W542

Natural Resources and Environment

AGRICULTURE • RESOURCES • CONSERVATION • LAND MANAGEMENT

1

FLOUNDER-2 (G.B.)
WELL SUMMARY

OFFSHORE

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

FILE COVER INSTRUCTIONS FOR ACTION OFFICERS

(1) FOLIO NUMBERS: Each subject paper attached to a file is to be given a consecutive number by the attaching officer. Papers must not be removed from or attached to a file without approval.

(2) REFERRAL TO OTHER OFFICERS: When an Officer completes action on the file and further action is required by some other Officer, please initial Column (4) and on the next vacant line, enter the relevant folio number in Column (1), indicate to whom the file is to be forwarded in Column (2) and record the date in Column (3).

(3) BRING UP MARKINGS: When action on a file is required at a later date, the officer will initial Column (4) and, on the next vacant line, enter the relevant folio number in Column (1), then write "B/U" followed by the action officer's name in Column (2) and the date the file is required in Column (3).

(4) PUTAWAY MARKINGS: When ALL action on a file is completed the officer concerned will initial Column (4) and, on the next vacant line, write "P/A" in column (2).

REGISTRY MUST BE NOTIFIED OF ANY FILE MOVEMENTS BETWEEN OFFICERS

LOCATION

EARLIER FILES	LATER FILES	RECORDS DISPOSITION (2)

RELEVANT FILES

File No.	Subject

SYMBOLS FOR ACTION OFFICERS

EXECUTIVE

Secretary	SEC
Deputy Secretary	DS
Executive Director Portfolio Management	EDPM
Executive Director Performance Evaluation	EDPE
Executive Director Primary Industries and Chief Scientist	EDPI,CS
Executive Director Catchment Mgt & Sustainable Agriculture	EDCMSA
Executive Director Minerals and Petroleum	EDMP
Executive Director Forests Service	EDFS
Executive Director Parks, Flora and Fauna	EDPF
Executive Director Land Victoria	EDLV
Executive Director Regional Services	EDRS

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Chief Finance Officer	CFNO
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Director Capital Policy	DCP
Director Human Resources	DHR
Director Planning & Budget	DPB
Director Information Technology & Telecommunications	DITT
Director Business Reform	DBR
Manager Business Improvement	MBI
Manager Administrative Policy & Procedures	MAPP
Manager Metropolitan Administrative Operations	MMAO
Manager Corporate Communications & Information	MCCI
Manager Electronic Information Services	MEIS
Manager Library & Information Services	MLIS

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Manager Petroleum Development	MPD
Manager Geological Survey Victoria	MGSV
Manager Mineral & Petroleum Operations	MMPO
Manager Minerals Development	MMD
Manager Extractive Industries	MEI
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Manager Chemical Standards Branch	MCSB
Manager Plant Standards	MPS
Chief Veterinary Officer	CVO
Director Bureau of Animal Welfare	DBAW
Director Fisheries	DF
Director Quality Assurance	DQA
Director Agribusiness	DA

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Chief Economist	CE
Manager Internal Audit & Risk Mgt Policy	MIARMP
Manager Strategic Quality Assurance	MSQA

CATCHMENT MGT & SUSTAINABLE AGRICULTURE

Program Manager Pest Plants & Animals	PMPPA
Director Catchment & Water Resources	DCWR
Director Sustainable Development	DSD
Director Office of Rural Affairs	DORA
Director Natural Resource Policy	DNRP

FORESTS SERVICE

Manager Commercial Forestry	MCF
Chief Fire Officer	CFO
Manager Forest Management	MFM
Manager Regional Forests Agreements	MRFA

PARKS, FLORA & FAUNA

Manager Parks & Reserves	MPR
Manager Business Management Parks, Flora & Fauna	MBMPFF
Manager Flora & Fauna	MFF
Manager Coasts & Ports	MCP

LAND VICTORIA

Director Geospatial Information	DGI
Director Resources & Reform	DRR
Surveyor General	SG
Valuer General	VG
Director Land Registry	DLR
Director Crown Land Management	DCLM

PORTFOLIO MANAGEMENT

Director Water Agencies	DWA
Manager Portfolio Coordination	MPC
Manager Environmental Policy	MEP
Manager Policy Support	MPOS
Director Media	DM

FLOUNDER-2

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COMPLETION REPORT

FLOUNDER 1, FLOUNDER 2 & FLOUNDER 3.

GENERAL

	Flounder 1 Gippsland Basin, Vic.	Flounder 2 Gippsland Basin, Vic.	Flounder 3 Gippsland Basin, Vic.
Location			
Shot Point	5325	2074	142
Line	EG-67	EC-142	G69A-262
Lease	Vic. P-1	Vic. P-1	Vic. P-1
Latitude	38° 25' 29" S.	38° 19' 17" S.	38° 18' 58" S.
Longitude	148° 25' 52" E.	148° 26' 53" E.	148° 28' 23" E.
Elevation	Rotary table above mean sea level		
	93'	99'	99'
Water Depth	287'	326'	363'
Total Depth	11,740'	9321'	8634'
Spud Date	19 July, 1968	18 February, 1969	24 April, 1969
Completion Date	11 October, 1968	24 March, 1969	14 May, 1969
Well Status	Flounder 1, 2 and 3 were abandoned as oil discoveries		
Casing & Plugs	See Completion Log		
Cores			
No. Cut	10	5	4
Total footage	260'	165'	80'
Feet recovered	232'	108'	58'
% recovery	89.3%	65.5%	72.5%
	(See Completion Log)		
Electric Logs	I.E.S. 898-11310'; Sonic 898-11300';Dipmeter 980-10,007';FDC 7800-8800';MLL 8100-8500', 9966-11,151';GRN 7800-8800' Velocity Survey	I.E.S. 881-9321'; Sonic 881-9320';FDC 2411-9319';Dipmeter 2411-9320'	I.E.S.968-8635' Sonic 968-8620' FDC 2457-8635.'
Mud Logs	Mud logging by Exploration Logging Company		
	955-11,740'	975-9321'	1010-8634'

Tests:

Flounder 1

15 wire line tests were run in Flounder 1 with 4 successful tests recovering gas and oil at 8296', 8314', 8330' and 8395'. Filtrate was recovered at 10,324' and five tight tests were

run at 3971', 8212', 10,059', 10,956', and 11,097'. Mis-runs due to equipment failure occurred at 8217', 8296', 10,956', 11,097'.

One DST was run through perforations at 8314-15'and 8330-32'. In order to meet requirements for refinery tests,only seven barrels of congealed waxy oil of 46.7° API gravity and a 72°F pour point was recovered before the test was terminated.

Flounder 2

Five wireline tests were run in Flounder 2 with gas and oil, or gas and condensate being recovered at 7012', 7021', 8329'. Water was recovered at 9262'and an FIT at 7014'had no recovery.

Flounder 3

Two FIT's at 8399'and 8415'recovered gas and oil and one FIT at 8426' recovered filtrate.

(See Completion Log for test details).

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Flounder Field Completion Report

GEOLOGICAL SUMMARY

FORMATION TOPS

Flounder 1	Gippsland formation	Ocean Floor
	Lakes Entrance formation	6268 (-6175)
	Latrobe Marine Eocene	6325 (-6232)
	M. diversus	6325 (-6232)
	L. balmei	7450 (-7357)
	Upper Cretaceous	9940 (-9847)
Flounder 2	Gippsland formation	Ocean floor
	Lakes Entrance formation	6413 (-6314)
	Latrobe Marine Eocene	6460 (-6361)
	M. diversus	6460 (-6361)
	L. balmei	
Flounder 3	Gippsland formation	Ocean floor
	Lakes Entrance formation	6525 (-6426)
	Latrobe Marine Eocene	6550 (-6451)
	M. Diversus	6550 (-6451)
	L. balmei	7430 (-7331)

GEOLOGY OF THE FLOUNDER FIELD.

General

The Flounder field is located approximately 9 miles northeast of the Halibut and 10 miles south of the Tuna field. It is approximately 36 miles from shore. Flounder 1, the discovery well, was drilled to test intra-Latrobe Sands near the crest of an east-west anticlinal structure as delineated by seismic mapping. The well was spudded on July 19, 1968 and was completed as an abandoned oil well on October 11, 1968. Two stepouts, Flounder 2 and 3 were drilled in 1969 as confirmation wells. Both encountered the intra-Latrobe reservoir discovered in Flounder 1. Flounder 2 also encountered a volatile oil reservoir occurring in a point bar braided stream sequence near the top of the Marine Eocene Section.

Structure

The structure on the top of the intra-Latrobe pay shows Flounder to be an east-west trending anticline. Apparent west dip of 4-5° is slightly steeper than seen in other intra-Latrobe fields.

At Flounder, one unconformity occurs at the top of the Marine Eocene Latrobe and another near the M. diversus - L. balmei boundary. A structure map at the top of the Latrobe has been made and is included in this report.

The intra-Latrobe reflection, on which the Top of Pay Structure Map was based originates from an interbedded coal-sand-shale sequence some 600 to 700' above the oil. No mappable reflection event is generated at the top of the braided stream sand which reservoirs the oil. Log correlations between the three wells indicate a thinning of this interbedded section to the east, but a thinning of the section between the lowest coal and the top of the pay to the west (see enclosures). Because of the necessity to obtain as accurate a structural picture as possible this situation presents two problems.

Firstly, the amplitude and frequency of the mapped reflection changes slightly due to the thickness variation in the interbedded section A point of consistent reflection character was carefully picked and mapped over the whole field. This represented as close an approximateion to true structural configuration as could be mapped taking into account the resolution available with this quality data. When tied back to the three wells this structural map matched Flounder 2 and 3 as correlated at the base of the interbedded section but in Flounder-1 was some 40' low to the same point. It was assumed that the log correlations were correct and the map was adjusted to compensate for this difference. This final adjusted map represented the structural configuration of the deepest coal.

Secondly, a simple isopach was constructed of the interval between the deepest coal and the top of the braided stream oil sand using the well data. This was then cross contoured with the adjusted structure map to obtain the Top of Pay Structure Map. Errors that exist in this structure map should not be of sufficient magnitude to be significant.

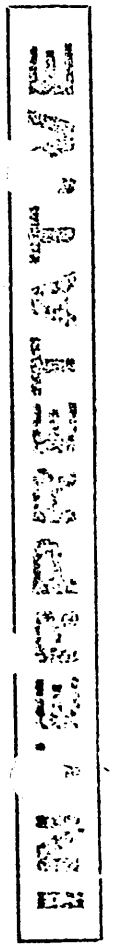
Stratigraphy

The age of the 11,350' of sediments penetrated in the Flounder field ranges from Upper Cretaceous to Miocene. The Miocene Gippsland Formation is composed chiefly of marl, calcarenite and micritic limestone. The Oligocene Lakes Entrance Formation is predominantly soft, light grey marl. Neither of these formations is of interest as no significant hydrocarbon shows were encountered in these horizons.

The 5415' of sediments below the base of the Oligocene penetrated by Flounder 1 are Early Eocene, Paleocene and Upper Cretaceous in age. The three Flounder wells, Turrum 1 and the two Tuna wells are unique when compared to other wells in Gippsland Basin, where the "Latrobe Complex" underlying the marine Lakes Entrance consists of continental type sediments. At Flounder the marine Lakes Entrance overlies a section of marine sediments upper diversus (Early Eocene) in age and equivalent in time to continental "Latrobe Complex" sediments in other parts of the basin. From regional studies now in progress in Gippsland Basin it appears, after deposition of the Lower M. diversus sediments uplift occured in the Flounder - Tuna area and erosion by channeling removed the Lower M. diversus section and locally, some of the L. balmei sediments. This was followed by an encroachment of the seas depositing marine shales with local sand bodies, or in general, marine channel filling. In the Flounder area the marine section immediately below the base of the Lakes Entrance is referred to as the marine Eocene section or the M. diversus and the term"Latrobe Complex"is reserved for the normal continental section found elsewhere in the basin.

Enclosures:

Structure map Top of Latrobe (refer to FLOUNDER-1)
Structure map Top of Intra-Latrobe Pay (refer to FLOUNDER-1)
Structure Section Flounder Field (refer to FLOUNDER-1)
Stratigraphic Section Flounder Field (refer to FLOUNDER-1)
Completion Logs Flounder 1, Flounder 2, Flounder 3.
Time Depth Curves Flounder 1, Flounder 2, Floudet 3



COMPLETION DATA

FLOUNDER -2

Water Depth: 326 ft.
Well T.D.: 9,321 ft.

