EL 29043

FIRST ANNUAL REPORT

FOR THE PERIOD


By

Company Geologists

Dr Zhiyu Jiang & Dr Jianchun Lu

1st July 2013
# TABLE OF CONTENT

Title Page....................................................................................................................... 3
Abstract............................................................................................................................... 4
Introduction......................................................................................................................... 5
Tenure Details..................................................................................................................... 5
Geological Setting ............................................................................................................. 6
Mineralisation .................................................................................................................... 6
Field Reconnaissance Works ............................................................................................ 7
Geophysical Images ......................................................................................................... 9
Expenditure ....................................................................................................................... 13
Conclusion ...................................................................................................................... 13
Recommendation ............................................................................................................. 14
References ....................................................................................................................... 14
Title Page

Name of titleholder: GRIGM RESOURCES PTY LTD
Name of project operator: GRIGM RESOURCES PTY LTD
Report Title: EL29043
Report Type: First Annual Exploration Report
Author: Dr Zhiyu Jiang & Dr Jianchun Lu
Date: 26 Jul. 2013
Target: Sn, Ta, Nb and REE
Related NT 1:100 000 Bynoe, 5072
Related NT 1:250 000 Darwin, SD5204
Contact: Zhiyu Jiang, Phone:0291917587 or 0477168036
E-Mail:zhiyu.jiang830@gmail.com
Address:62 Cameron St. Jesmond, NSW 2299

Jianchun Lu, Phone:03 98508619 or 0457460243
E-Mail:landfdiamond@bigpond.com
Address:9 Frederick St. Bulleen, VIC 3105

Copyright: GRIGM Resources Pty Ltd reserves copyright of the annual report. The document has been written for submission to the Northern Territory Department of Mines and Energy in accordance with the Mineral Titles Act (NT). GRIGM Resources Pty Ltd authorises the department to copy and distribute the report and associated data.
Abstract

Exploration title EL29043 was granted to GRIGM RESOURCES PTY LTD on 8 October 2012. During this first year, a detailed review of the previous exploration work has been conducted. It reveals a potential ore deposit of tin, tantalum, niobium and thorium associated with pegmatite in the title area. Only three Sn-Ta-Nb and Th mineral occurrences have been mentioned in the previous reports in the area of EL29043. Most tin, tantalum and biobium minerals are present in the adjacent areas at west and southwest. Previous explorations and mining activities had only carried out in a limited depth, generally less than 50 meters in depth. There is no information discussing a possibility of planer gresien underneath with mineralisation. Aero-geophysical images have been used to understand substructures in the area. A series of aeromagnetic anomalies occur in the area in NNE direction with a small gentle positive aero-gravity anomaly at south.

Two reconnaissance trips have been undertaken to the area in the first year. Unfortunately, the first reconnaissance had been blocked by heavy rains in wet season without access to the tin field. The second reconnaissance had accessed to the tin field, but failed to find a track to the mineral occurrences in EL29043. Samples had been taken from the tin field and analysis of the samples returned good results.
Introduction

EL29043 was granted to GRIGM RESOURCES PTY LTD by NT State DEPARTMENT OF MINES AND ENERGY on 8 October 2012 for a period of six years. This report summarises work carried out on EL29043 during the period 8 October 2012 to 7 October 2013.

Tenure details

EL29043, total of 42 units (Table 1), is located about 15km southwest of Darwin, accessing by Cox Peninsula Road and local 4WD tracks (Fig. 1).

Table 1 EL29043 units

<table>
<thead>
<tr>
<th>BLOCK NO</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD52 706</td>
<td>E, H, N, S, U, X, Y, Z</td>
</tr>
<tr>
<td>SD52 779</td>
<td>A, B, C, D, E, F, G, H, J, K, N, O, P</td>
</tr>
</tbody>
</table>

Geological Setting

Geologically the tin field, including the area of EL29043, is located in the Palaeoproterozoic Pine Creek Orogen. The Archaean basement is overlaid by
the McAuthur, Birrindudu, Daly, Arnhem and Money Shoal Basins. Outcrop rocks include metamorphosed Greywacke, shale, siltstone, sandstone, dolostone, tuff, granite, felsic volcanic rocks, dolerite, basalt, micaceous schist, metapelite, calc-silicate rock, quartzite and intrusive rocks.

