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## EDC 27: East Mugdock Quarry, by Mugdock Reservoir

**Grid reference:** [NS 55786 76079]

**Site type:** Artificial quarry works

**Site ownership:** Not known

**Current use:** Recreation

**Field surveyor:** Sarah Arkley & Mike Browne

**Current geological designations:** None

**Date visited:** 2nd April 2009

### Site map

(Figure 27) East Mugdock Quarry Location Map

### Summary description

Disused sandstone and microgabbro quarry, may have been formerly used for building stone and roadstone.

The intrusion is part of the Milngavie Sills complex intruding here into sandstones belonging to the Lawmuir Formation.

There are several quarries in the vicinity, although most are only in sandstone, just the one displays the intrusion. This quarry reveals sandstone in the lower part (approx 6 m) and the microgabbro sill in the upper part (approx 4 m). The sandstone is fairly massive, medium-grained and pale-coloured. The microgabbro, in contrast, is dark-coloured and displays good sub-vertical columnar jointing.

A path over-looking the reservoir, to the south of the quarry, has been improved by man. The hillside adjacent to the path has been beautifully chiselled, the tool-marks left by quarrymen are still very clear. The exposure through sandstone here displays a good example of contorted (convolute) cross bedding.

### EDC 27: Stratigraphy and rock types

**Age:** Carboniferous Formation: Lawmuir Formation

**Rock type:** Sedimentary Rock Cycles of the Strathclyde Group Type.

**Age:** Carboniferous to Early Permian

**Formation:** Milngavie Sills, Western Midland Valley Westphalian to Early Permian Sills

**Rock type:** Basalt and microgabbro

### Assessment of site value

#### Access and safety

#### Aspect/Description

**Road access and parking** Parking is available for a couple of cars at the northeastern tip of the reservoir in a layby or a large number of cars can be parked at Drumclog Moor car park, at the edge of Mugdock Country Park.

**Safety of access** Care should be taken along the road, then a footbridge leads from the road across the reservoir to a network of paths through woods on the eastern side of Mugdock Reservoir

**Safety of exposure** Care should be taken as in all quarries and an assessment made of each face before approaching. The quarry which displays the overlying sill has a bench half way up which can be easily accessed but care should be taken not to step back!

**Permission to visit** No permission sought as part of public park

**Current condition** Two of the four quarries are almost completely overgrown. The other two are in good condition although some of the sandstone faces are a pretty mossy obscuring any structures.

**Current conflicting activities** None

**Restricting conditions** None known

**Nature of exposure** Sub vertical quarry faces

## **Culture, heritage & economic**

**Historic, archaeological & literary associations** None known. Rating: 0.

**Aesthetic landscape** Pleasant with scarp features. Rating: 5.

**History of earth sciences** None known. Rating: 0.

**Economic geology** Former sandstone and microgabbro quarry used in the walls and 3 buildings around the reservoir and possibly for the reservoir itself. Rating: 3

## **EDC 27: Geoscientific merit**

EDC 27: East Mugdock Quarry, Mugdock Country Park. Geoscientific merit.

Total Geoscientific merit score 45

## **Current site value**

**Community.** Rating: 10

**Education.** Rating: 6.

## **Fragility and potential use of the site**

**Fragility** Geohazard, Natural Overgrowing

**Potential use** Research, Higher/Further Education, School, On-site Interpretation, On- site Geotrail, Multidisciplinary

## **Geodiversity value**

The main value of this site is the number of different features it exposes. Not only of the rocks and their structures but tool-marks of this quality are rare in East Dunbartonshire, and the sandstone was likely used for constructing local buildings connected with the reservoir. Rating: 7

## Photographs

(Photo 165) Panorama of one of the larger quarries in the Mugdock Country Park, which displays a thick sandstone unit from the Lawmuir Formation overlain by an igneous sill of late Carboniferous to early Permian age. Looking E.

(Photo 166) The contact between the thick sandstone unit belonging to the Lawmuir Formation and the overlying microgabbro sill is indicated by a ledge. Looking N.

(Photo 167) Vertical columnar jointing has formed within the sill as the magma cooled and contracted.

(Photo 168) Spheroidal weathering of the microgabbro blocks making up the sill.

(Photo 169) A path leading away from the quarry overlooking the reservoir. The sandstone has been chiselled away to leave a smooth vertical face. Looking NW.

