HELLYER GOLD MINES PTY LTD

EL51/2011 LOONGANA ROAD ANNUAL REPORT

August 2013

Reporting period: 15 August 2012 to 14 August 2013
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Submitted by: Hellyer Gold Mines Pty Ltd
Tenement holder: Hellyer Gold Mines Pty Ltd, PO Box 721, HAMILTON CENTRAL QLD 4007

ABSTRACT

EL 51/2011 is currently held by Hellyer Gold Mines Pty Ltd (Hellyer; formerly Hellyer Mill Operations Pty Ltd). On-ground exploration activities within EL 51/2011 have been minimal over the past twelve months. The objective for the tenement is to determine the extent and quality of the limestone as a neutralising agent for the operations at the Hellyer mine. Exploration over the following twelve months is to map and sample the limestone to determine the suitability of the limestone for this purpose.

An assessment has commenced on all available data covering the tenement including historical reports. Previous reports covering this tenement can be found on the Mineral Resources Tasmania database (MRT). No field work has been undertaken by Hellyer during the reporting period.

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1. INTRODUCTION

1.1 TENURE

Exploration Licence (EL) 51/2011 "Loongana Road" was granted to Hellyer Mill Operations Pty Ltd for a period of five years commencing on 15 August 2012 as part of the Hellyer Mine package. EL51/2011 comprises 40 square kilometres. The table below is from the Mineral Resources Tasmania (MRT) database, of details recorded for the tenement. The company name of Hellyer Mill Operations Pty Ltd has been changed to Hellyer Gold Mines Pty Ltd as a result of the recent acquisition.

Details for Licence Category 5 (Non-Metallic)				
ID	Ten. Ref.	Area	Holder	Product
34504	EL51/2011	40 sq km/blocks	Hellyer Gold Mines Pty Ltd	Category 5 – Industrial Minerals, Semi/Precious Stone

This is the first annual report for the tenement, reporting from 15 August 2012 to 14 August 2013.

1.2 EXPLORATION RATIONALE

A limestone source is required as part of the neutralising process at the Hellyer mine operations. The tenement provides a significant source of limestone within reasonably close proximity to the plant. Limestone is an alkaline agent with the ability to neutralise, or partially neutralize strong acids as part of the processing of various metals, especially iron, copper, and lead. The exploration program for the first two years is mapping and sampling of limestone to determine the extent and quality of the limestone as a neutralising agent for operations at the Hellyer mine.

1.3 LOCATION

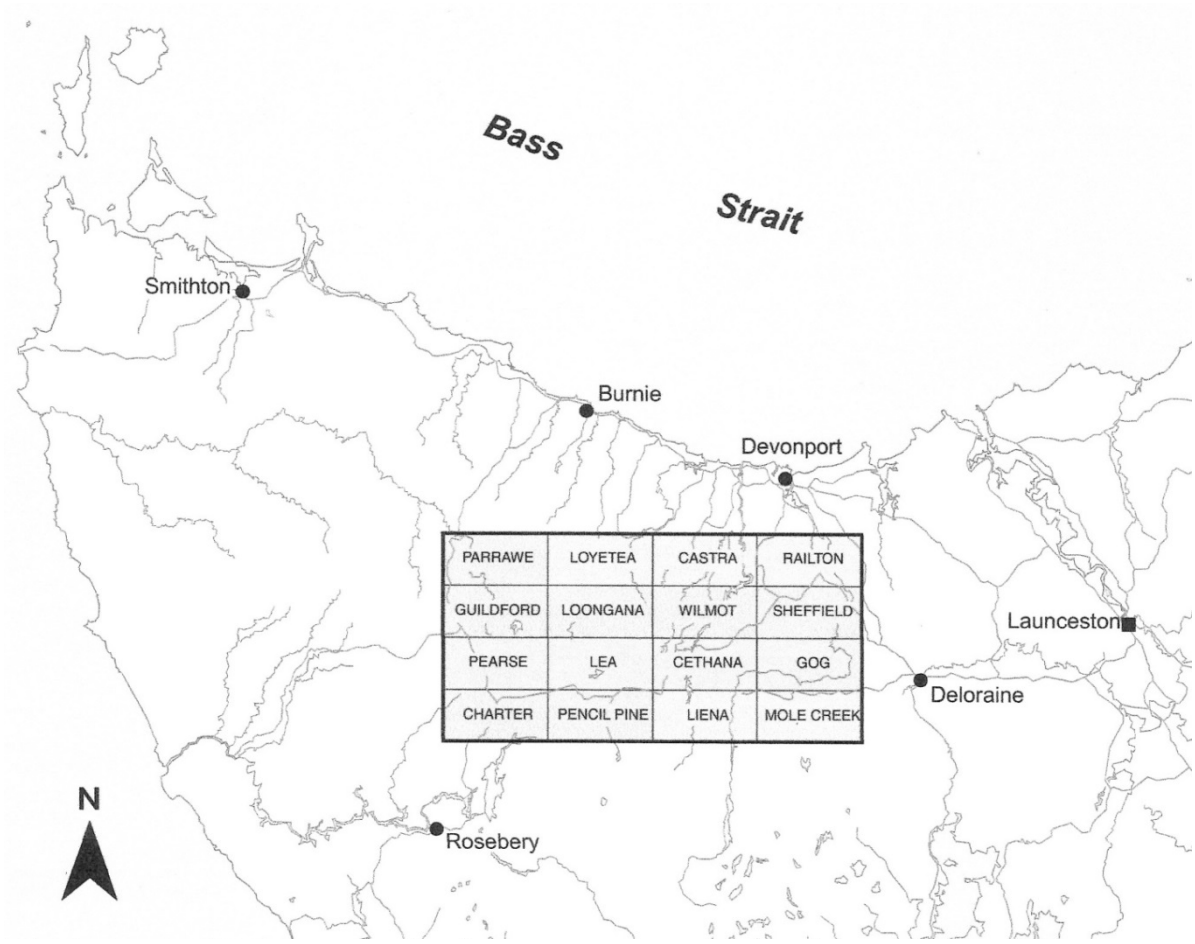
Loongana Road EL51/2011 is located 32 km south of Ulverstone, in North West Tasmania. The project area is covered by the 1:25,000 Loongana Geological Map Sheet 4041 and Wimot Map Sheet to the east, at approximately 417,000 mE and 5,416,000 mN (GDA 94, MGA Zone 55). Refer to Figure 1 for the location of the tenement and topography of the area.

Access to the Loongana area is good. The small hamlet of Nietta is located approx. 25km south of Ulverstone. From Nietta, the Loongana road goes south west and then traverses west through the centre of the tenement, following the Leven river. The tenement is approx. 5km from Nietta.

The Loongana region is largely characterized by private farming land and state forest- with topography ranging from flat river frontage to steep sided hills. Figure 2 shows Google Earth imagery over the project area. Figure 3 shows land tenure over the tenement and Figure 4 depicts excluded land.

1.4 GEOLOGICAL SETTING *from BUCKLAND, G L 1977*

The map below shows the location of the mapped areas in northwest Tasmania, discussed in the regional geological setting. 1:25 000 scale geological map sheets are available for the named areas.



1:25 000 Geological Map Sheets – Northwest Tasmania

1.4.1 REGIONAL GEOLOGY

Refer to Figure 5 Regional Geology 1:25,000 Loongana Map Sheet. The Cambrian 'Dundas trough' and Mt Read Volcanics belt swing from a north south trend into an east west orientation in the Sheffield area, before disappearing under younger rocks to the east. The main Cambrian trough expands considerably in width in a north south direction at this 'big bend', and links to the narrow 'Dial Range trough' just north of the area under consideration.

The following major geological elements are present in the area:

(1) Proterozoic rocks forming three areas of 'basement' to the trough. The largest is the northern margin of the Tyennan Region, of Mesoproterozoic schist, quartzite and phyllite. A smaller block of dolomitic schist and quartzite, surrounded by post-Cambrian rocks, is present to the northeast of the trough at Railton. A small area of Neoproterozoic quartzwacke belonging to the Oonah/Burnie Formation correlates is present in the western part of the area around Guildford and Hampshire.

(2) Several blocks of Early Cambrian allochthonous Cleveland–Waratah Association rocks, including the 'Barrington Chert' and 'Motton Spilite', form 'basement' in the central part of the trough in the Sheffield–Preston area, and are also exposed in the Parrawe area to the west.

(3) The main trough is largely occupied by Middle Cambrian post-collisional volcanic and volcano-sedimentary sequences of the Mt Read Volcanics belt. The trough is shaped like an inverted 'v', bounded by the Tyennan Region to the south, and by Neoproterozoic and allochthonous rocks to the west and east.

(4) Late Cambrian to Ordovician siliciclastic sequences of conglomerate and sandstone are widespread across the area, and include correlates of the Late Cambrian Owen Group on Black Bluff Range, the Roland

Conglomerate along strike at Mt Roland, and the extensive shallow marine shelf deposit of Ordovician Moina Sandstone across most of the area. The siliciclastic rocks are regionally unconformable on the underlying Middle Cambrian rocks.

(5) Ordovician Gordon Group limestone and small remnants of Siluro-Devonian sandstone occur in a series of large Tabberabberan synclinal structures.

(6) Two significant bodies of Devonian granite, the Housetop and Dolcoath granites, crop out in the northern and south-central parts of the area, and are associated with numerous mineral prospects.

(7) Flat-lying and block-faulted Carboniferous- Permian-Triassic sedimentary rocks, and associated Jurassic dolerite intrusions, blanket most of the older rocks in the eastern part of the area. The sequence is exposed along the scarp of the Great Western Tiers, and includes a thick (300 m) upper dolerite sill and a possible thin lower sill (Tasmanian Geological Survey Record 2003/17 6) forming small outliers in the Mole Creek area (Jennings, 1963). Coal deposits in the Permo-Triassic beds have been widely exploited and drilled in the Mersey River-Railton area.