Casing:

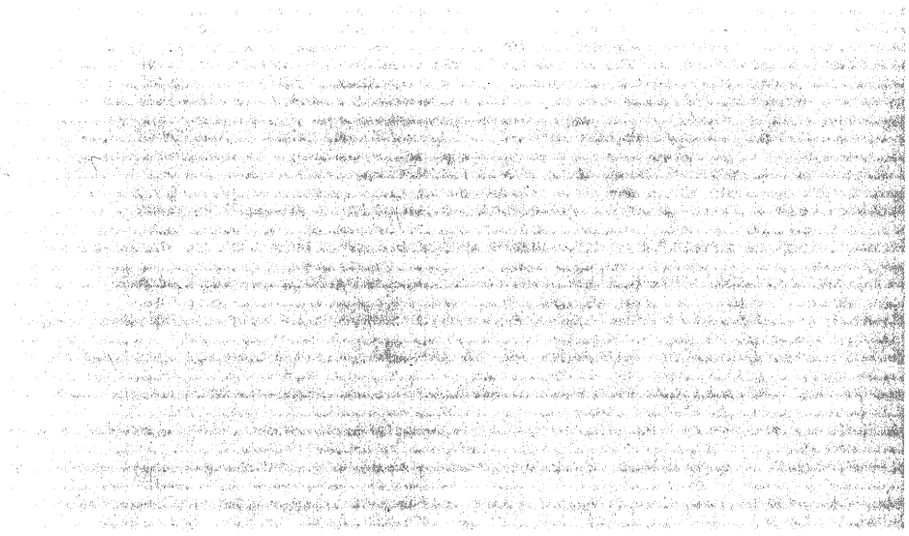
Diameter	Setting Depth
30"	502 ft.
20"	881 ft.
13 3/8"	2,414 ft.

Cement Plugs:

No. Sacks	Set At	
250	8,445 ft.	8,162 (Tagged)
100	8,148 ft.	8,000 (Tagged)
275	7,105 ft.	6,806 (Tagged)
75	533 ft.	440 (Circulated off)

* * *

Attachment 2



PE601498

This is an enclosure indicator page.
The enclosure PE601498 is enclosed within the container PE904920 at this location in this document.

The enclosure PE601498 has the following characteristics:

ITEM_BARCODE	= PE601498
CONTAINER_BARCODE	= PE904920
NAME	= Well Completion Log
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= Well Completion Log
REMARKS	=
DATE_CREATED	= 20/03/1969
DATE_RECEIVED	=
W_NO	= W542
WELL_NAME	= Flounder-2
CONTRACTOR	= Schlumberger
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

(12)

PE902866

This is an enclosure indicator page.
The enclosure PE902866 is enclosed within the container PE904920 at this location in this document.

The enclosure PE902866 has the following characteristics:

ITEM_BARCODE	= PE902866
CONTAINER_BARCODE	= PE904920
NAME	= Time Depth Curve
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= VELOCITY_CHART
DESCRIPTION	= Time Depth Curve
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W542
WELL_NAME	= Flounder-2
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

2.0 LITHOLOGY

Lithology: FLOUNDER - 2.

975 to 2290 feet: Coquina and calcarenite with some sandstone and micritic mudstone.
Coquina: white, light grey, unconsolidated.
Calcarenite: light grey, fine to coarse grained, subangular to subrounded, slightly glauconitic, unconsolidated.
Sandstone: muddy, micritic, skeletal.
Mudstone: micritic, firm to hard, some soft.

2290 to 2457 feet: Limestone: light grey, micritic to skeletal, muddy, silty matrix.
Mudstone: grey, calcareous, massive; and trace coquina: clear to yellow, unconsolidated.

2457 to 6250 feet: Marl: grey to light grey, firm, occasional bed mudstone: light grey to buff, trace limestone fragments, abundant fossils, trace glauconite and pyrite.

Gas Readings:

Depth(ft)	Cuttings	HotWire	C1	C2	C3	C4	C02
975-1150	0	0	10	-	-	-	90
1150-2457	0	2 - 77	200-6300	20-600	-	-	90-250
2457-4685	2 - 20	10 - 45	1000-2000	100-400	-	-	90-100
4685-4695	5 - 10	600	54600	4400	275	440	800
4695-6250	2 - 5	20 - 45	2000-5000	200-300	-	-	90-100

6250 to 6520 feet: Marl, as above.

6520 to 6600 feet: Mudstone: calcareous.

6600 to 6964 feet: Siltstone: brown to brown-black, carbonaceous, soft to firm, non to slightly calcareous, trace coal, glauconite and pyrite; some thin, hard, fine grained sandstone beds, calcareous cement, low permeability, good blue to white fluorescence, weak streaming cut with acid treatment.

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Sands noted as follows:
6810 to 6820 feet;
6860 to 6870 feet;
6890 to 6910 feet;
6930 to 6964 feet.

Core No.1 - 6964 to 6984 feet; cut 20 ft, recovered 20 ft.

Mudstone: dark brown grey, calcareous, slightly micaceous, some pyrite, occasional thin laminae.
Sandstone: some fossil fragments, hard, no shows.

6984 to 7075 feet: Mudstone: as above.

7075 to 7086 feet: Sandstone: quartz, unconsolidated, medium to coarse grained, subrounded to well rounded, no fluorescence or cut.

Core No.2 - 7086 to 7096 feet; cut 10 ft, recovered 5 ft.

1'6" Sandstone: light grey, quartz, medium to coarse grained, scattered pebbles, subangular to subrounded, poor sorting, slightly micaceous, very hard dolomite, cement and matrix.

3'6" Sandstone: quartz, unconsolidated, friable, fine to coarse grained, moderate sorting, subangular to subrounded. No shows.

7096 to 7200 feet: Sandstone: hard to friable, as above, thin interbeds of mudstone.

7200 to 7330 feet: Sandstone: mainly unconsolidated, coarse to very coarse and pebbly, rounded, well sorted, pyritic, minor interbeds of dolomitic sandstone: light grey, moderate sorting, fine-grained; and brown micaceous mudstone, slightly pyritic.

7330 to 7410 feet: As above, but noted up to 10% microcrystalline limestone fragments.

7410 to 8150 feet: Sandstone quartz, massive, unconsolidated, with thin mudstone and siltstone and rare traces coal, some dolomite streaks.

8150 to 8220 feet: Shale and siltstone: light grey, calcareous, micaceous.

8220 to 8242 feet: Sand: unconsolidated, as above.

Gas Readings:

Depth(ft)	Cuttings	Hot Wire	C1	C2	C3	C4	C5	CO2
6250-6860	2-5	10-15	200-1000	100-200	-	-	-	100
6860-6890	70	15	1500	200	-	-	-	95
6890-6910	34	10	1500	200	-	-	-	95
6910-6964	-	29-42	2200	350	200	-	-	95
6964-7010	27-62	110	400-40000	40-1500	20-300	-	-	100
7010-7050	100	38-1000	1500-130000	200-2500	150-4500	40-350	0-1100 (?)	500
7050-7075	17-30	23-100	700	10-90	20-60	-	-	100
7075-7086	30-100	20-1000+	300-53000	80-3500	20-900	0-30	0-60	100
7086-7210	5-33	10-35	400-2000	10-300	4-30	-	-	90
7210-7410	1-22	4-15	40-500	0-60	-	-	-	90
7410-8036	2-35	5-100	80-4000	20-130	0-100	-	-	100-150
8036-8220	0-20	10-20	70-1000	10-100	0-60	0-10	-	80
8220-8242	20-50	20-75	6500	100-700	100-600	0-100	-	80

Core No. 3 - 8242 to 8302 feet; Cut 60 feet. Recovered 60 ft.

Siltstone: dark grey, very hard, micaceous, pyrite inclusions, non calcareous, rare fine grained sandstone laminae disseminated carbonaceous material; streaks of pale yellow fluorescence and slight white cut in sandy laminae in top 3 feet.

8302 to 8360 feet: Mainly sandy siltstone light grey, silt to very fine grained sand, slightly calcareous to calcareous, micaceous, some weak pale yellow fluorescence and cut; poor to no permeability some hard brown siltstone

8360 to 8380 feet: Fine grained to pebbly sandstone hard, probably tight.

8380 to 8404 feet: Siltstone as above

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Core No. 4 - 8404 to 8439 feet; Cut 35 feet. Recovered nil

Damaged core head.

Core No. 5 - 8441 to 8481 feet; Cut 40 ft. Recovered 23 ft.

Sandstone: fine to very coarse grained, friable water saturated

Core analysis - top part too friable to measure.

Bottom sandstone porosity 24% perm. 400 m.d. water saturation from 63% to 98% average 70%

8481 to 8503 feet: Reaming.

8503 to 8540 feet: Sandstone quartz, white, coarse grained pebbly, hard, dolomitic, mineral fluorescence, no cut. Shale light grey, silty, firm to soft.

8540 to 8548 feet: Shale and siltstone light to medium grey, micaceous.

Sandstone clear quartz, firm, medium to very coarse grained, moderate to well sorted, dolomitic.

8548 to 8700 feet: Interbedded shale and sandstone and coal

Shale medium to dark grey, very silty, micaceous, carbonaceous.

Sandstone clear to frosted quartz, mainly medium grained very dolomitic.

Coal black, brittle with conchoidal fracture.

8700 to 8800 feet: Sandstone light frey, quartz, very dolomitic, subangular to subrounded, slightly glauconitic, hard light.

Logging:

At 8548 feet
Ran IES
FDC
BHCS
Velocity Shoot
Shot 57 S.W.C. Recovered 41

Testing:

F.I.T. No. 1 8329 feet. Recovered
92.8 c. ft. gas
12,000 ccs oil 47.4° A.P.I.
pour point 63°
3,000 ccs mud.

F.I.T. No. 2 7021 feet - Mechanical failure

F.I.T. No. 3 7021 feet - Recovered
98 c. ft. gas
6,500 ccs condensate (64.6° A.P.I.
300 ccs mud.

Gas Readings:

Depth (ft)	Cutting	Hot Wire	C1	C2	C3	C4	C5	CO2
8302-8404	35-75	15-250	500-20,000	30-1,400	0-500	0-250	0-80	100
8481-8503	2-5	3-7	40-120	0-25	-	-	-	100
8503-8540	0-5	5-10	70-1300	30-100	-	-	-	-
8540-8548	5-10	1-7	100-1300	10-100	-	-	-	-
8548-8650	4-7	3-14	100-1600	10-200	0-15	-	-	-
8650-8700	1-25	3-44	200-2000	20-300	0-150	-	-	80
8700-8800	0-6	5-9	200-500	20-70	0-20	-	-	80

8800 to 8940 feet: Interbedded shale and coal.

8940 to 9133 feet: Mudstone: dark brown, carbonaceous, thin coal seams, some carbonaceous siltstone and clean sandstone; no shows.

9133 to 9250 feet: Interbedded coal, carbonaceous siltstone and shale.

9250 to 9321 feet: Sandstone: fine to medium grained, tight with no shows.

Testing:

F.I.T. No.4 7014 feet - Mechanical failure.

F.I.T. No.5 7012 feet - Recovered 8000 ccs condensate 66° API at 60°F., 122.9 c.ft gas, 250 ccs mud.

F.I.T. No.6 9262 feet - Tight; recovered 500 ccs filtrate Rmf 0.7 at 75°F.

2.1 Description of Glauconitic Sandstone

amdel
The Australian Mineral Development Laboratories
Flemington Street, Frewville, South Australia 5063
Phone Adelaide 79 1662, telex AA82520

Please address all correspondence to Frewville,
In reply quote: MP3/178/0

30th August, 1976

Esso Australia Ltd.,
GPO Box 4047,
SYDNEY, NSW 2001

Attention: Mr B.G. McKay

REPORT MP 447/77

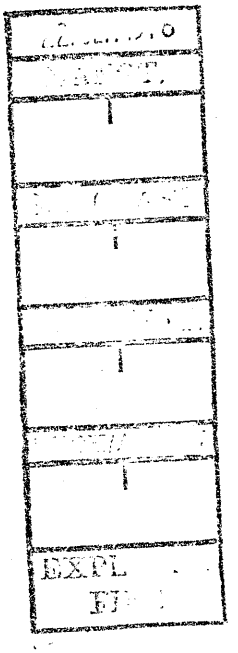
YOUR REFERENCE:	Letter (DJM:sg) of 6-8-76
MATERIAL:	1 rock
IDENTIFICATION:	S271
DATE RECEIVED:	11-8-76
WORK REQUIRED:	MA1,4

Investigation and Report by: Dr B.G. Steveson

Officer in Charge, Mineralogy/Petrology Section: Dr K.J. Henley

for F.R. Hartley
Director

mhb



DESCRIPTION OF GLAUCONITIC SANDSTONE

Sample: S271; TS36447

FLOUNDER #2 CORE #3

DEPTH 8290'

Rock Name:
Calcareous glauconitic sandstone.

Hand Specimen:
The sample is a massive and compact rock which has a dark grey colour. The rock is, however, rather heterogeneous and there are patches of fine-grained brown material which contrast with greyer material rich in a fine-grained mineral. In addition the sample contains randomly distributed grey patches up to about 2 mm in size.

Porosity & perm. measurements should have been made.

