



# BLACK CANYON

## ASX Announcement



26 September 2023

ASX:BCA

## Thick Manganese Intersections Confirm Balfour East Discovery

### HIGHLIGHTS

- Further assay results have been received from the ~7,000m reverse circulation (RC) drilling program completed across six key targets, including Balfour East, within the Balfour Manganese Field.
- Results demonstrate thick manganese enriched shale mineralisation from first pass reconnaissance drilling, with the following significant intersections:
  - 33m @ 13.5% Mn from 2m,  
including 17m @ 15.6% Mn from 2m (BSRC032)
  - 32m @ 11.3% Mn from surface,  
including 7m @ 14.6% Mn from 6m (BSRC033)
  - 37m @ 11.5% Mn from 5m until end of hole (BSRC034)
  - 45m @ 9.9% Mn from 1m (BSRC039)
  - 41m @ 11.9% Mn from 7m,  
including 7m @ 15.3% Mn from 12m (BSRC044)
- The Balfour East manganese drill assays confirm a cross strike width of between 200m to 300m and at least 600m of strike extent.
- The Balfour East discovery builds upon the successful targeting and drilling of the KR1 discovery.<sup>1</sup>
- Further assay results are expected for the remaining Balfour Manganese Targets over the next month. The data will then be collated and Mineral Resource and/or Exploration Targets estimated, subject to review of the results.
- Multi-stage purification stages commenced on the KR1 sample where leaching testwork extracted 97% Mn from KR1 material<sup>2</sup>, which is part of the expanded High Purity Manganese Sulphate (HPMSM) variability study.

<sup>1</sup> BCA Announcement 23 August 2023 – Drill Results Confirm Manganese Discovery at KR1

<sup>2</sup> BCA Announcement 5 September 2023 – Advancing Battery Grade HPMSM Development

ASX Code: **BCA**

Registered Address  
283 Rokeby Road  
Subiaco, WA, 6008

Telephone: +61 8 9426 0666  
Email: [info@blackcanyon.com.au](mailto:info@blackcanyon.com.au)  
Website: [www.blackcanyon.com.au](http://www.blackcanyon.com.au)



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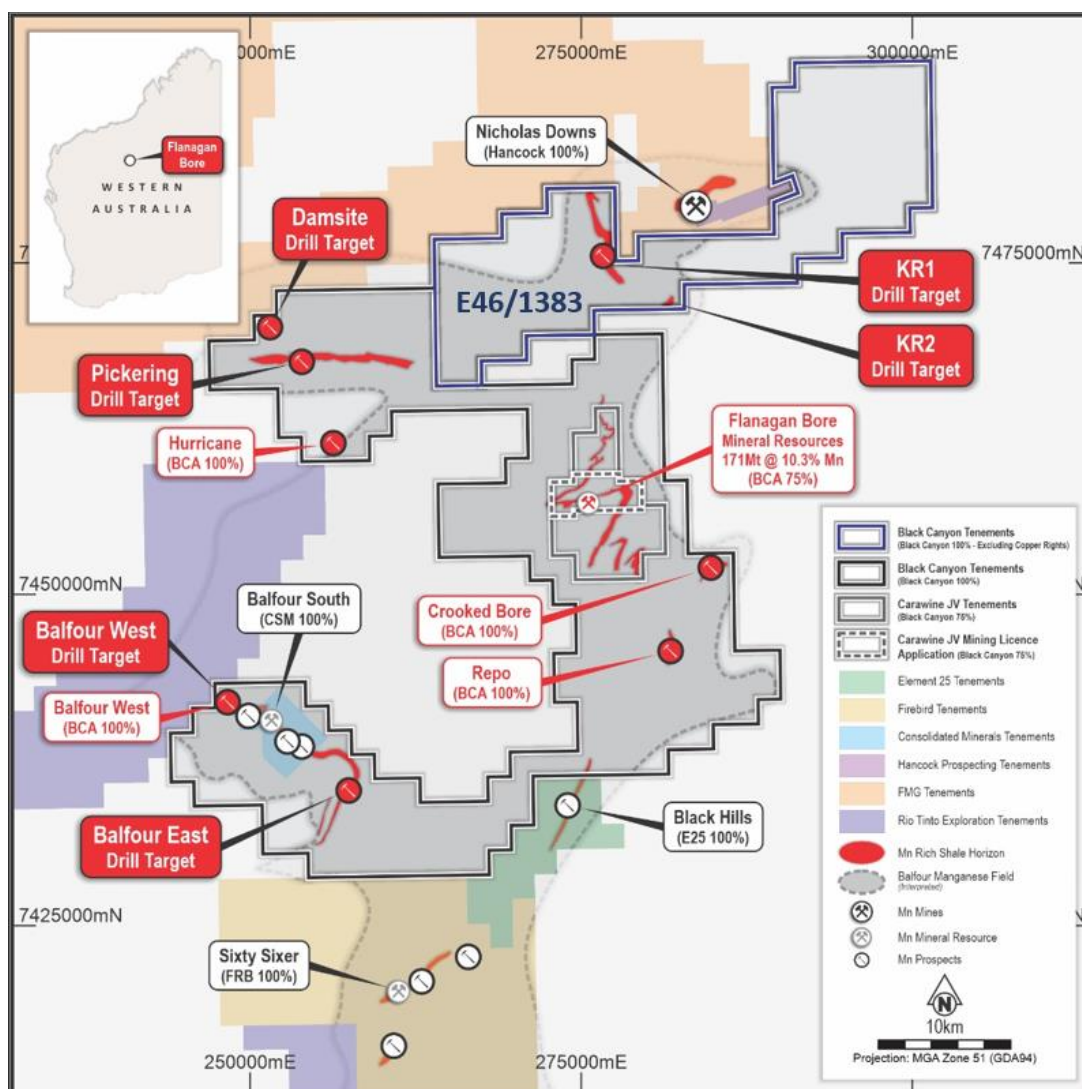
Australian manganese explorer and developer, Black Canyon Limited (**Black Canyon** or the **Company**) (**ASX: BCA**) is pleased to announce that assay results from the July 2023 RC drill program have now been received from the Balfour East Discovery. The mineralisation was initially mapped at surface and this first pass drill program has been successful in drilling thick continuous zones of mineralisation, with several high-grade intersections reported from surface. The results further reinforce the prospectivity of the Balfour Manganese Field.

