Geotech International Pty Ltd

ABN 59 057668 434

214 YORK ST
SUBIACO
WA 6008
tel/fax: (08) 9380 9382
paskins@westnet.com.au

Takone Project

Relinquishment Report for part EL73/2007 for the Period 16 June 2008 to 15 June 2009

Date: July 2009

Author:- Paul W. Askins, MSc., CP Geo., MAusIMM

Paul W Askins
Geology

SUMMARY OF ACTIVITIES FOR THE Takone PROJECT
for the Period 16 June 2008 to 15 June 2009

- Compile previous work

-Interpret remote airborne geophysical and other digital datasets

- Assess prospectivity

CONTENTS

1.0 Introduction/Abstract

2.0 Tenement Details

3.0 Location and Access

4.0 Geology and coal/oil shales

5.0 Previous Exploration

6.0 Work Carried Out During the Period

7.0 Prospectivity

8.0 Selected References

Figures 1 to 4

Tables 1 and 2

KEYWORDS

Geology/Mineralisation:

Permian Lower and Upper Parmeener Supergroup, coal, oil shale, tasmanites

Minerals/ Commodities:

Coal; Oil Shale; Tasmanites

Deposits/Occurrences:

Preolenna Coalfield

Oonah oil shale

Exploration:

Data review, prospectivity

COORDINATES

All lat/long co-ordinates in this report refer to the AGD66 Datum

All AMG co-ordinates in this report refer to the AGD66 Datum - Zone55

1.0 Introduction/ Abstract

This report covers the exploration activities conducted by Geotech International Pty Ltd within the relinquished sections of EL73/2007 at Takone (The 'Tenement'), for the period 16 June 2008 to 15 June 2009.

The original full Tenement included areas with known coal and oil shale deposits, which were Geotech's exploration targets.

During the period all available previous work was evaluated and the prospectivity was appraised.

The area relinquished has little prospectivity because of absence of the target Permian stratigraphy, or is overlain by basalt making evaluation impracatical.

2.0 Tenement Details

Tenement details are shown in Table 1.

Table 1 – Takone Project Tenement Details

Tenement	Holder	Date Applied	Date Granted	Area	Two Year Expenditure Commitment
EL73/2009	Geotech International Pty Ltd	Mar 2008	16 June 2008	202km^2	$61 000
Reduced area		July 2009		116km^2	

3.0 Location and Access

The Tenement surrounds the locality of Takone in NW Tasmania, as shown on Fig 1. The relinquished area is shown on Fig 4.
The area is very accessible with many roads and tracks, and is about 25km from the port of Burnie. Potential resources lie in non-sterilised working forest areas.

4.0 Geology and Coal/Oil Shales

Coal seams and an oil shale unit have been found here in two stratigraphic intervals within the Permian parts of the Lower and Upper Divisions of the Parmeener Supergroup within the Tasmania Basin. The Parmeener Supergroup is up to two kilometres thick, and has been subdivided into two divisions; the Lower Division, being predominantly marine; and the Upper Division, being wholly of freshwater origin.

The oil shale unit occurs towards the base of the Lower Parmeener Supergroup above tillites in a restricted marine environment.

The Preolenna Coal Measures occur at the base of the Upper Parmeener Supergroup, as shown on the stratigraphic column on Fig 3.

The two main areas of the original full area of the tenement containing coal and oil shale are shown on Fig 2. These are at Preolenna and at Oonah.

Oil Shale at Oonah

The oil shale, near the base of the Lower Parmeener Supergroup, is the variety Tasmanite, which occurs in only a few places world-wide. The kerogen of tasmanite occurs as particulate amber-colored discs (in reality, flattened sacs), having a distinct structure and clearly defined cell walls. The oil shale is thought to have formed in a quiet ecosystem of shallow bays, inlets and river estuaries in which the alga was free to multiply. The kerogen resulted from prodigious algae blooms when conditions were favourable for completion of the life cycle and "spore" build-up in the marginal marine waters.

