

## ASX ANNOUNCEMENT

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Number: 740/15042021

### **Little Broken Hill Gabbro grows in stature Broken Hill Ni-Cu-PGE Project, NSW**

- New drill assays from first pass reconnaissance drilling at three areas within the Little Broken Hill Gabbro (LBHG) have further confirmed the highly prospective nature of this large and yet very poorly explored intrusion.
- At Rockwell significant PGE-copper-nickel mineralisation within the basal ultramafic unit of the LBHG has now been shown to be up to 60 metres thick, extend to a depth of at least 150 metres from surface and for at least 1,500 metres along trend.
- Mineralisation is increasing in thickness and grade at depth, in particular to the south but is still open in all directions. New results include:

51 metres at 0.3 g/t 3PGE from 140 metres in RWIPT013 *which includes*  
6 metres at 0.5% copper, 0.4% nickel and 0.3 g/t 3PGE from 154 metres *and*  
5 metres at 0.5% copper, 0.4% nickel and 0.6 g/t 3 PGE from 161 metres *and*  
1 metre at 0.2% copper and 1.1 g/t 3PGE from 186 metres.

11 metres at 0.8 g/t 3PGE from 101 metres in RWIPT004 *including*  
1 metre at 0.9 g/t 3PGE and 0.15% copper from 105 metres.

11 metres at 0.3 g/t 3PGE from 40 metres in RWIPT008 *including*  
2 metres at 0.7 g/t 3PGE from 47 metres.

- Three very widely spaced drill holes at the Western Contact prospect along the basal ultramafic unit 2 kilometres south of Rockwell also returned anomalous PGE-copper mineralisation over a 1 kilometre trend including:

16 metres at 500 ppm copper and 0.2 g/t 3PGE from 83 metres in Hole LBIPT053 *including*  
2 metres at 0.3% copper and 0.2 g/t 3PGE from 89 metres *and*  
3 metres at 0.1% copper and 0.4 g/t 3PGE from 94 metres.

- At the Central LBHG prospect and an area at least 1,000 metres by 500 metres in size with anomalous copper (>250 ppm) and 3PGE (>20 ppb) centred over a possible “feeder zone” has been identified. This is interpreted to be a possible halo or leakage anomaly above a larger mineralised zone at depth.
- A stand out gold-copper result has been returned from within the feeder zone fault of:  
4 metres at 1.5 g/t gold and 0.13% copper from 150 metres in Hole LBIPT040 *including*  
1 metre at 4.5 g/t gold and 0.18% copper from 152 metres.

- **Drilling was guided exclusively by Impact's proprietary ratio for PGE exploration. The new assay data has now identified two separate trends to the mineralisation which may reflect both magmatic and hydrothermal processes as commonly seen around major deposits. This is another major breakthrough for Impact and will help guide follow up drill programmes.**
- **These results from the first ever drill programme at the Little Broken Hill Gabbro are extremely encouraging for the discovery of a significant deposit given the remainder of the entire 6.5 kilometre extent of the target unit is untested.**
- **Follow up drilling will start as soon as practicable after completion of the drill programme at Apsley and by the end of the Quarter. Statutory approvals for most of the planned drill holes are already in place.**

Impact's Managing Director Dr Mike Jones said *"These results continue to confirm our belief that the LBHG may potentially contain a vast reservoir of PGE's and possibly nickel and copper. We have to remember that this is the first ever drill programme to test the basal ultramafic unit and yet every drill hole that has intersected it has returned some level of mineralisation. It is evident that there is very significant potential along the entire length of the 6.5 kilometre long intrusion."*

*"We have made another breakthrough with our ratio indicating two separate chemical trends are at play and this will further help guide our follow up drill programmes. We are fortunate that most of the immediate follow up drill holes already have statutory approvals in place and we look forward to drilling at Broken Hill as soon as possible after our on-going drill programme at Apsley is complete".*

New assays from first pass reconnaissance drilling at several places within the Little Broken Hill Gabbro (LBHG) have further confirmed the highly prospective nature of this large and yet very poorly explored intrusion within Impact Minerals Limited's (ASX:IPT) 100% owned Broken Hill platinum group element (PGE)-copper-nickel project in New South Wales.

The drill holes were completed in three specific areas (Figure 1):

1. **Rockwell** which covers the northern one third of the intrusion and where Impact's drilling has already identified large amounts of anomalous PGE+/-copper-nickel mineralisation in the basal ultramafic unit of the LBHG (ASX Releases 17<sup>th</sup> December and 22<sup>nd</sup> December 2020).
2. The **Western Contact** zone which was drilled in three places to further test the basal ultramafic unit 2 kilometres south west of Rockwell.
3. **Central LBHG** which was drilled to test for halos or so-called "leakage anomalies" within the upper gabbro units of the LBHG that overlie an interpreted "feeder zone." These are fault-controlled conduits through which hot magma migrates from depth into a larger intrusion and which are common sites for the deposition of nickel-copper sulphides such as at the giant Voiseys Bay deposit in Canada (see Figure 9 in this report and ASX Releases 9<sup>th</sup> July 2020 and 17<sup>th</sup> December 2020).

Significant results, all of which require follow up drilling, were returned from all three areas as follows.

## ROCKWELL

Assays from a further 9 RC holes are reported here for the first time to add to previously reported assays from Rockwell (Figures 2 and 3, Table 1 and 2 and ASX Releases 17<sup>th</sup> December and 22<sup>nd</sup> December 2020).

A stand out intercept has been returned from Hole RWIPT013 of:

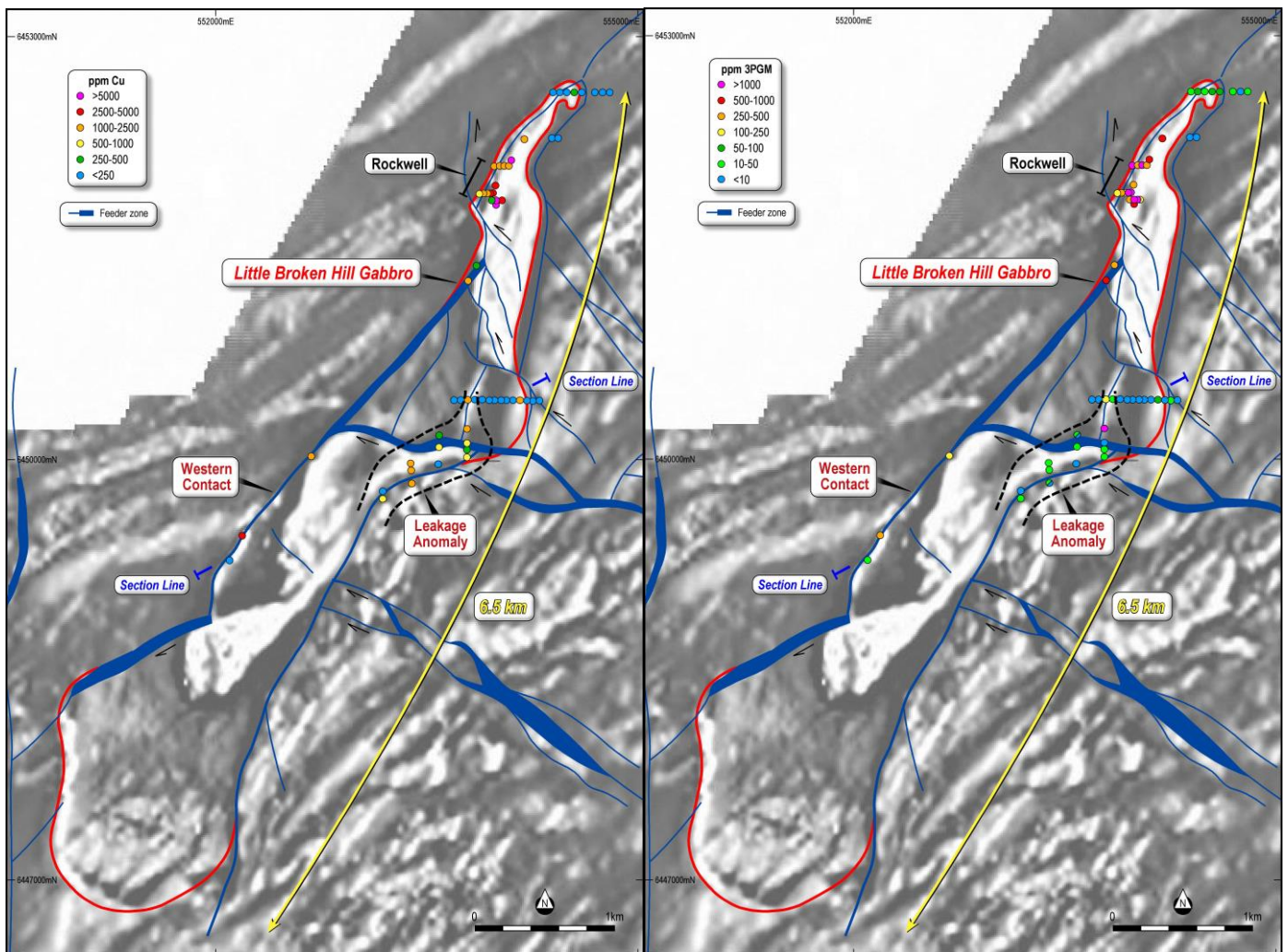
**51 metres at 0.3 g/t 3PGE from 140 metres *which includes***  
**6 metres at 0.5% copper, 0.4% nickel and 0.3 g/t 3PGE from 154 metres *and***  
**5 metres at 0.5% copper, 0.4% nickel and 0.6 g/t 3 PGE from 161 metres *and***  
**1 metre at 0.2% copper and 1.1 g/t 3PGE from 186 metres.**

This is of a similar width to a significant intercept previously reported in Hole RWIPT003 of

**61 metres at 0.4 g/t 3PGE from 31 metres RWIPT003 *which includes***  
**12 metres at 1.4 g/t 3PGE and 0.2% copper from 73 metres *and including***  
**1 metre at 2.3 g/t 3PGE, 0.4% nickel and 0.2% copper from 73 metres *and***  
**1 metre at 2.6 g/t 3PGE, 0.7% nickel and 0.2% copper from 79 metres.**

Other new results at Rockwell with robust widths of modest grades of 3PGE include (Figures 2 and 3):

**11 metres at 0.8 g/t 3PGE from 101 metres in RWIPT004 *which includes***  
**1 metre at 1.0 g/t 3PGE and 0.15% copper from 105 metres;**  
**11 metres at 0.3 g/t 3PGE from 40 metres in RWIPT008 *which includes***  
**2 metres at 0.7 g/t 3PGE from 47 metres; *and***  
**18 metres at 0.1 g/t 3PGE from 245 metres in RWIPT014.**



**Figure 1.** First vertical derivative image of airborne magnetic data over the Little Broken Hill Gabbro showing Impact's drill collars and best results down hole for copper and 3PGM (palladium+platinum+gold).

