

Pine Creek Property

SECOND ANNUAL & FINAL REPORT

30th August 2013

20th October, 2013

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SUMMARY

EL 28332 forms part of St George Mining's Blue Thunder Gold Project which is a contiguous area comprised of EL 27732, EL 28016, EL 28017, EL 28232, EL 28332, EL 28463 and EL 28465. St George Mining is the manager of the Project.

All tenements are held in the name of Blue Thunder Resources Pty Ltd, a wholly owned subsidiary of St George Mining, other than for EL 27732. On the 1 March 2009, St George Mining entered into an option to acquire 80% of EL 27732 which is currently held by James Stewart (50%) and Geotech International (50%).

St George Mining acquired EL 28332 with the aim of assessing if there are extensions of the known gold system on the tenement to the north. Exploration and analysis of the area failed to meet the established exploration criteria to succeed. The tenement area is situated to the NE of the main tenement package and is located over the regional gravity high and not on the Fenton Shear. This regional gravity high is interpreted as a concealed Archean dome draped with Paleoproterozoic sediments, where the areas along the marginal gravity gradient localise the major long-lived regional structures, which are the exploration focus.

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BACKGROUND

EL 28332 forms part of St George Mining's Blue Thunder Gold Project. It lies between EL 28017 and EL 28016 and abuts the NW boundary of EL 27732. The Blue Thunder Gold Project covers a contiguous area comprised of EL 27732, EL 28016, EL 28017, EL 28232, EL 28332, EL 28463 and EL 28465. All tenements are held in the name of Blue Thunder Resources Pty Ltd, a wholly owned subsidiary of St George Mining, other than for EL 27732. St George completed an option agreement to acquire 80% of EL 27732 on the 1st of March 2009, from current holders, James Stewart (50%) and Geotech International (50%).

EL 28332 was granted to Blue Thunder Resources on the 25/08/2011 for a period of 6 years. At the end of Year 2 the title was surrendered.

LOCATION AND ACCESS

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

GEOLOGY & MINERALISATION

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 11 MozAu.¹

The region is characterised by early Proterozoic meta-sedimentary rocks occurring in a geosynclinal setting over a gneissic and granitic Archean basement. The PCO sequence is unconformably overlain by the Middle Proterozoic McArthur Basin to the east and by the Middle Proterozoic Victoria Basin and Cambrian-Ordovician and Mesozoic sequences (Daly and Bonaparte Gulf Basins) to the west and southwest. Major sedimentation and volcanism occurred between 2000 to 1870 Ma in an intra-cratonic basin formed by crustal extension of the predominantly Achaean granitic 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 1899 Ma and then subsequently intruded by the Cullen Batholith.

The Cullen Batholith is comprised of 23 individual plutons, which are mostly highly fractionated, and sometimes metal-enriched leuco-granites. The extent of the contact zone with the host rocks varies and is 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 a preserved high level of emplacement.

At a regional scale, gold mineralisation in the PCO occurs in linear belts associated with regional structures at or near the greenschist 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.

The rocks of the South Alligator Group form a distinctive sequence of iron-rich sediments resting unconformable on older rocks. The area of the South Alligator Group includes the basal Koolpin Formation which is overlain by the Gerowie Tuff, which is conformable with the Mount Bonney Formation. The Gerowie Tuff and overlying Mount Bonney Formation are similar in composition and may act as a stratigraphic seal for mineralisation found in the ferruginous and carbonaceous rocks of the underlying and preferentially mineralised Koolpin Formation.²

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 alteration zones around the granite contact and their deformational pattern (micro-fracturing) during localised shearing.

¹"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"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

The magnetic response of these zones implies hydrothermal iron enrichment has occurred as part of the contact alteration. Epigenetic iron may play an important role in localising gold mineralisation. A similar relationship between gold and concentrations of iron exists at the Tennant Creek Goldfield (5+ MozAu), to the south, which lies to the south within the same Proterozoic terrane.

The Cosmo Howley deposit (2+ MozAu) is one of these gold deposits that are situated in the inner contact aureole of the Cullen Batholith. Cosmo Howley and most of the known gold deposits in this district are hosted by the Koolpin Formation, situated on the eastern limb of a regional antiform. The Pine Creek Property is situated on the sheared western limb of this interpreted regional anticline (Fenton Shear) and hosted by the folded continuation of the prospective Koolpin Formation. The core of this anticline may have been intruded by a major pluton.

