

19 October 2012



## Quarterly Report to 30 September 2012

---

### ➤ Dubbo Zirconia Project (DZP)

- Improved heavy rare earth recoveries from demonstration pilot plant (DPP) operation indicate potential increased yttrium, dysprosium and terbium output from the Project
- Current anticipated annual revenue around A\$450 million does not account for uplift from the rare earth separation JV with Japan's Shin-Etsu Chemical
- Environmental Impact Statement is nearing completion and scheduled to be lodged before the end of the year
- Interim feasibility study results indicate increase in capital and operating costs but are still subject to further optimisation. The Project remains robust at the conservative costs and revenues
- Other process improvements, including water recycling, trialled on the DPP and could lead to additional cost savings
- Land and water licence acquisition, and infrastructure development initiated
- Core hole TOD003 intersects 107.4 metres grading 1.83% ZrO<sub>2</sub>, 0.035% HfO<sub>2</sub>, 0.39% Nb<sub>2</sub>O<sub>5</sub>, 0.022% Ta<sub>2</sub>O<sub>5</sub>, 0.12% Y<sub>2</sub>O<sub>3</sub>, 0.74% REO (TYREO 0.86%) with a heavy rare earth distribution of 22%
- Preliminary testing for tantalum recovery has produced promising results

### ➤ Tomingley Gold Project (TGP)

- Project Approval from NSW Department of Planning and Infrastructure received late July
- Final development commitment awaiting approval of mine operations plans
- Capital and operating cost reviews confirm industry wide increases around 10%
- Detailed design advanced and long lead capital acquisitions continue
- RC drilling to define resources at Caloma Two commenced

### ➤ Exploration and Development

- Alkane's interest in the Orange District Exploration Joint Venture, including the McPhillamys gold deposit, sold to Regis Resources Ltd for the issue of 17.5 million Regis shares

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](http://www.alkane.com.au) [mail@alkane.com.au](mailto:mail@alkane.com.au)

For personal use only



## DUBBO ZIRCONIA PROJECT (DZP) – zirconium, niobium, yttrium, rare earth elements

Australian Zirconia Ltd (AZL) 100%

The Dubbo Zirconia Project (DZP) is located in the Central West Region of New South Wales, 30 kilometres south of the city of Dubbo (Figure 1). The DZP is based upon a large in-ground resource of the metals zirconium, hafnium, niobium, tantalum, yttrium, and rare earth elements. Over several years the Company has developed a flow sheet consisting of sulphuric acid leach followed by solvent extraction recovery and refining to generate a suite of saleable products.

### Process and Product Development

In previous feasibility study reports, various potential process changes were identified that could improve the economic viability of the project. Several of these have been trialled in the demonstration pilot plant (DPP) at ANSTO Minerals and some have been incorporated in the current flowsheet including the recovery of rare earths (REE), the reduction in solvent extraction regeneration costs, the secondary zirconia recovery flowsheet, and in-house acid production with electricity co-generation.

Since the previous feasibility study report (ASX Announcement 11 September 2011) and in parallel with the engineering and costing work performed on the feasibility study, process development test work has provided further opportunities for improvement. A number of these initiatives have been evaluated on a laboratory scale and are in the process of being further evaluated in DPP runs scheduled to the end of this year.

The extension of the current DFS process to include these enhancements is due to the potential for significant upside to the project indicated by test work results. Key outcomes are the potential for increased revenue from improved REE recovery, particularly for the important HREE, and reductions in capital expenditure from the combination of the primary and LREE leach steps onto one set of filters and water recovery options that reduce water consumption and evaporation pond area. A value engineering exercise focussed on key project elements is also underway.

While the REE optimisation work is continuing, and further improvement with dysprosium (Dy) and terbium (Tb) recoveries are possible, the following table summarises anticipated output derived from the current DPP mass balances.

**Table 1. Anticipated output as separated REOs**

Rare Earth Distribution in Deposit and Anticipated Recovery @ 1Mtpa			
Light Rare Earth	ppm	%	2012 test work anticipated recovery tonnes
Lanthanum Oxide	1799	19.51%	1000
Cerium Oxide	3393	36.70%	1750
Praseodymium Oxide	373	4.05%	200
Neodymium Oxide	1302	14.12%	750
Samarium Oxide	203	2.20%	72
Heavy Rare Earth			
Europium Oxide	6	0.07%	2
Gadolinium Oxide	198	2.15%	55
Terbium Oxide	31	0.34%	9
Dysprosium Oxide	189	2.05%	75
Holmium Oxide	39	0.42%	~12
Erbium Oxide	107	1.16%	~35
Thulium Oxide	15	0.16%	~5
Ytterbium Oxide	92	1.00%	~32
Lutetium Oxide	13	0.14%	~4
Yttrium Oxide	1460	15.84%	790
LREE	7070	76.68%	3772
YHREE	2150	23.32%	1019
TOTAL	9220	100.00%	4791

For personal use only



A preliminary assessment on recovery of tantalum from the primary filter cake has produced some promising results. This program comprised testing for physical concentration, chemical leaching and pyrometallurgy at laboratory scale which was undertaken by a specialist consultant not involved with the mainstream work at ANSTO Minerals.

This data will need to be replicated at a larger scale before tantalum could be considered for commercial development but a 30% recovery from ore to product would see the Project produce around 100tpa (220,000lbs/annum) Ta<sub>2</sub>O<sub>5</sub> equivalent. Tantalite (30% Ta<sub>2</sub>O<sub>5</sub>) is currently trading for US\$135/lb).

