term assumptions for price, cost, technical feasibility and capital expenditure.

Comparisons with the prior estimate within the 2015 long term planning design shell indicates that the 2015 estimate contains around 16% more gold metal than the prior estimate in an equivalent volume at and equivalent cutoff. This reflects the impact of the RC drilling undertaken 2014-15 and should lead to improved reconciliation of Ore Reserve predictions with actual mill reconciled mine production.

## MINERAL RESOURCE STATEMENT

PT AR reports Mineral Resources inclusive of Ore Reserves.

Statement of Mineral Resources inside 2015 reporting pit shell (#35) with reasonable prospects for eventual economic extraction.

Deposit	Category	Tonnes (million)	Gold grade (g/t Au)	Silver grade (g/t Ag)	Contained metal	
					Gold (Moz)	Silver (Moz)
Purnama	Measured	21	2.2	27	1.5	18
	Indicated	67	1.3	16	2.7	34
	Inferred	2	1.0	14	0.1	1.1
	Total	91	1.5	18	4.3	53

Reporting volume: in situ as at 1/1/2016, based on 2015 EOY as-built survey inside pit shell #35. Reported at a 0.5ppm Au cutoff, inclusive of Ore Reserves. Bulk Density by Ordinary Kriging.





## 1. INTRODUCTION

PT Agincourt Resources (PT AR) own and operate the Martabe Project in the North Sumatra Province of Indonesia. They are currently mining their first deposit of the project, the Purnama gold – silver (Au-Ag) deposit and treating the ore through a Carbon-in-Leach (CIL) cyanide plant adjacent to the mine. Mining commenced in mid-2012 and has to date extracted over 1.17 Moz Au and 10.13 Moz Ag.

This report reviews the major differences in inputs, interpretation and processes between the previous Mineral Resource estimate undertaken by Cube Consulting for PT AR in June 2013 and the updated Mineral Resource estimate undertaken by Dale Sims and James Pocoe for PT AR in December 2015 and reported here.

The report is written from the Competent Person's perspective and is written to comply with the requirements of the JORC Code (2012 Edition) for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Readers unfamiliar with the code are referred to it here:

[http://www.jorc.org/docs/jorc\\_code2012.pdf](http://www.jorc.org/docs/jorc_code2012.pdf)

Major and material differences between this and the prior estimate are discussed below. All of the details on the relevant technical aspects of the Mineral Resource estimate are included in the 'Table 1' documentation component as required by the JORC Code. The 'Table 1' Sections 1-3 documents are to be found as Section 18 of this report and have been extensively reviewed by AMC Consultants prior to release in their role as 'peer reviewers' for PT AR.

Much of the detail in the prior PT AR Mineral Resources explanatory report from 2013 (pp4-40) is still applicable and so readers are referred to that report for some specific issues rather than have the detail repeated here. The prior report can be obtained from the following web address:

[http://www.g-resources.com/wp-content/themes/twentyten/pdf/martabe/minerals\\_130923.pdf](http://www.g-resources.com/wp-content/themes/twentyten/pdf/martabe/minerals_130923.pdf)

Each of Dale Sims Consulting Pty Ltd and James Pocoe Consulting Pty Ltd have been engaged by PT AR to provide this report and they confirm that (i) they are not a group, holding or associated company of PT AR or its holding or associated companies (including G-Resources), (ii) have no officers who are also the actual or proposed officers of PT AR or its holding or associated companies (including G-Resources); (iii) have no economic or beneficial interest in the Mineral Resources and/or Martabe Project being reported on in this report, and (iv) is not being remunerated with a fee depending on the outcome or findings of its work under this report.



## 2. PURNAMA PRODUCTION EXPERIENCE

Since production commenced from Purnama in mid-2012 PT AR have found they obtain more gold from their mining operation than expected from their Ore Reserve estimates, including estimates based on the 2013 Resource model. Overall project to date, according to site production reports reconciled to mill production, they have mined around 23 percent more gold than their Ore Reserves estimate predicted. Around 15 percent of that increase is attributed to a higher ore tonnage mined than expected from Reserves while around 85 percent of that increase is from a higher average gold grade than they expected from Reserves.

Ore Reserves are based on analysis of the Mineral Resources taking into account the Modifying Factors used to convert a Mineral Resource into a minable Ore Reserve. An outcome of the Reserve estimation process is a production schedule which is used to underlie the annual budget for the operation. PT AR have not factored metal grades in any of their Reserve estimates and so the difference between Ore Reserve predictions and actual reflects a problem in their Resource model or its conversion to Ore Reserves.

After Ore Reserves are estimated but before the orebody is mined another series of ore definition work and modelling occurs to guide the final mining activity and ultimate extraction. This work is termed 'Grade Control' (GC) and includes closer spaced Reverse Circulation (RC) drilling, logging and sampling, pit mapping and grade modelling to produce a short term schedule and mining plan with 'dig blocks' of different grade ranges identified in the pit. Comparisons of GC-based grade predictions to mill reconciled production for the 12 months to December 31 2015 are in much closer accord with overall Au mined from the pit being around 8 percent greater than GC estimates compared to the 40 percent from Reserves (Table 1).

PT AR have undertaken investigation into the under-prediction of their Ore Reserve compared to actual and have initiated programs aimed to address the underlying issues and so produce a more accurate production forecast and overall estimate of metal contained in the Purnama deposit.

The corrective program discussed below involves increasing the data density in the Resource estimate by drilling additional holes in the pit to gain more information to use in the estimate, and to change the sampling method to obtain a more precise primary sample of the mineralisation through the use of RC drilling. The 2013 Resource model was based exclusively on diamond drilling data and was generated before significant mining or GC had occurred at Purnama. Drilling to define mineralisation for a resource estimate is termed 'Resource Development' (RD) drilling.



**Table 1: Reconciliation of Grade Control, Ore Reserve estimates with Declared Ore Mined, January-December 2015**

	Tonnes (million)	Grade Au (g/t)	Grade Ag (g/t)	Au (‘000 Oz)	Ag (Million Oz)
Declared Ore Mined (DOM)	4.3	2.8	29	381	4.0
Grade Control (GC)	4.5	2.6	27	369	3.8
Ore Reserve (OR)	5.1	2.0	24	323	3.9
DOM/GC %	96%	<b>108%</b>	109%	103%	105%
DOM/OR %	84%	<b>140%</b>	123%	118%	103%
GC/OR %	88%	130%	112%	114%	99%

Source: PT AR Mine Geology.

### 3. COMPETENT PERSONS’ COMPLIANCE STATEMENTS

The authors, Dale Sims and James Pocoe, were engaged to assist PT AR with this work and have worked together with site professionals since mid-2015 on this Mineral Resource estimate update. Dale Sims has been working sporadically with PT AR as a consultant since 2011 and assisted in interpretation and domaining with the 2013 Purnama estimate. James Pocoe commenced work on Purnama in July 2015.

The authors, Mr. Dale Sims and Mr. James Pocoe are full-time employees of Dale Sims Consulting Pty Ltd and James Pocoe Consulting Pty Ltd, respectively, which were engaged by PT AR to prepare this Mineral Resource estimate update report.

Certain parts of the information in this report that relates to Mineral Resources is based on information compiled by Mr. Dale Sims, a Fellow and Chartered Professional (Geology) of the Australasian Institute of Mining and Metallurgy and a Member of good standing of the Australian Institute of Geoscientists. Mr. Sims has over 10 years’ experience relevant to the style of mineralization and type of deposit under consideration in respect of the activities undertaken by PT AR, so as to qualify as a Competent Person as defined in (i) the 2012 Edition of the “Australasian Code of Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code)”, and (ii) Chapter 18 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited. Mr. Sims confirms that he is independent of, and is not an actual or proposed officer or employee of, PT AR, its holding companies (including G-Resources) and their respective directors, senior management and advisers, and has no potential for conflict of interest in relation to this report to G-Resources. Dale Sims Consulting Pty Ltd confirms that it is not a group, holding or associated company of PT AR or its holding or associated companies (including G-Resources), and has no potential for conflict of interest in relation to this report to G-Resources. In addition, each of Mr. Sims and Dale Sims Consulting Pty Ltd confirm that they (i) have no economic or beneficial interest in the Mineral Resources and/or Martabe Project being reported on in this report, and (ii) are not being remunerated with a fee depending on the outcome or findings of their work under this report. Both Mr. Sims and Dale Sims Consulting Pty Ltd consent to the inclusion of this



report and/or any content therein in any public reporting (including any public announcement, circular, regulatory filing and/or other disclosure document) by PT AR or its holding or associated companies (including G-Resources) in relation to the Mineral Resources and/or Martabe Project, in the form and context in which it appears. Mr. Sims will accept Competent Person and overall responsibility for the information in this report that relates to the data quality relevant to the recent work as described as well as geological interpretation and modelling for the mineralization, lithological and alteration domains used in the estimate.

Certain parts of the information in this report that relates to Mineral Resources is based on information compiled by Mr. James Pocoe, a member of good standing of the Australasian Institute of Mining and Metallurgy. Mr. Pocoe has 10 years' experience relevant to the style of mineralization and type of deposit under consideration in respect of the activities undertaken by PT AR, so as to qualify as a Competent Person as defined in (i) the 2012 Edition of the "Australasian Code of Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code)", and (ii) Chapter 18 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited. Mr. Pocoe confirms that he is independent of, and is not an actual or proposed officer or employee of, PT AR, its holding companies (including G-Resources) and their respective directors, senior management and advisers, and has no potential for conflict of interest in relation to this report to G-Resources. James Pocoe Consulting Pty Ltd confirms that it is not a group, holding or associated company of PT AR or its holding or associated companies (including G-Resources), and has no potential for conflict of interest in relation to this report to G-Resources. In addition, each of Mr. Pocoe and James Pocoe Consulting Pty Ltd confirm that they (i) have no economic or beneficial interest in the Mineral Resources and/or Martabe Project being reported on in this report, and (ii) are not being remunerated with a fee depending on the outcome or findings of their work under this report. Both Mr. Pocoe and James Pocoe Consulting Pty Ltd consent to the inclusion of this report and/or any content therein in any public reporting (including any public announcement, circular, regulatory filing and/or other disclosure document) by PT AR or its holding or associated companies (including G-Resources) in relation to the Mineral Resources and/or Martabe Project, in the form and context in which it appears. Mr. Pocoe will accept Competent Person and overall responsibility for the information in this report that relates to the statistical and spatial analysis of grade data and the interpolation, validation and reporting of the final estimate.

#### **4. MINERALISATION**

The Purnama orebody is a style of deposit known as 'high sulphidation epithermal' and is hosted in a multiphase sequence of andesitic lava flows, sediments and breccias cut by a set of later breccias thought to be phreatomagmatic (explosive) in origin. These later breccias are hosted within a vertical pipe-like body cross cutting the main volcanic sequence. The core of the breccia pipe is intruded by a barren Hornblende Andesite unit although just to the north this unit hosts mineralisation at the Ramba Joring deposit.



Primary mineralisation at Purnama is refractory with very fine grained Au locked within sulphide mineralisation. The processing plant recovers gold from the oxidised material in the deposit where weathering has made the gold accessible to cyanide solutions. This is due to sulphide degradation by oxidation which modifies the mineral matrix to develop porosity in the gold hosting minerals. This is important as gold in refractory material is not recovered in the current CIL plant.

In general, as the mine progresses deeper the degree of weathering reduces and so the oxidation state of the 'ore' in any given location is an important component to consider for economic recovery of gold. The geometry of the oxidation profile is not a simple 'layer-cake' system but has local variation due to rock type, structure and exposure history. The degree of oxidation is estimated by chemical analysis of the amount of sulphur present in sulphides (Sulphide Sulphur or "SxS"). Visual estimations of oxidation from mapping and core/chip sample logging are thought to be not as reliable as chemical analysis for SxS.

## **5. MATERIAL ISSUES FOR THIS ESTIMATE**

This section should be read in conjunction with relevant sections of the JORC Table 1 documentation in Section 18.

### **5.1. Additional RC Drilling**

Following investigation of the gold reconciliation under-call of the Reserve model compared to the mill production PT AR commenced a program of Resource Development RC (RDRC) drilling in the Purnama deposit in late 2014 to both increase data density and to obtain RC samples to include in an estimate update. Some earlier RDRC had been undertaken from the original land surface to infill some areas before mining commenced but this had been completed in early 2012 and results were not used in the 2013 estimate.

RC drilling with a 140mm diameter hole size as used in the Purnama pit delivers around 8 times the sample volume per metre compared to half HQ diamond drill core, the dominant drill sample size for resource definition drilling. With proper subsampling and analysis techniques the larger primary sample can yield a more representative assay result from improved sampling precision. A study comparing sampling imprecision from diamond drill core with sampling imprecision from RC drilling has demonstrated this is the case for Purnama with RC samples having around half the imprecision of half diamond core under ideal subsampling and assay conditions.

Along with better sampling precision the larger primary sample provides a better opportunity to 'capture' high grade sulphide bearing minerals in the drill bit path and hence RC data exhibits a positive bias in gold content in paired sample type data when compared to half diamond drill core. For these reasons, as well as the decreased drill hole spacing for GC RC, the reconciliation of GC models to production is more accurate than the Reserve model. This information forms the technical basis to significantly increase the content of RC data used in the Mineral resource estimate as undertaken by PT AR for this estimate.



In sampling and assay Quality Assurance and Quality Control (QAQC), issues of accuracy (bias) and precision (scatter) are assessed through tests applied via samples collected either in the field or in the laboratory or through submission for assay of materials with a known range of expected value. Discussion of drilling assay data accuracy and precision is made in the following section 4.4 and although there is potential for 'poor data' to impact on this assessment of sampling imprecision through use of different drilling and sampling methods, that is not thought to be the case here for the dataset as a whole. There are issues related to onsite versus off site analysis for RC samples which is discussed in section 4.4, but these are not thought to invalidate this conclusion.

Since August 2014 PT AR have drilled 201 RC holes into the Purnama resource for around 22.8km of drilling. Holes have been drilled on nominal 50m east-west sections with holes spaced 25m along the section line. Most RDRC drilling has been sampled on 1m intervals. The drill design over-drilled existing diamond drill holes and gave full coverage across the exposure of the pit floor access permitting. Holes were generally drilled on -60 or -70 degree dips to the west compared to the east and west dipping diamond holes generally drilled at flatter angles of around -30 to -50 degrees (Figure 1a). Part of the Resource model is also influenced by Grade Control RC (GCRC) drilling to improve the estimate for the next 12 months of production (section 4.2 below). The extent of the estimation input data and output volume limits for various drilling datasets is shown in Figure 1 b.

The inclusion of RC data has been the major addition to drilling information for this resource estimate and is discussed further in JORC Table 1. In total there is 32km of Resource Development RC drilling used in this estimate which constitutes around 25% of the total Resource Development drilling dataset by meterage.

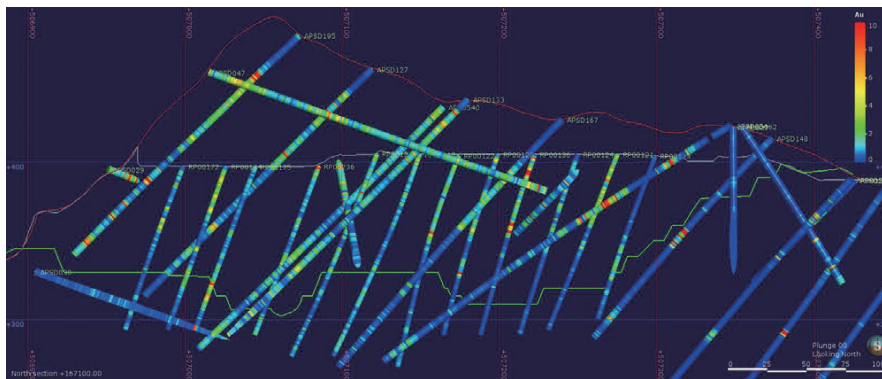


Figure 1 (a): Drill section 167100mN. Raw gold assay data shown on combined drilling dataset. Diamond drill holes (thick trace); recent RDRC holes thin trace. Original topography (brown); mid 2015 pit floor (blue); October 2015 final pit design (green).



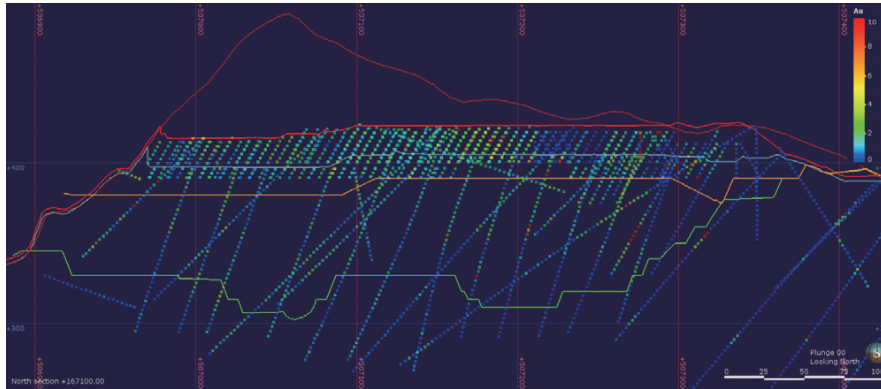


Figure 1 (b): Drill section 167100mN. Three metre composited gold assay data shown on combined drilling dataset including GCRC, RDRC and DD. Original topography (brown); upper limit of data for this estimate (red); mid 2015 pit floor (blue); base of December 2016 production projection (orange); October 2015 final pit design (green). GCRC will only influence model blocks down to the orange surface while RDRC and DD will influence the whole model.

Figure 1: (a) and (b). Vertical cross sections showing typical distribution of Grade Control and Resource Development RC and DD drilling.

## 5.2. Mine Production Grade Control Drilling and Pit Mapping

Angled GCRC drilling is undertaken ahead of mine production on 12.5m spaced east-west sections with holes drilled at 6.25m spacing along the sections. Vertical spacing between hole collars varies but is usually around 10m to correspond with major bench intervals with GCRC proceeding along with mining. All pit exposures are mapped by geologists on 10m bench intervals to record the mineralisation, geological and alteration aspects of the orebody during extraction for use in GC modelling domain construction.

Given the significantly improved reconciliation performance of grade control estimates the available grade control data has been used to estimate the next 12 months of anticipated production below the current pit floor. Beyond that limit GCRC data has not been used in the estimate reverting instead to the other drill data. This portion of the estimate uses around 5,400 GCRC drill holes totalling 95km of drilling, in addition to diamond and RDRC drilling.

Pit mapping has been used to improve the mineralisation domains and to provide a level of detailed understanding of mineralisation control to the model. It has directly led to a number of refinements in the model domains along with learnings from the detailed drilling data from grade control. Examples of the high quality pit mapping outputs are shown in Figure 2.



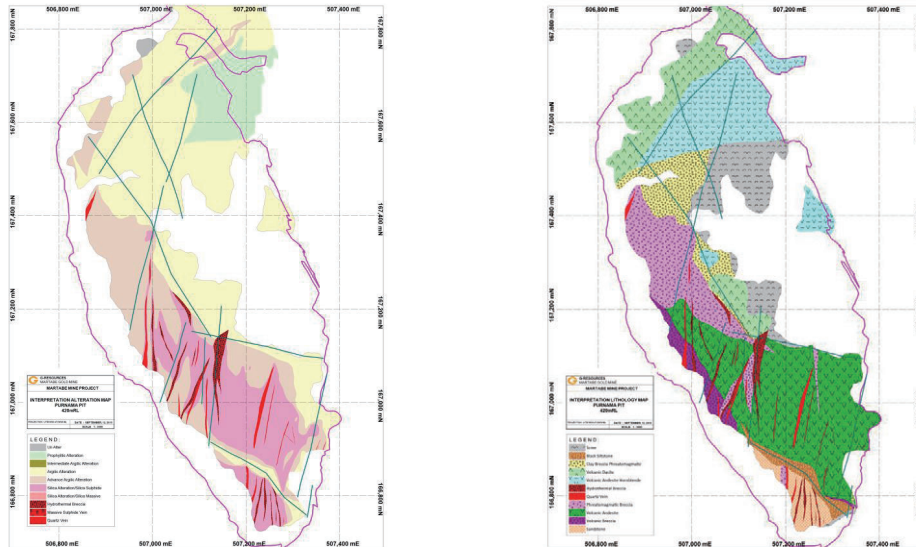


Figure 2: Compiled alteration (left) and lithological (right) mapping from 420mRL bench in Purnama Pit. White areas define the edge of topography while the pink line is the projected edge of the 2014 final pit design which on this level does not fully intercept topography.

