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ALKANE RESOURCES LTD
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DEFINITIVE FEASIBILITY STUDY CONFIRMS ROBUST DUBBO ZIRCONIA PROJECT

- **The DFS for the DZP has delivered a technically and financially robust project over an initial 20 year life with EBITDA of A$5.23 billion and NPV of A$1.23 billion.**
- **The DZP is a strategic and alternate source of zirconium and heavy rare earth products with a resource capable of very long term supply**

DUBBO ZIRCONIA PROJECT Financial Summary for 20 year life in A$	
Project Capacity	1,000,000 tonnes pa
Capex – Plant	$396.8M
Sulphuric Acid Plant	$116.6M
Infrastructure + Owners	$253.4M
SUB TOTAL	$766.8M
EPCM	$63.5M
Contingency (20%)	$166.1M
TOTAL	$996.4M
Annual Revenue	$503.5M
Annual Operating Costs	$213.5M
Annual EBITDA	$290.0M
IRR*	19.3%
NPV*	$1,235M

* - 20 year life, pre-tax, 8% discount rate

- **Several strategic partnerships have been established and product development work is continuing to ensure maximum return for the Project's output**
- **The Project remains on track for development anticipated early in 2014**

CONTACT : IAN CHALMERS, MANAGING DIRECTOR, ALKANE RESOURCES LTD, TEL +61 8 9227 5677
INVESTORS : NATALIE CHAPMAN, CORPORATE COMMUNICATIONS MANAGER, TEL +61 418 642 556
MEDIA : WESTBROOK COMMUNICATIONS, CONTACT: IAN WESTBROOK, TEL +61 2 9231 0922 OR +61 407 958 137

65 Burswood Road, Burswood WA 6100, AUSTRALIA (PO Box 4384, Victoria Park WA 6979, AUSTRALIA)
Telephone: +61 8 9227 5677 Facsimile: +61 8 9227 8178
www.alkane.com.au mail@alkane.com.au

The Dubbo Zirconia Project (DZP) is located 30 kilometres south of the large regional centre of Dubbo in the Central West Region of New South Wales (Figure 3)**.** The DZP is based upon the large in-ground resources of the metals **zirconium, hafnium, niobium, tantalum, yttrium and rare earth elements.** Over many years the Company has developed a flow sheet consisting of sulphuric acid leach followed by solvent extraction recovery and refining to produce several products.

The project is held by **Australian Zirconia Ltd (AZL)**, a wholly owned subsidiary of Alkane Resources Ltd.

A **Demonstration Pilot Plant** (DPP) has been operating at the laboratory facilities of **ANSTO Minerals** at Lucas Heights in the south of Sydney since May 2008 and to date has recovered substantial quantities of zirconium products, niobium concentrate, a light rare earth concentrate and a heavy rare earth concentrate.

TZ Minerals International Pty Ltd (TZMI) in Perth has managed the program and feasibility study since the inception of the project in 1998.

The **Definitive Feasibility Study (DFS)** has recently been completed and was built on previous studies prepared by TZMI in 2011 and SNC Lavalin in 2002. The current study was based upon a 1 million tonne per annum mining and processing facility located at the Project site south of Dubbo.

Estimates of operating consumables, utilities and logistics have been drawn from mass and energy balances prepared by TZMI and ANSTO Minerals engineers. The prices for consumables and logistics have been compiled by canvassing relevant and competing suppliers where possible. The processing plant flow sheets using results from the DPP operation and test work have been used to determine process equipment numbers. Vendor supply budgets have been obtained for the key process equipment, and general process equipment has been costed from Engineering and Project Management Services (EPMS) and TZMI's database. Civil, structural, piping, electrical and instrumentation were based upon preliminary design. Estimates of manpower numbers were matched to recent local salary data to establish the overall labour costs.

Product volumes have been calculated from recovery data based on results from the DPP. Prices for the suite of products have been supplied by specialist marketing consultants, Technical Ceramic Marketing Services Pty Ltd (TCMS) and the Industrial Mineral Company of Australia Pty Ltd (IMCOA).

