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## Coalbed Methane Potential in Texas

### Abstract:

The natural gas that is retained by coalbeds in the subsurface is commonly referred to as coalbed methane (CBM). It is also known as coal mine methane (CMM) when it is liberated during mining operations. Gases are generated in-situ during coalification and some are adsorbed on the coal's internal surface area. CBM production now accounts for approximately 8% of the total natural gas production in the United States and is rapidly growing. CBM is produced commercially in many basins in the United States, with the potential for commercial production in other areas, notably the Gulf Coast Basin of Texas.

Coals have a much larger storage capacity for natural gas than porous sandstones or carbonates, meaning that a large resource of coal can contain extremely large volumes of natural gas. However, in addition to gas content, several key factors influence the commercial producibility of coals, most notably permeability, rank of the coal and its thickness and lateral extent. A detailed geologic assessment of the coal and coalbed methane resource is a critical component of CBM prospect development and evaluation.

In Texas, coals ranging in age from Pennsylvanian to Eocene and in rank from lignite to bituminous have potential for CBM production. Wells have been drilled in South Texas to test Cretaceous Olmos coals, in Central Texas to test Eocene Wilcox coals and in West Texas to test Pennsylvanian coals. It is very early in the evaluation stage and CBM has yet to be proved commercial in Texas; however, the potential for commercial CBM production is high.

As with "conventional" natural gas, a producer/developer may sell CBM to the natural gas market or use it onsite for power generation. In addition to those options, CBM can be produced in conjunction with CO<sub>2</sub> sequestration from power generation

facilities and can qualify for greenhouse gas credits and severance tax credits. CBM production has project issues that are similar to conventional natural gas production, with the key issue typically being disposal of produced water.

### Biographical Sketches

**JOHN C. GRIFFITHS** the President of Calvin Resources, Inc., is a Certified Petroleum Geologist with over 26 years experience in resource management, generation, evaluation and financing of exploratory and development projects, and asset evaluation for acquisition or divestiture. Mr. Griffiths graduated from the University of Texas and started his career as an exploration geologist for Texas Oil & Gas Corp. in Houston in 1975.

**RAYMOND C. PILCHER** is President of Raven Ridge Resources, Incorporated. Mr. Pilcher received a BS in geology from University of Texas at Austin in 1975. He has worked more than 25 years in petroleum and mining industries. His experience includes domestic and international exploration and development, project planning and management, economic evaluation, and corporate planning and development. During the last decade, he has led or participated in numerous domestic and international projects undertaken to develop coalbed methane and coal mine gas and other energy resources for a variety of private sector clients as well as public entities including U.S. EPA, UNDP, APEC, and The World Bank. He has worked and traveled extensively in Western and Eastern Europe, the former Soviet Union, and Asia. Mr. Pilcher is actively leading Raven Ridge toward developing equity positions in international and domestic coalbed and coal mine methane projects. He is a member of the Board of Directors for two companies in which Raven Ridge is a substantial stockholder, CBM Energy Limited and Gas Separation Technology, LLC. □