ANNUAL EXPLORATION REPORT YEAR 3
EL 25297
FOR PERIOD ENDING 13th MARCH 2010

‘WALKER CREEK’

Darwin SD5204 1:250,000
Pine Creek SD5208 1:250,000
Bynoe 5072 1:100,000
Reynolds River 5071 1:100,000

Titleholder: Australia Mining & Gemstone Co. Pty Ltd

Report No. 2010-001
Australia Mining & Gemstone Co. Pty Ltd
By Mingjin Hou
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## INDEX

1. SUMMARY ................................................................................................. 1  
2. LOCATION AND ACCESS ...................................................................... 1  
3. TENEMENT STATUS AND OWNERSHIP ............................................. 3  
4. GEOLOGY ............................................................................................... 3  
5. HISTORICAL EXPLORATION ................................................................. 7  
6. EXPLORATION DURING YEAR 1 AND 2 BY TUC ......................... 12  
7. EXPLORATION DURING YEAR 3 BY AMG ........................................ 15  
8. PLANNED EXPLORATION FOR YEAR 4 .......................................... 15  
9. REFERENCES .......................................................................................... 16  
10. EXPENDITURE ...................................................................................... 17  

### List of Figures

1. Location of EL25297 outlined in Green  
2. Relinquished blocks EL25297 at the end of Year 2  
3. Tenement Geology from Regional Mapping
1. SUMMARY

EL 25297 is 55km SSE of Darwin, and 40km West of Batchelor, dissected by Burton Creek. Australia Mining and Gemstone Company Ltd applied for tin, tantalum and tungsten in this region.

Australia Mining and Gemstone bought the EL25297 from Territory Uranium Company Ltd at 18th September 2009, the medium of the third year of the EL25297.

So, working during the Year 1 and Year 2 including the first half part of Year 3 were made by TUC.

Work during Year 1 of tenure consisted of a review of both NTGS data, and compilation of significant results from Industry reports. Exploration during year 2 was restricted with efforts focused on EL24984 (part of combined reporting CR111 – Litchfield). At the end of year 2 the tenement was reduced from 44 blocks to 22 for compulsory tenement reduction.

This report details work completed by AMG on the remained 22 blocks.

2. LOCATION AND ACCESS

EL25297 is situated approximately 55km SSE of Darwin, NT, and 40km W of Batchelor (Figure 1). The eastern boundary of the Licence runs parallel to the Litchfield National Park. Burton Creek runs through the centre of the tenement. The northern boundary is close to the Finniss River. Access would be via the Mandorah Road onto the Litchfield National Park road and then on to local tracks or exploration tracks.

Topography for most of the tenement is mainly flat low lying pastoral grazing country. Vegetation consists of mixed scrub and Eucalyptus trees in well drained areas and melaleuca and pandanus fringing waterholes, black soil areas and streams. Recent deposits of sand and clay occur along the banks of the Finniss River. Black soils are found throughout the licence area with significant areas near Burtons Creek.
Figure 1: Location of EL25297 outlined in Green
3. TENEMENT STATUS AND OWNERSHIP

EL 25297 was granted on 14th March 2007 and expires on 13th March 2013. It comprises 44 graticular blocks (108.6 sq km) that are reduced in size to less than the full block along some of the margins. There are no other mining leases or mineral claims shown within the Licence boundaries.

Underlying cadastre is all freehold land owned by several parties, including:


At the end of year 2 the tenement was reduced from 44 blocks to 22 for compulsory tenement reduction. Blocks relinquished are shown in Figure 2.

4. GEOLOGY

EL 25297 is situated within the Pine Creek Orogen, a tightly folded sequence of palaeoproterozoic rocks. A full description of the geology and stratigraphy of the Pine Creek Orogen can be found in several texts, including Ahmad et al., (1993; Ahmad, 1998).

The tenement area covers the “Two Sisters Granite” predominantly (Figure 3). This is a palaeoproterozoic S-type granitoid which intrudes the Burrell Creek Formation and is unconformably overlain by Depot Creek Sandstone and Antrim Plateau Volcanics. The Two Sisters Granite is described as granite, adamellite, granodiorite and in places pegmatitic with accessory garnet and tourmaline. The NTGS believes the granite to be prospective for Pegmatite and Placer Tin deposits. Hickey (1990) state that the contact aureole with the Burrell Creek Formation is well known for its Pegmatite outcrops.

