CARMICHAEL RESEARCH

25th January, 2006

RECOMMENDATION

SPECULATIVE BUY

12-month Price Target	$0.44
12 month volume	103m
12 month share low	$0.13
12 month share high	$0.26
Market Risk	medium
Liquidity Risk	medium
Infrastructure Risk	medium/high
Country Risk	low

DJC Research

ISSUED CAPITAL

ASX Code	ALK
Share price	$0.26
Mkt cap.[1] (m)	$44.0
Ordinary shares on issue	166m
Unlisted options[2]	6.2m

1 Undiluted *Source: IRESS*
2 Various dates & Strike prices

DIRECTORS

Ian Cornelius	Exe. Chairperson
Ian Chalmers	Technical Director
Lindsay Colless	Finance Director
Henry Kennedy	Non-Exe. Director
Anthony Lethlean	Non-Exe. Director

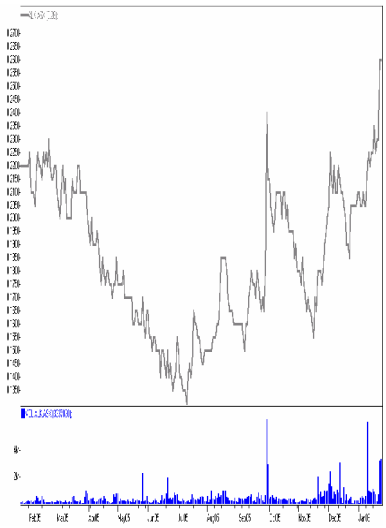
Source: ALK

MAJOR SHAREHOLDERS

Citicorp Nominees	16.0%
ANZ Nominees	15.2%
Golden Movement Resource	3.1%
Sydney Equities	3.0%

Source: ALK

12 MONTH PERFORMANCE



Source: IRESS

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ALKANE EXPLORATION LTD (ALK)

VALUATION

ALK is an overlooked, undervalued company that is on the threshold of realising inherent value from several of its projects.

KEY POINTS

- ***"World-Class" Dubbo Zirconia Project***
- ***150-220Mt Nullagine Iron Ore Project with interest from third parties***
- ***600,000oz resource at the Wyoming Gold Project***
- ***Unhedged 42,000oz gold production due in 1QFY08***
- ***Other significant gold, copper and nickel projects***
- ***Conservative 12-month target valuation of $0.44ps***

ALK is a diverse exploration company with copper, gold, iron ore, nickel and zirconia assets. In valuing ALK, three key projects were chosen as being most likely to have a material impact on the company's value in the short-to-medium term, including the Wyoming Gold, the Nullagine Iron Ore and the Dubbo Zirconia Projects.

Gold production from the ***Wyoming Gold Project*** is expected to commence 1QFY08 via open pit mining, then from 4QFY09 from underground. The current total resource for the Wyoming gold deposit is 7.13Mt @ 2.7g/t Au (606,400oz).

Previous drilling by ALK targeting ***Nullagine*** have demonstrated significant deposits of pisolite iron ore. ALK have estimated that the total iron ore resource located on their leases to be between 150 to 220Mt.

The ***Dubbo Zirconia Project*** (DZP) is one of the world's largest undeveloped zirconium projects. The current DZP Resource/Reserve is 73.2Mt although the actual DZP resource is likely to be significantly larger as the majority of drilling is confined to depths less than 55m, with an Inferred Resource calculated to only 100m below the surface. Although there are several other known "Dubbo-type" deposits elsewhere in the world, the key to DZP's viability is the presence of acid soluble ore minerals that dissolve at the sulphation stage limiting the level of deleterious elements in subsequent leach solutions.

We believe that the DZP is too large for ALK to develop on its own or in conjunction with another party other than with a major Mining House, even with projected cashflows from the Wyoming Gold Project. The DZP does, however, constitute a significant proportion of ALK's value, with a conservative valuation based on a gross in-situ value of 2% for Measured Resources and 1% for Inferred Resources at a total value of $A177.3m or $0.75ps fully diluted.

