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Annual and Final Surrender Report

for EL40/2011 George River

for the Period 4 July 2014 to 3 July 2015

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ABSTRACT

This report describes the exploration activities completed within EL40/2011 during the period 4 July 2014 to 3 July 2015. **This is both the annual and final surrender report for the tenement.**

The Tenement is located west of the town of St Helens, and (directly) about 85 km east of Launceston.

The Tenement covers a major past producer alluvial tin mine, and a number of known tin and tungsten deposits in the basement.

There has been a long history of prospecting since the mid 1870s, and mining for alluvial tin was carried out between 1874 and 1962, with a production of about 2400 tonnes of metallic tin. Production of tin and tungsten from the known basement deposits is minor.

In the district the original sources of tin and tungsten 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 company's main focus is exploration for tin and tungsten, in alluvial deposits and in bedrock.

Work completed during the period comprised a continued Investigation for the evidence of outcropping or subcropping microgranites and siliceous greisens or their structural manifestation in several zones along strike from the Mt Pyramid deposits.

A review of extensive open file data referred to in the 2014 report is now interpreted ;

- As mixed sample media by various companies
- Heavy mineral concentrates and fine fraction transported materials may well result in false anomalies.

The areas' of historical deep-lead and alluvial tin represent minor concentrations with little potential .They almost certainly represent cassiterite from long eroded or displaced ,background cassiterite bedrock sources.

KEYWORDS

NE Tasmania

Geology

Mineralisation
 Alluvial
 Paleochannel
 Leads
 Primary Deposits
 Granite
 Mathinna Group
 Tin
 Tungsten
 Exploration Targets

**SUMMARY OF ACTIVITIES for EL40/2011 George River
 for the Period 4 July 2014 to 3 July 2015**

- Further review of previous company exploration
- Plotting previous exploration grid locations, pan concentrate sampling, soil sampling, and drilling in mapinfo format 2014
- Re-evaluating the MRT database of past stream sediment geochemical exploration 2014
- Determine the distribution and nature of known mineral deposits
- Assess the prospectivity for untested or undiscovered alluvial tin and basement tin and tungsten mineralisation.
- Generate targets for future work.

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
EI402012_2014_01_report.pdf	Pdf	Annual Report
EL40-2011_drainage_rock_analyses_2014_WASG3.txt	Text	Sample analyses, descriptions

File name	Format	Contents
EI402012_2014_02_Georges River.pdf	Pdf	Annual Report

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Table 1 Tenement Details

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1.0 INTRODUCTION

This report describes the exploration activities completed within EL40/2011 (The ‘Tenement’) during the period 4 July 2014 to 3 July 2014. This is the 3rd annual report for the 3rd year of grant of the Tenement.

The Tenement is located west of the town of St Helens, and (directly) about 85 km east of Launceston, in north-east Tasmania, Fig.1.

Table 1 – Tenement Details

Tenement	Holder	Date Applied	Date Granted	Size
EL40/2011 Georges River	Tin Dragon Pty Ltd 100%	7 July 2011	4 July 2012 (Categories 1 and 5)	180km ²

Excluded from the grant of the tenement are one small mining lease for stone and gravel near Girdy’s Hill, small private land holdings at Ericksons Road and Pyengana, and a State Reserve downstream of St Columba Falls, as illustrated on Fig 2.

Much of the land within the south and east parts of the Tenement, where the bulk of known low order anomalies occurs, is logged state forest, timber plantation and timber reserves. Private farming land, particularly for diary cattle, is concentrated in the western 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 Ringarooma, Blue Tier, Victoria, Pyengana, St Helens, Brilliant and Beamauris,.

Access is via the Tasman Highway and several sealed roads. Formed local roads and logging tracks and other rough tracks provide further access.

The tenement covers past producer alluvial tin mines and several small tin and tungsten deposits in the basement. The most significant past production of an estimated 2400 tonnes of metallic tin was from alluvials of Thureau's lead. Only minor production of tin and tungsten from basement deposits is recorded.

