



## ASX ANNOUNCEMENT

Date: 29 January 2014

ASX: IPT

Number: 335/290114

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### ASSAY RESULTS CONFIRM EXTENSIVE NICKEL AT MULGA TANK

#### Three styles of nickel-copper mineralisation identified:

- 1. Extensive disseminated nickel in the Mulga Tank Dunite:**  
2 m at 1.3% nickel including 1 m at 2% nickel and multiple zones of 0.5 m at 0.5% to 1.2% nickel within an intercept of 115 m at 0.3% nickel; other thick intercepts of 21 m at 0.4% nickel and 59 m at 0.3% nickel.
- 2. High tenor veins at the base of the Mulga Tank Dunite:**  
0.25 m at 3.8% nickel, 0.7% copper and 0.7 g/t PGE and 0.3 m at 0.7% nickel.
- 3. High tenor nickel sulphide in multiple komatiites in a flow channel:**  
0.75 m at 0.85% nickel, 0.35% copper and 0.28 g/t PGE (Pt+Pd+Au); and 6.7 m at 0.5% nickel.

#### Significant follow-up work including drilling required throughout the project area

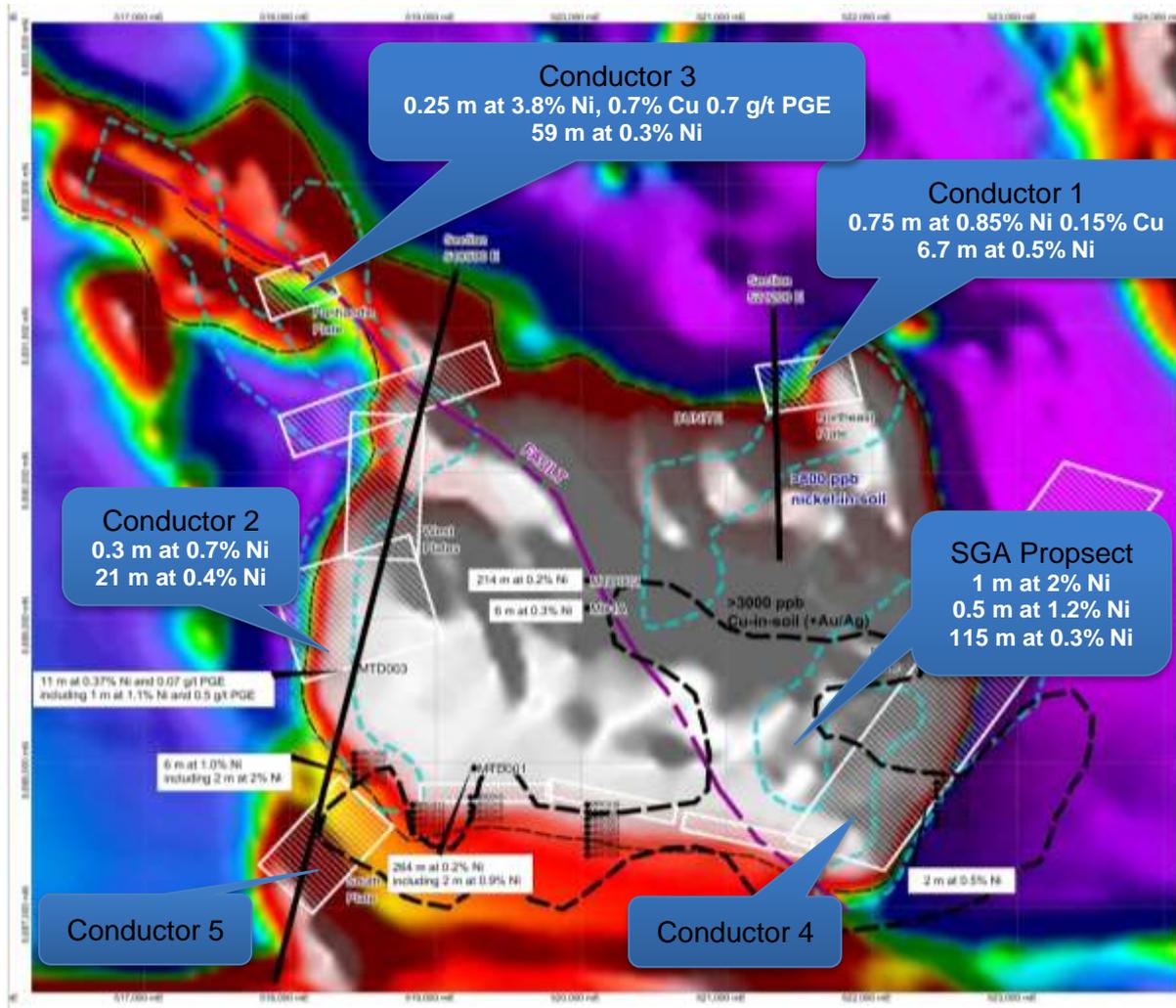
Impact Minerals Limited (ASX: IPT) is pleased to announce that assays from its maiden drill programme at the Mulga Tank Project 200 km north east of Kalgoorlie have confirmed the widespread presence of nickel and copper sulphide mineralisation over an area of about 15 sq km within and close to the Mulga Tank Dunite within E39/988 (Impact 20% and earning a further 50% from Golden Cross Resources Limited).