The deposit style and the host-rock sequence at Cosmo Howley are strikingly similar to those of the giant Homestake gold deposit (~57 MozAu) in South Dakota.³ A direct genetic link is inferred on the basis of similar age, sedimentology, deformation style, sulphide species, pathfinder elements, isotopic data, and forensic signatures in the sulphides. This is an important consideration for the prospectivity of the local area: Cosmo Howley and the Blue Thunder gold prospect (EL 27732). Both gold occurrences are hosted by the same stratigraphic unit and are also similar in their setting and stratabound style of mineralisation.

Large gold systems cluster within well-defined periods of lithospheric growth including the Paleoproterozoic.⁴ Recent geochronology offers new constraints on evolution of the Pine Creek Orogen,⁵ allowing inter-regional comparisons and correlations to be made with the Tanami and Tennant Creek Regions. Previously, age dating of Paleoproterozoic gold mineralisation in the Northern Territory appears to have been based on inferred genetic links between the ages of spatially related granites and the gold mineralisation (e.g. Tennant Creek).⁶ Contrasting views have also argued that the gold mineralisation in the Pine Creek area is much younger than previously thought⁷. While dating is still imprecise and incomplete, it is suggested the NT gold deposits appear to be clustering around an age range of 1760 - 1700 Ma, and this represents a major orogenic gold event towards the end of the Paleoproterozoic.

This is suggestive of a major global-scale late Paleoproterozoic gold event, post regional metamorphism and magmatism, during shift from brittle-ductile to brittle deformation, and provides an approximate correlation between gold deposits of the Northern Territory and the mineralising event responsible and capable of forming the giant Homestake gold deposit.

³ "Geochemistry and depositional environment of the gold-mineralized Proterozoic Koolpin Formation, Pine Creek Inlier, Northern Australia: a comparison with modern shale sequences"; Matthai SK and Henley RW; Precambrian Research 78 (1996) 211-235

⁴ "Lithospheric controls on the formation of provinces hosting giant orogenic gold deposits"; Bierlein FP, Groves DI, Goldfarb RJ & Dubé B (2006)

⁵ "Pine Creek Orogen: a synthesis through time and space"; Worden K, Geoscience Australia - Evolution and Metallogensis of the NAC (ALICE SPRINGS, 20-22 JUNE 2006)

⁶ "Metallogenic Potential of Australian Proterozoic Granites"; Budd AR, Wyborn LA, Bastrakova IV; Geoscience Australia Record 2001/12

⁷ "Timing of gold mineralisation in the Pine Creek Orogen, Northern Territory, Australia: its significance to the thermal aureole gold model"; Sener AK, Groves DJ and Fletcher IR; Mineral Exploration and Sustainable Development

The Pine Creek lode gold deposits are spatially related to regional anticlines that were formed early, above thrust-ramp and thrust duplex structures. Suitable trap sites within these structures appear to have been present as illustrated by the strata-bound nature of some of the gold deposits beneath thick dolerite sills or greywacke units on the crests of anticlines. The thrusts appear to have acted as channel ways for hydrothermal fluids from deep larger structures into anticlines and other trap sites. Dolerite dykes provide local competency contrasts.

Two major phases of deformation that pre-date granitoid intrusions have been recognised in the Pine Creek Geosyncline. The earliest widely recognised structures in the Pine Creek Geosyncline are bedding-concordant fabrics and breccia zones (D_1). The second phase of deformation produced the north to north-west trending folds that still dominate the district (D_2). The folds vary from open and upright to overturned and isoclinal with the development of a penetrative slaty cleavage.

Gold occurs in all rock types except granite. The higher-grade deposits have an association with carbonaceous or iron and sulphur rich sedimentary horizons, such as the Koolpin Formation. More competent lithology's in turbidite-style sequences form vein-stockwork deposits (e.g. Enterprise and Mount Todd), whereas those with both contrasting competency and geochemistry form strata-bound vein and replacement style of deposits (e.g. Cosmo Howley).

