

# Kingston Resources (KSN AU)

## Positive drill results from first Misima Nth holes

KSN effectively reported ~3g/t gold plus significant silver credits over a 16m intersection from 16.2m depth from its first round of drilling at its Misima North prospect. The Misima North prospect is along strike from the historically mined Umuna pit and is largely untested. With two diamond drill rigs now operating on the island, we look forward to more steady positive news flow, which we expect will ultimately lead to a resource upgrade and mining studies. We reiterate our Buy recommendation with a target price of \$0.80ps (previously \$0.84ps).

### Misima - GDD065 – 16m @ ~3g/t gold from 16m

GDD065 was testing the Misima North prospect located along strike from the Umuna Pit which was responsible for the bulk of the mines historical production of 3.7Moz between 1989 and 2004. The reported results included three reported intersections over the 16m and two intersections totalling 2.2m in length unreported due to core loss.

### Misima - GDD044 – 24m @ 2.9g/t gold from 7.4m

While these results were reported in Sep 2019 at the Abi prospect south west of the Umuna pit, we think they are worth a reminder as it highlights KSN's encouraging strike rate at Misima. Other previous results in this area include GDD042 intersecting 15.7m at 1.6g/t Au from 40m, and GDD035 intersecting 20m @ 1.8g/t Au from 78m.

### Misima – a Tier 1 pedigree

The decision to close the Misima mine in 1999 was made in a sub US\$300/oz gold price environment despite the mine operating at around 5<sup>th</sup> percentile of global cash costs. With 2.8moz already in Resources, calculated at a much lower gold price than prevailing prices, we look forward to KSN moving to mining studies in 2020.

### Spec Buy, \$0.80ps target price = ~\$50/oz Au in Resource

We have derived a target price based on an analysis of industry peers and made subjective adjustments for size, sovereign risk and permitting stage. Successful drill results at compelling near surface prospects at both Misima and Livingstone will continue to be the primary short-term share price catalysts.

With regards to Misima, Kingston's CEO, Andrew Corbett commented

*"We currently have two rigs drilling at Ewatinona in the Quartz Mountain area as we look to upgrade and potentially expand the existing Resource in this area, with drilling also planned to follow-up on the initial positive results at Abi. Once those campaigns are complete, we then expect to return to Misima North for a second round of drilling..."*

- Kingston Resources – 15 January 2020

Mining	
12-month rating	<b>BUY</b>
12-m price target (A\$)	0.80
Previous TP (A\$ps)	0.84
Price (A\$)*	0.18
Upside	345%
*Priced on 15/1/20	
BBG: KSN AU	
Trading data & key metrics	
52-w range (A\$ps)	0.12 - 0.24
Market Cap (A\$m):	32
Shares issued (m):	177
Avg daily volume (k):	210
Avg. daily volume (\$k):	38
Directors:	
Tony Wehby	NEC
Andrew Corbett	MD & CEO
Stuart Rechner	NED
Mick Wilkes	NED
Substantials:	
Winchester	13.1%
Delphi	9.3%
Farjoy	8.6%
Slipstream	7.6%
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Specific disclosure:	
The analyst holds shares in KSN.	
Acova Capital provided corporate advisory services for KSN in the last 12 months and received fees for those services.	

## GDD065 – 16m @ ~3g/t gold from 16m

KSN reported three intersections with grades and two small intersections with no grades due to core loss. (Figure 1). We calculate, assuming the missing intersections grade 1g/t gold (conservative we think given the adjacent grades are much greater than 1g/t), the overall 16m intersection has an average grade of around 3g/t gold. Given the intersections are small, even if they return zero grade, the overall grade of the 16m is 2.9g/t gold.