The 12-month valuation is based on two near term projects. The Nullagine Iron Ore Project is based on 2% of the total revenue stream using A$12.5/t margin, with an extractable resource of 150Mt. We have valued this project at A$22.5m or $0.23ps fully diluted. The Wyoming Gold project valuation is based on a 42,000oz per annum operation for an eventual extractable resource of 500,000oz. We have valued this project at an after-tax $NPV_{10\%}$ of A$34.9m or $0.21ps fully diluted.

Although the cumulative ALK valuation is $1.19ps fully diluted, the **12-month valuation** for ALK is **A$57.4m** or **$0.44ps** fully diluted.

Year End June	*2006f*	*2007f*	*2008f*	*2009f*	*2010f*
Net Revenue	(1.7)	(3.6)	10.9	2.6	6.1
EPS (fully diluted)	-	-	0.07	0.02	0.04
PER	-	-	3.3	13.9	5.9
NPAT ($m)	-	-	10.9	2.6	6.1
CFPS	-	-	0.09	0.03	0.06

Table 1 *Source: DJC Research*

Investment Valuation – Alkane Exploration Ltd

ALK is a diverse exploration company with gold, copper, nickel iron ore and zirconia assets. In attributing a value to this company, however, three projects were chosen primarily because of their ability to affect the value of ALK in the short to medium term. The Wyoming Gold Project is projected to begin production at the beginning of 2008FY. The Nullagine Iron Ore Project is current in the midst of third party negotiations, while the Dubbo Zirconia Project is a World Class deposit.

Wyoming Gold Project

The Wyoming project valuation is based upon a number of assumptions. Mine production is expected to commence at the start of the 2008FY and finish at the end of 2020FY – with a final recoverable mine production of 500,000oz.

Underground production is projected to plateau ~300,000t/pa in 2010 at a reserve grade of 5g/t. The average mined grade is expected to be ~2g/t from the open pit and 4.3g/t from underground operations (~42,000oz/pa). The long-term gold price used from 2013 is US$450oz at an exchange rate of A/US$0.70.

In NSW gold royalty rate is 4%. There are, however, allowable discounts for plant depreciation (11.25% pa) and directly attributable administration costs (33%). The net result from the above deductions mean that throughout the production stipulated (2008 to 2020), there are no government royalties owing.

Financial Summary – Alkane Wyoming Gold Project from 2008

Year End 30 June	*2008f*	*2009f*	*2010f*	*2011f*	*2012f*	*2013f*
US Gold Price (US/oz)	500	490	480	470	460	450
AUD/USD	0.70	0.70	0.70	0.70	0.70	0.70
Aus Gold Price (Aoz)	714	700	686	671	657	643
Tonnage (000t)	660	660	302	302	302	302
Revenue (A$m)	27.4	26.8	26.2	25.7	25.1	24.6
Costs(A$m)	19.7	21.5	17.7	17.6	18.0	18.1
Costs (A$t)	21	23	56	56	56	56
Costs (A$oz)	467	510	420	420	428	432
EPS (fully diluted)	0.07	0.02	0.04	0.04	0.03	0.03
PER	3.3	13.9	5.9	6.2	7.2	8.2
NPAT ($m)	10.9	2.6	6.1	5.7	5.0	4.4
CFPS	0.09	0.03	0.06	0.05	0.05	0.05

Table 2 *Source: DJC Research*

When constructed, the Wyoming plant will be the only gold mill in the region. Once underground operations commence, there will be excess capacity, with scope in the future for new tonnage coming from other nearby gold operations. Attributable expenditure to date for the Wyoming Gold Project is $6.6m.

