
EDC 23: Douglas Muir Quarry, Milngavie

Grid reference: [NS 52246 74838]

Site type: Artificial quarry works

Site ownership: Mains Estate. Tarmac lease the site from Mains Estate

Current use: In current use

Field surveyor: Mike Browne & Hugh Barron

Current geological designations: None

Date visited: 19th March 2009

Site map

(Figure 23) Douglas Muir Quarry Location Map

Summary description

The Douglas Muir Quartz-Conglomerate Member (DMQ) of the Lawmuir Formation (Strathclyde Group) consists mainly of hard, white conglomerates with subordinate pebbly sandstones with a few lenses of (purplish-grey)/grey mudstone up to 30 cm thick. Trough cross-bedding is present in sets from 0.2 m to 1.0 m thick. Many of the units are upward fining in grain size. The clasts and pebbles are almost exclusively of white and pink vein quartz and well-rounded, averaging 2 cm but up to 10 cm in diameter (, but some blocks of sandstone up to 15 cm across are also present). Palaeocurrent directions indicate transport of the original sediments towards the south-south-west. Channel bases of at least 20 m lateral extent are currently visible. Note the older working faces are weathered to a strong darkish yellow brown colour. The fresh conglomerate has a slightly yellow tinge. The sandstones are pale grey (i.e. off-white).

The base of the Douglas Muir Quartz Conglomerate is not seen on the site but elsewhere it rests apparently unconformably on volcanoclastic sediments of the Kirkwood Formation. The top boundary is transitional, by upward passage by interbedding from conglomerate to white and pale grey sandstones of the Craigmaddie Muir Sandstones of the Lawmuir Formation. Note this transition seems to be happening laterally southwards (and with thinning?) within the current quarry with less conglomerate and more mudstone lenses preserved.

Thickness is said to be 15 m at the type locality at Douglas Muir Quarry, and up to 70 m maximum elsewhere. Good examples of petrified fossil trees seen (not in situ). Possible glacial striae seen.

EDC 23: Stratigraphy and rock types

Age: Lower Carboniferous Formation: Douglas Muir Quartz-Conglomerate Member, Lawmuir Formation

Rock type: Conglomerate

Assessment of site value

Access and safety

Aspect/Description

Road access and parking On entry call into the site office

Safety of access As this is a working quarry, prior requests for a visit (to the quarry manager) would be essential and all visitors should follow the required site health and safety regulations. For safety, visitors may need to be accompanied by quarry personnel during visits. Plenty of parking is available next to the site office. Be aware of quarry vehicles at all times and wear all appropriate PPE.

Safety of exposure Working faces should not be approached as they are generally unstable

Permission to visit Permission given from the site office (Tarmac) Current condition Good clean quarry faces

Current conflicting activities Working quarry

Restricting conditions As these are working faces it is currently not known what exposures will remain when quarrying ceases.

Nature of exposure Sub vertical quarry faces

Culture, heritage & economic

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

Aesthetic landscape Quarry reveals good sections through the underlying geology. Rating: 2.

History of earth sciences None known. Rating: 0.

Economic geology Active crushed rock quarry – high specification material. Rating: 5.

EDC 23: Geoscientific merit

EDC 23: Douglas Muir Quarry, Milngavie. Geoscientific merit.

Total Geoscientific merit score 37

Current site value

Community. Rating: 2.

Education. Rating: 6.

Fragility and potential use of the site

Fragility Development. Value of the site depends on the development of conservation sections once working has finished. Restoration mixes wetlands/lakes with partly heather covered bare bedrock and false screes against remaining quarry faces. Paths will cross the area so interpretation with a leaflet and info board is possible.

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

Geodiversity value

This site provides the best exposures and is the type locality for the Douglas Muir Conglomerate Member. The current operators (Tarmac Ltd) are additionally willing to discuss leaving key areas of some quarry faces accessible following extraction for the purpose of geoconservation, so future visitors may access and learn from the site. One such face would be the one facing south–west above the silt lagoon in the eastern part of the quarry. This face displays excellent channel

features. This site's geodiversity value would be enhanced if the current or any other operator leaves conservation sections after cessation of working.

Photographs

(Photo 134) Quarried cliff displaying a section through the Douglasmuir Quartz-Conglomerate Member (basal Lawmuir Formation). The east wall section shows mudstone beds and a lower percentage of conglomerate to sandstone, with lenticular bedding. Looking ENE.

(Photo 135) Quarry face displaying a section through the Douglasmuir Quartz-Conglomerate Member (basal Lawmuir Formation). Note the conspicuous channel base in the mid-upper face, east wall near north end (view from north).

(Photo 136) Quarry face displaying a section through the Douglasmuir Quartz-Conglomerate Member, basal Lawmuir Formation. East wall section showing more persistent mudstone beds and lower percentage of conglomerate to sandstone. Note lenticular bedding.

