Enhanced Oil Recovery Potential and CO_2 Sequestration in the Michigan and Northern Appalachian Basins Region

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The U.S. DOE-funded Midwest Regional Carbon Sequestration Partnership (MRCSP) is currently involved in an examination of potential carbon dioxide (CO_2) sequestration reservoirs, including oil and gas fields, for eight states. The Appalachian and Michigan Basins contain some of the largest historic oil-and-gas-producing areas in the conterminous United States. This region has produced over 5 billion barrels of oil and more than 50 trillion cubic feet of natural gas; however, secondary and especially tertiary recovery attempts have been spotty at best within the two basins. Since 1972, more than 1 billion barrels of incremental oil have been produced using CO_2-assisted enhanced oil recovery (EOR) techniques in the Permian Basin and other areas of the western United States. Large sources of CO_2 for EOR have not been available within the eastern United States to enable this technology. Should CO_2 become available via capture from large anthropogenic sources, could this region take advantage of this technology to produce hundreds of millions of barrels of additional oil while sequestering CO_2? Past EOR projects in the region and select case histories have been summarized. Using this information and a new regional oil and gas fields GIS, a high-level screening for potential CO_2-EOR candidates is underway.