Great Bou der



# HIGHLIGHTS

Great Boulder is pleased to report its maiden JORC 2012 Mineral Resource Estimate (MRE) for the Mulga Bill and Ironbark deposits that form part of the flagship Side Well Gold Project located in Meekatharra, Western Australia

Deposit	Category	Tonnes	Grade (g/t Au)	Au (Koz)
Mulga Bill	Inferred	5,258,000	2.5	431,000
Ironbark	Inferred	934,000	2.9	87,000
Global Resource	Total	6,192,000	2.6	518,000

Resources reported at a cut-off grade of 0.5g/t gold for open pit and 1.0g/t for underground

- The MRE includes a high-grade component of 370koz @ 5.0g/t Au using a 2.0g/t cut-off grade, of which 300koz @ 5.0g/t Au is at Mulga Bill and 71koz @ 4.7g/t Au is at Ironbark
- > Mineralisation at both deposits remains open along strike and at depth
  - GBR has only systematically explored and defined Mineral Resources over 1.7km of the combined +18km of mineralised gold corridors at Mulga Bill and Ironbark
- Resources are shallow, delineated from approximately 30m to 300m at Mulga Bill and from surface to 150m at Ironbark – 75% of the MRE has open pit mining potential (within 150m from surface)
- Initial metallurgical test work at Mulga Bill returned recoveries up to 99.7% demonstrating gold is recoverable via conventional gravity recovery and CIL methods (ASX 25/3/22)
- MRE delivered within 18 months from discovery at Mulga Bill and 6 months for Ironbark, at an exploration cost of approximately A\$17 per ounce
- Opportunity to create a significant gold camp with Mulga Bill and Ironbark representing only two of an extensive pipeline of untested regional prospects
- Mulga Bill's copper mineralisation has not been included in the MRE and will be advanced with ongoing drilling for future inclusion as a potentially value accretive by-product credit
- Side Well is strategically located neighboring multiple resources, mines and processing infrastructure – the closest operating mill is located c.25km southwest by road
- > Resource growth RC drilling to recommence at Side Well in early February

Great Boulder Resources ("Great Boulder" or the "Company") (ASX: GBR) is pleased to announce a maiden Mineral Resource Estimate (MRE) for the Side Well Gold Project ("Side Well") near Meekatharra in Western Australia.

The MRE for the Mulga Bill and Ironbark prospects contains a total of 518,000oz of contained gold at an average grade of 2.6g/t Au at an Inferred Classification. The MRE was prepared by an independent consultant using geological and mineralisation interpretations prepared by GBR using all available AC, RC and diamond data.

# Great Boulder's Managing Director, Andrew Paterson commented:

"This resource incorporates all the drilling we've done at Mulga Bill and Ironbark over the past two years. To go from zero to 518,000 ounces in that time is an exciting milestone for the Company."

"The maiden resource estimate is significant for three main reasons. Firstly, it materially de-risks Side Well by demonstrating that we understand the controls on mineralisation at Mulga Bill such that we can demonstrate continuity on multiple gold-bearing structures to build up a significant resource inventory."

"Secondly, it's a fantastic effort to get to 518,000 ounces of gold after two years of drilling with such a small team. It's a significant milestone on our way to the million ounces of gold that we believe the project has the potential to contain."

"Lastly, it demonstrates the broader potential of the project. This estimate covers a relatively small area of the project, and we already have extensional targets on both deposits plus more drilling to define the potential at Flagpole and Loaded Dog. Then there's the regional targets along the prospective eastern stratigraphy of Side Well. I think we will see substantial growth to the resource inventory throughout the year and into 2024 from extensional drilling and new discoveries."

"The RC rig will be back on site imminently to add more ounces as we continue to unlock the potential of this new gold camp just ten minutes' drive from Meekatharra. It's a unique opportunity for a junior gold explorer to have a large unexplored gold system so close to an important historic gold field."

While the estimation of a maiden mineral resource is an important milestone in quantifying Great Boulder's exploration success over the past two years at Side Well, it is also a useful indicator of the broader potential of the project. At Mulga Bill, RC drilling concentrated over a strike length of 1,400m currently defines mineralised lenses over 1,150m. Mineralisation remains open to the north, with sparse drilling testing areas beyond the cross-cutting Proterozoic dyke; to the south only a small amount of drilling has been completed at Loaded Dog and Flagpole.

At Ironbark the mineralisation spans 585m of strike and is limited to the north by drill coverage. However, to the south of Ironbark multiple gold and pathfinder anomalies remain untested by drilling over 7.5km of strike, with additional prospectivity over several kilometres of strike north of Ironbark.

With so many growth opportunities within Side Well the Company anticipates material success from ongoing exploration programs.

