crusader

ASX RELEASE 28 April 2017

Quarterly Activities Report March 2017

Highlights

Borborema Gold Project

- Key licence (LP or Licença Previa) received post quarter end from the State Government Environmental Authority- IDEMA
- Metallurgical test work and evaluation progressed

Juruena Gold Project

- Preliminary Economic Assessment (PEA) work is substantially complete including optimisation work considering both open-pit and underground development options. The PEA is based on the updated JORC compliant mineral resource estimate which was updated in December 2016
    - PEA based on the Querosene and Dona Maria deposits which include Resources;

Prospect Name	Resource Category	Lower cut-off applied	Metric Tonnes	Resource Gold Grade (g/t)	Ounces of Gold
Dona Maria	Indicated	2.5gt cutoff	67,800	13.7	29,800
	Inferred		148,500	12.2	58,200
	sub-total		**216,300**	**12.7**	**88,000**
Querosene	Indicated	2.5gt cutoff	31,200	28.4	28,500
	Inferred		188,700	14.7	89,300
	sub-total		**219,900**	**16.7**	**117,800**
Total Indicated			**99,000**	**18.3**	**58,300**
Total Inferred			337,200	13.6	147,500
Total Resources considered in PEA			**436,200**	**14.7**	**205,800**

- Additional and more extensive metallurgical test results received- all positive and confirming previous assumptions. Results include;
    - Metallurgical test results;
        - Gravity separation completed on various size fractions and grades. Recoveries of 20% and 40% adopted for Querosene and Dona Maria flowsheets respectively (pre-leaching)
        - Carbon-in-Leach (CIL) and Carbon-in-Pulp (CIP) trade-off completed- all results indicate +90% recoveries. CIP adopted for PEA (combined results after gravity)

Leach Style	Querosene	Dona Maria
CIP	91.5%	90.9%
CIL	92.8%	89.8%

- Trade-off between flotation and leaching also completed. Flotation rejected despite achieving overall recoveries ~90% for both deposits. The variation in results (mass pull and overall recoveries) were the reason why CIP was preferred

o Comminution test results;

- Work index results for Querosene and Dona Maria, 18.8 and 21.3 kWh/t respectively
- Abrasion index for composite sample from Querosene and Dona Maria, 0.434- considered medium-high
- Sedimentation, cyanide neutralisation, filtration and tests to minimise the tailings grades were also completed with favourable results

Commenting on the quarterly results, Managing Director Rob Smakman said:

"Work continued through the first quarter of 2017 on all our projects, with efforts focussed on getting the PEA completed at Juruena, the Borborema Environmental Licence approval and maintaining profitability at Posse. Crusader remains committed to becoming a significant gold producer in Brazil and the positive advances made during the quarter will soon reflect that goal."

Juruena Gold Project – Mato Grosso State, Brazil (100% Crusader)

Development Update Juruena Project

During the quarter, Crusader and independent mining consultant, Global Resource Engineering (GRE) substantially completed a PEA for the development of the project. The PEA is based on the updated JORC compliant mineral resource estimate for the project which was updated in December 2016 (see Table 1).

Prospect Name	Resource Category	Lower cut-off applied	Metric Tonnes	Resource Gold Grade (g/t)	Ounces of Gold
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	sub-total		**219,900**	**16.7**	**117,800**
Total Indicated			**99,000**	**18.3**	**58,300**
Total Inferred			**337,200**	**13.6**	**147,500**
Total high grade ounces			**436,200**	**14.7**	**205,800**
Crentes	Inferred	1.0gt cutoff	846,450	2.0	55,100
Total Combined			**1,282,650**	**6.3**	**260,900**

Table 1: JORC (2012) compliant Mineral Resource estimate for Juruena Project, December 2016.

Note: Appropriate rounding applied. Table includes updated mineral resource estimates for Querosene and Dona Maria, Crentes remains the same as per the 2015 resource estimate. For further information, please see the section at the end of this report: Summary of Resource Estimate and Reporting Criteria.

