



# **Redbank Copper Limited**

## **Annual Exploration Report**

**ELR94**

**Redbank**

**For the period 10 August 2017 to 9 August 2018**

**Distribution:**

**Department of Mines and Energy NT**

**Redbank Copper Limited**

|                             |                                       |
|-----------------------------|---------------------------------------|
| <b>Tenement Operator:</b>   | <b>Redbank Copper Limited</b>         |
| <b>Tenement Holder:</b>     | Redbank Operations Pty Ltd            |
| <b>Report Type:</b>         | Annual                                |
| <b>Report Title:</b>        | Exploration Report ELR 94             |
| <b>Report Period:</b>       | 10/08/2017 to 09/08/2018              |
| <b>Author:</b>              | Bruce Armstrong                       |
| <b>Date of Report:</b>      | 12/11/201812/11/2018                  |
| <b>1:250 000 map sheet:</b> | Calvert Hills                         |
| <b>1:100 000 map sheet:</b> | Wollogorang                           |
| <b>Target Commodity:</b>    | Copper                                |
| <b>Keywords:</b>            | Copper, Breccia Pipes, Aeromagnetic's |
| <b>Prospects drilled:</b>   | NA                                    |
| <b>List of Assays:</b>      | NA                                    |
| <b>List of Elements:</b>    | NA                                    |

## **SUMMARY**

Exploration Retention Licence ELR94 forms part of Redbank Copper Limited's, Redbank Copper Project the tenement is located 300km south east of the township of Borroloola near the northern Territory/Queensland border. The tenement covers a sequence of sediments and volcanics of the Tawallah Formation. The tenement is prospective for breccia pipe hosted copper mineralisation. Approximately 10 breccia pipes have been identified in the tenement. Sufficient work has been completed to calculated geological resources on two of the pipes Punchbowl and Roman Nose. Total resource is 27,200 tonnes of contained copper have been defined within the tenement.

During the current reporting period work consisted of processing low level aeromagnetic and interpretation data. The work has generated six additional targets which have similar structural settings to the known breccia pipes and have anomalous soil geochemical signature

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# **1. INTRODUCTION**

This report details exploration activities on ELR94 between 10 August 2017 and 9 August 2018. The tenement is owned by Redbank Copper Limited, a company listed on the Australia Stock Exchange. The tenement forms part of the company's Redbank Copper Project which comprises 10 mineral titles. The tenement surrounds Mining Leases 634 – 635 and EL31316 that secures the Sandy Flat plant site and copper resources at Redbank, Azurite, Bluff, and Sandy Flat. Site infrastructure including the camp, airstrip and internal roads are located on the tenement.

## **2.1 Location and Access**

The tenement is located approximately 300 km south-east of the township of Boorooloola, and immediately west of the Northern Territory – Queensland border. Wollogorang Homestead is located in the south east corner of the tenement.

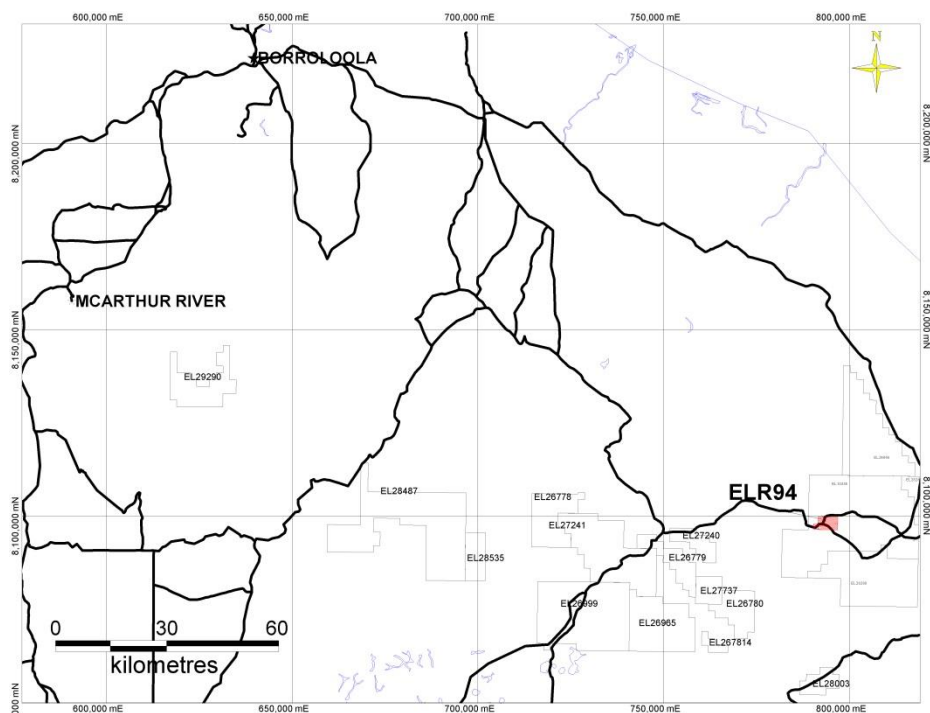
Vehicle access is restricted to the main Borrooloola – Wollogorang road and local station tracks. There is a 1200m airstrip at Redbank which can be used to access the project.

