LAKES OIL N.L.

(A.B.N. 62 004 247 214)

PROTEA No.1

STRATIGRAPHIC WELL

WELL COMPLETION REPORT

BY

D.R. HORNER & J.N. MULREADY

LAKES OIL N.L.
LEVEL 11,
500 COLLINS STREET,
MELBOURNE 3000
MAY 2003

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1.0 SUMMARY

Protea No.1 stratigraphic hole was located in PEP 157 and was drilled as a follow up well to Boundary Creek No.1A corehole and the Deadman Hill No.1 stratigraphic well. Boundary Creek No.1 encountered reservoir quality Strzelecki Formation section. Protea No.1 is located onshore in the Longford area of Gippsland, being off Clancy Street off Merricks Road, Longford, approximately 12 Km SE of Sale (refer Location Map).

The well was drilled to provide stratigraphic and reservoir information regarding both the Golden Beach Formation and Strzelecki Formation at this location. The Golden Beach Formation was intersected at 323 m KB

Core No.1 was cut within the Strzelecki Formation over the interval 349.5 to 556.0 m, recovering 0.8 m (12%). Since the recovery conisted of claystone no ocre analysis was undertaken.

Palynology age dating was undertaken on a sample form the core. (refer Appendix 2).

Protea No.1 was spudded at 0730hrs 3rd June, 2002. A 12.25" (311 mm) hole was drilled to 8.5m and 9.625" (244 mm) conductor set at 8.4m. An 8.5" (216 mm) hole was then drilled from 8.5m to 345m utilizing a PHPA/KCl /polymer mud system.

Quartenary Gravels were present from surface to 13 meters. No Gippsland Limestone or Lakes Entrance Formation was encountered. The Latrobe Group was encountered at 13 meters, and extended to 323 meters where the Golden Beach Formation was penetrated. Gas readings through the Latrobe Group were between 0 and 3 units, with no oil fluorescence observed. Excellent reservoir quality sands existed throughout the Latrobe Group interval.

Seven inch (178 mm) casing was set at 334m, the BOP's were nippled up and pressure tested, and after the shoe track was drilled out a core was cut from 349.5 to 356.0 meters with 0.8m of recovery. The well began flowing sand and water during coring. The mudweight was increased to 9.1 lb/gal, and a cement plug emplaced at the shoe before drilling 6.125" hole recommenced.

The well was then drilled to 609 m. at which stage drilling was suspended awaiting rig repairs. Subsequently the well was drilled to a total depth of 825 m. bottoming in Strzelecki Formation.

Schlumberger wireline logs were run prior to plugging and abandonment of the well. The rig was released on the 19 June 2002.

2.0 WELL HISTORY

2.1 GENERAL DATA

2.1.1	Well Name and Number	Protea No.1
2.1.2	Location	512877 E 5772884 S
2.1.3	Elevations	G.L. 50.0 m A.S.L. R.T. 51.0 m A.S.L.
2.1.4	Petroleum Tenement	PEP 157
2.1.5	Name of Operator	LAKES OIL N.L. A.C.N. 004 247 214 Level 11 500 Collins Street, Melbourne.
2.1.6	Other Participants	None
2.1.7	Date Drilling Commenced	3 June, 2002
2.1.8	Date Drilling Completed	18th June, 2002
2.1.9	Date Rig Released	19th June, 2002
2.1.10	Drilling Time to T.D.	16 days
2.1.11	Total Depth	825 m.
2.1.12	Status	Plugged and abandoned

2.2 RIG DATA

2.2.1 Drilling Contractor	Sides Engineering Pty Ltd 25 Garden Road, Clayton, Vic. 3168
2.2.2 Rig	Bourne 2000THD
2.2.3 Rig Carrier	Twin Steer Tri-axle
2.2.4 Weight Indicator	Hydraulic Pressure
2.2.5 Power	Cummins - Truck Engine
2.2.6 Rotary	Top Drive
2.2.7 Blocks	Not applicable
2.2.8 Pumps	Clarke 5.5X10 3 Cylinder Duplex
2.2.9 Mud mixing	Gardner Denver Duplex
2.2.10 Sump pump	Not applicable
2.2.11 Transfer Pump	Wreckair - Worm Drive
2.2.12 Tubulars	3.5" X 13.30 D.P.
2.2.13 Fishing Tools	None on Site
2.2.14 Handling Tools	Rented Tasman
2.2.15 Stablizer	12.25", 8.5" , 6"
2.2.16 Spare Parts	As reasonably required to conduct operations for programmed well
2.2.17 Personnel	Driller plus 4 crew
2.2.18 Drilling Hours	Rig Operated Daylight Hours Only.