The target stratigraphy is shown on Fig 4. The unit is flat lying and is a window in a larger area of Tertiary basalt, with an intrusive Jurassic dolerite sill to the north.

Oil shale at Preolenna

Here, at a higher stratigraphic level than at Oonah, there are bands of ‘cannel coal’ or torbanite within the thin seams of black coal. These are stated to have been caused by concentrations of the alga Reinschia. These bands are very rich in volatiles, and have been called 'oil shale' by some authors.

The bands are lenticular and from 23 to 60cm thick. Very high oil yields are reported by Rogers (1934):- he reports 130 gallons per ton, which is 590litres/t!

Coal at Preolenna

Bacon (1991) has reviewed this coalfield, correlated with the Mersey Coal Measures further east. The seams are thin, from 220-600 mm thick, discontinuous, dislocated by faulting, and dip steeply at 14-25°. Four seams of coal crop out on the north-western bank of the Jessie Gorge near Preolenna, and also crop out in the Flowerdale River valley south of Preolenna over a distance of three kilometers. Mining activity has taken place in both the Jessie Gorge (Preolenna Coal Mine) and in the Flowerdale River valley (Torbanhill or Meunna Coal Mine). Coal outcrops are also recorded from near Relapse Creek, south-west of Preolenna, and west of West Takone.

Oil shale occurrence on Cam River

MRT maps show an oil shale occurrence on the Cam River near Tewkesbury in the relinquished portion of the tenement. No information on this could be located.

5.0 Previous Exploration

A summary of previous exploration activities, for oil shale and coal only, is presented in Table 2.

Table 2 – Takone Project Previous Exploration Summary

Year/Company	REPORT No	Activities
Pre 1990 Tas Geol Survey	Bacon, 1991	Summary of all past work for Preolenna coals
1923 Tas Geol Survey	URMISCA_011-13	Discovery of Oonah oil shale by Reid in 1923 recorded in Mercury Newspaper. “Reserves” of 6M tons are quoted.
1924 Tas Geol Survey	UR1924_242-243	Quotes reserves of Tasmanite at Oonah
1928 Tas Geol Survey	UR1928B_081-86	Quotes reserves of Tasmanite at Oonah
1944 Tas Geol Survey	UR1944_043-45	Sampling and oil analyses
1980-1982 Petroquest Pty Ltd	80-1429 80-1449 82-1788	Geological review Drilling Down-hole geophysical logging
1984 CRA	84-2169 84-2172 84-2173	Geological appraisal

The work done in the Preolenna area is amply summarized by Bacon (1991), but all this field lies in the retained area of the Tenement.

The Oonah oil shale was discovered by Reid in 1923 as recorded in the Mercury Newspaper. The “reserves” were quoted as 6 million tons. This reserve was repeated by Reid in 1924, and also repeated by Blake in 1928. No basis for the reserve calculation was stated. In 1944 Henderson conducted field sampling of the outcropping oil shale. All of the Oonah oil shale area lies within the retained area of the Tenement.

The only modern field work which has been done in the area was by Petroquest, from 1980 to 1982. CRA held part of the area in 1984 but merely carried out a semi academic review of the prospectivity for coal, but oil shale was not reviewed.

Petroquest carried out a desktop review of prospectivity of northern Tasmania, including the Preolenna and Oonah area, and generated maps showing target stratigraphy. They followed this with an unclear poorly documented amount of field work. Ultimately they drilled several areas including at Oonah and Preolenna, all within the retained area of the Tenement.

There is no documented MRT drilling outside the retained area.

No University studies such as theses have been located for the area.

6.0 Work Carried Out During the Period

Work during the period has consisted of office based:

- Compile all past company exploration data, government reports, drill data.
- Process drill data on previous maps
- Assess prospectivity for coal and for oil shale.

