

**ASX:KRE**

**Kimberley Rare Earths Limited**  
ABN 20 147 678 779

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**Capital Structure**

126.6m shares  
6.0m 25c, 2014 unlisted options  
3.5m 30c, 2014 unlisted options  
0.75m 30c, 2015 unlisted options

**Cash at 31 December 2011**

\$13.6 million

**Market Cap at 31 December 2011**

\$10 million

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13<sup>th</sup> February 2012

## CUMMINS RANGE UPDATE

### KEY POINTS

- **Cummins Range Interim Resource Statement confirms 18% increase in contained TREO to 85,000 tonnes (1% TREO cutoff).**
- **Conversion from Inferred to Indicated JORC classification pending confirmatory additional field work.**
- **Preliminary Evaluation Study activities in progress on all fronts to meet July planned completion date.**

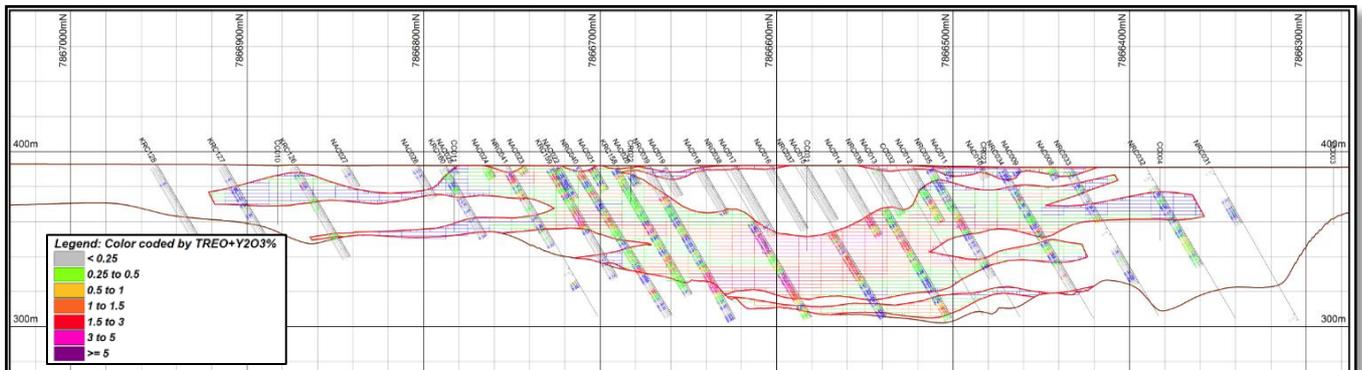
KRE is pleased to provide an update of project development activities for its Cummins Range project in Western Australia.

### Interim Resource Statement<sup>1</sup>

All of the 2011 RC drilling completed by KRE and the historic Navigator RC drilling were combined into a fully validated database and supplied to Hellman and Schofield for resource estimation work. An improved geological model was used to define wire frames from which a solid model was constructed and subsequently used to constrain the final block model.

There is now considerable confidence in the geological model which exhibits good continuity between sections. Strong structural control in a NW-SE orientation is evident with individual loads confined to the regolith that dip gently towards the SW. Block grades were assigned using Ordinary Kriging geostatistical techniques with the search ellipse oriented parallel to the primary structural control. A section through the centre of the block model is shown in Figure 1.

<sup>1</sup> Refer to "Notes on Resource Estimates" appended to the end this document



**Figure 1:** North-South Section 307340E through the resource block model.

Reliable down-hole density measurements were used to estimate a density profile for the regolith however measurements were only obtained from the NW quadrant of the resource and subsequently extrapolated over the entire block model. A 1.0% TREO lower cut-off grade was selected to remain consistent with the previous 2009 resource estimation.

The addition of the new KRE drilling data set and the application of the more rigorous geological model have resulted in a 17% increase in tonnage and a slight improvement in grade as summarised in Table 1.