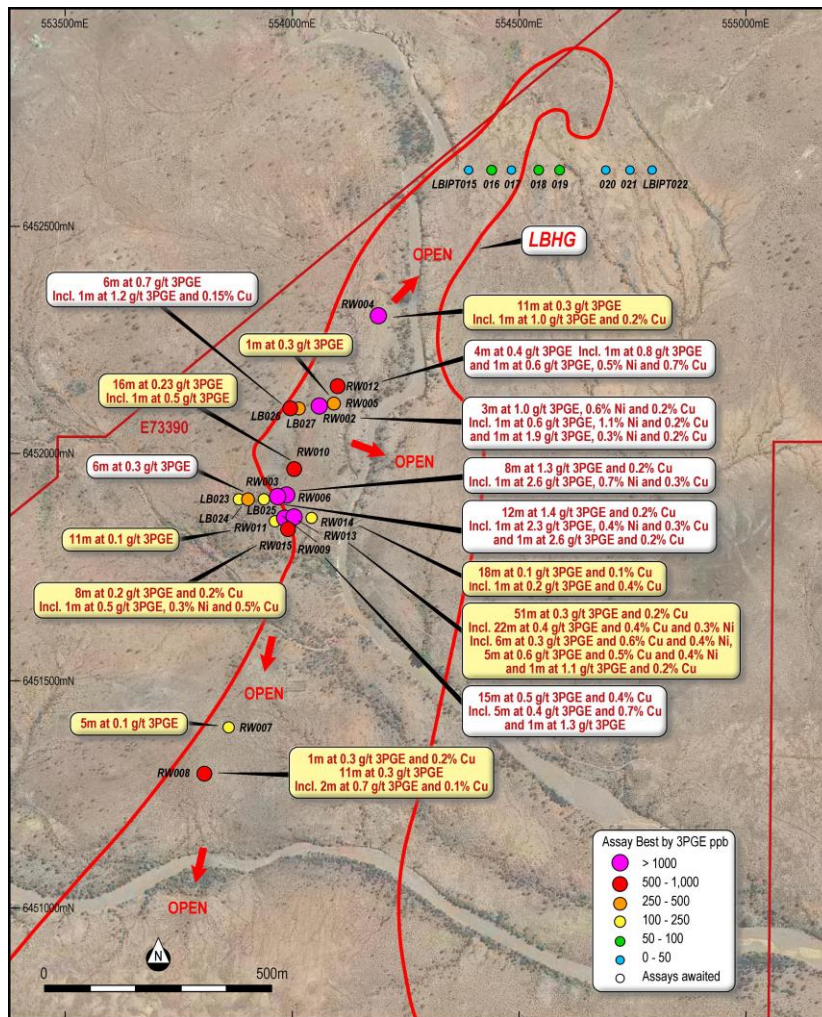
In addition, two holes were drilled 400 metres and 500 metres south of the main area of drilling at Rockwell to test the basal ultramafic unit along trend. Anomalous results were returned from both holes including (Figure 2 and Table 2):

**11 metres at 0.3 g/t 3PGE from 40 metres in Hole RWIPT008 which includes 2 metres at 0.7 g/t 3PGE from 47 metres with up to 0.1% copper in a few places.**

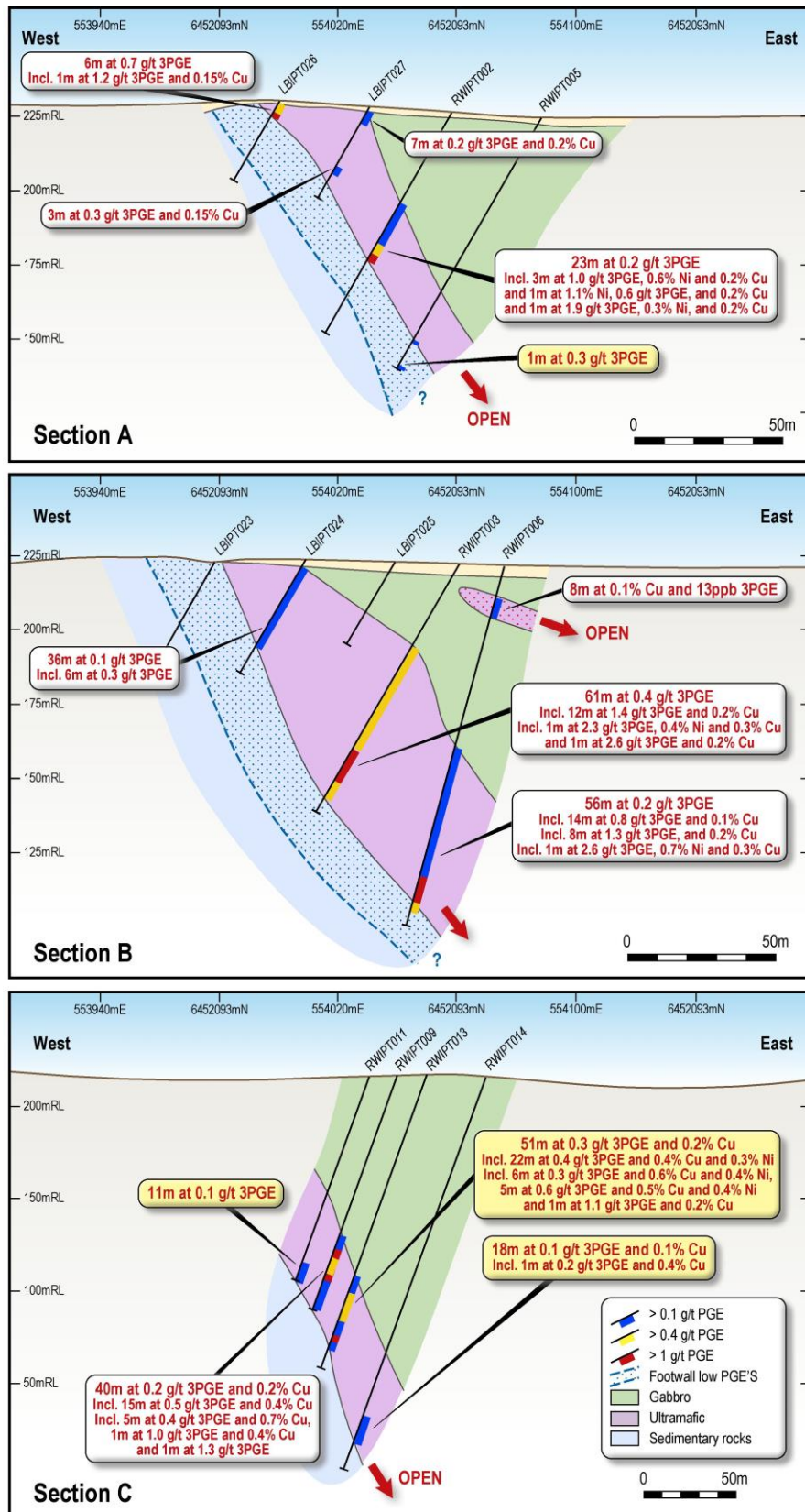
These are the first holes in this part of the basal ultramafic contact intrusion and are again considered very encouraging in particular given the increase in grade with depth seen to the north at Rockwell (Figure 3).

These results indicate significant PGE-copper-nickel mineralisation extends to a depth of at least 150 metres from surface and for at least 1,500 metres along trend at Rockwell (Figures 2 and 3).





**Figure 2.** Location of Impact's 28 drill holes at Rockwell with best down hole assay results for 3PGE. New results are highlighted in yellow. The northern line of drill holes with weaker results are vertical aircore drill holes that are no more than 50 metres deep. They have probably not effectively tested the basal ultramafic unit at depth and deeper RC drilling is required.



**Figure 3.** Cross-sections through the Rockwell Prospect with new drill results in yellow. Note the increasing PGE content with width of the basal ultramafic (see Figure 2 for location of cross sections from Drill Hole IDs).

## WESTERN CONTACT

The drill results at Rockwell indicate that the basal ultramafic unit of the LBHG was highly prospective for PGE-copper-nickel mineralisation (ASX Release 22<sup>nd</sup> December 2020). However prior to Impact's 2020 programme there had been no previous drill testing of unit which is at least 6.5 kilometres long (Figure 1).

