REDUCTION REPORT YEAR 2
EL 25311

FOR PERIOD ENDING 21st December 2009

‘PINE CREEK EAST’

RUM JUNGLE / PINE CREEK PROJECT NT

Pine Creek SD5208 1:250,000
Pine Creek 5270 1:100,000

Titleholder: Territory Uranium Company Limited

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Territory Uranium Company Ltd
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1. SUMMARY

EL 25311 is 3km east of the Pine Creek township within the Pine Creek Orogen. Territory Uranium Company Ltd applied for EL25311 primarily to explore for vein-hosted U mineralisation and secondly to evaluate the potential for other types of economic mineralisation. A total of 10 blocks were relinquished during the second year tenement reduction. This report relates to the ten blocks relinquished. Year 1 exploration involved a detailed historical data review and RC drilling and auger drilling was completed during year 2 (none of which were on the relinquished ground).

2. LOCATION AND ACCESS

EL25311 is located approximately 3km east of the Pine Creek township and 220km SSE of Darwin, NT. (Figure 1). The Stuart Highway crosses the southwest corner of the Licence approximately 9km south of the Pine Creek township. Access is via Bonrook Station (‘Franz Weber Country’) south of Pine Creek or along tracks that head out east to Wandie across the central portion of the tenement from the Pine Creek sewerage plant. Topography is undulating hills with well-defined drainage, with higher relief in the SW corner of the Licence. Access is advisable in the dry season only.
Figure 1 Location Map showing EL25211 (Green Square) and the recently dropped areas (Red).
3. TENEMENT STATUS AND OWNERSHIP

EL 25311 was granted on 22nd December 2006 and expires on 21st December 2012. It originally comprised 21 graticular blocks, however 10 were recently dropped in November 2008. This report details the work done in the 10 relinquished blocks.

NT Gas holds a Petroleum Lease PL4 within EL 25311. A gas pipeline and high power line transect the Licence from NW to SE. There are no other tenements within the Licence boundary.

Underlying cadastre is mainly Pastoral Lease, with Bonrook Station covering approximately 80% of the tenure. There are 2 other Pastoral Leases along the northern boundary. Landholders are below:

- Franz Weber Foundation (NT Portion 710, Pastoral Lease 643; Bonrook Station)
- Equest Pty Ltd (NT Portion 1630; Pastoral Lease 815; Mary River West Station)
- Mary River Wildlife Ranch Pty Ltd (NT Portion 1631; Pastoral Lease 1434; Mary River Station)

The expenditure covenant set for the second year was $28,500.
4. GEOLOGY

EL 25311 is situated within the Pine Creek Geosyncline, a tightly folded sequence of Lower Proterozoic rocks. A full description of the geology and stratigraphy of the Pine Creek Geosyncline can be found in several texts, including Ahmad et al., (1993; Ahmad, 1998), which covers the 1:250,000 Pine Creek Sheet. More detailed mapping and explanatory notes cover the 1:100,000 Pine Creek sheet (Stuart-Smith et. al., 1987).

The south-western part of tenement area overlies the Finniss River Group sediments (Burrell Creek Formation) which is dominantly feldspathic greywacke with interbedded siltstones. A small tongue of Mt Bonnie Formation sediments (South Alligator Group) are mapped in the central west of the Licence. The northern and south-eastern part of the tenement overlies granites from the Cullen Batholith, which is a series of I-type Proterozoic granites (Wyborn, 2002). Granite types within EL25311 include the Bonrook Granite (Allamber Springs Suite) which is classed as a concentrically zoned transitional granite and leucogranite pluton, with greisens and pegmatites commonly associated with more fractionated leucogranites. The eastern part of EL25311 is dominated by the McCarthys Granite of the Fingerpost Suite, which is a more hornblende granite dominated pluton (Wyborn, 2002). The Cullen Batholith intrudes early Proterozoic metasediments and is highly fractionated. Within EL 25311 the Allamber Springs Granite is mapped covering the northern part of the Licence, while the Bonrook Granite pluton occupies the central portion. All of the metasediments display contact metamorphism, with mapped isograds within EL 25311 ranging from hornblende hornfels (covering most of the metasediments) with albite-epidote (subdivided into ‘biotite in’ phase) covering the metasediments near the western and south-western parts of EL 25311.

The Pine Creek Shear Zone transects the tenement and is a major regional structure mapped as a D3 fault (Ahmad et al., 1993). The metasediments within the shear zone are chloritic and show vertical cleavage, while granites in the shear zone have discrete fault breccias and mylonite zones. There is evidence of movement along the Pine Creek Shear Zone after granite emplacement. Mapping by Goldfields Exploration noted the area is dominated by relatively tight, south-plunging folds. The Bonrook fault is adjacent to the Bonrook Granite and is characterized by a 2-3m quartz vein.
Figure 2  The 1:100,000 Geological Map over EL 25311
5. EXPLORATION YEAR 1

During the first year of tenement part of the work done on EL25311 was a literature review and data compilation. Appendix 1 contains the list of previous tenure and some of the work done is summarised below.

