

### **ASX**

# Announcement 17th July 2014



### KRUCIBLE METALS LTD

Mineral Discovery Company

ABN:12 118 788 846 ASX Code: KRB

### **About Krucible**

### **Sean Kelly**

Non-executive Chairman

#### **Allan Branch**

Managing Director & CEO

#### **Ray Koenig**

Non-executive Director

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Non-executive Director & CP

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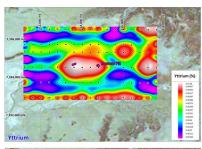
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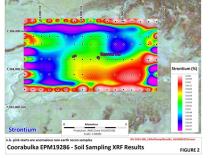
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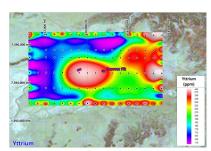
Listed on Australia's main stock exchange since 2007, Krucible is an Australian-based resources company with an enviable history of discovery in phosphorus and heavy rare earths as well as other elements. Krucible continues to explore for precious metals, base metals and others, and is transitioning to a combined exploration and mining company. Krucible has plans and expectations to ultimately enter joint ventures to develop mines on tenements in the mineral rich Mount Isa area of north western Queensland. Krucible has a strong industry-based board and management, who promote aggressive value-added mining projects.

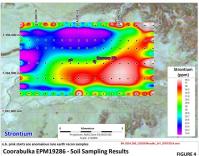
### **Boulia South Exploration Report**

- Lag Sampling at Valroy has returned anomalous REE samples up to 1500ppm cerium, 235ppm praseodymium, 894ppm neodymium, 107ppm samarium, 254ppm yttrium as well as 357ppm lead, 2.87% strontium, 2.78% phosphorous (6.37% phosphate),
- A rock chip sample collected in the Valroy EPM returned anomalous REE values up to 354ppm yttrium, 130ppm dysprosium, 190ppm gadolinium, 611ppm praseodymium, 273ppm samarium, as well as 6.16% phosphorous and 5.92% strontium.
- Laboratory results from ALS Global confirm the preliminary results from portable XRF analysis of soil sampling done in May 2014 on Coorabulka (EPM19286) and announced on 5 June 2014.









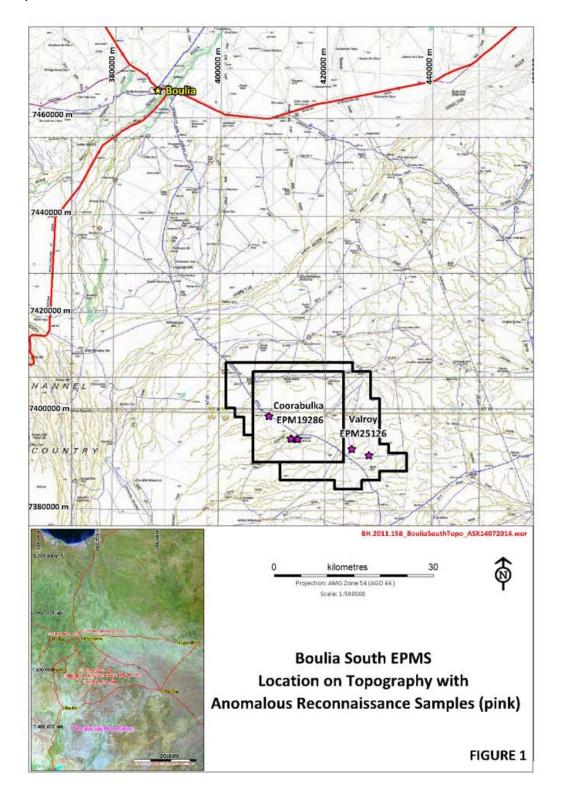
- Further sampling programs to expand the current grids to encompass new anomalies on Coorabulka and Valroy are expected to be completed by September 2014.
- GeoDiscovery was contracted to complete 3D modelling on the existing data for the Coorabulka magnetic anomaly. Preliminary images indicate a number of large north-south and northwest southeast structures
- The main anomaly is an ovoid highly magnetic body modelled at approximately 1km below surface. While this is not a direct target the anomaly has been altered by these structural features and may have remobilised fluids at shallower depths.



