

Engineer: STERLING METZGER

Cell: 330-605-2231

PLUG and ABANDONMENT PROCEDURE

HSR-ARISTOCRAT 13-27A

Step Description of Work

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 isolate production equipment, and remove any automation prior to rig MIRU.
2. MIRU Slickline. Pull bumper spring and tag bottom. Record tag depth in Open Wells. Well has a gyro survey from 11/18/2013. RD slickline.
3. Prepare location for base beam equipped rig. Install perimeter fence as needed.
4. 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.
5. MIRU WO rig. Spot a min of 25 jts of 2-3/8" 4.7# J-55 tbg. Load hole using clean fresh water with biocide to control well. ND WH. NU BOP. Unland tbg using unlanding joint and LD.
6. TOOH and SB 6830' of 2-3/8" tbg. LD remaining tbg.
7. MIRU Wireline. PU and RIH with (4.5", 11.6#) gauge ring to 8090'. TOOH.
8. PU and RIH with (4-1/2" 11.6#) CIBP and set at +/- 8080' to abandon the J sand perms. TOOH. RIH to dump 2 sx on CIBP. TOOH.
9. PU and RIH with 4-1/2" CIBP and set at +/- 7420' to abandon the Nio/Codell perms. TOOH. RIH to dump 2 sx on CIBP. TOOH. RD WL.
10. TIH with 2-3/8" tbg to 2500'. Load hole with biocide treated fresh water and circulate the gas out of the well. PT to 1000 psi for 15 minutes. TOOH. SB all tbg.
11. RU WL. RIH with two 3-1/8" perf guns with 3 spf, min 0.5" EHD, 120° phasing. Shoot 2' of squeeze holes at 7120' and 4' of squeeze holes at 6700'. TOOH. RD WL.
12. PU CICR (4-1/2" 11.6#) on 2-3/8" tbg and RIH while hydrotesting tubing to 3000 psi. Set CICR at 6730'.
13. Establish circulation with biocide treated fresh water (100 bbls) through squeeze holes.
14. RU cementers. Pump Niobrara Squeeze: 10 bbls sodium silicate and 5 bbls fresh water followed 165 sxs (255 cf) w/ polyflake, 15.8 ppg & 1.55 cf/sk. Underdisplace by 3 bbls. Volume based on 290' below the CICR inside 4-1/2" production casing, 320' in the 4-1/2" csg annulus assuming 7.88" bit size with 60% excess, and 193' on top of the CICR. RD cementers.
15. Slowly pull out of the cement and PUH to 6400'. Reverse circulate tubing clean to ensure no cement is left in the tubing. TOOH and SB 4870' tbg. LD Stinger and remaining tbg.
16. RIH to 4870' w/ 2-3/8" tbg and establish circulation with fresh water with biocide.
17. RU Cementers. Pump Sussex Balance Plug: 10 bbls sodium silicate and 5 bbls fresh water followed 40 sxs (47 cf) 15.8 ppg & 1.18 cf/sk. Volume is based on 500' inside 4-1/2" production casing. The plug will cover from 4870'-4370'. RD cementers.
18. Slowly pull out of the cement and PUH to 4100'. Reverse circulate to ensure no cement is left in the tbg.
19. WOC per cement company recommendation. TIH and tag cement. Cement top needs to be at or above 4374' (200' above the SX top at 4574'). Call Engineering if tag is lower than 4374'. TOOH and SB 1620' tbg. LD remaining.
20. RU WL. RIH and cut 4-1/2" casing at 1520'. RD WL.

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21. Circulate with fresh water containing biocide to remove any gas.
22. Un-land casing using a casing spear, not a lifting sub. Max pull shall be 100,000#. If unable to unland, contact Engineering.
23. ND BOP. ND TH. Install BOP on casing head with 4-1/2" pipe rams.
24. TOOH and LD all of 4-1/2" casing. Remove 4-1/2" pipe rams and install 2-3/8" pipe rams.
25. RIH with 2-3/8" tbg to 1620'.
26. Establish circulation with biocide treated fresh water (115 bbls).
27. RU Cementers. 10 bbls (min) SAPP, followed by 20 bbls fresh water spacer. Pump Stub Plug: 275 sxs (319 cf) 0.25lb/sk Polyflake, 15.8 ppg and 1.16 cf/sk. Volume is based on 100' in 4-1/2" production casing with no excess, 560' of 8" OH from caliper with 20% excess, and 200' in 8-5/8" surface casing with no excess. The plug will cover 1620' - 760'. RD cementers.
28. Slowly pull out of the cement and PUH to 500'. Circulate using biocide treated fresh water, to ensure the tubing is clean.
29. WOC per cement company recommendation. TIH and tag cement. Cement top needs to be at or above 910' (50' above the surface casing shoe at 960'). Call Engineering if tag is lower than 910'. PU and TOOH.
30. RU WL. RIH 8-5/8" 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 Evans 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 8 5/8" 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.