

## PSC 12-10 – Bradenhead Procedure

- 1 A gyro survey of this well will need to be completed before any work begins.
- 2 Last pressure test on casing was 3/27/2010 to 5,500 psi.
- 3 Notify the Foreman and Field Coordinator 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 Slick line. Fish plunger if necessary and tag CIBP with cement top (Should be 7212').
- 5 Prepare location for base beam rig.
- 6 Spot frac valve for 3-1/2" casing.
- 7 Spot 25 jts of 2-1/16" 3.25# N-80 8RD EUE tbg.
- 8 Spot 160 jts of 1-1/4" 2.33# J-55 IJ tbg.
- 9 Notify mud company to have 10.0 ppg mud on standby.
- 10 Check wellhead for flanged-style connections and 5,000 psi rating. If wellhead is not rated to 5,000 psi or does not have flanged-style connections, install one that does prior to completing the job.
- 11 MIRU WO rig. Kill well with fresh water with biocide. ND wellhead, NU BOP.
- 12 Run two 2" lines from starting head to return tanks.
- 13 PU 8-10' landing joint with TIW safety valve on top and screw into the tbg hanger. Back out the lock down pins and pull up on the tbg string to break any possible sand bridges. Do not exceed 80% of tubing tensile strength, or 57,384-lb.
- 14 Unseat tbg hanger and LD tbg hanger and landing joint. Install rubber wiper in stripping head.
- 15 MIRU EMI equipment. TOO H with 2-1/16" tbg. EMI tbg while TOO H. Lay down joints with wall loss or penetrations >35%. Replace joints as necessary. Keep yellow and blue band tubing. Note joint number and depth of tubing leak(s) on production equipment failure report in OpenWells. Clearly mark all junk (red band) tubing sent to yard.
- 16 TIH 2-1/16" tbg with 3.5" RBP (3.5" 7.7# WC-70). Set RBP at +/- 6690' (Collars at 6672' and 6710'). Spot 2 sx sand on top of RBP. TOO H with 2-1/16", SB tbg.
- 17 Pressure test RBP to 2,000 psi for 15 minutes. (Pressure test to make sure plug is set correctly)
- 18 ND BOP, un-land 3-1/2" csg, RU dual-entry flange, NU BOP. If casing cannot be safely un-landed, contact engineering for further support.
- 19 PU and TIH with 1-1/4" 2.33# IJ tbg to 4534'. Call Tod Haanes (cell# 303-929-2339) if you cannot land EOT to 4534'.
- 20 Pickup concentrated mud flush (Alcomer 74L – liquid mud thinner in 5 gallon bucket) from Imperial. Circulate the Alcomer 74L mud flush intermittently in sweeps as the 1-1/4" tbg is TIH (3 sweeps while TIH, and a 4<sup>th</sup> sweep when at 4534').
- 21 Circulate 510 bbls with rig pump (Circulate at least 1.5x annular volume from 4534'). Displace 20 bbls 10.0 ppg mud to 4534'.
- 22 TOO H 1-1/4" tbg to 4270'.
- 23 MIRU cement company.

- 24 Commence pumping cement job consisting of 5 bbls fresh water, 20 bbls sodium metasilicate, 5 bbls fresh water and 268.8 cf (240 sx) of G" with ¼ lb/sk cello-flake mixed at 14.6 ppg and 1.12 cuft/sk blended for a 6 hr pump time (Cement from +/- 3802' to 4270').
- 25 Break lines, clean up with fresh water, RDMO cement company.
- 26 TOOH 1-1/4" tbg to +/- 3000' and circulate clean. TOOH remaining 1-1/4" tbg and SB tbg.
- 27 ND BOP, ND dual-entry flange, re-land 3-1/2" csg, NU frac valve. Leave well shut in for 24 hours.
- 28 MIRU wire line and RIH with CCL-GR-CBL-VDL from 6500' to 3600' or 200' past TOC. If Sussex/Shannon plug is not above 3802', contact engineering for further instructions. Email logs to engineering and [DJVendors@anadarko.com](mailto:DJVendors@anadarko.com). RDMO wire line.
- 29 ND frac valve, un-land 3-1/2" csg, NU dual-entry flange, NU BOP.
- 30 PU and TIH 1-1/4" 2.33# IJ tbg to 900'.
- 31 Circulate 90 bbls with rig pump (1.5x annular volume from 900').
- 32 MIRU cement company. Commence pumping cement job consisting of 10 bbls fresh water spacer, 295.8 cf (170 sx) of Control Set 'C' mixed at 13.5 ppg and 1.74 cuft/sk blended for a 2 hr thickening time (cement from 900' to 200').
- 33 Break lines, clean up with fresh water, RDMO cement company.
- 34 Slowly PU tubing string and land EOT at +/- 200'. Circulate with water so the TOC will be at +/- 200'. The goal is to have cement *at least* 100' into the surface casing. The surface casing shoe is located at 320'.
- 35 TOOH with 1-1/4" tbg. Circulate clean, LD 1-1/4" tbg.
- 36 ND BOP, ND dual entry flange, re-land 3-1/2" csg and NU BOP. Leave well shut in minimum of 24 hours.
- 37 MIRU wire line and run CCL-GR-CBL-VDL from 1000' to 0'. Email logs to engineering and [DJVendors@anadarko.com](mailto:DJVendors@anadarko.com). RDMO wire line.
- 38 TIH with 2-1/16" tbg and retrieving head and tag sand above RBP at +/- 6690'. Circulate sand off RBP. Latch onto RBP and release RBP. TOOH standing back all 2-1/16" tbg and LD RBP.
- 39 PU and TIH with 2-1/16" notched collar, 2-1/16" XN, 2-1/16" 3.25# N-80 tbg. Clean out to CIBP with cement top @ 7212'. TOOH and land 2-1/16" tbg @ +/- 7065', which is 30' above the Codell perf.
- 40 ND BOP, NU master valve.
- 41 Install 7 1/16" x 5,000 psi tubing head adaptor with new 5,000 psi master valve threaded 2-1/16" connection. Make sure all wellhead valves are rated to 5,000 psi.
- 42 Install 2-1/16" pup joint above the master valve. Pressure test the tubing head from below the tubing head through the master valve to 5,000 psi with hydro tester. NU 5k wellhead.
- 43 RDMO WO rig. Return well to production team.
- 44 Clean location and swab well back to production. Notify field foreman/field coordinator of finished work and turn well back over to production team.