Operator: Crossland Uranium Mines Ltd

Lake Woods

COMBINED SECOND ANNUAL REPORT for the period 20 April 2012 to 10 April 2013 and FINAL REPORT for the period 20 April 2011 to 10 April 2013

EL 28198

Tenement Holders: Crossland Diamonds Pty Ltd

Buskas M and Melville P
April 2013
Summary

This Combined Second Annual and Final Report covers the relevant periods of tenure on the subject licence held by Crossland Diamonds Pty Ltd and operated by Crossland Uranium Mines Limited (Crossland). The project is located approximately 700 km south of Darwin and 200 km north of Tennant Creek. The Stuart Highway traverses the licence.

The area was originally identified as a conceptual target area based on proprietary methods and modelling conducted by Paradigm Geoscience Pty Ltd. The principal target commodity was diamonds. In later years further concepts were developed which involved the search for base metals and copper-nickel-platinoids. Historical exploration in the region had focused on the potential for diamonds and base metals, but was limited due to poorly developed drainage and widespread alluvial and aeolian cover.

No exploration has been carried out by Crossland on the subject licence for the period since granting in April 2011.
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1 Introduction

1.1 Background

The Lake Woods Project area was initially selected as a conceptual target area using confidential technology supplied by Paradigm Geoscience (later renamed Global Geoscience Limited). The aim of the technology is to identify targets for mineral exploration with the same signatures as major mineral deposits. The method offers a means to identify prospective settings for mineral resources without the need to acquire title to broader areas, with the resultant demanding access and land use challenges. Because of the restricted areas selected, more intensive exploration than would be normal in greenfields exploration can be focussed on the limited area by even junior mineral explorers such as the holders.

1.2 The Target Area

No known mineralised occurrences are present within the tenement. Historically, the regional emphasis has been directed towards exploration for base metals and diamonds but this has been hampered by poorly developed drainage systems combined with widespread colluvial cover. The Renner Group was apparently correlated with sediments in the McArthur Basin, which host the McArthur River base metal deposits; however more recent mapping has shown that the correlated units belong to the older Tomkinson Creek Group, which is in unconformable contact with the Renner Group. Favourable rocks in the former contain uneconomic occurrences of Pb-Zn-Cu sulphides. The Bootu Creek Manganese deposits to the south of the project area occur in theBootu Formation, which is included within the Tomkinson Creek Group.

The most recent interpretation of the geological setting of the Target Area suggests that deposit types likely to occur in this geological environment include base metals in the Palaeozoic sediments, copper-nickel in intrusive complexes, stratabound manganese similar to the Bootu Creek deposits, and diamonds within sub-cropping intrusive pipes. Sedimentary phosphate deposits are also a possibility in this type of environment.

2 Location and General Description

The Lake Woods project is located 700 km south of Darwin and 200 km north of Tennant Creek. The project area was originally centred on the Ashburton Range, which runs north-south along the eastern margin of Lake Woods, a large seasonal lake. The Stuart Highway passes through the centre of the area and the recently completed North Australian Railway is located 40 km to the west. The small town of Elliot lies immediately to the north and Renner Springs is located 40 km to the south.

The western section of the tenement is dominated by sandstone ridges of the Ashburton Range, which slope off to the west towards Lake Woods. East of the Highway is the beginning of the extensive plains of the Barkly Tableland, where the country is mostly treeless but covered with low, thick scrub. Access into the area is good with a combination of station tracks and disused stretches of the old Highway. Elsewhere the country is fairly open and flat between the sandstone ridges.
The tenement lies on Powell Creek Station.

Figure 1 Location and Setting of EL 28198
3 Tenure Details

Substitution Exploration Licence (SEL) 28198 was granted on 20 April 2011 for a period of four (4) years. It consisted of 317 sub-blocks totalling 1034.92 km². The licence was surrendered by Crossland on 10 April 2013.

4 Geology

The subject licence lies within the southwest and northwest corners of the NTGS 1:250,000 Beetaloo and Helen Springs sheets respectively. Geologically it is within the Ashburton Province (1400-1700 Ma), which consists of a sequence of unmetamorphosed and weakly deformed, predominantly shallow marine sediments. The Ashburton Province overlies the Warramunga Province, which is deformed by the Tennant Orogeny (1850 Ma) and intruded by granites of the same age. The Ashburton Province is in turn, overlain by Palaeozoic sediments of the Georgina and Wiso basins to the east and west respectively. Based on the magnetic patterns, both the Wiso and Georgina Basins are probably represented in the project area.

The oldest rocks that outcrop in the tenement are the Middle Proterozoic evaporitic sandstones and conglomerates of the Renner Group, which form the ridges of the Ashburton Range. The sequence is intruded by a sill consisting of alkali syenite/gabbro (1295+/-14 Ma). The sill has been shown to be more widespread than past mapping suggests as it tends to be susceptible to weathering and is therefore recessive.

