



30 January 2019

## Corporate Details

### Ordinary Shares:

793,040,876

### Market Capitalisation:

~\$170 million

### Cash and bullion and available financing facilities at 31 December 2018:

\$18.2 million

### Debt at 31 December 2018:

\$5 million

ASX Code: **MOY**

## Board of Directors

**Greg Bittar**  
Non-Executive Chairman

**Tim Kennedy**  
Non-Executive Director

**Peter Lester**  
Non-Executive Director

**Bruno Lorenzon**  
Non-Executive Director

## Management

**Peter Cash**  
Chief Executive Officer

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

## Contact Details

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# Strong underground drilling results confirm extensions at Bartons

## Results from in-fill and extensional program to be included in impending Resource and Reserve upgrade

- Initial assay results received from maiden underground drilling program at the Bartons Underground Mine.
- Drilling designed to upgrade the current Mineral Resource and allow conversion to Ore Reserves, with significant assays including:
  - 3.32m @ 14.09g/t Au from 151.4m including 2.72m @ 16.62g/t Au from 152m (BUDD0001)
  - 8.1m @ 5.23g/t Au from 213.9m including 2.4m @ 9.23g/t Au from 216.6m (BUDD0020)
  - 8m @ 3.69g/t Au from 95m including 1.15m @ 13.55g/t Au from 100m (BUDD0011A)
  - 6m @ 6.71g/t Au from 147m including 5m @ 7.59g/t Au from 147m (BUDD0021)
  - 6.6m @ 3.14g/t Au from 111m including 1m @ 10.85g/t Au from 114.4m (BUDD0003)
  - 5.3m @ 2.90g/t Au from 115.7m including 1.19m @ 5.62g/t Au from 118.56m (BUDD0005)
  - 2.67m @ 4.92g/t Au from 64.73m including 1m @ 6.82g/t Au from 66.4m (BUDD0026)
  - 3.2m @ 4.00g/t Au from 143.6m including 0.95m @ 6.45g/t Au from 145.85m (BUDD0032)
- Drilling shows continuity of host structure beneath the 0m RL.
- Results to be included in updated Mineral Resource and Ore Reserve Statement to be released in February 2019.
- New extensional drill targets confirmed with potential to further expand the Bartons underground mine at depth.

Millennium Minerals Limited (ASX: MOY) ("Millennium" or the "Company") is pleased to advise that it has received highly encouraging initial assay results from the extensive new program of resource in-fill and extensional drilling which commenced last year from underground drilling platforms at the Bartons deposit, part of its 100%-owned Nullagine Gold Project in Western Australia.

The drilling program was designed to in-fill deeper portions of the Mineral Resources and allow conversion of the next five development levels to Ore Reserves. With the underground resource remaining open at depth, the drilling also tested for extensions of the deposit to a depth of 200m below the previously defined Mineral Resources.

