



Orinoco Signs Toll Treatment Agreement with Cleveland Mining for Cascavel Gold

Cascavel material to be processed at Premier Gold Mine

Orinoco Gold Limited (ASX: OGX) is pleased to announce that it has entered into a Toll Treatment Agreement with Cleveland Mining Limited (ASX: CDG) to process material from its 70%-owned **Cascavel Gold Project** in Brazil.

Under the agreement, gold-bearing material from Cascavel will be processed at Cleveland's Premier Gold Mine. The Cascavel Project lies ~120km from the Premier Gold Mine, with both projects located in Goiás State in central Brazil.

The Toll Treatment Agreement will allow Orinoco to evaluate the ore extracted from its planned 200m exploration decline at Cascavel without the expense or additional time required to establish its own processing facilities on site and without the tonnage constraints of the pilot plant currently being utilised at a nearby metallurgical facility.

Orinoco plans to process an initial 500-tonne parcel of material in the first half of 2014 following completion of the exploration decline. The primary aim of this exploration decline is to develop a better geological understanding of the controls and grade distribution of the main gold-bearing structure at Cascavel.

Once the exploration decline is complete and the initial 500-tonne sample has been processed, both parties will assess the processes, outcomes and economics of the activity. The agreement provides for further parcels of up to 4,000 tonnes per month to be processed.

Orinoco's Managing Director Mark Papendieck said the Company was very pleased to have finalised an agreement with Cleveland Mining, a fellow ASX-listed mining company operating in central Brazil, to toll treat Cascavel ore.

"Cleveland's Premier Gold Mine is a quality operation located within trucking distance of Cascavel," he said. "The Agreement will enable us to fast-track our understanding of the Cascavel Project by cost effectively processing and evaluating material extracted from the planned exploration decline.

"This will in turn enable us to evaluate the economics of a future commercial gold operation at Cascavel," he added.

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Issued Capital

76,500,001 Ordinary Shares

15,000,000 Performance Shares

12,500,000 Listed Options

17,900,000 Unlisted Options

ASX Code

OGX (Ordinary Shares)

OGXO (Listed Options)



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Bulk Sample Update

Orinoco recently collected and processed a non-selective sample from the Cascavel winze containing the barren host rock (quartzite), the mineralised quartz veins and alteration. This sample is intended to provide an initial indication of a diluted mining grade of the area immediately surrounding the Cascavel winze.

The Company is currently awaiting final assays from control samples from each phase of the bulk sampling process (crushing and screening, milling, gravity concentration and tailings) to allow the total gold content of the bulk sample to be calculated and fully reconciled. In order to establish the grade of the entire sample the assay data collected from all stages of the testwork (including assays from over 30 kilograms of samples taken from the resultant gold concentrate alone) is required in order to compile mass and metallic balances and calculate the total gold content of the sample.

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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. Dr Klaus Petersen is an employee of Orinoco Gold Limited and has 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 consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.*



Figure 1. Ball Mill and Gravity Tower at Cleveland's Premier Mine in Goiás, Brazil.

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Table 1 Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	<ul style="list-style-type: none"> • <i>Underground bulk sampling:</i> the samples are collected from non selective face/panel sampling on winze walls, floors and ceilings. • <i>Sampling procedures at the pilot plant:</i> after the sample has been crushed to <0.4mm the samples are homogenised and arranged in uniform stockpiles with less than 10 tonnes in a long shape. Each pile was sampled from up to five sections (head grade) and the entire sample for each section was submitted for screen fire assay. Each step of the processing process (e.g. mill feed, shaking table feed, shacking table concentrate, tailings) was sampled in 30min intervals and a composite sample was generated daily. All samples were analysed by screen fire assay and if mass was not sufficient, a fire assay composite of 5 points in the sample was used. • <i>Chip sampling:</i> sampling has been conducted on site following pre-determined selective sections that target rock types and structural features. Samples are collected from in-situ outcrops, chipped with a geo pic and bagged in plastic bags with weights between 3-5kg. Samples are bagged in double bags with number codes and a short description of the sampling place (e.g. rock type, features, alteration). All data is stored in a geological database following QA/QC procedures. • <i>Underground channel sampling:</i> channels in fresh rock are cut approx. 7cm wide and 2-3cm deep with the help of a geo pick and an electric disk saw. Channels are 0.5m long and made from the floor to the ceiling of the winzes and spaced approximately every 3m (wood framing, cables, pipes, stopes permitting). All data is stored in the data base following QA/QC procedures. • <i>Diamond Drill core sampling:</i> samples from drill core are sawn in half with a diamond core saw and sampled every 0.5m in the ore zone. Sampling places are marked on the core tray with the sample number. The core trays are also marked with the blanks and standards samples and all core is photographed. All data is stored in the data base following QA/QC procedures. • <i>Gold Mineralisation at Cascavel Target:</i> gold mineralisation at Cascavel is interpreted as an Orogenic Deposit style and is hosted in stacked quartz veins ranging from 0.1 – 0.5m wide and stacked repeatedly with variable composing alteration zones ranging from 1.5-15m. Drilling confirmed structural continuity along strike and plunge, microconglomerate as a host rock and a biotite alteration halo as the main characteristics. Gold is very coarse grained and clustered through the ore zone plunging 240-250/25. • <i>Gold mineralisation at Eliseo Target:</i> gold is hosted in deformed conglomerates where visible gold is frequently hosted in banded iron formation (BIF) blocks, sometime in the matrix of the conglomerate with sulphides that are interpreted as a further upgrading process of the originally mineralised BIF source. • <i>Polymetallic mineralisation at Tinteiro:</i> silver/tungsten/copper mineralisation is interpreted as carbonate replacement mineralisation that overlaps parts of the Cascavel Orogenic system 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.
Drilling techniques	<ul style="list-style-type: none"> • Drilling has been conducted by Servitec Ltda using diamond drilling. Drill rigs are Brazilian built hydraulically assisted MACSonda 320's. Drilling starts with HQ size core up to the limit of the equipment or where the rock type permits and is then NQ. Polymer filling is used when necessary.
Drill sample recovery	<ul style="list-style-type: none"> • Recovery is guaranteed by the contractor to not be less than 90% in the ore zones and is recorded every meter of advance with metal plate markings on the core tray boxes with drilling reports delivered daily. • Assays for gold are completed using Screen Fire assay to minimize the analytical problems related to coarse gold.

