

# Quarterly Report / Q3 March 2016

- Gwalia gold production exceeded Q3 target, FY16 guidance increased
- Simberi gold production 110,488 ounces for 12 months to March 2016
- Accelerated debt reduction of US\$27 million (plus additional US\$10 million in April)

# **Executive Summary**

### **Operations**

- Consolidated gold production was 91,580 ounces for the March quarter (Q2 Dec: 91,912 oz). Consolidated All-In Sustaining Cost<sup>1</sup> (AISC) was A\$947 per ounce for the quarter (Q2 Dec: A\$992 per ounce). The average realised gold price for the quarter was A\$1,614 per ounce (Q2 Dec: A\$1,560 per ounce).
- Swalia (Western Australia) gold production for the quarter was 66,147 ounces (Q2 Dec: 63,533 oz) at AISC of A\$770 per ounce (Q2 Dec: A\$846 per ounce). Mined grade improved to 10.2 g/t Au (Q2 Dec: 7.9 g/t Au) with 210 kt milled (Q2 Dec: 267 kt).
- Simberi (PNG) gold production was 25,433 ounces for the quarter (Q2 Dec: 28,379 oz) and 110,488 ounces for the 12 months to 31 March 2016, exceeding the targeted 100,000 oz p.a. run rate for the fourth consecutive quarter and for the rolling 12 months. AISC was A\$1,404 per ounce (Q2 Dec: A\$1,319 per ounce), impacted by recent capital expenditure on mining fleet.

### **Health & Safety**

> The Company-wide Total Recordable Injury Frequency Rate (TRIFR), calculated as a rolling 12 month average, was a record low 2.7 to 31 March 2016 (Q2 Dec: 3.4).

### **Exploration**

- Gwalia (Leonora) WA There are three drilling programs at Gwalia.
- > The program that began in 2014 targeting extensions to the Gwalia lode system approximately 400m below current underground mine workings (between 1,800 to 2,000 metres below surface (mbs)) has been completed with results from daughter holes GWDD13M, 13N, 17BW1 and 17C received during the quarter.

The Gwalia Mine sequence was intersected by each drill hole over an approximate strike length of 200m, between 1,800 to 2,000 metres below surface. Details are set out in Figures 1.0, 2.0 and Table 2 in the Exploration Figures and Tables appendix.

- > A new drilling program has commenced targeting 200m deeper (2000 to 2200 mbs) down plunge extension with new parent hole GWDD18 and southern extension with three daughter holes GWDD17D, 17E and 11N. GWDD18 and 17D are expected to be completed in Q4 June 2016.
- > A separate program is targeting prospective zones higher in the mine sequence. The first of these is targeting a potential northern extension to the South West Branch between 1,600 to 1,700 mbs and has been drilled from existing underground development. This has returned a number of intersections (details in Figure 4.0 and Table 1) including:
- > UGD2391 5.7m @ 12.6 g/t Au from 1,639 mbs
- > UGD2401 24.5m @ 5.3 g/t Au from 1,644 mbs
- Centenary Project (Leonora) WA A second phase of drilling was undertaken with two drill holes completed. No significant intercepts were returned. Exploration work also included a high powered, systematic moving-loop TEM (HP MLTEM) survey program. Results will be evaluated in FY17.
- > Pinjin Project (Yilgarn) WA Over 9,000 metres of aircore drilling was completed from a program of up to 25,000 metres, designed to test 16 bedrock geochemical and geophysical targets within the Pinjin project, with the results due to be analysed in Q4 June 2016. The drilling program will continue through Q4 June 2016.
- Simberi PNG Initial trenching at Bekou South on the Simberi Mine Lease (PNG) was completed during the quarter, targeting oxide mineralisation. Trench results were returned (details in Figure 9.2) including:
- > SIMTR961 90m @ 1.3 g/t Au
- > SIMTR962 35m @ 1.9 g/t Au
- > SIMTR963 65m @ 1.0 g/t Au, and 40m @ 3.3 g/t Au
- > SIMTR964 30m @ 5.6 g/t Au, including 5m @ 29.3 g/t Au
- > Big Tabar Island PNG Additional trench sampling was completed at Banesa Au-Cu porphyry prospect (EL609) during the March quarter. Mapping and surface sampling commenced at Fotombar prospect (EL609) during the March quarter.

<sup>1</sup> Non-IFRS measure, refer Appendix

# **Gwalia Materials Handling**

- > During the quarter the Company completed conceptual studies on potential materials handling systems for deeper mining at Gwalia. The studies have now included a lower capital ventilation solution whereby the installation of two ventilation shafts will allow ongoing truck haulage to at least 2,200 mbs.
- > Based on the deep drilling to date, it is likely that the ventilation solution will deliver the greatest value, however, the decision between the ventilation solution and a materials handling solution needs to be informed by the drilling underway down to 2,200 mbs.
- > A study regarding the design, location and timing of additional ventilation shafts will continue in Q4 June 2016. Truck technology and trucking optimisation studies will continue into Q1 September 2016, and inform future capex estimates.

### Simberi Sulphide PFS

- The pre-feasibility study (PFS) for the Simberi Sulphide Project was completed (subject to independent review of the underlying resource estimate) in April 2016 for consideration by the Board. The PFS confirmed that the Sulphide Project could extend mine life at Simberi by a further eight years (beyond the current three year oxide treatment plan).
- The PFS notes that the outcome of the economic evaluation of the Sulphide Project is sensitive to key commodity and economic assumptions. The PFS recommends additional value-engineering work to refine the feasibility of the project prior to the commencement of a definitive feasibility study, to better inform an investment decision.
- The PFS will inform the ongoing strategic review of the Company's PNG assets announced in February 2016. A range of options are being considered including continued ownership, exploration and development, joint ventures, and divestment of some or all of the PNG assets.

### Finance (unaudited)

- > US dollar denominated debt was reduced by US\$27 million during the quarter to US\$189 million at 31 March 2016 (Q2 Dec: US\$216 million). At 31 March 2016, interest bearing liabilities totalled A\$248 million (Q2 Dec: A\$299 million).
- > A further US\$10 million was repaid on the Red Kite facility on 15 April 2016 reducing the Red Kite balance to US\$11 million and total debt to US\$179 million. US\$146 million of debt has been repaid since 1 June 2015 and debt repayment remains the preferred use for the Company's strong cash flows.

Cash contribution <sup>1</sup> from operations for the quarter increased to A\$71 million (Q2 Dec: A\$57 million) with an improved gold price and higher grade at Gwalia the main contributors. Cash at bank as at 31 March was A\$114 million<sup>2</sup> (Q2 Dec: A\$100 million) after repayment of debt and financing costs in the quarter of A\$38 million (Q2 Dec: A\$58 million).

### Outlook

- > Guidance for FY16 is as follows:
  - Forecast Gwalia (Leonora) gold production of between 260,000 and 265,000 ounces (previously 245,000 and 260,000 ounces) at an AISC of between A\$800 and A\$820 per ounce (previously A\$840/oz and \$900/oz), with capex at between A\$29 and A\$32 million (previously A\$30 and A\$35 million).
  - Forecast Simberi gold production is maintained at between 100,000 and 110,000 ounces at an AISC of between A\$1,350 and A\$1,430 per ounce, with capex of between A\$10 and A\$12 million.
  - Forecast exploration expenditure is maintained at A\$15 million.