The Burrell Creek Formation is located on the eastern most side of the tenement. These metasediments are brown to grey-green, thickly bedded to massive, fine to coarse feldspathic metagreywacke with graded bedding in places and minor lenses of volcanolithic pebble conglomerate; brown to grey, laminated phyllite,
slate and mudstone; minor quartz-mica schist; porphyroblastic quartz-mica hornfels near granite. The NTGS sees this unit as prospective for Vein Au, Vein Sn, Polymetallic Cu, Pb, Zn, Ag veins and vein-type U. Annual Report EL25297 Report Number 2008-0024.

Figure 2  Relinquished blocks EL25297 at the end of Year 2
Figure 3: Tenement Geology from Regional Mapping
The regionally metamorphosed Welltree Metamorphics are predominant in the south of the tenement. These metasediments are described as Quartz-feldspar-biotite gneiss ± garnet ± sillimanite ± andalusite, quartzitic gneiss, quartzite, minor quartz-feldspar-muscovite gneiss.

The Sweets member of the Welltree Metamorphics is present in the southern portion of the tenement as a north-south trending unit. They are described as Marble in places graphitic, para-amphibolite, calc-silicate gneiss, quartz-feldspar-biotite gneiss.

There are no recorded MODAT occurrences within the tenement although it is felt that the region is part of the “Bynoe Tin Tantalum mineral field.” Tin mineral occurrences occur around the Licence.

Horn (2002) states that the tin/tantalite mineralisation is associated with the Meso to Neo Proterozoic pegmatite intrusions related to the Two Sisters granite. The pegmatites are variable but mostly form lenticular bodies that have intruded along foliations and bedding planes. They can occur as narrow veins or dykes up to 60 metres across and a kilometre in strike length. Sill like and blind complex intrusions are also noted by Horn (2002). Hickey (1990) describes the general strike of the veins and pegmatites as 045 degrees (grid) and outcropping sporadically throughout the licence. The pegmatites are marked by cream to green weathered feldspar and grey coarse mica. The contact between the granite and the metamorphosed pelites has been found to be covered by sediment but NTGS drilling has determined the contact to lie approximately along the course of the Burton Creek some two to three kilometres east and parallel to the Burrell Creek Formation Plateau marked by Mount Farrington, Mount Marie and the 146 feature (Hickey 1990). The northern portion of the licence is marked by a north east trending fault south of Porters Creek (Hickey 1990).

The pegmatites are described by Horn (2002) as

1. showing fractional zoning during emplacement (can affect mineralization distribution).

2. having wall rock enriched in mica and cores with kaolinite rich zones (weathered
feldspars) +/- barren milky quartz.

3. having the best grades within the kaolinitic rich zones.

4. mineralisation can be fine to very coarse grained tantalite, cassiterite and columbite. There is no consistent distribution pattern of the minerals.

Alluvial and elluvial tin, tantalum, tungsten and gold were mined from the nearby Finnis River mineral field. Pickets, Annie, Lucy and numerous other mines and diggings of the Finnis River type deposits exist approximately 10 kilometres north east of the EL area.

5. HISTORICAL EXPLORATION

Tin was discovered in the region in 1886. The total recorded production to 1957 is 585 tonnes of tin concentrate and 15 tonnes of tantalite concentrate (Summers 1957 unpubl.). The open cut Goodwill Mine lies to the east of the tenement and has recorded production of 7.6 tonnes of tin concentrate mostly between 1936 and 1950. The dimensions of the mine are 60 metres long, 15 metres wide and 10 metres deep. Minor remnants of pegmatite are left in the walls of the mine.

**EL971** covers the southern half of EL25297. CR1978-0058, CR1979-0174 and CR1980-0111 are company reports extracted from the Geological Surveys Industry Reports Management System. EL971 covers the southern half of EL25297. CRA Exploration explored for uranium between 1977 and 1980. Most of this work occurred outside EL25297.

