

Engineer: Savanna Riebe

Cell: 970-714-0288

PLUG and ABANDONMENT PROCEDURE

CAMENISCH P 04-05

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 catch and remove plunger, isolate production equipment, and remove any automation prior to rig MIRU. |
| 2. | MIRU Slickline and VES. WELL NEEDS GYRO RAN. Run gyro to 7150', 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 1-1/4" 2.33# tbg. Kill well as necessary using clean fresh water with biocide. ND WH. NU BOP. Unland tbg using unlanding joint and LD. |
| 7. | TOOH and SB 7170' 1-1/4" tbg. LD any remainder. |
| 8. | PU and TIH with (2-7/8", 8.7#) Bit and Scraper on 1.25" tbg to 7170'. TOOH, SB 7160' 1-1/4" tbg and LD remaining tbg and bit and scraper |
| 9. | MIRU Hydrotester. PU (2-7/8", 8.7#) hydraulically-set CIBP and TIH while hydrotesting to 3000 psi to +/- 7160' to abandon the Nio/Codell perfs. RDMO Hydrotester. |
| 10. | Hydraulically set CIBP at +/- 7160' (collars at (7146' & 7178')). Release tbg from CIBP. Load hole with biocide treated fresh water and circulate all gas from well. PT CIBP to 1000 psi for 15 minutes. |
| 11. | <u>MIRU cementers.</u> Pump Niobrara Balance Plug: Pump 15 sx (24 cf), assuming 15.8 ppg & 1.55 cf/sk. Volume based on 615' inside 2-7/8" production casing with no excess. Cement will be from 7160'-6545'. RD cementers. |
| 12. | Slowly pull out of the cement and TOOH to 6045'. Reverse circulate to make sure tbg is clean of cement. TOOH LD all 1-1/4" tbg. |
| 13. | MIRU WL. RIH and cut 2-7/8" casing at 4290'. RDMO WL. |
| 14. | Attempt to establish circulation and circulate 200 bbl with fresh water containing biocide to remove any gas. |
| 15. | 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. |
| 16. | Install BOP on casing head with 2-7/8" 8.7# pipe rams. |
| 17. | Establish circulation and circulate 340 bbl with fresh water containing biocide to remove any gas. |
| 18. | <u>RU Cementers.</u> Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water spacer Pump Sussex Balance Plug: 190 sx (223cf) with 0.25 lb/sk Polyflake, 15.8 ppg & 1.17 cf. Volume is based on 400' inside 7-7/8" production hole w/60% excess. Cement will be from 4290'-3890'. RDMO cementers. |
| 19. | Slowly pull out of the cement and TOOH to 3790'. Reverse circulate to ensure no cement is left in the tbg. |

Engineer: Savanna Riebe

Cell: 970-714-0288

PLUG and ABANDONMENT PROCEDURE

CAMENISCH P 04-05

20. TOOH to 860' 2-7/8" csg. LD remaining csg.
21. MIRU WL. RIH and tag cement as needed. RDMO WL.
22. RU Cementers. Pump FHM Plug: 210 sx (242 cf) with 0.25 lb/sk Polyflake, 15.8 ppg & 1.16 cf/sk (313' in 7.88 bit size w/ 60% excess factor, and 200' in 8-5/8" surface casing with no excess). The plug is designed to cover 860'-347' RDMO cementers. Notify engineering if circulation is ever lost during job.
23. Slowly pull out of the cement and TOOH to 100'. Reverse circulate using biocide treated fresh water, to ensure the casing is clean. TOOH, LD all 2-7/8" csg.
24. MIRU WL. Tag cement as needed. RIH 8-5/8" 24# CIBP to 80'. RDMO WL and WO rig.
25. 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.
26. Supervisor submit paper copies of all invoices, logs, and reports to VWP Engineering Specialist.
27. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
28. 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.
29. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
30. Welder cut casing minimum 5' below ground level.
31. Fill casing to surface using 4500 psi compressive strength cement (NO gravel).
32. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
33. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
34. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
35. Back fill hole with fill. Clean location, and level.
36. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.