Natural Resources and Environment

AGRICULTURE • RESOURCES • CONSERVATION • LAND MANAGEMENT

BREAM 2

W540 A

DEPT. NAT. RES & ENV
PE903953

WELL COMPLETION SUMMARY

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
STATUS. Suspended oil & gas discovery	SPUD. 23-2-69 COMPLETED 24-4-69. T.D. 10,657'	147° 47' 53" E 38° 31' 21" S ESSO. WILDCAT. 540 26/7/74

BREAM - 2

§ Separate logs

✓	IES	Run 1	2" & 5"	715' – 3536'	.
✓	"	" 2	" "	3500 – 6727	.
✓	"	" 3	" "	6678 – 10044	.
✓	"	" 4	" "	8000 – 10650	.
✓	BHCS/GR	" 1	2" & 5"	715 – 3522	.
✓	BHCS	" 2	" "	3502 – 6725	.
✓	BHCS	" 3	" "	6679 – 10036	.
✓	BHCS/GR	" 4	" "	10000 – 10648	.
✓	FDC	" 1	2" & 5"	3500 – 6726	.
✓	"	" 2	" "	6678 – 10043	.
✓	"	" 3	" "	8000 – 10656	.
✓	GRN	" 1	2" & 5"	5728 – 6728	.
✓	"	" 2	" "	8500 – 9200 9700 – 10044	.
✓	FIT	" 1	Tests 1–10		.
✓	"	" 2	" 1–5		.
✓	"	" 3	" 1–4		.
✓	"	" 4	" 1 & 2		.

EX
Sec
Dep
Exe ✓ Cont. Dipmeter " 1. 8900 – 10596 and 2" & 5" .
Exe
Exe
Exe ✓ Completion IES log for 2". 2 copies COMPLETION LOG
Exe ✓ Side wall core descriptions. Runs 1, 2, 3 & 4. Repeat of 4.
Exe CORE ANALYSIS RESULTS. 1–14. B.M.R.
Exe ✓ Core descriptions 1–14

CO
Ge
Chi
Ma
Dir
Dir
Dir ✓ Description of Cores 2, 8 & 9 from B. Chenhall (Sydney Uni) Thin section
Dir [Core N°14. Interval 10635-657. 2 Core Boxes.]
Dir
Ma ✓ Petrographic Descriptions of Volcanics from 6392-6395. 2 copies
Ma ✓ Core Lab. Graphology 760 - 10657.
Ma ✓ Core Lab. report for Core, Mud & Cutting analysis includes Completion coregraph & Graphology
Ma Hydrocarbon
Ma
Ma ✓ Micro Paleontology report by David Taylor
Ma
MI ✓ Palynology report by L. E Stover & A. D Partridge. Plus revision.
Ma ✓ Cross section of Bream 2. VITRINITE REFLECTANCE BY AMOCO 220486.
Ma
Ma ✓ Structure Top of Latrobe. Hydrocarbon Ref. – Subsurface Oil EPRG 4-1898
Ma
Ma ✓ Time Depth Curve. IN BREAM FIELD FILE: TOP LATROBE COARSE CONTOURS MAP
PR ✓ Weekly Reports 24/2/69 – 28/4/69.
SC ✓ Completion Report (General). Page 1 Basic Pages 2-3 Interp.
Ma
Ma ✓ Structure Contours Latrobe Delta Topographic Surface.
Chi
Dir
Dir Cores 1–14 and cuttings 760'–10,657' were received by B.M.R. 5/12/73.
Dir
Dir

BREAM-2

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46 pges

COMPLETION REPORT

GENERAL

540 A.

INTERPRETATIVE

Name of Well: Bream 2.

Location: Gippsland Basin, Victoria, Australia.
Shot Point 915, Line EH-201A.

Longitude	147°	47'	~~53~~ 46" E
Latitude	38°	31'	~~24~~ 22" S

Permit Vic/P1.

Spud Date: February 23, 1969.

Completion Date: April 24, 1969.

Elevation: Mean Sea Level, R.T. 31'. 9.45

Water Depth: 191'. 58.22

Total Depth: 10,657'. 3248.25

Well Status: Suspended oil and gas discovery.

Casing & Cement Plugs: See Completion Log for details.

Cores: Cut 14; total footage 503'; recovered 430'; 85.5%.

Mud Logs: The well was logged by Core Laboratories Inc., from 760' to 10,657'.

Electric Logs: IES 715-10657'; BHCS 715-10657'; FDC 3550-10657'; GRN 3550-10044'; Velocity Survey 3550-6726'.

5728

Tests: In Bream 2 a total of 21 wireline tests were run.

In the interval 5934-6504 7 tests recovered gas, or gas condensate (5934', 6285', 6292', 6303', 6306' and 6315'). At 6347' and 6326' two recovered gas and oil; one wireline test at 6504' recovered water and mechanical failures occurred at 6302' and 6326' (see Completion Log for details). Nine tests were run between 8000' and 9200'; five recovering gas. (See Completion Log for details.

BREAM-2

GEOLOGIC SUMMARY

Formation	Depth (ft.)
Gippsland Formation	Sea floor. 58-22
Lakes Entrance Formation	5750(-5719) 1727-76
Latrobe Delta Complex	6131(-6100) 1868-73
N. asperus	6131(-6100)
P. asperopolus	6653(-6622)
M. diversus	6966(-6953)
L. balmei	7613(-7582)
Upper Cretaceous	9461(-9430)

Lithologic Description: The Gippsland Formation consists of skeletal and micritic-skeletal limestones, grading downward into mudstone. A typical section of mudstone and glauconitic shale was penetrated in the Lakes Entrance Formation. Very good reservoir quality coarse-grained sandstones with minor fine grained sandstone were drilled in the Latrobe sections, as expected. The sands are interbedded with siltstone, shale and coal, as is typical of the Latrobe elsewhere in the basin. The volcanics are in altered amygdaloidal basalt and thought to be part of an igneous body intruded at a shallow depth.

Zonation:

For aminifer al zonation by David J. Taylor.

Age.	Zone	Top
Upper Miocene	B	1200
Middle Miocene	C	2150
	D	3100
	E	4750
Lower Miocene	F	5100
	G	5300
	H	5550
Oligocene	I	5750
	J	5900

GEOLOGY OF FEATURE

The Bream feature, an east-west trending faulted anticline, is located 16 miles south of the Barracouta field and 23 miles west of Kingfish. Across the anticline a north-south striking horst-graben system is formed by faults which appear to have originated near the end of the Oligocene. This faulting makes a feature which is structurally fairly complex.

Hydrocarbons:

A thick hydrocarbon column was encountered in the N. asperus zone of the Latrobe Delta Complex. Sandstones within this reservoir are of excellent reservoir quality. Sands are predominantly medium to very coarse grained and occasionally conglomeratic, sub angular to rounded, with fair sorting; generally friable, good to excellent porosity and permeability. Permeabilities range from 1 to 12,000 md, with an average of 970 md. This column at the top of the Latrobe consisted of 197' gross gas and 35' of gross oil.

Additional Shows:

14' of net gas was encountered in the Lakes Entrance Formation from 5926-5940'. An FIT at 5934' found this zone to be gas productive. Other gas sands encountered within the Latrobe Delta Complex are as follows:

Interval	Net Gas
8151-8161	8'
8406-8416	7'
8603-8632	23'
8673-8696	18'
8940-8963	14'

Several thin sands are probably gas productive below 10,200', but hole conditions below 9900' precluded wireline testing.

Enclosures:

Structure - map Top of Latrobe

Structure Cross Sections A-A'

Time Depth Curve

Completion Log

2. PETROGRAPHIC DESCRIPTIONS

A - J. BARRY HOCKING

B - R.L. GRAHAM

2nd Copy

540A

Geological Survey of Victoria

PETROGRAPHIC DESCRIPTION OF VOLCANICS FROM 6,392-6,395 FEET IN ESSO'S BREAM 2 WELL

J. Barry Hocking

February, 1970

Unpublished Report No. 1970/6

PETROGRAPHIC DESCRIPTION OF VOLCANICS FROM 6,392-6,395 feet IN ESSO'S BREAM 2 WELL

1. Sample: Core sample selected from Core 9, in the interval 6,392 to 6,395 feet, from Esso's Bream 2 well, Gippsland Shelf.

2. Hand Specimen Description (Regd. No. 16613)

The rock is a greenish black (5GY) to olive black (5Y), very fine-grained, hard and crystalline, and appears to be basaltic. In addition to feldspars, there are dark green sub-rounded patches of clay mineral, but no obvious phenocrysts.