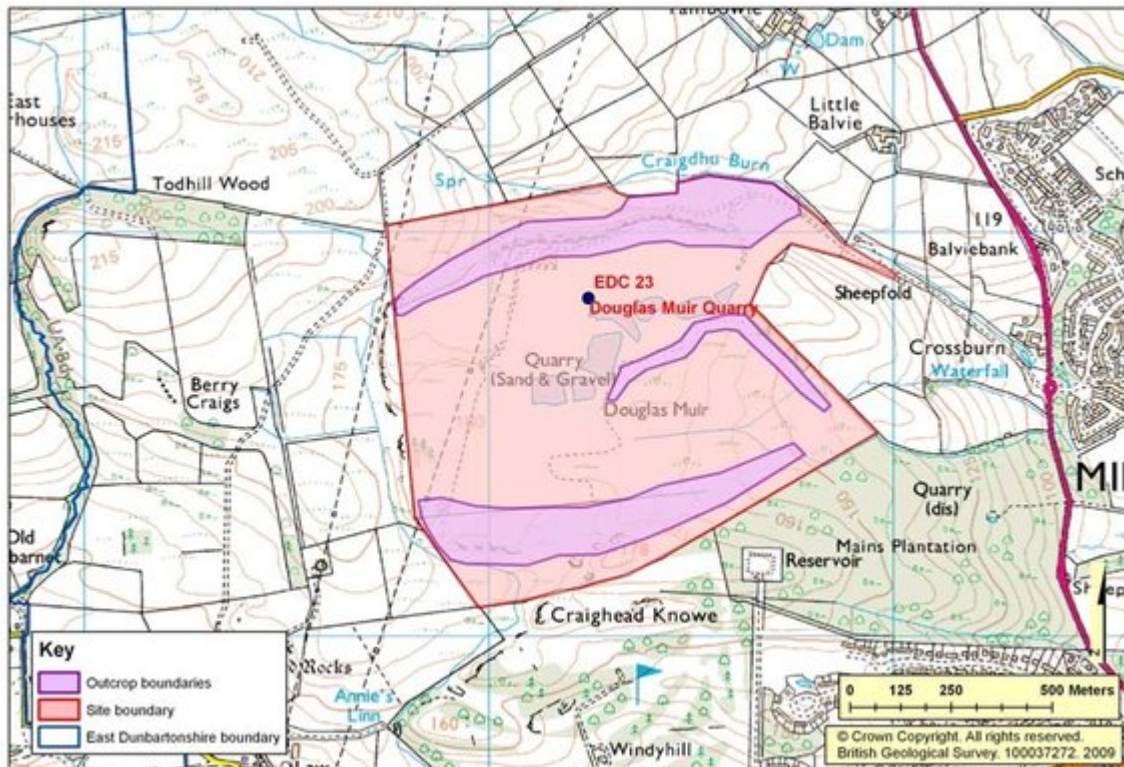
(Photo 137) Quarry face in the Douglasmuir Quartz-Conglomerate Member (basal Lawmuir Formation), showing mainly sandstone deposited on mudstone and conglomerate. View east of remnant west wall, closer detail of section.

(Photo 138) Close-up of loose blocks showing rounded clasts of white and pink vein quartz and quartzite up to 6 cm in diameter. Blocks have come from the Douglasmuir Quartz-Conglomerate Member.

(Photo 139) Large fossil tree found at conveyor section of the quarry, now in garden at site offices. Fossil is located within the Douglasmuir Quartz-Conglomerate Member.

(Photo 140) Former quarrying in the Douglasmuir Quartz-Conglomerate Member (basal Lawmuir Formation), showing heather and exposed rock restoration, with former quarry faces marked by blocks.

Bibliography



(Figure 23) Douglas Muir Quarry location map.

GeoScientific Merit	Rarity	Quality	Literature/ Collections	1st
Litho Stratigraphy	6	6	2	<input checked="" type="checkbox"/>
Sedimentology	5	6	2	<input type="checkbox"/>
Igneous/Mineral/ Metamorphic Geology	0	0	0	<input type="checkbox"/>
Structural Geology	0	0	0	<input type="checkbox"/>
Palaeontology	4	4	2	<input type="checkbox"/>
Geomorphology	0	0	0	<input type="checkbox"/>

EDC 23: Douglas Muir Quarry, Milngavie. Geoscientific merit.



(Photo 134) Quarried cliff displaying a section through the Douglasmuir Quartz-Conglomerate Member (basal Lawmuir Formation). The east wall section shows mudstone beds and a lower percentage of conglomerate to sandstone, with lenticular bedding. Looking ENE.



(Photo 135) Quarry face displaying a section through the Douglasmuir Quartz-Conglomerate Member (basal Lawmuir Formation). Note the conspicuous channel base in the mid-upper face, east wall near north end (view from north).



(Photo 136) Quarry face displaying a section through the Douglasmuir Quartz-Conglomerate Member, basal Lawmuir Formation. East wall section showing more persistent mudstone beds and lower percentage of conglomerate to sandstone. Note lenticular bedding.



(Photo 137) Quarry face in the Douglasmuir Quartz-Conglomerate Member (basal Lawmuir Formation), showing mainly sandstone deposited on mudstone and conglomerate. View east of remnant west wall, closer detail of section.



(Photo 138) Close-up of loose blocks showing rounded clasts of white and pink vein quartz and quartzite up to 6 cm in diameter. Blocks have come from the Douglasmuir Quartz-Conglomerate Member.



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(Photo 140) Former quarrying in the Douglasmuir Quartz-Conglomerate Member (basal Lawmuir Formation), showing heather and exposed rock restoration, with former quarry faces marked by blocks.