Mineralisation

Mineralisation in the Pine Creek Orogen includes gold, uranium, base metals, PGE, iron ore, manganese, magnesite and phosphate. The major tin-tantalum pegmatite fields of the Northern Territory occur on the western and southwestern margins of the PCO and the northern margin of the Arunta Region. Their location on craton margins is typical of Proterozoic terranes, where parent granites are commonly late to post-tectonic bodies, confined to pre-existing granite contacts or deep regional faults (Černý 1989). In this tin field, Bynoe area, deposits account for 98% of past tin production and 97% of identified resources and 99% of past Ta production and 99% of identified resources in NT.

Tin- and tantalum-bearing pegmatites in the Bynoe area are located in a north-trending, 10 km-wide belt extending from Kings Table to the Finniss River in the Bynoe 1:100k sheet. These occurrences were discovered at the turn of the last century and total recorded production is 533 t of cassiterite concentrate and 63 t of tantalite concentrate.

There are over 150 mineralised pegmatite bodies concentrated in three fields in the Bynoe area. The northern group, centred on Observation Hill, contains the majority of mineralised pegmatites and was investigated by Greenbushes Tin Ltd. The second group is situated along the upper reaches of Leviathan Creek and contains about 30 closely spaced pegmatites. The third group is between Annie River and Gorge Creek and contains about 35 widely spaced pegmatites (Fig. 2).

Previous mining and exploration of Bynoe pegmatites is restricted to the weathered zone down to 20 m in depth. Several pegmatites extend to the south of the Bynoe area. One group includes the historic Mount Finniss, Goodwill and Bamboo Creek Mines and is concentrated around the margins of the granite stock straddling the northern boundary of Litchfield National Park. Recently, other tin-tantalum pegmatites have been recognised overlying granite on Labelle and Twins Stations to the west and southwest of the Litchfield stock.

Elsewhere in the Pine Creek Orogen, tin-tantalum pegmatites were mined in the Shoobridge area prior to 1890. During 2001, Julia Corporation sampled a mineralised pegmatite swarm (Two Bobs) located to the south of Shoobridge.
EL29043 is located east of the third group with three minerals occurrence, named as Charlotte River of thorium at south of the tenement.

Field Reconnaissance Works

Field reconnaissance trips were carried out in September 2012 and March 2013, with chief and senior geologists from China. These geologists have decades of experience in exploration in tin mineralisation associated with granite. Along the Cox Peninsula Road and local unsealed roads, a number of old pits were visited in the tin field to get an idea of the tin-Ta-Nb mineralisation in the area. Unfortunately, most of the old mines have been abandoned or back filled and covered by the luxuriant vegetation of tropical rain forests. To get general idea of the Sn-Ta-Nb mineralisation in the Bynoe area, some of the mineral occurrences within other titles (such as EL29023 and EL26932) in the area had been visited. Only one old mine (Booths South) had been visited, where the open pits have been filled up by water (Photo 1). Samples have been taken from the processing plant area. One of the samples has been crashed into powder under 200 mesh and analysed for tin, Ta and Nb using XRF. The results are shown in Table 1.
Photo 1. Old mining pit in the tin field (at 130.79548 and -12.677638).

Photo 2. Hand specimen of Sn-Ta-Nb ore from the tin field (at 130.79383 and -12.671268).

Table 1 Hand specimen analysis results

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Sample ID</th>
<th>Location</th>
<th>Sn (%)</th>
<th>Sn+/-%</th>
<th>Nb (%)</th>
<th>Nb+/-%</th>
<th>Ta (%)</th>
<th>Ta+/-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole rock</td>
<td>Sn-1</td>
<td></td>
<td>19.78</td>
<td>0.05</td>
<td>0.24</td>
<td>0.02</td>
<td>0.42</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Three mineral occurrences within EL29043 had been planned to be visited. Unfortunately, no previous works had been seen at the location of Charlotte River mineral occurrence. Five company geologists also failed to find accessing tracks in the first trip for mineral occurrences of Jans and Liana within EL29043.
Between late February 2013 and early March 2013, the company geologists had undertaken the second reconnaissance with experts from China again. Unfortunately, access was blocked by flood with heavy rains in the field. No mineral occurrences in EL29043 were visited.

