



## South Wales RIGS Group Site Record

### RIGS Description

## SECTION A

General	South Wales
<b>Site Name:</b> Crwcas Quarry	<b>File Number:</b> Site_DH_18
<b>RIGS Number:</b> 692	<b>Surveyed by:</b> Rhian Kendall
<b>Grid Reference:</b> SO 0410 2767	<b>Date of Visit:</b> 21 <sup>st</sup> June 2010
<b>RIGS Category:</b> Scientific	<b>Date Registered:</b>
<b>Earth Science Category:</b> Stratigraphic, Palaeontological	
<b>Site Nature:</b> Disused quarry	<b>Owner:</b> Unknown <b>Planning Authority:</b> Powys County Council
<b>Unitary Authority:</b> Powys County Council	<b>Documentation prepared by:</b> Rhian Kendall
<b>OS 1:50,000 Sheet:</b> 160	<b>Documentation last revised:</b> 7 <sup>th</sup> February 2011
<b>OS 1:25,000 Explorer Sheet:</b> OL12	<b>Photographic Record:</b> Attached
<b>BGS 1:50,000 Sheet:</b> E213	
<p><b>RIGS Statement of Interest:</b></p> <p>Crwcas Quarry is a good exposure of St Maughans Formation (Lower Old Red Sandstone), in an area where outcrop is scarce. The quarry is also cited in literature as one of the few locations in the area to have yielded the fossil fish; <i>Phialaspis symondsii</i>. This fossil is an important for dating the rocks of this age (stratigraphically useful). Important trace fossils have also been recorded here.</p>	

### **Geological setting/context:**

Crwcas Quarry is a series of small, long, adjacent quarries at the crest of a small wooded hill known as Crwcas Wood. It is south of Brecon and is accessed via a small lane which runs south from Brecon from Christ Collage to access Pen-y-lan farm and then via public foot path running west from lane, approx 100m south of bridge over A40.

The quarry worked the St Maughans Formation which is Lower Devonian in age.

In the Brecon district, 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 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.

Crwcas Quarry is of interest as it is a good exposure of the St Maughans Formation where there are very few to visit but it is principally of interest for its fossils of which trace fossils and fish remains have been found.

The faces of the quarries become higher to the north-west from approx 6-8m in the south east to in excess of 20m. There are also other groundworks that indicated further quarrying is now infilled.

The quarries show sequences of interbedded sandstones and mudstones, typical of the St Maughans Formation. The sandstones are between approx 30cm to 2m thick, and are commonly cross-bedded and channelled. SANDSTONE: red, fine grained, well sorted, moderately micaceous. Mudstone varies in thickness from 0.5m to approx 2m sometimes with thin sandstone stringers. Common shrinkage cracks in mudstones, highlighted in grey green. MUDSTONE: red, very fine grained, well sorted and slightly less micaceous than the sandstone units.

Crwcas Quarry is one of the few locations in the area to have yielded the fossil vertebrate *Phialaspis symondsii*. This fossil fish is important for stratigraphical purposes, its presence indicating proximity to the Silurian-Devonian Boundary.

Important trace fossils have also been recorded here. The trace fossils found here are a number of paired, parallel, sinuous tracks of at least two distinct widths, suggesting two sizes of animals that produced them. They could be different species or adult and juveniles of the same species. This example is thought to be the first record of trace fossils of this kind in these aged rocks in Britain. It is thought that the tracks were made by arthropods, possibly a scorpion-like organism.

## References:







BARCLAY, W J, DAVIES, JR, HUMPAGE. A J, WATERS, RA, WILBY, P R, WILLIAMS, M, WILSON. 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).

BASSETT, M G AND OWENS, R. 1974. Fossil Tracks and Trails. Amgueddfa 18 pp2-18

WHITE, E I. 1938. New Pteraspids from South Wales. QJGS v94 pp85-116

White, E I. 1945. The genus *Phisalasips* and the “*Psammosteus* Limestones” QJGS v101 pp207-242

## SECTION B

<b>PRACTICAL CONSIDERATIONS:</b> Please score Accessibility and Safety Red Amber or Green			
<b>Accessibility:</b>			X 
Comment: Good easy access across rough ground. Permission should be sought			
<b>Safety:</b>			X 
Comment: High faces so general care should be taken not to go close to the tops of faces and hard hats are 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> <b>Site condition:</b> Variable, overgrown in parts to very good. Quarry floor is covered in soil build up and faces sometimes obscured but vegetation but mainly very good. <b>Potential threats:</b> None known. <b>Site Management:</b> Faces would benefit from being cleared of soil and vegetation
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<b>SITE DEVELOPMENT:</b> <b>Potential use (general):</b> This site could provide opportunity to study fossil fish and trace fossils as well as continue to provide dating material.  <b>Potential use (educational):</b>
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<b>Other comments:</b>
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## Photographic Record



General view of south east corner of quarries looking to the south east  
The following three photographs illustrate the main faces showing red mudstones and mudstones of the St Maughans Formation