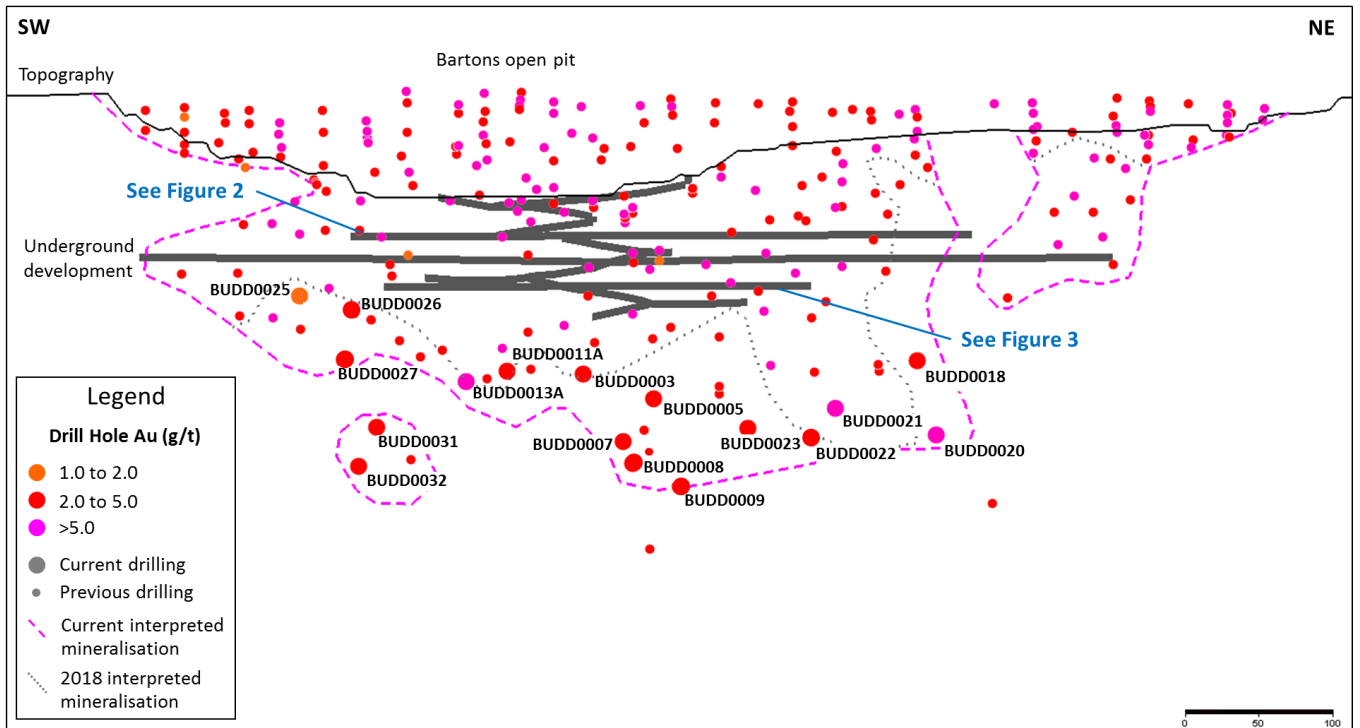
The drilling program was highly successful, returning a number of significant high-grade intercepts well beyond the interpreted boundary of the mineralisation, as shown in the Long Section in Figure 1 below, which shows the location of the drill holes.

Significant results received to date from the drilling are shown below. True widths (TW) are shown in brackets after the down-hole interval:

- 3.32m (2.9m TW) @ 14.09g/t Au from 151.4m including 2.72m (2.4m TW) @ 16.62g/t Au from 152m (BUDD0001)
- 8.1m (3.8m TW) @ 5.23g/t Au from 213.9m including 2.4m (1.1m TW) @ 9.23g/t Au from 216.6m (BUDD0020)
- 8m (3.6m TW) @ 3.69g/t Au from 95m including 1.15m (0.5m TW) @ 13.55g/t Au from 100m (BUDD0011A)
- 6m (3.1m TW) @ 6.71g/t Au from 147m including 5m (2.6m TW) @ 7.59g/t Au from 147m (BUDD0021)
- 6.6m (3.0m TW) @ 3.14g/t Au from 111m including 1m (0.4m TW) @ 10.85g/t Au from 114.4m (BUDD0003)
- 5.3m (2.7 m) @ 2.90g/t Au from 115.7m including 1.19m (0.6m TW) @ 5.62g/t Au from 118.56m (BUDD0005)
- 2.67m (1.6m TW) @ 4.92g/t Au from 64.73m including 1m (0.8m TW) @ 6.82g/t Au from 66.4m (BUDD0026)
- 3.2m (1.4m TW) @ 4.00g/t Au from 143.6m including 0.95m (0.4m TW) @ 6.45g/t Au from 145.85m (BUDD0032)
- 6m (1.9m TW) @ 2.58g/t Au from 141m (BUDD0007)
- 6m (1.4m TW) @ 3.48g/t Au from 145m (BUDD0008)
- 3.35m (1.6m TW) @ 3.27g/t Au from 159.65m including 1m (0.5m TW) @ 5.17g/t Au from 161m (BUDD0018)
- 4m (1.8m TW) @ 2.69g/t Au from 128m including 1m (0.5m TW) @ 5.50g/t Au from 128m (BUDD0022)

The results received to date will be included in an updated Mineral Resource and Ore Reserve estimate for Bartons Underground, which will form part of the Company's updated 2018 Mineral Resource and Ore Reserve statement, scheduled to be released in Q1 2019.