The first year of exploration involved ground radiometric traversing of the unconformity between the Burrell Creek Formation and the Depot Creek Sandstone, reconnaissance mapping, water sampling (radon 222 done onsite) with 2 of the 95 samples collected within EL25297 and a helicopter borne total count survey (outside of EL25297). The 2 samples within EL25297 (682568 and 682569) gave a best value of 0.3ppm U and 1 radon emanation (20cps) in sample 682568 (compared with best value of 60ppm U outside EL25297 in sample 673499). Three uranium anomalies were located with further sampling required at only one of the sites where 200-220ppm U (+4% Th).
Fraser and Steemson (1978) make comment about the Finniss River Group metasediments consisting of interbedded shales, micaceous sandstones, arkoses and conglomerates (polymictic generally with well rounded pebbles). The rocks have an overall schistose appearance and extensively sheared and quartz veined. The shales can be characterised by large andalusite crystals.

CRA targeted the unconformity between the Finniss River Group and the Depot Creek sandstone (outside of EL25297) with ground scintillometry and noted that the background values for various rock types were shales - 130cps, conglomerate – 70 to 100 cps and Depot Creek Sandstones 40 to 50 cps. They noted several radioactive springs along the western escarpment. These are to the south east of EL 25297.

The uranium water sampling results were determined to be back ground with possibly three anomalous results. The helicopter borne radiometric survey determined two anomalies that may be due to uranium, soils indicate background U values. All thorium targets were regarded as of a small size. Further sampling required.

Work during the second and third years of exploration was outside EL25297. During the second year of exploration over this large tenement work focussed on extending sampling over targets (Florence Creek in particular). Geological mapping and radiometric traversing occurred in this region. Sampling was undertaken of the Depot Creek sandstone. The radioactivity at the springs was determined to be derived from an undetermined location some distance from the springs, little or no uranium was obtained from 13 soil samples. Follow up is recommended on the Florence Creek area.

During the third and final year of tenure results failed to define a drill target. After a review of the data, a track etch cup radon survey was completed over the plateau above the springs, concentrating on fractures in the sandstone. The anomalous readings did not cluster and failed to define an anomaly.

**EL2048** covers the southern eastern two blocks of EL25297. CR1982-0135, CR1985-0069 and CR1986-0184 are the statutory Annual Reports for the NTDME. During 1982 some 95 stream sediments (13 samples within EL25297) and seven
rock chip samples (none in EL25297) were taken by Territory Mining Pty Ltd for
Greenbushes Tin Ltd. Two sampling programmes were completed for the stream
sediment sampling, sampling of gravels and grits for heavy minerals and sampling
of silts and clays. The results of these programmes were not encouraging. Horizon
Pacific Pty Ltd took the licence over and prospected for Tin Tantalite
mineralization associated with Pegmatites. The Walkers Creek, Tin Pot, Bamboo
Creek Tin Mine and Goodwill Mine are all in close proximity to EL25297. During
1984 work involved limited drilling and reconnaissance. Also the Walkers Creek
(40 tonnes annually at the time) and Bamboo Creek Mines (46 tonnes of tin
concentrate and 50 kilograms of tantalum concentrate) are in relative proximity to
the southern end of EL25297.

During the final year (1985-86) of tenure G.S.Eupene completed an assessment of
the stream sediment programme and follow up. There were over 300 stream
sediment samples collected however, disappointingly none of them have been
located accurately within the reports. Exploration in the region seems to have
been curtailed by a slump in the tin market. The majority of the exploration occurs
outside EL25297.

EL2140 and EL2141 were contiguous licences held by Otter Exploration during
the 1980s. They were searching for Uranium in the district. CR1981-0284 and
CR1981-0283 are the statutory Annual reports supplied to the Department of
Mines and Energy.

