

**AAPG Annual Meeting  
March 10-13, 2002  
Houston, Texas**

William L. Henderson<sup>1</sup> (1) Michigan Dept. of Environmental Quality, Lansing, MI

## **The History of Petroleum Geology in Michigan**

Petroleum geology has evolved alongside exploration and development in Michigan. While commercial production of Michigan petroleum spans 75 years, pioneers dug a shallow Devonian oil well in southwestern Ontario's (Canada) flank of the Michigan Basin a year before Drake's famous 1859 U.S. discovery. Michigan's State Geologist, Alexander Winchell, mentioned petroleum deposits under Michigan's surface in 1860, but the next 65 years brought only minor oil production near Ontario and Ohio.

In 1925, Saginaw oil field (Mississippian Berea Sandstone) became Michigan's first commercial success, mapping an anticline with brine wells. By the early 1930's, several large structures containing prolific Devonian carbonate oil reservoirs had been discovered. Geophysical tools had little success, and 'doodlebuggers' were rampant.

Discovered in 1957, the Albion-Scipio oil field, a narrow 35 mile linear trend of Ordovician dolomite pools is still Michigan's only giant field. Tarot cards and 'trendology' yielded to geophysical means to develop the field. Surficial geochemical methods finally helped discover Stoney Point field, a smaller trend nearby the Albion-Scipio, twenty-five years later.

The first northern Lower Michigan Silurian Niagaran pinnacle reefs were discovered in 1968, starting Michigan's most productive play to date. Decidedly seismic prospects, due to greater depth than southeastern Michigan reefs, serious near-surface technical problems were overcome. These small, but prolific pools are currently being re-imaged with 3-D seismic, and production enhanced with horizontal drain holes.

Deep seismic targeted Ordovician St. Peter Sandstone in the 1980's. Multiple gas pay zones produce from this well-sorted sand, which in the central basin exceeds 1000 feet thick. This deep drilling spurred the recent revision of Michigan's stratigraphy.

Beginning in 1987, geological and engineering studies of the Antrim Formation, a Devonian gas shale, helped this low gas, high water producing shale become commercially successful.