

27 Jan 2017

## KIDMAN RESOURCES LTD

### Early metallurgy results suggest standalone plant

Kidman Resources Limited (KDR) recently released initial metallurgical test work for the very large Mt Holland lithium project (128Mt @ 1.44% Li<sub>2</sub>O). Testwork was performed on 4 drill holes broken into 3 categories: weathered composite, fresh composite and longer term composite.

The tests from two holes in the southern end (shallow portion) showed that ~75% of the lithium mineralisation in the weathered and fresh composite was predominantly spodumene (the balance, 25%, was petalite). The initial metallurgy results of the fresh composite sample from the southern end of the deposit showed that from a head grade of 1.36% Li<sub>2</sub>O, 38% of the mass reported a specific gravity (SG) of greater than 2.7, this mass contained 75% of the lithium. This is encouraging (assuming the two holes are representative) that the southern end of the deposit can upgrade, via DMS and flotation, to produce saleable concentrate.

Based on the two sampled holes in the northern portion (deeper end) of the deposit, it appears petalite (another lithium mineral) makes up ~52% of the lithium content. If representative, it suggests additional capex to maintain recoveries in-line with the southern end. We note, however, this portion of the deposit would likely only be mined well into the future (20+ years depending on production rate), and hence the possibility of a plant upgrade at that time is likely to be irrelevant to valuation.

### Further work to be done

It is important to remember that this is an initial metallurgical result and that we would expect that recoveries will improve with the addition of potentially finer crushing, magnetic separation and adjustment of floatation techniques. KDR is planning to drill 20 diamond holes in the southern portion of the deposit which it will log to better understand the mineralogy, including the zoning of the lithium minerals. Given Earl Grey is such a large deposit, KDR has the optionality to prioritise areas with the most simple metallurgy, and deferring any upgrades required to improved recoveries in more complex zones.

We note it is common for pegmatites to be zoned internally between different minerals depending on which stage they crystallised, we also note that previous drilling has indicated zonation of lithium minerals at Earl Grey.

### Retain Speculative Buy

Given that the metallurgy is not simple we believe that to optimise recoveries a standalone plant would be most suitable as it would be tailor made for the Earl Grey deposit's metallurgy. We have always assumed a standalone plant at Earl Grey for our model, and that remains our base case. We have modestly increased our capex and reduced our mine life and recoveries. Our speculative valuation is \$1.21.

The Earl Grey deposit is still shaping up to be of substantial significance. Catalysts include the further metallurgical results and the resolution of the MZN dispute.

Share Price	\$0.505
Prelim. Valuation	\$1.21
Price Target (12 month)	\$1.28

#### Brief Business Description:

Excellent, but early stage, hardrock lithium project in WA plus a good advanced gold exploration portfolio, also in WA.

#### Hartleys Brief Investment Conclusion

Appears to have a large undeveloped and good grade hard rock lithium project. Under valued if the project can be developed.

#### Chairman & MD

Peter Lester (Chairman)  
Martin Donohue (MD)

#### Major Shareholders

Capri 10.3%  
Acorn 5.9%

#### Company Address

Level 4, 12-20 Flinders Lane  
Melbourne VIC 3000

Issued Capital	315.9m
- fully diluted	365.8m

Market Cap	A\$159.5m
- fully diluted	A\$184.7m

Cash (30 Sep 16a)	A\$17.3m
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Debt (30 Sep 16a)	A\$6.0m
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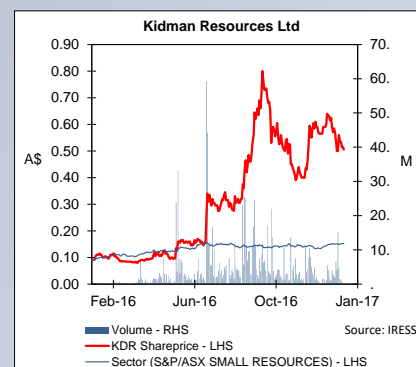
EV	A\$148.2m
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EV/Resource Spod.	A\$80.6/t
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EV/Reserve Spod.	n/a
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Prelim. (A\$m)	FY19e
Prod (spod Mt)	nm
Op Cash Flw	nm
Norm NPAT	loss
CF/Share (cps)	nm
EPS (cps)	nm
P/E	nm