7.0 Prospectivity

7.1 General

Prospectivity for only coal and oil shale was examined. No other commodities were reviewed. The prospectivity for coalbed methane was not evaluated, (coalbed methane rights are not held).

7.2 Oonah Oil Shale

A large prospective area, about 6 x 5km, entirely in the retained area, contains a flat lying tasmanite unit(s), which are potentially open pittable. High oil yields of greater than 95litres/t are recorded for surface samples. The known thickness of the oil shale from drilling and trenching is 0.3 to 1.0m.

The area is readily accessible, with numerous roads and tracks traversing the predominantly working forest area.

Tasmanite is potentially more valuable than “traditional” types of oil shale because the entire oil shale need not be retorted. The tasmanite spores can be recovered by flotation, thereby producing a higher yielding product, and potentially substantially lowering operating costs.

7.3 Preolenna Coal and Oil Shale

The Preolenna coalfield, which includes cannel coal or oil shale lenses, is entirely within the retained area.

7.4 Conclusion

The known coal and oil shale is within the retained area. The area relinquished has little prospectivity because of absence of the target Permian stratigraphy, or is overlain by basalt making evaluation impractical.

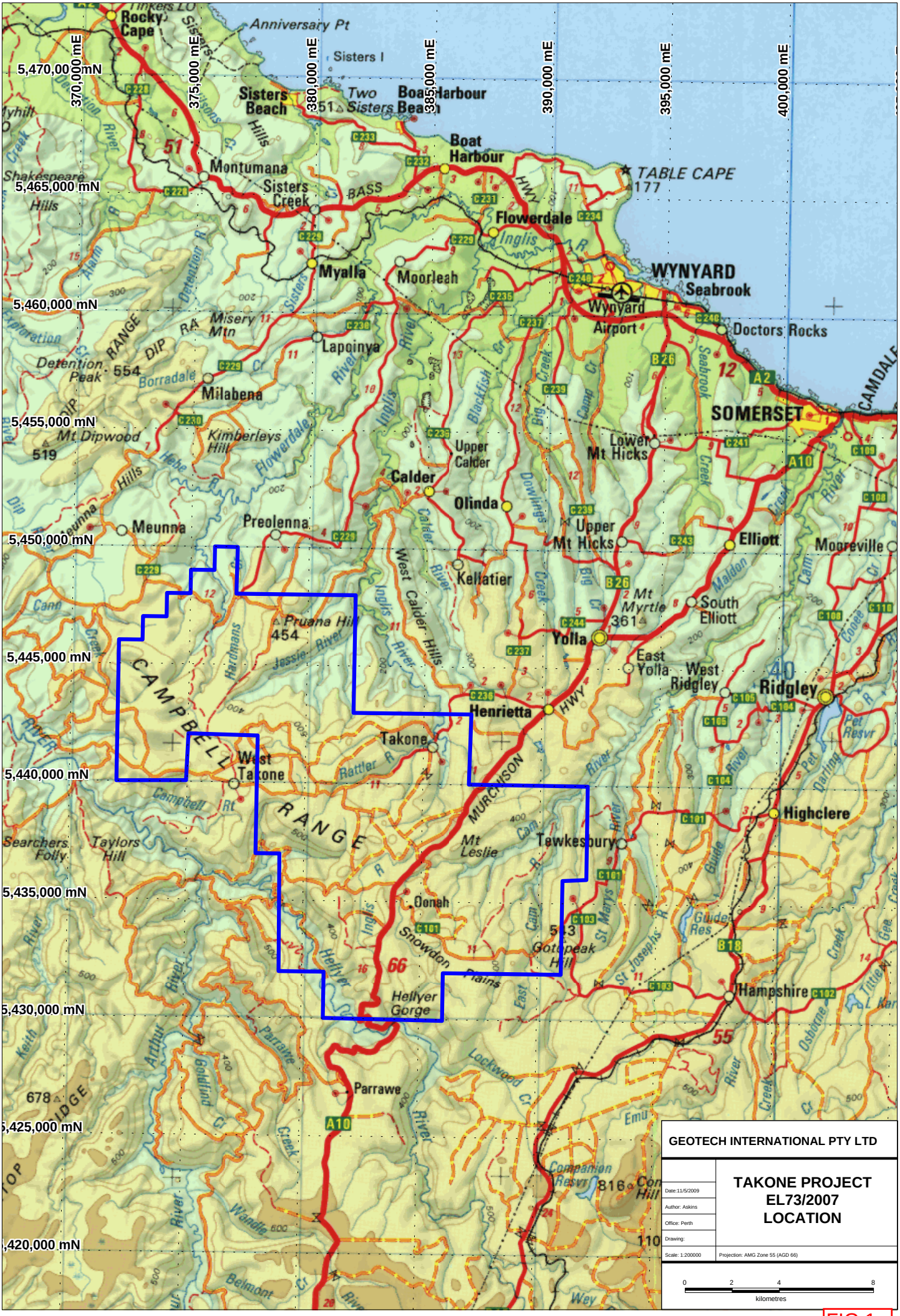
8.0 SELECTED REFERENCES

Bacon, C. A., 1991, The Coal Resources of Tasmania. *Bull. Geol. Surv. Tasmania 64*.

Reid, C.M.; Burrett, C.F., 2004, The geology and hydrocarbon potential of the glaciomarine Lower Parmeener Supergroup, Tasmania Basin. *In* Petroleum Exploration Society of Australia Special Publication, Vol.2, p.265-275; PESA Eastern Australasian basins symposium II, Adelaide, South Aust., Australia, Sept. 19-22, 2004, edited by P.J. Boult, D.R. Johns and S.C. Lang. Publisher: Petroleum Exploration Society of Australia, Sydney, N.S.W., Australia.

Rogers, LI. 1934. Preolenna cannel coal. Unpublished MRT Report TCR34-057.

