

Essential Petroleum Resources Limited

**PEP 152
ONSHORE OTWAY BASIN, VICTORIA**

WELL COMPLETION REPORT

Port Fairy 1

January 2003



CONTENTS

1	SUMMARY.....	1
2	WELL HISTORY	3
2.1	<i>GENERAL DATA</i>	3
3.	ENGINEERING DATA.....	7
3.1.	<i>WELL STATUS.....</i>	7
3.2.	<i>OPERATIONAL SUMMARY.....</i>	7
3.3	<i>DAILY OPERATIONS.....</i>	9
3.3	<i>BHA AND BIT SUMMARIES.....</i>	12
3.4	<i>CASING AND CEMENTING REPORT</i>	12
3.5	<i>DRILLING FLUIDS.....</i>	13
3.6	<i>WELL TESTING & COMPLETION.....</i>	13
4.1	<i>CUTTINGS.....</i>	16
4.2	<i>CORES</i>	16
4.3	<i>TESTING</i>	16
4.4	<i>SAMPLE ANALYSIS.....</i>	16
4.5	<i>FLUID ANALYSES.....</i>	16
4.6	<i>MUD LOGGING</i>	16
4.7	<i>WIRELINE LOGGING.....</i>	17
4.8	<i>VELOCITY SURVEY.....</i>	17
5	GEOLOGY	18
5.1	<i>STRATIGRAPHY.....</i>	18
5.2	<i>LITHOLOGY.....</i>	19
5.3	<i>RESERVOIR QUALITY AND HYDROCARBON INDICATIONS</i>	22
5.4	<i>CONTRIBUTION TO GEOLOGICAL KNOWLEDGE.....</i>	24

Port Fairy No. 1 Well Completion Report

FIGURES

Figure 1: Port Fairy Top Waarre Formation Two Way Time	4
Figure 2: Port Fairy Well Location	5
Figure 3: Port Fairy Time -Depth Curve	10
Figure 4: Time Analysis - Drilling Phase.....	11
Figure 5: Time Breakdown - Testing phase	14
Figure 6: Port Fairy 1 - Well Schematic	15

TABLES

Table 1: General well data	3
Table 2: List of Contractors	6
Table 3: Time Breakdown – drilling phase.....	9
Table 4: Deviation Surveys	11
Table 5: Bit and BHA Record	12
Table 6: Casing and Cementing Details.....	12
Table 7: Completion Time Summary.....	14
Table 8: Drill Stem Test Results	16
Table 9: Detail of logs run.....	17
Table 10: Stratigraphic Table.....	18
Table 11: Reservoir Quality and Hydrocarbon Indications	23

APPENDICES

Appendix 1: Location Survey
Appendix 2: Daily Drilling Reports
Appendix 3 Casing Tables
Appendix 4: Drilling Fluid Recap
Appendix 5: Cuttings Description
Appendix 6: Drill Stem Test Results
Appendix 7: Well checkshot survey and synthetic seismogram.
Appendix 8: Cased hole testing results
Appendix 9: Palynological Report
Appendix 10: Fluid Analysis

ENCLOSURES

Enclosure 1: Composite Well Log
Enclosure 2: Mudlog
Enclosure 3: Wireline Logs

2 WELL HISTORY

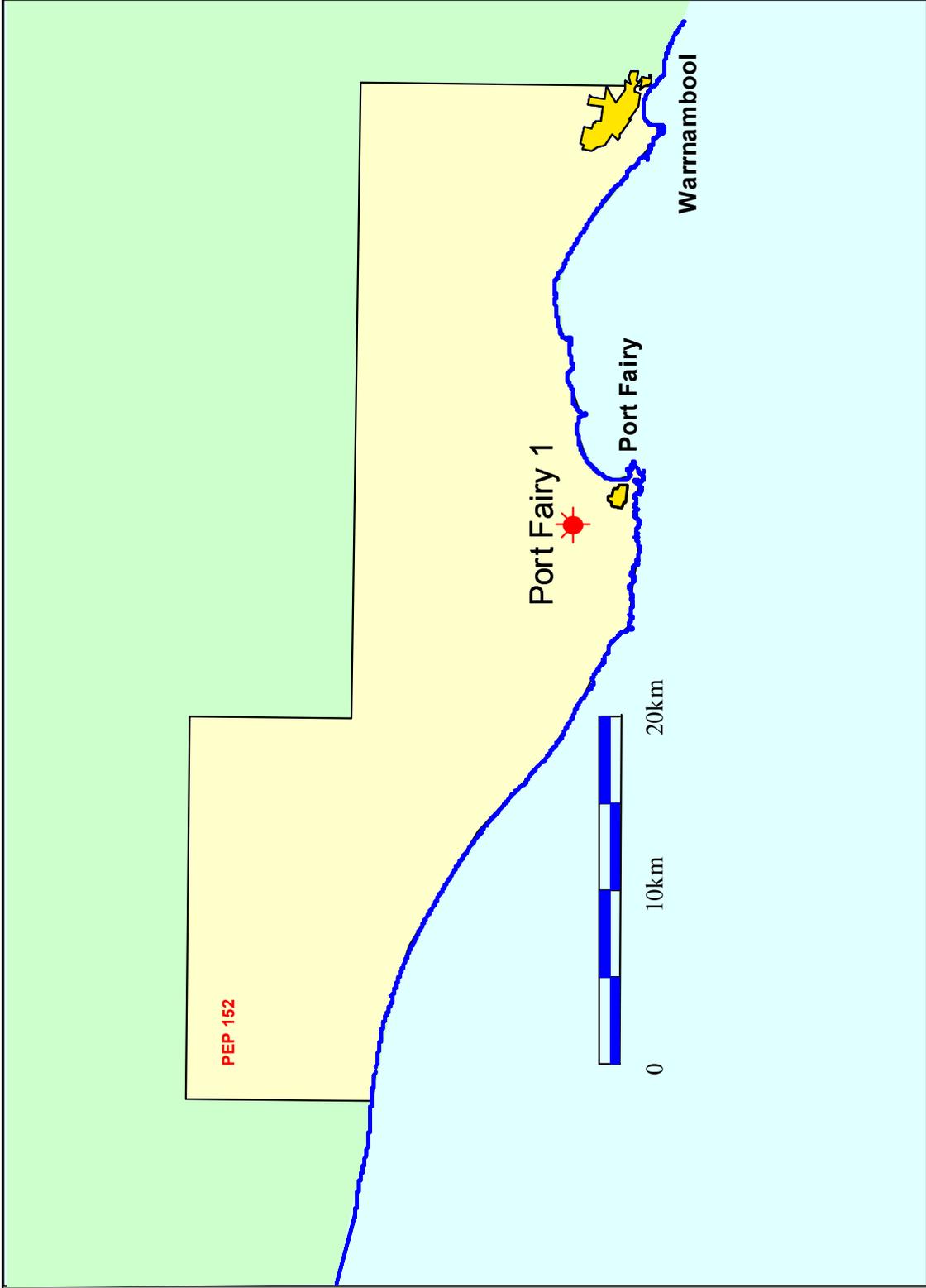
2.1 GENERAL DATA

General well data are given in Table 1, and the location shown in Figures 1 & 2.

Table 1: General well data

Well name:	Port Fairy 1
Classification:	Exploration
Permit operator:	Oil Company of Australia Limited
Well operator	Essential Petroleum Resources Limited
Basin:	Otway, onshore western Victoria
Lease:	PEP 152
Seismic location:	Line OBE00-01, Shotpoint 345, location offset 200m west.
Coordinates:	Latitude 38° 21' 38.40"S, Longitude 142 12'49.03"E Easting 606, 030.35m, Northing 5,753,470.16m, MGA Zone 54
Datum:	GDA94
Elevation:	Ground Level (GL): 7.67 metres AHD Rotary Table (RT): 12.09 metres AHD (All depths relate to RT unless otherwise stated)
Property owner:	Bill McClaren, Tayfield Station
Nearest town:	The coastal township of Port Fairy, approximately 3.5 km south of the well.
Nearest well:	Government water bore Belfast 4, approximately 4km SSE of the well.
Measured depth	Driller: 1550.0 m
	Logger: 1523.0 m (logger could not reach TD)
Spud date:	07:00 hours January 9, 2002.
TD reached:	18:30 hours January 18, 2002.
Days to Drill:	9.5 days
Date suspended:	04:00 hours, January 24, 2002.
Drill rig released:	12:00 hours January 24, 2002.
Testing commenced:	07:00 March 19, 2002
Testing completed:	18:00 September 24, 2002
Well status:	Suspended oil & gas well.

Figure 2: Port Fairy Well Location



2.2 CONTRACTORS

Table 2: List of Contractors

Service	Contractor
Project Managers	Essential Petroleum Resources Limited
Drilling	Mitchell Drilling and Exploration
Location Survey	Paul Crowe, Licensed Surveyor
Site Construction	Walter Mellis
Water Supply	Trucked in by Walter Mellis
Fuel Supply	Supplied by Drilling Contractor
Cementing	Dowell
Mud System - Drilling Fluids - Solids Control	IDFS Via Drilling Contractor
Mud Logging	Geoservices
Electric Logging	Schlumberger
Drilling Tools	Tasman Oil Tools
Casing Services	Drilling Rig
Drill Stem Testing	Australian DST
Casing & Tubing	Itochu
Wellheads And Equipment	Cameron Iron Works
Workover Rig	Imperial Snubbing
Completion Services - Slickline - Completion Components - Perforating - Lubricator	- Expertest - Expertest - Schumberger
Well Testing	Expertest
Environmental - Waste Disposal	Transwest Environmental
Accommodation	Town accommodation. (Port Fairy)
Trucking	Dehne Transport
Crane Services	Timboon Engineering
Communications - Landlines - E Mail/Internet	- Telstra - Via EPRL server

3. ENGINEERING DATA

3.1. WELL STATUS

Figure 3 illustrates the suspended condition of the well as at December 2002.

3.2. OPERATIONAL SUMMARY

3.2.1. Logistics and Planning

Essential Petroleum Resources (EPRL) managed drilling on behalf of the PEP152 Joint Venture. Materials and logistics were managed out of the EPRL offices and from the Port Fairy wellsite.

Mud and cement chemicals were supplied by Independent Drilling Fluid Services, from their Cheltenham facility.

3.2.2. Site Preparation

Site construction for Port Fairy 1 commenced in December 2001. The original selected position (SP 345 on line OBE00a-01) was unsuitable as the land had been subdivided for housing and was also boggy from recent rains. The site was shifted 200m to the west side of Blackwood Road.

Fencing and lockable gates were installed. Pits were dug and the site was sheeted with gravel. Hard rock (basalt) at surface limited the depth of the water storage pits. The size of the location was kept relatively compact, as the rig required a small footprint and no rig camp.

Of particular concern throughout construction was adherence to the environmental management plan for the project, which stressed the minimisation of noise and dust levels.

3.2.3. Mobilisation

Mitchell Rig 50 was mobilised from Queensland on January 3 after completion of necessary modifications to the mud system. Mobilisation was timed to avoid the road congestion of the immediate Christmas-New Year period.

The mobilisation to the rigsite was completed in 4 days.

3.2.4. Pre Spud

The Port Fairy 1 pre-spud meeting was held at the rig site at 19:00 on January 8, 2002.

3.2.5. 17 ½" Hole Section

Port Fairy 1 was spudded at 07:00 hrs on the January 9, 2002. The 17½" hole section was initiated with a 20" drag bit to drill the soil above the basalt. A 12 ¼" pilot hole was then air-hammered to 14.5m. Attempts to ream the pilot hole with the drag bit were unsuccessful. A 20" conductor was set to 6.5m and the diverter rigged up. The pilot hole was reamed at 17 ½" diameter with an air hammer to 14.5m and then drilled ahead to 31.5m. Caving sand below the base of basalt at 28m prevented further air drilling. The air hammer was laid down and 23 sacks neat cement was spotted on bottom. After waiting on cement and rigging up mud tanks 17 ½" hole was drilled ahead with no returns to 55m and partial water returns to 78.2m. The 13 ⅜" conductor was run to 67.4m and cemented with neat class G cement.

3.2.6. 12 1/4" Hole section

Cement was tagged at 57.9m inside the conductor pipe. The 12 1/4" hole section was drilled from 78.2 to 821m with water/gel mud. High instantaneous rates of penetration were achieved. With only one mud pump available, the large cuttings load caused mud rings in the annulus and cutting blockages in the flow line. The flow line was modified to add cleaning jets, and the drill pipe was worked briefly prior to connections to prevent cuttings build-up. The mud was continually diluted to counter viscosity increases due to the native clays and limestone, and treated with SAPP to counter the mud rings. Enerseal lost circulation material (LCM) was used during drilling of the Dilwyn Formation aquifer to ensure minimal contamination of the formation. No losses were experienced.

Further minor time losses were caused by the mud pump losing prime in the section 500 – 687m. LCM in the mud probably contributed to this problem. At 817.5m a wiper trip was carried out. No fill was encountered. The hole was deepened to 821 during the wiper trip to better accommodate the 9 5/8" casing measurement.

Hole deviation in the upper part of the 12 1/4" section was stable at 1°. A survey at 821m was a misrun.

3.2.7. 9 5/8" Intermediate String

A string of 9 5/8" L80 47 ppf BTC casing was run to a shoe depth of 812m. The string was cemented to surface with 200% annular volume of class G cement and displaced with 195 BBL mud. Good cement returns to surface were noted. Plugs were bumped with 1300psi.

3.2.8. 8 1/2" Hole Section

The BOPs were nipped up and tested successfully at 250 and 2500psi without incident. The float and shoe were drilled out and formation drilled to 824m. A leak-off test was performed. Leak-off was recorded at 620 psi, equivalent to mud weight of 13.5ppg. The hole was displaced to PHPA mud. A survey of 3 1/2° was recorded at 824m. 8 1/2" hole was drilled ahead to 1327m with a PDC bit. Flow check and sample circulation was carried out to evaluate a drilling break at 865m. A survey of 3 1/2° was recorded at 1044m. The mud weight was increased to 9.5ppg. Rate of penetration decreased below 1236m and the bit was pulled at 1327m. The PDC bit was in good condition. The low ROP was attributed to poor face cleaning.

A new tricone bit was reamed to bottom and drilled 8 1/2" hole to 1550m TD. Samples were circulated at 1343 and 1351m. The hole was logged successfully. Straddle drillstem tests were attempted unsuccessfully. As the zones could not be properly evaluated in open hole by DST the hole was completed for testing through casing.

3.2.9. 7" Production String

A string of 7" J55 BTC casing was run to a shoe depth of 1536m. The string was cemented, to a theoretical depth of 660m RT plus 40% excess, with class G cement and displaced with 199 BBL mud. Plugs were bumped with 3000psi.

During rigging down of the cementing gear the well started to flow. The annular BOP was closed. A stable shut in pressure of 13psi was observed. The pressure bled off and the well was observed to be stable.

3.3 DAILY OPERATIONS

3.3.1 Daily Drilling Reports

The details of the daily activities during rig up and drilling operations for the Port Fairy 1 well are presented in the Daily Drilling reports in Appendix 2.

3.3.2 Time Performance

The time – depth curve for Port Fairy 1 is presented in Figure 3 and a time breakdown presented in Table 2 and Figure 4. Problems due to DST failures at the end of the hole were the most significant cause of delays. Drilling, logging and casing operations were carried out without significant problems. Some delays were incurred dealing with mud rings and poor cuttings clearance, and pump suction problems from LCM in the 12 ¼” section. An unscheduled bit change in the 8 ½” section was due to the PCD bit balling up.

Table 3: Time Breakdown – drilling phase

OPERATION	Days	%
Drill actual	3.17	21%
Reaming	0.71	5%
Rig Repairs & maintenance	0.38	2%
Rig up or modify surface equipment	0.30	2%
Logging	0.48	3%
Circulate to condition mud	0.38	2%
Circulate to evaluate well	0.36	2%
Casing and cementing operations	2.84	19%
Tripping for bit or BHA change, for casing and at TD	1.75	12%
Tripping to condition hole	0.63	4%
Tripping to evaluate well	1.51	10%
Hole problems	0.41	3%
Well surveys	0.15	1%
Drill stem testing operations	1.31	9%
Installing & testing BOPS, Leak-off tests	0.79	5%
Routine HSE operations: site cleanups, safety meetings	0.05	0.3%
HSE time related to incidents	0.00	0%
Total Days	15.21	100%

Port Fairy No. 1 Well Completion Report

Figure 3: Port Fairy Time -Depth Curve

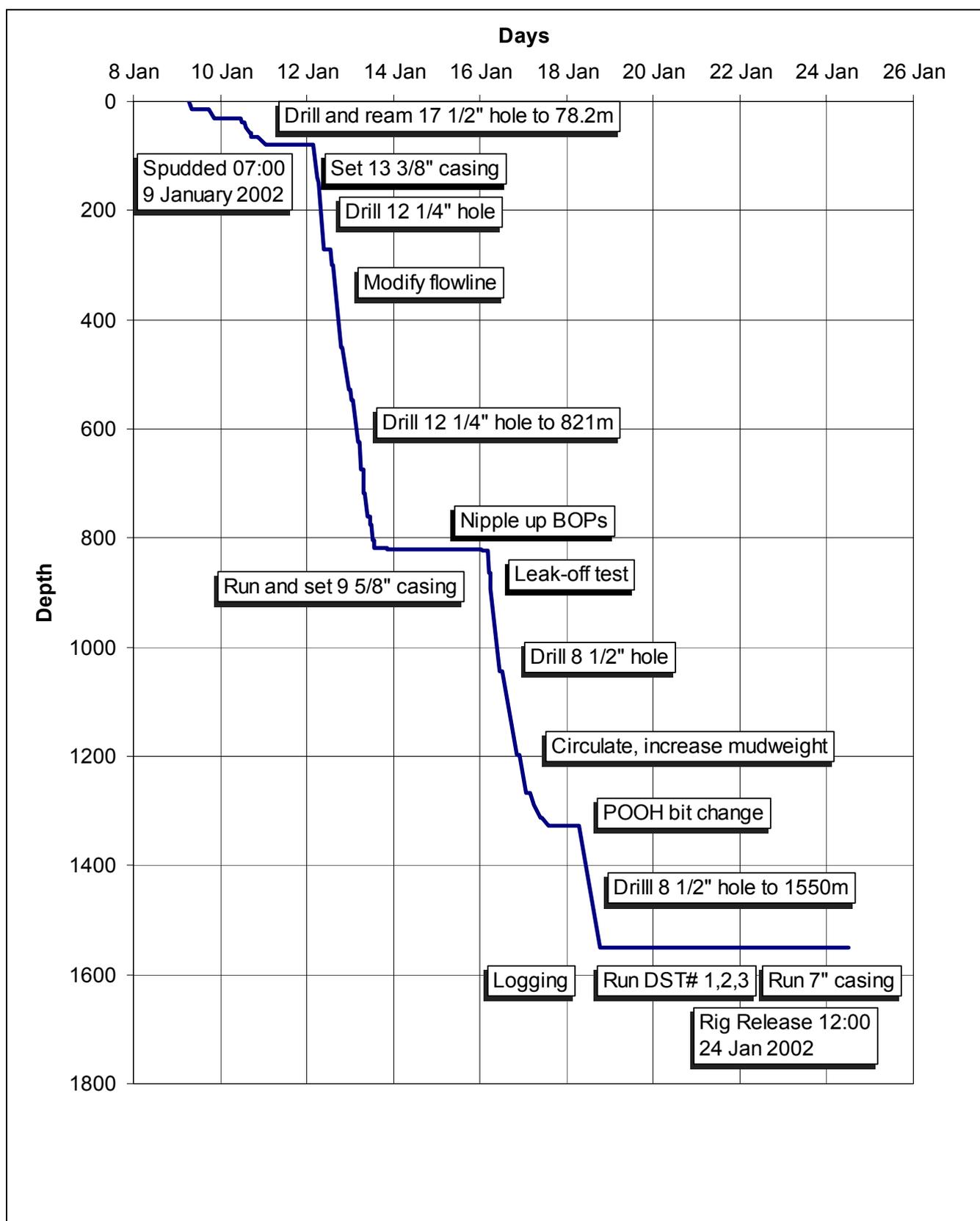
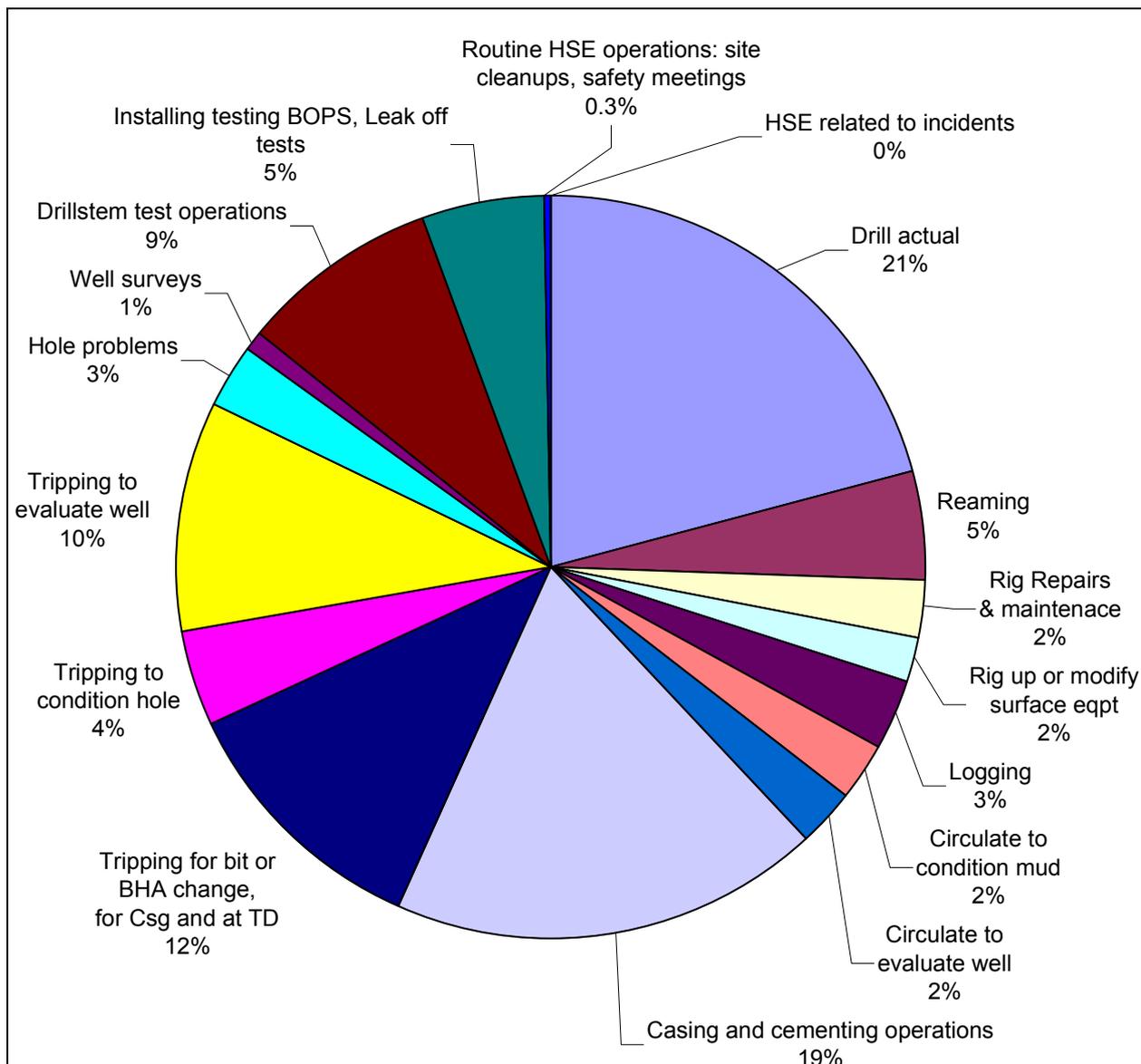


Figure 4: Time Analysis - Drilling Phase



3.3.3 Surveys

Deviation measured in the well did not exceed 3 ½ degrees.