An airborne spectrometer and magnetometer survey was flown over EL 2141 in
May 1980. The magnetic contours were generally featureless (granite) with more
magnetically susceptible rocks to the south east. Six separate uranium anomalies
were recorded, all associated with thorium anomalies. Three anomalies were
evaluated in the field (PC-1, 2 & 3; of which PC-2 is within EL25297 at
approximately MGA52 683500E / 8571900N). Anomaly PC-2 was found to be a
small depression in black clay soil surrounded by outcrops of locally pegmatitic
granite and attributed as Th or daughter elements in black soil (and therefore not
assayed). Samples of soil and water from the other two anomalies had anomalous
concentrations of thorium (120ppb Th) with insignificant uranium values (5ppb U).
Thus no further work was warranted and the licences were allowed to expire.
Scintrex Pty Ltd flew a magnetometer and spectrometer survey over EL2140 with the preliminary results available in June 1980. One significant uranium channel anomaly (anomaly BC-1) was located and corresponded with a heavily vegetated creek (Burtons Creek) in an area of granite outcrops and quartz reefs (on southern boundary of EL25297). High gamma activity relates to concentrations of uranium or thorium daughter products in the black soil and water. No significant uranium or thorium values were reported. Results in the report are confusing but most values appear to be below background.

**EL3288** and **EL3289** were contiguous licences and were explored for tin and tantalum between 1982 and 1985 by CR Townsend. These licences cover the tenement of EL25297. CR1986-0193, CR1984-0080 and CR1983-0157 cover EL3289 and CR1986-0192, CR1984-0079 and CR1983-0156 cover EL3288 and are the statutory Annual reports supplied to the Department of Mines and Energy.

Between 1982 and 1983 the first year of exploration was completed over EL3288 and EL3289. Exploration activities included reconnaissance, rock and pans concentrate sampling, auger soil sampling and costeaging of prospective zones for the purpose of bulk sampling with the aim of locating economic deposits of alluvial and elluvial tin, tantalum, tungsten and gold. In general analytical results indicated some high TiO2 values and lesser values for tin, tantalum and tungsten. While the report had several samples assayed and some petrographic analysis, the report maps do not show these locations.

During the second year of tenure in EL3288 extensive testing of the Connies Hill heavy mineral locality was undertaken using the mobile wash/concentrator plant (location unclear from supplied maps). Chemical analysis on two samples gave 28.3% and 20.4% Ti with minor amounts Sn, Ta, and Zr. XRF analysis confirmed that the Ti mineral was ilmenite and rutile. Illmenite values at the time were depressed and the value of the potential deposit was considered uneconomic. The Goatshed region showed potential for tin with some eluvial occurrences being prospected and panned. 780 gram concentrate was obtained from a treatment of tonnage and assayed at 54.1% Sn and 8.45% Ta further bulk sampling was planned for the coming year.
Work on the second year of EL3289 involved soil and alluvium sampling. Erratic tin –tantalum mineralisation was defined associated with the pegmatite dykes. Bulk samples confirmed that sub economic grades.

The third and final year of tenure involved assessment of the economic viability of the area. To the south alluvial and eluvial material containing Sn/Ta was found in the Connies Hill, Shirt Tail and Goatshed area. Results were not encouraging with only 100 kilograms of heavy material obtained from 2000 tonnes after treatment through a mobile washing concentrator plant. No attempts were made to define reserves and the licences surrendered Townsend (1986). As previously stated, this work could not be easily located in relation to EL25297.

**EL4923** covers a similar region to the current tenure. The ground was held by John Walton Enterprises and reported on by Eupene Exploration Enterprises for the period 1986 to 1989. CR1990-0081, CR1989-0023 and CR1987-0267 are the statutory Annual reports supplied the Department of Mines and Energy.

**EL4923** was applied for to further identify tin, tantalum and niobium resources in the vicinity of the Mount Finniss Mine. CR1987-0267 reports the first year of work completed on EL4923. Stream sediment sampling (158 samples were taken, of which 105 are within EL25297) was unsuccessful at locating tin tantalum mineralisation. The sampling defined that the mineralisation would confined to pegmatite zones of licence, so follow-up work concentrated on an area with pegmatite (just outside SW boundary of EL25297). Nine costeans (spaced at 100 metres and 50 metres in length) and eight percussion holes (to ten metres depth) were placed in the south west of the licence to test the pegmatite in that region.

