APPENDIX 3

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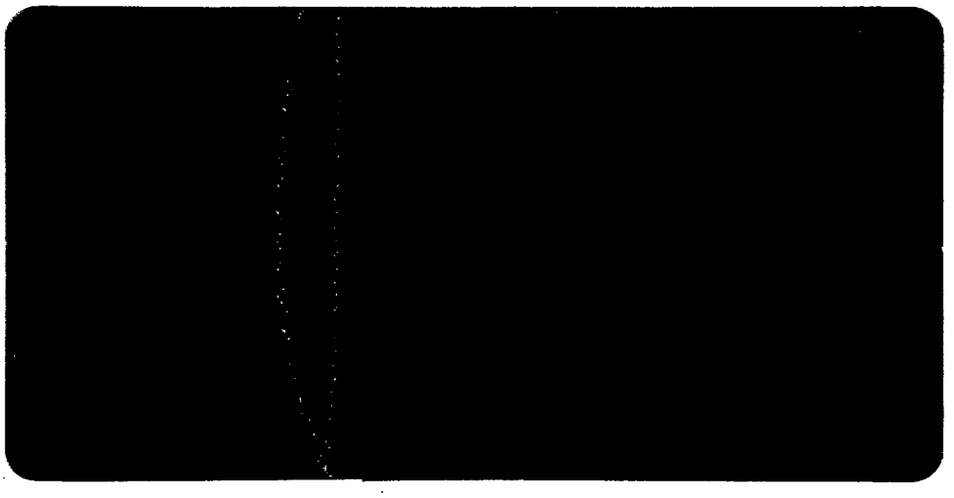

THE FORAMINIFERAL SEQUENCE
in
OMEO # 2A
GIPPSLAND BASIN.

for: AUSTRALIAN AQUITAINE PETROLEUM PTY. LTD.

August 7, 1985.

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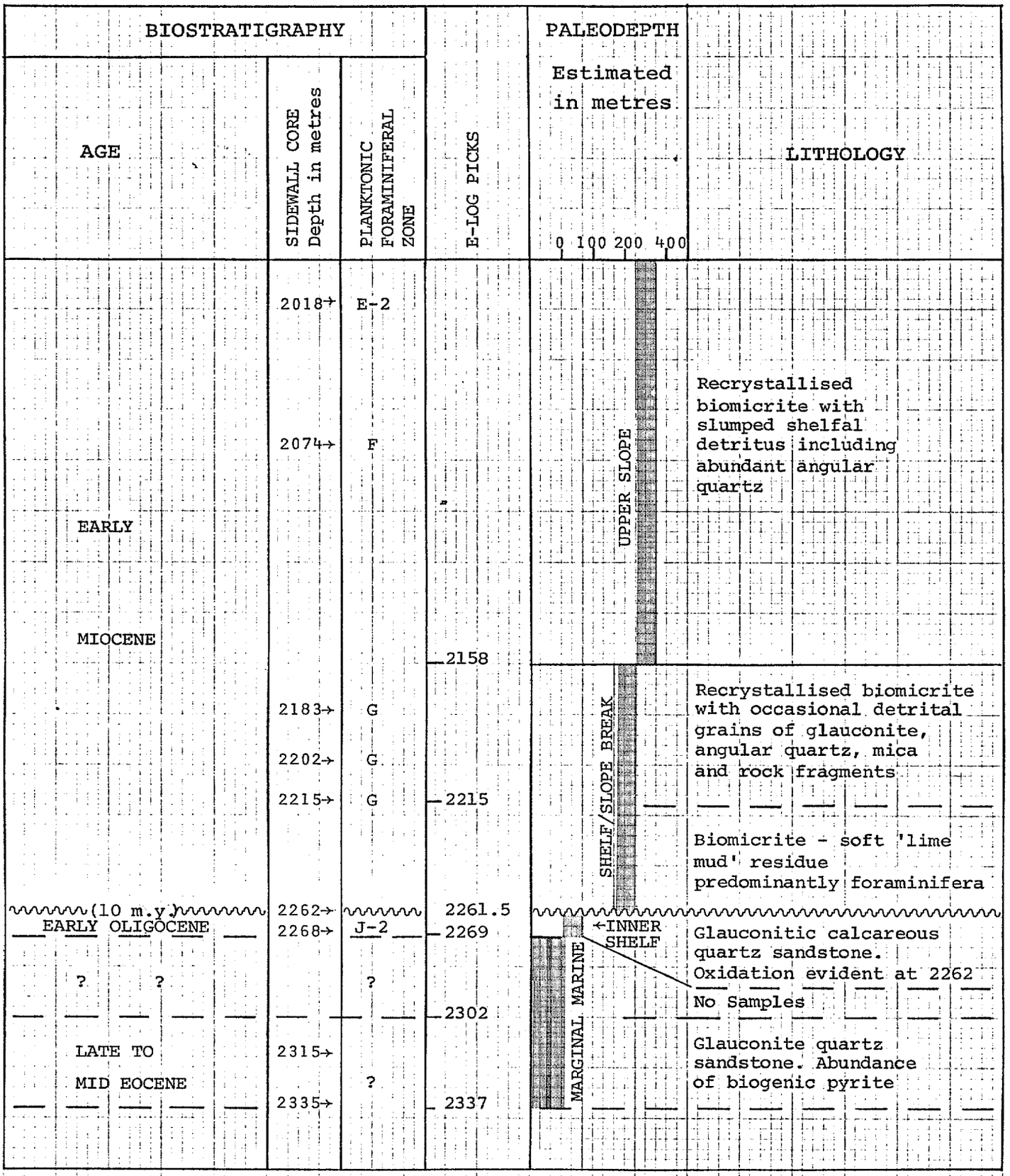

TABLE 1: INTERPRETED FORAMINIFERAL SEQUENCE for OMEO #2

~~~(10 m.y.)~~~ = hiatus with time span

(refer factual data on Table 3).