Details of the DZP's product output, market strategy and current commodity price trends were documented in the September 2011 feasibility study results (ASX 19 September 2011) and subsequent ASX announcements and Quarterly Reports (www.alkane.com.au).

Geology, Mineral Resources and Mining

The geology, resources and reserves were also documented in the September 2011 study and subsequent ASX announcements and Quarterly Reports. The current Identified Mineral Resources and Ore Reserves are appended as Table 2.

Mining has been scheduled to provide plant feed of 1 million tonnes per annum from a simple open cut mining operation and will entail drill and blast, load, haul and dump of ore to the ROM (run of mine) pad situated approximately three kilometres to the west of the deposit. Grade control will be based on assay and leachability test results from blast hole drill cuttings. To allow for specific environmental management, the mining schedule was modified to develop the western half of the deposit during the first 10 years to a depth of 40 metres, with the eastern half mined in the second 10 year period. The capital cost of the mining equipment has been included in the Project total.

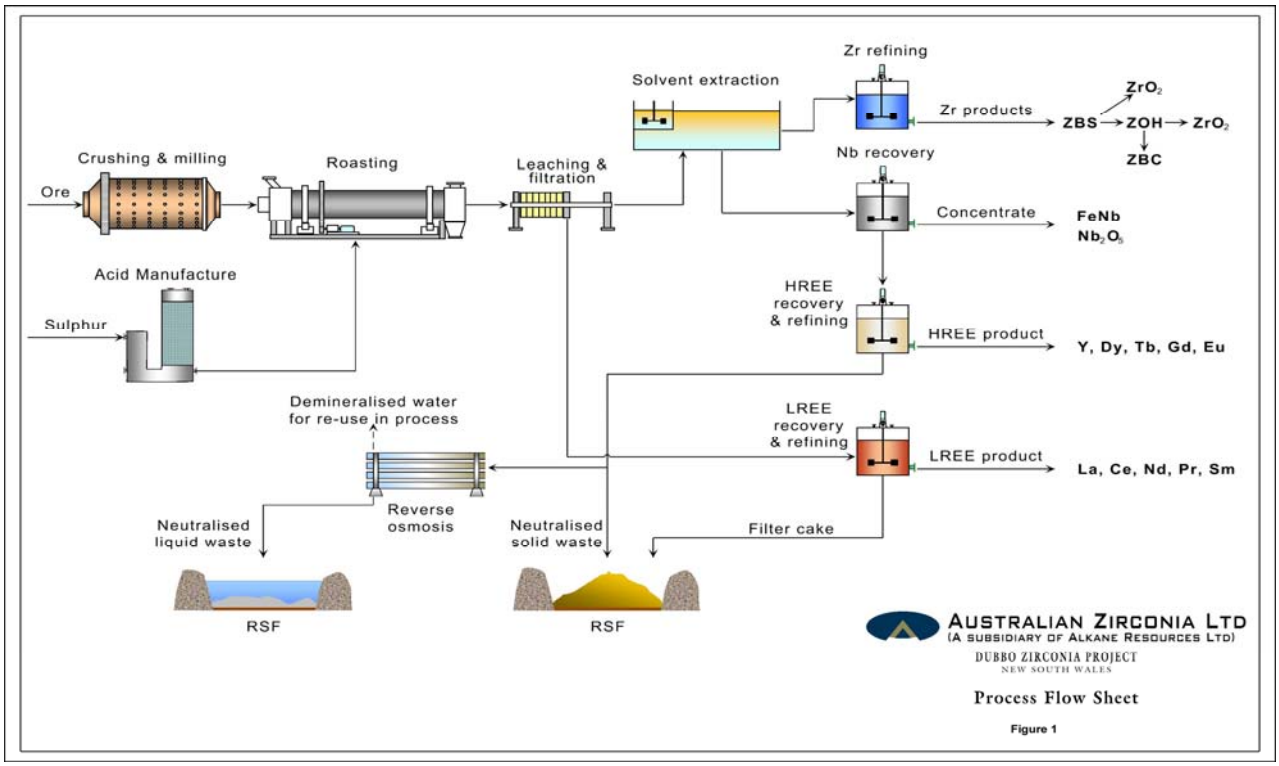
Due to size of the deposit, only 3.46 million tonnes of waste will be removed during the initial 20 year life. The currently defined resource could support an operation in excess of 70 years.