Criteria	Commentary
<i>Logging</i>	<ul style="list-style-type: none"> • Bulk samples are sent to the pilot plant where they are dried before being crushed. • All chip samples have a brief description and are preferentially used to recognise geochem anomalies. • The core samples are geologically logged in an appropriated level of detail concerning mineral resources, mining studies and metallurgical studies, where the main lithology and kind of alteration is described and the alteration minerals, veins, fractures, faults quantified. • All drill cores and channels are photographed. • All intersections are logged, with lengths varying between 0.5 and 1 meter or limited to the presence of geological boundaries in ore zones.
<i>Sub-sampling techniques and sample preparation</i>	<ul style="list-style-type: none"> • Drill core are sawn in half with a diamond core saw and half core is sent to the laboratory. • Chip samples are sent to the laboratory without drying or splitting. • The drill core boxes are marked meter by meter, according to the recovery of each interval. A geologist subsequently marks all lithological contacts and possible ore zones in the boxes. Duplicates are inserted in each batch of 20 samples. Blanks and standards are inserted approximately every 30 meters. • Blanks and standards are inserted into chip samples batches. • The core sample duplicates are the quarter of the remaining cores halves.
<i>Quality of assay data and laboratory tests</i>	<ul style="list-style-type: none"> • 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 with Fire Assay method in non-ore samples. Metallic Screen Fire Assay is applied if the sample is considered ore. Selective samples are analysed in ICP-MS, with a multi-acid digestion for 32 elements. • Standards (insertion of different standards in each 30 samples approximately): If less than 10% is outside of the mean + 2x Std. Dev, the results are validated. If less than 10% is outside the Mean + 3x Std. Dev, but there are standards between these two points - the results are validated, but the Lab is notified. If more than 10% is 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. • Blanks (insertion in each 30 samples approximately): If less than 5% is 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. • Duplicates (insertion in each 20 samples – Bias control): Project Duplicates are core quarter and Lab duplicates are Gravel and Pulp Duplicates.
<i>Verification of sampling and assaying</i>	<ul style="list-style-type: none"> • All assaying results are verified; being selected the best intersections as from 0.2 g/t cut-off grade. • Twinned drill holes aren't used as it is not an adequate check in a coarse gold deposit. • The data entry and storage of physical data is made in the site project and the storage of electronic data.
<i>Location of data points</i>	<ul style="list-style-type: none"> • All drill holes, trenches and channels were located with Total Station and the down-hole surveying is made with Deviflex or Multi-shot depending on the inclination. Multi-shot for vertical drill holes and Deviflex for inclined drill holes. • The grid system used is UTM South American 1969 - Zone 22 S. • The topography crew uses local landmarks to guarantee the quality of their surveying.
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> • Data spacing is not regular but in the main portion of Cascavel target is enough to establish the degree of geological and grade continuity appropriate for the first Mineral Resource estimation and classification. • 1 meter Run Length compositing was applied.
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> • The data orientation is not regular and depending on the drill hole orientation is possible see different kind of structures. • Because of the irregular orientation and spacing, a data declustering is necessary.

Criteria	Commentary
Sample security	<ul style="list-style-type: none"> • Drill core is stored in plastic core boxes with lids and is stacked in piles in the core shed of the site office. • All laboratory pulps are stored in the core shed in boxes supplied by the labs, stacked in dry places.
Audits or reviews	<ul style="list-style-type: none"> • A third independent consultant has been hired to generate a evaluation report about the current exploration targets (report is pending).

Section 2 Reporting of Exploration Results

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

Mineral tenement and land tenure status	<ul style="list-style-type: none"> • <i>The Faina Goldfield project is 70% hold 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.</i> • <i>Some locations within the project have archaeological sites that are required to be mapped and photographed prior to removal of the sites.</i> • <i>The tenement 840167/2007, where the majority of the work at Cascavel has been completed is a granted exploration permit valid until the 29.11.2014 when the final report will be due.</i>
Exploration done by other parties	<ul style="list-style-type: none"> • Exploration for oxide gold deposits was well developed on the belt during at least 20 years, in different cycles and by different companies. A reasonable amount of surface exploration was 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.
Geology	<ul style="list-style-type: none"> • 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. • Golden trends seem to be very continuous also along the strike, mostly associated with the main regional scale shear zones. • Mineralisation style is also varied on the belt. Most part of the gold mineralisation can be classified as Orogenic, mainly hosted in chemical and volcanoclastic sedimentary units. At least the following models can already be considered, according to the available data: Shear Hosted (Orogenic) associated with carbonaceous/BIF hosts, mafic volcanic and vulcanoclastic 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 vulcanosedimentary 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.