



Essential  
Petroleum  
Resources  
Limited

**PEL 72**

**Onshore Otway Basin**

**South Australia**

**Annual Report**

**For the Period**

**26 March 2003 to 25 July 2005**

**Year 2, Term 2**

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September 2005

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## 1. Introduction

Petroleum Exploration Licence No. 72 ("PEL 72") is located in the onshore Otway Basin, South Australia. The licence currently covers approximately 511 km<sup>2</sup> following the relinquishment of 175 km<sup>2</sup> prior to licence renewal.

This report describes the work performed by Essential Petroleum Resources Ltd as operator in Year 2, Term 2, in accordance with requirements of Section 33 of the Petroleum Regulations 2000.

PEL 72 is in good standing with all required work commitments exceeded.

## 2. Administration

The northeastern portion of the original licence area (175 km<sup>2</sup> of the original 686 km<sup>2</sup>) was relinquished to satisfy the 25% relinquishment requirement at the end of Year 5, Term 1. All parties to the PEL 72 Joint Venture, with the exception of Essential Petroleum, elected to withdraw prior to licence renewal.

The licence was subsequently renewed for a period of five years expiring 25 March 2007 with Essential Petroleum as the sole participant. Beach Petroleum N.L. farmed in to the licence during Year 2 and interest holders are now:

Essential Petroleum Resources Ltd	50% (Operator)
Beach Petroleum N.L.	50%

Prior to the end of Year 2 Essential Petroleum, as operator of PEL 72, was granted extensions totaling 16 months to allow:

- Interpretation of the 2004 Harris Flat Seismic Survey
- An AVO study of the Harris Flat Seismic Survey by a specialist seismic processing consultant
- Preparation of a scoping document for a multi-disciplinary seismic acquisition study to address seismic data quality in PEL 72.

In July 2005 Essential Petroleum, as operator of PEL 72, was granted a variation to the work program deferring the drilling commitment of Year 3 to Year 4, and bringing the Year 4 commitment of geological and geophysical review to Year 3. Year 3 commenced July 26 2005.

## 3. Regulated Activities

Section 33.(2) (a) of the Petroleum Regulations 2000 states that the licensee must furnish to the Minister an annual report that includes

***"a summary of regulated activities conducted under the licence during the year"***

Part 3, Section 10 (1) (a) of the Petroleum Act 2000 states that "***exploration for petroleum or another regulated resource***" is a regulated activity:

Part 3, Section 10 (3) of the Petroleum Act 2000 states that a regulated activity

***“includes all operations and activities reasonably necessary for, or incidental to, that activity such as..***

- (a) physical and geophysical surveys of land;***
- (b) the drilling of wells;***
- (e) the processing of substances recovered from a well”***

### **3.1 Physical and Geophysical Surveys**

#### *2003 Kongorong Gravity Survey*

Haines Surveys Pty Ltd, on behalf of Essential Petroleum, conducted a detailed GPS gravity survey in the Carpenter Rocks/Kongorong area approximately 40km SW of Mt Gambier. The completed survey consisted of 1109 detail gravity stations acquired on a grid designed on a 400m station interval along roads and trails, and a 500m station interval on farms.

#### *2004 Harris Flat Seismic Survey*

Regional well sections indicate that reservoir-seal pairs in the lower Sherbrook Group would be best developed in the southeast corner of the licence. The Harris Flat Seismic Survey, comprising 7 seismic lines totaling 64.2 km of 2D seismic data, was designed to provide infill over leads identified on existing seismic data in the southeast licence area.

Trace Energy Services was contracted by Essential Petroleum to conduct the 2004 Harris Flat 2D Seismic Survey.

Velseis Processing was contracted to process the Harris Flat Seismic Survey 2D data. In addition one vintage line (BO98A-03) adjoining new line EP04-02 was reprocessed.

### **3.2 Drilling**

No exploration drilling was undertaken during the reporting period.

