

# Metallurgical Testwork Delivers 48% to 50% Manganese Concentrates

- Positive results received from initial beneficiation (Heavy Liquid Separation - HLS) provide confidence that a high-grade manganese oxide concentrate can be readily produced from Wandanya using a simple density-based technique.
- Significant manganese upgrades, on average, well above the premium 44% Mn oxide benchmark achieved:
  - WD01MG composite upgraded from a raw feed grade of **21.2% Mn to grades between 44% to 49% Mn** (depending on HLS applied SG and size fraction)
  - WD02HG composite upgraded from a raw feed grade of **41.5% Mn to grades between 51% to 53% Mn** (depending on HLS applied SG and size fraction)
- Overall concentrate grades range between 50% and 48% Mn achieved with 68% to 76% recoveries respectively when combining the moderate and higher-grade composites results.
- Low deleterious elements such as iron, aluminium and phosphorus from the head grade feedstock and upgraded concentrate element analysis results.
- The Wandanya discovery represents a new exploration model on the eastern margin of the Oakover Basin comprising hydrothermal, stratabound manganese and iron. The Company has only drill tested 240m of the 3km W2 target strike and is looking forward to further drilling these high-grade manganese and iron outcrops<sup>2&3</sup>.

Australian manganese explorer and developer, Black Canyon Limited (**Black Canyon or the Company**) is pleased to announce the results from benchtop scale beneficiation testwork completed on composite reverse circulation (**RC**) drill chip samples from the W2 prospect at the Wandanya Project<sup>1</sup>. The testwork demonstrates substantial uplifts from composite feed grades of 21.2% Mn and 41.5% Mn to concentrate grades well above the premium 44% Mn oxide benchmark grade for both the moderate and higher-grade feed samples. The laboratory testwork used HLS techniques as a proxy for widely used, industry based dense media separation (**DMS**).

The initial sighter level metallurgical tests provide a positive insight to the beneficiation characteristics of the manganese mineralisation discovered at Wandanya using feed grades similar to those at Woodie Woodie that routinely use DMS as part of its ore processing circuit.

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## Capital Structure (ASX: BCA)

Shares on Issue	106.1M
Top 20 Shareholders	48.9%
Board & Management	7.5%
Funds & Institutions	20.6%

## Board of Directors

**Graham Ascough**  
Non-Executive Chairman

**Brendan Cummins**  
Managing Director

**Simon Taylor**  
Non-Executive Director

**Adrian Hill**  
Non-Executive Director

## Balfour Manganese Field Highlights

Global MRE of 314Mt @ 10.5% Mn. \*  
 Largest Resource in Western Australia.  
 Development Options – Traditional Mn concentrate or HPMSM processing for EV's.

\*BCA Announcement 12/12/23



**Black Canyon's Managing Director Brendan Cummins said:**

*"Completing this early stage metallurgical testwork and generating a high grade, low impurity concentrate, in excess of the premium 44% Mn oxide benchmark, has been a great achievement and start to 2025. The style of high-grade hydrothermal manganese mineralisation we have discovered at Wandanya lends itself to the application of density-based beneficiation techniques with manganese minerals being denser than the less dense dolomite host rocks. The testwork confirmed our expectation that the mineralisation would beneficiate in a similar manner to the hydrothermal ores processed at Woodie Woodie and demonstrates the potential to produce a high quality manganese concentrate for the silico and ferro alloying industry and as feedstock for high purity manganese sulphate (HPMSM)."*

*"We continue to learn more about the W2 manganese prospect with these additional layers of analysis and we are quickly building a greater understanding of the prospect's potential. My main conclusion to date has been the simplicity of the geology, with shallow high-grade mineralisation and now we have demonstrated how readily the manganese can be upgraded using a simple and established density-based process. Our immediate focus is to complete a Heritage Survey and then further drilling down dip and along strike so we can understand the full scale and significance of the discovery."*

*"We have only drill tested 240m of strike or less than 10% of the 3km long manganese target based on mapping and rock chip sampling<sup>2</sup>. This is why we are very keen, following the wet season, to get the rig back to site as soon as possible and test not only the manganese targets but also the recently announced high-grade iron mineralisation we have mapped over 2km adjacent to the manganese<sup>3</sup>."*



**Figure 1. W2 Prospect, RC drill bags from WDRC031 in the foreground**

## **W2 Prospect, Wandanya (BCA 100%)**

### **Heavy Liquid Separation Testwork**

Testwork samples were selected from about 110kg of RC drill chip samples collected from the W2 drilling program completed in September 2024<sup>1</sup>. Whilst diamond core would be preferable to RC drill chips, for this early-stage sighter level beneficiation testwork, the processing of RC chips does provide initial concentrate grade and recovery data that can be applied to more detailed diamond core based testwork when available.

