

Mitchell 20-25 Bradenhead Procedure

- 1 Well has MWD report from 6/24/2009.
- 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 1300' of 1.66" 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 @ +/-7430', (collars are at 7415' and 7457'). 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 1.66" 2.3#/ft J-55 10rd IJ tubing, and TIH outside 4-1/2" casing in open hole to ~1300'. NOTE: there may be spotty cement well above 1300'. If 1.66" tbg tags above 1300', contact Evans Engineering to discuss further steps.
- 12 Circulate with the rig pump while TIH to clean up the annulus. 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.
- 13 MIRU cement services. Pump: 5 bbl water w/biocide, 20 bbl Sodium Metasilicate, and another 5 bbl spacer immediately preceding cement. Pump 70 sx of Type III cement with 0.3% CFL-3, 0.3% CFR-2, 0.25 pps polyflake and CaCl₂ mixed at 14.8 ppg and 1.33 cf/sk (cement from 1300' to 1000'. 8.25" OH avg from caliper, adding 20% excess).
- 14 PUH to 600' and circulate 1.5 times the hole volume of water or until no cement returns are seen. TOOH with 1.66" 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 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

Single stage Bradenhead over Fox Hills

TOC: ~1300'

No HZ's

Pasture

Well has directional survey

Drilled by KMG

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 **1600' to surface**. If new top of cement is below **1000'** 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 @ +/-**7430'**. 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 **8052'**. Land tbg @ +/- **7860'** (~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.

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