



EXPLORATION LICENCE  
EL 3/2007  
GLADSTONE, NORTH EAST TASMANIA

ANNUAL REPORT  
FOR THE YEAR ENDED  
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## 1 EXECUTIVE SUMMARY

EL3/2007 forms part of Macquarie Harbour Mining's North East Tasmanian Project. Adjoining tenements EL2/2007 and EL66/2007 comprise the remainder of the project area. The main exploration targets on EL3/2007 are placer tin deposits, including both recent alluvium and Tertiary deep leads.

An extensive literature review of published documents and open-file company reports relating to previous exploration on this tenement formed the major part of work during the year. Several short reconnaissance trips were made in 2008 but access was restricted by thick vegetation in many places and the fact that Ogilvies Bridge over the Ringarooma River approximately 5 km south east of Gladstone was not passable.

A trailer-mounted tin plant is currently being fabricated in Southern Tasmania to facilitate bulk sampling on EL3/2007 and the south western corner of EL2/2007.

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*Note: All coordinates in this report are AGD66*

## 2 INTRODUCTION

This is the first annual report on EL3/2007 which is held in the name of Goldstock Mining Pty Ltd, a wholly owned subsidiary of Macquarie Harbour Mining Ltd ("MHM"). The tenement covers an area of 204 sq km and its northern boundary is common with the southern boundary of EL2/2007 but extends a further 3km to the east as shown in Figure 1. The tenement then covers about 6 km of ground to the south at full width with two arms extending to the south east from the east and west sides. The shape of the tenement is controlled by the boundaries of the Mount William National Park in places. The area is covered by the Gladstone, Lanka, Spurr's Rivulet and Anson's Bay 1:25,000 map sheets.

Surface geology (see Figure 3) is basically similar to that in EL2/2007 to the north but the level of the plateau is higher and the drainages have eroded valleys producing an area of moderate relief. Alluvial tin deposits have been worked in the past in the north western areas of the licence as shown in Figure 2 and Figure 3. Most of the licence is underlain by granite but in the northerly areas the granite is overlain by Tertiary to recent sediments which are host to the tin deposits and are only found as isolated patches in the south. The granite covered by the licence is Devonian in age and forms one of a series of granite plutons that together form the Blue Tier Batholith. It is referred to as the Gardens Pluton and consists almost entirely a medium to coarse grained biotite hornblende granodiorite. It can be seen from the geology map that the western leg of the licence covers a narrow band of Mathinna Beds with a band of equigranular coarse grained biotite adamellite along its western contact. The granite to the west of this is a biotite granite forming the Poimena Pluton. The band of Mathinna Beds terminates at the contact with an intrusion of granite to the south that is referred to as the Mount Pearson Pluton which is also a biotite granite. The extension of the EL in the east widens at its south eastern end where it is underlain by Palaeozoic Mathinna Beds which are intruded by a generally N-S striking dyke of quartz feldspar porphyry about 200m wide.

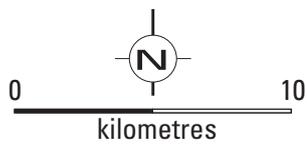
There are no identified lode style gold deposits recorded in the tenement but some of the alluvial tin deposits along the Great Musselroe River do contain low gold values. The identified placer tin deposits (see Table 1) comprise both Tertiary deep leads and recent alluvial concentrations. Because they were mostly worked more than 80 years ago, and more often by individuals rather than companies, little can be found in the way of accurate production records. It is therefore difficult to ascertain what areas have been successfully mined and no longer contain any economic deposits or where resources of interest are still present.

The main objective of exploration on EL3/2007 will be to bulk sample unmined extensions of known placer deposits as well as the substantial tailings derived from previous mining in order to prove up economic tin resources. The current high price of tin and inefficient methods of recovery in past operations provide strong incentives for such an approach. As a secondary target the contact zone between the Mathinna Beds and the Garden and Poimena Plutons in the south and south west of the tenement is considered to offer potential for "thermal aureole" style gold mineralisation.