Cashflow Analysis – Alkane Wyoming Gold Project

Year End 30 June	*2006f*	*2007f*	*2008f*	*2009f*	*2010f*	*2011f*
Operating Surplus (A$m)	(1.7)	(3.6)	10.4	8.0	11.2	10.6
Loans In (A$m)		31.0				
New Equity (A$m)						
Net Interest (A$m)			(2.6)	(2.5)	(2.1)	(1.8)
Total Cash In (A$m)	(1.7)	27.4	7.9	5.6	9.1	8.7
Capex (A$m)						
Tax (A$m)		28.0	1.4	1.4	1.4	1.4
Loans Out (A$m)						
Total Cash Out (A$m)		28.0	1.4	1.4	1.4	1.4
Net Cashflow (A$m)	*(1.7)*	*(0.6)*	*6.5*	*4.2*	*7.7*	*7.3*

Table 3 *Source: DJC Research*

Post-Tax NPV Valuation (500,000oz Mineable Resource)

Discount Rate	*Post-tax value (A$m)*	*VPS – fully diluted (A$)*
0	56.1	0.34
2	50.4	0.30
4	45.6	0.27
6	41.5	0.25
8	38.0	0.23
10	34.9	0.21
12	32.3	0.19
14	30.0	0.18
16	28.0	0.17
18	26.2	0.16

Table 4 *Source: DJC Research*

Sensitivity Analysis (500,000oz Mineable Resource)

	Vari. Change		*VPS Change*	
	Nom.	*%*	*Nom.*	*%*
Gold Price (A$oz)	22.5	5	0.05	23
USD/AUD	0.05	7	0.08	36
Total Costs ($At)	-	5	0.04	18
Milling Costs (A$t)	2	17	0.04	18
Mining Grade (%)	-	5	0.05	23

Table5 *Source: DJC Research*

Investment Valuation – Continued

Nullagine Iron Ore Project

The Nullagine Iron Ore Project valuation is based on a recoverable tonnage of 150Mt. The long-term profit margin is estimated to average A$12.5/t, which includes debt and capex considerations for the project start-up, giving a total life of project revenue return of A$1.875B.

The total attributable value of this project is calculated at 2% coupon of the total revenue stream, 60% of which is credited to ALK - equating $0.23ps.

An important consideration to the viability of the Nullagine Iron Ore project is the commercial success/development of the proposed Fortescue Metals (FMG) railway development linking the Cloud Break, Christmas Creek, Mt Lewin and Mt Nicholas deposits with the deep water loading facilities at Port Headland. The Nullagine iron ore project is only 30km distant from the proposed rail-infrastructure plan. FMG have publicly stated that they are willing to allow third parties to use their constructed rail infrastructure.

Nullagine Iron Ore Project Valuation

Recoverable Tonnage (Mt)	*Profit Margin (A$t)*	*Total Value (A$B)*	*2% Coupon Rate (A$m)*	*ALK (60%)*	*ALK Shares (m)*	*Value p.s. – fully diluted (A$)*
150	12.5	1.875	37.5	22.5	166	0.23

Table 6 *Source: DJC Research*

Dubbo Zirconia Project

The Dubbo Zirconia Project (DZP) is a multi-mineral deposit based on the Toongi alkaline intrusive that contains hafnium, lanthanides (rare earths), niobium, tantalum, yttrium, uranium and zirconium. We believe that the project is too large to be developed by a company or a number of companies of ALK's size. Rather, is more likely that the DZP would be developed in conjunction with a major mining house, with ALK either having a free-carried interest in the project or participating in an actual sale.

A gross in-situ valuation methodology is utilised because there has been no project optimisation, therefore, no reasonable capex estimate can be considered. The DZP valuation is based on four basic products:

(1) The proposed DZP plant will be able to produce a zirconium sulphate, oxide, hydroxide and carbonate. Although each commands markedly different prices – a generic US$4kg is used;

(2) Niobium product, also containing tantalum but no value is attributed to;

(3) Yttrium product, that also contains rare earths but no value is attributed to; and

(4) Uranium.

