



WCR MACKEREL-4

(W668)

COMPLETION REPORT

MACKEREL-4

668

Esso Australia Ltd

June, 1973

W 668

successful output (oil).

SPUD. 11/2/73.

LAT. 38° 30' 51.5"

COMP. 10-5-73. P. & A. 10/5/73.

66

MACKEREL-4 VIC. 4/5. ESSO. WILDCAT.

- ✓ ISF. Run 1. 2" 2806' - 8680'
- " " 1 5" 2806' - 8680'
- " " 1 2"45" 2806' - 8680'
- BHCS/GR. Run 1 & 2. 2" 688T 250GR. - 2852 } 1<sup>st</sup> R. 2806 - 8680 2<sup>nd</sup> R.
- " " " " " 5" " " " " " "
- " " Run 1. 2"45" 688AT 250GR. - 2852
- " " " 2. 2"45" 2806 - 8680
- FDC/CNL Run 1 2" 7550 - 8686 FDC 8671 CNL.
- " " " 1. 5" " - " "
- " " " 1. 2"45" " - " "
- ✓ Cent. Dipmeter, 4 arm. Run 1. 7550 - 8685. 2 copies
- ✓ FIT. Run 1. Tests 1 - 7.
- ✓ Bariod Mud Log. 955 - 8700.
- ✓ " A.D.T. 4000 - 6500. 2 copies.
- ✓ "d" Exponent. 4500 - ~~8700~~ 7400.?
- ✓ Core Analysis report. Cores 3, 6 & 7. (Bariod)
- ✓ Core Descriptions 1 - 8.
- ✓ Agnew-Go-Western's Amerada Gauges obtained subsurface pressure when doing FIT runs 1, 2, 5, 6 & 7.
- ✓ " " " Calibration Data.
- ✓ Time Depth Curve. 2 copies. Different.
- ✓ Sidewell Core Descriptions.
- ✓ Sample Descriptions. 6344' - 7797'
- ✓ Core Analysis Results. Cores 3, 6 & 7 (Core Lab.).
- ✓ Petrographic Report
- ✓ Preliminary core analysis porosity & permeability data.
- ✓ Hydrocarbon Report - subsurface Oil. EPR-57PS-73 +1<sup>c</sup>
- ✓ Weekly reports. O.K.
- ✓ Completion Report. Pages marked ✓ can be copied for well
- ✓ Palynological Determinations by L. E. Stover. Plus revision.
- ✓ Paleontology report by D. Taylor.
- ✓ Well completion Log.
- Map. Top Latrobe Group, Mackerel Field +1<sup>c</sup>
- Map. Geological Cross Section A-A' +1<sup>c</sup>
- Core Analysis Report by Exxon Production Research Co. EPR. 6PS. 75.

## MACKEREL-4

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ESSO STANDARD OIL (AUSTRALIA) LTD.

COMPLETION REPORT

I WELL DATA RECORD

Date June, 1973

LOCATION

WELL NAME MACKEREL-4	STATE VICTORIA	PERMIT or LICENCE VIC L/5	GEOLOGICAL BASIN GIPPSLAND	FIELD MACKEREL
CO-ORDINATES		MAP PROJECTION	GEOGRAPHICAL DESCRIPTION	
Lat.	Long.	X	Y	Offshore,
Surface	38°30'49.918"S	614	634	approx. 70 miles from
Bottom Hole	148°18'53.508"E	5736334		Sale, 2.6 miles SW of
				Mackerel-2.
<u>ELEVATIONS &amp; DEPTHS</u>				
ELEVATIONS		WATER DEPTH	TOTAL DEPTH	Avg. Angle
Ground	Sea Level	273'	M.D. 8700' driller	Straight hole
KB	32'		T.V.D.	
RT		PLUG BACK DEPTH	REASONS FOR P.B.	
Braden Head		366'	Abandonment	
Top Deck Platform				
<u>DATES</u>				
MOVE IN	RIG UP	SPUDED		
February 10, 1973	February 11, 1973	February 11, 1973		
RIG DOWN COMPLETE	RIG RELEASED	PROD.UNIT - Start Rigging Up		
May 10, 1973	May 10, 1973			
PROD.UNIT - Rig Down Complete		I.P. ESTABLISHED		
<u>MISCELLANEOUS</u>				
OPERATOR	PERMITTEE or LICENCEE	ESSO INTEREST	OTHER INTEREST	
Esso Australia Ltd	Esso/Hematite	50%	Hematite Petroleum 50%	
CONTRACTOR	RIG NAME	EQUIPMENT TYPE		
Global Marine Australasia Pty Ltd	"Glomar Conception"	Shipshape drilling vessel		
TOTAL RIG DAYS	DRILLING AFE NO.	COMPLETION NO.	TYPE COMPLETION	
79.64	233-102			
LAHEE WELL	Before Drilling	Outpost		
CLASSIFICATION	After Drilling	Successful Outpost (oil)		

B. G. McKay  
Geologist

WELL MACKEREL-4

VII SAMPLES, CONVENTIONAL CORES, SW CORES					
INTERVAL	TYPE	RECOVERED	INTERVAL	TYPE	RECOVERED
2860-8700'	Cuttings (Washed and Dried)	Sampled every 10-30 feet	7842-7865'	Core # 6	9 feet
2860-8700'	Cuttings (Sacked unwashed)	Sampled every 10-30 feet	7865-7888'	Core # 7	15 feet
2860-8700'	Cuttings (Canned)	Sampled every 100 feet	7888-7917'	Core # 8	0 feet
3250-8530'	Sidewall Cores	Attempted 30 Recovered 28			
7797-7806'	Conventional Core # 1	1 foot			
7806-7825'	Core # 2	0 feet			
7825-7831'	Core # 3	6 feet			
7831-7832'	Core # 4	1 foot			
7832-7842'	Core # 5	10 feet			

VIII WIRELINE LOGS AND SURVEYS Incl. FIT)			
Type & Scale	From	To	
ISF-SP 2" & 5"	8680-	2806'	
BHCS-GR 2" & 5"	8680-688	(GR to 250)	
FDC-CNL 2" & 5"	8686-	7550'	
HDT 5" & 10"	8685-	7550'	
Velocity Survey			
FIT # 1	7912'	(Successful)	
# 2	7878'	(Successful)	
# 3	7824'	(Seal Failure)	
# 4	7775'	(Seal Failure)	
# 5	7832'	(Successful)	
# 6	7778'	(Successful)	
# 7	7880.5'	(Successful)	

A. P. Whittle  
Geologist

WELL MACKEREL-4

IX	FORMATION TOPS/Zones					REMARKS	
	NAME	Tops		Gross Interval (ft)	Net Pay (ft).		
		M.D.	Sub-sea		Gas		Oil
<u>GIPPSLAND FM</u> Miocene-Recent	305'	- 273'				Water Depth 273'	
Mid Miocene marker	7110'	- 7078'					
Oligocene (1) marker	7294'	- 7262'					
Oligocene (2) marker	7468'	- 7436'					
<u>LATROBE GROUP</u>							
Gurnard Fm.	7748'	- 7716'	7748' - 7904' (156')		144'		
Undifferentiated Latrobe Group	7760'	- 7728'			(Interval 7760'-7904') Includes Trans.Zone 7898'-7904' (6') Residual Oil Zone 7904'-7922' (18')		

X	GEOLOGIC ANALYSIS (Pre Drilling prognosis Vs actual results)		
<u>Pre Drill</u>	Seismic and velocity interpretation over the Mackerel Field indicated that the south western fault block had substantial closure above the field oil-water contact. The well was designed to test this interpreted structural configuration and the reservoir characteristics of the Latrobe.		
<u>Prognosis</u>	<u>Age</u> Miocene-Oligocene Eocene-Paleocene	<u>Formation</u> Gippsland Latrobe Group	<u>Subsea</u> - 279' - 7630'
<u>Post Drill</u>	<p>The well essentially substantiated the basic structural configuration and extension of the good quality reservoir sand of the Mackerel field. The top of the Latrobe Group was 86' low to prediction but this is within the limits of seismic and velocity interpretational techniques. Further work is necessary to resolve the interpretational problems involved at this level of accuracy. Correlation with the other Mackerel wells within the oil column is extremely difficult in the generally characterless massive sand section.</p> <p>The oil-water contact at - 7872', is within ten feet of the field oil-water contact of -7862' and is considered to be within the limits of rig measurement. A transition zone of 6' and a residual oil zone of 18' were found at the base of the oil column in this well. Similar zones are present in the other Mackerel wells and Cobia-1, but have varying thicknesses.</p> <p>Correlation of the Oligocene and Miocene section with nearby wells indicates that it is essentially flat lying deep water sedimentation onlapping the Latrobe unconformity surface. No anomalous lithologies were encountered.</p>		



IV CASING-LINER-TUBING RECORD							
Type	Size	Weight	Grade	Thread	No. Joints	Amount	Depth
KB ELEVATION ABOVE CASING HEAD						296.00	296.00
20"/30" PILE JOINT						34.05	330.05
	20"	129#	X-52	JV & CC	9 + Float Shoe	359.54	689.59
KB ELEVATION ABOVE HANGER						301.00	301.00
	10-3/4"	40.5#	K-55	Butt.	61 + Float Shoe & Collar	2509.42	2810.42

V CEMENT RECORD			
String	20"/30" Pile Joint	20"	10-3/4"
Type of Cement	60 sx Aust. 'N' neat with 2% CaCl <sub>2</sub>	1100 sx Aust. 'N'	277 sx Aust. 'N' neat followed with 323 sx Aust. 'N' + 2% CaCl <sub>2</sub>
Number of FT <sup>3</sup>	71	1298	708
Average Weight of Slurry	15.6 ppg	15.6 ppg	15.6 ppg
Cement Top		Sea Floor	1500'
Casing Tested with			1600#
Number of Centralizers		5	10
Number of Scratchers			
Stage Collar, etc.			
Remarks		Tailed in with 350' sx Aust. 'N' neat with 2% CaCl <sub>2</sub>	Cemented without returns.

