



HORSESHOE METALS  
LIMITED

## ASX/MEDIA ANNOUNCEMENT

16 FEBRUARY 2015

**ASX Code:** HOR

### Management

**Mr Neil Marston**  
*Managing Director/Company  
Secretary*

**Mr Michael Fotios**  
*Non-Executive Director*

**Mr Alan Still**  
*Non-Executive Director*

### Issued Capital

Shares: 169 Million  
Options:  
5.4 Million (60c, exp 5/15)  
Performance Rights: 2.8 M

Share Price: \$0.026

Market Capitalisation:  
\$4.4 Million

**Cash at Bank  
(31 Dec 2014)**

**\$0.4 Million**

## HORSESHOE METALS REPORTS ENCOURAGING DRILL RESULTS AT HORSESHOE LIGHTS PROJECT

### SUMMARY

- Diamond drilling results show potential for copper mineralisation south-east of Horseshoe Lights mine.
- Bornite and chalcopyrite mineralisation and pyritic sulphides present in drill core.
- Best copper interval: 0.7m (526.9 – 527.6m) @ 0.3% Cu.
- Drilling intersected wide zone of volcanoclastics and metamorphosed porphyritic andesite of the Narracoota Formation – possible similarities with hanging wall rocks at Horseshoe Lights mine.
- Wide zone of hydrothermal alteration intersected – appears to coincide with structure or stratigraphic horizon identified in ground magnetic survey.
- Drill hole ended in prospective Narracoota Formation – exceeding previous interpreted thickness.
- Further evaluation of area planned including down-hole electromagnetic survey to test for off-hole conductors.
- Next phase of RC drilling at Horseshoe Lights project to commence shortly.

Horseshoe Metals Limited (ASX:HOR) (“Horseshoe” or “the Company”) is pleased to announce the results of recently completed diamond drilling at its 100% owned Horseshoe Lights Copper/Gold Project (“Horseshoe Lights Project”) in the Gascoyne region of Western Australia (see Figure 1).

The drilling consisted of a deep diamond drill hole (RCD358) designed to test a significant geophysical anomaly, from a pre-collared depth of 251.9m to a final depth of 698.1m. The hole terminated in altered basalt with sulphide bearing quartz veining in the prospective Narracoota Formation still being encountered.

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The drill hole is located approximately 1,100 metres south-east of the existing Horseshoe Lights open pit as shown in Figure 2. The Company is encouraged by the results of this drilling and is of the view that the results provide an indicator that the area may be highly prospective for a repetition of the Horseshoe Lights deposit.

Follow up exploration is now being planned, including a Down Hole Electromagnetic (DHEM) survey to test for off-hole conductors which may indicate the presence of a more massive sulphide body nearby.

The hole was co-funded by the Western Australian State Government under its Exploration Incentive Scheme.

**Mineralisation**

Based on initial field observations a batch of 203 samples covering 196.1 metres of core were submitted for multi-element analysis and all results have now been received (*refer to Quarterly Report dated 30 January 2015 for sample interval locations*).

Minor zones of copper mineralisation in the form of chalcopyrite and bornite, generally within quartz veins, were observed intermittently in the drill core. Best intervals received from samples submitted to the laboratory were:

- 1.0m (364.9 – 365.9m) @ 0.1% Cu
- 0.7m (526.9 – 527.6m) @ 0.3% Cu

In addition pyrite and possibly other sulphide minerals were observed in zones throughout the core but predominantly in quartz veins within an altered basalt unit which occupies the bottom 204m of the hole. Details of mineralisation intervals from laboratory results received are set out in Table 2.

**Geology**

Drilling intersected a sequence of volcanic rocks of the prospective Narracoota Formation over its entire length (see Figure 3). A summary geological log is shown in Table 1 below.

**TABLE 1**  
**SUMMARY GEOLOGICAL LOG – RCD358**

Depth From (m)	Depth To (m)	Geological Summary
0.0	251.9	RC Pre Collar
251.9	318.0	Fine – medium grained metamorphosed porphyritic andesite with minor felsic tuffaceous intervals (See Plate 1).
318.0	362.1	Medium grained metamorphosed porphyritic andesite with more massive fine grained intervals – basalt flows (See Plate 2).
362.1	433.0	Alteration zone. Matrix supported volcanoclastic with minor porphyritic andesite intervals. Propylitic alteration – spotty epidote, chlorite, silica and haematite (See Plate 3).
433.0	469.9	Less altered matrix supported volcanoclastic composed of porphyritic andesite clasts with tuffaceous intervals. Some silica and chlorite alteration (See Plate 4).
469.9	492.2	Metamorphosed porphyritic andesite. Strong foliation and chlorite alteration (See Plate 5).
492.2	494.3	Contact between porphyritic andesite and altered basalt (dolerite?). Brecciated tuff and basalt clasts within quartz vein with iron rich fluids (See Plate 5).
494.3	698.1 (EOH)	Altered basalt (dolerite?) with intermittent sulphide bearing quartz veining of various orientations and some zones of carbonate alteration (See Plate 6).



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A zone of intermediate volcanic rocks was observed in the drill core from 251.9m to 494.3m. Plate 1 shows an unaltered example of the core encountered within this zone.

Field examination of these rocks show that certain intervals have been subjected to significant hydrothermal alteration. Examples of this metasomatic alteration include silica and haematite alteration in isolation but also in the form of jasperoids. This may be indicative of proximity to a structural feature or favourable stratigraphic horizon which is acting as a conduit for potentially mineralising fluids. Plates 2, 4 and 5 shows various examples of this alteration.

Due to the intensely altered nature of these rocks four pieces of cut drill core were submitted for petrology and mineralogical assessment. From these assessments it has been determined that the zone from 362.1m to 433.0m consists of metamorphosed porphyritic andesite with intense propylitic alteration that is dominated by chlorite and epidote (as clinozoisite) with magnetite accompaniment (See Plate 3).

