

# Alkane Resources

Exploration update  
and FY21 results

## Boda and Tomingley continue to deliver

Metals & mining

On 16 August, Alkane published the assay results of 10 more holes drilled at Boda. While our estimate of the overall mineralised inventory at Boda has changed little as a result of this set of holes, probably their most significant consequence is the increase in the potential resource contained within the high-grade sulphide cemented breccia from c 2.1Moz gold equivalent (AuE) to c 3.5Moz AuE above 3.0g/t AuE. This is as a result of the extension of this structure to at least 800m (cf 500m previously) from the interpretation of the assay results of holes KSDD034 and 034W2, KSRC038D and KSRC042 and, in particular, KSRC043, which returned an intersection of 31m from surface at a grade of 2.94g/t.

Year end	Revenue (A\$m)	PBT* (A\$m)	EPS* (c)	DPS (c)	P/E (x)	Yield (%)
06/20	72.5	20.6	2.56	0.00	37.3	N/A
06/21	127.8	46.3	5.35	0.00	17.9	N/A
06/22e	134.3	28.4	3.34	0.00	28.6	N/A
06/23e	130.8	34.1	4.01	0.00	23.8	N/A

Note: \*PBT and EPS are normalised, excluding amortisation of acquired intangibles and exceptional items.

## Initial inklings of a conceptual mine at Boda

The extension of the high-grade zone to 800m holds out the possibility of a continuous mine from surface at Boda. While it is early days, this could be in the form of a traditional long-hole open stoping mine. However, a sub-level or full cave may also be economic either initially or over time.

## Next step: Working towards a maiden resource

Over the next 12 months, we expect Alkane to announce both a tighter, higher-grade resource relating to the sulphide cemented breccia at Boda as well as one for the massive mineralised envelope (probably at an economic cut-off of c 0.3g/t). Initially, it is likely that the majority of the delineated resources will be in the inferred category, although we would expect this to be successively upgraded to higher categories with subsequent drilling.

## Valuation: Up to 130c per share

Our 'base case' valuation of the expanded and extended Tomingley operation is 35 Australian cents per share (cf 32c previously), to which may be added (as contingencies) a further 6c for the eventual development of the Roswell underground extension and potentially 12c given the current gold price. To this total of 53c, an additional 4c may be added to reflect the value of residual (unmined) resources plus 3c for ongoing exploration success at Roswell, San Antonio and El Paso to take the total for the wider Tomingley operation to 60c (including cash held centrally). Beyond that, we value Alkane's interests in Calidus and Genesis at 9c per share and the exploration completed to date at Boda and Boda Two within the Northern Molong Porphyry Project at up to 61c with plenty of blue-sky upside still remaining to take the total up to 130c (cf 125c previously – see Exhibit 10).

1 September 2021

Price **A\$0.955**

Market cap **A\$569m**

A\$1.3771/US\$

Net cash (A\$m) at June 2021 9.8

Shares in issue 595.4m

Free float 78%

Code ALKX

Primary exchange ASX

Secondary exchange OTC QX

### Share price performance



% 1m 3m 12m

Abs (15.2) 5.4 (13.3)

Rel (local) (16.9) (0.2) (30.8)

52-week high/low A\$1.50 A\$0.67

### Business description

Alkane Resources has two main assets in Central West New South Wales: 1) the Tomingley gold mine, where recent exploration has increased the mine life by at least eight years, from FY23 to FY31, and 2) its Boda prospect at Northern Molong, which is shaping up to be a tier 1 alkalic porphyry district.

### Next events

Maiden resource at Boda By end-Q3 CY22

Tomingley extension project approval Q3 CY22

Underground production at Roswell commences Q1 CY23

Open cut production at San Antonio commences Q3 CY23

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## Recent developments

Since our last note, Alkane has:

- released the results of 10 additional holes drilled at Boda, Boda Two and Boda Three at its Northern Molong Porphyry Project in Central West New South Wales in Australia, and
- announced its financial results for the year to end-June 2021.

This note updates our analysis of the company with respect to both announcements. However, given that underlying earnings for FY21 were within A\$1.0m (or 3.3%) of our prior forecast (see pages 9–11), primacy in this case has been given to the drilling results at Boda, which, among other things, have increased the vertical extension of the high-grade sulphide cemented breccia zone to a total of 800m (cf 500m previously) from surface.

## Boda and Boda Two drilling results

On 16 August, Alkane reported the assay results of an additional seven diamond drill holes (denoted DD) and an additional three reverse circulation (RC) holes at its Boda, Boda Two and Boda Three prospects at its Northern Molong Porphyry Project. The drilling is part of a 30,000m diamond and RC core exploration programme that began in July 2020 to test the dimensions and extensions to the large, low-grade mineralised envelope at Boda, as well as any internal high-grade zones.

A summary of the nine holes drilled at Boda and Boda Two (see Exhibit 2) is as follows:

<b>Exhibit 1: Boda drill hole assay results</b>					
	From (m)	To (m)	Average/aggregate intercept (m)	Average gold grade (g/t)	Average Cu grade (%)
<b>Previously announced DD results</b>			<b>705.1</b>	<b>0.26</b>	<b>0.12</b>
<b>Previously announced RC results</b>			<b>303.3</b>	<b>0.17</b>	<b>0.10</b>
<b>Previously announced all holes</b>			<b>590.9</b>	<b>0.25</b>	<b>0.12</b>
KSRC038D*	118.0	935.0	763.0	0.35	0.10
KSRC040	35.0	36.0	1.00	0.00	0.11
KSRC042	46.0	468.0	307.00	0.31	0.14
KSRC043	0.0	66.0	35.00	2.62	0.88
KSDD025	12.0	1,222.0	126.90	0.27	0.02
KSDD026	282.0	299.5	17.50	0.24	0.00
KSDD033	201.0	1,566.0	1,053.00	0.19	0.12
KSDD034	4.0	1,325.7	47.30	0.13	0.03
KSDD034W2	424.0	1,750.0	655.00	0.12	0.13
<b>New DD results</b>			<b>443.8</b>	<b>0.22</b>	<b>0.11</b>
<b>New RC results</b>			<b>114.3</b>	<b>0.55</b>	<b>0.21</b>
All DD results			653.2	0.26	0.12
All RC results			259.7	0.21	0.12
<b>All holes</b>			<b>539.5</b>	<b>0.25</b>	<b>0.12</b>

Source: Alkane Resources, Edison Investment Research. Note: \*Diamond tail to earlier RC hole. DD: diamond drill holes; RC: reverse circulation holes.

