

EXXONMOBIL EXPLORTION COMPANY

**Biostratigraphy and Paleoenvironments of East Pilchard-1 Well,
Gippsland Basin, Australia**

Thomas D. Davies

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**TECHNOLOGY
BIOSTRATIGRAPHY REPORT**

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APPENDIX A

East Pilchard-1

SAMPLE-BY-SAMPLES LISTING OF BIOSTRATIGRAPHIC AND PALEOENVIRONMENTAL DATA

Depths in meters MD

Palynozone: Lower N. asperus-P. asperopolus undiff. (Middle-uppermost Eocene) (1650-1680m)

1650
(SWC 60) Kerogen: 15-20% amorph; 40-45% woody/coaly; 15-25% biodeg terr 5-10; 3-5% herbac.; 1-2% S/P
Spore/pollen (R); Dinoflagellates (VR); Pyrite (R-F); Poor preservation
Dinoflagellate unidentified (VR)
Proteacidites spp. (SP) (VR)
Proteacidites cf. reversus. (SP) (VR)
Nothofagidites spp. (SP) (VR)
Nothofagidites deminutus (SP) (VR) 93/8.9
Nothofagidites emarcidus (SP) (VR)
Nothofagidites cf. endurus (SP) (VR)
Ilexpollenites sp. (VR)
Cyathidites spp. (VR)

1658
(SWC 59) Kerogen: 20-25% amorph; 35-40% woody/coaly; 15-25% biodeg terr 5-10%; 3-5% herbac.; 1-2% S/P; sparse
Spore/pollen (R); Dinoflagellates (barren); Pyrite (C); Very poor preservation
Nothofagidites spp. (SP) (VR)
Nothofagidites cf. deminutus (SP) (T. bellus (Mioc.)-M. diversus) (VR)
Triporopollenites harrisii (VR)
Simplicipollis meridianus (VR)
Cyathidites spp. (R)
Gleicheniidites spp. (VR)
Ischyosporites cf. gremius (VR)

Palynozone: P. asperopolus (lower part Middle Eocene-upper part Lower Eocene) (1680-1720m)

1680
(SWC 58) Kerogen: 10-15% amorph; 45-50% woody/coaly; 25-30% biodeg terr 5-10%; 3-5% herbac.; 1% S/P; abund.
Spore/pollen (C); Dinoflagellates (VR); Pyrite (EA); Fair-poor preservation
Dinoflagellate unidentified (VR)
Cleistosphaeridium spp.(VR)
Proteacidites spp. (SP) (C)
Proteacidites dilwyensis sensu S&E, 1973 (SP) (VR)
Proteacidites pachypolus (SP (R-F)
Proteacidites asperopolus (SP (VR)
Nothofagidites spp. (SP) (R)
Nothofagidites cf. deminutus (SP) (VR-R)
Nothofagidites emarcidus (SP) (VR)
Triporopollenites harrisii (VR) (C)
Tiliapollenites notabilis (VR)
Anacolosidites luteoides (VR)
Malvacipollis subtilis (VR)
Podocarpites spp. (VR)
Cyathidites spp. (VR)
Gleicheniidites spp. (VR)
Rugulatisporites mallatus (VR)

Palynozone: Indeterminate (1720-1938m)

1720
(SWC 57)

Kerogen: sparse; mainly woody/coaly with some biodeg. terres.
Spore/pollen (barren); Dinoflagellates (barren); Pyrite (R)

Palynozone: Lower L balmei (Paleocene)
(1938-2105m)

1938
(SWC 56)

Kerogen: amorph; 15-20% woody/coaly; 55-60% biodeg terr 10-15%; 3-5% herbac.; 2-5% S/P
Spore/pollen (F); Dinoflagellates (barren); Pyrite (F); Fair-poor preservation
Proteacidites spp. (SP) (R)
Proteacidites angulatus (SP) (VR)
Gambierina rudata (SP) (VR)
Gambierina edwardsii (SP) (VR)
Nothofagidites spp. (SP) (R)
Nothofagidites endurus (SP) (VR)
Lygistepollenites cf. balmei (SP) (R)
Lygistepollenites florinii (SP) (VR)
Phyllocladidites spp. (SP) (VR)
Phyllocladidites mawsonii (SP) (VR)

Palynozone: Basal Lower L balmei (Basal Paleocene)
(2105-2177m)

2105
(SWC 54)