Nickel and/or copper mineralisation that warrants immediate follow up work has been found at four of the six targets tested (SGA Prospect and Conductors 1, 2 and 3) and lesser mineralisation has been found at the other two targets (Conductors 4 and 5) (Figure 1 and Tables 1, 2 and 3).

Three different styles of high tenor mineralisation have been identified (Figure 2):

1. Extensive disseminated nickel sulphide within the Mulga Tank Dunite (SGA Prospect and Conductors 2 and 3, Figure 2a).
2. Narrow veins of high tenor nickel and copper sulphide both within and at the base of the Mulga Tank Dunite and which contain textures suggesting they may be remobilised from zones of more massive sulphide (SGA Prospect and Conductors 2 and 3, Figure 2b).
3. Disseminated nickel sulphide and narrow veins of nickel and copper sulphide associated with a komatiite flow channel that probably lies immediately above the Mulga Tank Dunite (Conductor 1, Figure 2c).

These styles of mineralisation and the geology at Mulga Tank are very similar to the Perseverance Dunite near Leinster in Western Australia that hosts the significant Perseverance deposit (45 Mt at 2% nickel) and the nearby Rocky's Reward deposit (9.6 Mt at 2.4% Ni) (Figures 3 and 4).



**Figure 1.** Image of the Total Magnetic Intensity from airborne magnetic data over the Mulga Tank Dunite (white outline) showing:

1. the location and modelled geometry of the five EM targets drilled;
2. best assay results;
3. the nickel-in-soil geochemistry contours at greater than 800 ppb; and
4. the copper in soil geochemistry contour at greater than 3,000 ppb to the south west coincident with Conductor 4.

In particular the recognition of high tenor mineralisation close to the basal contact of the Mulga Tank Dunite is very encouraging and demonstrates significant potential for the discovery of a major massive sulphide deposit along many strike kilometres of this very prospective contact.

In addition, down-hole EM surveys have now identified eight off-hole anomalies that also require follow up work and a review of previous soil geochemistry data has identified large nickel- and copper-in-soil anomalies that have not been drill tested (Figure 1). These results will be summarised in a future release.

## Assay Results

### 1. Extensive disseminated nickel sulphide within the Mulga Tank Dunite

*SGA Prospect: high tenor nickel sulphide within a large soil geochemistry anomaly*

Hole MTD011 was drilled to test the eastern edge of a combined nickel and copper-in-soil anomaly that covers many square kilometres of the southeast quadrant of the Mulga Tank Dunite (Figure 1). This drill hole intersected the Mulga Tank Dunite which contains trace to 5% disseminated sulphide throughout and returned an intercept of **114.8 m at 0.3% nickel from 98 metres**.

Within this, five separate zones of higher grade nickel sulphide occur and which returned assays of:

- **2 m at 1.3% nickel from 102 m including 1 m at 2% nickel from 103 m** in the RC pre-collar. These samples contain extensive visible sulphides;
- **0.5 m at 0.7% nickel** from 155 m from a one metre thick zone of dunite containing sulphide replacement of olivine crystals;
- **0.5 m at 0.7% nickel from 158.5 m** and **0.6 m at 0.7% nickel from 181 m** from two 20 m thick zones containing up to 5% disseminated nickel sulphides (Figure 2a); and
- **0.5 m at 1.2% nickel from 211.7 m** from a 50 cm thick zone of breccia containing a few clasts of high tenor nickel sulphide that may have come from a nearby larger body of massive sulphide (Figure 2b).

#### *Conductors 2 and 3*

Holes MTD005 and MTD006 were drilled to test strong EM conductors along the western side of the Mulga Tank Dunite and the north west along-strike extension of the Mulga Tank Dunite respectively (Figure 1).

Both holes intersected the dunite which contained trace amounts of disseminated sulphide and returned broad intercepts of:

- **21 m at 0.4% nickel from 78 m in MTD005 at Conductor 2; and**
- **59 m at 0.3% nickel from 117 m in MTD006 at Conductor 3.**

### 2. High tenor nickel and copper at the base of the Mulga Tank Dunite

Holes MTD005 and MTD006 were drilled to test strong EM conductors along the western side of the Mulga Tank Dunite and the north west along-strike extension of the Mulga Tank Dunite respectively (Figure 1).

