

Coal-bed Gas Potential of Arkansas Coals in the Arkoma and Desha Basins.

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An estimated 1.5 billion tons of bituminous and semi-anthracite coal resources of Pennsylvanian age, distributed in the Upper Atoka, Hartshorne, McAlester, and Savanna Formations, are present in the 1,700 square-mile area of western Arkansas. A major factor in the distribution and depth of the coal beds is the east-west folded and faulted structure of the basin.

Although some 25 coal beds are present, only four have been mapped and named by the United States Geological Survey and the Arkansas Geological Commission: the Lower Hartshorne coal, the Upper Hartshorne coal, the Charleston coal, and the Paris coal. The Lower Hartshorne is the thickest coal (reported up to eight feet in southern Sebastian County) and the most extensive, covering about 1,300 square miles. The Lower Hartshorne has been the target for 38 coal-bed methane (CBM) wells that have been drilled in the basin near Hartford, AR in 2005. These wells are both conventional vertical wells and horizontal pinate wells ranging in depth from 400 to 2,000 feet; they have produced 4.2 billion cubic feet of CBM.

The Desha Basin, covering an area of 8,200 square miles in the Gulf Coastal Plain, southeastern and eastern Arkansas, contains Eocene Wilcox Group coals, 1,500 feet in depth and also possibly Lower Cretaceous coals 3,000 to 3,500 feet in depth. Thus in the Arkoma Basin, Arkansas, Pennsylvanian CBM production has begun and reserves may be significant in the Lower Hartshorne coal, and potential Eocene and Lower Cretaceous CBM reserves may be present in the Desha Basin.