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8 November 2012

Company Announcements  
Australian Securities Exchange

## **PETROLOGY CONFIRMS PORPHYRY COPPER-GOLD AT CRATER MOUNTAIN**

**Three distinct zones of mineralisation now identified at Nevera – gold mixing zone, high grade zone, porphyry cu-au zone**

- *NEV 033 drill hole peripheral to major porphyry copper-gold system*
- *Petrological and mineralogical study verifies and highlights the presence of strong porphyry copper-gold mineralisation underlying the northern end of the Nevera Prospect*
- *Plans for detailed airborne geophysics underway*

Gold Anomaly (ASX: GOA) has received a final report on the petrology and mineralogy of drill core from hole NEV033 at the Nevera Prospect at the flagship Crater Mountain project, Papua New Guinea (PNG). The report by Mr Anthony Coote of Applied Petrologic Services & Research in New Zealand (“APSAR”), includes a detailed discussion of his findings which confirm and highlight the drill hole’s proximity to a nearby major porphyry copper-gold system. This confirms that the Nevera prospect has three distinct geological zones of potential; the Mixing Zone, the High grade zone and now the copper-gold porphyry zone.

Gold Anomaly’s final drill hole of its last drill program, NEV033, was a deep hole collared down-slope from NEV020, with the distinction of being the first drill hole since the initial BHP drilling program sited specifically to target porphyry copper-gold.

Based on the identification in drill core of minerals that are characteristic of the broad propylitic halos that surround porphyry cu – au deposits in a number of widely spaced drill holes, an area at least 800m long by 400m wide lying at depth under the northern end of the prospect ridge is interpreted as being proximal to a porphyry Cu - Au system.

NEV033 was sited and oriented to test this interpretation, its location based particularly on the presence of strong coarse phyllic alteration in the lower part of drill hole NEV020 which is located higher up the slope from the NEV033 collar, to test for potential porphyry copper-gold mineralisation at depth; strong phyllic alteration are commonly found to overlie deep buried porphyry deposits.