TABLE 1 Identified Alluvial Tin Deposits in EL3/2007

<b>Deposit</b>	<b>Other Names</b>	<b>MRT No.</b>	<b>Easting</b>	<b>Northing</b>	<b>Metal</b>	<b>Deposit Type</b>
Amber Creek		1280	586100	5460200	Sn	Placer
Amber Hill / Groves & Torley			585200	5460000	Sn	Placer
Arcadia		339	588200	5460800	Sn	Placer
Browns			585900	5460500	Sn	Placer
Dawes		324	588800	5462400	Sn	Placer
Edina and	New Edina	337	588700	5461750	Sn	Placer
Enterprise	Star Hill	338	586650	5461700	Sn	Placer
Great Musselroe		1273	589800	5455900	Sn&Au	Placer
Lanka North		340	587200	5460800	Sn	Placer
Lanka South		1281	587350	5460600	Sn	Placer
Moore's		377	588900	5463100	Sn	Placer
North Musselroe		1292	590300	5460000	Sn	Placer
Ogilvies			585400	5461000	Sn	Placer
Purdue		344	587200	5461500	Sn	Placer
Wood's Flat	Gt Musselroe		587600	5458100	Sn	Placer
Unnamed		323	585600	5462200	Sn	Placer

Note: Coordinates are AGD66 from MRT Deposits Database

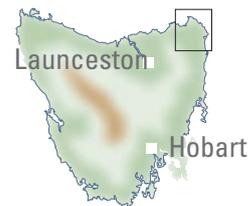


tenement boundary with exploration licence number

— road, track

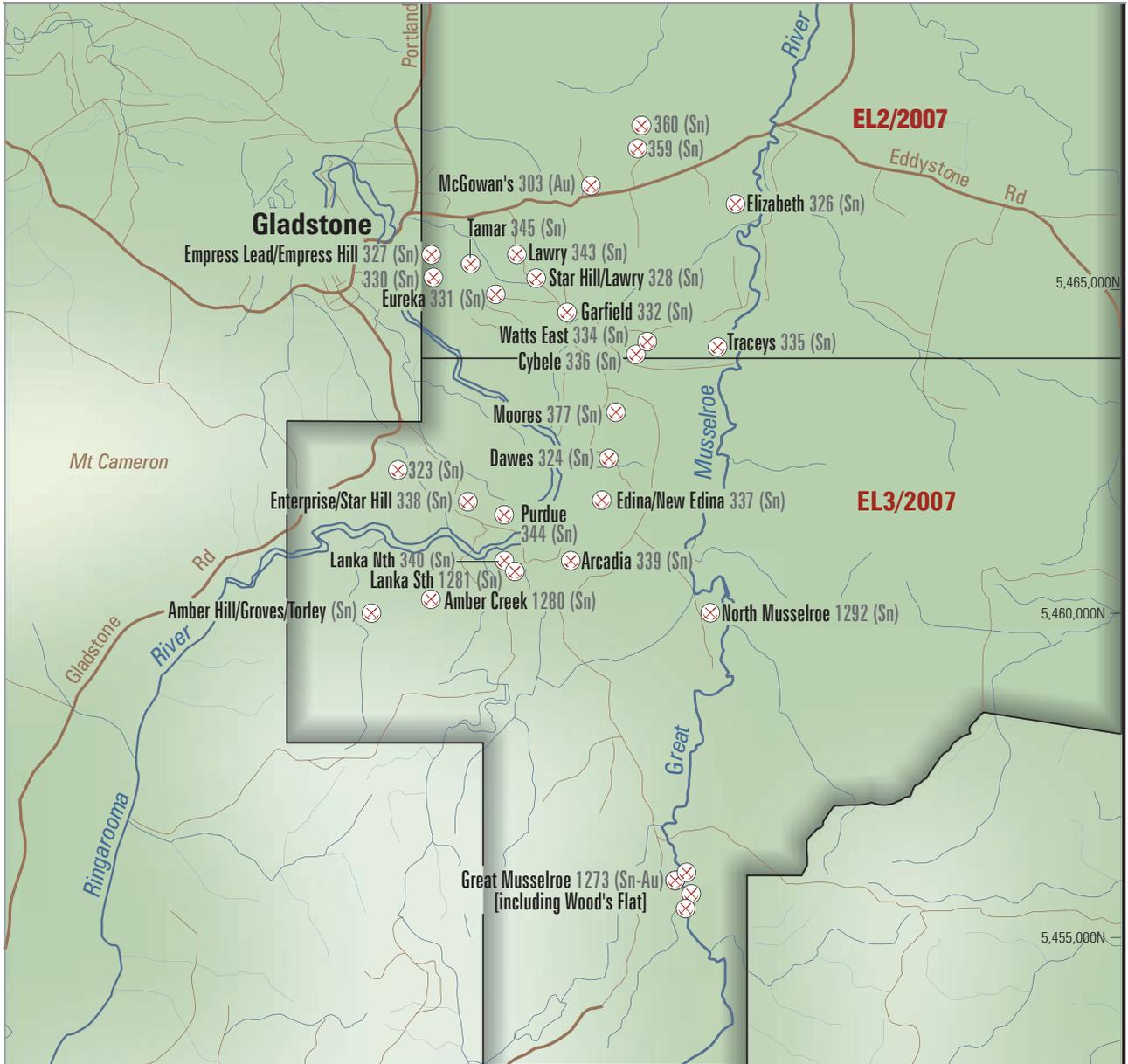
— drainage

AMG coordinates



Compiled for this Macquarie Harbour Mining Prospectus by Dr A.C. Gifford September 2007