2.3 DRILLING DATA

2.3.1 The following is the daily operations summary for Protea No.1. It has been compiled from the daily drilling reports. Onsite drilling supervision for Lakes Oil N.L. was provided by W. Westman. Further details are provided in the time/depth curve (Figure 4).

DATE	HOURS	OPERATION
03-06-02	0.5	Move in and rig up.
		Spud Protea No.1 at 0730 hrs 3rd June, 2002.
	1.0	Drill 12.25" (311 mm) hole to 8.5m RT.
	7.0	Cement 9.625" (244 mm) conductor at 8.4m.
	3.0	Nipple up BOP's and function test.
	1.0	Shut down for night.
04-06-02	0.5	Travel from town. Start up. Function test BOP.
	5.0	Repair hydraulics in mast.
	5.0	Drill 8.5" (216 mm) hole from 8.5 to 128m.
	1.0	Circulate clean. POOH to DC's.
	0.5	Shut down for night.
05-06-02	0.5	Travel from town. Service rig. Start up.
	1.0	RIH to bottom. No fill. Break circulation.
	8.5	Drill to 280m.
	1.5	Circulate clean. POOH to DC's.
	0.5	Shut down for night.
06-06-02	0.5	Travel from town. Service rig. Start up.
	1.0	RIH to bottom. 6m. fill. Break circulation.
	5.5	Drill 8.5" (216 mm) hole from 280 to 345m.
	0.5	Circulate clean.
	3.5	POOH. Prepare to run casing.
	0.5	Shut down for night.
07-06-02	0.5	Travel from town. Service rig. Start up.
	4.0	R/u and run 7" (178 mm) casing. Held up at 334m.
	1.5	R/u to circulate. Unable to circulate or move pipe. R/d 20 ton crane.
	1.0	Attempt to circulate. R/u 30 ton crane.
	1.5	Reciprocate casing. Unable to circulate.
	0.5	Land csg. Lift BOP. Cut casing. N/u BOP.
	2.0	RIH w/ drilling assembly to clean out casingg. Drill out float & clean out sand. No obvious obstruction.
	1.0	Establish circulation.
	0.5	Shut down for night.
08-06-02	0.5	Travel from town. Service rig. Start up.
	0.5	Check for circulation around casing annulus - OK.
	2.5	POOH. R/u to cement.
	0.5	Pump cement. Pressure increase after 5 bbls pumped. Continue with job.
	1.0	Insert top plug and begin disp. Found valve passing fluid. Cement locked up before displacement complete.
	2.0	P/test BOP while repairing pull down shaft. Pipe rams / choke manifold 200 PSI low 1000PSI high 10 mins OK.
	2.0	RIH.
	0.5	Drill out plug and cement. Drill 345 to 349.5m.
	0.5	Circulate bottoms/up 10 mins. Conduct LOT. Equivalent mud wt 9.9 lb/gal.
	1.0	POOH. Prepare to cut core #1.

