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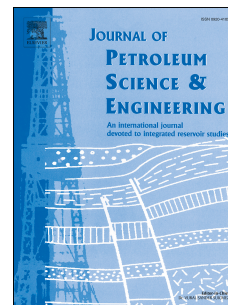
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Effect of Cationic Copolyelectrolyte Additives on Drilling Fluids for Shales

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ABSTRACT

Wellbore instability remains one of the major challenges in terms of both time and economy during drilling. The issue is more pronounced in reactive shale formations. A set of polytertiary amines (PTA)-*ran*-polyquaternary amines (PQA) polymers possessing different ratios of tertiary amine to quaternary amine (0:100, 40:60, 60:40, mol:mol) segments were synthesized and their efficacy towards the wellbore stability of shale reservoirs were ascertained. When added in similar weight proportions, the copolymer possessing 60:40 (mol:mol) ratio of tertiary to quaternary amine moieties (PTA-*ran*-PQA-64) enhanced the apparent ($\geq 58\%$) and plastic ($\geq 71\%$) viscosities of silicate drilling fluid to maximum extent. The amount of API filtrate

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