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# **BROCKMAN**

## **BROCKMAN MINING LIMITED**

**布萊克萬礦業有限公司\***

*(incorporated in Bermuda with limited liability)*

**(SEHK Stock Code: 159)**

**(ASX Stock Code: BCK)**

### **UPGRADED SIRIUS RESOURCE OF 124 MT GRADING 60.32% Fe**

Brockman is pleased to announce a 14% increase in Mineral Resource for the Sirius deposit to 124 Mt grading 60.32% Fe, at the Ophthalmia Iron Ore Project near Newman in the East Pilbara region of Western Australia. The Sirius Mineral Resource now includes Indicated Mineral Resources of 105 Mt grading 60.35% Fe.

Brockman is to now commence a Pre-Feasibility Study for a 15 Mtpa DSO mining operation at Ophthalmia, predicated on the Company achieving a rail infrastructure solution for the Marillana Project, located 80 km northwest of Ophthalmia.

Brockman Mining Limited (Brockman) is pleased to announce an upgraded Mineral Resource of 124 Mt grading 60.32% Fe for the Sirius Deposit, which is located about 15 km north of the Newman township in Western Australia and forms part of Brockman's greater Ophthalmia Iron Ore Project (Figure 1). This represents an increase of 15 Mt over the previously announced Mineral Resource but significantly 105 Mt (85%) of the total resource is now classified as Indicated Resources whereas the previous resource was entirely in the Inferred Resources category. The average grade of mineralisation has also increased slightly, from the previously reported 60.03% Fe.

The upgraded Mineral Resource estimate for the Sirius Deposit was prepared by Golder Associates Pty Ltd (Golder) and included the 177 RC drill holes (14,840 m) completed in 2013. The resource estimate was classified in accordance with guidelines provided in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012). The classification was based principally on geological confidence, drill hole spacing and grade continuity from available drilling data (see Figures 2 to 5). The mineralisation models and block reporting cut-off grades used in this *in situ* resource estimate are both 54% Fe. The methodology and procedures used for the Mineral Resource estimate, as well as the sampling techniques and data acquisition methods are provided in the attached Mineral Resource statement by Golder Associates Pty Ltd (Appendix 1).

\* *For identification purpose only*

The Mineral Resource estimate now incorporates the previously identified Exploration Targets at Sirius, almost all converted into Mineral Resources. No new Exploration Targets were identified during the drilling program or resource update.

Together with the previously announced Mineral Resources for the Coondiner and Kalgan Creek Deposits<sup>1</sup>, released to the ASX on 19 April 2013 and 4 December 2012 respectively, the total DSO Mineral Resources at the Ophthalmia Project now stand at 305 Mt grading 59.11% Fe (Table 1), of which 200 Mt (or 66%) is classified as Indicated Resources.

**Table 1: Ophthalmia Mineral Resource (DSO) Summary**

<b>Deposit</b>	<b>Class</b>	<b>Tonnes (Mt)</b>	<b>Fe (%)</b>	<b>CaFe* (%)</b>	<b>SiO<sub>2</sub> (%)</b>	<b>Al<sub>2</sub>O<sub>3</sub> (%)</b>	<b>S (%)</b>	<b>P (%)</b>	<b>LOI (%)</b>
Kalgan Creek <sup>1</sup>	Indicated	12.5	59.25	62.64	4.02	4.79	0.007	0.20	5.41
	Inferred	39.7	59.07	62.55	4.53	4.55	0.005	0.17	5.56
	<b>Sub Total</b>	<b>52.1</b>	<b>59.11</b>	<b>62.56</b>	<b>4.41</b>	<b>4.60</b>	<b>0.006</b>	<b>0.18</b>	<b>5.52</b>
Coondiner <sup>1</sup> (Pallas and Castor)	Indicated	82.5	58.1	61.7	5.61	4.48	0.008	0.17	5.76
	Inferred	46.4	58.7	62.1	5.37	4.40	0.006	0.18	5.44
	<b>Sub Total</b>	<b>128.9</b>	<b>58.3</b>	<b>61.8</b>	<b>5.52</b>	<b>4.45</b>	<b>0.008</b>	<b>0.17</b>	<b>5.64</b>
Sirius	Indicated	105.0	60.35	63.67	3.54	3.97	0.007	0.18	5.22
	Inferred	19.0	60.15	63.41	4.09	3.83	0.009	0.17	5.14
	<b>Sub Total</b>	<b>124.0</b>	<b>60.32</b>	<b>63.63</b>	<b>3.62</b>	<b>3.95</b>	<b>0.007</b>	<b>0.18</b>	<b>5.20</b>
Ophthalmia Project	Indicated	200.0	59.35	62.77	4.42	4.23	0.007	0.18	5.45
	Inferred	105.1	59.10	62.50	4.82	4.35	0.006	0.17	5.43
	<b>Total</b>	<b>305.0</b>	<b>59.27</b>	<b>62.68</b>	<b>4.56</b>	<b>4.27</b>	<b>0.007</b>	<b>0.17</b>	<b>5.45</b>

\* *CaFe represents calcined Fe and is calculated by Brockman using the formula  $CaFe = Fe\% / ((100 - LOI) / 100)$*

\*\* *Tonnes may not add up due to rounding*

1 The Mineral Resources for Kalgan Creek and Coondiner were prepared and first disclosed under JORC Code 2004. Refer the ASX announcements made 16/10/2012 and 4/12/2012 respectively. Neither has been updated to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported. All material assumptions and technical parameters underpinning the estimates, continue to apply and have not materially changed, nor have the Competent Person's findings been materially modified.

Following the excellent conversion from Inferred to Indicated Resources at Sirius, Brockman now plans to immediately commence a Pre-Feasibility Study for a 15 Mtpa DSO mining operation at Ophthalmia. The study will be predicated on Brockman achieving a rail infrastructure solution for its Marillana Project, located about 80 km northwest of Ophthalmia. Further, the Company will also investigate the potential for a smaller, interim road-haulage operation based on the high grade, above water table mineralisation at Sirius.

