

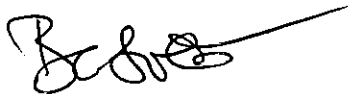


***Petroleum and Geothermal Energy Act 2000***  
**S.115**

**MEMORANDUM**

**GEOHERMAL EXPLORATION LICENCES**  
**GELs 282, 283 and 284**

1. Variation of licence conditions 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: 13 April 2012

Ref: 27/2/448  
27/2/449  
27/2/450

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

## **VARIATION OF GEOTHERMAL EXPLORATION LICENCES GELs 282, 283 and 284**

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 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 vary the conditions of the above-mentioned licences, held by -

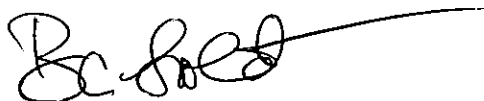
### **Green Rock Energy Limited ACN 094 551 336**

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:-

<b>Year of Term of Licence</b>	<b>Minimum Work Requirements</b>
<b>One</b>	<ul style="list-style-type: none"><li>• Geological and geophysical studies.</li></ul> <i>Year 1 work program to be conducted anywhere within the boundaries of GELs 282, 283 and 284.</i>
<b>Two</b>	<ul style="list-style-type: none"><li>• Geological and geophysical studies.</li></ul> <i>Year 2 work program to be conducted anywhere within the boundaries of GELs 282, 283 and 284.</i>
<b>Three</b>	<ul style="list-style-type: none"><li>• Re-enter (if possible) and geophysical log existing drill holes to estimate in-situ rock and water properties, and to measure temperatures.</li><li>• Conduct thermal conductivity measurements on existing core samples.</li><li>• Estimate groundwater temperatures at 2,000 to 5,000m depth using geothermal modelling techniques.</li></ul> <i>Year 3 work program to be conducted anywhere within the boundaries of GELs 282, 283 and 284.</i>
<b>Four</b>	<ul style="list-style-type: none"><li>• Geological and geophysical studies.</li></ul> <i>Year 4 work program to be conducted anywhere within the boundaries of GELs 282, 283 and 284.</i>
<b>Five</b>	<ul style="list-style-type: none"><li>• Geological and geophysical studies.</li></ul> <i>Year 5 work program to be conducted anywhere within the boundaries of GELs 282, 283 and 284.</i>

Dated: 13 April 2012

A handwritten signature in black ink, appearing to read "Barry A. Goldstein", with a long horizontal line extending to the right from the end of the signature.

**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 ACT 2000

*Grant of Geothermal Exploration Licences—GEL 282, GEL 283 and GEL 284*

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 282	Green Rock Energy Limited	Cooper Basin, South Australia	496	27/02/448
GEL 283	Green Rock Energy Limited	Cooper Basin, South Australia	497	27/02/449
GEL 284	Green Rock Energy Limited	Cooper Basin, South Australia	490	27/02/450

*Description of Area—GEL 282*

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

Commencing at a point being the intersection of latitude 27°39'00"S GDA94 and longitude 139°49'00"E GDA94, thence east to longitude 139°54'00"E GDA94, south to latitude 27°40'30"S GDA94, east to longitude 140°01'00"E GDA94, south to latitude 27°48'00"S GDA94, west to longitude 139°48'00"E GDA94, south to latitude 27°57'00"S GDA94, west to longitude 139°42'00"E GDA94, north to latitude 27°49'00"S GDA94, east to longitude 139°43'00"E GDA94, north to latitude 27°47'00"S GDA94, east to longitude 139°48'00"E GDA94, north to latitude 27°40'00"S GDA94, east to longitude 139°49'00"E GDA94 and north to the point of commencement.

Area: 496 km<sup>2</sup> approximately.

