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SUMMARY
Diamond drill hole PCRD001 was drilled on the southern border of EL24835 into a radiometric anomaly called the Windgap Uranium prospect located 23km north of the Warrego mine site. The hole was drilled to 475.5m and stayed entirely in granite. No mineralisation was encountered.

Two ground gravity surveys were completed in the tenement area by Atlas Geophysics during May 2010. 627 gravity stations were collected on a 50m grid. Both survey areas were chosen for ground follow-up which involved orientated lag sampling and collection of rock chips. 80 LAG samples were taken and 5 rock chip samples collected. An area in the south of EL 24835 (EL24835 South) was also chosen for an orientated lag sampling program. At this location, 31 lag samples were collected as well as three rock chips.

Better results include;

- EL24835 GRID1 – Co 9.5ppm, Zn 20ppm, Cu 85ppm, As 60ppm
- EL24835 South – Au 29ppb, Sb 23.5ppm, Zn 20ppm, Pb 46ppm, Cu 60ppm, Bi 1.8ppm, As 65ppm

Also included is a rock chip sample with Sn 2400ppm and Pb 200ppm which was taken in the EL24835 South area.

Expenditure for the year was $274 942.64 against a covenant of $80 000.

INTRODUCTION
EL 24835 was granted to Uranium West Pty Ltd on August 16, 2006. In August 2007, an Exploration Joint Venture Agreement (JVA) was signed with Rum Jungle Uranium Ltd (RJU) over two EL’s in Rum Jungle (EL 24866 and EL 24898) and two in Tennant Creek (EL 24835 and EL 24834). Rum Jungle Uranium Ltd is operator of the Joint Venture and has now earned 50% of the venture after spending $600 000. RJU is currently earning another 25% by spending $500 000.

EL 24835 is located 45km north of Tennant Creek. It is located on the Flynn and Short Range 1:100 000 map sheets and the Tennant Creek 1:250 000 map sheet. The tenement was pegged to explore for IOCGU mineralisation and unconformity type uranium mineralisation. A waiver of reduction was submitted to DPIFM to keep the full tenement area for year 3.

EL24835 is part of Rum Jungle’s Tenant Creek Project which consists of ten granted tenements. RJU is exploring for uranium, gold and copper in the Tennant Creek area.

All data collected by Rum Jungle Uranium Ltd is in GDA 94 Datum.
GEOLOGICAL SETTING

EL24835 is located immediately north of the unconformity between the Warramunga Province and the Tomkinson Creek Province around 40km north of Tennant Creek. At the unconformity, the Flynn Group overlies the older deformed Warramunga Formation which hosts the Tennant Creek goldfield.

The Warramunga Formation contains lithic tuffaceous, volcaniclastic and lithic sandstone, siltstone and hematitic siltstone, mudstone, slate and volcanic arenite (metagreywacke). At the Northern Star mine site there are a number of hematitic ironstone knobs, which are common occurrences around Tennant Creek in the Warramunga Formation. Chloritic schists are known to host uranium mineralisation at depth below the Northern Star open cut mine but occur at such a depth they are not mapped in Warramunga Formation anywhere as outcrop. Chlorite is mapped in alteration haloes and shear zones around a number of Tennant Creek ore bodies.
The Flynn Group of the Palaeoproterozoic Churchill’s Head Group of rocks consists of relatively undeformed and un-metamorphosed sedimentary rocks and volcanics. The basal units are the Wundirgi Formation in the west and the Monument Formation to the east. The Wundirgi Formation consists of lithic arenite, siltstone and shale while the Monument Formation consists of rhyolitic and rhyodacitic tephra, tuffaceous sandstone, siltstone, chert and shale. The Bernborough and Brumbreu Formations occur further up in the stratigraphy, consisting of similar rocks with the Warrego Volcanics (chert, tuff, white siltstone and shale and sublithic arenite) interfingering with the Bernborough Formation.

The younger Warrego Granite intrudes the Flynn Group and outcrops to the west of EL 24835. Outcrop in the south-eastern part of the tenement is limited with large areas of recent sand, soil and colluvium.

![Figure 2 Local geology of EL24835](image-url)
PREVIOUS EXPLORATION

Year 1
Limited ground work was conducted by Uranium West during the first year of tenure (Crescent Gold, 2007). The area has historically been explored for Tennant Creek style IOCG mineralisation with hundreds of shallow pattern vacuum and RAB holes drilled along the southern boundary of the tenement in the 1980’s and 1990’s by previous operators over small magnetic anomalies near the unconformity of the Warramunga Province and overlying Churchill’s Head Group.

Year 2
During the second year of tenure, eight RC drill holes were drilled for 1392m (Doyle, 2008). Holes 1-5 were targeted at a gravity high feature in the eastern part of the tenement. The drill holes intersected mainly Warramunga Group siltstone and mafic magnetic dykes but no mineralisation. It looks like the gravity high is caused by the mafic intrusions but further drilling along section to the north in 2008 will confirm this theory. Holes 9-11 were drilled into another gravity high in the western part of the tenement on the southern fringe of the Short Range. These holes intersected sediments of the Flynn Sub Group possibly in the hornfels zone on the northern tip of the Warrego Granite. No mineralisation was intersected.

