

# **Crusader Re-ignites Borborema Gold**

## Highlights

- Crusader has completed an internal optimisation review into a 2Mtpa development for Stage 1 of the Borborema Gold Project. The previous draft BFS work was based on 4.2Mtpa.
- **Economics** are positive and, as a result, further work towards a new Feasibility Study has begun (including revising the existing Ore Reserve estimate).
- This review was completed using factored costs from previously unfinished feasibility work (draft BFS), updated consumable prices, a lower US\$ gold price (\$1,150/oz) and a higher BRL:USD exchange rate (4:1).
- Borborema has a Proven and Probable Ore Reserves of 42Mt @ 1.18g/t for 1.6Moz. This estimate was made in 2012 and includes the two main lenses of mineralisation. The optimisation of Borborema Stage 1 plans to exploit the upper lens only, which includes ore of approximately 20Mt at a strip ratio of approximately 3.5:1 (t:t). This pit-size optimises the resource at current prices, minimises waste movement, reduces capital and operational costs and does not sterilise the future development of the deeper lens (Stage 2).
- The Stage 1 Project footprint has been adapted to respect the existing highway and powerlinesremoving the requirement and cost to move. All direct project impacts (waste storage, pit, infrastructure etc.) have been restricted to Company owned land.
- Recent testwork on the filtration of tailings has confirmed that low moisture content in the filter cake is possible, increasing the recycling of the water in the project and allowing dry stacking of tailings to be considered. This has the important additional benefits of removing the planned tailings dam, simplifying the overall operation, reducing capital costs with minimal impact on operational costs.
- Additional metallurgical samples (~6 tonnes) are being shipped to an independent lab in Australia for testwork to confirm the processing flowsheet and investigate various mining and processing potential cost saving opportunities. This work will be a vital part of a renewed feasibility study.
- Borborema is 100% owned by Crusader and has various additional fiscal benefits available, including an income-tax reduction scheme where income tax can be reduced by 75% for the first 10 years of the operation (overall project tax rate is assumed to be 15.25%). A 1% government royalty on gold production remains in place.

Crusader's 100% owned Borborema Gold Project, located in the northeast of Brazil, is favoured by excellent logistics and an extensive database of completed work. Previously mined as a heap leach in the 1980's (Brazil's first such project), Crusader has completed sufficient work to delineate a JORC compliant (JORC 2004) mineral resource estimate of 68.6Mt @ 1.10g/t Au for 2.43Moz contained gold, including Proven and Probable reserves of 42Mt @ 1.20 g/t for 1.6Moz.



This Project review builds on the work completed over the past years, including internally generated reports and studies as well as the incomplete Feasibility study, which was suspended in 2013 when falling gold prices rendered the study financials obsolete. This review considers a project which could be expanded to include more of the project in the future and has been completed internally by Crusader personnel with assistance from various independent consultants.

"Borborema has long been a significant asset for Crusader and it is with great pleasure that we can update shareholders with a new concept for its development. By simplifying the project and changing the footprint, the environmental and social impact is minimised and the path to its potential development is clear" stated Rob Smakman, Managing Director of Crusader.

"The global markets have changed as well- in favour of gold developers and miners- much the same as what has happened to gold producers in Australia through 2015. We firmly believe that this stage 1 project plan gives Borborema the best pathway into production."

The changes in scope for Borborema include the following project specific areas:

- The review considers a 2Mtpa throughput rate, which mines the upper lens only (pit depth of ~ 180m). This rate optimises the resource at current prices, minimises waste movement, reduces capital and operational costs and does not sterilise the future development of the deeper reserves.
- The open-pit optimisation project footprint has been restricted to respect the BR 226 highway, the existing high voltage power lines and the current Crusader owned farmland. These restrictions indicate that neither the highway nor the powerlines will need to be moved and additional farms will not need to be purchased. This has important capital cost savings as well facilitating the ongoing licensing of the project.
- Tailings testwork has indicated that dry stacking is a viable option and in an attempt to recycle additional water, which is a critical part of the Borborema Project, dry stacking is being considered. No tailings dam will therefore need to be constructed, saving initial and sustaining capital as well facilitating the licensing process. This has minimal operational cost impact.
- Specific economic factors have been updated including the USD gold price, BRL:USD exchange rate, summarised in the table below