Both holes intersected narrow veins of high tenor nickel and copper sulphide towards the base of the Mulga Tank Dunite with best assay results of:

- **0.25 m at 3.8% nickel, 0.7% copper and 0.7 g/t PGE (Pt+Pd+Au) from 212.6 m in Hole MTD006 at Conductor 3; and**
- **0.3 m at 0.7% nickel from 154.7 m in Hole MTD005 at Conductor 2.**

The vein textures are similar to those present around some massive sulphide deposits where the sulphide has been remobilised into later faults and fractures and demonstrate for the first time the presence of high tenor nickel and copper sulphides close to the basal contact of the Mulga Tank Dunite, considered to be the most prospective location for a massive sulphide deposit (Figure 3).

Importantly the veins and other important structures are commonly sub-parallel to the drill core axis and therefore the drill holes are not at the optimum orientation to intersect them. Accordingly Impact considers it highly likely that many more such veins are present.



**Figure 2a MTD011.**  
Disseminated nickel sulphides in accumulative dunite interpreted to be of magmatic origin.



**Figure 2b MTD011.** Clasts of massive nickel sulphide (with copper sulphide) in breccia zone in dunite.

The clast may be remobilised from a nearby body of massive sulphide.



**Figure 2c.** Vein of massive nickel and copper sulphides with pyrrhotite. The paler coloured areas in the lower part of the vein are crystals of pentlandite (nickel sulphide). The pale yellow areas in the very upper part of the vein are chalcopyrite (copper sulphide).

*Note all core is 5 cm wide*

### 3. High tenor nickel sulphide in mineralised komatiite flow channel

Holes MTD004, 07 and 10 were drilled to test a strong ground EM anomaly coincident with a nickel-in-soil anomaly of up to 3,040 ppb in the north east quadrant of the Mulga Tank Dunite (Figure 1).

Two nickel-copper mineralised ultramafic units, (the Upper Ultramafic Unit (a komatiite) and Lower Ultramafic Unit) 20 m apart that extend for at least 150 m along strike and thicken considerably from west to east have been discovered. The two units define the southwestern edge of a “flow channel” that dips at about 65 degrees to the northwest and contains other ultramafic to mafic sills, flows and sedimentary rocks ([see announcement 3 December 2012](#)).

Such channels are an important control on nickel sulphide mineralisation at major nickel mines such as Rocky’s Reward, Kambalda and Forrestania in W.A.

The Upper Ultramafic Unit, contains distinctive textures such as “spinifex ore” and irregular blebs and veinlets that are common above a number of nickel sulphide deposits in Western Australia and returned best assays of:

- **1.75 m at 0.5% nickel, 0.15% copper and 0.14 g/t PGE (Pt+Pd+Au) from 302 m in Hole MTD004 including 0.75 m at 0.85% nickel, 0.35% copper and 0.28 g/t PGE (Pt+Pd+Au) and**
- **0.5 m at 0.6% nickel, 0.1% copper and 0.1 g/t PGE from 328 m in Hole MTD007.**

The Lower Ultramafic Unit, which comprises an ultramafic rock that is up to 50 m thick and contains several zones with up to 5% disseminated sulphides and in the immediate footwall in Hole MTD004 a 30 cm long steeply dipping narrow vein containing high tenor nickel and copper sulphide minerals, returned best assays of:

- **6.7 m at 0.5% nickel from 356 m including 0.4 m at 1% nickel from 362 m in Hole MTD004; and**
- **15 m at 0.3% nickel from 471 m in Hole MTD007.**

Two further weakly mineralised ultramafic units containing disseminated sulphides were intersected in MTD007 below the Lower Ultramafic Unit and returned best assays of:

- **15 m at 0.3% nickel from 471 m; and**
- **3 m at 0.3% nickel and 0.16 g.t PGE (Pt+Pd+Au) from 506 metres.**

These results indicate that the komatiite flows that lie above the Mulga Tank Dunite are also highly prospective for nickel deposits such as those at Kambalda in Western Australia.

## Discussion and Next Steps

A significant amount of new information has been obtained from the six targets tested in this maiden drill programme at Mulga Tank. Significant nickel and/or copper mineralisation has been found at four of the targets and lesser mineralisation has been found at the other two.

This work, together with the results from previous explorers drill holes, demonstrates that the Mulga Tank Dunite contains nickel sulphides in multiple horizons over a very large area of many square kilometres.

In particular the discovery of high tenor nickel and copper close to the base of the dunite at two locations many kilometres apart is very encouraging. The basal contact is highly prospective for the discovery of a massive sulphide deposit over many tens of kilometres of strike both within E39/988 and along strike in other licences within the Mulga Tank Project.