**Heavy rare earth recovery circuit DPP**

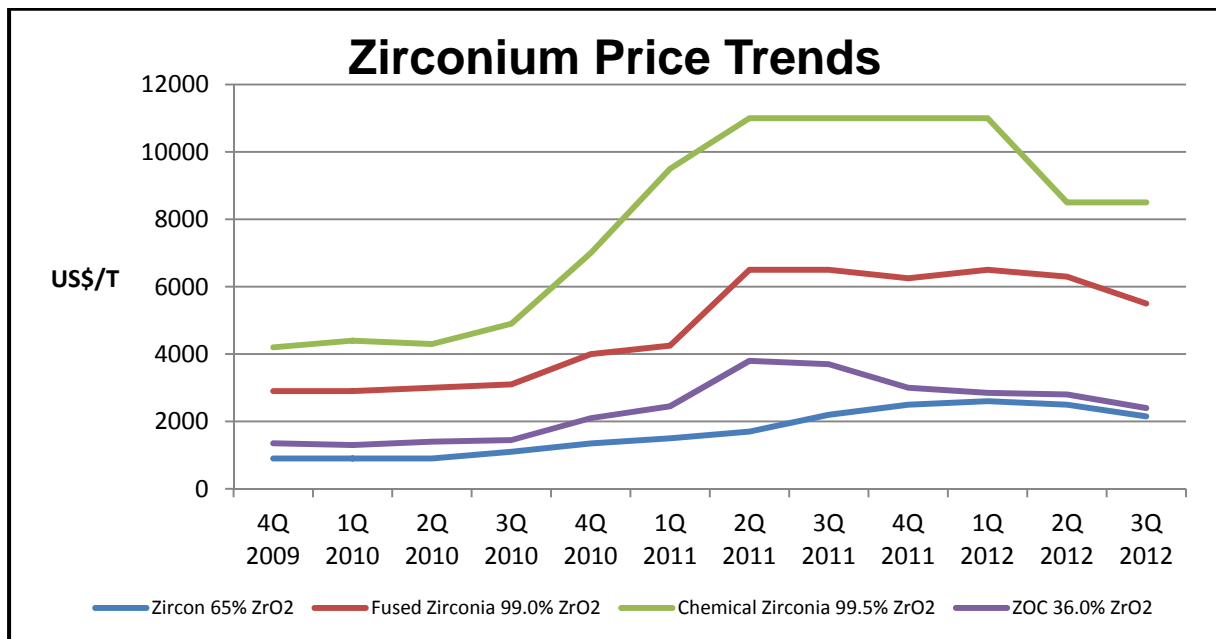


**Reverse osmosis water recycling DPP**



### Market Developments – Zirconium

The zircon - zirconium industry remains very weak with soft demand due to ongoing world financial uncertainty. The Chinese zirconium oxychloride (ZOC) market is very depressed and ZOC prices are close to that of its production precursor, zircon (Table 2). At these prices the Chinese ZOC producers would be struggling to generate returns.



Source:TCMS

For personal use only



While AZL believes that zircon prices and subsequently ZOC prices will improve during 2013, the viability of producing ZOC from the DZP is currently subject to review. The Company will continue with its two ZOC MoU relationships and expand the arrangements to review alternative opportunities.

As a result, AZL has ramped up its program to produce chemical zirconia from DZP zirconium basic sulphate (ZBS) and zirconium hydroxide (ZOH), to be used as precursors for the downstream manufacture of powders and oxides for ceramic and other industrial applications. This work had already established that the DZP could produce a suite of high purity zirconia (+99% ZrO<sub>2</sub>) of variable grain size and morphology for different applications.

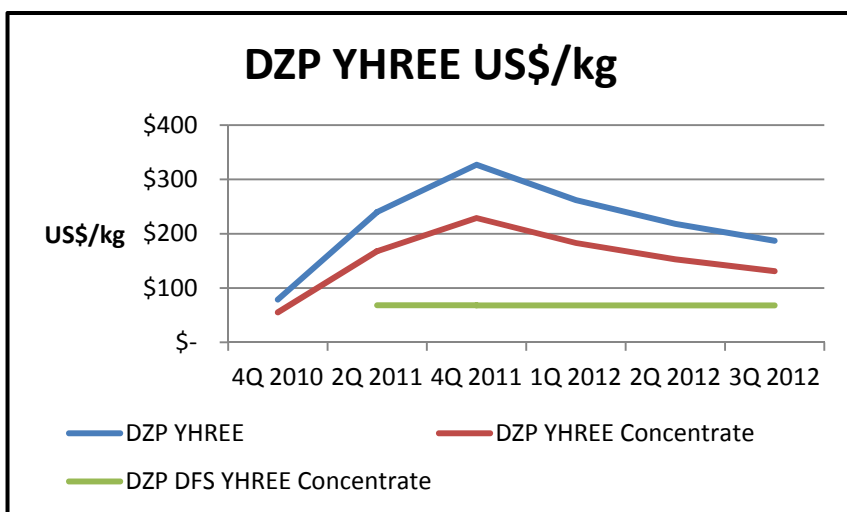
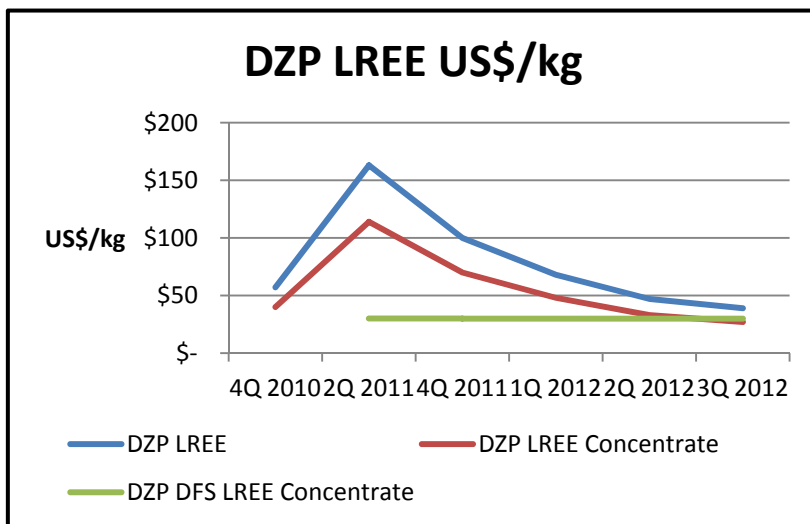
A new test facility to be established should be operating before the end of the year to prepare the zirconia powders for market evaluation.

**Market Developments – Rare Earth Elements (REE)**

Prices for rare earths continued to weaken during the Quarter but the falls were not as severe as for the previous period. As with the June Quarter the price weakening was not uniform with the larger volume lanthanum and cerium taking the major drops (Table 3).

The following graphs show the relative value of the DZP light rare earth (LREE) concentrate and heavy rare earth (HREE) concentrate as separated REOs, compared to an estimated value of selling the concentrate (approx 70% of contained value).

The HREE value remains well above the average used in the definitive feasibility study of September 2011 (ASX Announcement 19 September 2011) while for the first time in recent years, the current quarter prices for the LREE are just below that used in the DFS base case.



These DFS prices do not reflect the returns anticipated by the toll treatment joint venture with Shin-Etsu that will enable the Company to produce the full suite of high purity separated REOs (ASX Announcement 1 August 2012).

For personal use only





## Market Developments – Niobium

The market for niobium pentoxide (Nb<sub>2</sub>O<sub>5</sub>) and ferro-niobium (FeNb) remains stable and prices for the main traded product, FeNb, are US\$40 - \$45/kg. AZL is working with its MoU partner (ASX Announcement 26 October 2011) to develop a market acceptable FeNb product and is anticipating converting the MoU to an off-take / joint venture agreement by the end of 2012.