Dubbo Zirconia Project Assumptions

Product	*Measured Resources (Mt)*	*Inferred Resources (Mt)*	*Grade (%)*	*Expected Metallurgical Recovery (%)[1]*	*Price per tonne (US$)[2]*	*Gross In-situ Value (2%) for Measured Resources*	*Gross In-situ Value (1%) for Inferred Resources*
Zirconium	35.7	37.2	1.96	80	4,000	2,239	2,333
Niobium	35.7	37.2	0.46	65	14,000	1,494	1,557
Yttrium	35.7	37.2	0.14	80	3,000	120	125
Uranium	35.7	37.2	0.014	65	70,000	227	237

Table 7 *Source: DJC Research*

1 Expected metallurgical resource estimates provided by ALK
2 Product prices provided by ALK

Although it is presently illegal to mine or extract U_3O_8 in NSW, we believe that public opinion is beginning to change. Subsequently, we believe that by the time the project is producing concentrate, that the extraction of uranium concentrate will be permissible; hence it is included in the DZP valuation.

Dubbo Zirconia Project Valuation

Attributable 2% value for Measured Resources (A$m)	*Attributable 1% Value for Inferred Resources (A$m)*	*Total Attributable Value*	*ALK Shares (m)*	*Value p.s. – Fully diluted (A$)*
116.6	60.7	177.3	166	0.75

Table 8 *Source: DJC Research*

Dubbo Zirconia Project

The Dubbo Zirconia Project (DZP) is one of the world's largest undeveloped zirconium resources located 30km south of the regional centre of Dubbo (pop. 40,000), in NSW. The project is centred on an intrusive trachyte body containing elevated levels of zirconium (1.96% ZrO_2), hafnium (0.04% HfO_2), niobium (0.46%, Nb_2O_5), tantalum (0.03% TaO_5), yttrium (0.14% Y_2O_3), uranium (0.014% U_3O_8) and Rare Earth Oxides (0.745%).

The current DZP Measured Reserve stands at 35.7Mt (0 to -55m, 340RL) with the Inferred Resource of 37.5Mt (-55 to 100m; 295RL) giving Resource/Reserve of 73.2Mt produced in accordance with the JORC code. The actual DZP resource is likely to be significantly larger as the majority of drilling is confined to depths less than 55m, with an Inferred Resource calculated to only 100m below the surface.

Major Uses for Dubbo Project Mineral Products

Mineral	*Major Producers*	*Product Uses*
Zirconium	Australia	50% of zirconium is used for ceramic pigments, but also for drying agents, fire retardants, advanced ceramics, electronics and catalysts.
Hafnium	Australia/ South Africa	The leading market for hafnium is in super-alloys. The metal is also used for nuclear control rods.
Niobium	Brazil	Most niobium is converted into ferro-niobium within the steel industry. The rest is used in super alloys, specialty glasses and ceramics.
Tantalum	Australia	Predominantly used in the production of ceramic capacitors for mobile phones and alloys.
Yttrium & HREE	China	Yttrium is associated with almost all REE and uranium deposits. The most important yttrium compound and is widely used to make YVO_4 europium and Y_2O_3 europium phosphors that give the red colour in television picture tubes. The largest use of REE's is in glass polishing/ ceramics (39%), automotive catalytic converters (22%), permanent magnets (16%), petroleum-refining catalysts (12%) and metallurgical uses (9%).
Uranium	Canada/Australia	Energy generation.

Table 9 *Source: DJC Research*

The trachyte body would be a conventional open-cut operation and would eventually cover an area of approximately 14ha to a maximum depth. Mining would entail drill, blast, load, haul and dump to a ROM pad, approximately 4km to the west of the open-cut. Mining costs have been estimated to be around A$5t.

The DZP is situated less than 1km from a major arterial route and less than 500m from existing rail infrastructure. The proposed water pipeline would be 6km in length from the Macquarie River (a major regional waterway). The project would purchase electrical power from the New South Wales electrical supply, estimated to be between 4.4 & 3.8MW, while the plant would also require approximately 288Tj of gas to run the metallurgical sulphation process. Both the proposed powerline and gas pipeline would require 30km of development from existing facilities situated at Dubbo.