### 5.3. Additional Diamond Drilling Below Purnama Pit Design

Diamond drilling remains the dominant dataset throughout the Resource model comprising around 94km of data or 75% of the utilised drilling information below the December 16 production horizon. Within the current pit design, no significant additional diamond drilling has been undertaken hence the diamond drilling dataset within the oxide resource remains unchanged from the 2013 estimate. The PT AR Mineral Resources explanatory report from 2013 (pp4-40) reviews this data.

Since the 2013 estimate additional deeper drilling has been undertaken to investigate the potential for primary sulphide mineralisation well below the current pit design. A total of 39 drill holes have been completed in 2014 for around 8.5km of drilling. This drilling generally intersected low grade sulphide mineralisation of around 1g/t Au below the existing oxide resource and is incorporated in this estimate. It contributes to the understanding of the sulphide resource which is also reported in this estimate yet has no significant impact on the oxide resource.

### 5.4. Drilling and Assay Data Quality

For diamond drilling data used in the 2013 estimate aspects of data and assay quality are discussed in the Cube 2013 report linked above. No material issues were found in the data in the prior work and the geological and assay data has been used as is for this estimate.



For data added in this estimate data quality has been a major focus of the drilling and assaying program, particularly for sampling and assay Quality Assurance Quality Control (QAQC) for the RDRC activity undertaken in 2015. Details are listed in Section 18 JORC Table 1 and summarised here:

- QAQC of RC field sampling has included revision to procedures, routine weighing of samples and undertaking field duplicate sampling at 1:20.
- The sampling interval was reduced from 3m to 1m to increase sample weights as 3m composites were subsampled multiple times to produce the composite leading to small field samples averaging around 2kg per 3m sampled. Single splitting of 1m samples increase weights to around 9kg per 3m sampled.
- A sampling imprecision study was undertaken comparing diamond half core to RC samples with RC samples shown to have around half the sampling imprecision of diamond core. This reflects the larger sample mass collected from RC drilling due to hole size.
- All RC drill chip logging has been undertaken to industry standards using experienced PT AR geologists and validated library codes have been applied during digital data collection.
- Assay laboratory quality control (QC) assessment led to a change of laboratory used for this work in 2015. The onsite GC laboratory was superseded by an external commercial laboratory on the basis of data precision. QC data from the onsite laboratory had poor precision, and although results were not considered overall to be significantly biased, it was prudent to obtain more precise results from an external commercial lab. The onsite lab is used for GC RC samples where a higher throughput and lower cost profile results in lower precision compared to Resource Development analysis work undertaken through an offsite lab. Historically RDRC data in Purnama has been drilled in 3 phases – phase 1 drilling was early RDRC during 2011–2012 focusing on the northern sections of the pit, phase 2 drilling was exploration-driven RC drilling in 2014 in the southern end of the pit and phase 3 is the current 2015 pit-wide redrill of the Resource. These campaigns are shown in Figures 3 a-d below. Phase 1 drilling assayed in the onsite lab is either now largely above the current pit floor or in the zone superseded by GCRC drilling, while phase 2 drilling assayed offsite is spatially limited to the southern end of the resource which is lower grade. Phase 3 drilling is the most critical given its representative spread across the entire pit strike length. Around 38% of the 2015 RC program samples were assayed onsite while 62% were assayed offsite. Importantly the samples collected from the highest grade part of the orebody were largely assayed offsite. Although the onsite lab precision is poor there is overall no specific grade bias in assay results based on



the analysis of Certified Reference Materials submitted to the onsite lab. With data smoothing from the estimation processes the potential adverse impact of lower precision data in the final resource model will be largely reduced with longer scheduling increments in the Ore Reserves analysis given they will not be used for detailed mine scheduling. Additionally, below the GCRC envelope (orange line Figure 3) RC data is only 25% of the total dataset.

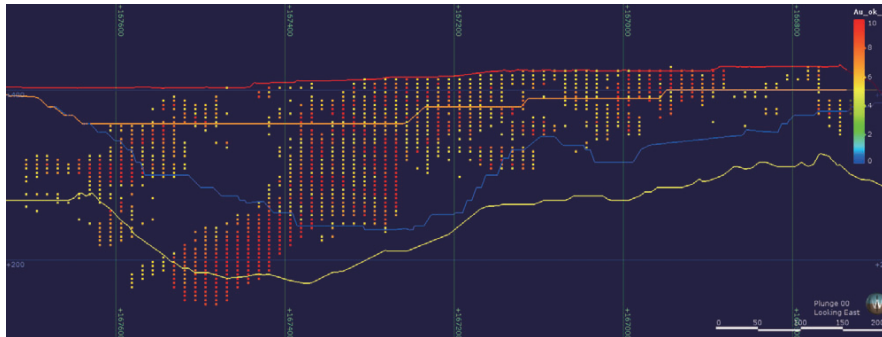


Figure 3 (a): Long section of Purnama deposit looking east with resource model estimated Au blocks shown filtered to be only +5ppm Au. The graphic shows the upper limit of data used in the 2015 estimate (red line) and the lower limit of blocks estimated with GCRC data (orange line). In blue is the December 2015 Reserve pit shell final design and the yellow shell is the limit of Resource reporting.

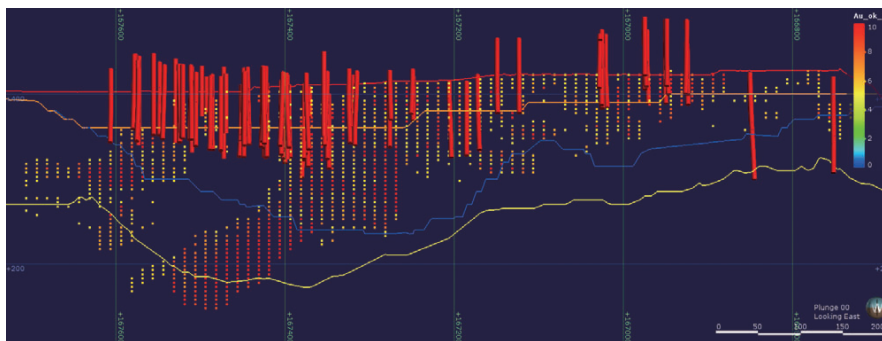


Figure 3 (b): Long section of Purnama deposit showing distribution of phase 1 RDRC data drilled 2011-12. Red hole trace denotes location of samples assayed at the onsite lab- largely above limit where GCRC will dominate the estimate (orange line). All other colours are as per Figure 3(a).

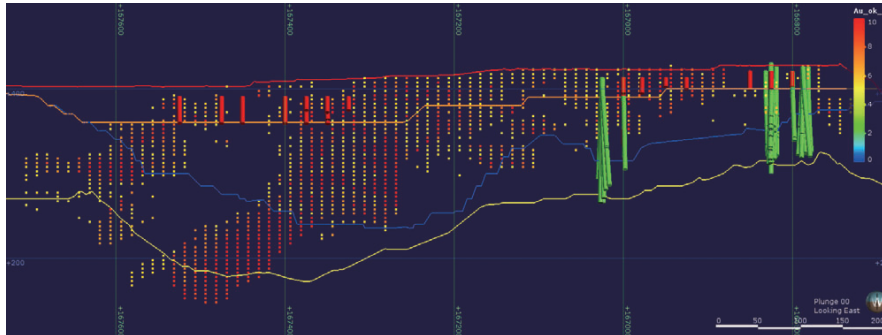


Figure 3 (c): Long section of Purnama deposit showing distribution of phase 2 RDRC data drilled 2014. Note data below limit where GCRC will dominate the estimate (orange line) is largely from the offsite lab. Red hole trace denotes assayed at the onsite lab; green hole trace denotes assayed at offsite lab. All other colours are as per Figure 3 (a).

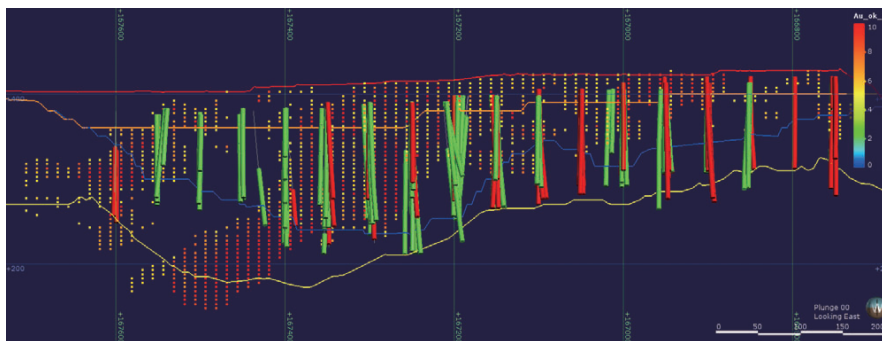


Figure 3 (d): Long section of Purnama deposit showing distribution of phase 3 RDRC data drilled 2015. Note in the central higher grade section of the resource between 167100-167400mN data is dominated by offsite lab. Red hole trace denotes assayed at the onsite lab; green hole trace denotes assayed at offsite lab. All other colours are as per Figure 3 (a).

Figure 3: Long section views showing distribution of drilling types and assay laboratory for samples used in estimation.

## 5.5. Drilling Type and Assay Bias

Using a combined RC and diamond drilling data set raises the issue of data compatibility. How reasonable is it to use the diamond and RC drilling data together to inform a resource estimation?

As discussed above the project to date reconciliations support the GC model as being a more accurate production prediction than the Reserves. This is thought to be in part due to a larger primary sample volume from RC drilling compared to half diamond drill core. To test this assumption a study was undertaken to pair 2m compositing data points from the different data sets which occur within a 4m distance of each other for statistical analysis. The pairing of both RDRC/DD and GCRC/RDRC was undertaken to assess relative bias between data types. The analysis also examined correlation within some of the different mineralisation domains which are discussed later in this report.



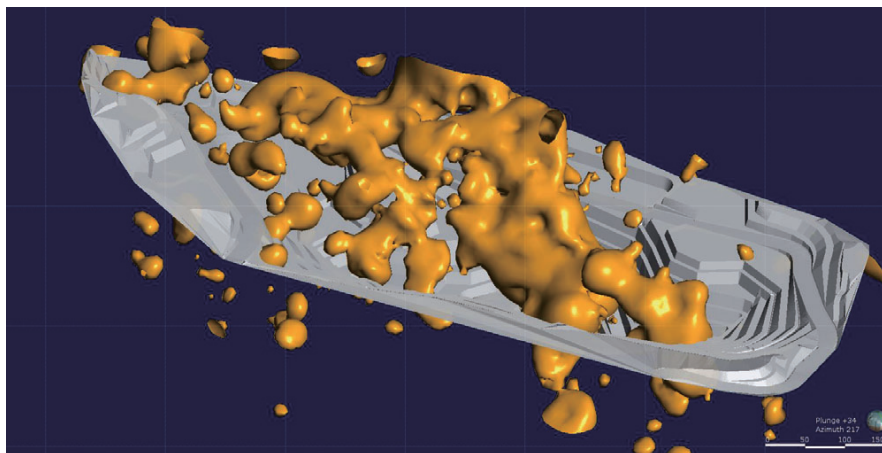
The study is discussed in detail in section 8.2 Data Accuracy and Precision. It concludes that there is a positive (higher) bias in gold grade between RDRC samples and diamond samples in paired data analysis although there is no bias between RDRC and GCRC samples. This supports the objective of this estimate to develop a more accurate prediction of mining activity and validates the inclusion of RC data. As the proportion of RC data in the total dataset increases, so should the accuracy of the estimation outputs.

## 6. MODEL DOMAIN INTERPRETATION AND CREATION

All domains were created in Leapfrog 3D modelling software which allowed the generation of interlocking domain wireframes based on logged data in the drilling database. Updated domains have been developed for the following model components.

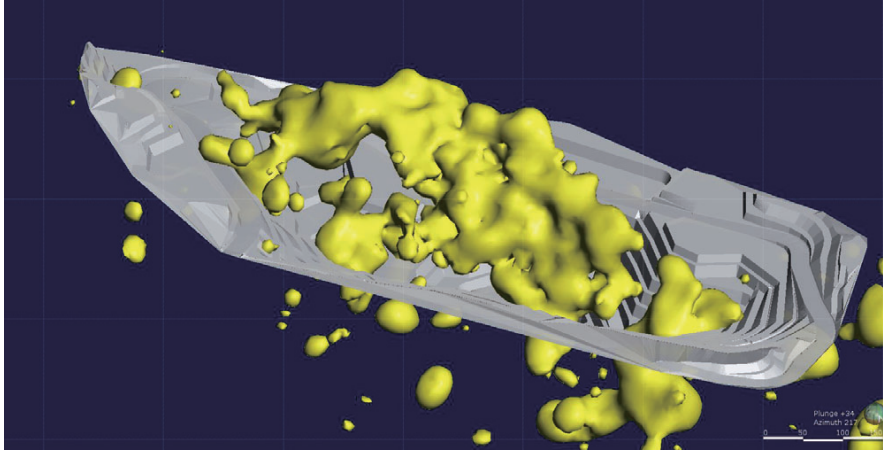
### 6.1. Mineralisation Estimation Domains

The domains for estimation of all elements have been combined into a single set for this estimate. Previously individual domains were manually interpreted for Au, Ag, As, Cu, Hg and SxS yet recent analysis has concluded that the controls for the distribution of these elements are reasonably similar hence a single encompassing set of domains can be used for all elemental estimations. Isotropic, un-domained models were generated using composited RD DD data for major elements and the geometry of distributions were compared. Although some elements such as Sulphide Sulphur (SxS), and potentially Mercury (Hg) have weathering or supergene controls which modify their primary distribution it was thought that the overall controls on this element suite from the genetic emplacement perspective were reasonably similar and all were part of the mineralisation sequence for Purnama with shared controls as discussed below. Figure 4 (a-f) shows a series of isometric views of each metal distribution model supporting this assessment.

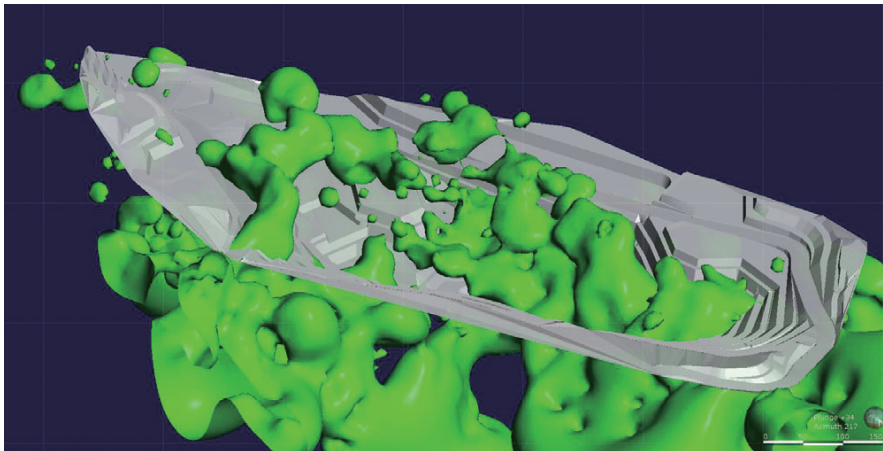


(Figure 4 a) – Isometric view to the SW showing the isosurface of an isotropic model of Au at 2ppm. Major Au shoot plunges are to the NNE. June 2015 final mine design pit shell in grey.

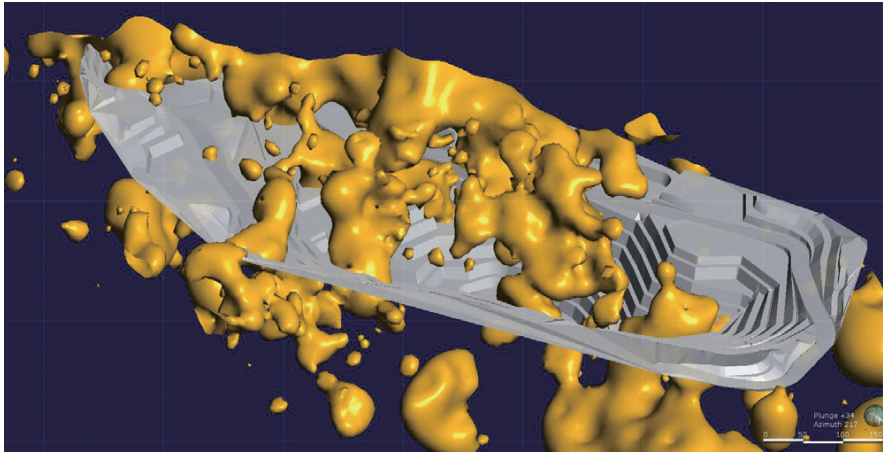




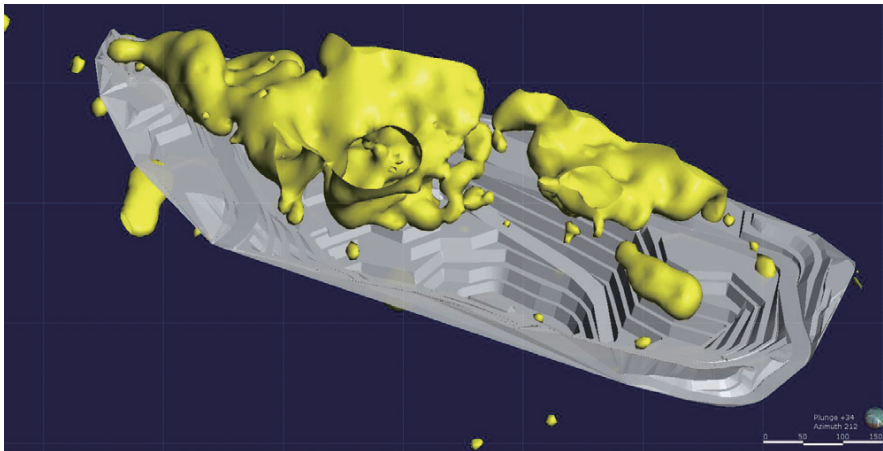
(Figure 4 b) – Isometric view to the SW showing the isosurface of an isotropic model of Ag at 30ppm. June 2015 final mine design pit shell in grey.



(Figure 4 c) – An isometric view to the SW showing the isosurface of an isotropic model of Cu at 200ppm. June 2015 final mine design pit shell in grey.

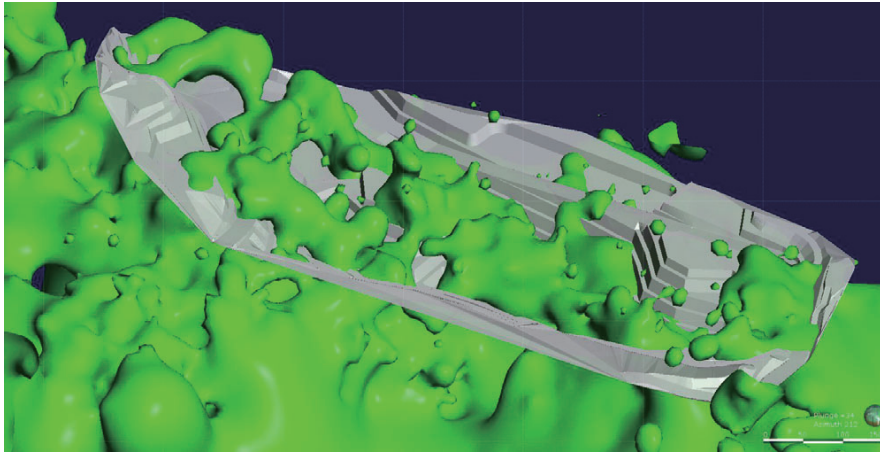


(Figure 4 d) – An isometric view to the SW showing the isosurface of an isotropic model of As at 500ppm. June 2015 final mine design pit shell in grey.



