



PE990732

BIOSTRATA PTY LTD

A.C.N. 053 800 945

Principal Scientist:
Alan D. Partridge
School of Earth Sciences
La Trobe University
Bundoora Vic 3083

Postal Address:
302 Waiora Road
Macleod Vic 3085

Telephone: (03) 9479 1517
After Hours: (03) 9457 3888
Geol. Dept. Fax: (03) 9479 1272

18 June 1996

Our ref: PR96/16

To: **Lesley Knight**
Petroleum Unit
Energy & Minerals Victoria
3rd floor, 115 Victoria Parade
Fitzroy VIC 3065

Fax: (03) 9412 5655

Page 1 of 5

PROVISIONAL REPORT No. 1
GIPPSLAND BASIN - PALYNOLOGICAL STUDY

The palynological analysis of 23 sidewall core samples from Colliers Hill-1, Dutson Downs-1 and Golden Beach West-1 are reported in the following tables. These samples were collected from the EMV core store on 29 May 1996. An additional seven core and cuttings samples from these wells and Merrimans-1 collected on 14 June 1996 are currently being processed and will be ready for microscope analysis on Thursday 20 June 1996. These 30 samples constitute the work contracted for under Requisition for Goods/Services No. VP032.

The principal results from the study is that the Golden Beach Group in the onshore Gippsland Basin appear to represent mainly, if not entirely, the upper portion of the group penetrated offshore. Thus, the equivalents to the largely fluvatile Chimaera Formation (Lowry & Longley, 1991) are represented but not the lacustrine Kipper Shale and its equivalents. In addition the Strzelecki Group was confirmed as penetrated at the bottom of Dutson Downs-1. The other two wells appear to be still within the Golden Beach Group at T.D.

The samples from the Latrobe Group and basal Seaspray Group did not provide any surprises or unexpected results but will be important control points for the log and seismic correlations.

Yours sincerely

Alan D. Partridge

PROVISIONAL REPORT No. 1
GIPPSLAND BASIN—PALYNOLOGICAL STUDY
COLLIERS HILL-1

Sample	Depth		Spore-Pollen Zone (Microplankton Zones and Subzone)	Comments and Key Species Present
	Metres	Feet		
SWC 30	545.6	1790	<i>P. tuberculatus</i> (<i>Operculodinium</i> Superzone)	Microplankton 85% of total count. <i>Spiniferites</i> spp. 50% of MP count. <i>Nothofagidites</i> at 31% dominates S-P.
SWC 29	548.0	1798	<i>P. tuberculatus</i> (<i>Operculodinium</i> Superzone)	Microplankton 22% of total. <i>Spiniferites</i> spp. 74% of MP. <i>Nothofagidites</i> spp. 66% of S-P. FAD <i>Cyatheacidites annulatus</i> .
SWC 24	571.8	1876	Upper <i>N. asperus</i>	Coal sample dominated by <i>Nothofagidites</i> spp. 67%.
SWC 22	925.1	3035	Lower <i>N. asperus</i>	Coal sample dominated by gymnosperm <i>Phyllocladidites mawsonii</i> at 49%.
SWC 17	1283.2	4210	<i>N. senectus</i> to <i>T. apoxyxinus</i>	<i>Podocarpidites</i> spp. 25%; <i>Proteacidites</i> spp. 12%. <i>Nothofagidites senectus</i> recorded but possibly caved or contaminated.
SWC 07	1642.9	5390	Indeterminate	Low yield sample with most recorded specimens regarded as contaminants.
SWC 04	1689.2	5542	<i>P. mawsonii</i>	Sample lacks key species but assigned to zone on abundance of <i>Dilwynites</i> spp. at 24%.

Discussion:

Four sidewall cores were analysed from the base of the Seaspray Group and the Latrobe Group and three from the Golden Beach Group. The analysis confirmed that the glauconitic sandstone to marl in the top two samples belong to the basal Oligocene and as such are considered to belong to the Seaspray Group. This confirms results in other wells where the glauconitic sandstones at the Seaspray/Latrobe boundary in the onshore Gippsland Basin are younger than the offshore Gurnard Formation.

The other two samples suggest all the *N. asperus* Subzones are probably present in the coal measures facies of the Latrobe Group.

The three sample from the Golden Beach Group are unfortunately rather poor, but suggest that only the youngest part of the group has been penetrated. The only microplankton recorded are rare specimens of the fresh water algal cyst *Circulisorites parvus* at 4210 ft and 5390 ft, and the acritarch *Micrhystridium* sp. A of Marshall (1989). The latter has been recorded from the lacustrine shales in the Kipper Formation.

