# YEAR 2 ANNUAL REPORT

**ELKERA (EL27842)**

<table>
<thead>
<tr>
<th>Title Holder:</th>
<th>NATURAL RESOURCES EXPLORATION PTY. LTD.</th>
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</thead>
<tbody>
<tr>
<td>Operator:</td>
<td>Natural Resources Exploration Pty. Ltd.</td>
</tr>
<tr>
<td>Tenement Manager:</td>
<td>Nicole Munro, Natural Resources Exploration Pty. Ltd.</td>
</tr>
<tr>
<td>Titles / Tenements:</td>
<td>EL(s): 27842</td>
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<tr>
<td>Project Names:</td>
<td>Elkeria</td>
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<tr>
<td>Report Title:</td>
<td>Year 2 Annual Report – Elkera (EL 27842)</td>
</tr>
<tr>
<td>Type of Report:</td>
<td>Annual Report</td>
</tr>
<tr>
<td>Author(s):</td>
<td>Nicole Munro</td>
</tr>
<tr>
<td>Company Ref:</td>
<td>NRE_NT2012: ELKERA Year 2 Annual Report</td>
</tr>
<tr>
<td>Target Commodity / Commodities:</td>
<td>Phosphate and base metal mineralisation</td>
</tr>
<tr>
<td>Date of Report:</td>
<td>4 October 2012</td>
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<td>Contact Details:</td>
<td></td>
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**NATURAL RESOURCES EXPLORATION PTY. LTD.**

PO Box 9235, Gold Coast Mail Centre, QLD 9726

Level 8 Corporate Centre, 2 Corporate Ct, Bundall QLD

Tel: (07) 5644 5500    Fax: (07) 5528 4558

Email: info@naturalresources.net.au
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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) 27842 is to provide a summary of the activities carried out over the licence area in the past 12 months, including results produced by those activities.

EL 27842 was initially approved for Group Technical Reporting along with EL 27841 and 27843 however EL 27841 and 27843 have recently been surrendered in the second term. NRE will provide the Department with a combined Annual and Final Report for EL 27841 and 27843 within 60 days after the date the two (2) mineral titles ceased to be in force.

NRE has carried out a detailed geological assessment of EL 27842, more commonly known to NRE as its ‘Elkera’ Prospect, during the second year of grant. NRE’s exploration activities during the second term included extensive desktop based studies and completion of a helicopter reconnaissance program to evaluate the tenement, introduce themselves to landowners and conduct geological mapping on the tenement. NRE’s extensive desktop studies included research, review and compilation of the data in the Northern Territory Geological Services’ ('NTGS') open file reports, air photo imagery and examination and interpretation of the latest geological maps.

Investigations during the second year were intended to locate any possible areas of surface or shallow subsurface mineralisation across the tenement. NRE’s second term activities have found an interesting occurrence of ironstone which is anomalous for base metals (Cu, Pb, Zn, Mo, P, U and V). NRE’s activities during the second term have been a great success and have delineated areas for further exploration activities to be conducted during the third term.
1. Introduction

Natural Resources Exploration (‘NRE’) has conducted extensive office-based studies and field work during the second term of its Elkera Prospect, EL27842. The EL is located in the Southern Georgina Basin approximately 200 kilometres north east of Alice Springs, 30 kilometres north of the Plenty Highway and 90 kilometres south of Sandover Highway.

NRE conducted an extensive review of all previous exploration across the tenement and also conducted a reconnaissance helicopter assisted field trip and geological mapping across the tenure. NRE also took this opportunity to introduce ourselves to the landowners.

Investigations during the second year were intended to locate any possible areas of surface or shallow subsurface mineralisation across the tenement. NRE’s second term activities have found an interesting occurrence of ironstone which is anomalous for base metals (Cu, Pb, Zn, Mo, P, U and V). NRE’s activities during the second term have been a great success and have delineated areas for further exploration activities to be conducted during the third term.

2. Tenure

NRE’s exploration licence EL27842 is more commonly known to NRE as its Elkera Prospect. The Elkera Prospect consists of 10 sub-blocks across the Southern Georgina Basin making up an area of approximately 32 square kilometres.

The tenure was granted on 11 August 2010 for a term of six (6) years. 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>Sq. Km</th>
<th>Status</th>
<th>Grant Date</th>
<th>Term (Yrs)</th>
<th>Expiry Date</th>
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<tr>
<td>Southern Georgina</td>
<td>Elkera</td>
<td>27842</td>
<td>10</td>
<td>31.71</td>
<td>Granted</td>
<td>11-Aug-10</td>
<td>6</td>
<td>10-Aug-16</td>
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</table>

Native Title

There are currently no Native Title Claims within the boundary of the exploration licence.