The weight average grade of the GDD065 results was 2.9g/t gold

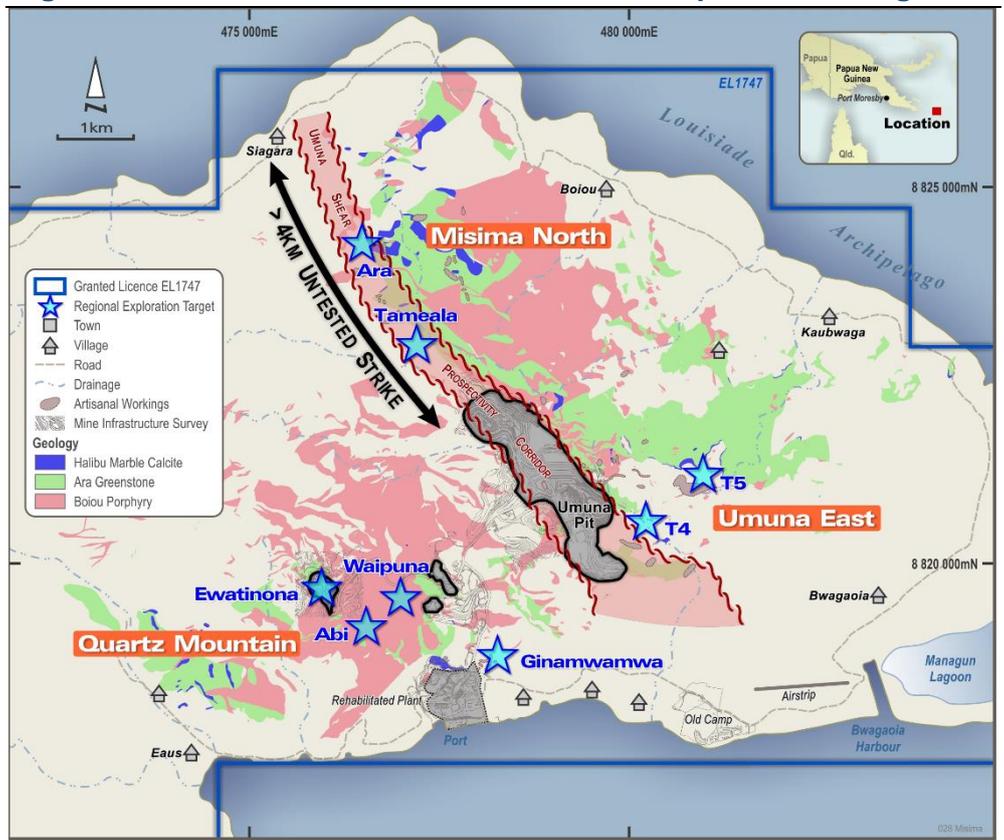
**Figure 1 – GDD065 intersections (& Acova’s total estimate).**

Intersections	From	To	Interval	Au Grade	Ag grade
	16.2	19.7	3.5	1.48	78
Not reported	19.7	20.9	1.2	1.0	0.0
	20.9	22.8	1.9	1.5	2
Not reported	22.8	23.8	1.0	1.0	0.0
	23.8	32.2	8.4	4.55	11.4
<b>Total</b>	<b>16.2</b>	<b>32.2</b>	<b>16.0</b>	<b>3.0</b>	<b>23.3</b>

Source: Company, Acova

The intersection is compelling given this is the first drilling campaign the company has undergone focused specifically on Misima North. Misima North is along strike from the previously mined Umuna pit which was responsible for mining the bulk of the mines historical 3.7Moz gold and at an average grade of 1.6g/t between 1989 and 2004.