Further assays from the remaining targets drilled during the July are expected over the coming month.

**Black Canyon Executive Director, Brendan Cummins, said:**

*“The prospectivity of the Balfour Manganese Field is further emphasised with the discovery of manganese enriched shale at Balfour East. We have only drilled a small section of outcropping mineralisation at Balfour East, but it appears to be continuous and open in all directions except to the southeast.”*

*“This reconnaissance style drill program does not fully test the potential of the targets, but it does provide important early parameters such as grade ranges, thickness and continuity, which we can use to assess the significance of the discovery. These results from our first pass drill campaign at Balfour East have delivered fantastic outcomes for the Company and we will further evaluate the drill results to understand the geometry of the mineralisation.”*



**Figure 1. Location of the main drill targets across the Balfour Manganese Field and manganese shale target horizon (red solid outlines).**

### **Balfour East Discovery RC Drill Assay Results**

A total of 220 holes for 6,927m of drilling were drilled across six target areas, of which 36 holes for 1,120m were drilled across the general Balfour East area.

The most significant drill results were received from a previously undrilled 300m long, 125m wide section of outcropping manganese mineralisation. The reconnaissance program was drilled along the long axis of the trend of the mineralisation using 100m or 200m centres. Single holes were drilled stepping out 200m to the northwest and southeast to help determine width. The drill program was successful in extending the mineralisation from 300m long in outcrop to 600m based on the limited drilling completed to date. At this stage the geometry of the mineralisation is not fully understood but a northeast strike is presumed where the main zone of mineralisation appears to trend to the southwest to hole BSRC039, which is located 650m away. The mineralisation appears to be open in all directions except to the southeast where only one hole has been drilled.

Significant results are presented in plan(s) and section in Figures 2, 3 & 4 respectively and are listed below:

- 33m @ 13.5% Mn from 2m,  
**including 17m @ 15.6% Mn from 2m (BSRC032)**
- 32m @ 11.3% Mn from 0m,  
**including 7m @ 14.6% Mn from 6m (BSRC033)**
- 37m @ 11.5% Mn from 5m until EOH (BSRC034)
- 45m @ 9.9% Mn from 1m (BSRC039)
- 41m @ 11.9% Mn from 7m,  
**including 7m @ 15.3% Mn from 12m BSRC044**

The reconnaissance nature of the drill program at Balfour East is not detailed enough to determine the full geometry of the mineralisation. The drill results reported in this release are down hole widths, and the true width is unknown because the dip of the mineralisation is not yet understood. Further drilling is required to establish the mineralisation geometry so true widths of the mineralisation can be reported.

A total of four regional drill lines were also completed in the Balfour East area to assist in understanding the stratigraphy so future RC drill programs can be planned to target shallowly buried manganese enriched shale horizons. Two of the four drill lines encountered some manganese enriched shale mineralisation with the results being reviewed against regional geophysical datasets to determine relationships between geophysical signatures, outcropping geology and drill results, which may help plan follow-up drill programs.

### **Balfour West RC Drill Assay Results**

A total of 30 holes for 1,344m of drilling were drilled into the Balfour West target. The drilling was designed to intersect the western strike and northern down dip extents of widespread outcropping manganese located on granted Mining Lease held by Consolidated Minerals, who operate the Woodie Woodie Mine.

The drill results did not encounter significant intervals of mineralisation either along strike or down dip. Thin zones of probable transported manganese located close to surface were intersected and includes the following:

- 1m @ 11.8% Mn from 2m (BSRC015)
- 4m @ 13.3% Mn from 0m (BSRC016)
- 3m @ 11% Mn from 0m (BSRC028)