	0.5	Shut down for night.
09-06-02	0.5	Travel from town. Service rig. Start up.
	1.0	POOH to core.
	2.0	P/u core barrel & RIH.
	1.0	Circulate. Wash to bottom.
	1.5	Core from 349.5 to 356m.
	1.0	POOH to csg shoe. Well seemed to be filling w/ fine running sand &
	1.0	flowing water.
	1.0	Circulate. Observe well. Losing returns.
	1.0	POOH. Core barrel plugged w/ sand.
	1.5	Attempt to recover core. Inner barrel wedged w/ sand. Lay down barel.
	0.5	RIH w/ drilling assembly. Secure well.
		Shut down for night.
10-06-02	0.5	Travel from town. Service rig. Start up.
	1.5	RIH.
	0.5	Tagged sand at 241m. Circ/wash down to 283m - sheets of sand across
	0.5	shakers.
	1.5	POOH 6 jts. Float stuck open, string sanded up. Recover core.
	4.0	POOH. 1.5 DC's full of sand.
	2.0	RIH w/ open ended pipe. Tag at 263m. Wash down to 343m.
	0.5	Circulate and wait on cement truck.
	0.5	Pump cement. Pull 20 jts. Circulate pipe clean.
	0.5	Shut down for night.
11-06-02	0.5	Travel from town. Service rig. Start up.
	1.0	POOH.
	1.0	RIH. 6.125" (156 mm) bit, 6XDC, 3.5" DP.
	8.0	Tag cement at 333m. Drill ahead to 485m.
	0.5	Circulate bottoms up.
	0.5	POOH to 321m.
	0.5	Shut down for night.
12-06-02	0.5	Travel from town. Service rig. Start up.
	0.5	RIH.
	0.5	Change hydraulic filters. Low hydraulic power.
	0.5	RIH.
	7.3	Drill ahead 485 to 609m.
	1.3	POOH.
	0.5	Maintenance.
	0.5	Shut down for night.
13-06-02	0.5	Travel from town. Service rig. Start up.
	1.5	POOH. Change BHA/bit – old bit undergauge.
	0.5	RIH.
	1.0	Safety meeting.
	0.5	RIH to shoe, condition mud.
	4.0	RIH. Fill from 450m to hard bridge at 475m.
	1.5	Ream from 450 to 609m. (Due to undergauge bit?).
	0.5	Circulate bottoms up.
	01.0	POOH.
		Shut down for night.
14-06-02	0.5	Travel from town. Service rig. Start up.
	4.5	Repair crown. Empty sump. Refuel.
	***	Wait on rig spares
15-06-02	0.5	Travel from town.
	***	Repair crown.

16-06-02	0.5 3.0 1.0 5.5 0.5 0.5 1.0 0.5	Travel from town. Service rig. Start up. Repair rig. Stand rig up. Break circulation. RIH. Hole bridged at 475 and 579m. Wash down to bottom. Drill ahead 609 to 751m. POOH. Circulate hole whilst repairing hydraulics. POOH Shut down for night.
17-06-02	12	Repair rig crown
18-06-02	0.6 2.0 1.3 0.3 3.0 4.0 0.3	Travel from town. Service Rig RIH Wash to bottom Drill to 825 m Circulate hole clean POOH to log Run Schlumberger logs Secure well for the night
19-06-02	0.6 1.3 0.3 2.0 0.3 0.3 4.3 2.0	Travel from town. Service Rig RIH to 495 m. Set 50 m balanced cement plug from 495-445 m. POOH to 360 m. Wait on cement truck Set balanced cement plug 360 to 310 m. POOH to 200 m. Circulate clean. Wait on cement. POOH. Release rig. Commence rigging down

2.3.2 Hole sizes and depths:

12.25" (311mm) Spud to 8.5m.
8.5" (216mm) 8.5 to 345m.
6.125" (156mm) 345 to 825m.

Casing and cementing:

SURFACE:

SIZE:	9.625" / 244 mm
Weight:	64.9 kg/m
Grade:	K55
Shoe setting depth:	8.4m

INTERMEDIATE:

SIZE:	7" / 178 mm
Weight:	34.2 kg/m
Grade:	K55
Shoe setting depth:	338m

2.3.3 Deviation Surveys:

None taken.

2.3.3 Drilling Fluid:

(A) Spud - 8.5 meters: Type: Freshwater/Gel spud mud.

(B) 8.5 - 825m. KCl/Polymer/PHPA.

Physical Mud Properties:

DEPTH	PPG	VIS	KCL %	PHPA LB/GAL
250	8.7	32	4	0.5
340	9	34	4	0.5
723	9.1	37		
751	9.2	35		
609	9.1	32		

2.3.5 Water Supply:

Water was trucked to site from Sale.

2.3.6 Perforation:

None.

2.3.7 Plugging and Cementing:

Plug 1. 495-445 m
Plug 2. 360 to 310 m.
Plug 3. Surface -10 m.

