COMBINED REPORT:
YEAR 2 ANNUAL & FINAL
17/05/2011 to 24/04/2013
ATARTINGA (EL 28330)
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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) 28330 is to provide a summary of the activities carried out over the permit in the past 12 months, including results produced by those activities.

Natural Resources Exploration (‘NRE’) has carried out a detailed geological assessment of Exploration Licence (EL) 28330, more commonly known to NRE as its ‘Atartinga Prospect’. To delineate prospective areas for potential rare earth elements and uranium mineralisation, NRE carried out extensive office-based studies including desktop reviews of all previous exploration across EL28330.

NRE also attended the Alice Springs Core Facility 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.

NRE believes that this tenure holds low mineral prospectivity and no further exploration is warranted at this time. NRE made application to the Department to completely surrender the entire title for EL28330 under section 103 of the *Mineral Titles Act*. EL28330 was surrendered on 24 April 2013.

NRE believes that there is no rehabilitation required in relation to EL28330 as no work involving land disturbance has been carried out during the term of the licence.
1. Introduction

Natural Resources Exploration (‘NRE’) was granted EL 28330 on 17 May 2011, consisting of a total of 245 sub-blocks. NRE’s exploration rationale and objectives for its Arunta Prospect considered the evaluation of potential rare earth elements and uranium mineralisation. 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 conducted an extensive review of historic exploration over its Arunta Prospect. A review of all previous exploration within the area has been completed including review of previous exploration data from NTGS open file company reports, review of aeromagnetics, of radiometrics and gravity survey provided by NTGS and review of satellite imagery, of ASTER imagery and Google Earth Imagery.

NRE also attended the Alice Springs Core Facility for the purpose of conducting XRF and ALS Analysis of cuttings from previously drilled water bores in the region.

2. Tenure

NRE’s exploration licence (EL) 28330, is more commonly known by NRE as its ‘Atartinga Prospect’. The Atartinga Prospect was granted to NRE on 17 May 2011 consisting of 245 sub-blocks across the Arunta Province. Table 1 lists the pertinent tenement details.

Table 1.  

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Tenement Name</th>
<th>Title No. (EL)</th>
<th>Sub-blocks</th>
<th>Sq. Km</th>
<th>Status</th>
<th>Grant Date</th>
<th>Surrender Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arunta</td>
<td>Atartinga</td>
<td>28330</td>
<td>245</td>
<td>718.5</td>
<td>Surrendered</td>
<td>17-May-11</td>
<td>24-Apr-13</td>
</tr>
</tbody>
</table>

2.1 Location and Access

Location

The Atartinga Prospect is sits across the Arunta Province. EL28330 is located approximately 130 kilometres north of Alice Springs. Sandover Highway passes directly through the tenement. Figure 1 represents the location of EL28330.
Access

The Atartinga Prospect can be accessed by vehicle via the sealed Stuart Highway, followed by the sealed Sandover Highway and then via unsealed station tracks. Access to the tenure is identified in Figure 2.
Pastoral Leases

NRE’s Atartinga Prospect overlies one (1) Pastoral Lease, namely ‘Woodgreen Station’ NT Portion 2673, Perpetual Pastoral Lease 972. Figure 3 shows this lease in relation to the Atartinga Prospect area.
Native Title
There are currently no Native Title Claims over the Atartinga Prospect area.

Recorded Sites
There are currently three (3) Recorded Sacred Sites within the Atartinga Prospect area. The location of these Recorded Sacred Sites is highlighted in Figure 4 below.

Figure 3.  Cadastral Map
3. **Geology**

3.1 **Regional Geology**

The Atartinga Prospect is located in the Arunta Geological Province and lies within the Titri-Waite Basin, an enclave of mid to late Tertiary continental lacustrine to fluviatile immature sediments whose provenance are the well exposed highly uraniferous Proterozoic granites which rim the basin.

The region is considered highly prospective for Sedimentary Uranium deposits. Recently released Radiometric data of the Northern Territory illustrates the presence of highly radiogenic Proterozoic granites forming an arcuate hinterland to the basins of central Australia, clearly depicting high sedimentary uranium deposit potential in the region.

**Styles of Uranium Mineralisation:**

The palaeo-channels are highly prospective for Sandstone-style uranium deposits. These are generally of three (3) varieties that may be gradational to each other;

1. **Roll-front:**
   Crescent shaped forming at a redox boundary in porous sandstone (also including Basal or Palaeochannel Type Deposits)

2. **Tabular:**
   Elongate zones of mineralisation within selectively reduced sediments.
3. Tectonic – lithologic:

Tongue shaped forming along permeable fault zones cutting sandstone/mudstone sequences. Ore zones form along permeable sandstone layers adjacent to the fault.

*Figure 5* shows the Regional Geology of EL28330.

**Figure 5. Regional Geology Map**

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### 3.2 Permit Geology

The Atartinga Prospect is located in the Arunta Geological Province and lies within the Titri-Waite Basin. The geology within EL 28330 consists of tertiary laterite and calcrete, plus sediment filled Palaeochannels over Mesoproterozoic age granite and gneiss rocks. An enclave of mid to late Tertiary continental lacustrine to fluviatile immature sediments whose provenance are the well exposed highly uraniferous Proterozoic granites which rim the basin.