Accordingly, three shallow scout drill holes to test the basal unit were completed over a 1 kilometre strike extent along the central west contact of the LBHG (Figure 1).

Two of the drill holes returned encouraging anomalous results:

**16 metres at 500 ppm copper and 0.2 g/t 3PGE from 83 metres in Hole LBIPT053 *which includes* 2 metres at 0.3% copper and 0.2 g/t 3PGE from 89 metres and 3 metres at 0.1% copper and 0.4 g/t 3PGE from 94 metres; and**

**7 metres at 0.3 g/t 3PGE from 146 metres in LBIPT052.**

The ultramafic unit in the third hole LBIPT054 contained weak 3PGE up to about 20 ppb over its entire 12 metre width.

Given the very wide drill spacing and essentially random location of the drill holes, these results further confirm the prospectivity of the basal ultramafic unit over many kilometres of strike along the western contact of the LBHG. It is of note that at Rockwell similar results were found closer to surface with better grades intersected at depth (Figure 3).

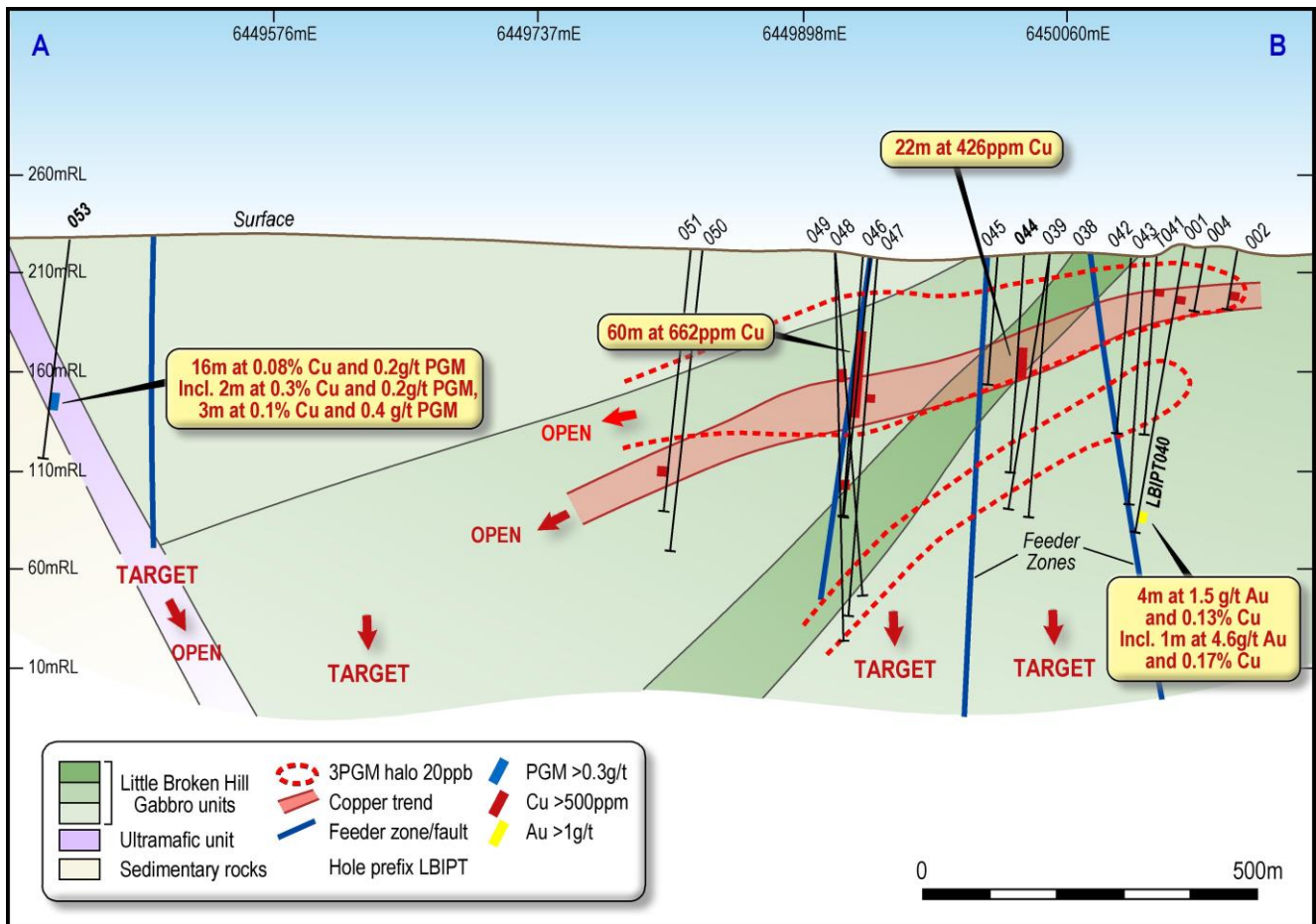
Impact considers it likely that the basal ultramafic unit contains PGE-copper-nickel mineralisation over much of its 6.5 kilometre extent and extensive further exploration is required.

## CENTRAL LITTLE BROKEN HILL GABBRO (LBHG)

The Central LBHG area is centred on a major fault WNW-trending fault that cross cuts the entire LBHG and which is interpreted to be a "feeder zone" through which magma migrated from depth into the main intrusion (see Figure 8 this report and ASX Releases 9<sup>th</sup> July 2020 and 17<sup>th</sup> December 2020). Such feeder zones are common sites for the deposition of nickel-copper sulphides such as at the giant Voiseys Bay deposit (Figure 9).

However, it was considered likely that the feeder zone was most prospective at depth where it intersects the basal ultramafic unit. Accordingly, the Central LBHG area was drilled to test for near surface halos or "leakage anomalies" that may have come from massive sulphide bodies buried deeper within the intrusion.

Of the 30 aircore and RC holes completed, 12 returned very encouraging results and an area at least 1,000 metres by 500 metres in size with anomalous copper (>250 ppm) and 3PGE (>20 ppb) has been identified. This is centred over the interpreted feeder zone and has a possible westerly plunge (Figures 1 and 4).



**Figure 4.** Oblique cross section through the LBHG showing drill results from the Central LBHG area and also the Western Contact (Hole 053). Significant anomalous copper and 3PGE mineralisation is present over a large area and at depth. This is encouraging for the discovery of a massive sulphide deposit at depth.

Of note, there is a stand out gold-copper intercept in Hole LBIPT040 associated with quartz veins in the target feeder zone fault which returned (Figures 1 and 4):

**4 metres at 0.13% copper and 1.5 g/t gold from 150 metres which includes**  
**1 metre at 1.3 g/t gold and 0.18% copper from 151 metres and**  
**1 metre at 4.5 g/t gold and 0.17% copper from 152 metres.**

All of these results are supportive of more significant mineralisation at depth in and around the feeder zone. Modelling of the magnetic and gravity data over the LBHG is now underway to determine the likely depth to the base of the intrusion to help guide further drilling and determine the efficacy of a ground EM survey that may help to identify conductive zones that may represent massive nickel-copper sulphide deposits.

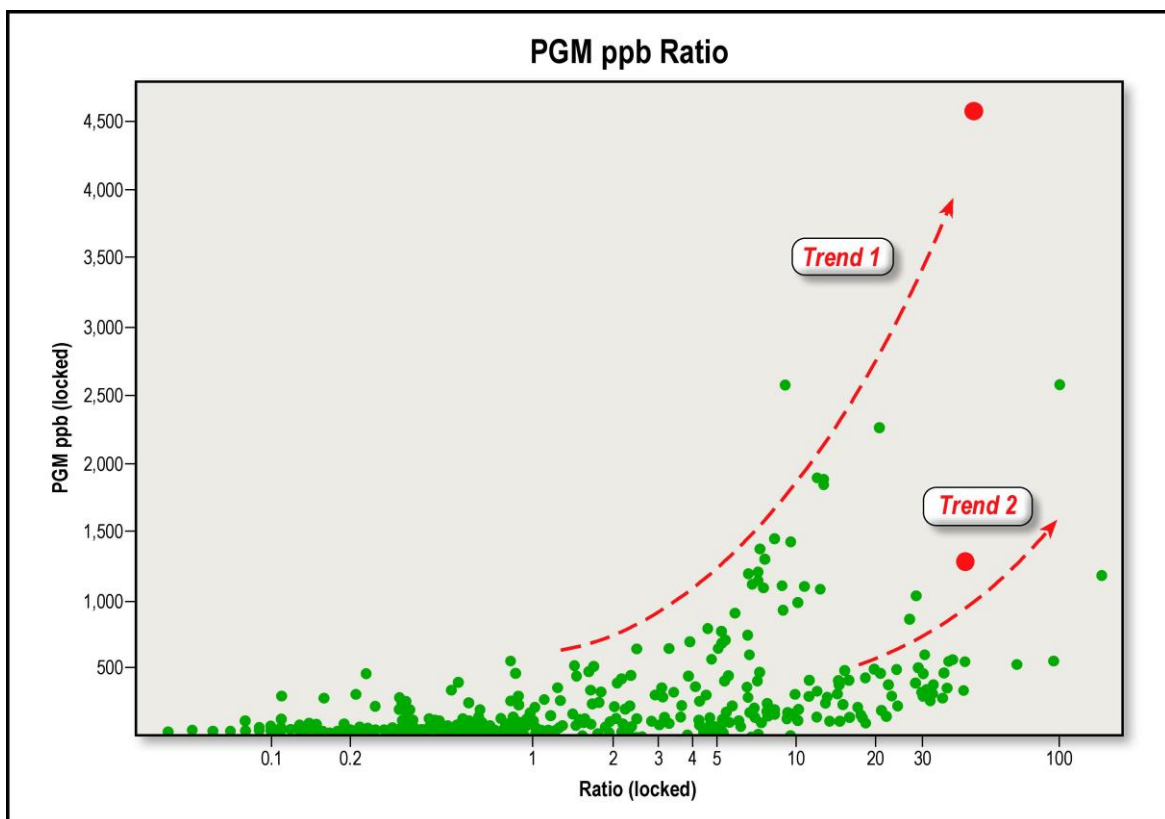


## ABOUT IMPACT's RATIO: A VECTOR TO HIGH GRADE PGE AT THE LBHG

The discovery of the areas of encouraging PGE-copper-nickel mineralisation across the entire LBHG area was driven exclusively by Impact's proprietary geochemical ratio which has been previously shown to have an exceptional positive correlation with PGE grades at Platinum Springs (ASX Release 6<sup>th</sup> October and 2<sup>nd</sup> December 2020).

