

PETROLEUM AND GEOTHERMAL ENERGY ACT 2000

*Surrender of Geothermal Exploration Licences—
GELs 226, 230, 278, 285, 293, 407 and 425*

NOTICE is hereby given that I have accepted surrender of the abovementioned geothermal exploration licences under the provisions of the Petroleum and Geothermal Energy Act 2000, pursuant to delegated powers dated 21 March 2012.

No. of Licence	Licensee	Date of Surrender	Reference
GEL 226	Torrens Energy Limited	17.5.2012	27/2/383
GEL 230	Torrens Energy Limited	17.5.2012	27/2/387
GEL 278	Torrens Energy Limited	17.5.2012	27/2/442
GEL 285	Torrens Energy Limited	17.5.2012	27/2/451
GEL 293	Torrens Energy Limited	17.5.2012	27/2/460
GEL 407	Torrens Energy Limited	17.5.2012	F2010/688
GEL 425	Torrens Energy Limited	17.5.2012	27/2/535

Dated 17 May 2012.

B. A. GOLDSTEIN,
Executive Director,
Energy Resources Division
Department for Manufacturing, Innovation, Trade, Resources and Energy
Delegate of the Minister for Mineral Resources and Energy

Petroleum and Geothermal Energy Act 2000
S.115

MEMORANDUM

GEOHERMAL EXPLORATION LICENCES
GELs 226, 230, 278, 285, 293, 407 and 425

Surrender of the abovementioned Geothermal Exploration Licences with effect from 17 May 2012 is hereby entered on the public registers.



BARRY A. GOLDSTEIN
Executive Director
Energy Resources Division
Department for Manufacturing, Innovation, Trade, Resources and Energy
Delegate of the Minister for Mineral Resources and Energy

Date: 17 May 2012

Ref: 27/2/378
27/2/383
27/2/442
27/2/451
27/2/460
27/2/535
F2010/688

Petroleum and Geothermal Energy Act 2000

SURRENDER OF GEOTHERMAL EXPLORATION LICENCES GELs 226, 230, 278, 285, 293, 407 and 425

I, BARRY ALAN GOLDSTEIN, Executive Director, Energy Resources Division, Department for Manufacturing, Innovation, Trade, Resources and Energy, in the State of South Australia, pursuant to the provisions of section 89(2) of the *Petroleum and Geothermal Energy Act 2000* and all other enabling powers, for and on behalf of Tom Koutsantonis, Minister for Mineral Resources and Energy (Minister), pursuant to delegated powers dated 21 March 2012 hereby accept with effect from 17 May 2012, the surrender of the following Geothermal Exploration Licences:

1. GELs 226, 230, 278, 285, 293, 407 and 425 in the name of Torrens Energy Limited.

Dated: 17 May 2012



BARRY A. GOLDSTEIN
Executive Director
Energy Resources Division
Department for Manufacturing, Innovation, Trade, Resources and Energy
Delegate of the Minister for Mineral Resources and Energy

**Petroleum and Geothermal Energy Act 2000
S.115**

MEMORANDUM

**GEOHERMAL EXPLORATION LICENCES
GELs 226, 230, 278, 285, 407, 425 and 293**

1. Variation of licence conditions is hereby entered on the public registers.



**BARRY A. GOLDSTEIN
Executive Director Petroleum and Geothermal
Minerals and Energy Resources
Primary Industries and Resources SA
Delegate of the Minister for Mineral Resources Development**

Date: 18 April 2011

Ref: 27/2/383
27/2/387
27/2/442
27/2/451
27/2/460
27/2/535
F2010/688

Petroleum and Geothermal Energy Act 2000

VARIATION OF GEOTHERMAL EXPLORATION LICENCES GELs 278 and 285

I, BARRY ALAN GOLDSTEIN, Executive Director Petroleum and Geothermal, Minerals and Energy Resources, Department of Primary Industries and Resources in the State of South Australia, pursuant to section 25 of the *Petroleum and Geothermal Energy Act 2000* and all other enabling powers, for and on behalf of Tom Koutsantonis, Minister for Mineral Resources Development (Minister), pursuant to delegated powers dated 1 October 2009 vary the conditions of the above-mentioned licences, held by -

