

## Alkane Resources Limited

## Speculative Buy

(ASX Code: ALK)

www.alkane.com.au

Price \$0.32

June 2009

- Tomingley Gold Project resources increased to 848,600 ounces.
- Definitive feasibility study envisages annual gold production of between 50,000 and 70,000 ounces.
- Development commitment on Dubbo Zirconia Project anticipated in 2010.
- McPhillamys' potential to host a major gold system confirmed with 366 metre intersection averaging 1.85 g/t gold.
- Substantial interest in iron ore explorer BC Iron which has reached an agreement with Fortescue Metals Group for the provision of rail haulage and port services for an initial 3 million tonnes per annum operation and a potential joint venture.

### INTRODUCTION

ALK is rapidly progressing two significant projects towards development decisions. The first of these, the Tomingley Gold Project, is currently subject to a definitive feasibility study which is expected to be completed later in 2009 with a formal go-ahead announcement to be made soon thereafter. The second, the Dubbo Zirconia Project, is currently subject to pilot plant trials and a development decision is likely in 2010. In addition to these, the company participates in the Orange District Exploration Joint Venture with Newmont. Recent exploration has returned significant gold intersections at the McPhillamys prospect indicating the potential for a major gold system. The company also holds an investment in BC Iron Limited which has outlined a channel iron ore deposit in the east Pilbara.

### Tomingley Gold Project

The Tomingley Gold Project (TGP) extends over 60 kilometres from near Parkes in the south, to north of Tomingley in the central west of New South Wales and covers a narrow sequence of Ordovician volcanic rocks. The Wyoming Prospect, within the TGP, is located about 14 kilometres north of the company's Peak Hill gold mine and immediately north of the historic 70,000 ounce gold producing Myalls United mine.

The Wyoming area forms one of a number of prospects and gold occurrences, including Peak Hill, located along this volcanic belt. Gold mineralisation at Wyoming has a close spatial relationship to a feldspar porphyry which intrudes into andesitic volcanic rocks near their western contact with a more pelitic sequence. Mineralisation is associated with extensive alteration and quartz veining of the porphyry and volcanic rocks.

The company had previously defined resources at Wyoming One and Wyoming Three. A major reverse circulation (RC) drilling program was completed in mid 2008 at Caloma, a more recent discovery located 500 metres east of the defined resources at Wyoming One and Wyoming Three. The program, comprising 186 RC holes for 22,034 metres, was focused on a 400 metre central section of the 1,000 metre north-south Wyoming style feldspar porphyry host.



Monthly Share Turnover	3.0m shares
Shares on Issue	244.6 million
Unlisted options	4.4 million
Market Capitalisation	\$78.3 million
12 Month Price Range	\$0.10 - \$0.505
Cash	\$6.3 million
Major Shareholder	Abbotsleigh P/L 28.78%



### DIRECTORS

John Dunlop	Chairman
Ian Chalmers	Managing
Inky Cornelius	Non Executive
Ian Gandel	Non Executive
Anthony Lethlean	Non Executive

## Resource Review and Caloma Estimation

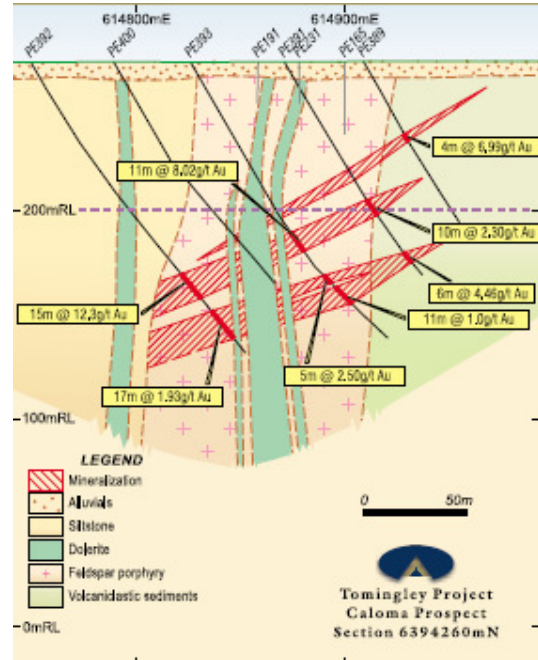
The Wyoming One and Wyoming Three deposits were recently subject to an independent review and subsequently independent estimates were made along with a new estimate for the Caloma deposit. The work was conducted by Richard Lewis of Lewis Mineral Resource Consultants.

