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In-situ Estimation of Unpropped Fracture Conductivity in Shale and Assessing its Role during Stimulation and Production

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Abstract

Formation productivity is determined by the matrix quality (the permeability, organic content, etc.) and by the formation "frac'ability." The frac'ability of a formation is the degree to which injection can create a large and productive fracture network. Considerable disagreement exists about what parameters control frac'ability. The term "brittleness" is often used to refer to formation frac'ability, but this is a rather ill-defined term. Yang et al. (2013) compared a variety of brittleness indices defined in the literature and found that they were not well-correlated when compared against each other.