Process

The flowsheet is a proprietary process developed by AZL (Figure 1) and is based on crushing and grinding of ROM ore feed, followed by a sulphuric acid roast, water leach, solvent extraction recovery and chemical

refining to produce high purity zirconium products. Niobium concentrate is recovered from the waste stream of the zirconia extraction and refined using acid leaching.

The process naturally separates the REEs into a dominant light rare earth element suite (LREE) and an yttrium-heavy rare earth element rich suite (HREE) which are recovered as high purity chemical concentrates from two streams. The LREE are washed out of the primary leach residue and reconcentrated by chemical precipitation. The HREE are recovered after the niobium extraction from the main process stream, prior to final neutralisation and residue disposal.



Metal recoveries were calculated from mass balances derived from DPP operations and are recorded from ore feed to final products. For this study 82% was used for zirconium; 61% for niobium; while rare earths ranged from 61% to 32%. Project output is summarised in Table 1.

The DPP is continuing to operate and provide process optimisation and product development. This resulted in the inclusion of a reverse osmosis (RO) step in the waste stream with significant water recovery and reduction of the size of the liquid residue storage facilities (LRSF).

Improvements also included changes to the rare earth circuits with improved recoveries, particularly with the strategically and financially important heavy rare earths. This program will continue during 2013. A separate zirconia applications and process development facility has been established in Perth to produce larger samples of zirconia products for specific customers.

Market and Revenue

Market assessment and revenues were calculated using an anticipated price range over the first 20 year life of the Project on information supplied by AZL's marketing consultants TCMS and IMCOA and market publications. The Project offers strategic significance for zirconium products as it does not rely on zircon or Chinese zirconium chemicals production, and provides a new source of heavy rare earths outside China.

Zirconium:

By the end of this decade, TCMS forecasts that total zirconium materials demand will reach 239,000 tpa, assuming a growth rate of 7% between 2012 and 2020. Zircon demand in 2020 for zirconium materials

would therefore require 368,000 tpa of zircon, or 150,000 tpa more than 2012, and would represent approximately 25% of all zircon demand.

There are numerous end use market opportunities for DZP zirconium materials in the form of zirconium chemicals and chemical zirconia, fused zirconia replacement, and even direct replacement of zircon in specific applications. The DZP will represent about 9% of the total zirconium materials market in 2015, and around 7% by 2020.

Currently AZL has two MoUs and one letter agreement to advance development of markets for the DZP output and the Company remains convinced that confirmed off-take agreements will be finalised during 2013. AZL has produced several high quality products and is continuing to provide these to potential customers for testing.

It is anticipated that the current weakness in the zircon – zirconium materials pricing will dissipate over the next two years, and prices used in the current study reflect a growing market. The price is anticipated to range from US$6/kg to US$9/kg per ZrO_2 unit as the zircon price recovers and higher value zirconia applications are developed.

Niobium:

The global steel industry is the main driver for niobium consumption where about 80% of all niobium, as ferroniobium (FeNb), is used in the manufacture of high strength low alloy steels (HSLA). Standard grade ferroniobium typically contains ~60% niobium, and is used as an additive to HSLA steels and stainless steels. This market is growing at around 10% pa and the price has been stable at US$40-45/kg per niobium content for the last few years.

