

Engineer: Christina Cordaro  
Cell Phone Number: 432-209-1371

## PLUG and ABANDONMENT PROCEDURE

### M KURTZ 1

1. Well is being re-entered to P&A well to current standards due to it being offset to upcoming fracs.
2. Provide 48 hour notice to COGCC prior to rig up per request on approved Form 6 (e.g. submit Form 42, etc.).
3. Locate and expose 10 ¾" casing stub. Extend stub to 12" below GL and install 11" SOW, 3M casing head with 3000 psi ball valves in both outlets.
4. Prepare location for base beam equipped rig. Install perimeter fence as needed. Spot in 245 jts of 3-1/2" work string (WS) to location.
5. MIRU Spud rig. NU 9" 3000 psi BOP stack on casing head. PT BOP and casing head. Function test BOP. Install a choke manifold on casing outlet. NU rotating head on BOP. Hook up return line to shale shaker. Ensure full opening 3-1/2" TIW on rig floor.
6. PU 7-7/8" PDC bit, 6-1/2" mud motor, X-Over to workstring.
7. TIH and drill through 10 sx cement plug at surface. Once past cement plug and no cement is seen in returns, perform flow test.
8. Continue drilling to next 50 sx cement plug. TOC estimated to be at 310'. BOC estimated at 425' Once past cement plug and no cement is seen in returns, perform flow test.
9. Continue drilling to next 30 sx cement plug. TOC estimated to be at 4650', BOC estimated at 4750'. Once past cement plug and no cement is seen in returns, perform flow test.
10. Continue drilling until workstring tags next TOC estimated to be at 7580'. If no tag, stop drilling at 7601' and contact engineering for different cement volumes needed.
11. TOOH. LD Workstring. Remove bit and mud motor. TIH workstring with mule shoe to previous TD.
12. RU Cementers. Pump J Sand Balanced Plug: 85 sx (130 cf, 23bl) 15.8 ppg & 1.53 cf/sk cement with 0.25 lb/sk Polyflake. Volume is based on 179' in the 7-7/8" drill bit size with 100% excess. Cement will be from 7580'-7401'. RD cementers.
13. Slowly pull out of the cement and PUH to 7100'. Circulate to ensure no cement is left in the WS.
14. WOC per cement company recommendation. TIH and tag cement. Cement top needs to be at or above 7401'. Call engineering if tag is lower.
15. LD WS while TOOH to 6918.
16. RU Cementers. Pump Niobrara Balanced Plug: 180 sx (275 cf, 49 bbl) 15.8 ppg & 1.53 cf/sk cement with 0.25 lb/sk Polyflake. Volume is based on 400' in the 7-7/8" drill bit size with 100% excess. Cement will be from 6915'-6518'. RD cementers.
17. Slowly pull out of the cement and PUH to 6000'. Circulate to ensure no cement is left in the WS.
18. WOC per cement company recommendation. TIH and tag cement. Cement top needs to be at or above 6518'. Call engineering if tag is lower.
19. LD WS while TOOH to 4260.
20. RU Cementers. Pump Sussex Balanced Plug: 155 sx (275 cf, 49 bbl) 12 ppg cement with & 1.79 cf/sk cement with 0.25 lb/sk Polyflake. Volume is based on 400' in the 7-7/8" drill bit size with 100% excess. Cement will be from 4260'-3860'. RD cementers.
21. Slowly pull out of the cement and PUH to 3400'. Circulate to ensure no cement is left in the WS.

22. WOC per cement company recommendation. TIH and tag cement. Cement top needs to be at or above 3860'. Call engineering if tag is lower.
23. LD WS while TOO H to 890'.
24. **RU Cementers. Pump Surface Shoe Plug:** CAN SPLIT PLUG IF DESIRED. 370 sx (573 cf, 102 bbl) 14 cement ppg with & 1.55 cf/sk cement with 0.25 lb/sk Polyflake. Volume is based on 475' in the 7-7/8" drill bit size with 100% excess and 415' inside 10 3/4", 40.5#/ft surface casing with no excess. Cement will be from 890-10'. RDMO Cementers.
25. Slowly pull out of the cement and PUH to 10'. Circulate to ensure no cement is left in the WS or above 10' in the casing.
26. TOO H, laying down remainder of WS.
27. WOC per cement company recommendation.
28. Document if cement is circulated to surface. If cement is not circulated to surface, contact engineer.
29. Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries to [rscDJVendors@anadarko.com](mailto:rscDJVendors@anadarko.com) within 24 hours of completion of the job.
30. Supervisor submit paper copies of all invoices, logs, and reports to Platteville Engineering Specialist
31. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
32. Capping crew will set and secure night cap on 10 3/4" casing head to restrain the casing head, pressure test CIBP to 500 psi with hydrotest pump, then remove night cap and casing head restraints.
33. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
34. Welder cut casing minimum 5' below ground level.
35. Fill casing to surface using 4500 psi compressive strength cement (NO gravel).
36. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
37. Obtain GPS location data as per COGCC Rule 215 and send to [rscDJVendors@anadarko.com](mailto:rscDJVendors@anadarko.com).
38. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
39. Back fill hole with fill. Clean location, and level.
40. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.