

Formation Damage Issues Impacting the Productivity of Tight Gas Producing Formations

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ABSTRACT

Very low in-situ permeability gas reservoirs ($K_{gas} < 0.1$ mD) are very common and represent a major portion of the current exploitation market for unconventional gas production. Many of these reservoirs exist regionally in Canada and the United States and also on a worldwide basis. These reservoirs have many unique challenges associated with the drilling and completion practices required in order to obtain economic production rates. Formation damage mechanisms affecting these very low permeability gas reservoirs, with a particular emphasis on relative permeability and capillary pressure effects (phase trapping) will be discussed in this paper. Examples of reservoirs prone to these types of problems will be reviewed, and techniques which can be used to minimize the impact of formation damage on the productivity of tight gas reservoirs will be presented.