

# crusader

# CAS

### Juruena Gold Project – Path to Production

ASX:CAS

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#### **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 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 is 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 Lauritz 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. This 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..

### A Brazilian Mining Company



Utilising strong local relationships to acquire and develop mineral assets in Brazil. Cash flow from Posse Iron, exciting gold potential, now with Lithium!



#### Juruena Gold Project (CAS 100%)

- Current Resources -178koz @ 12.1 g/t Au
- ↗ New Resource estimate pending
- Scoping Study Q4 2014
- Exceptional high-grade gold results

#### **Borborema Gold Project (CAS 100%)**

- Resource 2.43Moz Au
- **⊅** BFS pending

#### Posse Iron Ore Mine (CAS 100%)

- ↗ Unique high-value product
- Domestic sales to local Brazilian market

#### Crusader Lithium- Manga (CAS 50%)

- **7** Results from Rock chips to 1.3% Li<sub>2</sub>O
- JV with Lepidico and their L-Max extraction technology

### **Corporate Overview**



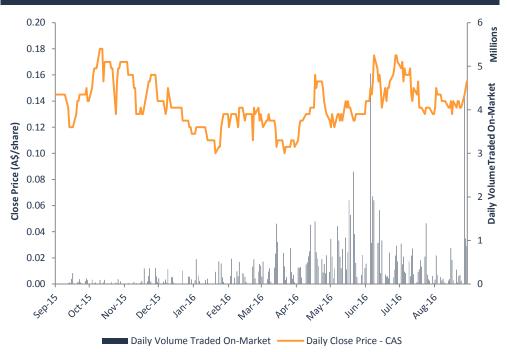
#### ASX: CAS

| Total Ordinary Shares on Issue         | 238.1m |
|--|--------|
| Options on issue <sup>1</sup>          | 49.4m  |
| Cash (as at 30 June 2016) <sup>2</sup> | \$2.1m |
| Debt (as at 30 June 2016) <sup>3</sup> | US\$3m |
| Market Capitalisation (at 16.5cps)     | A\$39m |

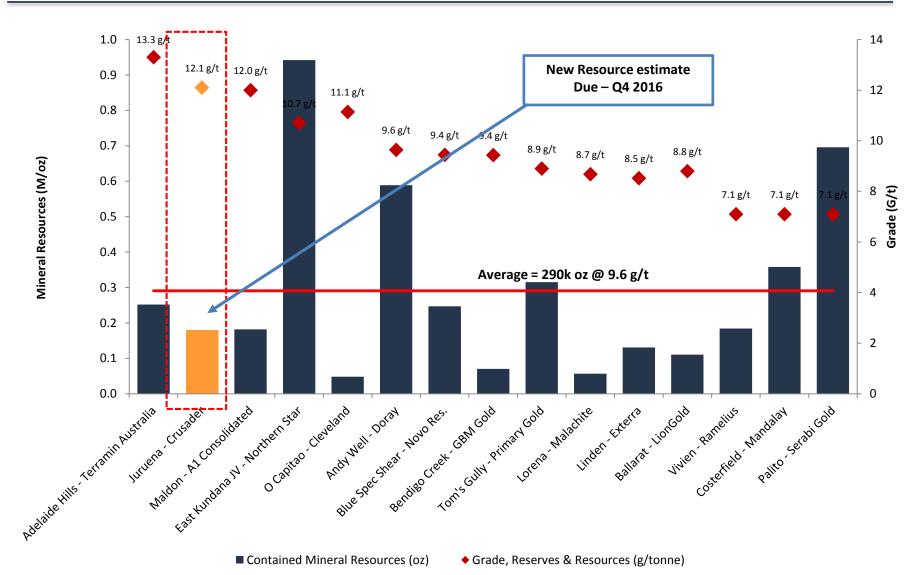
- 1. Volume weighted exercise price of 32.1cps
- 2. Includes restricted cash of \$0.5m
- 3. Debt facility with Macquarie Bank repayable before 31 December 2016

| Shareholders                     |        |
|----------------------------------|--------|
| Stephen Copulos                  | 23.77% |
| Farjoy Pty Ltd                   | 10.26% |
| International Finance Corp (IFC) | 5.79%  |
| Other directors                  | ~2.5%  |

#### Share Trading Data



### Peer Group – Brazil & Aust. – Grade > 7g/t



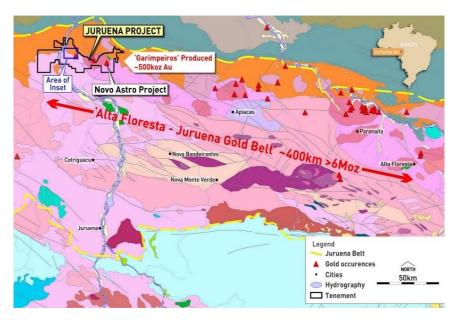
### Juruena – Jewel of the Alta Floresta Gold Belt crusader

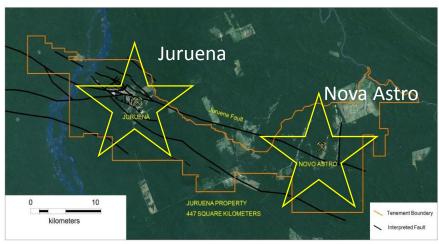
#### Iccation - Alta Floresta Gold Belt - Central Brazil