The camp and airstrip which supports the company's Sandy Flat Mine operation are located within ELR 94. The site is currently on care and maintenance, and is manned by full time caretakers who live at the camp.

Topography is dominated by escarpment country with a maximum elevation of 226m. The well-developed dendritic drainage network is dominated by Settlement Creek, which drains to the north-east into the Gulf of Carpentaria. Vegetation consists mostly of open woodland and native grasses that support cattle grazing.

The tenement is on the Wollogorang Pastoral Station

The area has a tropical climate with a wet season between November - March during which time access to and around the project can be blocked by flooding creeks and a dry season between March and October during which time the majority of field operations occur.



**Figure 1. Location Plan.**

## 1.2 Tenure

The tenement is held by Redbank Operation Pty Ltd a wholly owned subsidiary of Redbank Copper Limited. The tenement was being converted to a retention license pending conversion to MLN 27385. However, due to the company's recent financial difficulties negotiation with native title parties and plans to advance the grant of the ML were stalled.

**Table 1. Tenement details for the Redbank Copper.**

| Exploration License Number | Total Area Ha | Grant Date                   | Expiry date                 | Holder                      |
|----------------------------|---------------|------------------------------|-----------------------------|-----------------------------|
| ERL94                      | 1905          | 10 <sup>th</sup> August 1989 | 9 <sup>th</sup> August 2019 | Redbank Operations Pty Ltd. |

## 2.0 GEOLOGY AND MINERALISATION

### 2.1 Regional Geology

The tenement is situated in the south-eastern portion of the Proterozoic McArthur Basin in the Northern Territory (Figure 2.). The tenement is located on the Wearyan Shelf tectonic unit within basin. The geological sequence comprises a mix of shallow water and continental sedimentary units intercalated with volcanics of the Tawallah Group which is the lower most sequence within the Macarthur Basin sequence. The sequence has been intruded by various granitic bodies.

The McArthur Basin sequence contains the world class McArthur River lead-zinc deposit (227 Mt grading 9.2% zinc, 4% lead, 0.2% copper, and 41g/t silver) approximately 200 km north of the tenement. Within the region copper mineralisation associated with trachyte breccia pipes is mined at Sandy Flat and Redbank, and copper uranium mineralisation is recognized within the Westmorland Conglomerate Formation to the south of the tenement. The Merlin Diamond field is approximately 300 km to the west of the tenement

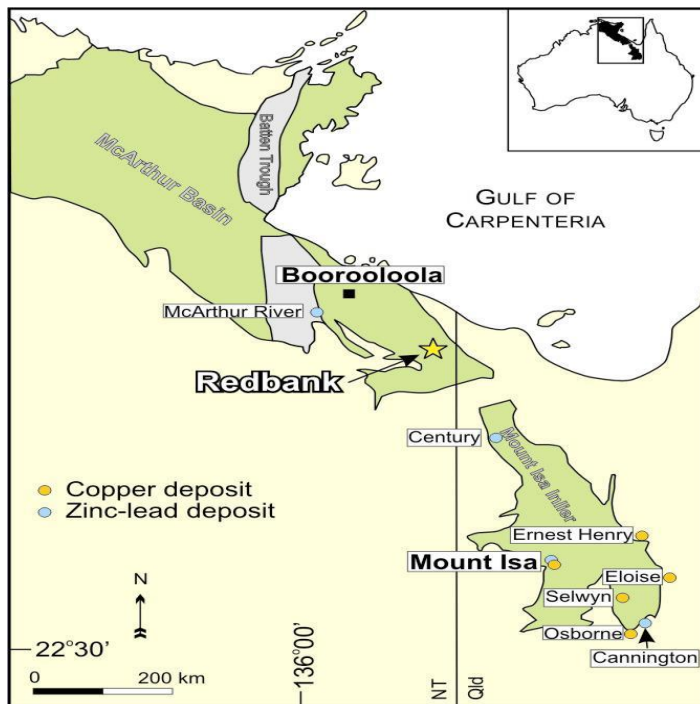


Figure 2. Regional Geological Setting.

