



## South Wales RIGS Group Site Record RIGS Description

### SECTION A

General	South Wales
<b>Site Name:</b> Llanishen Railway Station	<b>File Number:</b> Site_CCC_75
<b>RIGS Number:</b> 687	<b>Surveyed by:</b> South Wales Geologists' Association
<b>Grid Reference:</b> ST 1812 8229	<b>Date of Visit:</b> March 2009
<b>RIGS Category:</b> Scientific, historical	<b>Date Registered:</b>
<b>Earth Science Category:</b> Stratigraphic, educational	<b>Owner:</b>
<b>Site Nature:</b> Outcrop in banking	<b>Planning Authority:</b> Cardiff County Council
<b>Unitary Authority:</b> Cardiff County Council	<b>Documentation prepared by:</b> Rhian Kendall
<b>OS 1:50,000 Sheet:</b> 171	<b>Documentation last revised:</b> 21 <sup>st</sup> May 2009
<b>OS 1:25,000 Explorer Sheet:</b> 151	<b>Photographic Record:</b> Attached
<b>BGS 1:50,000 Sheet:</b> E263	
<b>RIGS Statement of Interest:</b>	
<p>The small exposure on the east platform of Llanishen Railway Station has been proposed as a RIGS for two reasons. First and foremost is the importance of the site as the "Type location" for the Llanishen Conglomerate. This means that this site is the place that was considered representative of this formation and as such is important to preserve not only because it is of historical, importance being described by Strahan in 1899, but also because it is valuable to geologists as the best place to see the characteristics of this unit. This site is also important because it is so easily and safely accessible to students who would like to learn about rocks of this age and type. That is Lower Devonian, river delta deposits, originating from low sinuosity streams.</p>	

**Geological setting/context:**

The Llanishen conglomerate is up to 150m thick and is made up of red sandstones, siltstones and mudstones with beds of conglomerate, containing mainly exotic pebbles. The unit also contains calcretes (Fossil soils). The Llanishen conglomerate is exposed in the core of the Cardiff-Cowbridge Anticline, on the north western limb of the Rogerstone Anticline and in inliers at Michalstone-super-Ely and Drope.

The Llanishen conglomerate is generally organised into fining upward cycles, with conglomerates at the base commonly overlying an erosion surface, cut into siltstones. The conglomerates fine upwards into sandstones and siltstones in turn. Some however are sharply overlain by siltstone. Some coarse members of the fining upwards cycles are multi-story, with each being separated by erosion surfaces. Calcretes are developed in the uppermost parts of the cycles.

The Llanishen conglomerate characterises the upper 450ft of the St Maughans Group in the area south and south west of Machen. The railway cutting at Llanishen Station and was first described by Strahan and Cantrill (1899 p17) as a bed of gravelly red conglomerate occurring 2000ft above the Silurian and 200ft below the base of the Brownstone Group.

This formation is regarded as a proximal alluvial facies with the conglomerates and sandstones interpreted as channelised, low sinuosity streams. These rocks interfinger laterally and downslope with flood plains where siltstones were deposited. (Squirrell and Downing 1969 and Allen 1975) There is also evidence that the conglomerates were derived from the South with a possible source area of the Bristol Channel Landmass.

At Llanishen Railway Station, there is a small piece of outcrop behind the waiting shelter on the east side of the station exposing a 2m high, 1m wide section of soft, red-coloured, gravelly Llanishen Conglomerate Formation at ST 1813 8221. Clast sizes range from less than one centimetre to approximately 10cm, with larger clasts commonly being seen in discreet layers. Regardless of size, the clasts are predominantly sub to well rounded and are usually, fine to medium grained red brown sandstones. There is also a very small exposure behind the power box at the base of the road bridge. This site is the Type Locality for this formation.

**References:**

WATERS, R A, LAWRENCE, D J D 1987. Geology of the South Wales Coalfield, Part III, the country around Cardiff. British Geological Survey

Strahan A. 1899. The Geology of the South Wales Coalfield, Part I. The Country around Newport. British Geological Survey.

## SECTION B

### PRACTICAL CONSIDERATIONS:

Please score Accessibility and Safety Red Amber or Green

#### Accessibility:



Comment: Easy, safe access via Llanishen Railway Station. If close access is required, permission should be sought to cross barriers.

#### Safety:



Comment: Easy safe access to site which is visible round the back of the shelter on the East Side of the Track. It is worth pointing out that this site is at a working railway station so trains regularly pass by. This should not cause a problem as the platform is wide and designed for public access.

#### Conservation status:

There

are no known conservation designations of this RIGS.

### OWNERSHIP/PLANNING CONTROL:

**Owner/tenant:** Network Rail

**Planning Authority:** Cardiff County Council

#### Planning status/constraints/opportunities:

There are no known planning constraints or opportunities

### CONDITION, USE & MANAGEMENT:

**Present use:** Part of retaining wall

**Site condition:** Good condition and clear of vegetation in the winter

#### Potential threats:

In danger of being bricked up as it is completely surrounded by masonry at the time of writing. It is also mostly obscured by vegetation in the summer months

#### Site Management:

Recommend that Network Rail be told about site so that it doesn't get covered in the future.

### DEVELOPMENT:

**Potential use (general):** Could make an interesting display at the railway station if an interpretation board was added.

**Potential use (educational):**

Good site to examine the Llanishen Conglomerate at its type locality and also proximal alluvial facies. There is currently no close access to the outcrop because of position of barriers. The site could have an interpretation board, explaining its importance

**Other comments:**

The old station house and waiting shelter on the west platform is also interesting as they are constructed in Radyr Stone, a building stone, peculiar to Cardiff. These buildings also provide an interesting comparison to the Llanishen conglomerate as they are also conglomeratic but of a different age.

## Photographic Record



The Llanishen Conglomerate as it appears in a retaining wall on the Eastern side of the railway line behind the waiting shelter



More detailed view of Llanishen conglomerate, showing variation in clast sizes and general characteristics of this rock unit.

*Photographs by Rhian Kendall*

