



## QUARTERLY REPORT TO 31 DECEMBER 2010

### KEY HIGHLIGHTS

#### ➤ DUBBO PROJECT – NEW REVENUE NUMBERS

- Potential revenues from the DZP products continue to increase assisted by escalating zircon prices, the Chinese Government classification of zirconium as a strategic metal and an indication of future preferences for value added zirconium products, and further restriction of their rare earth exports
- These developments have opened opportunities for expansion of zirconium product markets for the DZP, and provide scope to increase the size of the project to 1Mtpa
- Base case revenues at the rate of 400,000tpa ore processed are now estimated at US\$180Mpa with project open pit life of at least 200 years, while the expanded case of 1Mtpa could generate revenues of US\$450Mpa
- The Demonstration Pilot Plant (DPP) continued development of the yttrium heavy rare earth (YHREE) and the light rare earth (LREE) products
- Discussions for off-take agreements with potential consumers continued

#### ➤ TOMINGLEY GOLD PROJECT – DFS COMPLETED

- The base case development confirmed a production of 370,000 ounces of gold over a seven and half year life
- Operating cash flows estimated to be A\$155M with a capital cost of A\$95M
- Noah's Rule Pty Ltd were appointed financial advisors for the project and are investigating funding alternatives

#### ➤ CUDAL – NEW GOLD AND BASE METAL DISCOVERY

- Reconnaissance RC drilling at the Bowen Park One target discovers new gold and base metal mineralisation:

**CUD006 17 metres grading 1.20g/t gold and 2.85% zinc from 96 m including 4 metres grading 2.20g/t gold and 7.03% zinc from 96m**

### Corporate Profile

#### Alkane Board

J. S. F. Dunlop (Chairman)  
D. I. Chalmers (Managing Dir)  
A. D. Lethlean (Director)  
I. J. Gandel (Director)  
L A Colless (Joint Secretary)  
K E Brown (Joint Secretary)

#### Contact

Ian Chalmers  
Managing Director  
96 Parry Street  
PERTH WA 6000  
Telephone +61 8 9328 9411  
Facsimile +61 8 9227 6011  
Email [ichalmers@alkane.com.au](mailto:ichalmers@alkane.com.au)  
Web – [www.alkane.com.au](http://www.alkane.com.au)

#### 12 month share price range

A\$1.19- \$0.23

Market Cap 18 Jan 2011

~A\$259 million

ASX Code: ALK

249 million shares

31 December 2010 Cash

Cash ~ \$4.0 million

No debt

#### Media Relations

Westbrook Communications  
Level 1, 17 Castlereagh Street  
SYDNEY NSW 2000  
Telephone +61 2 9231 0922  
Facsimile +61 2 9231 0131  
Web – [www.westbrookfin.com.au](http://www.westbrookfin.com.au)

For personal use only



## NEW SOUTH WALES

### TOMINGLEY GOLD PROJECT (TGP) - gold

Alkane 100%

The TGP is located in the Central West of New South Wales, about 400 kilometres northwest of Sydney. The Project is centred on three gold deposits **Wyoming One**, **Wyoming Three** and **Caloma**, located 14 kilometres north of the Company's Peak Hill Gold Mine (Figures 1 and 2).

#### Definitive Feasibility Study (DFS)

The results of the DFS were reported to the ASX on 13 December 2010, and only the summary will be repeated (Table 1).

The financial projections were developed utilizing a gold price of \$1,400 per ounce in Australian Dollars on a quarterly period basis. Comparative results for \$1,400/oz (base case), \$1,500/oz (anticipated) and \$1,600/oz (upside) results are shown in Table 2 below.

The Base Case analysis incorporates the current ore reserve and anticipated additional recoverable mineral resources from the open pits and underground mining. Metallurgical recoveries were determined by extensive testing of drill samples. The project life is approximately 7.5 years and will recover 369,261 ounces.

The financial analysis is based on pit designs derived from pit shells generated at \$1,540/oz and underground mine design optimized at \$1,250/oz. Total capital requirement for the project was estimated at A\$95 million, including a 10% contingency.

**Table 1 Summary of Life of Mine Production – Base Case 7.5 years**

	Open Pit	Underground	Total
Ore Tonnes Mined (t)	5,883,183	679,417	6,562,600
Waste Tonnes Mined (t)	44,574,441	199,657	44,774,098
Total Tonnes Mined (t)	50,457,624	879,074	51,336,698
Average Mined Grade (g/t)	1.64	3.98	1.88
<b>Total Gold Recovered (oz)</b>	<b>288,322</b>	<b>80,939</b>	<b>369,261</b>

**Table 2 Summary of Project Financials – Base Case 7.5 years**

Financial Summary			
	Base Case	Anticipated	Upside
Gold Price	A\$1,400 / oz	A\$1,500 / oz	A\$1,600 / oz
Revenue	\$516.97m	\$553.89m	\$590.82m
Operating Cash Flow	\$155.20m	\$192.13m	\$233.86m
Net Cash Flow*	\$65.39m	\$102.32m	\$144.65m
IRR	14.5%	22.2%	33.3%
NPV	\$15.08m	\$41.61m	\$76.73m

\*Net Cash Flow = EBITDA, including State royalties but excludes Compass Resources Limited royalty

For personal use only



### ***Project Financial Advisors***

Noah's Rule Pty Ltd have been appointed advisors to the Company to assist in providing financing facilities for the Project and they have commenced negotiating alternatives which will include a hedging component for the gold output revenue.

