



ASX Release: 23 March 2021

## Maiden JORC 2012 Resource for Buena Vista Magnetite Project

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### HIGHLIGHTS

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- **Mineral Resources for the Buena Vista magnetite project are now JORC 2012 compliant**
  - **Maiden JORC 2012 mineral resource confirms important increases in DTR% for key areas of the project**
  - **31% increase in mineral resources to 232Mt**
  - **Resources are robust and confirm potential for project development**
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Magnum Mining & Exploration's (ASX: MGU, "Magnum" or "the Company") is pleased to report the Mineral Resource for its Buena Vista magnetite project in Nevada has been updated in accordance with the 2012 edition of the JORC Code (JORC 2012)

The Mineral Resources previously reported in 2013 under the 2004 JORC Code, and the NI43-101 Code, have undergone a comprehensive review and full evaluation. The update to JORC 2012 standard has been performed by highly experienced and qualified independent consultant, MPR Geological Consultants.

Magnum is pleased to report that the total Mineral Resource estimate has increased as a result of this update. Detailed information is provided in Appendix A of this announcement, prescribed by JORC 2012 as Table 1, however, in summary the key changes are:

- A **31% increase** in total reported Mineral Resources from 177.3Mt to 232Mt
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- A **6% increase** in the indicated resource of the Section 5 area and a **25% increase** in the DTR% (Davis Tube Recovery Percentage)
- An **additional 40Mt** of inferred mineral resources in the West Pit area and **13% increase** in the DTR%
- A **14% increase** in the inferred resource of the East Pit area

DTR% is a measure of the percentage of the rock sample that is recovered by magnetic concentration during Davis Tube processing. It represents the volume of the rock sample that is magnetic and in general the higher the Total Fe the higher the DTR%

Magnum Mining & Exploration Ltd

ABN: 70 003 170 376

Suite 2, Churchill Court, 234 Churchill Avenue, Subiaco WA 6008 PO Box 8209, Subiaco East WA 6008

Tel: +61 8 6280 0245 Fax: +61 8 9381 2855 Email: info@mmel.com.au Web: www.mmel.com.au

The indicated mineral resource of 151Mt confirms the resource evaluation is robust given it closely aligns with the 148.7Mt reported in 2013. This in turn provides subsurface confidence for project development.

**Table 1: JORC (2012) reported mineral resources compared with 2013 NI43-101 estimate.**

Estimates at 10% Fe cut off										
Deposit	Resource Category	2013			2021			Difference		
		Mt	Fe%	DTR%	Mt	Fe%	DTR%	Mt	Fe%	DTR%
Section 5	Ind	32.1	17.7	16.8	34	17.4	21.0	6%	-2%	25%
	Inf	0	0.0	0.0	8.0	16	18	-	-	-
	<b>Subtotal</b>	<b>32.1</b>	<b>17.7</b>	<b>16.8</b>	<b>42</b>	<b>17</b>	<b>20</b>	<b>31%</b>	<b>-3%</b>	<b>22%</b>
West	Ind	116.6	19.1	21.2	117	19.5	23.9	0%	2%	13%
	Inf	0	0.0	0.0	40	17	21	-	-	-
	<b>Subtotal</b>	<b>116.6</b>	<b>19.1</b>	<b>21.2</b>	<b>157</b>	<b>19</b>	<b>23</b>	<b>35%</b>	<b>-1%</b>	<b>9%</b>
East	Ind	0	0.0	0.0	0.0	0.0	0.0	-	-	-
	Inf	28.9	19.6	23.4	33	19	23	14%	-3%	-2%
	<b>Subtotal</b>	<b>28.9</b>	<b>19.6</b>	<b>23.4</b>	<b>33</b>	<b>19</b>	<b>23</b>	<b>14%</b>	<b>-3%</b>	<b>-2%</b>
Total	Ind	148.7	18.8	20.3	151	19.0	23.2	2%	1%	15%
	Inf	28.9	19.6	23.4	81	18	22	180%	-10%	-8%
	<b>Total</b>	<b>177.6</b>	<b>18.9</b>	<b>20.8</b>	<b>232</b>	<b>18.6</b>	<b>22.6</b>	<b>31%</b>	<b>-2%</b>	<b>9%</b>

The data base for the JORC 2012 mineral resource estimate utilised data from 139 diamond drill holes totally 23,061 metres and 50 reverse circulation drill holes totalling 13,024 metres.

**Magnum Resources Executive in Charge of Buena Vista, Simon Baldwin commented:** The JORC 2012 mineral resource estimate for Buena Vista is a highly important step in advancing the project to production status. The JORC 2012 estimate will allow the pit design, processing circuit, production rate and plant layout to be updated together with detailed financial modelling. We look forward to continuing to provide updates on the technical and financial aspects of this project to confirm the potential of Buena Vista to be a new, and significant, magnetite development.

## OVERVIEW

Buena Vista is an advanced magnetite iron ore project. In excess of A\$34 million has been expended on the Project over the past decade completing feasibility studies and permitting for the long-term production of a +67.5 % Fe magnetite concentrate with no deleterious impurities.

All major development permits have already been secured.

Required technical work such as drilling, metallurgy, hydrogeology and plant design have already been completed.

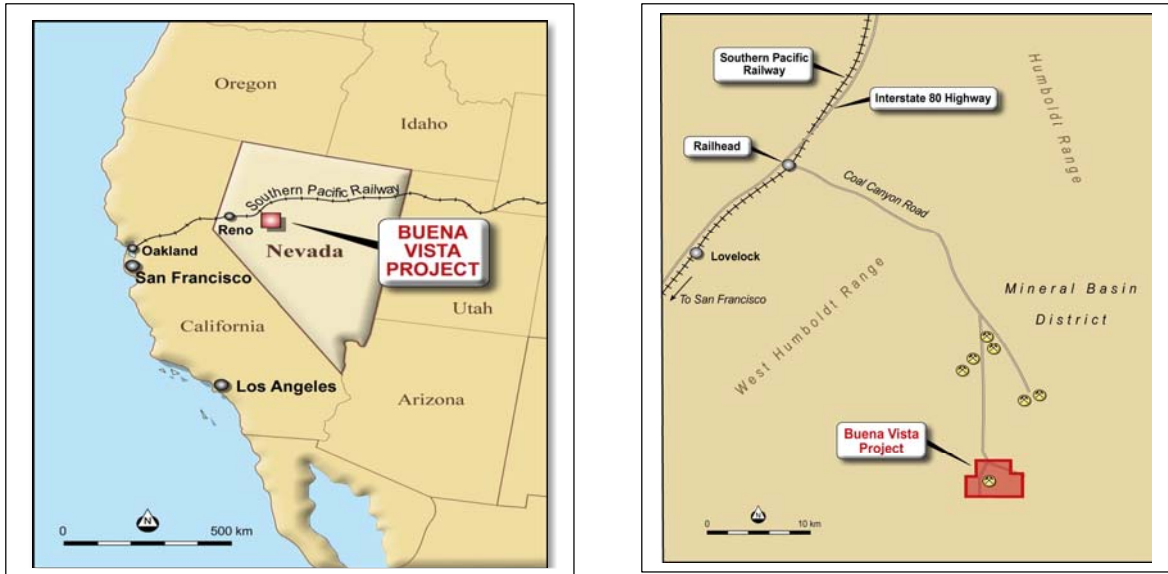
Buena Vista also provides a very favourable ore characteristic given its intrusive origin.

In this regard, the magnetite at Buena Vista is much coarser grained and the host rock softer, than typical banded iron (BIF) hosted magnetite deposits and consequently the magnetite is much more easily liberated during the beneficiation process.

