BLACK CANYON

ASX Announcement



27 November 2023 ASX:BCA

KR1 and KR2 Mineral Resource Estimate Exceeds 100 Mt

- **Maiden Mineral Resource estimate (MRE) of 103 Mt @ 10.4% Mn containing 10.7 Mt of manganese at the KR1 and KR2 deposits, Balfour Manganese Field (BMF).**
  - **KR1 of 79 Mt @ 10.0% Mn (100% Indicated)**
  - **KR2 of 24 Mt @ 11.9% Mn (Inferred)**
- The new KR1 & KR2 MRE is in addition to the previously announced Flanagan Bore MRE of **171 Mt @ 10.3% Mn[1] containing 17.7 Mt of manganese**.
  - **FB3 Deposit: 116 Mt @ 10.2% Mn** (45% Measured and 55% Indicated)
  - **LR1 Deposit: 56 Mt @ 10.4% Mn** (90% Measured and 10% Indicated)
- Further MREs underway for Damsite and Balfour East, along with an Exploration Target estimate at Pickering Creek.
- **Global Mineral Resource estimate across the Balfour Mineral Field totals 275 Mt @ 10.3% Mn containing 28.4 Mt of manganese** classified as Measured (36%) Indicated (55%) and Inferred (9%).
- The Balfour Mineral Field confirmed to host multiple large-scale deposits with significant contained manganese, providing a solid platform to establish Ore Reserves through development studies for both High Purity Manganese Sulphate (HPMSM) feedstock and manganese concentrates for the steel industry.

Australian manganese explorer and developer, Black Canyon Limited ("**Black Canyon"** or "**the Company"**) (ASX: BCA) is pleased to announce that the July 2023 reverse circulation (RC) drill program delivered significant Maiden Mineral Resource estimates across the Company's 100% owned KR1 and KR2 deposits located with the Balfour Manganese Field Projects totalling **103Mt @ 10.4% Mn (73% Indicated and 27% Inferred) containing 10.7 Mt of Manganese (Table 1).**

Black Canyon Executive Director, Brendan Cummins, said: *"The Balfour Manganese Field (BMF) deposits have continued to exceed expectations with the latest increase in resource tonnes and contained manganese from the KR1 and KR2 deposits. To put this into perspective, in the two and half years since*

[1] ASX release 24/11/2022 Mineral Resource increases by 64% at Flanagan Bore

Registered Address
283 Rokeby Road
Subiaco, WA, 6008

Telephone: +61 8 9426 0666
Email: info@blackcanyon.com.au
Website: www.blackcanyon.com.au

listing, Black Canyon has discovered more manganese than is held by any other company in Western Australia with a massive inventory of 28.4 Mt of contained manganese. We are now completing Mineral Resource estimates for Balfour East and Damsite, which will add further tonnes with significant potential upside from the 10 km long Pickering Creek Exploration Target.

"Furthermore, the Company has demonstrated the amenability of the BMF deposits to produce HPMSM for batteries used in electric vehicles [2]. The BMF deposits also have the potential to produce a 30 - 33% manganese concentrate suitable for the manganese alloy steel market through simple beneficiation using washing/scrubbing and dense media separation."

"The increased mineral resource scale across the Balfour Mineral Field, enables the Company to revisit the Scoping Study completed on the Flanagan Bore Project that evaluated Production Targets of 36.1 Mt @ 11.7% Mn over a 20-year mine life, generating a pre-tax NPV_8 of $134M and pre-tax IRR of 67%. [3] Having multiple mineral resources will allow the Company to investigate a multi-pit operation with single processing site or a single pit/plant operation in addition to reviewing throughput size."

"In parallel, HPMSM hydrometallurgical testwork is continuing and the Company has commenced larger scale processing with the delivery of 400kg of sample material from the KR1 and KR2 deposits. This next round of testwork will help to optimise the test parameters across the leaching and purification stages and crystallisation processes that can be used for further design refinement for a planned Pilot Plant."

"The Company has delivered on its strategy to demonstrate the scale of the BMF to provide development options to produce manganese concentrate for the steel industry and a HPMSM feedstock. Black Canyon will continue to execute upon its strategy with a focus on completing technical studies, while engaging with top tier end users and high-quality counter parties."

The combined Global Mineral Resources discovered by Black Canyon across the Balfour Manganese Field including Flanagan Bore now totals **275 Mt @ 10.3% Mn** classified as Measured (36%) Indicated (55%) and (9%) Inferred for 28.4 Mt of contained Manganese (Table 2).

Table 1. Summary of Mineral Resources for the KR1 and KR2 deposits across the Balfour Manganese Field, Nov 2023

Summary of Mineral Resources[1-3]							
Deposit	**Mineral Resource Category**	**Material (Mt)[2]**	**In Situ Mn (Mt)**	**Mn (%)**	**Fe (%)**	**Si (%)**	**Al (%)**
KR1	Indicated	79	7.8	10.0	7.9	18.0	5.4
Total	**Indicated**	**79**	**7.8**	**10.0**	**7.9**	**18.0**	**5.4**
KR2	Inferred	24	2.9	11.9	10.6	19.2	5.0
Total	**Inferred**	**24**	**2.9**	**11.9**	**10.6**	**19.2**	**5.0**
Grand Total		**103**	**10.7**	**10.4**	**8.6**	**18.3**	**5.3**

Notes:
(1) Mineral resources reported at a cut-off grade of 7% Mn.
(2) Appropriate rounding has been applied.
(3) Refer to Appendix 1 JORC Table 1, Sections 1 to 3 and Appendix 2 for further details.

[2] ASX release 23/10/2023 Battery Grade Manganese Sulphate > 99% Achieved.

[3] ASX release 18/08/2022Robust Economics, long life mine with low development CAPEX confirmed from the Flanagan Bore Scoping Study

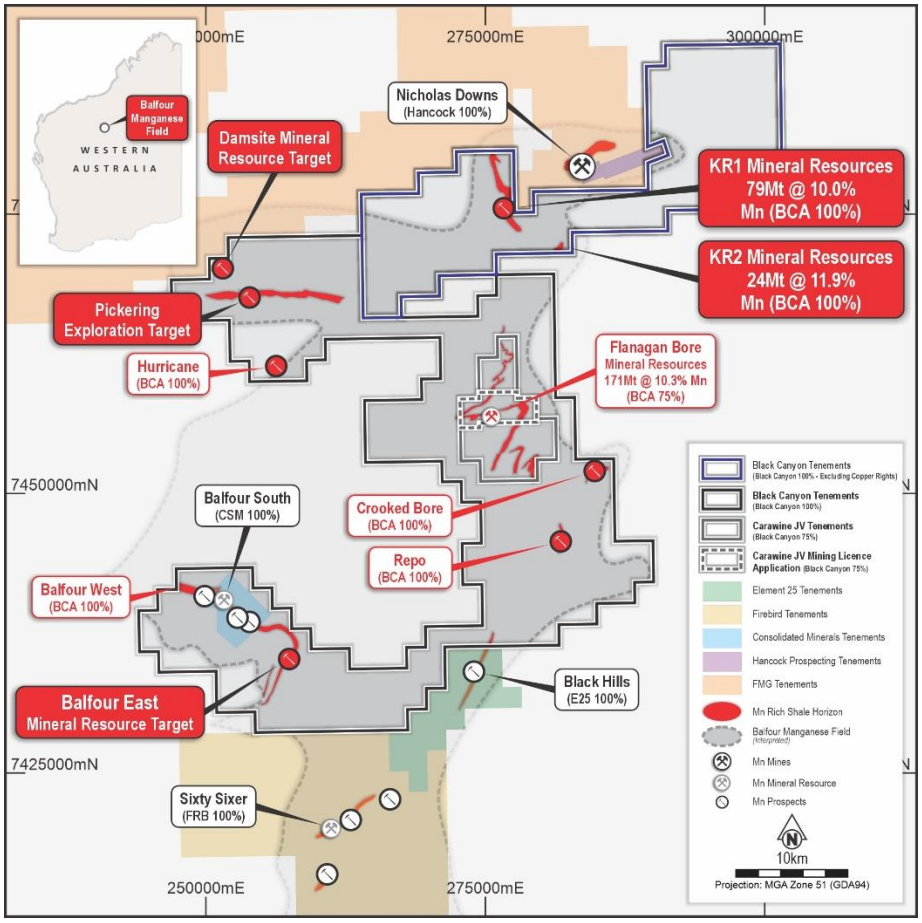


Figure 1. Location of the KR1, KR2, Balfour East, Damsite MRE targets and Exploration Target at Pickering from across the Balfour Manganese Field. Mn shale target horizon (red solid outlines).

Table 2. Summary of Global Mineral Resources across the Balfour Manganese Field, November 2023

Summary of Mineral Resources(1-3)							
Deposit	**Mineral Resource Category**	**Material (Mt)**	**In Situ Mn (Mt)**	**Mn (%)**	**Fe (%)**	**Si (%)**	**Al (%)**
FB3[4]	Measured	52	5.5	10.5	10.4	16.9	4.3
LR1[4]	Measured	47	4.9	10.3	8.4	16.7	4.6
Total	**Measured**	**100**	**10.4**	**10.4**	**9.4**	**16.8**	**4.4**
KR1[5]	Indicated	79	7.8	10.0	7.9	18.0	5.4
FB3[4]	Indicated	63	6.3	10.0	9.6	16.8	4.4
LR1[4]	Indicated	8	0.9	11.3	9.4	6.9	1.8
Total	**Indicated**	**150**	**15.1**	**10.1**	**8.7**	**16.9**	**4.8**
KR2[5]	Inferred	24	2.9	11.9	10.6	19.2	5.0
Total	**Inferred**	**24**	**2.9**	**11.9**	**10.6**	**19.2**	**5.0**
Grand Total		**275**	**28.4**	**10.3**	**9.1**	**17.1**	**4.7**

Notes:
(1) Mineral resources reported at a cut-off grade of 7% Mn.
(2) Appropriate rounding has been applied.
(3) Refer to Appendix 1 JORC Table 1, Sections 1 to 3 and Appendix 2 for further details.
(4) Flanagan Bore deposits under which Black Canyon owns 75%
(5) Deposit under which Black Canyon owns 100%

KR1 and KR2 Maiden Mineral Resource Estimate

Reverse Circulation drill results from the KR1 and KR2 prospects completed July 2023 by the Company have been reviewed and validated for the maiden Mineral Resource estimates. The work was completed under the supervision of Greg Jones, a specialist consultant in Mineral Resource estimates, metallurgy and processing technology, who is employed by IHC Mining (refer to Competent Person statement). A Summary of the Mineral Resource estimate and Reporting Criteria is attached to this announcement.

Table 1 displays the maiden Mineral Resource estimates for the KR1 and KR2 deposits. The grade tonnage curves are presented in Figures 2 to 5 and oblique and cross-section views of the KR1 and KR2 deposits are presented in Figures 6 to 9. Supporting JORC tables are presented in Appendix 1 and 2.

The Mineral Resources at KR1 and KR2 are hosted in mostly outcropping manganese enriched shales and form topographically elevated features. The Mineral Resources defined at KR1 and KR2 have been estimated utilising RC drilling completed by Black Canyon comprising 112 holes for 3,419 m of drilling.

At KR1, the Mineral Resource estimate is based on drillholes on traverses completed on 200 m spaced lines and 100 m spaced drillhole centres. The drill data shows the manganese enriched shale geology and grades are continuous downhole and across strike, which supports the Indicated Mineral Resource classification at this drill spacing.

At KR2, the Mineral Resource estimate is based on drillholes on traverses completed on 200 m spaced lines and 200 m spaced drillhole centres. The drill data shows the manganese enriched shale geology and grades are continuous downhole and across strike, which supports the Inferred Mineral Resource classification at this drill spacing.

KR1 and KR2 High-Grade Manganese Mineral Resources

A shallow, high-grade subset of mineralisation has been delineated across the KR1 and KR2 Mineral Resources and presented in Table 3. At an elevated cut-off grade of 11% Mn the Mineral Resource estimate totals 29 Mt @ 13.3% Mn.

As the Company progresses the development and feasibility studies, having access to shallow high grade manganese Mineral Resources has the potential to add significant value.

Table 3. High-grade Zone Mineral Resource estimate from KR1 and KR2 deposits, November 2023

Summary of Mineral Resources[1,3]							
Deposit	Mineral Resource Category	Material (Mt)[2]	In Situ Mn (Mt)	Mn (%)	Fe (%)	Si (%)	Al (%)
KR1	Indicated	15	2.0	13.1	9.8	18.0	6.2
Total	**Indicated**	**15**	**2.0**	**13.1**	**9.8**	**18.0**	**6.2**
KR2	Inferred	14	1.9	13.6	11.2	18.2	4.6
Total	**Inferred**	**14**	**1.9**	**13.6**	**11.2**	**18.2**	**4.6**
Grand Total		**29**	**3.9**	**13.3**	**10.5**	**18.1**	**5.5**

Notes:
(1) Mineral resources reported at a cut-off grade of 11% Mn.
(2) Appropriate rounding has been applied.
(3) Refer to Appendix 1 JORC Table 1, Sections 1 to 3 and Appendix 2 for further details.