(Figure 4 e) – Isometric view to the SW showing the isosurface of an isotropic model of Hg at 0.5ppm. June 2015 final mine design pit shell in grey.





*(Figure 4 f) – Isometric view to the SW showing the isosurface of an isotropic model of SxS at 2%. June 2015 final mine design pit shell in grey.*

*Figure 4 (a-f): Isometric views of models of Au, Ag, Cu, As, Hg, SxS, showing similar spatial distribution of principal metals and sulphur.*

The updated mineralisation domains are a combination of alteration, lithology and structure and reflect the current interpretation on the controls on mineralisation and the major divisions in the resource for mineralisation distribution. They have been revised from the 2013 model to incorporate information from production experience and pit mapping data.

Compared to the 2013 estimate the domains for the feeder zones and contact zone have been modified so that the broad 'main zone' has been subdivided into 3 zones termed MZ1, MZ2 and MZ3. Additionally, a new southern high grade contact zone has been identified along with a barren black shale unit immediately below it. Table 2 below contains a list of the mineralisation domains in the model and their key features, while Figure 5 shows a representative cross section of mineralisation estimation domains.



**Table 2: Mineralisation Domain Codes**

<b>Mineralisation Domain Name</b>	<b>Description</b>	<b>Mineralisation/Waste</b>	<b>Key features</b>
MZ1	Mineralisation Zone 1	Mineralisation	Northern mineralisation zone, dominantly vuggy silica breccia formed on sandy matrix phreatomagmatic breccia and andesite at depth
MZ2	Mineralisation Zone 2	Mineralisation	Central mineralisation zone, dominantly vuggy silica breccia formed on andesite, andesitic breccia and sediments at depth
MZ3	Mineralisation Zone 3	Mineralisation	Southern mineralisation zone, dominantly vuggy silica breccia from sediments and andesite
CZ1 N	Contact Zone 1 North	Mineralisation	Northern contact zone 1 in sandy matrix phreatomagmatic breccia at clay matrix phreatomagmatic breccia contact. High grade mineralisation with a north south trend and a moderate dip east
CZ1 S	Contact Zone 1 South	Mineralisation	Southern contact zone 1 in sandy matrix phreatomagmatic breccia at clay matrix phreatomagmatic breccia contact. High grade mineralisation with a NW-SE trend and a moderate dip NE
CZ2	Contact Zone 2	Mineralisation	Southern contact zone located in andesitic breccia above a black shale unit
FZ	Feeder Zone main	Mineralisation	Hydrothermal breccia dominated feeder zone material with a steep dip and north south trend
PN	Purnama North	Mineralisation	A hydrothermal breccia feeder zone north of the main pit. Ramba Joring style mineralisation
FZ309	Feeder Zone South	Mineralisation	Southern extension of the Purnama orebody along a hydrothermal feeder zone which forms a southerly trending ridge off the main deposit



Mineralisation Domain Name	Description	Mineralisation/Waste	Key features
BSZ	Black Shale Zone	Waste	A black shale sediment unit along the contact of MZ2 and MZ3 domains
VANH	Hornblende Andesite Intrusive	Waste	Barren intrusive Hornblende Andesite
CBPM	Clay matrix breccia	Waste	Clay matrix phreatomagmatic breccia which forms the cap to Contact Zone 1 mineralisation
CLY	Clay zone in NW	Waste	A barren late clay alteration/weathering unit which overlies MZ1
BAS	Basalt west of Purnama Fault	Waste	A different unit across the Purnama Fault which is thought to have had significant vertical movement
SCR	Scree	Both waste and mineralised in places	Loose surficial material from weathering and mass movement. Mineralised west of the Purnama Fault where it has been shed off the Purnama ridge

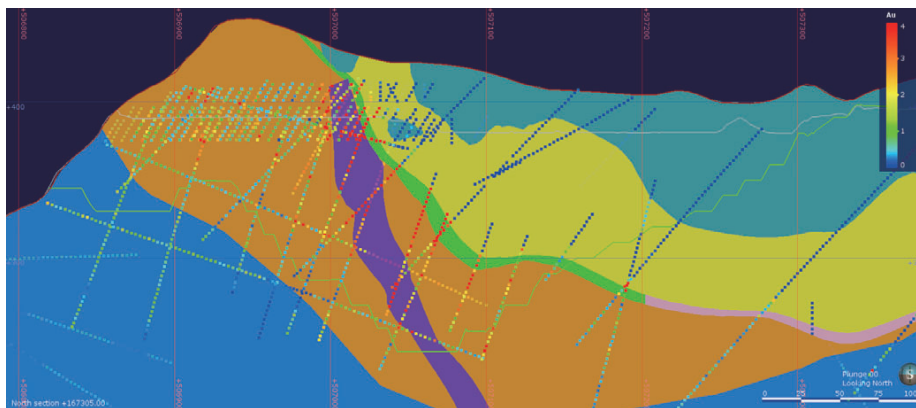


Figure 5: Cross section on 167305mN looking north showing mineralisation domains; L-R MZ1 (blue), MZ2 (orange), Feeder Zone 1 (purple), Contact Zone 1 north (green), Contact Zone 1 south (pink), Clay matrix breccia cBPM (yellow) and VanH (blue green). Au 3m composites (colour scale top RH corner).



## 6.2. Lithology Domains

These domains have been developed to reflect the dominant lithology groups. They overlap the Mineralisation domains in some instances but can be identical particularly for waste domains including CBPM, BAS, CLY and VANH. Table 3 lists the lithology codes and their related metallurgical recovery predicting 'Lewis Formula' equivalents. They are coded into the model variable named LITH.

**Table 3: Lithology Domain Codes**

Lithology Domain Name	Description	Lewis formula equivalent	Code in Model LITH	Wireframe name (.dxf)
SCR	Scree	N/A – waste	1	Lithology 20m res – SCR
BHX	Hydrothermal Breccia/ quartz vein	Hydrothermal Breccia/ QV	2	Lithology 20m res – BHX
CLAYNW	Clay zone north west	N/A – waste	3	Lithology 20m res – Clay_NW
VANH	Hornblende Andesite Intrusive	N/A – waste	4	Lithology 20m res – VANh
CBPM	Clay matrix breccia	N/A – waste	5	Lithology 20m res – cBPM
SBPM	Sandy matrix breccia	Phreatomagmatic breccia	7	Lithology 20m res – SBPM
VAN	Volcanic Andesite	Andesite	8	Lithology 20m res – VAN
VBX	Volcanic Andesite Breccia	Volcanic breccia	9	Lithology 20m res – VBX
SED	Sediments	Volcanic breccia	10	Lithology 20m res – SED
VBA	Basalt west of Purnama Fault	N/A – waste	21	Lithology 20m res – VBA



### 6.3. Alteration Domains

These domains reflect the dominant alteration from logging data. Table 4 lists the alteration codes and their related Lewis Formula equivalents. They are coded into the model variable named ALT.

**Table 4: Alteration Domain Codes**

<b>Alteration Domain Name</b>	<b>Description</b>	<b>Lewis formula equivalent</b>	<b>Code in Model ALT</b>	<b>Wireframe name (.dxf)</b>
SI	Silica	Silicic	1	Alteration – SI
AA	Advanced Argillic	Advanced argillic	2	Alteration – AA
AR	Argillic	N/A – waste	3	Alteration – AR
PP	Propylitic	N/A – waste	4	Alteration – PP

### 6.4. Hardness Domains

These domains reflect the degree of silica alteration intensity and are based on the qualitative logging of silica intensity by geologists with silica intensity class 3,4 and 5 modelled as very hard, class 2 modelled as hard and the class 1 as medium. Null values are for waste lithology domains. Table 5 lists the hardness codes. They are coded into the model variable named HARD.

**Table 5: Hardness Domain Codes**

<b>Hardness Domain Name</b>	<b>Description and approximate alteration domain</b>	<b>Code in Model HARD</b>	<b>Wireframe name (.dxf)</b>
Very Hard	Silica alteration dominant	1	Hardness – Very Hard
Hard	Silica and Advanced Argillic	2	Hardness – Hard
Medium	Advanced Argillic	3	Hardness – Medium
Null	Waste	4	Hardness – Null



## 6.5. Bulk Density Domains

These domains are based on mineralisation domains. Previously an oxidation domain model made in 2012 was used to domain bulk density in conjunction with relevant mineralisation domain. The 2012 oxidation domain was based on visual logging of oxidation on a percentage basis and the 80% threshold was used to create the model. Reviewing the oxidation model against alternative measurements of oxidation such as the proportion of AuCN to total Au reduces the confidence in the robustness of the model. Additionally, modelling artefacts occur in the Cube model of oxidation domain boundaries. The bulk density data was subset by domain without oxidation and is thought to better reflect the informing data. Table 5 lists the bulk density domain codes. The BD variable contains the estimated Bulk Density using the domains listed below.

**Table 6: Bulk Density Domain Codes**

<b>Bulk Density Domain Name</b>	<b>Constraining mineralisation domains</b>	<b>Wireframe name (.dxf)</b>
CLAY	CBPM and CLY	Domain Model – CLY, Domain Model – cBPM
VANh	VANH	Domain Model – VANh
MZ1	MZ1	Domain Model – MZ1
MZ2-3	MZ2-3	Domain Model – MZ2, Domain Model – MZ3
CZ	CZ1North, CZ1 South, CZ2	Domain Model – CZ01_North, Domain Model – CZ01_South, Domain Model – CZ2
HBX	FZ, FZ309	Domain Model – FZ, Domain Model – FZ309
BSZ	BSZ	Domain Model – BSZ
PN	PN	Domain Model – Purnama North
BAS	BAS	Domain Model – Basalt



## 6.6. Classification Domains

These domains reflect the JORC classifications applied in the model. Public reporting will be at a nominated cutoff and limiting extent to meet JORC requirements for reasonable prospects. Table 7 lists the classification codes. They are coded into the model variable named CAT. The geometries of the classification domains are shown in long section in Figure 6.

*Figure 6: An east looking long section showing input composite data (all drill types) and the classification volumes; green is Measured Resource, orange is Indicated Resource and blue is Inferred resource. Also shown is the outline of the December 2015 Reserves*

**Table 7: Classification domain codes**

Classification Domain Name	JORC Classification	Code in Model CAT	Classification basis
Measured	Measured Resource	1	Combination of drill spacing nominally 25m plus kriging slope >0.9 and WOM<0.2. Smoothed between drill fans and intermediate holes where continuity verified.
Indicated	Indicated Resource	2	Outside Measured where drill spacing is nominally 50m combined with ~ kriging slope >0.7 and WOM<0.6.
Inferred	Inferred Resource	3	Remainder is reported within optimisation pit shell #35 with reasonable prospects for future economic extraction.



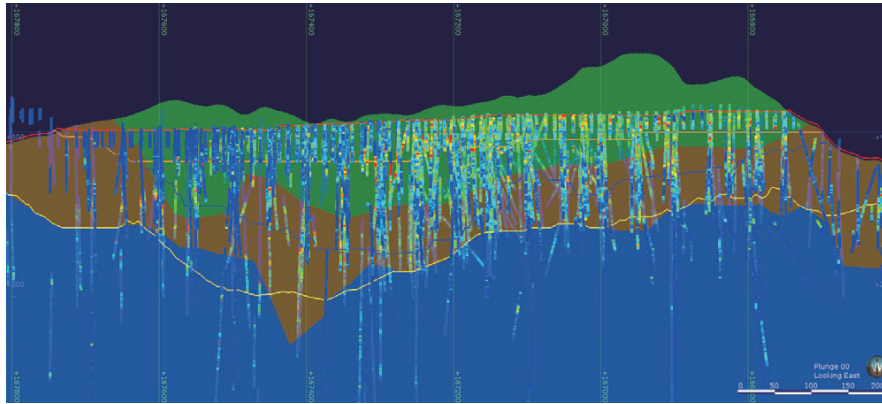


Figure 6: An east looking long section showing input composite data (all drill types) and the classification volumes; green is Measured Resource, orange is Indicated Resource and blue is Inferred resource. Also shown is the outline of the December 2015 Reserves.

## 7. MODEL VARIABLES

Model Variables listed below in Table 8 include all variables included in the resource model.

**Table 8: Model Variables**

<b>Model variable name</b>	<b>Description</b>	<b>Derivation</b>
Au_ok	Gold estimated by Ordinary Kriging	Estimated by Mineralisation Domain
AuCN_ok	Cyanide soluble gold estimated by Ordinary Kriging	Estimated by Mineralisation Domain
Ag_ok	Silver estimated by Ordinary Kriging	Estimated by Mineralisation Domain
AgCN_ok	Cyanide soluble silver estimated by Ordinary Kriging	Estimated by Mineralisation Domain
As_ok	Arsenic estimated by Ordinary Kriging	Estimated by Mineralisation Domain
Ca_ok	Calcium estimated by Ordinary Kriging	Estimated by Mineralisation Domain



<b>Model variable name</b>	<b>Description</b>	<b>Derivation</b>
Cu_ok	Copper estimated by Ordinary Kriging	Estimated by Mineralisation Domain
CuCN_ok	Cyanide soluble copper estimated by Ordinary Kriging	Estimated by Mineralisation Domain
SxS_ok	Sulphide sulphur estimated by Ordinary Kriging	Estimated by Mineralisation Domain
Hg_ok	Mercury estimated by Ordinary Kriging	Estimated by Mineralisation Domain
cat	JORC Classification	Assigned from wireframes
bd	Bulk Density	Estimated by Mineralisation Domain
dom	Mineralisation Domain	Assigned from revised domains
lith	Lithology Domain	Assigned from revised domains
alt	Alteration Domain	Assigned from revised domains
rqd	RQD	Transferred from prior RQD model
oxd	Oxidation	Assigned from 2012 wireframe
hard	Hardness	Assigned from revised domains

## **8. GRADES ESTIMATION**

### **8.1. Data Configuration**

The Purnama deposit is drilled with a mixed data set consisting of Resource Development (RC), Exploration DD (DD) and Grade Control (GC) (Figure 7). There is little redundant data in the combined RC and DD configuration. Using both data types for estimation is necessary as omitting either RC or DD out of the data set would create large gaps in drilling coverage. The addition of a substantial number of RC holes is a significant change to the size and nature of the Resource database



since previous estimates. RC and GC RC drill holes are drilled with equivalent RC drilling rigs with equivalent hole diameter, sample length and sample volume (with some minor exceptions). Drill hole spacing is summarised in Table 9.

Nominal hole diameter for each hole type is shown in Table 10.

**Table 9: Average drill hole spacing by drill type**

Drilling type	Nominal/Typical spacing (E, N)
Grade Control RC	6.25m x 12.5m
Resource Development RC	25m x 25m 25m x 50m
Resource Development DD	25m x 25m 50m x 25m 50m x 50m



Figure 7: Plan showing distribution of GC (white dot), RC (blue circle) and DD (red cross) collar locations. Preliminary pit design as at December 2015.



**Table 10: Recorded hole diameter by hole type**

Hole Type	Hole Size/Core diameter	Number of holes
DDH	PQ3 83mm (33% total count), HQ3 61mm (57% total count), NQ3 45mm (10% total count)	644
RC	100mm	4
RC	140mm	7,869

## 8.2. Data Accuracy and Precision

*Resource Development RC and DD: relative accuracy and precision*

Paired data shows that RDRC is biased high relative to DD (Table 11, Figure 8). RDRC samples are less variable, consistent with the significantly larger sample volume. The correlation is quite weak, attributed to the distance between samples in each pair (up to 4m) and imprecision on both data types.

**Table 11: Statistics of paired DD and RC data (GC excluded; 2m composites); pairs <4m separation.**

Domain	Pairs	Drill Maximum type	Mean Au	Variance	CV	Correlation
All	458	RCAu	26	1.95	9	1.5
		DDAu	42.7	1.75	14	2.1

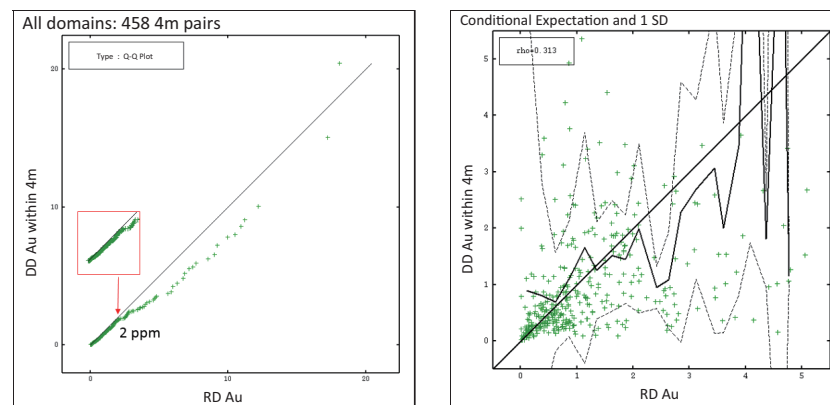


Figure 8: *Relative accuracy of 4m paired DD and RC (GC excluded) data (2m composites). The inset (red box) on Q-Q plot shows that RDRC samples are biased high relative to DD from 0 grade.*



*Combined resource and grade control RC and DD: relative accuracy and precision*

In mined areas with grade control RC drilling completed it is possible to identify pairs of RC (either RDRC or GCRC, termed 'combined RC') and DD data. Paired RC+DD samples were identified within a distance tolerance of 4m.

On pair-by-pair basis, Au grade from combined RC is higher than DD; a systematic difference (bias) exists. The bias is evident globally (all domains) and in individual domains (for example, in Feeder Zones 'FZ'), and is confirmed using pairs <2m apart and <4m apart (Table 12, Figure 10). DD tends to be higher than combined RC at low grades (0-1.5 ppm).

There is a large scatter on the combined RC vs DD XY scatter plot and poor correlation. The poor correlation reduces the reliability of the measurement of combined RC vs DD bias and is attributed to imprecision associated with pre-2014 GC RC in particular, and to natural variation at short distances (a nugget effect of approximately 20% is evident).

Gold occurs as fine disseminations within high-sulphide accumulations. The high sulphide is itself erratically distributed at mesoscopic scale. It is considered that RC samples are more representative of the mineralisation (and hence less biased) and more precise than half core diamond drill samples due to their larger volume and so their ability to better reflect mineralisation distribution.

Grade Control (GC) estimates are dominated by GC RC sampling. Historic reconciliation performance confirms that GC estimates more accurately predict mined head grades than DD and RC based estimates.

**Table 12: Statistics of paired DD and combined RC data (2m composites); pairs<4m separation**

Domain	Pairs	Drill type	Mean		Variance	CV	Correlation
			Max Au	Au			
All	3124	RCAu	73.3	2.01	10	1.6	0.42
		DDAu	47.2	1.63	9	1.8	
FZ	1762	RCAu	73.3	2.61	13	1.3	0.39
		DDAu	42.7	2.07	9	1.2	

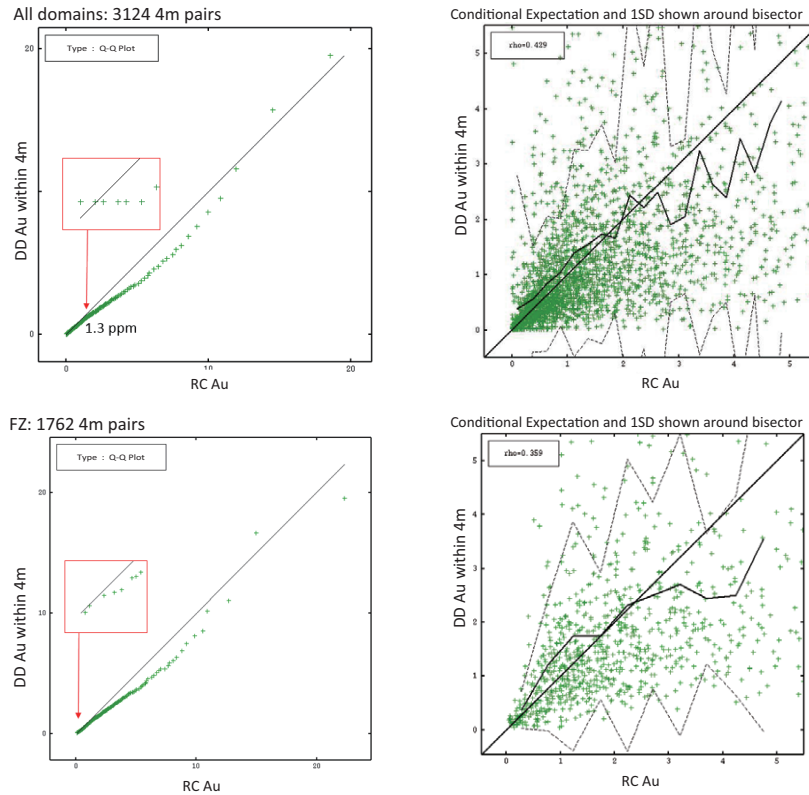


Figure 9: Relative accuracy of 4m paired DD and combined RC data (2m composites). FZ domain. The insets on Q-Q plots show the tendency for RC samples to be higher than DD samples even at low grades.

