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# MAIDEN JORC RESOURCE FOR YANGIBANA PROJECT

### <u>HIGHLIGHTS</u>

- Maiden JORC resource estimate for the Yangibana Project
- Total JORC Resource of 3.36 million tonnes comprising Indicated Resource of 1.86 million tonnes at 1.38% TREO and Inferred Resource of 1.50 million tonnes at 1.29% TREO at a 0.5% TREO cut-off
- Major increase of 290% in contained TREO compared to previous non-JORC estimate
- Significant Neodymium (Nd<sub>2</sub>O<sub>3</sub>), a critical rare earth oxide, is included in the contained TREO, with average grade of 2,700ppm (0.27%)
- Upgraded resource covers only 825m of strike length to a maximum 400m down-dip to a maximum vertical depth of 100m below surface
- Resource remains open in all directions with mineralisation cropping out to east and west
- Additional reverse circulation and diamond drilling to commence in Q4 on neighbouring targets within the 550 sq km tenements at Yangibana

#### YANGIBANA PROJECT

The Directors of Hastings Rare Metals Limited (ASX: HAS or the Company) are pleased to announce the results of the maiden JORC resource estimate for the Yangibana Project. The estimate is based on the Company's May 2014 reverse circulation (RC) drilling programme at the Yangibana North prospect in which Hastings holds a 70% interest.





The estimate was carried out by independent consultants CoxRocks Pty Limited. A summary of the report on the estimation methodology will be available on the Company's web site in the coming weeks.

The drilling programme comprised 44 reverse circulation (RC) holes totalling 1,836m. The holes were drilled on a nominal 50m by 50m grid, perpendicular to the strike of the outcropping mineralisation, and all holes were collared at -60°. Internal surveys at 30m intervals in most holes indicated minimal deviation.

The mineralisation intersected in Hastings' drilling conforms to a shallow, southwards dipping, well mineralised body of ironstone-quartz with a variable thickness of less mineralised fenitically-altered granite halo.

Samples recovered from the drilling process were split through a cyclone mounted splitter with representative sub-samples of approximately 2kg collected from each metre. Samples to be sent for analysis were selected based on geological logging of the drill chips to identify target zones supplemented by use of a hand-held scintillometer. The remainder of each one metre sample has been stored for future analytical requirements and preliminary metallurgical test work.

The selected one-metre samples were delivered to Genalysis in Perth for analysis. All samples were milled to nominal 75 micron and then subjected to sodium peroxide fusion prior to the determination of the rare earth suite, rare metals, uranium and thorium via the analytical technique ICP\_MS.

The deposit was modelled based on the ironstone-quartz lens plus any portions of the halo that carried immediately adjacent mineralisation exceeding 5,000ppm total rare earths oxides (TREO). One continuous and consistent wire-frame was constructed and the drill data was sub-set within this framework. No high grade outliers were identified in the data based on a cumulative log probability plot and no cut of high grade assay was required. A search ellipse was assigned to the mineralised unit based on review of the dip and strike of the mineralisation. Using the sub-set data for the interpretation grade estimation was carried out using inverse distance squared methodology (ID2).

The cut-off grade of 5,000ppm (0.5%) TREO was based on the strong correlation of this grade to the mineralised interval, with only areas comprising predominantly quartz within the wireframe being removed from the calculation. This is considered reasonable as these quartz zones are generally discrete and would be readily removed from the process either by selective mining or possibly by beneficiation. Incorporating this cut-off grade provides a realistic estimate of the material that might be expected to be extracted by a low cost and simple open pit mining operation.

Metallurgical test work will commence in the near future to determine the potential to recover the target mineralisation within the deposit, but preliminary indications based on





mineralogical studies and analogies with similar mineralisation styles suggest a potential to produce saleable products.