### ***Development Timetable***

Depending upon suitable financing being secured for the project, the development timetable will be contingent upon achieving project approval from the NSW Minister for Planning. The final Environmental Assessment (EA) is scheduled to be lodged by the end of January 2011 and the review and consent process is expected to take approximately five months. Total construction time is estimated at fifteen months, and first gold production anticipated in the second half of 2012.

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

*Australian Zirconia Ltd (AZL) 100%*

The Dubbo Zirconia Project (DZP) is located 30 kilometres south of the large regional centre of Dubbo (Figure 1) in the Central West Region of New South Wales. The DZP is based upon one of the world's largest in-ground resources 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 produce several products.

The **Demonstration Pilot Plant (DPP)** has been operating at the laboratory facilities of **ANSTO Minerals** at Lucas Heights south of Sydney since May 2008 and to date has recovered substantial quantities of zirconium products and niobium concentrate. The DPP has continued to operate for short periods to trial engineering and process innovations, and provide loaded solutions to trial yttrium and rare earth recovery processes.

Separate programs to improve the quality of existing zirconium and niobium products continued with success in minimising contaminants with the zirconium product suite, and production of a ferro-niobium product which is a primary additive for HSLA (high strength low alloy) steels.

### ***Rare Earth Recovery***

The previous laboratory tested process to recover yttrium and heavy rare earths (HREE = gadolinium, terbium, dysprosium and erbium) has been operating within the DPP with about 30 kilograms of filter cake recovered to date.

This filter cake is being further processed to produce a marketable YHREE product and the program to achieve this has commenced.

Laboratory scale testing for the recovery of light rare earths (LREE = lanthanum, cerium, neodymium, praseodymium and samarium) has successfully produced a high quality rare earth oxide concentrate product containing + 99% REOs. Further laboratory scale optimisation was completed and the LREE circuit within the DPP is planned to be operational in February.

### ***Definitive Feasibility Study (DFS)***

The DFS is managed by TZ Minerals International Pty Ltd in Perth. The DPP operation continues to confirm the process flow sheet and provide engineering data for capital and operating cost estimates, as well as generate substantial product for market evaluation. Vendor pricing for capital costs has commenced.

For personal use only



The base case for the development is a 400,000 tonnes per annum ore throughput with all processing facilities located on-site at Toongi, about 30 kilometres south of Dubbo. Anticipated base case product output is shown in the following Table 3. As a result of expanding markets for all the Project's output, a 1 million tonne per annum ore throughput model will also be considered as part of the DFS.

<b>Product</b>	<b>400,000 tonnes per annum</b>		<b>1,000,000 tonnes per annum</b>	
<b>ZBS, ZOH, ZBC, ZrO<sub>2</sub></b>	<b>6,000tpa</b>	<b>US\$33.0M*</b>	<b>15,000tpa</b>	<b>US\$82.5M*</b>
<b>Nb -Ta concentrate</b>	<b>1,400tpa</b>	<b>US\$35.0M*</b>	<b>3,500tpa</b>	<b>US\$87.5M*</b>
<b>LREE concentrate</b>	<b>1,980tpa</b>	<b>US\$79.3M**</b>	<b>4,950tpa</b>	<b>US\$198.2M**</b>
<b>YHREE concentrate</b>	<b>600tpa</b>	<b>US\$33.1M**</b>	<b>1,500tpa</b>	<b>US\$82.7M**</b>
<b>TOTAL</b>	<b>9,980tpa</b>	<b>US\$180.4Mpa</b>	<b>24,950tpa</b>	<b>US\$450.9Mpa</b>
<b>*Zr @ US\$5.50/kg and Nb @ US\$25/kg as intermediate average prices</b>				
<b>** Price average of Q4 2010 for REO basket and assumes concentrate at 70% of total separated REO value</b>				
ZBS = zirconium basic sulphate; ZOH = zirconium hydroxide; ZBC = zirconium carbonate; ZrO <sub>2</sub> = zirconia; Equivalent ~99% ZrO <sub>2</sub> + HfO <sub>2</sub> basis. Nb-Ta concentrate = ~70% Nb <sub>2</sub> O <sub>5</sub> ; 1.0% Ta <sub>2</sub> O <sub>5</sub> calcined basis. LREE = Lanthanum, cerium, neodymium and praseodymium. YHREE = yttrium, gadolinium, dysprosium and terbium.				

While actual revenue for the base case is still being researched, current projections indicate potential of US\$180 million per annum using conservative pricing. This excludes production of separated rare earth products. The currently defined resource would enable a 200 year open pit life for this base case development.