Several different resource modelling techniques were employed to generate a number of models and the two extreme cases are summarised in the table below. The “No top cut – mgeol model” was the closest to that used by ALK in 2005 to produce results for the Wyoming One and Wyoming Three deposits. Differences in identified resources were caused by deeper drilling of the deposit at Wyoming One changing the shape and extent of mineralisation in the main porphyry and the nearby hanging wall zones, and differing classification parameters used for this compilation.

A more conservative model “Top cut 2.5 x 2.5 x 5.0 metre model” was estimated to provide the basis for open pit planning and ultimately reserve definition for economic review of the project. This model used statistical evaluation to remove high gold grade spikes in the mineralisation and also a smaller internal block size to approximate to that required for optimisation of the deposits for mining.

Much of the Wyoming area is covered by transported and unmineralised clay sediments and this has impacted

on both the exploration techniques used to locate and define orebodies, but also on development options and cost. The cover ranges from about 5 to 10 metres at Wyoming Three and Caloma, to more than 60 metres over Wyoming Two. The major orebody at Wyoming One averages 25 metres of cover.



### Identified Mineral Resources at the TGP as at 24 March 2009, above a cut off of 0.75 g/t gold

DEPOSIT	MEASURED		INDICATED		INFERRED		TOTAL		
	Tonnes	Grade (g/t)	Tonnes	Grade (g/t)	Tonnes	Grade (g/t)	Tonnes	Grade (g/t)	k Ounces
Wyoming 1	2,379,000	2.52	878,000	3.07	3,227,000	2.35	6,484,000	2.51	523.2
Wyoming 3	670,000	2.05	44,000	2.02	123,000	1.64	837,000	1.99	53.5
Caloma	1,842,000	2.28	497,000	2.12	1,731,000	1.85	4,070,000	2.08	271.9
<b>Total</b>	<b>4,891,000</b>	<b>2.37</b>	<b>1,419,000</b>	<b>2.70</b>	<b>5,081,000</b>	<b>2.16</b>	<b>11,391,000</b>	<b>2.32</b>	<b>848.6</b>

### Above: No top cut – mgeol model

DEPOSIT	MEASURED		INDICATED		INFERRED		TOTAL		
	Tonnes	Grade (g/t)	Tonnes	Grade (g/t)	Tonnes	Grade (g/t)	Tonnes	Grade (g/t)	k Ounces
Wyoming 1	2,227,000	2.07	882,000	2.25	3,478,000	1.62	6,587,000	1.86	393.2
Wyoming 3	630,000	1.87	58,000	1.73	154,000	1.25	842,000	1.75	47.3
Caloma	1,825,000	2.06	488,000	1.88	1,559,000	1.52	3,872,000	1.82	226.6
<b>Total</b>	<b>4,682,000</b>	<b>2.04</b>	<b>1,428,000</b>	<b>2.10</b>	<b>5,191,000</b>	<b>1.58</b>	<b>11,301,000</b>	<b>1.84</b>	<b>667.0</b>

### Above: Top cut – 2.5 x 2.5 x 5.0metre model

### Identified Mineral Resources at the TGP as at 31 December 2005, above a cut off of 0.75 g/t gold

DEPOSIT	MEASURED		INDICATED		INFERRED		TOTAL		
	Tonnes	Grade (g/t)	Tonnes	Grade (g/t)	Tonnes	Grade (g/t)	Tonnes	Grade (g/t)	k Ounces
Wyoming 1	4,020,000	2.25	1,010,000	2.77	1,270,000	4.09	6,300,000	2.70	547.7
Wyoming 3	815,000	2.20	15,000	2.32	-	-	830,000	2.20	58.7
<b>Total</b>	<b>4,835,000</b>	<b>2.24</b>	<b>1,025,000</b>	<b>2.76</b>	<b>1,270,000</b>	<b>4.09</b>	<b>7,130,000</b>	<b>2.70</b>	<b>606.4</b>

## Definitive Feasibility Study

A definitive feasibility on the TGP was initiated late in 2007 and is managed by Mintrex Pty Ltd, the consulting division of Perth engineering group, Holtfreeters Pty Ltd.