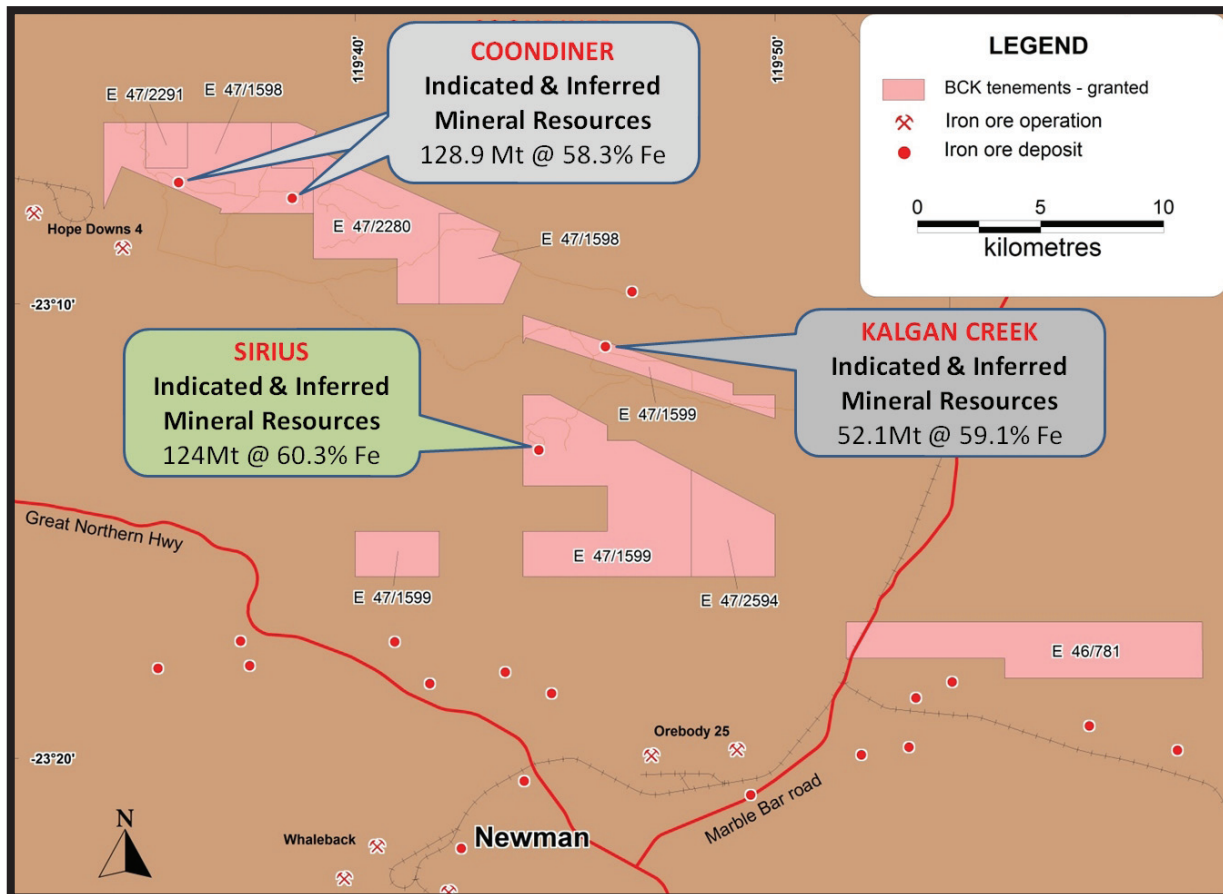


Figure 1: General location map of Ophthalmia Iron Ore Project

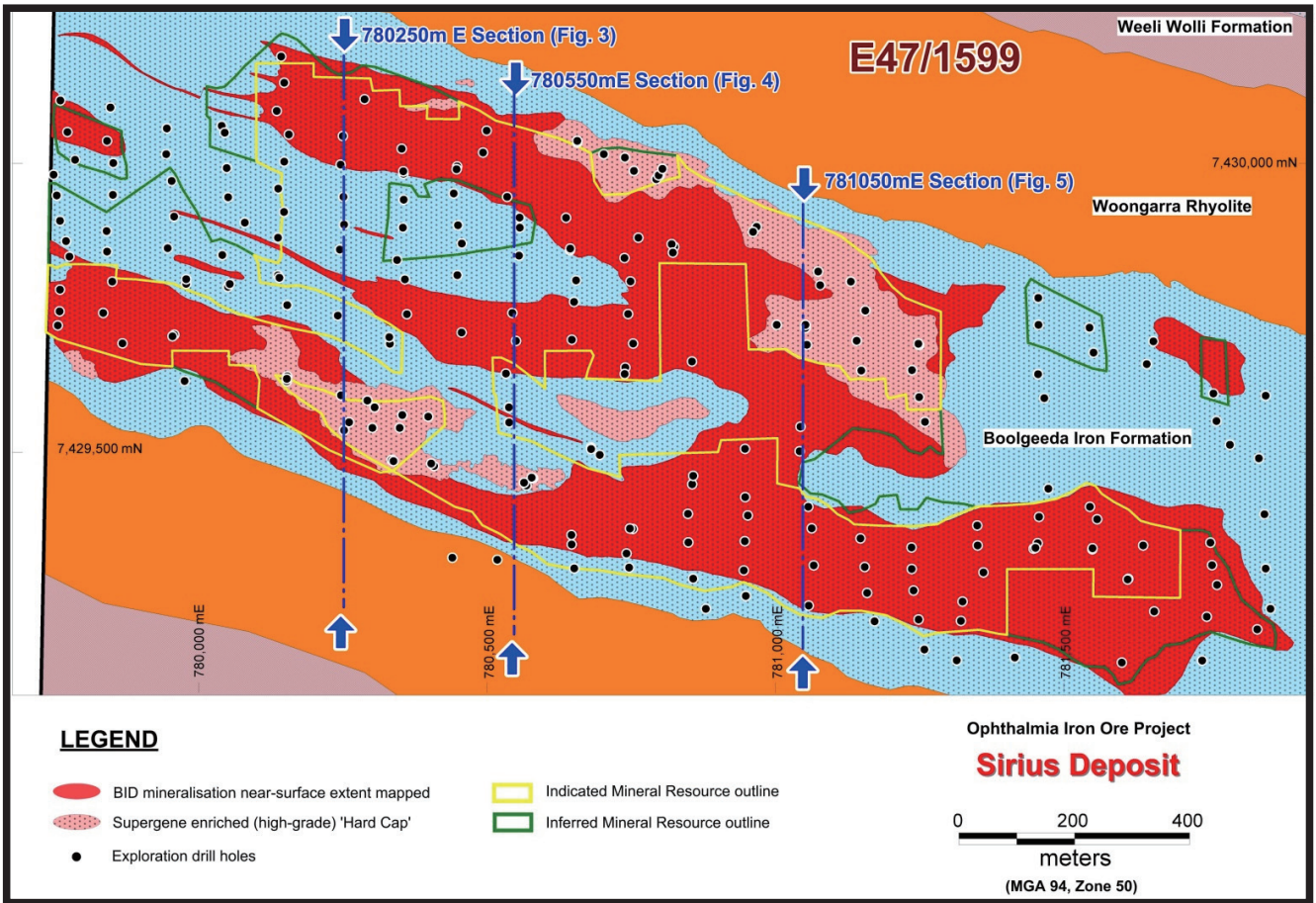


Figure 2: Drill hole locations and Mineral Resource extent at Sirius

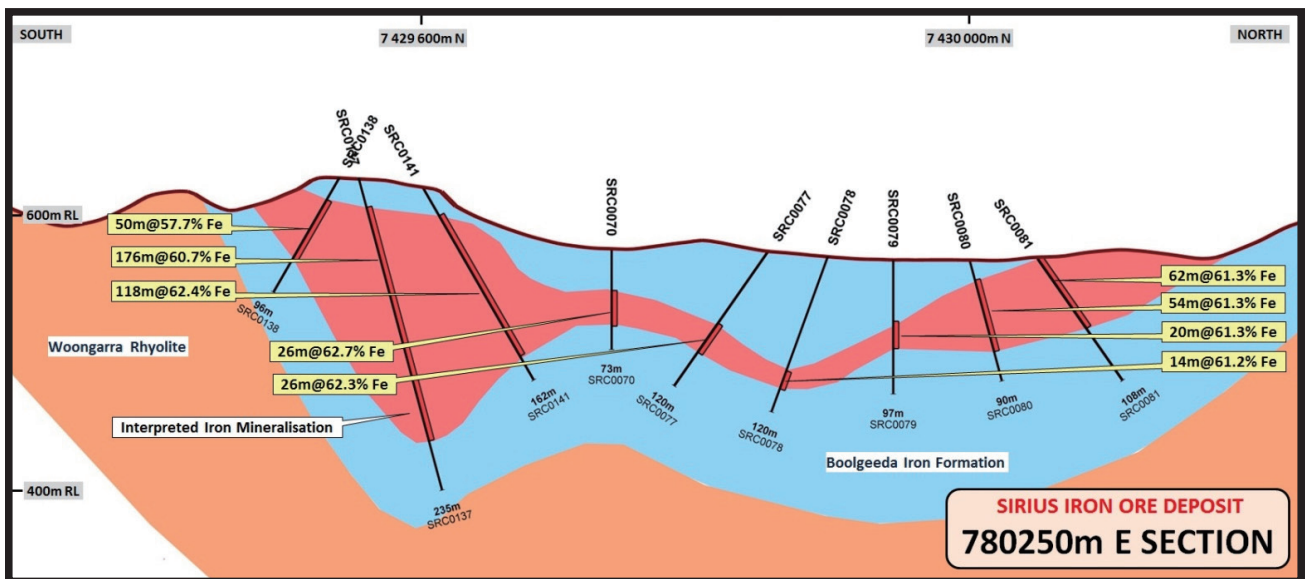


Figure 3: Cross Section through Sirius Deposit at 780250m E



*As at the date of this announcement, the Board comprises Mr. Kwai Sze Hoi (Chairman), Mr. Liu Zhengui (Vice Chairman) and Mr. Ross Stewart Norgard as non-executive directors; Mr. Luk Kin Peter Joseph (Chief Executive Officer), Mr. Chan Kam Kwan, Jason (Company Secretary) and Mr. Warren Talbot Beckwith as executive directors; and Mr. Yap Fat Suan, Henry, Mr. Uwe Henke Von Parpart and Mr. Yip Kwok Cheung, Danny as independent non-executive directors.*

## **DEFINITIONS**

ASX	ASX Limited (trading as the Australian Securities Exchange)
km	kilometres
m	metres
Mt	Million tonnes
Mtpa	Million tonnes per annum

## **FURTHER INFORMATION**

<b>Russell Tipper</b>	<b>Chief Executive Officer (Brockman Mining Australia)</b>	<b>+61 8 9389 3000</b>
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## Competent Person's Statements

The information in this statement which relates to the Mineral Resource at Sirius is based on information compiled by James Farrell who is a full-time employee of Golder Associates Pty Ltd, and Member and Chartered Professional of the Australasian Institute of Mining and Metallurgy. James Farrell has sufficient relevant experience to the style of mineralisation and type of deposit under consideration and to the activity for which he is undertaking to qualify as a Competent Person as defined in the JORC Code (2012).