As an example, the extensive metallurgical test work across run of mine material has demonstrated that Buena Vista ore will easily upgrade to +45% Total Fe before grinding meaning significant lower plant time and energy consumption as the ore is beneficiated. On a comparative basis this provides significant capex and opex benefits compared to typical BIF hosted magnetite deposits.

## LOCATION AND HISTORY

Buena Vista is located approximately 160km east-north-east of Reno in the mining friendly state of Nevada, United States.



The project was discovered in the 1890's, and in the late 1950's to early 1960's around 900,000 tonnes of direct shipping magnetite ore with an estimated grade of 58% Fe was mined.

In the 1960's US Steel Corporation acquired the project and carried out an extensive exploration program including 230 diamond drill holes and considerable metallurgical test work.

The project was refreshed in 2009 when Richmond Mining Limited, an ASX listed company acquired the project and commenced a detailed exploration program culminating in a definitive feasibility study in July 2011 and an updated study in 2013 for an expanded production rate.

A key component of these studies was extensive investigation of the optimal logistics plan for development of Buena Vista. This included the negotiation of in-principle agreements with existing rail and port operators and the securing of all major mining permits.

In addition, detailed costings were completed on the trucking or slurry pipeline options to deliver the concentrate to the rail head located some 50 kilometres from mine site.

## PROJECT LOGISTICS

The Buena Vista mine site is ideally located with towns Fallon (20,000 population) and Lovelock (8,000 population) within close proximity to the mine site. This provides site personnel and their families the opportunity to reside in local communities with existing infrastructure and facilities.

The mine site is around 50kms from the Union Pacific rail line which connects with multiple export port options including Stockton, West Sacramento, Oakland, San Francisco and Richmond (Levin).

Grid power is available within 40km of the deposits and sufficient water can be sourced from ground water aquifers located in the North Carson sink. The Nevada Department of Conservation and Natural Resources has already granted the required water rights for the life of the mine.

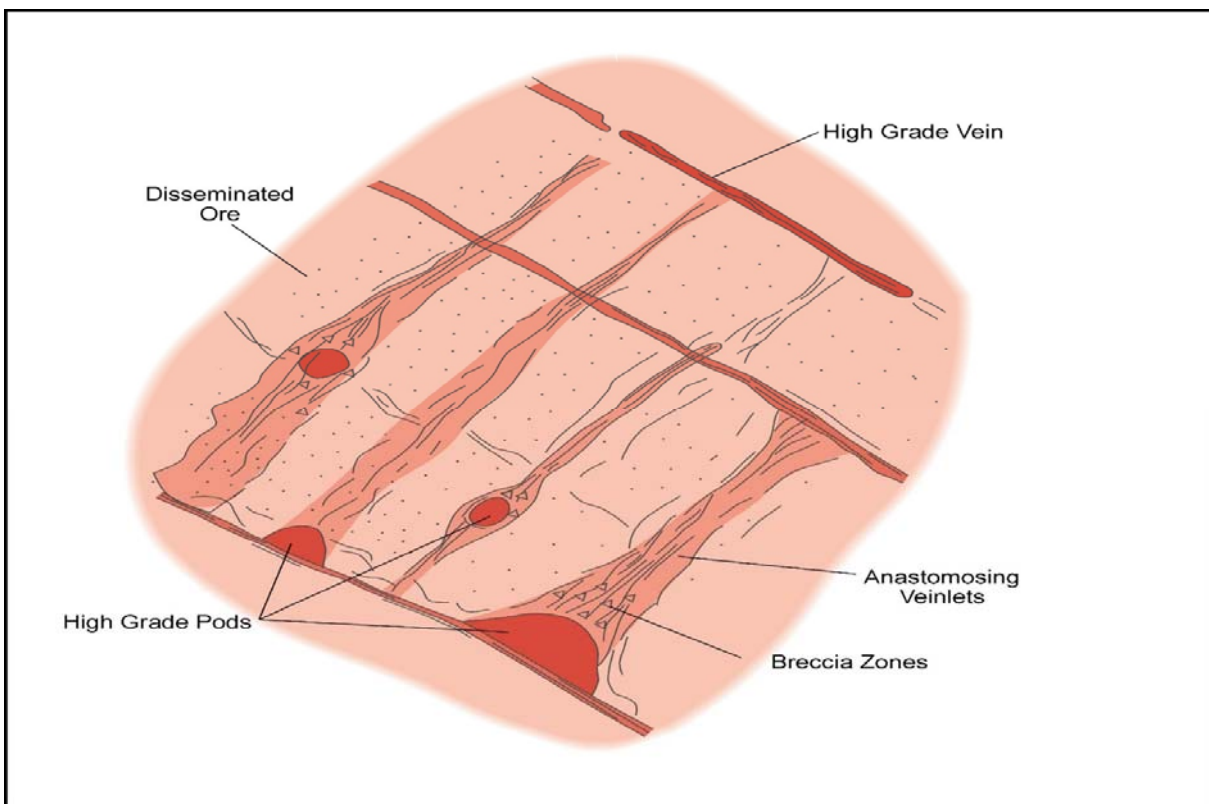
The mine is located in Churchill County in the State of Nevada which has a strong history of supporting mining developments and is easily accessed via the unsealed Pole Line road from Huxley or the sealed Coal Canyon road from Lovelock.

## GEOLOGY

The Buena Vista magnetite deposits are the product of late stage alteration of a localized intrusive local gabbro that resulted in intensely scapolitised lithologies and the deposition of magnetite.

The most well-known example of this type of magnetite mineralization is the Kiruna magnetite deposit in Sweden which has been in production since the early 1900's.

The distribution and nature of the magnetite mineralization at Buena Vista is a function of ground preparation by faulting and fracturing forming a series of open fractures, breccia zones and networks of fine fractures.

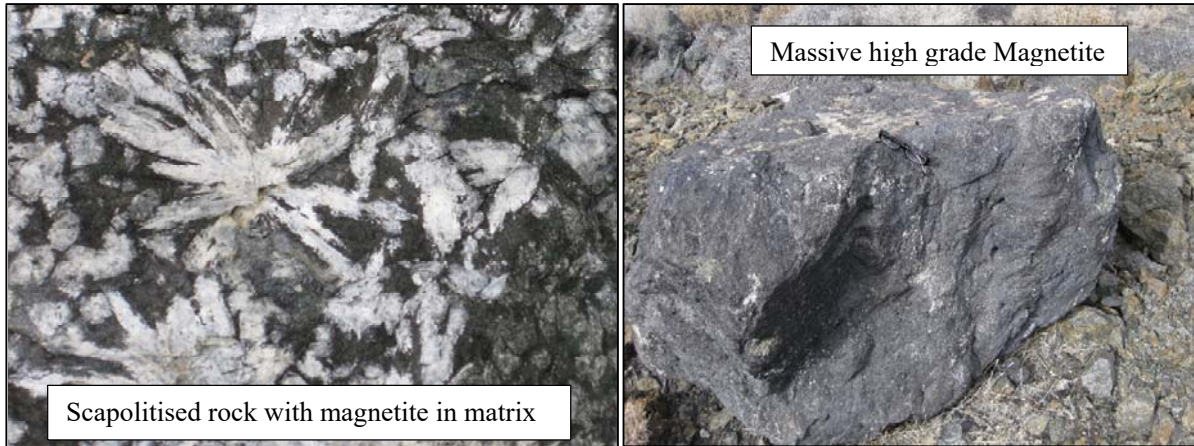


As a consequence, the magnetite mineralisation has been developed as disseminations within the altered gabbro through to massive pods and occasionally vein like intrusions.

