LAKES OIL N.L.

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

PATTIES PIES SOUTH-1A

PEP 156
ONSHORE GIPPSLAND BASIN, VICTORIA

WELL COMPLETION REPORT

By
Tim O'Brien

February 2004

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Level 11
500 Collins Street
Melbourne 3000

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Suite 1. (@ T.D.)

Type Log	Interval (m)
Density, Caliper, SP, Resistivity	456m – 84.5m
Gamma	456m – Surface

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Patties Pies Sth
Location Map

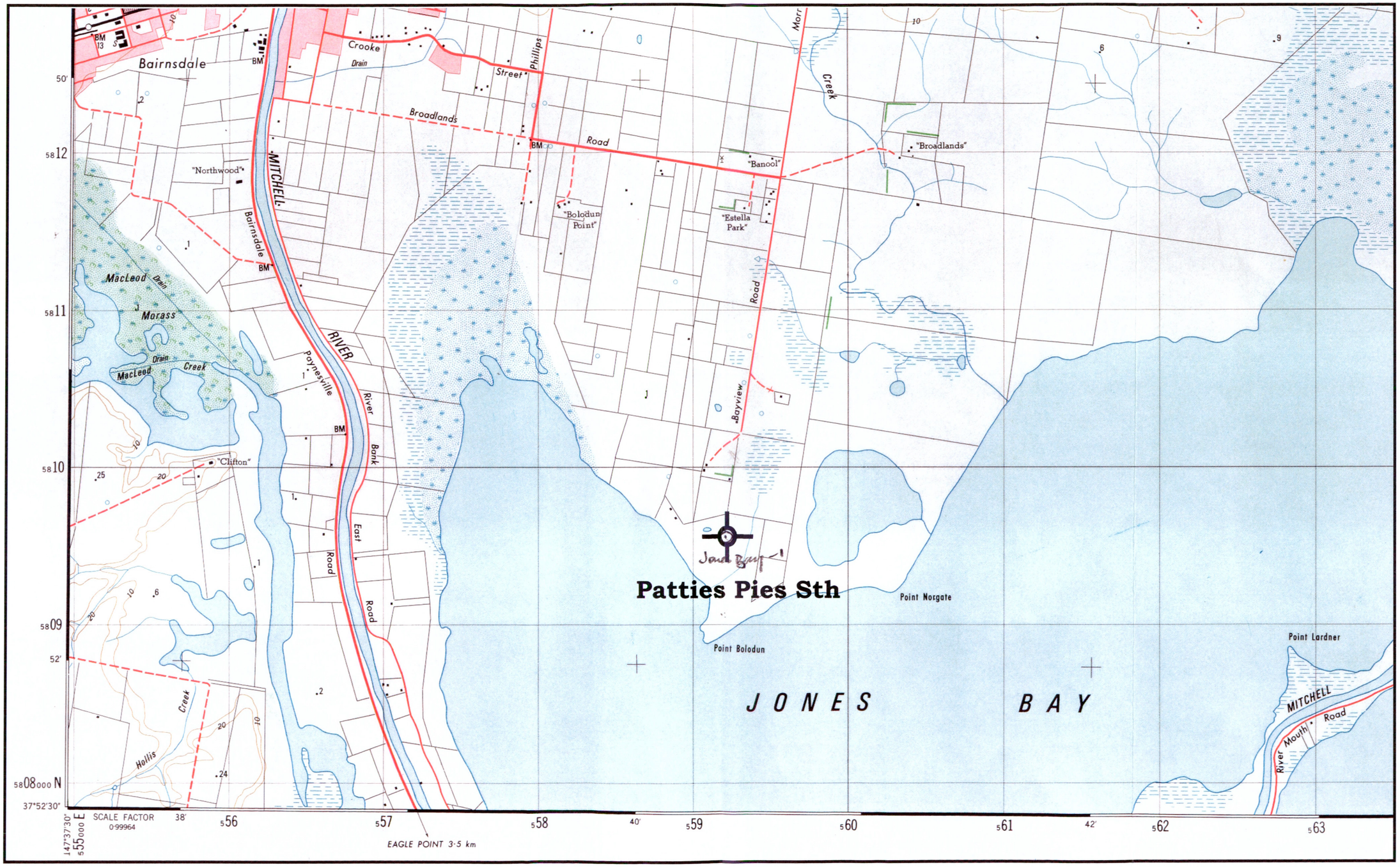

Figure 1

1.0 SUMMARY

Patties Pies South-1A, the third well to be drilled by Lakes Oil N.L. in PEP156, was located on the edge of Jones Bay, approximately 6 kilometres southeast of Bairnsdale and 1 kilometre south of Patties Pies-1, which was drilled by Lakes Oil in March 2003. Two local water bores were located in the vicinity of the well, each producing significant amounts of associated methane gas with very minor amounts of H_2S.

Patties Pies South-1A was drilled as a stratigraphic hole designed to clarify the relationship between the section encountered at Patties Pies-1 and the section to the south of the fault bounding the horst on which Patties Pies-1 was drilled, in an attempt to explain the lack of shows in the latter well. The seismic character evident on line GOR88A-05 suggested the lithology differed to the south of the fault, with indications of significant coal horizons at Latrobe Group level (Fig. 5). The lithology within Patties Pies South-1A was, as expected, found to mirror the lithology of Patties Pies-1, although, slightly deeper (approximately 20m), due to its location on the southern, downthrown side of the horst block.

Patties Pies South –1A was spudded on the 17th September 2003, employing a Bournedrill THD25VP rotary rig. A 311mm hole was drilled to 12m and a 244mm conductor pipe was then set at that depth. A 216mm hole was then drilled to 30m before progress ceased due to the presence of the pebble to cobble sized Boisdale Gravels at that depth which prevented any further progress with the conventional drilling rig. The hole was plugged and abandoned and the rotary drilling rig was skidded 1m to the south. A second 311mm hole was drilled to 12m and the conductor pipe set before a 216mm hole was drilled to 22.5m, just above the gravels. The rotary rig was then moved off site and a Bournedrill C500 cable tool rig was moved on site to progress through the gravels.

The Bournedrill C500 cable tool rig successfully drilled through the gravels to a depth of 30.5m and the 225mm conductor pipe was cemented to this depth before it was moved off site and the Bournedrill THD25VP rotary rig was moved back on site to complete the hole. A 216mm hole was drilled to 84m and 178mm casing was cemented in place at that depth. After installing and testing the BOP the well drilled ahead in 156mm hole to its total depth of 456m, which was reached on the 11th October 2003.

As a result of the lack of shows no testing was undertaken. Electronic logs (Gamma Ray, Density, Neutron, Single Arm Caliper, S.P. and point resistivity) were run and confirmed the conclusion that the well was dry, and Patties Pies South-1A was subsequently plugged and abandoned and the rig released on the 14th October 2003.

The primary objective of the well, determining the presence or lack of hydrocarbons within the Latrobe Group, was achieved, although unsuccessfully, as there proved to be no gas shows within the formation and no oil fluorescence was noted. Unfortunately the secondary objective, determining the depth of top basement (or Strezlecki Formation if present) was not achieved as the well was abandoned within the lower Latrobe Group.

2.0 WELL HISTORY

2.1 GENERAL DATA

Well name and number:	PATTIES PIES SOUTH-1A
Location:	Latitude: 37°51'35'' Longitude: 147°40'26'' Easting: 559216 E Northing: 5809564 N Seismic VP 135 Line GOR 88A-05 Bairnsdale SS
Elevations:	G.L. 2.2m A.S.L. K.B. 3.5m A.S.L.
Petroleum Tenement:	PEP156
Name of Operator	LAKES OIL N.L. A.C.N. 004 247 214 Level 11 500 Collins Street MELBOURNE, VICTORIA 3000
Other Participants:	None
Date Drilling Commenced:	17th September 2003
Date Drilling Completed:	11th October 2003
Date Rig Released:	14th October 2003
Drilling Time to T.D.:	24 days
Total Depth:	Driller: 456m Logger: 456m
Status:	Dry and Abandoned Left for conversion by landowner to a water well, producing from the Latrobe Group sands.