## 2.2 Tenement Geology

The majority of the tenement is covered by the Gold Creek Member of the Masterton Formation comprising a sequence of basalts, trachyte, volcanic agglomerates, breccia's and sandstones and siltstones which outcrop over the majority of the tenement. Sandstones and siltstones of the Masterton Formation occur to the North West corner and as isolated rafts overlying the Gold Creek Member.

The Redbank Mining Centre contains 23 breccia pipes or diatremes and shear zones/veins most of which contain copper mineralisation. These structures are mainly hosted by the Hobblechain Rhyolite, the Gold Creek volcanics and the Wollogorang Formation; however, diatremes have also been recorded in the Settlement Creek volcanics and the Seigal volcanics. Host rocks are brecciated and altered passing out into less altered shallow-dipping structural corridor although the mineralised breccia veins are aligned north-east with a steep northerly plunge to the shoots. A conjugate fault system with dextral movement would tend to produce dilation zones aligned along an easterly trend.

The localizing structures are probably fault intersections plunging through the Tawallah Group into the granite basement. The copper deposits occur in clusters, and can reach 300m in depth and have near circular to irregular outlines from 50m to 150m across.

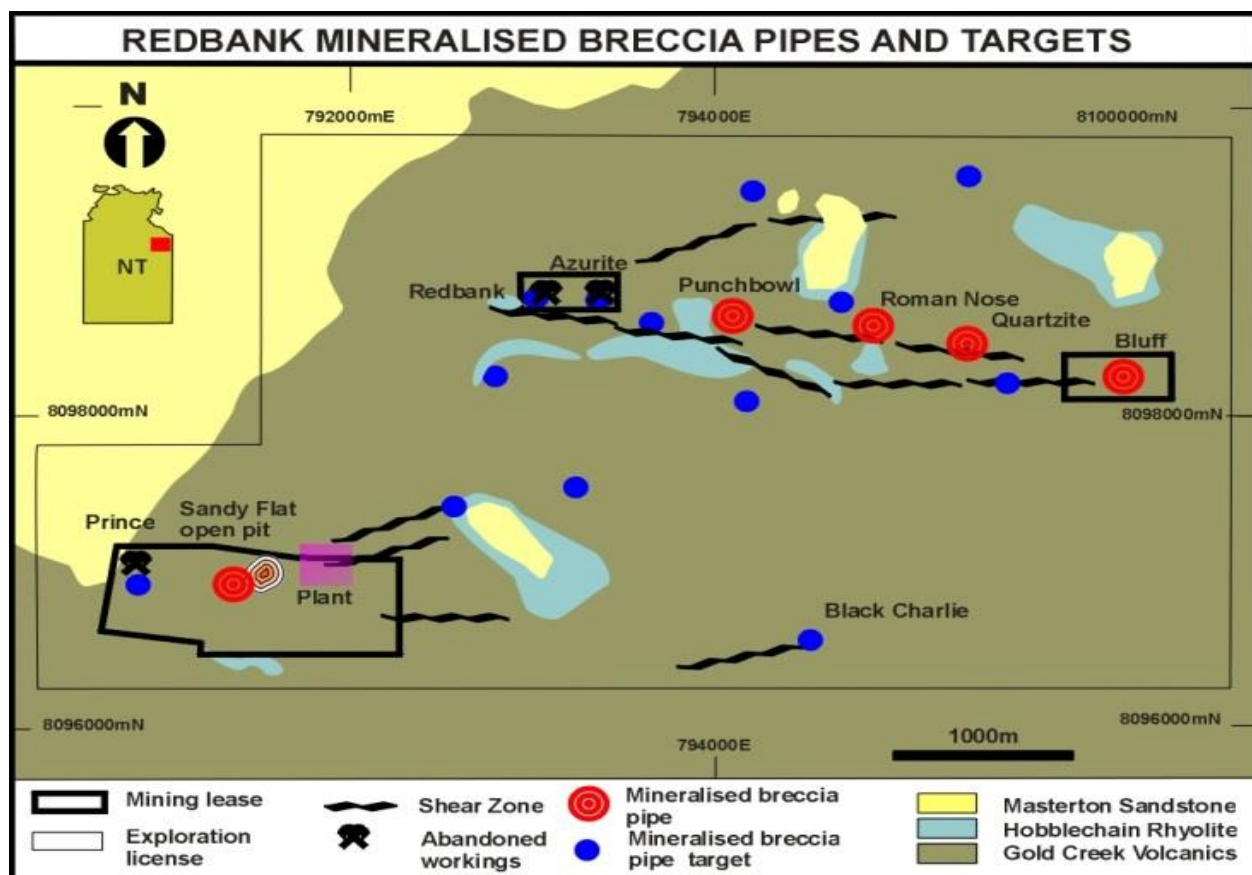


Figure 3 Project Geology and Location of Mineralized Breccia Pipes

Primary mineralisation consists of disseminations and veins with chalcopyrite and bornite in breccia. Gangue minerals are dolomite, barite, chlorite, potassium-feldspar, quartz, pyrite, haematite, apatite, and pyrobitumen. Clasts of overlying units are the evidence of collapse during breccia formation. In the oxide zone from surface to 30 m depth, grades may reach 6% Cu, the main minerals being malachite, azurite, chalcocite and chrysocolla.

Breccia and wall rocks are associated with intense potassic alteration consisting of carbonate-chlorite-potassium feldspar-quartz, pyrite, haematite and pyrobitumen.

