
A16 D28 Pot Ridings Wood Railway Cutting

Site information

Site name: Pot Ridings Wood Railway Cutting

Site key: D28

Grid reference: [SE 526 003] (west end)

Site type: cutting, railway, disused

Local authority: Doncaster Metropolitan Borough Council, South Yorkshire

Site dimensions: 100 m x 8 m

Site owner: Lafarge

Conservation status: Regionally Important Geological Site **Date:** 16/9/97

Field surveyor: Scott Engering **Date:** 16/2/07

Stratigraphy and rock types

Time unit: Permian **Rock unit:** Wetherby and Sprotbrough Members, Hampole Beds, Cadeby Formation, Zechstein Group

Rock type: Dolostone **Details:** Massive bedded ooid-limestones, stromatolite reefs, and inter reef sediments

Site map

(Figure 82) — D28 Pot Ridings Wood Railway Cutting

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Site description

An extensive and continuous section through the Cadeby Formation ([SE 52729 00422] to [SE 52988 07568]), comprising a wide variety of lithologies and structures, including: reefs, large scale wedge bedding, desiccation breccias, marls, fracture zones, fissure deposits, erosional surfaces, flexures and steeply dipping beds.

The survey of the cutting was undertaken from south-west to north-east and the features highlighted are as follows:

[SE 52727 00444] 4 metre section of massive, buff, granular limestone with brecciated upper beds dipping steeply to south and incorporating an irregular reef mass 2 m high x 5 m long at the base of the section, with overlying coarsely bedded breccia.

[SE 52755 00451] Irregular reef mass 3 m high x 5 m long on south side and steeply dipping starta to south. To the north-east, the beds vary considerably in thickness with pronounced wedge bedding and brecciation being common. Massive beds of limestone reach a maximum thickness of about 1 m.

East of [SE 52757 00457] Occasional fissure deposit to north side of quarry. Angular fragments of limestone up to 50mm in brown clay/sand matrix. Upper sections of limestone are massively bedded and there are occasional vertical fractures appearing as narrow zones. Further east at approximately [SE 52770 00500], two rubbly brecciated beds are seen in the north face at approximately 1 m and 2 m above the floor of the cutting. These are irregular and with a distinctive knobbled appearance, with the lower bed being much more persistent laterally. These coincide approximately with the 50 – 55 m contour.

At [SE 52839 00549], the cutting widens and the lower breccia passes laterally into a very distinctive red marl which is exposed half way up the cutting and beneath which there is a loose mound of red soil that obscures the lower section. The band of marl is differentially weathered and is easily distinguished from the massive limestone above. One metre above the red marl, the upper breccia is also seen. The widening of the cutting appears to coincide with a fault, with the down throw to the south-west, as the relative position of the breccias in the exposed rock face is now higher and there is a change in the dip of the strata from a southerly direction to the east. At [SE 52833 00560] and [SE 52805 00591], the red beds pass laterally and thicken from a compact reddened brecciated limestone into a true red marl. Here the overlying beds are flaggy and partially brecciated and the junction with the marl/breccia is a distinct undulating surface. Further to the east at [SE 52870 00594] the flaggy and brecciated beds persist at lower levels but the red colouration completely disappears. At SE52897 00623 the breccia has the irregular rounded appearance of a reef and is overlain by thin bedded, but not flaggy limestones, that follow the contours of this brecciated mass. Towards [SE 52937 00713], there is further change in the lithology from flaggy and brecciated beds to sections, 3–4 m thick, of massive wedge bedded limestones.

The marl sections were previously considered to correlate with the Hampole Beds in the 1997 survey. Although not conforming to typical descriptions in the Geological Memoirs for Barnsley and Doncaster and the Geological Conservation Review, their position in the stratigraphic column coupled with evidence of desiccation and erosion that has not been seen or recorded elsewhere in the Cadeby Formation within Doncaster indicates that this assertion still remains the same and deserves further detailed research.

The exposure itself is relatively remote and not easily accessible but merits further detailed scientific investigation with other sites on the River Don.

RIGS assessment of site value

Ratings: 1–2 very poor; 3–4 poor; 5–6 acceptable/useful; 7–8 quite good; 9–10 very good/excellent; N/A not applicable; D/K don't know

Access and safety

Aspect/Description/Rating

Road access & parking Remote. Nearest parking is adjacent to gypsy camp. Rating: 3

Safety of access Safe for experienced country walkers but extremely muddy and full of recent wind blown hazards (trees) at time of survey. Rating: 5

Safety of exposure No obvious hazards, apart from blown down trees, slippery surfaces and an occasional rock fall. Rating: 8

Permission to visit Owned by Lafarge but access appears to be unrestricted from the east. Rating: 5

Current condition Good exposures but access along the cutting was difficult at the time of the survey due to deep mud. Rating: 8

Current conflicting activities Weather

Restricting conditions None envisaged, but ease of access needs to be considered

Nature of exposure Railway cutting

Multiple exposures/prospect for trail Limited, except for a long days field trip in conjunction with Cadeby Cliff/Constitution Hill

Notes This site was difficult to visit, with a long walk, but well worth the time spent

Culture, heritage & economic

Aspect/Description/Rating

Historic, archaeological & literary associations Historic associations with the South Yorkshire Junction Railway. Rating: 8