AZL has an MoU with a European metal alloy and trading company to enter into a joint venture to produce FeNb on site from the niobium concentrate produced by the DZP plant. The commercial terms of this joint venture are still to be finalised and consequently conservative returns to include the cost of the FeNb conversion, of US$30-35/kg per niobium metal unit have been used for the revenue estimates.

Rare Earths:

Despite the negative sentiment directed at the rare earth industry over the last 12 months, the industry has underlying strength and significant growth potential. However it is also a diverse business that has divergent levels of growth that are not uniform for all the specific rare earth metals. This can create difficult market conditions with demand strong for some and significant oversupply for others.

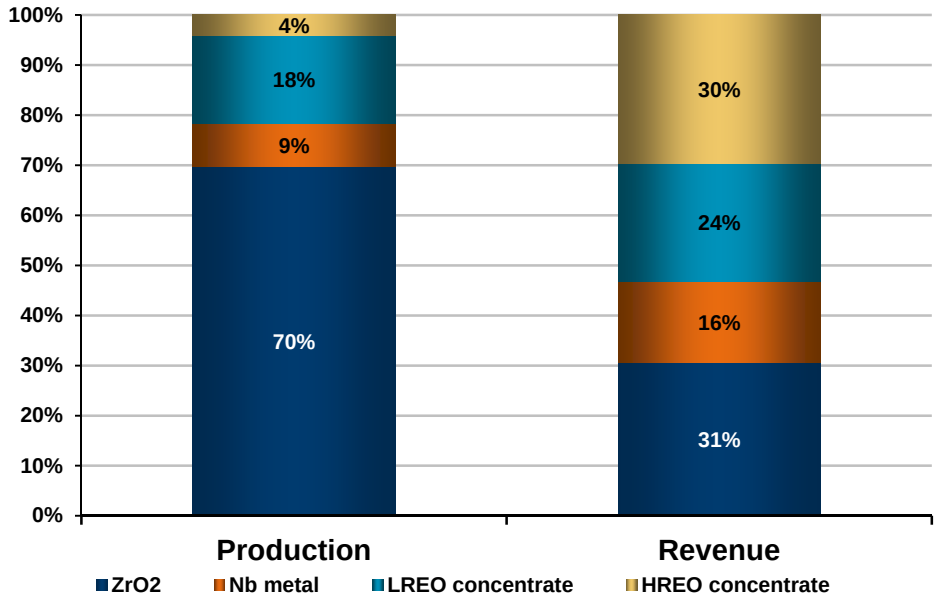
IMCOA estimate growth rates range from 10% to 15% for magnets (neodymium, praseodymium and dysprosium) and 6% to 8% for phosphors (yttrium and terbium) and ceramics (yttrium) will drive the rare earth market in the next few years.

AZL concluded an MoU in July 2012 with the large Japanese Shin-Etsu Chemical Co. Through this arrangement Shin-Etsu will have priority to purchase at commercial prices a quantity of rare earths toll processed by it under the agreement via an initial 5 year off-take agreement. The remaining available quantity of separated rare earths will be sold to other companies with which AZL has been discussing off-take arrangements. Strong demand outside of China particularly for AZL's heavy rare earths, including yttrium, should ensure that all separated products are sold.

The commercial details of the agreement would remain confidential but estimates of the toll treatment costs and subsequent revenues have enabled a value to be attributed to the DZP light rare earth and heavy rare earth products of an average US$101.3Mpa and US$127.4Mpa respectively (see Table 1 below).

Importantly approximately 90% of the LREE revenue is from neodymium and praseodymium sales while 95% of the HREE revenue is generated by dysprosium, terbium and yttrium.

Figure 2 DZP production and revenue comparisons



Financial Analysis

As described above, capital and operating costs were determined by vendor pricing and TZMI/EPMS's operating experience. The 1,000,000 tpa operation is summarised in Table 1.