(8) A widespread sequence of Tertiary basalt flows lies unconformably across all older rocks, and represents the remnant of a partly eroded Tertiary plateau. The basalt has infilled a previous system of river valleys and gorges, and is associated with lake sediments, river gravels and deep leads in many places. Much of the basalt has been cultivated as farmland.

1.4.2 LOCAL GEOLOGY

Refer to Figure 6 Surface Geology of the tenement.

The local sequence is dominated by Ordovician Gordon Group limestone and Siluro-Devonian Eldon Group sandstone. The limestone sequences generally overlie the Moina Sandstone conformably and gradationally, and are typically preserved in large Devonian synclinal structures now forming broad valleys. Tenement EL 51/2011 contains part of this sequence.

The Loongana–Narrawa area, where a fairly narrow east-trending structure sits quite discordantly across the series of NNE-trending structures coming up from the south, is probably also connected to the basin of Gordon-Eldon Group rocks around Talbot Lagoon.

In the Winterbrook area, covering the southeast portion of the tenement, a thick sequence (over 1000 m) dominated by volcaniclastic conglomerate and sandstone is exposed, between the Black Bluff range and Loongana. It was mapped by Pemberton and Vicary (1989). The sequence is folded into a broad ENE-trending syncline, with much of the south flank obscured by scree, and has an unconformable relationship with overlying Owen Group rocks. A number of thin units of andesitic lava, and several bodies of felsic quartz-feldspar-phyric lava or flow rock, are present. Several of the latter have vitriclastic textures in places, and are probably welded tuffs. Units mapped as quartz-feldspar-biotite-phyric crystal tuff are also present.

The conglomerate is typically pebble-cobble grade, with clasts predominantly of quartz-feldspar-phyric volcanic rocks but also including andesite, granite and quartzite. Some units are predominantly andesitic in composition. Several intrusive bodies of flow-banded quartz-feldspar porphyry are present, and may be shallow sub-volcanic bodies related to the felsic lavas. A zircon date of 500 ± 7 Ma has been obtained from a felsic lava unit in the central part of the Winterbrook area (Black et al., 1997).

1.5 REGIONAL GEOPHYSICS *from BUCKLAND, G L 1977*

Notes on aeromagnetic features from the WTRMP survey (image is on MRT database):
Refer to Figure 7 for aeromagnetic image over tenement area. A narrow ridge of high magnetics along the north flank of the Loongana Range is puzzling. Its trend suggests it is either related to the basal

conglomerate of the Owen Group correlates — perhaps a zone rich in detrital magnetite — or to some sort of east-west dyke structure, perhaps related to the Tertiary basalts.

Another positive feature overlaps the Owen Group–Cambrian contact just west of Nietta, but appears to be related to Tertiary basalt and could indicate that the basalt is more extensive than mapped in this area.

Notes on the radiometric image (image is on MRT database):
Radiometrics provides a clear and useful contrast between those rock types with low radiometric response, particularly the Tertiary basalts and the Owen–Moina siliciclastic rocks, and lithologies with significant response, such as the Cambrian volcanic sequences, the Devonian granites, and the Precambrian rocks. Thus small windows of older rocks within the large basalt-covered western area may be clearly visible, and a number of these have been investigated and confirmed by R A Poltock (2002).

Other strong zones are produced by the volcanic sequences, including the EQPS (particularly in the Bell Mount–Cethana area), the WVSS in most areas (particularly Loongana–Nietta–Lower Wilmot), and the Tyndall Group correlates, which give a strong to patchy response. A contrast is apparent at Native Track Tier between the strong and fairly uniform response of the WVSS correlates to the southeast, and the patchy response of the Tyndall Group correlates to the northwest.

1.6 BRIEF SUMMARY OF CAMBRIAN PROSPECTS

Most of the known productive mineral deposits in the region are related to the Devonian granites, however, four types of Cambrian deposits/prospects can be recognised – the below type was of the most interest to previous explorers over the tenement area:

Pb-Zn-Cu ± Ag prospects hosted within tuffaceous shale and sandstone of the WVSS, with faint suggestions of exhalative mineralisation, and links to andesitic intrusive rocks in some cases, e.g. Lake Barrington prospect, McPhersons mine, Preston Silver mine, Barrington (Alma) mine, Loyetea South, Loyetea North, and Challenger 2. The Crosby Creek prospect is clearly related to the adjacent andesitic intrusive rock, and suggests that such intrusive rocks might have acted as both metal sources and heat engines to potentially produce VHMS-type deposits. Large areas of the WVSS around the interpreted 'granitic' intrusive in the Nietta–Castra–Barrington area would seem to be prospective for buried VHMS deposits, or other types of mineralisation, from such a source, but knowledge of the geology of these areas is insufficient to properly assess this potential. This is partly due to extensive coverage by basalt, concealing the more prospective underlying rocks.

See Figure 8 for mineral occurrences within the tenement.

2. REVIEW OF PREVIOUS WORK

2.1 PRIOR TO CURRENT TENEMENT

Locating previous exploration reports within the tenement boundary has been conducted remotely via the MRT database. Reports are listed in the literature review as part of section 3 of this report. The majority of previous exploration has been related to the search for volcanogenic massive sulphides, although no mining has been established within the tenement, of this type. Figure 9 shows the location of drill hole points and Figure 10, Stream Sediment Sample locations within the tenement.

2.2 DURING CURRENT TENEMENT

There was no previous work during the current tenement period since this is the first annual report.

3. EXPLORATION COMPLETED DURING THE REPORT PERIOD

3.1 LITERATURE REVIEW

An MRT database search using the co-ordinates of the current tenement has produced the following results. See Table 1 below. The tenement reference i.e. EL 51/2011 means, the 51st exploration license that was

granted in the year 2011. All previous reported work, listed, has been for the exploration of base metals +/- gold. No metal deposits have been mined within the tenement area according to MRT. However, it is highly likely that limestone has been quarried on this site in the past, due to the high grade nature of the limestone.

Table 1: Previous reports in the MRT database that cover all or part of the current tenement

Tenement reference	Locality	Mineral category	Holder
EL36/1979	South Nietta	1	The Shell Company of Australia Ltd and IMI Ltd Coal Division
EL36/1979	South Nietta	1	The Shell Company of Australia Ltd and IMI Ltd Coal Division
EL42/1992	Black Bluff	1	Renison Ltd (Exploration)
EL17/1971	Black Bluff	1	Cortima Mines Pty Ltd
EL38/1987	Wilmot	1	Cyprus Gold Australia Corporation
EL9/1988	Winter Brook	1	Aberfoyle Resources Ltd
EL51/2004	Erriba (3 km north of Moina)	1	Bass Metals Ltd and Geoinformatics Exploration Tas Pty Ltd
EL17/2005	Nietta (9 km west of Wilmot)	1	OZ Minerals Australia Ltd
EL32/1997	Leven River	1	Haslam C O
EL19/1990	Wilmot	1	Noranda Pty Ltd
EL51/2011	Loongana Road	5	Hellyer Mill Operations Pty Ltd
EL55/2007	Wilmot	1	China Coal Resources Pty Ltd

1 = Metallic

5 = Non-metallic (industrial minerals)

An MRT document search on the limestone at Loongana produced this 1951 report by TD Hughes. See the outline of the report below. Particularly relevant is the annotation at the end. It would appear the limestone within the lease is of high quality and therefore suitable for use in a processing plant as a neutralising agent.

Table 2: Report on the Loongana Limestone

Report	UR1951_098_101
Date	06/11/1951
Author(s)	Hughes, T D
Title	Limestone at Loongana
Physical Description	1 volumes, 4P
Map (250K)	SK55-3 BURNIE
Map (50/100K)	80152 Loongana
Geographic	Leven River, Loongana
Activities	Geochemistry, Geology, Mining, Structure, Whole-rock: Major
Minerals	Calcite, Gravel, Limestone
Annotation	The quantities of limestone available for quarrying are almost limitless. The limestone outcrops along either side of the Leven Valley for a distance of four miles at a width across the strike of one mile, though this is covered in places by alluvium and basalt. Limestone here is of high grade and could be quarried with no trouble at all.

3.2 REGIONAL AND PROSPECT EXPLORATION ACTIVITIES

The only exploration activity during the reporting period was the production of a map documenting the extensive limestone outcrop within the tenement boundaries. Figure 11 shows the tenement boundary, co-ordinates and location of the limestone outcrop.

4. DISCUSSION OF RESULTS

At this stage there are no results to discuss. Initial observations indicate the limestone is extensive and suitable for use in the processing plant.

5. CONCLUSIONS

There has been minimal exploration performed during the past 12 months. The objective for the tenement is to establish the full extent and quality of the limestone as a neutralising agent for the operations at the Hellyer mine. Future exploration over the next two years includes mapping and sampling the limestone to determine the suitability of the limestone for the purpose of a neutralising agent.

6. ENVIRONMENT

Since there has been no physical exploration, there has been no surface disturbing operations within the tenement area and no rehabilitation requirements.