The Competent Person responsible for the geological interpretation and the drill hole data used for the resource estimation at Sirius is Mr. Aning Zhang. Mr. Zhang is a full-time employee of Brockman Mining Australia Pty Ltd, is a Member of the Australasian Institute of Mining and Metallurgy and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity for which he is undertaking to qualify as a Competent Person as defined in the JORC Code (2012). Mr. Zhang consents to the inclusion in this report of the matters based on his information in the form and content in which it appears.

The information in this report that relates to Mineral Resources at Coondiner and Kalgan Creek is based on information compiled by Mr. James Farrell and Mr. A Zhang.

Mr. James Farrell, who is a Chartered Professional and Member of the Australasian Institute of Mining and Metallurgy and a full-time employee of Golder Associates Pty Ltd, produced the Mineral Resource estimates at Coondiner and Kalgan Creek based on the data and geological interpretations provided by Brockman. Mr. Farrell has sufficient experience that is relevant to the style of mineralisation, type of deposit under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the 2004 edition of the "Australasian Code for Reporting of Exploration, Results, Mineral Resource and Ore Reserves". Mr. Farrell consents to the inclusion in this report of the matters based on his information in the form and context that the information appears.

Mr. A Zhang, who is a Member of the Australasian Institute of Mining and Metallurgy and a full-time employee of Brockman Mining Australia Pty Ltd, provided the geological interpretations and the drill hole data used for the Mineral Resource estimations at Coondiner and Kalgan Creek. Mr. Zhang has sufficient experience that is relevant to the style of mineralisation, type of deposit under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the 2004 edition of the "Australasian Code for Reporting of Exploration, Results, Mineral Resource and Ore Reserves". Mr. Zhang consents to the inclusion in this report of the matters based on his information in the form and context that the information appears.