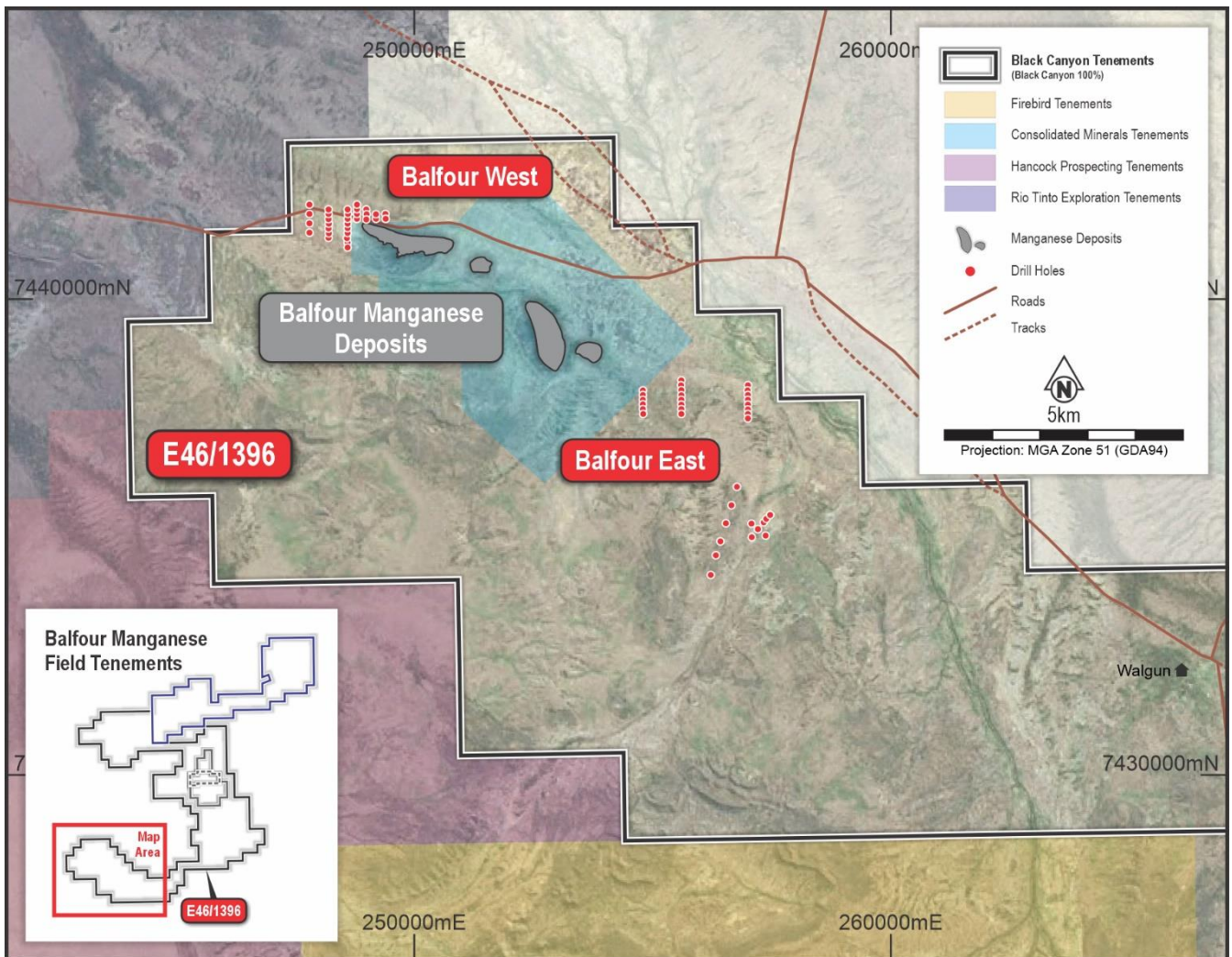


- 4m @ 9.7% Mn from 2m (BSRC029)

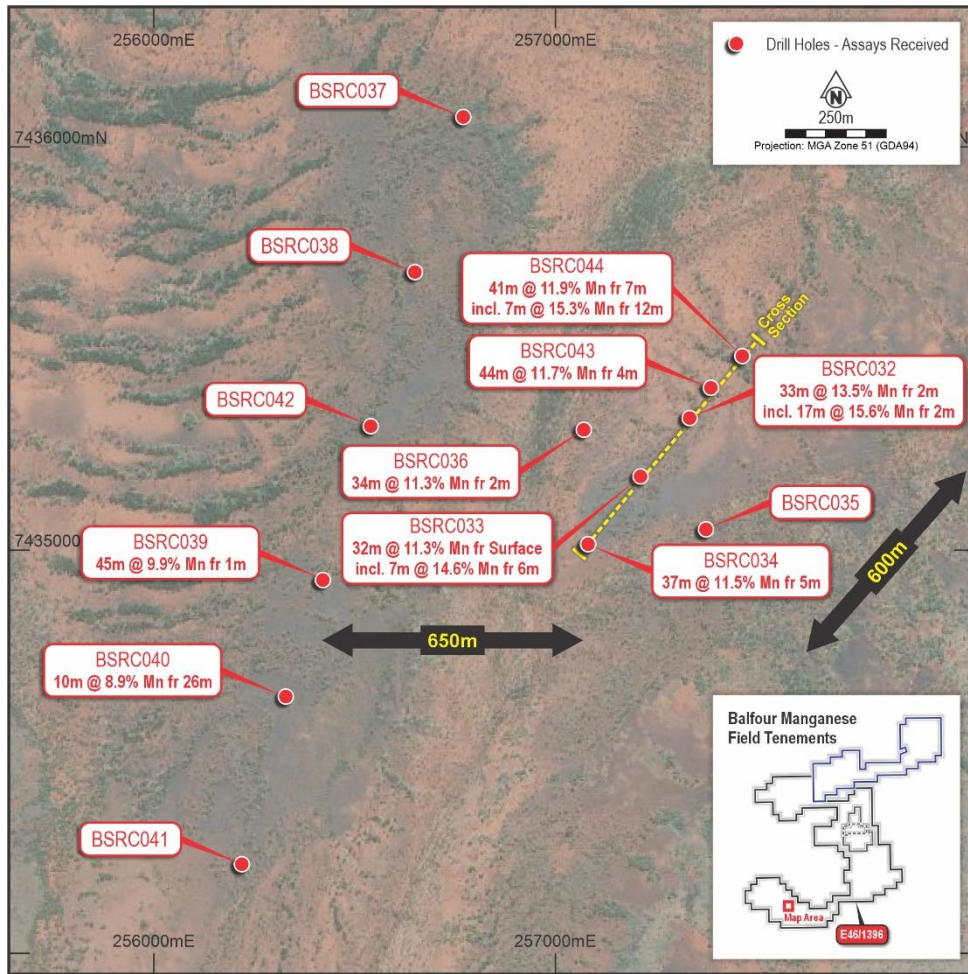
Due to the widespread thin cover, additional geophysical interpretation and data acquisition methods are being considered to resolve future exploration activities on this target area.