## 2.3 Geological Resources

Geological Resources have been calculated on two of the mineralized breccia pipes that have been identified within the tenement. The resource were calculated by SRK Consulting Pty Ltd. in 2010 and no further drilling has been undertaken on the deposits since that time. A table of resources is provided below summarises for the SRK Report.

| Deposit    | Indicated |     |           | Inferred  |     |           | Total     |     |           |
|------------|-----------|-----|-----------|-----------|-----|-----------|-----------|-----|-----------|
|            | tonnes    | Cu% | Metal (t) | tonnes    | Cu% | Metal (t) | tonnes    | Cu% | Metal (t) |
| Punchbowl  |           |     |           | 1,287,000 | 1.4 | 17,900    | 1,287,000 | 1.4 | 17,900    |
| Roman Nose | 435,000   | 1.2 | 5,100     | 259,000   | 1.6 | 4,200     | 694,000   | 1.3 | 9,300     |
| Total      | 435,000   | 1.2 | 5,100     | 1,546,000 | 1.4 | 22,100    | 1,981,000 | 1.4 | 27,200    |

**Table 2 Geological Resources ELR94**

In total the company has a total of 6,263,000 tonnes at 1.5% Cu for 96,400 tonnes of insitu copper metal within the project area including stockpiles at the Sandy Flat plant site

## 2. PREVIOUS EXPLORATION

Copper was discovered in the Redbank area in the early 1900's by Chinese workers on what is now EL10335 China Workings prospect.

Local Miner William Masterton commenced mining the Redbank and Azurite Deposit on tenement MLN634 around 1916 and continued intermittent operations for the next 40 years.

Government geological surveys in the 1940's have first described the copper occurrences at Redbank and Modern Exploration commenced in the 1960's. A number of exploration companies have held title or joint ventured into the ground over the years. Work has included geological mapping, soil sampling. Percussion and diamond s drilling. This work has resulted in the discovery of approximately 21 breccia pipes within the immediate area of ELR94, and the mining of oxide copper ore on the Sandy Flat, Redbank, and Azurite pipes

In 1989 a company Colmayne Pty Ltd acquired the tenement and was renamed Redbank Copper Pty Ltd and this company has held the ground since that time either as private operating company or as a wholly owned subsidiary of a listed company.

