

29 July 2020

## KALKAROO PROJECT PLANNING UPDATE

### HIGHLIGHTS

- Havilah plans to focus on the feasibility of developing the gold-only start up open pit at West Kalkaroo, that will initially target shallower oxidised gold resources.
- Infill drilling at 25 metre x 25 metre spacing over the last 4 months within the planned open pit shell has delivered a high degree of confidence in the gold resource.
- Directors consider this gold-only strategy is more likely to attract financing for West Kalkaroo and will in turn enhance the future development prospects of the much larger Kalkaroo copper-gold sulphide mining project.
- Havilah technical personnel are currently focused on advancing the final Kalkaroo environmental approvals along with obtaining capex and opex estimates for the gold-only start up open pit.
- The value of Kalkaroo on a NPV<sub>7.5%</sub> basis has risen considerably in AUD terms over the last 12 months, largely due to the increased long-term forecast USD gold price.
- Kalkaroo is considered to be at the lower risk end from a COVID-19 pandemic and sovereign risk perspective, which should assist its future development prospects.

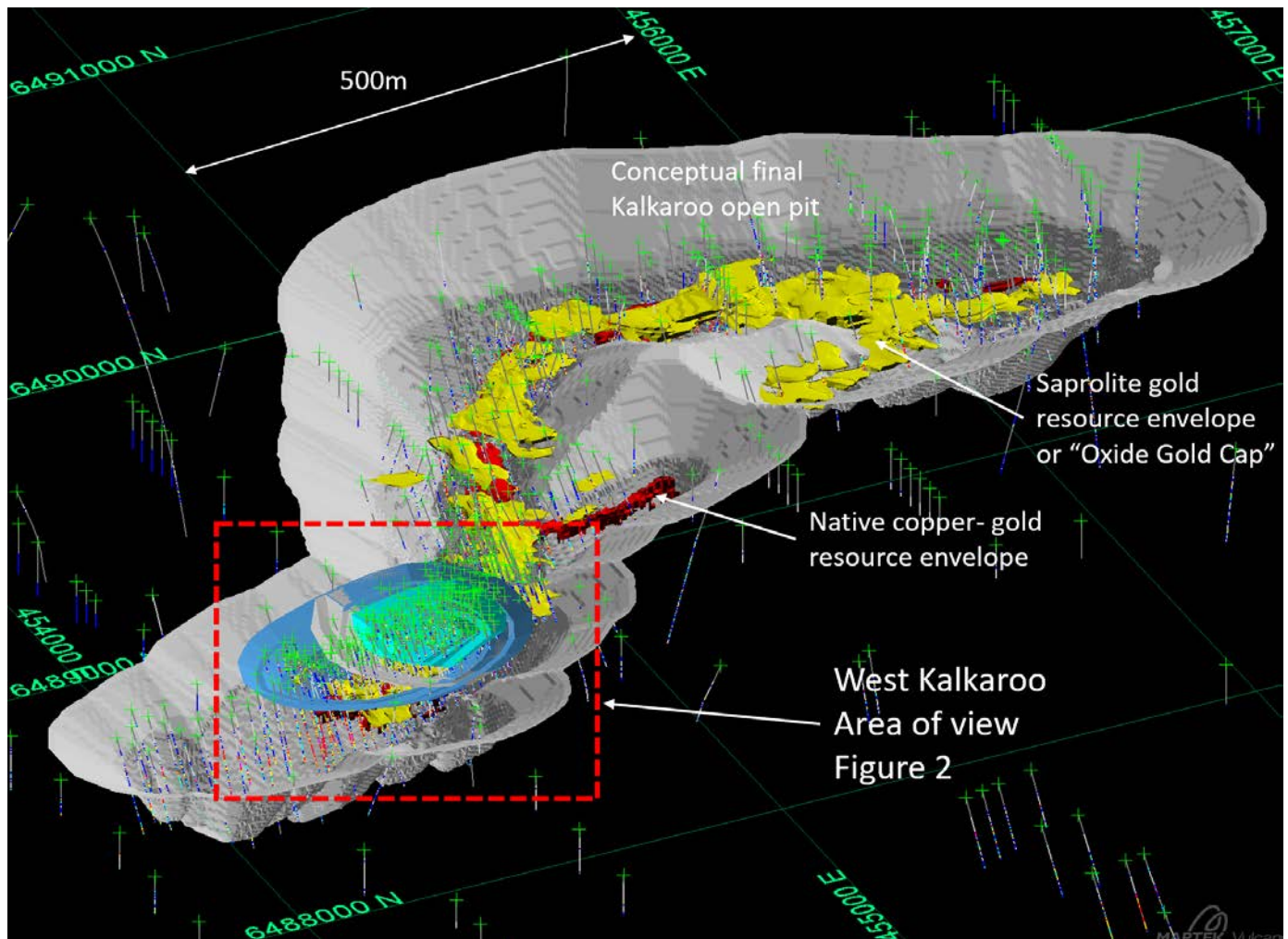
**Havilah Resources Limited (Havilah or Company)** provides an update to shareholders on forward planning for the Kalkaroo copper-gold project (**Kalkaroo or Project**).