- Extensive granite/felsic volcanic belt stretching ~400km east-west with multiple intrusive & extrusive events identified
- 7Moz produced 1979-1997 from 40 documented gold discoveries (DNPM)
- CAS controls 100% of 2 key areas- >500koz produced!
  - Juruena closest to production
  - 20,000 strong garimpeiro workforce -1980s
  - Only 4 of initial 16 targets tested 178koz @ 12 g/t

### Novo Astro – Garimpeiros (artisanal) mining centre

- 5km wide circular soil anomaly potentially multimillion-ounce intrusion related gold deposit
- Rock chips 264 g/t Au and 101.7 g/t Au
- Alluvial gold mining active ~ 40 years by local Brazilian garimpeiros. (Ongoing today)
- Comparisons to + 10Moz targets





### **Juruena Project Evolution**



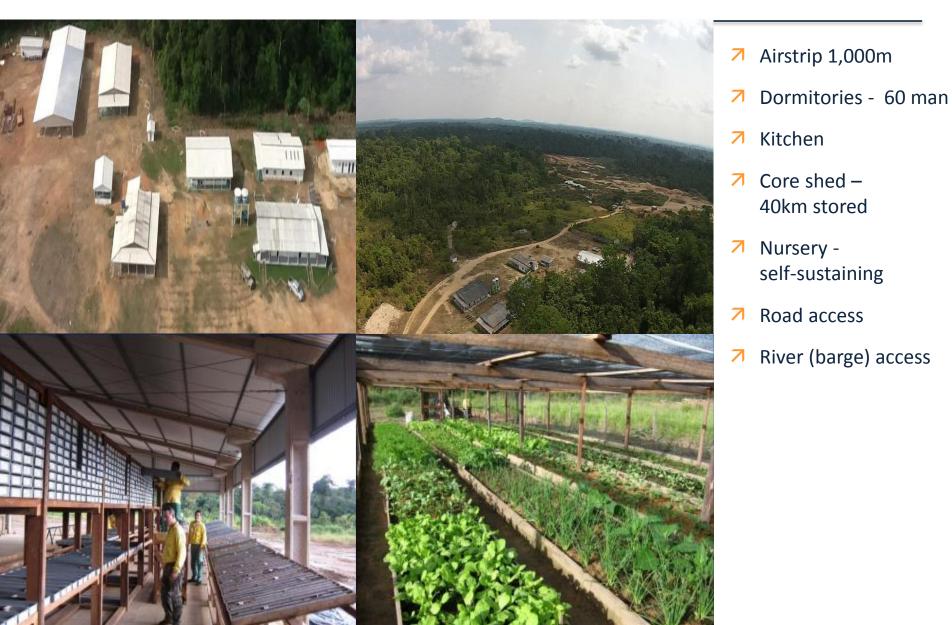
#### History

- Estimated 500koz produced from shallow garimpo workings (limited to depth of 15m)
- 7 1994 1998: Systematically explored by Madison JV
  - Diamond drilling 15,822m in 91 holes Aeromag 10,600 line km, broad spaced
- 2006: Acquisition of licences by Talon and GEOMIN No Modern Exploration
- 2009 2014: Lago Dourado (TSX(V)) JV formed and purchased Juruena, exploration between 2009 -2013
  - Soils 11, 499 samples Rock chip 802 samples;
    Auger drilling 3,458m for 423 holes
  - RC drilling 6,618m in 90 holes Diamond Drilling –
    22,018m in 70 holes (Total pre CAS 44,458m)
  - Geophysics: Aeromag 2,600 line km, tight spaced, Gradient IP
  - >USD\$25M spent pre-Crusader

- **2014:** Crusader acquires 100%
- **2014 2015:** 10,000m diamond and RC drilling
  - RC drilling 7,749m; Diamond drilling 1,863m;
    Auger drilling 995m for 111 holes
  - Metallurgical testwork Querosene & Dona Maria:
    > 90% for gold and silver using standard leaching
- 2015: Maiden JORC Resource estimate calculated for 3 key prospects totaling 1.3Mt @ 5.6g/t for 234koz Au
  - Querosene:
    263,500t at 12.3 g/t for 104,100oz Au
  - Dona Maria: 196,300t @ 11.8 g/t for 74,700oz Au
  - Crentes: 846,450t @ 2.0 g/t for 55,100oz Au
- **7** 2016:
- Infill drilling program Q3/Q4
- Resources upgrade Q4
- Scoping Study Q4