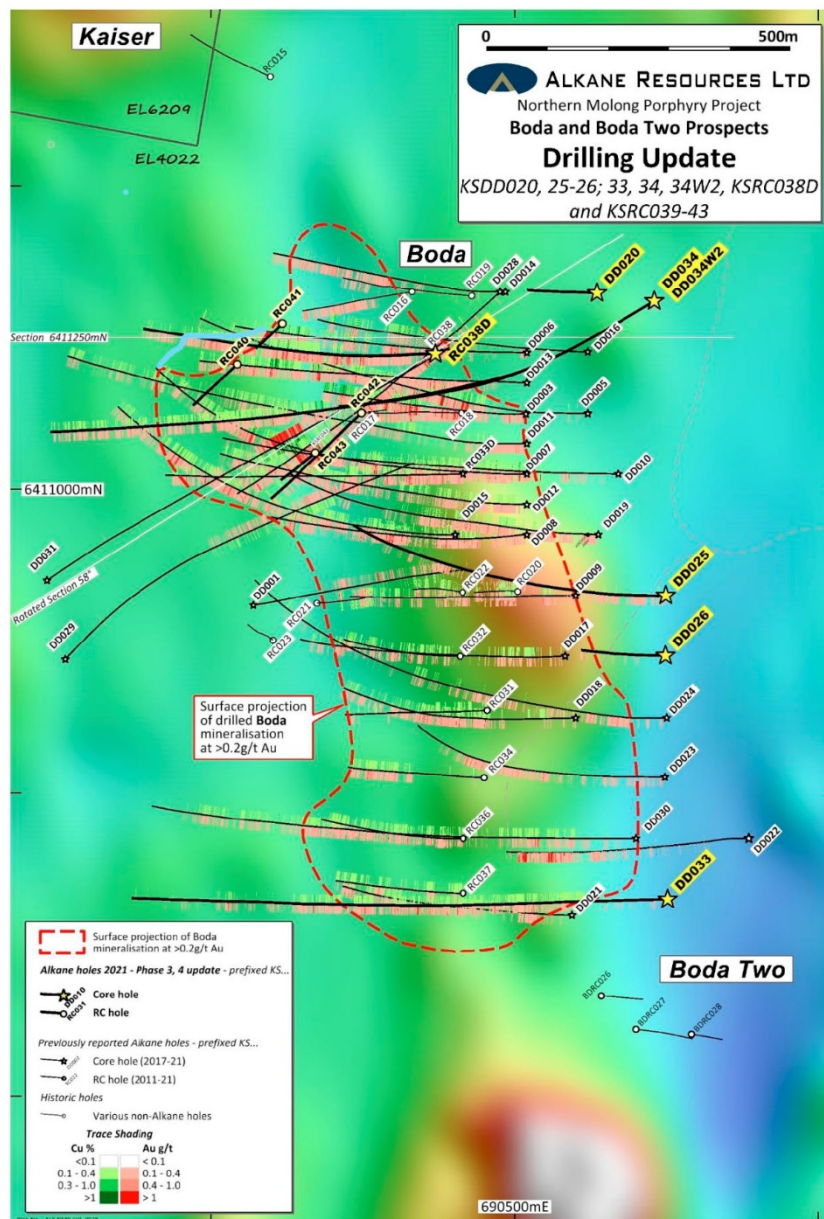
Note that, for the purposes of Exhibit 1, multiple intersections have been amalgamated and grades averaged according to the width of the individual intersections. In general, it may be seen that the six new DD holes reported widths of mineralisation that were consistent with (albeit slightly less than) those of previous holes at similar grades, but that the three RC holes (and particularly KSRC042 and KSRC043) reported grades that were materially higher than those reported previously in either DD or RC holes.

One further RC hole (not shown above), KSRC039, was drilled approximately 677m west-south-west of hole KSRC037 (see Exhibit 2 map) in Boda Three and returned an aggregate intercept of 14m at an average grade of 0.07g/t Au and 0.13% Cu – not high grade in and of itself, but demonstrating that the mineralisation continues for many metres to the south of the area already drilled and possibly much further with the potential for additional high-grade zones.

### Analysis and interpretation of Boda and Boda Two drill results

Two RC drill holes (KSRC042 and KSRC043) were designed to test for shallow extensions to the high-grade breccia first identified by KSDD007 (see our note [007 strikes it rich](#), published on 23 April 2020), while one hole (KSRC038D) was diamond core tailed to test for similar up-dip strike continuation and one further hole (KSDD034 with a wedge hole, KSDD034W2) for down-dip continuation. Hole KSDD033 tested the southern extensions to the mineralisation at Boda Two.

#### Exhibit 2: Boda prospect drilling update



Source: Alkane Resources

In general, holes KSRC042 and KSRC043 confirmed the existence of shallow extensions to the high-grade breccia first identified by hole KSDD007, with hole KSRC043 in particular intersecting significant gold and copper grades from surface with substantial assay results of:

- 31m grading 2.94g/t Au and 0.97% Cu from surface, including:
  - 9m grading 9.43g/t Au and 2.65% Cu from surface

Hole KSRC042 also intersected elevated grades of 10m grading 0.72g/t Au and 0.40% Cu and 9m grading 0.73g/t Au and 0.50% Cu.