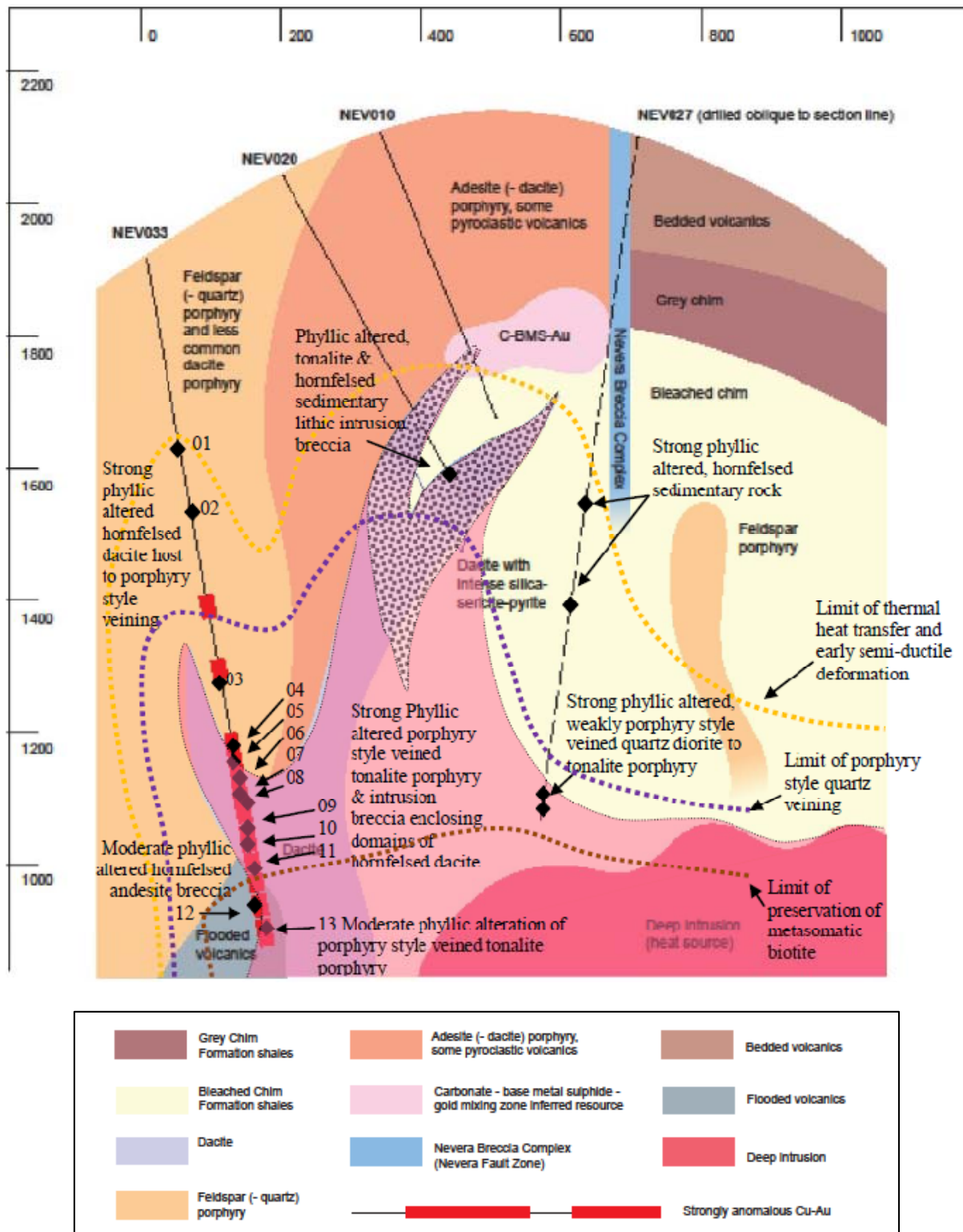


Figure 1 - Cross section by APSAR showing locations of petrographic samples in NEV033 and interpreted distribution of porphyry Cu-Au related structures Note: NEV027 is drilled oblique to section

NEV033 was planned to reach 1,100m depth, however deflection of the drill stem and consequent tightening of the rods caused the hole to be terminated at 984m.

The widest intersection of strongly anomalous copper and gold values in NEV033 is 124m from 704m down-hole to 828m; average values over this interval are 900 ppm Cu and 0.38 g/t Au

More details associated with Dr Cootes Report can be found in the attached appendix

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### **Competent Person for Crater Mountain**

*The information contained in this report relating to Exploration Results and Mineral Resources at Crater Mountain, PNG is based on information compiled by Mr P Macnab, Non-Executive Director of Gold Anomaly Limited. Mr Macnab is a Fellow of The Australian Institute of Geoscientists and has the relevant experience in relation to the mineralisation being reported upon 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. Mr Macnab consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

## **Appendix**

### **Petrology and Mineralogy of NEV033**

In summarising APSAR's very detailed findings, Coote states the petrological study "confirms strong phyllic/silicic alteration overprinting of porphyry style copper mineralisation developed within thermally metamorphosed/metasomatised dacites and basaltic andesite rocks, and potassic metasomatised tonalite porphyries, the latter probably in part causative to thermal and metasomatic effects including copper (and gold) mineralisation".

The petrology and mineralogy highlight a primary deep high temperature porphyry copper-gold mineralising event associated with tonalite porphyries intruding basaltic andesites and younger more evolved dacites of the Crater Mountain volcanic pile (and elsewhere bleached and indurated shales). Extensive prograde potassic metasomatism of the tonalite porphyries and volcanic country rock accompanied the early porphyry copper-gold mineralisation, along with strong thermal metamorphism of the country rock. The porphyry copper-gold mineralisation is widely distributed as multiple stages of characteristically porphyry style quartz veining (commonly Type B and Type C) within which abundant hypersaline, gas and liquid-rich aqueous fluid inclusions occur in granoblastic quartz.

An episode of intense retrograde epithermal phyllic/silicic alteration overprints the earlier porphyry copper-gold mineralogy and textures, in places with associated carbonate + base metal sulphide +/- gold mineralisation. The strong phyllic overprint diminishes towards the bottom of the drill hole. Coote concluded that the strength of the phyllic alteration overprint in places may have been sufficient to remobilise/redistribute prograde porphyry-related copper and gold.