### Infrastructure

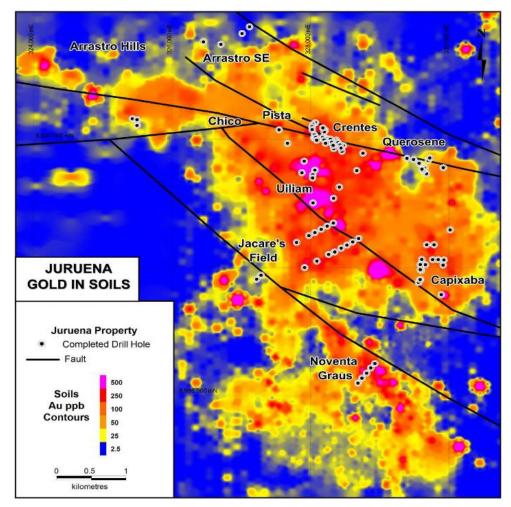




### Juruena- Gold District

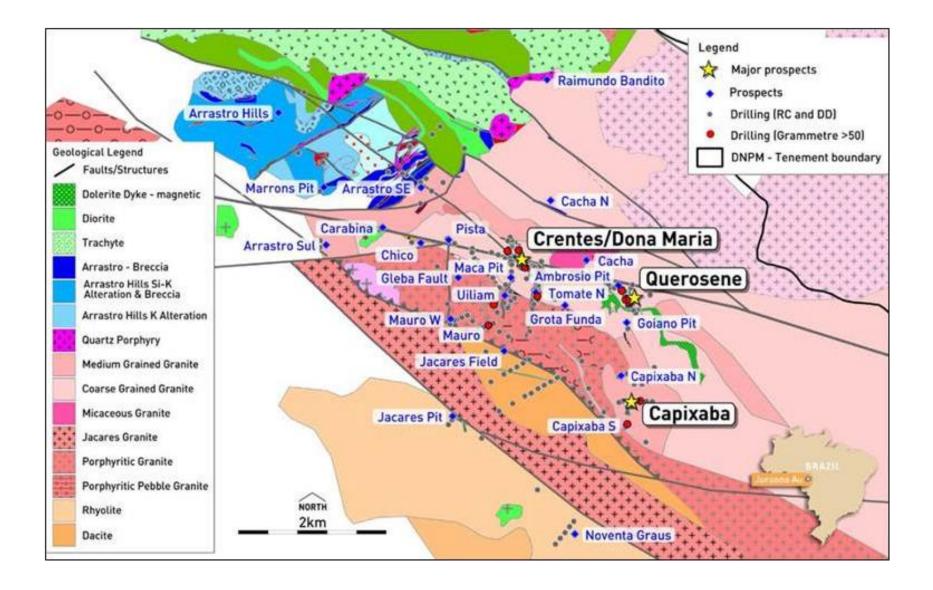


- Near-surface, high-grade gold mineralisation identified at Querosene, Dona Maria, Tomate and others
- Juruena gold soil anomaly is 'giant', >8km long & 4km wide >50ppb
  - Footprint size suggests district of gold projects- Crusader Systematically testing each area
  - Multi-element geochemistry completed on sampling, refined targeting using Cu, Ag, Bi, Mo, Fe trace elements
- Structurally controlled regional mapping identified multiple untested controlling structures (e.g. Uiliam, Mauro, Tomate)

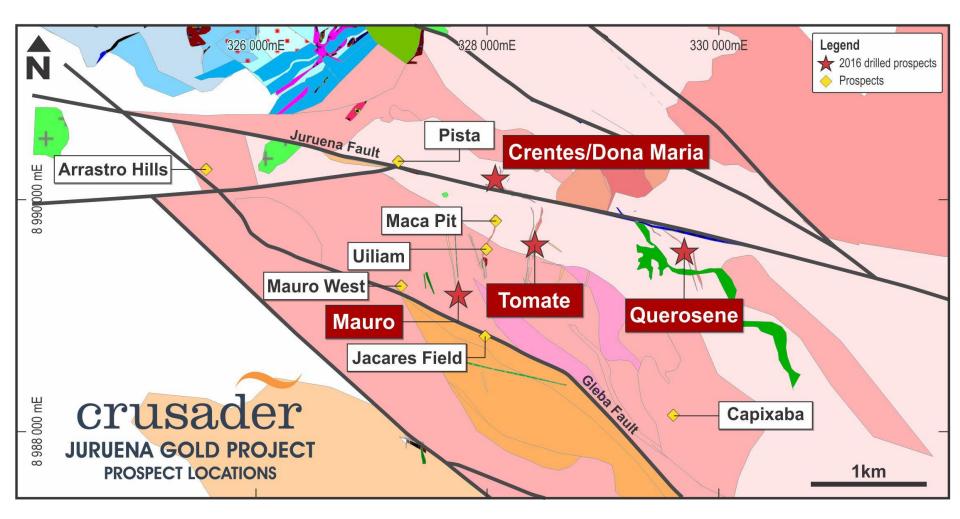


### Juruena Untested Targets ~ 8km





### Juruena – Immediate Targets ~ 2km







### **Current Resources & Development Strategy**

- Initial development in a recognised mining district with the potential to host multiple projects of significantly larger scale.
- Target high-grade, close to surface ounces
- Allow for small, highly profitable start-up production-Scoping Study to be completed Q4 2016
- Cashflow to fund larger expansion



| Juruena Gold Project<br>JORC Compliant Inferred Mineral Resources – September 2015 |                      |                  |                |                   |                |  |
|--|----------------------|------------------|----------------|-------------------|----------------|--|
| Prospect Name  | Resource<br>Category | Lower Cut<br>Off | Tonnes<br>(Mt) | Grade<br>(Au g/t) | Ounces<br>(oz) |  |
| Dona Maria   | Inferred             | 2.5 g/t          | 196,300        | 11.8              | 74,700         |  |
| Querosene  | Inferred             | 2.5 g/t          | 263,500        | 12.3              | 104,100        |  |
| Sub Total High Grade Zone  |                      |                  | 459,800        | 12.1              | 178,800        |  |
| Crentes  | Inferred             | 1.0 g/t          | 846,450        | 2.0               | 55,100         |  |
| Total Combined Resource  |                      |                  | 1,306,250      | 5.6               | 233,900        |  |

Note: Appropriate rounding applied. For further information, please see the section below: Summary of Resource Estimate and Reporting Criteria.

