



## Corporate Details

**Ordinary Shares:**  
791,747,847

**Market Capitalisation:**  
~\$178.1 million

**Cash and bullion at 31 March 2018:**  
~\$23.4 million

**Debt:**  
NIL

**ASX Code:** MOY

## Board of Directors

**Greg Bittar**  
Non-Executive Chairman

**Michael Chye**  
Non-Executive Director

**Tim Kennedy**  
Non-Executive Director

**Peter Lester**  
Non-Executive Director

## Management

**Peter Cash**  
Chief Executive Officer

**Dean Will**  
Chief Operating Officer

**Ray Parry**  
Chief Financial Officer and  
Company Secretary

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## March 2018 Quarterly Activities Report

### Key Points

- **March quarter gold production of 20,323oz at AISC<sup>1</sup> of A\$1,295/oz.**
- **Gold production for CY2018 expected to be in the range of 75-80koz at an all-in sustaining cost (AISC) of A\$1280 – \$1350/oz.**
- **Cash and bullion of \$23.4 million at 31 March (\$22.4m at Dec 31); no debt.**
- **March quarter gold production was above guidance of 18-20,000 oz following the processing of remaining higher-grade ore from the Bartons cut-back. The Bartons cut-back was completed in March in preparation for the new Bartons Underground.**
- **Portal development has commenced at Bartons Underground, with high-grade development ore expected to come into the production schedule during Q4, ahead of high-grade stoping ore in Q1 2019.**
- **Pre-stripping and mining activities now underway at the Golden Eagle Mining Centre to access higher grade ore sources.**
- **Gold production for the remainder of CY2018 expected to be sourced primarily from the Golden Eagle deposit (Mineral Resource of +320,000oz), supplemented by high-grade oxide feed from the new Redbeard deposit, Au81 West and Shearers North/Mundalla deposits.**
- **20 per cent increase in Ore Reserves at 31 December 2017 to 221,600oz, up from 185,900oz last year (net of mining depletion of 84,808oz for CY2017) following a highly successful +246,000m drilling campaign in 2017.**
- **Drilling continues to deliver strong results that support Millennium's plan to establish a +5-year mine life at Nullagine with annual production of 100,000ozpa.**
- **Maiden Mineral Resource of 245,700t at 2.6g/t Au for 20,600oz completed for the new Redbeard oxide discovery, with subsequent drilling confirming the high-grade mineralisation remains open at depth.**
- **Processing Study on the extensive sulphide Mineral Resource at Nullagine demonstrates sustainable financial and operating benefits using the new processing method outlined in recent releases.**
- **Procurement of long-lead process equipment for the plant expansion will commence during the June 2018 Quarter, targeting commissioning during the first quarter of CY2019.**



Millennium Chief Executive Peter Cash said the March Quarter had delivered strong progress both from an operational and exploration perspective.

“This was a solid result for Millennium, with production for the March Quarter of 20,323 ounces slightly exceeding guidance thanks to the strong performance of the Bartons cut-back and Au81 West Pit.

“With the Bartons cut-back now complete, mining will now focus primarily on the Golden Eagle Mining Centre which will represent an important source of ore feed over the remainder of 2018.

“Pre-stripping of the Golden Eagle deposit is now underway to provide access to higher-grade ore, which means we can expect to see slightly lower production and a higher cost base over the June and September Quarters. However, this investment in mine development will set the Company up for a strong increase in production in the December Quarter, with our annualised production rate expected to hit 100,000 ounces per annum by the end of the year.

“In addition, we’re now set to unlock the significant value within our sulphide ore resource at Nullagine, with studies during the Quarter confirming the preferred processing route and delivering a very substantial reduction in capital and operating costs.

“We expect to place first orders for long-lead items for the plant expansion within the coming weeks, putting us on track to commence commissioning in early 2019.

“The commencement of underground development at Bartons also marks a key milestone for Millennium, representing the first of several potential underground mining operations at Nullagine. High-grade development ore from Bartons Underground will hit the mill during the December quarter, with high-grade stoping ore entering the mining schedule early next year.

