Natural Resources and Environment

AGRICULTURE • RESOURCES • CONSERVATION • LAND MANAGEMENT

WELL SUMMARY
WAHOO-1
W549

1 Folio No	2 Referred to	3 Date	4 Clearing Officer's Initials	1 Folio No.	2 Referred to	3 Date

EARLIER FILES	LATER FILES	RECORDS DISPOSITION

/AHOO - 1 T.D. 2446. ESSO. WILDCAT. **549** 38° 01' K.B. 31' GLOMAR W.D. 2

1 ES.	Run 1.	2".	744 – 1417	
"	" 2.	"	1417 – 2433.	Transparencies of log.
"	" 1.	5"	744 – 1417	
"	" 2.	"	1417 – 2433	
"	" 1 & 2	2".	744 – 2433.	(2 off)
"	" 1 & 2	5".	744 – 2433.	(2 off).
BHCS/GR.	" 1	2"	744 – 1396.	
BHCS.	" 2.	"	1396 – 2430.	
BHCS/GR.	" 1	5"	744 – 1396.	
BHCS.	2.	"	1396 – 2430.	
BHCS/GR	" 1 & 2.	2".	744 – 2430	(2 off)
" "	" 1 & 2.	5".	744 – 2430.	(2 off)
FDC.	" 1.	2".	1389 – 2433.	(3 off)
"	" 1.	5".	1389 – 2433.	(3 off).
Cont. Dipmeter.	" 1	3 arm.	1389 – 2432.	Sep. 2" and 5" scale

Core Lab. report on Core, Mud & cuttings analysis, includes Complete Coregraph + 1 copy. and Grapholog + 1 copy. 800' – 2446' T.D.

Time Depth Curve.

Palaeontology report by D. Taylor.

Palynology " " L. S. Stover & A. D. Partridge.

" " " P. R. Evans & R. D. Mulholland.

Core description for N° 1, 2 & 3.

Sidewall core descriptions 1397 – 2413

Structure Map. Latrobe Delta Topo Surface.

Well Completion Log.

Structure Map. Top of Lakes Entrance "Greensand".

" " . Inner Strzelecki Mapping Point

Geological Cross Section A–A'

Well Completion report Page 2 only for release

Weekly Reports.

Cores 1, 2 & 3 and Cuttings 800' – 2446' received by B.M.R. 5/12/73?

Palynology Report Revision by A. D. Partridge.

Wahoo-1
(W549)

Well Summary Report

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Enclosures

Structure Map on Top of Lakes Entrance "Greensand"
Well Completion Log
Mud Log
Completion Coregraph
Time-Depth Curve

549

B A S I C

WELL COMPLETION REPORT

WAHOO 1

B.L. Culp
April 19, 1970.

INDEX

LIST OF ILLUSTRATIONS

BASIC

COMPLETION REPORT

~~GENERAL~~

Name of Well:	Wahoo 1.
Location:	Lease Victoria P-1, Hematite. Zone 7, Shot Point 7915, Line EH-208. Latitude 38° 01' 42" Longitude 148° 44' 48"
Elevation:	Sea Level, Rotary Table 31'.
Water Depth:	245'.
Total Depth:	2,446'.
Spud Date:	May 27, 1969.
Completion Date:	June 12, 1969.
Well Status:	Dry and abandoned.
Cores:	No: 3. Total Footage: 40' Recovery 39' 97.5% 57 Sidewall Cores shot 54 recovered between 770' & 2413'.
Mud Logs:	The well was logged by Core Laboratories Inc., from 800' to 2,446'.
Electric Logs:	I.E.S. 744-2433 G.R.-Sonic 744-2430 F.D.C. 1389-2433 C.D.M. 1389-2433 Velocity Survey
Tests:	No tests were run.
Casing:	30" @ 380' 13 3/8" @ 744' 9 5/8" @ 1390'
Mud:	Sea water to 1440' Fresh water gel 1440-2446 12.3 lbs/gal weight 8.0 cc water loss.
Bits:	5 bits were used to drill Wahoo 1.
Plugs:	Plug No. 1 1475-1289 Plug No. 2 497- 397

GEOLOGIC SUMMARY

Tops	Depth
Gippsland Formation	Sea Floor
Lakes Entrance Formation	1408 (-1377)
Latrobe Complex	1514 (-1483)
L. balmei	1514 (-1483)
Strzelecki	1940 (-1909)

Lithologic Description:

Lithology within the Gippsland Formation consists of micritic, skeletal limestones, interbedded with fossiliferous shale and marls. In Wahoo 1 the Lakes Entrance Formation is identified by the greensand facies, a sandy, glauconitic siltstone. A typical Latrobe section was drilled, consisting of sandstones, fine to very coarse grained, with good porosity and permeability, interbedded with grey, carbonaceous siltstones and shales. Whereas the Strzelecki consists of very fine to fine grained lithic feldspathic sandstones with minor grey shale, coal and clay.

