Factors to Consider when Choosing Stimulation Methods for Coalbed Methane Completions

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SUMMARY

Coal is the most abundant hydrocarbon on the planet and locked within these reservoirs is almost 7500 Tcf of natural gas of which about 1000 Tcf is estimated to be currently technically recoverable. Current natural gas production from Coalbed Methane reservoirs, CBM, represents 10.0% of annual U.S. natural gas production with over 20,000 producing coalbed methane wells in 12 states. This is remarkable when one considers that, prior to about 1989, CBM contributed essentially nothing to US domestic gas production.

The significance of coalbed methane will increase as demand increases and supply of conventional natural gas dwindles, in not only US, but rest of the world.

To facilitate production of natural gas from CBM wells several stimulation techniques have been applied. Some typical methods are hydraulic fracturing, under-reaming, and cavitation. These methods have been successfully (and unfortunately unsuccessfully) employed.

One of the keys to insure success of any stimulation technique is proper understanding of how reservoir physical and chemical parameters influence production.

We will take this opportunity to review how the stimulation strategy chosen is affected by particular formation characteristics.