Recorded Sites

The Aboriginal Areas Protection Authority (AAPA) has identified no registered sacred sites and no restricted work areas within the boundary of the exploration licence.
NRE’s Elkera Prospect overlies three (2) Pastoral Leases, namely NT Por 717 PPL 1098 (“Old Macdonald Downs”), NT Por 2454 PPL 990 (“Huckitta”) and NT Por 742 PPL 1125 (“Dneiper”). The location of these leases in relation to the EL is shown below in Figure 1. NRE had made contact with the landowners in relation to these landholdings.

Figure 1. Cadastral Map

2.1 Location and Access

The EL is located in the Southern Georgina Basin approximately 200 kilometres north east of Alice Springs, 30 kilometres north of the Plenty Highway and 90 kilometres south of Sandover Highway. The location of the EL is shown in Figure 2.

Access to the EL by road is via the Plenty Highway. A series of unsealed tracks can be utilised to access the EL, but further clearing may be required to reach areas of the tenure. Existing rail infrastructure lies approximately 300 kilometres away from the EL. Access to the tenure is identified in Figure 3.
Figure 2. Location Map

Figure 3. Access Map
3. Geology

3.1 Regional Geology

The Elkera Prospect is located in the Southern Georgina Basin. The Georgina Basin is a large intracratonic sedimentary basin in central and northern Australia, lying mostly within the Northern Territory and partly within Queensland. It is named after the Georgina River which drains part of the basin. Deposition of locally up to 4 kilometres of marine and non-marine sedimentary rocks took place from the Neoproterozoic to the late Paleozoic.

Along with other nearby sedimentary basins of similar age such as the Amadeus Basin and Officer basin, the Georgina Basin is to believe to have once been part of the hypothetical Centralian Superbasin that was fragmented during episodes of tectonic activity. The Georgina Basin overlies the Aileron Province, Tennant Region, Murphy Inlier, McArthur and South Nicholson Basins and Lawn Hill Platform. It is interpreted to be contiguous at depth with Wiso and Daly Basins and Conformably overlies the Kalkarindji Province.

The Georgina Basin is a broad, northwest-southwest trending intracratonic depression which underlies an area of some 325,000 square kilometres of the Northern Territory and Queensland. Approximately 60 percent of the basin area lies within the Northern Territory.

The Georgina Basin has a maximum sediment thickness in the south (Toko and Dulcie Synclines) including the area covered by NRE’s Lucy Creek Project tenement, and east (Bruke River Belt), with a much thinner succession in the central and northern parts of the basin (Barkly and Undilla Sub-basins).

The Georgina Basin contains Cambrian and Ordovician, predominantly marine carbonate and clastic sediments, Devonian continental sediments and, in places, Neoproterozoic clastics. After an initial period of rift filling, sediments were deposited in a series of subtidal to supratidal environments over part of an extensive epicontinental shelf. The regional geology is shown in Figure 4.
The Palaeozoic sequence progressively thickens in a south-southeasterly direction, rarely exceeding 400 metres in the northern half of the basin, and reaching about 5000 metres in the southeast of the basin. The sedimentary sequence has been neither metamorphosed nor intruded by igneous rocks. In the latest Cambrian, the Delamerian Orogeny caused a change to predominantly marine siliciclastic deposition in the southwest, with carbonate deposition continuing in the southeast. This pattern persisted until deposition ceased during the Middle Ordovician. In the Early to Late Devonian, the Arunta Block was uplifted during a phase of the Alice Springs Orogeny and fluvial siliciclastics deposited along the southern margin of the basin.

Despite extensive potential source rocks in the early Middle Cambrian of the southern part of the basin, numerous oil shows and an uneconomic gas flow in Ethabuka 1, little exploration has been undertaken. The basin has been deformed by minor to moderate folding and faulting, especially in the south and east, with moderate to severe folding and faulting and extensive overthrusting along the southern and southwestern margin. Most of the structural deformation occurred during the Late Devonian to Early Carboniferous Alice Springs Orogeny. The northern part of the Georgina Basin sequence is gently undulating with no pronounced folding recognised other than supratenuous (draped) folding.
3.2 Permit Geology

EL27842 is situated in the southern margin of the Georgina Basin, approximately 350 kilometres to the east of Alice Springs. Regional NTGS geology comprises Cambrian basin sediments with the south western edge of the license covering faulted contact zone between the Arunta Province to the south west and the Georgina Basin to the north east.

Much of the Cambrian sequence within the license area is obscured by Cretaceous and younger cover. The outcrop in the far north of the license is Lower Ordovician Tomahawk Formation with minor outcrops of Proterozoic rocks and claypan.

There is potential for Irish-style carbonate replacement and sediment hosted Cu, especially along the Tarlton Fault in the south west of the licence area.

The geology has been mapped and interpreted across the Huckitta and Tobermory 1:250,000 geological sheets and the Algamba, Tarlton, Jervois Range and Lucy 1:100,000 geological sheets by government geologists. The permit geology is illustrated in Figure 5 below.

