PALYNOLOGICAL ANALYSIS, WRASSE-1
GIPPSLAND BASIN

by

M.J. HANNAH
G.D. POWIS
M.K. MACPHAIL

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PART I

INTRODUCTION

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INTRODUCTION

Wrasse-1 intersected Latrobe Group sediments ranging in age from Lower *L. balmei* to (?) Middle *N. asperus*. A significant unconformity occurs at the base of the channel fill sediments where the Lower *N. asperus* Zone overlies the Upper *L. balmei* Zone.

Exact details of the situation at the boundary between the Turrum Formation/Lakes Entrance Formations boundary are difficult to sort out owing to the poor dating over this interval.

In total 48 samples from both sidewall and conventional cores were prepared and examined. Preservation was in general, poor and yield low.

GEOLOGICAL COMMENTS

1. GEOLOGICAL SUMMARY

AGE	UNIT *	ZONE	DEPTH (m)
Early Miocene	Lakes Entrance Fm.	*P. tuberculatus*	2588.67-2711.0
	log break at approx. 2713m		
latest Eocene-earliest Oligocene	Un-named carbonate	No older than Middle *N. asperus*	2723.0
	log break at approx. 2730m		
Middle Eocene	Turrum Fm. (Unit A)	Lower *N. asperus*	2733-2822
	log break at 2824m		
Middle Eocene	Turrum Fm. (Unit B)	*N. asperus*	2826-2848
	log break at 2859m		
Middle Eocene	Turrum Fm. (Unit C)	Lower *N. asperus*	2860-2865
	log break at 2868.5m		
Paleocene	Latrobe Group	Upper *L. balmei*	2901
Paleocene		Lower *L. balmei*	2936.5-2977

* Units and boundaries after Rexilius (1984)

T.D. 2984

2. TOP OF LATROBE GROUP

Because of poor preservation and low yields age dating of samples over this boundary is difficult. Little can be added to the discussion presented by Rexilius (1984) other than to say that the palynological dates obtained are consistant with the foraminiferal determinations.

3. TURRUM FORMATION

For reasons outlined in the biostratigraphy section the Turrum Formation sediments are assigned to the Lower Nothofagidites asperus Zone albiet with a low degree of confidence.

BIOSTRATIGRAPHY

1. Lower Lygistepollenites balmei Zone (2977.0m to 2936.5m)

The presence of Lygistepollenites balmei in conjunction with species such as Nothofagidites endurus, Australopollis obscurus, Latrobosporites ohaiensis is indicative of a Lower Lygistepollenites balmei Zone age for these sediments.

The presence of the dinoflagellate Eisenackia crassitabulata in sidewall core 32 at 2967.5m and the subsequent assignment of this sample to the Eisenackia crassitubulata Zone is consistant with the Lower Lygistepollenites balmei Zone age for this interval.

2. Upper Lygistepollenites balmei Zone (2901.0m)

A single sample (sidewall core 36) is provisionally assigned to this zone on the basis of Lygistepollenites balmei, Integricorpus antipodus and Ischyosporites irregularis.

Sidewall core 35 at 2918.0m can only be assigned a generalized Lygistepollenites balmei Zone age, making the precise placement of the Upper/Lower Lygistepollenites balmei Zone boundary impossible.

3. Lower Nothofagidites asperus Zone (2865.0m to 2733.0m)

The channel fill sediments encountered in Wrasse-1 are provisionally assigned to the Lower Nothofagidites asperus Zone. This determination is largely based on the consistent appearance of the dinoflagellate Areosphaeridium

diktyoolokus. Reworking of Paleocene material including Lygistepollenites balmei and Australopollis obscurus is relatively common.

The Wilsonidinium echinosuturatum dinoflagellate Zone was recognised on the presence of the nominate species in sidewall core 56 at 2764.0m.

General abundance and diversity of dinoflagellates was high across this interval, with Vozzhenikovia extensa being found thoughout. This species has been previously considered to be a reliable indicator of a Middle Nothofagidites asperus Zone age. It now seems likely that the range of Vozzhenikovia extensa extends down into the Lower Nothofagidites asperus Zone.

4. Middle Nothofagidites asperus Zone (2723.0m)

Sidewall core 62 at 2723.0m has been dated as no older than Middle Nothofagidites asperus Zone because of the presence of Proteacidites rectomarginus.

