ORION EXPLORATION PTY LTD

ANNUAL REPORT
ON EDITH RIVER U-Au-Cu PROSPECT

PINE CREEK MINERAL FIELD, NORTHERN TERRITORY

Edith River Uranium-Gold-Copper Prospect

Exploration Licence: 23568

BY

P. Kastellorizos

DECEMBER 2006

DISTRIBUTION

1. Northern Territory Department of Minerals & Energy
2. Pan Resources plc
3. Orion Exploration Pty Limited
PROJECT NAME: Edith River Uranium-Gold-Copper

TENEMENTS: Exploration Licences 23568

MINERAL FIELD: Pine Creek Geosyncline

LOCATION:  
MT EVELYN SD5305 1:250 000  
FERGUSSON RIVER SD5212 1:250 000  
KATHERINE SD5309 1:250 000  
Ranford Hill 5370 1:100 000  
Fergusson River 5269 1:100 000  
Katherine 5369 1:100 000

COMMODITIES: Uranium, Copper and Gold

Abstract

The Edith River U-Cu-Au Project consists of one granted Exploration Licence (EL23568) covering 474.9 square kilometres approximately 220 km south of Darwin in the Northern Territory (Figure 1). The tenement area is situated approximately 55 km north-northwest of the township of Katherine and is accessed via the Stuart Highway then along the unsealed Spring Hill Road.

AsIs to carry out a reinterpretation of exploration data over the Woolgn project area, with an emphasis on the existing geophysical data. AsIs concluded that the project area was highly prospective for uranium mineralisation, including unconformity, sandstone; quartz-pebble conglomerate, vein, and IOCGU deposit types. It also suggested that interpretation of aeromagnetic data could reveal structures and shears that may host gold/base metal mineralisation within the Cullen Batholith.

AsIs identified the following areas within the project area as being of specific interest for uranium exploration:

- Volcanics of the Edith River Group crop out in the central east of EL 23569. These are interpreted to unconformably overlay the Cullen Granite. This represents a suitable environment for precipitation of uraniferous minerals in the basal sequence which includes conglomerate and shale.
- Sediments of the Mesoproterozoic Tolmer Group crop out in the north-west corner of EL 23569. At the base of this group is the Depot Creek Sandstone, a pebbly quartz sandstone that unconformably overlies the Cullen Granite. This presents a suitable environment for uranium precipitation. A number of elevated U/Th ratio values occur near the margins of the Depot Creek Sandstone and indicate a high priority exploration target.
- In the extreme north of EL 23568 a high uranium channel value is located near the edge of outcrop of Cullen Granite.
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1.0 EDITH RIVER URANIUM-GOLD-COPPER PROJECT

2.0 INTRODUCTION

The Edith River U-Cu-Au Project consists of one granted Exploration Licence (EL23568) covering 474.9 square kilometres approximately 220 km south of Darwin in the Northern Territory (Figure 1). The tenement area is situated approximately 55 km north-northwest of the township of Katherine and is accessed via the Stuart Highway then along the unsealed Spring Hill Road.

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- Sediments of the Mesoproterozoic Tolmer Group crop out in the north-west corner of EL 23569. At the base of this group is the Depot Creek Sandstone, a pebbly quartz sandstone that unconformably overlies the Cullen Granite. This presents a suitable environment for uranium precipitation. A number of elevated U/Th ratio values occur near the margins of the Depot Creek Sandstone and indicate a high priority exploration target.

- In the extreme north of EL 23568 a high uranium channel value is located near the edge of outcrop of Cullen Granite.

3.0 LOCATION AND ACCESS

The tenements are located approximately 220km SSE of Darwin and 50 km NNW of Katherine (Figure 8) and lies within the Pine Creek and Katherine 1:250K map series. The lease is located immediately west of the Stuart Highway. Access roads and tracks off the Stuart Highway are normally limited to dry weather only. The area varies from flat terrain to moderately undulating.

4.0 TENEMENTS

The project is comprised of one granted exploration licence (EL) with the tenement details are summarised in Table 1 and their locations are shown in Figures 1 and 2.
Figure 1 Edith River Project – Topographic Map
Table 1 Edith River Project - Tenement Summary

<table>
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<tr>
<th>Tenement</th>
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<th>Beneficial Holder</th>
<th>Expiry Date</th>
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<th>Annual Commitment</th>
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<td>474.9 km²</td>
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5.0 REGIONAL GEOLOGY

The Edith River prospect is located within the Pine Creek Inlier, which on a regional scale, hosts a number of major gold deposits. Regional deformation and metamorphism took place during the craton scale Barramundi Orogeny (1860-1850 Ma). Widespread felsic intrusive activity (Cullen Event) occurred after the Barramundi Orogeny. Granite batholiths were emplaced in the period 1850-1820 Ma and produced thermal metamorphic aureoles in country rocks overprinting regional metamorphic mineral assemblages. Synchronous with the waning of this event in the South Alligator Valley region was the development of two consecutive rift-controlled volcanic and clastic sedimentary graben-fill successions, the El Sherana and Edith River Groups (1830 Ma and 1822 Ma respectively). They are bounded by unconformities and were folded prior to deposition of McArthur Basin sediments.

