United Uranium Limited

Annual Report on Exploration Activities

McArthur River Project

For Period 21 September 2008 to 20 September 2009

Title Holder: United Uranium Limited
Tenements: Exploration Licence 25839
Project Name: McArthur River Project
Mineral Field: McArthur Mineral Field
Location: Urapunga SD5310 1:250 000
Datum / Zone GDA 94 / Zone 52
Commodities: Uranium and Base Metals
Date of report: 16 October 2009
Author: I. Prentice

Contact Details: Ian Prentice – Consultant Geologist
Zephyr Consulting Group
PO Box 1424
West Perth, WA, 6872
Ph – (08) 9200 4474
Fax – (08) 9200 4475
Email (technical) – ian.prentice@zephyrgroup.com.au
Email (expenditure) – glazarou@citadelcapital.com.au

Distribution:
1 Northern Territory Department of Minerals & Energy
2 United Uranium Limited
ABSTRACT

Location: The McArthur River Project is located approximately 200 kilometres east north east of Katherine in the Northern Territory.

Geology: The project is located in the central portion of the McArthur Basin, which consists of platform cover sediments bounded by and unconformably overlying the Pine Creek, Arnhem and Murphy Inliers. The south eastern half of the tenement is dominated by the Roper Group and Collara Subgroups comprising largely thick interbedded fine grained glauconitic sandstones. Quaternary and recent alluvial sediments dominate the north western half of the tenement area.

Work done: Exploration activities during the reporting period consisted of review of the results of the previous year's exploration activities, the flying of an airborne electromagnetic survey (VTEM) in conjunction with Geoscience Australia, review of the preliminary data from this survey and the implementation of an exploration program to assess the prospectivity of anomalies defined. The VTEM survey was flown on east west flight lines on 250m spacing for a total of 981 flight line kilometres.

Results: The preliminary data from the electromagnetic survey defined two broad conductive zone uranium targets and a coincident EM conductor and magnetic anomaly (base metals target).

Conclusion: Exploration on the McArthur River Project during the reporting period was dominated by the flying of the electromagnetic survey and the review of the preliminary data from the survey. The McArthur River Project is prospective for unconformity and/or vein style uranium and base metals (Zn–Pb) mineralisation.

Ground based exploration of the targets generated, which had commenced prior to the end of the reporting period, combined with the final data from the survey will be key to target definition for future exploration work.
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1 SUMMARY


The tenement, EL25839, is located approximately 200 kilometres east north east of the township of Katherine in the Northern Territory. Access from Katherine is 50km south east on the Stuart Highway, then east on the Central Arnhem Road to the Mainoru Homestead. Access within the tenement is on secondary roads and station tracks.

The project is located in the central portion of the McArthur Basin, which consists of platform cover sediments bounded by and unconformably overlying the Pine Creek, Arnhem and Murphy Inliers. The south eastern half of the tenement is dominated by the Roper Group and Collara Subgroups comprising largely thick interbedded fine grained glauconitic sandstones. Quaternary and recent alluvial sediments dominate the north western half of the tenement area.

Previous exploration by United Uranium has defined a number of regionally extensive radiometric anomalies and two aeromagnetic anomalies from the reprocessing of Northern Territory Geological Survey (NTGS) airborne geophysics.

During the reporting period United Uranium’s exploration work consisted of desktop review and assessment of the results of the previous year’s exploration activities, the flying of an airborne electromagnetic (VTEM) survey in conjunction with Geoscience Australia, review of the preliminary data from this survey and the implementation of an exploration program to assess the prospectivity of anomalies defined.

Review of the preliminary airborne electromagnetic survey data has generated two broad conductive zone uranium targets and a coincident EM conductor and magnetic anomaly (base metals target). Ground based exploration to assess these anomalies commenced prior to the end of the reporting period.
2 INTRODUCTION

This report details exploration carried out on the McArthur River Project, EL25839, during the reporting period 21/9/2008 to 20/9/2009. United Uranium Limited is the operator and holds an 80% interest in the tenement.

The project area is located approximately 200 kilometres east north east of the township of Katherine in the Northern Territory (Figure 1). Access from Katherine is 50km south east on the Stuart Highway, then east on the Central Arnhem Road to the Mainoru Homestead, in the north west corner of the project area. Access within the tenement is on secondary roads and station tracks from the Mainoru and Mountain Valley homesteads.

