



## South Wales RIGS Group Site Record RIGS Description

**SECTION A**

General	South Wales
<b>Site Name:</b> Pantymaes Quarry	<b>File Number:</b> SITE_DH_8
<b>RIGS Number:</b> 691	<b>Surveyed by:</b> Rhian Kendall
<b>Grid Reference:</b> SN 9134 2649	<b>Date of Visit:</b> 4 <sup>th</sup> September 2010
<b>RIGS Category:</b> Scientific, Educational	<b>Date Registered:</b>
<b>Earth Science Category:</b> Stratigraphic, Sedimentological and Palaeontological	<b>Owner:</b> Unknown <b>Planning Authority:</b> Powys County Council
<b>Site Nature:</b> Disused Quarry	<b>Documentation prepared by:</b> Rhian Kendall
<b>Unitary Authority:</b> Powys County Council	<b>Documentation last revised:</b> 6 <sup>th</sup> January 2011
<b>OS 1:50,000 Sheet:</b> 160	<b>Photographic Record:</b> Attached
<b>OS 1:25,000 Explorer Sheet:</b> OL12	
<b>BGS 1:50,000 Sheet:</b> E213	
<p><b>RIGS Statement of Interest:</b></p> <p>Pantymaes Quarry has been put forward as a RIGS because of the contribution that it has made in to the understanding of controls on deposition of sediments during the Lower Devonian (St Maughans Formation) and the opportunity it provides for further study. The quarry is also important in the study of arthropod track ways and plant fossils. It is easily accessible and relatively safe place to bring groups for study.</p>	

### Geological setting/context:

Pantymaes Quarry is 3km south of Sennibridge in Powys and is accessed via a public foot path west of the A4067. The quarry is about 250 long and approximately 30m high in places and worked a sandstone is within the St Maughans Formation which is approx 15m thick. The sandstone is overlain by approx 15m of mudstones. The quarry was worked between 1929 and 1947. Production ceased when it became uneconomic due to the increasing mudstone overburden.

The St Maughans Formation is made up of upwards fining cycles of alluvial sediments. Mudstones, at the top of a cycle are cut into by overlying basal sandstones and intraformational conglomerates which are interpreted as meandering channel deposits. These deposits fine upwards through siltstones into thick floodplain mudstones, which often contain calcretes. Typically, within the St Maughans Formation, the sandstone units are up to 3m thick, and occasionally 6m thick. The unit at Pantymaes Quarry is exceptional, being at least 15m thick (base not seen).

The sandstones of the St Maughans Formation are typically red brown to purple and green and grey, fine to medium grained, planar and trough cross bedded. The mudstones are red brown and parallel bedded with subordinate siltstones and sandstones. They are occasionally bioturbated and contain calcretes. They are interpreted as the floodplain deposits of meandering stream systems. At Pantymaes Quarry. The mudstones are at least 15m thick (Top not seen).

Pantymaes quarry was the subject of a detailed sedimentological study which provided new ideas on the palaeoenvironments of the St Maughans Formation. The work suggested that the proximity to the major disturbance of Carreg Cennen and the Swansea Valley Disturbances as well as the Heol Senni fault, which were probably active during the early to mid-Devonian. Local subsidence patterns would have been controlled by local faults.

The interpretation of the sandstone facies shows differences in the styles of successive channel complexes suggesting phases of fluvial development rather than the punctuated filling of a single channel. The fluctuating styles within the sandstones and gradual change to mudstones suggests tectonic control on sedimentation, in response to movement on local faults. Braided channels are caused by the displacement along faults, affecting equilibrium along the rivers that cross the faults. (Owens and Hawley 2000)

Trace fossils are known from this quarry. These are arthropod (myriopod) trackways that have been assigned to *Diplichnites gouldi*. The trackways that preserved on bedding planes of finely laminated planar and rippled siltstones at the tops of fining upwards sequences (Smith A, Braddy SJ, Marriott SB and Briggs DEG. 2003). Plant fossils are also seen at the quarry. *Parka decipiens* has been identified here.

Also of interest at this site are the remnants of the buildings and infrastructure used at the quarry. This includes various buildings and loading sidings as well as the position of the mineral line railway. Piles of dressed stones are also visible at the quarry. It was known to have and supplied sandstone for road-stone and bridge masonry.







