**INDEX OF DOCUMENTS HELD ON THE PUBLIC REGISTER FOR GEOTHERMAL EXPLORATION LICENCE GEL 196**

| | | |
|---|---|---|
| 1. | 2 May 2005 | Memorandum entering GEL 196 on the public register. |
| 2. | 2 May 2005 | Geothermal Exploration Licence GEL 196<br><br>Interests: Pacific Hydro Ltd 100% |
| 3. | 12 May 2005 | Gazettal of Grant of GEL 196 |
| 4. | 26 April 2006 | Memorandum entering variation of licence conditions on the public register. |
| 5. | 26 April 2006 | Variation of licence |
| 6. | 17 March 2008 | Memorandum entering suspension of licence conditions on the public register. |
| 7. | 17 March 2008 | Suspension of licence |
| 8. | 20 March 2008 | Gazettal of suspension of GEL 196 |
| 9. | 11 April 2008 | Temporary Cessation of Suspension of licence |
| 10. | 11 April 2008 | Memorandum entering temporary cessation of suspension on the public register. |
| 11. | 17 April 2008 | Gazettal of temporary cessation of suspension of GEL 196. |
| 12. | 12 May 2008 | Memorandum entering notation of receipt of security on the public register. |
| 13. | 15 July 2008 | Memorandum entering variation of licence conditions on the public register. |
| 14. | 15 July 2008 | Variation of licence. |
| 15. | 21 October 2008 | Suspension of licence from and including 8 November 2008 until 7 August 2009.<br><br>New expiry date of GEL 196 is now 1 October 2011 |
| 16. | 21 October 2008 | Memorandum entering the suspension of licence on the public register. |
| 17. | 30 October 2008 | Gazettal of suspension of licence |

| | |
|---|---|
| 18. 6 August 2009 | Suspension of licence from and including 8 August 2009 until 7 August 2010.<br><br>New expiry date of GEL 196 is now 1 October 2012 |
| 19. 6 August 2009 | Memorandum entering the suspension of licence on the public register. |
| 20. 13 August 2009 | Gazettal of suspension of licence |
| 21. 4 January 2011 | Suspension of licence from and including 2 October 2010 until 1 October 2011.<br><br>New expiry date of GEL 196 is now 1 October 2013 |
| 22. 4 January 2011 | Memorandum entering the suspension of licence on the public register. |
| 23. 13 January 2011 | Gazettal of suspension of licence |
| 24. 7 February 2011 | Consolidation of licence area with GELs 193, 199, 202, 205 and 238 with effect from 7 February 2011<br><br>Revocation of licence. |
| 25. 7 February 2011 | Memorandum entering the consolidation of licence area and revocation of licence on the public register. |

# Petroleum and Geothermal Energy Act 2000
# S.115

## MEMORANDUM

### GEOTHERMAL EXPLORATION LICENCES
### GELs 193, 196, 199, 202, 205 and 238

1. Consolidation of the adjacent licence areas of GELs 193, 196, 199, 202, 205 and 238, whereby the consolidated licence area is now designated as GEL 193 is hereby entered on the public register.

   The total area of GEL 193 is now 2,964 square kilometres approximately.

2. Revocation of GELs 196, 199, 202, 205 and 238 is hereby entered on the public register.

3. 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: 7 February 2011

Ref: 27/2/319
27/2/322
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27/2/334

# Petroleum and Geothermal Energy Act 2000

## Consolidation of licence areas
## Geothermal Exploration Licences
## GELs 193, 196, 199, 202, 205 and 238

## Revocation of licence
## Geothermal Exploration Licences
## GELs 196, 199, 202, 205 and 238

## Variation of licence conditions
## Geothermal Exploration Licence
## GEL 193

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 82 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. consolidate the adjacent areas of Geothermal Exploration Licences GELs 193, 196, 199, 202, 205 and 238 held by –

**Pacific Hydro Limited**
ACN 115 281 144

The consolidated licence area shall be designated as:

**Geothermal Exploration Licence GEL 193**

DESCRIPTION OF CONSOLIDATED AREA

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

Commencing at a point being the intersection of latitude 27°08'55"S GDA94 and longitude 138°40'55"E GDA94, thence east to longitude 139°41'20"E GDA94, north to latitude 27°02'55"S GDA94, east to the western boundary of Innamincka Regional Reserve, thence southerly along the boundary of the said Regional Reserve to latitude 27°17'08"S GDA94, west to longitude 139°41'20"E GDA94, south to latitude 27°22'25"S GDA94, west to longitude 138°40'55"E GDA94, and north to point of commencement.

AREA: **2964** square kilometres approximately.

2. consequently revoke Geothermal Exploration Licences GELs 196, 199, 202, 205 and 238.