The project is located in the central portion of the McArthur Basin, a large depositional basin extending from Arnhem Land to beyond the Queensland border. The Basin comprises 1700Ma to 1300Ma platform cover sediments and is bounded by and unconformably overlies the Pine Creek, Arnhem and Murphy Inliers. The south eastern half of the tenement is dominated by the Roper Group and Collara Subgroups comprising largely thick interbedded fine grained glauconitic sandstones. Quaternary and recent alluvial sediments dominate the north western half of the tenement area.

United Uranium has targeted the region for the discovery of unconformity-related and vein hosted uranium deposits and base metal (Zn – Pb) mineralisation. The South Alligator Uranium fields, located 180km to the west north west of the tenement, are the closest uranium occurrences. The Bulman Zn-Pb deposits, a cluster of 10 deposits scattered over a 40km radius, are located from 10 – 50km north north east of the tenement.

Reprocessing of the Northern Territory Geological Survey (NTGS) airborne geophysics within the project area has identified a number of regionally extensive radiometric anomalies and two aeromagnetic anomalies.

Exploration activities during the reporting period consisted of desktop review of the results of the previous year’s exploration, the flying of an airborne electromagnetic (VTEM) survey in conjunction with Geoscience Australia, review of the preliminary data from this survey and the implementation of an exploration program to assess the prospectivity of anomalies defined.
3 TENEMENT STATUS

The McArthur River Project consists of a single granted exploration licence, EL25839, in which United Uranium holds an 80% interest and is the operator. The balance of the tenement is held by United Mining Resources Pty Ltd.

EL25839 covers an area of 55 sub-blocks (approximately 182 sq km) and was granted on 21 September 2007. Tenement details are listed in Table 1.

<table>
<thead>
<tr>
<th>Tenement</th>
<th>Grant Date</th>
<th>Expiry Date</th>
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<td>EL25839</td>
<td>21/09/07</td>
<td>20/09/13</td>
<td>55</td>
</tr>
</tbody>
</table>

Table 1: Tenement Schedule

4 GEOLOGY

The project is located in the central part of the McArthur Basin. The McArthur Basin is a large complex depositional basin covering an area of about 200,000km² extending from Arnhem Land in the north west and to the south west beyond the Queensland border. The Basin largely comprises 1700Ma to 1300Ma (Middle Proterozoic or Carpentarian) platform cover sediments which are the principal element of the North Australian Platform Cover (Plumb et al. 1981). The Basin is bounded by and unconformably overlies the Early Proterozoic Pine Creek, Arnhem and Murphy Inliers.

Within the western part of the McArthur Basin the Lower Proterozoic sediments of the Katherine River Group form the oldest of the basin stratigraphies. Unconformably overlying the Katherine River Group are the middle Proterozoic lithologies of the McArthur River Group which comprises cherts, dolomites, sandstones and volcanics.
The tenement area is dominated by the Roper Group and Collara Subgroups comprising largely thick interbedded fine grained glauconitic sandstones. These are younger than the McArthur River Group, which is host to the world famous McArthur River base metals deposit. Minor amounts of laminated mudstones are also found within this group. The sediments cover the south eastern half of the tenement and dip gently to the south. The Jalboi Formation and Hodgson Sandstone Formation, comprising fine grained sandstones outcrop to the south east of the tenement area.

Several major north east trending structures cross cut the stratigraphy, some of these being suitable targets for follow up exploration.

Quaternary and recent alluvial sediments within the Mainoru drainage system dominate the north western half of the tenement area. Tertiary deposits of laterite and lateritic rubble generally overlie the much of the Proterozoic sedimentary units.

There are no gazetted uranium occurrences proximal to the tenement area. The South Alligator Uranium fields are located 180km to the west north west of the tenement.

The McArthur Basin as a whole has an excellent potential for discovery of large base metal deposits. The style of base metal mineralisation in the Basin is typically SEDEX, vein-type and palaeokarst related. Other types of mineralisation include vein-type and breccia pipe copper deposits at Redbank; smaller-sized iron ore deposits within McArthur sediments at Roper Bar; and manganese deposits.

Lead-zinc mineralization is widespread throughout the McArthur River region. The McArthur River (HYC) zinc-lead deposit, located 200km east of EL25839 is one of the largest in the world. Mineral resources as at 2006 (Xstrata Annual Report 2006) were 157 Mt @ 11.3% Zn, 4.9% Pb and 49 g/t Ag. It is an example of a sediment hosted (SEDEX) zinc-lead deposit, which are known from around the world. Sedex deposits are widely distributed in Northern Australia in the Mount Isa – McArthur River region, such as Mount Isa, Hilton, George Fisher, Lady Loretta, Dugald River, Century and McArthur River.
Deposit features include:

- Fine-grained galena and sphalerite, with pyrite and pyrrhotite
- Good geophysical targets (eg. EM, IP, gravity, conductivity).
- Generally there is either an iron-manganese or a silicate alteration halo.
- Syn-sedimentary and replacement ore textures.
- The major sulphides are pyrite, sphalerite and galena, with lesser chalcopryite, arsenopyrite and marcasite.
- The mineralisation covers an area of 2 sq km and averages 55 m in thickness.