### **3.3 Geological and Geophysical Studies**

Geological and geophysical studies have included:

- Merging the Kongorong Gravity Survey with existing gravity stations (*Stewart Geophysical Consultants Pty Ltd*).
- A preliminary interpretation of enhanced gravity images (*Stewart Geophysical Consultants Pty Ltd*).
- Palynological analysis of old slides from Lake Bonney 1, Caroline 1 and Mount Salt 1 (*Biostrata Pty Ltd*).
- Preparation and interpretation of well cross-sections to determine the distribution of Sherbrook Group reservoir and seal lithologies
- Interpretation of open-file seismic data
- Interpretation of the 2004 Harris Flat Seismic Survey

- AVO analysis of the 2004 Harris Flat Seismic Survey (*Makaira Geotechnical Pty Ltd*)

## 4. Compliance Issues

### 4.1 Regulatory Compliance

Section 33.(2) (b) of the Petroleum Regulations 2000 states that the 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”***

Minimum Year 2 work program requirements (50km of 2D seismic budgeted at \$300,000) to satisfy licence conditions have been met.

The licence is operated as per the requirements of the “Statement of environmental objectives for seismic operations in the Otway Basin, South Australia” (Cockshell and Langley, 2001) and a report issued by PIRSA entitled “The Environmental Management of Seismic Operations in the South East of South Australia” (Langley, 1996).

No environmental incidents were reported during the Year 2.

*Non-compliance:*

*Harris Flat Seismic Survey:*

The most serious incidence of non-compliance occurred during acquisition of the Harris Flat Seismic Survey.

Under *Section 20 of the Petroleum Act 2000*, before a Speculative Survey Licence (SSL) is granted over part of an existing licence, an applicant must:

- (a) consult with the existing licensee and seek to reach agreement on the activities to be carried out...***
- (b) inform the Minister of the result of the consultation.***

The series of events are as follows:

16 January 2004:

Essential Petroleum Resources Ltd applied for an SSL to accommodate the easternmost line in the planned Harris Flat Seismic Survey. The incursion into PEL 82 was required to obtain full fold seismic coverage over a prospect in PEL 72. In the application letter it was noted that the operator of PEL 82 was overseas and could not be contacted.

30 January 2004:

A delegate of the Minister for Minerals and Energy granted approval for the Harris Flat Seismic Survey under *Section 74(3)(a) of the Petroleum Act 2000*. The approval granted was restricted to the area covered by PEL 72.

13,14,15 February 2004:

Line 04HF-05 of the Harris Flat Seismic Survey was acquired. The ~ 2km section of line 04HF-05 that extended into PEL 82 had been permitted and surveyed, but

not prepared for acquisition in case permission from the PEL 82 operator was denied. Trace Energy Services were aware of the situation but it appears that the information was not effectively communicated to the line crew. On completion of line 04HF-04 the line crew laid spread for 04HF-05, including the out of permit area, without the knowledge of the permit man. Fences were compromised by the actions of the line crew resulting in stock mixing. The permit man became aware of the situation the following morning.

Vibrator trucks entered line 04HF-05 from McLeans Road and vibrated the line in a southeast direction (see Figure 1). The first vibration point lies only ~170m outside of the permit boundary. However data was recorded by the ~ 2km of receiver spread laid outside of the permit boundary.

5 March 2004:

Essential Petroleum withdrew the application for the Speculative Survey Licence. In the letter the Director of Exploration states "Unfortunately, agreement with the operator of PEL 82 was not reached in time to include any acquisition of seismic data from PEL 82 into the Harris Flat seismic programme."

As seismic data was inadvertently recorded in PEL 82 it appears that this was not effectively communicated to the Director of Exploration. The communication breakdown was compounded by the fact that the incident occurred at the end of the survey, the incident was not reported in the daily reports to management and the Exploration Manager was away from the office for two weeks immediately following the survey.

