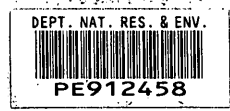


7/23/98 8041



912458 001

Page 1 of 29

ANGLESEA - 1A

Well Elementary Data

W468
1/8/98

WELL ANGLESEA No1 W468 TYPE N.F.W. BASIN Port Phillip
 TEN. HOLDER ~~Albion~~ Oil Development N.L. Lat. 38°24'26"S 38°24' Ph. Jan Jac.
 OPERATOR ~~A.O.D.~~ Oil Development N.L. LOCATION. Long. 144°11'53"E 144°12'30"E
 TENEMENT P.P.L. 256 Military Map. Anglesea 1 Mile Military
 ELEVATION 65.06 G.L. 78.06 K.B. (datum) T.O. 10.065 - 7miller STATUS. D.A.

SPUD. 23 May 1962 COMPLETION 7 Nov. 1962 ABD. 9 Nov 1962
 CASING 18 5/8" @ 30' Cts. (504) 13 7/8" @ 389' Cts. (13504) 9 5/8" @ 2295' Cts. (1290) *Contracte Reelings & Bales.*

912458 002

AGE	FORMATION	DEPTH	THICKNESS
Oligocene - Eocene	Demon's Bluff Fm. Anglesea Memb.	0 +78	390
Eocene	Eastern View Coal Ms.	390 - 312	1542
L. Cret - Jur.	Otway Group	1932 - 1854	8133+

Jellenbach 1965: -
 Demon's Bluff Fm. 0-370'
 Eastern View Coal Ms. 370-1816'
 Proposed unit "H" 1816-1921'
 Otway Group 1921-10065'
 (2 Otway subunits)
 "A" 1921-5710'
 "B" 5710-10065'

(1-1-63)
 Name changed after the well drilled to Albion Oil Development Australia N.L.

FORMATION TESTS

D.S.T. 1.	2220 - 2296	Packer failed
D.S.T. 2.	7683 - 7738	
D.S.T. 3.	7688 - 7738	
D.S.T. 4.	7672 - 7738	

LOG SUMMARY and INTERPRETATION

Type	Run	Interval	Date	Type	Run	Interval	Date	Interval	φ	Sw
E-Lag	1	2289-390	6 Jun. 62	Micrology	1	2287-390	6 Jun 62			
	2	4233-2298	28		2	4233-2298	28 Jun 62			
	3	6313-4050	20 Jul. 62		3	6313-4150	20 Jul "			
	4	7893-6200	29 Aug "		4	7893-6200	29 Aug "			
	5	8954-7700	16 Oct "		5	8954-7700	16 Oct "			
	6	10040-8834	8 Nov "		6	10028-8700	8 Nov "			
C.O.M.	1	5000-4800	29 Aug 62	r.l.a.i.p.						
		6300-5750								
		7886-6602								

Albion Oil Development N.L.
 ANGLESEA No 1
 ①

CORES

No	Interval	Rec	No	Interval	Rec	No	Interval	Rec	No	Interval	Rec
1	490-510	8'0"	16	4011-4021	10'6"	31	9156-9176	19'0"	S.W.	5206	
2	789-809	4'3"	17	4223-4234	11'0"	32	9641-9656	2'7"		5207	
3	1090-1110	5'7"	18	4517-4527	9'0"	33	10045-10065	20'0"		5208	
4	1214-1234	3'10"	19	4819-4829	5'6"					5209	
5	1506-1526	10'0"	20	5161-5171	9'6"	S.W.	3771			5210	
6	1778-1798	11'0"	21	5487-5497	6'0"		3772			5211	
7	1931-1951	19'0"	22	5766-5776	7'0"		3773			5212	
8	2225-2245	20'0"	23	6237-6247	9'0"		3774				
9	2286-2296	9'0"	24	6723-6727	3'0"		5196				
10	2557-2567	10'0"	25	6759-6773	10'0"		5198				
11	2860-2870	10'0"	26	7255-7265	9'6"		5199				
12	3158-3168	5'0"	27	7544-7550	6'0"		5201				
13	3460-3470	7'0"	28	7857-7867	9'0"		5203				
14	3724-3734	2'0"	29	8190-8200	8'0"		5204				
15	3734-3744	N.I.	30	8690-8707	17'0"		5205				

CHEMICAL ANALYSES (OIL, WATER, GAS)

Mimis kept. Analysis of drill cuttings 4200-4210
 "It would appear that traces of petroleum
 crudes are present in the cuttings examined."

912458 003

GENERAL (Conclusions, structure, abandonment programme, etc)

Drilling of Anglesea 1 has shown original seismic estimate of 4500 to
 top of otway means, due to multiple reflections. Expected
 Cretaceous absent but may be present seawards.
 Dip as indicated by core and c.v.m. is 20°-25° south.
 However at 8690'-8707' - Core 30 dip was 70° indicating a fault or
 its close proximity. Dip in succeeding cores range 35°-45°.

Possible porous beds along the unconformity of otway + presumed
 Paleozoic basement was not reached, however if they exist
 they may be intersected at a shallower depth farther to the
 north and northeast towards the margin of the Cretaceous
 basin, since Anglesea 1 was selected in an area where the
 maximum thickness of sediments could be expected in PP2. 256

Temp. Survey No continuous survey run but bottom hole temps recorded
 by Schlumberger Seaco Inc. during logging operations are: 107°F at 2287';
 140°F at 4233'; 152°F at 6313'; 168°F at 7894'; 186°F at 8954'; 240°F at 10028';
 The sharp increase in temp between 8954 and 10028 suggests T.D. was
 probably not far above basement.

