



August 1994

TO: M. Smith
FROM: S. Horan (BHP Petroleum)

RESULTS OF CENTRAL OTWAY STUDY GROUP
PALYNOLOGY STUDY IN PEP-111

Tyrendarra -13

Analysed 1340.3 barren and 1316.7-1319.8 which is possible *P. mawsonii* or *Adistocarinitus*.

RECOMMEND ANALYSE 1328.9-1331.9 which is cuttings from sand to see if can get any P. mawsonii or A. distocarinitus from sandstone at 1325-1335.

Codrington-1

Analysed 1130.9-1133.8 which gave a *P. pannosus* date in a claystone above a sandy interval which suggests that the clays and minor silts? above this point may be ? Late Cretaceous. Possibility that the sand in Tyrendarra-13 from 1325-1335 may correlate to the interval in Codrington-1 from 1130-1115, dating from Tyrendarra-13 will clarify this point.

RECOMMEND no further action but sample Core 16 to date if Tyrendarra-13 has *mawsonii* or *distocarinitus* age. Also visually inspect Core with 10+ darcy permeability and collect paleo sample if sand consolidate and poro/permeability data looks valid.

Yambuck-2

Analysed 1368.5-1371.6 *U. T. apoxyexinus* (*U. cretacea/aceras*) and 1382 *P. pannosus*. Straight forward results, *P. pannosus* Eumeralla Fm with *U. T. apoxyexinus* above an unconformity probably at top of sst at 1380.

RECOMMEND no further action.

Belfast-11

Analysed 1338.1-1341.1 *U. T. apoxyexinus* (*U. cretacea/aceras*) on top of cuttings from 1353.3-1356.4 and core at 1374.6 of *P. pannosus* age. Similar result as Yambuck-2. Possible minor sand at 1350 that may be *mawsonii* or *Distocarinitus*, could be flooding sand? but is minor (1-2 m) and would be difficult to resolve with further paleo.

RECOMMEND no further action

Belfast-4

Analysed 1511.8-1514.8, 1524-1525.5, 1546.0 core which are all apparently *A. distocarinitus* with *P. infusorioides* age. Data at 1417.9 from Cookson and Eisanack 1961 possibly *U. T. apoxyexinus* and samples from core AX at approximately 1680 is *C. paradoxa* Dettman 1965. Based on these results there is potential for a section of *mawsonii* and *distocarinitus* 200+ metres thick. There is poor log coverage from this well but further work is justified as there is potential a thick *Mawsonii/Distocarinitus* sequence. Also worth talking to C. Abelle

about marine fauna in core at 1417. SP deviation to left at 1480 may be a sand of mawsonii or distocarinitus age - cf Boothapool SP log at 1130 which has A.distocarinitus beneath and U.T.apoxyexinus below.

RECOMMEND sampling cores at 1370 (AS), 1417 (AT) and 1630 (AV). The cores AS and AT is designed to determine if any P.mawsonii is present and also determine the position of the T.Apoxyexinus within the well. and fix the position of the top of the Otway Group.

Boothapool-2

Analysed 1115.6-1118.6 U.T.apoxyexinus, 1143-1146 A.distocarinitus and 1200.3 Eumeralla. There is a sand at 1130 m 1-2 m thick that may be mawsonii/distocarinitus age, possibly get another cuttings sample but probably not worth it as results will be ambiguous.

RECOMMEND no further work.

Koiroit-10

Analysed 1162 A.distocarinitus (P.infusoiriodes), 1207.85, 1208.7, 1228.3-1231.4, 1253.5 all P.pannosus. Potentially distocarinitus or younger sandstones above 1162.

RECOMMEND sample core 18 which consists of glauconitic mudstone to determine the age of sediments above the sandstone around 1130 and determine where the UT.apoxyexinus is..

Yangery-1

Analysed 902.2-905.2 distocarinitus, 908.3-911.35 P.pannosus. Potential for Distocarinitus and younger sediments above 902.2.

RECOMEND sample cores at 826 (AP-16) and 872 (AQ-17) to confirm P.mawsonii date and identify T.apoxyexinus in the well. These cores currently have T.apoxyexinus? and P.mawsonii? dates from Dettman 1965 but are based on identification of long ranging species using current palynology shemes. Ages could range from A.distocarinitus to T.llilei..

Wangoon-6 and Wangoon-2

Both wells have U.T.apoxyexinus samples on top of P.pannosus.

RECOMEND no further work.

NOTE: take extra samples in Belfast-4, Koiroit-10 and Yangery-1 for future micropaleo work with Rexillius, arenaceous forams have been identified earlier but nanno fossil work has not been attempted. Also sample core 17 Koiroit-1 and core 15 in Yangery-1 just in case get any surprises.

SUMMARY: The work to date has not identified a quartzose sandstone that is of equivalent age to the Shipwreck Group/Waarre Sandstone, at least not a sand greater than 1-2 m. In most wells claystone of Upper T.apoxyexinus age rest on top of Eumeralla aged sediments with some sediments of A.distocarinitus age (Tyrendarra-13, Codrington-1, Belfast-4,

Boothapool-2, Koiroit-10, and Yangery-1. There appears to be a relative thick distocarinitus/mawsonii? sequence between Belfast-11 and Wangoon-6 which needs quantifying.

It appears that the wells analysed have either had any mawsonii/distocariutus age remove from them or more likely no sands were deposited. Evidence for this is not only the absence of sands of this age but the presence of marine claystones instead which are similar in age to other identified nmarine maxima in the basin.

FUTURE WORK: It is recommended that the following sample be futher analysed for reasons mentioned above at a cost of 1330 (100% BHPP cost) with the other members of the Joint study group being given the option not to participate if necessary (332 each);

Tyrendarra-13	cuttings 1328.9-1331.9
Belfast-4	core 1370
	core 1417
	core 1630
Koiroit-10	core 1110
Yangery-1	core 826
	core 872