Other references are tabulated in Table 2



GEOTECH INTERNATIONAL PTY LTD

TAKONE PROJECT
EL73/2007
LOCATION

FIG 1

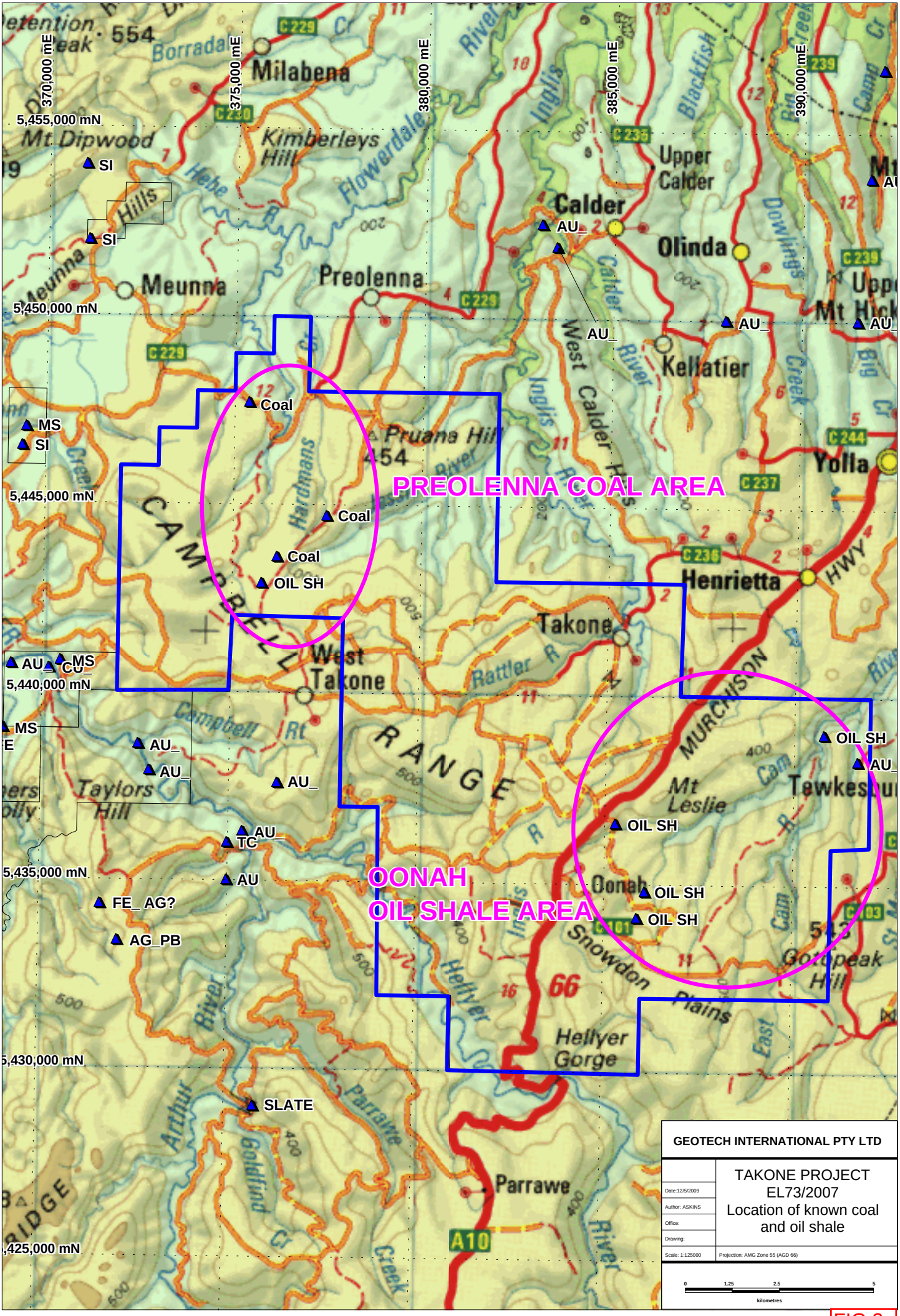

370,000 mE
375,000 mE
380,000 mE
385,000 mE
390,000 mE
5,455,000 mN
5,450,000 mN
5,445,000 mN
5,440,000 mN
5,435,000 mN
5,430,000 mN
5,425,000 mN
Milabena
Meunna
Preolenna
Calder
Olinda
Upper Calder
Kellatier
Yolla
Henrietta
Takone
West Takone
Taylors Hill
Mt Dipwood
Kimberleys Hill
Pruana Hill
Mt Leslie
Oonah
Hellyer Gorge
Parrawe
CAMPBELL RANGE
PREOLENNA COAL AREA
OONAH OIL SHALE AREA
Coal
OIL SH
SLATE
FE_ AG?
AG_PB
SI
MS
AU_
TC
A10
HWY
GEOTECH INTERNATIONAL PTY LTD
TAKONE PROJECT
EL73/2007
Location of known coal and oil shale
Date:12/5/2009
Author: ASKINS
Office:
Drawing:
Scale: 1:125000
Projection: AMG Zone 55 (AGD 66)
kilometres