The 3-D model was produced within which block-modelling was carried out. Resource grades were calculated for each of the rare earths and the relevant figures were summed to provide TREO and critical rare earths oxides (CREO) figures. An estimate of specific gravity/bulk density of 2.8 was used in the estimation of tonnes, and this provided the following resources:-

Cut-off grade ppm (%) TREO	Resource Category	Tonnes	Average Grade ppm (%) TREO	Including ppm (%) CREO
5,000 (0.5)	Indicated	1,860,000	13,800 (1.38)	3,000 (0.30)
	Inferred	1,500,000	12,900 (1.29)	2,800 (0.28)
	TOTAL	3,360,000	13,400 (1.34)	2,900 (0.29)

The density of drilling, the consistent interpretation of the mineralised zone both between drillholes and in surface exposure, and the homogeneity of the mineralisation allowed the independent consultant to classify the drilled portion of the deposit as Indicated Resources. Then based on the continuity of the mineralised zone at surface to both east and west, the existence of historical drilling data to both east and west, and the strength of the mineralisation at depth, as indicated in Hastings' previous ASX release of 15<sup>th</sup> July 2014, the independent consultant had the confidence to estimate Inferred Resources over the area as shown in Figure 1.

The Critical Rare Earth Oxides (CREO) contribute 0.29% of the average grade of TREO of 1.34% (being 21.6% of the average grade TREO). Significantly, the major component of the CREO was Neodymium (Nd<sub>2</sub>O<sub>3</sub>) with average grade of 2,700ppm (0.27%). Neodymium is critical for the manufacture of Permanent Magnets (wind and power turbines), electronic components (heat resistant ceramics) and rechargeable consumer batteries.

These resource estimates represent a major increase in contained tonnes compared to the non-JORC resource figures estimated following the last 1988 drilling campaign. The 1988 figures indicated 15,350 tonnes of contained TREO whereas the new JORC resource contains 45,000 tonnes of contained TREO, a significant increase of 290%.

The location of the resources is shown in plan view in Figure 1.

Cross sections (facing grid east) of the Indicated and Inferred Resources in Figures 2, 3 and 4 are from the western, central and eastern lines respectively and indicate the shallow dip of the mineralisation, with drilling to date intersecting mineralisation at a maximum depth of 75m below surface. Figure 5 provides an isometric view of the Indicated Resources viewed





towards the northwest, and clearly shows that the mineralisation appears to be strengthening at depth, particularly in the southeast.

The new upgraded resource covers some 825m of strike of the outcropping Yangibana North prospect that is part of a discontinuous 12km trend of ironstone-quartz bodies that are known to carry significant rare earths. The May 2014 drilling tested the target to only 200m down dip and all mineralisation intersected to date is generally shallow within 75m of surface.

Composite bulk samples have been collected from all 44 holes for preliminary metallurgical test work which will commence in the third quarter 2014.

Consideration will now be given to expanding the Yangibana North resource and to test a number of the many other targets within Hastings' extensive tenement package at Yangibana totalling some 550 square kilometres. In particular, Bald Hill and Frasers prospects (Hastings owns 95%) have potential to host mineralisation with a significantly higher in-ground value than the Yangibana North mineralisation at current commodity prices.

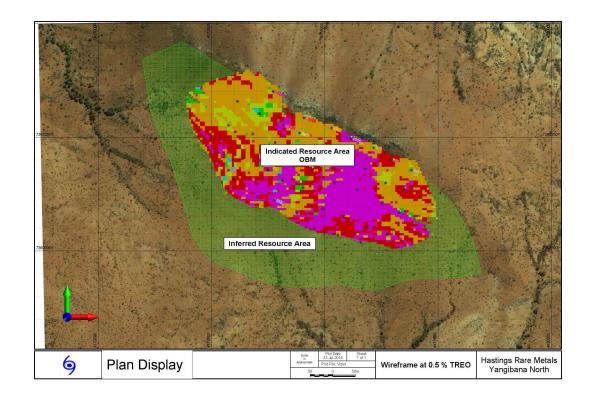
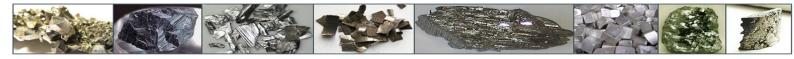


Figure 1 – Yangibana North – Plan showing Indicated Resources (purple to yellow) and Inferred Resources (green) based on May 2014 RC drilling programme





