

# Further Bonanza Grades & Cascavel Gravity Circuit Update

High- Grade Shoots Extended &

Plant Installation Underway – All Brazilian Supplied Equipment on Site at Cascavel

## **Highlights**

- Latest underground mine samples grade up to 290g/t Au
- High-grade zones extended, including:
  - o 10.3m @ 100g/t Au
  - o 11.6m @ 50.3g/t Au
- Mine development to extend North outside the initial Mining Area
- The Brazilian supplied crushing circuit has been delivered to site
- Installation of the crushing circuit is currently underway
- Australian supplied gravity circuit currently en-route with arrival in Brazil expected late December
- Gravity circuit remains on schedule for commencement of commissioning during Q1 2016

Orinoco Gold Limited (ASX: OGX) is pleased to report that construction of the Gravity Circuit at its flagship **Cascavel Gold Mine** in central Brazil is proceeding according to schedule for first production early next year and that Cascavel mine development is continuing to deliver excellent grades from underground mine sampling. Importantly, consistent gold in advances from an exploration drive to the North of the Initial Mining Area, are expected to increase the size of the Initial Mining Area.

Further high grade results from underground sampling at Cascavel continue to show the extensions of the high grade zones in the areas of initial planned stoping in the Central portion of the Cascavel Gold Mine. Visible gold continues to be evident in the panning of each advance. Level drive development is currently underway in the Central, Northern and Southern portions of the mine while raises are being developed in the Central portion of the mine ahead of planned stoping. The northern portion of the mine has recently been added to the initial mining area following consistent visible gold being encountered in an exploration drive to the north of the Cascavel Service Decline. Previous Orinoco drilling indicated that the gold bearing structure continues to the North, and underground sampling has now verified that this area warrants inclusion in the mine plan.

## **Cascavel Circuit Update**

The three stage crushing circuit and associated screens, conveyors and hoppers are now on site where installation of that equipment has commenced. The Australian supplied Gekko Systems gravity circuit is currently en-route and expected to arrive in Brazil towards the end of December. The gravity circuit has been factory commissioned in Australia and is scheduled to be installed to allow for the processing of commissioning ore in early March.

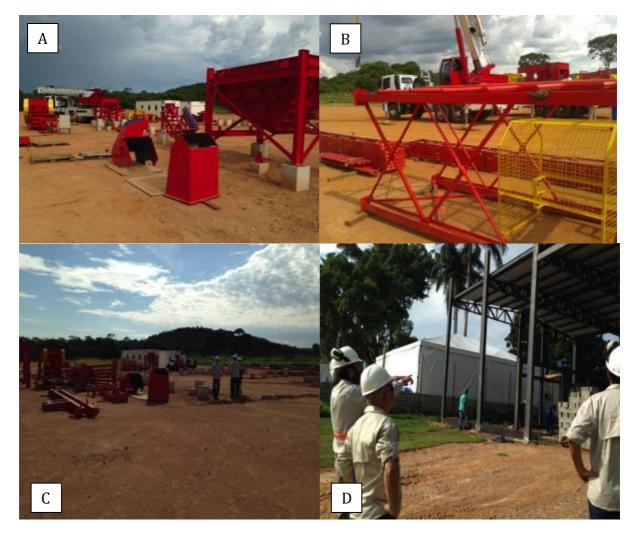
As planned, all mine development is 'on ore' with the decline shaft (3.5m x 3.0m) and the level drives (2.2m by 2.0m) developed within the main mineralised vein and alteration halo. It is planned to use this diluted development ore for commissioning of the Cascavel plant. This strategy allows for fine-tuning of the crushing circuit and the gravity circuit before stope ore is fed to the plant. As the planned stope height is 1.8m there will be far less dilution of the mineralised zone.

The final crushing stage of the Cascavel plant incorporates a Vertical Spindle Impactor (VSI) to crush the ore to a relatively coarse size of 600 microns for gravity separation. The coarse nature of the ore and low volumes of very fine material (slimes) has the further advantage of allowing the tailings to be dewatered in a simple settling pond prior to final dry stacking. This method of tailings disposal avoids the need for a tailings dam, an important safety and environmental consideration. Dry stacking of the tailings also facilitates possible retreatment of the tailings at a later date should they prove to contain enough gold to make this economic.

Orinoco's CEO Mark Papendieck said "we are delighted by the progress made by the team in Brazil in preparation for plant construction. With the Australian equipment now on the water we remain on schedule to produce our first gold during the plant commissioning in Q1 2016".



Figure 1. Components of the crushing circuit being installed on site at Cascavel.



