

Geologic Characterization of the Helderberg Group as a Confining Layer for CO₂ Sequestration

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The Midwest Regional Carbon Sequestration Partnership (MRCSP) has determined that multiple units offer potential for carbon dioxide sequestration in West Virginia. The Siluro-Devonian Helderberg Group is situated stratigraphically between the Oriskany Sandstone and the Salina Group evaporites. Formed in an ancient "sea way," the Helderberg is predominantly limestone, but contains some interbedded sand and shale shed from the eastern uplifts of the Taconic Orogeny. Ranging in thickness from 50 – 150 m, available data on the Helderberg include geophysical logs, sample descriptions, sidewall cores, and outcrop observations. Although extensive faulting suggests limited potential as a seal, a detailed geologic evaluation of the Helderberg may help to identify heterogeneities in this sequence and evaluate its effectiveness as a confining layer.