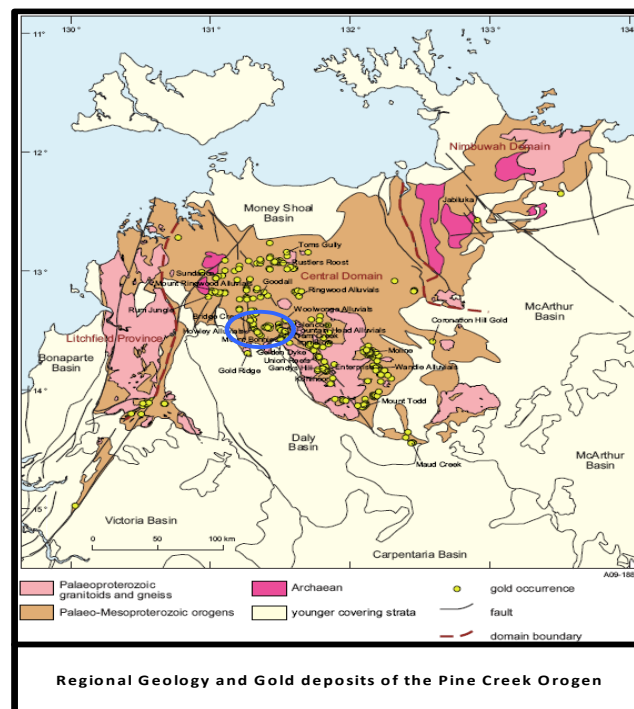


Figure 2 – Regional Geology and Gold Deposits of the PCO, the blue circle showing the approximate location of St George's Pine Creek Property

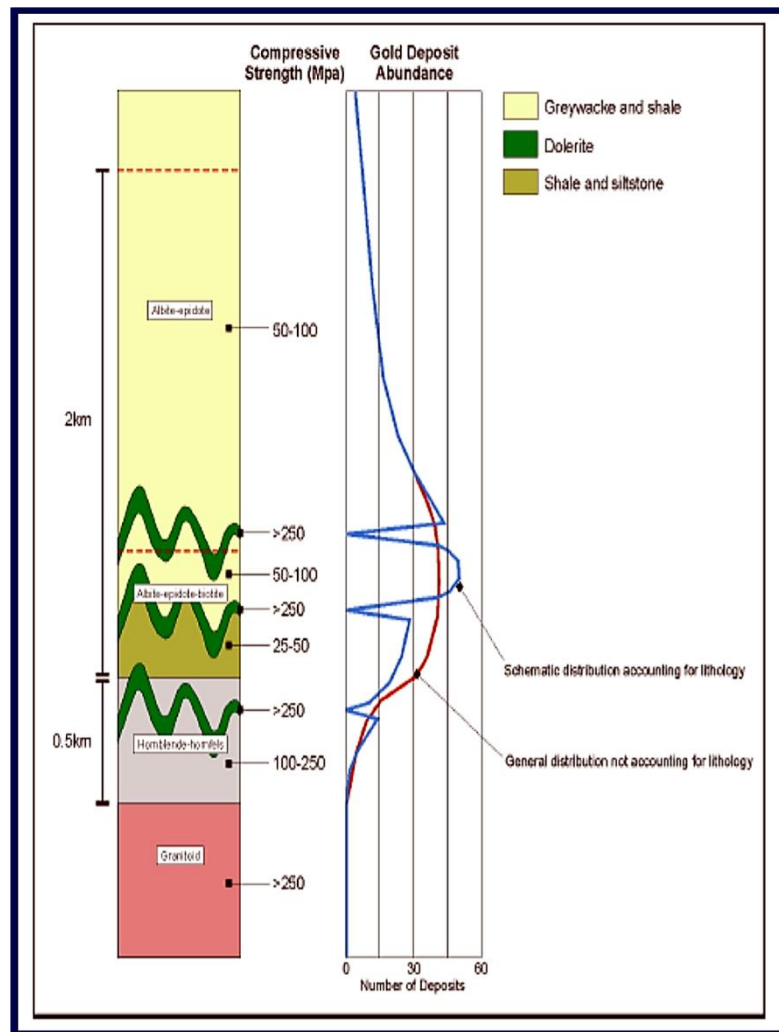


Figure 3 – Stylised model of the alteration domains surrounding a granite-country rock contact, showing optimal zone for mineralisation.

