

LOCAL GEOLOGICAL SITES

THURROCK DISTRICT



ThG9 Gun Hill Gravel Pit

Site location: Gun Hill Gravel Pit, West Tilbury (also known as Broom Hill)

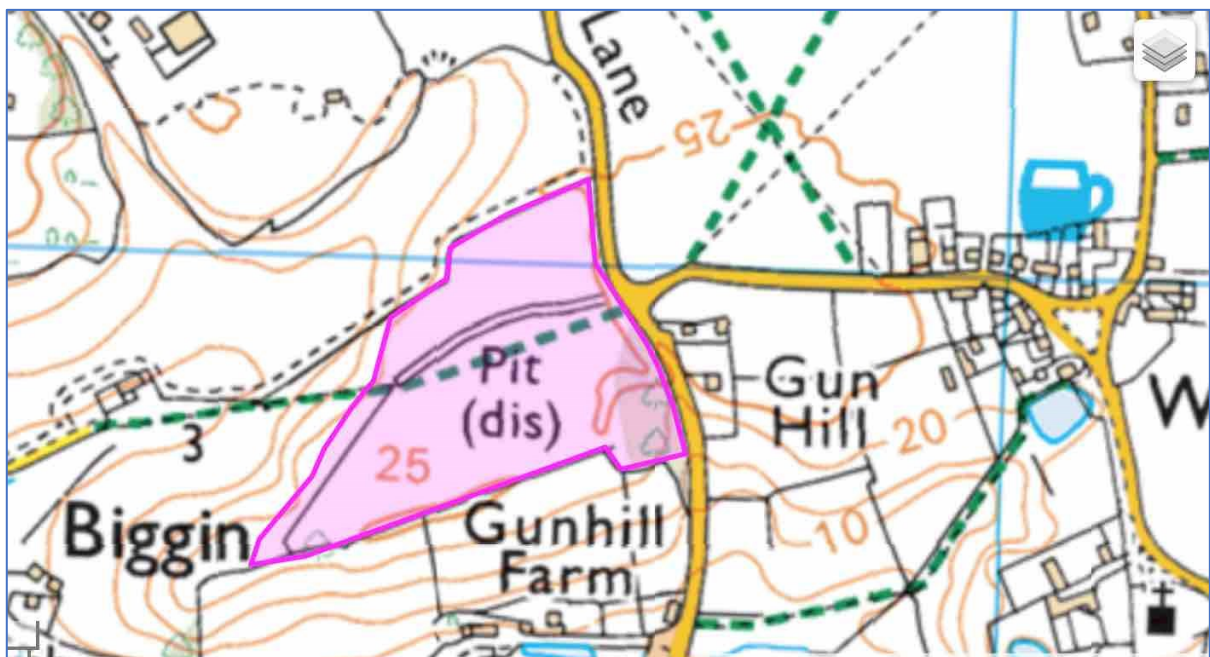
Grid reference: TQ 656 780

Status: Public access

Summary of the geological interest:

The ridge of high ground between West Tilbury and Chadwell St. Mary is a high terrace of the present Thames and to the south the land falls steeply down to the Tilbury Marshes. On this ridge, at the high point known as Gun Hill (also known as Broom Hill), is a disused gravel pit with exposures of Orsett Heath Gravel. This gravel forms the oldest and highest terrace of the Lower Thames (the Boyn Hill terrace) and is about 400,000 years old.

Up to 2 metres of sand and gravel is visible in the sections in various places, some showing current bedding. The gravel is now some 25 metres above the level of the present Thames, an example of the erosion that has taken place over this period of time. There is a fine view from here across the Tilbury Marshes to the modern river. The site is, in effect, a fossil cliff line and is well placed to explain the loop of the Thames around Tilbury. The pit is part of Broom Hill Local Wildlife Site.



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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 Thames was diverted to roughly its present course by the ice sheet during the coldest period of the Ice Age, some 450,000 years ago. It was then a much larger river and its course extended across a wide area, depositing huge amounts of gravel, forming wide floodplains as far north as Hornchurch.

Subsequent glacial/interglacial cycles saw the river cut down through its floodplain to create another floodplain at a lower level, and leaving fragments of the former floodplain as terraces each side of the valley. This process was repeated several times leaving us with a complex sequence of terraces of different ages along the Thames valley, each one providing valuable information about the climate, flora and fauna of Britain during the Ice Age.

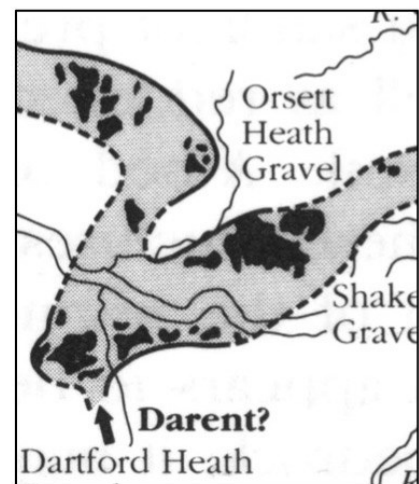
The gravel at Gun Hill is Orsett Heath Gravel which forms the oldest and highest terrace of the Lower Thames (the Boyn Hill Terrace) and is about 400,000 years old.

It is important to retain visible gravel exposures for scientific study.



400,000 year old Thames gravel (Orsett Heath Gravel) exposed in the gravel pit at Gun Hill.

Photo: © G. Lucy



400,000 years ago

The route of the Thames through what is now Thurrock during deposition of the Orsett Heath Gravel.

The existing course of the Thames is shown and the outcrops of the gravel are shown in black

(map extracted from Bridgland 1994).

Reference:

BRIDGLAND, D.R. 1994. **The Quaternary of the Thames**. Chapman and Hall. Geological Conservation Review Series.