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18 June 1996

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PROVISIONAL REPORT No. 2
GIPPSLAND BASIN—PALYNOLOGICAL STUDY

The palynological analysis of 31 samples from the six wells Avon–1, Burong–1, Comley–1, Southwest Bairnsdale–1, West Seacombe–1 and Wonga Binda–1 are reported in the following tables. The samples comprising 13 sidewall cores, 2 cores and 16 cuttings were collected from the EMV core store on 29 May 1996. These 31 samples constitute the work contracted under Requisition for Goods/Services No. VP033.

The following geological interpretations of importance can be derived from the analyses:

1. The northern and north-eastern onshore margin of the basin contains Latrobe Group facies extending from Late Eocene (Middle *N. asperus* Zone) to Early Oligocene (*P. tuberculatus* Zone).

2. The well sampled Burong–1 well supported by Wonga Binda–1 confirm Middle Eocene (Lower *N. asperus* Zone) resting unconformably on Paleocene (*L. balmei* Zone). The Early Eocene *P. asperopolus* to Lower *M. diversus* Zones appear to be missing.

3. The presence of the Upper *T. longus* Zone at 3777 ft (1332m) in Wonga Binda–1 is considered to reflect the maximum coastal onlap associated with the K/T boundary shale recognised in the offshore portion of the basin.

The original specifications for this work required more sidewall core samples to be analysed from West Seacombe–1. Unfortunately upon inspection all the SWCs in this well proved to be poor lithologies for palynological analysis, and therefore the available samples were spread between the other wells.

Yours sincerely

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AVON–1

Sample	Depth		Spore-Pollen Zone	Comments and Key Species Present
	Metres	Feet	(Microplankton Zones)	
Cuttings	725	2378.61	*P. tuberculatus*	Abundant microplankton with key spore *Cyatheacidites annulatus*. *Triorites magnificus* present but interpreted as reworked.
Cuttings	740	2427.82	*P. tuberculatus*	*Cyatheacidites annulatus* present.
Cuttings	785	2575.46	Upper *N. asperus*	*Nothofagidites* spp. abundant. *Aglaoreidia qualumis* present.
Cuttings	810	2657.48	Upper *N. asperus*	*P. mawsonii* abundant. *Granodiporites nebulosus* present.
Cuttings	850	2788.71	Middle *N. asperus* (*G. extensa*)	LADs *Triorites magnificus* and *Gippslandica extensa*.
Cuttings	900	2952.76	Middle *N. asperus* (*G. extensa*)	*Triorites magnificus* and *Gippslandica extensa* present.

Discussion:

The Latrobe section in Avon–1 ranges from the Late Eocene into the basal Oligocene (Upper *N. asperus*). No cuttings suitable for analysis were available over the interval of the interpreted shoreline barrier sand between 735–775m, but its age can be inferred as Oligocene. The two shallowest cuttings are believed to be significantly affected by down hole cavings.

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BURONG–1

Sample	Depth		Spore-Pollen Zone	Comments and Key Species Present
	Metres	Feet	(Microplankton Zones)	
SWC 26	687.3	2255	Upper *N. asperus*	*Nothofagidites* spp. dominant without younger or older indicator species.
SWC 25	713.2	2340	Middle *N. asperus* (*G. extensa*)	LADs for *Proteacidites adenanthoides* and *Gippslandica extensa*.
SWC 23	760.8	2496	Middle *N. asperus* (*G. extensa*)	*Triorites magnificus* present.
SWC 21	794.3	2606	Middle *N. asperus* (*G. extensa*)	*Tricolpites thomasii* present
SWC 19	850.7	2791	Middle *N. asperus* (*G. extensa*)	*Triorites magnificus* present.
SWC 17	866.5	2843	Middle *N. asperus* (*G. extensa*)	*G. extensa* possibly caved.
SWC 16	887.0	2910	*N. asperus*	Subzone indeterminate.
SWC 14	935.1	3068	Lower *N. asperus*	*Tricolpites simatus* and *Proteacidites recavus* present.
SWC 11	997.9	3274	Upper *L. balmei*	LAD for *Lygistepollenites balmei* with *Camarozonosporites bullatus* and *Cyathidites gigantus*.
SWC 07	1135.1	3724	Lower *N. asperus*	Sample appears out of place. Common *Nothofagidites* spp. with *Proteacidites asperopolus*.
SWC 06	1151.2	3777	*L. balmei*	*Lygistepollenites balmei*, *Gambierina rudata* and *Polycolpites langstonii* recorded.
SWC 03	1205.8	3956	*L. balmei*	FADs for *Lygistepollenites balmei* and *Gambierina rudata*.

