EL 8143

FINAL REPORT

Ranford/Katherine 1:100,000 Map Sheet

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TABLE OF CONTENTS

1.0 SUMMARY 3

2.0 LOCATION AND TENURE 4

3.0 GEOLOGY 4
   3.1 Regional Geology 4
   3.2 Local Geology 4

4.0 EXPLORATION COMPLETED 5

5.0 EXPENDITURE 6

6.0 REFERENCES 6

LIST OF FIGURES

Figure 1 Tenement Location Plan
1.0 SUMMARY

EL 8143 is located approximately 250 kilometres south-east of Darwin on the Katherine and Ranford Hill 1:100,000 map sheets. The area consists of Lower Proterozoic sediments of the Burrell Creek, Tollis and Kombolgie Formations of the Pine Creek Geosyncline.

Exploration over the area consisted of stream sediment sampling, geological mapping, soil and rock sampling, and LAG sampling (Fawcett, 1995).

The tenement was granted to Dominion Gold Operations Pty. Ltd. in September 1993 and was acquired in May 1995 by Territory Goldfields N.L., which is now managed by Northern Gold N.L. Barnjarn Mining Company holds a 10% interest through a Joint Venture. Substitute Exploration Licence 9212 was granted over the area on the 9th of February 1996, for a period of 4 years.

Expenditure for the final year to 9th February 1996 was $1000.
2.0 LOCATION AND TENURE

EL 8143 is located approximately 250 kilometres south-east of Darwin and 50 kilometres east south-east of Pine Creek. Access is via the Stuart Highway or Kakadu Highway and then via maintained pastoral tracks (Figure 1).

The licence covers 44 graticular blocks, over 135 square kilometres, on the Ranford, Seventeen Mile and Edith River 1:50,000 sheets and the Katherine and Ranford Hill 1:100,000 map sheets. EL 8143 lies between latitudes 13°53' south and 14°05' south and longitudes 132°13' east and 132°20' east.

The licence was granted to Dominion Gold Operations Pty. Ltd. on the 8 September 1993 for a period of six years. Territory Goldfields N.L., which is now managed by Northern Gold N.L., acquired the tenement in May 1995. The Barnjarn Mining Company holds a 10% interest through a Joint Venture.

SEL 9212 was granted over the area on the 9th of February 1996, for a period of four years.

3.0 GEOLOGY

3.1 Regional Geology

EL 8143 is situated within the Pine Creek Geosyncline, a tightly to isoclinally folded sequence of mainly pelitic and psammitic Lower Proterozoic sediments with interlayered tuff units. All the lithologies in the area have been metamorphosed to low, and in places, medium grade, metamorphic assemblages. For the purpose of this report, the prefix meta- is implied, but omitted from the rock names and descriptions.

The sequence has been intruded by pre-orogenic dolerite sills of the Zamu Dolerite and a large number of late syn-orogenic to post-orogenic Proterozoic granitoids. Largely undeformed Middle and Late Proterozoic, Palaeozoic and Mesozoic strata, as well as Cainozoic sediments and laterites, overly the Pine Creek Geosyncline lithologies.

3.2 Local Geology

The geology of the tenement area comprises rocks of the Burrell Creek Formation, the Tollis Formation, the Wolfram Hill Granite and the Kombolgie Formation.

The Burrell Creek Formation is dominated by greywacke and siltstone/shale and outcrops extensively throughout the area on lightly timbered rubble strewn rises and low strike ridges. Within the hornfelsed aureole adjacent to the granitoids it forms prominent ridges and ranges up to 200 metres high. Most of the rocks
within the unit are well cleaved and tightly folded about north to north-west subhorizontal fold axes.

The Tollis Formation is separated from the underlying Burrell Creek Formation by a structural and metamorphic discontinuity and is interpreted as an unconformity (Stuart-Smith, 1993). Markedly different fold styles (refolded isoclinal folding in the older rocks and simple upright folding in the Tollis Formation) differentiate the lithologies in the field.

The Wolfram Hill Granite is an extensively altered leucogranite, containing quartz veins, with fluorite, carbonate and muscovite - quartz greisen zones. The granite is associated with Sn, W, Cu and Monazite occurrences. Rugged ridges of hornfels rise above the level of the granite and topographically define its margin.

The Kombolgie Formation sandstone lies unconformably over the early Proterozoic sediments and the Cullen Batholith and forms a discontinuous line of rocky hills and tablelands. The Kombolgie Formation is in many areas unconformably overlain by flat lying Mesozoic sediments and a thin layer of Cainozoic sand and laterite.

4.0 EXPLORATION COMPLETED
A comprehensive data review of previous exploration was completed over EL 8143. Open file NTDME data showed that detailed stream sediment sampling along with some geological mapping and soil sampling has been completed in the area. The most extensive programs have been carried out by Billiton (Aust.) and Zapopan N.L.

A program of reconnaissance rock chip sampling in areas of anomalous stream sediment results and old tin workings was completed.

A high of 52 ppb Au was recorded from anomalous stream sediment catchments. Samples consisted of hematitic quartz and altered sediments.

In the old tin mine area samples consisted of vein and shear related lode quartz in strongly hematised sediments. The best result from this area recorded 1.19 g/t Au, 2.54% Pb, 5,600 ppm Zn, 1,080 ppm Ag and 250 ppm Bi.

During the 1994/95 year of tenure, a programme of LAG sampling was conducted resulting in the collection of 14 samples. These were collected as part of a larger programme of LAG sampling over the Wandie project area.

Samples were submitted to Amdel, Dawn for analysis of Au, Cu, Pb, Zn, Ag, As, Mn, Fe and Bi (Fawcett, 1995). Results were generally weak.
5.0 EXPENDITURE
The following is a breakdown of the costs incurred in the final year to the 9th February 1996 for EL 8143:-

Report Compilation
Data Review
Tenement Management

TOTAL $1000

6.0 REFERENCES
