# Mount Bundy Project

**EL 31526**

**First Annual & Final Report**

**For the Period 18 Dec 2017 to 17 Dec 2018**

<table>
<thead>
<tr>
<th><strong>Titleholder</strong></th>
<th>Thunderbird Metals Pty Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Operator</strong></td>
<td>Thunderbird Metals Pty Ltd</td>
</tr>
<tr>
<td><strong>Titles/Tenements</strong></td>
<td>EL31526</td>
</tr>
<tr>
<td><strong>Tenement Manager/Agent</strong></td>
<td>Austwide Mining Title Management Pty Ltd</td>
</tr>
<tr>
<td><strong>Mine/Project Name</strong></td>
<td>Mount Bundy</td>
</tr>
<tr>
<td><strong>Personal author(s)</strong></td>
<td>Oliver Kreuzer, Kris Butera</td>
</tr>
<tr>
<td><strong>Target Commodity/Commodities</strong></td>
<td>Gold</td>
</tr>
<tr>
<td><strong>Date of Report</strong></td>
<td>8 November 2018</td>
</tr>
<tr>
<td><strong>Datum/Zone</strong></td>
<td>GDA94/Zone 52</td>
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<td><strong>250 000 K Mapsheet</strong></td>
<td>Darwin SD 52-04</td>
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<tr>
<td><strong>100 000 K Mapsheet</strong></td>
<td>Mary River 5272</td>
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<td><strong>Contact Details</strong></td>
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</tbody>
</table>
Executive Summary

Exploration licence 31526 ("Licence", "Project" or "Mount Bundy Project") is located c. 110 km east of Darwin, the capital city of the Northern Territory, and on the western margin of Kakadu National Park. The greater 1.75 Moz Au Tom’s Gully, Rustler’s Roost and Quest 29 gold deposit cluster is located 15 km to the west of the Company’s Mount Bundy Project.

The Licence was granted to Thunderbird Metals Pty Ltd ("Thunderbird") on 18 December 2017 for a term of six years with Thunderbird the sole holder and operator.

During the reporting period, Thunderbird (i) conducted desktop studies and (ii) in late April 2018 completed a reconnaissance site visit aimed at determining access and exploration methods best suited to the area.

The desktop study clearly highlighted the underexplored nature of the Project area, which covers highly prospective geology under widespread post-mineral cover yet drill testing of gold prospective bedrock has been very limited with much of the past activity having been focused at the Donkey Hill prospect and broader “Annaburro Dome” whilst the remainder of the project area is virtually unexplored by drilling.

Thunderbird’s intention was to conduct significant exploration programs at the Mount Bundy Project. Unfortunately, due to sustained poor market conditions for greenfields exploration, Thunderbird was unable to raise the funds required to adequately explore the Project. Hence, a decision was made to relinquish the Licence due to lack of funds.

The licence was surrendered on 7 November 2018.

Keywords: Gold, Mount Bundy, Pine Creek Orogen, Reconnaissance.
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Location and Access

Exploration licence 31526 ("Licence", “Project” or “Mount Bundy Project”) is located c. 110 km east of Darwin, the capital city of the Northern Territory, and on the western margin of Kakadu National Park (Fig. 1). Hanking Gold Mining Pty Ltd’s greater 1.75 Moz Au Tom’s Gully, Rustler’s Roost and Quest 29 gold deposit cluster is located 15 km to the west of the Mount Bundy Project.

Access to the Project is via the Arnhem Highway, which crosses the Project area, and a number of roads, station tracks and fence lines. These tracks provide good access for 4WD vehicles during the dry season, however these tracks become impassable after heavy rain, and therefore no access is possible throughout the wet season.

The terrain in the Licence area is dominated by low hills with broad plains and swampy ground. Vegetation cover is mostly tropical bush- and woodland. Land use includes cattle and cashew farming.

Tenure

EL 31526 was granted to Thunderbird Metals Pty Ltd (“Thunderbird”) on 18 December 2017 for a term of six years with Thunderbird the sole holder and operator. The Licence covers 169 blocks or 562 km² (Fig. 2).