Kerogen: amorph; 10-20% woody/coaly; 55-65% biodeg terr 10-15; 3-5% herbac.; 1-2% S/P
Spore/pollen (C); Dinoflagellates (A); Pyrite (C); Fair-poor preservation
Dinoflagellate unidentified (F)
Glaphrocysta cf. retiintexta (VR)
Peridinioid dinoflagellates (A, broken)
Deflandrea cf. deliniata (L) (F)
Deglandrea cf. medcalfii (R)
Senegalinium ?dilwynense (Paleocene) (R)
Cerodinium cf. dartmooria (VR)
Cerodinium cf. striatum (Paleocene, L.balmei) (VR)
Oligosphaeridium complex (R)
cf. Hystrichosphaeridium tubiferum brevispinosum (VR)
Proteacidites spp. (SP) (R)
Proteacidites angulatus (SP) (R)
Gambierina rudata (SP) (VR)
Gambierina edwardsii (SP) (R)
Nothofagidites spp. (SP) (R)
Nothofagidites endurus (SP) (VR)
?Quadruplanus brossus (SP) (VR, reworked?)
Tricolpites confessus (SP) (VR-R)
Tricolpites gillii (SP) (R)
Tetracolporites verrucosus
Australopollis obscurus (R)
Podocarpites spp. (VR)
Lygistepollenites balmei (SP) (R)
Lygistepollenites florinii (SP) (VR)
Phyllocladidites spp. (SP) (R)
Phyllocladidites mawsonii (SP) (R)
Phyllocladidites microsaccatus (SP) (R)
Stereisporites antiquasporites (SP) (R)
Stereisporites (Tripunctisporis) sp. (SP) (R)
Cyathidites spp. (VR)
Gleicheniidites spp. (VR)
Ischyosporites spp. (VR)

Palynozone: prob. T. longus (Maastrichtian)
(2177-2415m)

2177
(SWC 53)

Kerogen: amorph; 10-20% woody/coaly; 60-70% biodeg terr 5-10; 1-2% herbac.; <1% S/P
Spore/pollen (R-F); Dinoflagellates (ER); Pyrite (C); Poor preservation
Dinoflagellate unidentified (ER, piece), s104/11
Proteacidites spp. (SP) (R-F)
Proteacidites cf. angulatus (SP)(VR)
Nothofagidites spp. (SP) (VR)
Nothofagidites cf. senectus (SP) (VR)

Simplicipollis meridianus (VR) (R-F)
Tricolpites confessus (SP) (R)
?Tricolporites lilliei (SP) (VR)
Australopollis obscurus (VR)
Podocarpites spp. (VR)
Phyllocladidites mawsonii verrucosus (SP) (R)

Palynozone: Lower? T. lilliei (basal Maastrichtian-Campanian)
(2415-m)

2415-20

Kerogen: amorph; 10-20% woody/coaly; 60-70% biodeg terr 5-10; 1-2% herbac.; 2-3% S/P
Spore/pollen (R-F); Dinoflagellates (ER); Pyrite (C); Poor preservation
Dinoflagellate unidentified (ER, piece)
Proteacidites spp. (SP) (R-F)
Proteacidites cf. angulatus (SP) (VR)
Proteacidites cf. reticulconcavus (SP) (VR)
Nothofagidites spp. (SP) (R)
Nothofagidites cf. senectus (SP) (VR)
Tricolpites confessus (SP) (R)
Tricolpites gillii (SP) (R)
Tricolpites waiparaensis (SP) (VR)
Tricolpites longus (SP) (R) 105/15.2
Tricolporites lilliei (SP) (VR) 89.5/18.2
Gephyrapollenites wahooensis (SP) (VR) -104.9/14.3
Podocarpites spp. (VR)
Lygistepollenites florinii (SP) (R)
Phyllocladidites spp. (SP) (F)
Phyllocladidites mawsonii (SP) (F)
Phyllocladidites mawsonii verrucosus (SP) (R)
Phyllocladidites microsaccatus (SP) (R)
Stereisporites antiquasporites (SP) (R)
Stereisporites regium (SP) (R)
?Stereisporites viriosus (SP) (VR)
Cyathidites spp. (VR)
Gleicheniidites spp. (VR)
Aequitriradites sp. (SP) (VR) 98/5.8

2520-25
(inter volc.)

Kerogen: amorph; 5-10% woody/coaly; 60-75% biodeg terr 5-10; 1-2% herbac.; 2-3% S/P
Spore/pollen (C); Dinoflagellates (barren); Pyrite (F-R); fair preservation
Proteacidites spp. (SP) (R-F)
Proteacidites angulatus (SP) (VR)
Proteacidites amolosexinus (SP) (VR)
Gambierina rudata (SP) (VR)
Gambierina edwardsii (SP) (R)
Nothofagidites spp. (SP) (R)
Nothofagidites cf. senectus (SP) (VR)
Tricolpites confessus (SP) (R-F)
Tricolpites gillii (SP) (VR)
Tricolpites cf. sabulosus (SP) (VR)
Tricolpites remarkensis (SP) (R)
Tricolpites apoxyexinus (SP) (VR, top)
cf. Australopollis obscurus (VR)
cf. Gephyrapollenites wahooensis (SP) (VR)
Podocarpites spp. (R)
?Lygistepollenites balmei (SP) (VR)
Phyllocladidites spp. (SP) (F)
Phyllocladidites mawsonii (SP) (VR)
Phyllocladidites mawsonii verrucosus (SP) (VR)
Phyllocladidites microsaccatus (SP) (R-F)
Araucariacites australis (R)
Stereisporites regium (SP) (R)
Cyathidites spp. (VR)
Gleicheniidites spp. (R)
Ischyosporites spp. (VR)
Lycopodiumsporites spp. (R)
Aequitriradites sp. (SP) (F) +96/21; 106.8/20.8; 92.9/17
Aequitriradites spinosus (SP) (R) +105.8/15.5
Aequitriradites verrucosus (SP) (VR)
Triporoletes reticulatus (Rouseisporites sp.) (R)