GEOLOGIC HISTORY

WAHOO-1

The present-day appearance of the Wahoo 1 structure is nearly identical to that of the Flathead structure located 12 miles to the west (Plates I, II and III). The well was drilled near the crest of a large fault-line closure having about 700' ± of closure down to the 2000' subsea contour, as mapped on the Lakes Entrance Greensand.

The top of the Greensand was encountered at - 1377' (subsea) in Wahoo 1 about 60' structurally higher than in Flathead 1. The underlying Latrobe sandstone complex was 426' thick and consisted predominantly of porous and permeable sandstones. It should be noted that the Latrobe section of Flathead 1 was only 22' thick.

Another point of interest is the age of the Latrobe sandstones on the Flathead and Wahoo structures. At Flathead 1 the Latrobe was Eocene and Upper Paleocene (M. diversus) in age and contained oil shows down into the Lower Cretaceous Strzelecki Group. The Wahoo 1 well had a section of Latrobe which was Lower and Middle Paleocene (L. balmei) and no shows of any oil.

Based on the ages of the Latrobe at the two structures and the occurrence of oil shows at Flathead and not at Wahoo, the following geologic history might be postulated for this area:

1. During Lower and Middle Paleocene time, porous sandstones of the Latrobe were spread over an eroded Strzelecki surface in the Wahoo area, while the Flathead area remained an area of non-deposition. The Wahoo 1 area is assumed to be more basinward in location.

2. Continued subsidence of the basin resulted in the Eocene-Upper Paleocene Latrobe section being spread over the Wahoo area and also shelfward over the Flathead area.

3. Initial uplift and erosion of the basin at the close of Eocene time removed the Eocene and Middle Paleocene at Wahoo and part of the Eocene at Flathead.

4. Late structural movement occurred in the area during Miocene and Pliocene time, resulting in the present day structural configuration.

INTERPRETATIVE

HYDROCARBONS

WAHOO-1

There were no shows of oil or gas of any type encountered in the drilling of the well. Porous and permeable sandstones of the Latrobe Complex were present but saturated with water. There are two possible situations that are compatable with the lack of hydrocarbons in Wahoo-1. One is that the well is located, when based on the post-drilling mapping, some 100 to 200' structurally low to the crest of the structure. The other is based on lack of seal across the fault to the north and northwest of the well. It is possible that permeable Miocene-Oligocene marls and limestones are juxtaposed against Latrobe. This situation could have allowed hydrocarbon migration to continue updip from the Wahoo area.

If the situation is however, that hydrocarbons are present on structure and up-dip from Wahoo-1, they would be of questionable commercial value. This conclusion is based on the remaining small areal closure and the shallow depth to the Latrobe to which would complicate field development.

CONCLUSIONS

The Wahoo-1 well has adequately tested the structure on which it was drilled. Since no shows of oil or gas were encountered in this well, any accumulation updip on the structure would be of limited commercial value. Also, the alternate possibility is that the Wahoo structure is not sealed and a trapping situation did not exist at the time of hydrocarbon migration.

PETROGRAPHY OF EIGHTEEN CORE SAMPLES FROM VARIOUS GIPPSLAND BASIN WELLS:
TUNA-1
TUNA-4
KIPPER-2
SUNFISH-1
WAHOO-1
FLATHEAD-1
SNAPPER-1

A report prepared for the
Esso Australia Ltd
Sydney, Australia

Report prepared by: I.R. Duddy
Petrography by: I.R. Duddy

JULY 1990

REPORT FILED IN TUNA-1 BOX

GEOTRACK REPORT #255

PE906449

Telephone:
National (03) 344 7214
International 613 344 7214
Facsimile 613 347 5938
Telex AA35185 UNIMEL

Geotrack International Pty Ltd
PO Box 4120
Melbourne University
Victoria 3052
Australia

Samples to:
Room 225
Earth Sciences Bldg
University of Melbourne
Cnr Swanston and Elgin St

DATE: 3/10/1986

5/12/70

SAMPLE DESCRIPTIONS

SAMPLE DESCRIPTIONS

Wahoo-1

ft.

