EL29757

Final Report for the Period

13 May 2013 to 7 July 2015

July 2015

B Townsend
# PROJECT DETAILS

**DATE**
6 July 2015

**PROJECT NAME**
Flora

**REPORT TITLE**
EL29757 Final Report for the Period 13/5 2013 to 7/7/2015

**TENEMENT HOLDERS**
Century Hill Pty Ltd        Operator: Consolidated Global Investment Limited

**TENEMENT NO.**
EL 29757

**KEYWORDS**
Daly Basin, Cambrian, Heavy Rare Earth Elements (HREE), Barite

**TYPES OF WORK**
Reconnaissance Field Trip, rock chip sampling, XRF Survey

**COMMODITY (TARGET)**
Heavy Rare Earth Elements, Barite

**TECTONIC UNIT**
Daly Basin

**GEOLOGICAL AGE**
Proterozoic, Palaeozoic, Tertiary

**NEARBY TOWNS**
Katherine

1: 250 000-Fergusson River SD52-12

**GEOLOGICAL MAPS**
1: 100 000-Flora 5168
1: 100 000-Bowman S2

**AUTHOR**
Brett Townsend, CGI Limited
ABSTRACT

During the 2013 exploration year anomalous Rare Earth Element (REE) mineralisation was identified on the neighbouring EL26899 which coincided with previously identified target areas interpreted from a recently conducted airborne magnetic/radiometric survey. The results were considered low but still anomalous and follow up work was recommended.

Subsequently a contiguous area was applied for and granted on 13 May 2013 as EL29757.

A nine day field reconnaissance was conducted during the current 2014 exploration year with the objective of sampling areas of coincident U²/Th anomalies with Fe altered sandstone throughout the adjacent EL26899, as well as sampling similar sandstone ridge targets in EL29757.

Access was generally limited by rugged terrain. Niton readings were taken at 17 locations, with rock chip samples taken from 16 of those locations. The rock chip samples were taken generally from ferruginous sandstone ridges which commonly showed high net values Total Rare Earth (Praseodymium, Neodymium, Cerium & Lanthanum) from portable Niton XRF of 1,000 to 2,000+ ppm.

Three initial samples was selected for assay at North Australian Laboratories (NAL) at Pine Creek NT. Inductively Coupled Plasma – Mass Spectrometry (ICP-MS) was used with 25 elements reported providing a comprehensive coverage of REEs.

Results from the NAL assays for Total REEs were disappointingly low in comparison with the field readings, indicating the gross inaccuracy of the Niton XRF tool due to the high iron content of the samples (see Table 1).

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During the current year the Company conducted a review of data and made an evaluation of the potential of the tenement in the context of prevailing and foreseeable market conditions.

Consequently the Company elected to surrender the tenure was cancelled on 7 July 2015.
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1.0 INTRODUCTION

EL29757, the subject of this report, is located within the Daly Basin as shown in Figure 2.

The tenement is held in the name of Century Hill Pty Ltd which is a wholly owned subsidiary of Consolidated Global Investments Limited (CGI), A.C.N 009 212 293.

Tenure

Tenement details are given in Table 1.

Table 1-Tenement Schedule

<table>
<thead>
<tr>
<th>Tenure ID</th>
<th>Ownership</th>
<th>Name</th>
<th>Approval Date</th>
<th>Expiry Date</th>
<th>Size (Blocks)</th>
<th>Area Km²</th>
<th>Mineral Field</th>
<th>Rent $</th>
<th>Expenditure Covenant $</th>
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<td>Century Hill Pty Ltd</td>
<td>Flora North</td>
<td>13/5/2013</td>
<td>12/5/2019</td>
<td>29</td>
<td>87.92</td>
<td>Northern</td>
<td>928</td>
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1.1 PROJECT LOCATION, RELIEF & CLIMATE

EL29757 is located some 240km south of Darwin and some 110km west of Katherine immediately west of the Flora River Nature Reserve. It is contiguous with EL26899 which is also held by Century Hill Pty Ltd (see Figure 1).

Katherine is the fourth largest town in the Northern Territory.

The Cretaceous Mullman Beds cap the high plateau areas whilst the Dorisvale Fault marks a change in geology and terrain. The fault corresponds with the Pony Pocket and Salt Lick Creeks with large grey silt soil plains. Southwest of the fault the lithologies are dominantly Antrim Plateau Volcanics.