PREVIOUS EXPLORATION

The Pine Creek Orogen has been explored for gold for over a century, following the discovery of gold from a hole dug for the construction of the overland telegraph line in the 1870's. A substantial quantity of gold was then produced from 1884 – 1915, with peak production around 1891 – 1895.

Modern gold exploration did not commence until 1980, when increased gold prices and improved mining and metallurgical technology drove renewed exploration. Systematic geological mapping, geochemical surveys and drilling, mostly were conducted around previously known occurrences. A number of previously known occurrences such as Enterprise, Cosmo Howley, Golden Dyke, were re-evaluated and subsequently mined. Several new gold deposits were also discovered. The depressed gold price during the 1990's curtailed exploration from the late 1990's until a recovery in 2005 stimulated further exploration and mining.

The Pine Creek shear hosts most of the known deposits including the Cosmo Howley gold deposit (2+ MozAu). 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).

The project is hosted by the regional Fenton shear zone, which is covered by some younger sedimentary unit, notably the Gerowie Tuff, the Mount Bonney Formation and Cambrian limestone units. This region remains substantially under explored with the majority of past exploration efforts being focused on uranium. The Fenton shear was not seriously explored until the regional Homestake programme in the 1990's.

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

Homestake Gold of Australia (HGAL) was subsequently granted tenure over the ground and approached the area with the new strategy of exploring for concealed ("under cover") gold deposits. HGAL had noted the similarities between the stratigraphy and mineralisation of the South Alligator Group, especially similarities between the Koolpin and Homestake Formation, which hosts the giant Homestake deposit (~57 MozAu)⁸ in Lead, South Dakota (the "Homestake deposit"). This assumption was the basis of their exploration model.

The deposit style and host rocks of Cosmo Howley and the Homestake deposit are independently noted as being similar with respect to their character and stratigraphic succession⁹. It is also noted by St George to have similarities in style, age and setting to the giant Obuasi gold deposit (30+ MozAu) in SW Ghana.

⁸ "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

⁹ "Geochemistry and depositional environment of the gold-mineralized Proterozoic Koolpin Formation, Pine Creek Inlier, Northern Australia: a comparison with modern shale sequences"; Matthai SK and Henley RW ; Precambrian Research 78 (1996) 211-235

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. The TMI image was from the Aerodata multi-client survey and E-W line soakings of 200 m, sensor height was 70 m and image pixel size was 50 m.

In 1995, HGAL conducted a gravity survey along 2 E-W lines with lengths of 14 and 16 km. Readings were taken at 100 m spacings in milli-gals. These lines were combined with regional Northern Territory Geological Survey (NTGS) and AGSO (Australian Geoscience Survey Organisation) data.

All available geophysical images, satellite TM imagery, topographical and geology maps, and air photos were synthesised at the 1: 500,000 scale map of the south western section of the Pine Creek Orogen. The compilation provided the basis for the subsequent regional diamond drilling programme.

The two key drill holes from this drilling programme were FEND 14 and FEND 18.

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 @ 0.74 ppmAu (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.¹⁰ 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 1200 m SSE of FEND 14 and intersected 20 m @ 1.74 ppmAu within a broad zone of continuous stratabound mineralisation (no cut-off) from 423 to 443 m. The FEND 18 intersection was approximately 200 m 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, due to a corporate restructuring at Homestake, the property was relinquished and further exploration has not yet been conducted.

Homestake had spent at least \$1.382 Mon 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 previous diamond drilling activity.

The significant post mineral coverage (+200 m 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.

¹⁰ "Annual Report Exploration Licence 9200 - Fenton South - Northern Territory HGAL Report No. 1997/50"; 1997; Northern Territory Geological Survey Open File Report

EXPLORATION TARGETING

Key considerations in exploration targeting are:

STRUCTURAL: A position on the Fenton Shear (FS) which has local structural conditions favourable for gold mineralisation; the FS is a significant north trending regional structure. It is located to the west of and sub parallel with the well-endowed Pine Creek Shear and appears to be localised along the western margin (the gravity gradient) of a large competent body that presents as a regional gravity high. This feature is interpreted as an Archean basement dome that is draped with younger Paleoproterozoic sediments and that provides the necessary competency contrast allowing the e sub-horizontal stratigraphy, including the target Koolpin Formation (KFM) was rotated upwards into a sub-vertical to vertical orientation up against the margin of this competent “dome” feature by westward directed compression. The thrust folding precedes the later coincident formation of the strike-slip Fenton Shear developed during a successive extensional phase, along the original trace of an overturned thrust-fold closure.