Classification	Deposit	Туре	Cut-off	Tonnes	Au g/t	Ounces
Inferred	Mulga Bill	Open Pit	0.5	3,664,000	2.6	301,000
		Underground	1	1,594,000	2.5	130,000
	Subtotal Mu	ılga Bill		5,258,000	2.5	431,000
	Ironbark	Open Pit	0.5	933,000	2.9	87,000
		Underground	1	1,000	2.7	0
	Subtotal Iro	nbark		934,000	2.9	87,000
<b>Total Inferred</b>				6,192,000	2.6	518,000

### TABLE 1: SIDE WELL GOLD PROJECT – SUMMARY OF MINERAL RESOURCES

Subtotals are rounded for reporting purposes. Rounding errors may occur.

The Side Well MRE was prepared by independent consultant Elizabeth Haren of Haren Consulting using drillhole databases and mineralisation and geology interpretations prepared by Great Boulder's geologists.



FIGURE 1: A PERSPECTIVE VIEW LOOKING WEST TOWARDS MEEKATHARRA WITH IRONBARK AND MULGA BILL IN THE FOREGROUND.

The MRE was informed by 226 RC holes and 12 RC-Diamond holes drilled by Great Boulder at Mulga Bill and Ironbark for a total of 43,370.3m, as well as a small number of RC holes and two diamond holes drilled by Doray Minerals in 2011/12. In addition, 131 AC holes were drilled within the resource area for 10,468m. AC assays from holes drilled by Great Boulder have been included in the estimation where appropriate. AC geochemical data has been an important ingredient in drill

targeting, particularly at Mulga Bill where the recognition of an association between bismuth, silver, copper and gold was an early breakthrough in targeting high-grade gold mineralisation. Within the whole Side Well project area the Company has drilled more than 600 AC holes.



FIGURE 2: PLAN VIEW OF MULGA BILL (LEFT) AND PERSPECTIVE FROM THE SOUTHEAST (RIGHT) SHOWING ESTIMATED BLOCK GRADES.



FIGURE 3: PLAN VIEW OF IRONBARK (LEFT) AND PERSPECTIVE FROM THE SOUTHEAST (RIGHT) SHOWING ESTIMATED BLOCK GRADES.



# FIGURE 4: INFERRED OUNCES PER VERTICAL METRE FOR MULGA BILL AND IRONBARK, REPORTED IN 10M INCREMENTS. BOTH DEPOSITS ARE CURRENTLY CONSTRAINED BY DEPTH OF DRILLING.

As can be seen in Figure 5 above, both mineral resource estimates contain significant ounces to approximately 260 vertical metres in the case of Mulga Bill and 130m at Ironbark. Both resources are constrained at depth by drill coverage.

At Mulga Bill the deeper RC holes average between 250m to 260m depth, testing to 210m vertical depth at a dip of -55°, however the majority of RC holes test mineralisation to depths of 160m to 180m below surface.

At Ironbark the 10 deepest RC holes average 215m at -55°, equivalent to 176m vertical coverage. Holes are designed to penetrate the target with a 10 to 20m "tail" into the barren footwall rock, making the effective depth of these holes approximately 140m.

Increasing the density of effective drilling at depth is likely to identify significant additional gold mineralisation and extend the mineral resource inventory for both deposits.

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FIGURE 5: MULGA BILL SECTION 7060400N SHOWING MULTIPLE MINERALISED ORIENTATIONS IN THE CENTRAL AREA.

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FIGURE 6: MULGA BILL SECTION 7060875N (HGV ZONE) WITH VERY HIGH GRADE MINERALISATION ON THE SUPERGENE HORIZON AND A HIGH-GRADE SUBVERTICAL LODE AT DEPTH.

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FIGURE 7: MULGA BILL 7061000N (HGZ ZONE) WITH HIGH-GRADE MINERALISATION ON THE RECENTLY DISCOVERED EASTERN LODE. THE GAP BETWEEN THIS ZONE AND PREVIOUS DRILLING IN THE HGV AREA IS AN OBVIOUS TARGET FOR EXTENSIONAL EXPLORATION.

1 February 2023



FIGURE 8: IRONBARK CROSS SECTION 7057850N DEMONSTRATES THE SIMPLE GEOMETRY AND NEAR-SURFACE HIGH GRADE AT IRONBARK.

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FIGURE 9: IRONBARK SECTION 7058850N HAS A SMALL BLANKET OF SUPERGENE MINERALISATION, AND PRIMARY MINERALISATION EXTENDING TO SURFACE.

## **Next Steps**

Challenge Drilling will return to site in early February to recommence RC drilling with an initial campaign of 4,000m. High priority holes include extensional targets on the Central, Eastern and HGV areas at Mulga Bill as well as deeper targets at Ironbark.



FIGURE 10: SIDE WELL IS STRATEGICALLY POSITIONED CLOSE TO EXISTING INFRASTRUCTURE. MULGA BILL AND IRONBARK ARE LESS THAN 25KM FROM WESTGOLD'S BLUEBIRD MILL.