2.3.8 Bit Data

BIT RUN	1	2	3	4	5
Diameter	12.25"	8.5"	6.125"	6"	6.125"
Type & Manufacture	Security S33	Varel L127	Varel 117	Core Head	Varel ETD14
IADC code	114	127	117		437
Serial number	209393	537086			176346
Nozzles	Open	Open	11,11,11		11,11,11
Depth in (m)	0	9	345	350	
Depth out (m)	8.5	345	350	356	
Drilled (cum/daily)	8.5	337	5	7	
Hours (cum/daily)	1	14	0.5	1.5	
Dull grade		7.7.WT.A.O.I.TD			
Av. ROP m/hr		24		6	
WOB Klbs		5	1	2	
RPM		100	100	100	
Jet Velocity					
HHP@Bit					
BHA		Bit/2DC/4DC			

2.4 LOGGING AND TESTING

2.4.1 Wellsite Geologist:
J. Mulready (Spud to 128m) David Horner (128 to 825m T.D.)

2.4.2 Mudlogging:
Hot wire hydrocarbon detection, depth and drill rate monitoring was provided by Denis Sisely.

2.4.3 Ditch Cutting Samples:
Cuttings were collected at 5 meter intervals from spud to 345m, then at 3m intervals to 825m (T.D.)

These being 1 set 500gm unwashed calico bag, and 1 set washed samplex tray.

2.4.4 Coring:
1 X 9 m core was cut from 349.5 to 356m (0.8m recovery (12%)).
See core analysis report.

2.4.5 Sidewall Cores:
No sidewall cores were taken.

2.4.6 Testing:
No tests were conducted.

2.4.7 Wireling Logs:
DT-GR-FMI (778m to shoe at 338m) GR to surface.

2.4.8 Bottom Hole Temperature :
32° Centigrade

2.4.9 Velocity Survey:
No velocity survey was conducted.

3. GEOLOGY

3.1 REGIONAL GEOLOGY

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

With the exception of occasional wildcat drilling in the boom of the 1980's, exploration of the onshore Gippsland Basin has been largely ignored since the 1970's.

The early exploration activities in the onshore part were aimed primarily at the Early Cretaceous Strzelecki Group and, later on after successful drilling offshore, at the top of the Latrobe Group "coarse clastics", but a lack of understanding of the stratigraphy and the mechanism of hydrocarbon generation, migration and timing of structures, along with the poor quality of the seismic and well log data, resulted in a downgrading of the hydrocarbon potential of the onshore area.

3.2 EXPLORATION HISTORY

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

Petroleum exploration in the permit commenced in the early 1960's and continued into the early 1970's, conducted mainly by Woodside and Arco with eight wells being drilled within the permit. This exploration originally had as its main objective the Strzelecki Group with emphasis moving to the Latrobe Group later in this period. Few of these wells, except for North Seaspray-1, are thought to be located within closure at the Top Latrobe Group level.

Several shallow bores have been drilled in the vicinity of PEP 157 by Victorian Electricity, Coal and Water Resources authorities; however, none of these bores encountered Latrobe Group reservoirs at a significant depth or within closure.

During 1985, Hartogen Energy Ltd drilled Burong-1 to test the Top Latrobe at the crest of a northeast trending asymmetrical anticline which is fault controlled to the northwest. While the Latrobe section contained excellent reservoir rock, no significant shows were recorded within this section.

Recently, Lakes Oil has drilled nine wells within their onshore Gippsland permits; PetroTech-1 targeted greensands of the Lakes Entrance Formation but was not tested; Hunters Lane-1 produced oil from the same formation but at a non-economic rate; Baudin-1 and Investigator-1, which both targeted Lower Latrobe Formation sands, were unsuccessful, probably due to lack of seal. North Seaspray-3, Trifon-1 and Gangell-1 drilled between 2000 and 2001, all targeted Strzelecki Formation sands. Boundary Creek-1 corehole was drilled in 2001 to obtain information on reservoir quality within the Strzelecki Formation.