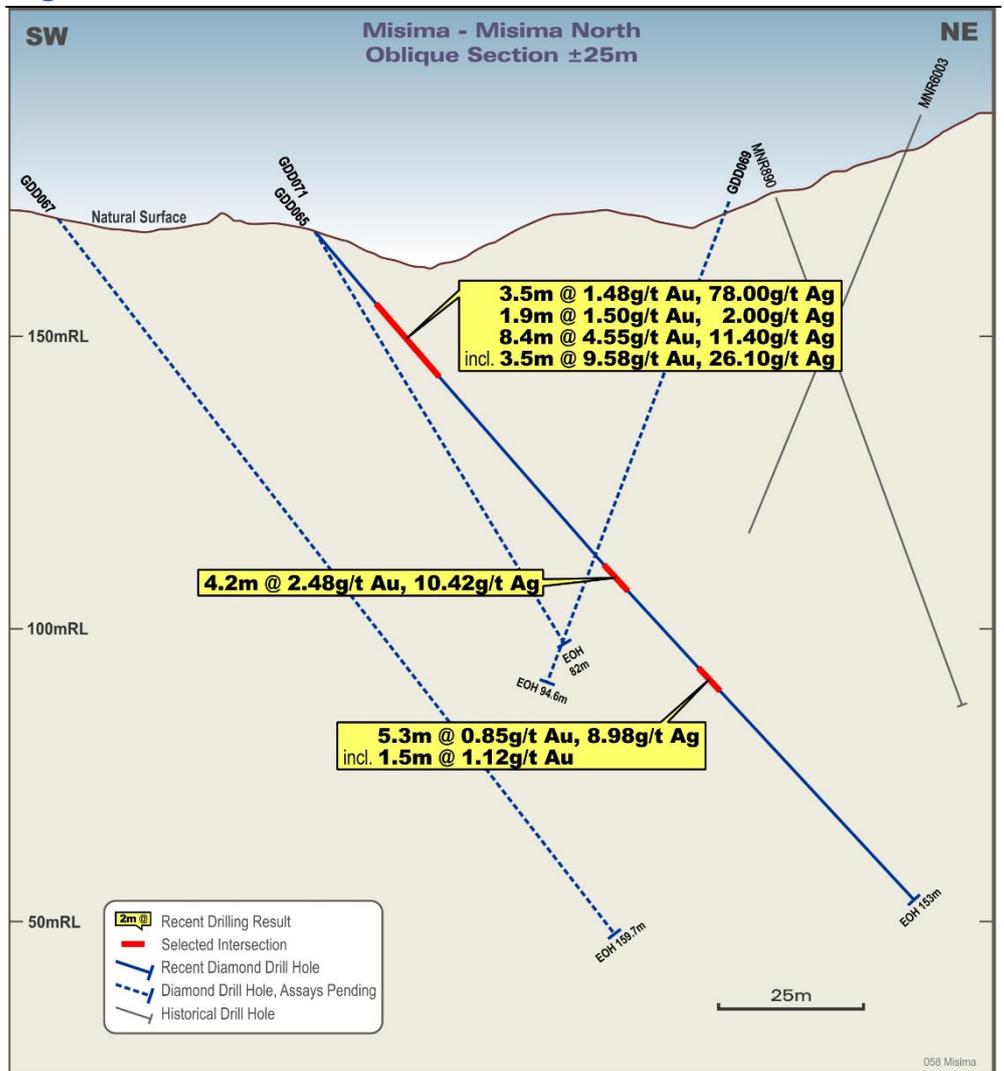
**Figure 2 – Location of Misima North and exploration targets**



Source: Company

Figure 3 shows the location of DD065 and several proximate drill holes with assays pending. GDD071, adjacent to DD065 has been completed with assays pending. And with no significant core loss reported in GDD071, the company believes it has the potential to confirm the continuity of the mineralisation in the area.

Figure 3 – Cross Section of DD065.