3. Thin Section Description (Slide No. 9564)

3.1 Review

The thin section reveals that the rock is a basic igneous type and that it is inequigranular-porphyritic (though not markedly), fine-grained, and hypocrystalline (?), with a pilotaxitic texture. It is composed of rare, severely altered phenocrysts in a groundmass of plagioclase feldspar, pyroxene, iron ore, chlorite and ?volcanic glass. The relative proportions are estimated visually to be:

	%
Phenocrysts	negl.
Plagioclase	45
Pyroxene	20
Chlorite/?glass	30
Iron Ore	5

3.2 Details

There is only one subhedral crystal in the thin section that can be considered as a small phenocryst, 1.4 mm long and now completely chloritised. It has a hexagonal- pyramidal outline, and was probably olivine prior to alteration.

In the groundmass the plagioclase feldspar (sodic labradorite) occurs as laths up to 1.7 mm long (average slightly more than 1 mm) as well as less common interstitial crystals. The laths are randomly orientated and frequently interlocking. As a result of chlorite replacement the plagioclase crystals have a somewhat tattered appearance with the chlorite occurring around the crystal margins and along fine cracks within. The alteration is sometimes rather severe.

The pyroxene is colourless to faint pink augite, which is slightly titaniferous, in the form of subhedral to anhedral crystals up to 0.6 mm (average approx. 0.3 mm). The crystals are occasionally twinned. The augite has undergone the same partial chloritisation as the plagioclase. Carbonate is rarely an alteration product.

Chlorite, one of the more abundant constituents of the rock, is somewhat variable in its growth forms (and, hence, its optical properties). Other than its partial replacement of the plagioclase and augite, and its complete replacement of the olivine phenocryst, it also occurs as shapeless patches up to 3 mm across. The latter sometimes have the appearance of being former voids or vesicles in the rock. A layer of brownish chlorite lines the walls of the voids which have then been filled with a crenulated layer of light green to honey brown material, which is isotropic, and, in the centre of the voids, is brownish chlorite in the form of clusters of spherulites or as concentric lamellae.

The isotropic material could be volcanic glass - hence the reference, under review, that the rock is "hypocrystalline (?)" - in which case the spherulitic chlorite that it encloses could be devitrefied glass. However, but for its paler colour, it also resembles the mineraloid chlorophaeite which is found associated with chlorite in a similar growth form in the Perch volcanics (Hocking, 1969).

Iron ore occurs as long threads of skeletal ?ilmenite up to 1.4 mm long.

4. Conclusions

4.1 Rock Classification

The rock is a partially altered olivine basalt.

4,2 Stratigraphic Implications

Mineral composition and texture of this olivine basalt are comparable to those of other olivine basalts from South Gippsland and the Gippsland Shelf such that one might group it with the 'Older Volcanics'.

Barry Hocking

30th January, 1970

J.B. HOCKING
Geologist,
Sedimentary Basin Studies Section

2. B. PETROGRAPHIC DESCRIPTION

by

R.L. GRAHAM.

BREAM – 2

BASIC

540A

Thin Section Descriptions from Bream 2 March 25, 1969.

Thin sections from three hand specimens were cut and described by Brian Chenhall, a Ph.D. Candidate at Sydney University.

No.3 Core 2, Bream 2 6112½'

"Coarse arenite with medium grain size. The rock contains rather rounded masses of green glauconite (indicating perhaps glauconite is reworked), with sub-angular quartz grains set in a matrix consisting chiefly of carbonate (?calcite). A few grains of an opaque mineral having ragged anhedral outlines are scattered throughout the rock - some of these are associated with the glauconite. The opaque is possibly magnetite. Scarce feldspar (perthite) occurs as subrounded grains within the rock. Accessory minerals present include magnetite and hornblende".

N.B. The carbonate material is more probably siderite considering the extremely ferruginous nature of the rock. The opaque mineral is pyrite. The rock in hand specimen can be seen to be very pyritic.

No.1 Core 8 Bream 2 6371'

"Medium grained basaltic igneous rock, with interstitial texture defined by euhedral laths of labradorite plagioclase. Former mafic material (pyroxene) and glassy interstices replaced by fine grained aggregates of carbonate and chalcedony. Vesicles also show fillings of these minerals. Primary ilmenite remains. Partially carbonate altered basalt".

No.2 Core 9 Bream 2 6419'

"Coarse grained amygdaloidal volcanic with intergranular texture and consisting of plagioclase (labradorite) and light pink clinopyroxene (augite?). A few euhedral montmorillonite pseudomorphs may be after olivine. Interstitial material (formerly glassy) replaced by fine aggregates of

Refer Report 2 No 9

dusty opaque and greenish layer silicates (montmorillonite or smectite materials). Amygdales are also filled with similar material with cores of light coloured (?) nontronite layer silicate..

Somewhat altered basalt".

Most of the basalt cored was very fine grained, the hand specimens thin sectioned being unusual. This, together with the amount of alteration revealed by thin sectioning, especially the strongly carbonate altered basalt capping the cored interval, would indicate that the rock is either an extrusive or, more probably, was intruded very close to the surface.

A sample from Core 9 (6419') was tested for magnetic susceptibility by Phil Cooney. The measured magnetic susceptibility was 2.1×10^{-3} C.g.s. which is well within the normal range for this rock type.

R.L. Graham.

RLG:AW
March 25, 1969.

3.0. CORE DESCRIPTION

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

BASIC

Core No. 1

WELL: Bream 2

Interval Cored 6076'-6109' ft., Cut 33 ft., Recovered 33 ft., (100 %) Fm. Latrobe

Bit Type , Bit Size in., Desc. by BRG/BW Date 4/3/69.

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Lithology	Interval (ft.)	Descriptive Lithology
8 6 4 2				
6080			6076'-6095'	mudstone – dk br to lt br to dk grn mottled, slightly dolomitic, m pt very f sdy, highly glauconitic, micaceous, sparsely pyritic: dense. Glauconite increasing in grain size (to cg) and abundance towards base of section. All original sedimentary structure destroyed by burrowing, producing an essentially horizontal, irregular, wavey, non-parallel, discontinuous lamination. Bleeding gas, no fluorescence or cut, slight HC odour and taste in siltier portions at base.
6085				
6090				
6095		S	6095'-6109'	– mudstone – aa.
6100				Contact between two mudstone intervals sharp and marked by a dip discordance.
6105				Samples for core analysis 6095' 6098' 6106'
6109				Samples for paleo and source analysis 6084, 6089, 6097, 6102.

REMARKS.

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 2

WELL: BX

Interval Cored 6111 - 6166 ft., Cut 55 ft., Recovered 53 ft., (96 %) Fm. LATROBE ?

Bit Type C 20 , Bit Size 8 5/16 in., Desc. by R.L. GRAHAM Date 12/3/'69

Depth & Coring Rate (min./ft.)	Graphic (1" 5')	Shows	Interval (ft.)	Descriptive Lithology
0 5 10 15 20				
11			6111 - 6135'	SANDSTONE greenish, fine-crs grained with some rounded granule-pebble sized qtz grains and glauconite pellets; poorly sorted, v. glauconitic + pyritiferous. Pyrite forms cement and aggregates. Partially clay choked, hd, tight. Some hydrocarbon odour and faint yellowish cut. Some dolomite patches and a band 1½" thick almost solid pyrite at 6112½. Gradually becomes less pyritif. and a little less glauc. after 6121' — and a little more porous + perm. but is badly clay choked. Some min fluor. The more porous and coarser sections give better odour + cut.
5			6135' - 6162'	SANDSTONE: v. silty and occ. shaly with shale partings. Mainly f.gr. but grades from v.f - med gr. Heavily burrowed and burrow tubes may contain v. crs grained qtzose material. Lt. brown — dk. greyish brn, with flat lying horiz. laminations where not burrowed; carbonaceous with plant fragments. Mainly qtzose + well sorted, hd, tight. Some hydrocarbon odour and weak yellowish cut. Micaceous, occ. pyrite + glauc.
10		-O-		
15			6162' - 6164'	SANDSTONE lt brown - buff, friable, qtzose, very poorly sorted, med - pebble sized. Sub-angular with rounded qtz pebbles. Porous + perm. No odour or cut but doesn't appear obviously water wet. Slightly mic
20		-O-		
25				
30				
5				
0				
2				

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 3

WELL: BREAM 2

Interval Cored 6166 - 6212 ft., Cut 46 ft., Recovered 0 ft., (0 %) Fm. LATROBE

Bit Type C 20 , Bit Size 8 5/8 in., Desc. by R. L. GRAHAM Date 12-3-'69

Depth & Coring Rate (min./ft.)	Graphic (1" 5')	Shows	Interval (ft.)	Descriptive Lithology
0 5 10 15 20				
6166				
10				
80				
95				
95				
200				
205				