As a consequence of the consolidation, the work program forming 'condition 1' of the consolidated GEL 193 comprises:

| Year of Term of Licence | Minimum Work Requirements |
|---|---|
| One | • Geological and geophysical studies. |
| Two | • Geological and geophysical studies.<br>*Year 2 work program to be carried out anywhere within GELs 191,192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 236, 237 and 238* |
| Three | • Identify slim hole target and prepare approvals.<br>*Year 3 work program to be carried out anywhere within GELs 191,192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 236, 237 and 238* |
| Four | • Fill-in gravity data and modelling.<br>*Year 4 work program to be carried out anywhere within GELs 191,192 and 193* |
| Five | • Drill 1 slim hole.<br>*Year 5 work program to be carried out anywhere within GELs 191,192 and 193* |

Dated: 7 Feb 2011

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

The following signature evidences the consent of the licensee to the consolidation of GELs 193, 196, 199, 202, 205 and 238 as set out in this document and made pursuant to Section 82 of the *Petroleum and Geothermal Energy Act 2000*.

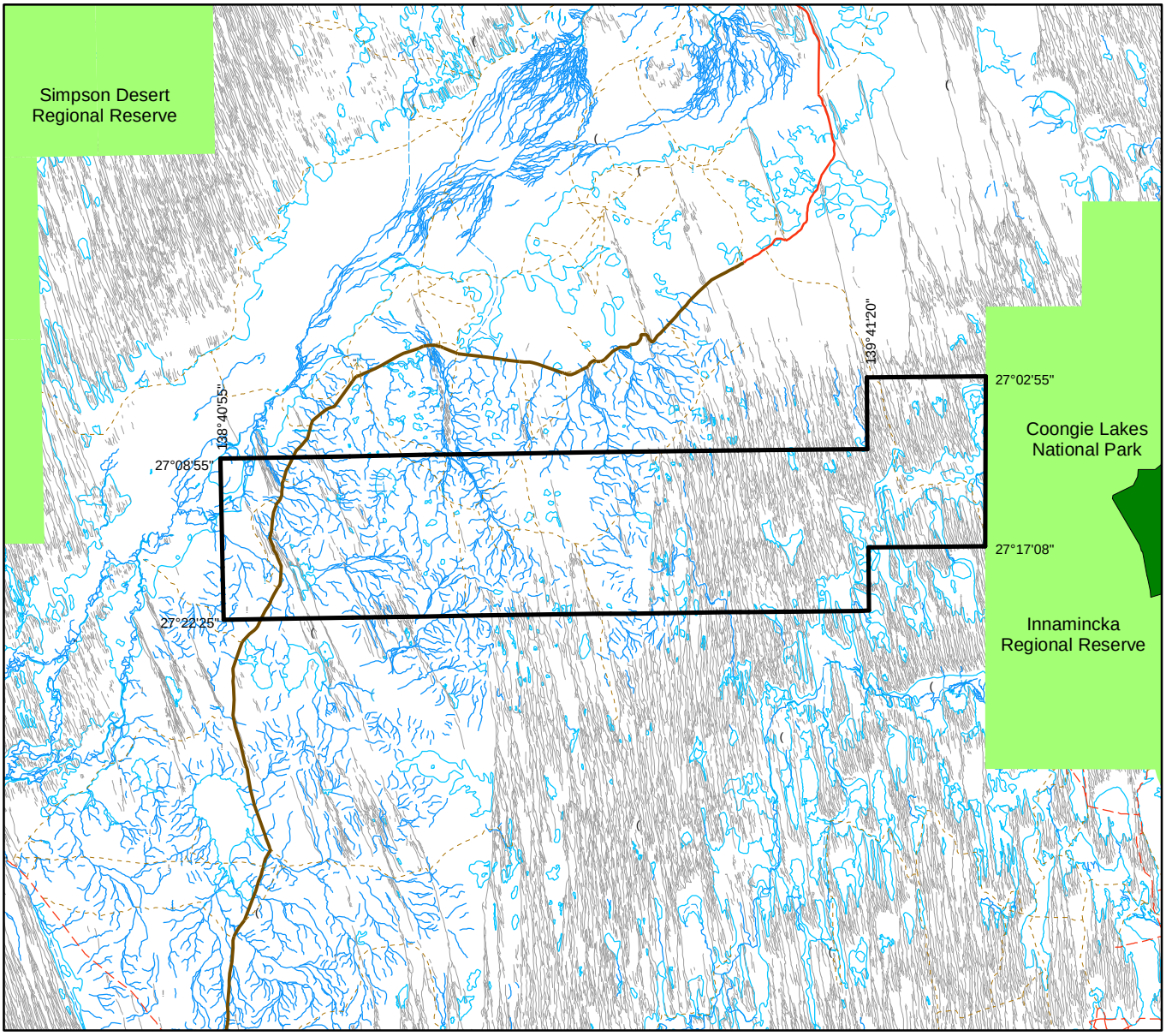
Signed for and on behalf of **Hydro Pacific Limited** by its authorised representative:

19/1/2011
.....
Date

.....
Authorised Representative

TERRY TEOH
.....
Name

EXEC MGR DEVT.
.....
Position




SCALE 1:1 000 000

20 10 0 20 40 60

Kilometres

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: 193

Government of South Australia
Primary Industries and Resources SA

**SR 27/2/322** AREA: **2964** sq km (approx)

PETROLEUM AND GEOTHERMAL ENERGY ACT 2000

*Suspension of Licence Condition*
*Extension of Licence Term*
*Geothermal Exploration Licences—GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204 and 205*

PURSUANT to section 76A of the Petroleum and Geothermal Energy Act 2000, notice is hereby given that Condition 1 of the abovementioned Geothermal Exploration Licences has been suspended for the period, from and including 2 October 2010 to 1 October 2011 under the provisions of the Petroleum and Geothermal Energy Act 2000, pursuant to delegated powers dated 1 October 2009.

The terms of GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204 and 205 have been extended by a period corresponding to the period of suspension, such that the licences will now expire on 1 October 2013.

Dated 4 January 2011.

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 and Geothermal Energy Act 2000*
# S.115

## MEMORANDUM

## GEOTHERMAL EXPLORATION LICENCES
## GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204 and 205

1. Suspension of the work commitments under licence condition 1 of geothermal exploration licences GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204 and 205 for the period from and including 2 October 2010 to 1 October 2011 is hereby entered on the public register.

2. Extension of the term of GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204 and 205 by the corresponding period of suspension, such that these GELs will now expire on 1 October 2013 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: 4 January 2011

Ref: 27/2/320
27/2/321
27/2/322
27/2/323
27/2/324
27/2/325
27/2/326
27/2/327
27/2/328
27/2/329
27/2/330
27/2/331
27/2/332
27/2/333
27/2/334

# *Petroleum and Geothermal Energy Act 2000*
# S.76A

## SUSPENSION OF CONDITION
## EXTENSION OF LICENCE TERM
## GEOTHERMAL EXPLORATION LICENCES
## GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204 and 205

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 –

(a) suspend the work commitments under licence condition 1 of geothermal exploration licences GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204 and 205 for the period from and including 2 October 2010 to 1 October 2011.

(b) extend the term of these GELs by the corresponding period of suspension, such that GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204 and 205 will now expire 1 October 2013.

Dated: 4 January 2011

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

*Suspension of Geothermal Exploration Licences—GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 236, 237 and 238*

PURSUANT to section 90 of the Petroleum Act 2000, notice is hereby given that the abovementioned Geothermal Exploration Licences have been suspended under the provisions of the Petroleum Act 2000, from and including 8 August 2009 until 7 August 2010, pursuant to delegated powers dated 28 March 2002, *Gazetted* 11 April 2002, page 1573.

The expiry date of the GELs 191-205 is now determined to be 1 October 2012.

The expiry date of the GELs 236-238 is now determined to be 1 October 2013.

Dated 6 August 2009.

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.90

## SUSPENSION OF
## GEOTHERMAL EXPLORATION LICENCES
## GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 236, 237 and 238

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 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 –

(a) suspend geothermal exploration licences GELs 191-205 and 236-238 for the period from and including 8 August 2009 to 7 August 2010.

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

2. The expiry date of GELs 191-205 is now 1 October 2012.

3. The expiry date of GELs 236-238 is now 1 October 2013.

Dated: 6 August 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*
**S.115**

# MEMORANDUM

## GEOTHERMAL EXPLORATION LICENCES
## GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 236, 237 and 238

1. Suspension of licences from and including 8 August 2009 to 7 August 2010 is hereby entered on the public register.

2. The expiry date of GELs 191-205 is now 1 October 2012.

3. The expiry date of GELs 236-238 is now 1 October 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: 6 August 2009

| | | | |
|---|---|---|---|
| Ref: | 27/2/320 | 27/2/326 | 27/2/332 |
| | 27/2/321 | 27/2/327 | 27/2/333 |
| | 27/2/322 | 27/2/328 | 27/2/334 |
| | 27/2/323 | 27/2/329 | 27/2/393 |
| | 27/2/324 | 27/2/330 | 27/2/394 |
| | 27/2/325 | 27/2/331 | 27/2/395 |

PETROLEUM ACT 2000

*Suspension of Geothermal Exploration Licences—GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 236, 237 and 238*

PURSUANT to section 90 of the Petroleum Act 2000, notice is hereby given that the abovementioned Geothermal Exploration Licences have been suspended under the provisions of the Petroleum Act 2000, from and including 8 November 2008 until 7 August 2009, pursuant to delegated powers dated 28 March 2002, *Gazetted* 11 April 2002, page 1573.