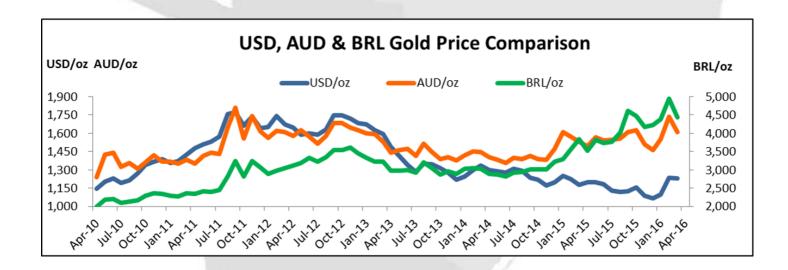
Some modifications to the processing flowsheet have been assumed and will need to be confirmed with additional testwork currently underway. As such, Crusader has dispatched approximately 6 tonnes of drill sample to Australia for additional metallurgical and comminution testwork. This program is designed to define the process flowsheet to a feasibility level and will include some of the opportunities considered in the review. Results for this work are expected over coming months with the aim of defining a definitive flowsheet which will lead to a new feasibility study.



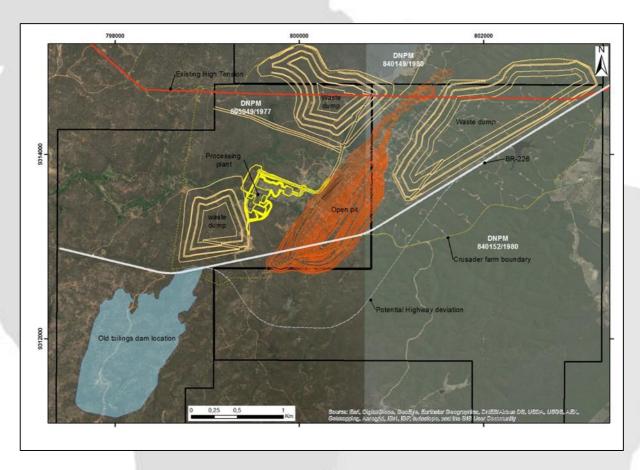


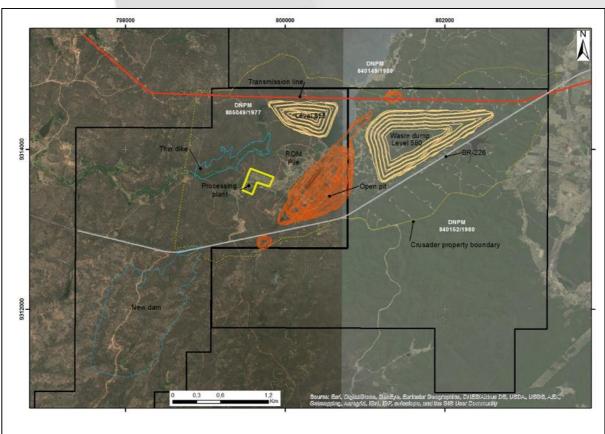
Borborema Project Optimisation Inputs	2016 compared to 2013
Gold price US\$ /oz	Approximately 11% less than in 2013
Government royalty on revenue	No change
Discount rate	Approximate 60% increase
Mining recovery	No change
Overall Pit slopes	No change
Mill throughput rate	2Mtpa (half of 2013)
Average processing recovery	No material change
Average mining cost US\$/t mined	No material change
Average mill throughput cost US\$/t milled	Approximate 10% increase

The Borborema Gold Project's economics continue to benefit from the current strength in the Brazilian Real gold price.











## For further information, please contact:

Mr. Rob Smakman

**Managing Director, Brazil** 

Office (Brazil): +55 31 2515 0740

Email: rob@crusaderdobrasil.com

Mr. Paul Stephen

**Executive Director, Australia** 

Office (Aus): +61 8 9320 7500

Email: paul@crusaderresources.com

Mr. David Tasker

**National Director, Investor Relations** 

**Professional Public Relations** 

Tel: +61 433 112 936

Email: David.tasker@ppr.com.au

#### **About Crusader**

Crusader Resources Limited (ASX:CAS) is a minerals exploration and mining company listed on the Australian Securities Exchange. Its major focus is Brazil; a country Crusader believes is vastly underexplored and which offers high potential for the discovery of world class mineral deposits. Crusader has three key assets:

#### Posse Iron Ore

The Posse Iron Ore Mine is located 30km from Belo Horizonte, a city acknowledged as the mining capital of Brazil and the capital of Minas Gerais state. The project had an indicated and inferred Mineral Resource estimate of 36Mt @ 43.5% Fe when mining began in March 2013. Posse is currently selling DSO into the domestic market. With an experienced mining workforce amongst a population of over 2.5 million people, the infrastructure and access to the domestic steel market around the Posse Project is excellent.