All of the assays have now been received from the Balfour West and East targets.

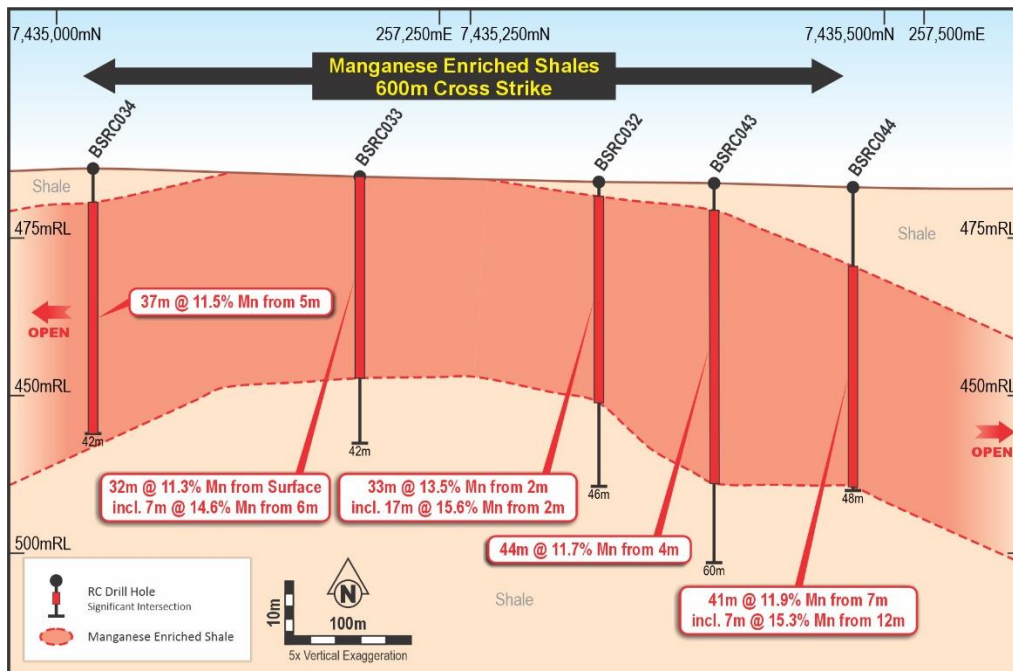
Further assays are pending and will be reviewed in the next month for the remaining KR1 drill holes, KR2, Pickering and Damsite targets. Subject to analysis of the drill results, confirming grade and geological continuity Mineral Resource and/or Exploration Targets at each of the prospects will be estimated. Results from the drilling program are presented in Appendix 1.



**Figure 2. Location map of the Balfour West and Balfour East drill hole locations and Balfour Mn Deposits owned by Consolidated Minerals.**



**Figure 3. Drill plan, cross-section location and significant results received from reconnaissance drilling at Balfour East.**



**Figure 4. Balfour East oblique cross-section (looking to the northwest) with manganese enriched shale and drill intersections.**



## Manganese Oxide HPMSM Feedstock Variability Studies (BCA 100%)

Black Canyon has continued to advance its feedstock variability studies<sup>3</sup> to ascertain the amenability of various manganese ore sources to simple beneficiation, leaching and ultimately producing battery grade HPMSM. As part of the variability study, material from the KR1 prospect has been leached and yielded a 97% extraction rate. With the completion of the successful leaching process, the KR1 sample is now undergoing purification stages prior to crystallisation of HPMSM.

The expanded HPMSM strategy is in addition to the ongoing Flanagan Bore activities where the Company has established a **Mineral Resource Estimate of 171 Mt @ 10.3% Mn**.<sup>4</sup> Flanagan Bore is part of the Carawine JV where Black Canyon has earned a 75% interest.

This announcement has been approved by the Board of Black Canyon Limited.