The expiry date of the GELs 191-205 is now determined to be 1 October 2011.

The expiry date of the GELs 236-238 is now determined to be 1 October 2012.

Dated 21 October 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

## GEOTHERMAL EXPLORATION LICENCES
## GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 236, 237 and 238

1. Suspension of licences from and including 8 November 2008 to 7 August 2009 is hereby entered on the public register.

2. The expiry date of GELs 191-205 is now 1 October 2011.

3. The expiry date of GELs 236-238 is now 1 October 2012.

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: 21 October 2008

| Ref: | | | | | |
|---|---|---|---|---|---|
| | 27/2/320 | 27/2/324 | 27/2/328 | 27/2/332 | 27/2/394 |
| | 27/2/321 | 27/2/325 | 27/2/329 | 27/2/333 | 27/2/395 |
| | 27/2/322 | 27/2/326 | 27/2/330 | 27/2/334 | |
| | 27/2/323 | 27/2/327 | 27/2/331 | 27/2/393 | |

# *Petroleum Act 2000*
# S.90

## SUSPENSION OF
## GEOTHERMAL EXPLORATION LICENCES
## GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 236, 237 and 238

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 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 –

(a) suspend geothermal exploration licences exploration licence GELs 191-205 and 236-238 for the period from and including 8 November 2008 to 7 August 2009.

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

2. The expiry date of GELs 191-205 is now 1 October 2011.

3. The expiry date of GELs 236-238 is now 1 October 2012.

Dated: 21 October 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**

# Petroleum Act 2000

## VARIATION OF GEOTHERMAL EXPLORATION LICENCES

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 Geothermal Exploration Licences GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204 and 205 held by -

**Pacific Hydro Limited**

Condition 1 of the licences 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 Years two to five exploratory operations may be undertaken anywhere within the area covered by GELs 191 to 205 and 236 to 238, and shall include but not necessarily be limited to:-

| Year of Term of Licence | Minimum Work Requirements |
|---|---|
| One | • Geological and Geophysical review. |
| Two | • Geological and Geophysical review. |
| Three | • Drill and test 1 well to a depth of 900m. |
| Four | • Drill and test 1 injector well; and<br>• Conduct long-term flow test. |
| Five | • Construct a demonstration plant. |

"

Dated: 15 July 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**

# Petroleum Act 2000
# S.115

# MEMORANDUM

## GEOTHERMAL EXPLORATION LICENCES
## GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 236, 237 and 238

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 July 2008

Ref: 27/2/320 to 27/2/334
27/2/393 to 27/2/395

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

# MEMORANDUM

## GEOTHERMAL EXPLORATION LICENCES
## GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 236, 237 and 238

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: 12 May 2008

File:

| | | |
|---|---|---|
| 27/2/320 | 27/2/326 | 27/2/332 |
| 27/2/321 | 27/2/327 | 27/2/333 |
| 27/2/322 | 27/2/328 | 27/2/334 |
| 27/2/323 | 27/2/329 | 27/2/393 |
| 27/2/324 | 27/2/330 | 27/2/394 |
| 27/2/325 | 27/2/331 | 27/2/395 |

PETROLEUM ACT 2000

*Temporary Cessation of Suspension of Geothermal Exploration Licences—Gels 191-205 and GELs 236-238*

PURSUANT to section 90 of the Petroleum Act 2000, notice is hereby given that the suspension dated 17 March 2008, of the abovementioned Exploration Licence has been temporarily ceased under the provisions of the Petroleum Act 2000, from and including 20 April 2008 to 24 April 2008, pursuant to delegated powers dated 28 March 2002, *Gazetted* 11 April 2002, page 1573.

The expiry date of GELs 191-205 is now 1 January 2011.

The expiry date of GELs 236-238 is now 1 January 2012.

Dated 11 April 2008.

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*
# S.115

# MEMORANDUM

## TEMPORARY CESSATION OF SUSPENSION OF GEOTHERMAL EXPLORATION LICENCES – GELs 191 – 205 & GELs 236 - 238

1. Temporary cessation of suspension of licence from and including 20 April 2008 to 24 April 2008 is entered on the public register.

