



# BLACK CANYON

## ASX Announcement



15 September 2022

ASX:BCA

## Thick intervals of manganese enriched shale intersected at the FB3 deposit, Flanagan Bore

- Assay results from infill mineral resource RC drilling at the FB3 Deposit at Flanagan Bore continues to confirm substantial zones of manganese enriched shale including the following significant results:
  - 47m @ 13.6% Mn from surface (FBRC231), including
    - 23m @ 15.9% Mn from surface
  - 39m @ 13% Mn from 2m (FBRC232), including
    - 12m @ 15.8% Mn from 2m
  - 51m @ 12.3% Mn from surface (FBRC239), including
    - 18m @ 16.6% Mn from surface
  - 36m @ 13.2% Mn from surface (FBRC238), including
    - 11m @ 16.5% Mn from surface
  - 64m @ 10.0% Mn from 5m (FBRC255)
  - 6m @ 24.1% Mn from surface (FBRC228)
- Manganese enriched shale has now been delineated from surface, extending over 1000m x 1200m at the FB3 deposit that remains open to the southwest where additional assay results are pending
- These results demonstrate high potential to expand the FB3 Mineral Resource Estimate and grow the global mineral resources at Flanagan Bore
- Updating of the current Indicated Mineral Resource Estimate of 67Mt @ 10.4% Mn at FB3 has commenced incorporating these latest drill results
- Assays from the discovery drilling at FB2 and L1 to TF1 are expected in late September

Australian manganese explorer, Black Canyon Limited (**Black Canyon** or the **Company**) (ASX:BCA), is pleased to announce the results of recent reverse circulation (RC) drilling at the FB3 deposit during May and June 2022 (Appendix 1). The results continue to deliver even thicker zones of higher grade manganese enriched shale that have the potential to expand the FB3 Mineral Resource Estimate (MRE) and grow the global mineral resources at Flanagan Bore beyond the current **104Mt @ 10.5% Mn (Indicated)** containing **11Mt of manganese** (refer to ASX Announcement 13 April 2022 for further details).

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**Black Canyon’s Executive Director, Brendan Cummins, said** “At FB3, a combination of key factors such as folding and topographic elevation have enhanced the enrichment of manganese in the hosting shales. This has led to the development of very thick zones of mineralisation from surface with multiple holes intersecting more than 50m thick intervals of manganese enriched shale around the fold nose that gently plunges to the southwest. Further upside is anticipated along the fold limb extension towards the L1 and TF1 trend where RC chip logging and surface mapping indicate further manganese mineralisation.

These new drill results will increase the MRE confidence currently estimated at Flanagan Bore and will very likely increase tonnage so the Company can continue to build upon the success of our recent positive Scoping Study.”

Located 120km north-east of Newman, Flanagan Bore is part of the Company’s Carawine JV and is subject to a farm-in and joint venture agreement with Carawine Resources Ltd (ASX:CWX). Having earned a 51% interest, Black Canyon is now earning up to 75% in the Carawine Project tenements by sole-funding an additional \$2.5m of exploration expenditure.

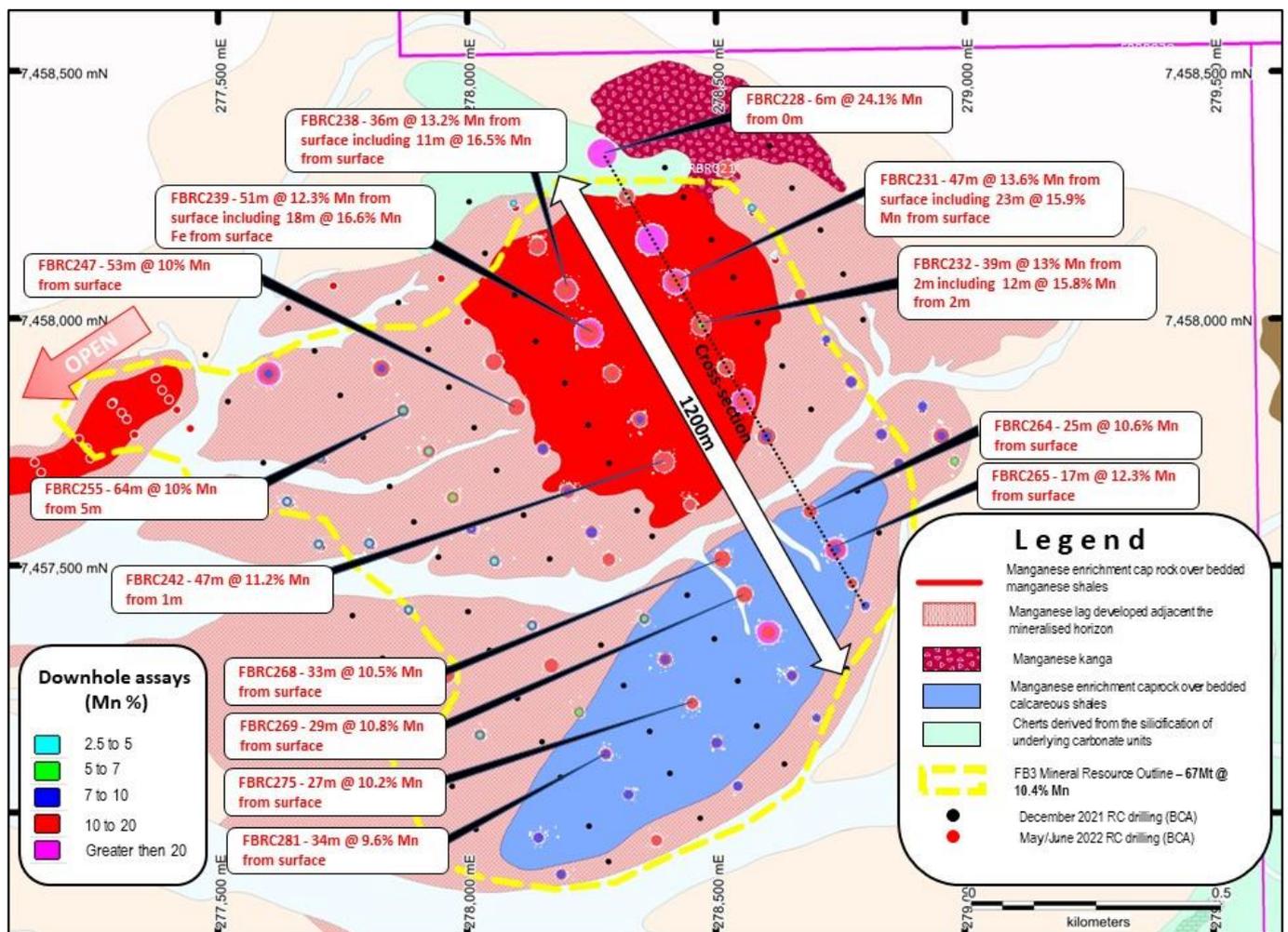


Figure 1. FB3 deposit drill plan showing significant drill results and downhole drill results projected to surface over mapped geology (BCA earning 75%)

## **Flanagan Bore Drill Program Summary**

As a result of the recently completed RC drill program (181 holes for 7,534m), the overall drill spacing at FB3 and LR1 has been reduced from 200m spaced lines and 100m centred holes to 100m spaced lines and 100m centred holes. Significantly, the doubling of the drill density should enable the current Indicated classified Mineral Resources to be upgraded to Measured, which is suitable for detailed feasibility and associated mining and processing studies.

To date, the Company has received and compiled the assay results from the LR1 and FB3 deposit area only, with further results due from the westerly extension of FB3 along the L1 to TF1 trend, which are expected in late September. A summary of the significant results from FB3 is provided below and collar details for the drill program completed at Flanagan Bore are presented in Appendix 1.

### **FB3 Infill Mineral Resource Assay Results**

Manganese enriched shale has now been delineated from surface at the FB3 deposit extending over an area of 1200m x 1000m. The assays received from the May/June 2022 RC drill program completed at FB3 have confirmed the folded nature of the shales and manganese mineralisation that is plunging shallowly to the southwest.

Deeper drilling completed as part this infill phase have yielded much thicker intervals of mineralisation than previously encountered, which has the potential to expand the FB3 Mineral Resource Estimate and grow the global mineral resources at Flanagan Bore.

Significant results are shown in plan and section in Figures 1 & 2 respectively and listed below.