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

4915

Core No. 4

WELL: BREAM #2

Interval Cored 6216-53' ft., Cut 37 ft., Recovered 33 ft., (89 %) Fm. LATROBE

Bit Type C 8 , Bit Size 8 5/16" in., Desc. by R L GRAHAM Date 13/3/'69

Depth & Coring Rate (min./ft.)	Graphic (1" 5')	Shows	Interval (ft.)	Descriptive Lithology
0 5 10 15 20 25				
			6216-19'	SANDSTONE dk brown, dirty, v. carbon, poorly sorted, med-v. crs. grained with occ. rounded qtz pebbles, sub-ang-rounded, micaceous, tight, burrowed, irreg. shale partings. Hydro. odour. No fluor. Weak yellow cut.
			6219-19½'	SHALE: b[illegible], s[illegible]y, v. carb., micac., occ. burrow. Some faint // laminae due to v. thin sand streak.
			6219½-25½'	SANDSTONE: Brown to buff, fine to mostly crs grained, loose and friable, fairly well sorted, v. micaceous, sub-angular, some carbon. material. Fair-good poros. + perm. Hydro. odour. Poss. faint fluor. Faint yellow cut.
			6225½-27'	SHALE: Dk grey to black, v. silty, v. carbon, micaceous, one large (5cm) pyrite concretion.
			6227-45'	SAND. As for 6219½'-25½' but gradually becoming coarser and very friable. Grain size increases to crs to granular. Occ. irreg. shale laminations and coaly bands to 6235' and large scale cross bedding of about 5°-10°. Very porous + perm. Good odour.
			6245-46'	SILTSTONE dk brown, v carbon, well sorted with occ. sandy stringers, micaceous.
			6246-49'	SANDSTONE. grey, med-crs grained, fair sorting, sub-ang to sub round, qtzose, very friable + sugary, v. porous + perm. Slight hydro. odour, no fluor. Faint yellow cut.

REMARKS:

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 5

WELL: BREAM #2

Interval Cored 6253 – 79 ft., Cut 26 ft., Recovered 5 ft., (19 %) Fm. LATROBE

Bit Type C 8 , Bit Size 8 5/16" in., Desc. by R. L. GRAHAM Date 14/3/'69

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0 5 10 15 20 25				
53			53'-55½'	SANDSTONE · buff, f-mgr., well sorted, qtzo-feld, sub-ang – sub-rnd, micac, sl. calc, faint irreg. discont. carb. laminae, + minor shale parting at base, pyritic, · poros. + perm. good · Faint hydro odour · No fluor. Sl. cut.
54		☿		
55				
56				
57		☿		
58			55½'-58	SANDSTONE: dk brown (prob. due to mud invasion), med – v. crs grained with some pebbles to 1cm, qtzose – with clear milky + blue qtz, sub ang – round, little clay · matrix, non calc, some pyrite aggregates. Very porous + perm. Faint hydro · odour, no fluor, sl. yellow cut · Bleeding gas.
79				

REMARKS:

6715

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. - 6

WELL: BREAM 2

Interval Cored 6279-6280 ft., Cut 1 ft., Recovered 0·5 ft., (50 %) Fm. LATROBE

Bit Type C 14A , Bit Size 8 5/16" in., Desc. by R. L. GRAHAM Date 14-3-'69

Depth & Coring Rate (min./ft.)	Graphic (1" 5')	Shows	Interval (ft.)	Descriptive Lithology
0 10 20 30 40 50				
				Pebble Conglomerate. Lt brown, poorly sorted, open framework of rounded qtz pebbles to 2 cms. Matrix of crs grained well sorted, subang – sub·round, sand grains. Porosity and perm. fair Poss. weak hydro. odour. No fluor. Faint yellow cut.

REMARKS:

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 7

WELL: BREAM 2

Interval Cored 6294 – 6334 ft., Cut 40 ft., Recovered 40 ft., (100 %) Fm. LATROBE

Bit Type C 20 , Bit Size 8 5/16" in., Desc. by R.L. GRAHAM Date 15/3/'69

Depth & Coring Rate (min./ft.)	Graphic (1" 5')	Shows	Interval (ft.)	Descriptive Lithology
0 5 10 15 20				
6294			6294'-6298½'	Irregularly interbedded and interlaminated SHALE, SHALY SILTSTONE and v.f.gr. qtzose SANDSTONE, with occ. coarser grained lenses, and pebbles. Micaceous, v. carbon., w/ carbon. streaks and laminae. Some burrowing and pyrite nodules. Some of the sandy streaks show blue white fluorescence but no cut.
6302			6298½'-6300½'	SANDSTONE: brown, med. to pebble sized grains, v. poorly sorted, qtzose w/ some shale pebbles in a sand and clay matrix. Sub. ang – rounded, sl. calc., fairly friable but tight. Has dk grey to black shaly interbeds and laminae. Sandier parts are heavily burrowed. Hydro. odour. Bluish white fluor. + good bluish white cut.
6310			6300½'-6307'	SHALE: dk grey to black, v. silty and grading in places to shaly siltstone – v carbon. + micac., pyritic in places and has some thin sandy laminae. Numerous large burrow tubes filled with sand.
6320			6307'-6309'	SANDY SHALE: dk brn, v. carb. shale containing about 30-40% med-v.crs. scattered qtz and feld. sand grains. No fluor.
			6309'-6313'	SANDSTONE: Similar to above but with patchy fluor. only in cleaner poss. burrowed areas; no shale parting, + better poros. + perm due to less clay matrix. Grades into a cleaner sand at 6312' which is grey, f.-m.gr., carb., no pebbles; v. burrowed, hd. tight.
6330			6313'-6313½'	Coal
			6313½'-6321'	SILTSTONE: grey, qtzose, micac., carbon., sl. pyritic, shaly, well sorted, sub. ang., hd., tight.

REMARKS:

6321'-6326': SHALE: dk. brownish grey, v. carbon, coaly, micac., pyritic; becomes sandier over last foot where it is v. heavily burrowed, w/ large pyritic nodules.

6326'-6332½': SILTSTONE: As for 6313½'-6321' with pyritic growths.

6332½'-6334': SANDSTONE: lt. grey, f.-m.gr, qtzose, ang-sub.rnd, well sorted, sl. micac., sl. carbon., sl. calc. Tight. Good blue white fluor., odour + good blue white cut: Burrowed

8 of 15

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 8

WELL: BREAM 2

Interval Cored 6334-74 ft., Cut 40 ft., Recovered 40 ft., (100 %) Fm. LATROBE

Bit Type C 20, Bit Size 8 5/16" in., Desc. by R.L. GRAHAM Date 15/3/'69

Depth & Coring Rate (min./ft.)	Graphic (1" 5')	Shows	Interval (ft.)	Descriptive Lithology
0 5 10 15 20				
34			6334-39'	SANDSTONE: buff, f.-v.crs gr becoming pebbly towards the base; sub ang-ang. matrix with sub-rounded pebbles to 1cm. Sl. calc, pyritic and micaceous; some even // bedding and poss. cross bedding at 5-10°. Qtzose w/ some lithic pebbles. V. porous and perm. V. strong blue white fluor. and cut. Good hydro. odour.
39			6339'-41½'	SHALE: V carb. grading to coal, black, hd, w/ parallel wavy laminae of pyrite and silt.
44			6341½'-43'	COAL: grading to v. carb. shale. The coal is mostly shiny with conchoidal fracture & quite good quality. Bleeding gas.
49			6343-47'	SHALE: as above.
54			6347'-6365'	COAL: as above grading over the last 3' to v. carbonaceous shale, as above.
59			6365'-74'	DOLOMITE: grey, v. hd, with small vughs to one cm filled with qtz and calcite. Very pyritic with small integral crystals & with large concretions to 6cms. Pyrite also fills veins and cracks. Does n't appear sandy — poss. a dolomitised limestone. Contains numerous small black metal', needle-like crystals. (manganese?)
74				

REMARKS:

9915

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 9

WELL: BREAM #2

Interval Cored 6374-6437 ft., Cut 63 ft., Recovered 63 ft., (100 %) Fm. ? LATROBE ?

Bit Type C 8 , Bit Size 8 5/16" in., Desc. by R.L. GRAHAM Date 16/3/'69

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0 5 10 15 20				
6374			6374-6437	VOLCANICS: possibly basalt: dk grey, finely crystalline groundmass of grey feldspar laths and in places what may a brownish mesostasis. Dk green phenocrysts up to 5mm are very common in places and occ. there are large irregular yellowish green phenocrysts (xenocrysts?) to 1 cm. These may be olivine or a calcic? pyroxene they are at times altered to a white subst. reacting with conc. HCl. They dk. green crystals are irregular in shape & may be diopside. The rock appears fairly calcic & contains some veins and small vughs containing carbonate material + ?zeolites. In the groundmass the edges of biotite laths present a needle-like appearance. Hornblende may also be present. The yellowish-green phenocrysts often show a dk green reaction rim which may contain biotite. Minor slickensiding is present.