800-810 243.84-246.89	Micritic, skeletal, argillaceous, medium-light grey, firm abundant skeletal debris of ochinoids, bryozoa, foraminifera. Trace dolomite, sucrosic buff, firm good porosity.
810-830 -252.98	100% micritic skeletal limestone, as above.
830-840 -256.03	100% limestone, micritic skeletal, argillaceous, becoming slightly glauconitic. Skeletal debris as above.
840-860 -262.13	100% limestone, skeletal, micritic and medium-light grey, firm, Trace glauconite as above, skeletal debris as above.
860-890 -271.27	30% skeletal micritic limestone as above. 70% micritic skeletal argillaceous (Marl) with abundant skeletal debris as above.
890-1070 -326.14	30% skeletal micrite as above. 70% micritic, skeletal, argillaceous.
1070-1190 -362.71	Marl, very light grey, soft scattered skeletal debris as above. Trace pyrite, trace micritic skeletal as above.
1190-1220 -371.83	90% limestone, skeletal micrite, very light grey-white, firm to medium hard, skeletal debris, foraminifera, echinoid spines and plates, bryozoa. Trace pyrite and glauconite. 10% Marl as above.
1220-1280 -389.12	70% limestone, micritic, skeletal, argillaceous, medium-light grey, firm scattered skeletal debris as above. 30% Marl as above.
1280-1310 -399.28	70% Marl with abundant skeletal debris as above. 30% micrite skeletal as above. Trace green shale-silty.
1310-1320 -402.34	50% Marl. 30% micrite, skeletal, white-very light grey. 20% skeletal debris.
1320-1330 -405.38	30% Marl. 20% micrite, skeletal as above. 50% shale light grey-light green, silty, calcareous with occasional very slight trace glauconite, firm, slightly fissile.

1330-1340 405.38-408.43	70% shale. 10% micrite, skeletal. 20% skeletal debris.
1340-1350 - 411.48	40% shale. 20% marl. 40% skeletal debris.
1350-1370 -417.58	90% shale as above. 10% skeletal debris. Trace glauconite.
1370-1380 -420.62	30% shale. 30% micrite, skeletal, white-very light grey, skeletal debris as above. 40% skeletal debris echinoid spines, foraminifera, bryozoa trace glauconite.
1380-1390 -423.67	30% shale. 70% skeletal debris as above trace glauconite.
1390-1400 -426.72	90% shale. 10% skeletal debris trace loose sand grains fine-very coarse, yellow-brown.
1400-1410 -429.77	30% shale. 50% sandstone, very fine-coarse, unconsolidated clear-yellow brown, subround-subangular, poorly sorted. 20% glauconitic green shale, siltstone and very fine grained sandstone.
1410-1420 -432.82	90% sandstone, unconsolidated as above. 10% glauconitic siltstone.
1460-1470 [illegible]	Sample quality very poor. 30% sandy siltstone, glauconitic, argillaceous, green-grey, quartz grains very fine-medium occasionally coarse, subround-round moderately poorly sorted, poor visible porosity. 30% unconsolidated quartz grains, very fine-very coarse, occasionally granules, subround, poorly sorted, frosted, clear-white. 40% cavings.
1470-1480 -451.10	90% unconsolidated quartz grains as above. 10% green sandy argillaceous siltstone, slightly glauconitic as above.
1480-1490 -454.15	20% sandstone, green grey, very fine-fine, occasionally medium-coarse very argillaceous, subround, poorly sorted, poor porosity, soft to friable. 80% unconsolidated quartz grains.

M = metres in pencil.

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1490-1500	20% sandstone, green grey as above. 70% unconsolidated quartz grains as above. 10% sandy rgillaceous siltstone, mottled brown nd green, uartz grains very fine subangular-subrounded, poorly sorted, clay matrix with brown silt grains.
1500-1520 -462.30	80% unconsolidated quartz grains as above. 20% siltstone glauconitic, slightly sandy, light brown with green glauconitic grains, hard, tight.
1520-1530 -466.34	60%unconsolidated quartz grains as above. Trace siltstone as above. 40% pea-size gravel.
1530-1550 -472.44	50% unconsolidated quartz grains fine to granule. 50% pea size gravel, round to subround quartz white-clear, yellow. Trace siltstone as above.
1550-1560 -475.49	90% unconsolidated sand grains and gravel as above. 10% plant debris, wood fragments and coal all carbonized.
1560-1570 -478.54	90% coal and plant fragments. 10% unconsolidates sandstone as above.
1570-1590 -484.63	60% unconsolidated sandstone as above. 30% coal. 10% pyrite. Trace brown siltstone with plant fragments, very slight trace amber.
1590-1600 -487.68	50% coal (plant debris). 40% unconsolidated sand and gravel. 10% pyrite, slight trace amber.
1600-1610 -490.73	70% unconsolidated sandstone, white, very fine-coarse, occasionally granule-angular subround. 20% gravel. Trace pyrite. 10% coal (plant debris).
1610-1620 -493.78	80% unconsolidated sandstone as above, angular-subround very fine-coarse. 20% coal (plant debris).
1620-1650 -502.92	90% unconsolidated sandstone as above. 10% coal (plant debris). Trace white clay very slight trace amber.
1650-1660 -505.97	80% sandstone, unconsolidated as above. 20% coal. Trace white clay very slight trace amber.