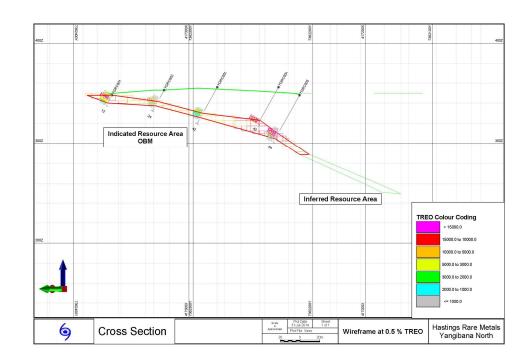


Figure 2 – Yangibana North – May 2014 RC Drilling Cross Sections showing Indicated and Inferred Resources (facing east) – Western Most Section

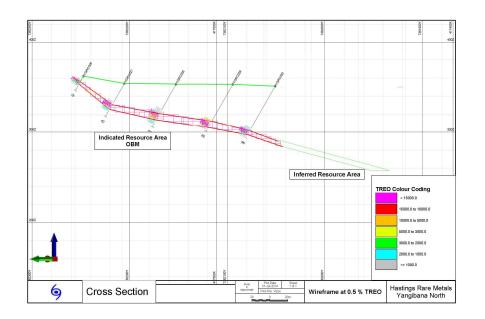


Figure 3 – Yangibana North – May 2014 RC Drilling Cross Sections showing Indicated and Inferred Resources (facing east) – Central Section





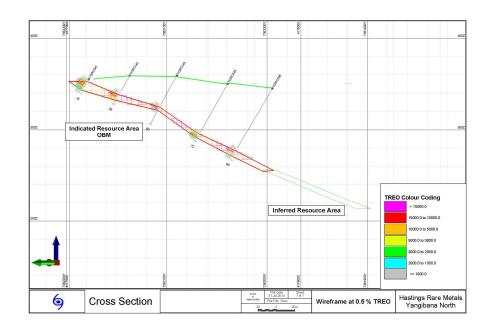


Figure 4 – Yangibana North – May 2014 RC Drilling Cross Sections showing Indicated and Inferred Resources (facing east) – Eastern Most Section

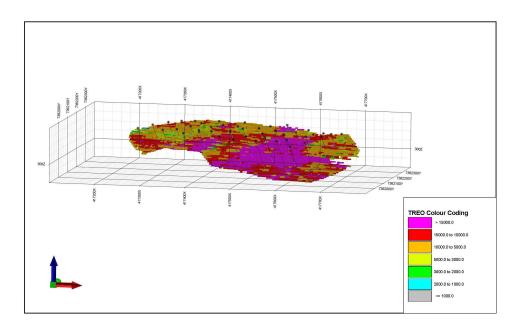


Figure 5 – Yangibana North – May 2014 RC Drilling Indicated Resources – Isometric View to Northwest





\* **TREO** is the sum of the oxides of the heavy rare earth elements (HREO) and the light rare earth elements (LREO).

**HREO** is the sum of the oxides of the heavy rare earth elements europium (Eu), gadolinium (Gd), terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb), lutetium (Lu), and yttrium (Y).

**CREO** is the sum of the oxides of neodymium (Nd), europium (Eu), terbium (Tb), dysprosium (Dy), and yttrium (Y) that were classified by the US Department of Energy in 2011 to be in critical short supply in the foreseeable future.

**LREO** is the sum of the oxides of the light rare earth elements lanthanum (La), cerium (Ce), praseodymium (Pr), neodymium (Nd), and samarium (Sm).