David Taylor
August 6, 1985

A/PQUE A4 2mm.
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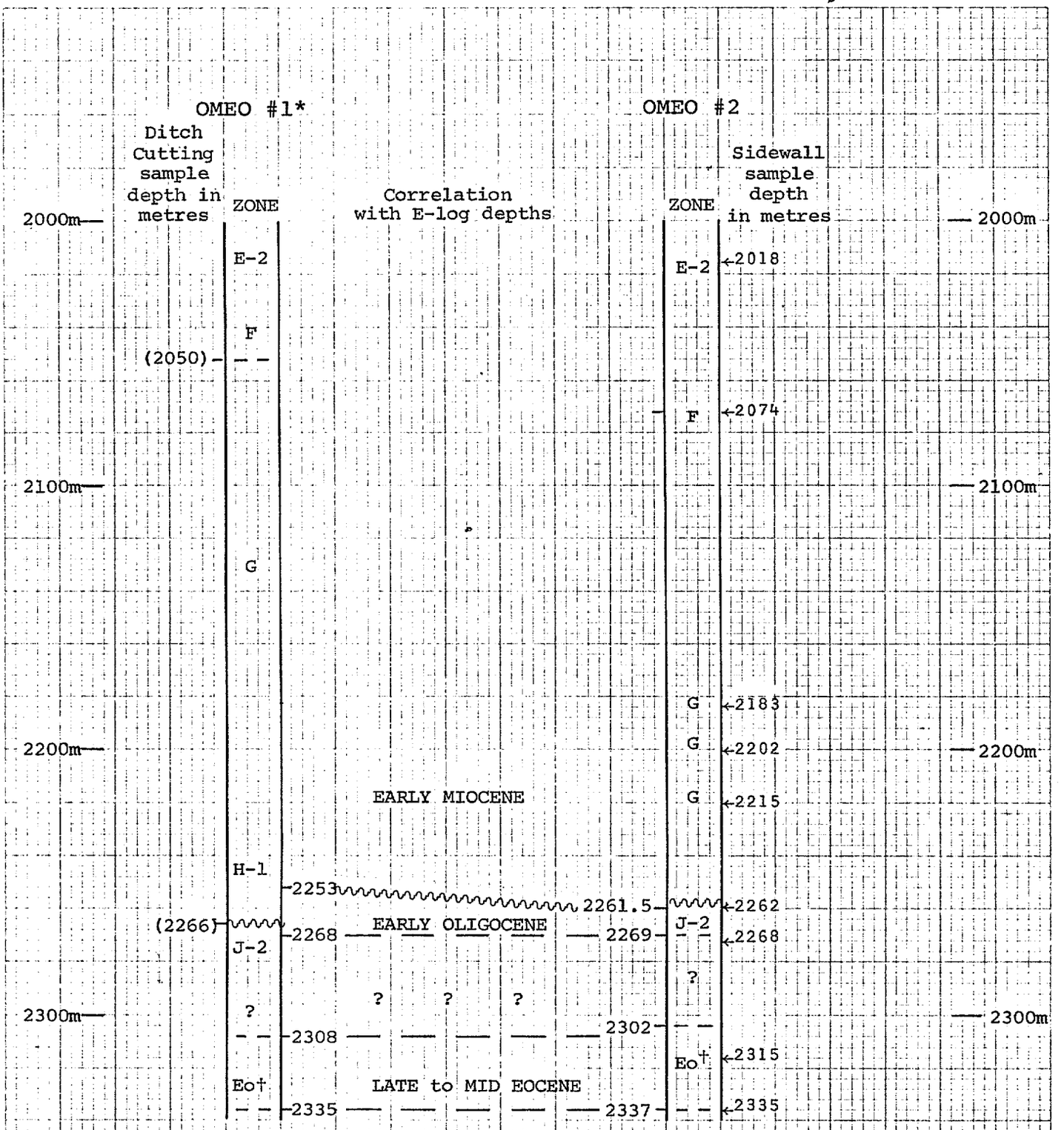

TABLE 2: BIOSTRATIGRAPHIC CORRELATION of PALEOGENE/NEOGENE TRANSITION between OMEO #1 and OMEO #2.