Torrens Energy Limited
ACN 118 065 704

Condition 1 of the licences is omitted and the following substituted:

“ During the term of the licence, the Licensee shall carry out or cause to be carried out, exploratory operations on the area comprised in the licence in accordance with such work programs as are approved by the Minister from time to time. Year one exploratory operations are guaranteed, and any subsequent licence year work program becomes guaranteed upon entry into any such licence year. These exploratory operations shall include but not necessarily be limited to:-

Year of Term of Licence	Minimum Work Requirements
One	<ul style="list-style-type: none">• Geological and geophysical review. <i>(to be conducted anywhere in the area covered by GELs 230, 231, 232, 233, 234, 235, 278 & 285)</i>
Two	<ul style="list-style-type: none">• Complete and case up to 5 fully cored heat flow holes to a depth of 400 to 500 metres for a total depth of 2000 to 2500 metres.• Geological and geophysical review. <i>(to be conducted anywhere in the area covered by GELs 230, 231, 232, 233, 234, 235, 278, 285, 407, 408, 409 & 410)</i>
Three	<ul style="list-style-type: none">• Geological and geophysical review. <i>(to be conducted anywhere in the area covered by GELs 230, 231, 232, 233, 234, 235, 278, 285, 407, 408, 409 & 410)</i>
Four	<ul style="list-style-type: none">• Geological and geophysical review. <i>(to be conducted anywhere in the area covered by GELs 230, 278, 285 & 407)</i>
Five	<ul style="list-style-type: none">• Geological and geophysical review. <i>(to be conducted anywhere in the area covered by GELs 278, 285 & 407)</i>

Dated: 18 April 2011



BARRY A. GOLDSTEIN
Executive Director Petroleum and Geothermal
Minerals and Energy Resources
Primary Industries and Resources SA
Delegate of the Minister for Mineral Resources Development

**Petroleum and Geothermal Energy Act 2000
S.115**

MEMORANDUM

**GEOHERMAL EXPLORATION LICENCES
GELs 226, 230, 278, 285, 407 and 425**

1. Variation of licence conditions is hereby entered on the public register.



**C. D. COCKSHELL
Acting Director Petroleum and Geothermal
Minerals and Energy Resources
Primary Industries and Resources SA
Delegate of the Minister for Mineral Resources Development**

Date: 5 November 2010

Ref: 27/2/383
27/2/387
27/2/442
27/2/451
27/2/535
F2010/688

Petroleum and Geothermal Energy Act 2000

VARIATION OF GEOTHERMAL EXPLORATION LICENCE GEL 278

I, CYRIL DAVID COCKSHELL, Acting Director Petroleum and Geothermal, Minerals and Energy Resources, Department of Primary Industries and Resources in the State of South Australia, pursuant to section 25 of the *Petroleum and Geothermal Energy Act 2000* and all other enabling powers, for and on behalf of Paul Holloway, Minister for Mineral Resources Development (Minister), pursuant to delegated powers dated 1 October 2009 vary the conditions of the above-mentioned licence, held by -

Torrens Energy Limited
ACN 118 065 704

Condition 1 of the licence is omitted and the following substituted:

“ During the term of the licence, the Licensee shall carry out or cause to be carried out, exploratory operations on the area comprised in the licence in accordance with such work programs as are approved by the Minister from time to time. Year one exploratory operations are guaranteed, and any subsequent licence year work program becomes guaranteed upon entry into any such licence year. These exploratory operations shall include but not necessarily be limited to:-