CUMMINS RANGE INFERRED RESOURCE – 1.0% CUTOFF GRADE						
	Tonnage (Mt)	REO (%)	P <sub>2</sub> O <sub>5</sub> (%)	U <sub>3</sub> O <sub>8</sub> (ppm)	Th (ppm)	Total REO (kt)
2009	4.17	1.72	11.0	187	41	72
2012	4.90	1.74	11.2	145	48	85
Change	+17%	+1%	+2%	-22%	+18%	+18%

**Table 1:** Cummins Range Inferred Resource (1% cutoff grade).

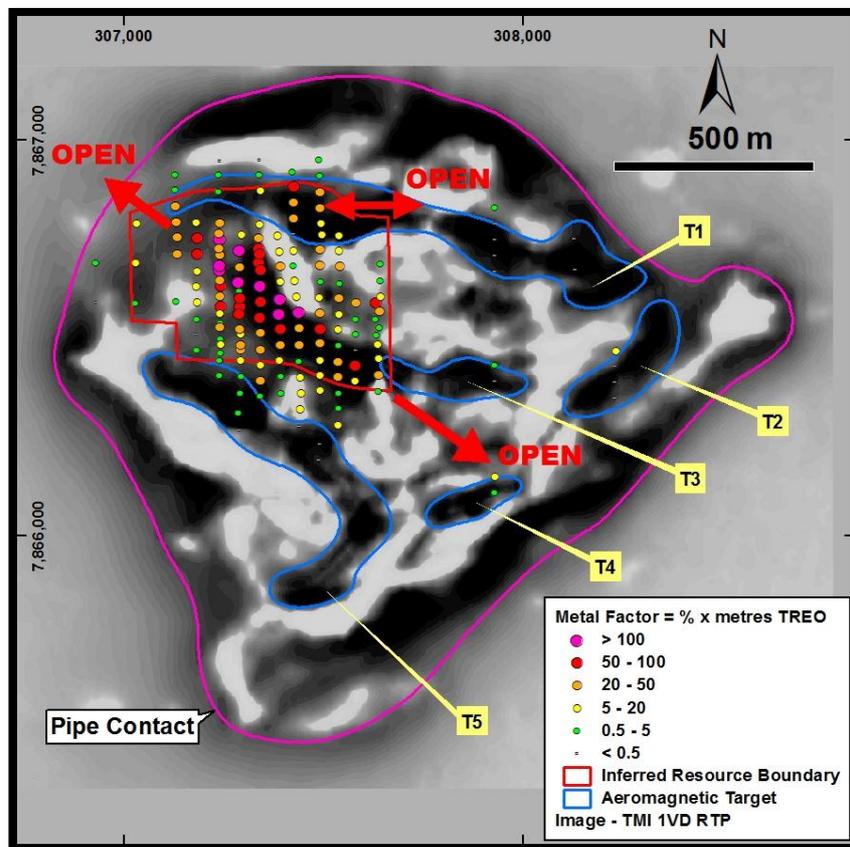
Using a 0.5% TREO cut-off grade results in very similar tonnages to the 2009 resource estimation but produces a marked increase in grade as summarised in Table 2. This result reflects the improvements in the geological model and the consequent new constraints applied to the block model as described above.

CUMMINS RANGE INFERRED RESOURCE – 0.5% CUTOFF GRADE						
	Tonnage (Mt)	REO (%)	P <sub>2</sub> O <sub>5</sub> (%)	U <sub>3</sub> O <sub>8</sub> (ppm)	Th (ppm)	Total REO (kt)
2009	11.15	1.08	9.0	116	41	120
2012	10.76	1.18	10.2	100	47	127
Change	-4%	+10%	+3%	-14%	+1%	+6%

**Table 2:** Cummins Range Inferred Resource (0.5% cutoff grade).

A resource reclassification is planned to be achieved later in the year and hence the resource estimations quoted above are considered interim. The resource currently remains in the Inferred category due to density measurements being localised in the NW quadrant of the resource and not distributed throughout the deposit; as well as sample recovery issues experienced during the 2011 RC drilling program.

KRE intends to recommence RC and diamond drilling at the end of the current wet season and will target the central core of the deposit to firm up confidence in the density profile and to address sample recovery issues. This drilling will generate further samples for metallurgical testwork, and will also target extensions to the resource identified in previous ASX announcements as the deposit remains open at depth as well as along strike to both the NW and SE as shown below in Figure 2.



