



# Origin Energy Geothermal Pty Ltd

Annual Report

Licence Year 6

*8 January 2011 - 7 January 2012*

GEL 185

CONTENTS

Page No.

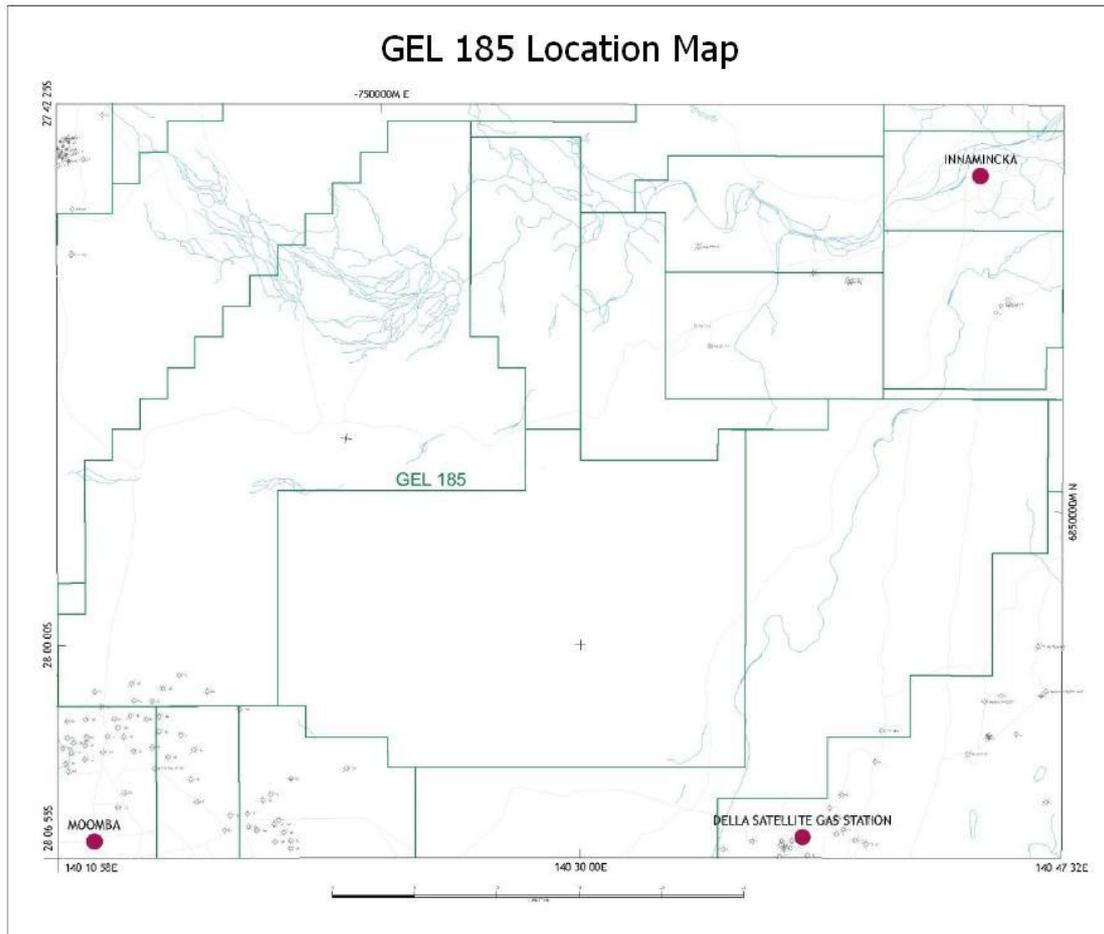
- 1 INTRODUCTION ..... 3
- 2 PERMIT SUMMARY ..... 3
- 3 REGULATED ACTIVITIES ..... 5
  - Drilling and Related Activities..... 5
  - Seismic Data Acquisition ..... 5
  - Seismic Data Processing and Reprocessing..... 5
  - Geochemical, Gravity, Magnetic and other surveys..... 5
  - Production and Processing ..... 5
  - Pipeline/Flowline Construction and Operation..... 5
  - Preliminary Survey Activities ..... 5
- 4 COMPLIANCE ISSUES..... 5
  - Licence and Regulatory Compliance ..... 5
  - Compliance with Statement of Environmental Objectives ..... 6
  - Management System Audits..... 6
  - Report and Data Submissions ..... 6
  - Incidents..... 7
  - Threat Prevention ..... 7
  - Future Work Program ..... 7
- 5 EXPENDITURE STATEMENT ..... 7
- APPENDIX 1 EXPENDITURE STATEMENT (COMMERCIAL IN CONFIDENCE) ..... 8

## 1 Introduction

Geothermal Exploration Licence (GEL) 185 was granted on 14 April 2005 with an initial term of five years. The licence is located in the Cooper Basin, South Australia. The location of GEL 185 is seen in Figure 1 below.