- Plugging
1. 7550 - 7450 - 50%
 2. 4900 - 4800 - 50%
 3. 2350 - 2250 - 50%
 4. 12' - Surface - 50%

A.O.D. - Westralian-Planet Trip

Under original agreement Westralian Oil Ltd holds 20%,
 A.O.D. holds ~~50%~~ 60%. Planet earned 20% interest by meeting
 25% of well costs

BEST GAS SHOWS(?):
463-1509
1524-1567
198-107
2639-2679

STATE OF VICTORIA
DEPARTMENT OF MINERALS & ENERGY, OIL AND GAS DIVISION

WELL SHEET

912458 004

1. WELL NAME/OP/RIG: ANGLESEA - 1 / ODNL (ALLIANCE OIL DEVELOPMENT) / R&B
2. BASIN/GRATICULE: OTWAY / TORQUAY EMBAYMENT
3. PERMIT: PETROLEUM PROSPECTING LICENCE No. 256
4. CLASSIFICATION: STRATIGRAPHIC TEST
5. STATUS/CERTIFICATION: DRY, PLUGGED AND ABANDONED; SUITABLE FOR SUBSEQUENT REENTRY.
6. SPUD DATE: 23.05.62
7. T.D. DATE: 07.11.62 TOTAL DEPTH (LOG): 3067.8 M HOLE TVDSS:
8. RIG RELEASE DATE: 09.11.62
9. K.B. 23.8
10. G.L. 19.8
11. WATER DEPTH: —
12. TOPHOLE SOUTHERLY: 38° 24' 26" TOPHOLE EASTERLY: 144° 11' 53"
13. BOTTOMHOLE SOUTHERLY: — BOTTOMHOLE EASTERLY: —
14. AVERAGE DEVIATION: ± 4° NET DRIFT (AZIMUTH): —
15. OBJECTIVES: 1) MARINE WEDGE UNCONFORMABLY ABOVE OTWAY GROUP
16. 2) COARSE FLUVIAL ARENITES AT BASE OF OTWAY GROUP 3) INTRA OTWAY.
17. PERFORATED INTERVALS, SS: NONE
18. _____
19. SHOW TYPES & INTERVALS, MDKB: "SOME QUESTIONABLE TRACES OF CRUDE OIL (SPOTTY WIRE FLUORESCENCE (RESIDUAL?) THROUGHOUT OTWAY GROUP.
20. UPPER OTWAY GROUP), WITH HYDROCARBON GAS BELOW 1097M TO T.D.*
21. CORE SAMPLE AT 460M (E5) CUT AMBER POSSIBLY FROM LIGNITE.
22. CUTTINGS SAMPLE INTERVALS, MDKB: 9-3067
23. LOGS RUN, LDKB: CAL. DLL - SP, MSFL (118.9 - 3056.0); HDT (1463.0 - 2403.5)
24. JW GAS DETECTOR (853.4 - 3056.0); GEOLOGRAPH (9.1 - 3056.0)
25. RFT/DST RECOVERIES (INTERVALS), LDKB: NONE DUE TO PACKER FAILURES IN RUGOSE HOLE.
26. FSIP (DEPTH, TVDSS): 33X CORES WITH 21% - 100% RECOVERY 149.3 - 3067.8
27. INTERVAL CORES RECOVERED, MDKB: _____
28. N/A RW at _____ °C at _____ Metre, LDKB _____ RESERVOIR NAME _____
29. N/A RW at _____ °C at _____ Metre, LDKB _____ RESERVOIR NAME _____
30. CONDUCTOR CASING ml (_____) to _____ M. -Hole Size _____ (Metric) _____ (Imperial)
31. SURFACE CASING ml (18-7/8") to 9.1 M. -Hole Size _____
32. INTERMEDIATE CASING ml (13-7/8") to 18.6 M. -Hole Size _____
33. LINER/FINAL CASING ml (9-5/8") from _____ M. to 699.5 M.
34. NOTE: ALL LINEAR MEASUREMENTS REPORTED IN METRIC UNLESS OTHERWISE SPECIFIED.

CHECK OUT *

33 GEOLOGY: ANGLESEA No. 1

FM./Key Bed	AGE	KEY	LITH	LOG TOP, KB	SMPL TOP, KB	VDME TOP, SS	TVD, SS	TVT
ANGLESEA MBR.	L. Ed		LYS	0				119+
DEMON'S BLUFF F.M.E. Q.			LS SD.					
EASTERN VIEW PA -			COAL, LIGNITE	118.9				470+
COAL MEASURES E. ED								
OTWAY GROUP	E. CRET.		ARKOSE, SLTST. S. MUDST.	588.8				2,479+

46 RESERVOIRS:

OIL/GAS PAY ZONES	DEPTH INT, SS	RECD %	TOP SEAL THICK, TVT	BTM SEAL THICK, TVT
* "AEROMAGNETIC SURVEY SUGGESTS THAT TARGET PETROLIFEROUS (?) WEDGE SEDIMENTS MAY BE PRESENT IN THE OFFSHORE AREA TO THE SOUTHEAST OF THE ANGLESEA TROUGH."				

56 COMMENTS:

57 LOCATION DESIGNED FOR OFF-STRUCTURE STRATIGRAPHIC TEST IN SW CORNER OF PPL 256, WHERE SEISMIC INDICATED THAT SEDIMENTARY SECTION ABOVE THE LOWER PALEOZOIC BASEMENT COULD BE THICKEST. OWING TO 20-25° DIPS (SOUTH) IN HARD BEDS OF OTWAY GROUP BELOW 610M, IT WAS DIFFICULT TO KEEP STRAIGHT HOLE. THE SHARP INCREASE IN TEMPERATURE BETWEEN 2729M AND 3057M INDICATES PROXIMITY TO BASEMENT, ALTHOUGH A BASAL CONGLOMERATE WAS NOT ATTAINED AS PER TARGET PLAN. FURTHERMORE IT APPEARS LIKELY THAT SHOWS WERE NOT PROPERLY EVALUATED AND THAT AN OFFSET WELL SHOULD BE DRILLED ON STRUCTURE (?) TO BASEMENT WITH A PROPER MUD PROGRAMME TO WITHSTAND CAVING HOLE CONDITIONS AND TO ALLOW FOR COMPLETE AND ACCURATE HYDROCARBON EVALUATION VIA MODERN MUDLOGGING, ELECTRIC LOGGING, AND DRILLSTEM TESTING. "IT WAS HOPED THAT A WEDGE (STRATIGRAPHIC PLAY ONLY?) OF THE MARINE MIDDLE AND UPPER CRETACEOUS SEDIMENTS WHICH YIELDED PETROLIFEROUS GAS IN THE ADJOINING OTWAY BASIN WOULD BE PRESENT AT THIS LOCATION, BELOW THE EASTERN VIEW COAL MEASURES AND RESTING UNCONFORMABLY ON THE OTWAY GROUP. HOWEVER, AS THIS PRIMARY TARGET PROVED TO BE ABSENT, THE SECONDARY OBJECTIVE OF SEEKING φ WITHIN OR AT THE BASE OF THE OTWAY GROUP WAS PURSUED TO THE MAXIMUM OF THE CAPACITY OF THE AVAILABLE EQUIPMENT." (COMPLETION REPORT, PAGE 5.)