The conceptual development options currently comprise three open pit mines, Wyoming One, Wyoming Three and Caloma, followed by possible underground operations. Gold production would be through a conventional gravity and carbon in leach gold recovery circuit at an open pit mining rate of around 0.75 to 1.0 million tonnes per year. These treatment rates would recover an average of 50,000 to 70,000 ounces of gold a year for a minimum of five years.

Metallurgical testwork to date has returned 90% plus gold recovery for both oxide and fresh ore with average cyanide and lime consumptions. Work indices for crushing and grinding are near average for the oxide samples but above average for fresh ore. Abrasion indices are all near average. Gravity gold recoveries are exceptionally high, particularly for fresh ore samples, with all giving plus 50% recovery.

In several samples, the calculated head grades were higher than that returned from the original composite core samples, which combined with the high gravity recoveries, could indicate that the drilling samples may have under-called the gold content of the deposits.

Preliminary pit shells have identified several zones of mineralisation that have been classified as inferred resources, and a 5,000 metre RC drilling program has recently been completed to raise these to indicated status for inclusion in the initial reserve statement and financial models.

Estimates for the base case development model of the 1 Mtpa operation, indicate capital costs would be around \$50 million  $\pm$  20%, depending upon sourcing of new plant or the availability of suitable second hand equipment.

The TGP is located in an area of substantial existing infrastructure with the major Newell Highway transecting the project, linking a number of towns with a regional population base exceeding 150,000. No camp facilities are required and the workforce can be sourced locally. A natural gas pipeline and railway are located 5 km west of Tomingley, and power is available from the NSW state grid at Peak Hill, 20 km to the south of the site. Water supply will be achieved via a pipeline to be laid from established sources near Narromine, 45 km to the north of the site.



**Central NSW project locations**

*Source: Alkane Resources Limited*

### **Dubbo Zirconia Project**

ALK's Dubbo Zirconia Project (DZP) is based on one of the world's largest in-ground resources of the metals zirconium, hafnium, niobium, tantalum and yttrium and rare earth elements. It is located 30 km south of Dubbo in central NSW. The measured resource to a depth of 55 metres is 35.7 million tonnes averaging 1.96% ZrO<sub>2</sub>, 0.04% HfO<sub>2</sub>, 0.14% Y<sub>2</sub>O<sub>3</sub>, 0.46% Nb<sub>2</sub>O<sub>5</sub>, 0.03% Ta<sub>2</sub>O<sub>5</sub>, 0.014% U<sub>3</sub>O<sub>8</sub> and 0.75% REO. There is an additional inferred resource between 55 and 100 metres depth estimated at 37.5 million tonnes at similar grades.

The company has developed a flow sheet consisting of sulphuric acid leach followed by solvent extraction recovery to produce several products. A demonstration pilot plant (DPP) at the laboratory facilities of ANSTO Minerals at Lucas Heights south of Sydney recommenced operation in February 2009 after two trial runs in 2008. The plant operated efficiently over a 53 day period with no significant issues and in the latter half of the run produced high quality zirconium and niobium products. The plant is designed to test the complete flowsheet, providing process and engineering data, but most importantly, several tonnes of the various products for distribution to potential end users. Through the demonstration plant it is planned to recover a suite of zirconium chemicals, zirconia, a niobium-tantalum concentrate, a light rare earth concentrate and a yttrium-heavy rare earth concentrate which are used in the expanding ceramic, catalyst, electronics, special rechargeable batteries and permanent magnets, engineering ceramic, and specialty glasses and alloy industries as well as the nuclear power industry.

The aim of current activities is to underpin the marketing section of the feasibility study with letters of intent from customers, at a minimum. The data generated by the DPP will be used to update the existing feasibility model which ALK hopes to have completed by mid 2010.