In the meantime, hole KSRC038D (which was the diamond core tail of original RC hole KSRC038) intersected a wide zone of sulphide cemented breccia within a broad zone of gold-copper porphyry mineralisation up-dip of holes KSDD006, KSDD016, KSDD031 (which was designed to test the high-grade breccia down plunge, on the reverse angle), KSDD034 and O34W2 and KSDD005, with significant assay results of:

- 711m grading 0.36g/t Au and 0.10% Cu, including:
  - 17m grading 0.92g/t Au and 0.03% Cu
  - 12m grading 1.93g/t Au and 0.20% Cu
  - 17m grading 0.91g/t Au and 0.53% Cu
  - 1m grading 15.2g/t and 0.14% Cu

In this case, while the grade of the new hole was consistent with that intersected in previous holes (particularly for gold), the width of the intersection was generally materially greater (see Exhibit 3).

At the same time, deep DD core holes KSDD034 and KSDD034W2, which tested down-dip of the high-grade breccia, demonstrated the continuity of the structure as well as a possible feeder structure and conduit to the breccia with significant assay results of:

- 604m grading 0.13g/t Au and 0.14% Cu, including
  - 61m grading 0.10g/t Au and 0.26% Cu
  - 8m grading 0.25g/t Au and 0.61% Cu
  - 32m grading 0.25g/t Au and 0.20% Cu

As such, these two holes largely corroborated the results of hole KSDD028 (see our note [Revealing the fruits of its labours](#), published on 9 July 2021). Hole KSDD028 was significant in that it was designed to intersect the north-west striking orebody at approximately 90°. The hole, collared in outer propylitic alteration, intersected a gold mineralised pyrite-sericite shell for approximately 300m downhole, which zoned in to extensive calc-potassic alteration with gold-copper (Au-Cu) mineralisation centred around a high-grade Au-Cu breccia. The breccia showed apparent sulphide zonation with the upper intercepts more pyrite rich, zoning towards the centre and at depth to more chalcopyrite rich with increasing Au-Cu grades, possibly vectoring towards a 'causative' intrusion to the Boda system.

All told, these five new holes are interpreted as indicating that the orientation of the high-grade sulphide cemented breccia at Boda is as expected and that it has a vertical depth extension of at least 800m. In the meantime, it remains open and further drilling in this area is designed to test the structure at depth where its nature may change from chalcopyrite dominant to more copper-rich bornite dominant as well as continuing to test for a causative porphyry intrusion to the breccia and Boda system.

Results were also received from diamond core drill hole KSDD033, which tested the southern extensions to Boda Two and confirmed a zone of extensive gold-copper porphyry mineralisation, with a higher aggregate intercept and higher grades than earlier shallower holes (KSDD021 and KSRC037), with significant discrete intercepts of:

- 995m grading 0.19g/t and 0.12% Cu, including
  - 8m grading 1.14g/t Au and 0.30% Cu
  - 14m grading 0.49g/t Au and 0.23% Cu
  - 30m grading 0.39g/t Au and 0.20% Cu
  - 7m grading 0.55g/t Au and 0.38% Cu
- 21m grading 0.36g/t Au and 0.11% Cu

As such, hole KSDD033 may be said to have largely confirmed the earlier (significant) results from holes KSDD022 and KSDD021, which intersected a large pyrite shell comprising stringers and aggregates of pyrite within a sequence of propylitic altered basaltic andesites and monzodiorite sills and dykes, where the thick intersection of strong gold mineralisation with anomalous copper and pathfinder elements was interpreted to be indicative of a distal component to a new, large fertile magmatic system (Boda Two). Note that the same was also true of the intersection of significant molybdenum and copper mineralisation at a depth below 841m in hole KSDD024, which also suggests a zonation of metals around a deeper magmatic source to the system.

In total, five holes tested positive for molybdenum mineralisation, at various grades from 10–124ppm and at various depths ranging from 118m to 975m. Four of the holes (KSRC038D, KSRC042, KSDD034 and KSDD034W2), including the highest grade and deepest intersection (hole KSDD034W2), related to the sulphide cemented breccia unit, while the other one was KSDD033, which was testing the southern extensions of Boda Two. While the intersections in KSDD033 were not as deep, generally, as in earlier holes (ie from only 240m downhole), it corroborated the general pattern of molybdenum mineralisation being found at greater depths (eg holes KSDD019, KSDD017, KSDD024, KSDD030 and KSDD021).

**Exhibit 3: Recent Boda and Boda Two hole assay results of comparable earlier results**

Recent hole				Prior comparable hole			
Hole	Intersection (m)	Average gold grade (g/t)	Average Cu grade (%)	Hole	Intersection (m)	Average gold grade (g/t)	Average Cu grade (%)
KSRC042	307.0	0.31	0.14	KSDD007	1,197.1	0.54	0.25
KSRC043	35.0	2.62	0.88	KSDD031	407.2	0.77	0.31
KSRC038D	763.0	0.35	0.10	KSRC038	404.0	0.35	0.07
KSDD033	1,053.0	0.19	0.12	KSDD021	775.8	0.14	0.10
				KSRC037	385.0	0.10	0.11
KSDD034	47.3	0.13	0.03	KSDD031	407.2	0.77	0.31
KSDD034W2	655.0	0.12	0.13	KSDD028	839.0	0.38	0.17
KSRC038D	763.0	0.35	0.10	KSDD006	638.6	0.25	0.13
				KSDD016	501.0	0.19	0.18
				KSDD031	407.2	0.77	0.31
				KSDD034	47.3	0.13	0.03
				KSDD034W2	655.0	0.12	0.13
				KSDD005	720.7	0.45	0.19

Source: Alkane Resources, Edison Investment Research

In general, the DD holes continue to demonstrate wider overall intersections than their RC counterparts, extending to greater depths at higher grades, which may be attributed to a) the zonation of the system and b) the fact that the RC drill holes are testing the upper part of the system, where grades are anyway anticipated to be lower (as is typical of this type of porphyry system). Moreover, some of the RC drill holes are pre-collars for subsequent DD holes in order to reduce the overall cost of the holes (eg KSRC038D). Note that three further earlier RC holes (KSRC031, KSRC032 and KSRC037) also finished in mineralisation and one of these (KSRC032) will be extended via a diamond tail at a later date.