FIG 2

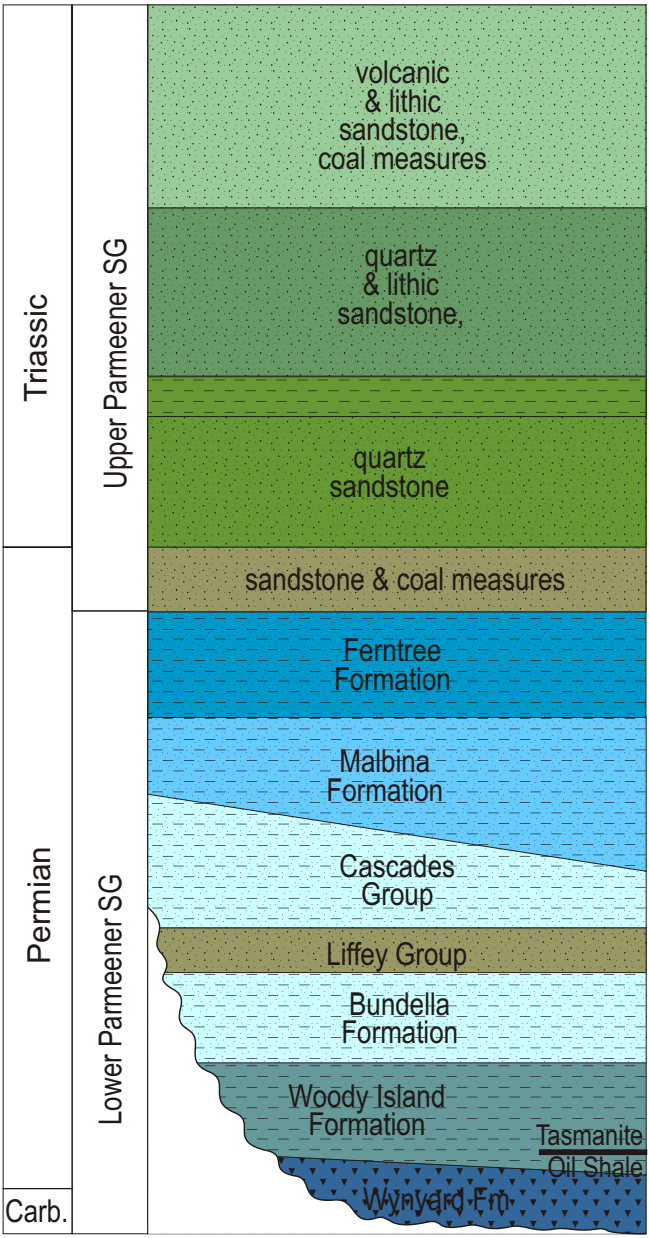