Discussion:

The good sidewall core coverage in Burong–1 and good assemblages extracted now provide one of the best age controlled sections in the onshore Gippsland Basin. The sampling confirms the Early Eocene *P. asperopolus* to Lower *M. diversus* Zone are not present over most if not all of the onshore portion of the basin.

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COMLEY–1

Sample	Depth		Spore-Pollen Zone	Comments and Key Species Present
	Metres	Feet		
Core-1	478.6-478.8	1570.2-1570.9	*P. tuberculatus*	Very low yield, but index species *Cyatheacidites annulatus* recorded.
Core-1	481.8-482.0	1580.7-1581.4	Lower *P. tuberculatus*	Microplankton 4%. *Nothofagidites* spp. 62%. *C. annulatus* and *Granodiporites nebulosus* present

Discussion:

The 20m of sands over basement in Comley–1 are clearly Oligocene in age and not Eocene as is typical for the Latrobe Group. These young sands appear to be related to the structurally high Lakes Entrance Platform.

SOUTH WEST BAIRNSDALE–1

Sample	Depth		Spore-Pollen Zone	Comments and Key Species Present
	Metres	Feet		
Cuttings	387.1	1270-80	*P. tuberculatus*	*Nothofagidites* spp. 86%. *Cyatheacidites annulatus* present with common *Aglaoreidia qualumis*. No microplankton recorded.
Cuttings	417.6	1370-80	Middle *N. asperus*	*Nothofagidites* spp. 67%. *Proteacidites rectomarginis, Santalumidites cainozoicus* and *Tricolpites thomasii* are key species recorded. Rare microplankton are all caved.

Discussion:

The results from SW Bairnsdale–1 suggest the thin Latrobe Group section along the northern margin of the basin represent the Latest Eocene to basal Oligocene.

WEST SEACOMBE–1

Sample	Depth		Spore-Pollen Zone	Comments and Key Species Present
	Metres	Feet		
SWC 17	905.3	2970.0	*N. asperus*	Very low yield gave only a few palynomorphs which indicate only broad Middle Eocene to Early Oligocene age.

Discussion:

It is unfortunate that this sample which was the best of all the sidewall cores from West Seacombe–1 gave only a generalised age. Any additional palynological work on this well requires analysis of cuttings.

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WONGA BINDA–1

Sample	Depth		Spore-Pollen Zone	Comments and Key Species Present
	Metres	Feet	(Microplankton Zone)	
Cuttings	590	1936	*P. tuberculatus*	Dominated by microplankton consistent with marly lithology.
Cuttings	672	2205	Upper *N. asperus*	*Granodiporites nebulosus* and *Aglaoreidia qualumis* key species present.
Cuttings	786	2579	Middle *N. asperus* (G. extensa)	*Gippslandica extensa* present.
Cuttings	927	3041	Lower *N. asperus*	*Nothofagidites* spp. frequent. *Phyllocladidites mawsonii* abundant without younger indicator species.
Cuttings	1071	3514	*L. balmei*	LAD of *Lygistepollenites balmei* in largely caved assemblage. *Proteacidites asperopolus* present.
Cuttings	1185	3888	*L. balmei*	Rare index species in largely caved assemblage.
Cuttings	1263	4144	*L. balmei*	Rare index species in largely caved assemblage.
Cuttings	1332	4370	Upper *T. longus*	Common *Gambierina rudata* with *Battenipollis sectilis* and *Tricolporites lilliei*.

Discussion:

The eight cuttings samples provide only a broad age control of the Latrobe Group. The presence of the Upper *T. longus* Zone at the base of the well is the most westerly known occurrence of this zone in the basin.

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