#### Resource development RC and grade control RC: relative accuracy

In mined areas with grade control RC drilling completed it is possible to identify pairs of Resource Development RC and GC RC data. Paired RDRC and GCRC samples were identified within a distance tolerance of 4m.

On a pair-by-pair basis, there is no overall bias between GC and RC drilling. GCRC tends to be slightly higher than RDRC at low grades (0-1 ppm); Figure 10, Table 13.

There is a large scatter on GC vs RC (XY scatter plot) and poor correlation. The poor correlation reduces the reliability of the measurement of bias and is attributed to imprecision particularly in pre-2014 GC RC, and natural variation at short distances (nugget effect).



**Table 13: Statistics of paired GC and RC data (DD excluded; 2m composites); pairs <4m separation. All domains.**

Domain	Pairs	Max Au	Mean		Variance	CV	Correlation
			RC Au	Au			
All	3376	RC Au	187	1.68	19	2.6	0.37
		GC Au	44.4	1.68	8	1.7	

The RC Au variance is sensitive to a small number of outlier values.

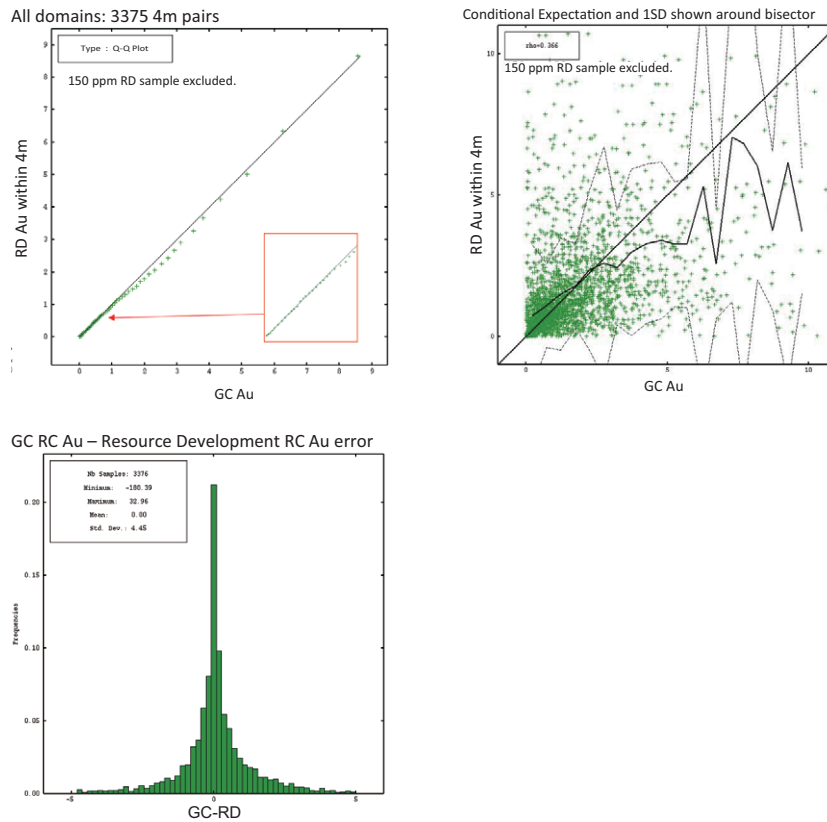


Figure 10: Relative accuracy of 4m paired GC and RC (DD excluded; 2m composites).





From this analysis the combination of the Grade Control RC and Resource Development RC and DD datasets was used for the estimate. As discussed above the use of GCRC was limited to the planned production volume to December 2016 while the combined RDRC and DD datasets were used throughout the remainder of the model. The RDRC drilling was designed to terminate at around 10-20m below the base of the current final pit design and so the deeper resource (outside current pit designs) is informed almost entirely by DD.

RDRC drilling (excluding GCRC) constitutes around 25% of the total drill metres in the estimation database so the estimate will retain a dominance of DD data below the 2016 production volume.

Several estimation options were identified in consideration of the mixed data set. Final estimation was completed using Resource Development RC and DD together. Grade Control RC was used (with RC and DD) for estimating the volume of planned production for the period to December 2016.

## **9. PRODUCTION RECONCILIATION**

PT AR reports positive Resource to Declared Ore Mined (DOM) reconciliation (grade, tonnes, metal) (Table 1 above).

The mined volume representing production in the period July 2014-June 2015 inclusive provides a basis for the following analysis. Close-spaced RC drilling supports reasonably accurate GC grade predictions. There is a strong information effect evident; closer spaced drill holes with larger volume add substantial grade and metal. The observed information effect supports the combined use of RC and DD data for Resource estimation (Figure 15, Figure 12).

An alternate estimation method called Co-Kriging (CK) has been implemented to provide a point of comparison with the Ordinary Kriged estimates forming the basis of the Resource estimate. Results of the CK are for comparison only and do not form part of the reported Resource. A brief description of the CK method is provided in Section 12.2 elsewhere in this report.

### **9.1. Estimates Using GC Data**

Estimates using GC data (effectively GC estimates) provide the most accurate estimates available. OK estimates have historically under-called recovered gold metal by around 6 percent.

When using GC data, CK estimates are marginally better than OK as they preserve the grade of RC samples (removing the low bias attributable to small core samples).



## 9.2. Estimates Not Using GC Data

In the absence of GC data, CK estimates are significantly better than OK as they preserve the grade of RC samples (removing the low bias attributable to small core samples).

## 9.3. Raw Sample Length and Composite Length

Raw sample lengths vary between drill type and program (Table 14, Figure 11). Composite length of 3m suits the raw sample lengths of angled holes, causing only a small number of 2m and 2.5m samples to be split. All other primary samples, including the dominant 1m RC and GC samples and 1.5m average DDH samples, are combined in 3m composites without splitting.

Compositing to 3m reduces Au grade variance a little more than the 2m compositing used in previous estimates, making data analysis easier and the estimation less sensitive to top cutting decisions. Three metre composites from angled holes are well suited to estimation of blocks with 2.5m or 5m vertical height.

Use of 3m composite length allows for use of 965 x 3m composite samples collected during the 2012 APRC drilling programme, without need to retrieve the 1m samples from stored residue.

**Table 14: Drilling types in the Resource database**

Hole Type	Hole Purpose	Sample Length		Mean
		Min	Max	
DDH	ResDev	0.1	440	1.5
RC	ResDev	1.0	5.0	1.0
RC	GC	1.0	6.0	1.3

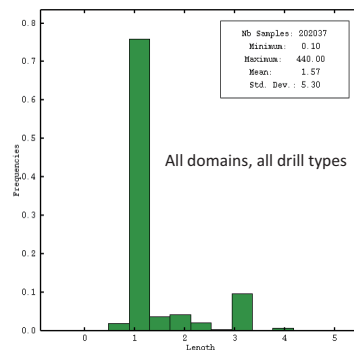


Figure 11: Histogram of raw sample length, all drill types.



#### 9.4. Non-sampled Intervals

Records for non-sampled intervals are entered to the database such that the full length of all holes is explicitly defined on the assay table. No further modification is necessary to ensure that non-sampled intervals are treated as very low grade (essentially 0 grade) intervals during estimation.

### 10. DATA ANALYSIS

#### 10.1. Summary Statistics

The distribution of 3m composite values for all variables is strongly positively skewed; examples are shown in Figure 12. A substantial amount of variance is attributable to a small number of high value composites.

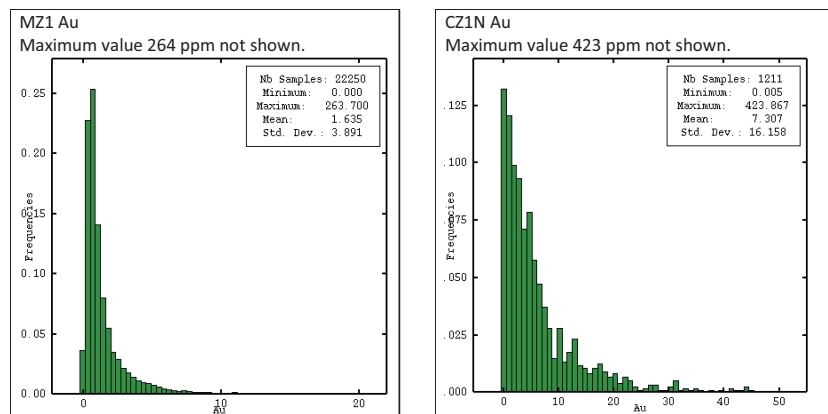


Figure 12: Skewed distributions for 3m composites, Au, Domains MZ1 and CZ1N

#### 10.2. Spatial Statistics

Experimental variograms for all variables, particularly Au, are sensitive to the skewness of the distributions. Pairwise Relative variograms were found to be significantly more structured than raw variograms, indicating that data transformation is advantageous. A clustering effect is evident in the statistics of all variables. De-clustering of data prior to data transformation was performed to avoid possible bias in variograms and to ensure consistency of mean grade (at 0 cut off) with final kriged estimates. An initial kriging, using an approximate (loosely fitted) pairwise relative variogram, has been used to provide kriging weights on each composited data location. The stored kriging weights were applied for all subsequent data analysis including summary statistics, Normal scores transform, experimental variograms.



The adopted data analysis workflow is as follows:

1. Generation of de-clustering weights by a preliminary OK. A pairwise relative variogram was made and modelled. OK used the pairwise relative variogram and 3m Au composites. Kriging weights were accumulated on each Au data point and stored on the data file. The Au estimate was not stored.
2. Data transformation by Normal Scores Transform (Gaussian Anamorphosis) using OK weights. As Au is sampled at all sample locations, OK weights for Au were used for Au and all other variables in the spatial data analysis process for final grades estimation.
3. Experimental variogram generation, variogram fitting (Transformed variables); back-transformation of variograms to Raw scale.
4. Ordinary Kriging for grades.

### 10.3. Experimental Variograms and Fitted Models

All experimental variograms were made using Normal Scores transformed data on 3m composites and with OK weights from the initial OK for Au. No data were cut or removed.

Gold variograms are characterized by low nugget, ranging from 15-25% of total variance. However, short-range directional structures, ranging from 10-30m depending on domain and direction, are present. Nugget plus short range directional structures account for approximately 50% of total variance. Longer range directional structures exhibit strong anisotropy with ranges in the plane of the domain 4 to 8 times longer than the range normal to the plane. Variogram anisotropy is aligned with interpreted grade trends and observed mineralized zone geometry.

The Ordinary Kriging approach uses a single variogram (per variable, domain) for combined Resource Development RC, GC RC and DD 3m composites; differences in sample precision and any impact on variogram between RC and DD samples are ignored.

#### *Nugget*

Short lag, omni-directional variograms were computed for interpretation of nugget effect. Nugget effect is typically low as a proportional of total sill but is normally associated with a short range directional structure.

#### *Anisotropy*

Mineralisation is interpreted to be preferentially aligned to near-vertical feeder structures and/or stratigraphy-parallel favourable horizons. Experimental variograms tend to be equally continuous in these orientations and preference is given to geological observations and interpretation, which favours the flatter, stratigraphy-parallel orientation.



### **Feeder zones**

Individual feeder zones (FZ, FZ309, PN) are modelled as near-vertical, roughly N-S trending structures. Experimental variograms show relatively long ranges consistent with the overall geometry of each feeder zone, roughly equal down dip and along strike, with much shorter ranges across strike.

### **Contact zones**

The main contact zone (CZ1) is divided into N and S to reflect the variation in orientation. CZ1 is thin (approximately 10 m wide) and flat dipping (30-40 degrees). CZ2 is a narrow zone dipping 45° towards 045.

### **Low grade and waste domains**

Minor feeder-type mineralisation occurs and variograms are anisotropic with N-S trending, steep E dipping planes.

### **Scree zone**

A shallow (5°) dip, roughly parallel to the topographic slope distal to the Purnama hill and main deposit, is applied to the minor scree-hosted mineralisation.

## **11. ESTIMATION METHOD AND PARAMETERS**

### **11.1. Adopted Estimation Strategy**

The adopted method for the final grade estimate is based on a zonation of the available data and consideration of short term (12 months) production areas (Figure 13). A volume representing planned production through to the end of December 2016 was identified (Pit zone B); for estimation of the principal mineralised domains in this zone, GC RC along with Resource Development RC and DD samples were used. A substantial amount of GC RC drilling has been completed in Pit zone B ahead of mining in 2016 (seen in Figure 3 above).

For the region below this, hosting the remaining resources (Pit zone C), GC RC data was not used for estimation; only Resource Development RC and DD samples were used. Mined areas extracted between July 2014 and June 2015 were re-estimated for comparison with previous estimates and actual production (Pit zone A).

For non-mineralised domains, no GC RC samples were used for estimation (Table 15).



The adopted estimation method is Ordinary Kriging, which has been standard practice for all previous Purnama estimates. Other than the zonation (Pit zones A, B, C) described above, differences in accuracy and precision between Resource Development RC, Grade Control RC and DD are not explicitly addressed during the estimation; that is, no distinction is made between RC and DD samples and bias and precision differences are ignored as the kriging treats all data on equivalent terms. The resultant Ordinary Kriged mean grade of estimated blocks is a mixture of RC and DD samples; the mean of the OK reflects the mean of mixed RC and DD samples.

**Table 15: Data types used for estimation, Domains**

Domain	Code	Description	Pit zone A	Pit zone B	Pit zone C
MZ1	1	Mineralisation Zone 1	RC+GC+DD	RC+GC+DD	RC+DD
MZ2	2	Mineralisation Zone 2	RC+GC+DD	RC+GC+DD	RC+DD
MZ3	3	Mineralisation Zone 3	RC+GC+DD	RC+GC+DD	RC+DD
CZ1N	4	Contact Zone 1 N	RC+GC+DD	RC+GC+DD	RC+DD
CZ1S	5	Contact Zone 1 S	RC+GC+DD	RC+GC+DD	RC+DD
CZ2	6	Contact Zone 2	RC+GC+DD	RC+GC+DD	RC+DD
FZ	11	Feeder Zone 1	RC+GC+DD	RC+GC+DD	RC+DD
PN	12	Purnama North	RC+DD	RC+DD	RC+DD
FZ309	19	Feeder Zone 309	RC+DD	RC+DD	RC+DD
BSZ	21	Black Shale Zone	RC+DD	RC+DD	RC+DD
VANH	22	VANh	RC+DD	RC+DD	RC+DD
CBPM	23	CBPM	RC+DD	RC+DD	RC+DD
CLY	24	Clay	RC+DD	RC+DD	RC+DD
BAS	25	Basalt	RC+DD	RC+DD	RC+DD
SCREE	26	Scree	RC+DD	RC+DD	RC+DD

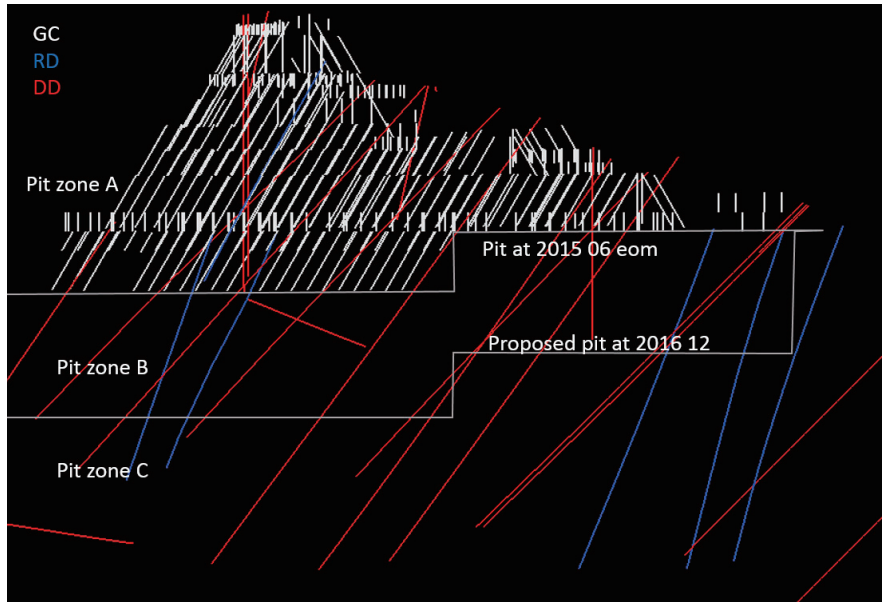


Figure 13: Schematic cross section showing distribution of drilling types and Pit Zones A, B, C for estimation.

## 11.2. Block Size

Block size selection has been a compromise between precision of geometry modelling, current and expected mining bench height, data spacing and estimation quality.

Regular blocks size 6.25m x 12.5m x 5m (E, N, RL) provide adequate resolution of domain geometry and are supported by available data as follows:

Estimation Pit zone B where GC RC drilling is at nominal 6.25m x 12.5m plus DD, RC.

Estimation Pit zone C where Resource Development RC drilling has been completed along with DD holes. In deeper and some lateral extremities, the adopted block size is too small for reliable local estimation. The reduced reliability of these areas is reflected in the kriging quality indicators and Resource classification. These areas are not in short or medium term mine production areas so they will not be scheduled in the mine plan at a scale where the local estimation is significant. They will also be subject to infill Resource Development drilling prior to production and GC drilling in the production phase.

Discretisation of 5 x 7 x 2 per block was determined on the basis of tests in pit zone C of each domain, and with reference to the nominal drill hole orientation, block geometry and modelled variogram.





### 11.3. Kriging Parameters

A single pass kriging methodology is adopted. Search distances are approximately at the variogram range in the along strike and down dip directions, or longer in some domains where data are wide spaced. The across-strike search distance is shorter than the across-strike variogram range in domains MZ1, MZ2 and MZ3 (these consist of several mineralised structures); the search distance is consistent with the average width of individual structures.

A minimum of 5, 3m composites is required for a block to be estimated; maximum number of composites is 20 (where GC RC data are used) and 32 (where GC RC not used). Fewer data were used when GC data was included to reduce the occurrence of negative weights caused by screen effect of multiple nearby samples.

Multiple kriging tests showed that there was only a small sensitivity to search parameters of measures of bias (slope of regression  $Z | Z^*$ ) and smoothing (Weight of the Mean) and precision (Kriging variance).

## 12. SENSITIVITIES

### 12.1. Metal at Risk

The high grade tail of the Au grade distribution (3m composites) is reasonably well informed on account of the substantial Resource Development RC and DD dataset and the large set of close-spaced GC RC data. This, along with robust definition of high grade mineralization domains, means that a medium to high level of confidence is placed on the high grade part of the distribution.

Multiple tests were made to evaluate the impact of high grade 3m composite samples on grade and contained metal estimates. In final estimates, grade and distance thresholds were applied depending on domain, variable and input data type. The thresholds were derived from the analysis of high grade trends in GC data and histograms of GC, RC and DD data. Indicator variograms were used to assess continuity of high grade zones. A nominal distance threshold of 10m (applied in all directions) was applied to all variables in all domains.

