

## عنوان مقاله:

Experimental Investigation of Possible Scale Formations during Water Injection Process with an Emphasis on the Role of Reservoir Rock

## محل انتشار:

هفتمین کنگره ملی مهندسی شیمی (سال: 1390)

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## خلاصه مقاله:

Water incompatibility is one of important aspects of water injection projects that may cause severe formation damage and permeability impairment in case of poor design. It can lead to reduction in permeability and injectivity and consequently rise in costs of operation and work over. Therefore, a suitable study on compatibility of injection and formation waters prior to field application seems mandatory. This paper investigates this phenomenon in two parts; first, formation and injection waters are put together at high pressure and temperature representative of the reservoir conditions then the changes in water compositions and the types of scales precipitated are investigated. Second, the effect of presence of reservoir rock on the scale precipitation of formation and injection water mixtures is investigated. According to the results, the presence of reservoir rock plays an important role in scale formation and precipitation. In other words, the scale precipitations caused by changes in thermodynamic conditions could be different for the case in contact with reservoir rock from the case not in contact with it. Here, scales of calcium carbonate type and, in case of high sulfate concentration cases, scales of calcium sulfate type could be observed because of calcite structure of the rocks considered. Finally, the experiments of core flooding in addition to static experiments (jar tests) to investigate water compatibility issue seem necessary.

## کلمات کلیدی:

Water Incompatibility, Formation Damage, Scale Precipitation, Injectivity Impairment

## لینک ثابت مقاله در پایگاه سیویلیکا:

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