4348 line km of airborne geophysics (magnetic and radiometrics) were flown at 100m line spacing in a north south orientation at 40m flying height. The Survey was flown by UTS Geophysics in late 2007. Fugro ground gravity crews carried out two ground surveys in the eastern and western part of the tenement and adjoining tenements, EL 25575 and EL 24874 with a station spacing of 200m (Figure 3). A number of gravity high features are evident in the data with initial drilling results indicating the highs may be due to mafic intrusives at depth.

A helicopter supported rock chip sampling program was carried out during August 2008 over all Tennant Creek tenements using a Bell Jetranger supplied by Jayrow out of Katherine. 27 samples were collected from radiometric anomalies on EL 24835 and sent for geochemical analysis at NTEL in Darwin (results in Appendix 2). The best results were 206ppm Cu from sample TC08015 and 276 ppm Cu from sample TC08014.

During August 2008, all RC drill pads an access tracks were rehabilitated and 19 further RC drill pads were constructed ready for a second round of RC drilling to further test ground gravity targets and small magnetic anomalies under alluvial cover.

Year 3
During the third year of tenure, five RC drill holes were drilled for 679m by Johannsen Drilling. The best result was 26m at 512 ppm Cu in a hematite quartz breccia unit from 71-96m in hole PCRC019. No uranium or gold mineralisation has yet been encountered.
1330 line km of airborne geophysics (magnetics and radiometrics) were flown by UTS Geophysics at 100m line spacing in a north south orientation at 30m flying height over the south east corner of the tenement.

A ground gravity survey was conducted over the south eastern part of the tenement by Fugro Ground Surveys with station spacings at 200m and 100m infill. Data was collected from a total of 1207 gravity stations.

Both gravity and magnetic surveys in the south east corner of the tenement were conducted to try and identify structures hosting known uranium mineralisation in the nearby Northern Star open cut mine and to try and locate mineralisation extending west into EL24835.

All drill pads and sumps were rehabilitated during the year.

**CURRENT EXPLORATION**

**Diamond Drilling**
Drilling of PCRD001 at the Windgap Uranium prospects, located 23km north of Warrego Mine, commenced on November 23 and was completed on December 10. Drilling was done by H2O Drilling out of Coolalinga utilising a Sandvik 810 multi-purpose rig. The drill crew camped on-site in a caravan camp.

Diamond Hole PCRD001 was drilled to a depth of 475.5m underneath historic hole TCPD11 which was drilled to 201m vertical depth. PCRD001 started and finished in Warrego Granite. The hole was drilled towards 180° with the aim to test possible east-west faulting and shearing in the granite that may be hosting uranium mineralisation. The hole steepened during the RC pre-collar from 60 degrees to 67.8 degrees at 150m. During NQ core drilling the hole rose gradually to hit 60 degrees again at around 450m. Due to the steepening of the hole it may not have reached far enough south to properly test shearing on the northern edge of the radiometric anomaly. The granite was relatively fresh, pink in colour with minor hematite and chlorite alteration.

A hand held XRF machine was used to assay drill core while logging the PCRD001. No anomalous results were found to warrant sampling of the drill core for assaying.
Figure 3. Diamond Drill Site

Figure 4: Windgap Drill Hole Location
Figure 5. Hematite-chlorite shear at 426m

Figure 6. Hematite alteration of large feldspar granite at base of hole
Ground Gravity and follow-up Soil/LAG sampling

Two targets were picked for ground gravity surveys from interpreted geophysical data on EL24835. Selected areas over uranium anomalies and/or structures were selected for the close spaced ground gravity surveying. The contract was awarded to Atlas Geophysics. The survey commenced on May 1 and was completed on May 24 with 2795 stations collected at an average of around 140 stations per day with a few days lost due to unseasonal rain.

N Rollings and R Myers undertook a LAG and soil sampling programme during 12th June to 24th June 2010 (inclusive of travel time). Eighty LAG samples were taken over GRID 1 and 31 LAG samples were taken over the south of EL24835 (EL24835 South). No LAG or soil samples were taken on GRID2, instead 5 rock chip samples were taken over the GRID2 area due to the large extent of quality outcrop. Another three rock chip samples were taken over EL24835 South.

Lag samples were statistically analysed using Standard Scores based on the method of Garrett and Grunsky (2001, see appendix 4). Statistically significant results were found at:

- EL24835 GRID1 – Co 9.5ppm, Zn 20ppm, Cu 85ppm, As 60ppm
- EL24835 South – Au 29ppb, Sb 23.5ppm, Zn 20ppm, Pb 46ppm, Cu 60ppm, Bi 1.8ppm, As 65ppm

Rockchip samples were sent off to the lab for assay, returning some results with anomalous copper, zinc and lead and one anomalous sample containing Sn 2400ppm and Pb 200ppm.
Grid 1

EL24538 Grid 1 covers two magnetic anomalies. The southern anomaly was chosen by Hutchins as a Phillip Creek Top Anomaly (Figure 8). A ground gravity survey displayed as the first vertical derivative shows a complex network of gravity highs with highly contrasting gravity low running 020°T. Field investigation of EL24538 Grid 2 to the south revealed that gravity highs often corresponded to quartz sandstone/quartzite units (exposed at surface) while gravity lows corresponded to ironstone or ferruginized lithologies. It is interesting to note that a strong copper anomaly (Error! Reference source not found.) in the northern most line of Grid 1 corresponds to the gravity low suggesting that LAG is reflecting the bedrock geochemistry. At this location however the lag was plentiful and on a topographic rise suggesting outcrop was near the surface. Evidence on site suggested that gridding and possible drilling had been undertaken in the past at this location. This is not surprising as the location has anomalous Zn, Co and Cu as well as elevated As.

