



## Description

Light grey mudstone, very fine, waxy feel.

Layer of high high grade coal, some plant fossils can be seen

A dusty, light grey silstone

Dark grey carbonaceous siltstone nearly identical to one below. However has more frequent fossils and finer mud

Nearly identical to the flaser bedding sequence from below with light/dark banding, some plant fossils.

A dark grey siltstone with calamities plant fossils, carbon films, carbonaceous

Calcareous siltstone, light grey colour, fining upwards, some root fossils

Alternating light/dark banding. Flaser bedding. Becomes finer near top of facies.

Mostly terracotta coloured massive sandstone. The bottom of the facies has large mudflake breccia of the same colour as the red mudstone beneath it. About halfway up there was a small amount of lithic fragments of the same red mudstone. A few bleached layers were seen. Near the top of the facies the grain size fluctuated more and started becoming more grey and silty.

## Interpretation

Marine environment, Coal is typically cyclical with a marine mudstone being at the bottom/top of the sequence. This whole section is almost one whole coal environmental cycle.

Delta environment with enough factors leading to large foliage growth, freshwater environment.

Unlikely to be sudden sea level rise due to coal layer above. However plants didn't grow on this unit, perhaps water too salty, no carbon leads to lighter colour.

Sea level dropped again, leading back to deltaic environment, better circumstances leading to more plant growth

Cyclic event as sea level rose slightly, incorporated plant fossils likely taken from facies below so out of sequence

Likely a deltaic environment, too much influx of salt water for it to grow enough foliage to create a strong coal layer.

Calcareous environment means very low energy, the sea level rose again leaving a shallow marine environment.

Flaser bedding points to tidal environment, the sea levels have risen enough (or land has eroded) that the river channel has become tidal conditions.

Massive sandstone is usually river channel environment, the red colour associated with oxidising. A non marine system. Small bleach layers mean at short intervals river was reducing environment. The fragments of the breccia included were likely ripped from the mudstone below in a large storm event. More lithic fragments later on were likely from the same rock but exposed in another area and carried down. The start of it greying shows reduced energy, approaching the mouth of the river, perhaps rising sea level.