Thin Section:
An optical estimate of the constituents gives the following:-

	%
Glauconite	25-30
Siderite	25-30
Quartz	25
Ferroan dolomite	10
Potassium feldspar	5
Kaolinite	<5
Tourmaline	trace
Opaques	trace

The mineralogy of the sample was determined in part from optical observation (combined with staining of the thin section) and in part from X-ray diffraction analysis. The rock is somewhat heterogeneous and the proportions given apply to the sample overall. In one or two places the rock contains a relatively small amount of siderite with correspondingly more abundant quartz and dolomite. The sample appears to be a glauconitic sandstone (with a distinctly bimodal grain size distribution) which has been cemented by siderite and subsequently by ferroan dolomite.

Approximately 5 to 10% of the rock consists of large grains of quartz and feldspar. These grains are commonly subround to subangular and have low sphericities. The average size of the grains is somewhat difficult to measure in thin section but appears to be more than 1 mm. The single quartz crystals which comprise some of these grains shows undulose extinction and some quartzites have metamorphic textures and contain a little biotite. Fresh potassium feldspar is relatively abundant in this coarser grained material and is present as untwinned material with traces of perthitic exsolution. Some of the larger feldspar grains have subidiomorphic shapes and a tendency towards an overall tabular appearance. The large grains are randomly distributed over the area of the thin section as can be ascertained from viewing the section with the naked eye.

The rock also contains a moderate amount of finer grained quartz and feldspar. This material occurs as angular grains which have an average size of approximately 0.08 mm. The quartz grains are single crystals which show only a little undulose extinction and the feldspar is fresh potassium feldspar some of which shows cross-hatched twinning. The relative

proportions of this fine-grained detrital material and authigenic carbonate vary a little from place to place in the thin section but there are few fields of view which contain less than 15% of fine-grained detritus. The contact between the quartz and feldspar and the authigenic carbonate is usually well-defined and it appears that little of the detrital silicate has been replaced during the deposition of the carbonate.

Almost one third of the volume of the rock consists of glauconite (the presence of this mineral was verified by X-ray diffraction analysis). Glauconite forms more or less equant areas which range in size commonly from 0.1 to 0.4 mm. Some of the glauconite forms stacks of flakes which commonly have a curved appearance (Plate 1a) Elsewhere the glauconite forms pellets with an extremely fine-grained granular appearance. Many of these grains are similar to the autochthonous glauconite described by Carozzi and referred to by him as lobate grains. Many of these glauconite grains show radial cracks which are triangular in sahpe and widest at the periphery of the grains. In some of the glauconite grains carbonate has filled shrinkage cracks in the lobate grains, but, more commonly, glauconitic pigment occurs in the shrinkage cracks; this indicates that the filling of the shrinkage cracks is a relatively early feature of the diagenetic history of the rock. The glauconite of lobate grains is normally ascribed to the precipitation of glauconite from gels. Crystals and aggregates of glauconite which show subradial and cleaved textures are probably derived from the lobate grains during the diagenesis of the rock. In general, the equant glauconite grains are larger than the abundant grains of quartz and feldspar and this is probably a reflection of the lower density of glauconite and possibly also of some diagenetic addition to the glauconitic material of the sediment.

Kaolinite has been used to describe a small amount of a colourless clay which occurs in small aggregates (less than 0.15 mm in size) widely dispersed throughout the rock.

Trace detrital components of the rock are represented by a few very small flakes of muscovite and equant but angular crystals of a brown pleochroic tourmaline.

X-ray diffraction analysis shows that the carbonate phases in this rock consict of subequal amounts of dolomite and siderite. Staining techniques involving the use of both alizarin red-S and potassium ferricyanide were used to examine the distribution of these two carbonates. The plate shows coarse-grained blue-stained carbonate which is ferroan dolomite and a more abundant fine-grained brown carbonate which is siderite. The siderite occurs as equant anhedral crystals which are commonly about 0.05 mm in size. In many parts of the rock the siderite is an extremely abundant intergranular mineral which clearly represents the principal cementing phase. There is some evidence of a little etching of detrital silicates by siderite but this process does not appear to have substantially reduced the average grain size of the detrital silicates. Ferroan dolomite occurs as euhedral to anhedral crystals which are up to about 0.2 mm in size. Some of these crystals appear to have replaced glauconite and some fine-grained dolomite occurs in shrinkage cracks in lobate grains of glauconite. It is not possible to distinguish unambiguously from the textures in the rock whether the dolomite precedes or post-dates the siderite and evidence can be adduced for either interpretation.

This rock is interpreted as being a bimodal sandstone (with the principal grain size mode in the very fine sand grade and a minor mode in the coarse sand grade) which contains a minor amount of potassium feldspar and usually

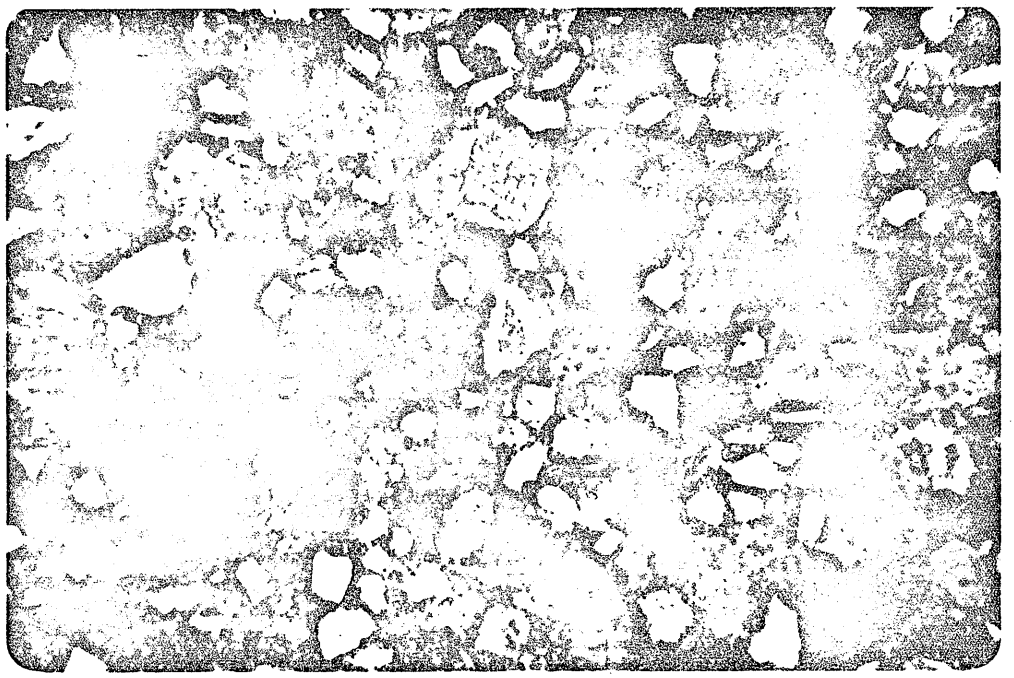
abundant glauconite. As far as can be determined, most of the glauconite was precipitated from colloidal or gel-like material during or soon after deposition but some more coarsely crystalline aggregates of glauconite may have been derived from the primary glauconite during diagenesis of the sample. The rock has been cemented by abundant fine-grained siderite and a smaller amount of coarser grained ferroan dolomite. Textures of the sample suggest (but no means prove) that the dolomite preceeded the siderite; this is particularly shown by the presence of dolomite in shrinkage cracks in lobate glauconite grains (whereas little siderite is seen in this site). This texture may be interpreted, alternatively, as suggesting that siderite was the first cementing carbonate mineral and that subsequently the glauconite suffered dehydration and shrinkage and later dolomite filled in the shrinkage cracks thus formed in the glauconite.

In summary, this rock is a marine sandstone which is both glauconitic and feldspathic. The sample has a distinctly bimodal grain size distribution with excellent to moderate sorting of each of the modes; bimodality of marine sediments is probably the result of derivation of material from two disparate sources.

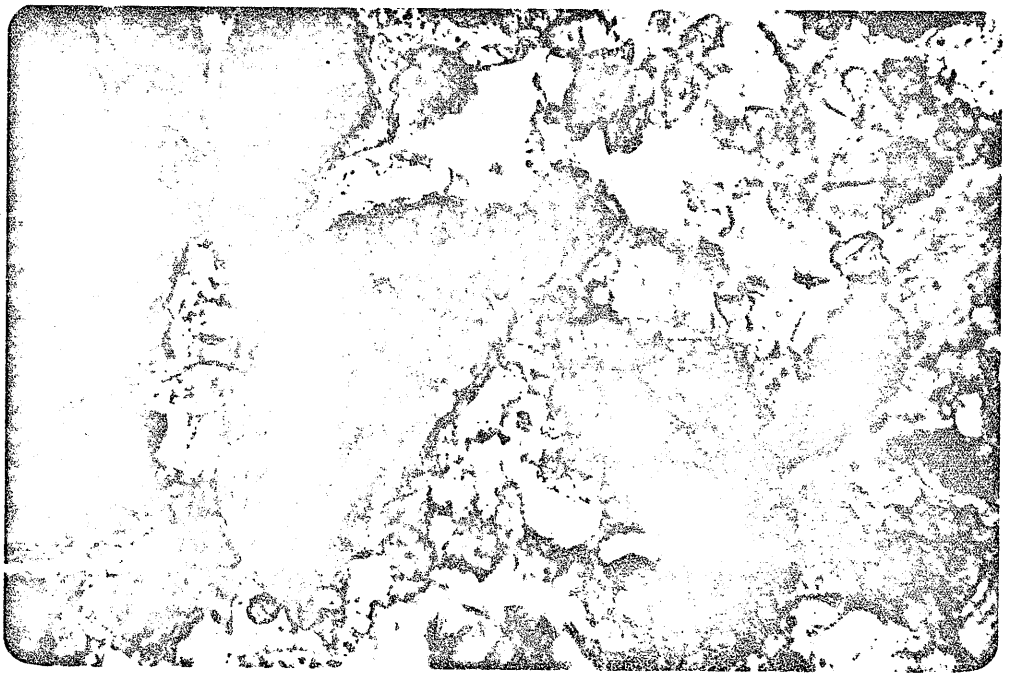
PLATE 1a - X50, plane-polarized light. This field shows dark brown siderite, green glauconite, blue ferroan dolomite and white quartz and feldspar. Note euhedral dolomite crystal top centre and dolomite in glauconite on extreme left.

PLATE 1b - X200, plane-polarized light.

The fine granular structure of siderite (deep brown) is shown.



a.



b.

2.2 Core Descriptions

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 1

WELL: FLOUNDER-2

Interval Cored 6964'-6984' ft., Cut 20 ft., Recovered 20 ft., (100 %) Fm. L D C

Bit Type C 20, Bit Size 8 5/6 in., Desc. by C Lunt A Whittle & S Kitoo Date 4/3/69

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0 4 8 12 16				
6964			6964 - 6974	Mudstone dk gy calc firm, micaceous, (biotite) very thin horizontal parallel laminations; w/ thin discontinuous silt lenses, lt gy, calc micaceous & occ pyrite aggregates
6965				
6970			6974 - 6979	Mudstone aa but dips 10-15° & occ disturbed bedding and burrows. At 15" from top of core 1" thick lens lt. gy. vf.g hard, well sorted, sa-sr sli. calc. micaceous glauc lithic, silty-sandstone, w/ brn gy clay clasts : low P & P
6975				
6980			6979 - 6984	Mudstone a.a. horizontally bedded. - at base of core, scour surface w. cross laminations 10-12° dip. Occ. fossil frags in lower ½' of core
6984				

REMARKS:

BARREL JAMMED AT 6984'

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 2

WELL: Flounder - 2

Interval Cored 7086 - 7096 ft., Cut 10 ft., Recovered 5 ft., (50 %) Fm. Latrobe Delta Complex

Bit Type C20 , Bit Size 8 5/16 in., Desc. by CL, AW & SK Date 5-3-69

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0 5 6 7 8			7086' - 7087.5' (1.5 ft thick)	Sandstone, light grey, medium - coarse grain w/ scattered pebbles quartzose frosted, subangular - subrounded, poor sorting, hard, slightly micaceous, dolomitic matrix, w/ traces of mud - grey chert, thick - bedded, no show, slight mineral flouresence
			7087.5' - 7091' (3.7' ft thick)	Sandstone, grey brown, unconsolidated to very friable, medium - coarse grain, moderate sorting, quartzose frosted, subangular - subrounded, slightly micaceous, no show, slight mineral flouresence occassional fragments
			7091 - 7096	No recovery

REMARKS:

Coring stopped, due to loss pressure, hole in bumper - sub.

Bit was 20% worn

ESSO STANDARD OIL (AUSTRALIA) LTD.