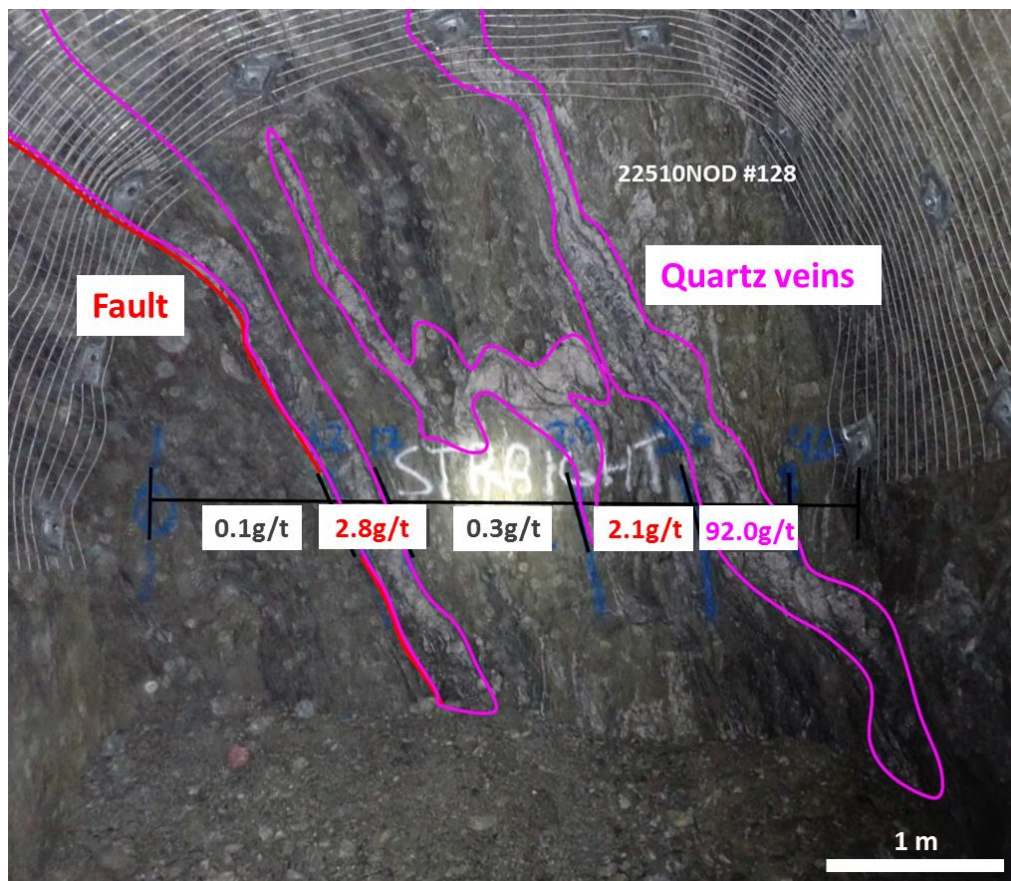
Importantly, the drilling has also identified additional extensional drill targets which will be tested during the next round of underground drilling at Bartons. These targets have the potential to further significantly expand the underground mine at depth below the current workings.



**Figure 1: Bartons long section showing current open pit and underground mine workings, current and 2018 interpreted mineralisation and drill hole intercepts for the main lode.**