*Steven Rodman*  
 Engineer





## 2.0 SAMPLE DESCRIPTIONS

MACKEREL-4

SAMPLE DESCRIPTION

On bottom after 2 months strike. Drilled cement plug 2679-2914' (235'). 10-3/4" casing. Shoe at 2810'. Hole was clean and in good condition with 2 small bridges around 5700 to 5800'. Hole clean with no cavings. Strapped in depth 6351'. KB to sea floor is 305'. Sea level to sea floor 273'.

<u>INTERVAL</u>	<u>DESCRIPTION</u>
6344' - 50	Shale, light - medium gray, calcareous, soft - medium, firm.
6350' - 60	Shale, as above.
6360' - 70	Shale, as above, fossiliferous with trace very fine grained silty brown sandstone.
6370' - 80	Shale, as above.
6380' - 90	Shale, as above, (trace lignite from CC 16 mud).
6390' - 6400	Shale, as above.
6400 - 10	90% Shale, as above. 10% sandstone, brown very fine grained, silty.
6410' - 20	90% Shale, as above trace tan dolomite. 10% Sandstone, as above
6420' - 50	100% Shale, as above.
6450' - 60	100% Shale, light gray and medium gray, slightly silty moderately firm.
6460' - 70	100% Shale - as above.
6470' - 80	90% Shale 10% Sandstone, white, fine grained, subrounded, quartz, unconsolidated.
6480' - 6500	90% Shale, as above. 10% Sandstone, as above.
6500' - 6540	90% Shale, as above. 10% Sandstone, as above.
6540' - 70	100% Shale, as above. Trace tan dolomite.
6570' - 80	100% Shale, as above. Trace tan dolomite.
6580' - 6630'	100% Shale, medium grained, firm slightly silty, small forams, trace fine grained unconsolidated quartz, subrounded.
6630' - 70'	100% Shale, as above.
6670' - 6700'	50% Shale, as above. 50% Marl, light grey very soft.
6700' - 50	10% Shale 90% Marl, light grey, very soft, gummy.
6750' - 70'	10% Shale 90% Marl
6770' - 80	100% Marl with trace fine grained, subrounded quartz.

INTERVAL	DESCRIPTION
6780' - 90	100% Marl, as above.
6790' - 6800	100% Marl, as above.
6800' - 20	90% Marl 10% Shale, grey firm silty.
6820' - 40	80% Marl, as above. 20% Shale, as above.
6840' - 90	100% Marl, light grey, very soft, gummy.
6890' - 6920	100% Marl, as above with trace fine grained, sandy grains, with small forams.
6920' - 40	100% Marl, as above.
6940' - 50	90% Marl, as above. 10% Sandstone, grey, very fine - fine grained trace glauconite.
6950' - 7000	90% Marl, as above with very fine grained, quartz sand, forams. 10% Shale, light fine grained.
7000' - 20	30% Marl 70% Shale, medium gray, firm, fissile, small forams.
7020' - 30	50% Marl 50% Shale
7030' - 40	100% Shale
7040' - 70	50% Marl 50% Shale
7070' - 80	100% Marl
7080' - 7100	40% Marl 50% Shale, as above many foram. 10% Sandstone, white quartz, very fine grained, unconsolidated.
7100 - 10	70% Marl 30% Shale
7110' - 40	40% Marl 60% Shale
7140' - 50	10% Marl 90% Shale
7150' - 70	10% Marl 80% Shale 10% Sandstone, white, very fine-fine grained, subrounded quartz.
7170' - 7200	20% Marl 80% Shale
7200' - 30	30% Marl, light grey, very soft, gummy. 70% Shale, medium grey, slightly silty, firm.
7230' - 50	20% Marl 80% Shale, as above, with trace light green shale.
7250' - 70	20% Marl 80% Shale, medium grey, silty, firm, trace green shale, with some very fine grained glauconitic sandstone, unconsolidated, trace pyrite.

INTERVAL	DESCRIPTION
2770' - 90	20% Marl 80% Shale, medium grained, slightly silty, trace light green shale.
7290' - 7330	30% Marl, as above. 60% Shale, as above. 10% Sandstone, brown-green, very fine grained, silty, slightly glauconitic.
7330' - 40'	40% Marl 60% Shale
7340' - 50	60% Marl 40% Shale
7350' - 60	40% Marl 60% Shale
7360' - 70	10% Marl 90% Shale, medium grey, slightly silty, trace green shale, abundant very small forams.
7370' - 7400	10% Marl 80% Shale, medium gray, soft - firm. 10% Sandstone, clean, very fine grained, quartz ferruginous staining.
7400' - 30	10% Marl 80% Shale 10% Sandstone, very fine grained, clean quartz, subrounded rounded, slight ferruginous staining, trace glauconite trace pyrite abundant small forams.
7430' - 50	100% Shale, medium grey, fissile, fossiliferous, trace light green shale, trace glauconite, very fossiliferous (small forams)
7450' - 80	100% Shale, as above, firm trace glauconite, very fossiliferous.
7480' - 90	100% Shale, gray, fissile, very fossiliferous, trace glauconite.
7490' - 7500	100% Shale, as above, with abundant small forams
7500' - 10	100% Shale, as above with abundant small forams.
7510' - 20	100% Shale, as above with abundant small forams. Some forams pyrite replaced.
7520' - 30	100% Shale, as above with pyrite. (Small fossils).
7530' - 40	100% Shale, as above.
7540' - 50	100% Shale
7550' - 60	100% Shale, as above, trace medium grained clean quartz sandstone.
7560' - 70	100% Shale, trace free glauconite.
7570' - 80	100% Shale, abundant small forams.
7580' - 90	100% Shale, as above.
7590' - 7600	100% Shale.
7600' - 10	100% Shale
7610' - 20	100% Shale, medium gray, fissile, fossiliferous, abundant small forams. Trace green shale, calcareous.

INTERVAL	DESCRIPTION
7620' - 30	100% Shale.
7630' - 40	100% Shale.
7640' - 50	100% Shale trace glauconite.
7650' - 60	100% Shale.
7660' - 70	100% Shale
7670' - 80'	100% Shale
7680' - '90	100% Shale
7690' - 7700	100% Shale, grey, fissile, platy, calcareous.
7700' - 10	100% Shale, as above with trace glauconite
7710' - 20	100% Shale
7720' - 30	100% Shale, as above with pyrite
7730' - 40	100% Shale
7740' - 50	100% Shale
7750' - 60	100% Shale
7760' - 70	80% Shale 20% Sandstone - frosty white and clear quartz, medium coarse, subrounded, quartzose, unconsolidated, good fluorescence (white yellow) with fair cut, some glauconite and pyrite, trace ferruginous stained quartz. <u>No drill break</u> , Top picked at 7765' from gas chrom. Bumper subs not functioning.
7770' - 80	70% Shale - (cavings?) 30% Sandstone - as above.
7780' - 90	70% Shale 30% Sandstone, as above good even yellow white fluorescence, good cut.
7790' - 97 Circulation Drilling Break began at 7787'±	30% Shale 70% Sandstone, frosty white and clear quartz, subrounded unconsolidated with trace, glauconite and trace pyrite good even yellow white fluorescence and cut.

## 2.1 CORE DESCRIPTIONS

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. L

WELL: MACKEREL #4

Interval Cored 7797-7806 ft., Cut 9 ft., Recovered 1 ft., (11 %) Fr. LATROBE

Bit Type C-19, Bit Size 8 15/32 x 4 in., Desc. by J. BLACK Date 28/4/73

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
<p>97</p> <p>1 2 3</p> <p>80</p> <p>85</p> <p>86</p>			<p>7797-98</p>	<p><u>SANDSTONE - FROSTY &amp; CLEAR WHITE sub</u>  <u>RND/RND. QTZ., M/V. CRSE, V. FRIAB</u>  <u>TO UNCONSOL., LARGE MODULUS</u>  <u>GLAUCONITE, RARE PYRITE, GOOD PERM.</u>  <u>&amp; PERM., GOOD EVEN YELLOW WH.</u>  <u>FLUOR. &amp; CUT, GOOD SWEET CRSE</u>  <u>ODOR &amp; LT. BRN. STAIN.</u>  <u>TWO THIN (1/8") SILTY, HORIZ.</u>  <u>CARB. SHALE STREAKS.</u>  <u>SAND IS WELL SORTED TO</u>  <u>FAIR SORTED &amp; CLEAN.</u></p> <p><u>UNRECOV. CORE IS PROB. UNCONSOL. SAND.</u></p>

REMARKS: CORE BBL. JAMMED.  
← 4" FULL DIAM. SPL. MAX. PACKED FOR EPRCO  
← PALYNOLOGY SPL.



ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 2

WELL: MACKEREL #4

Interval Core: 7806-7825 ft., Cut 19 ft., Recovered 0 ft., (0%) Fr. LATROBE

Bit Type: C-19 FD, Bit Size: 8 1/2 X 4 in., Desc. by: J. BLACK Date: 29/4/73

Depth & Coring Rate (min./hr)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
06 5 10 15				
			7806-25	NO RECOVERY INTERPRETED TO BE UNCONSOL. SAND.
10				
15				
20				
25				

REMARKS: CORES 1 & 2 USED NEW TYPE FLAT SHANKED C-19 CORE HEAD.

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 3

WELL: MACKEREL-4

Interval Cored 7825-31 ft., Cut 6 ft., Recovered 6 ft., (100%) Fr. LATROBE

Bit Type C-22 FD, Bit Size 8 15/32 x 4 in., Desc. by J. BLACK Date 30 APRIL 1973

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
25	○○○○○ ←		7825-25'5"	SHALE PEBBLES - GRAY FIRM, UNCON SOL. WELL RND. TO 1" DIA. PROB. CAVINGS
	○-○-○ ←		7825'5"-26'2"	SHALE PEBBLES IN SOFT SILTY SHALE MATRIX TO 2" DIAM. MAY BE CAVING.
	○-○-○ ←		7826'2"-28'	SANDSTONE - FROSTY WH. M/V. CRSE. S.P., QTZ., V. FRIAB., GLAUC., CLEAN GOOD POR & PERM. GOOD EVEN YELLOW WH. FLUOR. & CUT, GOOD OIL ODOR & LT. BRN. STAIN
30			7828'-30'8"	SANDSTONE - AS ABOVE BUT UNCON SOL.
31			7830'8"-31'	SANDSTONE - WH QTZ., F/M. G. W/ SOME VFG QTZ FEW IRREG. SHALE PIECES, FAIR POR & PERM. GOOD EVEN YELLOW WH. FLUOR & CUT. GOOD ODOR & LT BRN OIL STAIN

REMARKS: BBL JAMMED.  
 ← EPRCO 4" FULL DIAM. WAX PACKED SPL.  
 ← PALYNOLOGY SPL  
 ← SIMULATED OVER BURPEN SPL

4 of 8

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 4

WELL: MACKEREL #4

Interval Cored 7831-7832 ft., Cut 1 ft., Recovered 0 ft., (0 %) Fr. LATROBE

Bit Type C-22 FD, Bit Size 8 1/32 x 4 in., Desc. by J. BLACK, Date 30 APRIL 1973

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
31 32 Grid for depth and coring rate	Graphic area with a diagonal line from top-left to bottom-right			RECOVERED 1' SHALE CAVINGS

REMARKS: BBL. JAMMED & CORE CATCHER BROKEN

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 5

WELL: MACKEREL -4.

Interval Cored 7832 - 7842 ft., Cut 10 ft., Recovered 10 ft., (100 %) Fr. Latrobe Group

Bit Type C-19, Bit Size 8 15/32 in., Desc. by SHORT / WHITTLE Date 1/5/73

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
<p>5 10 15 20</p>	<p>7832</p> <p>7842</p>		<p>7832 - 42. SANDSTONE. quartzose, frosted, white to light grey, poorly consolidated, soft, fine grained to granule, dominantly medium to coarse grained, angular to rounded, dominantly sub rounded, poorly sorted, massive, homogeneous. Trace glauconite, granular green, disseminated. Trace pyrite, in fine grained aggregates. Trace flaky muscovite. Rare dark fine to medium grained sub rounded lithics. Excellent porosity and permeability. Uniform bright blue/white fluorescence with instant streaming white cut. Brown/yellow oil staining apparent on fresh surfaces. Strong hydrocarbon odour with possible trace of H<sub>2</sub>S.</p>	<p>Barrel jammed.</p>

REMARKS: The core was almost all unconsolidated sand when it was removed from the barrel. The biggest consolidated portions were selected for EPRCo core analysis and wax packed - see photos. These possibly have poorer P & P. Mud invasion was clearly visible on freshly broken surfaces under U/V light. Ten samples labelled 7832 to 7841 inclusive were waxed for EPRCo. A separate portion was packed from each foot for geology in plastic tubing and the remainder wax packed. Wax packs labelled ⊗ may be suitable for core analysis.

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 6

WELL: MACKEREL -4

Interval Cored: 7842 - 7865 ft., Cut 23 ft., Recovered 9 ft., (39%) Fr. Latrobe Group.

Bit Type: C-19, Bit Size: 8 1/32 in., Desc. by: SHORT/WHITTLE Date: 2/5/73

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
5 10 15	7842	↑ ● ↓	7842 - 7851	SANDSTONE. quartzose, frosted, white to light grey, weakly consolidated, extremely friable, fine grained to granule, dominantly coarse grained, sub angular to sub rounded to rounded, fair sorting, massive, homogeneous. Trace glauconite medium to coarse grained, nodular. Trace dark medium to coarse sub rounded to rounded lithics. Occasional areas of 1" diam having green stainings on quartz grains. Excellent porosity and permeability. Uniform bright blue/white fluorescence with instant streaming white cut. Brown/yellow oil staining. Strong hydrocarbon odour.
	7851		7851 - 7865	NO RECOVERY
	7865			Lithology essentially same as Core # 6 but: 1. slightly coarser grained. 2. more consolidated - probably because barrel didn't jam. 3. no H <sub>2</sub> S odour - this may occur if core "burns" when barrel "jams". Note: Suspect the grain size distribution may be bimodal - reflected in grain size and sorting - coarser fraction appears better rounded.

REMARKS: One 4" long whole diameter portion for EPRCo. every foot.  
 All samples should be suitable for core analysis.  
 ← Core Lab overburden sample

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 7

WELL: MACKEREL #4

Interval Cored 7865-7888 ft., Cut 23 ft., Recovered 15 ft., (65%) Fm. LATROBE

Bit Type C-19, Bit Size 8 15/32 in., Desc. by SHORT/WHITTLE Date 2ND MAY 1973

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
5 10 15 20	7865	↑ ↓	7865-7874	Sandstone quartzose frosted white to grey, fine to granule grain size with a predominance of medium. Angular to rounded with a predominance of subrounded (coarse to granule size grains appear to be more well rounded - have a bimodal distribution of grain size) Weakly consolidated, massive homogeneous. Trace pyrite, of ten associated with a green spotty stain, trace glauconite, fine grained, granular, trace mica flakes, both muscovite & biotite, trace grey lithics, fine to medium grained. Excellent porosity & permeability
	7874		7874-7880	Sandstone, as above, but with a dolomitic cement. This cement is "patchy" in distribution but becomes much more abundant towards the base with an increase from 30% dolomitized at the top to 90% at the base. Bright blue fluorescence throughout, but slightly patchy in basal 6', good streaming white cut. Strong hydrocarbon odour & light brown oil staining (dolomitized section still bleeds oil)
	7880		7880-7888	No Recovery.
				Note Top undolomitized section of core has a lot of flushing & mud invasion, but in the lower 6' this invasion diminishes to practically zero.

REMARKS: Core Lab over burden samples 7873' & 7877'  
 Baroid Core Analysis samples 7870' & 7878'  
 EPR Co Samples top 4" of every foot  
 Samples taken for thin section analysis 7877' & 7879'

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. B

WELL: MACKEREL #4

Interval Cored 7888-7917 ft., Cut 29 ft., Recovered 0 ft., (0 %) Fm. LATROBE

Bit Type C-22, Bit Size 8 1/32 in., Desc. by SHORT/WHITTLE Date 3/5/73

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
<p>0 5 10 15 20 25</p>	<p>7888</p> <p>7917</p>		<p>7888-7917 No RECOVERY.</p>	<p style="text-align: center; font-size: 2em; opacity: 0.5;">BASIC</p>

REMARKS: Christensen can't think of a reason for no recovery.

## 2.2 SIDE WALL CORE DESCRIPTIONS



LITHOLOGICAL DESCRIPTIONS OF SIDEWALL CORES

from MACKEREL-4

by DAVID TAYLOR.....27-6-73

sidewall core no.	Depth	Description of untreated core	Description of residue
30	3250	medium grey micritic limestone	Fine grained calcite + abundance of siliceous sponge spicules & very small sized planktonic forams. This is the "Sponge Spicule Facies" of Taylor in Halibut & Kingfish-1 reports.
29	3750	light grey " " + ang. qtz.	" as above " " + ang. qtz.
28	4250	" " " " + ang. qtz.	Fine grained calcite + rare ang. qtz. Abundance of small sized plank. forams. This is the "Pelagic Facies" of Halibut.
27	4500	" " " " + white calcite viens	Fine grained calcite + massive calcite = ? algae + rare f. ang. qtz. Sparse fauna size & shape sorted. High energy activity.
26	4750	soft medium grey micritic limestone	Fine grained calcite. Sparse fauna shape & sized sorted. High energy.
25	5000	Light grey micritic limestone	As above + rare ang. qtz.
24	5300	" " " "	Fine grained calcite + rare ang. qtz. Abundance of Plank forams. "Pelagic Facies".
23	5750	" " calcareous clay	Mainly plank. forams - no size or shape sorting. disseminated pyrite. Would fit as a globigerinid ooze.
21	6250	Medium grey micritic limestone	Fine grained calcite + disseminated pyrite + rare sub-round qtz. Small sized sparse plank. forams - size & shape sorted - High energy.
20	6500	" " " "	" As above " "
19	6750	" " " "	Fine grained calcite very sparse fauna - size & shape sorted.
18	7000	Medium gray calcareous clay	Globigerinid ooze
17	7250	" " " "	" " "
16	7500	Light " " " "	" " - diagenetic effects apparent. Rare white ang. qtz.
15	7740	" " " "	" " - diagenetic effects apparent.