3675

CORE DESCRIPTION

29/

Core No. 3

WELL: Flounder - 2

Interval Cored 8242 - 8302 ft., Cut 60 ft., Recovered 60 ft., (100 %) Fm. Latrobe Delta Complex

Bit Type C20, Bit Size 8 15/32 in., Desc. by C.L., A.W. & S.K. Date 11-3-69

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0 5 6 7 8				
8242			8242' - 8251' (9')	Siltstone, med dk gy - dk gy, ~~firm~~, v micaceous, w/common glauc & pyrite inclusions slightly burrowed, non-cal, poorly developed faint wavy discontinous non-parallel lamina, w/occ sand grains & glauc f-mg, v slight bleeding gas, w/ finely disseminated carb material, w/rare fossil frags, w/ rare irregular zones of weak pale-yellow flour, pale bluish-white cut, no odor
8251			8251' - 8278' (27')	Siltstone, a.a., but no flour, no cut, frequent burrows and pyrite inclusions (up to 5 cm) w/ white clay nucleus, abundant disseminated carb material
8278			8278' - 8293' (15')	Siltstone, med dk gy - dk gy, firm-hard, non-cal, w/ common pyrite inclusions, abundant large burrows, abundant poorly developed faint wavy discontinous lamina non-parallel, w/v abundant disseminated carb material (30% by volume), w/ occ glauc grs f-mg and abundant quartz grains occ pebbles & m-cg, subang-sbrd, slightly gas bleeding
8293			8293' - 8296' (3')	Sandstone, lt gy, vf-fg, subang-sbrd, qtzose, v glauc, mod sorted, non-cal, poor porosity & permability, v burrowed, w/ occ pockets of qtz sandstone, f-vcg, non-cal, v glauc, irregular contact above & below
8296			8296' - 8302' (6')	Siltstone, gy med dk gy, ~~firm~~-hard, non-cal, w/ extensive burrowings & relicts of well-defined parallel continous lamina
8302				

REMARKS: Penetration time for 60' = 5½ hrs @ 40-60 RPM averaging 55 RPM

Hydrocarbon shows are apparently confined to top 9 feet. Burrowings become more extentsive with depth

30/

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 4

WELL: FLOUNDER-2

Interval Cored 8404 - 8439 ft., Cut 35 ft., Recovered 0 ft., (0 %) Fm. LATROBE DELTA COMPLEX

Bit Type C 20 , Bit Size 8 15/32 in., Desc. by JB, HS & SK Date 11-3-69

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0 4 8			NO RECOVERY	

04
10
15
20
25
30
35
39

REMARKS: BIT MILLED ON JUNK BEARING.

5 of 5

ESSO STANDARD OIL (AUSTRALIA) LTD.

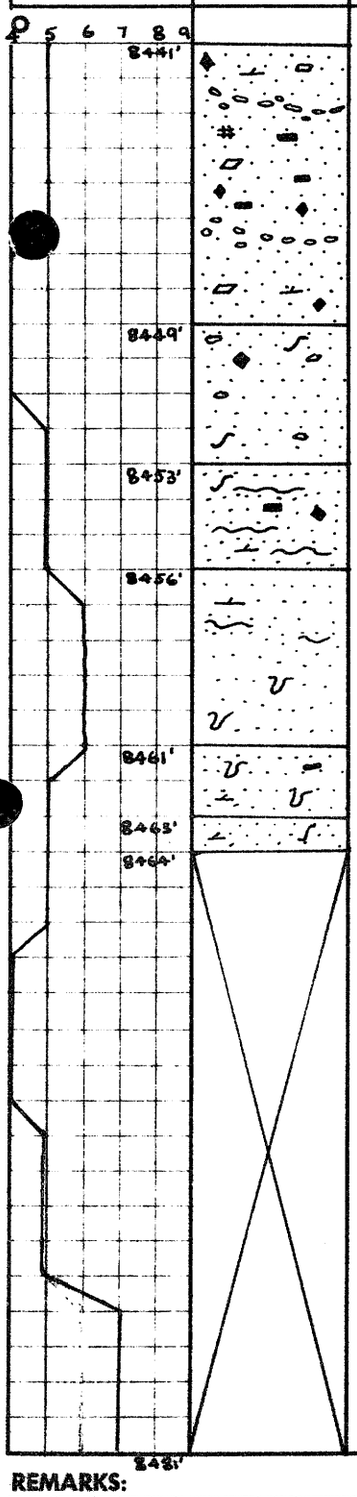
CORE DESCRIPTION

Core No. 5

WELL: FLOUNDER-2

Interval Cored 8441 - 8481 ft., Cut 40 ft., Recovered 23 ft., (57 %) Fm. LATROBE DELTA COMPLEX

Bit Type C20 , Bit Size 8 15/32 in., Desc. by JB, HS & SK Date 12-3-69



Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
			8441 - 8449	Sandstone, ltgy-med gy, qtzose, m-pbl predom c-vc, ang-rd, m-w srted, friable-m hd, sli cal matrix, common pyritic coating on qtz grs, & rare cal xstals, common-rare gyp, rare coal frags, w/ occ bands of vc-pebbly sized grs, & no flour, no cut.
			8449-8453	Sandstone, pale yel-brn, qtzose, m-v.c w/ occ pbls predom c gr, ang-rd, m-w srted, m.hd, sli cal matrix, rare pyrite, rare glauc, no flour, no cut, prob thk bedded.
			8453 - 8456	Sandstone, med-dk gy, qtzose, vf-c, ang-rd, p-mod srtd, m.hd, v sli cal, rare pyrite, occ coal frags, rare glauc, rare dol, rare biotite mica, w/ thin wvy horizontal v. carb, thin continous lams; no flour, no cut.
			8456 - 8461	Sandstone, pale yel brn, qtzose, f-pbl, p-mod srtd, m.hd, ang-rd, cal cmt, rare dol, w/ thin discons lam, occ burrows, no flour, no cut.
			8461 - 8463	Sandstone, med lt gy, qtzose, f-vc, m-w srtd, m.hd, ang-rd, sli cal cmt, rare dol, rare biotite, occ cly clasts, no flour, no cut
			8463 - 8464	Sandstone, vlt gy, qtzose, vf-vc, m srtd, v.hd, ang-rd, dolic cmt, rare dol gr, rare glauc, occ m gy sh frags, no flour, no cut, v tight.

REMARKS:

Drilling: mud wt 10.2, weight M lbs 20,000 av 15,000; Total coring time 4hrs.

2.3 Side Wall Core Descriptions

SIDEWALL CORE DESCRIPTIONS

WELL FLOUNDER-2 | SERV. CO. Schlumberger | DATE 15-3-[illegible] | LOG RUN NO. 542 | GEOLOGIST JB, SK & HS

REF. # | FIELD Wildcat | STATE Victoria | ATT. 57 REC. 41 | PAGE 1 OF 3 PAGES

NO.	DEPTH	REC	LITHOLOGY	COLOR	DISS CLAY	CONS	CALC	ODOR	FIDO	FLUORESENCE DIST	FLUORESENCE INT	FLUORESENCE COL	CUT QUAN	CUT COL	CUT FLUOR. INT	CUT FLUOR. COL	SHOW	Age 1 of 5 FOR. PROD.
1	8507'	0	No Recovery															
2	8390'	3/4"	Sandstone, gr-vcse, f-pbl, predom cgr, mod-w srt, ang-rd, v. friable, v.	pale yel-brn	—		v.	—		—	—	—	—	—	—	—	—	
			silty matrix, trace of pyrite coats around qtz grains					—		—	—	—	—	—	—	—	—	
3	8149'	3/4"	Shale, v. silty, v. firm, bentonitic, v. micaceous biotite, w/ occ	dk gy	—		v. sli	—		—	—	—	—	—	—	—	—	
			coal frags.															
4	8099'	3/8"	Shale, v. silty, v. firm, non-bentonitic, w/ occ coal streaks, v. micaceous	dk gy			sli.	—		—	—	—	—	—	—	—	—	
5	7652'	3/4"	Siltstone, sandy, white frosted, ang-rd, med hd-friable, w/ coaly para-llel thin continous lams, micaceous	med. dk gy	mod.		sli.	—		—	—	—	—	—	—	—	—	
6	7480'	1"	Shale, sli silty, occ scattered f sd grs, v. micaceous, mod firm.	brn, gry	—		v. sli	—		—	—	—	—	—	—	—	—	
7	7339'	1½"	Shale, v. micaceous, v. firm.	pale yel brn	—		—	—		—	—	—	—	—	—	—	—	
8	7207'	1"	Shale, laminated, w/ occ silty ∥ lams, mod-v. firm, micaceous, bentonitic	med dk gy	—		v. sli	—		—	—	—	—	—	—	—	—	
9	7097'	0	No Recovery		—			—		—	—	—	—	—	—	—	—	
10	7064'	1¼"	Sandstone, v. silty, vf-pbl, predom fg, poor-mod srted, hard-v. friable,	pale yel brn	—		—	—		—	—	—	—	—	—	—	—	
			w/ occ brn carb shale lenses, clayey matrix, qtz grs often pyrite coated,															
			sli glauc, ∫ micaceous, vis. poor-fair porosity & perm.															
11	7038'	1¼"	Sandstone, f-mg, w/ occ qtz pbls, mod-w. srted, ang-rd, hard-v. fria.	med lt gy	—		v. sli	—		—	—	—	good	brn yel	—	—	—	
			micaceous, rare glauc, occ coal frags, w/ thin thgcon. lams.															
12	7015'	1¼"	Sandstone, f-mg, silty, ang-sbrd, friable,	med lt gy	—		—	sli		—	—	—	good	brn yel	—	—	—	
13	6995'	1"	Sandstone, fg, silty, sugary texture, friable, poor-mod srt., coaly lams.	v. lt gy	—		—	—		—	—	—	—	—	—	—	—	Age 1 of 5
14	6930'	1¾"	Shale, firm, - hd, micaceous	dk gy brn	—		sli	—		—	—	—	—	—	—	—	—	
15	6894'	0	No Recovery	—	—		—	—		—	—	—	—	—	—	—	—	
16	6844'	1⅝"	Shale, firm, micaceous,	dk brn			v. calc	—		—	—	—	—	—	—	—	—	
17	6743'	1¼"	Shale, firm, fossili.	brn gy	—		v. calc	—		—	—	—	—	—	—	—	—	
18	6643'	0	No Recovery	—	—		—	—		—	—	—	—	—	—	—	—	
19	6595'	1¼"	Shale, firm, glauc.	ol gn	—		v. calc	—		—	—	—	—	—	—	—	—	

SIDEWALL CORE DESCRIPTIONS | WELL FLOUNDER-2 | SERV. CO. | DATE 15-[illegible]69 | LOG RUN NO. | GEOLOGIST 295

REF.# | FIELD Wildcat | STATE Victoria | ATT. 57 REC. 41 | PAGE 2 OF 3 PAGES

NO.	DEPTH	REC	LITHOLOGY	COLOR	DISS CLAY	CONS	CALC	ODOR	FIDO	FLUORESCENCE DIST	FLUORESCENCE INT	FLUORESCENCE COL	CUT QUAN	CUT COL	CUT FLUOR. INT	CUT FLUOR. COL	SHOW	PROD. PROD.
20	6492'	1"	Shale, glauc, firm	gn gy	—	—	v.	—	—	—	—	—	—	—	—	—	--	
21	6452'	0	No Recovery	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
22	6416'	1"	Shale, sli silty, v firm-hd,	lt brn gy	—	—	v	—	—	—	—	—	—	—	—	—	—	
23	6391'	1⅛"	Mudstone, mod firm	gy	—	—	sli-mod	—	—	—	—	—	—	—	—	—	—	
24	6290'	1¼"	Mudstone, mod firm	gy	—	—	sli-mod	—	—	—	—	—	—	—	—	—	—	
25	6190'	1⅛"	Mudstone, mod firm	gy	—	—	sli-mod	—	—	—	—	—	—	—	—	—	—	
26	6090'	0	No Recovery	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
27	5989'	⅞"	Sandstone, vf-fgr, w.srted, ang-rd, friable, micaceous, carb in part,	lt gy	—	—	sli	—	—	—	—	—	—	—	—	—	—	
28	8520'	¾"	Shale, laminated, w/ thin // lams, micaceous, firm-v. firm.	dk gy	—	—	sli	—	—	—	—	—	—	—	—	—	—	
29	8507'	1¼"	Sandstone, vf-fg, w. srted, ang-rd, mod hard, v. micaceous, carb in part,	lt gy	—	—	sli	—	—	—	—	—	—	—	—	—	—	
			sli. glauc., good porosity & perm.															
30	8484'	¾"	Sandstone, f-mg, w. srted, ang-rd, v. friable, qtzose, sli micaceous, w/ occ	v.lt gy	—	—	v.sli	—	—	—	—	—	—	—	—	—	—	
			glauc gr, good porosity & perm. no flour, no cut															
31	8393'	¾"	Sandstone, qtzose, f-cg, mod-w.srted, rd-sbrd, v.friable, w/ occ black lithics	lt gy	—	—	—	sli	—	patchy	mod	yel wh	—	—	strong	yel wh	lt brn	
			grs, micaceous, cly matrix, good flour, good cut, good porosity & perm.				—	sli	—	even	mod	yel wh	—	—	—	—	—	
32	8373'	¾"	Sandstone, vf-mgr, m-w. srted, ang-rd, friable, qtzose, abnt mica,	med lt gy	—	—	—	sli	—	even	mod	yel wh	—	—	strong	yel wh	lt brn	
			w/ occ carb frags, rare glauc, strong flour, good cut, good porosity.															
33	8368'	1"	Sandstone, f-vcg, predom. cg, poor-mod srted, ang-rd, friable, qtzose	lt gy	—	—	v.	sli	—	even	mod	yel wh	—	—	Mod	yel wh	lt brn	
			frosted, rare pyrite coating on qtz, rare glauc, dissem. carb material,															
			strong flour, good yel-wh cut, petrol. odor, good porosity & perm.															
34	?8362'	0	No Recovery	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
35	?8357'	½"	Sandstone, m-vcg, poor-mod srtng, rd-v.rd, v.friable, qtzose frosted	med. lt gy	—	—	—	strong	—	even	mod	yel wh	—	—	mod	yel wh	lt brn	
			& pitted, bright yel-wh flour, strong yel cut, strong petrol. odor															SK
36	?8357'	¾"	Sandstone, f-cg, m-w. srted, rd-v.rd, friable, qtzose frosted, clay matrix,	med lt gy	—	—	—	strong	—	even	mod	yel wh	—	—	mod	yel wh	lt brn	
			strong petrol. odor, bright yel-wh flour, strong yel-wh cut, good poros.															1/82

