

عنوان مقاله:

EXPERIMENTAL STUDY ON MEMBRANE EFFICIENCY OF SHALES THROUGH PORE PRESSURE
.TRANSMISSION MEASUREMENTS

محل انتشار:

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خلاصه مقاله:

Membrane efficiency (ME) in shale drilling particularly with water-based drilling fluids (WBDFs) has gained strong research attention due to the impact of oil-based drilling fluids on the environment and the legal challenges it presents. A suite of experiments has been conducted on selected bio-based plants containing surfactant property. These surfactants are used to formulate water-based drilling fluids and their performances tested through a pore pressure transmission test. Results indicated that the type of membrane enhancer used in WBDFs affects the membrane efficiency of the shale-mud system. It also revealed that the saponin amount in the crude bio-surfactant used for the mud formulation correlates directly with the membrane efficiency and indirectly with the crude bio-surfactants critical micelle concentration (CMC). Crude bio-surfactant particle size was found to have an impact on membrane efficiency at low permeabilities than at high permeabilities. Depending on the bio-surfactant used membrane efficiencies were improved over several degree of percentages with the least improvement of ۳۵%

کلمات کلیدی:

Shale; Bio-Muds; Shale Instability; Pore Pressure; CMC

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