* Reinterpretation from that presented in Taylor (1983). Rotary cuttings only.

† Definite Eocene faunas; zonal determination not possible. Considerable sample lag in OMEO #1.

David Taylor
August 7, 1985.

INTRODUCTION.

Nine sidewall cores were processed and examined from OMEO #2. This suite sampled the transition between the Paleogene and Neogene. The original interpretation of the OMEO #1 sequence by Taylor (1983) was hindered in that the section was represented by only ditch cutting samples with no sidewall cores available. As a result of comparison with sidewall cores in OMEO #2, the OMEO #1 interpreted sequence has been adjusted and amended (refer Table 2).

The biostratigraphic and environmental sequence in OMEO #2 is summarised on Table 1, based on planktonic and benthonic foraminiferal distributional data presented as Table 3. Biostratigraphic and paleoenvironmental criteria applied are the same as those outlined in the OMEO #1 report by Taylor (1983).

EOCENE - Sidewall cores 2335 & 2315m; E-log interval 2337 to 2302m.

The rich Eocene fauna, present as obvious downhole contamination in OMEO #1, were not replicated in the sidewall cores from OMEO #2. In fact, only one foraminifera was found at 2335m in OMEO #2 with no foraminifera found at 2315m. The sidewall core at 2335m was barren of benthonic foraminifera, but did contain an abundance of pyritic spheres and discs. These pyritic bodies were obviously of biogenic origin and were common within Eocene estuarine and lagoonal sediments of the Gippsland Basin.

The Eocene faunas in OMEO #1 were probably concentrated by marine ingressions that broke through, episodically, into an estuarine, lagoonal environment. The two sidewall cores from OMEO #2 were not shot into these richly foraminiferal horizons, but into the normal marginal marine sediments.

Note is made that this Eocene interval in OMEO #1 has been adjusted and is now interpreted as being between 2335 and 2308m (refer Table 2). Apparently there was a considerable downhole contamination and significant sample lag of the order of a hundred metres.

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? EOCENE - E-log interval 2302 to 2268m.

No sidewall cores were shot in this E-log interval directly below the J-2 (Early Oligocene) horizon. A similar interval has now been designated between 2308 and 2268m in OMEO #2 (see Table 2).

EARLY OLIGOCENE - Sidewall cores 2268 & 2262m; E-log interval 2269 to 2261.5m.

A typical Zone J-2 planktonic assemblage was found in both of the sidewall cores. The calcareous cemented, glauconitic quartz sandstone of this interval was deposited in a fairly shallow continental shelf with a paleodepth of ≈50m, on the evidence of the benthonic fauna.

Similar foraminiferal assemblages and sediments were isolated in ditch cutting samples from OMEO #1. However the original interval designated as J-2 has now been abbreviated, occurring only between 2268 and 2253m (refer Table 2).

COBIA EVENT HIATUS at 2261.5 on E-logs.

Although there are no samples directly above this E-log event, it is assumed that late Oligocene sediment (Zones I & H-2) were absent as they were in OMEO #1. In OMEO #2, pyrite and glauconite in the Early Oligocene sample at 2262, immediately below the event, have been oxidised, suggesting exposure prior to the onslaught of the Early Miocene transgression.

EARLY MIOCENE - Sidewall cores at 2215, 2202, 2183, 2074 and 2018m.

Unfortunately there is a forty seven metre sample gap between the highest Early Oligocene sidewall core at 2262m and the lowest Early Miocene sidewall core at 2215m. Despite the absence of samples, it is assumed that the sediment above 2261.5m was no older than Early Miocene, on evidence of correlation with OMEO #1.

Zone G planktonic assemblages are present at 2215, 2202 and 2183, whilst assemblages at 2074 and 2018 represent Zones F and E-2 respectively. Sedimentation commenced on the outer continental shelf, with later slumping

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over the shelf edge with deposition on the continental slope in Zone F and E-2 times. Coarse quartz and other rock detritus increases up section.