	Mt	Grade	Mt Li <sub>2</sub> O
Resources (Li <sub>2</sub> O)	128.0	1.4%	1.8
Reserve (Li <sub>2</sub> O)	none		
	Mt	Grade	Moz Au
Resources (Au)	20.0	1.8	1.2
Reserve (Au)	none		



Trent Barnett

Head of Research

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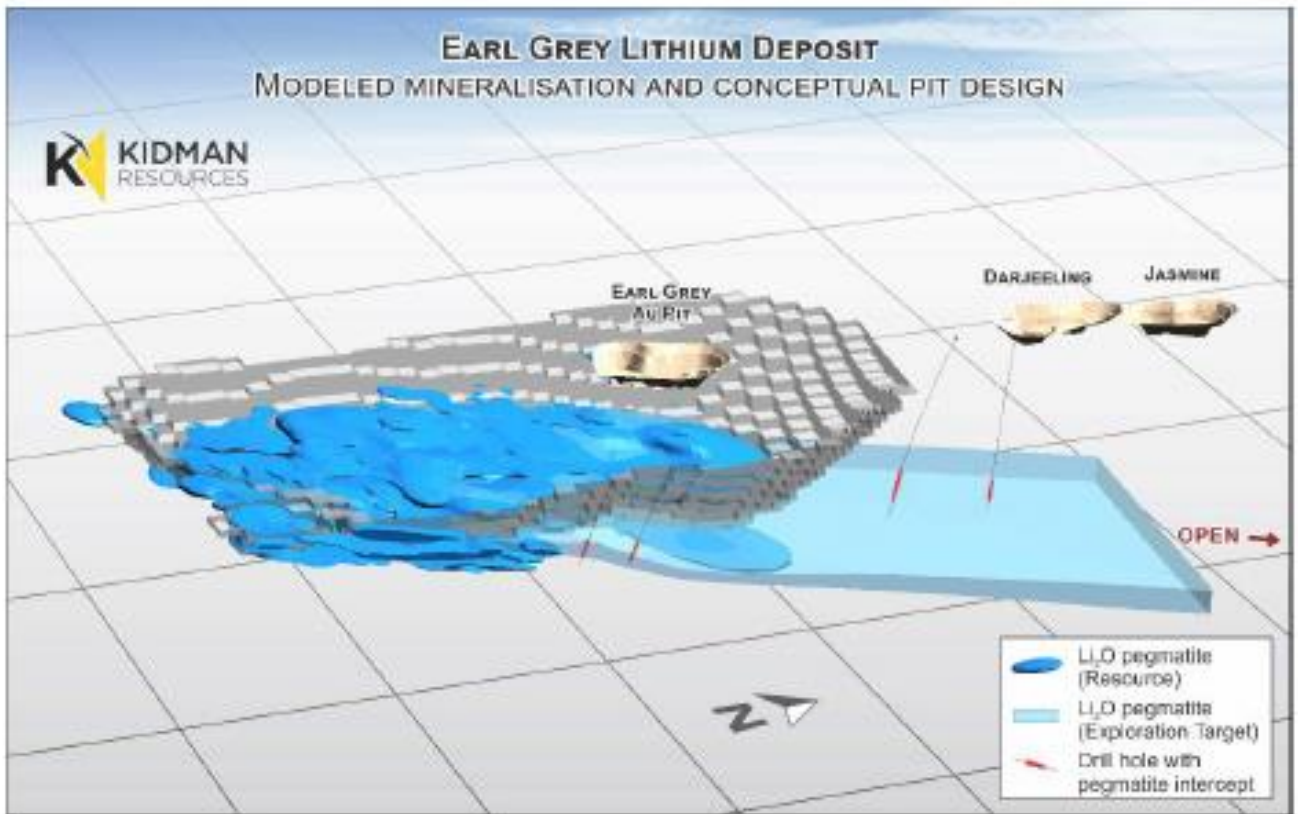
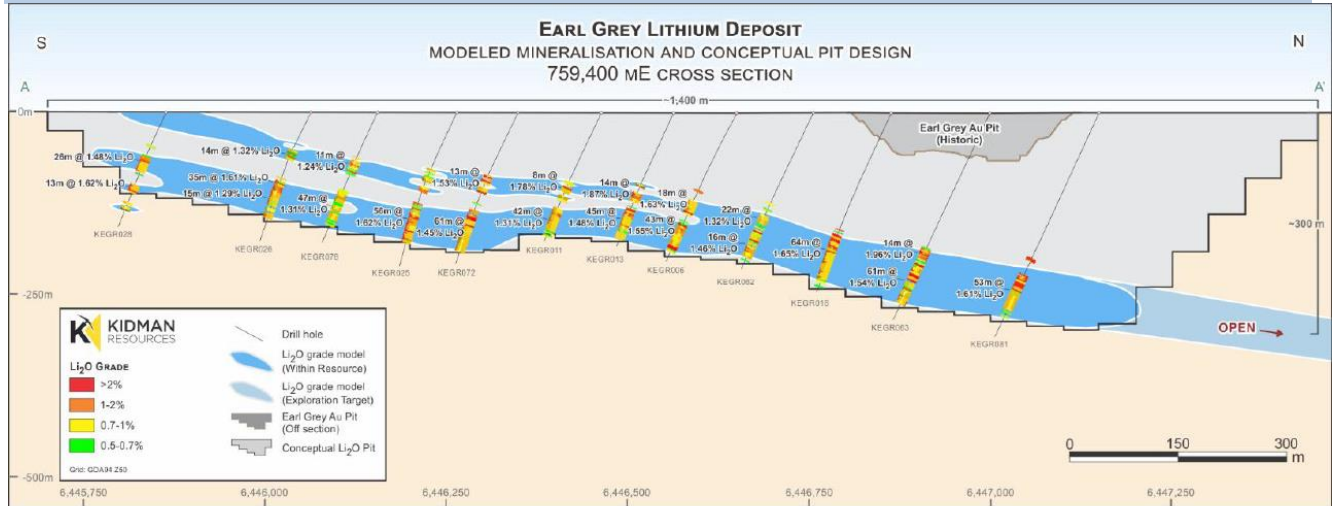
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Hartleys has assisted in the completion of capital raisings in the past 12 months for Kidman Resources Limited (Kidman), for which it has earned fees. Hartleys has provided corporate advice within the past 12 months, and continues to provide corporate advice to Kidman for which it has earned and continues to earn fees. Hartleys has a beneficial interest in 4 million unlisted options in Kidman. See back page for details.