NO. 1a	DEPTH 1	REC 2	ROCK TYPE 3	MODIFIERS 4	CAL 5	COLOR 6	INDUR DEG 7	GRAIN SIZE 8	SRTG 9	RND 10	DISS CLAY 11	STAIN 12	FLOURESCENCE			CUT FLUOR.		CUT RESIDUE		SHOW 21	PROB PROD 22	REMARKS - GAS 23	
													% RK	DISTR 14	INTEN 15	COLOR 16	INTEN 17	COLOR 18	QUAN 19				COLOR 20
1	8350	1/2	Sltst.	Quartzose	-	Grey	Firm	Silt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	8530	1/2	Sltst.	Quartzose	-	Grey	Firm	Silt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	8365	3/8	Siltst	Quartzose	-	Grey	firm	silt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	8247	7/8	Sltst.	Quartzose, Pyritic	-	lt.gy	firm	silt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	8144	3/4	Sltst	Quartzose	-	lt.gy	firm	silt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	8065	1/2	Mdst	silty, argillaceous	-	gy	sft.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	7930	3/4	Sst.	Quartzose	-	lt.gy	Uncon	fine crse.	P	sa, sr	0	-	-	-	-	-	-	-	-	-	-	-	
8	7915	N/R	LOST	BULLET																			
9	7901	1	Sst.	Quartzose Glauconite sl		Lt.gy	Uncon	f-cg	P	sa, sr	0	-	100	ev	Br	blue white	bri	blue white	M/Lt	Yell. brown	0	Oil	C1-800 C2-6500 C1-2200 C4-6000, C5-3500
10	7890	1	Sst	Quartzose, lithics, occ.sl green stain		wh	Uncon.	f-m	P	sr	0	-	100	ev	bri	lt. blue white	bri	Blue white	M	Pale yellow	0	Oil	C1-2100 C2-1600 C3- 4000 C4-1100 C5-5500
11	7765	1 1/2	Sst	Quartzose, lithics, mica		lt.gy wh	Uncon	f-c	P	sa sr	0	-	100	ev	bri	lt. blue white	bri	Blue white	M/Lt	Yellow Brown	0	Oil	C1-2200, C2-1600, C3- 1500, C4-24000 C5- 20000
12	7758	1	Sst	Quartz, pyritic glauconite		Gy.	Friable	f-m	P	sr	0	-	5	spotty patchy	fnt	blue white	bri	Blue white	Lt	Pale Yellow	0	Oil	C1-600 C2-300, C3- 1100 C4-2500 C5-3000
13	7755	1/2	Mdst	glauc. qtzose sl cal. argill. py.		grn	firm soft	-	-	-	-	-	-	N.B.	VERY	GLAUCONITIC	-	-	-	-	-	-	-
14	7752	3/4	Sltst.	Redbed contain pieces of Latrobe in red matrix glauconitic		mod Red.br	soft	slt	P	-	-	-	20	patchy	fnt	Dull Yell.	fnt	Dull yellow	Tr	clear	0	Oil	C1-400 C2-200 C3-200 C4-300
15	7740	2	Marl	sli. slty.	V	gy	firm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	7500	3/4	Marl	sli. slty	V	gy	firm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	7250	1 1/2	Marl	sli. slty. foss.	V	gy.	firm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	7000	1 3/4	Marl	Sli. slty. foss		gy	firm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	6750	3/4	Marl	sl. silty, foss mica.	V	gy	firm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	6500	1	Marl	sl. slty. foss	V	gy	firm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	6250	3/4	Marl	sli. silty	V	Gy	Firm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	6000	N/R	LOST	BULLET																			
23	5750	1 1/2	Marl	slty	V	gy	Firm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	5300	3/4	Marl	slty	V	gy, gr	Firm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NO. 1 a	DEPTH 1	REC 2	ROCK TYPE 3	MODIFIERS 4	CAL 5	COLOR 6	INDUR DEG 7	GRAIN		DISS CLAY 11	STAIN 12	FLOURESCENCE			CUT FLUOR.		CUT RESIDUE		SHOW 21	PROB PROD 22	REMARKS - GAS 23	
								SIZE 8	SRTG 9			RND 10	% RK 14	DISTR 14	INTEN 15	COLOR 16	INTEN 17	COLOR 18				QUAN 19
25	5000	1/2	Marl	slty.	V	gy.gr	Firm	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-
26	4750	3/4	Marl	slty.foss.	V	gy.gr	Firm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	4500	1	Marl	slty	V	gy.gr	Firm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	4250	1	Marl	slty	V	gy.gr	Firm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	3750	1 1/2	Marl	sli.slty.foss.	V	gy.gr	Firm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	3250	2	Marl	sli.slty	V	gy	soft	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

## 2.3 CORE ANALYSIS REPORT



### 3.0 PALYNOLOGY / PALAEOBIOLOGY

ESSO PRODUCTION RESEARCH COMPANY

PALYNOLOGICAL DETERMINATIONS FOR  
MACKEREL-4 WELL, GIPPSLAND BASIN

Lewis E. Stover

Stratigraphic Geology Division

June 1973

EPR.42ES.73

ESOA Paleontology  
Report 1973/05

PALYNOLOGICAL DETERMINATIONS FOR  
MACKEREL-4 WELL, GIPPSLAND BASIN

by

L. E. Stover

SUMMARY

Sample	Depth	Zone	Age
SWC 15	7740'✓	<i>P. tuberculatus</i>	Oligocene
SWC 14	7752'	indeterminate	(barren)
SWC 13	7755'	indeterminate	(no diagnostic species)
SWC 12	7758'	<i>P. tuberculatus</i>	Oligocene
SWC 11	7765'	indeterminate	(barren)
SWC 10	7890'	indeterminate	(practically barren)
SWC 9	7901'	indeterminate	(barren)
SWC 7	7930'	indeterminate	(barren)
SWC 6	8065'✓	<i>L. balmei</i>	Late Paleocene
SWC 5	8144'✓	<i>L. balmei</i>	Late Paleocene
SWC 4	8247'	indeterminate	(practically barren)
SWC 1	8350'✓	<i>L. balmei</i>	Late Paleocene
SWC 3	8365'✓	<i>L. balmei</i>	Middle to Late Paleocene
SWC 2	8530'	<i>L. balmei</i>	Middle to Late Paleocene

✓ - denotes microplankton as well as spore-pollen are identified from the sample.

DISCUSSION

Sidewall cores from 7740 and 7758 feet are assigned to the *Proteacidites tuberculatus* zone because of the occurrence of *Cyatheacidites annulatus* in both samples. The residue from the sample at 7740 feet contains a fairly diverse microplankton association which is dominated by specimens of the *Achomosphaera/Spiniferites* complex. Specimens of *Tectatodinium imperfectum* are frequent whereas those of other species are sparse to rare. Spore-pollen from the *P. tuberculatus* zone are not well preserved and only a relatively meagre assemblage lacking Proteaceous forms was recovered.

Sidewall cores from 7765 to 7930 feet were either barren or lack diagnostic indigenous palynomorphs. Samples from 7901 and 7930 feet contained fairly common northern hemisphere Middle to Late Paleocene spore-pollen derived from a drilling mud additive.

Excellent *Lygistepollenites balmei* assemblages were recovered from 8065, 8365, and 8530 feet and good assemblages were obtained from 8144 and 8350 feet.



Because of the paucity of specimens from the sidewall core at 8247 feet, no interpretation is possible for this sample. Except for the latter sample, microplankton occur throughout the *L. balmei* zone in Mackerel-4. These are abundant at 8530 feet (65 to 70 percent) and rare in overlying samples (1 to 2 percent).

Probable reworked Cretaceous spore-pollen were identified at 8065 feet (*Lycopodiumsporites eminulus*) and at 8144 feet (*Krauselisporites* sp.). Spore-pollen occurrences are plotted on sheets 1, 2 and 3 and microplankton occurrences are shown on sheet 4.









BASIN Gippsland DATE June 1973

WELL NAME Mackerel-4 ELEVATION KB-32 feet

AGE	PALYNOLOGIC ZONES	HIGHEST DATA					LOWEST DATA				
		Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time	Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time
OLIGO-MIOC.	<u>T. bellus</u>										
	<u>P. tuberculatus</u>	7740	1				7758	1			
EOCENE	<u>U. N. asperus</u>										
	<u>L. N. asperus</u>										
	<u>P. asperopolus</u>										
	<u>U. M. diversus</u>										
	<u>L. M. diversus</u>										
PALEO-CENE	<u>L. balmei</u>	8065	0				8530	0			
	<u>T. longus</u>										
LATE CRETACEOUS	<u>T. lilliei</u>										
	<u>N. senectus</u>										
	<u>C. trip./T.pach.</u>										
	<u>C. distocarin.</u>										
	<u>T. pannosus</u>										
	<u>C. paradoxa</u>										
EARLY CRETACEOUS	<u>C. striatus</u>										
	<u>U. C. hughesii</u>										
	<u>L. C. hughesii</u>										
	<u>C. stylosus</u>										
Pre-Cretaceous											

COMMENTS: SWC's from 7765 to 7930 feet barren or nearly so. Microplankton present in samples from 8065 to 8530 feet and especially abundant at 8530 feet.