### **Boulia South Rare Earth Enrichment Zone Identified**

Surface sampling on the Boulia South tenements (Figure 1) (Coorabulka EPM19286 and Valroy EPM25126) has identified a strong zone of REE enrichment from ALS Global assay results. This follows up on portable XRF results announced 5 June 2014.

Peripheral anomalies within these grids will be followed-up with exploration that encompasses the new anomalous zones.





### 1. Valroy EPM25126

Lag surface sampling in this location in May 2014 was based on reconnaissance samples which indicated wide REE anomalism in this area. The grid samples were analysed by an Olympus Delta (DP-4050-HCR) portable XRF before being sent to ALS Global for assaying. The portable XRF (x-ray fluorescence) results indicated strongly anomalous yttrium and strontium (ASX announcement 5 June 2014). These XRF results varied from the lab results, possibly due to the heterogeneous nature of the lag sample and future XRF analysis methodology will compensate for this by averaging more XRF scans.

Nevertheless, lab assays from ALS Global returned strongly anomalous values up to 307ppm copper, 1500ppm cerium, 357ppm lead, 2.87% strontium, 2.78% phosphorous (6.37% phosphate), 235ppm praseodymium, 894ppm neodymium, 107ppm samarium, 254ppm yttrium and 734ppm zinc (see Table 1). The anomalous samples from the REE suite form overlapping anomalies with two distinct patterns indicated in Figures 2 and 3.

Sample No		Northing (AGD66)	Ce_ppm	Cu_ppm	Dy_ppm	Nd_ppm	P_ppm	Pb_ppm	Pr_ppm	Sm_ppm	Sr_%	Y_ppm
VALA 51	424636	7392985	1500	140.5	22.4	894	27800	357	235	103	2.87	66.3
VALA 52	424988	7392989	730	204	16.05	418	13850	166	113.5	56.2	1.24	56.7
VALA 55	426195	7392949	1060	168	52	694	18600	303	183.5	107.5	1.7	254
VALA 71	424243	7393393	286	307	17.7	160.5	6230	122.5	33.7	24.9	0.33	90.3
VALA 72	423776	7393439	770	186	15.5	456	13800	180.5	106	51.7	1.24	56.1
VALA 75	424659	7393828	162.5	250	39.7	134.5	5110	95.2	23.6	31.6	0.16	236
VALA 76	425013	7393805	890	246	34.5	512	14850	230	125	65.2	1.09	153
VALA 110	427796	7394990	930	213	25.4	533	14400	180.5	142.5	74.4	1.2	104.5

**Table 1 Anomalous Valroy Lag Sampling Results** 

A rock chip collected in the south eastern corner of the grid returned high REE results of 354ppm yttrium, 130ppm dysprosium, 190ppm gadolinium, 611ppm praseodymium, 273ppm samarium, 6.16% phosphorous and 5.92% strontium.

Results show there are a number of strong peripheral anomalies which need to be investigated. This will require extensions to the current sampling grid and is expected to be completed by September 2014.

### 2. Coorabulka EPM19286

In May 2014 Krucible completed a soil sampling program encompassing the two 'borrow pits' where previous anomalous samples are located. The grid was a wide-spaced, first-pass attempt to find zones of potential REE enrichment on the prospect.

Initial portable XRF analysis using an Olympus Delta (DP-4050-HCR) indicated there was potential for anomalous REE in these samples (ASX Announcement 5 June 2014). ALS Global in Townsville assay results confirms the presence of REE (Table 2 shows anomalous results) and shows the portable XRF results in this case are very consistent with the lab values.

