

29th February 2012

# ASX RELEASE



## MAIDEN RESOURCE, NGUALLA RARE EARTH PROJECT

Peak Resources Limited (Peak) is pleased to report a Maiden Mineral Resource estimate reported according to the 2004 JORC Code and Guidelines, for the Ngualla Rare Earth Project in southern Tanzania.

Richard Beazley Managing Director of Peak Resources (ASX: PEK) stated, "What makes this discovery very attractive is the significant grades that make Ngualla stand apart from most rare earth deposits. Having these high tonnages and grades places Ngualla amongst the top rare earth resources outside of China.

The time frame from discovery to resource has been outstanding particularly in consideration of the sheer size of the deposit that has been delineated into resource status."

### HIGHLIGHTS:

- The Mineral Resource Estimates at a 1.0% lower grade cut-off for the combined Southern Rare Earth and South West Alluvial Zones is:  
**170 million tonnes at 2.24% REO\*, for 3.8 million tonnes of contained REO.**
- Using a 3.0% lower grade cut, the total resource includes a higher grade near surface zone of:  
**40 million tonnes at 4.07% REO for 1.6 million tonnes of contained REO.**
- The maiden resource combined with encouragement from early metallurgical test work and proposed new drilling will allow the Company to commence scoping studies next quarter.
- This is a major milestone for Peak and takes the Company from an explorer to a developer.

\*REO= total rare earth oxides plus  $Y_2O_3$

Richard Beazley commented further, "This resource puts Peak in a dominant position from which to develop the asset into an operating mine with its strengths defined to date by the significant tonnes and grade, very low thorium and uranium levels and outcropping bulk style geometry centred around a hill lending itself for very low strip ratios in mining.

The next step in the development of Ngualla will be for a very busy year ahead for the Peak team. The 2012 drilling program will focus on infill drilling primarily in the Southern Rare Earth Zone to move more of the resource into Measured and Indicated categories to assist in mine planning and financial requirements. Drilling will also focus on testing the resource where it currently remains open to the north, south and with depth.

Additionally, metallurgical test work will continue and further bulk material is scheduled to be supplied from additional diamond drilling to support the ongoing metallurgical program later in the year.

Peak will also be moving forward with a scoping study to integrate the current defined maiden resource and metallurgical understanding with other key aspects such as marketing, logistics, supply and mining to assess the economic potential of numerous development pathways for the project over the coming year.

With the recent purchase of Zari behind us and 100% ownership in the bag, the future for Peak is very exciting indeed."