**Figure 2:** Cummins Range resource showing potential to increase tonnage along strike.

### **Preliminary Evaluation Study**

KRE plans to complete a Preliminary Evaluation Study (PES) by July this year that will evaluate the commercial merit of the project in order to support further expenditure. To this end, a range of activities are being undertaken to ensure that the PES is completed with an appropriate level of confidence to support progression to the Pre-Feasibility Study (PFS) stage.

### ***Mining Studies***

The geological resource block model developed by Hellman & Schofield, the results of which are described above, is being subjected to basic pit optimisation studies. The objectives of this work are to;

- a. determine the potential mining inventory from the resource; and
- b. determine the potential for a staged pit approach that takes advantage of the resources higher grade zones and increasing TREO production early in the mining schedule to improve project economics.

### ***Metallurgical and Mineralogical Studies***

Metallurgical test work and associated mineralogical study work is being carried out both in Australia and China to support process flowsheet development and economic assessment. The primary objective of this work is to determine the potential upgradeability (into concentrate) for Cummins Range ore, and to improve understanding of the mineralogical distribution, liberation and deportment of rare earths within the mineralisation. This work will assess froth flotation and other mineral processing techniques.

To facilitate the test work programs, a large composite sample has been prepared from a carefully selected range of drill intercepts samples collected during the 2011 KRE drilling campaign. A series of sub-samples taken from the composite were assayed with an average grade of 3.43% TREO and a standard deviation of 0.23% TREO, confirming the homogeneity of the sample. The grade and composition of the sample is expected to approximate material from a potential high grade stage 1 pit at Cummins Range.

A 600kg portion of the composite is currently being subjected to concentration and mineralogical studies at a research institute in China, and a second 50kg sample is being similarly tested at the Ian Wark Research Institute in Adelaide. Subsequent work on the concentrate produced will be tested at ANSTO to determine a potential downstream extraction flow sheet for the material.

The metallurgical testwork will provide key information to support the PES financial model including recovery and mass balance information, flow sheet design, and reagent consumption rates.

### *Environmental & Approvals*

Animal Plant Mineral (APM) have been contracted to conduct a baseline flora and fauna survey of the project site to support the environmental understanding of the site and the approvals process. APM specialise in Kimberley surveys which must be conducted during the wet season for validity and acceptance by the regulators.

In addition, referral documents will be prepared by APM for submission to federal and state environmental authorities should the project proceed to the PFS stage. This process allows regulators to determine whether or not formal assessment of the project is required.

### *Capital & Operating Cost Estimation*

Capital and cost estimates for the project are being developed through a combination of in-house experience and third party engineering support. An engineering company experienced in process engineering of mineral and chemical processing plants will soon be selected to provide process engineering support including flow and mass balance diagrams, conceptual general arrangements for the site, and high level capital cost estimates for the site and associated infrastructure.

### *Financial Modeling*

Corality<sup>2</sup> has been engaged to develop a PES-level financial model for the project. The model will form a basis for evaluating all options and sensitivities associated with the project, including the concept of a centralised extraction facility to process rare earth concentrates from several sites.

### **About Kimberley Rare Earths**

*Kimberley Rare Earths Limited listed on the Australian Securities Exchange (ASX:KRE) on 18 May 2011, having raised \$18.2m under an oversubscribed Initial Public Offering.*

*KRE is a specialist rare earths company and holds a 25% interest in the Cummins Range Project in Western Australia. KRE has the right to earn up to 80% of the project by funding exploration and development through to delivery of a bankable feasibility study. KRE's first target is to spend \$10m within four years to increase its interest to 55%. The Cummins Range project comprises 1 granted exploration license (80/2232) in the East Kimberley within which is contained a JORC compliant Inferred Resource of 4.90 Mt at 1.74% TREO (total rare earth oxide), 11.2% P2O5 and 145 ppm U3O8 (using a 1% TREO cut off). The Cummins Range project is one of only a few Australian rare earths projects with a Resource reported under the JORC Code.*

