

## Carl Adler 2 Remedial Cement.docx

- 1 Level location for base beam rig.
- 2 Call Foreman or Field Coordinator before rig up to catch plunger, isolate production equipment, and ask if replacement parts/equipment are requested. Operations need to hook up the Bradenhead pressure and bleed off the pressure before the rig gets on location.
- 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 Spot a minimum of 5 jts 2-3/8", 4.7#, J-55 EUE TBG for replacement.
- 5 MIRU slickline. Fish production equipment as necessary and tag fill. Note tagged depth in OpenWells. RDMO Slickline.
- 6 MIRU WO rig, flat tanks and rig pumps. Kill well, as necessary, with biocide treated fresh water.
- 7 ND WH. NU BOP.
- 8 Unseat landing joint and lay down.
- 9 MIRU EMI services. TOOH with 2-3/8" TBG. EMI on TOOH. LD joints with wall loss or penetrations > 35%. Replace joints as necessary. \*\*Keep yellow & blue band tubing. Note joint number and depth of tubing leak(s) on PRODUCTION EQUIPMENT FAILURE REPORT IN OPEN WELLS.
- 10 PU and TIH with RBP for 4-1/2", 10.5/11.6# casing on tubing and set RBP at +/- 6680'. Pressure test RBP to 1000 psi for 15 mins. If pressure test passes, proceed. Dump 2 sx sand on RBP. TOOH while standing back TBG.
- 11 MIRU WL. PU and RIH with CCL/CBL/GR. Correlate to depth to Schlumberger CBL dated 1/12/95. Run CBL from just above RBP to surface. Deliver logs to Evans for review. Once cleared by Engineering, proceed with next step.
- 12 PU and RIH with CCL and perf guns. Correlate depth to CBL. Shoot squeeze holes at 4810'-4811', 0.38" EHD, 1 SPF. PUH and shoot circulation holes at 3850'-3851', 0.6" EHD, 1 SPF. POOH and LD guns.
- 13 PU and RIH with CICR. Set CICR at 4600'. POOH. RDMO WL.
- 14 PU stinger and RIH on 2-3/8" tbg. Sting into retainer at 4600'.
- 15 Establish circulation/injection down tubing before pumping cement. Note rate, pressure, volume pumped, and returns.
- 16 MIRU cement services. Mix and pump cement job as follows: Freshwater spacer, 20 bbls Sodium Metasilicate, 610 sx G neat cement with ¼#/sk cello-flake mixed at 15.8 ppg & 1.15 cuft/sk. Displace cement 1 bbl short of CICR. Sting out of CICR, place ½ bbl of remaining cement on top of CICR. PUH to squeeze circulation holes at 3850'. Place remaining cement across holes. PUH 3 stands and reverse out. (Attempt to cement from 4810' to 3850'). Design is for 12.25" & 11" hole (caliper), 4.5" casing, 960' w/ 10% excess.
- 17 TOOH and stand back tbg. LD stinger. WOC overnight at minimum.
- 18 CLEAR WITH EVANS ENGINEERING TO ENSURE FOX HILLS REMEDIAL CEMENT IS NOT NECESSARY. ONCE CLEARED, PROCEED.
- 19 TIH with 3-7/8" bit on 2-3/8" TBG. Drill through cement down to at least 3950'. Pressure test squeeze perforations to 1000 psi for 15 mins. If pressure test passes, proceed.
- 20 Continue down and drill through cement and CICR down to 4910'. TOOH while standing back TBG and LD bit.
- 21 MIRU WL. PU and RIH with CCL/CBL/GR. Correlate to depth to CBL. Run CBL from 5000' to 3650'. Deliver logs to Evans for review. Once cleared by Engineering, proceed with next step.
- 22 PU and TIH with RBP retrieving head. Latch on to RBP at 6680' and release. TOOH while SB TBG and LD RBP.
- 23 MIRU hydrotester.

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- 24 PU & RIH with 2-3/8" NC, 2-3/8" XN profile nipple, 114 joint 2-3/8" TBG, Arrowset AS-1X packer (10k psi rated), and 2-3/8" TBG. Hydrotest tubing to 6000 psi while RIH. Set packer at 4100'. EOT should be landed at +/- 7650'.
- 25 Load backside with biocide treated water and pressure test packer to 1000 psi for 15 min.
- 26 ND BOP. NU WH. Ensure all valves on TBG head are rated to 5000 psi and ensure TBG head has a new R-46 ring gasket installed.
- 27 Hydrotest TBG head and master valve to 5000 psi. If pressure test fails, call Evans office for alternate procedures.
- 28 RDMO hydrotester. RDMO WO rig.
- 29 Return well 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 well, MIRU WO rig.
- 32 Control well with biocide treated water.
- 33 ND WH. NU BOP.
- 34 Release Arrowset AS-1X packer and POOH with 2-3/8" TBG, Arrowset packer, XN profile nipple, and NC while standing back TBG and laying down packer.
- 35 Return packer to shop were purchased and have redressed.
- 36 PU & RIH with 2-3/8" NC, 2-3/8" XN profile nipple (ensure nipple is input into OpenWells), and 2-3/8" TBG.
- 37 Clean out to at least 7770' using biocide treated water. Use a bailer if necessary.
- 38 PUH and land TBG at 7652', which is approximately 1 joint above the top JS perf.
- 39 RU rig lubricator. Broach TBG to SN. RD rig lubricator.
- 40 ND BOP, NU WH.
- 41 Hydrotest TBG head and master valve to 5000 psi. If pressure test fails, call Evans office for alternate procedures. RDMO hydrotesters.
- 42 RDMO WO rig. Swab well back if needed. Return well to production team.