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PLUG and ABANDONMENT PROCEDURE

FLORENCE BERRY UNIT 1

Description

1. Provide 48 hour notice to COGCC prior to rig up per request on approved Form 6 (e.g. call field coordinator, submit Form 42, etc.). Notify Automation Removal Group at least 24 hours prior to rig move. Request they catch and remove plunger, isolate production equipment, and remove any automation prior to rig MIRU.
2. MIRU Slickline. Pull production equipment and tag bottom. Record tag depth in Open Wells. Gyro was run on 02/12/15. RDMO Slickline.
3. Prepare location for base beam equipped rig. Install perimeter fence as needed.
4. Verify COAs before RU.
5. Upon RU, check and record bradenhead pressure. If bradenhead valve is not accessible, re-plumb so that valve is above GL. Blow down bradenhead and re-check pressure the next day. Repeat until pressure stays at 0 psi.
6. MIRU WO rig. Spot a min of 25 jts of 2-3/8" 4.7#, J-55, EUE tbg. Kill well as necessary using biocide treated fresh water. ND WH. NU BOP. Unland tbg using unlanding joint and LD.
7. TOO H and SB 7720' 2-3/8" tbg. LD any remainder.
8. PU and TIH with (4-1/2", 11.6#) Bit and Scraper on 2-3/8" tbg to 7720'. TOO H, SB 7175' of 2-3/8" tbg. LD Bit and Scraper and remaining tbg.
9. MIRU WL. PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 7710'. POOH. RIH and dump 2 sx cement on CIBP. POOH. RDMO WL.
10. TIH with 2-3/8" tbg to 7175'. Load hole with biocide treated fresh water and circulate all gas out of well. PT CIBP to 1000psi for 15 minutes. TOO H and SB 2-3/8" tbg.
11. MIRU WL. RIH and run CBL from 7650' to surface. Forward CBL to Platteville office. Cementing plans may change depending on CBL results.
12. PU and RIH with two 3-1/8" perf guns with 3 spf, min 0.5" EHD, 120° phasing. Shoot 2' of squeeze holes at 7300' and 4' of squeeze holes at 6655'. RDMO WL.
13. MIRU hydrotesters. PU and TIH with (4-1/2", 11.6#) CICR on 2-3/8" tbg to 7175' while hydrotesting to 3000 psi. RDMO hydrotesters. Set CICR at 6685'.
14. Establish circulation to surface with biocide treated fresh water, and pump 100 bbls to clean up hole.
15. RU Cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water spacer. Pump Niobrara Squeeze: 210 sx (56.5 bbl or 318 cf) with 0.25 lb/sk polyflake, assuming 15.8 ppg & 1.51 cf/sk. Underdisplace by 3 bbls. Volume is based on 615' below the CICR inside 4-1/2", 11.6# production casing with no excess, 645' in the 4-1/2", 11.6# annulus assuming 7.88" bit size with 60% excess and 190' on top of the CICR to cover top perfs. RD Cementers.
16. Slowly pull out of the cement and TOO H to 5995'. Reverse circulate using biocide treated fresh water to ensure the tubing is clean. TOO H and SB 4060' of 2-3/8" tbg. LD remaining tbg.
17. MIRU WL. PU and RIH with two 3-1/8" perf guns with 3 spf, min 0.5" EHD, 120° phasing. Shoot 2' of squeeze holes at 4435' and 4' of squeeze holes at 4030'. RDMO WL.
18. PU and TIH with (4-1/2", 11.6#) CICR on 2-3/8" tbg. Set CICR at 4060'.

19. Establish circulation to surface with biocide treated fresh water, and pump 100 bbls to clean up hole.
20. RU Cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water spacer. Pump Sussex Squeeze: 135 sx (36.4 bbl or 204 cf) with 0.25 lb/sk polyflake, assuming 15.8 ppg & 1.51 cf/sk. Underdisplace by 3 bbls. Volume is based on 375' below the CICR inside 4-1/2", 11.6# production casing with no excess, 405' in the 4-1/2", 11.6# annulus assuming 7.88" bit size with 60% excess and 190' on top of the CICR to cover top perms. RD Cementers.
21. Slowly pull out of the cement and TOO H to 3370'. Reverse circulate to ensure no cement is left in the tbg.
22. TOO H and SB 630' of 2-3/8" tbg. LD stinger, and remaining tbg.
23. MIRU WL. PU and RIH with two 3-1/8" perf guns with 3 spf, min 0.5" EHD, 120° phasing. Shoot 2' of squeeze holes at 1000' and 4' of squeeze holes at 630'. RDMO WL.
24. PU and TIH with (4-1/2", 11.6#) CICR on 2-3/8" tbg. Set CICR at 630'.
25. Establish circulation to surface with biocide treated fresh water, and pump 100 bbls to clean up hole.
26. ***THE FOLLOWING TWO PLUGS WILL BE PUMPED BACK-TO-BACK***
27. RU Cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water spacer. Pump Fox Hills Squeeze: 125 sx (33.6 bbl or 189 cf) with 0.25 lb/sk polyflake, assuming 15.8 ppg & 1.51 cf/sk. DO NOT UNDERDISPLACE. Volume is based on 370' below the CICR inside 4-1/2", 11.6# production casing with no excess, 400' in the 4-1/2", 11.6# annulus assuming 7.88" bit size with 60% excess. SB Cementers. Release tbg from CICR.
28. RU Cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water spacer. Pump Stub Plug: 40 sx (10.7 bbl or 60 cf) with 0.25 lb/sk Polyflake, assuming 15.8 ppg & 1.5 cf/sk. Volume is based on 630' in 4-1/2", 11.6# production casing with no excess. The plug is designed to cover 630'-0'. RDMO Cementers.
29. Slowly pull out of the cement and TOO H to 100'. Reverse circulate using biocide treated fresh water to ensure the tubing is clean. TOO H, LD all 2-3/8" tbg.
30. MIRU WL. Tag cement as needed. RIH 4-1/2", 11.6# CIBP to 80'. RDMO WL and WO rig.
31. Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries to rscDJVendors@anadarko.com within 24 hours of completion of the job.
32. Supervisor submit paper copies of all invoices, logs, and reports to VWP Engineering Specialist.
33. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
34. Capping crew will set and secure night cap on 4-1/2", 11.6# casing head, restrain the casing head, pressure test CIBP to 500 psi with hydrotest pump, then remove night cap and casing head restraints.
35. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
36. Welder cut casing minimum 5' below ground level.
37. Fill casing to surface using 4500 psi compressive strength cement (NO gravel).
38. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
39. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
40. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.

41. Back fill hole with fill. Clean location, and level.
42. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.