The detailed petrography shows that anhydrite is locally a major component of the epithermal retrograde phyllic alteration as well as the primary porphyry style veining and related prograde potassic metasomatic alteration in which it occurs deep in the hole as intergrowths with preserved secondary biotite and K-feldspar. The occurrence of anhydrite rather than alunite in the retrograde hydrothermal overprint is taken to indicate the near neutral pH of the invading hydrothermal fluids reacting with the wallrock.

Coote noted that "chalcopyrite and bornite comprise the copper mineralogy contained within prograde potassic metasomatism/hornfels replacement/recrystallisation assemblages, and that contained within paragenetically associated porphyry style quartz veining. The chalcopyrite and bornite stability persists with retrograde phyllic alteration overprinting, whereas minor amounts of chalcopyrite and more abundant tennantite/tetrahedrite comprise the copper mineralogy present within base metal-carbonate fracture-fill and breccia cement assemblages".

### **ON-GOING PORPHYRY COPPER-GOLD EXPLORATION**

Drilling is currently on hold at Crater Mountain whilst the Company consolidates and evaluates the huge amount of data generated over the past 2 years, and conducts further surface exploration and airborne geophysics.

There are no detailed airborne geophysical data available over the Crater Mountain area, and the Company is currently pursuing tenders to have a detailed survey carried out. The survey will be heliborne magnetics/radiometrics on line separations of 100m flown at 50m above tree-top height. It is intended that this will be conducted over the whole of its Crater Mountain tenements, with particular emphasis on the Nevera Prospect where it can be

expected to generate considerable detail of the underlying intrusions, alteration patterns and structural controls, all of which are critical to the Company in planning ongoing drilling of the porphyry copper-gold potential.

Geological mapping and sampling are continuing, with an emphasis being given to the Nevera Prospect where a number of targets will be made drill-ready, in particular the next deep porphyry copper-gold target which will also draw heavily on the results of the airborne geophysics.

Due to the depth of the identified porphyry copper-gold mineralisation at the northern end of the Nevera Prospect, consideration is being given to mobilising a drill rig capable of drilling to a depth of 2,000m: experience on other prospects, notably on the Golpu porphyry copper-gold at the Wafi-Golpu Prospect in the Morobe Goldfield, has shown that a significant part of the mineralisation can lie more than 1,000m below the surface, and progress in locating and assessing them required deep drilling.

## **BACKGROUND**

As currently mapped, the Nevera Prospect is approximately 3.5km long in a north-south direction, and 2.5km wide, remaining open to the south and east. The Prospect is draped over a prominent high north-south ridge between the Maviana Creek in the east and the Nevera River in the west, which projects northwards at approximately 2,300m asl from the main east-west Crater Mountain range and terminates near the northern edge of the Prospect. After being initially more wide-ranging, exploration in the Nevera Prospect has focussed since the mid-1990s in the northern part of the Prospect, around the northern end of the ridge.

The first drilling at Crater Mountain was undertaken by BHP in 1996, targeting an interpreted shallow “telescoped porphyry copper” body in the north of the Nevera Prospect. Diamond drill holes NEV001 to 003 were angled under the northern end of the prospect ridge, however petrography carried out on the drill core identified the intersected mineralisation as low-sulphidation epithermal carbonate-base metal sulphide-gold “mixing zone” in style, with NEV002 returning 193m at 1.19 g/t Au. Mixing zone mineralisation is deposited as veins when deeply penetrating downwards-circulating carbonated groundwater mixes with rising hot mineralised magmatic fluids derived from a deep intrusive source. Petrography of hydrothermal breccias from the drill core identified some exotic porphyry fragments that suggested possible porphyry copper mineralisation at much greater depth.

Subsequent drilling by Macmin (NEV004 to 007), Triple Plate Junction (NEV008 to NEV017) and Anomaly (NEV018 to NEV032) outlined an irregular sub-horizontal gold-bearing volume within the mixing zone referred to as the Main Zone more than 600m long by 400m wide by 150m deep underlying the end of the prospect ridge which contains predominately low grade coherent gold values. This gold-bearing component of the mixing zone is located largely in the base of the Crater Mountain volcanics extending a short distance down into the underlying Mesozoic Chim Formation shales, and may have its source in the concurrent northeasterly-trending structurally and lithologically complex Nevera Fault System (Nevera Breccia Complex).