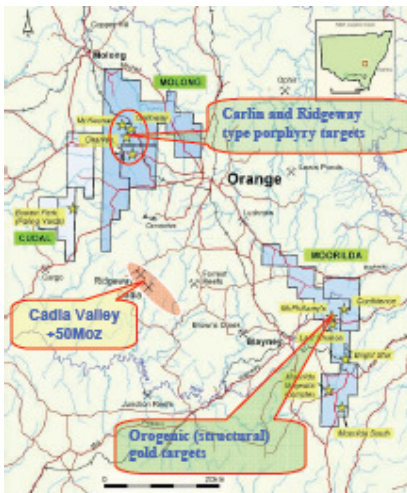


**Demonstration Pilot Plant – Dubbo Zirconia**

*Source: Alkane Resources Limited*

### **Orange District Exploration Joint Venture**

Newmont is earning a 51% interest in the company's Orange district tenements and may increase its interest to 75% by funding all expenditures to completion of a bankable feasibility study. Recently exploration work has continued to focus on the McPhillamys prospect which is located within the Moorilda Project, centred about 35 km south east of Orange in central NSW. The prospect covers 175 sq km and forms part of the Orange District Exploration Joint Venture. Drilling during 2008 confirmed that a plus 0.5 g/t gold mineralised envelope extends over a north south strike of at least 600 metres with widths up to 200 metres. Drill intersections include 123 metres averaging 1.96 g/t gold and 77 metres averaging 1.65 g/t gold. Recent diamond drilling has confirmed the potential of the project to host a major gold system with an intersection of 366 metres averaging 1.85 g/t gold. Based on potential dimensions of 500 metres x 150 metres to a depth of 400 metres a conceptual target of 2.3 million ounces has been outlined.



**Orange Area Regional Location**

*Source: Alkane Resources Limited*

Elsewhere within the region, ALK has defined a 2 million tonne 1.0% copper indicated resource 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, ALK holds a diluting 25% residual interest in a nickel sulphide joint venture with Xstrata near Leinster.

### **Peak Hill Gold Mine**

The company has completed final rehabilitation at the former open cut gold mine involving works in shaping, topsoiling and seeding of the heaps to create a long-term stable landform. The office infrastructure and exploration base will remain until development at Tomingley is completed.

A significant but moderately refractory sulphide gold-copper orebody below the oxide mine remains subject to ongoing review and will be re-assessed following successful development at Tomingley. Several process options have been previously trialled and an innovative bio-heap leach was considered the most favourable alternative. The proximity to the town of Peak Hill means that any mine development would be underground.

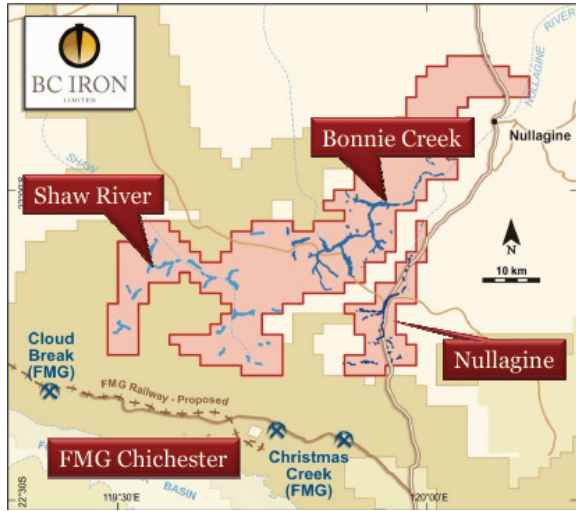
Mineral resources at a 0.5 g/t cut off stand at 11.27 million tonnes averaging 1.29 g/t gold and containing 467,400 ounces of gold. **(These have not been included in the charts of mineral resources on following pages)**

### **Investments**

#### **BC Iron Limited (15.5%)**

BCI has recently announced an updated resource estimate for the Bonnie Creek channel iron ore (CID) deposits at its Nullagine iron ore project in the east Pilbara. The measured, indicated and inferred direct shipping ore (DSO) total resource is 50.7 million tonnes averaging 57.0% Fe (64.8% CaFe). This resource is contained within an updated global resource totalling 89.1 million tonnes averaging 54.1% Fe (61.9% CaFe). The Bonnie Creek resource is comprised of five separate deposits: Outcamp Well (20.4 mt), Warrigal Well (14.3 mt), Coongan Well (7.7 mt) and Bonnie East (8.3 mt). All deposits average 57.0% Fe. The project is located immediately to the north of Fortescue Metal's (FMG) Christmas Creek deposit presenting the possibility of a rail haulage or access agreement with that company. If such an agreement can be reached BCI would be capable of transporting its ore to Port Hedland, 260 kilometres to the north west, for export.

