

Failed to circulate. Pumped 135 BW down casing thru perforations @ 4200'. Failed to circulate. Pumped 120 BW down tubing thru casing perforations @ 4860'. Failed to circulate. Shut in.

Pulled 2 1/2" tubing & packer. Rigged up casing pullers. Welded 5 1/2" x 2" lift nipple to casing. Pulled w/30,000# but failed to move casing. Pulled 287,000# on casing. Worked slips free & removed same. Ran Dia-Log free point indicator, found casing free down to 3600'. 11 point drop @ 4618', 34 point drop @ 4625', zero reading @ 4700'. 5 1/2" casing weight 180,000#. Obtained 9" stretch w/290,000# pull (including weight of casing). Ran 4 joints 2 1/2" tubing w/retrievable cementer. Set @ 4475'. Pumped 150 BW down tubing while moving casing up & down. Failed to circulate between perforations 4200' & 4860'. Shut well in.

Pulled tubing & 5 1/2" nipple & retrievable cementer. Set 5 1/2" CI Baker 2-A cement retainer @ 4845'. Ran 2 1/2" tubing & engaged cement retainer. Pumped into casing perforations @ 4860' w/water. Mixed 400 ex. cement. Pumped 15 bbls. cement thru casing perforations @ 4860'. Pressure increased to 2000 psi. Pumped 5 bbls. cement @ 2000 psi. Cleared perforations w/10 BW. After WOC 24 hours pumped into casing perforations @ 4860' @ 1800 psi & 2 3/4 b/m w/water. Mixed 100 ex. cement. Pumped 10 bbls. cement thru casing perforations @ 4860' & pressure increased to 2000 psi. Finished pumping 100 ex. cement @ 2000 psi. Cleared perforations w/10 BW. After WOC 24 hours pumped water into casing perforations @ 2 b/m w/2200 psi. Mixed 100 ex. cement. With 7 bbls. cement in formation pressure dropped 2200 - 1400 psi. With 13 bbls. in formation pressure gradually increased to 2600 psi. Final pressure 2600 psi. Cleared perforations w/10 BW. After WOC 24 hours pumped into casing perforations w/water @ 1 3/4 b/m w/2900 psi. Mixed 100 ex. cement. With 4 bbls. in formation pressure decreased to 2200 psi. With 9 bbls. in formation pressure dropped to 3300 psi. With 16 bbls. in formation pressure built up to 4400 psi. With 20 bbls. in formation pressure 3400 psi. Final pressure 3400 psi. Cleared perforations w/10 BW. After WOC 24 hours pumped water into casing perforations @ 4860' @ 1.5 b/m w/3200 psi. Mixed 100 ex. cement. With 5 bbls in formation pressure decreased to 2100 psi. With 20 bbls. in formation pressure increased to 2800 psi. Cleared perforations w/10 BW. After WOC 48 hours pumped into casing perforations @ 4860' w/water @ 3300 psi & 1 1/2 b/m. Mixed 100 ex. cement. With 7 bbls. cement in formation pressure bled to 2200 psi. Pressure gradually increased to 3200 psi w/20 bbls. in formation. Final pressure 3200 psi. Cleared all perforations w/10 BW. After WOC 72 hours pumped into casing perforations @ 4860' w/water @ 1 1/2 b/m w/3200 psi. Pumped 10 BO down tubing followed by 50 ex. DOC slurry + 50 BO + 100 ex. regular cement. DOC on formation @ 2900 psi. With 6 bbls. cement in formation pressure decreased to 2300 psi. Pressure gradually increased to 4000 psi w/20 bbls. cement in formation. Final pressure 4000 psi. Ran junk basket to 4830'. Perforated @ 4615' w/4 holes. Ran Baker cement retainer & set @ 4600'. Pumped into formation thru casing perforations @ 4615' w/water @ 2600 psi & 2 1/4 b/m followed by 250 gallons 10% MCA & 100 ex. cement. With 4 bbls in formation pressure 3400 psi, broke to 1000 psi. With 11 bbls. in formation recovered returns thru Bradenhead. With 20 bbls. in formation pressure 2400 psi. Final pressure 2400 psi. Pulled tubing & stinger. After WOC 48 hours drilled cement to 4634'. Perforated 5 1/2" casing 4621' - 4622' w/4 jet shots per foot. Set 5 1/2" Baker 2-A CI cement retainer @ 4595'. Pumped into casing perforations @ 4621' w/water @ 2500 psi @ 2 1/4 b/m. Mixed 100 ex. cement. With 4 bbls. in formation pressure decreased to 1600 psi. Gradually increased to 2800 psi w/20 bbls. in formation. Final pressure 2800 psi. Pulled tubing. Drilled cement to 4845'. Perforated 5 1/2" casing 4806' - 4830' & 4838' - 4832' w/4 jet shots per foot. Treated perforations w/2000 gallons 10% MCA. Loaded casing annulus w/76 BO. Pumped 20 BO into formation. Treated thru casing perforations via 2 1/2" tubing w/20,000 gallons gelled lease crude (Control-frac) containing 1/20#/gallon fluid-loss additive & 1#/gallon sand. Overflushed w/140 BO.

After recovering load pumped 61 BOPD + 75 BW w/11-64" SPM. GOR 511.