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Sample	Easting	Northing	Ce_ppm	Dy nnm	Nd_ppm	Dh. nnm	Pr_ppm	Sr nnm	V nnm
No	(AGD66)	(AGD66)	ce_ppiii	Dy_ppiii	Nu_ppiii	PD_bbiii	FI_ppiii	Sr_ppm	Y_ppm
COOS58	413605	7394600	75.9	20.1	65.9	15	12.85	314	118.5
COOS67	417200	7394601	73.6	13.15	60.1	17.3	12	327	85
COOS68	417601	7394601	107.5	9.75	78.6	45.4	17.05	388	57.8
COOS70	417200	7393800	79.7	6.49	51.9	46	12.25	276	35.3
COOS72	416396	7393799	94.7	7.96	74.4	28.3	17.35	433	43.5
COOS74	415600	7393800	107	8.71	84.8	27.8	19.65	451	46

**Table 2 Anomalous Coorabulka Soil Sample Results** 

The 'borrow pit' is identified as a positive anomaly in a number of the images. However the more exciting features are the stronger anomalies on the eastern and southern margins of this grid indicating a wider zone of enrichment (Figures 4 and 5). Further sampling will be completed to enclose these anomalies.

Krucible also completed costeaning work on the 'borrow pit at Coorabulka during May to determine the density of the nodules in the area. Work is continuing on the samples collected from this. Initial observations suggest the nodules maybe a surface weathering feature approximately 0.5m thick in this area. Beneath the nodules is a grey clay unit of the Cretaceous Allaru Mudstone which is not considered prospective. Whether the unit continues below this unit is not known and further work needs to be completed in this area.

### 3. 3D Magnetic Modelling Coorabulka

Modelling by GeoDiscovery of the magnetic anomaly in the Coorabulka EPM has been completed with preliminary images received. These indicate the magnetic body is deep but has a number of structural features including a series of north-west trending structures which have been cut by large north-south trending lineaments (Figures 6 and 7).

While the magnetic body is not an immediate target the modelling does indicate the area is structurally complex with the possibility of numerous compression phases and re-activation zones, favourable for the mobilisation of enriched fluids. The most obvious structural feature is a deep seated north-south fault which has a magnetic signature from 200m below surface.

Many Carbonatite intrusions have a distinct magnetic signature which is a large, circular isolated body with concentric zonation and can have an associated gravity anomaly. Coorabulka has some similar features to this type with an isolated circular magnetic feature up to 10km wide. Zonation of the body is complicated by the strong deformation caused by structures. Work is continuing on the magnetic interpretations of this interesting anomaly.

Attached Figures 2-7
Annexure A

**Further Information:** 



Allan Branch Managing Director & CEO 17<sup>th</sup> July 2014



About Krucible Metals Limited:

Listed on Australia's main stock exchange since 2007, Krucible is an Australian-based resources company with an enviable history of discovery in phosphorus and rare earths as well as other elements. Krucible continues to explore for precious metals, base metals and strategic metals, and is transitioning to a combined exploration and mining company. Krucible has plans and expectations to ultimately enter joint ventures to develop mines on its tenements in the mineral rich Mount Isa area of northwestern Queensland and elsewhere. Krucible has a strong industry-based board and management, who promote aggressive value-added mining projects.

#### COMPETENT PERSON STATEMENT

"The information in this report that relates to Mineral resources and Exploration Results is based on information compiled by Mr Andrew J Vigar who is a Fellow of The Australasian Institute of Mining and Metallurgy and is employed by Mining Associates Limited, Hong Kong and is a non-executive director of Krucible Metals Ltd. Mr Vigar 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'. Mr Vigar consents to the inclusion in this report of the matters based on his information in the form and context in which it appears".

Results are from ALS Global using REE method ME-MS61r. Phosphate results are calculated using the conversion factor 2.291. yttrium oxide results are calculated using the conversion factor 1.27 and cerium oxide calculated using conversion factor 1.22

This report may contain forward-looking statements. Any forward-looking statements reflect management's current beliefs based on information currently available to management and are based on what management believes to be reasonable assumptions. A number of factors could cause actual results, or expectations to differ materially from the results expressed or implied in the forward looking statements.



