APPENDIX 5

PALYNOLOGICAL ANALYSIS

TRITON#1 AND TRITON#1 SIDETRACK

OTWAY BASIN

PALYNOLOGICAL ANALYSIS OF TRITON-1
AND TRITON-1 SIDETRACK
OTWAY BASIN

By

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PART 1

INTERPRETATIVE DATA

INTRODUCTION:

A total of 79 samples were processed and examined for palynomorphs. These include 49 cutting samples and 24 sidewall cores from Triton-1 Sidetrack and 6 cutting samples from Triton-1. Recovery of fossils varied widely from sample to sample, with many barren or low yield samples. This variable recovery, combined with the fact that most of the age dates are derived from cutting samples, makes the reliability of the palynological zonation and age determination of the sequence in Triton-1 and Triton-1 Sidetrack dubious.

The palynologic zonation and probable geologic age equivalent is summarized below. The results of individual sample analysis are given in Table 1 and the occurrence and distribution of individual species is tabulated in the accompanying check charts.

SUMMARY

Depths cited in summary are all for Triton-1 Sidetrack

GEOLOGICAL AGE	SPORE-POLLEN ZONES	DINOFLAGELLATE ZONES	DEPTH IN METRES
Early Oligocene - Latest Eocene	*P. tuberculatus* Late *N. asperus*	Not zoned	1700-1730
UNCONFORMITY			
Maastrichtian - Campanian	*T. longus* to *T. lilliei*	Not zoned	1740-1750
Campanian - Santonian	*N. senectus*	*X. australis* *N. aceras*	1760-1945 1995-2395
Santonian - Coniacian - ?Turonian	Not possible to zone on spore-pollen	*I. cretaceum*	2495-2975
		Unzoned Interval	2995-3175
Turonian		*P. infusorioides*	3195-3385
Turonian - Cenomanian		Barren interval	3395-3527
		C. muderongense (Local Acme Zone)	3530-3545
			T.D. 3545

GEOLOGICAL COMMENTS:

1. Confidence in the palynological zonation and age dating of the sequence penetrated by Triton-1 and Triton-1 Sidetrack is low for the following reasons:

   a. The palynological subdivision of this well section is based almost entirely on the floras extracted from ditch cuttings, thus only "tops" or extinction points can be used with any reliability. The regular zonation of the Late Cretaceous, as developed from sidewall and core samples in other wells and from outcrop sections, use the recognised stratigraphic range and both the "top" and "bottom" (i.e. first and last) occurrence of key species. The first occurrence, or "bottom" of a species range, often the most accurate and useful stratigraphic marker, cannot be applied with confidence to assemblages recovered from cutting samples. Sidewall core samples were available only from the bottom 625 metres of Triton-1 Sidetrack and recovery was so poor that little additional information could be added to that obtained from the assemblages of the ditch samples.

   b. The concentration of palynomorphs in the preparations from most of the samples from the thick Belfast Mudstone was very low. Indeed, it is clear from both cuttings and sidewall cores, that the fossil bearing sediments mostly occur in thin bands, separated by much thicker rock layers that are either barren or very poorly fossiliferous.

c. The occurrence of caved palynomorphs in the cuttings was also a problem. Cavings were particularly noticable in the Triton-1 hole. In the Triton-1 Sidetrack, in contrast, there was little evidence of caving or mud contamination, although the possibility of caving must be considered when utilizing the lower occurrence of marker species.

2. Both dinoflagellates and spore-pollen are used to zone the upper part of the well, while dinoflagellates are used exclusively in the lower part of the well. Below 2900 metres diversity and abundance of all palynormorphs falls off, but this is particularly true for the spore-pollen, as shown clearly on the range chart. Because of this, it has not been possible to apply the Late Cretaceous spore-pollen zonation of Dettmann and Playford (1969). One key spore, Clavifera triplex, does occur in the deepest two samples, however its occurrence is discounted in favour of the dinoflagellate data as, subsequent to the work of Dettmann and Playford (1969), it has been shown to have a much earlier appearance than the base of the original C. triplex Zone (see Morgan 1980).

