

D. W. Hardin No. 1

Ran 5-1/2" Baker Model K 2-B retainer on 2-3/8" tubing. Set retainer at 4088'. Tested retainer, 7" casing, 5-1/2" liner, and blow out preventor with 900#. Pumped water into formation 2-1/2 bbls per min at 1000#. Mixed 101 sacks reg cement. Squeezed perforations at 4138-4144' and 4152-4162'. Squeezed 14 sacks cement into formation. Max pressure 2890#. Casing pressure 900#. Reversed out 86 sacks. Left 1 sack cement above retainer. Top cement 4074'. Tested squeeze job with 900#. Perforated 5-1/2" liner from 4005-4071' by Perforating Guns with 4, 1/2" Jet Holes per foot. Ran 128 Jts 2-3/8" tubing without flow valves. Set at 4056.05'. Swabbed 18 bbls water and swabbed dry. Swabbed 2 bbls BS&W, well swabbed dry. Treated thru 2-3/8" tubing with 1000 gals 15% LT NE acid by Chemical Process. Inj rate 21 gals per min. Treating time 48 min. Duration 55 min. Tubing pressure 1500-2100#. Casing pressure 500-1900# packer pressure applied. Flushed tubing with 15-1/2 bbls oil. Swabbed 15-1/2 bbls load oil, 1 bbl new oil 15 hours. Treated formation with 3000 gals 15% NE acid thru tubing perforations at 4052'. Inj rate 77 gals per min. Treating time 39 min. Duration 1 hour. Tubing pressure 1600-2025#. Casing pressure 500-1950# packer pressure applied. Flushed tubing with 16 bbls oil. Swabbed 16 bbls load oil, 63 bbls acid residue 20 hours. Well kicked off and flowed 37 bbls oil above load, 9 bbls acid residue 24 hours. Flowed 32 bbls oil, 6 bbls acid residue 24 hours. Gas Volume 93,000 cu ft. Gas Oil Ratio 2916/1. Allowable increased to 32 bbls oil per day effective 1-5-54. Treated formation with 6000 gals 15% LT NE acid. Inj rate 193 gals per min. Treating time 31 minutes. Duration 40 min. Tubing pressure 1900-400#. Casing pressure 500-2100# packer pressure applied. Flushed tubing with 16 bbls oil. Swabbed 16 bbls load oil, 5 bbls new oil 1/2 hour. Well kicked off and flowed 175 bbls oil, 143 bbls acid residue, 175 bbls water 7 hours. Well died. Swabbed 10 bbls oil, 10 bbls water 1 hour. Well kicked off and flowed 198 bbls oil, 574 bbls water 14 hours estimated. Pulled tubing and packer. Ran Howco DM retainer on tubing and set at 3989'. Pumped 201 bbls oil in casing annulus and tubing to displace water in hole thru perforations in liner. Pumped 250 gals kerosene ahead of cement. Mixed 100 sacks reg cement with 525 gals kerosene and 7 gals DOC #1. Squeezed perforations from 4005-4071' with 100 sacks cement. 33 sacks into formation. Max pressure 3500#. Casing pressure 1000#. Reversed out 45 sacks cement. Found top retainer at 3987'. Drilled 1-1/2' and retainer started down hole. Pushed retainer to 4070'. Circulated hole 3 hours. Set tubing at 4056' with perforations at 4050-4052'. Swabbed 44 bbls load oil, 57 bbls water 7 hours. Top fluid 2000'. Swabbed 79 bbls oil (load), 57 bbls water 24 hours. Top fluid 2500'. Dumped 12 gallons Hydromite with water running in hole. Filled to 4062'. Dumped 6 gals Hydromite. Filled to 4046'. Ran 128 Jts tubing set at 4046'. Swabbed 1 bbl load oil, 14 bbls water 7 hours. Top fluid 4000'. Treated formation with 500 gals 15% LT NE acid. Inj rate 9.26 gals per min. Treating time 54 min. Duration 2 hours 20 min. Tubing pressure 1000-1600#. Casing pressure 1000-1700# packer pressure applied. Flushed tubing with 16 bbls oil. Swabbed 45 bbls load oil, 12 bbls acid residue 11 hours. Top fluid 3950'. Treated formation with 1000 gals 15% LT NE acid. Inj rate 71 gals per min. Treating time 14 min. Duration 25 min. Tubing pressure 500-1500#. Casing pressure 500-1700# packer pressure applied. Flushed tubing with 16-1/2 bbls oil. Swabbed 22 bbls load oil, 24 bbls acid residue 19 hours. Top fluid 3850'. Well flowed 18 bbls load oil, no water 21 hours.

Flowed 12 bbls oil, no water thru 2-3/8" tubing 24 hours. Gas Volume 13.0 mcf. GOR 1083/1. Schedule Allowable 32 bbls exempt effective 1-5-54. Daily Average Production before workover 2 bbls oil, 108 bbls water for the month of Nov. 1953.