2.2 RIG DATA (Rig 1)

Drilling Contractor:	Drilltec Pty Ltd Drilling Depot Rd, Morwell, Vic. 3840
Rig:	Bournedrill THD25VP (rotary rig)
Rig Carrier:	Truck Mounted
Weight Indicator:	Hydraulic Pressure
Power:	Truck Engine
Rotary:	Top Drive
Blocks:	Not Applicable
Pumps:	Duplex 5" x 6" Double Action
Mud Mixing:	Gardener Denver Duplex
Sump Pump:	Not Applicable
Transfer Pump:	Not Applicable
Tubulars:	Mayhew Pipe
Fishing Tools:	None on Site
Handling Tools:	Drilltec Toolbox
Stabilizer:	$5\ ^{5}/_{8}"$
Spare Parts:	As reasonably required to conduct operations for programmed well.
Personnel:	Driller plus 2 crew
Drilling Hours:	Rig Operated During Daylight Hours Only

RIG DATA (Rig 2)

Rig :	Bournedrill C500 (cable tool rig)
Rig Carrier:	Truck Mounted
Weight Indicator:	Hydraulic Pressure
Power:	Truck Mounted Auxiliary Power Source
Rotary:	Not Applicable (Cable Tool Rig)
Pumps:	Not Applicable
Tubulars:	Not Applicable
Fishing Tools:	None on Site
Handling Tools:	Drilltec Toolbox
Stabilizer:	Not Applicable
Spare Parts:	As reasonably required to conduct operations for programmed well.
Personnel:	Driller plus one crew
Drilling Hours:	Rig operated during daylight hours only