Data from the DPP and Letters of Intent or Memorandums of Understanding from future customers will be incorporated in the current DFS. Due to the dramatic changes in demand and price for many rare earth products and the desire to fully test the yttrium and rare earth recovery circuits in the DPP, the timing for completion of the study was extended to mid 2011.

Depending upon financing and Development Consent from the New South Wales state government, the DZP could be in production early 2013.

### **Market Developments**

In November 2010, the Chinese Ministry of Commerce (Mofcom) gave preliminary advice that their export quotas for rare earth products for 2011 were to be further reduced, such that the export of the primary products would be reduced by about 30% of 2010 levels. This anticipated reduction almost immediately impacted on prices again, resulting in some significant rises as demonstrated by Table 4 below.

The potential increase in revenue for the DZP from these changes is reflected in Table 3 above where the base case revenues have risen from about US\$120 million per year to US\$180 million over the last six months.

For personal use only



**Table 4 Rare Earths Prices 2010 (US\$/kg REO)**

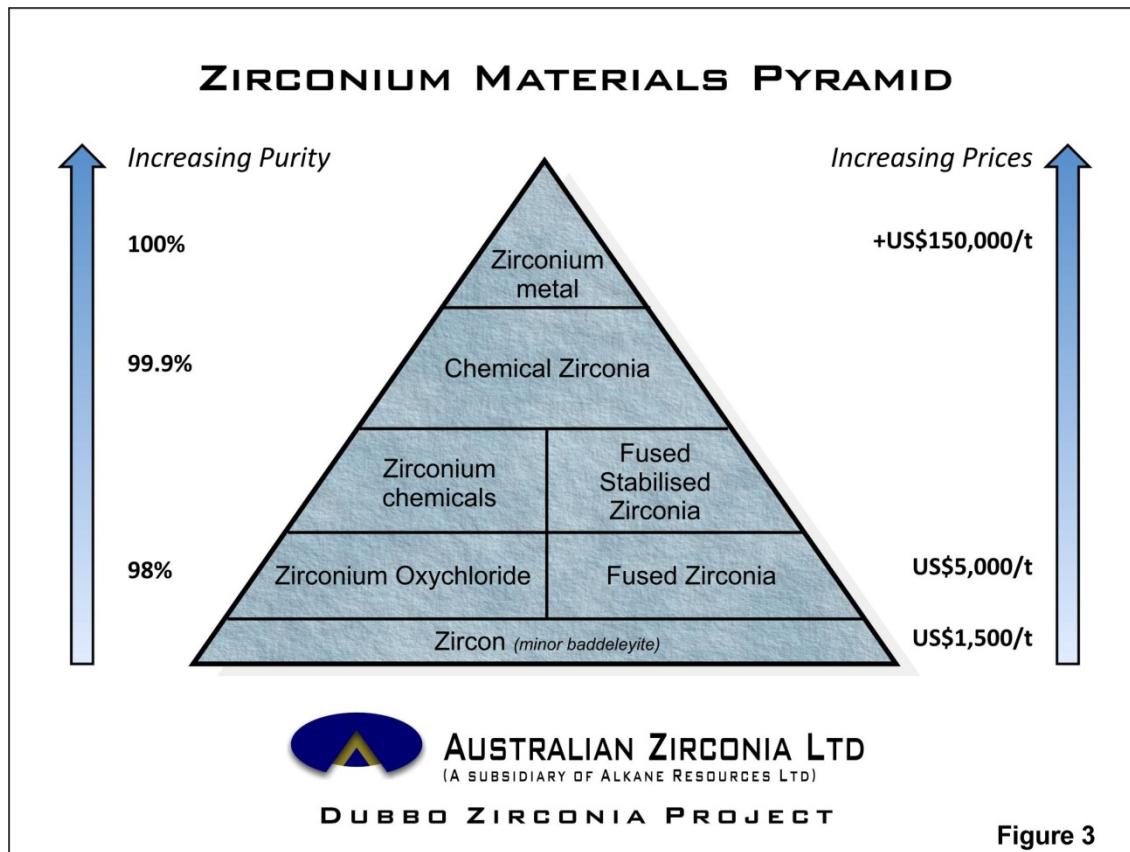
(Source: *Metal Pages*© )

Light Rare Earth	DZP Distribution	Q2 Average	Q3 Average	Q4 Average
Lanthanum Oxide	19.5%	\$7.13	\$25.75	\$53.00
Cerium Oxide	36.7%	\$5.58	\$24.50	\$50.00
Praseodymium Oxide	4.0%	\$30.60	\$48.25	\$77.00
Neodymium Oxide	14.1%	\$31.13	\$49.50	\$80.00
Samarium Oxide	2.2%	\$4.50	\$22.25	\$34.00
Heavy Rare Earth				
Europium Oxide	0.07%	\$521.67	\$570.00	\$625.00
Gadolinium Oxide	2.15%	\$8.25	\$28.75	\$44.00
Terbium Oxide	0.34%	\$545.00	\$570.00	605.00
Dysprosium Oxide	2.05%	\$196.67	\$275.00	\$295.00
Ho, Er, Tm, Yb, Lu	2.9%			
Yttrium Oxide	15.8%	\$11.42	\$26.25	\$56.00
<b>DZP LREE</b>	<b>76.68%</b>	<b>\$12.06</b>	<b>\$30.58</b>	<b>\$57.20</b>
<b>DZP YHREE</b>	<b>23.32%</b>	<b>\$42.23</b>	<b>\$62.34</b>	<b>\$78.70</b>
<b>DZP LREE Concentrate Value</b>		<b>\$8.44</b>	<b>\$21.41</b>	<b>\$36.47</b>
<b>DZP YHREE Concentrate Value</b>		<b>\$29.59</b>	<b>\$43.64</b>	<b>\$57.20</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 and currently spot prices are considerably higher than the average Q4 figures quoted.