Until recently, development of Kalkaroo was predicated on a large scale copper-gold mine as outlined in the published Kalkaroo pre-feasibility study (**PFS**) that was compiled for Wanbao Mining by independent mining consultants, RPM Global Asia Limited (**RPM**). That PFS contemplated average annual production of 30,000 tonnes of copper and 72,000 ounces of gold as recovered metal over a 13 year production period from a large open pit. This was based on a JORC Ore Reserve of 100.1 million tonnes (90% Proved and 10% Probable) that contains 474,000 tonnes of copper and 1.41 million ounces of gold ([refer to ASX announcement of 18 June 2019](#)).

As documented in that PFS, the estimated pre-production capital expenditure is AUD\$332 million, including mining fleet of AUD\$76 million and a contingency of AUD\$46 million. Total capital expenditure over the life of mine is AUD\$680 million, including AUD\$149 million for the mining fleet and AUD\$82 million in contingency. Such amounts are challenging for Havilah to fund given its sub AUD\$50 million market capitalisation.

Over the past 12 months there has been a 25% rise in the long-term forecast USD gold price from USD\$1,200 an ounce used in the PFS to USD\$1,500 an ounce (Source: World Bank, JP Morgan). Directors note that in view of this, commencement of West Kalkaroo as a shallow gold-only open pit has potentially become a realistic development option. Accordingly, Havilah has focused its drilling efforts this year at West Kalkaroo where it has completed over 90 aircore drillholes for a total of over 8,000 metres, mostly within the limits of a conceptual starter open pit (Figure 1). The objective was to gain greater confidence in the shallow gold resources (particularly grade and distribution) at West Kalkaroo, which has largely been achieved with drilling nominally on 25 metre x 25 metre spacing for the shallowest saprolite gold zone. This area was chosen because of the comparatively shallow overburden and extensive faulting and associated brecciation that has enhanced gold (and copper) grades. Recent ASX announcements have reported many encouraging gold intersections from

this drilling, that are generally above the estimated resource grades for this area (refer to ASX announcements of [12 May 2020](#) and [24 June 2020](#)).