Zlivisporis blanensis (R) 101.5/18
Laeivigatosporites spp. (F)

2613
(SWC 36)

Kerogen: sparse; 25-30% amorph; 50% woody/coaly; 20% biodeg terr; % herbac.; % S/P
Spore/pollen (R); Dinoflagellates (barren); Pyrite (F-R); poor preservation
Nothofagidites spp. (SP) (VR)
Phyllocladidites spp. (SP) (R)
Stereisporites antiquasporites (SP) (VR)

2620-25

Kerogen: 5-10% amorph; 50-60% woody/coaly; 15-20% biodeg terr; % herbac.; 3-5% S/P
Spore/pollen (C); Dinoflagellates (barren); Pyrite (F-R); fair-poor preservation
Proteacidites spp. (SP) (R)
Proteacidites cf. angulatus (SP) (VR)
Nothofagidites spp. (SP) (R)
Nothofagidites senectus (SP) (R-)
Tricolpites confessus (SP) (R)
Tricolpites gillii (SP) (VR)
Tricolpites cf. longus (SP) (R)
Tricolpites apoxyexinus (SP) (R-F, incr)
Australopollis obscurus (VR)
Podocarpites spp. (F)
Lygispollenites cf. balmei (SP) (VR)
Lygispollenites florinii (SP) (VR)
Phyllocladidites spp. (SP) (C)
Phyllocladidites mawsonii (SP) (F)
Phyllocladidites microsaccatus (SP) (C)
Araucariacites australis (R)
Cyathidites spp. (F-R)
Gleicheniidites spp. (R)
Aequitriradites sp. A (SP) (R)
Aequitriradites verrucosus (SP) (R)
Laeivigatosporites spp. (R)

2647
(SWC 35)

Kerogen: 5-10% amorph; 50-60% woody/coaly; 20-25% biodeg terr; 5% herbac.; 1-2% S/P
Spore/pollen (C); Dinoflagellates (barren); Pyrite (C-A); poor- preservation
Proteacidites spp. (SP) (R-F)
Proteacidites cf. scaboratus (SP) (VR)
Nothofagidites spp. (SP) (VR)
Nothofagidites cf. senectus (SP) (VR)
Nothofagidites cf. kaitangataensis-type (SP) (VR) -97.2/21
Tricolpites confessus (SP) (VR)
Tricolpites cf. sabulosus (SP) (VR)
Podocarpites spp. (R)
Phyllocladidites spp. (SP) (F)
Phyllocladidites cf. mawsonii (SP) (VR)
Phyllocladidites microsaccatus (SP) (R)
Araucariacites australis (R-F)
Cyathidites spp. (VR)
?Aequitriradites verrucosus (SP) (R)
cf. Foraminispora wonthagiensis (SP) (VR)
Circaticosporites cf. cuniformis (SP) (VR)
Circaticosporites cf. australiensis (SP) (VR)

2645-2650

Kerogen: 5-8% amorph; 60-65% woody/coaly; 15-20% biodeg terr; 5% herbac.; 3-5% S/P
Spore/pollen (C); Dinoflagellates (barren); Pyrite (R); fair preservation
Proteacidites spp. (SP) (R-F)
Proteacidites amolosexinus (SP) (VR)
Nothofagidites spp. (SP) (R-F, caved?)
Nothofagidites senectus (SP) (R)
Nothofagidites endurus (SP) (VR, caved?)
Tricolpites confessus (SP) (VR)
Tricolpites sabulosus (SP) (R-F)
Tricolpites cf. remarkensis (SP) (R, caved?)
Podocarpites spp. (R-F)
Phyllocladidites spp. (SP) (F)
Phyllocladidites mawsonii (SP) (R, caved?)
Phyllocladidites microsaccatus (SP) (R)
Phyllocladidites antarcticus (SP) (R)

Araucariacites australis (R)
Cyathidites spp. (R-F)
Gleicheniidites spp. (R)
Lycopodiumsporites spp. (VR)
Lycopodiadites asperatus (SP)(VR)
Foraminispora asymmetricus (SP) (R) +97.8/17.7; 96/17
Circaticosporites cf. australis (SP) (VR)
Circaticosporites cf. australis (SP) (VR)
Laeivigatosporites spp. (R)

2654
(SWC 34)

