



Annual Report and Final Tenement Surrender Report

**for EL31/2011 Great Musselroe River
for the Period 5 December 2014 to 4 December 2015**

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Date: December 2015

ABSTRACT

This report describes the exploration activities completed within EL31/2011 during the period 5 December 2014 to 2 December 2015. This is the third annual report for the third year of grant of the Tenement.

The Tenement is located generally north, east, and south of Gladstone, a small mining town located 140 km east of Launceston.

The Tenement covers a number of past producer alluvial tin mines and many known alluvial tin deposits, but there are very few known basement tin deposits.

There has been a long history of investigations since 1874. Large scale mining for tin ceased in 1982. Past production of cassiterite is about 3,100 tonnes, and unmined resources, calculated by various authors, total about 1,400 tonnes.

The company's main focus is exploration for tin, in alluvial deposits and in bedrock. Prior to Tin Dragon's activities there has been no past exploration for bedrock tin mineralisation.

The area is characterized by relatively poor outcrop. Much of the basement rocks are covered with various types of unconsolidated sediments, from Eocene to Recent in age, most of which are tin bearing.

In the district the original sources of the tin were phases of the Devonian tin-bearing granites of the Blue Tier Batholith. Tin occurs as cassiterite in quartz and greisen vein systems in the roof zone of the granites near the contact with overlying Silurian Mathinna Beds.

Exploration work during the reporting period comprised;

- Assembling of data for the assessment of potential basement mineralisation in the Garfield-Amber Hill Area
- Assessing very historical maps and reports for evidence of any remaining alluvial resources in the Eastern Leads and Dorset Dredge areas
- Prospecting for basement mineralisation where alluvials seem to surrounding a blind circular Mathinna Beds-granite contact.
- Seeking for evidence of source areas to the extensive Musselroe River system.

Alluvial tin occurs in the Musselroe River system for an extraordinary strike length exceeding 14 km. It no seems highly unlikely that a single source area to the south has supplied the cassiterite, and so it is very likely that source bedrock mineralisation occurs with multiple

centres all along this strike. There is a vast area prospective for basement mineralisation, which is presently totally unexplored.

In the Dorset Flats area the data review gave no clues about the presence or absence of basement mineralisation, although rehabilitation may have successfully covered basement indications?. There appear to be no remaining resources immediately adjacent to the former dredged areas, although the granite contact to the east may be prospective. The Eastern Leads are identified as an area warranted further data review, but failed to turn up any encouragement for new resources.

The general area Amber Hill to Garfield had been interpreted as having significant potential for outcropping basement mineralisation. A further data review to generate targets was undertaken but failed to produce encouraging results.

KEYWORDS

NE Tasmania
Geology
Mineralisation
Alluvial
Paleochannel
Leads
Primary Deposits
Granite
Mathinna Group
Tin

SUMMARY OF ACTIVITIES for EL31/2011 Great Musselroe River for the Period 5 December 2014 to 2 December 2015

Exploration work included a continuing compilation of datasets of past exploration and mining, and a review of the data to target potential new alluvial resources, and areas prospective for basement tin mineralisation. This was concentrated on the Musselroe River system and the Dorset Flats area.

CO-ORDINATES

All lat/long co-ordinates in this report refer to the GDA94 Datum, unless stated otherwise. All AMG co-ordinates in this report refer to the GDA94 - Zone55, unless stated otherwise.

FILE SUMMARY LIST

File name	Format	Contents
\\el312011_2015_01_report.pdf	pdf	Annual and Final Surrender Report

EL312011_2014_01_report.pdf	pdf	Annual Report
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1.0 INTRODUCTION

This report describes the exploration activities completed within EL31/2011 (The ‘Tenement’) during the period 5 December 2014 to 2 December 2015. This is the fourth and final annual report, for the fourth year of grant of the Tenement.

For convenience the project is named “Musselroe Project”.

The Tenement is located generally north, east, and south of Gladstone, which is a small mining town located 140 km east of Launceston, in north-east Tasmania.

Table 1 – Tenement Details

Tenement	Holder	Date Applied	Date Granted	Size
EL31/2011 Great Musselroe River	Tin Dragon Pty Ltd 100%	20 May 2011	5 December 2011 (Categories 1 and 5)	138sq km

The tenement was reduced in size during the year. The initial tenement is shown on Fig 1.

