ASX RELEASE 17 February 2020

ASX: MGV

Lena Mineral Resource more than doubles and gold grade increases

- **The Lena Mineral Resource (Indicated and Inferred) within Musgrave's Cue Gold Project has grown significantly to:**

4.3Mt @ 2.3g/t gold for 325,000 ounces of contained gold

- **The updated Lena resource delivers a:**
  - **112% increase (172,000 ounces gold) in total contained ounces, up from the previous 2017 Mineral Resource**
  - **72% increase in Indicated Resources to 121,000 ounces gold; and**
  - **28% increase in gold grade to 2.3g/t Au**
- **The Lena deposit remains open down dip and there is scope to further grow the resource**
- **The total Cue Gold Project Mineral Resource (Indicated and Inferred) increases significantly to:**

6.45Mt @ 3.0g/t gold for 613,000 ounces of contained gold

- **Drilling is underway at Break of Day and Mainland with a focus on further resource growth and making new gold discoveries**

Musgrave Minerals Ltd (ASX: **MGV**) ("Musgrave" or "the Company") is pleased to report a significant resource update at its 100% owned Lena gold deposit on the Company's flagship **Cue Gold Project** in Western Australia's Murchison district (*Figure 1*).

The total Indicated and Inferred Mineral Resources for the Lena deposit now stands at **4.3Mt @ 2.3g/t Au for 325,000 ounces of contained gold (Table 1)**. Since the previous Mineral Resource estimate, (published in July 2017) the Company has added **172,000 ounces of gold,** increasing the Mineral Resources at Lena by 112% and improving the overall grade of the deposit by 28% to **2.3g/t gold**.

5 Ord Street, West Perth WA 6005
Telephone: (61 8) 9324 1061 Fax: (61 8) 9324 1014
Web: www.musgraveminerals.com.au Email: info@musgraveminerals.com.au
ACN: 143 890 671

The resource update incorporates the results of highly successful reverse circulation ("RC") and diamond drilling programs completed over the past six months. The updated total Indicated and Inferred Mineral Resources for the Cue Project, incorporating the Lena and Break of Day deposits and several smaller deposits, now stands at **6.45Mt @ 3.0g/t Au for 613,000 ounces of contained gold (Table 2)**.

The Lena deposit is located approximately 130m west of Break of Day, which hosts a high-grade resource of 868Kt @ 7.2g/t Au for 199Koz contained gold (*see MGV ASX release 18 October 2019, "Annual Report"*). The Company is currently drilling at Break of Day and recent results include significant intercepts including 45m @ 11.8g/t Au (*see MGV ASX release 3 December 2019, "New high-grade 'link-lode' intersected at Break of Day, Cue Project"*) related to 'link lodes' that have not yet been incorporated into the Break of Day resource. Assays from the current drill program at Break of Day are expected mid-March.

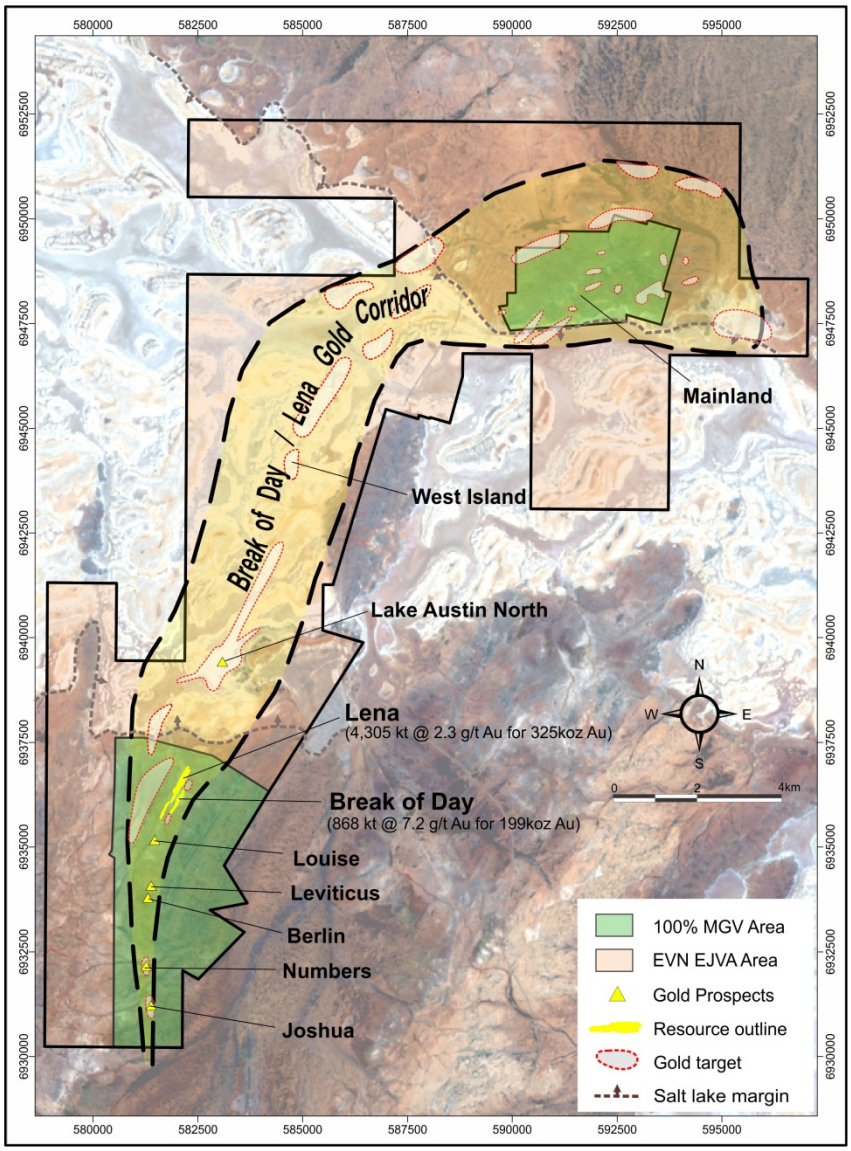

Figure 1: Prospect location plan

Musgrave's Managing Director Rob Waugh said *"We are continuing to make new discoveries and grow the existing 100% owned gold resources at Cue. This latest update significantly grows the contained ounces in the Lena Resource and improves the overall grade of the deposit while also delivering a major uplift in the geological confidence by reducing the drill hole spacing of the near surface component and thus growing the Indicated Resource category."*