FIGURE 1. Tenement Location Map

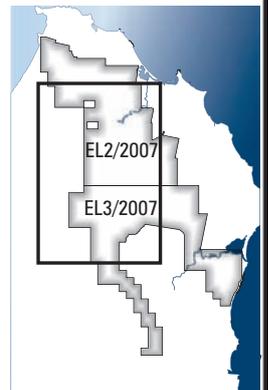
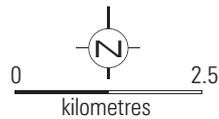


AMG co-ordinates

Amber Creek 1280 (Sn) deposit with Mineral Resources Tasmania name, number and metal

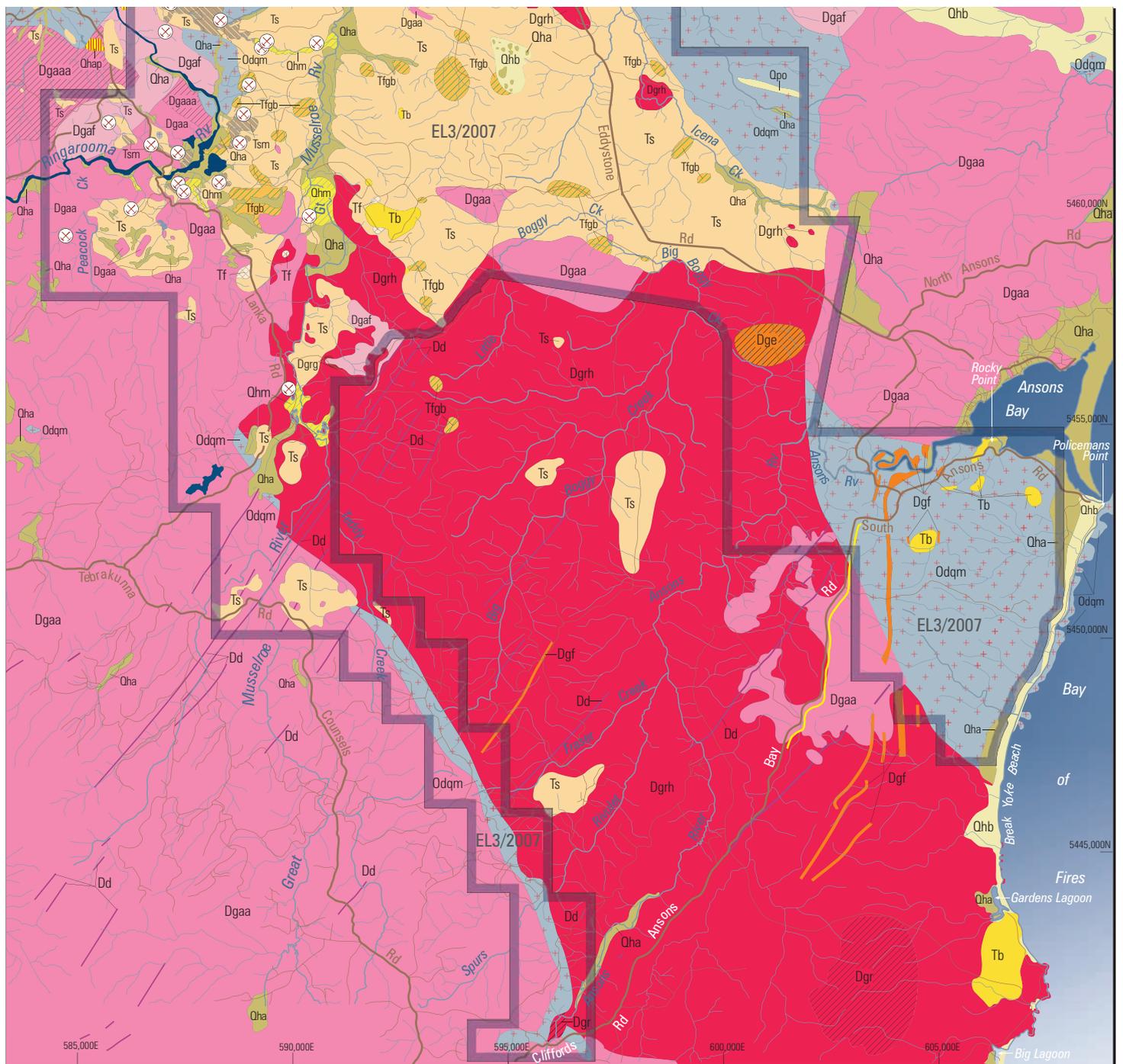
EL2/2007 tenement boundary with exploration licence number

road, track  
drainage



Compiled for this Macquarie Harbour Mining Prospectus by Dr A.C. Gifford September 2007