REMARKS:

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 10

WELL: BREAM-2

Interval Cored 8902 - 50 ft., Cut 48 ft., Recovered 48 ft., (100 %) Fm. L D C.

Bit Type C-8 , Bit Size 8 5/16 in., Desc. by C. K. LUNT Date 30 Mar. 69

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0 5 10			8902-04'	2' SILTSTONE: lt-m-brn gry, mon calc, hd, micac, carbonac w/occas small deposits of pyrite. Const widely scat m-crs qtz grs throughout, burrows.
			8904-07'	3' SANDSTONE: lt gry, slty, vf-crs gr, hd, w.s., sr, qtzose. Occas burrows filled w/ crs-v.crs qtz grs. Thin wavy lam finely disem carb mat Spotty yell f/uor w/ wk cut
			8907-17'	10' SILTSTONE: As by 8902-04' w/ occas thin discont stks m-crs gr SS. V widely scat m-v.crs qtz grs throughout.
			8917-24½'	7½' SANDSTONE as by 8904-07' w/ fewer carbonac lam. Wk spotty yell f/uor & wk yellow
			8924½-26'	1½ SILTSTONE as by 8707-17'
			8926-29'	3' SHALE: dk gry, hd mon calc w/ freq stks pyrite along bedding planes occur. also as irreg deposits
			8929-32½'	3½ SANDSTONE as by 8904-07' occurring as armored sand balls surrounded by finely disem carb mat. Patchy yell f/uor & wk cut
			8932½-34½'	2' SANDSTONE: as above w/ strng yell f/uor & yell cut
			8934½-44'	9½' SHALE as by 8926-29 w/ 1" coal bed at 8940'

REMARKS:

8944-49' 5' SANDSTONE: lt gry, slty, vf-f gr, hd low p&p w/occas thin lenses f-crs qtz SS w/ strng speckled f/uor & gd yell cut. Freq lam carb mat

8949-50' 1' SANDSTONE: lt gry, f-crs gr, m. hd. sl p

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 11

WELL: BREAM-2

Interval Cored 8950-9010 ft., Cut 60 ft., Recovered 60 ft., (100 %) Fm. LDC

Bit Type C-8, Bit Size 8 5/16 in., Desc. by C.K. LUNT Date 30 Mar. 69

Depth & Coring Rate (min./ft.)	Graphic (1" 5')	Shows	Interval (ft.)	Descriptive Lithology
0 5 10			8950-67'	17' SANDSTONE: lt gry, vf gr, slty, hd. w.s., pyritic w/ abund thin carb-micac discont lam. in top 6'. Grn size incr. to f-crs in btm 11' w/ const. thin parallel carb-micac lam w/ 30° dip. Fr. yellow fluor., wk yellow cut
			8967-74½'	7½' SHALE: dk gry, dense, hd, non calc pyritic, micac interlam w/ lt. gry slt-stn.
			8974½-84½'	10' SILTSTONE-SILTY SANDSTONE: lt gry n.p. slt-vf gr qtz w/ abund micac mat. some glauc, pyrite. The lower 5½' consists of turbulence structures: armored sd & mud balls, contorted ss-slt interlam., m-crs qtz grs scat throughout
			8984½-85'	½' SANDSTONE: lt gry, n.p. slt-vf gr w/ abund v.fine micac-carb lam., abund pyrite wk-fr. yellow fluor, v. wk cut, fr hydroc odor
			8985-87'	2' SILTSTONE as by 8974½-84½'
			8987-89'	2' SANDSTONE: lt-m gry, v silty, vf-vcrs gr poor Φ & K. Fr. yell fluor, wk yell cut, gd odor
			8989-97'	8' SHALE: dk gry, hd, dns. non calc micac, pyrite, contortedly interlam w/ ss: lt. gry v. slty, f gr w/ strks of coal w/ pyrite nodules. Strong patchy yell fluor, wk cut, gd. odor
			8997-98'	1' SANDSTONE: lt tan, sl. por, m-vcrs gr w/ abund interst clay, v pyritic w/ freq contort. discont strks dk gry carb-shly mat. Strong yell fluor, gd yell cut, gd hydroc. odor

REMARKS:

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 11 (cont.)

WELL: BREAM-2

Interval Cored ft., Cut ft., Recovered ft., (%) Fm.

Bit Type , Bit Size in., Desc. by Date

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0			8998 - 9001'	3' SANDSTONE lt gry vf-f gr slty, sl micac, pyritic w/ some glauc. Occas v thin micac-carb laminae Wk-fr yell fluor, v. wk cut, fr hydroc. odor
			9001 - 03	2' SHALE as by 8989-97'
			9003 - 10'	7' SANDSTONE m gry, sl; por f-crs gr pr-fr sorting, sa-sr, v. micac (biotite) gd yell fluor, gd yell cut, fr hydroc. odor.

REMARKS:

13915

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 12

WELL: BREAM-2

Interval Cored 9010 - 9019 ft., Cut 9' ft., Recovered 9' ft., (100 %) Fm.

Bit Type C-20, Bit Size 8 5/16 in., Desc. by C.K. LUNT Date 31 Mar 69

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0 5 10			9010 - 15'	5' SANDSTONE: lt. gry, sli por, slty vf - m. gr, fr. sorting sa-sr hd. w/freq. thin discont. lam of carb-micac. mat. Fnt. pinpoint yell. fluor, no cut no odor.
		*	9015 - 18½'	3½' SILTY SHALE: dk gry dense, hd., micac. pyritic
		*	9018½ - 19'	½' SANDSTONE: m gry, por slty f - vcrs gr well sorted sa-sr. Wk pinpoint yell. fluor, no cut, no odor

REMARKS:

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 13

WELL: BREAM -2

Interval Cored 9019 - 9042 ft., Cut 23 ft., Recovered 23 ft., (100 %) Fm. L.D.C.

Bit Type C-20, Bit Size 8 5/16 in., Desc. by J. BLACK Date 2 APRIL 1969

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0 2 4 6 8 10				
20			9019 - 29	10' SANDSTONE: lt.gry wh. f-m.g, silty hard v.tight w/ occ. band of fair Por., some clay choking, V. MICAC. occ band of carb. MATTER. V. SPOTTY bright yello FL. Weak cut. Bands DIP 5-10° FAINT ODOR.
25			9029 - 30	1' SANDSTONE - AS ABOVE but M-CRSE g. SPOTTY yello FL. w/ FAIR CUT. 1" BAND w/ GOOD FL AND GOOD CUT AT 9029'. GOOD ODOR
30			9030 - 32	2' SANDSTONE - A.A., F-M. g. grading downward to siltstone 1" Coal seam at 9030½'. SPOTTY Yello FL, WEAK CUT, FAINT ODOR
35			9032 - 35	3' SHALE - DK. gry. HARD, firm, indur., Silty w/ bands OF thin carb MATTER AND OF gry V. hard siltstone. Silt-st bds SPOTTY Yello FL w/ Weak cut. Bands DIP 5-10°
40			9035 - 42	7' SANDSTONE - Lt gry wh. f-m g. w/ few crse gs., Pookly SORTED. clay choked, FIRM, hard tight w/ sparse V. thin bands CARB. MATTER V. SPOTTY Yello FL. W/ V. weak cut. 1" BAND AT 9037 w/ GOOD BRIGHT YELLO FL AND GOOD CUT. GOOD ODOR
45				

REMARKS:

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 14

WELL: Bream 2

Interval Cored 10,635 - 657 ft., Cut 22 ft., Recovered 22 ft., (%) Fm. Latrobe

Bit Type C-8, Bit Size 8 5/16 in., Desc. by H.L. Date April 16 1969

Depth & Coring Rate (min./ft.)	Graphic (1" 5')	Shows	Interval (ft.)	Descriptive Lithology
0 2 4 6 8 10,635				
40		ø	10,635 - 10,646 ½ (11½')	Shale, hard dark brown to black, carbonaceous, with coal seams, very silty Scattered clay clasts and silt inclusions, slightly pyritic. Rare patchy yellow fluor in silt.
45		ø	10,646 ½ - 656 ½ (10)	Sandstone, hard, grey, fine to very coarse grain, with grain size increasing down, angular to sub-rounded. Occasional banding and wavy discontinuous laminae of carbonaceous material. Slightly pyritic and micaceous. Estimated 10 - 15% white clay matrix, non-calcareous. Yellow mineral fluor and spotty blue fluor (gas). Very weak cut. Very slight taste and odor. P&P poor to fair.
50				
55		☼	10,656 ½ - 657 (½')	Balled up white clay, grey shale and coal. Barrel jammed.