As with rare earths, China is the dominant producer in the downstream zirconium business and its current output equates to about 90% of world production of zirconium oxychloride (ZOC) and 60% of fused zirconia (FZA). These two products are base materials for the downstream zirconium industry as demonstrated in Figure 3 below.



**Figure 3**

For personal use only





China is a major importer of zircon from producers in Australia and South Africa, and about 30% of this is used to produce the ZOC and FZA. The zircon industry is also experiencing a major supply deficit (see ASX 31 March 2010 Quarterly Report, 29 April 2010) which continued to deteriorate throughout the year. The major mineral sands producers are supplying from current production with little or no stocks and limited opportunities for substitution, and that there is no evidence of significant new deposits coming on stream in the next several years. Consequentially prices for zircon have risen from US\$900 per tonne to US\$1,500 per tonne as spot in China.

The zircon price rise, plus higher operating and greater environmental management costs within China have impacted on the price of ZOC and FZA, as well as chemical zirconia derived from ZOC, and Table 5 reflects these changes.

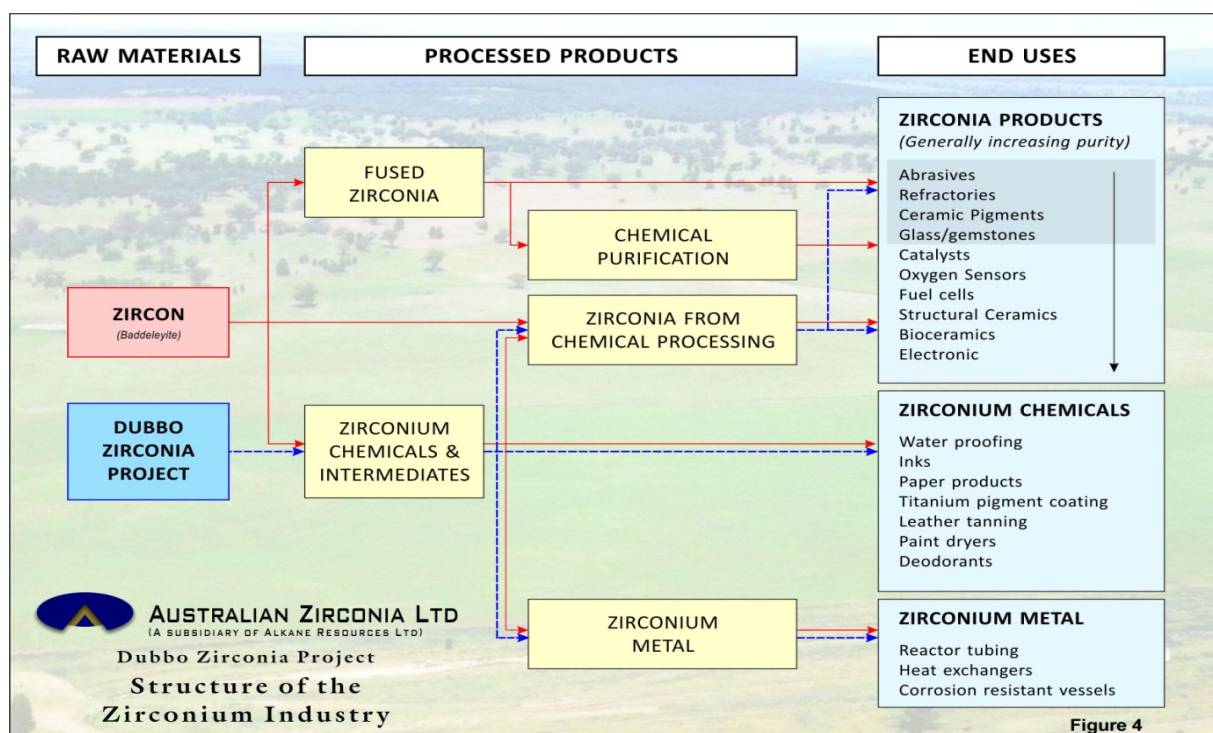
Product	Q2 Average	Q4 Average
Fused Zirconia	\$4.00	\$5.00
Zirconium Oxychloride	\$4.00	\$7.00
Chemical Zirconia	\$4.00	\$7.00

Compiled by TCMS

In November/December, Metal-Pages Ltd and the China Daily reported that industry sources within China had called on the Government to classify zirconium as a strategic metal to protect China's downstream industries. While this was particularly directed towards nuclear grade zirconium metal, Metal-Pages sources also noted that China had begun to regulate the export of other zirconium products.