## Resource Development

A 228.4 metre vertical diamond core drill hole, TOD003, tested the thickness of the mineralised trachyte at Toongi to assist with understanding the deposit origin and determine additional resource potential (Figure 2). The previous deepest drilling was 100 metres. The drill hole intersected 118.7 metres of trachyte, although the top 5.9 metres are weathered and mixed with surface clays and the basal 5.4 metres are weathered and irregularly mineralised. The hole terminated in sediments of the Triassic aged Napperby Formation and these sediments are intruded by basalt and trachyte sills thought to be of a similar age to the Jurassic Toongi trachyte.

Table 4: Diamond drill core results DZP

Hole No	East	North	RL (m)	Azim	Inclin	Int'cept (m)	Grade (ZrO <sub>2</sub> %)	Interval (m)	EOH (m)	Comments
TOD003	652826	6406926	390.5	000°	90°	107.4	1.83	5.9 – 113.3	228.4	

Analyses on generally 1 metre core by lithium borate fusion ICP-MS

## Average grades of TOD003

**1.83% ZrO<sub>2</sub>, 0.035% HfO<sub>2</sub>, 0.39% Nb<sub>2</sub>O<sub>5</sub>, 0.022% Ta<sub>2</sub>O<sub>5</sub>, 0.12% Y<sub>2</sub>O<sub>3</sub>, 0.74% REO (TYREO 0.86%)**

The drill grades are slightly less than the average previously determined for the deposit and this is thought to result from the ICP-MS analytical technique compared to the original XRF. The rare earth distribution is very similar to the deposit (Table 1) with an approximate 78% LREE to 22% HREE split.

The drilling confirms that the Toongi mineralised trachyte is not a volcanic plug as previously thought but is more likely a volcanic sill or flow (Figure 2). Further drilling would be required to determine the underlying geometry of the body however the depth extension to the mineralisation identified by TOD003 could add 10 to 20% to the resource.

## Environmental Impact Statement (EIS)

The DZP has been classified by the NSW Department of Planning and Infrastructure (DP&I) as a State Significant Project. The EIS is being managed by regional NSW environment specialists, R W Corkery & Co with the input from 11 specialist consultants. Much of the base line work has been completed and is in the process of being compiled into the study document to be submitted to the DP&I. The EIS is scheduled to be completed late November.

On the basis of the work completed to date, no major issues are anticipated.

## Definitive Feasibility Study (DFS)

The DFS and process development have been managed by TZ Minerals International Pty Ltd (TZMI) since the inception of the Project in 1999. TZMI has input from external engineering companies and transport logistics specialists to develop the capital and operating costs for the Project. TZMI is also working with the environmental consultants to ensure the site and operation has minimal impact on the existing environment.

While process development will continue, particularly with the REE recovery circuits and water recycling, TZMI has updated capital and operating costs for the 1Mtpa operation.

For personal use only



## Interim Capital Costs

The capital cost estimate prepared for the DZP uses a work breakdown structure (WBS) based on the study flowsheet as the basis for the estimate. The WBS enables the plant to be divided into discrete areas, packages or facilities so that engineering and drawings appropriate to each area, package or facility could be completed to enable a capital cost to be estimated.

Capital equipment costs have been determined by soliciting budget quotations from suitable vendors. Where possible bulk material costs have been based on unit rates from local and interstate vendors, with other bulk material rates determined from in-house data bases. The capital cost estimate does not make any allowance for costs that may be incurred as a consequence of any future test work or scope changes.

Unit labour costs have been calculated from current local applicable construction labour awards as advised to TZMI, and include construction equipment costs, mobilisation and demobilisation of personnel.

	A\$
Plant, infrastructure and acid plant	798M
EPCM	89M
Contingency	<u>177M</u>
<b>TOTAL</b>	<b>1,064M</b>

As widely reported, capital costs in Australia have escalated dramatically in the last two years and the 10% increase for the DZP numbers was not unexpected. AZL believes that there is scope to reduce the capex with the implementation of a value engineering approach and incorporation of some of the process initiatives that are being trialled on the DPP. The company will also consider fixed sum EPC contracts as an option to decrease capex and some preliminary discussions have been had with major engineering companies.

## Interim Operating Costs

The operating cost estimate has been developed based on actual tonnes mined mining and processed, including ramp-up effects such as costs associated with labour. TZMI has used information from AZL and the marketplace to develop the operating costs. The estimate was prepared in July-September 2012 Australian dollars and, where applicable, a US\$:A\$ exchange rate of 0.85 has been assumed.

Process reagent and utility consumptions are verified and estimated from interactive mass balance and energy balance models constructed by TZMI. The models draw from DPP operational experience, with allowances made for scale up in energy consumption. Electrical energy consumption is taken from the motor list assembled from the engineering capital estimate.

Contract mining costs are directly drawn from recent quotes.

Personnel numbers are determined by operational and support function organisation requirements, while salary data consider local and national industry trends.

Logistics costs and utility rates have been advised on recent enquiries by TZMI and AZL, with comparisons to Alkane's nearby gold project experience.

The typical annual operating cost for steady state operation at 1 million tonnes mined and processed, excluding any ramp-up consideration is:

**TOTAL** **A\$228Mpa**

Of these costs about 64% are process reagents and 12% are personnel, both of which have added to the overall increase of 10%. As with the capex, there is scope to reduce the opex with competitive tender for chemicals supply to the project as well as the implementation of process improvements.



## Interim Revenue

As advised in Market Developments above, prices for most commodities have been severely impacted by current global financial conditions and these have generally reduced the DZP's anticipated revenue stream. The changes have largely impacted on zirconium and light rare earth revenues, but the reduction was offset to some degree by the increase for the heavy rare earth concentrate. The rare earth revenues used do not account for the anticipated improvement achieved through the Shin-Etsu joint venture and the Project's ability to sell higher value individual separated rare earth products.

At current prices annual revenue is estimated to be approximately **A\$450M**.

Applying the conservative costs and revenues, the Project remains robust.

## Infrastructure

AZL has secured Call Options covering several properties within and adjacent to the project site that will cater for all site infrastructure, including residue storage facilities. A water licence acquisition program is underway to provide all requirements for the DZP.

A site access study via road or rail, or more likely a combination of both is well advanced and will be incorporated into the EIS and DFS. Power line options are also being considered but an off-take point from the state grid near Geurie, 25km to the east of the plant site (Figure 1), is considered most likely.