3.3 PERMIT PEP 137 (now PEP 157)

Lakes Oil N.L. acquired the PEP 137 permit in April 1999, following the drilling by Roma Petroleum N.L. of the McCreesh-1 well, an unsuccessful test of the top Latrobe Group sands. PEP 137 covered an area of 1,680 square kilometers within the onshore Gippsland Basin. The permit extends over the northern part of the Seaspray Depression, the southern portion of the Lake Wellington Depression and part of the Baragwanath Anticline. Ten exploration wells have been drilled from 1962 - 2002, with Lakes Oil N.L. having tested gas at the North Seaspray-3, Trifon-1 and Gangell-1. North Seaspray-3 was a follow up to Woodside/Lakes Oil North Seaspray-1 well, which also flowed gas from the top of the Strzelecki Formation.

3.4 TECTONIC HISTORY

The Gippsland Basin is a rift basin, which originated in the Late Jurassic to Early Cretaceous and consists of alternating half graben structures along its east-west trend. It is characterised by a deep central basin, flanked by northern and southern terraces. In the onshore area, the Late Cretaceous movements were accompanied with volcanism in the western margin of the basin. Several phases of positive structural inversion occurred in the Gippsland Basin from Mid-Oligocene to the present time, creating the major hydrocarbon bearing structures seen in the offshore region. The main phase occurred during the Late Miocene, which resulted in inversion of existing features and the creation of anticlinal structures.

3.5 STRUCTURAL ELEMENTS

The onshore area can be tectonically sub-divided into six major areas:

(A) Lakes Entrance Platform (Northern Platform): This lies immediately south of the Eastern Highlands, where the Palaeozoic Basement gently slopes southwards and is unconformably overlapped by Oligocene - Miocene marine sediments and thin Pliocene - Quartenary continental deposits.

(B) Latrobe Valley Depression: This lies between the Palaeozoic Eastern Highlands to the north and the Early Cretaceous Balook Block to the south. Over 700 meters of continental Latrobe Valley sediments are present in this area.

(C) Lake Wellington Depression: This lies to the south of the Lakes Entrance Platform, where over 1200 meters of Eocene to Pliocene sediments unconformably overlie the Early Cretaceous rocks. This trough is offset from the Latrobe Valley Depression to the west, by left lateral displacement on the Yinnar Transfer Fault Zone which occurred during the Tertiary. The boundary also closely coincides with the western limit of marine Tertiary sediments. To the east it merges with the Strzelecki Terrace.

(D) Baragwanath Anticline: This is the eastern extension of the outcropping Balook High. It is an Early Cretaceous block, which was elevated during the Late Miocene time as a result of the renewed lateral strike slip wrenching along the Boundary Fault Systems. It separates the Lake Wellington Depression to the north from the Seaspray Depression to the south. On the crest of the structure, thin Miocene strata are succeeded unconformably by a veneer of Pliocene-Pleistocence sediments. On the flanks of the structure, however, the Miocene sediments wedge out towards the crest by onlap at the base and erosion at the top of the sequence.

(E) Seaspray Depression: This is the onshore extension of the Central Deep. It occupies the southern onshore part of the basin, where the most complete stratigraphic section is present. The permit occupies the northeastern end of the Seaspray Depression.

(F) South Terrace: Wilson's Promontory is an erosional remnant of a broad shallow basement platform bounding the Gippsland Basin on its southern side. The Southern Terrace represents the edge of this platform. The Chitts Creek Conglomerate onlaps the South Terrace as a mirror image to the Tyers Conglomerate on the North Terrace.

3.6 REASONS FOR DRILLING

Protea-1 was drilled to provide stratigraphic and reservoir information on the Golden Beach Formation and the Strzelecki Formation at this location. One 9 meter core was programmed to be taken at the top of the Golden Beach Formation for palynological analysis and one 9 meter core within the Strzelecki Formation for palynology and porosity/permeability analysis. In the event only one core was cut within the Golden Beach Formation.

3.7 STRATIGRAPHIC PROGNOSIS

The stratigraphic prognosis was made utilising the sparse nearby well data and the available seismic coverage.

