



LAKES OIL N.L.

(A.C.N. 004 247 214)

As Operator for

PETRO TECH PTY LTD

(A.C.N. 009 116 429)

**WOMBAT 3D
SEISMIC SURVEY REPORT**

**FOR
PRL 2**

AUGUST 2008

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SEISMIC SURVEY REPORT

1. Introduction

The Wombat 3D Seismic Survey was recorded between the 10th – 20th January 2008, in PRL 2, to the north of the township of Seaspray in the Gippsland Basin. A total of 89.32 linear km (28.582km²) was recorded with a total of 18 E-W source lines (with 5 additional N-S source lines to cover the inaccessible area, due to cropping, in the south of the survey) and 27 N-S receiver lines making up the survey. The survey was recorded by Lakes Oil N.L. on behalf of its wholly owned subsidiary Petro Tech N.L. to better delineate the Wombat Field and assist in the positioning of the future development wells for the field.

The seismic acquisition was performed by Terrex Seismic of Bibra Lake, W.A. and the processing of the data was carried out by Velseis Processing Pty Ltd of Brisbane, Qld. Surveying was performed by Dynamic Satellite Surveys Pty Ltd of Yeppon, Qld.

Interpretation of the data was performed by the staff of Lakes Oil N.L. in the Melbourne offices. Petro Tech Pty Ltd, a wholly owned subsidiary of Lakes Oil N.L., is the operator of the permit PRL 2 and holds 100% of the Wombat Field.

2. Objectives of the Survey

The survey was designed to better delineate the extent of the Wombat Field and to enable the best possible positioning of the Wombat-4 well (to be drilled in late 2008/early 2009) to ensure that the field can be brought towards production and the size of the resource can be estimated to assist in proving the commerciality of the first onshore “tight gas” resource. The survey was also designed to try and better identify the structures within the Strzelecki Formation and the underlying Rintoul’s Creek Sandstone to give a better understanding of the provenance of the gas encountered in the first three Wombat wells and the oil encountered at depth in Wombat-3. The Wombat structure was previously identified on only 2D seismic data which provided limited resolution within the Strzelecki Formation which has been identified as the main “tight gas” reservoir target within the onshore Gippsland Basin.

3. Location of Licence

PRL 2 is located in the south eastern portion of the onshore Gippsland Basin in Eastern Victoria (Figure 1) and covers the Seaspray Depression and Baragwanath Anticline. It is bound to the south by PEP 158 to the west by PEP 166 by the coastline to the east and to the north by a currently ungazetted area of the Gippsland Basin (previously PEP 156). Sale is the largest population centre within the permit and is located approximately 25km north of the survey area. The survey was conducted within the Seaspray Depression over the Wombat Field, a large 4-way dip, anticlinal structure which runs broadside to the current day coastline.

4. Regional Geology

4.1 General

The Gippsland Basin is an Early Cretaceous to Cainozoic Basin occupying approximately 46,000km² of the southeastern margin of the Australian continent. The basin is flanked on the north, west and south-west by Palaeozoic rocks and confined between the structural uplifts of the Victorian Highlands in the north and the Bassian Rise in the south. The eastern margin of the basin is open to the Tasman Sea. The Gippsland Basin is an east-west trending half graben feature with 70% of its area lying beneath Bass Strait and 30% onshore.

The Gippsland Basin formed as a result of the rifting and subsequent separation that occurred between Australia and Antarctica as a result of the break-up of Gondwana in the Late Jurassic/Early Cretaceous. This resulted in the deposition of the silica rich Tyer's Conglomerate and Rintoul's Creek Sandstone in the half-grabens formed by the initial rifting event followed by the influx of large volumes of volcanoclastic material deposited during the end of the rifting and subsequent sag phase of the basin. This formation is known as the Strzelecki Formation and ranges in thickness from several hundred meters to over 5km and it is the primary target within the Wombat Field.

