

EL9/2013 Priory Annual Report 2014

7th November 2013 – 6th November 2014

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Younger fitter days!

Working on SEL22/1999 Sapphire Exploration 2003
Vol. 1 - Annual Report
Vol. 2 - Appendices

Abstract

The purpose of EL9/2013 is to locate an economically feasible alluvial Sapphire mine.

In 2013 the author became aware that a Micheal Lloyd had found a 7mm light blue Sapphire in the rock in which it appeared to have formed, together with other hardly worn Sapphires in streams in the Priory district.

EL9/2013 was applied for to assess the potential for a small scale alluvial Sapphire mine in the district. Should tin and other heavy minerals be located as well , this would enhance the economics of the venture. It is unlikely that a hard rock Sapphire mine would be feasible as they have been rarely successful elsewhere in the world, but the possibility should be investigated.

The focus of initial exploration was to assess recently defined aeromagnetic anomalies that might be basalt plugs and to locate some Sapphires.

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1. Introduction

The author's principal objective of exploration is to locate a mineable deposit of alluvial Sapphire. A secondary objective is to locate the rocks or the structure that is the source of Sapphires in the district.

1.1 Report Datum

GDA94

1.2 Exploration Rationale

The existence of Sapphires in the Priory district has been known about for some years, but not a lot of work has been done to find a mineable deposit nor has the source of the Sapphires been conclusively confirmed. It is hoped that dedicated and focused exploration using recently flown Aeromagnetics and simple prospecting methods will prove successful..

1.3 Geological Setting

The following has been provided to the author by Karen Adams a Geologist employed by Ron Gregory Prospecting.

“The Tasmanian Geological Survey Record of 1995 (Seymour and Calver) describes the regional geology of the north-east of Tasmania as dominantly composed of turbiditic rocks from the Lower Palaeozoic known as the Mathinna Group, that have undergone Early Devonian deformation, Devonian granitoid intrusions (with some associated mineralization) and mid Devonian to Carboniferous deformation.

The Mathinna Group out crop from around Beaconsfield in the north-east to Maria Island in the south (Baillie et al, 1989) and have no discernable basement depth (Seymour and Calver, 1995). Age diagnostic fossils are extremely rare within the Mathinna Group, however the oldest rocks within the group are thought to be the quartzose turbiditic sandstone (Stony Head Sandstone) followed by a black pelite (Turquoise Bluff Slate) and then an increasingly sand-rich succession of sublithic and quartzose turbidites (Bellingham Formation), and the feldspatholithic Sidling Sandstone (Seymour and Calver, 1995) (Banks et al, 1989).

Early Devonian deformation of the Mathinna Group, posited as D1, precedes the St Marys Porphyrite extrusion and emplacement of the inter-related Devonian granodioritic plutons, and lead to an overall NNW trending, low grade metamorphism (Seymour and Calver, 1995).

The dominant volcanic/magmatic features of northeastern Tasmania include the St Marys Prophyrite and the Devonian granitoids (including the Scottsdale, Blue Tier and Eddystone Batholiths).

While the St Marys Porphyry was originally named in 1957 as an extrusive rock, it was considered possible that it could be a high level intrusive body. Later work by McNeil in 1965 showed the southwestern contact to be intrusive with subsequent work confirming this, but showing other parts of the body to be extrusive (Baillie et al, 1989).

Geophysical modeling demonstrates the likelihood of subsurface connectivity between the various Devonian granitoids, comprising a large, northerly trending elongate mass, underlying a significant proportion of the "Northeast Tasmania

The Devonian granitoids can be divided into four main types. I-type granodiorite, biotite adamellite/granite, S-type biotite-garnet adamellite and alkali-feldspar granite (Seymour and Calver, 1995) (McClenaghan, 1989). The Blue Tier batholith is relatively well studied and is considered to provide a reliable analogue for the successive phases of intrusion in north east Tasmania. The main granodiorite plutons are the oldest, intruded by adamellite and granodioritic dykes that are comagmatic and likely part feeders to the St Marys Porphyry, dated from 388-389Ma (Seymour and Calver, 1995). A second phase of adamellite intrusions is dated at approximately 15 million years later. Alkali-feldspar granites, thought to be derived from this second phase of adamellite intrusion by crystal fractionation, followed from 364-374Ma (Seymour and Calver, 1995). The I-type granites decrease in abundance to the east and the unequivocally S-type granites are restricted to the Eddystone Batholith in the far northeast.