Table 4: Deviation Surveys

Depth	Deviation
148	1°
299	1.5°
450	1°
821	Misrun
824	3 ½°
1044	3 ½°
1327	3 ½°

3.3 BHA AND BIT SUMMARIES

Drilling bits performed adequately. Air hammering proved effective in the basalt at surface. The rental PDC 8 ½” bit delivered very high ROP. Low ROP at the end of the bit run was attributed to sub-optimal face cleaning.

Table 5: Bit and BHA Record

Bit No	in	mm	Jets	Make	Type	IADC code	In	Out	Made	Hrs	Cond	Reason Pulled
1	17 ½	445		Drill quip	Air Hammer		6.5	31.5	25	2.75	good	Hole caving
	notes		Reamed 6.5-31.5m after 12 ¼” pilot hole air hammered to base basalt									
2	17 ½	445		Bourne	Drag		31.5	78.2	46.70	4.75		Casing point
	BHA		2 x 8” DC									
3	12 ¼	311	20-16-16	Varel	ETR1GMPS	115S	78.2	821	742.80	23.5	2-2-WT-A-E-I-D	Casing point
	BHA		2 X 8” DC, 1 x 8” stabilizer, 16 x 6 ¼” DC, drilling jars, XO									
4	8 ½	216	5 x 14	DBS	PDC		821	1327	506.00	28.5	1-1-1-A-X-I-P-R	Low ROP
	BHA		NBR, Pony DC, STB, 1 x DC, STB, jars, 2 x DC, XO									
5	8 ½	216	13-13-13	Hughes	GT-03	417	1327	1550	223.00	11.5	2-2-WT-A-B-I-D	TD
	BHA		NBR, Pony DC, STB, 1 x DC, STB, jars, 2 x DC, XO									

3.4 CASING AND CEMENTING REPORT

The casing and cementing program is summarised in Table 5 below.

Table 6: Casing and Cementing Details

Hole Size (in)	Hole Depth (mRT)	Casing Size (in)	Shoe Depth (mRT)	Casing type	Casing Eqpt	Cementing	Comment
17 1/2	78.2	13 3/8”	67.4	K55 BTC	Open		
12 1/4	821	9 5/8”	812.0	47 ppf L80 BTC	Float shoe, float collar	277bbl 13.2 ppg lead, 52bbl 15.6ppg tail (100% excess), disp w/ 10bbl water 185 bbl mud.	Approx 90 bbl cement returns. Bump plugs w/ 1300psi. Floats held OK
8 1/2	1550.0	7”	1536	23 ppf J55 BTC	Float shoe, float collar	498sx, 578 ft3 Class G 15.8 ppg, rise: 670m +40% excess. Disp w/ 10bbl water & 199 bbl mud	Bump plugs w/ 3000 psi, held 5 min OK. Well flowed, shut in pressure 13PSI, bled off OK.

3.5 DRILLING FLUIDS

Drilling fluid details are summarised in the Operational summaries (Section 3.2). The drilling fluid contractor's mud recap is provided in Appendix 4. Drilling fluid chemistry was effective throughout the program.

3.6 WELL TESTING & COMPLETION

3.6.1 OPERATIONS SUMMARY

Site operations recommenced on 18 March 2002 with unloading and rigging up surface equipment. Contractor personnel worked a day shift, travelling to Port Fairy for accommodation. A well check shot survey was recorded.

A tubing head was installed and the Imperial snubbing unit positioned over the well. The BOP was installed and tested to 2500 PSI. A scraper and mill were run to TD and 7 lb/bbl KCl brine circulated into the well.

The testing assembly was run in to the hole and the packer set at 1389mRT. A 2.8bbl water cushion was pumped. Expertest ran a 2.3" gauge ring and then pulled the PX prong and PX plug. Schlumberger ran in for GR-CCL correlation and ran perforation guns.

The intervals 1402 – 1406mRT and 1443 – 1452mRT were perforated. Well flow was too small to measure. A build-up against a surface shut-in was measured with the Expertest surface-readout gauge.

Expertest ran in with a PX plug. Fluid was tagged at 930m, calculated fluid influx was 5.4 bbl. Fluid was reversed out through the sliding sleeve. No gas was present. The packer was pulled and an ESVZ bridge plug set at 1400m and tested at 2000 psi.

The packer was set above 842mRT, PX plug and prong pulled and 600ft water cushion pumped. Schlumberger ran GR CCL and perforated the interval 862m – 866mRT. Surface pressure built to 70psig but flow died when the well was open at surface. A 1.75" gauge cutter was run to check for hydrate plugging. An EMR gauge was run at 500 ft stages. Pressures indicated a normal water hydrostatic gradient in the tubing. The packer was unseated and re-seated at 870mRT. The well flowed water from the annulus at 10 bbl/hr. The sliding sleeve was opened and the tubing swabbed until steady flow was established. The well flowed fresh water at 10bbl/hr (240 BWPD). The well was shut in at surface and equipment rigged down. Operations ceased on 26 March.

Testing was recommenced on 7 August 2002 with Expertest. The fluid in the tubing was swabbed down to ~591m. Three short intervals in the Flaxman Formation in the zone 1347 – 1358 were perforated. Perforations at 1356.5 to 1358.0m were monitored for 15 minutes with no increase in wellhead pressure. After sitting overnight the fluid level in the well had risen to 529m, there was an air blow (no gas) at the wellhead. The zone 1352.5m to 1354m was perforated with a 2 psi pressure rise noted at the wellhead. Fluid had risen to 518m. The zone 1347m to 1348m was perforated with a 1 psi pressure increase noted at the wellhead. The fluid level was ~520m. The well was swabbed to catch a sample. A sample of oily material in water was taken for analysis and found to contain a refined product (lubricating oil).

The well was suspended until 16 September 2002 when a pressure of 900 psi was noted on the wellhead. The well was flared and a gas sample was taken on 21 September 2002. A static pressure gradient survey on 22 September showed approximately 223m of gas 15m of oil and 1120m of completion brine in the tubing (measurement from the base of

Port Fairy No. 1 Well Completion Report

the perforated interval at 1358m). Swabbing of the well on 23 September produced samples of light oil in water. Wellhead pressure returned to 900 psi. The oil sample was analysed to be 52° oil. Fluid analyses are presented in Appendix 10.

3.6.2 COMPLETION SUMMARY

The details of the completion are shown in the completion status diagram. Completion and testing time performance times achieved are shown in Table 7 and in Figure 5.

Table 7: Completion Time Summary

Operation	Hours	%
Travel to/from wellsite	7.25	6%
Site & surface Equipment	17	14%
Logging & perfs	13.25	11%
Well head & BOPs	10.75	9%
Circulate fluid	1	1%
Tripping tubing	25.5	21%
Wireline & testing ops	41.5	34%
Plugging	2	2%
Rig up/down	5.5	4%
Total Hours	123.75	100%

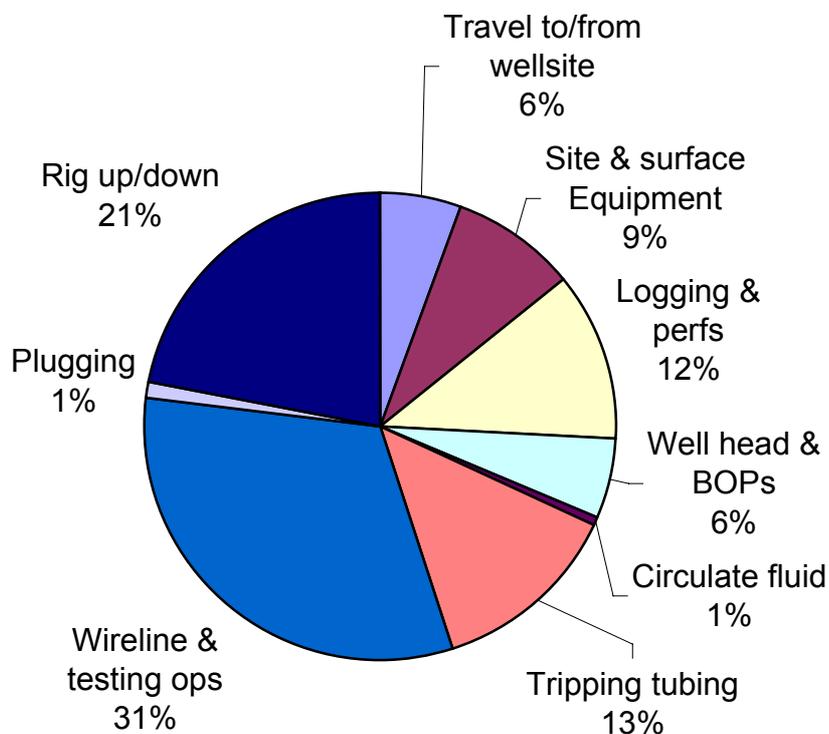
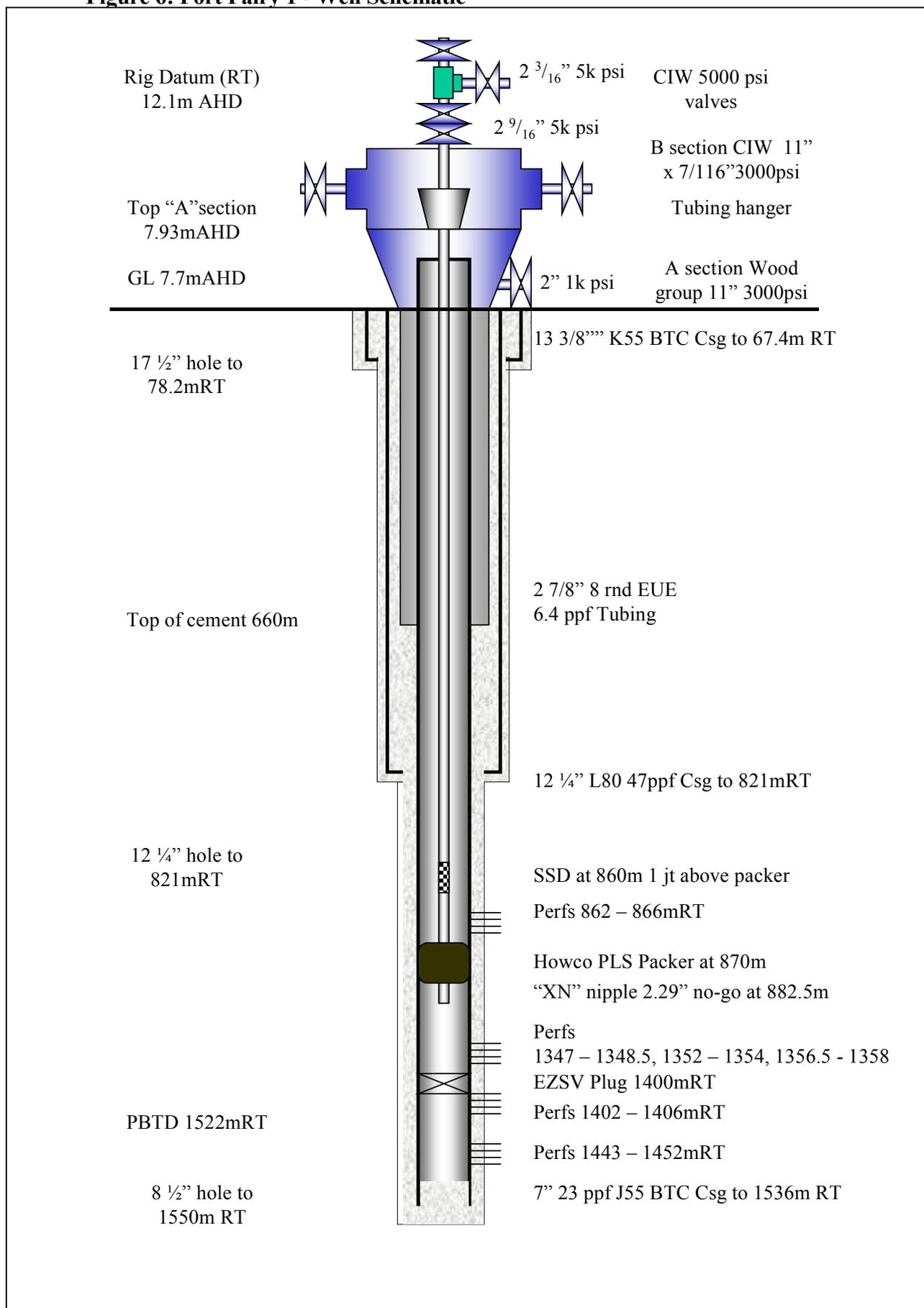


Figure 5: Time Breakdown - Testing phase

Figure 6: Port Fairy 1 - Well Schematic



Port Fairy No. 1 Well Completion Report

FORMATION SAMPLING AND TESTING

4.1 CUTTINGS

Cuttings were collected at 10metre intervals in the 12 ¼” hole section and then at 3m intervals to TD. Detailed cuttings descriptions are presented in Appendix 5.

4.2 CORES

No sidewall cores or conventional cores were cut.

4.3 TESTING

Straddle inflate testing was attempted after logging at TD. The results are summarised in Table 8. Drill stem testing was unsuccessful in evaluating the formation due to both the test tool plugging with drill cuttings and formation material, and packer failures. Drill stem test reports are provided in Appendix 6.

Table 8: Drill Stem Test Results

DST No	Interval	IF	ISI	FF	FSI	Result
1	1429 – 1451	9 minutes, weak blow throughout, NGTS	40 minutes	22 minutes. No Blow	40 minutes	Tool plugged during IF
2	1378 – 1402	Packer did not seat.				
3	860 – 868	5 minute, mod blow	45 minutes	No blow. test abandoned		Tool partially plugged during IF
4	859 – 868.9	Could not Inflate				Packer ruptured

4.4 SAMPLE ANALYSIS

Ten cuttings samples were submitted for palynological analysis to Biostrata Pty Ltd. The results of the palynological analysis are presented in Appendix 9. The palynology indicated that zone immediately above the top of the Eumeralla Formation contained an age equivalent of the lower part of the Waarre Formation (Waarre ‘B’). No material of age equivalent to the upper Waarre ‘C’ horizon, where good quality reservoir sands can be expected, was intersected in the well.

4.5 FLUID ANALYSES

Samples from fluid recoveries are presented in Appendix 10

4.6 MUD LOGGING

Geoservices provided a skid mounted mudlogging unit. Depth, penetration rate, mud gas, pump rate, and mud volume data as well as mud chromatographic analysis was recorded

Port Fairy No. 1 Well Completion Report

from surface to total depth. Rate of penetration, weight on bit, total gas and chromatography were recorded and plotted on the Formation Evaluation Log (Mud Log) and are presented in Enclosure 2.

4.7 WIRELINE LOGGING

Wireline logging was carried out by Schlumberger Seaco using a truck mounted MAXIS unit. The logging suite consisted of two logging runs. A composite log is provided in enclosure 1.

Logs are presented in Enclosure 3

Details of the log depth intervals for each log run are as follows.

Table 9: Detail of logs run

Run	Depth (mKB)	Log	Top Log Interval	Bottom Log Interval	BHT Deg. C
1	1523	Gamma Ray	15	1515	66
		SP	812	1501	
		LDT	812	1518	
		CNL	812	1515	
		DLL	812	1521	
		MSFL	812	1518	
		NGT	1200	1507	
		PEF	812	1518	
2	1523	Sonic	100	1510	NR

4.8 VELOCITY SURVEY

A velocity check shot survey in open hole was programmed, but could not be carried out because explosives could not be safely used with a microwave transmitter tower in close proximity. The velocity survey was eventually carried out using an airgun during the cased hole testing program. A synthetic seismogram was computed from the sonic log and checkshot surveys. The results are included in Appendix 7.

Appendix 1: Location Survey

Paul D Crowe, B.App.Sci. (Surv), LS, M.I.S.
Trevor W McDowell, B.App.Sci. (Surv), LS, M.I.S.

Paul Crowe
Licensed Surveyor
192 Koroit Street,
WARRNAMBOOL 3280
Ph 5561 1500
Fax 5561 2935
crowe@ansonie.com.au
ABN 5952 1601 183

RECEIVED
18 JAN 2002

BY:

17 Jan. 02

Essential Petroleum
226 Albert Road
SOUTH MELBOURNE 3205

Attention GORDON WAKELIN - KING
FAX 9699 3110

**PORT FAIRY #1
WELL SITE**

Dear Gordon

Following is a plan indicating the results of the survey of the location of the above well.

Yours faithfully



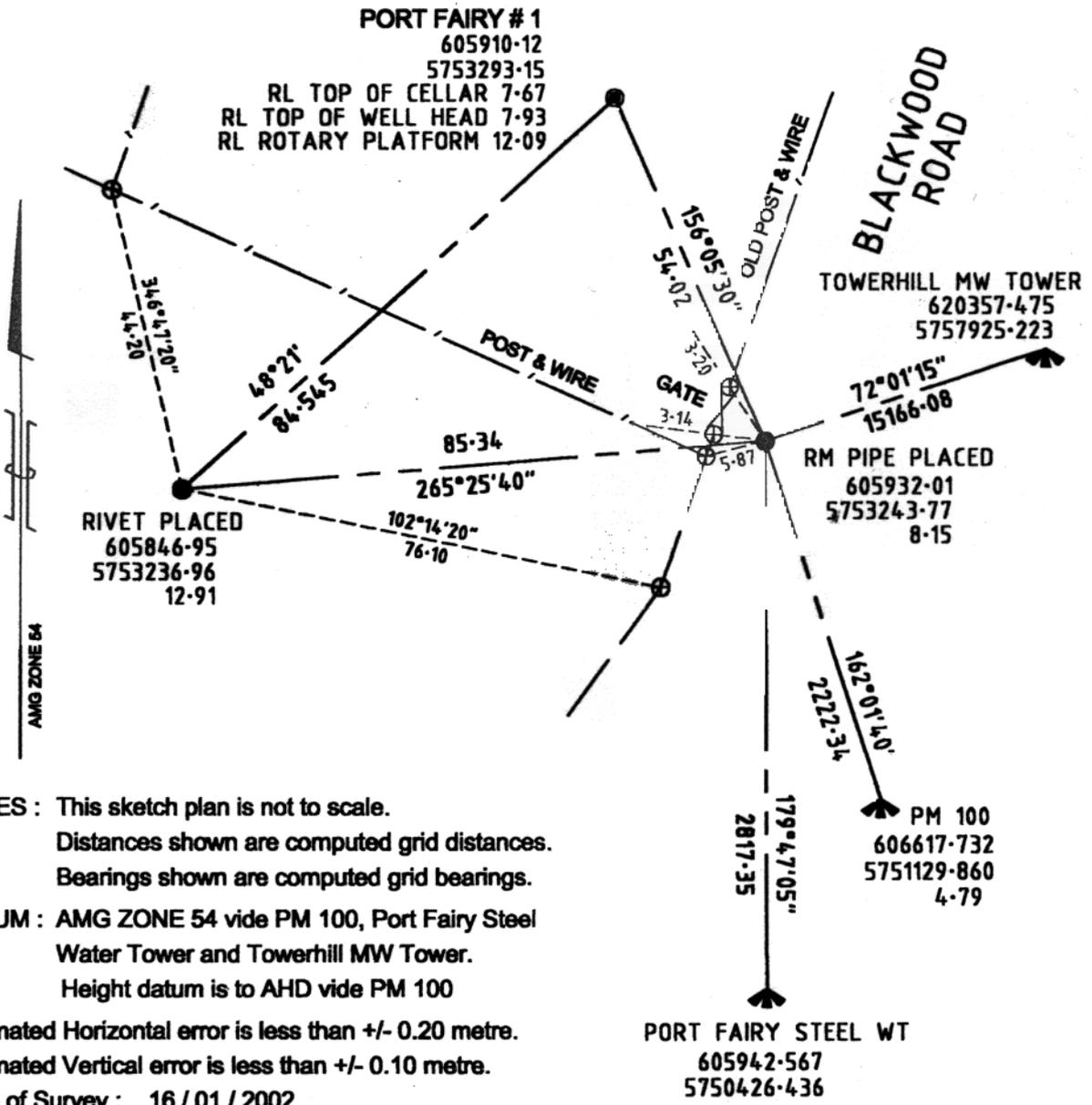
PAUL D CROWE

GAS WELL LOCATION

REFERENCE MARKS SKETCH PLAN

Well Name	PORT FAIRY # 1		
Spheroid	AGD	AMG	ZONE 54
Latitude	S 38°21'43.71"	Easting	605 910.12
Longitude	E 142°12'44.15"	Northing	5 753 293.15
Convergence	0°45'09"	Elevation	7.67 (AHD)
Scale Factor	0.99973627	Measurement units	(metres)

Spheroid	GDA94	MGA	ZONE 54
Latitude	S 38°21'38.40"	Easting	606 030.35
Longitude	E 142°12'49.03"	Northing	5 753 470.16



