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FINAL REPORT

GOG

EL12/2001

2003

HELD BY: AurionGold Exploration

MANAGER & OPERATOR: AurionGold Exploration

AUTHOR(s): Michael Vicary

27 May 2003

PROSPECTS: Firetower Prospect, West Gog

MAP SHEETS:	**1:250,000:**		**1:100,000: Mersy**	
GEOGRAPHIC COORDS:	**Min East:**	**442000**	**Max East:**	**464000**
	Max North:	**5404000**	**Max North:**	**5407000**

COMMODITY(s): GOLD, COPPER

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SUMMARY

This report documents the work completed on EL 12/2001 - Gog by Goldfields / AurionGold Exploration.

In late 2002, AurionGold Exploration was acquired by Placer Dome Asia Pacific and a detailed review of Tasmanian exploration program completed. As a result of the review all non-mine lease exploration was suspended and several exploration tenements (including the Gog EL) were recommended to be relinquished.

AurionGold acquired EL12/2001 for its potential to host a 50MT stockwork style Au or intrusive Cu-Au deposit. It contains the Firetower prospect, an epigenetic stock work veined Au deposit with a W, As, Cu and minor Pb, Zn association, that had been inadequately tested by previous exploration. It is hosted in intensely carbonate-sericite altered volcaniclastics and is possibly related to nearby quartz-feldspar-biotite porphyry intrusions.

Drilling by AurionGold at the Firetower Prospect has extended the strike length about 400m. It has been closed off to the east but remains open to the west for at least a further 200m. Drilling suggests continuity of higher grade mineralisation between drillholes in the core of the prospect. An inferred resource of contained ounces was calculated to be only 3.6 Mt @ 0.8 g/t Au (90,000 oz). The Firetower prospect is not of sufficient size to warrant any further work.

Other work completed on the tenement included 1:5000 mapping, rock chip sampling, stream sediment sampling, a gradient array IP survey, ground magnetics, gridding and C-horizon soil sampling.

Reconnaissance mapping and stream sediment sampling has identified two other areas worthy of follow up, the west Gog area and a stream draining the Gog Range east of the Noranda Grid. The first of these, the West Gog area was subsequently gridded, soil sampled mapped and rock chip sampled. Numerous gossans, ironstones and bleached and veined volcanics were mapped. Extensive though low grade Au-As and basemetal soil and rock chip anomalies (Cu to 3.3%) are present and require follow-up rock chipping and possibly drilling or trenching. The anomalies remain open to the north and east. The grid should be extended to test these areas further.

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1. INTRODUCTION

EL12/2001 Gog is located in the north of Tasmania at the Gog Range, between Sheffield and Mole Creek (Figure 1). Although the terrain is steep, the prospect is easily accessed from major roadways and old forestry roads. The prospect area consists of State Forest managed by Forestry Tasmania, the Gog Range Conservation Area, Forests Managed by Prescription and several small ML's over road metal quarries. Exploration activity within the Conservation Area and Forests Managed by Prescription area need to be approved by the Mineral Exploration Working Group (MEWG) prior to commencing activities. Vegetation consists of both wet and dry sclerophyll forest, rainforest, dense regrowth of previously disturbed ground and forestry plantations.

EL12/2001 was awarded to Goldfields Exploration after successfully tendering through Mineral Resources Tasmania tender process. The ETA (ETA540) resulted from the revocation of former EL25/98 from Sirocco Resources NL. An application was lodged for an additional 13 km^2 to be added to the EL, extending eastwards along prospective Cambrian volcanic rocks.

In January 2002, Goldfields Exploration merged with Delta Gold to form AurionGold. AurionGold was subsequently taken over by Placer Dome in late 2002.

