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PLUG and ABANDONMENT PROCEDURE

FARLEY 35-23

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. Directional Survey was run on 07/22/06. RDMO Slickline.
3. Prepare location for base beam equipped rig. Install perimeter fence as needed.
4. Verify COAs before RU. Verify Form 17 (State Bradenhead Test) has been run within 60 days of RU. A good PT has less than 10% loss in pressure and stabilization at the end of the test. Test can be extended longer in time if need be. Contact Foreman and Engineer to confirm proceeding after pressure test.
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. Kill well as necessary using biocide treated fresh water. Verify BOP and wellhead rating, inspect for appropriate API standards, pressure test BOP according to VWP BOP testing guidelines. ND WH. NU BOP. Unland tbg using unlanding joint and LD.
7. TOOH and SB 7135' of 2-3/8" tbg. LD remaining 2-3/8" tbg.
8. MIRU WL. PU and RIH with (4-1/2", 11.6#) gauge ring to 7145'. POOH.
9. PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 7135' (collars at 7106' & 7148'). POOH. RDMO WL.
10. TIH with 2-3/8" tbg to 7135’
11. Load hole with biocide treated fresh water and circulate all gas out of well. PT CIBP to 1000 psi for 15 minutes.
12. MIRU Cementers. Pump Niobrara Balance Plug: Pump 25 sx (6.9 bbl or 39 cf) Class G Cement, assuming 15.8 ppg & 1.53 cf/sk. Volume based on 400’ inside 4-1/2", 11.6# production casing with no excess. Cement will be from 7135'-6735'.
13. Pull out of cement at a rate of 1 jt/min. TOOH to 4354', LD 2-3/8" tbg.
14. Pump Sussex Plug: Pump 10 sx (2.8 bbl or 16 cf), assuming 15.8 ppg & 1.53 cf/sk. Volume based on 175’ inside 4-1/2", 11.6# production casing with no excess. Cement will be from 4354'-4179'. Collect wet and dry samples of cement to be left on rig. RDMO Cementers.
15. Pull out of cement at a rate of 1 jt/min. TOOH, SB 970' 2-3/8" tbg. LD remaining tbg.
16. PU and TIH with mechanical cutter on 2-3/8" tbg. Cut 4-1/2", 11.6# casing at 920'. TOOH and LD cutter.
17. Attempt to establish circulation and circulate (67 bbl) with fresh water containing biocide to remove any gas.
18. 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.
19. Install BOP on casing head with 4-1/2", 11.6# pipe rams.
20. TOOH and LD all 4-1/2", 11.6# casing. Remove 4-1/2", 11.6# pipe rams and install 2-3/8" pipe rams.

21. TIH with mule shoe and 2-3/8" tubing to 970'.
22. Establish circulation to surface with biocide treated fresh water and pump at least two hole-volumes (136 bbl) to circulate all gas out of the well. Contact engineering if evidence of gas migration persists.
23. MIRU cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water spacer. Pump Stub Plug: Pump 120 sx (33.2 bbl or 186 cf), assuming 14 ppg & 1.55 cf/sk. Volume is based on 50' in 4-1/2", 11.6# production casing with no excess. 152' in 7.875" bit size open hole with 100% excess factor. 203' in the 8-5/8", 24# surface casing with no excess. The plug is designed to cover 970'-565'. Collect wet and dry samples of cement to be left on rig. RDMO Cementers. Notify engineering if circulation is ever lost during job.
24. Pull out of cement at a rate of 1 jt/min. TOOH to 160'. Reverse circulate using biocide treated fresh water to ensure the tubing is clean. TOOH, SB 670' 2-3/8" tbg. WOC.
25. TIH with mule shoe on 2-3/8" tbg and tag cement to verify appropriate coverage above the surface casing shoe. Pressure test casing to 500 psi and hold for 15 minutes. TOOH to 150', LD 2-3/8" tbg.
26. MIRU Cementers. Pump Surface Plug: Pump 50 sx (10.3 bbl or 58 cf) Class G cement, assuming 15.8 ppg & 1.15 cf/sk. Volume based on 150’ inside 8-5/8", 24# surface casing with no excess. Cement will be from 150' to surface. Verify and document cement to surface. Collect wet and dry samples of cement to be left on rig.
27. Pull out of cement at a rate of 1 jt/min. TOOH, LD all 2-3/8" tbg. PU and TIH with 16' of tbg subs. Top off cement to surface. Circulate clean. RDMO cementers. TOOH and LD tbg subs. RDMO WO rig.
28. 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.
29. Supervisor submit paper copies of all invoices, logs, and reports to VWP Engineering Specialist.
30. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
31. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5’ below ground level.
32. Welder cut casing minimum 5' below ground level.
33. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
34. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
35. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
36. Back fill hole with fill. Clean location, and level.
37. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.