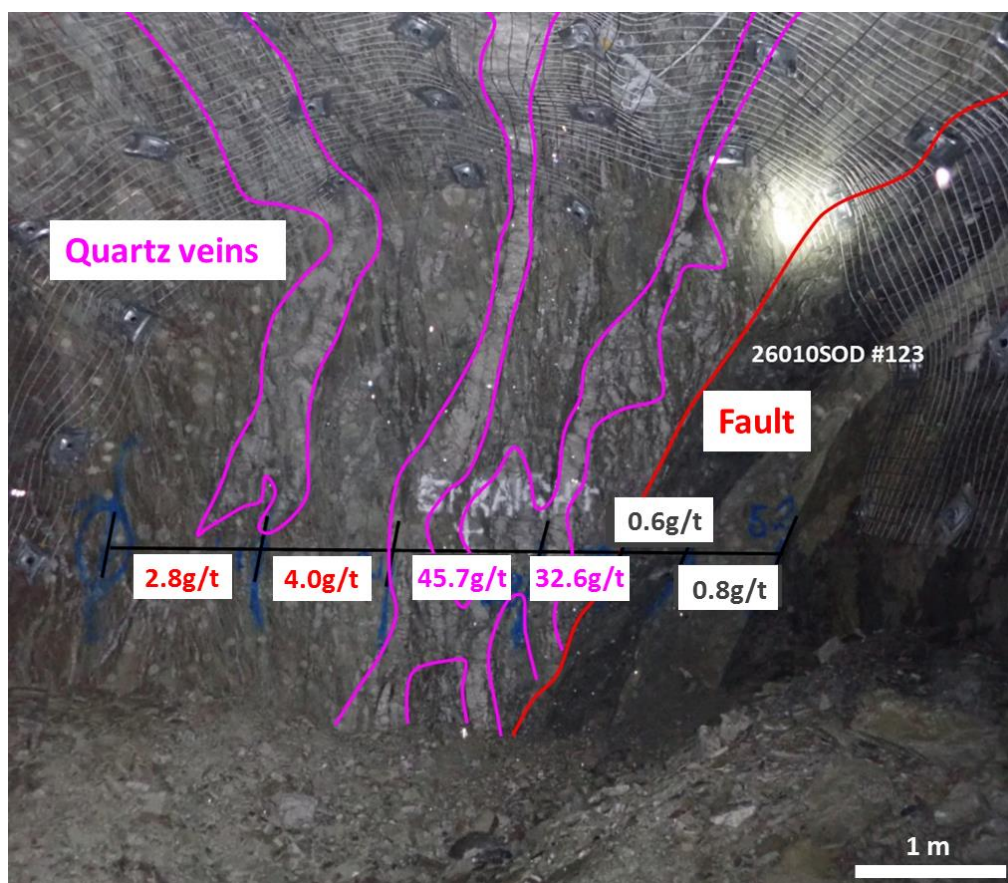
## Bartons Development Update

Underground development is continuing on the 225 level at Bartons and development has commenced on the 210 level. Photographs of the development headings are shown in Figures 2 and 3.



**Figure 2: Cut 123 260 level, Bartons main lode south ore drive showing face sample gold grades (facing SW).**





*Figure 3: Cut 128 225 level, Bartons main lode north ore drive showing face sample gold grades (facing NE).*

### Management Comment

Millennium Minerals Chief Executive Peter Cash said the Company's maiden underground drilling program at Bartons had been successful in achieving all of its key objectives.

"The in-fill drilling component will allow conversion of Ore Reserves in the next five development levels while deeper drilling has been successful in intersecting high-grade mineralisation up to 200m below the limit of the current Mineral Resource envelope," he said.

"These outstanding results show that Bartons is a significant high-grade ore system that will continue to grow as we mine deeper and continue to take advantage of underground drilling platforms to progressively expand the mineralised envelope.

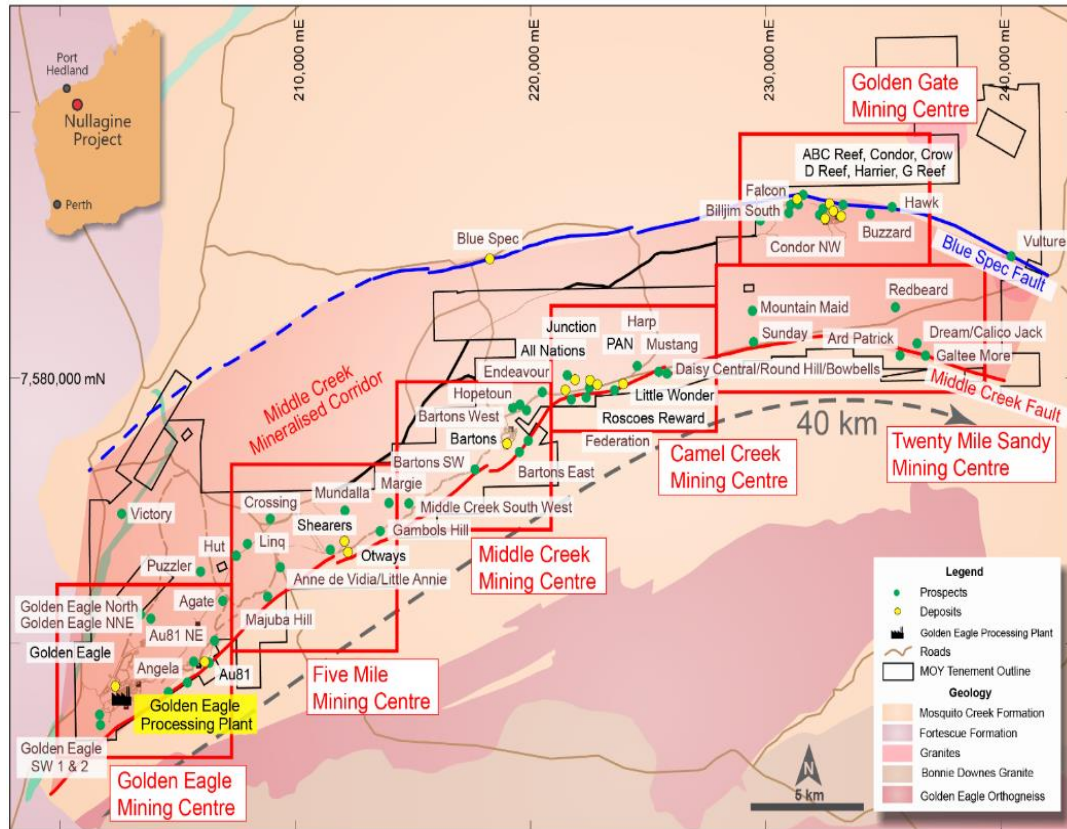
"The results generated to date will underpin a Resource and Reserve increase as part of our annual Resource statement next month, but they have also paved the way for the next phase of deeper drilling to continue growing the deposit at depth."