- RATINGS:
- 0; SWC or CORE, EXCELLENT CONFIDENCE, assemblage with zone species of spores, pollen and microplankton.
  - 1; SWC or CORE, GOOD CONFIDENCE, assemblage with zone species of spores and pollen or microplankton.
  - 2; SWC or CORE, POOR CONFIDENCE, assemblage with non-diagnostic spores, pollen and/or microplankton.
  - 3; CUTTINGS, FAIR CONFIDENCE, assemblage with zone species of either spores and pollen or microplankton, or both.
  - 4; CUTTINGS, NO CONFIDENCE, assemblage with non-diagnostic spores, pollen and/or microplankton.

NOTE: If a sample cannot be assigned to one particular zone, then no entry should be made. Also, if an entry is given a 3 or 4 confidence rating, an alternate depth with a better confidence rating should be entered, if possible.

DATE RECORDED BY: L. E. Stover, DATE June 1973

DATA REVISED BY: \_\_\_\_\_ DATE \_\_\_\_\_

BASIN GIPPSLAND

DATE \_\_\_\_\_

WELL NAME MACKEREL - 4

ELEVATION KB +32 feet

AGE	PALYNOLOGIC ZONES	HIGHEST DATA					LOWEST DATA				
		Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time	Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time
Eocene	<u>P. tuberculatus</u>	7740	1				7758	1			
	<u>U. N. asperus</u>										
	<u>M. N. asperus</u>										
	<u>L. N. asperus</u>										
	<u>P. asperopolus</u>										
	<u>U. M. diversus</u>										
	<u>M. M. diversus</u>										
	<u>L. M. diversus</u>										
Paleocene	<u>U. L. balmei</u>	8065	0				8144	1			
	<u>L. L. balmei</u>	8350	1				8530	0			
	<u>T. longus</u>										
Cretaceous	<u>T. lilliei</u>										
	<u>N. senectus</u>										
	<u>C. trip./T.pach.</u>										
	<u>C. distocarin.</u>										
	<u>T. pannosus</u>										
EARLY CRETACEOUS											
PRE-CRETACEOUS											

COMMENTS:

Dinoflagellate Zones

Wetzeliella homomorpha 8065 (1)

Eisenackia crassitabulata 8365 (1) - 8530 (1)

- RATINGS: 0; SWC or CORE, EXCELLENT CONFIDENCE, assemblage with zone species of spores, pollen and microplankton.
- 1; SWC or CORE, GOOD CONFIDENCE, assemblage with zone species of spores and pollen or microplankton.
- 2; SWC or CORE, POOR CONFIDENCE, assemblage with non-diagnostic spores, pollen and/or microplankton.
- 3; CUTTINGS, FAIR CONFIDENCE, assemblage with zone species of either spore and pollen or microplankton, or both.
- 4; CUTTINGS, NO CONFIDENCE, assemblage with non-diagnostic spores, pollen and/or microplankton.

NOTE: If a sample cannot be assigned to one particular zone, then no entry should be made. Also, if an entry is given a 3 or 4 confidence rating, an alternate depth with a better confidence rating should be entered, if possible.

DATA RECORDED BY: LES.

DATE June 1973.

DATA REVISED BY: A.D.P.

DATE Jan. 1975.

BASIN GIPPSLAND

BY D. TAYLOR

WELL NAME MACKEREL-4

DATE \_\_\_\_\_ ELEV. +32'

Foram Zonules

		Highest Data	Quality	2 Way Time	Lowest Data	Quality	2 Way Time
MIOCENE	A Alternate						
	B Alternate						
	C Alternate						
	D <sub>1</sub> Alternate	3250'	1				
	D <sub>2</sub> Alternate	6250'	1		5750'	1	
	E Alternate	7000'	1		6750'	1	
	F Alternate	7250'	1				
	G Alternate						
	H <sub>1</sub> Alternate	7500'	1				
	H <sub>2</sub> Alternate	7740'	1				
	OLIGOCENE	I <sub>1</sub> Alternate					
I <sub>2</sub> Alternate							
J <sub>1</sub> Alternate							
J <sub>2</sub> Alternate							
EOC.	K Alternate						
	Pre K	8144'	2				

COMMENTS: SWC 8144' is probably Early Eocene.  
 SWC 7740' - Zonule H<sub>2</sub>, is considered to be out of place.  
 SWC 7250' - Zonule F, is at the very base of this zone.

Note: If highest or lowest data is a 3 or 4, then an alternate 0, 1, 2 highest or lowest data will be filled in if control is available.

If a sample cannot be interpreted to be one zonule, as apart from the other, no entry should be made.

- 0 SWC or Core - Complete assemblage (very high confidence).
- 1 SWC or Core - Almost complete assemblage (high confidence).
- 2 SWC or Core - Close to zonule change but able to interpret (low confidence).
- 3 Cuttings - Complete assemblage (low confidence).
- 4 Cuttings - Incomplete assemblage, next to uninterpretable or SWC with depth suspicion (very low confidence).

Date Revised \_\_\_\_\_

By \_\_\_\_\_



MACKEREL - 4

o = 1-20 specimens

I = over 20 specimens

Sheet 1  
of 4 sheets

depth side wall core	3250	3750	4250	4500	4750	5000	5300	5750	6250	6500	6750	7000	7250	7500	7740	8144
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
PLANKTONICS																
1. <i>Orbulina universa</i>	I	I	I	I	I	I	I	I	.	.	.					
2. <i>Globigerina bulloides</i>	I	I	I			I										
3. <i>G. ? acostaensis</i>	.	I														
4. <i>G. woodi</i>	I	I	I	I		I	I	I	I	I	I	I	I	I	I	
5. <i>Globorotalia mayeri barisaensis</i>	I	I	I	.	I		I	I	I	I	I	I				
6. <i>Globigerina apertura</i>		I	I	I	I		I	I				I	I	I	I	
7. <i>Globorotalia peripheroacuta</i>			I		I						?					
8. <i>G. miozea conoidea</i>				.		I	I	I								
9. <i>G. menardii</i>				.				I								
10. <i>G. miocenica</i>					I		I	I								
11. <i>Globigerinoides trilobus</i>							I	I	I	I	I	I	I			
12. <i>Orbulina suturalis</i>								I				.				
13. <i>Globoquadrina dehiscens</i>								I				I	.			
14. <i>Globorotalia languensis</i>								I								
15. <i>G. peripheroronda</i>									I	I	I	I	.			
16. <i>G. miozea miozea</i>									.	I	.	I				
17. <i>Globigerinoides bisphericus</i>											I	I	I			
18. <i>G. glomerorus circularis</i>											.					
19. <i>Globorotalia praemenardii</i>												I				
20. <i>Globoquadrina advena</i>													I		I	
21. <i>Globorotalia praescitula</i>													I			
22. <i>Globigerina praebulloides</i>														I	I	
23. <i>G. woodi connecta</i>														I		
24. <i>Globoquadrina praedeheiscens</i>														I	I	
25. <i>Globorotalia cf miozea</i>															I	
26. <i>Praegloboquadrina primitiva</i>																.
27. <i>Globigerina linaperta</i>																I
side wall core.	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
ZONE	D-1	D-1	D-1	D-1	D-1	D-1	D-1	D-1	D-2	D-2	D-2	E-1	F	H-1	H-2	early EOCENE
depth	3250	3750	4250	4500	4750	5000	5300	5750	6250	6500	6750	7000	7250	7500	7740	8144

depth sidewall core	3250-	3750	4250	4500	4750	5000	5300	5750	6250	6500	6750	7000	7250	7500	7740	8144
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
CALC. BENTHONICS I																
28. Astrononion sp. Carter	I															
29. Cibicides mediocris	.															
30. C. nonvozealandicus	.															
31. C. subhaidingeri	I														I	
32. Gyroidinoides zealandica	.	I														
33. Oslangularia bengalensis	.															
34. Anomalina aotea	.															
35. Anomalinoides macroglabra			.													
36. Cibicides lobatulus (flat)				I												
37. Gyroidina sp.?			.									I				
38. Anomalinoides procolligera												.				
39. Cibicides sp.?																
40. 'Planulina' wullerstorfi																
41. Gyroidinoides tenera																
CALC. BENTHONICS II & III not present																
Calc. BENTHONICS IV																
42. Cassidulina carinata	I	I	I	I	I	I	I			I	I					
43. Sphaeroidina bulloides	I	I	I	I		I	I	I	I	I	I					
44. Pullenia sp.	.						.									
45. Chilostomella sp						I										
CALC. BENTHONICS V																
46. Siphouvigerina plebja		I														
47. Euuvigerina pickii								I								
48. E. mioschwageri								I								
49. Bulimiha truncatulinella								I								
CALC. BENTHONICS VI																
50. Lenticulina spp.	I	I								I	I	I			I	
51. Lagena spp.	I	I				I									I	I
52. Nodosaria spp	I			I		I		I					I	I		
53. Lenticulina mamilligera		I														
54. Guttulina prolema						.										
side wall core	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
ZONE	D-1	D-1	D-1	D-1	D-1	D-1	D-1	D-1	D-1	D-2	D-2	D-2	E-1	F	H-1	H-2

depth	3250	3750	4250	4500	4750	5000	5300	5750	6250	6500	6750	7000	7250	7500	7740	8144
side wall core	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
CALC. BENTHONICS VII																
55. Sigmoilopsis sp.								I				I	I	I		
ARAGONITIC BENTHONICS																
not present																
ARENACEOUS BENTHONICS - PRIMITIVE																
56. Bathysiphon spp.		I	.										I	I	I	
57. Discammina compressa								I								
58. Brachisiphon corbiformis								I								
59. Haplophragmoides sp																
60. Ammodiscus sp. (smooth)																.
ARENACEOUS BENTHONICS - COMPLEX																
61. Martinotiella communis								I								.
62. Karerriella bradyi																.
OTHER FOSSILS																
Sponge spicules	I	I														
smooth ostracodes			I													
? algae				I												
MINERALS																
fine grained calcite	I	I	I	I	I	I	I		I	I	I					
angular quartz		.	.	.	.	.	.		.	.						I
disseminated pyrite								I	I	I						
DIAGENETIC effects on plank. forams. apparent														X	X	
sidewall core	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
ZONE	D-1	D-1	D-1	D-1	D-1	D-1	D-1	D-1	D-2	D-2	D-2	E-1	F	H-1	H-2	early EOCENE 8144
depth	3250	3750	4250	4500	4750	5000	5300	5750	6250	6500	6750	7000	7250	7500	7740	8144



