

## First High Purity Rare Earth Products For Assessment

Peak Resources Limited (Peak; ASX: PEK; OTCQX: PKRLY) is rapidly progressing the development of its 100% owned Ngualla Rare Earth Project in Tanzania. Ngualla is on track to become the next major rare earth supplier with high grade mineralisation and a simple, proven metallurgical process supporting a low cost operation.

Peak is pleased to announce the completion of a significant milestone with the production of two refined rare earth products at ANSTO Minerals (Australian Nuclear Science and Technology Organisation) that are in saleable form and available for evaluation by target customers.

The work includes the first of four separated high purity rare earth oxide products from the Solvent Extraction (SX) Pilot Plant now in operation at ANSTO.

### Highlights:

The rare earth products completed to date are:

- **An ultra-high purity (99.9%)\* mid and heavy rare earth oxide (M+HREO)**
- **A high purity (>99%) rare earth carbonate with a grade of 56% REO**

These samples are now available for evaluation by target customers

The SX Pilot Plant work is progressing well with three additional separated rare earth oxide samples to be produced successively over the coming months. A high purity didymium oxide (a neodymium – praseodymium mix) sample is expected in June, followed by cerium oxide and finally a lanthanum oxide.

\*Assays by weight excluding water and volatiles (LOI)

The successful production of a separated high purity rare earth oxide from a bulk sample of mineralisation places Ngualla amongst a select few projects to have achieved this milestone. The ability to produce separated high purity rare earth oxide adds significant value to the project and allows access to wider markets for Ngualla's products.

Peak's Chairman, Alastair Hunter said *"The successful production of these products of such high quality is an achievement very few other companies have made and we are hopeful they will exceed the expectations of any future off take customers. This work is well within the required specifications and demonstrates Peak's commitment to drive the development of the Ngualla Project forward."*



Photo 1: High purity (99.9%) rare earth oxide product produced from Ngualla mineralisation by the SX Pilot Plant at ANSTO Minerals.

## Technical Report

Two high purity rare earth products have been produced at ANSTO Minerals from a 1.3 tonne bulk sample of weathered Bastnaesite Zone mineralisation from Ngualla using the simple sulphuric acid leach recovery process:

1. The first of four separated products – a mid and heavy rare earth oxide mix (M+HREO) – has been produced by the SX Pilot Plant currently in operation.
2. A high purity rare earth carbonate has also been precipitated from the feed chloride solution and assayed.

Both samples are available for assessment by potential off take customers.

### Mid and Heavy Rare Earth Oxide

The SX Pilot Plant has successfully produced its first product - an ultra-high grade mid and heavy rare earth oxide. With a purity of 99.9% REO this product (Photo 1, Table 1) is expected to exceed the requirements of off take customers.