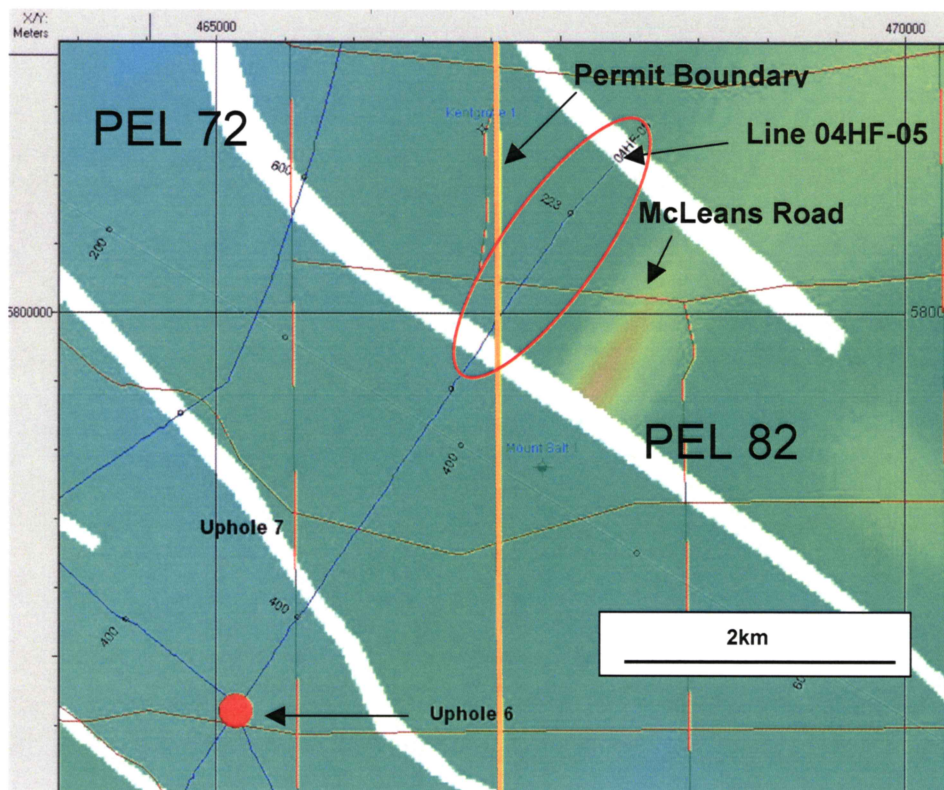


Figure 1: Map showing incursion of line 04HF-05 into PEL 82

Other incidences of non-compliance are listed below:

1. *Section 35(1) Geophysical operations reports* – The Harris Flat Seismic Survey was completed in February 2004. The operations report should have been submitted in August 2004. This report was submitted in June 2005.
2. *Section 37(1) Geophysical Data* – The Harris Flat Seismic Survey was completed in February 2004. The data should have been submitted in August 2004. The data were submitted in March 2005.
3. *Section 36(1) Geophysical interpretation report* – Processing of the Harris Flat Seismic Survey was completed in August 2004. A geophysical interpretation report should have been submitted in February 2005. The report is currently in preparation.

## 4.2 Rectification of Non-compliance

Section 33.(2) (c) of the Petroleum Regulations 2000 states that the annual report must include:

***“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 the recurrence of any such non-compliance”***

### *Communication*

The acquisition of data in PEL 82 without an SSL in place was unintentional. Essential Petroleum recognises that

1. Field procedures must be reviewed to avoid similar incidences occurring in the future.
2. Communication of non-complaint incidences within the Company must be improved.

### *In future*

1. Field procedures will be reviewed and modified where appropriate to ensure continual improvement to the goal of no incidences of non-compliance
2. Daily Reports to management will include a section for “Non-compliance issues” in addition to Safety and Environment.

### *Data and reports*

The operations report and data for the Harris Flat Seismic Survey have been submitted. An interpretation report for the Harris Flat Seismic Survey is in preparation.

In future Essential Petroleum will endeavor to submit the reports and data required by the South Australian Petroleum Regulations 2000 within the specified time period.

## 4.3. Management System Audits

Section 33.(2) (d) of the Petroleum Regulations 2000 states that the 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 action that has, or will be, taken”***

No management system audits were undertaken during the reporting period.

