



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

**MEMORANDUM**

**GELs 354, 355, 356, 357, 358, 359, 360,  
361, 362, 363, 364, 365 and 377  
and  
GELs 448, 449, 450, 451, 452, 453, 454, 455,  
456, 457, 458, 459, 460 and 461**

1. Notation of discharge of security in the form of Bank Guarantee dated 26 August 2009 is hereby entered on the public register.



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

Date: 23 September 2011

File: 27/2/519  
27/2/545



## PETROLEUM AND GEOTHERMAL ENERGY ACT 2000

*Surrender of Geothermal Exploration Licences—GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 and 377*

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 1 October 2009.

| No. of Licence | Licensee                | Locality                               | Date of Surrender | Reference |
|----------------|-------------------------|--|-------------------|-----------|
| GEL 354        |                         |  |                   |           |
| GEL 355        |                         |  |                   |           |
| GEL 356        |                         |  |                   |           |
| GEL 357        |                         |  |                   |           |
| GEL 358        |                         |  |                   |           |
| GEL 359        |                         |  |                   |           |
| GEL 360        | Gradient Energy Limited | Cooper/Eromanga Basin, South Australia | 18 July 2011      | 27/02/519 |
| GEL 361        |                         |  |                   | 27/02/522 |
| GEL 362        |                         |  |                   |           |
| GEL 363        |                         |  |                   |           |
| GEL 364        |                         |  |                   |           |
| GEL 365        |                         |  |                   |           |
| GEL 377        |                         |  |                   |           |

Dated 27 July 2011.

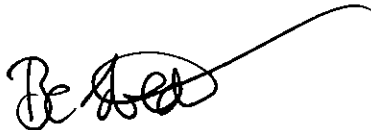
B. A. GOLDSTEIN,  
Executive Director,  
Petroleum and Geothermal Division  
Minerals and Energy Resources  
Primary Industries and Resources SA  
Delegate of the Minister for Mineral Resources Development

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

**MEMORANDUM**

**GEOHERMAL EXPLORATION LICENCES**  
**GELs 354, 355, 356, 357, 358, 359, 360,**  
**361, 362, 363, 364, 365 and 377**

1. Surrender of the abovementioned Geothermal Exploration Licences with effect from 18 July 2011 is hereby entered on the public register.



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

Date: 27 July 2011

Ref: 27/2/519  
27/2/522

## ***Petroleum and Geothermal Energy Act 2000***

### **SURRENDER OF GEOTHERMAL EXPLORATION LICENCES GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, and 377**

I, BARRY ALAN GOLDSTEIN, Executive Director Petroleum and Geothermal Division, Minerals and Energy Resources, Department of Primary Industries and Resources, 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 Development (Minister), pursuant to delegated powers dated 1 October 2009 –

- a) hereby accept surrender of Geothermal Exploration Licences – GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 and 377 in the name of Gradient Energy Limited with effect from 18 July 2011.

Dated: 27 July 2011



**BARRY A. GOLDSTEIN  
Executive Director  
Petroleum and Geothermal Division  
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 354, 355, 356, 357, 358, 359, 360,**  
**361, 362, 363, 364, 365 and 377**

