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### **Coal Bed Methane and Sudden Blowout**

Large amounts of gas (mainly methane) are produced during the coalification process - more gas than the coal can hold. Some of this gas escapes into other rocks or into the atmosphere and some of it remains in the coal. Coal is an excellent reservoir for gas. The gas content of coal increases with depth (below drainage) and rank of the coal.

Permeability in coals is created by naturally occurring fractures referred to as cleats. Coal is commonly an aquifer because the cleats are generally saturated with water. Methane is locked in coal by the water in cleats and is usually undetected by conventional gas-well drilling technology. To release gas from the coal beds, large quantities of water must be pumped out. Environmentally acceptable methods to dispose of this water must be determined for each specific operation. Coal bed methane is produced in association with mining.

There are many ways to develop coal bed methane gas. One method is to simply drill a well to the coal seam, fracture the coal, pump out the water, and connect the well to a gas pipeline. Some success has been achieved when the drilling is coordinated with mining of the coal. Wells are drilled down to the coal bed (or just above it) where some gas is produced upon drilling. The coal is mined out and the roof collapses, creating a large void of collapsed rock (called “gob”) that may intersect coal beds above the main bed. Gas accumulates in the gob and is pumped out by the existing gas wells. Another variation of this post-mining gas extraction is the drilling of gas wells into abandoned underground mines. Many of these old underground mines are filled with methane and other gases that blend with the air already in the mine. This gas can be produced, but is generally of lower quality.

The potential of coal bed methane from the coals is poorly known. The Kentucky Geological Survey has experience on both natural gas and coal resources that can be pertinent for future development.