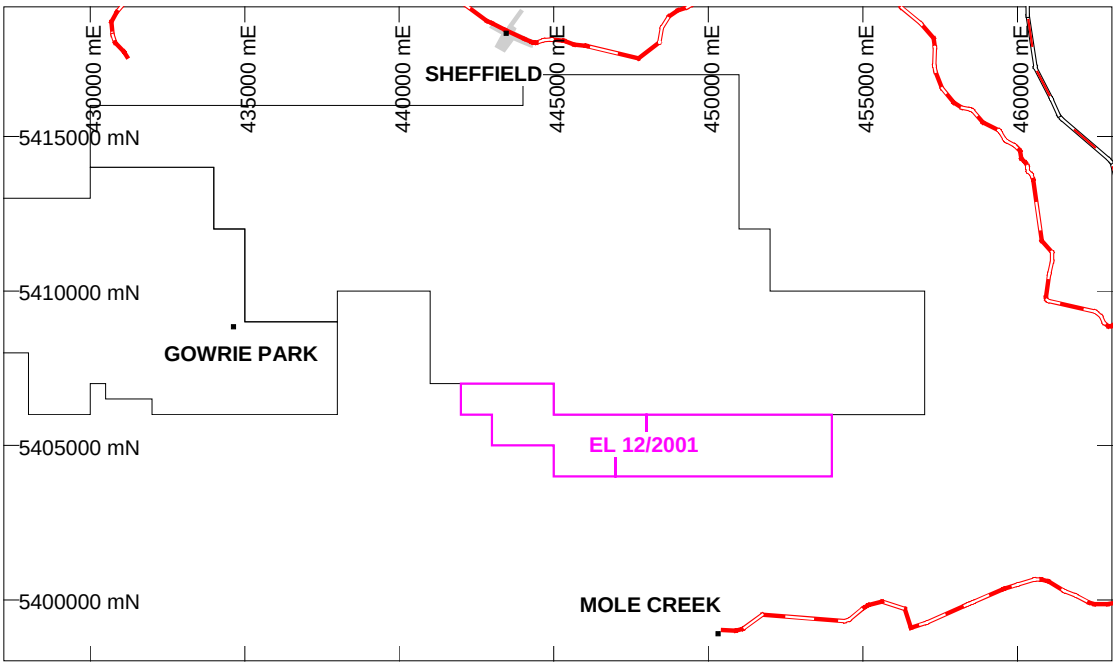


Figure 1. Location EL 12/2001

2 REGIONAL GEOLOGY

The Gog EL is hosted in the Fossey Mountain Trough, an E-W subsidiary trough of the N-S trending Dundas Trough. The eastern margin of the Dundas Trough contains the Cambrian Mt Read Volcanics, overlain by

unconformable to disconformable Cambro-Ordovician siliciclastics and limestones. The Mt Read Volcanics are highly mineralised hosting major polymetallic VHMS deposits such as Hellyer and Rosebery and volcanogenic copper-gold deposits such as Mt Lyell and the high grade Henty Gold Mine.

The Fossey Mountain Trough is comprised of similar Cambrian Volcanics and overlying Cambro-Ordovician siliciclastics as the Dundas Trough. The stratigraphy of the Fossey Mountain Trough is poorly known and many stratigraphic relationships are conjectural. No attempt has been made to correlate units from the Gog Range area with the rest of the Mt Read Volcanics. Much of the stratigraphic nomenclature remains from the original 1 inch to 1 mile Mines Department mapping (Jennings et al, 1959 and Jennings, 1979). Mineral Resources Tasmania have recently released a 1:25 000 geological map covering the Gog Range district. Mapping of the region is ongoing with the Sheffield sheet incomplete and stratigraphic relationships undergoing verification by Mineral Resources Tasmania.

Previously the Cambrian volcanics of the district had been assigned by Jennings et al (1959, 1979) to three mappable units from oldest to youngest:

1) Beulah Formation
2) Gog Range Greywacke
3) Minnow Keratophyre.

Recent work by Mineral Resources Tasmania (Corbett, *pers com*) suggests there may be two separate episodes of andesitic volcanism. This interpretation suggests there are four Cambrian volcanic episodes consisting of from oldest to youngest:

1) Beulah Formation
2) Gog Range Greywacke
3) Dasher River Andesite
4) Minnow Keratophyre

However this view is not universal with some conflicting field evidence leading some workers to consider the Beulah Formation overlying the Gog Range greywacke (eg. Rand and Noonan, 1989). This interpretation simplifies the geology back to the three formations of Jennings (1979) but the andesitic volcanics form the youngest rather than the oldest formation.

The oldest outcropping rocks recorded in the district belong to the Barrington Chert, consisting of pure, finely laminated to brecciated black, red and grey chert (Jennings 1979). The chert is considered to be sedimentary in origin and is interbedded with some greywacke and chert conglomerate units.

Basaltic lavas and volcaniclastics have been recorded in a number of localities underlying or near the base of the Gog Range Greywacke, including the Motton Spilite (Jennings 1979) and the Magog Basalt (McCleneghan *et al* 2001, Herrmann, 1991). The Motton Spilite occurs as a massive, dark green,

fine grained chloritised rock composed of fine albite and augite/chlorite interbedded with chert breccia and volcaniclastics (Jennings 1979).

Conformably overlying the Barrington chert is the Gog Range Greywacke, a 600m thick sequence of mixed siliciclastic and volcaniclastic rocks. The basal member is typically conglomeratic with rounded clasts of chert and quartzite interbedded with argillaceous and vitric siltstones, grading up into greywackes and siltstones. Jennings (1979) notes that the acid volcanic content increases up sequence towards the overlying Minnow Keratophyre. Sparse fossils obtained from the Gog Range Greywacke date it as late Middle Cambrian (Banks 1962).