This report details the work conducted during Year 6 of the licence (8 January 2011 - 7 January 2012 inclusive) in accordance with Regulation 33 of the *Petroleum and Geothermal Energy Act 2000*.

**Figure 1 GEL 185 Location Map**



## 2 Permit Summary

For the duration of Licence Year 5 licensee for Geothermal Exploration Licence (GEL) 185 was Origin Energy Geothermal Pty Ltd.

The original work commitments (including variations) associated with GEL 185 are shown in Table 1.

**Table 1 Original work commitments by licence year**

Year of term of Licence	Minimum Work Requirements
One	<ul style="list-style-type: none"> <li>• Geological and geophysical studies</li> </ul>
Two	<ul style="list-style-type: none"> <li>• Geological and geophysical studies</li> </ul>
Three	<ul style="list-style-type: none"> <li>• Review of seismic data;</li> <li>• Acquisition and modelling of magneto-telluric data</li> </ul>
Four	<ul style="list-style-type: none"> <li>• Geological and geophysical studies</li> </ul>
Five	<ul style="list-style-type: none"> <li>• Drill one well</li> </ul>

Licence Year 6 concluded on 7 January 2012. Table 2 displays the minimum work program (after all variations) and the actual work completed up until the end of the current reporting period. Note that work commitments for Year 5 were suspended.

**Table 2 Final work program and work completed (as of end of current reporting period) by licence year**

Licence Year	Minimum Work Program	Actual Work
Year 1 (14/04/2005-13/04/2006)	Geological and geophysical studies	See GEL 185 Year 1 Annual Report (Eden Energy Ltd)
Year 2 (14/04/2006-13/04/2007)	Geological and geophysical studies	See GEL 185 Year 2 Annual Report (Eden Energy Ltd)
Year 3 (14/04/2007-13/04/2008)	Review of seismic data; Acquisition of modelling of magneto-telluric data	See GEL 185 Year 3 Annual Report (Eden Energy Ltd)
Year 4 (14/04/2008-07/01/2010)	Geological and geophysical studies	See GEL 185 Year 4 Annual Report (Eden Energy Ltd)
Year 5 (08/01/2010-07/01/2011)	<b>Note:</b> Commitment to Drill one well was suspended until Licence Year 6	Cultural Heritage and Environmental Survey
Year 6 (08/01/2011-07/01/2012)	Drill one well <b>Note:</b> Commitment to Drill one well was suspended until Licence Year 7.	Cultural Heritage Work Area Clearance

On 21 December 2011, a suspension of work commitments for Licence Year 6 was granted for the period from and including 8 January 2012 to 7 January 2013. Following meetings between Origin and DMITRE executives, at which Origin outlined the results obtained from the Origin-Operated Celsius 1 well drilled in GRL 8, an extension of GEL 185 licence was granted, such that GEL 185 will now expire

7 January 2013. While the well encountered encouraging temperatures, it did not meet the Shallows Joint Venture's expectations in terms of permeability thickness.

### **3 Regulated Activities**

Pursuant to Regulation 33(2)(a) under the Act, an annual report must include:

*“a summary of the regulated activities conducted under the licence during the [current reporting] year.”*

This information is detailed below.

#### ***Drilling and Related Activities***

No regulated activities undertaken in the licence reporting period

#### ***Seismic Data Acquisition***

No regulated activities undertaken in the licence reporting period

#### ***Seismic Data Processing and Reprocessing***

No regulated activities undertaken in the licence reporting period

#### ***Geochemical, Gravity, Magnetic and other surveys***

No regulated activities undertaken in the licence reporting period

#### ***Production and Processing***

No regulated activities undertaken in the licence reporting period

#### ***Pipeline/Flowline Construction and Operation***

No regulated activities undertaken in the licence reporting period

#### ***Preliminary Survey Activities***

A preliminary Cultural Heritage survey was conducted in GEL185 on May 2011 in conjunction with the Yandruwandha Yawarrawarrka Traditional Land Owners (Aboriginal Corporation).