Geology and Mineralisation

The Mount Bundy Project is located in the Pine Creek Orogen ("PCO"). The Paleoproterozoic strata of the PCO consists of a greater 4 km-thick succession of clastic, carbonate and carbonaceous sedimentary and volcanic rocks and unconformably overlying Neoarchean (c. 2,670 to 2,500 Ma) granitic and gneissic basement. Between 1,867 to 1,850 Ma, these rocks were deformed, metamorphosed and extensively intruded by c. 1,830 to 1,800 Ma syn- to post-tectonic, mafic and granitic rocks. However, deformation and metamorphism were not uniformly distributed across the orogen. Three domains have been recognised in the PCO that in the period between 2,020 and 1,830 Ma experienced distinct depositional and tectono-thermal histories. The Mount Bundy Project falls within the greenschist facies grade Central Domain that comprises the c. 2,020 Ma Woodcutters and c. 1,860 Ma Cosmo Supergroups (Hollis et al., 2011; Craig et al., 2011; Ahmad and Hollis, 2013).
Figure 1. Location map, Mount Bundy Project (EL 31526).
Figure 2. Tenure and access map, Mount Bundy Project (EL 31526), also showing individual one-minute graticular blocks. Base map: ESRI World Shaded Relief.
As illustrated in Figure 3, Thunderbird’s Mount Bundy Project covers heavily folded and deformed Paleoproterozoic sequences including (from bottom to top) the Wildman Siltstone and Mundogie Sandstone of the Mount Partridge Group (Woodcutters Supergroup), which are overlain by the Koolpin Formation, Gerowie Tuff (dated at c. 1,864 to 1,862) and Mount Bonnie Formation of the South Alligator Group, and the Burrell Creek Formation of the Finniss River Group (Cosmo Supergroup). Immediately west of the Licence, the Wildman Siltstone is intruded by the 1,820 Ma Mount Goyder Syenite of the Mount Bundy Suite. The eastern margin of the Mount Goyder Syenite (as mapped at surface) is only 2 km from the western boundary of the Licence.

Much of the Paleoproterozoic strata, in particular in the northern part of the Licence, is covered by lateritic gravel horizons and younger, unconsolidated alluvial floodplain and drainage sediments. Sporadic outcrops of friable, ferruginous sandstone and conglomerate recorded in the southern part of the Project may be of Jurassic rather than Paleoproterozoic age, and if so may represent the Jurassic Petrel Formation.

The PCO hosts significant resources of gold and uranium and notable platinum group metals, base metals, silver, iron and tin-tantalum mineralisation (Ahmad and Hollis, 2013). Gold mineralisation in the PCO is preferentially developed within rocks of the South Alligator Group and lower parts of the Finniss River Group (i.e., Wildman Siltstone, Koolpin Formation, Gerowie Tuff, Mount Bonnie Formation and Burrell Creek Formation) and illustrates a clear spatial association with regional anticlines, strike-slip shear zones and duplex thrusts at or near granitoid intrusions (Sener, 2004).

**Exploration Rationale**

Thunderbird originally selected the Licence area on the basis of a comprehensive in-house geophysical and gold prospectivity modelling study covering the entire Pine Creek Orogen. The underlying targeting model was created in the framework of a mineral systems approach, incorporating the existing geological knowledge (e.g., Sener, 2004) and leveraging off the team’s extensive experience with orogenic gold mineral systems worldwide.

**Previous Exploration**

The earliest recorded exploration activities at Thunderbird’s Mount Bundy Project date back to the 1970s when parts of the Licence area were investigated by CRA Exploration and
Geopeko targeting uranium, base metals and gold (Table 1). A second wave of exploration activity occurred in the late 1980s to early 1990s when parts of the Licence area were explored for gold and base metals. Work undertaken by Newmont between 1985 and 1990 delivered the first tangible gold exploration results with the Donkey Hill prospect returning grab samples up to 50.8 g/t Au and 13.7 g/t Au from different veins, five-metre costean chip samples up of 6.68 g/t Au and RC drill intercepts of up to 2 m @ 3.10 g/t Au from 28 (hole RCD-3).

No detailed exploration has been undertaken at the Mount Bundy Project since Newmont except for a seven-year program from 2006 to 2013 by Uranex and JV partner Rum Jungle Resources, targeting both gold and uranium. Work by the JV partners at the Donkey Hill prospect and across the broader “Annaburro Dome” (Fig. 3) returned grab samples up to 61.2 g/t Au from Donkey Hill and 0.27 g/t Au from a large outcropping quartz vein 3.8 km to the north. However, the results of a six RC hole drilling program were disappointing returning a best intercept of 5 m @ 0.35 g/t Au from 86 m (hole DHRC003).

Table 1. Summary of historic exploration activities.