Open-pit and underground development scenarios were considered in the PEA as well as a standalone Carbon-in-Leach (CIL) processing plant. Results of the PEA will be released in the current quarter.

The preparation of the PEA included several trade-off studies into the underground mining method, the inclusion and depth of open pits at both of the target deposits as well the processing route. The cut and fill underground mining method was decided in 2016 (and checked with the new mining model generated in late 2016), however the inclusion of the open pits (and their size) at Querosene and Dona Maria required the updated mineral resource estimate which was completed in late 2016.

Inclusion of small or starter open pits at both Querosene and Dona Maria is considered 'more positive' economically as more of the resource is included, there is no requirement for a dedicated box cut and the amount of underground development to access the ore zones is significantly reduced. This option is also achievable despite the majority of the ore blocks in the planned open pits being in the Inferred category.

Additional metallurgical samples were collected from the drilling performed in 2016 and submitted to the lab in early 2016. These samples were collected to gain additional confidence in the process flowsheet chosen, as well as to investigate various trade-off studies in order to optimise processing.

These results included both comminution testing and metallurgical tests. The results are summarised below.

Comminution testing

- Composite samples from both Querosene and Dona Maria were submitted to an independent laboratory to estimate the Work Index ('WI' is an estimate of the grinding power required to 'mill' the ore). The results of the WI tests were as expected with Dona Maria 21.3 kWh/t slightly higher than Querosene at 18.8 kWh/t. Previously, Crusader had estimated 22 kWh/t for the WI.
- A single sample was composited from both deposits and submitted to separate lab for abrasion testing. This test assists in the estimation of wear materials during the processing of the ore. The abrasion test returned a medium-high value of 0.434 (vs estimate of 0.5)
- Sedimentation tests were also conducted to understand the pulp characteristics. The tests were conducted on the finest potential grind size (74um) and results returned easy and fast sedimentation properties
- Cyanide neutralisation tests were performed on pulp derived from the leaching process and the INCO process was chosen for the neutralisation process. The tests were successful in reducing the free cyanide to 1mg/l in a short period
- Filtration tests were performed on the pulps derived from the leaching process and a moisture content of 17.6% was achieved from testing. This is considered a low moisture content and suitable for 'dry stacking' of tailings

Metallurgical testing

- A total of 11 samples (5 from Dona Maria and 6 from Querosene) were selected from the target deposits (mainly from drill core). These samples considered rock type, sample location (northing and easting) as well as depth. The grade of these samples was also carefully considered and divided into low (<8g/t) medium, (>8, < 16 g/t) and high (> 16g/t). This careful sample collection ensures that the samples are representative of the deposits
- Gravity separation was performed on the samples and the results confirm the ore is very nuggety, with results, both mass pull and overall gold recoveries, varying greatly. Samples were tested on a Knelson concentrator using a number of grind sizes between 125 and 74 um. Average recoveries were 18% for

Querosene and 38% for Dona Maria. These results indicate that gravity as a standalone processing route is not an option, however as an initial step in the flow sheet, it will form an important part of the processing route

- Leach tests were performed on the gravity sample rejects of most of the individual samples as well as blended varieties of the samples. Tests were performed on grind sizes between 74, 106 and 125um. The results were relatively consistent across the suite, with the lowest overall recoveries returned from the highest grade sample (a sample with a head grade of 1,668g/t was tested- both at 106 and 75 um, with a recovery of ~69-76% achieved[1]). The overall recovery chosen for the PEA was 90% at a grind size of 106um, based on the overall results
- A trade-off study between Carbon-in-Leach (CIL) vs Carbon-in-Pulp (CIP) was completed on blended ores from the two deposits. Results indicate that the simpler CIL route (see table below), would achieve similar recoveries and given the potential lower capital and operating costs, it has been chosen as the preferred processing route.

