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Tenement Manager: Becana Devencorn, Natural Resources Exploration Pty. Ltd.
Titles / Tenements: EL(s): 28319
Project Names: Bing Bong
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Author(s): Nicole Munro
Company Ref: NRE_NT2013: BING BONG – Final Report
Target Commodity / Commodities: Diamonds, Uranium, Base metals and Manganese
Date of Report: 16 December 2013
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Any information included in the report that has been originated or sourced from historical open file reports or other sources is listed in the “Exploration Studies - Historic” section within the document.

The Minister has authority to publish the copyrighted information accordingly.
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Summary

Section 94 of the *Mineral Titles Act* requires the submission of an Annual Report prepared by the titleholder for each exploration licence. The purpose of the following Annual Report for Exploration Licence (EL) 28319 is to provide a summary of the activities carried out over the permit in the past 12 months, including results produced by those activities.

NRE’s exploration rationale and objectives over EL28319, more commonly known to NRE as its ‘Bing Bong’ prospect, considered the evaluation of potential base metal, diamond and uranium mineralisation. Initial investigations were intended to locate any outcropping of mineralisation and any indicators of any sub-surface mineralisation within the tenement based on desktop reviews. NRE has carried out extensive office-based studies of EL28319 and also conducted a site visit to the Darwin Core Library for the purposes of testing available water bore cuttings within Bing Bong Prospect area.

Office-based studies have included desktop reviews of all previous exploration across the tenement, assessment of the geology, radiometrics, aeromagnetics, gravity and ASTER imagery within the Bing Bong Prospect.

NRE’s attendance at the Darwin Core Library was conducted with a view to analysing water bore cuttings held at the library. NRE carried out both XRF and ALS Analysis of water bores located in the region of its Bing Bong Prospect.

Based on the exploration activities conducted on EL28319, NRE believes that no further exploration is warranted at this time. NRE made application to the Department to completely surrender the entire title for EL28319 under section 103 of the *Mineral Titles Act*. EL28319 was surrendered on 18 July 2013.

NRE believes that there is no rehabilitation required in relation to EL28319 as no field based activities have been undertaken within the tenure nor have any works involving land disturbance been carried out during the term of the licence.
1. Introduction

EL28319, more commonly known by NRE as its ‘Bing Bong Prospect’ was granted to NRE on 3 May 2011 as the sole titleholder and operator. EL28319 is situated in the Carpentaria zinc belt within the McArthur Basin. The region is strongly mineralised with a number of prominent commodities including Copper, Lead-Zinc Silver, Uranium, Gold, Iron, Phosphate and Diamonds.

NRE’s exploration rationale and objectives over EL28319, more commonly known to NRE as its ‘Bing Bong’ prospect, considered the evaluation of potential base metal, diamond and uranium mineralisation. Initial investigations were intended to locate any outcropping of mineralisation and any indicators of any sub-surface mineralisation within the tenement based on desktop reviews.

NRE has carried out extensive office-based studies of EL28319 and also conducted a site visit to the Darwin Core Library for the purposes of testing available water bore cuttings within Bing Bong Prospect area.

2. Tenure

EL28319 is more commonly known by NRE as its ‘Bing Bong’ Prospect. The Bing Bong Prospect consists of 171 sub-blocks in the Carpentaria zinc belt within the McArthur Basin. EL27946 was granted to NRE on 31 January 2011. Table 1 lists the pertinent tenement details.

Table 1. Tenement Details

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Tenement Name</th>
<th>Title No. (EL)</th>
<th>Sub-blocks</th>
<th>Status</th>
<th>Grant Date</th>
<th>Surrender Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>McArthur</td>
<td>Bing Bong</td>
<td>28319</td>
<td>171</td>
<td>Surrendered</td>
<td>3-May-11</td>
<td>18-Jul-13</td>
</tr>
</tbody>
</table>

EL28319 is located approximately 670 kilometres south east of Darwin, near the coast. The tenure is accessible via the sealed Stuart Highway, along the sealed Carpentaria Highway and finally via Robinson road and unsealed station tracks. An alternative way of reaching the project area would be to access any focus areas via helicopter.