This andesite rock unit bears similarities to the same unit that is observed in the hanging wall position at the nearby Horseshoe Lights mine, referred to there as a dacite rock unit (see Figure 2). Additional petrology and mineralogical assessment of historical core through the dacite at the mine is required to confirm this association. If an association exists this would be the first discovery by Horseshoe of dacite (andesite) away from the mine. This may provide a very strong indicator that the area may be highly prospective for a repetition of the Horseshoe Lights mine sequence and therefore proximal to the mineralised horizon.

Below the andesite rock unit, from a depth of 494.3m, is an altered mafic unit which was logged as an altered basalt based on visual alteration, low magnetism and low titanium content analysed using a fpXRF instrument. This unit is considered analogous to the meta-basalt unit below the mineralised units at the Horseshoe Lights mine.

Petrological assessment of one core sample suggests this unit is an altered granophyric dolerite. However, this unit differs from the late dolerite sill that acts as a basement to the Horseshoe Lights Mine sequence, due to its altered nature, lack of magnetic oxides and low titanium content. Therefore this unit is still considered to be part of the Narracoota Formation stratigraphy. Plate 6 shows an example of the core through the altered basalt.

The hole was terminated at a depth of 698.1m with altered basalt and sulphide bearing quartz veining still being encountered.

### **Geophysical Interpretation**

From the observations of the drill core so far a definite source of the geophysical anomaly identified in the Dipole-Dipole Induced Polarisation (DDIP) survey has not been established. The obvious candidate is pyrite that was intersected throughout the core but this is not considered to exist in high enough concentrations to cause such a large anomaly. Another possible cause is clay alteration but only minor clay alteration was observed. The other more likely candidate is magnetite that was associated with the propylitic alteration zone between 362.1m and 433.0m downhole. Further work is required to confirm this hypothesis.



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When a comparison is made with other geophysical information the Company has gathered there appears to be a good correlation between the strong alteration zone in RCD358 and a distinct linear feature observed in the ground magnetic survey data which is presently interpreted as a structure or stratigraphic horizon. It appears that the drill hole has intersected the southern end of this feature which strikes north-north west (see Figure 4).

Only limited widely spaced sterilisation drilling (<100m depth) into weathered rocks of the Narracoota Formation has been undertaken previously in the area of this apparent structure. This apparent structure and surrounds warrants further investigation and testing.

### **Future Activities**

The Company intends undertaking the following additional work as soon as practicable in respect to drill hole RCD358:

1. perform petrology and mineralogical assessment of additional pieces of core from RCD358 and historical diamond drilling at the Horseshoe Lights mine to establish commonality between the two locations;
2. cut additional drill core for multi-element and gold analysis;
3. case the hole and complete a Down Hole Electromagnetic (DHEM) survey to test for off-hole conductors which may indicate the presence of a more massive sulphide body nearby.

The Company also advises that the next phase of Reverse Circulation (RC) drilling at the Horseshoe Lights Project is planned to commence in the near future. The programme of drilling (see Figure 2 for collar locations) will be conducted under a drilling-for-scrip agreement by Whitestone Minerals Pty Ltd (Whitestone). Under a Drilling Fund Contract Whitestone is obliged to provide drilling services to the value of approximately \$235,000 (see ASX announcement 31 March 2014).

The Company has been advised by Whitestone that the drill rig tasked with drilling at Horseshoe Lights will be available to mobilise to site at the completion of a two week drilling programme it is presently undertaking elsewhere.

### **ENDS**

#### **For further information please contact:**

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Plate 1 – (303.6 – 308.3m depth) Fine – medium grained metamorphosed porphyritic andesite with minor felsic tuffaceous intervals.

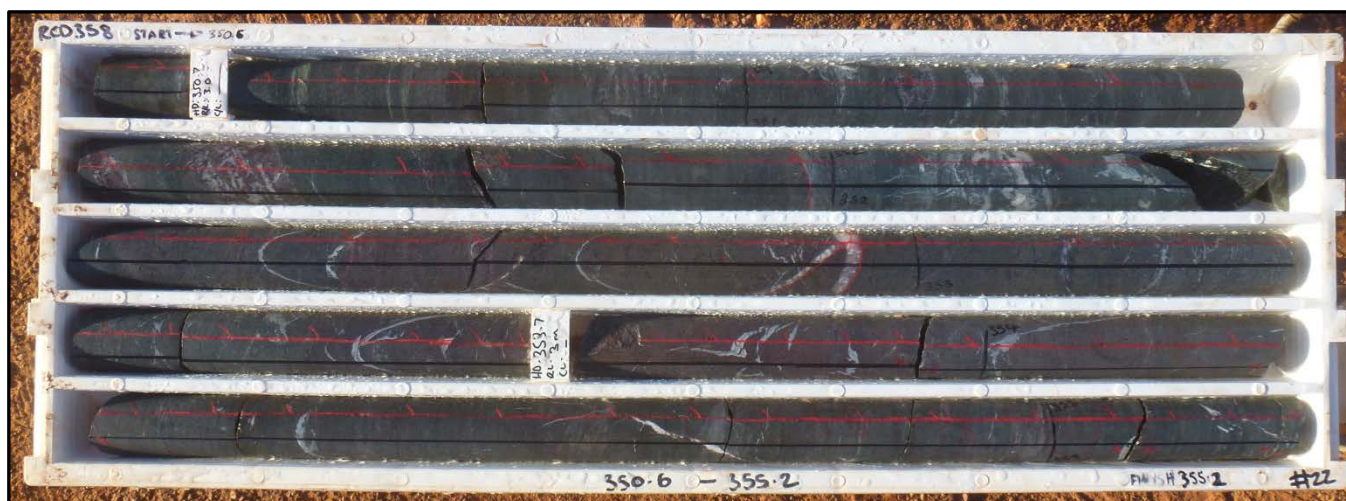


Plate 2 – (350.6 – 355.2m depth) Medium grained metamorphosed porphyritic andesite with more massive fine grained intervals – basalt flows.

