

RECOMPLETION PROCEDURE
 WARN STATE A/C 3 NO. 10
 Vacuum Field
 Lea County, New Mexico
 Page No. 2

11. RD lubricator, frac valve and wireline unit.
12. RIH w/2-7/8" tubing to 7,750'. Circulate hole clean w/2% KCl water. Pressure test CIBP to 1,000 psig.
13. PUH to 7,500'. Spot 840 gal 15% HCl acid from 7,510' to 6,638'. POOH.
14. RU wireline company and full lubricator.
15. Load casing w/2% KCl water and pressure test lubricator to 1,000 psig.
16. RIH w/4" casing guns and CCL. Perforate Blinbry F/6,684'-6,687', 6,690'-6,694', 6,707'-6,717', 6,720'-6,732', 6,734'-6,741', 6,852'-6,858', 6,884'-6,890', 6,895'-6,897', 6,971'-6,973', 6,976'-7,984', 6,992'-6,998', 7,002'-7,012', 7,014'-7,016', 7,042'-7,046', 7,048'-7,052', 7,064'-7,069', 7,072'-7,074', 7,084'-7,088', 7,090'-7,092', 7,094'-7,097', 7,112'-7,122', 7,124'-7,136', 7,142'-7,148', 7,153'-7,155', 7,158'-7,164', 7,178'-7,183', 7,190'-7,196', 7,256'-7,274', 7,290'-7,294', 7,304'-7,310', 7,315'-7,322', 7,328'-7,330', 7,334'-7,338', 7,342'-7,351', 7,372'-7,376', 7,392'-7,413', 7,418'-7,423', 7,428'-7,432', 7,438'-7,442', 7,469'-7,474', 7,478'-7,484', 7,485'-7,487', and 7,489'-7,496' w/2 SPF (compensated neutron/litho density measurements). Total shots - 514.
17. RD lubricator and wireline unit.
18. RIH w/(1) 2-7/8" overbalance surge valve (set to shear at 11,096 psig differential); (1) 6' 2-7/8", N-80 tbg sub; 5-1/2" treating pkr; SN and 2-7/8", N-80 tbg to 6,640'. Hydrotest tbg to 8,000 psig while going in hole.
19. Set pkr at 6,640'. Flange up tbg to BOP. Install full opening 5K psig frac valve and 15K psig tree saver.
20. Load annulus w/2% KCl water and pressure to 2,000 psig. Install relief valve set for 2,250 psig on annulus.
21. Load tbg w/500 gal 15% HCl acid. Load tbg w/N₂ to a surface pressure of 7,740 psig (=58,300 SCF N₂). Follow w/2% KCl water. Surge valve should shear at a surface pressure of 9,108 psig with 3 bbls of 2% KCl water pumped. Surge valve shear pressure - 11,096 psig. Displace acid w/35 bbls 2% KCl water.
22. Flow back well to frac tank until dead.
23. Release pkr and reset at 7,230'. RU swab and swab test perfs 7,256'-7,496'. Monitor annulus for vacuum. Release pkr and POOH.
24. Run in hole w/5-1/2 RBP, ballcatcher, 5-1/2" treating packer, tubing ball tester, SN and 2-7/8" tubing. Pressure test tubing to 7,000 psig. If swab tests indicate interval 7,256'-7,496' to be oil productive, frac per service company recommendations. If interval is water productive, retrieve RBP and set @ 7,230'. PUH 5' w/packer and set. Pressure test RBP to 1,000 psig. Release packer and set @ 6,934'.
25. If interval 7,256'-7,496' is oil productive frac perfs 6,971'-7,196' per service company recommendations. If interval 7,256'-7,496' is wet, swab test perfs 6,971'-7,196' to determine productive capabilities of interval. If wet retrieve RBP and set @ 6,934'. If oil frac per service company recommendations.