# This announcement has been approved by the Great Boulder Board.

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#### **ABOUT GREAT BOULDER RESOURCES**

Great Boulder is a mineral exploration company with a portfolio of highly prospective gold and base metals assets ranging from greenfields through to advanced exploration located in Western Australia. The Company's core focus is advancing the Whiteheads and Side Well gold projects while progressing initial exploration at the earlier stage Wellington Base Metal Project located in an emerging MVT province. With a portfolio of highly prospective assets plus the backing of a strong technical team, the Company is well positioned for future success.

## **COMPETENT PERSONS' STATEMENTS**

The information in this Announcement that relates to exploration results is based upon work undertaken by Mr Andrew Paterson who is a Member of the Australasian Institute of Geoscientists (AIG). Mr Paterson has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a 'Competent Person' as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (JORC Code). Mr Paterson is an employee of Great Boulder Resources and consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

The information in this report that relates to the Side Well mineral resource is based upon information compiled by Ms Elizabeth Haren, a Competent Person who is a Chartered Professional member of the Australasian Institute of Mining and Metallurgy (AusIMM) and Member of the Australian Institute of Geoscientists (AIG). Ms Haren is an employee of Haren Consulting Pty Ltd and an independent consultant to the Company. Ms Haren 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' (JORC Code). Ms Haren consents to the inclusion in the report of the matters based on her information in the form and context in which it appears.



FIGURE 11: GREAT BOULDER'S PROJECTS

An ASX Listing Rule 5.8.1 summary of technical information pertaining to the mineral resource estimate is detailed below.

# Material Information Summary – Mineral Resources

# Mulga Bill and Ironbark Deposits

The Mulga Bill deposit lies approximately 10km east of the township of Meekatharra. Mineralisation has been modelled over a 1.15km strike and is concentrated within three main areas: Mulga Bill Central, The HGV area and the Eastern Trend. Within these areas lodes can be grouped broadly into three main categories: Steep shear structures, flat to shallow dipping vein sets and supergene related mineralisation. The lodes follow and cross-cut a 50m wide zone of dacitic to rhyolitic volcaniclastics and shallow intrusives, with preferential development of structures at lithological contacts. Mineralisation remains open down dip and to the north and south of the current model.

A maiden resource estimate was undertaken by external resource consultant Haren Consulting in January 2023. The resource estimate is mainly based on drilling completed by Great Boulder between 2020 and 2022, with minor historical drilling included. A summary of the mineral resource estimate is provided above in Table 1.

## **Geology and Geological Interpretation**

The Side Well Project is located within the northern Murchison Terrane of the Yilgarn Craton in Western Australia. The project occupies a strategic and highly prospective position over the richly endowed Wydgee-Meekatharra greenstone belt between the Paddy's Flat area to the west and the Andy Well gold mine to the north.

Within the tenement area the regional stratigraphy is folded into a broad, south-plunging syncline. A mafic-ultramafic sequence hosting the Paddy's Flat mining operation wraps through Side Well and runs down the eastern flank of the project, striking south-southeast towards the historic Gabanintha mining area. Prior to GBR's tenure the majority of this sequence had not been previously explored, making it an excellent target for greenfields exploration. In the centre of the syncline a broad package of felsic to intermediate volcaniclastics is covered by a thin layer of alluvial material, screening any underlying mineralisation from conventional geochemical techniques. This area hosts the Mulga Bill deposit.

The Mulga Bill deposit is hosted by a package of intermediate to felsic volcanic and volcaniclastic rocks that trend broadly north-south and are subvertical in dip. In the core of the Mulga Bill deposit is a sequence of dacitic and rhyolitic shallow intrusives and volcaniclastics approximately 50m wide, flanked on both sides by units of more andesitic composition. This central more felsic package is preferentially sheared by a large north-south trending orogenic zone that is interpreted to possibly represent a splay off the regional Albury-Heath fault zone located to the south of the tenement.

At Mulga Bill three broad lode styles have been recognised: sub-vertical, north south orientated shear lodes, flat to shallow dipping quartz and sulphide vein sets and palaeowater table related supergene lodes. The sub-vertical lodes are relatively more continuous but of moderate grade, while the generally west dipping shallow vein sets are of a higher grade but limited dimensions. The flat structures occur in regular sets with spacings of 20-40m between veins. Highest gold grades over thick interval at Mulga Bill occur at intersection of these two lode sets cause structural blowouts.

Mulga Bill is overlain by approximately 10-15m of transported cover. Beneath this cover a welldeveloped depleted zone consisting of kaolonitic clays extends on average to 60-80m below surface. Gold lodes have been intersected within this depleted layer in some areas however significant remobilisation of gold has occurred resulting in two main supergene layers forming in the saprolite. The supergene layer is generally low to medium grade however can have some significant highgrade gold where a flat dipping set has intersected the zone and undergone enrichment. The top of fresh rock lies on average between 100-120m below surface but can be as deep as 140m.

