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The Company Announcements Office  
ASX Limited Via E Lodgement

31 October 2016

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## Quarterly Activities Report to 30 September 2016

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### **HIGHLIGHTS**

#### ***Yarraloola Project – West Pilbara***

##### *Robe Mesa CID Deposit*

- Four (4) drill-pads have been prepared for sonic drilling to recover 100mm diameter core for a metallurgical test-work programme to determine ore and waste characteristics and the potential for low-cost upgrading.
- Sixty nine (69) new drill-pads with works and heritage approval have been prepared for RC drilling on potential ore-extensions.
- Drilling will commence in late October.

##### *Ashburton Magnetite Prospect*

- Magnetite mass-yield and quality produced from diamond-core by low intensity magnetic separation (LIMS) approximates the yield and quality from RC-chips by Davis Tube.
- Higher grade areas such as Spinifex Hill with a high proportion of Davis Tube results reporting greater than 30% mass yield at Fe > 67%, SiO<sub>2</sub> < 5% and Al<sub>2</sub>O<sub>3</sub> < 1% will be a focus of future drilling and sampling.
- Thirty nine (39) new pads with works and heritage approval have been prepared and RC drilling and this will commence in early November.

#### ***Shepherds Well Project – West Pilbara***

- Soil sampling confirms two areas with anomalous base-metal (nickel, cobalt, lead and zinc) and gold in soils.
- An eastern anomaly that overlies a linear magnetic feature in felsic rocks is some 2.5km in length and 40m wide with lead (Pb) to 786 ppm, zinc (Zn) to 1150 ppm.
- A western anomaly on the boundary between basaltic and felsic rocks is about 500m long and 400m wide with nickel (Ni) to 3560 ppm, chromium (Cr) to 1350 with elevated gold (Au), palladium (Pd) and platinum (Pt).
- Future work will focus on the delineation of targets for drilling.

### **Yarrie Project – North Pilbara**

- Eight (8) drill-sites on four gravity-magnetic anomalies have been prepared for RC drilling.
- Soil and rock chip samples have been collected from a regional north-trending structure showing evidence of pyrite and carbonate alteration and silicification that is a prospective for gold.
- Work is focussed on generating targets for drilling.

## **Project Summaries**

### **Yarraloola Project – West Pilbara**

#### ***Background***

The Yarraloola tenements cover an area of 853 km<sup>2</sup> in the western part of the Hamersley Basin and adjacent parts of the Ashburton Trough in the West Pilbara. The project has a basement of Archaean and Proterozoic-aged rocks that are in parts overlain by younger sediments of the Carnarvon Basin. All the sequences are prospective for iron mineralisation. In the east, Archaean-age sediments in the Hamersley Basin include iron-rich members of the Marra Mamba, Brockman and Boolgeeda Iron Formations. In the central and western parts, Proterozoic-age metasediments of the Ashburton Trough have interbedded iron formation. In the south, the Coziron tenements are transected by the Robe River pisolitic iron-stone. The pisolitic iron-stones are basin margin sediments of the Carnarvon Basin and currently support large-scale mining operations at Warrambo, Mesa A and Mesa J (Fig 1).

In addition to prospectivity for iron-ore, the Yarraloola tenements are well serviced by established infrastructure that includes bitumen roads and gas-pipelines and these provide opportunities to lower the cost of any new development. There are also proposals for additional facilities in the region. BC Iron Ltd has approval for a new haul-road and port at Cape Preston East, while the API joint-venture controls an easement for a railway through the West Pilbara to a proposed port at Anketell Point. These infrastructure corridors traverse the Coziron tenements.

Coziron currently has exploration focussed on two prospects.

1. The Robe Mesa Deposit on E08/1060 and E08/1686 that contains two intervals of pisolitic ironstone (CID) representing recently deposited material from the Carnarvon Basin (Fig 1).
2. Outcrop and subcrop of magnetite-bearing schists in the Proterozoic-aged, Ashburton Trough on tenements E08/1686 and E08/1826 (Fig 1).

#### ***Robe Mesa Deposit***

The Robe Mesa deposit is defined by 78 vertical RC drill-holes completed during 2014 and 2015 (Fig 2). These intersected an upper and lower interval of pisolitic iron-stone with Fe>50% (Figs 3). The geology and geochemistry from the drilling has been used to generate an independently calculated JORC-compliant resource which was revised and announced in detail on the ASX on 7<sup>th</sup> December 2015 and 8<sup>th</sup> of February 2016 and is summarised in the following tables.

Robe Mesa Deposit – Updated Mineral Resource Estimate from February 2016 – reported above a **Fe cut-off grade of 50%.**

Category	Mt	Fe%	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub> %	LOI%	P%	S%	Fe <sub>ca</sub> %
Indicated	65.7	53.8	8.3	3.4	0.14	10.6	0.04	0.02	60.2
Inferred	18.8	53.8	8.2	3.4	0.14	10.7	0.05	0.02	60.3
<b>Inferred</b>	<b>84.5</b>	<b>53.8</b>	<b>8.3</b>	<b>3.4</b>	<b>0.14</b>	<b>10.6</b>	<b>0.04</b>	<b>0.02</b>	<b>60.2</b>

Robe Mesa Deposit – Updated Mineral Resource Estimate from February 2016 – reported above a **Fe cut-off grade of 55%.**

Category	Mt	Fe%	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub> %	LOI%	P%	S%	Fe <sub>ca</sub> %
Indicated	19.5	56.0	6.0	2.7	0.10	10.7	0.04	0.02	62.7
Inferred	5.2	56.0	5.8	2.8	0.1	10.7	0.05	0.02	62.7
<b>Inferred</b>	<b>24.6</b>	<b>56.0</b>	<b>5.9</b>	<b>2.7</b>	<b>0.1</b>	<b>10.7</b>	<b>0.04</b>	<b>0.02</b>	<b>62.7</b>

The block-model developed from the resource estimation shows that the higher grade resource (Fe > 55%) is an interval on the upper section of both the lower and upper zone of mineralisation (Fig 3).

The block-model also highlights opportunities for further work. Areas of inferred resource can be infill drilled to increase the resource confidence. Lower-zone mineralisation which projects beneath the surface to the east and west of the mesa offers potential to increase the tonnage of the resource.

### ***Robe Mesa – Work Programmes and Results***

During the Quarter work progressed on establishing a two-phase drilling programme.

1. Four (four) drill-sites that were previously used for RC drilling were selected as representative intercepts to recover about 280m of core by sonic drilling. The 100mm diameter drill-core is suitable for a metallurgical test-work programme that will determine the ore-type and whether low-grade material and mineralised waste can be upgraded by low-cost methods. The results will assist in attributing a value to the ore-types.
2. Sixty-nine (69) proposed drill-sites and associated access tracks with works approval underwent a heritage clearance programme and have been prepared for RC drilling (Fig 4). The programme is planned for about 3,600 m.

### **Robe Mesa Deposit – Future Work**

Both the sonic and RC drilling will be underway in the next quarter and results will be reported as they become available.