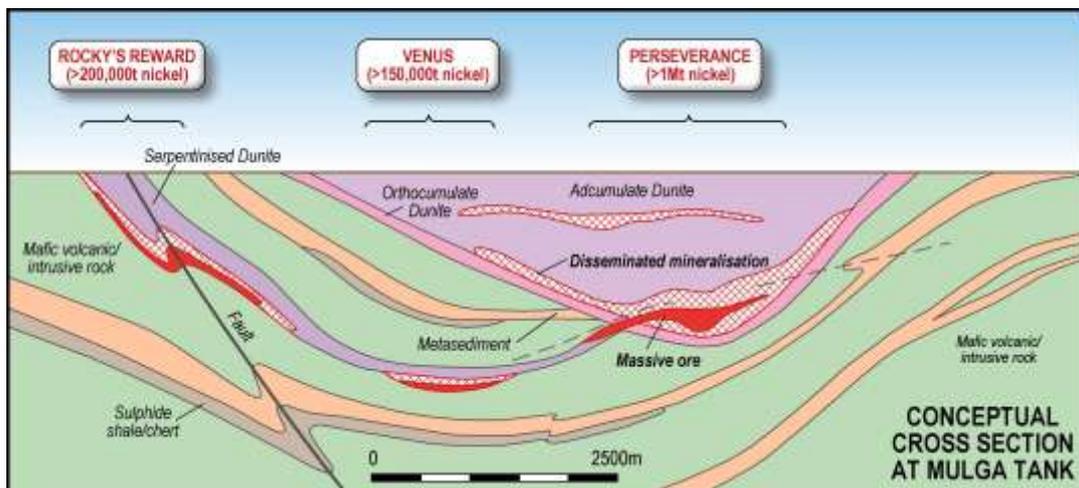
These results are being further reviewed and synthesised in order to determine follow up work programmes.

Although the source of the EM conductors drilled were sulphide-rich black shales, two further significant outcomes of the drill programme are that:

1. Many of the ground EM anomalies that were originally interpreted as one single conductor have been resolved into as many as 8 separate conductors in places. Although all the conductors that were intersected were caused by sulphide-rich black shale units immediately beneath the dunite, assay results from Conductor 1 demonstrate that the nickel-copper mineralised units lie **below** units of black shale. Accordingly the black shales may be masking and be difficult to discriminate from, the EM response of any underlying massive sulphide.
2. The ionic leach soil geochemistry technique used by previous explorers has effectively identified blind sulphide mineralisation beneath up to 70 m of transported overburden. As such, the ionic leach technique potentially offers a method to help discriminate barren EM conductors such as black shale from massive sulphides. An orientation soil geochemistry survey has been completed over the mineralisation at Conductor 1 in order to compare different soil geochemistry techniques and the optimal sample spacing. The results of this work are expected in February and will be used to determine the best approach to further soil geochemistry programmes.

The results of the current drill programme have upgraded the prospectivity of at least several other EM anomalies identified in the ground EM survey. A review of the soil data over the entire project area is also on-going to identify further priority drill targets.

**By Order of the Board**



**Figure 3.** Conceptual cross-section for the Mulga Tank Dunite and surrounding area showing the Perseverance and Rocky’s Reward exploration model.



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**Table 1. Summary of Key Results**

Target	Conductor strength	Drill Hole ID	Key Results	Source of conductor
Soil Geochemistry Anomaly	No conductor	MTD011	Four zones of nickel sulphide in the Mulga Tank Dunite including disseminated "spinifex-ore" and breccia mineralisation. Hole stopped at 220 m because of Christmas break. Hole returned 115 m at 0.3% nickel including 2 m at 1.3% nickel from 102 m, 1 m at 0.8% nickel from 114 m, 0.5 m at 0.7% nickel from 158 m, 0.6 m at 0.7% nickel from 181 m and 0.5 m at 1.2% nickel from 211.7 metres.	No EM response from ground EM survey. Downhole EM survey to be done in Q1-Q2 2014.
Conductor 1	Strong	MTD004 MTD007 MTD010	Two mineralised komatiites containing disseminated high tenor nickel-copper sulphides and extending over at least 150 m, thickening to the east and defining a flow channel. Open in all directions. Remobilised high tenor nickel and copper massive sulphide veins. Zone of pyrrhotite-chalcopyrite breccia sulphides 8 m thick in metasedimentary rocks from 410 m depth. Best assays were: 0.75 m at 0.85% nickel, 0.35% copper and 0.28 g/t PGE (Pt+Pd+Au) from 302 metres in the upper komatiite, 6.7 m @ 0.5% nickel, 0.1% copper and 0.2 g/t PGE including 0.4 m at 1% nickel from 362.5 metres in the lower komatiite.	Single ground EM anomaly resolved into multiple off-hole conductors by down-hole EM. Multiple sulphide-rich black shale units with significant folds and faults are responsible for the conductors. However the black shales overlie and mask the nickel sulphide bearing units. Downhole EM survey identified one further strong anomaly along strike to the east from MTD010 that requires follow up.
Conductor 2	Weak to medium	MTD005	50 m thick zone of disseminated and fracture controlled chalcopyrite in footwall of dunite. Immediate footwall returned 4.4 m at 0.17% copper from 158 metres.	15 m thick unit of sulphide rich sandstone, minor black shale and basalt at the predicted depth.
			High tenor nickel-copper veins in basal contact zone of dunite returned 0.3 m at 0.7% nickel from 154.7 metres. Thick zone of disseminated nickel sulphides in dunite returned 21 m at 0.4% nickel from 78 metres. Both zones can be correlated over 300 m to the south east to similar zones in MTD003.	No EM response.
Conductor 3	Strong	MTD006	High tenor nickel-copper vein in dunite returned 0.25 m of 3.8% nickel and 0.7% copper from 212.6 metres. Dunite is anomalous in nickel and returned 59 m at 0.3% nickel from	Anomaly off-hole at 300 m depth in metasedimentary rocks which contain chalcopyrite and some sulphide-rich black shale. Anomaly is likely to be black shale. Anomaly originally