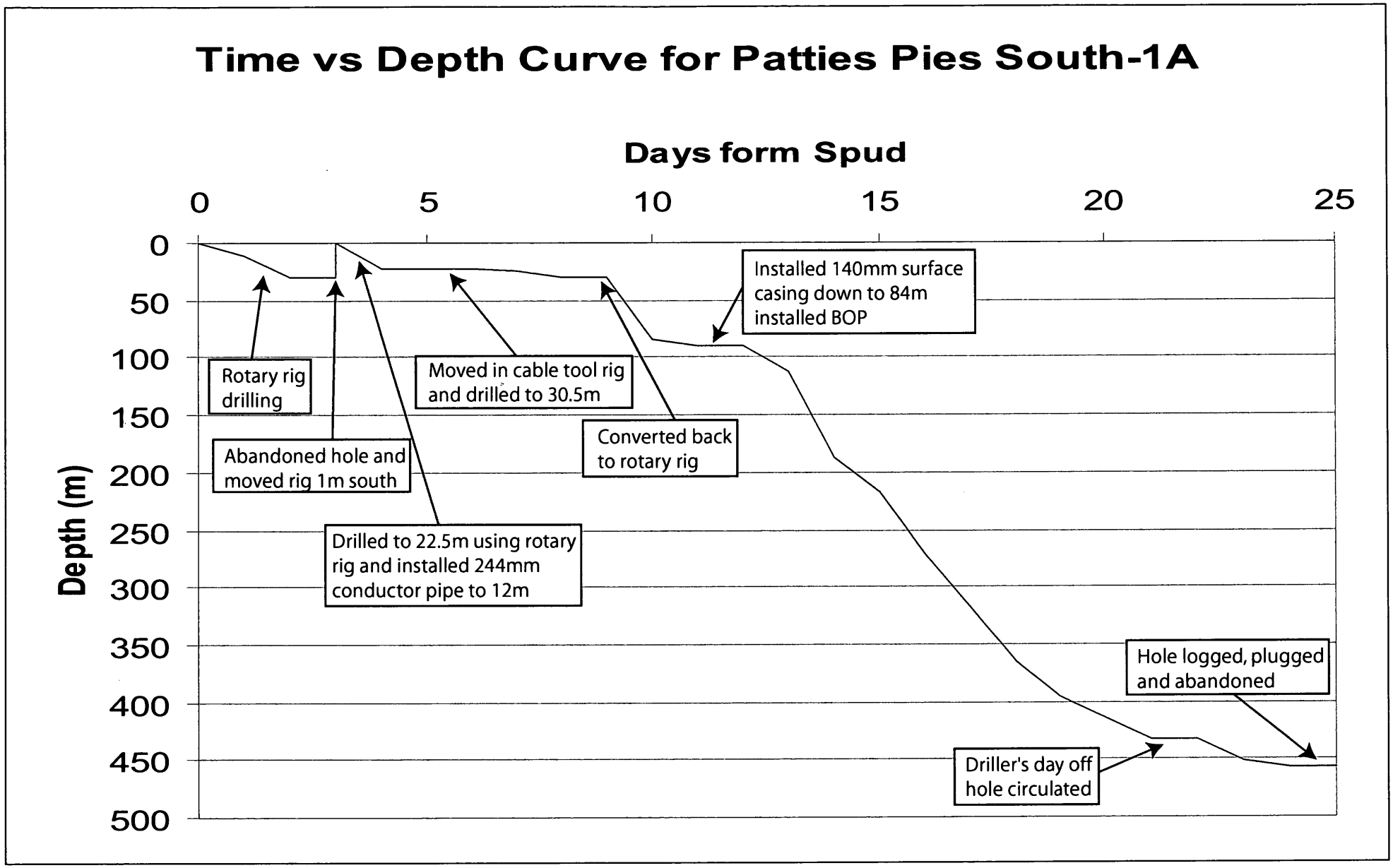

FIGURE 2

Well Completion Diagram for Patties Pies South 1A

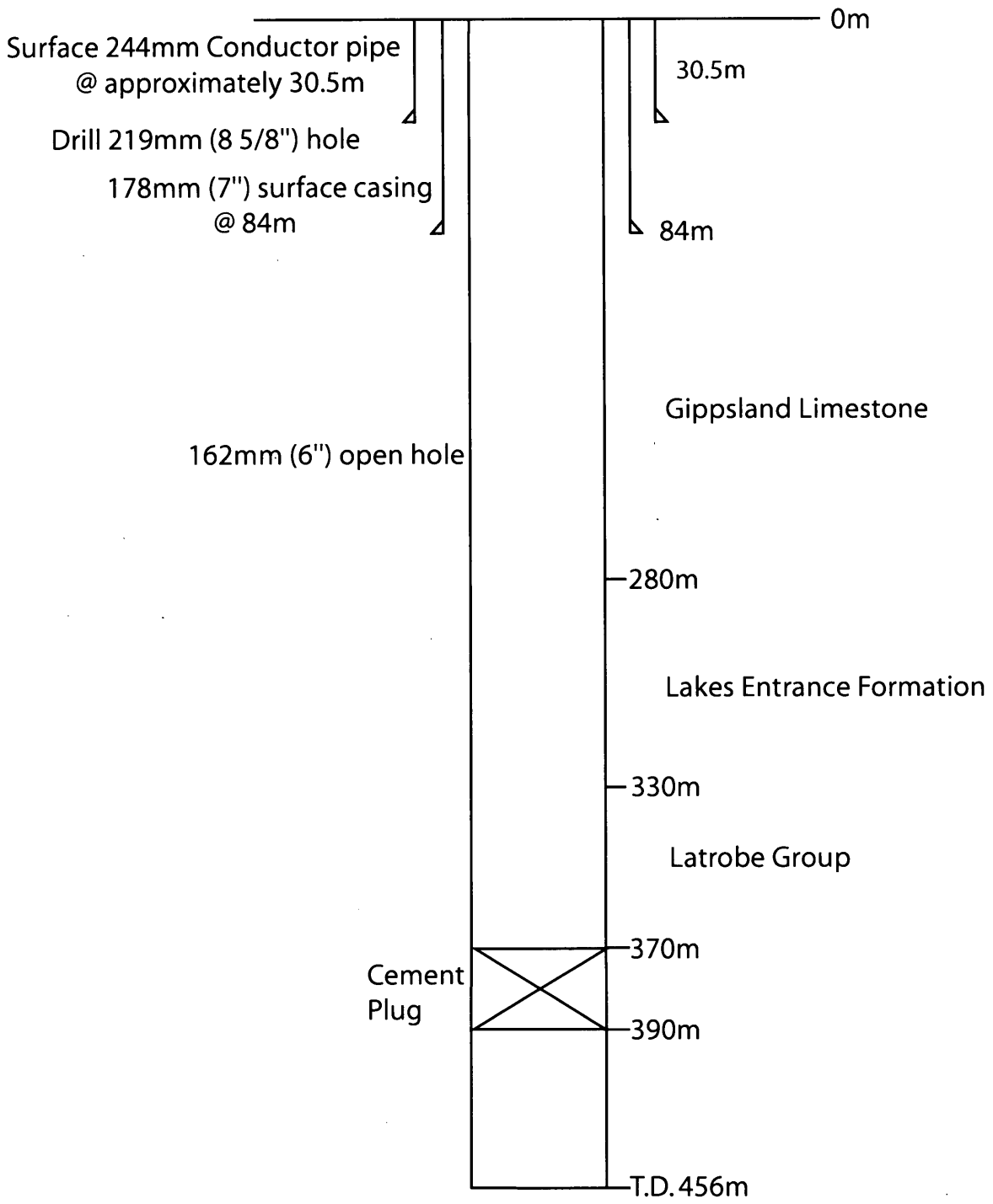

FIGURE 3

2.3 DRILLING DATA

The following is the daily operations summary for Patties Pies South-1A. It has been compiled from the tour sheets and daily drilling reports. The well was operated on a turn-key rate with onsite drilling supervision by Lakes Oil N.L. personnel. Further details are provided in the time/depth curve (Fig. 2).

The depths in the following summary are those reached at 2400 hrs on each day with the operations given for the previous 24 hour period.

Date	Depth (KB)	Hours Drill.	Prog--ress	Mud Wt.	Mud Vis	Mud WL	Mud pH	Activity (Report time-6.00AM)
18-9-03	0	0	0					Rig up
19-9-03	13.0	1.5	13					Spud PP S/1 @ 8.13 A.M. 18-9-03: drill 244mm hole. Condition hole.
20-9-03	30.5	1.5	17.5					Drill cond. hole. No returns @ 30.5m. POH with drag bit. RIH with roller bit. No returns.
21-9-03	30.5	0	0					Inject air to clean hole. Some cgl. Pebbles returned.
22-9-03	22.5	N.A.	22.5					Plug well. Move rig 1m & spud PP-S/1a. drill 16". to 22.5m Move rig off hole. Wait for cable rig.
23-9-03	22.5	0	0					W.O. cable tool rig.
24-9-03	22.5	0	0					Cable tool rig on site.
25-9-03	25.8	4.0	3.3					RIH 14"csg. Drill cable tool in csg while pushing csg. Ahead.
26-9-03	31.8	6.0	6.0					Drill to 31.8m.Run 225mm PVC cond. Pipe.
27-9-03	31.8	0	0					Pull 14". csg. Move cable tool rig off hole. Cement cond. pipe.
28-9-03	84.0	9.0	52.2					Move rotary rig onto hole.Drill 8.5". hole.
29-9-03	90.0	1.0	6.0					Clean 6m fill. Drill to 90m, run surf. csg. & cement W.O.C.
30-9-03	90.0	0	0					Wait on cement.
1-10-03	112.0	2.0	22.0					Nipple up BOP. Drill 5 5/8". hole.
2-10-03	187.0	5.0	65.0	-	37	170	-	Drilling.
3-10-03	217.0	3.0	30.0					Drilling. Shut down due to weather.
4-10-03	272.0	7.0	55.0	8.7	38	-	-	Drilling
5-10-03	318.0	3.5	46.0					Drilling.
6-10-03	365.0	5.0	47.0					Drilling.
7-10-03	396.0	7.8	31.0					Drilling.
8-10-03	414.0	7.5	18.0					Drilling.
9-10-03	432.0	6.3	18.0					Drilling.
10-10-03	432.0	0	0					Rig shut down.
11-11-03	452.0	5.3	20.0					Drilling
12-10-03	456.0	2.0	4.0					Drilled to T.D.
13-10-03	456.0	0	0					Ran Logs.
14-10-03	456.0	0	0					Ran plugs.

Hole Sizes and Depths:

12.25" / 311mm. to 30.5m.
8.5" / 216mm. to 84.5m.
5.625" / 143mm. to Total Depth (456m)

Casing and Cementing:

Surface

Size -	225mm PVC csg.
Weight -	13.7kg/m
Grade -	Class 12
Shoe Setting Depth -	12.3m KB
Quantity of Cement -	328 kg Construction Cement

Intermediate

Size -	7" / 178mm.
Weight -	38.7 kg/m
Grade -	K55
Shoe Setting Depth -	84.5m KB
Quantity of cement -	1720 kg Construction Cement

Deviation Surveys:

Nil

Drilling Fluid:

(a)	Spud – 84m	Additives – Bentonite, Pac R
(b)	84m – 456m	Additives – KCL Polymer, Pac L, Pac R

Water Supply:

Water was trucked by tanker from Sale.

Perforation Record:

None.

Plugging and Cementing:

Cement plug from 370m –390m at the base of the Latrobe Sand.

2.4 LOGGING AND TESTING

Wellsite Geologist:

Barry Clarke

Mudlogging:

Lakes' own hot-wire gas detector was used to monitor ditch gas, and was supervised by Dennis Sisely.

A mudlog recording lithology, penetration rate, mud gas and other data was prepared and is an enclosure to this report.

Ditch Cutting Samples:

Cuttings were collected at 5m intervals from surface to 300m and then at 3m intervals to 456m (T.D.). The cuttings samples and sets were:

Sample Type	No. Sets
Unwashed	1 (DPI)
Samplex Trays	1 (Operator)

Coring:

None.

Sidewall Cores:

None.

Testing:

None.

Wireline Logs:

One suite of logs were run by GHD.

Run #1

Log Type	Interval (m)
Density, Caliper, SP, Resistivity	456m – 84.5m
Gamma	456m – surface

LAKES OIL N.L.

Generalised Stratigraphy Gippsland Basin

AGE	GROUP	ROCK UNIT	MAXIMUM THICKNESS ONSHORE	MAXIMUM THICKNESS OFF-SHORE	LITHOLOGY AND DEPOSITIONAL ENVIRONMENT	HYDRO-CARBONS ONSHORE	HYDRO-CARBONS OFF-SHORE
PLIOCENE LATE	SALE	HAUNTED HILLS GRAVEL	110m	-	Gravels, sands and clays. Non Marine		
PLIOCENE EARLY	SALE	BOISDALE FORMATION	200m	-	Interbedded sand, silt and clay, with minor gravels and coals. Non marine		
PLIOCENE EARLY	SEASPRAY	JEMMYS POINT FORMATION	110m	290m	Calcareous sandstone with shell beds. Marine	◒	
MIOCENE LATE	SEASPRAY	TAMBO RIVER FORMATION	100m	150m	Glauconitic marl with marly and shelly limestone. Marine		
MIOCENE EARLY-MIDDLE	SEASPRAY	GIPPSLAND LIMESTONE	800m	1500m	Fossiliferous limestone, marly limestone and marl. Marine	☼	☼
OLIGOCENE LATE	SEASPRAY	LAKES ENTRANCE FORMATION – SEACOMBE MARL MEMBER	225m	500m	Fossiliferous calcareous mudstone and marl. Marine		
OLIGOCENE LATE	SEASPRAY	LAKES ENTRANCE FORMATION – GIFFARD SANDST MEMBER	15m		Muddy sandstone, marly sandstone and sandy mudstone with glauconite and pyrite. Marine	●	☼
EOCENE	LATROBE	TRARALGON FORMATION	1100m	3000m	Quartzose sandstone with minor coals, siltstone and claystone. Non marine	☼	● ☼
PAL	LATROBE	BARRACOUTA FORMATION	510m		Coarse grained quartzose sandstones with minor interbedded siltstone, claystone and coal. Non Marine	☼	● ☼
CRETACEOUS LATE	GOLDEN BEACH	UPPER LIMIT / KIPPER FORMATION / JUDITH FORMATION	400m	2000m	Interbedded sandstone and shale with minor coal. Non marine	☼	☼
CRETACEOUS EARLY	STRZELECKI	WONTHAGGI FORMATION	2000m	5000m	Interbedded sandstones, shales and minor coal. Non Marine	☼	
CRETACEOUS EARLY	STRZELECKI	Tyers Sub Group – RINTOUL'S CREEK SANDSTONE	200m		Quartzose sandstone interbedded with mudstone and shales with minor coal. Non marine		
CRETACEOUS EARLY	STRZELECKI	Tyers Sub Group – TYERS CONGLOMERATE			Conglomerate, quartzite, mudstone and shales. Fluvial		
CRETACEOUS EARLY	STRZELECKI	DUCK BAY VOLCANICS			Lava and pyroclastics. Non marine		
PALEOZOIC		PALEOZOIC	+	+	BASEMENT		