Following the deposition of the Strzelecki Formation there was a period of uplift and erosion resulting in the large unconformity at the top of the Strzelecki which forms a regional seal over the structure. In places within the Seaspray Depression the Golden Beach Formation was deposited during the Late Cretaceous but did not encroach far onshore. After another period of

uplift and erosion and a large marine transgression into the basin, caused by the final separation of Australia and Antarctica during the Early Tertiary, the silica rich sediments of the Latrobe Group were deposited which form the majority of the reservoirs offshore. This deposition was followed by further marine transgressions which resulted in the deposition of the deeper marine marls and limestones of the Lakes Entrance Formation and Gippsland Limestone respectively. A series of thinner formations were deposited following the Miocene inversion which resulted in a marine regression leading to the eventual deposition of the non-marine Quaternary sediments.

With the exception of occasional wildcat drilling in the boom of the 1980's, exploration of the onshore Gippsland Basin has been largely ignored since the 1970's. Lakes Oil N.L. has assiduously explored the area in recent years. There has been minimal seismic acquisition in the area in recent years with the last survey over the Wombat Field conducted by Crusader in 1987. These previous surveys were aimed at delineating the potential reservoirs within Latrobe Group not the deeper Strzelecki Formation so the data quality in the Strzelecki is poor due to the survey designs and the large amount of brown coal present in the Latrobe Group which absorbs most of the seismic energy.

The early exploration activities in the onshore part were aimed primarily at the Early Cretaceous Strzelecki Group and, later on, at the top of the Latrobe Group coarse clastics. Following the gas discovery in the Wombat-1, -2 & -3 exploration wells, the Strzelecki Formation is the premier target in and around the Seaspray Depression.

Permit PRL 2

Lakes Oil NL was awarded the Retention Licence 2 in March 2007 covering an area of 747 km² over the old PEP 157 which Lakes acquired (formerly PEP 137) from Roma Oil NL in April 1999, following the drilling by Roma of the McCreesh-1 & McAlister wells, unsuccessful tests of the top Latrobe Group sands. The permit extends over the northern part of the Seaspray Depression, the southern portion of the Lake Wellington Depression and part of the Baragwanath Anticline (Figure 1). Over twenty exploration wells have been drilled from 1962 – 2007, with Lakes Oil recently testing gas at the North Seaspray 3, Trifon-2 and Gangell-1 locations. The Wombat-1, -2 & -3 exploration wells located through the middle of the seismic survey area flowed gas from the Strzelecki Formation with Wombat-3 recovering some oil from the deeper Strzelecki Formation as well.