- **47m @ 13.6% Mn from 0m (FBRC231), including**
  - **23m @ 15.9% Mn from surface**
- **39m @ 13% Mn from 2m (FBRC232), including**
  - **12m @ 15.8% Mn from surface**
- **51m @ 12.3% Mn from 0m (FBRC239), including**
  - **18m @ 16.6% Mn from surface**
- **36m @ 13.2% Mn from 0m (FBRC238), including**
  - **11m @ 16.5% Mn from surface**
- **64m @ 10% Mn from 5m (FBRC255)**
- **53m @ 10% Mn from 0m (FBRC247)**
- **47m @ 11.2% Mn from 1m (FBRC242)**
- **6m @ 24.1% Mn from 0m (FBR228)**

Assays from the balance of the May/June drill program which includes drillholes from the FB2 prospect as well as drilling along the trend from L1 to TF1 are expected in late September.

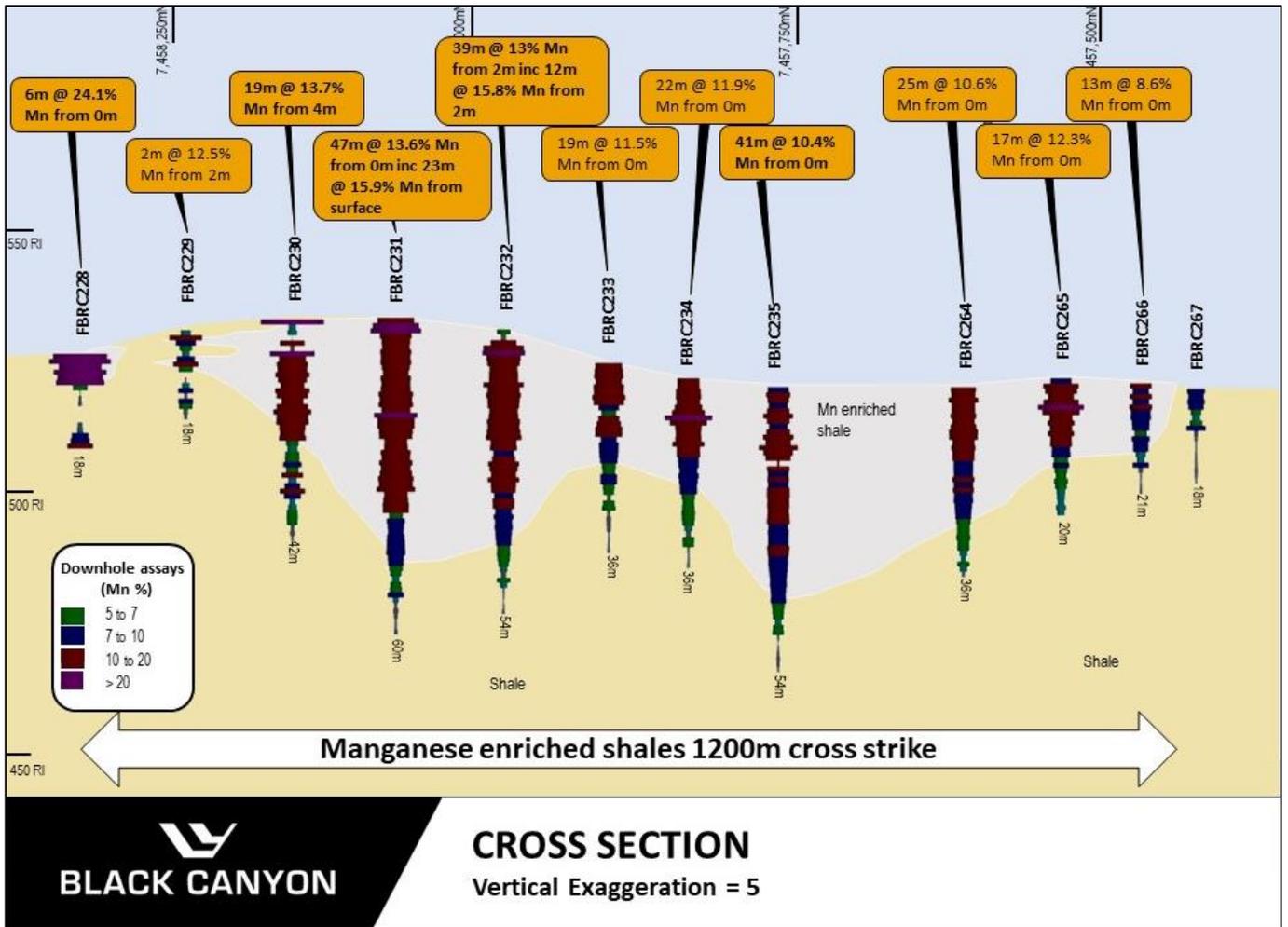


Figure 2. FB3 deposit cross section (see plan for location) showing significant results from the FB3 drill program (looking northeast)

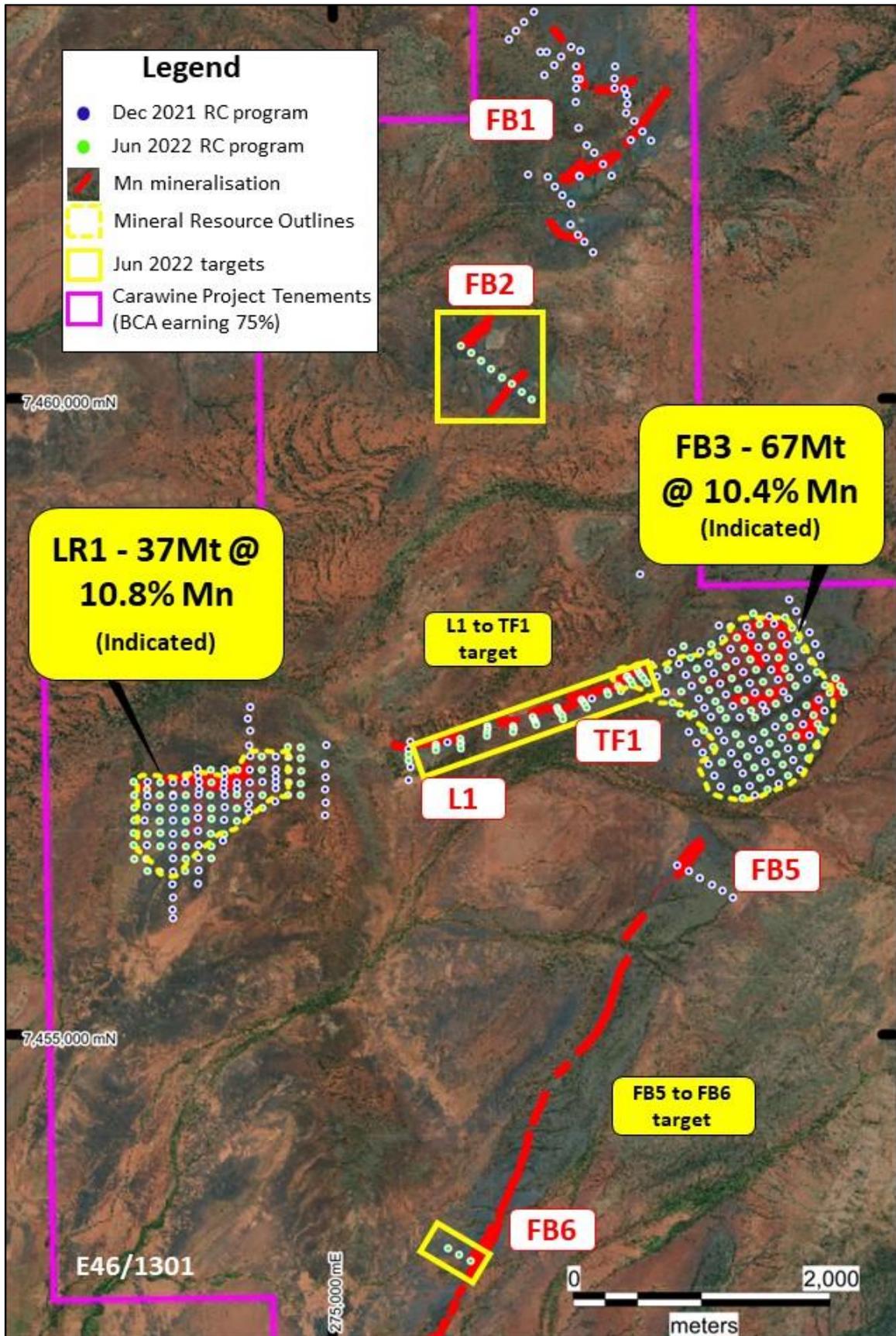


Figure 3. Flanagan Bore Project - FB3 & LR1 Mineral Resource outlines and additional drill targets at FB1, L1, TF1 and FB6 (Black Canyon (51%) earning up to 75%)

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

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## About Black Canyon

Black Canyon has entered into a farm-in and joint venture with ASX listed Carawine Resources Limited (ASX:CWX) to acquire a majority interest in the Carawine JV Project in Western Australia. The Carawine Project covers approximately 800 km<sup>2</sup> of tenure located south of the operating Woodie-Woodie manganese mine, providing a large footprint in a proven and producing manganese belt. Black Canyon has also applied for and acquired other exploration licenses adjacent to the Carawine Project that would increase the total land holdings to over 2400 km<sup>2</sup> upon grant. In addition to manganese, the Carawine Project also hosts multiple copper occurrences including the Western Star prospect which comprises a large zone of surface copper enrichment.