"With drilling underway at the nearby high-grade Break of Day and Mainland-Consols deposits we are looking forward to more exciting results as the programs progress."

Lena Mineral Resource

The Mineral Resource at Lena extends over a strike length of more than 1,500m with the southern lode resource estimated to a maximum depth of 280m. The resource on the main lodes in the northern part of the deposit is estimated to a maximum depth of 430m.

The Lena Mineral Resource comprises 16 individual lodes (*Figure 2*) with the majority of the lodes open at depth. This Mineral Resource update builds confidence in the geological model which is showing good continuity of the mineralisation near surface and at depth. The significant increase in Indicated Mineral Resources supports the Company's increasing confidence in the project and will support future development studies.

Noting that high-grade tops-cuts were applied to different lodes that ranged from 8g/t to 26g/t, the Company feels that additional infill drilling in areas of higher grades may define high-grade shoots that have the potential to improve the resource grade of these lodes. This drilling is being considered and will be part of future programs at Lena.

The Indicated and Inferred portions of the resource are shown in Figure 3.

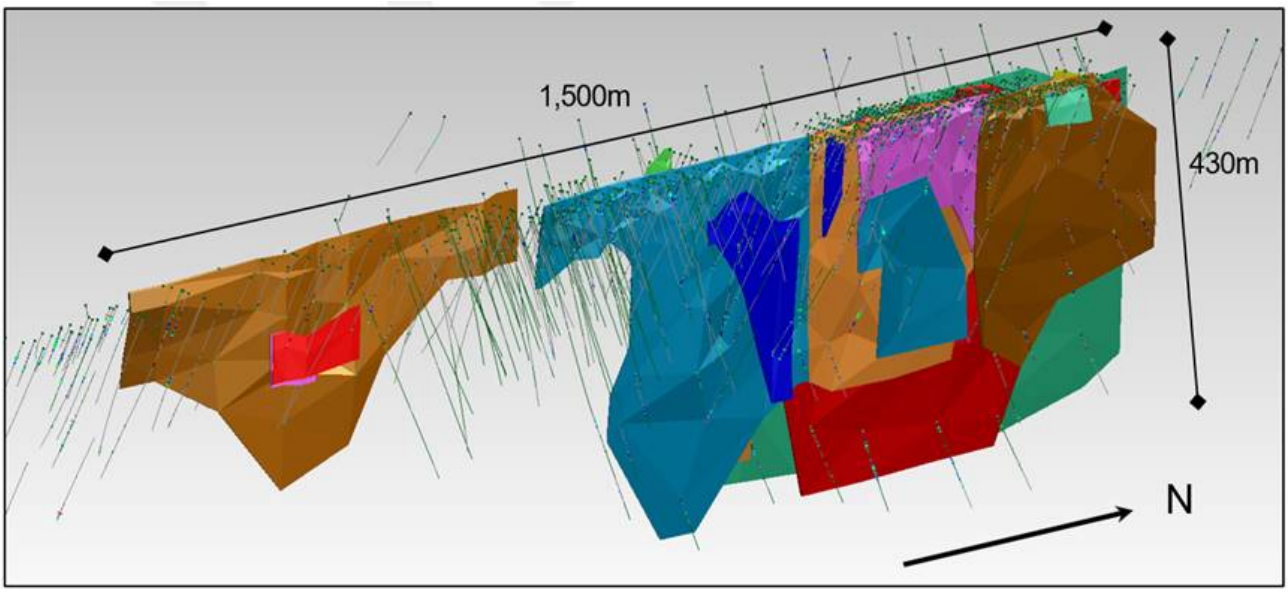

Figure 2: Lena Long section showing current resource boundary of the 16 gold lodes and the opportunity at depth to extend the resource.