#### **Bob Vassie**

Managing Director and CEO 19 April 2016

<sup>1</sup> Non-IFRS measure, refer reconciliation of cash movements on page 13

<sup>2</sup> Excluding A\$1.5 million restricted cash

# **St Barbara Gold Production & Guidance**

Production Summary		Year	Q1 Sep	Q2 Dec	1H	Q3 Mar	Q3 YTD	Guidance
Consolidated		FY15	FY16	FY16	FY16	FY16	FY16	FY16
Production								
Gwalia	oz	248,142	72,388	63,533	135,921	66,147	202,068	260 to 265 koz
								(previously 245 to 260 koz) <sup>3</sup>
King of the Hills	oz	49,677	9,112	_5	9,112	-	9,112	9 koz <sup>4</sup>
Simberi	oz	79,568	29,539	28,379	57,918	25,433	83,351	100 to 110 koz <sup>6</sup>
								(no change)
Consolidated	oz	377,387	111,039	91,912	202,951	91,580	294,531	369 to 384 koz
								(previously 354 to 379 koz)
Mined Grade								Reserve grade [2]
Gwalia	g/t	8.9	9.7	7.9	8.8	10.2		9.4
King of the Hills	g/t	4.2	n/a	n/a⁵	n/a	n/a		n/a
Simberi	g/t	1.23	1.22	1.22	1.22	1.35		1.3
Total Cash Operating Costs <sup>[1]</sup>								
Gwalia	\$/oz	642	553	665	605	587		n/a
King of the Hills	\$/oz	1,112	893	-	893			n/a
Simberi	\$/oz	1,336	1,119	1,098	1,109	1,198		n/a
Consolidated	\$/oz	850	731	799	762	757		
All-In Sustaining Cost <sup>[1]</sup>								
Gwalia	\$/oz	841	692	846	764	770		800 to 820
								(previously 840 to 900) <sup>3</sup>
King of the Hills	\$/oz	1,103	964	-	964			-
Simberi	\$/oz	1,464	1,252	1,319	1,285	1,404		1,350 to 1,430
								(no change) <sup>6</sup>
Consolidated	\$/oz	1,007	863	992	922	947		960 to 1,000
								(previously 990 to 1,060)

[1] Non-IFRS measure, refer Appendix.

[2] Ore Reserve grade at 30 June 2015, refer Ore Reserve and Mineral Resources Statement released 25 August 2015.

[3] Current FY16 guidance for Gwalia updated 7 April 2016, previous FY16 guidance for Gwalia revised in the Q2 December 2015 production report (released 8 January 2016).

[4] Stockpiled as at 30 June 2015.

[5] King of the Hills ceased mining in April 2015 and ceased processing in September 2015. It was sold in October 2015 (refer ASX announcement 16 October 2015).

[6] Current FY16 guidance for Simberi revised in the Q2 December 2015 production report (released 8 January 2016).



FY16 Production Indicative Quarterly Guidance Profile



Indicative % of annual production (koz)

koz

Figures displayed to nearest thousand ounces. Reported ounces in associated table

#### Disclaimer

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This report contains forward-looking statements that are subject to risk factors associated with exploring for, developing, mining, processing and the sale of gold. Forward-looking statements include those containing such words as anticipate, estimates, forecasts, indicative, should, will, would, expects, plans or similar expressions. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company, and which could cause actual results or trends to differ materially from those expressed in this report. Actual results may vary from the information in this report. The Company does not make, and this report should not be relied upon as, any representation or warranty as to the accuracy, or reasonableness, of such statements or assumptions. Investors are cautioned not to place undue reliance on such statements.

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The Company estimates its reserves and resources in accordance with the Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves 2012 Edition ("JORC Code"), which governs such disclosures by companies listed on the Australian Securities Exchange.

### Gwalia, Leonora, WA



- > Gwalia produced 66,147 ounces of gold in the March quarter. As anticipated in the mine schedule, mining at Gwalia returned to higher grade stopes during the quarter, including the first full stope on the 1540 level. The mined grade achieved was higher than expected at 10.2 g/t Au, compared with the Ore Reserve grade of 9.4 g/t Au<sup>1</sup>. This led to production being better than anticipated, and the FY16 guidance upgrade released to the ASX on 7 April 2016.
- > Tonnage was lower than expected for the quarter due to a short delay in commencing production from a southern stope.
- > The grade cycle that results from the 'centre out' mining method is evident in the grade graphic above, with alternate quarters of higher and lower grade impacting production and unit costs.
- > All In Sustaining Cost (AISC) was A\$770 per ounce for the quarter (Q2 Dec: A\$846/oz), an improvement on the previous quarter primarily due to the higher grade mined.

#### West Lode drilling completed

- > West Lode drilling concluded in Q3 with no further results to report. The maturing interpretation of this component of the lode system is that the high grade area of West Lode concludes by 1700 mbs with the ongoing downward plunge thinning. Some high grade intercepts beneath West Lode are interpreted to be part of South Gwalia Series and are reported via the deep drilling program on page 11 and in Table 2 of the appendix with results categorised under 'South Gwalia Series'.
- > Previous West Lode drilling results will be considered as part of the annual Ore Reserves and Mineral Resources estimates due to be released in August.

### Northern Extension Drilling Program

- > Underground drilling, targeting extensions to the Gwalia lode system from the 1540 level, has returned significant intersections of mineralisation. Further underground drilling to establish the extent of this mineralisation is expected to be undertaken in Q4 FY16. Significant results included the following (all intercepts downhole, details in Table 1 and Figure 4.0):
  - > UGD2391 5.7m @ 12.6 g/t Au from 1,639m
  - > UGD2392 3.0m @ 6.1 g/t Au from 1,685m
  - > UGD2394 13.0m @ 6.4 g/t Au from 1,678m
  - > UGD2400 11.7m @ 6.3 g/t Au from 1,620m
  - > UGD2401 24.5m @ 5.3 g/t Au from 1,644m
- > The characteristics of these intersections appear to be consistent with those identified elsewhere within Gwalia with the closest analogue being South West Branch. The intersections are less than 100m away from current development.
- > Up-plunge extensions of this mineralisation, expected to be similar in orientation with the nearby South West Branch lode, will be investigated by daughter holes from pre-existing surface drilling. This part of the program is anticipated to be undertaken during FY17.

#### Outlook

- > FY16 guidance is increased as follows:
  - > Production of between 260,000 and 265,000 ounces (previously 245,000 ounces and 260,000 ounces)
  - > AISC of between A\$800 and A\$820 per ounce (previously A\$840/oz and \$900/oz)
  - Capital expenditure of between A\$29 and A\$32 million (previously A\$30 and A\$35 million).

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<sup>1</sup> Ore Reserve grade at 30 June 2015, refer Ore Reserve and Mineral Resources Statement released 25 August 2015.

Production Summary		Q1 Sep	Q2 Dec	Q3 Mar
Gwalia		FY16	FY16	FY16
Underground ore mined	kt	254	242	205
Grade	g/t	9.7	7.9	10.2
Low grade development	kt	2	8	6
ore & stockpiles milled				
Grade	g/t	2.6	3.3	2.5
Ore milled	kt	241	267	210
Grade <sup>[1]</sup>	g/t	9.8	7.7	10.1
Recovery	%	96	96	97
Gold production	oz	72,388	63,533	66,147
All-In Sustaining Cost <sup>[2]</sup>		\$	per ounce	
Mining		356	410	379
Processing		121	123	116
Site services		52	51	54
Stripping and ore inventory		(11)	42	(3)
adjustments				
	-	518	626	546
By-product credits		(3)	(2)	(2)
Third party refining & transp	oort	1	1	1
Royalties	_	37	40	42
Total cash operating costs		553	665	587
less operating development	_	(45)	(52)	(50)
Adjusted cash operating cos	t	508	613	537
Corporate and administration	on	40	48	49
Corporate royalty		23	23	25
Rehabilitation		3	3	3
On-site exploration		-	-	-
Capitalised mine & op				
development		101	132	139
Sustaining capital expenditu	re _	17	27	17
All-In Sustaining Cost (AISC)		692	846	770

[1] Includes Gwalia mineralised waste

[2] Non-IFRS measure, refer Appendix

#### Gwalia underground ore mined



### Gwalia Growth Projects – Materials Handling Study

- During the quarter the Company progressed conceptual studies on potential materials handling systems for deeper mining. Whilst the current life of mine is predicated on trucking down to 1,800 mbs, these studies commenced in Q1 September 2015 in parallel with the deep drill program, to ensure a materials handling solution was available on a timely basis to support anticipated resource estimation.
- > These studies included assessing variations of:
  - > 7 m diameter blind sink shaft with skip hoisting
  - > 5 m diameter single pass and two-stage raise-bore shaft with either skip hoisting or vertical conveyor
  - underground crushing and hydraulic (slurry) pumping to surface
  - > additional ventilation shaft(s) to facilitate continued truck haulage.
- > The primary benefit of the various shaft options, each from surface to around 1,500 mbs, is in approximately halving the number of haul trucks required to maintain production volume, and either eliminating or reducing the need for separate ventilation shafts. Whilst the hydraulic haulage option also reduced the number of trucks required, it would have required two ventilation shafts to serve the underground crushing plant. The benefit provided by each option needed to be evaluated against the respective capital investment and design and execution complexity of what are significant infrastructure projects.
- > Truck haulage with additional ventilation has been identified as the likely solution based on current drilling down to 2,000 mbs, however, the decision between the various alternatives needs to be informed by the drilling now underway down to 2,200 mbs. Key considerations include:
  - > Ventilation is currently the primary constraint to maximising production and enabling deeper mining.
  - The introduction of additional ventilation allows mining to extend to lower levels, and may also benefit existing reserves by removing the current trucking limitation and opening the possibility of mining additional lodes concurrently.
  - > Additional ventilation requires significantly lower capital investment, and has lower project and operating risk than the other alternatives considered.