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#### **About Hastings Rare Metals**

- Hastings Rare Metals is a leading Australian rare earths company, with two JORC compliant rare earths projects in Western Australia.
- The Hastings deposit contains JORC Indicated and Inferred Resources totalling 36.2 million tonnes (comprising 27.1mt Indicated Resources and 9.1mt Inferred Resources) at 0.21% TREO, including 0.18% HREO, plus 0.89% ZrO<sub>2</sub> and 0.35% Nd<sub>2</sub>O<sub>5</sub>.
- The Yangibana deposit contains JORC Indicated and Inferred Resources totalling 3.36 million tonnes at 1.34% TREO, including 0.29% of CREO (that includes 0.27% Nd<sub>2</sub>O<sub>3</sub>) (comprising 1.86 million tonnes at 1.38% TREO Indicated Resources and 1.50 million tonnes at 1.29% TREO in Inferred Resources).
- Rare earths are critical to a wide variety of current and new technologies, including smart phones, hybrid cars, wind turbines and energy efficient light bulbs.
- The Hastings deposit contains predominantly heavy rare earths (85%), such as dysprosium and yttrium, which are substantially more valuable than the more common light rare earths.
- The Company aims to capitalise on the strong demand for heavy rare earths created by expanding new technologies. It has recently validated the extensive historical work and completed a Scoping Study to confirm the economics of the Project.





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

The information in this report that relates to Resources is based on information compiled by Simon Coxhell. Simon Coxhell is a consultant to the Company and a member of the Australasian Institute of Mining and Metallurgy. The information in this report that relates to Exploration Results is based on information compiled by Andy Border, an employee of the Company and a member of the Australasian Institute of Mining and Metallurgy.

Each has sufficient experience relevant to the styles of mineralisation and types of deposits which are covered in this report and to the activity which they are 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' ("JORC Code"). Each consents to the inclusion in this presentation of the matters based on his information in the form and context in which it appears.



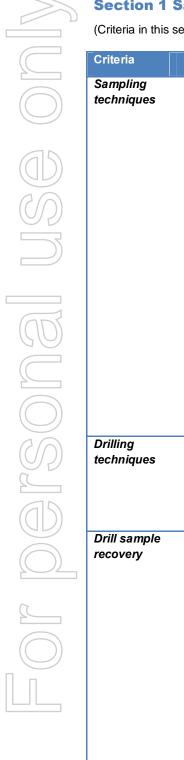


### JORC Code, 2012 Edition – Table 1

#### **Section 1 Sampling Techniques and Data**

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (eg 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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> </ul>	<ul> <li>Reverse circulation drilling was carried out at the Yangibana North prospect to obtain drill chip samples from one-metre intervals from which a 2- 4kg sample was collected for submission to the laboratory for analysis for rare earths, rare metals, U and Th. Mineralised zones were identified visually during geological logging in the field.</li> <li>Samples from each metre were collected in a cyclone and split using a 3 level riffle splitter. Field duplicates and Reference Standards were inserted at a rate of approximately 1 in 40.</li> </ul>
Drilling techniques	<ul> <li>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).</li> </ul>	<ul> <li>Reverse Circulation drilling at Yangibana North utilising a nominal 5 1/4 inch diameter face- sampling hammer</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul> <li>Recoveries are recorded by the geologist in the field at the time of drilling/logging.</li> <li>If poor sample recovery is encountered during drilling, the geologist and driller have endeavoured to rectify the problem to ensure maximum sample recovery. Visual assessment is made for moisture and contamination. A cyclone and splitter were used to ensure representative samples and were routinely cleaned.</li> <li>Sample recoveries to date have generally been high, and moisture in samples minimal. Insufficient data is available at present to determine if a relationship exists between recovery and grade. This will be assessed once a statistically valid amount of data is available to make a</li> </ul>