### **Drilling Highlights to Date - Querosene**

#### **Dec 2014**

- 3m @ 26.35 g/t Au from 73m in hole QR-03 including 0.5m @ 150.57 g/t Au from 73m
- 7 2m @ 12.11 g/t Au from 52m in hole QR-07

#### March 2015

- **8m @ 6.27 g/t Au** from 80m in QR-20
- 7 2m @ 17.62 g/t Au from 84m in QR-21
- 7 4m @ 3.78 g/t Au from 86m in QR-24
- 7 1m @ 3.36 g/t Au from 86m in QR-25

#### May 2015

- **2m @ 32.97 g/t Au** from 82m in QR-20
- **1.50m @ 23.71 g/t Au** from 84m including
  **1m @ 34.26 g/t Au** from 84m in QR-21
- **1m @ 6.97 g/t Au** from 51m in QR-13
- **0.5m @ 8.96 g/t Au** from 56m in QR-15
- **1m @ 5.21 g/t Au** from 84m in QD-02

#### July 2015

- **2m @ 9.6m g/t Au** from 48m in QR-28
- **0.5m @ 7.02 g/t Au** from 110.7m in QD-05

#### August 2016

- 2.90m @ 75.02 g/t Au from 112.80m in QD-043 including 0.45m @ 335 g/t Au
- 1.40m @ 48.62 g/t Au from 84.0m in QD-039 including 0.4m @ 87.96 g/t Au & 0.64m @ 47.92 g/t Au
- **1.47m @ 29.42 g/t** Au from 57.2m in QD-028
- 2.0m @ 11.09 g/t Au from 113.9m in QD-030 including 1m @ 19.56 g/t Au
- **1.02m @ 7.30 g/t Au** from 156.1m in hole QD-027
- **0.70m @ 6.00 g/t Au** from 102m in QD-041

#### September 2016

3.6m\* @ 554 g/t Au from 147m in QD-44 including
 1m @ 1,992 g/t Au from 148m

\*Note, this is not true width as hole was drilled sub-parallel to the ore zone. Estimated true width is 1.55m see further comments below

## **Drilling Highlights – Other Targets**

#### **Dona Maria**

#### July 2015

- **3.38m @ 47.97 g/t Au** from 183.62m in MD-01, including 1.87m @ 84.50 g/t Au from 183.62m
- 12m @ 35.13 g/t Au from 99m in MR-10, including
  4m@ 75.07 g/t Au from 99m

#### May 2015

- 7 16m @ 1.54 g/t Au from 4m in MR-05
- **1m @ 6.52 g/t Au** from 126m in MR-06

#### August 2016

- **1.5m @ 141.36 g/t Au** from 45m in MD-06;
- 4m @ 8 g/t Au from 96m (including 1m @ 27.99 g/t) in MD-06; and
- 4m @ 3.98 g/t Au from 77m (including 1m @ 11.09 g/t) in MD-06

#### September 2016

- **10m @ 112 g/t Au** from 125m in MD-09
- **4.8m @ 11.89 g/t Au** from 101m in hole MD-10
- **4.0m @ 27.10 g/t Au** from 84m in hole MD-14

#### Crentes

#### July 2015

 7 4m @ 5.19 g/t Au from 12m and 12m@ 1.62 g/t Au in CR-05

#### <u>May 2015</u>

- **16m @ 3.11 g/t Au** from 32m in CR-08
- **1m @ 20.6 g/t Au** from 49m in CR-05
- 12m @ 3.71 g/t Au from 68m and
  4m @ 3.42 g/t Au from 87m in CR-07

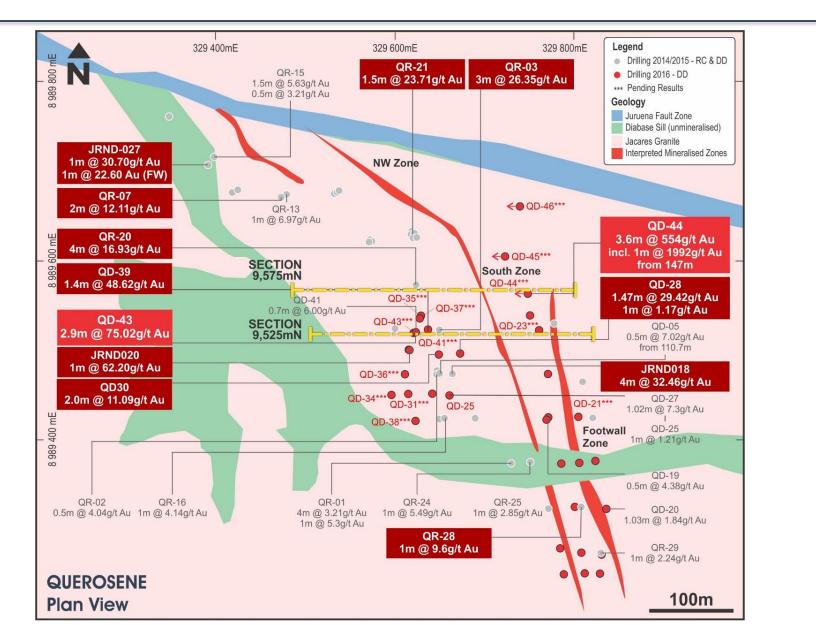
#### Capixaba

#### July 2015

- **3m @ 4.30 g/t Au** from 32m in CXR-04
- **2m @ 8.28 g/t Au** from 62m in CXR-09
- **4m @ 8.26 g/t Au** from 60m in CXR-13