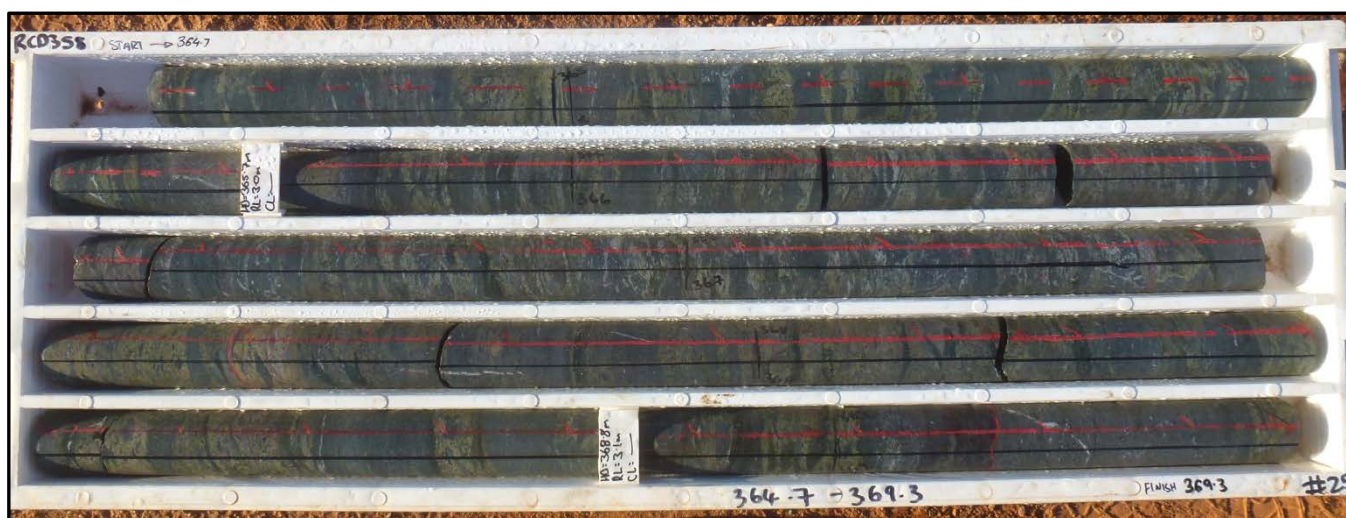


Plate 3 – (364.7 – 369.3m depth) Alteration zone. Matrix supported volcanoclastic with minor porphyritic andesite intervals. Propylitic alteration – spotty epidote, chlorite, silica and haematite.





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Plate 4 – (458.1 – 463.4m depth) Less altered matrix supported volcanoclastic composed of porphyritic andesite clasts with tuffaceous intervals and some silica and chlorite alteration.



Plate 5 – (491.2 – 495.9m depth) Metamorphosed porphyritic andesite. Strong foliation and chlorite alteration to 492.2m. 492.2 – 494.4m - Contact Zone - Brecciated tuff and basalt clasts within quartz vein with iron rich fluids.



Plate 6 – (612.7 – 617.4m depth) Altered basalt with intermittent minor sulphide bearing quartz veining of various orientations and carbonate alteration.



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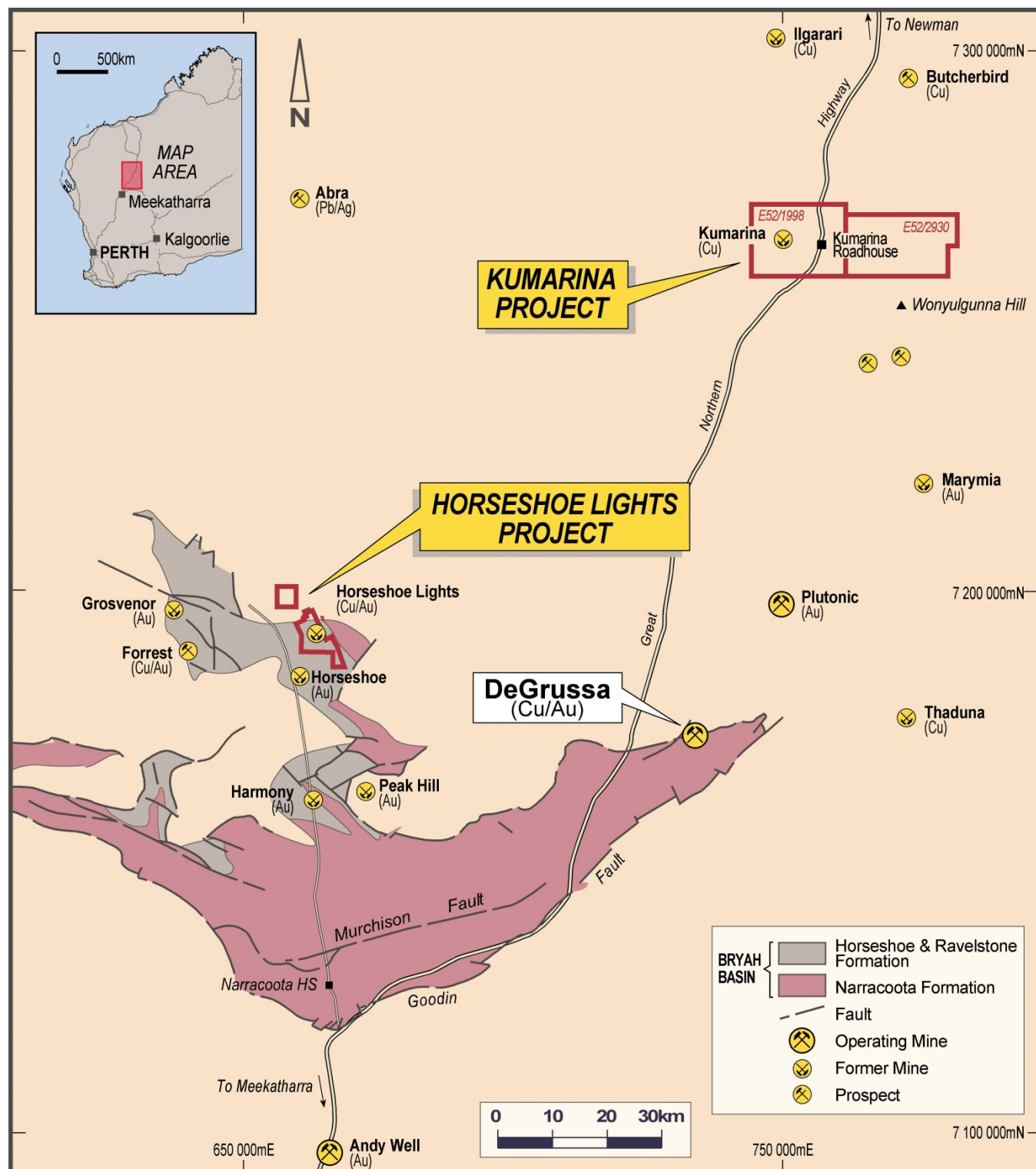


Figure 1 - Projects Location Plan.