7. BIBLIOGRAPHY

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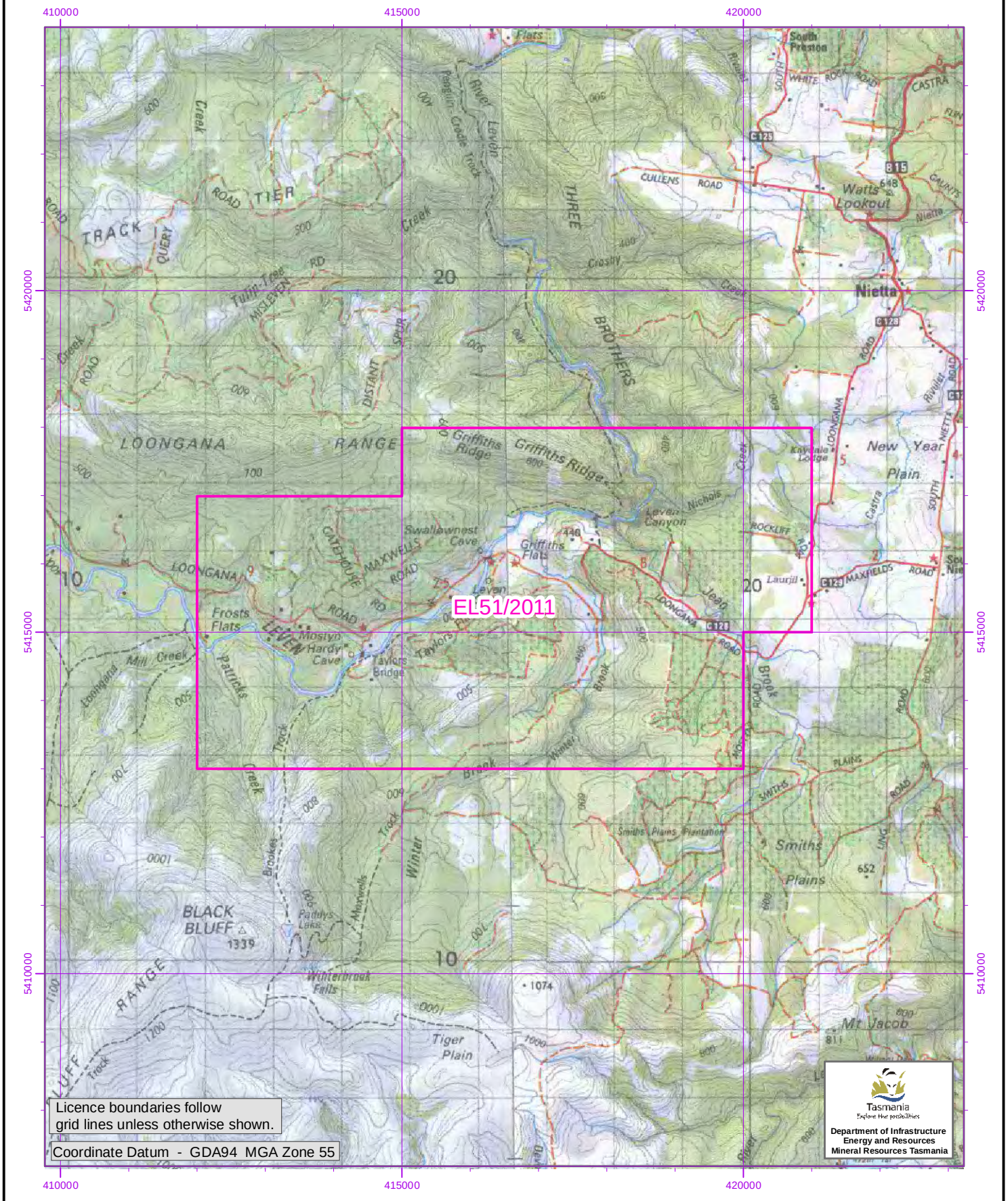
FIGURES