**Figure 2.** A. Crushing circuit being installed on foundations. B & C. Delivery of the crushing circuit. D. Construction of the mine and plant workshop.

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#### Forward-Looking Statements:

This Announcement includes "forward-looking statements" as that term within the meaning of securities laws of applicable jurisdictions. Forward-looking statements involve known and unknown risks, uncertainties and other factors that are in some cases beyond Orinoco Gold Limited's control. These forward-looking statements include, but are not limited to, all statements other than statements of historical facts contained in this presentation, including, without limitation, those regarding Orinoco Gold Limited's future expectations. Readers can identify forward-looking statements by terminology such as "aim," "anticipate," "assume," "believe," "continue," "could," "estimate," "expect," "forecast," "intend," "may," "plan," "potential," "predict," "project," "risk," "should," "will" or "would" and other similar expressions. Risks, uncertainties and other factors may cause Orinoco Gold Limited's actual results, performance, production or achievements to differ materially from those expressed or implied by the forward-looking statements (and from past results, performance or achievements). These factors include, but are not limited to, the failure to complete and commission the mine facilities, processing plant and related infrastructure in the time frame and within estimated costs currently planned; variations in global demand and price for coal and base metal materials; fluctuations in exchange rates between the U.S. Dollar, the Brazilian Real and the Australian dollar; the failure of Orinoco Gold Limited's suppliers, service providers and partners to fulfil their obligations under construction, supply and other agreements; unforeseen geological, physical or meteorological conditions, natural disasters or cyclones; changes in the regulatory environment, industrial disputes, labour shortages, political and other factors; the inability to obtain additional financing, if required, on commercially suitable terms; and global and regional economic conditions. Readers are cautioned not to place undue reliance on forward-looking statements. The information concerning possible production in this announcement is not intended to be a forecast. They are internally generated goals set by the board of directors of Orinoco Gold Limited. The ability of the company to achieve any targets will be largely determined by the company's ability to secure adequate funding, implement mining plans, resolve logistical issues associated with mining and enter into any necessary off take arrangements with reputable third parties. Although Orinoco Gold Limited believes that its expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that actual results will be consistent with these forward-looking statements.

#### **Previously Reported Results:**

23 Oct 2014 - Cascavel: More Bonanza Results Extend Current High Grade Zone to 15m @ 88g/t Au

#### Competent Person's Statement:

The information in this announcement that relates to Exploration Results is based on information compiled by Dr Klaus Petersen who is a member of the Australasian Institute of Mining and Metallurgy and CREA and Dr. Marcelo Juliano de Carvalho who is member of the Australasian Institute of Mining and Metallurgy. Dr Klaus Petersen and Dr. Marcelo Juliano de Carvalho are employees of Orinoco Gold Limited and have sufficient experience, which is relevant to the style of mineralisation under consideration and to the activity that they are undertaking 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. Dr Klaus Petersen and Dr. Marcelo Juliano de Carvalho consent to the inclusion in this report of the matters based on the information in the form and context in which it appears.

### Panel Sampling & Application of Results to Head Grade

Samples are collected from the mineralised zone continuously along each wall of the Level Drives. Samples are collected from contiguous 'Panels' of 0.5m height (although the dimensions of each panel will vary, and are reported fully in Table 1). Each advance in the Level Drives is followed by sampling and panning of the face of the Drive to give immediate information regarding the qualitative gold grade of mineralisation, and is followed by sampling of the walls of the Drive in 'panels' to submit for assay.

Panel samples, as opposed to channel samples provide the following benefits:

- Channel samples are not contiguous with one another, and are collected from a narrow vertically cut channel from the floor to the ceiling of the drive;
- Panel samples provide for a larger volume of material to be collected and assayed to obtain a more representative sample of the gold bearing material than either a drillhole or a channel sample can provide;
- Cascavel is a sub-horizontal mineralised structure (dipping at 30-35° to the southwest). Contiguous panel samples allow for the horizontal sampling of the ore zone in the Drives and subsequent estimation of the range of possible head grades from those parts of the mine.

Despite the advantages of taking a panel sample as opposed to a channel sample, panel samples still represent an insufficient quantity of material to account for the coarse gold effect. Several tonnes would need to be sampled in order to obtain a representative grade from any particular area within the mine. Compare the results of the two corresponding panel samples from Level 0 Central: Right wall 56.6g/t Au while the left wall returned 469g/t Au. These two samples are located approximately 2.2m along plunge from each other and each weighed ~10kg.