These ground conditions produce variations in mineralization types from massive pods grading +60% magnetite to lighter disseminations grading 10-20% magnetite.

The mineralisation has been best developed within a number of discrete but proximal deposits (Section 5, West and East deposits) that outcrop and exhibit a strong magnetic signature.

The strike of the deposits is approximately east-west for the Section 5 and West deposits and south west-north east for the East deposit. The dip is generally towards the north.



Metasomatic magnetite deposits such as those at Buena Vista have important beneficiation advantages over the other main type of magnetite deposit which is a banded iron hosted magnetite, also sometimes known as a taconite.

	<b>Buena Vista (Magmatic)</b>	<b>Taconite (Banded iron)</b>
<b>Genesis</b>	Metasomatic (hot solutions)	Non-magmatic precipitate
<b>Grain size</b>	Coarse	Fine
<b>Grind size to liberate magnetite</b>	+100 microns	Sub 15-20 microns
<b>Capex</b>	Lower capital intensity	Higher capital intensity
<b>Opex</b>	Lower opex	Higher opex

## **DRILLING EVALUATION**

Buena Vista has been extensively drilled with three main programmes having been carried out.

The initial programme was by Columbia Mines (US Steel) in the early 1960's and was by BQ, NQ and HQ diamond drilling and holes were surveyed for dip using a Tropari instrument.

A total of around 112 holes for 18,215 metres was completed and all holes were geologically sampled and logged.

Around 5,000 samples across the magnetite mineralized zones were taken from the drill core and the magnetite content determined by Davis Tube. All testing was carried out at the Colorado school of Mines Research foundation.

In 2010 a confirmatory diamond drill programme of 8 holes comprising 1,415 metres was carried out by Richmond Mining Limited. This programme, which was HQ was designed to twin various 1960's holes in order to test for vertical and lateral continuity as well as provide QA/QC information on the historic drilling.

All of the holes were geologically logged and then halved or quartered and samples assayed by American Assay Laboratories in Reno and SGS Laboratories in Perth.

In 2012 Nevada Iron Limited carried out a programme comprising 19 drill holes for 3,431 metres of HQ diamond drilling and 50 holes for 13,024 metres of 138 mm reverse circulation drilling.



This programme was designed to provide infill drilling for an expanded resource estimate, extend the boundaries of the known mineralized areas and provide additional core for definitive metallurgical beneficiation test work. All drill holes from this programme were geologically logged and the diamond holes surveyed down hole.

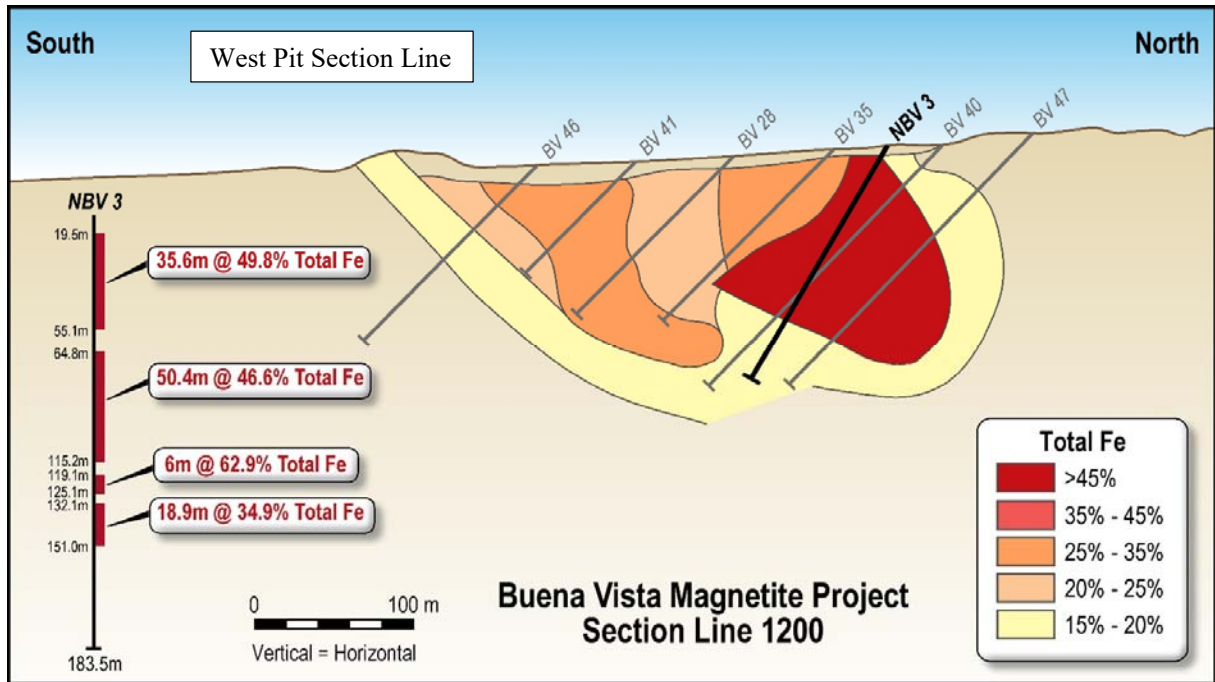
Samples from this programme were prepared by ALS Global Laboratories in Reno and analysed by ALS Laboratories in Perth.

**JORC 2012 MINERAL RESOURCE ESTIMATE**

The JORC 2012 mineral resource estimate was carried out by MPR Geological Consultants Pty Ltd (“MPR”).

The drill hole data base utilised for the resource modelling was compiled by MPR from the extensive digital data base available from data sets from previous evaluations of Buena Vista.

Mineralised domain wire-frames used for the resource modelling were interpreted from 3.05 metre down-hole composited Fe grades from the diamond and RC drilling. The domains captured zones of continuous Fe grades greater than approximately 10% and for the West Deposit were trimmed by several steeply dipping dykes.



The combined mineralised domains lie within a corridor of around 3,300 metres by 500 metres and extend from surface to a depth of around 240 metres. Around 90% of the mineralisation lies within 140 metres of the surface.

Total Fe, DTR mass recovery and density were estimated by ordinary kriging of 3.05 metre down-hole composited grades within the mineralised domains. Densities were assigned to drill hole intervals from an Fe-density function.

The resource modelling did not employ upper Fe grade cuts reflecting the low to moderate variability of the attributes and lack of extreme Fe values.

The indicated and inferred mineral resource estimates were extrapolated to around 40 metres and 60 metres from drill intercepts respectively.

Micromine software was used for the initial data compilation, domain wire-frame calculations and coding of composite values.