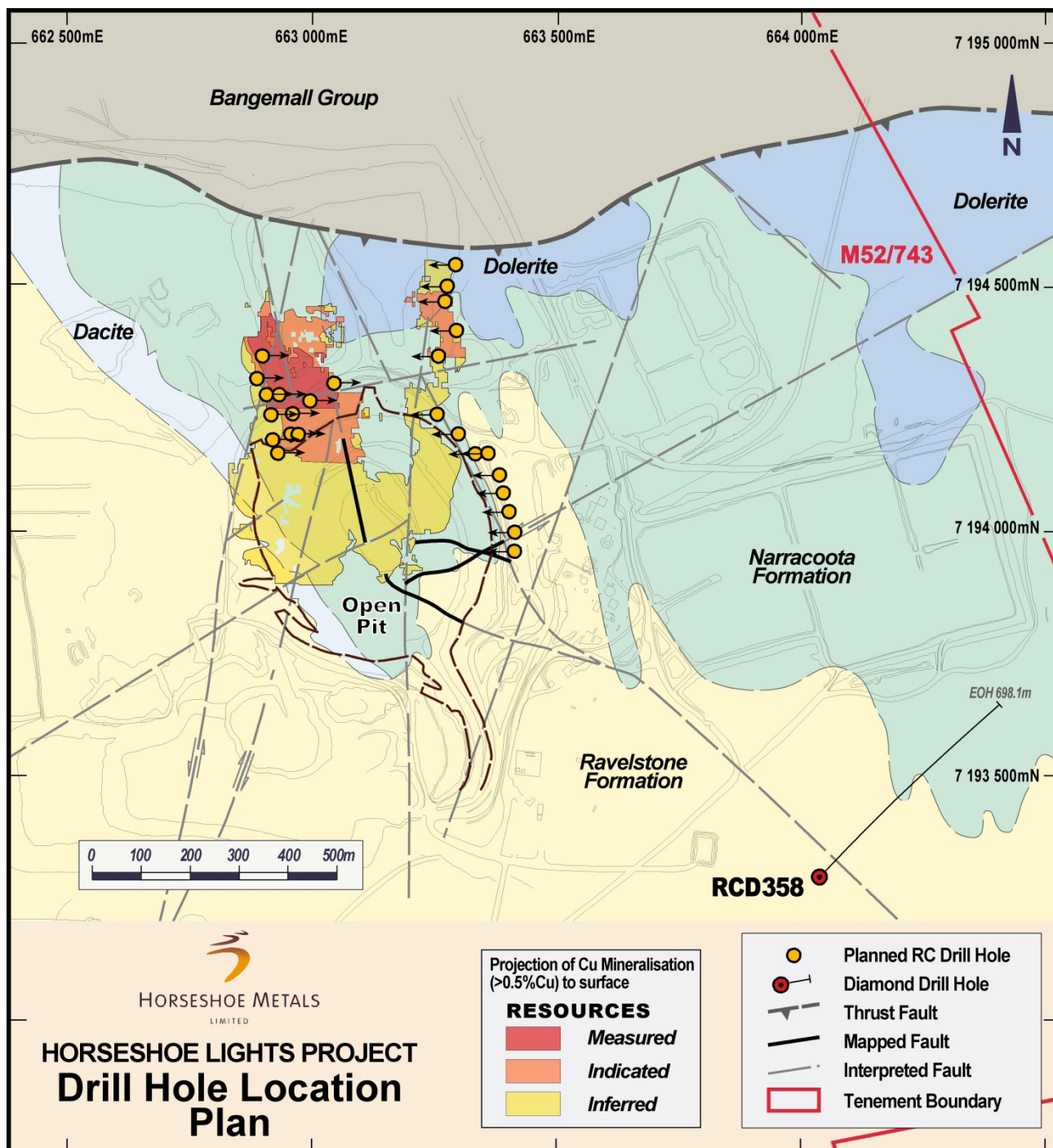


Figure 2 – Drill Hole Location Plan.





