

William E Gee GU 2: Niobrara Squeeze/Dual Annular Fill/Production Packer/Replace WH

- 1 Well needs Niobrara squeeze, dual stage annular fill, production packer, and a WH rated to 5000 psi.
- 2 Call automation removal group 24 hours before rig up to isolate any production equipment (remove plunger, wellhead automation, etc.). Prepare to move base beam rig onto location. Install fence if needed.
- 3 Check and report surface casing pressure. If valve is not accessible at ground level, re-plumb so valve is at ground level.
- 4 MIRU slickline. RIH to retrieve production equipment and tag for fill. Last tagged depth on 1/22/2006 was 7934'. Note tagged depth in OpenWells. RDMO slickline.
- 5 MIRU WO rig. Kill well as necessary with water and biocide. ND wellhead. NU BOP.
- 6 Spot ~165 jts (5000') of 1-1/4" 2.33# J-55 10rd IJ tbg.
- 7 Unland 2-3/8" tbg and lay down landing joint.
- 8 MIRU EMI services. EMI 2-3/8" tbg while TOO H and tally while standing back. Lay down joints that have greater than 35% penetration or wall loss. Replace all joints that fail EMI testing. Document joint numbers and depth of bad tubing and create a Production Equipment Failure report in OpenWells. RDMO EMI services.
- 9 PU 10,000 psi rated from above and below CIBP (4.5", 10.5#, J-55), and 2-3/8" tubing. Set CIBP at +/- 7,830'.
- 10 Release tbg from CIBP and circulate all gas out of the hole. Pumping water with biocide, pressure test CIBP and production casing to 1,000 psi for 15 minutes. If pressure test passes, proceed; otherwise contact engineering.
- 11 Bleed off pressure and TOO H standing back all 2 3-8" tbg. Load hole with biocide treated water.
- 12 MIRU WL. PU and RIH with CCL-GR-CBL-VDL. Log from tagged CIBP depth (+/- 7,830') to surface. **Email results to nicole.schaly@anadarko.com and dave.gomendi@anadarko.com after CBL is ran. No CBL on file, so calculated TOC is 7,246'.**
- 13 ****ALL BELOW STEPS ASSUME TOP OF CEMENT IN WELL AT +/- 7,246'*****
- 14 PU and RIH with 3-1/8" guns and shoot squeeze holes at 7,200' using 3 SPF, 0.42" EHD. RD WL.
- 15 PU and TIH with CICR, stinger, and 2-3/8" tbg and set CICR at 7,150'.
- 16 MIRU cementing services. Establish injection rate with water and pump 130 sx 50/50 Poz "G" with 20% silica flour, 3% gel, 0.1% sodium metasilicate and 0.4% FL-52 mixed at 13.5 ppg and 1.71 cuft/sx. (cement volumes based on 450' of 9.5" hole with 20% excess). Displace cement to the CICR using 27 bbl of water. Sting out of CICR. RDMO cementing services.
- 17 Reverse circulate using approx. 55 bbls water (2 times tubing volume) or until returns are clean.
- 18 TOO H and stand back all 2-3/8" tbg.
- 19 ND BOP, ND tbg head. Unland 4-1/2" csg (Do not exceed 130,000 lbs). NU double entry flange, NU BOP.
- 20 PU and TIH with 160 jts of 1-1/4" tbg to +/- 5000'. While tripping in, make 2 sweeps of Alcomer 74 and make one final additional sweep at 5000'.
- 21 Circulate and condition hole with ~930 bbls of water with rig pump (1.5x annular volume from 5000'), or until well is completely dead.
- 22 Spot 40 bbls of 10 ppg drilling mud.
- 23 PUH 6 jts to 4800'.
- 24 MIRU Cementers. Preceding cement, pump 5 bbls fresh water, 20 bbls sodium metasilicate, and another 5 bbls water spacer. Then pump 445 sx of Class "G" with 0.25 pps cello flake, 0.4% CD-32, 0.4% ASA-301 mixed at 15.8 ppg and 1.15 cuft/sx. Cement designed for 4800' to 4190' based on 12" OH with 20% excess.
- 25 PUH to 4000' and circulate 2x tbg volume (~30 bbls) to clear tubing of any cement.
- 26 PUH to 1350'.