A comparison between prognosed and actual formation tops is given below:

FORMATION	PROGNOSED (mKB)	ACTUAL (mKB)	ACTUAL (MsS)	DIFFERENCE (m)
Quartenary Gravel	Surface	Surface	Surface	0
Gippsland Limestone	4	Not present	-	-
Lakes Entrance Formation	60	Not present	-	-
Latrobe Group	72	13	+38	59 High
Golden Beach Formation	122	323	-272	201 Low
Strzelecki Formation	187	481	-430	294 Low
Total Depth	600	825	-775	225 Low

3.8 STRATIGRAPHY

QUARTENARY GRAVEL (1 - 13 meters)

1 - 13 meters

SANDSTONE: (100%) orange brown, fine to medium, subangular, clear and orange quartz grains in a sparse argillaceous and calcareous matrix, friable - often with loose grains in sample, no oil fluorescence.

GIPPSLAND LIMESTONE
Not Present.

LAKES ENTRANCE FORMATION
Not Present

LATROBE FORMATION (13 - 323 meters)
13 - 128 meters
SAND: (90%) loose grains, light grey, fine to coarse, subangular, clear to light grey, occasionally white, well sorted, no

oil fluorescence.

In general becoming coarser with depth and grading to to:

SAND: light grey, clear, white, very coarse grained to pebbly, subangular to subrounded, no oil fluorescence.

Interbedded with:

COAL: (10%) grey black, soft.

128 - 145 meters
COAL: (70%) dark orange brown to very dark brown to rarely black, irregular to blocky fracture rarely fibrous, earthy

texture and lustre, often very argillaceous, rare amber, moderately hard.

Interbedded with

SANDSTONE: (30%) very light grey, very fine to grit, dominantly coarse, angular to subrounded, dominantly subangular, poor to moderate sorting, weak to moderate silica cement, trace dark grey argillaceous matrix, clear to opaque quartz grains, rare grey green and orange brown lithics, trace to common black coaly detritus, trace to common coarse mica flakes, trace pyrite, friable, fair to very good inferred porosity, no oil fluorescence.

145 - 212 meters
SANDSTONE: (100%) very light grey, very fine to pebble, dominantly very coarse - in general becoming coarse with

depth, angular to subrounded, dominantly subangular, poor to moderate sorting, weak silica cement, trace off white

argillaceous matrix, clear to opaque quartz grains, trace grey green lithics, trace black coaly detritus, trace coarse mica

flakes, trace pyrite, friable to unconsolidated, very good inferred porosity, no oil fluorescence.

With minor detrital and thinly interbedded:

COAL: (Trace) very dark brown to dominantly black, irregular to blocky fracture, earthy texture and lustre, very argillaceous in part, moderately hard.

212 - 222 meters
Massive Claystone:

CLAYSTONE: (100%) off white to very pale brownish white, (kaolinitic?), very soft, sticky, amorphous.

222 - 318 meters
Massive Sandstone:

SANDSTONE: (100%) very light grey, very fine to pebble, dominantly very coarse, angular to subrounded, dominantly subangular, poorly sorted, weak silica cement, trace to rarely common off white argillaceous matrix, clear to opaque quartz grains, trace grey green lithics, trace coarse mica flakes, trace black coaly detritus, rare pyrite, friable, very good inferred porosity, no oil fluorescence.

318 - 323 meters
CLAYSTONE: (40%) off white to medium grey, trace black carbonaceous specks, trace micromica, soft, sticky, amorphous.

Grading to and interbedded with:

SANDSTONE: (60%) light grey, very fine to pebble, dominantly very coarse, angular to subrounded, dominantly subangular, poorly sorted, weak silica cement, abundant off white to medium grey argillaceous matrix, clear to milky quartz grains, trace grey green lithics, trace black coaly detritus, common to abundant pyrite, friable, good inferred porosity, no oil fluorescence.

GOLDEN BEACH FORMATION - EMPEROR SUBGROUP (323 - 481 meters)

323 - 345 meters
CLAYSTONE: (60%) medium grey, slightly silty, trace black carbonaceous specks, trace micromica, firm, very dispersive, non fissile.

Interbedded and laminated with:

SANDSTONE: (40%) light grey, very fine to coarse, dominantly fine to medium, subangular to subrounded, moderately to well sorted, weak silica and calcareous cements, common to abundant off white argillaceous matrix, clear to opaque quartz grains, abundant altered feldspar grains, common to abundant green grey brown and yellow orange lithics, common clear to brown mica flakes, trace black coaly detritus, common to abundant pyrite, friable, poor visual porosity, no oil fluorescence.