NOTES : This sketch plan is not to scale.
 Distances shown are computed grid distances.
 Bearings shown are computed grid bearings.
 DATUM : AMG ZONE 54 vide PM 100, Port Fairy Steel Water Tower and Towerhill MW Tower.
 Height datum is to AHD vide PM 100
 Estimated Horizontal error is less than +/- 0.20 metre.
 Estimated Vertical error is less than +/- 0.10 metre.
 Date of Survey : 16 / 01 / 2002

Date 16 / 01 / 2002
Trevor McDowell
 TREVOR McDOWELL
 LICENSED SURVEYOR

Paul Crowe Surveyor ABN 59521601183 "Ambleside" 192 Koroit Street Warrnambool 3280 Ph. (03) 5561 1500	REF 1062
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Appendix 2: Daily Drilling Reports

ORIGIN ENERGY PETROLEUM LTD

Daily Drilling Report

WELL:	Port Fairy #1	DATE:	10.01.02
PERMIT:	Vic P-152	REPORT #	2
RIG:	Mitchell Drilling Rig #150	D.F.S.	1

DEPTH 2400 Hrs:	31.5	STATUS @ 06:00 Hrs:	Wait on cement to set.
TVD:	31.5	FORMATION:	Newer basalt
24 HR PROGRESS:	31.5	LAST CASING:	NA @ <input style="width: 50px;" type="text"/>
HOLE SIZE:	17½"	WD (LAT):	<input style="width: 50px;" type="text"/>
		RT - GL / Air gap:	4.65
		SHOE L.O.T.:	<input style="width: 50px;" type="text"/>
		MAASP:	<input style="width: 50px;" type="text"/>
SURVEYS: <input style="width: 100%;" type="text"/>			

MUD PROPERTIES	ADDITIVES	CONSUMABLES			FORMATION DATA		
Density (ppg)			Rig	Workboat	Workboat	Name	
Funnel viscosity.		Fuel				Lithology	
PH		Potable water				Top depth RT.	
PV/YP(cp/lb/100ft ²)		Drill water				Trip gas %	
Gels 10secs / 10min		Barites				Connection Gas %	
WL API(cc/30min)		Cement				Background gas %	
WL HTHP(cc/30min)		Gel				ECD (ppg)	
Cake (1/16")		Base Oil				DRILLS / BOPS	
Solids %		PUMPS	1	2	3	LAST BOP DRILL	
Sand %		TYPE				LAST FIRE DRILL	
Chlorides (mg/l)		STROKE(in)				LAST MOB DRILL	
KCl %		LINER(in)				LAST ABN. RIG DRILL	
MBT (lb/bbl)		SPM				LAST BOP TEST	
Flowline Temp °C		LPM				BOP TEST DUE	
Hole volume bbls.		AV-DP(Ft/min)					HRS
Surface volume bbls.		AV-DC(Ft/min)					CUM
		SPP(kPa/psi)				1. Rig up / down.	
		SCR @ 40				2. Drilling.	3.00
		SCR @ 50				3. Reaming.	3½
						4. Trip	1.00
						5. Circ. / condition.	1.00
						6. Deviation survey	
						7. Run casing	6.00
						8. Cementing	2.00
						9. Handle Preventors	
						10. Marine riser.	
						11. Logging.	
						12. Press. test BOP	
						13. Repair rig.	
						14. Service rig.	
						15. Slip / cut drtg line	
						16. Drill stem test.	
						17. Fishing.	
						18. Well control.	
						19. Hang-off.	
						20. W.O.Weather	
						21. Lost circ.	
						22. Plug / Abandon.	
						23. Mob / Demob	
						24. Handle anchors.	
						25. Position rig.	
						26. Guide base / ROV.	
						27. Others	½
						TOTAL (HRS)	17.00
							0

Origin Energy Petroleum Ltd / Essential Petroleum Resources Limited.

Daily Drilling Report

WELL:	Port Fairy #1	DATE:	11.01.02
PERMIT:	Vic P-152	REPORT #	3
RIG:	Mitchell Drilling Rig #150	D.F.S.	2

DEPTH 2400 Hrs:	78.2	STATUS @ 06:00 Hrs:	Running 13.375" conductor
TVD:		FORMATION:	Port Campbell Lst
24 HR PROGRESS:	48	LAST CASING:	NA @
HOLE SIZE:	17½"	WD (LAT):	RT - GL / Air gap: 4.5
SURVEYS:		SHOE L.O.T.:	
		MAASP:	

MUD PROPERTIES	ADDITIVES	CONSUMABLES	FORMATION DATA	
Density (ppg)		Rig	Name	
Funnel viscosity.		Workboat	Lithology	
PH		Workboat	Top depth RT.	
PV/YP(cp/lb/100ft ²)			Trip gas %	
Gels 10secs / 10min			Connection Gas %	
WL API(cc/30min)			Background gas %	
WL HTHP(cc/30min)			ECD (ppg)	
Cake (1/16")			DRILLS / BOPS	
Solids %		PUMPS	LAST BOP DRILL	
Sand %		1	LAST FIRE DRILL	
Chlorides (mg/l)		2	LAST MOB DRILL	
KCl %		3	LAST ABN. RIG DRILL	
MBT (lb/bbl)			LAST BOP TEST	
Flowline Temp °C			BOP TEST DUE	
Hole volume bbls.				HRS
Surface volume bbls.				CUM
			1. Rig up / down.	6.00
			2. Drilling.	3.00
			3. Reaming.	5.50
			4. Trip	3.75
			5. Circ. / condition.	18.25
			6. Deviation survey	18.25
			7. Run casing	2.00
			8. Cementing	1.00
			9. Handle Preventors	21.25
			10. Marine riser.	21.25
			11. Logging.	21.25
			12. Press. test BOP	21.25
			13. Repair rig.	21.25
			14. Service rig.	0.25
			15. Slip / cut drtg line	21.50
			16. Drill stem test.	21.50
			17. Fishing.	21.50
			18. Well control.	21.50
			19. Hang-off.	21.50
			20. W.O.Weather	21.50
			21. Lost circ.	21.50
			22. Plug / Abandon.	21.50
			23. Mob / Demob	21.50
			24. Handle anchors.	21.50
			25. Position rig.	21.50
			26. Guide base / ROV.	21.50
			27. Others	2.50
				24.00
			TOTAL (HRS)	24.00

DOWNHOLE TOOLS	SERIAL No.	ROT/REAM HRS	DRILLING DATA
			DRAG - UP (mt)
			DRAG - DOWN (mt)
			TORQUE-On Bottom (amps)
			TORQUE-Off Bottom (amps)

BHA No.		BHA WEIGHT		STRING WT	
BHA Profile :					

 Essential Petroleum Resources Limited. Daily Drilling Report										
WELL:	Port Fairy #1				DATE:	15.01.02				
PERMIT:	PEP-152				REPORT #	7				
RIG:	Mitchell Drilling Rig #150				D.F.S.	6				
DEPTH 0600 Hrs:	Surface			STATUS @ 06:00 Hrs:	Nipple up BOP's & associated equipment					
TVD:	821.00 m			FORMATION:	N/A					
24 HR PROGRESS:	N/A		LAST CASING:	9 5/8 @ 812.0m		SHOE L.O.T.:	N/A			
HOLE SIZE:	12 1/4"		WD (LAT):	N/A		RT - GL / Air gap:	4.5m		MAASP:	N/A
SURVEYS:										
MUD PROPERTIES		FL	PIT	CONSUMABLES			FORMATION DATA			
Sample taken @			10:00 / 821m		Rig	Workboat	Workboat	Name	N/A	
Flowline Temp °C			-	Fuel				Lithology		
Weight ppg / SG			9.25 / 1.11	Potable water				Top depth RT.		
Funnel viscosity.			37	Drill water				Trip gas %		
PV/YP(cp/lb/100ft ²)			7 / 8	Barites				Connection Gas %		
Gels 10secs / 10min			8	Cement				Background gas %		
WL API(cc/30min)			20	Gel				ECD (ppg)		
WL HTHP(cc/30min)			-	Base Oil				DRILLS / BOPS		
Cake (1/32")			-	PUMPS	1	2	3	LAST BOP DRILL		
Solids %			6.8	TYPE	SOILMEC			LAST FIRE DRILL		
Sand %			0.75	STROKE(in)	7"			LAST MOB DRILL		
MBT(lb/bbl)			15	LINER(in)	7"			LAST ABN. RIG DRILL		
PH			9.0	SPM	140			LAST BOP TEST		
Chlorides (mg/l)			1000	GPM	480			BOP TEST DUE		
KCl %			-	AV-DP(Ft/min)	83				HRS	CUM
PHPA (Calc ppb)			-	AV-DC(Ft/min)	102			1. Rig up / down.		38.75
				SPP(kPa/psi)	367			2. Drilling.		31.75
Hole volume bbls.			185	SCR @ 40				3. Reaming.		
Surface volume bbls.			-	SCR @ 50				4. Trip		16.75
BIT DATA			WEATHER / RIG RESPONSE							
Bit Run	2			Wind Speed (kts)				5. Circ. / condition.	2.00	7.00
Diameter	12 1/4"			Direction				6. Deviation survey		
Type & manufacture	122ETRIGMPS VAREL			Temperature				7. Run casing	5.25	18.25
IADC code				Barometric pressure millibar				8. Cementing	9.00	17.75
Serial number	165767			Barometer rise / fall				9. Handle Preventors		
Nozzles	16-16-20			Visibility(NM)				10. Riser, flowline	7.75	
Depth In (m)	78m			Sea state				11. Logging.		
Depth Out	821m			Swell / Period / Direction				12. Press. test BOP		
Drilled (m cum/dly)				Waves / period / direction				13. Repair rig.		1.50
Hours (cum/dly)				Heave				14. Service rig.		0.25
Dull grade				Pitch				15. Slip / cut drlg line		
Average ROP (m/hr)				Roll				16. Drill stem test.		
WOB Klbs				Anchor tension				17. Fishing.		
RPM				Anchor tension				18. Well control.		
Jet velocity				Riser tension				19. Hang-off.		
HHP @ BIT				VARIABLE DECK LOAD (Kips)				20. W.O.Weather		
BHA No.	1	BHA WEIGHT				STRING WT		21. Lost circ.		
BHA Profile :								22. Plug / Abandon.		
								23. Mob / Demob		
								24. Handle anchors.		
								25. Position rig.		
DOWNHOLE TOOLS	SERIAL No.	ROT/REAM HRS	DRILLING DATA							
			DRAG - UP (mt)				26. Guide base / ROV.			
			DRAG - DOWN (mt)				27. Others		10.25	
			TORQUE-On Bottom (amps)							
			TORQUE-Off Bottom (amps)							
							TOTAL (HRS)	24.00	142.25	

Essential Petroleum Resources Limited.

Daily Drilling Report

WELL:	Port Fairy #1	DATE:	19-Jan-02
PERMIT:	PEP-152	REPORT #	11
RIG:	Mitchell Drilling Rig #150	D.F.S.	10

DEPTH 0600 Hrs:	1550.00 m	STATUS @ 06:00 Hrs:	Preparing to rig Schlumberger up.
TVD:	1550.00 m	FORMATION:	Eumerella
24 HR PROGRESS:	223.00 m	LAST CASING:	9 5/8 @ 812.0m
HOLE SIZE:	8 1/2"	WD (LAT):	N/A
		RT - GL / Air gap:	4.5m
		SHOE L.O.T.:	13.5 ppg
		MAASP:	620 psi
SURVEYS:			

MUD PROPERTIES	FL	PIT	CONSUMABLES			FORMATION DATA		
Sample taken @	1130 / 1371m	1930 / 1550m		Rig	Workboat	Workboat	Name	Eumerella
Flowline Temp °C	120	124	Fuel				Lithology	
Weight ppg / SG	9.60 / 1.15	9.70 / 1.16	Potable water				Top depth RT.	1369.50 m
Funnel viscosity.	46	48	Drill water				Trip gas %	
PVYP(cp/lb/100ft2)	16 / 21	19 / 23	Barites				Connection Gas %	
Gels 10secs / 10min	3 - 7	5 - 8	Cement				Background gas %	
WL API(cc/30min)	6	6.4	Gel				ECD (ppg)	
WL HTHP(cc/30min)			Base Oil				DRILLS / BOPS	
Cake (1/32")	1.5	1.5	PUMPS	1	2	3	LAST BOP DRILL	19/01/02
Solids %	7.4	8.2	TYPE	SOILMEC			LAST FIRE DRILL	
Sand %	1.75	1.50	STROKE(in)	6			LAST MOB DRILL	
MBT(lb/bbl)	9.0	9.5	LINER(in)	6			LAST ABN. RIG DRILL	
PH	8.8	9.0	SPM	150			LAST BOP TEST	15/01/02
Chlorides (mg/l)	21,500	21,000	GPM	378			BOP TEST DUE	29/01/02
K+ (mg/l)	23,200	21,600	AV-DP(Ft/min)	154				HRS CUM
KCl %	4.3	4.0	AV-DC(Ft/min)	279			1. Rig up / down.	38.75
PHPA (Calc ppb)	1.23	1.22	SPP	1150			2. Drilling.	11.50 47.25
Hole volume bbls.	346		SCR @ 36	10bar			3. Reaming.	2.50 12.50
Surface volume bbls.	150		SCR @ 64	28bar			4. Trip	7.00 36.00
							5. Circ. / condition.	3.00 16.00
							6. Deviation survey	1.00
							7. Run casing	18.25
							8. Cementing	17.75
							9. Handle Preventors	3.25
							10. Riser, flowline	
							11. Logging.	
							12. Press. test BOP	5.00
							13. Repair rig.	3.75
							14. Service rig.	1.25
							15. Slip / cut drlg line	
							16. Drill stem test.	
							17. Fishing.	
							18. Well control.	
							19. Hang-off.	
							21. W.O.Weather	
							22. Lost circ.	
							23. Plug / Abandon.	
							24. Mob / Demob	
							25. Handle anchors.	
							26. Position rig.	
							27. Guide base / ROV.	
							28. Others	11.50
							TOTAL (HRS)	24.00 212.25

DOWNHOLE TOOLS	SERIAL No.	ROT/REAM HRS	DRILLING DATA		
Jars	DAH 02993	35%	DRAG - UP (mt)		
Nb slab	MDC	30%	DRAG - DOWN (mt)		
Stab	MDC	30%	TORQUE-On Bottom (amps)		
Stab	MDC	30%	TORQUE-Off Bottom (amps)		

BHA No. 2 **BHA WEIGHT** **STRING WT**

BHA Profile : Bit / NB / Pony/STB/ DC/STB/ 16 xDc/Jars/ 2 x Dc./Xo

Origin Energy Ltd / Essential Petroleum Resources Limited.

Daily Drilling Report

WELL: Port Fairy #1
PERMIT: PEP-152
RIG: Mitchell Drilling Rig #150

DATE: 22-Jan-02
REPORT # 14
D.F.S. 13

DEPTH 0600 Hrs: 1310.00 m **STATUS @ 06:00 Hrs:** RIH , wiper trip
TVD: 1550.00 m **FORMATION:** Eumeralla
24 HR PROGRESS: - **LAST CASING:** 9 5/8 @ 812.0m **SHOE L.O.T.:** 13.5 ppg
HOLE SIZE: 8 1/2" **WD (LAT):** N/A **RT - GL / Air gap:** 4.5m **MAASP:** 620 psi
SURVEYS:

MUD PROPERTIES	PIT	PIT	CONSUMABLES			FORMATION DATA		
Sample taken @		17:00 / 1550m		Rig	Workboat	Workboat	Name	Eumeralla
Flowline Temp °C			Fuel				Lithology	
Weight ppg / SG		9.70 / 1.16	Potable water				Top depth RT.	1369.50 m
Funnel viscosity.		44	Drill water				Trip gas %	
PV/YP(cp/lb/100ft2)		19 / 20	Barites				Connection Gas %	
Gels 10secs / 10min		4 / 6	Cement				Background gas %	
WL API(cc/30min)		5.0	Gel				ECD (ppg)	
WL HTHP(cc/30min)		-	Base Oil				DRILLS / BOPS	
Cake (1/32")		1.5	PUMPS	1	2	3	LAST BOP DRILL	19/01/02
Solids %		8.0	TYPE	SOILMEC			LAST FIRE DRILL	
Sand %		1.25	STROKE(in)	6			LAST MOB DRILL	
MBT(lb/bbl)		8.5	LINER(in)	6			LAST ABN. RIG DRILL	
PH		9.2	SPM	150			LAST BOP TEST	15/01/02
Chlorides (mg/l)		20,500	GPM	378			BOP TEST DUE	29/01/02
K+ (mg/l)		200	AV-DP(Ft/min)	154				HRS CUM
KCl %		2.5	AV-DC(Ft/min)	279			1. Rig up / down.	38.75
PHPA (Calc ppb)		1.10	SPP	1150			2. Drilling.	47.25
Hole volume bbls.		365	SCR @ 69	28bar			3. Reaming.	12.50
Surface volume bbls.		150	SCR @ 36	18bar			4. Trip	5.00 48.75
BIT DATA			WEATHER / RIG RESPONSE					
Bit Run	3	4	Wind Speed (kts)				5. Circ. / condition.	1.00 18.00
Diameter	8 1/2"	8 1/2"	Direction				6. Deviation survey	1.00
Type & manufacture	DBS	GT03	Temperature				7. Run casing	18.25
IADC code	PDC	HTC	Barometric pressure millibar				8. Cementing	17.75
Serial number	5996742 RW	L45CV	Barometer rise / fall				9. Handle Preventors	3.25
Nozzles	14 - 14 - 14 - 14 - 14	13 - 13 - 13	Visibility(NM)				10. Riser, flowline	
Depth In (m)	821m	1327m	Sea state				11. Logging.	11.50
Depth Out	1327m	1550m	Swell / Period / Direction				12. Press. test BOP	5.00
Drilled (m cum/dly)	506m	223m	Waves / period / direction				13. Repair rig.	3.75
Hours (cum/dly)	7¼ / 30¼		Heave				14. Service rig.	1.25
Dull grade	Ring		Pitch				15. Slip / cut drlg line	
Average ROP (m/hr)	16.7		Roll				16. Drill stem test.	18.00 43.25
WOB Klbs	5-15		Anchor tension				17. Fishing.	
RPM	140		Anchor tension				18. Well control.	
Jet velocity	135		Riser tension				19. Hang-off.	
HHP @ BIT	39		VARIABLE DECK LOAD (Kips)				20. W.O.Weather	
BHA No.	2	BHA WEIGHT		STRING WT			21. Lost circ.	
BHA Profile : 8 1/2" HTC bit - Drill collors - Drill pipe							22. Plug / Abandon.	
							23. Mob / Demob	
							24. Handle anchors.	
							25. Position rig.	
							26. Guide base / ROV.	
DOWNHOLE TOOLS	SERIAL No.	ROT/REAM HRS	DRILLING DATA					
			DRAG - UP (mt)					
			DRAG - DOWN (mt)					
			TORQUE-On Bottom (amps)					
			TORQUE-Off Bottom (amps)					
						TOTAL (HRS)	24.00	281.75

Origin Energy Ltd / Essential Petroleum Resources Limited.

Daily Drilling Report

WELL:	Port Fairy #1	DATE:	23-Jan-02
PERMIT:	PEP-152	REPORT #	15
RIG:	Mitchell Drilling Rig #150	D.F.S.	14

DEPTH 0600 Hrs:	873.02 m	STATUS @ 06:00 Hrs:	DST #3
TVD:	1550.00 m	FORMATION:	Eumeralla
24 HR PROGRESS:	-	LAST CASING:	9 5/8 @ 812.0m
HOLE SIZE:	8 1/2"	WD (LAT):	N/A
SURVEYS:		RT - GL / Air gap:	4.5m
		SHOE L.O.T.:	13.5 ppg
		MAASP:	620 psi

MUD PROPERTIES	PIT	PIT	CONSUMABLES			FORMATION DATA		
Sample taken @			Rig	Workboat	Workboat	Name	Eumeralla	
Flowline Temp °C			Fuel			Lithology		
Weight ppg / SG			Potable water			Top depth RT.	1369.50 m	
Funnel viscosity.			Drill water			Trip gas %		
PV/YP(cp/lb/100ft2)			Barites			Connection Gas %		
Gels 10secs / 10min			Cement			Background gas %		
WL API(cc/30min)			Gel			ECD (ppg)		
WL HTHP(cc/30min)			Base Oil			DRILLS / BOPS		
Cake (1/32")			PUMPS	1	2	3	LAST BOP DRILL	19/01/02
Solids %			TYPE	SOILMEC			LAST FIRE DRILL	
Sand %			STROKE(in)	6			LAST MOB DRILL	
MBT(lb/bbl)			LINER(in)	6			LAST ABN. RIG DRILL	
PH			SPM	150			LAST BOP TEST	15/01/02
Chlorides (mg/l)			GPM	378			BOP TEST DUE	29/01/02
K+ (mg/l)			AV-DP(Ft/min)	154			HRS	CUM
KCl %			AV-DC(Ft/min)	279			1. Rig up / down.	38.75
PHPA (Calc ppb)			SPP	1150			2. Drilling.	47.25
Hole volume bbls.			SCR @ 69	28bar			3. Reaming.	3.00
Surface volume bbls.			SCR @ 36	18bar			4. Trip	5.00
							5. Circ. / condition.	2.50
							6. Deviation survey	1.00
BIT DATA			WEATHER / RIG RESPONSE					
Bit Run	3	4	Wind Speed (kts)				7. Run casing	18.25
Diameter	8 1/2"	8 1/2"	Direction				8. Cementing	17.75
Type & manufacture	DBS	GT03	Temperature				9. Handle Preventors	3.25
IADC code	PDC	HTC	Barometric pressure millibar				10. Riser, flowline	
Serial number	5996742 RW	L45CV	Barometer rise / fall				11. Logging.	11.50
Nozzles	14 - 14 - 14 - 14 - 14	13 - 13 - 13	Visibility(NM)				12. Press. test BOP	5.00
Depth In (m)	821m	1327m	Sea state				13. Repair rig.	3.75
Depth Out	1327m	1550m	Swell / Period / Direction				14. Service rig.	0.50
Drilled (m cum/dly)	506m	223m	Waves / period / direction				15. Slip / cut drlg line	
Hours (cum/dly)	7¼ / 30¼		Heave				16. Drill stem test.	13.00
Dull grade	Ring		Pitch				17. Fishing.	56.25
Average ROP (m/hr)	16.7		Roll				18. Well control.	
WOB Klbs	5-15		Anchor tension				19. Hang-off.	
RPM	140		Anchor tension				21. W.O.Weather	
Jet velocity	135		Riser tension				22. Lost circ.	
HHP @ BIT	39		VARIABLE DECK LOAD (Kips)				23. Plug / Abandon.	
BHA No.	2	BHA WEIGHT		STRING WT			24. Mob / Demob	
BHA Profile :	Refer to DST #3 BHA sheet.						25. Handle anchors.	
DOWNHOLE TOOLS	SERIAL No.	ROT/REAM HRS	DRILLING DATA					
			DRAG - UP (mt)			26. Position rig.		
			DRAG - DOWN (mt)			27. Guide base / ROV.		
			TORQUE-On Bottom (amps)			28. Others		11.50
			TORQUE-Off Bottom (amps)					
						TOTAL (HRS)	24.00	305.75