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

Date: 11 April 2008

| Ref: | | | | | |
|---|---|---|---|---|---|
| | 27/2/320 | 27/2/324 | 27/2/328 | 27/2/332 | 27/2/394 |
| | 27/2/321 | 27/2/325 | 27/2/329 | 27/2/333 | 27/2/395 |
| | 27/2/322 | 27/2/326 | 27/2/330 | 27/2/334 | |
| | 27/2/323 | 27/2/327 | 27/2/331 | 27/2/393 | |

# *Petroleum Act 2000*
# S.90

## TEMPORARY CESSATION OF SUSPENSION OF GEOTHERMAL EXPLORATION LICENCES GELs 191 – 205 and GELs 236 - 238

I, CYRIL DAVID COCKSHELL, A/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 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 -

(a) hereby approve the temporary cessation of suspension dated 17 March 2008 of geothermal exploration licences GELs 191 to 205 and GELs 236 to 238 for a period of five (5) days from and including 20 April 2008 to 24 April 2008.

1. Regulated activities are permitted to be carried out during this period of temporary cessation of suspension.

2. The suspension dated 17 March 2008 will resume with effect from and including 25 April 2008 until 7 November 2008.

Dated: 11 April 2008

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

PETROLEUM ACT 2000

*Suspension of Geothermal Exploration Licences—*
*GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 236, 237 and 238*

PURSUANT to section 90 of the Petroleum Act 2000, notice is hereby given that the abovementioned Geothermal Exploration Licences have been suspended under the provisions of the Petroleum Act 2000, from and including 3 March 2008 until 2 November 2008, pursuant to delegated powers dated 28 March 2002, *Gazetted* 11 April 2002, page 1573.

The expiry date of the GELs 191-205 is now determined to be 1 January 2011.

The expiry date of the GELs 236-238 is now determined to be 1 January 2012.

Dated 17 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.90

## SUSPENSION OF
## GEOTHERMAL EXPLORATION LICENCES
## GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 236, 237 and 238

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 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 –

(a) suspend geothermal exploration licences exploration licence GELs 191-205 and 236-238 for the period from and including 3 March 2008 to 2 November 2008.

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

2. The expiry date of GELs 191-205 is now 1 January 2011.

3. The expiry date of GELs 236-238 is now 1 January 2012.

Dated: 17 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**

# *Petroleum Act 2000*
# S.115

# MEMORANDUM

## GEOTHERMAL EXPLORATION LICENCES
## GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 236, 237 and 238

1. Suspension of licences from and including 3 March 2008 to 2 November 2008 is hereby entered on the public register.

2 The expiry date of GELs 191-205 is now 1 January 2011.

3. The expiry date of GELs 236-238 is now 1 January 2012.

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 March 2008

| | | | | | |
|---|---|---|---|---|---|
| Ref: | 27/2/320 | 27/2/324 | 27/2/328 | 27/2/332 | 27/2/394 |
| | 27/2/321 | 27/2/325 | 27/2/329 | 27/2/333 | 27/2/395 |
| | 27/2/322 | 27/2/326 | 27/2/330 | 27/2/334 | |
| | 27/2/323 | 27/2/327 | 27/2/331 | 27/2/393 | |

# Petroleum Act 2000

## VARIATION OF GEOTHERMAL EXPLORATION LICENCES

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 Geothermal Exploration Licences GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204 and 205 held by -

**Pacific Hydro Limited**

Condition 1 of the licences 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. Years two to five exploratory operations may be undertaken anywhere within the area covered by GELs 191 to 205 and 236 to 238, and shall include but not necessarily be limited to:-

| Year of Term of Licence | Minimum Work Requirements |
|---|---|
| One | • Geological and Geophysical review. |
| Two | • Geological and Geophysical review. |
| Three | • Drill and test 2 wells. |
| Four | • Drill and test 1 injector well; and<br>• Conduct long-term flow test. |
| Five | • Construct a demonstration plant. |

"

Dated: 26 April 2006

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

## GEOTHERMAL EXPLORATION LICENCES
## GELs 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204 and 205

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: 26 April 2006

Ref: 27/2/320 to 27/2/334

PETROLEUM ACT 2000

*GRANT OF GEOTHERMAL EXPLORATION LICENCES*
*GEL 188, GEL 189, GEL 190, GEL 191, GEL 192, GEL 193, GEL 194, GEL 195, GEL 196, GEL 197, GEL 198, GEL 199, GEL 200, GEL 201, GEL 202, GEL 203, GEL 204 AND GEL 205*