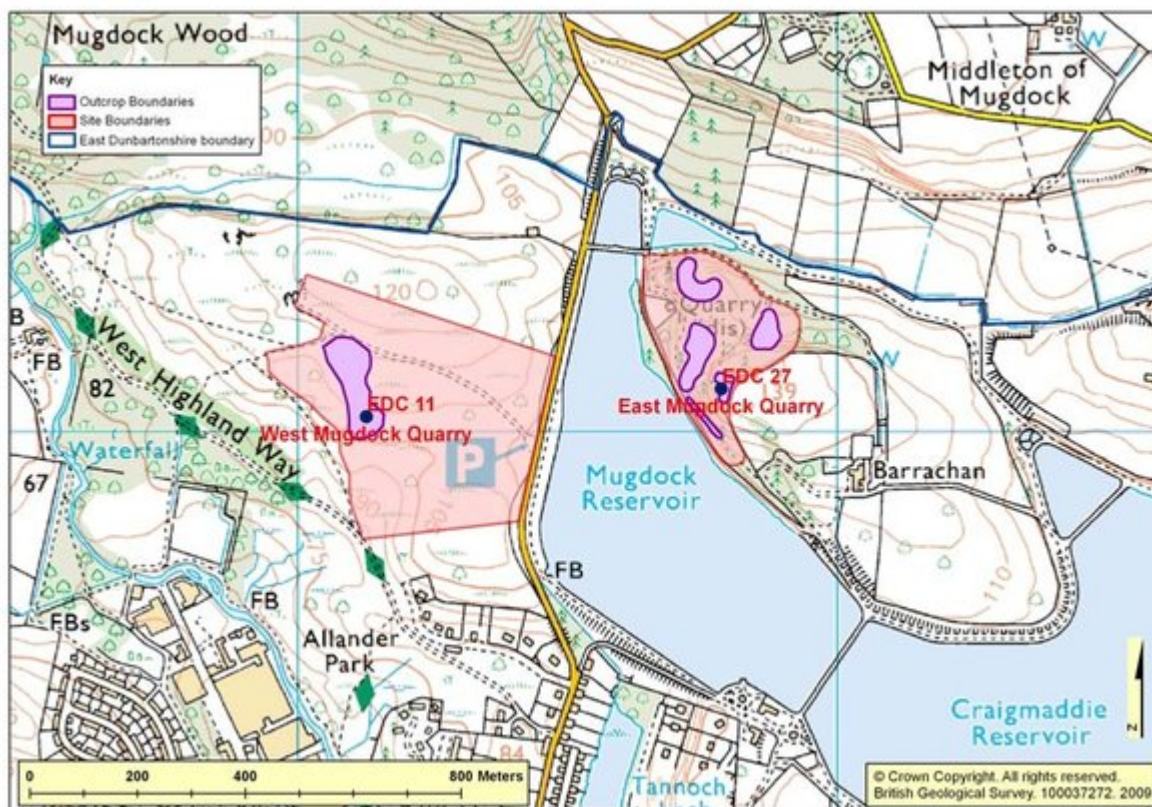
(Photo 170) Close-up of the chisel marks on the surface of the sandstone cliff.

(Photo 171) Close-up of convolute bedding displayed in some of the sandstone blocks adjacent to the path.

(Photo 172) House lying between the reservoir and the sandstone quarries likely to have been constructed of local sandstone from the Lawmuir Formation, showing how the local geology has been used as a resource.

(Photo 173) The gauge basins at the northern tip of the reservoir are likely to have been constructed using locally quarried sandstone. The reservoir is popular with walkers, runners and bikers and an additional interpretation board explaining the geology of the area and how it has been used for locating, designing and constructing the reservoir could be well received.

## Bibliography



(Figure 27) East Mugdock Quarry location map.



GeoScientific Merit	Rarity	Quality	Literature/ Collections	1st
Litho Stratigraphy	4 ▾	3 ▾	2 ▾	<input type="checkbox"/>
Sedimentology	3 ▾	3 ▾	2 ▾	<input type="checkbox"/>
Igneous/Mineral/ Metamorphic Geology	4 ▾	5 ▾	4 ▾	<input checked="" type="checkbox"/>
Structural Geology	1 ▾	2 ▾	0 ▾	<input type="checkbox"/>
Palaeontology	2 ▾	2 ▾	2 ▾	<input type="checkbox"/>
Geomorphology	2 ▾	4 ▾	0 ▾	<input type="checkbox"/>

EDC 27: East Mugdock Quarry, Mugdock Country Park. Geoscientific merit.