There are small Mining Leases for category 1 minerals which are excluded from the tenement in the Riverside and Dorset Flats areas. The bulk of land within the tenement is logged state forest, timber plantation and timber reserves. Some private farming land is concentrated in the northern-most parts of the Tenement.

The project lies within the Tasmania NE (SK55-21) 1:250,000 map sheet, and the 1:25,000 map sheets of Gladstone, Lanka, Spurrs Rivulet, Derby and Pioneer. Access is via a sealed major road between Gladstone and Pioneer. Formed local roads and logging tracks and other rough tracks provide access within the project area.

The tenement covers a number of past producer alluvial tin mines and many known alluvial tin deposits, but there are very few known basement tin deposits. Past production of cassiterite is about 3,100 tonnes, and unmined resources calculated by various authors total about 1,400 tonnes.

The company's main focus is exploration for tin, in alluvial deposits and in bedrock.

As stated in the 2012,2013 and 2014 Annual Reports the potential for primary tin resources in the Tenement has not been addressed by previous owners of the deposits and leases. There is a natural tendency for alluvial miners to seek alluvials and not bedrock tin sources- and vice versa for hard rock explorers.

Basement rocks in local areas are almost completely unexplored for any style of deposit. The area has very high potential for discovery of basement deposits.

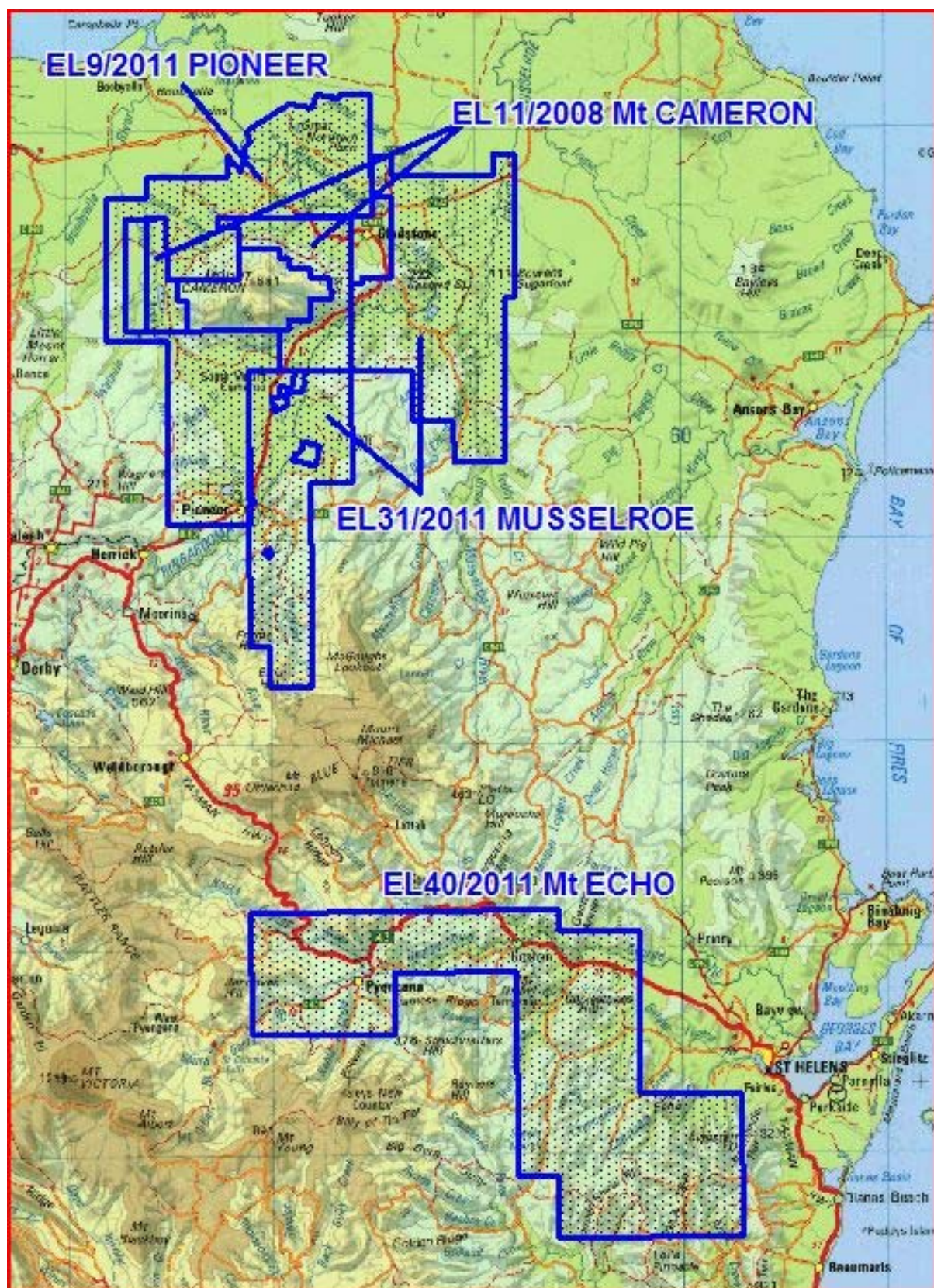


Fig 1

2.0 GEOLOGICAL SETTING and MINERALISATION

The area is characterized by relatively poor outcrop. Much of the basement rocks are covered with various types of unconsolidated sediments, most of which are tin bearing.

Nearly all known metallic deposits in the Tenement are alluvial tin (with accessory gold, monazite, sapphires) hosted in paleochannels (leads). Some tin deposits in basement rocks occur around Gladstone, but this area is outside the Tenement. Given the widespread alluvial occurrences, the lack of known tin mineralisation in basement is striking.

In the district the original sources of the tin were phases of the Devonian tin-bearing granites of the Blue Tier Batholith. Tin occurs as cassiterite in quartz and greisen vein systems in the roof zone of the granites near the contact with overlying Silurian Mathinna Beds.

The distribution of known mineralisation is outlined in Fig 2.