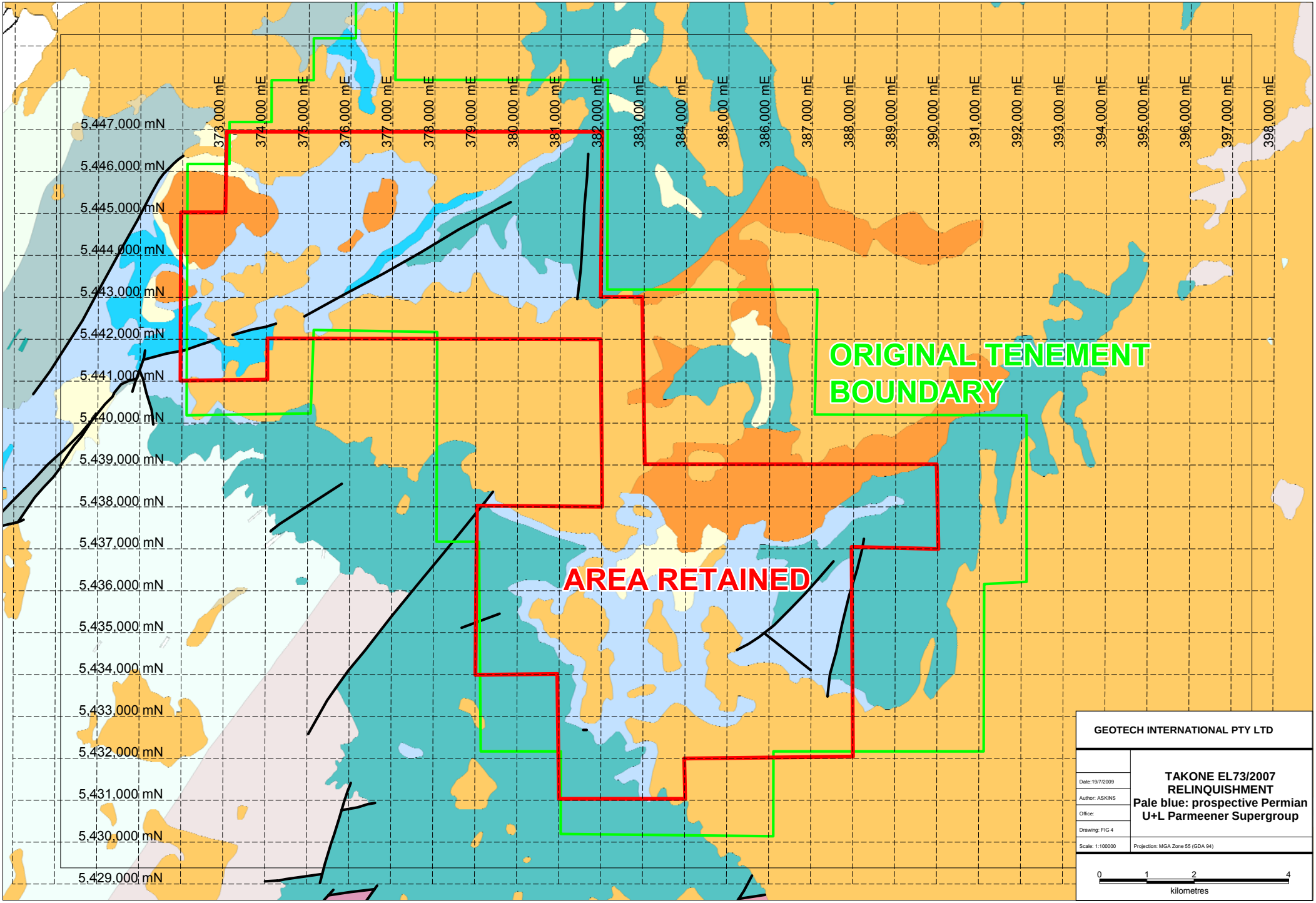


