APHRODITE
Gold Limited

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Company Announcements Office
Australian Securities Exchange Limited

APHRODITE GOLD DEPOSIT
POSITIVE METALLURGICAL RESULTS - OVER 90% GOLD RECOVERY

HIGHLIGHTS

- **More positive results received from metallurgical testwork on the Aphrodite Gold Deposit which hosts a JORC resource containing 1.03Moz gold (Note 1).**
- **Bulk flotation tests on primary ore produced a very encouraging mass pull of 2.9% (compared to 5.85% from a previous bench scale test) with an overall recovery of gold of 91.3% and gold assay of 46.35g/t from an initial feed grade of 1.49g/t. (Note: The lower the mass the better).**
- **Concentrate produced in the bulk flotation is more representative of the concentrate which would be produced in a full sized flotation plant.**
- **Diagnostic leaching and QEMSCAN analysis show that there is more gold associated with arsenopyrite than pyrite. It may therefore be possible to selectively float arsenopyrite from other sulphides to produce an even lower mass concentrate at extremely high gold grade (Note 2). This needs to be demonstrated in future testwork.**
- **Producing high gold grade low mass concentrate would greatly assist in reducing transport and processing costs of the concentrate as well as opening up a range of options for the processing or sale of concentrate.**
- **Concentrate produced from Aphrodite could find strong interest with Chinese processors.**
- **Transitional ore exhibited oxide characteristics with very good gold recoveries by conventional leaching (around 98%). This is significant as the transitional ore could be treated through a standard leach circuit with oxide ore.**
- **Size by size analysis tests on oxide material showed upgrading of gold grade through rejection of fines is possible.**
- **A potential processing route for oxide ore could be size classification of crushed feed followed by toll treatment or sale of upgraded coarser material and on site leaching of lower grade fines.**
- **Size classification may translate into low grade material previously considered uneconomic being mined and processed thereby increasing overall resources.**
- **Viscosity and oxygen uptake results were low and should not be an issue when processing oxide, transition or primary ores.**
- **Results of the testwork to be used in a Scoping Study to commence shortly.**

INTRODUCTION

Aphrodite Gold Ltd is pleased to report further positive results from its metallurgical testwork program on its Aphrodite Gold Deposit located near Kalgoorlie which hosts a JORC resource containing 1.03Moz of gold (refer to Note 1). The program was conducted at ALS AMMTEC Laboratories and supervised by Mineral Engineering Technical Services (METS) located in Perth, Western Australia.

The results reported herein complete the first phase of an intense metallurgical program on individual composite samples of oxide, transitional and primary (sulphide) material prepared from drill core. The results of this program will now be used in a Scoping Study to be commenced shortly.

Testwork recently completed included;

- ✓ Rheology on oxide, transition and primary samples
- ✓ Oxygen uptake determinations on all samples
- ✓ Cyanide Sensitivity on all samples
- ✓ Bulk flotation testwork on primary sample
- ✓ Direct leach and bench scale flotation on transitional material
- ✓ Size by Size Analysis of oxide sample
- ✓ Percolation and Agglomeration tests on Oxide Sample
- ✓ Diagnostic Leach on Primary Leach Residue
- ✓ Petrology and QEMSCAN mineralogy.

An interim report on testwork completed in the 2Q 2011 was provided to the ASX on 14 July 2011. This announcement included results from:

- ➢ Detailed head assay of oxide, transitional and primary sulphide mineralised samples.
- ➢ Crushing Work index determination of oxide, transitional and primary samples.
- ➢ Unconfined Compressive Strength determination of oxide, transitional and primary samples.
- ➢ Bond Abrasion index of oxide, transitional and primary ore samples.
- ➢ Bond Ball Mill Work index of oxide transitional and primary ore samples.
- ➢ Falcon gravity separation tests of oxide, transitional and primary ore samples.
- ➢ Gravity leach versus grind size for oxide ore sample.
- ➢ Bench scale rougher flotation versus grind size test of primary ore sample.
- ➢ Cleaner flotation of 75µm primary rougher flotation concentrate.
- ➢ Coarse bottle roll versus crush size for oxide ore sample.