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: 14 December 2010

Ref: 27/2/519  
27/2/522

# Petroleum and Geothermal Energy Act 2000

## VARIATION OF GEOTHERMAL EXPLORATION LICENCES GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 & 377

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 -

**Gradient Energy Limited**  
ACN 128 437 507


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:-

| <b>Year of Term of Licence</b> | <b>Minimum Work Requirements</b>  |
|--------------------------------|---|
| One                            | <ul style="list-style-type: none"><li>• Geological and geophysical studies.</li></ul> <i>(To be conducted anywhere within the areas of GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 &amp; 377)</i>   |
| Two                            | <ul style="list-style-type: none"><li>• Thermal conductivity measurements on available drillcore;</li><li>• Detailed temperature logging of suitable drillholes;</li><li>• Permeability / porosity measurements of available core within aquifers;</li><li>• 150 line km seismic reprocessing to improve the geological model; and</li><li>• Stored heat calculations that incorporate data obtained from the above measurements.</li></ul> <i>(To be conducted anywhere within the areas of GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 &amp; 377)</i> |
| Three                          | <ul style="list-style-type: none"><li>• Geological and geophysical studies.</li></ul> <i>(To be conducted anywhere within the areas of GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 &amp; 377)</i>   |
| Four                           | <ul style="list-style-type: none"><li>• Geological and geophysical studies; and</li><li>• Seismic reprocessing</li></ul> <i>(To be conducted anywhere within the areas of GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 &amp; 377)</i>  |

|      |  |
|------|--|
| Five | <ul style="list-style-type: none"><li>• Geological and geophysical studies;</li><li>• Geophysical survey of the target area (gravity, magnetic or magneto-tellurics); or shallow drilling to approximately 500 metres for heat flow measurements.</li></ul> <p><i>(To be conducted anywhere within the areas of GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 &amp; 377)</i></p> |
|------|--|

Dated: 14 December 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 AND GEOTHERMAL ENERGY ACT 2000

*Suspension of Geothermal Exploration Licences**GELs 354, 355, 356, 357, 358, 359,  
360, 361, 362, 363, 364, 365 and 377*

PURSUANT to section 90 of the Petroleum and Geothermal Energy Act 2000, notice is hereby given that the abovementioned Geothermal Exploration Licences have been suspended under the provisions of the Petroleum and Geothermal Energy Act 2000, for the period from and including 24 May 2010 to 23 November 2010, pursuant to delegated powers dated 1 October 2009.

The expiry date of Geothermal Exploration Licences GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 and 377 is now determined to be 25 November 2013.

Dated 24 June 2010.

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

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

**MEMORANDUM**

**GEOHERMAL EXPLORATION LICENCES**  
**GELs 354, 355, 356, 357, 358, 359, 360,**  
**361, 362, 363, 364, 365 and 377**

1. Suspension of licences from and including 24 May 2010 to 23 November 2011 is hereby entered on the public register.
2. The expiry date of GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 and 377 is now determined to be 25 November 2013.



**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 June 2010

Ref: 27/2/519  
27/2/522

***Petroleum and Geothermal Energy Act 2000***  
**S.90**

**SUSPENSION OF  
GEOTHERMAL EXPLORATION LICENCES  
GELs 354, 355, 356, 357, 358, 359, 360,  
361, 362, 363, 364, 365 and 377**

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 the provisions 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 hereby -

1. suspend geothermal exploration licences GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 and 377 for the period from and including 24 May 2010 to 23 November 2010.

No regulated activities are permitted to be carried out during the period of the suspension.

The expiry date of GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 and 377 is now determined to be 25 November 2013.

Dated: 24 June 2010



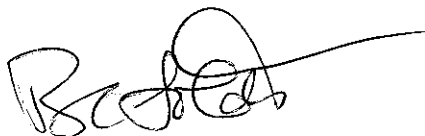
**BARRY A. GOLDSTEIN**  
**Director Petroleum and Geothermal**  
**Minerals and Energy Resources**  
**Primary Industries and Resources SA**  
**Delegate of the Minister for Mineral Resources Development**

**Petroleum Act 2000**  
**S.115**

**MEMORANDUM**

**GEOHERMAL EXPLORATION LICENCES**  
**GEL 354, 355, 356, 357, 358, 359, 360,**  
**361, 362, 363, 364, 365 and 377**

1. Notation of receipt of Bank Guarantee dated 26 August 2009 is hereby entered on the public register.
2. Security is held to cover any event occurring in any licence operated by Gradient Energy Limited in South Australia.