**References:**

BARCLAY, W J, DAVIES, J R, HUMPAGE, A J, WATERS, R A, WILBY, P R, WILLIAMS, M, WILSON, D. 2005. Geology of the Brecon district – a brief explanation of the geological map. Sheet Explanation of the British Geological Survey. 1:50 000 Sheet 213 Brecon (England and Wales)

OWEN, G, DUNCAN, H. 2000. Depositional setting of the Lower Old Red Sandstone at Pantymaes Quarry, central South Wales: new perspectives on the significance and occurrence of 'Senni Beds' facies. Geological Society, London, Special Publications 2000; v. 180; p. 389-400

SMITH, A, BRADDY, S J, MARRIOTT, S B and BRIGGS, D E G. 2003. Arthropod trackways from the Early Devonian of South Wales: a functional analysis of producers and their behaviour Geol. Mag. 140 (1), 2003, pp. 63–72.

## SECTION B

<b>PRACTICAL CONSIDERATIONS:</b> Please score Accessibility and Safety Red Amber or Green			
<b>Accessibility:</b>			
Comment: Easy access via a footpath			
<b>Safety:</b>			
Comment: Care should be taken close to faces which could possibly fail. Hard hat recommended.			
<b>Conservation status:</b> There are no known conservation designations of this RIGS			

<b>OWNERSHIP/PLANNING CONTROL:</b> <b>Owner/tenant:</b> Unknown <b>Planning Authority:</b> Powys County Council <b>Planning status/constraints/opportunities:</b> There are no known planning constraints or opportunities
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<b>CONDITION, USE &amp; MANAGEMENT:</b> <b>Present use:</b> None. Disused quarry <b>Site condition:</b> Good but becoming encroached by vegetation and being infilled with scree from the faces.  <b>Potential threats:</b> Development of this site for housing or other building works would obscure faces. It is also being encroached by vegetation.  <b>Site Management:</b> The site would benefit from the removal of some of the vegetation to facilitate access to the faces. This process does not appear to be rapid here so maintenance would be low.
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<b>SITE DEVELOPMENT:</b> <b>Potential use (educational):</b> This site could be used for educational purposes to study the St Maughans Formation and meandering river systems, most likely by university students or researchers
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<b>Other comments:</b>
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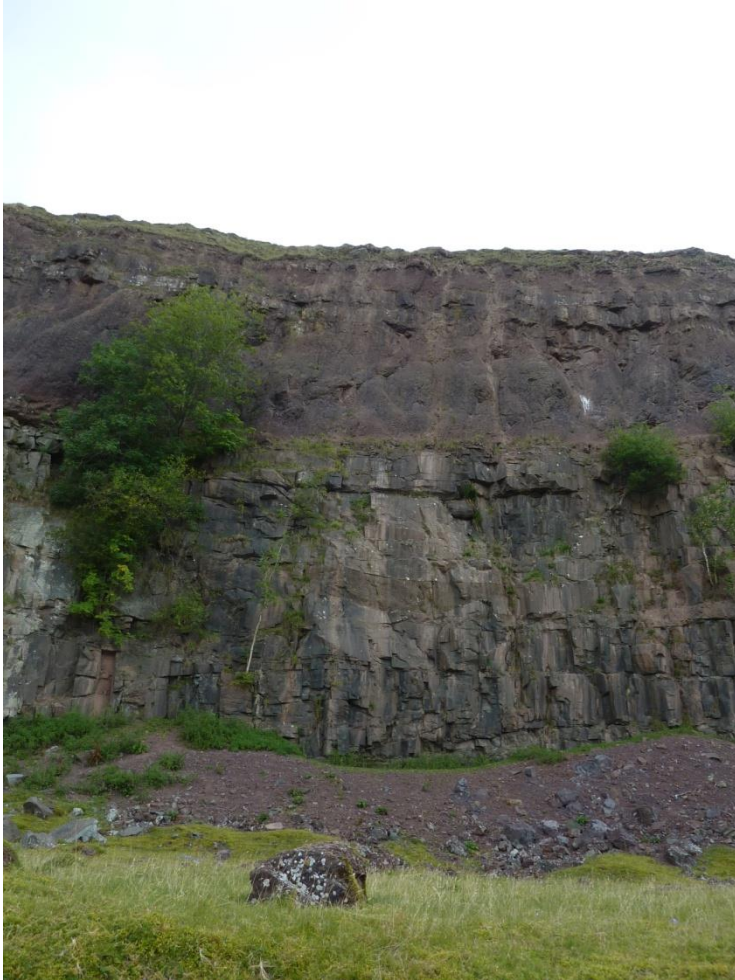
## Photographic Record



Northern part of the quarry looking North.



Southern part of the quarry looking north



Typical section showing sandstone at the base and overlying mudstones. Face is approx 30m high.



Ripple bedding



Desiccation cracks in mudstone



Intraformational conglomerate



Cross cutting channels as described by Owen and Hawley



Abandoned, partially dressed stone.



