ASX RELEASE
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PLANT DESIGN OPTION STUDY RESULTS

HIGHLIGHTS

- **The Option Study reviewing and optimising the Borborema process plant design was successfully completed.**
- **No changes were proposed for the process circuit but recommended changes to some equipment selection and the plant layout were made to facilitate future throughput expansions with minimal disruption to production.**
- **The Option Study considered an expansion to 4Mtpa throughput for which the Borborema Project is permitted. The actual expansion will be confirmed by ongoing studies.**
- **Initial capital and operating cost estimates for the revised plant circuit and the incremental cost of a possible expansion up to 4Mtpa throughput are very attractive and justify further investigation. However, their order of accuracy needs to be improved in the coming weeks with updated vendor pricing.**
- **The DFS project financial model will be updated with equipment specifications and improved cost accuracy in the coming weeks as Big River Gold resumes project financing discussions.**

Big River Gold Ltd (ASX: BRV) (the **Company** or **Big River**) is pleased to announce the results of the plant design option study (**Option Study**) completed for the Borborema Gold Project by Wave International (**Wave**).

The Option Study aimed to optimise proposed process plant designs and compare the resulting capital costs with those presented in (1) a Definitive Feasibility Study (**DFS**) completed by Wave in December 2019 (**DFS 2019**) and (2) an update completed by Wave and CPC Project Design (**CPC**) in July 2020 (**Updated DFS 2020**). Wave has consented to be named in this announcement and for the content of the Option Study to be extracted and summarised in this announcement.

The study was undertaken to ensure that the 2Mtpa Stage 1 Process plant proposed in the *Updated DFS 2020* study[1] was the most efficient use of capital and that the design and equipment choice would not incur additional costs or prevent a seamless transition to any future possible expansions in the project and plant throughput at a later date. Previous scoping and feasibility studies announced to the market on 16 November, 2012 and 15 September, 2011 had considered a plant capable of processing up to 4Mtpa.

The ultimate size of any future expansion will be subject to ongoing studies and availability of process water and we are pleased that positive progress on the latter is being made in this regard. However, for the purposes of the Option Study the comparison assumed an expanded plant capacity of 4Mtpa, being the maximum plant capacity that the Borborema project is currently permitted for.

The main points derived from the Option Study include:

[1] ASX Announcement 8 July 2020, a copy is available at https://www.bigrivergold.com.au/asx-announcements/

- Equipment and engineering options have been identified and the layout redesigned, with potential bottlenecks removed, so that the Stage 1 circuit can be expanded on the same pad footprint as was previously planned (refer Figures 1 to 3). No change was incurred in earthworks cost.
- An oversize single stage crusher replaced the 3 Stage crushing circuit.
- A review of recent developments of SAG mill usage in Brazil suggested improvements in equipment support which mitigated concerns about operational security. Consequently, a larger than previously planned 4500kW SAG mill was reinserted into the design along with a small ball mill (2250W). This would meet the requirements of a 2Mtpa throughput with some flexibility and in any future expansion an additional small ball mill would be sufficient to increase throughput up to 4Mtpa through the comminution circuit.
- Key equipment in the original designs contained 20%-30% design margin oversize. The CIL tankage in particular was judged to be oversized and consequently "right"-sized to allow space for an additional 6 tanks in a 4Mtpa expansion. This was considered operationally more efficient and also reduced capital expenditure.
- The process circuit layout was arranged to provide space for any future expansion for the above as well as the downstream elution circuit, gold room, filter shed and possible mica recovery circuit, if that is determined to be viable in the future.
- The current power line agreement and design for the 2Mtpa project has sufficient capacity to support a plant throughput up to 4Mtpa.
- Big River has accepted the recommendations but note that some additional changes may still occur with the layout as determined by ongoing detailed engineering, such as the location of the electrical substation after discussions with the local power authority, but it is not believed they will have a material effect.