The Company has identified a potentially large limestone resource near Geurie which should be suitable for the waste stream neutralisation at the processing plant.

## Schedule

Subject to finalising the revised flow sheet and process improvements, the updated DFS should be completed later this year and a program to secure project financing is scheduled to commence shortly.

The NSW state approvals process remains the large unknown and while AZL believes that the Project should not generate any unacceptable environmental risk, the schedule is dependent upon timely review by government departments, local government and stakeholders in the region. AZL believes that the process should take less than 12 months and construction could commence before the end of 2013. This timetable would enable first production in the second half of 2015.

## TOMINGLEY GOLD PROJECT (TGP) - gold

*Tomingley Gold Operations Pty Ltd (TGO) 100%*

The TGP is based on three gold deposits (Wyoming One, Wyoming Three and Caloma) located 14 kilometres north of the Company's Peak Hill Gold Mine, approximately 50 kilometres south west of Dubbo (figures 1 & 2). A Definitive Feasibility Study (DFS) was completed late 2010 (*ASX Report dated 13 December 2010*).

## Development

Approval for the TGP was received from the NSW Department of Planning and Infrastructure in late July. A number of operational and environmental management plans have been finalised or are being prepared and approval of the site Mining Lease from the Division of Resources and Energy and approval of environmental management plans by the EPA are the final steps to enable construction work to commence.

As with the mining industry in general, both capital and operating costs have increased over the last two years and a recent review of the TGP has seen capital costs rise to A\$107 million (\$116 million with contingencies). At the end of the September Quarter \$10.62 million have been expended on development and capital costs, including \$3.12 million for EPCM expenditure.



An updated financial model did not include the revised resource potential from the Caloma open pit identified by recent RC drilling, or the potential in the Caloma Two deposit. At current gold prices the TGP base case will generate revenue around A\$570 million with an anticipated EBITDA of A\$200 million, with an average life of mine cash costs of around A\$1,100 per ounce.

The land acquisition program is almost complete and all land required for the development secured. Detailed design by the EPCM contractors, Mintrex Pty Ltd is well advanced and some off-site construction work could begin, once all approvals are in place, with the upgrade of primary and secondary road access and commencement of the water and power lines (Figure 1). Some long-lead items such as the ball mill were ordered last year to minimise construction delays and it is planned to commence production by quarter four 2013.

Recently Alkane agreed to extend to 31 December 2012 the mandate to Credit Suisse to provide a project financing facility. This financing comprises a Project Loan Facility of up to A\$45 million and a Gold Hedging Facility of up to 163,000 ounces. Last year the Company entered into an initial 90,000 ounce gold forward sale that will underwrite a minimum price of approximately A\$1,600 per ounce for the first two and a half years of production from the Project.

### **Resource Development**

A major RC drilling program has commenced to define Measured / Indicated Resources for the Caloma Two deposit for inclusion into the production model for the Project.

**BODANGORA (copper-gold), WELLINGTON (copper-gold), CUDAL (gold-copper-zinc)** were inactive.

### **CALULA (base metals-gold)**

*Alkane Resources Ltd 100%; Part Alkane 80%, Comet Resources Ltd 20%*

Alkane has reached agreement with Comet Resources Ltd to acquire an immediate 80% interest in exploration licence EL 7971 which covers approximately 53km<sup>2</sup> adjacent to Alkane's existing EL 7235 and EL 7383 (Figure 3). Alkane will carry all expenditures to the completion of a bankable feasibility study and decision to mine on any resources defined within EL 7971. Comet can then elect to contribute at 20% or dilute according to a standard industry formula.

The Calula Project is located about 25km north of Orange and straddles the structural boundary between the Ordovician aged Molong Volcanic Belt in the west and the Silurian Hill End Trough to the east. The Ordovician hosts the major porphyry style, gold-copper deposits such as Newcrest's Cadia-Ridgeway operations, while the Silurian volcanics host volcanogenic massive sulphide (VMS) deposits (Lewis Ponds), structural gold deposits (Hill End) and the hybrid McPhillamys deposit.

Comet has completed several surface geochemical programs and limited RC drilling, but several prospects remain untested.

Alkane believes that the project is very prospective for several target styles, and given the Company's involvement in the discovery of the McPhillamys deposit, is particularly well placed to assess the area's potential for McPhillamys style gold mineralisation.

### **ORANGE DISTRICT EXPLORATION JOINT VENTURE - ODEJV (gold-copper)**

*Alkane Resources Ltd 49%, Newmont Australia Limited 51%*

As advised to the ASX on 9 August 2012, Alkane and Newmont Exploration Pty Ltd, accepted an offer from Regis Resources Ltd for their respective interests in the ODEJV located near Orange.

The principal asset of the ODEJV is a 2.96 million ounce gold resource (see attached resource statement) at McPhillamys within the Moorilda tenements. Regis will pay \$150 million for the tenements, mining information, all fixtures, machinery, equipment and other property or rights of any description acquired with funds of the Joint Venture (including all access, compensation and agistment agreements relating to the JV tenements and any underlying freehold land) and any other Joint Venture property.

For personal use only





Alkane will receive \$73.5 million for its 49% interest, to be settled by the issue of fully paid ordinary shares in Regis. The number of shares received will be calculated at \$4.20 per share being the volume weighted average trading price of Regis shares for the 45 days preceding acceptance of the offer, ie 17.5 million shares. At current prices, the shares are valued at about \$95M (as at 19 October).

Alkane's interests in the ODEJV are held in its wholly owned subsidiary, LFB Resources NL, which company will be transferred to Regis subject to NSW Ministerial approval of the change of ownership of LFB. Other conditions precedent include waiver by Alkane, Newmont and LFB of their pre-emptive rights under the ODEJV, approval by Regis' project financier and confirmation of tenement status.

### **LEINSTER REGION JOINT VENTURE (nickel-gold)**

*Alkane Resources Ltd 20% diluting, Xstrata Nickel Australasia 80%*

*The three prospects - **Leinster Downs**, **Miranda** and **McDonough Lookout** - are subject to a farm-in agreement with Xstrata Nickel Australasia.*

Xstrata have not advised any activities for the Quarter to date.

### **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](http://www.alkane.com.au) - ASX: ALK and OTCQX: ANLKY**

Alkane is a multi commodity company focussed 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. Cash flow from the TGP will provide the funding to maintain the project development pipeline and to contribute to development of the DZP.

The DZP revised feasibility study and environmental impact statement is nearing completion and a development decision is anticipated in the second half of 2013. 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 resource of 1Mt @ 0.99% Cu and 0.3g/t Au which can be expanded while at Bodangora a large 12km<sup>2</sup> monzonite intrusive complex has been identified with porphyry style Cu-Au mineralisation.

