

## PLUG AND ABANDON PROCEDURE

### REYNOLDS 4-24

1. Provide 48 hr notice to COGCC prior to rig up per request on approved Form 6 (e.g. call field coordinator, submit Form 42, etc.). Call IOC (970-506-5980) at least 24 hr prior to rig move. Request they catch and remove plunger, isolate production equipment and remove any automation prior to rig MIRU.
2. MIRU slickline services. Pull bumper spring and tag bottom. RDMO slickline services.
3. Prepare location for base beam equipped rig. Install perimeter fence as needed.
4. Check and record Bradenhead pressure. If Bradenhead valve is not accessible, re-plumb so that valve is above GL.
5. MIRU WO rig. Kill well as necessary w/ water containing biocide. ND WH, NU BOP.
6. Unseat and LD landing joint by PU w/ 2-3/8" tbg (4.7#, J-55, 8rd EUE) to break any sand bridges. Do not exceed the safety tensile load of 57,384 lbs (80% of upset yield strength).
7. TOOH. SB +/- 7,060' of tbg, LD the remainder.
8. MIRU Wireline. PU gauge ring on wireline and RIH to +/- 7,070'. POOH and LD gauge ring.
9. PU CIBP for 4.5" csg (11.6#, I-80, LTC). RIH and set CIBP at 7,060' (Note: Collars are at 7,030' & 7,072'). POOH and LD the setting tool. Pressure test CIBP to 1000 psi for 15 min. RDMO Wireline.
10. TIH w/ 2-3/8" tbg and tag the CIBP (at +/- 7,060') while hydrotesting each stand to +/- 3000 psi.
11. MIRU Cementing Services. Spot 25 sx of cmt (Class G w/ 20% silica flour, 0.4% CD-32, 0.4% ASA-301, and R-3 to achieve 2:30 pump time) mixed at 15.8 ppg and 1.38 cuft/sk from 7,060' to 6,710' on top of CIBP.
12. PUH w/ 2-3/8" tbg to +/- 6,000' (+/- 22 jts) and circulate tbg clean. PUH to +/- 4,380', LD remainder.
13. Spot a balanced plug of 35 sx of cmt (Class G, 0.4% CD-32, 0.4% ASA-301) mixed at 15.8 ppg and 1.15 cuft/sk from 4,380' to 3,970' in 4-1/2" (11.6#, I-80, LTC) csg. RDMO Cementing Services.
14. PUH to +/- 3,350 (+/- 33 jts) and circulate to clean tbg. WOC for 4 hours.
15. TIH w/ 2-3/8 and tag TOC (+/- 3,970'). If cement is tagged below 3,970' contact the engineer for possible further cement work.
16. TOOH and SB +/- 970' of tbg and LD remainder.
17. MIRU wireline. PU a jet cutter on wireline and RIH to +/- 870' to cut 4-1/2" csg. Cut, TOOH, and LD csg. RDMO wireline.
18. TIH w/ 2-3/8" tbg to +/- 970'.
19. MIRU Cementing Services. Pump 10 bbls of SAPP (Sodium Acid Pyrophosphate) followed by 20 bbls of fresh water containing biocide. Spot 125 sx of cmt (Type III w/

- cello flake and  $\text{CaCl}_2$  as deemed necessary) mixed at 14.8 ppg at 1.33 cuft/sk. Planned cement is from 970' to 870' stub plug in 4-1/2", 11.6# csg stub, 870' to 770' in 7-7/8" OH (plus 60% excess), and from 770' to 500' inside 8-5/8", 24# surface csg. PUH to 250' and circulate tbg clean. RDMO Cementing Services. WOC for 4 hrs.
20. TIH w/ 2-3/8" tbg and tag TOC and if TOC is deeper than 500' contact engineer for possible further cement work. TOO H and LD 2-3/8" tbg.
  21. MIRU wireline. PU CIBP on wireline for 8-5/8" (24#) csg and TIH to +/- 80'. Set CIBP and test to 1000 psi for 15 min. POOH and LD wireline. RDMO wireline.
  22. RDMO WO rig.
  23. NOTE: Instruct cementing & wireline contractors to email copies of all job logs/job summaries & invoices to [rscDJVendors@anadarko.com](mailto:rscDJVendors@anadarko.com) within 24 hours of the completion of the job.
  24. Wellsite supervisor should turn all paper copies of cementing reports/invoices and logs into Joleen Kramer.
  25. Have excavation contractor notify One-Call to clear for digging around wellhead and flowline removal.
  26. Excavate hole around surface casing enough to allow welder to cut 8-5/8" casing minimum 5' below ground level.
  27. Welder cut 8-5/8" casing minimum 5' below ground level.
  28. MIRU ready cement mixer. Fill the last 80' inside the 8-5/8" prod. casing until 10' below surface. Use 4,500 psi compressive strength redi-mix cement (Sand and Cement only, no gravel) to finish filling surface casing to top of cut off.
  29. Have welder spot weld on steel marker plate. (Note: marker shall be labeled with well name and number, legal location (¼ ¼ description) and API number.
  30. Properly abandon flowlines as per rule 1103.
  31. Have excavation contractor back fill hole with native material. Clean up location and have leveled to plant any vegetation required.
  32. Submit Form 6 to COGCC. Provide "As Plugged" wellbore diagram identifying the specific plugging completed.

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