United Uranium explored AP1931 (which covered the western half of EL 25311) in 1969. The Licence was mapped (no reference scale) and the focus was a base metal geochemical anomaly. The 'Western Anomaly' returned rock chip results of '3.3oz/ton Ag, 2.9% Pb and 0.33% Zn' but the results were considered 'disappointing' because costean values did not match the rock chip samples. The map does not indicate where these samples were or where the Western Anomaly is.

There is an apparent gap in exploration during the 1970's as the ground was part of the Mt Wells Policy Reserve which prevented grant of exploration licences.

Goldfields Exploration held EL 4398 for 2 years from 1983, which covered the main trend of gold workings at Pine Creek, plus the western sliver of EL 25311. Goldfields were looking for extensions of gold mineralisation from the deposits covered by their mineral leases. Work done included rock chip sampling, water bore drilling, a downhole resistivity survey (to detect shear-controlled mineralisation) and stream sediment sampling. Rock chip sampling delineated the Caledonian alluvial workings in the north, with patchy results throughout the Licence. Goldfields outlined 11 anomalies based on rock chip sampling, with 5 of those anomalies in EL 25311 (Figure 3). Of those 5 anomalies, only Anomaly 6 was considered worth follow-up, but no further work was carried out as the Anomaly appeared to plot just east of Goldfield's tenure.

Goldfields Exploration also held EL 4907, which covered the ground south of the Pine Creek mines and 2 blocks within EL 25311. Ground magnetics designed to define Geological boundaries and locate possible areas of pyrrhotite mineralisation did not work due to high noise. Rock chip sampling in the area of the Bonrook granite were 'low in most elements, especially gold', and the Company observed small saddle reefs in the area were 'anomalously low in gold', concluding that 'rocks adjacent to the Bonrook granite are not likely to be gold mineralised'. However Anomaly 10 (with values of 0.93ppm Au) from work done on EL 4398 is adjacent to the Bonrook granite, so this conclusion may not be true. Costeaining and drilling
occurred after the blocks that cover EL25311 were relinquished, so none of the drilling or costeaning were carried out within EL25311.

**EL 4926** covered the 2 NW blocks of EL25311, plus areas further west. Calvert River Manganese Pty Ltd applied for EL 4926, then transferred it to Tanas Pty Ltd. Air photo interpretation (plus local knowledge) revealed the area to have an old land surface that is covered by gravels. The mature erosion surface was probably developed in Tertiary times. The comments made about geochemical sampling are interesting; loose surface material was taken because of limited outcrop; with patches of quartz on black soil plains. Surveying of Goldfield’s ‘Anomaly 3’ shows that the costeans to test the Anomaly were located on MCN 541 or 542 which was an old dredging claim. Resampling of quartz float gave wildly variable results; initial results of 1.97g/t Au gave 0.17g/t Au on reassay. Some of the quartz was found to have rounded corners, indicating that it was transported gravel, rather than reflecting underlying regolith. In Year 2 the tenement was taken over by Union Reefs Mining and no work was completed on the area of EL 25311.

**EL 4955** covered the 4 central western blocks of EL25311 from 1988. Geological reconnaissance in the area noted that the anticline structures in the Mt Bonnie Formation are ‘real’ and need further investigation. The anomalies identified by Goldfields (on EL 4398) could not be identified and may have been gravel derived from the old Tertiary gravel surface. However, some anomalous As values were obtained from rock chip sampling, although not necessarily where the (low-level) Au values were. Work in Year 2 focussed on the Mt Bonnie Formation anticlinal structure, with grid mapping and sampling. Stream sediment sampling failed to identify any areas of interest. Soil sampling gave one anomalous result that could not replicated with follow-up sampling. It is unclear whether the soil sampling was carried out in an area that may be covered by the Tertiary gravel (?). In conclusion, it appears that the work carried out in Year 2 was not sufficient to test the mineralisation potential.

**EL 4969** covered 2 blocks in the SW corner of EL25311, from 1986. Exploration by Sabminco (later Zapopan) in Year 1 consisted of panning of stream sediments (locations not recorded) and a stream sediment sampling programme. Rock chip samples were not located either. Rock chip sampling in Year 2 gave a best result of 0.7g/t Au (just south of EL25311) and 0.3g/t Au (within EL 25311; see FIG 3) from quartz veins on the granite contact. Anomalous Pb and As values were common with one result of 12% As from the granite contact. The central and eastern portions of the tenement are considered most prospective (this area is covered by EL25311). The tenure was only for 2 years so no further work was carried out.
EL 4998 was granted for a 1 year period in 1986/87. Four of the 5 blocks are on the south-eastern part of EL25311.

