

George Stieber Unit A 1 Remedial Cement / Packer

- 1 Well needs Fox Hills remediation and a production packer ran.
- 2 Gyro was ran 10/23/2013, do not run additional gyro.
- 3 Call Foreman or Lead Operator at least 24 hrs prior to rig move. If not already completed, request that they catch and remove plunger, isolate production equipment and remove any automation equipment prior to the rig showing up. Install perimeter fence as needed.
- 4 MIRU slickline. Fish plunger from lubricator. RIH and pull the bumper spring and standing valve if necessary. RBIH with sinker bars and tag bottom. Report findings (last cleaned out to 8132' 8/11/2014). RDMO slickline.
- 5 Prepare location for base beam rig.
- 6 Spot a minimum of 25 jts of 2-3/8", 4.7#, J-55, EUE tbg for replacement.
- 7 MIRU WO rig and auxiliary equipment. Check pressures. Rig up 2" line from the casing head annulus to work tank. Kill well with fresh water treated with biocide. ND tree and adapter flange, NU BOP's.
- 8 PU 8-10' landing joint. TIW valve on top and screw into the tbg hanger. Back out the lock down pins and pull up on tbg string to break any possible sand bridges, unseat landing joint and lay down. Do not exceed 80% of tubing tensile strength, or **57,380-lb**. Clean out as necessary to 8132' with biocide treated water, or N2 as necessary.
- 9 TOOH with 2-3/8" tbg. *Tubing EMI'd 8/2014, no need to EMI again.
- 10 MIRU wireline. RIH with gauge ring (5-1/2", 17#) to 7000' and POOH. RIH on wireline with CCL and 5-1/2" 10,000 psi rated from above and below CIBP. Set CIBP @ +/-6575', (collars are at 6554' and 6598') and POOH. Dump bail 2 sx of sand on top of CIBP. Pressure test CIBP to 1000 psi for 15 minutes, squeeze holes 4430' and 5000', do not exceed 1000 psi on pressure test. If pressure test fails, contact Evans Engineering.
- 11 Bleed off pressure and ND BOP's. ND existing tubing head off of 4-1/2" casing and install new WHI 5000 psi flanged tubing head complete with 5000 psi casing valves, if necessary. Verify all wellhead equipment is rated to 5000 psi. NU BOP.
- 12 MIRU wireline services. PU CCL and perf guns. PUH and shoot squeeze holes, avoiding collars, as per the following: 1625'-1626', 3 spf, 0.38" EHD. PUH and shoot circulation holes, avoiding collars, as per the following: 775'-776', 3 spf, 0.6" EHD. POOH and LD guns.
- 13 RIH and set CICR at 805' +/- 10' depending on collar depths from CBL. RDMO wireline.
- 14 PU stinger and RIH on 2-3/8" tbg. Sting into CICR at ~805'. Establish circulation with biocide treated water.
- 15 MIRU cement services. Prepare to cement. Pump 50 bbl biocide treated water. Mix and pump **380sx (~90bbbls)** of 14.8 ppg (1.33 cuft/sk) Type III with cello flake and CaCl₂ (max of 1%) as necessary. The cement is to be retarded for 80 °F and 1 hour maximum pump time. Displace

Remediate Fox Hills and set production packer

GRYO ran 10/23/2013

Future HZ Activity: Quarter Circle 4 - 1/2016 (Fort Lupton Campaign)

Nio top: 7174'; TOC: 6419'

Squeeze holes @ 4430' & 5000'

Spud on 10/1990

Fox Hills Marker: 1415'; Deepest Water Well: 920'; State Aquifer Depth: 853'; SC Shoe: 878'

Prep and Produce

cement 4.5 bbl short of CICR. Sting out of CICR and dump remaining cement (4.5 bbl) on top of CICR. PUH to +/- 500' (~10 jts) and reverse circulate 2 times the tubing volume of biocide treated water or until clean returns are seen. Displace and squeeze 3 bbls cement into top perf w/ cement pump truck to accurately determine displace volume. TOO H and SB 2-3/8" tubing. LD stinger.

- 16 RDMO cementing company.
- 17 Leave well shut in for ~36 hours with 1,000psi.
- 18 TIH with 4-3/4" bit on 2-3/8" tbg. Drill through cement to the CICR @ 805', without drilling through it.
- 19 Pressure test squeeze perforations to 1000 psi for 15 minutes. If pressure test holds, proceed.
- 20 Continue drilling through CICR @ 805' to at least 1650', or until there are no cement returns. Do not drill out CIBP at 6575' until CBL is run. Pressure test squeeze perforations to 1000 psi for 15 minutes. If pressure test holds, proceed.
- 21 MIRU wireline and run CCL-GR-CBL-VDL from ~2000' to surface. Call Evans Engineering before moving on to step 22. In addition to normal handling of logs/job summaries, email copies of all cement job logs/job summaries and invoices to rscDJVendors@anadarko.com within 24 hours of the completion of the job. RDMO wireline.
- 22 PU bit for 5.5" CIBP and TIH w/ 2-3/8" tbg to CIBP at 6575'. Drill and push CIBP to at least 8132'. TOO H.
- 23 MIRU hydrotester. PU 2-3/8" NC, 2-3/8" XN nipple (be sure nipple is correctly input into OpenWells), ~47 joints 2-3/8" 4.7# J-55 EUE tbg, Arrowset AS-1X packer rated to 10,000 psi (for 4.5" casing), and 2-3/8" 4.7# J-55 tbg to surface. Hydrotest tubing to 6,000 psi while TIH. Set packer at +/- 6,530' (collars at 6,510' and 6,554'). Land EOT at +/- 7,985' (1 joint above JS). RDMO hydrotester.
- 24 Load 2-3/8" x 5-1/2" annulus with biocide treated water and pressure test to 1,000 psi for 15 minutes to be sure packer is set properly.
- 25 RU rig lubricator. Broach tubing to seating nipple. RD rig lubricator. ND BOP.
- 26 Install 7-1/16" x 2-1/16" 5,000 psi tubing head adaptor and new flanged 5,000 psi master valve with 2-3/8" EUE companion flange on top. Make sure all wellhead valves are rated to 5,000 psi.
- 27 Hydrotest tubing head to 5000 psi for 15 minutes.
- 28 RDMO WO rig.
- 29 Clean location. Notify field foreman/field coordinator of finished work and turn well back over to production team.
- 30 END OF SAFETY PREP STEPS. BELOW ARE STEPS FOR UN-PREPPING THE WELL
- 31 When notification is sent to un-prep the well, MIRU WO rig. Kill well as necessary with water and biocide. ND wellhead. NU BOP.
- 32 Unland 2-3/8" tbg and lay down landing joint.
- 33 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.

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- 34 If sand fill was tagged above 8132', then reverse circulate, with N2 as necessary, or bail, to cleanout to 8,132' (depth last bailed to). Otherwise proceed to next step.
- 35 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 +/- 7,985' (1 joint above top of JS).
- 36 RU rig lubricator. Broach tubing to XN seating nipple. RD rig lubricator. ND BOP. NU WH.
- 37 Install 7-1/16" x 5,000 psi tubing head adaptor and 5,000 psi flanged master valve. Make sure all casing valves are 5,000 psi rated w/ Double X Heavy nipples. Make sure all wellhead valves are rated to 5,000 psi.
- 38 Install 2-3/8" seating nipple 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.
- 39 NU WH. RDMO WO rig. Return well to production team.

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