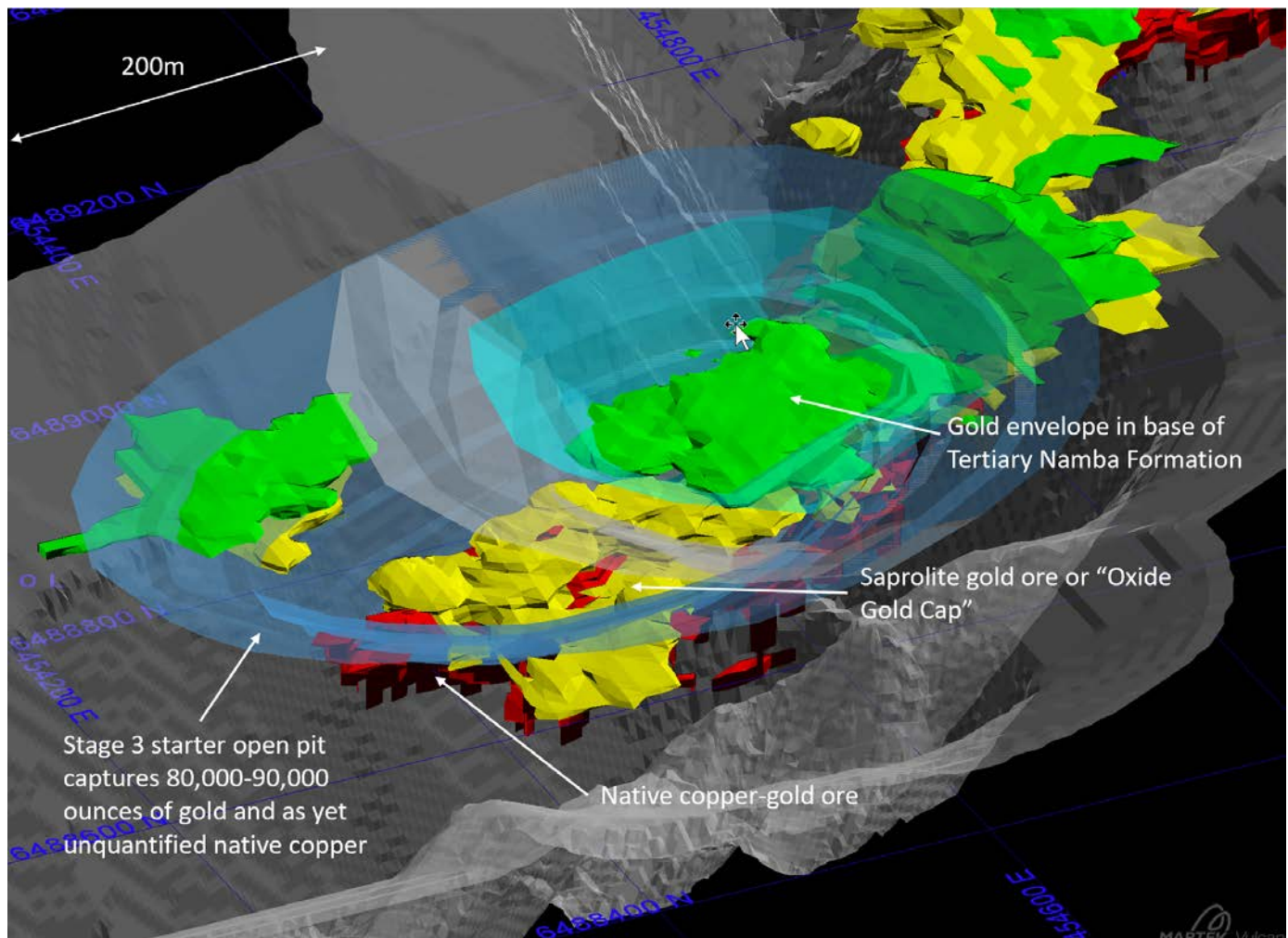


**Figure 1** Showing planned gold-only start up open pit design at West Kalkaroo (light blue) within the larger Kalkaroo PFS copper-gold open pit (grey). Note the density of resource drilling at West Kalkaroo.

Richard Buckley, Havilah's Senior Mine Planning Engineer, has incorporated the new drilling results into the design of a series of progressively larger open pits at West Kalkaroo, based on the published JORC Ore Reserve. The largest optimised shallow gold-only open pit design is estimated to contain approximately 80,000-90,000 ounces of gold (plus some native copper) after removal of an estimated 7-8 million cubic metres of soft free-dig overburden (Figure 2). Presently, this technical information is being used to obtain firm mining quotes from mining contractors to assist in determining project feasibility.