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Target	Conductor strength	Drill Hole ID	Key Results	Source of conductor
			117 metres. EM anomaly unexplained.	modelled at an incorrect depth of 425 m below surface.
<b>Conductor 4</b>	Strong	MTD009	30 m thick zone of silica-pyrite-chlorite+/-chalcopyrite immediately beneath the dunite. Two zones 20 m and 5 m thick of low tenor nickel-copper veins and stringers in pyroxenite and metabasalts below dunite at 240 m and 290 m respectively. No significant assays.	Single ground EM anomaly resolved into eight conductors. One anomaly is sulphide rich black shale at 190 m; Two further conductors are coincident with the two zones of low tenor nickel-copper sulphides below the dunite. The zones are of insufficient width or sulphide content to explain the EM anomalies. Other conductors are off-hole at 220 m, 270 m and 350 m (below hole) and are not explained.
<b>Conductor 5</b>	Medium	MTD008	50 m thick zone of weak chalcopyrite mineralisation as disseminations and fracture and vesicle fills in mafic and sedimentary rocks beneath the dunite contact. Up-dip projection of conductor below hole may be coincident with nickel-copper soil geochemistry anomalies. No significant assays.	Single ground EM anomaly resolved into two conductors: one at 220 m which is sulphide-rich black shale and a second likely to be below the hole and which is undrilled.

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**Table 2. Drill Hole Information**

Drill Hole ID	Easting GDA	Northing GDA	RL	Dip	Azimuth	EOH	Rotary Depth	RC Depth
MTD004	521320	6690600	470	-80	180	455	78	0
MTD007	521488	6690658	470	-80	180	574	48	150
MTD010	521340	6690580	470	-80				150
MTD005	518208	6688816	470	-80	270	235		152
MTD006	517761	6691073	470	-80	270	451	78	117
MTD009	522225	6687710	470	-60	180	355		150
MTD008	517920	6687241	470	-80	225	300	66	150
MTD011	521400	6688200	470	-70	225		58	

**Note: Holes MTD001 MTD002 and MTD003 were drilled by a previous explorer**

*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.*

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**Table 3. Assay Results**

Hole ID	From	To	Thickness	Ni%	Cu%	PGE (+Au) g/t	Cutoff	Conductor	Rock Type
<b>MTD004</b>	302	303.75	1.75	0.49	0.15	0.14	0.5% Ni	1	Orthocumulate Dunite
<i>including</i>	302	302.75	0.75	0.85	0.35	0.28	0.5 % Ni		Orthocumulate Dunite
	356.25	362.9	6.65	0.47	0.1	0.22	0.3% Ni		Pyroxenite and Serpentine Rock
<i>including</i>	362.5	362.9	0.4	1.04	0.05	0.06	1.0 % Ni		Pyroxenite and Serpentine Rock
	384.5	386	1.5	0.31	0.02	0.11	0.3% Ni		Pyroxenite
	396.75	398.25	1.5	0.31	0.05	0.1	0.3% Ni		Ultramafic Tuff and Sediment
	403.5	404.75	1.25	0.47	0.02	0.27	0.3% Ni		Pyroxenite
<b>MTD005</b>	78	99	21	0.39	NSA	NSA	0.3% Ni	2	Serpentinised Dunite
	151	155	4	0.31	NSA	0.04	0.3% Ni		Orthocumulate Dunite
<i>including</i>	154.7	155	0.3	0.71	0.01	0.03	0.5 % Ni		Orthocumulate Dunite
	158	162.4	4.4	0.02	0.17	0.03	0.1% Cu		Metasediments with sulphide and graphite
<b>MTD006</b>	117	176	59	0.3	NSA	0.02	0.3% Ni	3	Adcumulite Dunite
	212.6	212.85	0.25	3.8	0.67	0.69	1.0 % Ni		Sulphide Vein
	322.2	322.6	0.4	0.01	0.43	NSA	0.2% Cu		Metasediments with sulphide and graphite
<b>MTD007</b>	327.5	328.5	1	0.48	0.07	0.06	0.3% Ni	1	Orthocumulate Dunite
<i>including</i>	328	328.5	0.5	0.58	0.1	0.11	0.5 % Ni		Orthocumulate Dunite
	471	486	15	0.32	NSA	0.05	0.3% Ni		Orthocumulate Dunite
	506	509	3	0.32	0.04	0.16	0.3% Ni		Orthocumulate Dunite
<b>MTD009</b>	62	66	4	0.33	NSA	0.04	0.3% Ni	4	Weathered Ultramafic Rock
<b>MTD011</b>	98	212.8^	114.8	0.3	0.01	0.02	0.3% Ni	SGA	Adcumulate Dunite with minor metasediment