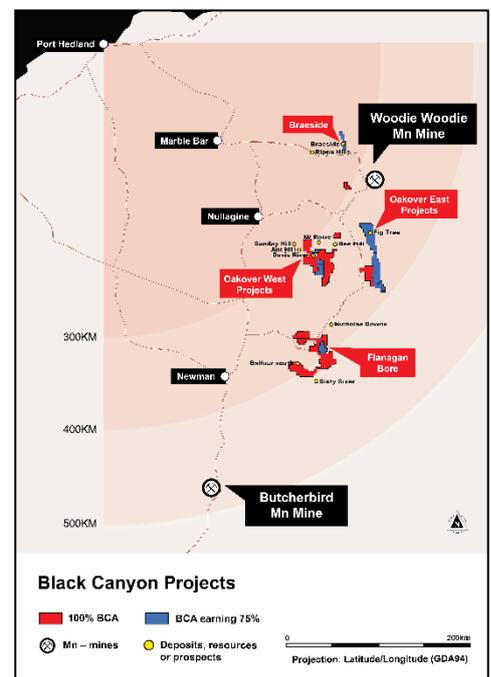
Manganese and copper continue to have attractive fundamentals with growing utilisation in the battery mineral sector and challenging supply conditions.

## 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.

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 Australian 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 Persons 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 and 7 September 2022 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. Flanagan Bore drill collar information and assay results from the LR1 Deposit May/June 2022 RC drill program

| Hole ID | Deposit | East (GDA94) | North (GDA94) | RI    | Survey Method | EOH (m) | Dip | Azimuth | From (m) | To (m) | Interval (m) | Mn (%) | Fe (%) | Drill intersection                         |
|---------|---------|--------------|---------------|-------|---------------|---------|-----|---------|----------|--------|--------------|--------|--------|--|
| FBRC169 | LR1     | 273446.5     | 7457002.1     | 498.1 | DGPS          | 24      | -90 | 360     |          |        |              |        |        | NSR  |
| FBRC170 | LR1     | 273447.9     | 7456901.3     | 497.8 | DGPS          | 54      | -90 | 360     | 2        | 36     | 34           | 13.1   | 8.7    | 34m @ 13.1% Mn & 8.7% Fe from 2m           |
| FBRC171 | LR1     | 273448.7     | 7456799.1     | 497.5 | DGPS          | 60      | -90 | 360     | 18       | 60     | 42           | 9.9    | 8.2    | 42m @ 9.9% Mn & 8.2% Fe from 18m until EOH |
| FBRC172 | LR1     | 273450.3     | 7456700.1     | 497.2 | DGPS          | 66      | -90 | 360     | 27       | 66     | 39           | 9.7    | 8.0    | 39m @ 9.7% Mn & 8% Fe from 27m until EOH   |
| FBRC173 | LR1     | 273442.8     | 7456599.6     | 496.9 | DGPS          | 54      | -90 | 360     | 31       | 54     | 23           | 9.7    | 8.2    | 23m @ 9.7% Mn & 8.2% Fe from 31m until EOH |
| FBRC174 | LR1     | 273446.6     | 7456504.1     | 496.5 | DGPS          | 60      | -90 | 360     | 33       | 60     | 27           | 9.6    | 7.9    | 27m @ 9.6% Mn & 7.9% Fe from 33m until EOH |
| FBRC175 | LR1     | 273449.2     | 7456396.4     | 496.3 | DGPS          | 60      | -90 | 360     | 40       | 60     | 20           | 9.5    | 7.6    | 20m @ 9.5% Mn & 7.6% Fe from 40m until EOH |
| FBRC176 | LR1     | 273548.7     | 7456946.5     | 498.1 | DGPS          | 48      | -90 | 360     | 0        | 8      | 8            | 8.7    | 6.8    | 8m @ 8.7% Mn & 6.8% Fe from 0m             |
| FBRC177 | LR1     | 273552.9     | 7456598.2     | 497.1 | DGPS          | 60      | -90 | 360     | 22       | 60     | 38           | 9.8    | 7.9    | 38m @ 9.8% Mn & 7.9% Fe from 22m until EOH |
| FBRC178 | LR1     | 273544.7     | 7456397.5     | 496.6 | DGPS          | 60      | -90 | 360     | 29       | 54     | 25           | 9.7    | 7.5    | 25m @ 9.7% Mn & 7.5% Fe from 29m           |
| FBRC179 | LR1     | 273552.8     | 7456301.5     | 496.3 | DGPS          | 60      | -90 | 360     | 40       | 60     | 20           | 9.7    | 7.9    | 20m @ 9.7% Mn & 7.9% Fe from 40m until EOH |
| FBRC180 | LR1     | 273650.8     | 7457000.6     | 499.0 | DGPS          | 24      | -90 | 360     |          |        |              |        |        | NSR  |
| FBRC181 | LR1     | 273648.3     | 7456898.6     | 498.5 | DGPS          | 60      | -90 | 360     | 6        | 50     | 44           | 10.1   | 8.2    | 44m @ 10.1% Mn & 8.2% Fe from 6m           |
| FBRC182 | LR1     | 273647.8     | 7456798.3     | 497.9 | DGPS          | 70      | -90 | 360     | 7        | 53     | 46           | 10.2   | 8.5    | 46m @ 10.2% Mn & 8.5% Fe from 7m           |
| FBRC183 | LR1     | 273647.5     | 7456698.1     | 497.6 | DGPS          | 60      | -90 | 360     | 9        | 52     | 43           | 9.6    | 8      | 43m @ 9.6% Mn & 8% Fe from 9m              |
| FBRC184 | LR1     | 273650.9     | 7456601.3     | 497.4 | DGPS          | 48      | -90 | 360     | 12       | 45     | 33           | 10.7   | 8.3    | 33m @ 10.7% Mn & 8.3% Fe from 12m          |
| FBRC185 | LR1     | 273652.1     | 7456498.9     | 497.1 | DGPS          | 42      | -90 | 360     | 10       | 35     | 25           | 9.9    | 7.8    | 25m @ 9.9% Mn & 7.8% Fe from 10m           |
| FBRC186 | LR1     | 273648.8     | 7456298.0     | 496.6 | DGPS          | 68      | -90 | 360     | 40       | 64     | 24           | 9.7    | 7.9    | 24m @ 9.7% Mn & 7.9% Fe from 40m           |
| FBRC187 | LR1     | 273849.3     | 7457053.8     | 500.0 | DGPS          | 18      | -90 | 360     |          |        |              |        |        | NSR  |
| FBRC188 | LR1     | 273852.6     | 7456899.8     | 499.3 | DGPS          | 54      | -90 | 360     | 0        | 44     | 44           | 11.1   | 8.5    | 44m @ 11.1% Mn & 8.5% Fe from 0m           |
| FBRC189 | LR1     | 273848.4     | 7456796.9     | 499.2 | DGPS          | 54      | -90 | 360     | 0        | 43     | 43           | 10.5   | 8.6    | 43m @ 10.5% Mn & 8.6% Fe from 0m           |
| FBRC190 | LR1     | 273850.5     | 7456697.7     | 499.0 | DGPS          | 42      | -90 | 360     | 0        | 34     | 34           | 10.4   | 8.1    | 34m @ 10.4% Mn & 8.1% Fe from 0m           |
| FBRC191 | LR1     | 273848.8     | 7456599.0     | 498.8 | DGPS          | 36      | -90 | 360     | 5        | 25     | 20           | 11.6   | 9.2    | 20m @ 11.6% Mn & 9.2% Fe from 5m           |
| FBRC192 | LR1     | 273853.3     | 7456499.0     | 498.5 | DGPS          | 42      | -90 | 360     | 0        | 32     | 32           | 11.3   | 9.3    | 32m @ 11.3% Mn & 9.3% Fe from 0m           |
| FBRC193 | LR1     | 273853.1     | 7456399.1     | 498.1 | DGPS          | 54      | -90 | 360     | 39       | 44     | 5            | 10.3   | 10.6   | 5m @ 10.3% Mn & 10.6% Fe from 39m          |
| FBRC194 | LR1     | 273844.6     | 7456301.3     | 497.5 | DGPS          | 70      | -90 | 360     |          |        |              |        |        | NSR  |
| FBRC195 | LR1     | 274046.9     | 7457099.4     | 501.9 | DGPS          | 24      | -90 | 360     |          |        |              |        |        | NSR  |
| FBRC196 | LR1     | 274049.5     | 7456998.8     | 504.1 | DGPS          | 24      | -90 | 360     | 0        | 17     | 17           | 15.1   | 10.1   | 17m @ 15.1% Mn & 10.1% Fe from 0m          |
| FBRC197 | LR1     | 274043.4     | 7456897.3     | 502.0 | DGPS          | 42      | -90 | 360     | 0        | 29     | 29           | 14.8   | 9      | 29m @ 14.8% Mn & 9% Fe from 0m             |
| FBRC198 | LR1     | 274248.7     | 7456902.8     | 502.2 | DGPS          | 54      | -90 | 360     | 0        | 42     | 42           | 11.0   | 10.1   | 42m @ 11% Mn & 10.1% Fe from 0m            |
| FBRC199 | LR1     | 274249.7     | 7456797.4     | 501.0 | DGPS          | 60      | -90 | 360     | 1        | 47     | 46           | 11.9   | 9.2    | 46m @ 11.9% Mn & 9.2% Fe from 1m           |
| FBRC200 | LR1     | 274247.5     | 7456698.0     | 500.5 | DGPS          | 42      | -90 | 360     | 15       | 35     | 20           | 15.4   | 9.5    | 20m @ 15.4% Mn & 9.5% Fe from 15m          |
| FBRC201 | LR1     | 274150.8     | 7456594.1     | 499.7 | DGPS          | 54      | -90 | 360     | 34       | 47     | 13           | 9.9    | 7.9    | 13m @ 9.9% Mn & 7.9% Fe from 34m           |
| FBRC202 | LR1     | 274047.9     | 7456597.9     | 499.5 | DGPS          | 36      | -90 | 360     | 22       | 26     | 4            | 16.7   | 9.9    | 4m @ 16.7% Mn & 9.9% Fe from 22m           |
| FBRC203 | LR1     | 274049.5     | 7456498.3     | 499.0 | DGPS          | 42      | -90 | 360     |          |        |              |        |        | NSR  |