Exhibit 4 updates our estimates of the potential mineralised inventory in the light of the nine new drill hole results at Boda. As previously, in recognition of the difference between RC and DD results, we have included two updated estimates: one based on the whole population of results and the other based on the results of the DD holes only. Our updated mineral inventory estimates are also compared with the resources disclosed by Newcrest for Cadia Ridgeway c 100km to the south (see Exhibit 5).

#### Exhibit 4: Edison estimate of the potential size of Boda mineralisation

Source of underlying data Characteristic (units)	Edison				Alkane Resources				Newcrest
	Updated (all holes)	Updated (DD holes)	***Prior (all holes)	***Prior (DD holes)	Alkane est. dimensions	High-grade pod	Surface projection	Cadia Valley Ridgeway	Cadia Ridgeway underground actual**
Strike (m)	1,037	1,037	1,034	1,034	1,000	150	1,069	250	
Ave est true width (m)	260	322	271	315	400	100	521	150	
Est surface area (Mm <sup>2</sup> )							0.557		
Ave est true depth (m)	875	1,031	915	1,044	1,100	****800	1,020	600	
Est volume (Mm <sup>3</sup> )	236	344	256	340	440	12	568	22.5	
Est density (t/m <sup>3</sup> )	3	3	3	3	3	3	3	3	
<b>Est tonnage (Mt)</b>	<b>707</b>	<b>1,033</b>	<b>769</b>	<b>1,020</b>	<b>1,320</b>	<b>36</b>	<b>1,704</b>	<b>67.5</b>	<b>151</b>
Est ave gold grade (g/t)	0.25	0.26	0.25	0.26	*0.25		0.2		0.49
Est ave copper grade (%)	0.12	0.12	0.12	0.12	*0.12				0.32
Est ave AuE grade (g/t)	0.45	0.45	0.45	0.47	*0.45	3.0		2.0	0.84
<b>Est contained gold (koz)</b>	<b>5,719</b>	<b>8,561</b>	<b>6,192</b>	<b>8,648</b>	<b>10,674</b>		<b>10,957</b>		<b>2,400</b>
<b>Est contained copper (kt)</b>	<b>862</b>	<b>1,259</b>	<b>938</b>	<b>1,267</b>	<b>1,609</b>				<b>480</b>
<b>Est contained AuE (koz)</b>	<b>10,187</b>	<b>15,088</b>	<b>11,127</b>	<b>15,314</b>	<b>19,015</b>	<b>3,472</b>		<b>4,340</b>	<b>4,925</b>

Source: Edison Investment Research, Alkane Resources. Note: \*Edison estimates; \*\*From Newcrest reserve & resource statement, 31 December 2020; \*\*\*Conducted at prices of US\$9,401/t Cu and US\$1,787/oz Au; \*\*\*\*Previously 500m. Updated gold equivalent resource inventory and grades calculated at US\$1,794/oz Au and US\$9,299/t Cu.

Given the information available, our best estimate of the overall size of the Boda deposit is broadly unchanged at 707–1,704Mt at an average gold grade of 0.25–0.26g/t containing 5.7–11.0Moz Au plus copper. Not easily discernible from these overall figures, but probably the most significant consequence of the drilling results announced on 16 August, is the increase in the potential resource contained within the high-grade sulphide cemented breccia, from c 2.1Moz AuE to c 3.5Moz AuE at a grade above its 3.0g/t AuE cut-off (see column entitled 'High grade pod'), as a result of the extension of this structure to at least 800m (cf 500m previously) from the interpretation of the assay results of holes KSDD034 & 034W2, KSRC038D, KSRC042 and, in particular, KSRC043, which was designed to test for shallow extensions to the breccia and, in the process, returned an assay result of 31m grading 2.94g/t from surface (see [Alkane's announcement](#) for more detail).

Edison's interpretation of Alkane's drilling results notwithstanding, clearly such estimates are very far from being anything close to JORC code-compliant and experience would suggest they have an accuracy of approximately  $\pm 75\%$ . Even the bottom end of this range, however, would suggest a multi-million ounce gold deposit at Boda with a potential valuation (based on the US\$24.08/oz average valuation of in-situ ounces calculated in our report [Gold stars and black holes](#), published in January 2019) in the range A\$0.32–0.61/share (cf A\$0.34–0.60/share previously).

## Northern Molong Porphyry Project background

The Northern Molong Porphyry Project is 100% owned by Alkane, covers c 115km<sup>2</sup> of the northern Molong Volcanic Belt (MVB) and is around 80km to the north-east of its Tomingley Gold Mine, in Central West New South Wales (Exhibit 5).