The results of Havilah's comprehensive metallurgical studies for the oxidised saprolite gold and native copper ores have enabled design of a preferred gold processing plant. Capital and operating costs for the gold plant are being determined by an independent engineering consulting firm. In parallel, Havilah's technical personnel are currently working towards completion and lodgement of the final environmental approvals documentation for the gold-only start up open pit option, which closely aligns with the scope of the September 2014 approved Kalkaroo Copper-Gold Mining Lease Proposal and Management Plan. It should be noted that Havilah has already secured the required mining permits for Kalkaroo (Mining Leases and Miscellaneous Purposes Licences). It also owns the surrounding Kalkaroo Station pastoral lease, thus providing unrestricted access.

Accordingly, Havilah has decided to focus its future efforts on determining the feasibility of developing the gold-only start up open pit at West Kalkaroo. Directors consider that this approach will improve the prospects of being able to develop the larger Kalkaroo copper-gold project at the appropriate time, because the gold mining operation would effectively expose the underlying copper-gold sulphide orebody. With much of the overburden removed at West Kalkaroo, the Kalkaroo copper-gold project would potentially become a more attractive mining investment proposition that is more likely to attract the funding required to develop the large scale open pit copper-gold mine.





**Table 1 Pre-tax NPV<sub>7.5%</sub> value matrix in AUD\$ million for variable USD copper and gold prices at AUD:USD0.75**

Gold price USD\$/oz and AUD\$/oz (at AUD:USD exchange rate of 0.75)															
Copper price USD\$/lb & AUD\$/lb	USD		\$1,000	\$1,100	\$1,200	\$1,300	\$1,400	\$1,500	\$1,600	\$1,700	\$1,800	\$1,900	\$2,000	\$2,100	\$2,200
	AUD		\$1,333	\$1,467	\$1,600	\$1,733	\$1,867	\$2,000	\$2,133	\$2,267	\$2,400	\$2,533	\$2,667	\$2,800	\$2,933
	2.50	3.33	\$171	\$239	\$308	\$376	\$445	\$514	\$582	\$651	\$719	\$788	\$857	\$925	\$994
	2.70	3.60	\$301	\$369	\$438	\$506	\$575	\$643	\$712	\$781	\$849	\$918	\$986	\$1055	\$1124
	2.89	3.85	\$427	\$496	\$564*	\$633	\$701	\$770*	\$839	\$907	\$976	\$1044*	\$1113	\$1182	\$1250
	3.10	4.13	\$560	\$629	\$698	\$766	\$835	\$903	\$972	\$1040	\$1109	\$1178	\$1246	\$1315	\$1383
	3.30	4.40	\$690	\$759	\$827	\$896	\$965	\$1033	\$1102	\$1170	\$1239	\$1308	\$1376	\$1445	\$1513
	3.50	4.67	\$820	\$889	\$957	\$1026	\$1094	\$1163	\$1232	\$1300	\$1369	\$1437	\$1506	\$1575	\$1643
	3.70	4.93	\$950	\$1019	\$1087	\$1156	\$1224	\$1293	\$1362	\$1430	\$1499	\$1567	\$1636	\$1705	\$1773
	3.90	5.20	\$1080	\$1149	\$1217	\$1286	\$1354	\$1423	\$1491	\$1560	\$1629	\$1697	\$1766	\$1834	\$1903
	4.10	5.47	\$1210	\$1278	\$1347	\$1416	\$1484	\$1553	\$1621	\$1690	\$1759	\$1827	\$1896	\$1964	\$2033

\* NPV<sub>7.5%</sub> from PFS (green) compared with that at recent long-term forecast (orange) and spot gold price (yellow), as calculated by the PFS financial model. NPV (Net Present Value) is a measure of discounted cash flow valuation in this case using a discount rate of 7.5%.