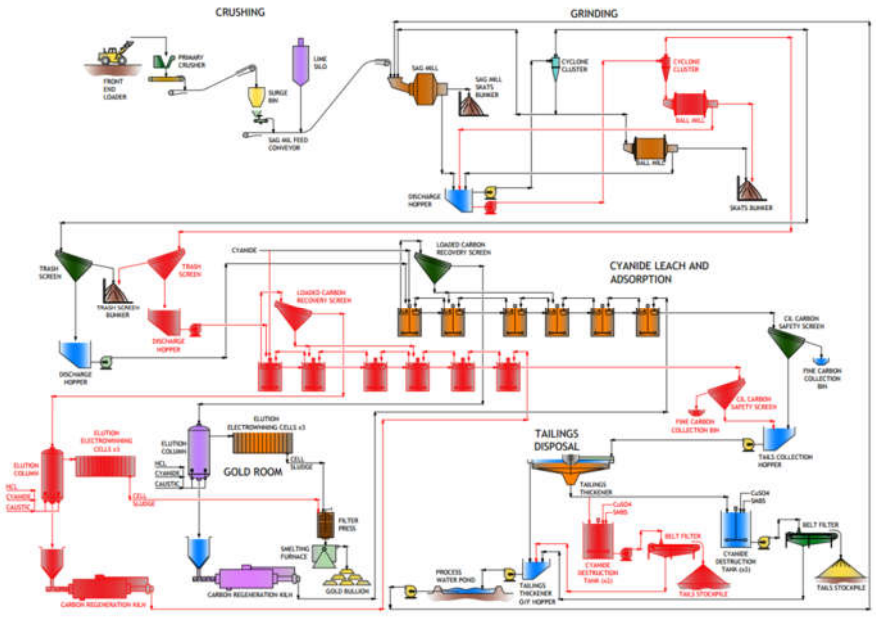

Figure 1. Plant process flow design for the revised 2Mtpa Stage 1 circuit. Additional plant and equipment considered appropriate for a possible future expansion is included and highlighted in red.

Changes to the 2Mtpa circuit mainly comprise the inclusion of an oversized single-stage crusher, 4500kW SAG mill with a smaller 2250kW ball mill and smaller CIL tanks. The Option Study determined an increase in throughput capacity could be achieved with these changes along with downstream changes to the elution circuit and tailings treatment.

Figure 2. Redesigned Stage 1 circuit incorporating provision for possible future expansion.