**Geophysical Images**

As all previous works are carried out near the surface, approximately less than 50 meters in depth associated with pegmatites in the tin field. Fluid inclusion study suggests that the mineralisation temperature is about 300°C which indicates that the mineralisation forms in the last low temperature stage of hydrothermal fluid activities or near the surface associated with intrusion of granite. Under the pegmatites, there may be massive mineralisation associated with greisen at contact zone between the granite and country rocks, like the Limu Sn-Nb-Ta deposit in China (Fig. 3). In the tin field, people have found that the mineralisation is concentrated around the margins of the granite stock straddling the northern boundary of Litchfield National Park, such as the historic Mount Finniss, Goodwill and Bamboo Creek Mines. Also some tin-tantalum pegmatites have been recognised overlying granite on Labelle and Twins Stations to the west and southwest of the Litchfield stock recently. It indicates that there is a possibility to find massive mineralisation with greisen at contact zone between granite and the country rocks underneath the pegmatites at depth in this tin field. Therefore, geophysical images have been reviewed to identify subsurface structures.
Fig. 3 Mineralisation associated with pegmatites and massive greisen at Limu Sn-Nb-Ta deposit in China
Fig. 4 shows the magnetic TMI image of the tin field and EL29043 area. It is well known that the southeast corner magnetic anomaly represents a largely exposed granite complex. The area of EL29043 is located at northwest margin of the granite complex. In EL29043 a series anomalies distributes in north-south direction and small anomalies at south of the area of EL29043 in almost E-W direction. Generally, granite will has negative gravity anomaly and positive uranium anomaly comparing to country rocks. There are two small gravity anomalies located at central of EL29043 with the small E-W magnetic anomalies at south. Although image of uranium (Fig. 6) shows that the tin field area are all in red, positive anomaly of uranium, image of U/Th still display anomalies in the areas showing magnetic and gravite anomalies with both major N-S and minor E-W directions.

Fig. 7 is the Landsat742 image. It is clear that the north-south anomalies are related to the structures of the folded metamorphic rocks. The area may have some unexposed pegmatites associated with Sn-Ta-Nb mineralisation. Most interesting area is located at east of Charlotte River mineral occurrence, where has gravity anomalies and E-W magnetic and U/Th anomalies. This area may has small granite body(s) or unexposed granite with top contacting zone and massive greisen mineralisation.
**Fig. 4** Aero-magnetic images of the tin field and EL29043 area.
Fig. 5  Gravity images of the tin field and EL20943 area
Fig. 6 Images of uranium and U/Th at the tin field and EL29043 area.
Conclusion

There is a potential explore for tin, tantalum and niobium in the area of EL29043 although only three Sn-Ta-Nb and Th mineral occurrences are mentioned in the previous reports in the area of EL29043. Previous explorations and mining activities in the tin field have only carried out to a limited depth, generally less than 50 meters. There is a possibility of planer gresien with massive mineralisation under the sub-surface mineralisation associated with pegmatites. Aero-geophysical images have been used to understand substructures in the area. A series of aeromagnetic anomalies occur in the area in N-S and E-W directions with two small aero-gravity and U/th anomalies, the most interesting area to target massive mineralisation associated with the gresien on top of the unexposed small graneties.

Recommendation

Following works have been recommended for the next 12 months:

1. Finishing the remote sensing and retrieve aero-geophysical data in detail, especially for the area of EL29043 to find some interesting spots;
2. Find accessing tracks to inspecte the three mineral occurrences and check the areas identified by remote sensing and retrieving geophysical data;
3. Detail mapping and rock chip sampling at the identified spots;
4. Geochemical sampling at the interesting area.

References