Source: Company

GDD071, located next to GDD065 has been drilled, - assays pending

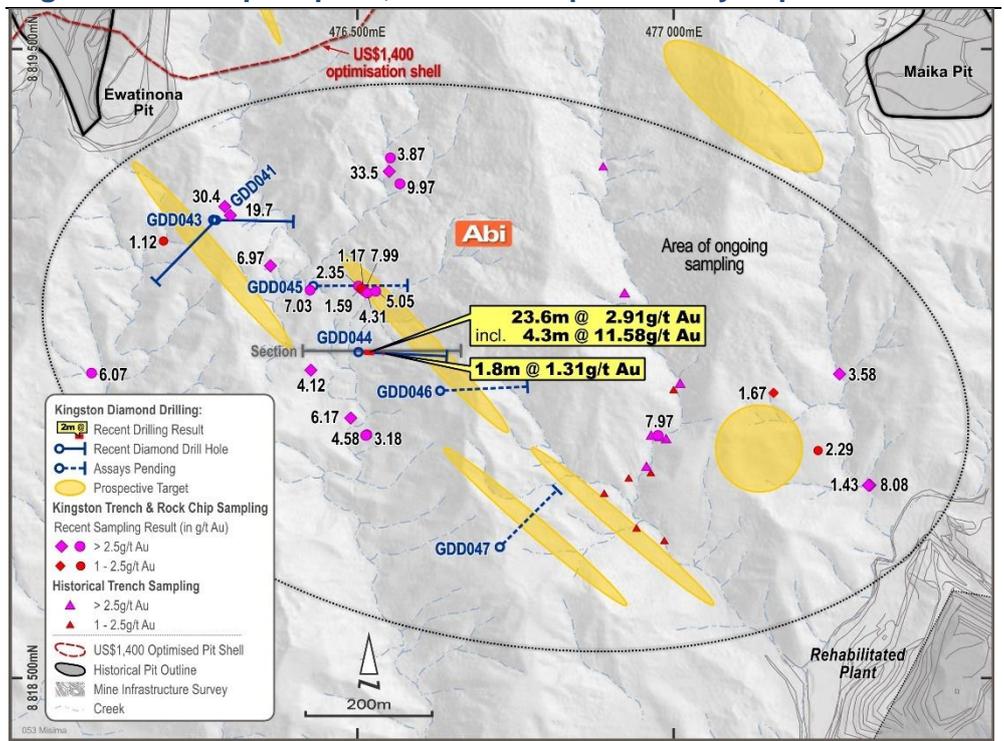
## GDD044 – 24m @ 2.9g/t gold from 7.4m

GDD044 diamond drill hole reported in September 2019 is located between the old processing plant location and the previously mined Ewatinona pit, a target known as the Abi prospect. The hole was clearly successful in testing for economic mineralisation along north-west trending prospects recently identified by Kingston.

Both diamond drill rigs are currently located at Ewatinona in the Quartz Mountain area, where the company is looking to upgrade and possibly expand the existing 220koz Resource. Post this drilling campaign, the company expects to relocate at least one drill rig to Misima North to follow up on the exciting first results.

Both diamond drill rigs have returned to the Quartz Mountain area

Figure 4 – Abi prospect, GDD044 – previously reported



Source: Company

## Misima – a Tier 1 pedigree

Misima Island is located 625km east of Port Moresby in the Solomon Sea. Gold was discovered on the island in 1888 with small scale underground mining continuing until WWII. Placer Dome Inc (Placer) commenced exploration in 1977, with production beginning in 1989. Misima was operated as an open pit gold mine from 1989 to 2001, with stockpiled ore treated for the final three years of the operation until 2004. Gold production over this period was 3.7Moz, along with significant silver credits.

Misima is Kingston's flagship asset containing 2.8Moz gold

**Figure 5 – Location of Kingston's assets**



Source: Company

## Background on Misima

Placer mined 87.5Mt at 1.6g/t Au producing 3.7Moz of gold and 22Moz of silver over its 14-year mine life. At the end of 1990 the Reserve grade stood at 1.26g/t, however, the mined grade averaged 1.53g/t delivering reserve grade reconciliation of 121%. The mill had nameplate capacity of 5.5Mtpa, easily workable ore saw a maximum throughput of 6.9Mtpa achieved.