“Exploration is also continuing to deliver positive results, with drilling at the emerging Redbeard deposit confirming the high-grade mineralisation remains open at depth,” he said.

## **Mine Safety, Environment and Community**

### Safety

There were no lost-time injuries, no medically treated injuries and one alternative duty injury recorded for the quarter.

The 12-month moving average for the Lost Time Injury Frequency Rate (LTIFR) is 1.38, which is under current industry averages for Western Australia (as reported by the Department of Mines & Petroleum (DMP)). The Total Reportable Injury Frequency Rate (TRIFR) is 9.64.

### Environment and Heritage

No reportable environmental incidents occurred during the quarter.

A mining proposal application for the Barton’s underground resource and Mustang open cut deposit and the Project Management plan for Bartons underground mine were approved by the Department of Mines, Industry Regulation and Safety (DMIRS) this quarter.

Native Vegetation Clearing Permit applications have been approved by DMIRS for Project One (extension to current mining areas at Little Wonder, All Nations, Roscoes Reward and for a new resource area at Round Hill) and Project Two (Majuba, Crossing, Hutt, Agate and Mundella). Further mining proposal extensions of Shearers North/Mundella and Redbeard are well advanced, with applications planned for submittal in early May.

Archaeological Heritage surveys by Traditional Owner Groups continued across the Project, with several areas cleared and approved for ongoing exploration and mining activities.



## Community

Millennium will continue to work closely with the local community throughout 2018 to focus on additional involvement in activities to help emphasise our relationships with them. Such activities include our annual participation in the ANZAC Day Service held at Lynas Lookout and closely work with the School to enhance the students' knowledge of business, continued education and future pathways outside of school. We will once again contribute to their annual school excursion outside of Nullagine.

Millennium values highly its role as a proactive member of the Nullagine township community and maintains strong relationships within the broader community. The Company continues to work closely with several local service groups including schools, Police Force, Nursing Station and DFES as well as maintaining the Nullagine airstrip.

## Operational Activities Summary

The Company produced 20,323oz for the quarter at a C1 cash cost of \$1,194/oz and an AISC of \$1,295/oz.

The mining schedule during the quarter focused on the Bartons cut-back, the Au81 West pit and the commencement of mining at the Golden Eagle South deposit. The Au81 West and Golden Eagle South deposits will provide the bulk of high grade ore feed for the next three months.

Production for the June quarter is expected to be in the range of 16-18,000oz, with a corresponding increase in AISC to A\$1,500-1,600/oz due to the combination of additional pre-stripping costs at Golden Eagle and the lower ounce production levels.

Importantly, the new mine schedule sees production increasing in Q4 to +25,000oz at an AISC of ~A\$1,100/oz, enabling the Company to achieve its recently announced annual production guidance for 2018 of 75-80,000oz.

The processing plant continued to perform well, with throughput for the quarter of 474,420 tonnes at 1.56g/t.

Clearing and pit development activities at the Golden Eagle deposit were completed during the quarter and mining commenced. Portal development at Bartons underground also commenced during March.

A comparison of the operating results by quarter is provided in Table 1 below:

**Table 1 – Quarterly Comparative Results**

		<b>Jun-17</b>	<b>Sep-17</b>	<b>Dec-17</b>	<b>Mar-18</b>
<b>Total volume mined</b>	<i>bcm</i>	1,147,865	1,292,249	1,240,586	<b>1,098,931</b>
<b>Ore mined</b>	<i>t</i>	383,019	261,351	353,723	<b>369,927</b>
<b>Ore processed</b>	<i>t</i>	535,382	444,638	469,078	<b>474,420</b>
<b>Head grade</b>	<i>g/t</i>	1.24	1.25	1.6	<b>1.56</b>
<b>Metallurgical recovery</b>	<i>%</i>	89	90	89	<b>85.5</b>
<b>Fine gold production</b>	<i>oz</i>	18,897	16,007	21,401	<b>20,324</b>
<b>Gold sold</b>	<i>oz</i>	18,144	15,558	19,627	<b>21,013</b>