5. Proteacidites tuberculatus Zone (2707.0m to 2588.07m)

Sidewall cores from this interval can be assigned to the Proteacidites tuberculatus Zone with a high degree of confidence based on the presence of Cyatheacidites annulatus.

Unfortunately the precise position of the boundary between the Middle Nothofagidites asperus and the Proteacidites tuberculatus Zones is again impossible to pick. This is because samples between 2729.0m (sidewall core 61) and 2711.0m (sidewall core 68?) have only generalized zonal assignments or indeterminate ages.

TABLE I : SUMMARY OF PALYNOLOGICAL ANALYSIS WRASSE-1

INTERPRETATIVE DATA

SAMPLE NO.	DEPTH (m)	YIELD	DIVERSITY SPORE POLLEN	LITHOLOGY	ZONE	AGE	CONFIDENCE RATING	COMMENTS
								1 of 4
31	2977.0	Good	Poor	Sl.st.	Lower L. balmei	Paleocene	2	L. balmei, N. endurus, G. retiintexta, P. golzowense
32	2967.5	Mod.	Poor	Sl.st.	Lower L. balmei (E. crassilabulata)	Paleocene	2	L. balmei, G. edwardsii, I. gillii, E. crassilabulata
33	2952.0	Meager	Poor	Sl.st.	L. balmei	Paleocene	1	L. balmei, L. amplus
34	2936.5	Poor	Poor	Sl.st.	Lower L. balmei	Paleocene	1	L. balmei, A. obscurus, S. reglum
35	2918.0	Poor	Poor	Sl.st.	L. balmei	Paleocene	2	L. balmei, L. ohalensis
36	2901.0	V. Poor	Fair	Sl.st.	Upper L. balmei	Paleocene	1	L. balmei, A. obscurus, I. antipodus
37	2865.0	Poor	Poor	Clyst.	Lower N. asperus	Late Eocene	2	P. confragosus; P. pachypolus; A. diktyoplokus
38	2866.0	Poor	Fair	Clyst.	Mid. N. asperus	Middle Eocene	2	V. extensa; A. diktyoplokus
39	2848.0	Poor	Fair	Slst.	Lower N. asperus	Middle Eocene	2	N. falcatus
40	2838.0	Poor	Poor	Ss.	Lower N. asperus	Middle Eocene	2	D. phosphoritica, N. falcatus
41	2837.0	Good	Poor	Ss.	Lower N. asperus	Middle Eocene	2	N. falcatus, A. diktyoplokus
42	2844.0	Poor	Poor	Ss.	Lower N. asperus	Middle Eocene	2	N. falcatus, F. crater
43	2826.0	Mod.	Fair	Sl.st.	Lower N. asperus	Middle Eocene	2	V. extensa, P. leightonii, N. falcatus, A. diktyoplokus
44	2822.0	Poor	Poor	Ss.	Lower N. asperus	Middle Eocene	2	V. extensa, N. falcatus, A. diktyoplokus

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TABLE I : SUMMARY OF PALYNOLOGICAL ANALYSIS WRASSE-1

INTERPRETATIVE DATA

SAMPLE NO.	DEPTH (m)	YIELD	DIVERSITY SPORE POLLEN	LITHOLOGY	ZONE	AGE	CONFIDENCE RATING	COMMENTS
								2 of 4
45	2817.0	Poor	Poor	Ss.	INDETERMINATE			
46	2812.0	Poor	Poor	Ss.	INDETERMINATE			
47	2808.0	Mod.	Pair	Sl.st.	Lower N. asperus	Middle Eocene	2	V. extensa, N. falcatus, P. leightoni, A. diktyoplokus
48	2802.0	V. poor	Poor	Ss.	Lower N. asperus	Middle Eocene	2	N. falcatus
49	2798.0	Poor	V. poor	Sl.st.	Lower N. asperus	Middle Eocene	2	N. falcatus
50	2794.0	V. Poor	Sl.st.	INDETERMINATE				
51	2790.0	Fair	Fair	Sl.st.	Lower N. asperus	Middle Eocene	2	V. extensa, N. falcatus
52	2785.0	Fair	poor	Sl.st.	N. asperus	Middle Eocene	2	N. falcatus
53	2778.0	Good	Fair	Sl.st.	Lower N. asperus	Middle Eocene	2	V. extensa, N. falcatus
54	2773.0	Negligible	V. poor	Sl.st.	INDETERMINATE			
55	2769.0	Poor	Poor	Sl.st.	Lower N. asperus	Middle Eocene	2	V. extensa, N. falcatus
56	2764.0	Moderate	Good	Sl.st.	Lower N. asperus (W. echinosuturatum)	Middle Eocene	1	N. falcatus, W. echinosuturatum reworked A. obscurus, L. balmei
57	2759.0	Low	Poor	Sl.st.	Lower N. asperus	Middle Eocene	2	T. simatus, S. punctatus
58	2754.0	High	Good	Sl.st.	Lower N. asperus	Middle Eocene	2	N. falcatus

