

A Comprehensive Overview of Onshore Geologic Carbon Sequestration in New York State

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New York State began exploring carbon capture and sequestration (CCS) in 2003 when it joined the Midwest Regional Carbon Sequestration Partnership (MRCSP), one of seven partnerships across the country whose common goal was to research the potential for CCS in the United States. Since that time, New York has forged ahead with both broad, regional characterization of the state and more detailed analysis of localized target formations. Each of these targets is evaluated based on well logs, thin sections, core and cuttings.

The Rose Run is an Upper Cambrian tight sand member of the Galway Formation. This and other Cambrian sands show porosity and permeability in some areas of western and central NY up to 10% and up to 8 milidarcies. It has been extensively studied in and around Jamestown, NY. However, due to localized dissolution and mineralization, porosity can be patchy. There is also a prospective target in the reservoirs of the Trenton/Black River play in the Finger Lakes region of New York, which has the most porosity and permeability (up to >10 darcies) of any sequestration target. Since the TBR fields are still producing, sequestration in these formations will most likely have to wait until the fields are depleted. The Queenston is an Upper Ordovician sandstone primarily deposited in a fluvial environment. In the target area near Cayuga Lake, the Queenston is a braided stream deposit. Porosity can range from ~2% up to 18%, but is not widely extensive. The Marcellus and Utica black shales also have the potential to be a sequestration target with both enhanced gas recovery (EGR) and depleted gas reservoirs. And finally, the Stockton, a lacustrine sand in the Triassic rift basin in southern NY is currently being explored.