The resource size enables the project to be scalar – so production could encapsulate economies-of-scale potentially raising annual revenues from a base case of US$25m over US$80m per annum.

In 2002, a sulphuric acid process was trialed using a mini plant with several products recovered and distributed internationally. It appears that the key to DZP's viability (in comparison to other zirconium rich intrusives) is the presence of acid soluble ore minerals that dissolve at the sulphation stage - limiting the level of deleterious elements in subsequent leach solutions.

10 Largest Undeveloped Uranium Deposits in Australia

Deposit	*State*	*Grade U_3O_8 (%)*	*Contained U_3O_8 (t)*	*In-situ U_3O_8 Value (A$B)*[1]	*Category*
Jabiluka	NT	0.62	88,000	8.3	Reserves + Measured and Indicated Resources
Yeelirrie	WA	0.15	52,000	4.9	Indicated Resources
Mulga Rock	WA	0.14	46,000	4.3	Estimated Resources
Kintyre	WA	0.2-0.4	35,000	3.3	Reserves & Resources
Mt Gee	SA	0.073	33,000	3.1	Inferred Resources
Valhalla	QLD	0.14	25,000	2.4	Measured & Indicated Resources
Westmoreland	QLD	0.2	21,000	2.0	Inferred Resources
Koongarra	NT	0.8	14,450	1.4	Reserves
Manyingee	WA	0.09	12,000	1.1	Indicated and Inferred Resources
Dubbo Zr Project	***NSW***	***0.014***	***10,400***	***1.0***	***Measured and Indicated Resources***

Table 10 *Source: UIC*

1 Using US$32lb U_3O_8 equates to US$70.55kg @ US/A$0.75 = A$94.06kg (∴ 1 tonne U_3O_8 = A$94,060)

The DZP deposit actually contains the 10th largest undeveloped uranium resource in Australia. The in-situ grade is too low to be economic in its own right. But because ore-grade material would be processed anyway, extraction of the U_3O_8 at marginal extra cost would be a highly attractive proposition.

Nullagine Iron Ore Project (60%)

Previous work by ALK targeting diamonds at the base of Tertiary paleochannels at Nullagine, demonstrated that the tops of Tertiary paleochannels were typically composed of pisolitic iron ore deposits up to 20m thick overlying clays, carbonates and other detrital units. A pisolite is a spherical accretion of iron minerals (typically composed of goethite and hematite) with minor clay and silica.