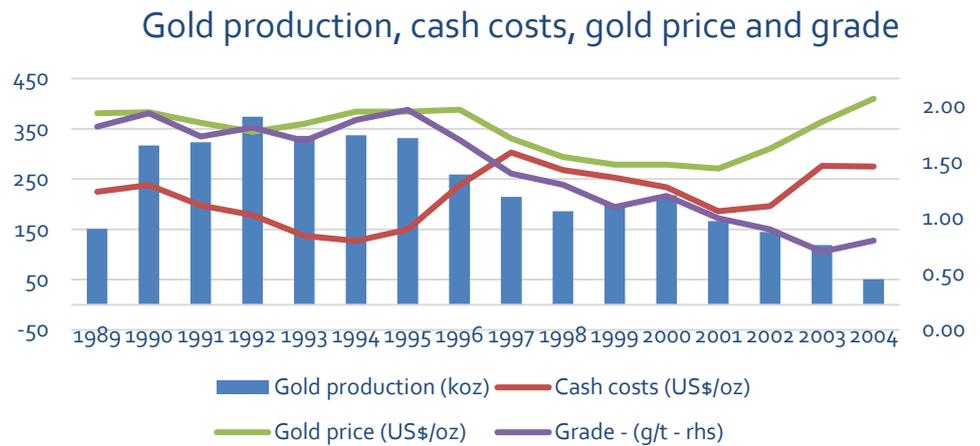
Misima was closed when gold prices were sub US\$300 per oz

Gold recoveries averaged 91.5% and cash costs averaged US\$218/oz, resulting in an average margin of US\$128/oz (37%). At the time the decision was made to close the mine, the gold price was below US\$300/oz. The mill was subsequently decommissioned and removed by 2005. The site has since been rehabilitated, with the PNG Mineral Resource Authority signing off on the successful rehabilitation in 2012.

The production profile, cash costs and revenues of the historical operations are summarised in Figure 6.

Misima operating margins were 37% over its LOM

Figure 6 – historical production and mining costs



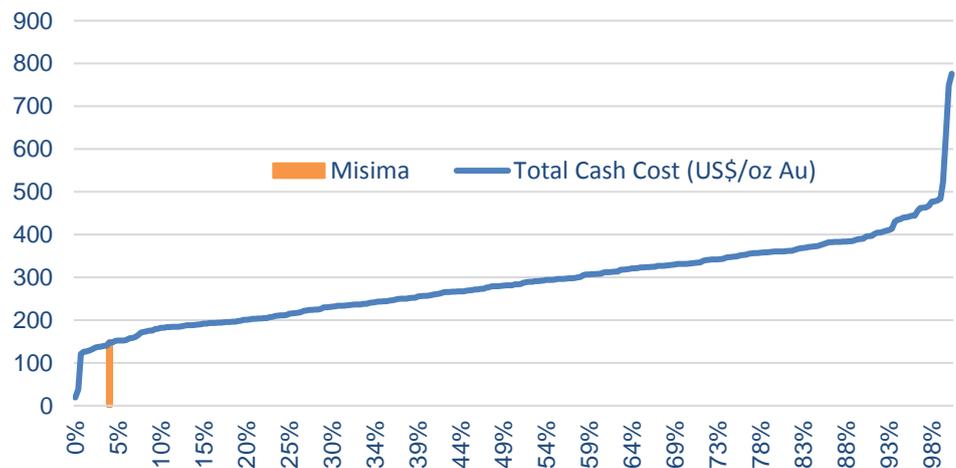
Source: Placer Annual Reports, acova capital

**Back in the day, Misima was around the 5<sup>th</sup> percentile on costs**

Perhaps the clearest evidence of Misima’s competitiveness is where it sat historically on the cash cost curve. Figure 7 is a 1995 global cash cost curve showing Misima at around US\$150/oz. That compares to the 50<sup>th</sup> percentile of around US\$300/oz. The average grade mined at Misima in 1995 was 1.97/gt gold.

Misima was around the 5<sup>th</sup> percentile in global cash costs in 1995

Figure 7 – Global gold total cash cost curve – US\$/oz, 1995



Source: Wood Mackenzie

**The benefits of hindsight in Kingston’s favour**

Technical risk must be considered much lower than a conventional greenfield gold development given the depth and quantity of knowledge that already exists regarding the current Resource, and the mineability and processing characteristics of the ore. Originally, when the mine was commissioned there were several technical hiccups in the processing circuit that were overcome with relative ease. KSN has the benefit of this knowledge when designing all aspects of the mine. For these reasons we view downside technical risk as minimal relative to other pre-development peers in greenfield locations

Much was learnt the last time Misima was mined

## What could Misima look like?

While early days, we believe, given the large tonnage, lower grade nature of the deposit, the project lends itself to high tonnage mill throughput, and we can envisage something in the order of 200kozpa gold production for at least ten years. We believe there already exists sufficient gold resources for such an operation which, crucially, will drive unit costs down as all fixed costs associated with remote island mining are diluted over a larger production base.