### ***Ashburton Magnetite Prospect***

The Ashburton prospect is a 12 km long by 800 m wide area with high-order magnetic anomalies generated from poorly outcropping Proterozoic schists. These are almost entirely covered by a veneer of sand and conglomerate from the Carnarvon Basin on tenements E08/1686 and E08/1826 (Fig 1). The magnetite-mineralised rocks outcrop intermittently as a suite of north-west, trending, strongly folded, variably siliceous, chloritic schists that dip steeply to the south-west. RC and diamond drilling

show that the magnetite-rich metasediments but hosted by intermediate and rhyolitic volcanics. The implication is that rather than an outlier of the Hamersley Basin, the Ashburton magnetic anomalies appear to be the expression of mineralisation associated with a deeper water oceanic basin and volcanism and represent an Algoma-style setting.

The mineralisation in the Ashburton has a suite of characteristics that may be favourable for larger-scale magnetite recovery, including the following.

1. The transition from weathered to fresh rock appears to be range from about 20 to 30m with the base of oxidation represented by the increase of mass-recovery of magnetite at less than 35m below the surface.
2. No evidence of blue asbestos (crocidolite) in the system.
3. Grainsize that is coarser than material from the adjacent Hamersley Basin iron formations.
4. Generally low phosphorous and sulphur contents.
5. A 30 to 40% mass yield by Davis Tube with the concentrates reporting Fe > 67%, Al<sub>2</sub>O<sub>3</sub> < 1% and SiO<sub>2</sub> < 5%.

### Ashburton Magnetite: Activities and Results

#### a. Low intensity magnetic separation (LIMS) from diamond core

A metallurgical test-work programme on diamond-core investigated the quantity and quality of magnetite from shallow intervals of mineralisation in the Northern Discovery and Trailer Laydown drill-core (Fig 5). This is material that would be recovered during the early stages of a mine development. Results were fully reported to the ASX on 3<sup>rd</sup> August 2016 but are summarised as follows.

Step-wise grinding to P80 targets of 125, 90, 63, 45, 38 and 28 microns with magnetite recovery by Davis Tube was used to plan the larger-scale processing flow-sheet. The best quality concentrate was recovered at a target size of 28 microns which had a measured particle size of about 20 microns (Table 1). This was consistent with the grind-size that was developed for recovery of magnetite by Davis Tube from the RC samples in the Ashburton.

Following the Davis Tube study on the diamond-core, a staged recovery programme was undertaken on larger samples. This involved an initial grind to a P80 of 45 microns and the recovery of a rougher concentrate using a 1000 gauss magnetic separator (LIMS). The rougher concentrate was then milled to a P80 of 20 microns with a two stage LIMS recovery and cleaning process. Results are presented in Table 2.

*Table 1. Yield and quality of magnetite concentrate by Davis Tube from grind-size evaluation at a target P80 of 28 microns but with a measured P80 of 20 microns.*

Drill-Hole	From	To	Yield	Fe%	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	P %	LOI %
YARDDH002	119	135	53.2	47.3	29.5	0.96	0.070	-0.75
YARDDH002	139	186.2	36.4	66.4	6.8	0.27	0.022	-2.88
YARDDH003	104	110.3	26.4	65.1	8.1	0.37	0.026	-2.54
YARDDH003	110	137.6	33.2	66.5	6.8	0.29	0.022	-2.94
YARDDH003	138	146.2	39.0	64.9	8.8	0.52	0.026	-2.89

Table 2. Yield and quality of a magnetite concentrate from a two-stage grind and LIMS recovery circuit.

Drill-Hole	From	To	Yield	Fe%	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	P %	LOI %
YARDDH002	139	186.2	35.8	65.9	7.2	0.30	0.026	-2.8
YARDDH003	104	110.3	25.9	65.6	7.6	0.40	0.030	-2.5
YARDDH003	110	137.6	32.7	67.7	5.6	0.30	0.019	-3.0
YARDDH003	138	146.2	38.9	65.1	8.4	0.60	0.028	-2.9

The two-stage grind and LIMS recovery and cleaning typically produced only 1% less mass recovery than the Davis Tube, but it upgraded the Fe by up to 1.2%. This suggests that the Davis Tube is providing representative results to assist in identifying the more prospective portions of the Ashburton system.

#### **b. Magnetite recovery from diamond-core by Davis Tube**

Following the LIMS recovery of magnetite from the shallow intercepts in the Northern Discovery and Trailer Laydown sections, deeper intercepts of magnetite mineralisation were sampled at approximately 5m intervals and processed by Davis Tube. The projected outcrop expression of these zones is currently outside of the areas that have been drilled. These Davis Tube results provide a more comprehensive data-base of recovery results from the Ashburton magnetite system and were fully reported to the ASX on 3<sup>rd</sup> of August 2016 but are summarised by Fig 6.

The overall significance is that the central portion of the Ashburton magnetite system currently covered by drilling on the Trailer-laydown, Spinifex Hill and Discovery drill-sections is producing higher volumes of better quality concentrate.

#### **Ashburton Magnetite - Future Work**

Pads have been prepared for a RC drilling programme consisting of a minimum of 8 holes to 200m depth with associated geochemistry and Davis Tube studies is being planned. The focus of exploration will be the Spinifex Hill and Discovery sections along with a large untested high-amplitude magnetic feature in the southern part of the Ashburton prospect.

Results will be reported as they become available.