BCI is currently undertaking a feasibility study on a 1.5 million tonnes per annum start up operation at Bonnie Creek which is due for completion during the first half of 2009. The company aims to have environmental surveys and permits completed by the middle of 2009 with construction commencing shortly after. First production is targeted for 2010. BCI's estimated capital expenditure for the mine development is approximately \$20 million to \$30 million. It envisages future expansion to 3 million tonnes per annum and then to 5 million tonnes per annum.



BCI recently announced that it had reached an agreement in principle with Fortescue Metals Group Ltd (FMG) for the provision of rail haulage and port services for its Nullagine project. The agreement provides for an initial production target of 3 million tonnes per annum escalating to 5 million tonnes per annum when port and rail facilities are expanded. Subsequently the parties have announced that, subject to a satisfactory feasibility study, they will form a joint venture to develop the project. Under this joint venture FMG may earn a 50% interest in the project.

### **Board of Directors**

**John Dunlop – Non-Executive Chairman**  
**BE (Min), MEng Sc (Min), FAusIMM (CP), FIMM, MAIME, MCIMM**

A consultant mining engineer with over 37 years surface and underground mining experience in Australia and overseas. He is a former director of the Australian Institute of Mining and Metallurgy and is chairman of its affiliate, the Mineral Industry Consultants Association.

Mr Dunlop is non-executive chairman of Alliance Resources Ltd and of Drummond Gold Ltd and non-executive director of Gippsland Ltd.

**David (Ian) Chalmers – Managing Director**  
**MSc, FAusIMM, FAIG, FIMM, FSEG, MSGA, MGSA, FAICD**

Mr Chalmers is a geologist and graduate of the Western Australian Institute of Technology and has a Master of Science degree from the University of Leicester in the United Kingdom. He has worked in the mining and exploration industry for over 39 years, during which time he has had experience in all facets of exploration through feasibility and development to the production phase.

Mr Chalmers is currently a principal in Muti Metal Consultants Pty Ltd. He has previously been a director of AuDAX Resources Ltd and Northern Star Resources Ltd.

**Ian (Inky) Cornelius – Non-Executive Director**  
**FAICD**

Mr Cornelius has had over 40 years experience in the minerals and petroleum industry. He spent the first nine years of his career with the Western Australian Department of Mines before leaving to manage his own tenement consulting business. Since 1976, he has held senior executive positions in a number of public exploration and mining companies. In this capacity, he has had extensive experience and success in the selection, management and development of deposits of many commodities.

Mr Cornelius is a non-executive director of Pancontinental Oil & Gas NL, Austral Africa Resources Ltd and Montezuma Mining Company Ltd.

**Ian Gandel – Non-Executive Director**  
**LLB, BEc, FCPA, FAICD**

Mr Gandel is a successful Melbourne businessman with extensive experience in retail management and retail property. He has been a director of the Gandel Retail Trust and has had an involvement in the construction and leasing of Gandel shopping centres. He has previously been involved in the Priceline retail chain and the CEO chain of serviced offices.

Through his private investment vehicles, Mr Gandel has been an investor in the mining industry since 1994. Mr Gandel is currently a substantial holder in a number of publicly listed Australian companies and, through his private investment vehicles, now holds and explores tenements in his own right in Victoria, Western Australia and Queensland.