To facilitate representative examples of mineralisation, the drill chip samples were collected from six holes, with two holes each from a northern, central and southern drill line along 240m of drilled strike. A moderate and high composite grade of 20% Mn and 40% Mn was targeted based on the average intersection around 30% Mn with reasonably distinct moderate grades in an upper zone and higher grades closer to the footwall. The mineralised intervals were all intersected from less than

10m depth. All the samples were crushed to -10mm and then combined as required to produce a moderate (WD01MG) and higher (WD02HG) grade composite.

The assay feed grades of the WD01MG and WD02HG composites was 21.2% Mn and 41.51%Mn respectively and the data is presented in Table 1.

The WD01MG and WD02HG composites were then screened at 1mm to produce a fines (-1mm+0.045mm) and a coarser fraction (+1mm-10mm). The fine and coarse fractions were subjected to heavy liquid separation at liquid specific gravities (**SG**) of 3.0g/cm<sup>3</sup> and 3.3g/cm<sup>3</sup>.

The results are displayed in Table 2 and show significant uplifts, especially from the moderate grade concentrate. Based on the testwork completed and assuming re-combining the moderate-grade and high-grade composites at an SG of 3.0g/cm<sup>3</sup> and 3.3g/cm<sup>3</sup>, the combined calculated averages for the concentrate are 50% Mn and 48% Mn respectively, produced from a calculated combined average head grade feed of about 31% Mn.

Summary assay data from the HLS concentrate products have been completed for a limited element suite with the results shown in Table 3. Low Fe and Al contents from the head assays and final concentrates further highlight the quality of the Wandanya manganese mineralisation.

Drill program information for the samples collected for the HLS testwork is presented in Appendix 1 and Appendix 2.

**Table 1. Head grade assays from the moderate and high-grade composites**

Composite	Mn (%)	Fe (%)	Al (%)	Si (%)	Ca (%)	K (%)	Mg (%)	P (%)
<b>WD01MG</b>	21.2	3.5	2.4	14.2	6.0	1.4	4.0	0.01
<b>WD02HG</b>	41.5	2.3	1.6	7.0	2.4	1.0	1.5	0.01

**Table 2. HLS testwork summary of results from the moderate and high-grade composites**

Composite	Sample type	Assayed head Mn (%)	Size fraction	HLS Results								
				Parameter	Mn (%) Conc	Mn Stage Rec (%)	Mn (%) ave Conc	Mn overall Conc rec (%)	Combined Mn (%) Conc	Combined overall Conc rec (%)		
WD01MG	RC chip composite	21.2	+1.0mm -10mm	SG 3.0	43.9	78	45.1	67.3	48	76		
			-1.0mm +0.045mm		46.6	65.6						
WD02HG	RC chip composite	41.5	+1.0mm -10mm	SG 3.0	50.8	96.3	51.2	84.4				
			-1.0mm +0.045mm		51.7	90.7						
WD01MG	RC chip composite	21.2	+1.0mm -10mm	SG 3.3	46.6	58	47.9	53.1	50	68		
			-1.0mm +0.045mm		49.2	57						
WD02HG	RC chip composite	41.5	+1.0mm -10mm	SG 3.3	51.6	92.4	52.2	82				
			-1.0mm +0.045mm		52.9	89.4						

