Thickness and Extent of Saline Cambrian Reservoirs in the Ohio Region Is Controlled, in Part, by the Underpinning Precambrian Complex and Paleotopography, Mark T. Baranoski, Ohio Division of Geological Survey, 2045 Morse Rd., Building C-1, Columbus, OH 43229-6693, mark.baranoski@dnr.state.oh.us

Updated maps of the Precambrian complex (Granite Rhyolite and Grenville Provinces and the East Continent Rift Basin) unconformity surface in the Ohio region are essential when selecting potential sites for CO_2 sequestration into saline Cambrian reservoirs. Regional structural features and paleotopography controlled depositional facies and basin architecture of the proto-Illinois-Michigan and Appalachian Basins and Rome Trough. Thickness and extent of potential Cambrian reservoirs have been redefined with updated regional correlation and maps of Cambrian sub-Knox units for the Ohio region. The Mount Simon Sandstone was deposited in an area limited to western Ohio and the adjacent proto-Michigan-Illinois Basin. The eastern limit of the Mount Simon is redefined along a north–northwest-trending, broad, Precambrian paleotopographic arch (exposed Laurentian craton), which extends in the subsurface from an area north of presentday western Lake Erie, southward to the Ohio River, and corresponds to the northwestern Rome Trough boundary fault system. The Mount Simon subcrops along the northern portion of this north–northwest-trending arch. Along the southern portion of this trend, the Mount Simon thickness thins to the east, grading laterally with mixed clastic-carbonate Conasauga Group facies. An east–northeast-trending shoulder of the Rome Trough formed another regionally extensive paleotopographic barrier to Mount Simon deposition. Following Mount Simon deposition, the stable Ohio Platform developed, which was dominated by cyclical mixed clastic-carbonate sediments of Eau Claire Formation and Conasauga Group. The redefined sub-Knox of the Ohio region illustrates that the Mount Simon is not the regional basal "blanket sandstone," as traditionally mapped.