YEAR 1
ANNUAL REPORT
31/10/2012 to 30/10/2013
LILLA CREEK SOUTH
(EL 29718)

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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) 29718 is to provide a summary of the activities carried out over the permit in the past 12 months, including results produced by those activities.

To delineate prospective areas for potential coal, uranium and base metal mineralisation and define the next phase of exploration, Natural Resources Exploration (‘NRE’) has carried out extensive office-based studies of EL29718, known to NRE as its ‘Lilla Creek South’ Prospect. NRE conducted extensive desktop reviews of all previous exploration across the area including review of all previous historical exploration reports.

NRE’s exploration rationale and objectives for its Lilla Creek Prospect considered the evaluation of potential coal, uranium and base metal mineralisation. Investigations were intended to locate any outcropping of mineralisation and any indicators of any subsurface mineralisation within the tenement based on desktop reviews.

Prior to the first year of grant, NRE also attended the Alice Springs Core Library for the purpose of conducting XRF and ALS Analysis of cuttings from previously drilled water bores within EL29718 and the surrounding region.
1. Introduction

Natural Resources Exploration (‘NRE’) has conducted extensive office-based studies during the first term of Exploration Licence (EL) 29718, known to NRE as its ‘Lilla Creek South’ Prospect. Prior to the commencement of first term, NRE also attended the Alice Springs Core Library for the purpose of testing water bore cuttings within the Lilla Creek South Prospect and the surrounding region.

EL 29718 was granted to NRE on 31 October 2012, consisting of a total of 250 sub-blocks. EL 29718 is situated in the Pedirka Basin, containing overlapping Amadeus and Eromanga Basin sediments with the Musgrave Province to the West. The region is strongly mineralised with Uranium with a number of other prominent commodities including Copper, Lead-Zinc Silver, Gold, Iron, Phosphate and Diamonds.

NRE’s exploration rationale and objectives for its Lilla Creek South Prospect considered the evaluation of potential uranium and base metal 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.

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 Lilla Creek South Prospect during the first year of grant.

Prior to grant, NRE also attended the Alice Springs core library with a view to analysing water bore cuttings held at the library. NRE carried out both XRF and ALS Analysis of water bores located within the surrounding region.

NRE looks forward to conducting further exploration activities on EL29718 during the second term.
2. Tenure

NRE’s exploration licence (EL) 29718, is more commonly known by NRE as its ‘Lilla Creek South Prospect’. The Lilla Creek South Prospect was granted to NRE on 31 October 2012. EL29718 consists of 250 sub-blocks in the Pedirka Basin, which underlies Eromanga and Amadeus Basin sedimentary rocks. 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>
</tr>
</thead>
<tbody>
<tr>
<td>Pedirka Basin</td>
<td>Lilla Creek South</td>
<td>29718</td>
<td>250</td>
<td>774.4</td>
<td>Granted</td>
<td>31 Oct 12</td>
<td>6</td>
<td>30 Oct 18</td>
</tr>
</tbody>
</table>

2.1 Location and Access

The Lilla Creek South Prospect area is located approximately 200 kilometres south of Alice Springs, near to the border with South Australia. The location of EL29718 is outlined in Figure 1 below.

The tenure is accessible from Alice Springs via the southbound, sealed Stuart Highway and along the sealed Finke Road east of Kulgura. The road trends east-west across the tenement. Unsealed station tracks can be used to access various locations on the tenement.

An alternative way of reaching the EL would be to access any focus areas via helicopter.

Figure 1. Location Map
Pastoral Leases

NRE’s Lilla Creek South Prospect overlies three (3) Pastoral Leases, namely ‘Umbeara’ NT Portion 2869 PPL 999, ‘Lilla Creek’ NT Portion 259 PPL 1041 and ‘Idracowra’ NT Portion 2958 PPL 1090. Figure 2 shows the leases in relation to the Lilla Creek South Prospect.

Figure 2. Cadastral Map

2.2 Topography and Drainage

The topography of the Lilla Creek South Prospect is relatively flat, with the Newland Ranges running through the tenement. The Goyder and Corella Creeks run through the tenement as well as several small valleys with unnamed estuaries.

There are an abundance of small tributaries to the south of EL 29718, which drains to the south west. The south east section of the area contains sand ridges that trend in north south.
3. Geology

3.1 Regional Geology

The Lilla Creek South Prospect lies within three main geological provinces. EL29718 contains Cambrian to Devonian age sedimentary rocks of the Amadeus Basin with overlapping Cretaceous-age sediments of the Eromanga Basin occurring in the north west. The western third of EL29718 contains Neoproterozoic age gneiss, granite and dolerite dykes of the Musgrave Province, with the remainder of the license containing Eromanga Basin rocks. Permian age sedimentary rocks of the Pedirka Basin underlie Eromanga Basin rocks.