Mineralisation in the northeast of Tasmania is dominantly thought to be Devonian in origin and related in part to the emplacement of the granitoids in the area. Vein and disseminated deposits abound, with a conspicuous absence of skarn type deposits due to the absence of carbonate and/or ultramafics in the area (Seymour and Calver, 1995). Gold-bearing quartz reefs are well-known in the Mathinna beds and many seem to occur in a corridor between the Blue Tier and Scottsdale Batholith. Gold bearing veins are likely to have a deep seated regional metamorphic origin, while other gold deposits, as exemplified by the Lisle and Golconda deposits appear to have a close genetic relationship to granitoid emplacement, in particular the hornblende granodiorites (Seymour and Calver, 1995).

Disseminated cassiterite deposits are found within greisenised alkali-feldspar granites in the Blue Tier Batholith and dilational quartz-wolframite vein deposits occur in Mathinna beds over granite cupolas (Seymour and Calver, 1995).

Tertiary Basalts are scattered throughout northeastern Tasmania, with a notable increase in abundance on the western and south-western margins of the Blue Tier Batholith around the Briseis Valley area. Small outcroppings of Tertiary basalt also occur to the east of Mount Cameron, on the northern margins of the Blue Tier Batholith (ed. Burret et al, 1989)."

The author's view is that the Priory district is mainly granite with some Mathinna bed outcrop and some basalt plugs in places.

1.4 Licence Information

1.4.1 Licence Number

EL9/2013

1.4.2 Licence Name

Priory

1.4.3 Licence Location

The Licence covers the Priory district, from Priory in the south east, to Lottah in the south west to Pipdoodle Creek in the north west to Ansons Plains homestead in the north east.

Please refer to Location Plan at **Figure 1**.