**FIGURE 2:** Identified deposits EL3/2007 and southern part of EL2/2007



**QUATERNARY**

- Qha** Alluvium - stream
- Qhap** Granitoid - man disturbed
- Qhb** Dune sand
- Qhm** Mine tailings and disturbed ground

**TERTIARY**

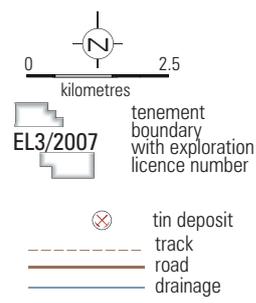
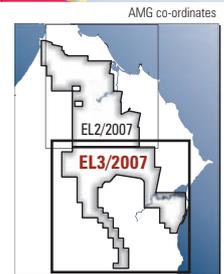
- Ts** (Ts) Gravel, sand, silt, mud, clay.
- Tb** (Tb) Basalt
- Tsm** (Tsm) Sand, gravel, clay disturbed by man
- Tfgb** (Tfgb) Grey billy and silcrete

**DEVONIAN**

- Odqm** Metamorphosed quartzwacke turbidite, interbedded sandstone, siltstone, mudstone.
- Dd** Dolerite dykes
- Dge** Aplitic Granite
- Dgf** Quartz feldspar porphyry

**MAJOR GRANITIC INTRUSIONS**

- Dgaf** Biotite-muscovite alkali feldspar granite/adamellite
- Dgaa** Porphyritic, biotite, muscovite granite/adamellite
- Dgaaa** Biotite muscovite adamellite
- Dhaf** Biotite, muscovite, granite/adamellite
- Dgr** (Dgr) Biotite granodiorite
- Dgrh** (Dgrh) Biotite hornblende granodiorite
- Dgrg** Gabbro



Compiled for this Macquarie Harbour Mining Prospect by Dr A.C. Gifford September 2007

**FIGURE 3: The Geology of EL3/2007**

### 3 REVIEW OF PREVIOUS MINING AND EXPLORATION

Mining of recent alluvium and Tertiary deep lead deposits to the east and south of Gladstone occurred spasmodically from the 1870's for about 90 years. Workings tended to be numerous and relatively small with no operator finding a deposit of sufficient size to ensure production over a number of decades. Extraction of cassiterite from recent alluvium has been dominated by the Wood's Flat deposit on the Musselroe River which was still operating in the 1960's, while the deep lead production has come from a number of places (Empress, Lawrys, Cybele, Traceys, Edina, New Edina, Purdue, Arcadia, Lanka, Amber Hill, Amber Creek etc) along old stream courses believed to be sourced from high ground to the west.

Records of tin production are incomplete and very often only rough estimates that come from early Department of Mines annual reports. The main period of operations from the deep leads appears to be 1900-1930 with the most productive mine during this time being the Edina which was producing about 1.5 tonnes of concentrate (at approx 73% Sn) a month in 1901. The richest mine in the 19th century was evidently the Empress, 7 kms NE of Gladstone, which at its peak produced 100 tonnes of tin (at least) for 1885-1886.

The early miners did not have access to drilling equipment to assist in the discovery of new leads or extensions of those they were working and as early as 1901 Twelvetrees recommended that the Mines Department provide assistance in the drilling of bores. In 1904 Cybele Tin Mines mounted a drilling programme on Garfield Ridge (EL2/2007) of 142 Bores. Then a more extensive government campaign was mounted in 1916 with 515 bores for 2,810m (Blake 1937A). This drilling was undertaken by the government with the prospector paying half the cost of the programme. Further programmes by the Mines Department took place in 1937, 1945, and 1953 and other forms of assistance were also given to miners, including cash to purchase equipment.

Of particular interest are the results from the 1937 Government drilling at Amber Creek which consisted of 53 holes for 962 m using a Calyx type drill. This bored a 130 mm hole and samples were collected every 2.2 m. The holes were spaced 20 m apart on lines 40 m apart. Only 17 of the holes intersected "wash" (cassiterite bearing gravel) at the base of the gravel profile and this was of variable grade, although a number of high value intersections were recorded (eg. 3.15 m of 3.6 kg/cu.m Sn from 13.4 m, 1.47 m of 8.4 kg/cu.m Sn from 10.2 m, and 3.05 m of 11.2 kg/cu.m Sn from 15.9 m. Portions of the Amber Creek deposits have been mined but it is not known whether any part of the high grade deep lead remains. It is reported (Keid 1952) that production was halted in 1952 when the lead narrowed and the height of the overburden made working it unsafe.