Wombat 3D Location Map

Department of Primary Industries

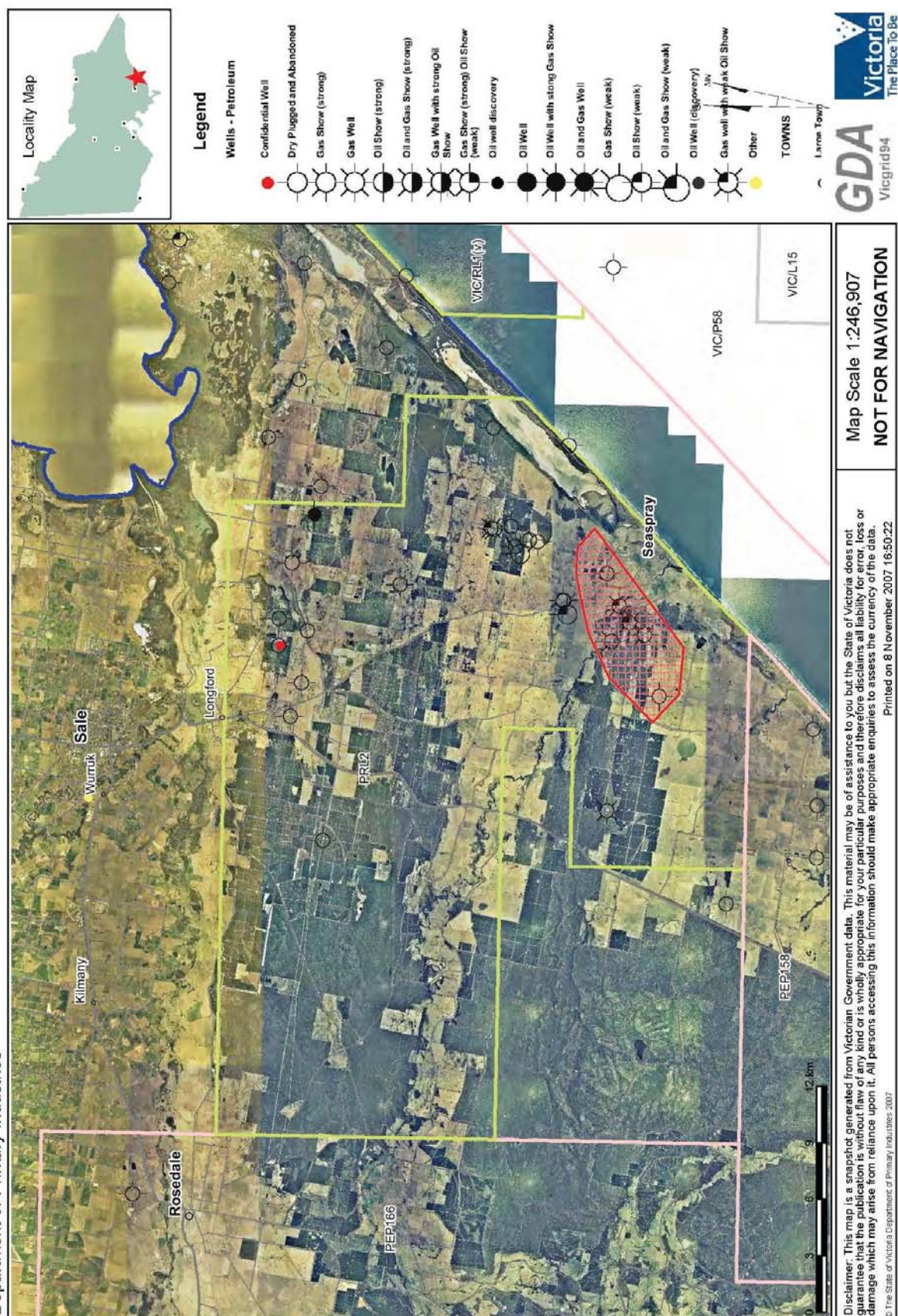


Figure 1. Wombat 3D Seismic Survey Location Map

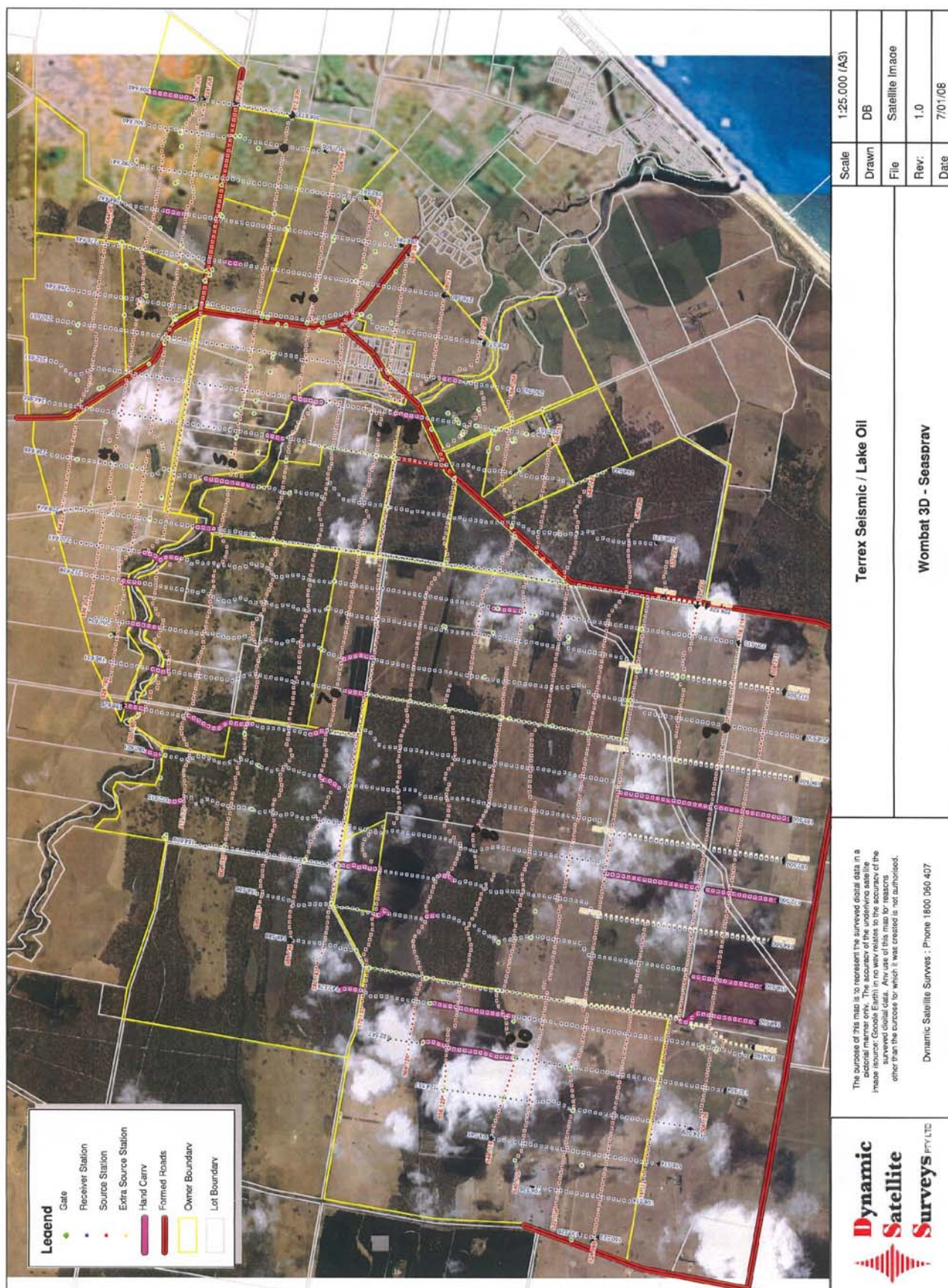


Figure 2. Wombat 3D Seismic Survey layout map with uphole locations

5. Exploration History

Hydrocarbon exploration commenced in the onshore region of the basin in 1924 when the Lake Bunga exploration well encountered traces of oil, leading to the discovery and development of the Lakes Entrance oil field. The oil accumulation is found in a stratigraphic trap within a glauconitic sand member of the Oligocene Lakes Entrance Formation. The field produced a total of 10,000 bbls of 15.7° API gravity oil before production ceased in 1956. Aside from the Lakes Entrance oil accumulation, wet gas flowed to the surface during testing of the Strzelecki sandstones at North Seaspray 1 and 3, Trifon-1, Gangell-1 and Wombat-1, -2 & -3.

Petroleum exploration in the permit commenced in the early 1960's and continued into the early 1970's, conducted mainly by Woodside and Arco with a number of seismic 2D surveys being shot leading to eight wells being drilled within the permit. The 1962 Sale Seismic Survey and the 1964 Seaspray Seismic Survey were shot by ARCO and the 1965 Paynesville Seismic Survey was shot by Woodside. This exploration originally had as its main objective the Strzelecki Group with emphasis moving to the Latrobe Group later in this period.

Little work was done in the permit until Crusader Resources NL conducted the Seaspray and Monkey Creek Seismic Surveys in 1987 which lead to the defining of the Wombat, McCreesh and McAlister structures

Several shallow bores have been drilled in the vicinity of PRL-2 by Victoria Electricity, Coal and Water Resources authorities; however, none of these bores encountered Latrobe Group reservoirs at a significant depth or within closure. During 1985, Hartogen Energy Ltd drilled Burong 1 to test the Top Latrobe at the crest of a northeast to southwest trending asymmetrical anticline that is fault controlled to the northwest. While the Latrobe section contained excellent reservoir rock, no significant shows were recorded within this section.