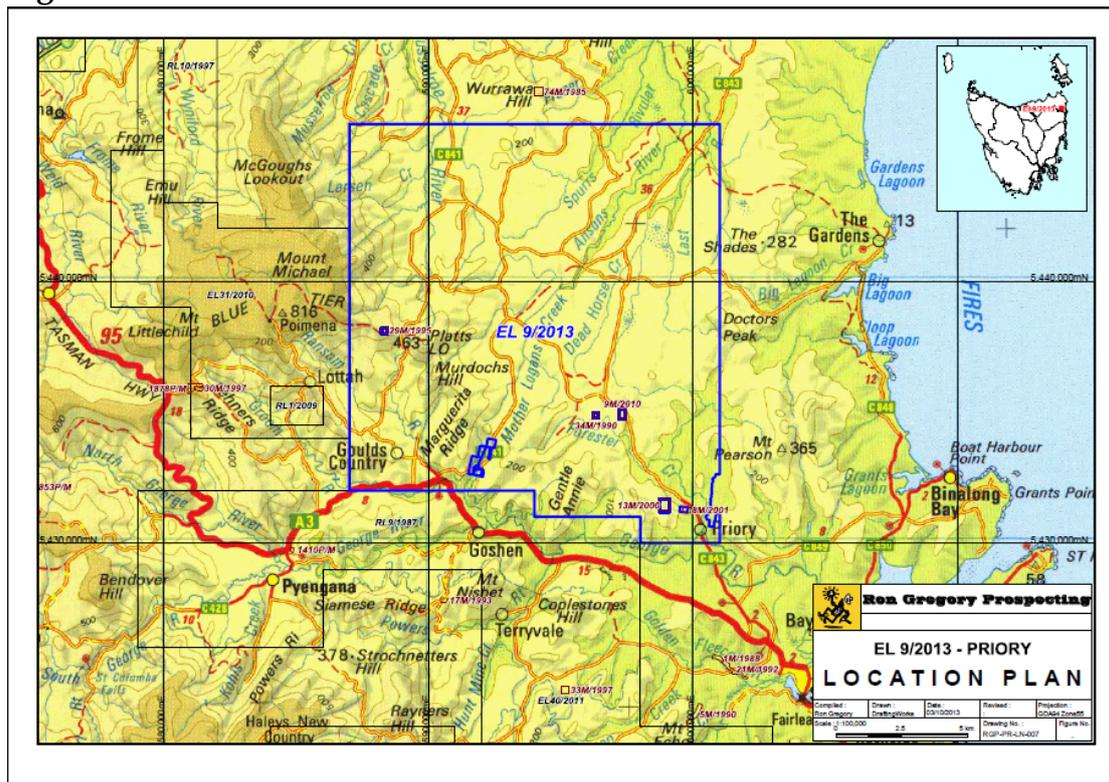
1.4.4 Reporting Period

7thth November 2013 – 6th November 2014

1.4.5 Tenement Holder

Ron Gregory

Figure 1 – Location Plan



LOCATION PLAN EL9/2013

2. Previous Work

2.1 Work Prior to Current Licence

A review of past exploration was done by the author. Very little work has been done by past explorers on Sapphire. There has been some alluvial Tin mining & prospecting at Priory (ID 2030) (hardrock), Albion Creek (ID 2021) (alluvial) and Bells Marsh Creek (ID17) (alluvial) areas.

The most comprehensive modern exploration was by CSR (69_0595, 79_1407, 80_1482, 82_1765, 83_1990, & 83_1990), but this was mainly concentrated on Thoreau's Deep Lead and Scamander. CSR did conduct a stream sediment sampling program on creeks in the western part of EL9/2013 and this information is still being evaluated (79_1407). No sapphire was mentioned but coarse Zircon and Cassiterite was found in places.

Shell also conducted exploration over some of EL 9/2013 and concluded that Tin potential was low. Refer to 83_2073.

Van Dieman Mines Pty Ltd under SEL 22/1999 conducted some exploration for Sapphires in the Priory area but their work was located south of Priory and immediately outside of EL9/2013.

Refer to **Figure 2**

The following is an excerpt from their report.

“A number of large gemmy stones were observed in the collection of Michael Lloyd of Priory near St Helens. This material was evidently obtained by his father or grandfather from alluvial tin mining operations in the Tertiary Leads of the St Helens district. This parcel does not appear to have been hand-picked over and remains one of the few intact and representative parcels observed by the author.”

(Kinane 2003 – 10_6111)

The various reports for SEL22/1999 provide interesting information on the value of Sapphire. Please refer to 10_6111, SEL221999_200408_01, SEL221999_200508_01, SEL221999_200808_02, SEL221999_200808_03, & SEL221999_200809_01.