EL 6255 covered the eastern portion of EL25311, with only one block outside EL 25311 (to the south). Work done in the 2 year tenure (from 1989) included an interpretation of airborne magnetics, which indicated major NW-SE trending lineaments. A ground magnetic survey indicated a magnetic anomaly at approximately MGA52 813660E / 8466430N, which appears to be in Bonrook Granite (from 100,000 mapping). The magnetic anomaly was considered to be a mafic dyke and the regional geophysics indicated that this was a NW-SE trending body (same as Pine Creek Shear Zone orientation). It was recommended that it be drill-tested but the Licence expired before further work could be carried out. Only 3 rock chip samples were taken and results were ‘disappointing’.

Rosequartz Mining held EL 6687 (one block in the centre of EL25311) for one year from 1990. Traversing of the granitic areas did not show ‘any evidence of mineralisation’ and 16 composite rock chip samples gave a maximum value of 0.02ppm Au.

Rosequartz Mining also held EL 6727 (2 blocks in the NW corner of EL25311) for 3 years from 1989. Soil sampling along one ENE trending line gave a maximum value of 2.72ppb Au, which is considered insignificant. Work in Year 2 consisted of sampling of alluvial gravels to determine the alluvial potential. Cassiterite in minor quantities were identified in pan concentrates, but no significant gold values.

EL 7246 consisted of 3 blocks (forming an L-shape) in the centre of EL 25311. Granted to Nullabor Holdings for 3 years from 1991, work consisted of aeromagnetic data interpretation, rock chip sampling and BLEG stream sediment sampling. Sampling gave some anomalous values (up to 8.49ppm Au in PCR-50 – a rock chip sample) and 11.2ppb Au from stream sediment samples. Follow-up systematic sampling of a quartz vein located within Burrell Creek Formation sediments in the SW corner of the Licence plus BLEG soil samples across the strike of the vein system failed to produce anomalous results.

Follow-up ground mag (to locate favourable anticline structures identified from regional interp) plus drilling had been planned but was not carried out due to bad weather. The aeromagnetic interpretation is similar to that carried out on adjoining tenement EL 6255 but the interpreted dyke on EL 6255 is called a zone of contact metamorphism in EL 7246 and a parallel zone is considered to be the dyke on EL 7246. The same geophysical dataset was used on both EL’s (Aerodata 1987-88; 200m EW lines at 70m flight height).
Adjacent **EL 7617** was held by Nullabor Holdings for a year from 1992 and included the same aeromag interpretation as that done for EL 7246. Slightly anomalous gold was found from geochemical sampling but ‘no significant surface indications’ of gold mineralisation was found and the tenement was relinquished.

Prospecting on **EL 7702** found alluvial gold, which became covered by MCN 5057 by small scale miners. The Licence consisted of 4 blocks along the Pine Creek, with 2 of the western blocks along the northern boundary of EL25311. The target of exploration (and mining) was alluvial gold along the Pine Creek. The creek was extensively ‘sampled’ but there is no evidence that the MCN was granted.

Acacia Resources were the main explorer during the mid-1990’s which is when their Union Reefs gold mine was commissioned and operating. Within EL 25311, they held (either outright or in JV) **EL’s 7893, 8624, 9137** (covering relinquished portion from 7893); **9361, 9530** (covering relinquished portion of 7893) and **9577** (covering relinquished portion of 7893). These tenements covered all but the far north-eastern 4 blocks. These tenements also had active mineral claims which excised some of the best known mineralisation.

**EL 7893** covered the southern half of, and is contained within, EL 25311. Acacia Soil auger sampling in Year 2 defined a NW-trending zone of zinc anomalism with a maximum value of 294ppm Zn. The following year 52 rock chip samples were collected with the best result coming from a sample taken on a mine mullock dump (!) Very weak anomalism could be seen with a NW trend of rock chips >0.01ppm Au but less than 0.1ppm Au. An Au/As coincident soil anomaly trending NW was apparently delineated but the data not presented in reports. No drilling or costeaining was carried out.