Appendix 3 Casing Tables

PORT FAIRY #1 9 5/8" SURFACE CASING RUNNING TALLY

Joint No.	Joint Length (meters)	Cumulative Length (meters)	Depth Landed 812.00m	Capacity (bbls) 0.07324bbl/ft	Displacement (bbls) 0.08117bbl/ft	String Weight klb 47.00lb/ft	Remarks
Shoe & Jt	12.82	12.82	812.00	3.08 bbl	3.41 bbl	1.977	shoe length 0.52m float length 0.35m
Float & Jt	12.52	25.34	799.18	3.01 bbl	6.75 bbl	3.907	
3	12.20	37.54	786.66	5.94 bbl	10.00 bbl	5.789	
4	12.12	49.66	774.46	8.85 bbl	13.22 bbl	7.657	
5	11.88	61.54	762.34	11.71 bbl	16.39 bbl	9.489	
6	11.77	73.31	750.46	14.54 bbl	19.52 bbl	11.304	
7	12.29	85.60	738.69	17.49 bbl	22.79 bbl	13.199	
8	11.93	97.53	726.40	20.35 bbl	25.97 bbl	15.039	
9	11.78	109.31	714.47	23.19 bbl	29.11 bbl	16.855	
10	12.51	121.82	702.69	26.19 bbl	32.44 bbl	18.784	
11	11.77	133.59	690.18	29.02 bbl	35.57 bbl	20.599	
12	12.22	145.81	678.41	31.96 bbl	38.83 bbl	22.484	
13	11.28	157.09	666.19	34.67 bbl	41.83 bbl	24.223	
14	11.14	168.23	654.91	37.34 bbl	44.80 bbl	25.941	
15	11.86	180.09	643.77	40.19 bbl	47.96 bbl	27.769	
16	11.07	191.16	631.91	42.85 bbl	50.90 bbl	29.476	
17	11.36	202.52	620.84	45.58 bbl	53.93 bbl	31.228	
18	12.41	214.93	609.48	48.56 bbl	57.23 bbl	33.142	
19	12.08	227.01	597.07	51.47 bbl	60.45 bbl	35.004	
20	12.44	239.45	584.99	54.46 bbl	63.76 bbl	36.923	
21	12.82	252.27	572.55	57.54 bbl	67.18 bbl	38.899	
22	12.00	264.27	559.73	60.42 bbl	70.37 bbl	40.750	
23	12.02	276.29	547.73	63.31 bbl	73.57 bbl	42.603	
24	12.34	288.63	535.71	66.27 bbl	76.86 bbl	44.506	
25	10.97	299.60	523.37	68.91 bbl	79.78 bbl	46.198	
26	12.18	311.78	512.40	71.84 bbl	83.02 bbl	48.076	
27	12.08	323.86	500.22	74.74 bbl	86.24 bbl	49.938	
28	11.84	335.70	488.14	77.58 bbl	89.39 bbl	51.764	
29	12.60	348.30	476.30	80.61 bbl	92.75 bbl	53.707	
30	11.60	359.90	463.70	83.40 bbl	95.84 bbl	55.496	
31	11.15	371.05	452.10	86.08 bbl	98.81 bbl	57.215	
32	12.09	383.14	440.95	88.98 bbl	102.03 bbl	59.079	
33	12.21	395.35	428.86	91.92 bbl	105.28 bbl	60.962	
34	12.42	407.77	416.65	94.90 bbl	108.59 bbl	62.877	
35	11.79	419.56	404.23	97.74 bbl	111.73 bbl	64.695	
36	12.10	431.66	392.44	100.64 bbl	114.95 bbl	66.561	
37	12.11	443.77	380.34	103.55 bbl	118.17 bbl	68.428	
38	11.98	455.75	368.23	106.43 bbl	121.36 bbl	70.276	
39	12.22	467.97	356.25	109.37 bbl	124.62 bbl	72.160	
40	11.55	479.52	344.03	112.14 bbl	127.69 bbl	73.941	
41	12.52	492.04	332.48	115.15 bbl	131.03 bbl	75.871	
42	11.65	503.69	319.96	117.95 bbl	134.13 bbl	77.668	
43	12.14	515.83	308.31	120.87 bbl	137.36 bbl	79.540	
44	11.83	527.66	296.17	123.71 bbl	140.51 bbl	81.364	
45	12.41	540.07	284.34	126.69 bbl	143.82 bbl	83.277	
46	11.58	551.65	271.93	129.47 bbl	146.90 bbl	85.063	
47	11.58	563.23	260.35	132.26 bbl	149.98 bbl	86.849	
48	10.99	574.22	248.77	134.90 bbl	152.91 bbl	88.543	
49	12.49	586.71	237.78	137.90 bbl	156.24 bbl	90.469	
50	12.08	598.79	225.29	140.80 bbl	159.45 bbl	92.332	
51	12.34	611.13	213.21	143.77 bbl	162.74 bbl	94.235	
52	11.91	623.04	200.87	146.63 bbl	165.91 bbl	96.071	
53	11.99	635.03	188.96	149.51 bbl	169.10 bbl	97.920	
54	12.21	647.24	176.97	152.44 bbl	172.35 bbl	99.803	
55	12.24	659.48	164.76	155.39 bbl	175.61 bbl	101.690	
56	12.42	671.90	152.52	158.37 bbl	178.92 bbl	103.605	
57	11.81	683.71	140.10	161.21 bbl	182.07 bbl	105.426	
58	12.19	695.90	128.29	164.14 bbl	185.31 bbl	107.306	
59	12.36	708.26	116.10	167.11 bbl	188.60 bbl	109.212	
60	12.54	720.80	103.74	170.12 bbl	191.94 bbl	111.146	
61	12.37	733.17	91.20	173.09 bbl	195.24 bbl	113.053	
62	12.59	745.76	78.83	176.12 bbl	198.59 bbl	114.994	
63	12.35	758.11	66.24	179.08 bbl	201.88 bbl	116.899	
64	12.52	770.63	53.89	182.09 bbl	205.21 bbl	118.829	

PORT FAIRY #1 7" CASING CEMENT JOB

EPR. Cementing Company : Dowell Date of Job: 24th Jan 2002

Single Stage

LEAD CEMENT	NA	ppg	TAIL CEMENT	15.8	ppg	Diesel Spacer	7.09	ppg
previous shoe	818	m	top of tail	670	m	Amount	n/a	bbl
bottom of lead		m	bottom of tail	1540	m	diesel	n/a	bbl
gauge hole (ft3)		ft3	gauge hole (ft3)	362.1	ft3	MCS B	n/a	
plus 100% excess		ft3	plus 40% excess	506.9	ft3	Chemical Wash	8.3	ppg
Caliper hole volume (logs)	n/a	ft3	Caliper hole volume (logs)	550.0	ft3	Amount	n/a	bbl
csg-csg ann. cap. (cuft/ft)		ft3/ft	csg-csg ann. cap. (cuft/ft)	0.1268	ft3/ft	water (39.9 galls/bbl)	n/a	bbl
length (ft)		ft	length (ft)	492	ft	MCS B (2.1 galls/bbl)	n/a	gal
csg-csg volume (cuft)		ft3	csg-csg volume (cuft)	62	ft3	FP9L	0	gal
shoe track		ft3	shoe track	9.0	ft3			
slurry volume (cuft)		ft3	slurry volume (cuft)	577.9	ft3	Pressures		
No. of sacks		sx	No. of sacks	498	sx	max differential	1325	psi
mix water theory		bbls	mix water theory	61.7	bbls			
mix water actual		bbls	mix water actual	61.7	bbls	Job Time Estimate		
D081 Retarder 0.04 gals/sx		gals	D145A Dispersant	32	gal	mixing slurry	40	min
bentonite (30kg/tonne)		sx	D144 Antifoam	5	gal	displacement	23	min
D144 Antifoam.		gals				total time	70	min
D145A Retarder						thickening time	4	hour
CaCl2	0	kgs						
Displacement	199.0	bbl	JOB SUMMARY					
Cementer	199	bbl Water	Time	mins	Description & Comments			
Rig pump	0.0	bbl 9.1 mud	04:30 - 04:32	2	Pump 10 bbls water ahead.			
liner size (in)	7.00	in	04:32 - 04:35	5	Test lines 3500psi Ok.			
97% efficiency	0.078	bbl/stk	04:35 - 05:15	40	Mix and pump tail.			
number of strokes	0		05:15 - 05:40	25	Wash out line. Drop top plug. Displace.			
rate	11	BPM	05:40 - 05:50	10	Bump plug w/ 3000 psi 5 mins OK.			
SPM	0				Nil cmt returns.			
annular velocity	110	fpm						
approx. time	17	minutes			Float held OK.			
					Well was flowing strongly after plug bumped. Shut annu:			
					Shut in pressure 10 psi. Observe 10mins. 13 psi.			
					Bled down OK.			

Joint No.	Joint Length	Cumulative Length	Depth Landed	Capacity (bbbls)	Displacement (bbbls)	String Weight MT	Remarks
		0.00	0.00				String wt is buoyed wt.
		0.00	0.00				
		0.00	0.00	0.0	0.00	0.000	
XN	0.28	0.28	850.00	0.0	0.00	0.002	
1	9.41	9.69	849.72	0.2	0.07	0.064	
Packer	1.15	10.84	840.31	0.2	0.08	0.072	
2	9.31	20.15	839.16	0.4	0.15	0.134	
SSD	1.18	21.33	829.85	0.4	0.16	0.142	
3	9.31	30.64	828.67	0.6	0.23	0.204	
4	9.35	39.99	819.36	0.8	0.29	0.266	
5	9.40	49.39	810.01	0.9	0.36	0.329	
6	9.34	58.73	800.61	1.1	0.43	0.391	
7	9.37	68.10	791.27	1.3	0.50	0.453	
8	9.41	77.51	781.90	1.5	0.57	0.516	
9	9.39	86.90	772.49	1.7	0.64	0.578	
10	9.41	96.31	763.10	1.8	0.71	0.641	
11	9.36	105.67	753.69	2.0	0.78	0.703	
12	9.32	114.99	744.33	2.2	0.85	0.765	
13	9.43	124.42	735.01	2.4	0.91	0.828	
14	9.29	133.71	725.58	2.5	0.98	0.890	
15	9.31	143.02	716.29	2.7	1.05	0.952	
16	9.43	152.45	706.98	2.9	1.12	1.014	
17	9.38	161.83	697.55	3.1	1.19	1.077	
18	9.41	171.24	688.17	3.3	1.26	1.139	
19	9.43	180.67	678.76	3.4	1.33	1.202	
20	9.36	190.03	669.33	3.6	1.40	1.264	
21	9.47	199.50	659.97	3.8	1.47	1.327	
22	9.44	208.94	650.50	4.0	1.54	1.390	
23	9.44	218.38	641.06	4.1	1.60	1.453	
24	9.47	227.85	631.62	4.3	1.67	1.516	
25	9.44	237.29	622.15	4.5	1.74	1.579	
26	9.32	246.61	612.71	4.7	1.81	1.641	
27	9.30	255.91	603.39	4.9	1.88	1.703	
28	9.43	265.34	594.09	5.0	1.95	1.765	
29	9.43	274.77	584.66	5.2	2.02	1.828	
30	9.29	284.06	575.23	5.4	2.09	1.890	
31	9.29	293.35	565.94	5.6	2.16	1.952	
32	9.32	302.67	556.65	5.7	2.22	2.014	
33	9.48	312.15	547.33	5.9	2.29	2.077	
34	9.46	321.61	537.85	6.1	2.36	2.140	
35	9.47	331.08	528.39	6.3	2.43	2.203	
36	9.47	340.55	518.92	6.5	2.50	2.266	
37	9.48	350.03	509.45	6.6	2.57	2.329	
38	9.47	359.50	499.97	6.8	2.64	2.392	
39	9.49	368.99	490.50	7.0	2.71	2.455	
40	9.49	378.48	481.01	7.2	2.78	2.518	
41	9.48	387.96	471.52	7.4	2.85	2.581	
42	9.49	397.45	462.04	7.5	2.92	2.644	
43	9.49	406.94	452.55	7.7	2.99	2.708	
44	9.46	416.40	443.06	7.9	3.06	2.771	
45	9.46	425.86	433.60	8.1	3.13	2.834	
46	9.46	435.32	424.14	8.3	3.20	2.896	
47	9.48	444.80	414.68	8.4	3.27	2.960	
48	9.47	454.27	405.20	8.6	3.34	3.023	
49	9.49	463.76	395.73	8.8	3.41	3.086	
50	9.48	473.24	386.24	9.0	3.48	3.149	
51	9.49	482.73	376.76	9.2	3.55	3.212	
52	9.49	492.22	367.27	9.4	3.62	3.275	
53	9.48	501.70	357.78	9.5	3.69	3.338	
54	9.44	511.14	348.30	9.7	3.76	3.401	
55	9.49	520.63	338.86	9.9	3.83	3.464	
56	9.48	530.11	329.37	10.1	3.90	3.527	
57	9.49	539.60	319.89	10.3	3.97	3.590	
58	9.48	549.08	310.40	10.4	4.04	3.653	
59	9.49	558.57	300.92	10.6	4.10	3.717	
60	9.48	568.05	291.43	10.8	4.17	3.780	
61	9.47	577.52	281.95	11.0	4.24	3.843	
62	9.47	586.99	272.48	11.2	4.31	3.906	

Joint No.	Joint Length	Cumulative Length	Depth Landed	Capacity (bbbls)	Displacement (bbbls)	String Weight MT	Remarks
63	9.44	596.43	263.01	11.3	4.38	3.968	
64	9.50	605.93	253.57	11.5	4.45	4.032	
65	9.49	615.42	244.07	11.7	4.52	4.095	
66	9.46	624.88	234.58	11.9	4.59	4.158	
67	9.49	634.37	225.12	12.1	4.66	4.221	
68	9.48	643.85	215.63	12.2	4.73	4.284	
69	9.47	653.32	206.15	12.4	4.80	4.347	
70	9.48	662.80	196.68	12.6	4.87	4.410	
71	9.46	672.26	187.20	12.8	4.94	4.473	
72	9.49	681.75	177.74	13.0	5.01	4.536	
73	9.48	691.23	168.25	13.1	5.08	4.599	
74	9.49	700.72	158.77	13.3	5.15	4.662	
75	9.47	710.19	149.28	13.5	5.22	4.725	
76	9.49	719.68	139.81	13.7	5.29	4.788	
77	9.47	729.15	130.32	13.9	5.36	4.851	
78	9.49	738.64	120.85	14.0	5.43	4.915	
79	9.48	748.12	111.36	14.2	5.50	4.978	
80	9.48	757.60	101.88	14.4	5.57	5.041	
81	9.49	767.09	92.40	14.6	5.64	5.104	
82	9.47	776.56	82.91	14.8	5.71	5.167	
83	9.49	786.05	73.44	14.9	5.78	5.230	
84	9.48	795.53	63.95	15.1	5.85	5.293	
85	9.45	804.98	54.47	15.3	5.92	5.356	
86	9.47	814.45	45.02	15.5	5.99	5.419	
87	9.47	823.92	35.55	15.7	6.06	5.482	
88	9.47	833.39	26.08	15.8	6.12	5.545	

PORT FAIRY #1 9 5/8" SURFACE CASING RUNNING TALLY

Joint No.	Joint Length	Cumulative Length	Depth Landed	Capacity (bbls)	Displacement (bbls)	String Weight klb	Remarks
65	12.51	783.14	41.37	185.10 bbl	208.54 bbl	120.758	
66	11.97	795.11	28.86	187.98 bbl	211.73 bbl	122.604	
67	12.09	807.20	16.89	190.88 bbl	214.95 bbl	124.468	
Lnd Jt	7.50	814.70	4.80	192.68 bbl	216.95 bbl	125.625	Landing joint
68	12.54	827.24	-2.70	195.70 bbl	220.29 bbl	127.558	OUT
69	13.10	840.34	-15.24	198.84 bbl	223.78 bbl	129.578	OUT
70	13.02	853.36	-28.34	201.97 bbl	227.24 bbl	131.586	OUT
71	12.68	866.04	-41.36	205.02 bbl	230.62 bbl	133.541	OUT
72	12.64	878.68	-54.04	208.06 bbl	233.98 bbl	135.490	OUT
73	12.47	891.15	-66.68	211.05 bbl	237.31 bbl	137.413	OUT
74	12.39	903.54	-79.15	214.03 bbl	240.60 bbl	139.324	OUT
75	12.35	915.89	-91.54	217.00 bbl	243.89 bbl	141.228	OUT

Stick up above RT -2.70m

CASING RUN SUMMARY

Drill to 821m. Run survey. POOH.
 Conduct pre-casing meeting.
 Rig up to run casing.
 Run shoe followed by next 5 joints of casing. (13.3/8" K-55 BTC Casing)
 Tag bottom. Pick up of bottom to cement.
 Prepare for cementing.
 Conduct pre-cementing meeting.
 Commence cement job.

Appendix 4: Drilling Fluid Recap

Operator : OCA Ltd
Well : Port Fairy # 1
Rig : Mitchell 50
Spud : 9th January 2002

DRILLING FLUID SUMMARY

FOR: *Oil Company of Australia Ltd*

WELL: Port Fairy # 1

Otway Basin

VICTORIA

Engineered by: Arun Madan
Prepared by: Arun Madan and Mark Scheide
Spud Date: 9th January 2002

Operator : OCA Ltd
Well : Port Fairy # 1
Rig : Mitchell 50
Spud : 9th January 2002

CONTENTS

1. Summary of Operations
2. Observations, Recommendations and Well Analysis
3. Interval Costs
4. Materials Reconciliation
5. Fluid Properties Summary
6. Mud Volume Analysis
7. Graphs
8. Bit Record
9. Solids Control Equipment
10. Hole Gauge Analysis
11. Polymers Concentration
12. Daily Mud Reports

Operator : OCA Ltd
Well : Port Fairy # 1
Rig : Mitchell 50
Spud : 9th January 2002

1. SUMMARY OF OPERATIONS

Port Fairy # 1 was an exploration well in PEP 152 of the onshore Otway Basin. The primary targets were the Flaxman and Warree sandstones while the secondary target was the Nullawarree Green sands. The well was spudded @ 0700 Hours on 9th January 2002, TD of 1550 Meters was reached @ 1830 Hours on 18th January 2002 and the rig was released on 24th January 2002.

HOLE SIZE : 17 1/2"
MUD TYPE : Air/Water
INTERVAL : Surface – 78.2 Metres
CASING : 13 3/8" conductor @ 67 metres

The well was spudded @ 07:00 hours on 9th January with 17 1/2" drag bit. As the bit would not drill below 2 metres, a 12 1/4" hammer assembly was picked up and the hole was drilled to 10 metres. The hole was further drilled using 17 1/2" hammer to 31 metres assembly just through basalt into sands. Some basalt cavings were evident at this stage. 23 sacks of cement were mixed and spotted at bottom.

After waiting on cement, the 12 1/4" pilot hole was further drilled using water from the mud tanks with returns to the sump. After drilling to 78.2 metres, the hole was enlarged to 17 1/2". 13 3/8" conductor casing was run in to 67 metres and cemented using rig mixing facilities and mud pumps.

HOLE SIZE : 12 1/4"
MUD TYPE : Spud Gel Mud
INTERVAL : 78 – 821 Metres
CASING : 9-5/8" @ 813 Metres

The make up water (from local bore plus haulage from Port Fairy township) was tested at location and found to have the following properties:

pH	8.5
pf/mf	0.05/0.3
Hardness	200 mg/l
Chlorides	800 mg/l

During waiting on cement on 13 3/8" conductor, the tanks were placed in position. 200 barrels of 20 ppb Trugel 13A and 0.25 ppb Caustic Soda were mixed in the tanks obtaining viscosity of more than 45 sec/qt. The shaker was dressed with 20/30 mesh screens.

A 12 1/4" bit was run in and the cement was tagged at 58 metres. The cement was drilled with gel mud with minimal cement contamination. Whilst drilling through the Limestone and Marl formations, water addition was made to counter the increasing viscosity. The shaker screens were washed continuously to prevent excessive run off from the shakers. Occasional by passing of the Possum belly and shale shakers were required in view of excessive cuttings.

Operator : OCA Ltd
Well : Port Fairy # 1
Rig : Mitchell 50
Spud : 9th January 2002

Mud rings were experienced while drilling at 270 metres due to anticipated Gumbo in lower Gellibrand Marl. The mud had started picking up in gels just prior to mud rings. The flow line was nipped down and cleaned. Provision for jet cleaning of flow line was made and the drilling was resumed. The mud was treated with SAPP (0.3 ppb) at this stage to prevent any mud rings.

The mud yield point decreased to less than 5 lbs/100ft² on addition of the SAPP and again gradually increased during further Marl drilling. Half a sack (0.075 ppb) of SAPP was again added when the mud viscosity increased at 420 m. Mud rings were again experienced during bottoms up after survey at 450 m.

While drilling through Dilwyn formation, Xanthan Gum and Pac Reg sweeps (addition to Suction during connections as no separate pill tank) were pumped around to keep the hole clean in view of low pump discharge (only one mud pump). Enerseal Coarse was also added during Dilwyn sands on operator's request.

As the mud pump started jacking off during pumping of sweeps, these sweeps were discontinued. The shaker screens were upgraded to 60/80 mesh, however the bottom screen was almost immediately replaced with coarser screen (20 mesh) because of excessive run off. The upper screen was also continuously hosed in view of sand blinding.

A wiper trip to the drill collars was made after drilling to 818 metres. After drilling another 3 metres to 821 metres, for casing shoe adjustment, the pipes were pulled out. The pipes were slugged both prior to Wiper trip and the final pull out.

9 5/8" (47 ppf) casings were run in with shoe at 813 metres. After circulating the hole, the casings were cemented displacing the cement slurry with the mud. A good amount of cement slurry surfaced during displacement.