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TABLE I : SUMMARY OF PALYNOLOGICAL ANALYSIS WRASSE-1

INTERPRETATIVE DATA

SAMPLE NO.	DEPTH (m)	YIELD	DIVERSITY SPORE POLLEN	LITHOLOGY	ZONE	AGE	CONFIDENCE RATING	COMMENTS
								3 of 4
Core 2	2751.3	Mod.	Poor		Lower N. aserus	Middle Eocene	2	V. extensa, reworked A. diktyoplokus
Core 2	2743.9	Low	Poor		Lower N. asperus	Middle Eocene	2	P. cf incurvatus, V. extensa
59	2737.0	Low	Poor	Sl.st.	N. asperus		-	
60	2733.0	High	Fair	Clyst.	Lower N. asperus	Late Eocene	2	T. falcatus
61	2729.0	Low	V. poor	Clyst.	INDETERMINATE			
62	2723.0	Low	V. Poor	Clyst.	No older than Mid. N. asperus	Oligocene-Late Eocene	-	P. rectomarginis
63	2719.0	Mod.	Poor	Clyst.	No older than Lower N. asperus	-	-	N. falcatus
64	2715.0	Low	Poor	Clyst.	No older than Lower N. asperus	-	-	N. falcatus
65	2711.0	V. Low	V. poor	Clyst.	INDETERMINATE			
66	2707.0	Mod.	Poor	Clyst.	P. tuberculatus	Oligocene	0	C. annulatus
67	2703.0	Mod.	Poor	Clyst.	P. tuberculatus	Oligocene	0	C. annulatus
68	2699.0	Good	Poor	Clyst.	P. tuberculatus	Oligocene	0	C. annulatus
69	2690.0	Mod.	Fair	Clyst.	INDETERMINATE			
70	2686.0	Low	Poor	Clyst.	P. tuberculatus	Oligocene	0	C. annulatus
71	2662.0	Low	Poor	Clyst.	P. tuberculatus	Oligocene	0	C. annulatus
73	2626.0	Low	Poor	Clyst	P. tuberculatus	Oligocene	0	C. annulatus

TABLE 1 : SUMMARY OF PALYNOLOGICAL ANALYSIS WRASSE-1

INTERPRETATIVE DATA

SAMPLE NO.	DEPTH (m)	YIELD	DIVERSITY SPORE POLLEN	LITHOLOGY	ZONE	AGE	CONFIDENCE RATING	COMMENTS
Core 1	2596.75	Mod.	Fair		P. tuberculatus	Oligocene	0	C. annulatus
Core 1	2597.3	Good	Poor		P. tuberculatus	Oligocene	0	C. annulatus
Core 1	2591.15	Low	Fair		P. tuberculatus	Oligocene	0	C. annulatus
Core 1	2588.67	Low	Poor		P. tuberculatus	Oligocene	0	C. annulatus