RESULTS OF RECENT TESTWORK

Rheology

A rheology test was completed on each of the oxide, primary and transition samples to determine whether slurry viscosity would pose any issues when processing. Tests were conducted at 45% solids by weight and 75 µm grind size.

All samples exhibited very low viscosities at high and low shear conditions and therefore viscosity should not be an issue when processing oxide, transition or primary ore.

Oxygen Uptake Tests

Oxygen uptake tests determine if oxygen sparging (injection) is required to maintain adequate dissolved oxygen levels required for cyanide leaching of gold. Oxide, transition and primary samples were submitted for oxygen uptake tests.

All samples returned relatively low levels of oxygen consumption with only the oxide sample indicating oxygen addition would be essential. The oxide sample recorded a high oxygen uptake rate (>0.15 mg/L/min) for the first hour of the test with the subsequent results returning low oxygen uptake rates (<0.05 mg/L/min). Tests on transition and primary samples showed low oxygen uptake.

The overall results indicate that it could be possible (if multiple leaching stages are used) to use oxygen injection in the first stage of leaching and air injection in the following stages, thereby reducing operating costs.

Cyanide Sensitivity

The cyanide sensitivity of each oxide, transition and primary sample was examined through leaching each sample at two different cyanide concentrations then observing the gold extraction achieved at each concentration.

Cyanide concentrations of 0.025% and 0.05% were chosen to be tested for the oxide sample, while concentrations of 0.025% and 0.075% were used for the transition and primary samples. The higher cyanide concentration of 0.075% was chosen for the transition and primary samples as it was thought that more cyanide may be required to achieve acceptable gold extraction if refractory gold is present. All leach tests were undertaken at a grind size of P80 of 75 µm.

While the oxide sample showed slightly faster leach kinetics in the early stages of the test at the higher cyanide concentration, by test completion (48 hours) the final difference in recovery was negligible. Overall recoveries of 97.41% at 0.05% and 96.11 at 0.025% were achieved. As expected cyanide consumption was higher during the 0.05% concentration test over the 0.025% (0.89 kg/t compared to 0.51 kg/t cyanide). These values will be taken into account when designing any leach circuit for oxide material.

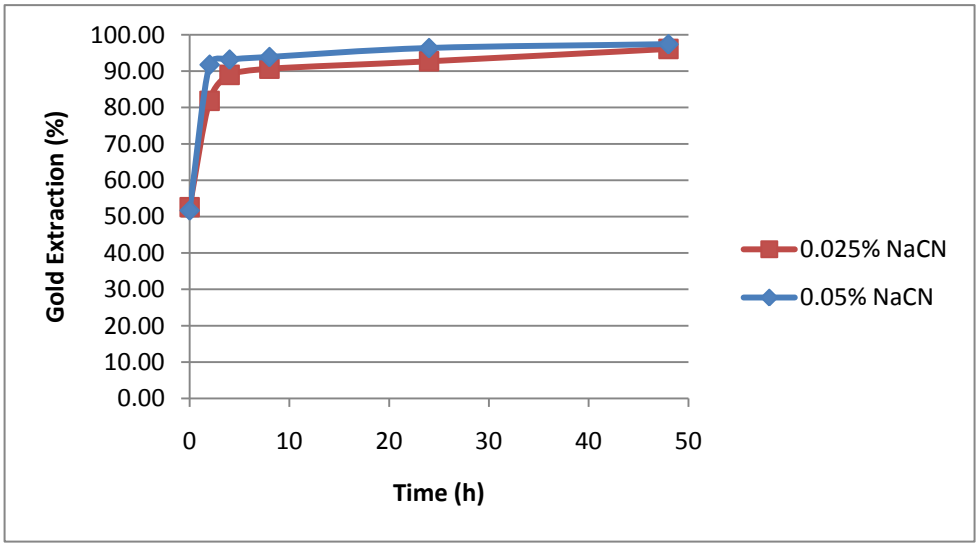

Figure 1: Oxide Sample Cyanide Sensitivity

The transition cyanide sensitivity test showed no advantage in using the higher concentration of cyanide as the 0.025% solution produced faster leach kinetics and a slightly higher overall recovery (99.27% over 97.61%). Also the cyanide consumption at 0.075% was recorded as being approximately twice as high as the consumption at 0.025% (1.50 kg/t at 0.075% and 0.78 kg/t at 0.025%). As the higher cyanide concentration had no effect of the leach recovery of kinetics, the lower cyanide concentration of 0.025% would be selected to reduce operating costs.