Outcrop as shown on 250 000 scale mapping is moderate, on average about 40%. The majority of cover material is transported sand of Quaternary age. The Regional Geology is depicted in Figure 3 below.

Figure 3. Regional Geology Map

Outcropping rocks of the Musgrave Block within EL29718 are dominated by Proterozoic age gneiss (mostly derived from felsic and minor mafic rocks), granite and dolerite dykes. Mineralisation is not known to occur within the same type of rocks elsewhere in the Musgrave Block, although exploration efforts have generally ignored the granites.

Neoproterozoic to Cambrian age sedimentary rocks of the southern edge of the Amadeus
Basin underlie part of EL29718. The northern edge of the Amadeus Basin contains several small occurrences of sediment hosted copper and two major sediment hosted uranium deposits. Oil and gas is produced from three areas to the south and west of Alice Springs.

Pedirka and Eromanga Basins are considered together here because they occupy approximately the same area. The Pedirka Basin is Permian in age and extends into South Australia and Queensland. Coal bearing strata of the Purni Formation are thought to be of equivalent age to major coal deposits of the Bowen Basin in Queensland. Outcrop of Crown Point Formation, the basal unit of the Pedirka Basin, occurs in the southeast of EL29718.

Eromanga Basin rocks are Jurassic to Cretaceous in age. In the EL area there is one main unit mapped at the base of the Eromanga Basin succession, that being Rumbulara Shale.

### 3.2 Permit Geology

NRE’s Lilla Creek South Prospect is situated in the Pedirka Basin with overlapping Eromanga and Amadeus Basins. Over the area, there is a large cover of superficial deposits of Quaternary alluvium and sand in the north east portion of the tenement.

To the west lay Precambrian gneiss and minor dolerite intrusions, these were deposited in the Musgrave Province which has been folded into an anticline trending north-north east to the south-south west.

In the centre and towards the east of the tenement lie Jurassic sandstones and pebbly sandstones from the Da Souza Sandstone Formation. Lower Cretaceous shale and siltstones from the Rumbalara Shale Formation reside in the eastern section of the tenement.

The permit geology is illustrated in Figure 4 and the changes in the interpreted stratigraphic succession over time are shown in Table 2.
**Figure 4. Permit Geology Map**

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

<table>
<thead>
<tr>
<th>Era</th>
<th>Period</th>
<th>Formation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cainozoic</td>
<td>Quaternary</td>
<td>Alluvium and Sand</td>
</tr>
<tr>
<td>Mesozoic</td>
<td>Lower Cretaceous</td>
<td>Rumbalara Shale</td>
</tr>
<tr>
<td></td>
<td>Jurassic</td>
<td>Da Souza Sandstone</td>
</tr>
<tr>
<td>Palaeozoic</td>
<td>Devonian – Cretaceous</td>
<td>Langara Formation</td>
</tr>
<tr>
<td>Precambrian</td>
<td>(Undifferentiated)</td>
<td>Dolerite and Gneiss</td>
</tr>
</tbody>
</table>

4. **NRE’s Exploration Activities during the Reporting Period**

To delineate prospective areas for coal, base metal and uranium mineralisation and define the next phase of exploration, Natural Resources Exploration (‘NRE’) has carried out extensive office-based studies of EL29718 and a historic review of previous exploration over the tenure area. Prior to grant, NRE also attended the Alice Springs Core Library for the purpose of conducting XRF and ALS Analysis of cuttings from previously drilled water bores in the region.

Our office-based studies and analysis of cuttings at the Alice Springs Core Library have
allowed us to delineate prospective areas for base metal and uranium mineralization and in particular, gold mineralisation.

4.1 Exploration Studies

NRE has conducted an extensive review of historic exploration over its Lilla Creek South Prospect. A review of all previous exploration within the EL 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.

Exploration focus during the first term within EL29718 has primarily been for sedimentary U and gold mineralization deposits. Fourteen companies have explored the area from 1984 to present with aerial radiometrics being a common tool used to define exploration targets which were generally followed up with geological reconnaissance.

In the wider area, there has been exploration for sedimentary and primary U, Au, opal, diamonds, base metals, Sn, Ta, PGE, REE, massive Mn, Ni, Fe and coal.

Afmeco Mining and Exploration

Afmeco Mining and Exploration held three tenements, EL820, EL909 and EL2398. These tenures were explored by Afmeco Mining and Exploration between 1973 and 1981 by radiometric surveys. Follow up drilling was planned but only two holes drilled due to government action on uranium exploration at this time.

Burke, RJ

EL5602 was explored for Au, opal and diamonds by Burke, RJ from 1988 to 1990 via geological reconnaissance, rockchip sampling (not assayed, petrography) and pan concentrate. Two potch opal (low quality jewellery opal) areas were located. In the authors opinion there is a high potential for more potch opal areas with a strong possibility of precious opal (high quality), based on an air photo interpretation. Tin biotite, amphibole and zirconium were observed in the pan concentrate.