# BLACK CANYON

|         |     |          |           |       |      |    |     |     |   |    |    |      |      |   |
|---------|-----|----------|-----------|-------|------|----|-----|-----|---|----|----|------|------|---|
| FBRC204 | LR1 | 274050.2 | 7456401.0 | 498.4 | DGPS | 72 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC205 | LR1 | 274051.0 | 7456715.0 | 500.0 | GPS  | 36 | -90 | 360 | 3 | 14 | 11 | 14.9 | 10.8 | <b>11m @ 14.9% Mn &amp; 10.8% Fe from 3m</b>          |
| FBRC206 | LR1 | 274051.1 | 7456797.5 | 500.3 | DGPS | 36 | -90 | 360 | 0 | 7  | 7  | 10.3 | 6.3  | 7m @ 10.3% Mn & 6.3% Fe from 0m                       |
| FBRC207 | LR1 | 274444.0 | 7457201.4 | 504.3 | DGPS | 48 | -90 | 360 | 7 | 21 | 14 | 11.2 | 10.0 | 14m @ 11.2% Mn & 10% Fe from 7m                       |
| FBRC208 | LR1 | 274445.4 | 7457097.9 | 503.5 | DGPS | 30 | -90 | 360 | 0 | 30 | 30 | 12.7 | 9.2  | <b>30m @ 12.7% Mn &amp; 9.2% Fe from 0m until EOH</b> |
| FBRC209 | LR1 | 274448.3 | 7456901.7 | 502.0 | DGPS | 60 | -90 | 360 | 7 | 41 | 34 | 11.7 | 10.1 | <b>34m @ 11.7% Mn &amp; 10.1% Fe from 7m</b>          |
| FBRC210 | LR1 | 274446.2 | 7456798.0 | 501.6 | DGPS | 54 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC211 | LR1 | 274648.8 | 7457277.4 | 505.6 | DGPS | 36 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC212 | LR1 | 274652.8 | 7457199.1 | 505.4 | DGPS | 36 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC213 | LR1 | 274651.8 | 7457100.0 | 504.8 | DGPS | 30 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC214 | LR1 | 274651.6 | 7456997.4 | 503.7 | DGPS | 36 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC215 | LR1 | 274646.9 | 7456898.9 | 503.1 | DGPS | 36 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC216 | LR1 | 274744.1 | 7457275.2 | 506.2 | DGPS | 36 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC217 | LR1 | 274748.0 | 7457187.9 | 506.0 | DGPS | 30 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC218 | LR1 | 274751.1 | 7457091.4 | 505.2 | DGPS | 30 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC219 | LR1 | 274748.3 | 7456989.8 | 504.1 | DGPS | 25 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC220 | LR1 | 274746.6 | 7456900.4 | 503.9 | DGPS | 24 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC221 | LR1 | 274251.4 | 7457100.0 | 503.9 | DGPS | 30 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC222 | FB3 | 278573.3 | 7458216.8 | 526.7 | DGPS | 18 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC223 | FB3 | 278619.3 | 7458120.4 | 525.0 | DGPS | 24 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC224 | FB3 | 278670.3 | 7458042.5 | 522.8 | DGPS | 18 | -90 | 360 | 0 | 1  | 1  | 11.7 | 10.1 | 1m @ 11.7% Mn & 10.1% Fe from 0m                      |
| FBRC225 | FB3 | 278722.0 | 7457952.4 | 521.7 | DGPS | 18 | -90 | 360 | 0 | 1  | 1  | 8.6  | 6.7  | 1m @ 8.6% Mn & 6.7% Fe from 0m                        |
| FBRC226 | FB3 | 278771.1 | 7457866.7 | 520.5 | DGPS | 18 | -90 | 360 | 0 | 15 | 15 | 9.5  | 10.8 | 15m @ 9.5% Mn & 10.8% Fe from 0m                      |
| FBRC227 | FB3 | 278521.9 | 7458295.5 | 531.4 | DGPS | 18 | -90 | 360 | 0 | 1  | 1  | 17.7 | 16.7 | 1m @ 17.7% Mn & 16.7% Fe from 0m                      |
| FBRC228 | FB3 | 278274.0 | 7458326.6 | 526.5 | DGPS | 18 | -90 | 360 | 0 | 6  | 6  | 24.1 | 12.1 | <b>6m @ 24.1% Mn &amp; 12.1% Fe from 0m</b>           |
| FBRC229 | FB3 | 278323.1 | 7458240.1 | 532.0 | DGPS | 18 | -90 | 360 | 2 | 4  | 2  | 12.5 | 7.7  | 2m @ 12.5% Mn & 7.7% Fe from 2m                       |
| FBRC230 | FB3 | 278373.2 | 7458153.1 | 533.0 | DGPS | 42 | -90 | 360 | 4 | 23 | 19 | 13.7 | 12.9 | 19m @ 13.7% Mn & 12.9% Fe from 4m                     |
| FBRC231 | FB3 | 278420.6 | 7458068.0 | 533.3 | DGPS | 60 | -90 | 360 | 0 | 47 | 47 | 13.6 | 13.1 | <b>47m @ 13.6% Mn &amp; 13.1% Fe from 0m</b>          |
| FBRC232 | FB3 | 278472.1 | 7457980.6 | 531.1 | DGPS | 54 | -90 | 360 | 2 | 41 | 39 | 13.0 | 11.2 | <b>39m @ 13% Mn &amp; 11.2% Fe from 2m</b>            |
| FBRC233 | FB3 | 278522.3 | 7457895.2 | 524.7 | DGPS | 36 | -90 | 360 | 0 | 19 | 19 | 11.5 | 10.8 | <b>19m @ 11.5% Mn &amp; 10.8% Fe from 0m</b>          |
| FBRC234 | FB3 | 278555.8 | 7457827.9 | 521.9 | DGPS | 36 | -90 | 360 | 0 | 22 | 22 | 11.9 | 10.7 | <b>22m @ 11.9% Mn &amp; 10.7% Fe from 0m</b>          |
| FBRC235 | FB3 | 278602.3 | 7457757.2 | 520.2 | DGPS | 54 | -90 | 360 | 0 | 41 | 41 | 10.4 | 10.1 | <b>41m @ 10.4% Mn &amp; 10.1% Fe from 0m</b>          |
| FBRC236 | FB3 | 278097.3 | 7458225.9 | 521.3 | DGPS | 18 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC237 | FB3 | 278144.9 | 7458139.7 | 526.7 | DGPS | 36 | -90 | 360 | 0 | 22 | 22 | 12.0 | 11.0 | 22m @ 12% Mn & 11% Fe from 0m                         |
| FBRC238 | FB3 | 278202.3 | 7458051.8 | 526.2 | DGPS | 54 | -90 | 360 | 0 | 36 | 36 | 13.2 | 10.9 | <b>36m @ 13.2% Mn &amp; 10.9% Fe from 0m</b>          |
| FBRC239 | FB3 | 278248.1 | 7457965.5 | 525.4 | DGPS | 60 | -90 | 360 | 0 | 51 | 51 | 12.3 | 11.2 | <b>51m @ 12.3% Mn &amp; 11.2% Fe from 0m</b>          |
| FBRC240 | FB3 | 278293.2 | 7457883.7 | 522.8 | DGPS | 60 | -90 | 360 | 0 | 48 | 48 | 10.8 | 11.0 | <b>48m @ 10.8% Mn &amp; 11% Fe from 0m</b>            |
| FBRC241 | FB3 | 278349.3 | 7457791.2 | 523.4 | DGPS | 54 | -90 | 360 | 0 | 40 | 40 | 10.9 | 10.3 | <b>40m @ 10.9% Mn &amp; 10.3% Fe from 0m</b>          |
| FBRC242 | FB3 | 278397.5 | 7457705.3 | 522.1 | DGPS | 60 | -90 | 360 | 1 | 48 | 47 | 11.2 | 10.5 | <b>47m @ 11.2% Mn &amp; 10.5% Fe from 1m</b>          |
| FBRC243 | FB3 | 278449.7 | 7457619.5 | 518.4 | DGPS | 61 | -90 | 360 | 0 | 51 | 51 | 9.9  | 10   | <b>51m @ 9.9% Mn &amp; 10% Fe from 0m</b>             |
| FBRC244 | FB3 | 277948.0 | 7458082.8 | 517.1 | DGPS | 18 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC245 | FB3 | 278001.2 | 7457995.1 | 518.6 | DGPS | 18 | -90 | 360 | 0 | 16 | 16 | 9.2  | 10.5 | 16m @ 9.2% Mn & 10.5% Fe from 0m                      |
| FBRC246 | FB3 | 278058.1 | 7457906.9 | 519.4 | DGPS | 52 | -90 | 360 | 0 | 43 | 43 | 10.3 | 10.4 | <b>43m @ 10.3% Mn &amp; 10.4% Fe from 0m</b>          |
| FBRC247 | FB3 | 278103.3 | 7457815.6 | 519.0 | DGPS | 58 | -90 | 360 | 0 | 53 | 53 | 10.0 | 10.4 | <b>53m @ 10% Mn &amp; 10.4% Fe from 0m</b>            |
| FBRC248 | FB3 | 278155.7 | 7457731.7 | 519.5 | DGPS | 56 | -90 | 360 | 0 | 49 | 49 | 10.0 | 10.3 | <b>49m @ 10% Mn &amp; 10.3% Fe from 0m</b>            |
| FBRC249 | FB3 | 278205.3 | 7457646.5 | 519.1 | DGPS | 48 | -90 | 360 | 0 | 48 | 48 | 10.0 | 10.1 | <b>48m @ 10% Mn &amp; 10.1% Fe from 0m until EOH</b>  |
| FBRC250 | FB3 | 278253.0 | 7457564.2 | 517.5 | DGPS | 63 | -90 | 360 | 0 | 54 | 54 | 9.8  | 9.9  | <b>54m @ 9.8% Mn &amp; 9.9% Fe from 0m</b>            |
| FBRC251 | FB3 | 278287.3 | 7457509.3 | 516.8 | DGPS | 60 | -90 | 360 | 0 | 54 | 54 | 9.8  | 9.8  | <b>54m @ 9.8% Mn &amp; 9.8% Fe from 0m</b>            |
| FBRC252 | FB3 | 277731.1 | 7458068.2 | 514.5 | DGPS | 18 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC253 | FB3 | 277781.8 | 7457980.8 | 514.7 | DGPS | 18 | -90 | 360 |   |    |    |      |      | NSR   |
| FBRC254 | FB3 | 277833.4 | 7457893.9 | 515.5 | DGPS | 48 | -90 | 360 | 0 | 36 | 36 | 10.8 | 9.5  | 36m @ 10.8% Mn & 9.5% Fe from 0m                      |