<table>
<thead>
<tr>
<th>GEMIS Report ID</th>
<th>Holder/Operator</th>
<th>Year(s)</th>
<th>Target Commodity</th>
<th>Activities ± Significant Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR2015-0677</td>
<td>Primary Gold</td>
<td>2012-2015</td>
<td>Au</td>
<td>Desktop review, field reconnaissance</td>
</tr>
<tr>
<td>CR2015-0766</td>
<td>Australian Geoscience</td>
<td>2012-2015</td>
<td>Au</td>
<td>Desktop review; field reconnaissance</td>
</tr>
<tr>
<td>CR2013-1065</td>
<td>Uranex</td>
<td>2006-2013</td>
<td>Au, U</td>
<td>Airborne MAG/RAD and AEM survey; field reconnaissance; geochemical soil survey of 665 samples; grab samples up to 61.2 g/t Au from veins at the Donkey Hill prospect and 0.27 g/t Au from a large outcropping quartz vein 3.8 km to the north; 6 RC holes for a total of 666 m designed to test the Donkey Hill prospect and 3 geophysical anomalies; results were disappointing with a best intercept of 5 m @ 0.35 g/t Au from 86 m in hole DHRC003</td>
</tr>
<tr>
<td>CR2009-0772</td>
<td>Yellow Rock Resources</td>
<td>2006-2009</td>
<td>U</td>
<td>Field reconnaissance; geochemical sampling (soils, water, radon gas); most activity occurred outside Thunderbird’s Licence</td>
</tr>
<tr>
<td>CR2003-0024</td>
<td>Renison Consolidated</td>
<td>2001-2002</td>
<td>Au</td>
<td>Desktop review; field reconnaissance</td>
</tr>
<tr>
<td>CR1990-0532</td>
<td>Newmont</td>
<td>1985-1990</td>
<td>Au</td>
<td>Identification of and focus on the Donkey Hill prospect (grab samples up to 50.8 g/t Au and 13.7 g/t Au from different veins; Five-metre chip samples from the costeans recorded a maximum of 6.68 g/t Au; 4 RC holes for 244 m with a best intercept of 2 m @ 3.10 g/t Au from 28 in hole RCD-3</td>
</tr>
<tr>
<td>CR1989-0511</td>
<td>Carpentaria Gold</td>
<td>1987-1989</td>
<td>Au, base metals</td>
<td>Heli-borne geochemical stream sediment survey of 176 samples with a peak value of 0.7 ppb Au; grab samples up to 0.74 g/t Au; 4 weakly anomalous drainages were identified but none were deemed worthy of follow up</td>
</tr>
<tr>
<td>CR1979-0140</td>
<td>Geopeko</td>
<td>1977-1978</td>
<td>Au</td>
<td>Data review; photogeology; Airborne MAG survey; reconnaissance geological mapping; 224 auger holes</td>
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<td>CR1973-0090; CR1972-0085</td>
<td>CRA Exploration</td>
<td>1971-1973</td>
<td>U, base metals</td>
<td>Airborne MAG/RAD survey; geological mapping; reconnaissance auger drilling; geochemical stream sediment survey with peak values of 51 ppm Pb, 34 ppm Cu and 21 ppm Ni, gold was not assayed; stratigraphic soil sample traverses and reconnaissance rock chip sampling</td>
</tr>
</tbody>
</table>
Figure 3. Geology map, Mount Bundy Project (EL 31526). The Donkey Hill gold prospect and Annaburro Dome (i.e., doubly-plunging anticlines) are labelled. See text for details.
Exploration During the Reporting Period

During the reporting period, Thunderbird (i) conducted desktop studies and (ii) in late April 2018 completed a reconnaissance site visit aimed at determining access and exploration methods best suited to the area.

Desktop studies completed during the reporting period included:

- Review of historic exploration reports.
- Compilation of all available public domain and historic exploration data into a GIS.
- Data interpretation.
- Definition of initial gold exploration target areas.
- Formulation of plans as to how to best explore these target areas.

Key findings are as follows:

- Access to the Licence area is generally straightforward although full access is only possible during the dry season.
- Landholders are approachable and open to early-stage exploration activities.
- Termite mounds are ubiquitous across the Licence area, potentially providing an excellent geochemical sample medium. Termite mound sampling has never been tried or trialled at the Mount Bundy Project but could be more effective than soil or stream sediment sampling given the widespread moderate to thick (transported?) black soil cover and remnant duricrust that appears to effectively mask bedrock in many places (cf. Bajwah, 2015).
- Five target areas were identified for follow-up exploration based on a combination of geological, geophysical and geochemical criteria (Fig. 4).

Conclusions and Recommendations

Thunderbird believes that the Mount Bundy Project is highly prospective for orogenic gold systems and has excellent potential for discovery of a significant gold deposit. A desktop review clearly highlighted the underexplored nature the Licence area, which is characterised by highly prospective bedrock, widespread post-mineral cover and very limited drill testing, most of which occurred at the Donkey Hill prospect and broader “Annaburro Dome”. Thunderbird intended to conduct significant exploration programs at the Mount Bundy Project. Unfortunately, due to sustained poor market conditions for greenfields exploration, Thunderbird was unable to raise the funds required to adequately explore the Project. Due to lack of funds, the decision was made to relinquish the Licence.
Figure 4. Initial broad target areas for follow-up exploration. 1: Annaburro Dome (outcropping gold mineralisation). 2. Unexplored Annaburro Dome look-a-like. 3: Unexplored fold-fault system developed in highly prospective Paleoproterozoic strata. 4: Subtle, polymetallic stream sediment anomalism in area of poor outcrop. 5: Coincident, regional-scale magnetic and gravity linears.
References