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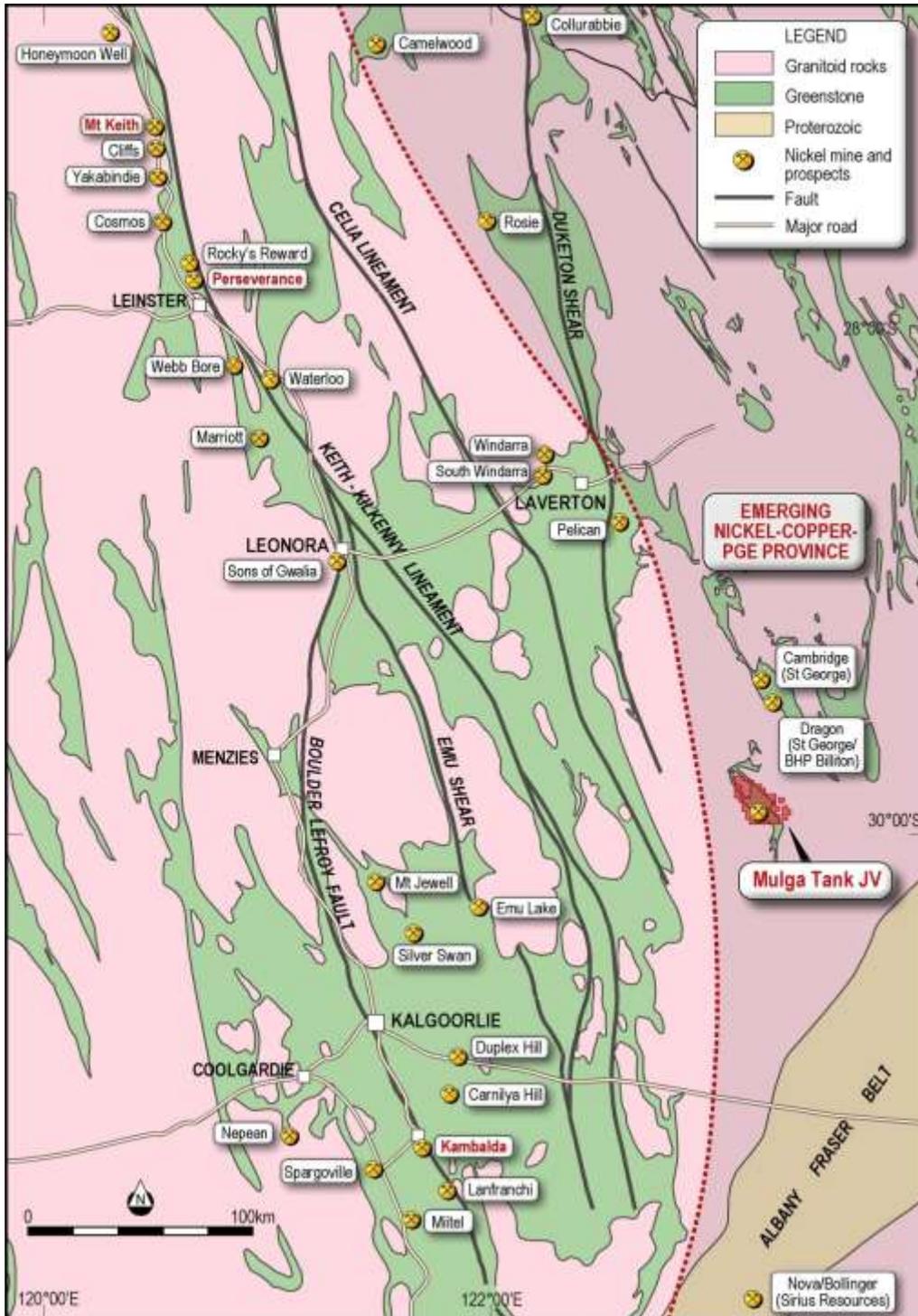
Hole ID	From	To	Thickness	Ni%	Cu%	PGE (+Au) g/t	Cutoff	Conductor	Rock Type
<i>including</i>	102	104	2	1.3	0.03	0.14	0.5 % Ni		#IL
<i>including</i>	103	104	1	1.95	0.04	0.21	1.0% Ni		#IL
<i>also including</i>	114	115	1	0.83	0.1	0.18	0.5 % Ni		#IL
<i>also including</i>	158	158.5	0.5	0.71	0.02	0.1	0.5 % Ni		Sheared and brecciated ultramafic
<i>also including</i>	181	181.6	0.6	0.68	0.02	0.07	0.5 % Ni		Adcumulate Dunite
	211.7	212.2	0.5	1.18	0.04	0.1	1.0% Ni		Brecciated ultramafic rock

#IL: Incomplete Logging

^:missing assays from 148 to 150 m

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**Figure 4.** Location of Impact’s Mulga Tank Project and significant nickel sulphide mines and prospects including Perseverance and Rocky’s Reward deposits with new nickel-copper-PGE discoveries in the emerging nickel-copper province to the east.