## SUMMARY MODEL

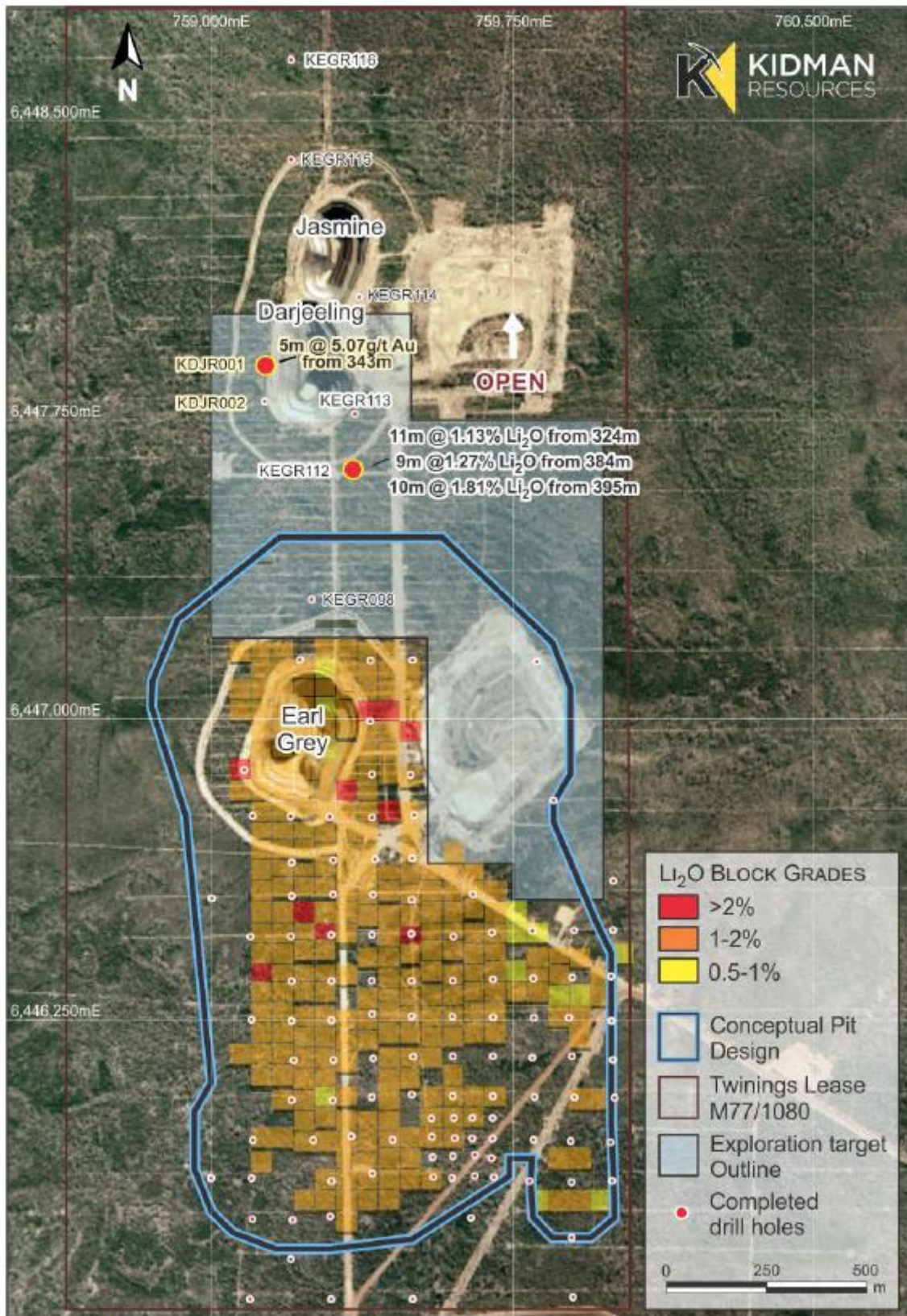
Kidman Resources Ltd KDR		Share Price \$0.505		Jan-17 Speculative Buy			
<b>Key Market Information</b>				<b>Directors</b>			
Share Price		\$0.505		<b>Company Details</b>			
Market Capitalisation		\$159.5m		Level 4, 12-20 Flinders Lane			
Market Capitalisation - full dil.		\$184.7m		Melbourne VIC 3000			
Net Cash (Debt)		\$11.3m		ph: +61 3 9671 3801			
Listed Investments (est)		\$0.0m		<a href="http://www.kidmanresources.com.au">www.kidmanresources.com.au</a>			
Issued Capital		315.90m					
Options		49.9m					
Issued Capital (fully diluted all options)		365.8m					
EV - incl. listed invest		\$148.2m					
EV - full diluted, option cash		\$166.3m					
Price Target		\$1.28					
<b>Projects</b>				<b>Top Shareholders</b>			
<b>Projects</b>	<b>Interest</b>	<b>Location</b>	<b>Commodity</b>				
Mt Holland - lithium	100%	WA	Li				
Mt Holland - Gold	100%	WA	Au				
<b>JORC Resources</b>				<b>Investment Summary</b>			
	<b>Mt</b>	<b>Grade</b>	<b>Li2O (Mt)</b>				
Mt Holland - lithium	128.0	1.44%	1.84	4.54			
- M&I	78.5	1.44%	1.13	2.79			
- Inferred	49.5	1.43%	0.71	1.75			
	<b>Mt</b>	<b>Grade g/t</b>	<b>Moz</b>	<b>LC</b>			
Mt Holland - Gold	20.0	1.8	1.2				