Bonnie Well Traverse

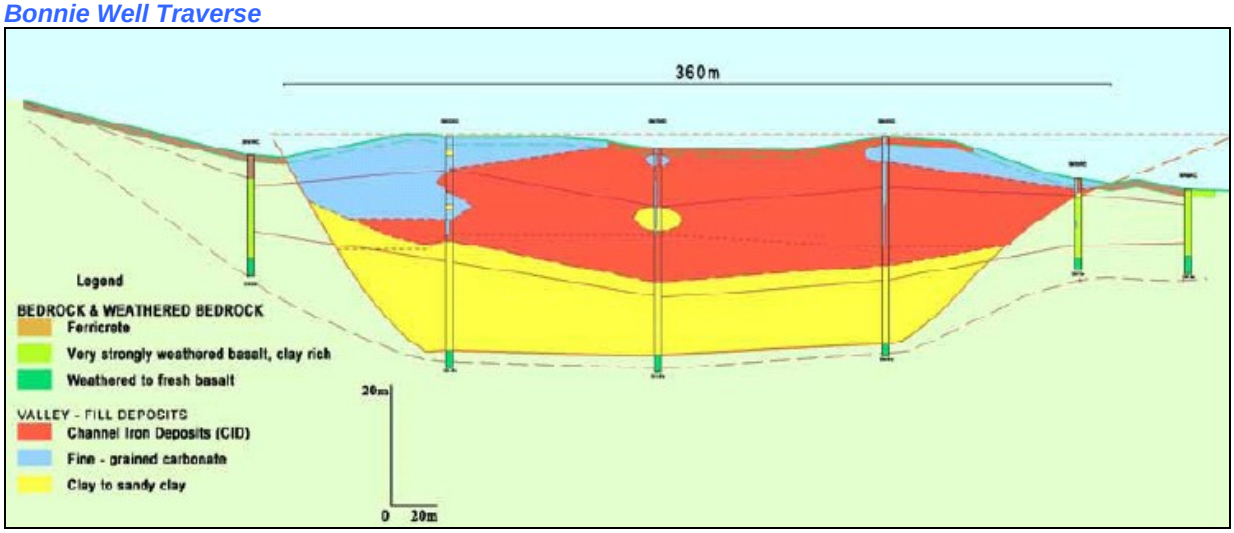

Figure 1 *Source: ALK*

Pisolitic deposits typically form as accumulations of iron-rich fragments of bedded ore (often derived from the Brockman or Marra Mamba Iron Formations) that are then eroded from nearby topographically elevations and transported to, and deposited in, trap sites at the base of those hills. Due to their inherent high-ferric compositions, subsequent erosion and/or uplift of these formations expose the deposits, often forming a series of flat-topped hills known as "mesas".

Pisolite Iron Ore Comparison (Robe River vs Nullagine)

	Fe	*SiO_2*	*Al_2O_3*	*P*	*LOI*	*Fe (Calcined)*
Nullagine Iron Ore Project[1]	58	3.23	3.95	0.03	9.07	63
Robe River CID Ore	57	5.50	2.58	0.04	9.25	63

Table 11 *Source: Rio Tinto, ALK*

1 Results based on limited surface sampling

The Robe River Iron-Ore operations in the Pilbara have been in operation and exporting pisolite ore since 1972. Since 1990, the growth in the pisolite iron ore export market to Japanese customers has had an annualised growth rate of 9% per annum.

Using aerial photography and topographic base maps, ALK have digitised every major Tertiary pisolite outcrop – estimated to have a total length of 26km. A thickness for each outcrop was estimated using either available drillhole data or if the mesas were exposed, outcrop thickness. From this data, three-dimensional polygons were calculated.

Using a generic specific-gravity of 2.6 tonnes per cubic metre, multiplied by the calculated volumetric polygons for each Tertiary outcrop – a cumulative tonnage was determined. ALK believe that the potential tonnage for the channel iron ore deposits on its leases range between 150 to 220Mt.

The Nullagine tenements are situated 30km north of the proposed Fortescue Metals (FMG) railway, linking the Cloud Break, Christmas Creek, Mt Lewin and Mt Nicholas deposits with the deep water loading facilities at Port Headland. It appears increasingly likely that FMG may receive funding for development of their iron-ore venture. FMG have publicly stated that they will allow third-party access to any constructed rail infrastructure.