Figure 4

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RESIDUAL 5MS 10 15 20 25

RES. SHOT STATIC
RES. GROUP STATIC

PATTIES PIES-1

GM82-6 VP 211

SEISMIC LINE GORGBA-05 909990 016Y

VP

PATTIES PIES STH

VIEW LODGE WATER BORE

TOWER BAY STRUCTURE

-0.200
0.000
0.100
0.200

TOP LATROBE

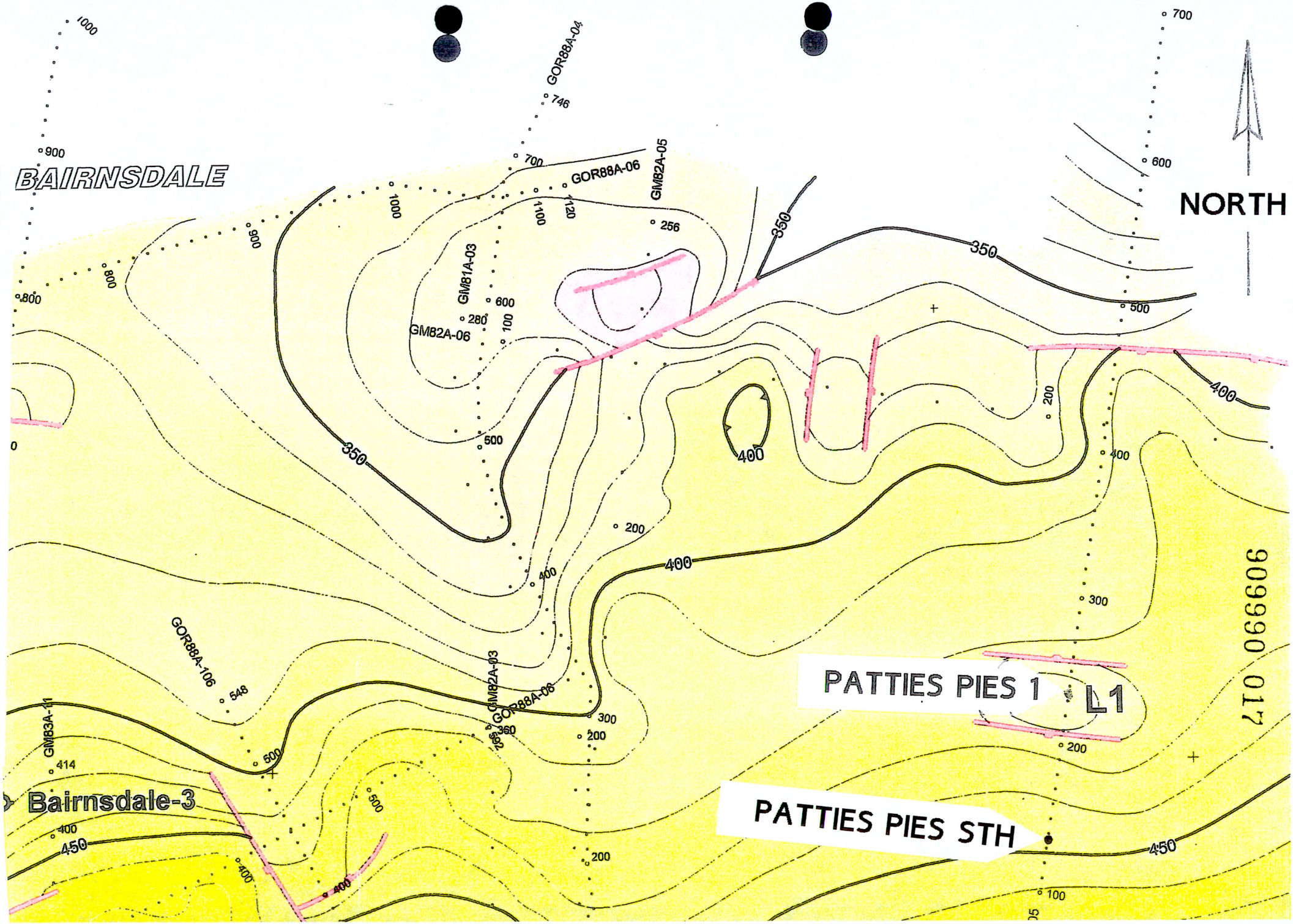
Untested section

0.400
0.500
0.600
0.700
0.800
1.00

BASEMENT

CDP

FIGURE 5



BASE LATROBE TWT STRUCTURE MAP FIGURE 6

3.0 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 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.

3.3 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. Permit PEP 157 occupies the northwestern 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.

3.4 PERMIT PEP 156

PEP 136was granted to Lakes in June 1997. During June 2000, following changes to the onshore legislation, the permit was granted for a further five year period, and the permit name changed to PEP 156.

PEP 156 covers an area of 3185 km^2 within the onshore Gippsland Basin. Virtually all the permit is within the Northern Platform.

3.5 EXPLORATION HISTORY

Hydrocarbon exploration commenced in the onshore region of the basin in 1924 when the Lake Bunga 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 approximately 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 onshore Gippsland 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 onshore portion of the basin. 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 Victoria Electricity, Coal and Water Resources authorities; however, none of these bores encountered LaTrobe Group reservoirs at a significant depth or within closure.

During 1985, Hartogen Energy Ltd drilled Burong-1 to test the Top LaTrobe at the crest of a northeast 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 within PEP 157 in 2001 to obtain information on reservoir quality within the Strzelecki Formation. Two stratigraphic wells, Deadman Hill-1 and Protea-1 were also drilled in PEP 157 in 2002 in order to better define the subcrop limits of the Late Cretaceous Golden Beach Group section. Lake Bunga-1 and Lake Bunga-2 coreholes were drilled within PEP 155 at Lakes entrance in late 2002 – early 2003 as infield appraisal wells for the Lakes Entrance oil field.

3.6 REASONS FOR DRILLING

It has been common knowledge for some time that the water wells in the vicinity of Bairnsdale have produced significant amounts of gas in association with the water. In particular the well located on the Foard property approximately 3km northwest of Patties Pies Sth, and the bore on Bay View Lodge, approximately 400m northwest of Patties Pies Sth. It is also a follow up well to Patties Pies-1 (1 km north), which tested the top of the horst block, compared to Patties Pies Sth which tested the section to the south of the fault which bounds the horst block.

3.7 STRATIGRAPHIC PROGNOSIS

The stratigraphic prognosis was prepared using the known stratigraphy from the previously drilled Patties Pies-1 well about 1km to the north. This well data was correlated with the seismic line GOR88A-05 to allow the top formation picks to be made. The stratigraphy at Patties Pies South was found to mirror that at Patties Pies-1, only the formation tops are some 20m deeper.

Table 1 below shows the comparison between the prognosed and actual formation tops encountered at Patties Pies South.

Formation Tops:	Prognosed (mRT)	Actual* (mRT)	Actual* (mSS)	Difference* (High/Low)
Quartenary Gravel	Surface	Surface	Surface	0
Gippsland Limestone	32.5	26.5	25.2	6 H
Lakes Entrance Formation	300	280	278.7	20 H
- Sandstone	Not Prognosed	290	288.7	
LaTrobe Group	357	330	328.7	27 H
Strzlecki Formation	539			
T.D.	550	456		94 H

Table 1: Prognosed vs actual stratigraphy.

3.8 STRATIGRAPHY

Tertiary Gravels
Surface to 26.5m. Thickness 26.5m

Clay: Red, red brown, grey, soft, sticky
Sandstone: Red brown, fine to very coarse grained (up to cobble/pebble sized), subrounded, argillaceous, moderate sorting.