The Metal-Pages article stated "Due to heavy dependence on imported raw materials, coupled with recent fluctuations in international prices of zircon, the risk to the zirconium industry as a whole has increased to some extent. China's future policy will be tilted towards value-added products, an industry source commented."

These developments have opened up the potential for additional markets for the DZP's zirconium products (Figure 4) and increased the option of the expanded project development.



For personal use only



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

Alkane Resources Ltd 49%, Newmont Australia Limited 51%

The ODEJV includes Alkane's **Molong** and **Moorilda** tenements located near the city of Orange in the Central West of New South Wales, adjacent to Newcrest Mining Ltd's Cadia Valley Operations.

Newmont Australia Limited (NAL) earned a 51% interest in the ODEJV in August 2009. In March 2010 NAL elected to proceed to 75% by completing a Bankable Feasibility Study (BFS) on the **McPhillamys Project**. NAL is a subsidiary of the US based Newmont Mining Corporation (**NYSE:NEM**).

### McPhillamys Regional Exploration

NAL completed three reconnaissance diamond drill holes (NEWD012 – 014 for 654.6 metres) on regional targets near to the McPhillamys deposit.

The holes targeted the strong IP chargeability anomaly at McPhillamys North, immediately north of the McPhillamys deposit; surface geochemical anomalies and aircore drilling results (7m @ 1.21g/t Au) at Flanagans Gulley, about 3.5 kilometres south of McPhillamys; and positive aircore drilling results (39m @ 0.26g/t Au) at Hodsons, a further 1.5 kilometres south.

While holes NEWD 0012 and 013 did not intersect significant gold mineralisation, extensive alteration and sulphide mineralisation was logged in the core. NEWD014 was abandoned due to bad ground conditions and did not reach target depth, and the main zone remains untested. The results are summarised in Table 6 below.

**Table 6: Summary 2010 drill core results for McPhillamys Regional at 31 December 2010**

Hole No	East	North	RL (m)	Azimuth	Inclin	Intcpt (m)	Grade (g/t Au)	Interval (m)	EOH (m)	Comments
NEWD012	715690	6292965	~915	270°	70°	4	0.27	166 - 170	242.7	McPh North
NEWD013	716795	6289425	~980	270°	65°	1	2.00	5 - 6	256	Flanagans
and						1	1.12	8 - 9		
and						3	0.84	174 - 177		
and						13	0.49	214 - 227		
NEWD014	718310	6286325	~895	270°	65°	18	0.14	122.7 - 140.7	155.9	Hodsons

Gold analysis by 50g fire assay and base metals by ICP at generally 1 metre full core intervals for HQ core. True widths are about 65% of intersection.

### Development Concepts

As previously advised (ASX Report of 5 July 2010), Alkane completed an initial resource assessment of the McPhillamys deposit with the following Indicated and Inferred Resources being identified:

**91.94 million tonnes grading 1.00g/t Au and 0.07% Cu (2.96 Moz) at 0.3g/t gold cut-off; or**

**60.86 million tonnes grading 1.32g/t Au and 0.08% Cu (2.57 Moz) at 0.5g/t gold cut-off.**

Early in 2010 NAL completed a series of desk top studies to review development models for the deposit which include various open pit scenarios and a possible underground block cave mining concept. These studies will be expanded as part of the BFS program.

For personal use only



## CUDAL (gold-copper)

Alkane Resources Ltd 100%

Shallow reconnaissance RC drilling was completed at the Bowen Park One Prospect in late 2010 and comprised 15 holes totalling 1623 metres (Figure 5). The holes targeted structures with quartz-carbonate-hematite veining corresponding to distinct demagnetised zones, within an andesitic volcanoclastic sequence. Previous sampling of the veining had returned values up to 17.2g/t gold.

The drilling identified a gold and zinc mineralised fault zone within the andesitic volcanics. The zone is best defined in CUD006 where drilling returned **17m @ 1.2 g/t Au, 2.8% Zn, 7.29g/t Ag from 96m, including. 4m @ 2.2 g/t Au, 7% Zn, 16 g/t Ag** from a pyrite-sphalerite-carbonate rich zone (Figure 6).

**Table 7: Summary 2010 RC drill results > 1.00g/t gold for Cudal at 31 December 2010**

Hole No	East	North	RL (m)	Azimuth	Inclin	Intcpt (m)	Grade (g/t Au)	Interval (m)	EOH (m)	Comments
CUD006	671750	6312570	606	092°	60°	17	1.20	96 - 113	127	2.85% Zn
incl						4	2.20	96 - 100		7.03% Zn
CUD012	671750	6312500	600	090°	60°	6	0.78	96 - 113	128	
incl						3	1.43	75 - 78		

Gold analysis by 50g fire assay and base metals by ICP at generally 1 metre or 3 metre RC sample intervals. True widths are about 65% of the intersection.