## Why we think there's already ten years at ~200kozpa

The NI 43-101 Canadian exchange compliant Resource published in August 2017 by WCB Resources (the previous owner) is, by the code's requirements, contained in a mineable pit shell. The larger JORC compliant Resource, published subsequently in November 2017 by KSN, includes tonnes outside the pit shell, located adjacent to the current pit, as well as at depth. The significance of the 2.3Moz Resource located in a pit-shell, is that the NI 43-101 is a closer proxy to a Reserve than a JORC Resource, in our view. If more than 2moz are ultimately proven up into a Reserve, the project would have around ten-years mine life at a production rate greater than 200koz per annum, assuming future recoveries are in line with historical recoveries of around 91%.

**Figure 8 – Conceptual throughput rates and production levels**

Throughput	mtpa	4.0	6.0	8.0
Grade	g/t Au	1.0	1.0	1.0
Recovery	%	91%	91%	91%
Annual production	koz	117	176	234

Source: Acova.

## The Tonnage-grade curve provides options

While the overall Resource grade is currently 1.1g/t for 2.8Moz, it is more a factor of economics driven by cut-off grade assumptions. The cut-off grade for the 2.8moz is 0.5g/t gold. However, at higher cut-off grades, the Resource is still material. The grade tonnage table for the current JORC Resource is shown in Figure 12.

**Figure 9 – Misima JORC Resource – Tonnage-grade table**

Cut-Off (g/t Au)	Tonnes	Au grade	Contained Gold
g/t Au	Mt	g/t	Moz
0.5	82.3	1.1	2.8
0.6	62.8	1.2	2.5
0.7	49.5	1.4	2.2
0.8	39.9	1.5	2
0.9	32.8	1.7	1.8

Source: Company Resource announcement – November 2017

The tonnage-grade table illustrates there is clear scope to process higher grade ore in the early years and stockpile lower grade ore for processing at the end of the mine life. The trade-off is sometimes higher up-front strip ratios and increased working capital commitments. However, this high grading was pursued when the mine was originally operating, and we suspect it will be a value accretive opportunity when the time arises to optimise the mining schedule in future economic studies.

Grade tonnage curves indicate optionality to maximise returns

The wealth of historical operating data and technical analysis performed on Misima as part of the previous operation is a major benefit for KSN in our view. This should assist in expediting and increasing the confidence of future economic studies.

### What could capital costs look like?

Given the nature of the deposit lends itself to high volume mining, we expect the capital costs will be material. Figure 10 is a selection of recent large-scale open cut gold projects where a PFS or FS has been completed, showing the mill throughput and initial capital expenditure requirements. As expected, the capital intensity (as measured by capex divided by mill throughput per annum) decreases when throughput is higher. However, this can be more than offset by lower grades in some cases.

**\$60/t capex intensity equates to \$420m at 7mtpa throughput**

**Figure 10 – Capex intensity selected gold projects**

Project	Location	Mill throughput mtpa	Capex \$m	Capex intensity \$/t mill throughput
Woodlark	PNG	2.40	199	83
Awak Mas	Indonesia	2.50	194	78
Dalgaranga	WA	2.50	86	34
Karlawinda	WA	3.00	132	44
McPhillamy's	NSW	7.00	215	31
Gruyere	WA	7.50	532	71
Namindi	Ghana	9.50	552	58
<b>Average</b>				<b>57</b>

*Source: Various company reports, Technical studies*

At the upper end of the capex intensity is the PNG Woodlark project now under the control of GeoPacific Resources (GPR AU). The original DFS was completed in 2012 in a higher gold price environment and reported a capex of US\$160m. In 2017 Geopacific took control of the project and reported an updated DFS in November 2018 with updated capex of \$199m and throughput of 2.4mtpa, giving a resulting capex intensity of \$83/t annual throughput.

