



**Petroleum Act 2000  
S.115**

**MEMORANDUM**

**GEOHERMAL EXPLORATION LICENCES  
GEL 308, GEL 311, GEL 312,  
GEL 313, GEL 314, GEL 315**

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: 2 June 2009

Ref: 27/2/476  
27/2/479  
27/2/480  
27/2/481  
27/2/482  
27/2/483

# Petroleum Act 2000

## VARIATION OF GEOTHERMAL EXPLORATION LICENCES GELs 308, 311, 312, 313, 314 and 315

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 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 28 March 2002, Gazetted 11 April 2002, page 1573, hereby vary the conditions of the above-mentioned petroleum exploration licence held by -

**Deep Energy Ltd ACN 126 086 600**

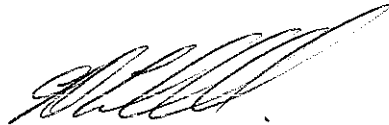
Condition 1 of the licence is omitted and the following substituted:

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. Years one and two 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 and Two	<ul style="list-style-type: none"><li>• Drill nine wells to at least 200 metres depth and holes to be temperature and gamma logged;</li><li>• Conduct 80 line km magneto-telluric survey.</li></ul> <p><i>(Work program may be carried out anywhere within GELs 308, 311, 312, 313, 314 and 315).</i></p>
Three	<ul style="list-style-type: none"><li>• Geological and geophysical studies; and</li><li>• Drill six test holes to depths of 600-800 metres; and</li><li>• Measure geothermal gradients; and</li><li>• Conduct down-hole magnetometry</li></ul> <p><i>(Work program may be carried out anywhere within GELs 308, 311, 312, 313, 314 and 315).</i></p>
Four	<ul style="list-style-type: none"><li>• Geological and geophysical studies; and</li><li>• Drill six test holes to depths of 600-800 metres; and</li><li>• Measure geothermal gradients; and</li><li>• Conduct down-hole magnetometry; and</li><li>• Acquire 120 km 2D seismic</li></ul> <p><i>(Work program may be carried out anywhere within GELs 308, 311, 312, 313, 314 and 315).</i></p>

Five	<ul style="list-style-type: none"><li>• Geological and geophysical studies; and</li><li>• Drill six test holes to depths of 800 metres (if required); and</li><li>• Measure geothermal gradients (if required); and</li><li>• Drill six deep wells to depths of 2,500-4,000 metres</li></ul> <p><i>(Work program may be carried out anywhere within GELs 308, 311, 312, 313, 314 and 315).</i></p>
------	--

Dated: 2 June 2009



**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 ACT 2000

*Grant of Geothermal Exploration Licences—GELs 308, 311, 312, 313, 314 and 315*

NOTICE is hereby given that the undermentioned Geothermal Exploration Licences have been granted 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	Area in km <sup>2</sup>	Reference
GEL 308	Deep Energy Ltd	Vicinity of Lake Frome	481	27/02/476
GEL 311	Deep Energy Ltd	Vicinity of Lake Frome	471	27/02/479
GEL 312	Deep Energy Ltd	Vicinity of Lake Frome	479	27/02/480
GEL 313	Deep Energy Ltd	Vicinity of Lake Frome	487	27/02/481
GEL 314	Deep Energy Ltd	Vicinity of Lake Frome	461	27/02/482
GEL 315	Deep Energy Ltd	Vicinity of Lake Frome	484	27/02/583

*Description of Area—GEL 308*

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

Commencing at a point being the intersection of latitude 31°44'00"S GDA94 and longitude 139°41'00"E GDA94, thence east to longitude 139°56'00"E GDA94, south to latitude 31°55'00"S GDA94, west to longitude 139°41'00"E GDA94, and north to the point of commencement.

Area: 481 km<sup>2</sup> approximately.

*Description of Area—GEL 311*

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

Commencing at a point being the intersection of latitude 30°48'00"S GDA94 and longitude 139°25'00"E GDA94, thence east to longitude 139°30'00"E GDA94, south to latitude 31°00'00"S GDA94, west to longitude 139°25'00"E GDA94, south to latitude 31°05'00"S GDA94, west to longitude 139°15'00"E GDA94, north to latitude 30°55'00"S GDA94, east to longitude 139°25'00"E GDA94, and north to the point of commencement.

Area: 471 km<sup>2</sup> approximately.

*Description of Area—GEL 312*

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

*Area 1*

Commencing at a point being the intersection of latitude 30°28'00"S GDA94 and longitude 139°35'00"E GDA94, thence east to longitude 139°40'00"E GDA94, south to latitude 30°39'00"S GDA94, west to an eastern boundary of Vulkathunha - Gammon Range National Park, thence generally northeasterly and northwesterly along the boundary of the said National Park to longitude 139°30'00"E GDA94, north to latitude 30°31'00"S GDA94, east to longitude 139°35'00"E GDA94 and north to the point of commencement.

