Engineer: Jade Patterson
Cell: 509-307-7514
Date: 2/2/2015

PLUG AND ABANDONMENT PROCEDURE
COUGHLIN RED VV 22-2, API 05-123-16666

Steps

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.). Call 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. Prepare location for base beam equipped rig. Install perimeter fence as needed.
3. Check and record Bradenhead pressure. If Bradenhead valve is not accessible, re-plumb so that valve is above GL.
4. MIRU, kill as necessary using clean fresh water with biocide. NDWH. NUBOP. Unseat landing jt, LD. **Note:** Per slickline report on 6/11/14-Slickline stacked out at 7536' (EOT). Impression block showed what looked like a broken fish neck.
5. Notify cementers to be on call. Provide volumes listed below:

5.1 Codell plug: 30 sx (41 cu-ft) "G" w/20% silica flour, 0.4% CD-32, 0.4 ASA-301 and R-3 to achieve 2:30 pump time. Mix at 15.8 ppg and 1.38 cu-ft/sk. Cement volume based on 820' in 3 ½" casing.

5.2 Sussex balance: 35 sx (40 cu-ft) "G" w/0.4% CD-32, 0.4% ASA-301, mixed at 15.8 ppg and 1.15 cu-ft/sk. Cement volume based on 800' in 3 ½" casing.

5.3 Foxhills plug: 430 sx (572 cu-ft) Type III w/cello flake and $CaCl_2$ as necessary, mixed at 14.8 ppg and 1.33 cu-ft/sk. Cement volume based on 100' in 3 ½" casing, 639' in 10" OH with 40% excess and 201' in 8 5/8" casing. Nearest caliper measurement at 4300'.

6. TOOH 242 joints of 2 1/16" tubing landed at 7538'. Stand back tubing.
7. MIRU WL. PU 3 ½" 9.3# gauge ring and RIH w/WL to 7550'. POOH.
8. PU 3 ½" 9.3# CIBP, RIH and set at +/-7520' to abandon Codell perfs.
9. Hydrotest to 3000 psi while RIH with 2 1/16" production tubing. Tag CIBP at 7520' and PU just above. Circulate well to remove remaining gas. Pressure test CIBP to 1000 psi.
10. RU cementers. Pump Codell plug: 30 sx (41 cu-ft) "G" w/20% silica flour, 0.4% CD-32, 0.4 ASA-301 and R-3 to achieve 2:30 pump time. Mix at 15.8 ppg and 1.38 cu-ft/sk. Plug to cover from 7520' to 6700'.
11. PUH to ~6400'. Circulate with water containing biocide to clear tubing.
12. PUH to 5150'. LD remainder.
13. Pump Sussex plug: 35 sx (40 cu-ft) "G" w/0.4% CD-32, 0.4% ASA-301, mixed at 15.8 ppg and 1.15 cu-ft/sk. Plug to cover from 5150'-4350'.
14. WOC per Cement Company's recommendation. RIH with 2 1/16" tubing and tag cement at or above 4350'. If not, consult with Evans Engineering.
15. TOOH standing back ~1530', LD remainder.

16. RU WL. Cut casing at or below 1430'. RD WL. Circulate casing with water containing biocide to remove any excess gas.
17. NDBOP, NDTH.
18. Install BOP on casing head with 3 ½" pipe rams.
19. TOOH 3 ½" casing, LD.
20. RIH with 2 1/16" tubing to +/- 1530'.
21. RU cementers. Precede cement with 10 bbl SAPP and a 20 bbl (minimum) fresh water spacer.
22. Pump Foxhills plug: 430 sx (572 cu-ft) Type III w/cello flake and $CaCl_2$ as necessary, mixed at 14.8 ppg and 1.33 cu-ft/sk. Plug to cover from 1530' to 1430' in 3 ½" casing, 1430' to 791' in 10" OH with 40% excess, and 791' to 590' in 8 5/8" casing. Nearest caliper measurement was at 4300'.
23. PUH to 300' and circulate clean. TOOH and WOC per cement company recommendations.
24. RIH with 2 1/16" tubing and tag cement at or above 690'. If not consult with Evans Engineering.
25. RU WL. PU 8 5/8" 24# CIBP and RIH to 80'. Set and PT to 1000 psi for 15 minutes. If tests, RDMO WL and WO rig.
26. Instruct cementing and wireline contractors to email copies of all job logs/jobs summaries to rscDJVendors@anadarko.com within 24 hours of completion of the job.
27. Supervisor is to submit paper copies of all invoices, logs, and reports to Evans Engineering Specialist.
28. Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
29. Excavate hole around surface casing enough to allow welder to cut casing 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 flowlines per Rule 1103. File electronic Form 42 once abandonment complete.
35. Back fill hole with fill. Clean location, level.