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PLUG and ABANDONMENT PROCEDURE

HALEY 41-13 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 Slicklineand VES. WELL NEEDS GYRO RUN. Run gyro to 4840', making stops every 100'. RDMO Slickline and VES.
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 2-7/8" 6.5#, J-55, EUE tbg. LOTO Pumping unit. Kill well as necessary using biocide treated fresh water.
7. Unhang rods from pumping unit bridle. ND WH. NU BOP. TOOH and LD rod string.
8. MIRU Slicklineand VES. WELL NEEDS GYRO RUN. Run gyro to 4840', making stops every 100'. RDMO Slickline and VES.
9. Unland tbg. using unlanding joint and LD. Release tbg. anchor. TOOH and SB 4750' 2-3/8" tbg. LD tbg anchor, pump and any remaindign tbg.
10. PU and TIH with (4-1/2", 10.5#) Bit and Scraper on 2-3/8" tbg to 4760'. TOOH, SB all 2-3/8" tbg. LD Bit and Scraper.
11. MIRU WL. PU and RIH with (4-1/2", 10.5#) CIBP and set at +/- 4750' (collars at ' & '). POOH. RDMO WL.
12. TIH with 2-3/8" tbg to 4750’ . Load hole with biocide treated fresh water and circulate all gas out of well. TOOH and SB 2-3/8" tbg.
13. MIRU WL. RIH and run CBL from 4750' to surface. Forward CBL to Platteville office. Cementing plans may change depending on CBL results. RDMO WL. MIRU hydrotesters. TIH with 2-3/8" tbg to 4750’ while hydrotesting to 3000 psi. RDMO hydrotesters. PT CIBP to 1000psi for 15 minutes.
14. MIRU Cementers. Pump Sussex Balance Plug: Pump 20 sx (5.5 bbl or 31 cf), assuming 15.8 ppg & 1.53 cf/sk. Volume based on 290’ inside 4-1/2", 10.5# production casing with no excess. Cement will be from 4750'-4460'. RD Cementers.
15. Slowly pull out of the cement and TOOH to 3960'. Reverse circulate using biocide treated fresh water to ensure the tubing is clean. TOOH and SB 1310' of 2-3/8" tbg. LD remaining tbg.
16. 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 1480' and 4' of squeeze holes at 1280'. RDMO WL.
17. PU and TIH with (4-1/2", 10.5#) CICR on 2-3/8" tbg. Set CICR at 1310'.
18. Establish circulation to surface with biocide treated fresh water, and pump 100 bbls to clean up hole.
19. RU Cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water spacer. Pump Fox Hills Squeeze: 75 sx (20.2 bbl or 114 cf) with 0.25 lb/sk polyflake, assuming 15.8 ppg & 1.51 cf/sk. Underdisplace by 3 bbls. Volume is based on 170' below the CICR inside 4-1/2", 10.5# production casing with no excess, 200' in the 4-1/2", 10.5# annulus assuming 7.88” bit size with 100% excess and 190' on top of the CICR to cover top perfs. RD Cementers.
20. Slowly pull out of the cement and TOOH to 620’. Reverse circulate to ensure no cement is left in the tbg.
21. TOOH and SB 1120' of 2-3/8" tbg. LD stinger, and remaining tbg.
22. MIRU WL. RIH and jet cut 4-1/2", 10.5# casing at 600'. RDMO WL.
23. Attempt to establish circulation and circulate (60 bbl) with fresh water containing biocide to remove any gas.

24. ND BOP. ND TH. Un-land casing using a casing spear, not a lifting sub. Rig max pull shall be 100,000#. Max pull over string weight shall be 50,000#. If unable to unland, contact Engineering.
25. Install BOP on casing head with 4-1/2", 10.5# pipe rams.
26. TOOH and LD all 4-1/2", 10.5# casing. Remove 4-1/2", 10.5# pipe rams and install 2-3/8" pipe rams.
27. TIH with mule shoe and 2-3/8" tubing to 1120'.
28. Establish circulation with biocide treated fresh water and pump one hole-volume (68 bbl).
29. RU Cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water spacer. Pump Stub Plug: 260 sx (69.5 bbl or 390 cf) with 0.25 lb/sk Polyflake, assuming 15.8 ppg & 1.5 cf/sk. Volume is based on 520' in 4-1/2", 10.5# production casing with no excess, 373' in 7.88" bit size w/ 100% excess factor, and 227' in the 8-5/8", 24# surface casing with no excess. The plug is designed to cover 1120'-0'. RDMO Cementers. Notify engineering if circulation is ever lost during job.
30. Slowly pull out of the cement and TOOH to 100'. Reverse circulate using biocide treated fresh water to ensure the tubing is clean. TOOH, LD all 2-3/8" tbg.
31. MIRU WL. Tag cement as needed. RIH 8-5/8", 24# CIBP to 80'. RDMO WL and WO rig.
32. 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.
33. Supervisor submit paper copies of all invoices, logs, and reports to VWP Engineering Specialist.
34. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
35. Capping crew will set and secure night cap on 8-5/8", 24# casing head, restrain the casing head, pressure test CIBP to 500 psi with hydrotest pump, then remove night cap and casing head restraints.
36. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
37. Welder cut casing minimum 5' below ground level.
38. Fill casing to surface using 4500 psi compressive strength cement (NO gravel).
39. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
40. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
41. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
42. Back fill hole with fill. Clean location, and level.
43. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.