

Engineer: Tod Haanes  
Cell: 303-929-2339

## PLUG and ABANDONMENT PROCEDURE

### Marrs Red VV 22-4

#### 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.). Call 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. NOTE: **Casing is 3-1/2"**, 7.7 lb/ft, M-75.
3. MIRU slickline. Pull bumper spring and tag bottom. Record tag depth in Open Wells. RD slickline.
4. Prepare location for base beam equipped rig. Install perimeter fence as needed.
5. Check and record Bradenhead pressure. If Bradenhead valve is not accessible, re-plumb so that valve is above GL. The last Form 17 test on 1/19/2015 recorded a Bradenhead pressure of 32 psi, and 1 quart of water.
6. MIRU WO rig. Kill well as necessary using clean fresh water with biocide. ND WH. NU BOP. Unseat landing joint, and LD.
7. TOOH and SB 7370' 2-1/16" tubing.
8. PU scraper and RIH to 7370' for 3-1/2" 7.7 lb/ft casing. TOOH, SB 7340' tubing, and LD scraper.
9. PU CIBP, and while hydrotesting tubing to 3000 psi, set CIBP at 7340' (collars are located at 7320' and 7362') to abandon the Nio-Codell perfs.
10. Fill hole and pressure test CIBP to 1000 psi for 15 minutes.
11. TOOH, SB 7340' of tubing, and LD CIBP setting tool.
12. TIH with 2-1/16" tubing to 7340'.
13. RU cementers. **Pump Niobrara plug:** 25 sxs (38 cf) Thermal 35 +0.5% CFR-2+0.25% FMC, mixed at 15.6 ppg & 1.51 cf/sk. The plug will cover 7340' to 6600'. Volume is based on 740' inside 3-1/2" production casing with no excess. RD cementers.
14. Slowly pull out of the cement and PUH to 6300'. Reverse circulate tubing clean to ensure no cement is left in the tubing. PUH to 4890'.
15. RU Cementers. **Pump Sussex balanced plug:** 25 sxs (29 cf) 0:1:0 'G'+0.5% CFR-2+0.2% FMC+0.5% LWA, mixed at 15.8 ppg & 1.15 cf/sk. The plug will cover 4890' - 4320'. Volume is based on 570' in 3-1/2" production casing with no excess. RD cementers.
16. Slowly pull out of the cement and PUH to 4100'. Reverse circulate tubing clean to ensure no cement is left in the tubing.
17. WOC per cement company recommendation. Tag cement. Cement top needs to be at or above 4379' (200' above the Sussex TOP located at 4579').
18. TOOH and SB 1150' 2-1/16" tubing.
19. RU WL. RIH and cut casing at 1050'. RD WL.
20. Circulate with fresh water containing biocide to remove any gas.
21. Un-land casing. ND BOP, and ND TH. Install BOP on casing head with 3-1/2" pipe rams.
22. TOOH and LD 1050' of 3-1/2" casing. Remove 3-1/2" pipe rams and install 2-1/16" pipe rams.
23. RIH with 2-1/16" tubing to 1150'.
24. Establish circulation and get bottoms up with fresh water containing biocide.

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25. RU Cementers. Precede cement with 10 bbl (min) SAPP followed by a 20 bbl fresh water spacer.  
**Pump Stub Plug:** 210 sxs (279 cf) 0:1:0 'G'+0.5% CFR-2+0.2% FMC+0.5% LWA+0.25 lb/sk Polyflake, mixed at 15.8 ppg & 1.15 cf/sk. (100' in 3-1/2" production casing with no excess, 204' in 8.75" OH from caliper with 40% excess, 432' in 8-5/8" surface casing with no excess). The plug will cover 1150' - 414'. RD cementers.
26. Slowly pull up to 200' and reverse circulate tubing clean using fresh water treated with biocide.
27. WOC per cement company recommendation. Tag cement. Cement top needs to be at or above 444' (50' above the Fox Hills Sand TOP located at 494'). TOOH.
28. MIRU WL. RIH 8-5/8" CIBP to 80'. Set and pressure test to 1000 psi for 15 minutes. RDMO WL and WO rig.
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 Evans Engineering Specialist.
31. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
32. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
33. Welder cut casing minimum 5' below ground level.
34. Fill casing to surface using 4500 psi compressive strength cement (NO gravel).
35. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
36. Obtain GPS location data as per COGCC Rule 215 and send to [rscDJVendors@anadarko.com](mailto:rscDJVendors@anadarko.com).
37. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
38. Back fill hole with fill. Clean location, and level.
39. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.