Optimal Development of Utica Shale Gas Wells

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In 1820, the first commercial shale well was drilled in the State of New York,[1] which lead to the eventual gas production from the Basin's Devonian Shale reservoirs. Today, thanks to successful and active development of the Barnett, Antrim and Fayetteville shales, along with the Devonian (Huron/Ohio) of the Appalachian Basin, shale gas now accounts for 6% of U.S. gas production, totaling, more than 1000 BCF annually. As a result, no two words are more attention grabbing than "shale gas" in today's oil and gas marketplace. While the Fort Worth Basin's Barnett Shale has garnered most of the news over the past decade, what was old is now new in the Appalachian Basin. Operators have improved technologies, developed and honed in the Fort Worth Basin, to thank for this resurgence as these technologies hold promise for developing the region's large Marcellus and Utica Shale gas deposits. This paper will discuss the role that these technologies, specifically horizontal well drilling and completion techniques, may have on Utica Shale gas development. For this, the paper will conduct a parametric reservoir study for an example Utica Shale Gas development project. The subject wells were drilled and completed with modest stimulation treatments. This review will review past performance and assess optimum stimulation strategies (in terms of size and intensity) when using vertical for vertical and horizontal wells to produce the Utica gas shale.