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

Work completed during the period comprised

- Further review of previous company exploration
- Plotting previous exploration grid locations, pan concentrate sampling, soil sampling, and drilling in mapinfo format circa 2014
- Re-evaluating the MRT database of past stream sediment geochemical exploration circa 2014
- Determine the distribution and nature of known mineral deposits or anomalies (mostly the latter)
- Assess the prospectivity for untested or undiscovered basement tin and tungsten mineralisation.
- Generate targets for future work.
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2.0 GEOLOGICAL SETTING and MINERALISATION

Basement rocks are dominantly Silurian-Devonian Mathinna Group metasedimentary rocks (Beds), intruded by various phases of Devonian granites.

The Mathinna Beds typically consist of an alternating sequence of bedded sandstones up to 10m thick and siltstones and shales up to 5m thick. The arenaceous members are the dominant lithological types and in part they have suffered low grade contact metamorphism to quartzites and slates. The succession was folded during the Tabberabberan Orogeny into open folds trending NNW. Major faults and shear zones also trend NNW and the centres of mineralisation are often located on major shears. Further comments on faulting and fracturing appear in Section 12.0, and fault-fracture patterns are plotted on Fig 9.

Several phases of the Devonian Blue Tier Batholith occur in this area, Figs 4 & 5. Some phases, especially the Constable Creek sheet of the Mt Pearson (Mt Pierson in Groves GSB55) phase are tin-bearing biotite muscovite granites. The Constable Creek sheet is described by Groves (1977) as rarely fresh, flat lying composite body of microgranites, biotite granites and adamellites, with miarolitic cavities, pegmatitic patches, tourmaline veins. In the sheet at the Echo Mine there is a mineralised greisen.

Judging by the location of the main alluvial tin deposits in the area, the source of cassiterite is likely to be the eroded parts of the Constable Creek sheet.

There is a metal zonation of mineral deposits in the area, (Groves, 1972,) Fig 6. Adjacent to the outcrop of the Constable Creek sheet is a tungsten zone followed to the SE by a tin zone containing the major Great Pyramid deposit (outside the Licence area). A strong N-S copper zone is then followed to the east by a silver-lead-zinc zone.

Basement mineralisation, of tin, tungsten and copper is typically hosted in quartz veins/ fractures/ shears in the Mathinna Beds and scattered greisen-altered fractures in the granites. The largest known deposit is Great Pyramid, to the south of the Tenement. A resource, potentially open-pit mine from surface, of 3.3Mt @ 0.2% Sn (0.1% cut-off) has been previously estimated by Shell, and in early 2014 Niuminco released a JORC Inferred Resource of 1.3 million tonnes at 0.3% Sn. Mathinna Group quartzites are the main host rock and cassiterite occurs in sheeted micro-veinlets along joints.

The main basement mines and prospects in the Tenement are reviewed separately in Section 6.0.

The Tertiary alluvial history is complex and not well studied. Stanniferous alluvium is present in a number of places, and the main such deposit is the Thureau's Lead.

The relevant placer history of the region is better known further north in the Pioneer-Gladstone area, and is likely to be similar here. It commenced in Permo-Triassic time (ca 250Ma) with the unroofing and erosion of the granitic rocks. In late Jurassic time (ca 150Ma) further uplift occurred with intrusion of extensive igneous dolerite sheets followed by a long period in the Late Cretaceous (ca 75Ma) of widespread and intense erosion. Deep weathering of the granites during this period resulted in liberation of large amounts of cassiterite from the granitic hosts and their deposition in alluvium of the streams draining the highlands.

During Middle Eocene time (ca 46Ma) volcanic activity commenced along the Blue Tier with the extrusion of the Older Basaltic lava flows. It is likely that these were emplaced along

stream valleys incised into the pre-Eocene granitic land surface, and so buried the older alluvial cassiterite deposits.