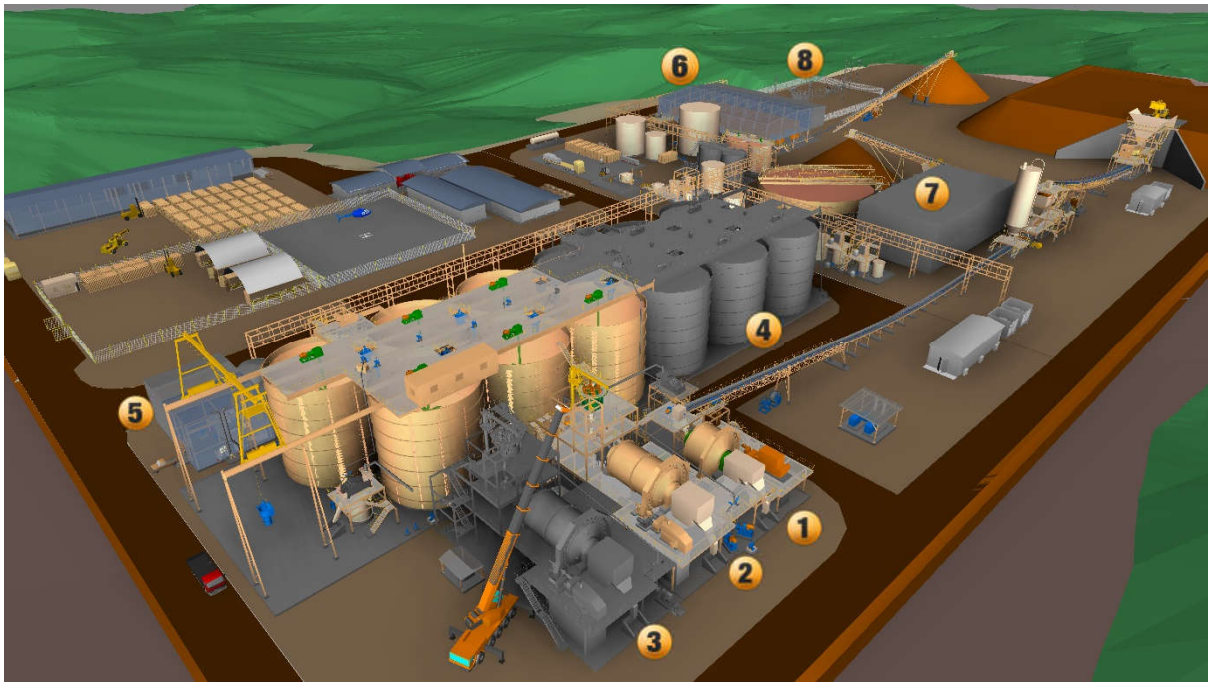

Figure 3. Redesigned Stage 1 circuit showing plant and equipment of possible future expansion, illustrated in grey.

The SAG mill (1) and 2250kW ball mill (2) are shown while additional plant and equipment that might be installed to take the expansion up to 4Mtpa is shown in grey in the space left vacant. This includes another 2250kW ball mill (3), a doubling of the CIL tank capacity (4), an increase in gold room capacity (5) and additional filtration cells (6). Space for a mica recovery circuit is shown at (7) – a decision that is subject to further assessment.
Some modifications may occur to this layout as detailed engineering continues such as the location of the electrical sub-station (8) and orientation of the SAG/ball mills to improve maintenance access.

Capital Estimates

For the purposes of comparison and to compare "like with like", the same economic assumptions and inputs used in the December 2019 DFS[2] were used for the Updated July 2020 DFS[3] and the Option Study. Table 1 summarises those comparisons which suggest a significant saving and operational benefits while Figure 4 reconciles the main areas of capex variation.

The Updated 2020 DFS had a total capital expenditure requirement of US$98.5M including contingency of US$11.5M (using 2019 economic parameters) compared to the Option Study total capex of US$94.6M including contingency of US$15.0M.

Note that while the level of accuracy of the DFS study costings was within -10% to +15%, the Option Study was a study utilising estimates and factoring in some areas that decreased the accuracy to around ±30%.

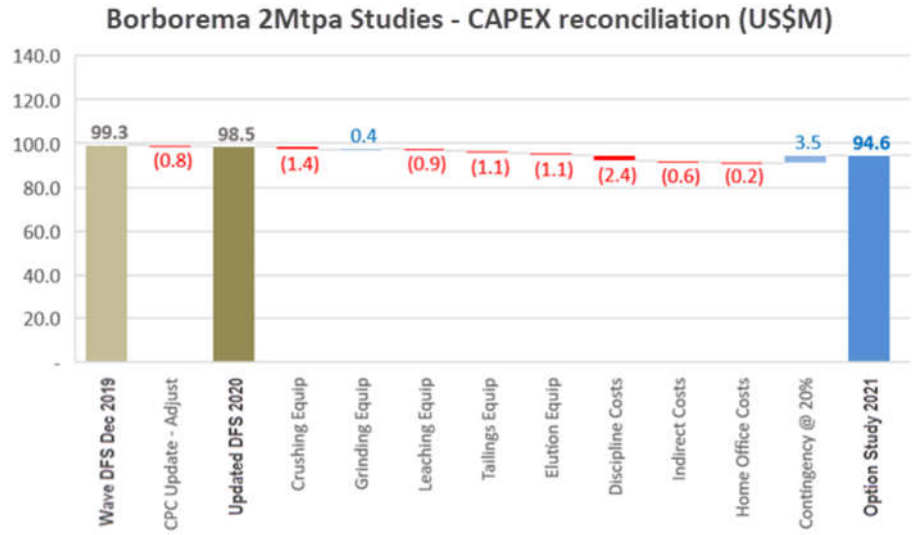

Figure 4. Reconciliation of movements in key areas of CAPEX estimates between studies

The Company plans to increase the level of accuracy of the Option Study cost estimates to a DFS standard over the coming weeks with the revised equipment specifications provided to secure quotes from prospective suppliers. In addition, the other costings used in previous DFS reports will be updated.

The more accurate and updated costs will be incorporated into the project financial model which contains the other project costs (mining and administration) and latest economic parameters such as the recently announced tax exemptions, ISSQN rates and FX currency changes.