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1660-1670	80% sandstone, unconsolidated as above. 10% coal. 10% white clay, soft, sticky.
1670-1680	50% clay, as above. 40% sandstone as above. 10% coal.
1680-1740	90% unconsolidated sandstone and gravel. 10% clay.
1740-1790	100% unconsolidated sandstone and gravel as above.
1790-1800	90% unconsolidated sandstone of gravel as above. 10% coal.
1810-1820	100% sandstone, unconsolidated, white, very fine-very coarse subround poorly sorted. Trace coal white clay.
1820-1830	60% sandstone, unconsolidated as above. 30% coal. 10% shale, silty carbonaceous, brown-grey soft-firm.
1830-1840	90% sandstone, unconsolidated as above. 10% coal.
1840-1850	90% sandstone, unconsolidated as above. 10% coal.
1850-1860	70% sandstone, unconsolidated as above. 10% coal. 20% very light grey clay, soft-sticky. Trace pyrite.
1860-1870	100% sandstone as above. Trace ??
1870-1890	90% sandstone as above. 10% shale, very light grey firm-hard. Trace coal.
1890-1900	100% sandstone, unconsolidated as above. Trace coal. Trace shale. Trace clay. Trace pyrite.
1900-1920	80% sandstone as above. 10% coal. 10% shale. Trace pyrite. Trace coal. Cut core near 2000' bring core to Sydney.

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1920-1940 — 90% sandstone, unconsolidated, very fine-very coarse, white, angular-subround.
585.72 – 591.31 — 10% shale as above.
Trace coal.

1940-1950 — 60% sandstone as above.
– 594.36 — 40% clay, silty, very light grey, soft,sticky.
Trace coal.

1950-1960 — 20% sandstone as above.
– 597.41 — 80% clay as above.
Trace coal.

1960-1970 — 90% clay as above.
– 600.46 — 10% sandstone as above.
Trace coal.

Strzelecki

1970-1980 — 50% unconsolidated quartz.
10% coal.
–603.50 — 20% clay as above.
20% sandstone, lithic feldspathic, with clay matrix, light grey with dark lithic grains, tight, slightly friable, very fine-fine subangular, well sorted.

1980-1990 — 30% coal.
30% unconsolidated sand grains.
–606.55 — 30% clay.
10% sandstone, lithic feldspathic.

1990-2000 — 60% sandstone, lithic feldspathic as above.
20% coal.
–609.60 — 10% clay.
10% unconsolidated sandstone.

2000-2010 — 50% sandstone, lithic, feldspathic with abundant white clay matrix, very fine-fine, well sorted, subangular-subround, soft.
–612.65 — 40% sandstone, unconsolidated.
10% coal.

2010-2017 — 70% sandstone, lithic, feldspathic.
–614.78 — 20% sandstone unconsolidated.
10% coal.

Core #3 2017'-2047', cut 30' recovered 29'.
–623.93

2047-2060 — 50% clay, light grey, silty, soft, sticky.
623.93 – 627.89 — 10% coal.
20% unconsolidated quartz grains, very fine-coarse subrounded.
10% sandstone, lithic, feldspathic as above.
10% shale, grey, blocky firm.

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2060-2070	20% sandstone, unconsolidated as above.
627.32 - 632.94	50% sandstone.
	20% clay.
	10% shale as above, heavy trace coal.
2070-2080	60% sandstone, lithic, feldspathic as above.
-638.77	40% clay very light grey wi--? dispersed grains of feldspar, quartz and lithics very fine-fine sand, clay soft, sticky.
	Trace unconsolidated sand grains.
	Trace coal.
	Trace shale.
2080-2090	20% sandstone, lithic, feldspathic as above.
-637.03	80% clay, in part as above.
2090-2100	80% shale, medium-light grey, firm, blocky.
	20% clay.
-640.08	Trace sandstone, lithic, feldspathic as above.
2100-2110	10% unconsolidated quartz grains.
	20% sandstone, lithic, feldspathic as above.
-643.13	20% clay as above.
	50% shale as above.
2110-2120	10% shale as above.
-646.18	10% unconsolidated sand grains.
	40% sandstone, lithic feldspathic.
	40% clay as above.
2120-2130	10% shale.
	10% unconsolidated sand.
-649.22	30% clay.
	50% sandstone, lithic, feldspathic as above.
2130-2140	30% sandstone, lithic, feldspathic.
	60% clay as above.
-652.27	10% shale.
	Trace coal.
	Trace unconsolidated sandstone.
2140-2150	20% sandstone, lithic feldspathic.
	30% shale.
-655.32	50% clay.
2150-2160	40% sandstone, lithic, feldspathic with clay matrix, very light grey with dark lithic grains, with feldspar grains, very fine-fine angular-subangular, well sorted, tight.
-658.37	50% clay, white-very light-grey in part with dispersed lithic and feldspar grains as above.
	10% coal.