7 March 2014

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## **MINERAL RESOURCE STATEMENT FOR SIRIUS PROSPECT, WESTERN AUSTRALIA**

Dear Colin

Golder Associates Pty Ltd (Golder) has updated the resource estimate for the Sirius prospect, Western Australia, using all available assay data as of 22 January 2014. The resource estimate was classified in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012).

The classification of Mineral Resources was completed by Golder geologists. The classification was based principally on geological confidence, drill hole spacing and grade continuity from available drilling data.

The *in situ* Mineral Resource is constrained to the mineralisation domain boundaries within tenement E47/1599.

## **GEOLOGY**

The Sirius mineralisation is hosted within the Boolgeeda Iron Formation, which is composed of Banded Iron Formation (BIF) intercalated with mudstone, siltstone and chert. The Boolgeeda Formation sits conformably above the Woongarra Formation. During the Tertiary period these rocks were overlain by alluvial and colluvial sediments derived from cyclic weathering and erosion of the surrounding BIF.

## **ASSUMPTIONS AND METHODOLOGY**

This Mineral Resource estimate for the Sirius prospect is based on a number of factors and assumptions:

- All of the available drilling data as of 22 January 2014 was used for the Mineral Resource estimate. This data was collected by Brockman from their 2011 to 2013 drilling campaigns.
- The collar positions were measured using differential global positioning system, and are considered adequate for the purposes of this resource estimate.
- A review of the quality assurance and quality control (QAQC) data was completed by Golder. The QAQC program included company standards, blanks and field duplicates submitted at a rate of 1 in 25 of all assayed samples. Analysis of the QAQC data indicates that drill hole samples were prepared and analysed with acceptable quality for this Mineral Resource estimate.
- Of all the RC holes (223 in total) drilled at Sirius, 177 have downhole survey. The downhole survey tool used is a Century Geophysical 9622 deviation tool, based on magnetics. It has an accuracy of +/- 0.5° in dip and +/- 2° in azimuth. The data used in the resource estimate has been verified, all the data that was affected by magnetics has been removed. The survey tool was calibrated both prior to and post survey. Given the weathered formation including the mineralisation is non-magnetic or weakly magnetic, the survey data is considered reliable.





- Global *in situ* densities of 2.6 t/m<sup>3</sup> for the mineralised zones and 2.5 t/m<sup>3</sup> for the waste are applied to the block model based on downhole density logging of 183 drill holes. The geophysical results were filtered for outliers in both density (<1.5 t/m<sup>3</sup> and >3.5 t/m<sup>3</sup>) and caliper (RC: <130 mm and >160 mm; and HQ3 diamond hole: <90 mm and >120 mm and PQ3 diamond holes: <125 mm and >140 mm).
- Statistical and geostatistical analyses were carried out on drilling data composited to 2 m downhole intervals. This included variography to model the spatial continuity of the grades within each domain.
- Mineralisation domains were interpreted on paper sections and modelled as three dimensional wireframes by Brockman. A mineralisation cut-off grade of 54% Fe was used to define the mineralised domain.
- The Ordinary Kriging interpolation method was used for the estimation of Fe, SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, CaO, P, LOI, S, MnO, TiO<sub>2</sub>, K<sub>2</sub>O and MgO using variogram parameters defined from the geostatistical analysis.
- The Mineral Resource for Sirius is reported from the block model *Sirius\_20140211\_ok1.bmf*.
- The reported Mineral Resources are within the Brockman tenement E47/1599m shown in Table 1 .

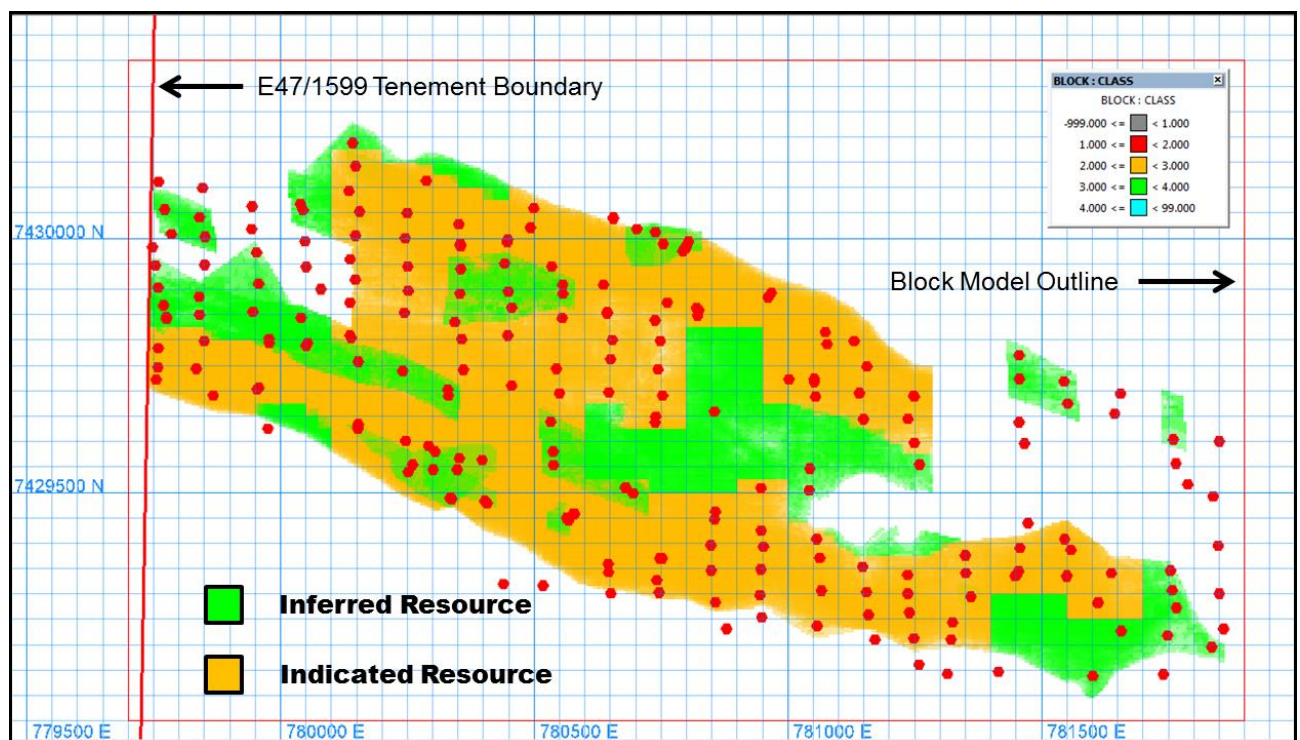


Figure 1: Plan View of Sirius Deposit Showing the Location of the mineral Resources, Drill Hole Collars and Exploration License E47/1599

## MINERAL RESOURCE STATEMENT

The resource estimate was classified in accordance with guidelines provided in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012). The classification was based principally on geological confidence, drill hole spacing and grade continuity from available drilling data.