*Description of Area—GEL 283*

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

Commencing at a point being the intersection of latitude 27°48'00"S GDA94 and longitude 139°48'00"E GDA94, thence east to longitude 140°01'00"E GDA94, south to latitude 27°55'00"S GDA94, west to longitude 139°59'00"E GDA94, south to latitude 28°00'00"S GDA94, west to longitude 139°42'00"E GDA94, north to latitude 27°57'00"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 284*

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

Commencing at a point being the intersection of latitude 28°00'00"S GDA94 and longitude 139°36'00"E GDA94, thence east to longitude 139°56'00"E GDA94, south to latitude 28°04'00"S GDA94, east to longitude 140°02'00"E GDA94, south to latitude 28°09'00"S GDA94, west to longitude 139°52'00"E GDA94, north to latitude 28°06'00"S GDA94, west to longitude 139°36'00"E GDA94 and north to the point of commencement.

Area: 490 km<sup>2</sup> approximately.

Dated 17 August 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 282, 283 and 284**

1. Notation of lodgement 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: 17 August 2007

File: 27/2/448  
27/2/449  
27/2/450

**Petroleum Act 2000  
S.115**

**MEMORANDUM**

**GEOHERMAL EXPLORATION LICENCES  
GEL 282, 283 and 284**

1. These licences granted with effect from and including 17 August 2007 are hereby entered on the public register.

2. Interests in the licences are:-

Green Rock 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: 17 August 2007

File: 27/2/448  
27/2/449  
27/2/450

# PETROLEUM ACT 2000

## GEOHERMAL EXPLORATION LICENCE

### GEL 284

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:

#### Green Rock Energy Limited ACN 094 551 336

(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 16 August 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"><li>• Geological and geophysical studies</li></ul> <p><i>Note: Year 1 work program to be conducted anywhere within the boundaries of GELs 282, 283 and 284.</i></p>
Two	<ul style="list-style-type: none"><li>• Geological and geophysical studies</li></ul> <p><i>Note: Year 2 work program to be conducted anywhere within the boundaries of GELs 282, 283 and 284.</i></p>
Three	<ul style="list-style-type: none"><li>• Re-enter (if possible) and geophysical log existing drill holes to estimate in-situ rock and water properties, and to measure temperatures</li><li>• Conduct thermal conductivity measurements on existing core samples.</li><li>• Estimate groundwater temperatures at 2,000 to 5,000m depth using geothermal modelling techniques</li></ul> <p><i>Note: Year 3 work program to be conducted anywhere within the boundaries of GELs 282, 283 and 284.</i></p>

<b>Four</b>	<ul style="list-style-type: none"> <li>• Re-enter a selected group of existing drill holes to measure water flows and temperatures</li> </ul> <p><i>Note: Year 4 work program to be conducted anywhere within the boundaries of GELs 282, 283 and 284</i></p>
<b>Five</b>	<ul style="list-style-type: none"> <li>• Drill well to potential reservoir rocks (3 to 3.5 kilometres depth) for the purpose of testing the fracturing potential or water flow potential.</li> <li>• Economic evaluation and design of a pilot program.</li> </ul> <p><i>Note: Year 5 work program to be conducted anywhere within the boundaries of GELs 282, 283 and 284.</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: 17 August 2007