3. Although the dinoflagellate assemblages have been used to age date and zone the well they are not as diverse as assemblages found in wells further west along the southern margin of Australia or along the west coast. It is very noticable that some genera and species have restricted ranges or are totally absent from the Port Campbell Embayment end of the Otway Basin. For example the various species of Diconodinium are absent including the important zone indicator, Diconodinium dispersum; while species of Cribroperidinium, which are a dominant element throughout most of the Late Cretaceous in Western Australia and Papua New Guinea, are restricted to the

local Cribroperidinium muderongense Acme Zone in the eastern Otway Basin and in the Triton-1 Sidetrack hole. These restrictions and absences of certain dinoflagellate species lower the confidence of the exact correlation to the scheme of Helby, Morgan and Partridge (in prep.) and thus to the geological time scale.

4. Age Dating.

The best estimate for the correlation of the Triton-1 and Triton-1 Sidetrack sequence with the time scale, via the zonation of Helby, Morgan and Partridge (in prep.) is given in Figure-1, allowing for limitation of the spore-pollen and dinoflagellate data discussed above.

Correlation is relatively good between 1740 and 2975 metres, from the T. longus Zone to I. cretaceum Zone, as it is based on fairly diverse assemblages of both spores, pollen and dinoflagellates.

Below 3000 metres the correlation is poorer. The only definitive correlation point is the interval of the P. infusorioides Zone from 3195-3385 metres. This is most likely Turonian, however as it is bounded above and below by virtual barren intervals, it need not necessarily represent the whole of the zone, and this is shown as such in Figure-1.

The local C. muderongense Acme Zone is shown as equating with the Diconodinium dispersum Zone and hence the Cenomanian. This is an estimate only as it can have a possible age range of Turonian to Albian. Because of documented absences and restrictions in the ranges of key dinoflagellate species the age dating cannot be any more definitive.

In Figure-1 the 'Unzoned Interval' from 2895-3175 metres is shown as a possible correlative of the C. striatoconus Zone and overlying O. porifera Zone. This should not however be taken as meaning the section is complete, with these zones present but not represented by fossils. An alternative argument could be used, saying that since Conosphaeridium striatoconus is a distinctive fossil and known elsewhere in the Port Campbell Embayment its absence in this well implies absence of zone. It is similarly dangerous to imply too much from the 'Barren Interval' from 3385-3527 metres.

5. The Cribroperidinium muderongense Acme Zone is based on the top occurrence of named species and has been shown to have significance as a local marker by Stacy (1981). Its highest occurrence in Port Campbell-1 is at 1807 metres; in Port Campbell-2 at 2608 metres and Flaxmans-1 at 2104.5 metres. In these three wells this boundary lies within the Waarre Sandstone Formation. Although this is a likely correlation for this area it must be made with the knowledge that the species on which it is based has a longer range outside of this local area and potentially could have a longer range in the deeper more marine parts of the basin as at Triton-1.

6. Limited detailed palynological work has been done on the adjacent Nautilus-1 well, however the X. australis Zone is found in cores 9 and 10 between 1861 to 2009 metres, which is only marginally deeper than the equivalent zone in Triton-1 Sidetrack.

DISCUSSION OF ZONES:

The palynological zones recognized in the well are discussed in descending order because the most diagnostic assemblages were obtained from the ditch cuttings. Sidewall cores were only available for examination in the Sidetrack hole below 2910 metres.

The spore-pollen zones used follow Stover and Partridge (1973) while the dinoflagellate zonation conforms to the Australia wide scheme to be described in Helby, Morgan and Partridge (in preparation) modified in part for local use in Port Campbell Embayment following the study by Stacy (1981).