Gippsland Limestone
26.5 to 280.0m. Thickness 253.5m

Marlstone: Bioclastic claystone, calcareous silstone and limestones including sparry bioclastic packstones, wackestones and grainstones.
Reservoir: Mostly tight, small amount inter – and intra – skeletal porosity.
Shows: No oil stain or fluorescence. Trace hotwire gas (1 – 2 units) at 136 – 150; 225 – 235.

Lakes Entrance Formation
280.0 to 330.0m Thickness 50.0m

Glauconite Sandstone Member
290.0 to 330.0m

Sandstone: Dark brown, very fine grain, silty, quartz, glauconite in part, up to 50% calcite cement.
Reservoir: Mostly very tight, small amount visible porosity at 305.0m.
Shows: No oil stain or fluorescence, trace hotwire gas at 300.0-306.0m.

Latrobe Group
330.0 to 456.0(?)m Thickness 120.0(?)m

330.0 to 375.0
Sandstone: Mostly very coarse grained, unconsolidated. Gamma log of Patties Pies #1 well indicates a number of discrete sand units, 2 – 10m thick, separated by shales?, the sands sitting with a sharp base on the underlying shale and fining upwards indicating a fluviatile depositional origin - and a similar section would be expected in this well even though its not evident in samples and drilling times; however two gross units of sands can be recognised viz. 330.0 - 352.0 and 361.0 – 374.0. Coal occurs in small to large amounts below 352.0m - part occurs as grains in sandstone but the large amount in part suggests interbedding. The coal is black and looks to be higher in rank than brown coal which suggests it might be reworked from the Strezlecki. Pyrite is common below 375.0m – part cements quartz grains and part is associated with black coaly or bituminous? organic material. Quartz crystal overgrowths occur on quartz grains between 365.0 – 374.0m.

375.0 to 435.0m
Claystone: Consists of red, yellow brown, grey and green claystones (weathered basalts) and micaceous and fissile laminated shales.

435.0 to T.D. (456.0m)
Sandstone: Consists of unconsolidated sandstone and conglomerate; the sandstone grains have crystal overgrowths.

Reservoir: Sandstones - excellent reservoir quality.
Shows: No oil stain, fluorescence or hotwire gas readings. The black coaly? material associated with pyrite does not exhibit fluorescence but a small amount gives a fairly fast blooming cut with faint to weak blue fluorescence.

3.9 HYDROCARBON SHOWS

No significant gas shows or fluorescence were recorded in the well.

The Latrobe Group primary target had very low gas values and none to a very faint fluorescence in the sands.

4.0 DISCUSSION AND CONCLUSIONS

As noted previously (see the Well History above) significant gas was not seen in the Latrobe sands in the Patties Pies–1 well and it was hoped the reason for this might be explained by drilling a well at the Patties Pies South–1/1a location. However the results of drilling Patties Pies South-1 suggest there is no gas there either as there appeared to be no significant gas liberated at the bit while drilling and no connection or trip gas produced from the formations, at least according to the hotwire gas detector readings. Possible explanations for the lack of gas shows in both wells are:

- There actually was no gas at both wells - perhaps because there is no effective trap or seal, or the wells were too far down-dip from the water-bore (although on the closest seismic line the Patties Pies-1 well appears to be on a higher structure than the projected water bore). There are no seismic tie lines between the water bore and the wells and the direct structural relations between them are unknown
- Due to the extremely high porosity and permeability in the Latrobe sands any gas present would be flushed ahead of the bit and into the formation and though actually present would not have been detected. In order to minimise this possibility a low weight, KCL mud was used to minimise the effect of invasion. Note: there were a few units of gas recorded in the Latrobe in Patties Pies–1 well.
- It is most likely that the gas is in solution within the groundwater and that any indications of the gas in the well were held back by the weight of the drilling mud. This will be proven if gas is produced with the water when the landowner brings the well into production

Although there appeared to be no significant gas in the wells there still remains the question regarding the origin of the gas in the water bore and its significance for further exploration. Is there proof the gas in the bore is being produced from the Latrobe sands and is the gas contained in a trap or is it in solution? If the gas is in a trap then the structural position of the bore within the trap should be determined eg. if the bore is located relatively down dip then further exploration should be carried out up dip. If there is no trap at the water bore location and the gas is only in solution, it could be migrating and accumulating in a trap somewhere up-dip. Logs indicate that there are a number of discrete sands within the Latrobe section indicating they pinch-out laterally and therefore there could be stratigraphic traps up-dip if there are seals present too.

Sequence stratigraphic analysis of the Patties Pies-1 & South wells and other available well and geophysical data will ultimately provide better chances of finding new reservoirs and indicating their 3D geometry and coming up with new prospects eg. the glauconite sands in the Patties Pies' wells suggest they are part of a condensed sequence related to transgressive and highstand systems tracts – therefore reservoir beds eg. alluvial plain and fluviatile sands might be expected to occur landward of these wells. The diagenetic features shown in the Patties' wells, such as the crystal overgrowths, calcite cements, abundant pyrite and the accumulation of organic material etc., are associated with the history of the basin hydrology. The migration and accumulation of hydrocarbons are also related to this history and an understanding of this might help exploration.

5.0 COMPLETION

None – the well was plugged at the base of the Latrobe Group aquifer and is to be converted by the landowner to a water well producing from the Latrobe Group sands.

K.B. 3.3 m (approx.)

AGE	FORMATION	DEPTH	SUB-SEA
QUATERNARY	GRAVEL	SURFACE	
MIOCENE - OLIGOCENE	GIPPSLAND LIMESTONE	26. 5	- 23. 2
OLIGOCENE	LAKES ENTRANCE FM.	280. 0	- 276. 7
EOCENE - EARLY OLIGOCENE	LATROBE GP.	330. 0	- 326. 7
PALEOZOIC (?)	BASEMENT (?)	450. 0 (?)	- 446. 7 (?)
	TOTAL DEPTH DRILLER LOGGER	 456. 0 455. 4	

Table 2: Formation Tops

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CUTTINGS DESCRIPTIONS

APPENDIX 1

CUTTINGS DESCRIPTIONS

PATTIES PIES SOUTH-1A CUTTINGS DESCRIPTIONS
Wellsite Geologist: Barry Clarke. Well spudded 18/09/03.

DEPTH (m)	ROP (min/m)	Gas Units	DESCRIPTIONS
0-5	6.0	0	SAND - clear, fine – coarse grain, most medium - coarse grain, sub round, fair sorted,quartz, trace micaceous, 40% brown argillaceous, limonitic, abundant clay, buff, unconsolidated, trace Bryozoa.
5-10	12.0	0	CLAY - brown, very silty, very fine carbonaceous specks, floating sand & silt grains, grades very argillaceous siltstone to argillaceous silty sandstone, very poor sorted, 5% loose sand grains as above.
10-15	3.6	0	CLAY - grey, soft, slight carbonaceous, also brown limonite clay as above.
15-20	3.2	0	CLAYSTONE - medium orange brown, limonitic, very silty, grades brown argillaceous siltstone.
20-25	2.4	0	CONGLOMERATE – polymictic, pebble fragments of argillite, quartzite, igneous, limestone, coal etc.
25-30	5.2	0	25 – 26m – CONGLOMERATE - as above. 26m – 30m – SILTSTONE - medium grey, very argillaceous, very fine grained sandy grading silty sandstone, abundant skeletal fragments including Gastropod, Pelecypod Bryozoa.
30-35	3.0	0	SILTSTONE – as above, abundant loose grains quartz, lithic grains, glauconite, coal.
35-40	2.3	0	SILTSTONE - as above, medium to dark grey, very fine sandy, quartz, argillaceous, abundant skeletal grains, soft, friable.
40-45	2.6	0	SILTSTONE – as above, grey, sandy and argillaceous, abundant bioclastic material, grades silty, bioclastic wackestone and packstone .
45-50	4.0	0	SILTSTONE - as above, medium grey, quartzose, abundant bioclastic material, lithic grains, glauconite, micaceous, soft, friable.