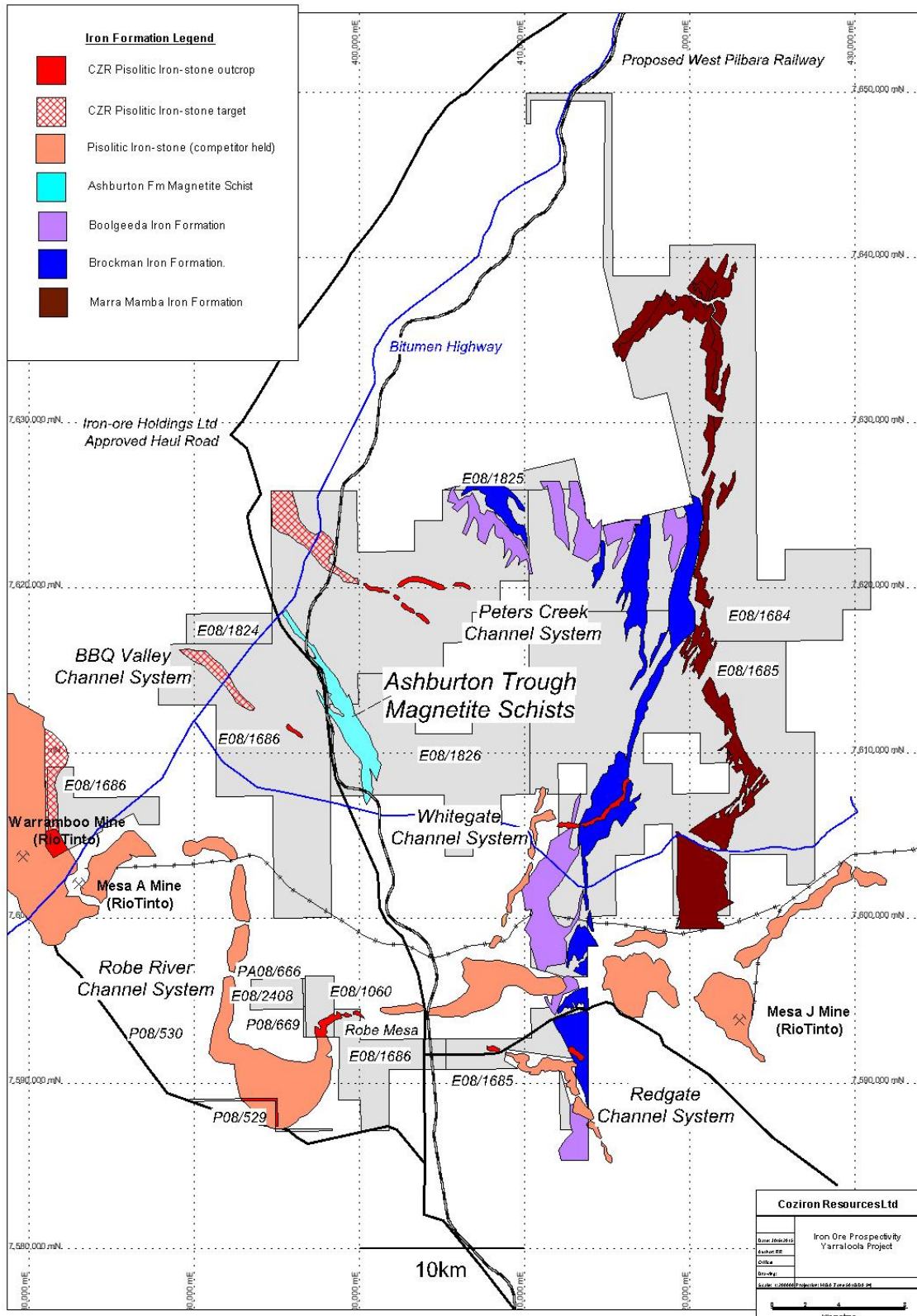


Fig 1. Location of the Robe Mesa and magnetite-schists in the Ashburton Trough on the Yarraloola Project, West Pilbara of Western Australia.

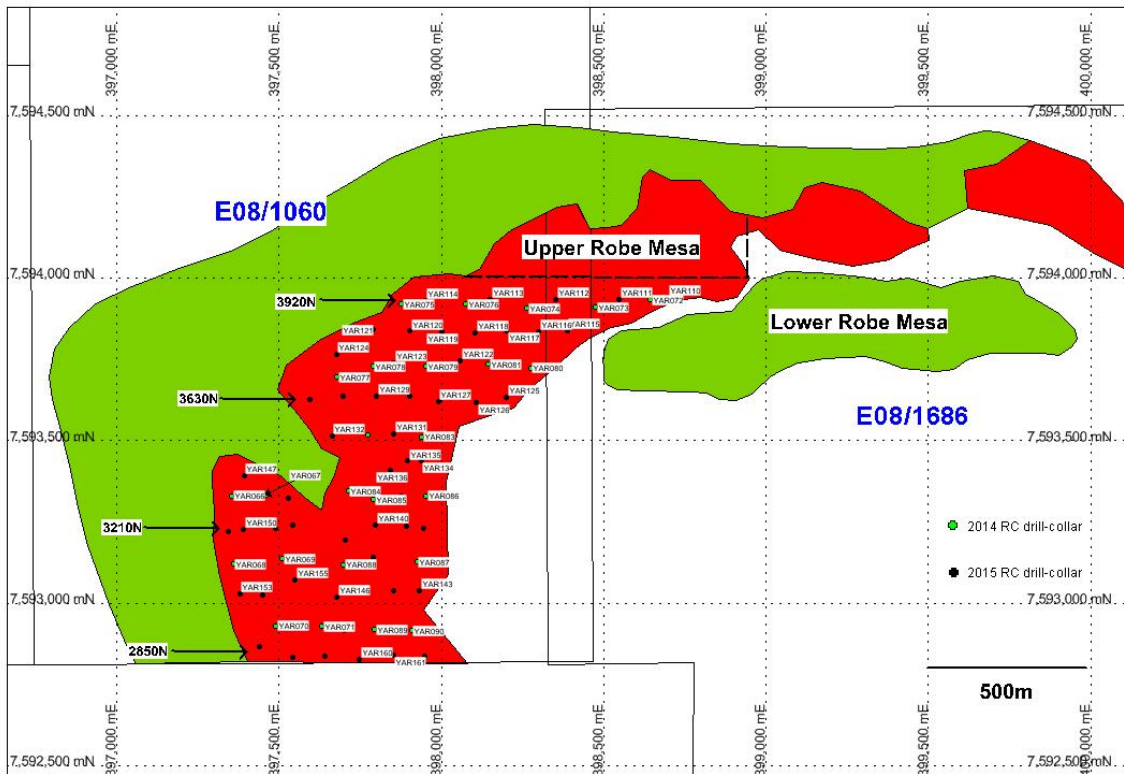


Fig 2. Location of 2014 and 2015 RC drill-collars and cross-sections on the updated outcrop distribution of the upper (red) and lower (green) zones of pisolitic iron-stones associated with the Robe Mesa on tenements E08/1060 and E08/1686.

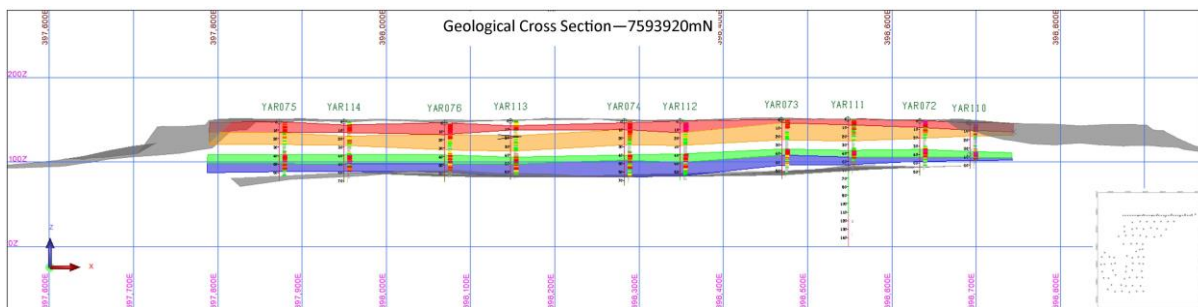


Fig 3. Interpreted cross-section on 7593920N (from Fig 1) showing the down-hole intervals with Fe > 50% in the upper and lower zones at 5% Fe cut-offs. Upper Zone, Red – Fe > 55% and orange Fe > 50 to < 55%; Lower Zone Green – Fe > 55% and orange Fe > 50 to < 55%.