## Annexure A <u>Table 1 – Sampling Techniques and Data</u>

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation,	Lag Sampling - Surface geochemical sampling technique involving the collection of surface rock material from a specific point and sieving to fraction size +2mm -6mm.
	such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.	Soil Sampling - Surface geochemical sampling technique involving the collection of soil material in this case from 40-45cm below surface at a specific GPS location. Sample was sieved to a -2mm fraction size before bagged.
	<ul> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> </ul>	The samples were collected at a number of sites within a 100m radius of the GPS point. Each sample was on average 1-2kg.
	<ul> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> </ul>	No mineralisation identified in the field refer to Laboratory results
Drilling techniques	• In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	No drilling competed
Drill sample	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	No drilling competed
recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> </ul>	No drilling competed
	<ul> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> </ul>	No drilling competed
Logging	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.	No drilling competed
	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.	No drilling competed
	<ul> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> </ul>	No drilling competed



### Table 1 Cont.

Criteria	JORC Code explanation	Commentary
	The total length and percentage of the relevant intersections logged.	No drilling competed
Sub-	If core, whether cut or sawn and whether quarter, half or all core taken.	No drilling competed
	• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	No drilling competed
sampling techniques and	<ul> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> </ul>	No drilling competed
sample preparation	<ul> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> </ul>	No drilling competed
	<ul> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> </ul>	No drilling competed
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered appropriate to the grain size of the material collected.
Quality of assay data and	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	The assay method (ME-MS61r) used by ALS Global Laboratories is considered to represent the leachable portion of the REE's. The method is considered appropriate for the level of exploration.
laboratory tests	• 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.	ALS Global Laboratory Results
Verification	<ul> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	ALS Global completes their own QAQC procedures no procedures were completed by Krucible which is considered acceptable for the level of exploration.
of sampling and	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> </ul>	No drilling competed
assaying	The use of twinned holes.	No drilling competed
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All data was collected initially on paper ledgers which have been transferred to a digital database with the company's coding templates.
	Discuss any adjustment to assay data.	No adjustments have been made
Location of data points	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.	Sample points were located using a Garmin 76 GPS with an accuracy of 5m
	Specification of the grid system used.	All surveys were MGA Zone54 (AGD66)



### Table 1 Cont.

Criteria	JORC Code explanation	Commentary
Data spacing and distribution	Quality and adequacy of topographic control.	Topographical control is sufficient for the stage of exploration
	Data spacing for reporting of Exploration Results.	Sample points were on a 400x800m spacing on the Coorabulka EPM with 2 infill rows and 400x400m spacing's on the Valroy prospect
	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.	Not sufficent sampling to determine resource
Orientation	Whether sample compositing has been applied.	Not Applied
of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	No bias attributable to orientation of sampling
Sample security	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.	No drilling competed
Audits or reviews	The measures taken to ensure sample security.	Standard sample security protocols were observed
	The results of any audits or reviews of sampling techniques and data.	It is considered by the Company that industry best practice methods have been employed at all stages of the exploration. No reviews were completed



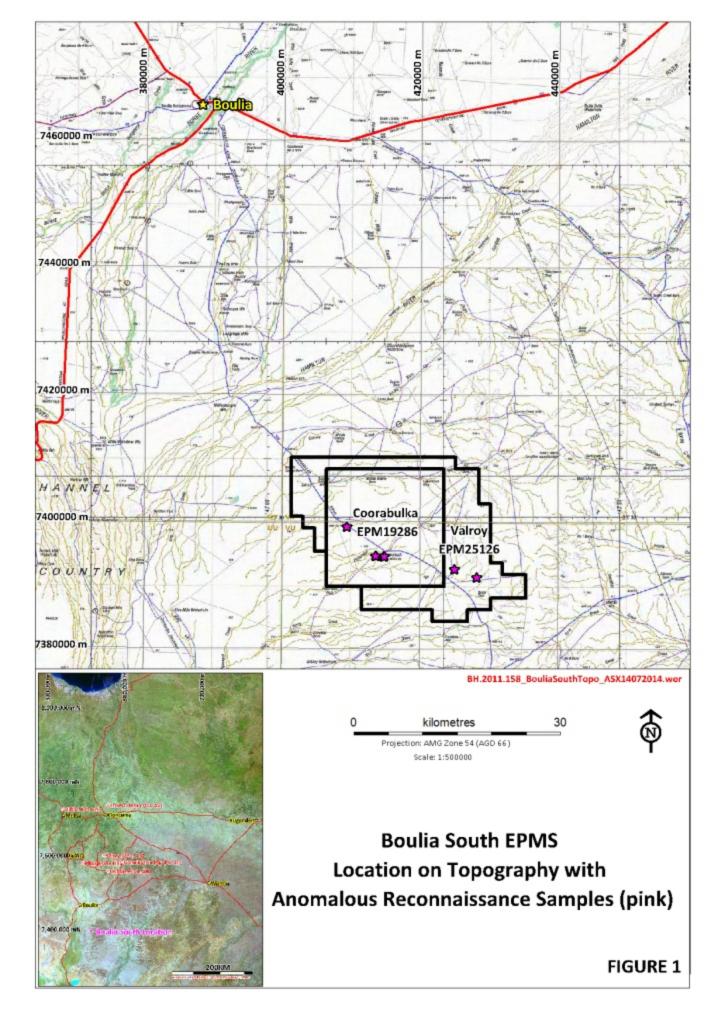
### <u>Table 2 – Reporting of Exploration Results</u>