Kerogen: 45-55% amorph; 15-20% woody/coaly; 15-20% biodeg terr; 3-5% herbac.; 3-5% S/P
Spore/pollen (C, com mud contam.); Dinoflagellates (barren); Pyrite (F-C); poor-fair preservation
Proteacidites spp. (SP) (F-C)
Proteacidites cf. angulatus (SP) (VR)
Gambierina rudata (SP) (VR)
Nothofagidites spp. (SP) (F-C, contam?)
Nothofagidites senectus (SP) (R)
Nothofagidites cf. aperus-type (SP) (VR, contam.?)
Tricolpites confessus (SP) (VR)
cf. Tricolpites gillii (SP) (VR)
Tricolpites waiparaensis (SP) (VR)
cf. Phimopollenites pannosus (SP) (VR-R)
Podocarpites spp. (R-F)
Phyllocladidites spp. (SP) (F)
Phyllocladidites microsaccatus (SP) (F)
Phyllocladidites antarcticus (SP) (R)
Araucariacites australis (R)
Gleicheniidites spp. (R)
Aequitriradites sp. (SP) (R-F)
Aequitriradites spinosus (SP) (R)
Aequitriradites verrucosus (SP) (R) +106.9/21
cf. Ceratosporites equalis (SP) (VR)

Palynozone: N. senectus (Middle-Lower Campanian)
(2675-2805m)

2675
(SWC 33)

Kerogen: 5% amorph; 65-70% woody/coaly; 15-20% biodeg terr; 3-5% herbac.; 2-3% S/P
Spore/pollen (C, com mud contam.); Dinoflagellates (barren); Pyrite (F-R); poor-fair preservation
Proteacidites spp. (SP) (F, incr.)
Nothofagidites spp. (SP) (F, mud contam?)
Nothofagidites senectus (SP) (R)
Nothofagidites endurus (SP) (VR, mud contam.?)
Tricolpites confessus (SP) (VR)
Tricolpites gillii (SP) (VR)
Tricolpites waiparaensis (SP) (VR)
Tricolpites cf. remarkensis (SP) (R, caved?)
Tricolpites apoxyexinus (SP) (R)
Tricolpites sabulosus (SP) (R)
Phimopollenites pannosus (SP) (R)
Retimonocolpites sp. (SP) (VR)
Podocarpites spp. (R-F)
Phyllocladidites spp. (SP) (F-C)
Phyllocladidites mawsonii (SP) (R)
Phyllocladidites microsaccatus (SP) (C)
Phyllocladidites antarcticus (SP) (R-F)
Araucariacites australis (R-F)
Classopollis spp. (SP) (VR, reworked)
Cyathidites spp. (R-F)
Gleicheniidites spp. (R)
Lycopodiumsporites spp. (VR)
Aequitriradites verrucosus (SP) (VR) +106.9/21
cf. Foraminispora asymmetricus (SP) (VR, reworked)
Kraeuselisporites spp. (SP) (VR, reworked) +
Circaticosporites spp. (SP) (VR)
cf. Ceratosporites equalis (SP) (VR)

2690
(SWC 32)

Kerogen: 10-15% amorph; 45-50% woody/coaly; 25-30% biodeg terr; 5-10% herbac.; 2-3% S/P
Spore/pollen (C, com mud contam.); Dinoflagellates (barren); Pyrite (C); fair-poor preservation

Proteacidites spp. (SP) (F)
Nothofagidites spp. (SP) (F, mud contam?)
Nothofagidites senectus (SP) (R)
Nothofagidites cf. aperus-type (SP) (VR, mud contam.?)
Tricolpites sabulosus (SP) (R)
Tricolpites cf. remarkensis (SP) (R, caved?)
Phimopollenites pannosus (SP) (R-F)
Podocarpites spp. (C)
Phyllocladidites spp. (SP) (F)
Phyllocladidites microsaccatus (SP) (A)
Phyllocladidites antarcticus (SP) (R-)
Araucariacites australis (C)
cf. Callialasporites dampieri (SP) (VR)
Cyathidites spp. (R)
Gleicheniidites spp. (R)
Triporoletes lavigatus (Rouseisporites sp.) (~Cenom. and lower) (VR) +94.5/20.9
cf. Cybelosporites striatus (SP) (R)

2698
(SWC 31)

Kerogen: 15-20% amorph; 45-50% woody/coaly; 10-20% biodeg terr; 5-10% herbac.; 1-2% S/P
Spore/pollen (F-C, com mud contam.); Dinoflagellates (barren); Pyrite (C-A); poor preservation
Proteacidites spp. (SP) (F)
Nothofagidites spp. (SP) (R, mud contam?)
Tricolpites sabulosus (SP) (R)
cf. Phimopollenites pannosus (SP) (R)
Phyllocladidites spp. (SP) (F)
Phyllocladidites microsaccatus (SP) (F)
Araucariacites australis (R)
Gleicheniidites spp. (R)
Laeivigatosporites spp. (R-F)