* NEEDS FURTHER RESEARCH

JAWJUC 8241

WELL NAME: **ANGLESEA 1**
 STATUS: _____ RIG: _____ CONSEC. No.: _____
 DATE: Commenced _____ Completed **6. 6. 62** TOTAL DEPTH: **3062**
 ELEVATION (G.L.) **19.8** LOCATION: A.M.G. sheet _____
 PARISH No _____ N **38 24 26** E **114 11 52**

ENGINEERING DATA: (casing, plugs, completion details) **OPE. SA OIL well.**
 17" casing to 118
 12 1/2 " to 699
 8 1/2 " to 3062.
912458 006

GEOPHYSICAL LOGS: Logged by **SCHLUMBERGER.** B.M.T. **66.6 at 1923**
75.5 at 2403
115.2 at 3062
 Microlog 3 runs to 1923
 Dip metre
 Electric
Core 1 at 12 - 3068

	CORES: Conventional				Side Wall Cores			
	From (m)	Thick	Recov.	%	Depth (m)	Recov.	Depth	Recov.
1								
2	240	246						
3	332	338						
4	370	376						
5	459	465						
6	542	548						
7	588	594						
8	678	681						

D Ripper.

912458 007

GROUNDWATER DATA: (T.O.S., screened intervals, S.L., Drawdown, Yield).

STRATIGRAPHY: Formation		Depth(m)	From	To	Comments
Heytesbury Group (CNR)	Newer Basalt	CXWV			
	Whalers Bluff Fm	CQWB			
	Moorabool Viaduct Sds.	CXMO			
	PortCambell Lst Fm	CHPC			
	Gellibrand Marl	CHAM			
	Clifton Fm.	COCL			
Nirranda Group (CON)	Narrawaturk Marl ^{Demands Bluff}	CONM	0		
	Mepunga Fm	CEME			
Wangerrrip Group (CPW)	Dilwyn Fm (Easter View)	CPDI	118.8		
	Older Volcanics	CEEV			
	Pember Mudstone	CPPM			
	Pebble Point Fm.	CPPP			
Sherbrook Group (MCS)	Paaratte Fm				
	Timboon Sd (Skull Ck)	MCPA			
	Nullawaare Fm	MCTS			
	Belfast Mudstone	MCHG			
	Flaxmans Fm	MGBM			
Otway Group (MCOZ)	Waarre Snds Fm	MCLF			
	Summeralla Fm	MCLW			
	Pretty Hill Sds (GALTWOOD BEACH)	MCEW	SBS	3065	
	Palaeozoic mudstones	MCPH			
		PSMV			

OTHER DATA: (Velocity survey, seismic line, gas/oil show, tests)

DATA SOURCE, REFERENCES, COMMENTS

Douglas UR 63/18

Dellenbach BMR Ree 1965/66

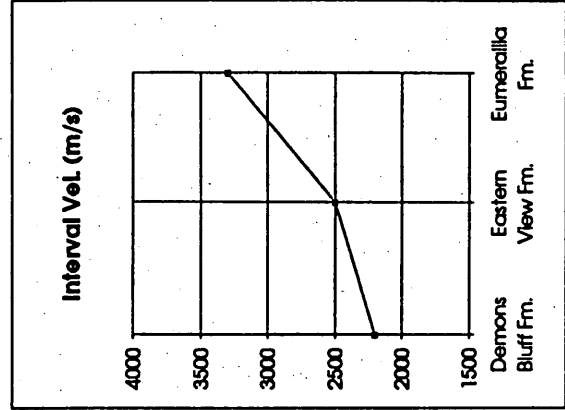
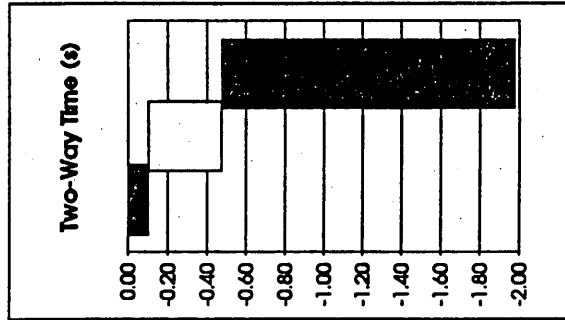
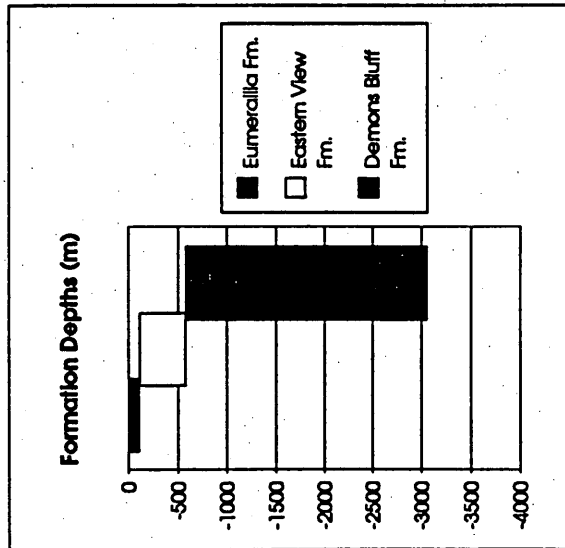
DeHmann 1965. For from Kooka Hill PL

ANGLESEA NO.1

OTWAY BASIN

Strat. log by - S. Tickell et al.(GSV) 1991
 Lat: -38.407222 Long: 144.19806
 KB Elev. (m ASL) 23.4 Grd. Bev. 19.8

Age	Unit	Remarks	Depth (m)	Thickness	Int. Vel. (m/s)	T-time (s)	2-T-time (s)	TWT Fm. top (s)
Eocen-Oligocene	Demons Bluff Fm.	Niranda Gp.	-4	-114	2200	-0.05	-0.10	0.00
	Eastern View Fm.		-118	-466	2500	-0.19	-0.37	-0.10
E. Cret.	Eumeralla Fm.	Otway Gp.	-584	-2480	3300	-0.75	-1.50	-0.48
	ID		-3064					-1.98



912458 009

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: ANGLESEA 1

Date of Job: FEBRUARY 1987

A. Concentrations of Extracted Material

Depth(ft)	Weight of Rock Ext'd. (grams)	Total Extract (ppm)	Loss on Column (ppm)	-----Hydrocarbons-----			-----Nonhydrocarbons-----		
				Saturates (ppm)	Aromatics (ppm)	HC Total (ppm)	NSO's (ppm)	Asphaltenes (ppm)	NonHC Total (ppm)
497.0 Core 1	8.9	11674.2	4568.5	679.2	1724.2	2403.4	4702.2	nd	4702.2
2565.0 Core 10	30.3	343.2	75.9	145.2	19.8	165.0	102.3	nd	102.3
6239.0 Core 23	73.1	243.5	43.8	53.4	52.0	105.3	94.4	nd	94.4