For Au estimation, some extreme values were truncated (trimmed but not removed) where distance between sample and block exceeded 10m. Where the distance threshold was not exceeded, the sample value was not cut (Figure 14). The grade and distance thresholds restricted the influence of very high grade composites during estimation, resulting in a 1% reduction globally in contained Au metal (Table 17). The influence of extreme value composite samples was similarly restricted during the estimation of secondary metals and deleterious elements.



A summary of the statistics of 3m composites for Au, along with an assessment of the high grade tail and final grade threshold applied during estimation is shown in Table 16. Grade thresholds applied in Pit zone B (where GC data is used) differed from those of Pit zone C, where GC data was not used.

**Table 16: Summary statistics of 3m composites (Au) and top cut grade threshold applied during estimation.**

*Grade Control data not used for estimation in Pit Zone C.*

Domain	BAS	SCREE	BSZ	CBPM	CLY	CZ1N	CZ1S	CZ2	FZ	FZ309	MZ1	MZ2	MZ3	PN	VANH
Composites Count	2,072	306	82	2,129	1,464	361	208	42	727	436	7,038	14,067	4,510	239	3,307
Maximum Au	3.9	3.2	1.1	7.7	1.3	107.9	26.5	21.6	87.4	15.6	248.2	124.1	43.7	22.8	6.4
Mean Au	0.1	0.6	0.2	0.1	0.1	8.4	2.8	6.9	4.2	0.8	1.2	1.0	0.8	2.1	0.1
Std. Dev.	0.2	0.6	0.2	0.4	0.1	10.3	4.1	4.5	6.9	1.0	3.5	2.0	1.6	2.7	0.3
CV	2.4	1.0	1.3	3.2	1.5	1.2	1.5	0.6	1.6	1.2	2.8	2.0	1.9	1.2	3.4
Q98	0.7	2.5	1.0	1.0	0.4	33.1	15.7	21.6	24.0	3.4	6.1	4.8	5.2	12.1	0.8
Q98.5	0.8	2.8	1.0	1.2	0.5	37.5	20.9	21.6	28.8	3.6	6.9	5.3	5.9	12.4	0.9
Q99	1.0	2.8	1.1	1.7	0.5	45.4	21.1	21.6	35.8	4.0	8.4	6.5	6.9	13.2	1.2
Q99.5	1.3	3.1	1.1	2.6	0.6	73.0	21.9	21.6	43.2	4.1	12.0	8.7	7.9	20.1	1.7
Q99.75	1.7	3.2	1.1	4.2	0.8	107.9	26.5	21.6	56.5	4.6	15.6	12.3	10.3	22.8	2.3
Q99.9	2.5	3.2	1.1	4.6	0.9	107.9	26.5	21.6	87.4	15.6	22.7	21.1	15.6	22.8	3.4
Maximum uncut GC						423.9	67.0	226.5	160.0	15.6	263.7	248.3	43.7		
Top cut grade value:															
OK2 Pit zone AB only	1.0	2.8	1.1	1.7	0.5	150.0	50.0	50.0	130.0	15.0	100.0	100.0	30.0	20.0	1.2
OK2 Pit zone C only	1.0	2.8	1.1	1.7	0.5	100.0	no cut	no cut	no cut	15.0	100.0	100.0	30.0	20.0	1.2

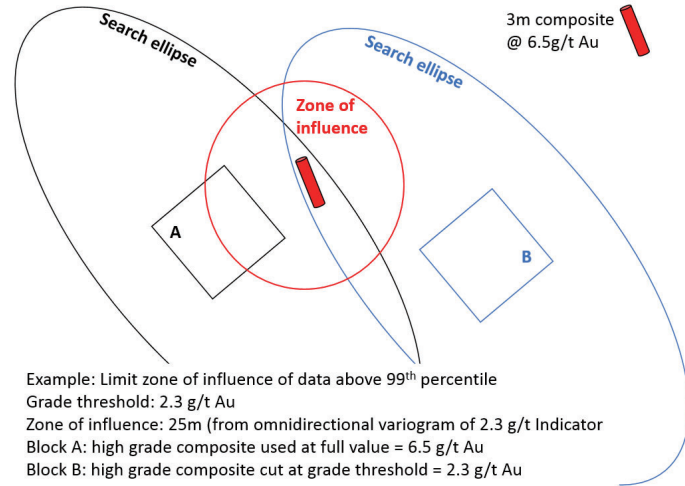


Figure 14: Schematic representation of application of top cut (trim), with application of grade and distance thresholds.

**Table 17: Impact of top cutting strategy on grade and metal estimates. Application of the top cut strategy reduces grade and contained metal of the estimate.**

	Cutoff	Ore		Grade Au	Au oz (Million)	Au		
		metal T	Tonnes (Million)			metal Tonnes	Ore Tonnes	Grade Au
Mineralised zones uncut	0	81.4	53.8	1.51	2.62	101%	100%	101%
	0.1	81.1	43.9	1.85	2.61	101%	100%	101%
	0.2	80.8	42.2	1.92	2.60	101%	100%	101%
	0.3	80.6	41.3	1.95	2.59	101%	100%	101%
	0.4	80.4	40.6	1.98	2.58	101%	100%	101%
CUT estimate	0.5	80.0	39.7	2.01	2.57	101%	100%	101%
	0	80.6	53.8	1.50	2.59			
	0.1	80.3	43.9	1.83	2.58			
	0.2	80.1	42.2	1.90	2.57			
	0.3	79.9	41.3	1.93	2.57			
	0.4	79.6	40.6	1.96	2.56			
	0.5	79.2	39.7	1.99	2.55			



## 12.2. Data Mixing

The combined use of RC and DD samples is a pragmatic approach taking into account the data distribution (neither data type provides adequate coverage on its own), and perceived difficulties in implementing a method that fully accounts for the differences in mean grade and sample precision.

For comparative purposes (not for Resource reporting), a Co-Kriging (CK) has been implemented. The CK method explicitly treats differences in bias and precision terms between RC and DD samples. The mean grade of estimated blocks is equal to the mean grade of 'primary' information (RC samples). DD samples are included as 'secondary' information, improving the quality of the estimation locally (adding roughness, reducing kriging errors). Precision differences (DD, RC) are dealt with by separate variogram components in the bi-variate RC, DD Au variogram.

The Co-Kriging results demonstrate that the combined use of all sample types in Ordinary Kriging is a conservative approach; the mean grade of the combination of RC and DD is lower than the mean grade of RC samples. As the mean of the CK estimate is equivalent to the mean of RC samples only, the CK estimate reports higher grade and increased metal compared to the OK estimate (Table 18). On this basis, the combined (mixed) use of RC and DD sample types in the published OK estimate is considered to be a conservative approach.

**Table 18: Comparison of OK and CK estimates showing conservative nature of OK relative to CK (an estimate not impacted by mean grade of DD samples).**

	Cutoff	Ore		Grade Au	Au		Grade Au
		Au metal	Tonnes T (Million)		metal Tonnes	Ore Tonnes	
CK	0	77.65	49.99	1.55	102%	100%	102%
	0.1	77.39	41.15	1.88	102%	99%	103%
	0.2	77.14	39.44	1.96	102%	99%	103%
	0.3	76.90	38.43	2.00	102%	98%	104%
	0.4	76.62	37.63	2.04	102%	98%	104%
	0.5	76.17	36.65	2.08	102%	97%	105%
OK2	0	75.94	49.99	1.52			
	0.1	75.69	41.44	1.83			
	0.2	75.46	39.85	1.89			
	0.3	75.26	39.04	1.93			
	0.4	75.04	38.41	1.95			
	0.5	74.67	37.59	1.99			



Comparison of estimates.  
Material mined July 2014 - June 2015

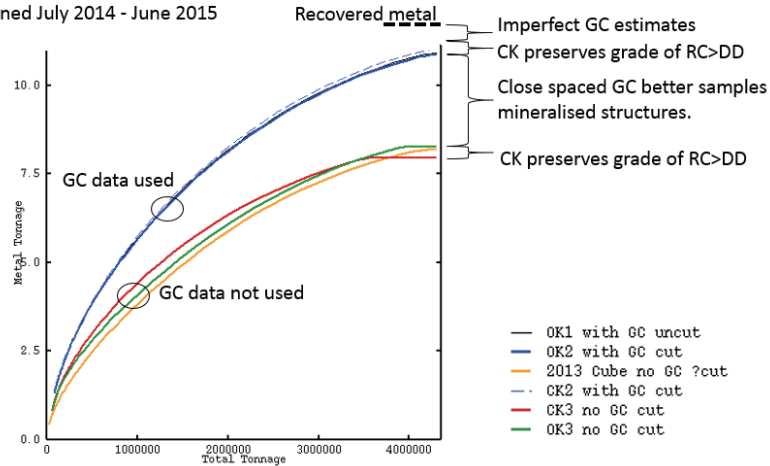


Figure 15: Metal quantity/Ore tonnage, 2014-2015 mined volume

Comparison of estimates.  
Material mined July 2014 - June 2015

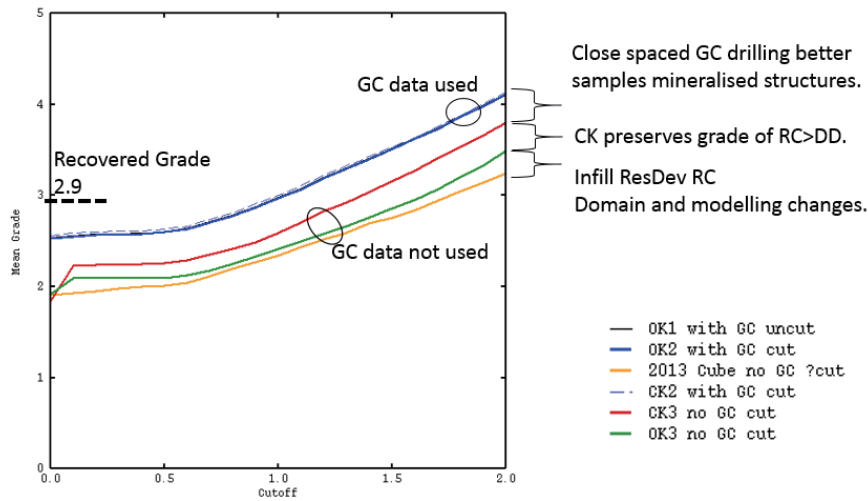


Figure 16: Grade at cut off, 2014-2015 mined volume

### 13. BULK DENSITY

#### 13.1. Data

No Bulk Density (BD) data has been added since the previous estimate and Resource report.

Available BD data consists of intact quarter or half cores from DD holes. Sample length varies according to core diameter: PQ 0.1m, HQ 0.15m, NQ 0.2m. BD measurement locations are not directly coincident with assay sample intervals.



### **13.2. BD Measurement Method**

Cut samples of intact core are dried at 80 degrees for 8 hours. BD is determined by application of Archimedes method. The sample is weighed dry in air, covered in plastic and weighed in water. Raw measurements are entered into a spreadsheet and calculations are automatic. A prepared standard sample is measured at the rate of 1 in 5 samples.

Previous work (2013) identified certain BD values that were considered to be invalid, being outside a range considered representative of true BD at this deposit (samples <1.8, >3.5). A small number of data values was excluded from the estimation process on this basis.

### **13.3. BD Zonation**

A set of domain model wireframes were constructed, representing a zonation of BD according to lithology, alteration and mineralization. BD domains are listed in Table 6.

### **13.4. BD Variogram Models**

BD variograms are characterised by high nugget effect and/or high variance short range directional structures. This is attributable to the general paucity of data at short distances, being limited to DD cores only. The low continuity variograms have a strong smoothing effect on estimated block BD values.

### **13.5. BD Estimation**

BD point samples were used to estimate block BD by Ordinary Kriging. Where estimation by OK was not possible due to insufficient data locally, the BD domain kriged average (median) was applied.

An isotropic search ellipse is necessary in order to allow sufficient data for estimation; this is consistent with the fitted variogram models. The wide-spaced data configuration is considered sufficient for reliable global BD estimation within each domain however the BD estimate is not particularly reliable locally.

On average, 8-12 data are used for each block BD estimate with a mean distance mostly in the range 57-82 metres (Table 19). The maximum allowable search distances are in some domains significantly longer than maximum variogram range, in order to access sufficient data.



**Table 19: Summary of data used in BD estimation (number of samples, distance to sample)**

BD domain	Blocks	Distance to data			Number of data used		
		Minimum	Maximum	Mean	Minimum	Maximum	Mean
CZ	4,532	5	143	75	1	16	10
HBX	10,021	16	143	57	1	16	11
MZ1	184,456	3	143	82	1	16	11
MZ2-3	501,366	8	143	80	1	16	12
PN	232	10	38	20	4	15	8
VANH	132,728	17	143	85	1	16	10

#### 14. RESOURCE CLASSIFICATION

An assessment of the uncertainty of the resource estimates has been made for internal use and external Resource reporting. The main criteria for the assessment is confidence in grade continuity, with consideration also of data spacing, data quality and grade estimation quality. Utilised indicators of Kriging quality include Slope of Regression and Weight of Mean (Simple Kriging).

A long section showing Mineral Resource classification domains is included in Figure 6. The figure includes the 2015 Ore Reserves final pit shell and the Reasonable Prospects reporting shell named by PT AR as shell “#35”.

Resources classified as Measured are within the GC data informing zone or where drill spacing is approximately 25m x 25m and the kriging Slope of Regression is greater than 0.9 while the kriging Weight of Mean is less than 0.2.

Resources classified as Indicated are outside the Measured volume and where drill spacing is nominally 50m and the kriging Slope of Regression is greater than 0.7 while the kriging Weight of Mean is less than 0.6.

After evaluation on a block by block basis, classification domain boundaries were smoothed to remove short scale variation between holes and drill fans. The boundaries were manually interpreted as sectional strings to create volumes applied to the model blocks.

Mineralisation not classified Measured or Indicated have been classified Inferred. Inferred Resources are predominantly below the oxide Reserve pit shell and inside the larger pit shell (#35) including sulphide primary mineralisation.

#### 15. REASONABLE PROSPECTS FOR EVENTUAL ECONOMIC EXTRACTION

Under the requirements of the JORC Code (2012) all reports of Mineral Resources must satisfy the requirement that there are reasonable prospects for eventual economic extraction (i.e. more likely than not), regardless of the classification of the resource.





Portions of a deposit that do not have reasonable prospects for eventual economic extraction must not be included in a Mineral Resource. The basis for the reasonable prospects assumption is always a material matter, and must be explicitly disclosed and discussed by the Competent Person within the Public Report using the criteria listed in JORC Table 1 for guidance. The reasonable prospects disclosure must also include a discussion of the technical and economic support for the cut-off assumptions applied.

The Mineral Resource statement for Purnama is reported at a 0.5ppm Au lower threshold or cutoff for all estimation blocks (or parts thereof) in the model which are located between two surfaces – the December 2015 End of Month survey of the current pit surface and a lower surface known as the #35 optimisation shell which sits below the December 2015 Ore Reserves optimised pit shell (refer Figure 6). Most of the Inferred Resource material in the estimate is outside of the #35 optimisation shell and so largely not reported in this statement.

The cutoff of 0.5ppm is unchanged from the prior estimate in 2013 and represents the current approximate threshold for material classification undertaken during the mining process (Grade Control) which separates waste material taken to a waste dump from low grade mineralised material which is stockpiled for eventual treatment based on current operating economics. It is considered that this is a reasonable cutoff assumption for future ore/waste classification based on current knowledge.

The upper reporting surface represents the surveyed pit position as at the end of December 2015.

The lower reporting surface represents an optimised pit shell run on longer term projections of operating cost, capital expenditure and the expected recovery using processing routes to allow future recovery of gold and silver from primary (unoxidised) material as well as in the current CIL plant.

The details of the optimisation are presented within internal PT AR documentation which the Competent Persons consider to reasonably represent a position for the long term potential of eventual economic extraction of the Mineral Resource. This position was also considered by 'peer reviewers' AMC Consultants.

Key features of this optimisation as advised by PT AR include a long term \$2000/Oz Gold and \$35/oz Silver price; the optimised pit shell includes a ramp and detailed design in its assessment; the existing Tailings Storage Facility supports further staged development to increase capacity to contain the total volume material in the optimised volume; an annualised mining limit of 12.5 Mt with an annual processing limit of 5.0Mt applied; an inclusion of USD450 Million of capital expenditure allowance for plant upgrade and relocation; and an assumed recovery for Au and Ag at 85% is applied based on 'sighter' test work and studies on sulphide ore feed undertaken in 2014.

## **16. MINERAL RESOURCE STATEMENT**

Mineral Resources as at 31 December 2015 are shown in Table 20. The bounding surface consists of a pit shell (identified as #35) containing oxide, mixed and sulphide material. The upper bounding surface is the as-built pit survey representing extent of mining as at 31 December 2015.



**Table 20: Mineral Resource table as at 31 December 2015.**

Deposit	Category	Tonnes (million)	Gold Grade (g/t Au)	Silver Grade (g/t Ag)	Contained Metal	
					Gold (Moz)	Silver (Moz)
Purnama	Measured	21	2.2	27	1.5	18
	Indicated	67	1.3	16	2.7	34
	Inferred	2	1.0	14	0.1	1.1
	Total	91	1.5	18	4.3	53

Reporting volume: in situ as at 1/1/2016, based on 2015 EOY as-built survey inside pit shell #35. Reported at a 0.5ppm Au cutoff, inclusive of Ore Reserves. Bulk Density by Ordinary Kriging.

## 17. COMPARISON WITH PREVIOUS ESTIMATE

The 2015 resource model is compared with the 2013 resource model in table 19. The volume used for reviewing this comparison is the long term planning pit shell from the 2015 Reserves estimate. Identical cut-offs are used between the two estimates and blocks are reported as their proportions within the volume applied.

The 2015 estimate has seen an overall increase in contained Au metal in this volume by 16% combining a grade increase of 12% with a tonnage increase of 4%. This increase dominantly reflects the impact of the additional RC drilling data used in the estimate, either in the Zone B part of the 2015 estimate where Grade Control RC data is used, or in the Zone C part of the 2015 estimate where Resource Development RC is used, along with prior diamond drilling information. The positive grade bias from the RC sampling is the underlying contributor to this increase.

Reconciliations with production project to date indicate that more gold occurs in the deposit than estimated by the 2013 resource model and so this increase in 2015 should lead to improved reconciliations of Ore Reserves with mill reconciled mine production.

**Table 19: Comparison of 2015 and 2013 estimates at 0.5 Au cut off.**

*Note: for comparison only – not the final Resource statement.*

Cutoff 0.5 g/t Au	2015 estimate			2013 estimate			Comparison		
	Moz Au	Tonnes (m)	Au ppm	Moz Au	Tonnes (m)	Au ppm	Moz Au	Tonnes	Au ppm
MEASURED	1.45	19.52	2.31	1.26	19.32	2.02	115%	101%	114%
INDICATED	0.99	18.81	1.64	0.85	17.72	1.50	117%	106%	110%
INFERRED	0.003	0.01	0.92	0.001	0.05	0.75	263%	213%	123%
<b>TOTAL</b>	<b>2.45</b>	<b>38.43</b>	<b>1.98</b>	<b>2.11</b>	<b>37.09</b>	<b>1.77</b>	<b>116%</b>	<b>104%</b>	<b>112%</b>

Reporting volume: in situ as at 1/11/2015 (based on 2015\_10eom as built survey); within preliminary pit 201512121tp. Bulk Density by Ordinary Kriging. Full block evaluation. For comparison only, this table does not form part of the Mineral Resource statement.