*Area 2*

Commencing at a point being the intersection of latitude 30°40'00"S GDA94 and longitude 139°25'00"E GDA94, thence east to longitude 139°30'00"E GDA94, north to a southern boundary of Vulkathunha - Gammon Range National Park, thence generally southeasterly along the boundary of the said National Park to longitude 139°35'00"E GDA94, south to latitude 30°50'00"S GDA94, west to longitude 139°30'00"E GDA94, north to latitude 30°48'00"S GDA94, west to longitude 139°25'00"E GDA94, and north to the point of commencement.

Area: 479 km<sup>2</sup> approximately.

*Description of Area—GEL 313*

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

Commencing at a point being the intersection of latitude 30°35'00"S GDA94 and longitude 140°05'00"E GDA94, thence east to longitude 140°18'00"E GDA94, south to latitude 30°50'00"S GDA94, west to longitude 140°11'00"E GDA94, north to latitude 30°45'00"S GDA94, west to longitude 140°05'00"E GDA94, and north to the point of commencement.

Area: 487 km<sup>2</sup> approximately.

*Description of Area—GEL 314*

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

Commencing at a point being the intersection of latitude 31°00'00"S GDA94 and longitude 139°25'00"E GDA94, thence east to longitude 139°30'00"E GDA94, south to latitude 31°05'00"S GDA94, east to longitude 139°45'00"E GDA94, south to latitude 31°09'00"S GDA94, west to longitude 139°41'00"E GDA94, south to latitude 31°11'00"S GDA94, west to longitude 139°30'00"E GDA94, north to latitude 31°10'00"S GDA94, west to longitude 139°20'00"E GDA94, north to latitude 31°05'00"S GDA94, east to longitude 139°25'00"E GDA94, and north to the point of commencement.

Area: 461 km<sup>2</sup> approximately.

*Description of Area—GEL 315*

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

Commencing at a point being the intersection of latitude 31°11'00"S GDA94 and longitude 139°30'00"E GDA94, thence east to longitude 139°41'00"E GDA94, south to latitude 31°26'00"S GDA94, west to longitude 139°30'00"E GDA94, and north to the point of commencement.

Area: 484 km<sup>2</sup> approximately.

Dated 28 March 2008.

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 308, 311, 312, 313, 314 and 315**

1. These Licences granted with effect from and including 28 March 2008 are hereby entered on the public register.
2. Interests in the licences are:-

Deep Energy Ltd	100%
-----------------	------
3. Notation of receipt of security is 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 March 2008

Ref: 27/2/476  
27/2/479  
27/2/480  
27/2/481  
27/2/482  
27/2/483

# PETROLEUM ACT 2000

## GEOHERMAL EXPLORATION LICENCE

### GEL 308

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:

**Deep Energy Ltd** ACN 126 086 600

(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 and to expire on 27 March 2013 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"><li>• Geological and geophysical studies; and</li><li>• Gravity Survey (750-1000 stations).</li></ul> <i>(Work program may be carried out anywhere within GELs 308, 311, 312, 313, 314 and 315).</i>
Two	<ul style="list-style-type: none"><li>• Geological and geophysical studies; and</li><li>• Drill six test holes to depths of 600-800 metres; and</li><li>• Measure geothermal gradients; and</li><li>• Conduct down-hole magnetometry.</li></ul> <i>(Work program may be carried out anywhere within GELs 308, 311, 312, 313, 314 and 315).</i>
Three	<ul style="list-style-type: none"><li>• Geological and geophysical studies; and</li><li>• Drill six test holes to depths of 600-800 metres; and</li><li>• Measure geothermal gradients; and</li><li>• Conduct down-hole magnetometry.</li></ul> <i>(Work program may be carried out anywhere within GELs 308, 311, 312, 313, 314 and 315).</i>

<b>Four</b>	<ul style="list-style-type: none"> <li>• Geological and geophysical studies; and</li> <li>• Drill six test holes to depths of 600-800 metres; and</li> <li>• Measure geothermal gradients; and</li> <li>• Conduct down-hole magnetometry; and</li> <li>• Acquire 120 km 2D seismic.</li> </ul> <p><i>(Work program may be carried out anywhere within GELs 308, 311, 312, 313, 314 and 315).</i></p>
<b>Five</b>	<ul style="list-style-type: none"> <li>• Geological and geophysical studies; and</li> <li>• Drill six test holes to depths of 800 metres (if required); and</li> <li>• Measure geothermal gradients (if required); and</li> <li>• Drill six deep wells to depths of 2,500-4,000 metres.</li> </ul> <p><i>(Work program may be carried out anywhere within GELs 308, 311, 312, 313, 314 and 315).</i></p>

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.

