



GEOTHERMAL RESOURCES LIMITED

ABN 45 115 281 144

Annual Report

Licence Year 4 (First Renewal)

For the Period:

22 Nov. 2015 to 31 July 2016 and 1 Aug. 2017 to 21 Nov. 2017

(Suspension: 1 Aug. 2016 to 31 July 2017)

GEL 181

16th January 2018

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1 Introduction

Geothermal Exploration Licence (GEL) 181 was granted to Havilah Resources NL on 22nd November, 2004. The licence was subsequently transferred to Geothermal Resources Limited on 12th August 2005. The licence is located in the Arrowie Basin, South Australia. This report details the work conducted during Licence Year 4 of the renewed licence (22/11/2015 – 21/11/2017 inclusive), in accordance with Regulation 33 of the *Petroleum and Geothermal Energy Act 2000 (SA)*.

A summary of the licence history is:

- Licence renewed, ie. second term starting 22nd Nov. 2009
 - > 33.4% of original GEL 181 excised to gain renewal
 - New Work Program (ie. changed licence conditions) with licence renewal.
- Year 1 of renewal: 22nd Nov. 2009 to 21st Nov. 2011
 - GEL 208 consolidated with GEL 181 on 23rd Nov. 2010
- Year 2 of renewal: 22nd Nov. 2011 to 21st Nov. 2014
- Year 3 of renewal: 22nd Nov. 2014 to 21st Nov. 2015
- Year 4 of renewal: 22nd Nov. 2015 to 31st July 2016
and 1st Aug. 2017 to 21st Nov. 2017
 - 20th Oct. 2016 New Work Program (ie. changed licence conditions).
- Year 4 Licence suspended 1st Aug. 2016 to 31st July 2017

2 Permit Summary

For the duration of the licence year, the licensee for Geothermal Exploration Licence (GEL) 181 was:

- Geothermal Resources Limited 100%

The work program was varied on 20th Oct. 2016.

Prior to this change the existing work program was as indicated in Table 1.

Table 1 Work commitments by licence year, prior to 20th Oct. 2016

Licence Year	Licence dates	Minimum Work Program
Licence suspended	22/11/2009 – 21/11/2010	<ul style="list-style-type: none">• Licence suspended
Year 1	22/11/2010 – 21/11/2011	<ul style="list-style-type: none">• Geological and geophysical studies.
Licence suspended	22/11/2011 – 21/11/2013	<ul style="list-style-type: none">• Licence suspended
Year 2	22/11/2013 – 21/11/2014	<ul style="list-style-type: none">• Geological and geophysical studies.
Year 3	22/11/2014 – 21/11/2015	<ul style="list-style-type: none">• Geological and geophysical studies.
Year 4	22/11/2015 – 21/11/2016	<ul style="list-style-type: none">• Drill one deep well >3,000 m depth.
Year 5	22/11/2016 – 21/11/2017	<ul style="list-style-type: none">• Flow test well; and• Data review.

The current work commitments (including all variations) associated with GEL 181 can be seen in Table 2.

Table 2 Current work commitments by licence year

Licence Year	Licence dates	Minimum Work Program
Licence suspended	22/11/2009 – 21/11/2010	<ul style="list-style-type: none"> • Licence suspended
Year 1	22/11/2010 – 21/11/2011	<ul style="list-style-type: none"> • Geological and geophysical studies.
Licence suspended	22/11/2011 – 21/11/2013	<ul style="list-style-type: none"> • Licence suspended
Year 2	22/11/2013 – 21/11/2014	<ul style="list-style-type: none"> • Geological and geophysical studies.
Year 3	22/11/2014 – 21/11/2015	<ul style="list-style-type: none"> • Geological and geophysical studies.
Year 4	22/11/2015 – 31/07/2016 and 1/08/2017 – 21/11/2017	<ul style="list-style-type: none"> • Geological and geophysical studies.
Licence suspended	22/11/2015 – 21/11/2016	<ul style="list-style-type: none"> • Licence suspended
Year 5	22/11/2017 – 21/11/2018	<ul style="list-style-type: none"> • Geological and geophysical studies.

Licence Year 4, of the renewed licence, concluded on 21/11/2017. The following table displays the minimum work program and the actual work completed up until the end of the current licence period.

Table 3 Work Program and work completed (as of end of current reporting period) by licence year

Licence Year	Minimum Work Program	Actual Work
Year 1	<ul style="list-style-type: none"> Geological and geophysical studies. 	<ul style="list-style-type: none"> Continued refinement to all modelling, especially 3D seismic interpretation. Proof of concept design, planning and costing. Continued promotion seeking next step finance.
Year 2	<ul style="list-style-type: none"> Geological and geophysical studies. 	<ul style="list-style-type: none"> Transfer of >3,500 m of diamond drill core (Frome 12 & Frome 13) from site to DSD Core Library. Rehabilitation of drill collars. Continued 3D modelling of seismic, geological and temperature data. Continued work towards 'proof of concept' design. Continued promotion seeking next step finance.
Year 3	<ul style="list-style-type: none"> Geological and geophysical studies. 	<ul style="list-style-type: none"> Initial planning for abandonment and rehabilitation of open wells. Continued promotion seeking next step finance.
Year 4	<ul style="list-style-type: none"> Geological and geophysical studies. 	<ul style="list-style-type: none"> Abandonment and rehabilitation of open wells planned. Discussions with DPC (Energy) seeking resolution re abandonment procedures.

3 Regulated Activities

Pursuant to Regulation 33(2) (a) under the Act, no regulated activities were undertaken.

4 Compliance Issues

Licence and Regulatory Compliance

Licence Non-Compliance

Geothermal Resources was compliant with all licence requirements.

Regulatory Non-Compliance

Geothermal Resources was compliant with the significant requirements. However, it was 6 days late in resubmission of the 2015 Annual Report. This occurred because of no / poor internet connection to site. At the time, all possible approaches to gain phone and internet access and reliability had been used; however, the situation has now changed with access via the NBN.

Report and Data Submissions

Table 4 List of report and data submissions during current licence reporting year

Description of Report/data	Due date	Date submitted	Compliant / Non-compliant
2015 Annual Report	21/01/2016	15/01/2016	Compliant
2015 Annual Report resubmission	11/03/2016	1/04/2016	Non-compliant
Cased hole reports	21/11/2017	1/11/2017	Compliant

Incidents

Pursuant to Regulation 33(2) (f), no incidents occurred in any activity (no regulated activity undertaken).

Management System Audits

Geothermal Resources aims for regulatory compliance, by striving for best practice in its management strategies, work practices and procedures, in an environmentally and socially responsible manner.

Geothermal Resources has a policy of continuing review and improvement in the development of management systems as it strives to meet this commitment.

Checklists have previously been developed to indicate assessment of compliance with environmental objectives as stated in the:

- SACB Drilling and Well Operations SEO (2009 and 2003).
- SACB Geophysical Operations SEO (2006).

At present other documented management systems include:

- Health Safety and Environment Manual
- Emergency Response Manual, with:
 - A4 ERP card
 - A4 Safe Travel card
- Hazard Awareness Manual.

Responsible persons:

- Dr Geoff Stolz
- Dr Chris Giles

Threat Prevention

Pursuant to Regulation 33(2) (g), no threats were identified as no regulated activities were undertaken.

Future Work Program

Pursuant to Regulation 33(2) (h) under the Act, an outline of the planned operations and activities is listed below:

- Geothermal Resources plans to decommission and rehabilitate all open wells, once agreement for the decommissioning procedure has been reached.
(Further discussions with DEWNR and DPC are required.)

5 Expenditure Statement

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