The deepest Early Miocene sample (i.e. at 2215) was of a soft and friable, fine grained carbonate mud, resulting in a residue consisting entirely of foraminifera. Sediment in sidewall cores at and above 2202m demonstrated diagenesis with noticeable recrystallisation of the fine carbonate. This sudden diagenetic change at 2215m (on E-logs) could explain the consdierable caving which occurred between 2215 and 2262m and thus the inability to recover samples form this interval.

REFERENCE.

TAYLOR, David - 1983 - The foraminiferal sequence in OMEO #1, Gippsland Basin. Report to Australian Aquitaine Petroleum Pty. Ltd. May 5, 1983.

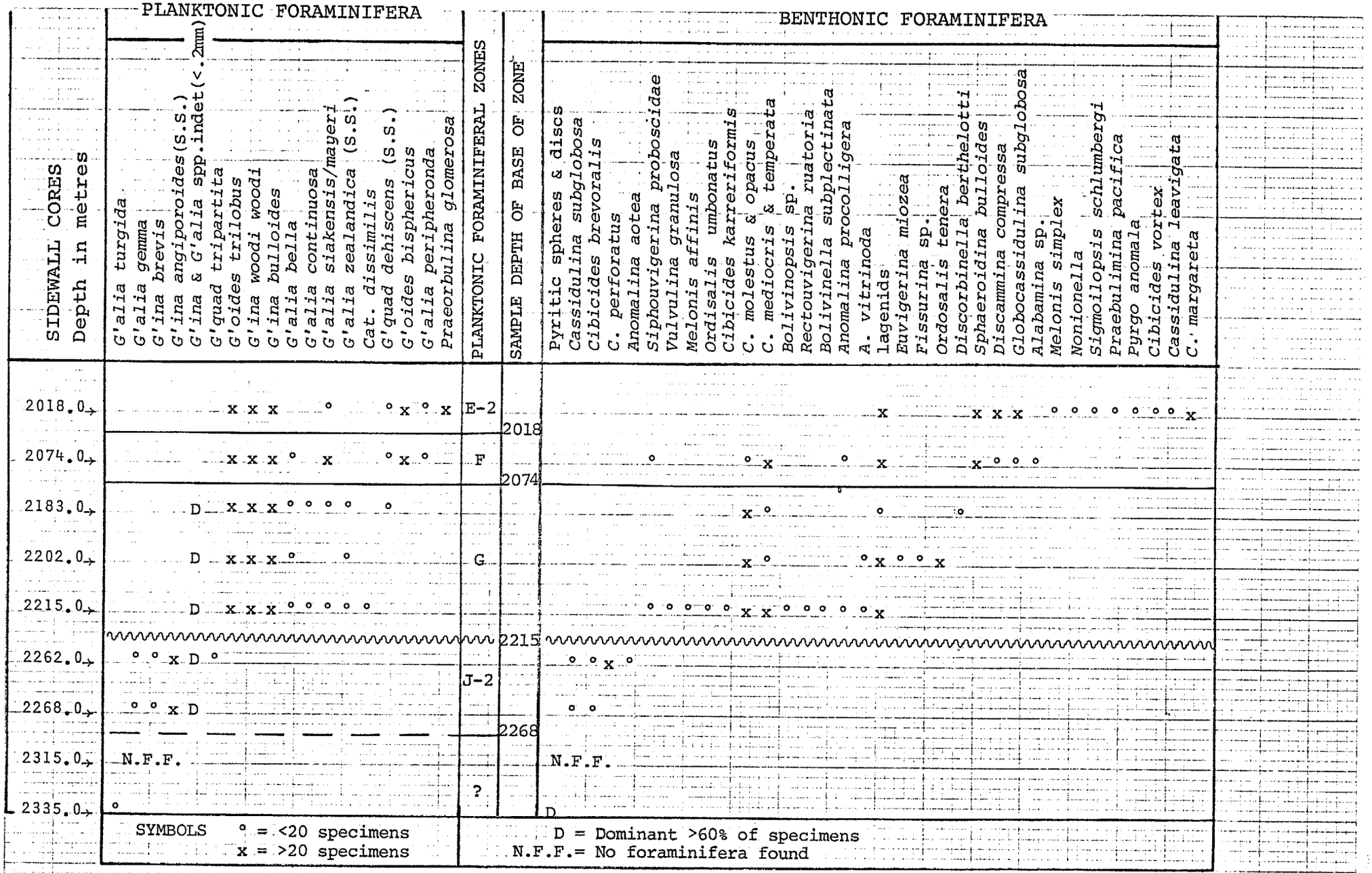

TABLE 3: DISTRIBUTION of FORAMINIFERA in OMEO #2.

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August 5,1985.