ASX RELEASE
2 December 2021

WATER STUDIES PROVIDE PROCESS SECURITY & SUPPORT FOR HIGHER PRODUCTION RATES

- **A Dynamic Water Balance (DWB) study was completed for the Borborema Gold Project by SRK Consulting (SRK) to refine water requirements.**
- **SRK modelling outcomes and iterative design improvements have significantly de-risked the water supply issues by determining:**
  - **A significantly lower than anticipated need for water is required to be pumped to site from external sources (which include the Currais Novos grey water option and ground water sources);**
  - **There is a near net zero demand for external water for the 2Mtpa base case in some scenarios and smaller than expected demand at expanded throughput, and**
- **Maintenance and upgrades of the sewage water facilities at Currais Novos continued to improve water flows to 51.5m^3/hr.**
- **Implications of recent studies and the water flows currently being obtained at Currais Novos indicate that production increases beyond 2Mtpa up to 4Mtpa are feasible without additional water supply risk.**
- **Studies confirmed the importance of the Fine Dyke for water storage and recycling. More geotechnical work and detailed engineering is underway.**

Big River Gold Limited (ASX:BRV) (**Big River** or the **Company**) is pleased to present the results of the Dynamic Water Balance (**DWB**) studies completed by SRK Consulting (**SRK**) and the ongoing water management program to provide water security for the Borborema Gold Project (**BGP** or **Project**) providing the company with a potential to increase the plant throughput from that previously reported to the ASX on 23 December 2019 and 8 July 2020 .

Importantly, the DWB study has established water management plans for the Project that indicates minimal additional external water will be required to support a 2 million tonnes per annum (Mtpa) operation. Extending this model and given the rehabilitation of the Currais Novos sewage facilities is progressing well, water supplies available from Currais Novos are considered sufficient to support the expansion of plant throughput up to approximately 4Mtpa.

The question of water management has also been addressed in conjunction with the DWB in the engineering design currently being undertaken for the Engineering Cost Estimate (**ECE**). This includes assessment of the water filtration from tailings, site wide drainage and water storage and various equipment options that better reduce water loss and increase water re-capture.

Figure 1. View to the south west over the Borborema pit showing the exposed ore zone and infrastructure.

PROCESS WATER & SITE WIDE WATER MANAGEMENT

Dynamic Water Balance

A Dynamic Water Balance study for Borborema completed by SRK identified extended periods when no additional water is required from offsite to support a 2Mtpa operation. Sensitivity analyses of the model demonstrated that in average conditions an occasional peak shortfall of approximately 35m^3/hour of process water may be required to be sourced from offsite to support a 2Mtpa plant. These short term demands occur in under 10% of the modelled climatic conditions based on analysis of the historical data by SRK. This equates approximately to a 1 in 10 year dry year[1], the impact of which could be mitigated by several water conservation options and incorporation of the small Sao Francisco Dam into the Fines Dyke.