MCN’s 3775 – 3777 were applied for over the region but they do not appear to have been granted. MCN’s 5098 – 5100 also appear on 1993 historic tenure maps in the same area.

**CR1989-0023** describes the second year of work on EL4293. 81 soil and rockchip samples were completed (of which 42 are in EL25297) and three costeans and three sample lines were completed for tin, tantalum, niobium and some gold on outcrop. Of these 6 multiple sample sites; 3 are within EL25297 at approximately MGA52 675600E / 8562800N; 679300E / 8555050N; 675200E / 8555900N. The
results were not encouraging Hickey (1989). One soil sample (26829) recorded a
tin value of 1010 ppm at the site of a sample line/costean (MGA52 675600E / 
8562800N).

CR1990-0081 describes the third year of work within the tenement. Exploration
was minimal and included field checking of all quartz veins and pegmatite
outcrops. No sampling was undertaken. It is worth noting that only Sn, Ta and Nb
were assayed from all sampling.

EL22833 covers the southern third of EL25297. CR2002-0073 details the work
completed on the tenement during 2001. Six RC drillholes for 132m (23 composite
drill samples) were completed on the Twin Hills pegmatite, where low tantalite
grades were obtained over narrow pegmatite veins. These holes were drilled
some five kilometres south of the EL25297 southern boundary. No further work
was recommended. Two rock chip samples were also taken some 4.5 kilometres
south of the tenement boundary. The Julia Corporation was exploring for Sn, Ta,
Nb, Th and U. No work was recorded within EL25297.

A check of historic mining tenure shows that MC333B was located just south of
EL25297 on Walkers Creek (approximately MGA52 683100E / 8566900N). No
reports for this tenement were found.

6. EXPLORATION DURING YEAR 1 AND 2 BY TUC

Work done during year 1 primarily consisted historic data compilation. The results
of previous work are outlined in the previous section (‘Previous Work’). Work done
included checking:

a) historic tenure in MapInfo, using a MapInfo file supplied by DPIFM (containing
exploration tenure, but not mining tenure)

b) checking historic tenure from old Titles tenure sheets (which contain mining as
well as exploration tenure): 1:250,000 from 1962 to 1975; 1:100,000 from 1975 to

c) checking NTGS datasets, such as COREDAT, MODAT, Explorer 3.
d) checking open file company reports submitted for previous tenure covering EL25297.

From this work;

a) A list of previous tenure and Industry reports are in Appendix 1.

b) There are no mineral claims or mining leases recorded in the Licence area, although the SW boundary has records of MCN applications.

c) There are no MODAT occurrences within the tenement

d) No rock chip samples, soil samples, stream sediment samples or drilling reported in Explorer 3 within tenement boundaries.

e) COREDAT and the Reynolds River 1:100,000 NTGS map show 7 NTGS stratigraphic holes drilled within the tenement. A check with the NTGS core library shows that these holes were not sampled and were disposed of in 1999.

f) No samples within EL25297 recorded in the DIM Database.

g) There are no Open File Company Geophysics Surveys covering EL25297. The regional survey covering the area is the 1981 Litchfield North Survey, with NS lines flown at 500m spacings and flight height of 100m.

The data compilation work shows that uranium exploration has been sporadic and fairly limited within EL 25297. Alluvial and elluvial tin and tantalum have been the targets of exploration in the region.

In summary; Annual Report EL25297 Report Number 2008-002

a) CRA explored for Uranium within EL25297 but predominantly to the east of the current licence within EL971. Only 2 water samples were collected within EL25297, both with unremarkable results.

b) EL 2048 covered tin exploration, with 13 heavy mineral concentrate samples were collected on the SE side of EL25297 with a ‘nil’ result for Sn/Ta.

c) EL2140/2141: Otter noted 3 radiometric anomalies from the regional BMR
radiometric survey, approximately located at MGA52 683500E / 8572300N (called PC-2); 677800E / 8568500N; and 674400E / 8565100N. Otter also carried out an airborne radiometric survey. Unfortunately, the reported results showed stacked profiles with raw results not reported. The radiometric anomaly (PC-2) from the BMR radiometric survey was field visited, but was discounted as Th / daughter products response. However, outcrops of pegmatitic granite were noted in the area, which may be prospective for pegmatitic uranium.