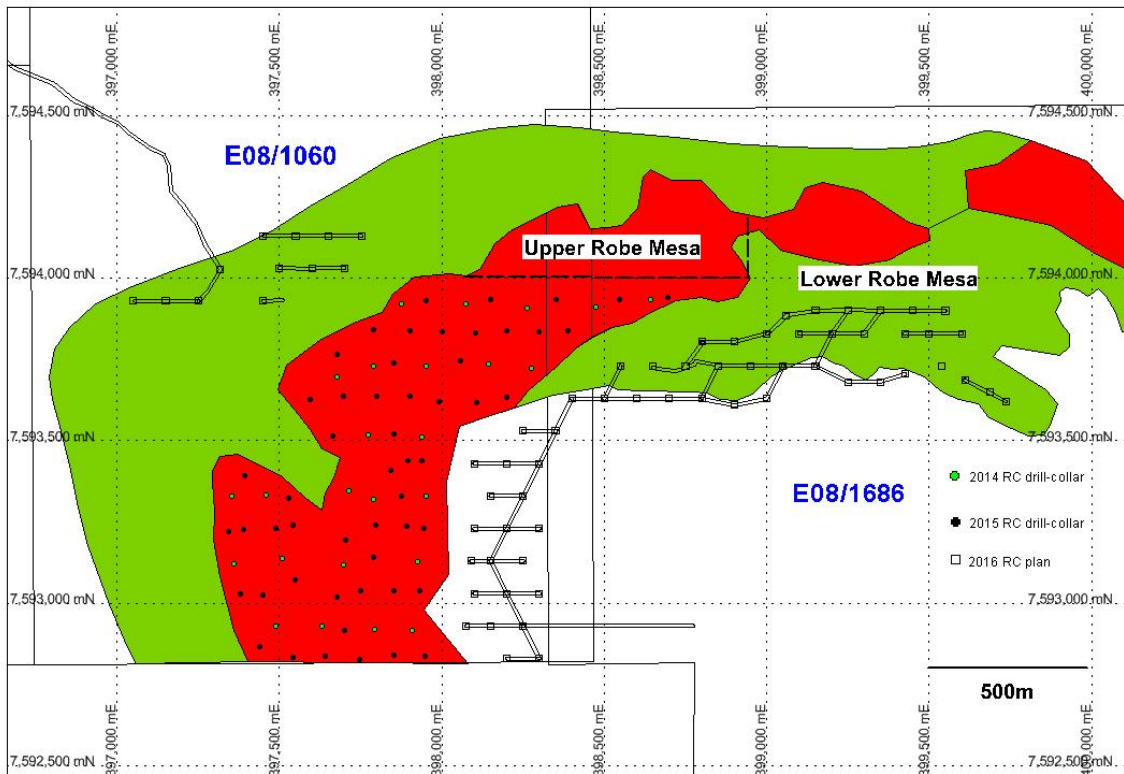


Fig 4. Robe Mesa Deposit showing previous drill location on the upper Robe and access and drill-pads that have been prepared for RC drilling on the lower Robe.



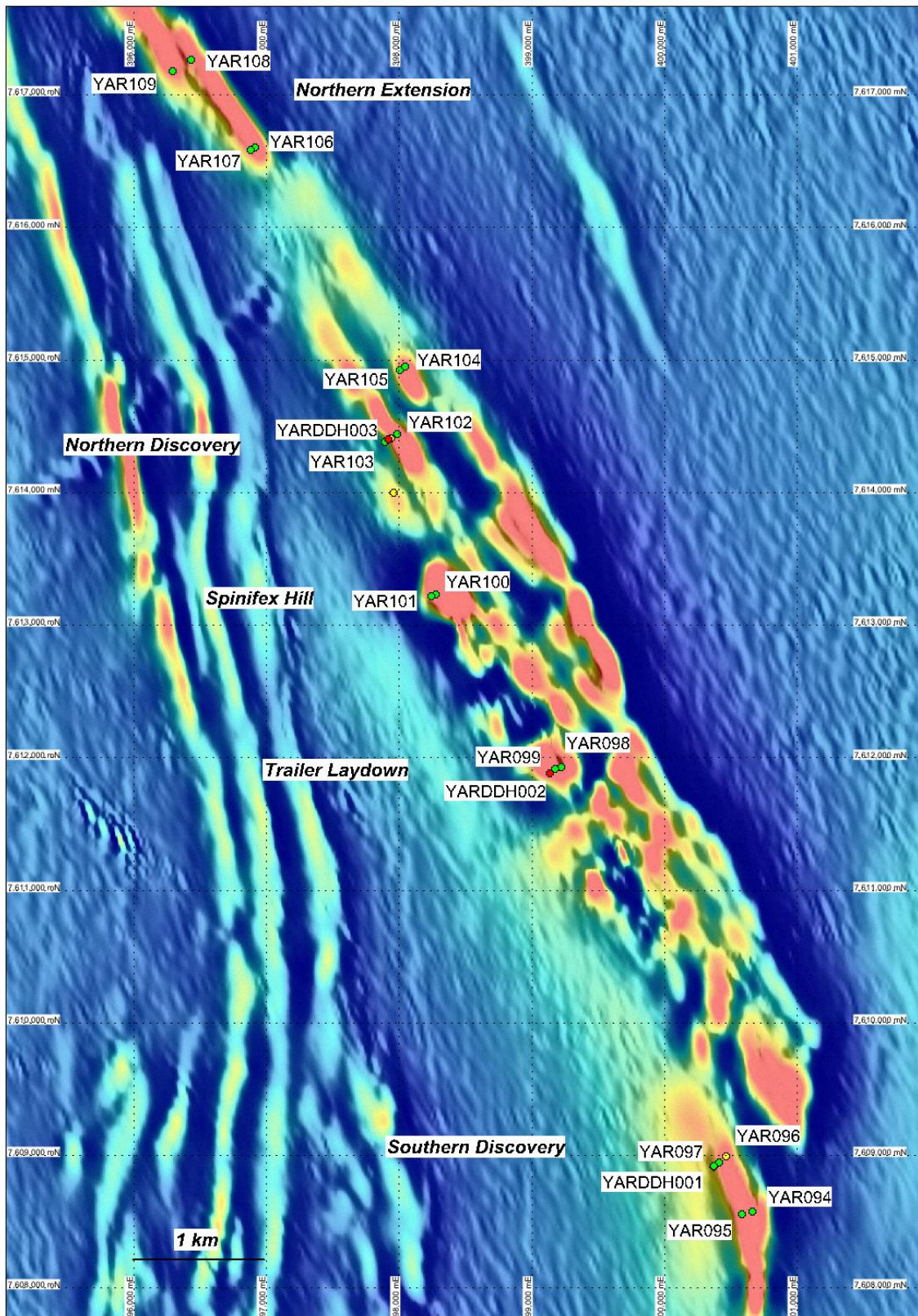


Fig 5. RC and diamond drill-collars for the magnetite-bearing sequence in the Ashburton Trough overlain on the first vertical derivative magnetic imagery. (Green circles = 2015 RC, Yellow = 2014 RC, Red = 2015 diamond hole).