EL 51/2011 40km^2
Vicinity of Loongana Road

0 1 2 3 4 5 Kms

1:75000

Figure 1

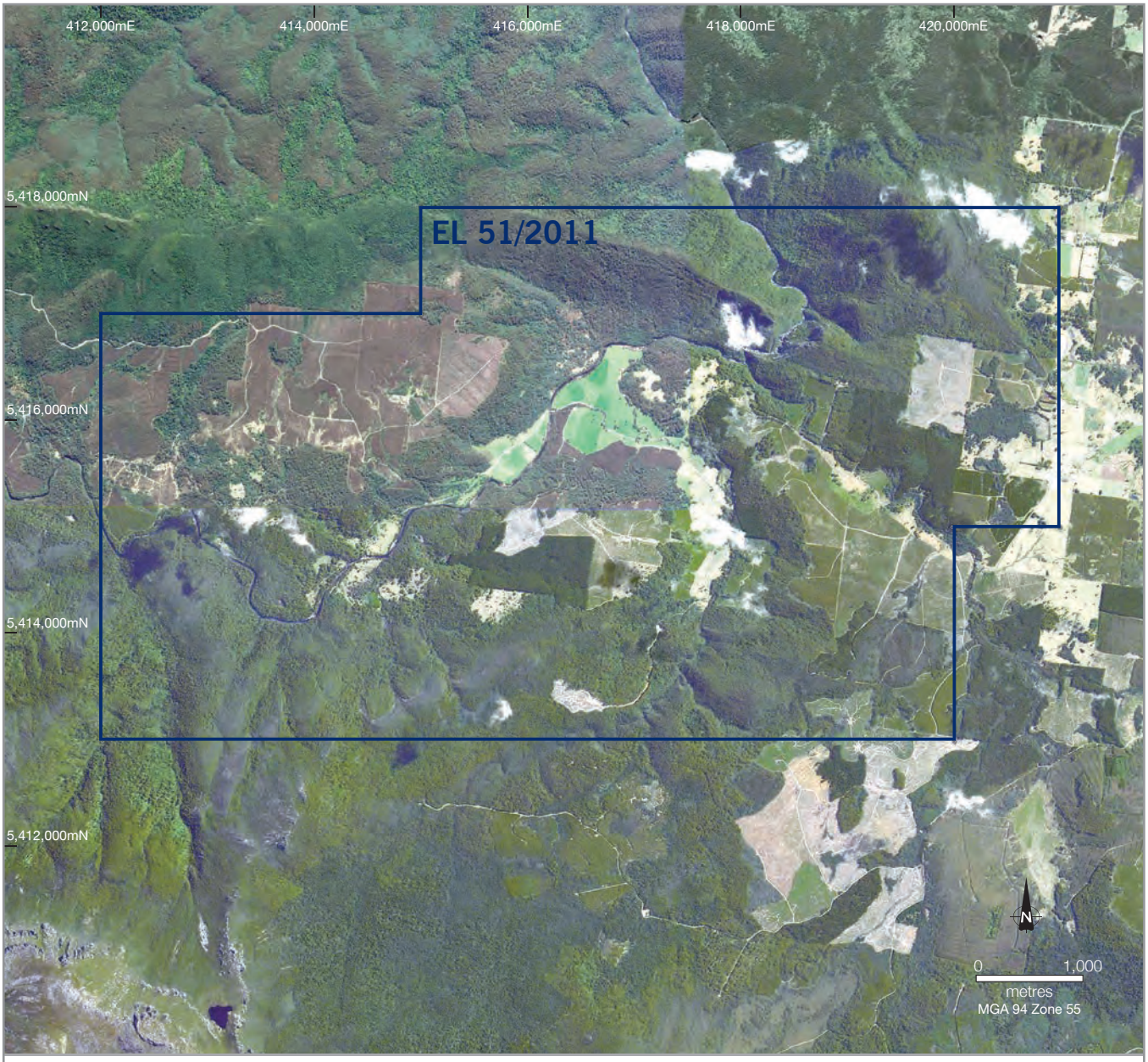


Figure 2

HELLYER Gold Mines

TASMANIA

EL51/2011
Loongana Road

Google Earth image

August 2013

Loon_02

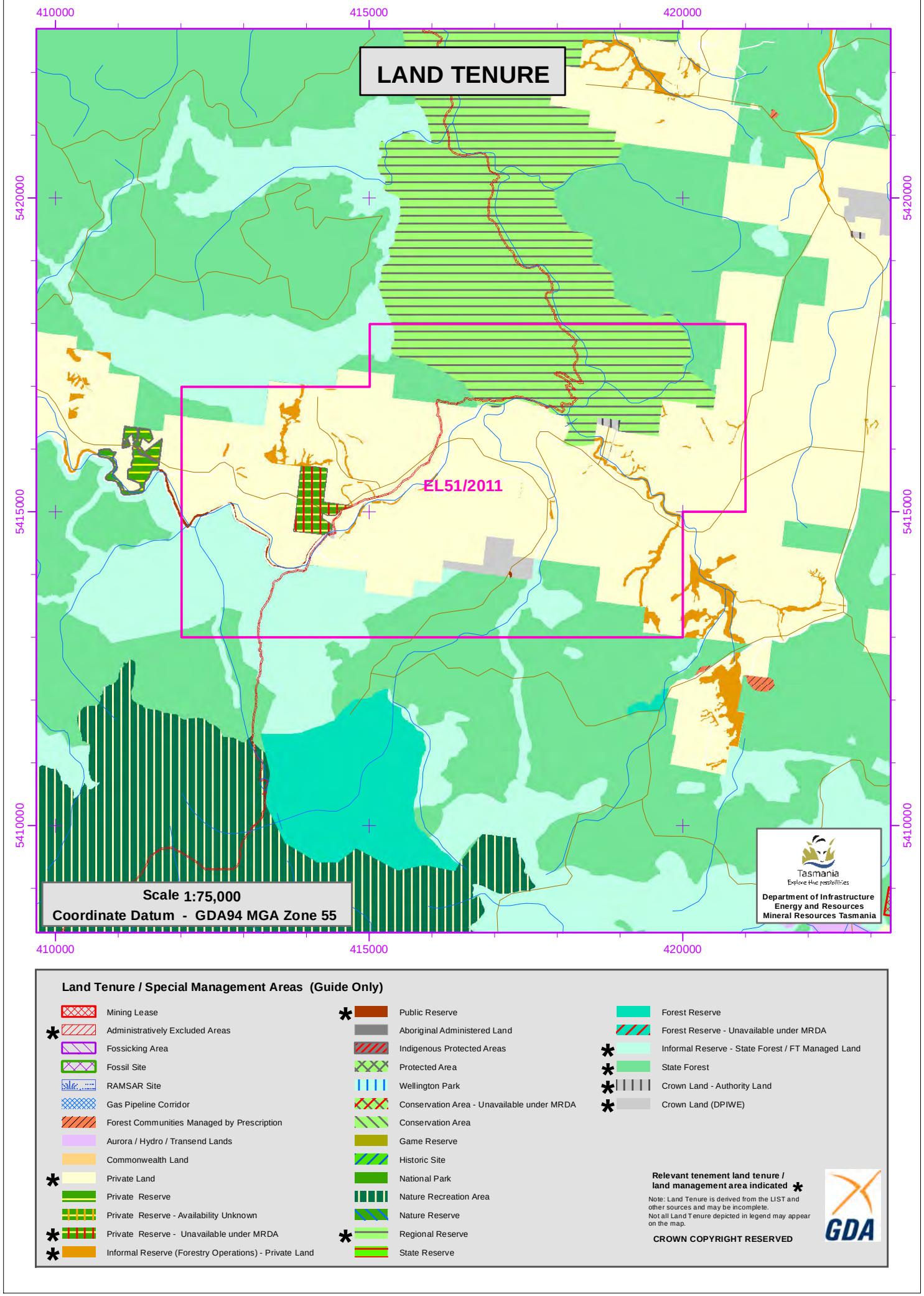

LAND TENURE
EL51/2011
410000
415000
420000
5420000
5415000
5410000
Scale 1:75,000
Coordinate Datum - GDA94 MGA Zone 55
Tasmania
Explore the possibilities
Department of Infrastructure
Energy and Resources
Mineral Resources Tasmania
Land Tenure / Special Management Areas (Guide Only)
Mining Lease
Administratively Excluded Areas
Fossicking Area
Fossil Site
RAMSAR Site
Gas Pipeline Corridor
Forest Communities Managed by Prescription
Aurora / Hydro / Transend Lands
Commonwealth Land
Private Land
Private Reserve
Private Reserve - Availability Unknown
Private Reserve - Unavailable under MRDA
Informal Reserve (Forestry Operations) - Private Land
Public Reserve
Aboriginal Administered Land
Indigenous Protected Areas
Protected Area
Wellington Park
Conservation Area - Unavailable under MRDA
Conservation Area
Game Reserve
Historic Site
National Park
Nature Recreation Area
Nature Reserve
Regional Reserve
State Reserve
Forest Reserve
Forest Reserve - Unavailable under MRDA
Informal Reserve - State Forest / FT Managed Land
State Forest
Crown Land - Authority Land
Crown Land (DPIWE)
Relevant tenement land tenure / land management area indicated *
Note: Land Tenure is derived from the LIST and other sources and may be incomplete.
Not all Land Tenure depicted in legend may appear on the map.
CROWN COPYRIGHT RESERVED
GDA

Figure 3

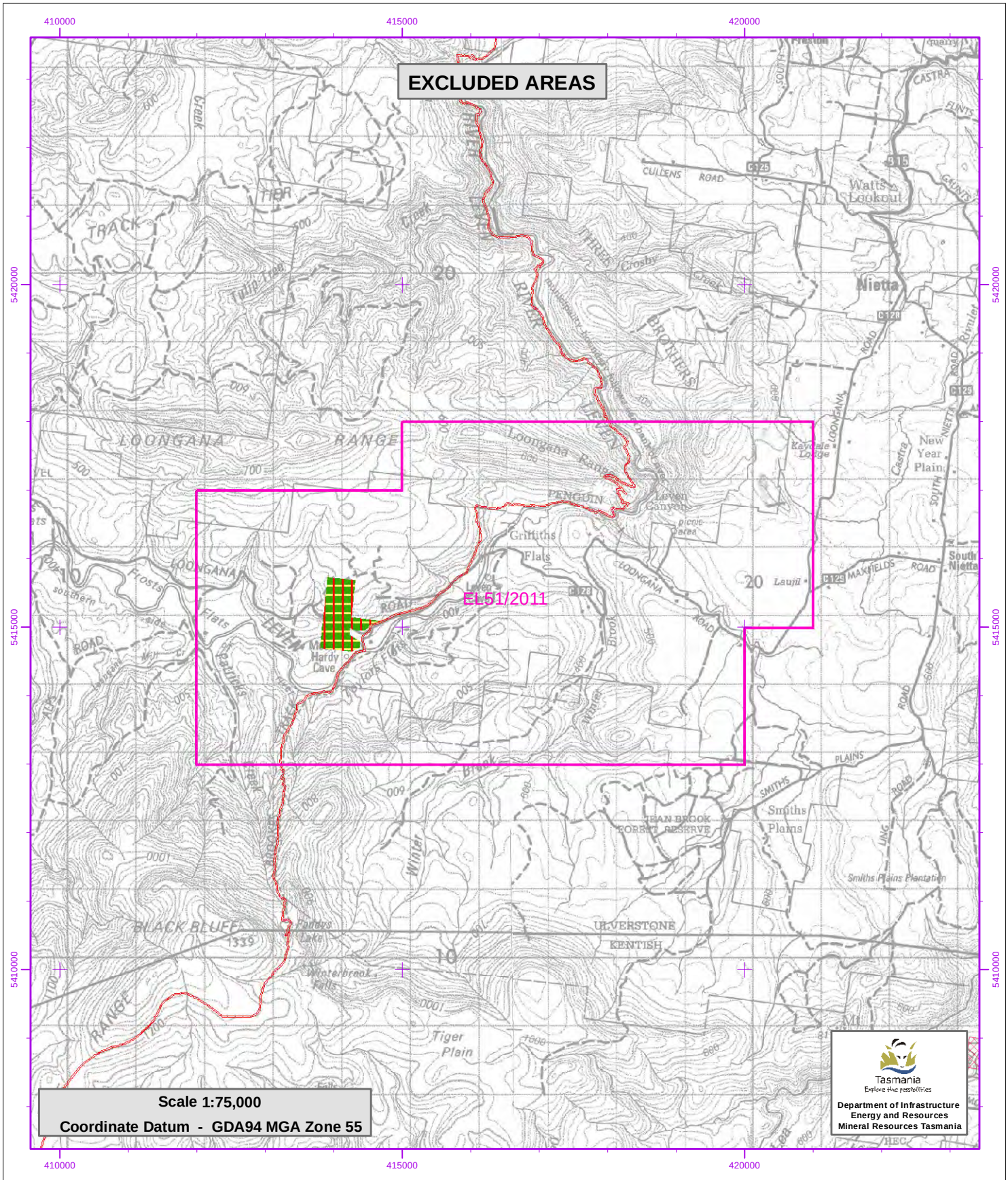

EXCLUDED AREAS
EL51/2011
410000
415000
420000
5420000
5415000
5410000
Scale 1:75,000
Coordinate Datum - GDA94 MGA Zone 55
Department of Infrastructure
Energy and Resources
Mineral Resources Tasmania
Excluded Areas
Exempt Area
Mining Lease
Retention Licence
Fossicking Area
Fossil Site
Administratively Excluded Areas
RAMSAR Site
Gas Pipeline Corridor
Wellington Park
Indigenous Protected Areas
Commonwealth Land
Private Reserve - Unavailable under MRDA
State Reserve
Nature Reserve
National Park
Historic Site
Game Reserve
Conservation Area - Unavailable under MRDA
Forest Reserve - Unavailable under MRDA
Relevant tenement land tenure / land management area indicated *
Note: Land Tenure is derived from the LIST and other sources and may be incomplete.
Not all Land Tenure depicted in legend may appear on the map.
GDA