### **Querosene Drill Plan View**



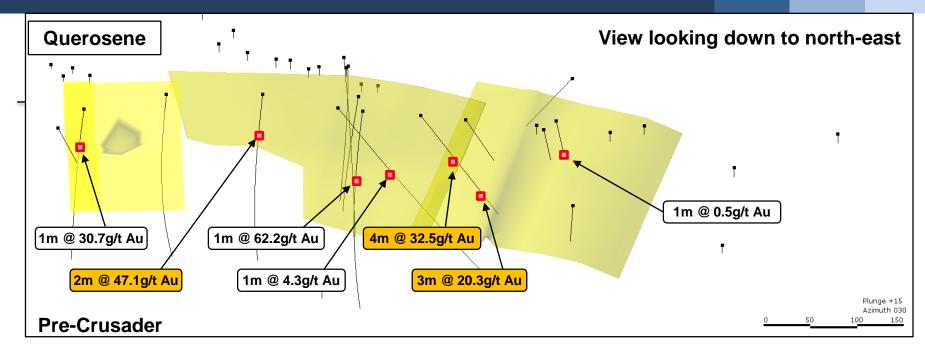


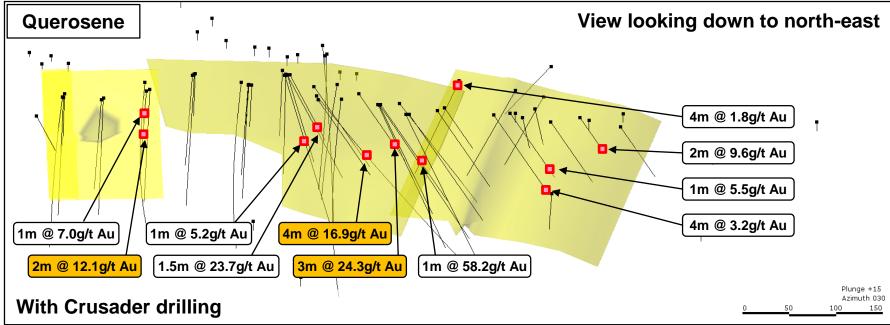
### **Querosene Cross-Sections**

#### octonom con octo West East West East - 250mRL & QD.39 QR.03 90 00.40 02:40 JRNDORO. -200mRL 200mRL 4m @ 16.93g/t Au 3.0m @ 26.35g/t Au from 73m 1.4m @ 48.62g/t Au JRND015 -150mRL from 84m 0.7m @ 6.0g/t Au from 102m 2.9m @ 75.02g/t Au from 113m -100mRL 100mRL 3.6m @ 554g/t Au incl. 1m @ 1992g/t Au Legend Jacares Granite Legend **Dolerite Sill** OPEN Mineralisation Zone Jacares Granite High Grade Intercept **Mineralisation Zone** High Grade Intercept ----- Approx. Pit Location 25m **Querosene Section 89,525mN Querosene Prospect Section 89,575mN**