For personal use only



**Table 2. Zirconium industry prices Q2 2010 to Q3 2012**

PRODUCT	ZrO <sub>2</sub>	Q2 2010 US\$/T	Q2 2011 US\$/T	Q2 2012 US\$/T	Q3 2012 US\$/T
Zircon (producer/trader)	65%	\$900 - \$1,150	\$1,700 - \$2,750	\$2,300 - \$2,600	\$2,000 - \$2,300
(100% ZrO <sub>2</sub> basis)	100%	(\$1,380 - \$1,770)	(\$2,620 - \$4,230)	(\$3,540 - \$4,000)	(\$3,080 - \$3,540)
ZOC (zirconium oxychloride)	36%	\$1,350 - \$1,450	\$3,600 - \$4,000	\$2,700 - \$3,000	\$2,300 - \$2,500
(100% ZrO <sub>2</sub> basis)	100%	(\$3,750 - \$4,030)	(\$10,000 - \$11,110)	(\$7,500 - \$8,330)	(\$6,390 - \$6,940)
ZBS (zirconium basic sulphate)	33%	\$1,770	\$6,000	\$3,200	\$2,900
(100% ZrO <sub>2</sub> basis)	100%	\$5,360	\$18,180	\$9,700	\$8,790
ZBC (zirconium basic carbonate)	40%	\$2,100	\$5,400	\$4,200	\$3,800
(100% ZrO <sub>2</sub> basis)	100%	\$5,250	\$13,500	\$10,500	\$9,500
Fused Zirconia	98.50%	\$2,900 - \$3,100	\$6,000 - \$7,000	\$5,600 - \$7,000	\$5,000 - \$6,000
Chemical Zirconia	99.50%	\$4,200 - \$4,400	\$10,000 - \$12,000	\$8,000 - \$9,000	\$8,000 - \$9,000
Chemical Zirconia	99.90%	\$5,300 - \$5,500	\$12,000 - \$15,000	\$9,000 - \$10,000	\$9,000 - \$10,000

*Source: TCMS*

**Table 3. Rare earth pricing Q2 2010 to Q3 2012**

Rare Earths Prices (US\$/kg FOB China REO)						
Source: <i>Metal Pages</i> © Numbers have been rounded						
Light Rare Earth	DZP Distribution	Q2 2010 Average	Q2 2011 Average	Q4 2011 Average	Q2 2012 Average	Q3 2012 Average
Lanthanum Oxide	19.51%	\$7.13	\$138.00	\$64.00	\$23.00	\$18.50
Cerium Oxide	36.70%	\$5.58	\$138.00	\$56.00	\$24.00	\$19.10
Praseodymium Oxide	4.05%	\$30.60	\$215.00	\$204.00	\$118.00	\$100.00
Neodymium Oxide	14.12%	\$31.13	\$253.00	\$235.00	\$116.00	\$100.00
Samarium Oxide	2.20%	\$4.50	\$120.00	\$92.00	\$82.00	\$60.00
<b>Heavy Rare Earth</b>						
Europium Oxide	0.07%	\$521.67	\$1867.00	\$3783.00	\$2365.00	\$2,000.00
Gadolinium Oxide	2.15%	\$8.25	\$167.00	\$135.00	\$103.00	\$95.00
Terbium Oxide	0.34%	\$545.00	\$1767.00	\$2938.00	\$1982.00	\$1,850.00
Dysprosium Oxide	2.05%	\$196.67	\$983.00	\$1973.00	\$1072.00	\$940.00
Ho, Er, Tm, Yb, Lu	2.89%					
Yttrium Oxide	15.84%	\$11.42	\$158.00	\$128.00	\$116.00	\$85.00
<b>DZP LREE</b>	<b>76.68%</b>	<b>\$12.06</b>	<b>\$163.00</b>	<b>\$100.00</b>	<b>\$47.00</b>	<b>\$39.00</b>
<b>DZP YHREE</b>	<b>23.32%</b>	<b>\$42.23</b>	<b>\$240.00</b>	<b>\$327.00</b>	<b>\$218.00</b>	<b>\$187.00</b>
<b>DZP LREE Concentrate</b>		<b>\$8.44</b>	<b>\$114.00</b>	<b>\$70.00</b>	<b>\$33.00</b>	<b>\$27.00</b>
<b>DZP YHREE Concentrate</b>		<b>\$29.59</b>	<b>\$168.00</b>	<b>\$229.00</b>	<b>\$153.00</b>	<b>\$131.00</b>

*Compiled by IMCOA*

These prices are for individual separated rare earth oxides at 99% purity, and the actual value for DZP concentrates will depend on market acceptance of the concentrate, but for this table 70% of the value has been assumed. The prices quoted above are averaged for the full quarter.

For personal use only



# Mineral Resource and Ore Reserve Statement September 2012

## Dubbo Zirconia Project – Mineral Resources (2011)

Toongi Deposit	Tonnage (Mt)	ZrO <sub>2</sub> (%)	HfO <sub>2</sub> (%)	Nb <sub>2</sub> O <sub>5</sub> (%)	Ta <sub>2</sub> O <sub>5</sub> (%)	Y <sub>2</sub> O <sub>3</sub> (%)	REO (%)	U <sub>3</sub> O <sub>8</sub> (%)
Measured	35.70	1.96	0.04	0.46	0.03	0.14	0.75	0.014
Inferred	37.50	1.96	0.04	0.46	0.03	0.14	0.75	0.014
<b>TOTAL</b>	<b>73.20</b>	<b>1.96</b>	<b>0.04</b>	<b>0.46</b>	<b>0.03</b>	<b>0.14</b>	<b>0.75</b>	<b>0.014</b>

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 (2012)

Toongi Deposit	Tonnage (Mt)	ZrO <sub>2</sub> (%)	HfO <sub>2</sub> (%)	Nb <sub>2</sub> O <sub>5</sub> (%)	Ta <sub>2</sub> O <sub>5</sub> (%)	Y <sub>2</sub> O <sub>3</sub> (%)	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
<b>Total</b>	<b>35.93</b>	<b>1.93</b>	<b>0.04</b>	<b>0.46</b>	<b>0.03</b>	<b>0.14</b>	<b>0.74</b>

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 a 1.5% combined ZrO<sub>2</sub>+Nb<sub>2</sub>O<sub>5</sub>+Y<sub>2</sub>O<sub>3</sub>+REO cut off using costs and revenues defined in the notes in ASX Announcement of 16 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.