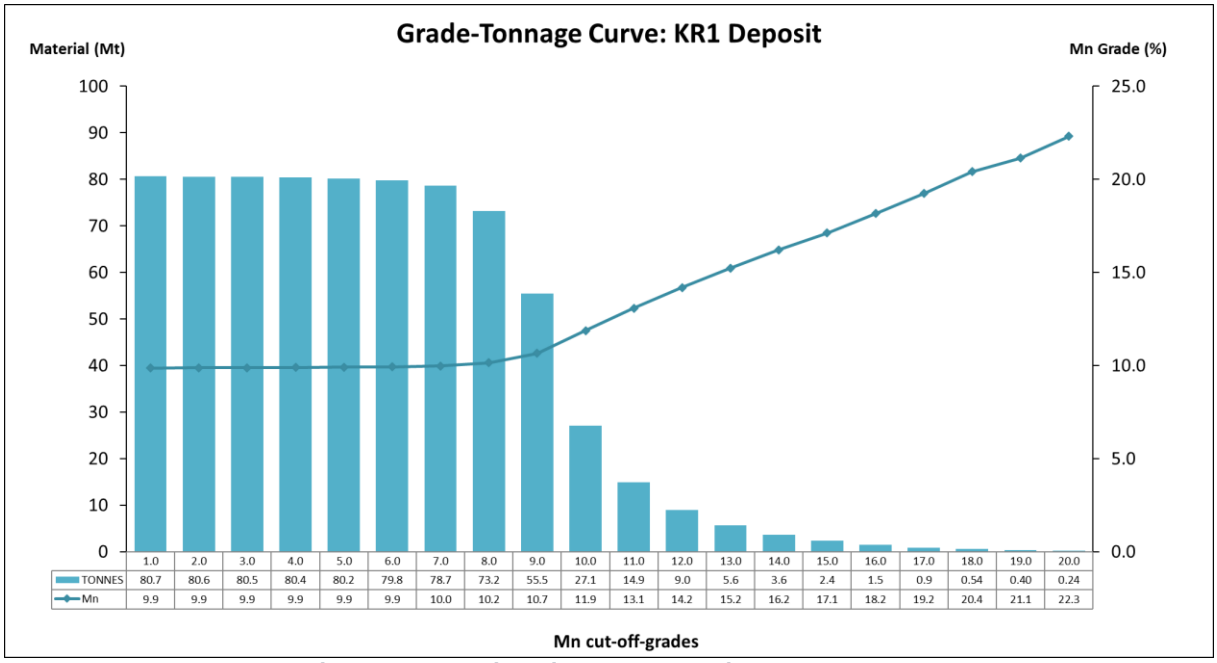


Figure 2. KR1 Mineral Resource grade-tonnage curve

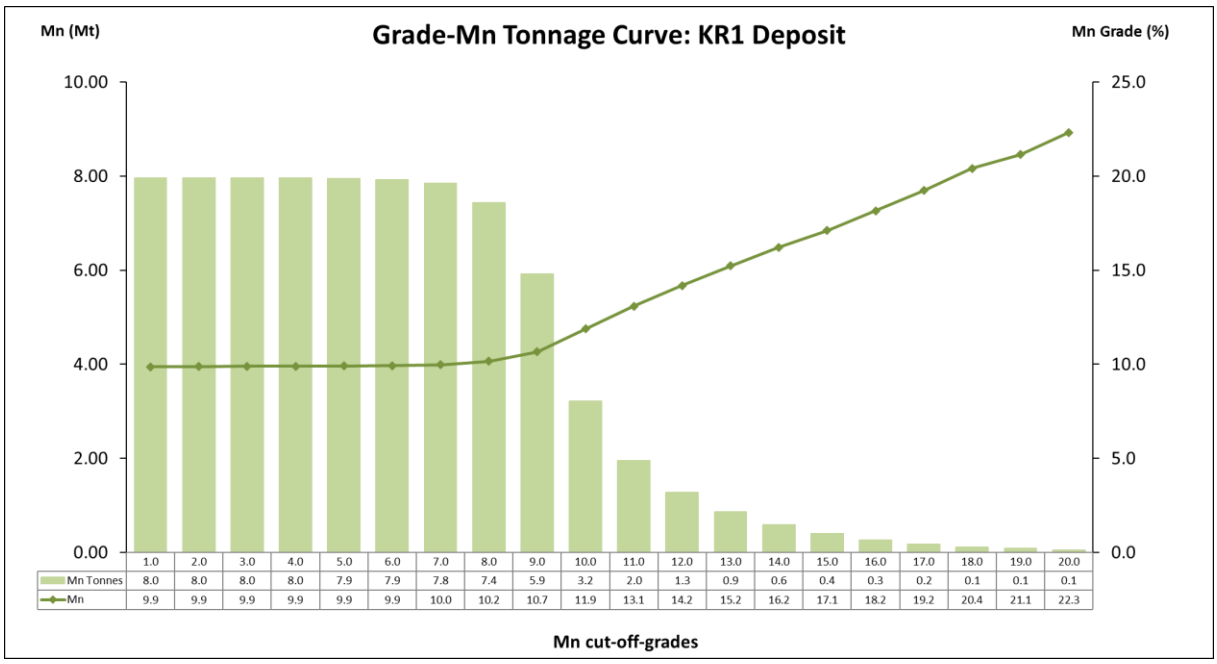


Figure 3. KR1 Mineral Resource grade-contained metal tonnage curve

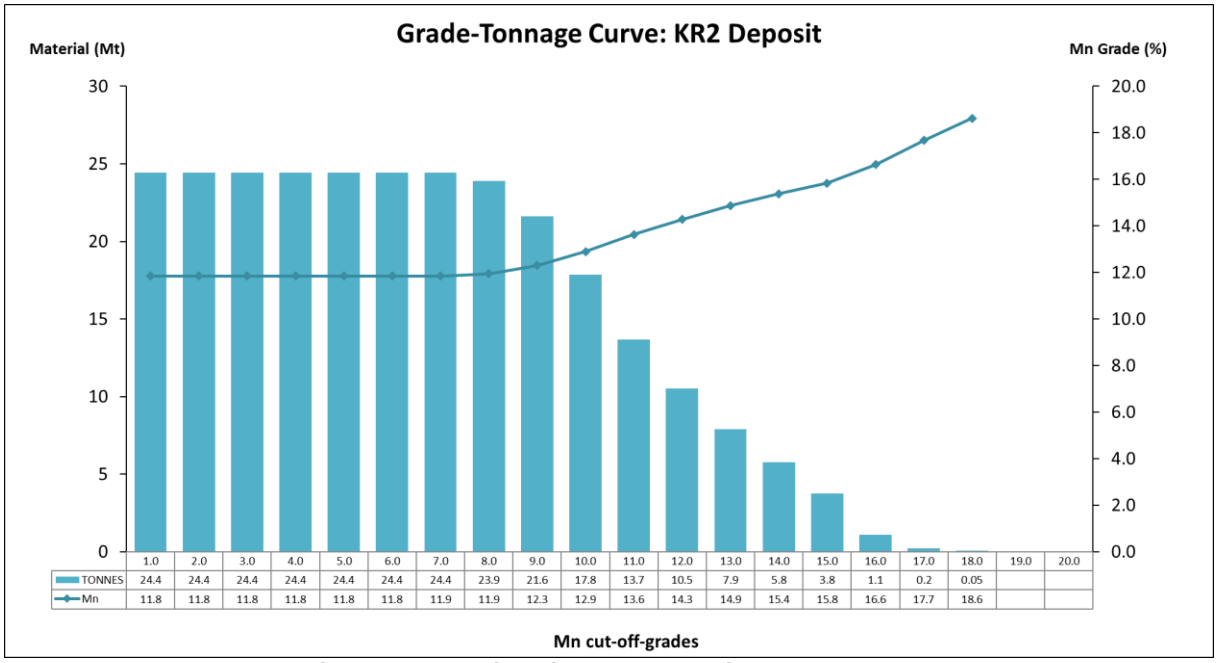


Figure 4. KR1 Mineral Resource grade-tonnage curve

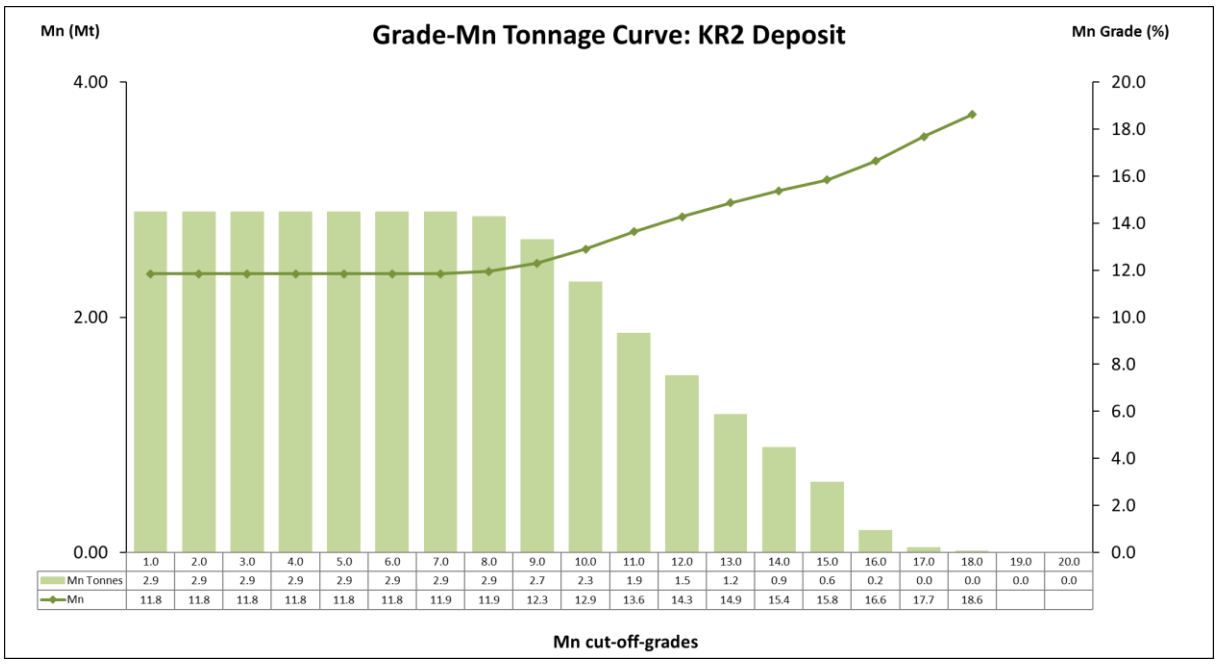


Figure 5. KR2 Mineral Resource grade-contained metal tonnage curve

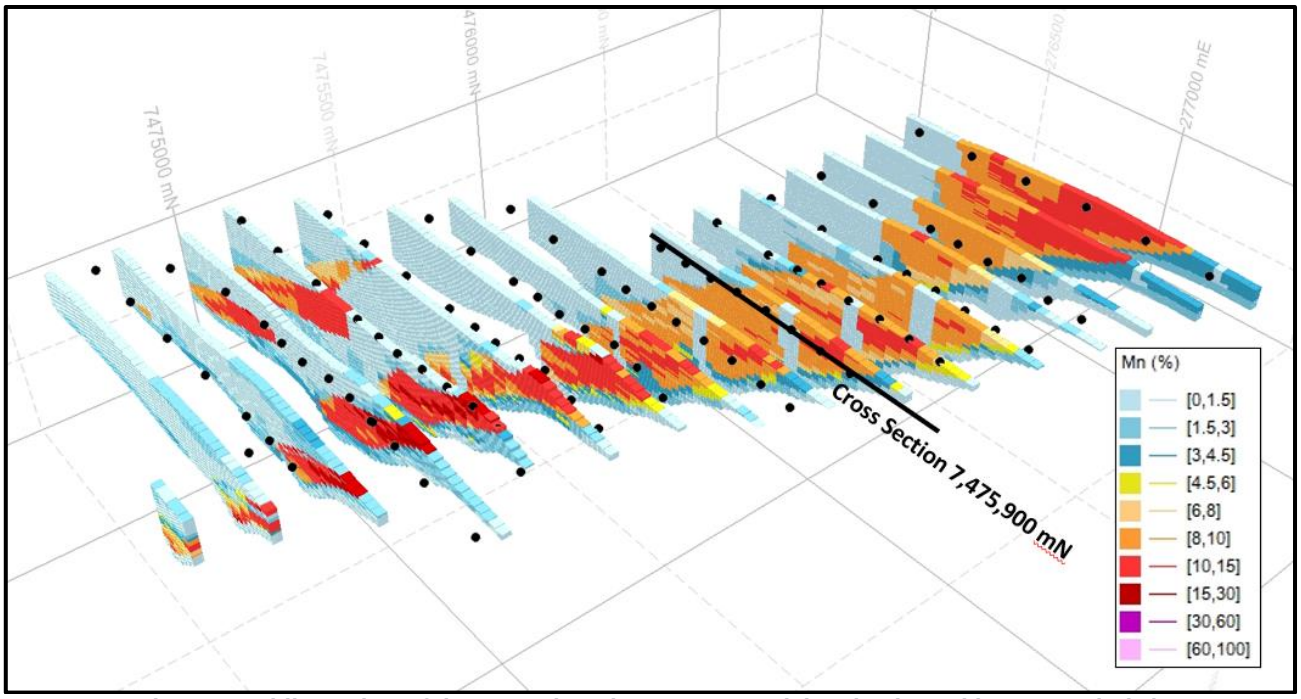


Figure 6. Oblique view of the KR1 Mineral Resource model and coloured by Mn grade (%).

