



**BLACK CANYON**

# **Pilbara Focused Manganese Developer & Explorer**

July 2024

**Scoping Study Results Presentation**

**ASX:BCA**  
[blackcanyon.com.au](https://blackcanyon.com.au)



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## Competent Persons Statement

The information in this report that relates to exploration results and exploration targets and results is based upon information reviewed by Mr Brendan Cummins who is a member of the Australian Institute of Geoscientists (AIG). Mr Cummins is the Managing Director of Black Canyon Ltd and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Cummins consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## Scoping Study Cautionary Statement

The Scoping Study referred to in this ASX release has been undertaken for the purpose of evaluating the potential development of the KR1 and KR2 deposits from the Balfour Manganese Field (BMF) Projects, Pilbara region, Western Australia. It is a preliminary technical and economic study of the potential viability of the KR1 and KR2 mineral resources. The Scoping Study outcomes include Production Targets and forecast financial information referred to in the release are based on low level technical and economic assessments that are insufficient to support estimation of Ore Reserves. The Scoping Study is presented to an accuracy level of +/- 35%. While each of the modifying factors was considered and applied, there is no certainty of eventual conversion to Ore Reserves or that the Production Target itself will be realised. Further exploration, evaluation and appropriate studies are required before Black Canyon will be able to estimate Ore Reserves or to provide any assurance of any economic development case. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Scoping Study.

The Mineral Resources scheduled for extraction as Production Targets over the 16-year mine life are classified as Indicated (72%) and Inferred (28%) with Inferred Mineral Resources considered from year 6 onwards. The first 5 years of mining are based entirely on Indicated Mineral Resources and from year 6 to 16 the forecast Production Targets are dominated by Indicated Mineral Resources with no year relying on greater than 50% of the Production Target generated from Inferred Mineral Resources. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the estimation of Indicated or Measured Mineral Resources or that the Production Target itself will be realised. Only 15% of the Global Mineral Resource discovered across the BMF have been scheduled for mining in this Scoping Study.

The Mineral Resources underpinning the Production Target in the Scoping Study have been prepared by a competent person in accordance with the requirements of the JORC Code (2012). For full details on the Mineral Resource Estimate, please refer to the ASX announcement of 12 December 2023. Black Canyon confirms that it is not aware of any new information or data that materially affects the information included in that release and that all material assumptions and technical parameters underpinning the estimate continue to apply and have not been changed. This Scoping Study is based on the material assumptions outlined in the announcement. These include assumptions about the availability of funding. While Black Canyon considers that all the material assumptions are based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Scoping Study will be achieved.

To achieve the range of outcomes indicated in the Scoping Study, funding in the order of A\$84 million will likely be required. Investors should note that there is no certainty that Black Canyon will be able to raise that amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of Black Canyon's existing shares. It is also possible that Black Canyon could pursue other strategies such as project finance, strategic partners, a sale or partial sale of its interest in the KR1 and KR2 projects. Black Canyon has 100% ownership of tenement (E46/1383) that the KR1 and KR2 mineral resources are located within.

This announcement contains forward-looking statements. Black Canyon has concluded that it has a reasonable basis for providing these forward-looking statements and believes it has a "reasonable basis" to expect it will be able to fund development of the KR1 and KR2 Projects. However, a number of factors could cause actual results or expectations to differ materially from the results expressed or implied in the forward-looking statements. Given the uncertainties involved, investors should not make any investment decisions based solely of the results of this study.

# Manganese Developer and Explorer

Essential for alloys used in the **steel industry** and critical for Cathodes in **Electric Vehicle** & **BESS Li-Ion batteries**.

Substantial Global MRE totaling **314 Mt @ 10.5% Mn containing 33.1 Mt Mn**.

Exploration Targets of **160 – 215 Mt @ 11 – 12% Mn, containing 18 – 23 Mt of Mn**.

Traditional manganese concentrate for the **Mn alloying** industry.

**Value add downstream processing for EV battery precursor material.**

**Scoping Study** at the **KR1 and KR2** deposits demonstrate positive results with an NPV<sub>8</sub> of **\$340m, IRR of 70%**, AISC of US\$3.38 dmtu and CAPEX of \$84.1m

**MANGANESE  
FOCUSED**

**BEST IN  
CLASS**

**BULK  
COMMODITY**

**POSITIVE ECONOMIC  
ANALYSIS**

# Corporate Overview ASX:BCA

**\$5.5m**

Market Cap  
(as at 01/07/2024)

**\$1.2m**

Cash  
(End of March Quarter)

**\$4.3m**

Enterprise Value

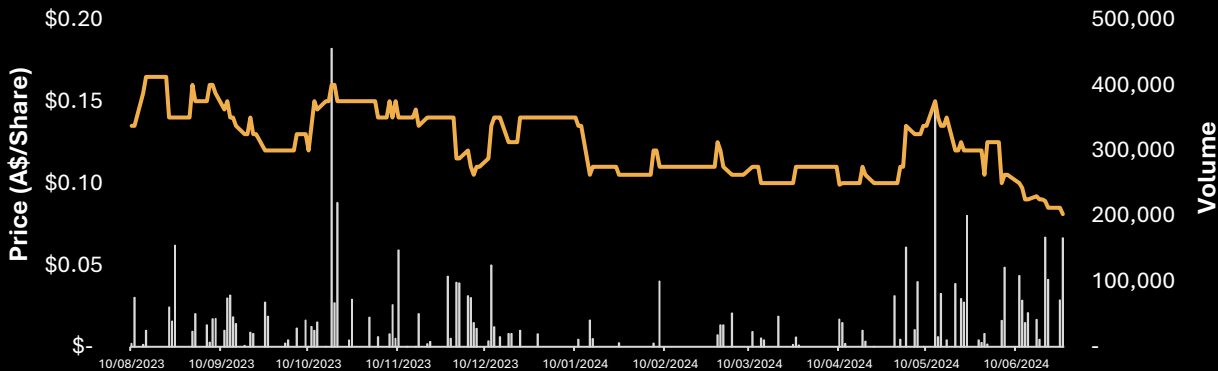
**70.14m**

Shares on  
Issue

**7.0m**

Unlisted Options  
(\$0.28 exercise,  
exp 27/07/2025)

## BCA Share Price & Volume



## Black Canyon Shareholders



**Graham Ascough**  
Non-Executive Chairman

Geophysicist  
Mr Ascough is a resources executive and geophysicist with more than 30 years' experience. He is presently Non-Executive Chairman of Geopacific Resources Ltd, Sunstone Metals Ltd and PNX Metals Ltd.



**Brendan Cummins**  
Managing Director

Geologist  
Mr Cummins has 30 years' experience across precious, base metals and bulk commodities. Extensive experience in resource development, feasibility, project development, environmental approvals and permitting.



**Simon Taylor**  
Non-Executive Director

Geologist  
Mr Taylor is a resources industry executive with over 30 years' experience in geology, finance and corporate management at CEO and Board levels. He is also Executive Chairman & CEO of Stellar Resources Ltd and Non-Executive Director of Petrathern Ltd.

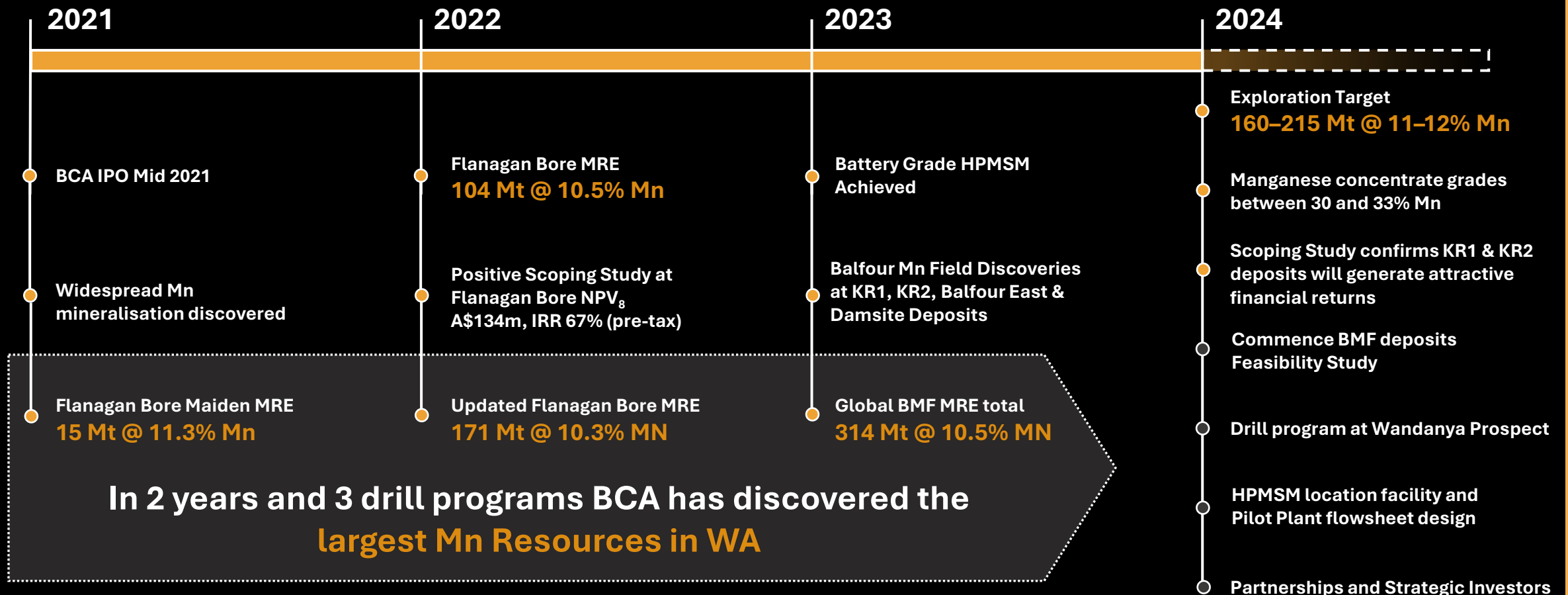


**Adrian Hill**  
Non-Executive Director

Finance  
Mr Hill is a senior executive with over 25 years' experience in strategic and finance roles in the resources, energy infrastructure and investment banking industries. He has an established record in strategy development, corporate structuring and capital raising.