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TABLE 2

ANOMALOUS AND UNUSAL OCCURRENCES OF SPORE-POLLEN TAXA IN WRASSE-1

SAMPLE NO.	DEPTH (m)	ZONE	TAXON	COMMENTS
Core 1	2592.15	P. tuberculatus (O)	Cingulatisporites ozotus	Rare ms sp. (A.D.P.)
SWC 68	2699.0	P. tuberculatus (O)	Proteacidites incurvatus	Not prev. recorded above lowermost Upper N. asperus Zone
SWC 60	2733.0	Lower N. asperus (2)	Cyperacese	Modern taxon
SWC 60	2733.0	Lower N. asperus (2)	Gothanipollis bassensis	Uncommon sp.
Core 2	2751.3	Lower N. asperus (2)	Vozzhenikovia cf extensa	Associated with A. diktyoplokus Ditto 2764.0m, 2890.0m, 2826.0m, 2860.0m
SWC 56	2764.0	Lower N. asperus (1)	Wetzeliella echinosuturatum	Very rare zone dinoflagellate indicator species
SWC 49	2798.0	Lower N. asperus (2)	Deflandrea truncata	V. rare sp. (reworked)
SWC 41	2837.0	(Lower N. asperus)	Wetzeliella glabrum	V. rare sp.
SWC 37	2865.0	(Lower N. asperus)	Proteacidites confragosus	V. rare sp.
SWC 36	2901.0	Upper L. balmei (2)	Integricorpus antipodus	Uncommon sp.
SWC 34	2936.5	Lower L. balmei (2)	Stereisporites regium	Uncommon above Cretaceous

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PART TWO

BASIC DATA
SUMMARY TABLE
RANGE CHART

TABLE 3 : BASIC DATA SUMMARY : WRASSE-1

SAMPLE NO.	DEPTH (m)	YIELD	DIVERSITY SPORE POLLEN	LITHOLOGY
31	2977.0	Good	Poor	Sl.st.
32	2967.5	Mod.	Poor	Sl.st.
33	2952.0	Meager	Poor	Sl.st.
34	2936.5	Poor	Poor	Sl.st.
35	2918.0	Poor	Poor	Sl.st.
36	2901.0	V. Poor	Fair	Sl.st.
37	2865.0	Poor	Poor	Clyst.
38	2866.0	Poor	Fair	Clyst.
39	2848.0	Poor	Fair	Slst.
40	2838.0	Poor	Poor	Ss.
41	2837.0	Good	Poor	Ss.
42	2844.0	Poor	Poor	Ss.
43	2826.0	Mod.	Fair	Sl.st.
44	2822.0	Poor	Poor	Ss.
45	2817.0	Poor	Poor	Ss.
46	2812.0	Poor	Poor	Ss.
47	2808.0	Mod.	Pair	Sl.st.
48	2802.0	V. poor	Poor	Ss.
49	2798.0	Poor	V. poor	Sl.st.
50	2794.0	V. Poor	Sl.st.	INDETERMINATE
51	2790.0	Fair	Fair	Sl.st.
52	2785.0	Fair	poor	Sl.st.
53	2778.0	Good	Fair	Sl.st.
54	2773.0	Negligible	V. poor	Sl.st.
55	2769.0	Poor	Poor	Sl.st.
56	2764.0	Moderate	Good	Sl.st.
57	2759.0	Low	Poor	Sl.st.
58	2754.0	High	Good	Sl.st.
Core 2	2751.3	Mod.	Poor	
Core 2	2743.9	Low	Poor	
59	2737.0	Low	Poor	Sl.st.
60	2733.0	High	Fair	Clyst.
61	2729.0	Low	V. poor	Clyst.
62	2723.0	Low	V. Poor	Clyst.
63	2719.0	Mod.	Poor	Clyst.

TABLE 3 : BASIC DATA SUMMARY : WRASSE-1

SAMPLE NO.	DEPTH (m)	YIELD	DIVERSITY SPORE POLLEN	LITHOLOGY
64	2715.0	Low	Poor	Clyst.
65	2711.0	V. Low	V. poor	Clyst.
66	2707.0	Mod.	Poor	Clyst.
67	2703.0	Mod.	Poor	Clyst.
68	2699.0	Good	Poor	Clyst.
69	2690.0	Mod.	Fair	Clyst.
70	2686.0	Low	Poor	Clyst.
71	2662.0	Low	Poor	Clyst.
73	2626.0	Low	Poor	Clyst
Core 1	2596.75	Mod.	Fair	
Core 1	2597.3	Good	Poor	
Core 1	2591.15	Low	Fair	
Core 1	2588.67	Low	Poor	