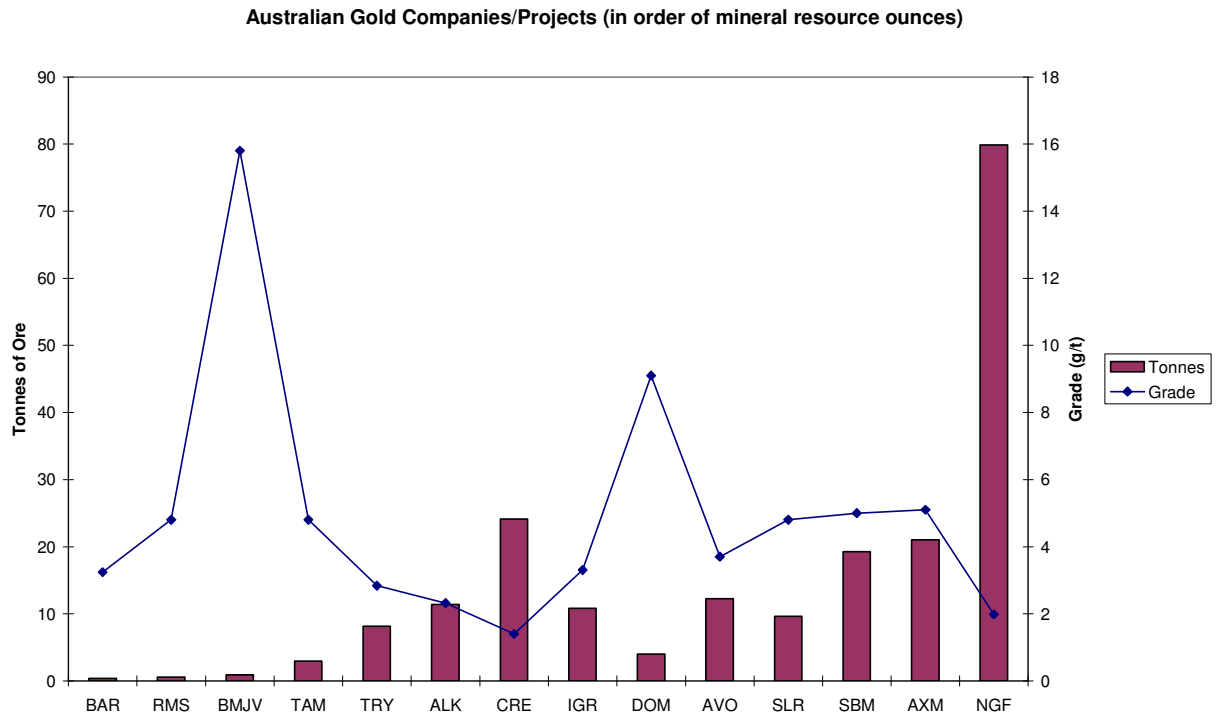
**Anthony Lethlean – Non Executive Director**  
**BappSc (geology)**

Mr Lethlean is a geologist with 10 years mining experience including 4 years underground on the Golden Mile in Kalgoorlie. In later years, Mr Lethlean has been working as a resources analyst with various stockbrokers and currently consults to Helmsec Global Capital Ltd. Mr Lethlean is a non-executive director of Alliance Resources Ltd.

