BIBLIOGRAPHIC DATA SHEET

PROJECT NAME: Ngalia East Project
TENEMENT NO: EL29067
TENEMENT OWNER: Royal Resources Limited 100%
TENEMENT OPERATOR: Royal Resources Limited
REPORT TYPE: Annual and Final
REPORT TITLE: Annual & Final Report Ngalia East Project, EL29067 Northern Territory for the period 16 April 2012 to 8 May 2013
REPORT PERIOD: 16 April 2012 to 15 April 2013
AUTHOR: Ian Faris, compiled by B Lawrence
DATE OF SUBMISSION: June 2013
DATUM: GDA94_Zone 52
1:250,000 SHEET AREA: Mount Doreen (SF52-12)
1:100,000 SHEET AREA: Vaughan (5053) and Gurner (5052)
MINERAL FIELD: Ngalia Basin
COMMODITY: Uranium
ABSTRACT

LOCATION: The Ngalia East Project is located approximately 365 kilometres west-northwest of Alice Springs near the margin of the Ngalia Basin and the Arunta Block, Northern Territory. The project is defined by a single Exploration Licence, EL29067, which covers an area of ~38km² (14 sub-blocks) and is located on the Mount Doreen (SF52-12) 1:250,000 sheets and the Vaughan (5053) and Gurner (5052) 1:100,000 sheets.

GEOLOGY: The Ngalia East Project is situated near the western margin of the Ngalia Basin, a basin containing sediments up to 6000m thick ranging in age from Neoproterozoic to Palaeozoic and preserved in an elongate structure. Uranium is the exploration target in sandstone hosted Mount Eclipse Formation.

WORK DONE: No work completed during the reporting period due to budgetary constraints and focus on other projects and subsequently the tenement was relinquished.

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1. INTRODUCTION AND TENURE

This report details exploration completed on the Ngalia East Project for the period 16 April 2012 to 15 April 2013. The reporting area comprises one granted Exploration Licence EL29067 situated approximately 355 kilometres west-northwest of Alice Springs near the margin of the Ngalia Basin and the Arunta Block, Northern Territory. The tenement covers 14 blocks (37.97 km²) and is owned 100% by Royal Resources Limited (“Royal”). Royal is the operator and the tenement details are listed in Table 1.

<table>
<thead>
<tr>
<th>TENEMENT</th>
<th>APPROVAL DATE</th>
<th>SURRENDER DATE</th>
<th>AREA</th>
</tr>
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<td>EL29067</td>
<td>16-April-2012</td>
<td>8-May-2013</td>
<td>14 Blocks</td>
</tr>
</tbody>
</table>

2. REGIONAL GEOLOGY

The Ngalia East Project is contained within the Ngalia Basin. The basin contains sediments up to 6000m thick ranging in age from NeoProterozoic to Palaeozoic and preserved in an elongate structure that is remnant of a much more extensive, polyphase intracratonic basin.

The NeoProterozoic Vaughan Springs Quartzite is the oldest unit in the Ngalia Basin and mostly forms ridges along the northern and southern margins and contains the Treuer Member, a less-resistant interbedded siltstone and sandstone. The Vaughan Springs Quartzite unconformably overlies the Arunta Inlier basement and is overlain conformably by carbonate units of the Albiania Formation, which in turn is overlain by the Naburula Formation, the Mount Stuart Formation and the Rinkabeena Shale. These are unconformably overlain by glacial deposits of the Mount Doreen Formation which in turn is overlain by the Yuendumu Sandstone, Walbiri Dolomite, Bloodwood Formation, Djagamara Formation and Kerridy Sandstone. Unconformably overlying, these formations is the Carboniferous Mount Eclipse Sandstone. The Mount Eclipse Sandstone crops out widely in the Ngalia Basin, has a maximum thickness of more than 3000m and hosts the majority of the sandstone-uranium mineralisation. It is a medium to coarse-grained feldspathic sandstone, commonly with carbonate cement. Conglomerate, arkose, dolomitic sandstone and shale are present as lenses. The rocks are dominantly red (oxidised), although restricted zones of light to dark grey (reduced) and yellow-brown sandstone are present.

The Arunta Block, located on the northern and western margins of the Ngalia Basin, contains the Southwark Granite, an undivided megacrystic biotite and muscovite-biotite granite with minor microgranite and leucogranite, pegmatite and aplite dykes, (Young et al. 1995). The Southwark Granite Suite is considered to be the source of uranium within the Mount Doreen area.

Seismic data indicates that the basin is an asymmetrical synclinal structure which preserves a much thicker succession on the northern margin marked by northerly dipping thrusts (Waite Creek and Yuendumu Thrusts) and high angle reverse faults. The current basin configuration results from effects of the 300-400Ma Alice Springs Orogeny, which exhumed the basement which subsequently became the provenance for the Carboniferous Mt Eclipse Sandstone (Edgoose, 2006).

3. LOCAL GEOLOGY AND MINERALISATION

EL29067 is approximately 40 kilometres to the southwest of the Bigrlyi uranium deposit which was discovered within the Mount Eclipse Sandstone by Central Pacific Minerals NL (CPM) in 1971 from surface radiometric anomalies. Central Pacific Mines NL sub-divided the basal 500m of the Mt Eclipse Sandstone into eight units (Units A to H) (Pope, 1978). The area of interest is Unit C which contains most of the uranium mineralisation encountered to date.
The uranium is thought to be sourced from the Southwark Granite, transported in oxidising solutions and precipitated in reduced sandstones containing carbonaceous material and pyrite such as the Mount Eclipse Sandstone, although more recent work (CSIRO, pers. comm.) suggests most of the ‘carbonaceous matter’ are vanadium minerals. Uranium minerals include carnotite in the oxidised zone and uraninite ± montroseite in the fresh rock below the water table. Diagnostic alteration in the Bigrlyi deposit includes haematitisation, chloritisation and kaolinisation.

Three exploration models exist at present, namely uranium associated with structures and associated with redox fronts within, although not restricted to the Mt Eclipse Sandstone, and within Tertiary channels overlying the Mt Eclipse Sandstone. There is also some potential for uranium mineralisation associated with surficial calcrete deposits.

4. EXPLORATION DURING REPORTING PERIOD

The exploration targets for the Naburula East Project were sandstone-hosted uranium mineralisation associated with the Mt Eclipse Sandstone both stratigraphic or structure related, buried Tertiary palaeochannels or calcrete associated surficial deposits and uranium enriched pegmatites within the Yarunganyi Granite. Due to budgetary constraints no work was completed and subsequently the tenement was relinquished.

5. REFERENCES


Figure 1: Ngalia East Project Location
Figure 2: Ngalia East Project Regional Geology 1:2,500,000