Recently Lakes Oil has drilled twenty-five wells within their onshore Gippsland permits, thirteen of them in PRL-2.

In 2000 North Seaspray 3, drilled updip from North Seaspray-1, successfully tested gas to surface at 150 mcf per day.

In 2000-2001 Trifon-1 and Gangell-1 were drilled as Strzelecki Formation tests, each producing gas at sub-economic rates. Trifon-2 was drilled in 2004 and flowed gas to surface from several intervals.

In 2001 the Boundary Creek corehole was drilled in order to assess the reservoir potential of Strzelecki sandstones. Boundary Creek-2 was drilled in 2005 to assess the deeper Strzelecki Formation sandstones and encountered significant thicknesses of apparent “tight gas” bearing sandstones which are yet to be tested.

In 2002 the Deadman Hill-1 and Protea-1 stratigraphic holes, investigating Golden Beach and Strzelecki Formation subcrop, were drilled in the general vicinity of Longford.

In late 2003 and 2004 the Wombat-1, -2 & -3 wells discovered gas in the Strzelecki Formation and Golden Beach Group near Seaspray with Wombat-3 encountering oil deep within the Strzelecki Formation.

In 2005 Echidna High-1 was drilled to test the Strzelecki Formation sandstones with gas shows recorded but not tested successfully.

6. Field Operations

6.1 Environment

The Seismic Survey was conducted on established grazing land, light native bush and roadsides. The surveying across the gazing land and light native bush involved minimal environmental disturbance with some mechanical and hand clearing of low scrub required. A Detailed Environmental Management Plan (EMP) for the Wombat 3D seismic survey was prepared for Lakes Oil by Mr. Chris Annear and compliance with this EMP was supervised by Mr Tim O’Brien and Mr Andy Brett.

Where possible existing tracks, gates and fence lines were used to minimize the disturbance to the surface and the dry weather experienced throughout the survey period greatly reduced the disturbance to the ground surface.

On completion of the survey the restoration required was minimal. All drill cuttings and flagging was removed from the lines and any fence altered was reinstated. Where vegetation was required to be cleared the removed vegetation, which was stockpiled during the survey, was replaced across the cleared area to prevent future access and to allow the vegetation to re-grow and close off the cleared lines.

A post survey inspection was conducted by representatives from Lakes Oil and the DSE and it was deemed that the rehabilitation was satisfactory and that there will be no lasting effects on the environment as a result of the survey. Ongoing monitoring will ensure that the survey area returns as closely as possible to its pre-survey state.

6.2 Aboriginal Heritage

The Ramahyuk Aboriginal Co-operative was notified in regards to the survey and their Cultural Heritage Officer, Mr Rob Douthat, visited the survey area and conducted an inspection prior to any earthworks or the surveying commencing. He determined that there would be a very low disturbance to the surface area and past disturbances by farming practices and other activities have already taken place greatly reducing the risk of any areas of cultural significance being disturbed. Based on his judgment it was not necessary to submit a Cultural Heritage Management Plan in regards to this survey.

During all clearing and surveying activities the contractors were instructed to look out for any potentially sensitive areas and work would have ceased in the area if anything had been found until a Ramahyuk representative was able to inspect the site. The survey was conducted predominantly over cleared grazing land and re-grown native vegetation so it was not expected to disturb any sacred sites and no sites of cultural significance were encountered during the survey.

6.3 Permitting, Line Clearing and Fencing

The permitting was conducted by Mr. Chris Annear of Petroleum Support Services of Mount Gambier S.A with the assistance of Mr Andy Brett of Jan Juc. The land clearing, fencing and rehabilitation was conducted by a local contractor Mr. Lindsay Willox. The local contractor works were directed and supervised by Mr Andy Brett and Mr Tim O'Brien from Lakes Oil NL.