Cut off Fe %	Deposit	Indicated			Inferred			Total		
		Mt	Fe %	DTR %	Mt	Fe %	DTR %	Mt	Fe %	DTR %
10.0	Sect 5	34	17.4	21.0	8.0	16	18	42	17.1	20.5
	West	117	19.5	23.9	40	17	21	157	18.9	23.2
	East				33	19	23	33	19.0	23.0
	<b>Total</b>	<b>151</b>	<b>19.0</b>	<b>23.2</b>	<b>81</b>	<b>18</b>	<b>22</b>	<b>232</b>	<b>18.6</b>	<b>22.7</b>
15.0	Sect 5	21	20.2	25.1	3.8	19	24	25	20.0	24.9
	West	90	21.4	26.7	26	20	24	116	21.1	26.1
	East				25	21	26	25	21.0	26.0
	<b>Total</b>	<b>111</b>	<b>21.2</b>	<b>26.4</b>	<b>55</b>	<b>20</b>	<b>25</b>	<b>166</b>	<b>20.9</b>	<b>25.9</b>
20.0	Sect 5	9.1	24.1	30.9	1.3	23	29	10	24.0	30.7
	West	40	26.5	34.4	9.6	25	32	50	26.2	33.9
	East				13	24	31	13	24.0	31.0
	<b>Total</b>	<b>49</b>	<b>26.1</b>	<b>33.8</b>	<b>24</b>	<b>24</b>	<b>31</b>	<b>73</b>	<b>25.5</b>	<b>33.0</b>
25.0	Sect 5	2.8	28.6	37.7	0.3	27	36	3.1	28.4	37.5
	West	19	31.5	41.9	3.5	30	39	23	31.3	41.4
	East				3.6	29	38	3.6	29.0	38.0
	<b>Total</b>	<b>22</b>	<b>31.1</b>	<b>41.4</b>	<b>7.4</b>	<b>29</b>	<b>38</b>	<b>29</b>	<b>30.7</b>	<b>40.6</b>

\* DTR% is the estimated proportion of the rock mass recoverable by simple magnetic concentration on the basis of the Davis Tube Recovery analyses for drill hole samples. It is strongly correlated to iron grades.

GS3M was used for Kriging and the estimates then imported into a Micromine block model for reporting.

Model validation included visual comparison of model estimates, composite grades, comparison with historic estimates and trend (swath) plots.

All tonnages were estimated on a dry basis and the estimates reflect medium scale open pit mining.

### Cut-off Grades

The resource estimate has been carried out across Total Fe cut-off grades of 10.0%, 15.0%, 20.0% and 25.0%. Because of the favourable beneficiation characteristics of the Buena Vista ore the lower cut-off of 10.0% Total Fe has been chosen to represent the headline resource estimate.

### METALLURGY

Unlike banded iron hosted magnetite deposits (taconites) where the magnetite mineralization is finely disseminated in siliceous bedding planes, the Buena Vista ore is of magmatic origin and as a consequence is coarser grained in association with the siliceous host rock.

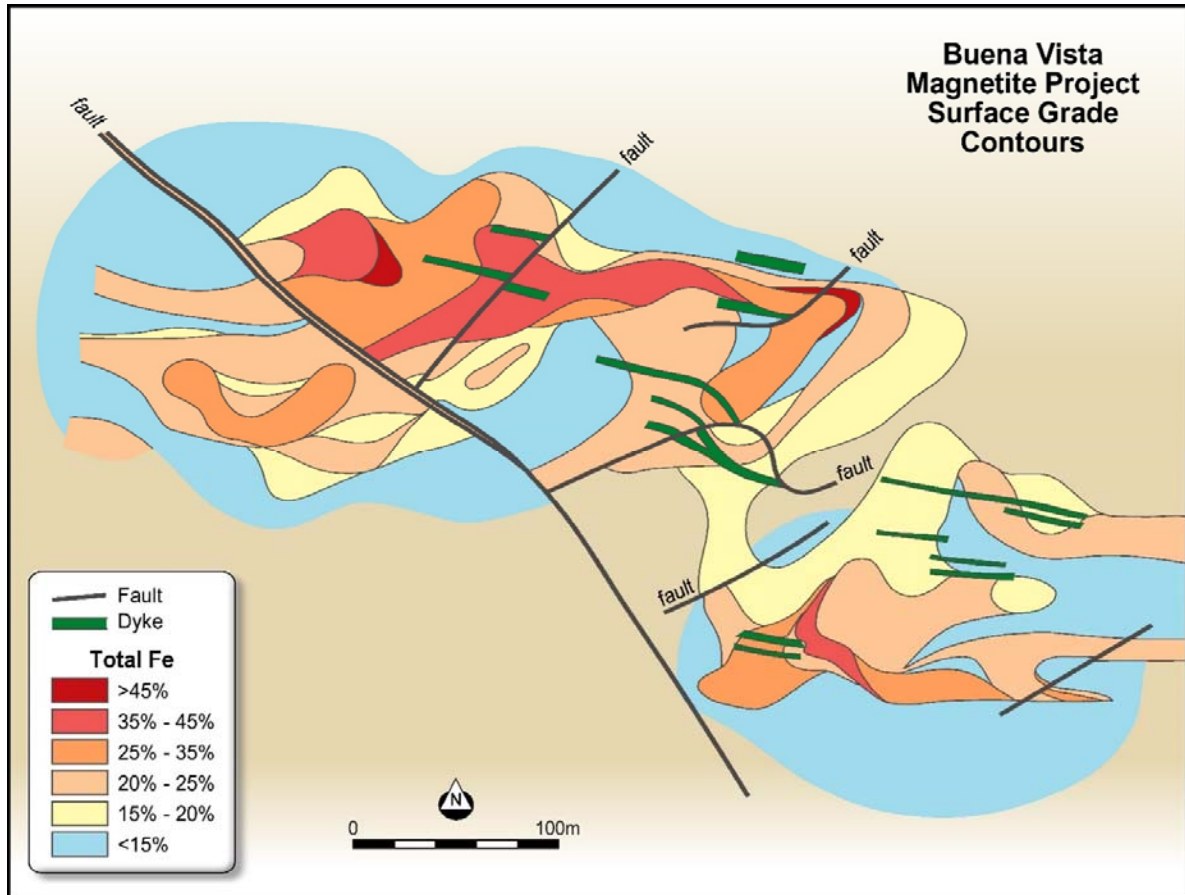
The prime benefit of this is that metallurgical test work has shown that the primary crush of the Buena Vista ore on average increases the mill grade to +45% irrespective of the primary ore grade. This is an important distinction to taconites and results in reduced energy usage for the subsequent crushing and grinding upgrade to the concentrate grade of +67.5%.

The Buena Vista concentrate contains no deleterious concentrations of impurities with silica typically 1.4-1.5%, alumina less than 1% and negligible sulphur and phosphorous content (around-0.003% respectively).

In addition, titanium and vanadium levels are low in the Buena Vista concentrate, typical levels are around 0.2% TiO<sub>2</sub> and 0.3% V.

% Fe	% SiO <sub>2</sub>	% Al <sub>2</sub> O <sub>3</sub>	% CaO	% MgO	% P	% S	% TiO <sub>2</sub>	% V	% LOI
69.5	1.72	0.67	0.16	0.22	0.003	0.002	0.20	0.26	3.15

**Buena Vista Composite Concentrate -150 mesh (106 microns) (After GR Engineering 2011)**



**Surface grade distribution (2011 feasibility study)**

**ENQUIRIES**

**For all Enquires please contact Simon Baldwin, Executive in Charge of Buena Vista on +61 8 6280 0245 or [simon@mmel.com.au](mailto:simon@mmel.com.au)**



**Magnum Mining and Exploration Ltd**

A handwritten signature in black ink that reads "G. Button". The signature is written in a cursive style with a large, looping initial "G".

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**Grant Button**  
**Company Secretary**

Competent Persons Statement

The information in this report that relates to Mineral Resources is based on information compiled by Mr Jonathon Abbott, a Competent Person who is a Member of the Australian Institute of Geoscientists and a full time employee of MPR Geological Consultants Pty Ltd. Mr Abbott has sufficient experience which 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 Exploration Results, Mineral Resources and Ore Reserves". Mr Abbott consents to the inclusion of the matters outlined in Appendix A in the form and context in which it appears.