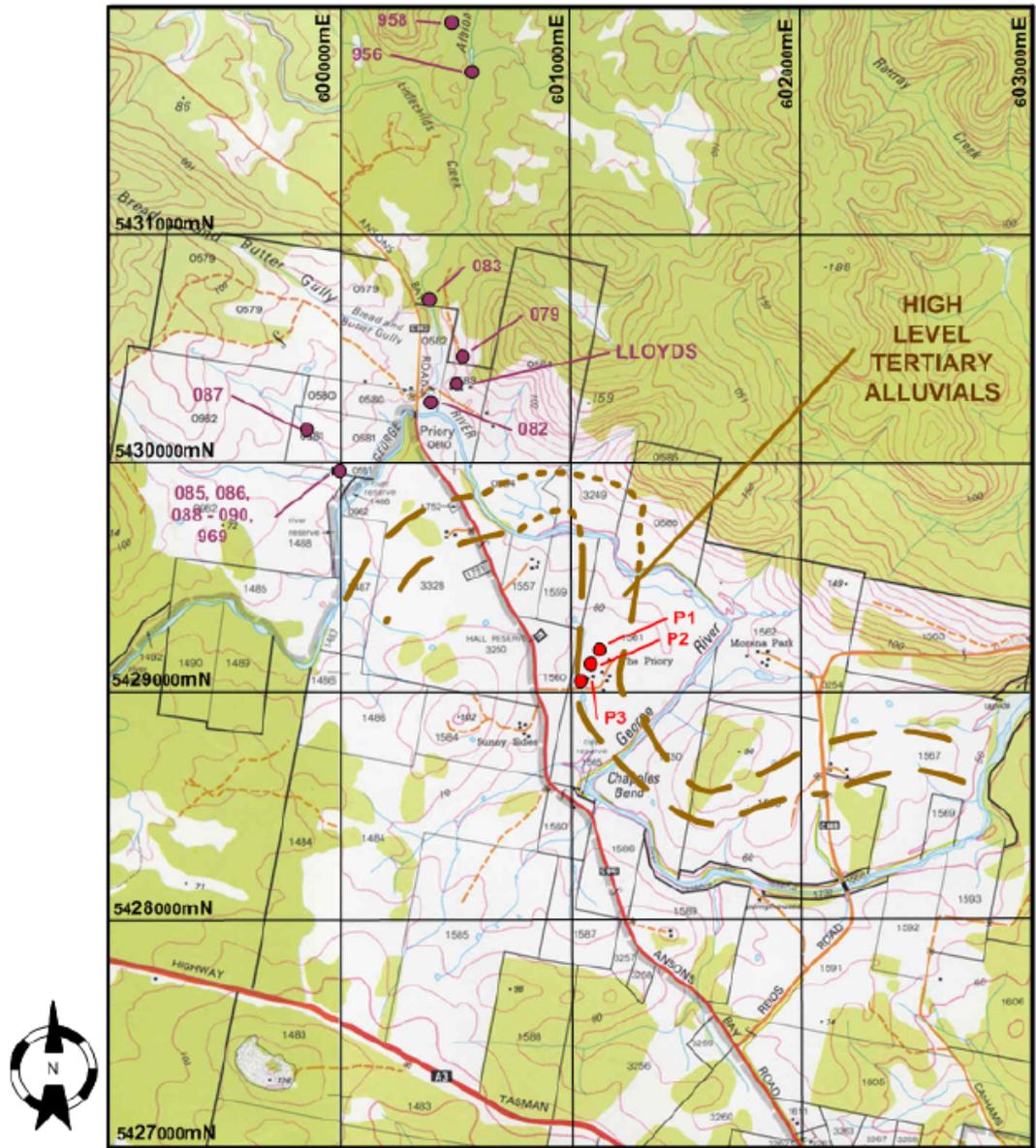
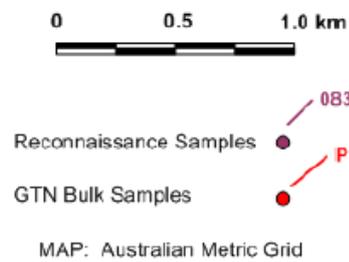


FIGURE 13



VAN DIEMAN MINES PTY LTD		
TITLE		
PRIORY AREA PROSPECTS		
FLENAME	DRAWN BY	DATE
DRAWING321	Niugini Resources P/L	20/09/2001
SCALE	PAGE	REVISED
1:25,000	1 OF 1	09/11/2003

FIGURE 2 – VAN DIEMAN MINES PTY LTD

3. Exploration

3.1 Desktop Studies

A review of previous exploration was conducted by the author. Refer to the synopsis in **Section 2- Previous exploration.**

Familiarization with world mining, and characteristics of Sapphire marketing was conducted by the author.

A report was from McPherson Duncan and Associates on the “priority Sapphire Field”. See **Appendix 1.**

3.2 Regional Exploration Activities

Regional exploration was conducted by K. C. Morrison Pty Ltd who searched for and examined magnetic anomalies in the north eastern portion of the Licence. See **Appendix 2 Relinquishment Report**

3.3 Prospect-based Exploration Activities

LOGANS QUARRY (inactive)

(Also known as Mother Logans Quarry)

Logans Quarry was used by Gunns for road material on local roads. Basalt was quarried but due to rehabilitation the original source cannot be determined and is believed to be underneath the rehabilitation. Numerous examples of black Spinel and other minerals can easily be found in the basalt rocks, but thorough examination failed to reveal any Sapphire or Zircon.

The creek draining the eastern side of the hill in which the quarry is located was the source of the “Discovery” Sapphire in matrix found by Michael Lloyd. Prospecting in this creek by the author and assistants (Rowena Murcott & Angelique Martin), Field assistants Howard Armitage & Brian Guy and fossicker Miguel De Salas has located a number of mostly blue Sapphires, together with Zircons and black Spinel. All are not waterworn and therefore have not traveled far. See **Appendix 4** for photos of Miguel’s Sapphires

HALFWAY QUARRY (active)

Black Spinel can be found in the basalt of this quarry. Prospecting by Ken Morrison & Michael Lloyd found no Sapphire in drainage below the quarry, but further work needs to be done.

