

The Barnett Shale Play, Fort Worth Basin

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In terms of monthly production, the Newark East (Barnett Shale) field recently became the largest gas field in Texas. Production has grown from 80 MMCF/D in January 2000 to over 560 MMCF/D at present because of accelerated new-well drilling and old-well reworks/refracs. There are over 2.5 TCF of booked proven gas reserves in the field at present. Newark East field is located in the northern portion of the Fort Worth Basin, just north of the city of Fort Worth. The Mississippian Barnett rests on an extensive angular unconformity. The Barnett must be stimulated to achieve economic flow rates. Currently, wells are hydraulically fractured, but good frac barriers must be present directly above and below the Barnett for this stimulation technique to be successful. Hence, the stratigraphy above and below the Barnett is important to economic production. The thermal history of the basin is an important reason for the success of the Barnett. The thermal history of the Fort Worth basin is directly related to the emplacement of the Ouachita system. In the late 1990s, work by Mitchell Energy had demonstrated the viability of water fracs in the Barnett play. Also in the late 1990s, Mitchell determined that the previous gas-in-place values for the Barnett were too low; there is approximately 150 BCF/mi² of in-place gas. The success of the Barnett play may provide a model for prospecting for other large shale-reservoirs.