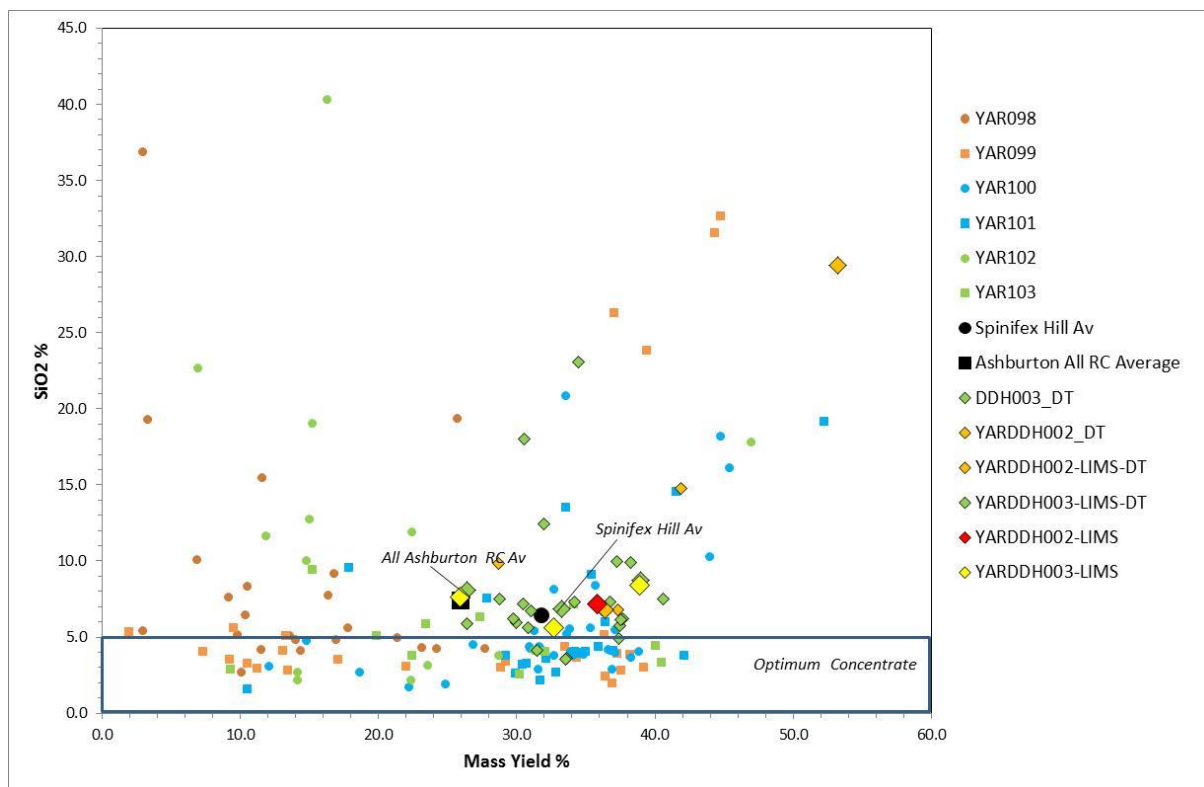


Fig 6. Magnetite mass-yield versus silica content from the Ashburton samples showing the high proportion of samples from the Spinifex Hill section (YAR100 and YAR101) reporting +30% mass yield and  $\text{SiO}_2 < 5\%$ .

## Shepherds Well Project – West Pilbara

### Shepherds Well - Background

Shepherds Well is a 192.2km<sup>2</sup> multi-commodity exploration license (E08/2361) located 50km southwest of Karratha. The tenement is contiguous with Coziron's Yarraloola Iron-ore Project, serviced by bitumen road access from the Great Northern Highway, located only 25-50km from a new proposed public access port at Cape Preston East and crossed in part by an easement for the proposed West Pilbara railway. This planned infrastructure has the potential to improve the economics of any mineral deposits identified within the project area.

Geologically, Shepherds Well compliments Yarraloola with prospectivity for iron-ore mineralization both as high-grade haematite and magnetite in either Archaean-age metasediments of the Cleaverville Terrain, or potentially in outliers of the Hamersley Basin overlying the Fortescue Basalt. The Cleaverville is the basement terrain in the Pilbara Craton that consists of a sequence of ocean-floor basalts and associated sediments that are part of an accretionary domain that pre-dates the formation of the Hamersley Basin and is intruded by granite.

Regionally, the Cleaverville Terrain hosts iron-formations up to 500m thick among which the North Star deposit is being developed into a magnetite mining operation by Fortescue Metals Ltd. The Cleaverville Terrain also hosts a number of base-metal (Cu-Au-Pb-Zn) occurrences attributed to a sea-floor volcanogenic origin. These are typically short strike-length lensoidal deposits with high-grade cores that occur in clusters. Unconformably overlying the Cleaverville Terrain are flat-lying and relatively undisturbed flows of the Archaean-age, Fortescue Flood Basalts. These have the potential to preserve outliers of the overlying Hamersley Group on their upper surface.

To date, exploration on Shepherds Well has included the acquisition and processing of a low level magnetic-radiometric survey, along with some early stage mapping, rock-chip and soil sampling. The focus of this work is to identify areas that have an anomalous geophysical and geochemical response and represent targets for future drilling. The results include two rock-chip samples of muscovite schist adjacent to some shallow prospecting pits which reported silver (Ag) to 9.8g/t, lead (Pb) to 4.4% zinc (Zn) to 0.5% and are anomalous in gold (Au) to 23ppb (CZR: ASX 29-July-2014; Fig 10).

### ***Shepherds Well – New Soil Sampling and Rock-chip Results***

During the quarter results for an additional 48 soil samples were added to the Shepherds Well database. Full details of the methodology were reported by CZR to the ASX on 13 September 2016. Results from the additional sampling programme completed in August provide improved spatial resolution on two anomalous prospects as shown on Figures 7 to 9.

1. In the east, a north-northeast trending zone of lead (Pb) and zinc (Zn) anomalism some 2.5km long and about 40m wide is associated within a linear magnetic feature within a felsic rock sequence. Previously reported rock chips have reported lead (Pb) to 4.4% and silver (Ag) to 9.5g/t (ASX:CZR 29<sup>th</sup> July 2014).
2. In the west, a zone some 500m long by 400m wide with anomalous zinc (Zn), Pb and gold (Au) overlies a contact between ultramafic and felsic rocks. Soils from the ultramafic rocks are characterised by nickel (Ni) to 3560 ppm, chromium (Cr) to 1530 ppm and elevated cobalt (Co) and palladium (Pd). A rock-chip sample from the margin of the anomaly in the felsic rocks previously reported lead (Pb) at 0.8% and silver (Ag) to 6g/t (ASX:CZR 28<sup>th</sup> June 2016).

### **Shepherds Well – Future Work**

The 2016 programme will focus on extending the sample-line coverage and sampling density over the prospective terrain in anomaly systems with a focus on identifying targets for drilling.