#### Gwalia Materials Handling Study (continued)

A summary of the relative merits of the materials handling > solutions considered is set out in the table below.

Summary analysis of Materials Handling Conceptual Study						
Materials Handling Option	Capex <sup>1</sup> A\$M +/-20%	Capex (ratio)	NPV <sup>2</sup> (ratio) 2015 Reserve	NPV <sup>3</sup> (ratio) 900 ktpa to 2,000 mbs	Const- ruction time	Risk <sup>4</sup>
	Indic	ative results	at conceptua	al study accu	racy	
Trucking (& ventilation)	65	1	1	1	1 year	Low
Blind Sink	220	3.4	0.6	0.9	4+ years	Medium
Raise Bore	200	3.1	0.6	0.9	3+ years	Medium
Vertical Conveyor	180	2.8	0.7	1.0	4 years	High
Hydraulic Vertical Pump	190	2.9	0.8	0.9	3 years	Medium- High

ry analysis of Materials Handling Concentual Study

1. Indicative midpoint capex (+/-20%) at conceptual study accuracy with various assumptions

2. Indicative midpoint NPV estimate mining 2015 Ore Reserve to 1,800 mbs

3. Indicative midpoint NPV estimate mining 2015 Ore Reserve to 1,800 mbs and then mining at 900 ktpa to 2000 mbs

4. Risk considers project risk based on investigation of similar projects, and operating risk based on utilisation of technology globally

- The lost production and removal of waste from a major > construction activity at depth is a significant consideration for most of the alternatives.
- > Net present value modelling indicates that trucking generates the best return on existing ore reserves down to 1,800 mbs, and also provides the equal best return should mining subsequently be able to continue at current rates down to 2,000 mbs. Further drilling down to 2,200 mbs will inform the final materials handling decision. It is likely that only a significant increase to orebody 'tenor' (ounces per vertical meter) at that depth would favour a larger capital materials handling solution.
- All the materials handling options involve a significant upgrade to ventilation, particularly for Hydraulic Vertical Pumping, in which ore to be pumped to surface would need to be ground much more finely than is the case for the other options (with no grinding required for trucking). The grinding infrastructure at depth would necessarily generate considerable heat, leading to additional ventilation and cooling requirements.

- Ongoing trucking is anticipated to require investment in two new ventilation shafts to maintain current production volume.
  - > A study regarding the optimal design, location and timing of the ventilation shafts will continue in Q4 June 2016.
  - Truck technology and trucking optimisation studies > will continue into Q1 September 2016, and will inform future capex estimates.
  - Subject to the results of further deep drilling, it is anticipated that the results of further studies on continued truck haulage and associated ventilation will inform an investment decision in Q2 December 2016.



Simberi, Papua New Guinea

AISC

[A\$/oz]

1,310

				25.4
FY 15 Q4 Jun		FY 16 Q1 Sep koz	FY 16 Q2 Dec	FY 16 Q3 Mar
mary		Q1 Sep FY16	Q2 Dec FY16	Q3 Mar FY16
waste	kt	2,606	2,417	2,348
	kt	896	876	723
	1.	1 2 2	1 2 2	1 25

### 1,404 1,319

Operations

- Simberi produced 25,433 ounces of gold during the quarter and 110,488 ounces of gold for the 12 months to 31 March 2016, exceeding the 100,000 oz p.a. target run rate for the fourth consecutive quarter.
- A new mining pit 'Pigibo' was brought into production this quarter, requiring waste stripping, new roads and earthworks. The site moved record volume (cubic metres) of ore and waste for the quarter, aided by new mining equipment that commenced operating from mid-February. The initial surface Pigibo material is much lower in density than the other pits currently in use, however, requiring approximately 40% more material in volume to be moved to achieve similar tonnages.
- The impact on production of a two week stoppage in the aerial rope conveyor ("Ropecon") caused by a failed splice in the conveyor belt was lessened by bringing forward planned waste stripping activities and increasing ore haulage by truck. Sections of the conveyor belt have been identified and planned for future replacement.
- AISC for the quarter was A\$1,404 per ounce (Q2 Dec: A\$1,319/oz) with the increase on the previous quarter primarily due to the lower production volume. Total site costs were similar to the previous quarter. Capex associated with four low hour trucks (part of the previously announced new mining fleet) was recognised in AISC this quarter (following the capex associated with the two low-hour excavators which impacted AISC in Q2 Dec).



[1] Non-IFRS measure, refer Appendix

#### Outlook

### > FY16 guidance is maintained:

- > production of between 100,000 and 110,000 ounces
- > AISC of between A\$1,350 and A\$1,430 per ounce
- > Capex of between A\$10 and A\$12 million.

### Simberi Sulphide Project pre-feasibility study (PFS)

- > The pre-feasibility study (PFS) for the Simberi Sulphide Project was completed (subject to independent review of the underlying resource estimate) in April 2016 for consideration by the Board. The PFS confirmed that the Sulphide Project could extend mine life at Simberi by a further eight years (beyond the current three year oxide treatment plan).
- > Completion of the study has resulted in an update to the information released as a progress report in February, as shown in the adjacent table.
- > The PFS was scoped to focus on low capital expenditure solutions that utilised existing infrastructure to the extent possible. Updated indicative parameters of the Sulphide Project based on the PFS are set out in the adjacent table.
- > It is proposed that the Sulphide Project would utilise the existing infrastructure on Simberi Island, including the airport, power station, village and wharf. The existing semi-autogenous grinding (SAG) mill and scrubber-ball mill would be utilised in a new plant flowsheet, maintaining the ability to process both oxide and sulphide ores.
- > The PFS indicates the production and sale of a concentrate as the preferred option, which avoids the requirement to establish downstream processing on the Island.
- > A key remaining requirement to finalise the PFS is an independent review of the resource estimate used to inform the PFS, with such work currently in progress. The PFS evaluation will be validated upon completion of the resource estimation, which is scheduled to coincide with the annual Ore Reserve and Mineral Resources Statements scheduled to be released with the annual financial statements in August 2016.
- > To avoid an interruption to production, a decision on the Sulphide Project is required by Q3 March 2017. It is envisaged that further optimisation and value engineering activities will continue on the Project to support a possible future investment decision, including further investigation of the optimal balance between grinding and flotation time to maximise recovery.
- > While not currently a preferred option for St Barbara, potential methods to oxidise the sulphide concentrate on site may be of interest to other parties and will be investigated as part of the Strategic Review.