# Black Canyon a Manganese focused Growth Story

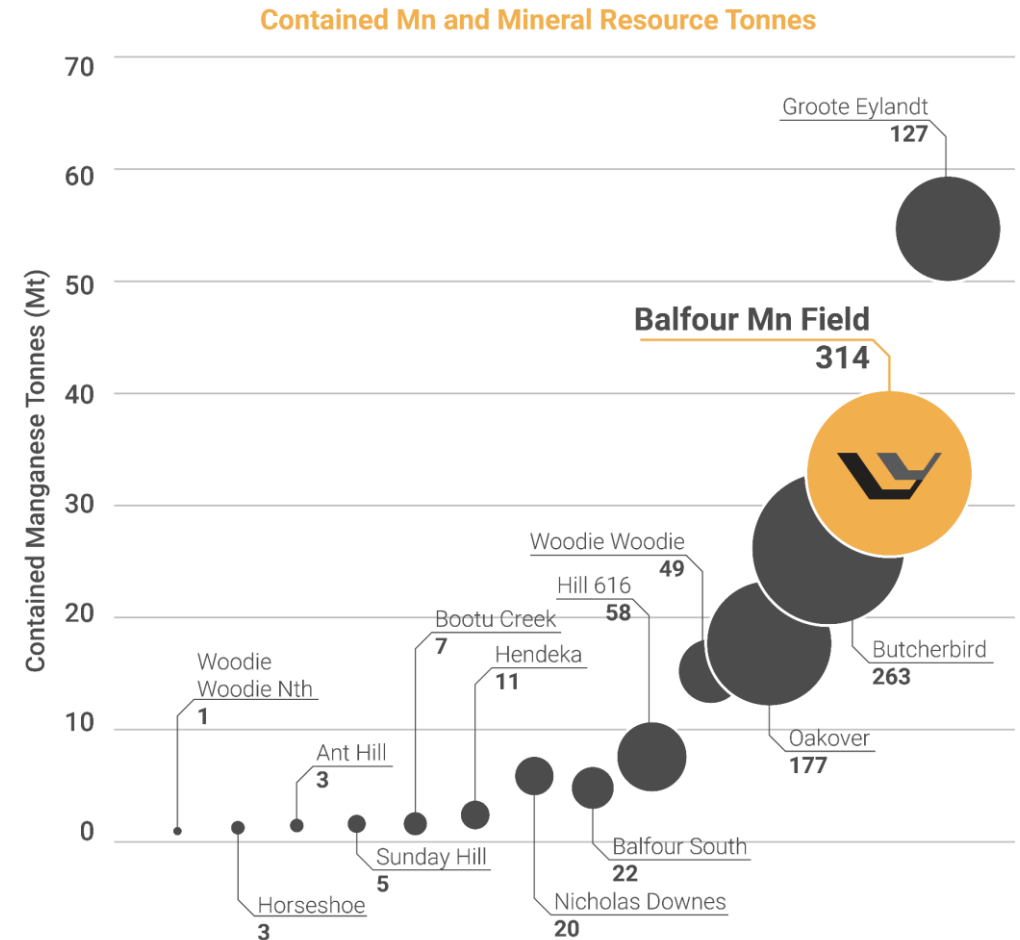


# Black Canyon in the Australian Manganese Context

- ▶ Largest manganese Mineral Resources Estimate in Western Australia and second largest in Australia.
- ▶ All discovered by Black Canyon in the past 2 years.
- ▶ Three drill programs completed for 569 holes for 20,064m.

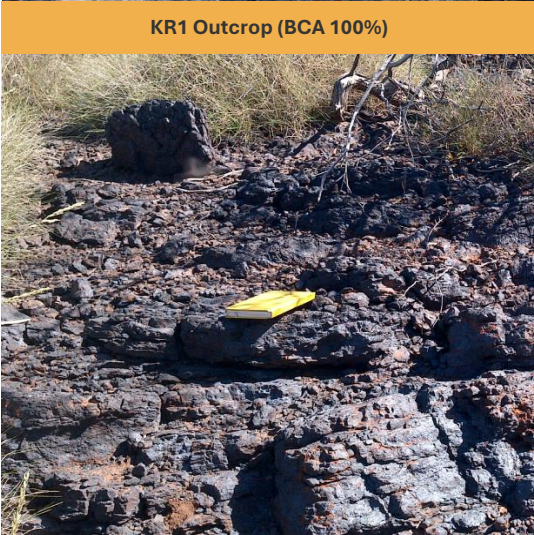
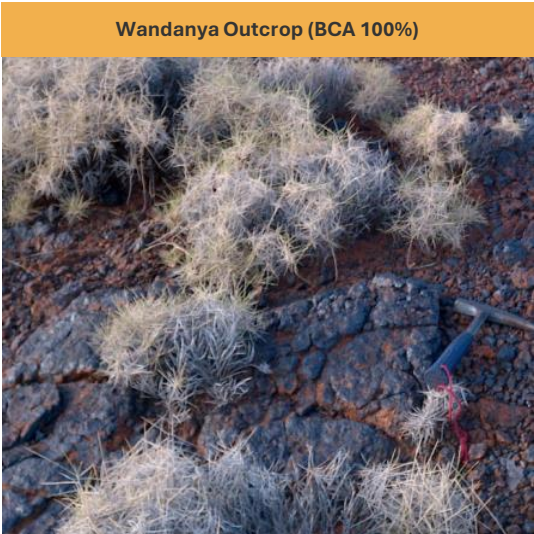
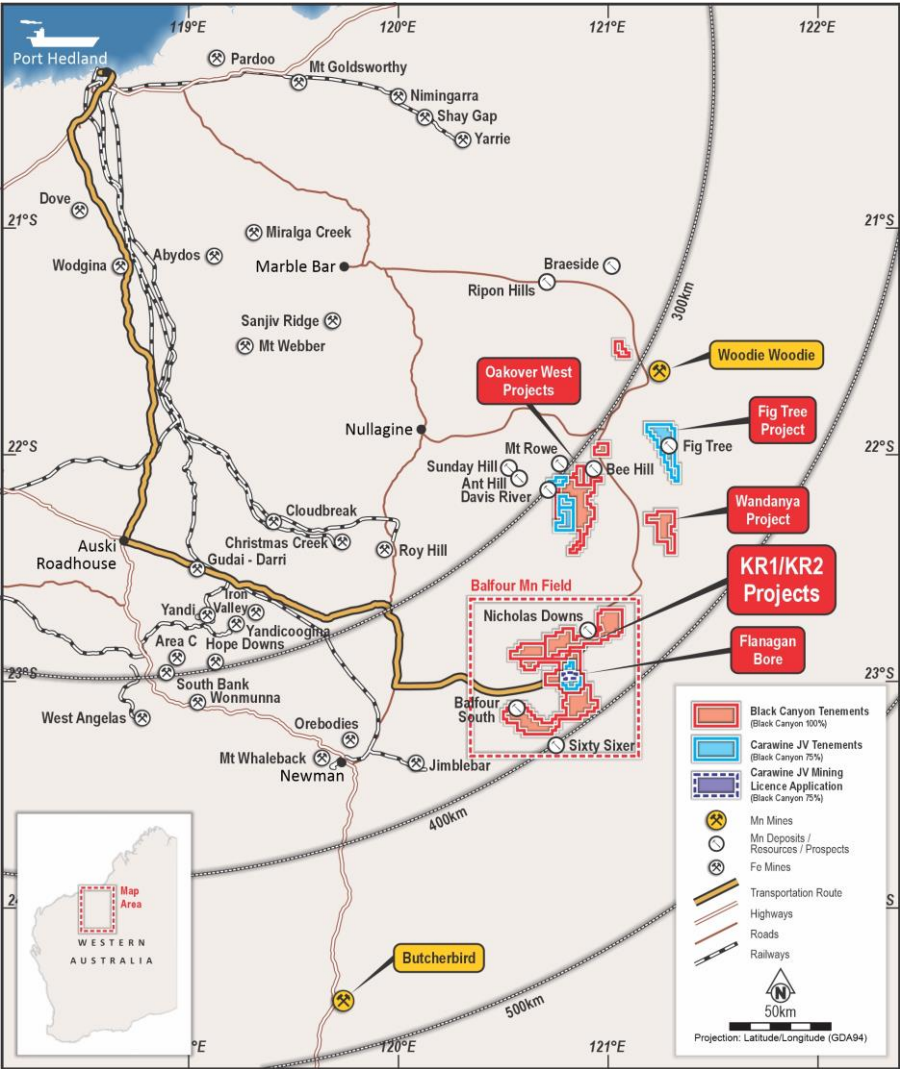
Deposit	Company	Tonnes (Mt)	Grade Mn (%)	Contained Mn (Mt)
Groote Eylandt	South 32	127	43.6	55.4
<b>Balfour Mn Field</b>	<b>Black Canyon</b>	<b>314</b>	<b>10.5</b>	<b>33.1</b>
Butcher Bird	Element 25	263	9.9	26.1
Oakover	Firebird Metals	177	9.9	17.4
Woodie Woodie	Consolidated Minerals	49	30.6	14.8
Hill 616	Firebird Metals	58	12.2	7.0
Balfour South	Consolidated Minerals	22	19.4	4.2
Nicholas Downs	Hancock Prospecting	20	27.2	5.3
Hendeka	Trek Metals	11	15.0	1.7
Bootu Creek	OM Holdings	7	13.9	1.0
Sunday Hill	Resource Development Group	5	18.0	0.9
Ant Hill	Resource Development Group	3	24.8	0.8
Horseshoe	Bryah Resources	3	20.2	0.6
Woodie Woodie Nth	Accelerate Resources	1	19.1	0.2

Refer to notes at the end of the presentation for data pertaining to Mineral Resources.





# Asset Overview – 2,100km<sup>2</sup> of Granted Licenses



BCA ASX Announcement 05/07/2023 High-grade Manganese Rock Chip Samples up to 54% Mn at the Wandanya Project.



