PARTIAL RELINQUISHMENT REPORT

BLOCKS RELINQUISHED AFTER YEAR 2

Pine Creek Property
EL 28016

REPORTING PERIOD

25th November 2010 to 24th November 2012

January 2013

Tim Hronskey

Target Commodity: Au
SUMMARY
An extensive exploration review of the controls on gold mineralisation within the Pine Creek Area was completed after failing to intersect mineralisation in a deep and expensive diamond drill-hole (PCDD-001) on the St George tenement immediately to the north.

The intention of the 2012 exploration review was to develop a set of key targeting criteria, related to local controls on gold mineralisation at Pine Creek. The application of those criteria to the tenements held by St George was to focus exploration activity and to identify non prospective areas for relinquishment.

The targeting criteria were used to highlight and confirm priority exploration areas for further exploration. The lower priority areas were also identified with the intention of relinquishing excess ground so as to maximise the use of finite human and financial resources.

There is a significant change in the presentation of the Fenton Shear zone in the southern area of interest (EL 28016). The consistent Fenton Shear starts to split into a number southerly diverging structures ("horse tail").

South of this northern area of interest, the magnetic response of the general area and the shear zone appears to become more subtle and diffuse, especially in the southern portion of the tenement. This suggests the magnetic stratigraphy is much deeper (more post mineral cover) and/ or has a significantly lower iron and sulphur content (magnetite + pyrrhotite levels) than further to the north.

To maximise the available expenditure and focus on the key target area, the relinquishment of lower priority areas of EL 28016 was recommended. The blocks selected for relinquishment covered areas of the tenement that did not cover the mineralised Fenton Shear zone, or were deemed to be of a low priority because the diffuse magnetic response indicated the target formation was too deep and/ or the iron and sulphur contents (associated with magnetite and pyrrhotite) were low.

The blocks selected for relinquishment and retention are shown in figure 4.
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BACKGROUND

EL 28016 forms part of St George Mining's Blue Thunder Gold Project at Pine Creek. It lies directly south of and is contiguous with the southern boundary of EL 27732. EL 28016 is held in the name of Blue Thunder Resources Pty Ltd, a wholly owned subsidiary of St George Mining. On 1st March 2009, St George completed an option agreement to acquire 80% of EL 27732 from current holders, James Stewart (50%) and Geotech International (50%). St George is the Project Manager in respect of EL 27732.

LOCATION

The Company's Pine Creek Property is located 130 km SE of Darwin, Northern Territory, Australia and hosts the Blue Thunder Gold Project, centred on EL 27732. The logistics of the property are excellent: the area is well serviced by a major highway that runs from Darwin to Alice Springs, it is proximal to the main Darwin-Adelaide rail link, and any project should be able to access the main gas-pipeline from the north coast.

Figure 1 - Location of Pine Creek Property
REGIONAL GEOLOGY

The Pine Creek Property is located in the western section of the Central Domain of the Pine Creek Orogen (PCO), which is a major gold and uranium province in the Northern Territory, and with a known gold endowment of approximately 11MozAu.\(^1\)

The region is characterised by Paleoproterozoic meta-sediments overlying a gneissic and granitic Archaean basement. The PCO sequence is unconformably overlain by the Mesoproterozoic McArthur Basin and Victoria sedimentary basins, then by Cambrian-Ordovician and Mesozoic. During the Proterozoic, major sedimentation and volcanism occurred between 2000 to 1870Ma in an intra-cratonic basin formed by crustal extension of the silicic Achaean basement. The stratigraphic sequence is dominated by mudstones, siltstones, greywackes, sandstones, tuffs, and limestones. The sediments and basic intrusions were folded and metamorphosed to amphibolite facies between 1870 to 1899Ma.

At a regional scale, gold mineralisation in the PCO occurs in linear belts associated with regional structures at or near the green-schist facies brittle-ductile transition phase. Gold deposits within the western area of the Central Domain of the PCO are concentrated within the sedimentary Koolpin Formation, the basal unit of the South Alligator Group, resting unconformably on older rocks.