The Ironbark deposit lies on the eastern limb of the regional Polelle Syncline, approximately in the same stratigraphic location as the Paddy's Flat gold camp. It is hosted in the mafic-ultramafic sequence that dips at approximately 75 degrees to the west. A mafic unit of 10-30m thickness lies within dominantly ultramafic flow units and this unit has provided the focal point for mineralising fluids. Four main west-dipping lodes at Ironbark are related to veining and increased pyrite and are located along contacts of the mafic unit but also crosscut the mafic in places. These west-dipping lodes are interpreted to be consistent through the regolith profile with a small supergene zone

developed 10-20m below surface. The weathered representations of the primary lodes are thought to come close or to the surface in several areas.

Ironbark's regolith profile consists of 1-4m of proximal colluvium that carries gold mineralisation overlying a 20-70m thick saprolite layer. Weathering is strongly controlled by the mineralised zone with fresh rock intersected between 40-100m below surface. In contrast to Mulga Bill, there is no major depletion layer present at Ironbark.

# **Drilling Techniques**

A total of 97 AC holes, 180 RC holes and 14 RCDD or DD holes have been completed within the Mulga Bill resource area. Of these 10 RC holes and 2 DD holes were drilled by Doray Minerals between 2011 and 2012. The remainder were drilled by Great Boulder between 2020 and 2022.

Drillholes are drilled towards either 270° or 090° depending on the lode being targeted. Drillholes are mainly drilled at -55° to -60° dip. Some exceptions to this standard were done to test for alternative lode orientations in some areas and to assist with geological interpretation.

Drill spacing was generally completed on 50m sections with some lines infilled to 25m in certain areas. Drill hole spacing on section is 40-50m, with some sections infilled to 25m. Some areas have tighter drill spacing due to holes being drilled from the opposite direction to hit lodes of differing orientations.

A total of 46 RC and 34 AC holes were used for the Ironbark resource model. These were completed by Great Boulder in 2022. Drill holes at Ironbark are drilled on 50m sections with 50m spacing on section between holes. This spacing is reduced to 25m x 25m spacing in some areas. Holes were generally drilled at -60° towards 090°.

Drillholes at both Mulga Bill and Ironbark were surveyed using north-seeking gyroscopic survey equipment. All collar points were surveyed using DGPS in the GDA94 coordinate system.

# Sampling and Sub-sampling Techniques

RC samples were collected using a cone splitter over 1m intervals at the rig. 4m composites of these samples were collected by GBR staff where visually unmineralised rock was encountered; any visually interesting intervals of alteration or mineralisation were sampled using the 1m split bags.

Any 4m composites assaying greater than 0.1g/t Au were re-sent for analysis using the 1m split samples. Sample dryness and recovery were evaluated at this point and geological logging was completed on every metre.

Magnetic susceptibility was recorded for every metre drilled at Ironbark. This was not done at Mulga Bill due to the consistent lack of magnetic minerals at that deposit.

Diamond drilling was completed using HQ barrels to the top of fresh rock then NQ2 for the remainder of the drillhole. Geological and geotechnical logging was completed on every metre and core was

selected for sampling using a 0.2m minimum and 1.2 maximum sample interval. Core was cut in half for sampling with half core being sent to the lab for analysis.

## **Historical Sampling**

Holes completed by Doray Minerals were split with a cone splitter at the rig to 1m intervals. 4m composites of these samples were collected by field staff where visually unmineralised rock was encountered; any intervals of visible alteration or mineralisation were assayed in 1m samples.

Any 4m composites assaying greater than 0.1g/t Au were re-sent for analysis using the 1m split samples.

## **Sample Analysis Method**

Samples were analysed at either ALS or Intertek Laboratories using a 50g fire assay (FA) technique. Samples were pulverised to a nominal 85% passing 75 microns. Au analysis was undertaken using Au-AA26 involving 50g lead collection fire assay and Atomic Adsorption Spectrometry (AAS) finish.

A number of samples were checked using screen fire assay (SFA) or photon assay (PA) to evaluate the effect of nuggetty gold.

QAQC procedures included using field blanks, certified standards and duplicates to evaluate analysis performance. The QAQC data indicates that results are of a suitable standard for resource estimation.

## **Historical Analyses**

4m composites were analysed by Doray using a 25g Aqua Regia method at SGS Laboratories. 1m splits from anomalous composites were sent for a 30g fire assay.

Certified standards were inserted to test for confidence with no issues in the dataset used for resource estimation.

## **Estimation Methodology**

Samples were flagged with the individual mineralisation domains and composited to 1m lengths honouring the domain boundaries. Statistical and geostatistical analysis was used to understand the characteristics of the mineralisation. Statistical analysis showed the populations in each domain to have approximately log-normal distribution shapes. Where outlier gold grades were identified appropriate top-cuts were applied. Top-cuts were generally not severe with relatively few composites affected.

Continuity analysis was performed on individual domains where a robust variogram model was able to be interpreted. In other cases domains were grouped by genetic, statistical and orientation

characteristics to interpret robust variogram models. Poorly informed domains borrowed parameters from generally statistically and genetically similar domains or groups.