Figure 4

Figure 5

Department of Infrastructure Energy and Resources
MINERAL RESOURCES TASMANIA

DIGITAL GEOLOGICAL ATLAS 1:25 000 SCALE SERIES
LOONGANA, SHEET 4041

LOONGANA

Scale: 1:25 000

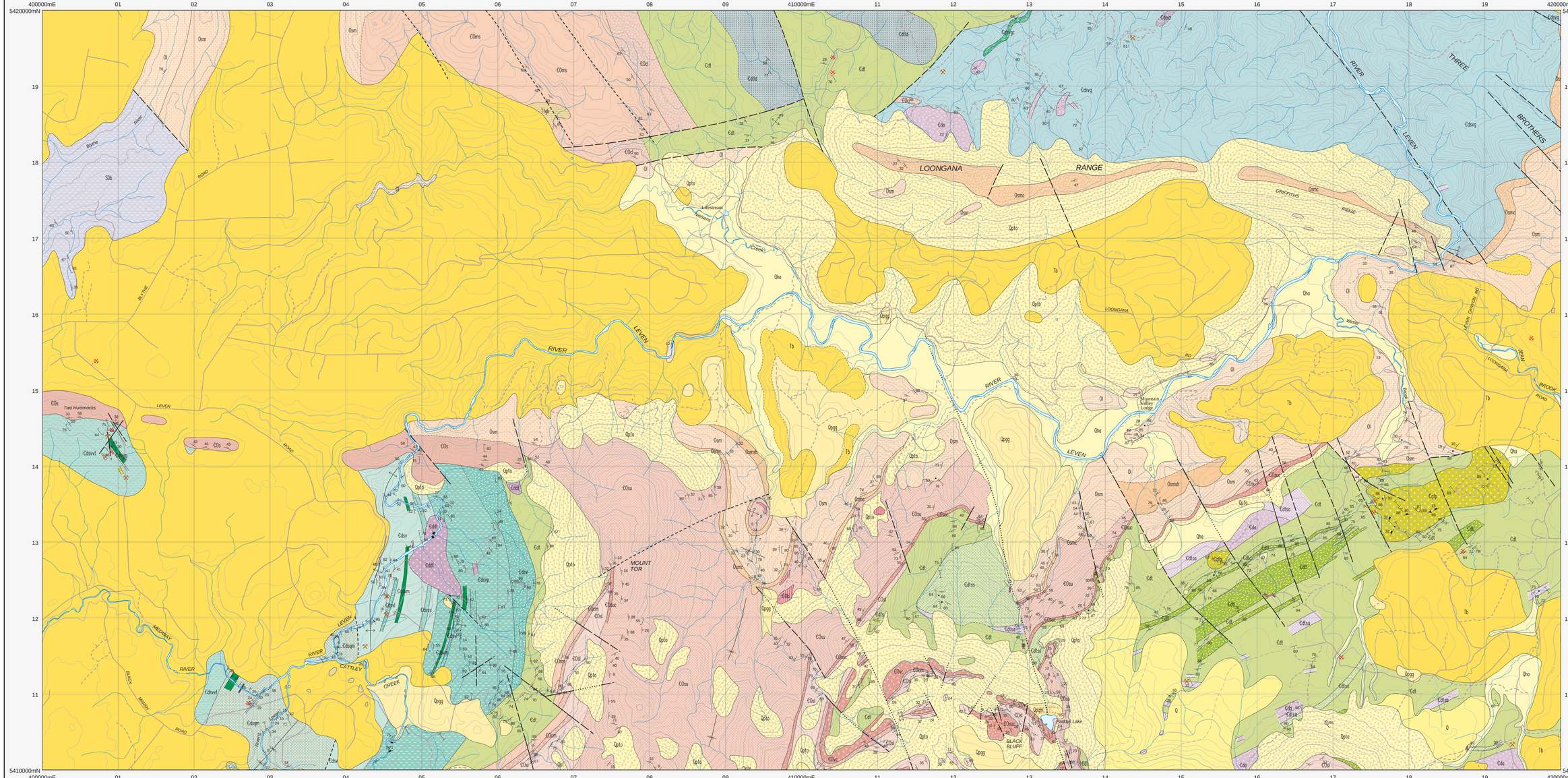
0 500 1000 1500 2000 2500m

INDUSTRY TOURISM RESOURCES

Tasmania
Explore the possibilities

400000mE 01 02 03 04 05 06 07 08 09 410000mE 11 12 13 14 15 16 17 18 19 420000mE

5420000mN 19 18 17 16 15 14 13 12 11 5410000mN



PALEOZOIC

CENOZOIC

QUATERNARY

HOLOCENE

- Qha — *Alluvium, swamp and marsh deposits (Qha).*
- Qpt — *Talus (Qpt).*
- Qptb — *Basalt talus (Qptb).*
- Qpto — *Quartzite and conglomerate talus (Qpto).*

PLEISTOCENE ?

- Qpgg — *Glacial deposits (Qpgg).*
- Qpgm — *Mostly morainal deposits (Qpgm).*

PALEOGENE – NEOGENE

- Tfgb — *Grey–billy and silcrete (Tfgb).*
- Tb — *Basalt (Tb).*
- Ts — *Dominantly non–marine sequences of gravel, sand, silt, clay and regolith (Ts).*

SILURIAN – DEVONIAN

- SDb — *Mudstone minor siltstone, minor fine–grained sandstone and rare limestone (correlate of Bell Formation) (SDb).*

PALEOZOIC

ORDOVICIAN

ELDON GROUP

- Ol — *Limestone with siltstone in some areas (Ol).*

GORDON GROUP

- Osmsh — *Calcareous siltstone and sandstone. Transitional unit from Moina Sandstone to Gordon Limestone (COum).*
- Osm — *Pale grey to pink commonly cross–bedded quartz sandstone, coarse and pebbly toward base and with tubicular trace fossils in horizons of upper sequences (correlate of Moina Sandstone) (COum).*
- Osmc — *Grey to pink/purple granule–pebble conglomerate and coarse sandstone. Chert clasts common. Some bioturbated horizons (Osmc).*

CAMBRIAN

WURAWINA SUPERGROUP

OWEN GROUP

FURONGIAN

COs

- COsu — *Mostly pink sandstone and granule–pebble conglomerate with minor siltstone. Clasts of chert common (COsu).*
- COb — *Basalt, typically hemilite–altered, fine grained, purple weathering. Massive to brecciated, generally well cleaved, vesicular, rare pillow structures (COb).*
- COsuc — *Pink pebble to pebble–cobble conglomerate with minor lenses of coarse sandstone (COsuc).*
- COsl — *Thin bedded pink to grey sandstone, minor siltstone, calcareous sandstone and pebble conglomerate. Some bioturbated horizons (COsl).*
- COcm — *Pebble–cobble to cobble–boulder conglomerate thick bedded to massive, with minor sandstone lenses. Pink to pale grey (correlate of Middle Owen Conglomerate) (COcm).*
- COms — *Interbedded micaceous sandstone, siltstone and siliceous pebble conglomerate, mostly grey in colour (correlate of Newton Creek Sandstone) (COms).*
- COcl — *Lower sequence of siliceous pebble to cobble grade conglomerate with sandstone interbeds (COcl).*
- COvc — *Volcaniclastic conglomerate, breccia and sandstone. Correlate of Jukes Conglomerate (COvc).*

PALEOZOIC

CAMBRIAN

CAMBRIAN SERIES 3 – FURONGIAN(?) — TYNDALL GROUP CORRELATES

- Cdt — *Mixed sequences of volcaniclastic and felsic to intermediate volcanic rocks (Cdt).*
- Cdtc — *Volcaniclastic conglomerate and sandstone (Cdtc).*
- Cdtca — *Andesitic volcaniclastic conglomerate (Cdtca).*
- Cdtss — *Volcaniclastic sandstone and siltstone, typically quartz–feldspar +/– biotite–phyric, with minor felsic lava (Cdtss).*
- Cdtso — *Andesitic volcaniclastic sandstone (Cdtso).*
- Cdo — *Andesitic lava and breccia, typically feldspar–hornblende–phyric (Cdo).*
- Cdtf — *Felsic quartz–feldspar–phyric lava, commonly flow–banded and autobrecciated (Cdtf).*
- Cdtd — *Dacitic lavas and related intrusives, typically feldspar–ferromagnesian–phyric, commonly flow–banded (Cdtd).*

CAMBRIAN SERIES 3 — MOUNT READ VOLCANICS

CORRELATES OF GOD PRAISE GREYWACKE

- Cdsvg — *Marine vulcan–sedimentary sequences of sandstone, siltstone, conglomerate and breccia with some felsic to andesitic volcanic rocks (Cdsvg).*
- Cdsq — *Siliceous conglomerate and sandstone, with some volcanic detritus in places (Cdsvgc).*
- Cdo — *Andesitic lavas, breccias and related intrusives (Cdo).*

CORRELATES OF MT CHARTER GROUP — WESTERN VOLCANO–SEDIMENTARY SEQUENCE

- Cdsv — *Mixed sequence of volcano–sedimentary, sedimentary and volcanic rocks (Cdsv).*
- Cdsvp — *Upper sequences of pumice–bearing volcaniclastic sandstone and breccia in Mt Tor area (correlate of Southwell Subgroup) (Cdsvp).*
- Cdsvm — *Coarse polymict volcaniclastic breccia units, typically graded, of mass–flow origin (Cdsvm).*
- Cdsvl — *Felsic lava, typically quartz–feldspar–phyric (Cdsvl).*
- Cdsvs — *Bedded sandstone–siltstone unit (Cdsvs).*
- Cdsm — *Coarse polymict volcaniclastic breccia units, typically graded, of mass–flow origin (Cdsvm).*
- Cdsvl — *Felsic lava, typically quartz–feldspar–phyric (Cdsvl).*

PALEOZOIC

CAMBRIAN

CAMBRIAN SERIES 3 — CORRELATES OF MT CHARTER GROUP — WESTERN VOLCANO–SEDIMENTARY SEQUENCE — MOUNT READ VOLCANICS

Cdsv

- Cdsqm — *Micaceous quartzwacke sandstone with siltstone and granule conglomerate (correlate of Animal Creek Greywacke) (Cdsqm).*
- Cdsvm — *Volcaniclastic mass–flow units (Cdsvm).*
- Cdsvvt — *Vitric ash units (Cdsvvt).*
- Cdsvl — *Mafic intermediate lava unit (Cdsvb).*
- Cdsvvt — *Dominantly fine–grained vitriclastic siltstone with some mass–flow deposits, shale and greywacke (correlate of Black Henry Beds) (Cdsvvt).*
- Cdsvm — *Volcaniclastic mass–flow units (Cdsvm).*
- Cdsvs — *Bedded sandstone–siltstone unit (Cdsvs).*

INTRUSIVE ROCKS

- Cdbc — *Basaltic dykes, usually chlorite–carbonate altered (Cdbc).*
- Cdfp — *Quartz–feldspar porphyry (Cdfp).*
- Cdfs — *Feldspar–quartz porphyry, commonly spherulitic, usually intrusive (Cdfs).*
- Cdaid — *Massive plagioclase–hornblende phyric dioritic, andesite and dacitic intrusives (Cdaid).*
- Cdat — *Ophitic textured mafic–intermediate rocks of uncertain affinity, feldspar–pyroxene–chlorite–quartz–bearing (Cdat).*

- *Geological boundary – position approximate.*
- *Geological boundary – position inferred.*
- *Fault – position approximate.*
- *Fault – position inferred.*
- *Fault – position concealed.*
- *Axial surface trace of major fold, antiform.*
- *Axial surface trace of major fold, synform.*
- *Moraine ridge crests.*
- *(white line) Limit of mapping of sub–unit within undifferentiated rock unit.*

- *Strike and dip of bedding – right way up; overturned; facing unknown.*
- *Strike of vertical bedding facing unknown.*
- *Strike and dip of cleavage of unspecified type and relative age; vertical.*
- *Strike and dip of metamorphic foliation other than cleavage.*
- *Trend and plunge of hinge line of minor antiform, unspecified relative age; horizontal.*
- *Trend of horizontal hinge line of minor synform, unspecified relative age.*
- *Trend of horizontal minor fold hinge line – unspecified relative age: relative local age F2.*
- *Strike and dip of dominant joint set; vertical.*
- *Strike and dip of igneous banding or platy alignment; vertical.*
- *Field station for adjacent readings on the map.*
- *Glacial striae, sense of movement unknown.*
- *Mineral deposit location – hardrock*
- *Construction material/industrial mineral/gemstone location*

Data derived from Mineral Resources Tasmania DEPOSITS database. Data point position has not been verified in every case.

