CONTENTS

1. INTRODUCTION
2. LOCATION AND LEASING
3. HISTORY
4. GEOLOGY
5. EXPLORATION PROGRAMME
   • Alluvials
     • Results
     • Conclusions
   • Pegmatites

Figures

Figure 1. Tenement Location
Figure 2. Tenement Location/Geology
Figure 3. Drill Line Cross Sections
Figure 1. EL 6805, Tenement Location. 1:50,000
1. **INTRODUCTION**

This report describes the results of exploration undertaken within Exploration Licence 6805 during the period 1st July 1993 to 30th June 1994. The report is submitted to the Northern Territory Department of Minerals and Energy, and is the Annual Report for the previous licence year.

EL 6805 is one of several tenements held by Corporate Developments Pty Ltd covering Sn/Ta/Nb pegmatite mineralisation in the Leviathan Creek - Mount Finniss area and forms part of that company's tin and tantalum exploration and development project.

2. **LOCATION AND LEASING**

EL 6805 is located on Leviathan Creek, some 20 km north northwest of Mount Finniss, and approximately 40 km south of Darwin. The Licence was granted on the 1st June 1990 for a period of 6 years. The Licence was reduced from 4 to 2 blocks on the 25th May 1994.

3. **HISTORY**

The major prospect in the tenement is the Leviathan Mine which was discovered in 1886 and worked sporadically until its final abandonment in 1909. Greenbushes Ltd, under the Bynoe Joint Venture, explored this mine and several other rediscovered prospects for their soft pegmatite potential in the period 1987 - 1989 with various results. The BJV also examined the potential of the alluvials in the Leviathan Creek downstream from the Leviathan pegmatite.

Corporate Developments Pty Ltd re-examined the potential of the alluvials and several of the pegmatites in 1992.

4. **GEOLOGY**

Some 12 pegmatites have been identified and explored to various extent within the licence. They are located, in the main, on the eastern side of Leviathan Creek, varying in outcrop size from +100 metres to 5 metres. They occur commonly as vein- or dyke-like intrusions in Burrell Creek Formation, lenticular in surface outcrop and sometimes having pronounced pinch and swell characteristics. Normally, the veins are steeply dipping with sharp contacts. The pegmatites are all weathered to some extent, the quantity of associated eluvium dependent on the vein morphology.

Erosion and degradation associated with the Leviathan Creek system has exposed the pegmatites, and the inference was drawn that the Sn/Ta mineralisation would have eroded into the Leviathan fluvial system.
Figure 2. EL 6805, Tenement Location - Geology. 1:100,000
5. EXPLORATION PROGRAMME

Work on EL 6805 was directed towards:

(a) Testing the alluvials in and around Leviathan Creek.
(b) Continuing the evaluation of the pegmatites and delineating the associated eluvials.

(a) Alluvials

A Gemco Auger Drill was purchased, and eleven lines chosen for ease of access and manoeuvre at Upper, Western and East Leviathan Creek. These areas were considered representative of the prospect as a whole, and the western terrace area had given encouraging results from shallow pits in 1992.

Results

Lines 1 and 2 were drilled adjacent to and downstream from Trojan and Burnetts Find Pegmatites. Only yellow silt and clay was present, and was poorly developed.

Lines 3,4,5,6, and 7 were sited along the western bank of Leviathan Creek to the north of Pandanus Pegmatite, testing both the modern stream channel and old terrace gravels. The modern stream, as at Lines 1 and 2, was devoid of wash, and downgrades the potential of the modern channel.

The old terrace returned interesting grades and depths, and warrants bulk sampling at a later date.

Line 8 was sited in a tributary gully near a new pegmatite located to the north of the Leviathan North Pegmatite, and tested the east terrace and main channel. Only silt and clay with nil values were encountered, other than residual gravel on the bank of Leviathan Creek in Hole 4.

Line 9 tested a small tributary gully draining Old Bucks - Leviathan North Pegmatites. A pegmatite with low values was struck in Hole 4.

Line 10 was drilled 20 m north of Melissas Pegmatite into a well developed terrace of rounded pebbles and angular quartz cobbles. Hole 1 contained low values.

Line 11 was drilled on a gently sloping terrace 150 m north of Melissas Pegmatite. All holes encountered low values.

Conclusions

The drilling downgraded the modern channel of Leviathan Creek, but confirmed a substantial volume of terrace gravels of low grade, but with favourable characteristics of nil overburden, absence of boulders, and low-medium clay content.
The conundrum of gravel paucity in the north-south drainage systems of the Bynoe Harbour region has yet to be explained. That gravels were developed is evidenced by those in the terraces which are lateritised to varying degrees. However, the observation is that all the gravels in the most recent stream channels have been stripped, the perceived reason at this stage being a rapid lowering of sea level accompanied by, or closely associated with, a high rainfall regime during the early Quaternary.

(b) **Pegmatites**

Work on the pegmatites within the licence has been part of the overall pegmatite re-evaluation programme on all the tenements. This programme has involved the collection and collation of all prospecting and exploration information, particularly the programmes of the BJV. This work is on-going.
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The Director: Geology

Dear Maria En. 6805,

As requested below are the locations of auger drill holes as determined by GPS. Average error was 54 m. Also enclosed is a map showing approximate locations.

Legends

John Lorenzo

LINE 1 Lat 12° 48'.291
Long 13° 41'.964

2 12° 48'.236°
13° 41'.923

3 12° 48'.164
13° 42'.911

4 12° 48'.000
13° 42'.886

5 12° 47'.892
13° 42'.885

6 12° 47'.780
13° 42'.883

8 12° 46'.082
13° 41'.613

9 12° 46'.176
13° 41'.680

10 12° 46'.936
13° 42'.614

11 12° 47'.334
13° 42'.742