The model for the Mulga Bill deposit was constructed using a parent block size of 5mE by 10mN by 5mRL; with sub - cells down to 0.25mE by 0.50mN by 0.50mRL.

The model for the Ironbark deposit was constructed using a parent block size of 10mE by 10mN by 5mRL; with sub - cells down to 0.50mE by 0.50mN by 0.25mRL.

The sub-cell size was selected to accurately represent the geometry and volumes of the mineralisation, geology and weathering domains. The parent cell size was selected based on the drill hole data spacing and its relationship to the complexity of mineralisation and continuity with the parent block size used for estimation of gold grade.

Ordinary Kriging was used to estimate grades in all domains, with estimation searches and number of samples used determined by iterative testing and validation of the estimates. Dynamic anisotropy was utilised to allow the estimation to follow the geometry of the mineralisation. Hard boundary conditions were applied for grade estimation into each of the mineralised domains so that grade estimation for each domain used only the data that is contained within that domain.

# **Specific Gravity**

A total of 93 density measurements were taken from Mulga Bill diamond core. These were grouped based on regolith layer to obtain common values for extrapolation across the deposit. The measurements were used to obtain the density values below:

Material	Measurements	Density
Transported and Upper Saprolite	11	1.84
Lower Saprolite	7	2.09
Saprock	6	2.53
Fresh	67	2.68

# TABLE 2: MULGA BILL SPECIFIC GRAVITY VALUES

No density measurements have been taken at Ironbark. As Ironbark mineralisation is hosted within basalts and ultramafics a common Yilgarn density value for basalt has been applied to the fresh rock domain (2.9g/cc). This is thought to be relative conservative given that any mineralisation within

ultramafic material is likely to have a higher density. The saprolite densities were then extrapolated using the same relative range as Mulga Bill with 2.9g/cc as the base.

# TABLE 3: IRONBARK SPECIFIC GRAVITY VALUES

Material	Density	
Transported and Upper Saprolite	1.90	
Lower Saprolite	2.20	
Saprock	2.70	
Fresh	2.90	

## **Mineral Resource Classification**

The Mineral Resource has been classified as Inferred based on confidence in the geological model, continuity of mineralised zones, drilling density, confidence in the underlying database and bulk density information. Most of the mineralisation interpreted and estimated has been classified as Inferred. Mineralisation domains with isolated and/or very few drill hole intercepts remain unclassified until increased confidence in their volume, orientation and grade tenor is established with further drilling.

## **Cut-off Grades**

A 0.5 g/t Au gold cut-off was used to report the upper zones with open pit potential while a 1.0 g/t Au cut-off was used where the mineralisation is deeper with underground mining potential.

# Metallurgy

A gravity recovery and cyanide leach test was completed on a parcel of high-grade material Mulga Bill by Independent Metallurgical Operations (IMO). The parcel was selected from holes 21MBRC034 (91 to 96m) and 21MBRC050 (101 to 104m) with an assayed head grade of 39.47g/t Au.

Initially IMO conducted three tests examining the effect on gold recovery of different grind sizes using P80 150  $\mu$ m, 106  $\mu$ m and 75  $\mu$ m. Gravity recovery was consistent for each grind at around 62%. Cyanide leach tests were conducted with an initial cyanide concentration of 500ppm NaCN, maintained at 300ppm NaCN over 48 hours.

Once this process was completed a fourth test was run using an increased NaCN dosage, starting at 750ppm maintained at 400ppm over 48 hours. Given that gravity recovery showed no relation to grind size the fourth test used a coarse grind of 150  $\mu$ m. Gravity recovery remained consistent at 62.1%.

The fourth leach test demonstrated overall gold recovery of 99.7%. More significantly, the residual tail grade was only 0.1g/t Au which demonstrates that almost all the gold in the test parcel was recovered by the gravity and cyanide leach combination.

Results from the initial three leach tests were reported to the market on 10 March 2022, with results from the fourth leach test announced on 25 March 2022. The Company is not aware of any new information or data that materially affects the information included in this announcement.

No metallurgical work has yet been completed for Ironbark mineralisation.