Compiled by J. Pemberton, B.Sc.(Hons) and J. McKibben, B.Sc.(Hons), 1996 from the folwing sources (see responsibility diagram):

A PEMBERTON, J and VICARY, M.J. 1988. Mt Read Volcanics Project Map 8. Tasmania Department of Mines.

B BAILLIE P.W. et al, 1986. Geological Atlas 1:50 000 Series. Sheet 36 (8015N), St Valentines. Tasmania Department of Mines.

C PEMBERTON, J and VICARY, M.J. 1989. Mt Read Volcanics Project Map 9. Tasmania Department of Mines.

D JENNINGS, I.B. et al, 1959. Geological Atlas 1 Mile Series. Zone 7 Sheet 37, Sheffield. Tasmania Department of Mines.

Updated by:

E Modified and upgraded by K.D. Corbett, 2004 as part of the Western Tasmanian Regional Minerals Program, with additional information from:

F Vicary, M.J. 1994 and 1995. Unpublished company mapping, RGC Exploration Pty Ltd. TCR 94–3565 and TCR 95–3728.

RESPONSIBILITY DIAGRAM

B,E	E,F	
		D,E
A,E		C,E

LOCATION DIAGRAM

INDEX TO ADJOINING SHEETS

PARRAWE	LOYETEA	CASTRA
GUILDFORD	LOONGANA	WILMOT
PEARSE	LEA	CETHANA

1:25000 maps available.

LOONGANA 4041

REFERENCE THIS MAP AS:

PEMBERTON, J. and McKIBBEN, J. (compilers) 2004. Digital Geological Atlas 1:25000 Scale Series. Sheet 4041. Loongana. Mineral Resources Tasmania.

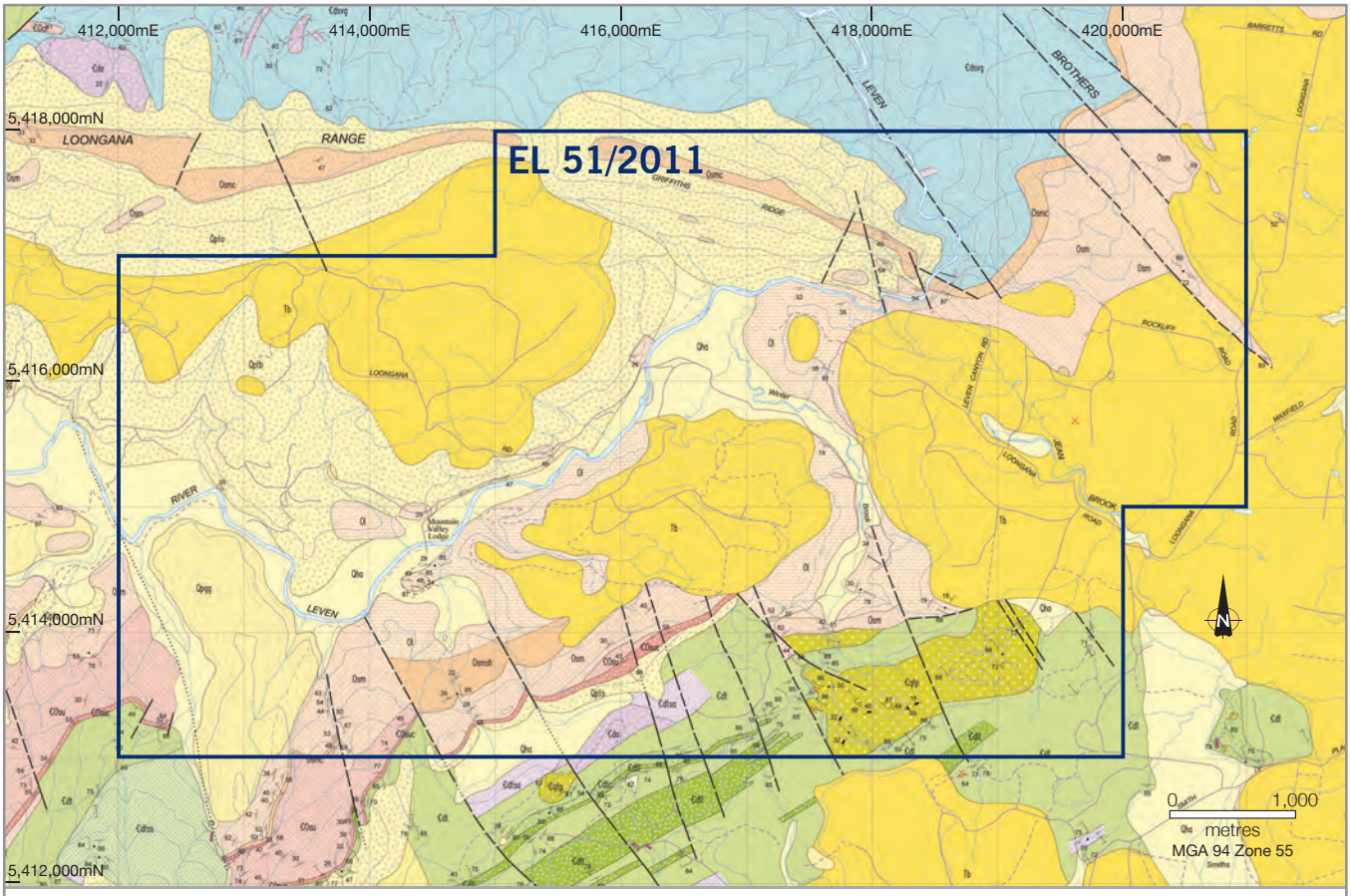
Map produced by the Geoscience Information Branch of Mineral Resources Tasmania using G.I.S. software.

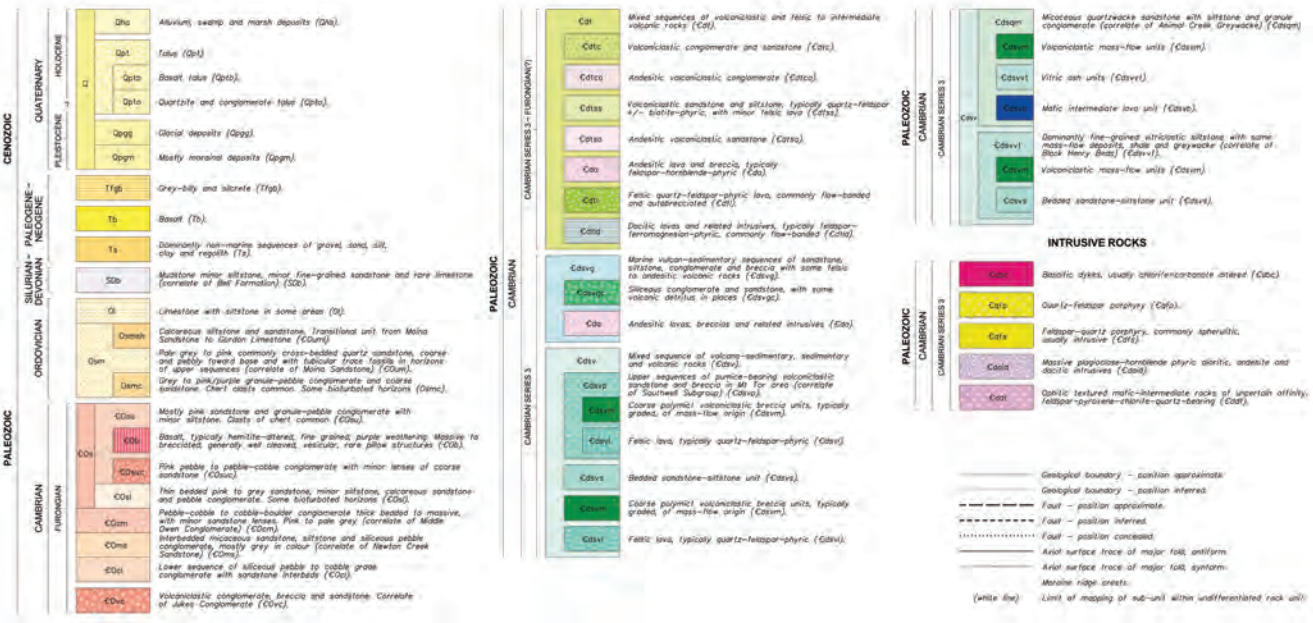
GDA

GDA94 – MGA Zone 55. Contour Interval: 20 metres.