## Tomingley Gold Project – Mineral Resources (2012)

DEPOSIT	MEASURED		INDICATED		INFERRED		TOTAL		Gold (koz)
	Tonnage (t)	Grade (g/t)	Tonnage (t)	Grade (g/t)	Tonnage (t)	Grade (g/t)	Tonnage (t)	Grade (g/t)	
Top Cut 2.5x2.5x5.0m model									
Wyoming One	2,316,550	2.2	890,340	2.2	3,117,350	1.7	6,324,240	1.9	392.4
Wyoming Three	642,470	2.0	63,225	2.0	102,820	1.3	808,510	1.9	49.9
Caloma	2,690,530	2.3	567,860	2.1	2,194,490	1.9	5,452,870	2.1	369.4
<b>Total</b>	<b>5,649,550</b>	<b>2.2</b>	<b>1,521,420</b>	<b>2.1</b>	<b>5,414,660</b>	<b>1.8</b>	<b>12,585,630</b>	<b>2.0</b>	<b>811.7</b>

These Mineral Resources are based upon information compiled by Mr Richard Lewis FAusIMM (Lewis Mineral Resource Consulting Pty Ltd) 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 (JORC Code). Richard Lewis 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 are given in the ASX Report dated 25 March 2009 and 2 October 2010, and this announcement.

## Tomingley Gold Project – Ore Reserves (2011)

DEPOSIT	PROVED		PROBABLE		TOTAL		Ounces (minable)
	Tonnage (t)	Grade (g/t)	Tonnage (t)	Grade (g/t)	Tonnage (t)	Grade (g/t)	
Wyoming One	1,700,000	1.6	200,000	1.3	1,900,000	1.6	94,500
Wyoming Three	500,000	1.6	0	0.0	500,000	1.6	28,100
Caloma	1,100,000	2.3	100,000	1.7	1,200,000	2.2	86,500
<b>Total</b>	<b>3,300,000</b>	<b>1.8</b>	<b>300,000</b>	<b>1.5</b>	<b>3,600,000</b>	<b>1.8</b>	<b>209,100</b>

These Ore Reserves are based upon information compiled under the guidance of Mr Dean Basile MAusIMM (Mining One Pty Ltd) 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 and Resources are estimated at an effective A\$1,540 per ounce gold price. Dean Basile consents to the inclusion in the report of the matters based on the information in the form and context in which it appears. The Caloma reserves are based on the 2009 resources, not the updated resources.

## Peak Hill Gold Mine – Mineral Resources (2011)

DEPOSIT	MEASURED		INDICATED		INFERRED		TOTAL		k oz
	Tonnage (t)	Grade (g/t)	Tonnage (t)	Grade (g/t)	Tonnage (t)	Grade (g/t)	Tonnage (t)	Grade (g/t)	
0.5g/t gold cut off									
Proprietary			9,440,000	1.35	1,830,000	0.98	11,270,000	1.29	467.4
3.0g/t gold cut off									
Proprietary					810,000	4.40	810,000	4.40	114.6

These Mineral Resources are based upon information compiled by Mr Terry Ransted MAusIMM (Principal, Multi Metal Consultants Pty Ltd) 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.

## Wellington – Galwadgere – Mineral Resources (2011)

DEPOSIT	MEASURED		INDICATED	
	Tonnage (t)	Grade (% Cu)	Tonnage (t)	Grade (% Cu)
Galwadgere	-	-	2,090,000	0.99

These Mineral Resources are based upon information compiled by Mr Terry Ransted MAusIMM (Principal, Multi Metal Consultants Pty Ltd) 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 2005 Annual Report.

## Moorilda – McPhillamys (ODEJV) – Mineral Resources (2011)

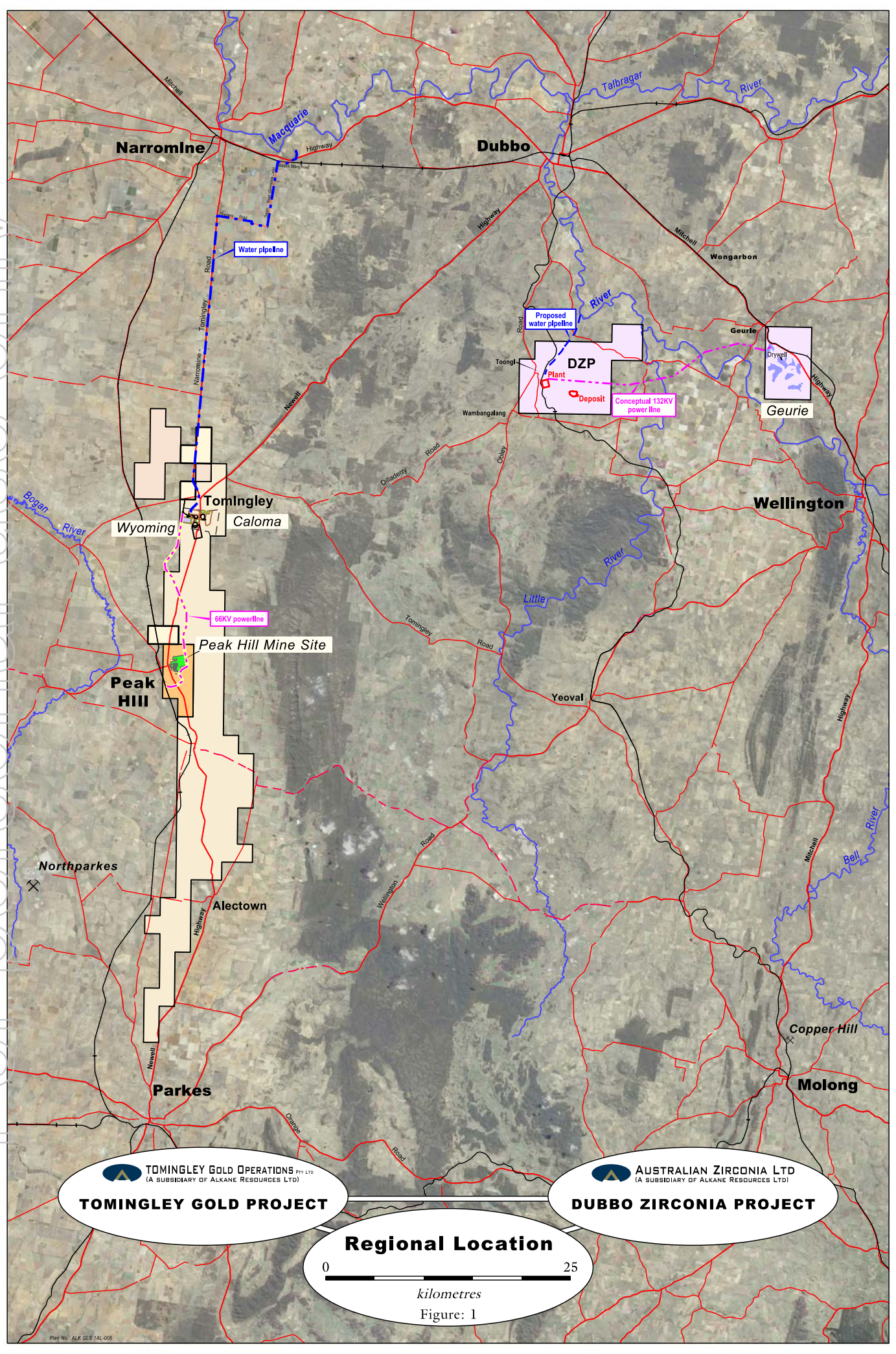
DEPOSIT	INDICATED			INFERRED			TOTAL			k oz gold	tonnes copper
	Tonnage (t)	Grade (g/t)	Grade % Cu	Tonnage (t)	Grade (g/t)	Grade % Cu	Tonnage (t)	Grade (g/t)	Grade % Cu		
McPhillamys 0.3g/t Au cut-off											
Inner Ore Zone	51,650,000	1.10	0.07	23,504,000	1.19	0.07	75,154,000	1.13	0.07	2,723.6	55,091
Outer Ore Envelope	9,624,000	0.44	0.04	7,167,000	0.43	0.03	16,791,000	0.43	0.03	234.7	5,729
<b>Total</b>	<b>61,274,000</b>	<b>0.99</b>	<b>0.07</b>	<b>30,671,000</b>	<b>1.01</b>	<b>0.06</b>	<b>91,945,000</b>	<b>1.00</b>	<b>0.07</b>	<b>2,958.3</b>	<b>60,820</b>