Aesthetic landscape Access to the site from the Don Gorge coincides with a wide variety of Nature Reserves. Rating: 8

History of earth sciences This site provides a good opportunity to add to and advance the knowledge as described in existing geological publications. Rating: 8

Economic geology This site records the development of the railway network at a time when the economy of Great Britain was at its very best. Rating: 7

Notes

Education and science

Surface processes General weathering of limestone and marl. Rating: 7

Geomorphology Access from the River Don provides a good insight into the Geomorphology of the Don Gorge. Rating: 7

Sedimentary An extremely diverse variety of lithologies and sedimentary structures are exposed. Rating: 9

Fossils Specialist interests in Permian species. Rating: 7

Igneous Not applicable. Rating: 0

Metamorphic Not applicable. Rating: 0

Tectonic: structural Good field evidence of folding and faulting. Rating: 7

Minerals Not applicable. Rating: 0

Stratigraphy Considerable potential to establish the stratigraphic relationship with the Hampole Beds. Rating: 8

Notes This is a very good site to demonstrate a wide range of sedimentary and structural processes

Geodiversity value

A very good insight into the importance of geology in determining the route of railway networks. Rating: 9

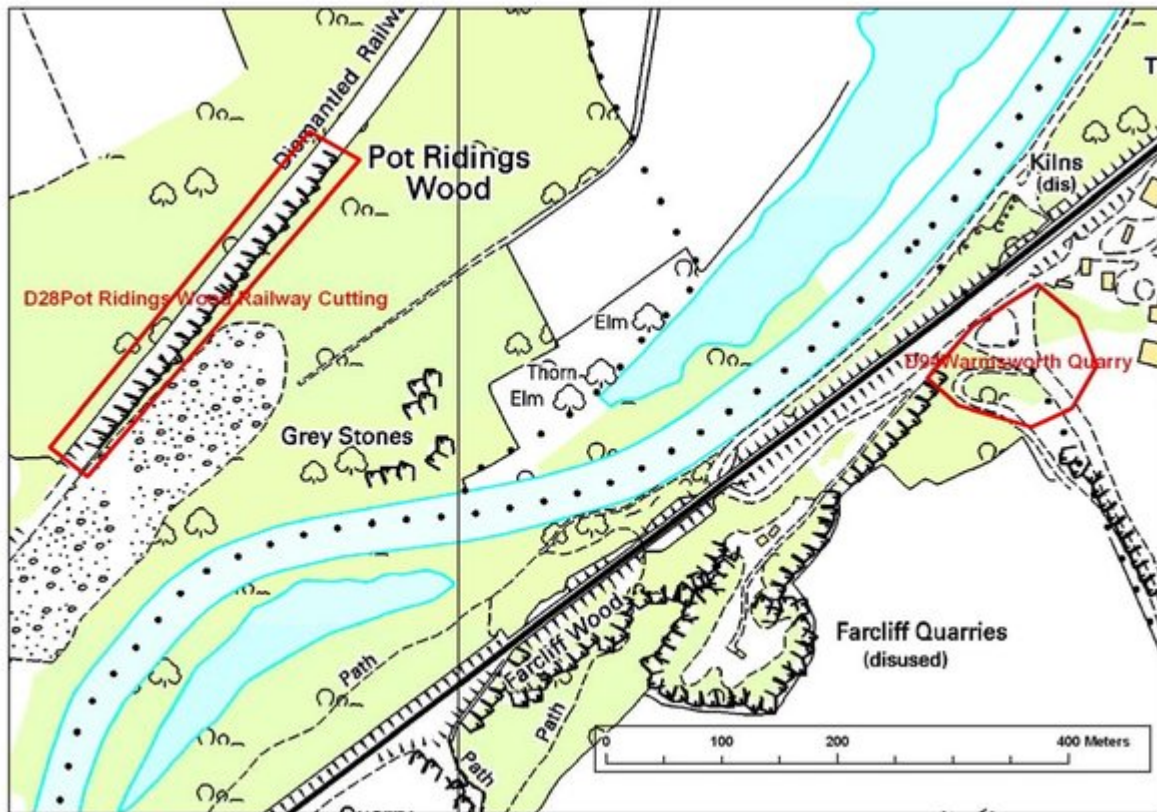
Site photographs D28 Pot Ridings Wood Railway Cutting

(Figure 83) General view east from centre of cutting. [SE 52785 00492].

(Figure 84) Brecciated mound with overlying well bedded limestones following the topography of an erosional surface. [SE 52897 00623].

(Figure 85) Exposure of irregular shaped reef mound with steeply dipping well bedded limestones of the Wetherby Member. [SE 52727 00444].

(Figure 86) A joint infilled with brecciated limestone fragments and unconsolidated Quaternary sandy clay. [SE 52750 00450].



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(Figure 83) General view east from centre of cutting. [SE 52785 00492].



(Figure 84) Brecciated mound with overlying well bedded limestones following the topography of an erosional surface. [SE 52897 00623].



(Figure 85) Exposure of irregular shaped reef mound with steeply dipping well bedded limestones of the Wetherby Member. [SE 52727 00444].



(Figure 86) A joint infilled with brecciated limestone fragments and unconsolidated Quaternary sandy clay. [SE 52750 00450].