Plotfile for this map generated from digital data as at: 02-FEB-2012

WARNING:INKS ARE LIGHT SENSITIVE





HELLYER Gold Mines

TASMANIA

EL51/2011
Loongana Road

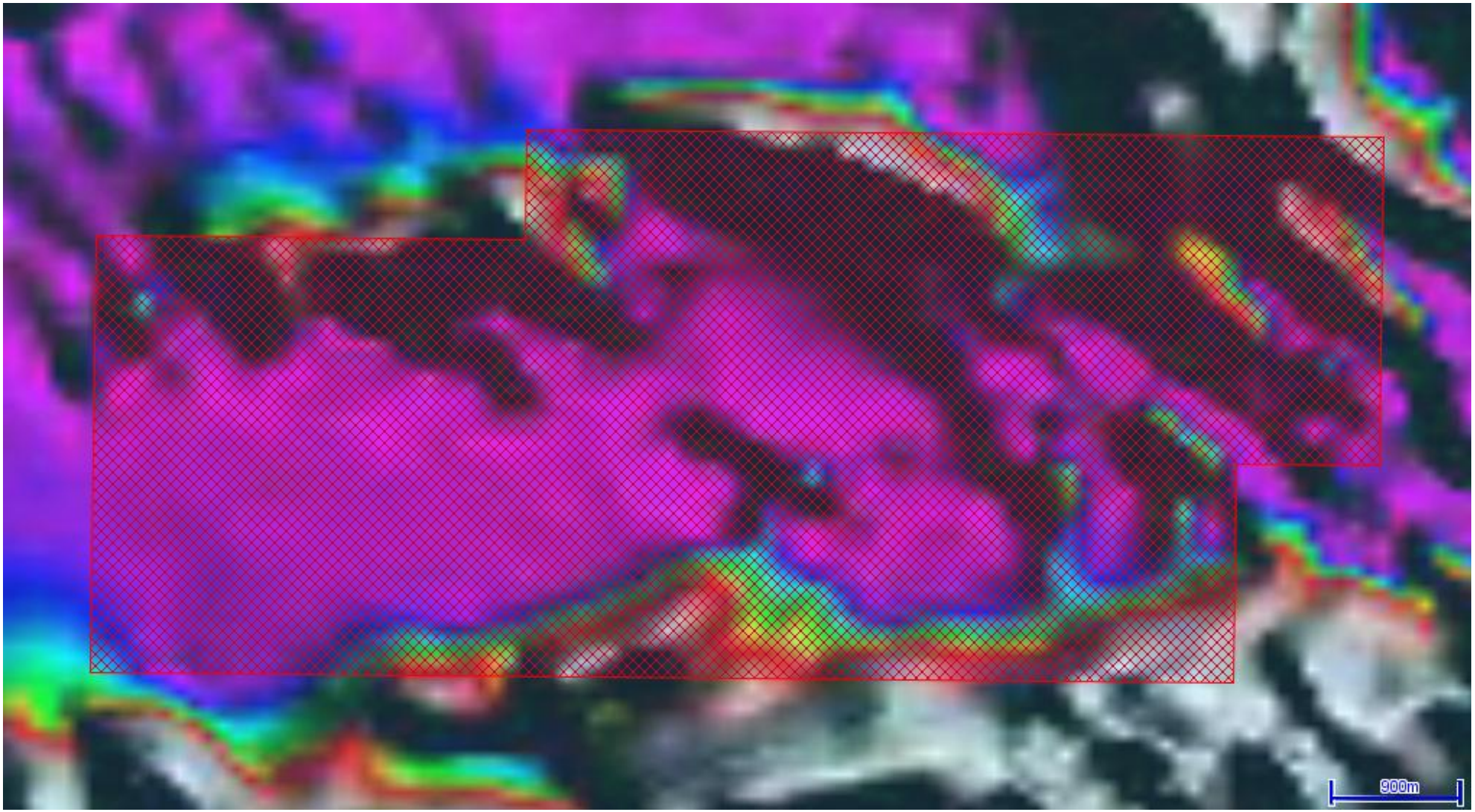
Surface geology

August 2013

Loon_01

Figure 6

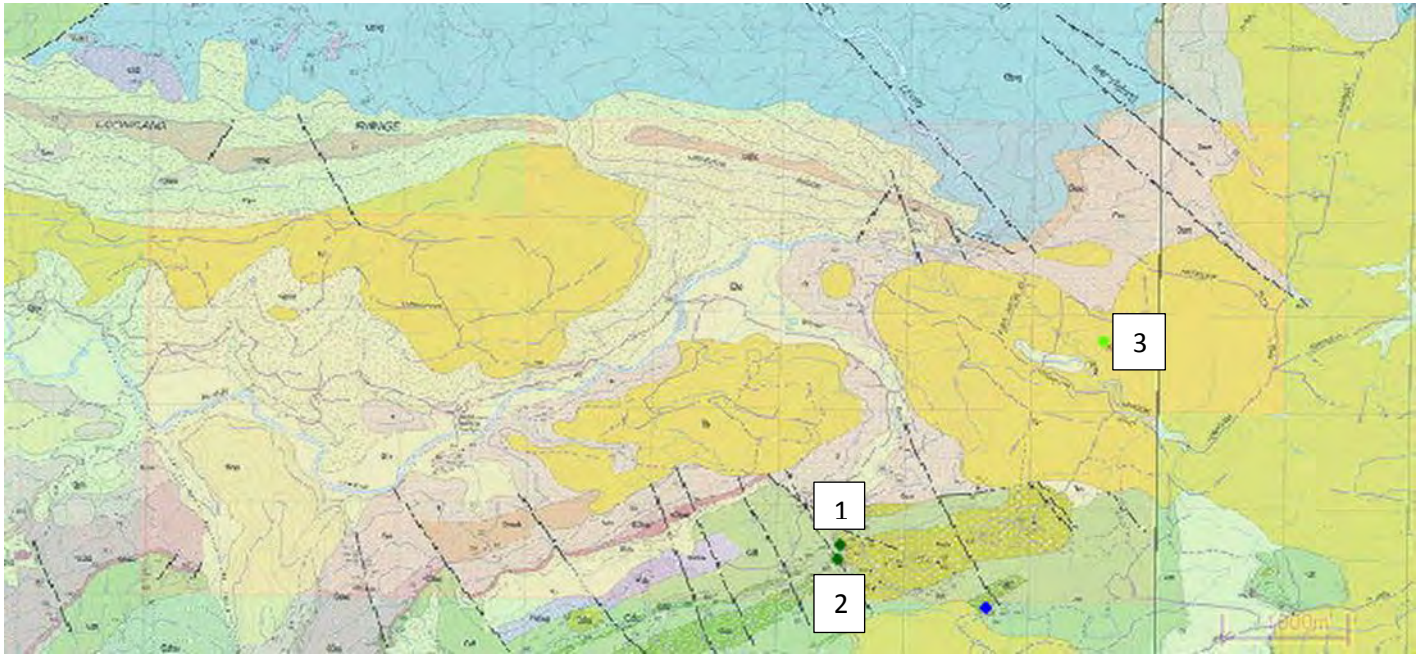
410,850E 5419,200N 422,000E 5419,200N



410,850E 5412,600N 422,000E 5412,600N

GDA 1994 - MGA Zone 55 (1:33,500) **FIGURE 7 : EL51/2011 Loongana Aeromagnetic Image**

410,850E 5419,200N 422,000E 5419,200N



410,850E 5412,600N 422,000E 5412,600N

GDA 1994 - MGA Zone 55 (1:33,500)

Click on column heading to sort

Details for **Mineral Deposits Points** 2 feature(s) displayed Clear Selection

	ID	Details	Name	Type Of Main Commodity	Prime Commodity	Deposit Type	Operational Status	Form
2	1638	dark green	Unnamed	Metals/elements	Lead	Mineral Occurrence	Mineral occurrence	Vein (single, sheet, saddle)
1	1637		Unnamed	Metals/elements	Lead	Mineral Occurrence	Mineral occurrence	Vein (single, sheet, saddle)

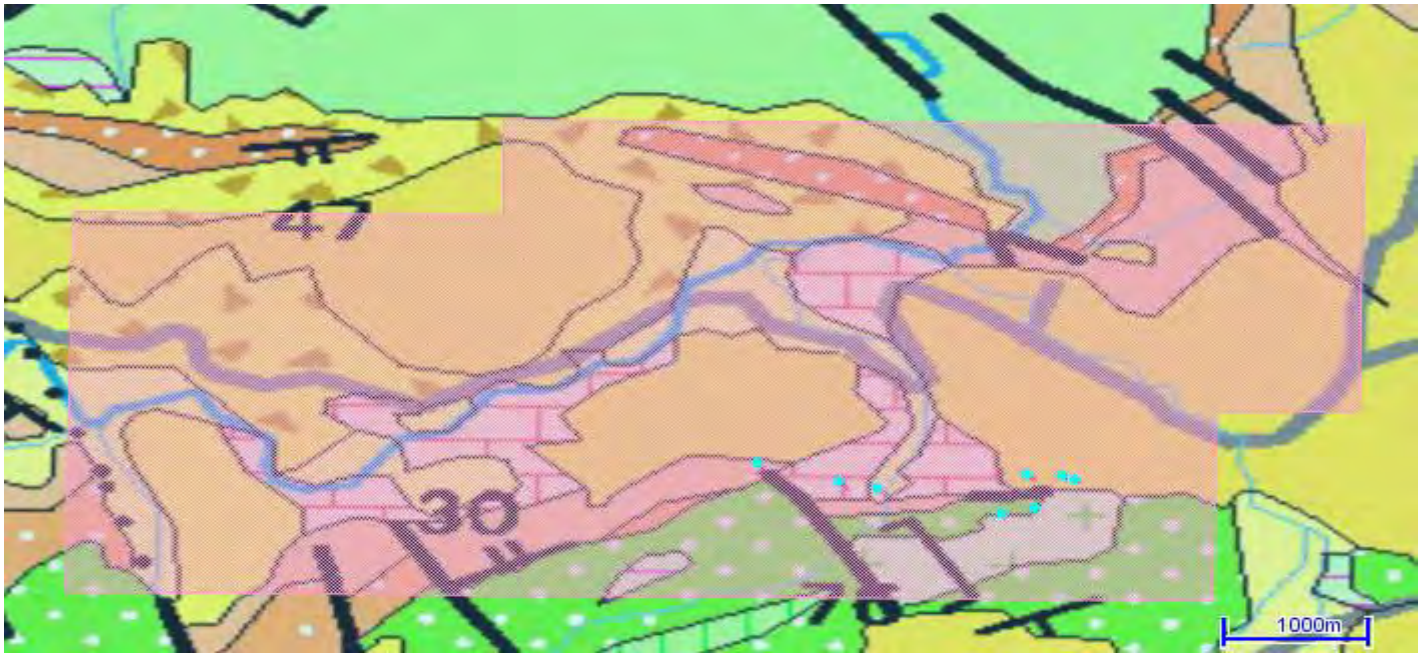
Details for **Mineral Deposits Points** 1 feature(s) displayed Clear Selection