Prior to the start of the survey a total of 27 landowners were contacted to grant access consent for the survey crew along with the township of Seaspray being notified of the increased activity in the area. All landowners were happy for the survey to proceed and all were happy with the rehabilitation performed on the completion of the survey and there have been no follow up problems in regards to the survey or the rehabilitation.

Where existing gates could not be used fences were crossed using temporary gates either of the lay down or “cockeys gate” construction. The landowners were happy to move stock from the paddocks involved in the survey whilst the survey was in progress greatly reducing the need for having to secure the fences with barbwire or electric fences. After the survey these gates were removed and the fences restored to their original condition.

6.4 Line Pointing, Chaining & Marking

Lakes Oil representatives were responsible for the initial survey layout and line pointing. Chaining and marking was carried out by Dynamic Satellite Surveys Pty Ltd (DSS) (see Appendix 2 for full report). DSS used the RT20/RT2 real-time chain and survey method with in-fill using the REM and conventional techniques. Permanent Markers were not left in the survey area.

6.5 Data Acquisition

Acquisition of the survey was conducted by Terrex Seismic using the following equipment and parameters:

Instrumentation

Instruments:	Sercel 428XL, 24-Bit Telemetric Recording System
No. Channels:	3D 960 (10 Lines x 96 Channels) + 2 Aux
Auxiliary Channels:	#1 Pilot, #2 Cross-correlation (Pilot vs True Reference)
Tape Format:	SEG-D, 3490 BPI
Filters:	Hi-cut – 200 Hz Low-cut – Nil (Default 0Hz)
Sample Rate:	2ms

Record Length: 14s (8s sweep, 6s listening time)
Correlation: Correlation before sum, Linear (zero) phase
Pre-Amp Gain: 12dB
Noise Edit: Diversity
System Polarity: SEG (VCU 0°, ESG 0°)
Encode Sweep Generator: Pelton Vibpro

Source Data

Energy Source: 3 x IVI Hemi-50 Vibrators, 50,000lb Peak Force
6x6 Truck mounted Vibrators Online
Electronics (VCU): Pelton Vibpro
Sweep Frequency: Varisweep
Linear upsweeps (1st sweep 5-100Hz, 2nd sweep 5-60Hz)
Sweep Length: 8.0s
Number of Sweeps: 2 (standing)
Sweep Taper: 200ms Taper
Sweep Energy per km: 400s/km
Vibrator Array: 3 Vib in-line, 12 m Pad-Pad / No Moveups, 24m Array Length
Drive Level: 80% (100% = 46,500lbs)
Amplitude Control: Peak and Trough
Cosine Taper: 0.3s
Phase Locking: Ground Force, time correction every cycle
Accelerometers: Seismic Source High Performance
Vibrator QC: Vibrasig with PSS

Receiver Data

Model/Res Frequency: Sensor SM-4 Model B, 10Hz
#/String/Connection: 12 (4x3 Series/Parallel)
Coil Resistance: 375 Ω
Open Circuit Damping: 0.25
Damping Resistor: 1000 Ω
Damping with Shunt: 0.69
Harmonic Distortion: <2.0% at 12Hz

Field Parameters

Receiver Line Spacing:	320m
Station Interval:	40m
Receiver Group Interval:	40m
Receiver Group Location:	Centred on Station
Receiver Group Array:	12 phones in-line @ 2m spacing, array length 22m
Source Line Spacing:	320m (Orthogonal to the receiver lines)
VP Interval:	40m
VP Location:	Centred on Stations
VP Array:	24m
Centre Gap:	None
Bin Size:	20 x 20
Spread Geometry:	10 lines x 96 groups
Max Traces Live:	960
In-line Max Offset:	1900m
X-line Max Offset:	1600m
Max Offset:	~2480m
Multiplicity:	30%
Max Fold:	36

6.6 Static Control

The basic field static control was obtained by drilling upholes to depths of approximately 30m at various locations across the survey area and the use of upholes drilled and logged during previous 2D seismic surveys conducted within the Wombat 3D seismic survey area. A total of 9 holes were successfully drilled and logged (see Figure 2 for locations) to varying depths depending on the depth required to penetrate competent rock beneath the weathered zone. The depth to below the weathering varied from approximately 2.2m to 21.0m. A total of 18 previously drilled and logged upholes from earlier surveys were used to assist in the statics control across the survey area

The drilling was performed by Drilltec Ltd of Morwell, Vic using a truck mounted rotary drilling rig. The downhole weathering survey was performed by SGS Expertest of Wingfield, S.A. using a downhole geophone and a truck mounted weight drop source. Field plots are included as Appendix 4.