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 $km^2$ | Reference |
|---|---|---|---|---|
| GEL 188 | Pacific Hydro Ltd | Cooper Basin, South Australia | 443 | 27/2/317 |
| GEL 189 | Pacific Hydro Ltd | Cooper Basin, South Australia | 498 | 27/2/318 |
| GEL 190 | Pacific Hydro Ltd | Cooper Basin, South Australia | 498 | 27/2/319 |
| GEL 191 | Pacific Hydro Ltd | Cooper Basin, South Australia | 496 | 27/2/320 |
| GEL 192 | Pacific Hydro Ltd | Cooper Basin, South Australia | 498 | 27/2/321 |
| GEL 193 | Pacific Hydro Ltd | Cooper Basin, South Australia | 497 | 27/2/322 |
| GEL 194 | Pacific Hydro Ltd | Cooper Basin, South Australia | 496 | 27/2/323 |
| GEL 195 | Pacific Hydro Ltd | Cooper Basin, South Australia | 498 | 27/2/324 |
| GEL 196 | Pacific Hydro Ltd | Cooper Basin, South Australia | 497 | 27/2/325 |
| GEL 197 | Pacific Hydro Ltd | Cooper Basin, South Australia | 496 | 27/2/326 |
| GEL 198 | Pacific Hydro Ltd | Cooper Basin, South Australia | 498 | 27/2/327 |
| GEL 199 | Pacific Hydro Ltd | Cooper Basin, South Australia | 497 | 27/2/328 |
| GEL 200 | Pacific Hydro Ltd | Cooper Basin, South Australia | 496 | 27/2/329 |
| GEL 201 | Pacific Hydro Ltd | Cooper Basin, South Australia | 498 | 27/2/330 |
| GEL 202 | Pacific Hydro Ltd | Cooper Basin, South Australia | 497 | 27/2/331 |
| GEL 203 | Pacific Hydro Ltd | Cooper Basin, South Australia | 496 | 27/2/332 |

| No. of Licence | Licensee | Locality | Area in $km^2$ | Reference |
|---|---|---|---|---|
| GEL 204 | Pacific Hydro Ltd | Cooper Basin, South Australia | 498 | 27/2/333 |
| GEL 205 | Pacific Hydro Ltd | Cooper Basin, South Australia | 497 | 27/2/334 |

*Description of Area—GEL 188*

All that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of longitude 138°40′55″E GDA94 and latitude 26°43′25″S GDA94, thence south to latitude 26°55′25″S GDA94, west to longitude 138°28′50″E GDA94, north to the southern boundary of Simpson Desert Regional Reserve, thence easterly and northerly along the boundary of the said Regional Reserve to latitude 26°43′25″S GDA94 and east to the point of commencement.

Area: 443 $km^2$ approximately.

*Description of Area—GEL 189*

All that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of latitude 26°55′25″S GDA94 and longitude 138°28′50″E GDA94, thence east to longitude 138°40′55″E GDA94, south to latitude 27°08′55″S GDA94, west to longitude 138°28′50″E GDA94 and north to the point of commencement.

Area: 498 $km^2$ approximately.

*Description of Area—GEL 190*

All that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of latitude 27°08′55″S GDA94 and longitude 138°28′50″E GDA94, thence east to longitude 138°40′55″E GDA94, south to latitude 27°22′25″S GDA94, west to longitude 138°28′50″E GDA94 and north to the point of commencement.

Area: 498 $km^2$ approximately.

*Description of Area—GEL 191*

All that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of longitude 138°53′00″E GDA94 and latitude 26°42′00″S GDA94, thence south to latitude 26°55′25″S GDA94, west to longitude 138°40′55″E GDA94, north to latitude 26°43′25″S GDA94, west to the eastern boundary of Simpson Desert Regional Reserve, thence northerly along the boundary of the said Regional Reserve to latitude 26°42′00″S GDA94, and east to the point of commencement.

Area: 496 $km^2$ approximately.

*Description of Area—GEL 192*

ll that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of latitude 26°55′25″S GDA94 and longitude 138°40′55″E GDA94, thence east to longitude 138°53′00″E GDA94, south to latitude 27°08′55″S GDA94, west to longitude 138°40′55″E GDA94 and north to the point of commencement.

Area: 498 $km^2$ approximately.

*Description of Area—GEL 193*

All that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of latitude 27°08′55″S GDA94 and longitude 138°40′55″E GDA94, thence east to longitude 138°53′00″E GDA94, south to latitude 27°22′25″S GDA94, west to longitude 138°40′55″E GDA94 and north to the point of commencement.

Area: 497 $km^2$ approximately.

*Description of Area—GEL 194*

All that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of latitude 26°42′00″S GDA94 and longitude 138°53′00″E GDA94, thence east to longitude 139°05′05″E GDA94, south to latitude 26°55′25″S GDA94, west to longitude 138°53′00″E GDA94 and north to the point of commencement.

Area: 496 $km^2$ approximately.

*Description of Area—GEL 195*

All that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of latitude 26°55′25″S GDA94 and longitude 138°53′00″E GDA94, thence east to longitude 139°05′05″E GDA94, south to latitude 27°08′55″S GDA94, west to longitude 138°53′00″E GDA94 and north to the point of commencement.