For further details:

**Brendan Cummins**  
**Executive Director**

Telephone: +61 8 9426 0666

Email: [brendan.cummins@blackcanyon.com.au](mailto:brendan.cummins@blackcanyon.com.au)

For media and broker enquiries:

**Andrew Rowell / Zander Beacham**  
**White Noise Communications**

Telephone: +61 8 6374 2907

Email: [andrew@whitenoisecomms.com](mailto:andrew@whitenoisecomms.com)  
[zander@whitenoisecomms.com](mailto:zander@whitenoisecomms.com)

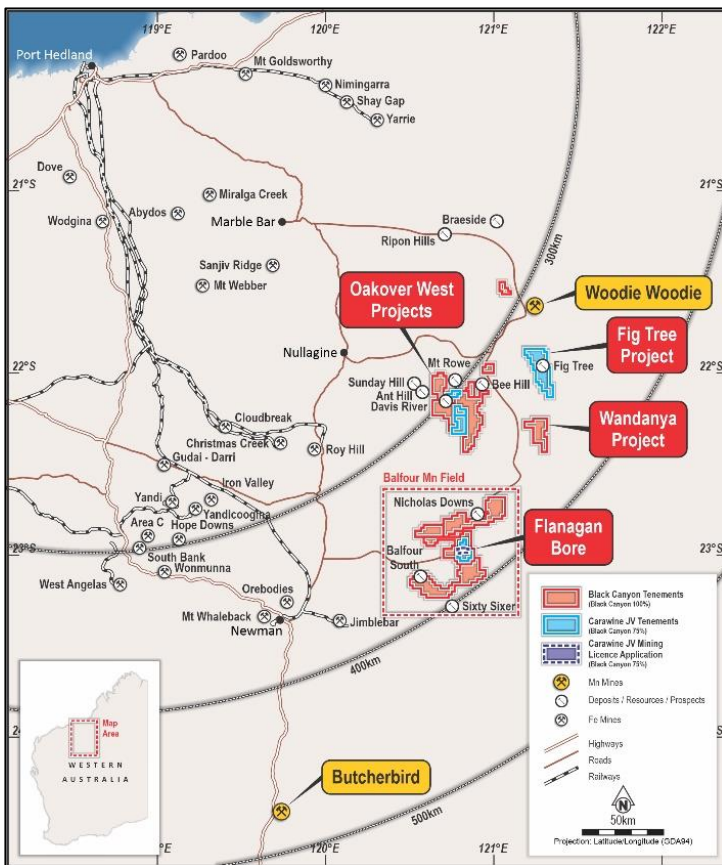
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<sup>3</sup> BCA Announcement 1 June 2023 – Expanded HPMSM testwork yields positive results.

<sup>4</sup> BCA Announcement 24 November 2022 – Flanagan Bore Mineral Resource Estimate Increased by 64%



## About Black Canyon



Black Canyon has consolidated a significant land holding totalling 2,400km<sup>2</sup> in the underexplored Balfour Manganese Field and across the Oakover Basin, in Western Australia.

The emerging potential for the Balfour Manganese Field is evident by the size of the geological basin, mineral resources identified to date, distance from port, potential for shallow open pit mining and a likely beneficiated Mn oxide concentrate product grading between 30 and 33% Mn. Black Canyon holds several exploration licenses 100% within the Balfour Manganese Field along with a 75% interest in the Carawine Joint Venture with ASX listed Carawine Resources Limited. A Mineral Resource (Measured and Indicated) of **171Mt @ 10.3% Mn** has been defined at Flanagan Bore which is part of the Carawine JV<sup>4</sup>.

Manganese continues to have attractive fundamentals where it is essential and non-substitutable in the manufacturing of alloys for the steel industry and a critical mineral in the cathodes of Li-ion batteries.

## Compliance Statements

### Reporting of Exploration Results and Previously Reported Information

The information in this report that relates to Exploration Results is based on, and fairly represents, information and supporting documentation reviewed by Mr Brendan Cummins, Executive Director of Black Canyon Limited. Mr Cummins is a member of the Australian Institute of Geoscientists, and he has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which has been undertaken to qualify as a Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Mr Cummins consents to the inclusion in this release of the matters based on the information in the form and context in which they appear. Mr Cummins is a shareholder of Black Canyon Limited.

For further information, please refer to ASX announcements dated 14 February 2023, 27 March 2023, June 1 2023, June 14 2023, June 17 2023, July 14 2023, 23 August 2023, 5 September 2023 and 13 September 2023 which are available from the ASX Announcement web page on the Company’s website. The Company confirms that there is no new information or data that materially affects the information presented in this release that relate to Exploration Results and Mineral Resources in the original market announcements.

*Note 4 ASX release 24/11/2022 Mineral Resource increases by 64% at Flanagan Bore.*