### **Recommendation**

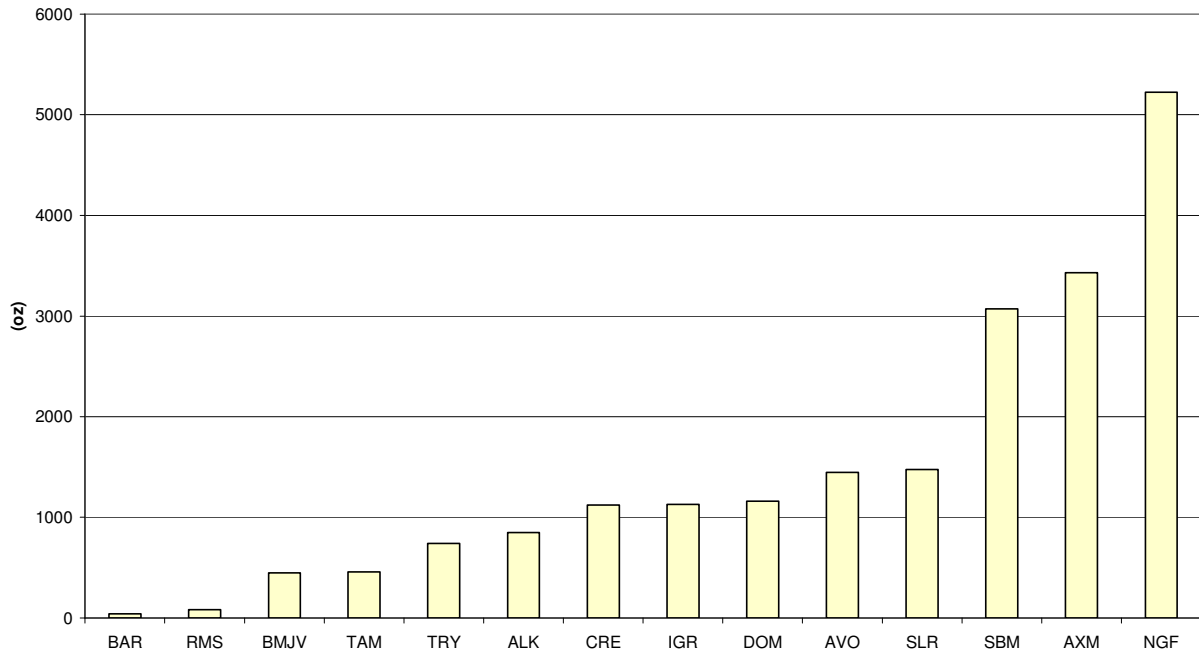
ALK is likely to give the go-ahead on two important projects in the near future which will give the company an income stream and diversity. These are the Tomingley Gold Project and the Dubbo Zirconia Project which are both located in central NSW and close to infrastructure. In addition, the McPhillamys joint venture with Newmont could emerge as a giant given the healthy drill intersections returned to date. The charts on the following page show that ALK is reasonably positioned with respect to its gold industry peers in terms of resource tonnage and contained ounces. Further charts show the health of the gold industry, particularly in Australia in terms of exchange rate with the US\$. We recommend ALK as a Speculative Buy.

## Resource Tonnage and Grade



**Note: BMJV is a joint venture between Beaconsfield Gold NL (BCD) and Allstate Explorations NL (ALX)**

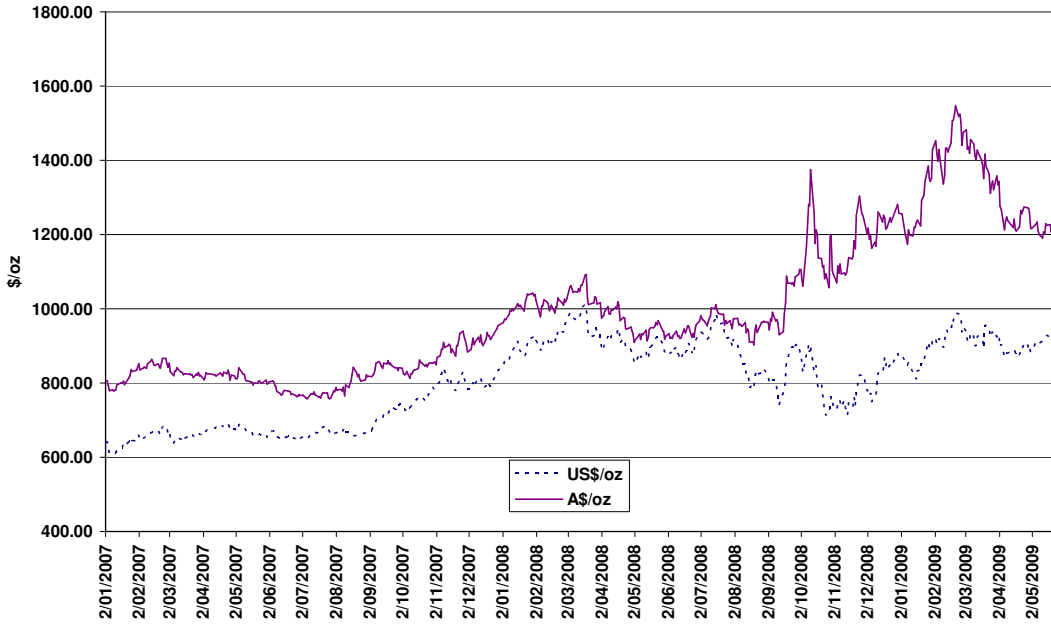
### Gold Mineral Resources



LONDON PM GOLD FIX



GOLD PRICE - LONDON PM FIX



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*Prepared by Paul Goody 5 June 2009*