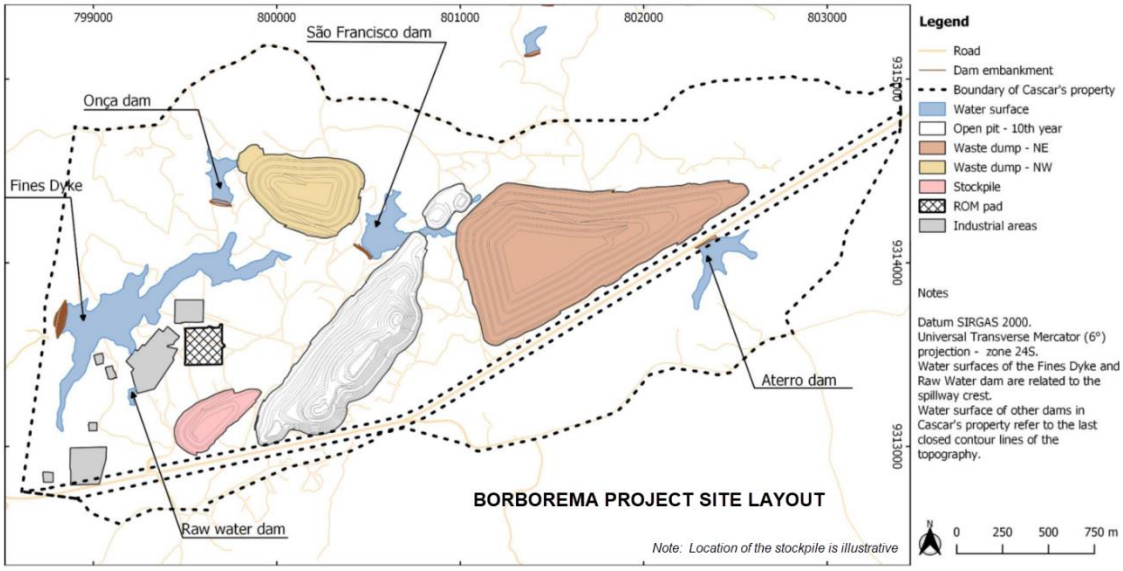

Figure 2. Borborema site layout and water management features (from: "Site-wide water balance for the Borborema Project", SRK (Oct 2021))

[1] A 1% Annual Exceedance Probability (AEP) event.

Seven scenarios and three sub-scenarios were evaluated in SRK's study with details of each provided in Appendix 1 attached to this announcement.

Incorporated into these were the possible water savings to be obtained by employing evaporation control methods of which the most common technique uses floating covers. In Brazil, using PET plastic bottles as floating covers has reduced evaporation by up to 72% with 80% of the dam area covered.

These scenarios established that the most effective way of reducing any site process water deficit (in order of impact) were:

1. Delivery of sewage water from Currais Novos;
2. Implementation of evaporation reduction methods, and
3. Enlargement of the Fines Dyke storage capacity.

Early decommissioning of the Sao Francisco dam would increase storage to the Fines Dyke, reduce overall evaporation and may also lead to increased water flow without increase in the height of the Fines Dyke dam wall.

Water sourced from borefields in the district would also improve site water management and this potential is being investigated.

Those scenarios with the lowest estimated water deficits are summarised in Table 1.

- Scenarios E1 and E2 required less greywater inflow than the baseline scenarios to assure the supply of the water demand even in dry years. Scenario E1 required less sewage compared to scenario E2.

- Scenario F which employed a combination of water management actions (refer Appendix 1) did not need to include the greywater to supply the demand.

Table 1. Comparison of the sewage inflow required from Currais Novos for each scenario

Scenario	Sewage demand adopted[1] (m^3/hr)	Average sewage inflow from Currais Novos[2] (m^3/hr)	Average water déficit during the plant operation (m^3/hr)
A1	55.3	35.2	0.5
B1	55.3	35.2	0.5
C1	55.3	34.8	2.3
E1	15.0	15.0	**0.7**
E2	30.0	27.3	**0.5**
F	0.0	0.0	**0.9**

1. *This column refers to the Raw Water dam demand on the STP Borborema*
2. *This column refers to the average sewage inflow from Currais Novos (note that this value depends on the availability of the stochastic generated sewage)*

Currais Novos sewage water facility

Since assuming management and refurbishment of the assigned sewage pump station, BRV has been progressively repairing and refurbishing the sewage boxes and system, reaching flow rates of 51.5 m^3/hr. BRV will continue to improve the existing infrastructure and plans to add additional pumps and surge tanks

as we work toward achieving the 70m^3/hr flow for which we have agreed with the local water authority, CAERN.

In seeking increased water flow and security the Company is negotiating with CAERN to assume more responsibility for the system while working to increase the water allocation assigned to Borborema. We are also investigating identified bore fields to the north and south which may hold the potential to provide significant water flows with gravity feed to site as an additional risk mitigation.

The results of the SRK study are significant for the Project and BRV.

The Company is confident of not requiring additional water supply from Currais Novos in most years to meet a 2Mtpa production profile. Furthermore, the water flows currently being obtained at Currais Novos not only further de-risk the Project but also identify a water source that could support production expansion up to 4Mtpa.

For and on behalf of the Board.

Andrew Richards
Executive Chairman
Big River Gold Ltd

About Big River Gold

Big River Gold Ltd (ASX:BRV), is a mineral exploration and development company listed on the Australian Securities Exchange. Its major focus is the 2.43M ounce Borborema Gold Project in Brazil; a country the Company believes is underexplored and offers high potential for the discovery of world class mineral deposits.

Borborema Gold Project

Borborema is a project with a resource of 2.43Moz gold, located in the Seridó area of the Borborema province in north-eastern Brazil. It is 100% owned by Big River and consists of three mining leases covering a total area of 29 km2 including freehold title over the main prospect area.

The Project benefits from a favourable taxation regime, existing on-site facilities and excellent infrastructure such as buildings, grid power, water and sealed roads. It is close to major cities and regional centres and the services they can provide.