From the Mid Eocene to Late Oligocene (ca 46 to 24Ma) uplift and a humid tropical climate resulted in rapid erosion of the basalts, and renewed liberation of cassiterite from granites and reworking and upgrading of the earlier pre Middle Eocene alluvial deposits. The Middle Miocene (ca 14Ma) saw a second period of basaltic volcanism with extensive lava flows down many of the larger valleys in the Derby area.

Post Middle Miocene to Recent alluvial deposits were then formed along the alluvial flats of the major rivers.

In areas closer to the present coast there were marine incursions which have reworked the earlier alluvials.

Further observations on the alluvial deposits and their geological history are in Section 7 of this report.

In summary there has been a complex history of placer formation involving reworking and reconcentration of cassiterite.

3.0 REVIEW OF PREVIOUS WORK

Expensive and quality reporting of previous work is reported in the 2013-1014 period.

4.0 EXPLORATION COMPLETED DURING THE REPORT PERIOD

Work done by Tin Dragon during the period consisted of

- Thorough compilation of previous company exploration, as above
- Plotting previous exploration grid locations, pan concentrate sampling, soil sampling, and drilling in mapinfo format
- Re-evaluating the MRT database of past stream sediment geochemical exploration
- Sampling in one area of prior generated tungsten anomalism
- Field traverse of the Blue Tier to Launceston Creek area.
- Field reconnaissance visit to mined alluvial areas near Thureau's deep lead.
- Determine the distribution and nature of known mineral deposits
- Assess the prospectively for untested or undiscovered alluvial tin and basement tin and tungsten mineralisation.
- Generate targets for future work
- **Minor work is reported during the period and little potential exists in the current commodity-financial market.**

5.0 ALLUVIAL DEPOSITS

"The 2013 Annual Report discussed alluvial deposits, including Thureau's lead, and the reader is referred to that report- it is not repeated here.

More data has been located and digested. Some newly accessed data is in Kostoglou (1998), which contains a large 1:25 000 scale plan of alluvial deposits and races, and in Colman (1934) which discusses operations of the Siamese Tin Syndicate in the Golden Fleece Rivulet area.

I made a reconnaissance visit to the alluvial tin mined areas of that area, which is a short distance north of Tin Dragon's tenement, in order to try to understand the alluvial history of the general area. Clearly there is much alluvium quite high on the southern slopes of the valley up to around the 50m RL. Colman observed the same thing. This is old alluvium from an abandoned channel, suggesting that there has been relatively recent uplift of the Mt Echo area to the south, and a shift in the valley north to its present position. Colman observed that this old alluvium sits on top of Thureau's lead. Also notable is that much of the mined alluvium is actually reworked material in modern gullies which cut through that old alluvium.

Abandoned channels on hill tops and sides at ~150m RL are presumably outlined by the Saxelby deposits plotted by Kostoglou.

This neotectonics of a progressive rise of the terrain around Mt Echo, a horst block, and terrain to its south and west, and development of modern drainages, would account for the

progressive unroofing of the Constable Ck granite sheet and shedding of its alluvial tin towards St Helens.

Judging by the sudden change in flow direction of Constable Ck just south of Mt Echo there has been stream capture. The original flow direction of Constable Ck was along the current Launceston Ck, and it has been captured by the present lower Constable Ck as shown on Fig 10. This would mean a change of different delivery route for alluvial tin; the older route was via Launceston Ck, delivering tin to western areas, and the younger route was and is via the modern Constable Creek, delivering tin to eastern areas. This will account for some of the complexity of alluvial tin distribution.

The known alluvial deposits worked for tin, according to different sources, are replotted on Fig 8. There are large areas of alluvium where no workings are recorded. The largest, potentially containing cassiterite derived from the Blue Tier to the north-west, is in the Pyengana area. The main historical workings have been at Thureau's Lead, the upper portions of which are in the tenement."see previous reports.

6.0 BASEMENT DEPOSITS

The review of known basement mineral deposits in the previous report was revised and no particular high quality targets were determined.