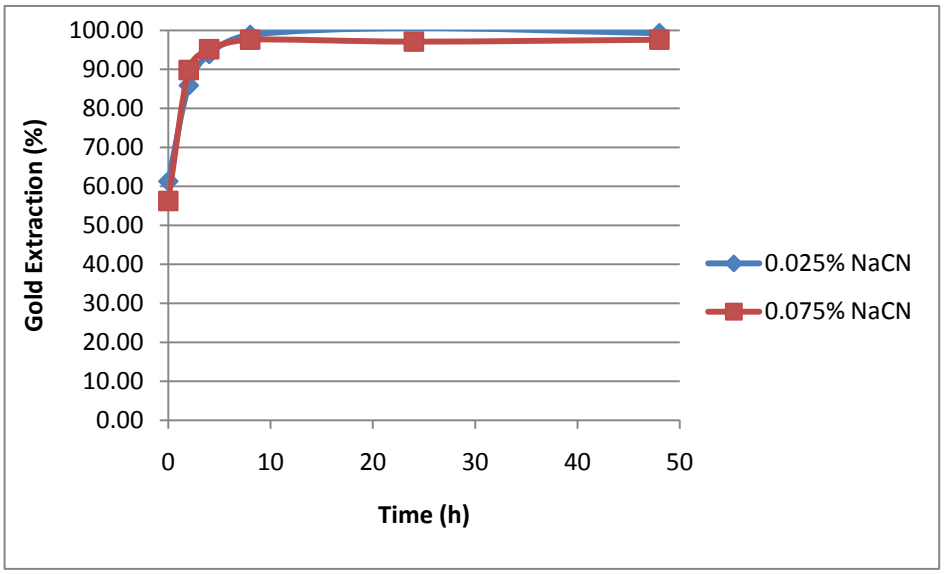

Figure 2: Transition Sample Cyanide Sensitivity

The high leach recoveries (around 98%) indicate that the transition material behaves more like an oxide ore than (refractory) primary material. This is significant as the transitional ore could be treated through a standard leach circuit with the oxide ore.

Varying the concentration of cyanide had no effect on the recovery of gold in the primary sample. The low recoveries of gold (approximately 35%) indicate that the primary material, as previously established, is refractory and therefore direct leaching of the primary ore would not be viable. However recovery of gold via production of a high grade gold concentrate presents a very attractive alternative as demonstrated by the testwork results which follow.

Flotation Testwork on Primary Material

Rougher Flotation

Results of previous rougher flotation testwork on primary material showed encouraging results with high recoveries of gold per mass recovered with fast flotation kinetics with the most favourable results from the 75µm grind size where 95.8% of the gold was recovered in 12.4% of the mass. (Refer to ASX report 14 July 2011). Fast flotation kinetics means that a smaller flotation plant could be installed at site.

Bench Scale Cleaner Flotation

Bench scale cleaner flotation work conducted on the 75 µm rougher flotation work showed that the mass of the concentrate was reduced to 5.85% from the initial (rougher) sample weight achieving an overall recovery of gold of 93.5%.

Primary Bulk Cleaner Flotation

Bulk flotation tests (on the same primary composite as the bench scale flotation work) produced a **very encouraging mass pull of 2.9% (compared to 5.85% for bench scale test) with an overall recovery of gold of 91.3% (compared to 93.5% for bench scale). The concentrate produced assayed 46.35g/t gold from an initial primary composite averaging 1.49g/t. Overall the concentrate produced in bulk flotation will be more representative of the concentrate which would be produced in a full sized flotation plant.**

Lower mass recoveries in bulk flotation over bench scale is common during testwork as the larger volume of the float cell means less light gangue (waste) material is likely to be recovered in the froth. The resulting concentrate is of a higher purity than the equivalent bench scale float concentrate. This can be seen in the bulk flotation results below which show higher sulphur content in the bulk cleaner concentrate (30.61% compared to 16.4% in the bench scale). The higher sulphur content, combined with the smaller mass, indicates a higher percentage of pyrite and arsenopyrite in the concentrate (the minerals being targeted by flotation). **The smaller mass recovery and high purity is favourable for toll treatment as a small mass concentrate means less transport and processing costs.**

