



South Wales RIGS Group Site Record RIGS Description

SECTION A

General	South Wales
Site Name: Creigiau Quarry	File Number: Site_CCC_40
RIGS Number: 662	Surveyed by: South Wales Geologists' Association
Grid Reference: ST 0868 8162	Date of Visit: 16 th July 2005
RIGS Category: Scientific, Educational	Date Registered: Owner: Unknown Planning Authority: Cardiff County Council
Earth Science Category: Mineralogical	
Site Nature: Disused/dormant quarry	Documentation prepared by: Lynda Garfield
Unitary Authority: Cardiff County Council	Documentation last revised: 23 rd October 2009
OS 1:50,000 Sheet: 170	Photographic Record: Attached
OS 1:25,000 Explorer Sheet: 151	
BGS 1:50,000 Sheet: E263	
<p>RIGS Statement of Interest: Creigiau Quarry has been proposed as a RIGS because it offers a large accessible outcrop of the upper part of the Pembroke Limestone Group. It is partially dolomitised, with characteristic textures including "zebra" or "brush" textures, where mineralisation has infilled voids with quartz, barite, haemetite/goethite and calcite. It also hosts larger calcite developed within possibly relatively recent karst.</p> <p>It provides interesting exposures for those interested in the development of mineralisation within the Carboniferous limestones in South Wales, to complement other mineralised outcrops along the Carboniferous outcrop in South Wales. It also provides a good section upwards through the Pembroke Limestone Group.</p>	

Geological setting/context:

Creigiau Quarry is a large disused or dormant quarry, encompassing three or more older quarries. There are large and continuous exposures in the quarry faces which offer good sections of the local Pembroke Limestone Group sequence, principally its upper part, from the High Tor Limestone Formation up through the Hunts Bay Oolite Subgroup. Thrusting is reported.

The limestone is partially dolomitised, resulting in characteristic voids and textures including some “zebra” or “brush” textures, where mineralisation has infilled voids (see photo) with quartz, barite, haemetite/goethite and calcite. Very minor copper and lead mineralisation has also been reported. The quarry is also renowned for beautiful scalenohedral calcite with nail head overgrowths (“Taffs Well calcite”) which have developed within possible relatively recent karst.

The upper quarry on the north side, which is somewhat overgrown, shows the best mineralisation. The lower, most recent quarry, has good fresh exposures.

As a whole the Pembroke Limestone Group demonstrates a range of marine carbonate lithologies and is interpreted as a shelf limestone, with several transgressive/regressive phases. In its upper part the High Tor Limestone is a bioclastic limestone, whilst the Hunts Bay Oolite Subgroup is, as its name indicates, a dominantly oolitic sequence, around 180m thick in the area (Waters RA and Lawrence DJD (1987). The upper part of the High Tor Limestone Formation records regression and subsequent return of high energy shoreface deposits. The Hunts Bay Oolite reflects shoaling, local emergence and paleokarst, lagoonal and peritidal environments (Waters CN, Browne MAE, Dean MT and Powell JH (2007)

References:

WATERS, R A and LAWRENCE, D J D. 1987. Geology of the South Wales Coalfield, Part III, the country around Cardiff, Memoir BGS sheet 263 (third edition)

WATERS, C N, BROWNE, M A E, DEAN, M T and POWELL, J H. 2007. Lithostratigraphical framework for Carboniferous successions of Great Britain (Onshore). BGS research report RR/07/01

PRACTICAL CONSIDERATIONS: Please score Accessibility and Safety Red Amber or Green			
Accessibility:		X	X
Comment: Although access is probably still barred by the quarry, it offers potentially good access through the main quarry entrance. Upper levels are somewhat overgrown and access probably more difficult.			
Safety:		X	X
Comment: Quarry faces need examining for stability. Overgrown areas may need some clearing			
Conservation status: There are no known conservation designations of this RIGS			

OWNERSHIP/PLANNING CONTROL: Owner/tenant: Unknown Planning Authority: Cardiff County Council Planning status/constraints/opportunities: <i>Could there be old or recent quarry permissions for this site? The quarry does appear to be dormant rather than disused.</i>

CONDITION, USE & MANAGEMENT: Present use: None as far as known. Disused or dormant quarry Site condition: Older worked parts (upper levels) are overgrown; lower more recent worked parts were fairly free from vegetation although this has probably been encroaching since the quarry stopped working a few years ago. Potential threats: Quarry could become active again. Otherwise, increasing vegetation growth, could become overgrown Site Management: Suggest that selected parts of the site are cleared of vegetation every few years, starting with upper more overgrown levels. If this quarry were to become active again, it is possible that more mineralisation could be uncovered. These sites could be left accessible after the quarry has ceased any operations.
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SITE DEVELOPMENT: Potential use (general) Potential use (educational): Good site for students to study dolomitisation, mineralisation, as well as the upper part of the Pembroke Limestone Group sequence. Potential for good parking, access and safety.
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Other comments:

Photographic Record



General view of the quarry from higher levels on north side, mass of iron mineralisation left centre. Pembroke Limestone Group



Iron mineralisation - large piece of brush type structure of quartz and goethite/limonite on Carboniferous Limestone - field of view 20cm across



General view of the main part of the quarry, looking west (1999)



Calcite growth, field of view 13cm

Photographs by Lynda Garfield