Titleholder: Rum Jungle Resources Ltd
Operator: Rum Jungle Resources Ltd
Tenement Manager: Ross McColl
Tenement: EL 27933
Project Name: Angus Downs Potash
Report Title: First annual report for EL 27933, Wollunga Well, period ended 27/10/2011
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Corporate Author: Rum Jungle Resources Ltd
Target Commodity: Potash and other evaporites
Date of Report: 26/11/2011
Datum/Zone: GDA94/ Zone 53
250K map sheet: Henbury
100K map sheet: Wallera
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SUMMARY

Exploration within Rum Jungle Resources’ Karinga Creek Lakes Project is targeting potassium-, magnesium- and sulfate-salts in salt lakes brines to eventually produce potassium sulfate (SOP) and potassium magnesium sulfate (schoenite) fertiliser probably using solar evaporation ponds. EL 27933 is 80 km north and peripheral to the main project area. EL 27933 covers a palaeo-salt lake system, rather than an active lake as at Karinga Creek. The EL was pegged to target potash, other evaporites and possibly uranium. Angus Downs is an Indigenous Protected Area under Commonwealth legislation and this has delayed exploration to date. During the first year, a long awaited AAPA site survey was finally completed and the CLC were contacted twice, but no agreement has yet been reached. These delays have meant that no ground-disturbing work was possible in the first year.

Expenditure for the year was $13,070.58 against a covenant of $36,000. This excludes AAPA work. It is intended to roll-over the $36,000 proposed expenditure from year one into year two on the assumption that all clearances will be obtained and work can proceed as originally planned.
LOCATION AND ACCESS
EL 27933 covers 78 sub-blocks or 243.38 km². It is entirely within the Angus Downs Perpetual Pastoral Lease, just south of Wallara (also spelt Wallera) Ranch; the station’s airstrip is on the northern boundary of the EL. Angas Downs is an Indigenous Protected Area under Commonwealth legislation. The EL is bisected by the existing partly-formed Lurritja Road. This and a few poorly-maintained station tracks to bores are the only existing access. The remainder of the EL is covered by sand dunes and clay pans. The area south of EL 27933 is under application by Rum Jungle Resources as EL(A) 28885.

HISTORY OF TENURE
EL 27933 was applied for in February 2010 and granted 27/10/2010 for six years. It is 100% held by Rum Jungle Resources Ltd.

EXPLORATION RATIONALE
The emphasis on EL 27933 is exploring the palaeo-salt lakes and any associated drainages. Rum Jungle Resources is targeting evaporite minerals within the palaeo-salt lake system, any residual brines and possibly palaeochannel uranium.

GEOLOGICAL AND HYDROLOGICAL SETTING
EL 27933 contains an evaporitic palaeo-salt lake system manifest as outcropping gypsum mounds and salt crusts in open flats. Rum Jungle Resources believe that the EL also contains a previously unrecognized palaeo-drainage system. The palaeo-lakes and palaeo-channels may contain economic quantities of rock evaporites or highly evolved brines suitable for potash production. EL 27933 overlies rocks of the Amadeus Basin. The petroliferous Amadeus Basin covers approximately 150,000 km² and extends into Western Australia. It is comprised of a Neoproterozoic to mid-Paleozoic succession of predominantly shallow marine sedimentary rocks and attains a thickness of up to 14,000 m. The Amadeus Basin contains evaporites which form diapirs and piercement structures. At surface, these structures produce localized halite and gypsum and highly salty groundwater. Evaporite diapirs are visible.
on some seismic lines in the vicinity of EL 27933. However, it is not known as yet, what relationship, if any, there is between the palaeo-salt lakes on EL 27933 and a possible Amadeus Basin evaporite source. The siltstones of the central Amadeus Basin have weathered into a topographic low which contains the Karinga Creek Lakes. To date, these modern lakes have been the main focus of Rum Jungle Resources’ potash project. EL 27933 is about 80 km north of the main Rum Jungle ELs over the active Karinga Creek Lakes. EL 27933 and EL(A) 28885 are regarded as an adjunct to the Karinga Creek Lakes Project and are testing a similar model, but in a more geologically-evolved setting.

![Figure 2. Interpreted palaeo-salt lakes on EL 27933 and ELA 28885](image)

**PREVIOUS EXPLORATION**
Local pastoralists have exploited surface salt on a few lakes as a source of NaCl for cattle licks since the 1940s and there was some local exploitation of gypsum for domestic use. Small-scale commercial salt-crust scraping operations have operated sporadically over the decades, notably at Lake Suzi outside EL 27933. There has been no exploitation of the lake brines. This was however examined in 1960s and again by NT Evaporites during the late 1980s to early 1990’s. In 1988, NT Evaporites and the Northern Territory Department of Industry and Development created a geological data base to assess the industrial mineral resources in the license areas. The investigation involved field mapping, sediment sampling and water sample collection. This work identified a variety of industrial minerals and brine resources including industrial clays, zeolites and evaporites. In 1992, Geo-Processors Pty Ltd conducted an assessment of resources and feasibility study of the Karinga Creek area and concluded that the site was suitable for a commercial operation and technically feasible. These studies, and the reasons for their lack of success, have been summarised in other open file reports and are not reproduced here.

The area of EL 27933 has been included in some of this previous evaporite exploration. It has also been the subject of petroleum exploration, including seismic acquisition (see Figure 1).

**WORK BY RUM JUNGLE RESOURCES – YEAR ONE**
Desktop studies were undertaken, including checking previous petroleum reports for the area. Two Rum Jungle Resources’ geologists and a field technician undertook a reconnaissance from existing tracks. The extensive gypsum mounds and salt crusts located are shown below. Research into two water bores named Wollunga Well and Abe’s Folly in the area highlight salt water close to surface with elevated
potassium levels. A 20 hole air core drill program has been approved in a Mine Management Plan for this tenement but due to lack of access, no work has yet been done.

![Figure 3. Gypsum mounds on palaeo-salt lake on EL 27933](image)

**Figure 3. Gypsum mounds on palaeo-salt lake on EL 27933**

![Figure 4. Salt crust at Wollunga Well](image)

**Figure 4. Salt crust at Wollunga Well**

**PLANNED EXPLORATION YEAR 2**

Year two work will be catch-up from year one. The palaeo-lakes and associated drainages will be sampled as originally proposed. The 20 hole air core drill program and associated track clearing will commence if an agreement is reached with the Central Land Council and/or Traditional Owners.
PLANNED EXPENDITURE YEAR 2
There was no year two covenant proposed in the application. It is intended to roll-over the $36,000 proposed expenditure from year one into year two on the assumption that all clearances will be obtained and work can proceed as originally planned.

CONCLUSIONS AND RECOMMENDATIONS
EL 27933 is still pending Aboriginal clearances and work has been restricted to desktop studies and reconnaissance from existing tracks.