The Cretaceous Plateaus form natural barriers around the license whilst the area south-west of the fault is undulating to isolated hills dissected by the Pony Pocket-Salt Lake Creeks and the Bradshaw Creek which drain into the Daly River to the northeast of Dorisvale Homestead.

The project area has a sub-tropical climate, with distinct wet and dry seasons. Average annual rainfall of 1040mm is mainly received in January to early March, with an average of 74 rain days per year.
Average temperatures range from 25° to 35° Celsius, with an occasional 40° during November and December, usually accompanied by very high humidity.

The Dry Season has beautiful weather with temperatures regularly dropping down to 10° Celsius overnight.

There is no shortage of water and sunshine to support the fast growing agricultural and horticultural industries in the region.

Figure 1 – Location of EL29757 & EL26899
2.0 REGIONAL GEOLOGY

The project is located within the Daly Basin, a gently dipping intracratonic Cambro-Ordovician Basin which lies unconformably over the Pine Creek Orogen and the Birrindudu Basin to the north and east and the Victorian Basin to the west. It in turn overlies the Carpentaria Basin on its southern Margin.

The south-west margin of the project area is located on the dominant northwest trending Dorisvale Fault which separates the Daly Basin Middle Cambrian shallow marine sediments from Lower Cambrian Antrim Plateau tholeiitic plateau basalts. Evidence of epithermal-style mineralisation has been located along the Dorisvale Fault by a large number of explorers since the 1980’s. The basin sediments are interpreted to be up to 1km thick.

Carbonate hosted base metal and barite has been located within the Dorisvale Fault. Historically the area has been explored for gold, phosphate, coal, diamonds, manganese, copper-lead-zinc, tin, nickel, uranium, bulk commodities such as limestone and industrial minerals including barite.

Current exploration in the project area has focused on heavy rare earth elements (HREE) with the TUC Resources discovery of their Stromberg, Scaramanga, Skyfall and Largo Prospects. These discoveries have introduced a completely new mineral potential for basin margin sandstone formations.
Figure 2- Simplified geology of the Georgina, Wiso and Daly basins. Source: Khan et al.
2.1 PROJECT GEOLOGY

EL29757 occupies a fault bounded graben bounded to the south by the Dorisvale Fault along which occurrences of barite have been historically mined with the Dorisvale historic barite operation occurring within the north western
edge of the adjacent EL26899. The fault is down-thrown on the north-east and up-thrown on the south-western side. The tenure is principally underlain by Jinduckin Formation and overlain by quaternary sediments of pisolithic laterite and ferruginous rubble.

The Daly Basin is an intra-cratonic basin composed of flat lying sedimentary rocks of the Daly River Group which are comprised of:

- **Tindell Limestone**- Bioclastic mottled oncoid and stromatolitic limestone, minor mudstone and basal conglomerate, arkosic sandstone and siltstone.
- **Jinduckin Formation**- Dolomitic siltstone dolstone and dolomitic quartz sandstone.
- **Oolloo Dolstone**- Ooids and stromatolitic dolstone and minor dolomitic sandstone

### 3.0 MINERAL PROSPECTIVITY

**Current Exploration by TUC Resources to the North**

TUC Resources have identified a number of HREE exploration targets defined by airborne radiometric anomalies directly to the north of the Century Hill Exploration Licenses along the Daly Basin margin. These include the Stromberg Prospect and the Scaramanga Prospect as well as Skyfall along the Dorisvale Fault and Largo further east into the basin. These are shown in Figure 4 below.

![Figure 4: U²/Th Anomalies Regionally](image-url)
Recent Exploration by Century Hill Pty Ltd on EL26899 & EL29757

In September 2012 the Flora River NT Airborne Geophysical Survey was flown over EL26899 which is held by Century Hill Pty Ltd. The survey has provided high quality data which has enabled detailed identification of geological structure. Radiometric data was interpreted and elevated values of U²/Th identified. These anomalies were proposed to be indicators of potential Heavy Rare Earth Elements (HREE) mineralisation based on similar anomalies to the north documented by TUC Resources Limited.

During the 2013 exploration year anomalous Rare Earth Element (REE) mineralisation was identified coinciding with previously identified target areas interpreted from the recently conducted airborne magnetic/radiometric survey. The results were considered low but still anomalous and follow-up work was recommended.

A nine day field reconnaissance was conducted during the current 2014 exploration year with the objective of sampling areas of coincident U²/Th anomalies with Fe altered sandstone throughout the adjacent EL26899, as well as sampling similar sandstone ridge targets in EL29757. Access was limited by rugged terrain, and sampling conducted failed to discover elevated REE values.