**Table 1: Analysis of Mid + Heavy Rare Earth Oxide product**

RARE EARTHS			OTHER METALS		
Element	Oxide	Normalised wt%	Element	Oxide	Calculated wt%
La	La <sub>2</sub> O <sub>3</sub>	0.07	Al	Al <sub>2</sub> O <sub>3</sub>	0
Ce	CeO <sub>2</sub>	0.01	As	As <sub>2</sub> O <sub>3</sub>	0.0
Pr	Pr <sub>6</sub> O <sub>11</sub>	0.01	Ba	BaO	0.00
Nd	Nd <sub>2</sub> O <sub>3</sub>	0.05	Ca	CaO	0.0
Sm	Sm <sub>2</sub> O <sub>3</sub>	55.65	Co	CoO	0.00
Eu	Eu <sub>2</sub> O <sub>3</sub>	13.89	Cr	Cr <sub>2</sub> O <sub>3</sub>	0.00
Gd	Gd <sub>2</sub> O <sub>3</sub>	21.34	Cs	Cs <sub>2</sub> O	0.00
Tb	Tb <sub>4</sub> O <sub>7</sub>	1.05	Cu	CuO	0.00
Dy	Dy <sub>2</sub> O <sub>3</sub>	2.41	Fe	Fe <sub>2</sub> O <sub>3</sub>	0.0014
Ho	Ho <sub>2</sub> O <sub>3</sub>	0.20	Hf	HfO <sub>2</sub>	0.017
Er	Er <sub>2</sub> O <sub>3</sub>	0.27	K	K <sub>2</sub> O	0.00
Tm	Tm <sub>2</sub> O <sub>3</sub>	0.02	Mg	MgO	0.0
Yb	Yb <sub>2</sub> O <sub>3</sub>	0.29	Mn	MnO <sub>2</sub>	0.00
Lu	Lu <sub>2</sub> O <sub>3</sub>	0.0	Mo	MoO <sub>2</sub>	0.00
Y	Y <sub>2</sub> O <sub>3</sub>	4.67	Na	Na <sub>2</sub> O	0.0
			Ni	NiO	0.00
			P	P <sub>2</sub> O <sub>5</sub>	0.034
			Pb	PbO	0.00
			Rb	Rb <sub>2</sub> O	0.00
			S	SO <sub>4</sub>	0
			Se	SeO <sub>2</sub>	0.0
			Si	SiO <sub>2</sub>	0
			Ta	Ta <sub>2</sub> O <sub>5</sub>	0.0012
			Ti	TiO <sub>2</sub>	0.00
			Th	ThO <sub>2</sub>	0.00
			U	U <sub>3</sub> O <sub>8</sub>	0.00
			Zn	ZnO	0.00
			Zr	ZrO <sub>2</sub>	0.00
<b>Total REO</b>		<b>99.94</b>	<b>Total Other Metals</b>		<b>0.054</b>
<b>Other Metals</b>		<b>0.05</b>			
<b>Total REO</b>		<b>100.00</b>			

Note assays are normalised to account for water and volatiles (LOI) which is not reported in the above table. Assays below detectable limits are denoted by "0.0" or "0.00" to the applicable level of accuracy.

This product is a mix of samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, lutetium and yttrium as oxides. This high value M+HREO product is expected to contribute approximately 23% of the total value of Ngualla’s rare earth production as defined by the December 2012 Scoping Study (Table 2).

**Table 2: Product and value splits, December 2012 Scoping Study, 10,000tpa production profile.**

Product	Total Equivalent REO Production t/y*	Product Value (US\$)	Relative Value Contribution
Nd / Pr Oxide	2,125	\$189.1M	52%
Heavy Rare Earth Oxide + Y Oxide	288	\$82.9M	23%
La Oxide	2,756	\$38.6M	11%
Ce Oxide	2,126	\$31.9M	9%
Ce Oxide (concentrate)	2,684	\$21.5M	6%
<b>Total</b>	<b>9,980</b>	<b>\$363.9M</b>	<b>100%</b>

\* Rare earth distribution derived from April 2013 Mineral Resource estimate for Bastnaesite Zone weathered mineralisation +3% REO.

As Table 2 illustrates, the value drivers for Ngualla are the Nd/Pr Oxide and Mid+Heavy high purity oxide products. These include the higher value ‘Critical RE’s’ forecast to be in undersupply. 75% of the projected annual revenue (December 2012 Scoping Study) will be derived from the two high purity products. The lower value cerium and lanthanum oxides are relative by-products at only 25% of the total revenue.

The SX Pilot Plant work is progressing well with three additional separated rare earth oxide samples to be produced successively over the coming months. A high purity didymium oxide (a neodymium/praseodymium oxide mix) product is scheduled in June, to be followed by lanthanum oxide and finally a cerium oxide product.

### Rare Earth Carbonate

Following the successful verification of the acid leach recovery process at ANSTO (ASX announcement 13th March 2013), a high purity mixed rare earth carbonate has been produced (Photo 2). The carbonate was precipitated directly from the rare earth chloride solution (Figure 1) used as the feed for the SX Pilot Plant which was produced from a bulk sample of Ngualla mineralisation.