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TOC: 7,246' (calculated); NB top: 7,154'
HZ offset pad: Gee 1-24HZ (605' away) in the Mount Princeton campaign
Prep type: Full Circle
Gyro date: 8/14/2014

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- 27 Commence pumping cement job consisting of 480 sx of Type III with 0.25 pps cello flake mixed at 14.8 ppg and 1.33 cuft/sx blended for a 3 hr pump time. Cement designed for 1350' to 518' based on 12" OH with 20% excess.
- 28 PUH to 350' and circulate with water to clear tubing of any cement.
- 29 TOO H with remaining 1-1/4" tbg and LD.
- 30 RDMO Cementers.
- 31 ND BOP, ND dual entry flange, re-land 4-1/2" csg. NU BOP.
- 32 Leave well SI for a minimum of 24 hrs.
- 33 PU and TIH with 3-7/8" blade bit and 2-3/8" tbg to cement top. Drill out CICR and cement past lower perfs at 7,200' and pressure test to 1000 psi. ****DON'T DRILL OUT CIBP AT 7,830'**** If pressure test fails contact engineering, otherwise proceed to next step.
- 34 TOO H and stand back all 2-3/8" tubing. LD 3-7/8" bit. Load hole with biocide treated water.
- 35 MIRU wireline services. RIH with CCL-GR-CBL-VDL. Log from +/- 7,830' (depth of CIBP) to surface. Email results to Nicole.schaly@anadarko.com and dave.gomendi@anadarko.com If the cement is not above 6,750' contact engineer. RDMO wireline services.
- 36 ND BOP.
- 37 ND existing tubing head off the 4.5" casing and install new WHI 5,000 psi flanged tubing head complete with 5,000 psi rated casing valves and XXH nipples
- 38 NU BOP.
- 39 PU and TIH with 3-7/8" blade bit and 2-3/8" tbg to CIBP at +/- 7,830'. Drill out CIBP.
- 40 TOO H and stand back all 2-3/8" tubing. LD 3-7/8" bit.
- 41 PU 2-3/8" NC, 2-3/8" XN nipple (be sure nipple is correctly input into OpenWells), 33 joints of 2-3/8" 4.7# J-55 tbg, Arrowset AS-1X packer rated to 10,000 psi for 4-1/2", 10.5#/ft casing, and 2-3/8" tbg to surface. Set packer at +/- 6,800'. Land EOT at +/- 7,840' (1 joint above the top J-sand perfs).
- 42 Load 2-3/8" x 4-1/2" annulus with biocide treated water and pressure test to 1,000 psi for 15 minutes to be sure packer is set properly.
- 43 RU rig lubricator. Broach tubing to seating nipple. RD rig lubricator. ND BOP.
- 44 Install 7-1/16" x 5,000 psi tubing head adaptor with new 5,000 psi master valve with flanged 2-3/8" connection. Make sure all wellhead valves are rated to 5,000 psi and nipples are XXH.
- 45 Install 2-3/8" pup joint above the master valve. Pressure test the tubing head from below the tubing head through the master valve to 5,000 psi using hydrotester.
- 46 RDMO WO rig. Return well to production team.
- 47 END OF SAFETY PREP STEPS. BELOW ARE STEPS FOR UN-PREPPING THE WELL
- 48 When notification is sent to un-prep the well, MIRU WO rig. Kill well as necessary with water and biocide. ND wellhead. NU BOP.
- 49 Unland 2-3/8" tbg and lay down landing joint.
- 50 Release Arrowset AS-1X packer and TOO H standing back all 2-3/8" tubing and LD packer. Return packer to shop it was purchased from and have the packer redressed.
- 51 If sand fill was tagged above 7,920' (depth of bottom J sand perfs) on initial safety prep, then either reverse circulate to cleanout well to PBMD at +/- 7,999'. Otherwise proceed to next step.

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- 52 PU 2-3/8" NC, 2-3/8" XN nipple (be sure nipple is correctly input into OpenWells), and 2-3/8" 4.7# J-55 tbg to surface. Land EOT at +/- 7,840' (1 joint above top J Sand perms).
- 53 RU rig lubricator. Broach tubing to XN seating nipple. RD rig lubricator. ND BOP. NU WH.
- 54 Install 7-1/16" x 5,000 psi tubing head adaptor and 5,000 psi master valve with flanged 2-3/8" connection. Make sure all wellhead valves are rated to 5,000 psi, and nipples are XXH.
- 55 Install 2-3/8" pup joint above the master valve. Pressure test the tubing head from below the tubing head through the master valve to 5,000 psi using hydrotester. If wellhead does not pressure test, replace wellhead/ wellhead valves as necessary with 5,000 psi rated equipment.
- 56 NU WH. RDMO WO rig. Return well to production team.

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