# BLACK CANYON

|         |     |          |           |       |      |    |     |     |    |    |    |      |      |  |
|---------|-----|----------|-----------|-------|------|----|-----|-----|----|----|----|------|------|--|
| FBRC255 | FB3 | 277876.5 | 7457808.8 | 516.2 | DGPS | 75 | -90 | 360 | 5  | 69 | 64 | 10.0 | 10.0 | 64m @ 10% Mn & 10% Fe from 5m              |
| FBRC256 | FB3 | 277928.0 | 7457726.9 | 516.0 | DGPS | 72 | -90 | 360 | 6  | 62 | 56 | 9.9  | 9.8  | 56m @ 9.9% Mn & 9.8% Fe from 6m            |
| FBRC257 | FB3 | 277607.9 | 7457883.1 | 513.2 | DGPS | 36 | -90 | 360 | 0  | 20 | 20 | 14.2 | 10.3 | 20m @ 14.2% Mn & 10.3% Fe from 0m          |
| FBRC258 | FB3 | 277710.9 | 7457714.2 | 513.3 | DGPS | 96 | -90 | 360 | 30 | 95 | 65 | 9.6  | 9.9  | 65m @ 9.6% Mn & 9.9% Fe from 30m           |
| FBRC259 | FB3 | 278914.0 | 7457817.6 | 521.7 | DGPS | 18 | -90 | 360 | 0  | 7  | 7  | 7.1  | 10.7 | 7m @ 7.1% Mn & 10.7% Fe from 0m            |
| FBRC260 | FB3 | 278951.8 | 7457758.1 | 522.2 | DGPS | 18 | -90 | 360 | 0  | 9  | 9  | 9.8  | 12.2 | 9m @ 9.8% Mn & 12.2% Fe from 0m            |
| FBRC261 | FB3 | 278978.1 | 7457707.4 | 521.3 | DGPS | 18 | -90 | 360 | 7  | 8  | 1  | 10.2 | 10.0 | 1m @ 10.2% Mn & 10% Fe from 7m             |
| FBRC262 | FB3 | 278831.6 | 7457761.3 | 520.6 | DGPS | 27 | -90 | 360 | 0  | 15 | 15 | 10.4 | 10.2 | 15m @ 10.4% Mn & 10.2% Fe from 0m          |
| FBRC263 | FB3 | 278866.5 | 7457702.8 | 520.8 | DGPS | 24 | -90 | 360 | 0  | 12 | 12 | 9.2  | 9.9  | 12m @ 9.2% Mn & 9.9% Fe from 0m            |
| FBRC264 | FB3 | 278689.8 | 7457606.5 | 520.2 | DGPS | 36 | -90 | 360 | 0  | 25 | 25 | 10.6 | 9.9  | 25m @ 10.6% Mn & 9.9% Fe from 0m           |
| FBRC265 | FB3 | 278740.6 | 7457529.7 | 521.9 | DGPS | 26 | -90 | 360 | 0  | 17 | 17 | 12.3 | 10.2 | 17m @ 12.3% Mn & 10.2% Fe from 0m          |
| FBRC266 | FB3 | 278772.9 | 7457461.6 | 520.9 | DGPS | 21 | -90 | 360 | 0  | 13 | 13 | 8.6  | 9.9  | 13m @ 8.6% Mn & 9.9% Fe from 0m            |
| FBRC267 | FB3 | 278799.7 | 7457417.0 | 519.9 | DGPS | 18 | -90 | 360 | 0  | 4  | 4  | 7.9  | 9.4  | 4m @ 7.9% Mn & 9.4% Fe from 0m             |
| FBRC268 | FB3 | 278513.6 | 7457510.5 | 518.5 | DGPS | 42 | -90 | 360 | 0  | 33 | 33 | 10.5 | 9.9  | 33m @ 10.5% Mn & 9.9% Fe from 0m           |
| FBRC269 | FB3 | 278558.0 | 7457439.2 | 520.0 | DGPS | 36 | -90 | 360 | 0  | 29 | 29 | 10.8 | 9.7  | 29m @ 10.8% Mn & 9.7% Fe from 0m           |
| FBRC270 | FB3 | 278606.1 | 7457362.9 | 522.2 | DGPS | 33 | -90 | 360 | 0  | 25 | 25 | 10.8 | 9.7  | 25m @ 10.8% Mn & 9.7% Fe from 0m           |
| FBRC271 | FB3 | 278653.1 | 7457275.8 | 520.8 | DGPS | 24 | -90 | 360 | 0  | 15 | 15 | 9.5  | 10.2 | 15m @ 9.5% Mn & 10.2% Fe from 0m           |
| FBRC272 | FB3 | 278702.3 | 7457190.8 | 517.6 | DGPS | 18 | -90 | 360 | 0  | 2  | 2  | 8.2  | 7.8  | 2m @ 8.2% Mn & 7.8% Fe from 0m             |
| FBRC273 | FB3 | 278358.5 | 7457390.4 | 517.2 | DGPS | 45 | -90 | 360 | 1  | 36 | 35 | 9.5  | 9.7  | 35m @ 9.5% Mn & 9.7% Fe from 1m            |
| FBRC274 | FB3 | 278400.5 | 7457308.2 | 518.3 | DGPS | 42 | -90 | 360 | 0  | 32 | 32 | 9.7  | 9.4  | 32m @ 9.7% Mn & 9.4% Fe from 0m            |
| FBRC275 | FB3 | 278454.1 | 7457220.1 | 519.3 | DGPS | 36 | -90 | 360 | 0  | 27 | 27 | 10.2 | 9.5  | 27m @ 10.2% Mn & 9.5% Fe from 0m           |
| FBRC276 | FB3 | 278502.8 | 7457140.6 | 518.2 | DGPS | 26 | -90 | 360 | 0  | 19 | 19 | 9.7  | 9.6  | 19m @ 9.7% Mn & 9.6% Fe from 0m            |
| FBRC277 | FB3 | 278545.2 | 7457053.5 | 516.6 | DGPS | 18 | -90 | 360 | 0  | 13 | 13 | 8.9  | 10.3 | 13m @ 8.9% Mn & 10.3% Fe from 0m           |
| FBRC278 | FB3 | 278134.1 | 7457376.8 | 515.9 | DGPS | 36 | -90 | 360 | 9  | 36 | 27 | 9.7  | 9.7  | 27m @ 9.7% Mn & 9.7% Fe from 9m until EOH  |
| FBRC279 | FB3 | 278172.9 | 7457295.8 | 516.1 | DGPS | 30 | -90 | 360 | 0  | 30 | 30 | 9.4  | 9.6  | 30m @ 9.4% Mn & 9.6% Fe from 0m            |
| FBRC280 | FB3 | 278228.1 | 7457202.0 | 516.2 | DGPS | 48 | -90 | 360 | 2  | 40 | 38 | 9.6  | 9.6  | 38m @ 9.6% Mn & 9.6% Fe from 2m            |
| FBRC281 | FB3 | 278281.5 | 7457118.2 | 516.4 | DGPS | 42 | -90 | 360 | 0  | 34 | 34 | 9.6  | 9.4  | 34m @ 9.6% Mn & 9.4% Fe from 0m            |