#### Simplified 3 Stage Process Flow Sheet - Ngualla Project

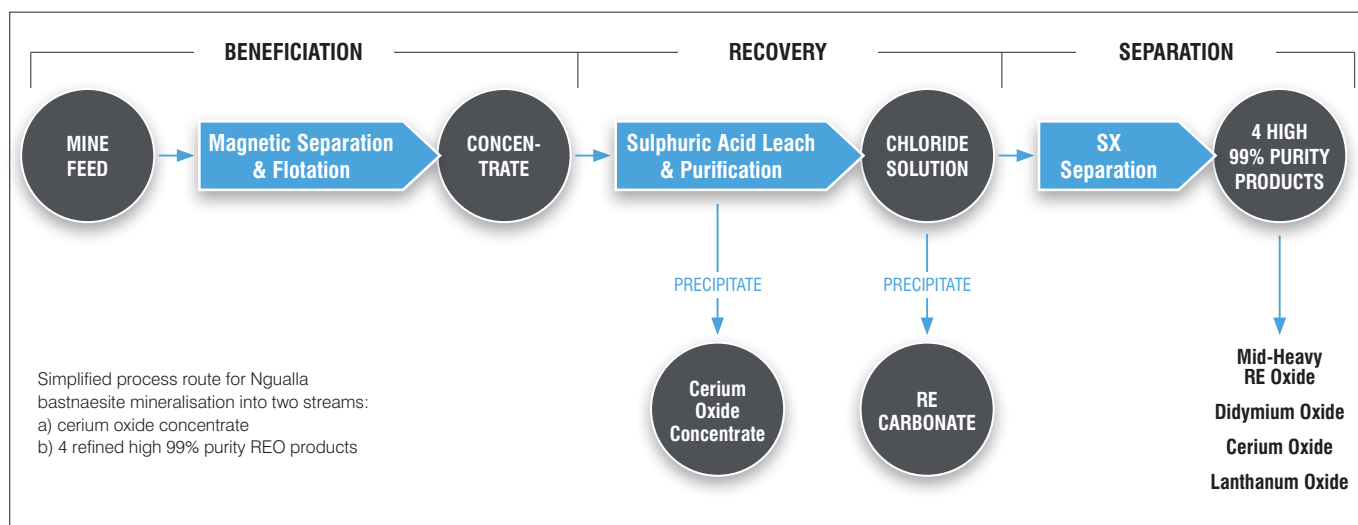


Figure 1: Simplified overview of 3 stage metallurgical process flow sheet for Ngualla.

Assay results of this carbonate (Table 3) have now been received and indicate a high purity (>99%) rare earth carbonate with a rare earth content of 56% REO and less than 1% impurity metals present. Most importantly, the radioactive elements, thorium and uranium, are extremely low, being below detection limits.

**Table 3: Analysis of Rare Earth Carbonate**

Rare Earth Oxide		Grade % REO in RE Carbonate	% of Total REO distribution
Lanthanum	La <sub>2</sub> O <sub>3</sub>	28.3	49.9
Cerium	CeO <sub>2</sub>	5.4	9.5
Praseodymium	Pr <sub>6</sub> O <sub>11</sub>	4.6	8.1
Neodymium	Nd <sub>2</sub> O <sub>3</sub>	15.9	28.0
Samarium	Sm <sub>2</sub> O <sub>3</sub>	1.6	2.8
Europium	Eu <sub>2</sub> O <sub>3</sub>	0.3	0.5
Gadolinium	Gd <sub>2</sub> O <sub>3</sub>	0.4	0.8
Terbium	Tb <sub>4</sub> O <sub>7</sub>	0.1	0.1
Dysprosium	Dy <sub>2</sub> O <sub>3</sub>	0.1	0.1
Holmium	Ho <sub>2</sub> O <sub>3</sub>	0.0	0.0
Erbium	Er <sub>2</sub> O <sub>3</sub>	0.0	0.0
Thulium	Tm <sub>2</sub> O <sub>3</sub>	0.0	0.0
Ytterbium	Yb <sub>2</sub> O <sub>3</sub>	0.0	0.0
Lutetium	Lu <sub>2</sub> O <sub>3</sub>	0.0	0.0
Yttrium	Y <sub>2</sub> O <sub>3</sub>	0.1	0.2
<b>Total</b>		<b>56.7%</b>	<b>100.0%</b>

Other Metals		Grade % Oxide
Uranium	U <sub>3</sub> O <sub>8</sub>	0.0
Thorium	ThO <sub>2</sub>	0.00
Other Metals		0.56

Analysis by ANSTO Minerals using acid digestion and ICP-OES.