**ENDS**

### For further information:

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**Figure 4: Nullagine Project Location Plan over regional geology**

## Competent Persons Statements – Exploration Results

The information in this report that relates to Exploration Results is based on information compiled by Mr James Farrell (MAusIMM(CP), MAIG), a geologist employed full-time by Millennium Minerals Limited. Mr Farrell is a Member and Chartered Professional of the Australasian Institute of Mining and Metallurgy and has sufficient experience that is relevant to this style of mineralisation and type of deposit under consideration and to the activity that is being reported on 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 Farrell consents to the inclusion in the report of the matters in the form and context in which it appears.

**Appendix 1 – Table of significant intersections for Bartons.**

Hole_ID	GDA East	GDA North	RL	Azi	Dip	Depth (m)		From (m)	To (m)	Width (m)	True Width (m)	Grade (g/t Au)	Gram-metres
BUDD0001	219160	7577666	216	145.2	-17.0	191.1		109.00	110.55	1.55	1.3	2.52	3.9
BUDD0001	219160	7577666	216	145.2	-17.0	191.1		115.95	117.00	1.05	0.9	2.39	2.5
BUDD0001	219160	7577666	216	145.2	-17.0	191.1		151.40	154.72	3.32	2.9	14.09	46.8
BUDD0001	219160	7577666	216	145.2	-17.0	191.1	Incl.	152.00	154.72	2.72	2.4	16.62	45.2
BUDD0002	219160	7577666	215	117.5	-21.9	162.0				AA			AA
BUDD0003	219160	7577666	216	161.6	-23.1	185.7		111.00	117.60	6.60	3.0	3.14	20.7
BUDD0003	219160	7577666	216	161.6	-23.1	185.7	Incl.	114.40	115.40	1.00	0.4	10.85	10.9
BUDD0003	219160	7577666	216	161.6	-23.1	185.7		129.00	130.00	1.00	0.8	3.76	3.8
BUDD0003	219160	7577666	216	161.6	-23.1	185.7		138.90	140.60	1.70	1.3	1.84	3.1
BUDD0004	219160	7577666	216	152.3	-29.0	183.1		127.10	131.00	3.90	2.8	1.74	6.8
BUDD0004	219160	7577666	216	152.3	-29.0	183.1		147.00	148.00	1.00	0.7	2.01	2.0
BUDD0005	219160	7577666	215	130.5	-31.5	189.0		115.70	121.00	5.30	2.7	2.90	15.4
BUDD0005	219160	7577666	215	130.5	-31.5	189.0	Incl.	118.56	119.75	1.19	0.6	5.62	6.7
BUDD0006	219160	7577666	215	119.0	-40.9	171.0		134.60	136.70	2.10	1.3	3.23	6.8
BUDD0007	219160	7577666	215	141.1	-39.7	174.0		141.00	147.00	6.00	1.9	2.58	15.5
BUDD0007	219160	7577666	215	141.1	-39.7	174.0		150.00	151.00	1.00	0.6	3.02	3.0
BUDD0008	219160	7577666	215	138.9	-45.7	213.2		145.00	151.00	6.00	1.4	3.48	20.9
BUDD0009	219160	7577666	215	119.6	-46.3	204.0		147.00	148.00	1.00	0.5	2.72	2.7
BUDD0009	219160	7577666	215	119.6	-46.3	204.0		170.00	171.00	1.00	0.3	2.44	2.4
BUDD0010	219160	7577666	216	156.2	-43.9	215.8				NSA			NSA
BUDD0011A	219089	7577552	232	107.3	-41.0	138.1		95.00	103.00	8.00	3.6	3.69	29.5
BUDD0011A	219089	7577552	232	107.3	-41.0	138.1	Incl.	100.00	101.15	1.15	0.5	13.55	15.6
BUDD0012	219089	7577551	232	151.9	-50.6	141.2				NSA			NSA
BUDD0013A	219089	7577552	233	131.1	-44.8	159.1		84.57	87.80	3.23	1.8	1.56	5.0
BUDD0013A	219089	7577552	233	131.1	-44.8	159.1		93.25	95.00	1.75	0.6	10.01	17.5
BUDD0013A	219089	7577552	233	131.1	-44.8	159.1	Incl.	93.25	94.00	0.75	0.2	20.10	15.1
BUDD0013A	219089	7577552	233	131.1	-44.8	159.1		115.00	116.00	1.00	0.6	5.06	5.1
BUDD0013A	219089	7577552	233	131.1	-44.8	159.1		127.96	129.00	1.04	0.6	2.46	2.6
BUDD0014	219089	7577552	232	128.6	-55.4	152.9				NSA			NSA
BUDD0015	219089	7577552	232	106.5	-50.6	165.0		128.20	132.00	3.80	1.5	1.51	5.7
BUDD0016	219089	7577552	232	117.2	-58.2	210.2				NSA			NSA
BUDD0017	219089	7577551	232	141.4	-61.7	198.2				NSA			NSA
BUDD0018	219178	7577705	217	69.8	-14.2	200.7		159.65	163.00	3.35	1.6	3.27	11.0
BUDD0018	219178	7577705	217	69.8	-14.2	200.7	Incl.	161.00	162.00	1.00	0.5	5.17	5.2
BUDD0019	219178	7577705	217	84.9	-20.9	174.0				AA			AA
BUDD0020	219178	7577705	217	77.3	-22.8	257.3		55.00	56.00	1.00	0.3	6.28	6.3
BUDD0020	219178	7577705	217	77.3	-22.8	257.3		213.90	222.00	8.10	3.8	5.23	42.4
BUDD0020	219178	7577705	217	77.3	-22.8	257.3	Incl.	216.60	219.00	2.40	1.1	9.23	22.2
BUDD0020	219178	7577705	217	77.3	-22.8	257.3		239.60	241.00	1.40	0.6	3.84	5.4
BUDD0021	219178	7577705	217	93.0	-28.1	198.0		129.00	131.00	2.00	1.0	3.50	7.0
BUDD0021	219178	7577705	217	93.0	-28.1	198.0		135.00	136.00	1.00	0.5	2.88	2.9
BUDD0021	219178	7577705	217	93.0	-28.1	198.0		139.00	140.00	1.00	0.5	3.44	3.4

