

1) Brief History of Hydraulic Fracturing The first attempts at fracturing formations for the purpose of improving production were not hydraulic in nature – they involved the use of high explosives to break the formation apart and provide "flow channels" from the reservoir to the wellbore. There are records indicating that this took place as early as 1890. This type of reservoir stimulation reached its ultimate conclusion with the experimental use of nuclear devices to fracture relatively shallow, low-permeability formations in the late 1950s and early 1960s. By the late 1930s, acidizing had become an accepted well development technique. Several practitioners observed that above a certain "breakdown" pressure, injectivity would increase dramatically. In 1940, Torrey recognized the pressure induced fracturing of formations for what it was. His observations were based on squeeze cementing operations. It is probable that many of these early acid treatments were in fact acid fractures.