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2160-2170 (-658.37 - 661.41)
30% clay as above.
70% shale, medium-light grey, silty in part, ocasionally with very finely disseminated carbonaceous material blocky, firm to soft.

2170-2180 (- 664.46)
20% clay as above.
80% shale as above.

2180-2190 (- 667.51)
20% clay as above.
70% shale as above.
10% siltstone medium-light grey firm.

2190-2200 (- 670.56)
40% clay as above.
60% shale as above.

2200-2210 (- 673.61)
10% sandstone, lithic, feldspathic as above.
40$ clay as above.
50% shale.

2210-2220 (- 676.66)
10% sandstone as above.
30% clay.
60% shale as above.

2220-2230 (- 679.70)
70% shale as above.
30% sandstone as above.
Trace coal.

2230-2240 (- 682.75)
80% shale with minor siltstone as above.
20% sandstone as above.
Trace coal.

2240-2250 (- 685.80)
90% shale.
10% sandstone as above.

2250-2260 (- 688.85)
As above.

2260-2270 (- 691.90)
70% siltstone, hard, grey with abundant black lithics.
Trace carbonaceous material, occasional brown and green.
20% shale, firm homogeneous.
10% sandstone, hard, grey grey green mostly fine grained abundant black and green lithics in white clay matrix, occasionally very coarse fragments of quartz.
Trace coal and pyrite.

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Sample descriptions June 10, 1969.H.L.

2270-2280 691.9- 694.9	80% sandstone, hrd, grey-green grey, abundant black, green and some orange lithics mostly fine grained quartz and lithic somme coarse grains. Carbonaceous 10-20% white to grey green matrix slightly calcareous with concentrated HCL, probably dolomite. 20% shale firm grey homogenous. Trace siltstone as above occasionally pebble-sized fragments of quartz. Traces of coal. Traces of very coarse lithic fragments. Trace pyrite.
2280-2290 -697.99	As above, but with about 5% increase in coal.
2290-2300 -701.04	80% sandstone as above. 10% shale as above. 10% coal as above. Traces as above.
2300-2310 -704.09	As above.
2310-2320 -707.14	90% sandstone as above. 10% shale and coal as above. Traces as above.
2320-2330 -710.18	80% sandstone as above. 20% shale and siltstone as above. Traces as above.
2330-2340 -713.23	90% sandstone as above. 10% shale. Traces as above.
2340-2350 -716.28	70% sandstone as above. 20% shale as above. 10% coal. Traces as above.
2350-2360 -719.33	60% sandstone as above. 10% shale as above. 30$ coal. Traces as above.
2360-2370 -722.38	40% sandstone as above. 40% coal. 20% shale as above. Trace as above.
2370-2380 -725.42	50% siltstone, soft-firm, green-grey in soft clay matrix. 40% sandstone as above. 10% coal and shale as above. Trace as above.

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2380-2390 725.42-728.47	60% siltstone, shale as above. 40% sandstone as above. Traces as above.
2390-2400 -731.52	60% sandstone as above. 30% siltstone as above. 10% coal and shale. Trace others.
2400-2410 -734.57	As above.
2410-2420 -737.62	As above.
2420-2430 -740.66	60% siltstone as above. 30% sandstone as above. 10% shale as above. Traces as above.
2430-2440 -743.71	70% siltstone as above. 20% sandstone as above. 10% shale as above. Traces as above.
2430-2446 -745 54	??

CORE DESCRIPTIONS

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 1

WELL: WAHOO - 1

Interval Cored 1440 1445 ft., Cut 5 ft., Recovered 5 ft., (100 %) Fm.