HOLE SIZE : 8½"
MUD TYPE : KCl - PHPA – Polymer
INTERVAL : 813 Meters – 1550 Meters
CASING : 7" Casing

During nipping up of the BOP's, the mud tanks were dumped and cleaned. 250 barrels of fresh KCl-PHPA-Polymer mud was mixed in the settling and suction pits (keeping 90 barrels in trip and reserve tanks), isolating sand-trap as suction for sand trap:

JK-261 (dry PHPA)	0.22 ppb
PAC-R	1.75 ppb
Xanthan Gum	0.22 ppb
KCl	37 ppb

The KCl concentration (10.5 %) was higher than recommended (3-4%) so as to have the initial mud weight of 8.9 ppg (1.07 SG) as requested by the operator. The fluid was sheared through the gun lines while the shakers were dressed with 20 / 40 mesh screens.

The cement was tagged at 774 meters with the 8 ½" bit. The shoe track and 2 meters of new formation to 823 meters were drilled with the mud from previous interval using the sandtrap as the

Operator : OCA Ltd
Well : Port Fairy # 1
Rig : Mitchell 50
Spud : 9th January 2002

suction. After circulating the hole clean, an extended LOT was conducted obtaining EMW of 13.5 ppg.

The hole was displaced with fresh KCl – PHPA mud after LOT. A deviation survey was conducted immediately after displacement (the survey prior to casing was a miss-run), which gave enough time to mix another 140 barrels of fresh mud to replenish the surface volume. PHPA was not added to this fresh batch to avoid any run off from the shaker.

The drilling resumed after the survey. There was no run off from the shakers. PHPA (dry) was added, initially through the reserve tank but as the frequent shifting of the flexi-pump for water, pre-mix and other works became cumbersome, so continuous dry addition was started in the tanks to keep up with the drilling. The approximate rate of addition was 1.35 lbs per metre of formation drilled. The formation was argillaceous in nature but the cuttings were dry and well encapsulated.

The mud volume was built up with water and simultaneous addition of PAC –Reg. Xanthan Gum was added whenever required to maintain hole cleaning. Only one triplex mud pump with 7” stroke length and 6” liner was available, so the mud yield point was allowed to build up in view of lower pump discharge (310 – 325 gpm).

The yield point was more than 15 lbs/100ft² in the beginning and was allowed to gradually build to more than 17 lbs/100ft² as the drilling progressed though PHPA (dry) addition also accounted for some of this higher rheology.

The mud weight increased to 9.2 ppg (1.10 SG) while drilling at 1200 metres. Attempts were made to up grade the shaker screens but without success, so coarser screens were continued. While drilling at 1236 metres, gas up to 25 units was recorded. The mud weight was increased to 9.5 ppg (1.14 SG) on operator’s request using Barytes.

The drilling after 1236 metres was controlled with less weight on bit. The ROP became very poor at 1327 metres so it was decided to pull out of hole. A baryte slug was pumped which was mixed in the suction tank after stopping the circulation. The PDC condition was O.K. on pulling out.

A new tri-cone bit was run in. On encountering a ledge at 874 metres, further running in was done with washing and reaming. The availability of a top drive, facilitated this washing down. 20 metres of fill were encountered at bottom. During washing and reaming, Xanthan Gum and Pac Reg additions were made and the yield point was increased to more than 20 lbs/100ft².

On resumption of drilling, the yield point was continued to be maintained more than 20lbs/100ft². PHPA addition had to be decreased because of higher rheology and non-availability of any pre-mix facilities. The PHPA rate of addition was still 0.95 lbs per metre of formation drilled. The concentration of Pac Reg was kept on higher side. KCl addition was not required as the same was still more than 4 %.

The mud weight gradually increased to 9.6 – 9.7 ppg (1.15 – 1.16 SG) while drilling through lower Flaxman and Eumerrella formations. Although the desander and the desilter were run continuously, the sand was more than 1.0 % while drilling these formations though the MBC values were still low.

TD of 1550 metres was reached at 18:30 hours on 18th January 2002. After circulating the hole clean, the pipes were pumped out utilising the top drive facilities. As it was decided to pump out the pipes so the slug was not pumped thus the pull out was wet.

Operator : OCA Ltd
Well : Port Fairy # 1
Rig : Mitchell 50
Spud : 9th January 2002

POST TD

After pulling out, Schlumberger was rigged up and two runs of logs were recorded. Fill was encountered at 1523 metres during logging. After rigging down Schlumberger, test tools were run in and DST # 1 was conducted. After deflating the packer, the pipes were pulled out to 2nd object. Attempts to seat the packer failed so test tools were pulled out.

The sample chamber was found plugged with sand on pulling out. During logging and DST operations, 70 barrels of mud was mixed in the surface tanks to make up for the volume lost during wet pull out. Pac Reg was the only polymer used while building up the volume.

The old bit was run in for a wiper trip. Fill was encountered at 1513 metres. After circulating bottoms up at 1513 metres the pipes were pulled out. Water along with Pac Reg, Caustic and Idcide was added during circulation to build up the volume. After pumping slug, the pipes were pulled out.

Test tools were made up and run in for DST # 2 in Parratte. The tools got plugged after initial build up. The test tools were pulled out. Another trip was made after DST # 2. The fill from 1506 metres was washed and reamed. Xanthan Gum high viscous mud was pumped around during final bottoms up. A slug was pumped and the pipes were pulled out.

DST # 3 tools were run in to repeat the test in the Parratte formation. The packer did not inflate. The tools were pulled out and 7" casing was run in without any fill with shoe at 1546 metres. The casing was cemented, displacing the slurry with water and bumping the plug.

The rig was released on 24th of January 2002.

Operator : OCA Ltd
Well : Port Fairy # 1
Rig : Mitchell 50
Spud : 9th January 2002

2. OBSERVATIONS, RECOMMENDATIONS AND WELL ANALYSIS

The well Port Fairy # 1 was drilled to TD of 1550 meters. Two run of wireline logs and three DST's were carried out during post TD evaluation. The logging runs were successfully conducted though the test tools got plugged during DST # 1 and DST # 2 while the packers did not inflate for DST # 3 (re-test of DST # 2 object).

<i>HOLE SIZE</i>	<i>INTERVAL</i>	<i>Meters</i>	<i>COST</i>	<i>COST / FT</i>
12 ¼"	0 – 821. Metres	821	\$3309.42	\$ 4.03
8 ½"	821 – 1550 Meters	729	\$ 13003.69	\$ 17.84
TOTAL DRILLING COST (1550 Metres)			\$ 16,313.11	\$10.52
POST TD COSTS (logging / completion)			\$ 2,367.98	
TOTAL WELL COST			\$18,681.09	\$ 12.05
DAMAGED COST			\$ 131.72	
TOTAL COST (Damaged + Used)			\$ 18,812.81	

12¼" Surface Hole

The surface interval was drilled with Gel Spud Mud at the cost of \$3,309.42 i.e. \$ 4.03 per metre.

13 3/8" conductor was set at 67 metres so losses were not encountered in the upper limestone formations. Mud rings were experienced while drilling through the Marl section especially Gellibrand Marl. SAPP addition was made which helped in thinning down the mud.

Pac Reg and Xanthan Gum sweeps were pumped around while drilling through Dilwyn sands. The losses were not significant. LCM (Enerseal Coarse @ 1 ppb) though was added on Operator's request. The addition of Pac Reg provided stability to the mud system though yield point was only 10-11 lbs/100ft² at TD. Casing was run in without any problems. Good quantity of cement surfaced during displacement with mud.

8½" Production Hole

This interval was drilled using KCl PHPA mud at the total mud cost of \$ 13,003.69 or \$17.84 per metre again without any major mud related problems.

The initial mud weight was kept 8.9 ppg (1.07 SG) using KCl in anticipation of aquifer pressures. The mud weight was further increased to 9.5 ppg (1.14 SG) using Barytes when some gas indications were there in claystones prior to Nullawarre Green sands.

The hole was drilled without any major problems except for some fill during bit and logging trips (1523 metres). No wiper trip had been made prior to logging and DST # 1. The running in of 7" casing was smooth without encountering any fill at bottom with casing shoe at 1546 metres.

Operator : OCA Ltd
Well : Port Fairy # 1
Rig : Mitchell 50
Spud : 9th January 2002

Solids Control

The rig had very basic and inferior solids control system. The single double deck shaker could be operated with coarse screens (20 /30 to 60/20 mesh) during surface hole and any attempt to upgrade the screens resulted in run off from the shakers.

The desilter and desander (single cone) were available but were operated through single hopper pump. The desander had been requisitioned for this well but as the feed system was not properly set so effectiveness of hydrocyclones was low. As the cut size of screen was around 234 microns, so load on hydrocyclones was very high.

The settling in sand trap was utilised but faulty dump gate and lack of any high-pressure water hose for cleaning made it difficult to clean the sand trap frequently. The sand trap was dumped during surveys and trips only.

There was no direct dumping provision of the possum belly in the sump and the same had to be dumped through the sand trap. Though the possum belly was dumped frequently but it only added to solids in the sand trap.

Provision of gumbo sliding by pass line was an advantage, but lack of any proper jetting provision in the flow line resulted in non-productive rig time. Due to low operating volume, the LGS were only around 7.0 % by surface target depth despite drilling 821 metres of 12 ¼" hole.

During production interval, the shaker screens had to be downgraded to 20/40 mesh (cut size of 381 microns) because of the polymers. The shaker screen could not be upgraded due to continuous direct addition of PHPA. The PHPA addition in the pits further lowered the efficiency of solids control hydrocyclones. The settling rate was high due to PHPA but again the sand trap could not be dumped frequently.

The formations were quite argillaceous but the sufficient amount of PHPA in the system helped in keeping the solids on lower side. The LGS increased to only 3.5 % by 1050 metres and further to 5.5 % by 1255 feet. The LGS further increased during flaxman and Eumerrella formation drilling to 7.2 % v/v.

The sand in the system was always high with values of 1.0 – 1.75 % v/v in Flaxman and Eumerrella formations.

Mud Weight

The mud weight by surface casing depth was 9.25 – 9.3 ppg (1.11-1.115 SG) because of drilled solids. Due to anticipated aquifer pressure in the Dilwyn formation, the operator requisitioned minimum mud weight of 8.9 ppg (1.07 SG).

Again due to anticipated aquifer pressure, the operator requested the mud weight of 8.9 ppg (1.07 SG) for the initial brew for production hole. The casing seat formation was not sure at that stage. KCl was utilised as the initial weighing agent.

As the LGS increased, the KCl content was allowed to drop continuously from initial 10.5 % to specified 4 %. The mud weight was increased at 1236 feet from 9.2 ppg (1.10 SG) to 9.5 ppg (1.14 SG) using Barytes on operator's request. This was requisitioned in anticipation of high-pressure sands as 25 units of drilled gas were recorded in clay stone formations.

Operator : OCA Ltd
Well : Port Fairy # 1
Rig : Mitchell 50
Spud : 9th January 2002

The mud weight further increased to 9.6-9.7 ppg (1.15 – 1.16 SG) during fast drilling through Flaxman and Eumerrella formations. No effort was made to dump and dilute the system to cut back the mud weight.

Mud Losses

No significant mud losses were experienced in the surface or production intervals. The conductor was set quite deep (67 metres) which covered the thief limestone zones. While drilling the conductor hole with water from the sump, losses were evident.

Hole Gauge

The hole on the basis of single axis calliper logs was 6.4 % overgauge with average hole size of 8.74". The Pember Mud stone, Skull Creek and Belfast Mud Stone had higher average hole sizes i.e.9.20", 9.54" and 9.52" respectively.

Though the single axis calliper does not reflect the true picture, the lower concentration of PHPA due to mixing constraints might be a contributing factor in these argillaceous formations.

Mud System and Properties

Mud used for surface hole was basic gel spud mud. Initial gel concentration was 20 ppb, which gave the viscosity of more than 45 sec/qt in fresh make up water. The claystone of long sequence of Marl formations contributed further to mud viscosity.

SAPP addition (0.3 ppb) was added to the system at 270 metres when mud rings were experienced in Gallibrand Marl due to gumbo. Further additions of less than 0.1 ppb SAPP was made at 420 metres when a rapid viscosity increase was noticed. Mud rings were experienced after the survey at 450 metres.

During further drilling, Pac Regular and Xanthan Gum sweeps were pumped around to keep the hole clean and to increase the viscosity in Dilwyn sand formations in view of low pump discharge rate because of the single mud pump.

The running of casing was smooth though the yield point was in the range of 10 –11 lbs/100ft² only with lower gels because of sufficient polymers in the system at this stage.

KCl – PHPA Polymer mud system was used for the 8 ½" Production hole. The initial concentration of dry PHPA was 0.15 ppb, the concentration of PHPA was gradually increased to 1.0 ppb by continuous addition of PHPA during drilling.

The rate of addition was 1.35 lbs/metre of formation drilled until top of Flaxman. The average rate of addition was cut down to 0.95 lb/metre.in Flaxman and Eumerrella formations due to various factors like target sands, fish eyes due to higher rheology and direct additions of PHPA.

As the concentration of PHPA was kept lower in the beginning, due to shaker constraints, so the initial concentration of Pac Reg was kept more than 1.0 ppb. The concentration was maintained between 1.25 ppb to 1.50 ppb to maintain fluid loss and rheology properties.

Operator : OCA Ltd
Well : Port Fairy # 1
Rig : Mitchell 50
Spud : 9th January 2002

When the rate of addition of PHPA was decreased near the target, Pac Reg was supplemented with Pac Iv also, to have combined concentration of approximately 1.75 ppb. Xanthan Gum concentration was maintained between 0.25 to 0.4 ppb; additions more through sweeps.

As the pump discharge was expected to be low due to availability of only one mud pump (triples: 6" liner and 7" stroke length), so the yield point was kept more than 17 lbs/100ft² from the beginning itself. The yield point was 17- 23 lbs/100ft² during the drilling of 8 ½" hole though un-sheared PHPA and solids also contributed to this rheology.

Fluid loss throughout the section was less than 7.0 cc/30min and was below 6.5 cc/30min while drilling the targets.

Potassium chloride concentration was 10.5 % in the beginning of the hole as it was used as weighing agent for the starting fluid, but was allowed to decrease as the drilling progressed. The concentration was more than 4.0 % while drilling through target sands.

Due to non-availability of a pill tank, the suction tank was used as a makeshift pill tank for slugs and high viscous pills though the returns during pumping of these pills could not be isolated due to low surface capacity.

Appendix 5: Cuttings Description

Depth (mRT)		Port Fairy No 1 - Sample Descriptions							Vis Por	Description and shows:
From	To	Sst	Slt	Clyst	Lst	Marl	Co			
80	90			100					CLAY medium grey, sticky, very soft, washing out of sample. Washed sample is predominantly cement.	
90	100			100					CLAY medium grey, soft, plastic,	
100	110			95	5				CALCAREOUS CLAY, medium grey, soft, CALCARENITE, light grey, fine grained, common marine fossils and glauconite.	
110	120			90	10				CALCAREOUS CLAYSTONE, medium to light grey, soft, sticky, minor fossils. CALCARENITE, light grey, fine grained, soft - firm, friable, fossiliferous, trace glauconite.	
120	130				10	90			MARL, as above, CALCARENITE, light grey, occasionally white, fine to coarse grained, soft - hard, friable to well cemented, fossiliferous, trace glauconite.	
130	140				5	95			MARL, as above, trace pyrite, soft, plastic, CALCARENITE, light grey, occasionally white, fine to coarse grained, soft - hard, friable to well cemented, fossiliferous, trace glauconite.	
140	150				10	90			MARL, as above, CALCARENITE, white to light grey, occ yellowish white, fine to coarse grained, poorly sorted, fossil frags, friable to firm, trace glauconite.	
150	160				10	90			MARL, as above, CALCARENITE, as above, laminated in part.	
160	170				10	90			MARL, as above, CALCARENITE, white to grey, mottled, fine to coarse, silty, fossiliferous,	
170	180				5	95			MARL, as above, very sticky, dispersive, fossiliferous, CALCARENITE, as above.	
180	190				20	80			MARL, as above, very finely calcarenitic in part, soft to firm, CALCARENITE, as above, glauconitic, occasionally well cemented.	
190	200				30	70			MARL, as above, very finely calcarenitic in part, soft to firm, CALCARENITE, as above, glauconitic, occasionally well cemented.	
200	210				10	90			MARL, as above, very finely calcarenitic in part, soft to firm, CALCARENITE, as above, glauconitic, occasionally well cemented.	
210	220				20	80			MARL, as above, very finely calcarenitic in part, soft to firm, CALCARENITE, as above, glauconitic, occasionally well cemented.	
220	230				10	90				
230	240									
240	250				10	90			MARL, light grey, soft/dispersive to firm, glauconitic, common sand size fossil grains.	
250	260				5	95			MARL, as above, occasionally pyritic	
260	270				60	40			MARL as above, washing over shakers, CALCARENITE, light grey to light greenish and brownish grey, fine to coarse grained, very silty grades to CALCISILTITE. Abundant fossil fragments	
270	280				60	40			MARL, light grey, firm, CALCARENITE, as above, fossiliferous, tr glauconite, common loose large fossil fragments.	
280	290			30	60	10			CLAYSTONE, medium grey, soft, slightly to very calcareous, silty, grades to CALCISILTITE, light grey soft, CALCARENITE, as above. Aundant large fossil fragments.	
290	300				80	20			CALCARENITE, pred light grey, occ brown, very fine to coarse grained, grades to MARL	

Depth (mRT)		Port Fairy No 1 - Sample Descriptions							Vis Por	Description and shows:
From	To	Sst	Slt	Clyst	Lst	Marl	Co			
300	310			30	60	10			CLAYSTONE, medium grey, soft, slightly to very calcareous, silty, grades to MARL, light grey soft, CALCARENITE, as above. Abundant large fossil fragments.	
310	320				90	10			CALCARENITE, pred light grey, occ v pale greyish brown, very fine to coarse grained, grades to CALCISILTITE, clayey, abundant fossil fragments	
320	330				100	0			CALCARENITE, occ very pale greenish grey, predominantly very fine grained, silty grading to clayey CALCISILTITE,	
330	340				90	10			CALCARENITE, as above grades to clayey calcisiltite and MARL, Abundant fossil fragments	
340	350				80	20			CALCISILTITE, light to medium grey, fossiliferous, grades to very fine CALCARENITE and MARL	
350	360				70	30			CALCISILTITE, as above.	
360	370				90	10			CALCARENITE, light grey, mottled, occ light greenish grey, argillaceous, very fine grained, poorly sorted, grades to CALCISILTITE and MARL	
370	380				80	20			CALCISILTITE, light to medium grey, fossiliferous, grades to very fine CALCARENITE and MARL, light grey,	
380	390				40	60			Minor CALCARENITE, white, very fine grained, moderately sorted, laminated, soft, CALCISILTITE and MARL as above	
390	400				20	80			MARL, medium grey, occasionally light greenish grey, grades to CALCILUTITE, argillaceous, soft, plastic. CALCARENITE, light grey, very fine grained, silty.	
400	410				20	80			MARL medium grey, soft, dispersive, grades to calcilutite, CALCISILTITE, light grey, argillaceous, grades to very fine CALCARENITE,	
410	420	Tr	Tr		20	80			MARL and CALCISILTITE as above, trace SANDSTONE, loose, clear, medium grained, trace SILTSTONE, yellowish brown, ?limonitic, firm to hard	
420	430	5	0	0	20	75	0		as above, SANDSTONE clear, fine to medium grained, loose, occasionally well cemented with clear calcite.	
430	440	80	tr		0	20			SANDSTONE, clear to light brown, yellowish brown, fine to medium grained, quartzose, subangular, predominantly loose grains with Fe staining and calcite cement adhering, common carbonaceous grains. SILTSTONE, yellowish brown, calcareous, firm, common carbonaceous grains. MARL as above	
440	450	30	20	20		30			SANDSTONE, as above, occ coarse grained, siltstone, greyish brown to light grey, calcareous, grades to calcareous claystone, light grey,	
450	460	80	20						SANDSTONE, mottled, fine to coarse grained, poorly sorted, subangular, dispersive calcareous argillaceous matrix, common lithic and carbonaceous grains very soft. SILTSTONE, very calcareous.	
460	470	90	10						SANDSTONE, greyish brown, speckled, very fine to very coarse grained, poorly sorted, loose Fe-stained grains and very soft aggregates with dispersive argillaceous calcareous matrix. CARBONACEOUS SILTSTONE, very dark brown.	
470	480	90	10					p	SANDSTONE, clear, Fe-stained to greyish brown, fine to v coarse, loose grains and aggs with soft clay matrix or occ firm calcite cement	
480	490	90	10			0		p	SANDSTONE, as above, calcite cement decreasing, common carbonaceous silty laminae and inclusions.	

