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BYNOE JOINT VENTURE

ANNUAL AND RELINQUISHMENT REPORT

EL 3491

COX PENINSULA, N.T.

Distribution:

Mines Department Darwin
Perth Office
Darwin Office

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August 1988

CR88/232
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1. INTRODUCTION

This report is submitted to the Northern Territory Department of Mines and Energy and details exploration carried out by Greenex and behalf of Barbara Mining Corporation and Greenbushes Ltd on EL 3491 during the period August 1987 - August 1988. It comprises an annual report for the previous licence year (Section 34) and a report on the licence area which has been relinquished (Section 32). Exploration Licence 3491 is on Cox Peninsula south-west of Darwin (Figure 1). This licence is one of a number held in the region by the Bynoe Joint Venture. These licences are actively being explored for tin/tantalum mineralised pegmatite and alluvial deposits.

2. LOCATION AND LEASING

EL 3491 is located on the Finniess River Station road approximately 30 kms SSW of Darwin. The licence originally covered an area of 145 sq km and 46 graticular blocks was granted on the 2nd August 1984. On the 2nd August 1988 the licence area was reduced to 5 graticular blocks.

3. TOPOGRAPHY

Gently undulating country makes up the area of EL 3491, and is comprised regionally of low laterite capped peneplains separated by broad mature drainages. Between the drainages and peneplains are gradual slopes.

4. HISTORY

Tin mining commenced in the field in 1886. However, there seems to be no known record of any mining activity within EL 3491. Workings in the area around the exploration licence include the Ah Hoy and Ah Bung Mines, Lost Chinaman, Old Bucks, Leviathan and Annie.
5. PREVIOUS EXPLORATION

5.1 1984/85 Work

5.1.1 Pegmatite Evaluations

As EL 3491 was a new licence much of the first years activities have been confined to prospect reconnaissance. During 1984 a field crew headed by Greenbushes Tin Mine Geologist Geoff Clynick discovered and mapped, Jan's pegmatite, Lianas pegmatite and Sue's pegmatite. Three trenches were cut through these deposits and sampling was carried out.

From the one sample taken from a 20 m trench across Jan's pegmatite uneconomic grades were returned. This was a little unexpected due to the presence of coarse cassiterite-tantalite mineralisation on the dumps. Additional trenching was planned, but was of a low priority due to the small size of the prospect.

Sampling of a 20 m trench across Lianas prospect produced encouraging results. Follow up work was planned but the pegmatite was narrow (4 m) so again this work has been of low priority.

The 26 m trench across Sue's Pegmatite, exposed a 5 m wide pegmatite with a probable strikelengh of 110 m. A sample from this pegmatite produced uneconomic results, and because of the narrow vein present the prospect was considered to have limited reserve potential.

5.1.2 Exploration of Quartz Ridges Identified from Airphotos

In 1985 Project Geologist William Clayton carried out extensive prospecting in the region north of Annie River and south of the Charlotte River. A number of quartz ridges were prospected, and trenching was required to determine the potential of these zones.

Quartz veins in the south west of EL 3491 and near Sue's Mine were also visited, with no success.
5.2 1985/86 Work

5.2.1 Pegmatite Evaluation

The 1985/86 programme in EL 3491 identified three additional areas of tin/tantalum mineralisation, namely: Ah Hoy South, Rocky Ridge and Charlotte Prospect. An approach comprising aerial photograph evaluation and exhaustive ground reconnaissance was utilised in their location. Ah Hoy South was mapped; Rocky Ridge was mapped, trenched, channel sampled and partly drilled; and Charlotte Prospect was at that point given the status of a located prospect.

A total of 141.6 m of trenching on Rocky Ridge Pegmatite resulted in the exposure of 34.9 m of pegmatite, including a width of 25 m on a quartz scree covered ridge west of the old workings. Although tin grades were poor, tantalum grades were generally good from this prospect.

One 85 m trench through the northern most exposure of Ah Hoy South Pegmatite produced disappointing results. However, the potential for additional mineralised pegmatite was considered encouraging.