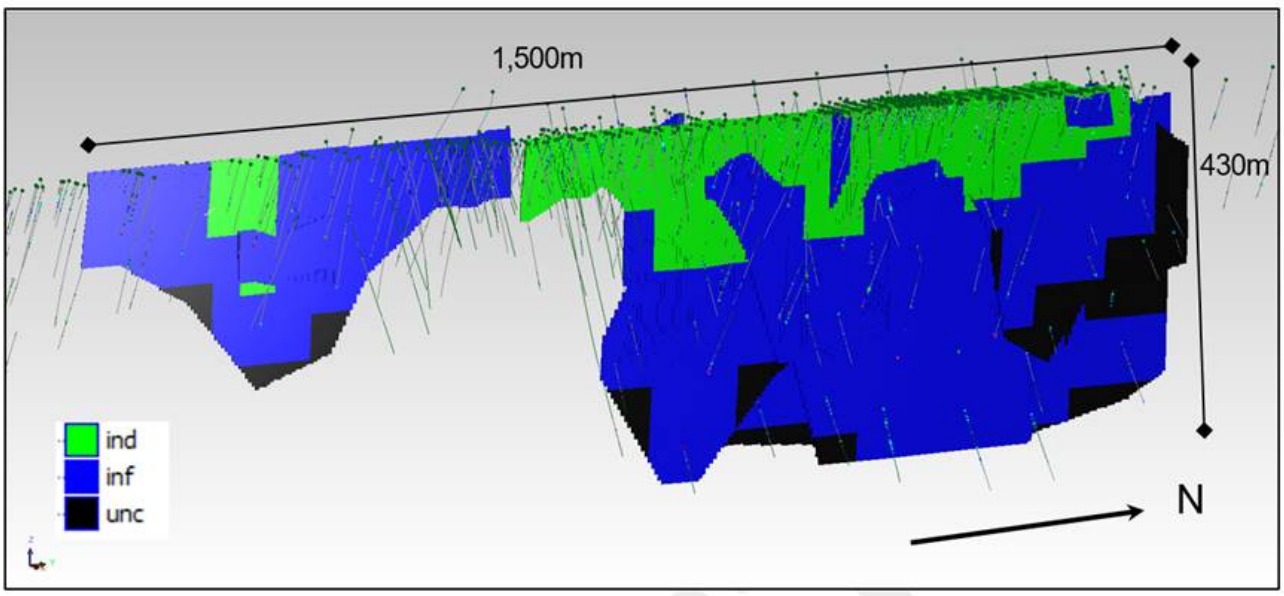

Figure 3: Lena long section block model showing resource classifications (Indicated Resources in green and Inferred Resources in blue).

Listing Rule 5.8.1

Pursuant to ASX listing rule 5.8.1, and in addition to the information contained in the JORC tables, the Company provides the following in respect to the Lena Mineral Resource.

Mineral Resource Statement Overview

An update of the Mineral Resource estimate for the Lena deposit was completed in February 2020 by Payne Geological Services Pty Ltd ("PayneGeo"). The update incorporates the results of infill and extension drilling programs carried out by Musgrave during 2018 and 2019 subsequent to the previous resource estimate dated July 2017. The drilling has allowed the deposit to be modelled at greater depth than the previous estimate as well as providing increased confidence in the tenor and continuity of the interpreted mineralisation.

The Lena Project area has been held by a number of operators and has been drilled in several phases since initial discovery. Drilling has been focussed on the Lena and the adjacent Break of Day deposits, with more regional exploration also completed. No modern mining has been conducted at Lena, with only minor historic workings present.

The reported Mineral Resource for the Lena deposit has increased substantially since the last estimate in 2017. This is due to the greater depth extent of the current model, a number of high grade intersections in the deeper lodes in the recent drilling and more constrained interpretation methodology to better define the lodes at depth. A summary of the February 2020 Lena Mineral Resource is provided in Table 1 below.

Table 1: Lena Gold Deposit February 2020 Mineral Resource
(0.5g/t Au cut-off above 1260mRL, 2.0g/t Au cut-off below 1260mRL)

Cut-off Grade	Indicated			Inferred			Total		
	Tonnes Mt	Au g/t	Au kOz	Tonnes Mt	Au g/t	Au kOz	Tonnes Mt	Au g/t	Au kOz
Surface-1,260mRL 0.5g/t Au Cut-off	2.16	1.6	115	0.87	1.7	47	3.03	1.7	161
Below 1,260mRL 2.0g/t Au Cut-off	0.09	2.3	7	1.18	4.1	158	1.27	4.0	164
Total	2.25	1.7	121	2.05	3.1	204	4.31	2.3	325

*Rounding discrepancies may occur

Geology and Geological Interpretation

The Cue Project lies within the Murchison Province in the north-western part of the Archean Yilgarn Craton. In the Moyagee area, the greenstone sequence is dominated by the Cuddingwarra Shear Zone which extends from Mt Magnet to Meekatharra. Mineralisation at Lena is developed in the Lena Shear which is a splay off the Cuddingwarra Shear Zone.

The Lena Shear is characterised by a 100m wide zone of deformation within a sequence of basalts, ultramafics and iron rich sediments that have been intruded by numerous phases of felsic dykes. The Lena Shear is near vertical with possible shoots located at the intersection of northwest trending cross-faults. Mineralisation occurs within all lithologies within the shear and there is a relatively strong correlation between quartz/carbonate veining, sulphide minerals (pyrite/arsenopyrite) and gold.

Within the shear zone, discrete zones of mineralisation are typically 2m to 20m in thickness and strike north-south with a generally vertical dip.

Regolith development varies across the prospect. Depth of complete oxidation in the deposit area is approximately 30m to 40m with depth to fresh rock approximately 50m to 70m. Gold distribution appears to be modified within the regolith, with likely remobilisation and depletion of gold.

Drilling at Lena extends to a maximum depth of 400m below surface. The mineralisation has been interpreted and estimated to a depth of 430m and the mineralisation remains open over much of the 1.5km strike length of the deposit.

Drilling Techniques

The Lena Mineral Resource is defined by 168 RC and 59 diamond drill holes as well as 168 shallow grade control (RC) holes for a total of 41,074m, the majority of which were angled at -60^{o} to grid west. The majority of holes were drilled by Silver Lake Resources Limited ("SLR") between 2009 and 2013.

Drill hole spacing is variable, with the upper portion of the deposit drilled at 25m by 25m or 50m by 25m spacings. The northern portion of the deposit has been drilled with grade control holes at spacing of 10m by 7.5m or 20m by 7.5m to a depth of 30m. Hole spacings in the deeper portions of the deposit vary from 40m to 100m.