**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: 9 September 2009

File: 27/2/519  
27/2/522

**Petroleum Act 2000  
S.115**

**MEMORANDUM**

**GEOHERMAL EXPLORATION LICENCES  
GELs 354, 355, 356, 357, 358, 359, 360,  
361, 362, 363, 364, 365 & 377**

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: 15 June 2009

Ref: 27/2/519  
27/2/522

# Petroleum Act 2000

## VARIATION OF GEOTHERMAL EXPLORATION LICENCES GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 & 377

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 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 geothermal exploration licences held by -

**Gradient Energy Limited**  
ACN 128 437 507

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"><li>• Geological and Geophysical Studies</li></ul> <p><i>(To be conducted anywhere within the combined areas of GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 &amp; 377)</i></p>  |
| Two                     | <ul style="list-style-type: none"><li>• Thermal conductivity measurements on available drillcore;</li><li>• Detailed temperature logging of suitable drillholes;</li><li>• Permeability / Porosity measurements of available core within aquifers;</li><li>• 150 line km seismic reprocessing to improve the geological model; and</li><li>• Stored heat calculations that incorporate data obtained from the above measurements.</li></ul> <p><i>(To be conducted anywhere within the combined areas of GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 &amp; 377)</i></p> |

|              |  |
|--------------|--|
| <p>Three</p> | <ul style="list-style-type: none"> <li>• Conduct 35 line kilometres of magneto-telluric survey;</li> <li>• Drill a narrow hole to a depth of 1,000 metres;</li> <li>• Conduct temperature logging of drill hole; and</li> <li>• Geological and geophysical studies.</li> </ul> <p><i>(To be conducted anywhere within the combined areas of GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 &amp; 377)</i></p>   |
| <p>Four</p>  | <ul style="list-style-type: none"> <li>• Drill one test well to a depth of 2,000 to 3,500 metres; or drill two narrow holes to depths of 1,000 metres;</li> <li>• Conduct temperature/flow rate logging of test well, or temperature logging of drill holes; and</li> <li>• Geological and geophysical studies.</li> </ul> <p><i>(To be conducted anywhere within the combined areas of GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 &amp; 377)</i></p> |
| <p>Five</p>  | <ul style="list-style-type: none"> <li>• Deepen year four test well (if required), or drill second well to a depth of 2,000 – 3,000 metres;</li> <li>• Conduct temperature and flow rate logging;</li> <li>• Hydraulic fracture stimulation; and</li> <li>• Geological and geophysical studies</li> </ul> <p><i>(To be conducted anywhere within the combined areas of GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 &amp; 377)</i></p>                  |

"

Dated: 15 June 2009



**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

*Grant of Geothermal Exploration Licences—GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 and 377*

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> |
|----------------|-------------------------|--------------|-------------------------|
| GEL 354        | Gradient Energy Limited | Cooper Basin | 488                     |
| GEL 355        | Gradient Energy Limited | Cooper Basin | 498                     |
| GEL 356        | Gradient Energy Limited | Cooper Basin | 497                     |
| GEL 357        | Gradient Energy Limited | Cooper Basin | 498                     |
| GEL 358        | Gradient Energy Limited | Cooper Basin | 497                     |
| GEL 359        | Gradient Energy Limited | Cooper Basin | 497                     |
| GEL 360        | Gradient Energy Limited | Cooper Basin | 497                     |
| GEL 361        | Gradient Energy Limited | Cooper Basin | 497                     |
| GEL 362        | Gradient Energy Limited | Cooper Basin | 498                     |
| GEL 363        | Gradient Energy Limited | Cooper Basin | 479                     |
| GEL 364        | Gradient Energy Limited | Cooper Basin | 498                     |
| GEL 365        | Gradient Energy Limited | Cooper Basin | 479                     |
| GEL 377        | Gradient Energy Limited | Cooper Basin | 179                     |

*Description of Area—GEL 354*

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

Commencing at a point being the intersection of latitude 26°13'00"S GDA94 and longitude 139°34'00"E GDA94, thence west to longitude 139°22'00"E GDA94, north to the northern border of the State of South Australia, thence easterly along the border of the said State to longitude 139°34'00"E GDA94 and south to the point of commencement.