Overlying the Gog Range Greywacke are the andesitic volcanics of the Beulah Formation. Recent field visits tend to suggest this interpretation although the southern boundary of the Beulah Formation with the Gog Range Greywacke is unclear. Andesitic lavas, lava breccias and associated volcaniclastics outcrop poorly in the lower Beulah area. The lavas are commonly massive to vesicular feldspar- augite phyric rocks commonly with chlorite altered ferromagnesian minerals (Jennings 1979, Vicary and Jackson, 1993). Jennings (1979) noted that the Andesites outcropping north of the Dasher River are similar in appearance. These have been termed the Dasher River Andesites (Corbett, *pers com*) and demonstrably overly the Gog Range Greywacke.

Also overlying the Gog Range Greywacke immediately north of the Gog Range is the Minnow Keratophyre. The Minnow Keratophyre forms the core of a large east west trending syncline. It is a generally massive unit of quartz-feldspar porphyry with a fine-grained matrix. Quartz and feldspar phenocrysts are generally large (>4mm) comprising 5-10% of the rock. Zircon U-Pb dating of the Minnow Keratophyre yields an age of 499.6 ±5.6Ma (McCleneghan et al, 2001).

The last known Cambrian igneous event involved the intrusion of stocks of diorite and monzodiorite. The intrusives are typically plagioclase-amphibole-minor quartz diorites, quartz-gabbro norites and biotite-hornblende-quartz monzodiorite (McClenaghan *et al* 2001). The ‘Beulah granite’ (monzodiorite) gives a zircon U-Pb radiometric date of 493.5 +/- 3.9 Ma (McClenaghan et al 2001).

The Cambrian volcanics and sediments are unconformably overlain by late Cambrian to early Ordovician Gordon Group consisting of siliciclastics of the Roland Conglomerate and Moina Sandstone overlain by the Gordon Limestone (Jennings et al, 1959). The Roland Conglomerate is a white to pink pebble-cobble conglomerate while the overlying Moina Sandstone is a pink to white, fine to medium grained quartz sandstone. Basal conglomerates of mixed siliciclastic-volcaniclastic derivation are locally present, particularly at the andesite-conglomerate contact in the Beulah area.

The Mt Read Volcanic-Gordon Group contact at the Gog Range suggests there was a significant tectonic event, involving overturned to recumbent

folding of the southern margin of the volcanics followed by significant uplift and erosion prior to deposition of the Gordon Group. This is evident in a reversal of facing between the Gog Range Greywacke and the unconformably overlying Roland Conglomerate (see Figure 2).

The next major deformation event during the Devonian resulted in widespread folding and faulting with numerous reverse and thrust faults. Post orogenic granitoids intruded the sequence, with the Dalcoath granite outcropping 10-15 km to the west of the Gog EL.

Post orogenic sediments including Permian conglomerates, Jurassic dolerite, Tertiary basalts and sediments and recent Quaternary deposits overly the deformed Cambrian and Ordovician sequences.

Table 1. Pre-Devonian Stratigraphic Summary of Gog Range district.

Gordon Group	Gordon Limestone	Ordovician shallow marine to intratidal limestone.
	Moina Sandstone	Grey to pink, medium grained quartz sandstone.
	Roland Conglomerate	Grey, cobble to pebble siliciclastic conglomerate.
Mt Read Volcanics	Beulah Formation	Andesite lava, intrusive and volcaniclastics with associated diorite intrusions.
	Minnow Keratophyre	Quartz-feldspar porphyritic lava and intrusives
	Gog Range Greywacke	Chloritised quartz-feldspar crystal-pumiceous volcaniclastic breccias, polymict volcaniclastic/siliciclastic breccias. Rhyolitic volcaniclastic sandstones, pumice breccias, vitric siltstones and quartz-feldspar-biotite phyric lavas and intrusives. Polymict volcaniclastic/siliciclastic conglomerates, volcaniclastic sandstones and siliclastic sandstones and argilites.
Crimson Creek Formation?	Motton Spillite?	Massive, fine grained basaltic lava.
Barrington Chert		Laminated to brecciated, black, red and grey chert.

3 PREVIOUS WORK

Former EL 7/73 totalling 743 km^2 covering the majority of the Mt Read Volcanics in the Fossey Mountain Trough was first explored by Asarco Australia Pty. Ltd. in 1973. Asarco's initial work program involved regional 80# stream sediment sampling and reconnaissance mapping. The tenement was reduced to 440 km^2 after target definition from the initial program.

CRAE became operators of the tenement after entering into joint venture with Asarco in 1976 and also picked up the relinquished portion of the former EL 7/73. They initiated ground surveys of the previously identified targets including gridding, mapping, soil and rock chip sampling and geophysical surveying (gradient array IP, dipole-dipole IP, magnetics, self potential and VLF-EM). Targets tested included Lake Barrington, Promised Land, Staverton, Stonebridge, Beulah Barite, Cethana (East and West), Gog Range and the Cethana Picnic Ground. Encouraging results for the Cethana (East and West), Lake Barrington, Staverton and Gog Range grids led to detailed dipole-dipole IP, Genie EM, PEM, UTEM and Dighem surveys. Fourteen diamond holes and three percussion holes were also completed, twelve of these on the Cethana prospect, four on the Lake Barrington prospect and one at Staverton (Von Strokirch, 1986).