The project area lies proximal to the Bulman base metal deposits. Outcropping Zn-Pb-Ag mineralisation at the Bulman Deposit was discovered and briefly worked by prospectors in 1910. The deposit is hosted within gently dipping, laminated stromatolitic dolostone and chert of the Mesoproterozoic Dook Creek Formation which lies south of EL25839. The mineralisation at Bulman is found in ten separate deposits scattered over a 40km radius in close proximity to a dolerite intrusive. A combined resource of 1.2Mt @ 6.5% Pb and 0.93Mt @ 11%Zn was estimated for seven of these deposits.

The Swamp prospect, which is anomalous in lead and zinc, is the closest known mineral occurrence to the tenement area. The prospect, also known as “Anomaly 12 extended”, comprises a small open pit and is located 5km to the west of the tenement.

Reprocessing of the NTGS radiometric data draped over the DEM has highlighted a number of radiometric anomalies. The most prominent of these is coincident with the Crawford Formation (Roper Group) which extends in a south westerly direction for over 20km in the central part of the tenement area. The anomalous zone is apparent when looking at both the total count radiometric data and also the uranium data. These sediments are conceptually favourable sedimentary lithologies for sandstone hosted uranium deposits. It is probable that the apparent radiometric anomalies are associated with the lateritic cover overlying the sub cropping sandstone lithologies.
5 PREVIOUS EXPLORATION

All historical exploration undertaken within the tenement area has been reviewed. Based on the open file reporting from the Northern Territory Geological Survey, there were a limited number of historical tenements that either partially or fully covered EL25839.

Exploration carried out within the area covered by EL25839 has been carried out since 1970 largely for diamonds and with very limited reconnaissance sampling for base metals. The potential for the tenement area to host base metal mineralisation remains largely untested. Although some very early work has been undertaken over the targeted radiometric anomalies within the tenement area, the work failed to adequately explain these anomalies.

Previous exploration conducted both within EL25839 and proximal to the tenement area (EL Number, Year, Report Number, Company) follows;

The area held by Exploration and Resource Development Pty Ltd (ERD) covered the north eastern portion of EL25839 extending to the southeast. ERD were specifically targeting the area for diamonds. ERD completed open file reviews of the tenement area and concluded that sufficient work had been undertaken within the tenement area to downgrade the potential for base metals and diamonds. No field work was undertaken by ERD.

The area held by Exploration and Resource Development Pty Ltd (ERD) covered the central portion of EL25839 and extended to the south. ERD completed open file reviews of the area and concluded that sufficient work had been undertaken within the tenement area to downgrade the potential for base metals and diamonds. No field work was undertaken by ERD.

**EL 3351 1983 Ashton Mining Limited (CR1983-085)**
Ashton Mining Limited conducted exploration for diamonds over EL3351 which covers the eastern half of EL25839. Ashton undertook stream
sediment sampling to assess the area for diamond indicator minerals. Due to extremely difficult access, a helicopter was utilised to undertake the program. There were no significant results.

**EL 4486 1990 Stockdale Prospecting Limited**

(CR1985-0149)

EL4486 covered the same area now held by United Uranium as EL25839. Stockdale undertook reconnaissance stream sampling for diamond and kimberlitic indicator minerals at a density of 1:200km². Sample results were all negative and the ground was subsequently relinquished.

**EL 6287, 6289 1994 Stockdale Prospecting Limited**

(CR1990-0060)

EL6287 covered the north western half of EL25839 and EL6289 covered the south eastern half of EL25839. Stockdale undertook reconnaissance and infill stream and loam sampling for diamond and kimberlitic indicator minerals at a density of 1:5.8km² over 15,714km². There were no significant results.

**EL 8938 1995 CRA Exploration**

(CR1996-0241)

CRA undertook exploration for illmenite and kimberlitic diatremes in the Urapunga Project area in the Western McArthur River Basin in 1996. The area included the western third of the EL25839. Landsat TM data, aeromagnetic and radiometric data was purchased and reprocessed for the region of which 25 aeromagnetic targets were selected for follow up work.