<b>Gold sales revenue</b>	<i>\$M</i>	32.1	25.2	32.13	<b>35.45</b>
<b>Cash Operating Cost</b>	<i>\$/oz</i>	1,217	1,286	1,081	<b>1,194</b>
<b>All-in Sustaining Cost</b>	<i>\$/oz</i>	1,396	1,470	1,290	<b>1,295</b>

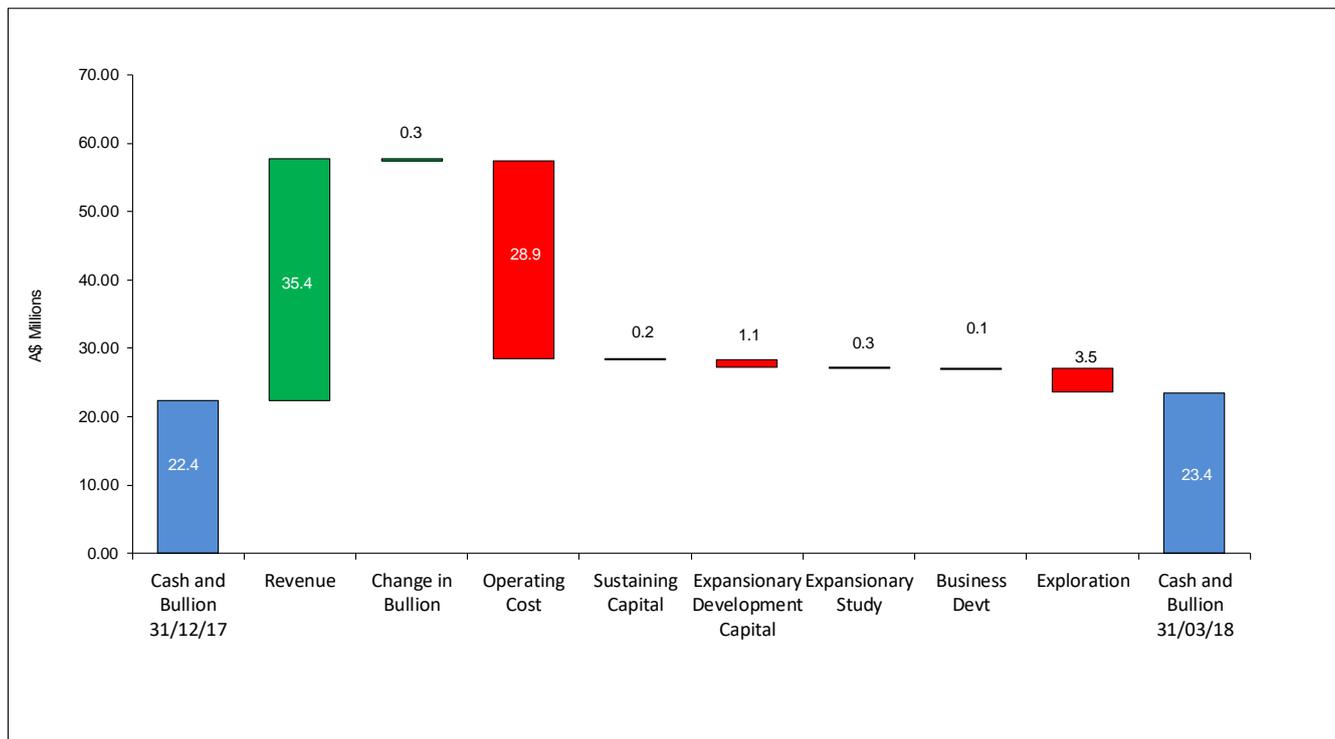
## Corporate Activities

As at 31 March 2018, the Company held cash and bullion of \$23.4 million and remains debt-free.

Gold sales revenue for the quarter totaled \$35.45 million, which was achieved at an average realised gold price of \$1,687/oz.

