

COMPLETION REPORT

2-14-94 Rigged up the Western Company. Pressure tested casing and frac valve to 2800 psi. Held OK for 5 minutes. Rigged up Blue Jet wireline (Gamma Ray, CLL, and CBL logs had been run earlier to test their tools). Perforated the Pictured Cliffs interval with 4" casing gun having 0.50" holes and 2 JSPF as follows:

1432 - 1444 12 ft 25 holes

Broke down the perforations at 1850 psi. Established an injection rate into the perforations of 6.4 BPM at 900 psi, with an ISIP of 500 psi, decreasing to 350 psi. Acidized the Pictured Cliffs interval with 500 gallons of 7 1/2% DI HCl weighted acid containing 38 1.1 s.g. RCN ball sealers at 5.3 BPM at 600 psi. Saw good action when the balls hit the perforations. Did not obtain a balloff. Final injection rate was 1.5 BPM at 2500 psi, with an ISIP of 400 psi (0.71 psi/ft frac gradient). Ran junk basket on wireline and recovered 35 ball sealers. Fracture stimulated the Pictured Cliffs interval down the casing with 20,000 gallons of fluid (with 2% KCl) containing 3,000 gallons of 30# X-linked borate gelled fluid pad and 17,000 gallons of 70 quality foam using 30# X-linked borate gelled fluid containing 53,000 lbs of 16-30 mesh sand as follows:

3,000 gals of 30# X-linked fluid pad	15 BPM @ 650 psi
5,000 gals of 70 qual foam-30# X-linked fluid with 0-4 ppg (ramped) 16-30 sand	15 BPM @ 1100 psi
12,000 gals of 70 qual foam-30# X-linked fluid with 4 ppg 16-30 sand	15 BPM @ 1050 psi
1,350 gals of 70 qual foam-30# X-linked gelled fluid flush	15 BPM @ 950 psi

JOB PROBLEMS: We had a spacer of nearly 0 ppg during the middle of the 4 ppg stage do to problems changing out sand trucks. The job was cut short (even though the correct amount of sand was pumped as the job described) do to the blender sanding off because of sand slug.

Initial shutin pressure was 850 psi, decreasing to 800 psi after 15 minutes. Average rate pumped was 15 BPM with an average pressure of 1000 psi. Average nitrogen rate pumped was 4500 SCFM. Total nitrogen pumped was 140,000 SCF. Total load fluid to recover is 270 barrels. Left well shutin for 3 hrs. Opened well to flow through a 1/4" choke to a steel tank. Well flowing to cleanup after frac.