| FBRC282 | FB3 | 278326.8 | 7457036.3 | 516.1 | DGPS | 36 | -90 | 360 | 0  | 31 | 31 | 9.2  | 9.2  | 31m @ 9.2% Mn & 9.2% Fe from 0m            |
| FBRC283 | FB3 | 278382.7 | 7456944.3 | 515.3 | DGPS | 27 | -90 | 360 | 0  | 18 | 18 | 9.9  | 9.2  | 18m @ 9.9% Mn & 9.2% Fe from 0m            |
| FBRC284 | FB3 | 277887.4 | 7457408.2 | 513.9 | DGPS | 84 | -90 | 360 | 27 | 77 | 50 | 9.4  | 9.5  | 50m @ 9.4% Mn & 9.5% Fe from 27m           |
| FBRC285 | FB3 | 277960.0 | 7457278.6 | 514.5 | DGPS | 30 | -90 | 360 | 22 | 30 | 8  | 9.5  | 9.1  | 8m @ 9.5% Mn & 9.1% Fe from 22m until EOH  |
| FBRC286 | FB3 | 278029.9 | 7457156.4 | 514.7 | DGPS | 64 | -90 | 360 | 11 | 59 | 48 | 9.5  | 9.5  | 48m @ 9.5% Mn & 9.5% Fe from 11m           |
| FBRC287 | FB3 | 278147.1 | 7456949.5 | 514.5 | DGPS | 44 | -90 | 360 | 0  | 36 | 36 | 9.6  | 9.7  | 36m @ 9.6% Mn & 9.7% Fe from 0m            |
| FBRC288 | FB3 | 278192.2 | 7456876.0 | 514.1 | DGPS | 40 | -90 | 360 | 0  | 35 | 35 | 9.4  | 9.6  | 35m @ 9.4% Mn & 9.6% Fe from 0m            |
| FBRC289 | FB3 | 277645.0 | 7457626.0 | 513.0 | GPS  | 72 | -90 | 360 | 37 | 72 | 35 | 9.9  | 9.5  | 35m @ 9.9% Mn & 9.5% Fe from 37m until EOH |
| FBRC290 | FB3 | 277708.0 | 7457540.0 | 513.0 | GPS  | 72 | -90 | 360 | 31 | 72 | 41 | 9.9  | 9.4  | 41m @ 9.9% Mn & 9.4% Fe from 31m until EOH |
| FBRC291 | FB3 | 277809.0 | 7457542.0 | 513.0 | GPS  | 72 | -90 | 360 | 24 | 72 | 48 | 10   | 9.6  | 48m @ 10% Mn & 9.6% Fe from 24m            |
| FBRC292 | FB3 | 277976.0 | 7457634.0 | 515.0 | GPS  | 72 | -90 | 360 | 7  | 60 | 53 | 9.7  | 9.7  | 53m @ 9.7% Mn & 9.7% Fe from 7m            |
| FBRC293 | FB3 | 278013.0 | 7457571.0 | 515.0 | GPS  | 72 | -90 | 360 | 10 | 63 | 53 | 9.4  | 9.7  | 53m @ 9.4% Mn & 9.7% Fe from 10m           |
| FBRC294 | FB3 | 278059.0 | 7457506.0 | 515.0 | GPS  | 72 | -90 | 360 | 15 | 65 | 50 | 9.6  | 9.6  | 50m @ 9.6% Mn & 9.6% Fe from 15m           |
| FBRC295 | FB2 | 275995.0 | 7460431.0 | 510.0 | GPS  | 36 | -90 | 360 |    |    |    |      |      | Assay results pending                      |
| FBRC296 | FB2 | 276073.0 | 7460375.0 | 508.0 | GPS  | 30 | -90 | 360 |    |    |    |      |      | Assay results pending                      |
| FBRC297 | FB2 | 276151.0 | 7460314.0 | 507.0 | GPS  | 24 | -90 | 360 |    |    |    |      |      | Assay results pending                      |
| FBRC298 | FB2 | 276229.0 | 7460251.0 | 511.0 | GPS  | 30 | -90 | 360 |    |    |    |      |      | Assay results pending                      |
| FBRC299 | FB2 | 276313.0 | 7460180.0 | 509.0 | GPS  | 63 | -90 | 360 |    |    |    |      |      | Assay results pending                      |
| FBRC300 | FB2 | 276392.0 | 7460129.0 | 511.0 | GPS  | 42 | -90 | 360 |    |    |    |      |      | Assay results pending                      |
| FBRC301 | FB2 | 276470.0 | 7460068.0 | 511.0 | GPS  | 42 | -90 | 360 |    |    |    |      |      | Assay results pending                      |
| FBRC302 | FB2 | 276546.0 | 7460007.0 | 512.0 | GPS  | 42 | -90 | 360 |    |    |    |      |      | Assay results pending                      |
| FBRC303 | TF1 | 277374.0 | 7457881.0 | 513.0 | GPS  | 42 | -60 | 330 |    |    |    |      |      | Assay results pending                      |
| FBRC304 | TF1 | 277387.0 | 7457857.0 | 513.0 | GPS  | 42 | -60 | 330 |    |    |    |      |      | Assay results pending                      |
| FBRC305 | TF1 | 277401.0 | 7457838.0 | 513.0 | GPS  | 48 | -60 | 330 |    |    |    |      |      | Assay results pending                      |
| FBRC306 | TF1 | 277417.0 | 7457817.0 | 512.0 | GPS  | 48 | -60 | 330 |    |    |    |      |      | Assay results pending                      |
| FBRC307 | TF1 | 277444.0 | 7457779.0 | 512.0 | GPS  | 66 | -60 | 330 |    |    |    |      |      | Assay results pending                      |
| FBRC308 | TF1 | 277286.0 | 7457829.0 | 516.0 | GPS  | 42 | -60 | 330 |    |    |    |      |      | Assay results pending                      |
| FBRC309 | TF1 | 277306.0 | 7457811.0 | 515.0 | GPS  | 30 | -60 | 330 |    |    |    |      |      | Assay results pending                      |