Prepared by:
Alan D. Partridge
18 June 1996

**PROVISIONAL REPORT No. 1
GIPPSLAND BASIN—PALYNOLOGICAL STUDY**

DUTSON DOWNS-1

Sample	Depth		Spore-Pollen Zone	Comments and Key Species Present
	Metres	Feet		
SWC 26	1466.4	4811	Upper <i>N. senectus</i>	FAD for <i>Gambierina rudata</i> with <i>Forcipites sabulosus</i> 10% and <i>Nothofagidites senectus</i> ~3% of S-P count. Assemblage dominated by fungal spores & hyphae at 52% of total count.
SWC 22	1501.4	4926	<i>N. senectus</i>	<i>Forcipites sabulosus</i> ~5%. S-P dominated by <i>Podocarpidites</i> spp. at 31%. Fungal spores/hyphae 11%.
SWC 18	1543.2	5063	<i>N. senectus</i>	<i>F. sabulosus</i> 16%; <i>N. senectus</i> 1.5%. <i>Podocarpidites</i> spp. 28%.
SWC 12	1707.8	5603	Indeterminate	Most fossils recorded appear to be caved. This is consistent with mud penetration of fine grained sandstone lithology.
SWC 03	1786.7	5862	<i>P. mawsonii</i> or younger	FAD of <i>Phyllocladidites mawsonii</i> in sample with abundant <i>Dilwynites</i> spp. ~21%. <i>N. senectus</i> recorded but considered to be a contaminant.
SWC 01	1834.9	6020	<i>C. striatus</i>	Good Strzelecki Group assemblage with abundant <i>Osmundacidites/Baculatisporites</i> at 27%; <i>Cyathidites</i> spp. at 12% and several index species including <i>Crybelosporites striatus</i> .

Discussion:

Five of the sidewall cores analysed were found to belong to the Golden Beach Group while the sixth and deepest gave a good Strzelecki Group assemblage. All the samples from the Golden Beach Group are considered to belong to the younger Chimaera Formation (Lowry & Longley, 1991; APEA J. v.31, p.143-153) as no index species of spores, pollen or microplankton considered typical of the older lacustrine Kipper Shale formation were recorded. The only microplankton recorded from the Golden Beach Group were specimens of the algal cyst *Circulisporites parvus* at 4811 ft and 5862 ft.

Prepared by:
Alan D. Partridge
18 June 1996

PROVISIONAL REPORT No. 1
GIPPSLAND BASIN—PALYNOLOGICAL STUDY

GOLDEN BEACH WEST-1

Sample	Depth		Spore-Pollen Zone	Comments and Key Species Present
	Metres	Feet		
SWC 29	976.9	3205	<i>N. asperus</i> probably Middle	Coal with abundant <i>Nothofagidites</i> spp. >62% and rarer index species. Presence of single specimen of <i>Dryadopollis retequetrus</i> suggests Middle zone.
SWC 24	1005.8	3300	Lower <i>N. asperus</i>	Coal with low concentration of palynomorphs. Presence of <i>Proteacidites recavus</i> suggests Lower subzone.
SWC 23	1036.3	3400	Lower <i>N. asperus</i>	Sandy claystone with only low concentration of palynomorphs. <i>P. recavus</i> and <i>P. reflexus</i> key index species recorded.
SWC 30B	1706.9	5600	<i>N. senectus</i>	<i>Forcipites sabulosus</i> 31%. <i>Nothofagidites senectus</i> 3% in poorly preserved assemblage.
SWC 27B	1752.6	5750	<i>N. senectus</i>	<i>F. sabulosus</i> ~9% in assemblage dominated by <i>Podocarpidites</i> spp. at 40%.
SWC 26B	1770.9	5810	<i>N. senectus</i>	<i>F. sabulosus</i> present in poorly preserved assemblage. Confidence low.
SWC 20B	1828.8	6000	<i>T. apoxyexinus</i>	Low yielding sample with FAD for <i>Latrobosporites amplus</i> and LAD for <i>Balmeisporites glenelgensis</i> .
SWC 16B	1920.2	6300	<i>T. apoxyexinus</i>	<i>Peninsulapollis gillii</i> present in assemblage dominated by <i>Podocarpidites</i> spp. ~25% and <i>Triporoletes reticulatus</i> ~21%.
SWC 06B	2231.1	7320	Indeterminate	Grey-brown claystone gave only very low yield with few fossils which are not zone diagnostic.
SWC 02B	2288.4	7508	<i>P. mawsonii</i> or younger	Younger than Strzelecki Group based on assemblage composition but key zone species not recorded. Assemblage dominated by <i>Microcachryidites antarcticus</i> at 64% and <i>Podocarpidites</i> spp. at 23%.

Discussion:

Three sidewall cores were analysed from the Latrobe Group and seven from the Golden Beach Group.

The coaly samples from the Latrobe Group gave somewhat limited diversity assemblages consistent with their derivation from a peat swamp environment. Nevertheless the zones recorded are consistent with results from other onshore wells.

In the interval below 3400 ft down to 5022 ft there were no sidewall core or conventional core samples considered suitable for palynology. The sidewall cores were predominantly fine grained tan to brown coloured sandstones whilst core-2 (4603–4623 ft) and core-3 (4980–4983 ft) were massive quartz sandstones. Although there were loose pebble-sized pieces of coaly material in the core boxes these were considered caved.

Samples between the sidewall core at 5022 ft and core-5 at 5415–5425 ft were not analysed at this time pending availability of open file palynological data on this interval. Personal communication with Dr M.K. Macphail suggests this interval is assigned to the *L. balmei* to Upper *T. longus* Zones.

Between 5600 ft to 7508 ft all the sample fall into the Golden Beach Group. The sequence probably only belong to the younger Chimaera Formation (Lowrey & Longley, 1991) as no index species of the older Kipper Shale or underlying Strzelecki Group were recorded.

Prepared by:
Alan D. Partridge
18 June 1996