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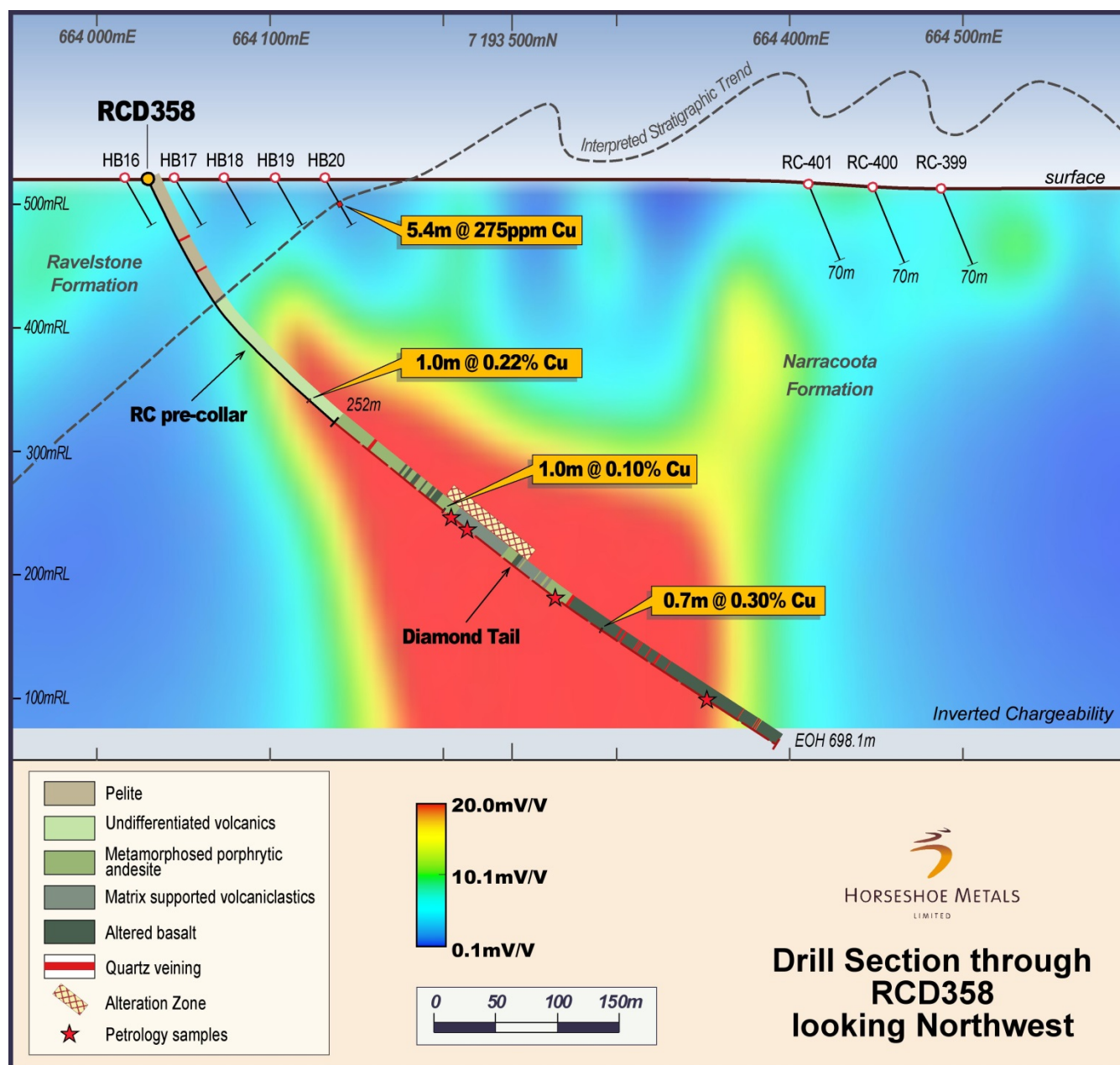


Figure 3 – Drill Section through RCD358.

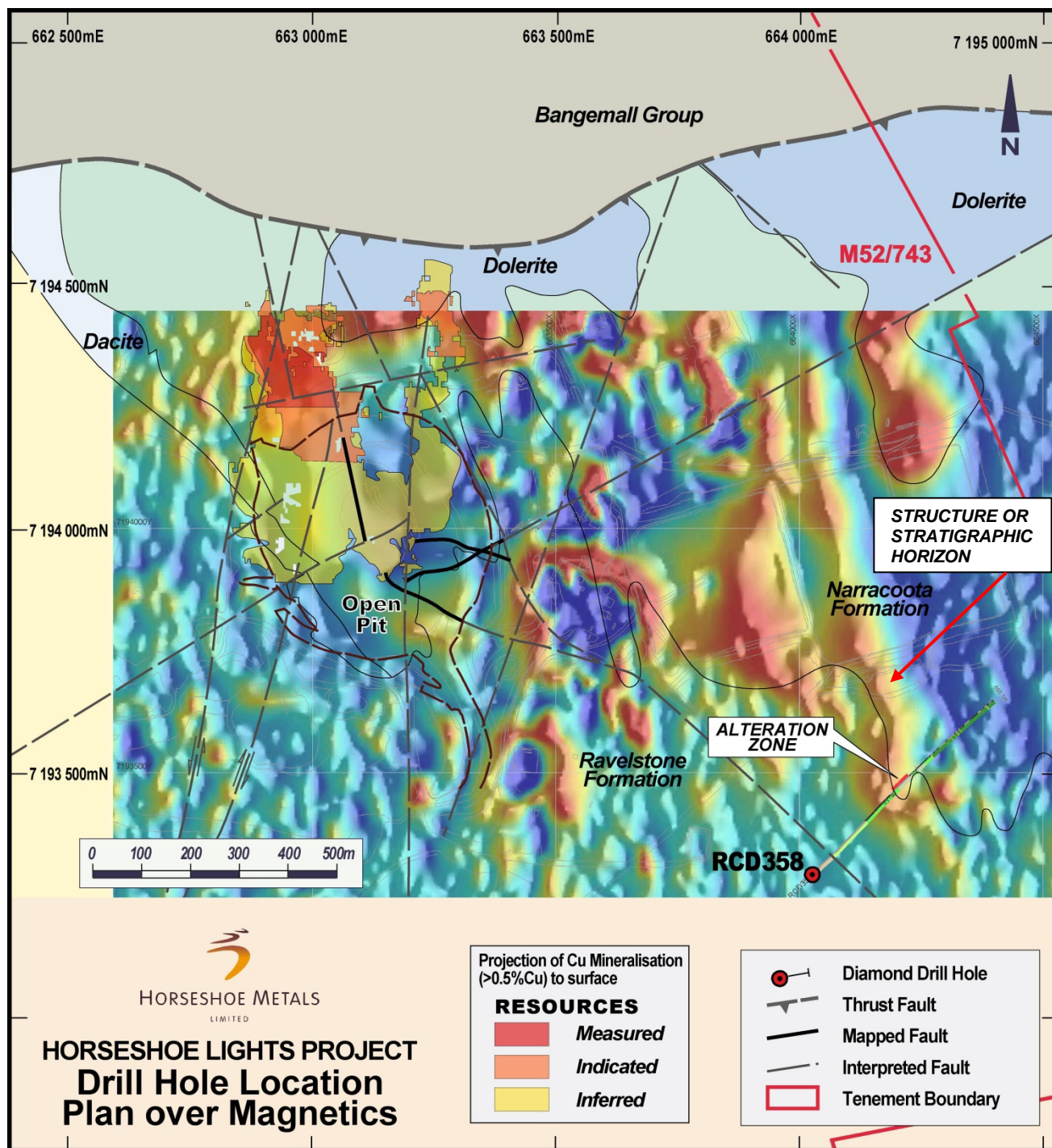


Figure 4 – Drill Hole RCD358 Location over Ground Magnetism Imagery.