# KR1 Deposit (BCA 100%)

Looking South



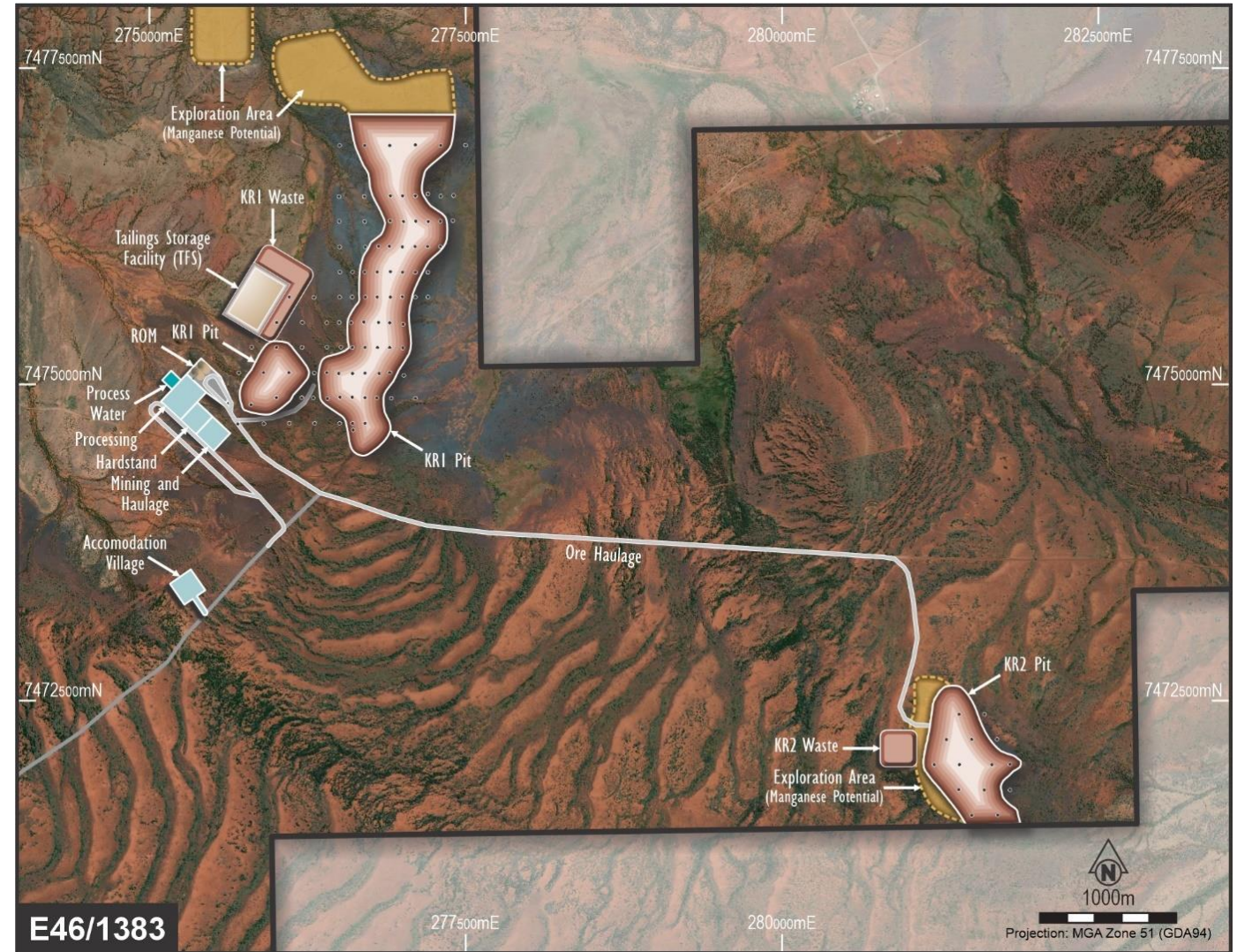


# KR1 and KR2 Scoping Study Results

Financial Performance Summary	Unit	LOM
Initial LOM	(years)	16
Total LOM Revenue	(A\$ M, real)	2,781
Total LOM EBITDA	(A\$ M, real)	654
<b>NPV @ 8% - before tax</b>	(A\$ M, real)	<b>340</b>
<b>IRR - before tax</b>	(%, real)	<b>70</b>
<b>Project Capital Expenditure</b>	(A\$ M, real)	<b>84</b>
Payback Period - before tax	(years)	<2
Average Sales Price (LOM)	Product (A\$/t)	227
	\$US/dmtu	<b>4.60</b>
EX rate AUD:USD	A\$	0.67
CI Cash Costs (CIF)	(A\$/t, real)	149
	\$US/dmtu	3.02
AISC (CIF)	(A\$/t, real)	166
	\$US/dmtu	<b>3.38</b>

## Key Assumptions

- ▶ Mining Rate – 3.0Mtpa
- ▶ Life of Mine – 16 years
- ▶ Annual Concentrate Production – 760,000tpa (LOM 12Mt)
- ▶ LOM Production Targets of 48.2Mt @ 10.9% Mn
- ▶ Mining Method – truck and shovel
- ▶ Simple Processing method – crush, wash, screen and DMS
- ▶ Reagents – water and dense media
- ▶ Transport – 115t and 155t trucks 550km to Port Hedland



BCA ASX Announcement 01/07/2024 Positive Results confirmed from the KR1 & KR2 Scoping Study

# KR1 and KR2 Scoping Study Results

## CAPEX

Item	Description	Cost (A\$M)
<b>Process Plant</b>		
	Crushing	5.9
	Processing	34.4
	Tailings systems	2.3
	Services	0.6
	Plant bulk earthworks	2.1
	Process infrastructure	0.5
	<b>Total Process Plant</b>	<b>45.7</b>
<b>Infrastructure</b>		
	Tails Storage Facility	2.3
	Water supply	1.8
	Roads	1.3
	Accommodation Camp	5.5
	Light vehicles & mobile equipment	1.2
	Other	1.6
	<b>Total Infrastructure</b>	<b>13.6</b>
<b>Indirect Costs</b>		
	Owners and other costs	5.9
	EPCM	7.1
	Contingency	11.9
	<b>Total Indirect cost</b>	<b>24.9</b>
	<b>TOTAL CAPEX</b>	<b>84.1</b>

## LOM OPEX/t (CIF)

CA Operating Cost C1	A\$/t LOM	A\$/t Mn CONC	\$US/DMTU
Mine to ROM Haulage	5.21	20.45	0.42
Milling Costs	5.82	22.87	0.46
Grade Control and rehandle	1.5	5.89	0.12
G & A	1.51	5.93	0.12
Product haulage	17.46	68.61	1.39
Port and shipping charges	6.36	25	0.51
<b>Total C1 Operating cost</b>	<b>37.9</b>	<b>148.8</b>	<b>3.02</b>

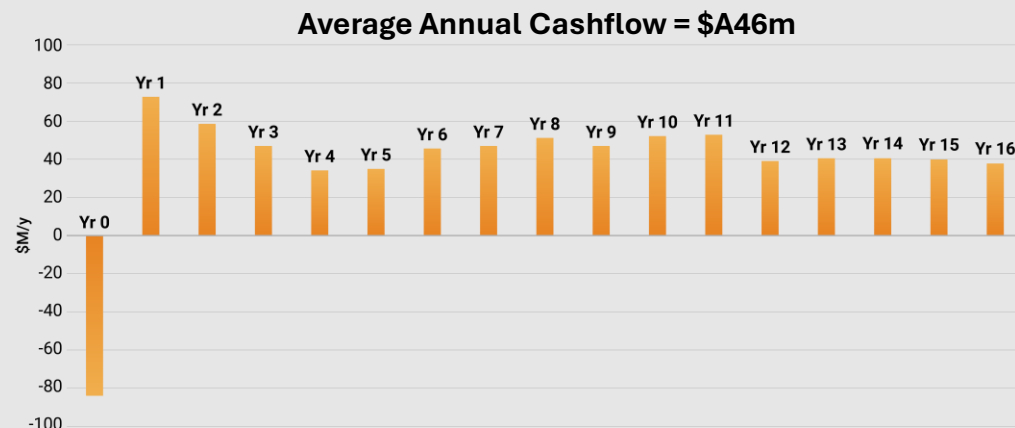
  

AISC	A\$/t LOM	A\$/t Mn CONC	US/DMTU
C1 Operating cost	37.9	148.8	3.02
Sustaining Cost	0.8	2.9	0.06
Royalty (State & Traditional Owners)	3.7	14.7	0.3
<b>Total AISC</b>	<b>42.4</b>	<b>166.4</b>	<b>3.38</b>



# KR1 and KR2 Scoping Study Results

## Operating Cashflow



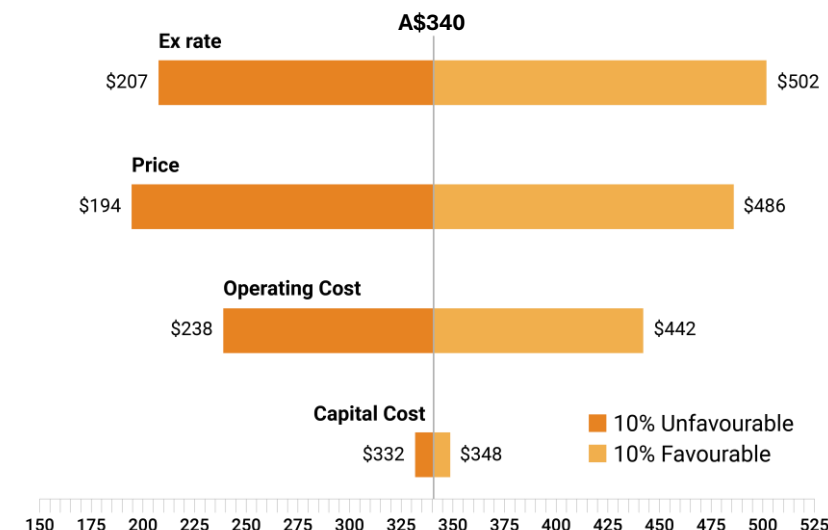
- Higher cashflows are anticipated in years 1 – 3 due to very low strip ratios from the KR1 starter pit that also coincides with higher ore feed grades in the upper portion of the deposit.
- Similarly, from year 6 access to KR2 mineralisation also means developing shallower mineralisation with a low strip ratio.

## AUD NPV sensitivity to price and exchange rate based on 33% Mn

Exchange Rate AUD:USD	Mn Price (US\$ DMTU) (CIF)				
	44% Mn				
	4.36	4.87	5.6	6.09	6.78
	33% Mn disc				
	3.6	4	4.6	5	5.6
0.74	-83	34	207	321	496
0.71	-44	78	257	376	557
<b>0.67</b>	<b>21</b>	<b>150</b>	<b>340</b>	<b>466</b>	<b>657</b>
0.63	94	231	433	567	771
0.59	177	323	539	682	900

Current 44% Mn Benchmark Price over US\$8.00/dmtu

## Sensitivity analysis using a 10% threshold (A\$m, NPV, before tax, real)



# KR1 and KR2 Scoping Study Results

## Project Enhancements

- ▶ Additional development of higher-grade, low-strip-ratio BCA controlled resources within a 20-30km radius
- ▶ Additional resources feed into a higher throughput operation to further increase manganese concentrate product
- ▶ The Scoping Study considered contract haulage, but future Feasibility Studies may consider transitioning to owner operator or a combination of fleet ownership and contract management to reduce OPEX costs.
- ▶ Soft, laminated nature of the mineralisation may be highly favorable for cost-effective strip-mining using surface miners
- ▶ Future metallurgical optimisation to focus on increasing manganese grade by applying additional density-based separation techniques.

## Project Funding (\$84m CAPEX)

- ▶ Funding is expected to come from traditional equity and debt instruments, including contributions from existing shareholders, new equity investors, and debt providers both from Australia and overseas.
- ▶ Funding may also come from strategic offtake partners seeking long term secure supply of manganese concentrate for alloying in their smelters.
- ▶ The Project has attracted strong interest from Chinese, Indian smelters and commodity traders.
- ▶ Black Canyon could pursue options including a sale or partial sale of the KR1 and KR2 projects and offtake funding.
- ▶ The North Australian Infrastructure Fund (NAIF) supports infrastructure and mining projects, benefiting local economies and stakeholders, particularly in northern regional Western Australia. NAIF prefers long mine life assets, like those in the Balfour Manganese Field, and often collaborate with Export Australia for funding packages.



# Beneficiation Metallurgical Testwork

## Crushing and washing testwork

- ▶ Significant manganese grade uplifts from feed grades of 11% and 15% Mn upgraded to approximately 23% and 24% Mn through scrubbing and washing – an important first step for beneficiation.