6.7 Survey Issues

The survey was conducted during summer in January so there were fire concerns during the survey and preparation/rehabilitation periods and the necessary precautions were taken to avoid any fire issues with fire fighting equipment available at all times. Prior to conducting the survey there were concerns raised about dust, crops and possible wet weather which would restrict access to some areas due to the likelihood of the trucks getting bogged and damaging the equipment and environment but no rain was recorded until the final day of the survey period enabling the survey to be conducted quickly with no damage caused to the ground surface. Vehicle speeds were restricted to limit the amount of dust created and areas of cropping were avoided to minimize damage to crops and tracks.

To enable the safe acquisition of the survey traffic management control was put in place to restrict the speed of traffic moving along the roads through the survey area and at times traffic was stopped to enable the safe deployment of the equipment across the roads. There were no road related incidents reported and the disturbance to the general public was kept to a minimum with no reports of any complaints being lodged regarding the conduction of the survey throughout the area and the rehabilitation has been conducted and signed off on by the relevant landowners.

All phases of the survey were completed successfully with the recording crew achieving good production rates. No accidents or environmental incidents were reported during the survey. Terrex Seismic held daily tool-box meetings prior to the start of work where operational and safety issues were discussed. Crew members were required to undergo random breathalyzer tests each morning prior to commencing work in an attempt to reduce the possibility of accidents. A full report on the conduction of the survey by Terrex Seismic is included as Appendix 1.

7. Data Processing

7.1 Data Processing

The data processing of the Wombat 3D Seismic Survey was performed by Velseis Processing Pty Ltd in their Brisbane processing centre between February and May 2008 with the data compiled by Mario Vecchi

The Data Processing Report (Appendix 3) lists the tests performed on the data and describes the processing sequence.

During test and production processing special attention was given to:

1. Amplitude recovery
2. Deconvolution before stack

The final processing sequence can be summarized as follows:

- Reformat
- Trace Edit
- Geometry
- Phase Conversion
- Gain Recovery
- Deconvolution
- Linear Noise Removal
- Datum Statistics
- Cross-spread Sorting
- 3D Velocity Filtering
- TFD Noise Removal
- Velocity Analysis (1st Pass)
- Residual Statics Calculation and Application
- Velocity Analysis (2nd Pass)
- Trim Static Calculation and Application
- Common Reflection Surface Processing
- Shift to Final Datum

- Resample
- Kirchhoff Prestack 3D Time Migration
- Velocity Analysis (Final)
- Normal Moveout Correction
- Mute
- Stack
- Deconvolution After Stack
- FXY Deconvolution
- Frequency Filter
- Amplitude Balance (AGC)
- Display

7.2 Digital Archives

The following data stages were archived on DVD in SEG Y format:

- 1 DVD-519 containing raw and filtered migrations in SEG Y format and the processing report.
- 2 LTO/C-039 containing DBS gathers with no NMO applied

7.3 Contractor Performance

Velseis completed the main part of the processing project by the scheduled date and the staff at Velseis were very cooperative and responsive to all requests. The processed data was of reasonable enough quality to enable a good interpretation of the targeted structures. The resolution within the Strzelecki Formation was only slightly improved upon from previous surveys due to the problem of getting enough energy through the thick brown coal intervals within the overlying Latrobe Group sediments.

APPENDIX 1

Terrex Seismic Wombat 3D Final Report

APPENDIX 2

DSS Surveying Wombat 3D Final report

APPENDIX 3

Velseis Processing Report

APPENDIX 4

SGS Expertest Uphole Plots