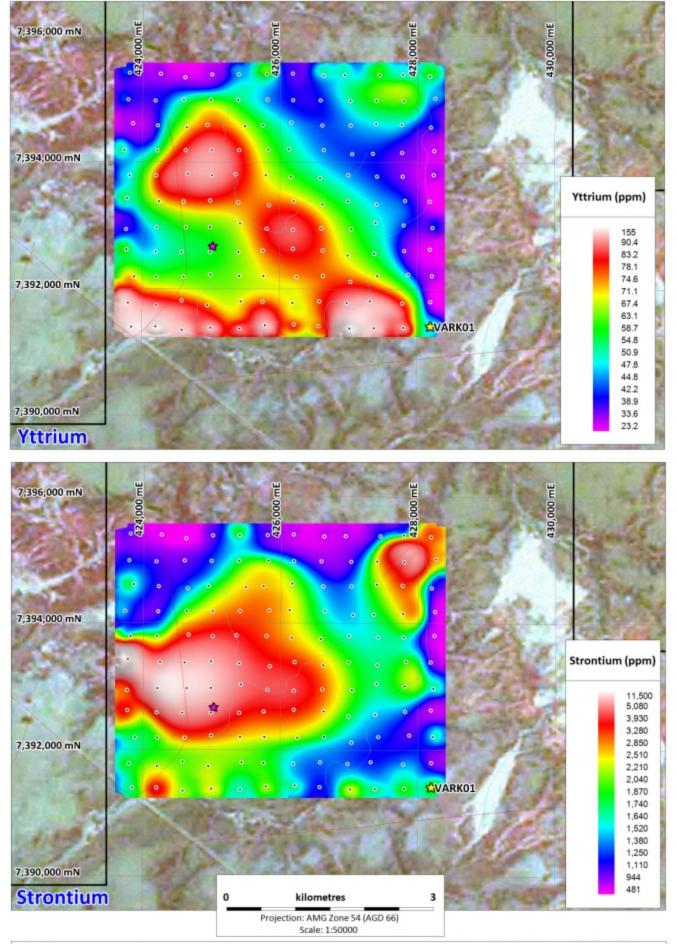
Criteria	JORC Code explanation	Commentary		
Mineral tenement and land tenure	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	Krucible owns 100% of all of its tenements including Coorabulka EPM19286 and Valroy EPM25126. The native title determination is the Pitta pitta people and Krucible has an Ancillary agreement with the Pitta pitta people over both EPMs		
status	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	The tenements are in good standing and no known impediments exist.		
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	Exploration was completed by Krucible staff only		
Geology	<ul> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	The mineralisation style targeted is secondary rare earth enrichment in Cretaceous sediments		
	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</li> </ul>	No drilling competed		
	o easting and northing of the drill hole collar	No drilling competed		
	o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar	No drilling competed		
Drill hole	o dip and azimuth of the hole	No drilling competed		
Information	o down hole length and interception depth	No drilling competed		
	o hole length.	No drilling competed		
	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.	No drilling competed		
	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> </ul>	No mineralisation recorded		
Data aggregation methods	<ul> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> </ul>	No mineralisation recorded		
	<ul> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	No mineralisation recorded		
	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> </ul>	No mineralisation recorded		
Relationship between mineralisation widths and	<ul> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> </ul>	No mineralisation recorded		
intercept lengths	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	No mineralisation recorded		