6.0 LOCAL GEOLOGY

The Edith River project area is dominated by the southern portion of the Cullen Granite batholith (Figure 2). The granite is intrusive into metamorphosed shale, siltstone, and greywacke of the Burrell Creek Formation, pendants of which crop out in the north, centre-east, and southeast of the tenement area.

The granite and the metasediments are overlain by an outlier of acid volcanics of the MesoProterozoic Edith River Group in the centre-east and by the MesoProterozoic sandstones and dolomites of the Tolmer Group in the northwest. Younger sediments occupy the southwest portion of the area. From younger to older (top to bottom) they are:

- Quaternary alluvium
- Cainozoic sand
- Lateritised Cretaceous mudstone and shale
- Ordovician and Cambrian to Ordovician sandstone, shale, and dolostone
- Cambrian limestone and shale

The Paleozoic sediments of the Daly River Group dip at a shallow angle to the southwest.
Figure 2 Edith River Project – Regional Geology with Mineral Occurrence Map
7.0 PREVIOUS MINING AND EXPLORATION

7.1 URANIUM EXPLORATION

Within the Edith River Exploration Licence several uranium prospects were discovered in 1952 in an intrusion of Lower Proterozoic granite (the Cullen granite) within a north trending shear zone approximately 91 to 122 metres wide. Numerous siliceous reefs and shear zones are arranged echelon within the main shear zone.

Disseminated uranium mineralisation associated with hematite and apatites was identified at three locations on shear zones and was then partially mapped by BMR geologists:

1) the YMCA prospects, 1.6 to 4.8 kilometres south east of the Edith River siding;
2) the Tennysons prospects, 3.2 kilometres west south west of the Edith River siding;
3) the Hore and O'Connor's prospect, 8 kilometres west north west of the Edith River siding.

The history surface grade has been estimated as ranging from 0.1% to 0.2% uranium. Two occurrences at the YMCA prospects were drilled in 1954, with one drill hole each in the oxide layer and one each drilled to intersect primary mineralisation, which did not encounter significant increase in grade. United Sales International Pty in 1971 noted that the disseminated nature of the occurrences did not offer easy drill targets and recommended a study to locate areas of intersecting shears, the carrying out of low level radiometrics with ground follow-up, and the identification of areas of Cambrian and late Proterozoic sediments lying unconformably on the Cullen Granite and their testing for sedimentary deposits of uranium.

Mining activities has been associated with two shaft developed over the YMCA prospects. The YMCA No.1 shaft working is reputed to be 30.5 metres deep and is said to have passed through lode at a depth of 12.1 metres. A westerly cross cut from the bottom intersected the lode at 9.1 metres and a winze sunk on this exposure only reached 6 metres before work was terminated.

All of these prospects are located on steeply dipping shear zones which strike generally north-west, and in the case of the YMCA prospects, which have examined in detail, the best values of uranium mineralisation occur at and near the intersections of north east striking shear zones with the main north west zones. Secondary uranium minerals – torbernite and meta-autunite occurs as disseminated hematite and apatite.

At all the Tennyson deposits the uraniferous minerals occur in a “hematitic” lode material, which has a very close relationship to the “hematitic” breccia, usually being co-extensive with it but occasionally it is related to “hematised” portions of the granite adjoining the breccia. The lode formation has a total exposed length of approximately 152 metres.
From the period 2005-06, Orion Exploration Pty Ltd conducted a historic detail geological summary and a comprehensive data review to define the following:

1. Outline the extent of historical exploration over the tenement area through historical exploration open file report searches.
2. Construct a GIS database outlining historic mineralised trends, geophysical anomalies, interpreted aeromagnetics/geology and geochemical samples.
3. Identify follow up geochemical targets for uranium mineralisation and compare tenement area with known uranium deposits within the region.

A total of 10 rock chip samples were collected from the several areas (Figure 3). All samples were sent to Genalysis Laboratories in Perth, Western Australia, and analysed for Au by an Aqua Regia digest with a graphite furnace AAS finish to a detection limit of 1ppb, and for Ag, As, Co, Cu, Mn, Ni, Pb, Sn, U, W, Zn and Fe by an Aqua Regia digest with an OES finish to detection limits of 0.5, 2, 1, 1, 100, 20, 1, 2, 1, 2 and 1ppm respectively. All results of the locations are presented in Appendix I and Figure 3. An altered metasediment from within a small shaft at the Fergusson River U prospect contained 2.84% Cu, 0.53g/t Au, and 237.96 ppm U.

Figure 3 Location Map of anomalous U-Au-Cu rock chip sample taken in 2006
8.0 WORK COMPLETED AND DISCUSSION

In June 2006, J. Doepel, consultant geologist, of Continental Resource Management (CRM) was commissioned by Red Rock Resources Ltd (parent company of Orion Exploration Pty Ltd) to carry out a field reconnaissance of the Edith River project area and to recommend an exploration programme for the Edith River tenement, EL23569 over one day. John Doepel was accompanied by Pedro Kastellorizos of Kastellco Geological Consultancy and Andrew Bell of Regency Mines plc.