**Table 3. HLS testwork concentrate element analysis from the moderate and high-grade composites**

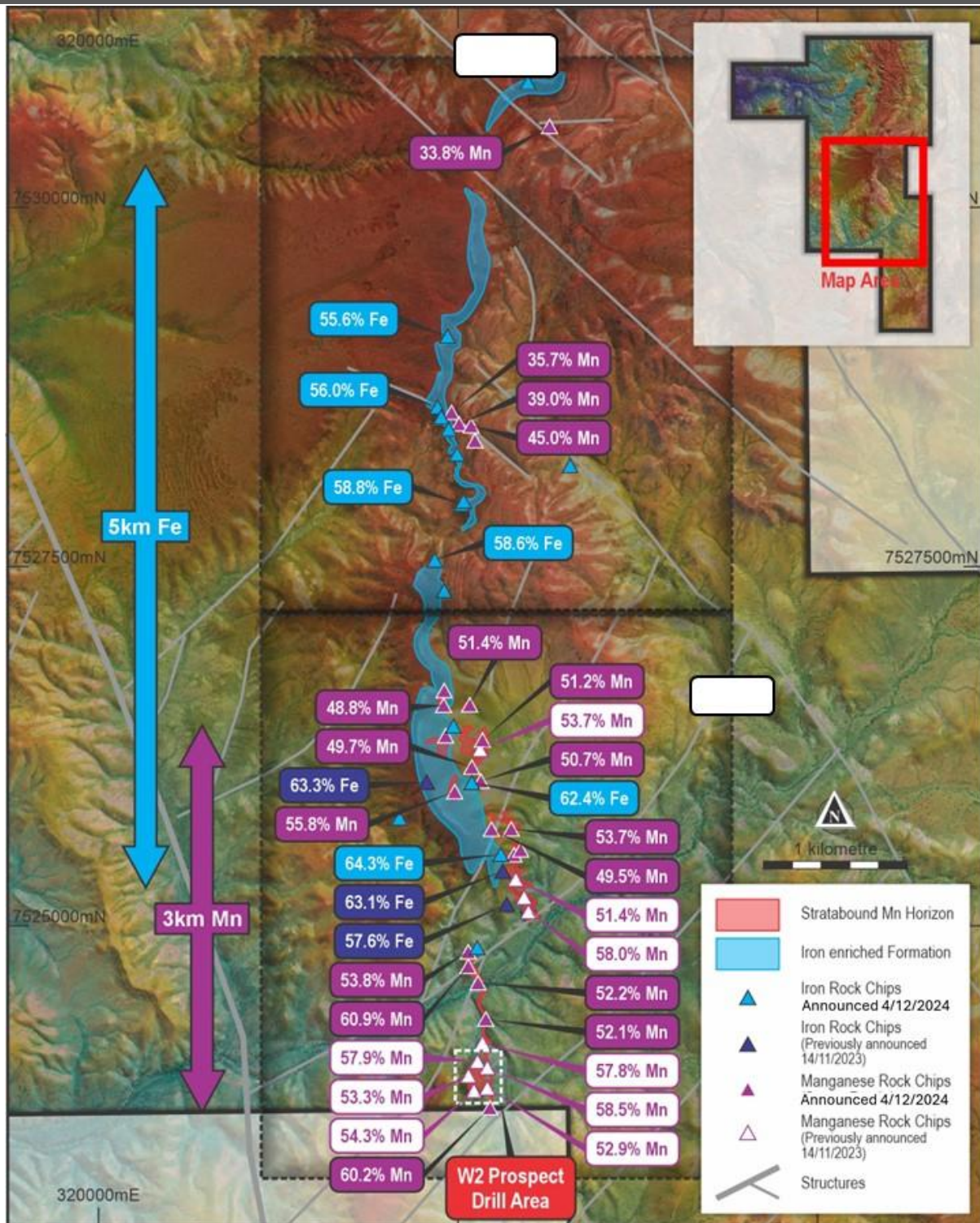
Composite	Size fraction	Parameter	Mn (%)	Fe (%)	Al (%)	Si (%)
WD01MG	+1.0mm -10mm	SG 3.0	43.9	3.5	1.5	3.7
	-1.0mm +0.045mm		46.6	3.5	1.1	2.6
WD02HG	+1.0mm -10mm	SG 3.0	50.8	2.0	0.9	2.3
	-1.0mm +0.045mm		51.7	1.6	0.7	1.8
WD01MG	+1.0mm -10mm	SG 3.3	46.6	3.1	1.2	2.6
	-1.0mm +0.045mm		49.2	3.4	1.0	2.0
WD02HG	+1.0mm -10mm	SG 3.3	51.6	1.7	0.8	1.9
	-1.0mm +0.045mm		52.9	1.5	0.7	1.5

## Next Steps

The initial metallurgical results have provided the Company with confidence to the amenability of the Wandanya manganese discovery to simple beneficiation and an indication of potential manganese concentrate grades and recoveries. These parameters can be used in further testwork which in the short term will rely on RC drill chips but in the future the Company is planning to undertake a diamond drill core program.

The next step in the exploration program will be to drill further along strike and down dip at Wandanya to show scale and continuity for the manganese and drill test the high-grade iron targets we have identified up dip from the stratabound manganese. The Company will continue to update progress on this important drill program.