Table 1 also includes an indicative estimate of the incremental cost of plant, equipment and engineering that might be required to increase the plant capacity to 4Mtpa totalling US$34.8M including contingency of US$5.8M. The final cost will be determined by ongoing feasibility studies subject to the securing of additional process water to support an expansion of up to 4Mtpa.

[2] ASX Announcement 23 December 2019, a copy is available at https://www.bigrivergold.com.au/asx-announcements/
[3] ASX Announcement 8 July 2020, a copy is available at https://www.bigrivergold.com.au/asx-announcements/

TABLE 1: CAPEX ESTIMATES BY STUDY (US$000)	Dec 2019 DFS	2020 DFS Update	2021 OPTION STUDY 2 MTPA	4 MTPA Expansion costs	4MTPA Total
Accuracy of Estimate	-10% to +15%	-10% to +15%	±30%	±30%	±30%
DIRECT FIELD COSTS	**64,986**	**64,804**	**58,239**	**21,150**	**79,389**
Earthworks	7,287	4,677	4,677	-	4,677
Civil and Concrete	3,612	3,653	3,354	962	4,316
Structural Steelwork	8,407	8,247	8,092	2,927	11,019
Mechanical / Platework	29,973	31,863	27,037	12,391	39,427
Piping and Valves	5,959	5,959	5,751	1,587	7,338
Electrical, Controls and Instrumentation	9,748	10,405	9,328	3,283	12,612
INDIRECT / OTHER FIELD COSTS	**13,348**	**12,525**	**11,949**	**4,058**	**16,006**
Construction Indirects + ISSQN	5,859	6,090	4,942	1,801	6,743
Transport / Delivery to Site	2,957	2,407	2,654	1,179	3,833
Vendor Support	884	611	794	352	1,146
Mobile Equipment	646	645	645	133	778
Mobilisation and Demobilisation	1,184	954	1,184	592	1,777
Spares	951	945	863	-	863
First Fills	867	873	867	-	867
OWNERS COSTS	**9,636**	**9,636**	**9,452**	**3,803**	**13,255**
EPCM Labour and Expenses	4,965	4,965	4,965	2,482	7,447
Owners' Team Labour and Expenses	3,171	3,171	3,171	952	4,123
External Consultants and Peer Review	150	150	150	-	150
Insurances	1,350	1,350	1,166	369	1,535
TOTAL CAPEX (EXCLUDING CONTINGENCY)	**87,970**	**86,965**	**79,640**	**29,010**	**108,650**
CONTINGENCY	**11,361**	**11,541**	**15,000**	**5,800**	**20,800**
TOTAL CAPEX	**99,331**	**98,506**	**94,640**	**34,810**	**129,450**

The estimates in Table 1 are extracted directly from the Option Study and rounded to the nearest $000. These numbers are estimates only and were calculated by Wave based on vendor quotations provided previously or factors derived from these quotations where equipment size has been significantly changed. They are not budgeted costs for the project and each estimate is subject to the accuracy range specified in the table.

Operating costs

Operating costs related to key areas of the plant were considered for comparison only. They do not include other aspects of the project such as mining and administration but the estimates provide comfort that there may be operating cost benefits of upscaling the plant as the operating cost reduced from $8.81/tonne ore to $6.50/t in key areas. However, these estimates are largely extrapolated and factorised from base data and should be considered a guide only.

Table 2: Option Study Operating Costs				
Key Cost Areas (Plant only)	2MTPA Operation		4MTPA Operation	
	US$ p.a.	US$/t ore	US$ p.a.	US$/t ore
Labour	2,703,402	1.35	3,287,163	0.82
Power	7,443,144	3.72	10,832,907	2.71
Reagents & Consumables	3,921,267	1.96	7,842,534	1.96
Maintenance	3,557,993	1.78	4,054,528	1.01
Total	**17,625,806**	**8.81**	**26,017,132**	**6.50**

**Note. Major plant cost areas considered. Not all are included (eg supply of water, G&A, mine etc)*
Estimates are largely extrapolated and factorised - the level of accuracy needs to be confirmed and improved

Next Steps to Financing and Development

With completion of the Option Study, and subject to further work being undertaken to improve the cost estimate accuracy to approximately -10% to +15%, Big River intends to update the project financial model and resume discussions regarding project finance in the coming weeks. Several institutions have been awaiting the completion of the Option Study to resume assessment for potential providing project finance.