At the lower end of the capex intensity chart is Regis Resources McPhillamy's project located in central NSW. That includes a water pipeline at an estimated \$38m. At a proposed throughput of 7mtpa, the PFS capex estimate of \$215m results in a capex intensity of \$31/t annual mill throughput. By way of comparison, Gold Road's Gruyere project has an estimated DFS level capex of \$532m or \$71/t annual throughput based on a 7.5mtpa plant.

By looking at comparable projects and taking a subjective view on the differences, we expect the capital intensity for a gold mine in Misima to be in the range of A\$40-60/t annual throughput, which if we assumed a similar throughput rate to McPhillamy's and Gruyere, or 7mtpa would be around \$280-\$420m. If Misima was to commence mining and milling at a rate of 4-5mtpa, capex could be significantly less.

### Timetable and permitting process

Under the current PNG Mining Act, the State has the option to acquire a participating interest of up to 30% by payment of sunk costs and then contributing to construction capital costs on a pro-rata basis to the project.

PNG has a tried and tested permitting process

The decision by the State to elect to take up equity is made post the company being issued a Mining Lease (ML). A Mining Lease Application (MLA) is usually submitted in conjunction with a detailed Feasibility Study and Development Proposal. In the case of Kula Gold’s Woodlark Island, the MLA was submitted on 30 October 2012 and the ML was granted on 29 July 2014, 21 months post submitting the MLA.

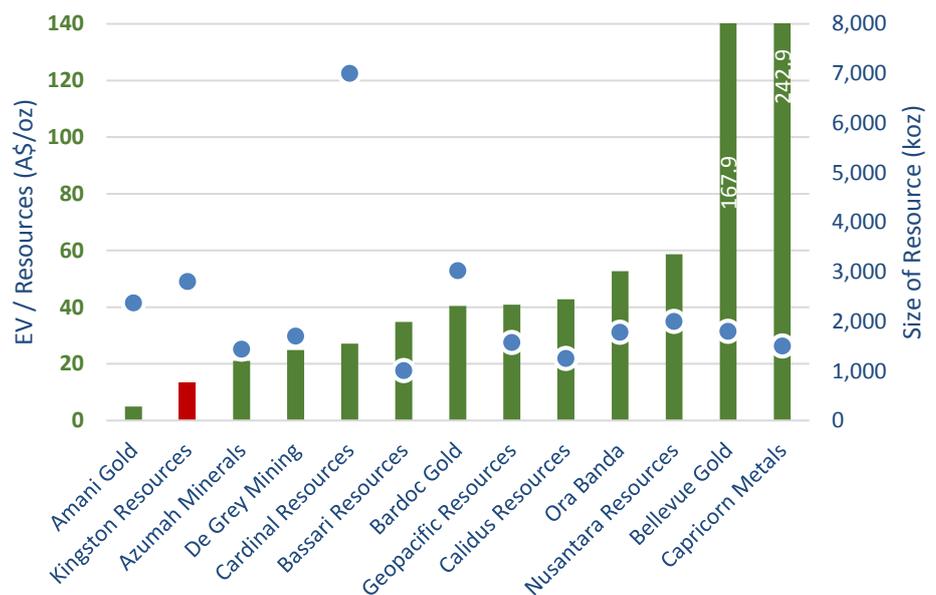
**Peer Comparisons**

Figure 11 illustrates our estimate of where KSN sits on the EV/oz Resource table of ASX listed gold explorers and developers. Kingston is currently trading at the very low end of the group at ~\$14/oz Resources, relative to an average of around \$60/oz.

The right hand axis in Figure 11 shows the 100% Resources for the respective companies. The only company in the peer group with a larger Resource in one location is Cardinal Resources, which has 7moz in Resources at its Namdini project in Ghana. Bardoc Gold has 3moz in Resources over six different projects located within around a 75km radius from each other. In comparison, KSN’s Misima project contains 2.8moz in Resources in the same location.