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## APPENDIX 1 - SECTION 1 SAMPLING TECHNIQUES AND DATA

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<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>	<p>The targets at Mulga Tank have been drilled by Reverse Circulation (RC) and diamond drill holes (DD). Eight holes for 3,025 m were completed.</p> <p>A hand held Olympus XRF machine was used to take multi-element readings on the samples bags from the RC drill pre-collars (1 reading every 1 metre) and at 25 cm to 50 cm intervals on the diamond core. These readings are a guide only and do not constitute an accurate or precise assay. Impact has conducted a number of quality control experiments to determine the optimal reading time and number of readings per sample site. A correlation of these readings against the assay data suggests that at values greater than 1% nickel, the XRF analyser gives a good approximation to the chemical assay value.</p> <p>Drill holes were oriented to intersect the dip of electromagnetic conductors as interpreted by Impact's consultants Newexco.</p>
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used</i>	<p>RC samples have been collected by riffle splitter. Diamond core was used to obtain high quality samples that were logged for lithological, structural, alteration and other attributes. Sampling was carried out under Impact Minerals Ltd protocols and QAQC procedures as per industry best practice.</p> <p>A combination of mapping, soil geochemistry, airborne magnetic data and ground EM surveys identified the Mulga Tank target.</p>
	<i>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (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>	<p>Diamond core is mostly NQ2 size, sampled on geological intervals cut into half core to give sample weights under 3 kg. Reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised. Samples were crushed, dried and pulverised (total prep) to produce a sub-sample for analysis by four acid digest with an ICP/OES finish for base metals and lead collection fire assay with AAS finish for precious metals.</p> <p>The main sulphide types are expected to be pentlandite and chalcopyrite, with pyrite, and minor sphalerite. Non-sulphide nickel species in weathered and transitional material have not yet been identified.</p>
<b>Drilling techniques</b>	<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>	<p>Diamond drilling accounts for 75 % of the drilling and comprises HQ and NQ2 sized core. Pre-collar depths range from 50 m to about 150 m and hole depths range from 300 m to 570 m. The core was oriented using a down-hole orientation tool at the end of every run with 70% of orientations rated as "good".</p> <p>RC drilling in the pre-collar accounts for 20 % of the total drilling and comprises 140 mm diameter face sampling hammer drilling.</p>
<b>Drill sample recovery</b>	<i>Method of recording and assessing core and chip sample recoveries and results assessed</i>	<p>Diamond core and RC recoveries are logged and recorded in the database. Overall recoveries are &gt;95% for Mulga Tank and there are no core loss issues or significant sample recovery problems.</p>

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Criteria	JORC Code explanation	Commentary
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples</i>	Diamond core at Mulga Tank is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against the depth given on the core blocks and rod counts are routinely carried out by the drillers. RC samples were visually checked for recovery, moisture and 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 sample bias has been established because an insufficient number of samples have been assayed.
<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>	Information on structure type, dip, dip direction, alpha angle, beta angle, texture, shape and fill material is stored in the structure table of the database.
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i>	Logging of diamond core and RC samples at Mulga Tank recorded lithology, mineralogy, mineralisation, structural (DDH only), weathering, colour and other features of the samples. Core was photographed in both dry and wet form.
	<i>The total length and percentage of the relevant intersections logged</i>	All drillholes were logged in full, apart from rock roller diamond hole pre-collar intervals of between about 50 m and 70 m depth.
<b>Sub-sampling techniques and sample preparation</b>	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	Core for Mulga Tank was cut in half onsite using an automatic core saw. All samples were collected from the same side of the core.
	<i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i>	RC samples were split using a riffle splitter.
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	The sample preparation of diamond core for Mulga Tank follows industry best practice in sample preparation involving oven drying, coarse crushing of the half core sample down to ~10 mm followed by pulverisation of the entire sample (total prep) using Essa LM5 grinding mills to a grind size of 85% passing 75 micron. The sample preparation for RC samples is identical, without the coarse crush stage.
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	Field QC procedures involve the use of certified reference material as assay standards, along with blanks, duplicates and barren washes. The insertion rate of these averaged 1:50.
	<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>	Field duplicates are done every 50 samples.
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	The sample sizes are considered to be appropriate to correctly represent the sulphide mineralisation at Mulga Tank based on the disseminated style of mineralisation, the thickness and consistency of the intersections, the sampling methodology and percent value assay ranges for the primary elements.