Table 1 summarises the Mineral Resources for Sirius. The mineralisation models and block reporting cut-off grades used in this *in situ* resource estimate are both 54% Fe. For mine planning purposes, ore loss and dilution should be considered.

**Table 1: *In Situ* Mineral Resource Using a 54% Fe Cut-Off Grade**

Classification	Mt	Fe	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	P	S	LOI	CaO	K <sub>2</sub> O	MgO	MnO	TiO <sub>2</sub>
Indicated	105	60.35	3.54	3.97	0.178	0.007	5.22	0.13	0.01	0.19	0.03	0.12
Inferred	19	60.15	4.09	3.83	0.168	0.009	5.14	0.13	0.01	0.18	0.03	0.12
<b>Total</b>	<b>124</b>	<b>60.32</b>	<b>3.62</b>	<b>3.95</b>	<b>0.177</b>	<b>0.007</b>	<b>5.20</b>	<b>0.13</b>	<b>0.01</b>	<b>0.19</b>	<b>0.03</b>	<b>0.12</b>

## The JORC Code Assessment Criteria

The JORC Code (2012) describes a number of criteria, which must be addressed in the Public Report of Mineral Resource estimates for significant projects. These criteria provide a means of assessing whether or not parts of or the entire data inventory used in the estimate are adequate for that purpose. The resource estimate stated in this document was based on the criteria set out in Table 1 of that Code. These criteria are discussed in Table 2 as follows.

**Table 2: JORC Code Table 1.**

JORC Code Assessment Criteria	Comment
<p><b>Sampling Techniques (Brockman)</b></p> <p><i>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as downhole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</i></p> <p><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></p> <p><i>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 (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</i></p>	<ul style="list-style-type: none"> <li>■ Sampling of Reverse Circulation (RC) chips and diamond cores was carried out in accordance to Brockman's sampling protocol and QAQC procedure, conforming to the industry best practices.</li> <li>■ Two sub-samples (A- and B- series split samples) of RC chips, each weighing mostly between 1.5 kg and 4 kg, were collected at 2 m intervals via a cone splitter mounted on the drill rig into pre-numbered calico bags. The A-series split samples were submitted for routine analysis, whereas the B-series split samples were reserved at the drill site.</li> <li>■ Bulk reject samples were collected at 1 m intervals and were placed either directly on the ground as piles in orderly rows if the samples were dry to moist or into pre-numbered polyweave bags if the samples were wet.</li> <li>■ The size of split samples were checked at all times to ensure each sample satisfying the minimum size/weight (e.g., 1/3 of large calico bag or 1 kg) requirement for being the valid samples for chemical analysis.</li> <li>■ Grab samples were taken directly from the bulk sample piles or polyweave bags following the sampling technique specified in Brockman's sampling procedure in order to take a representative sample. It was taken when a) the samples were too wet to split through the cone splitter, or b) the original split samples were undersize (i.e., less than 1 kg).</li> <li>■ The diamond cores were usually halved before submitting for assaying. The diamond cores from the 2013 drilling programme have been processed as part of a metallurgical test work programme and head assays of 2 m intervals for each hole are being obtained to check against the assays of each nearby RC hole.</li> </ul>

JORC Code Assessment Criteria	Comment
	<ul style="list-style-type: none"> <li>■ Field duplicate was taken at a rate of one per hole.</li> <li>■ Field standards (Certified Reference Materials) were inserted every 25<sup>th</sup> sample. Four different CRMs ( GIOP-14,GIOP-48,and GIOP-63 and GBAP-3) were used.</li> </ul>
<p><b>Drilling Techniques (Brockman)</b></p> <p><i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.), and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).</i></p>	<ul style="list-style-type: none"> <li>■ Most of the holes (223 holes in total) were drilled by RC rigs (Hydco 350) with a 140 mm diameter face-sampling hammer.</li> <li>■ 16 diamond holes (all triple-tube) of varied types were drilled, including 7 NQ3 holes (45 mm in diameter), 7 HQ3 (61 mm) and 1 PQ3 (83 mm). The cores were not orientated due to the incompetent nature of the rock.</li> </ul>
<p><b>Drill Sample Recovery (Brockman)</b></p> <p><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></p> <p><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></p> <p><i>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.</i></p>	<ul style="list-style-type: none"> <li>■ RC sample recovery was recorded as volumetric percentage estimated to the nearest 5% by field geologists.</li> <li>■ Diamond core sample recovery was directly measured from the length of the recovered core versus the depth drilled.</li> <li>■ Sample quality of both RC and diamond drilling was continuously monitored during drilling by experienced Brockman field staff to ensure that sample recovery was maximised and that samples were representative. Any issues were immediately rectified.</li> <li>■ No significant sample recovery issues were encountered.</li> <li>■ The results of previous RC-diamond twin holes have confirmed that there is no bias in the RC assays in wet samples either under the water table or due to wet-drilling.</li> </ul>
<p><b>Logging (Brockman)</b></p> <p><i>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.</i></p> <p><i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.), photography.</i></p> <p><i>The total length and percentage of the relevant intersections logged.</i></p>	<ul style="list-style-type: none"> <li>■ All of the RC holes were geologically logged (mostly qualitative) at 1 m interval corresponding to the intervals of bulk samples. RC samples were recorded at 2 m intervals.</li> <li>■ Diamond cores were both geologically and geotechnically logged, and were all photographed.</li> <li>■ The level of detail of logging was appropriate for each type of drilling and supports the requirement of Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>■ 100% of RC and diamond core holes (totalling 20 095 m and 1 366 m respectively), including mineralisation intersections, were logged.</li> </ul>
<p><b>Sub-Sampling Techniques and Sample Preparation (Brockman)</b></p> <p><i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></p> <p><i>If non-core, whether riffled, tube sampled, rotary split, etc., and whether sampled wet or dry.</i></p>	<ul style="list-style-type: none"> <li>■ Sub-sampling and sample preparation were performed by Nagrom Laboratory in Perth.</li> <li>■ Sample preparation includes sort, dry (8 to 12 hrs at 105°C) weigh, split (to 2 kg, reserve retained if required), pulverise (2 to 5 minutes depending on sample through LM5) and split assay pulp packet (bulk pulp reserve retained).</li> </ul>