## 18. JORC CODE, 2012 EDITION – TABLE 1

### Purnama Mineral Resource December 2015

#### Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"><li>• 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.</li><li>• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li><li>• Aspects of the determination of mineralisation that are Material to the Public Report.</li><li>• In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</li></ul>	<ul style="list-style-type: none"><li>• Primary mineralisation at Purnama is refractory with gold in the matrix of sulphide minerals. Gold recovery in the current mine is from fully or partially oxidised material in the upper sections of the orebody and recovered using cyanide leach processes.</li><li>• The amount of oxidation in samples is used to determine expected gold recovery at any location in the ore reserves estimate. It is measured by assaying for Sulphide Sulphur through acid digests in the lab as well as total contained gold using the fire assay technique. A cyanide soluble gold analysis is also undertaken on samples above 1 ppm gold as a check on this assessment.</li><li>• Samples informing the resource model are predominantly from half diamond drill (DD) core in PQ3, HQ3 or NQ3 size (75% drill metres totalling 94km) and 5" Resource Development Reverse Circulation (RC) drilling (25% drill metres totalling 32km). Additionally, ~5400 holes (95km) from Grade Control (GC) RC are used to inform the model immediately below the current pit floor for a distance of around 20m.</li></ul>



## Criteria

## JORC Code explanation

## Commentary

- The RC drilling data is new for this estimate and was not used in the prior (2013) Purnama estimate. Some additional diamond drilling has been added since the 2013 estimate although this is deep drilling undertaken to investigate the primary sulphide resource and so has limited influence on the open pit exploitable resource for processing via cyanide leaching.
- Sampled materials have been either half sawn core or for RC drilling subsamples of the recovered material collected at the rig and dried, crushed then further subsampled in a laboratory. RC sampling processes and outcomes are believed to be appropriate, undertaken to good practice industry standard and have had Quality Assurance/Quality Control (QAQC) measures applied to assess representivity.
- For RC field duplicate sampling has been undertaken at the rate of 1:20 samples. Sampling imprecision analysis has been undertaken between the field duplicate RC and half core diamond sampling with RC samples exhibiting a lower level of imprecision compared to diamond half core due to the larger volume of primary sample and equi-probable subsampling.
- For RC drilling, sampling was predominantly on routine 1m intervals and collected using a 3 tier riffle splitter at the rig to produce a 2-3kg subsample, which is dried and crushed in the lab and riffle split again to ~ 1kg for grinding in the lab in LM2 ring pulverisers prior to fire assay analysis.



Criteria	JORC Code explanation	Commentary
Drilling techniques	<ul style="list-style-type: none"><li>• Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, 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.).</li></ul>	<ul style="list-style-type: none"><li>• RC sampling was undertaken by PT Agincourt Resources (PT AR) field crews of 4-5 people collecting the cyclone underflow in lined wheelbarrows, splitting via Jones riffle splitters and collecting routine field duplicates Samples were weighed on submission to the lab to allow assessment of primary sample recovery along with visual estimates.</li><li>• For diamond drill core, samples were selected on geological boundaries, half sawn for sampling in the PT AR core shed and then dried and crushed in the lab before being riffle split and pulverised for analysis.</li><li>• The most recent drilling was undertaken by track mounted RC rigs operating on the pit floor drilling 5 ¼" (140mm) holes down to 200m. Face sampling hammers have been used as have booster and auxiliary compressors to ensure sample return was maximized, particularly where moisture was encountered in the drilling. The mineralisation at Purnama is accompanied by silicification and the hard ground is well suited to percussion drilling methods, although abrasive on equipment.</li><li>• For diamond drilling, core was recovered using triple tube equipment in predominantly HQ and NQ size with the hole commencing in PQ. Core was not generally oriented and recovery is considered acceptable for this geological environment. Length weighted average recovery for the entire core dataset is around 86%.</li></ul>



Criteria	JORC Code explanation	Commentary
Drill sample recovery	<ul style="list-style-type: none"><li>• Method of recording and assessing core and chip sample recoveries and results assessed.</li><li>• Measures taken to maximise sample recovery and ensure representative nature of the samples.</li><li>• 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.</li></ul>	<ul style="list-style-type: none"><li>• Field sampling crews recorded observed moisture in samples. If samples were significantly undersized this was noted in the database via field sheets.</li><li>• In the recent program all samples delivered to the lab were weighed after drying to monitor relative recovery after field splitting.</li><li>• In extremely wet situations (e.g. water running from the cyclone) samples were not collected. Where damp and wet samples were returned the entire sample was collected and allowed to drain/dry before subsampling via riffle splitter.</li><li>• No indications of grade/recovery relationships have been seen in the data.</li></ul>
Logging	<ul style="list-style-type: none"><li>• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li><li>• Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li><li>• The total length and percentage of the relevant intersections logged.</li></ul>	<ul style="list-style-type: none"><li>• All Core and RC chips are logged with data collected on lithology and alteration. For core, hardness, Rock Quality Designator (RQD), structure and detailed mineral species data is also collected.</li><li>• The level of geological detail from chip samples is less than for core yet still captures the dominant lithology and alteration grouping which is validated against open pit mine exposure. Geologists working on this program have been seconded from the mine where they are involved and experienced in daily RC GC drilling, logging and mapping to support the mining operation. The data collection programs have used standardised logging codes and processes applied across the mine site, supported by Standard Operating Procedure (SOP) documentation.</li></ul>



Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"><li>• If core, whether cut or sawn and whether quarter, half or all core taken.</li><li>• If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</li><li>• For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li><li>• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li><li>• Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li><li>• Whether sample sizes are appropriate to the grain size of the material being sampled.</li></ul>	<ul style="list-style-type: none"><li>• A representative chip sample is retained in trays per meter. All half core is retained for reference and further sampling if required. Some core has been specifically drilled for metallurgical test work and fully consumed in same.</li><li>• All core is photographed as are the chip trays from recent RC holes RP113-RP255 with images stored on the mine site server.</li><li>• Core was diamond sawn and half sampled. Some zones were ¼ core or fully sampled for early metallurgical test or thin section/research sampling.</li><li>• RC samples were riffle split using a 3 tier or 50/50 Jones riffle splitter. The majority of samples were returned to the surface dry although some wet holes were encountered in the north eastern sector of the pit. Moist samples were drained/dried on woven sacks and riffle split while very wet samples were not collected.</li><li>• For core the samples were selected on geological boundaries, half sawn then dried, crushed and riffle split in the lab prior to pulverisation.</li></ul>





## Criteria

## JORC Code explanation

## Commentary

- Field crews had SOPs and diagrammatic subsampling workflows for reference at sites. Issues with sampling were identified early in the recent program and addressed to improve sample quality. This included returning to a 1m downhole sample interval compared to 3m composites as applied in GC RC drilling. 1:20 field duplicates have been collected for all RC drilling in both GC and resource development drilling.
- A program of second half core analysis was undertaken on historical Purnama core to investigate the relative sampling imprecision between half diamond core and RC with RC samples returning far superior (reduced) level of sampling imprecision. This is understood to be a function of larger primary samples in RC drilling combined with equi-probable sampling through the use of riffle splitting.
- Primary mineralisation at Martabe is generally very fine grained being less than 5µm in size, contained in arsenic pyrite and pyrite. A 'nugget effect' occurs due to the erratic distribution of the sulphide minerals in the alteration system which accompanies mineralisation. Hence larger volume samples, adequately sub-split, are significantly better as the 5 ¼" (140mm) RC hole has effectively 9 times the volume of half HQ Triple Tube (TT) core and 16 times the volume of half NQTT core.



Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	<ul style="list-style-type: none"><li>• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li><li>• For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li><li>• Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li></ul>	<ul style="list-style-type: none"><li>• Gold analysis has been undertaken by fire assay with generally a 50 gm charge for total metal content with an acid digest finish. Cyanide soluble gold, silver and copper analyses were undertaken on samples where gold was greater than 1ppm. Silver, copper, arsenic and calcium were analysed using 2 and 4 acid digest and ICP finish. Sulphide Sulphur (SxS) was also collected for a large number of samples particularly in mineralisation as it is used to estimate expected plant recovery in the Reserves process.</li><li>• No geophysical tools were utilized for analysis and portable XRF data was not collected.</li><li>• All sample batches sent for analysis contained Quality Control samples including field duplicates (RC 1:20), commercial Certified Reference Materials (1:20) and pulp repeats (2 per batch or 1:20).</li><li>• For the recent (2015) RC drilling program a prudent decision was made to submit samples to a commercial laboratory in Jakarta for preparation and analysis as a means to improve sampling and analytical precision, and to a lesser extent analytical accuracy. Assessment of the QA/QC performance of the site laboratory had indicated sub-optimal precision but no overall bias. Around 35% of the 2015 RC resource development drilling campaign samples were assayed using the onsite lab with the remaining 65% of samples being assayed by a laboratory in Jakarta.</li></ul>



Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	<ul style="list-style-type: none"><li>• The verification of significant intersections by either independent or alternative company personnel.</li><li>• The use of twinned holes.</li><li>• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li><li>• Discuss any adjustment to assay data.</li></ul>	<ul style="list-style-type: none"><li>• Significant intersections have been reviewed by cross checking logged mineralisation and assay data against geological domain and core photography. External review has been undertaken using experienced consultants.</li><li>• This estimate is an update of a prior resource model (2013) and the deposit is in the process of mining having commenced production in mid-2012. Reconciliation of Resource estimates with mining production data, Grade Control estimates and mill production data allows validation of mineralisation controls and geological domains in the asset. Repeated above-expectation metal recovery in the plant compared to the diamond drilled resource model has prompted infill drilling with RC. Historically, review of the resource has been undertaken by technical teams from many sources including consulting groups and the current work is being undertaken with the assistance of external geological consultants James Pocoe and Dale Sims who are joint Competent Persons for this estimate.</li><li>• There are around 13 diamond/diamond twin holes in the Purnama dataset as well as 7 RC/RC twin holes and 9 RC/diamond twin holes. Although twin holes are not exactly drilled on the same path they are in reasonably close proximity to test short range continuity or difference between grade and geology. Although never identical there is a strong correlation between close spaced drilling data to confirm the grades and geology in these 'twinned' instances and totally different results are not evident.</li></ul>



## Criteria

## JORC Code explanation

## Commentary

- Analysis of RC-DD co-located pairs (maximum separation distance 4m) shows that at a local scale, DD samples are biased low relative to RC samples.
- Analysis of RC-GC co-located pairs (maximum separation distance 4m) shows that at a local scale, GC samples are not biased relative to RC samples. There is a large scatter attributed to lower precision of GC sampling relative to Resource Development RC.
- Procedures and processes have been established over many years of resource development and mine production since discovery of the district in 1997. Written and diagrammatical workflow documentation is used to control process quality with field workers with external review by both CPs as part of the most recent program.
- No adjustments have been made to assay data received from laboratories. Formally reported final results are stored in the PT AR Resource database.
- Use of mixed drill data types:
  - o GC RC data is unbiased relative to Resource Development RC both on a local (paired) basis and globally.
  - o GC RC and Resource Development RC data is biased high relative to Resource Development DD data, both on a local (paired) basis and globally.
  - o All data types are used on an equivalent basis for the estimation. This is deemed a conservative approach on the basis that DD data reports lower Au grades on average relative to RC samples.



Criteria	JORC Code explanation	Commentary
Location of data points	<ul style="list-style-type: none"> <li>• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>• Specification of the grid system used.</li> <li>• Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>o Grade Control data is used (along with Resource Development RC and DD) to estimate material scheduled for mining in 2016, but is not used for estimation of deeper material:</li> <li>o Estimation zone 1: in-situ material in a 20m slice immediately below the current pit floor (as at EOM June 2015). GC RC drill data is used, along with Resource Development RC and DD data.</li> <li>o Estimation zone 2: In situ material below Estimation zone 1. Combined use of Resource Development RC and DD data only (no GC).</li> </ul> <ul style="list-style-type: none"> <li>• All drill hole collars have been surveyed using professional surveyors with surface collars validated against a LIDAR-based pre-mining topography. Some adjustment has been undertaken to correct data entry issues in collars from all drilling including grade control and RC holes. All downhole surveys from the recent RC program have been validated against the digital files from the downhole survey tool where possible and all hole traces have been inspected for unusual deviation. Some hole trace smoothing was applied where considered appropriate.</li> <li>• The grid employed is UTM zone WGS47N Datum WGS84. No local grids have been used.</li> <li>• Topography over the pit is based on LIDAR. Current pit as constructed shapes are from the mine survey team based on daily pickups.</li> </ul>



Criteria	JORC Code explanation	Commentary
Data spacing and distribution	<ul style="list-style-type: none"><li>• Data spacing for reporting of Exploration Results.</li><li>• Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li><li>• Whether sample compositing has been applied.</li></ul>	<ul style="list-style-type: none"><li>• In the prior resource estimate (2013), resource development diamond drill hole spacing was nominally 25mN x 25mE in the central high grade section of the deposit and opening to 50mN x 25mE then 50mN x 50mE at the outer edges moving progressively away from the higher grade zones. Infill resource development RC drilling has been routinely undertaken on 50mN x 25mE spacing and has over-drilled any proximal prior diamond data thereby twinning holes in some instances. In comparison with reconciled grade and geological data from the 12.5mN x 6.25mE GC RC drilling undertaken for production, the resource development data is adequate to allow geological interpretation and grade estimation and the classification system reflects production experience.</li><li>• Samples have been composited within the estimation domains to 3m but the domains have been constructed on non-composited information to ensure close honouring of geological contacts.</li></ul>



Criteria	JORC Code explanation	Commentary
Orientation of data in relation to geological structure	<ul style="list-style-type: none"><li>• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li><li>• If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li></ul>	<ul style="list-style-type: none"><li>• The diamond drilling has been undertaken on east-west sections drilling both to the west and the east to provide a high degree of bi-directional or 'scissored' coverage over the deposit. The dominant controls on mineralisation are either steeply dipping north-south trending 'feeder zones' of hydrothermal breccia and quartz vein, or moderately east dipping stratigraphic controls on alteration. Most infill RC has been drilled dipping 60 degrees to the west thereby adequately testing both steep and shallowly east-dipping trends. Some steep diamond drill holes in the north of the deposit have drilled down a feeder zone system and this has been identified in the data; their very high grades are controlled in the model through domaining.</li></ul>
Sample security	<ul style="list-style-type: none"><li>• The measures taken to ensure sample security.</li></ul>	<ul style="list-style-type: none"><li>• Recent RC drill samples have been either hand delivered to the onsite lab or transported in locked sea containers to the lab in Jakarta. All road transported samples were moved under direct supervision of the site logistics group. Prior diamond drilling programs have had samples delivered by PT AR to the lab prep facility in Padang by land transport.</li></ul>
Audits or reviews	<ul style="list-style-type: none"><li>• The results of any audits or reviews of sampling techniques and data.</li></ul>	<ul style="list-style-type: none"><li>• The project has been reviewed by a number of consultants and corporate entities as part of an ongoing technical review and due diligence program. Although the results of these audits remain confidential no major issues have been raised to our best knowledge. Reviews of RC field sampling processes as part of this program have led to improvements in sample quality and representivity.</li></ul>





## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"><li>• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li><li>• The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li></ul>	<ul style="list-style-type: none"><li>• The Martabe Gold Mine is located in the Martabe Contract of Work (CoW) area. This “Generation 6” COW was signed in 1997 and provides for a minimum 30 years’ tenure after production commenced in 2012. Two potential extensions of 10 years each are specified in the CoW.</li><li>• The CoW covers a total area of 1,639 km<sup>2</sup>. Three relinquishments were made by previous operators, in compliance with the CoW. This has fulfilled the contractual requirement of the CoW and no further relinquishment is necessary until the CoW is terminated. The Martabe Gold Mine was fully permitted at the time of writing. Under Indonesian laws this includes mine operation permits, water discharge permits for treated mine runoff and process waters, various environmental approvals, and gold and silver bullion export permits amongst other permits and approvals. The Purnama, Ramba Joring and Barani preserves are within under the current Mining Permit (AMDAL).</li></ul>



Criteria	JORC Code explanation	Commentary
Exploration done by other parties	<ul style="list-style-type: none"><li>Acknowledgment and appraisal of exploration by other parties.</li></ul>	<ul style="list-style-type: none"><li>The district was discovered by the Normandy Mining, Anglo Gold Corporation joint venture in 1990.</li><li>The Martabe deposits were discovered in 1997 during a regional reconnaissance exploration program conducted by the Normandy and Anglo Gold joint venture. A bulk leach extractable gold (BLEG) stream sediment survey located the Martabe cluster of deposits. Three deposits were initially identified, including the Purnama deposit.</li><li>Surface exploration work included mapping, rock and soil sampling. Drilling commenced at Barani in 1998 and at Uluala Hulu in 2001. Multiple phases of exploration up to delineation drilling were continued throughout several ownership changes. A high level of continuity and work quality has been maintained over the project life.</li></ul>
Geology	<ul style="list-style-type: none"><li>Deposit type, geological setting and style of mineralisation.</li></ul>	<ul style="list-style-type: none"><li>Purnama is a high sulphidation epithermal deposit with mineralisation hosted in an andesitic volcanic sequence with volcanics, breccias and tuffs hosting mineralisation along with the steep 'feeder zones' of hydrothermal breccia and quartz vein. Primary mineralisation is refractory with fine grained gold hosted within sulphide mineralisation. Variable oxidation has occurred along favourable units and structures allowing cyanide recovery of oxidised sulphide mineralisation. The processing plant at Martabe utilises a cyanide leach recovery process.</li></ul>



Criteria	JORC Code explanation	Commentary
Drill hole information	<ul style="list-style-type: none"><li>• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:<ul style="list-style-type: none"><li>o easting and northing of the drill hole collar</li><li>o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li><li>o dip and azimuth of the hole</li><li>o down hole length and interception depth</li><li>o hole length</li></ul></li><li>• If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li></ul>	<ul style="list-style-type: none"><li>• The database used for the estimate (as at 30 Sept 2015) contains:<ul style="list-style-type: none"><li>o 6319 holes in total for 246,621 metres</li><li>o 602 diamond drill holes in PQ3 (33%), HQ3 (57%) and NQ3 (10%) size for 93,739 metres</li><li>o 298 resource development 5 ¼" (140mm) RC drill holes for 31,902 metres</li><li>o 5,419 grade control 5 ¼" (140mm) RC drill holes for 95,048 metres (used to influence the next 12 months' production volume only)</li></ul></li><li>• Pit mapping from mining project to date has been compiled on 10m RL plans.</li><li>• No information is omitted from use in the estimate.</li></ul>
Data aggregation methods	<ul style="list-style-type: none"><li>• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li><li>• Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li><li>• The assumptions used for any reporting of metal equivalent values should be clearly stated.</li></ul>	<ul style="list-style-type: none"><li>• All compositing within domains occurs as length weighted averages. Drilling data has been composited on 3m aggregates. Short intervals at the ends of domains are incorporated into the preceding interval. No raw sample values were cut or trimmed prior to sample regularization.</li><li>• The impact of extreme composite grade values on estimated metal was evaluated on a variable and domain basis. The influence of extreme value composite samples was limited through the application of grade and distance thresholds during estimation.</li><li>• No metal equivalents have been applied in this estimate.</li></ul>



Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"><li>• These relationships are particularly important in the reporting of Exploration Results.</li><li>• If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li><li>• If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li></ul>	<ul style="list-style-type: none"><li>• No individual intercepts are reported. The estimate is undertaken for the whole Purnama resource which has been extensively drilled and has been in production since mid-2012. The geometry of the mineralisation controls and the various drilling angle employed is discussed above.</li></ul>
Diagrams	<ul style="list-style-type: none"><li>• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li></ul>	<ul style="list-style-type: none"><li>• Representative plans and sections are presented in the Competent Persons Report.</li></ul>
Balanced reporting	<ul style="list-style-type: none"><li>• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li></ul>	<ul style="list-style-type: none"><li>• The global resource is reported in the Resource Statement.</li></ul>
Other substantive exploration data	<ul style="list-style-type: none"><li>• Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li></ul>	<ul style="list-style-type: none"><li>• No additional information has been used although production experience to date has been used for refining the geological and mineralisation models.</li></ul>



Criteria	JORC Code explanation	Commentary
Further work	<ul style="list-style-type: none"><li>• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li><li>• Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li></ul>	<ul style="list-style-type: none"><li>• Ongoing Resource evaluation drilling and Grade Control drilling will be planned following the completion and public reporting of this estimate.</li></ul>

*Section 3 Estimation and Reporting of Mineral Resources*

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	<ul style="list-style-type: none"><li>• Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li><li>• Data validation procedures used.</li></ul>	<ul style="list-style-type: none"><li>• Data recording in recent programs has been undertaken on digital devices with built-in validation libraries from paper-based field sheets. Manual checking of around 10% of database data against original field sheets has been undertaken to assess the level of routine data entry error rates without significant concern.</li><li>• All data has been visually validated and compared to surrounding information to assess consistency of data recording and geological assessment. Assay data of significant intersections has been reviewed against core photography to confirm geological nature and alteration as part of the modelling process.</li></ul>