SIDEWALL CORE DESCRIPTIONS | WELL FLOUNDER-2 | DEV. CO. | DATE 15-3 | LOG RUN NO. | GEOLOGIST 3 of 5

REF. # | FIELD Wildcat | STATE Victoria | LAT. 51 REC. 41 | PAGE 3 OF 3 PAGES

NO.	DEPTH	REC	LITHOLOGY	COLOR	DISS CLAY	CONS	CALC	GRAIN	EDGE	FLUORESCENCE DIST	FLUORESCENCE INT	FLUORESCENCE COL	CUT QUAN	CUT COL	CUT FLUOR. INT	CUT FLUOR. COL	SHOW	PROB. PROD.
37	?8344'	0	No Recovery	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
38	?8324'	1"	Sandstone, v. silty, vf-silty, mod-well sorted, ang-rd, friable, micaceous, pyritic, glauc, calc to cly matrix,	lt gy	—	—	sli	mod		even	mod	yel crb	—	—	strong	yel wh	—	
39	?8295'	½"	Shale, v. silty, laminated, w/ thin carb. // lams, v. firm,	med gy	—	—	v.	—	—	patchy	mod	yel	—	—	strong	yel wh	—	
40	?7995'	0	No Recovery	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
41	?7744'	¾"	Sandstone, f-mg, subang-sbrd, sli mica, mod-well srted, sli carb, friable - v. friable, good vis. porosity & perm.	lt gy	—	—	sli	—	—	—	—	—	—	—	—	—	—	
42	?7670'	⅜"	Sandstone, f-mg, subang-sbrd, mod-well srted, sli mica, sli carb friable -v. friable,	lt gy	—	—	v.	—	—	—	—	—	—	—	—	—	—	
43	?7220'	0	No Recovery	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
44	?7093'	¾"	Shale, firm, w/ // silty lams,	gy brn	—	—	v. sli	—	—	—	—	—	—	—	—	—	—	
45	?7075'	1"	Sandstone, friable - v. friable, f-mg, rd-sbrd, sli mica, mod srted, qtzose, fine // continous lams, good visual porosity & perm.	lt gy	—	—	—	—	—	—	—	—	—	—	—	—	—	
46	?7034'	0	No Recovery	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
47	?7034'	¼"	Sandstone, f-mg, subang-sbrd, sli micaceous, qtzose, fair porosity.	gy brn-dk gy brn	—	—	mod-very	—	—	—	—	—	—	—	—	—	—	
48	?7001'	¼"	Sandstone, vf-fg, rd-sbrd, sli mica, mod srted, qtzose, conti. // lams.	lt gy	—	—	sli	mod	—	—	—	—	weak	lt bl yel	—	—	—	
49	?6983'	0	No Recovery															
50	?6890'	1¾"	Shale, well lam, sli micaceous	dk gy brn	—	—	very	—	—	—	—	—	—	—	—	—	—	
51	6640'	0	No Recovery	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
52	6450	0	No Recovery	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
53	6289'	1"	Mudstone, w/occ chtgrs,	lt gy	—	—	very	—	—	—	—	—	—	—	—	—	—	
54	6089'	1¾"	Mudstone, prob lam.	lt gy	—	—	very	—	—	—	—	—	—	—	—	—	—	
55	5988'	¾"	Mudstone, mod lam.	lt gy	—	—	very	—	—	—	—	—	—	—	—	—	—	
56	—	0	No Recovery	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
57	5788'	¾"	Mudstone, mod lam.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

SIDEWALL CORE DESCRIPTIONS

WELL FLOUNDER - 2 | SERV CO. [illegible] | DATE 21/[illegible] | LOG I.D. NO. | GEOLOGIST BSW

REF.# | FIELD GIPPSLAND | STATE VICTORIA | ATT. 27 REC. 17 | PAGE 21 OF 2 PAGES 4045

NO.	DEPTH	REC	LITHOLOGY	COLOR	DISS CLAY	CONS	CALC	ODOUR	FIDO	FLUORESCENCE DIST	FLUORESCENCE LEN	FLUORESCENCE COL	CUT QUAN	CUT COL	CUT FLUOR. INT	CUT FLUOR. COL	SHOW	PROD.
1	9300	1"	Siltstone, gtzose, carb., mott.	Dk gy			—	Slight		—	—	—	—	—	—	—	—	
2		0	Not Recovered															
3	9200	1"	Siltstone, gtzose, carb., mott.	Lt gy			—	Present		—	—	—	—	—	—	—	—	
4	9103	1¼"	Sandstone, m.g., sr, ws, gtzose, porous	Lt gy			—	very Strong		—	—	—	—	—	—	—	—	None
5	9090	1"	Siltstone, gtzose, carb, mott.	Dk gy			—	Slight		—	—	—	—	—	—	—	—	
6	9000	1"	Mudstone, carb, mott.	Md gy			—	Slight		—	—	—	—	—	—	—	—	
7		0	Not Recovered															
8	8900	1¼"	Mudstone, carb, mott.	Md gy			—	Slight		—	—	—	—	—	—	—	—	
9	8825	1"	Mudstone, carb., mott.	Md gy			—	Strong		—	—	—	—	—	—	—	—	
10		0	Not Recovered	[illegible]			—	[illegible]										
11	8715	1"	Mudstone, carb.	Lt. gy			—	Strong		—	—	—	—	—	—	—	—	
12		0	Not Recovered															
13	8600	1¼"	Mudstone, carb.	Dk gy			—	Strong		—	—	—	—	—	—	—	—	
14																		
15																		
16																		
17																		
18	8380	1¼"	Sandstone, m-cg, sr, ms, gtzose, porous	Lt gy			—	very Strong		Good spotty fluor.			—	—	—	—	Fluor. & odour	Not good
19		0	Not Recovered															
20	7021	1½"	Fine g, silty Sandstone, gtzose, mica, carb.	Md gy			—	Strong		—	—	—	—	—	—	—	—	None
21		0	Not Recovered															
22	6992	1½"	Siltstone, gtzose, carb, lamin.	Lt-Dk Gy & Bn.			—	Strong		Fluorescence in Thin Laminae			—	—	—	—	Fluor. & odour	No Very Poor.
23	8953	½"	Sandstone, m-c gr, sr, ms, gtzose, porous	Lt gy			—	Present		—	—	—	—	—	—	—	—	
24	8801	¾"	Sandstone, mgr, sr, ws, gtzose, porous	Lt gy			—	Present		—	—	—	—	—	—	—	—	None
25	8688	1"	Sandstone, mgr, sr, ws, gtzose, porous	Lt gy			—	Strong		Faint Fluoresc.			—	—	—	—	Fluor & odour	Very Poor

SIDEWALL CORE DESCRIPTIONS

WELL FLOUNDER - 2 | SERV. CO. SCHLUMBERGER | DATE 21/3/69 | LOG RUN NO. | GEOLOGIST BSW

REF. # | FIELD GIPPSLAND | STATE VICTORIA | ATT. REC. | PAGE 2 OF 2 PAGES

5045.

NO.	DEPTH	REC	LITHOLOGY	COLOR	DISS CLAY	CONS	CALC	ODOR	FIDO	FLUORESENCE DIST	FLUORESENCE INT	FLUORESENCE COL	CUT QUAN	CUT COL	CUT FLUOR. INT	CUT FLUOR. COL	SHOW	PROB. PROD.
26	8386	3/4"	Sandstone, mg, ss, us, qtzose, porous	Lt gy			—	Very Strong		Good	Spotty	Fl.	—	—	—	—	Fluor & odour	Not Good
27	7008	1"	Sandstone, mg, ss, us, qtzose, porous	Lt gy			—	Strong		Faint Fluor.			—	—	—	—	Fluor & odour	Not Good.

5045

2.4 Core Analysis Report/Results

EXPLORATION LOGGING OF AUSTRALIA, INC.
A Geological-Engineering Service
PERTH ADDRESS 69 GREAT EASTERN HIGHWAY VICTORIA PARK WESTERN AUSTRALIA
PHONE 61 4437

CORE ANALYSIS REPORT

COMPANY ESSO-BHP
WELL FLOUNDER 2
LOCATION/FIELD OFFSHORE
COUNTY _____ STATE _____
COUNTRY AUSTRALIA
REMARKS CUT 20', RECOVERED 20', MUDSTONE: DARK GREY, HARD, CALCAREOUS, MICACEOUS, DIPS TO 15°. A 1" LENS LIGHT GREY, HARD, GLAUCONITIC SILTY SANDSTONE 15' FROM TOP OF CORE

DATE MARCH 4, 1969
DEPTH 6964' TO 6984'
GEO-ENGINEER CRAIG

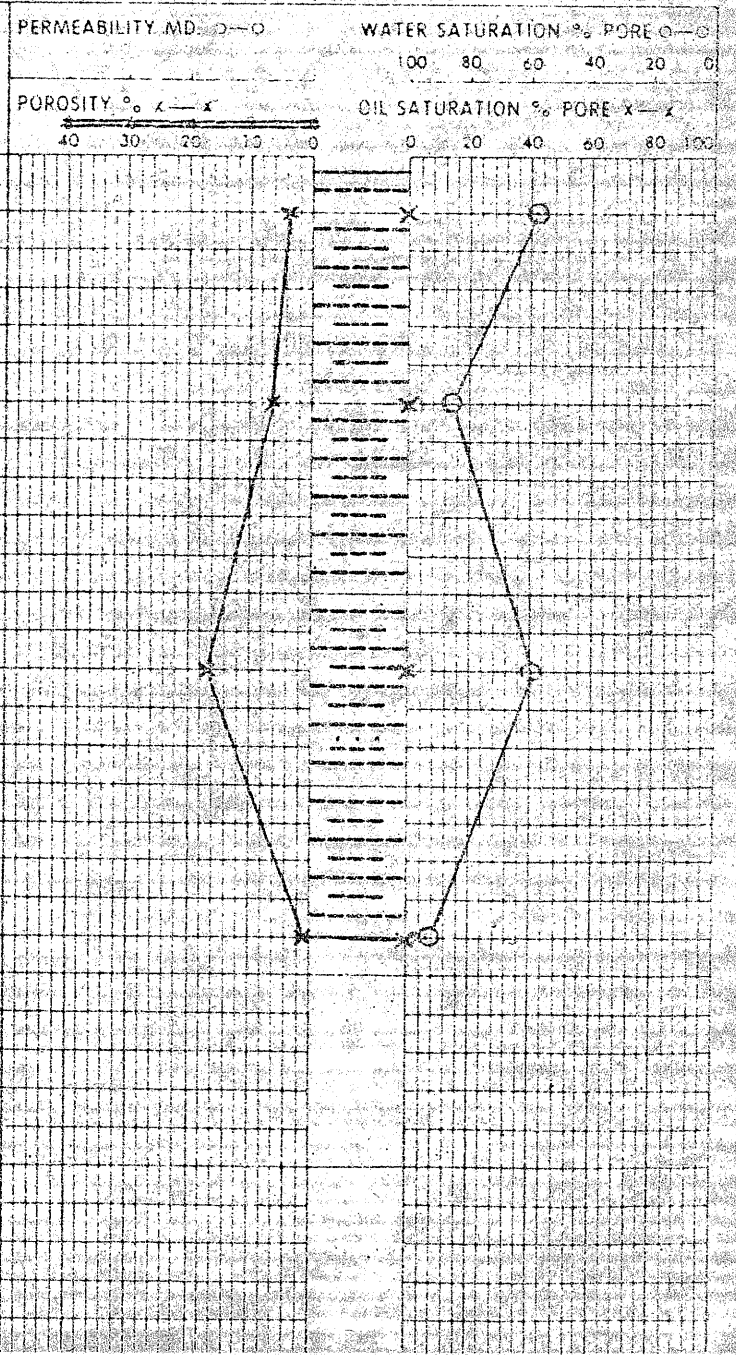
SAND
SILTY SAND
SILTST.
SHALE
LIME
CONGL.