The basal Koolpin Formation is overlain by the Gerowie Tuff, which is conformable with the Mount Bonney Formation. The Gerowie Tuff and overlying Mount Bonney Formation have a similar silicic composition and may act as a stratigraphic seal for mineralisation found in the ferruginous and carbonaceous rocks of the preferentially mineralised Koolpin Formation.\(^2\)

The sedimentary package was subsequently intruded by the Cullen Batholith, an intrusive complex comprised of 23 individual plutons. The intrusives are mostly highly fractionated (leuco-granites) and may be locally metal enriched. The contact zones have a variable thickness and are comprised of an albite + epidote + hornblende metamorphic facies. Hydrothermal fluids associated with this event are concentrated at the roof and margins of these plutons. The presence of numerous roof pendants and the distribution of a thermal aureole around these plutons suggest emplacement. Although the Cullen Batholith is not magnetic, the surrounding contact aureoles can be. The vast majority of PCO gold deposits, including all the larger ones, lay within these contact aureoles. This appears to be largely related to the physical properties of the granite contact zones, specifically their deformational pattern (micro-fracturing) during localised shearing.

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1\(^{\text{\textsuperscript{a}}}\)“Proterozoic Lode Gold and (Iron)-Copper-Gold Deposits: A Comparison of Australian and Global Examples”; Partington GA and Williams PJ; IN Australian & Global Proterozoic Lode Au & (Fe)-Cu-Au Deposits (Chapter 2), 2000

2\(^{\text{\textsuperscript{a}}}\)“A contribution of geology, petrology and geochemistry to the Cullen Batholith and related hydrothermal activity responsible for the mineralisation, Pine Creek Geosyncline, Northern Territory”; Bajwah ZU (1994); NT Geological Survey Report No. 8
A relationship between epigenetic iron concentrations and gold mineralisation is noted at Pine Creek and in other goldfields in the Northern Territory (e.g. the 5MozAu Tennant Creek Goldfield) and may play an important role in localising gold mineralisation. Cosmo Howley (2+ MozAu) is one of these gold deposits situated in the inner contact aureole of the Cullen Batholith and also hosted by the Koolpin Formation.

The Pine Creek Property is located approximately 50 km to the south west from the Cosmo Howley Mine but connected by the same target horizon (Koolpin Formation), hosted by the regional Fenton shear zone. The target Koolpin Formation is overlain by younger sedimentary units but east-ward directed compression has thrust the target formation into a subvertical orientation along the trace of the Fenton Shear. The Fenton Shear and sub-vertically orientated Koolpin Formation form on the western margin of a major regional feature, which presents as a gravity high and may be a concealed Archean Dome structure. Within the project area, magnetics and geochemistry indicate the local presence of granite intrusives.

Figure 2 – Regional Geology and Gold Deposits of the PCO, the blue circle showing the approximate location of St George’s Pine Creek Property
PAST EXPLORATION

Initial limited exploration in the area involved an aero-magnetic survey, some geochemical surveys and a photo-geological survey. The exploration to this time appeared to rule out any major surface or subsurface gold mineralisation because of the younger overlying sedimentary horizons.

The Fenton shear was not seriously explored until the regional Homestake programme in the 1990's. Homestake saw similarities between the stratigraphy, age and mineralisation-style their giant (40MozAu) Homestake mine in South Dakota and the Cosmo Howley deposit at Pine Creek and initiated a programme of undercover exploration. The deposit style and host rocks of Cosmo Howley, along with parallels in style, age and setting to the giant Obuasi gold deposit (30+MozAu) in SW Ghana, were also noted by St George Mining.

HGAL had purchased geophysical data, magnetic and gravity data from a multi-client survey and also acquired a 1:100,000 TMI (total magnetic intensity) image to refine their exploration targeting. In 1995, HGAL conducted a gravity survey along 2 E-W lines with lengths of 14 and 16km. Readings were taken at 100m spacing in milli-gals. These lines were combined with regional Northern Territory Geological Survey (NTGS) and AGSO (Australian Geoscience Survey Organisation) data. All was synthesised as a 1: 500,000 scale map of the south western section of the Pine Creek Orogen and this compilation provided the basis for the subsequent regional diamond drilling programme.

The two significant drill holes from this drilling programme were FEND 14 and FEND 18 which are situated on EL 27732, which has been acquired by St George.

