

BAKER RED V 1-14A BRADENHEAD PROCEDURE

- 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 25 jts 2-1/16", 3.25#, J-55 IJ TBG for replacement and 35 jts 1-1/4", 2.33#/ft, J-55 10rd IJ for annular cement job.
- 5 MIRU slickline and Vaughn Energy Services. Fish production equipment as necessary and tag fill. Note tagged depth in OpenWells. Last tagged/clean out depth was 7896' on 4/18/2006 (Bottom J-Sand perf: 7850'). Run gyro from 7400' to surface with stops every 100'. Forward gyro survey data to Sabrina Frantz. RDMO slickline and VES.
- 6 MIRU WO rig. Kill well, as necessary, with biocide treated fresh water. ND WH. NU BOPE.
- 7 Unseat landing joint and lay down.
- 8 MIRU EMI services. TOOH with 2-1/16" 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.
- 9 TIH with 2-1/16" TBG & RBP suitable for 3.5", 9.2#, N-80 casing. Set RBP at 4000'. (Collars at 3987' & 4016').
- 10 Circulate gas out of well and pressure test RBP & CSG to 2000 psi for 15 min. Dump 2 sx sand on top of RBP & TOOH while standing back TBG.
- 11 ND BOPE. ND WH. Unland 3-1/2" casing. NU double entry flange.
- 12 PU 1-1/4", 2.3#/ft J-55 10rd IJ tubing and TIH outside 3-1/2" casing and open hole to 1000'. Circulate with biocide treated fresh water on TIH.
- 13 MIRU cement services. Mix and pump cement job as follows: Freshwater spacer, 20 bbls Sodium Metasilicate, 315 sx 15.8 ppg neat Class G cement with ¼#/sx cello-flake. The cement is to be retarded for 125 degF for a six hour pump time. (Attempt to cement from 1000' to 100').
- 14 Trip out of the hole with 1-1/4" tubing and shut in overnight.
- 15 Rig down cementing services.
- 16 Reland 3-1/2" CSG. ND double entry flange. Install new WHI 5000 psi flanged tubing head (using crossover from 3-1/2" to 4-1/2") complete with 5000 psi rated casing valves. Install 7-1/16", 5000 psi tubing head adapter with new 5000 psi master valve with 2-3/8" 8 round threaded connection. SDFN to WOC.
- 17 MIRU wireline services.
- 18 PU and RIH with CCL-GR-CBL-VDL. Run from 1100' to surface, or the top of cement. RDMO wireline. If the cement is not above 100' then contact engineer.
- 19 PU and TIH with 2-1/16" TBG & retrieving head. Circulate sand off RBP, latch RBP and TOOH standing back TBG & laying down retrieving head and RBP.

Well needs Bradenhead work completed
Well is to be worked in due to Eagle Window
Well needs gyro survey
Nio top: 7084'; TOC: 3870'
NPV: 288M; No known casing issues

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- 20 If clean out is not necessary, skip to the next step. (NOTE: 1-1/4" TBG will be needed if fill is in liner. Liner top: 7449') PU and TIH with TBG and clean out to at least 7880'. Use nitrogen if/when needed to assist with cleanout. (Bottom J-Sand perf 7850') TOOH and SB 2-1/16" TBG & 1-14" TBG (if needed).
- 21 PU and TIH with NC, XN profile nipple, and 2-1-16" TBG and land well at 7440', which is above the liner top at 7449'.
- 22 RU rig lubricator. Broach tubing to XN nipple. RD rig lubricator.
- 23 ND BOPE. NU WH. Ensure all valves on WH are rated to minimum 5000 psi and ensure new TBG head has new R-46 ring gasket installed.
- 24 MIRU hydrotester. Pressure test new TBG head to 5000 psi for 15 minutes. After successful pressure test, proceed.
- 25 RDMO WO Rig. Clean location and swab if necessary. Notify Foreman or Field Coordinator of completed workover operations and turn well over to production team.

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