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.

APPENDIX 1. WATER BALANCE SCENARIOS ANALYSED IN SRK STUDY – CONCLUSIONS & RECOMMENDATIONS

(SRK Report: "*Site-wide water balance for the Borborema Project, Oct 2021")*

Scenario A: the Onça, São Francisco and Aterro dams, as well as the pit, pump water to the Fines Dyke in order to reduce water loss by evaporation and infiltration. The Fines Dyke meets Raw Water dam consumption, which in turn meets the processing plant needs. The Fines Dyke allowance is regulated to 90% of the Fines Dyke Q_{90}%[2].

Scenario B: the same as Scenario A, but it is considered that all the water stored in the dams is available for consumption. The 90% of the Q_{90}% allowance criterion does not apply in this scenario as the allowance is not regulated (it is assumed that there is an internal negotiation with the catchment regulator).

Scenario C: the Onça, São Francisco and Aterro dams pump water directly to Raw Water dam, which in turn meets the consumption requirements of the processing plant. Only the pit's water is pumped to the Fines Dyke. In this scenario it is assumed that no regulatory intervention would be necessary for these structures. The allowance is regulated to 90% of the Fines Dyke Q_{90}%.

Scenario D: same as scenario A, but the São Francisco dam is decommissioned in year -1.

Scenario E1: Same as scenario A, but including inflow from the Caça e Pesca sewage tank and considering a 40% reduction in evaporation losses. Other scenarios that include sewage inflow have also used the same stochastic generation framework.

Scenario E2: Same as scenario A, but including inflow from the Caça e Pesca sewage tank and considering an increase in the Fines Dyke storage capacity (the spillway crest elevation was increased to RL 468 m).

Scenario F: Same as scenario A, but considering a reduction of evaporation losses by 40% and a Fines Dyke with a larger capacity (the spillway crest elevation was increased to RL 468 m).

In scenarios A, B, C, SRK evaluated three additional sub-scenarios:

1. The inflow from the Caça e Pesca sewage tank is now considered (base case - set to 0 m^3/h for evaluation of the system's water deficit).
2. Losses due to evaporation are reduced by 40% (base case - no evaporation reduction was considered for evaluation of the system's water deficit).
3. Increase in the Fines Dyke storage capacity. The spillway crest elevation was increased to RL 468 m. This elevation refers to the last closed contour line of the earthworks model provided to SRK.

Findings:

The water deficit under the evaluated scenarios is compared in this subsection to help discern their results. Figure 1 illustrates the average of the water deficits.

[2] The Q90% refers to Brazilian authority regulations as to the amount of water that can be discharged under Borborema's Environmental licence.