**Exhibit 5: Location of the Northern Molong Porphyry Project**

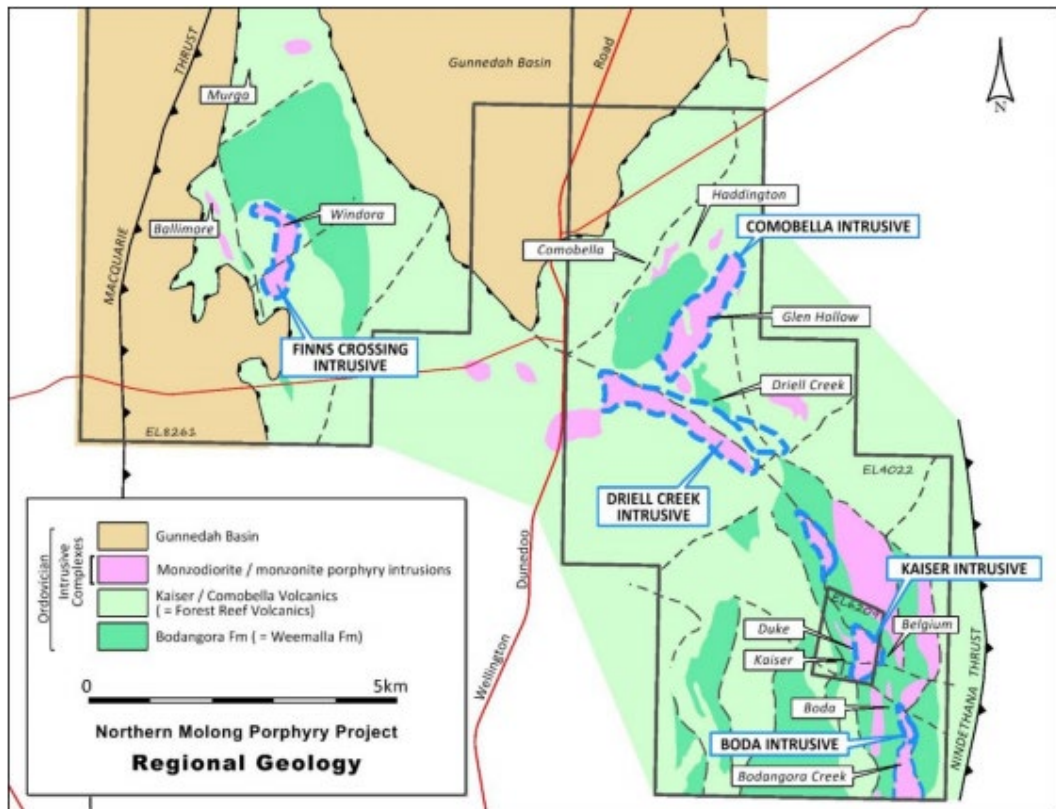


Source: Alkane Resources

To date, Alkane’s drill results at Boda have demonstrated both a similar stratigraphic sequence as well as style of alteration and mineralisation to Newcrest’s Cadia Province mines 110km to the south, although it is also more structurally complex. Nevertheless, together, the Cadia Province mines host a JORC-compliant mineral resource estimate of 36.1Moz Au at a grade of 0.35g/t Au and 8.2Mt of copper at a grade of 0.26% Cu plus silver and molybdenum and produced 843koz of gold in FY20 at an all-in sustaining cost (AISC) of US\$160/oz Au (net of by-product credits) to generate US\$991m in free cash flow.

The Northern Molong Porphyry Project now comprises four exploration licences, Bodangora, Boda South, Kaiser and Finns Crossing, within which Alkane has defined five magnetic anomalies interpreted to be intrusive complexes, Kaiser, Boda, Comobella, Driell Creek and Finns Crossing, all within a 15km north-west to south-east trending corridor (Exhibit 6) and all close to road, rail, gas and water infrastructure. Importantly, the Boda anomaly correlates with a historical induced polarisation (IP) survey completed by CRA Exploration (now Rio Tinto) over the Boda Intrusive Complex (BIC). This survey showed a strong high chargeable anomaly along the northern edge of the survey area coincident with the magnetic anomaly, as a result of which Alkane subsequently completed a 70-line kilometre IP survey over the 6km strike extensions of the BIC to generate drilling targets.

**Exhibit 6: Northern Molong Porphyry Project regional geology**



Source: Alkane Resources

Four of these targets have now been drill tested: Kaiser, Boda, Comobella and Glen Hollow. Exploration has identified the margins of major monzonite intrusive complexes that provide the primary control for porphyry and epithermal mineralisation with significant intersections being reported along the western margin of both the Kaiser Intrusive Complex and the BIC. Specifically, gold mineralisation has been discovered at Kaiser, Boda and Glen Hollow (which is part of Comobella), with recent drilling identifying multiple phases of monzonite to monzogabbro intrusion that are plumbing a north-west structural corridor hosting extensive (calc-)potassic alteration and significant gold-copper mineralisation. In this case, the north-west orientation of the structural zones is significant in that similarly oriented structural zones are important controls to Macquarie Arc alkali gold-copper porphyry mineralisation such as the Lachlan Transverse Zone at the Cadia Valley (and Northparkes) deposits. Within this context, the alteration at Boda suggests the prospect is positioned in the upper parts of an alkali porphyry system with high-level epithermal gold veins observed in some of the drilling coincident with strongly pyritic zones, while deeper drilling has defined strong pervasive hydrothermal alteration that is dominantly calc-potassic (ie, a biotite+actinolite+epidote+magnetite+chalcopyrite±kspars±bornite mineral assemblage), phasing out to a more distal propylitic alteration (albite+epidote+chlorite+pyrite±chalcopyrite).

## Quarterly, half-year and annual FY21 results

### Q421 operational results and FY21 estimates

Gold production from Tomingley in Q421 was already known prior to our last note ([Revealing the fruits of its labours](#), published on 9 July) and therefore formed the basis of our expectations, albeit Alkane's subsequent Quarterly Activities Report showed that this level of output was achieved via the milling of fewer tonnes at a higher grade (see Exhibit 7). This followed a first quarter in which



operational results at Tomingley were close to our expectations and second and third quarters that were characterised by higher head grades and lower unit costs (in A\$/oz terms). As a result, Alkane produced 56,958oz gold in FY21 at an AISC of A\$1,320/oz, materially outperforming its most recent guidance of 50–55koz at an AISC of A\$1,400–1,550/oz and its original guidance of 45–50koz gold at an AISC of A\$1,450–1,600/oz. A summary of Alkane's quarterly results for FY21 (including Edison's estimates of the actual gold price and forex rates during the quarter and the year) is as follows:

**Exhibit 7: Tomingley quarterly operating results, Q420–Q421**

	Q420	Q121	Q221	Q321	Q421e (prior)	Q421a	Variance (%)	FY21a	FY21e (prior)
Ore milled (t)	204,269	254,423	235,217	237,455	236,300	201,437	-14.8	928,531	963,395
Head grade (g/t)	2.20	1.56	2.50	2.40	2.03	2.16	+6.4	2.14	2.11
Contained gold (g/t)	14,448	12,761	18,906	18,323	15,446	13,989	-9.4	63,979	65,435
Recovery (%)	89.3	88.4	88.1	91.0	87.4	87.1	-0.3	88.8	87.0
Gold poured (oz)	13,358	11,499	15,919	16,040	13,500	13,500	u/c	56,958	56,958
Gold sold (oz)	12,992	11,945	16,613	15,844	13,500	11,526	-14.6	55,929	57,902
Gold price (US\$/oz)	1,713	1,911	1,875	1,796	1,814	1,814	u/c	1,849	1,849
Forex (A\$/US\$)	1.5226	1.3987	1.2929	1.2943	1.2989	1.2989	u/c	1.3212	1.3212
Average realised price (A\$/oz)	2,327	2,261	2,302	2,203	*2,356	2,401	+1.9	2,286	2,281
C1 site cash costs (A\$/oz)	981	1,178	720	803	1,103	1,199	+8.7	940	927
AISC (A\$/oz)	1,368	1,575	1,201	997	1,620	1,669	+3.0	1,320	1,320

Source: Alkane Resources, Edison Investment Research. Note: \*Excluded forward sales.

Apart from the level of tonnes milled and the head grade of the ore milled, one notable variation in actual results relative to our prior forecast was the level of gold sold compared with the amount of gold produced. This reflects nothing more than timing differences as at the balance sheet date of the company's results and will probably be recouped by a subsequent over-sale of gold relative to production in coming quarters. All other things being equal, this would have resulted in a A\$3.8m negative variance in revenues relative to our prior forecasts and was borne out when Alkane announced its full-year results on 27 August, which are summarised below:

**Exhibit 8: Alkane underlying\* income statement, H119–H221e (A\$m, unless otherwise indicated)**

	H120	H220	FY20	H121*	H221e (prior)	FY21e (prior)	FY21a
Revenue	34.098	38.451	72.549	65.252	66.405	131.657	127.833
Cost of sales	(16.500)	(16.400)	(32.868)	(24.087)	(27.614)	(51.701)	(45.313)
Gross profit	17.598	22.051	39.681	41.165	38.791	79.956	82.520
Other net income	0.111	(0.201)	(0.090)	0.350		0.350	3.365
Administration expenses	(4.993)	(5.276)	(10.269)	(7.215)	(7.215)	(14.430)	(11.993)
Exploration and evaluation expenditure expensed	0.000	(0.329)	(0.329)	0.000		0.000	
Impairments	0.000	0.000	0.000	0.000		0.000	
Gain/(loss) on disposal	0.000	(0.317)	(0.317)	(0.002)		(0.002)	(0.957)
Share of profit/(loss) of associates				(0.473)		(0.473)	(0.870)
Depreciation	(1.429)	(7.722)	(9.151)	(9.226)	(11.358)	(20.584)	(21.254)
EBIT/(LBIT)	11.318	8.207	19.525	24.599	20.218	44.817	50.811
Interest income/(cost)	(0.109)	0.498	0.389	(0.495)	0.313	(0.182)	(2.741)
Loss after tax from discontinued operations	0.000	(0.583)	(0.583)	*0.000		0.000	0.000
PBT/(LBT)	11.209	8.122	19.331	24.104	20.531	44.635	48.070
Income tax	3.743	2.826	6.569	7.485	6.159	13.644	14.503
Effective tax rate (%)	33.4	34.8	34.0	31.1	30.0	30.6	30.2
Profit/(loss) for the year	7.466	5.296	12.762	16.619	14.372	30.991	33.567
Non-controlling interest				0.189	0.000	0.189	0.000
Minority interest (%)				1.1	0.0	0.6	0.0
Adj. profit/(loss) for the year attributable to shareholders				16.430	14.372	30.802	33.567
Basic adjusted EPS (A\$/share)	0.0146	0.0091	0.0233	0.0277	0.0241	0.0517	0.0564

Source: Alkane Resources, Edison Investment Research. Note: \*Excludes 'profit/(loss) after income tax expense from discontinued operations' of A\$22,134k relating to the demerger of Australian Strategic Materials.

Readers should note that there is an anomaly whereby Alkane's H119, FY19 and H120 results were reported with its recently demerged Australian Strategic Materials (ASM) numbers fully consolidated, but its FY20 results were reported with ASM reflected as 'classified as held for distribution to owners' and/or 'discontinued'. The consequences of this are most obviously apparent in the line items entitled 'loss after tax from discontinued operations'. However, we do not consider them to be material enough to significantly detract from the overall trends apparent from the figures.

Otherwise, to the extent that revenues were A\$3.8m less than our prior forecast, this was more than offset by costs being A\$5.4m lower to result in Alkane outperforming our FY21 earnings expectations by A\$2.8m, or 9.0%. However, note that, if A\$2.7m in gains relating to the 'derecognition of financial assets' and included in 'Other income', above, are classified as 'exceptional' (see Exhibit 11), then the degree of outperformance moderates to A\$1.0m, or 3.3%, although, nevertheless, still out-performance.

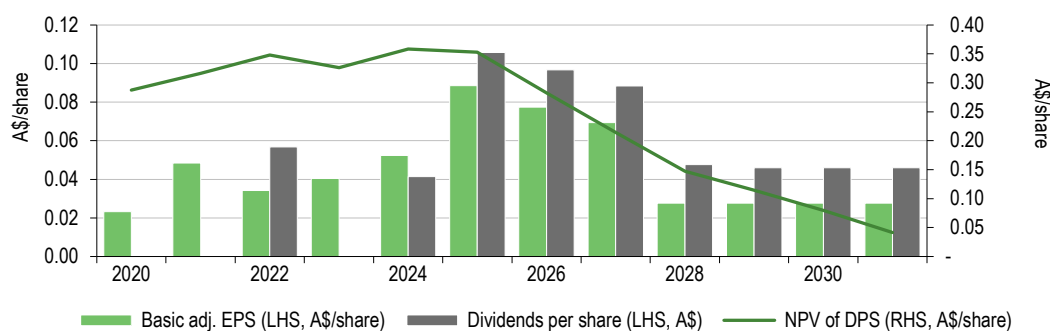
## Alkane/Tomingley valuation

As previously, our valuation of Tomingley is based on the present value of our forecast life of operations dividend stream to investors in Alkane as a result of the execution of the Tomingley mine plan (albeit now extended) discounted back to present value at a rate of 10% per year, excluding exploration expenditure.