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: 8 AUGUST 2007

*Adrian Larkin*  
Authorised Representative

ADRIAN LARKIN  
Name

MANAGING DIRECTOR  
Position

GREEN ROCK ENERGY LIMITED  
Company

*Nigel Hooper*  
Witness

NIGEL HOOPER  
Name

COMPANY SECRETARY  
Position

GREEN ROCK ENERGY LTD  
Company

# GEOTHERMAL EXPLORATION LICENCE

## GEL 284

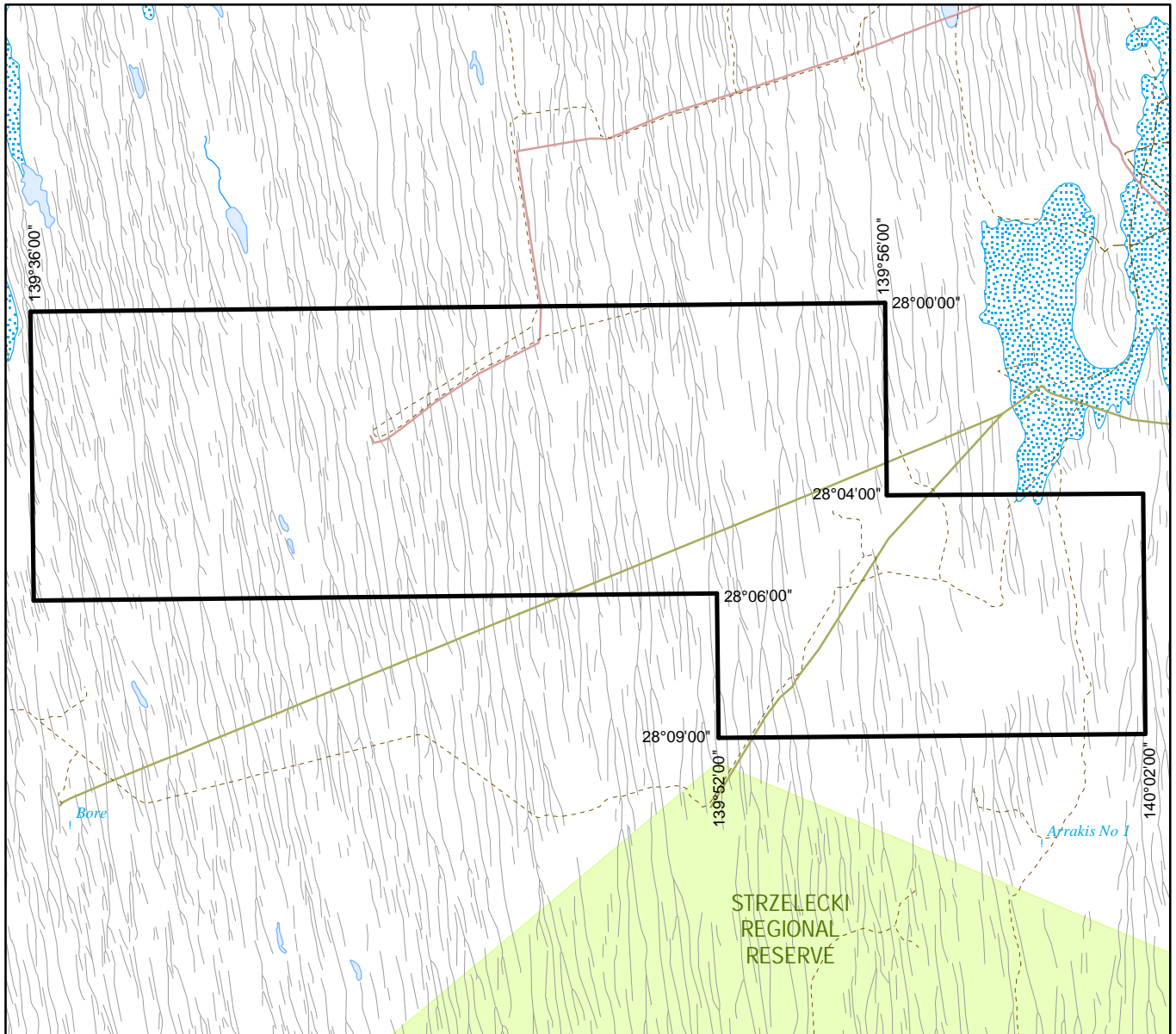
### THE SCHEDULE

#### Description of Area

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

Commencing at a point being the intersection of latitude 28°00'00"S GDA94 and longitude 139°36'00"E GDA94, thence east to longitude 139°56'00"E GDA94, south to latitude 28°04'00"S GDA94, east to longitude 140°02'00"E GDA94, south to latitude 28°09'00"S GDA94, west to longitude 139°52'00"E GDA94, north to latitude 28°06'00"S GDA94, west to longitude 139°36'00"E GDA94, and north to the point of commencement.

AREA: **490** 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: 284



Government of South Australia  
Primary Industries and Resources SA

SR 27/2/450

AREA: 490 sq km (approx)