

Hydrofracturing for Low Temperature Waxy Reservoirs: Problems and Solutions

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Abstract : Hydrofracturing is the most prominent but at the same time expensive, highly skilled and time consuming well stimulation technique. Due to high cost and skilled labor involved, it is generally carried out as the consummate solution among other well stimulation techniques. Considering today's global petroleum market, no gaffe or complications could be entertained during fracturing, as it would further hamper the current dwindling economy. The literature would be dealing with the challenges encountered during fracturing low temperature waxy reservoirs and the prominent solutions to overcome such teething troubles. During fracturing treatment for, shallow and high freezing point waxy oil reservoirs, the first line problems are to overcome uncompleted breakdown, uncompleted cleanup of fracturing fluids and cold damages to the formations by injecting cold fluid (fluid at ambient conditions). Injecting fracturing fluids at ambient conditions have the tendency to decrease the near wellbore reservoir temperature below the freezing point of oil reservoir and hence leading to wax deposition around the wellbore thereby hampering the fluid production as well as fracture propagation. To overcome such problems, solutions such as hot fracturing fluid injection, encapsulated heat generating hydraulic fracturing fluid system, and injection of wax inhibitor techniques would be discussed. The paper would also be throwing light on changes in rheological properties occurred during heating fracturing fluids and solutions to deal with it taking economic considerations into account.

Keywords : hydrofracturing, waxy reservoirs, low temperature, viscosity, crosslinkers

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