Drill hole collars were surveyed in MGA coordinates using RTK GPS and were transformed to local grid for interpretation and modelling. The resource drilling by MGV was down hole surveyed using gyro equipment completed at the time of drilling. Holes drilled by SLR were down hole surveyed using an Eastman single shot or EMS tool.

Sampling and Sub-sampling Techniques

For RC drilling, a face-sampling hammer was used with samples collected at 1m intervals from mineralised zones with composite sampling of 6m in visually unmineralised rocks. Samples were collected through rig-mounted cone splitters. Samples were reported to have been kept dry throughout the mineralised zones and visually determined recoveries were good.

Diamond drilling was completed using NQ2 drilling equipment for all diamond holes. Core selected based on geological observation was cut in half for sampling, with a half core sample sent for assay at measured geological intervals.

Sample Analysis Method

Samples from all resource drilling were assayed at contract laboratories using a fire assay technique. The recent Musgrave drilling was assayed at Intertek-Genalysis using a 50g fire assay.

Quality control data was collected from Musgrave and SLR drilling and included the use of blanks, certified standards and field duplicates. Detailed review of the QAQC data determined that the results were satisfactory and that the drilling database was suitable for resource estimation. The Musgrave infill drilling supports the previous drill hole data suggesting that there is no problem with the spatial location and tenor of mineralisation defined in the historic drilling.

Estimation Methodology

The main lodes in the deposit were estimated using ordinary kriging ("OK") grade interpolation whilst minor, discontinuous lodes were estimated using inverse distance interpolation. All lodes were interpolated using 1m composited data within wireframes prepared using nominal 0.4g/t Au

envelopes and the lodes were estimated separately using hard boundaries. A total of seven major lodes and nine minor lodes were modelled.

Interpolation parameters were based on geostatistical analysis and considered the geometry of the individual lodes. A first pass search of 30m with a minimum of 12 samples and a maximum of 24 samples was used which resulted in 19% of the blocks being estimated. A second pass with a search range of 60m filled a further 49% of the blocks. The majority of the remaining blocks were filled with a 90m search. The portion of the deposit defined by grade control drilling was estimated using a 15m search radius.

High grade cuts were applied to different lodes and ranged from 8g/t to 26g/t. These had a significant impact on the estimated grade.

A Surpac block model was used for the estimate with a block size of 4m EW by 20m NS by 10m vertical with sub-cells of 0.5m by 5m by 2.5m.

Bulk density values applied to the model were 2.0t/m^3 for Oxide, 2.4t/m^3 for Transition and 2.80t/m^3 for Primary rock. The density value for fresh rock was based on determinations using drill core. The density assigned to other material types was assumed, based on knowledge of similar deposits.

Mineral Resource Classification

The portion of the deposit defined by detailed exploration drilling at up to 50m hole spacings or with close spaced grade control drilling and displaying reasonable continuity of mineralisation and predictable geometry were classified as Indicated Mineral Resource.

Portions of a number of the lodes were sparsely drilled and variably mineralised and were classified as Inferred Mineral Resource. This was generally extrapolated to a distance of up to 60m past drill hole intersections. All minor lodes were classified as Inferred.

Cut-off Grades

The shallow, sub-cropping nature of the deposit and previous mining studies suggests that good potential exists for open pit mining at the project. The maximum depth potential for open pit is considered to be approximately 150m, so above 1260mRL (150m vertical) the Mineral Resource has been reported at a 0.5g/t Au lower cut-off to reflect potential exploitation by open pit mining.

The deeper mineralisation shows sufficient tenor and thickness of mineralisation to have potential for underground mining. To reflect the higher cut-off grades expected with potential underground mining, the portion of the deposit below 1260mRL has been reported at a cut-off grade of 2.0g/t Au. The maximum depth of the reported Mineral resource is 430m below surface.

Metallurgy

Preliminary metallurgical test work has been carried out on oxide, transitional and fresh mineralisation from the Lena deposit. Total recoveries in excess of 95% (including a high gravity gold recovery) are indicated using conventional processing methods.

Modifying Factors

No modifying factors were applied to the reported Mineral resources. Parameters reflecting mining dilution, ore loss and metallurgical recoveries will be considered during the planned mining evaluation of the project.

THE CUE PROJECT

The Cue Project ("the Project") is located in the Murchison district of Western Australia (*Figure 4*) and hosts Mineral Resources (Indicated and Inferred) totalling 6.45Mt @ 3.0g/t gold. The Company has defined a +28km-long prospective gold corridor that includes the Lake Austin North and Mainland-Consols gold discoveries.

The Company believes there is significant potential to extend existing mineralisation and discover new gold deposits within the Project area, as demonstrated by the recent drilling success at Break of Day, Lena and Lake Austin North. Musgrave's intent is to investigate options to best develop a low-cost operation, capable of delivering strong financial returns for its shareholders.

Musgrave has executed an $18 million Earn-in and Exploration Joint venture with Evolution Mining Ltd over the Lake Austin portion of the Cue Project (*Figure 4*). The Break of Day, Lena and Mainland areas are excluded from the Earn-in and Exploration Joint Venture with Evolution Mining Ltd.