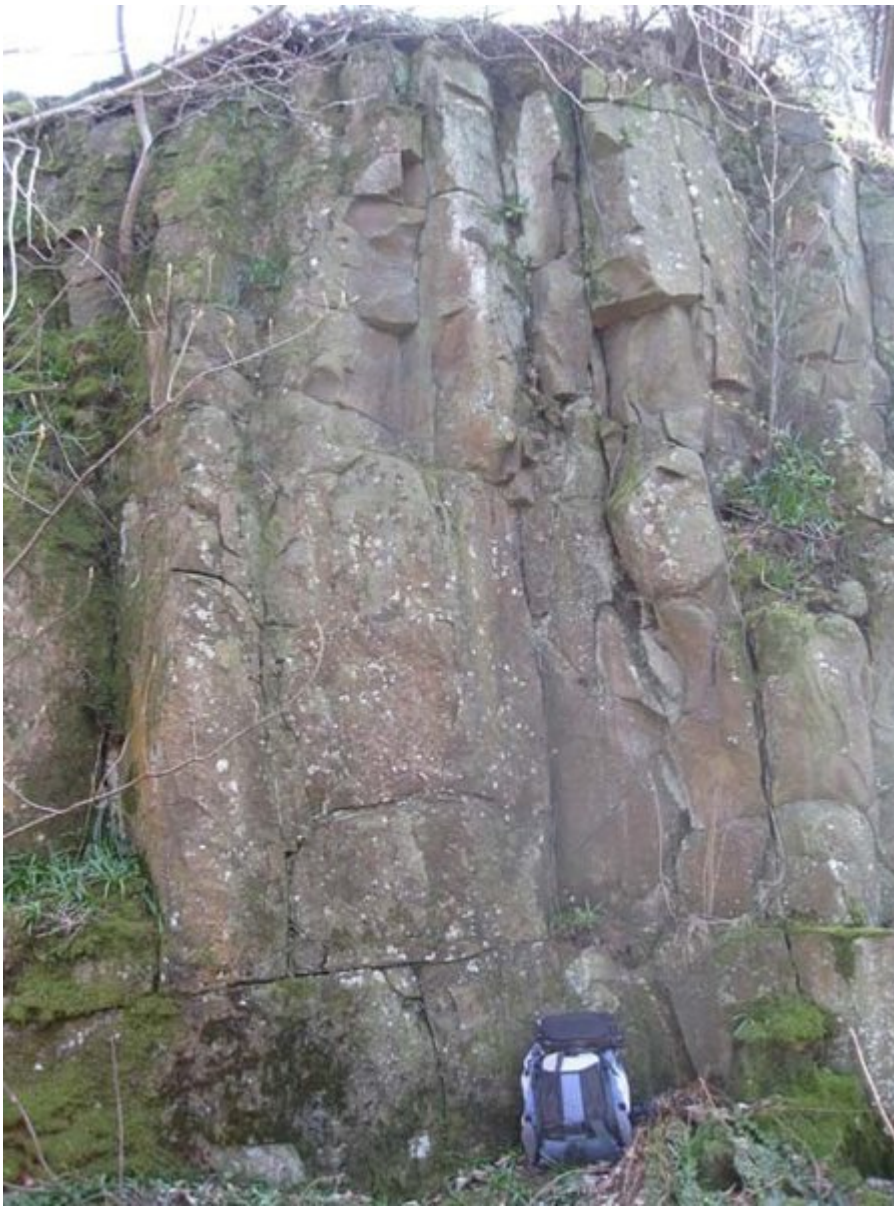


(Photo 165) Panorama of one of the larger quarries in the Mugdock Country Park, which displays a thick sandstone unit from the Lawmuir Formation overlain by an igneous sill of late Carboniferous to early Permian age. Looking E.



(Photo 166) The contact between the thick sandstone unit belonging to the Lawmuir Formation and the overlying microgabbro sill is indicated by a ledge. Looking N.