Silver Echo aka Nephele Creek Copper Mine

In the bed of Nephele Creek an irregular mass of quartz outcrops carrying rich pockets of pyrrhotite, pyrite and some chalcopyrite and arsenopyrite. The quartz does not appear to have followed any of the local joints/ fractures, and mining has failed to follow the mineralisation any distance.

No significant exploration is reported to have been carried out. The possibility of a breccia pipe comes to mind. High copper values at surface can be expected to pass downward into high tin concentrations.

Echo aka Constables Ck

Tungsten and minor molybdenite occurs in quartz veins of varying thickness along joints in a granite cupola. The veins are mineralised to different degrees. Wolframite and molybdenite are the main minerals; scheelite and bismuthinite also occur, with some arsenopyrite and pyrite. The host rock is greisen altered granite and aplite.

Previous production was probably nil to negligible though a company was floated to explore the area in the 1880s.

The area was drilled by Geophoto with 5 scattered diamond holes [70-0701, 71-0818], which although intersecting greisen and other alteration, failed to intersect any significant mineralisation. It was concluded that given the current level of exposure of the cupola any sizeable previous mineralisation had been eroded away.

Baden Powell

In this area within Mathinna Beds, veins of quartz carry wolframite, and in some cases also molybdenite. At the Baden Powell mine the vein quartz follows a fracture plane which strikes 30 degrees and dips 70 degrees NW. It has been mined for 150m along its length. Several small adits have been placed on parallel quartz veins but no mineralisation encountered. Waller (1901) reports about 1 tonne of wolframite was mined.

Carson De Beers (Price's)

Groves 1972 described this deposit as having a number of veins carrying wolframite, exposed in a number of pits, all hosted in quartzitic Mathinna Beds. Two types of veins occur, the most mineralised being poddy, up to 1m wide and 6m long. Waller (1901) reports about 1 tonne of wolframite was mined.

See summary review by Ruxton in Appendix A.

Loila Tier Tin [69-0547]

Described by Urquhart (1968) and Groves (1972). Small veins of quartz and cassiterite occur along shear planes in Mathinna beds. The presence at the western end of contact metamorphic spotting suggests that granite lies at shallow depth. The cassiterite occurs as disseminated crystalline aggregates, or encrustations in cavities in the shear zone, with a preferred quartzite host. Other excavations in the area have produced small quantities of tin ore in breccia zones. Tourmaline, arsenopyrite and galena are present.

The shear zone is 1.5km long, with vein systems up to 2m wide. Best analysis of dump material was 4% Sn.

The prospect is undrilled, which is warranted on this large system, to test its nature close to the granite contact.

See also summary review by Ruxton in Appendix A.

Wolfram Creek

In granite, close and north of the contact with of Mathinna bed metasediments, with roof pendants of metasediments. The granite is tourmaline rich, locally pegmatitic, and there are scattered quartz-greisen veins up to 0.6m wide. Shallow percussion drilling by Geophoto yielded several holes with >0.1% Sn, and soil samples in an area about 300m across yielded up to 0.14%, though the presence of cassiterite was not described and so may be fine grained. BHP soil sampling 400m further north, in granite, was also anomalous, so a large mineralised system seems to exist here in the apical part of the granite pluton.

Copper Show Creek

Workings here were rediscovered by CSR and are not in the MRT database. There is another Copper Show Ck deposit, also not in the MRT database, to the south, just outside Tin Dragon's tenement; this was discussed by Geophoto in their report 70_0690.

A shaft and trench in quartzite expose quartz veins which on analysis have up to 0.3%Sn and high Cu, Pb, Zn values.

Haley's Creek

Gossanous float samples from one side of a ridge commencing 594200E/5416000N (AGD66 Z55) trending NNW for 900m carry 0.1 to 0.3% Sn, with tungsten maximum only 40ppb, and locally up to 340ppm Bi. The linear distribution of these gossans suggests a mineralised fault zone.

Other poorly described quartz-tourmaline veins occurring within a 1.5km radius carry up to 0.3%Sn.

Ferntree Hill

Limited outcrop of mostly weathered, apparently greisenised granite was drilled by CSR. There is a distinct linear magnetic feature here.