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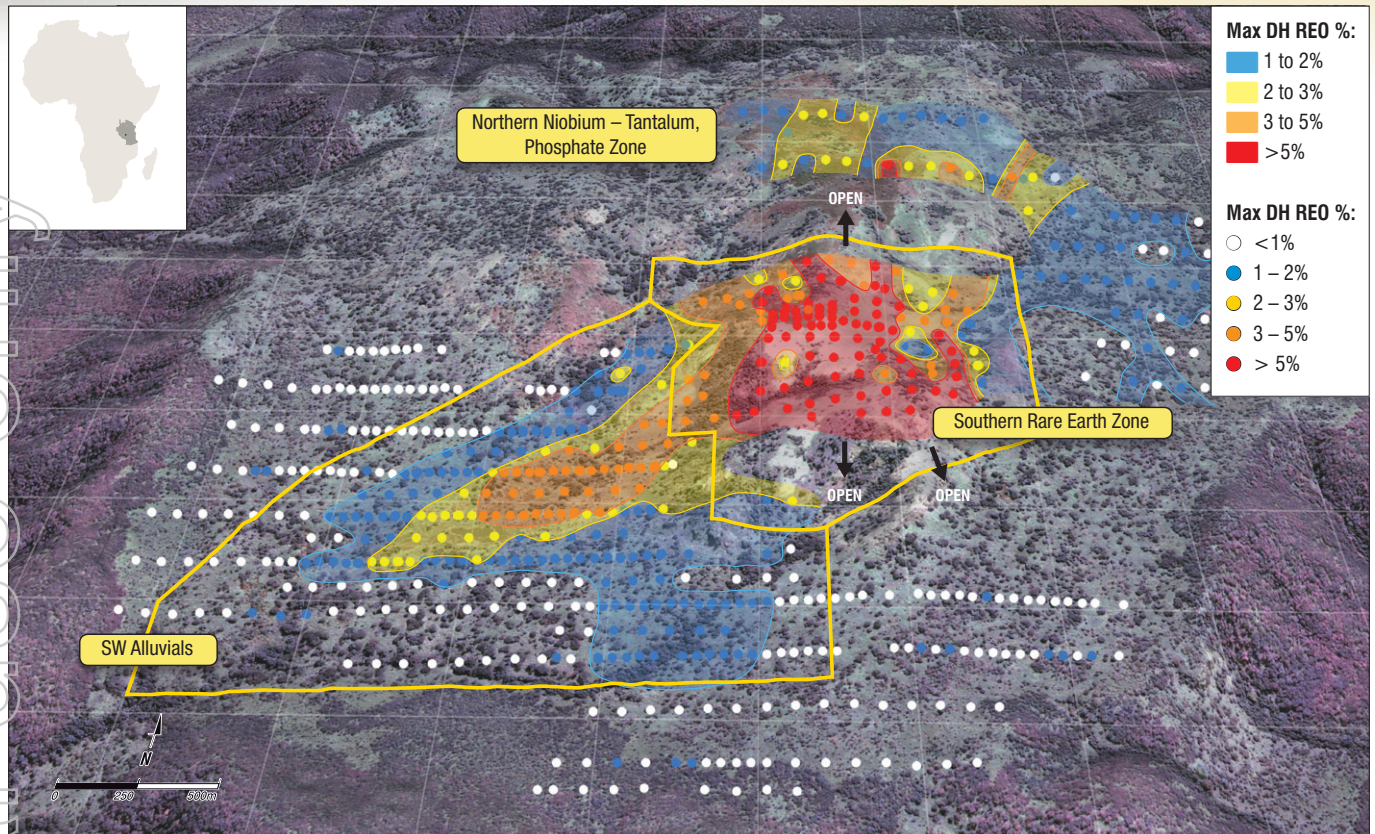


Figure 1: Location of resource areas in the Southern Rare Earth and South West Alluvial Zones and drilling over a satellite image of the Ngualla Carbonatite (light grey soil) draped over topography. Drill holes and contours coloured by maximum down hole REO %.

## Technical Report

Peak has moved the Ngualla Rare Earth Project forward rapidly over the last 18 months from discovery in August 2010 to today's release of the maiden Mineral Resource Estimate.

The Mineral Resource is based on three phases of drilling comprising over 26,700m of drilling in 651 drill holes. The last phase of drilling was completed on 30th November 2011 and results received in mid February 2012.

The resource estimate reported according to the JORC Code and Guidelines was completed by independent resource consultants Hellman and Schofield Pty Ltd for the Southern Rare Earth and South West Alluvial Zones (Figure 1).

Block grades in a 20m x 20m x 5m block model were assigned using Ordinary Kriging geostatistical techniques from two metre sample composites with searches aligned parallel to the strike and dip of the mineralisation. Density measurements collected from 9 diamond core holes located in or surrounding the main mineralised zones and applied to the entire project area on the basis of rock type. Further modelling parameters are detailed in the 'Notes on Resource Estimation' at the rear of this report.

A section through the block model in the Southern Rare Earth Zone is shown in Figure 2.

The Mineral Resource estimate for the Southern Rare Earth and South West Alluvial Zones at Ngualla above a 1% REO cut-off is:

**170 million tonnes at 2.24% REO, for a total of 3.8 million tonnes of REO**

(See Table 1 for classification details)

The distribution of individual rare earths plus yttrium oxides that make up the total for the 1% cut is shown in Table 4.

The mineralisation at Ngualla is of three main types: 1) surface iron rich gravel deposits, 2) iron rich, strongly weathered carbonatite and 3) fresh rock carbonatite. The 170Mt Mineral Resource includes a higher grade near surface portion of mineralisation. Above a 3% REO cut-off grade this is:

**40 million tonnes at 4.07% REO, for a total of 1.6 million tonnes of REO.**

(See Table 1 for classification details)

The majority of this mineralisation consists of near surface, ferruginous weathered carbonatite.