#### Borborema Gold

The Borborema Gold Project is in the Seridó area of the Borborema province in north-eastern Brazil. It is 100% owned by Crusader and consists of three mining leases covering a total area of 29 km² including freehold title over the main prospect area.

The Borborema Gold Project benefits from a favourable taxation regime, existing on-site facilities and excellent infrastructure such as buildings, grid power, water, sealed roads and is close to major cities and regional centres. The project's Ore Reserve includes Proven and Probable Ore Reserves of 1.61Moz of mineable gold from 42.4Mt @ 1.18g/t (0.4 & 0.5g/t cut-offs for oxide & fresh).

The measured, indicated and inferred Mineral Resource Estimate of 2.43Moz @ 1.10 g/t gold, remains open in all directions.

#### Juruena Gold

The Juruena Gold Project is located in the highly prospective Juruena-Alta Floresta Gold Belt, which stretches east-west for >400km and has historically produced more than 7Moz of gold from 40 known gold deposits.

The Juruena Project has been worked extensively by artisanal miners (garimpeiros) since the 1980s, producing ~500koz in that time. Historically there is a database of more than 30,000 meters of drilling and extensive geological data.

### Manga Lithium

The Manga Li Project (previously explored for tin and indium) is located in the NE of Goias state, Central Brazil. Crusader first applied for the ground when exploring for tin, indium and gold mineralisation in the region during 2007 and later mapped, soil sampled, rock chipped and drilled 15 reverse circulation holes for 1,001m. Manga forms part of the Third Element Metals a joint venture between Crusader and Lepidico Ltd, owner of the L-Max lithium mica treatment technology.

## **Competent Person Statement**

The information in this report that relates to the Manga Li project exploration results, Juruena Gold Project exploration results, Posse Iron Ore Project exploration results and Borborema Gold Project exploration results released after 1 December 2013, is based on information compiled or reviewed by Mr. Robert Smakman who is a full time employee of the company and is a Fellow of the Australasian Institute of Mining and Metallurgy. The information in this report that relates to Mineral Resources at the Juruena Gold Project is based on information compiled or reviewed by Mr. Lauritz Barnes and Mr. Aidan Platel who are independent consultants to the company and Members of the Australasian Institute of Mining and Metallurgy. Each of Mr. Smakman, Mr. Barnes and Mr. Platel have sufficient experience that is relevant to the type of mineralisation and type of deposits under consideration to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr. Smakman, Mr. Barnes and Mr. Platel consent to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The information in this report that relates to:

- a) Borborema Gold Project and Posse Iron Ore Project Exploration Results released prior to 1 December 2013 is based on information compiled or reviewed by Mr. Robert Smakman who is a full time employee of the company;
- b) Borborema Gold Mineral Resources is based on information compiled by Mr. Lauritz Barnes and Mr. Brett Gossage, independent consultants to the company;
- c) Borborema Gold Ore Reserves is based on information compiled by Mr. Linton Kirk, independent consultant to the company;
- d) Posse Fe Mineral Resources is based on and accurately reflects, information compiled by Mr. Bernardo Viana who was a full time employee of Coffey Mining Pty Ltd,

and who are all Members of the Australasian Institute of Mining and Metallurgy (Rob Smakman and Linton Kirk being Fellows), and who all have sufficient experience that is relevant to the type of mineralisation and type of deposit under consideration, and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2004 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Each of Mr. Smakman, Mr. Barnes, Mr. Kirk, Mr. Viana, and Mr. Gossage consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.

The information was prepared and disclosed under the JORC Code 2004. It has not been updated since to comply with JORC Code 2012 on the basis that the information has not materially changed since it was last reported.