Area: 488 km<sup>2</sup> approximately.

*Description of Area—GEL 355*

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

Commencing at a point being the intersection of latitude 26°09'30"S GDA94 and longitude 139°10'00"E GDA94, thence east to longitude 139°22'00"E GDA94, south to latitude 26°23'00"S GDA94, west to longitude 139°10'00"E GDA94 and north to the point of commencement.

Area: 498 km<sup>2</sup> approximately.

*Description of Area—GEL 356*

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

Commencing at a point being the intersection of latitude 26°23'00"S GDA94 and longitude 139°10'00"E GDA94, thence east to longitude 139°22'00"E GDA94, south to latitude 26°36'30"S GDA94, west to longitude 139°10'00"E GDA94 and north to the point of commencement.

Area: 497 km<sup>2</sup> approximately.

*Description of Area—GEL 357*

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

Commencing at a point being the intersection of latitude 26°13'00"S GDA94 and longitude 139°22'00"E GDA94, thence east to longitude 139°34'00"E GDA94, south to latitude 26°26'30"S GDA94, west to longitude 139°22'00"E GDA94 and north to the point of commencement.

Area: 498 km<sup>2</sup> approximately.

*Description of Area—GEL 358*

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

Commencing at a point being the intersection of latitude 26°26'30"S GDA94 and longitude 139°22'00"E GDA94, thence east to longitude 139°34'00"E GDA94, south to latitude 26°40'00"S GDA94, west to longitude 139°22'00"E GDA94 and north to the point of commencement.

Area: 497 km<sup>2</sup> approximately.

*Description of Area—GEL 359*

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

Commencing at a point being the intersection of latitude 26°19'00"S GDA94 and longitude 139°34'00"E GDA94, thence east to longitude 139°47'30"E GDA94, south to latitude 26°31'00"S GDA94, west to longitude 139°34'00"E GDA94 and north to the point of commencement.

Area: 497 km<sup>2</sup> approximately.

*Description of Area—GEL 360*

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

Commencing at a point being the intersection of latitude 26°18'30"S GDA94 and longitude 139°48'00"E GDA94, thence east to longitude 140°00'00"E GDA94, south to latitude 26°31'30"S GDA94, west to longitude 139°48'00"E GDA94, north to latitude 26°31'00"S GDA94, west to longitude 139°47'30"E GDA94, north to latitude 26°19'00"S GDA94, east to longitude 139°48'00"E GDA94 and north to the point of commencement.

Area: 497 km<sup>2</sup> approximately.

*Description of Area—GEL 361*

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

Commencing at a point being the intersection of latitude 26°15'30"S GDA94 and longitude 140°00'00"E GDA94, thence east to longitude 140°12'00"E GDA94, south to latitude 26°29'00"S GDA94, west to longitude 140°00'00"E GDA94 and north to the point of commencement.

Area: 497 km<sup>2</sup> approximately.

*Description of Area—GEL 362*

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

Commencing at a point being the intersection of latitude 26°04'30"S GDA94 and longitude 140°12'00"E GDA94, thence east to longitude 140°24'00"E GDA94, south to latitude 26°18'00"S GDA94, west to longitude 140°12'00"E GDA94, and north to the point of commencement.

Area: 498 km<sup>2</sup> approximately.

*Description of Area—GEL 363*

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

Commencing at a point being the intersection of latitude 26°18'00"S GDA94 and longitude 140°12'00"E GDA94, thence east to longitude 140°24'00"E GDA94, south to latitude 26°31'00"S GDA94, west to longitude 140°12'00"E GDA94 and north to the point of commencement.

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

*Description of Area—GEL 364*

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

Commencing at a point being the intersection of latitude 26°04'30"S GDA94 and longitude 140°24'00"E GDA94, thence east to longitude 140°36'00"E GDA94, south to latitude 26°18'00"S GDA94, west to longitude 140°24'00"E GDA94 and north to the point of commencement.