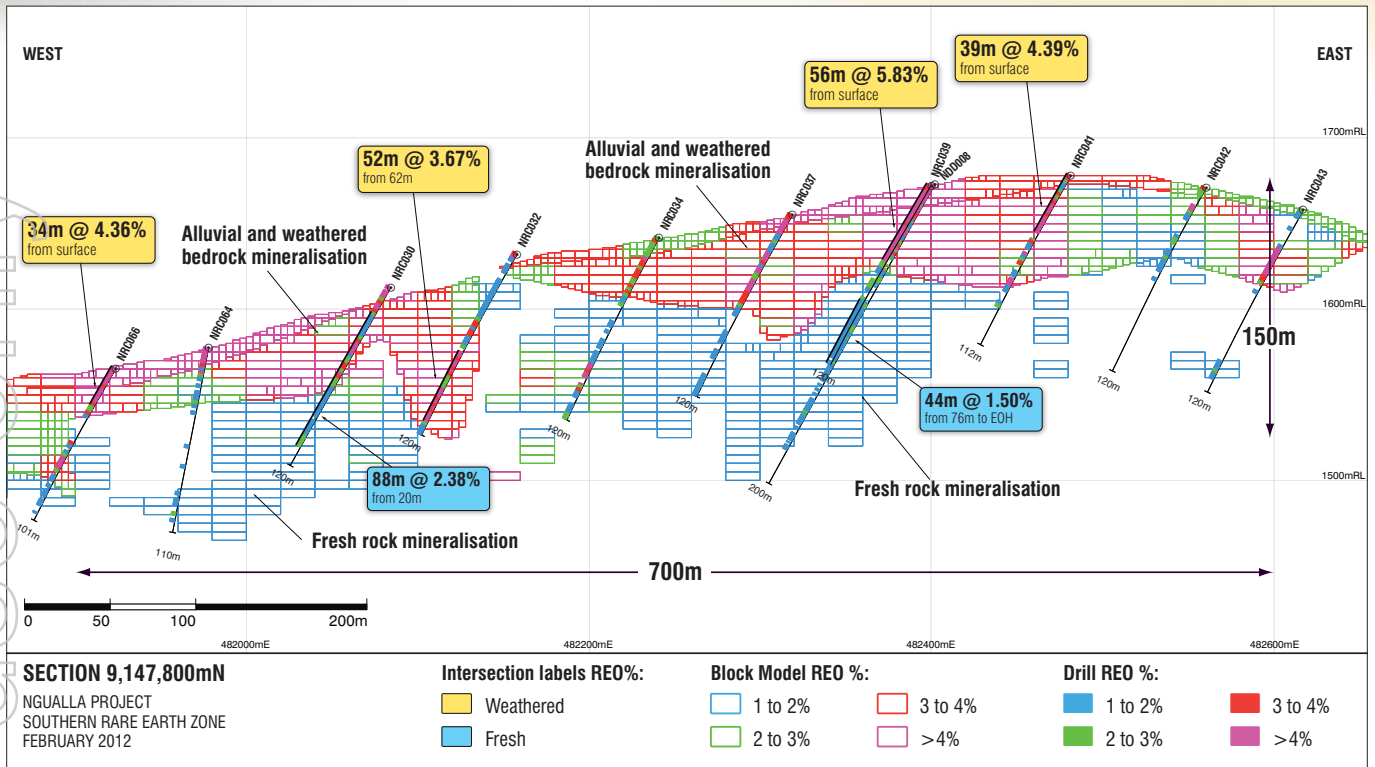


Figure 2: East – west section 9,147,800mN through the block model in the Southern Rare Earth Zone showing high grade near surface mineralisation.

Table 1: Classification of Mineral Resources for the Ngualla Rare Earth Project, 1.0% and 3.0% REO cut-off grades.

Lower cut – off grade	Resource Category	Tonnage (Mt)	REO (%)*	Contained REO tonnes
1.0% REO	Measured	29	2.61	750,000
	Indicated	69	2.43	1,700,000
	Inferred	72	1.92	1,400,000
	<b>TOTAL</b>	<b>170</b>	<b>2.24</b>	<b>3,800,000</b>
3.0% REO	Measured	11	3.99	430,000
	Indicated	21	4.09	850,000
	Inferred	8.7	4.11	360,000
	<b>TOTAL</b>	<b>40</b>	<b>4.07</b>	<b>1,600,000</b>

\*REO (%) includes all the lanthanide elements plus yttrium oxides. See Table 4 for breakdown of individual REO's. Figures above may not sum precisely due to rounding. The number of significant figures does not imply an added level of precision.