Proteacidites tuberculatus to
Late Northofagidites asperus Zones: 1700-1730 metres

The five cuttings samples from this 30 metre interval at the base of the Tertiary sequence contain mixed assemblages which can only be referred to a composite of the above two spore-pollen zones. The overall palynomorph assemblage has a P. tuberculatus Zone aspect which is consistent with the Early Oligocene, J2 foraminiferal zone identified by Rexilius (1982) at this level. The key species are Proteacidites stipplatus diagnostic but not restricted to the Late N. asperus Zone and Protoellipsodinium simplex m.s. diagnostic of P. tuberculates Zone. Anomalous species include Cyathidites splendens not found above the Middle N. asperus while the dinoflagellates Deflandrea phosphoritica and Homotryblium sp. are not found above the Late N. asperus Zone

Tricolporites lilliei to Tricolpites longus Zones: 1740-1750 metres

The spore Ornamentifera sentosa and the pollen Triporopollenites sectilis, Tricolpites confessus and Proteacidites amolosexinus are consistent with an Late Cretaceous age no younger than these zones. Although no pollen restricted to the T. longus Zone were identified at either 1740 or 1750 metres, specimens of the zone species, Tricolpites longus were observed in cuttings from 1760, 1995 and 2095 metres which strongly suggest that the youngest part of the Cretaceous section extends into the T. longus Zone.

Xenikoon australis Dinoflagellate Zone and
Nothofagidites senectus Spore-Pollen Zone: 1760-1945 metres.

The highest occurrence of Xenikoon australis in cuttings is taken as the top of this zone. Since in other sections documented on core material the extinction of X. australis equates with the boundary between the N. senectus and T. lilliei spore-pollen Zones this is also taken as the top of the N. senectus Zone in this well.

Nelsoniella aceras Zone: 1995-2395 metres

The highest occurrence of N. aceras in the cuttings is taken as the top of this zone in Triton-1 Sidetrack samples even though in some sequences in the Otway Basin N. aceras is known to overlap with the basal range of X. australis. An alternative top of this zone could be taken at the base of common X. australis at 2095 metres.

Isabelidinium cretaceum Zone: 2495-2975 metres.

The top of the I. cretaceum Zone is taken at 2495 metres as this is the highest occurrence in cuttings of Amphidiadema denticulata and Isabelidium belfastense which, based on the good dinoflagellate sequence in Morum-1 from the western Otway Basin, are not known to overlap with the range of N. aceras (Partridge, 1975). The base of the I. cretaceum Zone is much more uncertain but is taken at 2975 metres at a good cuttings assemblage which appears to be in place and contains frequent I. cretaceum specimens.

Unzoned Interval: 2995-3175 metres

In the cuttings and sidewall zones between 2895 and 3175 metres there are no new occurrences of either dinoflagellate, spores or pollen species which are useful for defining zones. The samples are not particularly rich and contain obvious down hole contaminants. It would be misrepresenting the data to attempt to recognise zones in this interval.

Palaeohystrichophora infusorioides Zone: 3195-3385 metres

Between 3195 and 3375 metres the cuttings samples but not the sidewall cores contain a number of new occurrences of dinoflagellate species. The interval is referred to the P. infusorioides Zone on the consistent occurrence of Microdinium ornatum which shows a distinct acme in this zone in certain offshore wells in Western Australia. Although the zone fossil Palaeohystrichopora infusorioides also occurs consistently in samples in this interval it has been shown in many other sections to have a much more extended range. It gives its name to the zone only because it is generally common. In the zonation proposed by Helby et al. (in prep.) the base of the P. infusorioides Zone is defined by extinction of zone indicators of the underlying D. dispersum Zone and the top defined by first appearance of Conosphaeridium striatoconus the zone species of the overlying zone. In Triton-1 Sidetrack these criteria do not work because of the absence of the key zone species. The P. infusorioides Zone can therefore only be identified on gross assemblage characteristics. Because of this and the fact that it is bounded by intervals which cannot be age dated or zoned the overall confidence in the zone identification is low.

Barren Interval: 3395-3527 metres

So few spores, pollen and dinoflagellates occur in either cuttings or sidewall cores in this interval that it is effectively barren and cannot be zoned. The reason the interval is virtually barren is considered to be the initial low palynomorph concentration in the sediment exacerbated by subsequent partial destruction of palynomorphs by carbonization.