Leach Style	Querosene				Dona Maria			
Grind size	125um	106um	74um	Average	125um	106um	74um	Average
CIP	91.9%	92.4%	91.1%	**91.5%**	92.8%	90.2%	89.7%	**90.9%**
CIL	92.1%	93.1%	93.2%	**92.8%**	89.7%	90.3%	89.5%	**89.8%**

Table 2. Trade-off- CIP vs CIL for various grind sizes, Querosene and Dona Maria deposits, Juruena Gold Project.

- A trade-off study on flotation versus leaching was also investigated on blended ores from the two deposits. Both samples used a variety of grind sizes and various flotation chemicals (and concentrations) in the testing. Results were very encouraging with Dona Maria achieving slightly better results;
    - Dona Maria flotation results, 5.2- 11.4% mass pull and 88.2- 94.4% overall recovery
    - Querosene flotation results, 6.3- 14.8% mass pull and 81.6-91.1% overall recovery

It was decided against using flotation as an option for the process flow sheet, with the simplicity of the leaching circuit preferred. Flotation can be more complex to manage, especially when you have multiple ore sources.

Borborema Gold Project, Rio Grande do Norte, Brazil (100% Crusader)

Work during the quarter for the Borborema Gold Project was focussed mainly on achieving the key environmental permit (Licença Previa or 'LP'). This critical milestone was achieved post quarter end and involved many meetings with various government departments over the past few months.

The LP essentially approves the Environmental and Social Impact Assessment Report for Borborema and follows submission of an updated project plan to the environmental authorities in 2016, which was developed in conjunction with IDEMA (the State Environmental Agency). The updated project plan proposed a reduced project footprint, dry stacked tailings and restricts project infrastructure to Crusader's owned farm area (see Figure 1 below and ASX releases 16 May 2016 and 20 July 2016).

[1] This low recovery is as a result of the high gold grades in the tail of the sample, indicating incomplete dissolution of the gold in solution. High grades will need to be monitored in the plant and attention paid to the gravity and leaching conditions to ensure high grader tails are eliminated.

With this key licence now received, Crusader will work to fulfil the standard conditions of the LP, which have largely already been achieved and include more detailed mitigation plans for the environmental social impacts. On submission of the required reports and subject to approval by IDEMA, the final step of an "Installation Licence" (Licença de Instalação or LI) will be issued. It is envisaged this will occur in 2017. The LI will allow project construction to commence.

Throughout the licensing process, Crusader has formed strong connections with the authorities in Rio Grande do Norte state and is confident that support for the project is strong (see Figures 2-5 below). Crusader is currently negotiating a joint 'letter of commitment' with the Rio Grande do Norte State Government which is aimed at formalising their support for the project development and could lead to economic benefits through additional tax incentives and/or tariff reductions.

The metallurgical testwork program that is underway at independent lab ALS in Perth has largely been put on hold during the quarter, with the focus of the project on the environmental licensing. Work completed focussed on the mineralogy of the ore zones with multi-element ICP scans completed on the composite samples. Microscopy investigation into the mineralogy was commenced, with particular attention paid to the gold deportment within the biotite minerals (see Figure 6).