<b>P&amp;L</b>				<b>Newsflow</b>			
	<b>FY2017F</b>	<b>FY2018F</b>	<b>Project</b>				
Net Revenue	na	na	Mar CY17 Metallurgy - Lithium Mt Holland - Li				
Total Costs	na	na	Mar CY17 Drilling gold Mt Holland - Gold				
EBITDA	na	na	Jun CY17 PFS Study - Lake Johnston Lithium process Mt Holland - Li				
Deprec/Amort	na	na	Sep CY17 PFS Study - Standalone Lithium process Mt Holland - Li				
EBIT	na	na	CY18 First Lake Johnston concentrate sales? Mt Holland - Li				
Net Interest	na	na	CY18 Construction of standalone facility Mt Holland - Li				
Pre-Tax Profit	na	na	CY19 First standalone concentrate sales? Mt Holland - Li				
Tax Expense	na	na					
NPAT	na	na					
Abnormal Items	na	na					
Reported Profit	na	na					
				<b>Unpaid Capital</b>			
				<b>No (m)</b>	<b>\$ (m)</b>	<b>Ave Pr</b>	<b>% Ord</b>
<b>Options</b>							
30-Jun-17				0	0.00	nm	0.0%
30-Jun-18				0	0.00	nm	0.0%
30-Jun-19				47	7.12	0.150	13.1%
30-Jun-20				0	0.00	nm	0.0%
30-Jun-21				0	0.00	nm	0.0%
30-Jun-22				2	0.00	0.000	0.8%
<b>Total</b>				<b>49.90</b>	<b>7.12</b>	<b>0.143</b>	<b>13.7%</b>
<b>Comments</b>							
Analyst: Trent Barnett				Last Updated: 27/01/2017			
Phone: +61 8 9268 3052							
Sources: IRESS, Company Information, Hartleys Research							