The financial model has been prepared by TZMI on the following basis:

- The project NPV is before tax and has been calculated over a project life of 20 years based on a discount rate of 8%. Comparative rates of 5% and 10% gave results of A$1,980.2M and A$880.9M.
- The capital construction costs for the project have been estimated using local Australian contractor prices.
- The capital cost estimate will be distributed over a two year development and construction period.
- All figures are presented in 2013 Australian dollar values. The costs in future years will be presented in 2013 values, carried forward as real costs ('constant' 2013 Australian dollars).
- GST is not included in the operating cost estimates.
- Prices for final products have been derived from marketing investigations undertaken by Alkane Resources' specialist marketing consultants TCMS and IMCOA.
- US$:A$ exchange rate of 1.03 to 0.85 has been assumed for the revenue and operating costs calculations. This exchange rate is consistent with the long term exchange rate forecast by Consensus Economics. TZMI has made provision in the model to examine the sensitivity of the project financial outcome to variation in exchange rates.
- Revenue for the project is calculated based on production output, and conservative and long term sustainable prices have been used for revenue assessment. For the purpose of this financial valuation, all sales revenue is assumed on an FOB basis.
- The financial model assumes a project ramp-up to full capacity over two years.
- The financial model uses specific annual inputs for fundamental variables, such as mine grades. The calculated operating costs and revenue may vary annually and are slightly different to the annual average values, which are calculated based on nominal production output and operating costs for a typical year.

- A royalty rate of 4% has been assumed on product sales. Royalty charges for the DZP are calculated based on product revenue net of all allowable deductions.
- For the purpose of this financial evaluation capital costs have been depreciated in line with Australian Taxation Office guidance.
- A corporate tax rate of 30% is assumed in calculating the project after-tax cash flow.

Table 1

DZP Financial Summary

	Qty	*Units*
Mining		
Ore reserves	36	million tonnes
Tonnes per annum	1,000,000	tpa
Mine life	20	years (initial)
Production (average after ramp-up)		
ZrO_2 (ZBS; ZOH) as zirconia units	15,827	tpa
Nb metal in concentrate or FeNb	1,967	tpa
LREO (in chloride solution)	3,997	tpa
HREO (in chloride solution)	911	tpa
Operating cost* (A$) pa	**213.5**	million
Drill-blast, clearing and waste	3.3	million
Personnel	33.8	million
Utilities	13.4	million
Process reagents	124.9	million
Process consumables	4.6	million
Product transport	7.5	million
Maintenance and consumables	15.5	million
Contract services	3.4	million
Administration expenses	7.0	million
Revenue (A$ average after ramp-up) pa	**503.5**	million
ZrO_2 (ZBS; ZOH) as zirconia units	153.9	million
Nb metal in concentrate or FeNb	81.5	million
LREO	118.7	million
HREO	149.4	million
Capital cost estimate (A$)	**996.4**	million
Process Plant	396.8	million
Sulphuric Acid Plant	116.6	million
Infrastructure and Owners Costs	253.4	million
EPCM	63.5	million
Contingency (20%)	166.1	million

** Royalties, depreciation and tax are calculated separately. Numbers have been rounded.*

Environmental Impact Statement (EIS)

The DZP will undergo an environmental assessment according to the framework established by the *Environmental Planning and Assessment Amendment (Part 3A Repeal) 2011* and *State Environmental Planning Policy (State and Regional Development) 2011.* The DZP has been categorised as State

Significant Development (SSD).

A number of detailed and specialist socio-environmental studies have been completed under the management of the principal consultants, R W Corkery & Co. These are being compiled into the EIS which is expected to be lodged by the end of April 2013.

Infrastructure

Two farming properties within the DZP site have been acquired and several other properties signed under option arrangements. If all options are exercised, the Company will own 3,500 hectares of land which is more than enough to site the project and associated infrastructure.

A program to obtain adequate and secure water supply commenced in 2012 and a number of existing supply licences have been acquired. Power and gas supplies can be acquired from the state grid and possible routes for the power line and gas pipeline are being investigated (Figure 3).