Total Product	Weight		Gold (Au)		Sulphur (total)		Iron (Fe)		Arsenic (As)	
	Kg	%	(g/t)	%dist	%	%dist	%	%dist	(%)	%dist
Cleaner Con	**5.92**	**2.90**	**46.35**	**91.30**	**30.61**	**93.94**	**32.13**	**30.15**	**2.00**	**86.79**
Cleaner Tails	3.55	1.74	0.93	0.20	0.55	1.01	4.14	2.33	0.07	1.82
Rougher Con	9.47	4.64	29.31	92.39	19.33	94.96	21.63	32.49	1.28	88.61
Overall Scavenger Tail	194.53	95.36	0.12	7.61	0.05	5.04	2.19	67.51	0.01	11.39

Table1: Bulk Flotation Test Results

The flotation results from the bulk test will be used in the design of a flotation circuit. **Optimising of reagents will be also be carried out in later studies in order to gain further improvement in gold recoveries and mass pull.** The composition of the sulphide concentrate produced will be checked as to its acceptability for final processing at selected treatment plants located close to the Aphrodite Project or elsewhere.

Transition Material Flotation

The conditions used in the rougher primary flotation were used to collect the first three concentrates during the transition flotation test. Controlled potential sulphidisation (CPS) flotation was completed for the fourth and fifth concentrates of the transition rougher flotation test. CPS is used as an attempt to reactivate the sulphur in the sample thus theoretically increasing flotation recovery of gold associated with sulphur based minerals.

Although CPS flotation of the transition composite returned encouraging results (90.1% gold recovery in 9.5% mass), flotation will most likely not be considered as a processing option for transition ore as greater recovery has been shown through leach testwork with the transition ore showing oxide characteristics producing gold recoveries (by leaching) of around 98%.

Size by Size Analysis of Oxide Sample

Size by size analysis tests on -6.4 mm oxide material showed that upgrading of the gold grade through rejection of a fines fraction is possible.

Separating the +106 µm material from the -106 µm produced gold grades of 2.01 g/t in the coarse fraction – an upgrade of 35% from a head grade of 1.54 g/t - while the finer -106 µm fraction assayed 1.01 g/t.

These results are significant as it shows that a possible processing route for oxide ore could be size classification of crushed feed followed by on site leaching of the fines and toll treatment or sale of upgraded coarser material. This may also translate into low grade material previously considered uneconomic being mined and processed. Leach testwork completed on P80 106 µm oxide material displayed good leach recovery (~97% gold recovery) which is complementary to this proposed processing route.

The Figure below shows the gold grade and mass distribution at the selected size intervals while the Table shows the grade achievable if the feed was classified into -106 µm and +106 µm products.