STRUCTURAL: The presence of local, NE-SW trending cross structures appear important in creating low pressure sites in which there is precipitation of metals from circulating hydrothermal fluids. These cross-structures appear to have a late (and preserved) dextral movement, which would cause dilation of intersection sites, and can be mapped as northerly deflections of the main NW- trending Fenton Shear. The relative up and down movements of these cross structures is not certain. However, the magnetic response of the KFM appears to become progressively more diffuse from northern project area, southwards. This would suggest the southern block of the cross structures are down faulted and preserved. In contrast, the northern block would have been uplifted and eroded; thus showing lower stratigraphic groups. There is some supporting evidence for this. FEND-10 was drilled to the north of the major cross structure currently marked by the subsequent Douglas Daly River. The hole intersected limestone, which appears to be present only in stratigraphy below the South Alligator Group that contains the Koolpin Formation. Holes of similar depths to the south of this structure only intersect the Koolpin Formation, implying a relatively higher stratigraphic position.

STRUCTURAL: The local occurrence of dolerite dykes (Zamu dolerite) appear to be provide important local structural controls on gold mineralisation, presumably providing the requisite local competency contrast within the more ductile pelitic sediments.

GEOCHEMICAL: The cherty and ferruginous alteration of the host rock (the Koolpin Formation or KFM) provides a favourable and requisite chemical environment for gold deposition. The KFM is preferentially enriched in iron, sulphides and other base metals relative to the overlying and more siliceous sedimentary units. This appears to reflect the existence of this sedimentary formation prior to the main metamorphic event, which led to dewatering of the basin and the remobilisation and then precipitation of ferrous and metal rich fluids in favourable structural settings. Post metamorphic sedimentation is marked by a sharp shift to more siliceous sedimentation ahead of the main orogenic gold event. The prior concentration of metallic (specifically iron-rich minerals) in low pressure sites would have acted as favourable sites (good oxidation-reduction setting among other favourable chemical gradients) to precipitate gold from the SO₂ and CO₂ rich hydrothermal gold fluids. The more siliceous hanging wall units act as physical and chemical constraints the gold-rich hydrothermal fluids.

GEOPHYSICAL: The prospective cherty, chloritic ironstone host unit presents as well-defined high magnetic responses. This was confirmed by magnetic susceptibility measures of the broad domain surrounding gold-rich intersection in the available historical drill core. There is an extensive flat-lying Cambrian (post mineral) limestone formation that overlies the Paleoproterozoic stratigraphy and is approximately 200 m thick and relatively massive in the project area. In these areas the target KFM is intersected at about 400m below surface. This is fast approaching the favourable economic parameters in conventional mining scenarios for the expected grades of the deposit types. The thickness of limestone increases westwards with additional more and more permeable limestone units noted by the NTGS. So, the strength of the magnetic response would appear to be a tool to map the depth of the target magnetic Koolpin Formation. This would indicate that sections of the KFM with a higher magnetic response are either shallower and / or contain more iron and pyrrhotite; both factors making them preferred target sites. Conversely, areas with a diffuse magnetic response would appear to be either deeper or less of less chemically favourable composition.

PROJECT GOALS

At the stage that the project was acquired by St George, there was surprisingly little contextual data that provides a framework for advancing exploration the initial HGAL discovery. This impacted on the ability for “top-down” exploration targeting. In the preceding year St George has developed an initial predictive and diagnostic model that now allows the company to conduct initial screening of the broader tenement package.