Criteria	JORC Code explanation	Commentary
Site visits	<ul style="list-style-type: none"><li>• Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li><li>• If no site visits have been undertaken indicate why this is the case.</li></ul>	<ul style="list-style-type: none"><li>• The Competent Persons have been involved in site work as part of this and prior work:<ul style="list-style-type: none"><li>o Dale Sims has been involved with the project since 2011 and assisted with the geological interpretation and modelling for the 2013 resource. Monthly site visits have been undertaken with this work since May 2015 for a total of ~10 weeks onsite. Dale's area of responsibility has been in geological modelling, classification and data integrity.</li><li>o James Pooce has been involved in site training and staff development since August 2015 and has undertaken over 5 weeks of site work through 3 visits for this estimate. James' area of responsibility has been in spatial analysis, estimation and reporting.</li><li>o Both Competent Persons have worked closely with site staff to ensure skills transfer and strong grounding in site experience for the model outcomes.</li></ul></li></ul>



Criteria	JORC Code explanation	Commentary
Geological interpretation	<ul style="list-style-type: none"><li>• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li><li>• Nature of the data used and of any assumptions made.</li><li>• The effect, if any, of alternative interpretations on Mineral Resource estimation.</li><li>• The use of geology in guiding and controlling Mineral Resource estimation.</li><li>• The factors affecting continuity both of grade and geology.</li></ul>	<ul style="list-style-type: none"><li>• The geological model is based on mine production and pit mapping as well as an evolving understanding of the mineralisation controls and geology from increased drilling data density and mining exposure. As such there is a high general level of confidence in the underlying geological model for the resource estimate.</li><li>• Data is predominantly drilling information and pit mapping calibrated to production. The step change increase in data density with Grade Control (GC) has been managed to allow projection of GC data for around 20m below the pit floor into the resource volume; covering planned production areas out to December 2016.</li><li>• All domains are based on a combination of geology and alteration and the interpreted controls on mineralisation based on production experience. Grades alone are not used to define domains.</li></ul>





Criteria	JORC Code explanation	Commentary
Dimensions	<ul style="list-style-type: none"><li>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</li></ul>	<ul style="list-style-type: none"><li>Being hosted by an alteration system in a volcanic terrain there is a fundamental irregularity in specific contact continuity in the deposit but a strong overall level of unit and sequence order. Understanding of the detailed structural and architectural aspects of the terrain is still evolving along with ongoing pit exposure and close-spaced RC GC drilling data. The overall lithological and alteration model as used in 2013 is still regarded as valid but refinement of mineralisation domains through an improved understanding of the controls and arrangement in the pit has been possible in this model update.</li><li>The major factors in controlling grade continuity and orientation are the presence of mineralised steep feeder zones whereby the alteration fluids gained access to the rock mass, and the overall easterly stratigraphic dip of the volcanic units which were subsequently altered during orebody development yielding a flatter mineralisation trend with an approximately 30-degree dip.</li><li>The generalised dimensions of Purnama are 1,500m along N-S strike by 400m E-W width by 500m vertical extent.</li></ul>



Criteria	JORC Code explanation	Commentary
Estimation and modelling techniques	<ul style="list-style-type: none"><li>• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li><li>• The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li><li>• The assumptions made regarding recovery of by-products.</li><li>• Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</li><li>• In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li><li>• Any assumptions behind modelling of selective mining units.</li><li>• Any assumptions about correlation between variables.</li><li>• Description of how the geological interpretation was used to control the resource estimates.</li><li>• Discussion of basis for using or not using grade cutting or capping.</li><li>• The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li></ul>	<ul style="list-style-type: none"><li>• Mineralisation domains are defined on the basis of a combination of lithological, alteration, structural and Au grade variables. Statistics confirm that the domain definition is appropriate for the estimation of gold (Au), silver (Ag), copper (Cu), mercury (Hg), arsenic (As), sulphide Sulphur (SxS) and calcium (Ca) as well as cyanide soluble variants of some of these elements.</li><li>• A medium to high level of confidence is attached to the latest iteration of domain definition, on the basis of significant additions to data (recent Resource Development RC drilling); utilisation of GC data in the interpretation in the upper levels; and the systematic re-assessment of all available data including review of core and chip logs and photographs.</li><li>• Data preparation: raw sample intervals range from 0.5m to 4m but predominantly 1.5m (75%) or 3m (10%); approximately 5% of raw sample intervals are at 2m. Raw intervals were length-weighted within each mineralization domain to nominal 3m length. Isatis geostatistical software v2015 was used to create the composites. No sample grade cutting was applied prior to or during the sample regularization process.</li><li>• A small number of co-located data (coincident composites with 0.2m) occur, mostly where both GC and Resource Development holes exist; one of the co-located samples was randomly selected and excluded from the data set prior to Kriging.</li><li>• Metal grades (Au, AuCN, Ag, AgCN, Cu, CuCN, As) of 3m composites were evaluated separately within each mineralized domain.</li></ul>



Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"><li data-bbox="916 412 1321 676">• A clustering effect is evident in the data, attributed to some clustering of drill holes due mostly to site access constraints. Summary statistics and experimental variograms were computed using de-clustering weights derived from a preliminary Ordinary Kriging (OK).</li><li data-bbox="916 687 1321 1091">• Due to the skewed nature of (Au) distributions in all domains, Normal-Scores transformed data were used for experimental variograms. No top-cutting of high grades was required at the data analysis stage. Resultant variograms are well structured and considered reliable estimates of the true variogram. Variogram models were back-transformed to raw space prior to use in Ordinary Kriging.</li><li data-bbox="916 1102 1321 1676">• General description of variograms: Gold variograms are characterized by low nugget, ranging from 15-25% of total variance. However, short-range directional structures, ranging from 10-30m depending on domain and direction, are present. Nugget plus short range directional structures account for approximately 50% of total variance. Longer range directional structures exhibit strong anisotropy with ranges in the plane of the domain 4 to 8 times longer than the range normal to the plane. Variogram anisotropy is aligned with interpreted grade trends and observed mineralized zone geometry.</li></ul>



### Criteria

### JORC Code explanation

### Commentary

- Grades estimation technique: Ordinary Kriging is used to estimate grades on regular blocks. Estimation was performed using Isatis geostatistical software v2015. Kriging search parameters were determined on the basis of kriging quality indicators (slope of regression  $Z|Z^*$ , Weight of mean from Simple Kriging, kriging variance and negative weights). A single pass estimation approach was implemented with search size and orientation derived from the range and orientation of the variogram anisotropy.
- Regular blocks size 6.25m x 12.5m x 5m (E, N, RL) provide adequate resolution of domain geometry and are supported by available data as follows: Estimation Zone 1 where GC RC drilling is at nominal 8x8m plus DD, RD. Estimation Zone 2 where Resource Development RC drilling has been completed along with DD holes. In deeper and some lateral extremities, the adopted block size is too small for reliable local estimation and this is reflected in the kriging quality indicators and Resource classification. These areas are not in short or medium term mine production areas and will be subject to infill Resource Development and/or GC drilling closer to production.



Criteria	JORC Code explanation	Commentary
Moisture	<ul style="list-style-type: none"><li>• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li></ul>	<ul style="list-style-type: none"><li>• Treatment of high grades in estimation. The high grade tail of the Au grade distribution is reasonably well informed on account of the substantial Resource Development RC and DD dataset along with the large set of close-spaced GC RC data. This, with robust definition of high grade mineralization domains, means that a medium to high level of confidence is placed on the high grade part of the distribution.</li><li>• Multiple tests were made to evaluate the impact of high grade composite samples on grade and contained metal estimates. In final estimates, grade and distance thresholds were applied depending on domain, variable and input data type. The thresholds were derived from the analysis of high grade trends in grade control data, histograms and Indicator variograms.</li><li>• For Au estimation, some extreme values were truncated (trimmed but not removed) where distance between sample and block exceeded 10m. Where the distance threshold was not exceeded, the sample value was not cut. The grade and distance thresholds restricted the influence of very high grade composites during estimation, resulting in a 1% reduction globally in contained Au metal. The influence of extreme value composite samples was similarly restricted during the estimation of secondary metals and deleterious elements.</li><li>• Estimates are made on a dry tonnage basis.</li></ul>



Criteria	JORC Code explanation	Commentary
Cut-off parameters	<ul style="list-style-type: none"><li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li></ul>	<ul style="list-style-type: none"><li>Reporting has been based on a gold cutoff of 0.5 ppm Au. This maintains consistency with prior estimates for comparison purposes plus reflects the site's current approximate threshold for waste versus mineralised waste. Mineralised waste may be stockpiled for eventual treatment. The sites current grade control modelling processes utilise an estimate of recovered value based on estimated gold grade and sulphide sulphur content combined with lithology and alteration domains hence a numerical Au cutoff alone is a simplistic approach yet thought applicable at this scale of resolution for the global model.</li></ul>
Mining factors or assumptions	<ul style="list-style-type: none"><li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</li></ul>	<ul style="list-style-type: none"><li>The mine is currently operating successfully as an open cut.</li><li>The current mining fleet comprises excavators with buckets ranging to 4 cubic metres, front end loaders with 5 cubic metre buckets and articulated dump trucks with 18 cubic metre trays. There is no intent to upsize the fleet significantly in the future.</li><li>The selective mining unit applied in the resource is the parent block size of 6.25m x 12.5m x 5m (E, N, RL) for 365 cubic metres which is thought to be appropriate given the size of the mining fleet and the informing data spacing. Only whole blocks are considered in the resource reporting.</li></ul>



Criteria	JORC Code explanation	Commentary
Metallurgical factors or assumptions	<ul style="list-style-type: none"><li>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</li></ul>	<ul style="list-style-type: none"><li>The current plant utilises CIL cyanide leach process. Refractory metal is not recovered in the plant. Average gold recovery in six months to 30th June 2015 was 82.5%.</li><li>Each block in the Reserve model has a predicted recovery estimated from a combination of lithology, alteration, Au/Ag grade and sulphide sulphur content. The recovery function is based on a formula developed by consultant metallurgist Peter Lewis for the feasibility study undertaken in 2009. The performance of this set of formulae has project to date under estimated the achieved recovery by up to 10%.</li><li>For the reasonable prospects test for the global resource PT AR have provided projected data for potential project development pathways to transition from oxide to primary material. Studies have been undertaken into various processing routes from flotation/pressure leach to whole ore pressure oxidation. A long term reporting shell has been provided by PT AR which takes into account overall metal recovery for sulphide ore as well as long term metal prices and operating costs. As such it is a forward looking statement with attendant disclaimers yet is their best guess at the future potential for Purnama. The reporting cutoffs within that shell reflect today's thresholds applied in the waste to mineralised waste decisions in mining.</li></ul>





Criteria	JORC Code explanation	Commentary
Environmental factors or assumptions	<ul style="list-style-type: none"><li>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</li></ul>	<ul style="list-style-type: none"><li>AMD is considered for all waste and has been a major focus of the operation for long term environmental management. AMD waste is being encapsulated in the TSF construction. Assessment by O’Kane Consultants has identified the ability of calcite in the main AMD waste rock (clay matrix phreatomagmatic breccia) to buffer acid generation and an estimate of Ca distribution has been included in the Resource model to support mine planning and waste management.</li></ul>
Bulk density	<ul style="list-style-type: none"><li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li><li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vughs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.</li><li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li></ul>	<ul style="list-style-type: none"><li>No Bulk Density (BD) data has been added since the previous estimate and Resource report.</li><li>Available BD data consists of intact quarter or half cores from DD holes. Sample length varies according to core diameter: PQ 0.1m, HQ 0.15m, NQ 0.2m. BD measurement locations are not directly coincident with assay sample intervals. BD measurement method: cut samples of intact core are dried at 80 degrees for 8 hours. BD is determined by application of Archimedes method. The sample is weighed dry in air, covered in plastic and weighed in water. Raw measurements are entered into a spreadsheet and calculations are automatic. A prepared standard sample is measured at the rate of 1 in 5 samples.</li></ul>



Criteria	JORC Code explanation	Commentary
Classification	<ul style="list-style-type: none"><li>• The basis for the classification of the Mineral Resources into varying confidence categories.</li><li>• Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li><li>• Whether the result appropriately reflects the Competent Person's view of the deposit.</li></ul>	<ul style="list-style-type: none"><li>• Previous work (2013) identified certain BD values that were considered to be invalid, being outside a range considered representative of true BD. A small number of data values was excluded from the estimation process on this basis.</li><li>• A set of domain model wireframes were constructed, representing a zonation of BD according to lithology, alteration and mineralization.</li><li>• BD samples were used to estimate by Ordinary Kriging BD values onto blocks. Where estimation by OK was not possible due to insufficient data locally, the BD domain kriged average (median) was applied.</li></ul> <ul style="list-style-type: none"><li>• Classification has been undertaken considering the continuity of each mineralisation domain, drill spacing and indicators of Kriging quality (Slope of Regression and Weight of Mean). Classification domain boundaries were smoothed to remove short scale variation between holes and drill fans. The boundaries were manually interpreted as sectional strings to create volumes applied to the model blocks.<ol style="list-style-type: none"><li>1. Resources classified as Measured are within the GC data informing zone or where drill spacing is approximately 25m x 25m and the kriging Slope of Regression is greater than 0.9 while the kriging Weight of Mean is less than 0.2.</li><li>2. Resources classified as Indicated are outside the Measured volume and where drill spacing is nominally 50m and the kriging Slope of Regression is greater than 0.7 while the kriging Weight of Mean is less than 0.6.</li></ol></li></ul>



Criteria	JORC Code explanation	Commentary
		<p>3. Resources classified as Inferred are outside the above 2 domains yet within the mineralisation envelope. They are dominantly below the pit shell in the sulphide primary mineralisation.</p>
Audits or reviews	<ul style="list-style-type: none"><li>• The results of any audits or reviews of Mineral Resource estimates.</li></ul>	<ul style="list-style-type: none"><li>• The project has been reviewed by a number of consultants and corporate entities as part of an ongoing technical review and due diligence program. Although the results of these audits remain confidential no major issues have been raised to our best knowledge.</li></ul>
Discussion of relative accuracy/ confidence	<ul style="list-style-type: none"><li>• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li><li>• The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li><li>• These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li></ul>	<ul style="list-style-type: none"><li>• Since production commenced from Purnama in mid-2012 PT AR have found they obtain more gold from their mining operation than expected from their Ore Reserve estimates, including estimates based on the 2013 Resource model. The positive reconciliation performance continued in 12 months ending December 31 2015 – refer to Table 1 in the body of the report.</li></ul>



# Appendix B

## Martabe Ore Reserves JORC Code Table 1 Section 4

### Explanatory notes: Section 4 JORC Code Table 1

Criteria	Commentary
Mineral Resource Estimate for conversion to Ore Reserves	<p>The Ore Reserves estimate has been based on the following Mineral Resource estimates:</p> <p>Purnama: Mineral Resource estimate updated as at 31 December 2015 with resource estimation carried out by James Pocoe Consulting Pty Ltd and Dale Sims Consulting. This resource update incorporated new drilling information as well as mining depletion up to the date reported.</p> <p>Barani: Mineral Resources estimate updated as at 19 May 2015 with resource estimation carried out by AMC Consultants Pty Ltd. This resource update incorporated new drilling information. No mining has taken place at this deposit since the previous report.</p> <p>Ramba Joring: Mineral Resource estimate completed in September 2010 and restated unchanged as at 30 June 2013 with resource estimation carried out by Cube Consulting Pty Ltd. This resource update incorporated new drilling information. No mining has taken place at this deposit since the previous report.</p> <p>The mineral resources of all three deposits are reported inclusive of the ore reserves. Refer to the public statement as at 31 December 2015, which is summarised in Table ES.1 and 4.2 in this Competent Person's Report.</p>
Site visits	<p>The Competent Person visited the site in February 2014 and October 2015 for project familiarisation, to inspect the mining operation and site conditions and review the mine planning and technical programme on the site. The Competent Person considers that the Modifying Factors appropriately reflect the mining method and site conditions, and are supported by the mine planning and technical programme on site.</p>



<b>Criteria</b>	<b>Commentary</b>
Study status	<p>This is an operating mine and is well-advanced beyond the study stage. Mining of the Purnama open pit is ongoing, with processing of ore mined from the Purnama open pit. The Barani proposed open pit has progressed to the submission of mining approvals with detailed development plans based on the updated resource and reserve models. The Ramba Joring proposed open pit remains at feasibility study stage and is based on projected future economics, and hence has not changed since last reported.</p> <p>Modifying Factors used in the estimation of these ore reserves were compiled using a combination of feasibility study level investigations and, more importantly, actual production figures from the operating mine and processing facility, providing a high level of confidence in the estimation process. The Ore Reserves are reported as delivered to the coarse ore run-of-mine pad.</p>
Cut-off parameters	<p>The cut-off value used in the estimation of these ore reserves is the non-mining, break-even value taking into account mining recovery and dilution, metallurgical recovery, site operating costs including processing and administration, doré transport, refining, royalties, and revenues. These were updated for the Purnama and Barani deposit using costs and predicted revenue consistent with the 2015 third quarter forecast and the 2016 budget. The parameters previously used for the public statement were adopted for Ramba Joring.</p> <p>Applying the budget parameters to the remaining Purnama deposit results in reclassification of some low-grade ore (LG) previously classified as ore reserve in 2013 to a mineralised waste (MW) category, which, while not currently economic, has future potential at a higher revenue of \$1,650 per ounce gold and \$30 per ounce silver. This material is not included in the ore reserves on current parameters.</p> <p>Ore Reserves currently stockpiled were also reassessed on the revised cost, revenue, measured grades, and modelled recoveries. The evaluation confirms that all stockpiled ore reserves remain economic, albeit marginal.</p>



## Criteria

## Commentary

Mining factors or assumptions

This is an operating mine, with mining of the Purnama pit having commenced and ore processing through the existing process facility having taken place over the preceding three years. Operating parameters together with feasibility parameters have been used, where appropriate, together with the existing mineral resource models. In the case of the Barani deposit, the new mining contract rates have been applied and all other parameters including recovery and geotechnical assumptions remain unchanged. Both Purnama and Barani optimisations were updated, however, as there were no material changes to Ramba Joring, there were no optimisation updates for this deposit, with the current pit design deemed as valid in the reporting of the ore reserves. The optimisation was undertaken using Whittle 4X Version 4.5 software with consideration of all operating costs, commodity prices, mine recovery and dilution factors, metallurgical recoveries, process throughputs, and mining rate limits. The pit shell selected was the best-case optimum to ensure that future potential was not restricted.

Purnama and Barani pits were re-optimised on the new cost and revenue parameters, including allowance for wider ramps to suit proposed truck upgrades. The ramps were changed from 18 m to 24 m width, suitable for 60-tonne dump trucks. The design change honoured geotechnical recommendations, with inter-ramp angles remaining unchanged from previous designs. In both pits, with ramp placement on the west wall, there was no significant change to the pit crest at the surface on the east wall compared to the previous pit designs. The change in revenue and costs and the effective marginal cut-off has, however, reduced the economic ore and increased the strip ratio for Barani. The Purnama pit strip ratio has reduced as a function of concentrated waste mining during 2015 for TSF construction to RL330 and the improved reserve from the RC infill drilling programme. The strip ratio for Purnama has changed from 0.9:1 to 0.7:1 (waste:ore).

Processing costs referenced variable milling rates for different lithology, based on production observations during 2014 and 2015. Observed milling performance gave a minimum of 465 tonnes per hour, maximum of 628 tonnes per hour, and weight average of 522 tonnes per hour based on budget 2016 material portions by hardness. The ore reserve economic value (EV) or effective marginal cut-off was applied, based on updated cost, revenue, and recovery inputs.



## Criteria

## Commentary

Both the Barani and Ramba Joring open pits are designed for the current smaller scale of mining equipment due to the smaller scale of operations and development requirements.

Stockpiled ore was estimated through the current grade control practices, and was also included and listed separately in the stated ore reserves.