2730-35

Kerogen: 5% amorph; 65-70% woody/coaly; 10-15% biodeg terr; 5-10% herbac.; 2-3% S/P
Spore/pollen (C, com mud contam.); Dinoflagellates (barren); Pyrite (R); poor-fair preservation
Proteacidites spp. (SP) (F)
Nothofagidites spp. (SP) (R, mud contam?)
Nothofagidites senectus (SP) (R)
Tricolpites cf. confessus (SP) (VR)
Tricolpites cf. gillii (SP) (VR)
Tricolpites waiparaensis (SP) (VR)
Tricolpites sabulosus (SP) (R-F)
cf. Phimopollenites pannosus (SP) (R)
Podocarpites spp. (F-C)
Phyllocladidites spp. (SP) (C)
Phyllocladidites mawsonii (SP) (R)
Phyllocladidites microsaccatus (SP) (C)
Phyllocladidites antarcticus (SP) (R-F)
Araucariacites australis (R)
Cyathidites spp. (R)
Gleicheniidites spp. (R)
Lycopodiumsporites spp. (VR)
Triporoletes lavigatus (Rouseisporites sp.) (VR, reworked) +92.5/16
Laeivigatosporites spp. (F)

2747
(SWC 29)

Kerogen: 5% amorph; 65-70% woody/coaly; 5-10% biodeg terr; 10-15% herbac.; 1-2% S/P
Spore/pollen (A, com mud contam.); Dinoflagellates (barren); Pyrite (R); fair preservation
Proteacidites spp. (SP) (F)
Gambierina cf. edwardsii (SP) (VR, mud contam.?)
Nothofagidites spp. (SP) (R, mud contam?)
Nothofagidites senectus (SP) (R)
cf. Illexpollenites sp. (VR)
cf. Tricolpites cf. confessus (SP) (VR)
Tricolpites sabulosus (SP) (R)
Phimopollenites pannosus (SP) (R)
Australopollis obscurus (VR)
Retimonocolpites peroreticulatus (SP) (VR)
Liliacidites lanceolatus-type (SP) (R, mud contam.)
Podocarpites spp. (F-C)
Phyllocladidites spp. (SP) (C-A)
Phyllocladidites mawsonii (SP) (R-F)
Phyllocladidites microsaccatus (SP) (C-A)

Phyllocladidites antarcticus (SP) (R-F)
Araucariacites australis (F)
Cyathidites spp. (R)
Gleicheniidites spp. (R)
Aequitriradites spinosus (SP) (R)
Aequitriradites verrucosus (SP) (R) +
Laevigatosporites spp. (F)

2761
(SWC 28)

Kerogen: 5% amorph; 70-75% woody/coaly; 5-10% biodeg terr; 5-10% herbac.; 1-2% S/P
Spore/pollen (C, com mud contam.); Dinoflagellates (barren); Pyrite (F); poor-fair preservation
Proteacidites spp. (SP) (R-)
Proteacidites amolosexinus (SP) (VR)
Nothofagidites spp. (SP) (R, mud contam?)
Nothofagidites senectus (SP) (R)
Nothofagidites cf. kaitangataensis-type (SP) (VR)
Tricolpites sabulosus (SP) (R)
Tetracolporites verrucosus (VR, mud contam.?)
Podocarpites spp. (R)
Phyllocladidites spp. (SP) (F)
Phyllocladidites mawsonii (SP) (R-F)
Phyllocladidites microsaccatus (SP) (F)
Phyllocladidites antarcticus (SP) (R)
Laevigatosporites spp. (F)

2771
(SWC 27)

Kerogen: 5-10% amorph; 60-65% woody/coaly; 10-15% biodeg terr; 5-10% herbac.; 2-3% S/P
Spore/pollen (C-A, com mud contam.); Dinoflagellates (barren); Pyrite (F); fair preservation
Proteacidites spp. (SP) (F)
Nothofagidites spp. (SP) (VR, mud contam?)
Tricolpites confessus (SP) (VR)
Tricolpites sabulosus/stipulatus (SP) (-T.apo.) (R)
Phimopollenites pannosus (SP) (VR)
Liliacidites spp. (SP) (R-F, mud contam.)
Liliacidites lanceolatus-type (SP) (R, mud contam.) -105.6/11.1; 97.5/7.8
Podocarpites spp. (R)
Phyllocladidites spp. (SP) (C)
Phyllocladidites mawsonii (SP) (F)
Phyllocladidites microsaccatus (SP) (C)
Phyllocladidites antarcticus (SP) (F)
Araucariacites australis (R-F)
Cyathidites spp. (R)
Gleicheniidites spp. (R)
Laevigatosporites spp. (F)

Palynozone: T. apoxyxinus (Santonian)
(2805-2850m)

2805-10

Kerogen: 3-5% amorph; 65-75% woody/coaly; 5-10% biodeg terr; 10-15% herbac.; 1-2% S/P
Spore/pollen (C-A, com mud contam.); Dinoflagellates (barren); Pyrite (F); fair preservation
Proteacidites spp. (SP) (F)
Proteacidites cf. angulatus (SP) (VR, contam.)
Beaupreadites sp. (SP) (VR) -106.8/8.8
Nothofagidites spp. (SP) (VR, mud contam?)
Tricolpites confessus (SP) (VR)
Tricolpites waiparaensis (SP) (VR)
Tricolpites sabulosus/stipulatus (SP) (R-F, incr.)
Liliacidites spp. (SP) (R, mud contam.)
Liliacidites lanceolatus-type (SP) (R, mud contam.) -100.10.8
Podocarpites spp. (F)
Phyllocladidites spp. (SP) (C)
Phyllocladidites mawsonii (SP) (F-R)
Phyllocladidites microsaccatus (SP) (F-C)
Phyllocladidites antarcticus (SP) (F)
Araucariacites australis (F)
Cyathidites spp. (F-C)
Gleicheniidites spp. (F)
Clavifera triplex (SP) (VR)
Circaticosporites cf. australiensis (SP) (VR)
Circaticosporites cf. ludbrookii (SP) (VR)