Benger, JW

EL5862 was explored for Au and opal by Benger, JW from 1988 to 1990. Whole rock sampling was performed with the geochemistry of samples being compared to samples collected from the Mintabie Opal Fields (an opal field in South Australia approx 200km south west of Pedirka). This showed similar and identical results. One sample from an amphibolite dyke near Umbeara Well gave anomalous gold values 0.03ppm (the rough location of this sample
has been guessed at based on the NTGS mapping of dykes in that area). 12 auger holes were drilled out of a planned 120. The holes indicated that any potential opal bearing strata had been eroded away and any potential must be found in the south-east corner of the EL. This was not covered by any future opal exploration.

Kajeena Mining Company

EL10055 overlaps with the south western most third of EL29718. The tenure was explored by the Kajeena Mining Company for base metals, diamonds gemstones U, Sn and Ta between 2001 and 2004. Exploration consisted of a desktop review and drainage sampling with follow up of anomalies. Results were negative.

Washington Resources

EL24204 covers an area largely to the west of the tenure. The tenure was explored by Washington Resources between 2004 and 2008 for base metals, PGE, U (primary and calcrete) and REE. Exploration consisted of desktop review, aerial magnetic and radiometric surveys, heavy mineral concentrate, rock chip and scintillometer surveys. A drilling program was designed however heritage clearance was not forthcoming and in October 2008 the tenement was surrendered due to economic and political reasons.

Imperial Granite and Minerals

EL24535 overlaps with western portion of EL29718. The Tenure was explored for base metals, Ni and Fe from 2007 to 2008 by Imperial Granite and Minerals. Exploration consisted of rock chip sampling of magnetic anomalies, results were poor. Elevated iron results came from a narrow (max. 1 meter wide) discontinuous vein with no apparent potential.

Eromanga Uranium

EL25163 and EL25166 were explored by Eromanga Uranium between 2006 and 2008 for sedimentary uranium in paleochannels. An aerial electromagnetic survey was conducted over the entire project area which was followed up by geological reconnaissance. This suggested U prospectivity was poor due to the extent of Mesozoic sedimentation i.e. the Rumbalara Shale and Hooray Sandstone being significantly smaller then indicated on the geological maps made by the NTGS.

Tri-Star Energy Company

EL27218 overlaps with the western most area of EL29718. It was explored by the Tri-Star Energy Company in 2009 to 2010 for coal. Tri star determined the coal seam underlying the area was too deep to be economically mined. Exploration activities in the area uncovered a large ironstone deposit which Tri-Star actively explored. It was determined that the
ironstone deposit lies to the west of EL27218 and therefore outside of EL29718. No further information was available on the ironstone deposit.

Previous exploration has been summarised in Table 3 and location of historic tenements is shown in Figure 5.

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 8263</td>
<td>1993-1993</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EL 909</td>
<td>1974-1976</td>
<td>CR1976-0087</td>
<td>Afmeco Mining and Exploration</td>
</tr>
<tr>
<td>EL 27218</td>
<td>2009-2010</td>
<td>CR2010-0790</td>
<td>Tri-Star Energy Company</td>
</tr>
</tbody>
</table>

Figure 5. Historic tenements over the Lilla Creek South Prospect
5. **NRE’s Exploration Activities for next 12 month period**

The objective of NRE’s exploration activities over the next 12 month period in relation to its Lilla Creek Prospect will be to follow up any targets identified during its first term activities.

In order to do this, NRE intends to process Eromanga Uranium’s raw magnetic data to assess the depth to basement within the tenure as well as any paleochannels within EL29718. NRE will also aim to conduct drainage sampling of the northern part of the Musgrave Province located within the tenure.

Exploration activities for the Lilla Creek South Prospect will be undertaken in conjunction with NRE’s surrounding tenures in the Pedirka Basin region.

6. **Reports lodged during the reporting period**

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 Darwin Core Facility. The Exploration Report was titled ‘**XRF & ALS Assaying of Water Bore Chips – Core Facility: Alice Springs**’.

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

7. **Conclusions**

Natural Resources Exploration’s exploration activities during the first term of its Lilla Creek South Prospect have been focused on delineating any potential coal, uranium and base metals targets within the tenement. It has given specific focus to delineate gold mineralization targets given the lack of historical gold exploration efforts and results from the waterbore analysis in the region and general prospectivity.

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’s office-based studies and assaying of water bore chips at the Alice Spring Core Library have allowed us to delineate prospective areas and develop a soil and lag sampling program for the tenement.

NRE intends to process Eromanga Uranium’s raw magnetic data to assess the depth to basement within the tenure as well as any paleochannels within EL29718 over the next 12 month period. NRE will also aim to conduct drainage sampling of the southern part of the Musgrave Province located within the tenure. NRE is looking forward to conducting its exploration activities on EL29718 in the second term.
8. Bibliography