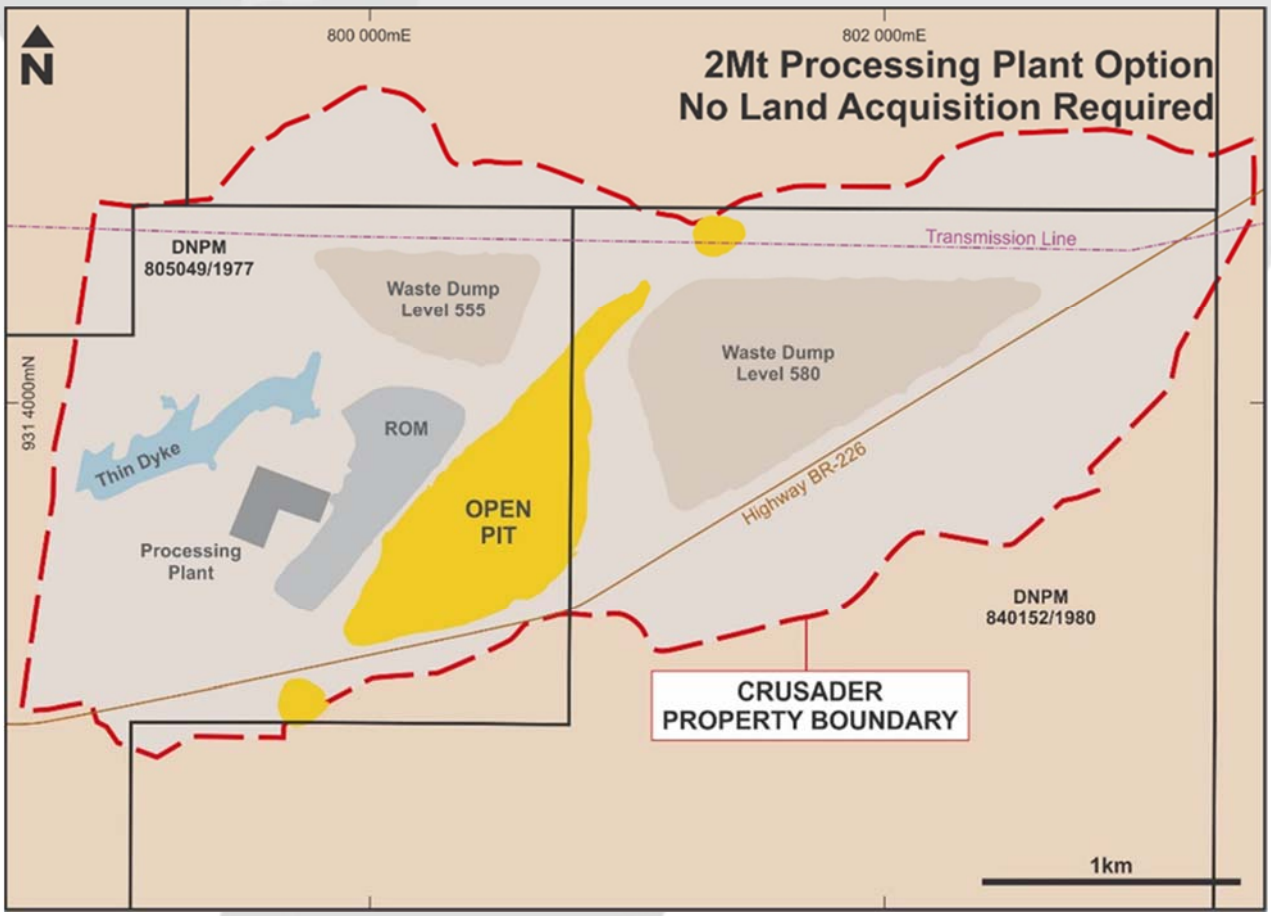

Figure 1: Modified general design for Borborema. The LP covers all the tenements in the diagram (805.049/1977, 840.152/1980 and 840.149/1980). All three areas will now be consolidated (grouped) by the Federal Mines department (DNPM)

Figure 2: IDEMA General Director, Rondinelle Oliveira hands over the LP to Crusader's RN representative- Jucieny Barros (source; idemarn; Instagram).

Figure 3: Meeting with representatives of Progel, IDEMA, the State Public Ministry, CAERN (State Water Authority) and Crusader in early 2017 (source;. idemarn; Instagram)

Figure 4: Crusader Managing Director, Rob Smakman (rhs), overlooking the Borborema Gold Project with the Mayor of Currais Novos, Odon Junior (centre) and Vice-Mayor Anderson Alves (rhs) (source; prefeituracurrais novos) Prefeituracurraisnovos) Instagram)

Figure 5: Technical visit from IDEMA to inspect the Borborema Gold Project, June 2016 (source idemarn instagram)

Figure 6. Microscope image of ore from the Borborema Gold Project. the dark Brown mineral is biotite and the clear mineral is quartz. Scale is 5mm on the RHS.