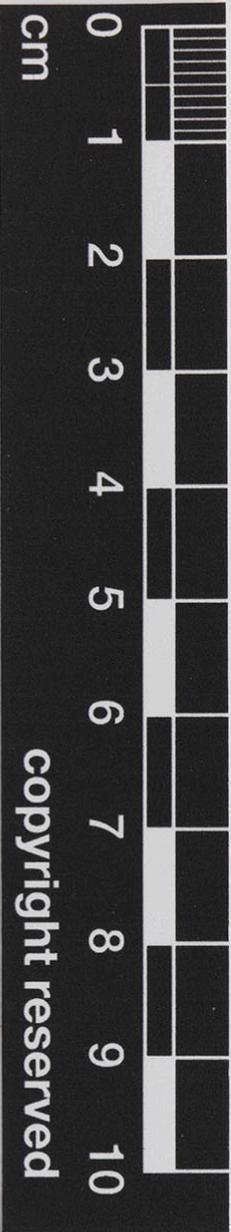
3.3.2 Geology

Little geology other than the work conducted by Ken Morrison on regional sampling was carried out. The geology is regarded as relatively simple, at this stage. Find basalt plugs, see if there are Sapphires or other indicator minerals, black Spinel or Zircon in the basalt or alluvials and then look at the geology of basalts.

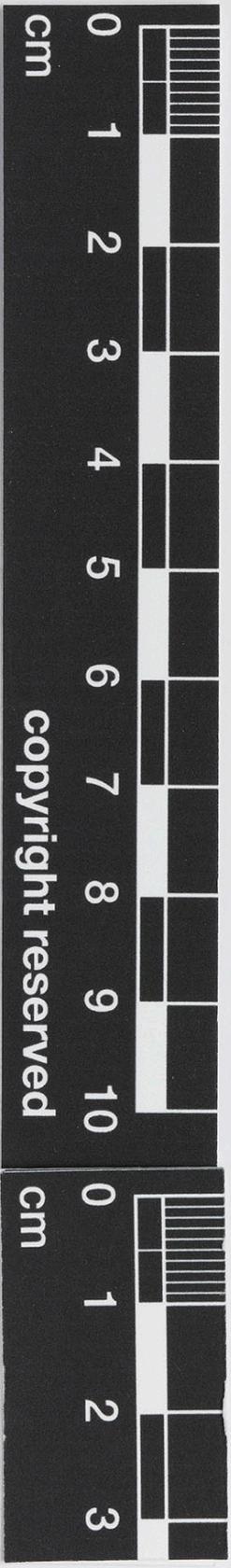
It should be noted that a fine example of a basalt plug intruding granite is at the Halfway Quarry. This would be a great teaching tool for students.

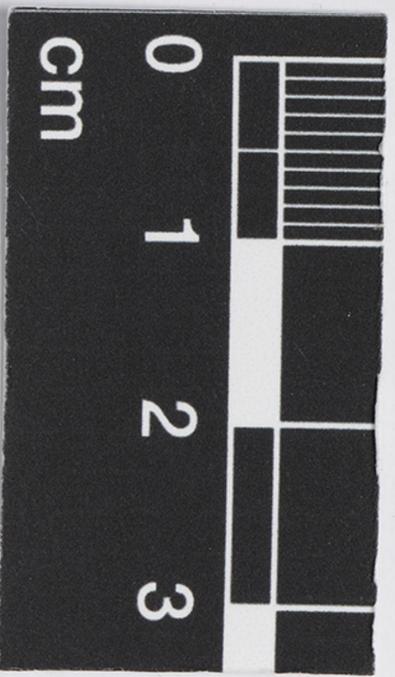
Figure 3 gives the Geology of EL9/2013 (from MRT 1:25,000 series) 7.

Mother Logan's
Sep 2014



Tasmanian Museum
& Art Gallery
Tasmanian
Government





3.3.3 Geochemistry

No Geochemistry was conducted.

3.3.4 Geophysics

A report on the magnetic anomalies within EL9/2013 was commissioned by Phil Muir of Southern Mineral Exploration Geophysics (SMEG). See **Appendix 3**.

