

Cores of Pennsylvanian Coal Sequences -- Eastern Kansas

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The Middle and Upper Pennsylvanian series across eastern Kansas includes thin coal beds (typically less than 0.7 m) within siliciclastic and carbonate successions. Coal rank varies ranging from high-volatile A to B bituminous. Coalbed methane has become an active play in eastern Kansas due to contributing factors such as sufficient depth and overburden, overlying seals of thick shale, the probability of encountering multiple seams in a single well, and excellent pipeline infrastructure. A better understanding of coalbed methane potential requires identification of thick, gas-rich coal seams (> 0.5 m) and their proximity to the existing pipelines.

A series of cores recovered over the last two years by the Kansas Geological Survey form a basis for interpreting coal-forming depositional environments. Coal samples from cores and cuttings were analyzed for gas content and desorption rates, ash and sulfur contents, and other coal properties. Preliminary analyses show gas contents ranging from 50 to 300 scf/ton across eastern Kansas. Coal qualities also vary dramatically between coals and between geographic locations. The cores presented show representative coal sequences that are currently producing coalbed methane and are active exploration targets in Kansas.