# BLACK CANYON

|         |     |          |           |       |     |    |     |     |  |  |  |  |  |  |                       |
|---------|-----|----------|-----------|-------|-----|----|-----|-----|--|--|--|--|--|--|-----------------------|
| FBRC310 | TF1 | 277316.0 | 7457798.0 | 514.0 | GPS | 36 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC311 | TF1 | 277332.0 | 7457767.0 | 512.0 | GPS | 54 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC312 | TF1 | 277220.0 | 7457758.0 | 515.0 | GPS | 30 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC313 | TF1 | 277236.0 | 7457740.0 | 514.0 | GPS | 36 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC314 | TF1 | 277243.0 | 7457719.0 | 513.0 | GPS | 42 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC315 | TF1 | 277131.0 | 7457711.0 | 513.0 | GPS | 30 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC316 | TF1 | 277144.0 | 7457691.0 | 512.0 | GPS | 36 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC317 | TF1 | 277157.0 | 7457667.0 | 512.0 | GPS | 48 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC318 | TF1 | 276933.0 | 7457652.0 | 513.0 | GPS | 24 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC319 | TF1 | 276946.0 | 7457630.0 | 512.0 | GPS | 30 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC320 | TF1 | 276959.0 | 7457612.0 | 512.0 | GPS | 42 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC321 | TF1 | 276975.0 | 7457587.0 | 511.0 | GPS | 60 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC322 | TF1 | 276744.0 | 7457585.0 | 510.0 | GPS | 24 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC323 | TF1 | 276755.0 | 7457566.0 | 510.0 | GPS | 32 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC324 | TF1 | 276765.0 | 7457545.0 | 510.0 | GPS | 30 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC325 | TF1 | 276784.0 | 7457527.0 | 510.0 | GPS | 30 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC326 | TF1 | 276788.0 | 7457495.0 | 510.0 | GPS | 42 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC327 | TF1 | 276553.0 | 7457513.0 | 509.0 | GPS | 24 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC328 | TF1 | 276567.0 | 7457488.0 | 509.0 | GPS | 36 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC329 | TF1 | 276578.0 | 7457470.0 | 509.0 | GPS | 42 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC330 | TF1 | 276583.0 | 7457452.0 | 509.0 | GPS | 42 | -60 | 330 |  |  |  |  |  |  | Assay results pending |
| FBRC331 | T1  | 276402.0 | 7457442.0 | 508.0 | GPS | 42 | -60 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC332 | T1  | 276403.0 | 7457421.0 | 508.0 | GPS | 60 | -60 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC333 | T1  | 276400.0 | 7457395.0 | 508.0 | GPS | 60 | -60 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC334 | T1  | 276203.0 | 7457443.0 | 507.0 | GPS | 24 | -60 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC335 | T1  | 276201.0 | 7457421.0 | 507.0 | GPS | 18 | -60 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC336 | T1  | 276198.0 | 7457393.0 | 507.0 | GPS | 24 | -60 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC337 | T1  | 276196.0 | 7457366.0 | 507.0 | GPS | 42 | -60 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC338 | T1  | 275989.0 | 7457343.0 | 507.0 | GPS | 18 | -60 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC339 | T1  | 275994.0 | 7457313.0 | 507.0 | GPS | 36 | -60 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC340 | T1  | 275991.0 | 7457296.0 | 507.0 | GPS | 42 | -60 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC341 | T1  | 275993.0 | 7457265.0 | 507.0 | GPS | 54 | -60 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC342 | T1  | 275801.0 | 7457299.0 | 507.0 | GPS | 18 | -60 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC343 | T1  | 275798.0 | 7457276.0 | 507.0 | GPS | 36 | -60 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC344 | T1  | 275800.0 | 7457250.0 | 507.0 | GPS | 36 | -60 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC345 | T1  | 275589.0 | 7457221.0 | 505.0 | GPS | 48 | -60 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC346 | T1  | 275588.0 | 7457170.0 | 505.0 | GPS | 60 | -60 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC347 | FB6 | 276071.0 | 7453238.0 | 499.0 | GPS | 36 | -90 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC348 | FB6 | 275981.0 | 7453286.0 | 499.0 | GPS | 42 | -90 | 360 |  |  |  |  |  |  | Assay results pending |
| FBRC349 | FB6 | 275896.0 | 7453338.0 | 499.0 | GPS | 20 | -90 | 360 |  |  |  |  |  |  | Assay results pending |

NSR – refers to No Significant Result

## Appendix 2. JORC 2012 Table 1

### Section 1 Sampling Techniques and Data

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

| Criteria  | JORC Code explanation   | Commentary   |
|---|---|--|
| <i>Sampling techniques</i>                            | <ul style="list-style-type: none"> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul> | <ul style="list-style-type: none"> <li>The samples were collected using industry standard Reverse Circulation (RC) drill methods .</li> <li>Drilling was completed by Westside Drilling who completed the entire RC drill program – 181 holes for 7534m</li> <li>There was limited water encountered during the drill program</li> <li>The drilling and sample techniques are considered representative for the style of mineralisation utilising 1m sample intervals gathered directly from the RC drill rig using an adjustable cone splitter from a levelled drill rig.</li> <li>The target sample weight was between 2-3kg which is appropriate for the style of mineralisation</li> </ul> |
| <i>Drilling techniques</i>                            | <ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>   | <ul style="list-style-type: none"> <li>The drill type is Reverse Circulation (RC) drilling vertical holes</li> <li>The drill diameter us 5 ¼ inch RC using a face sampling hammer</li> </ul>   |
| <i>Drill sample recovery</i>                          | <ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>  | <ul style="list-style-type: none"> <li>Sample recovery was estimated by the geologist on the rig and secondly by assessing the weight of the representative samples delivered to laboratory</li> <li>The drill recoveries were deemed acceptable with supervision of the sampling at the cone splitter</li> <li>No sample bias due to sample loss is evident from the observed sample recoveries</li> <li>The samples were drilled mostly dry again minimising sample bias</li> </ul>  |
| <i>Logging</i>  | <ul style="list-style-type: none"> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>  | <ul style="list-style-type: none"> <li>Drillhole logging was completed at the drill rig recording lithology, texture, grain size and colour.</li> <li>1m chip trays were also collected in site, photographed and used to further detailed logging post the drill program</li> <li>The logging was considered appropriate for exploration reporting and eventually Mineral Resource Estimation</li> <li>Every 1m interval as logged and sieved for inspection – 7534m</li> </ul>   |
| <i>Sub-sampling techniques and sample preparation</i> | <ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether</li> </ul>  | <ul style="list-style-type: none"> <li>The 1m RC samples were gathered by using a levelled cone splitter at the side of the rig</li> <li>The samples were dominantly dry</li> </ul>  |



| Criteria  | JORC Code explanation  | Commentary   |
|---|--|--|
|   | <p><i>sampled wet or dry.</i></p> <ul style="list-style-type: none"> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>   | <ul style="list-style-type: none"> <li>Black Canyon inserted Certified Reference Material (CRM) at a rate of 1/50, blanks at a rate of 1/50 and field duplicates from the cone splitter at a rate of 1/50 for a total insertion rate of QA/QC materials at 6%</li> <li>The sub sampling technique and quality control procedures is considered appropriate to ensure the sample is representative</li> <li>The sample size is considered appropriate for the grainsize and style of mineralisation</li> </ul>  |
| <b>Quality of assay data and laboratory tests</b> | <ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul> | <ul style="list-style-type: none"> <li>The samples were submitted to NATA accredited ALSChemex in Wangara</li> <li>The 2 – 3kg samples was sub-split to 750gram and pulverised with 85% passing 75µm</li> <li>The sample was then analysed using method ME-XRF26s for manganese ores using fusion disc XRF for Fe, SiO<sub>2</sub>, Mn, Al<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub>, P<sub>2</sub>O<sub>5</sub>, S, MgO, K<sub>2</sub>O, Na<sub>2</sub>O, CaO, BaO, Cr<sub>2</sub>O<sub>3</sub> and ZrO<sub>2</sub></li> <li>Review of the quality control results received to date that include CRM, blanks, duplicates show an acceptable level of accuracy and lack of bias) and precision has been achieved.</li> <li>In addition ALSCHEMEX has undertaken its own internal QAQC checks using CRM, Blanks and pulp duplicates and no issues have been reported or identified</li> <li>The CP is satisfied that the analysis was completed to an acceptable standard in the context in which the results have been reported</li> </ul> |
| <b>Verification of sampling and assaying</b>      | <ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>  | <ul style="list-style-type: none"> <li>The significant intersections have not been verified by independent personnel but have been peer reviewed internally for accuracy</li> <li>The results do not show evidence of bias compared to the previous drill results and block model estimates and no assay data has been adjusted</li> </ul>   |
| <b>Location of data points</b>                    | <ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>  | <ul style="list-style-type: none"> <li>Once a drill hole was completed the drill collar was located using a GARMIN handheld GPS with an accuracy of +/- 5m</li> <li>At LR1 and FB3 a the drill collars were also picked with a DGPS</li> <li>The grid system is UTM zone 51, GDA94 datum</li> <li>The topography is quite flat reflecting the underlying stratigraphy. The holes are shallow and downhole deviation is not considered material in the context of these results</li> </ul>  |
| <b>Data spacing and distribution</b>              | <ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>   | <ul style="list-style-type: none"> <li>The drill spacing of the RC drill program was approximately 100m line spacing with holes drilled 100m apart</li> <li>The drill hole spacing is considered appropriate for this stage of advanced exploration with a high level of geological and mineralisation confidence and no further infill drilling is currently planned</li> <li>No samples compositing has been applied</li> </ul>  |