# TABLE 4: SUMMARY STATISTICS FOR ALL LEACH TESTS

			Gold Su	immary	
		LT1 LT2 LT3 LT4		LT4	
Grind Size	μm	150	106	75	150
CN Conc	ppm	500/300	500/300	500/300	750/400
Gravity Recovery	%	62.3	62.7	62.4	62.1
2 Hour Recovery	%	66.6	67.6	68.1	69.8
4 Hour Recovery	%	71.9	71.3	69.8	78.2
8 Hour Recovery	%	77.8	77.2	75.1	89.4
24 Hour Recovery	%	83.8	82.4	80.8	99.8
48 Hour Recovery	%	87.7	88.0	87.2	99.7
Calculated Head Grade	g/t	35.95	35.84	36.17	36.14
Assayed Head Grade	g/t	39.47	39.47	39.47	39.47
Residue Grade	g/t	4.41	4.31	4.64	0.10
Gravity Recovery	%	62.3	62.7	62.4	62.1
Gravity Recovery	g/t	22.40	22.48	22.58	22.43
Leach Recovery	g/t	9.13	9.05	8.95	13.60
Total Recovery	g/t	31.54	31.53	31.53	36.04
24 Hour Cyanide Cons	kg/t	0.82	0.79	1.05	1.56
48 Hour Cyanide Cons	kg/t	0.94	0.94	1.05	1.61
24 Hour Lime Cons	kg/t	0.24	0.15	0.20	0.15
48 Hour Lime Cons	kg/t	0.24	0.15	0.20	0.15

ASX Announcement 25/3/2022: "99.7% gold recovery in second met test at Mulga Bill".

# **Modifying Factors**

No factors were applied to the estimated block values.

# Mining and metallurgical methods and parameters

Detailed open pit and underground mining studies have not yet commenced by Great Boulder however this will be evaluated as soon as further exploration enables the reporting of Indicated and Measured Mineral Resources suitable for economic assessment. In the Competent Person's opinion, the Meekatharra regional is a successful mining hub for several mining companies extracting gold in both open pit and underground mining scenarios therefore the assumption for

potential successful processing of Side Well ore is reasonable. Mining factors such as dilution and ore loss have not been applied.

No metallurgical assumptions have been made in estimating Mineral Resources.

## **Tonnage-Grade Curves**



FIGURE 12: TONNAGE-GRADE CURVE FOR MULGA BILL



FIGURE 13: TONNAGE-GRADE CURVE FOR IRONBARK

## Appendix 1 - JORC Code, 2012 Edition Table 1 (Side Well Project) Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	Commentary
Sampling techniques	RC samples were collected into calico bags over 1m intervals using a cyclone splitter. The residual bulk samples are placed in lines of piles on the ground. 2 cone splits are taken off the rig splitter for RC drilling. Visually prospective zones were sampled over 1m intervals and sent for analysis while the rest of the hole was composited over 4m intervals by taking a scoop sample from each 1m bag. Diamond core samples are selected on 1m intervals, or to lithological and alteration contacts at the geologist's discretion. Core is cut longitudinally using an Almonte-type diamond saw using the core orientation line as a uniform reference point and half the core is placed into calico bags for assaying. The other half core is placed back into the tray for reference. AC samples were placed in piles on the ground with 4m composite samples taken using a scoop. No AC data has been included in the Mineral Resource Estimate.
Drilling techniques	Industry standard drilling methods and equipment were utilised.
Drill sample recovery	Sample recovery data is noted in geological comments as part of the logging process. Sample condition has been logged for every geological interval as part of the logging process. Water was encountered during drilling resulting in minor wet and moist samples with the majority being dry. No quantitative twinned drilling analysis has been undertaken.
Logging	Geological logging of drilling followed established company procedures. Qualitative logging of samples includes lithology, mineralogy, alteration, veining and weathering. Abundant geological comments supplement logged intervals.
Sub-sampling techniques	1m cyclone splits and 4m speared composite samples were taken in the field. Samples were
and sample preparation	prepared and analysed at ALS Laboratories Perth for the RC and diamond drilling and Intertek Laboratories for the AC drilling. Samples were pulverized so that each sample had a nominal 85% passing 75 microns. Au analysis was undertaken using Au-AA26 involving 50g lead collection fire assay and Atomic Adsorption Spectrometry (AAS) finish. For AC drilling, Au analysis was undertaken using a 50g lead collection fire assay with ICP-OES finish.
Quality of assay data	All samples were assayed by industry standard techniques.
and laboratory tests	
Verification of sampling and assaying	The standard GBR protocol was followed for insertion of standards and blanks with a blank and standard inserted per 25 for RC and diamond drilling and 40 samples for AC drilling. No QAQC problems were identified in the results. No twinned drilling has been undertaken.
Data spacing and distribution	The spacing and location of the majority of drilling in the projects is, by the nature of early exploration, variable. The spacing and location of data is one of the variables taken into consideration when assigning resource category to estimated blocks.
Orientation of data in	Drilling is dominantly perpendicular to regional geological trends where interpreted and practical.
relation to geological structure	Holes are drilled to the east or to the west depending on the target orientation. True width and orientation of intersected mineralisation is variable due to the structural complexity and multiple vein orientations.
Sample security	GBR personnel were responsible for delivery of samples from the drill site to the courier companies dispatch center in Meekatharra. Samples were transported by Toll Ipec from Meekatharra to the laboratories in Perth.
Audits or reviews	Data review and interpretation by independent consultants occurs on a regular basis. Group technical meetings are usually held monthly incorporating Company geologists as well as external geochemical, geophysical and structural expertise.