*(Photo 167) Vertical columnar jointing has formed within the sill as the magma cooled and contracted.*



*(Photo 168) Spheroidal weathering of the microgabbro blocks making up the sill.*



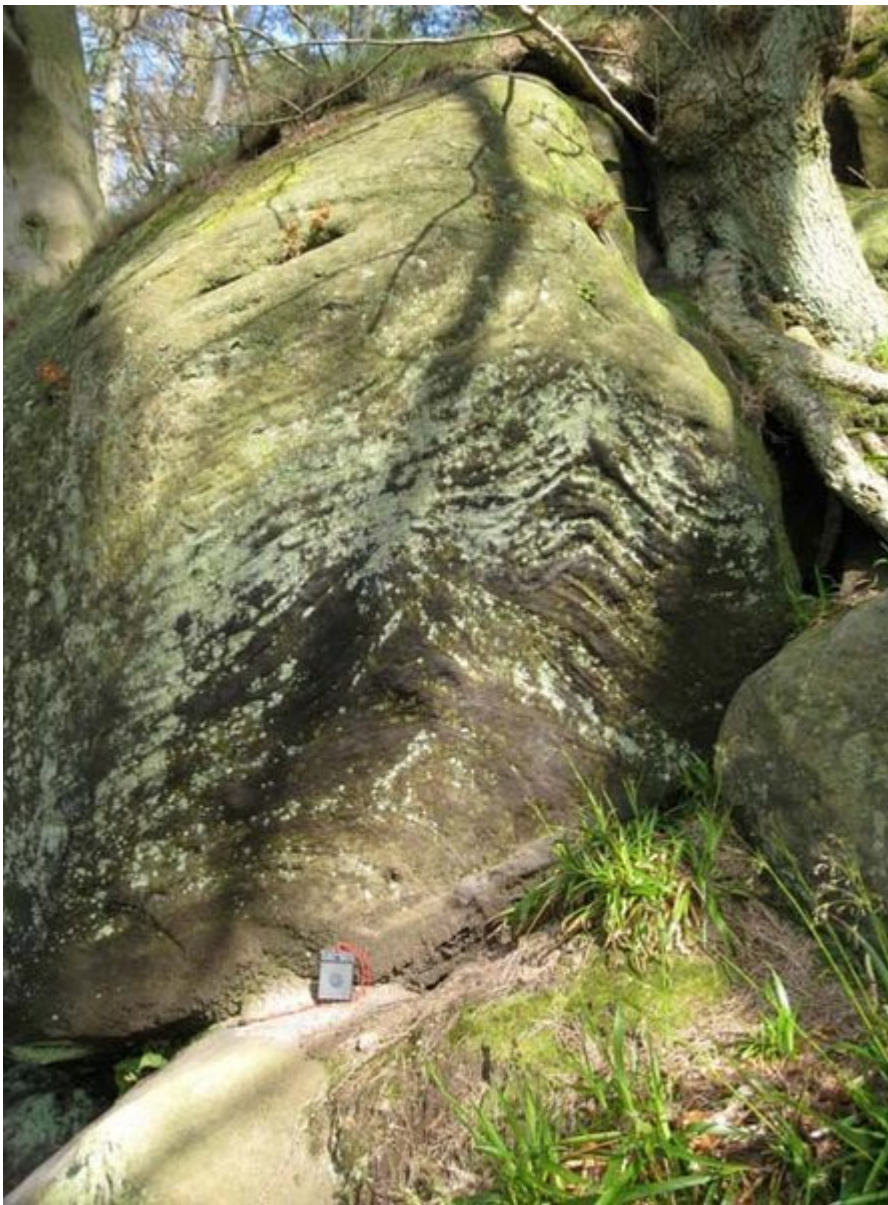


*(Photo 169) A path leading away from the quarry overlooking the reservoir. The sandstone has been chiselled away to leave a smooth vertical face. Looking NW.*



*(Photo 170) Close-up of the chisel marks on the surface of the sandstone cliff.*





*(Photo 171) Close-up of convolute bedding displayed in some of the sandstone blocks adjacent to the path.*





*(Photo 172) House lying between the reservoir and the sandstone quarries likely to have been constructed of local sandstone from the Lawmuir Formation, showing how the local geology has been used as a resource.*



*(Photo 173) The gauge basins at the northern tip of the reservoir are likely to have been constructed using locally quarried sandstone. The reservoir is popular with walkers, runners and bikers and an additional interpretation board*



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