

Subsurface investigation of a block at Moores Hill, West Tamar

by W. R. Moore

A property belonging to Mr G. E. Hickman on Moores Hill, near Sidmouth, was visited on 12 August with Dr Darlow, District Medical Officer, Launceston. Dr Darlow indicated the approximate boundaries of the block and the position of the sullage and septic tank pits from the sketch submitted to the Department of Health by the applicants.

Seven holes were drilled with a post-hole digger using a 100 mm auger, to depths varying between 1.0 and 1.4 metres. The holes were filled to the surface with water when each hole had been drilled and the site revisited 24 hours later to check the water levels. The holes were left open at the request of the Health Department. The logs and position of these holes were submitted to the Health Department at the request of Dr Darlow.

Grey and brown clay was present in all the holes drilled beneath a thin soil and sub-soil surface layer. The underlying rock was only penetrated beneath the clay in two holes (3 and 7). This rock is a dark grey carbonaceous siltstone of Upper Permian age and appears to underlie the whole block. From the gradual transition between the clay and the underlying rock in the drill holes, the clay appears to be derived from the weathering of the siltstone.

None of the water levels fell in the holes during the three-hour period of drilling, and during 24 hours the average decline was 75 mm for the seven holes with a minimum of 50 mm and maximum of 180 mm.

During this 24 hour period, two millimetres of rain was reported for the Beaconsfield area and the resident of the house next to the block reported that this rain fell in heavy showers during the four hours after the holes had been drilled. Therefore little soakage had occurred within the clay or in the underlying rock during the investigation period as could be anticipated with this thickness of impervious clay overlying a compact siltstone parent rock.

[17 August 1970]

Logs of auger holes, Moores Hill, West Tamar

Hole 1:

| <i>From (m)</i> | <i>To (m)</i> | <i>Description</i> |
|-----------------|---------------|---|
| 0 | 0.05 | Subsoil |
| 0.05 | 1.27 | Clay, iron stained, becoming grey at the bottom of the hole |

Hole 2:

| <i>From (m)</i> | <i>To (m)</i> | <i>Description</i> |
|-----------------|---------------|---|
| 0 | 0.025 | Soil |
| 0.025 | 1.25 | Dry brown and grey clay with thin ironstone pellets |

Hole 3:

| <i>From (m)</i> | <i>To (m)</i> | <i>Description</i> |
|-----------------|---------------|------------------------------|
| 0 | 0.05 | Soil |
| 0.05 | 0.965 | Brown clay |
| 0.965 | 1.12 | Black carbonaceous siltstone |

Hole 4:

| <i>From (m)</i> | <i>To (m)</i> | <i>Description</i> |
|-----------------|---------------|------------------------------------|
| 0 | 1.2 | Moist grey-brown iron-stained clay |
| 1.2 | 1.37 | Dry grey clay |

Hole 5:

| <i>From (m)</i> | <i>To (m)</i> | <i>Description</i> |
|-----------------|---------------|-----------------------|
| 0 | 0.025 | Soil and subsoil |
| 0.025 | 1.2 | Moist brown-grey clay |

Hole 6:

| <i>From (m)</i> | <i>To (m)</i> | <i>Description</i> |
|-----------------|---------------|-------------------------------------|
| 0 | 0.075 | Grey soil and subsoil |
| 0.075 | 1.3 | Brown moist clay, until last 150 mm |

Hole 7:

| <i>From (m)</i> | <i>To (m)</i> | <i>Description</i> |
|-----------------|---------------|----------------------------------|
| 0 | 0.075 | Grey clayey subsoil |
| 0.075 | 1.14 | Grey-brown clay |
| 1.14 | 1.17 | Dark grey carbonaceous siltstone |