## Appendix A

Table 1 - (JORC Code, 2012 Edition)  
Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
<p><i>Sampling techniques</i></p>	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> </ul>	<ul style="list-style-type: none"> <li>The database compiled for resource modelling comprises 218 holes for 36,084 m of drilling.</li> <li>Diamond drilling by Columbia Iron Mines in 1960 provides around 50% of the combined drilling (112 holes for 18,215 m), with 2010 Richmond Mining Pty Ltd diamond drilling contributing 4% (8 holes, 1,415 m), and 2012 Nevada Iron Limited RC and diamond drilling contributing 10% and 36% respectively (19 holes, 3,431 m and 50 holes, 13,024m).</li> <li>Richmond's 2010 drilling generally paired Columbia holes and although it provides useful confirmatory information, does not significantly directly alter resource estimates.</li> <li>Nevada Iron holes were drilled in western portions of the project not tested by earlier drilling. Average spacing for these holes is notably closer than for earlier drilling and they have proportionally less impact on estimated resources than Columbia's drilling.</li> <li>For the eastern portion of the West Deposit, which hosts the majority of estimated resources, Columbia's drilling provides around 85% of the estimation dataset, with Richmond and Nevada Iron drilling contributing 7% and 8% respectively.</li> <li>Whole core samples from Columbia's drilling were collected over primary sample intervals ranging from 0.3 to 35.4 foot (0.1 to 10.8 m) and average around 2.7m. Sample intervals honored geological contacts within longer intervals representing 25 foot (7.6m) vertical benches, or 35.4 feet (10.8m) down-hole for the generally 45° inclined holes. Material from these primary samples were composited over longer intervals representing "Bench Composites" for additional analyses.</li> <li>Richmond's diamond core was quarter-core sampled over generally 7 foot (2.1 m) down-hole intervals with a masonry saw.</li> <li>Nevada Iron's diamond core was quarter-core sampled over generally 5 foot (1.5 m) down-hole intervals with a masonry saw. Nevada Iron's RC holes were sampled over 5 foot (1.5 m) down-hole intervals and sub-sampled by riffle splitting.</li> </ul>
	<ul style="list-style-type: none"> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information</li> </ul>	<ul style="list-style-type: none"> <li>Primary samples averaging 2.7m in length and generally 10.8m bench composites from Columbia's drilling were analysed by the Colorado School of Mines Research Foundation Inc (CSMRF). Available data files contain total iron grade chemical analyses and Davis Tube mass recovery (DTR) analyses for around 18% of Columbia's primary sample intervals. For the remaining 82% of these intervals available data files include DTR analyses but not head iron grades. MPR assigned iron grades to the sample intervals without chemical iron analyses from DTR values utilising a formula derived from samples with both analyses. The general reliability of these assigned grades was confirmed by comparison with Bench Composite head grade analyses, and nearest neighbor comparisons with assays from newer drill holes.</li> <li>Rather than original assay values, the available data files for Columbia's East Deposit drilling include generally 10 foot (3.05m) down-hole composites calculated for previous resource modelling. Uncertainty over the reliability of these data is reflected by classification of all estimates for the East Deposit as Inferred.</li> <li>Samples from Richmond's diamond core drilling were analysed by SGS in Perth, Western Australia. After oven drying, samples were crushed to 90% passing 6mm, with 0.3 Kg riffle split sub-samples pulverised to 85% passing 100 microns analysed by XRF.</li> <li>Samples from Nevada Iron's drilling were analysed by ALS, which samples prepared at the ALS facility in Reno, Nevada and pulps sent to ALS in Perth, Australia for analysis for a suite of attributes including iron by XRF and LOI by gravimetric analysis. Sample preparation comprised crushing and pulverizing of riffle split sub-samples to 85% passing 75 microns.</li> <li>Davis Tube mass recovery tests were not performed on samples from Richmond's and Nevada Iron's drilling. MPR assigned DTR recovery values to these samples from iron grades using the DTR vs iron grade function developed from analyses of Columbia's drilling.</li> </ul>

Criteria	JORC Code explanation	Commentary
Drilling techniques	<ul style="list-style-type: none"> <li>• Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul style="list-style-type: none"> <li>• Columbia's drilling employed NX casing bits through unconsolidated material, with wire-line core-drilling for deeper drilling at generally NX diameter and less commonly BX (approximately 76 mm and 60mm hole diameter respectively). Available information indicates the core was not oriented.</li> <li>• Richmond's and Nevada Iron's diamond drilling employed HQ diameter bits (96mm hole diameter). Available information indicates the core was not oriented. Nevada Iron's RC drilling utilized 5 ¾ inch (146mm) bits.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>• Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>• Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>• Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul style="list-style-type: none"> <li>• Core recoveries were measured for all diamond drilling phases by recording recovered core lengths for core runs. Recovery measurements are available for around 85% of Columbia's drilling and average around 86% recovery for mineralised intervals. Core recoveries are available for all of Richmond's and Nevada Iron's diamond drilling and average around 98% and 96% recovery for mineralised intervals respectively.</li> <li>• No sample recovery measurements are available for Nevada Iron's RC drilling. 10 foot (3.05) m down-hole composited iron grades from Nevada Iron's RC drilling were compared with the nearest composite from Nevada Iron diamond holes within a maximum separation distance of 30 m. The comparison included 101 pairs of composites with an average separation distance of 13m and showed very similar average iron grades. This comparison supports the general reliability of the RC sampling.</li> <li>• There is no notable relationship between sample recovery and grade for any of the phases of diamond drilling.</li> <li>• Available information indicates that samples have not been biased due to preferential loss/gain of fine/coarse material.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>• Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>• The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>• All drill holes were geologically logged by industry standard methods. The logging is qualitative in nature and of sufficient detail to support the resource estimates.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>• If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>• For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>• Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>• Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>• Whole core samples were collected from Columbia's drilling over intervals ranging from 0.3 to 35.4 foot (0.1 to 10.8 m) and averaging around 2.7m. These samples were composited over generally 35.4 ft Bench Composite intervals for additional analyses.</li> <li>• Comparison of iron assay grades for primary samples and bench composites supports the general repeatability of the sampling. 10 foot (3.05) m down-hole composited iron grades from Columbia's diamond drilling were compared with the nearest composite from Richmond and Nevada drilling utilising a maximum separation distance of 10m which yielded 259 pairs of composites with an average separation distance of 6.7 m. Iron grades from these pairs, including intervals from Columbia's drilling with iron grades from chemical assays (87) or assigned from DTR values (172) showed very similar average iron grades.</li> <li>• Richmond's diamond core was quarter-core sampled over generally 7 foot (2.1 m) down-hole intervals with a masonry saw. After oven drying, samples were crushed to 90% passing 6mm, with 0.3 Kg riffle split sub-samples pulverised to 85% passing 100 microns.</li> <li>• Nevada Iron's diamond core was quarter-core sampled over generally 5 foot (1.5 m) down-hole intervals with a masonry saw. Nevada Iron's RC holes were sampled over 5 foot (1.5 m) down-hole intervals and sub-sampled by riffle splitting. Sample preparation comprised crushing and pulverizing of riffle split sub-samples to 85% passing 75 microns. Assay results for duplicate core samples and RC samples collected at average frequencies of around 1 duplicate per 30 primary samples reasonably match original assays supporting the reliability of field sub-sampling.</li> <li>• The available information demonstrates that the sub-sampling methods and sub-sample sizes are appropriate for the grain size of the material being sampled and provide sufficiently representative sub-samples for resource estimation.</li> </ul>