50-55	3.0	0	SILTSTONE – as above, grades quartz silty, bioclastic packstone and wackestone, mostly poor porosity, small amount pinpoint porosity.
55-60	5.6	0	LIMESTONE – light grey, buff, skeletal wackestone and packstone, silty to very coarse grain material, small amount very fine, crystal spar, Bryozoa, Coral, glauconite, scattered intraskeletal porosity, most primary porosity infilled with spar cement. No shows.
60-65	4.0	0	LIMESTONE – buff, light grey, very fine to very coarse grained skeletal and intraclasts, micrite and spar infill of porosity, poor porosity, no shows.
65-70	4.0	0	LIMESTONE – as above, fair amount intraskeletal porosity, probable poor permeability, most primary skeletal porosity infilled with spar. No shows.
70-75	3.2	0	LIMESTONE – buff, light grey, poor sorted sparry skeletal wackestone and packstone, mostly silt to medium grain size allochems, scattered intraskeletal porosity, mostly poor porosity, no shows.
75-80	2.0	0	LIMESTONE – buff, fine to medium grain, sparry skeletal packstone and grainstone, possible small amount large size intraskeletal porosity, trace skeletal-moldic porosity.
80-85	2.4	0	LIMESTONE – as above, poor sorted very fine to very coarse grain skeletal packstone and wackestone, fair amount intraskeletal porosity, no shows.
85-90	4.2	0	LIMESTONE - as above, poorly sorted bioclastic packstone and wackestone, abundant Bryozoa, interbedded bioclastic siltstone.
90-95	5.6	0	LIMESTONE – bioclastic packstone and wackestone as above, abundant Bryozoa, Pelecypod, small amount intraskeletal porosity, trace interskeletal porosity, no shows.
95-100	5.0	0	LIMESTONE – as above, no shows.
100-105	4.2	0	LIMESTONE – as above, common intraskeletal porosity, small amount interskeletal porosity, much porosity infilled with grey calcareous silt, no shows.

105-110	7.0	0	LIMESTONE – light grey, very poorly sorted skeletal wackestone as above, most silt to very fine grain size, abundant fine to coarse grain skeletal material including Bryozoa, glauconite, coal grains, large amount intraskeletal porosity, no shows.
110-115	2.8	0	LIMESTONE – 40%, as above, slight carbonaceous and quartz silty. 60 percent siltstone – grey, calcareous, argillaceous, bioclastic.
115-120	3.2	0	LIMESTONE / SILTSTONE – grey, bioclastic wackestone, argillaceous, quartz silt, Bryozoa: Siltstone – 60%, bioclastic, argillaceous.
120-125	2.8	0	SILTSTONE / MARLSTONE – grey, argillaceous,calcareous, carbonaceous, bioclastic; Limestone – 10% silty, argillaceous, bioclastic wackestone.
125-130	5.8	0	MARLSTONE / SILTSTONE – as above, grey, bioclastic, coarse grain fragments skeletal material, including Bryozoa, glauconite, quartz silt.
130-135	4.4	1	MARLSTONE / LIMESTONE – argillaceous micrite, with abundant coarser grains bioclastic detrital including Bryozoa, Foraminifera, Pelecypod, glauconite. LIMESTONE – 30%, buff, grey, poor sorted bioclastic wackestone, micrite to medium grain allochems, slight argillaceous, carbonaceous specs, glauconite. 1 unit hot wire gas.
135-140	3.4	1	LIMESTONE / MARLSTONE - medium buff grey, quartz silty and argillaceous skeletal wackestone, carbonaceous specs, Bryozoa etc. poorly sorted, quartz silt, coarse grain skeletal fragments. 1 unit hot wire gas.
140-145	2.8	2	MARLSTONE / SILTSTONE – very fine to medium grained, bioclastic wackestone, part grades argillaceous and micritic silty, bioclastic packstone. Two units hot wire gas.
145-150	3.6	1	LIMESTONE - grey, marly skeletal wackestone and packstone as above, very fine to coarse grain fossil material with micrite matrix, poor sorted, abundant Bryozoa, glauconite, carbonaceous specs, quartz silt, part argillaceous, grades marlstone. 1 unit hot wire gas.

150-155	3.2	0	LIMESTONE – buff, light brown, bioclastic wackestone, micrite to medium grained allochems, poorly sorted, Bryozoa, Pelecypod, intraclasts, argillaceous, quartz silt, glauconite, micrite matrix, trace spar cement, small amount interskeletal porosity, trace, 1 unit hot wire gas.
155-160	3.2	1	LIMESTONE – wackestone, as above, fair amount glauconite argillaceou. Limestone – micritic bioclastic wackestone, small amount coarser skeletal material, fairly glauconitic, poor porosity, no shows.
160-165	3.4	0	LIMESTONE / MARLSTONE - argillaceous and quartz silt bioclastic wackestone, Bryozoa, Coral, glauconite.
165-170	4.4	0	CLAYSTONE – 50%, slight green grey, very calcareous including abundant fragments Bryozoa. 50% marly limestone as above.
170-175	6.0	0	CLAYSTONE – light green, very calcareous, glauconitic. Claystone – medium to light grey as above, marly with abundant fine to coarse grained skeletal material.
175-180	6.0	0	CLAYSTONE - as above; LIMESTONE – 90%, light grey, light buff, sparry detrital wackestone, micrite to very fine grained bioclastic material including abundant Bryozoa, small amount glauconite.
180-185	4.6	0	CLAYSTONE – medium green grey, abundant bioclastic detrital material, grades marlstone. LIMESTONE – 20%, white, sparry micrite. LIMESTONE – 20%, white, light buff, very fine to medium grained skeletal and intraclast packstone, abundant Bryozoa, small amount intraskeletal porosity, no shows.
185-190	6.8	0	LIMESTONE - 90%, light buff, bioclastic packstone and wackestone, mostly very fine to fine grained, small amount coarse grain, poorly sorted, Pelecypod, Bryozoa, scattered intergranular porosity, trace skel- moldic porosity most tight, no shows. LIMESTONE – 10%, medium brown grey, bioclastic glauconitic wackestone as above.

190-195	4.4	0	LIMESTONE – light buff, sparry pelletoidal micrite. LIMESTONE – light buff, micritic and sparry bioclastic wackestone grading packstone, small amount interskeletal porosity. LIMESTONE – buff, sparry very fine grained detrital packstone and grainstone, tight, no shows.
195-200	8.0	0	CLAYSTONE – 10%, medium green, very calcareous, bioclastic particles; CLAYSTONE – 20%, medium grey brown, abundant poorly sorted skeletal material, grades marlstone; LIMESTONE – 70%, bioclastic wackestone, very fine to medium grained, abundant Bryozoa.
200-205	8.8	0	CLAYSTONE – 60%, medium to dark grey, calcareous silty; CLAYSTONE – 10%, light green, moderately calcareous, carbonaceous specks; LLAYSTONE – 30%, buff, very fine to medium grained bioclastic wackestone and grainstones as above, tight, no shows.
205-210	4.6	0	CLAYSTONE – grey as above, moderately calcareous; LIMESTONE – buff, as above.
210-215	5.6	0	CLAYSTONE – medium green grey, moderately calcareous; LIMESTONE – 20%, light buff, grey, bioclastic wackestone, very fine to very coarse grain, poorly sorted, calcareous silt and micrite infilling interskeletal porosity, part with spar cement, Bryozoa, no shows.
215-220	5.0	0	LIMESTONE – varigated buff green and grey, poorly sorted intraclast and bioclastic wackestone and packstone, tight; CLAYSTONE – medium grey green, bioclastic, silty.
220-225	6.8	1	CLAYSTONE - as above, samples probably contain a higher percent claystone than logged - much is probably washed out during sample washing; LIMESTONE – as above.
225-230	4.8	1	CLAYSTONE – as above, marly; LIMESTONE – as above. 1 unit hot wire gas.