## Pre-Feasibility level Heavy Liquid Separation (HLS) testwork (2023)

- ▶ Significant manganese concentrates results from lump (8-25mm) and fines (1-8mm) testwork includes
  - LR01 lump product - 32.2% Mn
  - LR01 fines product - 31.4% Mn
  - FB03 lump product - 33.2% Mn
  - FB03 fines product - 33.4% Mn

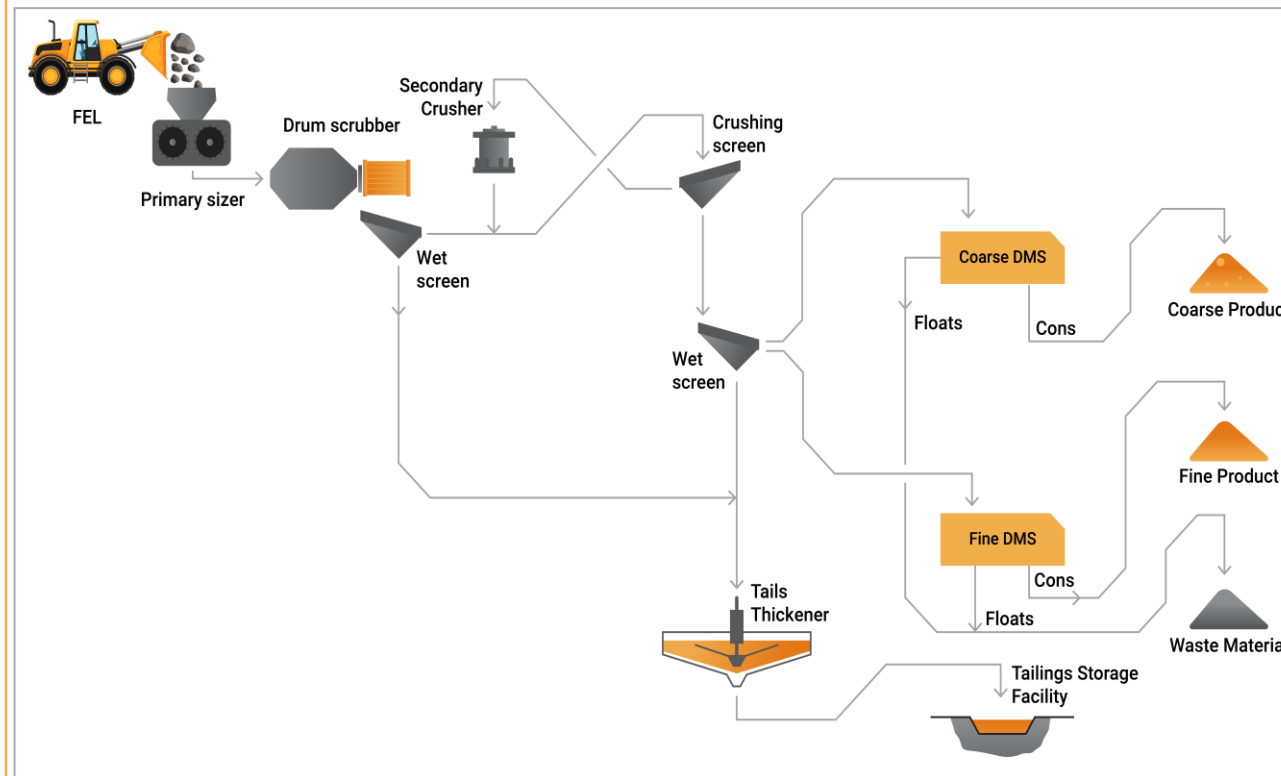
## HLS testwork delivers 35% plus Mn concentrate (2024)

- KR1 fines only - between 30.2% Mn & 37.4% Mn
- KR2 fines only - between 29.2% Mn & 35.3% Mn

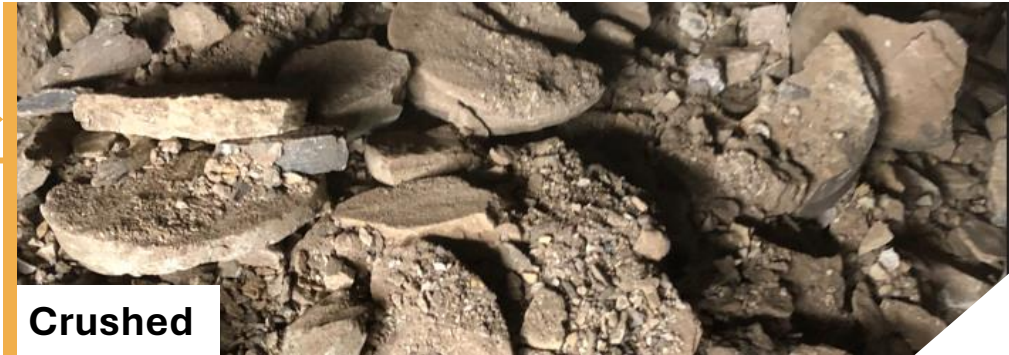
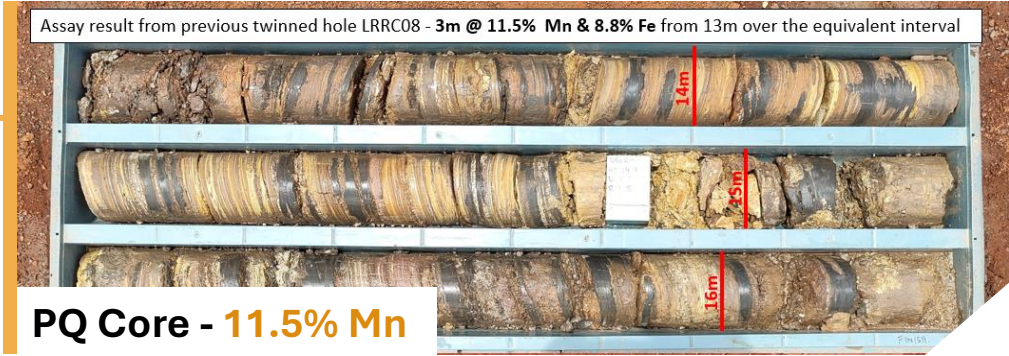
## Dense Media Separation (DMS) testwork delivered target grade between 30 and 33% Mn (2024)

- KR1 fines only product - 31.8% Mn
- KR2 fines only product - 31.3% Mn

## Simplified Flowsheet



# Schematic Beneficiation Process Summary

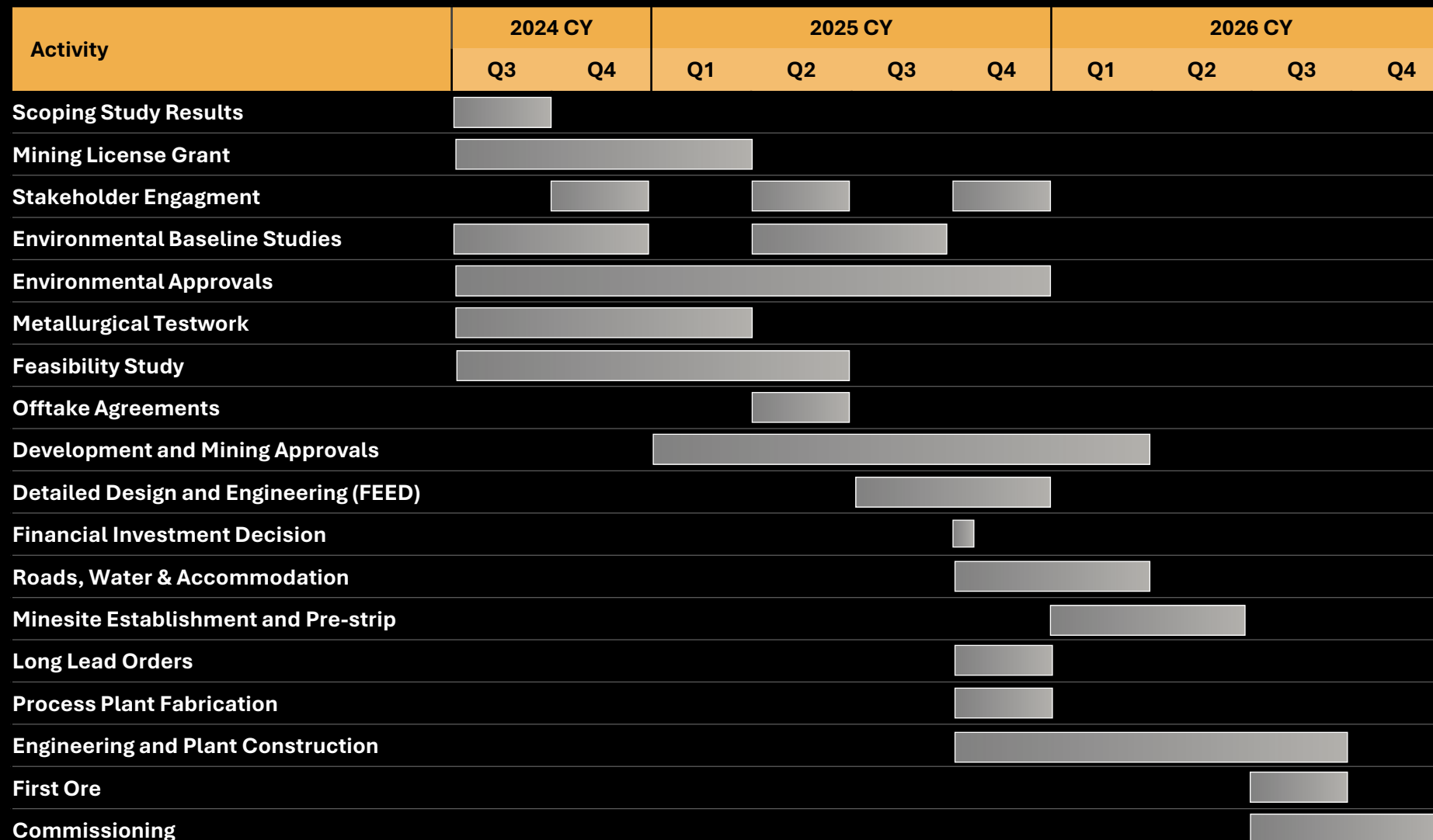


Dense Media Separation (DMS) – Upgrade to 32% Mn

BCA ASX Announcement 08/02/2022 Thick Manganese Intersections from Drilling at Flanagan Bore, 21/02/2022 Further Thick Manganese Intersections at Flanagan Bore and 24/04/2023 Metallurgical Testwork Successfully Delivers Consistent Concentrate Grades Above 30% Mn. 26/03/2024 Metallurgical testwork delivers 35% plus Mn concentrate. 01/05/2024 Dense Media Testwork delivers 32% Mn Concentrate



# KR1 & KR2 Potential Development Schedule



# 2024 Work Streams

- Completed Scoping Study at KR1 & KR2
- Examine Scale
- Mining & Processing options
- Transport Options
- Advance Environmental Studies
- Advance Metallurgical Testwork
- Feasibility Studies



## MN CONCENTRATE

- HPMSM processing facility location & key criteria
- Feedstock and End-product options
- Upscale Hydrometallurgical testwork
- Flowsheet development
- Pilot Plant
- Scoping Study



## PRECURSOR PRODUCT

- Offtake agreements with smelters or metal traders
- USA: importance of the IRA and the FTA
- Europe: importance of the EU Battery Passport Regulations
- Chinese, Korean, Indian and Japanese customers
- OEM, battery producer & pCAM partnerships



## PARTNERSHIPS

- Manganese Ore supply shocks
- KR1 & KR2 Scoping Study Results
- Offtake Agreements
- HPMSM processing location established
- Cornerstone or Strategic Investor



## POTENTIAL CATALYSTS



# BCA Investment Summary



**Delivering results** – Multiple discoveries, MRE upgrades, positive Scoping Study, ML applications, commencement of environmental studies and further feasibility studies planned.