345 - 356 meters
SANDSTONE: (100%) light brown, very fine to medium, dominantly fine, subangular to subrounded, moderately to well sorted, no apparent cement, trace light brownish white argillaceous matrix, clear to opaque quartz grains, common white to orange brown altered feldspar grains, common green grey brown yellow orange and red lithics, trace clear to brown mica flakes, trace black coaly detritus, trace pyrite, unconsolidated, good visual porosity, no oil fluorescence.

With minor interbedded:
CLAYSTONE: very dark grey to black, very carbonaceous, moderately silty, non calcareous, trace micromica, firm, non fissile.

356 - 417 meters
CLAYSTONE: (100%) medium brown grey to very dark grey, rarely off white to light brown grey, moderately silty, trace black coaly detritus, trace micromica, soft, sticky, non fissile.

With minor laminae in part of:

SANDSTONE: (trace) light brown, very fine to coarse, dominantly fine, subangular to subrounded, moderately sorted, very weak silica cement, common brownish white argillaceous matrix, clear to opaque quartz grains, common white to orange brown altered feldspar grains, common green grey brown yellow orange and red lithics, trace clear to brown mica flakes, trace black coaly detritus, friable, poor inferred porosity, no oil fluorescence.

417 - 449 meters
CLAYSTONE: (100%) light to medium grey, light to medium orange brown mustard yellow to red brown - occasionally mottled, moderately silty, rarely slightly calcareous, trace very fine sandstone laminae with common lithics and altered feldspar grains, trace black coaly detritus and carbonaceous flecks, trace micromica, firm, non fissile.

449 - 453 meters
SANDSTONE: (100%) light brown grey, very fine to coarse, dominantly fine to medium, subangular to subrounded, poor to moderate sorting, weak to strong calcareous cement, common to abundant white argillaceous matrix, clear to milky quartz grains, abundant altered feldspar grains, common green grey and red lithics, trace black carbonaceous material, rare brown mica flakes, trace pyrite, friable, poor visual porosity, no oil fluorescence.

453 - 481 meters
CLAYSTONE: (100%) light to medium grey, medium green, light to medium orange brown mustard yellow to red brown, moderately silty, rarely slightly calcareous, trace black coaly detritus and carbonaceous flecks, trace micromica, firm, non fissile.

STRZELECKI FORMATION (481 - 825+ meters)
481 - 576 meters
SANDSTONE: (80%) off white to light grey, becoming light greenish grey with depth, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, moderate calcareous cement at top decreasing to occasional weak calcareous cement with depth, abundant white argillaceous matrix - matrix supported, minor quartz grains, abundant altered feldspar grains, abundant green grey lithics, trace brown to red lithics, trace black carbonaceous material, friable, very poor visual porosity, no oil fluorescence.

Laminated and finely interbedded with:

CLAYSTONE: (20%) off white to medium grey to medium brown grey, occasionally light grey to light green grey, minor red brown at top, moderately silty, slightly calcareous in part, trace black coaly detritus and carbonaceous flecks, trace micromica, firm, non fissile.

576 - 720 meters
SANDSTONE: (50%) off white to medium greenish grey, very fine to rarely medium, dominantly fine, subangular to subrounded, moderately sorted, weak calcareous cement, abundant white argillaceous matrix - matrix supported, minor quartz grains, abundant altered feldspar grains, abundant green grey lithics, trace brown to red lithics, trace black carbonaceous material, trace brown mica flakes, friable, very poor visual porosity, no oil fluorescence.

Finely interbedded and laminated with and grading to:

CLAYSTONE: (50%) off white to medium grey to medium brown grey to medium green grey, moderately silty, rarely slightly calcareous, trace black coaly detritus and carbonaceous flecks, trace micromica, firm, non fissile.

720 - 777 meters
SANDSTONE: (80%) off white to medium greenish grey, very fine to occasionally medium, dominantly fine, subangular to subrounded, moderately sorted, weak to occasionally moderate calcareous cement, abundant off white argillaceous matrix - matrix supported, minor quartz grains, abundant altered feldspar grains, abundant green grey lithics, trace brown to red lithics, trace black carbonaceous material, trace brown mica flakes, friable, very poor visual porosity, no oil fluorescence.