Hole_ID	GDA East	GDA North	RL	Azi	Dip	Depth (m)		From (m)	To (m)	Width (m)	True Width (m)	Grade (g/t Au)	Gram-metres
BUDD0021	219178	7577705	217	93.0	-28.1	198.0		147.00	153.00	6.00	3.1	6.71	40.3
BUDD0021	219178	7577705	217	93.0	-28.1	198.0	Incl.	147.00	152.00	5.00	2.6	7.59	38.0
BUDD0021	219178	7577705	217	93.0	-28.1	198.0		155.18	157.00	1.82	1.0	3.14	5.7
BUDD0022	219177	7577704	217	101.7	-33.5	183.1		128.00	132.00	4.00	1.8	2.69	10.8
BUDD0022	219177	7577704	217	101.7	-33.5	183.1	Incl.	128.00	129.00	1.00	0.5	5.50	5.5
BUDD0022	219177	7577704	217	101.7	-33.5	183.1		153.00	154.00	1.00	0.4	2.45	2.5
BUDD0023	219177	7577704	217	119.8	-38.3	183.0		124.05	127.60	3.55	2.1	1.37	4.9
BUDD0023	219177	7577704	217	119.8	-38.3	183.0		133.00	134.36	1.36	0.6	2.02	2.7
BUDD0024	219177	7577704	217	104.2	-39.4	225.0		162.00	163.00	1.00	0.4	2.08	2.1
BUDD0024	219177	7577704	217	104.2	-39.4	225.0		209.00	209.63	0.63	0.3	11.75	7.4
BUDD0025	219056	7577521	234	189.5	-5.5	131.3		87.00	91.00	4.00	2.0	1.69	6.8
BUDD0026	219056	7577521	234	169.7	-16.6	135.0		64.73	67.40	2.67	1.6	4.92	13.1
BUDD0026	219056	7577521	234	169.7	-16.6	135.0	Incl.	66.40	67.40	1.00	0.8	6.82	6.8
BUDD0027	219056	7577521	233	168.9	-36.5	153.0		86.32	89.07	2.75	1.7	2.41	6.6
BUDD0028	219058	7577522	233	137.8	-40.3	117.1				NSA			NSA
BUDD0029	219056	7577521	233	185.1	-33.4	158.9				NSA			NSA
BUDD0030	219056	7577521	233	171.9	-46.5	153.0				NSA			NSA
BUDD0031	219058	7577522	233	147.0	-55.9	134.4		119.30	120.50	1.20	0.7	2.02	2.4
BUDD0032	219058	7577522	233	156.8	-59.1	184.6		143.60	146.80	3.20	1.4	4.00	12.8
BUDD0032	219058	7577522	233	156.8	-59.1	184.6	Incl.	145.85	146.80	0.95	0.4	6.45	6.1
BUDD0032	219058	7577522	233	156.8	-59.1	184.6		155.00	156.00	1.00	0.4	2.55	2.5
BUDD0033	219087	7577553	233	131.5	-65.0	381.8				NSA			NSA
BUDD0034	219158	7577669	216	138.0	-51.0	321.0				AA			AA