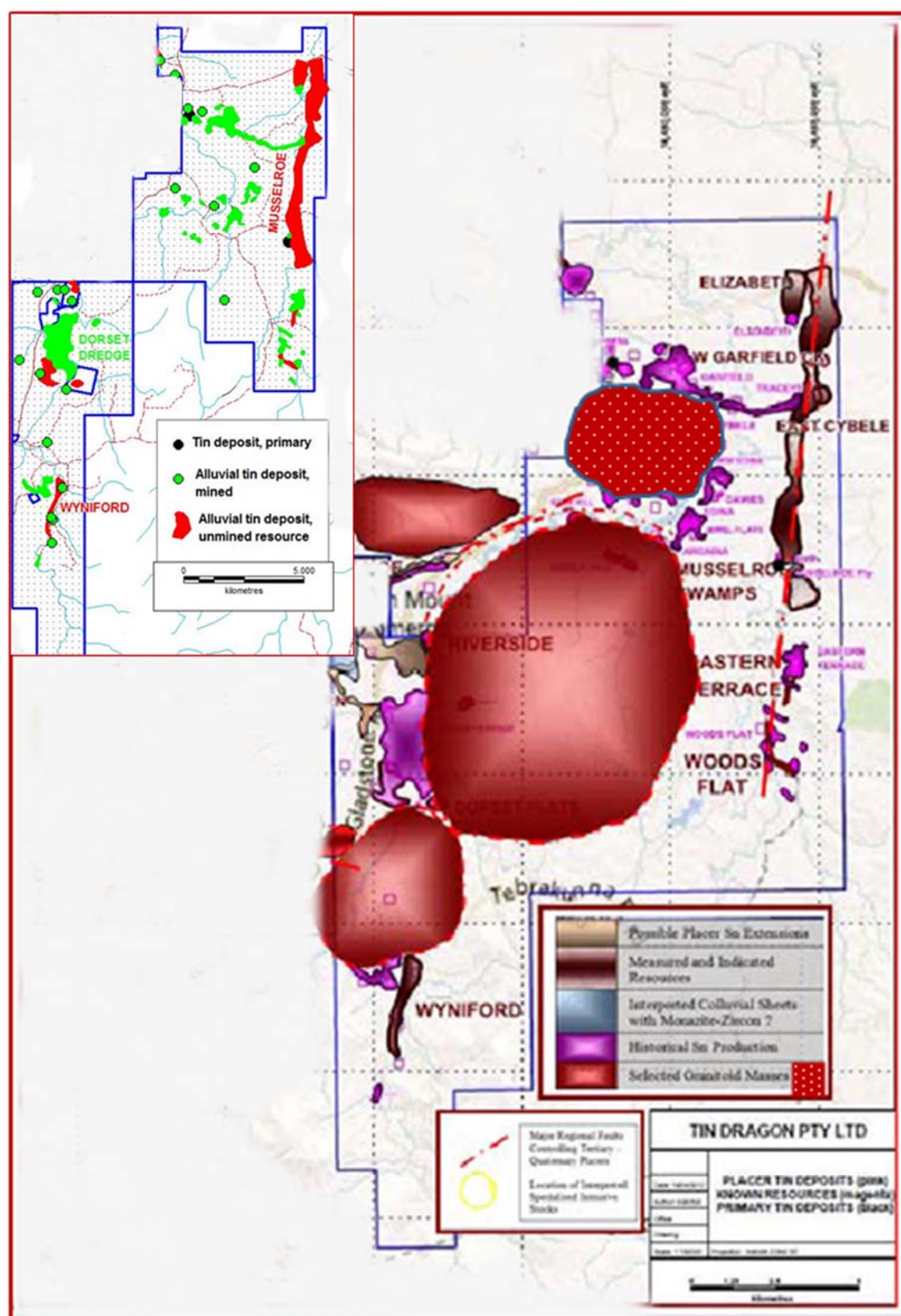


Fig 2

3.0 REVIEW OF PREVIOUS WORK

Exploration work by Tin Dragon during the previous periods included:

In the 2012 annual report; a compilation of earlier company exploration, mining activities, and government surveys. This data was reviewed to determine the distribution and nature of known mineral deposits, to compile past production and estimates of remaining known resources, and to assess the prospectively of the areas for untested or undiscovered alluvial tin and basement tin mineralisation. No field work was undertaken.

In the 2013 annual report; a continuing reviews of previously compiled datasets to help target basement tin mineralisation. This was concentrated on

- Stream sediment geochemical data
- Geophysical datasets such as aeromagnetics, and gravity surveys.

This data was then reviewed to aid targeting for undiscovered basement tin mineralisation.

Visits were made to local people, to the History Room at St Helens, and to the Queen Victoria Museum in Launceston, so as to garner useful information.

Reconnaissance field inspections of several areas were done to check access, the nature of the alluvial deposits, and search for basement alteration and mineralisation.

In the 2014 annual report consisted of further investigations of the Musselroe River area and the Dorset Flats area mined by the Dorset Dredge. This was done to evaluate any unmined alluvial deposits and to generate clues about the location of the (assumed) nearby basement sources of the cassiterite.

No field visits were carried out.

Details of these activities follow.

Continuing efforts to attract a joint venture partner or buyer for the project have been again thwarted by the general industry downturn, which has worsened during the year.

Exploration work during the 2014-2015 reporting period comprised;

- Assembling of data for the assessment of potential basement mineralisation in the Garfield-Amber Hill Area
- Assessing very historical maps and reports for evidence of any remaining alluvial resources in the Eastern Leads and Dorset Dredge areas
- Prospecting for basement mineralisation where alluvials seem to surrounding a blind circular Mathinna Beds-granite contact.
- Seeking for evidence of source areas to the extensive Musselroe River system.

4.0 EXPLORATION COMPLETED DURING THE REPORT PERIOD

Work areas covered in the current and previous years included the following and results can be found in each of the Annual Reports;

5.0 MUSSELROE RIVER AREA

Introduction

A search was made of the MRT plan catalogue. .

The location of all drilling was obtained from available company reports and digitised into Mapinfo, and bottom wash grades were plotted to determine the distribution of alluvial resources. The distribution of drilling is shown on Figs 3 and 4.

The main open file reports covering the area are

Utah 65_0409. Covers drilling in the Garfield Creek to Cybele Creek area, west of the Musselroe River, and Anson's Bay Road area.

