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

Re-Entry PLUG and ABANDONMENT PROCEDURE

KOENIG 1-19

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 8 5/8" casing stub. Extend stub to 12” below GL and install 8 5/8"x 11" SOW, 3M casing head with 3000 psi ball valves in both outlets.
4. Prepare location for spud rig. Install perimeter fence as needed**.** Spot in 235 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, **Deviation survey memory tool**, 6-1/2” mud motor, X-Over to workstring.
7. TIH and drill through 15 sx cement plug at surface. Once past cement plug and no cement is seen in returns, perform flow test.
8. Continue drilling to next 185 sx cement plug. TOC estimated to be at 500’, BOC estimated to be at 1000’. Once past cement plug and no cement is seen in returns, perform flow test.
9. Continue drilling until reaching 8900’. TD for well is 8886’.
10. TOOH. LD Workstring. Remove bit and mud motor. TIH workstring with mule shoe to previous TD. **If Deviation survey data was unsuccessful, run gryo through tubing.**
11. RU Cementers. **Pump Lyons/J Sand/Greenhorn/Codell/Niobrara Balanced Plug:** 1200 sx (1800 cf, 320 bbl) 15.8 ppg & 1.50 cf/sk cement with 0.25 lb/sk Polyflake. Yield may be slightly different based on CACL or additives. Confirm with cement company before pumping. Volume is based on 2618’ in the 7-7/8” drill bit size with 100% excess. Cement will be from 8900’-6282’. Break up as needed and pump in stages. RD cementers.
12. Slowly pull out of the cement and PUH to 6000’ or comfortable depth. Circulate to ensure no cement is left in the WS.
13. WOC per cement company recommendation. TIH and tag cement. Cement top needs to be at or above 6282’. Call engineering if tag is lower.
14. LD WS while TOOH to 4657’.
15. **RU Cementers. Pump GAS BLOCK Sussex Balanced Plug:** 400 sx (716 cf, 127.5 bbl) 12 ppg & 1.79 cf/sk cement with 0.25 lb/sk Polyflake. Yield may be slightly different based on CACL or additives. Confirm with cement company before pumping. Volume is based on 1051’ in the 7-7/8” drill bit size with 100% excess. Cement will be from 4657 – 3606. RD cementers.
16. Slowly pull out of the cement and PUH to 3000’ or comfortable depth. Circulate to ensure no cement is left in the WS.
17. WOC per cement company recommendation. TIH and tag cement. Cement top needs to be at or above 3606’. Call Engineering if tag is lower.
18. LD WS while TOOH to 762’. Circulate until there is no gas in returns.
19. **RU Cementers. Pump GAS BLOCK Surface Shoe Plug:** 185 sx (212.8 cf, 37.9 bbl) 14 ppg & 1.15 cf/sk cement with 0.25 lb/sk Polyflake. Yield may be slightly different based on CACL or additives. Confirm with cement company before pumping. Volume is based on 200’ in the 7-7/8”

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drill bit size with 100% excess and 200' inside 8-5/8", 24#/ft surface casing with no excess. Cement will be from 762-362'. RDMO Cementers

20. Slowly pull out of the cement and PUH to 200' or comfortable depth. Circulate to ensure no cement is left in the WS.
21. TOOH, laying down remainder of WS.
22. WOC per cement company recommendation.
23. MIRU WL. RIH and tag cement top at +/-362'. Record depth of tag in OpenWells. Cement top needs to be at or above 512'. Call engineering if tag is lower.
24. PU and RIH 8-5/8", 24# CIBP to 80' RDMO WL and spud 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 Platteville 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 to 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.