230-235	3.8	1	CLAYSTONE – as above, marly, soft, friable, bioclastic fragments common. 1 unit hot wire gas.
235-240	6.2	0	CLAYSTONE / MARLSTONE – as above; Limestone – 10% as above.
240-245	8.6	0	CLAYSTONE / MARLSTONE – as above.
245-250	6.8	0	CLAYSTONE / MARLSTONE – as above.
250-255	4.0	0	CLAYSTONE / MARLSTONE – medium grey, slight green grey, very calcareous, siltier than above, carbonaceous specks; CLAYSTONE – medium to dark brown grey, very calcareous, very fine grain bioclastic detrital, Bryozoa, Pelecypod, Foraminifera.
255-260	3.8	0	CLAYSTONE – grading marlstone as above; LIMESTONE – variegated buff and green, poorly sorted sparry detrital and bioclastic wackestone, fair amount glauconite, no porosity, no shows.
260-265	6.0	0	CLAYSTONE / MARLSTONE – as above; Limestone as above, some grades sparry bioclastic packstone, glauconitic, slightly carbonaceous, no porosity.
265-270	7.8	0	CLAYSTONE – varieties as above; LIMESTONE – buff, variegated green, slight sparry bioclastic and intraclast wackestone, poorly sorted, fair amount glauconite, Pelecypod, Bryozoa, tight.
270-275	7.2	0	CLAYSTONE / MARLSTONE – medium green grey, slight silty, slight carbonaceous, abundant Bryozoa, Pelecypod.
275-280	6.8	0	MARLSTONE / CLAYSTONE – 40%, medium to dark grey, abundant coarse grain skeletal material including Pelecypod;

			CLAYSTONE – 40%, slight green-grey, calcareous; CLAYSTONE – 20%, grey-green, bioclastic.
280-285	3.4	0	CLAYSTONE – varieties as above.
285-290	3.2	0	CLAYSTONE – medium brown grey, silty, very fine sandy, carbonaceous specks, calcareous, bioclastic detrital including Pelecypod, grades argillaceous calcareous siltstone; MARLSTONE / CLAYSTONE – as above.
290-295	5.8	1	SANDSTONE - 30%, dark brown, very fine to fine grain, scattered medium & coarse grain, poorly sorted, sub angular, quartz, chert, skeletal fragments, abundant calcareous cement – up to 50% quartz grains replaced, abundant black carbonaceous grains, small amount siliceous cement, lithiclasts, trace pyrite, tight, no shows; MARLSTONE – 70%, as above. Coarse fragments Pelecypod.
295-300	7.6	1	SANDSTONE – medium brown, as above, very fine to fine grain, angular, calcite cement replacing quartz, carbonaceous grains, glauconite, chert, lithics, possible laminae sandy bioclastic limestone, tight, no shows, 1 unit hot wire gas.
300-303	6.0	2	SANDSTONE – 30% as above; SILTSTONE – 70%, medium to dark brown grey, very argillaceous, very fine sandy, very soft, friable, unconsolidated, no shows, 2 units hot wire gas.
303-306	4.3	2	SANDSTONE – variegated medium brown and white, most very fine grain, well sorted, small amount with scattered coarser grains, 50% calcite cement replacing quartz grains, fair amount glauconite, tight, no shows; CLAYSTONE – 10%, emerald green, coarse fragments Pelecypod. 2 units hot wire gas.
306-309	9.0	0	SANDSTONE – 60% as above; SANDSTONE – 40%, similar composition as above, friable and argillaceous, soft, possible relic – mix quartz grains and mud?

309-312	6.7	0	SANDSTONE – medium to dark brown, as above, more glauconite than above, tight, no shows.
312-315	4.3	0	SANDSTONE – as above, no shows.
315-318	9.0	0	SANDSTONE – as above, very fine grain, silty, loose aggregates pyrite – part as pyritised plant material, less glauconite than above, tight, no shows.
318-321	9.7	0	SANDSTONE / SILTSTONE – medium brown, very fine grain, silty, poorly sorted, angular, argillaceous, quartz, calcite cement, pyrite - part as cement, chert or lithic grains, worm tubes, tight, no shows.
321-324	11.3	0	SANDSTONE / SILTSTONE – as above, tight, no shows; SANDSTONE - 5%, loose grains quartz, medium to very coarse grain, sub round to round.
324-327	7.6	0	SILTSTONE / SANDSTONE – brown, very fine grain to silt, slightly argillaceous, medium to poorly sorted, sub angular to sub round, quartzose, abundant calcite cement, trace pyrite, trace glauconite, micaceous, well compacted, hard, tight, no shows, trace amount coarse grains quartz – loose, as above.
327-330	8.0	1	SANDSTONE – as above.
330-333	5.3	0	SANDSTONE – as above; Sandstone – 1%, loose grains quartz, coarse grained, sub round; no shows.
333-336	5.3	0	SANDSTONE – light grey, clear, slightly frosty, medium to very coarse grain, fairly well sorted, round to sub round, quartz, small amount chert and lithic grains, abundant disseminated microcrystalline pyrite between quartz grains, unconsolidated, excellent porosity & permeability, no shows.
336-339	4.7	0	SANDSTONE - as above, unconsolidated, abundant loose silt to very fine grain quartz – possible matrix?, abundant pyrite intermixed with fine grain fraction - part forming cement, very good porosity, no shows.
339-342	7.8	0	SANDSTONE – as above, slightly coarser grained.

342-345	2.0	1	SANDSTONE – clear, white, medium to very coarse grain, well sorted, quartz, chert, lithic grains, unconsolidated as above, no shows.
345-348	2.3	0	SANDSTONE – as above, abundant dark grey chert or lithiclast grains, aggregates cemented with pyrite, small amount black resinous or organic material associated with pyrite gave no florescence but gave fairly fast blooming cut with a very weak blue florescence.
348-351	2.7	0	SANDSTONE – as above, very coarse to fine grain, fair sorting, milky white and clear quartz, chert, lithoclasts, patches with microcrystalline pyrite cement, very good porosity, no shows.
351-354	4.3	0	SANDSTONE - as above, possible slight coarser grain than above, large amount pyrite - part as cement, unconsolidated, very good porosity, no shows.
354-357	5.0	0	SANDSTONE – as above, 25% Coal – black, probably bedded.
357-360	5.7	0	SANDSTONE – medium grey, fine grain, sub angular to sub round, quartz – part with silica overgrowths, micaceous, abundant pyrite; COAL – black, interlaminated with sandstone above, floating sand grains in coal and common pyrite.
360-363	3.3	0	SANDSTONE – very fine grain, as above, interbedded? with black coal, abundant pyrite, poor sample, no shows.
363-366	5.3	0	SANDSTONE – salt & pepper, medium to coarse grain, common fine grain, fair sorted, sub round to sub angular, quartz with crystal overgrowths blocking pore throats, pyrite cement in part, coal grains, consolidated, breaks easily into grains, fairly good porosity, poor permeability, no shows; COAL – 20%, black, as above, part occurs as grains in the sandstone; trace black bituminous organic material with floating sand grains – no florescence but gives fast weak blooming cut with weak blue florescence.
366-369	6.3	1	SANDSTONE – 60%, mostly as loose grains as above, silt – very coarse grained, mostly coarse grained, sub round, clear quartz, grey lithoclasts, most unconsolidated, also cuttings of very fine to medium grain salt & pepper sandstone as above, no shows;

			COAL – 40%, black, as above.
369-372	5.3	0	SANDSTONE – 50%, loose grains & cuttings as above, no shows; COAL - 50%, black, floating sand grains and interlaminated silty sandstone, carbonaceous plant material, abundant disseminated pyrite, coarse crystals mica, part of coal gives fairly fast blooming cut with weak blue florescence.
372-375	10.0	0	COAL & SANDSTONE – as above, poor sample?, unwashed samples are mostly light grey clay – weathered volcanics?.
375-378	14.6	0	CLAY – light grey as above.
378-381	15.3	0	CLAY – as above.
381-384	19.0	0	CLAY – as above.
384-387	26.6	0	CLAY – grey and brick red.
387-390	17.6	0	CLAY - as above; SANDSTONE – 5%, red brown, very fine grain - silt, angular, siliceous cement, iron stain or clay matrix, some loose grains quartz with red stain, very fine to medium grain, mostly tight, no shows.
390-393	17.1	0	CLAY – red, with red sandstone as above.
393-396	19.3	0	CLAY – as above.
396-399	23.3	0	CLAYSTONE – interlaminated red and light grey and green grey, non calcareous, very micaceous, sub fissile.
399-402	20.0	0	CLAYSTONE – as above.
402-405	23.3	0	CLAYSTONE – as above, part silty and micaceous, interlaminated with Sandstone – mottled red, very