In the wake of Q421 full operational results, our valuation of the dividend stream potentially available to Alkane shareholders from its immediate Tomingley operations is now A\$0.348/share (cf A\$0.324/share previously). However, to this must be added the value of residual resources at the end of the life of operations, which we now estimate to be 0.8Moz with a current value of US\$18.2m (A\$25.0m), or A\$0.042/share, to bring our total valuation of Tomingley to A\$0.390/share (cf A\$0.365/share previously) including cash.

A comparison of our updated and prior expectations for Alkane's EPS and DPS stream and valuation from the present to the end of its life of operations is as follows:

**Exhibit 9: Alkane life of operations' forecast EPS and (maximum potential) DPS (A\$/share)**



Source: Edison Investment Research.

Note that the DPS columns in Exhibit 9 represent theoretical, maximum potential dividends that we believe could be paid by the company, rather than actual dividends forecast and are used solely for valuation purposes. In reality, we would expect a portion of any dividends that could be paid instead to be re-invested into the business, either in the form of exploration expenditure (eg at the Northern Molong Porphyry Project) or capital expenditure.

## Combined valuation of Alkane

A summary of our updated valuation of Alkane in the light of both our updated Boda estimates (see Exhibit 4) and FY21 results (see Exhibit 8) is as follows:

**Exhibit 10: Alkane Resources valuation summary (Australian cents per share)**

Asset	Previous			Current/updated		
	Existing assets' valuation	Contingent assets' valuation	Potential total	Existing assets' valuation	Contingent assets' valuation	Potential total
Tomingley plus cash	37		37	39		39
Roswell underground		5	5		6	6
El Paso and ongoing Tomingley extension exploration		3	3		3	3
Investments in Calidus and Genesis*	8		8	9		9
Boda exploration		34-60	60		32-61	61
Spot gold price level of long-term forecast		13	13		12	12
<b>Total</b>	<b>45</b>	<b>55-81</b>	<b>125</b>	<b>48</b>	<b>53-82</b>	<b>130</b>

Source: Edison Investment Research. Note: \*At prevailing share prices of A\$0.555/share for Calidus and A\$0.075/share for Genesis. Totals may not add up owing to rounding.

## Financials

Alkane had A\$9.8m in net cash on its balance sheet as at end-FY21. In addition, it had A\$7.7m of bullion on hand and, we estimate, an updated A\$51.1m in listed investments in Calidus and Genesis. Excluding cash flows from financing activities, Alkane generated A\$71.1m in cash from operating activities in FY21 (cf A\$37.1m in H121) and invested A\$102.7m in capex, leading to a free cash outflow of A\$31.6m. Hereafter, we estimate that cash flow from operations will contribute meaningfully to capex as the Tomingley mine extension is constructed. However, we expect that management will nevertheless seek to fund a portion of the project with debt put in place over the course of the next 12 months.