**Cross-section 525** 

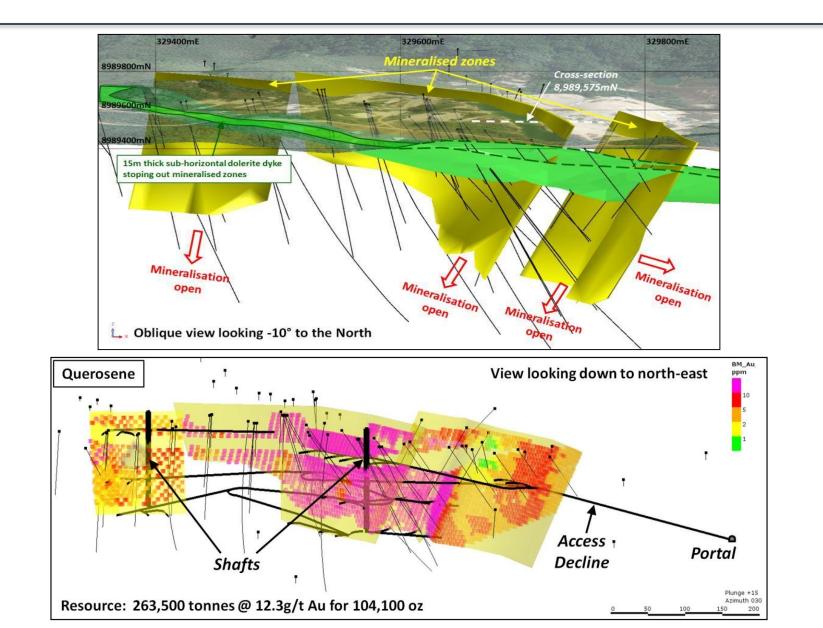
#### **Cross-section 575**



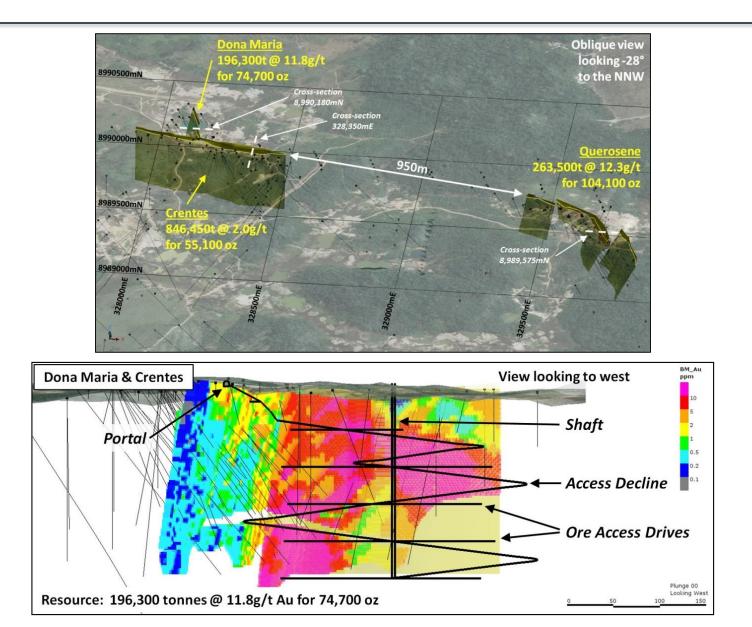


### **First Production Decline Planned - Querosene**



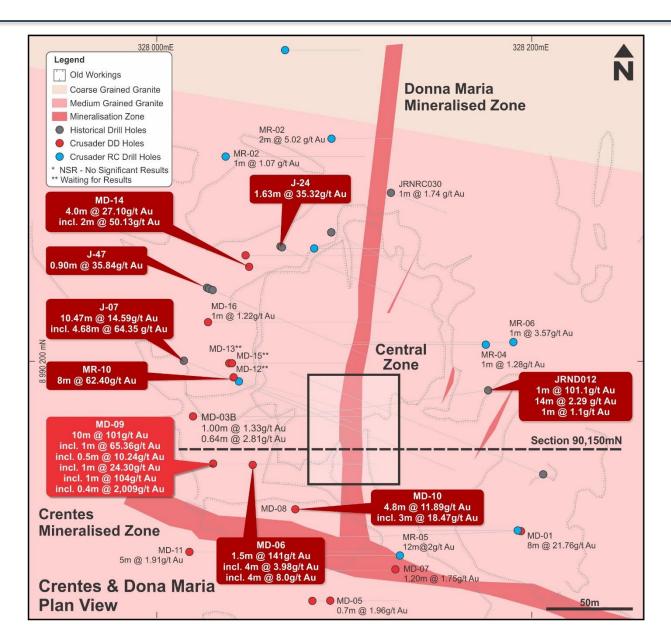


### 2nd Production Asset - Dona Maria ~ 1km crusader



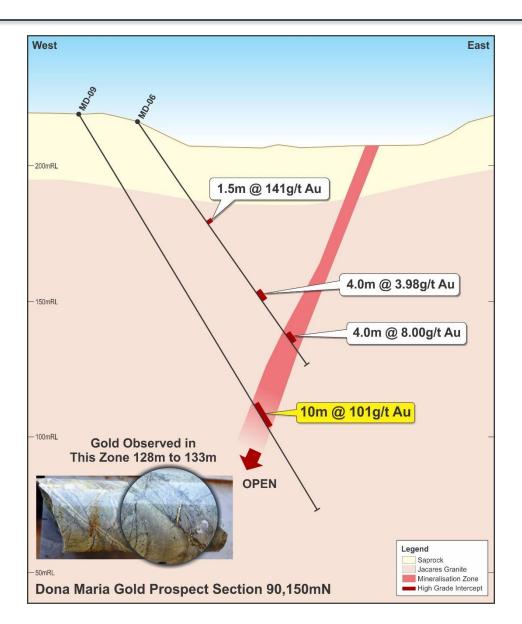
### **Dona Maria & Crentes Drill Plan**





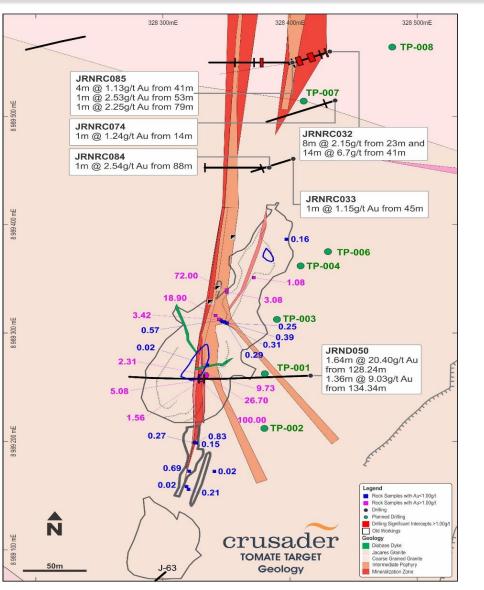
# crusader

### **Dona Maria Cross Section**



# Tomate Auger Drilling & Rock Chip Results crusader

- Located approximately 500m to the south of the eastern end of Crentes
- Drillholes planned under garimpo workings and along strike
- Historical drilling returned significant results
- 11 of 25 historical rock chip samples returned values > 1g/t gold (and up to 100 g/t gold in rock chip samples)





### Metallurgy

### Querosene:

Results for metallurgical testing on samples from the Querosene prospect indicate recoveries of > 90% for both gold and silver using standard leaching (see ASX release 1 July 2015). Results also indicate the gold and silver are free milling and well distributed within the ore.