Cribroperidinium muderongense Local Acme Zone: 3530-3545 metres

In the basal 15 metres in the Triton-1 Sidetrack hole the highest occurrence of the dinoflagellate, *Cribroperidinium muderongense*, was found. In the Port Campbell Embayment of the Otway Basin this has been previously shown to be an important local marker by Stacy (1981)

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Figure 1: Late Cretaceous Biostratigraphic Zones

AGE in Myr.	STAGE	SPORE-POLLEN ZONES Dettmann & Playford 1969 Stover & Partridge 1973	DINOFLAGELLATE ZONES Helby, Morgan & & Partridge (in preparation)	ZONATION OF TRITON-1 SIDETRACK Depths in metres
	MAASTRICHTIAN	Tricolpites longus	Isabelidinium druggii	Not present
				T. longus to T. lilliei 1740 - 1750
70	CAMPANIAN	Tricolporites lilliei	Isabelidinium korojonense	
		Nothofagidites senectus	Xenicoon australis	X. australis 1760 - 1945
		Tricolpites pachyexinus	Nelsoniella aceras	N. aceras 1995 - 2395
80	SANTONIAN		Isabelidinium cretaceum	I. cretaceum 2495 - 2975
	CONIACIAN		Odontochitina porifera	Unzoned interval 2995 - 3175
			Conosphaeridium striatoconus	
90	TURONIAN	Clavifera triplex	Palaeohystrichophora infusorioides	P. infusorioides 3195 - 3385
				Barren interval 3395 - 3527
	CENOMANIAN	Appendicisporites distocarinatus	Diconodinium dispersum	C. muderongense 3530 - 3545 T.D.
				Not penetrated
100	ALBIAN	Phimopollenites pannosus	Xenascus ceratoides	
		Coptospora paradoxa	Endoceratium ludbrookiae	

TABLE-1
SUMMARY OF PALAEONTOLOGICAL ANALYSIS, TRITON-1 SIDETRACK, OTWAY BASIN

SAMPLE	DEPTH (METRES)	DEPTH (FEET)	ZONE	AGE	CONFIDENCE RATING	YIELD	SPORE-POLLEN DIVERSITY	DINOS DIVERSITY	COMMENTS
Cuttings	1700	5577.5	P. tuberculatus to N. asperus	Oligo-Miocene	3	Fair	Low	Moderate	Mixed P. tuberculatus-Late N. asperus assemblage
Cuttings	1710	5610	P. tuberculatus to N. asperus	Oligo-Miocene	3	Poor	Low	Low	Mixed P. tuberculatus-Late N. asperus assemblage
Cuttings	1715	56267.5	P. tuberculatus to N. asperus	Oligo-Miocene	3	Fair	Low	Moderate	Mixed P. tuberculatus-Late N. asperus
Cuttings	1720	5643	P. tuberculatus to N. asperus	Oligo-Miocene	3	Poor	Low	Low	assemblage
Cuttings	1730	5676	P. tuberculatus to N. asperus	Oligo-Miocene	3	Fair	Moderate	Low	Mixed P. tuberculatus-Late N. asperus
Cuttings	1740	5708.5	T. longus/T. lilliei	Maast.-Campanian	3	Good	High	Moderate	
Cuttings	1750	5741.5	T. longus/T. lilliei	Maast.-Campanian	3	Fair	Moderate	Low	
Cuttings	1760	5774	X. australis	Campanian-Santonian	3	Good	High	Low	
Cuttings	1795	5889	X. australis	Campanian-Santonian	3	Good	High	Moderate	
Cuttings	1895	6217	X. australis	Campanian-Santonian	3	Good	High	Moderate	
Cuttings	1945	6381	X. australis	Campanian-Santonian	3	Poor	Moderate	Low	
Cuttings	1995	6545	N. aceras	Campanian-Santonian	3	Fair	Moderate	Low	
Cuttings	2095	6873	N. aceras	Campanian-Santonian	3	Good	High	Moderate	
Cuttings	2395	7857.5	N. aceras	Campanian-Santonian	3	Poor	Low	Moderate	
Cuttings	2495	8185.5	I. cretaceum	Santonian	3	Fair	Low	Moderate	
Cuttings	2595	8514	I. cretaceum	Santonian	3	Fair	Low	Moderate	
Cuttings	2795	9170	Non diagnostic	?	4	Poor	Low	Low	
Cuttings	2805	9203	I. cretaceum	Santonian	3	Good	Moderate	High	
Cuttings	2810	9219	I. cretaceum	Santonian	3	Good	Moderate	High	
Cuttings	2895	9498	Non diagnostic	?	4	Poor	Low	None	
Cuttings	2910	9547	I. cretaceum?	Santonian?	4	Fair	Low	Moderate	
SWC 51	2910	9547	Non diagnostic	?	4	Barren	-	-	
SWC 49	2926.5	9601.5	Non diagnostic	?	4	Barren	-	-	
SWC 48	2951	9682	Non diagnostic	?	4	Barren	-	-	
Cuttings	2975	9760.5	I. cretaceum	Santonian	3	Fair	Low	Moderate	C. victoriensis
Cuttings	2995	9826	Indeterminate	?	4	Poor	Low	Low	
SWC 46	3002	9849	Indeterminate	?	4	Barren	-	-	
SWC 45	3028	9934.5	Indeterminate	?	4	Barren	-	-	
Cuttings	3075	10088.5	Indeterminate	?	4	Fair	Low	Moderate	
Cuttings	3095	10154	Indeterminate	?	3	Fair	Low	Moderate	C. victoriensis
Cuttings	3110	10203.5	Indeterminate	?	4	Fair	Low	Moderate	
SWC 41	3125	10252.5	Indeterminate	?	4	Barren	-	-	
SWC 40	3151	10338	Indeterminate	?	4	Barren	-	-	
Cuttings	3175	10416.5	Indeterminate	?	4	Barren	-	-	
Cuttings	3195	10482	P. infusorioides	Turonian	4	Poor	None	Low	Highest occurrence of M. ornatum
Cuttings	3225	10581	P. infusorioides	Turonian	3	Good	High	High	M. ornatum; C. victoriensis

