

# 2017 – The Year of Alkane Resources

A little while ago, I wrote an article that claimed 2017 would be an incredible year for renowned Australian multi-commodity explorer, Alkane Resources Ltd. (ASX: ALK | OTCQX: ANLKY) (“Alkane”), and for those of you who remain unconvinced, the company recently published an outstanding quarterly activity report that goes beyond suggesting that their position is getting increasingly formidable by the week. Record quarterly gold production combined with rapidly improving market conditions are outstripping even my expectations, and looking at Alkane’s share price chart, I spy a recent trend reversal that could signify a serious boom period for the Aussie junior.

The company’s Tomingley Gold Project has produced a staggering quantity of material this financial year, and furthermore, Alkane has managed to significantly reduce on-site operating costs. The company sold 31,107 ounces of gold generating revenues of A\$52.6 million at an average price of A\$1,690/ounce, and secured forward contracts (as of 30 June 2017) of 17,500 ounces at an average price of A\$1,716/ounce. Given that budgets for FY2018 are complete and production is expected to be 65,000 to 70,000 ounces of gold at an all-in sustaining cost (AISC) of A\$1,100 to A\$1,200 per ounce, those expanding margins are looking very healthy indeed.

Gold production was above forecast at 27,924 ounces and well above the previous quarter of 18,721 ounces. This has been largely attributed to surprisingly high-grade material emerging from one particular pit (Caloma Two), and mining for the coming budget period will be exclusively from this mine and one other (Wyoming One). Full year production for FY2017 was 68,836 ounces, meaning that Q4 production comprised over 40% of the annual total; with Caloma Two playing a more

significant role in the coming year, FY2018, in my opinion, stands to be even more impressive.

On top of record gold activities, the highly anticipated Dubbo Project has made significant advances. Alkane signed a processing agreement with Vietnam Rare Earths (VTRE) in 2016, and this quarter signed a 12-month toll treatment agreement; subsequently, VTRE processed two shipments of light rare earth element (REE) concentrates totalling 80 tonnes acquired on market by Alkane, producing approximately 31 tonnes of separated rare earth oxides, including cerium, lanthanum, praseodymium, and neodymium oxides. Final processing is expected to be completed in July, with products then available for sale as pure oxides, or after conversion, as metal alloys.

The DP itself remains construction ready, with the mineral deposit and surrounding land wholly owned; all State and Federal approvals in place; an established flowsheet and a solid business case. Furthermore, amid China's increased restrictions on production and environmental compliance issues aimed at minimising environmental pollution, REE prices are undergoing some dramatic changes.

The crackdown by Chinese authorities is understood to be targeting all chemical industries, including rare earths, in order to tackle air pollution and the long term damage affecting waterways and soil degradation, and has resulted in REE prices hitting record highs. The sought-after magnetic materials, Neodymium and Praseodymium, have hit their highest value in two years, and Zirconium Oxychloride (the key indicator of the zirconium chemical industry) prices increased by 40% since the end of last year, resulting in the highest prices for 4-5 years.

It's not often that you come across a junior with a decent cash flow situation, and very rare indeed to find one so strong. The company's gold sales have enabled them to remain safely on the right side of the rare-earth market, and the

case for REE supply outside of China has never been better. Alkane have one of the world's largest in-ground resources of zirconium, hafnium, niobium, yttrium and rare earth elements; so large, in fact, it is expected to process 1,000,000 tonnes of ore each year over a period of 70 years or more, the first 20 of which are already fully permitted. I'll say it one more time; this is going to be one hell of a year for Alkane Resources.

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## **Some gold sunshine after the rain**

An unusually wet year continued through the winter for Alkane Resources Ltd. (ASX: ALK | OTCQX: ANLKY) ("Alkane"), including a freak December storm where 108mm of rain fell on their Tomingley Gold Operations within 24 hours. Even with two-thirds of that falling in the space of a single hour, the bypass water drains and pit protection measures held strong and prevented any damage. While the resulting underperformance on quarterly production can be chalked up to an 'act-of-god', gold poured for the quarter still represented A\$20.9m in revenue, and recent high-grade drill results, a renewed focus on mining performance and advancements to the A\$1bn Dubbo Project mean there is plenty to look forward to.

The Tomingley site is still running smoothly; production costs are within expected ranges and Alkane are pinning their focus on managing a tight schedule across their three active pits, Caloma, Caloma Two and Wyoming One. To extend the mineralisation zone, a drill program recently tested targets below the Wyoming One pit and at the Caloma pit; the drill cores measured roughly 2-5g/t across both mines, plenty enough

to support an underground mining operation. Some individual samples returned grades as high as 20g/t, and a high-grade ore from Caloma Two should be available for processing shortly; which means that Alkane shouldn't struggle to hit their revised FY2017 production schedule of 53,000-58,000oz.

The famed Dubbo Project remains ready for construction, with the mineral deposit and surrounding land wholly owned. All state and federal approvals are in place, and efforts to secure the financing for the project are being accelerated. The announcement of the memorandum of understanding with Siemens Ltd. showed the significance of the project to one of the major western rare-earth players, and a potential opportunity to secure future revenue for Dubbo. The company plans to construct the modular plant design in two stages, each of 500ktpa, or half capacity. The second stage will be built after the first stage is successfully commissioned and market price has been achieved for the zirconium, hafnium, niobium, yttrium and rare earth product range.