The Ngualla rare earth deposit can be divided into two geographic and geological areas, the **Southern Rare Earth Zone** located in the centre of the carbonatite around Ngualla Hill, and the **South West Alluvial Zone** (see Figure 1). The resource and geology for each zone differs and hence is described individually below:

**Southern Rare Earth Zone:** A 1km x 1km area in the low magnetic central core of the Ngualla Carbonatite (Figure 1). Rare earth mineralisation occurs from surface and is enriched in the weathered zone of the carbonatite, varying from a few metres to 140m vertical depth. Fresh rock mineralisation extends to the current drill depth of 155m from surface.

Mineralisation in the Southern Rare Earth Zone (SREZ) remains open to the north, south and with depth with a high likelihood that further drilling would increase the size of the deposit.

The bulk of the Mineral Resource at Ngualla is contained within the SREZ and most of the highest grade component occurs near surface within the weathered zone (see Figure 3). Table 2 shows the classification of the Mineral Resource for the SREZ at cut-off grades of 1% and 3% REO.

**Table 2: Classification of Mineral Resources for the Southern Rare Earth Zone, Ngualla Rare Earth Project, 1.0% and 3.0% REO cut-off grades.**

Lower cut – off grade	Resource Category	Tonnage (Mt)	REO (%)*	Contained REO tonnes
<b>1.0% REO</b>	Measured	15	3.31	500,000
	Indicated	62	2.50	1,500,000
	Inferred	68	1.93	1,300,000
	<b>TOTAL</b>	<b>145</b>	<b>2.32</b>	<b>3,400,000</b>
<b>3.0% REO</b>	Measured	9.6	4.08	390,000
	Indicated	20	4.11	830,000
	Inferred	8.5	4.13	350,000
	<b>TOTAL</b>	<b>38</b>	<b>4.10</b>	<b>1,600,000</b>

\*REO (%) includes all the lanthanide elements plus yttrium oxides. See Table 4 for breakdown of individual REO's. Figures above may not sum precisely due to rounding. The number of significant figures does not imply an added level of precision.