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**TABLE 2**  
**Horseshoe Lights Project**  
**Diamond Drilling Programme**  
**Mineralisation Intersections**

Hole	Northing (m)	Easting (m)	Planned Azimuth (degrees)	Planned Dip (degrees)	Hole Depth (m)	From (m)	To (m)	Interval (m)	Cu % (average)	Au g/t (average)
RCD358	7193294	664029	45	-60	698.1	364.90	365.90	1.0	0.1	0.03
						526.90	527.60	0.7	0.3	-
						499.0	500.0	1.0	-	0.05
						558.10	559.00	0.9	-	0.02

Note: Insufficient geological information is available to confirm true width of mineralisation intervals.

### Competent Persons Statement

*The information in the report to which this statement is attached that relates to Exploration Results is based on information compiled by Mr Geoff Willetts, BSc. (Hons) MSc. who is a Member of the Australian Institute of Geoscientists. Geoff Willetts is employed by Horseshoe Metals Limited. Geoff Willetts has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Geoff Willetts consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

*The information in this report that relates to the Horseshoe Lights Project Mineral Resources is based on information compiled by Mr. Dmitry Pertel, who is a member of the Australian Institute of Geoscientists. Mr. Pertel is an employee of CSA Global Pty Ltd. The information was previously issued with the written consent of Mr Dmitry Pertel in the Company's 30 June 2013 Quarterly Report released to the ASX on 31 July 2013. The Company confirms that:*

- (a) the form and context in which Mr. Dmitry Pertel's findings are presented have not been materially modified.*
- (b) it is not aware of any new information or data that materially affects the information included in the 31 July 2013 ASX announcement and that all the material assumptions and technical parameters underpinning the estimate in the 31 July 2013 ASX announcement continue to apply and have not materially changed.*
- (c) it is uncertain that following evaluation and/or further exploration work that the historical estimates will be able to be reported as mineral resources in accordance with the JORC Code.*

*The information in this report that relates to the Kumarina Project (Rinaldi Prospect) Mineral Resources is based on information compiled by or under the supervision of Mr Robert Spiers, who is a member of the Australian Institute of Geoscientists. Mr Robert Spiers is an independent consultant to Horseshoe Metals Limited and a full time employee and Director of H&S Consultants Pty Ltd (formerly Hellman & Schofield Pty Ltd). The information was previously issued with the written consent of Mr Robert Spiers in the Company's 30 June 2013 Quarterly Report released to the ASX on 31 July 2013. The Company confirms that:*

- (a) the form and context in which Mr Robert Spiers' findings are presented have not been materially modified.*
- (b) it is not aware of any new information or data that materially affects the information included in the 31 July 2013 ASX announcement and that all the material assumptions and technical parameters underpinning the estimate in the 31 July 2013 ASX announcement continue to apply and have not materially changed.*
- (c) it is uncertain that following evaluation and/or further exploration work that the historical estimates will be able to be reported as mineral resources in accordance with the JORC Code.*





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### About Horseshoe Metals Limited

Horseshoe Metals Limited (ASX:HOR) is a copper and gold focused company with a package of tenements covering over 500km<sup>2</sup> in the highly prospective Peak Hill Mineral Field, located north of Meekatharra in Western Australia. The Company's projects are the Horseshoe Lights Project and the Kumarina Project (see Figure 1).

### About the Horseshoe Lights Project

The Horseshoe Lights Project includes the old open pit of the Horseshoe Lights copper-gold mine which operated up until 1994, producing over 300,000 ounces of gold and 54,000 tonnes of contained copper including over 110,000 tonnes of Direct Shipping Ore (DSO) which graded between 20-30% copper.

The Horseshoe Lights ore body is interpreted as a deformed Volcanogenic Hosted Massive Sulphide (VMS) deposit that has undergone supergene alteration to generate the gold-enriched and copper-depleted cap that was the target of initial mining. The deposit is hosted by quartz-sericite and quartz-chlorite schists of the Lower Proterozoic Narracoota Formation, which also host Sandfire Resources' DeGrussa copper/gold mine.

Past mining was focused on the Main Zone, a series of lensoid ore zones which passed with depth from a gold-rich oxide zone through zones of high-grade chalcocite mineralisation into massive pyrite-chalcopyrite. To the west and east of the Main Zone, copper mineralisation in the Northwest Stringer Zone and Motters Zone consists of veins and disseminations of chalcopyrite and pyrite and their upper oxide copper extensions.

A Mineral Resource Estimate for the Horseshoe Lights deposit was completed by the Company in June 2013 (*see 30 June 2013 Quarterly Report announced on 31 July 2013*). The Mineral Resource Estimate meets the reporting requirements of the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves"

The total Measured, Indicated and Inferred Mineral Resource Estimate is **12.85 million tonnes @ 1.00% Cu and 0.1 g/t Au for 128,600 tonnes Cu and 36,000 oz Au** (using a cut-off grade of 0.5% Cu).

### About the Kumarina Project

The copper deposits at the Kumarina Project were discovered in 1913 and worked intermittently until 1973. The workings extend over nearly 5km as a series of pits, shafts and shallow open cuts. At the main Kumarina Copper Mine, the workings are entirely underground with drives from the main shaft extending for some 200m in the upper levels and for about 100m in the lower levels at a depth of 49m below surface.

Incomplete records post-1960s make it difficult to estimate the total copper production from the workings. However, indications are that the Kumarina Copper mine was the second largest producer in the Bangemall Basin group of copper mines. Recorded production to the late 1960s is 481t of copper ore at a high-grade of 37.0% Cu and 2,340t at a grade of 17.51% Cu.