#### Section 2 Reporting of Exploration Results

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

Criteria	Commentary
Mineral tenement and	Side Well tenement E51/1905 is a 48-block exploration license covering an area of 131.8km2
land tenure status	immediately east and northeast of Meekatharra in the Murchison province. The tenement is a 75:25
	joint venture between Great Boulder and Zebina Minerals Pty Ltd.
Exploration done by	Tenement E51/1905 has a protracted exploration history but is relatively unexplored compared to
other parties	other regions surrounding Meekatharra.
Geology	The Side Well tenement group covers a portion of the Meekatharra-Wydgee Greenstone Belt north
	of Meekatharra, WA. The north-northeasterly trending Archaean Meekatharra-Wydgee Greenstone
	Belt comprises a succession of metamorphosed mafic to ultramafic and felsic and sedimentary rocks
	belonging to the Luke Creek and Mount Farmer Groups.
	Over the northern extensions of the belt, sediments belonging to the Proterozoic Yerrida Basin
	unconformably overlie Archaean granite-greenstone terrain. Structurally, the belt takes the form of
	a syncline known as the Polelle syncline. Younger Archaean granitoids have intrusive contacts with
	the greenstone succession and have intersected several zones particularly in the Side Well area.
	Within the Side Well tenement group, a largely concealed portion of the north-north-easterly
	trending Greenstone Belt is defined, on the basis of drilling and airborne magnetic data, to underlie
	the area. The greenstone succession is interpreted to be tightly folded into a south plunging syncline
	and is cut by easterly trending Proterozoic dolerite dykes.
	There is little to no rock exposure at the Side Well prospect. This area is covered by alluvium and
	lacustrine clays, commonly up to 60 metres thick.
Drill hole Information	A list of the drill hole coordinates, orientations and intersections reported in this announcement are
	provided as an appended table.
Data aggregation	Results were reported using cut-off levels relevant to the sample type. For composited samples
methods	significant intercepts were reported for grades greater than 0.1g/t Au with a maximum dilution of
	4m. For single metre splits, significant intercepts were reported for grades greater than 0.5g/t Au
	with a maximum dilution of 3m.
	A weighted average calculation was used to allow for bottom of hole composites that were less than
	the standard 4m and when intervals contain composited samples plus 1m split samples.
	No metal equivalents are used.
Relationship between	The orientation of structures and mineralisation is not known with certainty, but majority of the
mineralisation widths	drilling was conducted using appropriate perpendicular orientations for interpreted mineralisation.
and intercept lengths	Stratigraphy appears to be steeply dipping to the west however mineralisation may have a different
	orientation.
Diagrams	Refer to figures in announcement.
Balanced reporting	It is not practical to report all historical exploration results from the Side Well project. Selected
	historical intercepts have been re-reported by GBR to highlight the prospectivity of the region. Full
	drillhole details can be found in publicly available historical annual reports.
Other substantive	Subsequent to Doray Minerals Limited exiting the project in 2015, private companies have held the
exploration data	ground with no significant work being undertaken.
Further work	Further work is discussed in the document.

#### Section 3 Estimation and Reporting of Mineral Resources

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

Criteria

Commentary

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#### 1 February 2023

Database integrity	All data was collected electronically by Great Boulder and stored in an acQuire SQL database with
	appropriate data validation procedures. The database is managed by an external consultant with
	extracts provided to Haren for Mineral Resource estimation.
	Haren undertook a basic check of the data for potential errors as a preliminary step to compiling the
	resource estimate. No significant flaws were identified.
Site visits	No site visit has been conducted by the competent person for Mineral Resources as the project is in early exploration.
Geological interpretation	There is moderate confidence in the interpreted geological and mineralisation model. Progressive
	drilling has identified new mineralisation and modified previous interpretations.
	The data used for Mineral Resource estimation has been collected reliably and is recent being
	completed since 2010 by both Doray Mineral Ltd for Mulga Bill and Great Boulder for Mulga Bill and
	Ironbark in a professional manner with most QAQC available and acceptable.
	Alternative interpretations have been investigated by a process of review, drill testing and updating
	of geological and mineralisation interpretations. Areas where interpretations are ambiguous or
	alternative interpretations could make a material difference are not included in the Mineral Resource
	coological interpretations of lithology and contact relationships are key to understanding the
	minoralization amplacement and are used extensively in the minoralization interpretations
Dimonsions	The Mules Bill denosit extends approximately 1 150 m from parts to couth 450 m parts to wast and
DIMENSIONS	is surrently known to a depth of 2 200 m
	Is currently known to a depth of 300 m.
	The folloark deposit extends approximately 600 m from north to south, 150 m east to west and is
Estimation and modalling	The Mulae Bill and keepback mineralization 1 m compositor exhibit energyimately log normal
techniques	distributions within each demain which is suitable for estimation by ordinary kriging
teeningues	Top cuts were applied where required to ensure outliers were not smeared during grade
	estimation.
	All estimates used hard boundaries between estimation domains and soft boundaries between
	weathering and geology which were confirmed by contact analysis.
	Reported Mineral Resource estimations were limited to extrapolation of less than ~30 m from drill hole data.
	Datamine version 1.13.32.0 was used for block modelling, estimation, and reporting. Supervisor
	version 8.15.0.1 was used for statistical and geostatistical analysis.
	Check estimates for Evermore were made using wireframes with the results broadly comparable.
	No assumptions were made regarding recovery of by-products and no other estimates than the gold
	Brades were made.
	variables of economic significance were estimated
	For Mulap Pill the block model was constructed using a parent cell size of 5 mE by 10 mN by 5 mPl
	for mineralised material.
	For Ironbark the block model was constructed using a parent cell size of 10 mE by 10 mN by 5 mRL
	for mineralised material.
	The parent cell size was selected based on the drill hole data spacing and its relationship to the
	complexity of mineralisation and continuity with the parent block size used for estimation of gold
	grade.
	Ordinary Kriging was used to estimate grades in all domains, with estimation searches and number
	of samples used determined by iterative testing and validation of the estimates.
	Dynamic anisotropy was utilised to allow the estimation to follow the geometry of the mineralisation.
	Hard boundary conditions were applied for grade estimation into each of the mineralised domains
	so that grade estimation for each domain used only the data that is contained within that domain.
	At this stage the selective mining units are unknown.
	No elemental correlation analysis was completed and only Au was estimated.
	Validation of grade estimates was completed using a three-stage process. The first is a global
	comparison of declustered and top-cut (where required) composites key statistics to the block model
	estimates for the first search pass as well as subsequent search passes. The second is a trend analysis