NSA = No Significant assays. Intersections are calculated with 2g/t Au lower cut-off and a maximum of 2 consecutive metres of internal dilution. Higher grade intersections are calculated with 5g/t Au lower cut-off and a maximum of 2 consecutive metres of internal dilution.

**JORC 2012 Edition - Table 1**

**Section 1 Sampling Techniques and Data**

Criteria	JORC Code Explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representatively and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Samples at Bartons were collected utilising NQ2-size diamond core.</li> <li>Drill core samples were sawn in half on site and half core samples submitted for analysis by Fire Assay with an AAS finish.</li> <li>Standard samples were inserted in the core sampling stream at a ratio of 1:50.</li> <li>Barren quartz washes were used before and after the mineralised lodes to monitor cross-sample contamination.</li> <li>Underground face samples were collected for each geological unit by rock chipping the face over the selected interval. A duplicate of at least one geological interval is completed for each face.</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul style="list-style-type: none"> <li>Diamond drilling was completed using NQ2 sized core.</li> <li>The core was oriented using an Ace-Coretool during drilling.</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul style="list-style-type: none"> <li>A record of the drill core recovery was recorded by the logging geologists and was close to 100%. Minor core loss was recorded from a limited number of drill holes in a known fault zone close to mineralisation.</li> <li>There is no correlation between sample recovery and gold grade.</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Geological logging is both qualitative and quantitative in nature. Logging is carried out for lithology, colour, grain size, regolith, alteration, weathering, veining and mineralisation. Sulphide and vein content were logged as a percentage of the interval.</li> <li>The drill core was oriented using an Ace-Coretool and structural measurements to assist with geological interpretation and modelling were collected during logging.</li> <li>Half core for sampled intervals and full core for unsampled intervals is retained on site.</li> <li>All of the drill core was logged.</li> </ul>



Criteria	JORC Code Explanation	Commentary
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>• If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>• For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>• Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>• Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>• Drill core samples where sawn in half on site and half core samples submitted for analysis.</li> <li>• The sample sizes are industry-standard and considered to be appropriate to correctly represent mineralisation at the deposits based on: the style of mineralisation, the thickness and consistency of the intersections, the sampling methodology and assay ranges for gold.</li> <li>• The entire underground face sample was crushed and milled in the on site laboratory prior to geochemical analysis.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>• For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>• Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>• The industry best practice standard assay method of 50g charge Fire Assay with AAS finish was used to determine total Au content of the diamond core samples.</li> <li>• Commercially prepared, predominantly matrix-matched low, medium &amp; high value certified reference QAQC standards were inserted at a rate of 1:50 into the RC sample stream.</li> <li>• The QAQC results from this protocol were considered to be acceptable.</li> <li>• No geophysical tools were used to determine any element concentrations used for these results.</li> <li>• Sample preparation checks for fineness were carried out by the laboratory as part of their internal procedures to ensure the grind size of 85% passing 75 microns was being attained. Laboratory QAQC involves the use of internal lab standards using certified reference material, blanks, splits and replicates as part of the in-house procedures.</li> <li>• Results highlight that sample assay values are accurate.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>• The verification of significant intersections by either independent or alternative company personnel.</li> <li>• The use of twinned holes.</li> <li>• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>• Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>• Intersections were checked by alternative company personnel to check they were reported correctly.</li> <li>• No twin holes were drilled in the programme. Previous significant intersections were verified with close spaced drilling.</li> <li>• Sampling is directly uploaded into the LogChief software and it is synchronised to the SQL database.</li> <li>• Assay results were not adjusted.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>• Specification of the grid system used.</li> <li>• Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>• Post completion of the drilling the diamond collars were surveyed by the Bartons underground survey team and have a positional precision of <math>\pm 10\text{mm}</math>. All collars are then validated against planned positions as a cross check. Surveyed collar co-ordinates are uploaded into the Company SQL database.</li> <li>• Grid datum is GDA94 51K (East Pilbara).</li> </ul>