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: ANGLESEA 1

Date of Job: FEBRUARY 1987

B. Compositional Data

Depth(ft)	-----Hydrocarbons-----			-----Nonhydrocarbons-----			EDM(mg) TOC(g)	SAT(mg) TOC(g)	SAT AROM	ASPH NSO	HC Non HC
	ZSAT.	ZAROM.	ZHC's	ZNSO's	ZASPH.	ZNon HC's					
497.0 Core 1	9.6	24.3	33.8	66.2	nd	66.2	24.5	1.4	.39	nd	.5
2565.0 Core 10	54.3	7.4	61.7	38.3	nd	38.3	41.4	17.5	7.33	nd	1.6
6239.0 Core 23	26.7	26.0	52.7	47.3	nd	47.3	28.3	6.2	1.03	nd	1.1

na = not applicable nd = no data

912458 010

TABLE 3

Summary of Gas Chromatography Data

Wellname: ANGLESEA 1

Date of Job: FEBRUARY 1987

A. Alkane Compositional Data

Depth(ft)	Prist./Phyt.	Prist./n-C17	Phyt./n-C18	CPI(1)	CPI(2)	(C21+C22)/(C28+C29)
497.0 Core 1	.86	.50	.68	3.17	3.99	.29
2565.0 Core 10	.99	.46	.58	1.46	1.74	4.88
6239.0 Core 23	.90	.63	.85	nd	nd	nd

TABLE 3

Summary of Gas Chromatography Data

Wellname: ANGLESEA 1

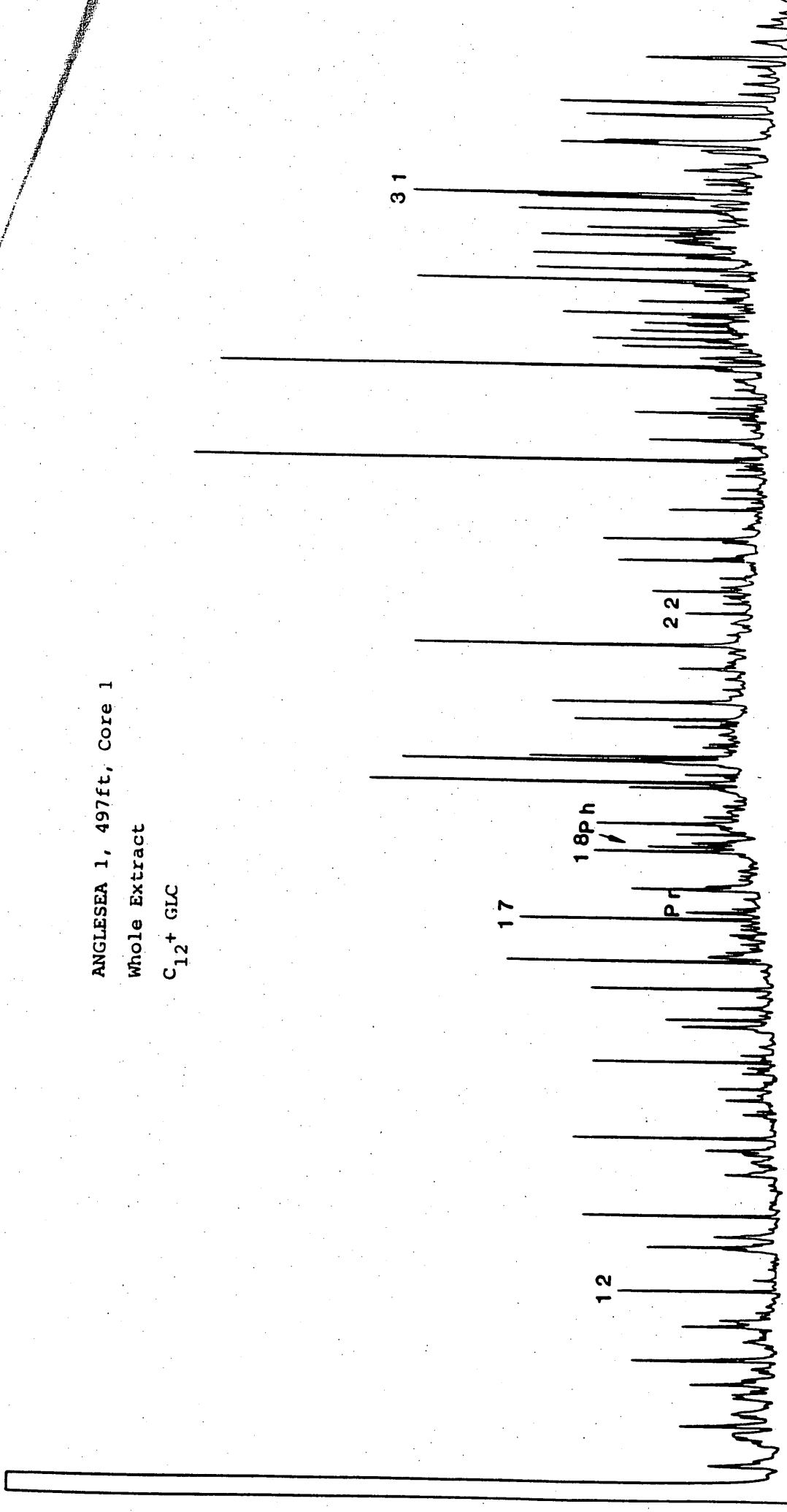
Date of Job: FEBRUARY 1987

B. n-Alkane Distributions

Depth(ft)	nC12	nC13	nC14	nC15	nC16	nC17	iC19	nC18	iC20	nC19	nC20	nC21	nC22	nC23	nC24	nC25	nC26	nC27	nC28	nC29	nC30	nC31
497.0 Core 1	3.5	4.3	4.4	3.6	3.9	5.1	2.6	4.4	3.0	2.8	1.6	1.5	1.7	3.0	2.1	12.3	3.3	12.4	2.3	8.7	4.7	8.8
2565.0 Core 10	5.3	6.8	9.3	6.5	8.5	12.3	5.6	9.8	5.6	6.5	4.1	2.7	4.6	1.9	1.4	2.9	1.1	1.3	.6	.9	1.3	1.2
6239.0 Core 23	7.7	8.2	15.9	7.4	8.5	9.2	5.8	7.6	6.5	8.4	3.7	2.4	5.2	3.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

na = not applicable nd = no data

ANGLESEA 1, 497ft, Core 1
Whole Extract
C₁₂+ GLC



DEPT. PRIMARY ACTIVITIES
PETROLEUM DEVELOPMENT
THIS DOCUMENT IS PUBLIC
ON OR BEFORE MARCH 2003

PE905784

This is an enclosure indicator page.
The enclosure PE905784 is enclosed within the
container PE905677 at this location in this
document.