The base metals in the Nevera mixing zone are dominated by Pb and Zn sulphides (galena and sphalerite), whilst Cu sulphide (chalcopyrite) is minor to absent; this is characteristic of many gold-bearing Pacific Rim epithermal mixing zone deposits, including in Papua New Guinea Hidden Valley and Wafi in the nearby Morobe Goldfield and Kelian in Indonesia.

In early 2012 consultant Dr Andrew Redmond outlined a coherent volume of 23.8mt at 1.04 g/t Au using a 0.5 g/t Au cut-off from adjacent drill holes within the gold-bearing component of the mixing zone, which defined a maiden inferred resource of 795,000 ounces of gold that remains open laterally and possibly to depth in the northeast; higher grade portions were identified within this resource. Using a 0.4 g/t Au cut-off resulted in an inferred resource of 27.2mt at 0.97 g/t Au for 843,000 ounces, whilst using a 0.8 g/t Au cut-off resulted in 14.6mt at 1.3 g/t Au for 602,000 ounces of gold, and using a 1.0 g/t Au cut-off resulted in 10.1mt at 1.46 g/t Au for 473,000 ounces of gold

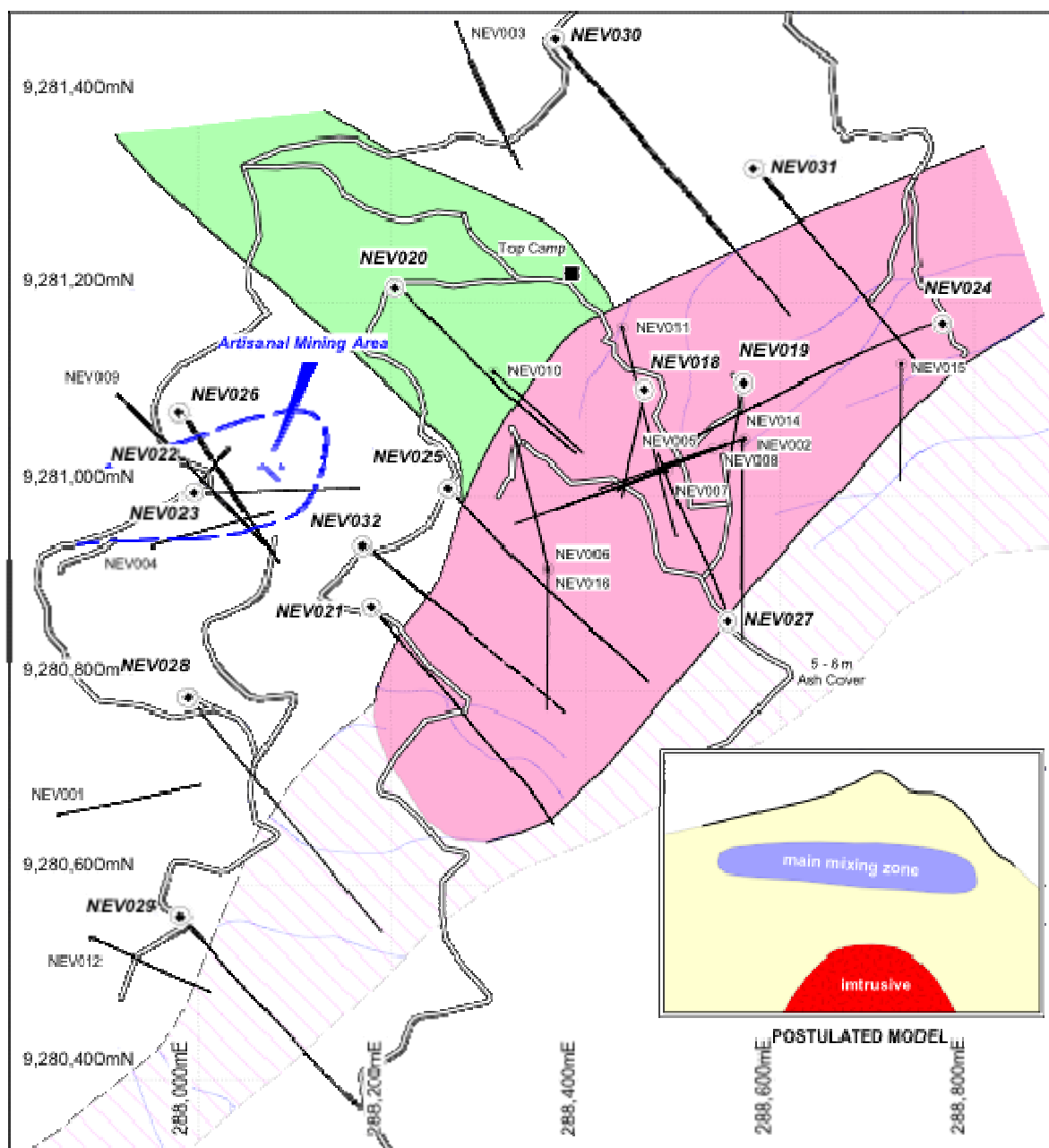


Figure 2 - Nevera bulldozer benches, drill collars and traces

Many of the drill holes penetrated to considerable depths below the base of the Main Zone at Nevera (marked only by a reduction in Au assay values and not by visual reduction of mineralisation), intersecting hundreds of metres of strongly bleached and indurated Chim



Formation shales with abundant brittle fracturing and breccia commonly displaying multi-generational quartz - pyrite and quartz - carbonate - base metal sulphide veining. Drilling by BHP, Macmin and TPJ was mostly less than 400m deep, with drilling by GOA reaching depths of up to 600m.

Below the Main Zone the presence of gold is restricted largely to sporadic short (mostly 2m) sections with medium and rarely high grades in which prominent quartz - carbonate - pyrite - base metal sulphide veins are interpreted as being primary magmatic in origin, pointing to a possible Pb - Zn - Au feeder zone at greater depth, associated with porphyries peripheral to the hot intrusion driving the baking of the shales; this is a similar setting to the multi-million ounce Waruwari base metal sulphide - gold mineralisation being mined at Porgera. Based on this interpretation by GOA, and the earlier untested interpretation by Macmin of a broad area with a similar deep Waruwari Pb - Zn - Ag - Au setting in the southwest quadrant of the Nevera Prospect, Gold Anomaly mobilized a second drill rig to site capable of drilling to 1,100m depth under suitable conditions, to locate the interpreted hot deep intrusion and test for a gold-mineralised feeder to the Main Zone gold mineralisation.