A Mineral Resource Estimate for the Rinaldi deposit was completed by the Company in June 2013 (*see 30 June 2013 Quarterly Report announced on 31 July 2013*). The Mineral Resource Estimate meets the reporting requirements of the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves"

The total Measured, Indicated and Inferred Mineral Resource Estimate is **835,000 tonnes @ 1.3% Cu for 10,600 tonnes Cu** (using a cut-off grade of 0.5% Cu).



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### Appendix 1 - JORC Code Reporting Criteria

#### Section 1 Sampling Techniques and Data

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

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>	Quarter cut NQ diamond drill core with sample lengths between 0.1m and 2.35m are defined, based on geological boundaries and submitted for assay analysis.
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	Diamond drill core is re-assembled and orientated using driller's valid orientation marks. Core is then measured and marked up in 1m intervals before logging and cutting. Core measurements are validated against driller's core block measurements and corrected if required. Selected zones of core are half and quarter cut along a consistent cut line with the "same-side" chosen and placed into Calico bag.
	<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>	Core samples up to 3kg of core sample over various lengths from 0.1m – 2.35m are dried and pulverised to obtain a 150g pulp sample used for ICP-OES multi-element analysis. Similarly for gold analysis the same pulp sample is used to obtain a 10g charge for aqua regia analysis.
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>	Diamond drilling is used to obtain NQ core (47.6mm diameter) for the entire length of this diamond tail extension. Diamond drill core samples are oriented & marked up using Reflex Ace tool ORI marks generated during the drilling process.
Drill sample recovery	<i>Method of recording and assessing core and chip sample recoveries and results assessed.</i>	All diamond core is measured and validated against driller's core block measurements. Results indicate recovery is excellent with recovery >99%.
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i>	Drill core recovery is excellent due to good ground conditions so no extra measures are required.
	<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 apparent bias associated between mineralisation and sample recovery.



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Criteria	JORC-Code Explanation	Commentary
Logging	<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>	Logging of diamond core identifies all aspects of lithology, colour, weathering, texture, alteration and mineralisation including percentage estimates of oxide/sulphide content. All drill hole data is recorded on site and directly imported into an electronic drill hole database.
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</i>	The logging data is qualitative. All diamond core is photographed post mark up in wet and dry form in their trays and retained for physical inspection on-site.
	<i>The total length and percentage of the relevant intersections logged.</i>	All diamond core from this diamond tail has been logged from start to end of hole.
Sub-sampling techniques and sample preparation	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	All core is initially half cut using a Corewise core saw. Laboratory samples are subsequently quarter cut and submitted for analysis whilst one quarter is retained onsite. The remaining half core will sent to the DMP core archive as part of the co-funding agreement conditions.
	<i>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</i>	Only core samples are involved in this program.
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	Core sample procedure follows industry best practice whereby samples are sorted, reconciled, placed onto trolleys and dried in a gas oven at 110°C for minimum of 8 hours or until dry. Samples ranging from 300g - ≤3kg are crushed to nominal ~10mm using a jaw crusher and then pulverised using LM2, LM5 or Mixer Mill pulverisers. Samples >3kg are Boyd crushed to a nominal ~3mm and split in half using Boyd rotary split divider, one half is then pulverised the other retain, bagged and stored. After pulverising a 150g craft geochemical (pulp) packet is taken directly from the pulveriser bowl and submitted to the laboratory for analysis.
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	Laboratory QAQC methods include insertion of blanks and undertaking check samples for significant assay results.
	<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>	No validation measures completed during the program as half cores are required by DMP as part of co-funding conditions.
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	The sample size is considered industry standard for gold and base metal mineralisation.





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Criteria	JORC-Code Explanation	Commentary
Quality of assay data and laboratory tests	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	<p>All samples are submitted to Genalysis Laboratory Services. The multi-element assay is derived using a mixed acid digest of nitric, hydrofluoric, perchloric and hydrochloric acids on 0.2g of sample and analysed using ICP Optical Emission Spectrophotometry.</p> <p>The gold assay is derived using an aqua regia technique where 10g of prepared sample is digested using nitric and hydrochloric acid. The sample is then solvent extracted using Methyl isobutyl ketone and read on a Graphite Furnace Atomic Absorption Spectrometer.</p> <p>These methods are considered adequate and effective for this style of mineralisation.</p>
	<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>	None undertaken in this programme
	<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>	None undertaken in this programme
Verification of sampling and assaying	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	None undertaken in this programme
	<i>The use of twinned holes.</i>	None undertaken in this programme
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	All drilling and sample data is captured in the field electronically using ruggedised laptops and established templates and verified in Perth office before upload into database.
	<i>Discuss any adjustment to assay data.</i>	No adjustments undertaken.
Location of data points	<i>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.</i>	<p>The Initial RC pre-collar location was determined by the licensed mine surveyor when mining operations were still underway and has been subsequently checked with DGPS equipment.</p> <p>Downhole surveys are captured by Reflex single shot digital camera readings obtained at 30m interval over the entire length of the diamond tail</p>
	<i>Specification of the grid system used.</i>	Grid system coordinates are GDA94 MGA Zone 50.
	<i>Quality and adequacy of topographic control.</i>	Topographic control was created from known survey stations and air photography in strict accordance with Mines Regulation Act 1946 by the authorised mine surveyor.



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Criteria	JORC-Code Explanation	Commentary
Data spacing and distribution	<i>Data spacing for reporting of Exploration Results.</i>	Exploration drill spacing is not applicable in this instance as only one collar location is involved.
	<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>	No mineral resource or ore reserve estimation applicable to this diamond tail extension.
	<i>Whether sample compositing has been applied.</i>	No composite sampling is employed for this diamond tail extension.
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>	Drilling in this program is orientated perpendicular to the interpreted mineralisation trend.
	<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>	Structural measurements taken from drill core suggest no sampling bias has been introduced.
Sample security	<i>The measures taken to ensure sample security.</i>	Prior to submission all samples are collected and stored on-site under supervision of the site geologist. Samples were transported to Perth by Horseshoe Metals personnel and then onto the assay laboratory by licensed couriers.
Audits or reviews	<i>The results of any audits or reviews of sampling techniques and data.</i>	No audits or reviews have been performed to date.