| Criteria   | JORC Code explanation   | Commentary   |
|--|---|--|
| <i>Orientation of data in relation to geological structure</i> | <ul style="list-style-type: none"><li>• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li><li>• If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li></ul> | <ul style="list-style-type: none"><li>• The LR1 deposit is flat and gently plunging. Drill logs and assay data have identified cross cutting dolerite dykes that may have intruded into zones of structural weakness which does appear at this early stage to terminate the prospective horizon to the south</li><li>• The FB3 deposit is gently folded and plunging shallowly to the south west. It is generally flat lying and openly folded.</li><li>• The drill hole orientation otherwise is suitable for this style of mineralisation and considered appropriate and unlikely to introduce sample bias</li></ul> |
| <i>Sample security</i>   | <ul style="list-style-type: none"><li>• The measures taken to ensure sample security.</li></ul>   | <ul style="list-style-type: none"><li>• The samples were collected in bulk bags, sealed with cable ties and stored on site until the drill program was completed</li><li>• The samples were then trucked to Perth in two consignments and delivered directly to ALSCHEMEX in Wangara. The bulka bags were inspected and audited by ALSCHEMEX who did not report any suspicious or tampered samples</li></ul>   |
| <i>Audits or reviews</i>                                       | <ul style="list-style-type: none"><li>• The results of any audits or reviews of sampling techniques and data.</li></ul>   | <ul style="list-style-type: none"><li>• Other than internal review by Company staff no audits have been completed.</li><li>• The CP was on site for parts of the RC drill program and considers the sampling and sub sampling techniques to be equal to industry standard and appropriate for the style of mineralisation and the results being reported.</li></ul>  |



## Section 2 Reporting of Exploration Results

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

| Criteria                                       | JORC Code explanation  | Commentary   |
|--|--|--|
| <i>Mineral tenement and land tenure status</i> | <ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul> | <ul style="list-style-type: none"> <li>The drilling was undertaken on granted tenement E46/1301</li> <li>Black Canyon has a farm-in and joint venture agreement with Carawine Resources Ltd (ASX:CWX), Black Canyon has earned an initial 51% interest and is now earning up to 75% in the Carawine Projects that includes E46/1301</li> <li>The tenement has a native title Heritage Protection Agreement with the Karlka Nyiyaparli People that required a Heritage Survey to be undertaken prior to ground disturbing activities. To this end an Ethnographic and Archeologic survey was completed prior to commencement of site activities</li> <li>There are no other known impediments to exploring E46/1301</li> </ul>  |
| <i>Exploration done by other parties</i>       | <ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>  | <ul style="list-style-type: none"> <li>Previous work on the tenure Includes exploration by Sentinel Mining Company carried out in 1968 in the general area of Balfour Downs. The exploration work included rock chip sampling from the southern edge of E46/784 which returned three samples with manganese values of 21.6 %, 25.7% and 11.4% Mn within manganese surface enrichment of Balfour Shales.</li> <li>Consolidated Global investment Pty Limited ('CGI') owned tenement E46/784 between 2010 and 2015 and carried out exploration work.</li> <li>Early reconnaissance work completed by CGI delineated many occurrences of manganese enriched outcroppings of the Balfour Formation. These north south striking outcrops were continuous over a distance of 1 km with widths of 50 m to 90 m in the LR1 Prospect area. Further exploration work completed by CGI included identification of prospective area using google images and remote sensing, a heritage survey and clearance for drilling using local Martu consultants. CGI completed a reverse circulation drilling programme of 22 holes in July 2012 on E46/784.</li> </ul> |
| <i>Geology</i>                                 | <ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>  | <ul style="list-style-type: none"> <li>The Flanagan Bore tenement is located within the Oakover Basin, the edges of which are defined by the Neoproterozoic Fortescue Group. Most of the tenement is covered by quaternary alluvium, sheetwash and outcrop only exists within the southern part and consists of rocks of the Manganese Group, mainly the Encheddong Dolomite and Balfour Formation. The tenement contains widespread manganese scree associated with manganese enriched Balfour Formation shales</li> <li>The prospects can be separated into three primary units, the upper unmineralised Balfour shale, the mineralised Balfour shale and the lower basal shale unit. The upper unmineralised shale is brown grey in</li> </ul>  |



| Criteria  | JORC Code explanation  | Commentary  |
|---|--|---|
|   |  | <p>colour and occurs from surface up to 10 m in depth intermittently across the project area.</p> <ul style="list-style-type: none"> <li>The manganiferous shale unit contains a supergene enriched manganiferous horizon which exhibits thickness range between 15 m to 37 m depth gently dipping to the south, progressively thickening to the east-south-east. The manganese layers are confined to distinct banding within the Balfour and there are also minor occurrences of interbedded red/brown shales intermixed within saprolitic clay bands.</li> </ul>   |
| <b>Drill hole Information</b>   | <ul style="list-style-type: none"> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>          | <ul style="list-style-type: none"> <li>Refer to Appendix 1 for a complete listing of the RC drill results reported at LR1 and FB3 by Black Canyon</li> <li>All assay results have now been reported for the LR1 and FB3 deposits</li> </ul>   |
| <b>Data aggregation methods</b>   | <ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>  | <ul style="list-style-type: none"> <li>Only length (1m) weighted intervals are included in the text of this release.</li> <li>Manganese intervals have been reported at 7% Mn cut off allowing 1 m of dilution (&lt;7% Mn)</li> <li>Iron intervals have been reported as they coincide with the Mn intervals and no cut offs are applied</li> <li>No metal equivalent values are used.</li> </ul>   |
| <b>Relationship between mineralisation widths and intercept lengths</b><br><br><b>Diagrams</b><br><br><b>Balanced reporting</b> | <ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> <li>Where comprehensive reporting of all Exploration Results is not practicable,</li> </ul> | <ul style="list-style-type: none"> <li>The deposit is mostly flat lying exhibiting a gentle dip of mineralisation to the south, south-west therefore 90 degree angled (vertical) drill holes considered appropriate.</li> <li>The mineralisation of the LR1 prospect is primarily strata bound striking approximately 80 to 90 degrees, gently dipping to the south</li> <li>The drill results reported are interpreted to represent close to true widths of the mineralisation</li> <li>These have been included in the body of the release where relevant and material to the reader's understanding of the results in regard to the context in which they have been reported.</li> <li>Information considered material to the reader's understanding of the</li> </ul> |



| Criteria                                  | JORC Code explanation   | Commentary   |
|---|---|--|
| <i>Other substantive exploration data</i> | <p><i>representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i></p> <ul style="list-style-type: none"><li><i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i></li></ul> | <p>Exploration Results has been reported in the body of the text and significant results have selectively been reported to provide the reader with the potential tenor and widths of the mineralisation</p> <ul style="list-style-type: none"><li>APPENDIX 1- contains the results of the holes completed at LR1 and FB3. Holes denoted with NSR describing holes without significant manganese results above the &gt; 7% Mn cut-off..</li><li>All information considered material to the reader's understanding and context of the RC Exploration Results have been reported.</li></ul> |
| <i>Further work</i>                       | <ul style="list-style-type: none"><li><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li><li><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li></ul>  | <ul style="list-style-type: none"><li>Further work is planned that includes: detailed metallurgical testwork on diamond drill core, environmental and hydrogeological investigations</li><li>The Company is intending to update the Mineral Resource LR1 now that all of the drill information has been received</li></ul>   |