JORC Code Assessment Criteria	Comment
<p><i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></p> <p><i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></p> <p><i>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.</i></p> <p><i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></p>	<ul style="list-style-type: none"> <li>■ Lab duplicates were taken at a rate of 1 in 20 samples.</li> <li>■ Lab standards (GIOP31) were randomly inserted at a rate of 1 in 20 samples.</li> <li>■ XRF calibrations are checked every morning using calibration beads made using exact weights</li> </ul>
<p><b>Quality of Assay Data and Laboratory Tests (Brockman)</b></p> <p><i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></p> <p><i>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.</i></p> <p><i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i></p>	<ul style="list-style-type: none"> <li>■ All samples submitted to Nagrom were assayed for Fe, SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub>, MnO, CaO, P, S, MgO, and K<sub>2</sub>O by XRF and for LOI at 1000°C by thermogravimetric analysis (TGA).</li> <li>■ Laboratory procedures are in line with ISO9001 Quality Management System and appropriate for iron ore deposits.</li> <li>■ Samples were dried at 105°C, weighed, crushed to a nominal -6.3 mm size, and then pulverised to 95% passing 75 µm.</li> <li>■ A 0.8 g sub-sample was collected and fused in 8 g of 12:22 lithium borate flux with 5% lithium nitrate additive. The resultant glass bead was analysed by XRF.</li> <li>■ Another 1–2 g sub-sample was dried and ignited at 1000°C with LOI calculated one constant mass was reached. LOI is the percentage mass change due to igniting the dry sample.</li> </ul> <p>QAQC</p> <ul style="list-style-type: none"> <li>■ Analysis of field duplicate samples shows that greater than 95% of pairs have less than 5% difference. Assays of all laboratory duplicates were within 2.5% of assays of the original samples repeated.</li> <li>■ Assays of all Certified Reference Materials inserted by Brockman and Nagrom are within the acceptable tolerance limits.</li> <li>■ Samples have been sent to an umpire laboratory as an independent check of the assay results. The results are pending at the time of this resource statement.</li> </ul>
<p><b>Verification of Sampling and Assaying (Brockman)</b></p> <p><i>The verification of significant intersections by either independent or alternative company personnel.</i></p> <p><i>The use of twinned holes.</i></p>	<ul style="list-style-type: none"> <li>■ Significant intersections reported have been independently verified by company geologists.</li> <li>■ Assays of twinned RC and diamond drill holes are consistently similar – indicating that the assays of the RC samples are reliable.</li> </ul>

JORC Code Assessment Criteria	Comment
<p><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></p> <p><i>Discuss any adjustment to assay data.</i></p>	<ul style="list-style-type: none"> <li>■ Primary data are captured on paper (hard copy logs) as well as in Toughbook laptops (digital logs) using Ocris software that has built-in validation routines to prevent data entry errors.</li> <li>■ All field data sent by Brockman's field geologists during drilling, as well as assay data from the laboratory were loaded into a secured SQL database managed by Expedio – a Perth-based database management company.</li> <li>■ All geological and assay data used in the estimate were validated by Brockman. No adjustments or modifications were made by Golder during the resource estimation.</li> </ul>
<p><b>Location of Data Points (Brockman)</b></p> <p><i>Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i></p> <p><i>Specification of the grid system used.</i></p> <p><i>Quality and adequacy of topographic control.</i></p>	<ul style="list-style-type: none"> <li>■ All collars were initially surveyed by Brockman personnel using a hand held GPS, and later by Bore Hole Geophysical Services using a differential GPS with an nominal horizontal and vertical accuracy of 150 mm</li> <li>■ Downhole deviation surveys were conducted by Surtron Technologies using a conventional magnetic susceptibility tool. The downhole survey data were validated by Brockman.</li> <li>■ The grid system for Sirius is MGA GDA94 Zone 50 and the vertical datum is AHD.</li> <li>■ The Digital Terrain Model (DEM) used in the estimation was acquired from Fugro Spatial Solutions with a quoted horizontal accuracy of 0.6 m and a vertical accuracy of 0.3 m.</li> </ul>
<p><b>Data Spacing and Distribution (Brockman)</b></p> <p><i>Data spacing for reporting of Exploration Results.</i></p> <p><i>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.</i></p> <p><i>Whether sample compositing has been applied.</i></p>	<ul style="list-style-type: none"> <li>■ The nominal drill-hole spacing (strike x breath) for the Sirius deposit is 100 m x 50 m. The actual hole spacing varies from 100 m to 200 m along strike and 50 m to 100 m across the strike.</li> <li>■ The sample data spacing and distribution were considered sufficient for each of the Mineral Resource categories classified under the 2012 JORC Code.</li> </ul>
<p><b>Orientation of Data in Relation to Geological Structure (Brockman)</b></p> <p><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></p> <p><i>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.</i></p>	<ul style="list-style-type: none"> <li>■ Lithological units strike east-southeast and are folded about a series of upright to slightly inclined, open to close folds. The mineralisation envelope is also folded. The majority of holes were either drilled vertically or at 50-75° to the north or south in order to be oriented perpendicular to the mineralisation.</li> <li>■ Owing to the rugged topography at Sirius, a small number of holes were drilled either partly along strike or down-dip in order to maintain appropriate drill spacing for the delineation of mineralisation.</li> </ul>
<p><b>Sample Security (Brockman)</b></p> <p><i>The measures taken to ensure sample security.</i></p>	<ul style="list-style-type: none"> <li>■ The chain of custody of all assay samples is managed by Brockman.</li> </ul>