A key product for Dubbo will be its hafnium reserves. Demand for hafnium continued to outstrip supply throughout 2016, which is closely related to increasing demand for hafnium-free zirconium metal for the nuclear industry. Chinese zirconium companies are starting to produce hafnium free zirconium for their own nuclear industry, and although this will increase hafnium supply, the quantities involved are only a few tonnes, and will most likely be consumed entirely within China. The principal market for hafnium is for hafnium metal used in superalloys. These superalloys are essential for industrial gas turbines and jet engines, but there are numerous additional research and development activities taking place which could create significant demand if hafnium availability can be increased from new sources such as the Dubbo Project.

Located at Toongi, 25 kilometres south of Dubbo in central-west New South Wales, the Dubbo Project is being developed by Australian Zirconia Limited (AZL), a wholly owned subsidiary

of Alkane Resources. Due to the size of the resource, the mine is expected to process 1,000,000 tonnes of ore throughput per year over a period of 70 years or more. AZL owns 3,441 hectares of land at Toongi, including the operating site, significant Biodiversity Offset Areas and residual agricultural land. Having survived the rains, Alkane expects construction of the processing plant to take place during 2017-2019, and since the sun always shines after a storm, this could very well be the year that Dubbo goes live.

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## **Alkane ready to seek government approval amid growing rare earth market optimism**

✘ Alkane Resources ('Alkane', ASX: ALK | OTCQX: ANLKY) has continued development at its AUD\$ 1 billion Dubbo Zirconia rare earths project in New South Wales as the Company heads toward the government approval and mine construction phase. Engineering got underway last April when Alkane signed a contract with Hatch Pty Ltd to provide front end and design (FEED) to deliver infrastructure, water and acid plant processing among other aspects on the basis of the Definitive Feasibility Study (DFS) issued in April 2013. The FEED process has given Alkane as accurate an idea as possible about the core costs and ease the necessary funding to bring the project to production. The DFS for the Dubbo Zirconia Project predicted an initial 20 year life with EBITDA of AUD\$5.23 billion and NPV of AUD\$1.23 billion.

Alkane has already managed to secure some very big financial players to arrange the investment banking and product financing support including Credit Suisse, Sumitomo Mitsui Bank and Petra Capital. All the elements are there to get the Project approved in early 2015. The next few weeks will see Alkane working with foreign governments and project financiers to raise all the capital needed; it should be noted that Alkane will be raising only limited funds from shareholders. While the rare earths market has been sluggish at best in the past few years, highlighted by the production and stock market challenges faced by the two main non-Chinese active producers, Lynas Corp and MolyCorp, the current situation is not as dire as expected. Indeed, Alkane's chances of reaching the crucial production phase, and ultimate survival, have received a boost from the Lynas's own experience.

Few would have predicted that Lynas would still be operating independently today. Its challenges with a highly politicized environmental movement in Malaysia, where its Lynas Advanced Materials Processing, 'LAMP', facility is based were only slightly worse than its slow ramp-up phase and constant losses. Recently, Lynas was even able to reassure its investors and the REE market in general that things are not as bad as they appeared less than a year ago. Lynas's shares (ASX: LYC) rose around 9% in the second week of November as the company managed to reassure its investors that the market for rare earths is not so bad. Lynas was recently able to renegotiate the terms of a 225 million USD loan from Japanese lenders as well as securing a less oppressive repayment plan: the bulk of repayment begins in 2016. So far, Lynas would have to make a repayment rate of USD 35 million by next Tuesday and the market has clearly expressed its confidence that the company has the resources to fulfill this obligation. Another condition of the new agreement is that the supply of rare earth oxides in the Japanese market is given priority, although no exact conditions were identified. This request for exclusivity and priority suggests overall REE demand is still

high. Indeed, Lynas intended to account for just under a third of the current Japanese demand for rare earths, which is estimated at 32,000 tons per year. Japan has long tried for some time to free itself from its dependence on Chinese REE's.

Molycorp in the United States fared even worse, enduring a massive share price collapse from the heights of a blue-chip to almost penny stock values. Yet both companies are still there, debt burdens and all. Their survival suggests that there is still room for new rare earth entries, especially those able to supply the higher demand critical REE's. Moreover, Alkane carries fewer risks to investors than Lynas because it will be outsourcing its processing, thus avoiding the need to spend at least a billion dollars in its own facility – the very investment that almost broke Lynas and Molycorp. Meanwhile, even as prices and perceived scarcity of REE's is now far from the heydays of 2010-2011, when industrial powers such as Japan and the United States complained about Chinese rare earth export quotas, higher prices are for these elements are likely.

Alkane has an additional source of funding for its Dubbo Zirconia Project as gold mining is in full swing at its Tomingley gold mine in New South Wales, Australia. Alkane's gold project came on line last February 14 and it was on time and on budget. Alkane announced the first gold pour at Tomingley with the production of an eight kilo bar, containing about 230 ounces of gold. The Tomingley mine started production on schedule and below budget, said Ian. Alkane will soon be ready to produce at close to, or at, design capacity, generating the cash flow that will help fund, and accelerate the development of, the rare earths operation. The mine holds three gold deposits with a resource of about 14.3 million tons (with 921,000 ounces of contained gold) and it is expected to increase production from the current 60,000 ounces/year to 70,000 ounces over the next few years. Alkane expects the Tomingley gold mine to help generate cash return of at least

AUD\$ 300-400/oz. of margin and an initial revenue of about AUD\$ 35 million, given a yearly production of over 60,000 ounces.