Area: 498 km<sup>2</sup> approximately.

*Description of Area—GEL 365*

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

Commencing at a point being the intersection of latitude 26°18'00"S GDA94 and longitude 140°24'00"E GDA94, thence east to longitude 140°36'00"E GDA94, south to latitude 26°31'00"S GDA94, west to longitude 140°24'00"E GDA94 and north to the point of commencement.

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

*Description of Area—GEL 377*

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

Commencing at a point being the intersection of latitude 26°09'30"S GDA94 and longitude 139°22'00"E GDA94, thence west to longitude 139°16'00"E GDA94, north to the northern border of the State of South Australia, thence easterly along the border of the said State to longitude 139°22'00"E GDA94 and south to the point of commencement.

Area: 179 km<sup>2</sup> approximately.

Dated 26 May 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 354, 355, 356, 357, 358, 359, 360,  
361, 362, 363, 364, 364 and 377**

1. These Licences granted with effect from and including 26 May 2008 are hereby entered on the public register.
2. Interests in the licences are:-

|                         |      |
|-------------------------|------|
| Gradient Energy Limited | 100% |
|-------------------------|------|



**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: 26 May 2008

Ref: 27/2/519  
27/2/522

# PETROLEUM ACT 2000

## GEOHERMAL EXPLORATION LICENCE

### GEL 362

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:

**Gradient Energy Limited ACN 128 437 507**

(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 *25 May* 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<br><i>(Years one to five work requirements may be conducted anywhere within the combined areas of GELs 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365 and 377).</i>  |
|-------------------------|--|
| One                     | <ul style="list-style-type: none"><li>• Geological and geophysical studies</li></ul>   |
| Two                     | <ul style="list-style-type: none"><li>• Conduct 70 line kilometres of magneto-telluric survey;</li><li>• Conduct temperature logging of the existing Haddon Downs #1 well (subject to well rehabilitation requirements); and</li><li>• Geological and geophysical studies.</li></ul> |
| Three                   | <ul style="list-style-type: none"><li>• Conduct 35 line kilometres of magneto-telluric survey;</li><li>• Drill a narrow hole to a depth of 1,000 metres;</li><li>• Conduct temperature logging of drill hole; and</li><li>• Geological and geophysical studies</li></ul>             |

|             |  |
|-------------|--|
| <b>Four</b> | <ul style="list-style-type: none"> <li>• Drill one test well to a depth of 2,000 to 3,500 metres; or drill two narrow holes to depths of 1,000 metres;</li> <li>• Conduct temperature/flow rate logging of test well, or temperature logging of drill holes; and</li> <li>• Geological and geophysical studies.</li> </ul> |
| <b>Five</b> | <ul style="list-style-type: none"> <li>• Deepen year four test well (if required), or drill second well to a depth of 2,000-3,000 metres; and</li> <li>• Conduct temperature and flow rate logging;</li> <li>• Hydraulic fracture stimulation; and</li> <li>• Geological and geophysical studies.</li> </ul>               |

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: 26 May 2008



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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: ..... 13/05/ ..... 2008