REMARKS:

4.0. CORE ANALYSIS

(BMR, CANBERRA)

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. Bream No.2

DATE ANALYSIS COMPLETED 27 November, 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 tetrachloroethylene
	From	To			V	H	Dry Bulk	Apparent Grain	Water	Oil				
1	6080'0"	6081'0"	Slst; arg. glauc mic.	17.4	N.D.	260	2.24	2.71	40	trace	N.D.	Nil	Nil	Nil
1	6098'1"	6099'3"	as above	12.5	N.D.	1.1	2.33	2.66	45	trace	N.D.	fair	Nil	Nil
2	6117'0"	6118'0"	Slst; arg. aren.	18.9	N.D.	330	2.20	2.71	32	14.0	N.D.	strong	Nil	Nil
2	6137'6"	6138'4"	Slst; mic.	12.8	N.D.	32	2.30	2.63	49	2.6	N.D.	strong	Nil	Nil
2	6149'5"	6150'2"	Sst; f.gr.	25.8	N.D.	94	1.93	2.62	10	0.8	N.D.	trace	Nil	Nil
2	6161'5"	6162'8"	Sst; f.gr. mic.	16.2	N.D.	7.9	2.19	2.62	30	trace	N.D.	fair	Nil	Nil
4	6231'0"	6232'0"	Sst; f.gr. to m.gr.	27.1	N.D.	4450	1.93	2.64	18	0.2	N.D.	trace	Nil	Nil
5	6254'0"	6255'0"	Sst; f.gr. arg.	28.1	N.D.	*315	1.84	2.60	41	trace	N.D.	fair	Nil	Nil

Remarks: - Cores No. 3 and 6 - No recovery
* Mounted in wax

General File No. 74/1078
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. Bream No. 2

DATE ANALYSIS COMPLETED 27 November, 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				
7	6299'6"	6300'5"	Sh; carb. slty	8.8	N.D.	1.4	2.50	2.63	18	0.1	N.D.	fair	Nil	trace
7	6310'11"	6311'6"	Sst, v.c. gr. arg.	13.5	N.D.	40 *	2.33	2.70	8	0.1	N.D.	fair	Nil	trace
7	6325'0"	6325'11"	Sst; f. gr. slty arg.	16.4	N.D.	71	2.16	2.59	23	0.5	N.D.	fair	Nil	trace
8	6334'0"	6335'0"	Sst; f. gr. to m. gr.	30.0	N.D.	3100	1.87	2.66	18	1.9	N.D.	fair	Dull even yellow	fair
8	6370'0"	6371'0"	Dolo.	9.1	<0.1	<0.1	2.45	2.69	22	Nil	N.D.	Nil	as above	nil
9	6378'3"	6379'1"	Volcanics	5.9	N.D.	<0.1	2.67	2.83	75	Nil	N.D.	Nil	as above	nil
10	8904'1"	8904'11"	Sst; m.gr. arg.	14.8	11	16	2.24	2.63	6	Nil	N.D.	trace	Nil	nil
10	8921'6"	8922'8"	Sst; f.gr.	17.4	32	35	2.17	2.63	2	0.6	N.D.	Nil	Nil	nil

Remarks: -

General File No. 74/1076
Well File No. _____

2/3

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. Bream No.2

DATE ANALYSIS COMPLETED 27 November 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
11	8958'9"	8959'9"	Sst; m.gr.	18.0	N.D.	120	2.17	2.63	4	Nil	N.D.	Nil	Nil	Nil
11	8963'1"	8963'8"	Sst; c.gr.	16.5	38	56	2.20	2.63	9	trace	N.D.	trace	Nil	trace
12	9010'2"	9011'1"	Sst; f. gr. carb. mic	9.0	0.12	6.8	2.39	2.63	14	Nil	N.D.	Nil	Nil	Nil
13	9022'3"	9022'10"	Sst; c.gr. carb. mic.	12.5	6.2	9.4	2.38	2.64	6	Nil	N.D.	Nil	Nil	Nil
13	9036'6"	9037'3"	Sst; m. gr. c.gr.pyr.	13.3	2.5	33	2.28	2.63	6	Nil	N.D.	Nil	Nil	Nil
14	10,644'0"	10,645'1"	Sh. carb.	2.1	N.D.	<0.1	2.54	2.59	55	26	N.D.	trace	spotted yellow	fair
14	10,651'7"	10,652'6"	Sst; v.c.gr. arg.	14.6	N.D.	13	2.25	2.64	2	Nil	N.D.	Nil	even spotted yellow	Nil.

Remarks: -

General File No. 75/1078

Well File No. _____

S.O. SIDEWALL CORE DESCRIPTION
FROM SCHLUMBERGER CST

BASIC

SCHLUMBERGER SIDEWALL CORE DESCRIPTIONS

BREAM 2

CST RUN 1 (Rec. 11 Cores)

	Depth (ft.)	Rec. (inches)	Description
1.	6682		Coal; brittle, sub conchoidal fracture, brilliant lustre, sub-bituminous
2.	6652	½'	Siltstone; with fine laminae and lenses of dark brown shale and coal Siltstone; light grey argillaceous very finely sandy, sparsely micaceous. No show. Shale; dark brown, sparsely carbonaceous, sparsely micro micaceous and pyritic.
3.	6612	½'	Mudstone; light grey, massive.
4.	6554	½'	Sandstone; light grey, slightly argillaceous, medium to very coarse grained, subangular to subrounded, generally poorly sorted; trace lithic friable. No show. Excellent porosity and permeability.
5.	6519	½'	Mudstone; dark brown, sparsely micro micaceous and carbonaceous ½'.
6.	6504		Coal; black, brittle sub conchoidal, brilliant lustre sub-bituminous
7.	6498	¼"	Light grey to buff, finely crystalline, intermediate igneous rock with scattered epidote, pyrite and zeolite filled vesicles.
8.	6377	1¼"	Mudstone; dark brown, in part silty, sparsely micro micaceous and carbonaceous with fine stringers of fine crystalline pyrite.
9.	6300	¼"	Sandstone; light grey, medium to very coarse grained, subangular to rounded, generally poorly sorted, friable, excellent porosity and permeability. No show.
10.			No recovery.
11.	6050	1½'	Mudstone; dark brown, in part silty, sparsely micro micaceous, highly glauconitic.
12.			No recovery.
13.	5970		Glauconitic mudstone; as above 1½'.

SCHLUMBERGER SIDEWALL CORE DESCRIPTIONS

BREAM 2

CST RUN 2

	Depth (ft.)	Rec. (inches)	Description
1.	10006		Sandstone, light brown, argillaceous, very fine to medium grained, subangular to subrounded, poorly sorted with scattered coarse grained to granular quartz sandstone, sparsely micaceous. Trace very weak scattered blue white fluorescence.
2.	9989		Shale, dark grey brown, silty, sparsely micro micaceous and pyritic
3.	9910		Sandstone, grey white, argillaceous, medium grained, subangular to subrounded, fairly well sorted, trace mica and pyrite, abundant white clay matrix. No detectable HC odour or fluorescence or cut.
4.	9885		Sandstone, grey white, argillaceous, medium to coarse grained as above. Slight HC odour, good scattering of blue white fluorescence, weak yellow white cut.
5.	9835		Shale, dark grey brown, silty, sparsely micaceous and pyritic
6.	9783		Sandstone, grey white, medium to coarse grained to granular, subangular to rounded, fairly well sorted, medium to abundant white clay matrix, friable. No HC odour or fluorescence or cut.
7.	9685	¼	Shale, grey brown, silty, trace carbon, micro micaceous and pyritic
8.	9585	1½	Shale, dark grey, carbonaceous, sparsely pyritic and micro micaceous
9.	9487	3/4	Sandstone, light grey to grey white, medium grained to granular, subangular to rounded, abundant white clay matrix, trace carbon, friable. Porosity fair, permeability poor. No HC odour. No cut.
10.	9430	¼	Shale, dark grey brown, silty, sparsely micro micaceous and pyritic
11.	9323	¼	Shale, dark grey, sparsely carbonaceous, pyritic, micro micaceous and silty to very fine sandy.
12.	9260	½	Shale, as above
13.	9135	¼	Shale as above with fine lenses of fine grained sand.
14.	8852	¼	Sandstone, light grey to grey white, very fine to fine grained, subangular to subrounded, well sorted, abundant white clay matrix, sparsely carbonaceous, porosity fair, permeability poor. No odour or fluorescence.
15.	8442	1½	Shale, dark grey, sparsely micro micaceous with carbonaceous debris.
16.	8320	¼	Shale, dark grey, sparsely micro micaceous, pyritic and carbonaceous
17.			No recovery