**Exhibit 11: Financial summary**

	2018	2019	2020	2021	2022e	2023e	2024e	2025e
Year end 30 June	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
<b>INCOME STATEMENT</b>								
Revenue	129,973.6	93,994.9	72,549.0	127,833.0	134,250.5	130,795.0	148,616.7	244,125.5
Cost of Sales	(51,080.9)	(53,656.4)	(32,868.0)	(45,313.0)	(74,033.7)	(63,528.6)	(85,327.0)	(150,500.0)
Gross Profit	78,892.7	40,338.5	39,681.0	82,520.0	60,216.8	67,266.4	63,289.7	93,625.5
EBITDA	70,378.7	32,971.7	29,412.0	70,527.0	52,850.0	59,899.6	55,922.9	86,258.8
Normalised operating profit	31,658.3	25,808.8	20,171.0	49,940.0	28,266.0	33,715.6	44,957.9	75,293.8
Amortisation of acquired intangibles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exceptionals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Share-based payments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Reported operating profit	31,658.3	25,808.8	20,171.0	49,940.0	28,266.0	33,715.6	44,957.9	75,293.8
Net Interest	(579.0)	(418.8)	389.0	(2,741.0)	146.6	362.5	165.7	445.1
Joint ventures & associates (post tax)	0.0	0.0	0.0	(870.0)	0.0	0.0	0.0	0.0
Exceptionals	0.0	0.0	(646.0)	1,741.0	0.0	0.0	0.0	0.0
Profit before tax (norm)	31,079.3	25,390.0	20,560.0	46,329.0	28,412.7	34,078.1	45,123.6	75,738.9
Profit before tax (reported)	31,079.3	25,390.0	19,914.0	48,070.0	28,412.7	34,078.1	45,123.6	75,738.9
Reported tax	(6,919.9)	(2,266.1)	(6,569.0)	(14,503.0)	(8,523.8)	(10,223.4)	(13,537.1)	(22,721.7)
Profit after tax (norm)	24,159.4	23,123.9	13,991.0	31,826.0	19,888.9	23,854.7	31,586.5	53,017.3
Profit after tax (reported)	24,159.4	23,123.9	13,345.0	33,567.0	19,888.9	23,854.7	31,586.5	53,017.3
Minority interests	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Discontinued operations	0.0	0.0	(583.0)	0.0	0.0	0.0	0.0	0.0
Net income (normalised)	24,159.4	23,123.9	13,991.0	31,826.0	19,888.9	23,854.7	31,586.5	53,017.3
Net income (reported)	24,159.4	23,123.9	12,762.0	33,567.0	19,888.9	23,854.7	31,586.5	53,017.3
Basic average number of shares outstanding (m)	506	506	547	595	595	595	595	595
EPS – basic normalised (A\$)	0.05	0.05	0.03	0.05	0.03	0.04	0.05	0.09
EPS – diluted normalised (A\$)	0.05	0.04	0.02	0.05	0.03	0.04	0.05	0.09
EPS – basic reported (A\$)	0.05	0.05	0.02	0.06	0.03	0.04	0.05	0.09
Dividend (A\$)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Revenue growth (%)	10.3	(-27.7)	(-22.8)	76.2	5.0	(-2.6)	13.6	64.3
Gross margin (%)	60.7	42.9	54.7	64.6	44.9	51.4	42.6	38.4
EBITDA margin (%)	54.1	35.1	40.5	55.2	39.4	45.8	37.6	35.3
Normalised operating margin (%)	24.4	27.5	27.8	39.1	21.1	25.8	30.3	30.8
<b>BALANCE SHEET</b>								
Fixed assets	138,275.0	172,196.0	129,077.0	203,161.0	217,667.0	245,073.0	258,698.0	257,823.0
Intangible assets	93,136.0	103,894.0	32,745.0	57,794.0	67,794.0	77,794.0	87,794.0	97,794.0
Tangible assets	36,266.0	51,038.0	62,322.0	99,411.0	103,917.0	121,323.0	124,948.0	114,073.0
Investments & other	8,873.0	17,264.0	34,010.0	45,956.0	45,956.0	45,956.0	45,956.0	45,956.0
Current assets	93,306.0	76,501.0	59,096.0	33,054.0	42,364.4	29,025.1	48,778.3	108,027.2
Stocks	19,153.0	4,816.0	7,647.0	11,648.0	5,149.3	5,016.8	5,700.4	9,363.7
Debtors	2,030.0	1,998.0	2,940.0	1,894.0	3,310.3	3,225.1	3,664.5	6,019.5
Cash & cash equivalents	72,003.0	69,582.0	48,337.0	18,991.0	33,383.8	20,262.2	38,892.4	92,123.0
Other	120.0	105.0	172.0	521.0	521.0	521.0	521.0	521.0
Current liabilities	(27,430.0)	(21,762.0)	(14,238.0)	(18,179.0)	(22,106.6)	(12,318.5)	(14,110.2)	(19,466.9)
Creditors	(9,299.0)	(8,007.0)	(9,425.0)	(11,082.0)	(15,009.6)	(5,221.5)	(7,013.2)	(12,369.9)
Tax and social security	(6,929.0)	(9,317.0)	0.0	0.0	0.0	0.0	0.0	0.0
Short-term borrowings	0.0	0.0	(2,090.0)	(3,294.0)	(3,294.0)	(3,294.0)	(3,294.0)	(3,294.0)
Other	(11,202.0)	(4,438.0)	(2,723.0)	(3,803.0)	(3,803.0)	(3,803.0)	(3,803.0)	(3,803.0)
Long-term liabilities	(13,647.0)	(13,059.0)	(19,522.0)	(26,471.0)	(26,471.0)	(26,471.0)	(26,471.0)	(26,471.0)
Long-term borrowings	0.0	0.0	(4,515.0)	(5,922.0)	(5,922.0)	(5,922.0)	(5,922.0)	(5,922.0)
Other long-term liabilities	(13,647.0)	(13,059.0)	(15,007.0)	(20,549.0)	(20,549.0)	(20,549.0)	(20,549.0)	(20,549.0)
Net assets	190,504.0	213,876.0	154,413.0	191,565.0	211,453.9	235,308.6	266,895.1	319,912.4
Minority interests	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shareholders' equity	190,504.0	213,876.0	154,413.0	191,565.0	211,453.9	235,308.6	266,895.1	319,912.4
<b>CASH FLOW</b>								
Operating cash flow before WC and tax	69,941.3	33,135.8	28,173.0	72,065.0	52,760.0	59,809.6	55,832.9	86,168.8
Working capital	(9,498.0)	(5,172.0)	(3,481.0)	(2,840.0)	9,010.0	(9,570.3)	668.6	(661.7)
Exceptional & other	1,277.0	1,454.0	3,704.0	4,632.0	0.0	0.0	0.0	0.0
Tax	(6,919.9)	7,047.9	(249.0)	0.0	(8,523.8)	(10,223.4)	(13,537.1)	(22,721.7)
Net operating cash flow	54,800.5	36,465.7	28,147.0	73,857.0	53,246.2	40,015.9	42,964.5	62,785.4
Capex	(9,224.0)	(19,621.0)	(46,122.0)	(59,477.0)	(29,000.0)	(43,500.0)	(14,500.0)	0.0
Acquisitions/disposals	0.0	4.0	(20,068.0)	1,522.0	0.0	0.0	0.0	0.0
Net interest	(579.0)	(418.8)	389.0	(2,741.0)	146.6	362.5	165.7	445.1
Equity financing	(5.0)	0.0	39,442.0	(31.0)	0.0	0.0	0.0	0.0
Exploration and Evaluation	(10,969.0)	(11,578.0)	(20,132.0)	(26,642.0)	(10,000.0)	(10,000.0)	(10,000.0)	(10,000.0)
Other	(4,317.0)	(7,442.0)	(9,522.0)	(18,129.0)	0.0	0.0	0.0	0.0
Net cash flow	29,706.4	(2,590.1)	(27,866.0)	(31,641.0)	14,392.8	(13,121.6)	18,630.2	53,230.6
Opening net debt/(cash)	(41,969.0)	(72,003.0)	(69,582.0)	(41,732.0)	(9,775.0)	(24,167.8)	(11,046.2)	(29,676.4)
FX	311.6	169.1	0.0	0.0	0.0	0.0	0.0	0.0
Other non-cash movements	16.0	0.0	16.0	(316.0)	0.0	0.0	0.0	0.0
Closing net debt/(cash)	(72,003.0)	(69,582.0)	(41,732.0)	(9,775.0)	(24,167.8)	(11,046.2)	(29,676.4)	(82,907.0)

Source: Company sources, Edison Investment Research

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