	ID	Details	Name	Type Of Main Commodity	Prime Commodity	Deposit Type	Operational Status	Form
3	5298		Loongana Deposit	Industrial Minerals/Gemstones	Silica	Mine or Prospect	Prospect	Residual

Click on column heading to sort

FIGURE 8 : MINERAL OCCURRENCES EL51/2011 LOONGANA ROAD TENEMENT

410,850E 5419,200N 422,000E 5419,200N



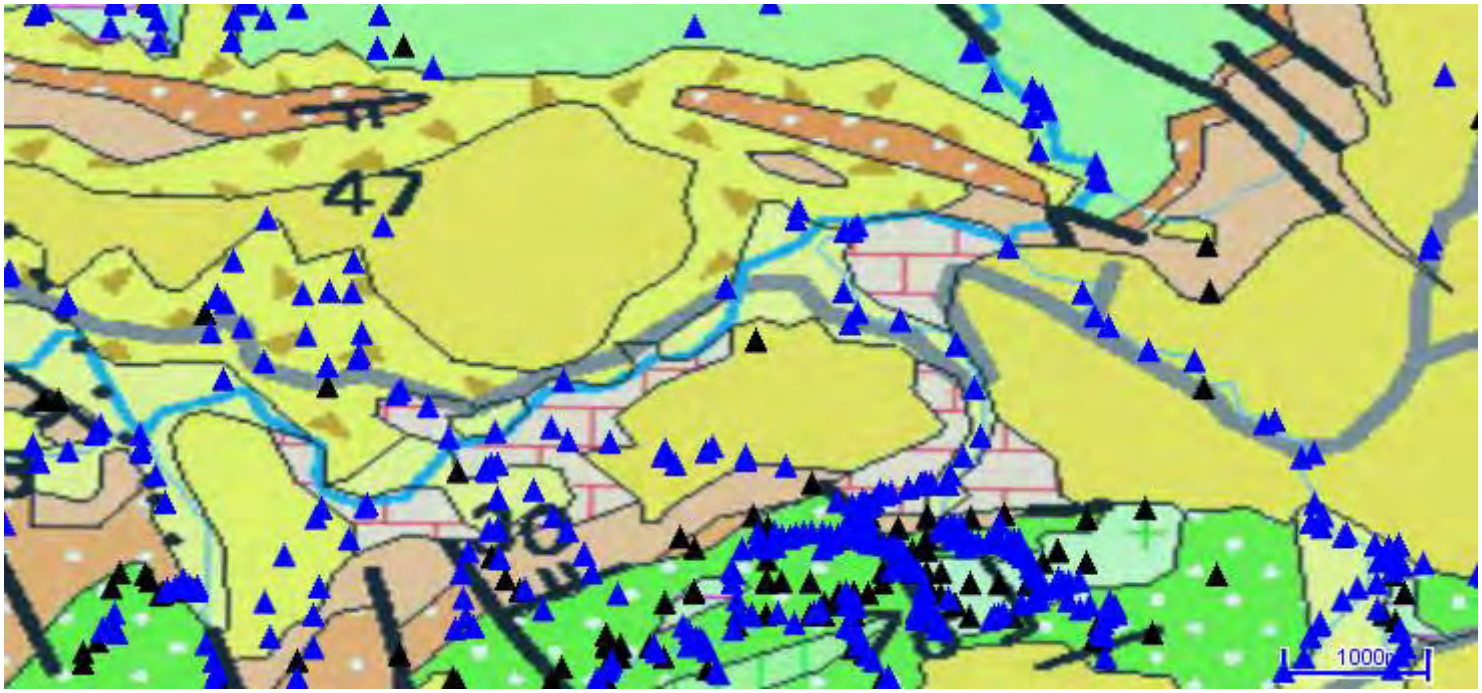
410,850E 5412,600N 422,000E 5412,600N

GDA 1994 - MGA Zone 55 (1:33,500)

8 x Light blue dots are drill hole locations

FIGURE 9 : DRILL HOLE LOCATIONS EL51/2011 LOONGANA ROAD TENEMENT

410,850E 5419,200N 422,000E 5419,200N



410,850E 5412,600N 422,000E 5412,600N

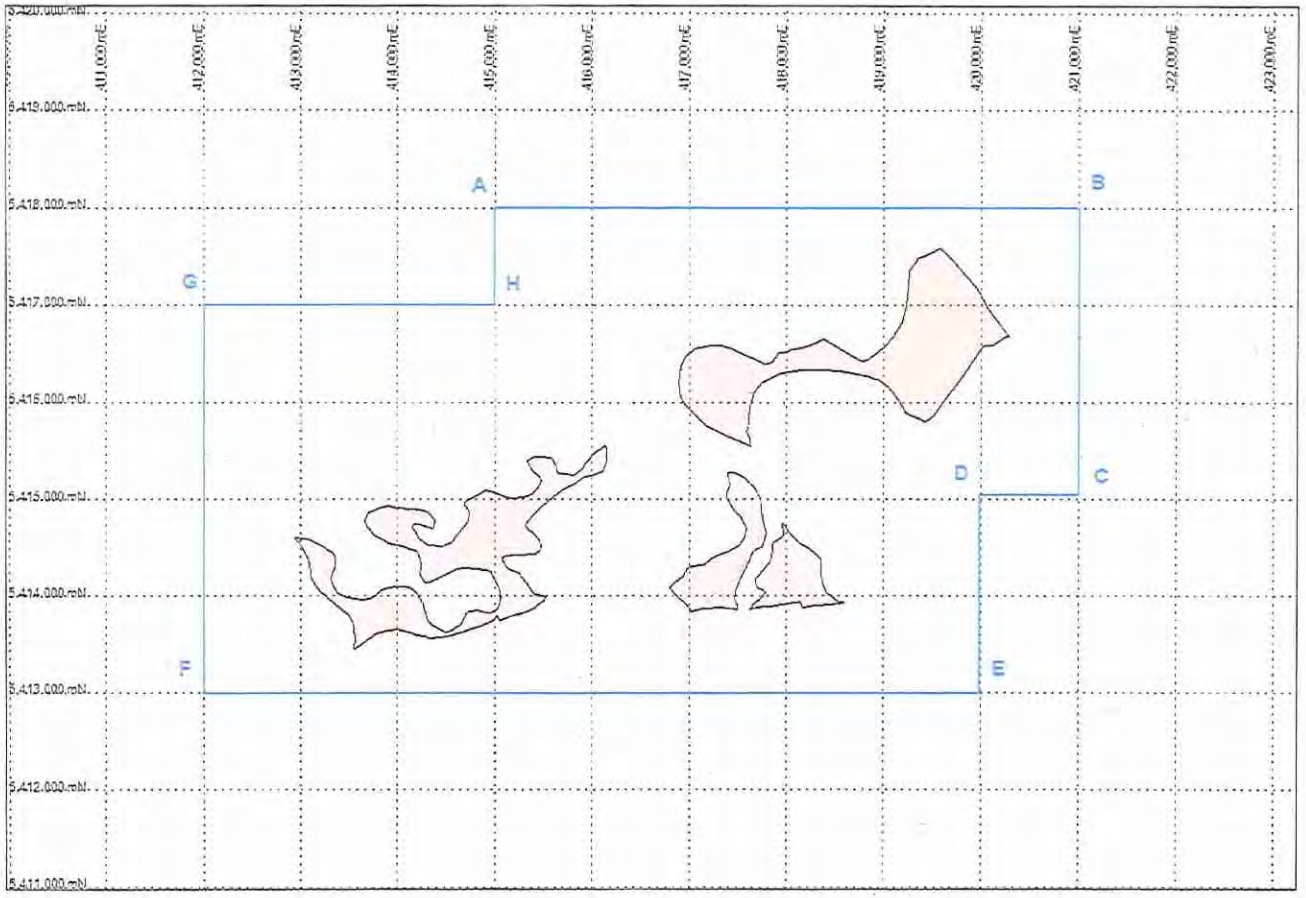
GDA 1994 - MGA Zone 55 (1:33,900)

Blue and black triangles are sites of historical stream sediment samples

FIGURE 10 : STREAM SEDIMENT LOCATIONS EL51/2011 LOONGANA ROAD TENEMENT

Figure 11

Proposed tenement boundary with corner co-ordinates (GDA94)



No.	mE	mN
A	415,000	5,418,000
B	421,000	5,418,000
C	421,000	5,415,000
D	420,000	5,415,000
E	420,000	5,413,000
F	412,000	5,413,000
G	412,000	5,417,000
H	415,000	5,417,000