Laeivigatosporites spp. (F)

2821

(SWC 24)

Kerogen: 2-3% amorph; 65-70% woody/coaly; 5-8% biodeg terr; 15-20% herbac.; 2-3% S/P
Spore/pollen (F, ? mud contam.); Dinoflagellates (barren); Pyrite (R); v. poor preservation
Tricolpites cf. sabulosus/stipulatus (SP) (VR)
Phimopollenites pannosus (SP) (VR)
Podocarpites spp. (F)
Phyllocladidites spp. (SP) (C)
Phyllocladidites microsaccatus (SP) (F-C)
Araucariacites australis (R)
Stereisporites antiquasporites (SP) (VR)
Cyathidites spp. (F)
Gleicheniidites spp. (R)
Laeivigatosporites spp. (F)

Palynozone: Lower T. apoxyexinus (Santonian)
(2850-2905m)

2850-55

Kerogen: 3-5% amorph; 65-70% woody/coaly; 5-10% biodeg terr; 10-15% herbac.; 2-3% S/P
Spore/pollen (C ? mud contam.); Dinoflagellates (F-C); Pyrite (R); poor-fairpreservation
Dinoflagellate unidentified (VR) +89\14.5
Chatangiella spp. (D) (F-C)
Chatangiella victoriensis (D) (F-) +100/14.4 ;103.21
cf. Trythyrodinium suspectum (D) (R-F)
Proteacidites spp. (SP) (F, some caved?)
Proteacidites sp. Eocene (SP) (VR, contam.)
Phimopollenites pannosus (SP) (F-R, incr.)
Podocarpites spp. (F-C)
Phyllocladidites spp. (SP) (C)
Phyllocladidites microsaccatus (SP) (F-C)
Phyllocladidites antarcticus (SP) (F)
Araucariacites australis (R-F)
Cyathidites spp. (F)
Gleicheniidites spp. (R)
Lycopodiumsporites spp. (VR)
cf. Ceratosporites equalis (SP) (VR) +102/14.3

2857

(SWC 21)

Kerogen: 5-10% amorph; 50-55% woody/coaly; 15-20% biodeg terr; 5-10% herbac.; 3-5% S/P
Spore/pollen (F-C, ? mud contam.); Dinoflagellates (~barren); Pyrite (C); v. poor preservation
cf. Chatangiella victoriensis (D) (-) +
Proteacidites spp. (SP) (r)
Tricolpites confessus (SP) (VR)
Tricolpites cf. sabulosus/stipulatus (SP) (VR)
Phimopollenites pannosus (SP) (F-C) 96/7.4
Podocarpites spp. (F-C)
Phyllocladidites spp. (SP) (F)
Phyllocladidites mawsonii (SP) (R)
Phyllocladidites microsaccatus (SP) (F)
Cyathidites spp. (F-R)

2887

(SWC 19)

Kerogen: 5-10% amorph; 50-55% woody/coaly; 15-20% biodeg terr; 5-10% herbac.; 5-8% S/P
Spore/pollen (C); Dinoflagellates (barren); Pyrite (C); very poor preservation
Phimopollenites pannosus (SP) (F-C, incr.)
Podocarpites spp. (F-C)
Phyllocladidites spp. (SP) (F-C)
Phyllocladidites mawsonii (SP) (F-C)
Phyllocladidites mawsonii verrucosus (SP) (VR)
Phyllocladidites microsaccatus (SP) (F)
Phyllocladidites antarcticus (SP) (R-F)
Cyathidites spp. (R)
Gleicheniidites spp. (F)

2890-95

(+SWC 18)

Kerogen: 2-5% amorph; 70-75% woody/coaly; 5-10% biodeg terr; 3-5% herbac.; 3-5% S/P
Spore/pollen (F); Dinoflagellates (barren); Pyrite (R-F); very poor preservation
Phimopollenites pannosus (SP) (F)
Podocarpites spp. (R)

Phyllocladidites spp. (SP) (R-F)
 Phyllocladidites microsaccatus (SP) (R)
 Phyllocladidites antarcticus (SP) (R)
 Stereisorites sp. (?Tripunctisporis) (SP) (VR)
 Cyathidites spp. (R)
 Gleicheniidites spp. (R)
 Aequitriradites sp. A (SP) (VR)
 Aequitriradites verrucosus (SP) (VR) +
 Circaticosporites cf. ludbrookii (SP) (VR)
 cf. Ceratosporites equalis (SP) (VR)