Other holes, including previous exploration drilling, returned anomalous gold and zinc values confirmed the potential of the area. Also important stratigraphic information was gained from the drilling, including the identification of fold controlled horizons of strongly magnetic monzonite+latite units not previously identified and considered highly prospective for copper - gold porphyry related mineralisation.

Further exploration, including drilling, will be scheduled to follow up this discovery and other targets within the project area.

## WELLINGTON (copper-gold)

Alkane Resources Ltd 100%

Persistent heavy rain and flooding prevented the 2010 drilling program starting in December, but the drilling has since commenced. This drilling is testing targets separate to the defined copper – gold resource at Galwadgere.

**BODANGORA (gold-copper), CALULA (gold-base metals) and DIAMOND CREEK (gold-base metals)** were inactive.

## WESTERN AUSTRALIA

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

Alkane Resources Ltd 22% diluting, Xstrata Nickel (Jubilee) 78%

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

Xstrata Nickel has advised that no field work was completed during the Quarter.

Unless otherwise stated, 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.

For personal use only





## BACKGROUND

**Alkane** is a multi commodity explorer and miner with its operations focussed in the **Central West of New South Wales**, centred about 400 kilometres northwest of Sydney. Over several years, including experience in developing the Peak Hill Gold Mine, Alkane has built a substantial resource base and is proceeding towards several developments:

The **Tomingley Gold Project** currently has an **840,000 ounce gold resource** within the **Wyoming and Caloma deposits**, (full details are in the 2008 Annual Report and the ASX announcements of 2 October and 16 December 2009). A feasibility study for the development of the project with potential 50,000 to 60,000 ounce per annum production was completed late 2010 and development financing options are now being investigated.

The **Dubbo Zirconia Project** is based upon a world class resource of the metals zirconium, hafnium, niobium, tantalum, yttrium and rare earth elements. The deposit also contains significant uranium. Over several years Alkane has developed a flow sheet which can recover a variety of products which have expanding applications in electronics, ceramics, catalysts, special alloys and glasses, fuel cells, special batteries and permanent magnets, nuclear power and as environmental drying agents. Following a \$3.3 million Commercial Ready Grant from AusIndustry in 2006, the feasibility study was reactivated. The study includes the construction and operation of a Demonstration Pilot Plant, and a development commitment is anticipated mid 2011.

Near **Orange**, the Company has a joint venture (**ODEJV**) with Newmont, one of the world's largest gold miners, which resulted in the discovery in 2006 of a significant gold deposit at **McPhillamys** within the **Moorilda Project**. An initial resource of Indicated plus Inferred resources containing **2.96 million ounces of gold and 60,000 tonnes of copper** has been defined (full details ASX announcement of 5 July 2010). Newmont are proceeding to complete a Bankable Feasibility Study for the development of the deposit.

