Coal Resources and Coalbed Methane Potential in the Kansas Portion of the Forest City Basin

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Within the Kansas portion of the Forest City Basin is an estimated 16.4 billion tons (14.9 billion metric tons) of coal that is present deeper than 100 feet (30 m) below the surface. Of this amount, 14.3 billion tons (13.0 billion metric tons) is from coals within the Cherokee Group (Middle Pennsylvanian). These resource quantities were determined from 27 coalbeds with 23 of the coals within the Cherokee Group. Resource amounts were determined for coals 14 inches (35 cm) or greater in thickness. Apparent rank of the coals is generally high-volatile B bituminous. Of primary concern for methane development is the thin [<2 feet (0.6 m)] occurrence of most coalbeds in the basin.

A continuous core taken in east-central Leavenworth County (sec. 35, T. 9 S., R. 22 E.) penetrated 13 coalbeds within the depth interval from 721 to 1,164 feet (220–355 m) for a total thickness of 11.5 feet (3.5 m) of coal. Within the Cherokee Group interval of 721–1,130 feet (220–344 m), there are 11 coals present with a total coal thickness of 10.9 feet (3.3 m). The Riverton coal at 2.1 feet (64 cm) thick is the thickest coal in that core. Apparent rank of the Riverton coal is high-volatile B bituminous, and two samples show vitrinite-reflectance values of R_o max = 0.53 and 0.56.

Review of geophysical logs from areas of the Forest City Basin in Kansas indicate that multiple coalbeds are widespread throughout the basin, but generally are thin. Preliminary investigations indicate there are a few areas in the basin where the coalbed thickness exceeds 42 inches (107 cm). Additional study and exploration effort is needed to determine if economic quantities of coalbed methane exist in the basin.

Geoscience for the 21st Century
Edited by D. F. Merriam: Transactions of the Am. Assoc. Petroleum Geologists Midcontinent Section Meeting (Wichita, KS), 1999