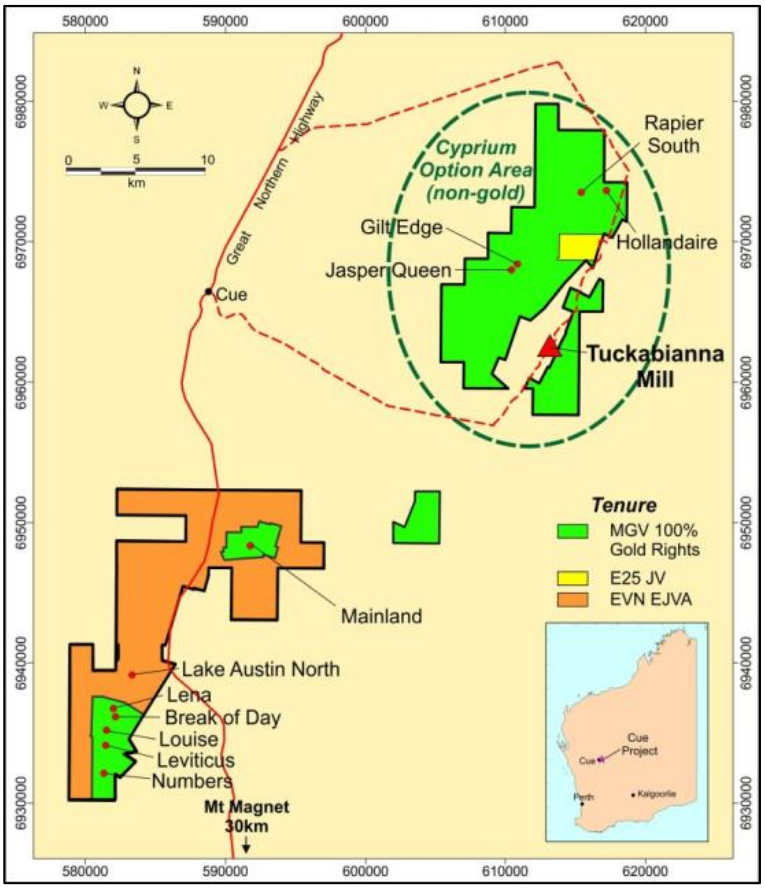

Figure 4: Cue Project location plan and tenure

In May 2019 Cyprium Australia Pty Ltd ("Cyprium") exercised an exclusive option to earn an 80% interest in the non-gold rights over the northern tenure at Cue including the Hollandaire deposit (*Figure 4*). Cyprium is required to spend $2 million on exploration within two years to acquire the 80% interest. Musgrave will retain 100% of the gold rights and a 20% free-carried interest in the non-gold rights to the completion of a definitive feasibility study.

For and on behalf of Musgrave Minerals Limited.
Rob Waugh
Managing Director

For further details please contact:

Rob Waugh
Managing Director
Musgrave Minerals Limited
+61 8 9324 1061

Luke Forrestal
Associate Director
Media and Capital Partners

+61 411 479 144

About Musgrave Minerals

Musgrave Minerals Limited is an active Australian gold and base metals explorer. The Cue Project in the Murchison region of Western Australia is an advanced gold and copper project. Musgrave has had significant exploration success at Cue with the ongoing focus on increasing the gold and copper resources through discovery and extensional drilling to underpin studies that will demonstrate a viable path to development in the near term. Musgrave also holds a large exploration tenement package in the Ni-Cu-Co prospective Musgrave Province in South Australia.

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Additional JORC Information

Further details relating to the information provided in this release can be found in the following Musgrave Minerals' ASX announcements:

- *30 January 2020, "Drilling resumes at Break of Day"*
- *13 January 2020, "More high-grade gold intersected at Cue"*
- *3 December 2019, "New high-grade 'link-lode' intersected at Break of Day, Cue Project"*
- *27 November 2019, "High-grade gold intersected in drilling at Mainland, Cue Project"*
- *21 November 2019, "2019 AGM Presentation"*
- *18 November 2019, "Drilling commences at Lake Austin North, Evolution JV, Cue"*
- *30 October 2019, "Mainland drilling commences and more high-grade gold intersected at Lena, Cue Project"*
- *24 October 2019, "September Quarterly Activities and Cashflow Report"*
- *18 October 2019, "Annual Report"*
- *18 October 2019, "Notice of Annual General Meeting / Proxy Form"*
- *17 October 2019, "Company Presentation – Brisbane Resources Round-up"*
- *9 October 2019, "High-grade gold intersected at Break of Day and ultra-high-grade rock-chip sample from Mainland, Cue Project"*
- *24 September 2019, "Further High-grade gold intersected at Lena below the existing resource, Cue Project"*
- *17 September 2019, "Musgrave and Evolution sign an $18 million Earn-In JV and $1.5M placement to accelerate exploration at Cue"*
- *3 September 2019, "High-Grade Gold Extension at Break of Day, Cue Project"*
- *20 August 2019, "High-Grade Gold Intersected at Lena and Mainland, Cue Project"*
- *30 July 2019, "Quarterly Activities and Cashflow Report"*
- *12 July 2019, "Opportunity to Extend Lena High-Grade Resource at Cue"*
- *4 July 2019, "Drilling commences at newly acquired Mainland Prospect, Cue"*
- *28 May 2019, "Scout Drilling Extends Gold Zone to >3km at Lake Austin North"*
- *1 May 2019, "Drilling at A-Zone Continues to Deliver Thick, High-Grade Gold Intersections"*
- *6 March 2019, "Musgrave Secures More Key Gold Tenure at Cue"*
- *3 December 2018, "Diamond Drilling Confirms Significant Gold Discovery at Lake Austin North"*
- *29 October 2018, "High-Grade Extended at Lake Austin North, Cue"*
- *15 October 2018, "Annual Report"*
- *31 August 2018, "First RC drill hole hits 42m @ 3.2g/t Au at Lake Austin North, Cue"*
- *27 July 2018, "Lake Austin North target continues to deliver strong gold results, Cue Gold Project, WA"*
- *15 June 2018, "High-Grade Gold Intersected at Lake Austin North, Cue Gold Project, WA"*
- *18 May 2018, " New Drill Results Highlight Regional Discovery Potential at Cue Gold Project, WA"*
- *16 August 2017, "Further Strong Gold Recoveries at Lena"*
- *14 July 2017, "Resource Estimate Exceeds 350koz Au"*
- *6 July 2017, "Excellent Gold Recoveries Achieved from Initial Metallurgical Test Work at Lena"*
- *16 June 2017, "More Gold Intersected Near Surface at Lena"*
- *6 June 2017, "High Grade Gold Intersected Near Surface at Lena"*
- *24 May 2017, "High Gold Grades Continue at Break of Day and Lena"*
- *20 April 2017, "Excellent High Grade Gold Hits at Break of Day and Lena"*
- *18 April 2017, "More High Grade Gold Results at Lena"*
- *3 April 2017, "Strong Gold Results Continue at Break of Day and Lena"*
- *17 March 2017, "Drilling Extends High Grade Gold at Break of Day and Lena"*
- *30 January 2017, "Diamond Drilling Confirms High Grade Gold at Break of Day and Extends High Grade Gold at Lena"*