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Criteria	JORC Code explanation	Commentary
<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>	See optiro. An industry standard fire assay technique using lead collection with an Atomic Absorption Spectrometry (AAS) finish was used for Au, Ag, Pt, Pd.
	<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>	No geophysical tools were used to determine material element concentrations.
	<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>	Quality control procedures for assays are as per Impact Minerals protocols. Accuracy and precision are within acceptable limits.
<b>Verification of sampling and assaying</b>	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	Significant intersections have yet to be returned and therefore verification is not required.
	<i>The use of twinned holes.</i>	No twin holes have been drilled at Mulga Tank.
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	Primary data was collected using a set of standard Excel templates on Toughbook laptop computers using lookup codes. The information was sent to IOGlobal/Reflex for validation and compilation into a SQL database server.
	<i>Discuss any adjustment to assay data.</i>	
<b>Location of data points</b>	<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 have been located by hand held GPS. Down-hole surveys used single shot readings have been completed during drilling at least at 50 m intervals.
	<i>Specification of the grid system used.</i>	The grid system for Mulga Tank is MGA_GDA94, Zone 51.
	<i>Quality and adequacy of topographic control.</i>	Standard government topographic maps and hand held GPS have been used for topographic control. The land surface is flat and increased accuracy and precision for topographic contours is not required at this stage.
<b>Data spacing and distribution</b>	<i>Data spacing for reporting of Exploration Results.</i>	This is a first pass reconnaissance drill programme designed to test geochemical and geophysical anomalies. Drill spacing is adequate for that and will change according to on-going results.
	<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>	This is a first pass reconnaissance drill programme designed to test geochemical and geophysical anomalies. Drill spacing is adequate for that and will change according to on-going results.
	<i>Whether sample compositing has been applied.</i>	Samples will be composited to one metre lengths and adjusted where necessary to ensure that no residual sample lengths have been excluded (best fit).
<b>Orientation of data in relation to geological structure</b>	<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 targets have been drilled sub-perpendicular to mineralisation within the stratigraphy, but subparallel to the orientation of some veins in the mineralised trend. Structural logging based on oriented core to determine the controls on mineralisation are on-going.

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	<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>	No orientation based sampling bias has been identified at Mulga Tank in the data at this point, although the vertical sulphide veins may cause hole orientations to be changed in future drill programmes.
<b>Sample security</b>	<i>The measures taken to ensure sample security.</i>	Chain of custody is managed by Impact Minerals Ltd. Samples for Mulga Tank are stored on site and delivered by Impact Minerals Ltd personnel to Kalgoorlie for initial sample preparation by Genalysis who then transport the samples to 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.
<b>Audits or reviews</b>	<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. An internal review of the sampling techniques and data will be completed at the end of the current programme.

## 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 Mulga Tank Project comprises 13 exploration licences covering 425 km <sup>2</sup> . Mulga Tank is located wholly within Exploration Licence E39/988. Impact Minerals Ltd (IPT) has a 20% interest in the tenement with Golden Cross Resources Limited (GCR: 80%). There is no Native Title Claim over the licence.
	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 tenement is in good standing with no known impediments. IPT has the right to earn 70% ownership with \$1.9M expenditure commitment before November 2017.
<b>Exploration done by other parties</b>	Acknowledgment and appraisal of exploration by other parties.	Limited bedrock-cover interface percussion drilling completed by previous explorers focused on the southern contact of the dunite, a circular, strongly magnetic feature 3.5 km by 4 km in diameter that is interpreted to represent a flat-lying ultramafic sill. A total of 28 RC and 4 diamond holes were completed.
<b>Geology</b>	Deposit type, geological setting and style of mineralisation.	Mulga Tank is interpreted as an ultramafic hosted primary magmatic nickel sulphide deposit, similar in style to the Perseverance and Rocky's Reward nickel mines at Leinster in Western Australia. The Mulga Tank Dunite is also similar to the unit that hosts the Mount Keith disseminated nickel sulphide deposit. There are two prospective units (Upper and Lower) that host the initial sulphide intersections at a depth of 300 and 350 metres vertically (respectively).

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<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>	Refer to Table 2 in body of text. Further details are not material for this early stage of exploration.
<b>Data aggregation methods</b>	<p>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.</p> <p>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.</p> <p>The assumptions used for any reporting of metal equivalent values should be clearly stated.</p>	<p>All reported assays have been length weighted. No top outs have been applied. A nominal cut-off of 0.3% to 0.5% nickel has been applied.</p> <p>High grade massive sulphide intervals internal to broader zones of sulphide mineralisation are reported as included intervals.</p> <p>No metal equivalent values are used for reporting exploration results.</p>
<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 Mulga Tank deposit is a flat lying ultramafic sill. Holes to date have been sub-vertical and whilst this is perpendicular to stratigraphy, steeply dipping sulphide veins are at a sub-optimal orientation to the drillhole.
<b>Diagrams</b>	<p>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.</p>	Refer to Figures in body of text.
<b>Balanced reporting</b>	<p>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.</p>	All results reported are representative

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<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.	The drill targets at Mulga Tank have been ranked on the basis of soil geochemistry and ground EM results. Information on structure type, dip, dip direction, alpha angle, beta angle, texture, shape, roughness and fill material is stored in the structure table of the database.
<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 assay results which is ongoing.

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