d) Townsend evaluated EL3288 & 3289 for Tin and tantalum using bulk sampling but the maps and sample numbers reported are difficult to match. There didn’t seem to be anything important from this work.

e) EL4923 was stream sediment sampled and soil/rock chip sampled for tin/tantalum. Pegmatites were identified and costeaging and small drill programme (outside current lease). There were no assays carried out for other elements.

f) EL22833 was also explored for tin tantalum with drilling outside EL25297.

Mineralisation Potential While there has been one major programme of geochemical sampling for tin tantalum, there is still scope for uranium exploration (pegmatite-hosted / unconformity-hosted) and also perhaps for REE’s within the pegmatites. Granite-hosted U mineralisation is characterised by; alkali-rich granite, high background U content, pervasive alteration, pegmatite-rich with quartz veining. Crossland Uranium are currently evaluating the MEMA prospect, which is a shear zone in granite hosting mineralised veins with secondary uranium minerals, notably meta-torbernite (Crossland Quarterly Report to ASX; September 2007). The granite is the Allia Creek Granite, which is part of the Allia Suite of which the Two Sisters Granite belongs (Wyborn 2002). Unconformity-hosted U mineralisation may be possible along the NE trending faulted contact between the Sweets Member of the Welltree Metamorphics and the Two Sisters Granite. The Sweets Member of the Welltree Metamorphics is reportedly similar in lithological composition to the lower and upper members of the Cahill Formation (hosting the Ranger & Jabiluka deposits). In other areas vein-type pitchblende mineralisation was intersected within graphitic microgneiss units of the Sweets Member (Monaro Mining Quarterly Report to ASX; March 2007).
Exploration during year 2 was restricted on this tenement with efforts focused on EL24984 (also part of combined reporting CR111 – Litchfield). Historical data compilation continued and a review of uranium targets (EL25176, 25195) and tin targets (EL25297) commenced with helicopter and geochemical reconnaissance planned at priority uranium targets next field season.

7. EXPLORATION DURING YEAR 3 BY AMG

AMG bought the EL 25297 from TUC last Sept. Then we studied all the information those TUC given to us. AMG is looking for base and precious metal.

Exploration is reviewed of the geochemical characteristics of the Two Sisters Granite to determine the prospectivity of the fractionated granite for REE such as Sn/Ta mineralization. So the assay methods/sampling techniques used in the regional geochemical sampling program carried out on EL 4923 were evaluated to see if this work downgraded the Sn/Ta prospectivity over the tenement.

Review satellite imagery for regional veining/structures/shears in the granite and the granitic veins that may have Sn/Ta potential; and follow-up with field reconnaissance.

Review the drill cores and the assay results which taken from the License.

8. PLANNED EXPLORATION FOR YEAR 4

The exploration plan will target to Sn/Ta mineralization (granite-hosted pegmatite/vein) similar to those previous companies had been trying to explore. A review of the geochemical characteristics of the Two Sisters Granite and granitic vein are planned; this is to determine the prospectively of the fractionated granite for REE mineralization.

Planned work includes;

1. Field reconnaissance/ground mapping along the NE-trending fault marked by the Sweets Member of the Welltree Metamorphics
2. Field reconnaissance/ground mapping along regional veining/structures/shears in the granite that may have Sn/Ta potential

3. Section generation across the southern portion of the Licence (using NTGS stratigraphic holes) with follow-up field mapping to determine possible structural controls on mineralisation along the faulted contact.

4. Geophysical section across the vein or shear zone which possible structural controls on mineralisation along the faulted contact.

5. Follow up drilling or costeaneing (in Year 5) if deemed appropriate

Expenditure is expected to be at least $8,300.

9. REFERENCES


10. EXPENDITURE

Expenditure (as supplied by AMG) consisted of:

Tenement Management $60.00
Office Studies $90.00
Office Overheads $23.00

Albatross Helicopters to survey tenement EL25297 $1078.00

**TOTAL $1251.00**