**Manganese is essential** to the steel industry and a critical battery mineral, with strong growth forecast.



**Clear strategy** to add value & grow the Company through discovery, development & downstream processing.



**Significant exploration** programs completed across the Balfour Manganese Field (BMF).



**Downstream strategy**, HPMSM to facilitate global feedstock supply diversification supporting a value-add strategy.





**BLACK CANYON**

## Contact

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Managing Director



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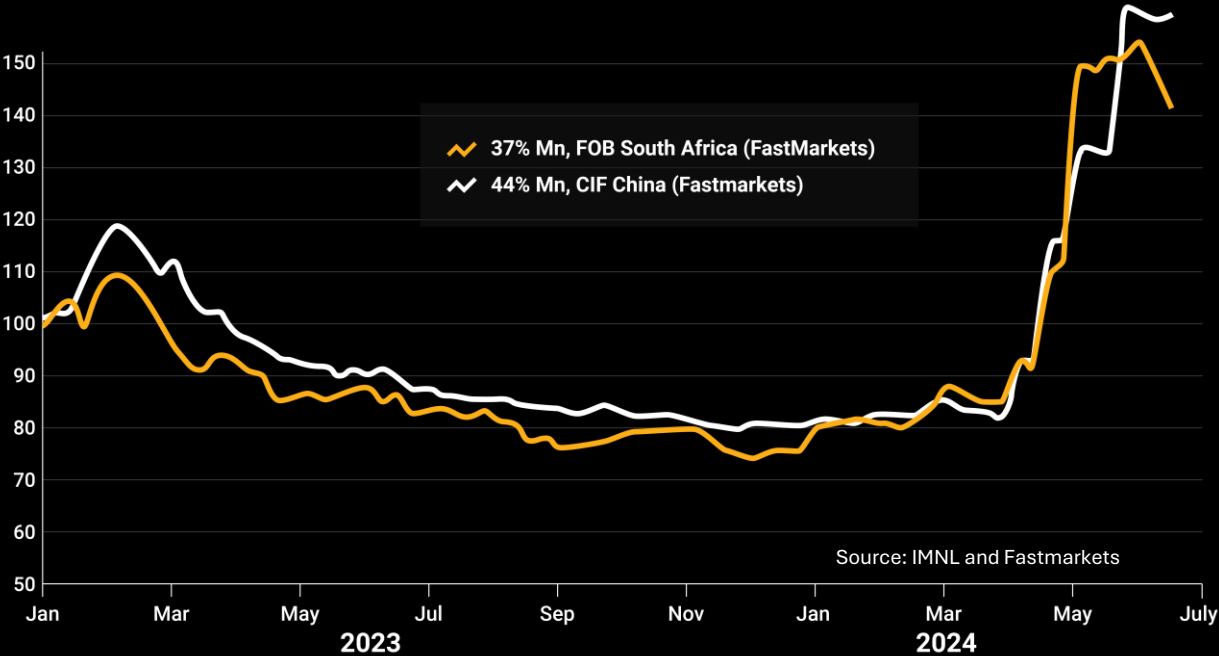


# Manganese Fundamentals

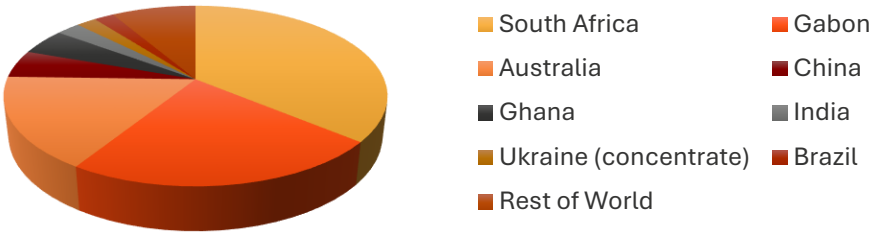
## Moving in the right direction

- ▶ Analysts expected the Mn ore price to move positively in 2024
- ▶ Groote Eylandt operations suspension removed approximately 15% of global manganese unit supply.
- ▶ March quarter 2024, the price was US\$4.29 dmtu and has increased to over US\$8.00 dmtu (44% Mn benchmark)
- ▶ Since 2017 the average price is US\$5.60 dmtu (44% Mn benchmark)

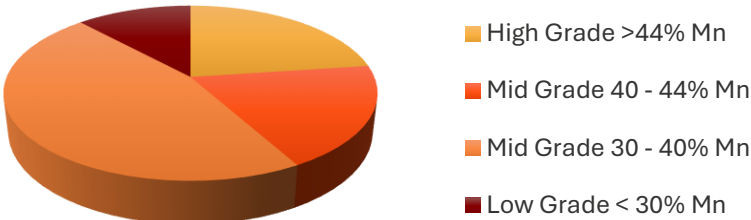
Manganese Ore Index 2023-2024 week ending 21 June 2024 (source IMNL and Fastmarkets)



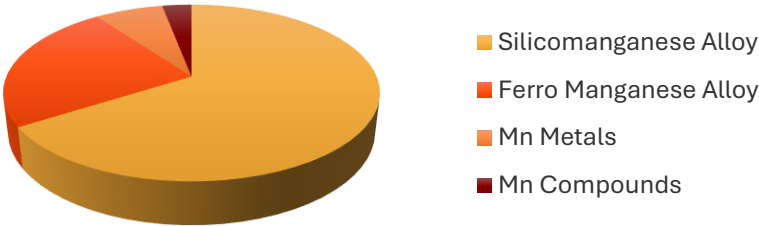
World Manganese Production (2022 USGS)



World Global Mn production grades (2023 IMNL)



Mn Ore Utilisation (2023 IMNL)



unit	2020	2021	2022	2023	2024e	2025e	2026e	2027e	2028e
US\$/DMTU	4.64	5.21	6.06	4.76	4.33	5.00	5.25	5.50	5.50

Company data, IMNI, Trademap, Morgan Stanley Research Estimates



# Manganese (Mn)

## Essential for steel and critical for EV Li-ion batteries

Fourth most consumed metal by tonnage with 60Mt tonnes of ore mined globally on an annual basis.



Approx. 90% is used in steel manufacturing, Mn alloys added to prevent corrosion, resist abrasion, and increase hardenability.



Baseload demand from China with the emergence of India.



Smeltered to make a ferro or silico manganese alloy used in steel production (6 - 15kg Mn/t steel).



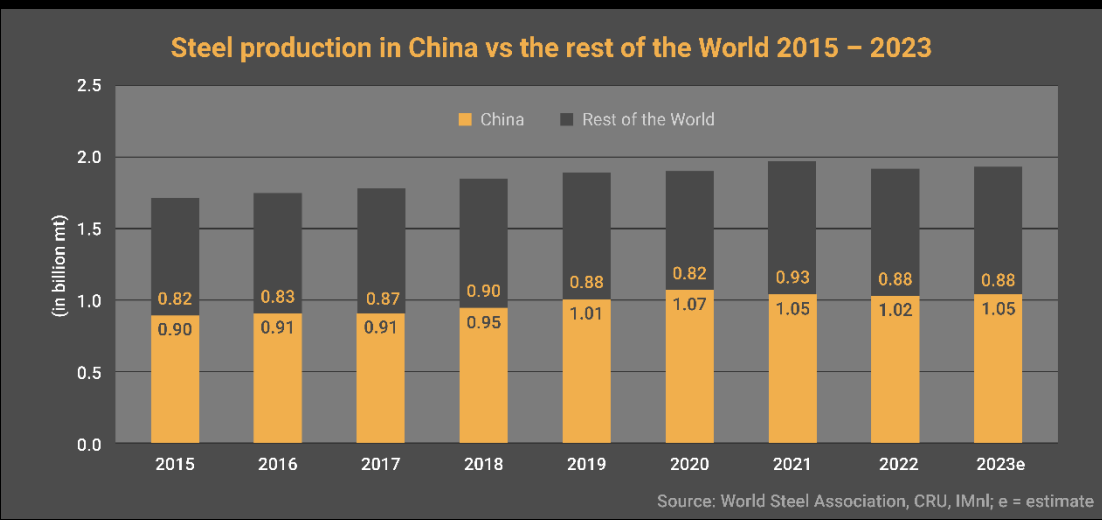
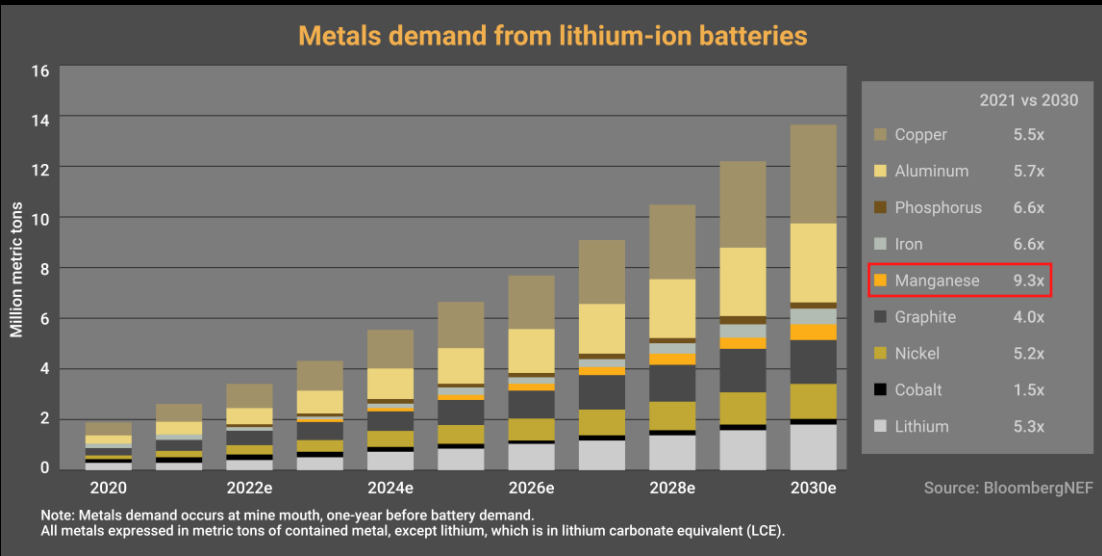
NMC batteries contain 10-30% Mn that equates to 10-60kg Mn depending on battery chemistry and pack size.



Growth of LFMP, high Li-Mn and sodium-based chemistries.



9.3x demand for Mn required for Li-Ion batteries by 2030.