The enclosure PE905784 has the following characteristics:

ITEM_BARCODE = PE905784
CONTAINER_BARCODE = PE905677
NAME = Fossil Distribution Sheet for
Anglesea-1(sheet 6 of 6)
BASIN = OTWAY BASIN
PERMIT = PPL/256
TYPE = WELL
SUBTYPE = DIAGRAM
DESCRIPTION = Fossil distribution Data Sheet, sheet 6
of 6, (from Appendix 6 of WCR) for
Anglesea-1
REMARKS =
DATE_CREATED =
DATE_RECEIVED =
W_NO = W345
WELL_NAME = ANGLESEA-1
CONTRACTOR =
CLIENT_OP_CO =

(Inserted by DNRE - Vic Govt Mines Dept)

912458 013

DEPT. PRIMARY INDUSTRIES
PETROLEUM DEVELOPMENT
THIS DOCUMENT HAS BEEN
SUBMITTED
ON OR BEFORE MARCH 2003

PE905785

This is an enclosure indicator page.
The enclosure PE905785 is enclosed within the
container PE905677 at this location in this
document.

The enclosure PE905785 has the following characteristics:

ITEM_BARCODE = PE905785
CONTAINER_BARCODE = PE905677
NAME = Fossil Distribution Sheet for
Anglesea-1(sheet 5 of 6)
BASIN = OTWAY BASIN
PERMIT = PPL/256
TYPE = WELL
SUBTYPE = DIAGRAM
DESCRIPTION = Fossil distribution Data Sheet, sheet 5
of 6, (from Appendix 6 of WCR) for
Anglesea-1
REMARKS =
DATE_CREATED =
DATE_RECEIVED =
W_NO = W345
WELL_NAME = ANGLESEA-1
CONTRACTOR =
CLIENT_OP_CO =

(Inserted by DNRE - Vic Govt Mines Dept)

DEPT. PRIMARY INVESTIGATION
PETROLEUM DEVELOPMENT
THIS DOCUMENT HAS BEEN
SCANNED
ON OR BEFORE MARCH 2003

PE905786

This is an enclosure indicator page.
The enclosure PE905786 is enclosed within the
container PE905677 at this location in this
document.

The enclosure PE905786 has the following characteristics:

ITEM_BARCODE = PE905786
CONTAINER_BARCODE = PE905677
NAME = Fossil Distribution Sheet for
Anglesea-1(sheet 4 of 6)
BASIN = OTWAY BASIN
PERMIT = PPL/256
TYPE = WELL
SUBTYPE = DIAGRAM
DESCRIPTION = Fossil distribution Data Sheet, sheet 4
of 6, (from Appendix 6 of WCR) for
Anglesea-1
REMARKS =
DATE_CREATED =
DATE_RECEIVED =
W_NO = W345
WELL_NAME = ANGLESEA-1
CONTRACTOR =
CLIENT_OP_CO =

(Inserted by DNRE - Vic Govt Mines Dept)

912458 015

DEPT. PRIMARY INDUSTRIES
PETROLEUM DEVELOPMENT
SCHEME
THIS DOCUMENT HAS BEEN
ON OR BEFORE MARCH 2003

PE905787

This is an enclosure indicator page.
The enclosure PE905787 is enclosed within the
container PE905677 at this location in this
document.

The enclosure PE905787 has the following characteristics:

ITEM_BARCODE = PE905787
CONTAINER_BARCODE = PE905677
NAME = Fossil Distribution Sheet for
Anglesea-1(sheet 3 of 6)
BASIN = OTWAY BASIN
PERMIT = PPL/256
TYPE = WELL
SUBTYPE = DIAGRAM
DESCRIPTION = Fossil distribution Data Sheet, sheet 3
of 6, (from Appendix 6 of WCR) for
Anglesea-1
REMARKS =
DATE_CREATED =
DATE_RECEIVED =
W_NO = W345
WELL_NAME = ANGLESEA-1
CONTRACTOR =
CLIENT_OP_CO =

(Inserted by DNRE - Vic Govt Mines Dept)

912458 016

DEPT. OF PRIMARY INDUSTRIES
PETROLEUM DEVELOPMENT
THIS DOCUMENT IS
SCANNED
MARCH 2003
ON OR BEFORE

PE905788

This is an enclosure indicator page.
The enclosure PE905788 is enclosed within the
container PE905677 at this location in this
document.

The enclosure PE905788 has the following characteristics:

ITEM_BARCODE = PE905788
CONTAINER_BARCODE = PE905677
NAME = Fossil Distribution Sheet for
Anglesea-1(sheet 2 of 6)
BASIN = OTWAY BASIN
PERMIT = PPL/256
TYPE = WELL
SUBTYPE = DIAGRAM
DESCRIPTION = Fossil distribution Data Sheet, sheet 2
of 6, (from Appendix 6 of WCR) for
Anglesea-1
REMARKS =
DATE_CREATED =
DATE_RECEIVED =
W_NO = W345
WELL_NAME = ANGLESEA-1
CONTRACTOR =
CLIENT_OP_CO =

(Inserted by DNRE - Vic Govt Mines Dept)

912458 017

DEPT. OF PRIMARY INDUSTRIES
PETROLEUM DEVELOPMENT
THIS DOCUMENT HAS BEEN
SCANNED
MARCH 2003
ON OR BEFORE

PE905789

This is an enclosure indicator page.
The enclosure PE905789 is enclosed within the
container PE905677 at this location in this
document.

The enclosure PE905789 has the following characteristics:

ITEM_BARCODE = PE905789
CONTAINER_BARCODE = PE905677
NAME = Fossil Distribution Sheet for
Anglesea-1(sheet 1 of 6)
BASIN = OTWAY BASIN
PERMIT = PPL/256
TYPE = WELL
SUBTYPE = DIAGRAM
DESCRIPTION = Fossil distribution Data Sheet, sheet 1
of 6, (from Appendix 6 of WCR) for
Anglesea-1
REMARKS =
DATE_CREATED =
DATE_RECEIVED =
W_NO = W345
WELL_NAME = ANGLESEA-1
CONTRACTOR =
CLIENT_OP_CO =

(Inserted by DNRE - Vic Govt Mines Dept)

BIOSTRATA PTY LTD

A.C.N. 053 800 945

912458 018

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La Trobe University
Bundoora VIC 3083

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Dear Bruce

I have reviewed the palynological reports on Anglesea-1 by Morgan (1987) and Macphail (1989) which I borrowed from you on 26 February. My interpretation of the data is synthesised into a single STRATDAT file given as an Excel file printout.