  
.....  
Authorised Representative

*Stephen Nawa*  
.....  
Name

*CEO / President*  
.....  
Position

*Gradient Energy Ltd.*  
.....  
Company

# GEOTHERMAL EXPLORATION LICENCE

**GEL 362**

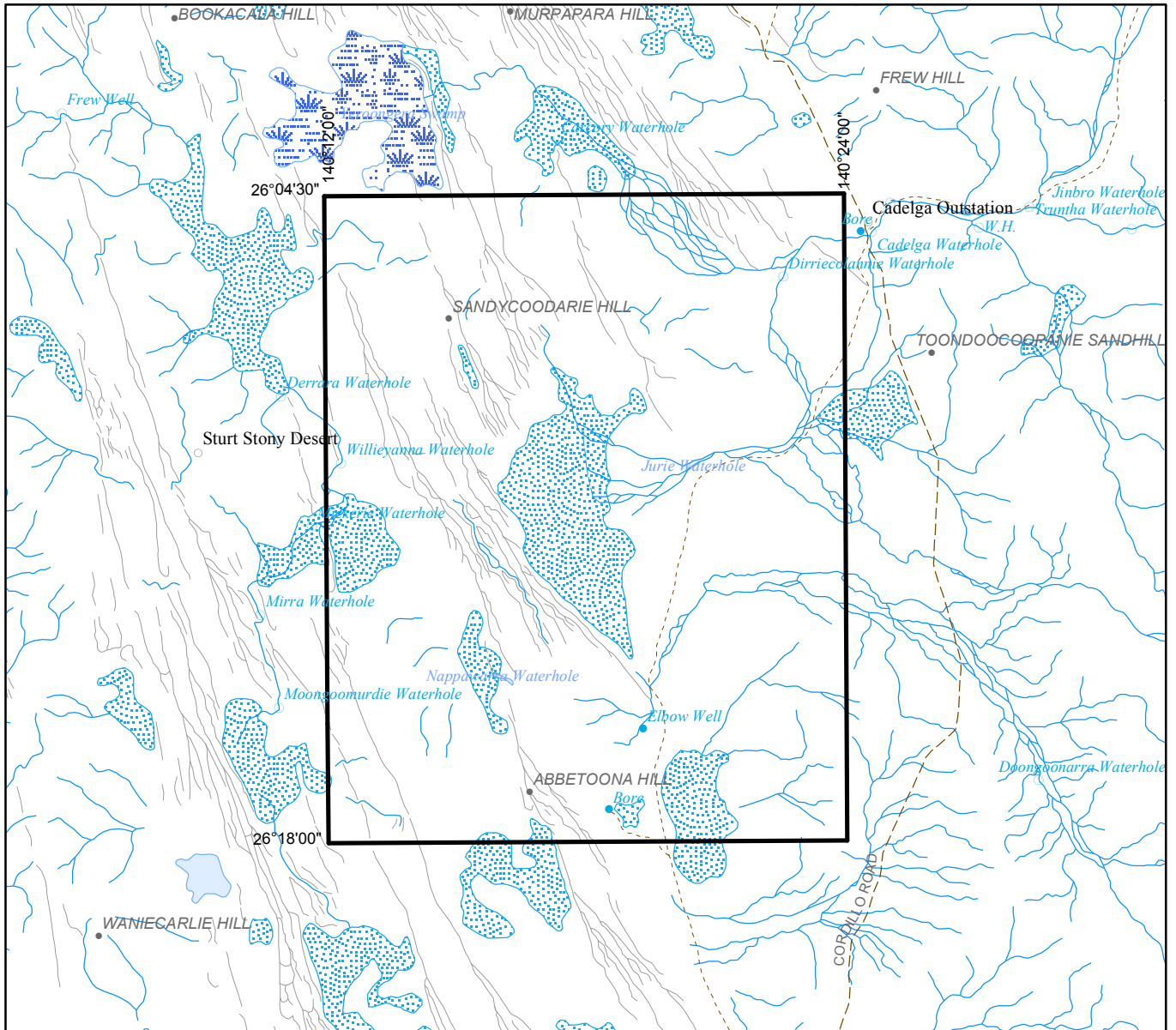
## THE SCHEDULE

### Description of Area

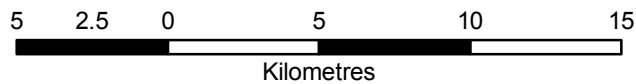
All that part of the State of South Australia, bounded as follows:-

Commencing at a point being the intersection of latitude 26°04'30"S GDA94 and longitude 140°12'00"E GDA94, thence east to longitude 140°24'00"E GDA94, south to latitude 26°18'00"S GDA94, west to longitude 140°12'00"E GDA94, and north to the point of commencement.

AREA: **498** 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: 362