Total Cue Project Gold Mineral Resources as at 14 February 2020

Deposit	Indicated Resources			Inferred Resources			TOTAL RESOURCES		
	Tonnes '000s	Au g/t	Ounces Au '000s	Tonnes '000s	Au g/t	Ounces Au '000s	Tonnes '000s	Au g/t	Ounces Au '000s
Moyagee									
Break of Day	445	7.7	111	423	6.5	89	868	7.2	199
Lena	2,253	1.7	121	2,053	3.1	204	4,305	2.3	325
Leviticus	-	-	-	42	6.0	8	42	6.0	8
Numbers	-	-	-	278	2.5	22	278	2.5	22
SUBTOTAL	2,697	2.7	232	2,796	3.6	323	5,493	3.1	554
Eelya									
Hollandaire	473	1.4	21	45	1.1	2	518	1.4	22
Rapier South				171	2.2	12	171	2.1	12
SUBTOTAL	473	1.4	21	216	1.9	13	689	1.6	34
Tuckabianna									
Jasper Queen	-	-	-	175	2.6	15	175	2.6	15
Gilt Edge	-	-	-	96	3.1	9	96	3.1	9
SUBTOTAL	-	-	-	271	2.8	24	271	2.8	24
TOTAL	3,233	2.5	258	3,219	3.4	355	6,453	3.0	613

* Due to the effects of rounding, the total may not represent the sum of all components

Competent Person's Statement
Exploration Results
The information in this report that relates to Exploration Targets and Exploration Results is based on information compiled and/or thoroughly reviewed by Mr Robert Waugh, a Competent Person who is a Fellow of the Australasian Institute of Mining and Metallurgy (AusIMM) and a Member of the Australian Institute of Geoscientists (AIG). Mr Waugh is Managing Director and a full-time employee of Musgrave Minerals Ltd. Mr Waugh has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration 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 Waugh consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Mineral Resources
The Information in this report that relates to Mineral Resources at Lena is based on information compiled by Mr Paul Payne, a Competent Person who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Payne is a full-time employee of Payne Geological Services. Mr Payne has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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 Payne 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 Mineral Resources at Break of Day is based on information compiled by Mr Aaron Meakin. Mr Meakin is a full-time employee of CSA Global Pty Ltd and is a Member of the Australasian Institute of Mining and Metallurgy. Mr Meakin 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 Competent Persons as defined in the 2012 edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). Mr Meakin consents to the disclosure of the information and 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 market announcement.

The information in this report that relates to the Hollandaire, Rapier South, Jasper Queen, Gilt Edge, Leviticus and Numbers Mineral Resource and Ore Reserve estimates is extracted from the report created by Silver Lake Resources Limited entitled "Mineral Resources and Ore Reserves Update", 26 August 2016 and is available to view on Silver Lake's website (www.silverlakeresources.com.au) and the ASX (www.asx.com.au). The Company confirms that it is not aware of any new information or data that materially effects the information included in the original market announcement and, in the case of estimates of Minerals Resources and Ore Reserves that all material assumptions and technical parameters underpinning the estimates 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 are presented, have not been materially modified from the original market announcement.

Forward Looking Statements
This document may contain certain forward-looking statements. Forward-looking statements include, but are not limited to statements concerning Musgrave Minerals Limited's (Musgrave's) current expectations, estimates and projections about the industry in which Musgrave operates, and beliefs and assumptions regarding Musgrave's future performance. When used in this document, words such as "anticipate", "could", "plan", "estimate", "expects", "seeks", "intends", "may", "potential", "should", and similar expressions are forward-looking statements. Although Musgrave believes that its expectations reflected in these forward-looking statements are reasonable, such statements are subject to known and unknown risks, uncertainties and other factors, some of which are beyond the control of Musgrave and no assurance can be given that actual results will be consistent with these forward-looking statements.