Criteria	JORC Code explanation	Commentary
<p>Quality of assay data and laboratory tests</p>	<ul style="list-style-type: none"> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>No geophysical measurements were used in the resource estimates.</li> <li>No information such as standards or blanks is available to indicate the reliability of assaying for Columbia's drilling. Comparison of composited iron grades from this drilling with the nearest composite from Richmond and Nevada Iron drilling within a maximum separation distance of 10 m yielding 87 and 172 pairs of composites for which the Columbia interval has iron grades from chemical analyses and assigned from DTR values respectively. Both sets of pairs show very similar average iron grades between sampling phases supporting the reliability of Columbia's data.</li> <li>Information available to demonstrate the reliability of SGS assays from Richmond's drilling includes interlaboratory repeats by AAL, and Amtek.</li> <li>Assay quality control procedures adopted by Nevada Iron included submission of certified reference standards and interlaboratory repeats by SGS, which reasonably support the reliability of ALS iron analyses.</li> <li>Acceptable levels of accuracy and precision have been established for the resource estimates.</li> </ul>
<p>Verification of sampling and assaying</p>	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>No drill hole results are reported in this announcement.</li> <li>Several sets of twinned and nearby holes have been drilled at Buena Vista. These include: <ul style="list-style-type: none"> <li>Richmond diamond vs Richmond RC: Two twin holes (avg separation 2.9m), and two nearby holes (avg separation 19.8m)</li> <li>Nevada Iron and Richmond vs Columbia: Four twin holes (3 RC, one diamond) with an average separation of 7.1 m and 15 pairs of holes for which portions are nearby (average separation 12m).</li> </ul> </li> <li>Information from these holes help support the reliability of iron grades from Richmond RC drilling and Columbia's drilling including holes with iron grades derived from DTR analyses.</li> <li>Few details of data entry procedures are available for the Buena Vista drilling. The available information indicates that this drilling employed industry standard methods that at the time of each drilling phase.</li> <li>Assay values were not adjusted for resource estimation. Primary samples from Columbia's drilling that were not assayed for iron were assigned iron grades from DTR recoveries. These samples represent around 46% of the combined estimation dataset and 65% of data from the eastern portion of the West domain.</li> <li>DTR values were assigned to sample intervals from Richmond and Nevada Iron drilling from iron assay grades. These data represent around 41% of the combined estimation dataset including around 15% of data from the eastern portion of the West domain.</li> </ul>
<p>Location of data points</p>	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Richmond commissioned a contract surveyor to accurately survey collar locations of their drill holes and accessible collars from Columbia's drilling. The same surveying company was employed to accurately survey the collar locations of Nevada Iron drill holes.</li> <li>Columbia's drill holes were generally down-hole surveyed using a Tropari instrument which provides inclinations at generally comparatively long intervals. Azimuths for these holes were assumed to be constant at the collar orientation.</li> <li>No down-hole surveys are available for Richmond's holes and 33 of Nevada Iron's drill holes and these holes were not down-hole surveyed and are assumed to run straight at designed orientations. The remaining 65 of Nevada Iron's drill holes were surveyed at intervals of generally around 15 m by an unknown method.</li> <li>The estimates are reported below a DTM generated from a topographic survey compiled by Richmond for the West Deposit and drill-hole collars for other areas. Details of the method used to generate the supplied topographic survey are unknown. The resultant DTM is consistent with drill hole collar surveys.</li> <li>Resource modeling utilized metric USG grid coordinates.</li> <li>The locations of drill hole traces and surface topography been defined with sufficient accuracy for the resource estimates. Topographic control is adequate for the resource estimates.</li> </ul>

<b>Criteria</b>	<b>JORC Code explanation</b>	<b>Commentary</b>
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <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></li> <li>• <i>Whether sample compositing has been applied</i></li> </ul>	<ul style="list-style-type: none"> <li>• No drill results are included in this announcement. Hole spacing varies with deposit area:</li> <li>• West Deposit: The eastern portion which hosts the majority of resources is tested by generally 200 foot (61m) spaced traverses of Columbia drill holes, and rare Richmond and Nevada Iron holes. Columbia's holes are generally inclined to the south (188) at around 45° at spacings of around 40 to 140m, averaging around 70m along traverses.</li> <li>• East Deposit is tested by 61m spaced traverses of southeast-northwest traverses of Columbia diamond drill holes which are inclined to the southeast (162) at around 45° at spacings along traverses of around generally 60 to 120m, and locally closer.</li> <li>• Section 5 and the western portion of the West Deposit have been tested by 50 by 50 m spaced drilling by Nevada Iron drill holes inclined to the south (188) at 60°.</li> <li>• The data spacing has established geological and grade continuity sufficiently for the Mineral Resource Estimates.</li> <li>• Drill hole samples were composited to 10 feet (3.05m) m down-hole intervals for resource modeling.</li> </ul>
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <li>• <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></li> <li>• <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></li> </ul>	<ul style="list-style-type: none"> <li>• The moderately northerly and northwest dipping mineralisation trends approximately perpendicular to the southerly and south easterly inclined drill holes. The drilling orientations achieve un-biased sampling of the mineralisation.</li> </ul>
<i>Sample security</i>	<ul style="list-style-type: none"> <li>• <i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Sampling of Richmond's and Nevada Iron's drill holes was supervised by field geologists and a chain of custody maintained for the samples. Details of sample security for Columbia's drilling are uncertain.</li> <li>• Buena Vista is in a remote area with limited access by the general public. The general consistency of results between sampling phases and twin hole comparisons provide confidence in the general reliability of the resource data.</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• In addition to reviewing QAQC information, verification checks undertaken by the Competent Person included checking for internal consistency between, and within database tables, comparison of database assay entries for Richmond and Nevada Iron drilling with laboratory source files and spot check comparisons of database sample intervals, iron grades and DTR recoveries with scanned copies of original CSMRF assay reports for around 10% of Columbia samples. These checks showed no significant issues.</li> <li>• The Competent Person considers that the sample preparation, security, and analytical procedures adopted for the Buena Vista resource drilling provide an adequate basis for the Mineral Resource estimates.</li> </ul>



Section 2 Reporting of Exploration Results  
Criteria listed in the preceding section also apply to this section

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul style="list-style-type: none"> <li>The project contains mineral rights over 234 separate claims covering an area of 2,457Ha (6,071 acres). Of these 45 are patented mining claims with the balance being either former railroad fee title land or unpatented claims</li> <li>The 45 patented mining claims covering 777 acres are all secured through lease agreements and have overriding royalties.</li> <li>The project has surface rights to the Section 5 patented land claim (528 acres). These surface rights provide allow the housing of all of the Buena Vista's proposed production facilities, plant, workshops, stockpiles and waste dumps.</li> <li>All tenements are in good standing.</li> <li>Relevant tenements to this announcement are T24NR34E Section 4, Section 5, Section 7, Section 8, Section 17, Rover 1832, Albatross 1832, Wyoming 1832, Cactus 1832, NVFe2,3,4,5,6,7,8, Iron Mountain 2MS14880,3MS14880, 6MS14880, 7MS14880, 10MS14880, 12MS14880, 13 MS14880, 14MS14880, 15MS14880</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>The database compiled for resource modelling comprises 218 holes for 36,084 m of drilling. Diamond drilling by Columbia Iron Mines in 1960 provides around 50% of the combined drilling (112 holes for 18,215 m), with 2010 Richmond Mining Pty Ltd diamond drilling contributing 4% (8 holes, 1,415 m), and 2012 Nevada Iron Limited RC and diamond drilling contributing 10% and 36% respectively (19 holes, 3,431 m and 50 holes, 13,024m).</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>Buena Vista magnetite iron mineralisation occurs within scapolite-hornblende-clinopyroxene-calcite-magnetite altered gabbro. Magnetite mineralisation varies from fine disseminations to massive pods up to tens of metres in dimensions, reflecting variable ground preparation of the gabbro. The mineralisation generally dips moderately to the north, striking approximately east-southeast (around 098 to 120) for most of the property area, and trending southwest-northeast in the East Deposit area (around 070).</li> <li>The magnetite mineralisation is cross cut by late-stage steep, generally east-west trending dykes ranging in thickness from less than 1m to rarely around 60 m.</li> <li>The mineralisation generally outcrops, but in the west of the project, including the Section 5 Deposit and western portions of the West Deposit it is overlain by around 3 to rarely 25m of un-mineralised surficial alluvial gravels.</li> <li>The mineralisation shows no significant oxidation, with fresh material occurring at shallow depths</li> </ul>
Drill hole Information	<ul style="list-style-type: none"> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>No drill hole results are reported in this announcement.</li> </ul>