Criteria	JORC Code explanation	Commentary
Criteria Logging Sub- sampling techniques and sample preparation	<ul> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all subsampling stages to maximise representivity of samples.</li> <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> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>Commentary <ul> <li>determination.</li> </ul> </li> <li>All drill chip samples are geologically logged at 1r intervals from surface to the bottom of each individual hole to a level that will support appropriate future Mineral Resource studies.</li> <li>Logging is considered to be semi-quantitative given the nature of reverse circulation drill chips and the inability to obtain detailed geological information.</li> <li>All RC drill holes in the current programme are logged in full.</li> <li>The RC drilling rig was equipped with an in-built cyclone and triple tier riffle splitting system, which provided one bulk sample of approximately 20kg, and a sub-sample of 2-4kg per metre drilled.</li> <li>All samples were split using the system described above to maximise and maintain consistent representivity. The majority of samples were dry. For wet samples the cleanliness of the cyclone and splitter was constantly monitored by the geologist and maintained to avoid contamination.</li> <li>Bulk samples were placed in green plastic bags, with the sub-samples collected directly off the splitter as drilling proceeded through a secondary sample chute. These duplicates were designed fo lab checks as well as lab umpire analysis.</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <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>	<ul> <li>A sample size of 2-4kg was collected and considered appropriate and representative for the grain size and style of mineralisation</li> <li>Genalysis (Perth) was used for all analysis work carried out on the 1m drill chip samples and the rock chip samples. The laboratory techniques below are for all samples submitted to Genalysis and are considered appropriate for the style of mineralisation defined at the Yangibana REE Project:</li></ul>
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel.	<ul> <li>At least two company personnel verify all significant intersections.</li> <li>All geological logging and sampling information is</li> </ul>







**JORC Code explanation** 

Criteria

## **ASX Announcement** 5 August 2014

Commentary

Location of data points	<ul> <li>(physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>the Hastings head office for scanning and storage. Electronic copies of all information are backed up daily.</li> <li>No adjustments of assay data are considered necessary.</li> <li>A Garmin GPSMap62 hand-held GPS is used to define the location of the drill hole collars. Standard practice is for the GPS to be left at the site of the collar for a period of 5 minutes to obtain a steady reading. Collar locations are considered to be accurate to within 5m. Collars will be picked up by DGPS in the future. Down hole surveys are conducted by the drill contractors using a Reflex electronic single-shot camera with readings for dip and magnetic azimuth nominally taken every 30m down hole, except in holes of less than 30m. The instrument is positioned within a stainless steel drill rod so as not to affect the magnetic azimuth.</li> </ul>
		<ul> <li>Grid system used is MGA 94 (Zone 50)</li> <li>Topographic control is obtained from surface profiles created by drillhole collar data. It will be necessary to undertake more detailed topographic controls later in the programme.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Drill hole spacing is nominally 50m along drill- lines, with a line spacing of 50m. Collar locations were varied slightly dependent on access at a given site. Regional rock chip samples were collected at sites of interest.</li> <li>A drill hole section spacing of 50m is used with hole spacings at 50m. Further details are provided in the collar co-ordinate table contained elsewhere in this report.</li> <li>No sample compositing is used in this report, all results detailed are the product of 1m down hole sample intervals.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	
Sample security	• The measures taken to ensure sample security.	<ul> <li>The chain of custody is managed by the project geologist who places calico sample bags in</li> </ul>





Criteria	JORC Code explanation	Commentary
		<ul> <li>polyweave sacks. Up to 10 calico sample bags are placed in each sack. Each sack is clearly labelled with:</li> <li>Hastings Rare Metals Ltd</li> <li>Address of laboratory</li> <li>Sample range</li> </ul>
		<ul> <li>Samples were delivered by Hastings personnel to the Nexus Logistics in order to be loaded on the next available truck for delivery to Genalysis. The freight provider delivers the samples directly to the laboratory. Detailed records are kept of all samples that are dispatched, including details of chain of custody.</li> </ul>
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul> <li>No audit of sampling data has been completed to date but a review will be conducted once all data from Genalysis (Perth) has been received. Data is validated when loading into the database and will be validated again prior to any Resource estimation studies.</li> </ul>

