



South Wales RIGS Group Site Record RIGS Description

SECTION A

General	South Wales
Site Name: Navigation Quarry	File Number: Site_RCT_161
RIGS Number: 718	Surveyed by: Andrew Haycock
Grid Reference: SS 3086 1937	Date of Visit: 24 th July 2003
RIGS Category: Scientific, aesthetic	Date Registered:
Earth Science Category: Stratigraphic	Owner: Unknown Planning Authority: Rhondda Cynon Taff County Borough Council
Site Nature: Disused quarry	Documentation prepared by: Rhian Kendall
Unitary Authority: Rhondda Cynon Taff County Borough Council	Documentation last revised: 27 th March 2012
OS 1:50,000 Sheet: 170 and 171	Photographic Record: Attached
OS 1:25,000 Sheet: 166	
BGS 1:50,000 Sheet: E249	
RIGS Statement of Interest:	
<p>Navigation Quarry has been proposed as a RIGS because it is easily accessible place to study the Hughes Member of the Pennant Formation.</p> <p>It would make a good location for teaching with massive cross bedded sandstones and braided channel fill deposit and well exposed fossil log jams all easily accessible.</p> <p>The site is also well used by the local community and regularly utilised by climbing groups.</p>	

Geological setting/context:

Navigation Quarry is a disused quarry which exploited the Hughes Member of the Pennant Sandstone Formation. The quarry is approximately 25 metre high x 100 m wide with very good exposures up to 20 to 25 m high.

Within the South Wales coalfield, The Hughes Member is typically green-grey lithic arenites with thin mudstones and siltstones, interbedded with seat earths. Coal seams where they exist are mainly very thin.

The Pennant Sandstone Formation is composed of large scale fining upwards cycles; fining up from sandstones with erosional bases through siltstones to mudstones. The sandstones are commonly cross bedded with conglomerates at their bases, clasts of coal, siltstones and ironstones. The sediments represent deposition in alluvial environments in high sinuosity river channels. The mudstone and siltstone deposits are floodplain deposits.

Navigation Quarry contains massive cross bedded sandstones which are occasionally interbedded with 40 - 50 cm thick parallel bedded sandstones (sediment associated with overbank flows?). Two lenticular channel fill deposits can be seen at the same stratigraphic horizon about 1/3 up the quarried face.

One channel can be seen in the main face and one can be seen in the north corner of quarry. Due to their positioning, it is very likely that the two channel fills were part of the same braided stream.

In the far south east corner of the quarry - a very large square shaped sandstone boulder contains many excellent plant fossil casts, possibly as a result of the concentration of material in log jam deposits.

Well bedded, cross bedded measures can also be found in natural exposure above the quarry.







References:

HOWELLS, M F. 2007. British Regional Geology: Wales (Keyworth, Nottingham: British Geological Survey)

SQUIRRELL, H C and DOWNING, R A. 1969. Geology of the South Wales Coalfield, Part I, the country around Newport (Mon), British Geological Survey, Sheet 249 (third edition)

WATERS, C N, WATERS, R A, BARCLAY, W J, and DAVIES, J R. 2009. A lithostratigraphical framework for the Carboniferous successions of southern Great Britain (Onshore). British Geological Survey Research Report, RR/09/01.

SECTION B

PRACTICAL CONSIDERATIONS: Please score Accessibility and Safety Red Amber or Green			
Accessibility:			X 
Comment: Easily accessible from good paths			
Safety:			X 
Comment: High faces so hard hats should be worn.			
Conservation status: None known			

OWNERSHIP/PLANNING CONTROL: Owner/tenant: Unknown Planning Authority: Rhondda Cynon Taff County Borough Council Planning status/constraints/opportunities:

CONDITION, USE & MANAGEMENT: Present use: Disused quarry. It is used by climbers Site condition: good Potential threats: none. Site Management: Continue as to date
--

SITE DEVELOPMENT: Potential use (general): As this site is already used by locals and the climbing community it may be a good place for interpretation material. Potential use (educational): This site is academically interesting as a site to investigate the Hughes Member of the Pennanat Sandstone member. Its also has many interesting sedimentological features and fossils which would be of educational interest.

Other comments:

Photographic Record



Photograph by Andrew Haycock
Exposure of measures at Navigation Quarry



Photograph by Andrew Haycock
Lenticular channel fill deposit in exposure



Photograph by Andrew Haycock
Plant fossil casts exposed in 'log jam' deposit