#### Indicative parameters from the Simberi Sulphide Project PFS

Scope	<ul> <li>Produce and sell gold concentrate from sulphide ores and gold doré from oxide ores</li> </ul>
	Minimise canital expenditure use existing
	infrastructure
Ore Reserves	Sulphide: 19.9 Mt @ 2.0 g/t Au for 1,285 koz of
at 30 June	contained gold
2015 <sup>1</sup> *	Oxide: 19.1 Mt @ 1.3 g/t Au for 818 koz of contained gold <sup>2</sup>
	The PFS has been prepared on a proposed revised interpretation of the existing Ore Reserve which is currently subject to independent review and subsequent Company approval.
	The primary change to the proposed revised interpretation of the existing Ore Reserve is the cut-off grade applied to the sulphide ore, which has been increased from between 0.9 to 1.1 g/t Au to a consistent 1.2 g/t Au, increasing the average sulphide ore grade by approximately 25%.
Capex	US\$100 million (A\$135 million at A\$/US\$ 0.75) comprising:
	<ul> <li>US\$43 million processing plant</li> </ul>
	<ul> <li>US\$42 million owner operated mining fleet<sup>3</sup></li> </ul>
	<ul> <li>US\$15 million general site infrastructure</li> </ul>
Strip ratio *	3.1 (for life of mine from FY17 for combined oxide and sulphide)
Mill	<ul> <li>3.5 Mtpa processing oxide ore</li> </ul>
throughput *	<ul> <li>(for approx. first 2 years and last year of project)</li> <li>2.0 Mtpa processing sulphide ore (following oxide ore)</li> </ul>
Production *	Average annual production from sulphide ores
(after applying	approx. 130,000 ounces over 8 years
recovery)	(1 Moz in total)
	Production from oxide ores treated within the
	Sulphide Project varies by year (80,000 oz in total)
Sulphide	c. 84%
recovery *	
Output *	Gold concentrate @ 35+ g/t Au from sulphide ores Gold doré from oxide ores
Concentrate	90% <sup>4</sup>
payable	
All-In Sustaining	US\$930 to US\$990 per ounce
Cost <sup>5</sup>	

<sup>6</sup> Indicates a change from the parameters in the progress report advised on 23 February 2016

- 3 Capex on new fleet would be incurred over the sulphide mine life. Contract mining to be assessed as an alternative
- 4 Concentrate payable not included in the reported AISC range

<sup>1</sup> Refer ASX release 25 August 2015 'Ore Reserves and Mineral Resources Statements as at 30 June 2015'

<sup>2</sup> Parts of the existing oxide reserve are contained within the Sulphide Project pit shell, and are subject to optimisation of the existing oxide operation

<sup>5</sup> Non-IFRS measure, refer Appendix, does not include concentrate payable

### **Strategic Review of PNG assets**

- > As announced on 23 February 2016, the Company is undertaking a strategic review of its PNG assets to evaluate the potential investment in the Simberi Sulphide Project against the Company's other potential investment opportunities
- > To maintain continuity of production at Simberi a decision on the Sulphide Project is required by Q3 March 2017.
- > Cutfield Freeman & Co is assisting the Company to conduct the Strategic Review and evaluate various options regarding its PNG assets, including:
  - > Sulphide Project
  - > existing oxide operation
  - > EL609 exploration licence across the Tabar Island Group (inc. Simberi, Tatau and Big Tabar Islands).
- > The Strategic Review is anticipated to take approximately 6 months to complete and will explore a range of options for the Company's PNG assets including:
  - > continued ownership, exploration and development
  - > joint ventures
  - > divestment of some or all of the assets.
- > The evaluation of all options under the Strategic Review is progressing to schedule, including the identification of likely interested parties.

## **Exploration**

### Gwalia Deep Drilling Program, Leonora WA

- > Resource extension drilling at Gwalia has continued with the objective of providing the required certainty to extend the Gwalia Indicated Resource and to develop the case for mining below the current base of reserves at 1,800 metres below surface (mbs).
- > Daughter holes GWDD13M, 13N, 17BW1 and 17C were completed to downhole depths of 2,147, 2,145, 2,233 and 2,263m respectively. All four drill holes successfully intersected the mining sequence for widths of between 77m and 111m, intersecting variously some or all of the mineralised veining interpreted to be extensions of Main Lode, South West Branch and South Gwalia Series (1 and 2). Results are set out in Table 2 and illustrated in Figures 1.0 and 2.0, including the following significant intercepts:

>	GWDD13M	South Gwalia Series 1 7.2m @ 7.4 g/t Au from 2,216 mbs
>	GWDD13N	Main Lode 2.9m @ 6.6 g/t Au from 2,109 mbs
>	GWDD13N	South Gwalia Series 1 6.4m @ 3.7 g/t Au from 2,183 mbs
>	GWDD17BW1	Main Lode 1.7m @ 16.2 g/t Au from 2,008 mbs
>	GWDD17BW1	South Gwalia Series 2 3.3m @ 28.6 g/t Au from 2,057 mbs
>	GWDD17C	Main Lode 1.3m @ 72.6 g/t Au from 2,002 mbs

- > GWDD17C South West Branch 10.2m @ 3.6 g/t Au from 2,012 mbs
- > Daughter hole GWDD17B was abandoned at a downhole depth of 1,801m due to poor core recovery. A wedge hole was successfully drilled (GWD17BW1) to recover core from the affected interval.
- > GWDD17D and GWDD18 represent the beginning of the next phase of surface drilling to investigate potential southern extensions to the Gwalia system and its downplunge extent to 2,200 mbs (Figures 5.0, 6.0 & 7.0).
  - > Daughter hole GWDD17D, targeting a potential southern extension, is expected to intercept its target in April 2016 at an approximate downhole depth of 2,000m. This hole will be followed by GWDD17E and 11N, also targeting the potential southern extension.
  - Parent hole GWDD18, targeting down-plunge extensions to the Gwalia lode system is expected to intercept its target in late June 2016 at a depth of approximately 2,200 mbs.

> It is expected that the recently completed drilling program will extend the current base of reserves. Studies will continue to investigate alternative materials handling or ventilation solutions to continue deeper.

### Centenary Project, Leonora WA

- > The Centenary project is located approximately 60 km north of Leonora, near the Jaguar and Bentley operations of Independence Group.
- > A second phase of drilling was undertaken with two drill holes completed. No significant intercepts were returned.
- > Downhole electromagnetic (EM) survey work carried out on these holes resolved the likely source of surface EM anomalies to the presence of pyritic black shales.
- > High powered, systematic moving-loop TEM (HP MLTEM) survey program was extended through the project area (E37/916, E37/917 tenements) between January and February 2016. Results will be evaluated in FY17.

### Pinjin Project, Yilgarn WA

- > Exploration continued on the Pinjin project within the Yilgarn Province, WA. The Pinjin Project is located 150 km northeast of Kalgoorlie, comprising a large tenement package of 20 exploration licences (1,358 km<sup>2</sup>) for 485 blocks (Figure 8.0).
- > A significant aircore drilling program (of up to 25,000 metres) targeting 16 bedrock geochemical and geophysical targets commenced in the March 2016 quarter and will continue through much of the June 2016 quarter (Figure 8.0). To date 188 holes have been drilled for a total of 9,619m. Assay results are pending and are anticipated to be reported in the June 2016 quarterly report.

# Simberi, Tatau & Tabar Islands, Papua New Guinea (ML 136 and EL 609)

- > Exploration continued on Simberi ML136 and EL609 at Western Simberi Island and Big Tabar Island (Figures 9.0 and 9.1).
- > On Simberi Island (Figure 9.0), the exploration program continued to focus on identifying additional near-mine higher grade oxide resources as potential ore feed sources to extend oxide mine life.
- > On Big Tabar Island (Figure 9.1), additional trench sampling was completed at Banesa Au-Cu porphyry prospect and mapping and surface sampling commenced at Fotombar prospect.

#### **Bekou South:**

- > 59 bedrock jack-hammer samples were collected from Bekou South in the December 2015 quarter following up on a historical gold-in-soil anomaly (Figure 9.2). Seven bedrock samples returned >0.5 g/t Au, with a maximum of 3.7 g/t Au.
- > 14 trenches (SIMTR954 to SIMTR967) were completed for 1,910 metres and 382 samples following up anomalous bedrock jack-hammer samples. The trench sampling results are highlighted in Figure 9.2 and include:
- > SIMTR961: 90m @ 1.3 g/t Au
- > SIMTR962: 35m @ 1.9 g/t Au, including

		5m @ 8.6 g/t Au
>	SIMTR963:	65m @ 1.0 g/t Au, and
		40m @ 3.3 g/t Au, including
		5m @ 16.4 g/t Au
>	SIMTR964:	30m @ 5.6 g/t Au, including
		5m @ 29.3 g/t Au,
		10m @ 5.9 g/t Au, including
		5m @ 10.8 g/t Au

#### West Simberi:

> Surface sampling continued on West Simberi Island (EL609) during the March 2016 quarter. Ridge and spur soil followed up anomalous gold in stream sediment samples (Figure 9.3). Maximum assay result retuned from the recent soil samples was 17 ppb Au.