Depth (mRT)		Port Fairy No 1 - Sample Descriptions								
From	To	Sst	Slt	Clyst	Lst	Marl	Co	Vis Por	Description and shows:	
490	500	100						e	SANDSTONE, clear, transl, medium to predominantly very coarse, well sorted, subangular, trace irregular shaped ?composite grains w/ dark inclusions, sub ang to subrounded.	
500	510	100						e	SANDSTONE, clear, as above. ? reworked qtz cemented sst	
510	520	100						e	SANDSTONE, as above (Sample swamped w/ LCM)	
520	530	95	5					f	SANDSTONE, light brown, fine to coarse pred medium, poorly sorted, trace dispersive, argillaceous matrix. SILTSTONE, dark brown, carbonaceous, finely sandy	
530	540	100	Tr					vg	SANDSTONE, clear, light grey, yellowish brown, loose, fine to very coarse subangular polished grains.	
540	550	100						vg	SANDSTONE as above, clean loose grains, trace calcareous cement, trace carbonaceous grains	
550	560	100						vg	SANDSTONE as above, clean loose grains, trace silty matrix washing out, trace carbonaceous grains	
560	570	100						vg	SANDSTONE as above, angular to subrounded, polished	
570	580	90	10					f	SANDSTONE, as above but with dark grey silty matrix in part. SILTSTONE, dark grey to greyish brown, silty, soft to firm	
580	590	100						vg	SANDSTONE as above, becoming clean.	
590	600	100	tr					g	SANDSTONE as above, trace SILTSTONE as above	
600	610	100						vg	SANDSTONE, clear, white, light grey, medium to very coarse grained, moderately sorted, angular to subrounded, trace calcareous cement. trace chert.	
610	620	100						g	SANDSTONE as above	
620	630	100	tr					g	SANDSTONE as above, trace SANDY SILTSTONE very dark brown.	
630	640	100						vg	SANDSTONE as above, becoming well sorted predominantly very coarse grained	
640	650	100	tr					vg	SANDSTONE as above, trace pyrite, trace SILTSTONE, dark brown, carbonaceous	
650	660	100						vg	SANDSTONE as above, clean	
660	670	100						vg	SANDSTONE as above, coarse to very coarse grained	
670	680	100						vg	SANDSTONE, as above	
680	690	100						vg	SANDSTONE, as above	
690	700	100					tr	e	SANDSTONE, clear, white, occ light grey, very coarse grained well sorted, subangular loose polished grains, trace COAL and CARBONACEOUS SILTSTONE	
700	710	100						e	SANDSTONE as above, medium to very coarse grained, trace fossil fragments	
710	720	100						e	SANDSTONE, clear, translucent, medium to very coarse grained, quartzose, v sl tr calc cmt, lse, subang. TR COALY SILTSTONE, dark brown to black	
720	730	100						e	SANDSTONE, as above, tr Fe staining	
730	733	100						e	SANDSTONE, as above, medium to v coarse, pred coarse grained, well sorted.	
733	736	100						e	SANDSTONE, as above, becoming predominantly med grained.	
736	739	100						e	SANDSTONE as above, fine to coarse grained.	
739	742	100						e	SANDSTONE, as above	
742	745	100						e	SANDSTONE, as above, coarse to very coarse.	
745	748	100						e	SANDSTONE, as above, coarse to very coarse.	
748	751	100						e	SANDSTONE, as above,	
751	754	100						e	SANDSTONE, as above, coarse grained	
754	757	100						e	SANDSTONE, as above, medium to occ. very coarse	

Depth (mRT)		Port Fairy No 1 - Sample Descriptions								
From	To	Sst	Slt	Clyst	Lst	Marl	Co	Vis Por	Description and shows:	
757	760	100						e	SANDSTONE, as above, medium to coarse	
760	763	100						e	SANDSTONE, as above, medium to coarse, predominantly angular, trace COAL, black, dull, silty	
763	766	100						g	SANDSTONE, clear, occ milky, tr Fe stain, medium to coarse grained, well sorted, sl calc cmt, quartzose,	
766	769	100						g	SANDSTONE, as above, fine to coarse pred medium, tr silty matrix washing out.	
769	772	100						f	SANDSTONE, as above, dispersive silty matrix increasing slightly.	
772	775	100						e	SANDSTONE, clear, medium to coarse grained, clean	
775	778	100	tr					vg	SANDSTONE clear, medium to coarse grained, clean, sl trace calcareous cement, tr SILTSTONE, very dark brown, sandy.	
778	781	100						vg	SANDSTONE, fine to coarse grained, occ very coarse, mod srt, angular, sl arg matx washing out.	
781	784	100						f	SANDSTONE, clear to pale brown, fine to coarse grained predominantly medium, moderately sorted, ang to subang, pred loose, occ calc cemented aggs, minor silty matrix	
784	787	100						f	SANDSTONE, as above, tr SILTSTONE, v dk brn	
787	790	100						f	SANDSTONE, as above,	
790	793	100						f	SANDSTONE, as above,	
793	796	100						e	SANDSTONE, clear - white, coarse to very coarse grained,	
796	799	100						f	SANDSTONE, clear to greyish brown, fine to very coarse grained, poorly sorted, angular to occ. rounded, pred loose w/ common arg and calc matrix. tr SILTSTONE, grey, pyritic	
799	802	100						f	SANDSTONE as above, clear to greyish brown, mod srt,	
802	805	100	tr					f		
805	808	100	tr					f	SANDSTONE clear, light greyish brown, fine to coarse grained angular to well rounded, loose w/ trace brownish calcareous cement, occ firm fine well cemented aggregates. Trace SILTSTONE dark grey.	
808	811								SANDSTONE, as above, becoming medium to coarse,	
811	814							f	SANDSTONE, as above, fine to very coarse, poorly sorted, angular to well rounded, dispersive silty matrix and calcareous cement adhering to predominantly loose grains. occasional cemented aggs, trace greenish grey lithic grains.	
814	818	90	10					p	SANDSTONE, brown, fine to occ coarse, silty matrix increasing	
818	822	60	40					n	SANDSTONE, lt brn to mott grn/brn, v fine to v co, p std, ang to srnd, brown silty mtx and calc cmt, dense pyritic cmt l/part, qtzose sst l/bedded w/ glauconite sst (30%) in dense brn mtx. SLTST, lt to v dk gy, vf sndy, blk, frm to hard, calc i/p.	
822	825	10	90	0	Tr				SLTST, med gy to brn or grnsh gy, sandy w/ f & med qtz and glauc grains, v arg gds to slty, sndy CLYST. Tr ? Dol brn transl.	
825	828	20	40	40	Tr				SLTST, as above, common f-co qtz gns gds to silty arg SST, med to lt gy greysh brn, glauc	
828	837	50	20	30					SST, medium greysh brn, m-co, vp std w/ abndt disp silty arg mtx and occ dense ?dol cmt, gds to snady SLT and CLYST v sft, glauc, occ bands w/ v hd dol cmt.	
837	843	60	30	10					ARG SST, medium gy, m to co gn, abndt silty arg mtx disp. gdsd to sndy SLTST and CLYST.	

Depth (mRT)		Port Fairy No 1 - Sample Descriptions								
From	To	Sst	SlT	Clyst	Lst	Marl	Co	Vis Por	Description and shows:	
843	846	20	60	20					SLTST, gy, brn, mott grn, v sndy, v arg, abndt lse co & v co subang qtz gns washing out, gds to ARG SST and sndy CLYST	
846	852	60	20	20					SST, medium greysh brn, m-v co, vp std w/ abndt disp silty arg mtx and occ dense ?dol cmt, gds to snady SLT and CLYST v sft, glauc, occ bands w/ v hd dol cmt.	
852	855	60	20	20					ARG SST as above	
855	858	70	20	10	Tr			n-f	SST, (1), med gysh brn, arg, as above, (2) clr mlky, co to gran, qtz subang, lse	
858	861	100	tr					e	SST, clr mlky, v co- granular, w std, ang - srnd occ w rnd, clean, lse qtzose, tr gy cherty lithic gns, vis por excellent, no shows, TRace SLTST a/a	
861	867	100						e	SST as above	
867	873	tr		100					CLYST, m-dk gry, amorphous, sticky, very soft, very finely qtz sandy, Trace SST v co a/a	
873	885			100					CLYST a/a	
885	900	60		40				p	SST, clr, v lt gy, co -v co, wstd, sang, lt gy arg mtx washing out	
900	906	100						p	SST, clr - lt brn, m to co gn mod std, lt brn arg mtx washing out	
906	915	70	30					f	SST a/a, mtx decreasing, l/bedded w/ CLAYST a/a	
915	921	20		80					CLAYST, med-dk gy, amorphous, soft, sticky, v sl sandy	
921	927			100					CLAYST a/a ibeeds of coarse clean sst in interval	
927	933			100					CLYST a/a	
933	942	20		80					CLYST a/a, bec lt grysh brn, mottled sandy, common pyrite aggregates	
942	951	40	30	30			Tr		CLYST, m gy mmica, amorphous to occ firm/cemented, silty and sandy, gds to arg, sandy, SLTST, SST v co a/a, Tr COAL, black, fibrous to blocky	
951	960	50	40	10			Tr		SST, med brnsh grey, vf to co, p std, abndt silty arg mtx, gds to sandy SLTST and CLYST, com pyrite aggs, variably cmted w/ calc,	
960	963	60	30	10				n	SST, silty arg a/a variably cemented, tr min flu	
963	966	40	40	20				n	SST medish grysh brn, a/a grades to sandy CLYST, lse/disp to hard.	
966	969	40	40	20				n	SST a/a, as silty arg sst and ? clean stringers of co to v co sst	
969	972	60	30	10			Tr		SST med grysh brn, vf to co gn, v p std, silty arg disp matx i/p, occ well cmted, occ pyrite cemented aggs, tr grey chert grains, gds to silty Clayst,	
972	975	80					20	n	SANDSTONE, lt brnsh gy, f to co mod srt, ang to srnd, mod to sl arg matx and mod cmt, friable aggs and occ lse co to v co qtz gns, tr prite and lithic gns, COAL, blk to v dk brn, fibrous.	
975	978	60	20	10			10		SST a/a, silty arg matx increasing, tr min flu	
978	981	50	40	10			tr		SST a/a bec v silty vf gn, COAL gds to car MDST	
981	984	60	40						SST a/a soft ? laminated light-med grysh brn, patchy white clay matx l/p	
984	987	70	30				tr		SST gysh brn a/a, vf to co gn, occ lse v co gn, vp std, brn silty clay, white patchy matx and variable dol cmt, occ dense py cmt, gds to sandy siltst	
987	990	90	10						SST a/a, brn,	
990	993	90	10						SST, lt to m gysh brn, vf to co v p std, a/a gds to SLTST, i/p fine to med gn, clean	

Depth (mRT)		Port Fairy No 1 - Sample Descriptions							Vis Por	Description and shows:
From	To	Sst	Slt	Clyst	Lst	Marl	Co			
993	996	90	10						SST, clr - lt brn gy, f to co, pred lse gns and aggs w/ silty mtx or pyrite cement.	
996	999	90	10						SST, m brnsh gry, vf -m, mod std, occ co, very dense silty mtx, tr CLYST, m-dk gy, silty, occ lt brn, tr glauconite	
999	1002	80	20						SST, gysh brn, vf to co gn, p std, sang srnd, very silty sl calc mtx, gds to SLTS	
1002	1005	80	20						a/a	
1005	1011	100							SST, lt gy, f - v co, p std, subang	
1011	1017	100							SST, a/a	
	1020									
1017	1023	20	80							
1023	1029	30	60	10					SLTST, m gy, fnly sndy, arg, gds to arg sst and slty clyst. SST, clr lse co gns,	
1029	1032	80	20						SST, gy-grn, vf -co, v p std,	
1032	1035	40	50	10						
1035	1038	60	30	10						
1038	1041	50	50						Interbedded SST, clr qtz in dense pyrite cement, SLTST, gds to CLYST, glauconitic laminae,	
1041	1044	50	50						SST co, lse or dense pyrite cement, SLTST, blocky, fnly sandy I/p, abndt pyrite	
1044	1047	40	50	10					SLTST, m brnsh gy, blk, sl sndy, SST, vf-co gn, p srt,	
1047	1050	70	30						SST a/a/ SLTST a/a tr glauconite,	
1050	1053	10	90						SLTST, m brnsh gy, arg, blocky, sft-firm, fnly snady gds to vf sst I/p, I/p smooth, tr pyrtite,	
1053	1056	20	80				tr		SLST, a/a, fine carb frags, sandy w/ fine qtz and minor lithic grns washing out, gds to SST	
1056	1059	20	80						SLTST a/a abndt pyrite as aggas and cement in SST	
1059	1062	20	80						SLTST, grysh brn, smth, soft/disp, sandy I/p, common pyrite aggs,	
1062	1065	40	60						SLTST, a/a gds to slty SST, abndt arg silty mtx washing out, abndt pyrite,	
1065	1068	30	70	0			tr		SLTST a/a gds to sst abndt pyrite	
1068	1071	20	70	10					CLYST, smooth, m gy, abndt pyrite as round aggs,	
1071	1074	10	70	20			tr		a/a abndt pyrite rounded aggs,	
1074	1077	50	40	10			tr		SST, clr, f-c ?bimodal, lse qtz gns, SLTST, lt gy, fnly snady, soft disp, comm carb flecks,	
1077	1080	10	70	20						
1080	1083	10	60	30					CLYST, m gy, slty, gds to SLTST	
1083	1086	10	70	20					SLTST m gy, grades to CLYST, blocky, firm,	
1086	1089	10	80	10					SLTST, m gy, blk, fnly sndy, lamianted w/ light gy vf sst, tr pyrite,	
1089	1092		50	50					SLTST gds to CLYST, m gry, sl sndy, carb flecks	
1092	1095		50	50					a/a	
1095	1098	10	70	20					SLTST, lt to medium grysh brown, carb flecks, firm, trace glauconite,	
1098	1101	0	0	100			0		silty clyst a/a, massive,	
1101	1104			100					silty clayst, massive	
1104	1107	80	20					vp	SST, lt gy, grysh brn, vf -c gn, p std, pred lse, occ, patchy silty matrix, trace to com glauconite in siltier aggs, gds to Siltst.	
1107	1110	50	50						SST, lt gy, grysh brn, vf -m gn, well std, dense calc cement, patchy silty matrix, trace glauconite.	
1110	1113	10	80	10					SST, bec v f gn, gds to siltst,	
1113	1116		50	50						

Depth (mRT)		Port Fairy No 1 - Sample Descriptions								
From	To	Sst	Slt	Clyst	Lst	Marl	Co	Vis Por	Description and shows:	
1116	1119		50	50					SLTY CLYST md gry, massive, v fnly sndy l/p, tr glauconite,	
1119	1125	0	100						a/a	
1125	1128	20	80						SLTY CLYST md gry, massive, v fnly sndy l/p grades to v f SST, tr glauconite, sandy, grades, tr carb mat. tr dolomite, common pyrite nodules	
1128	1131	20	80						SLTST, cly, a/a	
1131	1134	60	40							
1134	1137	60	40						SST brn, vf gn, slty, tr dol, gds to sndy SLTST	
1137	1140	20	50	30					SLTST, m gry, finely sandy, gds to v f sst, CLYST, m gry,	
1140	1143	30	40	30					SILTSTONE, gds to CLYST and silty SST a/a	
1143	1146	20	50	30					SST, gry, vf to co, v p std, ang, mic mic, pyritic, very silty, gds to SLTST	
1146	1149	30	50	20					SLTST, m gry, finely sandy, gds to v f sst, CLYST, m gry,	
1149	1152	60	30	10					SST, vf to m gn, pred lse, dispersive slty mtx, glauconitic	
1152	1155	40	50	10					SST, a/a	
1155	1158	30	50	10						
1158	1161	40	50	10						
1161	1164	40	50	10						
1164	1167	10	50	40					Silty CLYST, md to dk gy, gds, arg SLTST, micmicaceou, tr carb mat, SST gy, f-m occ co, p std, silty occ w/ dense calc cmt	
1167	1170	30	50	20					SST, lt gysh brn, vf m gn, p std, abndt slty arg mtx, sft, pulpy,	
1170	1173	30	60	10					SST, lt gysh brn, vf m gn, p std, abndt slty arg mtx, soft, gds to sandy SLTST	
1173	1176	40	40	20					SST, lt gy, lt yellsh gy, lt brn, vf to m gn, silty, occ dol, pred lse gns w/ abndt mtx washing out, gds to Siltstone,	
1176	1179	30	50	20					SLTST, v lt gy, spkled, v f sndy, tr carb specks, gds to SST, lt gy, vf to m gn, p std, soft arg, tr glauc,	
1179	1182	70	30					n	SST, l/p green, speckled, vf to f gn, v p std, silty, arg, micmic, com carb spks, dgs to SLTST.	
1182	1185	50	50	0				n	SST a/a/ SLTST a/a tr glauconite,	
1185	1188	10	80	10					SLTST, m gy, blk, fnly sndy, lamianted w/ light gy vf sst, tr pyrite,	
1188	1191	20	70	10						
1191	1194	30	60	10						
1194	1197	20	70	10					SLTST, m gy brn, sft, blk, f sndy, SST, lt gy	
1197	1200	20	70	10						
1200	1207	10	80	10					SLTST m -lt gy brn,	
1207	1216	40	30	30				p	SST, lt gy, lt gysh brn, very silty, sl dol cmt. glauconitic, SLTST, md gy brn, blk,	
1216	1222	50	40	10				p	SST, v lt gy, vf to rr m gn, p std, slty, tr glauc, ibdd w/ SLTST, gy brn, f sndy and glauc,	
1222	1231	50	40	10				n	SST, gyrsh brn, vf gn, slty, occ fn, tight, gds, to sandy SILTSTONE,	
1231	1237	20	80						SLTST, brnsh gy, v fnly sndy, gds to v f gn SST	
1237	1240	30	70	tr					a/a	
1240	1243	40	60						SLTST, bec fv sndier gds to SST.	
1243	1249	30	60	10					SLTST, a/a	
1249	1252	20	80						SLTST, m gy to grysh brn, v fnly sandy, v soft, gds to sst	
1252	1255	10	80	10					SLTST m gy, grades to CLYST, blocky, firm,	
1255	1258	10	70	20					SLTST a.a, tr glauconite, tr sst, dense calc cmt, glauc v f gn.	
1258	1261	10	70	20					SLTST a/a	
1261	1264	tr	60	40					SILTY CLAYSTONE, med brn gy, sft, rr fossil frags	

Depth (mRT)		Port Fairy No 1 - Sample Descriptions							Vis Por	Description and shows:
From	To	Sst	Slt	Clyst	Lst	Marl	Co			
1264	1267	tr	60	40					a/a, minor fine glauconitic sst laminae in siltstone, tr carb frags.	
1267	1270	tr	50	50					Silty claystone, med brn gy, sft, rr fossil frags	
1270	1273	tr	40	60					a/a, minor fine glauconitic sst laminae in siltstone, tr carb frags.	
1273	1276	20	60	20					m brnsh gy, glauconitic, sandy gds to v f SST	
1276	1279	10	40	50					CLYST, m - dk gy, blocky, tr m gn weathrd felds,	
1279	1287	10	80	10					SLTST w/ hard dol cement, glauconitic	
1287	1290	10	20	70					CLYST, m - dk gy, blocky, tr m gn weathrd felds, sndy, micromicaceous, tr glauconite.	
1290	1293	10	10	80					CLYST, medium to dark grey, smooth, blocky.	
1293	1296		10	90					CLyst, slty, very glauconitic, up to 40 % glauconite in tray.	
1296	1299		10	90					Glauconitic Claystone, dark grey, glauconite is v dark greenish blacl	
1299	1302		10	90					a/a, minor fine glauconitic sst laminae in siltstone, tr carb frags.	
1302	1305	10	10	80					CLAYST, a/a v dk gry, glauconite	
1305	1308		10	90					CLAYST, 70 % glauc in tray, pyritic glaucoite viens	
1308	1311			100					CLAYST, abndt glauconite	
1311	1314	10	40	50					a/a bec sandy and silty,	
1314	1317			100					GLAUCONITE CLAYST	
1317	1320			100					a/a	
1320	1323			100					a/a glauconite decreasing to minor constituent	
1323	1326			100					a/a	
1326	1329			100					a/a	
1329	1332	20	30	50				n	GLAUCONITIC CLAYSTONE, v dk gry, soft abndt blk glauconit grains ashing out, gds to arg greensand	
1332	1335	50	0	50				n	clyst a/a bec v glauc gds to greensand, m gn tight w/ abndt clay mtx, and loose glauconite gns, also 20% lse clear co to v co lse qtz gns,	
1335	1338	50	30	20				n		
1338	1341	40	0	60				n	Glauconite Sandstone, v dark green, gds to glauconitic claystone, black m gn glauc gns and pellets of ?glau cly in solid dk gy clay mtx.	
1341	1344	10	30	60					Clyst 2 types, (1) pelloidal claystone, very dark grey to black, (2)dark grey to medium brown, firm, subfissile	
1344	1348	20	30	50					SLTST, med gry brn, Clyst, as above	
1348	1350	20	30	50					Sltst and Clyst as above	
1350	1353	30	30	40					Glauconite Sandstone, v dark green, gds to glauconitic claystone, black m gn glauc gns and pellets of ?glau cly in solid dk gy clay mtx.	
1353	1356	10	30	60						
1356	1359	20	40	40					SILTSTONE, medium grey to brown, finely qtz sandy, Trace to common lse, very coarse qtz grains.	
1359	1362	20	40	40					Sltst as above	
1362	1365	10	50	40						
1365	1368		20	80					Two types as above, predominantly dark grey to medium brown, firm, subfissile, gds to SILTSTONE, medium grey to brown, finely qtz sandy, Trace to common lse, very coarse qtz grains.	
1368	1371	10	20	70					Sst Sltst and Clyst as above	
1371	1374		30	70					Siltstone and Clyst as above	
1374	1377		20	80					Sltst and Clyst as above	
1377	1380	10	70	20					SLTST, m brnsh gy, fnly sndy, tr glauc, gds to v fn arg SST and to CLYST, dk gy, subfiss.	