Asarco and CRAE's main focus was volcanogenic basemetal mineralisation, consequently very few gold analyses were made until late in the period of tenure. A sparse program of Bulk Cyanide Leach and -80# sampling was implemented in an attempt to detect fine volcanogenic gold mineralisation. Interestingly only four panned concentrate samples were taken. Significant results were returned, particularly one pancon from the Gog Range which returned 320ppm Au and 389 ppm W (Weber, 1984). A recommendation for a trenching program at the Gog grid was made but not implemented. The EL was relinquished in 1988.

Noranda acquired EL 10/88 in 1989, later relinquishing some of the EL to divide it into two portions, one known as Lake Barrington, the other as Gog Range. Noranda immediately followed up the anomalous stream sediment results from the Gog grid, identifying the Firetower Prospect from rock chip and channel sampling results (Jones 1989). Noranda completed a regional review of CRAE's work as well as detailed work on the Cethana and Gog Range Prospects. Their work on the Gog Range prospect included C-horizon soil sampling, mapping and rock chip sampling. In the following years a total of 17 short diamond holes were completed with a man portable diamond drill rig, as well as a dipole-dipole IP survey, petrographic work and detailed mapping and sampling. Highly significant gold results were returned with channel samples of 11m @ 4.9 g/t Au with significant W, Co and basemetal values. Best drill intercepts included 17m @ 5.37 g/t from diamond hole GP-90-10 Jones, 1991).

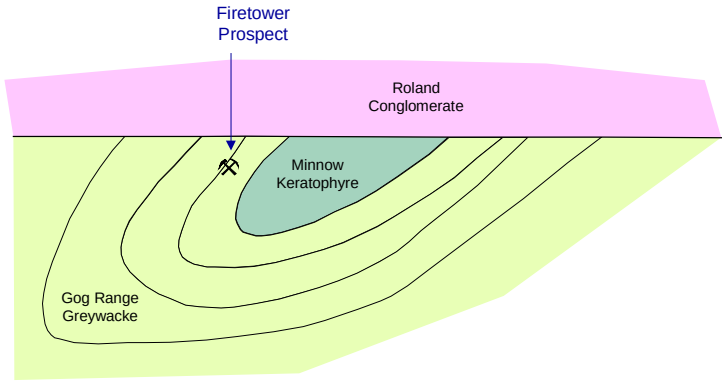
Noranda pulled out of Tasmania in 1990, joint venturing the tenement to Plutonic Operations Ltd. Plutonic took over management of the tenement entirely in 1992 whilst Noranda maintained a 10% royalty. Plutonic completed

a further 4 deeper diamond drillholes on the Firetower prospect as well as further work on the Cethana, Lake Barrington and Staverton prospects (Macdonald, 1993 and Close and Macdonald, 1995).

Plutonic later relinquished EL 10/88 which was subsequently picked up by Sirrocco Resources NL as EL 25/98 through Mineral Resources Tasmania's Exploration Tender process in 1998. After failing to meet expenditure commitments and completing minimal work Sirrocco were forced to relinquish the EL in 2000.

The far eastern part of the current EL12/2001 was held by Amax minerals as EL 49/82 (Vivian, 1984) and later by Outokumpu as EL16/90 (Herrmann, 1991). These companies completed mapping and BLEG and 80# regional stream programs on the portion of their EL's now covered by EL12/2001.

Late Cambrian



Recent

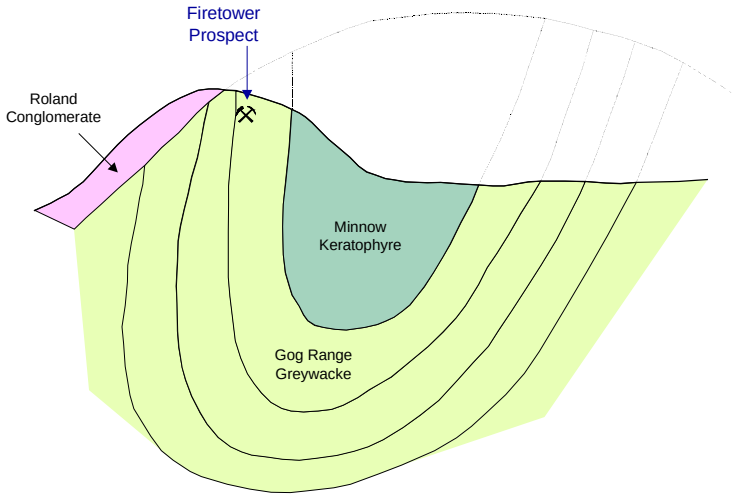


Figure 2. Structural setting of Gog district.