PALYNOLOGY DATA SHEET

BASIN: GIPPSLAND ELEVATION: KB: 210m GL: -65.0m

WELL NAME: WRASSE-1 TOTAL DEPTH: 2984.0m KB deviated

AGE	PALYNOLOGICAL ZONES	HIGHEST DATA					LOWEST DATA				
		Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time	Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time
NEOGENE	*T. pleistocenicus*										
	M. lipsis										
	C. bifurcatus										
	T. bellus										
PALEOGENE	*P. tuberculatus*	2588.67	0				2711.0	0			
	Upper *N. asperus*										
	Mid *N. asperus*										
	Lower *N. asperus*	2733.0	2				2865.0	3			
	P. asperopolus										
	Upper *M. diversus*										
	Mid *M. diversus*										
	Lower *M. diversus*										
	Upper *L. balmei*	2901.0	1				2901.0	1			
	Lower *L. balmei*	2936.5	1				2977.0	2	2952.0	1	
LATE CRETACEOUS	*T. longus*										
	T. lilliei										
	N. senectus										
	U. *T. pachyexinus*										
	L. *T. pachyexinus*										
	C. triplex										
	A. distocarinatus										
EARLY CRET.	*C. paradoxus*										
	C. striatus										
	F. asymmetricus										
	F. wonthaggiensis										
	C. australiensis										
PRE-CRETACEOUS											

COMMENTS: The E. crassitabulata zone has been recorded in SWC 32 at 2967.5m. The W. echinosuturatum zone has been recorded in SWC 56 at 2764.0m.

CONFIDENCE RATING:
- 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 an entry is given a 3 or 4 confidence rating, an alternative depth with a better confidence rating should be entered, if possible. If a sample cannot be assigned to one particular zone, then no entry should be made, unless a range of zones is given where the highest possible limit will appear in one zone and the lowest possible limit in another.

DATA RECORDED BY: M. HANNAH DATE: 5 December 1984

DATA REVISED BY: _____ DATE: _____

FOSSIL TYPE - PLANKTONIC FORAMINIFERA

Well Name Wrasse-1 Basin Gippsland Sheet No. 1 of 3

SAMPLE TYPE OR NO. *	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
DEPTHS / FOSSIL NAMES	1930.0	1950.0	1980.0	1990.0	2000.0	2010.0	2020.0	2045.0	2065.0	2085.0	2100.0	2120.5	2139.0	2157.0	2170.0	2180.0	2203.0	2236.0	2258.0	2272.0	2332.0	2344.0	2351.0	2367.9	2425.0	2440.0
Orbulina universa	—	■	■			---					---															
Globorotalia sp. cf. G.	---																									
conomiozea																										
Globorotalia miozea miozea	—	■	■		---			■	■	■	■			■	■			■		■						---
Globorotalia miozea conoidea	---	---	—			---	---			■			---	---	---											
Globigerina bulloides	---	—	—	—			---			■																
Indeterminate globigerinids	—																									
Globorotalia praescitula		—	—	---			---	—	—	—		---	---		—	---		---		---	—	—	—	—	—	---
Globigerinoides sicanus			---								---	---	—	—	—		---									
Globigerinoides trilobus			---	---	---	---	—	—	—	—	—	—	■	■	—			■		—	—		■	—		---
Globigerina woodi			---		---	---	—	—	■				■		■		---	---		■	---					■
Globoquadrina dehiscens s.s.					---									---	---	—	—	—		---	---			---		---
Globorotalia praemenardii									---			---														
Praeorbulina glomerosa											---	---	---													
Globigerina praebulloides														---	---	---		—	—	—	—	—		—		
Globoquadrina advena																---	---					---				---
Globorotalia continuosa																	---						---			
Globigerina woodi connecta																				---		—	—	---		
Globigerinoides sicanus/																					---					---
trilobus transition																										
Globorotalia bella																							—	—		
Globorotalia zealandica																							---			
Catapsydrax dissimilis																								---		
Globigerina sp. aff.																										
G. binaiensis																										
Globorotalia obesa																										
Indeterminate planktonics																										
Globorotalia opima																										
Globorotalia brevis																										
Globorotalia gemma					\																					
Globigerina angiporoides																										
Globigerina linaperta																										
Globoquadrina dehiscens s.l.																										
Globigerina euapertura																										
Chiloguembelina cubensis																										