The descriptions in CSR's report 83_1990 of surface samples and percussion chips are confusing, but rock types identified in thin section are greisen, adamellite, and one is quartzite with 10% magnetite. Their so called 'greisen like rocks' I suggest are metasomatised Mathinna beds occurring in an unmapped roof pendant. They are 30m thick and hard adamellite with greisen veins occurs below.

Tin values in drill holes in the greisen like material yielded up to 800ppm Sn, and greisen veins at surface up to 0.23% Sn.

Moonlight Marsh

Discovered by CSR, this is a 20m diameter pipe like outcrop of siliceous material with tourmalinised microgranite and quartz tourmaline veins. It carries 2% cassiterite in petrographic description but low 30ppm Sn in analysis, suggesting erratic nuggety cassiterite distribution. Coarse cassiterite occurs in some soil samples.

7.0 PREVIOUS STREAM SEDIMENT GEOCHEMISTRY

Discussed in detail in the two previous annual reports.

8.0 PREVIOUS STREAM SEDIMENT PAN CONCENTRATE SAMPLING

CSR made a careful study of the mineralogy of pan concentrates of (apparently) carefully collected trap site stream sediment samples, from several places especially the Haley's Ck area.

Cassiterite was reported in a number of places, in abundance in some granitic areas suggesting a close source. The sampling technique in the current terrain has proven to be unuseful.

Soft wolframite and scheelite in the Haley's Ck area; because these are soft minerals they must be close to source and so are good targeting indicators. Therefore early prospectors would find the source areas relatively easily.

9.0 PREVIOUS COMPANY GRIDS, SOIL SAMPLING AND DRILLING

Several campaigns of gridding and soil sampling have been conducted by Geophoto, CSR, BHP and Shell. The digitised location of these grids is shown on Fig 21 in the previous report.

10.0 FIELD VISIT

10.1 TRAVERSE

The 2014 vehicular traverse was made from the Loila Tier to Launceston Creek.

Speculations are made in the previous report.

10.2 RECONNAISSANCE VISIT TO MINED ALLUVIAL AREAS

See Section 5.0 ALLUVIAL DEPOSITS. The areas investigated are minor only.

10.3 SAMPLING

See Section 11.0 SAMPLING below

11.0 SAMPLING

Previously compiled geochemical results are of minor or doubtful importance as the database comprises different collection protocols and analysis of different media fractions.

12.0 ASSESSMENT OF PROSPECTIVITY AND MINERALISATION STYLES

In the 2013 Annual Report various datasets were evaluated, including gravity, magnetics, Landsat and Google imagery, DEM imagery, radiometrics, and Aster, and this appraisal is not repeated here.

Tin Dragon interpreted this work during the last reporting period.

Alluvial tin deposit styles which are appropriate for the area will be away from environmentally sensitive current drainages and so are restricted to alluvial terraces, or paleochannels.

13.0 ALLUVIAL TARGETS

Thureau's Lead was the largest past producer but based on a literature **review seems to offer little remaining potential**

It is assumed that most mined areas offer little remaining potential.

Elsewhere in the licence there are large alluvial areas where there are no records of any subsurface testing.

The latest assessment of each target are listed below.

Target 1- Pyengana area.

- Downstream from the known main primary tin bearing areas of the Blue Tier
- Sn anomalies in stream sediment.
- No recorded previous exploration.
- A very speculative “play”

Target 2 Groom River area.

- Apparently previous workings but apparently not extensive.
- Source areas upslope to north have Sn anomalies in stream sediment
- Granite area to north was mapped as hydrothermally altered and greisenised by McLennan and Williams, 1982, (post the mapping by Groves in GSB55), so could be a good Sn source, however ne Tasmania abounds with unmineralized siliceous greisen float..