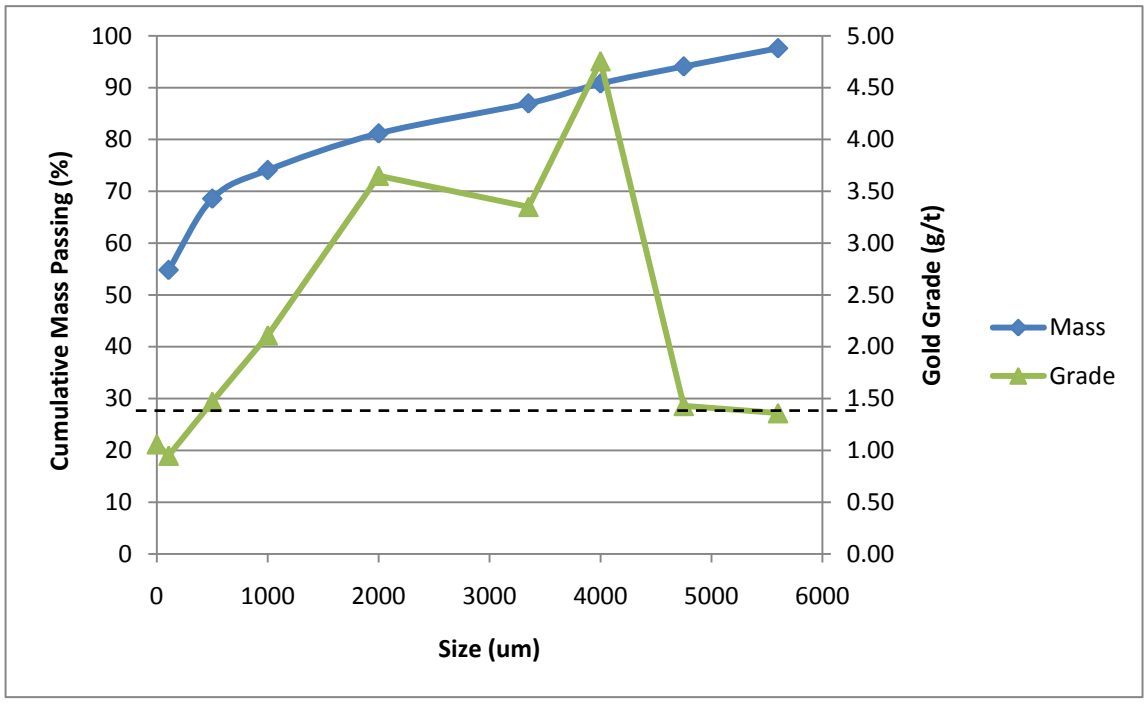

Figure 3: Gold Grade and Mass Distribution at selected size intervals – Oxide Sample

Size Fraction	Mass Recovery (%)	Gold Distribution (%)	Gold Grade (g/t)
-6.4 mm (whole feed)	100	100	1.54
+106 µm	45.19	61.81	2.08
-106 µm	54.81	38.19	1.06

Table 2: Gold Grade in Feed vs Size for -6.4 mm Oxide

While the fine fraction of the sample for the work completed was determined to be -106 µm, the most economical size cut for upgrading of gold grade will need to be investigated in future studies.

Percolation and Agglomeration on Oxide Sample

Percolation and agglomeration tests were completed on -6.4 mm oxide material as determined by intermittent bottle roll tests. The high percentage of fines within the oxide sample produced unsatisfactory results (even at the highest cement dosage of 16 kg/t) with regards to the flow of liquid through the column and slumpage of the material. The tests indicate that oxide ore is not amenable to heap leach.

Mineralogy

Mineralogical examination by QEMSCAN was undertaken on both the whole crushed sample (-3.35 mm) and the falcon gravity concentrates of each sample; oxide, transition and primary. The results of these tests have been provided in a report from ALS AMMTEC.

The work showed sulphide minerals in crushed primary sample making up 3.26% of the primary composite with pyrite (2.67% of the mass of the sample) the dominant sulphide followed by pyrrhotite (0.33%) and arsenopyrite (0.25%).

Diagnostic Leach on Primary Leach Residue

A diagnostic leach was completed on the primary leach residue following cyanide leaching to determine the deportment of refractory gold within the sample. It was assumed that all gold that could be freely leached had been recovered in the initial 48 hour leach test, accounting for 35.87% of cyanide soluble gold. The majority of refractory gold within the sample was determined to be locked in arsenopyrite (59.04% of total gold) followed by minor amounts within pyrite (4.52%) and silicates (0.57%).

QEMSCAN analysis of the primary feed showed that arsenopyrite only accounted for a very small proportion (0.25% in the feed) of the primary composite. This is significant with regards to the diagnostic leach results as it shows that the **majority of the gold in the primary ore is present within a very small mass.**

Arsenopyrite and pyrite were recovered during testwork via flotation of the primary ore to produce a high grade sulphide concentrate accounting for 2.9% of the feed mass (refer to section above titled Primary Bulk Cleaner Flotation).

Diagnostic leaching and QEMSCAN analysis show that there is more gold associated with arsenopyrite than pyrite. It may be possible to selectively float arsenopyrite from other sulphides to produce an even lower mass concentrate at extremely high gold grade (Note 2). QEMSCAN studies on float concentrate reported all sulphide species, including **arsenopyrite, were well liberated within the concentrate**. This indicates that selective flotation could be possible; however this will need to be confirmed through future testwork.