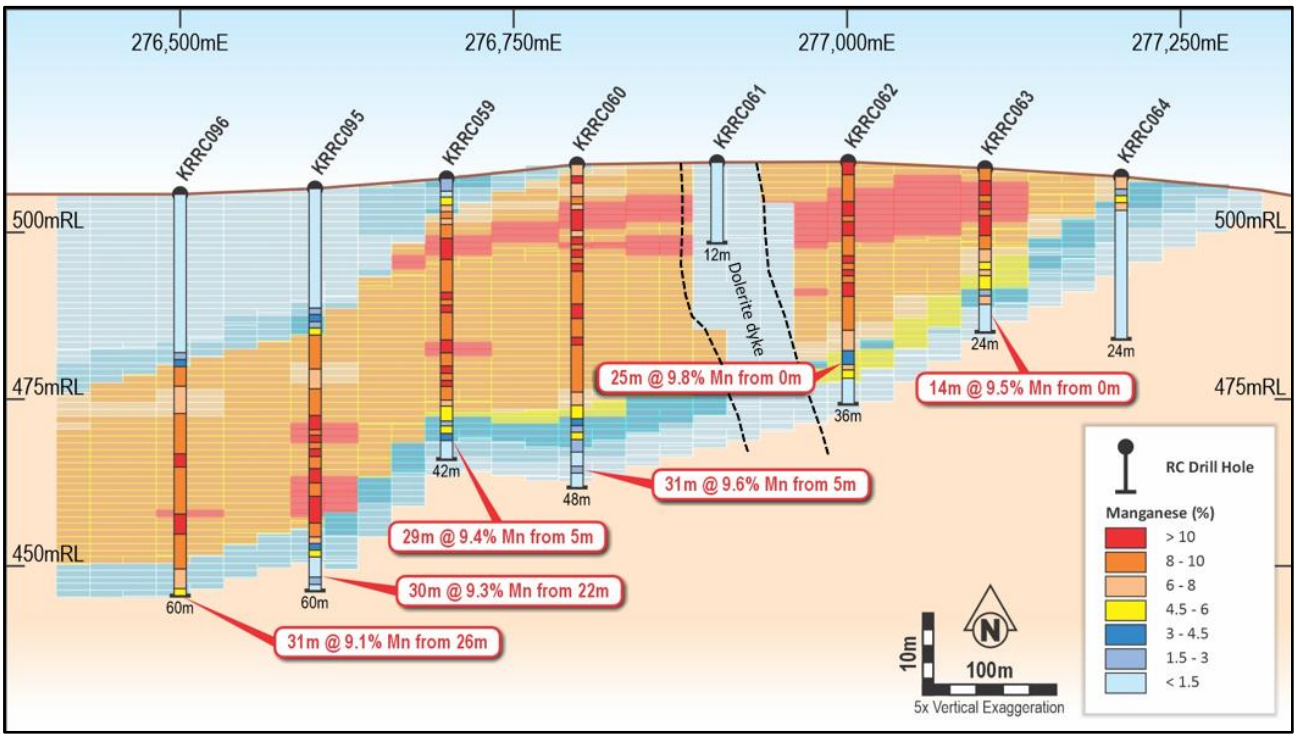


Figure 7. Type section 7,475,900mN (looking north) showing the KR1 Mineral Resource model cells and drill holes coloured by Mn grade (%).

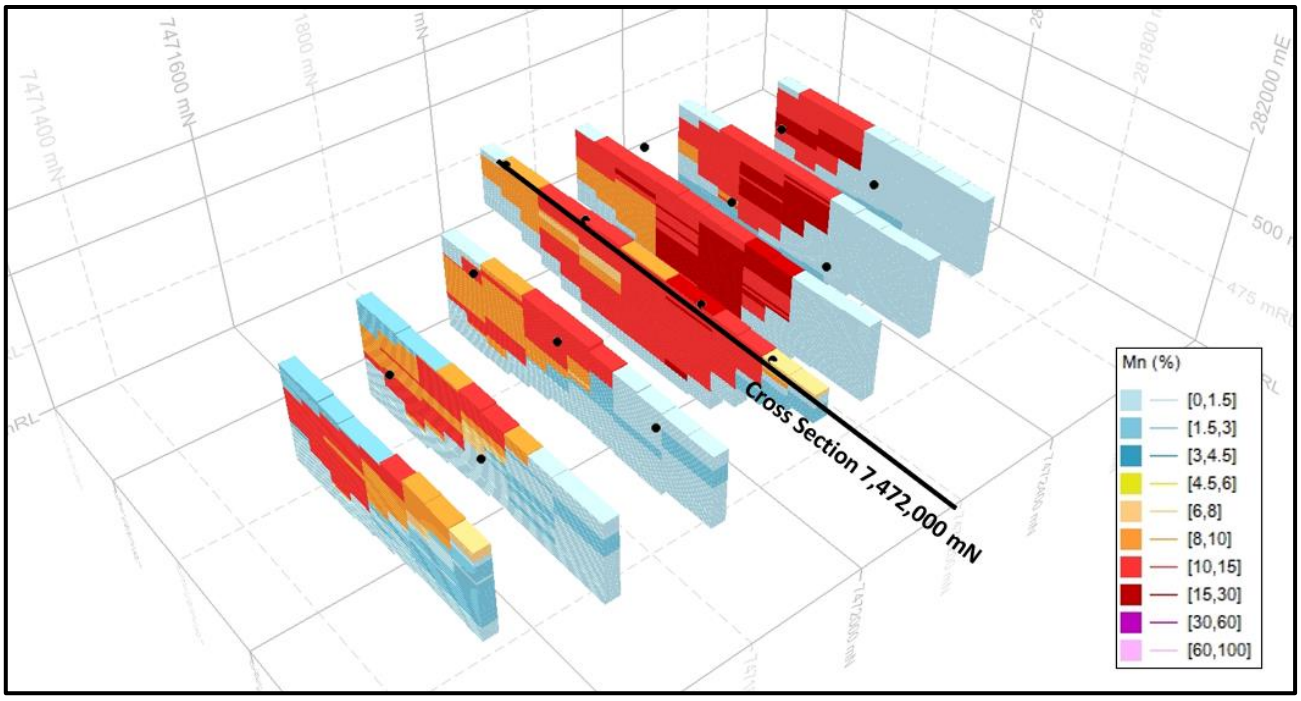


Figure 8. Oblique view of the KR2 Mineral Resource model coloured by Mn grade (%).

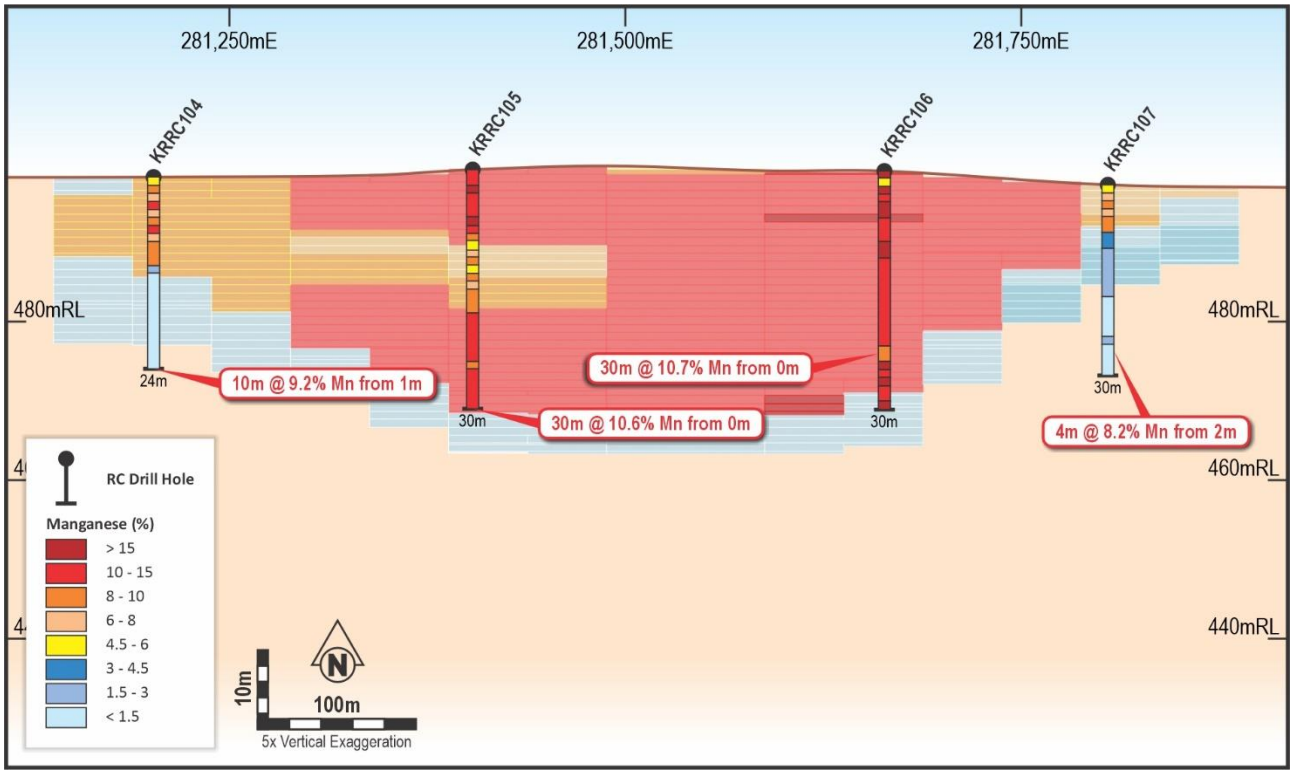


Figure 9. Type section 7,472,000 mN (looking north) showing KR2 Mineral Resource model cells and drill holes coloured by Mn grade (%).

SUMMARY OF MINERAL RESOURCE ESTIMATE AND REPORTING CRITERIA

As per ASX Listing Rule 5.8 and the JORC (Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (2012 Edition)) reporting guidelines, a summary of the material information used to estimate the Mineral Resource is detailed below (for further detail please refer to JORC Table 1, Sections 1 to 3 included below in Appendix 1).

Geology and geological interpretation

The Capricorn Orogen of Western Australia is host to significant manganese deposits of varying sizes and styles which are typically constrained to the Mesoproterozoic Edmund-Collier Basin. The most prominent of these is the Butcherbird manganese operation hosted in the Ilgarari Formation of the Collier Group. The Balfour Manganese Project is located within the Proterozoic Manganese Group which is part of the northern extent of the Collier Basin where it transitions to the Oakover Basin. Besides the Balfour Manganese Project there are also a number of recognised sedimentary Mn deposits within the Collier Basin including Flanagan Bore Project (BCA 75%), along with the well-known Woodie Woodie, Oakover, Nicholas Downs, Sixty Sixer, Balfour South and Ripon deposits. These deposits have a number of associated mineralisation styles such as supergene-enrichment, lateritic and fault hosted deposits.

The Collier Group and Manganese Group Mn deposits share similar qualities and are considered stratigraphic equivalents. In detail the Collier Basin comprises a Mesoproterozoic basin consisting of sedimentary rocks of the Collier and Manganese Groups. The important manganese bearing units of the Collier Group are the Ilgarari Formation (shale) and the Backdoor Formation (siltstone). The manganese bearing units of the Manganese Group are the Balfour Formation (shale) and the Woblegun Formation (siltstone) and underlying Enacheddong Dolomite. It unconformably overlies a portion of the Pilbara Craton, the Edmund Basin and Earaheedy Basin.

The local geology of the Balfour Manganese Project is dominated by shallow cover overlying shales from the Balfour Formation that overlie carbonate sequences ranging from calcareous shales and dolomite of the Enacheddong Dolomite. The sequence is also intruded by cross-cutting dolerite dykes and sills.

The geology at KR1 can be separated into a number of primary units:

a. Supergene enriched manganese shales often associated with a higher iron content that form a prominent ridge in the centre of the deposit, and typically extend from surface to 15 to 20 m depth.
b. A thick and widely distributed manganiferous enriched shale unit that contains supergene (manganese) enriched shale located between surface and 25 m depth.
c. At depth the fresh manganiferous olive to green shales of the Balfour shale persist with variable manganese enrichment.
d. A non-manganese bearing laterite layer is well developed on the southern drill lines and gets progressively thicker to the south and west. The laterite contains up to 31% Fe, but is low in Mn (<1%).
e. A calcareous-manganese shale is encountered at the north end of the deposit and is often mapped at surface. It has a laminated appearance, with carbonate and manganese bands as opposed to the more massive manganese shale observed in the south.
f. Below the fresher manganiferous shales, an unmineralized green and brown laminated shale is encountered.
g. An 80 wide dolerite dyke striking to the NNE bisects the deposit. The dyke is subvertical and separates the manganese enriched shales.

The KR1 deposit is oriented approximately north-south and is dipping gently to the west. The KR1 deposit maybe folded and is bisected by faults and both dolerite dykes and sills. The main dyke has displaced the western side upwards. In the north, this effectively cuts off the mineralisation (the mineralised horizon has

been eroded), whereas in the south it results in a repetition of the mineralised horizon near the surface (the mineralised horizon has been displaced upwards from depth).

The KR1 deposit is strongly weathered at surface down to a depth of between 10 and 30 m. The base of oxidation is typically deeper at the southern end of the deposit, becoming gradually shallower towards the north.

The KR2 deposit appears to be geologically simpler than the KR1 deposit.

a. The surface enriched manganese shales which are typically higher grade and maybe ferruginised to some extent and occur from surface to 15 m depth.
b. A thick and widely distributed manganiferous shale unit that contains the supergene (manganese) enriched shale located between surface and 30 m depth.
c. At depth the fresh manganiferous olive to green shales of the Balfour shale persist but have a lower manganese grade.