..2/

BREAM - 2

	Depth (ft.)	Rec. (inches)	Description
18.	8156	½	Sandstone, grey to white, medium grained to coarse grained, subangular to subrounded, fairly well sorted, moderate to abundant white clay matrix. No odour or fluorescence or cut.
19.	8082	1½	Shale, dark brown, sparsely micro micaceous, with carbonaceous debris and coal streaks
20.	7932	1-3/4	Shale as above
21.	7820	½	Sandstone, light grey, fine to medium grained, subangular to subrounded, fairly well sorted, argillaceous matrix, sparsely micaceous and carbonaceous. No show
22.	7675	1	Shale, grey brown, silty, sparsely micaceous and pyritic
23.	7612	¼	Shale, dark grey brown, micro micaceous, sparsely pyritic and carbonaceous
24.	7422	½	Shale as above
25.			No recovery
26.	7204	¼	Sandstone, grey white to light grey, argillaceous, very fine to fine grained, subangular to subrounded, well sorted, sparsely micaceous, tight, porosity fair, permeability very poor.
27.	7142	½	Shale, dark grey to grey brown, silty, sparsely micro micaceous, pyritic and carbonaceous
28.			No recovery
29.	6965	¼	Shale, light grey, sparsely micro micaceous, moderately soft.
30.			No recovery.

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9.4.69,

SCHLUMBERGER SIDEWALL CORE DESCRIPTIONS

BREAM 2

CST RUN 3

	Depth (ft.)	Rec. (inches)	Description
1.	6337	1¼	Shale, highly carbonaceous, sparsely pyritic, dark brown
2.	6280		No recovery.
3.	6000	½	Mudstone, highly glauconitic, sparsely micro micaceous, dark brown, very calcareous
4.	5950	¼	Mudstone, highly glauconitic, medium brown, very calcareous
5.	5932	¼	Sandstone, medium grained, poorly sorted, subangular to rounded, friable, fair degree carbonaceous material, pale brown
6.	5920	1¼	Mudstone, micaceous with slight forams, medium grey green very calcareous
7.	5900	1¼	Mudstone as above,
8.	5870	½	Mudstone as above
9.	5850	½	Mudstone as above, light grey green
10.	5800	¼	Mudstone as above, medium grey green
11.	5750	3/4	Mudstone as above
12.	5700	½	Mudstone as above
13.	5650	3/4	Mudstone as above
14.	5600	1	Mudstone as above
15.	5550	3/4	Mudstone as above
16.	5500	1	Mudstone as above, medium grey
17.	5450	3/4	Mudstone, sparsely micro micaceous, medium grey green, very calcareous
18.	5400	½	Mudstone, as above
19.	5350	½	Mudstone, micaceous with disseminated forams, medium grey, very calcareous
20.	5300	1½	Mudstone as above
21.	5250	1	Mudstone, micaceous, with finely disseminated rounded coarse grained quartzose sand, grey green, very calcareous
22.	5200	1	Mudstone, micaceous, grey green, very calcareous
23.	5150	1½	Mudstone, as above

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21.3.69.

SCHLUMBERGER SIDEWALL CORE DESCRIPTIONS

BREAM 2

File c.c. Hematite

CST RUN 4

	Depth (ft.)	Rec. (inches)	Description
1.	10592	¼	Sandstone; light grey-white, firm, very fine-medium grained, medium sorting, shaley, poor porosity and permeability. No show.
2.	10582	¼	Sandstone; grey-brown, firm, very fine-medium grained, angular to subrounded, poorly sorted, brown, clay matrix, trace carbonaceous matter. Poor porosity and permeability. No show.
3.	10555	¼	Sandstone; grey-brown, firm, as at 10582.
4.	10522	¼	Shale; medium grey, firm, homogenous. No show.
5.	10520	¼	Shale; as at 10522.
6.	10414	½	Sandstone; white, firm, fine grained, silty, clay matrix. No show.
7.	10262	½	Shale; dark brown, firm, micaceous, carbonaceous streaks.
8.	10329		No recovery.
9.	10243½	¼	Sandstone; white-grey, firm, fine-medium grained, trace pyrite, shaley. With patchy yellow fluorescence. Gas bubbling from core.
10.	10222	¼	Sandstone; grey, firm, fine to medium grained, 10% white clay matrix, patchy yellow fluorescence.
11.	10206	¼	Sandstone; grey, firm, fine to medium grained, shaley, with patchy and pinpoint yellow fluorescence. Gas bubbling from core.
12.	10146	Frags.	Shale; grey-brown, hard, carbonaceous.
13.	9991	¼	Shale; black to brown, hard, carbonaceous, laminated.
14.	9834	¼	Shale; brown to black, hard, slightly carbonaceous.
15.	9685		No recovery.
16.	9546	¼	Shale; brown, firm, silty, slightly micaceous and carbonaceous, slightly laminated.
17.	9300	¼	Shale; black, hard bleeding gas, laminated.
18.	9248	¼	Shale; brown, firm, silty, slightly micaceous.
19.	9063	¼	Siltstone; white-light grey, soft to firm, very shaley, carbonaceous, micaceous, laminated.
20.	8848	¼	Siltstone; as at 9063'.

BHL:AW
April 23, 1969.

E35/37 6 of 6. 172

S.W.C. DESCRIPTIONS.

BREAM 2

RECEIVED 21 MAY 1969 MINES DEPT.

Depth (ft.)	Rec. (inches)	Description
10592	¼	Sandstone; light grey-white, firm, very fine-medium grained, medium sorting, shaley, poor porosity and permeability. No show.
10582	¼	Sandstone; grey-brown, firm, very fine-medium grained, angular to sub rounded, poorly sorted, brown, clay matrix, trace carbonaceous matter. Poor porosity and permeability. No show.
10555	¼	Sandstone; grey-brown, firm, as at 10582.
10522	¼	Shale; medium grey, firm, homogeneous. No show.
10520	¼	Shale; as at 10522.
10414	½	Sandstone; white, firm, fine grained, silty, clay matrix. No show.
10262	½	Shale; dark brown, firm, micaceous, carbonaceous streaks.
10329		No recovery.
10243½	¼	Sandstone; white-grey, firm, fine-medium grained, trace pyrite, shaley. With patchy yellow fluorescence. gas bubbling from core.
10222	¼	Sandstone; grey, firm, fine to medium grained, 10% white clay matrix, patchy yellow fluorescence.
10206	¼	Sandstone; grey, firm, fine to medium grained, shaley, with patchy and pinpoint yellow fluorescence. Gas bubbling from core.
10146	Frags.	Shale; grey-brown, hard, carbonaceous.
9991	¼	Shale; black to brown, hard, carbonaceous, laminated.
9834	¼	Shale; brown to black, hard, slightly carbonaceous.
9685	N/R	
9546	¼	Shale; brown, firm, silty, slightly micaceous and carbonaceous, slightly laminated.
9300	¼	Shale; black, hard bleeding gas, laminated.
9248	¼	Shale; brown, firm, silty, slightly micaceous.
9063	¼	Siltstone; white-light grey, soft to firm, very shaley, carbonaceous, micaceous, laminated.
8848	¼	Siltstone; as at 9063'.

BHL:AW
April 23, 1969.

6.0. VITRINITE REFLECTANCE MEASUREMENTS

VITRINITE REFLECTANCE MEASUREMENTS.