Year of Term of Licence	Minimum Work Requirements
One	<ul style="list-style-type: none">Geological and geophysical review. <i>(to be conducted anywhere in the area covered by GELs 230, 231, 232, 233, 234, 235, 278 & 285)</i>
Two	<ul style="list-style-type: none">Complete and case up to 5 fully cored heat flow holes to a depth of 400 to 500 metres for a total depth of 2000 to 2500 metres.Geological and geophysical review. <i>(to be conducted anywhere in the area covered by GELs 230, 231, 232, 233, 234, 235, 278, 285, 407, 408, 409 & 410)</i>
Three	<ul style="list-style-type: none">Geological and geophysical review. <i>(to be conducted anywhere in the area covered by GELs 230, 231, 232, 233, 234, 235, 278, 285, 407, 408, 409 & 410)</i>
Four	<ul style="list-style-type: none">Drill 1 deep well. <i>(to be conducted anywhere in the area covered by GELs 230, 278, 285 & 407)</i>
Five	<ul style="list-style-type: none">Geological and geophysical review. <i>(to be conducted anywhere in the area covered by GELs 278, 285 and 407)</i>

Dated: 5 November 2010



C. D. COCKSHELL
Acting Director Petroleum and Geothermal
Minerals and Energy Resources
Primary Industries and Resources SA
Delegate of the Minister for Mineral Resources Development

**Petroleum and Geothermal Energy Act 2000
S.115**

MEMORANDUM

**GEOHERMAL EXPLORATION LICENCES
GELs 230, 231, 232, 233,
234, 235, 278 AND 285**

1. Variation of licence conditions is hereby entered on the public register.



**BARRY A. GOLDSTEIN
Director Petroleum and Geothermal
Minerals and Energy Resources
Primary Industries and Resources SA
Delegate of the Minister for Mineral Resources
Development**

Date: 24 March 2010

Ref: 27/2/387 27/2/391
27/2/388 27/2/392
27/2/389 27/2/442
27/2/390 27/2/451

Petroleum and Geothermal Energy Act 2000

VARIATION OF GEOTHERMAL EXPLORATION LICENCES GELs 278 AND 285

I, BARRY ALAN GOLDSTEIN, Director Petroleum and Geothermal, Minerals and Energy Resources, Department of Primary Industries and Resources in the State of South Australia, pursuant to section 25 of the *Petroleum and Geothermal Energy Act 2000* and all other enabling powers, for and on behalf of Paul Holloway, Minister for Mineral Resources Development (Minister), pursuant to delegated powers dated 1 October 2009 vary the conditions of the above-mentioned licences, held by -

Torrens Energy Limited

Condition 1 of the licence is omitted and the following substituted:

- “ 1. During the term of the licence, the Licensee shall carry out or cause to be carried out exploratory operations on the area comprised in the licence in accordance with such work programs as are approved by the Minister from time to time. Year one exploratory operations are guaranteed, and any subsequent licence year work program becomes guaranteed upon entry into any such licence year. These exploratory operations shall include but not necessarily be limited to:-

Year of Term of Licence	Minimum Work Requirements
One	<ul style="list-style-type: none">Geological and geophysical review. <i>to be conducted anywhere within the boundaries of GELs 230, 231, 232, 233, 234, 235, 278 and 285</i>
Two	<ul style="list-style-type: none">Complete and case 5 fully cored heat flow holes to a depth of 400 to 500 metres for a total depth of 2000 to 2500 metres; andGeological and geophysical review. <i>to be conducted anywhere within the boundaries of GELs 230, 231, 232, 233, 234, 235, 278, 285, 407, 408, 409 and 410</i>
Three	<ul style="list-style-type: none">Geological and geophysical review. <i>to be conducted anywhere within the boundaries of GELs 230, 231, 232, 233, 234, 235, 278, 285, 407, 408, 409 and 410</i>
Four	<ul style="list-style-type: none">Drill 1 test well to a depth of 4000 to 5000 metres <i>to be conducted anywhere within the boundaries of GELs 230, 231, 232, 233, 234, 235, 278, 285, 407, 408, 409 and 410</i>
Five	<ul style="list-style-type: none">Geological and geophysical review. <i>to be conducted anywhere within the boundaries of GELs 278, 285, 407, 408, 409 and 410</i>

Dated: 24 March 2010



BARRY A. GOLDSTEIN
Director Petroleum and Geothermal
Minerals and Energy Resources
Primary Industries and Resources SA
Delegate of the Minister for Mineral Resources Development

**Petroleum Act 2000
S.115**

MEMORANDUM

**GEOHERMAL EXPLORATION LICENCES
GEL 226, GEL 227, GEL 228, GEL 229, GEL 230, GEL 231,
GEL 232, GEL 233, GEL 234, GEL 235, GEL 260, GEL 261,
GEL 262, GEL 263, GEL 278, GEL 285, and GEL 293**

SA 2008-21

Notation of registrable dealing as evidenced by Alliance Agreement dated 8 July 2008 between Torrens Energy Limited and AGL Energy Limited is hereby entered on the public register.



