

## Moser 21-33 #1: Plug & Abandonment

- 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 equipment prior to MIRU.
- 2 Prepare location for base beam equipped rig. Install perimeter fence as needed.
- 3 Check and report surface casing pressure. If surface casing is not accessible at ground level, re-plumb so valve is at ground level
- 4 MIRU WO rig. Kill well as necessary with water and biocide. ND wellhead. NU BOP.
- 5 Unland 2-3/8" tbg (147 total joints landed at 4628'). PU approx. 2 additional joints of tubing and drop down to tag RBP set at 4692'. Latch onto and release RBP. TOOH standing back 4070' of 2-3/8" tubing. LD extra tubing and LD RBP.
- 6 Load production casing and pressure test casing to 1000 psi for 15 minutes. **IF PRESSURE TEST PASSES PROCEED TO NEXT STEP; OTHERWISE CONTACT ENGINEERING FOR PROCEDURE MODIFICATIONS.**
- 7 MIRU wireline. PU and RIH with two 1' long 3-1/8" perf guns and shoot squeeze holes at 4450' and 4040' using 3 SPF, 0.5" EHD, 1' net, 3 total shots. RDMO wireline.
- 8 MIRU hydrotester. PU CICR on 2-3/8" tubing and TIH while hydrotesting the 2-3/8" tubing to 3000psi. Set CICR at 4070' (no collar locator ran at this depth to correlate to). RDMO hydrotester.
- 9 Establish circulation down tubing through CICR and returns through squeeze holes to surface between production casing/production tubing annulus. **IF CIRCULATION TO SURFACE PROCEED TO NEXT STEP; OTHERWISE CONTACT ENGINEERING.**
- 10 MIRU cementing services. Establish circulation with water and pump 20 bbls sodium metasilicate, 5 bbl water spacer, 110 sx Class "G" cement with 0.25 pps cello flake, 0.4% CD-32 and 0.4% ASA-301 mixed at 15.8ppg and 1.15 cuft/sx (cement volumes based on 7" caliper plus 20% excess from 4450' to 4040' and 4-1/2" 11.6# casing capacity with no excess from 4450' to 3940'). Underdisplace cement in tubing using 12.7 bbls water (3 bbls short of CICR set at 4070'). TOOH and stand back tubing so EOT at +/- 3670'. Reverse circulate using approx. 29 bbls water (2 times tubing volume) or until returns are clean. RDMO cementing services.
- 11 TOOH and stand back 1380' of 2-3/8" tubing and LD extra tubing.
- 12 MIRU wireline. RIH and jet cut 4-1/2" production casing at 1280'. RDMO wireline. Circulate bottoms up and continue circulating to remove any gas from wellbore.
- 13 ND BOP. Install BOP on surface casing head with 4-1/2" pipe rams. Install 3000 psi ball valves on both casing head outlets. Install a choke or choke manifold on one outlet.
- 14 TOOH and LD 1280' of 4-1/2" casing. Install 2-3/8" pipe rams.
- 15 TIH w/ 2-3/8" tubing open ended to 1380' (100' inside the 4-1/2" stub).
- 16 MIRU cementing services. Establish circulation with water and pump 10 bbls SAPP mud flush, 20 bbls fresh water spacer, then balanced stub plug using 180 sx Type III cement with cello flake and CaCl<sub>2</sub> as necessary, mixed at 14.8 ppg and 1.33 cuft/sx (cement volumes based on 100' inside 4-1/2" 11.6# casing, 554' in 7" hole with 20% excess, and 200' in 7" surface casing). RDMO cementing services.
- 17 TOOH and LD 2-3/8" tubing until EOT at +/- 200'. Circulate down tubing and up surface casing/tubing annulus until returns are clean to ensure CIBP can be set in clean surface casing. Finish TOOH and LD 2-3/8" tubing. WOC to set up per cementing company recommendation.
- 18 PU and TIH with 2-3/8" tubing to tag cement plug at +/- 520'. If cement is not at or above 520' contact engineer, otherwise proceed to next step.
- 19 TOOH and lay down all 2-3/8" tubing.
- 20 MIRU wireline. PU and RIH with CIBP (7", 17#/ft). Set CIBP at 80' and pressure test the CIBP to 1000psi for 15mins. If pressure test fails contact engineering, otherwise proceed to next step.
- 21 RDMO wireline. RDMO WO rig.

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- 22 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 job.
- 23 Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
- 24 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
- 25 Excavate hole around surface casing enough to allow welder to cut casing minimum of 5' below ground level.
- 26 Welder cut casing minimum of 5' below ground level.
- 27 Fill casing to surface using 4500psi compressive strength cement (NO GRAVEL).
- 28 Spot weld on steel marker plate. Marker should contain well name, well number, legal location (1/4 1/4 descriptor), and API number.
- 29 Obtain GPS location data as per COGCC Rule 215 and send to [rscDJVendors@anadarko.com](mailto:rscDJVendors@anadarko.com)
- 30 Properly abandon flowline per Rule 1103. File electronic Form 42 once abandonment complete.
- 31 Back fill hole with fill. Clean and level location.
- 32 Submit Form 6 to COGCC ensuring to provide "As Performed" WBD identifying operations completed.

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