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JORC Table 1 Section 1 Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg 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.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg '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 (eg submarine nodules) may warrant disclosure of detailed information.*	• Drill holes used in the Lena estimate include 59 diamond holes (DD) and 168 reverse circulation holes. In addition, large number of regional RAB (Rotary Air Blast) and air-core (AC) holes have been completed; • The majority of RC and DD drilling was completed between 2009 and 2013 by SLR. MGV drilling has been carried out since 2016; • Musgrave RC and DD drilling has included extensional drilling as well as infill in the deeper parts of the deposit; • In the deposit area, holes were generally angled grid west to optimally intersect the mineralised zones; • RC samples were collected in 1m intervals from a rig mounted cone splitter; • RC drilling samples were composited into 6m intervals for assay with anomalous intervals resubmitted at 1m intervals. The majority of RC holes were sampled and assayed at 1m intervals; • DD core was cut using a diamond saw and half core samples submitted for analysis.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).*	• RC drilling used a face sampling bit; • Diamond drilling was carried out with NQ2 and sized equipment with standard tube;
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *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.*	• Recoveries from Musgrave drilling were excellent with RC samples visually monitored and core recovery measured; • Diamond core recovery was recorded in the drill logs and was excellent; • There appears to be no relationship between sample recovery and sample grades.
Logging	• *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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• All diamond drill holes were logged for recovery, RQD, geology and structure; • RC, drilling was logged for various geological attributes; • All drill holes were logged in full.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation*	• RC samples were collected from a rig mounted cone splitter in one metre intervals; • Visually unmineralised samples were composited into 6m intervals for analysis; • For historic RC and DD drill programs, samples were assayed at the contract laboratories. Musgrave samples were assayed at the Intertek laboratory in Perth. Samples were dried and a

Criteria	JORC Code Explanation	Commentary
	technique. • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *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.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	1kg split was pulverised to 80% passing 75 microns; • Musgrave and SLR drilling included extensive QAQC protocols including blanks, standards and duplicates. Results were satisfactory and supported the use of the data in resource estimation; • Sample sizes are considered appropriate to correctly represent the gold mineralisation based on: the style of mineralisation, the thickness and consistency of the intersections, the sampling methodology and assay value ranges for Au.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *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.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• For Musgrave drilling, analysis was by fire assay and ICP-MS finish at the Intertek laboratory in Perth; • For SLR RC and DD drilling, analysis was by fire assay and AAS finish at the Intertek laboratory in Perth; • The analytical technique used approaches total dissolution of gold in most circumstances; • Musgrave and SLR drilling included extensive QAQC protocols including blanks, standards and duplicates. Results were satisfactory and supported the use of the data in resource estimation.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• No independent verification of significant intersections has been carried out; • Multiple phases of drilling have confirmed the overall tenor and distribution of mineralisation; • Primary data documentation is electronic with appropriate verification and validation; • Data is well organised and securely stored in a relational database; • Assay values that were below detection limit were adjusted to equal half of the detection limit value.
Location of data points	• *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.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Drill hole collar coordinates used MGA Zone 50 datum with transforms to a local grid; • Drill hole collars have been accurately surveyed using either RTK GPS or differential GPS; • Topographic control is from drill hole collar surveys.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *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.* • *Whether sample compositing has been applied.*	• For RC and DD drilling, the hole spacing is largely 25m spaced holes on 25m to 50m spaced sections. • In the deeper parts of the deposit hole spacing is variable and often , and 100m by 30m in deeper or poorly mineralised parts of the deposit; • The northern portion of the deposit (330m strike length) has been drilled with grade control holes at spacing of 10m by 7.5m or 20m by 7.5m to a depth of 30m; • The drilling has demonstrated sufficient continuity in both geological and grade continuity to support the definition of Mineral Resource, and the classifications applied under the 2012 JORC Code; • Samples used in the Mineral Resource were based largely on 1m samples without compositing. Some compositing of DD holes was required to provide equal support during

Criteria	JORC Code Explanation	Commentary
		estimation.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *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.*	• Holes were generally angled to grid west to optimize the intersection angle with the interpreted structures; • No orientation based sampling bias has been identified in the data.
Sample security	• *The measures taken to ensure sample security.*	• Musgrave samples were carefully identified and bagged on site for collection and transport by commercial or laboratory transport.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Sampling and data procedures were audited by CSA Global as part of the 2017 estimation program; • Procedures were reviewed by PayneGeo all work was carried out by reputable companies using industry standard methods.

JORC Table 1 Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *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 license to operate in the area.*	• Musgrave Minerals has secured 100% of the Moyagee Project area (see MGV ASX announcement 2 August 2017: "Musgrave Secures 100% of Key Cue Tenure"); • The Break of Day and Lena prospects are located on granted mining lease M21/106 and the primary tenement holder is Musgrave Minerals Ltd; • The tenements are in good standing.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The tenement was previously held by Silver Lake Resources Ltd between 2009 and 2013 and prior to that by Perilya Mines Ltd from 1991 to 2007; • The majority of drilling was completed by SLR between 2009 and 2013.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Lena is an orogenic, lode-style deposit hosted within mafic rocks of the Norseman-Wiluna greenstone belt; • Gold mineralisation occurs as lodes and lenses within a corridor of strong shearing up to 100m wide; • There is a relatively strong correlation between quartz/carbonate veining, sulphide minerals (pyrite/arsenopyrite) and gold; • The shear zone strikes NE (grid north) and is sub-vertical in dip.

Drill hole information	• *A summary of all information material to the under-standing of the exploration results including a tabulation of the following information for all Material drill holes:*
	  • *easting and northing of the drill hole collar*
	  • *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  • *dip and azimuth of the hole*
	  • *down hole length and interception depth*
	  • *hole length*
	• *If the exclusion of this information is justified on the basis that the information is not Material and this*
		• All relevant drill hole information has previously been reported by SLR and MGV;
		• Drill hole locations are shown on the map within the body of the previous ASX release.