## Section 2 Reporting of Exploration Results

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

Criteria	JORC-Code Explanation	Commentary
Mineral tenement and land tenure status	<i>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.</i>	<p>The Horseshoe Lights Project comprises one Mining Lease (M52/743), one Exploration Licence (E52/2042), nine Prospecting Licences (P52/1203-1211) and five Miscellaneous Licences (L52/42 -45 and L52/66) covering an area of approximately 50 km<sup>2</sup> (5,000 hectares). Current registered holder of the tenements is Murchison Copper Mines Pty Ltd which is a wholly owned subsidiary of Horseshoe Metals Limited. Murchison Copper Mines Pty Ltd has 100% interest in the tenements. Unrelated party Horseshoe Gold Mine Pty Ltd retains a 3% net smelter return royalty in respect to all production derived from some of the Horseshoe Lights Project tenements, namely M52/743, P52/1203 – 1206, E52/2042 (portion only) L52/42 – 45 and L52/66.</p> <p>Native title interests are believed to have been extinguished in regards to Mining Lease 52/743. There are no historical or environmentally significant sites on Mining Lease 52/743.</p>



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Criteria	JORC-Code Explanation	Commentary
	<i>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.</i>	Mining Lease 52/743 is in good standing and the Company is unaware of any impediments to it obtaining a licence to operate in the area.
<i>Exploration done by other parties</i>	<i>Acknowledgment and appraisal of exploration by other parties.</i>	<p>The Horseshoe Lights deposit surface gossan was discovered in 1946 and worked at a prospect level until 1949. Open pit and underground workings were operated by Anglo-Westralian Pty Ltd, a subsidiary of Asarco Incorporated from 1949 to 1954. Asarco explored the deposit by sampling surface trenches, drilling one surface diamond drill hole, underground drilling and cross-cutting underground on two levels.</p> <p>In 1964, Electrolytic Zinc Company of Australia Pty Ltd conducted widespread exploration including eight diamond drill holes in a search for copper. Seven of the holes intersected oxidised material above 200 m depth. Drill hole EZ7 intersected sulphide copper mineralisation between the intervals 177-204m and 290-335m. Due to the low copper grade of the drill intercepts EZ relinquished the tenements.</p> <p>During 1969 and 1970 Planet Metals Ltd drilled seven holes and achieved several intercepts grading between 0.5% and 1.0% copper. Several of the holes were abandoned short of the target depth because of difficult drilling conditions.</p> <p>In the period 1975 to 1977, Amax Iron Ore Corporation and its partner Samantha Mines NL ("Samantha") investigated the Horseshoe Lights area for base metals. This investigation included drilling a further three diamond drill holes including one beneath the southern end of the main ore zone. Placer Austex Pty Ltd, Samantha and Homestake Mining Company Ltd also investigated the property.</p> <p>Previous exploration activities during the main phase of open pit mining were completed by Horseshoe Gold Mine Pty Ltd which was a wholly owned subsidiary of Barrack Mines Ltd between 1983-89 and Sabminco NL between 1990-1993. Barrack Mines Ltd drilled 43 diamond holes for 15,353m, 638 Reverse Circulation holes for 55,343m and 19 channel samples for 520m between 1983 and 1989.</p> <p>Sabminco NL drilled 14 HQ &amp; NQ diamond holes for 2672.25m and 108 Reverse Circulation holes for 9,244m between 1990 and 1993. Initial drill hole spacing was on a nominal spacing of 50 x 50m with infill as required in the pit area.</p>





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Geology	<i>Deposit type, geological setting and style of mineralisation.</i>	Primary VMS mineralisation at Horseshoe Lights occurs in the core of a NNW trending and SE plunging parasitic anticline, that is overturned to produce intermediate SW dips on western limbs and steep SW dips on eastern limbs. The massive and disseminated sulphide envelope of the deposit itself is also SW dipping and plunging to the SSE (150°), and was likely folded. It sits within altered basalt and mafic volcanoclastic units along the contact with overlying felsic volcanic schist. The VMS mineralisation in the mine area is constrained by the tightly folded and sheared stratigraphy, and appears to be affected by offsets along N-S and NE trending brittle cross faults.
Drill hole Information	<p><i>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:</i></p> <ul style="list-style-type: none"> <li>• <i>easting and northing of the drill hole collar</i></li> <li>• <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>• <i>dip and azimuth of the hole</i></li> <li>• <i>down hole length and interception depth</i></li> <li>• <i>hole length.</i></li> </ul> <p><i>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.</i></p>	Refer to the body of text of this report for all information material to the understanding of the exploration results. No exclusions of information have occurred.
Data aggregation methods	<i>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.</i>	Samples are reported and simply averaged over the mineralised interval. A 0.25% cut-off grade has been used unless otherwise noted
	<i>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.</i>	Intercepts that consist of high grade results within a longer lower grade zone are detailed separately to avoid confusion where applicable.
	<i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i>	Not applicable.



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<i>Relationship between mineralisation widths and intercept lengths</i>	<p><i>These relationships are particularly important in the reporting of Exploration Results.</i></p> <p><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></p> <p><i>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').</i></p>	Exploration drilling in this program is orientated generally perpendicular to interpreted mineralisation trend.
<i>Diagrams</i>	<i>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.</i>	Refer to diagrams in body of text.
<i>Balanced reporting</i>	<i>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.</i>	Refer to body of text for all exploration results
<i>Other substantive exploration data</i>	<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>	In the company's opinion this material has been adequately reported in previous announcements and the detail is not relevant for reporting of these exploration results.
<i>Further work</i>	<i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i>	Drilling is planned to upgrade the resources and check the extent of the mineralised zones to the east of the existing pit as stated.
	<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>	Refer to diagrams in body of text.