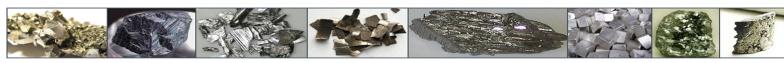




### **Section 2 Reporting of Exploration Results**

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

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul> <li>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.</li> <li>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.</li> </ul>	<ul> <li>The RC drilling at Yangibana North was all within E09/1043. 70% held by Gascoyne Minerals Pty Ltd, 30% GTI Resources Ltd.</li> <li>The tenements are in good standing and no known impediments exist.</li> </ul>
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	• A limited amount of RC drilling was completed at Yangibana North in the 1980s by Hurlston Pty Limited. Minor rock chip sampling has been carried out more recently but adds little to the project.
Geology	<ul> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul> <li>The Yangibana North Ironstone is a ironstone-quartz vein unit outcropping over approximately 800m. This ironstone unit is known to host REE mineralisation. The unit is thought to dip approximately 20 degrees to the south, generally with a width of approximately 3-4m.</li> <li>It is one of a series of ironstone lenses that have been explored previously to limited degree for base metals, manganese, uranium, diamonds and rae earths.</li> <li>The ironstones are considered by GSWA to be coeval with the numerous carbonatite sills that occur within Hastings tenements, or at least part of the same magmatic/hydrothermal system.</li> </ul>
Drill hole Information	<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: <ul> <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> </li> <li>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.</li> </ul>	Refer to details of drilling in table in the body of this report and the appendices.





Criteria	JORC Code explanation	Commentary
aggregation methods	<ul> <li>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> <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> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>down hole intervals and as such are length weighted. A lower cut-off grade of 5000ppm TREO has been used for assessing significant intercepts, and no upper cut-off grade was applied.</li> <li>Maximum internal dilution of 1m was incorporated in reported significant intercepts.</li> <li>No metal equivalents are used for reporting.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>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').</li> </ul>	<ul> <li>True widths for mineralisation have not been calculated and as such only down hole lengths have been reported.</li> <li>While interpretation of the results is still in the early stages, a better understanding of the geometry of the deposit will be achieved, and true widths reported, later in the programme. It is expected that true widths will be less than down hole widths, due to the apparent steep nature of the mineralisation.</li> </ul>
Diagrams	<ul> <li>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.</li> </ul>	<ul> <li>Appropriate maps and sections are available in the body of this ASX announcement.</li> </ul>
Balanced reporting	<ul> <li>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.</li> </ul>	<ul> <li>Reporting of results in this report is considered balanced.</li> </ul>
Other substantive exploration data	<ul> <li>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.</li> </ul>	<ul> <li>No other significant exploration work has been done by Hastings.</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions, depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul> <li>Insufficient results from Hastings drilling have been received to date and as such there is currently insufficient data to confirm a plan for follow-up work.</li> </ul>





### **Section 3 Estimation and Reporting of Mineral Resources**

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	<ul> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul> <li>Data was provided as a validated Access Database and digitally imported into Micromine Mining Software.</li> <li>Micromine validation routines were run to confirm validity of all data.</li> </ul>
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul> <li>No site visits have been undertaken, the competent person is familiar with the general area and geological model and sufficient data and documentation has been provided to negate a site visit.</li> </ul>
Geological interpretatio n	<ul> <li>Confidence in (or conversely, the uncertainty of ) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul> <li>The confidence in the geological interpretation is excellent.</li> <li>Detailed geological logging and surface mapping allows extrapolations of drill intersections from section to section.</li> <li>Alternative interpretations will result in similar tonnage and grade estimation techniques</li> <li>Geological boundaries are determined by the spatial locations of the various mineralized structures</li> <li>Quartz iron rich zones associated with ox carbonate rich zones and corresponding increase in rare earths are the key factors affecting continuity</li> </ul>
Dimensions	• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	<ul> <li>The Indicated Mineral Resource is 600 metres long (NE) by 200 metres wide (shallow dipping 2-8 metre wide vein) by 50 metres deep.</li> </ul>
Estimation and modelling techniques	<ul> <li>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> </ul>	<ul> <li>Grade Estimation using Inverse Distance Squared was used for all rare earth elements. One Wireframe was used to subset and constrain the data points used in the interpolation and only individual grades from individual wireframes were used.</li> <li>A previous non JORC compliant resource has been made and is consistent given the drilling at the time with this latest estimate.</li> <li>No assumptions have been made regarding recovery of</li> </ul>







