

3 Kimberley Street, West Leederville, WA 6007 PO BOX 1573 West Perth WA 6872 Telephone 08 9381 7838 Facsimile 08 9381 5375 Email: info@emmersonresources.com.au Website: <u>www.emmersonresources.com.au</u> ABN 53 117 086 745

# ANNUAL REPORT FOR GOLDEN SLIPPER ML 30176

# 15 APRIL 2016 - 14 APRIL 2017

LICENSEE: GIANTS REEF EXPLORATION PTY LTD A.B.N.009 200 346 (A wholly owned subsidiary of Emmerson Resources Ltd)

> AUTHOR: ADAM WALTERS

> > JUNE 2017

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| Central Land Council         |               | 1:250 000 |
| Emmerson Resources Ltd       | TENNANT CREEK | 5758      |
|                              |               |           |
|                              |               | 1:100 000 |

 $15^{\mbox{\tiny th}}$  April 2016 to  $14^{\mbox{\tiny th}}$  April 2017

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### 1.0 SUMMARY

The Queen of Sheba title was acquired by Giants Reef Exploration Pty Ltd (Giants Reef) to search for Tennant Creek style iron oxide copper-gold deposits (IOCG). Giants Reef is a wholly owned subsidiary of Emmerson Resources Ltd (Emmerson).

This combined report records the exploration work completed on this title during the period from 15 April 2016 to the 14 April 2017.

Exploration activity conducted was limited due to exploration focus elsewhere as described above. Emmerson continued its evaluations to geologically assess a number of Kenex generated targets within the Queen of Sheba title, these targets exhibited geological prospective rocks and structures but their overall ranking wasn't high enough for exploration to commence immediately and some titles were also affected by the exclusion zones form the CLC and AAPA.  $15^{th}\,April\,2016$  to  $14^{th}\,April\,2017$ 

### 2.0 INTRODUCTION

The Queen of Sheba title was acquired by Giants Reef to search for Tennant Creek style iron oxide coppergold deposits (IOCG). Giants Reef is a wholly owned subsidiary of Emmerson.

This combined report records the exploration work completed on these titles during the period from 15 April 2016 to the 14 April 2017.

Figure 1 shows the location of the Queen of Sheba title with respect to the Tennant Creek Township and figure 2 details the tenure of the Queen of Sheba area.

## 3.0 LOCATION

The Queen of Sheba title is located approximately between 28.5km and 30.5km north northwest of the Tennant Creek Township. The Licence falls on the Flynn (5759) 1:100,000 scale map sheet.

The principal access to the group from Tennant Creek is northwest via the Warrego Road for approximately 26km then turn north onto the Gecko Mine road which runs through the historical Gecko mine, then access to the title is north via a series of various dirt roads and fence line tracks. However, much of the area is rocky, without tracks and difficult to reach, even in a 4x4 vehicle. The unsealed tracks become impassable during the wet season.

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Figure 1: Location of the Queen of Sheba title with respect to the Tennant Creek Township

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Figure 2: Tenure of the Queen of Sheba title

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# 4.0 TENURE

The tenure details of the Queen of Sheba are detailed in the following table;

| Tenement ID | Tenement Name  | Holder | Interest | Grant Date | Effective Date | Expiry Date | Area (Ha) |
|-------------|----------------|--------|----------|------------|----------------|-------------|-----------|
| ML30176     | Queen of Sheba | GRE    | 100      | 15/04/2014 | 15/04/2014     | 14/04/2024  | 144.2     |

Table 1: Queen of Sheba Tenure Details

The Queen of Sheba title is located on -

) NT Parcel 00408, Perpetual Pastoral Lease 946, Phillip Creek Station

The Queen of Sheba title has 1 AAPA site that affects the group, and 1 CLC registered exclusion zone;

## 5.0 GEOLOGY

### 5.1 Regional Geology

The reader is referred to AusIMM Monograph 14 (Geology of the Mineral Deposits of Australia and Papua New Guinea), Volume 1, pp. 829-861, to gain a good introduction to the regional geology and styles of gold-copper mineralisation of the area.

In 1995 the Northern Territory Geological Survey released a geological map and explanatory notes for the Tennant Creek 1:100,000 sheet, which cover the area of the Licences.

The rocks of the Warramunga Formation host most of the orebodies in the region and underlie most of the Exploration Licences.

### 5.2 Geology of the Queen of Sheba

The rocks of the Queen of Sheba title consist of turbidite sediments of the Palaeoproterozoic Warramunga Formation (1865-1855 Ma), predominately greywacke and siltstones. This formation is host to virtually all the magnetite-haematite (ironstone-hosted) gold-copper-bismuth mineralisation and ore bodies in the Tennant Creek goldfield.