Detailed studies on site access using the existing road network and reactivation of the Dubbo to Toongi railway, are well advanced.

Financing

In October 2012, Alkane announced that it had engaged Credit Suisse (Australia), Sumitomo Mitsui Banking Corporation and Petra Capital Pty Ltd to provide investment banking and equity market services, including the arrangement of project financing, to fund the development of the DZP.

As previously advised AZL believes that several options are available:

- Equity sale of minor interest in AZL to strategic stakeholders
- Loan facilities through off-take partners
- Loan facilities from major international government agencies (ECAs)
- Normal commercial debt facility
- Equity funding through Alkane

It is likely that the final result will involve a combination of these options.

Securing the finance package of around A$1 billion is expected to take up to 12 months and to coincide with final project approvals, allowing the development program for the DZP to commence in Q1 2014.

Summary

In comparison with the September 2011 feasibility study, this DFS confirms a 1Mtpa production model. Since the earlier study there has been a reduction in market prices for zircon-zirconium chemicals and for all the rare earths. The revised DFS is positive regarding future price trends for DZP products, especially heavy rare earths which have greater scarcity, and the impact of the Shin-Etsu agreement which provides the potential for the full spectrum of separated rare earths without the technical and financial risk of AZL developing its own separation facility.

The revised DFS shows higher total project capital costs and slightly higher operating costs in accord with industry wide increases in Australia over the last two years. These increases now appear to be contained. The Project demonstrates a similar revenue outcome and a slightly lower EBITDA of A$290Mpa compared to A$312Mpa in 2011. Project NPV is virtually identical at A$1.2 billion. This result is also a substantial improvement on the October 2012 interim assessment which gave A$222Mpa EBITDA with a capex of A$1,064M.

Upside for the project is contained in the size of the resource which gives the DZP a project life of at least another 50 years beyond the 20 year life assessed in the previous and revised DFS. With ongoing process optimisation other potential upside are in higher recoveries for all the metals, the potential for recovery and sale of a tantalum product, as well as positive outcomes from joint ventures.

Competent Person

Unless otherwise advised above, the information in this report that relates to exploration results, mineral resources and ore reserves is based on information compiled by Mr D I Chalmers, FAusIMM, FAIG, (director of the Company) who 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. Ian Chalmers consents to the inclusion in this report of the matters based on his information in the form and context in which it appears

Disclaimer

This report contains certain forward looking statements and forecasts, including possible or assumed reserves and resources, production levels and rates, costs, prices, future performance or potential growth of Alkane Resources Ltd, industry growth or other trend projections. Such statements are not a guarantee of future performance and involve unknown risks and uncertainties, as well as other factors which are beyond the control of Alkane Resources Ltd. Actual results and developments may differ materially from those expressed or implied by these forward looking statements depending on a variety of factors. Nothing in this report should be construed as either an offer to sell or a solicitation of an offer to buy or sell securities.

This document has been prepared in accordance with the requirements of Australian securities laws, which may differ from the requirements of United States and other country securities laws. Unless otherwise indicated, all ore reserve and mineral resource estimates included or incorporated by reference in this document have been, and will be, prepared in accordance with the JORC classification system of the Australasian Institute of Mining, and Metallurgy and Australian Institute of Geosciences.

ABOUT ALKANE - www.alkane.com.au - ASX: ALK and OTCQX: ANLKY

Alkane is a multi commodity company focused in the Central West region of NSW Australia. Currently Alkane has two projects heading towards production in 2013/2015 - the Tomingley Gold Project (TGP) and the nearby Dubbo Zirconia Project (DZP). Tomingley recently received project approval for its development and is scheduled to commence production early 2014. Cash flow from the TGP will provide the funding to maintain the project development pipeline and will contribute to development of the DZP.

The DZP environmental impact statement is nearing completion and a development decision is anticipated early 2014. This project will make Alkane a strategic and significant world producer of zirconium products and heavy rare earths.