80 Lag samples were taken with anomalous geochemistry for Cu 85ppm, Co 9.5ppm, Zn 20ppm and As 60ppm (see Appendix 1 for Figures).
Grid 2

EL24385 Grid 2 covers a sequence of magnetic anomalies (Figure 9) and several small radiometric U anomalies (Figure 10). A ground gravity survey (<Error! Reference source not found.>) was conducted as these anomalies are nested between two crossed lineaments from the NTGS Tennant Creek Interpretation Sheet (Figure 7). The area showed excellent outcrop so it was decided to take rock chip samples rather than undertake a LAG survey (Figure 12). Five rock chip samples were taken. The main northern U anomaly appears to follow a well defined fault trending 030° with a corresponding fault valley (Figure 12). The fault that defines Uranium Valley corresponds to a highly ferruginised sandstone (possibly volcanic?) with a low gravity signature. Either side can be found a resistant sandstone/quartzite ridge (Figure 13). None of the samples return significant results and the northern U anomaly can be explained by the ferruginised unit scavenging U with 400cps compared to a background of 120cps. Whether this implies the surface anomaly is indicative of U mineralisation at depth is unknown.

The northern most magnetic anomaly adjacent to the U anomaly corresponds to the quartzite ridge identified by gravity and field observations. No explanation for this magnetic anomaly could be found at the surface. Similarly, the two other main magnetic anomalies were found to correspond to topographic lows surrounded by resistant sandstone/quartzite ridges. These depressions are filled with reworked colluvium from the surrounding ridges and no evidence was found in the float to suggest the cause of these magnetic anomalies.

The southern U anomaly corresponded to a saddle formed on a fault line as seen on the Tennant Creek Interp Sheet. Despite high counts the sample from this area did not yield significant U values. A hematite quartz breccia was found in the float on this saddle and revealed Bi 122ppm, As 49ppm and Fe 13.6% by portable XRF analysis.
Figure 9 Airborne magnetic with geological observations over extended area

Figure 10 Airborne radiometrics with geological observations over extended area
Figure 11 Rockchip sample locations over GRID2 and the Uranium Valley

Figure 12 Uranium Valley looking Southwest along fault line
Figure 13 Uranium Valley follows gravity low and comprises heavily ferruginised sandstone. Image is the gravity first vertical derivative.

**EL24835 South**

EL24385 South is a small region comprising seven anomalies including airborne radiometric (U, Figure 14), airborne magnetic (Figure 15) and ground gravity (Figure 16), (target after Hutchinson).

Best LAG assays yielded Au 29ppb, Sb 23.5ppm, Zn 20ppm, Pb 46ppm, Cu 60ppm, Bi 1.8ppm, As 65ppm (summarised in Appendix 4). The results indicate anomalous Cu on the western side of site with Au – Sb – Pb present in both rock chip and LAG sample on the eastern side.

The only anomalous rock chip (sample 4400) revealed Sb 4200ppm and Pb 200ppm in a massive specular hematite subcrop found over the a magnetic (+U) anomaly in EL24538 South. Coupled with anomalous LAG samples (Cu, Au, Pb, Sb, As and Bi) this area would be worthy of further investigation.

31 lag samples were collected as well as three rocks.
Figure 14 EL24835 South Airborne radiometrics - U

Figure 15 EL24835 South Airborne magnetics - TMI
## Rock Chip Sampling Results

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Rehabilitation

Drill pads and access tracks were left over the wet season and were rehabilitated after the wet season once the bull dust had settled and compacted with good rain. Phillips Earthmoving from Tennant Creek put in the drill pads and access tracks and they were once again contracted to rehabilitate the site.

Figure 17 PRCD001 ready to be drilled
PROPOSED EXPLORATION ACTIVITY YEAR 5
Ground gravity and lag geochemical anomalies will be followed up with a view to drill testing. A number or other existing magnetic and gravity anomalies will also be scrutinised with a view to drill testing in year 5.

PROPOSED EXPENDITURE YEAR 5

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CONCLUSION
Rum Jungle’s Tennant Creek survey suggests that LAG/Soil sampling may offer some utility as an exploration tool in the Tennant Creek Mineral Field, particularly if the survey team is mindful of local geomorphology. This is encouraging given the initial uncertainty of LAG/Soil sampling in this area and the complex nature of the geomorphic terrain. The anomalous LAG samples found in EL24538 South clearly match magnetic and gravity targets and support anomalous Sb values found in one rock chip sample.

REFERENCES