Nullagine Iron Ore Project

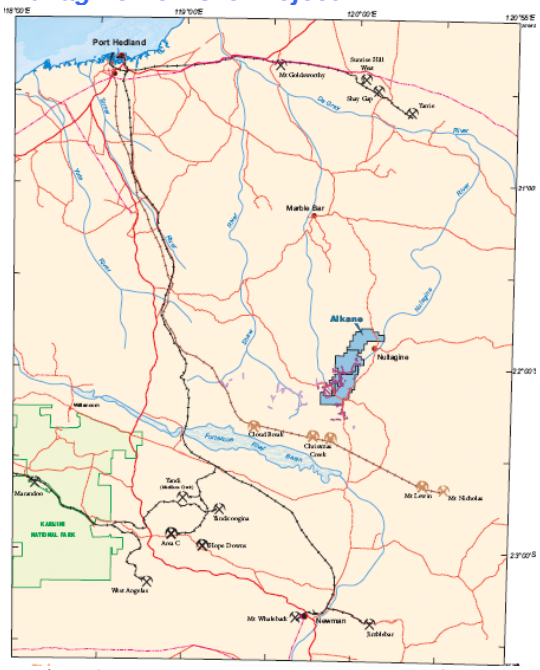

Figure 2 *Source: ALK*

Tomingley Gold Project

The Tomingley Gold Project is 366km^2, situated in Central NSW, extending over 60km in length from Parks in the South to Tomingley in the north covering a prospective sequence of Ordovician volcanics.

The Wyoming prospect is situated 14km north of ALK's Peak Hill Gold Mine, immediately north of the Historic Myalls United Mine (historical production 70,000oz). A number of Wyoming prospects (Wyoming One to Four) define separate mineralised structures over a kilometre in length within a major vein system resulting from regional dislocation. In addition, there are 20km of surface geochemical anomalies south of Wyoming through to Peak Hill.

The total resource for the Wyoming gold deposit is 7.13Mt @ 2.7g/t Au (606,400oz), with 58% of the contained gold in the measured category. Discovery cost-to-date is around $9oz compared to the industry average of $20-25oz.

Wyoming consists of three main high-grade zones; the Hangingwall Zone (HWZ), the cross-cutting 376 structure and mineralisation within the host porphyry that contains a bulk grade up to 2g/t Au (within this porphyry, however, there are multiple high-grade zones). The HWZ is a linear zone that has a strike-length of at least 400m, while the high-grade shoots (including the 376, 831 and 497) sit within or adjacent to the porphyry, with the potential of another high-grade zone sitting in-between.

ALK are currently refining their geological models with infill drilling. A pre-feasibility study is due within the 1Q06 that will include the dimensions of the open cut and the depth that ALK will go underground.

The mined gold-bearing ore would be processed via a conventional carbon-in-leach treatment plant, estimated to have a $25m capex, plus a 40 kilometre water pipeline estimated to cost $3m. We also estimate that working capital would be in the vicinity of $3m. The whole $31m would funded via debt.

Production is expected to commence 1QFY08 and finish at the end of 4QFY09 via open pit mining, with a Run of Mine (ROM) grade of 2g/t Au. Mining is then expected to move underground, with the ROM grade estimated to around 4.3g/t Au. Mill reconciliation is estimated to be in the vicinity of 95%. It is estimated that the final amount of gold extracted will probably exceed 500,000 ounces or 15.55 tonnes.

Simplified Wyoming Gold Project Plan

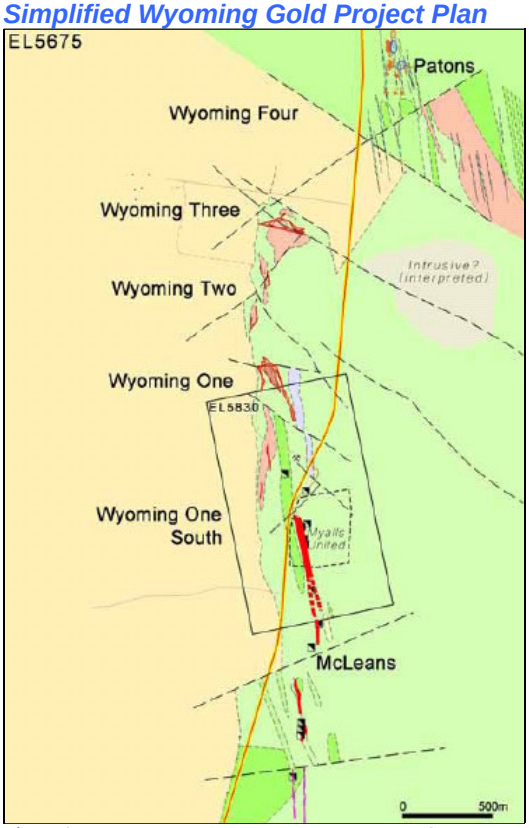

Figure 3 *Source: ALK*

Wyoming One (X-Section 614075E)