**BARRY A. GOLDSTEIN
Director Petroleum and Geothermal
Minerals and Energy Resources
Primary Industries and Resources SA
Delegate of the Minister for Mineral Resources
Development**

Date: 10 September 2008

27/2/383 - 27/2/392
27/2/419 - 27/2/422
27/2/442
27/2/451
27/2/460

PETROLEUM ACT 2000

Grant of Geothermal Exploration Licences—GEL 278 and GEL 285

NOTICE is hereby given that the undermentioned Geothermal Exploration Licences have been granted with effect from and including 5 July 2007, under the provisions of the Petroleum Act 2000, pursuant to delegated powers dated 28 March 2002, *Gazetted* 11 April 2002, page 1573.

No. of Licence	Licensee	Locality	Date of Expiry	Reference
GEL 278	Torrens Energy Ltd	Near Lake Torrens	4 July 2012	27/2/442
GEL 285	Torrens Energy Ltd	Adjacent Port Augusta	4 July 2012	27/2/451

Description of Area—GEL 278

All that part of the State of South Australia, bounded as follows:

Commencing at a point being the intersection of latitude 31°07'25"S GDA94 and longitude 138°15'20"E GDA94, thence east to longitude 138°27'24"E GDA94, south to latitude 31°21'43"S GDA94, west to longitude 138°16'00"E GDA94, north to latitude 31°12'30"S GDA94, west to longitude 138°15'20"E GDA94 and north to the point of commencement.

Area: 489 km² approximately.

Description of Area—GEL 285

All that part of the State of South Australia, bounded as follows:

Commencing at a point being the intersection of latitude 32°13'05"S GDA94 and longitude 137°44'08"E GDA94, thence east to longitude 137°45'00"E GDA94, south to latitude 32°15'00"S GDA94, east to longitude 137°52'39"E GDA94, south to latitude 32°33'00"S GDA94, west to the eastern boundary of the Cultana Army Land, thence generally north-westerly along the boundary of the said Army Land to longitude 137°44'08"E GDA94, north to latitude 32°30'00"S GDA94, east to longitude 137°46'00"E GDA94, south to latitude 32°31'00"S GDA94, east to longitude 137°47'30"E GDA94, north to latitude 32°28'00"S GDA94, west to longitude 137°44'08"E GDA94 and north to the point of commencement, but excluding the area bounded as follows:

Commencing at a point being the intersection of latitude 32°30'00"S GDA94 and longitude 137°49'30"E GDA94, thence east to longitude 137°51'00"E GDA94, south to latitude 32°31'45"S GDA94, west to longitude 137°49'30"E GDA94 and north to the point of commencement.

Area: 417 km² approximately.

Dated 28 June 2007.

B. A. GOLDSTEIN, Director Petroleum and Geothermal
Minerals and Energy Resources
Primary Industries and Resources SA
Delegate of the Minister for Mineral Resources Development

**Petroleum Act 2000
S.115**

MEMORANDUM

**GEOHERMAL EXPLORATION LICENCES
GELs 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 260, 261,
262, 263, 278 and 285**

1. Notation of receipt of security is hereby entered on the public register.



**BARRY A. GOLDSTEIN
Director Petroleum and Geothermal
Minerals and Energy Resources
Primary Industries and Resources SA
Delegate of the Minister for Mineral Resources
Development**

Date: 28 June 2007

Files:	27/2/383	27/2/384
	27/2/385	27/2/386
	27/2/387	27/2/388
	27/2/389	27/2/390
	27/2/391	27/2/392
	27/2/419	27/2/420
	27/2/421	27/2/422
	27/2/442	27/2/451