JORC Code Assessment Criteria	Comment
	<ul style="list-style-type: none"> <li>■ A-series assay samples in calico bags were packed into polyweave bags and sealed before placed inside heavy-duty bulka bags during drilling.</li> <li>■ Periodically the bulka bags were picked up from site by a local transport company and deposited with Regal Transport in Newman, who delivered the samples to the laboratory.</li> <li>■ Once received at the laboratory, the samples were sorted and securely stored until analysis.</li> <li>■ No loss or damage of samples has ever occurred during storage or transit.</li> </ul>
<p><b>Audits and Reviews (Brockman)</b></p> <p><i>The results of any audits or reviews of sampling techniques and data.</i></p>	<ul style="list-style-type: none"> <li>■ The database is stored in Micromine GBIS data management system which is maintained by Expedio contracted by Brockman. Routine checks and validations were carried out by Expedio consultants. Brockman has conducted its internal validation of the database before carrying out the mineralisation interpretation.</li> <li>■ Golder carried out an external audit of the database with regard to the sampling and QAQC procedures for its initial Mineral Resource estimate in January 2013 and again as part of this resource update.</li> </ul>
<p><b>Mineral Tenement and Land Tenure Status (Brockman)</b></p> <p><i>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.</i></p> <p><i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i></p>	<ul style="list-style-type: none"> <li>■ Sirius deposit is located within Exploration Leases E47/1599 which are 100% owned by Brockman.</li> <li>■ The tenement lies within the Niyiyaparli Native Title Claim (WC05/06).</li> <li>■ At the time of reporting, there are no known impediments to obtaining a licence to operate in the area, and the tenement is in good standing.</li> </ul>
<p><b>Exploration Done by Other Parties (Brockman)</b></p> <p><i>Acknowledgment and appraisal of exploration by other parties.</i></p>	<ul style="list-style-type: none"> <li>■ There was no previous exploration drilling by other companies within the Exploration Licence. The Sirius deposit was discovered, and has been explored, by Brockman.</li> </ul>
<p><b>Geology (Brockman)</b></p> <p><i>Deposit type, geological setting and style of mineralisation.</i></p>	<ul style="list-style-type: none"> <li>■ Sirius deposit is classified as a supergene-enriched bedded-iron-deposit (BID) style that consists of hematite and hematite-goethite ore hosted in a shaly BIF unit in the lower part of the Boolgeeda Iron Formation.</li> </ul>
<p><b>Drill hole information (Brockman)</b></p>	<ul style="list-style-type: none"> <li>■ No new exploration results have been reported.</li> </ul>
<p><b>Data aggregation methods (Brockman)</b></p>	<ul style="list-style-type: none"> <li>■ No new exploration results have been reported.</li> </ul>
<p><b>Relationship between mineralisation widths and intercept lengths (Brockman)</b></p>	<ul style="list-style-type: none"> <li>■ No new exploration results have been reported.</li> </ul>
<p><b>Diagrams (Brockman)</b></p>	<ul style="list-style-type: none"> <li>■ No new exploration results have been reported.</li> </ul>
<p><b>Balance reporting (Brockman)</b></p>	<ul style="list-style-type: none"> <li>■ No new exploration results have been reported.</li> </ul>

JORC Code Assessment Criteria	Comment
<p><b>Other substantive exploration data (Brockman)</b></p>	<ul style="list-style-type: none"> <li>■ No new exploration results have been reported.</li> </ul>
<p><b>Further work (Brockman)</b></p>	<ul style="list-style-type: none"> <li>■ There is no further exploration work planned for Sirius at this stage. Any future work will be related to mining studies.</li> </ul>
<p><b>Database Integrity (Brockman)</b></p> <p><i>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.</i></p> <p><i>Data validation procedures used.</i></p>	<p>Database integrity has been maintained in the following stages of data management routine:</p> <ul style="list-style-type: none"> <li>■ Data entry: Digital geology and sampling data were captured using Ocris which has built-in look-up codes (same as the ones used in the database) and validation rules to prevent data entry errors.</li> <li>■ Export of primary data: the Ocris logs need to be validated before they can be exported as a single Ocris native OXO file, using built-in functionalities in Ocris.</li> <li>■ Import of primary data into the database: the Ocris OXO file is loaded into the centralised SQL database by Expedio through a seamless importing routine within GBIS.</li> <li>■ Export of secondary data from the database: automated data-export SQL queries were developed within GBIS and used for exporting drill hole data for use in Mineral Resource estimation.</li> </ul>
<p><b>Site Visits (Brockman)</b></p> <p><i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i></p> <p><i>If no site visits have been undertaken indicate why this is the case.</i></p>	<ul style="list-style-type: none"> <li>■ Aning Zhang has visited site and inspected the exploration field operations including logging and sampling processes.</li> <li>■ Aning Zhang has also visited Nagrom and inspected the sample preparation and assaying processes.</li> </ul>
<p><b>Geological Interpretation (Brockman)</b></p> <p><i>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</i></p> <p><i>Nature of the data used and of any assumptions made.</i></p> <p><i>The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation.</i></p> <p><i>The factors affecting continuity both of grade and geology.</i></p>	<ul style="list-style-type: none"> <li>■ The mineralisation forms part of the main syncline which is parasitically folded and slightly overturned to north. It is essentially continuous throughout the deposit with thickness varied from a few metres to approximately 180 m.</li> <li>■ The BID mineralisation of the main zone in the northern limb of the syncline naturally pinches out to the west. There is no evidence of truncation of mineralisation by cross-cutting faults.</li> <li>■ A 'depletion zone' occurs below the thin supergene-enriched 'hard cap' at Discovery Hill (the main ridge in the south).</li> </ul>
<p><b>Dimensions (Brockman)</b></p> <p><i>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.</i></p>	<ul style="list-style-type: none"> <li>■ The main BID zone extends approximately 2200 m along strike and up to about 600 m wide (plan width). Mineralisation outcrops in parts to the surface and extends up to 180 m below the surface (hill top).</li> </ul>