If it is determined that onsite processing of the primary ore is the most economic route, producing a high gold grade low mass concentrate would greatly assist in reducing processing costs for oxidation of the concentrate as well as potentially opening up a range of options for processing or sale of the concentrate.

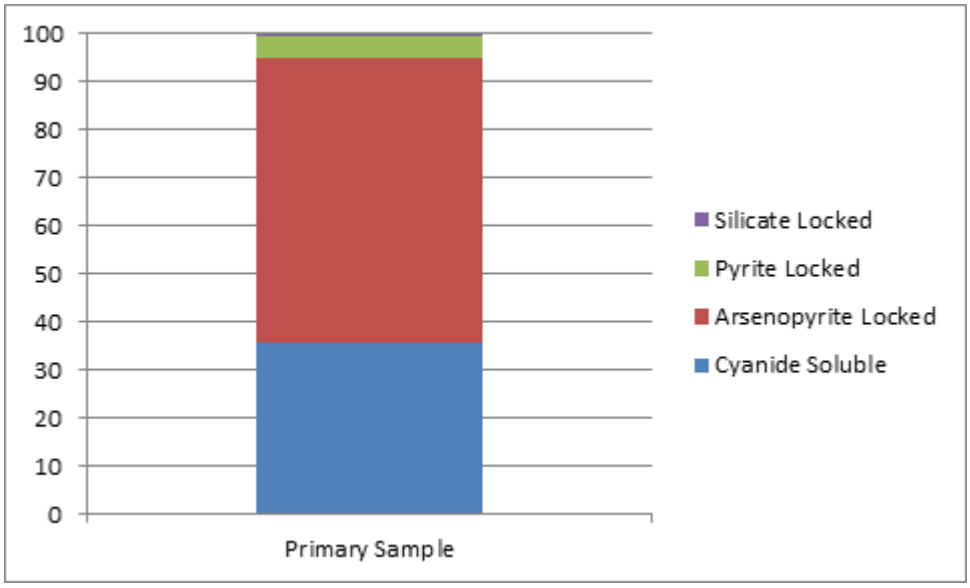

Figure 4: Percent Deportment of Gold in the Primary Sample

Petrology

Petrological examination of the each of the samples; oxide, transition and primary, was undertaken by Roger Townend to provide geologists a more detailed description of the composites used in the testwork program.

Yours Sincerely,

Leon Reisgys
Exploration and Development Director

Note 1:
Existing JORC Resource for the Aphrodite Gold Project consists of 3.67Mt @ 3.83g/t Au for 451,000 ounces. (Indicated) and 6.39Mt @ 2.83g/t Au for 582,000 ounces (Inferred) totaling 10.06Mt @ 3.19g/t Au for 1,033,000 ounces. This resource has been broken down into two domains; potential open pit (0 to 150m depth) and underground (150 to 440m depth). Potential open pit resources consist of 1.92Mt @1.96g/t Au for 121,000 ounces (Indicated) and 5.14Mt @1.81g/t Au for 299,000 ounces (Inferred) totaling 7.06Mt @ 1.85 g/t Au for 420,000ounces at a cut-off grade of 0.5g/t. Potential underground resources consist of 1.75Mt @ 5.87g/t Au for 330,000 ounces (Indicated) and 1.25Mt @ 7.02g/t Au for 283,000 ounces (Inferred) totaling 3.0Mt @ 6.35 g/t Au for 613,000 ounces at a cut off grade of 3.0g/t. Full details of the JORC resource are contained in the Company's ASX announcement of 24 March 2011.

Note 2:
Connelly et al, 2005; AusIMM Centenary of Flotation Symposium, Brisbane QLD, Australia "Separation of Pyite and Arsenopyrite in a Gold Sulphide Concentrate".

Competent Persons Statement
Information in this report that relates to technical results and resources reflects information compiled by Leon Reisgys FAusIMM and Exploration and Development Director of Aphrodite Gold Ltd who has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is reporting on as a competent person as defined in the 2004 Edition of "The Australian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves." Mr. Reisgys consents to the inclusion in this report of the matters based on the information compiled by him, in the form and context in which it appears.

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