Both reports are fairly typical of contract palynological work and there is general agreement on zones and ages in the well. Most differences reflect different samples and different experience of the two palynologists.

The one glaring anomaly is that the sample from core-4 at 1216ft reported on by Roger Morgan is either badly contaminated or somehow mixed up. It contains a mixed assemblage of Eocene *N. asperus* Zone species with Paleocene *L. balmei* Zone species. Whilst it is not possible to say exactly what went wrong one or more of the following are possible:

- i. Sample was poorly cleaned.
- ii. Samples were cross-contaminated in laboratory.
- iii. Slides were wrongly labelled.
- iv. Species were assigned to wrong samples during computer entry of data for range chart.

The species list from the sample given on Morgan's range chart is rearranged on attachment according to *N. asperus* Zone species, *L. balmei* Zone species and long ranging species. Note that Macphail (1987) records 25 (71%) of the species from the *L. balmei* Zone and long ranging lists from his sample from this core. When this sample is accepted as Upper *L. balmei* Zone the rest of the data falls into place.

The other major comments to be made on the sequence in Anglesea-1 are as follows:

1. The limited palynological data suggests that the most reasonable geological interpretation is that at T.D. Anglesea-1 was still within the Otway Group and still within the Early Cretaceous.
2. Below about Core-19 at 4821+ feet all samples are carbonised yielding very poorly preserved and very limited assemblages. Any zone picked on this data must be used with extreme caution.
3. The differences in zone picks in the Otway Group between the reports is consistent with the use of different samples, different processing technique and different effort factor at the microscope. Palynomorph assemblages extracted from the Otway Group are notoriously variable. An amalgam of ages from both reports is considered best.

4. The deepest occurrences of the zones species in Macphail's report are used to pick the bases of the *C. striatus*, *C. hughesii* and *C. australiensis* Zones within the carbonised section. Because of the overall rarity of palynomorphs these picks are all likely to be TOO SHALLOW.
5. The limited assemblages recorded force both palynologist to give a broad Latest Jurassic to Early Cretaceous to the deepest samples. Both are relying on negative evidence as neither identified species which become extinct within the Jurassic.
6. The range of the diagnostic spore *Cicatricosisporites australiensis* further complicates the issue as whilst most palynologists take its first appearance as the base of the Cretaceous in Australia others extend its range a considerable distance into the Jurassic. I do not consider this argument relevant to Anglesea-1 because near the base of its range *C. australiensis* is always rare. Thus, this rarity, combined with the poor preservation and low yield in Anglesea-1 would virtually preclude the recording of this species.
7. Both authors record anomalous species ranges in their assemblages. I consider most represent laboratory contamination, because mud contamination is highly unusual with conventional cores.

Finally there is the question of what additional palynological work is warranted on Anglesea-1? Firstly, no further work is recommended on the Otway Group as it is unlikely to significantly improve the age dating. In the Tertiary and Late Cretaceous the cores 1, 2 and 5 are worth re-analysing as there are still some ambiguities on their assemblages and ages. Cuttings could also be used to fill in the gaps between the Tertiary and Upper Cretaceous zones identified in the cores if this was needed.

This review of Anglesea-1 is a good example of how different palynology reports can be synthesised to give a new and better interpretation. I hope it will help you when evaluating other reports in the future.

Yours sincerely

Alan Partridge
ALAN D. PARTRIDGE

ATTACHMENT 1

Species recorded from Core-4 at 1216 feet by Roger Morgan.

N. asperus Zone - 14 species.

Granodiporites nebulosus
Nothofagidites emarcidus/heterus (common) *
Nothofagidites falcatus *
Nothofagidites vansteenisii
Proteacidites crassus
Proteacidites kopiensis
Proteacidites leightonii
Proteacidites ornatus (misidentified?)
Proteacidites pachypolus
Proteacidites rectomarginis
Proteacidites rugulatus
Tricolporites estoutus
Triorites magnificus (?)
Triporopollenites ambiguus (?)

L. balmei Zone - 9 species.

Australopollis obscurus *
Cyathidites gigantis *
Ephedripites sp. *
Gambierina rudata *
Gleicheniidites circinidites (frequent) *
Lygistepollenites balmei *
Nothofagidites endurus
Periporopollenites polyoratus
Tetracolporites textus

Long Ranging Species - 26 forms.

Clavifera triplex *
Cupanieidites orthoteichus *
Cyathidites splendens *
Dacrycarpites australiensis
Dilwynites granulatus *
Dilwynites tuberculatus
Ericipites scabratus
Haloragacidites harrisii *
Latrobosporites crassus *
Lygistepollenites florinii *
Malvacipollis diverus
Malvacipollis subtilis *
Myrtaceidites parvus/mesonesus *
Nothofagidites brachyspinulosus *
Nothofagidites flemingii
Periporopollenites demarcatus *
Proteacidites adenanthoides *
Proteacidites annularis *
Proteacidites grandis *
Proteacidites incurvatus *
Proteacidites lapis
Proteacidites spp. (frequent) *
Retitriletes austroclavatides
Stereoporites antiquisporites *
Stereisporites (Tripunctisporis) punctatus *
Verrucosisporites kopukuensis

* Identified by M.K. Macphail from same core.