Table-1 Cont.. /2

SAMPLE	DEPTH (METRES)	DEPTH (FEET)	ZONE	AGE	CONFIDENCE RATING	YIELD	SPORE-POLLEN DIVERSITY	DINOS DIVERSITY	COMMENTS
Cuttings	3240	10630	Non diagnostic	?	4	Poor	Low	Moderate	
Cuttings	3250	10663	P. infusorioides	Turonian	3	Good	Moderate	Moderate	M. ornatum, Lowest
Cuttings	3260	10695.5	Non diagnostic	?	4	Barren	-	-	
Cuttings	3270	10728	Non diagnostic	?	4	Very Poor	None	Low	
Cuttings	3275	10745	Non diagnostic	?	4	Poor	Low	Low	
Cuttings	3300	10827	P. infusorioides	?	4	Poor	Low	Low	M. ornatum; Highest Cribroperidium sp.
SWC 34	3305	10843	Non diagnostic	?	4	Very Poor	Very Low	None	
Cuttings	3320	10892	P. infusorioides	Turonian?	3	Fair	Low	Moderate	M. ornatum; Ascodinium sp.
Cuttings	3340	10958	P. infusorioides	Turonian?	3	Fair	Low	Moderate	
Cuttings	3360	11023.5	P. infusorioides	Turonian?	3	Good	Moderate	Moderate	M. ornatum; Ascodinium sp.
Cuttings	3375	11073	P. infusorioides	Turonian?	3	Fair	Low	Moderate	M. ornatum
Cuttings	3385	11105.5	P. infusorioides		4	Poor	Low	Low	Base: A. cruciformis
Cuttings	3395	11138.5	Indeterminate	?	4	Very Poor	None	Low	
SWC-30	3398	11148	Indeterminate	?	4	Barren	-	-	
Cuttings	3400	11155	Indeterminate	?	4	Very Poor	Low	None	
SWC-29	3408	11181	Indeterminate	?	4	Barren	-	-	
Cuttings	3425	11237	Indeterminate	?	4	Poor	Low	Low	
SWC-26	3425	11237	Indeterminate	?	4	Barren	-	-	
SWC-24	3435	11269.5	Indeterminate	?	4	Barren	-	-	
SWC-20	3448.5	11314	Indeterminate	?	4	Barren	-	-	
Cuttings	3450	11319	Indeterminate	?	4	Poor	Low	None	
SWC-17	3457.5	11343.5	Indeterminate	?	4	Barren	-	-	
SWC-13	3481.7	11423	Indeterminate	?	4	Barren	-	-	
SWC-12	3485	11434	Indeterminate	?	4	Barren	-	-	
SWC-10	3495	11466.5	Indeterminate	?	4	Barren	-	-	
SWC-9	3498	11476	Indeterminate	?	4	Barren	-	-	
Cuttings	3500	11483	Indeterminate	?	4	Barren	-	-	
SWC-6	3506	11502.5	Indeterminate	?	4	Barren	-	-	
SWC-5	3515	11532	Indeterminate	?	4	Barren	-	-	
SWC-4	3520	11548.5	Indeterminate	?	4	Barren	-	-	
SWC 3	3524.5	11563	Indeterminate	?	4	Poor	None	Low	
SWC 2	3527	11571.5	Indeterminate	?	4	Barren	-	-	
Cuttings	3530	11581	C. muderongense	Turonian-Cenomanian	3	Poor	Low	Moderate	
SWC 1	3533.5	11593	Non diagnostic	?	4	Poor	Low	None	
Cuttings	3535	11598	Non diagnostic	?	4	Poor	Low	None	
Cuttings	3540	11614	C. muderongensis	Turonian-Cenomanian	3	Poor	Low	Low	
Cuttings	3545	11630.5	C. muderongensis	Turonian-Cenomanian	3	Fair	Low	Moderate	