Finely interbedded and laminated with and grading to:

CLAYSTONE: (20%) off white to medium grey to medium green grey, medium brown grey, moderately silty, rarely slightly calcareous, trace black coaly detritus, trace micromica, firm, non fissile.

777 - 808 meters
CLAYSTONE: (80%) off white to light green grey to light brown grey, slightly silty, trace black coaly detritus and carbonaceous specks, trace micromica, non fissile.

Finely interbedded and laminated with:

SANDSTONE: (20%) off white to medium green grey, very fine to fine, very silty in part, subangular to subrounded, moderately sorted, weak calcareous cement in part, abundant off white argillaceous matrix - matrix supported, minor quartz grains, abundant altered feldspar grains, abundant green grey lithics, trace brown to red lithics, trace black carbonaceous material, trace mica flakes, friable, very poor visual porosity, no oil fluorescence.

808 - 825 meters
SANDSTONE: off white to medium green grey, very fine to fine, dominantly fine, subangular to subrounded, moderately sorted, occasional weak calcareous cement, abundant off white argillaceous matrix - matrix supported, minor quartz grains, abundant altered feldspar grains, abundant green grey lithics, trace brown to red lithics, trace black carbonaceous material, trace mica flakes, friable, very poor visual porosity, no oil fluorescence.

Finely interbedded and laminated with minor:

CLAYSTONE: off white to medium grey to medium green grey to medium brown grey, moderately silty, rarely slightly calcareous, trace black coaly detritus, trace micromica, firm, non fissile.

4.0 DISCUSSION AND CONCLUSIONS

Palynological dating by Dr. A. Partridge (Appendix 2) has been used to assist in selecting Formation picks. Five cuttings samples and one core sample were submitted for dating. The dates assigned confirm the presence of a Middle Eocene-Palaeocene age section (Latrobe Group) unconformably overlying Turonian age sediments of the lowermost section of the Golden Beach Group (Emperor Sub-Group), which in turn overly the Early Cretaceous age Strzelecki Formation.

Protea No.1 intersected a Gippsland Basin section in which the surface Quartenary Gravels were directly underlain by the Latrobe Group. This indicates that the Gippsland Limestone, Lakes Entrance Formation and the upper portion of the Latrobe Group had been eroded at this location, reflecting the effect of Tertiary structuring.

The Latrobe Group sands showed excellent reservoir potential, with clean coarse grained sands: however no hydrocarbon generation or migration was observed throughout this Group.

The Golden Beach Formation was encountered 272 meters low to prognosis, resulting in a far thicker section of Latrobe Group sediments being present than previously thought. This can probably be attributed to the poor quality of the available seismic and lack of adequate velocity and well control.

However, as interpreted, the Golden Beach Formation is present from 323 to 481 metres. It consisted of interbedded claystone and sandstone, the latter exhibiting reasonable reservoir quality. No hydrocarbon shows were recorded.

The thickness of Golden Beach Formation section encountered, (158 m), indicates there is rapid thinning, (probably fault controlled), between Protea-1 and Boundary Creek-1A, located 1.2 km to the west, which has Latrobe Formation unconformably overlying Strzelecki Formation. (refer Figures 2B, 3).

Protea-1 and Boundary Creek1A have thus tied down the western pinch-out edge of the Golden Beach Formation in this vicinity, and demonstrated the presence of reservoir quality sands within the Late Cretaceous age Golden Beach Group.

5.0 COMPLETION

Protea No.1 was plugged and abandoned.

TABLE II
STRATIGRAPHIC TABLE PROTEA No.1

AGE	FORMATION	DEPTH RT	ELEVATION	THICKNESS
Quatenary	Quatenary Gravel	1	+50	12
Miocene-Oligocene	Gippsland Limestone	Not present	-	-
Oligocene	Lakes Entrance Fm	Not present	-	-
E Oligocene - Eocene	Latrobe Group	13	+38	234
Late Cretaceous (Turonian)	Golden Beach Fm (Emperor Sub-Group)	323	-272	158
Early Cretaceous	Strzelecki Fm	481	-431	344+
	Total Depth	825	-775	

- all depth are in meters.