Bit Type C-11, Bit Size 8 5/16 in., Desc. by [illegible] Date June 8 1969

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0	1440		1440-1442	Sandstone with green clay matrix, very slightly dolomitic quartz grains very fine to very coarse occasionally granule size, rounded poorly sorted, tight No Show, grains of rounded green shale to very coarse and granule size also present scattered pelecypod fragments
	1445		1442-1445	Sandstone green very friable to unconsolidated very fine to medium occassionally coarse to granule, moderately sorted good visible porosity & permeability No Show

REMARKS:

CORE DESCRIPTION

Core No. 2

WELL: WAHOO-1

Interval Cored 1455-1460 ft., Cut 5 ft., Recovered 5 ft., (100 %) Fm

Bit Type C 22 , Bit Size 8 5/16 in., Desc. by [illegible] Date June 3, 1974

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0	455		1455-1460'	Sandstone slightly friable to unconsolidated green grey, with brown mottling; quartz grains very fine to medium, occasionally coarse to granule sub rounded, poorly sorted, argillaceous with grains of green shale and occassionally glauconite. poor visible porosity No Show Core has burnt odor
	460			

REMARKS:

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No 3

WELL: WARHOO - 1

Interval Cored 2017-2047 ft., Cut 30 ft., Recovered 29 ft., (%) Fm. STRZELECKI

Bit Type C-20, Bit Size 8 5/16 in., Desc by [illegible] Date [illegible]

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0			2017-2034	Sandstone lithic feldspathic Quartzwacke with light green grey clay matrix light green grey color very fine to fine grained sub angular well sorted well indurated tight No Show occasional streak of gilsonite scattered plant debris
		2034	2034 - 2046	Shale silty in part medium grey, firm slightly waxy blocky with scattered plant debris
		2046		

REMARKS:

SIDEWALL CORE DESCRIPTIONS

WAHOO 1.

BASIC

Sidewall Core Description

(M)	Depth (ft.)	Recovery (inches)	Description
425.8056	1397	NR	
431.5968	1416	2	Siltstone; firm, grey-green, with fine-coarse quartz grains, very glauconitic. No show.
448.3608	1471	NR	
458.1144	1503	2	Siltstone; as at 1416' and micaceous and slightly limey.
465.1248	1526	¾	Sandstone; soft to firm, grey, very fine grained, with few coarse quartz grains, slightly micaceous. No show.
470.0016	1542	1½	Sandstone; as at 1526' with few coal fragments. No show.
464.8200	1525	2	Shale; firm, grey-brown, very carbonaceous, silty and micaceous. No show.
482.4984	1583	2	Siltstone; firm, grey-brown, very shaley, with carbonaceous laminae. No show.
483.1080	1585	½	Sandstone; firm-friable, light grey, fine-coarse grained. No show.
487.6800	1600	2	Shale; firm, grey-brown, with carbonaceous material. No show.
496.8240	1630	2	Shale; firm, light grey, slightly silty. No show.
505.0536	1657	2	Shale; as for 1630'. No show.
508.7112	1669	N.R.	
525.4752	1724	2	Shale; as for 1630', with coarse quartz inclusions. No show.
5[illegible].4480	1760	2	Shale; as for 1630', with coarse quartz inclusions. No show.
542.0328	1796	2	Shale; firm, light grey, slightly silty. No show.
557.1744	1828	1½	Sandstone; unconsolidated, fine-medium grained, mostly rounded, clean. No show.
562.0512	1844	1½	Siltstone; firm, grey, very shaley, with inclusions, coarse quartz grains, carbonaceous. No show.
576.0720	1890	2	Shale; firm, grey-brown, carbonaceous, silty, with coarse quartz inclusions. No show.
592.2264	1943	2	Shale; firm, olive-grey, no show.
600.456	1970	1	Shale; hard, as for 1943'. No show.
656.5392	2154	¾	Shale; firm, grey, carbonaceous.
691.896	2270	¼	Sandstone; hard, grey-green, very fine grained, abundant lithics, clay matrix, tight. No show.
696.1632	2284	Fragment	Sandstone; As above and 2270'. No show.
701.0400	2300	¼	Sandstone; As for 2284', with carbonaceous material. No show.

2370	722.3760	Sandstone; as for 2284' and 2300'. No show.
2413	735.4824	Shale; hard, grey, very silty. No show.

(ft) (m)

PALYNOLOGY & PALAEONTOLOGY

PALYNOLOGY OF WAHOO # 1

by

P.R. Evans & R.D. Mulholland

Palyn. Rept. 1969/10

July 1969.

INTRODUCTION

Main core and sidewall core samples from Wahoo No.1 between depths of 1526' and 2045' were received during June 1969 for both urgent and routine palynological appraisal. A summary of results of this study follows. Because assemblages from the L. balmei Zone are so well preserved, further documentation of fossils from these samples continues.