Figure 3. A generalised stratigraphic column and nomenclature for the Parmeener Supergroup. The Lower Parmeener Supergroup is divided into many local units (see Clarke, 1989), but is simplified here to broad units recognisable basin wide. The Upper Parmeener Supergroup nomenclature follows Forsyth (1989). FROM Reid & Burrett, (2004).


373,000 mE
374,000 mE
375,000 mE
376,000 mE
377,000 mE
378,000 mE
379,000 mE
380,000 mE
381,000 mE
382,000 mE
383,000 mE
384,000 mE
385,000 mE
386,000 mE
387,000 mE
388,000 mE
389,000 mE
390,000 mE
391,000 mE
392,000 mE
393,000 mE
394,000 mE
395,000 mE
396,000 mE
397,000 mE
398,000 mE
5,447,000 mN
5,446,000 mN
5,445,000 mN
5,444,000 mN
5,443,000 mN
5,442,000 mN
5,441,000 mN
5,440,000 mN
5,439,000 mN
5,438,000 mN
5,437,000 mN
5,436,000 mN
5,435,000 mN
5,434,000 mN
5,433,000 mN
5,432,000 mN
5,431,000 mN
5,430,000 mN
5,429,000 mN
ORIGINAL TENEMENT BOUNDARY
AREA RETAINED
GEOTECH INTERNATIONAL PTY LTD
Date: 19/7/2009
Author: ASKINS
Office:
Drawing: FIG 4
Scale: 1:100000
TAKONE EL73/2007 RELINQUISHMENT
Pale blue: prospective Permian U+L Parmeener Supergroup
Projection: MGA Zone 55 (GDA 94)
0 1 2 4
kilometres