	where the declustered and top-cut (where required) composites are sliced into windows in northing
	or elevation directions and compared. The third is careful local validation of composite grades to
	estimated grade in multiple orientations to ensure expected grade trends are reproduced and the
	estimates are a good reflection of the input composites and estimation parameters. Where required,
	parameters were adjusted in an iterative process to ensure a high quality estimation.
Moisture	All tonnages have been estimated as dry tonnages.
Cut-off parameters	A 0.5 g/t Au gold cut-off was used to report the upper zones with open pit potential while a 1.0 g/t
	Au cut-off was used where the mineralisation is deeper with underground mining potential.
Mining factors or	It is assumed the deposit will be mined using open cut and underground methods. Successful mining
assumptions	operations are located on surrounding leases.
	Western Australia has a low geopolitical risk, an extensive history of gold mining and stable
	government policies and processes.
Metallurgical factors or	It is assumed that the gold will be extracted using standard gravity recovery and CIL methods
assumptions	common in the Western Australian goldfields. Initial tests on Mulga Bill mineralisation included
	gravity and cyanide leach test recoveries which demonstrated excellent recoveries with a very low
	residual tail on the single parcel tested to date.
Environmental factors or	It is assumed that no environmental factors exist that could prohibit any potential mining
assumptions	development at the deposits.
Bulk density	A total of 93 density measurements were taken from Mulga Bill diamond core. These were grouped
Dum denoty	based on regolith layer to obtain common values for extrapolation across the deposit.
	The measurements were used to obtain the density values used for the Mulga Bill MRE of 1.84 t/m3
	for Transported and Upper Saprolite 2.09 t/m3 for Lower Saprolite 2.53 t/m3 for Saprock and
	2.68 t/m3 for Fresh
	No density measurements have been taken at Ironbark. As Ironbark mineralisation is hosted within
	basalts and ultramafics a common Yilgarn density value for basalt has been applied to the fresh rock
	domain $(2.9 \text{ t/m}3)$ . This is thought to be relative conservative given that any mineralisation within
	ultramafic material is likely to have a higher density. The saprolite densities were then extrapolated
	using the same relative range as Mulga Bill with 2.9 t/m3 as the base.
	The values used for the Ironbark MRE are 1.90 t/m3 for Transported and Upper Saprolite 2.20 t/m3
	for Lower Saprolite, 2.70 t/m3 for Saprock and 2.90 t/m3 for Fresh.
Classification	The Mulga Bill and Ironbark Mineral Resources have been classified as Inferred based on confidence
	in the geological model, continuity of mineralised zones, drilling density, confidence in the underlying
	database and bulk density information.
	Most of the mineralisation interpreted and estimated has been classified as Inferred.
	Mineralisation domains with isolated and/or very few drill hole intercents remain unclassified until
	increased confidence in their volume, orientation and grade tenor is established with further drilling.
Audits or reviews	No external reviews or audits have been completed as this is a maiden MRF.
Discussion of relative	A quantitative procedure for assessing relative accuracy and precision has not been deemed
accuracy/ confidence	appropriate by the Competent Person for the estimation of gold grade at this stage.
	The Mineral Resource discussed is a global estimate and will require closer spaced data to achieve a
	local estimate suitable for reliable localisation of ore and waste at a mining stage.