SUMMARY

Sample	Depth	Age	Zone
SWC 26	1526'	Barren	
SWC 25	1575'*	Paleocene	L. balmei
SWC 22	1583'*	"	"
SWC 20	1600'	"	"
SWC 19	1630'	" Barren	"
SWC 18	1657'	"	
SWC 16	1724'	"	
SWC 15	1760'	"	
SWC 12	1844'	"	"
SWC 11	1890'	"	"
SWC 10	1943'	Lower Cretaceous	D. speciosus
Core 3	2042'	"	"
Core 3	2045'	"	"

* Dinoflagellates present.

COMMENT

No palynological evidence for the upper 150' of the Latrobe is available.

Fossiliferous samples from the L. balmei Zone fall into two groups, an upper and a lower separated by the four samples from 1630' to 1760'. Each of the barren samples was of a very light grey shale or siltstone, apparently devoid of organic debris. A possible origin for this interval within a near surface weathered zone should be considered.

Subdivision of the L. balmei Zone has not yet been attempted, although possibly two distinct horizons within the zone are represented above and below the barren interval.

SWC 12, 1844', is remarkable for its relatively abundant concentration of recycled Middle or early Upper Devonian spores, particularly of the genus Ancyrospora, which indicate Devonian sediments provided at least a portion of the source rocks for the Latrobe at Wahoo. Recycled Lower Cretaceous spores are also in evidence at several levels within the Latrobe.

The Lower Cretaceous at Wahoo is allocated to the D. speciosus Zone because of its content of C. hughesi at 1943'. Lack of diagnostic species at 2042-5' leaves allocation of that horizon to the same zone in question, but accessory fossils show that little variation occurs between the two levels.

Dinoflagellates were present in the uppermost two samples from the L. balmei Zone. They constituted 27% of the assemblage at 1575'.

BASIN GIPPSLAND DATE

WELL NAME WAHOO-1 ELEVATION +31 feet

AGE	PALYNOLOGIC ZONES	HIGHEST DATA Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time	LOWEST DATA Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time
LIG-MIO.	P. tuberculatus										
EOCENE	U. N. asperus										
	M. N. asperus										
	L. N. asperus	1503					1503				
	P. asperopolus										
	U. M. diversus										
	M. M. diversus										
	L. M. diversus										
PALEOCENE	U. L. balmei	1575	1				1600	1			
	L. L. balmei										
	T. longus	1844	1				1890	1			
LATE CRETACEOUS	T. lilliei										
	N. senectus										
	C. trip./T.pach.										
	C. distocarin.										
	T. pannosus										
EARLY CRETACEOUS	C. hughesii	1943	1				2045	2			
PRE-CRETACEOUS	T.D.	2446									

COMMENTS: Dinoflagellate Zones:

Deflandrea heteophylcta Zone 1503 (1)

A. Wetzeltella homomorpha Zone 1575 (1) – 1583 (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: A.D.P/L.E.S. DATE June 1971; Dec. 1971

DATA REVISED BY: A.D.P. DATE Jan. 1975.

FORM No R 315 12/72

BASIN GIPPSLAND DATE

WELL NAME WAHOO -1 ELEVATION +31 feet

AGE	PALYNOLOGIC ZONES	HIGHEST DATA Preferred Depth	Rtg	Alternate Depth	Rtg	2 way time	LOWEST DATA Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time
OLIG MIOC.	T. bellus										
	P. tuberculatus										
EOCENE	U. N. asperus										
	L. N. asperus	1503	1			0.484	1503	1			0.484
	P. asperopolus										
	U. M. diversus										
	L. M. diversus										
PALEOCENE	L. balmei	1575	1			0.503	1600	1			0.512
	T. longus	1844	1			0.581	1890	1			0.592
LATE CRETACEOUS	T. lilliei										
	N. senectus										
	C. trip./T.pach.										
	C. distocarin.										
	T. pannosus										
EARLY CRETACEOUS	C. paradoxa										
	C. striatus										
	U. C. hughesii	1943	1			0.606					
	L. C. hughesii						2045	2			0.627
	C. stylosus										
Pre-Cretaceous											

COMMENTS:

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.

DATA RECORDED BY: L.E.S./A.D.P. DATE June 1971; Dec. 1971

DATA REVISED BY: DATE

FORM No. P200 4/71

Form R 193 3/71

BASIN GIPPSLAND BASIN BY David TAYLOR

WELL NAME WAHOO-1 DATE 22-4-71 ELEV. +31'

Foram Zonules

		Highest Data	Quality	2 Way Time	Lowest Data	Quality	2 Way Time
MIOCENE	A Alternate						
	B Alternate						
	C Alternate						
	D_1 Alternate						
	D_2 Alternate	760	1		950	1	
	E Alternate	980	1		1160	1	
	F Alternate	1275	1		1402	1	
	G Alternate						
	H_1 Alternate	1406	1		1410	1	
	H_2 Alternate						
OLIGOCENE	I_1 Alternate						
	I_2 Alternate						
	J_1 Alternate						
	J_2 Alternate						
EOC.	K Alternate						
	Pre K						

COMMENTS:

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 _____

ENCLOSURES

PE905974

This is an enclosure indicator page.
The enclosure PE905974 is enclosed within the container PE906519 at this location in this document.