JORC Code Assessment Criteria	Comment
<p><b>Estimation and Modelling Techniques (Golder)</b></p> <p><i>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.</i></p> <p><i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></p> <p><i>The assumptions made regarding recovery of by-products.</i></p> <p><i>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).</i></p> <p><i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></p> <p><i>Any assumptions behind modelling of selective mining units.</i></p> <p><i>Any assumptions about correlation between variables.</i></p> <p><i>Description of how the geological interpretation was used to control the resource estimates.</i></p> <p><i>Discussion of basis for using or not using grade cutting or capping.</i></p> <p><i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></p>	<ul style="list-style-type: none"> <li>■ Mineralisation was defined by zones identified from downhole lithological and geochemical data.</li> <li>■ The block size is 50 m (X) by 25 m (Y) by 10 m (Z) or approximately ½ of the drill hole spacing in the X (east) and Y (north) directions. The sub-block size is 5 m (X) by 5 m (Y) by 2 m (Z). High-grade restraining was applied based on the EDA analysis. The high grade samples were used only in the estimation of the closest blocks to the sample.</li> <li>■ Using parameters derived from modelled variograms, Ordinary Kriging (OK) was used to estimate average block grades for Fe, SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, CaO, P, LOI, S, MnO, TiO<sub>2</sub>, K<sub>2</sub>O and MgO</li> <li>■ Unfolding was used during estimation to enable correlation of samples around the folded structures.</li> <li>■ The estimation was conducted in three passes with the search size increasing for each pass.</li> <li>■ The model was validated visually and statistically using swath plots and comparison to sample statistics.</li> </ul>
<p><b>Moisture (Golder)</b></p> <p><i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i></p>	<ul style="list-style-type: none"> <li>■ All tonnages are based on an assumed <i>in situ</i> bulk density.</li> </ul>
<p><b>Cut-off Parameters (Golder)</b></p> <p><i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i></p>	<ul style="list-style-type: none"> <li>■ The resource model is constrained by assumptions about economic cut-off grades. The mineralisation is confined by a 54% Fe cut-off grade. The tabulated resources were reported using cut-off grade of 54% Fe which was applied on a block by block basis.</li> </ul>



JORC Code Assessment Criteria	Comment
<p><b>Mining Factors or Assumptions (Golder)</b></p> <p><i>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution.</i></p> <p><i>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.</i></p>	<ul style="list-style-type: none"> <li>■ The Sirius deposit contains a continuous mineralisation envelope in the main zone. The resource has been drilled on a nominal 100 m x 50 m pattern sufficient to define the continuity of this zone. As a result, Golder assumes that the deposit is suitable for open pit mining.</li> <li>■ The block model has been built using a parent cell size of 50 m (X) by 25 m (Y) by 10 m (Z), primarily determined by data availability.</li> </ul>
<p><b>Metallurgical Factors or Assumptions</b></p> <p><i>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.</i></p>	<ul style="list-style-type: none"> <li>■ Metallurgical testing to date has shown that the assay results are similar across all size ranges.</li> </ul>
<p><b>Environmental Factors or Assumptions (Brockman)</b></p> <p><i>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 reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</i></p>	<ul style="list-style-type: none"> <li>■ These aspects have not been considered at this stage but the very low sulfur assays suggest that acid rock drainage will not be an issue for waste disposal.</li> <li>■ As the project is envisaged to be a DSO operation. It is expected that there will be minimal process residue which will not present any issues for disposal.</li> </ul>
<p><b>Bulk Density (Brockman)</b></p> <p><i>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.</i></p> <p><i>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.</i></p>	<ul style="list-style-type: none"> <li>■ Global <i>in situ</i> densities of 2.6 t/m<sup>3</sup> for the mineralised zones and 2.5 t/m<sup>3</sup> for the waste are applied to the block model based on downhole density logging of 183 drill holes.</li> <li>■ The geophysical results were filtered for outliers in both density (&lt;1.5 t/m<sup>3</sup> and &gt;3.5 t/m<sup>3</sup>) and caliper (RC: &lt;130 mm and &gt;160 mm; and HQ3 diamond hole: &lt;90 mm and &gt;120 mm and PQ3 diamond holes: &lt;125 mm and &gt;140 mm ).</li> </ul>

JORC Code Assessment Criteria	Comment
<p><i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></p>	
<p><b>Classification (Golder)</b></p> <p><i>The basis for the classification of the Mineral Resources into varying confidence categories.</i></p> <p><i>Whether appropriate account has been taken of all relevant factors, i.e. 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.</i></p>	<ul style="list-style-type: none"> <li>■ Resources were classified in accordance with the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition).</li> <li>■ The classification of Mineral Resources was completed by Golder based on geological confidence, drill hole spacing and grade continuity. The Competent Person is satisfied that the result appropriately reflects his view of the deposit.</li> <li>■ Continuous zones meeting the following criteria were used to define the resource class: <ul style="list-style-type: none"> <li><u>Indicated Resource</u> <ul style="list-style-type: none"> <li>■ Drill spacing to about 100 m by 50 m</li> <li>■ Evidence of geological and grade continuity</li> </ul> </li> <li><u>Inferred Resource</u> <ul style="list-style-type: none"> <li>■ Drill spacing wider than 100 m by 100 m</li> <li>■ Limited number of drill holes</li> <li>■ Greater geological complexity indicated by interpretation uncertainty in location of features like folds</li> <li>■ Limited grade continuity</li> </ul> </li> </ul> </li> </ul>
<p><b>Audits or Reviews (Golder)</b></p> <p><i>The results of any audits or reviews of Mineral Resource estimates.</i></p>	<ul style="list-style-type: none"> <li>■ This Resource Estimate is an update estimate from the previous estimate completed by Golder.</li> </ul>
<p><b>Discussion of Relative Accuracy/Confidence (Golder)</b></p> <p><i>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.</i></p> <p><i>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.</i></p> <p><i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></p>	<ul style="list-style-type: none"> <li>■ The relative accuracy is reflected in the resource classification discussed above that is in line with industry acceptable standards.</li> <li>■ This is a global resource estimate with no production data.</li> </ul>

## COMPETENT PERSON'S STATEMENTS

The information in this statement which relates to the Mineral Resource is based on information compiled by James Farrell who is a full-time employee of Golder Associates Pty Ltd, and Member and Chartered Professional of the Australasian Institute of Mining and Metallurgy. James Farrell has sufficient relevant experience to the style of mineralisation and type of deposit under consideration and to the activity for which he is undertaking to qualify as a Competent Person as defined in the JORC Code (2012).

The Competent Person responsible for the geological interpretation and the drill hole data used for the resource estimation is Mr Aning Zhang. Mr Zhang is a full-time employee of Brockman Mining Australia Pty Ltd, is a Member of the Australasian Institute of Mining and Metallurgy and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity for which he is undertaking to qualify as a Competent Person as defined in the JORC Code (2012). Mr Zhang consents to the inclusion in this report of the matters based on his information in the form and content in which it appears.

This document has been translated to Chinese by Brockman. The translation was checked by Golder.

Yours faithfully

### GOLDER ASSOCIATES PTY LTD



Juan Gutierrez  
Resource Geologist



James Farrell  
Associate, Principal Geologist

JG/JNF/hsl

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