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***Hydrocarbon-source-rock data and gas-well completions, Woodford Shale and Caney Shale, Oklahoma***

Black shales, considered important hydrocarbon source rocks, are now being evaluated as gas reservoirs. The current gas-shale activity in Oklahoma is in the Woodford Shale (Upper Devonian-Lower Mississippian; equivalent to the Ohio Shale and other Devonian gas shales in the eastern United States) and Caney Shale (Mississippian; equivalent to the Barnett Shale in Texas and Fayetteville Shale in Arkansas).

Data gathered on these potential gas shales include depth, thickness, thermal maturity, kerogen type, and kerogen quantity. Thermal maturity is determined by vitrinite reflectance. Kerogen type and quantity are determined by Rock-Eval pyrolysis. Reference lists on the Caney Shale, Excello Shale, Woodford Shale, Oklahoma Rock-Eval pyrolysis, and Oklahoma source rocks are available on the Oklahoma Geological Survey (OGS) Web site (<http://www.ogs.ou.edu/fossilfuels/oilgas.php>).

An Oklahoma gas-shales database, also available on the OGS Web site, contains information on gas wells completed in the Woodford Shale or Caney Shale. To date, initial potential gas rates range from 8 to 2,266 thousand cubic feet of gas per day from 81 wells at vertical depths from 763 to 15,310 ft. Nine horizontal wells with lateral lengths from 834 to 3,037 ft have been drilled in the Caney and Woodford Shales in Coal, Hughes, McIntosh, and Pittsburg Counties in eastern Oklahoma.

Shale-gas production in Oklahoma is a frontier play. Unresolved factors for successful gas-shale wells in Oklahoma include the affect of natural versus induced fractures on gas production, optimum thermal maturity for oil generative organic matter, and best completion practices.