4.0 PETROGRAPHIC REPORT

MACKEREL - 4

7877

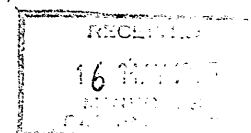
# GEOCHEMICAL AND MINERALOGICAL LABORATORIES PTY. LTD.

TELEPHONE: 31 9011 (3 LINES)  
AFTER HOURS: 36 4904  
TELEGRAMS & CABLES:  
GEOCHEM-SYDNEY



76 MCLACHLAN AVENUE,  
RUSHCUTTERS BAY,  
N.S.W. 2011

Esso Australia Limited,  
G.P.O. Box 4047,  
SYDNEY. N.S.W. 2001.



## PETROGRAPHIC REPORT

Mackerel-4 7877

Sample No. M4-7877

This rock is a well cemented, locally pebbly quartzofelspathic sandstone, consisting mainly of rounded to subangular detrital grains of quartz and felspar, with some detrital chert, fine-quartzite and minor white mica and biotite all set in an abundant carbonate cement. A few grains of detrital brown tourmaline and of very fine chlorite and/or clay aggregates are present also. The felspar is both plagioclase and K-felspar (locally slightly perthitic). Many of the quartz grains have sharp extinction, but many have undulose extinction and some contain fine deformation lamellae. Some appear to have undergone partial recrystallization, presumably to deformation in the source area. The largest quartz grains are well rounded pebbles (granules) up to 3 mm. across (these granules being coarse composite grains) but the average fragment size is about 0.5 mm. Some of the quartz grains have embayments resembling those in volcanic quartz phenocrysts, but some of these may be due possibly to replacement by the carbonate cement.

The carbonate cement is very coarse-grained some of the grains being at least 1 cm. across and thus enclosing many detrital grains. In fact, the cementation is an excellent example of lustre-mottling. The cementation is so complete that the porosity appears to be negligible (although some carbonate has been plucked out during the preparation of the section and should be ignored in this connection). Many clear instances of partial replacement and veining of detrital quartz and felspar by the carbonate are present. In places the carbonate appears to have grown in fractures in grains prised open, either by compaction or (possibly) by the growth of the carbonate itself. This is especially well shown by several detrital mica flakes that have been "frayed" into curved shreds separated by the carbonate cement. The proportion of cement present is very high, so that many of the detrital grains are not in contact with other detrital grains. Whether this is due to replacement of an original clay matrix by carbonate, or to recrystallization of an original carbonate matrix, cannot be demonstrated. Marginal replacement (apart from veining, etc.) of detrital grains by cement varies from slight or negligible to marked, but many grains appear to have essentially their original detrital shapes, so that their separation appears to be a primary feature indicating the former presence of a matrix of some kind.

Mackerel-4 7879Sample No. M4-7879

This sample also is a pebbly quartzofelspathic sandstone showing similar grain separation, extensive (if not complete) carbonate sedimentation (no undoubted porosity having been detected), and excellent lustremottling caused by the large size of the cementing carbonate grains. The detrital materials are similar to 7877, except that detrital chlorite (former biotite?) also appears to be present and some of the K-felspar shows fine gridiron microcline twinning. Once again, the quartz varies from relatively strongly deformed (with deformation lamellae and marked undulose extinction to apparently undeformed (with sharp extinction). Detrital mica grains commonly are distorted. Locally, extensive veining and replacement of quartz, mica and especially felspar, have taken place, as well as marginal replacement of detrital grains. However, most fragments appear to have retained their original shapes as deposited, so that their separation presumably is due to the former presence of a detrital matrix, which has since been transformed into the coarse carbonate cement.

19260/ALM/SW  
Your Ref: APW May 10 Order 17176

15th May, 1973.

5.0 FORMATION INTERVAL TEST (F.I.T)

DATA



ESSO AUSTRALIA LIMITED

MACKEREL

MACKEREL No. 4  
MAY 7, 1973

PURPOSE: OBTAIN SUBSURFACE PRESSURES WITH AMERADA GAUGES  
RUN IN TANDEM WITH SCHLUMBERGER FORMATION INTERVAL  
TESTER.

TOOLS USED: AMERADA 11,800 PSI ELEMENT SERIAL No. 8282-N 12 HOUR CLOCK  
AMERADA 8,500 PSI ELEMENT SERIAL No. 9391 12 HOUR CLOCK

F.I.T. No. 1 @ 7912'

<u>HOURS</u>	<u>PSIG</u> <u>11,800</u>	<u>PSIG</u> <u>8,500</u>	<u>REMARKS</u>
0020			RUN IN HOLE
0132			SET PACKER
	4060.82	4085.43	INITIAL HYDROSTATIC
0135			OPEN TOOL
0136	3405.11	3397.07	
0137	3417.33	3405.68	
0138	3417.33	3405.68	
0139	3417.33	3405.68	
0140	3417.33	3405.68	
0141	3417.33	3405.68	
0142	3417.33	3405.68	
0143	3417.33	3405.68	
0144	3417.33	3405.68	
0145	3417.33	3405.68	
0146	3417.33	3405.68	
0147	3405.11	3392.77	SEAL TOOL - OPEN SEGREGATOR
0148	3417.33	3405.68	
0149	3417.33	3405.68	
0150	3417.33	3405.68	
0151	3417.33	3405.68	SEAL SEGREGATOR
	4030.07	4029.52	FINAL HYDROSTATIC
0154			UNSEAT PACKER

ESSO AUSTRALIA LIMITED

MACKEREL

MACKEREL No.4  
MAY 7, 1973

PURPOSE: OBTAIN SUBSURFACE PRESSURE WITH AMERADA GUAGES  
RUN IN TANDEM WITH SCHLUMBERGER FORMATION INTERVAL  
TESTER.

TOOLS USED: AMERADA 11,800 PSI ELEMENT SERIAL No. 8282-N 12 HOUR CLOCK  
AMERADA 8,500 PSI ELEMENT SERIAL No. 9391 12 HOUR CLOCK

F.I.T. No. 2 @ 7878'

<u>HOURS</u>	<u>PSIG</u> <u>11,800</u>	<u>PSIG</u> <u>8,500</u>	<u>REMARKS</u>
0309			RUN IN HOLE
0357			SET PACKER
0359	4042.37	4042.43	INITIAL HYDROSTATIC
0400	1770.53	1762.86	OPEN TOOL
0401	1758.31	1762.86	
0402	1758.31	1762.86	
0403	1758.31	1762.86	
0404	1758.31	1762.86	
0405	2020.92	2016.30	
0406	3356.23	3371.25	
0407	3399.00	3371.25	
0408	3405.11	3401.37	
0409	3405.11	3401.37	
0410	3405.11	3401.37	
0411	3380.67	3375.55	SEAL TOOL - OPEN SEGREGATOR
0412	3399.00	3379.86	
0413	3399.00	3392.77	
0414	3405.11	3392.77	
0415	3405.11	3392.77	SEAL SEGREGATOR
	4017.78	4020.92	FINAL HYDROSTATIC
0419			UNSEAT PACKER

NOTE: F.I.T. Nos. 3 AND 4 SHOW NO RESULTS - MUD RUNS.