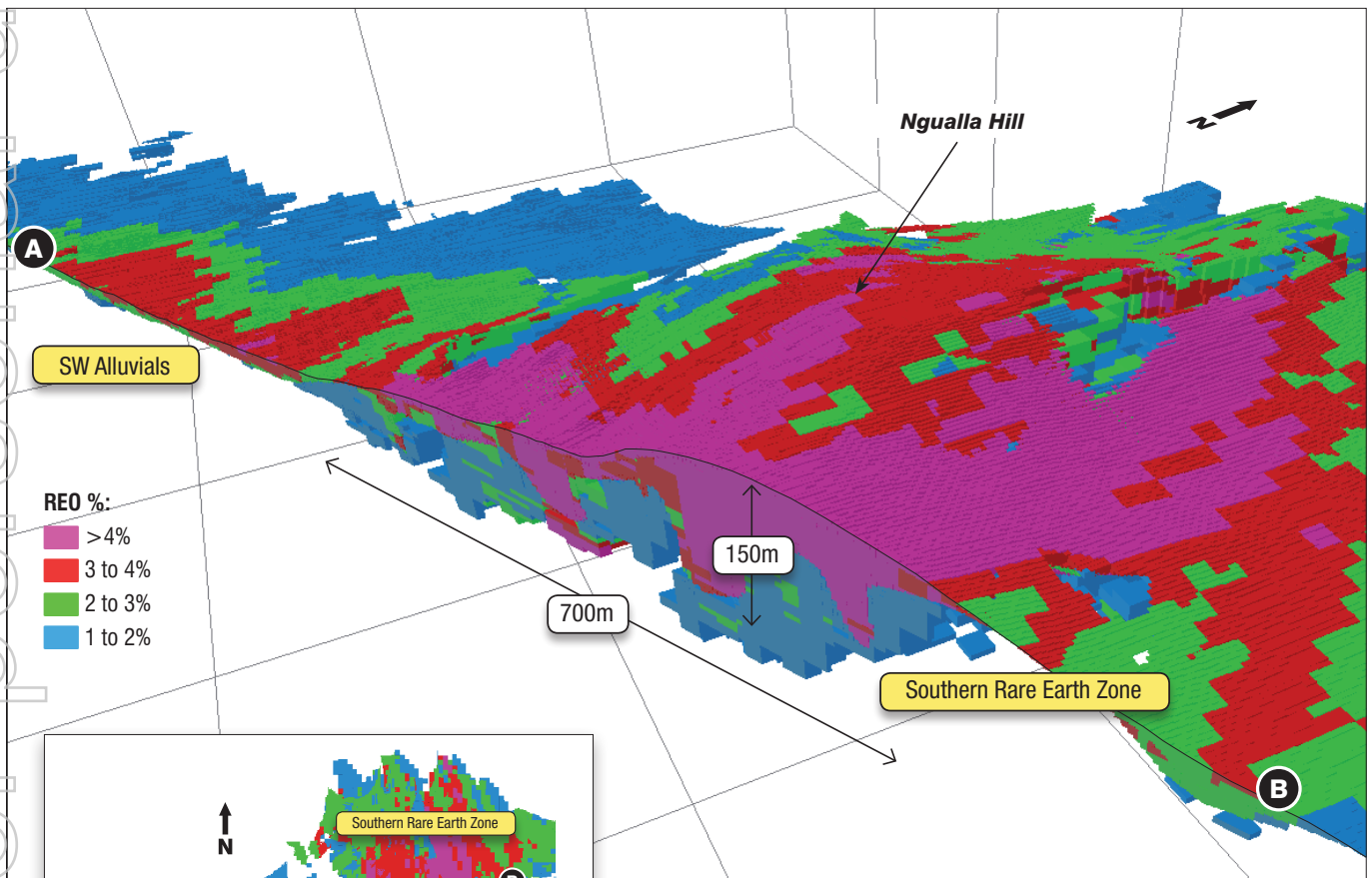


Figure 3: Perspective view of Ngualla Resource Block Model (+1% REO) sliced in a south westerly orientation, looking northwest, showing near surface, high grade REO mineralisation on Ngualla Hill (the Southern Rare Earth Zone) shedding down into the South West Alluvial Zone.

**South West Alluvial Zone:** Located to the south west of Ngualla Hill (see Figure 1). Rare earth mineralisation occurs from surface within unconsolidated ferruginous gravels to depths of up to 30m. Rare earth mineralisation in the South West Alluvial Zone is the result of erosion, transportation and deposition of weathered bed rock mineralisation in the Southern Rare Earth Zone.

Table 3 below shows the classification of the Mineral Resource for the SREZ at cut-off grades of 1.0% and 3.0% REO.

**Table 3: Classification of Mineral Resources for the South West Alluvial Zone, Ngualla Rare Earth Project, 1.0% and 3.0% REO cut-off grades.**

Lower cut – off grade	Resource Category	Tonnage Mt)	REO (%)*	Contained REO tonnes
<b>1.0% REO</b>	Measured	14	1.84	250,000
	Indicated	6.8	1.70	120,000
	Inferred	3.9	1.64	63,000
	<b>TOTAL</b>	<b>24</b>	<b>1.77</b>	<b>430,000</b>
<b>3.0% REO</b>	Measured	1.2	3.32	40,000
	Indicated	0.56	3.36	19,000
	Inferred	0.18	3.27	5,800
	<b>TOTAL</b>	<b>1.9</b>	<b>3.33</b>	<b>65,000</b>

\*REO (%) includes all the lanthanide elements plus yttrium oxides. See Table 4 for breakdown of individual REO's. Figures above may not sum precisely due to rounding. The number of significant figures does not imply an added level of precision.

The average REO % distribution for each of the two Mineral Resource zones is shown in Table 4.

**Table 4: Relative components of individual rare earth element oxides (including yttrium) as a percentage of total REO for the Ngualla Southern Rare Earth and Northern Zones (>1% REO).**