			fine to medium grain, scattered coarser grain, fair to poorly sorted, no shows.
405-408	29.0	0	CLAYSTONE / SHALE – green grey and red brown, interlaminated, part slight silty, micaceous.
408-411	21.0	0	CLAYSTONE – as above; SANDSTONE – small amount, grey, salt & pepper, very fine to silt, argillaceous, quartz, lithiclasts, slight to fairly calcareous, tight, no shows.
411-414	23.6	0	CLAYSTONE – red as above, also mottled buff and red.
414-417	19.0	0	CLAYSTONE / SHALE – as above, poor sample.
417-420	18.0	0	CLAYSTONE / SHALE – as above, fair amount of loose sand grains, fine to very coarse grain, increase ROP, mud pit turnrd deep red brown color.
420-423	21.3	0	CLAYSTONE – as above.
423-426	19.0	0	CLAYSTONE – red, buff, very micaceous, abundant cavings.
426-429	21.0	0	CLAYSTONE – as above, abundant loose grains quartz sand – cavings?
429-432	27.0	0	CLAYSTONE – red, light to medium brown, yellow brown, very micaceous, silty laminae, very fissile.
432-435	22.0	0	CLAYSTONE / SHALE - as above.
435-438	18.0	0	CLAYSTONE – as above, 80% loose grains quartz sand, very fine to coarse grained; trace SANDSTONE – dirty brown, very fine to medium grain, poor sorted, sub angular, quartz , micaceous, carbonaceous, silica? cement, non calcareous, tight, no shows.
438-441	21.3	0	CLAYSTONE – as above; 50% loose grains sand as above; SANDSTONE – trace, as above.

441-444	15.3	0	SANDSTONE – 10%, dirty brown as above, very micaceous, tight; SANDSTONE – 10%, very coarse fragments quartz, possible conglomerate .
444-447	11.0	0	SANDSTONE / CONGLOMERATE – clear, white, coarse to very coarse grain, possible fragments of larger size material, angular, quartz - part with quartz crystal overgrowths, lithics, no shows.
447-450	19.3	0	SANDSTONE? - as above, probably much cavings.
450-453	33.3	0	SANDSTONE? - as above, abundant cavings, trace lithic fragments including metamorphics and igneous, no shows.
453-456	28.3	0	SANDSTONE? – as above, possible conglomerate as above; SANDSTONE – trace amount, medium grain, very fine grain to silt, grades siltstone, poor to fair sorted, angular, quartz, siliceous cement, tight, very similar to base of Patties Pies # 1.

BIT RECORD

APPENDIX 2

BIT RECORD

BIT RECORD

WELL NAME : PATTIES PIES SOUTH –1/1a

BIT No.	1	2	3	4	5	6	
SIZE (mm)	244 mm	8.5 inch	16.0 inch	14.0 inch	8.5 inch	5 5/8 inch	
MAKE	n.a.	n.a. re-run	n.a. re-run	n.a.	n.a. new bit	ASH 1	
TYPE	4 way drag	Roller cone.	Four way drag.	Cable tool.	Four way chevron drag	P.C.D.	
JETS	none	none	none	none	none	none	
IN AT (KB) m	0	30.5	0	22.4	30.5	84.5	
OUT AT (KB) m	30.5	30.5	22.4	30.5	90.5	456.0	
METERS	30.5	0	22.4	8.1	60.0	371.5	
HOURS	3.0	3.0	2.5	10.0	3.0	54.4	
ACC. HRS	3.0	6.0	8.5	18.5	21.5	75.9	
WT.	n.a.	n.a	n.a	n.a.	n.a.	n.a.	
RPM	n.a.	n.a.	n.a.	-	n.a.	n.a.	
MUD WT.	(fresh water)	(fresh water)	(fresh water)	(fresh water)	(fresh water)	112	
VIS.						37	
VER.DEV.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
COND.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
REMARKS	Unable to drill or lift pebbles at 30.5m	Unable to drill or lift pebbles.	16 in. hole drilled for 14in.csg	Cable tool drilled through 14 in. csg.			

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WELL LOCATION SURVEY

APPENDIX 3

WELL LOCATION SURVEY

AUSTEC SURVEYING CONSULTANTS PTY LTD ACN 006 347 100
TITLE & ENGINEERING SURVEYORS :: LAND DEVELOPMENT CONSULTANTS

Ref 03300.C01
24/06/03

Lakes Oil N.L.
P.O. Box 300
Collins Street West
Melbourne, 8007.

Att: Mr J. Mulready
Re: Wellsite Surveys
Location: Bayview Road, Bairnsdale
And Bunga Creek, Lakes Entrance.

Further to your request we have completed the co-ordination of the bore holes at Bairnsdale and Lakes Entrance.

Jones Bay-1	E 559212.975	N 5809565.222	RL 2.200	PSF	0.99964318
Patties Pies-1	E 559321.145	N 5810466.907	RL 2.280	PSF	0.99964334
Datum:	Parish of Broadlands PM 35				
	Parish of Bairnsdale StMarys Spire				

Bunga Creek-1	E 589376.388	N 5809860.128	RL 60.600	PSF	0.99969839
Bunga Creek-2	E 591192.088	N 5810294.796	RL 43.890	PSF	0.99970242
Datum:	Parish of Colquhoun PM's 32 & 33				

- The above co-ords have been deduced from ground survey work to an estimated accuracy of +/- 0.02m.
- The co-ords are to the centre line at ground level of the bores, except for "Jones Bay-1" This bore has not yet been drilled. The co-ords are to the centre of the northern edge of a dirt ramp, at a distance of 7.45m on Magnetic Brg of about 7^0 from a steel (GI) stake placed on site.

Yours Faithfully,

Bruce Bowden.
Licensed Surveyor

Principal: BRUCE BOWDEN B.APP.Sc.(SURV.). L.S.

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LOGS

ENCLOSURE 1

LITHOLOGICAL LOGS

PE613642

This is an enclosure indicator page.
The enclosure PE613642 is enclosed within the container PE909990 at this location in this document.

The enclosure PE613642 has the following characteristics:

ITEM_BARCODE	PE613642
CONTAINER_BARCODE	PE909990
NAME	Patties Pies South-1A Lithological Log
BASIN	GIPPSLAND
ONSHORE?	Y
DATA_TYPE	WELL
DATA_SUB_TYPE	MUD_LOG
DESCRIPTION	Patties Pies South-1A Lithological Log. 1:200. Lakes Oil N.L. Barry W.Clarke. October 2003. Enclosure 1
REMARKS	
DATE_WRITTEN	11-OCT-2003
DATE_PROCESSED	
DATE_RECEIVED	
RECEIVED_FROM	Lakes Oil N.L.
WELL_NAME	Patties Pies South-1A
CONTRACTOR	
AUTHOR	
ORIGINATOR	Lakes Oil N.L.
TOP_DEPTH	0
BOTTOM_DEPTH	456
ROW_CREATED_BY	DH00_SW

(Inserted by DNRE - Vic Govt Mines Dept)

ENCLOSURE 2

GHD WELL LOGS

PE613643

This is an enclosure indicator page.
The enclosure PE613643 is enclosed within the container PE909990 at this location in this document.

The enclosure PE613643 has the following characteristics:

ITEM_BARCODE	PE613643
CONTAINER_BARCODE	PE909990
NAME	Patties Pies South-1A GHD Well Log
BASIN	GIPPSLAND
ONSHORE?	Y
DATA_TYPE	WELL
DATA_SUB_TYPE	WELL_LOG
DESCRIPTION	Patties Pies South-1A GHD Well Log. Suite 1 (@ TD). Density, Caliper, SP, Resistivity and Gamma. Enclosure 2
REMARKS	
DATE_WRITTEN	
DATE_PROCESSED	
DATE_RECEIVED	
RECEIVED_FROM	Lakes Oil N.L.
WELL_NAME	Patties Pies South-1A
CONTRACTOR	
AUTHOR	
ORIGINATOR	Lakes Oil N.L.
TOP_DEPTH	0
BOTTOM_DEPTH	456
ROW_CREATED_BY	DH00_SW

(Inserted by DNRE - Vic Govt Mines Dept)