Consequently, Orinoco considers panel samples, with the application of an appropriate mining dilution factor, to be the best *guide* to the expected head grade of material mined from the stopes, however they do not present a definitive grade estimate of any area.

The mineralisation in the Central part of Cascavel is generally around 0.5m to 0.7m thick. Orinoco's planned minimum stope height in a room-and-pillar stope is 1.6m, meaning that reported results in the Central portion of Cascavel would need to be diluted by a factor of approximately three to indicate a potential head grade for material delivered to the mill from a stope in this area.

The mining dilution effect has to be taken into account when assessing the results of the mineralised zone samples discussed in this release.

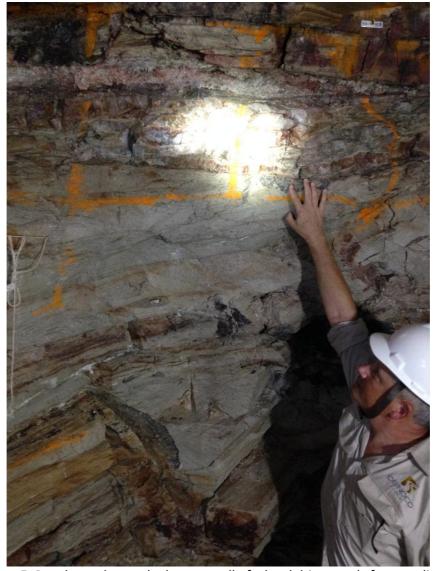


Figure 5. Panel samples marked-up on wall of a level drive, ready for sampling.

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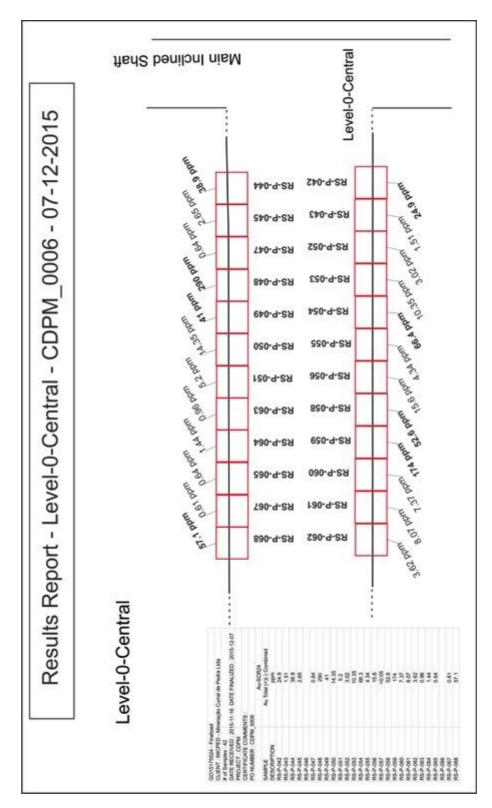


Figure 6 – Map of Level 0 Central showing the location of the panel samples.