**Figure 2. Wandanya 3 km long manganese discovery highlighting the drilling completed along 240m of strike at W2<sup>3</sup>.**



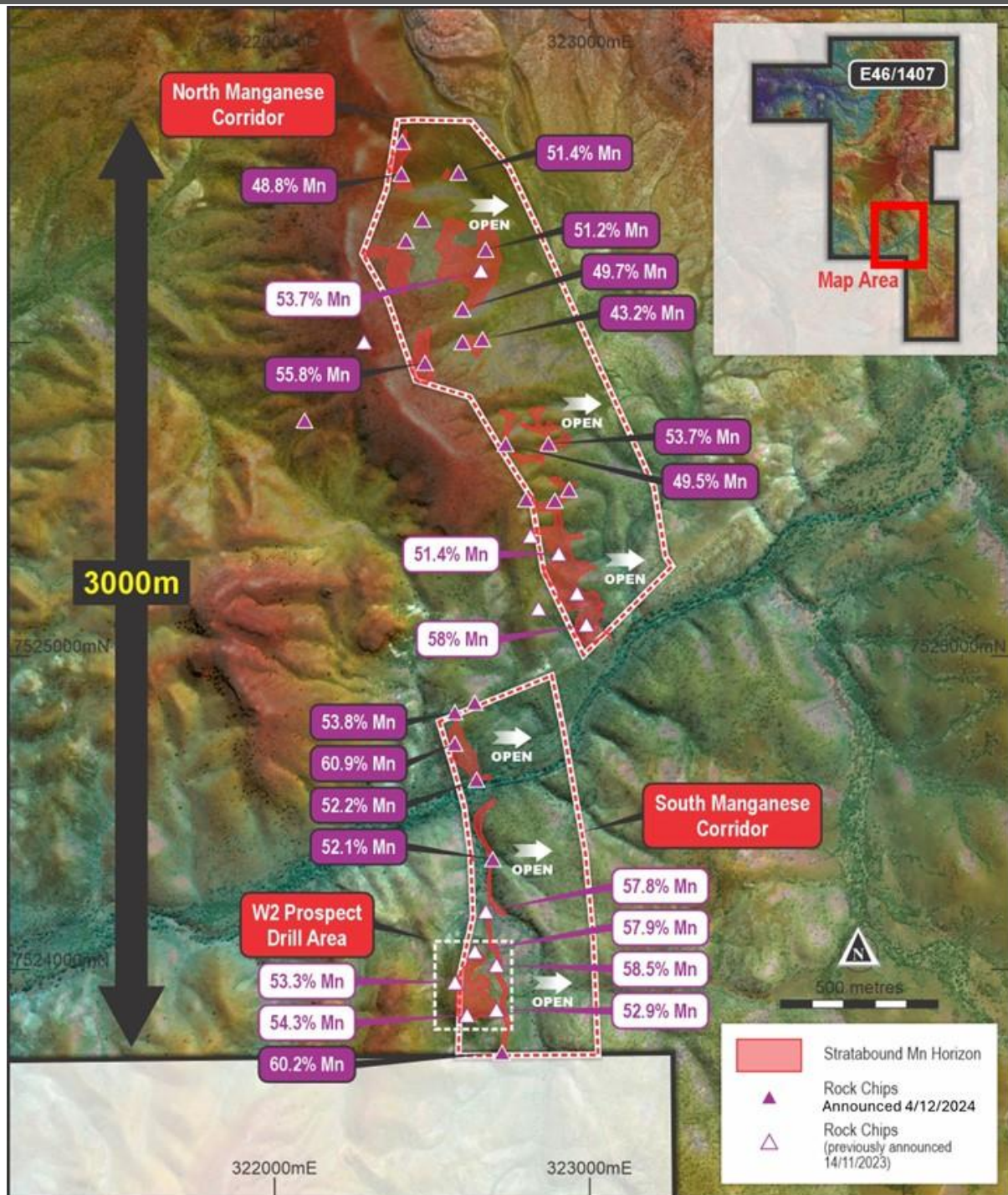


Figure 3. Manganese corridors at the Wandanya Project with manganese results above 30% shown overlying satellite imagery and draped with digital elevation model<sup>3</sup>. Drill targets down dip and along strike.

**-END-**

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

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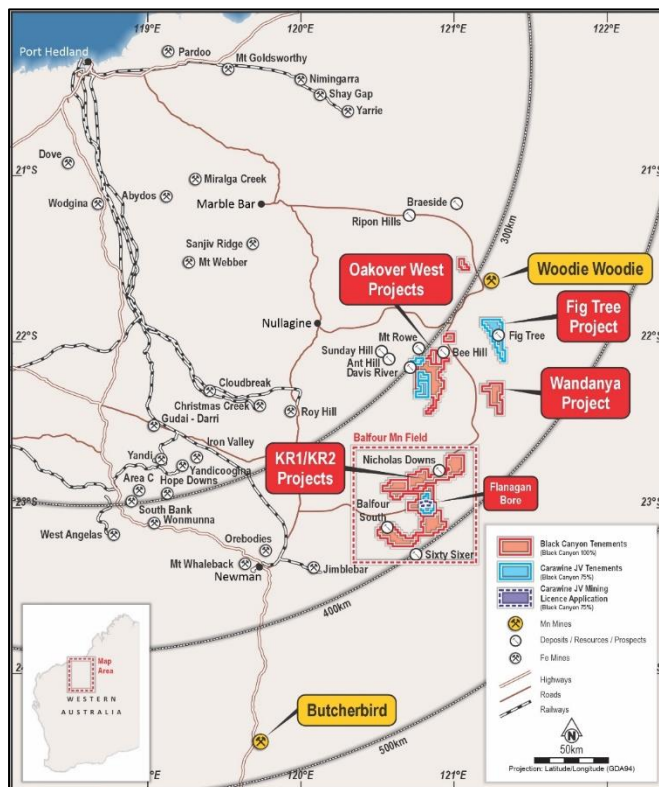
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## Reference List:

1. ASX Announcement 14 November 2024 – High grade Manganese Results from the Wandanya Project
2. ASX Announcement 27 November 2024 – 3km Strike of Outcropping Manganese Confirmed at Wandanya
3. ASX Announcement 4 December 2024 – High-Grade Iron Results from Wandanya

## About Black Canyon



Black Canyon has consolidated a significant land holding totalling 2,100km<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 Global Mineral Resource (Measured, Indicated & Inferred) of 314 Mt @ 10.4% Mn has been defined across the Balfour Manganese Field projects. This MRE comprises 100Mt @ 10.4% Mn

(Measured), 150Mt @ 10.1% Mn (Indicated) and 64Mt @ 11.9% Mn (Inferred) – refer to ASX release 12 Dec 2023.

Manganese continues to have attractive long-term 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, Managing 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.

The information in this report that relates to metallurgical testwork results is based on information reviewed by Mr David Pass, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Pass is an employee of BatteryLimits and consultant to Black Canyon Limited. Mr Pass has sufficient experience relevant to the mineralogy and type of deposit under consideration and the typical beneficiation thereof to qualify as a Competent Person as defined by the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012 Edition). Mr Pass consents to the inclusion in the report of the matters based on the reviewed information in the form and context in which it appears.

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, 26 September 2023, 12 October 2023, 27 November 2023, 12 December 2023, 26 March 2024, and 1 May 2024, 2 July 2024, 21 August 2024, 25 September 2024, 27 September 2024, 8 October 2024, 18 October 2024, 14 November 2024, 27 November 2024, 4 December 2024 and 23 December 2024 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.



**APPENDIX 1: JORC 2012: TABLE 1**

Section 1 Sampling Techniques and Data		
Criteria	Explanation	Comment
Sampling techniques	<p><i>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.</i></p> <p><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></p> <p><i>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (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.</i></p>	<p><i>Reverse circulation ('RC') was used as the primary drilling technique for the projects.</i></p> <p><i>RC cuttings were continuously sampled at 1 m intervals. All drill holes were sampled and logged from surface to end of hole or depth of mineralisation.</i></p> <p><i>Drilling completed by Black Canyon has been used for the projects.</i></p> <p><i>All drill samples were logged for weathering, colour, lithology and mineralogy.).</i></p> <p><i>RC samples were collected and placed in marked green plastic bags in order at each collar position.</i></p> <p><i>The 1m interval samples are considered industry standard and representative of the material being tested.</i></p> <p><i>There was limited water encountered during the drill program.</i></p> <p><i>The drilling and sample techniques are considered representative for the style of mineralisation utilising 1m sample intervals</i></p> <p><i>The target sample weight was between 2-3kg which is appropriate for the style of mineralisation</i></p>
Drilling techniques	<p><i>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).</i></p>	<p><i>Black Canyon drilling was completed using RC technique at 90-degree angle to collect 1 m samples as RC chips. Drill diameter is 5.25 inches as per standard RC sizing. A face sampling hammer was used to drill and sample the holes.</i></p> <p><i>The Company contracted Impact Drilling for the September 2024 drill campaign.</i></p>

<p><i>Drill sample recovery</i></p>	<p><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></p> <p><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></p> <p><i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i></p>	<p><i>The 2024 drill campaign recorded satisfactory drill sample recovery. The sample weights were not recorded on site, but the samples were weighed once received at the laboratory. The samples weights show good overall recoveries with smaller samples weights recorded in the top 1-2m.</i></p> <p><i>During the Sept 2024 drill program the 1m samples were collected from a levelled cone splitter affixed to the side of the drill rig.</i></p> <p><i>It is unlikely the lower weights encountered in the top 1 - 2m of the holes has biased the samples particularly with the style of mineralisation.</i></p> <p><i>The samples were drilled mostly dry minimising sample bias</i></p>
<p><i>Logging</i></p>	<p><i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i></p> <p><i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></p> <p><i>The total length and percentage of the relevant intersections logged.</i></p>	<p><i>Geological logs exist for the September 2024 drill program.</i></p> <p><i>Logging of individual 1 metre intervals was completed using logging code dictionary which recorded weathering, colour, lithology and observed commentary to assist with determining manganese mineralisation.</i></p> <p><i>Logging and sampling has been carried out to industry standards.</i></p> <p><i>Drill holes were geologically logged in their entirety and a reference set of drill chips were collected in 20m interval chip trays for the drill program. The chip trays were all photographed on site at the end of drilling each hole.</i></p> <p><i>All metres drilled were logged</i></p>