The ratio is based on the considerable amount of in-house research that Impact has completed on the nature and origin of the unusual ultramafic and mafic rocks which host the exceptional grades of PGE-copper-nickel mineralisation at Broken Hill (ASX Release 6<sup>th</sup> March 2019).

Early results from LBHG seemed to indicate a relatively poor correlation with grade compared to Platinum Springs (ASX Release 22<sup>nd</sup> December 2020). However incorporation of the new assay data has now clearly identified two separate trends in the data (Figure 5). Of note, the gold (plus copper) intercepts from the quartz veins in the feeder zone target at Central LBHG also lie along these trends.



**Figure 5.** Graph of platinum+palladium+gold (3PGE) in parts per billion (1,000 ppb = 1 g/t; y axis) against Impact's proprietary ratio (x axis) showing two clear Trends. Trend 1 has key thresholds at a ratio of between 2 to 5 and also in particular of greater than 6 to 8 that mark increases in grade of the 3PGE. Trend 2 has key thresholds at greater than 10 and greater than 25 which mark increases in grade. In addition, the two red circles are high grade gold results from Hole LBIPT040 and these also lie on the two trends. This suggests that the gold-copper veins are part of the same magmatic-hydrothermal system as the PGE-copper-nickel mineralisation.

The cause of the two trends is the subject of on-going research by Impact. However, Impact believes they may reflect a mix of magmatic and related hydrothermal processes at the base of the LBHG during its intrusion, with the gold-copper veins being related to late stage fluids that have fractionated from the PGM-bearing ultramafic magmas.

Such processes are common in many major deposits globally and this is encouraging for the discovery of a significant deposit in the area.

Impact has also demonstrated to its satisfaction that hand-held XRF data from LBHG is of sufficient accuracy and precision compared to the laboratory assay data to calculate the ratio and it will be used to guide the follow up drill programme.

## **DISCUSSION AND NEXT STEPS**

Impact's previous work has shown the LBHG to be of a similar size, age, chemical composition and in the same geodynamic setting as the giant Jinchuan nickel-copper-PGE deposit in China (550Mt at 1.1% nickel, 0.7% copper and 0.5 g/t PGE). These initial scout drilling results are considered to be very encouraging for the discovery of a Jinchuan-style deposit at the LBHG (ASX Release 9<sup>th</sup> July 2020 and 17<sup>th</sup> December 2020).

Virtually every drill hole that has penetrated the basal ultramafic unit has intersected anomalous PGE with variably anomalous nickel and copper. The ultramafic unit generally carries anomalous PGE's over its entire thickness with narrower zones of better grades of up to 2.6 g/t PGE's, 1.1% nickel and 0.7% copper towards the base of the unit in places.

In all locations the mineralisation is open along trend and down dip and this is all very encouraging for the potential discovery of a significant nickel-copper-PGE deposit at the base of the LBHG given the very small area tested thus far.

It is evident that there is potentially a very large inventory of those metals contained within the target basal unit and extensive follow-up drilling, including diamond drilling for the first time, is clearly required at many places within the LBHG.

A detailed interpretation of the large amount of new data generated from the extensive drill programmes completed at LBHG, Platinum Springs and Red Hill is now in progress to prioritise areas for follow up drilling.

In addition, down hole electromagnetic surveys will be completed on 5 drill holes across the project area to search for targets that may represent massive sulphide bodies. This work should commence in May.

Drilling will resume as soon as practicable after the end of the on-going drill programme at Impact's Apsley porphyry copper-gold prospect. Discussions are in progress with drilling contractors to determine timing and cost with the aim of drilling by the end of the current Quarter.

### **About the Drill Programme and Assays**

Impact has completed 68 holes for 5,532 metres at LBHG-Rockwell. Laboratory assays for 42 of those drill holes are reported here for the first time with significant intercepts listed in Table 2 and further details on the programme noted in the JORC Table. The precious metal results are reported as 3PGE (gold+palladium+platinum; Figures 1 and 2) with individual metal assays also listed in Table 2.

In addition to the chemical assay data all one metre samples were assayed with a handheld XRF instrument for a wide variety of metals including copper and nickel as well as the calculation of Impact's proprietary ratio for PGE exploration (ASX Releases 6<sup>th</sup> October 2020, 21<sup>st</sup> October 2020, 2<sup>nd</sup> December 2020 and 17<sup>th</sup> December 2020).

Impact was awarded a grant of \$75,000 towards the drill programme at the Little Broken Hill Gabbro as part of the Co-operative Drilling Initiative of the DRG Geological Survey of New South Wales. Their support is gratefully acknowledged.

### **COMPLIANCE STATEMENT**

This report contains collar locations and assay data for 42 new drill holes drilled by Impact.

**Dr Mike Jones**

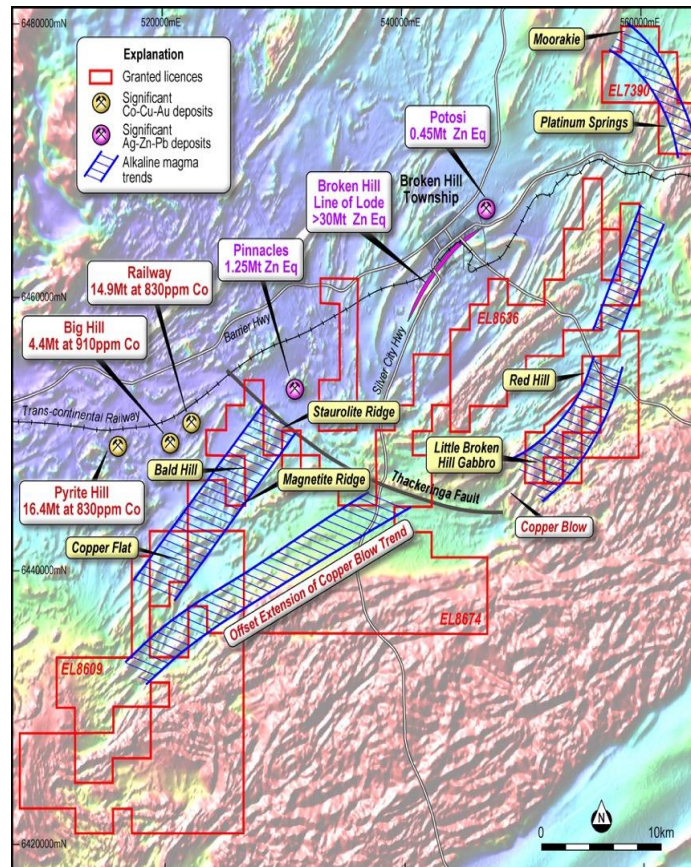
**Managing Director**

### **Competent Person's Statement**

*The review of exploration activities and results contained in this report is based on information compiled by Dr Mike Jones, a Member of the Australian Institute of Geoscientists. He is a director of the company and works for Impact Minerals Limited. He has sufficient experience which is relevant to the style of mineralisation and types of deposits 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 (the JORC Code). Mike Jones has consented to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

## ABOUT THE LITTLE BROKEN HILL GABBRO

The Little Broken Hill Gabbro (LBHG) lies about 25 km south of the town of Broken Hill and is the largest of a suite of mafic to ultramafic intrusions that occur in a 40 km long belt from Little Broken Hill in the south west to Red Hill, Darling Creek, Platinum Springs and Moorkai in the north east (Figure 6).