**Palynozone: Indeterminate
 (2905-2970m)**

- 2905
 (SWC 17) Kerogen: 2-5% amorph; 70-75% woody/coaly; 5-10% biodeg terr; 3-5% herbac.; 1% S/P
 Spore/pollen (R); Dinoflagellates (barren); Pyrite (F); very poor preservation
 Podocarpites spp. (R)
 Phyllocladidites spp. (SP) (R)
 Phyllocladidites microsaccatus (SP) (R)
- 2911
 (SWC 16) Kerogen: 5-8% amorph; 70-75% woody/coaly; 5-10% biodeg terr; 3-5% herbac.; 2-3% S/P
 Spore/pollen (F-R); Dinoflagellates (barren); Pyrite (C); v. poor preservation
 Podocarpites spp. (R)
 Phyllocladidites spp. (SP) (R)
- 2943
 (SWC 14) Kerogen: 5-10% amorph; 50-55% woody/coaly; 15-20% biodeg terr; 5-10% herbac.; 2-3% S/P
 Spore/pollen (F); Dinoflagellates (barren); Pyrite (C); v. poor preservation
 Proteacidites spp. (SP) (R)
 Podocarpites spp. (R)
 Phyllocladidites spp. (SP) (R)
 Phyllocladidites microsaccatus (SP) (R)
 Cyathidites spp. (R)

**Palynozone: Lower T. apoxyxinus-?P. mawsonii (Santonian-?Turonian)
 (2970-3127m)**

- 2970-75
 Kerogen: 5-10% amorph; 70-75% woody/coaly; 5-10% biodeg terr; 3-5% herbac.; 1-3% S/P
 Spore/pollen (F); Dinoflagellates (R-F); Pyrite (C-A); fair-poor preservation
 Chatangiella victoriensis (D) (F)
 cf. Xiphophoridium alatum (D) (Cam8-A16) (VR, folded)
 Podocarpites spp. (R)
 Phyllocladidites spp. (SP) (R)
 Phyllocladidites microsaccatus (SP) (R)
 Phyllocladidites antarcticus (SP) (R)
 Cyathidites spp. (R)
 ?Cybelosporites stylosus (SP) (VR) (Lw. Alb and lower)
- 2997
 (SWC 11) Kerogen: 5-10% amorph; 70-75% woody/coaly; 5-10% biodeg terr; 3-5% herbac.; 1-3% S/P
 Spore/pollen (C; some mud contam.); Dinoflagellates (F); Pyrite (C-A); fair-poor preservation
 Dinoflagellate unidentified (vR)
 Chatangiella porosa (D) (F) +b101/14.2, 105.5/12;95.5/9.9
 ?Isabelidium variabile (D) (ER)
 Proteacidites spp. (SP) (F, some contam?)
 Proteacidites cf. angulatus (SP) (VR), contam.)
 Tricolpites cf. confessus (SP) (VR)
 Tricolpites cf. sabulosus/stipulatus (SP) (VR)
 Australopollis obscurus (VR)
 Podocarpites spp. (F)
 Phyllocladidites spp. (SP) (F)
 Phyllocladidites microsaccatus (SP) (F)
 Phyllocladidites antarcticus (SP) (R)
 Cyathidites spp. (R)
 Circaticosporites cf. australiensis (SP) (VR)

- 3005
 (SWC 10) Kerogen: 5-10% amorph; 70-75% woody/coaly; 5-10% biodeg terr; 3-5% herbac.; 1-3% S/P

Spore/pollen (C; some mud contam.); Dinoflagellates (F); Pyrite (C-A); fair-poor preservation
 Dinoflagellate unidentified (R) 1111; +a104.3/5.5
 Chatangiella porosa (D) (F) +a
 Chatangiella triparita (D) (VR) +a
 cf. Exochosphaeridium stiolatum/Fibrocysta sp. (D) (R) +a99.1/15.2
 cf. Spongodinium delitiense (D) (VR, piece)
 Tricolpites cf. confessus (SP) (VR)
 Tricolpites cf. sabulosus/stipulatus (SP) (VR)
 Tricolpites cf. apoxyxinus (SP) (VR, base)
 cf. Phimopollenites pannosus (SP) (R)
 Australopollis obscurus (VR)
 Podocarpites spp. (F)
 Phyllocladidites spp. (SP) (F)
 Phyllocladidites microsaccatus (SP) (F)
 Phyllocladidites antarcticus (SP) (R)
 Stereisorites antiquasporites (SP) (VR)
 Gleicheniidites spp. (R)

3015-20

Kerogen: 4-5% amorph; 70-75% woody/coaly; 5-10% biodeg terr; 3-5% herbac.; 3-5% S/P
 Spore/pollen (C); Dinoflagellates (F); Pyrite (VA); poor-fair preservation
 Dinoflagellate unidentified (VR)
 Chatangiella porosa (D) (R-F) +a
 Isabelidium spp. (D) (VR)
 Trythyrodinium suspectum (D) (VR)
 Tricolpites cf. sabulosus/stipulatus (SP) (VR)
 Phimopollenites pannosus (SP) (R-F)
 Podocarpites spp. (F)
 Phyllocladidites spp. (SP) (F)
 Phyllocladidites microsaccatus (SP) (F)
 Phyllocladidites antarcticus (SP) (R)
 Stereisorites antiquasporites (SP) (VR)
 Gleicheniidites spp. (R)
 Circaticosporites cf. australiensis (SP) (VR)
 Circaticosporites cf. ludbrookii (SP) (VR)