4. WORK COMPLETED

Work completed by AurionGold (formerly Goldfields Exploration) during the period September 2001 to August 2002 included geological mapping, rock chip sampling, gridding, diamond drilling, stream sediment geochemistry, C-horizon soil sampling, gradient array IP and ground magnetic surveys. Details of this work are presented in Callaghan, 2002.

No additional exploration has been completed on the EL since August 2002. An AurionGold sponsored BSc(Hons) Project at the University of Tasmania by John Hooper commenced in July 2002. The aim of the project was to characterise the alteration styles present and develop a model for the genesis of the Firetower Prospect. The results of this study should be available in mid 2003.

5. DISCUSSION (From Callaghan, 2002)

The Firetower Prospect is a significant stock work style gold deposit hosted in volcaniclastics of the Gog Range greywacke. AurionGold are targeting a 50MT stockwork Au or intrusion related Cu-Au deposit. The Firetower Prospect, although interesting falls well short of the required target. However the West Gog area and the Pasminco held tenements to the north require further work.

The Firetower prospect is an epigenetic stock work veined Au deposit with a W, As, Cu and minor Pb, Zn association. It is hosted in the intensely carbonate-sericite altered volcaniclastics and is possibly related to nearby quartz-feldspar-biotite porphyry intrusions. Additional drilling during the past year has extended the prospect over a strike length of 400m. It has been closed off to the east but remains open to the west for at least a further 200m as suggested by rock chip geochemistry. Drilling suggests continuity of higher grade mineralisation between drillholes. An inferred resource of the contained ounces of the prospect was calculated to be 3.6 Mt @ 0.8 g/t Au (90,000 oz). A higher grade core is contained within this resource but is only of a very limited size (approximately 100m strike length). The style of mineralisation is amenable to bulk mining but is not of sufficient size to justify further work.

Reconnaissance exploration has identified several areas worthy of further exploration. These are the West Gog area and several pancon Au anomalies located along the Gog Range east of the Noranda Grid.

Gridding , mapping and soil sampling of the West Gog area has identified large Au, As, Cu, Pb and Zn C-horizon soil anomalies of a similar order to those over the known Firetower prospect to the west. However the Firetower prospect did contain 4 soil samples > 1 g/t. Systematic mapping of the grid has identified numerous gossans and stockworked veined volcanics and quartz-phyric intrusives identical to those at the Firetower prospect. Rock chip sampling of outcrop and float returned numerous anomalous samples but of a

generally low order (0.1 g/t). By contrast the Firetower prospect returned samples to 30g/t from outcrop.

The NE corner of the grid contains coincident Au, As, Cu, Pb and Zn anomalies in stockwork veined volcaniclastics. Outcrop contained limonitic quartz veins and malachite with rockchip values to 3.3% Cu. It is recommended that the grid be extended to the east to continue coverage of C-Horizon soil sampling, mapping and rock chip sampling. The grid should be extended far enough to cover the drainage of a few creeks with BLEG and/or W stream sediment anomalies.

This anomaly is open northwards onto the Pasminco held EL.

There is also a prominent Au anomaly associated with a magnetic high in the centre west of the grid. This anomaly appears to be hosted in a stock-work veined quartz porphyry intruding rhyolitic volcaniclastics. Numerous gossans and pyrite altered volcanics were also mapped in this area.

Detailed rock chip sampling and mapping of the best anomalies is recommended.