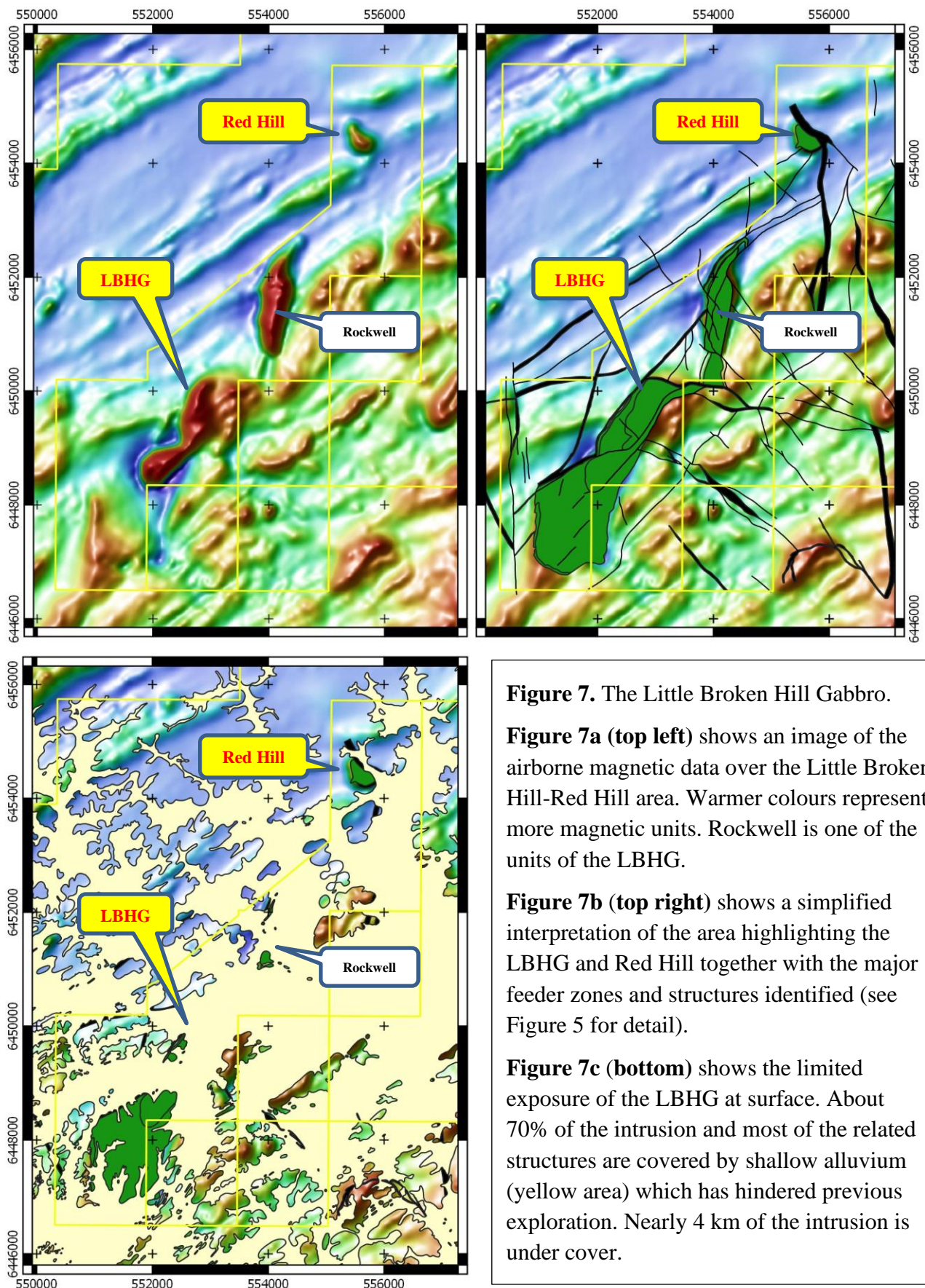
**Figure 6.** Impact's ground holdings in the Broken Hill area showing key prospects including Red Hill, Platinum Springs and Little Broken Hill Gabbro.

The LBHG is evident in airborne magnetic data (Figure 7a) and is about six kilometres long and up to one kilometre wide. There are no detailed published studies on the gabbro and it is poorly understood.

On-going work by Impact has shown that it is comprised of a number of individual units or lobes that have differing magnetic and chemical properties (compare Figures 7a and 7b and Figure 8).

Importantly, about 70% of the gabbro and four kilometres of strike is covered by up to about 25 metres of alluvium (Figure 7c). This cover has been a hindrance to previous exploration and only very limited sampling and drilling has been completed by previous explorers away from the areas of outcrop. This work returned only modest results and discouraged further exploration given the very high-grade nickel-copper-PGE results returned from the other prospects in the region.





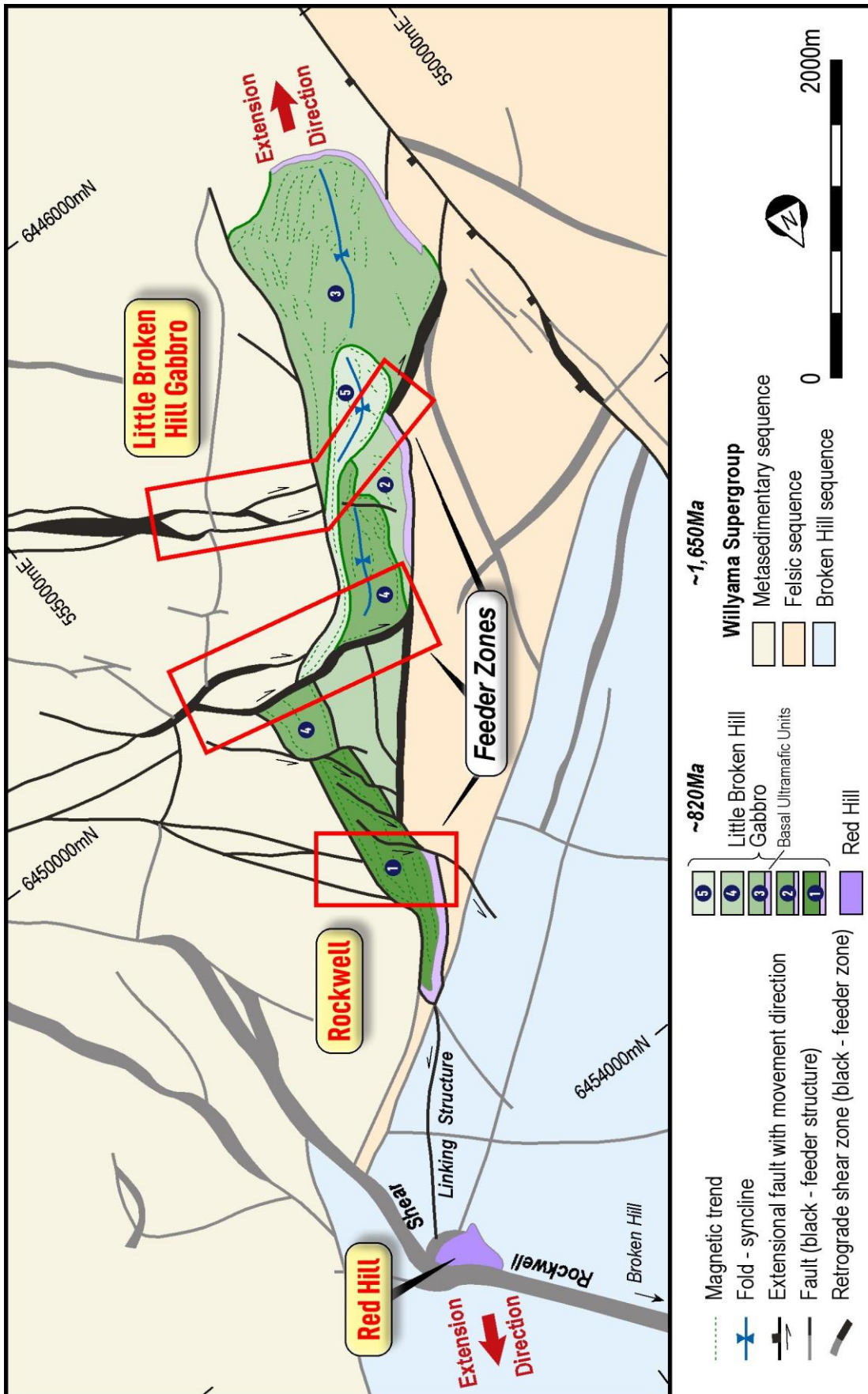


Figure 8. Interpretation of the Little Broken Hill Gabbro. Note the opposite fault slip direction either side of the central of the three possible feeder zones identified. The gabbro has expanded further to the right of this zone (SW) than the left (NE – Rockwell Lobe)



However, Impact's work has now shown that the gabbro has many of the characteristics required to potentially host a major nickel-copper-PGE deposit and that compelling targets exist under the alluvial cover or at depth. Three important lines of evidence for this are:

1. The structural controls on the intrusion and formation of the LBHG.
2. The age and geodynamic setting of the LBHG and related mafic and ultramafic rocks.
3. The internal chemistry of the individual units within the LBHG which is a work in progress.

### **1. The Structural Controls on the Intrusion of the Little Broken Hill Gabbro**

A new interpretation of the internal geometry and structure of the Little Broken Hill Gabbro by Impact is shown in Figure 8 (further details are in ASX Release 9<sup>th</sup> July 2020).

Impact's work has shown that the Little Broken Hill Gabbro is a mid-crustal magma chamber that was fed at least in part by ultramafic to mafic magmas sourced from the mantle such as those at Red Hill and the 9 km long Platinum Springs-Moorkai trend. Those magmas were demonstrably carrying extensive nickel-copper-PGEs both as magmatic sulphides such as at Platinum Springs and in related hydrothermal fluids such as at Red Hill. These deep-seated magmas fed the mid-crustal chamber through a sequence of extensional faults and shears that constitute feeder zones for the main intrusive body. Three possible feeder zones have been identified (Figure 8).