**Petroleum Act 2000
S.115**

MEMORANDUM

**GEOHERMAL EXPLORATION LICENCES
GEL 278 AND GEL 285**

1. These Licences granted with effect from and including 5 July 2007 are hereby entered on the public register.

2. Interests in the licence are:-

Torrens Energy Limited	100%
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**BARRY A. GOLDSTEIN
Director Petroleum and Geothermal
Minerals and Energy Resources
Primary Industries and Resources SA
Delegate of the Minister for Mineral Resources
Development**

Date: 28 June 2007

Ref: 27/2/442
27/2/451

PETROLEUM ACT 2000

GEOHERMAL EXPLORATION LICENCE

GEL 278

I, BARRY ALAN GOLDSTEIN, Director Petroleum and Geothermal, Minerals and Energy Resources, Primary Industries and Resources, in the State of South Australia pursuant to the provisions of the *Petroleum Act 2000* and all other enabling powers, for and on behalf of Paul Holloway, Minister for Mineral Resources Development (Minister), pursuant to delegation dated 28 March 2002, (refer Government Gazette dated 11 April 2002 page 1573), HEREBY GRANT to:

Torrens Energy Limited ACN 118 065 704

(hereinafter referred to as the Licensee) an Exploration Licence in relation to a source of geothermal energy in respect of the area set out below, to have effect for a period of five years commencing on 5 July 2007 and expiring on 4 July 2012 but carrying the right of renewal under the *Petroleum Act 2000*.

DESCRIPTION OF AREA

The land comprised in this licence is that part of the State of South Australia described in the Schedule hereto:

CONDITIONS

1. During the term of the licence, the Licensee shall carry out or cause to be carried out, exploratory operations on the area comprised in the licence in accordance with such work programs as are approved by the Minister from time to time. Year one exploratory operations are guaranteed, and any subsequent licence year work program becomes guaranteed upon entry into any such licence year. These exploratory operations shall include but not necessarily be limited to:-

Year of Term of Licence	Minimum Work Requirements
One	<ul style="list-style-type: none">• Geological and geophysical review. (to be conducted anywhere in the area covered by GELs 230, 231, 232, 233, 234, 235, 278 and 285)
Two	<ul style="list-style-type: none">• Complete and case 5 fully cored heat flow holes to a depth of 400 to 500 metres for a total depth of 2000 to 2500 metres.• Geological and geophysical review. (to be conducted anywhere in the area covered by GELs 230, 231, 232, 233, 234, 235, 278 and 285)
Three	<ul style="list-style-type: none">• Geological and geophysical review. (to be conducted anywhere in the area covered by GELs 230, 231, 232, 233, 234, 235, 278 and 285)

Four	<ul style="list-style-type: none"> • Drill 1 test well to a depth of 4000 to 5000 metres. (to be conducted anywhere in the area covered by GELs 230, 231, 232, 233, 234, 235, 278 and 285)
Five	<ul style="list-style-type: none"> • Geological and geophysical review. (to be conducted anywhere in the area covered by GELs 278 and 285)