<b>Criteria</b>	<b>JORC Code explanation</b>	<b>Commentary</b>
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> <li>• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>• Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>• The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>• No drill hole results are reported in this announcement.</li> <li>• No metal equivalent values reported in this announcement.</li> </ul>
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> <li>• These relationships are particularly important in the reporting of Exploration Results.</li> <li>• If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>• If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>• The mineralisation dips to the north or northeast at around 35°, approximately perpendicular to the generally 45° to 60° south to southeasterly inclined drill holes giving true thicknesses of mineralised intersections generally approximating 87% to 97% of down-hole intersection lengths.</li> </ul>
<i>Diagrams</i>	<ul style="list-style-type: none"> <li>• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	<ul style="list-style-type: none"> <li>• See diagrams included in this announcement.</li> </ul>
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li>• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>• No drill hole results are reported in this announcement.</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li>• Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	<ul style="list-style-type: none"> <li>• The large number of Davis Tube Recovery tests available for Columbia's drill hole samples and more comprehensive test-work by Nevada Iron demonstrate the mineralisation is amenable to concentration by simple magnetic processes.</li> </ul>
<i>Further work</i>	<ul style="list-style-type: none"> <li>• The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>• Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>• Planning for additional confirmation drilling in the West Pit area (x2 DDH) and exploration drilling of the Iron Horse prospect is currently in progress with completion expected within 10 weeks.</li> </ul>

## 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	JORC Code explanation	Commentary
Database integrity	<ul style="list-style-type: none"> <li>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.</li> <li>Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>The drill hole database utilised for resource modelling was compiled by MPR from numerous digital files available from datasets compiled during previous evaluations of the project.</li> <li>Mr Abbott review's review of database validity included consistency checks within and between database tables, spot check comparison of scanned hard-copies of assay reports for around 10% of Columbia's samples with database entries (sample intervals, head iron and DTR recovery) and comparison of database assay entries with laboratory source files for Richmond and Nevada Iron drilling. These checks showed no significant discrepancies and Mr Abbott considers that the resource data has been sufficiently verified to provide an adequate basis for Mineral Resource estimation\</li> </ul>
Site visits	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>Mr Abbott has not visited the Buena Vista Project due to current travel restrictions. Mr Abbott worked closely with Magnum geologists and the mineralisation interpretation underlying the estimates is consistent with Magnum's geological understanding of the deposit and informing data. Although detailed planning is not yet possible, it is anticipated that a site visit will be undertaken after current government travel restrictions are eased.</li> </ul>
Geological interpretation	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of ) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul style="list-style-type: none"> <li>Geological setting and mineralisation controls of the Buena Vista mineralisation have been confidently established from drill hole logging and field mapping. Due to the confidence in understanding of mineralisation controls and the robustness of the mineralisation model, investigations of alternative interpretations are considered unnecessary.</li> <li>Buena Vista magnetite iron mineralisation occurs within a scapolite-hornblende-clinopyroxene-calcite-magnetite altered gabbro. The magnetite mineralisation varies from disseminations to massive pods locally up to tens of metres in dimensions, reflecting variable ground preparation of the gabbro. The mineralisation generally dips moderately to the north, striking approximately east-west for most of the property area, and trending southwest-northeast in the East deposit area.</li> <li>Mineralised domain wire-fames used for resource modelling were interpreted from 10 ft (3.05m) down-hole composited iron grades from RC and diamond drilling. The domains capture zones of continuous iron grades of greater than approximately 10% and for the West Deposit and are trimmed by several steeply dipping dykes wire-frames interpreted from drill hole logging and iron grades.</li> <li>The mineralised domains are subdivided by Deposit area, comprising the Section 5, West and East Deposits. The West Deposit domain is subdivided into a main eastern zone capturing the area tested Columbia's drilling and a smaller western zone tested by Nevada Iron drilling.</li> </ul>
Dimensions	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The combined mineralised domains lie with a corridor around 3.3 km by 500 m. The combined resource estimates extend from surface to around 240 m depth with around 90% from less than 140 m.</li> <li>The Section 5 estimates extend over a strike length of around 470 m with domain widths of generally around 85 to 350m averaging around 250 m. Resource estimates extend from the base of surficial gravels to around 220 m depth, with around 90% from depths of less than 160m.</li> <li>The combined West Deposit estimates extend over a strike of around 1.4 km with domain widths of generally around 100 to 480 m averaging around 330 m. Mineral Resource estimates extend from surface to around 240 m depth, with around 90% from depths of less than 130 m.</li> <li>Modeled East Deposit mineralisation extends over approximately 600 m of strike with domain widths generally ranging from around 130 m to 260 m and averaging around 160 m. Resource estimates extend from surface to around 180 m depth, with around 90% from depths of less than 115 m.</li> </ul>