No obvious faults have been mapped or interpreted from the wide spaced drill data at KR2. The deposit appears to form an open synformal fold structure but requires further extension drilling to confirm the morphology. The oxidation zone is typically deeper than observed at KR1 and extends down to 30m which is essentially the depth of the drilling completed at this deposit.

The KR1 and KR2 resources have been zoned into three domains including basement. Zone 1 comprises unmineralised Balfour shale. Zone 2 is the higher-grade target mineralisation comprising brown grey, Balfour shale unit that is manganese enriched. The basement (Zone 200) has been used to control the interpolation of higher-grade Mn values into the un-sampled and low-grade area of the deposit.

An oxidation and transition/fresh rock boundary has also been applied to the block model.

Drilling techniques and hole spacing

The Mineral Resource estimate is based on drill programs designed and managed by Black Canyon staff and contractors during July 2023. The Company drilled data was tabulated into standard collar, lithology and assay Excel files that were provided to IHC Mining by Black Canyon who checked for out-of-range errors, inconsistencies and modified the header information prior to import into Datamine using standard routines. A list of drillhole collars and manganese intersects > 7% Mn are presented in Appendix 2.

Drilling has been conducted using conventional regular drill grids. At KR1, the nominal drill hole spacing is 100 m along east-west traverses with each traverse spaced approximately 200 m apart north-south. At KR2 the nominal drill hole spacing is 200 m along east-west traverses with each traverse spaced approximately 200 m apart north-south. The main objective of the maiden drill program was to target areas of high prospectivity which coincide with manganese outcrop/subcrop and targets generated from remote sensing images.

Both the KR1 and KR2 deposits were not drilled prior to Black Canyon's 2023 program.

Impact Drilling using a truck mounted 660 Schramm drill rig with an on board Sullair 1350/500 compressor completed the July 2023 drill program. The drill contractor used a conventional 5.25-inch RC hammer drill bit to drill the holes.

Sampling and sub-sampling techniques

The RC drilling completed by Black Canyon was logged and sampled on 1 m intervals (Figure 10). The samples were collected into calico bags from a side mounted adjustable cone splitter that was set to collect a 2 to 3 kg sample representing a 1 m interval which was submitted for analysis. The samples in the calico bags were not weighed on site but were weighed after oven drying at the laboratory in Perth. The bulk reject was collected in a large green plastic sample bag and stored on site. Prior to the commencement of drilling each hole the cone splitter was levelled to minimise sample bias. The cone splitter was regularly

checked for obstructions, contamination and cleaned out when required. The drilling was predominantly dry.



Figure 10. July 2023 RC drill program at KR1 designed and managed by Black Canyon staff and consultants

Sample analysis method - XRF

The elemental oxides were determined for both the historic and recent drill samples completed by Black Canyon using whole rock fusion (XRF – fused disc) analysis completed by Bureau Veritas Minerals method XF103. The oxides analysed are outlined in Table 4 in addition to the conversion factor used to convert oxides assay results to elemental results.

Table 4 Mineral species classification and definition and oxide conversion factor for the elements estimated

MINERAL SPECIES CLASSIFICATION	
Mineralogy	Definition
Aluminium oxide	Al2O3
Barium oxide	BaO
Calcium oxide	CaO
Cromium (III) oxide	Cr2O3
Iron	Fe
Iron (III) oxide	Fe2O3
Potassium oxide	K2O
Magnesium oxide	MgO
Manganese	Mn
Manganese oxide	MnO
Sodium oxide	Na2O
Phosphate pentoxide	P2O5
Silicon dioxide	SiO2
Strontium oxide	SrO
Titanium dioxide	TiO2

Element	Oxide	Factor
Al	Al2O3	1.889
Ca	CaO	1.399
Fe	Fe2O3	1.430
K	K2O	1.205
Mg	MgO	1.658
Mn	MnO	1.291
Na	Na2O	1.348
P	P2O5	2.291
Si	SiO2	2.139

Estimation methodology

Drill hole sampling has remained consistent at 1 m intervals for all drill holes completed at KR1 and KR2 completed by Black Canyon. This is considered good practice and provides both a consistent basis and adequate resolution for both geological interpretation and grade interpolation during the domaining and model build.

Inverse distance cubed (ID3) was used to interpolate grades and values into the block model. Part of the rationale for using ID3 is centred on the continuity of mineralisation for the manganese enriched Balfour shale both along strike, across strike and down hole.

Effectively, there is an averaging over the length of the sample interval down hole (in this case being 1 m) therefore there is already a dilution effect on any potential high-grade mineralisation leading to inverse distance being a less complex and more straight forward methodology.

An average density value of 2.5 was applied to the Zone 2 Indicated and Inferred areas of the KR1 and KR2 models based on previous downhole density gathered by ABIM Solutions Pty Ltd from the LR1 and FB3 resource area. Density measurements were collected using a down hole probe that provided bulk density readings at regular intervals along the length of a borehole. The density values applied to the MRE at LR1 and FB3 were as follows 2.38 for Zone 1, 2.52 for Zone 2 and 2.69 for basement.

It is recommended that future studies include down hole density surveys in the KR1 and KR2 deposits that are currently informed by average density values by domain to provide additional support for potential future upgrades of material to high confidence classifications.

Cut-off grades

The Mineral Resources stated for KR1 and KR2 deposits was estimated using a cut-off grade of 7% Mn. High-grade zones have also been estimated for KR1 and KR2 deposits using a cut-off grade of 11% Mn. The selection of an Mn cut-off grade used for reporting the Mineral Resources was based on the experience of the Competent Person, by considering similar style deposits in comparable geological settings and by considering the continuity of mineralisation at the cut-off grade.

Classification criteria

The JORC Code (2012) classification for the KR1 and KR2 deposits has taken into consideration the drill hole spacing, down hole sampling support with respect to the mineralised domain (Zone 2) and assessment of grade continuity by use of variography.

The KR1 and KR2 deposits have been assigned a JORC classification of Indicated and Inferred respectively, which is supported by the following criteria:

- Regular drill hole average spacing that defines the Mn % distribution trends.
- Geological and grade continuity seen within the defined domains supported by geo-statistics; and
- Domain controlled variography for Mn grade that supports the drill spacing for the assigned JORC classification.
- Density values derived from previous down hole density surveys completed on similar manganese enriched shale mineralisation modelled from LR1 and FB3.

All drill hole sampling has been carried out at regular 1 m intervals down hole. The use of industry standard laboratory and the drilling, sampling and assaying procedures overall have fully supported the development of an Indicated and Inferred Mineral Resource estimate. The QAQC data collected by Black Canyon to support the assaying process demonstrates satisfactory results which are adequate for this stage of the project. The sample support and distribution of assays is to an appropriate level of density for the domain interpretation and the resultant JORC classification.

Mining and metallurgical methods and parameters

No mining parameters have been applied to the KR1 and KR2 deposits. Sighter level testwork completed at KR1 includes beneficiation, comprising scrubbing and washing on surface mineralisation to confirm the upgrading performance of the material. The KR1 sample upgraded from an *insitu* grade of 25% Mn to 36.6% Mn. This was followed by initial leaching testwork for KR1 that yielded 97% of the Mn prior to producing battery grade HPMSM.[4]. Diamond core drilling is planned across the deposits in 2024 and larger volume samples will be used to complete larger scale scrubbing/washing and dense media separation based on geological domains across the orebodies to produce manganese concentrates.

The Company has completed pre-feasibility level metallurgical testwork to successfully beneficiate ores from the LR1 and FB3 Mineral Resource areas using PQ drill core material.[5]

On the basis that the KR1/KR2 and LR1/FB3 deposits are both manganese enriched shale hosted mineralisation styles it is very likely that the deposits will process in a similar manner and produce a lump and fines product between 30 and 33% Mn concentrate.

A Scoping Study was completed in August 2022 [6] with the following key conclusions:

- Flanagan Bore Project can generate strong financial returns over a 20-year mine life at an average production rate of 1.8Mtpa
- Project pre-tax NPV of A$134m (8% discount rate) and pre-tax IRR of 67%
- Low development CAPEX of A$44m with a payback period of less than 2 years
- LOM estimated Production Target of 36.1Mt @ 11.7% Mn mined from 104Mt @ 10.5% Mn Mineral Resource (Indicated)
- Conventional free dig mining with a very low strip ratio for the first 3 years and a LOM average strip ratio of 0.7:1 waste to ore

This Scoping Study was based on mining optimisations of 100% of the JORC-2012 Indicated Mineral Resource, comprising 107Mt @ 10.4% Mn (Refer to ASX Announcement on 13 April - Mineral Resource estimate at Flanagan Bore Exceeds 100 Mt).

On the basis the mineralisation styles are similar, and grade and tonnages are also highly comparable between the KR1/KR2 and LR1/FB3 deposits the Company believes the KR1/KR2 deposits have the potential to be economically exploited.

Statement of Mineral Resources

The Mineral Resource reported at a cut-off grade of 7% Mn for the KR1 and KR2 deposits is presented in Table 5. This table conforms to guidelines set out in the JORC (2012). The JORC Classification outlines and manganese grade distribution projected to surface are presented in Figures 11 and 14.

At a cut-off grade of 7% Mn the KR1 and KR2 deposits Indicated and Inferred Mineral Resource of 104 Mt @ 10.4% Mn for contained Mn of 10.7 Mt.

[4] ASX release 23/10/2023 Battery Grade Manganese Sulphate >99% Purity Achieved

[5] ASX release 17/04/2023 Metallurgical Testwork Successfully Delivers Consistent Concentrate Grades Above 30% Mn

[6] ASX release 18/08/2022Robust Economics, long life mine with low development CAPEX confirmed from the Flanagan Bore Scoping Study

Table 5. Summary of Mineral Resources for the KR1 and KR2 deposits across the Balfour Manganese Field, November 2023

Summary of Mineral Resources[1-3]							
Deposit	Mineral Resource Category	Material (Mt)[2]	In Situ Mn (Mt)	Mn (%)	Fe (%)	Si (%)	Al (%)
KR1	Indicated	79	7.8	10.0	7.9	18.0	5.4
Total	**Indicated**	**79**	**7.8**	**10.0**	**7.9**	**18.0**	**5.4**
KR2	Inferred	24	2.9	11.9	10.6	19.2	5.0
Total	**Inferred**	**24**	**2.9**	**11.9**	**10.6**	**19.2**	**5.0**
Grand Total		**103**	**10.7**	**10.4**	**8.6**	**18.3**	**5.3**

Notes:

(1) Mineral resources reported at a cut-off grade of 7% Mn.
(2) Appropriate rounding has been applied.
(3) Refer to Appendix 1 JORC Table 1, Sections 1 to 3 and Appendix 2 for further details.

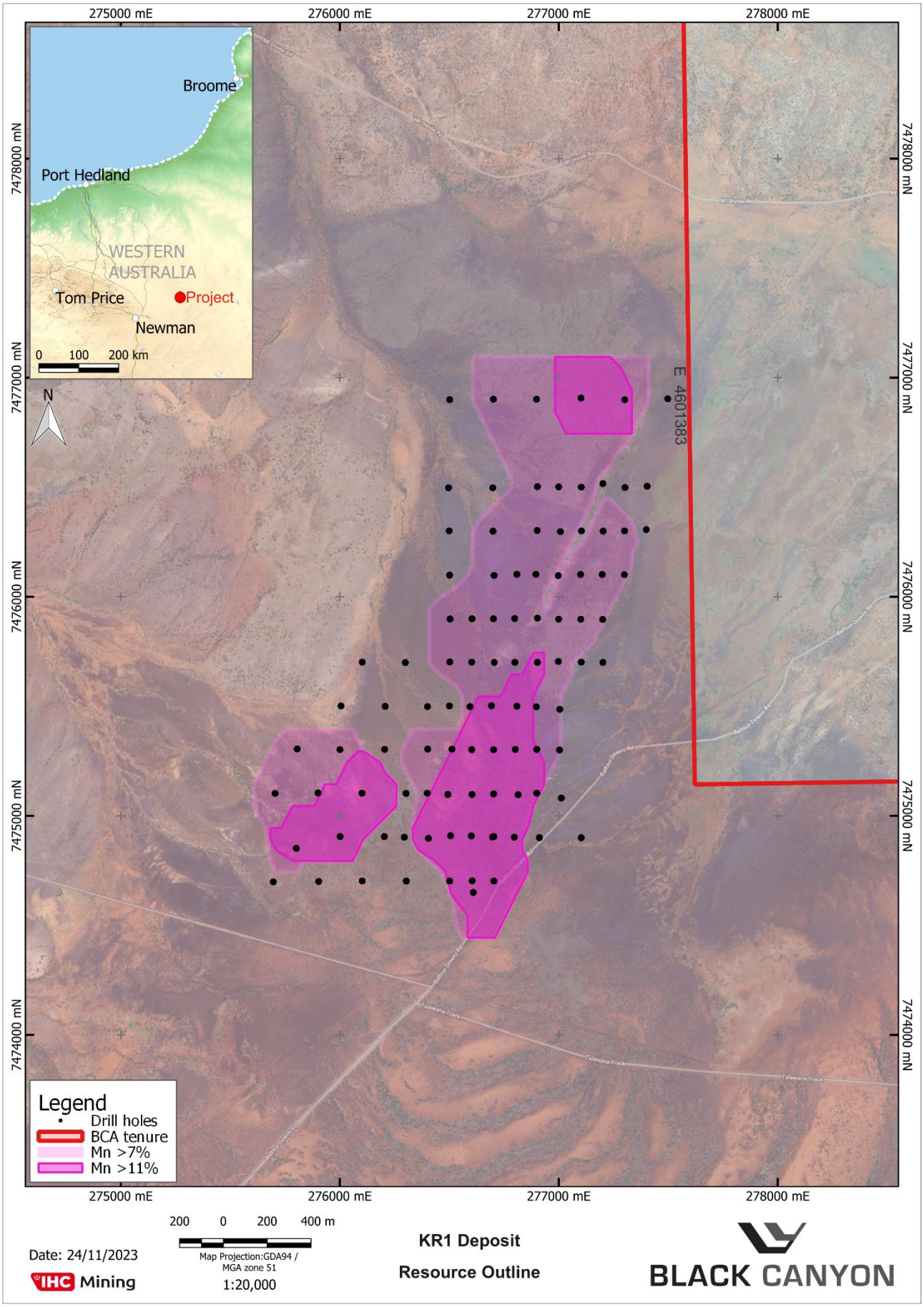


Figure 11. KR1 deposit JORC Mineral Resource Classification (>7% Mn)