A second report on the possibility of Deep Leads existing in the alluvial flats of the district was also commissioned. See **Appendix 4**.

Figure 4 shows the Potential Basalt Plugs within EL9/2013.

3.3.5 Remote Sensing

No Remote Sensing was conducted in 2013 – 2014

3.3.6 Drilling

No drilling was conducted in 2013-2014

3.3.7 Ore Reserves and Resources

N/A

3.3.8 3D Modelling

N/A

4. Results

The exploration to date has confirmed the existence of reasonable sized Sapphire at Logans Quarry, larger than are normally found in Tasmania. However few gem quality stones have been found. But then again only a small amount of material has been tested, probably only 2-3m³ in all.

The geological examination of magnetic anomalies in the north east half of the licence has downgraded that area and a decision has been made to relinquish a large part of the Licence.

Examination of magnetic anomalies for prospective basalt has proved successful in reducing the Licence size quickly.

Exploration for Deep Leads other than the small part of Thureau's Lead, located in the south east corner of the licence, will not be pursued in future exploration.

Conclusions

5.1 Conclusions

No conclusions can be drawn at this time other than the results so far are encouraging and therefore further work is warranted.

5.2 Recommendations

Conduct further magnetic anomaly examination in the western and south western part of the Licence and continue regional stream sediment sampling. Ken Morrison has offered to map and manually sample on a prospect scale the Bread & Butter Creek area at Priory.

Small scale bulk sampling of the alluvial flats near to Logans Quarry
Black-light the rocks at Logans and Halfway Quarries for Sapphire and Zircon.

Remove a bulk sample of the crushed rock from Logans Quarry for washing to see if Sapphire or Zircon is present.

6. Environment

No environmental damage was caused by the year's activities.

7. Expenditure

Expenditure during September and December quarters were minimal as the author had other business commitments as well as restricted cash flow due to non-payment by a large client. However the expenditure commitment for the first year was substantial met:

The majority of Geology expenditure was on a value basis from friends, fossickers and specifically Ken Morrison, Rowena Murcott & Angelique Martin.

Their assistance is gratefully acknowledged.

Geophysics-----	\$5,800
Geology-----	\$41,405
MRT rental & fees-----	\$5,892
Administration including logistic support to Assistants-----	\$3,364
TOTAL-----	\$56,461

8. References

All References are available on the Mineral Resources Tasmania Website

57_0174 – Rio Tinto
64_0381 – Utah
68_9532 – Utah
69_0595 – Geophoto
79_1407 – CSR
80_1482 – CSR
82_1683 – CSR
85_1765 – CSR
82_1888 – Goldfields
83_1990 – CSR
83_2073 – Shell
88_2901 – Totteny