Oxide		Ngualla SREZ*	Ngualla SW Alluvial*	Ngualla Average*	
		%	%	%	
<b>Light RE</b>	Lanthanum	La <sub>2</sub> O <sub>3</sub>	27.5	23.4	27.1
	Cerium	CeO <sub>2</sub>	48.3	48.1	48.3
	Praseodymium	Pr <sub>6</sub> O <sub>11</sub>	4.72	4.91	4.74
	Neodymium	Nd <sub>2</sub> O <sub>3</sub>	16.1	17.5	16.3
	Samarium	Sm <sub>2</sub> O <sub>3</sub>	1.59	2.14	1.65
<b>Heavy RE</b>	Europium	Eu <sub>2</sub> O <sub>3</sub>	0.32	0.53	0.35
	Gadolinium	Gd <sub>2</sub> O <sub>3</sub>	0.73	1.24	0.78
	Terbium	Tb <sub>4</sub> O <sub>7</sub>	0.06	0.13	0.07
	Dysprosium	Dy <sub>2</sub> O <sub>3</sub>	0.14	0.43	0.17
	Holmium	Ho <sub>2</sub> O <sub>3</sub>	0.02	0.06	0.02
	Erbium	Er <sub>2</sub> O <sub>3</sub>	0.05	0.14	0.06
	Thulium	Tm <sub>2</sub> O <sub>3</sub>	0.00	0.01	0.00
	Ytterbium	Yb <sub>2</sub> O <sub>3</sub>	0.02	0.07	0.02
	Lutetium	Lu <sub>2</sub> O <sub>3</sub>	0.00	0.01	0.00
	<b>Other</b>	Yttrium	Y <sub>2</sub> O <sub>3</sub>	0.40	1.42
<b>TOTAL %</b>		<b>100</b>	<b>100</b>	<b>100</b>	

(\* = Mineral Resource block model at 1% REO cut)

## Project Status

The Ngualla rare earth mineralisation is shallow and could easily be exploited by open cut methods. Early metallurgical test work managed by consultants Bateman Engineering Ltd has returned encouraging results (ASX report: 31st January 2012; 'Early encouragement from preliminary metallurgical test work – Ngualla Rare Earth Project'):

- Higher grade, near surface oxide mineralisation may be amenable to conventional acid leach - a relatively simple processing route to a high grade rare earth concentrate.
- Simple wet table characterisation of primary fresh rock rare earth mineralisation produces positive beneficiation results in preliminary sighter tests. Work is now underway to determine if standard flotation for bastnasite as a subsequent processing step has the potential to produce a saleable rare earth concentrate.
- The extremely low levels of uranium and thorium present in the Southern Rare Earth Zone (21ppm U and 35ppm Th) is a distinct advantage to the Ngualla Project over other rare earth projects.

The resource estimation and block model, combined with the completion of this early stage metallurgical test work will allow scoping studies to commence to begin to quantify the economic significance of this large new rare earth discovery. Preparations are underway for an infill drilling program to commence at Ngualla after the rains end in May 2012. The drilling will provide the necessary higher density of data to support an upgrade to Measured Resource category and also seek to extend the resource in several directions where it currently remains open.

Richard Beazley stated, *"the publication of this significant resource statement for an outcropping, bulk deposit, with very low thorium and uranium levels and encouraging initial metallurgical test work is indicating the potential for Peak to position themselves as a low cost rare earth producer with a long term presence in the rare earth industry."*



**Richard Beazley**

Managing Director

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.

The information in this report that relates to Mineral Resources is based on information compiled by Rob Spiers, who is a member of The Australasian Institute of Geoscientists. Rob Spiers is an employee of geological consultants Hellman and Schofield Pty Ltd. Rob Spiers 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'. Rob Spiers consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## Notes on Resource Estimation

### Competency Statement

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 peer reviewed 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 consents to the inclusion of the aforementioned 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 the transition metal Yttrium (Y).

### Quality assurance and quality control

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

### Geology and Mineralisation

The Ngualla carbonatite is intrusive into Precambrian gneisses, quartzites and rhyolitic volcanics. It is an approximately 3.5 X 2.5km carbonatite-fenite complex of oval outline with the longer axis orientated approximately N-S. The K-Ar age of the carbonatite as determined in Cahen and Snelling (1966) is  $1040 \pm 40$ Ma.

Over a north – south trending central ridge and an area on the northwestern side of the complex carbonatite outcrops are found, surrounded by an area covered with red soil. This is in turn surrounded by a ring of low hills that are predominantly covered by fenites. The fenite zone is up to 1km wide with a breccias zone adjacent to the carbonatite. Sodic pyroxene and/or amphiboles are present. The carbonatite is broadly of three types (James 1954):

- i) An outer sovite that is banded and magnetite free. In this zone apatite, biotite, muscovite, quartz and chlorite are accessories.
- ii) An intermediate zone consisting of well banded sovite and contains euhedral magnetite and commonly dolomite.
- iii) A central zone comprising poorly banded sovite containing fluorite, biotite, amphibole, parasite and rarely pyrochlore. James and McKie (1958) have described columbite pseudomorphs after pyrochlore.