Utah 66_0430. Covers drilling in the northern Musselroe Swamp, and Anson's Bay Road area.

Utah 68_0532. Covers drilling in the Woods Flat and Eastern Terrace areas.

BMI 72_0843. Covers drilling in the southern Musselroe Swamp.

Geology

The geological history of alluvial deposits in this area is complex and the limited exploration done here has given only some clues to unravel it.

Wood's Flat

History and production [66-0430]. The first recorded mining activity was by M.H. Groves and F.D. Richardson, who held the ground in 1946. In 1959 Wood and Bartels acquired the property and from 1960 operations continued under the sole ownership of V. Wood, the lessee in 1963-4 at the time Utah took out an option to purchase. A calculation based on pit surveys carried out by Utah showed that to February 1964 Mr Wood worked 255,000m³ of material with an average recovered grade of 330g/m³. This production figure differs from the official MRT records, which Utah believed to be incorrect. Production from that time, as documented in Director of Mines Annual Reports, is:

To December 1964, 50,800m³ at a recovered cassiterite grade of 480 g/m³; to December 1965, 24,400m³ at 620g/m³; to December 1966, 44,600m³ at 400g/m³; to December 1967, 40,000m³ at 500g/m³; to December 1968, 56,700m³ at a poor 53g/m³; to December 1969

from a different face, 21,700m³ at 650g/m³; to December 1970, 45,000m³ at 300g/m³; to March 1971 when the operations ceased, 6,800m³ at 120g/m³.

Drilling.

A number of companies and individuals are known to have carried out some drilling [68-0532]; namely, Endurance Tin Mining Company N.L. , Utah, Storey's Creek Tin Mining Company N.L. , Lanka Tin Mining Company N. L. , the Star Hill Syndicate (Mr Lawry), and Mr Wood. Of these only the drilling by the Endurance Tin Mining Company and Utah was extensive.

Resource Estimates by Utah. Drill lines were too far apart to project relative positions of the stanniferous gravels with any real hope of accuracy. The overall average grade (weighted by holes) of the Endurance drilling is 420g/m³, compared to the Utah figure of 210g/m³. The discrepancy between the figures is not readily explained, and presumably is some combination of natural variability and quality of drilling/sampling.

Utah calculated that Wood's Flat contained 940,000m³ at a grade of 190g/m³ in a deposit 7.3m deep. These volumes and grades were so far below their scoping study requirements that the option was not exercised.

Eastern Terrace

History and production[66-0430]. The earliest recorded mining in the southern Mussel Roe River area was at the Eastern Terrace. The upper shallow stanniferous ground was worked intermittently to a maximum of 3.7m depth by a number of operators from as early as 1890 until 1959. The principal operator was the Great Mussel Roe Proprietary Company, which abandoned the area in 1901. From the size of the pits it appears that 500,000m³ of material of unknown grade were mined.

Drilling. Apart from a line of six holes drilled by the government in 1902 (Twelvetreets, 1916), the only drilling conducted here has been by Utah in 1964. The positions of the government holes are not accurately known, and are shown approximately on Utah maps.

Utah noted that previous mining was less than 5m deep and taken to a siltstone "false bottom" rather than to bedrock.

Resource. Utah stated [68-0532] that it was difficult to assess resources for the stanniferous material in the upper irregular gutters as insufficient drilling had been done, but estimated around 400,000m³ at grades between 150 and 300g/m³ could possibly exist.

Musselroe Swamps

History and production. There has been very minor production in an area just west of the Musselroe River at about 5459500m N by North Musselroe Pty, of which no records can be found.

Drilling. On adjacent terraces there has been in 1953 a boring program carried out by the Department of Mines, and near Anson's Bay Rd west of the River there was a program by Storey's Creek Tin Mining Co. N L, and east of the river by Utah; drilling in the swamp has been conducted only by Utah [66-0430] and BMI Mining Ltd [72-0843].

Resource.

BMI did not produce a post-drilling resource calculation. They calculated whole-of-hole cassiterite grades, and did not seem to have a concept that barren overburden should be separated from pay wash in their evaluation, and so reached a conclusion that no payable reserves existed. At that time it is possible that the bottom wash, which does have some local very high values, could have been viable as a dredging operation.