S=SIDEWALL CORE
* T=CUTTINGS J=JUNK BASKET

--- Rare
— Few
■ Common

■ Abundant
C Contamination

PALAEO.CHART-2
DWG.1107/OP/287

FOSSIL TYPE: PLANKTONIC FORAMINIFERA

Well Name Wrasse-1 Basin Gippsland Sheet No. 2 of 3

SAMPLE TYPE OR NO. *	S	S	S	S	S	S	S	S	S	C	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	S
FOSSIL NAMES \ DEPTHS	2455.0	2465.0	2492.0	2508.0	2522.0	2537.0	2548.0	2566.0	2584.0	2589.9	2592.75	2593.25	2594.2	2608.0	2626.0	2644.0	2662.0	2680.0	2690.0	2699.0	2703.0	2707.0	2711.0	2715.0	2719.0	2723.0
Orbulina universa																										
Globorotalia sp. cf. G.																										
conomiozea																										
Globorotalia miozea miozea																										
Globorotalia miozea conoidea																										
Globigerina bulloides																										
Indeterminate globigerinids	■	■	■	■	■	—		■	■	■		■							■	■		■		■	—	
Globorotalia praescitula																										
Globigerinoides sicanus																										
Globigerinoides trilobus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	■								
Globigerina woodi	—	■	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	■								
Globoquadrina dehiscens s.s.	—	—	—	—	—	—	—										—									
Globorotalia praemenardii																										
Praeorbulina glomerosa																										
Globigerina praebulloides	—	■	—		—	—	—	—	—	—	—				—			—								
Globoquadrina advena	—	—		—																						
Globorotalia continuosa																		■								
Globigerina woodi connecta	—	—	—					—	—	—	—							■								
Globigerinoides sicanus/																										
trilobus transition																										
Globorotalia bella																										
Globorotalia zealandica																										
Catapsydrax dissimilis	—		—				—	—					—	—	—	—										
Globigerina sp. aff.	—																									
G. binaiensis																										
Globorotalia obesa			—		—			—																	—	
Indeterminate planktonics							■		■		■		■	■	■	■	■									
Globorotalia opima																			—	—						
Globorotalia brevis																					—				—	
Globorotalia gemma																					—	—				—
Globigerina angiporoides																						—	—	—	—	—
Globigerina linaperta																							—	—	—	—
Globoquadrina dehiscens s.l.																							C			
Globigerina euapertura																										—
Chiloguembelina cubensis																										—

* S=SIDEWALL CORE T=CUTTINGS J=JUNK BASKET

--- Rare — Few ■ Common

■ Abundant C Contamination

PALAEO.CHART-2
DWG.1107/OP/287

FOSSIL TYPE - PLANKTONIC FORAMINIFERA

Well Name Wrasse-1 Basin Gippsland Sheet No. 3 of 3

SAMPLE TYPE OR NO. *	S	S	S	C	S	S	S	S	S	S
FOSSIL NAMES \ DEPTHS	2729.0	2733.0	2737.0	2742.85	2754.0	2759.0	2764.0	2769.0	2778.0	2822.0
Orbulina universa										
Globorotalia sp. cf. G. conomiozea										
Globorotalia miozea miozea										
Globorotalia miozea conoidea										
Globigerina bulloides										
Indeterminate globigerinids	■	---	—							
Globorotalia praescitula										
Globigerinoides sicanus										
Globigerinoides trilobus										
Globigerina woodi										
Globoquadrina dehiscens s.s.										
Globorotalia praemenardii										
Praeorbulina glomerosa										
Globigerina praebulloides										
Globoquadrina advena										
Globorotalia continuosa										
Globigerina woodi connecta										
Globigerinoides sicanus/ trilobus transition										
Globorotalia bella										
Globorotalia zealandica										
Catapsydrax dissimilis										
Globigerina sp. aff. G. binaiensis										
Globorotalia obesa										
Indeterminate planktonics			—							
Globorotalia opima										
Globorotalia brevis										
Globorotalia gemma	---									
Globigerina angiporoides	—			---						
Globigerina linaperta	—	---								
Globoquadrina dehiscens s.l.										
Globigerina eapertura										
Chiloguembelina cubensis										

* S=SIDEWALL CORE T=CUTTINGS J=JUNK BASKET

--- Rare — Few ■ Common ■ Abundant C Contamination

PALAEO.CHART-2
DWG.1107/OP/287