ESSO AUSTRALIA LIMITED

MACKEREL

MACKEREL No.4  
 MAY 7, 1973

F.I.T. No. 5 @ 7832'

<u>HOURS</u>	<u>PSIG</u> <u>11,800</u>	<u>PSIG</u> <u>8,500</u>	<u>REMARKS</u>
0928			RUN IN HOLE
1016	4017.78	4020.92	SET PACKER - OPEN TOOL - INITIAL HYDROSTATIC
1018	3142.58	3177.50	
1020	3099.88	3117.35	
1022	3099.88	3100.14	
1024	3099.88	3100.14	
1026	3099.88	3100.14	
1028	3099.88	3100.14	
1030	3099.88	3100.14	
1032	3099.88	3100.14	
1034	3136.48	3134.56	
1036	3392.89	3397.07	
1038	3392.89	3397.07	
1040	3392.89	3397.07	
1042	3392.89	3397.07	
1043	3362.34	3379.86	SEAL TOOL - OPEN SEGREGATOR
1044	3399.00	3392.77	
1045	3399.00	3392.77	
1046	3399.00	3392.77	
1047	3399.00	3392.77	SEAL SEGREGATOR
	4005.49	4008.02	FINAL HYDROSTATIC
1051			UNSEAT PACKER

F.I.T. No. 6 @ 7778'

<u>HOURS</u>	<u>PSIG</u> <u>11,800</u>	<u>PSIG</u> <u>8,500</u>	<u>REMARKS</u>
1200			RUN IN HOLE
	3993.20	3973.61	INITIAL HYDROSTATIC
1249			SET PACKER - OPEN TOOL
1251	3142.58	3147.47	
1253	3142.58	3147.47	
1255	3142.58	3147.47	
1257	3142.58	3147.47	
1259	3142.58	3147.47	
1301	3142.58	3147.47	
1303	3142.58	3147.47	
1305	3142.58	3147.47	
1307	3142.58	3147.47	
1309	3380.67	3366.95	
1311	3380.67	3366.95	
1312	3350.12	3349.73	SEAL TOOL - OPEN SEGREGATOR
1313	3374.56	3362.64	
1314	3374.56	3362.64	
1315	3374.56	3362.64	
1316	3374.56	3362.64	
1317	3374.56	3362.64	SEAL SEGREGATOR
	3950.19	3943.50	FINAL HYDROSTATIC
1318			UNSEAT PACKER

ESSO AUSTRALIA LIMITED

MACKEREL

MACKEREL No.4  
 MAY 7, 1973

PURPOSE: OBTAIN SUBSURFACE PRESSURES WITH AMERADA GAUGES  
 RUN IN TANDEM WITH SCHLUMBERGER FORMATION INTERVAL  
 TESTER.

TOOLS USED: AMERADA 11,800 PSI ELEMENT SERIAL No. 8282-N 12 HOUR CLOCK  
 AMERADA 8,500 PSI ELEMENT SERIAL No. 9391 12 HOUR CLOCK

F.I.T. No. 7 @ 7880'

<u>HOURS</u>	<u>PSIG</u> <u>11,800</u>	<u>PSIG</u> <u>8,500</u>	<u>REMARKS</u>
1438			RUN IN HOLE
1528	4042.37	4042.33	SET PACKER - OPEN FLOWLINE - INITIAL HYDROSTATIC
1529	3411.22	3422.89	
1530	3429.55	3422.89	
1531	3429.55	3422.89	
1532	3429.55	3422.89	
1533	3429.55	3422.89	
1534	3429.55	3422.89	
1535	3429.55	3422.89	
1536	3429.55	3422.89	
1537	3429.55	3422.89	
1538	3429.55	3422.89	
1539	3429.55	3422.89	
1540	2520.86	2510.71	SEAL SEGREGATOR
1541	3423.44	3427.19	} PSEUDO SHUT IN
1542	3423.44	3427.19	
1543	3423.44	3427.19	
1544	3423.44	3427.19	
	4023.92	4025.22	FINAL HYDROSTATIC
1545			

AGNEW-GO-WESTERN PTY. LTD.  
582 ST. KILDA ROAD  
MELBOURNE, VICTORIA 3004

ESSO AUSTRALIA LIMITED

MACKEREL

MACKEREL No. 4

CALIBRATION DATA - MAY 2, 1973

INSTRUMENTS USED DURING FORMATION INTERVAL TESTING, MACKEREL No. 4:

<u>KGM/cm<sup>2</sup></u>	8,500 PSI No. 9391 <u>MM DEFLECTION</u>	11,800 PSI No. 8282-N <u>MM DEFLECTION</u>
7	.63	.37
14	1.11	.78
21	1.78	1.17
28	2.30	1.58
35	2.94	1.99
42	3.51	2.40
49	4.10	2.82
56	4.62	3.23
63	5.21	3.64
70	5.77	4.04
77	6.38	4.45
98	8.13	5.70
119	9.91	6.93
140	11.67	8.17
175	14.60	10.24
210	17.57	12.31
245	20.50	14.38
280	23.40	16.45
315	26.38	18.51
350	29.32	20.57
385	32.26	22.53

PE904981

This is an enclosure indicator page.  
The enclosure PE904981 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE904981 has the following characteristics:

ITEM\_BARCODE = PE904981  
CONTAINER\_BARCODE = PE902335  
NAME = Mackerel 4 F.I.T. Data  
BASIN = GIPPSLAND  
PERMIT = VIC/L5  
TYPE = WELL  
SUBTYPE = FIT  
DESCRIPTION = Mackerel 4 Formation Interval Test  
(F.I.T.) Data. Test number from 1-7.  
From Section 4 of Completion Report.  
REMARKS =  
DATE\_CREATED =  
DATE\_RECEIVED =  
W\_NO = W668  
WELL\_NAME = Mackerel-4  
CONTRACTOR = Schlumberger  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

6.0 ENCLOSURES

PE905168

This is an enclosure indicator page.  
The enclosure PE905168 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE905168 has the following characteristics:

- ITEM\_BARCODE = PE905168
- CONTAINER\_BARCODE = PE902335
  - NAME = Geological Cross Section A-A'
  - BASIN = GIPPSLAND
  - PERMIT = VIC/L5
  - TYPE = WELL
  - SUBTYPE = CROSS\_SECTION
- DESCRIPTION = Geological Cross Section A-A'  
Mackerel-4 Prospect.
- REMARKS = To accompany Authorisation to Drill
- DATE\_CREATED = 28/02/1973
- DATE\_RECEIVED =
  - W\_NO = W668
  - WELL\_NAME = Mackerel-4
- CONTRACTOR = Esso Exploration and Production  
Australia Inc
- CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)



PE905169

This is an enclosure indicator page.  
The enclosure PE905169 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE905169 has the following characteristics:

ITEM\_BARCODE = PE905169  
CONTAINER\_BARCODE = PE902335  
NAME = Top Latrobe Group Mackerel Field  
BASIN = GIPPSLAND  
PERMIT = VIC/L5  
TYPE = SEISMIC  
SUBTYPE = HRZN\_CONTR\_MAP  
DESCRIPTION = Top Latrobe Group Mackerel Field. C.I.  
100 feet.  
REMARKS = To accompany Authorisation to Drill  
DATE\_CREATED = 28/02/1973  
DATE\_RECEIVED =  
W\_NO = W668  
WELL\_NAME = Mackerel-4  
CONTRACTOR = Esso Exploration and Production  
Australia Inc  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE902336

This is an enclosure indicator page.  
The enclosure PE902336 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE902336 has the following characteristics:

ITEM\_BARCODE = PE902336  
CONTAINER\_BARCODE = PE902335  
NAME = Time Depth Curve  
BASIN = GIPPSLAND  
PERMIT =  
TYPE = WELL  
SUBTYPE = graph  
DESCRIPTION = Time Depth Curve  
REMARKS =  
DATE\_CREATED = 06/05/1973  
DATE\_RECEIVED =  
W\_NO = W668  
WELL\_NAME = Mackerel-4  
CONTRACTOR = ESSO  
CLIENT\_OP\_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE905170

This is an enclosure indicator page.  
The enclosure PE905170 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE905170 has the following characteristics:

- ITEM\_BARCODE = PE905170
- CONTAINER\_BARCODE = PE902335
- NAME = Mackerel-4 Time Depth Curve
- BASIN = GIPPSLAND
- PERMIT = VIC/L5
- TYPE = WELL
- SUBTYPE = VELOCITY\_CHART
- DESCRIPTION = Mackerel-4 Time Depth Curve (with added  
data points)
- REMARKS =
- DATE\_CREATED = 06/05/1973
- DATE\_RECEIVED =
- W\_NO = W668
- WELL\_NAME = Mackerel-4
- CONTRACTOR = Esso Exploration and Production  
Australia Inc
- CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE905167

This is an enclosure indicator page.  
The enclosure PE905167 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE905167 has the following characteristics:

ITEM\_BARCODE = PE905167  
CONTAINER\_BARCODE = PE902335  
NAME = Seismic Section line G72S-594  
BASIN = GIPPSLAND  
PERMIT = VIC/L5  
TYPE = SEISMIC  
SUBTYPE = SECTION  
DESCRIPTION = Mackerel-4 Seismic Section of line  
G72A-594, with seismic section and  
interpretative overlay.  
REMARKS = This item contains plastic overlay.  
DATE\_CREATED = 31/01/1973  
DATE\_RECEIVED =  
W\_NO = W668  
WELL\_NAME = Mackerel-4  
CONTRACTOR = Geophysical Service International  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE601444

This is an enclosure indicator page.  
The enclosure PE601444 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE601444 has the following characteristics:

ITEM\_BARCODE = PE601444  
CONTAINER\_BARCODE = PE902335  
NAME = Baroid ppm Mudlog  
BASIN = GIPPSLAND  
PERMIT =  
TYPE = WELL  
SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
Completion Report. Page 1 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
W\_NO = W668  
WELL\_NAME = Mackerel-4  
CONTRACTOR = BAROID WELL LOGGING SERVICES  
CLIENT\_OP\_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE603333

This is an enclosure indicator page.  
The enclosure PE603333 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603333 has the following characteristics:

ITEM\_BARCODE = PE603333  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 2 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603334

This is an enclosure indicator page.  
The enclosure PE603334 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603334 has the following characteristics:

ITEM\_BARCODE = PE603334  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 3 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603335