## Appendix 1. Balfour Manganese July 2023 drill collar information and assay results to date

NSR – No Significant Intersect

Prospect Abbreviations

BW – Balfour West

BE - Balfour East

PK – Pickering

DM - Damsite

HOLE ID	PROSPECT	E_GDA94	N_GDA94	RL	EOH	DIP	AZIMUTH	FROM (m)	TO (m)	THICKNESS (m)	Mn (%)	Fe (%)	DRILL INTERSECTIONS
KRRC001	KR1	277011	7475082	514.5	30	-90	360						NSR
KRRC002	KR1	276899	7475104	521	30	-90	360	0	1	1	14.8	12.3	1m @ 14.8% Mn & 12.3% Fe from 0m
KRRC003	KR1	276814	7475097	524.5	30	-90	360	0	12	12	14.2	10.7	12m @ 14.2% Mn & 10.7% Fe from 0m
KRRC004	KR1	276702	7475101	520.5	30	-90	360	3	19	16	15.1	10.9	16m @ 15.1% Mn & 10.9% Fe from 3m
KRRC005	KR1	276603	7475098	518.8	42	-90	360	11	33	22	13.3	10.8	22m @ 13.3% Mn & 10.8% Fe from 11m
KRRC006	KR1	276493	7475098	514.8	42	-90	360	8	32	24	13	8.7	24m @ 13% Mn & 8.7% Fe from 8m
KRRC007	KR1	276399	7475104	512.7	42	-90	360	26	34	8	7	9.9	8m @ 7% Mn & 9.9% Fe from 26m
KRRC008	KR1	276302	7475103	512.2	24	-90	360						NSR
KRRC009	KR1	276101	7475104	511.2	36	-90	360	4	31	27	11.8	8.5	27m @ 11.8% Mn & 8.5% Fe from 4m
KRRC010	KR1	275900	7475105	509.5	36	-90	360	15	36	21	9.6	8.3	21m @ 9.6% Mn & 8.3% Fe from 15m until EOH
KRRC011	KR1	275704	7475103	508	42	-90	360	28	42	14	8.9	7.7	14m @ 8.9% Mn & 7.7% Fe from 28m
KRRC012	KR1	277003	7475301	513.6	24	-90	360			0			NSR
KRRC013	KR1	276899	7475304	516.5	24	-90	360	0	6	6	9.6	7	6m @ 9.6% Mn & 7% Fe from 0m
KRRC014	KR1	276801	7475304	522	24	-90	360	0	15	15	12.9	8.7	15m @ 12.9% Mn & 8.7% Fe from 0m
KRRC015	KR1	276702	7475302	516	24	-90	360	7	15	8	10.5	15.2	8m @ 10.5% Mn & 15.2% Fe from 7m
KRRC016	KR1	276602	7475303	513.8	36	-90	360	4	27	23	10.4	8.9	23m @ 10.4% Mn & 8.9% Fe from 4m
KRRC017	KR1	276512	7475305	512.2	30	-90	360			0			NSR
KRRC018	KR1	276401	7475305	510.8	54	-90	360	31	48	17	9.3	7.7	17m @ 9.3% Mn & 7.7% Fe from 31m
KRRC019	KR1	276204	7475304	509	30	-90	360			0			NSR
KRRC020	KR1	276000	7475303	507.3	24	-90	360	8	12	4	9.8	9.5	4m @ 9.8% Mn & 9.5% Fe from 8m
KRRC021	KR1	275805	7475306	505.8	54	-90	360	31	53	22	9.2	7.7	22m @ 9.2% Mn & 7.7% Fe from 31m
KRRC022	KR1	277102	7474901	512.1	30	-90	360			0			NSR
KRRC023	KR1	276911	7474901	516	30	-90	360			0			NSR
KRRC024	KR1	276796	7474903	519.4	24	-90	360	0	3	3	19.2	11.5	3m @ 19.2% Mn & 11.5% Fe from 0m
KRRC025*	KR1	276697	7474904	520	17	-90	360	2	17	15	18.6	14.1	15m @ 18.6% Mn & 14.1% Fe from 2m including 7m @ 26% Mn from 10m
KRRC026*	KR1	276703	7474906	521	30	-90	360	4	18	14	18.3	14.3	14m @ 18.3% Mn & 14.3% Fe from 4m
KRRC027	KR1	276600	7474909	521.5	42	-90	360	11	34	23	12.2	8.7	23m @ 12.2% Mn & 8.7% Fe from 11m including 4m @ 18.4% Mn from 12m
KRRC028	KR1	276505	7474910	520	48	-90	360	17	39	22	12.2	8.8	22m @ 12.2% Mn & 8.8% Fe from 17m
KRRC029	KR1	276404	7474898	518.3	54	-90	360	26	42	16	10.9	9.7	16m @ 10.9% Mn & 9.7% Fe from 26m
KRRC030	KR1	276203	7474906	515.5	24	-90	360			0			NSR
KRRC031	KR1	276001	7474906	513	30	-90	360	15	25	10	15.2	11.6	10m @ 15.2% Mn & 11.6% Fe from 15m including 4m @ 18% Mn from 15m
KRRC032	KR1	275801	7474852	509.9	36	-90	360	21	36	15	10.8	9.2	15m @ 10.8% Mn & 9.2% Fe from 21m
KRRC033	KR1	276294	7474903	516	30	-90	360			0			NSR
KRRC034	KR1	276703	7474703	517.7	30	-90	360	6	8	2	25.1	8	2m @ 25.1% Mn & 8% Fe from 6m
KRRC035	KR1	276501	7474703	519.2	24	-90	360			0			NSR
KRRC036	KR1	276303	7474703	518.6	24	-90	360			0			NSR
KRRC037	KR1	276102	7474703	515.5	18	-90	360			0			NSR
KRRC038	KR1	275903	7474701	514.6	18	-90	360			0			NSR
KRRC039	KR1	275696	7474699	511.1	18	-90	360			0			NSR
KRRC040	KR1	276005	7475502	506.7	24	-90	360			0			NSR
KRRC041	KR1	276207	7475500	507.5	30	-90	360			0			NSR
KRRC042	KR1	276400	7475499	509	18	-90	360			0			NSR
KRRC043	KR1	276500	7475502	510.5	18	-90	360			0			NSR
KRRC044	KR1	276594	7475499	511.5	24	-90	360			0			NSR
KRRC045	KR1	276692	7475503	513	36	-90	360	9	29	20	11.4	9.1	20m @ 11.4% Mn & 9.1% Fe from 9m
KRRC046	KR1	276808	7475501	517	30	-90	360	1	23	22	12.2	9.4	22m @ 12.2% Mn & 9.4% Fe from 1m including 3m @ 18% Mn from 1m
KRRC047	KR1	276897	7475498	515.5	24	-90	360	0	13	13	10	7.4	13m @ 10% Mn & 7.4% Fe from 0m
KRRC048	KR1	277004	7475487	512	18	-90	360			0			NSR
BSRC001	BW	248602	7441203	463	54	-90	360			0			NSR
BSRC002	BW	248589	7441298	463	54	-90	360			0			NSR
BSRC003	BW	248602	7441405	463	84	-90	360			0			NSR
BSRC004	BW	248601	7441506	463	72	-90	360			0			NSR
BSRC005	BW	248600	7441600	463	66	-90	360			0			NSR
BSRC006	BW	248601	7441705	463	60	-90	360			0			NSR
BSRC007	BW	248601	7441100	463	54	-90	360			0			NSR
BSRC008	BW	248606	7441808	463	40	-90	360			0			NSR
BSRC009	BW	248605	7441903	463	42	-90	360			0			NSR
BSRC010	BW	248799	7441704	463	36	-90	360			0			NSR
BSRC011	BW	248801	7441806	463	42	-90	360			0			NSR
BSRC012	BW	248800	7441907	463	42	-90	360			0			NSR
BSRC013	BW	248799	7441999	463	48	-90	360			0			NSR
BSRC014	BW	248997	7441902	463	42	-90	360			0			NSR
BSRC015	BW	248999	7441799	463	42	-90	360	2	3	1	11.8	13.4	1m @ 11.8% Mn & 13.4% Fe from 2m
BSRC016	BW	248998	7441690	463	42	-90	360	0	4	4	13.3	13.5	4m @ 13.3% Mn & 13.5% Fe from 0m
BSRC017	BW	248200	7441303	463	36	-90	360			0			NSR