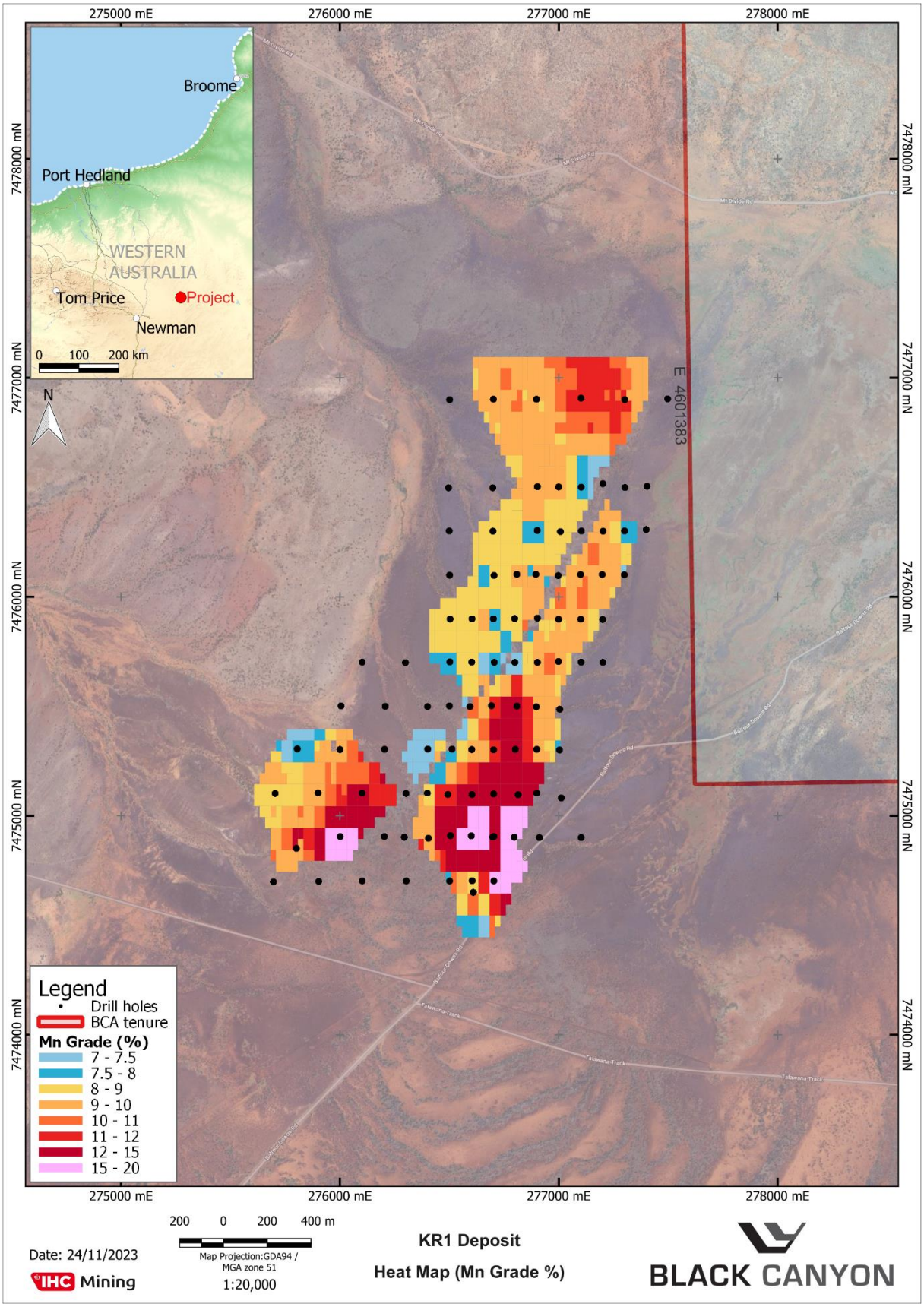


Figure 12. KR1 deposit manganese grade distribution projected to surface.

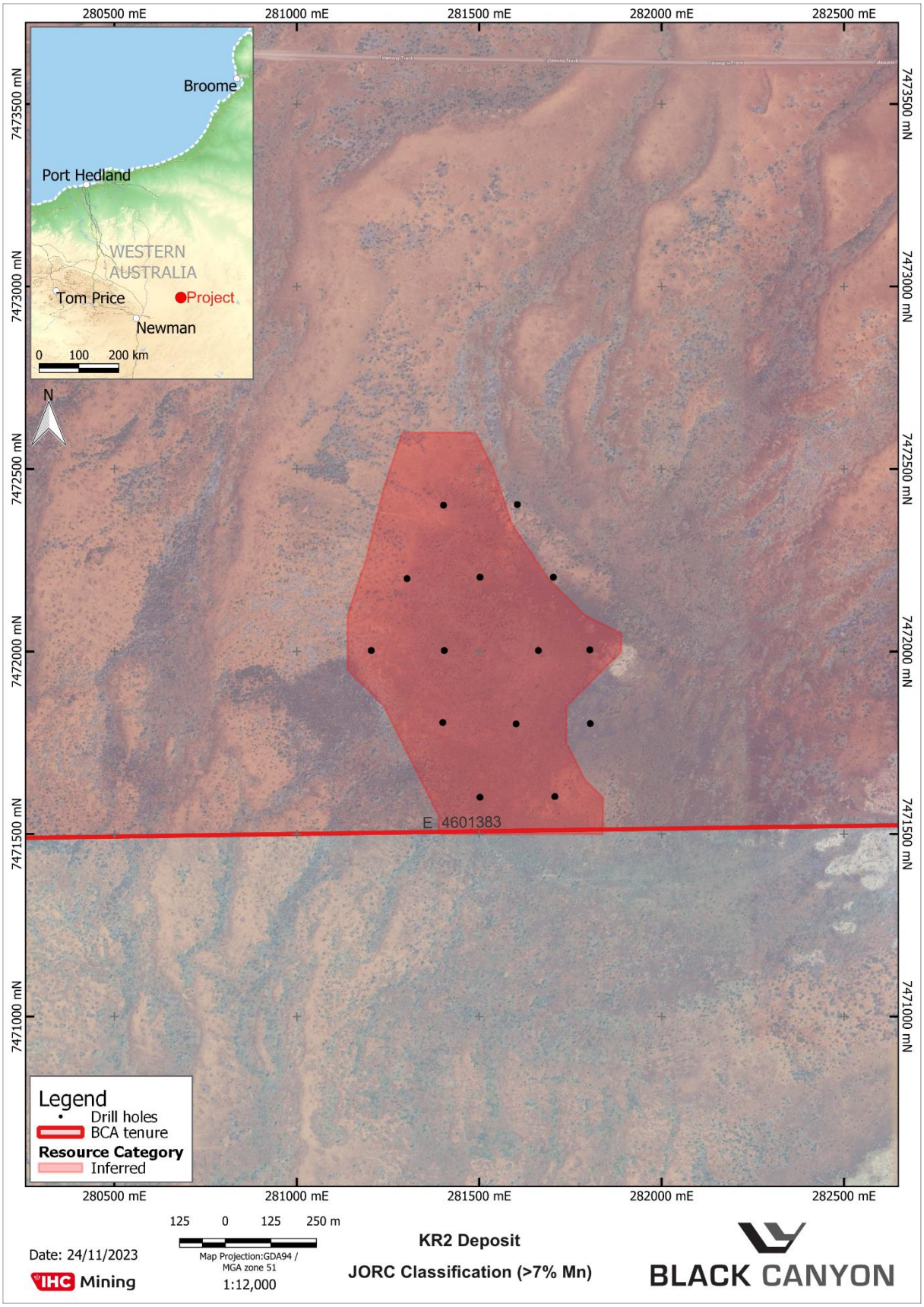


Figure 13. KR2 deposit JORC Mineral Resource Classification (>7% Mn)

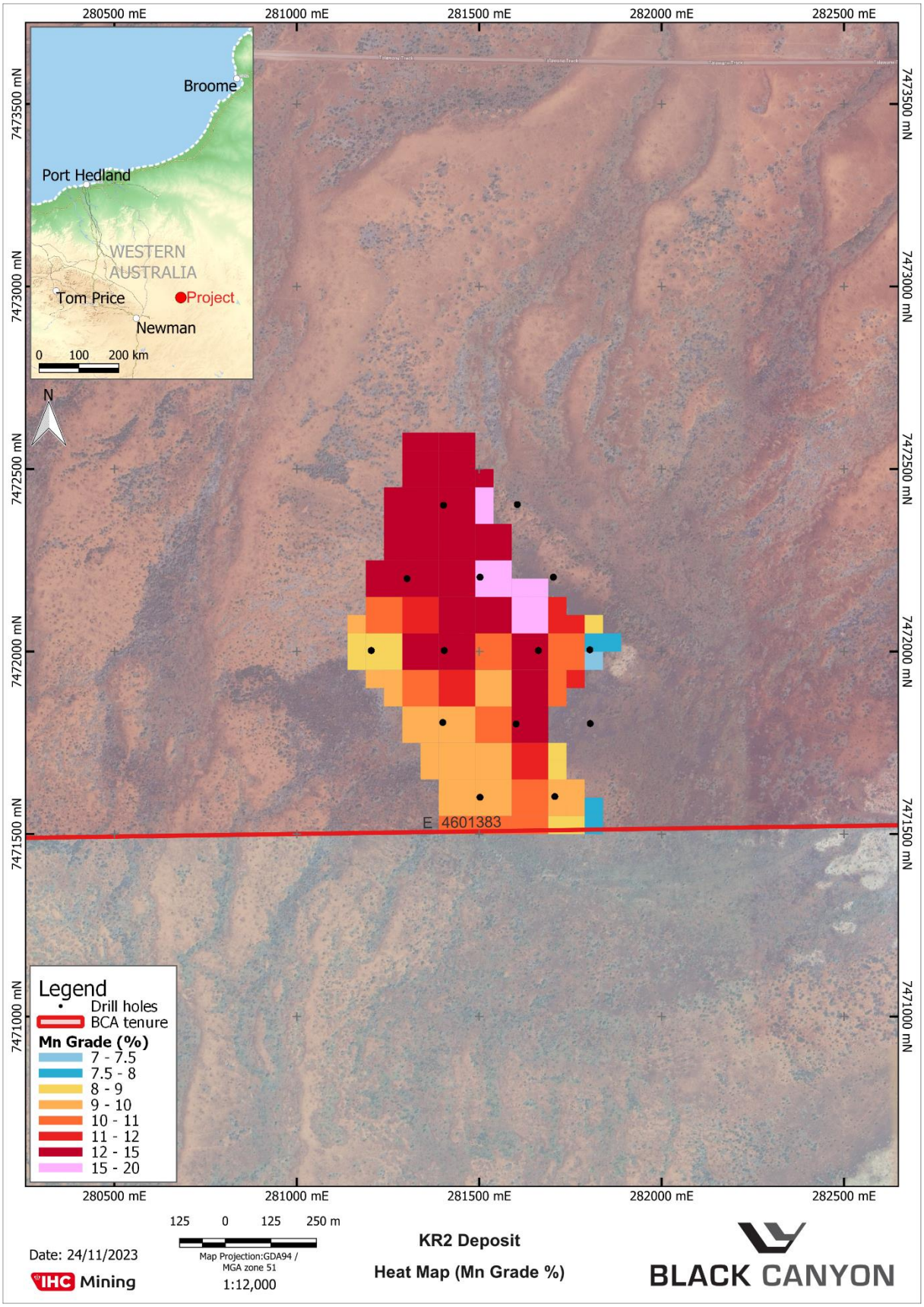


Figure 14. KR2 deposit manganese grade distribution projected to surface.

