Partial Surrender Report

EL26091
Cameron Downs

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The Cameron Downs project is located approximately 6 km south of Batchelor. The licence area is situated in the Rum Jungle mineral field. It straddles the boundary between granites of the Late Archaean Rum Jungle Dome and (meta-)sedi­­imentary successions of the Palaeoproterozoic Pine Creek Orogen. Desktop study and reconnaissance exploration.

It was determined that the target unconformity zone does not lie within the western half of the tenement and the areas was relinquished.
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1. GEOLOGICAL ACTIVITIES

1.1 Brief description of local and regional geology

The Cameron Downs project is located in the Rum Jungle mineral field, Pine Creek Orogen. According to Lally (2002) and Lally and Bajwah (2006), the oldest known rocks in the Rum Jungle mineral field are schist and banded ironstone of the Stanley Metamorphics that during the period 2,535 to 2,525 Ma were intruded by granites of the Rum Jungle Complex. These Archaean rocks are exposed in the Rum Jungle and Waterhouse domes, two domical inliers in the central portion of the Rum Jungle mineral field. The Rum Jungle complex is unconformably overlain by Palaeoproterozoic basin-fill sedimentary rocks of the Manton, Mount Partridge, South Alligator and Finiss River Groups. These groups form part of the Pine Creek Orogen.

Multiple folding and faulting events affected the Rum Jungle mineral field from 1880 to 1760 Ma. Early NW-directed thrusts were overprinted by tight to isoclinal N-trending folds, accompanied by upper greenschist facies metamorphism. Open folding and kinking was the distal expression of granite emplacement to the east and southeast. Retrograde lower greenschist facies metamorphism accompanied regional-scale, NW-trending strike-slip faulting.

Haematitic quartzite breccia, siltstone and sandstone of the Geolsec Formation (a palaeo-regolith?) unconformably overlie rocks of the Mount Partridge Group and postdate the Pine Creek orogeny.

Uranium and polymetallic base metal mineralisation occurs in Mount Partridge group sediments around the margins of the Archaean domes and is associated with faults (e.g., Lally, 2002; Lally and Bajwah, 2006).

EL 26091 straddles the boundary between granites of the Late Archaean Waterhouse Dome and sedimentary successions of the Palaeoproterozoic Pine Creek Orogen. The latter include the:

- Beestons Formation (Manton Group): coarse, poorly sorted, massive feldspathic sandstone or arkose, vein quartz pebble conglomerate, and planar cross-bedded coarse-medium feldspathic sandstone that were deposited in a fluvial environment.
- Celia Dolomite (Manton Group): silicified dolostone, dolostone and magnesite that were deposited in an intertidal environment.
- Crater Formation (Mount Partridge Group): poorly sorted, arkosic coarse sandstone, BIF conglomerate of poorly sorted pebble- to boulder-sized clasts of haematitic, banded iron formation and vein quartz within a quartz haematite sand matrix, and well sorted, arkosic coarse sandstone, thin quartz pebble conglomerate, shale, siltstone and sandstone that were deposited in a fluvial environment.
- Coomalie Dolostone (Mount Partridge Group): intertidal, stromatolitic dolostone and magnesite with minor interbeds of calcareous metapelite and para-amphibolite.
- Whites Formation (Mount Partridge Group): inter- to subtidal, fine-grained commonly pyritic calcareous and carbonaceous argillite, and minor quartzite, calcarenite and para-amphibolite.

The western half of the licence area covers the Beestons Formation, The Celia Dolomite and the Crater Formation.
1. Office-based activities

The following office-based activities were undertaken:

a. Collaborative research project undertaken by the Centre for Exploration Targeting

- EL 26091 is one of 77 available areas that were considered prospective based on the outcomes of a 1.5 year-long research project on uranium mineralising systems and Australia-wide uranium prospectivity analysis. This project was funded by Regalpoint and undertaken by the Centre for Exploration Targeting ("CET"), a joint venture between the University of Western Australia and Curtin University of Technology.
- The overall results of this major scientific study greatly advanced Regalpoint’s understanding of uranium mineralising processes and the prospectivity of its exploration licence areas, including EL 26091.

b. Assessment of previous exploration activities

Previous exploration activities include the following:

- 1977 to 1982 (relevant licence: EL 1181): International Mining Corporation and Marathon Petroleum Australia carried out a comprehensive exploration programme that included a photogeological study, airborne magnetic and radiometric surveys, ground emanometry, track-etch survey, soil sampling, IP and resistivity work, ground magnetics and spectrometer grid surveys, geological mapping and drilling. The drilling located uranium mineralisation in three areas but the detected uranium occurrences proved to be low grade and discontinuous in nature.
- 1984 to 1986 (relevant licence: EL 4772): Idemitsu Minerals Australia carried out stratigraphic and structural modelling, ground magnetic and radiometric surveys, geological mapping, helicopter-borne EM and radiometric surveys and drilling.
- 1990 to 1999 (relevant licence: EL 6640): Exploration by Compass Resources and JV partners Guardian Resources and Billiton Australia Gold (later Acacia Resources) focused on the advanced polymetallic Area 55 prospect.
- 1995 to 1996 (relevant licence: EL 8475): Nicron Resources targeted gold and Woodcutters-type base metals deposits with a programme of soil sampling, RAB drilling, 1:10,000-scale geological mapping, and a detailed airborne magnetic and radiometric survey over the southern part of EL 8457.

Most of this work appears to have been undertaken outside the boundaries of Regalpoint’s EL 26091.

2. Reconnaissance exploration

Inspection of the licence area established that both the Whites Formation and Coomalie Dolostone occur within a domain that is characterised by low topographic relief and laterally extensive soil cover in the eastern half of the licence area. No outcrop of the Coomalie Dolostone and only two outcrops of the Whites Formation were located within the western half.
3. Conclusions and recommendations

Given the interpretation that the Coomalie Dolostone and Whites Formation contact zone falls to the east of the licence it is recommended that the western half of the tenement be relinquished.

The relinquished area is:

- BIM: SD52
- BLOCK: 5299
- SUB BLOCKS: K, P

![Oblique view of the licence area, looking north. Geology overlay illustrates the distribution of the targeted Coomalie Dolostone (yellow) and Whites Formation (white) within the easternmost portion licence area.](image)

Figure 1. Oblique view of the licence area, looking north. Geology overlay illustrates the distribution of the targeted Coomalie Dolostone (yellow) and Whites Formation (white) within the easternmost portion licence area.

4. References


Figure 2. Location map