

RECOMMENDED PROCEDURE

1. Rig up. Kill well if necessary w/fresh water treated w/2% KCl and 1 gal./1000 gals. Adomall. Tag TOF @ \pm 3750'. POOH w/tubing.
2. G.I.H. w/spearing tool, drill collars, and 2 7/8" 6.5# EUE tubing. Fish 3 joints 2 3/8" 4.7# EUE tubing and POOH.
3. Rig up logging service. Run GR-CNL-CCL Log from PBD (3870') to \pm 2500'.
4. Send logs to Division Office for evaluation.
5. G.I.H. w/CIBP on wireline. Set CIBP @ \pm 3738'. Pressure test CIBP to 1500 psi for 30 minutes.
6. G.I.H. w/2 7/8" tubing. Spot 168 gallons (4 bbls.) 15% NE-HCl Acid from 3733' to 3561'.
7. Rig up Welex Perforating Service or equal. G.I.H. w/Welex 3 1/8" SSB (or equal) hollow carrier centralized select fire casing gun, 180° phasing, 2 JSFF, EHD 0.35". Perforate Lower Queen Formation @ 3595', 3611', 3681', 3696', 3693', 3710', 3717', 3733' (16 Holes). Shoot bottom perf. first, then shoot top to bottom. Casing collars to be determined from GR-CCL Log run above.
Note: Top of 4" liner @ 3739'.
8. G.I.H. w/retrievable treating packer, and 2 7/8", J-55 tubing. Set packer @ \pm 3500'. Breakdown Queen Perforations w/1600 gallons (38.1 bbls.) 15% NE-FE-HCl @ 8 BPM utilizing 32 - 7/8" RCN ballsealers. Release 4 ballsealers every 200 gallons (4.8 bbls.).
9. Shut well in for 15 minutes. Swab back acid water. Run packer down through perforations to free ballsealers. Set packer at 3450'.
10. Rig up fracturing service. Fracture treat Lower Queen Perforations @ 3595'-3733' w/the following treatment @ 16 BPM through 2 7/8" tubing.
Estimated Surface Treating Pressure = 3500 psi.
Maximum Allowable Surface Pressure = 6500 psi.
 - A) 2000 gals. (48 bbls.) gelled fluid pad.
 - B) 1000 gals. (24 bbls.) frac fluid w/1/2 PPG "20-40" mesh sand.
 - C) 1000 gals. (24 bbls.) frac fluid w/1 PPG "20-40" mesh sand.
 - D) 1000 gals. (24 bbls.) frac fluid w/1 1/2 PPG "20-40" mesh sand.
 - E) 2000 gals. (48 bbls.) frac fluid w/2 PPG "20-40" mesh sand.
 - F) 2000 gals. (48 bbls.) frac fluid w/2 1/2 PPG "20-40" mesh sand.
 - G) 3000 gals. (71 bbls.) frac fluid w/3 PPG "20-40" mesh sand.
 - H) 3000 gals. (71 bbls.) frac fluid w/3 PPG "10-20" mesh sand.
 - I) Drop 8 - 7/8" RCN ballsealers at tail of "10-20" mesh sand.
 - J) Repeat steps (A) through (H).
 - K) Flush to 100' above top perforation.

Total Gelled Fluid Volume - 30,000 gals. (714 bbls.)
Total Frac Sand Weight - 59,000#
Average Sand Concentration - 2.27 PPG
11. Record ISIP and @ 5 minute intervals for 15 minutes. SION. Swab well to test. Report results to Division Office.
12. POOH w/2 7/8" tubing and retrievable packer.
13. G.I.H. w/2 7/8" tubing and S.N. Cleanout to \pm 3740'. Set tubing @ 3720' w/S.N. @ \pm 3690'.
14. R.I.H. w/rod string and pump. Place well on production test. Report results to Division Office.

GELLED FLUID COMPOSITION

- A) 30#/1000 gals. Gelling Agent
- B) 5#/1000 gals. Ph Control
- C) 170#/1000 gals. KCl Clay Swelling Control
- D) 25#/1000 gals. Adomite Aqua FLA
- E) 2 gals./1000 gals. Fluorocarbon Surfactant
- F) 1#/1000 gals. Breaker
- G) 1 gal./1000 gals. Complexer