#### **Big Tabar Island:**

> Additional trench mapping and channel sampling was completed at Banesa Au-Cu prospect (EL609) to test for potential extensions to mineralisation to the NW and SE. During the March quarter, five creek channel and trenches (TABTR187 to TABTR191) were completed for 710 metres and 142 samples. To date, a total of 128 creek channel and trenches (TABTR064 to TABTR191) for 7,646 metres and 1,530 samples were collected at Banesa. Au and Cu assay results were received for trenches TABTR177 to TABTR186 returning no significant results. Trench locations are shown in Figure 9.4.

### Fotombar:

Reconnaissance mapping, rock chip and float sampling commenced at Fotombar (Figure 9.5). Results returned included 6 float samples assaying >1 g/t Au with a maximum of 13.2 g/t Au. Samples comprise breccia float with a chalcedonic quartz-pyrite matrix. Mapping is required to determine if the source is a narrow northsouth trending zone of mineralisation subject to past historical drilling.

### Expenditure (unaudited)

> Expenditure on mineral exploration for the March 2016 quarter is shown below:

	Q3 Mar 2016	
Australia	A\$0.5 million	(expensed)
Pacific	A\$0.8 million	(expensed)
Gwalia Deep Drilling	A\$1.9 million	(capitalised)
Total	A\$3.2 million	
-		

### June 2016 Quarter

- > Exploration in Q4 June 2016 will focus on:
  - Continuing the Gwalia Deeps drilling program on the Southern Extension and down-plunge target areas
  - Follow up underground drilling for Gwalia northern extensions
  - Continuing the major aircore drilling program of up to 25,000 metres at Pinjin
  - > Targeting near mine oxide potential within ML136 on Simberi, including trenching at Pigicow West, Botlu South and Bekou South
  - Subject to access, trenching on southwest Tatau Island targeting higher grade oxide and sulphide potential
  - Continue additional follow-up trenching at Banesa Au-Cu prospect on Big Tabar Island
  - Continue mapping, surface sampling and grid clearing in preparation for a ground magnetic survey at Fotombar prospect on Big Tabar Island
  - > The map below shows current and planned target areas for Q4 June 2016.



# **Health & Safety**

- > The Company-wide Total Recordable Injury Frequency Rate (TRIFR), calculated as a rolling 12 month average, decreased from 3.4 at 31 December 2015 to a record low 2.7 for the twelve months ended 31 March 2016.
- St Barbara employees participated in the PNG Mining Safety Week in March 2016. Areas of focus included boating, light vehicles and chainsaw safety.

### **Finance**

- > 93,173 ounces of gold were sold in the March quarter, at an average realised gold price of A\$1,614 per ounce (Q2 Dec: 89,050 ounces at A\$1,560 per ounce).
- > Cash at bank at 31 Mar 2015 was \$114 million<sup>1</sup> after total payments during the quarter of A\$38 million for the repurchase of US Notes and payment of bi-annual interest on the US Notes and quarterly Red Kite interest and principal repayments noted below:
  - > During the March quarter, the Company repurchased US\$12 million in aggregate principal of its US Senior Secured Notes at a discount to par value of 2.0% and 2.5% St Barbara has now repurchased a cumulative US\$82 million (33%) in principal of the original US\$250 million of Notes issued by St Barbara in March 2013 at discounts of between 2% and 7%. US\$168 million of the Notes were on issue at the end of the March quarter.
  - > US\$15 million principal was repaid against the Red Kite debt facility during the March quarter. The balance of the Red Kite facility at 31 March 2015 was US\$21 million. A further US\$10 million was repaid on the Red Kite facility on 15 April 2016 reducing the balance on this facility to US\$11 million. The Company anticipates to completely extinguish the Red Kite debt before 30 June 2016.
- > Total interest bearing liabilities at 31 March 2015 of A\$248 million (31 Dec 2015: A\$299 million) included US\$168 million Senior secured notes and US\$21 million Red Kite facility, with the balance comprised of A\$2 million of lease liabilities. A\$/US\$ exchange rate at 31 Mar 2015 was 0.7662<sup>2</sup> (31 December 2015: 0.7285).

Cash movements for the March 2016 quarter are summarised in the following table:

Cash movements & balance A\$M	Q1 Sep	Q2 Dec	Q3 Mar
(unaudited)	FY16	FY16	FY16
Leonora - operating cash flow <sup>[3]</sup>	68	52	63
Simberi - operating cash flow [3]	12	5	8
Gold Ridge <sup>[4]</sup>	(1)	(1)	-
Rehabilitation , land	(2)	(1)	(1)
management & corporate capex			
Corporate costs	(4)	(4)	(4)
Corporate royalties	(2)	(2)	(2)
Exploration <sup>[5]</sup>	(2)	(5)	(3)
Working capital movement	3	(1)	(9)
Cash flows before finance costs	72	43	52
Net interest and finance costs	(4)	(13)	(1)
US debt repayment	(30)	(45)	(37)
Net movement for quarter	38	(15)	14
Cash balance at start of quarter	77	115	100
Cash balance at end of quarter <sup>[6]</sup>	115	100	114

- > At the end of the quarter, approximately 25,000 ounces of gold forward contracts remained to be delivered in monthly instalments between April and June 2016 at A\$1,600 per ounce (this hedge announced on 8 April 2015 of initially 100,000 ounces, to secure a reliable cash margin on Simberi's FY16 gold production).
- > At the end of the quarter, approximately 30,000 ounces remained of the zero cost collar comprising gold put options (priced at US\$1,187 per ounce) and gold call options (priced at US\$1,287 per ounce) for the period April to June 2016 (this hedge announced on 15 February 2016 of initially 40,000 ounces, to reduce US dollar gold price risk on remaining Red Kite debt facility).
- > 50,000 ounces of gold forward contracts is to be delivered in monthly instalments between July and December 2016 at US\$1,260 per ounce (this hedge announced on 18 March 2016, to reduce US dollar gold price risk associated with repayment of the remaining US Senior Secured Notes).
- > S&P increased the credit rating of the Company and its US Senior Secured Notes from B- to B on 29 March 2016.

<sup>1</sup> Excludes A\$1.5 million restricted cash

<sup>2</sup> Reuters

<sup>4</sup> Q2 Dec cash flow includes final payment for water treatment plant

<sup>5</sup> Includes Gwalia deep drilling

<sup>6</sup> Excludes restricted cash (amount varies by quarter)

Se	nior Secured Notes	US\$M
>	Issued March 2013	250
>	Repurchased Q4 Jun 2015	(54)
>	Repurchased Q1 Sep 2015	(13)
>	Repurchased Q2 Dec 2015	(3)
>	Repurchased Q3 Mar 2016	<u>(12)</u>
>	Balance remaining at 31 Mar 2016	<u>168</u>
>	Coupon	8.875% p.a.
>	Redemption date	15 April 2018
>	S&P rating	В
>	Moody's rating	Caa1

# Corporate

> The Company was included in the ASX 200 in March 2016.

# Share Capital

Issued shares				
Opening balance 31 December 2015	495,102,525			
Issued	Nil			
Closing balance 31 March 2016	495,102,525			
Unlisted employee rights				
Opening balance 31 December 2015	24,034,288			
Issued	Nil			
Lapsed	Nil			
Closing balance 31 March 2016	24,034,288			

# ASX & ADR

The Company's shares are listed on ASX (ASX:SBM) and through American Depositary Receipts (ADR OTC: STBMY) traded in the USA.

# **Scheduled Future Reporting**

<u>Date</u>	<u>Report</u>
Late July	June 2016 Quarterly Report
Late August	FY16 Financial Report June 2016 Ore Reserves and Mineral Resources Statements

[Dates are tentative and subject to change]

# **Corporate Directory**

St Barbara Limited ABN 36 009 165 066

### **Board of Directors**

Tim Netscher	Non-Executive Chairman
Bob Vassie	Managing Director & CEO
Kerry Gleeson	Non-Executive Director
David Moroney	Non-Executive Director

### Executives

Bob Vassie	Managing Director & CEO
Garth Campbell-Cowan	Chief Financial Officer

## **Registered Office**

Level 10, 432 St Kilda Road

Melbourne Victoria 3004 Australia

Telephone	+61 3 8660 1900
Facsimile	+61 3 8660 1999
Email	info@stbarbara.com.au
Website	www.stbarbara.com.au

Australian Securities Exchange (ASX) Listing code "SBM"

American Depositary Receipts (ADR OTC code "STBMY") through BNY Mellon,

www.adrbnymellon.com/dr\_profile.jsp?cusip=852278100

Financial figures are in Australian dollars (unless otherwise noted).