## Appendix 2. JORC 2012 Table 1

### Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<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> <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>The samples were collected using industry standard Reverse Circulation (RC) drill methods.</li> <li>Drilling was completed by Impact Drilling who completed the entire RC drill program – 220 holes for 6927m.</li> <li>There was limited water encountered during the drill program.</li> <li>The drilling and sample techniques are considered representative for the style of mineralisation utilising 1m sample intervals gathered directly from the RC drill rig using an adjustable cone splitter from a levelled drill rig.</li> <li>The target sample weight was between 2-3kg which is appropriate for the style of mineralisation.</li> </ul>
<b>Drilling techniques</b>	<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>The drill type is Reverse Circulation (RC) drilling vertical holes.</li> <li>The drill diameter was 5 ¼ inch RC using a face sampling hammer</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul style="list-style-type: none"> <li>Sample recovery was estimated by the geologist on the rig and secondly by assessing the weight of the representative samples delivered to laboratory.</li> <li>The drill recoveries were deemed acceptable with supervision of the sampling at the cone splitter.</li> <li>No sample bias due to sample loss is evident from the observed sample recoveries.</li> <li>The samples were drilled mostly dry again minimising sample bias</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Drillhole logging was completed at the drill rig recording lithology, texture, grain size and colour.</li> <li>1m chip trays were also collected in site, photographed and used to further detailed logging post the drill program.</li> <li>The logging was considered appropriate for exploration reporting and eventually Mineral Resource Estimation</li> <li>Every 1m interval as logged and sieved for inspection – 6927 intervals were inspected</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>The 1m RC samples were gathered by using a levelled cone splitter of the side of the rig.</li> <li>The samples were dominantly dry.</li> <li>Black Canyon inserted Certified Reference Material (CRM) at a rate of 1/50, blanks at a rate of 1/50 and field duplicates from the cone splitter at a rate of 1/50 for a total insertion rate of QA/QC materials at 6%</li> <li>The sub sampling technique and quality control procedures is considered appropriate to ensure sample representivity</li> <li>The sample size is considered appropriate for the grain size and style of mineralisation</li> </ul>
<b>Quality of assay data</b>	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and</li> </ul>	<ul style="list-style-type: none"> <li>The samples were submitted to Bureau Veritas in Canningvale, WA.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>and laboratory tests</b>	<p><i>whether the technique is considered partial or total.</i></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>The 2 – 3kg samples were weighed and dried prior to pulverising 100% of the sample 95% passing 105µm.</li> <li>The sample was then analysed using method XF103 for manganese ores using fusion disc XRF for Fe, SiO<sub>2</sub>, Mn, Al<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub>, P<sub>2</sub>O<sub>5</sub>, S, MgO, K<sub>2</sub>O, Na<sub>2</sub>O, CaO, BaO and Cr<sub>2</sub>O<sub>3</sub>.</li> <li>Loss on Ignition (LOI) was also measured by Thermo Gravimetric Analysis (TGA)</li> <li>Review of the quality control results received to date that include CRM, blanks, duplicates show an acceptable level of accuracy (lack of bias) and precision has been achieved.</li> <li>In addition, Bureau Veritas has undertaken its own internal QAQC checks using CRM, Blanks and pulp duplicates and no issues have been reported or identified.</li> <li>The CP is satisfied that the analysis was completed to an acceptable standard in the context in which the results have been reported</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>The significant intersections have not been verified by independent personnel.</li> <li>Once the assays are received the new drill assay data will be compared to the previous drill hole assays by the Independent Resource Geologist</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Once a drill hole was completed the drill collar was located using a GARMIN handheld GPS with an accuracy of +/- 5m</li> <li>The grid system is UTM zone 51, GDA94 datum.</li> <li>The topography is quite flat reflecting the underlying stratigraphy. The holes are shallow and downhole deviation is not considered material in the context of these results</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>Drill line and hole spacing has been described for each prospect in the main body of the text.</li> <li>No sample compositing has been applied</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>The deposits are interpreted to be is flat and gently plunging. Drill logs and assay data have identified cross cutting dolerite dykes that may have intruded into zones of structural weakness. Further drilling and interpretation are required to ascertain the impact of dolerite intrusions on the mineralisation.</li> <li>The drill hole orientation otherwise is suitable for this style of mineralisation and considered appropriate and unlikely to introduce sample bias</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>The samples were collected into bulka bags, sealed with cable ties and stored on site until the drill program was completed.</li> <li>The samples were then trucked to Perth in three consignments and delivered directly to Bureau Veritas in Canningvale.</li> <li>The bulka bags were inspected and audited by Bureau Veritas who did not report any suspicious or tampered samples</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>Other than internal review by Company staff, no audits have been completed.</li> <li>The CP was on site for some of the RC drill program and considers the sampling and sub sampling techniques to be equal to industry standard and appropriate for the style of mineralisation and the results being reported.</li> </ul>