### Table 2 - Cont.

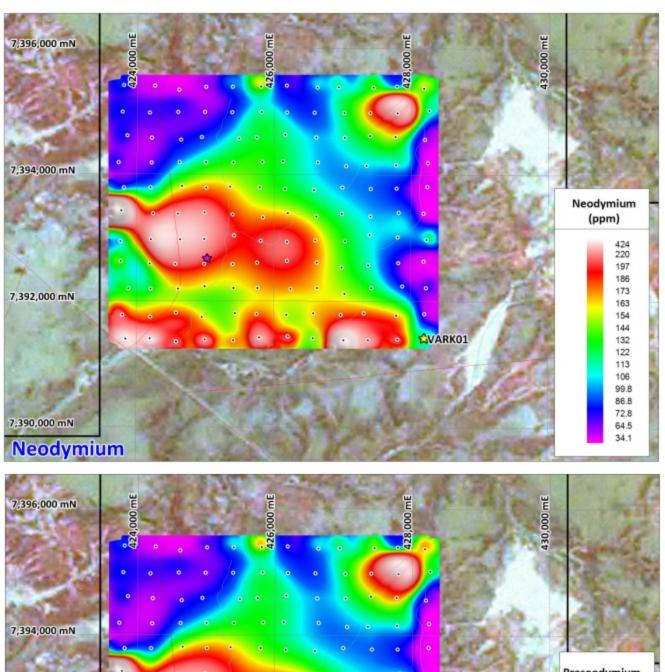
Criteria	JORC Code explanation	Commentary		
Diagrams	. Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Figures in text		
Balanced reporting	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.	Maps representing all results are provided in Figures 2, 3, 4, and 5.		
Other substantive exploration data	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.	Further work is planned for exploration including further surface sampling, and potential drilling.		
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).	Figures in text		
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Figures in text		

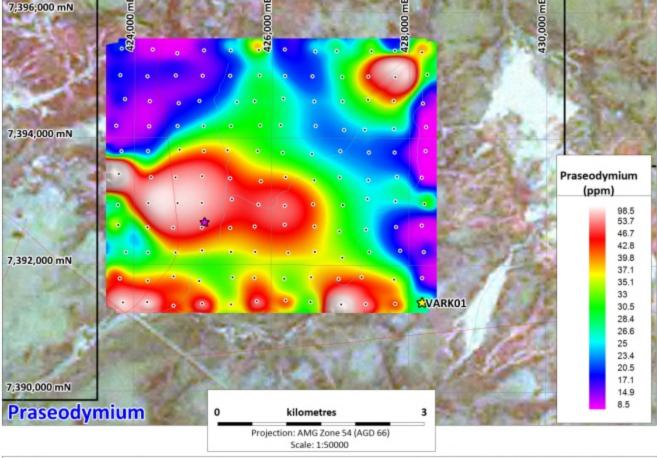




n.b. pink stars are anomalous recon samples

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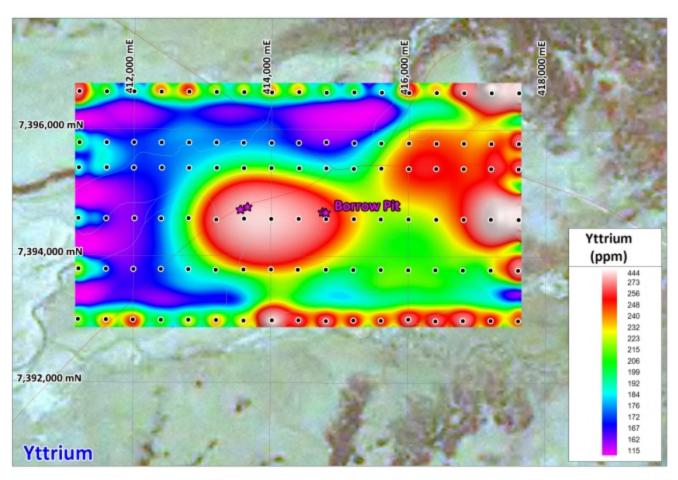