The tenement has not been exhaustively explored for REE mineralisation and further reconnaissance and rock chip sampling is planned for EL29757 in conjunction with further work on the contiguous EL26899.

3.1 OPEN FILE RESEARCH-DALY BASIN

Since 1969 several company reports have been submitted to the NTGS regarding geological activities undertaken in the area including CGI’s current tenement (EL 26899). The main focus in the past was for copper, lead, zinc, uranium and barium. Below are the main highlights during this time.

1969 - 1972 (CR19690059)

Mineral Deposits Limited collected several geochemical samples (rock and stream) estimated to have been undertaken between 1969 and 1972. The main outcomes from the sampling have been geo-rectified and undelayed on CGI’s tenement. The location of the rectified image is only approximate as no co-ordinates were included with the information. The current locations of the stream were used for control points.

Several barite occurrences have been recorded, the most well-known is Pony Pocket Bore, known today as Dorisvale Mine. Several stream geochemical anomalies have been indicated, three of which lie within EL 26899. The anomaly to the east of the Pony Pocket Bore barite occurrence may be reflecting the known mineralisation to the west but follow-up should be considered. Two anomalies in the central portion of the tenement were previously unknown and it is unclear if these anomalies were followed-up by Mineral Deposit Limited.

The locations of the anomalies coincide with the northwest-southeast trending Dorisvale Fault Zone which is the likely structural control for the barite mineralisation in the region.

A significant amount of base metal exploration has been carried out in and around this fault. Four major barite veins with traces of galena have been identified 9km SW of Dorisvale Homestead in Pony Pocket Creek on the extreme edge of the Daly Basin. A resource of 1,458,000 t of barite was identified by Mineral Deposits Ltd (1974).
and a proven reserve of 508,000t to 24m @ 90% BaSO₄ was identified by Fischer in 1971. Mining took place between 1977 and 1981 with a total of 58,295t being extracted.

Figure 6 below shows locations of base metal occurrences in the region.

1980-1981 (CR198000102 AND 19810067)

Between 1980 and 1981 Ashton Mining Limited completed detailed geological mapping, rock sampling and 2 IP geophysical survey line. The completed work correlates to the northwest portion of CGI’s tenement. Rock assays returned values as high as 0.322% Pb and 0.174% Zn. This area of mineralisation correlates to site 1 from the recent field reconnaissance visit where elevated Pb was identified using the Niton XRF. Several outcrops of anomalous mineralisation follow the trend of the Dorisvale Fault and were reported to be hosted in a silicified breccia.

Two IP lines were run across the fault zone. The results of the survey are should be better processed in order to better evaluate and interpret the results. The results of reprocessing the data will identify if IP is an appropriate method of mapping mineralisation along the Dorisvale Fault. If the mineralisation is present as disseminates Pb-Zn mineralisation then IP is likely a good exploration tool.

1992 (CR19920058)

In 1992 Pancontinental Mining Limited undertook a regional stream sediment geochemical program with a focus on base metals. The anomalies from the program were plotted on a topographic map. The map was georeferenced based on a few geographic location and cultural features and therefore the position is considered approximate (Figure 7).

Three zinc anomalies and one lead and one barium anomaly lie within CGI’s tenement. The coincident Zinc/Barium anomaly in the northwest is likely reflecting mineralisation from the Dorisvale Mine. The anomaly furthest to the south approximately correlates with one of the geochemical anomalies identified by Mineral Deposits Limited (CR19690059). It is unclear if this anomaly was followed-up with field mapping.
Figure 5 – Showing Base Metal Occurrences Proximal to EL26899
4.0 **EXPLORATION CONDUCTED**

Since the tenement was granted on 13 May 2013 the following work was carried out:

- In July 2013 a nine day reconnaissance field survey of EL29757 and EL26899 including Niton survey and rock chip sampling
- Assays for REEs, Multi-element, Barite
- Review and interpretation of survey data
- Map preparation, Report compilation
- Further review of relevant historic reporting and current regional activity
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During the current year the Company conducted a review of data and made an evaluation of the potential of the tenement in the context of prevailing and foreseeable market conditions.

Consequently the Company elected to surrender the tenement and tenure was cancelled on 7 July 2015.
5.0 FUTURE WORK

EL29757 has been surrendered and no further work will be conducted by the Company.

6.0 REFERENCES

- TUC Resources website
- Field Investigation of Flora Tenement, International Geoscience Pty Ltd, December 2012
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