Alkane's most advanced gold copper exploration projects are at the 100% Alkane owned Wellington and Bodangora prospects. Wellington has a small Cu-Au resource which can be expanded, while at Bodangora a large 12km^2 monzonite intrusive complex has been identified with porphyry style Cu-Au mineralisation.

Sale of Alkane's interest in the Orange District Exploration Joint Venture, host to the McPhillamys gold deposit, was completed in November 2012 with the issue of 17.5 million Regis Resources Ltd shares.

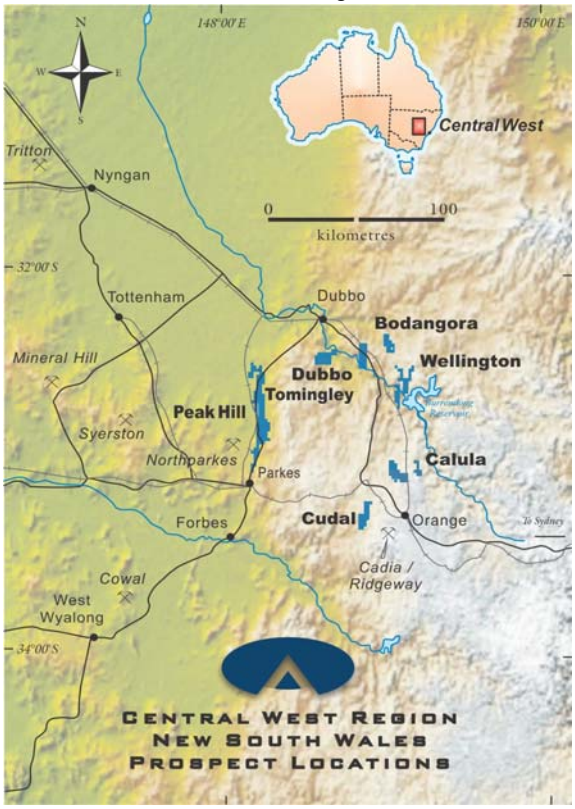


Table 2 DZP Mineral Resources and Ore Reserves

Dubbo Zirconia Project – Mineral Resources

Toongi Deposit	Tonnage (Mt)	ZrO_2 (%)	HfO_2 (%)	Nb_2O_5 (%)	Ta_2O_5 (%)	Y_2O_3 (%)	REO (%)
Measured	**35.70**	**1.96**	**0.04**	**0.46**	**0.03**	**0.14**	**0.75**
Inferred	**37.50**	**1.96**	**0.04**	**0.46**	**0.03**	**0.14**	**0.75**
TOTAL	**73.20**	**1.96**	**0.04**	**0.46**	**0.03**	**0.14**	**0.75**

These Mineral Resources are based upon information compiled by Mr Terry Ransted MAusIMM (Alkane Chief Geologist) who is a competent person as defined in the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Terry Ransted consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. The full details of methodology were given in the 2004 Annual Report.

Dubbo Zirconia Project – Ore Reserves

Toongi Deposit	Tonnage (Mt)	ZrO_2 (%)	HfO_2 (%)	Nb_2O_5 (%)	Ta_2O_5 (%)	Y_2O_3 (%)	REO (%)
Proved	**8.07**	**1.91**	**0.04**	**0.46**	**0.03**	**0.14**	**0.75**
Probable	**27.86**	**1.93**	**0.04**	**0.46**	**0.03**	**0.14**	**0.74**
Total	**35.93**	**1.93**	**0.04**	**0.46**	**0.03**	**0.14**	**0.74**

These Ore Reserves are based upon information compiled by Mr Terry Ransted MAusIMM (Alkane Chief Geologist) who is a competent person as defined in the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The reserves were calculated at a1.5% combined ZrO_2+Nb_2O_5+Y_2O_3+REO cut off using costs and revenues defined in the notes in ASX Announcement of16 November 2011. Terry Ransted consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Figure 3 DZP Location and site infrastructure