The only detailed exploration work undertaken in recent times was done by Utah Development Company Pty Ltd which was granted an Exploration Licence (EL6/1963) over a large area of tin potential in NE Tasmania. Ten areas were selected by Utah for detailed follow-up, including three which cover parts of EL3/2007. Utah also secured a six month option agreement with Mr V Wood over his Wood's Flat/Eastern Terrace properties. It should be noted that at this time there were a number of mining leases held within the areas of Utah interest which were held by other parties, thus excluding access to some of the most prospective ground.

Following an initial review of previous placer mining in the three zones of interest mentioned in the previous paragraph Utah concentrated on the potential of a swampy 3 km zone along the Musselroe River between Traceys and North Musselroe which they referred to as Test Area 5. This was tested by a drilling programme of approximately 500 metres in 69 holes but only 11 holes contained tin values above 100g/cu m. These were found in a thin discontinuous basal wash and it was decided that because of its swampy

nature and the lack of encouraging results, no further work would be undertaken in this area.

Utah went into the option agreement at Wood's Flat based on their estimate that there was potential for a reserve of 3.8 million cu.m at a grade of 600 g/cu.m. Initial feasibility studies made before the option was entered into estimated that a total resource of 3.25 million cu.m at a recoverable grade of 255 g/cu.m mined at a rate of 750,000 cu.m/y would be viable. Production records of Mr Wood's operation for 1960 to 1963 inclusive totalled 108,720 cu.m for 75.86 tonnes of concentrate containing 55.46 tonnes of metallic tin which gives a calculated head grade of 510 g/cu.m Sn.

During March and April 1964 Utah undertook a drilling programme on Wood's Flat and the nearby Eastern Terrace. The Tertiary sediments at Wood's Flat and the Eastern Terrace occur in separate depressions in the granitic bedrock and were considered to be remnants of separate drainages. The tin occurs as detrital cassiterite grains in the alluvial deposits. Tin is concentrated in the basal gravel at Wood's Flat but in an upper gravel in the Eastern Terrace. The results indicated that Wood's Flat contained 940,000 cu.m 7.3 metres deep at a grade of 160 g/cu.m and the Eastern Terrace 380,000 cu.m 2.7 metres deep at 166 g/cu.m These volumes and grades were so far below the feasibility study requirements that the option was not exercised. The work undertaken by Utah was the best exploration programme mounted on the alluvial tin deposits in the licence area but the Utah geologists were not confident that the drilling technique used was totally reliable (Appleby and McEwan 1966).

#### 4 EXPLORATION COMPLETED DURING THE REPORT PERIOD

Considerable time and effort was spent over the past twelve months conducting an extensive literature review of all relevant information covering EL3/2007. Most of this comprised hard copy and digital reports available from the Mineral Resources Tasmania library and online database. Part of an exhaustive bibliography, compiled by Featherstone Geological Consultants with assistance from MHM staff, is included in this report.

Several short reconnaissance trips have been made into the northern part of the licence to investigate the old tin workings but access was found to be very restricted in places. Bridges over the Ringarooma and Musselroe rivers were found to be out of commission meaning that some areas could only be reached by a circuitous route. This includes Ogilvies Bridge which prevents direct access south from Gladstone.

Construction of a mobile alluvial tin sampling plant capable of processing up to 5 tonnes/hr has commenced, with delivery scheduled for early June. An exploration programme is planned using an excavator to cut costeans and take bulk samples for concentration and grade evaluation on site.

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## 6 EXPENDITURE

Total expenditure from grant of tenement to the end of the first quarter 2008 is tabled below.

<b>Geoscientific Costs</b>	
Geology	61,763.00
Geochemistry	
Geophysics	715.00
Remote sensing	
<b>Drilling &amp; Gridding Costs</b>	
Gridding	
Drilling	
Earthmoving	
<b>Land Access Costs</b>	
<b>Rehabilitation Costs</b>	
<b>Feasibility Costs</b>	
<b>Other Costs</b>	
Rental fees	
Vehicular track Construction	
Surveying, contract drafting etc	
Capital equipment purchase	100,000.00
<b>Administration Costs</b>	
(note: not to exceed 10% of annual expend)	
Legal	
Office & Admin	2,348.00
<b>Total</b>	<b>164,826.00</b>