<p><i>Sub-sampling techniques and sample preparation</i></p>	<p><i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></p> <p><i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></p> <p><i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></p> <p><i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></p> <p><i>Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.</i></p> <p><i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></p>	<p><i>The 1m RC samples were gathered by using a levelled cone splitter of the side of the rig.</i></p> <p><i>The samples were submitted to Bureau Veritas who dried the sample for 12 hrs and pulverised the entire sample until 95% passing 105µm. This method is considered appropriate to ensure sample representivity</i></p> <p><i>The samples were dominantly dry.</i></p> <p><i>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%</i></p> <p><i>The sub sampling technique and quality control procedures is considered appropriate to ensure sample representivity</i></p> <p><i>The sample size is considered appropriate for the grain size and style of mineralisation</i></p>
<p><i>Quality of assay data and laboratory tests</i></p>	<p><i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></p> <p><i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i></p> <p><i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</i></p>	<p><i>The samples were submitted to Bureau Veritas in Canningvale, WA.</i></p> <p><i>The 2 – 3kg samples were weighed and dried prior to pulverising 100% of the sample 95% passing 105µm.</i></p> <p><i>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>.</i></p> <p><i>Loss on Ignition (LOI) was also measured by Thermo Gravimetric Analysis (TGA)</i></p> <p><i>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.</i></p> <p><i>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.</i></p> <p><i>The CP is satisfied that the analysis was completed to an acceptable standard in the context in which the results have been reported.</i></p>



Verification of sampling and assaying	<p>The verification of significant intersections by either independent or alternative company personnel.</p> <p>The use of twinned holes.</p> <p>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</p> <p>Discuss any adjustment to assay data.</p>	<p>Validation of the drilling files (collar, assay and lithology) was undertaken with field and data entry cross checks</p> <p>Adjustment of elemental oxides to primary element was completed using well known conversion factors.</p> <p>There were no twin holes</p> <p>There has been no adjustment to the assay data</p>
Location of data points	<p>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.</p> <p>Specification of the grid system used.</p> <p>Quality and adequacy of topographic control.</p>	<p>All drill holes in the project area were surveyed by handheld GPS with an accuracy of +/-5 m. The accuracy of the location of the drill collars is sufficient at this stage of exploration and resource development.</p> <p>The grid system used: WGS 84 / UTM zone 51S.</p>
Data spacing and distribution	<p>Data spacing for reporting of Exploration Results.</p> <p>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.</p> <p>Whether sample compositing has been applied.</p>	<p>The 2024 drilling completed at W2 was conducted via a conventional drill grid. The nominal drill spacing was 40 m along east-west traverses and each traverse was spaced approximately 40 m apart north-south.</p> <p>The drill spacing was sufficient to establish grade and geological continuity.</p> <p>No sample compositing has been applied.</p>
Orientation of data in relation to geological structure	<p>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</p> <p>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.</p>	<p>At W2 drill lines were oriented east-west across the strike of the primary mineralisation trend. The drill holes were completed at 90 degrees (vertical).</p> <p>At W2 the mineralisation is relatively flat lying exhibiting a gentle dip to the east.</p> <p>The drill grid is assumed to be located both perpendicular to the planar orientation of the key mineralised horizon with no or limited bias introduced with respect to the strike or dip of the mineralised horizon.</p>

Sample security	The measures taken to ensure sample security.	<p>The samples were collected into bulka bags, sealed with cable ties and stored on site until the drill program was completed.</p> <p>The samples were then trucked to Perth in three consignments and delivered directly to Bureau Veritas in Canningvale.</p> <p>The bulka bags were inspected and audited by Bureau Veritas who did not report any suspicious or tampered samples.</p>
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	<p>No audits or reviews have taken place on the sampling techniques or data</p> <p>The CP was on site for the entire 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</p>