Criteria	JORC Code explanation	Commentary
<p><i>Estimation and modelling techniques</i></p>	<ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Iron, DTR mass recovery and density were estimated by Ordinary Kriging of 10 foot (3.05 m) down-hole composited grades from diamond and RC drilling within the mineralised domains. Densities were assigned to drill hole intervals of from an iron vs density function.</li> <li>Iron and DTR mass recovery values were estimated by Kriging of grade x density reflecting these value's correlation with density and block values back-calculated from Kriged densities.</li> <li>The Kriging utilised 30.5 by 15 by 5 m (strike, cross strike, parent) parent blocks aligned with the 188 trending drill traverses for main deposit areas. Parent blocks were sub-blocked to minimum dimensions of 15.25 by 7.5 by 2.5 m for assignment of modelling domains.</li> <li>The modelling did not include upper cuts reflecting the low to moderate variability of the attributes and lack of extreme values.</li> <li>Indicated and Inferred Mineral Resource estimates are extrapolated to a maximum of generally around 40 m and 60 m from drill intercepts respectively.</li> <li>Micromine software was used for initial data compilation, domain wire-framing calculating and coding of composite values. GS3M was used for Kriging, and the estimates were imported into a Micromine block model for reporting. The estimation technique is appropriate for the mineralisation style.</li> </ul>
	<ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Comparatively limited open pit mining prior to 1960 predates the resource drilling and meaningful comparison of model estimates with production records is impossible.</li> <li>Model estimates are compatible with previous resource estimates, with differences reflecting increased drilling information availability and somewhat greater extrapolation of Inferred resources consistent with geological and mineralisation continuity.</li> </ul>
	<ul style="list-style-type: none"> <li><i>The assumptions made regarding recovery of by-products.</i></li> <li><i>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</i></li> </ul>	<ul style="list-style-type: none"> <li>Estimated resources make no assumptions about recovery of by-products. Analyses for secondary attributes (Al<sub>2</sub>O<sub>3</sub>, CaO, K<sub>2</sub>O, MgO, MnO, Na<sub>2</sub>O, P<sub>2</sub>O<sub>5</sub>, S, SiO<sub>2</sub>, TiO<sub>2</sub>, V<sub>2</sub>O<sub>5</sub> and LOI) are available only for Richmond and Nevada Iron grades which cover only a small proportion of the resource area. These attributes were estimated for the Section 5 and western portion of the West Deposit and are not included in Mineral Resource Estimates.</li> </ul>
	<ul style="list-style-type: none"> <li><i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li><i>Any assumptions behind modelling of selective mining units</i></li> </ul>	<ul style="list-style-type: none"> <li>Kriging employed 30.5 by 15 by 5 m (strike, cross strike, vertical) parent blocks aligned with the 188 trending drill traverses for main deposit areas. Parent blocks were sub-blocked to minimum dimensions of 15.25 by 7.5 by 2.5 m for assignment of modelling domains.</li> <li>The eastern portion of West deposit is tested by generally 200 foot (61m) spaced traverses of Columbia diamond drill holes with an average spacing along the traverses of 70m, and rare Richmond and Nevada Iron holes. The East Deposit is tested by generally 61 m by 60 to 120 m spaced drill holes. Drilling at the Section 5 and western portions of the West Deposit averages around 50 by 50 m spacing.</li> <li>Estimation of iron, DTR and density values included a five pass, octant search strategy with search ellipsoids, and variogram orientations aligned with local mineralisation orientations. Search radii (strike, dip, cross strike) and data requirements were: <ul style="list-style-type: none"> <li>Search 1: 45, 45,12m, min. 8 data/2 octants, max. 6 data</li> <li>Search 2: 90,90,24m, min. 8 data/2 octants, max. 6 data</li> <li>Search 3: 90,90,24m, min. 4 data/1 octants, max. 6 data</li> <li>Search 4: 120,120,24m, min. 4 data/1 octant, max. 6 data</li> <li>Search 5: 180,180,36m, min. 4 data/1 octant, max. 6 data</li> </ul> </li> <li>Most Indicated resources (99%) are informed by Search passes 1 and 2. Search passes 4 and 5 inform around 1.2% and 0.2% of Inferred resources respectively.</li> </ul>
	<ul style="list-style-type: none"> <li><i>Any assumptions about correlation between variables.</i></li> </ul>	<ul style="list-style-type: none"> <li>Around 82% of Columbia's drill intervals for which primary sample chemical assays are not available, were assigned iron grades from DTR values. Samples from Richmond's and Nevada Iron's drilling which represent around 41% of the combined estimation dataset were assigned DTR values from iron grades. The function used for this assignment reflects the strong and consistent correlation between iron grades and magnetite content was derived from DTR and iron analyses available for 1,038 samples from Columbia's drilling as follows: Fe % = 0.67 x DTR Recovery (%) +3.40.</li> <li>Densities were assigned to all samples included in the estimation dataset from iron grades utilising an iron grade versus density function derived from bulk density measurements of Richmond and Nevada Iron diamond core.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Description of how the geological interpretation was used to control the resource estimates.</li> </ul>	<ul style="list-style-type: none"> <li>Mineralised domain wire-fames used for resource modelling were interpreted from 10 ft (3.05m) down-hole composited iron grades from RC and diamond drilling and drill hole logs. The domains capture zones of continuous iron grades of greater than 10% and for the west and are trimmed by several steeply dipping interpreted dykes. Magnum geologists have reviewed the mineralised domains, and confirmed they are consistent with their understanding of the deposit and are appropriate for resource estimation.</li> </ul>
	<ul style="list-style-type: none"> <li>Discussion of basis for using or not using grade cutting or capping.</li> </ul>	<ul style="list-style-type: none"> <li>Estimation did not include cutting or capping of high grades. This reflects the low variability shown by drill hole composite iron, DTR recovery and density values which show no extreme or outlier values. This approach is consistent with the Competent Person's general experience of resource modelling for iron ore projects.</li> </ul>
	<ul style="list-style-type: none"> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	<ul style="list-style-type: none"> <li>Model validation included visual comparison of model estimates and composite grades, and trend (swath) plots.</li> </ul>
Moisture	<ul style="list-style-type: none"> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	<ul style="list-style-type: none"> <li>Tonnages are estimated on a dry basis</li> </ul>
Cut-off parameters	<ul style="list-style-type: none"> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul style="list-style-type: none"> <li>The selected cut-off grades reflect Magnum's interpretation of potential project economics for potential mining operations</li> </ul>
Mining factors or assumptions	<ul style="list-style-type: none"> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>The estimates reflect medium scale open pit mining.</li> <li>The Mineral Resource estimates extend from surface to a maximum depth of around 240 m with around 90% from less than 140 m depth. The mineralization is broad, and continuous in nature, with strong visual controls, and the estimates are considered to have reasonable prospects of extraction by open pit mining.</li> </ul>
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The large number of Davis Tube Recovery tests available for Columbia's drill hole samples and more comprehensive test-work by Nevada Iron demonstrate the mineralisation is amenable to concentration by simple magnetic processes.</li> </ul>
Environmental factors or assumptions	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Whilst Magnum's economic evaluation of the deposit is at an early stage, historical work including environmental considerations for potential mining have been evaluated in detail. Information available to Magnum indicates that there are unlikely to be any specific environmental issues that would preclude potential economic extraction.</li> </ul>



<b>Criteria</b>	<b>JORC Code explanation</b>	<b>Commentary</b>
<i>Bulk density</i>	<ul style="list-style-type: none"> <li>• <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></li> <li>• <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></li> <li>• <i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The mineralisation shows no significant oxidation, with fresh material occurring at shallow depths. Density is strongly correlated with increasing iron grade reflecting increasing magnetite content.</li> <li>• Bulk densities were estimated for model blocks by Ordinary Kriging of 10 foot (3.05 m) down-hole composited densities values assigned to drill hole intervals of from an iron-density function derived from 84 bulk density measurements performed on diamond core samples from Nevada Iron drilling.</li> </ul>
<i>Classification</i>	<ul style="list-style-type: none"> <li>• <i>The basis for the classification of the Mineral Resources into varying confidence categories.</i></li> <li>• <i>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</i></li> <li>• <i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Due to uncertainty over the reliability of the composite information available for the East Deposit all resources estimated for this deposit are classified as Inferred. Estimates for the other areas were classified as Indicated and Inferred on the basis of a set of cross-sectional polygons outlining areas of approximately 61 m and closer spaced drilling and maximum extrapolation of distances of around 60 m respectively.</li> <li>• The classification approach assigns mineralisation tested by relatively consistently 61 m and closer spaced drilling to the Indicated category and estimates for mineralisation tested by more broadly spaced drilling generally extrapolated to a maximum of around 60 m from drill holes to the Inferred category.</li> <li>• The resource classification accounts for all relevant factors.</li> <li>• The resource classifications reflect the Competent Person's views of the deposit.</li> </ul>
<i>Audits or reviews</i>	<i>The results of any audits or reviews of Mineral Resource estimates.</i>	<ul style="list-style-type: none"> <li>• The resource estimates have been reviewed by Magnum technical consultants and geologists and are considered to appropriately reflect the mineralisation and drilling data.</li> </ul>
<i>Discussion of relative accuracy/ confidence</i>	<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>• Confidence in the relative accuracy of the estimates is reflected by the classification of estimates as Indicated and Inferred.</li> </ul>