Figure 1 identifies the location of EL28319 as well as routes of access to the tenure.
The topography of the Bing Bong Prospect is low lying coastal wetlands, with coastal flats a few kilometres inland. There are several estuaries of the McArthur River and the several unnamed creeks. These creeks and the McArthur River generally flow north east through EL28319.

The south east section of the area is nearly entirely coastal flats. There is minor outcrop within EL28319 as well as occasional low lying dunes and mesas. **Figure 2** shows the topography within the area.
NRE’s exploration rationale and objectives for its Bing Bong Prospect considered the evaluation of potential diamond, base metal and uranium mineralisation within the tenement. Investigations were intended to locate any outcropping of mineralisation and any indicators of any sub-surface mineralisation within the tenement based on desktop reviews.

Exploration activities have included desktop reviews of all previous exploration across the tenement, assessment of the geology, radiometrics, aeromagnetics, gravity and ASTER imagery within the Bing Bong Prospect. They also included XRF and ALS analysis of waterbore cuttings from bore cuttings available within the tenement which were held at the Darwin Core Library.

Native Title
There is currently one (1) Native Title Claim over the area, namely the Booroolooa Region #2 (Coastal) Claim (Tribunal Number DC09/1). The Native Title Claim is identified in Figure 3 below.
Pastoral Leases

NRE’s Bing Bong Prospect overlies one (1) Pastoral Leases, namely ‘McArthur River’ NT Portion 4319, PPL 1051. Figure 4 shows this lease in relation to the Bing Bong Prospect area.
3. **Geology**

3.1 **Regional Geology**

The Bing Bong Prospect lies within the Carpentaria zinc belt consisting of Proterozoic sediments and volcanics. It is located within the unmetamorphosed, relatively undeformed Palaeoproterozoic to Mesoproterozoic succession of carbonate, siliciclastic and volcanic rocks of the McArthur Basin.

The Region is strongly mineralised with a number of prominent commodities including lead-zinc-silver, copper, uranium, gold, iron, phosphate and diamonds. The Regional Geology is depicted in *Figure 5* below.
The McArthur Basin lies within the north-eastern portion of the Northern Territory which extends into Queensland. Its sedimentary sequence is interpreted to be up to approximately 12,000 metres in thickness.

The McArthur Basin hosts the major stratiform McArthur River lead-zinc-silver deposit. The Basin also contains marine and non-marine sedimentary rocks. Volcanic and associated intrusive rocks are present in some parts of the Basin.

3.2 Permit Geology

NRE’s Bing Bong Prospect area is situated in the Carpentaria zinc belt within the McArthur Basin. Quaternary sand, silt and clay as part of alluvium or dunes cover a large portion of EL28319 along with Cainozoic soil, sand, ferruginous cemented detritus and residual black soil. Around 5% of the tenure is outcrop or Subcrop, are Early Cretaceous or Mesoproterozoic mainly sedimentary rocks.

There are Early Cretaceous mesas of sandy claystone, quartz sandstone, clayey sandstone occurring as small exposures only they are largely masked by Cainozoic deposits. Mesoproterozoic outcrops are as follows: Roper Group sandstones and shales occur in the central and southern parts of the tenure, In the south is the Karns Dolomite (dolostone and
sandstone), in the west the Mc Arthur Group – dolostone, shale, sandstone and in the east the Tawallah Group – sandstone, conglomerate and some mafic volcanics.

The permit geology is illustrated in **Figure 6** and the changes in the interpreted stratigraphic succession over time are shown in **Table 2**.

**Figure 6.** Permit Geology Map
4. **NRE’s Exploration Activities during the Reporting Period**

Natural Resources Exploration’s exploration activities focused on delineating surface targets within the area with the aim of identifying any diamond, uranium or base metal mineralisation within the tenement.