## Section 2 – Reporting of Exploration Results

Criteria	Explanation	Comment
Mineral tenement and land tenure status	<p>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.</p> <p>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.</p>	<p>The W2 mineralisation is located within E46/1407 held 100% by Black Canyon Ltd. Tenement E47/1407 was granted on the 11/04/2022 and expires on 10/04/2027</p> <p>The tenement upon which W2 is located are subject to a native title agreement with the Karla Nyiyaparli Aboriginal Corporation. Archaeologic and Ethnographic heritage surveys have been completed on the W2 deposits which has enabled the drilling to be completed. Further Heritage surveys will be required to continue ground disturbing activities beyond the current drill areas.</p> <p>There are no other known impediments to obtaining a licence to operate in the area.</p>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<p>No other historic exploration has been completed on the tenement for manganese on E46/1407.</p> <p>For W2 Black Canyon completed a ground reconnaissance exercise in 2023 to map the manganese enrichments and determine down dip upside. The exercise proved significant manganese enrichment throughout the project areas both as outcropping, sub-cropping and as substantial float material. The early reconnaissance groundwork by Black Canyon was used as a basis for the 2023 DDIP survey and Sept 2024 RC drilling programme.</p>
Geology	Deposit type, geological setting and style of mineralisation.	<p>The mineralisation model at W2 is preliminary but it appears to be a fault related hydrothermal stratabound deposit. There may be a supergene overprint to the original hydrothermal mineralisation.</p> <p>The mineralisation is located within a sedimentary sequence. From the base to the top of the sequence the geology comprises footwall dolomite, spotted manganese dolomite, massive manganese and manganese dolomite breccia overlain by hangingwall dolomite. The consistency</p>

Criteria	Explanation	Comment
		<p>of the mineralisation down dip and along strike has been interpreted to represent fault related, hydrothermal stratabound style of manganese mineralisation. Goethite alteration is common above the manganese zone and hematite was logged within the mineralised zones as jaspilitic bands. Manganese intensity increases towards the base of the sequence.</p> <p>The overall geological sequence is dipping very shallowly to the east but is also openly folded with a northerly axial plane forming undulating outcrops. Several large north-easterly faults can be identified along strike associated with surface mineralisation.</p> <p>The lithological sequence of the W2 prospect principally consists of the overlying Enachedong Formation carbonates overlying the Stag Arrow Formation sediments from the Proterozoic Manganese Group of the southern Oakover Basin. The mineralisation style at W2 is stratabound and maybe associated with hydrothermal fluids replacing a suitable reactive host rock at the base of the Enachedong Formation. Faults and structure are considered important features of this style of mineralisation with multiple north east trending faults visible from surface imagery.</p>
Drill hole Information	<p>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:</p> <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> <p>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.</p>	<p>See drill hole location plans and figures in main body of the release.</p> <p>A listing of drill holes and their corresponding coordinates, elevation and depth are listed in Appendix 2.</p> <p>All drill holes are reported</p>



Criteria	Explanation	Comment
Data aggregation methods	<p><i>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.</i></p> <p><i>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.</i></p> <p><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></p>	<p><i>No grade cutting to assays has been undertaken.</i></p> <p><i>Aggregation of samples has been undertaken using simple average calculations for each 1m sample.</i></p> <p><i>Manganese intervals have been reported at 10% Mn cut off allowing 1m internal dilution that enables the total reported grade to be greater than 10% Mn.</i></p> <p><i>Assays have been reported as elements</i></p>
Relationship between mineralisation widths and intercept lengths	<p><i>These relationships are particularly important in the reporting of Exploration Results.</i></p> <p><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></p> <p><i>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').</i></p>	<p><i>The W2 Prospect is mostly flat lying exhibiting a gentle dip of mineralisation to the east and 90-degree (vertical) drill holes considered appropriate.</i></p> <p><i>The drill results reported are interpreted to represent close to true widths of the mineralisation and are reported as down hole length.</i></p>
Diagrams	<p><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></p>	<p><i>Refer images within the body of this release for further details.</i></p>
Balanced reporting	<p><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></p>	<p><i>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</i></p> <p><i>APPENDIX 2- contains the location, drill holes details and assay results as received for the September 2024 drill program for the WD01MG and WD02HG composites</i></p> <p><i>Holes denoted with NSR indicated that no mineralisation over 10% Mn was detected in that hole.</i></p>

Criteria	Explanation	Comment
<i>Other substantive exploration data</i>	<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>	<i>At W2 IP surveys have been undertaken and have been found to be useful in identifying high chargeability and low resistivity anomalies associated with manganese mineralisation.</i>
<i>Further work</i>	<p><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></p> <p><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></p>	<p><i>Detailed mapping and sampling is required to delineate the outcropping mineralisation boundaries</i></p> <p><i>DDIP surveys could be used to identify buried stratabound and fault hosted mineralisation prior to any further drilling. The IP surveys could be completed along strike to the north and to the east.</i></p> <p><i>Gravity surveys might also detect deeper buried mineralisation associated with the underlying sedimentary sequences.</i></p>