Target 3 Moonlight Marsh

- Swamp areas avoided by previous miners because of clay handling difficulties
- Difficult to bore so unexplored
- Known tin mineralisation reported by CSR at Coplestone Hill
- Minor

Target 4 Steeles Marsh- Carters Marsh

- Abundant coarse cassiterite in CSR pan samples at lower end of Carters, suggesting nearby source Pan Con sampling has been found to be equivalent to pre 1800s prospecting.
- Sn stream sediment anomalies

Target 5 Upper Argonaut

- Abundant coarse cassiterite in CSR pan samples. Pan Con sampling has been found to be equivalent to pre 1800s prospecting.
- Known workings to north, perhaps this area not yet worked.

14.0 BASEMENT TARGETS

None of the basement targets A to M identified by Tin Dragon previously are suitable for a reasonable sized mining company and have thus been discounted during the current reporting period.

The Targets generated in 2014 are as yet unranked.

Target A

- Magnetic high in mapped granite terrain so may actually be a roof pendant of Mathinna beds similar to that at Ferntree Hill
- Abundant cassiterite in CSR pan concentrate sampling.

- Generally poorly sampled to date

Target B

- No stream sediment anomaly cluster in granite
- Abundant cassiterite in CSR pan concentrate sampling downstream
- One Sn stream sediment anomaly

Target C- Ferntree Hill North

- Magnetic high in mapped granite terrain interpreted to be a roof pendant of altered Mathinna beds.
- Known greisen mineralisation in the limited areas tested by CSR
- One line of gridding intersects the feature; has soils exceeding 50ppm Sn

Target D- Ferntree Hill South

- Magnetic feature absent but greisen in granite roof zone likely to exist.
- Abundant cassiterite in CSR pan concentrate sampling

Target E- Launceston Ck

- Granite terrain but could be greisen sheets, or vein swarms unexposed
- Large anomalous Sn and W stream sediment cluster

Target F- BHP Grid GT4-GT9

- Granite terrain, but apparently little or no outcrop, so could be greisen sheets, or vein swarms unexposed
- Anomalous soils

Target G- Silver Echo

- Possible breccia pipe at old mine.
- Magnetic (airborne) Mathinna beds, so a target for mineralisation closer to the granite contact at depth.

Target H- Haley's Ck to Carson De Beers

- Gossany rocks over a strike length of 900m in apparent fault zone with up to 0.3% Sn in surface sampling
- Other mineralised gossany rocks with up to 0.3% Sn
- Known mineralisation at Baden Powell, Carson De Beers, Copper Show Creek
- Apparent set of NW trending fractures controlling mineralisation and perhaps themselves mineralised
- Cassiterite in CSR pan concentrate sampling
- Wolframite and scheelite in CSR pan concentrate sampling indicates nearby undiscovered sources
- Cu, Bi, (Mo), (Pb) anomalies in stream sediments
- Many folded magnetic Mathinna beds, so many targets for mineralisation closer to the granite contact at depth.

Target I- Wolfram Ck

- At granite cupola, with Mathinna bed roof pendants
- 300m radius area with drilled rock commonly up to 0.15% Sn
- Anomalous soils sampling by Geophoto and by BHP.
- Potential for large low grade open pittable system

Target J- High Tier

- Large area with anomalous W and/or Sn in stream sediments
- Along the Mathinna bed-granite contact which may be faulted and mineralised
- Extensive untested magnetic Mathinna beds

Target K- Cramps Road

- The highest tenor magnetic Mathinna beds
- Cu anomalies in stream sediments.
- No previous exploration

Target L- Loila Tier

- Known mineralisation in fault zone with strike exceeding 1.5km
- Up to 4% Sn
- Not drilled

Target M- Moonlight Marsh

- 20m wide tourmaline rich breccia pipe in granite
- 2% Sn in petrological description
- Coarse cassiterite in soils.
- Unmapped, ill defined.
- Undrilled.

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14.0 EXPENDITURE

Expenditures have been reported via MRT Quarterly Returns. Essentially, given the financial and commodity market conditions, an optimistic view is difficult to sustain during the 2014-2015 period. Thus the expenditure has been all but trivial.

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