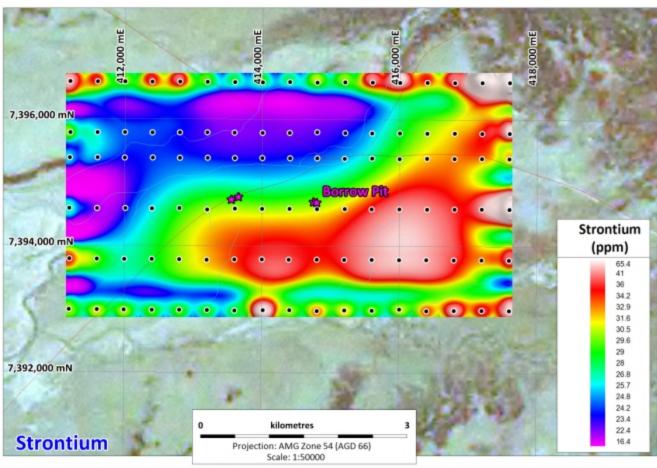


n.b. pink stars are anomalous recon samples

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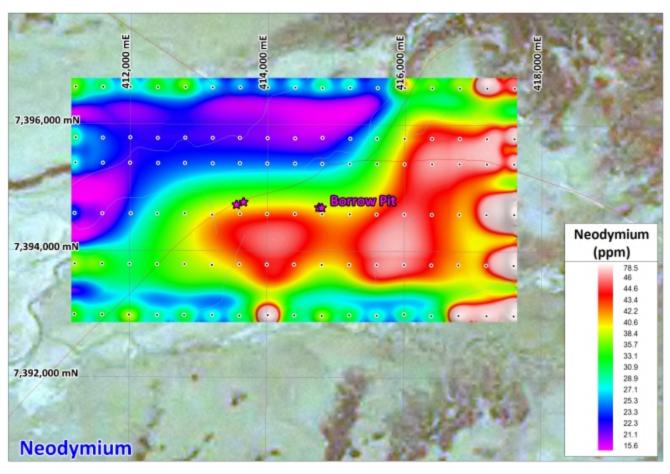
Valroy EPM25126 - Lag Sampling Results