These Mineral Resources are based upon information compiled by Mr Richard Lewis FAusIMM (Lewis Mineral Resource Consulting Pty Ltd) 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 (JORC CODE). Richard Lewis 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 ASX Announcement 5 July 2010. Totals may not tally due to rounding.

For personal use only



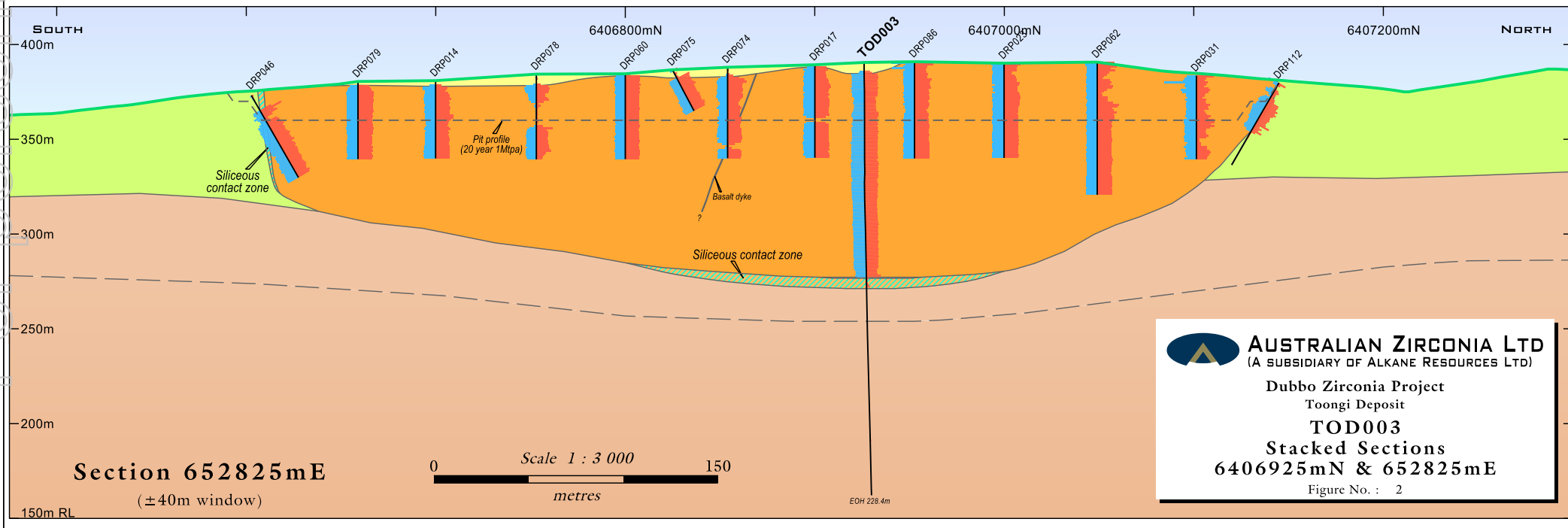
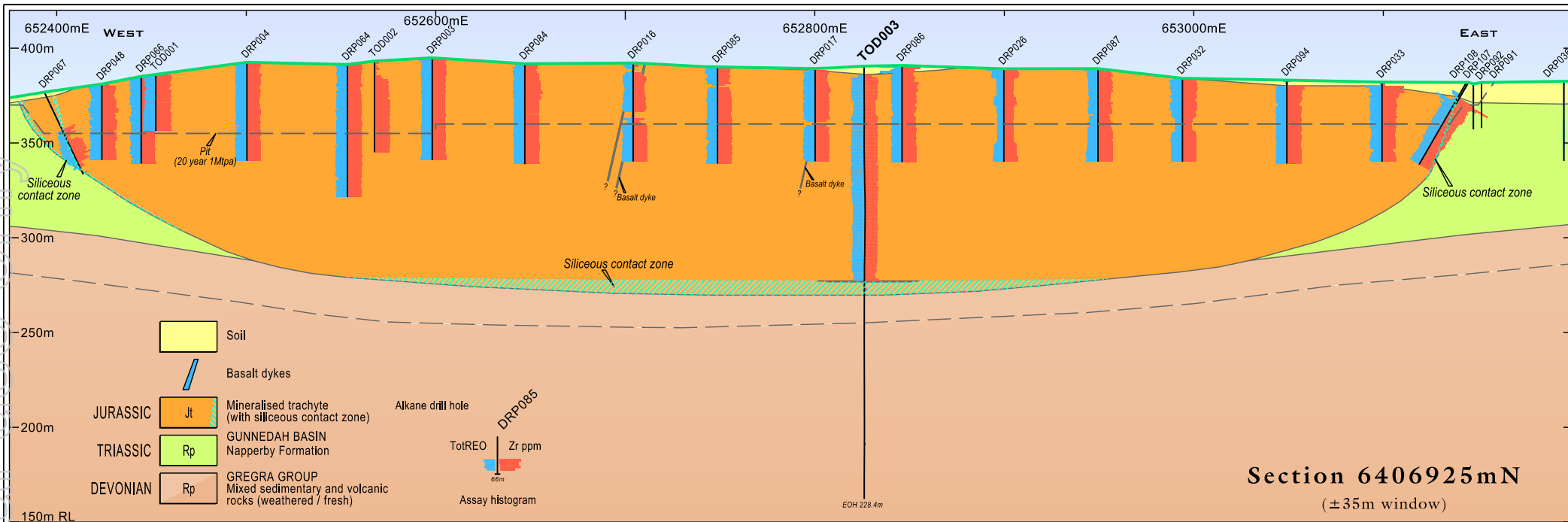
For personal use only