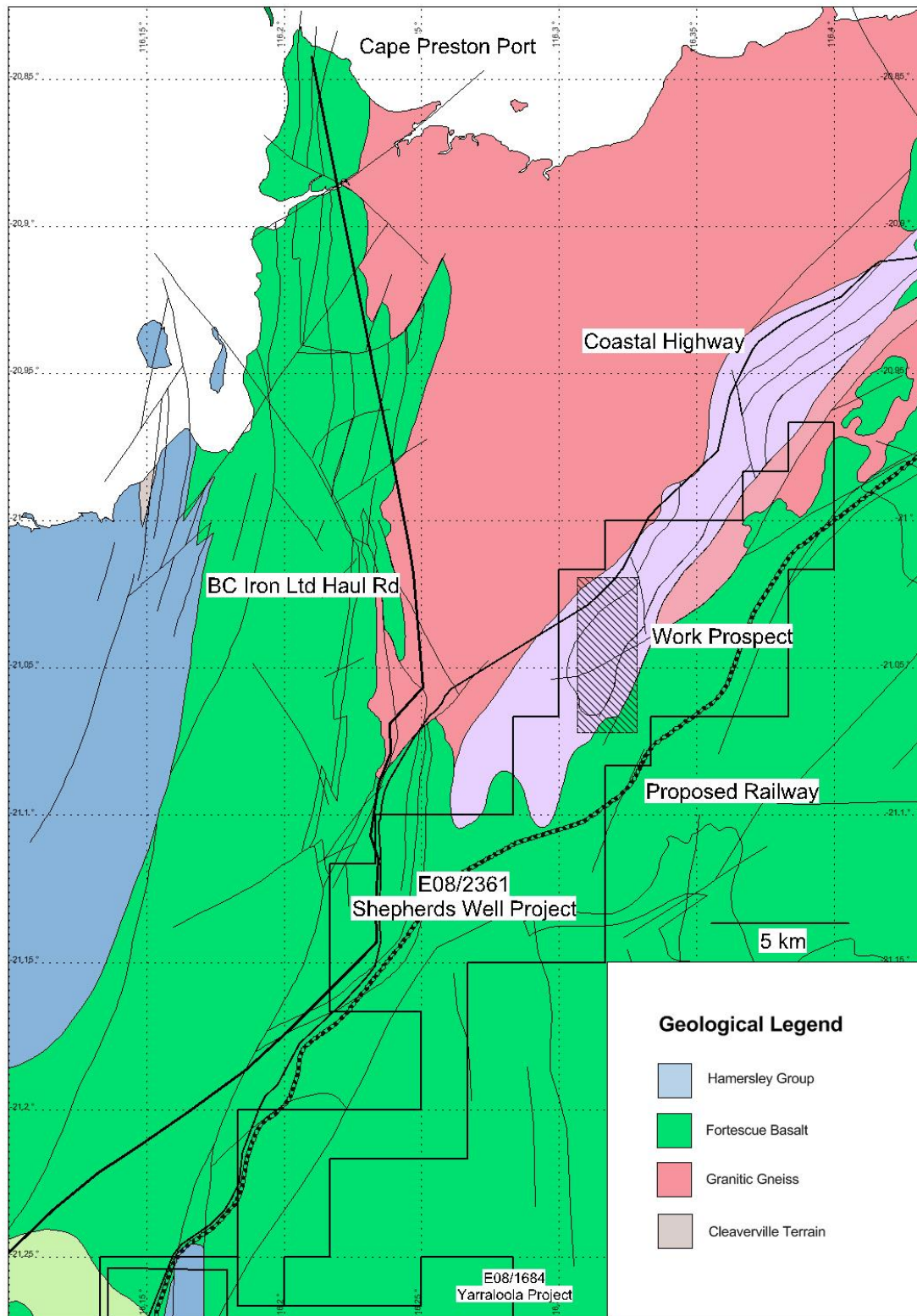


Fig 6. Regional geological setting of the Shepherds Well Project showing the distribution of the Cleaverville Terrain which are the more prospective rocks for iron-ore and base-metal mineralization and the prospective area that is currently being evaluated.

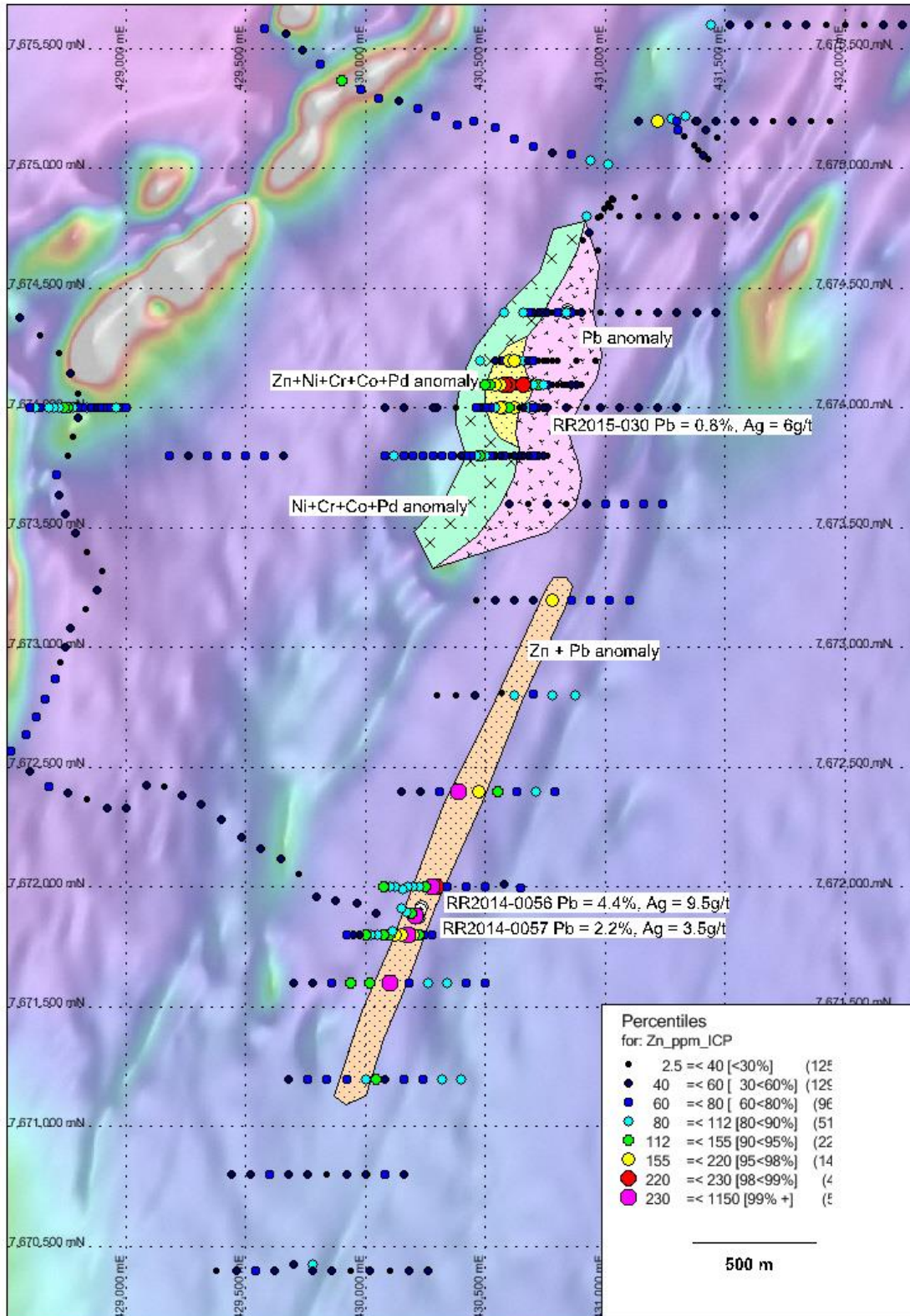


Fig 7 - Location of the 2015-2016 soil samples with the percentile zinc (Zn) distribution, mineralised rock-chip samples (RR and PK-series) and anomalous prospects overlain on the total magnetic intensity.