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

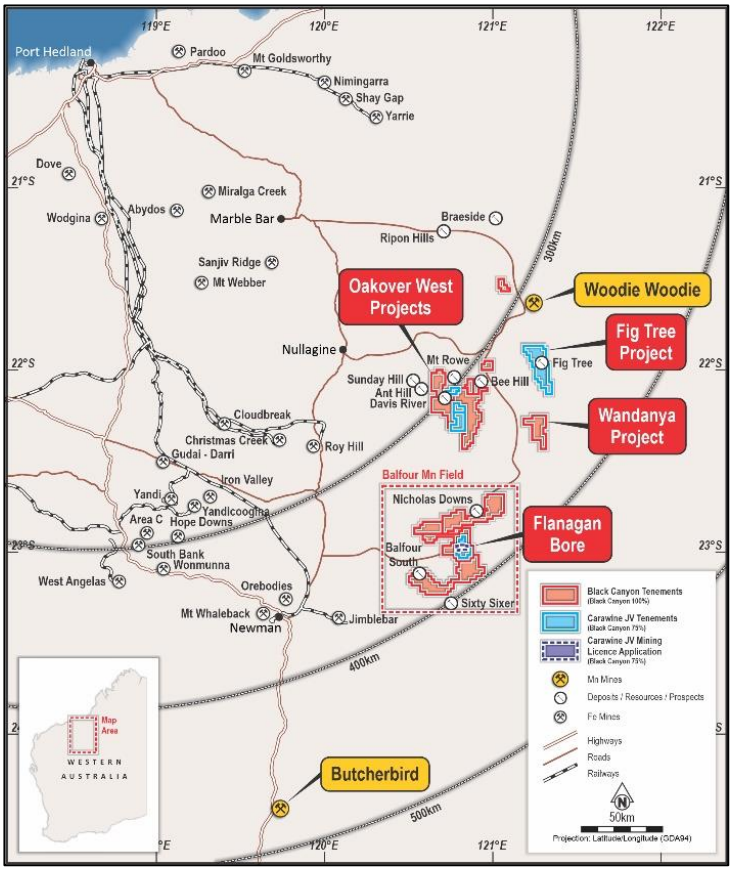
For further details:

Brendan Cummins
Executive Director
Telephone: +61 8 9426 0666
Email: brendan.cummins@blackcanyon.com.au

For media and broker enquiries:

Zander Beacham
White Noise Communications
Telephone: +61 8 6374 2907
Email: zander@whitenoisecomms.com

About Black Canyon



Black Canyon has consolidated a significant land holding totalling 2,400km^2 in the emerging Balfour Manganese Field and across the Oakover Basin, in Western Australia.

The 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[7].

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.

[7] ASX release 24/11/2022 Mineral Resource increases by 64% at Flanagan Bore

The information in this report that relates to Mineral Resources is based on, and fairly represents, information and supporting documentation prepared by Mr Greg Jones, (Consultant to Black Canyon and Geological Services Manager for IHC Mining). Mr Jones is a Fellow of the Australasian Institute of Mining and Metallurgy and has sufficient experience of relevance to the style of mineralisation and type of deposit under consideration, and to the activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Jones consents to the inclusion in this report of the matters based on the information in the form and context in which they appear.

For further information, please refer to ASX announcements dated 17 May 2021, 10 June 2021, 7 July 2021, 5 October 2021, 4 January 2022, 8 February 2022, 21 February 2022, 2 March 2022, 23 March 2022,13 April 2022, 9 June 2022, 7 September 2022, 15 September 2022, 11 October, 21 & 24 November 2022, 5 December 2022, 28 December 2022, 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 and 12 October 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.

APPENDIX 1: JORC 2012: TABLE 1

Section 1 Sampling Techniques and Data		
Criteria	**Explanation**	**Comment**
Sampling techniques	*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.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *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.*	*Reverse circulation ('RC) was used as the primary drilling technique for the projects.* *RC cuttings were continuously sampled at 1 m intervals. All drill holes were sampled from surface to end of hole or depth of mineralisation.* *Drilling completed by Black Canyon have been used for the projects.* *All drill samples were logged for weathering, colour, lithology and mineralogy (+ %).* *RC samples were collected and placed in marked plastic bags in order at each collar position.* *Black Canyon drill samples were collected on 1m intervals, pulverised and submitted for 'LOI (TGA), Whole Rock by Fusion (XRF)' using assay code XF103 completed by Bureau Veritas Minerals.* *The 1m interval samples are considered industry standard and representative of the material being tested.*
Drilling techniques	*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).*	*Black Canyon drilling was completed using RC technique at 90-degree angle to collect 1 m samples as RC chips. Drill diameter is considered to be 5.25 inches as per standard RC sizing. A face sampling hammer was used to drill and sample the holes.* *The July 2023 drill campaign across of the projects contracted Impact Drilling.*

Criteria	Explanation	Comment
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.* *Measures taken to maximise sample recovery and ensure representative nature of the samples.* *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.*	*The 2023 drill campaign recorded satisfactory drill sample recovery. The sample weights were not recorded on site, but the samples were weighted once received at the laboratory. The samples weights show good overall recoveries with smaller samples weights recorded in the top 1-2m.* *During the 2023 drill program the 1m samples were collected from a levelled cone splitter affixed to the side of the drill rig.* *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.*
Logging	*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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* *The total length and percentage of the relevant intersections logged.*	*Geological logs exist for the 2023 drill programs.* *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.* *Logging and sampling has been carried out to industry standards to a level sufficient to support Indicated and Inferred Mineral Resource estimate.* *Drill holes were geologically logged in their entirety and a reference set of drill chips were collected in 20m interval chip trays for the 2023 drill program.*
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.* *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* *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.* *Whether sample sizes are appropriate to the grain size of the material being sampled.*	*Not applicable, no diamond drilling assays results have been used in this mineral resource estimate.* *The drill holes were completed using RC drilling technique and the 1m samples were dry split using an on-board cone splitter set to deliver a 2-3kg samples. This technique is considered best practice and appropriate for sample generation.* *Field duplicates were undertaken at a rate of 2 per 100 samples. The field duplicates were split from the cone splitter simultaneously.* *The samples sizes collected from the cone splitter are considered appropriate for the commodity being investigated.*

Criteria	Explanation	Comment
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *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.* *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.*	*The 2023 drill samples were analysed at Bureau Veritas Minerals Perth, Western Australia utilising ore-grade XRF analysis which is considered industry standard for manganese ores.* *Elemental oxides assayed using XRF analysis include:* *Al2O3, BaO, CaO, Cr_2O_3, Fe, Fe2O3, K2O, MgO, Mn, MnO, Na2O, P2O5, SiO2, SrO, TiO2* *Oxides were converted to primary elements using standard conversion factors outlined by ALS.* *QA/QC was conducted by Black Canyon on the 2023 drill data by the following methods.* • *inserting 2 certified reference samples every 100* • *inserting 2 blanks every 100* • *conducting field duplicates at a rate of 2 in every 100* • *submitting a 200g pulped lab duplicate to a secondary laboratory for check XRF analysis at a rate of approximately 2 in every 100 samples for the 2023 drill program.* *The Company has reviewed the QAQC data and is satisfied that acceptable levels of precision and accuracy have been achieved through the sampling and assaying program and there is no evidence of bias. The data set is of a high standard and appropriate for use in Mineral Resource estimation*
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	*Validation of the drilling files (collar, assay and lithology) was undertaken by IHC Mining.* *All historic data was stored digitally using separate .txt files for collar, assay and lithology.* *Adjustment of elemental oxides to primary element was completed using well known conversion factors outlined by ALS.*
Location of data points	*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.* *Specification of the grid system used.* *Quality and adequacy of topographic control.*	*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.* *Grid system used is WGS 84 / UTM zone 51S.* *IHC Mining deems all drill collar positions within the project areas to be satisfactory at this stage of exploration and to support the Mineral Resource estimate as reported.* *A 1m contour based topographic DTM surface was supplied by Black Canyon to IHC Mining and is considered satisfactory at this stage of exploration and to support the Mineral Resource estimate as reported.*

Criteria	Explanation	Comment
		It is recommended future drill programs use DGPS as drill collar survey pickup and LIDAR for development of a high-resolution topographic surface.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.* *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.* *Whether sample compositing has been applied.*	*The 2023 drilling completed at KR1 was conducted via a conventional drill grid. The nominal drill spacing was 100 m along east-west traverses and each traverse was spaced approximately 200 m apart north-south. The drill spacing was sufficient to establish grade and geological continuity.* *The 2023 drilling completed at KR2 was conducted via a conventional drill grid. The nominal drill spacing was 200 m along east-west traverses and each traverse was spaced approximately 200 m apart north-south. The drill spacing was sufficient to establish grade and geological continuity.* *Variography has demonstrated current drill spacing supports an Indicated and Inferred Mineral Resource classification.* *No sample compositing has been applied.*
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* *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.*	*At KR1 and KR2 the drill lines were oriented east-west across the strike of the primary mineralisation trend. The drill holes were completed at 90 degrees (vertical).* *The mineralisation is relatively flat lying exhibiting a gentle dip to the west at KR1.* *At KR2 the drill lines are oriented perpendicular to the interpreted strike of the outcropping mineralisation. Post completion of the drill program the strike of the mineralisation is mostly likely north-north-west.* *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.*
Sample security	*The measures taken to ensure sample security.*	*All samples were dispatched directly from site to at Bureau Veritas Minerals Perth, Western Australia. There has been no documentation stating any problems during sample transportation from site to at Bureau Veritas Minerals.* *Given the location of the project it is not considered high risk in the context of which samples were reported.*
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	*Senior Black Canyon geological personnel have reviewed the data prior to use in the Mineral Resource estimate. No independent audits have been undertaken as they are not considered to be necessary at this stage.*

Section 2 Reporting of Exploration Results		
Criteria	**Explanation**	**Comment**
Mineral tenement and land tenure status	*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.* *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.*	*The KR2 and KR2 deposits are located within tenement E46/1383 currently held by Access Australia Mining which is awaiting transfer to Black Canyon Ltd. The tenement was acquired 100% by Black Canyon from Killi Resources in March 2023. All mineral rights apart from copper are 100% owned by Black Canyon Ltd. Tenement E 46/1383 was granted on 11/04/2022 and expires on 10/04/2027.* *The tenement of which the KR1 and KR2 are located are subject to a native title agreement with the Karlka Nyiyaparli Aboriginal Corporation. Archaeologic and Ethnographic heritage surveys have been completed on the KR1 and Kr2 deposits which has enabled the drilling to be completed.* *There are no other known impediments to obtaining a licence to operate in the area.*
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	*No other historic exploration has been completed on the tenement for manganese.* *Black Canyon completed a ground reconnaissance exercise in early 2023 to map the manganese enriched shales and determine down dip upside. The exercise proved significant manganese enriched shale throughout the project 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 RC drilling programme.*
Geology	*Deposit type, geological setting and style of mineralisation.*	*The mineralisation is a sediment hosted supergene and weathered manganese enrichment derived from original high manganese content shales.* *The lithological sequence of the project principally consists of the Balfour Formation shales from the Proterozoic Manganese Group of the southern Oakover Basin which is overlain by Quaternary cover.* *The KR1 and KR2 deposits can be separated into three primary units, the unmineralised Balfour shale, the mineralised Balfour shale and the lower basal shale unit. The unmineralised shale is brown grey in colour and the manganiferous shale unit contains a supergene enriched manganiferous horizon which exhibits thickness range between 5 m to30 m depth. The manganese layers are confined to distinct banding within the Balfour and there are also minor occurrences of interbedded red/brown shales intermixed with minor saprolitic clay bands.* *Further information is provided in the text of the release.*

Criteria	Explanation	Comment
Drill hole Information	*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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* *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.*	*See drill hole location plan in Figures 11 and 14 in main body of the release.* *A complete listing of drill holes and their corresponding coordinates, elevation and depth and composited drill results using a cut-off grade of 7% Mn is listed in Appendix 2.*
Data aggregation methods	*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.* *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.* *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	*No grade cutting to assays has been undertaken.* *No aggregation of samples has been undertaken.* *Assays have been reported as oxides. Appropriate conversion from oxides to elements has been completed using standard conversion factors.*

Criteria	Explanation	Comment
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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').*	*The KR1 deposit is mostly flat lying exhibiting a gentle dip of mineralisation to the west and 90-degree (vertical) drill holes considered appropriate.* *The mineralisation of the KR2 deposit is primarily strata bound striking approximately 160 degrees and forming a potentially open synformal fold structure. At this initial stage drilling 90-degree (vertical) drill holes is considered appropriate.*
Diagrams	*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.*	*Refer to body of release for maps and sections of drilling data.*
Balanced reporting	*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.*	*Exploration results are not being reported at this time.*
Other substantive exploration data	*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.*	*Diamond Core drilling is planned to generate bulk sample for further metallurgical testwork.*
Further work	*The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	*IHC has been advised that Black Canyon will be undertaking feasibility related studies on developing the Balfour Mn Projects which includes a further metallurgical testwork to be followed by process equipment selection, design and engineering studies.* *It is recommended that the Company undertake infill drilling to improve the confidence of the Mineral Resource estimates and undertake a suitable topographic survey (preferably LiDAR) to improve accuracy of the topographic DTM surface used for modelling purposes.*