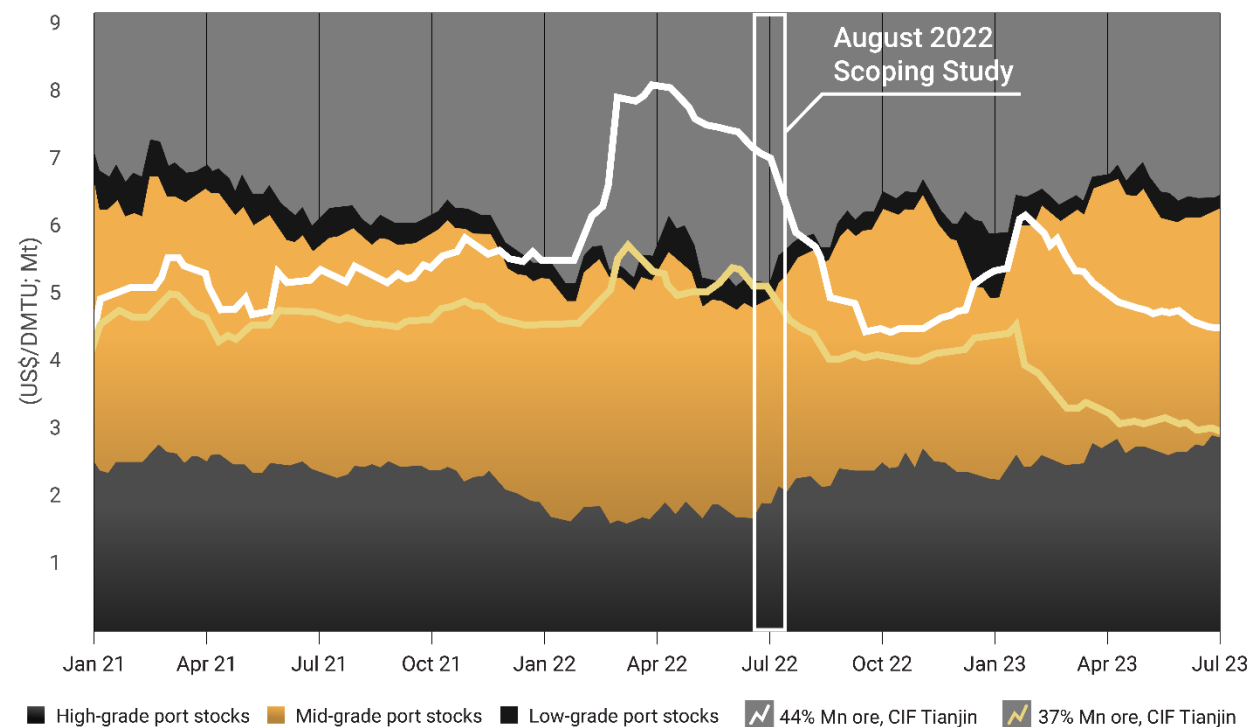


# Flanagan Bore Scoping Study Results (Aug 2022)

## Key Financial and Project Metrics

NPV <sub>8</sub> (before tax, real)	A\$134 million
IRR (before tax)	67%
Production Targets (LOM)	36.1Mt @ 11.7% Mn
Initial Mine Life @ 1.8Mtpa	20 Years
Annual Mn concentrate production	500kt
Project Capital Expenditure	A\$44 million
Payback Period	<2 Years
Total LOM Revenue	A\$2,282 million
Total LOM EBITDA	A\$420 million
Average Sales Price (CIF A\$/t Mn Conc LOM) (US\$4.90 DMTU or AU\$7.00/ DMTU)	A\$231
AISC (CIF, A\$/t Mn Conc LOM) (US\$4.08 DMTU or A\$5.82 DMTU)	A\$192

Manganese Ore Price and China Port Stocks



- ▶ Since 2015 Average price for 44% Mn was CIF US\$5.27 DMTU
- ▶ Manganese ore pricing currently at cyclical lows below the 5 year average



# Balfour Manganese Field Mineral Resources

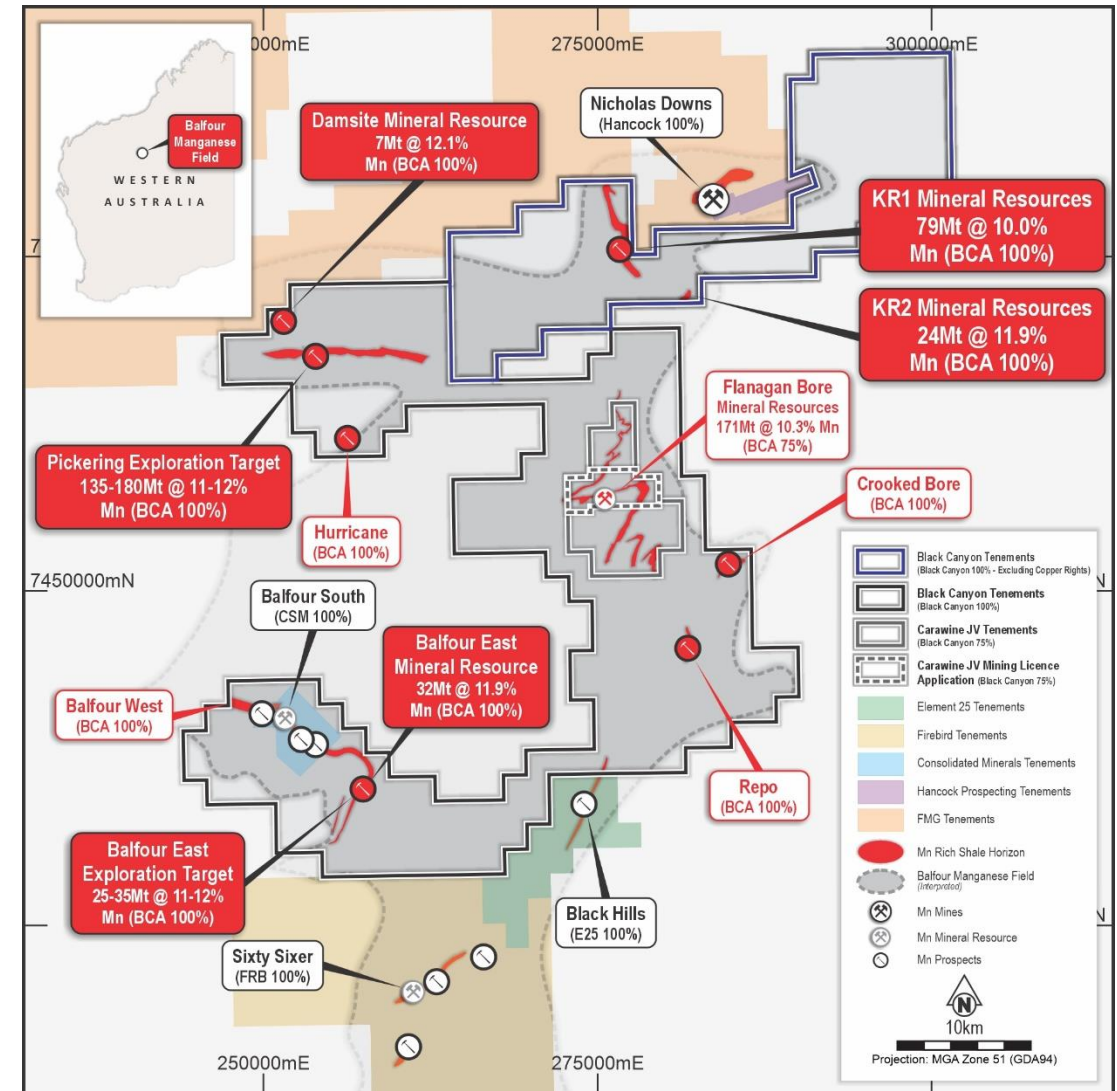
**Black Canyon controls the largest contained Manganese deposits in WA – 33.1Mt of contained Mn**

- MREs with strong geological and grade continuity demonstrated along and across strike – some remain open. Large scale mineralised system presents multiple development options
- 80% in high confidence Measured and Indicated Resource categories

Summary of Mineral Resources <sup>(1-3)</sup>							
Deposit	Mineral Resource Category	Material	In Situ Mn	Mn	Fe	Si	Al
		(Mt)	(Mt)	(%)	(%)	(%)	(%)
FB3 <sup>4</sup>	Measured	52	5.5	10.5	10.4	16.9	4.3
LR1 <sup>4</sup>	Measured	47	4.9	10.3	8.4	16.7	4.6
<b>Total</b>	<b>Measured</b>	<b>100</b>	<b>10.4</b>	<b>10.4</b>	<b>9.4</b>	<b>16.8</b>	<b>4.4</b>
KR1 <sup>5</sup>	Indicated	79	7.8	10.0	7.9	18.0	5.4
FB3 <sup>4</sup>	Indicated	63	6.3	10.0	9.6	16.8	4.4
LR1 <sup>4</sup>	Indicated	8	0.9	11.3	9.4	6.9	1.8
<b>Total</b>	<b>Indicated</b>	<b>150</b>	<b>15.1</b>	<b>10.1</b>	<b>8.7</b>	<b>16.9</b>	<b>4.8</b>
KR2 <sup>5</sup>	Inferred	24	2.9	11.9	10.6	19.2	5.0
Balfour East <sup>5</sup>	Inferred	32	3.9	11.9	8.5	18.6	4.9
Damsite <sup>5</sup>	Inferred	7	0.9	12.1	9.6	17.2	4.2
<b>Total</b>	<b>Inferred</b>	<b>64</b>	<b>7.6</b>	<b>11.9</b>	<b>9.4</b>	<b>18.7</b>	<b>4.9</b>
<b>Grand Total</b>		<b>314</b>	<b>33.1</b>	<b>10.5</b>	<b>9.1</b>	<b>17.2</b>	<b>4.7</b>

## Notes

- |  |                                       |
|--|---------------------------------------|
| (1) Mineral resources reported at a cut-off grade of 7% Mn.  | (4) Deposit under which BCA owns 75%  |
| (2) Appropriate rounding has been applied.   | (5) Deposit under which BCA owns 100% |
| (3) Refer to JORC Table 1, Sections 1 to 3 and Appendix 2 for further details in ASX release 27/11/2023. |                                       |