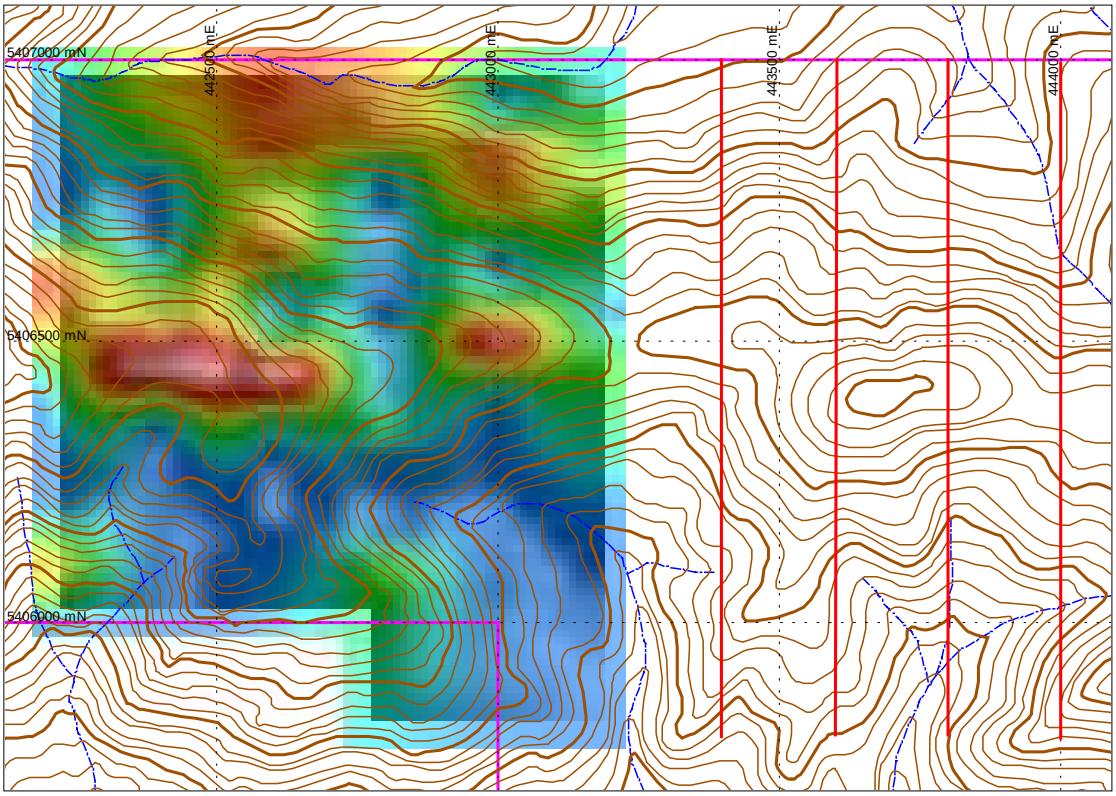


Figure 3. Proposed West Gog Grid Extension.

Drilling or trenching of the anomalies should also be considered if rock chip sampling is encouraging. Three preliminary trenches or RC drillholes testing Au-As-basemetal anomalies and the coincident Au-magnetic high anomaly are recommended.

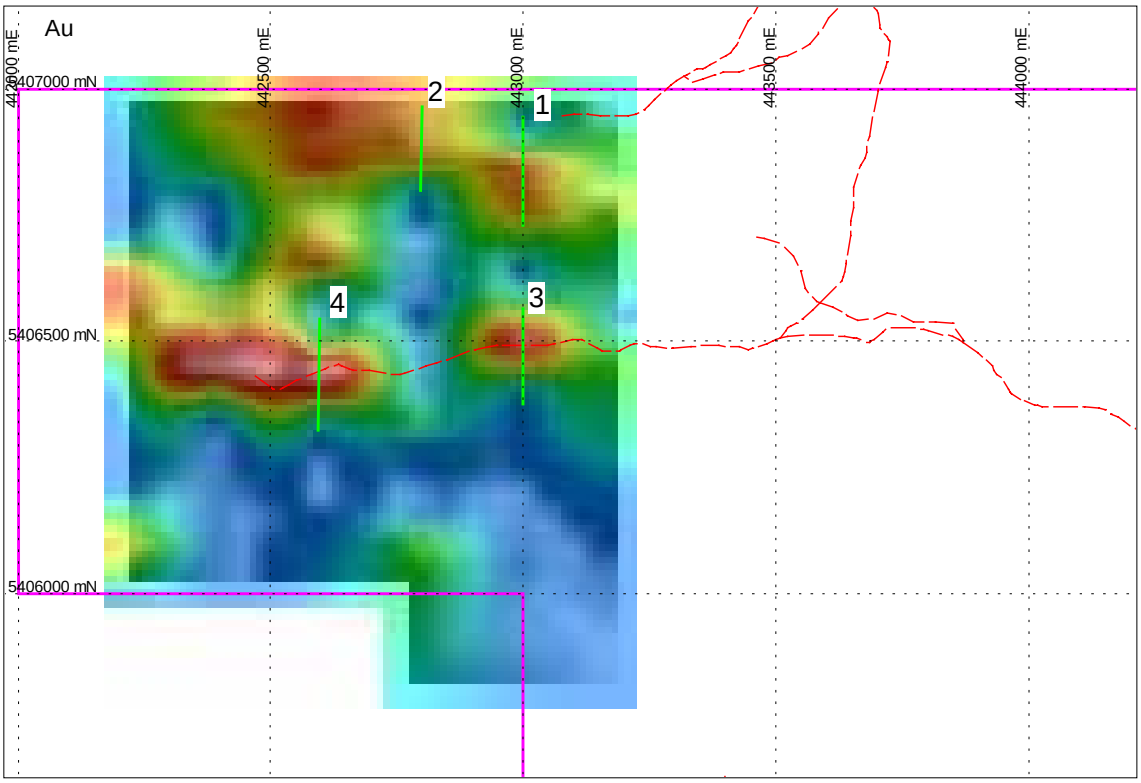


Figure 4. West Gog Soil Au with proposed drilling or trenching. Lines 1 and 3 are on coincident Au-As-basemetal anomalies. Line 3 is on outcropping Cu stock work with Au-basemetal anomaly. Line 4 is coincident Magnetic High and au anomaly.