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and</b>	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material</li> </ul>	<ul style="list-style-type: none"> <li>The drilling was undertaken on granted tenements E46/1383, E46/1404 and E46/1396</li> </ul>





Criteria	JORC Code explanation	Commentary
<b>land tenure status</b>	<p>issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</p> <ul style="list-style-type: none"> <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 tenements and all mineral rights are 100% owned by Black Canyon Ltd apart from E46/1383 where Killi Resources owns the copper rights.</li> <li>The tenements have Native Title Heritage Protection Agreements in place with the Karlka Niyiyaparli People that required a Heritage Survey to be undertaken prior to ground disturbing activities. Both Ethnographic and Archeologic surveys have been completed prior to commencement of site activities.</li> <li>There are no other known impediments to exploring the listed tenements</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>There has been limited exploration work carried out on the tenements for manganese.</li> <li>There has been no drilling carried out by past explorers specifically targeting manganese on these tenements</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The tenements are located within the Oakover Basin, the edges of which are defined by the Neoproterozoic Fortescue Group. Most of the tenements are covered by quaternary alluvium, sheetwash with restricted outcrop that comprises rocks of the Manganese Group, mainly the Encheddong Dolomite and Balfour Formation. The tenements contain widespread manganese scree associated with manganese enriched Balfour Formation shales.</li> <li>The mineralisation is described as supergene manganese enriched shale. The host Mn shale is gradually enriched in manganese as it weathers or is leached and redeposited in the upper zones. The upgrades can be substantial and are often associated with iron. Structural enhancement maybe a factor in developing thick zones of mineralisation. Both Mn and Fe are very mobile in the near surface environment in WA.</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to Appendix 1 for a complete listing of the RC drill holes completed across the Balfour Manganese Field for the July 2023 RC drill program by Black Canyon</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (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>Only length (1m) weighted intervals are included in the text of this release.</li> <li>Manganese intervals have been reported at 7% Mn cut off allowing dilution that still enables the total reported grade to be greater than 7% Mn.</li> <li>Iron intervals have been reported as they coincide with the Mn intervals and no cut offs are applied.</li> <li>No metal equivalent values are used.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<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 reconnaissance nature of the drill program at Balfour East is not detailed enough to determine the geometry of the mineralisation.</li> <li>Typically, the deposits previously drilled and reported in the region are flat lying exhibiting gentle dips so therefore 90° angled (vertical) drill holes are considered appropriate and reported downhole grades approximate the true width.</li> <li>The drill results reported in this release are down hole widths but the true width is unknown because the dip of the mineralisation is not understood.</li> <li>Further drilling is required to establish the mineralisation geometry so true widths of the mineralisation can be</li> </ul>



Criteria	JORC Code explanation	Commentary
		reported.
<b>Diagrams</b>	<ul style="list-style-type: none"><li>• <i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i></li></ul>	<ul style="list-style-type: none"><li>• These have been included in the body of the release where relevant and material to the reader's understanding of the results in regard to the context in which they have been reported.</li></ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"><li>• <i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i></li></ul>	<ul style="list-style-type: none"><li>• Information considered material to the reader's understanding of the Exploration Results has been reported in the body of the text and significant results have selectively been reported to provide the reader with the potential tenor and widths of the mineralisation</li><li>• APPENDIX 1- contains the location, drill holes details and assay results as received for the July 2023 drill program.</li><li>• Holes denoted with NSR indicated that no significant intervals of mineralisation over 7% Mn was detected in that hole.</li></ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"><li>• <i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i></li></ul>	<ul style="list-style-type: none"><li>• All information considered material to the reader's understanding and context of the RC Exploration Results have been reported.</li></ul>
<b>Further work</b>	<ul style="list-style-type: none"><li>• <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li><li>• <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li></ul>	<ul style="list-style-type: none"><li>• Further work is planned that includes further infill drilling and diamond core drilling for large scale metallurgical testwork.</li><li>• Down hole geophysical surveys for magnetic susceptibility density and gamma radiation to be completed and will be used to update the lithological logging.</li><li>• It is anticipated that the targets drilled from this RC program will have potential for eventual economic extraction and Mineral Resources and or Exploration Targets will be generated subject to review of the geological and grade continuity of the drill logging and assays results respectively.</li></ul>