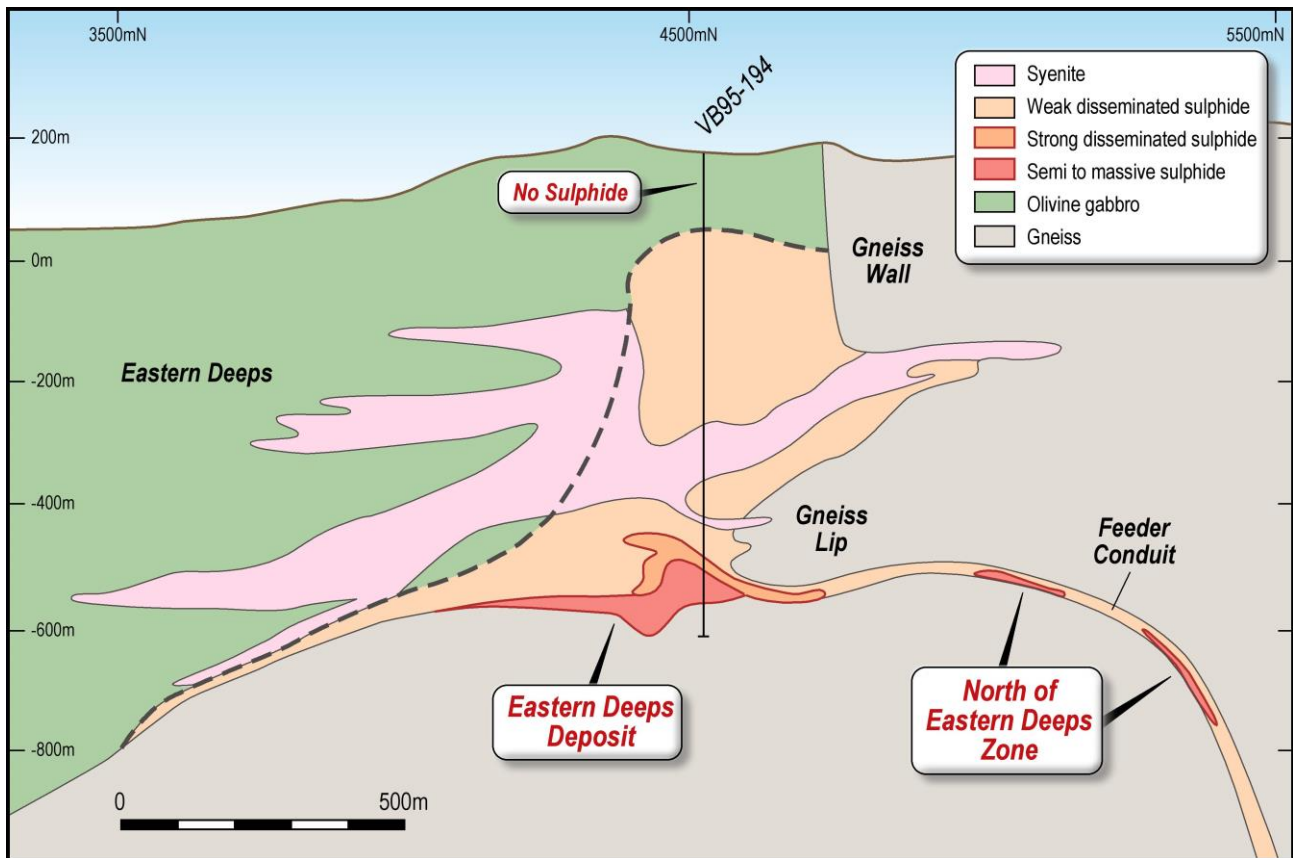
In addition, Impact has recognised five different units within the LBHG each of which has different magnetic, chemical and field characteristics (Figure 8). The geometry of the units, four of which are folded, are best explained as the product of repeated pulses of magma being injected from the feeder zones into a laterally expanding magma chamber. Each new pulse of magma causes gravitational instabilities in the chamber leading to slumping and sliding of the magmas towards the centre and edges of the chamber.

Such gravity slides have been shown to be important controls on the deposition and sorting of magmatic massive sulphide in a number of major deposits including the Bushveld Complex in South Africa (Maier et al 2012).

Feeder zones (and associated gravity slides) are well known loci for nickel-copper-PGE mineralisation. A very good example of a feeder zone is the Eastern Deeps mineralisation at the world class Voiseys Bay in Canada (>150 Mt at 1.6% nickel, 0.9% copper and 0.1% cobalt) as shown in Figure 9. Here, a significant massive sulphide body and a related large cloud or halo of disseminated sulphide has been deposited at the exit point of a feeder zone which in itself was carrying extensive sulphide mineralisation.

This is a useful conceptual model for Little Broken Hill and Impact's exploration programme is focussed in the first instance on the search to find an outer halo of disseminated sulphide in this intrusion which may then provide vectors to the ultimate target of massive sulphide.

An interpretation of the geochemistry of rock chip and drill assays from the LBHG is now underway and will no doubt add to the exciting model that Impact has built for its nickel-copper-PGE exploration in the Broken Hill region.



**Figure 9.** Cross-section through the Eastern Deeps deposit at Voiseys Bay. Note the feeder zone to the main intrusion and the large halo of disseminated sulphide mineralisation adjacent to the feeder. The massive sulphide body is some 600 metres deep and there is no surface expression of mineralisation.

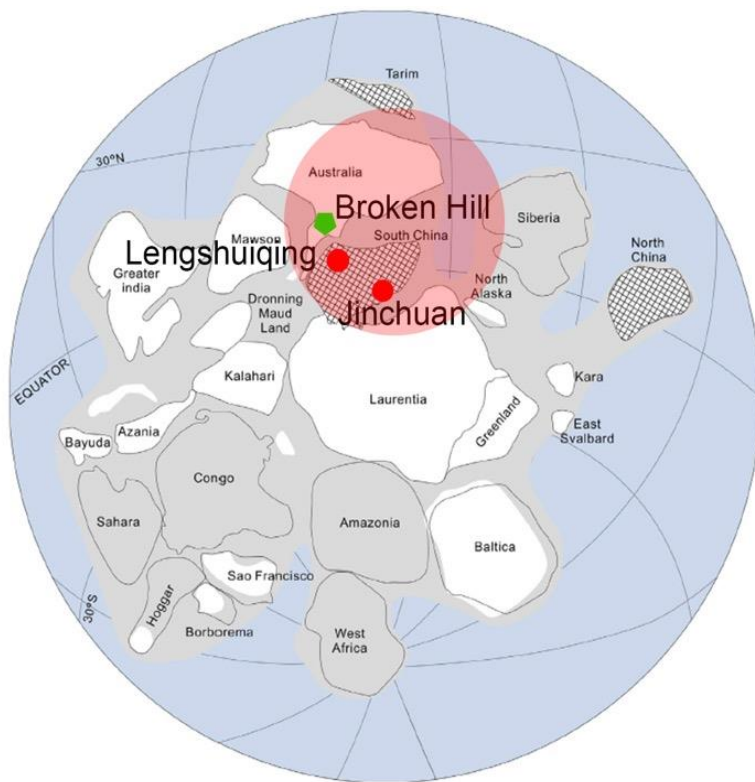
## 2. The Age, Size and Geodynamic Setting of the Little Broken Hill Gabbro

The LBHG is about 827 million years old and related to the break-up of a supercontinent called Rodinia by a rising “plume” of mafic to ultramafic magma likely derived from the core-mantle boundary (Figure 10, Wingate et al 1998). Unpublished age dating by Impact indicates all of the mafic-ultramafic rocks in the Broken Hill area are likely to be of a similar age.

At that time, Broken Hill was located close to Jinchuan, one of the world’s largest nickel-copper-PGE deposits (>550Mt at 1.2% Ni 0.7% Cu 0.5 g/t PGM) which is also of a similar age (Figure 10). This geodynamic framework of a rising mantle plume is widely recognised as a crucial component to the formation of major magmatic nickel-copper-PGE sulphide deposits (ASX Release March 6<sup>th</sup> 2019).

The Voiseys Bay deposit also formed in a similar geodynamic environment but at an earlier time in the Earth’s history, 1.3 billion years ago.





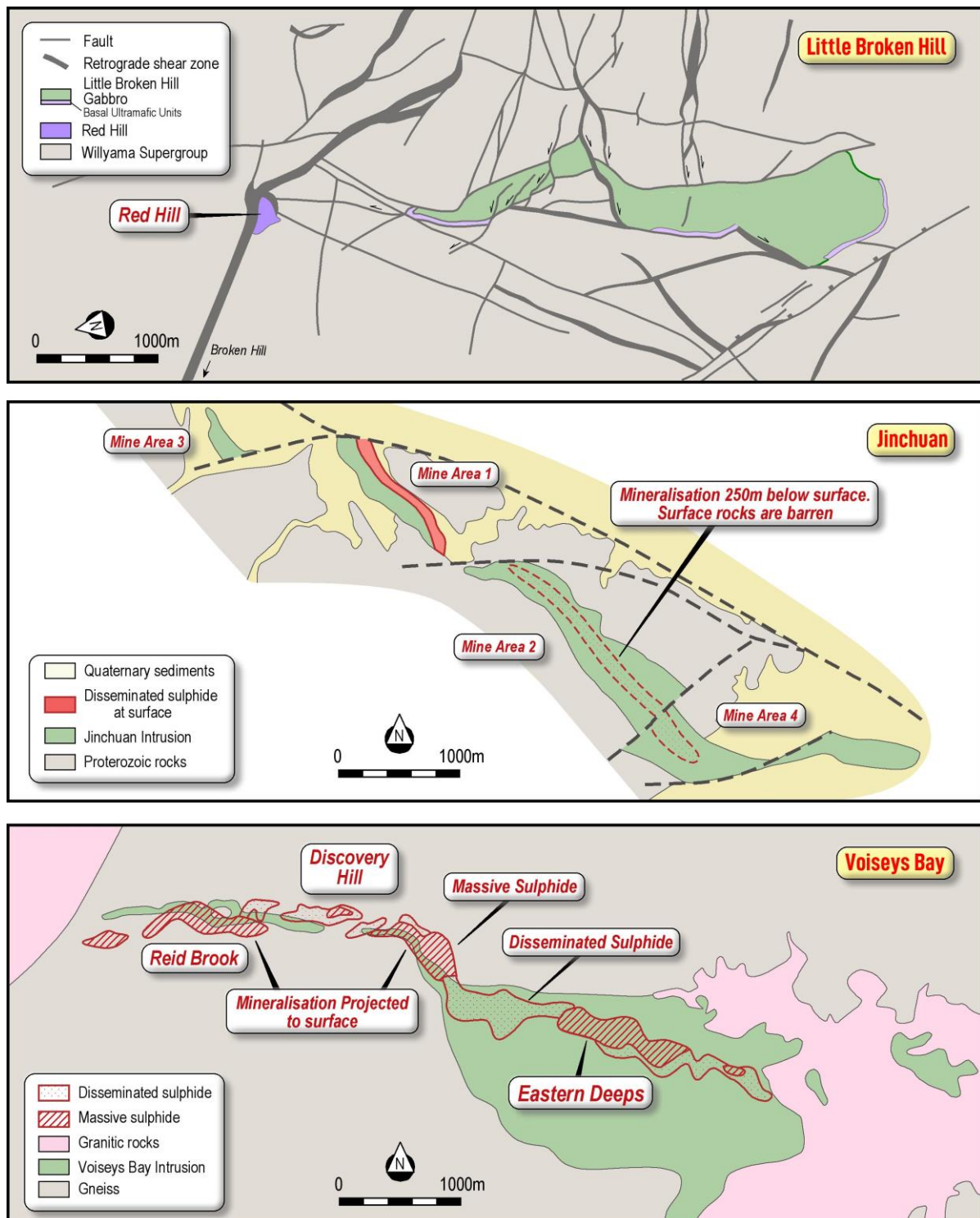
**Figure 10.** Position of the proposed mantle plume head (red circle) responsible for the breakup of Rodinia showing the location of Broken Hill in relation to the Jinchuan and Lengshuiqing Ni-Cu- Co-PGE deposits at about 800 million years ago (after Huang et al., 2015).