### **4 Compliance Issues**

#### ***Licence and Regulatory Compliance***

Pursuant to Regulations 33(2) (b) & (c), an annual report must include:

*“a report for the year on compliance with the Act, these regulations, the licence and any relevant statement of environmental objectives;”* and

*“a statement concerning any action to rectify non compliance with obligations imposed by the Act, these regulations or the licence, and to minimise the likelihood of recurrence of any such non-compliances.”*

Origin was fully compliant with licence, regulatory and SEO requirements during the reporting year ending 7 January 2011, including timely payment of forward licence fees.

Origin acknowledges that it was non-compliant with the submittal of the Licence Year 5 Annual Report, as it was not submitted by the due date of 7 March 2011. Origin remains committed to ensuring that it is fully compliant with all Licence and Regulatory requirements in future.

### Compliance with Statement of Environmental Objectives

Origin will conduct its activities in GEL 185 under the Statement of Environmental Objectives, Drilling and Well Operations, South Australian Cooper Basin, November 2009 (Santos). These objectives are listed below.

1. Minimise risks to the safety of the public and other third parties.
2. Minimise disturbance and avoid contamination to the soil.
3. Avoid the introduction or spread of pest plants and animals and implement control measures as necessary.
4. Minimise disturbance to drainage patterns and avoid contamination of surface waters and shallow groundwater resources.
5. Avoid disturbance to sites of cultural and heritage significance.
6. Minimise loss of aquifer pressure and avoid aquifer contamination.
7. Minimise disturbance to native vegetation and native fauna.
8. Minimise air pollution and greenhouse gas emissions.
9. Maintain and enhance partnerships with the Cooper Basin community.
10. Avoid or minimise disturbance to stakeholders and/or associated infrastructure.
11. Optimise (in order of most to least preferable) waste avoidance, reduction, reuse, recycling, treatment and disposal.
12. Remediate and rehabilitate operational areas to agreed standards.

Origin was fully compliant with the SEO for Licence Year 6. As Origin did not conduct any on-ground work in Licence Year 6, the assessment the compliance of individual activities against the SEO for this year is not required.

### **Management System Audits**

Pursuant to Regulation 33(2) (d) under the Act, an annual report must include:

*“a summary of any management system audits undertaken during the relevant licence year including information on any failure or deficiency identified by the audit and any corrective actions that has, or will be taken”.*

No audits were conducted during Licence Year 6.

### **Report and Data Submissions**

Pursuant to Regulation 33(2) (e) under the Act, an annual report must include:

*“a list of all reports and data relevant to the operation of the Act generated by the licensee during the licence year”.*

A Cultural Heritage Survey report was generated during Licence Year 6, as a result of survey operations in May 2011.

### **Incidents**

Pursuant to Regulation 33(2) (f), an annual report must include:

*“in relation to any incidents reported to the Minister under the Act and these Regulations during the relevant licence year -*

- (i) an overall assessment and analysis of the incidents, including the identification and analysis of any trends that have emerged; and*
- (ii) an overall assessment of the effectiveness of any action taken to rectify non-compliance with obligations imposed by the Act, these regulations or the licence, or to minimise the risk of recurrence of any such non-compliance”.*

No incidents occurred in GEL 185 during the reporting year.

### **Threat Prevention**

Pursuant to Regulation 33(2) (g) under the Act, an annual report must include:

*“a report on any reasonably foreseeable threats (other than threats previously reported on) that reasonably presents, or may present, a hazard to facilities or activities under the licence, and a report on any corrective action that has, or will be taken”.*

There are no threats to activities under the licence as work commitments for GEL 185 have been suspended.

### **Future Work Program**

Pursuant to Regulation 33(2) (h) under the Act, an annual report must include:

*“unless the relevant licence year is the last year in which the licence is to remain in force - a statement outlining operations proposed for the ensuing year”.*

Work commitments for Licence Year 6 have been suspended until Licence Year 7. The work commitment is to drill one well, as outlined in Table 1.

This involves preparation of well site and access tracks, drilling and testing of well to confirm reservoir properties and remediation of disturbed well site. The approximate duration of these activities is several months.

## **5 Expenditure Statement**

Please refer to Appendix 1 for the expenditure statement for the current reporting period.