The Warramunga Formation is characterised in a number of places by outcropping ridges which comprise scattered outcrops of weathered siltstone and greywacke with felsic volcanics or volcanically derived sedimentary rocks of the Flynn Sub-group/ Tomkinson Creek Sub-group (Ooradidgee Group), quartz-rich dissected colluvial fan deposits with minor, colluvium scree, felsic porphyry and alluvial deposits in active channels and on floodplains.

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## 6.0 WORK DONE DURING THE REPORT PERIOD

Exploration activity was limited due to exploration focus elsewhere but those that were conducted consisted further desktop assessments of a number of Kenex generated targets within the Queen of Sheba title, refer to figure 3.

Emmerson provided Kenex with the Tennant Creek Datasets available, from these data sets Kenex generated 15 predictive maps of 15 key parameters, as listed in the table below. Kenex run to models a Weights of Evidence (WOE) model, which used all 15 predictive maps, a Lineal Regression (LR) model which used 12 of the 15 predictive maps and they also generated a 3D model which used 11 of the predictive maps.

A selected area for target generation is gridded into cells and these predictive maps give a numerical weighting for each cell in terms of its adherence to the parameter being assessed. The values for each parameter are combined to give a number of resultant values predicting different statistical relationships. The aim of these resultant values is to generate a target area that has the essential parameters to host Tennant Creek Style Mineralisation. Of all the resultant values Emmerson uses the Post Probability (Pprb) value to identify and rank its targets, in a range of 0 - 1, with 1 being the highest potential value and values above 0.85 to be very significant, although all targets need to be considered in the context of "if the assessed cell has a low value" is it because the relevant data isn't significant or has it not been recorded/captured.

|    | PARAMETER   | Description  |  |  |
|----|---|--|--|--|
| 1  | Warramunga Formation                                    | Spatial relationship of stratigraphy to mineralisation                               |  |  |
| 2  | Distance to porphyry                                    | Distance to porphyries that pre-date or are synchronous with mineralisation          |  |  |
| 3  | Distance to mafics (Mafic Lithologies)                  | Spatial relationship of mafic lithologies older than cover to mineralisation         |  |  |
| 4  | Radiometry - U  | Anomalous U relation to mineralisation   |  |  |
| 5  | Distance to D <sub>0</sub> -D <sub>1 major</sub> faults | Faults of D1 age relation to mineralisation  |  |  |
| 6  | Distance to low order faults (Faults length < 1 km)     | Fault length pre to syn mineralisation   |  |  |
| 7  | Distance to F1 Anticlines                               | Spatial relationship of antiforms pre to syn mineralisation to mineralisation.       |  |  |
| 8  | Distance to F1 Synclines                                | Spatial relationship of synforms pre to syn mineralisation to mineralisation.        |  |  |
| 9  | Distance to Redox boundaries                            | Base of oxidation as the boundary between haematite/magnetite.                       |  |  |
| 10 | Distance to IOCG Haematite end-member                   | Relationship of iron alteration to mineralisation                                    |  |  |
| 11 | Distance to mag and gravity slope highs coincident      | Proximity to dense, magnetic highs   |  |  |
| 12 | Distance to ironstones                                  | Ironstones - All   |  |  |
| 13 | Ironstones - high mag/gravity coincident                | Ironstones - All - High gravity & mag  |  |  |
| 14 | Distance to anomalous rock/DH geochem                   | Combined anomalous Au, Cu and Bi buffered ((Au >= 0.1ppm, Bi >= 10ppm, Cu >= 100ppm) |  |  |
| 15 | Distance to anomalous regolith Au geochem               | Soil & Vacuum Au   |  |  |

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Table 2: Kenex Predictive Modelling Parameters

The targets generated in the Queen of Sheba title have exhibited geological prospective rocks and structures but their overall ranking wasn't high enough for exploration to commence immediately and with ML 30176 also affected by the exclusion zones from the CLC and AAPA.



Figure 4: Queen of Sheba title vs. Kenex generated targets (pink polygons)

### 7.0 REHABILITATION

Rehabilitation was not required as no ground disturbing activities were conducted. All future rehabilitation will be completed and performed as detailed in the NPA Mining Management Plan – Authorisation 0467-03 which includes the Queen of Sheba title.

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### 8.0 CONCLUSIONS

Exploration activity conducted was limited due to exploration focus elsewhere as described above. Emmerson continued its evaluations to geologically assess a number of Kenex generated targets within the Queen of Sheba title, these targets exhibited geological prospective rocks and structures but their overall ranking wasn't high enough for exploration to commence immediately and some titles were also affected by the exclusion zones form the CLC and AAPA.

# 9.0 COPYRIGHT STATEMENT

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