

Wardell 3-7-5Z Bradenhead Procedure

- 1 Well has gyro from 1/14/2014.
- 2 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.
- 3 MIRU slickline services. Pull bumper spring and tag bottom. RD slickline services.
- 4 Prepare location for base beam rig.
- 5 Spot a minimum of 1600' of 1-1/4" work string for annular cement job.
- 6 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. ND tree and adapter flange, NU BOP's.
- 7 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.
- 8 MIRU EMI equipment. TOOH with 2-3/8" tbg. EMI tbg while TOOH. Lay down joints with wall loss or penetrations >35%. Replace joints as necessary. Note joint number and depth of tubing leak(s) on production equipment failure report in Open Wells. Clearly mark all junk (red band) tubing sent to yard.
- 9 TIH with 2-3/8" tbg and 4.5" RBP. Set RBP @ +/-7090', (collars are at 7080' and 7123'). Pressure test RBP to 1000 psi. Spot 2sx of sand on RBP and TOOH.
- 10 Bleed off pressure. ND BOP's, ND wellhead, Un-land 4 1/2" casing, NU dual entry flange, NU BOP.
- 11 PU 1-1/4" 2.3#/ft J-55 10rd IJ tubing, and TIH outside 4-1/2" casing in open hole to ~1400'. Circulate with the rig pump while TIH to clean up the annulus. Use two sweeps of Alcomer 74L while TIH and a final sweep at 1400'. Make sure no pressure is present on bradenhead before moving on to the next step. If gas is detected, contact engineering to discuss plan moving forward.
- 12 Contact Ed Asuchak (min of 24hrs. in advance) to bring out 40bbbls of 10.0ppg mud. Pump 40bbbls of mud at 1400'. Leave 1-1/4" tbg full of mud to avoid wet trip and PUH to 1200' to place cement in annulus.
- 13 MIRU cement services. Pump: 5 bbl water w/biocide, 20 bbl Sodium Metasilicate, and another 5 bbl spacer immediately preceding cement. Pump 310 cu ft/180 sx of Control Set "C" cement with 1/4 lb/sk cello-flake mixed at 13.5 ppg and 1.74 cf/sk (cement from 1200' to 640'. 8.75" OH avg from caliper, adding 40% excess).
- 14 PUH to 400' and circulate 1.5 times the hole volume of water or until no cement returns are seen. TOOH with 1-1/4" tubing.
- 15 RDMO cementing company.
- 16 ND BOP. ND dual entry flange and crossover. Pick up and land 4-1/2" casing in slips.
- 17 Install new GE 5000 psi 4-1/2" bottom threaded tbg head with 7-1/16" flanged top, 7-1/16" flanged 5000 psi tbg head adaptor with 2-1/16" studded top, 2-1/16" flanged 5000 psi master valve, flanged 5000 psi 2-3/8" plunger lubricator (side outlets threaded). All valves, fittings, plugs on well head need to be rated for 5000 psi. NU BOP.
- 18 Leave well shut in for ~24hrs.

- 19 MIRU wireline and run CCL-GR-CBL-VDL from **4000' to surface**. If new top of cement is below 640' notify Engineering. 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.
- 20 RDMO wireline.
- 21 PU and TIH with 2-3/8" tbg and retrieving head. Circulate sand off RBP at @ +/-7090'. TOOH with RBP and SB tbg.
- 22 TIH with 2-3/8" NC, 2-3/8" XN SN and 2-3/8" 4.7# J55 EUE tbg, circulate out fill if necessary to 7499'. Land tbg @ +/- 7370' (~1 jt above top Codell perf).
- 23 Broach tubing to seating nipple. ND BOP's, NU master valve and tubing head adaptor.
- 24 GE should pressure test tbg head through test port on side of tbg head adaptor flange to 5000 psi for 15 mins.
- 25 RDMO WO rig.
- 26 Clean location and swab well back to production. Notify Field Foreman/Field Coordinator of finished work and turn well back over to production team.