# Cascavel Process Test Work Confirms High Gold Recoveries, Low Costs

New test work completed at Gekko demonstrates attractive economics of gravity gold plant to be installed in Brazil

#### **Key Points:**

- Outstanding results received from metallurgical test work conducted by Gekko Systems to confirm the final gravity process flow-sheet for the Cascavel Gold Project ahead of plant construction.
- Results reinforce previous test work, demonstrating high gravity gold recoveries of 89 95.6% at a coarse grind of 600  $\mu m$
- Clearly demonstrates the suitability of the selected Gekko gravity processing circuit for Cascavel ore and emphasises the low cost of recovering gold due to the coarse grind.
- Gekko Systems said of the Cascavel test work, "great continuous gravity recovery results, they sit in the highest 5% of results we've seen for this test".
- Mine development and construction at Cascavel now in full swing, with the following activities now underway:
  - o Preparation of the portal and initial development of the incline shaft
  - Construction of the explosives magazines and warehouse.
  - Site preparation for the offices, ROM pad and haulage winch.

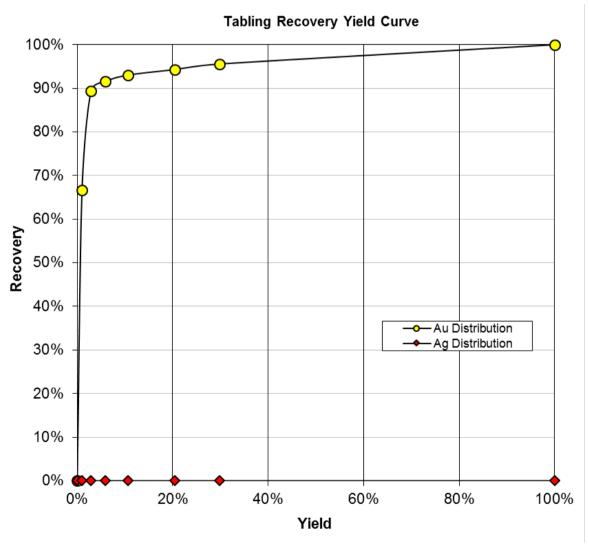
Orinoco Gold Limited (ASX: OGX) is pleased to advise that it has received the results of a highly successful metallurgical test work program conducted by gravity gold specialists Gekko Systems. This new test work confirms the process flow-sheet for its high-grade **Cascavel Gold Project** in central Brazil prior to installation of the plant.

Orinoco recently appointed Gekko Systems to construct the 15 tonne per hour (tph) gravity gold plant for Cascavel. Gekko Systems carried out various test work programmes on two ~70 kilogram samples of Cascavel ore, the first of which was to confirm the amenability of the material for the Gekko Gravity Flowsheet.

The Gekko processing plant to be installed at Cascavel is a modular ore concentration plant which consists of a closed-circuit crushing circuit with coarse gravity gold recovery via Gekkos proprietary In-Line Pressure Jig and Spinners. The Cascavel Plant, which is being fabricated partially in Brazil, and partially in Australia, will be ideally suited to recover the coarse gold at Cascavel, with the processing route delivering excellent recoveries from a plant with low capital intensity.

Gekko Systems has reported exceptional results from the gravity test work program, which are considered to be at the upper end of results achieved for coarse gold deposits. From a 70kg ore parcel, the Cascavel flow sheet achieved gravity gold recoveries of:

- 89.4% gold recovery into 2.9% of the mass at a grade of 417 g/t Au; and
- 91.6% gold recovery into 5.9% of the mass at a grade of 209 g/t Au; and
- 95.6% gold recovery into 30% of the mass at a grade of 43g/t Au.



**Figure 1**. Gold recovery curve for the first parcel of Cascavel ore tested at Gekko Systems laboratory in Ballarat.

Orinoco's Managing Director, Mr Mark Papendieck, said; "the results of the Gekko test work program were both a pleasing endorsement of the Company's previous metallurgical test work and a quantitative test justifying our development and production plan".

"One of the keys to the Cascavel investment proposition is the fact that we can achieve high gold recoveries from a modular gravity gold circuit which uses standard, simple gravity recovery with no chemicals or leaching. When combined with the fact that the gold is liberated without significant milling, this makes the process cost effective to purchase and install, and simple to operate," Mr Papendieck said.