2. The Licensee must take all reasonable precautions to minimise the risks of its activities resulting in a significant loss of petroleum reserves or a significant reduction in the recovery of petroleum reserves.
3. The Licensee must:
 - (a) upon commencement of regulated activities under this licence, maintain in force during the term of this licence public liability insurance to cover regulated activities under this licence (including sudden and accidental pollution) in the name of the Licensee for a sum not less than twenty million dollars (\$20,000,000.00) or such greater sum as specified by the Minister and make such amendments to the terms and conditions of the insurance as the Minister may from time to time require;
 - (b) maintain in force during the drilling of any well or operation in any well, control of well insurance in the name of the Licensee for a sum not less than ten million dollars (\$10,000,000.00) or such greater sum as specified by the Minister and make such amendments to the terms and conditions of the insurance as the Minister may from time to time require;
 - (c) upon request by the Minister, provide the Minister with a cover note or certificate of currency of each insurance policy referred to in paragraphs (a) and (b).
4. The Minister in specifying the levels of insurance accepts no liability for the completeness of their listing, the adequacy of the sum insured, the limit of liability, the scoped coverage, the conditions or exclusions of these insurances in respect to how they may or may not respond to any loss, damage or liability.
5. The Licensee will ensure, when preparing an Environmental Impact Report under Part 12 of the *Petroleum Act 2000*, that the report also includes an assessment of the potential economic consequences for other licensees under the *Petroleum Act 2000* or *Mining Act 1971* and owners of land, arising out of proposed regulated activities to be carried out in the licence area.
6. The Licensee must keep confidential any measurements made in a well which would enable the estimation of petroleum reserves ("Confidential Information") and must not disclose the Confidential Information without first obtaining the written consent of the licensee of the overlapping compatible licence, unless:
 - (a) it is a disclosure required under the Act, this licence or any other law;
 - (b) it is a disclosure which is for the purposes of prosecuting or defending any legal proceedings; or
 - (c) it is information which is or becomes public knowledge other than by breach of this licence condition.
7. A contract or agreement entered into by the licensee to transfer or accept liability for any well or facility constructed for the purpose of undertaking a regulated activity

under the *Petroleum Act 1940* or *2000* cannot transfer, limit or exclude liability under the *Petroleum Act 2000* unless written consent of the Minister is obtained.

8. In the event that the Licensee during any year of the term of this licence (a year being the period of twelve calendar months ending on the anniversary of the date upon which the licence comes into force) fails to comply with the work program requirements of this licence, it is an express term of this licence that the Minister then may use discretion to either cancel this licence or authorise such variation to these requirements as the Minister thinks fit.
9. The Licensee shall during periods determined by the Minister, lodge and maintain with the Minister, for the satisfaction of obligations arising under the Act or this licence, a security of \$50,000 (fifty thousand dollars) or such greater sum as specified by the Minister from time to time.
("the Security").
 - 9.1 The Security shall be lodged in the form of either;
 - (a) cash; or
 - (b) an unconditional, irrevocable bank guarantee or letter of credit in a form, and from a financial institution, approved by the Minister,
 - 9.2 Interest will not be payable by the Minister to the Licensee on any cash Security.
 - 9.3 All charges incurred by the Licensee in obtaining and maintaining the Security, shall be met by the Licensee.
 - 9.4 If upon expiry, this Licence is not renewed and the Minister is satisfied that there are no further obligations under this Licence or the Act, the Minister will return the Security to the Licensee.

Date:.....28 June.....2007



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BARRY A. GOLDSTEIN
Director Petroleum and Geothermal
Minerals and Energy Resources
Primary Industries and Resources SA
Delegate of the Minister for Mineral Resources Development