Depth (mRT)		Port Fairy No 1 - Sample Descriptions							Vis Por	Description and shows:
From	To	Sst	Slt	Clyst	Lst	Marl	Co			
1380	1383	10	30	60					SST, m gry, vf to f gn, slty, p std, calc I/p, pred v arg.gsd to SLTST and SLTY CLYST, tr lithic gns, red gns, mica,	
1383	1386	20	10	70					CLYST, v lt gy, occ v pale blu-gy-grn, v smooth, waxy. SST, ?lse gns washing out, vf to m gn, qtz, tr lithics, tr glauc, tr biotite	
1386	1389	20	30	50					CLYST,(1) v lt gy, v smooth, waxy. (2) m gy, sft, slty, gds to siltst, SST, I/p whi, ?tuffaceous, f gn, tr red, blk, gy lithic gns & felds, common lse gns washing out, vf to m gn, qtz, tr lithics, tr glauc, tr biotite gds to whi sndy sltst	
1389	1392	10	40	50					CLYST, (1) pale brnsh gy tov lt gy blocky, homogenous, (2) v lt gy to hi, v silty, sandy, gds to arg sandstone, and siltstone, tr lithics tr biotite. SLTST, I/p m gry brn, vf sndy, tr to minor glauc,	
1392	1395	10	70	20					sltst, md gy, tr glauc and lithic gns, occ v lt gy, sft, gds to v f SST,	
1395	1398	20	70	10					silty sst, v lt gy, soft, gds to sandy sltst, tr lithic gns,	
1398	1401	10	80	10					sltst, v lkt gy, sndy, sft, v fnly qtz sndy, gds to silty sst	
1401	1404	10	80	10					sltst, v lkt gy, sndy, sft, v fnly qtz sndy, gds to silty sst, biotite flakes,	
1404	1407		70	30					Arg sltst, md gryish brn and very light gry, sandy, Clyst, pale brown, waxy	
1407	1410		50	50					Arg sltst, v lt gry, sandy w/ wi, gy, tr red, and tr biotite gns, very soft stickt, gds to sndy, slty, clyst	
1410	1413		30	70					clyst, a/a tr biotite, gy lithic gns,	
1413	1417	20	60	20				n	sltst, v lt gry, sandy, arg, v soft stcky, gds to arg sst, vf gn, p std, minor lithics, tr biotite and felds	
1417	1420	20	60	20						
1420	1423	20		80					sandy cyst, v lt gy, com felds, minor biotite, gds to v f arg sst	
1423	1426		60	40				tr	clyst 10%, , pale gysh gm, smth, subfiss, 90% light grysh brn, vfly sndy, gds to slty clyst, tr coal frags,	
1426	1429		60	40					clyst pale bl-grnsh gy, 90 % lt gry sily clyst a/a tr biotite, tr carb frags,	
1429	1432		40	60					Clyst 40%, pale grnsh gry a/a, 60% light grys brn v fnly sndy, gds to tr v f sst,	
1432	1435									
1435	1438		80	20					siltst, lt gy, gry brn, arg gds to clyst, clyst I/p pale bluish gry,	
1438	1440	20	70	10				tr	siltst, lt gy, gry brn, arg gds to clyst, clyst I/p pale bluish gry,	
1440	1443	80	20					p	sst, clr gy, vf to m grn, mod std, arg mtx, occ dense calc cmt, abndt lithic gns, tr felds,	
1443	1446	80	20					p	sst as above, pred lse gns, minor aggs w/ silty cly mtx washing out.	
1446	1449	50	50						sst a/a, vf gn silty, gds to sltst,	
1449	1452	30	70					tr	sst, vf gn, gds to sltst,	
1452	1455	10	40	50				tr	clyst 20%, pale bluish gy, subfissile, sltst, light, greysh brn, v fnly sandy, sltst a/a	
1455	1458		70	30					Sltst, lt gy, grysh brn, firm, sndy w/ qtz and common lithic gns, tr carb mat. sltst a/a	
1458	1461		50	50					clyst, gy, pale grnsh gy, silty I/p gdst to	
1461	1464		50	50						
1464	1467		80	20					sltst, lt grysh brn, homogenous, tr carb mat, tr felds,	
1467	1470		80	20					a/a, tr large carb flecks, v fnly sndy I/p. , clyst, pale grnsh gy a/a	

Depth (mRT)		Port Fairy No 1 - Sample Descriptions							Vis Por	Description and shows:
From	To	Sst	Slt	Clyst	Lst	Marl	Co			
1470	1473	50	50						sst, gry, vf gn, slty, tr carb mat, felds, com lithic grains,gds to clyst, smooth	
1473	1476	70	30					tr	Sst, clear to grey, very fine to medium grained, moderately sorted, argillaceous matrix washing out, variable calcareous cement,abundant grey and black, trace red lithic grains,trace feldspar, vis porosity nil to poor.	
1476	1479	60	30	10						
1479	1482	50	40	10				nil-pr	Sltst, light grey to greyish brown, finely sandy, trace carbonaceous flakes and feldspar,	
1482	1485	20	50	30						
1485	1488	20	30	50					Clyst, in part brownish grey, in part pale greenish to bluish grey, smooth to waxy, friable ?tuff	
1488	1491	10	30	60						
1491	1494	10	40	50				nil-pr	Sltst, light grey to greyish brown, finely sandy, trace carbonaceous flakes and feldspar,	
1494	1497	10	30	60					Clyst, in part brownish grey, in part pale greenish to bluish grey, smooth to waxy, friable ?tuff	
1497	1500	50	30	20				nil-pr	Sst, clear to grey, very fine to medium grained, moderately sorted, argillaceous matrix washing out, variable calcareous cement,abundant grey and black, trace red lithic grains,trace feldspar, vis porosity nil to poor.	
1500	1503	10	40	50						
1503	1506	80	10	10				tr	Sst, lt gry, vf to f gnh, m std, ang, pred lse, cly mtx adhering to gns,abndt gy and black lithic tr casrb mat	
1506	1509	90	10					n	sst, gry, vf to f gn, slty, p std, ang, pred lse gns, occ slty aggs w/ clay mtx and calc cmt,	
1509	1512	80	10				10		sst, gry, vf gn, w std, ang, qtz and abndt lithic gn, ashing out of lt gy clay mtx, tr felds, tr coal, black, v dk brn,	
1512	1515	80	10	10				tr		
1515	1518	70	30					tr	sst, a/a, vf to f gn, abndt arg mtx washing out, gds to siltstone. red siltstone, dispersive,	
1518	1521	80	20					p	sst, gry, v fn gn, silty, p std, occ calc mtx, pred lse, occ tight aggs,	
1521	1524	90	10					p	sst a/a, vf gn silty, gy, red blk lithics, tr biotite, gds to sltst, , ang, abndt lithics, sl calc cmt, variable, cly mtx washing out.	
1524	1527	100						p	sltst, gry, vf gn, well std, , ang, abndt lithics, sl calc cmt, variable, cly mtx washing out.	
1527	1530	100							sst a/a,	
1530	1533	90	10						sst a/a, vf to occ m gn, tr felds, common lithics, common aggs ww/ whi cal cmt.	
1533	1536	100						p	sst a/a, pred lse, com aggs / hi clay mtx	
1536	1539	100							sst, gy, grnsh gry, speckled, vf to m gn, m std, ang, pred lse,	
1539	1542	90		10				p	sst a/a f - medium, m std, ang, variable calc cmt, abndt cly mtx, lithic, to 50% of sst, vis por poor,	
1542	1545	80		20					sst a/a	
1545	1548	90		10					SST a/a matrix increasing,	
1548	1550	70		30					SST a/a abundant grey clay matrix grades to sandy CLYST	

Appendix 6: Drill Stem Test Results

Appendix 9: Palynological Report

**Palynological analysis of cuttings
samples from Port Fairy-1,
onshore Otway Basin.**

by

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BASIC DATA

Table 3: Basic sample data for Port Fairy–1, Otway Basin.

Sample Type	Depth	Lithology & Texture of cuttings	Wt (grams)	VOM (cc)	Lab. Yield
Cuttings	856-59m	Black-dark grey argillaceous quartz sandstone, very fine texture.	52.9	2.8	0.052
Cuttings	874m	Dark grey mudstone, very fine texture.	15.1	0.3	0.019
Cuttings	1351m	Black mudstone, fine texture.	15.3	0.7	0.045
Cuttings	1357m	Dark grey mudstone, fine-medium texture.	15.4	0.5	0.032
Cuttings	1369m	Medium grey mudstone, coarse-grain texture.	18.6	1.4	0.075
Cuttings	1381m	Medium grey mudstone, fine-medium texture.	15.0	1.1	0.073
Cuttings	1387m	Medium-light grey mudstone, powder to lumpy texture.	15.1	0.9	0.059
Cuttings	1405m	Medium grey mudstone, very fine texture.	15.3	0.4	0.026
Cuttings	1441m	Dark grey mudstone, medium texture.	15.4	0.4	0.025
Cuttings	1545m	Dark grey mudstone, lumpy texture.	15.3	0.2	0.013

Wt = Weight of sample processed in grams.

VOM = Volume of wet organic residues in cubic centimetres recovered from sample.

Org. Yield = VOM divided by Wt.

Table 4: Basic assemblage data for Port Fairy–1, Otway Basin.

Sample Type	Depth	Visual Yield	Palynomorph Concentration	Preservation	No. SP Species	No. MP Species
Cuttings	856-59m	High	Moderate	Poor-good	43+	8+
Cuttings	874m	High	Moderate-high	Good	43+	6+
Cuttings	1351m	High	High	Good	37+	27+
Cuttings	1357m	High	High	Fair-good	32+	25+
Cuttings	1369m	High	Moderate	Poor-fair	41+	17+
Cuttings	1381m	High	High	Poor-fair	32+	26+
Cuttings	1387m	High	Moderate-high	Poor	37+	23+
Cuttings	1405m	Moderate	Moderate	Poor-fair	33+	13+
Cuttings	1441m	High	Moderate	Poor-fair	37+	6+
Cuttings	1545m	Moderate	Low	Poor	26+	3+

Averages:

36.1

15.4

Table 5: Species abundances and occurrences in Port Fairy–1, Otway Basin.

Sample Type:	Cuttings	Cuttings
Depth:	856-59m	874m
Spore-Pollen Species		
Angiosperm pollen undiff.	0.6%	2.8%
<i>Australopollis obscurus</i>	1.2%	
<i>Araucariacites australis</i>	0.6%	2.1%
<i>Baculatisporites</i> spp.	2.4%	
<i>Beaupreaidites orbiculatus</i>		cf.
<i>Camarozonosporites apiculata</i> †	X	X
<i>Camarozonosporites bullatus</i>	X	X
<i>Camarozonosporites heskermensis</i>		X
<i>Clavifera triplex</i>	0.6%	X
<i>Cyathidites</i> spp. large >40µm	X	0.7%
<i>Cyathidites</i> spp. small <40µm	4.2%	2.8%
<i>Densoisporites velatus</i>		0.7%
<i>Dilwynites granulatus</i>	2.4%	
<i>Dictyophyllidites</i> spp.	1.2%	2.1%
<i>Forcipites longus</i>		X
<i>Gambierina rudata</i>	9.5%	6.4%
<i>Gleicheniidites circinidites</i>	3.0%	6.4%
<i>Grapnelispora evansii</i>	X	
<i>Herkosporites elliotii</i>	1.8%	1.4%
<i>Illexpollenites</i> spp.		0.7%
<i>Laevigatosporites major</i>	X	X
<i>Laevigatosporites ovatus</i>	5.4%	2.8%
<i>Latrobosporites amplus</i>	X	1.4%
<i>Liliacidites</i> spp.	X	1.4%
<i>Lygistepollenites balmei</i>	0.6%	0.7%
<i>Lygistepollenites florinii</i>	1.8%	1.4%
<i>Marattisporites scabratus</i>	1.2%	
<i>Microalatidites paleogenicus</i>		0.7%
<i>Microcachryidites antarcticus</i>	1.2%	2.1%
<i>Nothofagidites endurus</i>		X
<i>Nothofagidites senectus</i>	X	1.4%
<i>Ornamentifera sentosa</i>	X	
<i>Peninsulapollis gillii</i>	0.6%	
<i>Peromonolites baculatus</i> †	X	
<i>Perotrilites</i> spp.		X
<i>Phyllocladidites mawsonii</i>	4.2%	9.9%
<i>Phyllocladidites verrucosus</i>	1.2%	
<i>Podocarpidites</i> spp.	6.0%	13.5%
<i>Proteacidites</i> spp.	31.0%	25.5%
<i>Proteacidites clinei</i> †	1.2%	0.7%

Table 5: Species abundances and occurrences in Port Fairy-1, Otway Basin (continued).

Sample Type:	Cuttings	Cuttings
Depth:	856-59m	874m
<i>Proteacidites konfragosus</i> †	X	X
<i>Proteacidites palisadus</i>		0.7%
<i>Proteacidites prepolus</i> †	X	
<i>Proteacidites reticuloconcaus</i> †	1.8%	0.7%
<i>Pseudowinterapollis wahooensis</i>	X	
<i>Retitriletes</i> spp.	X	2.8%
<i>Stereisporites antiquisporites</i>	10.7%	2.1%
<i>Stereisporites regium</i>	1.2%	0.7%
<i>Tetracolporites verrucosus</i>		0.7%
<i>Trichotomosulcites subgranulatus</i>	0.6%	1.4%
Tricolp(or)ates spp.	1.2%	2.1%
<i>Tricolpites waiparaensis</i>		X
<i>Tricolporites lilliei</i>		X
Trilete spores undiff.	3.0%	
<i>Triporopollenites</i> spp.		0.7%
<i>Tripunctisporis maastrichtiensis</i>	X	
Total Spores:	34.5%	24.1%
Total Gymnosperms:		31.9%
Total Angiosperms:	47.6%	44.0%
Total Spore-Pollen:	168	141
MP count:	41	20
Combined SP + MP count:	209	161
MP% of combined MP + SP count:	19.6%	12.4%
Microplankton & Algae Species		
Microplankton undiff.	5%	15%
<i>Alterbidinium</i> sp. cf <i>A. acutulium</i>	X	5%
<i>Amosopollis cruciformis</i>	2%	
<i>Botryococcus braunii</i>		X
<i>Impletosphaeridium</i> sp.	7%	5%
<i>Manumiella conorata</i>	71%	70%
<i>Nummus</i> sp.		X
<i>Palaeostomocystis reticulata</i>	2%	
<i>Paralecaniella indentata</i>	12%	5%
<i>Spiniferites</i> spp.	2%	
Total Microplankton:	41	20
Reworked Palynomorphs	1.0%	3.1%
TOTAL COUNT:	209	161

Abbreviations:

X = Present
 cf. = Compared with
 † = Manuscript species.

Table 6: Species abundances and occurrences in Port Fairy-1, Otway Basin.

Sample Type:	Cutts							
Depth:	1351m	1357m	1369m	1381m	1387m	1405m	1441m	1545m
Spore-Pollen Species								
<i>Aequitriradites spinulosus</i>					X		1.3%	
<i>Appendicisporites distocarinus</i>	X		0.6%	X	X			
<i>Araucariacites australis</i>	1.3%	2.9%	2.4%	1.7%	1.6%	2.7%	1.3%	5.3%
<i>Asteropollis asteroides</i>		X						
<i>Australopollis obscurus</i>	0.6%	0.5%			0.8%	0.9%		
<i>Baculatisporites</i> spp.	0.6%	1.0%	1.8%	2.5%	3.2%	1.8%	1.9%	8.8%
<i>Balmeisporites glenelgensis</i>			X					
<i>Balmeisporites holodictyus</i>						X		
<i>Ceratospirites equalis</i>	X				X	X	0.6%	
<i>Cicatricosisporites</i> spp.	X	X		2.5%	1.6%	4.5%	7.6%	1.8%
<i>Clavifera triplex</i>	1.3%	X	X					
<i>Coptospora paradoxa</i>						X	0.6%	
<i>Coptospora pileolus</i> †	X							
<i>Corollina torosa</i>	0.6%	1.0%	1.2%		X	2.7%	4.5%	0.9%
<i>Crybelosporites striatus</i>					RW	2.7%	1.9%	2.6%
<i>Cupressacites</i> sp.	25%	23%	3.7%	5.9%	X	3.6%	3.8%	1.8%
<i>Cyathidites</i> spp. large >40µm	0.6%	1.4%	3.7%	1.7%	7.3%	3.6%	4.5%	1.8%
<i>Cyathidites</i> spp. small <40µm	4.5%	6.2%	15.2%	15.3%	13.7%	28.2%	26.8%	14.0%
<i>Cyclosporites hughesii</i>						X	X	
<i>Dacrycarpites australiensis</i>	0.6%							
<i>Densoisporites velatus</i>			0.6%					
<i>Dictyophyllidites</i> spp.	0.6%	4.3%	5.5%	4.2%	3.2%	3.6%	1.3%	1.8%
<i>Dictyotosporites speciosus</i>						X		
<i>Dilwynites</i> spp.	11.6%	12%	9.8%	14.4%	7.3%	2.7%	1.9%	0.9%
<i>Dilwynites echinatus</i> †	X		X			X		
<i>Dilwynites granulatus</i>	X	X	X	X	X	X	X	X
<i>Dilwynites pusillus</i> †	X	X	X	X	X	X	X	
<i>Foraminisporis asymmetricus</i>						X	X	
<i>Foraminisporis dailyi</i>	X		0.6%					
<i>Foveogleicheniidites confossus</i>			1.2%	X				
<i>Gleicheniidites ancorus</i> †	0.6%	1.0%						
<i>Gleicheniidites circinidites</i>	8.4%	9.1%	19.5%	12.7%	18.5%	6.4%	2.5%	4.4%
<i>Herkosporites elliotii</i>	X	2.4%	0.6%		1.6%			
<i>Herkosporites proxistriatus</i>	X		X	2.5%				
<i>Hoegisporis trinalis</i> †			X		?			
<i>Laevigatosporites musa</i> †		0.5%				0.9%		
<i>Laevigatosporites ovatus</i>	2.6%	1.9%	3.0%	2.5%	1.6%	2.7%	1.9%	
<i>Liliacidites</i> spp.			X	0.8%	0.8%	0.9%		
<i>Lygistepollenites florinii</i>	CV			CV				CV
<i>Marattisporites scabratus</i>	0.6%	1.4%	1.2%	0.8%	0.8%			0.9%
<i>Matonisporites cooksoniae</i>							X	
<i>Microcachryidites antarcticus</i>	6.5%	6.2%	3.0%	5.1%	2.4%	6.4%	3.8%	3.5%
<i>Neoraistrickia truncata</i>		X	X					
<i>Osmundacidites wellmanii</i>	0.6%	0.5%	1.8%	0.8%	1.6%	2.7%	1.9%	6.1%
<i>Peromonolites</i> spp.	X		X		2.4%			
<i>Perotrilites jubatus</i>			0.6%		1.6%	X		1.8%

Table 6: Species abundances and occurrences in Port Fairy-1, Otway Basin (continued).

Sample Type:	Cutts	Cutts	Cutts	Cutts	Cutts	Cutts	Cutts	Cutts
Depth:	1351m	1357m	1369m	1381m	1387m	1405m	1441m	1545m
<i>Perotriletes majus</i>			X	X				
<i>Phimopollenites pannosus</i>							3.2%	0.9%
<i>Phyllocladidites eunuchus</i> †		0.5%					X	
<i>Phyllocladidites mawsonii</i>	2.6%	1.0%	X	0.8%	0.8%		0.6%	2.6%
<i>Podocarpidites</i> spp.	20.6%	9.1%	12.8%	11.0%	11.3%	9.1%	12.1%	26.3%
<i>Proteacidites</i> spp.	X		0.6%	0.8%	2.4%	0.9%	0.6%	
<i>Retitriletes</i> spp.	0.6%	1.9%	X	2.5%	3.2%	2.7%	2.5%	1.8%
<i>Retitriletes austroclavatidites</i>						X	X	
<i>Retitriletes nodosus</i>	RW			X		X		
<i>Stereisporites antiquisporites</i>	0.6%	0.5%	0.6%	X	0.8%	1.8%	0.6%	0.9%
<i>Stoverisporites microverrucatus</i>						X		
<i>Trichotomosulcites subgranulatus</i>	5.8%	6.7%	1.8%	6.8%	6.5%	2.7%	5.1%	4.4%
Tricolp(or)ates spp.		1.0%	1.2%	0.8%	0.8%	1.8%	1.3%	
<i>Tricolporites melusina</i> †						2.7%	0.6%	3.5%
Trilete spores undiff.		3.3%	4.9%		4.0%	0.9%	1.9%	2.6%
<i>Trilobosporites trioreticulosus</i>			X					
<i>Triporoletes laevigatus</i>						X	1.9%	
<i>Triporoletes reticulatus</i>			X	X	X		0.6%	0.9%
<i>Verrucosporites admirabilis</i> †		1.0%	1.8%	2.5%	X	CV		
<i>Vitreisporites signatus</i>	2.6%			0.8%	X		0.6%	
Total Spores:	22%	36%	63%	51%	65%	63%	61%	50%
Total Gymnosperms:	77%	62%	35%	47%	30%	30%	34%	46%
Total Angiosperms:	0.6%	1.4%	1.8%	2.5%	4.8%	7.3%	5.7%	4.4%
Total Spore-Pollen:	155	209	164	118	124	110	157	114
Total MP in MP + SP count:	20	40	11	20	14	14	9	7
Combined MP + SP Count:	175	249	175	138	138	124	166	121
MP% in SP + MP counts	11.4%	16.1%	6.3%	14.5%	10.1%	11.3%	5.4%	5.8%
Microplankton								
Microplankton undiff.	5%	16%	5%	10%	16%	21%	11%	
<i>Amosopollis cruciformis</i>	31%	23%	3%	5%	3%	7%	11%	
<i>Amphidiadema denticulata</i>			CV					
<i>Callaiosphaeridium asymmetricum</i>	X	X						
<i>Chatangiella tripartita</i>	CV							
<i>Chatangiella victoriensis</i>	CV							
<i>Chlamydoxella nyei</i>		4%	X	6%	10%	7%		
<i>Cleistosphaeridium ancoriferum</i>	2%	1%	4%	3%	3%			
<i>Cribroperidinium apione</i>	5%	3%		X	7%			
<i>Cribroperidinium edwardsii</i>		4%	26%	26%	16%	7%	22%	29%
<i>Cyclonephelium compactum</i>				4%	5%			
<i>Cyclonephelium distinctum</i>	X		X					
<i>Cyclonephelium vannophorum</i>				3%				
<i>Cymatiosphaera</i> sp.				X	X			
<i>Exochosphaeridium</i> spp.	X	X	5%	4%	X	7%	CV	
<i>Flaxadinium</i> sp. nov. †	8%	1%		1%		7%		
<i>Florentinia deanei</i>					X			
<i>Heterosphaeridium</i> spp.	11%	16%	22%	8%	3%	7%	CV	43%

Table 6: Species abundances and occurrences in Port Fairy-1, Otway Basin (continued).