Dolomitic and ankeritic veins are widespread throughout the complex as are calcite-quartz veins with minor galena, barite and chalcopyrite. James (1954) also reported monazite. Barite veins, several metres wide occur. In addition Van Straaten (1989) described highly potassic.

### Drilling and Sampling

A detailed resource development drilling data set for the entire Ngualla Project area was made available to H&S. The dataset contained a total of 651 collar records, 14,105 assay records, 5,036 geology records and 1,038 survey records which were assessed during the geological modeling process. All drill hole types including RC (reverse circulation), DD (diamond core) and AC (aircore) data were employed during the estimation process.

Drill hole spacing over the main mineralized zone was essentially on a 50mx80m (hole and line spacing respectively) grid pattern. At the periphery of the main mineralized zone and including the south-western alluvial zone the drill spacing was primarily on an 80mx100m (hole and line spacing respectively) grid pattern with infill on every second line down to 40mx100m (hole and line spacing respectively).

All sampling was conducted using standard 1 metre riffle splits from the RC drill cyclone. The 1m splits were then combined in the field with the subsequent 1m sample to form a 2m composite for final assay submission.



## Assaying

The entire list of elements which were routinely assayed for included:

Ag	Al	As	Au	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cu	
Dy	Er	Eu	Fe	Gd	Hf	Hg	Ho	K	La	Li	Lu	Mg	Mn
Mo	Na	Nb	Nd	Ni	P	Pb	Pr	S	Sb	Sc	Si	Sm	Sn
Sr	Ta	Tb	Th	Ti	Tm	U	V	W	Y	Yb	Zn	Zr	

The analysis was undertaken by SGS Laboratories, Perth, Western Australia by 4 acid digest and ICP, or XRF fusion or XRF pressed powder.

## Geological Interpretation and Modelling

Geological interpretation of drill-hole cross sections and plan projections was completed by Peak Resources representatives in conjunction with H&S and then wireframed utilising Micromine software to create a three dimensional geological model of the mineralisation. The wireframes were used to code the data set upon which the resources were estimated in a block model with dimensions of 20 x 20 x 5 metres (x, y, z).

Density analysis was completed using individual 293 readings collected from 9 separate diamond holes all located within and/or surrounding the main mineralized zones in the central southern portion of the project area. Densities range between 2.03 to 2.56 tonnes/m<sup>3</sup>. The determinations compiled from the density analysis were extrapolated over the entire project area and therefore the tonnage is subject to potential future local change and iteration in-line with the project development.

## Resource Estimation

The resource model was undertaken using Ordinary Kriging ("OK") from two metre composites within the mineralised zones using three estimation passes with the searches aligned parallel to the strike and dip of the mineralisation. H&S's proprietary software, GS3 was used for estimation. This approach was validated against the original data on section and in plan to ensure model integrity and global representativeness of TREO+ Y<sub>2</sub>O<sub>3</sub>% above a range of nominated cutoff grades.

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. The aforementioned inputs are a consequence of taking into account such issue as sample recovery, geological and structural variability and all QAQC aspects. The search parameters used to determine the classification of a block within the resource in this study are:

- Minimum number of samples found in the search neighborhood**  
 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 primary domains one (transported material) and two (strongly weathered bedrock). For the Measured category, the search radii are set to 80mE by 100mN by 25mRL respectively for the first pass. For Indicated and Inferred, the search radii are set to 160mE by 200mN by 50mRL 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.  
 For primary domain three (transitional and fresh bed rock) a three pass approach was adopted. For the Measured category, the search radii are set to 20mE by 80mN by 20mRL respectively for the first pass. For Indicated and Inferred, the search radii are set to 40mE by 160mN by 40mRL 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 Peak Resources Ltd that are believed to be realistic in terms of current considerations of prices, processing and mining costs and the marketability of the TREO+Y<sub>2</sub>O<sub>3</sub> Resource. It is generally assumed that the prospects represent the resources that are being targeted for open cut mining and production by the Company.