TABULAR DATA

CORE 1

DEPTH FEET	AIR PERM. MD.	POROSITY PERCENT	FLUID SATURATION % PORE VOLUME OIL	FLUID SATURATION % PORE VOLUME WATER	GRAVITY OIL °API	TOTAL CL G/G	REMARKS
6965		3.6	0.0	58			
6970		6.2	0.0	86			
6977		17	0.0	60			
6984		0.9	0.0	94			

ANALYSIS GRAPH



EXPLORATION LOGGING OF AUSTRALIA, INC.
A Geological-Engineering Service

PERTH ADDRESS 69 GREAT EASTERN HIGHWAY VICTORIA PARK WESTERN AUSTRALIA
PHONE 61 4437 CABLE EXLOGG PERTH

CORE ANALYSIS REPORT

COMPANY ESSO-BHP
WELL FLOUNDER 2
LOCATION/FIELD OFFSHORE/GIPPSLAND BASIN
COUNTY _____ STATE VICTORIA
COUNTRY AUSTRALIA
REMARKS RECOVERED 5 FEET LIGHT GREY, MEDIUM TO COARSE GRAIN, FRIABLE SANDSTONE. TOP FOOT OF CORE IS VERY HARD SANDSTONE. NO SHOWS; NO FLUORESCENCE IN CORE.

DATE MARCH 5, 1969
DEPTH 7086 FT TO 7096 FT
GEO-ENGINEER CRAIG

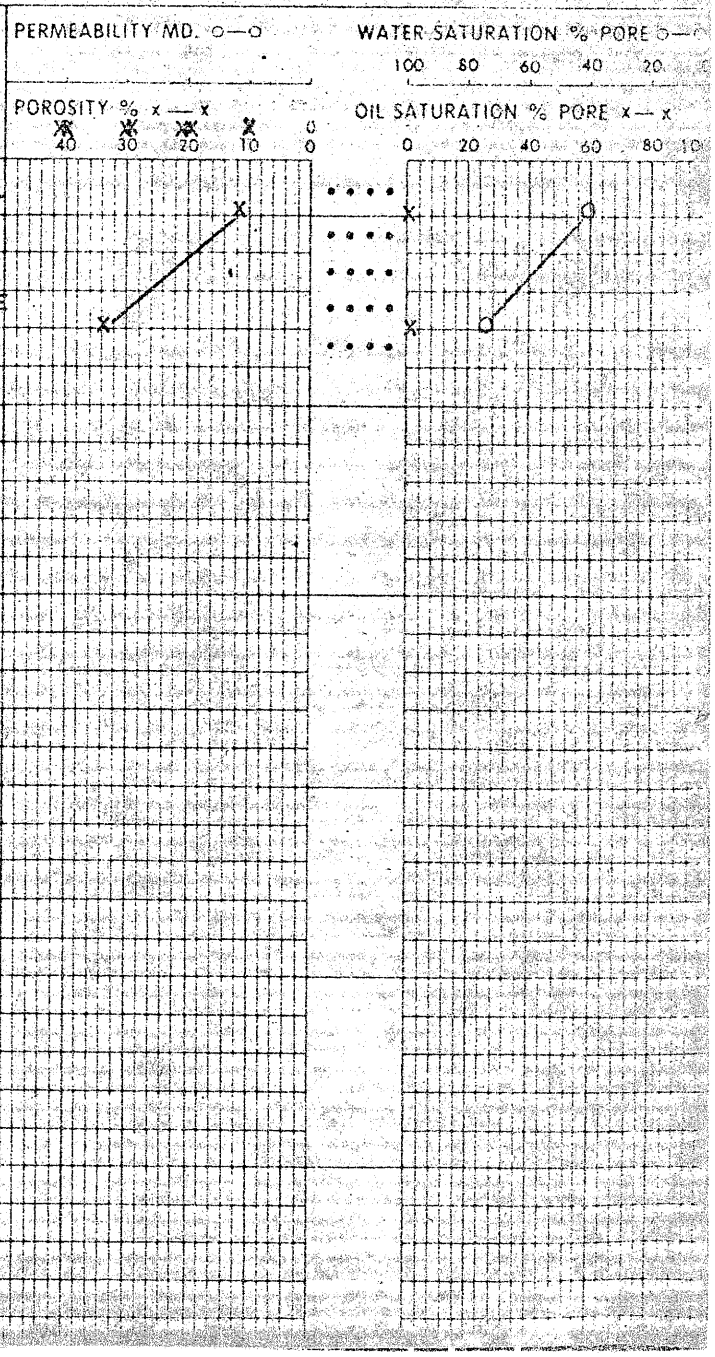
SAND
SILTY SAND
SILTST.
SHALE
LIME
CONGL.

TABULAR DATA

CORE #2

SAMPLE NUMBER	DEPTH FEET	AIR PERM. MD.	POROSITY PERCENT	FLUID SATURATION % PORE VOLUME OIL	FLUID SATURATION % PORE VOLUME WATER	GRAVITY OIL °API	TOTAL CL' G/G	REMARKS
1	7087		12.3	0	41			HARD SANDST
2	7090		34.8	0	67			FRIABLE SANDST

ANALYSIS GRAPH



EXPLORATION LOGGING OF AUSTRALIA, INC.
A Geological-Engineering Service

PERTH ADDRESS 69 GREAT EASTERN HIGHWAY VICTORIA PARK WESTERN AUSTRALIA
PHONE 61 4437 CABLE EXLOGG PERTH

CORE ANALYSIS REPORT

COMPANY ESSO-BHP
WELL FLOUNDER 2
LOCATION/FIELD OFFSHORE/GIPPSLAND BASIN
COUNTY _____ STATE VICTORIA
COUNTRY AUSTRALIA
REMARKS CORE #3 8242-8302'
CUT 60'. RECOVERED 60'

DATE MARCH 10, 1969
DEPTH 8242 FT TO 8302 FT
GEO-ENGINEER CRAIG/ALBERT

SAND
SILTY SAND
SILTST.
SHALE
LIME
CONGL.

TABULAR DATA

ANALYSIS GRAPH

SAMPLE NUMBER	CORE #3 DEPTH FEET	AIR PERM. MD.	POROSITY PERCENT	FLUID SATURATION % PORE VOLUME OIL	FLUID SATURATION % PORE VOLUME WATER	GRAVITY OIL °API	TOTAL Cl^- G/G	REMARKS
	NO ANALYSIS REQUIRED							
	CORE #3 8242-8302'							
	8242-8251 SILTSTONE: MEDIUM-DARK GRAY, MICACEOUS, GLAUCONITIC, VERY SLIGHT BLEEDING GAS, IRREGULAR WEAK YELLOW FLU, BLUISH WHITE CUT.							
	8251-8278 SILTSTONE: AS ABOVE, ABUNDANT CARBONACEOUS MATERIAL, NO FLOURESCENCE OR CUT.							
	8278-8293 SILTSTONE: AS ABOVE, 30% CARB MATERIAL, ABUNDANT GLAUCONITE & QUARTZ GRAINS, SLIGHT BLEEDING OF GAS.							
	8293-8296 SANDSTONE: LIGHT GREY, VERY FINE GRAIN, VERY GLAUCONITIC, WITH POCKETS OF FINE TO VERY COARSE, VERY GLAUCONITIC SAND-STONE.							
	8296-8302 SILTSTONE: GREY-MEDIUM DARK GRAY AS ABOVE.							

PERMEABILITY MD. o—o
POROSITY % x — x
8 6 4 2 0
40 30 20 10 0

WATER SATURATION % PORE o—o
100 80 60 40 20 0
OIL SATURATION % PORE x — x
0 20 40 60 80 100

CORE #4

EXPLORATION LOGGING OF AUSTRALIA, INC.

A Geological-Engineering Service

PERTH ADDRESS: 69 GREAT EASTERN HIGHWAY VICTORIA PARK WESTERN AUSTRALIA
PHONE 61 4437
CABLE EXLOGG PERTH

CORE ANALYSIS REPORT

COMPANY ESSO-BHP
WELL FLOUNDER 2
LOCATION/FIELD GIPPSLAND BASIN, OFFSHORE
COUNTY _____ STATE VICTORIA
COUNTRY AUSTRALIA
REMARKS CUT 35 FEET, NO RECOVERY, BIT HAD RUN ON JUNK. DRILL RATE AVERAGED 18 FT/HR, MAX. 40, MIN. 6 FT/HR., SUGGESTING FRIABLE SAND.

DATE MARCH 11, 1969
DEPTH 8404' TO 8439'
GEO-ENGINEER WATT

SAND
SILTY SAND
SILTST.
SHALE
LIME
CONGL.

TABULAR DATA

SAMPLE NUMBER	DEPTH FEET	AIR PERM. MD.	POROSITY PERCENT	FLUID SATURATION % PORE VOLUME		GRAVITY OIL °API	TOTAL Cl^- G/G	REMARKS
				OIL	WATER			
	Core 4							
	NO RECOVERY							

ANALYSIS GRAPH

PERMEABILITY MD. o—o
POROSITY % x—x
8 6 4 2 0
40 30 20 10 0
WATER SATURATION % PORE o—o
100 80 60 40 20 0
OIL SATURATION % PORE x—x
0 20 40 60 80 100

585

43/

CORE #5

EXPLORATION LOGGING OF AUSTRALIA, INC.

A Geological-Engineering Service

PERTH ADDRESS 69 GREAT EASTERN HIGHWAY, VICTORIA PARK WESTERN AUSTRALIA
PHONE: 61 4437 CABLE EXLOGG PERTH

CORE ANALYSIS REPORT

COMPANY ESSO-BHP
WELL FLOUNDER 2
LOCATION/FIELD GIPPSLAND BASIN, OFFSHORE
COUNTY _____ STATE VICTORIA
COUNTRY AUSTRALIA

DATE MARCH 12, 1968
DEPTH 8441 TO 8481
GEO-ENGINEER WATT

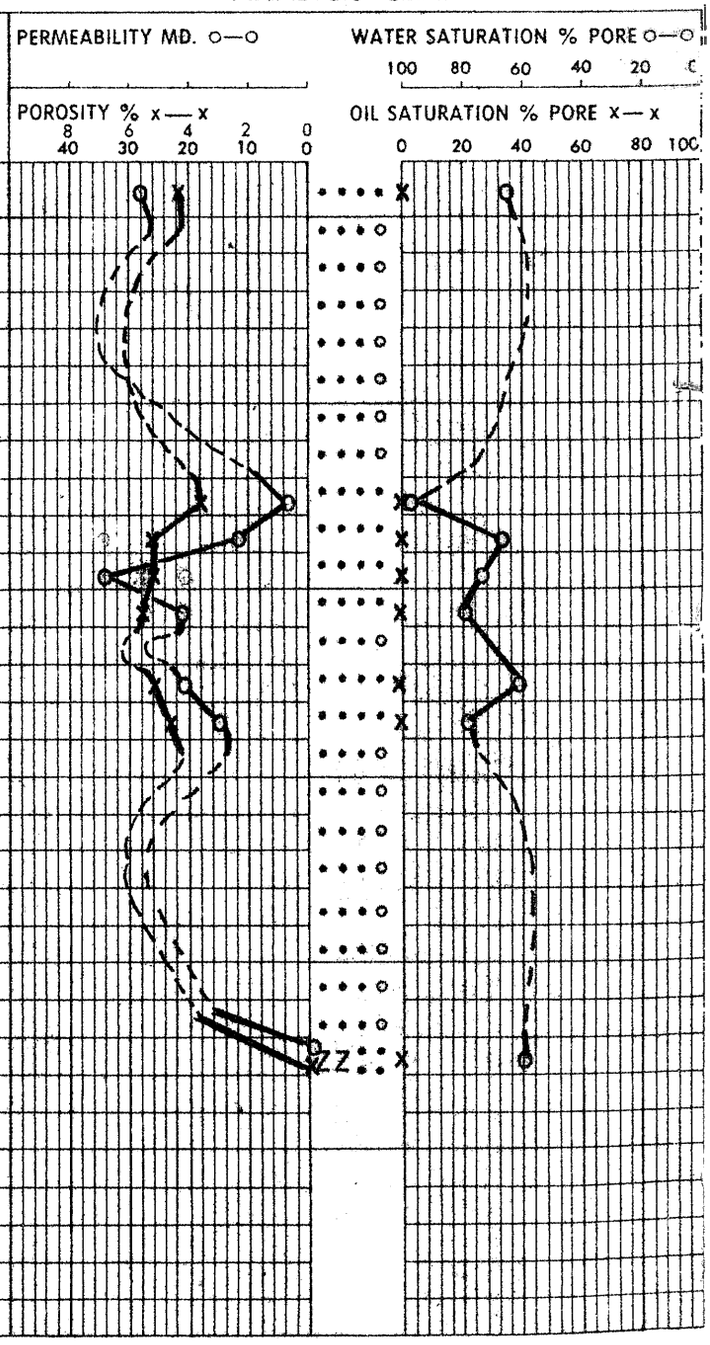
REMARKS CUT 40', REC 23' SANDSTONE: LIGHT-MED GREY MED-PEBBLY, POOR-WELL SORTED, ANGULAR-WELL ROUNDED, FRIABLE-VERY FRIABLE. 2' AT BASE VERY HARD AND TIGHT, DOLOMITE CEMENT. NO FLOR, CUT OR SHOW

SAND · SILTY SAND · SILTST. · SHALE · LIME · CONGL.