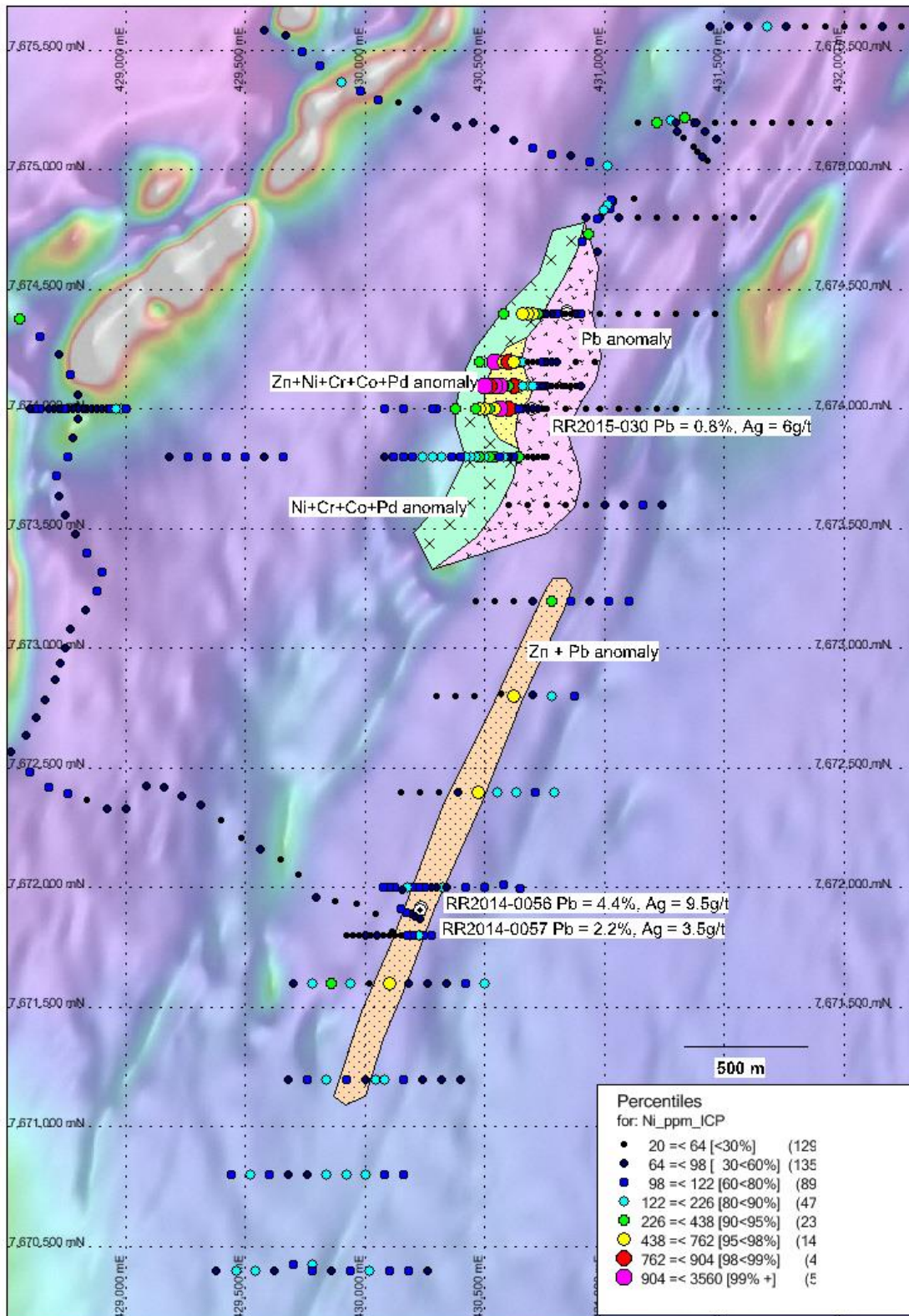


Fig 8 - Location of the 2015-2016 soil samples with the percentile nickel (Ni) distribution, mineralised rock-chip samples (RR and PK-series) and anomalous prospects overlain on the total magnetic intensity.