There basement is made up of radiogenic granite / gneiss thorium and is considered potassium rich. Calcrete uranium seems to have been tested. Minor potential in basement rocks for uranium pegmatites exists. The permit geology is illustrated in *Figure 6.*
The geology within EL28331 consists of units which have been mapped and interpreted across the Alcoota SF5310 Map Sheet. The stratigraphy is depicted in Table 2.
Table 2. **Stratigraphy taken from the Alcoota SF5310 Map Sheet**
4. NRE’s Exploration Activities during the Reporting Period

NRE’s exploration program over its Atartinga Prospect consisted of extensive desktop studies and a historic review of previous exploration over the tenure area. Our studies have been aimed at delineating prospective areas for potential rare earth elements and uranium mineralisation.

NRE also conducted XRF and ALS analysis of water bore cuttings previously drilling in the region and held at the Alice Springs Core Facility in an attempt to use innovative methods to obtain more information for the region.

NRE, aided by Terra Search Pty Ltd also carried out a reconnaissance helicopter assisted field trip of its Atartinga Prospect during September 2011. A number of field targets were assessed across the tenement and geological mapping of the area was carried out.

4.1 Exploration Studies

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

- 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.

Reasonably thorough drilling by previous explorers has been negative for calcrete uranium within the palaeochannels of the tenement.

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

<table>
<thead>
<tr>
<th>TENEMENT</th>
<th>PERIOD</th>
<th>COMPANY REPORTS</th>
<th>COMPANY</th>
</tr>
</thead>
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<tr>
<td>EL 9802</td>
<td>2003-2006</td>
<td>CR2005-0378</td>
<td>Tanami Exploration</td>
</tr>
<tr>
<td>EL 9805</td>
<td>2003-2005</td>
<td>CR2005-0378</td>
<td>Tanami Exploration</td>
</tr>
<tr>
<td>EL 53</td>
<td>1972-1972</td>
<td>CR1972-0073</td>
<td>CRA Exploration</td>
</tr>
<tr>
<td>AP 2741</td>
<td>1970-1972</td>
<td>Not Listed</td>
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</tr>
</tbody>
</table>

NRE - Atartinga (EL28330) – Combined Report: Year 2 Annual & Final
4.2 Water Bore Cuttings Analysis

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

NRE first delineated all water bores that had been drilled within EL28330. It also received all relevant information recorded at the time of drilling, including geology intersected and water chemistry. The eight (8) water bore locations within the tenure are shown in Figure 8.
The Department kindly allowed NRE to set-up in the Alice Springs Core Facility where NRE’s geologists undertook analysis of the water bore cuttings using a hand-held XRF device. Table 4 outlines those water bores tested using the portable XRF device.

**Table 4. Water Bores Tested using the portable XRF Device**

<table>
<thead>
<tr>
<th>Hole ID</th>
<th>MGA_Easting</th>
<th>MGA_Northing</th>
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</thead>
<tbody>
<tr>
<td>RN011208</td>
<td>430477</td>
<td>7507472</td>
</tr>
<tr>
<td>RN011209</td>
<td>427489</td>
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<td>411676</td>
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<td>RN012433</td>
<td>422127</td>
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<td>RN012587</td>
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<tr>
<td>RN012853</td>
<td>421627</td>
<td>7513472</td>
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</table>

NRE lodged an Exploration Report with the Northern Territory Department of Resources’ Geoscience Division on 12 September, 2011. This report was required in respect of the XRF and ALS Assaying of Water Bore Chips at the Alice Springs Core Facility. The Exploration Report was titled ‘**XRF & ALS Assaying of Water Bore Chips – Core Facility: Alice Springs**’.
4.3 Helicopter Reconnaissance

To delineate prospective areas, NRE, aided by Terra Search Pty Ltd, carried out a reconnaissance helicopter assisted field trip of its Atartinga Prospect during September 2011. A number of field targets were assessed across the tenement and geological mapping of the area was carried out.

The field targets within EL28330 that required ground truthing or evaluation were identified based on desktop research of regional geological and geophysical data, augmented with compilation and assessment of all previous exploration reports.

Field assessment of the targets involved an initial fly over to obtain a regional perspective of the geological, physiographic and botanical setting, followed by a ground assessment where appropriate. Detailed geological characteristics were recorded at each site and bulk surface samples were collected.

Geological ground truthing has produced a multitude of new information regarding surface characteristics across the region. It was discovered that uranium appears to be present but only in weakly elevated amounts. Uranium appears relatively enriched in surface calcrete however the dose rate for radioactivity over the calcrete is actually low.

Geological observations were recorded and nine (9) samples were collected from within EL28330. The field trip proved successful in evaluating the tenement in the most effective and timely manner possible.

4.4 Rock Chip Sampling

Geological observations were recorded and a total of nine (9) Rock Chip samples were collected from within EL28330. The locations of rock chip samples are plotted in Figure 9. The Rock Chip samples were taken across all the areas of the outcrop found during the course of the helicopter reconnaissance and mapping program. The Rock Chip samples were sent to ALS Laboratories for mineral analysis. Full assay results are provided in NRE’s Year 1 Annual Technical Report for EL28330 on 16 July 2012. This report was titled ‘Year 1 Annual Report – Atartinga (EL28330)’.
5. Reports lodged during the reporting period

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

6. Conclusions

Natural Resources Exploration’s exploration rationale and objectives for its Atartinga Prospect considered the evaluation of potential rare earth elements and uranium mineralisation. 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 believes that this tenure holds low mineral prospectivity and no further exploration is warranted at this time. NRE made application to the Department to completely surrender the entire title for EL28330 under section 103 of the *Mineral Titles Act*. EL28330 was surrendered on 24 April 2013.

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