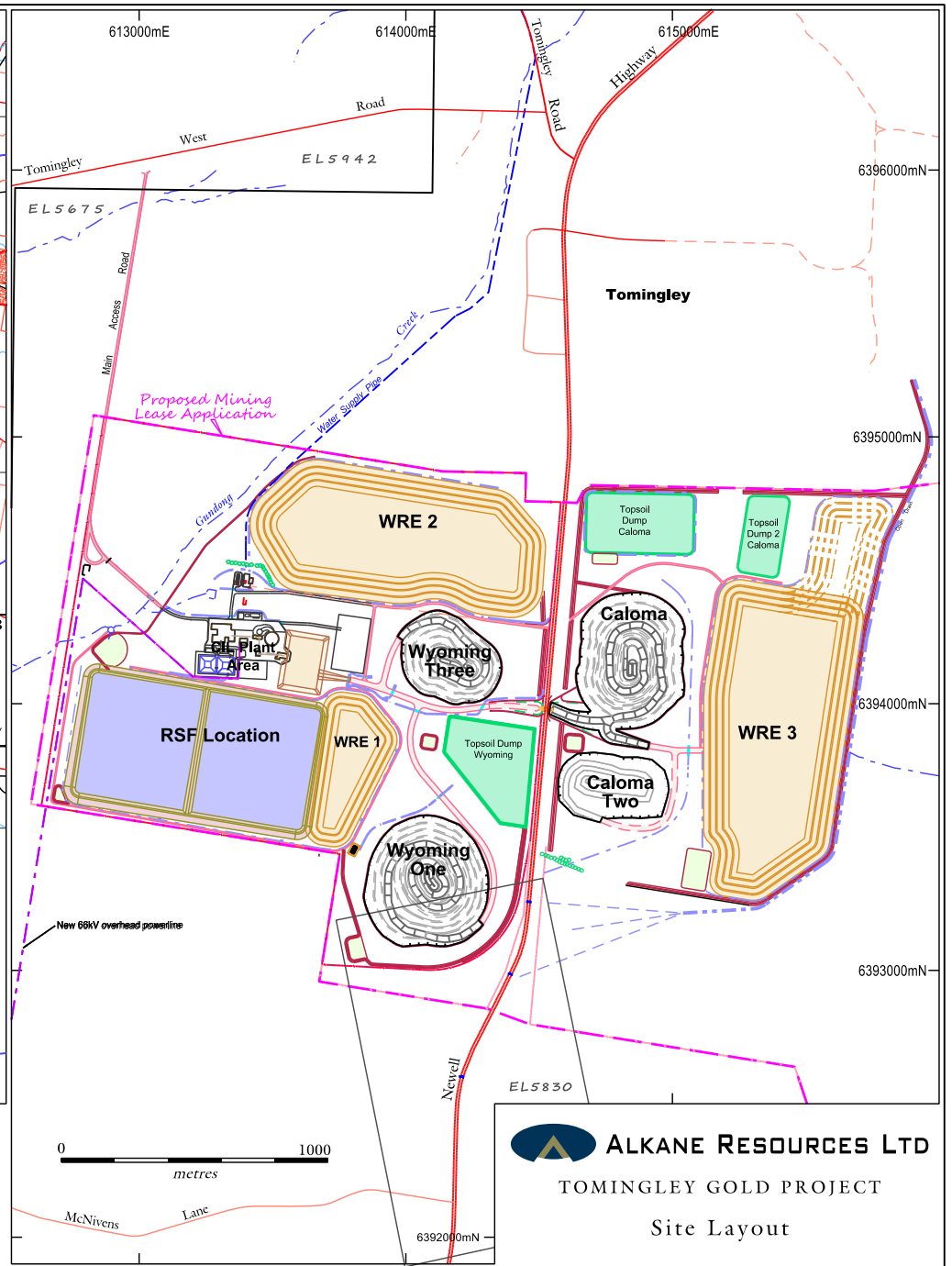
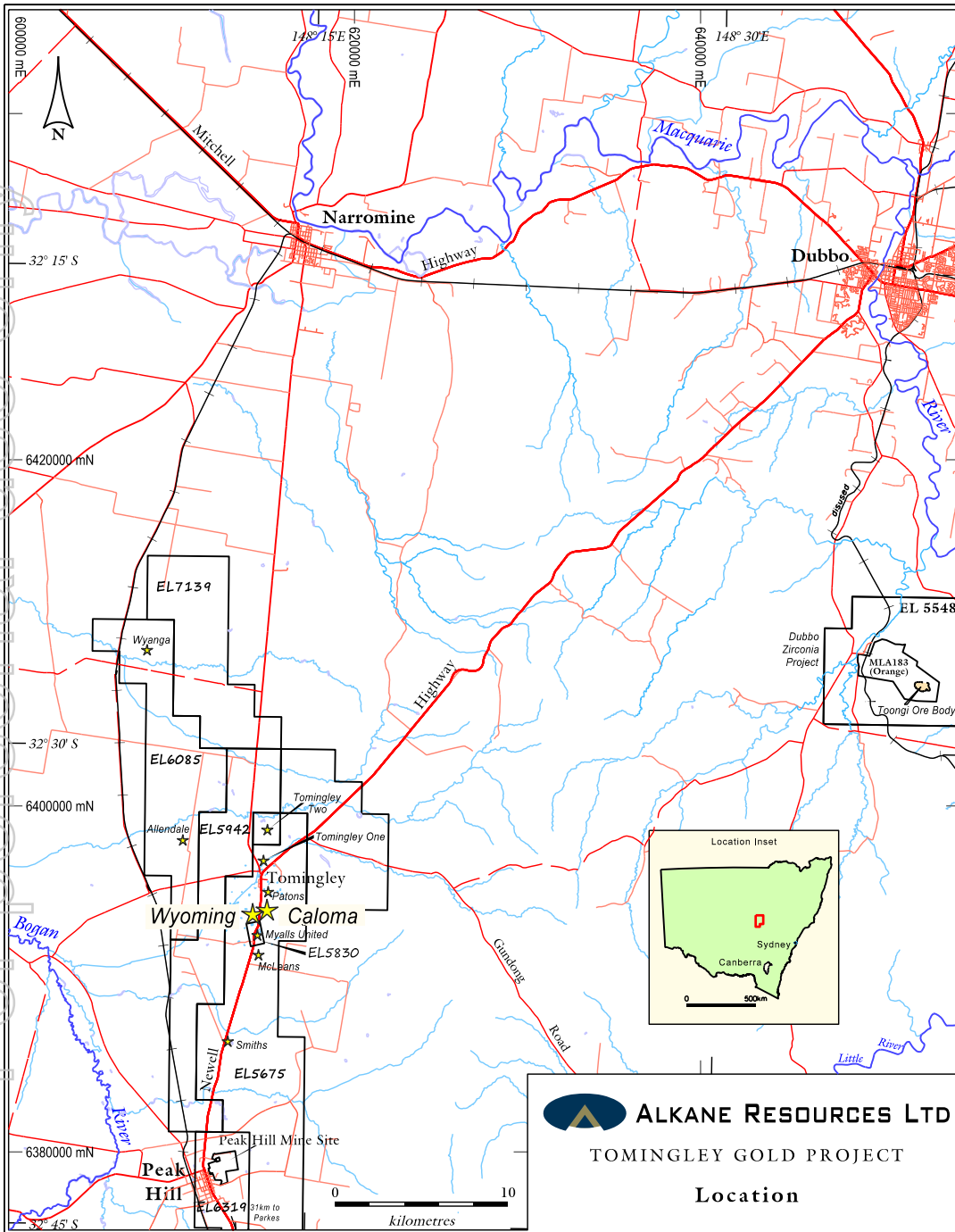
Elsewhere within the region, Alkane has defined a 2 million tonne 1.00% copper Indicated Resource (details 2005 Annual Report) which is being reviewed for its development potential at **Galwadgere** within the **Wellington Project**, and several other advanced exploration projects with encouraging drill intercepts. New exploration targets have been identified at several other locations.