### Dona Maria

Metallurgical testwork at the Dona Maria prospect recovered +90% gold in standard leaching tests. Various tests including leaching and leaching plus gravity at different grind sizes and leach times, recovered between 85.4% and 91.0% gold (39.7% and 47.6% Ag). The 15kg sample which was composed of recent drill cuttings, had a head grade of 31.2 g/t gold and is indicative of the high grades observed at Dona Maria.



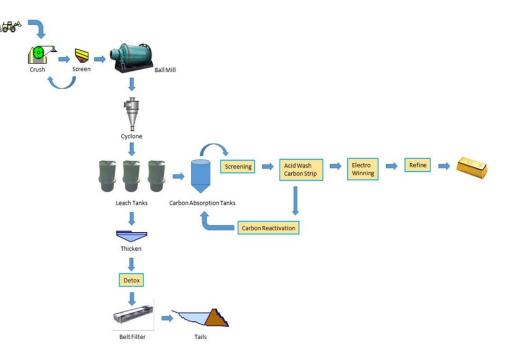


- Crusader is currently completing a Scoping Study with a respected international engineering consultancy Global Resource Engineering (GRE) who are envisaging an initial shallow open pit over Querosene followed by two underground mining operations with processing through a central CIL beneficiation plant to produce gold doré bars.
- GRE Global Resource Engineering group are a multi-discipline mining and environmental consultancy, based out of Denver USA, with extensive experience on developing gold projects in Brazil.
- Both Querosene and Dona Maria are suitable for long term narrow vein mining (the current preferred option is the cut and fill method) and both deposits have similar metallurgical properties allowing them to be mined and treated concurrently.
- Equipment suppliers have been contacted for quotations on both new and used equipment and this information was built into the financial analysis of the capital costs and overall viability.

### Simple Proven CIL - Modular

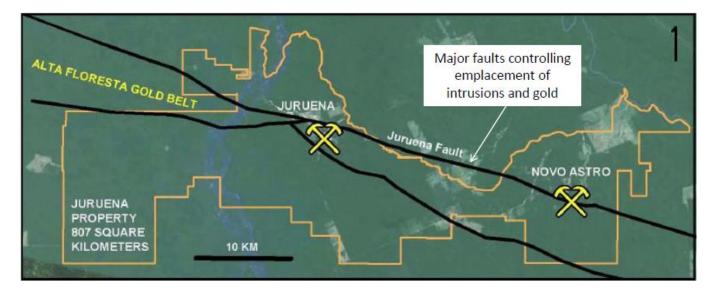
tock Pile

- Signed Option for a crushing and milling plant for the Juruena Gold Project
- The plant includes re-furbished second-hand crushing, screening and grinding circuit, capable of treating up to 300tpd.
- Brazilian equipment supplier and foundry – GNA, a group that has had a long association with Crusader as crushing, screening and wear part supplier for the Posse Iron Ore Mine
- The option is exclusive and includes a total cost of R\$8 million (~US \$2 million) for a "turn key" contract including installation and delivery to site



### Novo Astro-Multi-Million Ounce Potential crusader

- Novo Astro is Crusader's second project area on the Alta Floresta gold belt, ~25km south east of Juruena
- **5**km wide circular soil anomaly that has never been drilled
- Rock chip samples at Novo Astro returned 264 g/t Au and 101.7 g/t Au, (NR Sept 11, 2013)
- Alluvial gold mined for 40 years
- Regarded as an intrusive related gold target associated with granitic rocks
  - Geological model targeting the definition of a multi-million ounce gold deposit





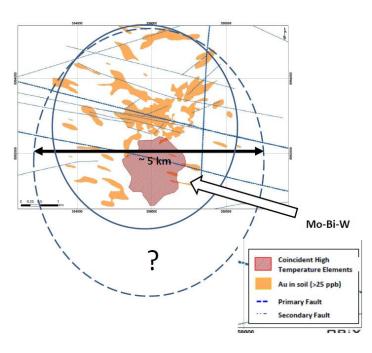


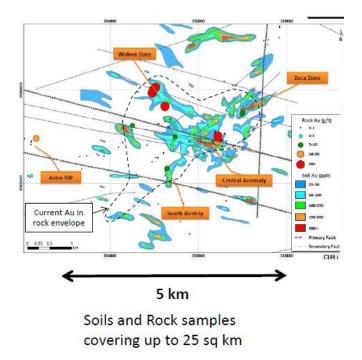
Novo Astro





## Undrilled, Widespread Gold



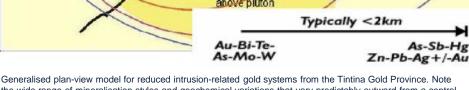


### Novo Astro Intrusion-Related Gold Target

- Appears to be forming concentric gold mineralisation (approximately 5km diameter) centred on a probable granite plug
- Unique pathfinder elements (Mo-Bi-W)