 **TOMINGLEY GOLD OPERATIONS** PTY LTD  
(A SUBSIDIARY OF ALKANE RESOURCES LTD)  
**TOMINGLEY GOLD PROJECT**

 **AUSTRALIAN ZIRCONIA LTD**  
(A SUBSIDIARY OF ALKANE RESOURCES LTD)  
**DUBBO ZIRCONIA PROJECT**

**Regional Location**  
0 25  
kilometres  
Figure: 1

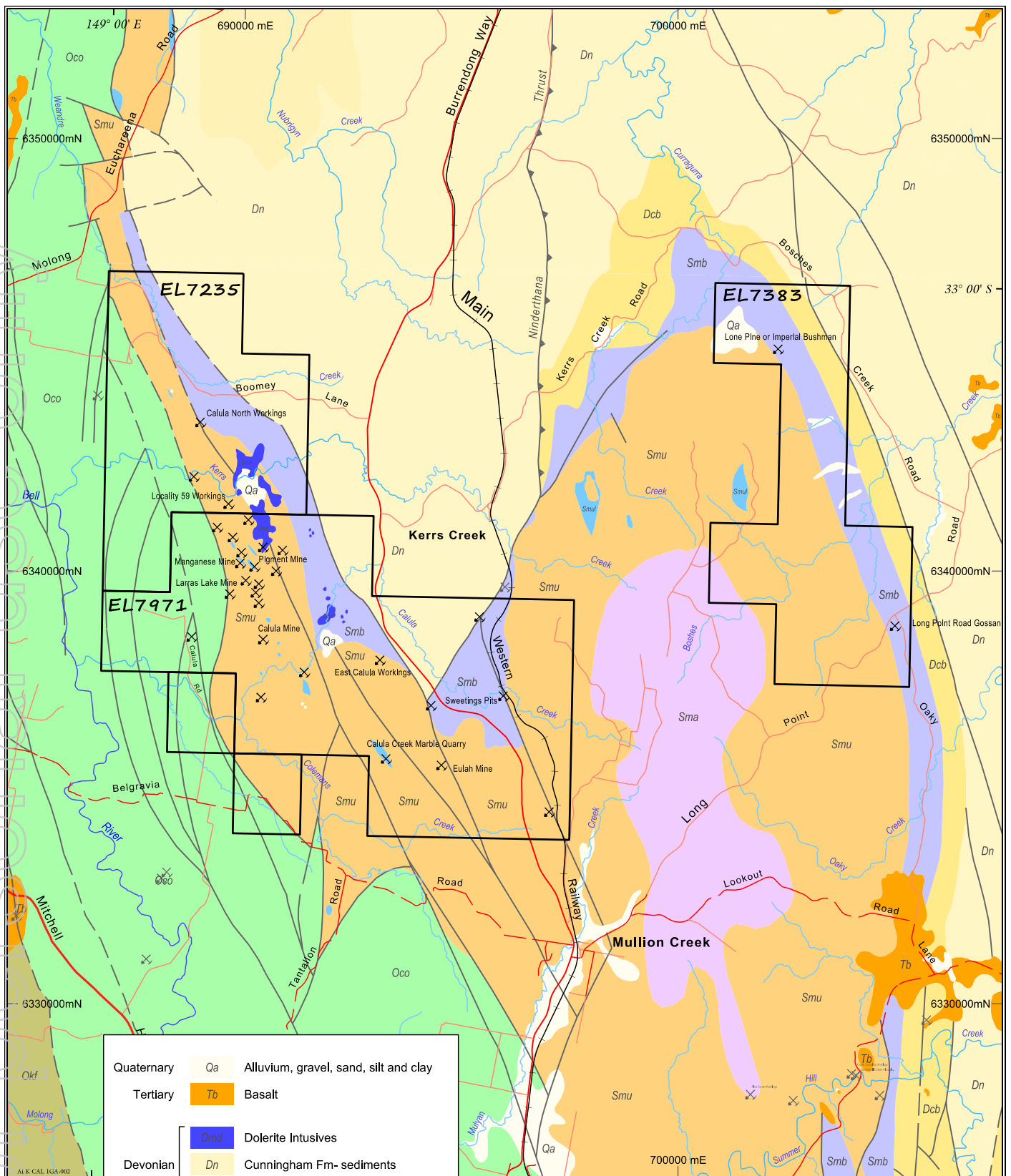


**AUSTRALIAN ZIRCONIA LTD**  
(A SUBSIDIARY OF ALKANE RESOURCES LTD)

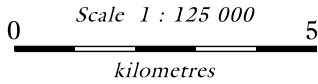
Dubbo Zirconia Project  
Toongi Deposit  
**TOD003**  
Stacked Sections  
6406925mN & 652825mE  
Figure No. : 2

For personal use only





Quaternary	Qa	Alluvium, gravel, sand, silt and clay
Tertiary	Tb	Basalt
Devonian	Dmd	Dolerite Intrusives
	Dn	Cunningham Fm- sediments
	Dcb	Bay Fm- Sediments
MUMBIL GROUP		
Silurian	Smb	Barnby Hills Shale- sediments
	Smu	Mullions Range Volcanics- volcanics
	Smul	Limestone
	Sma	Anson Fm- volcanics & sediments
Ordovician	Oco	Oakdale Fm- Volcanics & sediments
	Okf	Fairbridge Volc- Basalt
		Fault, fault inferred, thrust



**ALKANE RESOURCES LTD**  
**CALULA PROJECT**  
 NEW SOUTH WALES  
 EL7235, EL7383, EL7971

**Regional Geology**

Projection - MGA Zone 55  
 Datum (horizontal) - GDA94

Figure: 3