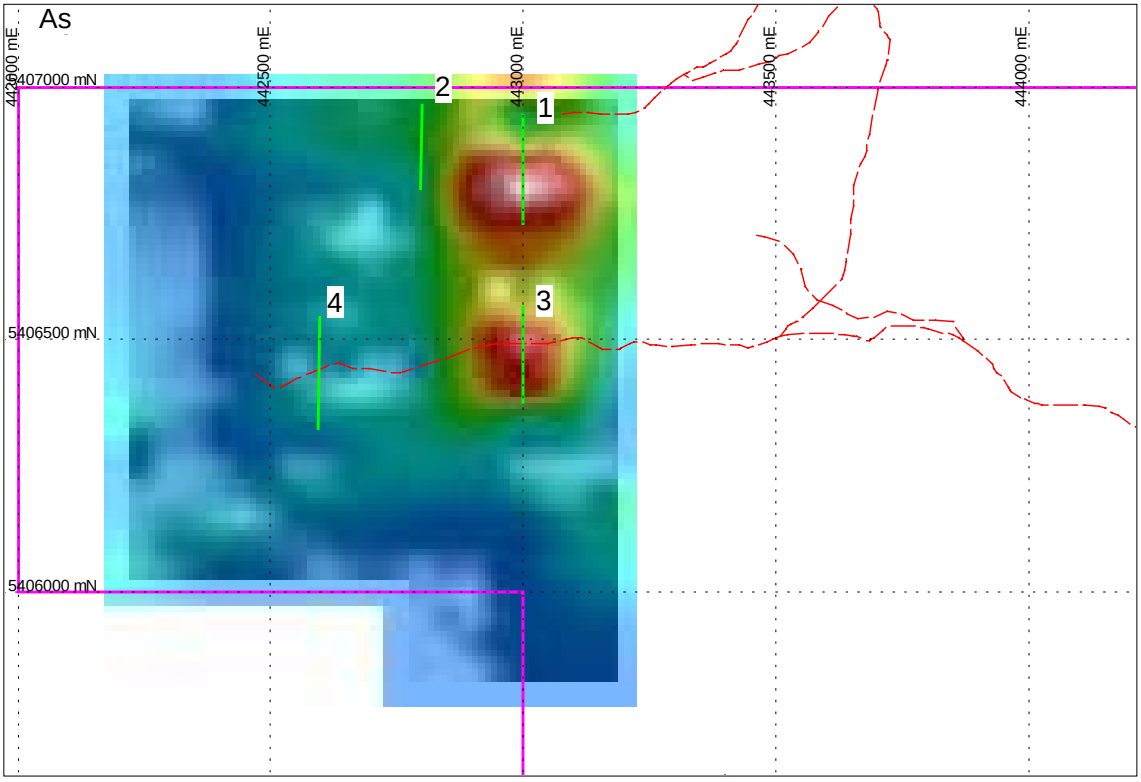


Figure 5. West Gog Soil As with proposed drilling or trenching.