TABLE-2
SUMMARY OF PALAEONTOLOGICAL ANALYSIS, TRITON-1, OTWAY BASIN

SAMPLE	DEPTH (METRES)	DEPTH (FEET)	ZONE	AGE	CONFIDENCE RATING	YIELD	SPORE-POLLEN DIVERSITY	DINOS DIVERSITY	COMMENTS
Cuttings	1750	5741.5	?	Late Cretaceous	4	Good	High	High	
Cuttings	1800	5905.5	X. australis?	Campanian	4	Good	High	High	
Cuttings	2620	8596	N. aceras?	Campanian?	4	Fair	Moderate	Moderate	
Cuttings	2660	8727	I. cretaceum?	Santonian?	4	Fair	Moderate	High	I. nucula
Cuttings	2710	8891	N. aceras or older	Campanian/Santonian	4	Fair	Low	Moderate	
Cuttings	2780	9121	I. cretaceum	Santonian	4	Fair	Low	Moderate	

PART II

BASIC DATA

Table-3: Basic Data Triton-1 Sidetrack

Table 4: Basic Data Triton-1

Occurrence Charts

TABLE-3

BASIC DATA

SUMMARY OF PALAEONTOLOGICAL ANALYSIS,

TRITON-1 SIDETRACK, OTWAY BASIN

SAMPLE	DEPTH (METRES)	DEPTH (FEET)	YIELD	SPORE-POLLEN DIVERSITY	DINOS DIVERSITY
Cuttings	1700	5577.5	Fair	Low	Moderate
Cuttings	1710	56103	Poor	Low	Low
Cuttings	1715	56267.5	Fair	Low	Moderate
Cuttings	1720	5643	Poor	Low	Low
Cuttings	1730	5676	Fair	Moderate	Low
Cuttings	1740	5708.5	Good	High	Moderate
Cuttings	1750	5741.5	Fair	Moderate	Low
Cuttings	1760	5774	Good	High	Low
Cuttings	1795	5889	Good	High	Moderate
Cuttings	1895	6217	Good	High	Moderate
Cuttings	1945	6381	Poor	Moderate	Low
Cuttings	1995	6545	Fair	Moderate	Low
Cuttings	2095	6873	Good	High	Moderate
Cuttings	2395	7857.5	Poor	Low	Moderate
Cuttings	2495	8185.5	Fair	Low	Moderate
Cuttings	2595	8514	Fair	Low	Moderate
Cuttings	2795	9170	Poor	Low	Low
Cuttings	2805	9203	Good	Moderate	High
Cuttings	2810	9219	Good	Moderate	High
Cuttings	2895	9498	Poor	Low	None
Cuttings	2910	9547	Fair	Low	Moderate
SWC 51	2910	9547	Barren	-	-
SWC 49	2926.5	9601.5	Barren	-	-
SWC 48	2951	9682	Barren	-	-
Cuttings	2975	9760.5	Fair	Low	Moderate
Cuttings	2995	9826	Poor	Low	Low
SWC 46	3002	9849	Barren	-	-
SWC 45	3028	9934.5	Barren	-	-
Cuttings	3075	10088.5	Fair	Low	Moderate
Cuttings	3095	10154	Fair	Low	Moderate