# **Shareholder Enquiries**

Computershare Investor Services Pty Ltd	
GPO Box 2975	
Melbourne Victoria 3001 Australia	
Telephone (within Australia)	1300 653 935
Telephone (international)	+61 3 9415 4356
Facsimile	+61 3 9473 2500
www-au.computershare.com/investor	

American Depositary Receipt enquires: BNY Mellon Depositary Receipts www.bnymellon.com/shareowner

# **Investor Relations Contact**

Franklin Resources Inc

Rowan Cole, Company Secretary	+ 61 3 8660 1900
Substantial Shareholders	% of Holdings <sup>1</sup>
Hunter Hall Investment Management Ltd	12.6%
M&G Investment Management Ltd	11.5%
Van Eck Associates Corporation	5.7%

1. As notified by the substantial shareholders to 31 March 2016

5.6%

### Appendix

# **Non-IFRS Measures**

- The Company supplements its financial information reporting determined under International Financial Reporting Standards (IFRS) with certain non-IFRS financial measures, including cash operating costs and All-In Sustaining Cost. We believe that these measures provide additional meaningful information to assist management, investors and analysts in understanding the financial results and assessing our prospects for future performance.
- > Cash Operating Costs are calculated according to common mining industry practice using The Gold Institute (USA) Production Cost Standard (1999 revision).
- > All-In Sustaining Cost (AISC) is based on Cash Operating Costs, and adds items relevant to sustaining production. It includes some, but not all, of the components identified in World Gold Council's Guidance Note on Non-GAAP Metrics - All-In Sustaining Costs and All-In Costs (June 2013).
  - > AISC is calculated on gold production in the quarter.
  - > For underground mines, amortisation of operating development is adjusted from "Total Cash Operating Costs" in order to avoid duplication with cash expended on operating development in the period contained within the "Mine & Operating Development" line item.
  - > Rehabilitation is calculated as the amortisation of the rehabilitation provision on a straight-line basis over the estimated life of mine.

## **Competent Persons Statement**

### **Exploration Results**

- > The information in this report that relates to Exploration Results for Simberi and Pinjin is based on information compiled by Dr Roger Mustard, who is a Member of The Australasian Institute of Mining and Metallurgy. Dr Mustard is a full-time employee of St Barbara and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr Mustard consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.
- > The information in this report that relates to Exploration Results for Gwalia and the Leonora region is based on information compiled by Mr Robert Love, who is a Fellow of The Australasian Institute of Mining and Metallurgy. Mr Love is a full-time employee of St Barbara and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of

the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Love consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

#### **Mineral Resource and Ore Reserve Estimates**

- > The information in this report that relates to Mineral Resources or Ore Reserves is extracted from the report titled 'Ore Reserves and Mineral Resources Statements 30 June 2015' released to the Australian Securities Exchange (ASX) on 25 August 2015 and available to view at www.stbarbara.com.au and for which Competent Persons' consents were obtained. Each Competent Person's consent remain in place for subsequent releases by the Company of the same information in the same form and context, until the consent is withdrawn or replaced by a subsequent report and accompanying consent.
- > The Company confirms that it is not aware of any new information or data that materially affects the information included in the original ASX announcement released on 25 August 2015 and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the original ASX announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original ASX announcement.
- Competent Persons Dr Mustard and Mr John de Vries (prior to his resignation from St Barbara in July 2015) are entitled to participate in St Barbara's long term incentive plan, details of which are most recently included in the 2015 Annual Report and Notice of 2015 Annual General Meeting released to the ASX on 20 October 2015. In 2012 and 2013 increase in Ore Reserves was one of the performance measures under that plan.
- > Full details are contained in the ASX release dated 25 August 2015 'Ore Reserves and Mineral Resources Statements 30 June 2015' available at www.stbarbara.com.au.



Quarterly Report / Q3 March 2016

# **Exploration Figures and Tables**



# Figure 1.0: Leonora: Gwalia Deep Drilling Long Section (looking north)









Figure 4.0: Leonora: Gwalia Northern Extension Drilling Long Section (looking south west)





Figure 5.0: Leonora: Gwalia Extension Drilling Q4 2016: Plan View









# Figure 8.0: Pinjin Project Drill Target Location Map





Simberi Island Location Map,

Figure 9.0

Figure 9.1 Big Tabar Island Location Map, Papua New Guinea





Figure 9.2 Bekou South Trench Location Map, Simberi ML 136, Papua New Guinea









Figure 9.5 Fotombar Sample Location Map, Big Tabar Island, Papua New Guinea



 Table 1:
 Northern Extension Significant Intercepts– Leonora Operations, Gwalia Mine

Hole Id	North	Fast	RL	Metres Below			Mine	Down-hole eralised Inter	section	
Hole lu	North	Lust	NL.	Surface	Depth	Dip/ Azimuth	From	То	Interval	Gold grade
						degrees	m	m	m	g/t Au
UGD2391	6060.6	9418.0	3736.4	1639	470.0	-16/306	286.3	292	5.7	12.6
UGD2392	6004.0	9515.1	3689.9	1685	380.0	-37/308	205.0	208.0	3.0	6.1
UGD2394	6027.6	9522.1	3696.7	1678	438.0	-35/313	205.0	218.0	13.0	6.4
UGD2395	5998.1	9572.6	3663.2	1712	249.7	-52/320	189.1	193.1	4.0	3.3
UGD2400	6080.3	9391.9	3755.2	1620	544.7	-13/304	311.3	323.0	11.7	6.3
UGD2401	6067.3	9436.5	3730.9	1644	490.2	-19/308	268.3	292.8	24.5	5.3
UGD2402	6041.3	9487.1	3715.8	1659	449.9	-25/311	227.1	238.8	11.7	1.7

NOTES:

No high grade cut is applied.

Dip and Azimuth angles estimated at intercept depth

Azimuth referenced to Mine Grid.

Reported intercepts are all down hole lengths.

# Table 2: Gwalia Deeps Significant Intercepts– Leonora Operations, Gwalia Mine

Hole Id	Down-hole Mineralised Intersection									
noic iu	North	East	RL	Metres Below	Lode	Dip/ Azimuth	From	То	Interval	Gold grade
	m	m	m	Surface		degrees	m	m	m	g/t Au
GWDD13M	5544.0	9849.4	3345.6	2034	SGS2	-55/235	2216.3	2223.4	7.2	7.4
GWDD13N	5683.0	9737.9	3545.1	1835	ML	-25/267	2108.5	2111.4	2.9	6.6
GWDD13N	5682.5	9725.4	3538.9	1841	SWB	-26/268	2121.9	2126.1	4.2	3.1
GWDD13N	5681.2	9669.4	3511.8	1868	SGS1	-25/269	2183.0	2189.4	6.4	3.7
GWDD13N	5681.1	9664.8	3509.6	1870	SGS2	-25/269	2189.4	2193.0	3.6	2.9
GWDD17BW1	5444.9	9760.9	3538.5	1842	ML	-53/282	2007.5	2009.3	1.7	16.2
GWDD17BW1	5446.8	9751.6	3526.0	1854	SWB	-53/282	2022.4	2025.8	3.4	3.5
GWDD17BW1	5451.0	9730.8	3498.3	1882	SGS2	-53/281	2057.3	2060.6	3.3	28.6
GWDD17C	5409.3	9760.8	3541.5	1839	ML	-50/271	2001.7	2003.0	1.3	72.6
GWDD17C	5409.6	9751.1	3530.0	1850	SWB	-49/272	2012.3	2022.5	10.2	3.6

NOTES:

High grade cuts are applied to SGS2 (80 g/t Au). Other lodes are reported uncut. Dip and Azimuth angles estimated at intercept depth.