In **Western Australia** the Company hold a diluting 23% residual interest in a nickel sulphide joint venture with **Xstrata Nickel (Jubilee)** near **Leinster**.

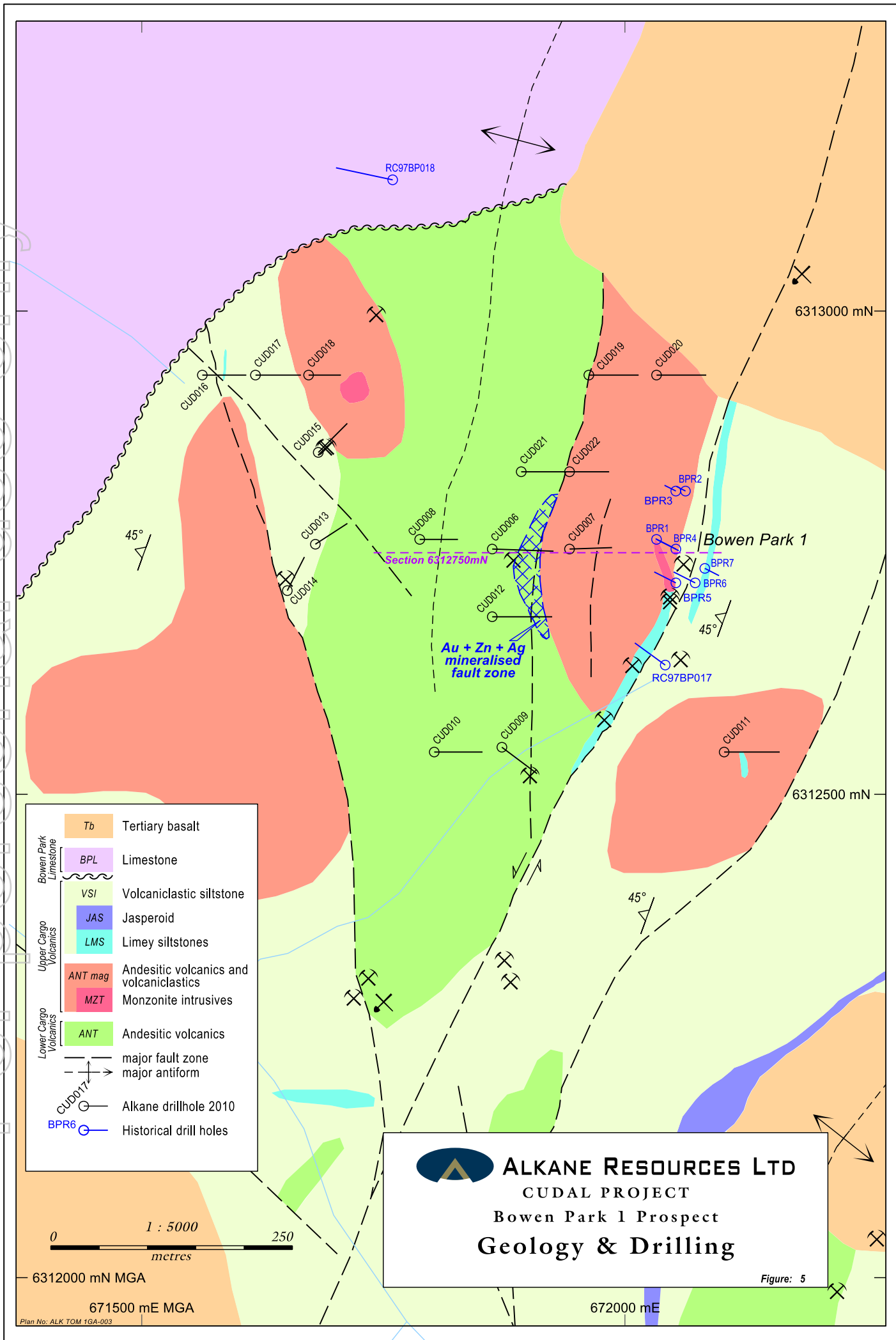


For personal use only

For personal use only



For personal use only



For personal use only