It is noted that the yellow highlighted spot gold price NPV<sub>7.5%</sub> (AUD\$1,044 million) could still be considered conservative for Kalkaroo on several grounds:

1. The above pre-tax NPV<sub>7.5%</sub> value matrix exchange rate was set at an earlier long-term forecast AUD:USD 0.75 rate, whereas over the past 12 months the AUD:USD exchange rate has mostly been below 0.70.
2. No account has been taken of improved gold recoveries in the oxidised ore types, namely saprolite gold and native copper from around 50% in the PFS to >90% based on Havilah's more recent metallurgical test work ([refer to ASX announcement of 9 May 2019](#)).
3. Open pit optimisations have not been re-run for higher long-term forecast gold prices. On the basis that lower grades of ore can be profitably treated if metal prices are higher, it is reasonable to assume (based on constant cost inputs) that re-optimisation would result in a larger open pit and hence improved mining economics and a longer mine life. For the present announcement the published PFS open pit optimisation and RPM financial model have been used.
4. The potential revenue contribution from other by-product commodities such as cobalt, rare earth elements and molybdenum has not been considered as yet due to uncertain recovery pathways.

Commenting on the gold-only start up mining options, Dr Chris Giles, Havilah's Technical Director, said:

"Taking advantage of the current long-term forecast gold price and pursuing the gold-only start up open pit option at West Kalkaroo makes business sense, given the considerably reduced upfront capital as compared with the full-scale copper-gold project contemplated in the PFS.

"We have a good understanding of the mining and materials handling of the overburden and ore based on our Portia gold mining experience. Dealing with the soft oxidised ores should simplify the start up.

"Havilah retains a high degree of optionality as the Project copper production could be initiated at any time after completion of the West Kalkaroo stage 3 open pit, if sufficient capital was available.

"In the meantime, the gold-only mining will remove much of the overburden at West Kalkaroo, which should make the ultimate copper-gold operation a potentially more attractive investment proposition.

"It is worth noting that low sovereign risk, advanced, large scale open pit copper-gold development opportunities like Kalkaroo, with associated land ownership, are rare at a time when renewable energy and electric vehicles are adding to the demand for copper and cobalt and with gold breaching USD\$1,900 an ounce.

"South Australia's low sovereign risk, mining friendly government and high ESG (environmental, social and governance) ranking makes the Kalkaroo copper-gold project a potentially more attractive mining investment proposition compared to many offshore copper-gold projects that are located in riskier locations where the COVID-19 pandemic continues unabated," he said.

This release has been authorised on behalf of the Havilah Resources Limited Board by Mr Simon Gray.

For further information visit [www.havilah-resources.com.au](http://www.havilah-resources.com.au)

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#### **Cautionary Statement**

This announcement contains certain statements which may constitute 'forward-looking statements'. Such statements are only predictions and are subject to inherent risks and uncertainties which could cause actual values, performance or achievements to differ materially from those expressed, implied or projected in any forward-looking statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and investors are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein. Given the ongoing uncertainty relating to the duration and extent of the global COVID-19 pandemic, and the impact it may have on the demand and price for gold and on global financial markets, the Company continues to face uncertainties with respect to the Kalkaroo project that may impact its operating activities and financial results.

#### **Competent Person's Statements**

The information in this announcement that relates to Exploration Targets, Exploration Results, Mineral Resources and Ore Reserves is based on data and information compiled by geologist Dr Chris Giles, a Competent Person, who is a member of The Australian Institute of Geoscientists. Dr Giles is Technical Director of the Company, a full-time employee and is a substantial shareholder. Dr Giles has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activities being undertaken to qualify as a Competent Person as defined in the 2012 Edition of '*Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves*'. Dr Giles consents to the inclusion in the announcement of the matters based on his information in the form and context in which it appears.

Except where explicitly stated, this announcement contains references to prior exploration results, JORC Mineral Resources and Ore Reserves, all of which have been cross-referenced to previous ASX announcements made by Havilah. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant ASX announcements.