*KRE has also entered an agreement to earn up to a 90% interest in a pegmatite-hosted rare earth project in Mozambique with significant exploration potential, including for xenotime-hosted yttrium, dysprosium and erbium.*

### **Competent Person Statement**

*Information in this ASX release that relates to exploration or exploration results is based on information compiled by Mr. Geoff Collis, who is a member of the Australasian Institute of Mining and Metallurgy and has sufficient exploration experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activities which are being undertaken to qualify as a Competent Person as defined in the 2004 Edition of the "Australian Code for Reporting of Mineral Resources and Ore Reserves". Mr Collis consents to the inclusion of these estimates in the form and context in which they appear.*

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<sup>2</sup> Corality - Specialist resource project financial modelling company

Glossary

<b>Aeromagnetic</b>	Airborne geophysical technique where the intensity of the earth's magnetic field is measured in a systematic way.
<b>Alluvium</b>	Loose unconsolidated soil or sediment eroded and deposited by water.
<b>Carbonatites</b>	Intrusive igneous rocks with a composition of greater than 50% carbonate minerals.
<b>Diamond Drilling</b>	(or <b>Core Drilling</b> ) A drilling technique which uses a diamond-set drill bit to produce a cylindrical core of rock.
<b>Eluvium</b>	Loose unconsolidated soil or sediment deposited under gravitational weathering and accumulation processes.
<b>HREO</b>	Heavy rare earth oxides. The oxides of the 9 heavy rare earth elements Europium (Eu), Gadolinium (Gd), Terbium (Tb), Dysprosium (Dy), Holmium (Ho), Erbium (Er), Thulium (Tm), Ytterbium (Yb), Lutetium (Lu).
<b>LREO</b>	Light rare earth oxides. The oxides of the 5 light rare earth elements; Lanthanum (La), Cerium (Ce), Praseodymium (Pr), Neodymium (Nd), Samarium (Sm). Note, excludes Promethium (Pm) due to its transient (radioactive) nature.
<b>Pegmatite</b>	A very coarse grained igneous intrusive rock composed predominantly of quartz, feldspar and mica.
<b>Pipe</b>	Cylindrical intrusion of younger igneous rocks into an older geological terrain.
<b>ppm</b>	Parts per million by weight (10,000ppm equals 1.00%).
<b>Pyroxenite</b>	Ultramafic igneous rock comprising predominantly minerals of the pyroxene group.
<b>RAB</b>	Rotary air blast, a cost-effective drilling technique used to sample weathered rock.
<b>RC</b>	Reverse circulation, a drilling technique that is used to return uncontaminated pulverised rock samples through a central annulus inside the drill pipes. RC samples can be used in industry-standard Mineral Resource statements.
<b>REO</b>	The oxides of the 14 rare earth elements; Lanthanum (La), Cerium (Ce), Praseodymium (Pr), Neodymium (Nd), Samarium (Sm), Europium (Eu), Gadolinium (Gd), Terbium (Tb), Dysprosium (Dy), Holmium (Ho), Erbium (Er), Thulium (Tm), Ytterbium (Yb), Lutetium (Lu) plus Yttrium (Y) but excluding Promethium (Pm).
<b>TREO</b>	The sum total of the 14 rare earth oxides, Lanthanum to Lutetium plus Yttrium as defined above under <b>REO</b> .
<b>Xenotime</b>	A rare earth phosphate mineral comprising predominantly yttrium phosphate (YPO <sub>4</sub> ). Dysprosium, erbium and terbium can substitute for yttrium.

### **Notes on Resource Estimates**

The Resource estimates were prepared by Rob Spiers (MAIG) who is a full time employee of Hellman and Schofield Pty Ltd. All resource work was supervised by Dr Phillip Hellman FAIG, who is a Director of Hellman and Schofield Pty Ltd. Both Robert and Phil have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activities which are being undertaken to qualify as Competent Persons as defined in the 2004 Edition of the "Australian Code for Reporting of Mineral Resources and Ore Reserves". Robert Spiers and Dr Phillip Hellman consent to the inclusion of these estimates in the form and context in which they appear.