	A	B	C	D	E	F	G	H	I	J	K
1	STRATDAT FILE FOR ANGLESEA-1, TORQUAY BASIN.										
2											
3	ABBREVIATION AT TOP OF COLUMNS										
4			CODE =		ZONE CODE						
5			/ =		TOP/BASE OF ZONE OR FORMATION						
6			PT =		PICK TYPES						
7			P/A =		PREFERRED/ALTERNATE DEPTH						
8			C =		CONFIDENCE RATING						
9			S =		SECURITY RATING						
10			R =		REFERENCE CODE						
11											
12	WELL NAME	DEPTH	DEPTH	CODE	/	ZONE NAME	PT	P/A	C	S	R
13		FEET	METRES								
14	ANGLESEA-1	490.0	149.4	S2110		LOWER N. ASPERUS	Y		A4	O	2
15	ANGLESEA-1	809.0	246.6	S2115		P. ASPEROPOLUS	M		A4	O	2
16	ANGLESEA-1	1090.0	332.2	S2155	H	UPPER L. BALMEI	Z	P	A2	O	2
17	ANGLESEA-1	1090.0	332.2	M2180	H	A. HOMOMORPHUM	Z	P	A3	O	2
18	ANGLESEA-1	1234.0	376.1	M2180	L	A. HOMOMORPHUM	Z	P	A3	O	2
19	ANGLESEA-1	1234.0	376.1	S2155	L	UPPER L. BALMEI	Z	P	A2	O	2
20	ANGLESEA-1	1506.0	459.0	S2160	H	LOWER L. BALMEI	Z	P	A2	O	2
21	ANGLESEA-1	1526.0	465.1	S2160	L	LOWER L. BALMEI	Z	P	A2	O	2
22	ANGLESEA-1	1778.0	541.9	S3110	H	T. LILLIEI	Z	P	A2	O	1
23	ANGLESEA-1	1798.0	548.0	S3110	L	T. LILLIEI	Z	P	A2	O	2
24	ANGLESEA-1	1931.0	588.6	S3145	H	C. STRIATUS	Z	P	A3	O	2
25	ANGLESEA-1	5171.0	1576.1	S3145	L	C. STRIATUS	Z	P	A3	O	2
26	ANGLESEA-1	6327.0	1928.5	S3150	H	C. HUGHESII	Z	P	A3	O	2
27	ANGLESEA-1	6347.0	1934.6	S3150	L	C. HUGHESII	Z	P	A3	O	2
28	ANGLESEA-1	10065.0	3067.8	S3160		C. AUSTRALIENSIS	M		A3	O	2
29											
30	REFERENCES:										
31	1. R. Morgan, Palynology report for AMOCO, January 1987 (R/4/87).										
32	2. M.K. Macphail, Palynology report for SHELL, August 1989 (R7423).										
33											
34	REMARKS:										
35	1. Palynology based on 32 samples from 21 cores.										
36	2. Palynomorphs carbonised and of low reliability below 4800 ft.										
37	3. Assemblage reported by R. Morgan from C-4 at 1216 ft is L. balmei Zone contaminated with										
38	N. asperus Zone fossils.										



6237' 1901 m
 6247' 1904.1 m

1. Residual yellowish orange sandy & clayey clasts 40-80' + 170'
 2. Demons Bluff - Probable upward descent in Qtz, erratic presence of fossils & glauconite, burrows suggestive of cyclic marine - non marine sedimentation [Not abundant Cyprinae 40-60']
 3. Polished well rounded quartz pebbles at 140' 170' (contam?)
 4. Coal interbeds 260'
 5. Clay like sponge remains 290'
-
- D Bluff
- E View
6. Coal 320' 1/4 350' 330 20% Coal 340 17% Coal
 7. coarse Qtz remaining 360' 25% , 370' 10% , 380' 9%

Angles 1. 00NL

40-60' 75% fine up 82 - massive pale brown - off wh, arg - srd, hand / transp.
Coated with mud.

20% Muddy red brown silt. prob casts.

5% Non calc pale yll, possibly to waxy clasts, one for side

soft bright red brown clasts weath holes?

Pale gr glauc + iron dots clayey silt? sh calc.

Fossils - mod abundant Cyprammina large

Traces blue pellets & no large / echinoid casts.

yel brown dots & lam fossils

Trace manganese

low siltite dots for srt.

Trace vitreous concretion fossils black coral.

< 11.6' 82 - Col. opaque & hand (wh) transp, arg - srd, nodular casts, indented
with some mud coating.

80' brown like ^{clasts} silt / ^{only} silt fossils - fossils are 60% fine 37% silt
silt mud, 3% silt fossils of clay. N/A.

Pale yll clay N/A.

Cyprammina (much reduced in No)

Mosses.

Traces ferrug + lam srt.

Trace pyrite cement (stallone)

No blue

82 fine - fine - off wh (brown coated), arg - srd, hand / transp

0.7% Co. - wh transp / hand, silt, nodular casts, traces of mud in
shallow indentations.

110 N/A No blue or Cyprammina

one pyrite silt rod - burrowing.

iron ^{iron} from clasts - a nearby silt silt.

rest hand, wh. sub rd mottled 82 grain

prob iron mineral.

Appears to be a
progressive down hole unit
in fr qtz at the expense
of musc + met in grainsize

5% to 10% mica etc.

140' blk gr fine rdy, muscovy rdy with ^{reddish glass} CO-veo polished frd-veo qtz
grains - white transl/transp, smooth, rdy. Qtz tones slightly
undented with some mud coating

Fines - 55% fr qtz wh/opp wh, long to srd, rdy coated, transl/transp.

45% muscovy rdy/rdy musc. Some muscov. The muscov likely

to be carb. burrows / tubes of ypl of decomposed musc

No glass. Prob Non musc

170' 10% Prob contains some clasts, re-appearance of grey brn 'lean' clayey fms

(samples 80-85, 80); blk gr fine rdy rdy 'clay' or calc. ⁶³ Cylindrical

some rdy of coarse gr musc. Prob rdy coating brn flaking rdy.

70% fines - 70% Qtz N/A. See rdy ypl opaque fr qtz.

30% prob carb rdy musc N/A.

Trace of musc glass, Permitted burrows to 0.2 mm diam

2% polished rdy to qtz N/A.

6-8% gran Qtz - transl/wh transl/ypl transl opaque, mainly srd smooth

shaded rdy with rdy indentation & accompanying musc.

Old grains are sang. V undented and are blk composite grains with low
cement. The blk + V undented grains idem from a different source.

200' 10% - 5% clasts of blk rdy rdy fms N/A

5% red brn flaking fms. rdy calc.

3% Qtz - 1/8-1/16, srd to rd, opp sang, polished smooth rdy.

The V undented grains may be composite grains as 2 rdy Qtz overgrowths.

grains are wh, opaque transl wh/transp wh. 1/16-1/8

89% fines 85% Qtz - fr, opp wh, sang - srd, coated.

15% carb musc.

trans musc hard glass, + some dolomite some clasts peritite cement.

230' best N/A. Prob a best preserved rdy fms.

5% clasts - blk rdy rdy, rdy rdy fms, Qtz pebble, med rdy brn clast
fms fr rdy (prob lami); ^{on peritite concealed.}

95% fines N/A. musc, prob glass

260' Dark chocolate brown friable or sandy silt to silty sand with clastic chert
like shaly (Vite) coal part 5% of total.

Red chert with wavy pale brown strands.

Sed rock thin - brown bedded, bituminous

Red chert sandy to massed part.