Heliborne aeromagnetics was conducted over 12 of these anomalies. Loam samples collected from a number of these anomalies all returned negative results. The potential for illmenite and diamonds in the region was downgraded following the exploration program.

**AP 2332 1971 Australian Aquitaine Petroleum**

(CR1971-0074)

In 1970, Australian Aquitaine Petroleum together with Canadian Aero Service Ltd undertook an airborne radiometric survey on half mile line spacing’s over an area which included the north western half of the tenement now held by
United Uranium. The open file report is an operational report and does not provide any conclusions or results from the survey.

**AP 3133  1971  Stockdale Prospecting**  
*(CR1971-0112)*

Exploration by Stockdale was primarily for diamonds and kimberlitic indicator minerals. Reconnaissance sampling and stream sediment sampling was carried out.

In addition, an airborne spectrometer traverse was undertaken over part of the tenement area now held by United Uranium with the target being for uranium. The instrument employed was a TV-3A Radiation Spectrometer with readings being taken at 100m above ground level. Results showed that the radiometric anomalies were related to either monazite in the drainage channels or laterites on top of the Proterozoic sediments.

### 5.1 UNITED URANIUM LIMITED – 2008

Exploration completed by United Uranium in the period between 21 September 2007 and 20 September 2008 consisted of compilation and review of all open file exploration data, compilation of public domain geological, geophysical and other digital data into MapInfo format, high level targeting utilising reinterpreted regional geophysical data and analysis of the effectiveness of previous exploration. This work, particularly the reinterpretation of geophysical data, identified a number of regionally extensive radiometric anomalies and two aeromagnetic anomalies that warranted follow up exploration.

In August 2008 a reconnaissance rock chip sampling program was completed in the north west of the tenement, with 6 rock chip samples collected, and scintillometer (total count) readings were collected at each sample point as well as on a number of traverses over second tier radiometric anomalies.

Weakly elevated uranium assays were returned from the some of the rock chip samples, with a maximum assay of 4.3ppm uranium, however base metal results were all low order.
6 EXPLORATION ACTIVITIES

Exploration activities by United Uranium in the reporting period between 21 September 2008 and 20 September 2009 consisted of desktop review and assessment of the results of the previous year’s exploration activities, the flying of an airborne electromagnetic survey in conjunction with Geoscience Australia, review of the preliminary data from the airborne electromagnetic survey and the implementation of an exploration program designed to assess the prospectivity of anomalies defined.

The airborne electromagnetic survey was conducted using the VTEM system and consisted of east west flight lines on 250m spacing for a total of 981 flight line kilometres. The survey was designed to assist in the identification of unconformity and vein style uranium mineralisation targets as well as potential massive sulphide targets. The flying of the survey was initially completed in late 2008, however data issues resulted in the survey being re flown in April 2009. Partial preliminary data was received in mid 2009.

Mapitt Geosolutions was engaged to review the preliminary data from the airborne electromagnetic survey to generate potential targets for follow up exploration. This review generated two broad conductive zone uranium targets, a well defined EM conductor coincident with a magnetic anomaly (a potential massive sulphide/base metals target) and two smaller lower order sulphide targets. These targets will be further refined once final data is available from the airborne electromagnetic survey.

The exploration program designed to provide an initial assessment of potential surface expression of these targets commenced prior to the completion of the reporting period. The program consisted of:

- surface sampling, prospecting, CPS and XRF readings on three traverses across the coincident EM conductor and magnetic anomaly,
- CPS and XRF readings and prospecting on three traverses over the two broad conductive zones, and
- prospecting of other low order targets across the tenement area.

No results from the program are available as yet.

Exploration expenditure for the period consisted of $116,986.00.
7 EXPLORATION POTENTIAL

The preliminary data from the airborne electromagnetic survey completed in conjunction with Geoscience Australia has enhanced the prospectivity of the McArthur River Project, particularly with the definition of the coincident EM conductor and magnetic anomaly (potential massive sulphide/base metals target) and the two broad conductive zone uranium targets.

The presence of these newly defined targets combined with the previously defined regionally extensive radiometric anomalies, justify ongoing exploration work, for both base metals and uranium mineralisation.

8 PROPOSED EXPLORATION

Assessment of the results of the current follow up exploration in combination with the review and interpretation of the final data from the airborne electromagnetic survey will form the basis of the ongoing exploration work.

Anomalies generated from this work may be subjected to further surface sampling and/or geological mapping, potentially surface geophysical surveys to assist on target definition, followed by drilling as required.

9 PROPOSED EXPENDITURE FOR 2010

Table 2: Exploration Budget over EL25839

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10 REFERENCES