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Criteria	JORC Code explanation	Commentary
	<ul> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> <li>Description of how the geological interpretation was used to control the resource estimates.</li> <li>Discussion of basis for using or not using grade cutting or capping.</li> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	<ul> <li>by-products.</li> <li>No estimation of any deleterious elements have been made</li> <li>The block model was constructed using a 10m X 10m x 5m block size, constrained by one individual wireframes. One interpolation passes were made, with a 140m X 80 m X 4 m search orientated parallel to the azimuth and dip of the mineralized zone (no plunge component assumed) to ensure all portions of the wireframe were filled.</li> <li>Geological interpretation of a consistent shallow dipping vein structure (2-8 metres true thickness).</li> <li>Visual validation of comparing block grades with drill hole assay values, via cross sections, plans and long sections was completed.</li> </ul>
Moisture	<ul> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	<ul> <li>Tonnages are estimated on a dry basis.</li> </ul>
Cut-off parameters	<ul> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul> <li>A nominal cut off 0.5% TREO corresponds with the visual mineralisation as determined by quartz and iron stone, coupled to anomalous scintillometer values effectively maps the mineralised zones.</li> </ul>
<i>Mining factors or assumptions</i>	<ul> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</li> </ul>	<ul> <li>The mining scenario if the deposit is shown to be economically viable would be a simple open pit mine.</li> <li>The shallow dipping nature of the mineralisation lends itself to a low strip ratio open it mining operation.</li> </ul>
Metallurgical factors or assumptions	<ul> <li>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</li> </ul>	<ul> <li>Representative samples have been collected from the recent drilling campaign to conduct metallurgical testwork.</li> <li>It is thought that simple gravity/flotation techniques may be applicable for the production of a high grade rare earth concentrate.</li> </ul>
Environmen-	Assumptions made regarding possible waste and process residue	No assumptions at this stage in regards to environmental





Criteria	JORC Code explanation	Commentary
tal factors or assumptions	disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	factors or assumptions have been made.
Bulk density	<ul> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul> <li>An insitu bulk density of 2.60 tonnes per cubic metre has been assumed for the mineralization. This is likely to be conservative (10-15%) and diamond drilling is required to obtain samples for ISBD work.</li> </ul>
Classificatio n	<ul> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul> <li>The Mineral Resource has been classified as Indicated.</li> <li>Additional data collection relating to the measurement of the insitu bulk density (ISBD) will result in the Indicated Resource being upgraded to Measured.</li> <li>The result of the Resource Estimation reflects the view of the Competent Person</li> </ul>
Audits or reviews	• The results of any audits or reviews of Mineral Resource estimates.	This is the maiden JORC 2012 Resource Estimate for Yangibana North and no audits have been carried out.
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.	<ul> <li>The relative accuracy of the Mineral Resource is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JOC Code.</li> <li>The statement relates to global estimates of tonnes and grade.</li> </ul>







Criteria	JORC Code explanation	Commentary
	<ul> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	



Consultants to the Exploration and Mining Industry



31 July 2014

The Directors Hastings Rare Metals Limited

Pursuant to the requirements of ASX listing rules 5.6, 5.22 and 5.24 and Clause 9 of the JORC Code 2012 Edition

Report named	ASX Announcement
By	Hastings Rare Metals Limited
Mineral Deposit	Yangibana North Hills Resource Estimation
Dated	5 August 2014

I confirm that I am the Competent Person for the Report and:

- I have read and understood the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition).
- I am a Competent Person as defined by the JORC Code, 2012 Edition, having five years experience that is relevant to the style of mineralisation and type of deposit described in the Report, and to the activity for which I am accepting responsibility.
- I am a Fellow of The Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists.
- I have reviewed the Report to which this Consent Statement applies.

I am a consultant working for CoxsRocks Pty Ltd and engaged by Hastings Rare Metals Limited to prepare the documentation for the Yangibana North Resource Estimate.

I have disclosed to the reporting company the full nature of the relationship between myself and the company, including any issue that could be perceived by investors as a conflict of interest.

I verify that the Report is based on and fairly and accurately reflects in the form and context in which it appears, the information in my supporting documentation relating to Exploration Targets, Exploration Results, Minerals Resources and/or Ore Reserves.

Simon Coxhell Principal Geological Consultant CoxsRocks Pty Ltd