This is an enclosure indicator page.  
The enclosure PE603335 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603335 has the following characteristics:

ITEM\_BARCODE = PE603335  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 4 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
    CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)



PE603336

This is an enclosure indicator page.  
The enclosure PE603336 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603336 has the following characteristics:

ITEM\_BARCODE = PE603336  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 5 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
    CONTRACTOR = Baroid  
    CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603337

This is an enclosure indicator page.  
The enclosure PE603337 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603337 has the following characteristics:

ITEM\_BARCODE = PE603337  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 6 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
    CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603338

This is an enclosure indicator page.  
The enclosure PE603338 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603338 has the following characteristics:

ITEM\_BARCODE = PE603338  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 7 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603339

This is an enclosure indicator page.  
The enclosure PE603339 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603339 has the following characteristics:

ITEM\_BARCODE = PE603339  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 8 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603340

This is an enclosure indicator page.  
The enclosure PE603340 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603340 has the following characteristics:

ITEM\_BARCODE = PE603340  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 9 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603341

This is an enclosure indicator page.  
The enclosure PE603341 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603341 has the following characteristics:

ITEM\_BARCODE = PE603341  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 10 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
    CONTRACTOR = Baroid  
    CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603342

This is an enclosure indicator page.  
The enclosure PE603342 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603342 has the following characteristics:

ITEM\_BARCODE = PE603342  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 11 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603343

This is an enclosure indicator page.  
The enclosure PE603343 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603343 has the following characteristics:

ITEM\_BARCODE = PE603343  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 12 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)



PE603344

This is an enclosure indicator page.  
The enclosure PE603344 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603344 has the following characteristics:

ITEM\_BARCODE = PE603344  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 13 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603345

This is an enclosure indicator page.  
The enclosure PE603345 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603345 has the following characteristics:

ITEM\_BARCODE = PE603345  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
                Completion Report. Page 14 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603346

This is an enclosure indicator page.  
The enclosure PE603346 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603346 has the following characteristics:

ITEM\_BARCODE = PE603346  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 15 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603347

This is an enclosure indicator page.  
The enclosure PE603347 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603347 has the following characteristics:

ITEM\_BARCODE = PE603347  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 16 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
    CONTRACTOR = Baroid  
    CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603348

This is an enclosure indicator page.  
The enclosure PE603348 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603348 has the following characteristics:

ITEM\_BARCODE = PE603348  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 17 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603349

This is an enclosure indicator page.  
The enclosure PE603349 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603349 has the following characteristics:

ITEM\_BARCODE = PE603349  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 18 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603350

This is an enclosure indicator page.  
The enclosure PE603350 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603350 has the following characteristics:

ITEM\_BARCODE = PE603350  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 19 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603351

This is an enclosure indicator page.  
The enclosure PE603351 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603351 has the following characteristics:

ITEM\_BARCODE = PE603351  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 20 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)



PE603352

This is an enclosure indicator page.  
The enclosure PE603352 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603352 has the following characteristics:

ITEM\_BARCODE = PE603352  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 21 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603353

This is an enclosure indicator page.  
The enclosure PE603353 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603353 has the following characteristics:

ITEM\_BARCODE = PE603353  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 22 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603354

This is an enclosure indicator page.  
The enclosure PE603354 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603354 has the following characteristics:

ITEM\_BARCODE = PE603354  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 23 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603355

This is an enclosure indicator page.  
The enclosure PE603355 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603355 has the following characteristics:

ITEM\_BARCODE = PE603355  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 24 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603356

This is an enclosure indicator page.  
The enclosure PE603356 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603356 has the following characteristics:

ITEM\_BARCODE = PE603356  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Mud Log  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
              Completion Report. Page 25 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603357

This is an enclosure indicator page.  
The enclosure PE603357 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603357 has the following characteristics:

ITEM\_BARCODE = PE603357  
CONTAINER\_BARCODE = PE902335  
NAME = Mackerel 4 Mud Log  
BASIN = GIPPSLAND  
PERMIT = VIC/L5  
TYPE = WELL  
SUBTYPE = MUD\_LOG  
DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
Completion Report. Page 26 of 27.  
REMARKS =  
DATE\_CREATED = 5/05/73  
DATE\_RECEIVED =  
W\_NO = W668  
WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603358

This is an enclosure indicator page.  
The enclosure PE603358 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603358 has the following characteristics:

- ITEM\_BARCODE = PE603358
- CONTAINER\_BARCODE = PE902335
- NAME = Mackerel 4 Mud Log
- BASIN = GIPPSLAND
- PERMIT = VIC/L5
- TYPE = WELL
- SUBTYPE = MUD\_LOG
- DESCRIPTION = Mackerel 4 Mud Log. Enclosure 5.1 from  
Completion Report. Page 27 of 27.
- REMARKS =
- DATE\_CREATED = 5/05/73
- DATE\_RECEIVED =
- W\_NO = W668
- WELL\_NAME = Mackerel-4
- CONTRACTOR = Baroid
- CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603359

This is an enclosure indicator page.  
The enclosure PE603359 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603359 has the following characteristics:

ITEM\_BARCODE = PE603359  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Drilling Data Record  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = WELL\_LOG  
DESCRIPTION = Mackerel 4 Drilling Data Record with  
              "d" Exponent and Kf = Apparent  
              formation drillability. Enclosure 5.3  
              of Completion Report. Page 1 of 7.  
REMARKS =  
DATE\_CREATED =  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
    CONTRACTOR = Baroid  
    CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)



PE603360

This is an enclosure indicator page.  
The enclosure PE603360 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603360 has the following characteristics:

ITEM\_BARCODE = PE603360  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Drilling Data Record  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = WELL\_LOG  
DESCRIPTION = Mackerel 4 Drilling Data Record with  
              "d" Exponent and Kf = Apparent  
              formation drillability. Enclosure 5.3  
              of Completion Report. Page 2 of 7.  
REMARKS =  
DATE\_CREATED =  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
    CONTRACTOR = Baroid  
    CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603361

This is an enclosure indicator page.  
The enclosure PE603361 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603361 has the following characteristics:

ITEM\_BARCODE = PE603361  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Drilling Data Record  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = WELL\_LOG  
DESCRIPTION = Mackerel 4 Drilling Data Record with  
              "d" Exponent and Kf = Apparent  
              formation drillability. Enclosure 5.3  
              of Completion Report. Page 3 of 7.  
REMARKS =  
DATE\_CREATED =  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
    CONTRACTOR = Baroid  
    CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603362

This is an enclosure indicator page.  
The enclosure PE603362 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603362 has the following characteristics:

ITEM\_BARCODE = PE603362  
CONTAINER\_BARCODE = PE902335  
NAME = Mackerel 4 Drilling Data Record  
BASIN = GIPPSLAND  
PERMIT = VIC/L5  
TYPE = WELL  
SUBTYPE = WELL\_LOG  
DESCRIPTION = Mackerel 4 Drilling Data Record with  
"d" Exponent and Kf = Apparent  
formation drillability. Enclosure 5.3  
of Completion Report. Page 4 of 7.  
REMARKS =  
DATE\_CREATED =  
DATE\_RECEIVED =  
W\_NO = W668  
WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603363

This is an enclosure indicator page.  
The enclosure PE603363 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603363 has the following characteristics:

ITEM\_BARCODE = PE603363  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Drilling Data Record  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = WELL\_LOG  
DESCRIPTION = Mackerel 4 Drilling Data Record with  
              "d" Exponent and Kf = Apparent  
              formation drillability. Enclosure 5.3  
              of Completion Report. Page 5 of 7.  
REMARKS =  
DATE\_CREATED =  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
    CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603364

This is an enclosure indicator page.  
The enclosure PE603364 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603364 has the following characteristics:

ITEM\_BARCODE = PE603364  
CONTAINER\_BARCODE = PE902335  
NAME = Mackerel 4 Drilling Data Record  
BASIN = GIPPSLAND  
PERMIT = VIC/L5  
TYPE = WELL  
SUBTYPE = WELL\_LOG  
DESCRIPTION = Mackerel 4 Drilling Data Record with  
"d" Exponent and Kf = Apparent  
formation drillability. Enclosure 5.3  
of Completion Report. Page 6 of 7.  
REMARKS =  
DATE\_CREATED =  
DATE\_RECEIVED =  
W\_NO = W668  
WELL\_NAME = Mackerel-4  
CONTRACTOR = Baroid  
CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)

PE603365

This is an enclosure indicator page.  
The enclosure PE603365 is enclosed within the  
container PE902335 at this location in this  
document.

The enclosure PE603365 has the following characteristics:

ITEM\_BARCODE = PE603365  
CONTAINER\_BARCODE = PE902335  
    NAME = Mackerel 4 Drilling Data Record  
    BASIN = GIPPSLAND  
    PERMIT = VIC/L5  
    TYPE = WELL  
    SUBTYPE = WELL\_LOG  
DESCRIPTION = Mackerel 4 Drilling Data Record with  
              ""d"" Exponent and Kf = Apparent  
              formation drillability. Enclosure 5.3  
              of Completion Report. Page 7 of 7.  
REMARKS =  
DATE\_CREATED =  
DATE\_RECEIVED =  
    W\_NO = W668  
    WELL\_NAME = Mackerel-4  
    CONTRACTOR = Baroid  
    CLIENT\_OP\_CO = Esso Australia Limited

(Inserted by DNRE - Vic Govt Mines Dept)