Posse Iron Ore Mine – Minas Gerais, Brazil (100% Crusader)

Crusader is committed to focus on its gold assets and at 31 December 2016 wrote off the value of the Posse Project. The Company is actively engaged with several parties looking for a beneficial way to realise value for Posse. Nevertheless, Crusader believes that there is significant value left at Posse with the large (~760kt) stockpile of fines on site and significant in-situ fines resources able to be beneficiated through a wet-treatment facility (Posse is currently a dry treatment facility).

During the quarter the Posse mine was close to cash-flow neutral, despite several weather events which adversely affected production. These weather events included two heavy rainfall events which temporarily flooded the open pit, restricting production for those days (mining faces were shifted to dry areas whilst the pumps emptied the water, see Figure 8 & 9 below).

There was also a plant shut down in January for three days when lightning struck the plant, destroying parts of the electrical control system (including the weighbridge). Receipts from iron ore product sales totaled $1.1M and operating payments were $1.2M.

Average production costs increased to $16.50/t compared to $14.87/t for the December 2016 quarter (see Figure 7 below). The main driver of the increase in production costs was the reduction in production for the quarter.

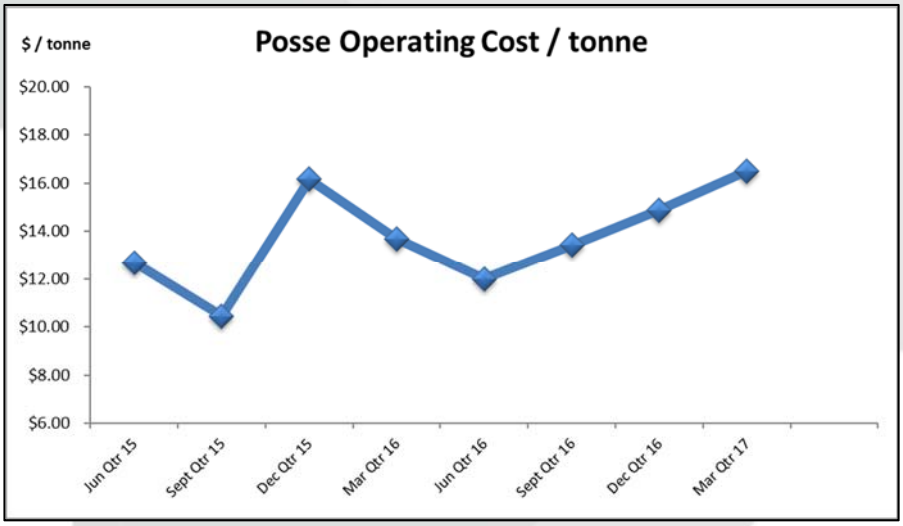

Figure 7: Operating costs at Posse Iron Ore Mine, Brazil

Figure 8: Rainfall was heavy in the first quarter of 2017- note the water in the bottom of Posse pit.

Figure 9: Rainfall assisted in the re-planting efforts on a portion of the Posse waste dump.

Corporate

Crusader attended the PDAC (Prospectors and Developers Association of Canada) conference in March and received significant interest in respect to its Juruena and Borborema gold projects.

As a result, a number of funding opportunities have been presented to the Company and one or more of these may provide a competitive development path going forward.

During the quarter, as announced on 31 March 2017, the Company executed a convertible loan agreement with the Copulos Group.

Health & Safety

There were no lost time accidents recorded at any of the Company's projects during the quarter.

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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:

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.

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 @ 1.10g/t gold, remains open in all directions.

Competent Person Statement
The information in this report that relates to 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 his 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. Brett 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.