#### **4.4. Data Submissions**

Section 33.(2) (e) of the Petroleum Regulations 2000 states that the annual report must include:

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

The list of reports as per the Petroleum Act 2000 and Petroleum Regulations 2000 are:

4. *South Australian Petroleum Regulations 2000, Section 33 - Annual Report (this report)*
5. *Section 35(1) Geophysical operations reports – “PEL 72 Gravity Survey” report by Haines Surveys*
6. *Section 37(1) Geophysical Data - Kongorong Gravity Survey digital data*
7. *South Australian Petroleum Regulations 2000, Section 36(1) Geophysical interpretation reports - “Gravity data in PEL 72” report by Stewart Geophysical Consultants Pty Ltd.*
8. *Section 35(1) Geophysical operations reports – “PEL 72 Harris Flat Seismic Survey Final Report, May 2005” by Essential Petroleum Resources Ltd.*  
Includes
  - a. Petroleum Support Service Final Report
  - b. Trace Energy Services Final Report
  - c. Dynamic Satellite Surveys Final Report
  - d. Environment Report
  - e. Velseis Processing Report.
9. *Section 37(1) Geophysical Data – PEL 72 Harris Flat Seismic Survey raw and processed digital data. Includes*
  - a. Field data
  - b. CDP gathers
  - c. Intercept gradient and angle stacks
  - d. Fluid factor stacks,
  - e. Final CGM files,
  - f. Velocities, SEG Y stacks, statics and processing report
  - g. Navigation data, uphole data and observers logs
10. *Section 49(3) Report on analysis of core or cuttings*
  - a. Reconnaissance palynological review of old slides from Lake Bonney 1 in the Otway Basin (Biostrata Report 2003/9),
  - b. Reconnaissance palynological review of old slides from Mount Salt 1 in the Otway Basin (Biostrata Report 2003/10)
  - c. Reconnaissance palynological review of old slides from interval 1123 to 3061 metres in Mount Salt 1, Otway Basin (Biostrata Report 2003/16)
  - d. Review palynological analysis of the Sherbrook Group in Caroline 1, Otway Basin (Biostrata Report 2003/12).
11. *Section 10 (1) Environmental Impact Report – Environmental sensitivities report prepared by Enesar and included as Attachment 4 in the Final Report by Essential Petroleum.*



## 4.5. Safety

Section 33.(2) (f) of the Petroleum Regulations 2000 states that the annual report must include:

***“in relation to any incidents reported to the Minister under the Act and these regulations during the relevant licensing 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 reportable incident occurred during the reporting period.

## 4.6 Threat Prevention

Section 33.(2) (g) of the Petroleum Regulations 2000 states that the annual report must include:

***“a report on any reasonably foreseeable threats (other than threats previously reported on) that reasonably present, 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 were no perceived threats and no action taken.

## 4.7 Future Work Program

Section 33.(2) (h) of the Petroleum Regulations 2000 states that the 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 the operations proposed for the ensuing year”***

The work commitment for Year 3, Term 2 is geological and geophysical studies budgeted at \$40,000.

The work planned includes a seismic acquisition and processing study to investigate the consistent poor seismic resolution in PEL72. The study will be conducted with a view to designing seismic acquisition programs and processing streams that will provide good quality data with quantitative AVO effects at the prospective lower Sherbrook Group horizons.

## 5. Expenditure Statement

Section 33.(3) of the Petroleum Regulations 2000 states that the annual report must include:

***“a statement of expenditure on regulated activities conducted under the licence for the relevant licence year”***

An Expenditure Statement for PEL 72 for the period 26 March 2003 to 25 July 2005 is attached (Table 1).

## 6. References

- Cockshell, C.D and Langley, K. R., 2001 *“Statement of environmental objectives for seismic operations in the Otway Basin, South Australia”*, Report Book 2001/020, PIRSA
- Langley, K.R., 1996 *“Environmental management of seismic operations in the south-east of South Australia”*, 4<sup>th</sup> Edition May 1996