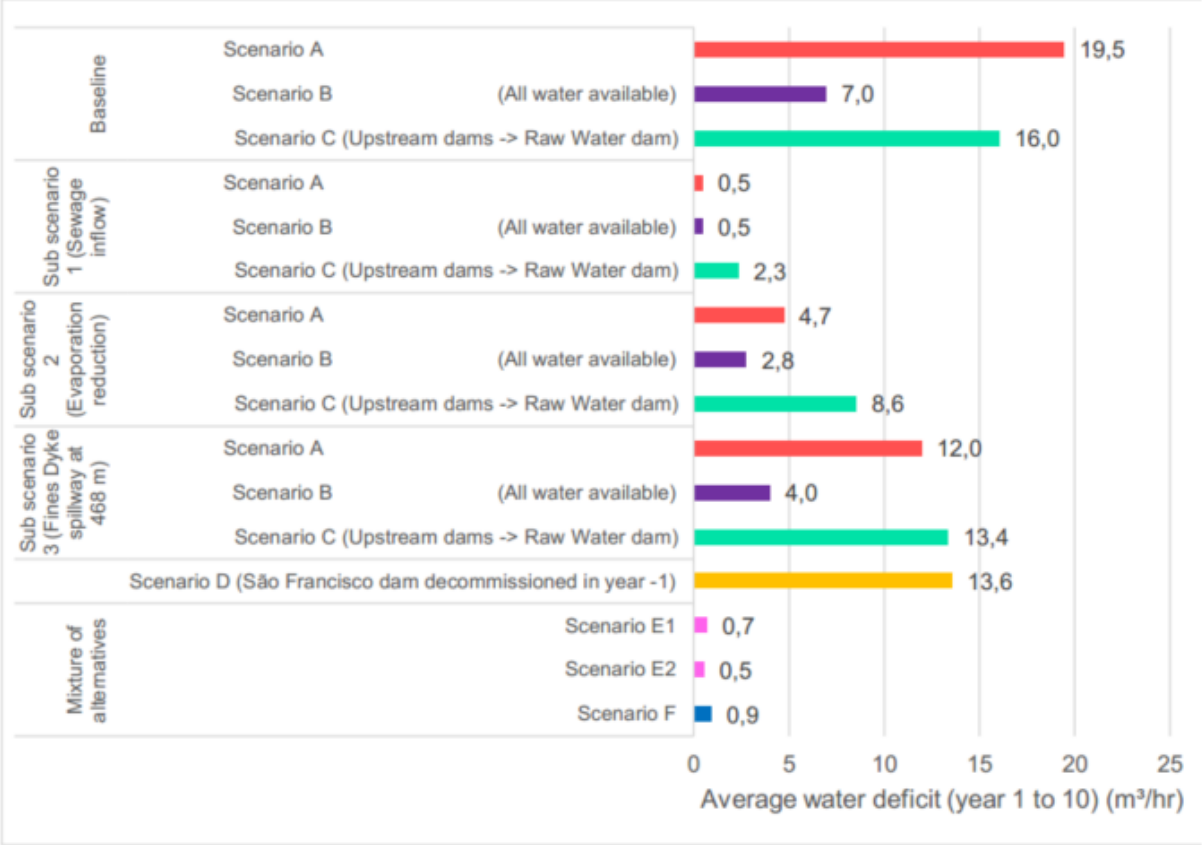

Figure 1. Average water deficit in scenarios and sub scenarios evaluated for the processing plant operation period.

CONCLUSIONS

The following were the main conclusions derived from the analysis of results:

- The Fines Dyke basin is not able to meet the project's water demands without external water sources (eg. sewage water) and/or attenuation techniques to reduce evaporation losses, even when disregarding the need to meet the Q9o% usage restriction.
- The sub-scenarios analysed involving active water management interventions have the potential to significantly reduce the water deficit and de-risk the water supply for the project.
- Among the interventions analysed, the inclusion of inflow from Currais Novos sewage was the most promising alternative for the project.
- The use of evaporation reduction techniques is also expected to considerably optimise water availability for the project.
- The current Q9o% water allowance restriction has a significant effect on the project's water deficit. Any internal negotiation between the client and the regulator to make this restriction more flexible would be beneficial to the project.
- The early decommissioning of the São Francisco dam (Scenario D) compared to the initial assessed date (August 2030) reduced the simulated water deficit.
- In scenarios E1, E2 and F, in which the variations of the base model of Scenario A are combined (i.e. sewage inflow from Currais Novos, reduced evaporation rate and increased storage capacity of the Fines Dike), the water deficit of the project considering the process plant demand of 71 m^3/h (base scenario was 0 m^3/hr (median and 90th percentile of daily water deficit, representing a common year and a dry year, respectively).

- Scenarios E1, E2 and F had a similar performance in terms of water deficit, however, it is noteworthy that scenario E2 required a higher sewage inflow compared to scenario E1 in order to not have water deficit in dry years (90th percentile).
- **Due to the similar performance between the scenarios, in terms of water deficit, scenarios E1 and E2 (which involve less variables and therefore are less complex) become more attractive than Scenario F.**
- **In summary, the scenarios that include sewage inflow (A1, B1, E1, E2) and scenario F were those with smaller water deficits.**

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Additional recommendations.

The recommendations from this study are:

- Only the scenarios with sewage input from the Caça e Pesca sewage tank were analysed, as there is potentially less water available (more conservative scenario).
- The seepage losses adopted in the reservoirs of the dams already built is a source of uncertainty in the project that may be leading to bias in the infiltration losses. Updating the adopted permeability values based on field tests to improve this gap in the model is recommended.
- Many inputs in this study were obtained from the definitive feasibility study (DFS) (GE21,2019). Updating the DFS inputs that undergo changes for future evaluations is recommended.
- In the current configuration of the processing plant, the Fines Dyke receives water that had contact with mining areas and the tailings disposed in a co-disposal facility (tailings and waste rock). The Fines Dyke overflow is therefore a subject that requires attention in terms of quality of the discharged water.
- The rainfall-runoff transformation of this project was focused on minimising the bias in annual volume generated rather than representing peak flows due to flood events. Therefore, use of the developed model for the design of hydraulic structures is not recommended.
- Calibration of the Australian Water Balance Model (AWBM) with meteorological information from the project site is recommended.