ABSTRACT

Greater Aneth field, Utah, largest oil producers, was discovered in 1956 and has produced over 451 million barrels of oil. Located in the Paradox Basin of southeastern Utah, Greater Aneth is a stratigraphic trap formed along the Pennsylvanian Paradox Formation. Because it represents an archetype oil field for western U.S., Greater Aneth was selected as the reservoir unit to evaluate the effects of carbon dioxide (CO2) injection and storage. The Greater Aneth Unit in the northwestern part of the field has produced about 149 million bbls of oil, of the estimated 450 million bbls of OOIP, a recovery rate of 33%. The large amount of remaining oil made the Aneth Unit ideal to demonstrate both CO2 storage capacity and enhanced oil recovery (EOR) by injection of CO2.

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ACKNOWLEDGMENTS

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THE GOTHIC SHALE AT GREATER ANETH OIL FIELD PARADOX BASIN SOUTHEASTERN UTAH: SEAL FOR HYDROCARBONS AND CARBON DIOXIDE GEOLOGIC SEQUESTRATION

The Gothic shale in the Pennsylvanian Paradox Formation is exposed along the Honaker Trail, San Juan River Canyon, Utah. The Gothic contains total organic carbon (TOC) ranging from about 0.5% to 8.5% as finely crystalline dolomitic limestone and includes, but is not limited to, peloidal- and skeletal grainstone/packstone, as well as lenticular, laterally-continuous, mudstone and shale. The shale is a stratigraphic trap producing from the Pennsylvanian Paradox Formation. Because it represents a typical oil field for western U.S., Greater Aneth was selected as the reservoir unit to evaluate the effects of carbon dioxide injection and storage. The Greater Aneth Unit in the northwestern part of the field has produced about 149 million bbls of oil, of the estimated 450 million bbls of OOIP, a recovery rate of 33%. The large amount of remaining oil made the Aneth Unit ideal to demonstrate both CO2 storage capacity and enhanced oil recovery (EOR) by injection of CO2.

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