

claystones. There was abundant biogenic pyrite which had undergone almost total oxidation to limonite in this unit suggesting a period of exposure and giving basis for the unconformity at the top.

Deposition of this unit is envisaged on a shallow continental shelf (30 m to 100 m water depth) in high energy conditions.

Demons Bluff Formation (1668 m to 1799 m)

The Demons Bluff Formation, of Late Eocene age, is dominantly a claystone section with thin interbeds of sandstone and dolomitic limestone. The claystones become characteristically darker and more reddish-brown with depth becoming almost black near the base. Arenaceous content, carbonaceous material, mica and pyrite also increase with depth. The sandstones are reddish-brown, very fine to fine grained and contain abundant reddish-tan clay, calcite and dolomite matrix. A trace amount of medium green glauconite was also noted.

Paleontologically, the top of the Demons Bluff corresponded with the incoming of distinct, fine grained, grey coloured specimens of morphologically simple arenaceous foraminifera and pyritic tubes and discs of biogenic origin. The unit was deposited in a barred basin, marginal marine environment in up to 30 m of water.

Eastern View Coal Measures (1799 m to 3031 m)

The section of Eastern View Coal Measures penetrated in Yolla-1 ranged in age from Late Eocene to Early Paleocene. The upper contact was gradational lithologically with the Demons Bluff Formation where the dark brown silty claystones became siltier and sandier and finally graded into clean, very fine grained sandstones of the EVCM, although a marked log character change occurs at the top of the EVCM.

The first sand package from 1817 m to 1858 m consists of very fine grained, angular, well sorted, very friable sandstone with minor amounts of non-calcareous clay matrix material. It contained abundant light green glauconite and had occasional dolomitic streaks. Core No.1 was cut within this unit. The sand package below this from 1861 m to 1898 m showed a marked increase in very fine micropyrrite, glauconite, mica and relict feldspars. Medium to coarse grained loose quartz also appeared as well as the first coals which were penetrated between 1878 and 1887 m.

Palynological analyses suggest that the top of the Middle Miocene occurs at 1832 m and that the depositional environments vary from nearshore marine above to marginal marine below. This is consistent with the facies present in Core No.1.

A thick section of interbedded sandstones, coals and shales was penetrated from 1898 m to 2801 m which ranged in age from Middle to Early Eocene. The boundary between the Mid and Lower Eocene is placed between 2174 m and 2210 m. The base of the section at 2801 m marked the Early Eocene - Late Paleocene boundary.

Two types of sandstones were present; one was very fine grained, angular, moderately well sorted and friable and contained abundant white to tan clay matrix and variable amounts of mica, glauconite (?) and abundant dark brown to black carbonaceous and organic material as finely disseminated particles, wisps and microlaminations. The sandstone occasionally graded