Most of the drilling from NEV004 to NEV032 targeted the mixing zone gold mineralisation, with several holes following mobilization by GOA of the larger drill rig targeting the interpreted deep intrusion-related gold feeder zone, whilst over the course of the drilling 5 holes were targeted at the High Grade Zone below the shallow underground workings of the artisanal miners, where narrow steep-dipping bonanza grade ore shoots are related to an episode of late stage high-sulphidation epithermal mineralisation.

As drill assay data increased it became apparent when reviewing base metal results that Cu values increase with depth in many of the drill holes, becoming anomalous in some, whilst at the same time Pb and Zn values decrease. This was initially considered to result from an early epithermal quartz - pyrite - chalcopyrite (+/- gold) phase of mineralisation characteristic of many Pacific Rim epithermal gold systems. The alternative possibility of a porphyry copper-gold connection was considered with growing conviction in the light of the presence of alteration minerals typical of outer propylitic alteration associated with porphyry copper-gold identified by hand lens deep in a number of drill holes, including the presence near the bottoms of several widely separated holes of magnetite - chalcopyrite in narrow veins.

At this time a petrological study of diamond core from drill holes NEV020, 024, 025, 027, 029 and 031 by Mr Anthony Coote of Applied Petrologic Services & Research ("APSAR") in New Zealand provided clear evidence for porphyry style copper-gold mineralisation at depth in the form of "hydrothermally overprinted copper mineralised, prograde potassic and porphyry style quartz veined tonalite porphyry, and fragments of tonalite porphyry and porphyry style veining contained within hydrothermally altered, polymict intrusion breccias". Coote concluded that "mineralogy, textures and fluid inclusion data also indicate magmatic hydrothermal fluid contributions to relatively high levels within the predominant low-sulphidation, epithermal system developed along the Nevera Fault".

When geological consultant Dr Greg Corbett visited site in early 2012 and closely examined drill core up to NEV031 he concurred with the interpretation of a possible deep porphyry copper-gold body located in the north of the Nevera Prospect northwest of the Nevera Breccia Complex, and he recommended a deep drill hole below NEV020 which was notable for intense coarse phyllic alteration (sericite/muscovite) in the lower part of the hole.