PROJECT CONCLUSION

St George Mining acquired EL 28332 with the aim of assessing if there are extensions of the known gold system on the tenement to the north. Exploration and analysis of the area was completed and failed to meet the established exploration criteria to succeed. The tenement area is situated to the NE of the main tenement package and is located over the regional gravity high and not on the Fenton Shear. This regional gravity high is interpreted as a concealed Archean dome draped with Paleoproterozoic sediments, where the areas along the marginal gravity gradient localise the major long-lived regional structures, which are the exploration focus.

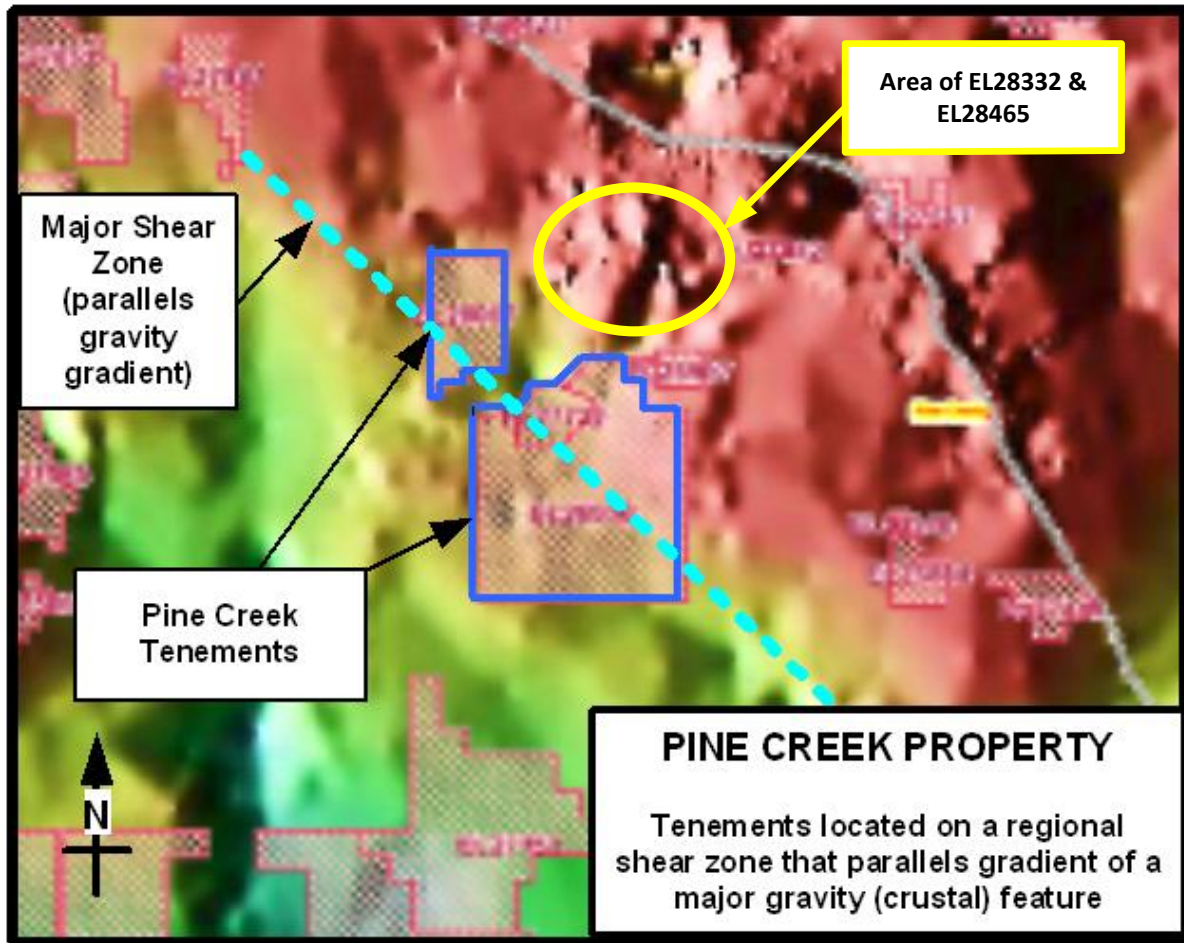


Figure 4 – The bent yellow circle highlights the area covered by tenements EL 28332 and EL 28465. They are not located on the NW trending shear zone that approximates the gravity gradient (yellowish area) on the western margin of this regional gravity high (red mass)

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