

Four brown coal seams have been intersected in the Selbourne deposit, generally at depths less than 10m, except when they underlie Tertiary basalt. In such cases overburden is generally greater than 60 metres thick. Brown coal seams thin and split towards the margins of the deposit and dip shallowly in a southeasterly direction.

4.5 Pre Tertiary Basement Geology

Pre Tertiary rock has been intersected in 17 holes, with possibly a further two holes intersecting basement. Basement contours for the northern part of EL20/80 are shown in Figure 6. A map showing basement contours for the entire EL will be presented with the next six monthly report. A summary of basement lithotypes is presented in Table 4.

The dominant basement rock type is Jurassic dolerite. When intersected during rotary chip drilling, low strength and brittle weathered dolerite is commonly overlain by a mottled grey-green-blue sandy kaolinitic clay, which is decomposed dolerite. However, when this clay is tested for plasticity (that is by rolling it between forefinger and thumb) the kaolinized felspar sand behaves mechanically as if it were a clay.

In the Birralee area rotary chip holes R066 and R063 intersected Triassic quartzose sandstone at depths of 0.9 and 0.8 metres, below a soil horizon. Rotary chip holes R062 intersected reworked Triassic quartzose sandstone, gravelly sandstones, and micaceous sandy schists. Triassic strata ranges in thickness from 1.6 to 8.5m in this area. Underlying Permian strata (designated Pue on the Frankford 1:63,600 geological atlas), are mid to dark coloured low to medium strength brittle quartzose sandy siltstones.

In the Osmaston - Exton area rotary chip hole R093 intersected reworked Triassic detritus immediately below Tertiary basalt. A grey-purple coloured micaceous quartzose sandy clay interbedded with a micaceous purple-grey siltstone with pyrite along bedding planes was intersected at 32.5m. This lithology is most likely to be of Triassic age. Rotary chip hole R094 intersected a mid to dark grey low strength brittle pyritic siltstone at 5.5m. This lithology is similar to Quamby Mudstone.

Rotary chip holes R039 (formerly BH22) and R017 intersected carbonaceous siltstone with thin light grey bands and silty indurated clays interbanded with silicified mid to dark green shale. It has not been possible to associate these lithologies with any outcropping Permian or Triassic strata in the area. However, it is assumed that they are of Permian age.