Table 1. Full Results of Panel Sampling

PID	Х	Υ	Z	From	То	Length	Au_ppm	
RS-P-015	561526.26	8288120.98	539.53	4.64	5.39	0.75	168	1 I
RS-P-016	561525.69	8288121.70	539.59	5.39	6.12	0.74	26.7	1 I
RS-P-020	561525.02	8288122.58	539.68	6.12	7.56	1.44	56.6	1
RS-P-032	561524.39	8288123.13	539.71	7.56	8.17	0.61	101.5	l I
RS-P-033	561523.89	8288123.44	539.69	8.17	8.74	0.57	182	1 I
RS-P-034	561523.45	8288123.71	539.67	8.74	9.20	0.46	4.6	l I
RS-P-044	561523.05	8288123.99	539.67	9.20	9.70	0.51	38.9	1
RS-P-045	561522.66	8288124.30	539.71	9.70	10.21	0.51	2.65	ᇛ
RS-P-047	561522.27	8288124.51	539.70	10.21	10.64	0.43	0.64	RIGHT
RS-P-048	561521.90	8288124.58	539.64	10.64	10.97	0.33	290	WALL
RS-P-049	561521.56	8288124.90	539.61	10.97	11.68	0.71	41	₽
RS-P-050	561521.07	8288125.31	539.56	11.68	12.34	0.66	14.35	
RS-P-051	561520.59	8288125.29	539.48	12.34	12.76	0.42	5.2	1
RS-P-063	561520.04	8288125.50	539.53	12.76	13.75	1.00	0.96	1
RS-P-064	561519.35	8288126.10	539.72	13.75	14.63	0.88	1.44	1 I
RS-P-065	561518.82	8288126.56	539.80	14.63	15.17	0.54	0.64	1
RS-P-067	561518.36	8288126.73	539.79	15.17	15.71	0.54	0.61	l I
RS-P-068	561517.82	8288126.72	539.74	15.71	16.25	0.54	57.1	
RS-P-017	561524.21	8288118.97	538.38	1.16	1.55	0.39	7.95	
RS-P-019	561523.84	8288119.42	538.34	1.55	2.32	0.77	16.20	1 I
RS-P-021	561523.40	8288119.86	538.27	2.32	3.40	1.08	469.00	1 I
RS-P-026	561523.00	8288120.13	538.22	3.40	3.86	0.47	635.00	1 I
RS-P-029	561522.62	8288120.39	538.16	3.86	4.32	0.46	6.65	1 I
RS-P-031	561522.24	8288120.67	538.10	4.32	4.81	0.49	3.57	1 I
RS-P-042	561521.84	8288120.98	538.02	4.81	5.35	0.53	24.9	1
RS-P-043	561521.48	8288121.33	538.02	5.35	5.83	0.49	1.51	LEFT
RS-P-052	561521.14	8288121.72	538.20	0.00	0.44	0.44	3.02	프
RS-P-053	561520.79	8288122.05	538.26	0.44	0.97	0.53	10.35	WALL
RS-P-054	561520.31	8288122.47	538.24	0.97	1.73	0.76	66.3	F
RS-P-055	561519.80	8288122.96	538.26	1.73	2.41	0.68	4.34	1 I
RS-P-056	561519.32	8288123.44	538.36	2.41	3.12	0.72	15.6	1 I
RS-P-058	561519.021	8288123.54	538.441	0.00	0.50	0.50	52.6	
RS-P-059	561518.643	8288123.84	538.473	0.50	0.97	0.47	174	
RS-P-060	561518.30	8288124.13	538.47	0.97	1.38	0.42	7.37	
RS-P-061	561517.89	8288124.38	538.43	1.38	1.95	0.57	8.07	
RS-P-062	561517.44	8288124.65	538.48	1.95	2.47	0.52	3.62	

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# **Section 1 Sampling Techniques and Data**

Criteria	Commentary
Sampling techniques	<ul> <li>Continuous "panel sampling" has been undertaken across the mineralised zone at Cascavel. Panels measuring approximately 0.5m x 0.5m are marked up on the walls of the drives and are contiguous (each panel abutting another panel) along both walls of the decline (or drives) with the sample from each panel being composed of chips collected from the entire area of each panel. The panel samples in the current release Dive 0 North is a section subparallel to the strike and almost perpendicular to the dip (the Level 0 cross-cuts sections of the high-grade shoots that dip to the SW).</li> <li>Where a vertical height of more than 0.5m is assessed as requiring sampling, contiguous panels will be cut below or above a panel. Each panel sample (approximately 4-11kg in weight) is crushed/milled/homogenised and split to obtain a 1kg sample in the laboratory and that 1kg sample is submitted for a screen fire assay.</li> <li>Panel sampling has been undertaken along the mineralised vein/s and alteration and screen fire assay has been used to obtain correct grades of each panel. This assay procedure is not only more expensive but needs more time for the lab to screen larger amounts of the samples instead of splitting fractions in an ordinary fire assay procedure. All data is stored in the database following appropriate QA/QC procedures.</li> </ul>
Drilling techniques	No drilling is reported in this announcement.
Drill sample recovery	No drilling is reported in this announcement.
Logging	No logging is reported in this announcement
Sub-sampling techniques and sample preparation	<ul> <li>Chip samples went sent to the laboratory without drying or splitting.</li> <li>Blanks and standards are inserted into panel samples batches;</li> </ul>
Quality of assay data and laboratory tests	• In the lab, all samples are dried at 100°C and crushed to 9 mesh in a jaw crusher. The samples go to a Jones or Rotary splitter and 500g of material is separated and powdered to 150 mesh. The 150# pulp is quartered and an aliquot of 50g is obtained. This aliquot is analysed by Fire Assay in non-mineralised samples. Metallic Screen Fire Assay is applied if the sample is considered mineralised. Selective samples are analysed in ICP-MS (Inductively Coupled Plasma Atomic Emission Spectrophotometry), with a multiacid digestion for 32 elements.
Verification of sampling and assaying	<ul> <li>Standards: (insertion of 1 known standards in each 20 samples approximately): If less than 10% of samples are outside of the expected mean + 2x Std. Dev, the results are validated. If less than 10% of the samples report results outside the Mean + 3x Std. Dev, but there are standards between the first and these two points - the results are validated, but the Lab is notified. If more than 10% is</li> </ul>