In parallel with that process, the Company intends to pursue the following, to be funded from internal resources:

- advance and de-risk the project with detailed Front End Engineering Design (FEED), a process required before handoff and implementation of the EPCM contract, and
- progress infrastructure developments on and around site. Steps are already underway in Brazil to finalize powerline and water pipe line design with local authorities and applications made to access property and allow site disturbance. Design and geotechnical work have commenced as the first steps in upgrading dam water storage on site by September.
- advance exploration and resource definition activities.

Funds will be assigned for the development of geological production and exploration teams to undertake exploration on tenements around the project as well as around and below the proposed pit designs.

Andrew Richards, Executive Chairman of Big River Gold, commented:

> *"We are very pleased with the results of the Option Study as it leads to a more efficient use of capital and a strong basis for future expansion studies. We also anticipate some encouraging outcomes as we move to establish more precision on the costings over the coming weeks.*
>
> *Despite the delays in securing finance during 2020, due in large part to difficulties related to the pandemic, the Company considers itself to be in an excellent position moving forward given the funds raised in December 2020. The Company will not only resume the process of securing project finance but has sufficient cash reserves to significantly advance the project with detailed FEED engineering and infrastructure development in parallel with that process. These are areas that are normally only able to be progressed once project finance has been secured."*

On behalf of the Board.

Andrew Richards
Executive Chairman
Big River Gold Ltd

Figure 5. View to the south west over the Borborema pit showing the exposed ore zone and infrastructure.

Definitive Feasibility Study (DFS)

A DFS for development and construction of Stage 1 of the Borborema Project was completed in December 2019 (refer ASX Announcement of 23 December, 2019) and updated in July 2020 as detailed in the ASX Announcement of 9 July, 2020. It confirmed the project's strong economics and optimised a profitable open pit with a mine life of more than 10 years producing approximately 729,000 ounces gold at a C1 cash cost of US$534/oz and AISC of US$713/oz.

Assuming a gold price of US$1,550 per ounce, the pre-tax NPV (8%) returned US$342M with an IRR of 64.7%. The project returns an average EBITDA of US$72M pa.

All material assumptions underpinning the production targets and forecast financial information continue to apply and have not changed materially.

Competent Person Statements

Borborema mineral resource estimate

The information in this announcement that relates to the mineral resource estimate for the Borborema Project was first reported in accordance with ASX Listing Rule 5.8 on 24 July 2017.

Big River confirms that it is not aware of any new information or data that materially affects the information included in the announcement of 24 July 2017 and that all material assumptions and technical parameters underpinning the Mineral Resource estimate continue to apply and have not materially changed.

Borborema ore reserve estimate

The information in this announcement that relates to the Ore Reserve estimate for the Borborema Gold Project was first reported in accordance with ASX Listing Rule 5.9 on 6 March 2018, 29 March 2018 and 11 April 2018. All material assumptions and technical parameters underpinning the Ore Reserve estimate continue to apply and have not materially changed.

That portion of the Ore Reserve that was included in the Stage 1 Mining Schedule for the December 2019 Definitive Feasibility Study (DFS) was reviewed by Porfirio Cabaleiro Rodriguez, BSc. (MEng), MAIG of GE21 as part of the DFS. The Ore Reserve was first reported in accordance with ASX Listing Rule 5.9 on 24 July 2017 and updated on 6 March 2018 and is based on information compiled by Mr. Linton Kirk, Competent Person who is a Fellow and Chartered Professional of The Australasian Institute of Mining and Metallurgy. Mr. Kirk is employed by Kirk Mining Consultants Pty Ltd and is an independent consultant to the company.

Company Announcements

Copies of the announcements by the Company to the ASX pertaining to mineral resource estimates, ore reserves and feasibility studies are available on the Company's website, at https://www.bigrivergold.com.au/asx-announcements/ or the ASX website, at https://www2.asx.com.au/markets/trade-our-cash-market/historical-announcements.