Charlotte prospect is located on the northern boundary of EL 3491. Tin/tantalum mineralisation was noted.

5.2.2 Quartz Ridge Evaluation

Evaluation of the eastern portion of EL 3491 was disappointing with many quartz veins located, but no signs of significant pegmatite swarms observed.

Other areas were identified for follow-up exploration effort.

5.3 1986/87 Work

5.3.1 Pegmatite Evaluation

The 1986/87 programme in EL 3491 involved further evaluation of Rock Ridge Pegmatite, and the exploration of Ah Bung Pegmatite.
A total of 190 m of trenching and 134.5 m of auger drilling of Ah Bung Pegmatite, identified two narrow veins. Sampling produced encouraging results but the pegmatite volume was found to be insubstantial.

A total of 142 m of trenching and 166.5 m of auger drilling on Rocky Ridge Pegmatite, identified an irregular vein/sill pegmatite. Tin mineralisation was found to be poor, while moderate levels of tantalite mineralisation were identified enabling an ore reserve estimate.

5.3.2 Quartz Ridge Evaluation

A 50 m trench dug in quartz-rich eluvium on a broad ridge west of Ah Bung failed to locate either pegmatite or quartz veining.

6. 1987/88 EXPLORATION PROGRAMME

The 1987/88 Exploration Programme in EL 3491 involved the evaluation of alluvial reserves of a tributary of the Charlotte River in the north of EL 3491. In addition, vehicular traverses were undertaken in the south of the exploration licence and a number of potential areas of pegmatite examined; these areas were identified on the basis of buck quartz scree.

Resulting from this work alluvial trenches exposed some significant alluvial concentrations of tin/tantalum in the area south of Ah Hoy Pegmatite in an alluvial channel named Ah Hoy Drainage. All quartz outcrops and areas of quartz scree examined during 1987/88 in this exploration licence contained no indicator minerals that would be suggestive of the presence of subsurface pegmatite.

6.1 Ah Hoy Drainage

Location and Topography:

Ah Hoy drainage is located south of the Charlotte River with its provenance in the country south of Ah Hoy and Ah Bung pegmatites. Trenching commenced upstream of the confluence of this drainage with the Charlotte River in an area where there was obvious terracing and evidence of
stream rejuvenation. A well defined channel dissects the alluvial flats and the area was previously untested. A total of three trenches were cut and 31 samples collected for assay (Figure 2 and 3). Subsequent assaying of the concentrated samples gave an indication of tantalum rich alluvial mineralisation with subeconomic levels of cassiterite.

Follow-up work is planned for 1988/89.

7. ESTIMATED EXPENDITURE 1987/88

The Bynoe Joint Venture has spent in excess of $4.5 million on its tenements on Cox Peninsula since 1984. In the past 12 months expenditure has been greater than A$400,000.

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MOBILE FLEET  
Toyota - repairs & maintenance  
tyres, hire vehicles  1,500  

PC400 Excavator - repairs and maintenance  5,000  

International 530 FEL  
Clear lines, construct roads  1,000  

Fuel Oil and Tyres (FEL)  200  

CAMP CANTEN  
Facilities  2,000  

Food and Accommodation  500  

Power and Water  1,500  

WORKSHOP  
General  
tools, equipment, rages, greases  500  

LABORATORY  
Sample Prep.  400  
Transport  200  
Sample Analysis  400  
Sundries  100
ADMINISTRATION
Accommodation  500
Communication  100
Travel and Food  1,500
Insurance  250
Tech Materials  100
Tenement Admin and Charges  400
Office Overheads

EXPLORATION
Gridding  300
General (Salaries and Wages)  4,000
Cone Prep.  1,500
Drafting and Reports  1,000
Excavator Trenching  3,100

ESTIMATED EXPENDITURE $ 26,050

8. EXPLORATION PROGRAMME 1988/89

The 1988/89 Exploration programme for EL 3491 will involve additional follow-up excavator trenching to further evaluate its alluvial potential. Exploration for additional pegmatites will continue with trenching and auger drilling undertaken where appropriate.