



Deep Reach Through Acid Encapsulation and Wormhole Propagation Sprint Project - DHRTC

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Deep Reach Through Acid Encapsulation and Wormhole Propagation Sprint Project - DHRTC

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Acid Injection into carbonate reservoirs is a popular well stimulation method to improve the formation permeability and enhance oil production. Acid injection leads to wormhole creation and propagation which can bypass the damage zone. Wormhole creation and propagation depends on the acid injection rate and dissolution rate of the rock in acid. At an optimal injection rate, dominant wormholes are formed which correspond to a minimum volume of acid required. Lower dissolution rates lead to deeper acid penetration into the formation.

The main objective of the project is to compare acid penetration and wormhole propagation in chalk samples (with and without cavity) using 3 different acidizing fluids (15% HCl, 10% Acetic Acid & Mixture of 15% HCl & 10% Acetic Acid). Initial test are carried out at normal temperature and pressure conditions. Key experiments performed are a soaking experiment, where acid is left stationary in a core and an acid injection experiment using a core flooding setup. Experiments are followed by CT Scanning, in order to elucidate the results.