

### 3.1.6.1 THE LOWER ROAD CUTTING

The lower of the two road cuttings represents about 25 m of Permian sediments (GR.435307, Royal Australian Survey Corps [ed.1] 1973, sheet 8124 series R652 topographic map 1:100.000). The bottom 15 m of the exposure consists of diamictites with particles ranging from boulders to clay. Many clasts are only recognised as ghosted forms because of the degree of weathering. Acid igneous rocks are rarely preserved in an intact unweathered state. The diamictite is divided into a number of units the lowest of which has a thickness of about 7.5 m. The unit is basically a muddy sandy gravel: sample 77/29 is from that unit.

Overlying the lower unit are a number of other units which range in texture from gravelly mud, gravelly muddy sand and muddy sandy gravel. (note these descriptive terms are field names based on the terms suggested for gravel sand and mud mixtures by Folk, 1955 .) It is difficult to clearly identify the sometimes subtle differences between these units. The change from one texture to another is often quite gradual and further obscured by the amount of weathering. There are a number of colour layers present in the diamictite units; some do not clearly coincide with any stratification (see plates 14 and 15, p.102) but others show a very clear coincidence (see plates 17 and 18, p.103.). Plate 16, p.102 shows diamictite that is clearly stratified but not colour banded.

The middle diamictite unit contains more coarse gravel. The clasts are mainly in the form of ghosted igneous pebbles, cobbles and boulders but others are intact and are mostly sandstone, cherts and quartz (see plate 20). The total thickness of the unit is about 6 m and it is overlain by a third diamictite unit that is about 2.5 m thick, clearly layered and colour banded (see plate 17, p.103). Sample 77/25



Plate 14 A general view of the lower Whitfield - Whitlands road cutting showing diamictite and interstratified traction deposits. (GR. 435307, RAS, sheet 8124 1973, 1:100 000.



Plate 15 Weathering induced colour layering in the Whitfield - Whitlands lower road cutting



Plate 16 Stratified non-colour banded diamictite in the Whitfield - Whitlands lower road cutting

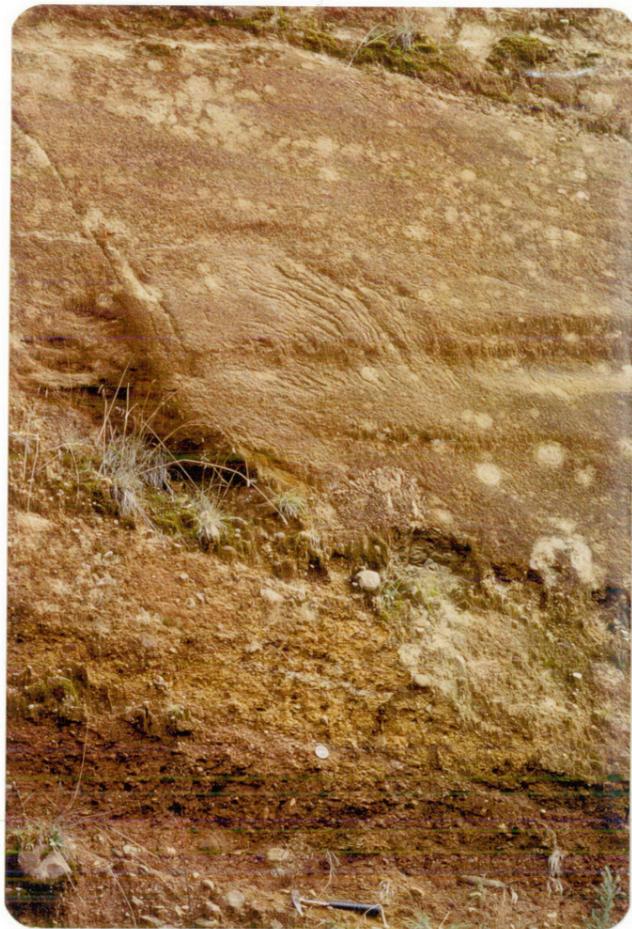


Plate 17 A broad view of stratified colour banded diamictite from the Whitfield- Whitlands lower road cutting (see p.92)



Plate 19 An enlargement of portion of plate 18



Plate 18 An enlargement of portion of plate 17



Plate 20 Ghosted igneous and other intact clasts in the middle diamictite unit from the lower road cutting

represents this unit and was collected from the location indicated in plate 9a, p.92. The lower part of the third unit has been trench sampled to collect the gravel fraction for clast shape analysis. The results of the analyses (sample 77/11) are discussed in a following section.

There is a crude alignment of clast long axes parallel with the layering of unit three but no plan orientation of the clasts has been determined (see plate 16, p.102). An erosional surface separates the third unit from the overlying coarse sandy fourth unit (see plates 20, p.103 and 22, p.105). The upper part of the third unit, just below the erosional surface, lacks the coarse gravel fraction found in the second unit and instead contains only pebbles. In contrast, directly above the erosional surface there is a layer of boulders, some of which are about 60 cm to 90 cm long. Not all the boulders appear to be in contact with the erosional surface but this doubtless could be due to the orientation of the cutting with respect to the attitude of the erosional surface. The boulders form the base of the sandy fourth unit which is texturally distinct from the diamictites in the lower half of the section. The unit is a lensoidal shape and is planar bedded and cross-stratified (see plate 25, p.106 and 27, p.108). Around some of the basal boulders there is draped and deformed layering probably resulting from the differential compaction (see plate 22, p.105; 25, p.106 and 27, p.108).

Sample 77/26 represents the fourth unit and was taken from the location indicated on plate 9a, p.92. Two similar units (five and six) overlie unit four and are both lensoidal shaped but appear to be more intensely cross-stratified. Traces of apparent cross-bedding are indicated on plate 25, p.106 and 27, p.108. Unit five is more weathered than unit