TABULAR DATA

SAMPLE NUMBER	Core 5 DEPTH FEET	AIR PERM. MD.	POROSITY PERCENT	FLUID SATURATION % PORE VOLUME OIL	FLUID SATURATION % PORE VOLUME WATER	GRAVITY OIL °API	DRY BULK DENSITY	REMARKS
1	8441	575	22.6	0	67.6	-	2.05	
	TOO FRIABLE AND COARSE FOR ANALYSIS							
2	8449	71	19.0	0	97.6	-	2.21	
3	8450	255	25.3	0	67.2	-	2.05	
4	8451	690	25.7	0	75.9	-	2.02	
5	8452	427	28.4	0	80.7	-	2.07	
6	8454	431	26.8	0	63.5	-	2.01	
7	8455	310	22.8	0	79.3	-	2.07	
	TOO FRIABLE AND COARSE FOR ANALYSIS							
8	8464	0	.04	0	60.3	-	2.64	

ANALYSIS GRAPH



Petroleum Technology Laboratory, Bureau of Mineral Resources, Geology and Geophysics, Canberra

CORE ANALYSIS RESULTS

NOTE: (i) Unless otherwise stated, porosities and permeabilities were determined on two plugs (V&H) cut vertically and horizontally to the axis of the core. Ruska porosimeter and permeameter were used with air and dry nitrogen as the saturating and flowing media respectively. (ii) Oil and water saturations were determined using Soxhlet type apparatus. (iii) Acetone test precipitates are recorded as Neg., Trace, Fair, Strong or Very Strong.

WELL NAME AND NO. FLOUNDER No. 2 DATE ANALYSIS COMPLETED OCTOBER 23, 1975

Core No.	Sample Depth From	Sample Depth To	Lithology	Average Effective Porosity two plugs (% Bulk Vol.	Absolute Permeability (Millidarcy) V	Absolute Permeability (Millidarcy) H	Average Density (gm/cc.) Dry Bulk	Average Density (gm/cc.) Apparent Grain	Fluid Saturation (% pore space) Water	Fluid Saturation (% pore space) Oil	Core Water Salinity (p.p.m. NaCl)	Acetone Test	Fluorescence of freshly broken core	Sample "cut" in tetrachlorethylene
1	6981'0"	6981'11"	Sh;blk carb	18.2	0.84	26	2.28	2.79	22	Tr	N.D.	Fair	Nil	Nil
2	7086'0"	7087'0"	Sst;m.gr. to v.c.gr.	8.5	<0.1	97	2.48	2.70	3.4	Nil	N.D.	Nil	Dull irregular yellow	Nil
2	7090'0"	7091'0"	Sst;f.gr.to m.gr.arg.	21.5	N.D.	N.D.	2.07	2.63	15	Nil	N.D.	Nil	Dull spotted yellow	Nil
3	8248'11"	8249'11"	Sh;carb slty	10.3	<0.1	<0.1	2.56	2.74	31	Nil	N.D.	Trace	Nil	Nil
3	8272'0"	8272'10"	Sh;pyr.	10.3	27	0.10	2.47	2.75	33	Nil	N.D.	Trace	Nil	Nil
3	8294'0"	8294'9"	Sst;f.gr glauc.mic.	18.3	2.2	9.6	2.17	2.66	9.2	Nil	N.D.	Trace	Nil	Nil
5	8441'11"	8442'9"	Sst;m.gr. to v.c.gr.	17.9	503	537	2.20	2.67	2.5	Nil	N.D.	Nil	Dull irregular yellow	Nil
5	8446'2"	8447'0"	as above	21.5	313	867	2.09	2.66	1.5	Nil	N.D.	Nil	as above	Nil

Remarks: - Core 4 - no recovery

General File No. ~~62/300~~ 74/1076
Well File No. _____

Petroleum Technology Laboratory, Bureau of Mineral Resources, Geology and Geophysics, Canberra

CORE ANALYSIS RESULTS

NOTE: (i) Unless otherwise stated, porosities and permeabilities were determined on two plugs (V&H) cut vertically and horizontally to the axis of the core. Ruska porosimeter and permeameter were used with air and dry nitrogen as the saturating and flowing media respectively. (ii) Oil and water saturations were determined using Soxhlet type apparatus. (iii) Acetone test precipitates are recorded as Neg., Trace, Fair, Strong or Very Strong.

WELL NAME AND NO. FLOUNDER No. 2

DATE ANALYSIS COMPLETED OCTOBER 23, 1975

Core No.	Sample Depth		Lithology	Average Effective Porosity two plugs (% Bulk Vol.	Absolute Permeability (Millidarcy)		Average Density (gm/cc.)		Fluid Saturation (% pore space)		Core Water Salinity (p.p.m. NaCl)	Acetone Test	Fluorescence of freshly broken core	Sample "cut" in tetrachlorethylene
	From	To			V	H	Dry Bulk	Apparent Grain	Water	Oil				
5	8450'3"	8451'0"	Sst;m.gr.to c.gr.arg.	21.3	190	941	2.08	2.65	4.4	Nil	N.D.	Trace	Nil	Nil
5	8455'0"	8455'9"	Sst;f.gr. to m.gr.carb	20.3	240	351	2.08	2.60	15	Nil	N.D.	Fair	Nil	Nil
5	8458'0"	8459'1"	Sst;f.gr to V.C.gr.arg	17.0	249	394	2.18	2.62	6.4	Nil	N.D.	Nil	Nil	Nil
5	8462'9"	8464'0"	Sst;m.gr. to c.gr.	6.3	<0.1	0.61	2.55	2.72	10	Nil	N.D.	Trace	Dull yellow	Nil

Remarks: -

General File No. ~~62/899~~ 74/1076
Well File No. _____

3.0 PALYNOLOGY

PE904922

This is an enclosure indicator page.
The enclosure PE904922 is enclosed within the container PE904920 at this location in this document.

The enclosure PE904922 has the following characteristics:

ITEM_BARCODE	= PE904922
CONTAINER_BARCODE	= PE904920
NAME	= Flounder 2 Species List
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Flounder 2 Species List. Page 1 of 4.
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W542
WELL_NAME	= Flounder-2
CONTRACTOR	=
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE904923

This is an enclosure indicator page.
The enclosure PE904923 is enclosed within the container PE904920 at this location in this document.

The enclosure PE904923 has the following characteristics:

ITEM_BARCODE	= PE904923
CONTAINER_BARCODE	= PE904920
NAME	= Flounder 2 Species List
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Flounder 2 Species List. Page 2 of 4.
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W542
WELL_NAME	= Flounder-2
CONTRACTOR	=
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE904924

This is an enclosure indicator page.
The enclosure PE904924 is enclosed within the container PE904920 at this location in this document.

The enclosure PE904924 has the following characteristics:

ITEM_BARCODE	= PE904924
CONTAINER_BARCODE	= PE904920
NAME	= Flounder 2 Species List
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Flounder 2 Species List. Page 3 of 4.
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W542
WELL_NAME	= Flounder-2
CONTRACTOR	=
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE904925

This is an enclosure indicator page.
The enclosure PE904925 is enclosed within the container PE904920 at this location in this document.

The enclosure PE904925 has the following characteristics:

ITEM_BARCODE	= PE904925
CONTAINER_BARCODE	= PE904920
NAME	= Flounder 2 Species List
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Flounder 2 Species List. Page 4 of 4.
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W542
WELL_NAME	= Flounder-2
CONTRACTOR	=
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

54

BASIN GIPPSLAND BASIN BY David TAYLOR

WELL NAME FLOUNDER-2 DATE 19 April 1971 , ELEV. +99'

Foram Zonules

		Highest Data	Quality	2 Way Time	Lowest Data	Quality	2 Way Time
MIOCENE	A				1300	4	
	Alternate						
	B	1350	3		1730	3	
	Alternate						
	C	1030	3		3100	3	
	Alternate						
	D_1	3150	3				
	Alternate						
	D_2				6289	1	
	Alternate						
	E	6391	1		6416	4	
	Alternate						
	F						
	Alternate						
	G						
	Alternate						
	H_1						
	Alternate						
	H_2						
	Alternate						
OLIGOCENE	I_1						
	Alternate						
	I_2						
	Alternate						
	J_1	6492	4		6492	4	
	Alternate						
	J_2						
	Alternate						
EOC.	K						
	Alternate						
	Pre K	6743	2		6930	2	

SWC at 6492' is below log correlation of top of channel fill — suggest possible error in labeling.

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 _____

BASIN GIPPSLAND DATE June 1971

WELL NAME FLOUNDER -2 ELEVATION +99 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
MIOC.	T. bellus										
	P. tuberculatus	6492 (6390)	2			1.485	6492 (6393)	2			1.485
EOCENE	U. N. asperus										
	L. N. asperus										
	P. asperopolus	6595 (6496)	1			1.505	7093 (6994)	0			1.597
	U. M. diversus	7207 (7108)	0			1.618	7480 (7381)	0			1.667
	L. M. diversus										
PALEO-CENE	L. balmei	7560 (7461)	2			1.680	7710 (7611)	2			1.707
	T. longus	8242 (8143)	1			1.795	9300 (9201)	2			1.983
LATE CRETACEOUS	T. lilliei										
	N. senectus										
	C. trip./T.pach.										
	C. distocarin.										
	T. pannosus										
EARLY CRETACEOUS	C. paradoxa										
	C. striatus										
	U. C. hughesii										
	L. C. hughesii										
	C. stylosus										
Pre-Cretaceous											

COMMENTS: Depth of swc 20 is uncertain, probably mislabled and suspect it should be 6392 rather than 6492 feet.

T.D. 9321' (1.983)

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 / A.D.Partridge, DATE June 1971

DATA REVISED BY: CHECKED: L.E.S. DATE Dec. 1971

BASIN GIPPSLAND DATE

WELL NAME FLOUNDER-2 ELEVATION +99 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
MIO.	P. tuberculatus										
EOCENE	U. N. asperus										
	M. N. asperus										
	L. N. asperus										
	P. asperopolus	6592	0				7093	0			
	U. M. diversus	7207	0				7480	0			
	M. M. diversus										
	L. M. diversus										
PALEOCENE	U. L. balmei	7560	3				7710	3			
	L. L. balmei	8099	2				8149	2			
	T. longus	8242	0				9300	2			
LATE CRETACEOUS	T. lilliei										
	N. senectus										
	C. trip./T.pach.										
	C. distocarin.										
	T. pannosus										
EARLY CRETACEOUS											
PRE-CRETACEOUS											

COMMENTS: DINOFLAGELLATE ZONES
W. edwardsii Zone 6743 (1)
W. thompsonae Zone 6844 (1) — 7093 (1)
W. ornata Zone 7333 (1) — 7480 (1)
Deflandrea druggii 8242 (1) — 8299 (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/ADP DATE June 1971 & Dec. 1971

DATA REVISED BY: ADP DATE Jan. 1975

4.0 South Channel Mapping Report

TABLE: 1 DEPTH TO MAPPED HORIZONS

"SOUTH CHANNEL MAPPING REPORT" BY ESSO. (D GARRAD)

14 JUN 88

DEPTH (MSS) 14 JUN 1988

Doc. 2927L/10

HORIZON	CODE	TERAGLIN-1	EAST HALIBUT-1	PILOTFISH-1A	HALIBUT-1	FLOUNDER-1	FLOUNDER-2	FLOUNDER-3	FLOUNDER-6	MACKERAL-1	MACKERAL-3
Water bottom	0001	79	85	206	72	87	99	111	93	98	100
Miocene unit	1000	nl	684	nl	497	615	628	820	218	556	nl
" " "	1200	nl	827	1179	748	719	806	1040	817	826	863
" " "	1520	996	1015	1436	1066	848	879	1233	889	1210	1182
" " "	1300	1077	1121	1565	1186	927	940	t	956	1396	1371
" " "	1350	1302	1501	1619	1587	1136	1193	1288	1213	np	np
" " "	1400	1583	1791	1914	np	1287	1348	t	1369	np	np
" " "	1450	1732	1919	2153	np	1393	1436	1457	1427	np	np
Base of Limestone	1500	2024	1968	2352	1758	1603	1702	1718	1630	1661	1770
Lakes Entrance Fm	1600	2114	2146	2520	2058	1787	1813	1829	1853	2139	2145
" " "	1700	2279	2284	2622	2173	np	np	-	np	2297	2304
Top of Latrobe	2000	2400	2374	2894	2275	1899	1938	1967	1907	2376	2368
Base Marlin Chan.	2100	2406	nt	2904	nt	nt	nt	nt	nt	t	t
61Ma Unconformity	2610	2647	np	t	2840	t	t	t	t	2751	np
63Ma Unconformity	2680	2842	np		3032	2400	2408	2407	2368	2885	np
68Ma Unconformity	2680	2974	np		np	2540	2536	2544	2745	2956	np
Intra-T. Longus Seismic Marker	2710	3281	np	3122	np	2791	np	np	np	np	np

NOTE: nl - not logged
np - not pentrated
t - trucated

APPENDIX 1

RAYVNMO MODELLING

The RAYVNMO program uses interval thickness and interval velocity pairs to perform raytracing. The program assumes a simple layercake model, and therefore gives no indication of dip effects and raypath distortions that may be inherent in the real data. An anisotropy factor may be included in any layer. Cable paramenters are input according to the parameters used by the particular seismic survey being matched.