Depth (ft)	Mean Maximum Reflectance (%)	Standard Deviation	Range	Number of Determinations
ALBACORE -1				
9380&9390	0.42	0.04	0.31-0.48	42
9720&2730	0.46	0.06	0.36-0.59	36
10070	0.46	0.04	0.36-0.55	39
10320	0.47	0.04	0.38-0.54	34
BARRACOUTA-3				
7310-7320	0.54	0.05	0.46-0.63	35
8590	0.60	0.08	0.43-0.71	35
9100-9120	0.62	0.10	0.41-0.80	41
9330-9360	0.64	0.10	0.43-0.93	36
9540-9560	0.73	0.05	0.63-0.84	33
BATFISH-1				
7560-7570	0.61	0.05	0.53-0.69	34
8170-8180	0.64	0.05	0.56-0.75	34
8640-8650	0.69	0.05	0.55-0.81	31
9170-9190	0.76	0.04	0.66-0.81	28
9430-9450	0.76	0.05	0.69-0.90	41
BONITA-1A				
9780-9790	0.54	0.06	0.46-0.68	36
10050	0.56	0.05	0.47-0.64	36
10280-10290	0.55	0.04	0.47-0.64	47
BREAM-2				
8070-8090	0.63	0.05	0.52-0.70	39
8380-8390	0.67	0.06	0.53-0.80	41
8933-8944	0.73	0.05	0.62-0.85	43
9730-9750	0.83	0.07	0.71-0.98	38
10638-10641	0.88	0.11	0.62-1.13	42

Depth (ft)	Mean Maximum Reflectance (%)	Standard Deviation	Range	Number of Determinations
COD-1				
7100-7120	0.63	0.06	0.53-0.81	41
8333-8339	0.59	0.05	0.47-0.67	34
9030-9060	0.75	0.06	0.61-0.85	32
9460-9470	0.77	0.06	0.61-0.86	41
FLOUNDER-1				
7430	0.44	0.05	0.36-0.56	39
8783-8795	0.64	0.04	0.56-0.77	36
9140	0.61	0.06	0.52-0.77	42
10395-10400	0.72	0.06	0.58-0.80	34
11350-11356	0.90	0.05	0.76-0.97	36
11676-11682	0.90	0.07	0.78-1.04	44
HALIBUT-1				
7888-7891	0.49	0.07	0.37-0.67	39
8450-8460	0.54	0.04	0.47-0.61	31
9250-9260	0.57	0.06	0.46-0.66	43
9630-9640	0.61	0.04	0.54-0.69	35
9870-9880	0.63	0.06	0.47-0.75	52
MACKEREL-1				
8760-8780	0.63	0.05	0.52-0.71	31
9630-9650	0.66	0.05	0.69-0.76	25
9870-9890	0.65	0.02	0.60-0.73	28

Depth (ft)	Mean Maximum Reflectance (%)	Standard Deviation	Range	Number of Determinations
MARLIN-1				
7070-7080	0.65	0.08	0.52-0.80	32
7497-7501	0.65	0.04	0.54-0.72	38
7780-7800	0.67	0.09	0.47-0.88	39
8230-8240	0.71	0.07	0.64-0.79	4
8455-8461	0.70	0.06	0.56-0.79	32
NANNYGAI-1				
7760-7670	0.052	0.07	0.39-0.65	33
8320-8340	0.50	0.05	0.42-0.65	32
9450-9470	0.64	0.04	0.57-0.71	35
9860-9880	0.64	0.06	0.51-0.75	31
SALMON-1				
7670-7690	0.50	0.06	0.38-0.64	35
8030-8050	0.56	0.05	0.45-0.67	37
8860	0.60	0.05	0.45-0.67	33
9250-9260	0.64	0.06	0.54-0.79	36
9856-9862	0.80	0.05	0.68-0.87	37
SNAPPER-1				
7280-7300	0.56	0.06	0.43-0.69	37
7754-7760	0.56	0.09	0.38-0.73	38
9254-9257	0.68	0.03	0.60-0.72	33
9900-9903	0.86	0.10	0.62-0.96	17
10140-10200	0.81	0.10	0.58-1.01	31
10495-10507	0.99	0.06	0.81-1.06	35

7. PALYNOLOGY (Miscellaneous)

INTERPRETATIVE

Palynology of Bream-3 and Review of Bream-2

By

P.R. Evans & Robin D. Mulholland

Palyn. Rept. 1970/5

March, 1970.

INTRODUCTION

Sidewall cores and cuttings from Bream No. 3 were examined during December 1969 and February 1970.

Whereas a close match with the sequence in Bream No. 2 through the *N. goniatus* and upper *M. diversus* was obtained, the better data from around the top of the *T. lilliei* Zone in Bream No. 3 necessitated revision of the *L. balmei*/*T. lilliei* boundary in Bream No. 2 (Palyn.Rept. 1969/7). Revision is based on direct comparison of assemblages, separation from *T. lilliei* of a species in Bream No. 2, swc 10, 9430 feet which had previously been assigned to *lilliei*, and examination of previously unreported assemblage from swc 8, 9585 feet.

The following summary lists determinations from both Bream No. 2 and Bream No. 3. Documents concerning Bream 2 based on Palyn. Rept. 1969/7 should be corrected accordingly.

SUMMARY

Zone	BREAM-2 Sample	BREAM-2 Depth (ft.)	BREAM-3 Sample	BREAM-3 Depth (ft.)
N. asperus	core 2	6138	swc 13	6215
	" 7	6298	" 10	6365
	" 8	6340	" 4	6447
	swc 8	6377	" 3	6574
	" 5	6519½	" 2	6628
P. asperopolus	swc 2	6652	swc 1	6700
Upper *M. diversus*	swc 29	6965		
	" 27	7142		
M. diversus undiff.	swc 24	7422		
M. diversus or *L. balmei*	swc 23	7612		
L. balmei	swc 22	7675		
	" 20	7932		
	" 19	8082		
	" 16	8320		
	" 15	8442		
	" 16	9248	swc 10	9255
	" 12	9260	" 8	9578
	" 10	9430	" 7	9606
	" 8	9585	" 6	9873
			" 5	10068.
Indeterminate	swc 2	9989		
T. lilliei	swc 8	9991	swc 4	10322
	" 11	10262	" 3	10365
	" 5	10520	" 2	10665
	" 7	10522	core	10852
	core 14	10643	swc 1	10964

BASIN GIPPSLAND DATE

WELL NAME BREAM-2 ELEVATION +31 feet

AGE	PALYNOLOGIC ZONES	HIGHEST DATA					LOWEST DATA				
		Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time	Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time
EOCENE (OLIGO.)	P. tuberculatus										
	U. N. asperus										
	M. N. asperus										
	L. N. asperus	6089	1				6138	2			
	P. asperopolus	6340	1				6377	2			
	U. M. diversus	6519	1				6652	1			
	M. M. diversus										
	L. M. diversus	6965	1				7142	1			
PALEOCENE	U. L. balmei	7422	1				7675	1			
	L. L. balmei	7932	2				8442	1			
	T. longus	9010	1				9585	1			
LATE CRETACEOUS	T. lilliei	9991	1				10642	1			
	N. senectus										
	C. trip./T.pach.										
	C. distocarin.										
	T. pannosus										
EARLY CRETACEOUS											
PRE-CRETACEOUS	T.D.	10,657									

COMMENTS: *Deflandrea heterophylcta Dinoflagellate Zone 6089 (1) – 6138(2)*

Wetzeliella homomorpha Dinoflagellate Zone 7422 (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: L.E.S./A.D.P. DATE June 1971; Dec. 1971.

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

FORM No R 315 12/72

Form R103 3/71

BASIN GIPPSLAND BASIN BY David Taylor

WELL NAME BREAM-2 DATE 19/4/71 ELEV. +31'

Foram Zonules

		Highest Data	Quality	2 Way Time	Lowest Data	Quality	2 Way Time
MIOCENE	A				1120	3	
	Alternate						
	B	1200	3		2100	3	
	Alternate						
	C	2150	3		3040	3	
	Alternate						
	D_1	3100	3		3900	3	
	Alternate						
	D_2	4000	3		4700	3	
	Alternate						
	E	4750	3		5100	3	
	Alternate						
	F	5150	2		5350	0	
	Alternate	5200	0				
	G	5400	0		5550	0	
	Alternate						
	H_1	5600	0				
	Alternate						
	H_2				5750	0	
	Alternate						
OLIGOCENE	I_1	5800	0		5870	0	
	Alternate						
	I_2						
	Alternate						
	J_1	5900	0		5970	0	
	Alternate						
	J_2	6000	0				
	Alternate						
EOC.	K				6138	2	
	Alternate						
	Pre K						

See Evans P.R. (1971) GI/40/80 for discussion of validity of SWC data in Bream-2. (A.D.R)

COMMENTS: Dr P.R. Evans suspects that sidewall cores are incorrectly labled as correlation with Bream-3 is difficult with this data.

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 BREAM - 2. ELEVATION + 31 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
M. MIOC.	T. bellus										
	P. tuberculatus										
EOCENE	U. N. asperus										
	L. N. asperus	6098	1				6519	1			
	P. asperopolus	6652	1				6652	1			
	U. M. diversus										
	L. M. diversus	6952	2				7142	1			
PALEO-CENE	L. balmei	7422	2	7612	1		8442	1			
	T. longus	9010	1				9585	1			
LATE CRETACEOUS	T. lilliei	9991	1				10643	1			
	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:

T.D. 10657 (3.243)

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.Stover & A.D.Partridge. DATE JUNE 1971.