Azimuth referenced to Mine Grid

Reported intercepts are all down hole lengths.

# LEONORA (Gwalia Deeps and Gwalia Northern Extension)- JORC Code, 2012 Edition – Table 1

### Contents

Drilling: Section 1 Sampling Techniques and Data

Section 2 Reporting of Exploration Results

# Drilling - Section 1 Sampling Techniques and Data

(Criteria in this section apply	to all succeeding sections.)
Criteria	Commentary
Sampling techniques	<ul> <li>Half-core sampling of NQ2 diamond drilling with boundaries defined geologically. Samples are mostly one metre in length unless a significant geological feature warrants a change from this standard unit. The upper or right-hand side of the core is submitted for sample analysis, with each one metre of half core providing between 2.5 – 3 kg of material as an assay sample.</li> </ul>
Drilling techniques	• Diamond drilling using NQ2 (50.6mm) sized core (standard tubes). Holes have been surveyed using a single shot electronic camera. All core is orientated using a Reflex ACT II RD orientation tool.
Drill sample recovery	<ul> <li>Core is metre marked and orientated and checked against drillers blocks to ensure that any core loss is accounted for.</li> <li>Sample recovery is rarely less than 100%. Where minor core loss does occur it is due to drilling conditions and not ground conditions.</li> </ul>
Logging	<ul> <li>All SBM holes are logged primarily for lithology, alteration and vein type/intensity which are key to modelling gold grade distributions. Validation of geological data is controlled via the use of library codes and reliability and consistency of data is monitored through regular peer review.</li> <li>All logging is qualitative.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>SBM half core is cut using a core saw before being sent to SGS laboratory in Kalgoorlie where the entire sample is crushed to achieve particle size &lt;4mm followed by complete pulverisation (90% passing 75 μm).</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>SBM samples were analysed for gold using fire assay with a 50g charge and analysis by flame Atomic Absorption Spectrometry (AAS). QC includes insertion of 3 commercial standards (1 per 20 samples), barren material used for blank control samples, use of barren flush material between designated high grade samples during the pulverising stage, re-numbered sample pulp residues re-submitted to original laboratory, and sample pulp residues submitted to accredited umpire laboratory, submission of residual (duplicate) half core from ore intervals. The analysis of gold was sound and re-analysis of pulps showed acceptable repeatability with no significant bias.</li> </ul>
Verification of sampling and assaying	• Sampling data is recorded electronically in spread sheets which ensure only valid non-overlapping data can be recorded. Assay and down hole survey data are subsequently merged electronically. All drill data is stored in a SQL database on secure company server.
Location of data points	Collars for surface holes are recorded by DGPS. Upon completion of underground drill holes an authorised surveyor will pick up the collar by placing a survey rod into the hole to measure azimuth and dip. This process may also occur while the hole is in progress by surveying the drill rods in the hole.
Data spacing and distribution	<ul> <li>Data spacing for grade control drilling is approximately 10m x 15m from 1000mbs to 1480mbs, resource definition is approximately 20m x 30m and surface drilling is approximately 60m x 80m from 1800mbs to 2080mbs. Drilling data is sufficient to establish down plunge continuity for all lodes.</li> </ul>
Orientation of data in relation to geological structure	Sampling is perpendicular to lode orientations and is sound based on past production and underground mapping.
Sample security	Company personnel or approved contractors only allowed on drill sites; drill samples are only removed from drill site by approved contractors to the company's secure core logging/processing facility; cut core is consigned to accredited laboratories for sample preparation and analysis.
Audits or reviews	Regular reviews of core logging and sampling are completed through SBM mentoring and auditing. Additionally, regular laboratory inspections are conducted by SBM personnel. Inspections are documented electronically and stored on secure company server. No significant issues were identified.

# Drilling - Section 2 Reporting of Exploration Results

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

Criteria	Commentary
Mineral tenement and land tenure status	• SBM has 100% ownership of the two tenements M37/25 and M37/333 over the Gwalia deposit.
Exploration done by other parties	<ul> <li>Western Mining Corporation (WMC) and Sons of Gwalia (SGW), have previously completed deep diamond drilling below 1,100 metres below surface</li> </ul>
Geology	<ul> <li>Gold mineralisation occurs as a number of stepped, moderately east dipping, foliation parallel lodes within strongly potassic altered mafic rocks which extend over a strike length of approximately 500 metres and to a vertical depth of at least 2,080 metres below surface. The deposit exhibits significant down-plunge continuity but is interrupted at approximately 1,200 metres below surface (mbs) by a cross cutting post-mineralisation doleritic dyke, with a horizontal width of approximately 30 metres.</li> </ul>
Drill hole Information	<ul> <li>Drill hole information is included in intercept table outlining mid-point co-ordinates including vertical hole depth and composited mineralized intercepts lengths and depth.</li> </ul>
Data aggregation methods	<ul> <li>A high grade cut of 80g/t Au is applied to South Gwalia Series 2 consistent with underground reporting practices at SBM. Grades in all other lodes are uncut.</li> </ul>
Relationship between mineralisation widths and intercept lengths	Down hole length is reported for all holes
Diagrams	Appropriate diagrams are included within the body of the report
Balanced reporting	Details of all holes material to Exploration Results have been reported in the intercept table.
Other substantive exploration data	These holes test the deepest limits of mineralisation and no other data is available
Further Work	Further exploration drill holes are planned
Balanced reporting	Details of all holes material to Exploration Results have been reported in the intercept table.
Other substantive exploration data	Data is included in the body of the report
Further Work	Follow-up drilling is planned and is discussed in the body of the report

# SIMBERI - JORC Code, 2012 Edition – Table 1

### Contents

Trenching:	Section 1 Sampling Techniques and Data
	Section 2 Reporting of Exploration Results
Surface Sampling:	Section 1 Sampling Techniques and Data
	Section 2 Reporting of Exploration Results

# Trenching - Section 1 Sampling Techniques and Data

(Criteria in this section app	ly to all succeeding sections.)
Criteria	Commentary
Sampling techniques	• Sampling of trenches was done over measured intervals of between 1 and 5 meters dependent on geology. A geo-pick was used to collect a continuous channel sample from the trench faces across the designated interval with the samples collected in calico bags. Samples (3 to 5kg) were prepped on-site (jaw crushed, disk mill pulverised and then split) to produce a 200g pulp sample. A 25g charge was then extracted from the pulp for Au analyses by Aqua Regia digestion followed by an Atomic Absorption Spectroscopy (AAS) instrument finish.
Trenching/Benching techniques	<ul> <li>Trenches were created by both hand and mechanical techniques. Hand trenches were dug using spades, crowbars and shovels to depths of between 1 and 2 meters. Creek channel sampling is conducted in the same manner as trenches, where continuous exposure of bedrock is made by hand clearing of vegetation and cover. Mechanised trenches were dug by an excavator or dozer exposing up to 5 meters of trench wall.</li> </ul>
Drill sample recovery	• N/A
Logging / Mapping	All trenches were qualitatively geologically mapped for lithology, structure and alteration.
Sub-sampling techniques and sample preparation	<ul> <li>Samples are routinely submitted for total pulverisation (85% passing &lt;75 μm) at the company onsite sample preparation facility on Simberi Island.</li> <li>200g pulps are sent to St Barbara's Simberi Laboratory where a 25g sub-sample is taken.</li> <li>For Banesa trench samples, the 200g pulps were sent to ALS, Townsville for analysis.</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>The Mine Lease samples were analysed for gold at the Simberi Lab using Aqua Regia digestion with a 25g charge and analysis by Atomic Absorption Spectrometry.</li> <li>The West Simberi and Banesa samples were analysed for gold at ALS (Townsville) via 50g fire assay and AAS finish (Method Au26). At Banesa, Cu, Ag, As, Fe, Mo, Pb, S, Sb and Zn were analysed via Nitric Aqua Regia Digestion and ICP-AES Finish (Method ME-ICP41).</li> <li>QC included the insertion of two in house blanks at the start of each batch of trench samples, the insertion of certified copper-gold standards (1:100) as well as the collection of field duplicates (1:100).</li> </ul>
Verification of sampling and assaying	• Sampling data is recorded electronically which ensures only valid non-overlapping data can be recorded. Assay and trench survey data are subsequently merged electronically. All data is stored in a SQL database on secure company server.
Location of data points	<ul> <li>All trenches were initially surveyed by a handheld GPS to capture the trench start point. The GPS used the Tabar Island Grid (TIG) which is based on WGS84 ellipsoid. The path of the trench from the initial start point to the end was surveyed by Tape &amp; Compass method. Trench interval coordinates were then generated using basic trigonometry.</li> <li>Selected recent trenches have been picked up using dGPS.</li> </ul>
Data spacing and distribution	Trench data spacing is irregular and broad spaced.
Orientation of data in relation to geological structure	• Where preceding surface mapping and sampling of trenches has contributed to understanding of outcropping geological structures, trenching and sampling has been undertaken to extend the strike length of the mapped structure. However, in many of the areas the lode orientation is poorly understood.
Sample security	• Only company personnel or approved contractors are allowed on drill sites; drill core is only removed from drill site to secure core logging/processing facility within the gated exploration core yard; core is promptly logged, cut and prepped on site. The 200gm pulps are then consigned to ALS in Townsville for Au-base metal analysis.
Audits or reviews	No audits or reviews of sampling protocols have been completed.