Traces of potashlike with fleming / hand etc

Red chert with flat sub || lath-like strata, chert, non calc

No grains of fossils. Prob non porous

290' Siderite or iron ore nodules at base, chert silty sand / sandy silt & ^{buff} egg shells
mass of coarse silt under the rest

Chert suggests thin - brown beds with coarse granular

Qtz - hand / fleming not angular, silty coated. Co grains - fleming / hand
wavy undulating surface, mass coated, mainly sand on isolated silt.

White hand / fleming rocks 0.1 mm x 0.6 mm looking like trivertinite chert?
(type of lithioid) processes and silty, → some monoclinic species

300' 80% Qtz

5% massive

15% silty sand / sandy silt

Traces of wavy chert.

Poor trace glass

massed

Basal

Prob E view top

320' 80% low rank dk brown black coal with thin chert pale brown sandy friable
silt & pyritic cemented friable silt.

Fine 60% silty sand / silty mud. 40% fine Qtz - ^{silty} fine hand / fleming silty to silty
coated.

Mass. traces amber glass etc.

Trace chert or cemented for silt with poor chlorite coating.

300' 10% chert med dark brown massed friable silt, vertical sandy silt with ? specular (see 300')
^{laminar} layers of carb sandy silt & fine cleaved silt.

Fine 90% - ^{silty} fine Qtz (rare Co - Vite Qtz) ang. silt, silty coated, fleming - hand.

15% carb sandy silt. Mass

310' A1A 10' ? species.

330' 20% dk bluish brown coal

leaves particles 75% - 20% coal

80% med br mica + carb soft ^{midly} slab. on front.

Thin to lam on dist oryzed ? lam for 100. + white glauc off ^{to} side lat.

Trace Qtz base - Vec, trace of feldspar with, redd - str, one well polished, with ^{small} mica inclusions.

Fines 25% - 25% coal to last mat.

10% for Qtz

Prob Non massive

65-75% for last andy slab.

Traces interstitial mat - a resin, amber, orange mica inclusions.

340' lower levels 30% - 30% coal

70% med br carb mica midly slab on patches

front; Trace indented ^{to} + possibly composite, white trace Qtz, also coated. Trace ^{to} dense pyritized cemented ^{to} grains in a slab.

Fines 70% - 10% coal

15% mica andy slab last slab.

65-75% for Qtz - sh off with, ang - str, also coated with

med mat.

1% Hard. + interstitial mat. Prob glauc pellets. Amber.

Trace of orange mica

Prob Non massive.

350' chocolate brown low rank brown coal - possibly to scratch

None lenticular mat², few smaller rose grains

on fr. gr. grains white sil coated - face 10% prob 5% sil fr. gr. ang - sang - srd.

see med - to gr sang, indented.

Most components of muscovite.

Non massive

----- Otz unit 31.

36 55% med gr brown carb mat, fr. abt, fr. redy medy abt.

25% Co - Vlt Otz - off wh, transl / redly transp, sang - srd.

mainly with nodules indented sil med coated mat² on smooth

rounded abraded mat²; coarsest part, rather polished w few inclusions

faces prob 60% Otz fine grained HIA. Remained silt only silt mat.

Most grains have some rd brnch med on them.

No Glass

Non massive

Some Muscovite

Prob thin - hour interval of medy abt abt w bands of looser Otz

370. 5% coal darts.

38% pale gr brown sandy silty med

10% Vlt - green Otz - off wh, transl, nodules visible sang - srd

5% dark brown carb medy abt.

45% fine sil Otz sang - srd HIA.

50% med with + carb mat²

Prob Non massive

Trails massive

Trails blocky

with sil

380' 90% Co - gran Otz - off wh, dusted with med, transl / off transp, 10% ^{wh.} opaque

sang, redly srd, surfaces ^v very indented with med upfilling cavities

on grain may be a composite, on with ktal growths - face projecting sharply, few mat.

The high irregularity is suggestive of basin margin.

darts of medy silty coal - verse cat, low coal, pale brown medy silt

faces 10% or less - 90% fr. gr, off wh sil coated ang - srd 10% med carb mat

Trails med.

Trace components - apatite (fr. gr)

400-
410

90% Qtz - lo-gran well std, sang, srd, white - sh off wh, much smoother
surfaces than 280' less indentations, less mud/matrix adhering to grain
mainly trans, though on trans & oragol. some subtem cavities
most grains show some polishing on edges

71. Clasts dk br carb sh; few crushed coal with vit ^{rotated} appear & concave/vein
fracture

80. Clasts of wh calc cemented med-veg sst, ^{sh frags.} (Prob casing cemented)

420-30 65% off wh casing cement. [Note 17 1/2" casing set at 389']

20% br blk coal

15% Qtz - lo-gran, trans wh, ^{on trans & oragol} ang on srd, cracked/split, mod
coated. surfaces indented see stabbone

trace blaus Contains

450 71. Casing Cement

90% Qtz - med-gran, mod std, ^{-sang} ang, partly srd, see composite, trans

30% wh - wh br, coated. Surfaces very indented, etched, see std
faces, edges mod polished

3% coal, for sdy sst, med br lignite,

480 13% dk br coal, on these clasts studded with br Qtz - coal forest leaves

85% Qtz. cleaner wh sh off wh, trans - trans, sang - srd, with
dull pitted few indented pitted surfaces mod std

frags - med of Qtz & carb mat.

Core 1 490-510 Rec 8' Coal

510 R1A. 71. Cement, 65% Qtz - well std, lo-gran, clean white trans
& trans, sang on srd, few faceted grains, see split with mod
polished shallow indented surfs. mineral covts adhering coaly mud,

30% br blk low rank soft coal. Small covts seen.

see with br - med Qtz on the coal.

Prob the beds/lams of coal in the sst.

Prob contains due to core 1 at 490-510'.

Harris 1970

Anglesia

western Cambell Embay

P. pachycephalus

Eoc

P. conprogensis 2

Paleoc.

C. ortholeclius 2

C. edwardsii

2670 - 2780

²⁶⁶⁷⁻⁹⁹
Core 2 58% *Proterid* *schizophoria* / *schizophoria* must 39% *glauca* *for-cos*, 10% *Ula*

60. *code* *Pro*
Fuc 21 2762 *for-vec* *glauca* *sch*, *sch* *sch*, *sch*.

2720-83 60% *hd* *schale*, *sch* *sch*

40% *med-green* *gtr* *Pro-1d*

2790-2820 85% *Ula* *gtr* *Pro-1d*

10% *schale*

20-40 50% *lo-green* *gtr* *Pro-1d*

20% *Ula* *any* *gtr* *best* *glauca*

15% *sch* *must*

40-70 75% *for-green* *gtr*

15% *gtr* *sch* *sch*