At 31 March 2018, the Company's hedge book consisted of 14,000oz to be delivered by 21 December 2018 at an average forward gold price of \$1,723/oz. March quarter cash and bullion movements are shown in (Figure 1) below.

**Figure 1: March 2018 quarter cash and bullion movements**



## Forward Guidance

Gold production for CY2018 is expected to be in the range of 75-80,000oz at an all-in sustaining cost (AISC) of A\$1280 – \$1350/oz. This compares with production of 72,848oz in CY2017.

Production for CY2018 is expected to be weighted towards the March and December quarters. Slightly lower production is expected during the June and September quarters due to additional pre-stripping activities required to access higher-grade ore at Golden Eagle. Higher all-in sustaining costs (AISC) are therefore likely in the June and September quarters due to the lower ounce production.



## **Bartons Underground Development**

The Company's underground mining contractor, GBF Underground, has commenced cutting the portal to establish the new underground mine at Bartons, with Ausdrill Geotechnical installing the portal ground support for the North and South Portals.

This underground development will access high-grade, free-milling mineralisation located directly beneath the existing Bartons open pit.

The commencement of underground development at Bartons follows the recent announcement of a 22 per cent increase in the Bartons Underground Mineral Resource to 627,000t at 4.9g/t Au for 97,900oz of contained gold, and an interim Ore Reserve of 270,000 tonnes grading 4.5 g/t Au for 39,000oz of contained gold (see ASX Announcement 8 January 2018).

High-grade development ore from Bartons Underground is expected to come into the production schedule during Q4 2018, helping the Company to achieve its target of an annualised production run rate of +100kozpa by the end of the year.

High-grade stoping ore from Bartons is scheduled to come into the production schedule in Q1 2019.

**Figure 2: Photo of Bartons Underground Portal development**



## **Reserves and Resources Update**

During the Quarter, Millennium announced updated Ore Reserves for the Nullagine Project at 31 December 2017. Following the success of the Company's +246,000m drilling campaign in 2017, the Project's Ore Reserves increased by 20 per cent to 221,600oz, up from 185,900oz last year (net of mining depletion of 84,808oz for CY2017).



The average grade of the updated Ore Reserve has increased from 1.4g/t to 1.67g/t, reflecting the Company's continued focus on delineating larger, higher grade ore sources across the Nullagine Project.

Total Group Mineral Resources at 31 December 2017, net of mining depletion, stood at 22.80 million tonnes at 1.5g/t for 1,121,700oz, with approximately 65 per cent of the total in the higher confidence Measured and Indicated categories.

The updated Nullagine Mineral Resource estimate included the addition of six maiden Mineral Resources for Redbeard, AU81 West, Shearers North, Bartons Underground, Bartons Open Pit and Little Annie.

### **Mineral Resources**

The Mineral Resources Statement as at 31st December 2017 is reported according to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the 'JORC Code') 2012 edition. The Mineral Resources are reported inclusive of Ore Reserves and exclusive of all mined (depleted) material.

Table 1: 2017 Mineral Resource Estimate by Resource Category

<b>Mineral Resource Category</b>	<b>Million Tonnes</b>	<b>Grade (g/t Au)</b>	<b>Thousand Ounces</b>
Measured	4.69	1.4	211.1
Indicated	9.93	1.7	527.3
Inferred	8.18	1.5	383.5
<b>Total</b>	<b>22.80</b>	<b>1.5</b>	<b>1121.7</b>

(\*Table may not add due to rounding)

### **Ore Reserves**

The total Project Ore Reserve estimate as at 31 December 2017, depleted for mining, is set out in Table 2 below:

Table 2: 2017 Total Ore Reserve Estimate by Reserve Category

<b>Ore Reserve Category</b>	<b>Million Tonnes</b>	<b>Grade (g/t Au)</b>	<b>Thousand Ounces</b>
Proved	2.29	1.3	96.3
Probable	1.84	2.1	125.3
<b>Total</b>	<b>4.13</b>	<b>1.67</b>	<b>221.6</b>

Full details of the Reserve and Resource estimates are provided in the Company's ASX Announcement dated 26 February 2018.