#### ***Definitions***

TREO is defined as the total oxides of the 14 rare earth elements; Lanthanum (La), Cerium (Ce), Praseodymium (Pr), Neodymium (Nd), Samarium (Sm), Europium (Eu), Gadolinium (Gd), Terbium (Tb), Dysprosium (Dy), Holmium (Ho), Erbium (Er), Thulium (Tm), Ytterbium (Yb), Lutetium (Lu) but excluding Promethium (Pm); plus Yttrium (Y).

#### ***Quality assurance and quality control***

The surveying, sampling and assaying carried out by KRE and its contractors has had rigorous QAQC applied to them to ensure accuracy and representivity of the drilling data.

#### ***Geology and Mineralisation***

The area referred to in this report occurs within the Cummins Range carbonatite which is a 1.5 km diameter near-vertical pipe that has been deeply weathered but essentially outcropping with only thin aeolian sand cover in places. The mineralisation has been defined using a combination of grade and various regolith units defined by detailed geological logging of all holes.

#### ***Drilling and Sampling***

The geological database used for the Resource Estimates consists of 314 assayed inclined RC holes representing 13986 assayed metres. The drill hole spacing is essentially 40x50 metres over most of the deposit. All sampling was conducted using standard 1 metre riffle splits from the RC drill cyclone.

#### ***Assaying***

Routine assaying of 14 lanthanides as well as Y, Th, U, Al, Si, P, Mg, Fe, Ca, Ga, Hf, Nb, S, Sc, Ta, Ti and Zr has been undertaken by Genalysis/Intertek Laboratories in Perth using sodium peroxide fusion, nickel crucible/ICP-MS techniques.

#### ***Geological Modelling***

Cross-sectional geological interpretations were completed for the entire area referred to in this report and used to create wireframes to define the boundaries of different loads. The wireframes were used to code the data set upon which the resources were estimated in a block model with dimensions of 10 x 12.5 x 2 metres (x, y, z). Density profiling was completed using data collected by down-hole gamma-gamma logging completed by Surtron within 10 separate RC holes all located within the NW quadrant of the model. Densities range between 1.52 and 2.32 tonnes/m<sup>3</sup>. The density profile from the NW quadrant was extrapolated over the entire model and therefore the ultimate tonnage is subject to change once density measurements are obtained from the central core of the deposit.

### *Resource Estimation*

Ordinary Kriging was used to estimate TREO grades from one metre composites within the mineralised zone using three estimation passes. Blocks in the resource model have been allocated a confidence category based on the number and location of samples used to estimate the grade of each block which are a consequence of taking into account such issue as sample recovery, geological variability and QAQC etc. The approach is based on the principle that larger numbers of samples, which are more evenly distributed throughout the search neighbourhood, will provide a more reliable estimate. The search parameters used to decide the classification of a block within the resource in this study are:

- Minimum number of samples found in the search neighbourhood

For Measured and Indicated categories, this parameter is set to sixteen. For Inferred category, a minimum of eight samples is required. This parameter ensures that the block estimate is generated from a reasonable number of sample data.

- Minimum number of spatial quadrants informed.

The space around the centre of a block being estimated is divided into octants by the axial planes of the data search ellipsoid. This parameter ensures that the samples informing an estimate are relatively evenly spread around the block and do not all come from one drill hole. For Measured and Indicated categories, all four quadrants must contain at least 16 samples combined. For Inferred panels a minimum of 2 quadrants must contain at least 8 samples combined.

- The distance to informing data.

A three pass approach was adopted. For the Measured category, the search radii are set to 45mE by 55mN by 8mRL respectively for the first pass. For Indicated and Inferred, the search radii are set to 90mE by 110mN by 16mRL respectively and the data criteria are reduced by half to minimum data of 8 in at least two octants by use of an expansion equal to 1.0.

### *Cut-off grades*

Reported cut-off grades have been based on the assumptions made by Kimberley Rare Earths that are believed to be realistic in terms of current considerations of prices, processing and mining costs and the marketability of the TREO Resource.