



## South Wales RIGS Group Site Record

### RIGS Description

**SECTION A**

General	South Wales
<b>Site Name:</b> Tridwr Quarry	<b>File Number:</b> Site_RAW_JRD_5
<b>RIGS Number:</b> 678	<b>Surveyed by:</b> R A Waters and J R Davies
<b>Grid Reference:</b> SN 8486 3889	<b>Date of Visit:</b> 18 <sup>th</sup> January 2011
<b>RIGS Category:</b> Scientific, educational	<b>Date Registered:</b>  <b>Owner:</b> Forestry Commission <b>Planning Authority:</b> Carmarthenshire County Council
<b>Earth Science Category:</b> Stratigraphical, sedimentological	
<b>Site Nature:</b> Semi active forestry quarry	<b>Documentation prepared by:</b> R A Waters
<b>Unitary Authority:</b> Carmarthenshire County Council	<b>Documentation last revised:</b> 5 <sup>th</sup> March 2012
<b>OS 1:50,000 Sheet:</b> 160	<b>Photographic Record:</b> Attached
<b>OS 1:25,000 Explorer Sheet:</b> 187	
<b>BGS 1:50,000 Sheet:</b> E213	
<b>RIGS Statement of Interest:</b>	
<p>Tridwr Quarry has been proposed as a RIGS as it provides an accessible site in the late Ordovician Tridwr Formation in Crychan Forest. This area hosts several, latest Ordovician and early Silurian GCR sites that form part of the Type Llandovery Series which is used as an international standard for this age of strata. The Tridwr Formation is contiguous with these younger rocks and provides important information on the geological setting of the Type Llandovery Series. Furthermore, the quarry is the type locality for the Tridwr Formation.</p> <p>The quarry shows a section in mudstones and thin sandstones with a range of features typical of deposition in a muddy shelf sea affected by storms. Fossil worms burrows and shells are common.</p> <p>It is an excellent site for researchers interested in the geological history of the late Ordovician and how it relates to the Type Llandovery Series. It also a good site for students to study shallow shelf sediments and their contained fossils.</p>	

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

Tridwr quarry is a medium sized, semi-active quarry used by the Forestry Commission for obtaining aggregate for surfacing tracks in Crychan Forest. It exposes c. 20 m of the upper part of the late Ordovician, mid Ashgill, Tridwr Formation, for which the locality is the type locality. The formation is contiguous with the stratigraphy of the Type Llandovery Series and has therefore received widespread attention.

The Tridwr Formation in the quarry comprises thin to medium bedded, pale and medium grey, colour banded silty mudstones with dark burrow mottles. Scattered tabular sandstones in beds up to 10 cm thick form c. 25% of the succession. The sandstone soles exhibit gutter and trace fossil casts, while the lower part of the beds are commonly very calcareous containing abundant fragmentary shelly material, dominated by brachiopods. Internally the sandstones are parallel, or more rarely cross-laminated.

When describing the Type Llandovery Series, Cocks et al. (1984) defined the Tridwr Formation as all the Ordovician mudstones conformably overlain by their Hirnantian Scrach Formation. More recently, Schofield et al. (2004) and Barclay et al. (2005) have redefined the Tridwr Formation as mudstones with shelly sandstones as typified in the quarry. Much of what was included by Cocks et al. (1984) in the Tridwr Formation is now referred to other Ashgill formations (Schofield et al. 2004; Barclay et al. 2005). Graptolites referable to the *anceps* Biozone and Rawtheyan shelly faunas are reported from the Tridwr Formation in the vicinity by Cocks et al. (1984).

The Tridwr Formation represents a mud dominated mid to outer shelf environment subject to storm events that were responsible for the sheet sandstones. To the west the formation passes laterally into the basinal, mud-dominated Nantmel Formation. Some 250 m west of the quarry the formation is overlain unconformably by the mid Hirnantian Cwm Clyd Sandstone Formation (British Geological Survey 2005).

### **References:**

BARCLAY, W J, DAVIES, J R, HUMPAGE, A, 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).

British Geological Survey. 2005. *Brecon. England and Wales Sheet 213. Bedrock and Superficial Deposits. 1: 50 000*. British Geological Survey: Nottingham.

COCKS, L R M, WOODCOCK, N H, RICKARDS, R B, TEMPLE, J T, LANE, P D. 1984. The Llandovery Series of the Type Area. *Bulletin of the British Museum (Natural History), Geology Series* 38: 131-182.

SCHOFIELD, D I, DAVIES, J,R, WATERS, R A, WILBY, P,R, WILLIAMS, M, WILSON, D. 2004. Geology of the Builth Wells district –a brief explanation of the geological map. *Sheet explanation of the British Geological Survey*. 1:50 000 Sheet 196 Builth Wells (England and Wales).

## SECTION B

### PRACTICAL CONSIDERATIONS:

Please score Accessibility and Safety Red Amber or Green

#### Accessibility:



Comment: Crychan Forest is open to the public and the quarry is adjacent to a main track. Access may be difficult when the quarry is temporarily in use.

#### Safety:



Comment: Although all the quarry faces are accessible, care is needed when going down from the upper lifts. Care is needed when plant is operating in the quarry.

#### Conservation status:

Unknown

### OWNERSHIP/PLANNING CONTROL:

**Owner/tenant:** Forestry Commission

**Planning Authority:** Carmarthenshire County Council

**Planning status/constraints/opportunities:**

Unknown

### CONDITION, USE & MANAGEMENT:

**Present use:** Quarry used by Forestry Commission to obtain aggregate for track surfacing. Operations are on a needs must basis.

**Site condition:** Open quarry floor with no static plant. Faces are gentle and upper lifts can be easily accessed. No vegetation as quarry in use.

**Potential threats:** Further quarrying unlikely to affect exposure as it will simply expose more of the same.

**Site Management:** Stock piles should be kept away from working faces.

### SITE DEVELOPMENT:

**Potential use (general):**

**Potential use (educational):** Good site for those interested in scientific research on the geological history, stratigraphy and sedimentology of the late Ordovician in the Llandovery area. Also good locality for students to study the features of shelf mudstones.

**Other comments:**

## Photographic Record



Generals view of quarry.





Tridwr Formation comprising mudstones with thin sandstones.



Colour banded mudstone with a thin parallel laminated sandstone.