### **Sulphide Resource Expansion Feasibility Study**

During the Quarter, Millennium identified an alternative processing configuration with the potential to substantially reduce capital and operating costs for the treatment of sulphide ore at Nullagine.

Leading Australian-based consulting engineering firm Ausenco has been appointed to complete a Feasibility Study on the alternate processing option.

The Sulphide Ore Expansion Study, was largely completed in the December 2017 Quarter and the outcome subsequently released to the market on the 5 February 2018.



The best economic outcome of the sulphide expansion study was the addition of a tails scavenging process at the back end of the plant to treat un-leached sulphide concentrates from the existing CIL tailings line and subjecting them to ultra-fine grinding and intense cyanidation in order to achieve an improvement in the overall leach recovery.

This is a similar processing configuration to that which is well understood and has been successfully used for many years to process sulphide ore at the world-class Granny Smith mine in WA and at KCGM's super pit operations in Kalgoorlie.

A Processing Study using this processing method has since been completed, demonstrating sustainable financial and operating benefits. The installation of a gravity sulphide scavenging circuit on the CIL tails stream together with an ultrafine grind and intense cyanidation, delivered superior cash flows and increases in gold production to all other options considered.

Direct capital cost of the plant expansion has been reduced to A\$15 million, with vendor quotes now received for all major components. Incremental processing costs are estimated to be \$3.60 per tonne in addition to the current CIL processing cost (currently \$18.40 per tonne)

Overall recoveries on a blended feed of oxide and sulphide ores are expected to average 85%. This is based on metallurgical test work on sulphide mineralisation from the Golden Eagle deposit (>75%), combined with incremental recoveries expected to be realised from oxide ores (current recoveries running at >90%).

Metallurgical test work is continuing to further optimise leach conditions, which is expected to further improve forecast recoveries.

Millennium will commence procurement for long-lead process equipment during the June 2018 Quarter and target commissioning of the plant expansion during the first quarter of CY2019.

### **Exploration:**

Millennium enjoyed continuing exploration success during the Quarter, with infill and extensional drilling returning strong results from existing deposits at Nullagine. Drilling of the Bartons underground continued to scope out additional ore adjacent to the upper levels of the planned underground mine.

Drilling activities were concentrated in Golden Eagle, Five Mile and Twenty Mile mining centres. It focussed on upgrading Resource Categories, extending known mineralisation and locating new economic positions.

Reconnaissance activities continued throughout the quarter and included geological mapping and rock chip sampling of targets across Millennium's tenements. This work focussed on Golden Gate and Twenty Mile mining centres to generate new drill targets.

### **Drilling**

#### **Golden Eagle Mining Centre**

Reverse Circulation drilling (210 holes for 11,422m) was carried out around the Golden Eagle deposit to extend the known mineralisation, upgrade Resource Categories and to scope out additional economic positions adjacent to the deposit. Results from this drilling will be used to update the Golden Eagle Mineral Resource Estimate ("MRE") and assess the economics of these extensions and additional mineralised positions.

PQ3 diamond drilling (5 holes for 402.5m) continued at the Golden Eagle deposit to supply material to the Sulphide Ore Expansion Study for the metallurgical test work.



## **Five Mile Mining Centre**

A total of 87 RC holes for 4,664m were drilled at and around the Shearers North deposit to extend the known mineralisation, upgrade Resource Categories and to sterilise some areas for infrastructure requirements. The results from this drilling will be included into an updated MRE and subsequently re-optimised.

## **Twenty Mile Mining Centre**

Drilling comprised 53 holes for 3,252m to test strike and depth extensions to the Redbeard MRE, as well as to scope out mineralisation between the regional traverses (see ASX Announcement - 09 April 2018). Strike extensions were tested with a 40x20m spacing to close off the mineralisation to the west and depth extensions to ~60m below surface. Additionally, two diamond holes were drilled (RBDD0001 and RBDD0002) for the purpose of conducting metallurgical test work and collecting specific gravity data updated the MRE.