Fig. 2: Mt Holland a very large deposit and still open



Source: KDR

Fig. 3: Exploration target to the north



Source: KDR

Fig. 4: Lithium minerals

Mineral name	Chemical formula	Lithium content (Li %)	Appearance (colour and lustre)
Spodumene	$\text{LiAlSi}_2\text{O}_6$	3.7	White, colourless, grey, pink, lilac, yellow or green; vitreous
Lepidolite	$\text{K}_2(\text{Li,Al})_{5-6}\{\text{Si}_{6-7}\text{Al}_{2-1}\text{O}_{20}\}(\text{OH,F})_4$	1.39–3.6	Colourless, grey/white, lilac, yellow or white; vitreous to pearly
Petalite	$\text{LiAlSi}_4\text{O}_{10}$	1.6–2.27	Colourless, grey, yellow or white; vitreous to pearly
Eucryptite	$\text{LiAlSiO}_4$	2.1–5.53	Brown, colourless or white; vitreous
Amblygonite	$\text{LiAl}[\text{PO}_4][\text{F,OH}]$	3.4–4.7	White, yellow or grey; vitreous to pearly
Hectorite	$\text{Na}_{0.3}(\text{Mg,Li})_2\text{Si}_4\text{O}_{10}(\text{OH})_2$	0.54	White, opaque; earthy
Jadarite	$\text{LiNaSiB}_3\text{O}_7(\text{OH})$	7.3	White; porcellanous