A comparison of the size of the Little Broken Hill Gabbro and the host intrusions at Jinchuan and Voiseys Bay is shown in Figure 11. The geometric similarities are obvious.

Importantly, more than 95% of the mineralisation at both Jinchuan and Voiseys Bay occurs at depths of up to many hundreds of metres below surface and the deposits are for the most part “blind”, that is, there are no surface indications of the underlying world class orebodies (Figures 9 and 11).

This is an important consideration in exploration at the LBHG where prior to Impact’s drill programme there was only one drill hole deeper than 25 metres.

Such comparisons clearly demonstrate that the LBHG has the correct scale, geodynamic setting and lack of previous exploration to host a major nickel-copper-PGE deposit.



**Figure 11.** Comparison of the Little Broken Hill Gabbro-Red Hill area with Jinchuan and Voiseys Bay. Note the similar scale and also how most of the mineralisation at Jinchuan and Voiseys Bay is at depth.

TABLE 1. DRILL HOLE DETAILS

Hole ID	Hole Type	Grid	Easting	Northing	Azi	Dip	Depth
LBIPT001	AC	MGA94_54	557300	6450449	270	-90	25
LBIPT002	AC	MGA94_54	553798	6450450	90	-60	33
LBIPT003	AC	MGA94_54	553852	6450443	270	-60	38
LBIPT004	AC	MGA94_54	553751	6450452	90	-60	38
LBIPT005	AC	MGA94_54	553901	6450448	270	-60	38
LBIPT006	AC	MGA94_54	553950	6450444	270	-60	31
LBIPT007	AC	MGA94_54	554001	6450449	270	-60	21
LBIPT008	AC	MGA94_54	554049	6450447	270	-60	31
LBIPT009	AC	MGA94_54	554103	6450448	270	-60	31
LBIPT010	AC	MGA94_54	554146	6450448	270	-60	31
LBIPT011	AC	MGA94_54	554200	6450447	270	-60	40
LBIPT012	AC	MGA94_54	554250	6450451	270	-60	32
LBIPT013	AC	MGA94_54	554306	6450449	270	-60	32
LBIPT014	AC	MGA94_54	554175	6450447	270	-60	28
LBIPT015	AC	MGA94_54	554400	6452628	270	-60	30
LBIPT016	AC	MGA94_54	554454	6452623	270	-60	25
LBIPT017	AC	MGA94_54	554499	6452623	270	-60	44
LBIPT018	AC	MGA94_54	554548	6452622	270	-60	31
LBIPT040	RC	MGA94_54	553799	6450251	270	60	169
LBIPT041	RC	MGA94_54	553795	6450150	180	60	104
LBIPT042	RC	MGA94_54	553792	6450048	180	60	103
LBIPT043	RC	MGA94_54	553796	6450101	180	60	91
LBIPT044	RC	MGA94_54	553599	6450101	180	60	104
LBIPT045	RC	MGA94_54	553603	6449979	180	60	73
LBIPT046	RC	MGA94_54	553399	6449951	180	60	151
LBIPT047	RC	MGA94_54	553401	6450001	180	60	211
LBIPT048	RC	MGA94_54	553401	6449846	0	60	199
LBIPT049	RC	MGA94_54	553402	6449846	0	80	199
LBIPT050	RC	MGA94_54	553203	6449797	300	60	175
LBIPT051	RC	MGA94_54	553203	6449752	300	60	151
LBIPT052	RC	MGA94_54	552796	6450004	300	60	199
LBIPT053	RC	MGA94_54	552311	6449450	295	60	133
LBIPT054	RC	MGA94_54	552243	6449258	315	60	169
RWIPT004	RC	MGA94_54	554191	6452303	270	75	118
RWIPT005	RC	MGA94_54	554094	6452111	270	60	97
RWIPT007	RC	MGA94_54	553865	6451397	270	60	100
RWIPT008	RC	MGA94_54	553809	6451297	270	60	100
RWIPT010	RC	MGA94_54	554008	6451966	270	70	76
RWIPT011	RC	MGA94_54	553968	6451853	270	70	148
RWIPT013	RC	MGA94_54	554005	6451860	270	70	208
RWIPT014	RC	MGA94_54	554045	6451860	270	70	283
RWIPT015	RC	MGA94_54	553996	6451835	270	70	211

**TABLE 2. SIGNIFICANT INTERCEPTS (100 ppb 3PGE cut off where appropriate)**

Hole ID		From	To	Interval (m)	Cu_ppm	Ni_ppm	Pd_ppb	Pt_ppb	Au_ppb	3PGM
ROCKWELL										
RWIPT004		42	43	1	1172	1522	16	10	19	44
		101	112	11	553	1266	201	84	19	304
	which incl and	102	103	1	1110	2024	559	203	49	811
RWIPT005		79	86	7	72	952	47	27	6	80
	including	85	86	1	151	171	95	44	28	167
		96	97	1	249	68	87	238	5	330
RWIPT007		15	20	5	163	1044	74	61	3	138
	which incl	15	17	2	145	995	134	125	2	259
		24	31	7	106	47	31	13	5	50
RWIPT008		28	31	3	824	1337	122	84	26	232
	which incl	28	29	1	2114	1540	107	77	62	246
		40	51	11	366	1207	219	108	10	337
RWIPT010		47	49	2	892	1577	398	275	23	696
		60	64	4	424	1196	152	78	16	246
	which incl	61	62	1	662	1597	300	149	24	473
RWIPT011		86	146	60	66	1467	33	18	6	57
		137	148	11	158	1191	80	38	19	137
		140	191	51	2269	2357	74	124	64	262
RWIPT013	including	146	168	22	4149	3442	95	206	95	396
	which incl	154	160	6	5753	3532	92	138	110	340
	including	161	166	5	4653	3584	110	318	144	572
RWIPT014		186	187	1	2268	2032	541	235	347	1122
		245	263	18	901	1475	35	43	26	104
		256	257	1	3648	1420	55	42	126	223
RWIPT015		133	141	8	1742	2031	60	125	41	226
	which incl	137	139	2	5074	3241	122	256	121	500
LBHG										
LBIPT001					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT002		23	28	5	735	103	NSA	NSA	40	34
	including	25	27	2	1087	99	NSA	NSA	77	78
	which incl	25	26	1	1063	102	1	NSA	122	123
LBIPT003					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT004					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT005					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT006					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT007					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT008					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT009					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT010		11	22	11	612	556	3	9	13	24
	including	21	22	1	620	658	7	32	32	71
					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT011					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT012					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT013					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT014					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT015					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT016					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT017					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT018					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT040		150	154	4	1307	NSA	NSA	NSA	1519	1519
	including	151	153	2	1700	78	NSA	NSA	2951	2951
	which incl	152	153	1	1767	112	NSA	NSA	4595	4596
LBIPT041		65	66	1	546.2	197.1	NSA	NSA	3	NSA
LBIPT042		63	64	1	733	47	NSA	NSA	5	NSA
		64	65	1	368	96	9	9	2	20
					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT043					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT044		51	73	22	426	225	NSA	NSA	6	NSA
LBIPT045					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT046		41	101	60	662	70	NSA	NSA	7	NSA
	including	58	60	2	1121	78	NSA	NSA	10	NSA
	also includ	75	77	2	843	67	6	7	13	26
LBIPT047		91	92	1	1129	74	3	3	10	15
		80	81	1	833	156	NSA	NSA	12	NSA
		100	101	1	1624.4	84.1			17	
LBIPT048		134	142	8	NSA	102	19	11	NSA	30
		96	104	8	891	58	NSA	NSA	6	NSA
		101	102	1	1324.4	54.5	NSA	NSA	7	NSA
LBIPT049		103	104	1	2210.7	68.5	NSA	NSA	9	NSA
		61	67	6	500	46	NSA	NSA	5	NSA
		117	118	1	1753	119			5	
LBIPT050					NSA	NSA	NSA	NSA	NSA	NSA
LBIPT051		84	88	4	103	76	18	13	NSA	32
		130	131	1	661	2	NSA	NSA	NSA	NSA
		25	26	1	760.9	309.7		NSA		
LBIPT052		72	73	1	771	128.9	16.8	39	15	70.8
		146	153	7	822	954	183	118	12	313
LBIPT053		70	75	5	533	480	10	18	14	42
		83	99	16	845	1452	130	63	14	207
	including	89	91	2	3026	2040	62	86	50	198
LBIPT054		94	97	3	1022	1912	222	124	15	361
					NSA	NSA	NSA	NSA	NSA	NSA
					NSA	NSA	NSA	NSA	NSA	NSA