Results of the RAYVNMO raytracing are given in the following table.

An anisotropy factor (k) of 1.0 was used in the Lakes Entrance Formation (between 1500 and 2000).

WELL NAME	TERAGLIN-1			EAST HALIBUT-1			PILOTFISH-1A		
HORIZON Code	Z above	VINT above	VNMO	Z above	VINT above	VNMO	Z above	VINT above	VNMO
0001	79	1480	1480	85	1480	1480	206	1480	1480
1000				599	2303	2209			
1200				143	2860	2338	973	2446	2263
1250	917	2490	2404	188	3159	2484	257	3253	2429
1300	81	3115	2460	106	3072	2526	129	3685	2522
1350	225	3571	2648	380	3707	2790	54	3724	2555
1400	281	3512	2777	290	3625	2900	295	3734	2704
1450	149	3634	2837	128	4000	2961	239	3464	2772
1500	292	3539	2923	49	3500	2973	199	3184	2817
1600	90	3333	2942	178	3236	2996	168	3111	2812
1700	165	2973	2950	138	3000	3000	102	2615	2831
2000	121	3361	2969	90	3214	3011	272	3126	2849

* TABLE CONTINUED OVER.

APPENDIX 1 CONTINUED

WELL NAME	MACKEREL-1			MACKEREL-3		
HORIZON Code	Z above	VINT above	VNMO	Z above	VINT above	VNMO
0001	98	1480	1480	100	1480	1480
1000	458	2195	2091			
1200	270	2784	2329	762	2490	2371
1250	384	2833	2449	319	2774	2468
1350						
1400						
1450						
1500	265	3581	2718	399	3746	2830
1600	478	3274	2844	375	3318	2915
1700	158	2926	2854	159	3057	2931
2000	79	2981	2862	64	3047	2934

APPENDIX 1 CONTINUED

WELL NAME HORIZON Code	HALIBUT-1 Z above	HALIBUT-1 VINT above	HALIBUT-1 VNMO	FLOUNDER-1 Z above	FLOUNDER-1 VINT above	FLOUNDER-1 VNMO	FLOUNDER-2 Z above	FLOUNDER-2 VINT above	FLOUNDER-2 VNMO	FLOUNDER-3 Z above	FLOUNDER-3 VINT above	FLOUNDER-3 VNMO	FLOUNDER-6 Z above	FLOUNDER-6 VINT above	FLOUNDER-6 VNMO
0001	72	1480	1480	88	1480	1480	99	1480	1480	111	1480	1480	93	1480	1480
1000	426	2201	2123	527	2234	2149	528	2211	2111	709	2419	2301	524	2185	2094
1200	252	3231	2573	167	2738	2305	178	2871	2311	220	3142	2499	199	2745	2271
1250	317	3202	2695	66	3000	2373	73	3174	2387	193	3477	2640	72	3200	2368
1300	120	3076	2719	79	3038	2421	62	3100	2423				67	3116	2406
1350	401	3713	2932	209	3190	2544	252	3252	2564	55	3235	2658	257	3294	2563
1400				151	3471	2641	155	3299	2634			156	3319	2613	
1450				106	3365	2683	88	3385	2670	169	3347	2718	58	3412	2657
1500	171	3842	3007	210	3043	2715	266	3148	2730	261	3089	2759	203	3147	2705
1600	300	3209	3040	184	319	2755	111	3171	2757	111	3041	2776	223	3186	2762
1700	105	3134	3047												
2000	111	3083	3053	112	3200	2782	125	3205	2787	138	2968	2785	54	3176	2774

TABLE CONTINUED OVER

TABLE 2. WELL TWO-WAY-TIMES AND LAGS TO LATROBE HORIZONS

14 JUN 1968

14 JUN 1968

Doc. 2927L/11

HORIZON	TOP OF LATROBE (2000)			61MA (2610)			65MA (2635)			68MA (2680)			INTRA-T. LONGUS (2710)		
	DEPTH (MSS)	TRUE TWT	LAG (TWT)	DEPTH (MSS)	TRUE TWT	LAG (TWT)	DEPTH (MSS)	TRUE TWT	LAG (TWT)	DEPTH (MSS)	TRUE TWT	LAG (TWT)	DEPTH (MSS)	TRUE TWT	LAT (TWT)
TERAGLIN-1	2400	1.700	24	2647	1.828	25	2842	1932	23	2974	1.994	31	3281	2.143	24
EAST HALIBUT-1	2374	1.662	5	np	–	–	np	–	–	np	–	–	np	–	–
PILOTFISH-1A	2894	2.146	18	t	–	–	t	–	–	–	–	–	3122	2.265	25
HALIBUT-1	2275	1.602	7	2.840	1.906	14	3032	2.002		np	–	–	np	–	–
FLOUNDER-1	1899	1.439	20	t	–	–	2400	1.734		2510	1.793	30	2791	1.947	30
FLOUNDER-2	1938	1.472	20	t	–	–	2408	1.746		2536	1.812	20	np	–	–
FLOUNDER-3	1967	1.468	15	t	–	–	2407	1.726		2544	1.806	24	np	–	–
FLOUNDER-6	1907	1.451	28	t	–	–	2368	1.711		2474	1.769	31	np	–	–
MACKEREL-1	2376	1.716	21	2751	1.916	22	2885	1.982		2956	2.02	28	np	–	–
MACKEREL-3	2368	1.696	-8*	np	–	–	np	–	–	np	–	–	np	–	–

* The anomalous lag at Mackerel-3 may be due to poor checkshot data. To avoid creating an anomalous trend on the Vavg map seismic time (lagged) was used to calculate Vavg at Mackerel-3

TABLE 3: VELOCITIES AND CONVERSION FACTORS TO TOP OF LATROBE GROUP

WELL	VNMO	VAVG	CF
Teraglin-1	2995	2823	0.9426
East Halibut-1	3019	2857	0.9463
Polotfish-1A	2855	2697	0.9447
Halibut-1	3010	2840	0.9435
Flounder-1	2775	2639	0.9510
Flounder-2	2772	2633	0.9500
Flounder-3	2717	2680	0.9513
Flounder-6	2780	2628	0.9426
Mackerel-1	2930	2775	0.9471
Mackerel-3	2970	2835	0.9545

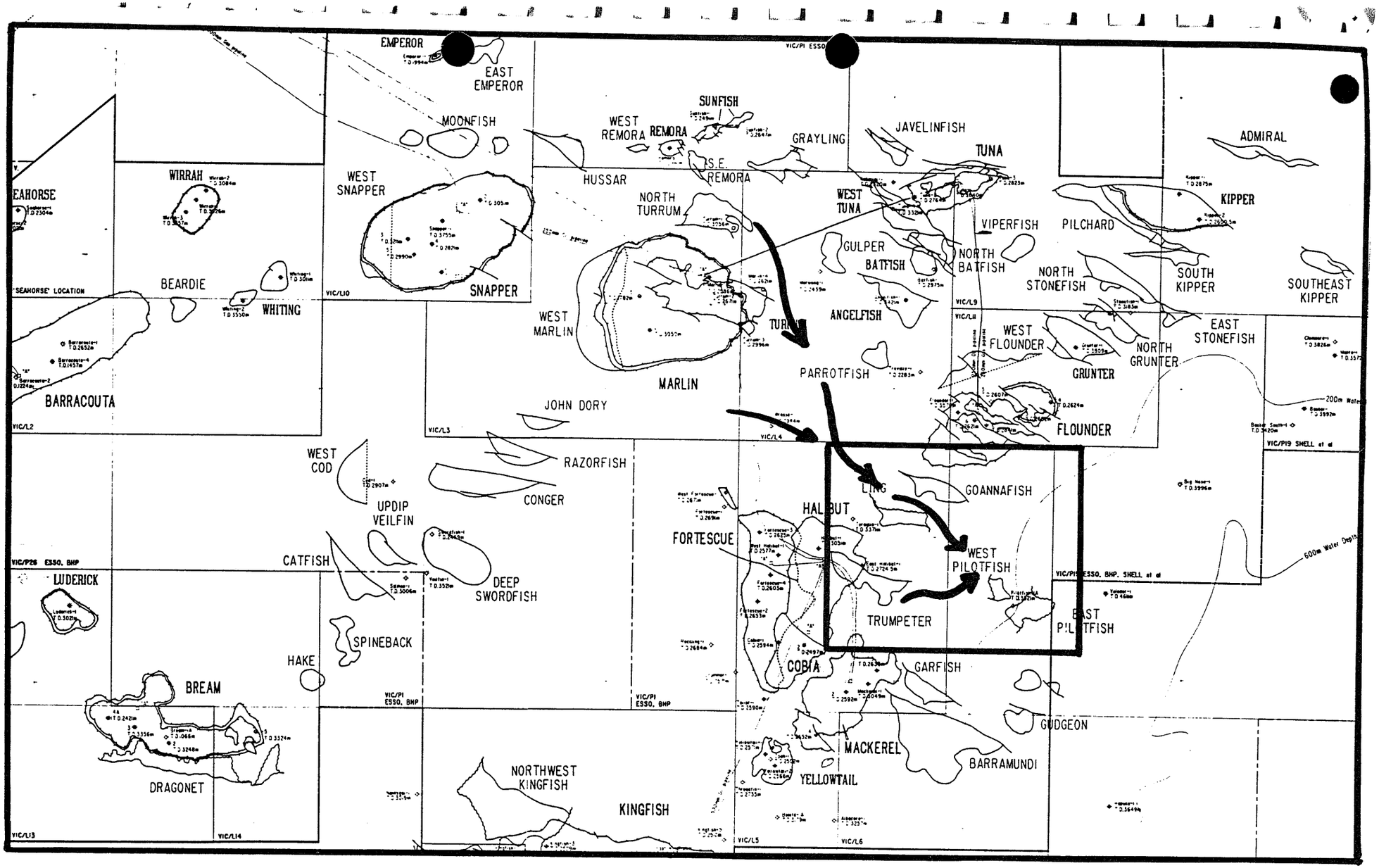


FIG. 1 : Locality map. Arrows indicate trend of Marlin Channel, and Top Latrobe Group channelling.

14 JUN 1988

5.0 F.I.T. DATA

PE904926

This is an enclosure indicator page.
The enclosure PE904926 is enclosed within the container PE904920 at this location in this document.

The enclosure PE904926 has the following characteristics:

ITEM_BARCODE	= PE904926
CONTAINER_BARCODE	= PE904920
NAME	= Flounder 2 F.I.T. Data
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= FIT
DESCRIPTION	= Flounder 2 Formation Interval Test (F.I.T.) Data
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W542
WELL_NAME	= Flounder-2
CONTRACTOR	= Schlumberger
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

6.0 Enclosures

PE904921

This is an enclosure indicator page.
The enclosure PE904921 is enclosed within the container PE904920 at this location in this document.

The enclosure PE904921 has the following characteristics:

ITEM_BARCODE	= PE904921
CONTAINER_BARCODE	= PE904920
NAME	= Structure Top of Pay
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MAP
DESCRIPTION	= Flounder 2 Structure Top of Pay. Plate 1 of Authorization to Drill. In Well Summary Folder.
REMARKS	=
DATE_CREATED	= 28/02/69
DATE_RECEIVED	=
W_NO	= W542
WELL_NAME	= Flounder-2
CONTRACTOR	=
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE603227

This is an enclosure indicator page.
The enclosure PE603227 is enclosed within the container PE904920 at this location in this document.

The enclosure PE603227 has the following characteristics:

ITEM_BARCODE	= PE603227
CONTAINER_BARCODE	= PE904920
NAME	= Flounder 2 Mud Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Flounder 2 Mud Log
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W542
WELL_NAME	= Flounder-2
CONTRACTOR	= Exploration Logging INC.
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)

PE603228

This is an enclosure indicator page.
The enclosure PE603228 is enclosed within the container PE904920 at this location in this document.

The enclosure PE603228 has the following characteristics:

ITEM_BARCODE	= PE603228
CONTAINER_BARCODE	= PE904920
NAME	= Continuous Dipmeter
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= Flounder 2 Continuous Dipmeter
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	= 29/04/69
W_NO	= W542
WELL_NAME	= Flounder-2
CONTRACTOR	= Schlumberger
CLIENT_OP_CO	= Esso Australia

(Inserted by DNRE - Vic Govt Mines Dept)