The mining contract was tendered in 2015 and awarded to a joint venture of PT Nusa Konstruksi Enjiniring and PT Macmahon Indonesia, which resulted in a substantial reduction in the mining costs. The mobilisation is in progress with commencement of operations from 1 January 2016 under the new contract. The fleet is consistent with previous mining practice and there are no significant operational changes.

Current mining operations are performed by a PT. Leighton Contractors Indonesia using 80-tonne excavators and 40-tonne articulated dump trucks for ore and waste mining. A combination of 10 m and 7.5 m blasted benches are excavated in 2.5 m flitches in bulk waste and selective ore zones respectively. Ancillary equipment utilised includes bulldozers, graders, and water carts. Drilling for blasting is performed with drills capable of 6 m one-pass drilling for holes with diameters varying between 89 mm and 127 mm. The blasting service is provided by a separate contractor. Grade control drilling is by contractor using a reverse circulation drill rig on a 12.5 m × 6.25 m pattern. Hole depths vary between 9 m and 24 m. Mining has been undertaken since May 2011 and no access issues exist.

All infrastructure to support the mining operation is in place. This includes a run-of-mine (ROM) stockpile located near the crusher, a waste disposal area within the tailings storage facility (TSF) footprint, a mine office, and mobile plant workshop. Two magazines are in place to support the blasting operation. Power is provided by diesel generators. Connection to the national grid is now complete, although to date, no grid power has been supplied. There is a positive water balance on-site, with excess water discharged after treatment through a polishing plant. All roads are in place, allowing access from one area to another.





## Criteria

## Commentary

The geotechnical open-pit wall designs were the subject of numerous geotechnical studies during the project progression from conceptual studies through to final feasibility studies. The most recent peer review of current conditions and operating parameters was undertaken in an annual geotechnical workshop in April 2015, involving PT Ground Risk Management and Peter O'Bryan and Associates. The workshop outcomes and review reports contain discussion of risk factors for slope stability as well as recommendations for future work. Overall, the assessment states that the stability of the Purnama open pit is within what is considered acceptable limits of stability. Recent updates of the structural geology have been incorporated into the Purnama design update.

Slope parameters for Purnama were based on recommendations from Golder and Associates in 2005, as summarised in the table below. These remain valid and are providing acceptable general wall stability.

Domain/lithology	Bench height (m)	Berm width (m)	Batter angle (°)	Inter-ramp angle (°)
VANh	20	9.5	70	50
Other fresh	20	7.7	70	53
Other fresh (including ramp)	20	7.7	70	49
Clay breccia	10	9.5	40	25

Slope parameters for Barani South were based on recommendations from Chris Orr and Associates in November 2009, and are summarised in the table below.

Domain/region	Bench height (m)	Berm width (m)	Batter angle (°)	Overall slope angle (excluding ramp) (°)
Breccia (East Wall)	10	8.0	75	42
Sandstone (West Wall)	10	7.0	75	45



## Criteria

## Commentary

Slope parameters for Ramba Joring were based on recommendations from Peter O'Bryan and Associates in April 2011, and are summarised in the table below.

Domain/region	Bench height (m)	Berm width (m)	Batter angle (°)	Overall slope angle (excluding ramp) (°)
Upper 60 m	5	3.0	55	38
60 m to 80 m depth	10	8.0	60	43
Below 80 m depth	20	8.0	60	46

Current mine practices include the ongoing assessment of geotechnical conditions as part of the mine's ground control management plan. There is an established and well-resourced geotechnical and hydrogeology team on-site to enable ongoing technical advice, monitoring and design input for management of ground control risks at Martabe.

Geotechnical and hydrogeology efforts focus on the following areas:

- Regular visual pit wall inspections and a quality assurance system for wall acceptance before vertical advance.
- Pit wall mapping to collect, update, and understand geotechnical features.
- Design reviews and stability analysis.
- Instrumentation monitoring, including prisms, conventional crack meters, and real-time extensometers.
- Establishment and ongoing monitoring of a dewatering programme.
- Ongoing development of a pit slope management programme involving rock mass characterisation, major structure model, slope design verification, risk identification, and appropriate mitigation.



## Criteria

## Commentary

- Artificial ground support on identified contact zones between the VANh and clay breccia has commenced as proposed by PT AR and supported by Peter O'Bryan and Associates.

In addition to the above, there are plans to complete a more comprehensive drilling programme for dewatering of the eastern wall to ensure stability of clay breccia and a horizontal drainage programme to enable pit wall depressurisation. Without this programme, there would be increased stability risks.

To estimate the mining loss and dilution, ore reserves block models were prepared by averaging the grades of the ore and non-ore proportions across model block volumes for all elements reported in the resource model. This has effectively diluted the ore with the adjacent non-ore blocks and so simulating mining dilution based on the parent block sizes as follows:

- Purnama 6.25 m × 25 m × 5 m (x, y, z)
- Barani 6.5 m × 12.5 m × 10 m (x, y, z)
- Ramba Joring 12.5 m × 12.5 m × 5 m (x, y, z)

All gold and silver grades reported in this estimate refer to these diluted grades. Mining ore losses result from blocks with small ore proportions, which are effectively diluted to the extent that the average grade is below the economic cut off of the reported ore reserves.

In the case of Barani and Ramba Joring, to account for potential additional ore losses that might occur at the surface on steep terrain, all mineralised material occurring within ore reserves model blocks with less than 50% of their volume occurring under the modelled topography had the grades zeroed, thereby excluding them from the estimation of these ore reserves.

No inferred material was included in the conversion of mineral resource to ore reserves. All inferred material was treated as waste in the planning process.



Criteria	Commentary
Metallurgical factors or assumptions	<p data-bbox="552 412 1324 644">The current process consists of a primary crusher, semi-autogenous grinding (SAG), and ball mill, with pebble crushing. Gold and silver is recovered via a carbon-in-leach (CIL) circuit, with carbon stripping through an Anglo-America-Research (AAR) process. The tailings pass through a cyanide detoxification circuit before being discharged to a TSF. Excess water from site is treated in a water treatment polishing plant (WPP) before testing and release.</p> <p data-bbox="552 687 1324 885">Dependent on ore hardness, mill throughput typically ranges from 450–600 tonnes per hour, with an 80% passing a size of 150 microns. Copper loading onto carbon is managed by increasing cyanide concentrations in the leach and adsorption circuits whenever ores with high copper levels are being treated, as identified in the geological crusher feed data.</p> <p data-bbox="552 927 1324 1125">The circuit has no dedicated process to manage excessively high silver feed but is controlled by establishing daily blending targets from geological ore block data. The guidelines for the blending targets were developed with input from the plant metallurgists, accounting for the processing circuit limits and priorities, which are as follows:</p> <ul data-bbox="552 1168 1324 1502" style="list-style-type: none"><li data-bbox="552 1168 1324 1225">• Gold average should be between 2 and 3.5 Au g/t with a high of 4.5 Au g/t.</li><li data-bbox="552 1268 1324 1325">• Silver average should be below 30 Ag g/t with a high of 40 Ag g/t.</li><li data-bbox="552 1368 1324 1425">• Copper average should be below 150 Cu g/t with a high of 200 Cu g/t.</li><li data-bbox="552 1468 1324 1502">• Mixture of siliceous and softer ores for milling consistency.</li></ul> <p data-bbox="552 1544 1324 1844">The process operators will respond to increasing silver grades by elevating the cyanide in the leach circuit to control silver tails losses. With respect to cyanide-soluble copper, observations to date indicate that the copper mineral ranges between 30% and 40% cyanide soluble. Small amounts are beneficial (approximately 20 ppm cyanide-soluble copper) in aiding the cyanide detoxification plant. With persistently high concentrations of cyanide-soluble copper, high copper loadings onto carbon become an issue. This is managed by:</p>



## Criteria

## Commentary

- Keeping cyanide concentrations high to promote compounds which do not readily load onto carbon.
- Introducing a cold stripping sequence in the elution circuit. This has been designed in the circuit, but not yet been used. The concept is to strip the copper off the carbon with a concentrated solution of cyanide at ambient temperature and elevated pH, followed by precious metal stripping, which is done at high temperature and pressure.

There is no current evidence of gold cyanide solution robbing carbonaceous materials, and there are no onward processing restrictions after transport of the doré.

For the Purnama deposit, Peter J. Lewis and Associates (Consulting Metallurgist) conducted an in-depth study of metallurgical recovery factors based on sampling of the 2007–2008 infill-drilling programme. Key aspects of his findings were:

- Sulphide sulphur (SxS) levels are a factor in recovery.
- Recoveries are different for differing rock types and alteration states.
- Precious metal grades can also affect recovery.

Peter Lewis derived a series of regression formulae based on a block's SxS grade, with adjustments for real life plant efficiencies, to predict Purnama plant recovery factors. These were applied to each block in the ore reserve model and a recovered grade for both gold and silver was calculated for each block.

An alternative recovery regression based on relationships between assay head grade and cyanide-soluble grade has been derived through studies conducted by Stuart Masters for comparison to the Lewis formulae.

The alternative formulae were adopted for blocks with no estimated SxS grade to estimate metal recoveries.



## Criteria

## Commentary

A similar approach was undertaken for the Barani and Ramba Joring deposits, using formulae derived by Peter Colbert in 2009 and 2010 respectively. These estimates were based on specific metallurgical testwork on samples taken from each deposit and interpreted to estimate expected CIL plant recovery performance.

Using the above methods for calculation of recoveries, the following are indicative averages for the three deposits:

- Purnama: Au 71% Ag 66% (Update as depleted to 31 December 2015)
- Barani: Au 88% Ag 76%
- Ramba Joring: Au 83% Ag 72%

In addition to the above metallurgical work and studies, the actual performance of the treatment plant over the last three years has provided confirmation that the recoveries are at least as high as those determined in the studies discussed above, although this confirmation is only relevant to the material processed, which was sourced from the upper areas of the Purnama open pit. The budget recovery for 2015 was Au=80.9% and Ag=65.8%, and for the actual model depleted was Au=80.2% and Ag=65.8%. The actual plant recovery for 2015 was Au=81.4% and Ag=65.7%, which compares favourably for gold recovery.

Performance to date suggests that an overcall on gold recovery is occurring of the order of 1.0% to 1.5% (actual model depleted versus actual process performance). On this basis, the conservative 1% reduction included in the Peter Lewis formulae has been removed from the gold recovery formulae for reserves and pit optimisations.

## Environmental

Successful management of environmental aspects is recognised by the company to be a critical contributor to the success of the Martabe gold mine. Environmental management efforts since operations commenced were focused on a range of important issues, including:

- Environmental monitoring.
- Statutory reporting.



## Criteria

## Commentary

- Safe tailings disposal.
- Safe treatment and discharge of excess mine water.
- Communication of environmental performance to stakeholders.
- Revegetation.
- Development of waste rock management strategy, including acid metalliferous drainage (AMD).
- Run-off water management.
- Waste and chemical management.
- A submitted and approved mine closure plan.

The management of the Martabe gold mine is progressively implementing an Equator Principles Compliance Plan, with the aims of continuing the very high level of conformance over the coming 12 months.

Reporting procedures and active management plans were put in place to not only meet legislative requirements, but also ensuring that issues of sustainability are addressed through proactive measures, resulting in the efficient and timely application of environmental procedures and strategies.

The AMD programme is well-advanced, with a completed classification system that is now part of routine grade control. Waste in PAF categories is also tracked from source to destination with records of placement by criteria. Additional instrumentation has been installed for groundwater standpipes, VWP's and oxygen diffusion sensors. Field tests including paste pH and nett acid generation (NAG) confirm that the classifications are representative of the waste types. Additional sampling has also been completed to infill waste zones which previously had a low density of data. The AMD classifications in the reserves model will be further updated with data from the recent resource drilling program. Currently all potentially acid forming (PAF) waste has a high clay content and is being placed in compacted layers within the TSF construction, as per Knight Piésold guidelines and construction supervision.





Criteria	Commentary
Infrastructure	<p>The TSF construction is as per the Knight Piésold design. Knight Piésold are also the engineer of record for the design and construction. The construction schedule is aligned with mining capacity and process storage requirements. Construction progress is updated regularly and aligned with budget ore-processing requirements. During 2015, the facility has been fully buttressed to 245 m reduced level (RL) of the final design profile and the crest has been raised to 329 m RL providing approximately nine metres of free board and in excess of 7 million cubic metres of surge capacity.</p> <p>The key environmental permits, being the Indonesian AMDAL (environmental impact assessment and environmental management plan), are currently in place and being updated as part of the life-of-mine plan review.</p>
Costs	<p>The site has been producing bullion since July 2012. All infrastructure, such as a 4.5 Mtpa processing plant, workshops, offices, accommodation, and warehouse is established and in operation. Power is supplied by diesel generators. Connection to the national grid has been recently completed. The operation has a positive water balance with excess water discharged. The TSF is under continuous construction and when completed to 360 m RL, will hold in excess of 10 years of tailings storage capacity. Additional crest raises to 370 m RL and 380 m RL have been reviewed and are conceptually feasibly for additional capacity.</p> <p>As this is an operating mine with all major infrastructure and processing facilities already in place, the projection of capital costs are not a factor influencing the reporting of these ore reserves.</p> <p>Operating costs have taken into account actual expenditures supplied from the site accounting system for the nine months to September 2015 with a forecast three months. This aligns well with the proposed budget, which was summarised into key components for pit optimisation, economic value calculations, and marginal cut-off for use in the estimating of the ore reserves.</p>



## Criteria

## Commentary

Mining costs were derived from the newly negotiated mining contract rates, with minor additional allowance for mining contract escalation expected in 2016. These rates include drill-and-blast with a full loading service, overhaul to the TSF construction site for waste disposal, and extra over costs associated with mine development in the challenging terrain at the Barani and Ramba Joring deposit, albeit excluding major capital works that are deducted from the project net present value (NPV).

As a result of the above, the overall average total ore based costs amounted to \$29.32 per tonne of material processed. The budget 2016 project mining costs for Purnama and Barani pits combined is \$3.14 per tonne mined. Mining costs are calculated to include the effects of increased depth and hardness for excavation, drilling and blasting, and haulage distances for truck costs as inputs to the optimisation process. For assessments of mineralised waste from Purnama, which might be processed in the future, the process costs were escalated together with the revenue, being \$35.18 per tonne processing and \$1,650 per ounce gold revenue respectively.

Deleterious elements included in the estimation process were sulphur in sulphides, which impacted on metallurgical recovery and is discussed above, and cyanide-soluble copper, which has a negative impact on the processing costs.

Metal prices have been updated for the economic value calculations and the ore reserves estimation. For the purposes of this ore reserves update, the Purnama pit is based on US\$1,250 per ounce gold and US\$16 per ounce silver, based on three-year average of the gold and silver metal prices and in line with the 2016 budget. A longer-term view of US\$1,433 per ounce for gold and US\$26.90 per ounce for silver has been applied to the Ramba Joring deposits, given the lead time to production, as per the previous public ore reserves statement of December 2014.

As all accounting and estimation of costs and revenues were based on United States dollars (USD), no further allowance for exchange rates were made in the technical work in this estimation process.

A state royalty of 0.5% has been included in the economic valuation and cut-off.



<b>Criteria</b>	<b>Commentary</b>
Revenue factors	<p>In general, no factors were applied in the application of the metal prices stated in the above section. A reduction in revenue is applied in the form of doré transport, refinery, and smelting charges, based on current US\$ per ounce costs.</p> <p>The head grades as reported in these estimates were not factored. Mining dilution and ore mining recoveries were taken into account as discussed elsewhere in this statement by applying a reblocking to selective mining unit (SMU) methodology and, as such, no further factors were considered appropriate and were therefore not applied.</p>
Economic	<p>Martabe is an operating mine, with the capital associated in realising the estimated ore reserves already expended and the relevant infrastructure in place. The economics of the reported ore reserves are based on operating costs and assumptions that were applied in the selection of distinguishing mill feed material as discussed in the section addressing the cut-off grade methodology applied.</p> <p>The combined gold and silver doré is transported from site and refined in Jakarta. It is then on-sold primarily through Singapore. There are no impediments to the sale of the refined product.</p> <p>The pit optimisation updates for Purnama were recently completed, with NPVs that align with the cash flow of the financial models for the life of mine. A discount rate of 7% has been applied to the optimisation assessments.</p>
Social	<p>All agreements with key stakeholders are in place and current. All matters leading to social licence to operate were resolved with the central, regional, and local governments. The company has an extremely active community development plan operating, which was developed in conjunction with the local communities.</p> <p>Acquisition is currently in progress and partially completed for the Ramba Joring project, where there are multiple land claims. This is expected to be resolved in 2016 through ongoing interaction with the lands department and community leaders.</p>

**Criteria****Commentary**

Other

Martabe is located within an area prone to earthquakes. This was factored in with the design of all key infrastructure on the site including the TSF. It is also situated in an area of high rainfall (+4 m per year). Excess water is captured and directed by dedicated drainage systems to water dams for treatment prior to release into the environment.

All government approvals to operate Martabe are current. Purchase of the land required to develop Ramba Joring is progressing, and will be completed prior to mining commencing in late 2018. All other outstanding issues have been resolved. The TSF design approval for a crest raise to 330 m RL is approved by the Dam Safety Commission. The conceptual design for the currently required design capacity and elevation of 360 m RL has been approved, including an assessment of the Knight Piésold design and seismic risks incorporated into the design factor of safety. Approval from the public works department has been received, and environmental and mines department approval is pending.



<b>Criteria</b>	<b>Commentary</b>
Classification	<p>All in-pit ore reserves that have been reported as proved were derived from the mineral resources classified at the Measured level of confidence, and ore reserves reported as Probable have been derived from the mineral resources classified at the Indicated level of confidence.</p> <p>No mineral resources classified at the Inferred level of confidence are included in these estimated ore reserves. The high degree of confidence in the Modifying Factors gives the Competent Person confidence that the ore reserves classifications are appropriate.</p>
Audits or reviews	<p>A peer review of the Martabe Ore Reserves was undertaken by AMC as part of the site visit in October 2015 and further review of the final optimisation and reserves was completed in December 2015. The review found that the estimate was technically sound.</p>
Discussion of relative accuracy/ confidence	<p>In the estimating of these ore reserves, the confidence levels as expressed in the mineral resource estimates were accepted in the respective ore reserve classification categories.</p> <p>The ore reserves estimates relate to global estimates in the conversion of mineral resources to ore reserves, due largely to the spacing of the drill data on which the estimates are based, relative to the intended local selectivity of the mining operations. The diluting methodology applied by way of resource estimation to a parent sized resource block rather than factoring of a SMU sized block further supports the assertion of a global rather than local estimate.</p> <p>Due to the advanced stage of the project, with mining and ore processing having taken place over the preceding three years, the Modifying Factors applied in the estimation of the ore reserves are considered to be of a sufficiently high level of confidence not to have a material impact on the viability of the estimated ore reserves. This is confirmed by positive reconciliations and the results of the extensive infill RC drilling programme, which have informed the mineral resource estimate. The current project-to-date reconciliation data indicates that ore mined, as estimated by the grade control programme, is significantly positive compared to the resource model predictions for ore tonnage and gold grade, and slightly positive for silver grade.</p>



## Criteria

## Commentary

Operating practices of the grade control system have now matured as the mining operation has advanced through several lithology and alteration states. In addition, the extensive RC infill drilling programme and mineral resource estimation update, which included the grade control and original diamond drilling data sets, has provided a robust mineralisation domain model and mineral resource estimate, which is expected to realise the previously observed positive reconciliation. The reconciliation, henceforth, is expected to be neutral, based on the updated mineral resource model. Long-term mine planning will be updated with reference to the updated model and modified designs. Ramba Joring has also undergone an infill drilling and re-interpretation programme, which will be validated and released by mid-2016.

Despite the pit geotechnical parameters for the Purnama design having been peer reviewed in early 2015, there remains some moderate risk in the observed bench-scale fault zone related failure zones and contact between the VANh and the underlying clay breccia. This is currently being addressed by a specific artificial ground support (AGS) programme to remediate this mode of failure, and there is budget allowance in 2016 for the ongoing ground support and groundwater management programme to mitigate any future risk.



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