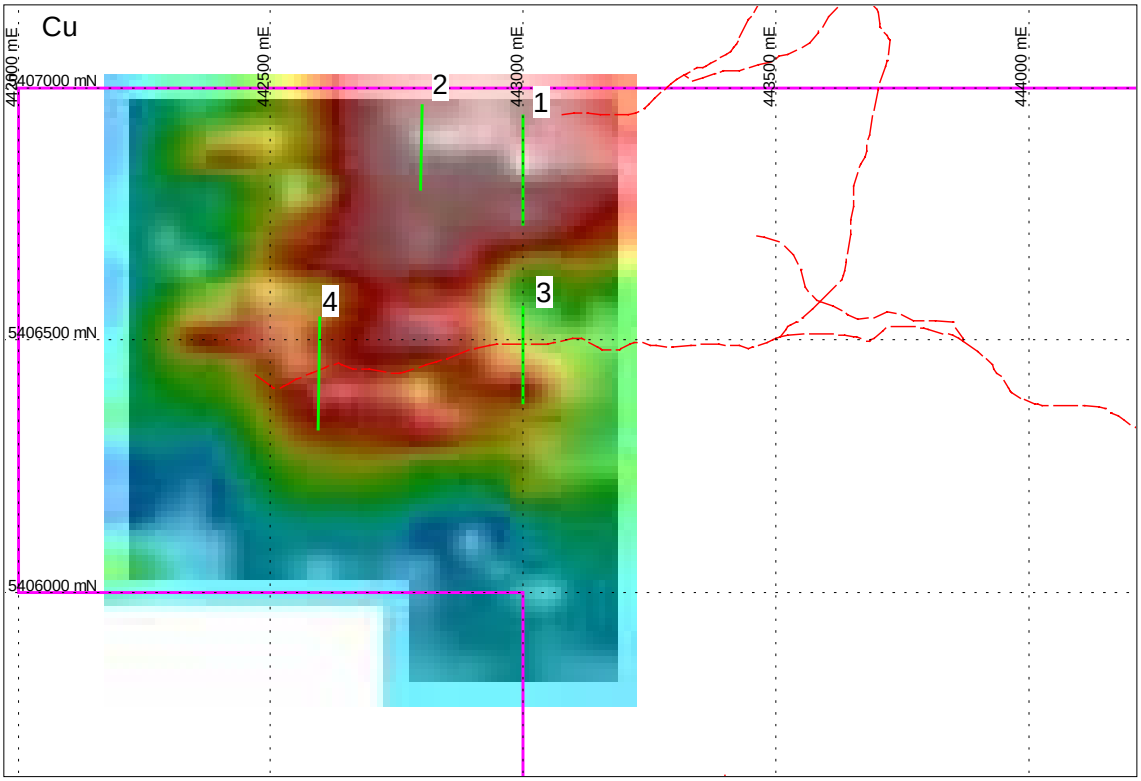


Figure 6. West Gog Soil Cu with proposed drilling or trenching.

Minor pancon Au anomalies from streams draining the northern slopes of the Gog Range, east of the Noranda Grid require ground checking.

Following a review of the Tasmanian Gold Exploration program by Placer Dome Asia Pacific in late 2002, all non-mine lease exploration was suspended and several exploration tenements (including the Gog EL) were recommended to be relinquished.

REFERENCES

Banks, M. R., 1962. Ordovician System, in Spry, A.H., Banks, M. R. (ed.) The Geology of Tasmania. J. Geol. Soc. Aust. 9(2):147-176.

Callaghan, T., 2002. Annual Report Gog EL12/2001 September 2001 – August 2002. AurionGold Exploration.

Close and MacDonald G., 1993. Annual report 1994-95 EL 10/88 Gowrie Park. Plutonic Operations Ltd. unpublished commpany report. TCR 95_3763.

Herrmann, W., 1991. Annual Report to 3/8/91 EL 16/90 – Deloraine. Outokumpu Exploration Australia Pty. Ltd. unpublished company report. TCR 91_3277A.

Jennings, I.B., MacCleod, W.N., Burns, K.L., Mayne, S.J., Robinson, R.G. 1959. Geological atlas 1 Mile Series. Zone 7 sheet 37. Sheffield. Department of Mines Tasmania.

Jennings, I.B., 1979. Geological survey Explanatory Report. Geological Atlas 1 Mile series, Zone 7 sheet 37, Sheffield. Deparment of Mines Tasmania.

Jones, P.A., 1989. Exploration Licence No 10/88 – Gowrie Park. Progress Report on Exploration Activities August 1988 to July 1989. Noranda Pty. Ltd. unpublished company report. TCR 89_3009.

Jones, P.A., 1991. Exploration Licence No 10/88 – Gowrie Park. Progress Report on Exploration Activities August 1990 to July 1991. Noranda Pty. Ltd. unpublished company report. TCR 89_3009.

MacDonald, G., 1993. Annual report 1992-93 EL 10/88 Gowrie Park. Plutonic Operations Ltd. unpublished company report. TCR 93_3500.

McClenaghan, M. P., Green, D.C., Seymour, D.B., and Brown, A.V., 2001. Gog Sheet 4440 1:25000 Digital Geological Atlas. Tasmanian Geological Survey. Mineral Resources Tasmania.

Rand, S.W and Noonan, D.J., 1989. EL 11/88 Gowrie Park. Progress Report for Year ended July 1, 1989. Aberfoyle Exploration Pty. Ltd. unpublished company report. TCR 89_3004.

Von Strokirch, T., 1986. EL 7/73 Sheffield Area, Northern Tasmania, Report on Exploration for 12 months to February 1986. CRA Exploration Pty. Ltd. unpublished company report. TCR 86_2531.

Vicary, M and Jackson, S., 1993. Exploration Licence No. 15/92 – Beulah. Annual Report August 1992 – July 1993. RGC Exploration Pty Ltd.

Vivian, R.M., 1984 Annual Report on Exploration Activities within EL49/82, Beulah, Northern Tasmania, for the period 30/8/83 to 29/8/84. Austamax Operations Pty. Ltd. unpublished company report. TCR 84_2306.

Weber, G.B., 1984. Exploration Results Beulah, Staverton, Gog Range and Ireland Prospects – Sheffield EL7/73 Tasmania. Report for 12 months ending February, 1984. Unpublished company report. TCR 84_2091.