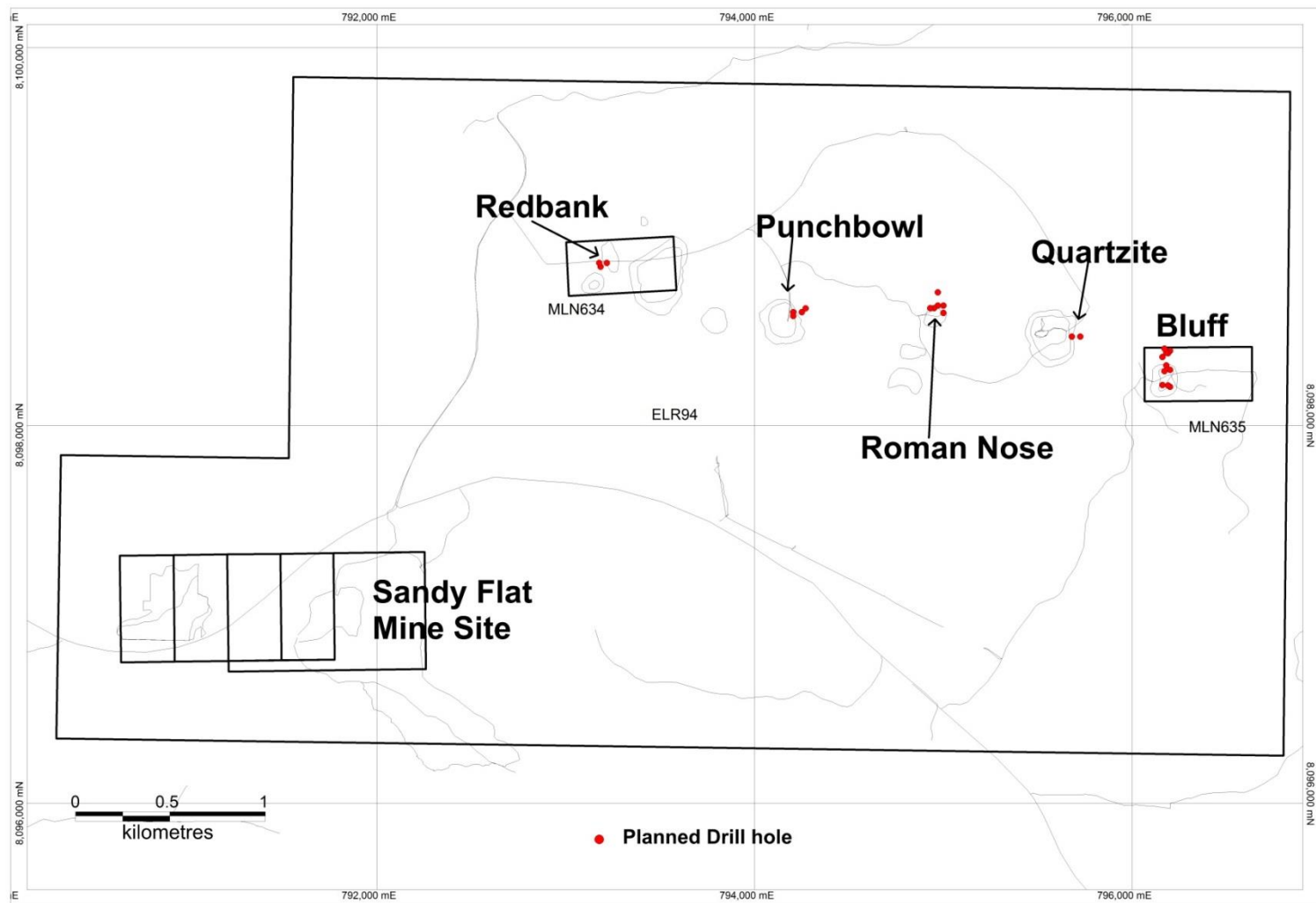
### **3. EXPLORATION DURING THE REPORTING PERIOD**

#### **3.1 Drill Planning**

The company completed a comprehensive review of past drilling on the tenement and prepared a drill program to complete additional drill testing on the Punchbowl and Roman Nose Deposits to provide conformation drilling for JORC 12 classification and extend the existing resources, as well as further drill testing on the Quartzite prospect. In total 12 reverse circulation and diamond holes for approximately 1890m of drilling was planned for the tenement which would be completed as part of a larger program of drilling which includes the Bluff, Redbank, Sandy Flat and Prince Deposits located within the internal mining leases. A plan showing the location of the planned holes on ELR 94 is provided as figure 4.

However, due to delays in securing a drilling contractor, no other work was undertaken on the title during the reporting period.

The company is currently attempting to secure a drill contractor to complete the drilling after the wet season.



**Figure 4 Tenement Plan showing Location of Planned Drilling**

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