Section 3 Estimation and Reporting of Mineral Resources		
Criteria	**Explanation**	**Comment**
Database integrity	*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.* *Data validation procedures used.*	*Exploration data was provided by the Company to IHC Mining in the form of Excel datasheets relating to collar, lithology and assay data,* *Geological interpretations also provided by the Company to IHC Mining in the form of PowerPoint presentations for both KR1 and KR2 deposits.* *Data in the form of individual Excel files ('.csv') was independently checked and reviewed by IHC Mining. Data review included:* • *Assay review for out-of-range values* • *Sample gaps* • *Overlapping sample intervals* *Checks of data by visually inspecting on screen (to identify translation of samples).* *Visual and statistical comparison was undertaken to check for validity of results.*
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	*Black Canyon Limited has completed a number of site trips between 2021 - 2023 to manganese targets across the Balfour Manganese Field prospects to map and visually inspect the drill targets. The Company managed and supervised the July 2023 RC drill program.* *This was completed by the Executive Director Mr Cummins who is a current member of the AIG. Mr Cummins is the Competent Person for the Exploration Results used as a basis for the Mineral Resource estimate. Mr Cummins conducted a site visit for the July 2023 drill program.* *The Competent Person Greg Jones has not yet conducted a site trip, however given his experience with the style of mineralisation in question, site visits to other manganese stratabound deposits, in addition to the extensive photography, videos and site visit reports, he considers this not to be of sufficient risk to prevent the estimation and classification of the Mineral Resource*
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* *Nature of the data used and of any assumptions made.* *The effect, if any, of alternative interpretations on Mineral Resource estimation.* *The use of geology in guiding and controlling Mineral Resource estimation.* *The factors affecting continuity both of grade and geology.*	*The geological interpretation was undertaken by IHC Mining and then validated using logging data, sampling information, geological surface mapping and observations. Three main domains were identified based on the manganese grades and lithological logging and these domains are noted as Zones. Both the KR1 and FB3 deposits share similar geological characteristics and therefore consist of the same geological domains.* *Zones were identified as Zone 1, 2 and 200 in the resource estimation process. Zone 1 consists of brownish background low grade manganese Balfour shale. Zone 2 is the brownish grey target high grade manganese enriched Balfour shale which exhibits elevated grades typically above 5% Mn. Zone 200 is considered basement and is informed by a sharp reduction in Mn grade at depth or by end of hole 'EOH' where drilling terminated in mineralisation.*

Criteria	Explanation	Comment
		It should be noted that Zone 2 contains minor instances of lower grade interbedded shales, and these have not been excluded given their thin and discontinuous nature. The occasional low grade Mn intercepts in Zone 2 are typically associated with Balfour shale lithology consisting of unmineralised interbedded shale or ferruginous material. *The RC drilling also logged the weathering profile 'WEATH' for each 1 m down hole interval as oxidised 'OX' or fresh 'FR'. Blank intervals are considered to be a transition zone between oxidised and fresh material. This oxidised material was domained (refer 'WZONE' field in model whereby WZONE=2 is oxidised material and WZONE=1 is fresh material) to exclude all transitionary and fresh material.* *This approach of domaining by Mn grade 'ZONE' and oxidised material 'WZONE=2' provides a suitable approach for the company to report the resource model using a combination of the two fields.* *The mineralised zones generally strike north-south (180 degrees) for the KR1 deposit forming an extensive outcrop on the east and gently dipping to the west. It has been cross cut by some dolerite dykes particularly on the southern margin of the deposit. The dominant north-south strike direction was confirmed by horizontal continuity and variography analysis.* *The KR2 mineralised zone most prominent strike direction is north-north-west (345 degrees). Only the outcrop has been drilled with the geology forming an open synformal structure which remains open to the northwest.* *Generally, the mineralisation for the KR1 deposit has been well defined from the maiden drill program in 2023. It remains open to the north for an additional 3km but closed to the south.* *The majority of the outcropping KR2 deposit has been well drilled. It remains open to the north-west where it may be concealed by shallow quaternary cover. To the south the drilling and mineralisation is terminated at the lease boundary.*
Dimensions	*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.*	*Widespread, continuous manganese mineralisation was encountered at KR1 with stronger zones of surface manganese enrichment intersected along 400 m of striking outcrop. The mineralised shale is between 400 m and 500 m wide, 2000 m long and extends 10 m to 35 m downhole with a small number of holes ending in mineralisation.* *The KR2 deposit mineralised shale is between approximately 300 m wide and 700 m wide and approximately 1000 m long. Mineralisation remains predominantly open to the west and north northwest at this stage of exploration. A high portion of the drillholes end in mineralisation with the deepest hole encountering mineralisation to 36m depth.*

Criteria	Explanation	Comment
Estimation and modelling techniques	*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.* *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* *The assumptions made regarding recovery of by-products.* *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* *Any assumptions behind modelling of selective mining units.* *Any assumptions about correlation between variables.* *Description of how the geological interpretation was used to control the resource estimates.* *Discussion of basis for using or not using grade cutting or capping.* *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	*Inverse distance cubed (ID3) was used to interpolate grades and values into the block model. Part of the rationale for using ID3 is centred on the continuity of mineralisation for the manganese enriched Balfour shale both along strike, across strike and down hole.* *Ordinary Kriging was also used to interpolate Mn grade into the block model (defined as model field 'Mn_OK') to be used as a validation check against the inverse distance weighting technique.* *Effectively there is an averaging over the length of the sample interval down hole (in this case being 1 m) therefore there is already a dilution effect on any potential high-grade mineralisation leading to inverse distance being a less complex and more straight forward methodology.* *No mine production records recorded as this is not applicable at this stage of exploration.* *No assumptions have been made regarding recovery of by-products.* *The parent cell size used in the grade interpolation is typically half the average drill hole spacing on the X and Y axes.* *The parent cell size for this resource estimate is 50 x 100 x 1 (XYZ) for KR1 and 100 x 100 x 1 (XYZ) for KR2.* *No assumptions have been made regarding modelling of selected mining units.* *No assumptions have been made about correlation behind variables.* *Validation was undertaken by use of swathe plots, population distribution analysis and visual inspection.* *The geological zones 'ZONE' were used to control the grade interpolation. 'WZONE' was also used as a secondary constraint to report oxide material only (excluding fresh and transitionary material) as an internal company check. Oxidised material WZONE=1 and fresh material WZONE=2.*
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	*Tonnages were estimated on assumed dry basis. No account has been made nor current test work completed to determine moisture.*

Criteria	Explanation	Comment
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	*A cut-off grade of 7% Mn was used for reporting the Mineral Resource estimate. A high-grade zone was also reported using a cut-off grade of 11% Mn.* *No top or bottom cuts were used for grade interpolation.*
Mining factors or assumptions	*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.*	*No specific mining method is assumed other than potentially open pit mining methods. No minimum thickness was assumed for reporting of the mineral resource.*
Metallurgical factors or assumptions	*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.*	*The material targeted for extraction is predominantly manganese hosted in manganese enriched shale. No specific detail and assumptions have been applied in the estimation for the current Mineral Resource and only allow for preliminary commentary with no detailed chemistry or sizing of mineral species.* *Based on another manganese hosted shale deposit currently being mined in the Pilbara it is reasonable to assume that the Balfour Manganese deposits also have reasonable prospect for economic extraction*
Environmental factors or assumptions	*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*	*No assumptions have been made regarding waste products at this stage of exploration, however it is reasonable to assume the creation and storage of waste products on site will not be of great concern for future mining activities.* *No environmental concerns or issues were identified during this phase of exploration.*

Criteria	Explanation	Comment
	environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	
Bulk density	*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.* *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.* *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	*At this stage of exploration average density values were applied to KR1 and KR2 deposits by geological domain based on the downhole geophysics work completed by Black Canyon during their previous exploration campaign for the FB3 and LR1 deposits. Details of the downhole geophysics program are described below:* *'A downhole geophysics program was completed by ABIM Solutions Pty Ltd who captured short (SSD) and long spaced density (LSD), caliper, magnetitic susceptibility and natural gamma during Black Canyons previous drilling programme for deposits FB3 and LR1. Density measurements were collected using a down hole logging probe that provides a continuous record of a formation's bulk density along the length of a borehole. A total of 85 holes representing approximately 28, 000 density measurements (0.1 m recordings) were surveyed across the LR1 and FB3 deposits access the RC holes drilled primarily in Dec 2021 which were spaced 200 x 100m apart'* *Average densities by domain were calculated from this work and have been applied to KR1 and KR2 deposits. These density values by domain are as follows:* *Zone 1 (unmineralised material) = 2.38* *Zone 2 (mineralised material) = 2.52* *Zone 200 (basement) = 2.69* *It is recommended that future studies include further down hole density work for each deposit.*
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.* *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).* *Whether the result appropriately reflects the Competent Person's view of the deposit.*	*The Indicated and Inferred classification for the KR1 and KR2 deposits respectively was based on the following criteria: drill hole spacing, down hole density spacing, appropriate grade constraints and domain controlled variography.* *The classification of the Indicated and Inferred Resource was supported by all of the supporting criteria as noted above.* *As Competent Person Greg Jones considers that the result appropriately reflects a reasonable view of the deposit JORC categorisation.*
Audits or reviews.	*The results of any audits or reviews of Mineral Resource estimates.*	*No recent audits or reviews of the Mineral Resource estimate has been undertaken.*
Discussion of relative accuracy/ confidence	*Where appropriate a statement of the relative accuracy and confidence level in the Mineral*	*Variography was used to support the drill hole spacing for the selected JORC Classification.*

Criteria	Explanation	Comment
	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. *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.* *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	*Validation of the model vs drill hole grades was carried out by direct observation and comparison of the results on screen.* *The Mineral Resource statement is a global estimate for the entire known extent of the KR1 and KR2 deposits within the tenement area.* *There has been no production to date.*

APPENDIX 2: SUMMARY DRILL HOLE COLLAR AND COMPOSITES (>7% Mn)

Hole id	GDA94 / MGA zone 51		RL	Dip	Azimuth	Deposit	From depth	To depth	Int	Mn %	Fe %	Al %	Si %	Zone
	East	North												
KRRC002	276899	7475104	521	-90	360	KR1	0	1	1	14.8	12.3	5.9	18.3	2
KRRC003	276814	7475097	521	-90	360	KR1	0	7	7	17.3	11.4	6.6	15.6	2
KRRC003	276814	7475097	514	-90	360	KR1	8	12	4	10.7	9.2	6.3	22.8	2
KRRC003	276814	7475097	506	-90	360	KR1	18	19	1	7.5	9.4	6.3	24.5	1
KRRC004	276702	7475101	516	-90	360	KR1	3	5	2	19.2	16.5	7.5	9.5	2
KRRC004	276702	7475101	508	-90	360	KR1	6	19	13	15.4	10.0	7.2	17.0	2
KRRC005	276603	7475098	502	-90	360	KR1	11	23	12	15.1	12.7	5.3	17.5	2
KRRC005	276603	7475098	490	-90	360	KR1	24	33	9	11.7	8.3	6.2	22.0	2
KRRC005	276603	7475098	482	-90	360	KR1	36	37	1	9.5	7.0	5.8	21.0	200
KRRC006	276493	7475098	495	-90	360	KR1	8	32	24	13.0	8.7	5.7	20.9	2
KRRC007	276399	7475104	486	-90	360	KR1	26	28	2	9.9	11.0	7.0	19.4	2
KRRC007	276399	7475104	481	-90	360	KR1	31	32	1	7.1	9.9	7.0	22.1	2
KRRC009	276101	7475104	494	-90	360	KR1	4	31	27	11.8	8.5	6.3	19.8	2
KRRC010	275900	7475105	492	-90	360	KR1	15	19	4	9.6	8.8	6.2	23.7	2
KRRC010	275900	7475105	487	-90	360	KR1	20	25	5	10.8	9.7	6.1	21.9	2
KRRC010	275900	7475105	482	-90	360	KR1	26	28	2	11.3	9.6	5.7	20.4	2
KRRC010	275900	7475105	477	-90	360	KR1	29	36	7	9.4	6.8	5.3	18.8	2
KRRC011	275704	7475103	478	-90	360	KR1	28	33	5	8.1	7.5	5.6	18.7	2
KRRC011	275704	7475103	471	-90	360	KR1	34	42	8	9.7	8.1	5.4	19.4	2
KRRC012	277003	7475301	513	-90	360	KR1	0	1	1	7.5	6.8	6.2	23.0	2
KRRC013	276899	7475304	513	-90	360	KR1	0	6	6	9.6	7.0	6.1	23.1	2
KRRC014	276801	7475304	521	-90	360	KR1	0	2	2	18.7	10.5	5.7	16.1	2
KRRC014	276801	7475304	513	-90	360	KR1	3	15	12	12.7	8.4	5.9	21.7	2
KRRC015	276702	7475302	507	-90	360	KR1	7	12	5	10.6	19.6	9.1	11.8	2
KRRC015	276702	7475302	502	-90	360	KR1	13	15	2	12.5	9.2	5.8	21.5	2
KRRC015	276702	7475302	498	-90	360	KR1	18	19	1	7.4	6.6	6.9	26.3	2
KRRC016	276602	7475303	508	-90	360	KR1	4	7	3	10.2	11.8	5.5	21.9	2
KRRC016	276602	7475303	496	-90	360	KR1	9	27	18	10.9	8.4	5.9	22.9	2
KRRC016	276602	7475303	484	-90	360	KR1	29	30	1	7.2	5.6	7.0	23.8	2
KRRC018	276401	7475305	485	-90	360	KR1	24	27	3	7.8	7.9	5.3	17.6	2
KRRC018	276401	7475305	482	-90	360	KR1	28	29	1	7.2	7.0	5.7	19.3	2
KRRC018	276401	7475305	471	-90	360	KR1	31	48	17	9.3	7.7	5.1	17.7	2
KRRC020	276000	7475303	497	-90	360	KR1	8	12	4	9.8	9.5	6.7	20.0	2
KRRC021	275805	7475306	472	-90	360	KR1	31	36	5	7.8	7.0	5.2	17.9	2
KRRC021	275805	7475306	460	-90	360	KR1	38	53	15	10.1	8.0	5.9	20.1	2
KRRC024	276796	7474903	518	-90	360	KR1	0	3	3	19.2	11.5	7.1	13.2	2
KRRC024	276796	7474903	512	-90	360	KR1	7	8	1	8.8	15.0	5.6	20.5	1
KRRC025	276697	7474904	518	-90	360	KR1	2	3	1	7.0	28.0	8.2	9.6	1
KRRC025	276697	7474904	514	-90	360	KR1	4	9	5	16.5	16.4	7.4	11.4	2
KRRC025	276697	7474904	507	-90	360	KR1	10	17	7	26.0	8.8	5.6	11.8	2
KRRC026	276703	7474906	520	-90	360	KR1	0	1	1	14.4	6.5	5.9	22.1	1
KRRC026	276703	7474906	510	-90	360	KR1	4	18	14	18.3	12.1	6.4	14.3	2
KRRC026	276703	7474906	500	-90	360	KR1	20	21	1	11.5	13.6	5.4	19.8	1
KRRC026	276703	7474906	491	-90	360	KR1	29	30	1	8.3	9.8	6.4	23.3	200
KRRC027	276600	7474909	515	-90	360	KR1	6	7	1	8.6	19.3	8.7	13.4	1
KRRC027	276600	7474909	503	-90	360	KR1	11	25	14	14.4	10.0	6.4	19.3	2
KRRC027	276600	7474909	494	-90	360	KR1	26	29	3	10.4	10.4	5.7	22.9	2
KRRC027	276600	7474909	489	-90	360	KR1	30	34	4	10.8	6.0	7.0	23.6	2
KRRC028	276505	7474910	500	-90	360	KR1	17	24	7	16.1	11.4	7.3	15.5	2
KRRC028	276505	7474910	494	-90	360	KR1	25	28	3	12.6	8.1	5.9	22.5	2
KRRC028	276505	7474910	490	-90	360	KR1	29	32	3	14.8	8.5	5.8	20.8	2
KRRC028	276505	7474910	484	-90	360	KR1	33	39	6	10.1	6.1	5.8	20.1	2
KRRC029	276404	7474898	492	-90	360	KR1	26	28	2	8.9	9.3	7.2	20.9	2