Sample Type:	Cutts							
Depth:	1351m	1357m	1369m	1381m	1387m	1405m	1441m	1545m
<i>Heterosphaeridium conjunctum</i>	X	X						
<i>Heterosphaeridium heteracanthum</i>	X	X	X	X	X	CV		
<i>Horologinella</i> sp. cf <i>H. lineata</i>						7%		
<i>Hystrichodinium pulchrum</i>		X		1%				
<i>Isabelidinium</i> spp.	5%	4%	1%					
<i>Isabelidinium balmei</i>	CV	3%			CV			
<i>Isabelidinium cretaceum</i>		CV						
<i>Kallosphaeridium</i> sp.	X	7%		3%	2%			
<i>Kiokansium polypes</i>	5%	3%	5%	4%	5%			
<i>Manumiella conorata</i>			CV					CV
<i>Micrhystridium</i> spp.	3%		1%	X	2%	14%		
<i>Microdinium ornatum</i>				X				
<i>Nelsoniella aceras</i>								CV
<i>Odontochitina costata</i>	X		4%		2%	CV		
<i>Odontochitina operculata</i>	X	3%						
<i>Odontochitina porifera</i>	3%	1%						
<i>Oligosphaeridium</i> spp.			14%	14%	7%		11%	
<i>Oligosphaeridium complex</i>	X		X	X	X		CV	
<i>Oligosphaeridium pulcherrimum</i>		X		X				
<i>Palaeohystrichophora infusorioides</i>	5%	3%				7%		
<i>Palaeoperidinium cretaceum</i>			5%	4%	3%	CV		
<i>Palambages</i> spp.	2%			X				
<i>Pterospermella australiensis</i>				X		CV		
<i>Sigmopollis carbonis/hispidus</i>					X	X	33%	29%
<i>Spiniferites</i> spp.	6%	4%	3%	4%	9%	7%	11%	
<i>Tanyosphaeridium salpinx</i>	5%							
<i>Trichodinium castanea</i>		X		3%	2%	CV		
<i>Trithyrodinium</i> spp.	2%							
<i>Valensiella griphus</i>	3%	4%					CV	
<i>Veryhachium</i> sp.					5%	X		
<i>Xenascus</i> sp.	X	X						
Total Microplankton count:	62	74	76	80	58	14	9	7
Other Palynomorph								
Fungal microfossils	1.3%	0.9%	1.2%			0.9%	2.5%	
<i>Botryococcus braunii</i>		X						
Reworked/Caved spore-pollen						0.9%		2.6%
<i>Aratrisporites</i> spp.					RW			RW
<i>Battenipollis sectilis</i>	CV							
<i>Forcipites sabulosus</i>	CV							
<i>Latrobosporites amplus/ ohaiensis</i>	CV					CV		
<i>Nothofagidites senectus</i>							CV	
<i>Ornamentifera sentosa</i>						CV	CV	
<i>Pilosisorites notensis</i>					RW			
Total Others:	2	2	2			2	4	3
TOTAL SP + Others COUNT:	157	211	166	118	124	112	161	117

Abbreviations:X= Present;
cf. = Compared with;CV = Caved;
† = Manuscript species

RW = Reworked;

Appendix 10: Fluid Analysis

3 September 2002

Essential Petroleum Resources Ltd
Level 2
226 Albert Road
SOUTH MELBOURNE VIC 3205

Attention: Wally Westman

REPORT LQ11954

CLIENT REFERENCE: Letter of 15/8/02

WELL NAME/RE: Port Fairy #1

MATERIAL: Fluid

WORK REQUIRED: Extraction, qualitative gas chromatography & resistivity

AUTHOR'S NAME: Carmelina Valente

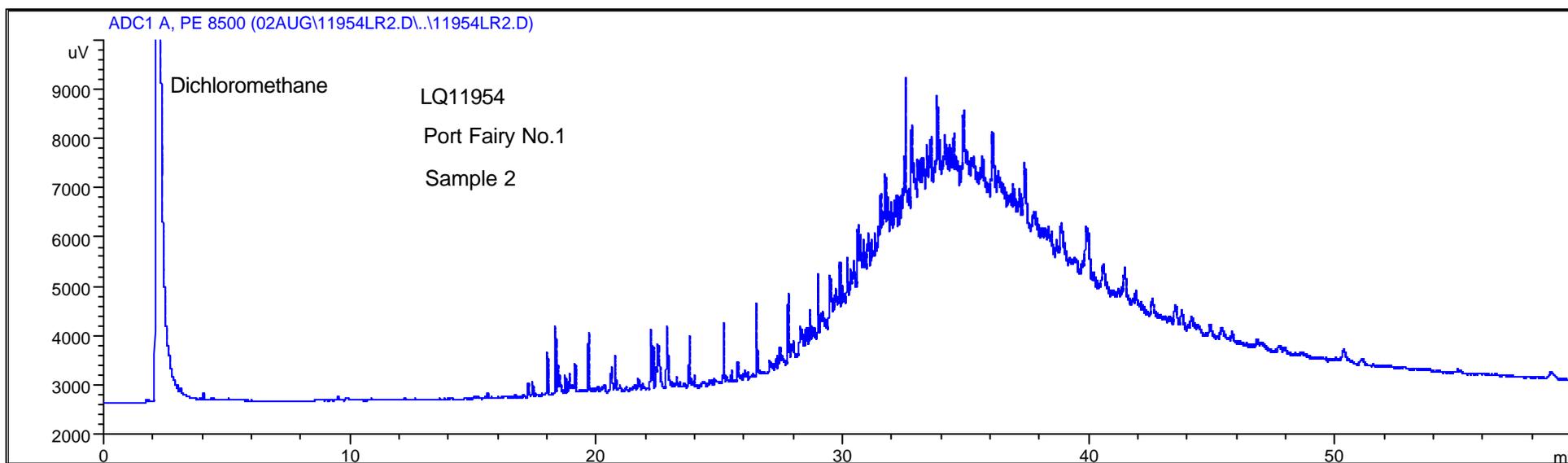
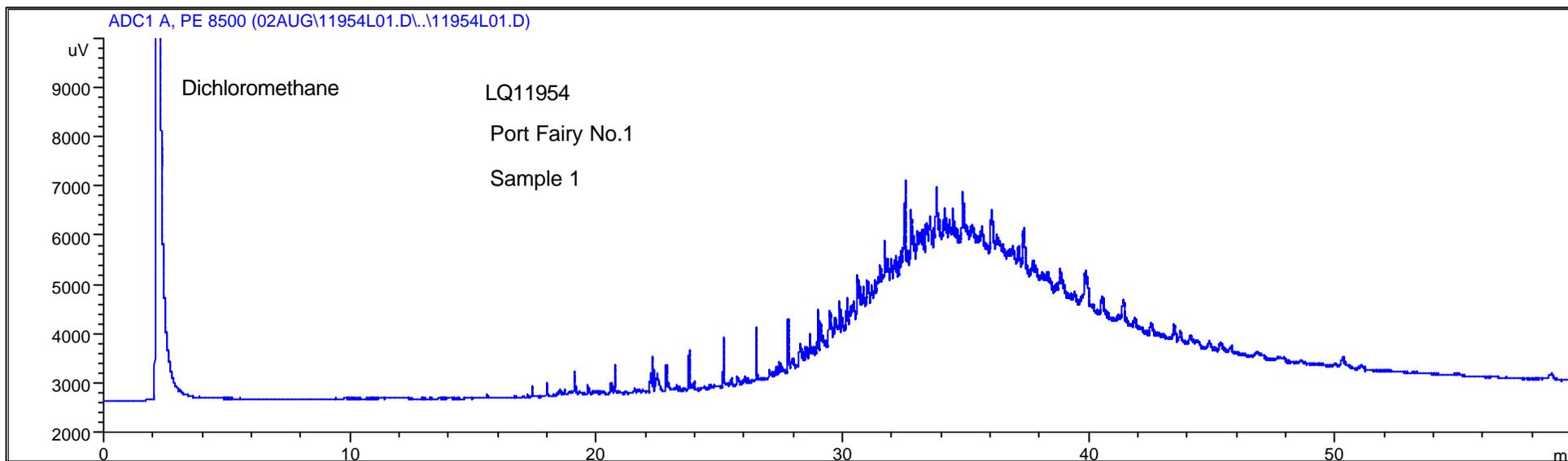
Please direct technical enquiries regarding this work, to the signatory below, under whose supervision the work was carried out. This report relates specifically to the sample or samples submitted for testing.

Diane Cass
Operations Manager
Petroleum Services

dc.cm

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ABN 30 008 127 802 • Telephone: +61 8 8416 5200 • Facsimile: +61 8 8234 2933

1. INTRODUCTION

Amdel Limited received two liquid samples from Port Fairy No.1 for extraction, residual hydrocarbons and resistivity on 22 August 2002. This report is a formal presentation of results forwarded by facsimile on 28 August 2002.

2. PROCEDURE

The samples were extracted with dichloromethane and carefully dried down using a rotary evaporator.

The extracts were analysed on a Perkin Elmer 8500 Gas Chromatograph equipped with a capillary column, flame ionisation detector and nitrogen carrier gas.

3. RESULTS

The gas chromatograms are presented on the following pages.

SAMPLE ID	YIELD (mg/L)	RESISTIVITY ohm.M @ 25°C
Sample 1	5	1.81
Sample 2	3	1.78

The extracts appear to be medium to heavy boiling range hydrocarbon.

The naphthenic hydrocarbon fraction between 30 and 60 minutes (>400°C) appears to be a lubricating oil.

3 October 2002

Essential Petroleum Resources Ltd
Level 2
226 Albert Road
SOUTH MELBOURNE VIC 3205

RECEIVED
10 OCT 2002

BY:.....

Attention: Wally Westman / Roger Blake

REPORT LQ12088

CLIENT REFERENCE:

Request 25/9/02

WELL NAME/RE:

Port Fairy-1

MATERIAL:

Gas

WORK REQUIRED:

Cylinder rental, gas composition & mobilisation

AUTHOR'S NAME:

Carmelina Valente

Please direct technical enquiries regarding this work, to the signatory below, under whose supervision the work was carried out. This report relates specifically to the sample or samples submitted for testing.



Diane Cass
Operations Manager
Petroleum Services

dc.cm

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PETROLEUM SERVICES GAS ANALYSIS

Method GL-01-01

ASTM D 1945-96 (modified)

Client: ESSENTIAL PETROLEUM

Report # LQ12088

Sample: PORT FAIRY-1
 Gas
 2850 kPag @ 10°C
 22/09/02, 1100 h, Cyl# 484

GAS	MOL %
Nitrogen	9.13
Carbon Dioxide	0.00
Methane	82.02
Ethane	4.21
Propane	2.60
I-Butane	0.96
N-Butane	0.71
I-Pentane	0.22
N-Pentane	0.08
Hexanes	0.04
Heptanes	0.02
Octanes and higher h'cs	0.01
Total	100.00

(0.00 = less than 0.01%)

The above results are calculated on an air and water free basis assuming only the measured constituents are present. The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs) using ISO 6976 and the physical constants from the GPSA SI Engineering Data Handbook 11 th Ed.

Average Molecular Weight	19.38
Lower Flammability limit	4.89
Upper Flammability limit	15.86
Ratio of upper to lower	3.24
Wobbe Index	47.39
Compressibility Factor	0.9976
Ideal Gas Density (Rel to air = 1)	0.669
Real gas Density (Rel to air = 1)	0.670
Ideal Nett Calorific Value MJ/m3	35.05
Ideal Gross Calorific Value MJ/m3	38.76
Real Nett Calorific Value MJ/m3	35.13
Real Gross Calorific Value MJ/m3	38.86
Gross calorific value of water-saturated gas MJ/m3	38.08

This report relates specifically to the sample submitted for analysis.

Approved Signatory _____

Accreditation No. : 2013
 Date : 12-12-02

15 October 2002

Essential Petroleum Resources Ltd
Level 2
226 Albert Road
SOUTH MELBOURNE VIC 3205

Attention: Roger Blake

REPORT LQ12106

CLIENT REFERENCE: Letter of 25/9/02

WELL NAME/RE: Port Fairy No. 1

MATERIAL: Liquid

WORK REQUIRED: Gas chromatographic analysis of oil & X-ray analysis

AUTHOR'S NAME: Carmelina Valente

Please direct technical enquiries regarding this work, to the signatory below, under whose supervision the work was carried out. This report relates specifically to the sample or samples submitted for testing.

Diane Cass
Operations Manager
Petroleum Services

dc.cm

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1. INTRODUCTION

A sample of liquid was received for gas chromatography and determination of its mineralogy on 1 October 2002. This is a final presentation of results sent by e-mail on 3 and 10 October 2002.

2. PROCEDURE

The sample was analysed on a Perkin Elmer 8500 Gas Chromatograph equipped with a capillary column, flame ionisation detector and nitrogen carrier gas.

The sample was analysed by X-ray diffraction to identify the minerals present.

3. RESULTS

The gas chromatogram and composition is presented on the following page.

The low boiling hydrocarbon at 1.8-16 min with a boiling range (-11.7 - 235°C) appears to be a full range naphtha (without the black discolouration).

The gas chromatogram contains a small amount of mono aromatics and the density 0.7700 g/cm³. It is appears to be suitable to be used as a solvent in industry.

The semi-quantitative mineralogy of the sample follows.

Name	Composition	Relative abundance
Amorphous		D
Magnetite	Fe ₃ O ₄	A
Graphite	C	Tr-A
Talc	Magnesium silicate	Tr-A
Calcite	CaCO ₃	Tr
?Hematite	Fe ₂ O ₃	Tr

Semiquantitative Abbreviations

- D = Dominant. Used for the component apparently most abundant, regardless of its probable percentage level.
- SD = Sub-dominant. The next most abundant component(s) providing its percentage level is judged above about 20.
- A = Accessory. Components judged to be present between the levels of roughly 5 and 20%.
- Tr = Trace. Components judged to be below about 5%.
- .

The X-ray diffraction indicates that the black particles in this sample are due to the carbon and Fe₃O₄ content.

Client: **ESSENTIAL PETROLEUM RESOURCES LTD**

Report # **LQ12106**

Sample: **PORT FAIRY NO. 1**

Boiling Point Range (Deg.C)	Component	Weight%	Mol%
-88.6	ETHANE	0.00	0.00
-42.1	PROPANE	0.00	0.01
-11.7	I-BUTANE	0.04	0.07
-0.5	N-BUTANE	0.19	0.35
27.9	I-PENTANE	1.86	2.77
36.1	N-PENTANE	2.33	3.46
36.1-68.9	HEXANE, C-6	12.22	15.23
80.0	BENZENE	0.00	0.00
80.7	CYCLOHEXANE	1.57	2.00
68.9-98.3	HEPTANE,C-7	18.61	19.94
100.9	METHYLCYCLOHEXANE	8.57	9.37
110.6	TOLUENE	0.07	0.09
98.3-125.6	OCTANE, C-8	24.23	22.77
136.1-144.4	ETHYLBZ+XYLENES	1.03	1.04
125.6-150.6	C-9	15.47	12.95
150.6-173.9	C-10	8.74	6.59
173.9-196.1	C-11	3.53	2.42
196.1-215.0	C-12	1.03	0.65
215.0-235.0	C-13	0.39	0.22
235.0-252.2	C-14	0.07	0.04
252.2-270.6	C-15	0.04	0.02
270.6-287.8	C-16	0.01	0.01
287.8-302.8	C-17	0.00	0.00
302.8-317.2	C-18	0.00	0.00
317.2-330.0	C-19	0.00	0.00
330.0-344.4	C-20	0.00	0.00
344.4-357.2	C-21	0.00	0.00
357.2-369.4	C-22	0.00	0.00
369.4-380.0	C-23	0.00	0.00
380.0-391.1	C-24	0.00	0.00
391.1-401.7	C-25	0.00	0.00
401.7-412.2	C-26	0.00	0.00
412.2-422.2	C-27	0.00	0.00
>422.2	C-28+	0.00	0.00
	Total	100.00	100.00

(0.00 = LESS THAN 0.01%)

The above boiling point ranges refer to the normal paraffin hydrocarbon boiling in that range. Aromatics, branched hydrocarbons, naphthenes and olefins may have higher or lower carbon numbers but are grouped and reported according to their boiling points.

Average molecular weight of C-8 plus fraction (calc) = 121 g/mol

This report relates specifically to the sample submitted for analysis.

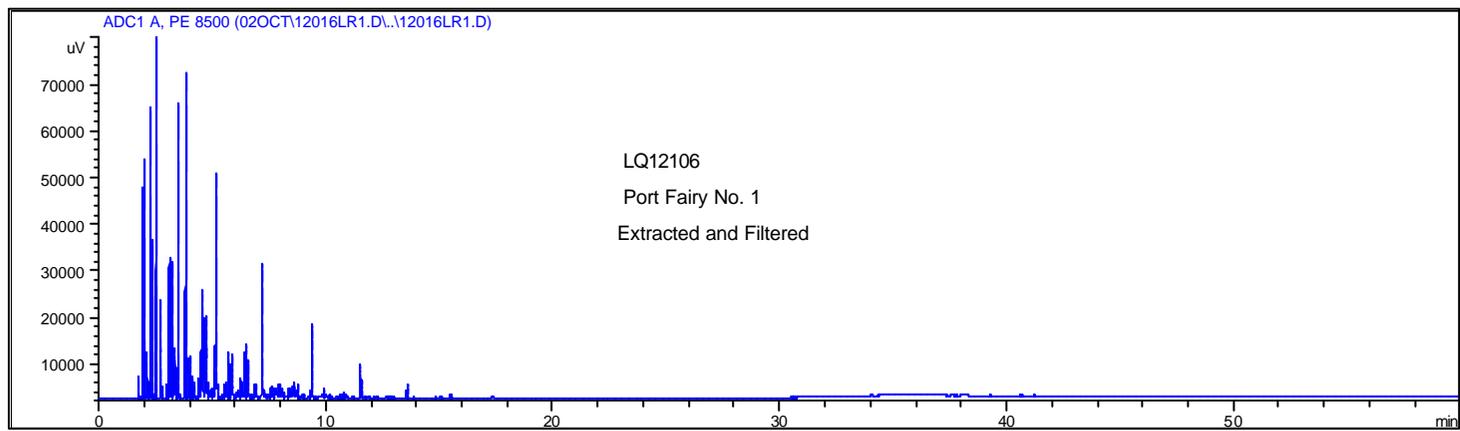
Approved Signatory

Accreditation No:

Date

2013

12-Dec-02





XI:18001

Your Ref: Reserve Pit Port Fairy No. 1

17 April 2002

Essential Petroleum Resource Limited
Level 2, 226 Albert Road
South Melbourne VIC 3205

Date Received: 5/04/2002

RECEIVED
24 APR 2002

Attention: **Mr. Wally Westman**

BY:.....

Certificate of Analysis

WSL Report Number: **443664**

The sample(s) referred to in this report were analysed by the following methods:

Analyte(s)	Method	Analyte(s)	Method
Alkalinity	APHA 2320 B	Cations	WSL 023A
Chloride	APHA 4500-CL,B	Cyanide	APHA 4120
Electrical Conductivity	APHA 2510B	Fluoride	WSL 077
Metals	WSL-032	Nitrate Nitrogen	APHA 4120
OCs	WSL8000	PAHs	WSL8000
PCBs	WSL8000	pH	APHA 4500H,B
Resistivity ^^	APHA 2510 B	Silica	APHA 4500-SI,C
Sulphate	APHA 4500SO4E	Total Phenolics	APHA 4120
TPH	WSL030	Volatiles	WSL3810A

Results pertain to samples as received

Yours faithfully
WSL Consultants Pty Ltd

Nick Bray
Manager Of Chemistry



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Date : 18-Dec-2002

WSL Report No: 443664

WSL JobNumber: 18001 Client: Essential Petroleum Resource Limited Job Reference: Reserve Pit Port Fairy No. 1

LAB NUM	Received	Sample	As	Cd	Co	Cr	Cu	Hg	Mo	Ni	Pb	Se	Sn	Zn
443664	5-Apr-2002	PARTLY DEHYDRATED DRILLING MUD	19	<0.2	7	40	52	<0.05	<5	16	17	<5	<5	100

Date : 18-Dec-2002

WSL Report No: 443664

WSL JobNumber: 18001 Client: Essential Petroleum Resource Limited Job Reference: Reserve Pit Port Fairy No. 1

LAB NUM	Received	Sample	POTASSIUM	SODIUM	CALCIUM	MAGNESIUM	ALKALINITY as CaCO ₃	Bi- CARBONATE as CaCO ₃	CARBONATE as CaCO ₃	HYDROXIDE as CaCO ₃	CHLORIDE	SULPHATE
443665	5-Apr-2002	WATER SAMPLE FROM RESERVE PIT	310	930	32	24	450	450	<2	<2	1,500	55

Date : 18-Dec-2002

WSL Report No: 443664

WSL JobNumber: 18001 Client: Essential Petroleum Resource Limited Job Reference: Reserve Pit Port Fairy No. 1

LAB NUM	Received	Sample	CONDUCTIVITY (μ S/cm)	pH (pH Units)	NITRATE NITROGEN	SILICA	IRON	SOLUBLE IRON	RESISTIVITY (ohms-cm)
443665	5-Apr-2002	WATER SAMPLE FROM RESERVE PIT	5,700	7.3	0.02	31	3.6	0.94	180

Date : 18-Dec-2002

WSL Report No: 443664

WSL JobNumber: 18001 Client: Essential Petroleum Resource Limited Job Reference: Reserve Pit Port Fairy No. 1

LAB NUM	Received	Sample	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-C36	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	STYRENE	CUMENE	1,2,4-TRI- METHYL BENZENE	TOTAL PHENOLS	FLUORIDE	CYANIDE
443664	5-Apr-2002	PARTLY DEHYDRATED DRILLING MUD	58	31	300	170	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<5	<5

Date : 18-Dec-2002

WSL Report No: 443664

WSL JobNumber: 18001 Client: Essential Petroleum Resource Limited Job Reference: Reserve Pit Port Fairy No. 1

LAB NUM	Received	Sample	NAP	ACY	ACE	FLU	PHE	ANT	FLA	PYR	BAA	CHR	BBF	BKF	BAP	DBA	BGP	IPY	TOTAL PAH
443664	5-Apr-2002	PARTLY DEHYDRATED DRILLING MUD	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1

Date : 18-Dec-2002

WSL Report No: 443664

WSL JobNumber: 18001 Client: Essential Petroleum Resource Limited Job Reference: Reserve Pit Port Fairy No. 1

LAB NUM	Received	Sample	HCB	a-BHC	LINDANE	HEPTACHLOR	ALDRIN	b-BHC	d-BHC	HEPTACHLOR- EPOXIDE	DDE	DIELDRIN
443664	5-Apr-2002	PARTLY DEHYDRATED DRILLING MUD	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Date : 18-Dec-2002

WSL Report No: 443664

WSL JobNumber: 18001 Client: Essential Petroleum Resource Limited Job Reference: Reserve Pit Port Fairy No. 1

LAB NUM	Received	Sample	DDD	DDT	ENDRIN	METHOXYCHLOR	CHLORDANE	a-ENDO-SULPHAN	b-ENDO-SULPHAN	ENDOSULPHAN SULPHATE	ENDRIN ALDEHYDE
443664	5-Apr-2002	PARTLY DEHYDRATED DRILLING MUD	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Date : 18-Dec-2002

WSL Report No: 443664

WSL JobNumber: 18001 Client: Essential Petroleum Resource Limited Job Reference: Reserve Pit Port Fairy No. 1

LAB NUM	Received	Sample	AROCLOR 1016	AROCLOR 1221	AROCLOR 1232	AROCLOR 1242	AROCLOR 1248	AROCLOR 1254	AROCLOR 1260	TOTAL PCBs
443664	5-Apr-2002	PARTLY DEHYDRATED DRILLING MUD	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1



XI:18001

Your Ref: Reserve Pit Port Fairy No. 1

17 April 2002

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