All results were received from this programme with best intersections of:

- **10.8m @ 6.20g/t Au** from 13.2m including **10.5m @ 6.35g/t Au** (RBDD0001)
- **13m @ 2.64g/t Au** from 0m including **1m @ 5.72g/t Au** (RBRC082)
- **9m @ 6.21g/t Au** from 33m including **5m @ 9.73g/t Au** (RBRC086)
- **6m @ 6.81g/t Au** from 54m including **4m @ 8.86g/t Au** (RBRC093)
- **7m @ 5.83g/t Au** from 49m including **3m @ 9.58g/t Au** (RBRC094)
- **5m @ 3.08g/t Au from 54m** (RBRC081)

Interpretation of the latest drilling results is currently underway and will be incorporated into an updated MRE for Redbeard.

## **Bartons UG MRE and Ore Reserve**

Drilling results from the December 2017 Quarter were incorporated into an updated underground MRE of 627,300 tonnes grading at 4.9g/t Au for 97,900oz of contained gold (see ASX Announcement - 8 January 2018), representing a 22% increase from the maiden underground MRE. This updated MRE was optimised to produce an interim Maiden Proven and Probable Ore Reserve estimate of 270kt at 4.5g/t Au for 39,000oz of contained gold (see ASX announcement - 8 January 2018).

A total of 10 holes were drilled with a combination of RC (866m) and diamond tails (505m) to test the interpreted northern extension of the mineralisation, near the upper levels of the planned underground mine. The results from this drilling will be incorporated into an updated underground MRE.

## **Planned Activities for the June Quarter**

The exploration focus for the coming Quarter will be on growing the existing mineral resources as well as drill testing the newly identified prospects in the Golden Eagle, Twenty Mile and Golden Gate mining centres. Additionally, drilling will be conducted as a preliminary assessment of further potential underground and sulphide resources.

**ENDS**

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## **Competent Persons Statement – Exploration Results**

The information relating to exploration results from the Nullagine project is extracted from the announcements titled:

1. *Bartons Underground Rapidly Advances and Production Update dated 08 January 2018;*
2. *Exploration updated and Redbeard Maiden Resource dated 22 January 2018;*
3. *Sulphide Ore expansion study update dated 05 February 2018;*
4. *Underground mining contract awarded dated 19 February 2018;*
5. *Ore Reserves and mineral Resource statement 26 February 2018;*
6. *2018 Production guidance 19 March 2018;*
7. *Sulphide plant expansion study update dated 05 April 2018;*
8. *Production and Exploration update dated 09 April 2018.*

all of which are available to view at [www.millenniumminerals.com.au](http://www.millenniumminerals.com.au).

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements relating to the drill results and that all material assumptions and technical parameters underpinning the drill results in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings as presented here have not been materially modified from the original market announcement.

## **Qualifying Statement**

This report may include forward-looking statements. These forward-looking statements are based on Millennium's expectations and beliefs concerning future events. Forward-looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of Millennium, which could cause actual results to differ materially from such statements. Millennium makes no undertaking to subsequently update or revise the forward-looking statements made in this report or to reflect the circumstances or events after the date of this report.

## **Notes**

- <sup>1</sup> *All-In Sustaining Cost (AISC) per ounce recovered represents: C1 Cash Costs, corporate administration costs related to operations, royalties, sustaining capital, development capital, tenement management of active mining tenements, rehabilitation and reclamation accretion, employee share payments provided to operational staff and production stripping adjustments and amortisation. It does not include expansionary development costs, including the sulphide plant expansion study, corporate development costs, tenement acquisition expenditure, or exploration and evaluation expenditure of new deposits and projects.*
- <sup>2</sup> *C1 cash cost represents the costs for mining, processing, administration, by-product credits and accounting adjustments for movements in stockpiles, gold in circuit and waste stripping. It does not include capital expenditure, exploration, tenement management, royalties and corporate administration costs.*

Unless otherwise denoted all currency units are Australian dollars.

All data provided is unaudited.