"The Gekko test work has not only reinforced previous results, but has in many respects, exceeded our expectations, demonstrating the ability to achieve excellent recoveries at a very coarse grind (p100  $600\mu m$ ) with a significant amount of the gold, around 88-89%, being recovered in the first pass test work at a grind size of (p100) 1.18mm.

"This means that a coarse grind liberates most of the gold, which in turn shows that less energy is required to win the gold from the processing circuit," he said. "This bodes extremely well for the economics of the Cascavel Project, which we expect to be a high-grade operation with low operating costs.

#### Site Preparation

Work is now well advanced on the development of the portal for the incline shaft. This work includes stabilisation of the brow, walls and footwall by the installation of reinforced concrete, gabions, steel supports, wire mesh and rock bolting prior to shotcreting. Panning of the vein and alteration at the commencement of the incline shaft has confirmed that gold mineralisation extends to surface.

In other civil work the earthworks and fencing for the explosive magazine and warehouse has been completed and the site preparation for the winch, headframe, ROM pad and offices is advancing.

-ENDS-

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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

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#### Competent Person's Statement:

The information in this presentation 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.

#### **Previous Reported Results:**

There is information in this report relating to Exploration Results at Cascavel. Full details of the Results were included in the following ASX Release and are available to view on the Company's website <a href="https://www.orinocogold.com">www.orinocogold.com</a>:

- 1. 28 November 2014 Low Cost Development & Exploration Upside Highlight Cascavel Opportunity
- 2. 23 October 2013 Cascavel: More Bonanza Results Extend Current High Grade Zone to 15m @ 88g/t Au
- 3. 14 May 2014 "Outstanding Gold Grade from Latest Cascavel Bulk Sample"
- 4. 7 July 2014 Bonanza Gold Results up to 27 oz/tonne from Cascavel Exploration Decline
- 5. 14 May 2014 Outstanding Gold Grade from Latest Cascavel Bulk Sample
- 20 January 2014 Successful Bulk Sampling Highlights the Opportunity for High Grade Development at Cascavel Gold Project.
- 7. 8 October 2012 High-Grade Gold Results Returned From Curral De Pedra Project, Brazil
- 8. 12 December 2012 Hits of up to 193gpt Au confirm mineralisation over 620m down dip

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the Exploration Results in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