NRE carried out a detailed geological assessment of the area in order to evaluate the prospectivity of the area prior to concluding that no further exploration is required on the subject area of this report.

Studies included review and compilation of the data from the Northern Territory Geological Services’ (NTGS) open file reports, air photo imagery and examination and interpretation of the latest geological maps. NRE also carried out XRF analysis of water bore cuttings across the broader area known as NRE’s EL28319, held at the Darwin Core Library.

**4.1 Exploration Studies**

NRE has conducted an extensive review of historic exploration over its Bing Bong Prospect. A review of all previous exploration within the project area has been completed including:

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Table 2.  **Stratigraphy (adapted from Northern Territory Geological Survey, 1989)**

[Graph of stratigraphy]

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• Review of previous exploration data from NTGS open file company reports; and
• Review of aeromagnetics, of radiometrics and gravity survey provided by NTGS; and
• Review of satellite imagery, of ASTER imagery, Google Earth Imagery.

Although no mineral occurrences have yet been documented in the region now held by NRE, the Bing Bong Prospect is considered to be situated in a prospective locality between a number of mineralized zones.

Historic

Previous exploration has been summarised in Table 3 and location of historic tenements is shown in Figure 7.

Table 3. Historic Tenures and Previous Companies’ Exploration Reports

<table>
<thead>
<tr>
<th>Tenement</th>
<th>Period</th>
<th>Company Reports</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL 8021</td>
<td>1993-1994</td>
<td>CR1994-0802</td>
<td>North Mining</td>
</tr>
<tr>
<td>EL 9545</td>
<td>1996-1997</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AP 1973</td>
<td></td>
<td>CR1969-0039</td>
<td>Placer Prospecting</td>
</tr>
</tbody>
</table>
4.2 Water Bore Cuttings Analysis

NRE engaged Terra Search Pty. Ltd. to attend the Northern Territory’s Darwin Core Facility to analyse a number of cuttings available from historically drilled water bores within EL28319.

NRE delineated all water bores that had been drilled within EL28319. It also received all relevant information recorded at the time of drilling, including geology intersected and water chemistry. The Department kindly allowed NRE to set-up in the Darwin Core Facility where NRE’s geologists undertook analysis of the water bore cuttings using a hand-held XRF device.

Not all water bores had cuttings available for testing however, NRE was able to test five (5) water bore cuttings within EL28319. For full assay results of those water bore chips, please see NRE’s Exploration Report lodged with the Northern Territory Department of Resources’ Geoscience Division on 7 June, 2011. This report was required in respect of the XRF and ALS Assaying of Water Bore Chips at the Darwin Core Facility. The Exploration Report was titled ‘XRF & ALS Assaying of Water Bore Chips – Core Facility: Darwin’.
5. Reports lodged during the reporting period

NRE lodged an Exploration Report with the Northern Territory Department of Resources’ Geoscience Division on 7 June, 2011. This report was required in respect of the XRF and ALS Assaying of Water Bore Chips at the Darwin Core Facility. The Exploration Report was titled ‘XRF & ALS Assaying of Water Bore Chips – Core Facility: Darwin’.

NRE believes that no other reports were required to be lodged during this reporting period.

6. Conclusions

Natural Resources Exploration’s activities focused on delineating surface targets within the tenure with the aim of identifying any diamond, uranium or base metal mineralisation.

NRE carried out a detailed geological assessment of the tenure in order to evaluate the prospectivity of the area. Research included review and compilation of the data in the Northern Territory Geological Services’ (NTGS) open file reports, air photo imagery and examination of the latest geological maps. NRE also carried out XRF analysis of water bore cuttings across the broader area known as EL28319, held at the Darwin Core Library.

There was very limited (if any) disturbance in relation to the activities conducted on EL28319. NRE did not conduct any works involving land disturbance during the term of the licence. NRE believes that no rehabilitation is required in respect of EL28319.
7. Bibliography