Criteria	JORC Code Explanation	Commentary
		<ul style="list-style-type: none"> <li>Downhole surveys were completed using a Devishot single and mulitshot camera on all holes using a 15m downhole interval for the first 60m of each drill hole and every 30m downhole thereafter.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>The diamond drilling at Bartons was completed on a nominal 40 to 20m spacing.</li> <li>The drill spacing has been sufficient to establish geological and grade continuity.</li> <li>None of the reported sample intervals were composited.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>The orientation of the mineralisation at Bartons is well understood from open pit mining, the underground development mapping and the current drill core logging. Mineralisation true widths have been reported together with the downhole interval lengths. The true thickness was based on the thickness of interpreted mineralisation.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Samples were given an ID, cross checked by field personnel that they corresponded to the assigned interval. Samples were collected on completion of each hole and delivered to the onsite assay laboratory for dispatch to Perth. Monitoring of sample dispatch was undertaken for samples sent from site and to confirm that samples have arrived in their entirety and intact at their destination.</li> <li>Sample security is managed with dispatch dates noted for each sample by the technician, this is checked and confirmed at the Perth laboratory on receipt of samples and discrepancies are corrected via telephone link up between the on-site and Perth laboratories.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data reviews.</li> </ul>	<ul style="list-style-type: none"> <li>Internal lab audits conducted by Millennium have shown no material issues.</li> </ul>

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code Explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul style="list-style-type: none"> <li>The Nullagine Gold Project prospects and deposits lie within fully granted Mining Leases within the Pilbara Gold Field (46). as detailed below. All the tenements are in good standing with no known impediments.</li> <li>Bartons * - M46/3, M46/164 &amp; M46/441 (100% MML);</li> </ul> <p><i>*These tenements are located within the Njamal title claim (WC99/8).</i></p>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Exploration by other parties has been reviewed and taken into account when exploring. Millennium has re-drilled in areas that other parties had drilled to gain a greater confidence in those results.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The Nullagine Gold Project deposits are structurally controlled, sediment-hosted, lode gold style deposits. They are all situated in the Mosquito Creek Basin that consists predominantly of Archean aged, turbidite sequences of sandstone, siltstone, shale and minor conglomerate units.</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>Provided in a table that relates exploration results to the drill hole information including: hole co-ordinates, RL, dip, azimuth, end of hole depth, downhole length and interception depths.</li> <li>All of the current drilling with results returned has been reported.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>All of the exploration prospects have their significant intersections reported with a lower cut-off of 2g/t Au and maximum of two consecutive metres of internal dilution. Higher grade intersections use a lower cut-off of 5g/t Au and maximum of two consecutive metres of internal dilution.</li> <li>Diamond drill core was sampled to geological boundaries, with a maximum sample length of 1 m and a minimum sample length of 0.3 m. Samples values were length-weighted during reporting.</li> <li>No metal equivalents were used.</li> </ul>

Criteria	JORC Code Explanation	Commentary
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>• <i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li>• <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li>• <i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>The orientation of the mineralisation at Bartons is well understood. Mineralisation true widths have been reported together with the downhole interval lengths. The true thickness was based on the thickness of interpreted mineralisation.</i></li> <li>• <i>Most of the surface RC drilling is perpendicular to the mineralisation and the drill hole orientations relative to the ore zones have ensured accurate interpretations and 3D modelling.</i></li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>• <i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Significant exploration results are tabulated in the release with drill hole sections to show them in context.</i></li> <li>• <i>Representative maps have been included in the report along with documentation.</i></li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>• <i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>All of the current drill results have been reported for Bartons.</i></li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>• <i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Leachwell tests for Bartons fresh rock mineralisation show metallurgical recoveries between 82% and 92%, with an average recovery of 85.6%. These recoveries have been confirmed by the processing of Bartons fresh rock mineralisation at the Golden Eagle plant.</i></li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>• <i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li>• <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Additional step-out drilling will be planned to target extensions to the Bartons mineralisation after the Mineral Resources and Ore Reserves are updated during the first quarter of 2019.</i></li> </ul>