Cuttings	3110	10203.5	Fair	Low	Moderate
SWC 41	3125	10252.5	Barren	-	-
SWC 40	3151	10338	Barren	-	-
Cuttings	3175	10416.5	Barren	-	-
Cuttings	3195	10482	Poor	None	Low
Cuttings	3225	10581	Good	High	High
Cuttings	3240	10630	Poor	Low	Moderate
Cuttings	3250	10663	Good	Moderate	Moderate
Cuttings	3260	10695.5	Barren	-	-
Cuttings	3270	10728	Very Poor	None	Low
Cuttings	3275	10745	Poor	Low	Low
Cuttings	3300	10827	Poor	Low	Low
SWC 34	3305	10843	Very Poor	Very Low	None
Cuttings	3320	10892	Fair	Low	Moderate
Cuttings	3340	10958	Fair	Low	Moderate
Cuttings	3360	11023.5	Good	Moderate	Moderate
Cuttings	3375	11073	Fair	Low	Moderate
Cuttings	3385	11105.5	Poor	Low	Low
Cuttings	3395	11138.5	Very Poor	None	Very Low
SWC 30	3398	11148	Barren	-	-
Cuttings	3400	11155	Very Poor	Very Low	None
SWC 29	3408	11181	Barren	-	-
Cuttings	3425	11237	Poor	Low	Low
SWC 26	3425	11237	Barren	-	-
SWC 24	3435	11269.5	Barren	-	-
SWC 20	3448.5	11314	Barren	-	-
Cuttings	3450	11319	Poor	Low	None

Table-3 Cont../2

SAMPLE	DEPTH (METRES)	DEPTH (FEET)	YIELD	SPORE-POLLEN DIVERSITY	DINOS DIVERSITY
SWC 17	3457.5	11343.5	Barren	-	-
SWC 13	3481.7	11423	Barren	-	-
SWC 12	3485	11434	Barren	-	-
SWC 10	3495	11466.5	Barren	-	-
SWC 9	3498	11476	Barren	-	-
Cuttings	3500	11483	Barren	-	-
SWC 6	3506	11502.5	Barren	-	-
SWC 5	3515	11532	Barren	-	-
SWC 4	3520	11548.5	Barren	-	-
SWC 3	3524.5	11563	Poor	None	Low
SWC 2	3527	11571.5	Barren	-	-
Cuttings	3530	11581	Poor	Low	Moderate
SWC 1	3533.5	11593	Poor	Low	None
Cuttings	3535	11598	Poor	Low	None
Cuttings	3540	11614	Poor	Low	Low
Cuttings	3545	11630.5	Fair	Low	Moderate

TABLE-4
BASIC DATA
SUMMARY OF PALAEONTOLOGICAL ANALYSIS, TRITON-1, OTWAY BASIN

SAMPLE	DEPTH (METRES)	DEPTH (FEET)	YIELD	SPORE-POLLEN DIVERSITY	DINOS DIVERSITY
Cuttings	1750	5741.5	Good	High	High
Cuttings	1800	5905.5	Good	High	High
Cuttings	2620	8596	Fair	Moderate	Moderate
Cuttings	2660	8727	Fair	Moderate	High
Cuttings	2710	8891	Fair	Low	Moderate
Cuttings	2780	9121	Fair	Low	Moderate