The Pre-Feasibility Study now in progress will assess the potential benefits of locating the beneficiation and acid leach recovery process units (Figure 1) at the Ngualla mine site and the solvent extraction separation plant located off site, closer to infrastructure, utility and port facilities. In this case, an intermediate mixed rare earth carbonate concentrate would be produced on site at Ngualla to be efficiently transported in this inert, high purity form to the solvent extraction plant for the production of the separated rare earth oxides. The purity of the carbonate and absence of radioactive elements indicate that no special permits will be required for the handling or transportation of this intermediate product from Ngualla to the separation plant.

Peak also retains the option to sell some of this high purity rare earth carbonate product directly to a third party for separation and samples are available for evaluation by potential customers.

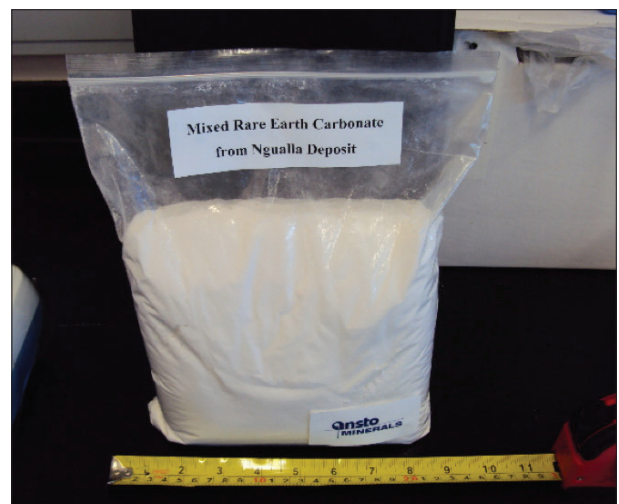


Photo 2: High purity (99%) mixed rare earth carbonate (56% REO) produced from Ngualla feed mineralisation at ANSTO Minerals.

## About the Ngualla Rare Earth Project:

The Ngualla Rare Earth Project in Tanzania is a recent discovery and is the highest grade of the large undeveloped rare earth deposits.

Fundamental geological aspects of the central Bastnaesite Zone targeted for first production offer distinct advantages for development over other rare earth projects. These include the large size of the deposit, outcropping, high grade mineralisation suitable to open cut mining with low strip ratios, favourable mineralogy amenable to a simple, low cost processing route and the lowest uranium and thorium levels of any major rare earth deposit in the world.

The favourable characteristics are reflected in the outcomes of the Scoping Study and preliminary economic assessment released on 3rd December 2012, which defined very low capital and operating costs compared to other rare earth projects.

Ngualla is a leading rare earth project with an estimated NPV of US\$1.57 billion and pre-tax IRR of 53% for an initial 25 years production and an average grade of 4.35% REO (refer ASX release dated 3rd December 2012).

An update to the December 2012 Scoping Study is nearing completion and will incorporate enhanced beneficiation processes from recent test work and a revised mining schedule based on the new, higher grade and increased resource model completed in April 2013.

Peak is moving forward with discussions to finalise a binding agreement with a strategic partner that is anticipated to see Ngualla fully funded through to production.

The Company continues to fast track the development of Ngualla with the aim of becoming a low cost, long term producer of high purity rare earth oxide products in 2016.



A handwritten signature in black ink, appearing to read 'Alastair Hunter'.

**Alastair Hunter** Executive Chairman

The information in this report that relates to Metallurgical Test Work Results based on information compiled and / or reviewed by Gavin Beer who is a Member of The Australasian Institute of Mining and Metallurgy. Gavin Beer is a Consulting Metallurgist with sufficient experience relevant to the activity which he is undertaking to be recognized as competent to compile and report such information. Gavin Beer consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Exploration Results is based on information compiled and/or reviewed by Dave Hammond who is a Member of The Australasian Institute of Mining and Metallurgy. Dave Hammond is the Technical Director of the Company. He 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 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dave Hammond consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.