Attempts were made to access the Tennyson uranium deposits on several occasions without any success. The vegetation was very dense to access via four wheel drive; a bull dozer will be utilized during the dry season of 2007 to conduct a ground radiometric survey in conjunction with geological mapping and rock chip sampling over the uranium anomalies.

Pan Resources (parent company of Orion Exploration Pty Ltd) commissioned AsIs to carry out a reinterpretation of exploration data over the Edith River project area, with an emphasis on the existing geophysical data. AsIs concluded that the project area was highly prospective for uranium mineralisation, including unconformity, sandstone, quartz-pebble conglomerate, vein, and IOCGU deposit types. It also suggested that interpretation of aeromagnetic data could reveal structures and shears that may host gold/base metal mineralisation within the Cullen Batholith.

AsIs identified the following areas within the project area as being of specific interest for uranium exploration:

- Volcanics of the Edith River Group crop out in the central east of EL 23569. These are interpreted to unconformably overlay the Cullen Granite. This represents a suitable environment for precipitation of uraniferous minerals in the basal sequence which includes conglomerate and shale.
- Sediments of the Mesoproterozoic Tolmer Group crop out in the north-west corner of EL 23569. At the base of this group is the Depot Creek Sandstone, a pebbly quartz sandstone that unconformably overlies the Cullen Granite. This presents a suitable environment for uranium precipitation. Dolomites in the overlying Stray Creek Formation are a possible source of sulphates in the precipitation process. A number of elevated U/Th ratio values occur near the margins of the Depot Creek Sandstone and indicate a high priority exploration target.
- The cover sediments in the southwest of the project area hold potential for roll-front sandstone deposits. Increased thicknesses of Tertiary or Quaternary sediments may be developed in channels incised into basement.
- In the extreme north of EL 23568 a high uranium channel value is located near the edge of outcrop of Cullen Granite.

AsIs also noted that there is potential within the southwest of the project area for the discovery of iron-oxide-copper-gold mineralisation. Although no mineralisation of this
type have been identified in the Pine Creek area, gravity coverage, which is the primary geophysical exploration tool for IOCGU deposits, is inadequate over the entire tenement area and the area is within a major uranium province.

As is recommended the following:

- Acquire and interpret detailed low-level airborne magnetic and radiometric data over the tenement area.
- Carry out ground spectrometer traverses over the U/Th anomalies on the unconformity at the base of the Depot Creek Sandstone in the northwest of EL 23569.

9.0 CONCLUSION

Historic exploration within the area has largely concentrated on surface sampling with encouraging results not adequately follow up. Numerous regional targets defined from areomagnetics/radiometric have not been tested and are considered excellent potential for the discovery of significant structurally controlled (shear/fault) gold/copper/uranium mineralisation.

Remodeling and re-interpretation of the aeromagnetic data (regional magnetic/radiometric) would be required in conjunction with a ground magnetic survey for better drill target definition over strongly geochemical Au-Cu-U geochemical anomalies.

Systematic follow-up of anomalous rock chip assays in the southern and south eastern portion of the tenement with detail rock chip and soil sampling is warranted.

There are numerous prospective north-west shear zones on the tenement that have been under explored. These areas are key targets for closely spaced geochemical sampling and potentially RAB drill targets which might host high grade gold mineralisation.

The prospectivity of the anomalous rock chip areas has been considerably enhanced by the systematic geochemical sampling programme in conjunction with drilling will lead to the discovery of high grade gold mineralisation as well as possible high tonnage/lower grade mineralisation.

10.0 EXPLORATION POTENTIAL

There is potential within the Edith River Project for the discovery of both uranium and gold mineralisation.

The tenement area is located within a world class uranium province, the Pine Creek Orogen, which contains about 20% of the world's uranium reserves. The Cullen Granite contains a number of uranium occurrences and as such is a potential source rock for
younger deposits. A number of potential trap formations for unconformity and sandstone roll-front deposits are also present. These formations are worthy of systematic exploration.

11.0 PROPOSED EXPLORATION
CRM recommends that the exploration programme should be designed to test the tenements for the target mineralisation described above.

It proposes that during the 2007,

Carries out a small first pass Tennyson/YMCA programme to determine the extent, width, and tenor of the Cu-Au-U mineralisation exposed in the sheared rocks at the Fergusson River U Shaft Prospect

- Acquires and interprets detailed low-level airborne magnetic and radiometric data over the project area
- Carries out ground spectrometer traverses over the U/Th anomalies on the unconformity at the base of the Depot Creek Sandstone in the northwest of EL 23569
- Conduct a ground radiometric/magnetic survey to mapped deep seated structures such as fault/shear zones, and follow this with a ground examination of anomalous areas.
- If any geophysical or geochemical uranium anomalies are delineated by the survey, a small RAB drilling program should be implemented to test the bedrock. Deeper drilling would be required to follow up positive results from the rock chip sampling and reconnaissance drilling.

12.0 E23568 - EXPENDITURE STATEMENT

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13.0 E23568 – PROPOSED EXPENDITURE

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14.0 REFERENCES