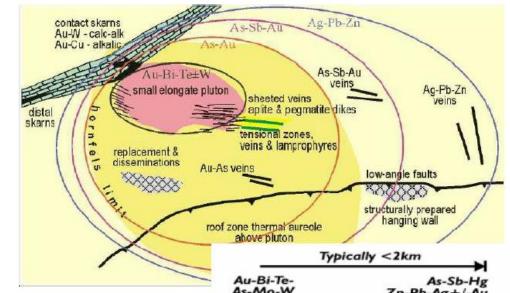
### Intrusion Related Gold System

- The intrusion-related gold system (IRGS) is a relatively new classification of gold deposits (1999) and is associated with granitic rocks.
- 7 IRGS form at depth and are able to be preserved in older terrains (Juruena formed at a shallower depth)
- 7 The deposits are best developed above and surrounding small, granitic intrusions. In addition to the association with granitoids
- 7 IRGS deposits have a distinctive, signature, accessory element suite of bismuth (Bi), tellurium (Te), molybdenum (Mo) and tungsten (W)



the wide range of mineralisation styles and geochemical variations that vary predictably outward from a central pluton (modified from Hart 2005)





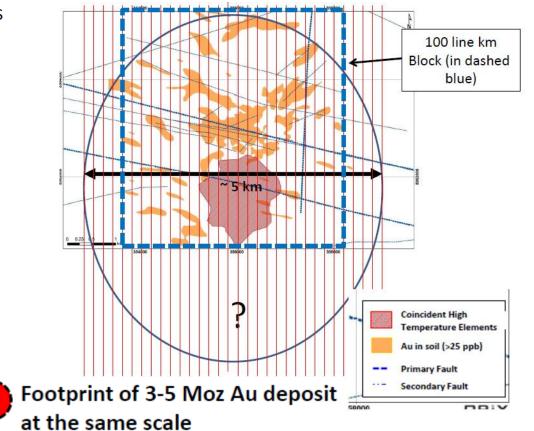
## Significance of System & Targeting



- Intrusion related gold systems are know to host deposits of significant scale and typically exhibit medium to high grades:
  - Fort Knox 158 million tonnes at 0.8 g/t Au
  - Pogo 10 million tonnes at 15 g/t Au,
  - Donlin Gold 541 million tonnes at 2.24 g/t
- Metal zoning at Novo Astro indicates system is developed and is dumping gold on the scale of kilometres
- **IRGS** deposits are typically metallurgically simple with minimal sulphide content
- ↗ How to target?
  - IP geophysics; utilised when gold is associated with disseminated sulphides to prioritise drilling
  - Drilling ahead of IP not recommended as best targets may not coincide with garimpeiro workings
  - Drill only meaningful targets: size / chargeability / resistivity combination

### Novo Astro - Next steps

- IP 200m line spacing (up to 200 line kms in red) for full coverage or 100 line kms for Phase 1 (blue)
- Tighter spaced geochemical sampling
- Aeromagnetics / IP
- Further rockchip sampling / trenching
- Auger Drilling 2016
- Diamond Drilling 2017



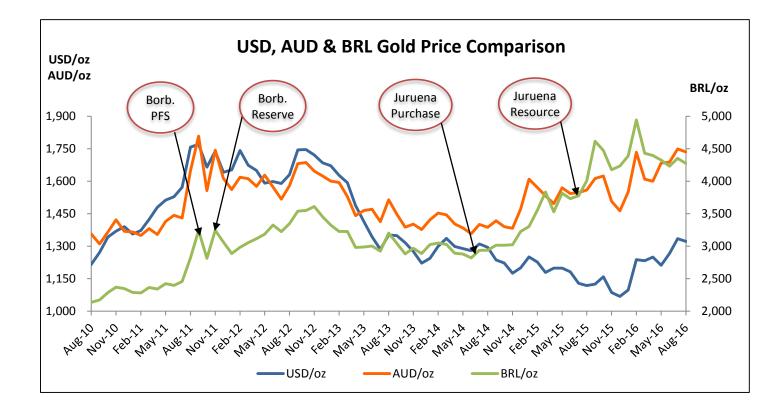
### Summary – Juruena & Novo Astro



- Juruena is Crusaders next production asset in Brazil
  - Crusader has a proven track record of taking projects from Exploration to Production in Brazil
- Two key project areas providing a range of target mineralisation styles
  - Both near term production potential and larger company making projects
- Established infrastructure and incumbent skilled site team allow for rapid progress
- ~8,000m drilling program completed (2016 program)
  - Targeting high-grade near term production ounces
- Systematic assessment of potentially large scale and globally significant porphyry & fault/fracture targets at Juruena and IRGS at Novo Astro
- Crusader will be an active and aggressive explorer/developer in Brazil

## **Currency Effects**





- Real has depreciated from R\$2.00 to R\$3.30 per USD, USD gold price has risen
- Industry has slowed post World Cup and now Olympics. Combined with downturn in Iron Ore markets has lead to an overall increase in availability and competition (pricing) for engineering and construction services

#### **Head Office**

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#### Site Office

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