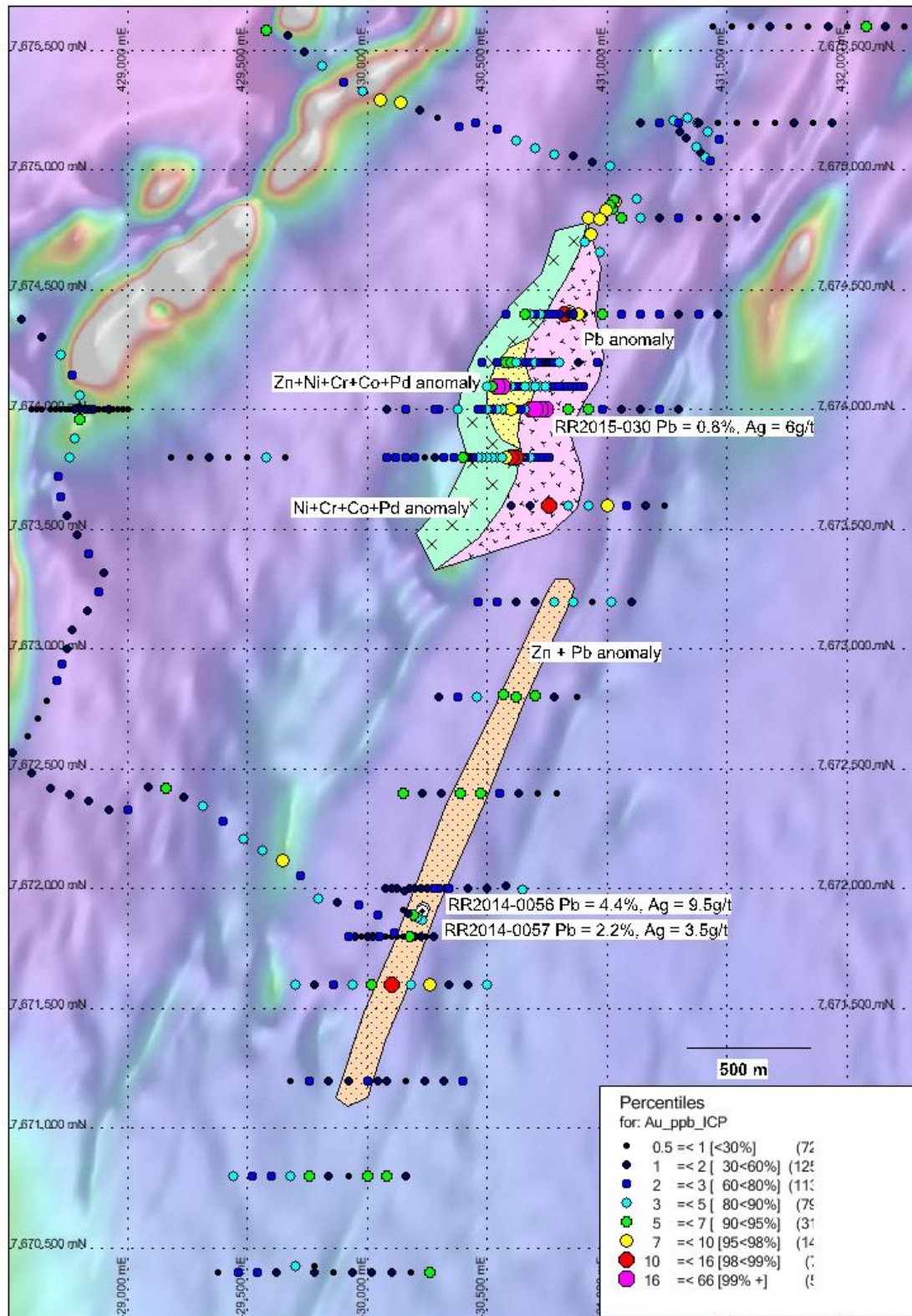


Fig 9 - Location of the 2015-2016 soil samples with the percentile gold (Au) distribution, mineralised rock-chip samples (RR and PK-series) and anomalous prospects overlain on the total magnetic intensity.

## Yarrie Project

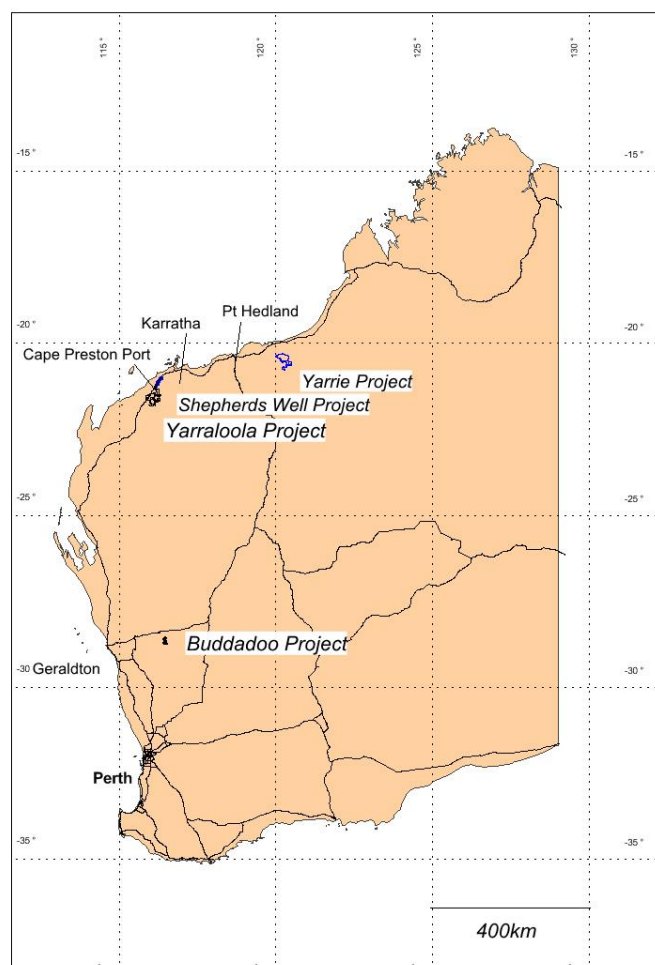
Mapping, soil and rock-chip sampling commenced. Results have only become available after the end of the quarter.

## Buddadoo Project

No significant work was undertaken during the quarter.

## ABOUT COZIRON RESOURCES LIMITED

Coziron Resources Limited has exploration focussed on the Yarraloola (853km<sup>2</sup> of granted tenements) and Buddadoo (210km<sup>2</sup> granted) Projects and an option over Shepherd Well (193km<sup>2</sup>) and Yarrie (841km<sup>2</sup>). The Yarraloola, Buddadoo, Shepherds Well and Yarrie projects have iron-ore as the principal exploration target (Fig 10).



*Fig 10. Location of the Coziron Resources Ltd projects in Western Australia.*

For further information please contact Adam Sierakowski on 08 6211 5099.



## COMPETENT PERSONS STATEMENT

The information in this report that relates to mineral resources and exploration results is based on information compiled by Rob Ramsay (BSc Hons, MSc, PhD) who is a Member of the Australian Institute of Geoscientists. Rob Ramsay is a full-time Consultant Geologist for Coziron and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Rob Ramsay has given his consent to the inclusion in this report of the matters based on the information in the form and context in which it appears.

### Coziron Resources Ltd – Changes to the Tenement Schedule in the past Quarter

Project	Location	Tenement Number	Economic Entity's Interest at Quarter End	Change in Economic Entity's Interest During Quarter
Yarraloola	West Pilbara, WA	E08/1060	85%	No Change
Yarraloola	West Pilbara, WA	E08/1684	85%	No Change
Yarraloola	West Pilbara, WA	E08/1685	85%	No Change
Yarraloola	West Pilbara, WA	E08/1686	85%	No Change
Yarraloola	West Pilbara, WA	E08/1824	85%	No Change
Yarraloola	West Pilbara, WA	E08/1825	85%	No Change
Yarraloola	West Pilbara, WA	E08/1826	85%	No Change
Yarraloola	West Pilbara, WA	E08/2408	100%	No Change
Yarraloola	West Pilbara, WA	P08/529	85%	No Change
Yarraloola	West Pilbara, WA	P08/666	100%	No Change
Yarraloola	West Pilbara, WA	P08/669	100%	No Change
Shepherds Well	West Pilbara, WA	E08/2361	70%	No Change
Yarrie	East Pilbara, WA	E45/3725	70%	No Change
Yarrie	East Pilbara, WA	E45/3728	70%	No Change
Yarrie	East Pilbara, WA	E45/4065	70%	No Change
Yarrie	East Pilbara, WA	E45/4604	70%	No Change
Yarrie	East Pilbara, WA	E45/4605	70%	No Change
Yarrie	East Pilbara, WA	E45/4433	100%	No change
Buddadoo	Mid-west, WA	E59/1350	85%	No Change