3056

(SWC 8)

Kerogen: 5-10% amorph; 60-70% woody/coaly; 10-15% biodeg terr; 3-5% herbac.; 1-3% S/P
 Spore/pollen (C); Dinoflagellates (F-C); Pyrite (VA); poor-fair preservation
 Dinoflagellate unidentified (R) 1
 Chatangiella victoriensis (D) (R-F) +
 Trythyrodinium suspectum (D) (VR)
 cf. Heterosphaeridium difficile (D) (F; distorted, degraded, pitted)
 cf. Xenascus ceratioides (D) (VR)
 Tricolpites cf. sabulosus/stipulatus (SP) (VR)
 Podocarpites spp. (F-R)
 Phyllocladidites spp. (SP) (F)
 Phyllocladidites microsaccatus (SP) (R)
 Phyllocladidites antarcticus (SP) (R)
 Gleicheniidites spp. (R)
 Aequitriradites sp. (SP) (VR)
 Aequitriradites spinosus (SP) (VR)
 Balmeisorites holodictyus (SP) (VR, reworked?) +100/9.5

3072

(SWC 7)

Kerogen: 5% amorph; 60-70% woody/coaly; 15-20% biodeg terr; 3-5% herbac.; 1-3% S/P
 Spore/pollen (C); Dinoflagellates (F); Pyrite (A); poor preservation
 Dinoflagellate unidentified (VR) 1
 Chatangiella victoriensis (D) (Camp-Turon) (F)
 Proteacidites spp. (SP) (, some contam?)
 Podocarpites spp. (R)
 Phyllocladidites spp. (SP) (F)
 Phyllocladidites microsaccatus (SP) (R)

3087

(SWC 6)

Kerogen: 5% amorph; 60-70% woody/coaly; 15-20% biodeg terr; 3-5% herbac.; 1-3% S/P
 Spore/pollen (F); Dinoflagellates (~barren); Pyrite (C); poor preservation
 ? Trythyrodinium suspectum (D) (VR)
 Podocarpites spp. (R)
 Phyllocladidites spp. (SP) (F)
 Phyllocladidites microsaccatus (SP) (R)
 Phyllocladidites antarcticus (SP) (R)

Cyathidites spp. (R)

3088

(SWC 5)

Kerogen: 5% amorph; 60-70% woody/coaly; 15-20% biodeg terr; 3-5% herbac.; 1-3% S/P
Spore/pollen (F); Dinoflagellates (R); Pyrite (C); poor preservation
Dinoflagellate unidentified (VR) 1
Chatangiella spp. (D) (VR)
Chatangiella cf. victoriensis (D) (Camp-Turon. (VR)
Podocarpites spp. (R)
Phyllocladidites spp. (SP) (F)
Phyllocladidites microsaccatus (SP) (R)
Phyllocladidites antarcticus (SP) (R)
Cyathidites spp. (R)
Aequitriradites spinosus (SP) (VR)

3085-90

Kerogen: 5% amorph; 60-70% woody/coaly; 15-20% biodeg terr; 3-5% herbac.; 1-3% S/P
Spore/pollen (F-C, some contam.); Dinoflagellates (F); Pyrite (C-A); poor preservation
Chatangiella spp. (D) (VR)
Chatangiella victoriensis (D) (R)
Isabelidium variabile (D) (VR)
Proteacidites spp. (SP) (F, some contam?)
Tricolpites cf. sabulosus/stipulatus (SP) (VR)
Podocarpites spp. (R)
Phyllocladidites spp. (SP) (F)
Phyllocladidites microsaccatus (SP) (F)
Phyllocladidites antarcticus (SP) (R)
Araucariacites australis (R)
Stereisporites antiquasporites (SP) (VR)
Cyathidites spp. (R)
Gleicheniidites spp. (R)
cf. Ceratosporites equalis (SP) (VR) -

**Palynozone: Indeterminate
(3127-3130m)**

3127

(SWC 3)

Kerogen: Dark coaly; 1-2% amorph; 80-85% coaly; 5-10% biodeg terr; <1% herbac.; <1% S/P
Spore/pollen (nearly barren); Dinoflagellates (nearly barren); Pyrite (C-A);v. poor preservation

3125-30

Kerogen: Dark coaly; 5-10% amorph; 75-80% coaly; 5-10% biodeg terr; <1% herbac.; % S/P
Spore/pollen (R, mostly caved); Dinoflagellates (nearly barren); Pyrite (VA); poor preservation
Phyllocladidites spp. (SP) (VR, caved?)
Phyllocladidites microsaccatus (SP) (VR, caved?)