KRRC029	276404	7474898	487	-90	360	KR1	31	32	1	15.6	11.5	5.1	17.8	2
KRRC029	276404	7474898	481	-90	360	KR1	33	42	9	12.6	10.1	5.4	21.1	2
KRRC031	276001	7474906	493	-90	360	KR1	15	25	10	15.2	11.6	7.9	14.9	2
KRRC032	275801	7474852	486	-90	360	KR1	21	28	7	9.3	9.1	6.4	23.4	2
KRRC032	275801	7474852	478	-90	360	KR1	29	36	7	12.9	9.3	6.2	18.5	2
KRRC034	276703	7474703	511	-90	360	KR1	6	8	2	25.1	8.0	8.9	9.5	2
KRRC034	276703	7474703	503	-90	360	KR1	14	15	1	8.3	24.5	8.9	11.2	2
KRRC034	276703	7474703	500	-90	360	KR1	16	20	4	17.0	13.2	9.2	11.7	2
KRRC045	276692	7475503	511	-90	360	KR1	0	4	4	11.5	10.1	5.1	21.0	1
KRRC045	276692	7475503	494	-90	360	KR1	9	30	21	11.3	9.1	5.9	21.9	2
KRRC045	276692	7475503	481	-90	360	KR1	32	33	1	7.5	6.6	5.9	22.9	1
KRRC046	276808	7475501	506	-90	360	KR1	1	23	22	12.2	9.4	5.7	21.0	2
KRRC047	276897	7475498	509	-90	360	KR1	0	13	13	10.0	7.4	5.5	20.3	2
KRRC051	276502	7475703	481	-90	360	KR1	25	29	4	8.2	7.3	4.9	17.1	2
KRRC052	276602	7475702	491	-90	360	KR1	15	20	5	8.7	7.7	4.8	16.8	2
KRRC052	276602	7475702	483	-90	360	KR1	21	30	9	8.7	7.3	4.8	16.6	2
KRRC053	276705	7475701	508	-90	360	KR1	0	2	2	9.5	12.8	6.1	18.0	2
KRRC053	276705	7475701	498	-90	360	KR1	10	12	2	8.0	11.4	5.4	22.1	2
KRRC053	276705	7475701	495	-90	360	KR1	13	15	2	7.5	10.4	5.1	18.7	2
KRRC053	276705	7475701	485	-90	360	KR1	19	30	11	8.4	9.7	5.6	19.6	2
KRRC054	276799	7475701	508	-90	360	KR1	2	4	2	8.8	11.1	6.1	20.2	2
KRRC055	276902	7475701	498	-90	360	KR1	0	26	26	10.0	7.3	4.6	16.6	2
KRRC056	276998	7475705	507	-90	360	KR1	0	8	8	9.4	6.5	5.4	18.9	2
KRRC059	276701	7475900	502	-90	360	KR1	5	6	1	9.3	12.5	5.4	18.6	2
KRRC059	276701	7475900	487	-90	360	KR1	7	34	27	9.5	7.4	4.9	17.5	2
KRRC060	276798	7475901	508	-90	360	KR1	2	3	1	13.9	7.3	5.3	20.1	2
KRRC060	276798	7475901	503	-90	360	KR1	5	10	5	10.9	9.0	5.6	21.0	2
KRRC060	276798	7475901	487	-90	360	KR1	11	36	25	9.5	6.9	4.6	16.5	2
KRRC062	276999	7475898	498	-90	360	KR1	0	25	25	9.8	7.5	4.7	16.6	2
KRRC063	277100	7475898	502	-90	360	KR1	0	14	14	9.5	6.7	4.9	17.8	2
KRRC063	277100	7475898	490	-90	360	KR1	19	20	1	7.1	6.2	6.2	22.5	200
KRRC066	276704	7476098	481	-90	360	KR1	9	39	30	8.8	7.0	4.8	17.3	2
KRRC067	276808	7476103	503	-90	360	KR1	1	7	6	9.1	8.4	4.9	17.4	2
KRRC067	276808	7476103	485	-90	360	KR1	8	36	28	9.5	7.2	4.6	16.3	2
KRRC068	276895	7476103	506	-90	360	KR1	0	3	3	11.1	9.9	4.7	17.0	2
KRRC068	276895	7476103	503	-90	360	KR1	4	5	1	8.3	8.4	6.5	22.0	2
KRRC068	276895	7476103	487	-90	360	KR1	9	33	24	9.4	7.2	4.8	17.1	2
KRRC070	277099	7476102	497	-90	360	KR1	0	23	23	9.8	7.0	4.6	17.2	2
KRRC071	277198	7476102	502	-90	360	KR1	0	12	12	9.8	6.7	4.9	17.8	2
KRRC072	277299	7476101	506	-90	360	KR1	0	1	1	7.0	4.9	3.8	14.0	2
KRRC072	277299	7476101	501	-90	360	KR1	5	6	1	8.5	6.4	6.7	23.8	1
KRRC074	276699	7476300	471	-90	360	KR1	14	51	37	9.1	7.1	4.6	16.3	2
KRRC075	276901	7476303	491	-90	360	KR1	13	16	3	8.8	7.6	4.6	16.1	2
KRRC075	276901	7476303	473	-90	360	KR1	18	46	28	8.8	6.8	4.8	16.9	2
KRRC076	277007	7476298	505	-90	360	KR1	0	6	6	8.9	7.7	4.9	17.4	2
KRRC076	277007	7476298	487	-90	360	KR1	7	35	28	9.2	6.9	4.7	16.9	2
KRRC078	277202	7476300	497	-90	360	KR1	0	20	20	9.4	6.6	4.7	16.7	2
KRRC079	277300	7476301	504	-90	360	KR1	0	5	5	7.8	6.2	5.2	17.9	2
KRRC083	276902	7476503	497	-90	360	KR1	0	21	21	9.4	6.7	4.8	16.8	2
KRRC084	276999	7476502	500	-90	360	KR1	0	17	17	9.5	6.5	4.8	17.1	2
KRRC085	277102	7476501	506	-90	360	KR1	0	3	3	7.9	6.3	5.5	19.2	2
KRRC085	277102	7476501	498	-90	360	KR1	9	10	1	7.1	8.3	6.7	23.6	1
KRRC090	276701	7476902	483	-90	360	KR1	0	40	40	9.3	7.5	4.7	16.5	2
KRRC091	276898	7476902	490	-90	360	KR1	0	30	30	9.7	7.2	4.6	16.2	2
KRRC092	277101	7476907	496	-90	360	KR1	0	24	24	10.7	6.9	4.3	15.5	2
KRRC093	277301	7476900	502	-90	360	KR1	0	10	10	10.4	6.6	5.2	18.2	2

KRRC093	277301	7476900	496	-90	360	KR1	11	12	1	7.1	6.0	5.9	20.8	2
KRRC093	277301	7476900	493	-90	360	KR1	14	15	1	8.4	6.0	6.2	21.8	200
KRRC095	276603	7475900	482	-90	360	KR1	22	27	5	8.5	7.2	5.0	17.0	2
KRRC095	276603	7475900	467	-90	360	KR1	28	52	24	9.6	6.8	4.6	16.2	2
KRRC096	276503	7475899	477	-90	360	KR1	26	31	5	8.2	7.2	5.1	17.6	2
KRRC096	276503	7475899	461	-90	360	KR1	32	57	25	9.4	6.7	4.7	16.7	2
KRRC097	276604	7474704	519	-90	360	KR1	0	1	1	8.3	20.5	7.6	15.2	1
KRRC097	276604	7474704	505	-90	360	KR1	13	16	3	15.1	12.6	9.8	12.6	2
KRRC097	276604	7474704	498	-90	360	KR1	17	25	8	12.8	16.4	10.2	11.4	2
KRRC097	276604	7474704	492	-90	360	KR1	26	28	2	11.5	15.9	11.1	11.8	2
KRRC097	276604	7474704	489	-90	360	KR1	29	31	2	13.1	16.3	10.0	11.3	2
KRRC097	276604	7474704	486	-90	360	KR1	33	34	1	8.0	7.7	8.4	22.8	2
KRRC098	276609	7474651	492	-90	360	KR1	25	28	3	13.7	17.1	8.2	12.7	2
KRRC098	276609	7474651	488	-90	360	KR1	29	32	3	10.1	18.6	9.5	12.8	2
KRRC098	276609	7474651	485	-90	360	KR1	32	35	3	18.6	19.4	6.7	9.0	1
KRRC099	281402	7472401	487	-90	360	KR2	0	22	22	14.8	11.2	4.5	18.3	2
KRRC099	281402	7472401	474	-90	360	KR2	23	25	2	9.9	9.1	6.4	22.8	2
KRRC099	281402	7472401	472	-90	360	KR2	26	27	1	9.5	6.5	7.0	24.5	2
KRRC101	281302	7472200	490	-90	360	KR2	0	16	16	11.7	9.9	5.5	18.6	2
KRRC101	281302	7472200	477	-90	360	KR2	18	24	6	9.4	9.7	5.5	21.4	2
KRRC103	281502	7472204	484	-90	360	KR2	0	27	27	16.5	12.2	3.7	15.6	2
KRRC103	281502	7472204	466	-90	360	KR2	28	36	8	13.2	11.1	4.2	16.1	2
KRRC104	281204	7472003	495	-90	360	KR2	1	4	3	9.3	13.5	7.5	18.8	2
KRRC104	281204	7472003	490	-90	360	KR2	5	11	6	9.5	12.4	7.0	17.9	2
KRRC105	281404	7472003	494	-90	360	KR2	0	9	9	13.0	12.8	5.8	18.9	2
KRRC105	281404	7472003	488	-90	360	KR2	10	12	2	8.1	9.1	6.0	23.8	2
KRRC105	281404	7472003	477	-90	360	KR2	13	30	17	10.3	9.8	4.6	17.5	2
KRRC106	281662	7472003	498	-90	360	KR2	0	1	1	21.1	15.4	4.0	13.2	2
KRRC106	281662	7472003	483	-90	360	KR2	2	30	28	13.7	11.4	4.3	17.4	2
KRRC107	281803	7472005	495	-90	360	KR2	2	3	1	8.2	8.4	3.4	15.8	2
KRRC107	281803	7472005	492	-90	360	KR2	4	6	2	9.3	6.9	5.8	21.8	2
KRRC108	281400	7471806	494	-90	360	KR2	0	8	8	10.1	10.6	6.9	21.1	2
KRRC108	281400	7471806	485	-90	360	KR2	10	16	6	9.1	9.5	5.6	22.2	2
KRRC108	281400	7471806	475	-90	360	KR2	17	30	13	10.1	9.0	4.8	18.1	2
KRRC109	281601	7471802	493	-90	360	KR2	0	13	13	11.6	11.4	5.0	21.3	2
KRRC111	281502	7471601	493	-90	360	KR2	3	4	1	8.5	7.1	5.8	25.3	2
KRRC111	281502	7471601	481	-90	360	KR2	6	25	19	11.8	9.7	5.3	21.8	2
KRRC111	281502	7471601	469	-90	360	KR2	26	29	3	8.7	8.1	6.2	24.3	2
KRRC112	281707	7471603	495	-90	360	KR2	1	2	1	15.9	12.0	7.0	15.5	2
KRRC112	281707	7471603	492	-90	360	KR2	3	5	2	13.4	12.7	6.1	18.2	2
KRRC112	281707	7471603	488	-90	360	KR2	7	10	3	7.7	10.6	6.3	23.5	2