# Trenching - Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also a	apply to this section.)
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Criteria	Commentary
Mineral tenement and land tenure status	• SBM has 100% ownership of the two tenements over the Simberi Islands; ML136 on Simberi Island, and EL609 which covers the remaining area of Simberi Island, as well as Tatau Island and Big Tabar Island.
Exploration done by other parties	<ul> <li>CRA, BHP, Tabar JV (Kennecott, Nord Australex and Niugini Mining), Nord Pacific, Barrick and Allied Gold have all previously worked in this area. Nord Pacific followed by Allied Gold was instrumental in the discovery and delineation of the 5 main oxide and sulphide deposits at Simberi.</li> </ul>
Geology	• The Simberi gold deposits are low sulphidation, intrusion related adularia-sericite epithermal gold deposits. The dominant host rocks for mineralisation are andesites, volcanoclastics and lesser porphyries. Gold mineralisation is generally associated with sulphides or iron oxides occurring within a variety of fractures, such as simple fracture in-fills, single vein coatings and crackle brecciation in the more competent andesite units, along andesite/polymict breccia contact margins as well as sulphide disseminations. On Tatau and Big Tabar Islands, located immediately south of Simberi, potential also exists for porphyry Cu-Au, epithermal quartz Au-Ag and carbonate-base metal Au mineralisation.
Trench/Bench Information	Included in the report text and annotated on diagrams.
Data aggregation methods	<ul> <li>Broad trench intercepts are spikes within the broader aggregated interval using a cut-off of 0.5 g/t Au and a minimum grade*length of 5gmpt. Such intercepts may include material below cut-off but no more than 5 sequential meters of such material and except where the average drops below the cut-off. Selvage is only included where its average grade exceeds 0.5 g/t Au.</li> <li>Using the same criteria for included sub-grade, supplementary cut-offs, of 2.5g/t Au, 5.0g/t Au and 10g/t Au, may be used to highlight higher grade zones and spikes within the broader aggregated interval. Single assays intervals are reported only where ≥1.0g/t and ≥5m trench length is intercepted. No high grade cut is applied.</li> <li>At Banesa, the same method is applied to aggregate gold grades using a 0.5 g/t cut-off grade and minimum grade*length of 5gmpt with no more than 5m of internal dilution and similar selvage restrictions. Within the corresponding Au intercept, Cu grades are reported if above 0.1% Cu. For defining copper intercepts a minimum of 0.1% Cu cut-off grade over 5m is used to define copper aggregated intervals with the corresponding gold grade reported where it is above 0.1g/t Au. Gold grades below this are not reported. Such intercepts may include material below cut-off but no more than 10 sequential meters of such material and except where the average drops below the cut-off. Selvage is only included where its average grade exceeds 0.1 %Cu. Supplementary copper grades above 0.2% Cu and/or 0.5 g/t Au are used to highlight higher gold or copper grade zones within the broad zone. No high grade cut is applied.</li> <li>No metal equivalent values are used for reporting exploration results.</li> </ul>
Relationship between mineralisation widths and intercept lengths	Trench intercepts are sampled along the length of the trench and are reported for all trenches; true width is not reported.
Diagrams	Diagrams 4.2 And 4.4 show all trenches material and immaterial to Exploration Results.
Balanced reporting	• Details of all trenches material to Exploration Results have been reported in the text, and all other trenches dug during the reporting period are highlighted on diagrams 4.2 and 4.4 included in the report.
Other substantive exploration data	Included in the body of the report.
Further work	Included in the body of the report.

# Surface Sampling - Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)		
Criteria	Commentary	
Sampling techniques	<ul> <li>Soil samples were collected by first digging through the organic A horizon until the B horizon was reached (Approximately 40cm depth). A bulk sample of approximately 3kg was then collected in a calico bag.</li> </ul>	
Drilling techniques	• N/A	
Drill sample recovery	• N/A	
Logging	All rock chip, float and soil samples were qualitatively logged for lithology, alteration, weathering and colour.	
Sub-sampling techniques and sample preparation	<ul> <li>Rock chip, float and soil samples were fully prepared at the company's on-site sample preparation facility on Simberi Island with 200g pulps sent to ALS Laboratory in Townsville for analysis.</li> </ul>	
Quality of assay data and laboratory tests	<ul> <li>Rock chip, float and soil samples were analysed for gold by ALS Townsville using Aqua Regia digestion with a 50g charge and analysis by Inductively Coupled Plasma Mass Spectroscopy. Base metals were analysed using Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES). QC included insertion of field duplicates (1:100) and low level gold standards (1:100).</li> </ul>	
Verification of sampling and assaying	• N/A	
Location of data points	<ul> <li>All sampling sites were surveyed by a hand held GPS using Tabar Island Grid (TIG) which is based on WGS84 ellipsoid and is GPS compatible.</li> </ul>	
Data spacing and distribution	<ul> <li>The sampling programs were designed to test the West Simberi catchment areas such that further stages of exploration could be planned.</li> </ul>	
Orientation of data in relation to geological structure	• N/A	
Sample security	<ul> <li>Only trained company personnel were allowed to collect the samples; All samples were held within a secure company building before dispatch to ALS in Townsville for Au-base metal analysis.</li> </ul>	
Audits or reviews	No audits or reviews of sampling protocols have been completed.	

### Surface Sampling - Section 2 Reporting of Exploration Results

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

Criteria	Commentary
Mineral tenement and land tenure status	• SBM has 100% ownership of the two tenements over the Simberi Islands; ML136 on Simberi Island, and EL609 which covers the remaining area of Simberi Island, as well as Tatau Island and Big Tabar Island.
Exploration done by other parties	<ul> <li>CRA, BHP, Tabar JV (Kennecott, Nord Australex and Niugini Mining), Nord Pacific, Barrick and Allied Gold have all previously worked in this area. Nord Pacific followed by Allied Gold was instrumental in the discovery and delineation of the 5 main oxide and sulphide deposits at Simberi.</li> </ul>
Geology	• The Simberi gold deposits are low sulphidation, intrusion related adularia-sericite epithermal gold deposits. The dominant host rocks for mineralisation are andesites, volcanoclastics and lesser porphyries. Gold mineralisation is generally associated with sulphides or iron oxides occurring within a variety of fractures, such as simple fracture in-fills, single vein coatings and crackle brecciation in the more competent andesite units, along andesite/polymict breccia contact margins as well as sulphide disseminations. On Tatau and Big Tabar Islands, located immediately south of Simberi, potential also exists for porphyry Cu-Au, epithermal quartz Au-Ag and carbonate-base metal Au mineralisation.
Drill hole Information	• N/A
Data aggregation methods	• N/A
Relationship between mineralisation widths and intercept lengths	• N/A
Diagrams	Figures 4.2 to 4.5 show all sample sites material and immaterial to Exploration Results.
Balanced reporting	• All trench and soils sample locations any significant results are shown in Figures 4.2 to 4.5.
Other substantive exploration data	Included in the body of the report.
Further work	Included in the body of the report.