The enclosure PE905974 has the following characteristics:

ITEM_BARCODE	= PE905974
CONTAINER_BARCODE	= PE906519
NAME	= Structure Map, Inner Strzelecki Mapping Point
BASIN	= GIPPSLAND BASIN
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= HRZN_CNTR_MAP
DESCRIPTION	= Structure Map, Inner Strzelecki Mapping Point (from WCR) for Wahoo-1
REMARKS	= Interpretive
DATE_CREATED	= 31/08/69
DATE_RECEIVED	=
W_NO	= W549
WELL_NAME	= WAHOO-1
CONTRACTOR	=
CLIENT_OP_CO	= ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC.

(Inserted by DNRE - Vic Govt Mines Dept)

PE905973

This is an enclosure indicator page.
The enclosure PE905973 is enclosed within the container PE906519 at this location in this document.

The enclosure PE905973 has the following characteristics:

ITEM_BARCODE	= PE905973
CONTAINER_BARCODE	= PE906519
NAME	= Geological Cross-Section A-A'
BASIN	= GIPPSLAND BASIN
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= CROSS_SECTION
DESCRIPTION	= Geological Cross Section A-A' (from WCR) for Wahoo-1
REMARKS	= Interpretive
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W549
WELL_NAME	= WAHOO-1
CONTRACTOR	=
CLIENT_OP_CO	= ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC.

(Inserted by DNRE - Vic Govt Mines Dept)

PE902853

This is an enclosure indicator page.
The enclosure PE902853 is enclosed within the container PE906519 at this location in this document.

The enclosure PE902853 has the following characteristics:

ITEM_BARCODE	= PE902853
CONTAINER_BARCODE	= PE906519
NAME	= Structure Map
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= SEISMIC
SUBTYPE	= HRZN_CONTR_MAP
DESCRIPTION	= Structure Map on Top of Lakes Entrance ""Greensand"" for Wahoo-1
REMARKS	=
DATE_CREATED	= 31/08/69
DATE_RECEIVED	=
W_NO	= W549
WELL_NAME	= Wahoo-1
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601491

This is an enclosure indicator page.
The enclosure PE601491 is enclosed within the container PE906519 at this location in this document.

The enclosure PE601491 has the following characteristics:

ITEM_BARCODE	= PE601491
CONTAINER_BARCODE	= PE906519
NAME	= Well Completion Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= COMPLETION_LOG
DESCRIPTION	= Well Completion Log Wahoo 1
REMARKS	=
DATE_CREATED	= 12/06/69
DATE_RECEIVED	=
W_NO	= W549
WELL_NAME	= Wahoo-1
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601492

This is an enclosure indicator page.
The enclosure PE601492 is enclosed within the container PE906519 at this location in this document.

The enclosure PE601492 has the following characteristics:

ITEM_BARCODE	= PE601492
CONTAINER_BARCODE	= PE906519
NAME	= Grapholog Core Laboratories Mudlog
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Grapholog Core Laboratories Mudlog for Wahoo-1
REMARKS	=
DATE_CREATED	= 10/06/69
DATE_RECEIVED	=
W_NO	= W549
WELL_NAME	= Wahoo-1
CONTRACTOR	= Core Laboratories
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902852

This is an enclosure indicator page.
The enclosure PE902852 is enclosed within the container PE906519 at this location in this document.

The enclosure PE902852 has the following characteristics:

ITEM_BARCODE	= PE902852
CONTAINER_BARCODE	= PE906519
NAME	= Core Lab Completion Coregraph
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= Core Lab Completion Coregraph for Wahoo-1
REMARKS	=
DATE_CREATED	= 10/06/69
DATE_RECEIVED	=
W_NO	= W549
WELL_NAME	= Wahoo-1
CONTRACTOR	= Core Laboratories
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902851

This is an enclosure indicator page.
The enclosure PE902851 is enclosed within the container PE906519 at this location in this document.

The enclosure PE902851 has the following characteristics:

ITEM_BARCODE	= PE902851
CONTAINER_BARCODE	= PE906519
NAME	= Time Depth Curve
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= VELOCITY_CHART
DESCRIPTION	= Time Depth Curve for Wahoo-1
REMARKS	=
DATE_CREATED	= 9/03/70
DATE_RECEIVED	=
W_NO	= W549
WELL_NAME	= Wahoo-1
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)