Source: British Geological Survey

Fig. 5: Key Assumptions and Risks for valuation

Assumption	Risk of not realising assumption	Downside risk to valuation if assumption is incorrect	Comment
30 year mine life @2Mtpa throughput	Moderate	High	This appears conservative based on the resource to date, and very conservative if we include the exploration target
Metallurgical recoveries are reasonable	Moderate	High	Given the scale of the project, we expect that any metallurgical difficulties can be overcome. Petalite generally has lower recoveries (eg the Separation Rapids project in Ontario), but the size of the deposit and hopefully zonation of the spodumene means we speculate the economics will still be compelling
Selling prices remain strong enough for spodumene mines to be viable	High	Extreme	We assume selling prices and demand remain strong enough for new spodumene mines to be developed
The Poseidon agreement is not used and the Company builds a new greenfields operation	Moderate	Upside	We assume KDR will develop Mt Holland as a standalone operation. If capex can be saved using neighbouring infrastructure this could improve economics
Company can obtain capital	High	Extreme	We assume KDR can continue to raise capital for development and exploration
Meaningful value for the gold assets	Moderate	Low	We speculatively assign \$55m of value for the gold assets
Mirindi (MZN) court action has no meaningful impact	Low	Extreme	MZN has commenced legal action asserting it has the lithium rights to Mt Holland.
Exploration value	Moderate	Meaningful	We assume speculative mining inventory assumptions and additionally some extra some exploration value.

**Conclusion**

We have used speculative assumptions to derive a valuation. Hence, we view KDR as high risk.

Source: Hartleys

## PRICE TARGET

We have a price target of \$1.28 (from \$1.17).

Price Target Methodology	Weighting	Spot	12 mth out
Speculative NPV base case, assuming significant equity dilution	60%	\$1.21	\$1.42
Speculative NPV at spot commodity and fx prices	20%	\$1.73	\$2.02
Net cash	5%	\$0.05	\$0.05
Gold project only	15%	\$0.12	\$0.14
<b>Risk weighted composite</b>		<b>\$1.09</b>	
<b>12 Months Price Target</b>		<b>\$1.28</b>	
Shareprice - Last		\$0.505	
<b>12 mth total return (% to 12mth target + dividend)</b>		<b>154%</b>	

Source: Hartleys Estimate

## RISKS

Results of preliminary metallurgical test work and studies are the largest risk for KDR.

Adjacent to this risk, is the ability for the Company to sign offtakes for the product to provide certainty for financiers. Additionally, the prices for spodumene are a risk. Eventually, other risks are similar to most developers: the outcomes of more detailed studies, metallurgy, management key-man risk, obtaining finance, relevant government approvals, political risk, commodity prices, commissioning success and the asset performance versus nameplate design.

In addition, Marindi Metals (MZN) is currently in dispute with KDR in regards to the lithium rights. KDR has said it will vigorously defend any claims by MZN.

Our valuation is very speculative given there are no pre-development studies.

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## Hartleys Recommendation Categories

Buy	Share price appreciation anticipated.
Accumulate	Share price appreciation anticipated but the risk/reward is not as attractive as a "Buy". Alternatively, for the share price to rise it may be contingent on the outcome of an uncertain or distant event. Analyst will often indicate a price level at which it may become a "Buy".
Neutral	Take no action. Upside & downside risk/reward is evenly balanced.
Reduce / Take profits	It is anticipated to be unlikely that there will be gains over the investment time horizon but there is a possibility of some price weakness over that period.
Sell	Significant price depreciation anticipated.
No Rating	No recommendation.
Speculative Buy	Share price could be volatile. While it is anticipated that, on a risk/reward basis, an investment is attractive, there is at least one identifiable risk that has a meaningful possibility of occurring, which, if it did occur, could lead to significant share price reduction. Consequently, the investment is considered high risk.

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