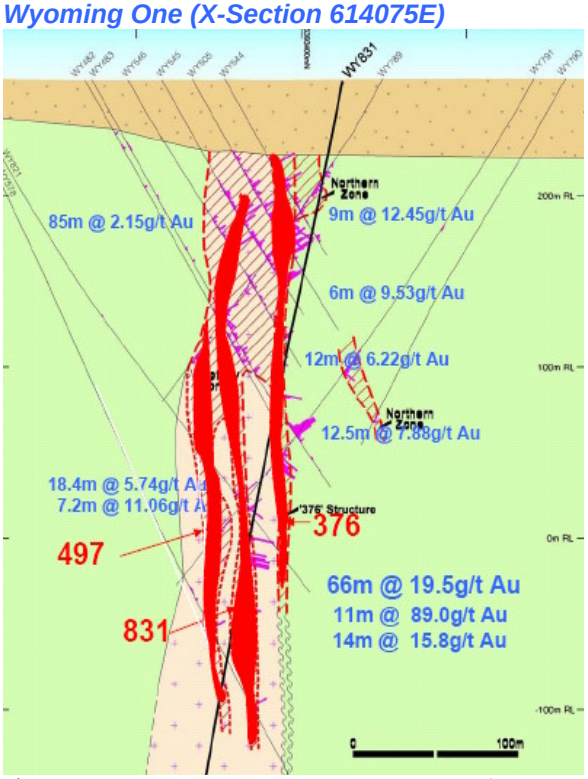

Figure 4 *Source: ALK*

Tomingley Gold Project Resource Summary

	Measured		Indicated		Inferred		Total		
Deposit	Tonnage	(g/t)	Tonnage	(g/t)	Tonnage	(g/t)	Tonnage	(g/t)	Ounces
Wyoming One	4,020,000	2.5	1,010,000	2.77	1,270,000	4.09	6,300,000	2.70	547,700
Wyoming Three	815,000	2.20	15,000	2.32			830,000	2.2	58,772
Total	*4,835,000*	*2.24*	*1,025,000*	*2.76*	*1,270,000*	*4.09*	*7,130,000*	*2.70*	*606,400*

Table 12 *Source: ALK*

Disclosure Disclaimer **RCAN0528**

This Research report, accurately expresses the personal view of the Author.

DJ Carmichael Pty Limited, its directors and employees advise that they may hold securities, may have an interest in and/or earn brokerage and other benefits or advantages, either directly or indirectly from client transactions in **Alkane Exploration Limited**. **Alkane Exploration Limited** has paid DJ Carmichael Pty Limited a fee of $65,598 being a fee of 5% on the funds raised by DJ Carmichael Pty Limited in the $3.2m placement.

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Declaration

I, Gaius Lucanus Lindsay King, the Author of this report, certify that the views expressed in this research accurately reflect my personal views about the subject securities. The report was made in conjunction with numerous contacts with personnel of **Alkane Exploration Limited** for assistance in verification of facts, admittance to business sites, access to industry/company information. No inducements have been offered or accepted by the company.

The recommendation made in this report is valid for four weeks from the stated date of issue. If in the event another report has been constructed and released on **Alkane Exploration Limited**, the new recommendation supersedes this and therefore the recommendation in this report will become null and void.

Recommendation Definitions

BUY – 10% or more outperformance
HOLD – 10% underperformance to 10% over performance
SELL – 10% or more underperformance
Period: During the forthcoming 12 months, at any time during that period and not necessarily just at the end of those 12 months.

1. Stocks included in this report have their expected performance measured relative to the ASX All Ordinaries index. DJ Carmichael Pty Limited's recommendation is made on the basis of absolute performance. Recommendations are adjusted accordingly as and when the index changes.