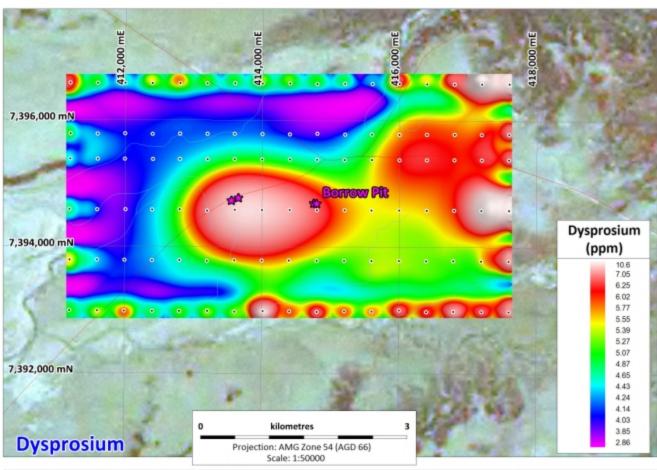




n.b. pink starts are anomalous rare earth recon samples

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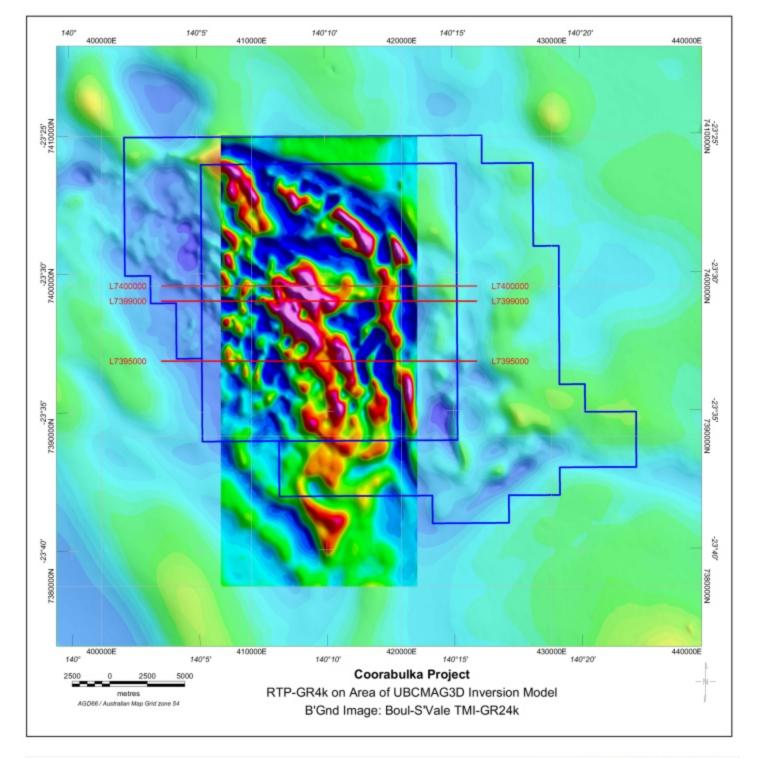


n.b. pink starts are anomalous rare earth recon samples

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Coorabulka EPM19286 - Soil Sampling Results

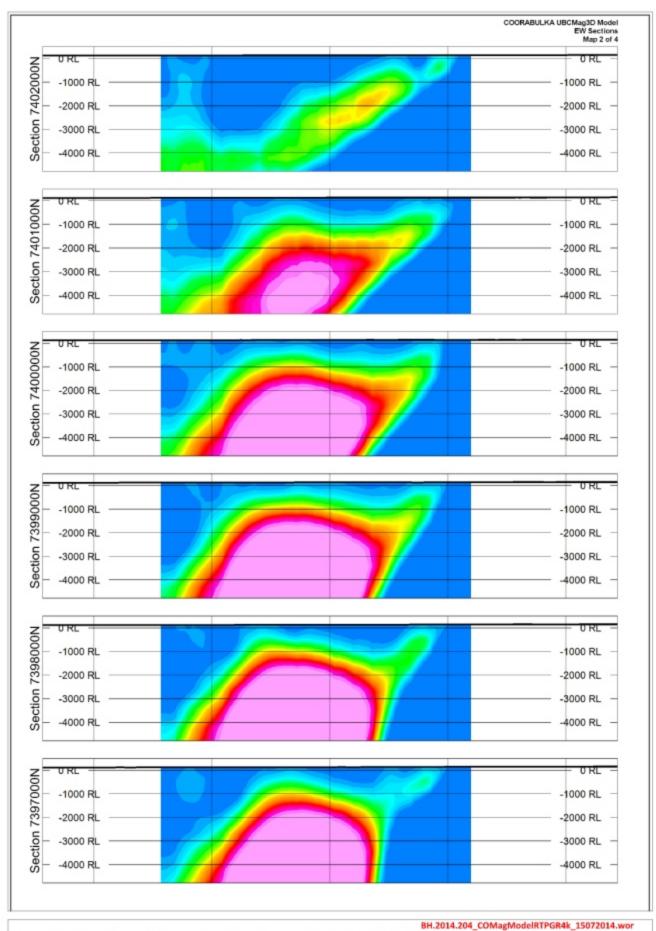
FIGURE 5



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Boulia South EPMs - Preliminary 3D Modelling Image RTP-GR4k (GeoDiscovery)

FIGURE 6



Boulia South EPMs - Preliminary 3D Modelling East-West Cross-Sections (GeoDiscovery)

FIGURE 7