DATA REVISED BY: CHECKED; L.E.S. DATE DEC. 1971

PLANKTONICS SHEET - Distribution of planktonic fauna and biostratigraphic zonation. Vertical lines show zonal divisions and horizontal lines indicate the diagnostic species.

BENTHONIC SHEETS - Distribution of benthonic calcareous and arenaceous species as well as other fauna.

KEY :

T = side wall cores.

T* = Thin sections of side wall cores

) = conventional cores.

Other samples are rotary cuttings with entire content plotted.

° = 1 - 20 specimens

1 = over 20.

W = worn / poor preservation / fragments.

? = determination queried.

DRILL DEPTHS

ALL DEPTHS ARE ~~FROM DATUM OF +31' M.S.L.~~

PE903959

This is an enclosure indicator page.
The enclosure PE903959 is enclosed within the container PE903953 at this location in this document.

The enclosure PE903959 has the following characteristics:

ITEM_BARCODE	= PE903959
CONTAINER_BARCODE	= PE903953
NAME	= Bream 2 Species list pg 2
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Bream 2 Species list pg 2 (from WCR)
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W540A
WELL_NAME	= Bream-2
CONTRACTOR	= Esso Australia Ltd
CLIENT_OP_CO	= Esso Australia Ltd

(Inserted by DNRE - Vic Govt Mines Dept)

PE903954

This is an enclosure indicator page.
The enclosure PE903954 is enclosed within the container PE903953 at this location in this document.

The enclosure PE903954 has the following characteristics:

ITEM_BARCODE	= PE903954
CONTAINER_BARCODE	= PE903953
NAME	= Bream 2 Species list pg 3
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Bream 2 Species list pg 3 (from WCR)
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W540A
WELL_NAME	= Bream-2
CONTRACTOR	= Esso Australia Ltd
CLIENT_OP_CO	= Esso Australia Ltd

(Inserted by DNRE - Vic Govt Mines Dept)

PE903955

This is an enclosure indicator page.
The enclosure PE903955 is enclosed within the container PE903953 at this location in this document.

The enclosure PE903955 has the following characteristics:

ITEM_BARCODE	= PE903955
CONTAINER_BARCODE	= PE903953
NAME	= Bream 2 Species list pg 4
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Bream 2 Species list pg 4 (from WCR)
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W540A
WELL_NAME	= Bream-2
CONTRACTOR	= Esso Australia Ltd
CLIENT_OP_CO	= Esso Australia Ltd

(Inserted by DNRE - Vic Govt Mines Dept)

PE903956

This is an enclosure indicator page.
The enclosure PE903956 is enclosed within the container PE903953 at this location in this document.

The enclosure PE903956 has the following characteristics:

ITEM_BARCODE	= PE903956
CONTAINER_BARCODE	= PE903953
NAME	= Bream 2 Species list pg-5
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Bream 2 Species list pg-5 (from WCR)
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W540A
WELL_NAME	= Bream-2
CONTRACTOR	= Esso Australia Ltd
CLIENT_OP_CO	= Esso Australia Ltd

(Inserted by DNRE - Vic Govt Mines Dept)

PE903957

This is an enclosure indicator page.
The enclosure PE903957 is enclosed within the container PE903953 at this location in this document.

The enclosure PE903957 has the following characteristics:

ITEM_BARCODE	= PE903957
CONTAINER_BARCODE	= PE903953
NAME	= Bream 2 Species list pg 6
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Bream 2 Species list pg 6 (from WCR)
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W540A
WELL_NAME	= Bream-2
CONTRACTOR	= Esso Australia Ltd
CLIENT_OP_CO	= Esso Australia Ltd

(Inserted by DNRE - Vic Govt Mines Dept)

PE903958

This is an enclosure indicator page.
The enclosure PE903958 is enclosed within the container PE903953 at this location in this document.

The enclosure PE903958 has the following characteristics:

ITEM_BARCODE	= PE903958
CONTAINER_BARCODE	= PE903953
NAME	= Bream 2 Species list pg 7
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= DIAGRAM
DESCRIPTION	= Bream 2 Species list pg 7 (from WCR)
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W540A
WELL_NAME	= Bream-2
CONTRACTOR	= Esso Australia Ltd
CLIENT_OP_CO	= Esso Australia Ltd

(Inserted by DNRE - Vic Govt Mines Dept)

8.0 ENCLOSURES

8.1 FIT DATA
8.2 GRAPHOLOG
8.3 COMPLETION LOG
8.4 CROSS SECTION A-A'
8.5 TIME DEPTH CURVE
8.6 COMPLETION COREGRAPH

PE903960

This is an enclosure indicator page.
The enclosure PE903960 is enclosed within the container PE903953 at this location in this document.

The enclosure PE903960 has the following characteristics:

ITEM_BARCODE	= PE903960
CONTAINER_BARCODE	= PE903953
NAME	= Bream 2 FIT Data
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= FIT
DESCRIPTION	= Bream 2 FIT Data (from WCR)
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	= 5/11/69
W_NO	= W540A
WELL_NAME	= Bream-2
CONTRACTOR	= Schlumberger
CLIENT_OP_CO	= Esso Australia Ltd

(Inserted by DNRE - Vic Govt Mines Dept)

PE603680

This is an enclosure indicator page.
The enclosure PE603680 is enclosed within the container PE903953 at this location in this document.

The enclosure PE603680 has the following characteristics:

ITEM_BARCODE	= PE603680
CONTAINER_BARCODE	= PE903953
NAME	= Bream 2 Grapholog (Mud Log)
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Bream 2 Grapholog (Mud Log)
REMARKS	=
DATE_CREATED	= 15/04/69
DATE_RECEIVED	= 28/05/69
W_NO	= W540A
WELL_NAME	= Bream-2
CONTRACTOR	= Core Laboratories Inc
CLIENT_OP_CO	= Esso Australia Ltd

(Inserted by DNRE - Vic Govt Mines Dept)

PE603681

This is an enclosure indicator page.
The enclosure PE603681 is enclosed within the container PE903953 at this location in this document.

The enclosure PE603681 has the following characteristics:

ITEM_BARCODE	= PE603681
CONTAINER_BARCODE	= PE903953
NAME	= Bream 2 Well Completion Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= COMPLETION_LOG
DESCRIPTION	= Bream 2 completion log (induction-electrical log) from WCR
REMARKS	=
DATE_CREATED	= 16/04/69
DATE_RECEIVED	=
W_NO	= W540A
WELL_NAME	= Bream-2
CONTRACTOR	= Schlumberger
CLIENT_OP_CO	= Esso Australia Ltd

(Inserted by DNRE - Vic Govt Mines Dept)

PE903961

This is an enclosure indicator page.
The enclosure PE903961 is enclosed within the container PE903953 at this location in this document.

The enclosure PE903961 has the following characteristics:

ITEM_BARCODE	= PE903961
CONTAINER_BARCODE	= PE903953
NAME	= Bream 2 Cross Section A-A'
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= CROSS_SECTION
DESCRIPTION	= Bream 2 Cross Section A-A'
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W540A
WELL_NAME	= Bream-2
CONTRACTOR	= Esso Australia Ltd
CLIENT_OP_CO	= Esso Australia Ltd

(Inserted by DNRE - Vic Govt Mines Dept)

PE903962

This is an enclosure indicator page.
The enclosure PE903962 is enclosed within the container PE903953 at this location in this document.

The enclosure PE903962 has the following characteristics:

ITEM_BARCODE	= PE903962
CONTAINER_BARCODE	= PE903953
NAME	= Bream 2 Time Depth Curve
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= VELOCITY_CHART
DESCRIPTION	= Bream 2 Time Depth Curve (from WCR)
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W540A
WELL_NAME	= Bream-2
CONTRACTOR	= Esso Australia Ltd
CLIENT_OP_CO	= Esso Australia Ltd

(Inserted by DNRE - Vic Govt Mines Dept)

PE604147

This is an enclosure indicator page.
The enclosure PE604147 is enclosed within the container PE903953 at this location in this document.

The enclosure PE604147 has the following characteristics:

ITEM_BARCODE	= PE604147
CONTAINER_BARCODE	= PE903953
NAME	= Completion Coregraph
BASIN	= GIPPSLAND
PERMIT	= VIC/P1
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= Bream-2 Completion Coregraph. Enclosure 8.6 from Well Summary Folder.
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	= 28/05/1969
W_NO	= W540A
WELL_NAME	= Bream-2
CONTRACTOR	= Core Laboratories, Inc.
CLIENT_OP_CO	= Esso Standard Oil (Australia) Ltd.

(Inserted by DNRE - Vic Govt Mines Dept)