MRT

ER85155
GSB55
OS100
OS169
TR5_75_77
TR8_63_71
TR12_19_24
UR1933_071_77
UR1946_073
UR1996_05

SEL22/1999 Annual Reports 2004, 2005, 2008 & 2009

9. Appendices – (Vol. 2)

Appendix 1

The Priory Sapphire Field
McPherson Duncan & Associates

Appendix 2

Relinquishment Report 2015
K. C. Morrison Pty Ltd

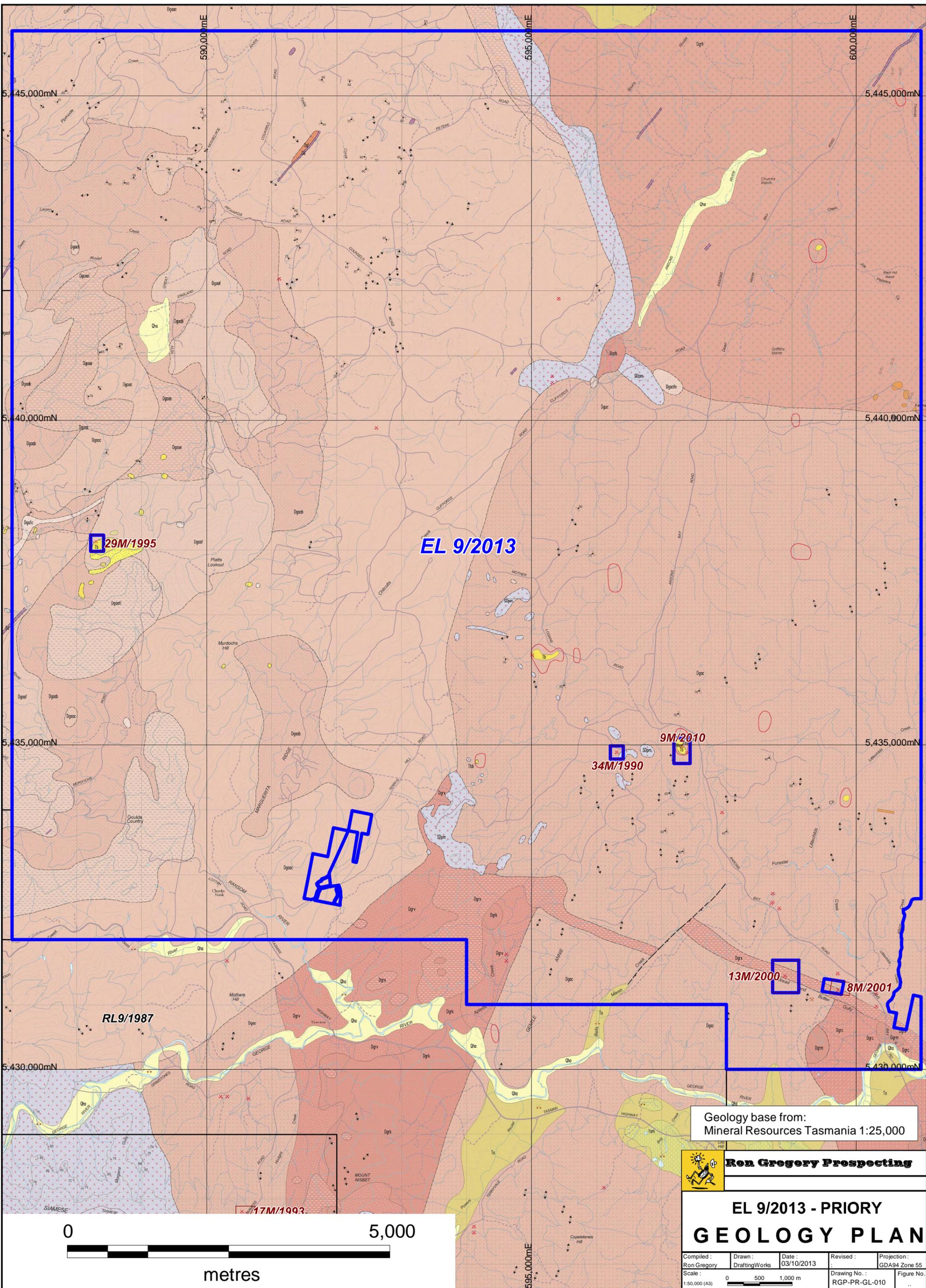
Appendix 3

Report on Geophysical Data Assessment for possible Basalt Pipes and
Paleochannels
Southern Mineral Exploration Geophysics (SMEG)

Appendix 4

Brief Report on Deep Lead potential on EL9/2013
Southern Mineral Exploration Geophysics (SMEG)

EL9/2013 GEOLOGY MAP
(Taken from MRT 1:25,000 map series)



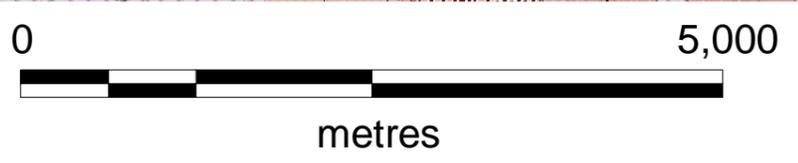
Geology base from:
Mineral Resources Tasmania 1:25,000



Ron Gregory Prospecting

EL 9/2013 - PRIORY GEOLOGY PLAN

Compiled : Ron Gregory	Drawn : DraftingWorks	Date : 03/10/2013	Revised : .	Projection : GDA94 Zone 55
Scale : 1:50,000 (A3)			Drawing No. : RGP-PR-GL-010	Figure No. : .



EL9/2013 POTENTIAL BASALT PLUGS MAP

