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Completion Diagnostics Is it Your Completion? or Is it Your Rock?

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Proper fluid and proppant placement are crucial to a successful propped fracture stimulation. Numerous completion diagnostic technologies are available to characterize the placement of the treatment. Until recently, characterization of frac fluid clean-up could only be simulated in the laboratory and anecdotally monitored in the field. A technique utilizing a family of unique, environmentally friendly, fracturing-fluid compatible, chemical tracers has now been developed for quantifying segment-by-segment recovery for individual fracturing treatments and stage-by-stage recovery for multi-stage fracturing treatments. Case histories demonstrate that individual, chemically differentiated and/or proppant-differentiated fracturing treatment segments are not being effectively covered. It has also been demonstrated that the chemical make-up and/or the proppant scheduling of these individual fracturing fluid segments may be detrimentally affecting not only their incremental clean-up, but ultimately the production contribution from the corresponding portions of the fractured reservoir. The validation of improvements in fracturing fluid clean-up and production enhancement resulting at least in part from changes in the chemistry of the fracturing fluids and/or changes in proppant scheduling are demonstrated using tracer technology. It will be demonstrated that this completions diagnostic tool can be used for determining well interference.

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