Figure 5. Permit Geology Map
4. NRE’s Exploration Activities during the Reporting Period

NRE has carried out a detailed geological assessment of EL27842 during the second term. NRE’s exploration program for the second term of EL27842 consisted of historic exploration review, completion of a helicopter assisted reconnaissance program and soil and rock chip sampling associated with a geological mapping program over the area.

4.1 Previous Exploration Studies

NRE has conducted an extensive review of historic exploration over its Elkera Prospect. The Georgina Basin hosts Australia’s most economic phosphate deposits in the Middle Cambrian rocks, such as Phosphate Hill across the border in Queensland and Wonarah in Southern Georgina Basin. Previous exploration in the area has included reconnaissance surface sampling for Pb-Zn MVT by CRA Exploration, BHP and MIM.

Previous exploration has been summarised in Table 2 and location of historic tenements is shown in Figure 6.

Figure 6. Historic tenements over the Elkera Prospect.
Table 2. Historic Tenures

<table>
<thead>
<tr>
<th>Tenement</th>
<th>Period</th>
<th>Company Reports</th>
<th>Company</th>
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<tr>
<td>EL 377</td>
<td>1972-1973</td>
<td>CR1972-0083</td>
<td>Asarco Australia</td>
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4.2 Helicopter Reconnaissance

During the second term of the Elkera Prospect, NRE completed a helicopter reconnaissance assisted field trip of the licence area. NRE introduced themselves to local landholders, assessed a number of field targets across the tenement and carried out geological mapping of the area. The field trip proved successful in evaluating the tenement in the most effective and timely manner possible.

Field assessment of the prospects involved an initial low fly over before determining whether a landing was viable for each target site. In most cases, a landing was made. Assessment at each site involved a variety of the following tasks:

- Geological and structural note taking and measurements
- Radiometric measurements
- Observations of outcrop boundaries where relevant
- Botanical and physiographic appraisal
- Photography of the features of interest at each site.

Detailed geological characteristics were recorded at each site. In addition to planned target sites, all areas identified in the air as being characterised by features anomalous to that mapped or revealed in currently available data sets were assessed.

Geological ground truthing produced new information regarding surface characteristics across the region. Observations were made at all target sites detailing the actual setting to ensure follow up work is carried out with optimal effectiveness.

An assessment has been made of each target visited during the program in order to assist in designing future exploration programmes for Elkera. All field observations and assay data collected from the field trip were assimilated in order to optimally define prospectivity based on this work.

NRE’s exploration activities in relation to this tenure have found an interesting occurrence of ironstone which is anomalous for base metals (Cu, Pb, Zn, Mo, P, U and V). An example of the nodular ironstone lag is shown in Figure 8 below.
It is favourably located over structural position at a geological terrain boundary between basement Proterozoic and Georgina Basin. The mineral prospective area within this tenement covers the whole tenure as this tenure currently consists of only 10 sub-blocks.

4.3 Rock Chip Sampling

Below is a summary of the assay results from soil and rock chip samples collected during the helicopter reconnaissance program carried out over the Elkera Prospect during the second term. Two (2) samples were collected and assayed. Sample locations are shown in Figure 11.
Table 3 shows selected geochemical analysis results for EL27842 with full assay results included as Appendix 1.

Table 3. Selected Geochemical Analysis Results

<table>
<thead>
<tr>
<th>Sample</th>
<th>As</th>
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5. NRE’s Exploration Activities for next 12 month period

During the third term of the Elkera Prospect, NRE intends to review previous surface geochemical data in relation to the area and in particular, that which was conducted by Anglo and CRA. NRE also intends to reprocess aeromagnetics and ASTER and if encouraging, design a surface geochemical survey with multi-element lag sampling.

6. Reports lodged during the reporting period

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

Natural Resources Exploration’s (‘NRE’) exploration activities during the first term of its Elkera Prospect have been focused on delineating surface targets for phosphate and possible base metal mineralisation within the region.

NRE’s exploration activities in relation to this tenure have found an interesting occurrence of ironstone which is anomalous for base metals (Cu, Pb, Zn, Mo, P, U and V). It is favourably located over structural position at a geological terrain boundary between basement Proterozoic and Georgina Basin. The mineral prospective area within this tenement covers the whole tenure as this tenure currently consists of only 10 sub-blocks.

During the next 12 month period, NRE intends to review previous surface geochemical data in relation to the area, reprocess aeromagnetics and ASTER. If further assessment of the EL proves encouraging, NRE intends to design a surface geochemical survey with multi-element lag sampling.

NRE is looking forward to commencing exploration activities during the third term of its Elkera Prospect.
8. Bibliography


Note these (and many more) references are also located in the References section of the Huckitta 1:250,000 geological map series explanatory notes.
APPENDIX I

Geochemical Results of Rock Chip Sampling

Helicopter Reconnaissance Program