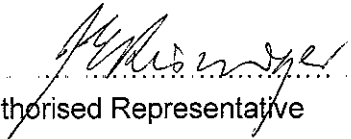
Date: 28 March 2008



.....  
**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: 7/31 ..... 2008

  
.....  
Authorised Representative

JOHN BISINGER  
.....  
Name

DIRECTOR  
.....  
Position

DEEP ENERGY LTD  
.....  
Company

# **GEOHERMAL EXPLORATION LICENCE**

**GEL 308**

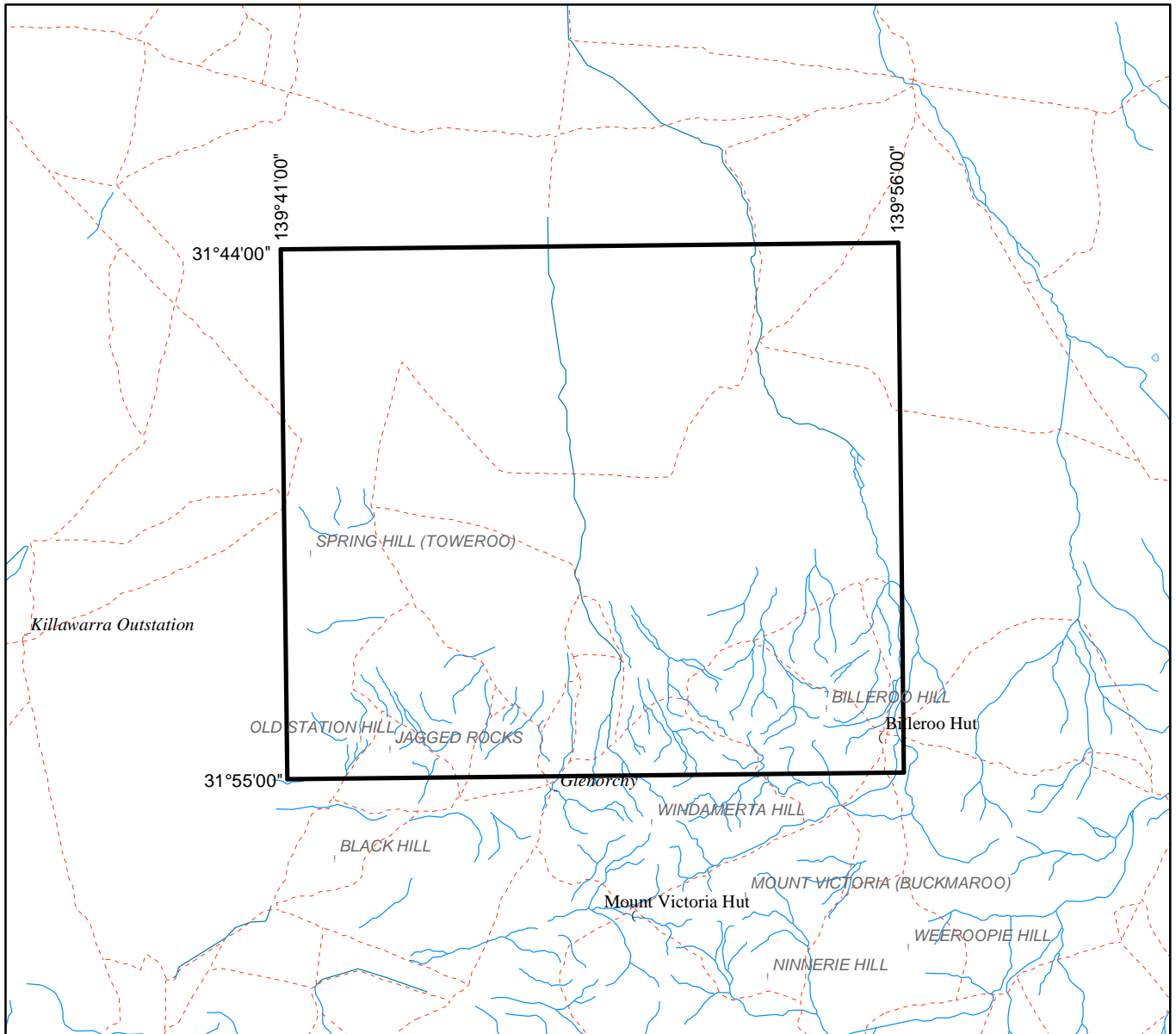
## **THE SCHEDULE**

### **Description of Area**

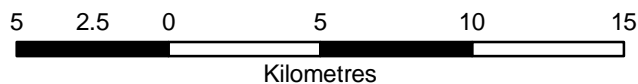
All that part of the State of South Australia, bounded as follows:-

Commencing at a point being the intersection of latitude 31°44'00"S GDA94 and longitude 139°41'00"E GDA94, thence east to longitude 139°56'00"E GDA94, south to latitude 31°55'00"S GDA94, west to longitude 139°41'00"E GDA94, and north to the point of commencement

AREA: **481** 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  
**GEOHERMAL EXPLORATION LICENCE NO: 308**