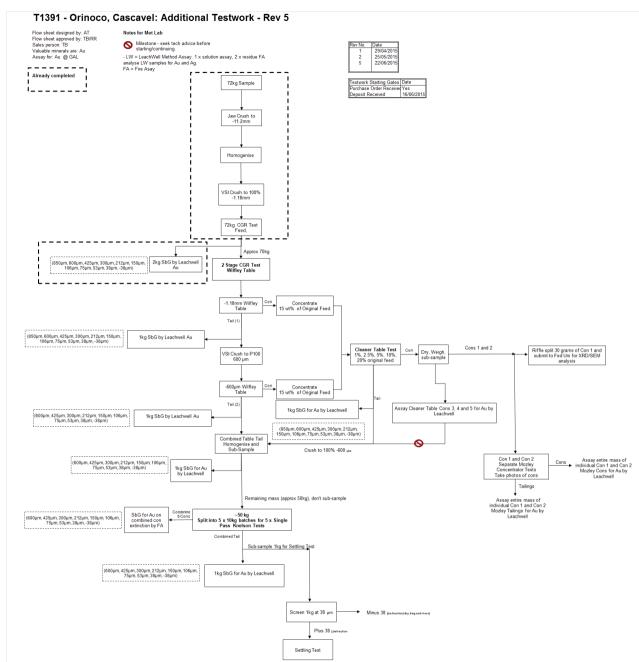


Figure 2: Testwork Flowsheet

### **Section 1 Sampling Techniques and Data**

Criteria	Commentary
Sampling techniques	<ul> <li>145kg of vein and alteration material was manually collected from Cascavel underground workings for metallurgical testwork.</li> </ul>
Drilling techniques	No drilling reported in this announcement.
Drill sample recovery	No drilling reported in this announcement.
Logging	No logging of the sample took place.
Sub-sampling techniques and sample preparation	Refer to figure 2: 'Testwork Flowsheet' for detail
Quality of assay data and laboratory tests	Assays of the gold concentrate were obtained by LeachWell Method and were performed by Gekko Systems.
Verification of sampling and assaying	Assays were taken at each step of the process – refer Figure 2 'Testwork Flowsheet'
Location of data points	<ul> <li>NA - The material provided for the metallurgical testwork was collected from various points in the Cascavel exploration decline.</li> </ul>
Data spacing and distribution	NA – this is a metallurgical test.
Orientation of data in relation to geological structure	NA – this is a metallurgical test.
Sample security	<ul> <li>Samples are stored in plastic sample bags, stored in the core shed on site prior to transport to the lab in sealed containers.</li> </ul>
Audits or reviews	No external audit or review has been undertaken regarding the results reported in this announcement other than by Gekko Systems and Orinoco Gold.

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## Section 2 Reporting of Exploration Results (Criteria listed in the preceding section also apply to this section.)

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Criteria	Commentary
Mineral tenement and land tenure status	<ul> <li>The Tinteiro 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 being acquired 100% by Orinoco, but the acquisition remains subject to previously announced conditions precedent.</li> <li>Orinoco is earning up to a 75% stake in the Tenements on which Targets 1, 2 and 3 are located.</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 Tinteiro tenements are granted exploration leases.</li> </ul>
Exploration done by other parties	<ul> <li>Exploration for oxide gold deposits was well developed through the belt during the last 20 years, in different cycles and by different companies, however no exploration of IOCG systems is recorded to have taken place. A reasonable amount of surface exploration has been carried out. Soil, stream sediments and chip sampling (for gold) are widespread along and around both belts. Those surface surveys detected several gold and arsenic anomalies (about 64 anomalies are described). Some of those anomalies were tested with drilling, frequently with positive results. However drilling was generally very shallow RAB drilling.</li> </ul>
Geology	<ul> <li>Gold mineralisation is widely distributed on the Faina Greenstone Belt, occurring on the ultramafics, felsic and mafic volcanics, on the clastic metasedimentary sequence and particularly at the chemical metasedimentary rocks;</li> <li>Golden trends seem to be very continuous also along the strike, mostly associated with the main regional scale shear zones;</li> <li>Mineralisation style is also varied on the belt. Most of the gold mineralisation can be classified as Orogenic, mainly hosted in chemical and volcanoclastic sedimentary units. The following models are considered relevant: Shear Hosted (Orogenic) associated with carbonaceous/BIF hosts, mafic volcanic and volcanoclastic units. Paleo-Placer/Conglomerate Hosted: associated with meta-conglomerates within the Proterozoic (Paleo?) transgressive clastic sequence. Au rich VHMS: hosted by younger Meso-Proterozoic intrusives in the volcanosedimentary rocks sequence in the Goiás Block, potentially in the Faina greenstone. The silver-tungsten-copper mineralisation at Cascavel has been interpreted as a carbonate replacement deposit due to the strong relationship to the impure limestone unit and crosscutting faults. Tinteiro Target shows features so far interpreted as being related to a late IOCG system.</li> <li>Polymetallic mineralisation at Tinteiro: silver/tungsten/copper is interpreted as a carbonate replacement mineralization type that overlaps parts of the Cascavel Orogenic style mineralization and represents the most distal expression of the Tinteiro system. Closer to the core of the Tinteiro system gold, copper, barium, cobalt, uranium anomalies occur with hematite, potassic and sodic alteration together with structural features like fold hinges and crosscutting faults that are interpreted as a potential IOCG target.</li> <li>The mineralisation of copper/gold/silver and other metals at Tinteiro is associated with zones of mainly hydrothermal sericite, hematite and magnetite alteration that are associated with regional and potentially deep crustal</li></ul>
Drill hole Information Data	<ul> <li>No drilling reported in this announcement.</li> <li>No data aggregation methods reported in this announcement</li> </ul>
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Criteria	Commentary
Relationship between mineralisation widths and intercept lengths	No exploration results reported in this announcement.
Diagrams	Diagrams relevant to the metallurgical testwork reported in this announcement are attached to the current announcement.
Balanced reporting	<ul> <li>This announcement is a comprehensive report of the results covered by this announcement.</li> </ul>
Other substantive exploration data	NA – no exploration results reported in this announcement.
Further work	<ul> <li>Ongoing metallurgical testwork on various aspects of the Cascavel material may be undertaken from time to time.</li> </ul>

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