Criteria	JORC Code explanation	Commentary
	exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	
Data aggregation methods	• *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.* • *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.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Length weighted average grades have been reported; • No high grade cuts have been applied to reported exploration results; • Metal equivalent values are not being reported.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *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').*	• Drill holes are angled to local grid west which is approximately perpendicular to the orientation of the mineralised trend.
Diagrams	• *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.*	• A plan showing the Lena drilling is included within the previous ASX releases.
Balanced Reporting	• *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.* • *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.*	• Drill hole collars were accurately surveyed using RTK GPS or differential GPS; • The majority of resource holes had down hole surveys. Musgrave holes were surveyed by gyro and SLR holes used single shot or EMS equipment; • The results of all significant results of resource drill holes have been previously reported; • Results of RAB and AC holes are not material to the project.
Other substantive exploration data	• *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.*	• Regional exploration programs have been conducted including RAB drilling and geochemical sampling. The results have not been used in the Mineral Resource estimate.
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large- scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Further work at the deposit will include extensional and infill drilling in the high grade portions of the deposit; • Along strike and down dip lode extensions are likely targets for further exploration; • Regional exploration results will be assessed to identify other targets.

JORC Table 1 Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• Data was captured electronically to prevent transcription errors; • Validation included comparison of gold results to logged geology to verify mineralised intervals.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• A site visit was undertaken by the Competent Person in October 2019; • The site visit verified the extent of exploration activities. Drill collars from previous drilling were located and it was confirmed that no obvious impediments to future project exploration or development were present.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• The confidence in the geological interpretation is considered to be good, with continuous mineralised structures defined by good quality drilling; • The deposit consists of sub-vertical mineralised lodes which have been interpreted based on logging and assay data from samples taken at regular intervals from angled drill holes.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• The Lena Mineral Resource area extends over a strike length of 1,500m and has a vertical extent of 440m from surface at 1420mRL to 980mRL.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• Using parameters derived from modelled variograms, Ordinary Kriging (OK) was used to estimate average block grades within the deposit; • Inverse distance interpolation was used for small, discontinuous pods with sparse sample data; • Surpac software was used for the estimation; • High grade cuts of between 8g/t and 26g/t were applied to 1m composite data; • The parent block dimensions used were 20m NS by 4m EW by 10m vertical with sub-cells of 5m by 0.5m by 2.5m. The parent block size was selected on the basis of KNA and is just less than 50% of the average drill hole spacing in the majority of the deposit.; • Previous resource estimates have been completed and compare well with the current estimate however the new model extends a considerable distance beyond the limits of the previous model; • No assumptions have been made regarding recovery of by-products; • No estimation of deleterious elements was carried out. Only Au was interpolated into the block model; • An orientated ellipsoid search was used to select data and was based on parameters derived from the variography; • An initial interpolation pass was used with a maximum range of 30m which filled 19% of blocks. A second pass radius of 80m filled 46% of the blocks and a third pass range of 120m filled most of the remaining blocks; • Within the GC area, grades were interpolated into sub-blocks using a search range of 15m; • A minimum of 12 samples was used for the first

Criteria	JORC Code explanation	Commentary
		pass, and this was reduced to two for the third pass. A maximum of 24 samples was used for all passes; • Selective mining units were not modelled in the Mineral Resource model. The block size used in the model was based on KNA, drill sample spacing and lode orientation; • Only Au assay data was available, therefore correlation analysis was not possible; • The deposit mineralisation was constrained by wireframes constructed using a 0.4g/t Au cut-off grade in association with logged geology; • The wireframes were applied as hard boundaries in the estimate; • For validation, trend analysis was completed by comparing the interpolated blocks to the sample composite data within 25m northing intervals and by 10m vertical intervals.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages and grades were estimated on a dry in situ basis. No moisture values were reviewed.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The Mineral Resource above 1260mRL has been reported at a 0.5g/t Au cut-off based on assumptions about economic cut-off grades for open pit mining. • Below 1260mRL, the Mineral Resource has been reported at a cut-off grade of 2.0g/t Au to reflect potential underground mining.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• Based on the sub-cropping nature of the deposit and the extent and tenor of the mineralisation, it is assumed that there is good potential for open pit mining at the project; • Portions of the deposit are considered to have sufficient grade and continuity to be considered for underground mining; • No mining parameters or modifying factors have been applied to the Mineral Resource.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• Metallurgical test work has been undertaken by Musgrave and previous operators at the project and has been reviewed; • Results of the test work have demonstrated that good gold recovery can be expected from conventional processing methods.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be*	• The area is not known to be environmentally sensitive and there is no reason to think that approvals for further development including the dumping of waste would not be approved.

Criteria	JORC Code explanation	Commentary
	reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Bulk density determinations in fresh rock were made on samples from drill core using the weight in air/weight in water method; • Assumed values were used for density for oxide and transitional material; • Bulk density values used in the resource were 2.0t/m^3, 2.4t/m^3 and 2.80t/m^3 for oxide, transitional and fresh mineralisation respectively.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• Mineral Resources were classified in accordance with the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC, 2012). The Mineral Resource was classified as Indicated and Inferred Mineral Resource on the basis of data quality, sample spacing, and lode continuity; • The Indicated portion of the Mineral Resource was defined where good continuity of mineralisation was evident and within the drilled area where hole spacing ranged from 25m by 25m to 25m by 50m spacing; • The remaining portions of the deposit were classified as Inferred Mineral Resource due to the sparse drilling; • Inferred Mineral Resource was extrapolated up to 60m past drill hole intersections; • The definition of mineralised zones is based on sound geological understanding producing a robust model of mineralised domains; • The Mineral Resource estimate appropriately reflects the view of the Competent Person.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• A documented internal audit of the Mineral Resource estimate was completed by the consulting company responsible for the estimate.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• The Lena Mineral Resource estimate is considered to be reported with a high degree of confidence. The consistent lode geometry and continuity of mineralisation is reflected in the Mineral Resource classification. The data quality is good and the drill holes have detailed logs produced by qualified geologists; • The Mineral Resource statement relates to global estimates of tonnes and grade; • The deposit is not previously been mined.