

LOCAL GEOLOGICAL SITES

THURROCK DISTRICT



ThG12 Orsett Cock Quarry

Site location: Orsett Cock Quarry (also known as Southfields Quarry)
Brentwood Road, Orsett

Grid reference: TQ 657 811

Status: Private land

Summary of the geological interest:

The quarry is situated behind the old Orsett Cock public house and once provided a magnificent exposure of the basal part of the Upnor Formation (formerly called the Woolwich Bottom Bed) of Palaeocene age. It consists mostly of extremely well-rounded pebbles representing a cross section through an ancient sea floor some 55 million years ago. The pebbles are black and many have crescent-shaped percussion or 'chatter-marks', indicating that they have been pounded together on a beach in a high-energy environment. This bank of pebbles was once an impressive sight, forming a vertical cliff. It is one of very few inland exposures of this particular formation.

The cliff face profiles should be retained as far as possible in any future development scheme.



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Site Assessment. *Local Geological Sites (LoGS) in Essex are assessed using criteria based on DEFRA guidance. An assessment form is used which asks key questions under four value categories: scientific, educational, historical and aesthetic. This site has been assessed and qualifies under these criteria.*

Scientific interest and site importance

The Upnor Formation (formerly called Woolwich Bottom Bed) is a sequence of pebble beds on top of the Thanet Sand that was deposited in subtropical seas and estuaries that covered parts of the London and Hampshire basins soon after the extinction of the dinosaurs. It is about 55 million years old (Palaeocene epoch) and precedes the London Clay which was deposited slightly later, under a deeper sea.

The exposure represents a cross section through an ancient sea floor. The strata, almost 9 metres thick, consists almost entirely of pebbles, with occasional layers of sand and dips 21 degrees to the east. The pebbles are black, with a pale grey interior, and many have crescent-shaped percussion or 'chatter-marks', indicating that they have been pounded together on a beach or just offshore in a high energy environment. The deposits, formerly thought to be Blackheath Beds, were probably part of an offshore barrier in fairly shallow water.

The exposures at the Orsett Cock Quarry have been specifically referred to in the geological survey memoir for the London region (Ellison 2004). The memoir has two fine colour photographs of a similar section in the adjacent Orsett Depot quarry.

It is important to obtain preservation of one of these faces in any reclamation scheme, particularly as the important Orsett Depot Pit to the south has now been infilled.

The exposure at the Orsett Cock Quarry is one of very few places left in the Thames valley where this bed can be studied.

References:

ELLISON, R.A. 1979. **Report of a field excursion to south Essex, 1st March 1975.** *Tertiary Research*. Vol. 2. Pages 51-55.

ELLISON, R.A. 2004. **Geology of London.** Special Memoir for 1:50,000 Geological sheets 256 (North London), 257 (Romford), 270 (South London) & 271 (Dartford). British Geological Survey. Pages 26-27)