**APPENDIX 2: SUMMARY DRILL HOLE COLLAR COMPOSITE DATA FOR W2**

Hole ID	East (GDA94 - Z51)	North (GDA94 - Z51)	RL	EOH	Dip	Azimuth	Deposit
WDRC012	322723	7523872	418	20	-90	360	W2
WDRC013	322760	7523884	406	20	-90	360	W2
WDRC026	322725	7523963	410	12	-90	360	W2
WDRC027	322763	7523960	408	20	-90	360	W2
WDRC031	322720	7524056	395	20	-90	360	W2
WDRC032	322753	7524061	402	20	-90	360	W2

HoleID	From (m)	To (m)	Zone	Composite ID	Mn (%)	Fe (%)	Al (%)	Si (%)	Ca (%)	K (%)	Mg (%)	P (%)
WDRC032	4	5	Med Grade	WD01MG	32.7	2.4	1.7	4.3	6.2	1.2	3.8	0.015
WDRC032	5	6	Med Grade	WD01MG	13.6	1.5	1.8	4.8	13.6	1.3	7.7	0.014
WDRC032	6	7	Med Grade	WD01MG	22.4	2.3	2.2	7.3	9.1	1.7	4.2	0.018
WDRC032	7	8	High Grade	WD02HG	43.5	1.6	1.6	3.8	3.4	1.2	1.3	0.012
WDRC032	8	9	High Grade	WD02HG	53.8	1.0	0.7	1.6	0.8	0.6	0.6	0.008
WDRC031	1	2	Med Grade	WD01MG	33.8	2.8	2.6	8.8	2.2	1.9	2.6	0.016
WDRC031	2	3	Med Grade	WD01MG	14.5	2.8	3.4	20.3	3.2	2.7	2.8	0.023
WDRC031	3	4	Med Grade	WD01MG	29.8	2.2	1.9	7.0	5.8	1.2	3.6	0.007
WDRC031	4	5	High Grade	WD02HG	47	1.1	1.6	4.9	1.3	0.7	1.0	0.011
WDRC031	5	6	High Grade	WD02HG	41.1	4.4	1.6	5.0	2.7	1.2	1.0	0.01
WDRC027	4	5	Med Grade	WD01MG	30.8	8.2	2.7	7.7	1.9	0.6	2.5	0.022
WDRC027	5	6	Med Grade	WD01MG	35.5	5.2	2.3	7.6	1.7	0.7	2.1	0.024
WDRC027	6	7	Med Grade	WD01MG	16.5	2.5	2.1	9.5	9.0	1.6	5.5	0.018
WDRC027	7	8	High Grade	WD02HG	40.5	2.0	2.0	7.2	2.4	1.6	1.0	0.017
WDRC027	8	9	High Grade	WD02HG	38.6	4.0	1.7	5.7	2.7	1.6	1.6	0.012
WDRC026	0	1	Med Grade	WD01MG	20.4	2.9	2.9	17.3	3.5	2.1	2.0	0.007
WDRC026	1	2	High Grade	WD02HG	43.1	1.7	1.5	4.7	2.9	0.9	1.7	0.008
WDRC026	2	3	High Grade	WD02HG	31.7	4.4	2.2	9.0	3.1	1.7	2.4	0.01
WDRC013	2	3	Med Grade	WD01MG	12.8	4.3	3.3	11.8	7.3	2.2	5.4	0.012
WDRC013	3	4	Med Grade	WD01MG	34.5	3.4	1.4	6.0	3.9	1.1	3.2	0.013
WDRC013	4	5	Med Grade	WD01MG	7.81	1.7	2.0	10.0	12.5	1.5	7.5	0.012
WDRC013	5	6	Med Grade	WD01MG	13.6	2.0	2.5	8.8	11.1	2.1	5.8	0.016
WDRC013	6	7	High Grade	WD02HG	35.2	2.4	2.1	6.2	4.0	1.4	2.6	0.017



WDRC013	7	8	High Grade	WD02HG	50.6	1.9	0.7	3.2	1.0	0.7	0.8	0.007
WDRC012	0	1	Med Grade	WD01MG	15.1	5.9	3.2	19.6	2.9	2.3	2.2	0.012
Composite average			Med Grade	WD01MG	22.3%	3.3%	2.4%	10.1%	6.3%	1.6%	4.1%	0.015%
Composite average			High Grade	WD02HG	42.5%	2.4%	1.6%	5.1%	2.4%	1.1%	1.4%	0.011%