Area: 498 $km^2$ approximately.

*Description of Area—GEL 196*

All that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of latitude 27°08′55″S GDA94 and longitude 138°53′00″E GDA94, thence east to longitude 139°05′05″E GDA94, south to latitude 27°22′25″S GDA94, west to longitude 138°53′00″E GDA94 and north to the point of commencement.

Area: 497 $km^2$ approximately.

*Description of Area—GEL 197*

All that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of latitude 26°42′00″S GDA94 and longitude 139°05′05″E GDA94, thence east to longitude 139°17′10″E GDA94, south to latitude 26°55′25″S GDA94, west to longitude 139°05′05″E GDA94 and north to the point of commencement.

Area: 496 $km^2$ approximately.

*Description of Area—GEL 198*

All that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of latitude 26°55′25″S GDA94 and longitude 139°05′05″E GDA94, thence east to longitude 139°17′10″E GDA94, south to latitude 27°08′55″S GDA94, west to longitude 139°05′05″E GDA94 and north to the point of commencement.

Area: 498 $km^2$ approximately.

*Description of Area—GEL 199*

All that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of latitude 27°08′55″S GDA94 and longitude 139°05′05″E GDA94, thence east to longitude 139°17′10″E GDA94, south to latitude 27°22′25″S GDA94, west to longitude 139°05′05″E GDA94 and north to the point of commencement.

Area: 497 $km^2$ approximately.

*Description of Area—GEL 200*

All that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of latitude 26°42′00″S GDA94 and longitude 139°17′10″E GDA94, thence east to longitude 139°29′15″E GDA94, south to latitude 26°55′25″S GDA94, west to longitude 139°17′10″E GDA94 and north to the point of commencement.

Area: 496 $km^2$ approximately.

*Description of Area—GEL 201*

All that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of latitude 26°55′25″S GDA94 and longitude 139°17′10″E GDA94, thence east to longitude 139°29′15″E GDA94, south to latitude 27°08′55″S GDA94, west to longitude 139°17′10″E GDA94 and north to the point of commencement.

Area: 498 $km^2$ approximately.

*Description of Area—GEL 202*

All that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of latitude 27°08′55″S GDA94 and longitude 139°17′10″E GDA94, thence east to longitude 139°29′15″E GDA94, south to latitude 27°22′25″S GDA94, west to longitude 139°17′10″E GDA94 and north to the point of commencement.

Area: 497 $km^2$ approximately.

*Description of Area—GEL 203*

All that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of latitude 26°42′00″S GDA94 and longitude 139°29′15″E GDA94, thence east to longitude 139°41′20″E GDA94, south to latitude 26°55′25″S GDA94, west to longitude 139°29′15″E GDA94 and north to the point of commencement.

Area: 496 $km^2$ approximately.

*Description of Area—GEL 204*

All that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of latitude 26°55′25″S GDA94 and longitude 139°29′15″E GDA94, thence east to longitude 139°41′20″E GDA94, south to latitude 27°08′55″S GDA94, west to longitude 139°29′15″E GDA94 and north to the point of commencement.

Area: 498 $km^2$ approximately.

*Description of Area—GEL 205*

All that part of the State of South Australia, bounded as follows: Commencing at a point being the intersection of latitude 27°08′55″S GDA94 and longitude 139°29′15″E GDA94, thence east to longitude 139°41′20″E GDA94, south to latitude 27°22′25″S GDA94, west to longitude 139°29′15″E GDA94 and north to the point of commencement.

Area: 497 $km^2$ approximately.

Dated 2 May 2005.

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

# Petroleum Act 2000
# S.115

# MEMORANDUM

## GEOTHERMAL EXPLORATION LICENCES
## GELS 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204 AND 205

1. These Licences granted on 2 May 2005 are hereby entered on the public register.

2. Interests in the licences are:-

| | |
|---|---|
| Pacific Hydro Ltd | 100%. |

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

Date: 2 May 2005

Ref: 27/2/317, 27/2/318, 27/2/319, 27/2/320, 27/2/321, 27/2/322, 27/2/323, 27/2/324, 27/2/325, 272/326, 27/2/327, 27/2/328, 27/2/329, 27/2/330, 27/2/331, 27/2/332, 27/2/333, 27/2/334

# *PETROLEUM ACT 2000*

## GEOTHERMAL EXPLORATION LICENCE

## GEL 196

I, BARRY ALAN GOLDSTEIN, Director Petroleum, Minerals and Energy Division, 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:

**Pacific Hydro Ltd**
ABN 31 057 279 508

(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 1 MAY 2010 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** | • Geological and geophysical review of the area covered by GEL's 188 to 205 (inclusive) |
| **Two** | • Drill and test 1 well within the area covered by GEL's 188 to 205 (inclusive) |
| **Three** | • Drill and test 1 well within the area covered by GEL's 188 to 205 (inclusive) |
| **Four** | • Drill and test 1 injector well within the area covered by GEL's 188 to 205 (inclusive)<br>• Conduct long-term flow test |
| **Five** | • Construct demonstration plant within the area covered by GEL's 188 to 205 (inclusive) |

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: 2 May 2005

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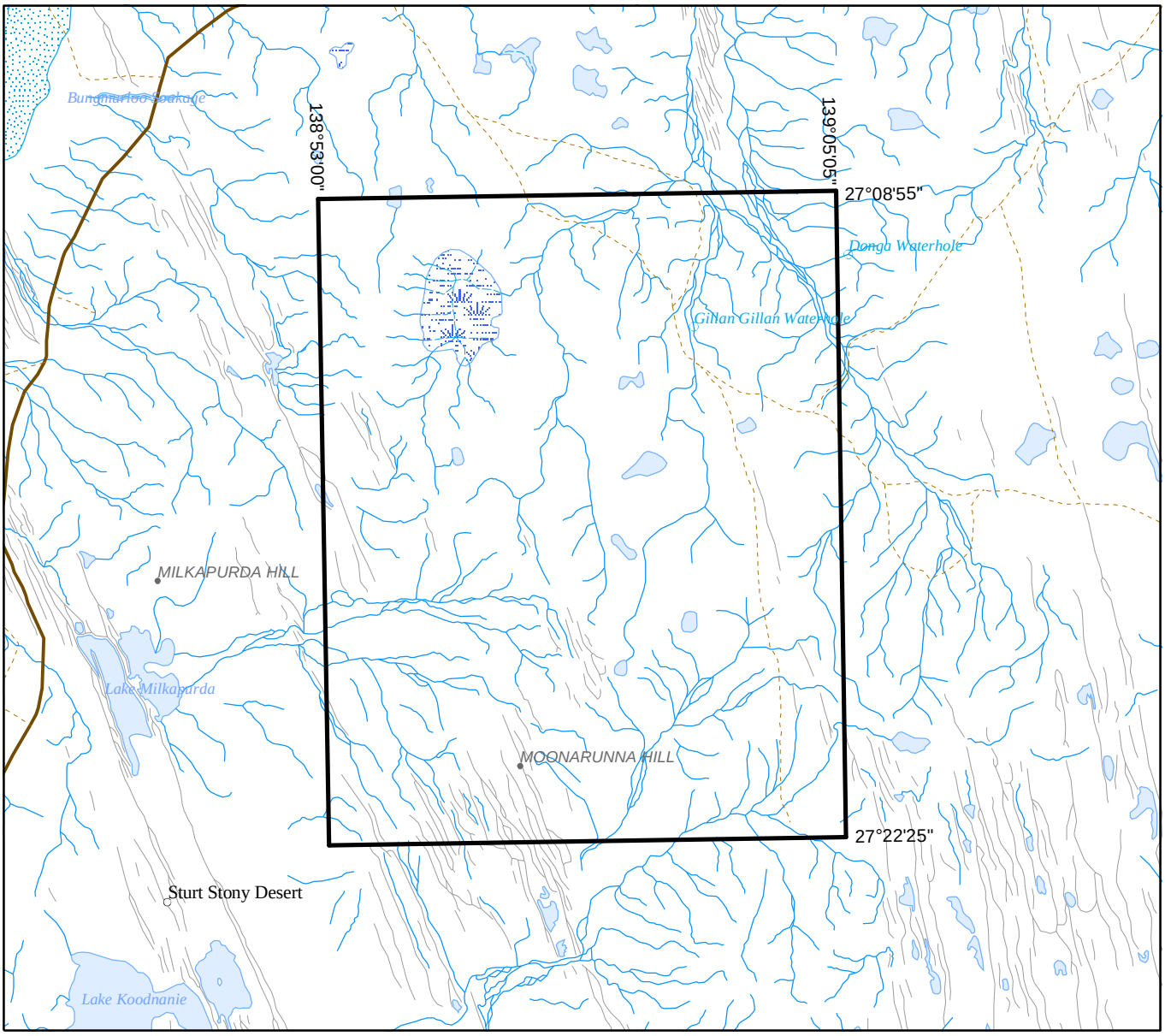
BARRY A. GOLDSTEIN
**Director Petroleum**
**Minerals and Energy Division**
**Primary Industries and Resources SA**
**Delegate of the Minister for Mineral Resources Development**




SCALE 1:250 000

5 2.5 0 5 10 15

Kilometres

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: 196

Government of South Australia MINERALS & ENERGY

**SR 27/2/325** AREA: **497** sq km (approx)