Kingston is trading on a very low EV/oz Resource vs peers.

**Figure 11 – EV/oz Resources – ASX listed explorers**



Source: Acova, Company announcements

Given the size of Misima Resource relative to its peers, we think the value proposition is even more compelling taking into consideration it is almost entirely based on the Misima Resource. The only cheaper company in the peer group based on the EV/oz metric is Amani.

Amani’s 2,370koz gold Resources is based on two projects in the north-east corner of the DRC. There are a number of smaller companies that we could have included, but culled the group to include only those that have Resources greater than 1moz.

## Spec Buy, target price \$0.80ps

Given the preliminary nature of the Misima project, we have derived our target price by applying \$50/oz Resource in the ground attributable to KSN.

Importantly, KSN reached an agreement with its joint venture partner, PPC, to buy out its remaining ~24% for \$2.8m. This will increase KSN's share of the Misima project to 100%.

KSN's share post April 2020 will be the total 2.8Moz of Resources. KSN's 75% share of Livingstone's 50koz (JORC 2004) is 37.5koz. Hence, total attributable ounces to KSN are currently ~2,838moz. A valuation of \$50/oz, results in an EV of ~\$142m and a equivalent market cap given we assume negligible cash after the PPC payments are made. This equates to approximately \$0.80ps based on 177m shares on issue.

### Valuation discussion

Applying \$50/oz Resource places KSN slightly below the average of the ASX listed peers shown in Figure 11 of around \$60/oz, although the high valuations of Bellevue Gold and Capricorn Metals skew the average higher. Excluding these two, would result in an average of around \$33/oz. The valuation is very subjective and there are reasons why different juniors trade above and below the average. In our minds we apply a discount due to perceived sovereign risk in PNG compared to Australia. Conversely, we think KSN deserves a large premium to many peers, given the size and pedigree of the Resource relative to its peers.

### Stock catalysts

We expect drill results in 2020 at both Misima and Livingstone will be the primary shorter-term catalysts, giving investors' confidence the Resources will continue to increase in quantity and quality. On-going work around Quartz mountain in particular has the potential to lead to a Resource upgrade in terms of size and confidence in 2020, providing the platform for the company to ramp up feasibility studies.

**Our \$0.80ps valuation is based on \$50/oz to Misima Resources**

## Risks

Technical risk must be considered much lower than a conventional greenfield gold development given the depth and quantity of knowledge that already exists regarding the current Resource, and the mineability and processing characteristics of the ore. Originally, when the mine was commissioned there were several technical hiccups in the processing circuit that were overcome with relative ease. Kingston however already has the benefit of this knowledge when designing all aspects of the mine. For these reasons we view downside technical risk as minimal relative to other pre-development peers in greenfield locations.

### General risks

*Resource risk.* Given KSN's projects are exploration there is no guarantee that a viable economic project will be delineated and hence the company remains exposed to resource risk.

*Funding and capital management risk.* Kingston remains unfunded to finance the development of a mining project and therefore remains subject to funding risk.

*Construction and development risk.* Construction and development of mining assets are generally subject to approvals timelines, receipt of permits, weather variability, access to skilled labour and technical personnel, as well as key material inputs and mechanical components which may cause delays to construction, commissioning and commercial production.

*Operational and capital cost risk.* Markets for exploration, development and mining inputs can fluctuate widely and cause significant differences between planned and actual operating and capital costs. Key operating costs are linked to energy and labour costs as well as access to, and availability of, technical skills, operating equipment and consumables.

*Commodity price and exchange rate risk.* Miners are price takers and the earnings and cashflows of mining companies remain exposed to changes in underlying commodity prices and exchange rates.

*Sovereign and regulatory risk.* We consider PNG higher risk than Australia with regard to regulations and timing of projects. Renewal of EL1747 and the issuance of a Mining Licence within a reasonable timeframe, or at all, are clear downside risks.

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## Specific Disclosure

At the date of this report, the analyst owns shares in Kingston Resources.

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