Criteria	Commentary
	<ul> <li>outside the Mean + 3x Std. Dev, the batch (40 samples) is rejected, an investigation is required and a re-analysis of the batch is made;</li> <li>Blanks (1 blank insertion in each 20 samples approximately): If less than 5% are above 5x the detection limit of the Lab, the results are validated. If more than 5% is above 5x the detection limit, the Lab is notified and the batches with failure are re-analysed;</li> <li>Duplicates (insertion in each 20 samples – Bias control): Project Duplicates are core quarter and Lab duplicates are Pulp Duplicates.</li> </ul>
Location of data points	<ul> <li>The topographic survey on the underground workings has been done by a qualified surveyor using a Total Station (RUIDE), model RTS 822R³. The survey uses laser for the location of channels, panels and underground workings.</li> <li>The grid system used is UTM South American 1969 - Zone 22 S;</li> <li>The topography crew uses surveyed base stations to guarantee the quality of their surveying.</li> </ul>
Data spacing and distribution	<ul> <li>Panel samples are approximately 0.5 x 0.5 metres and continuous along the mineralised zone.</li> </ul>
Orientation of data in relation to geological structure	The data orientation is intended to cover the mineralised zone approximately along strike and down dip. Data is collected from all underground openings
Sample security	<ul> <li>Samples are stored in plastic sample bags, stored in a dedicated secure facility on site prior to transport to the lab.</li> <li>All laboratory pulps are stored in the storage facility onsite in boxes supplied by the labs, stacked in dry places.</li> </ul>
Audits or reviews	<ul> <li>No audit or review has been undertaken regarding the results reported in this announcement.</li> </ul>

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# **Section 2 Reporting of Exploration Results**

(Criteria listed in the preceding section also apply to this section.)

Criteria	Commentary
Mineral tenement and land tenure status	<ul> <li>The Faina Goldfield project is 70% owned by Orinoco do Brasil Mineração Ltda, which in turn is 100% owned by Orinoco Gold Ltd. The 30% partners are free carried during the exploration stage until a decision to mine.</li> <li>The Sertão and Antena mining leases are owned 100% by Orinoco.</li> <li>Some locations within the Cascavel project have archaeological sites that are required to be mapped and photographed prior to removal of the sites.</li> <li>The key Cascavel tenement has a granted trial mining licence for 50.000 tonnes ROM for underground operation, an installation licence for a up to 50.000 tonnes per year gravity crushing and concentration plant and granted Environmental/Archaeological licences.</li> </ul>
Exploration done by other parties	<ul> <li>This release reports results from underground working at Orinoco's Cascavel Gold mine. No earlier exploration is reported in this release</li> </ul>
Geology	• CASCAVEL: Cascavel is best characterised as an Archean shear hosted Orogenic gold system. The structurally controlled mineralised quartz vein/s, veinlets and related sericite alteration evident in the decline and from drilling are continuous both along strike and down-plunge with some minor off-sets caused by later E-W and N-W striking faults (associated with the Tinteiro mineralisation). Visible offsets are no greater than 1m in the walls of the decline. These late faults also cause a slight rotation between the blocks, slightly changing the dip of the veins. Repetition of high grade shoots along the strike has been confirmed by bulk and panel sampling and with visible gold up to 10mm in size evident in the walls of the decline.
Drill hole Information	No drill holes are reported in this announcement.
Data aggregation methods	• To composite the panel samples the results where treated as a drill core section. The coordinates of the middle point at the left edge of each panel and vector data of azimuth and dip angles of a middle line in the panels was precisely surveyed. Those lines were used for the from/to data on the assay table. To give the correct weight for the grades in the panels due to minor differences in the length, 0.5 metres was considered 100% and all grades went normalised to this length. The normalised intervals where used to obtain the composite grade for the section.
Relationship between mineralisation widths and intercept lengths	Reported rock chips are single point, selective samples of outcropping lithologies.
Diagrams	Diagrams are attached to the current announcement.

Criteria	Commentary
Balanced reporting	<ul> <li>This announcement is a comprehensive report of the results covered by this announcement.</li> </ul>
Other substantive exploration data	Only assays for panel samples are reported in this announcement.
Further work	<ul> <li>Drilling and ongoing underground development is required to test the identified targets as the mine is developed.</li> </ul>

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