**EL 8624** occupied 2 blocks just north of EL7893, on the central portion of EL 25311. Acacia Resources held this tenement at the same time (1994-2000) as EL 7893 above. Soil sampling outlined a coherent NW/SE-trending soil anomaly in Year 1 while costeaining over the anomaly confirmed the soil sampling results and showed mineralisation was relatively continuous along strike between the costeans. Costean maps show dominantly grid-west dipping quartz, with variable sized quartz breccias and boudinaged veins. Drilling intersected patchy mineralisation at ‘Nagshead’ with best assay of 3m @ 4.41g/t Au in a broad zone of 12m @ 1.315g/t Au from 15m in RC96NH03. Drilling in Year 3 intersected 8m @ 0.75g/t Au from 46m in RC96NH08 and 9m @ 2.53g/t Au (including 4m @ 5.0g/t Au) from 3m in RC96PT03. An IP Survey noted a strong NW-Se trend extending over 2km strike and open to the southeast. This trend is high in both chargeability and resistivity, interpreted as indicating quartz veins containing considerable disseminated sulphides.
EL 9137 was also part of the Bonrook JV, along with EL8624 (above). Soil sampling picked up the southern extension of NW-striking mineralisation found on EL 8624. RC drilling intersected low grade mineralisation under a soil anomaly, with 1m @ 1.32g/t Au from 56m in RC97PT022. The western block was relinquished after broad-spaced soil sampling returned a best result of 23ppb Au, with no follow-up / resampling around this anomalous area.

Acacia started exploring EL 9361 from the end of 1996. The Year 1 work was carried out by Nullabor Holdings and consisted of a stream sediment sampling programme with a peak result of 7.2ppb Au (from 4 samples collected). Work by Acacia consisted of soil sampling (using auger and vacuum) plus the regional airborne geophysics survey. Most of the work concentrated on the SW block; 2 of the northern blocks were dropped with no work before Acacia commenced exploration. No drilling was carried out.

EL 9530 had soil sampling, plus part of a gravity survey and DTM modelling during its life of tenure. A peak gold anomaly of 84ppb Au was obtained in the soils programme, but there are no elevated results surrounding this sample. Most of the work seemed restricted to one block.

EL 9577 covered the SE extension of the Nagshead / Ponytail geochemical anomaly outlined on EL 8624 and 9137. Soil sampling within EL 9577 confirmed the geochemical anomaly extension further to the south-east, with a best result of 490ppb Au. Infill soil sampling confirmed the geochemical trend, but the values are fairly low level (10-15ppb Au). Costeaging confirmed the low level anomalism found in the soil sampling. The IP survey reported in EL 8624 also extended into EL 9577.

Acacia seemed most active in 1996-98, with no field work being conducted in 1999 as the Company was taken over which led to a change in priorities (to known resource extension exploration). In 2000, most of the tenements were expiring and Acacia (now Anglogold) were shifting their focus away from the Pine Creek area.

EL 25321 was explored by prospectors D. Langley and S. Davis for 3 years from 2003 for gold and diamonds. The interest in diamonds came after reports that a gem quality diamond was found in 1880 close to the old track crossing the Cullen River. Seven panned concentrates did not yield any diamond or indicator minerals. Stream sediment sampling returned anomalous gold values (not quantified) and appears to drain the known Lucknow gold occurrence. The source of the anomalous gold was not found from metal detecting and reconnaissance and the Licence was relinquished.
Within EL 25311 were also a number of tenements, all of which have since expired. **MCN’s 680 – 683** held by Kakadu Resources covered the Bonrook gold occurrence in the south of the Licence. The tenement appeared to have expired during 1995. A report written in 1993 recommended a drill programme but it is unclear whether this was carried out. The maps are unclear as to the location of the costeans

**MCN’s 2103, 2105 and 2112** were purchased by Union Reefs Gold Mine from Nullabor Holdings, but only photogeology work was carried out. The mineral claims were taken out over a weak geochem anomaly.

Pine Creek Goldfields explored **MCN’s 1162 and 1163** (Bonrook North) which covered westerly dipping greywacke with discontinuous quartz veins. Geochemical analysis indicated the majority of the areas were barren. Structure was dominantly NW-SE strike and south-westerly dip **but in the far southwest of MCN1162 the strike of beds trends E-W with a southerly dip.** This area will be visited during reconnaissance.

Tenement **EL 25311** was acquired by Territory Uranium Company in December 2006. During the first year of tenure a literature data compilation was completed to help with further exploration in the second year of tenement.
6. EXPLORATION YEAR 2

Work done during Year 2 of tenure consisted of field reconnaissance and a drilling program which focussed on two targets identified in the historic data compilation completed during Year 1. A total of 31 RC holes were drilled for 925m and 39 auger holes for 56.6m were completed. However, none of the work done was within the relinquished ground.
8. REFERENCES


Rade, J., 1956. Shearing along anticlines as an important structural feature in uranium mineralisation in the northern part of the Northern Territory of Australia. Journal of Economic Geology.


APPENDIX 1 Historical Data Review:

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Previous Tenure on EL25311.xls
APPENDIX 2 Geophysical images:

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