

HSR Boulter Federal 13-18A: Niobrara Cement Coverage & Replace Wellhead

- 1 Well has a gyro survey – 5/23/13.
- 2 Call foreman and/or field coordinator 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. Operations need to bleed off the bradenhead pressure before the rig gets on location.
- 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. Note tagged depth in OpenWells. RDMO slickline. ****Use a bailer to cleanout sand if slickline indicates fill above 7,590' (depth of bottom Codell perfs)****
- 5 MIRU WO rig. Kill well as necessary with water and biocide. ND wellhead. NU BOP.
- 6 Unland 2-3/8" tbg and lay down landing joint.
- 7 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.
- 8 PU 10,000 psi rated from above and below CIBP (4.5", 11.6#, I-80), retrieving head, and 2-3/8" tubing. Set CIBP at +/- 7,190' (collars located at 7,170' and 7,212').
- 9 Release tbg from CIBP and circulate all gas out of the hole. Pumping water with biocide, pressure test RBP and production casing to 1,000 psi for 15 minutes. If pressure test passes, proceed; otherwise contact engineering.
- 10 TOO H with 2-3/8" tbg. ND BOP.
- 11 ND existing tubing head off of 4.5" casing and install new WHI 5,000 psi flanged tubing head complete with 5,000 psi rated casing valves.
- 12 NU BOP.
- 13 MIRU wireline services. PU and RIH with 3-1/8" guns and shoot squeeze holes at 6,720' using 3 SPF, 0.38" EHD, 33.65" penetration, 1' net, 3 total shots. Tie into ASAP CCL-CBL-VDL dated 1/19/00. POOH with perf guns. RDMO wireline services.
- 14 PU and TIH with CICR, stinger, and 2-3/8" tbg to set CICR at 6,670'. Sting into CICR.
- 15 MIRU cementing services. Establish injection rate with water and pump 60 sx 50/50 Pox "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 9" hole with 30% excess). Underdisplace cement in 2-3/8" 4.7# tbg by 0.5 bbl short of CICR at 6,670' (approx. 25 bbls). Sting out of the CICR and PUH 1 stand dumping remaining 0.5 bbl of cement on top of CICR. Reverse circulate using approx. 50 bbls water (2 times tubing volume) or until returns are clean. RDMO cementing services.
- 16 TOO H and stand back all 2-3/8" tbg. Allow cement to set up for at least 24 hours.
- 17 MIRU wireline services. RIH with CCL-GR-CBL-VDL. Log from tagged top of cement in 4.5" casing (estimated +/- 6,638') to 100' above TOC (estimated to be +/- 6,423'). If the cement is not above 6,636' contact engineer. RDMO wireline services.
- 18 PU and TIH with 3-7/8" blade bit and 2-3/8" tbg to cement above CICR at +/- 6,637'. Drill out CICR and pressure test squeeze holes at 6,720' to 1,000 psi. If pressure test fails contact engineering, otherwise proceed to next step.
- 19 Continue to TIH and drill out CIBP at 7,190'. Do not drill out sand plug (estimated top at 7,850') since there is not approval to commingle the J Sand.
- 20 TOO H and stand back 2-3/8" tubing. LD 3-7/8" bit.

Well needs Niobrara cement coverage and replace wellhead

Well is to be worked on in preparation for the upcoming APC HENRICKSON 11-7HZ pad

TOC: 6,780' NB top: 7,036'

Soonest Frac: 11/9/2013

NPV: \$416M; no wellbore integrity issues

Full Circle

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- 21 PU and TIH with 2-3/8" NC, 2-3/8" XN nipple and 2-3/8" tbg to surface. Land EOT at +/- 7,535' (1 joint above top of Codell)
- 22 RU rig lubricator. Broach tbg to XN seating nipple. RD rig lubricator.
- 23 Install 7-1/16" x 5,000 psi tubing head adaptor with new 5,000 psi master valve with threaded 2-3/8" connection. Make sure all wellhead valves are rated to 5,000 psi.
- 24 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.
- 25 ND BOP. NU WH.
- 26 RDMO WO rig. Return well to production team.

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