FEND 14 intersected a 150 metre thick zone of high magnetic susceptibility that corresponded with a pyrrhotite-rich, chlorite + cherty iron formation under a hanging wall unit similar to the Gerowie-Tuff-like. The hole was critical in that intersected 17 metres @0.74ppm Au (from 610 - 627m and with no cut-off) in a low arsenopyrite bearing part of the ironstone. The modest grade was coincidental with the comparatively low level of arsenic but confirmed the presence of a broad and auriferous iron-formation, and confirmed the presence of Homestake-style gold mineralisation. FEND 14 was significant in that it confirmed HGAL’s conceptual target by identifying the presence of the predicted gold system.

FEND 18 was drilled 1200m SSE of FEND 14 and intersected 20m @ 1.74ppm Au within a broad zone of continuous stratabound mineralisation (no cut-off) from 423 to 443m. The FEND 18 intersection was approximately 200m above the intersection made in FEND 14. FEND 18 was significant in that it was the “discovery hole”, confirming not only the consistency of broad zones of gold mineralisation initially identified in FEND 14, but also confirming the strength of the system as demonstrated by the high-grade gold intersections. From an exploration perspective, an important milestone was reached with the drilling of the discovery hole (FEND 18) and follow-up exploration would ordinarily follow as a matter of course. However,

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due to a corporate restructuring at Homestake, the property was relinquished and further exploration has not yet been conducted.

Homestake had spent at least $1.382M on exploration at the property, based on available annual expenditures reports from the Northern Territory Mines Department. The exploration concept that the Fenton Shear was a mineralised zone capable of hosting Homestake (Lead-Dakota) style of mineralisation was been clearly proven by HGAL’s diamond drilling activity.

The significant post mineral coverage (+200m of Cambrian limestone) presents specific exploration and operational challenges for this property. Further exploration work is required to demonstrate that the controls on the mineralisation initially discovered at this prospect could be shown to be predictable and of an economic nature.

**ASSESSMENT**

The intention of the 2012 exploration review was to develop a set of key targeting criteria, related to local controls on gold mineralisation at Pine Creek. The application of those criteria to the tenements held by St George was to focus exploration activity and to identify non prospective areas for relinquishment.

EL 28016 covers the southern continuation of the Fenton Shear and abuts the southern boundary of the key property in the Pine Creek Project - EL 27732. Mineralisation has been identified in the sheared Koolpin Formation in this by historical diamond core drilling (FEND 14 and FEND 18). The areas of interest to the north (EL 27732) and those to the south (Northern part of EL 28016) are separated by an intrusive body of felsic to intermediate composition. This interpretation is supported by the low magnetic response of the area and the strong Cerium (Ce) response from the St George multi-element MMI soil geochemical campaign over that area.

There is a significant change in the presentation of the Fenton Shear zone in the southern area of interest (EL 28016). The consistent Fenton Shear starts to split into a number southerly diverging structures (“horse tail”). A comparison may be made between the magnetic response (reflecting bedding) in the mineralised zone in EL 27732 and the shear zone to south in EL 28016.

South of the southern area of interest, the magnetic response of the general area and the shear zone appears to become more subtle and diffuse, especially in the southern portion of the tenement. This suggests the magnetic stratigraphy is much deeper (more post mineral cover) and/ or has a significantly lower iron and sulphur content (magnetite + pyrrhotite levels) than further to the north.
The main area of interest lies in the northern part of EL 28016 where two prominent and sub-parallel magnetic features are present and appear to have been modified by a dextral SW-NE cross-structure. The intensity of the TMI response in the area is similar to that further north. In addition, the area is proximal to the inferred granitoid immediately to the north. The high cost of deep diamond (through non-mineralised cover sequences) means it is important to focus on select areas within EL 28016. The northern area is deemed the priority area for the 2013 field season.

Figure 3 - EL 28016 covers the southern extension of the mineralised trend. The box outlined by a pink dashed line is the area encloses an area on EL 28016, proposed for MMI sampling in this coming field season.
To maximise the available expenditure and focus on the key target area, the relinquishment of lower priority areas of EL 28016 was recommended. The blocks selected for relinquishment covered areas of the tenement that did not cover the mineralised Fenton Shear zone, or were deemed to be of a low priority because the diffuse magnetic response indicated the target formation was too deep and/or the iron and sulphur contents (associated with magnetite and pyrrhotite) were low.

Figure 4 – Plan shows EL 28016 where the blue blocks are the priority areas selected for further exploration and the white areas are selected for relinquishment.