# Balfour Manganese Field - KR1 and KR2 Mineral Resources

Discovered in March, drilled in July, maiden MRE November 2023

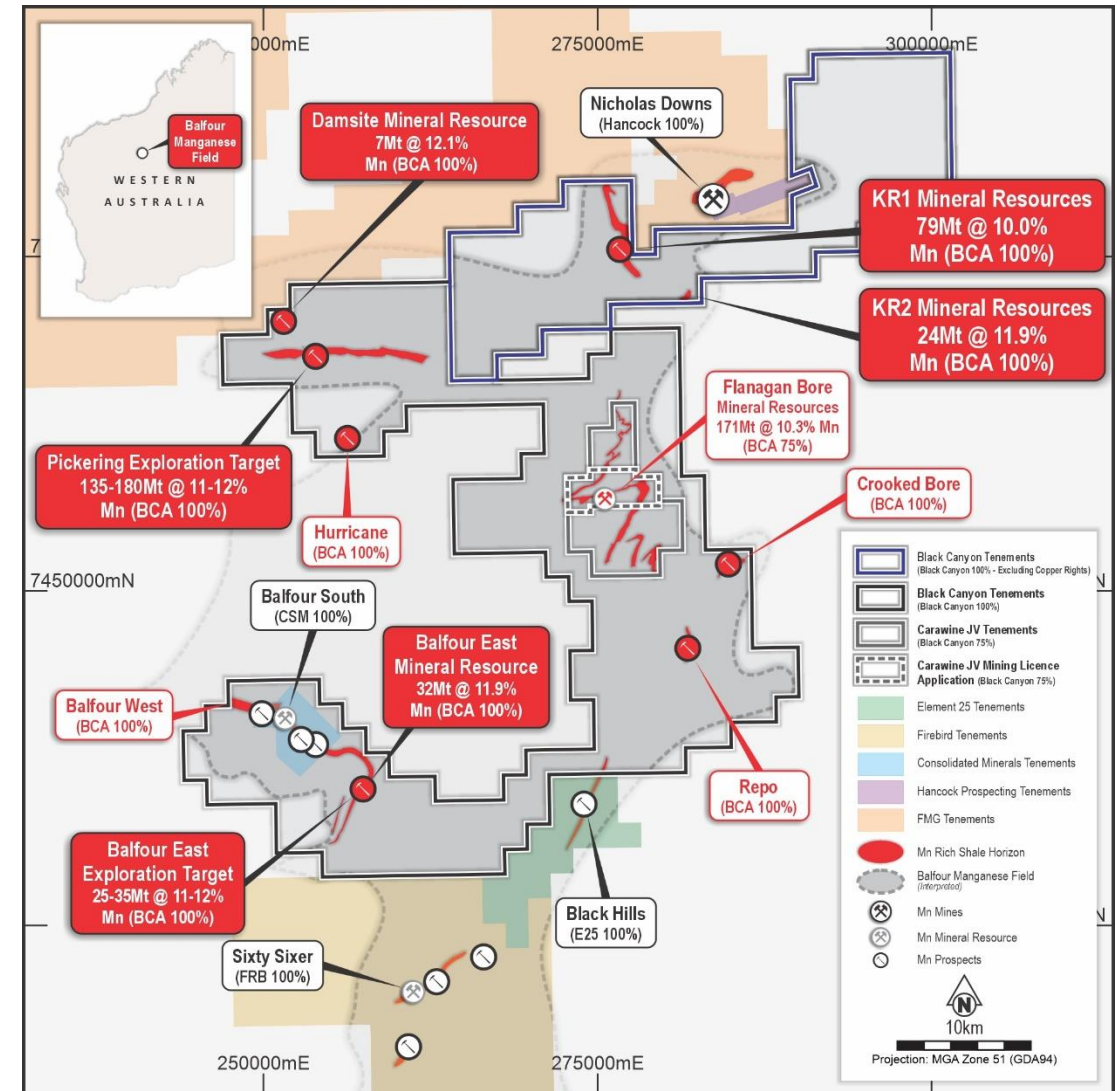
- Strong geological and grade continuity demonstrated along and across strike – some remain open. Large km scale mineralised system presents multiple development options.
- At KR1 and KR 2 - 77% in higher confidence Indicated and 22% Inferred Resource categories.

Summary of Mineral Resources > 7% Mn cut-off grade							
Deposit	Mineral Resource Category	Material (Mt)	In Situ Mn (Mt)	Mn (%)	Fe (%)	Si (%)	Al (%)
KR1	Indicated	79	7.8	10.0	7.9	18.0	5.4
Total	<b>Indicated</b>	<b>79</b>	<b>7.8</b>	<b>10.0</b>	<b>7.9</b>	<b>18.0</b>	<b>5.4</b>
KR2	Inferred	24	2.9	11.9	10.6	19.2	5.0
Total	<b>Inferred</b>	<b>24</b>	<b>2.9</b>	<b>11.9</b>	<b>10.6</b>	<b>19.2</b>	<b>5.0</b>
Grand Total		<b>103</b>	<b>10.7</b>	<b>10.4</b>	<b>8.6</b>	<b>18.3</b>	<b>5.3</b>

Summary of Mineral Resources >11% Mn cut-off grade							
Deposit	Mineral Resource Category	Material (Mt)	In Situ Mn (Mt)	Mn (%)	Fe (%)	Si (%)	Al (%)
KR1	Indicated	15	2	13.1	9.8	18.0	6.2
Total	<b>Indicated</b>	<b>15</b>	<b>2</b>	<b>13.1</b>	<b>9.8</b>	<b>18.0</b>	<b>6.2</b>
KR2	Inferred	14	2	13.6	11.2	18.2	4.6
Total	<b>Inferred</b>	<b>14</b>	<b>2</b>	<b>13.6</b>	<b>11.2</b>	<b>18.2</b>	<b>4.6</b>
Grand Total		<b>29</b>	<b>3.8</b>	<b>13.3</b>	<b>10.5</b>	<b>18.1</b>	<b>5.5</b>

## Notes

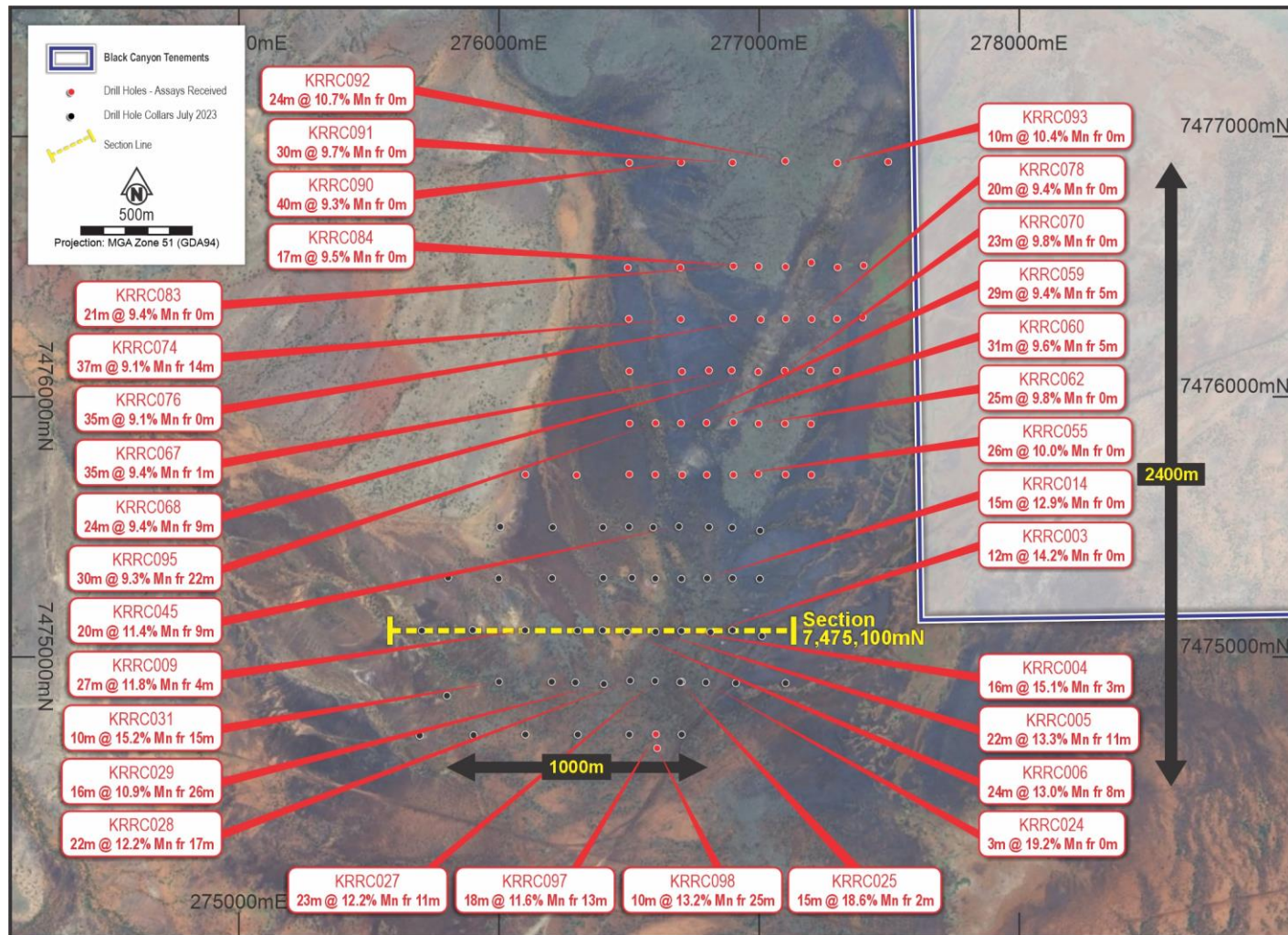
- (1) Mineral resources reported at a cut-off grade of 7% & 11% Mn.
- (2) Appropriate rounding has been applied.
- (3) Refer to JORC Table 1, Sections 1 to 3 and Appendix 2 for further details in ASX release 27/11/2023.