Utah calculated that their drilling potentially located two 1200m sections with resources of 587,000m³ at 135g/m³ and 553,000m³ at 190g/m³.

Elizabeth aka Park, Groves and Richardson

This deposit was being mined at the time of a 1952 visit by A Reid from the Department of Mines [UR1952_129-145]. The first two clean-ups produced about 2t of cassiterite, but no full records of production have been located.

Storey's Creek Tin Mining Co. N L drilled from Elizabeth north to the Anson's Bay Road; only sketchy results are available but Utah [66-0430] plotted the locations on their plan and calculated that there was a resource of 1,100,000m³ at 70g/m³. There is no record available to check if this is based on whole-of-hole values but this seems likely. It is possible that better values occur specifically within the bottom wash.

Anson's Bay Rd

This area lies east of the River and south of Anson's Bay Rd, Fig 3.

It was drilled by Utah in 1966 [66_0430]. It was thought that a series of generally linear disconnected reed swamps might indicate an ancestral drainage. A total of 32 reconnaissance auger holes were put down on three lines, and defined a broad flat floored channel approximately 1200m wide, and in excess of 1km in length, containing a maximum of 40m of sediments. 19 sample holes were drilled to test the section, which consists of an upper and lower sand and gravel horizon, separated by a continuous blanket of carbonaceous siltstone.

East Cybele Creek Terrace

This area, located NE of Traceys on the east side of the Musselroe River, was drilled in 1953 by the Department of Mines (99 holes at 30m spacings on three lines 80m apart) [UR1954_062-71]. Utah reviewed the data and calculated a possible resource of 68,500m³ at 180g/m³.

West of Garfield Creek

One drilled line, MR2, on this western terrace intersected stanniferous wash for which Utah estimated a resource of 40,000m³ at 120g/m³ over a 60m length.

Potential for Primary Tin Deposits

This area is vast and coarse alluvial tin occurs in many places suggesting that bedrock sources are close by, yet no deposits are recorded and no exploration has been conducted for them. Only at the Eastern Terrace has the granitic source of cassiterite been recorded, (see above).

6.0 DORSET FLATS AREA

This area contains the site of the large former producer, the Dorset Dredge, and the recently producing deposits at Riverside and South Mt Cameron.

The presence of coarse grained cassiterite and other recovered heavy minerals like gold suggests that the basement source is nearby, Yim (1990, 1991). It has been assumed that there are cassiterite bearing greisen veins developed in granite near its upper contact with Mathinna Beds, and gold in quartz veins in the Mathinna Beds, and that this upper contact zone has been removed by erosion. However it is possible that basement deposits in the form of granite hosted sheeted micro-veins of quartz and greisen, like the systems in the Taronga area of NSW, do occur below the dredged alluvium, or close by. Such systems have apparently never been explored. The large alluvial tin endowment here suggests a large bedrock source can be found.

In order to investigate this further and to check for unmined alluvial resources, a search was made of the MRT plan catalogue to determine if data in addition to that in the open file company reports existed. Several plans were found and there is still one apparently unscanned by Munro as mentioned in the previous annual report. The located plans showed dredge paths and production by year and one showed extensive drill results.

The review of that data found no clues about the presence or absence of basement mineralisation. There appear to be no remaining resources immediately adjacent to the

former dredged areas, but there appears to be potential in the Eastern Leads area to the west.

7.0 GENERAL CONCLUSIONS

Alluvial tin occurs in the Musselroe River system for an extraordinary strike length exceeding 14 km. Where drilling has been done, grades locally are encouraging though the known better areas are probably inaccessible for mining. It is highly unlikely that a single source area to the south has supplied the cassiterite, and so it is very likely that source bedrock mineralisation occurs with multiple centres all along this strike.

The Eastern Leads are identified as an area warranting further data review.

Reviews of the potential resource areas such as South Mt Cameron area, and Musselroe River and Wyniford River systems, shows that in the current climate none are commercially attractive.

8.0 RECOMMENDATIONS FOR WORK IN 2016

The tenement area warrants sporadic review and search for techniques that might better detect basement sources for mineralisation.

9.0 EXPENDITURE

Expenditures have been reported via MRT Quarterly Returns.