## APPENDIX 1 - SECTION 1 SAMPLING TECHNIQUES AND DATA FOR THE BROKEN HILL PROJECT

Criteria	JORC Code explanation	Commentary
Sampling techniques	<i>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</i>	Reverse Circulation (RC) percussion drilling was used to produce a 1m bulk sample (~25kg) which was collected in plastic bags. 1m split samples (nominally 3kg) were collected using a riffle splitter and placed in a calico bag. The cyclone was cleaned out with compressed air at the end of each hole and periodically during the drilling. Holes were drilled to optimally intercept interpreted mineralised zones.  For samples within the target ultramafic unit, the 1m sample in the calico bag was sent for assay. Outside the ultramafic unit the bulk sample was speared using standard techniques to produce either a 2 metre or 4 metre composite for assay.
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used</i>	Sample representivity was ensured by a combination of Company procedures regarding quality control (QC) and quality assurance / testing (QA). Examples of QC include (but are not limited to), daily workplace and equipment inspections, as well as drilling and sampling procedures. Examples of QA include (but are not limited to) collection of “field duplicates”, the use of certified standards and blank samples approximately every 50 samples.
	<i>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where ‘industry standard’ work has been done this would be relatively simple (e.g. ‘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 (e.g. submarine nodules) may warrant disclosure of detailed information</i>	RC samples were submitted to Intertek Laboratories in Perth for assay by 4 acid digest with ICP-MS finish and Fire Assay technique FA/50 MS (lead collection) for gold, platinum and palladium and fire assay technique NS/25/MS (nickel sulphide collection) for gold platinum, osmium, iridium, palladium, rhodium and ruthenium. Sample preparation involved: sample crushed to 70% less than 2mm, riffle split off 1 kg, pulverise split to >85% passing 75 microns.  Individual one metre samples were also assayed with a hand held Vanta or Delta XRF instrument. Measurements lasting a minute were taken on each of the calico bags. Readings are qualitative only.
Drilling techniques	<i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</i>	RC drilling comprises 4-inch hammer.
Drill sample recovery	<i>Method of recording and assessing core and chip sample recoveries and results assessed</i>	RC samples were visually checked for recovery, moisture and contamination as determined from previous drill logs.
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples</i>	The RC samples were collected by plastic bag directly from the rig-mounted cyclone and laid directly on the ground in rows of 10. The drill cyclone and sample buckets are cleaned between rod-changes and after each hole to minimise down-hole and/or cross contamination.
	<i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i>	No relationship has been established and it is considered unlikely to be a material issue.

Criteria	JORC Code explanation	Commentary
<b>Logging</b>	<i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i>	Geological logging of samples followed company and industry common practice. Qualitative logging of samples included (but not limited to); lithology, mineralogy, alteration, veining and weathering.
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i>	All logging is quantitative, based on visual field estimates. Systematic photography of the RC chip trays was completed.
	<i>The total length and percentage of the relevant intersections logged</i>	All RC chips samples were geologically logged by on-site geologists.
<b>Sub-sampling techniques and sample preparation</b>	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	Not applicable.
	<i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i>	All RC samples collected in calico bags were split using a riffle splitter. Samples were dry when sampled. Composite samples were collected from the bulk sample bags using a poly pipe spear.
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	Company procedures were followed to ensure sub-sampling adequacy and consistency. These included (but were not limited to), daily workplace inspections of sampling equipment and practices, as well as sub-sample duplicates ("field duplicates").
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	Laboratory QC procedures for rock sample assays involve the use of internal certified reference material as assay standards, along with blanks, duplicates and replicates. Impact uses field duplicates and standards for every 1 in 50 samples and blanks every 1 in 100 samples.
	<i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</i>	All QA/QC results were within acceptable levels of +/- 15-20%
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	Sample sizes are considered appropriate for the mineralisation style.
<b>Quality of assay data and laboratory tests</b>	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	Industry standard fire assay and 4 acid digest analytical techniques were used. Both techniques are considered to be almost a total digest apart from certain refractory minerals not relevant to exploration at Rockwell.
	<i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i>	N/A
	<i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i>	Field duplicates: 1 in every 50 samples. Standards 1 in 50 samples. Blanks 1 in 100 samples. In addition, standards, duplicates and blanks were inserted by the analytical laboratory at industry standard intervals.
<b>Verification of sampling and assaying</b>	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	The results have not been verified by independent or alternative companies. This is not required at this stage of exploration.

Criteria	JORC Code explanation	Commentary
	<i>The use of twinned holes.</i>	N/A
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	Primary assay data for drill assays has been received digitally from the laboratory and imported into Datashed to be combined with hole numbers and depths by Impact. Exports of data are used for plotting results in Mapinfo, Geosoft Target and Leapfrog. Original pdf laboratory assay certificates are saved for verification when required.
	<i>Discuss any adjustment to assay data.</i>	There are no adjustments to the assay data.
Location of data points	<i>Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i>	Drill holes were located by hand held GPS.
	<i>Specification of the grid system used.</i>	The grid system for Broken Hill is MGA_GDA94, Zone 54.
	<i>Quality and adequacy of topographic control.</i>	Standard government topographic maps have been used for topographic validation.
Data spacing and distribution	<i>Data spacing for reporting of Exploration Results.</i>	RC drill holes are drilled at varying spacings, orientations and depths deemed appropriate for early stage exploration
	<i>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.</i>	Estimations of grade and tonnes have not yet been made.
	<i>Whether sample compositing has been applied.</i>	Sample compositing was done for samples outside the target ultramafic unit. This was done to provide geochemical data that may help vector towards ore.
Orientation of data in relation to geological structure	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i>	The orientation of mineralisation is yet to be determined. A 3D review of the mineralisation is currently underway to better interpret the orientation of mineralisation and assist follow-up drilling.
	<i>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.</i>	Not relevant to early stage exploration drill results. No sampling bias has been detected.
Sample security	<i>The measures taken to ensure sample security.</i>	Chain of custody is managed by Impact Minerals Ltd. A courier is contracted by Impact Minerals to transport the samples from Broken Hill to the Intertek laboratory in Alice Springs for preparation and then sent to Intertek in Perth for assay. Whilst in storage, they are kept in a locked yard. Tracking sheets have been set up to track the progress of batches of samples.
Audits or reviews	<i>The results of any audits or reviews of sampling techniques and data.</i>	At this stage of exploration, a review of the sampling techniques and data by an external party is not warranted.

## SECTION 2 REPORTING OF EXPLORATION RESULTS

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	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 Broken Hill Project currently comprises 8 exploration licences covering 825 km <sup>2</sup> . The tenements are held 100% by Impact Minerals Limited. No aboriginal sites or places have been declared or recorded over the licence area. There are no national parks over the licence area.
	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 tenements are in good standing with no known impediments.
<b>Exploration done by other parties</b>	Acknowledgment and appraisal of exploration by other parties.	Previous work has been reported where required in accordance with the JORC Code in reports referred to in the text.
<b>Geology</b>	Deposit type, geological setting and style of mineralisation.	Nickel-copper-PGE sulphide mineralisation associated with an ultramafic intrusion.
<b>Drill hole Information</b>	<p>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</p> <ul style="list-style-type: none"> <li>• easting and northing of the drill hole collar</li> <li>• elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>• dip and azimuth of the hole</li> <li>• down hole length and interception depth</li> <li>• hole length.</li> </ul>	See Table details within the main body of this ASX Release.
<b>Data aggregation methods</b>	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	All reported assays have been length weighted. No top cuts have been applied. A minimum grade of 100 ppb 3PGE has been used where appropriate.
	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.	High grade semi-massive and vein-style sulphide intervals internal to broader zones of disseminated sulphide mineralisation are reported as included intervals.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalents have been reported.
<b>Relationship between mineralisation widths and intercept lengths</b>	<p>These relationships are particularly important in the reporting of Exploration Results.</p> <p>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</p> <p>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</p>	The orientation of mineralisation is yet to be determined. A 3D review of the mineralisation is currently underway to better interpret the orientation of mineralisation and assist follow-up drilling.



Criteria	JORC Code explanation	Commentary
<b>Diagrams</b>	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 Figures in body of text.
<b>Balanced reporting</b>	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.	All results reported are representative
<b>Other substantive exploration data</b>	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.	Assessment of other substantive exploration data is not yet complete however considered immaterial at this stage.
<b>Further work</b>	The nature and scale of planned further work (e.g. 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	Follow up work programmes will be subject to interpretation of results which is ongoing. A 3D review of the mineralisation is currently underway to better interpret the orientation of mineralisation and assist follow-up drilling.