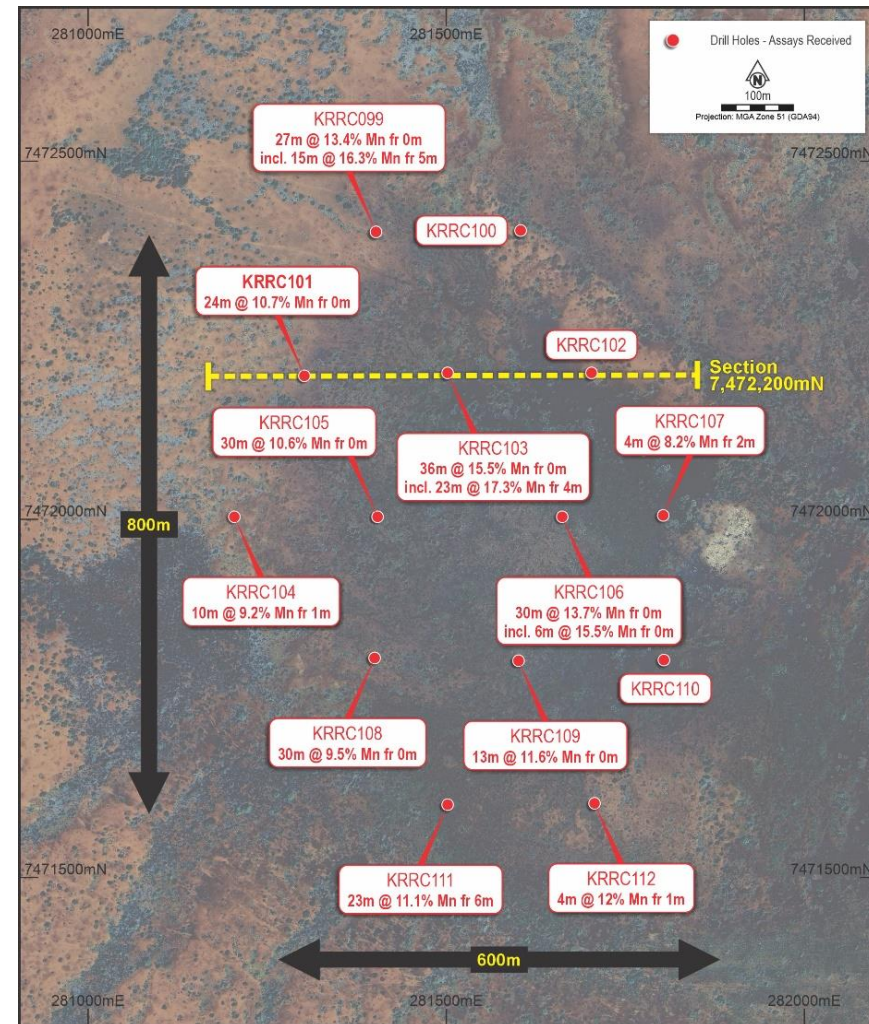


# KR1 & KR2 Deposits (BCA 100%)

**KR1 MRE 79 Mt @ 10.0% Mn for 7.8 Mt of contained Mn**

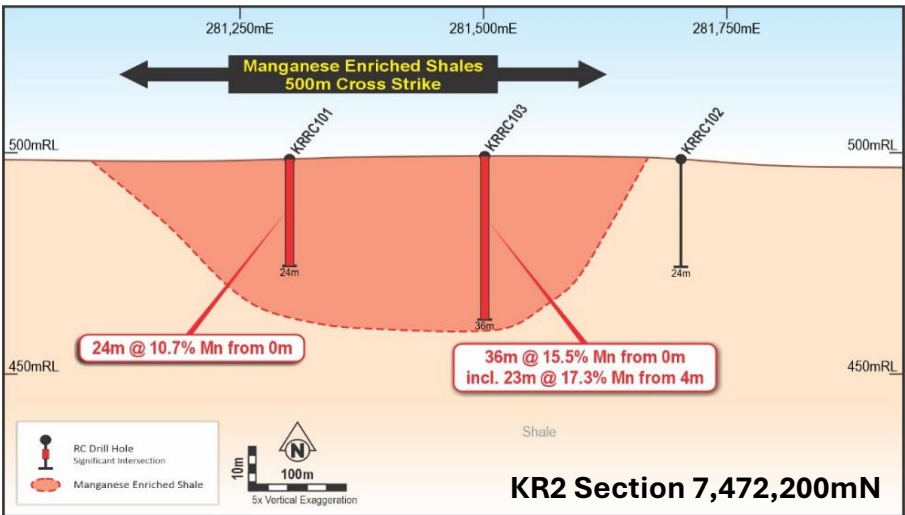
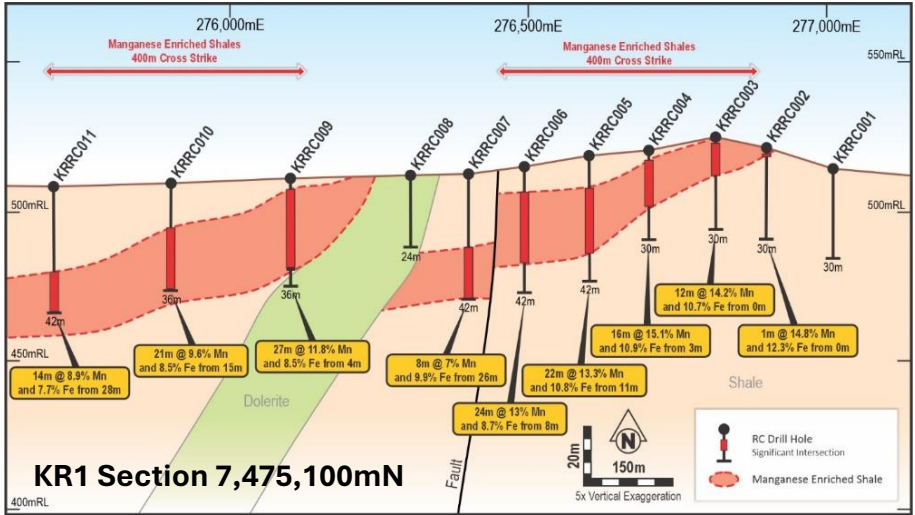
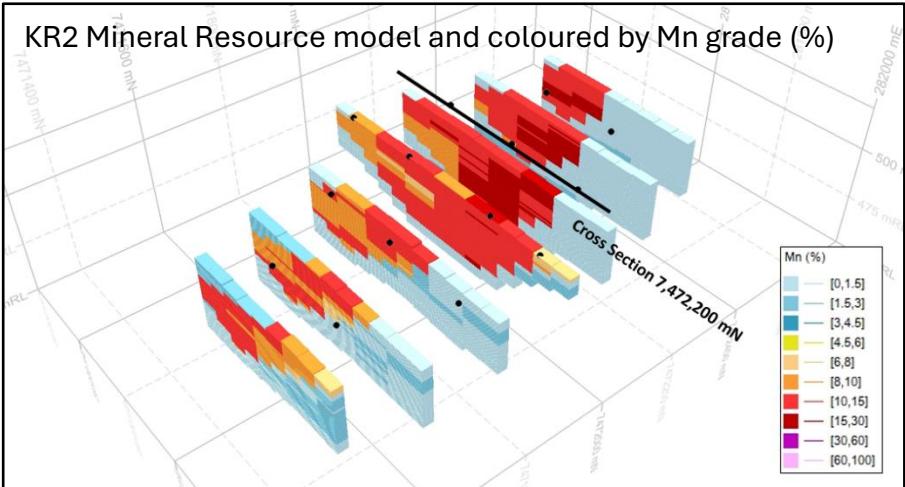
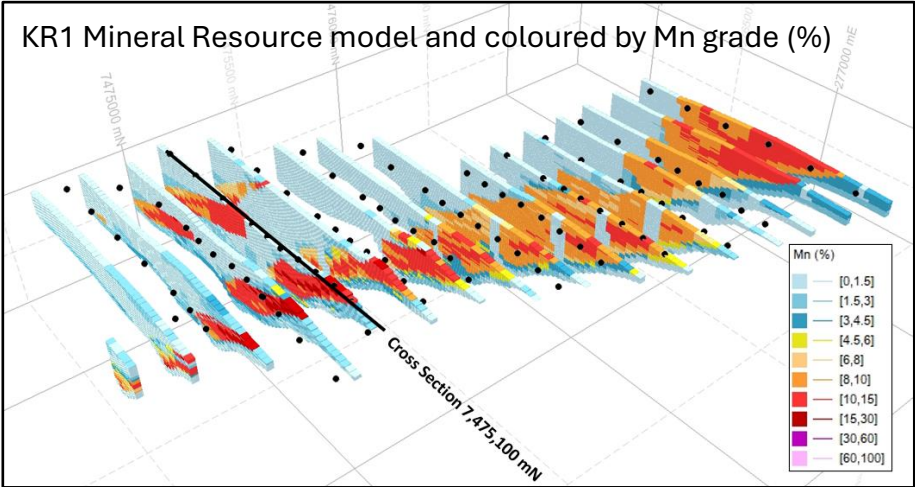


**KR2 MRE 24 Mt @ 11.9% Mn for 2.9 Mt of contained Mn**





# KR1 & KR2 Deposits (BCA 100%)



# Australian Mn Resources

Deposit	Company	Tonnes (Mt)	Grade Mn (%)	Contained Mn (Mt)
Groote Eylandt	South 32	127	43.6	55.4
Balfour Mn Field	Black Canyon	314	10.5	33.0
Butcher Bird	Element 25	263	9.9	26.1
Oakover	Firebird Metals	176.6	9.9	17.4
Woodie Woodie	Consolidated Minerals	48.5	30.6	14.8
Hill 616	Firebird Metals	57.5	12.2	7.0
Balfour South	Consolidated Minerals	21.6	19.4	4.2
Nicholas Downs	Hancock Prospecting	19.5	27.2	5.3
Hendeka	Trek Metals	11.3	15.0	1.7
Bootu Creek	OM Holdings	6.86	13.9	1.0
Sunday Hill	Resource Development Group	5	18.0	0.9
Ant Hill	Resource Development Group	3.1	24.8	0.8
Horseshoe	Bryah Resources	3.1	20.2	0.6
Woodie Woodie Nth	Accelerate Resources	1.2	19.1	0.2

Company	Deposit	Status	Contained Mn Mt	Measured		Indicated		Inferred		Total		Cutoff Mn %	Source
				tonnes Mt	grade Mn %	tonnes Mt	grade Mn %	tonnes Mt	grade Mn %	tonnes Mt	grade Mn %		
South 32	Groote Eyland	Operation	55,372,000	66.0	44.7	35	41.0	26	4402.0	127.0	43.6	-	2023 Annual Report (filed) Reported as a 43.6% Yield Grade
Black Canyon	Balfour Mn Field	Development	32,970,000	100	10.4	150	10.1	64.0	11.9	314.0	10.5	7.0	BCA Release 12/12/23
Element 25	Butcher Bird	Operating	26,144,000	15.3	11.5	41	10	206	9.8	263.0	9.9	-	2023 Annual Report (filed)
Firebird Metals	Oakover	Development	17,434,920	-	-	105.8	10.1	70.9	9.6	176.6	9.9	-	Firebird website 5/12/23 (& ASX release 10/3/22 - filed)
Consolidated Minerals	Woodie Woodie	Operation	14,841,000	-	-	-	-	-	-	48.5	30.6	-	GSWA Manganese invetsment flyer 2022
Firebird Metals	Hill 616	Exploration	7,015,000	-	-	-	-	57.5	12.2	57.5	12.2	-	Firebird website 5/12/23 (& ASX release 10/3/22 - filed)
Consolidated Minerals	Balfour South	Development	4,190,400	-	-	-	-	-	-	21.6	19.4	-	GSWA Manganese invetsment flyer 2022
Hancock Prospecting	Nicholas Downs	Care and Maint.	5,304,000	-	-	-	-	-	-	19.5	27.2	-	GSWA Manganese invetsment flyer 2022
Trek Metals	Hendeka	Development	1,695,000	-	-	-	-	11.3	15.0	11.3	15.0	10.1	2023 Annual Report (filed)
OM Holdings	Bootu Creek	Care and Maint.	953,540	-	-	6.9	13.9	-	-	6.9	13.9	-	Fosters stock Coverage report 02/11/2022
Resource Development Group	Sunday Hill	Exploration	899,000	-	-	4	17.7	1	19.1	5.0	18.0	-	RDG Sunday Hill MRE 1/6/2021 (filed)
Resource Development Group	Ant Hill	Exploration	769,300	-	-	2.8	24.4	0.3	28.7	3.1	24.8	-	MRL Sunday Hill MRE 31/12/2019 (filed)
Bryah Resources	Horse Shoe	Exploration	626,200	-	-	2.1	20.9	1	18.6	3.1	20.2	15.0	Bryah Release 24/08/2023 filed
AX8	Woodie North	Exploration	230,400	-	-	-	-	1.2	19.1	1.2	19.2	10-15%	AX8 release30/11/2023 filed