

SUMMARY OF GEODIVERSITY AUDIT

Quarry name	Moons Hill Quarry
County	Somerset
Location:	At Stoke St Michael, Near Shepton Mallet, East Mendips,
Output:	About 0.5M tonnes per year for general purpose construction aggregates
O.S. Grid Ref:	ST 665 462 (quarry office)
O.S. Map No:	1:50 000 Landranger Sheet 183
BGS Map No:	1:50 000 Sheet 281
Operated by:	John Wainwright & Co Limited
Quarry workings:	The quarry has developed as two large pits, Moons Hill and Stoke Quarries.
Scientific Status:	One area designated as a SSSI
Main Rock Type	Silurian Volcanics, andesite lava, tuff and agglomerate
Geological Age	Silurian, Wenlock Series, about 440 million years old
Geological Formations	Generally dark grey volcanic rocks with interbedded mudstones of the Coalbrookdale Formation overlain unconformably by red brown sandstones of the Portishead Formation of Devonian age.
Geological Structure	Strata generally dip very steeply to the north, with near-vertical faults.
Sedimentology	Thinly bedded mudstones as interbeds within the volcanic sequence.
Palaeontology	Shelly fossils within the mudstones and tuffs.
Mineralogy	None
Other Rock Types	None
Hydrogeology	The volcanic rocks have low primary permeability and high secondary permeability in joints and fissures. Water table generally at about 200mAOD
Geotechnical	The lavas and tuffs in particular are known for occasional wedge failures where blocks are bounded by intersecting near-vertical joints.
Geomorphology	Present Mendip landforms closely resemble ancient Mesozoic hills, valleys and islands.
Weathering, Erosion	Weathering of the volcanic rocks to significant depth with particular decomposition of the matrix within tuffs and agglomerates and exfoliation of boulders within the latter.
Geodiversity Highlights	<ul style="list-style-type: none"> • Dark grey amygdaloidal andesite lavas • Interbedded tuffs and mudstones • Ancient volcanic neck represented by vent agglomerate deposit • Abundant fractures and joints in the volcanic succession • Angular unconformity with the overlying Old Red Sandstone
Geodiversity Context	<ul style="list-style-type: none"> • During the Silurian period, some 440 million years ago, vulcanism deposited lavas, tuffs and agglomerates in shallow seas. • A period of uplift and folding which produced a major mountain chain across northern Britain – the Caledonian Orogeny, reached a climax in late Silurian times. • In the Devonian, desert conditions prevailed until about 350 million years ago. A shallow tropical sea then advanced across the land and the thick Carboniferous limestones were deposited. Land was to the north, deep water to the south. The Mendip area was probably near the equator. • The Palaeozoic rocks were deeply buried, folded, faulted and lifted above the sea by pressure of continental collision from the south in the Variscan mountain building when the main structure of Mendip was formed. The Silurian rocks were brought close to the surface. • Desert conditions returned in the Permian and Triassic when Mendip was a mountain area with deep and narrow valleys around its flanks and the Silurian rocks were raised close to the surface. • Advance of tropical seas in late Triassic/Jurassic times (not seen at Moons Hill Quarry). At this time Mendip was a group of islands.