Signed by the said LICENSEE

Date: 13/3.....2007

Chris Matthews

Authorised Representative

Chris Matthews

Name

Chief Executive Officer

Position

Torrens Energy Ltd

Company

Michele Haynes

Witness

MICHELE HAYNES

Name

Position

Company

GEOTHERMAL EXPLORATION LICENCE

GEL 278

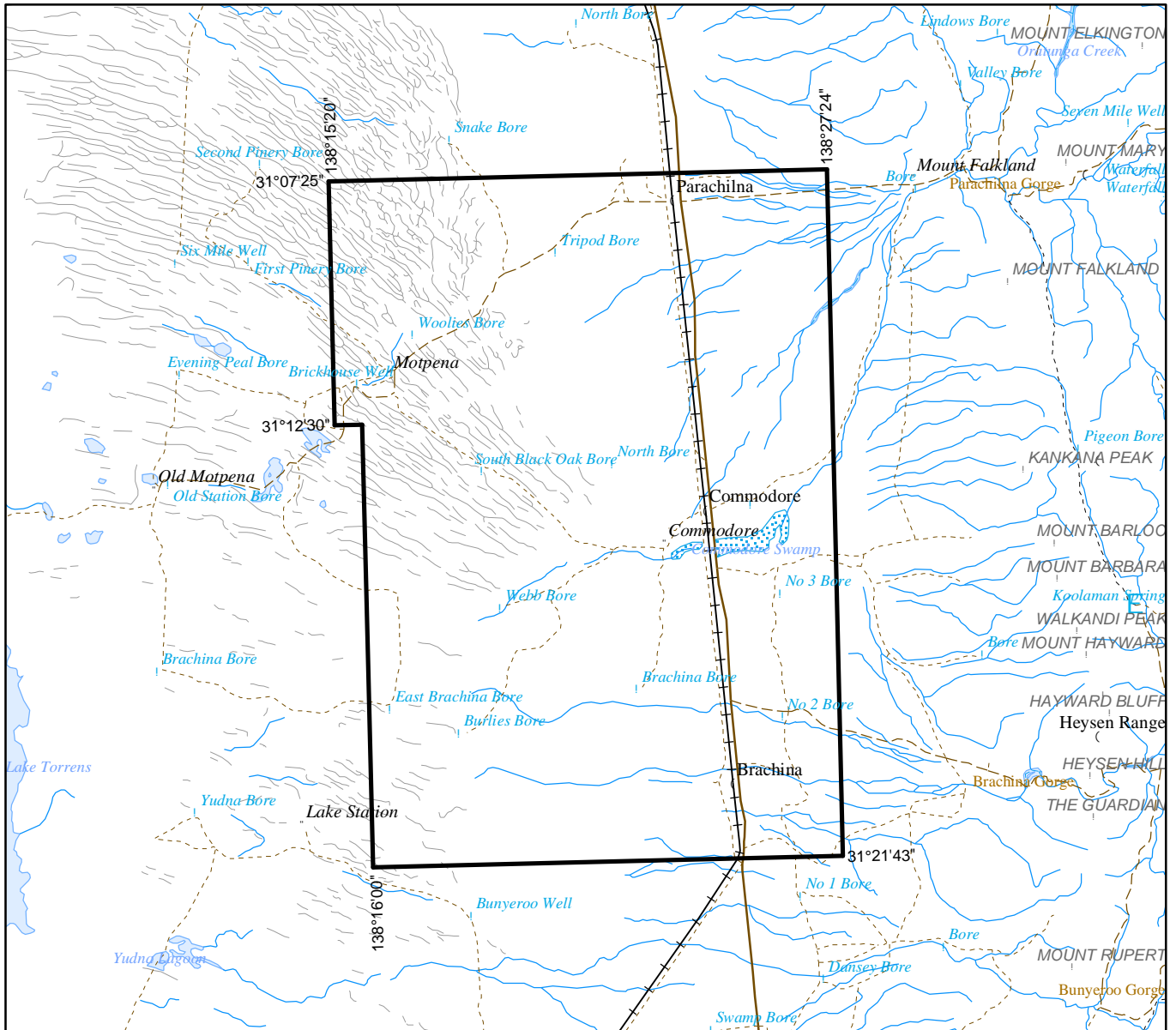
THE SCHEDULE

Description of Area

All that part of the State of South Australia, bounded as follows:-

Commencing at a point being the intersection of latitude $31^{\circ}07'25''\text{S}$ GDA94 and longitude $138^{\circ}15'20''\text{E}$ GDA94, thence east to longitude $138^{\circ}27'24''\text{E}$ GDA94, south to latitude $31^{\circ}21'43''\text{S}$ GDA94, west to longitude $138^{\circ}16'00''\text{E}$ GDA94, north to latitude $31^{\circ}12'30''\text{S}$ GDA94, west to longitude $138^{\circ}15'20''\text{E}$ GDA94, and north to the point of commencement.

AREA: **489** square kilometres approximately.



SCALE 1:250 000



Note: There is no warranty that the boundary of this licence is correct in relation to other features of the map. The boundary is to be ascertained by reference to the Geocentric Datum of Australia (GDA94) and the schedule.

THE PLAN HEREINBEFORE REFERRED TO

GEOTHERMAL EXPLORATION LICENCE NO: 278



Government of South Australia
Primary Industries and Resources SA

SR 27/2/442

AREA: 489 sq km (approx)