



Enhancing Gas and Oil Production with Zeta Potential Altering System – SPE128048

Presented by Jose Garza

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Faulkner County Natural Resource Center – 110 S. Amity Rd – Conway, AR 72032

Jose Garza is the Western Hemisphere Technical Advisor for Weatherford Fracturing Technologies. He has 10 years of fracturing experience, in Texas and Oklahoma, as a Field engineer, District engineer, and a Technical Advisor. He earned his B.S. in Natural Gas Engineering from Texas A&M University – Kingsville.

The presentation discusses laboratory studies and field results of a Zeta Potential Altering System (ZPAS) used in hydraulic fracturing treatments. Laboratory and field results show ZPAS minimizes proppant flow back, controls fines migration, enhances fluid load recovery, and inhibits calcium carbonate scale formation. This system, based on an inner salt, modifies the zeta potential of particles such as frac sand and formation substrate, changing the charge towards neutral values and therefore enhancing particle agglomeration. A variety of oil and gas formations can be treated by incorporating the new chemical additive into stimulation fluids. The chemical additive can be applied on the fly using several fluid systems to deliver the product. It is capable of treating proppants such as white and brown sand as well as ceramic proppants in any mesh size allowing flexibility in treatment design. A multi-well comparison of fractured wells, treated with ZPAS and of offset wells without the chemical, has been made in the Des Moines Granite Wash formation of the Texas Panhandle. In this study, results show wells treated with ZPAS had no significant proppant flowback compared to non-treated wells. In one case, a significant difference in production was observed from the ZPAS treated well compared to the untreated well.



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