The Renner Group is designated as Mesoproterozoic in age and unconformably overlies the Namerinni and Tomkinson Creek Groups south of the tenement area near Renner Springs. It is divided into five formations, namely the Gleeson, Baralandji, Powell, Wierny and Jangirulu. Conformably overlying the Jangirulu Formation are the Lake Woods Beds. Within the latter, recent mapping by J Seeley (2008) has identified several cycles of deposition, in which similar lithologies are repeated three or four times from east to west over a distance of 20 km. This conformable bedded sequence comprises quartz arenite, hematitic quartz arenite, arkosic sandstone, dolomitic siltstones and grey shales.

The main regional structure is represented by the north-south trending Ashburton Range, an asymmetrical anticline with a small warp on the western limb. The anticlinal axis is located immediately east of the Stuart Highway and has a gentle NNW plunge. The conformable bedding sequence trends 340° for the most part with dips of 50°- 60° immediately west of the anticlinal axis. Bedding dips decrease to 10°-20° in the most westerly exposures of arenaceous rocks. Progressing southwards, the stratigraphic sequence undergoes flexure as the strike of the bedding swings from 340° to 020°. Faulting is generally parallel to bedding.

More detail on the stratigraphy as mapped by Crossland Geologists is contained in previous statutory reports. Geological maps are also contained within those documents.
5 Previous Exploration

5.1 Other Companies
Exploration for base metals was undertaken by Aberlour in 1971-1972 and by Lone Pine Gold / NT Gold Mining / Rosequartz Mining during 1988-1990. The latter group undertook geological mapping and limited geochemical sampling but failed to identify any base metal anomalism. Their activities were limited to the Ashburton Range where outcrop is good.

Ashton Mining Ltd explored the area for diamonds between 1983 and 1991. They collected 75 gravel and 30 loam samples at a nominal density of one sample every 1-2 km along the drainages. Five of the Ashton samples contained single microdiamonds. Two of the microdiamonds were described as clear, colourless stones while the remainder comprised small irregular cubes of pink-brown and grey colour. While Ashton considered the high concentration of diamonds in this area as interesting they decided to focus on other areas in the Northern Territory and relinquished the licences. Aberfoyle Exploration P/L were in JV with Ashton for some of this period.

In the early 1990's Conzinc RioTinto Australia Exploration (CRAE ) conducted a large regional diamond exploration programme. The eastern half of the Lake Woods project area was included. CRAE flew a detailed magnetic-radiometric survey in 1992 at a flight line spacing of 300 m and a terrain clearance of 60 m. No follow-up was undertaken within the present project area.

In 1999 the NTGS flew the South Lake Woods Magnetics-Radiometrics Survey at a line spacing of 400 m and a terrain clearance of 60 m. This survey covered the existing project area and when combined with the earlier CRAE survey, full coverage was achieved.

5.2 Crossland
Crossland is the only other company in recent times to conduct mineral exploration in the region. The company conducted research and on-ground exploration activities between 2004 and 2010. The activities included desk-top literature searches and re-interpretation of airborne geophysical data. Fieldwork over that period included initial geological reconnaissance, stream and rock chip sampling for geochemical analysis, stream sampling for diamonds, TEMPEST airborne geophysics, Aircore drilling, more detailed geological mapping including stratigraphic interpretation and diamond drilling. The latter drilling activity was part funded by the NT government under the ‘Collaborations Scheme’. The drilling was instigated to provide core for a specialised study of the so-called dolerite intrusive and included both petrographic work and age dating.

6 Reporting Period

Due to economic factors Crossland was forced to re-evaluate its position on the Lake Woods Project and elected to forgo any exploration within the Year 2 (2012-2013) reporting period. During the year the company attempted to locate a Joint Venture partner to assist in exploration on the Lake Woods licences and other projects belonging to Crossland. Crossland believes that there is potential for diamond-bearing occurrences in the immediate region, and as a result the company is retaining a reduced area in the current adjacent licence.

For the 2 year period from granting to surrender, no exploration activities were carried out within the property for the reasons stated above.
7 Conclusions and Recommendations

The geology and economic potential of the package of licences held by Crossland since 2004 has been studied in some detail. The most encouraging discovery, although not in the subject tenement, is of the unusual suite of microdiamonds by both Crossland and the Ashton JV. Also of interest was the reinterpretation of the regional magnetic terrane by Crossland’s consultant; this led to a diamond drilling programme aimed at defining the nature of geophysical anomalies and a regionally extensive intrusive body. That programme was assisted by the NT government through the Collaborations scheme.

Further work on tracking down the possible sources of microdiamonds is justified and Crossland has intentions to carry out further groundwork. There is potential for the presence of Cambrian phosphate deposits in younger sediments on both the western and eastern sides of the Ashburton Ranges. The presence of phosphatic rocks of probable economic interest in both the Wiso and Georgina basins has been established.
9 References


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