Anadarko Petroleum Corporation

Morning 41-15 BradenHead Procedure

1 Call Foreman or Lead Operator at least 24 hr 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.
2 MIRU slickline. Fish plunger from lubricator. RIH and pull the bumper spring and standing valve if necessary. RBIH with sinker bars and tag bottom. Report findings. PBTD (should be at 7554'). RDMO slickline
3 Prepare location for base beam rig.
4 Spot 23 jts of 2-3/8" 4.7# J-55 8RD EUE tbg.
5 MIRU WO rig and auxiliary equipment. Check pressures. Rig up one 3" line or two 2" lines from the casing head annulus to work tank. Kill well with fresh water. ND tree and adapter flange, NU BOP's.
6 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, or **57,380-lb**. Clean out as necessary to 7554'.
7 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.
8 MIRU wireline, NU lubricator, RIH with Gauge Ring to 6800', POOH.
9 RIH on wireline with 4.5" RBP (Retrievable Bridge Plug). Set RBP at +/- 6725' (Collars at 6702' and 6746'). POOH and Pressure test RBP to 2,000 psi for 15 minutes. ND lubricator.
10 ND BOP, ND tubing head. Install 4-1/2" 7.5K frac valve on 4-1/2" csg.
11 Dump bail 2 sx of sand on top of RBP and POOH.
12 NU lubricator, PU one 3-1/8" 1ft perf gun (3 SPF 0.58" 120° phasing) and RIH to +/- 1600' (using CCL), Fire gun and perforate 1ft.
13 POOH with wireline. RDMO wireline.
14 Establish circulation down csg up annulus and make certain well is dead.
15 NU cement head and RU cement services. Circulate 75 bbls (1 annular volume) of water at 6bpm, followed by a 30bbl (5bbls water, 20bbls SMS, 5bbls water) spacer. Prepare to cement.
16 Mix and pump **~59bbls (215 sx)** of 14.0 ppg (1.53 cuft/sk) Type III w/cello-flake and CaCL1.
17 Shut down, Drop wiper plug and displace 1bbl of cement on top of wiper plug followed by 21 bbls of fresh water, break lines and clean. **Note: Under displace to within no more than 150ft of perfs,** catch final displacement pressure, shut in 4-1/2" frac valve.
18 ND cementing head and RDMO cement company.
19 Leave well shut in overnight.
20 ND 4-1/2" frac valve, NU BOP's. PU 3-7/8" bit and TIH with 2-3/8" tbg, rig up power swivel, tag cement and mill until past squeeze holes and TOOH.
21 MIRU wire line and run CCL-GR-CBL-VDL from 1700' to surface.

22 RDMO wireline.

23 ND BOP's, NU 4-1/2" 5000 psi tubing head with 2-5000 psi valves. NU BOP's to tubing head. Close the blind rams and pressure test squeeze holes to 1000 psi for 15 min.

24 PU and TIH with 2-3/8" tbg and retrieving head. Circulate sand off RBP at +/- 6725'. TOOH with RBP and SB tbg.

25 TIH with 2-3/8" NC, 2-3/8" XN SN, 2-3/8" 4.7# J-55 tbg, 4-1/2"Arrowset AS-1X packer rated to 10,000 psi, and 2-3/8" 4.7# J-55 tbg to surface. Hydrotest tubing to 5,000 psi while TIH.

26 Load 2-3/8" x 4-1/2" annulus with biocide treated water, Set packer at +/- 3370' (collars at 3352' and 3396'). Land tbg @ +/- 7395'.

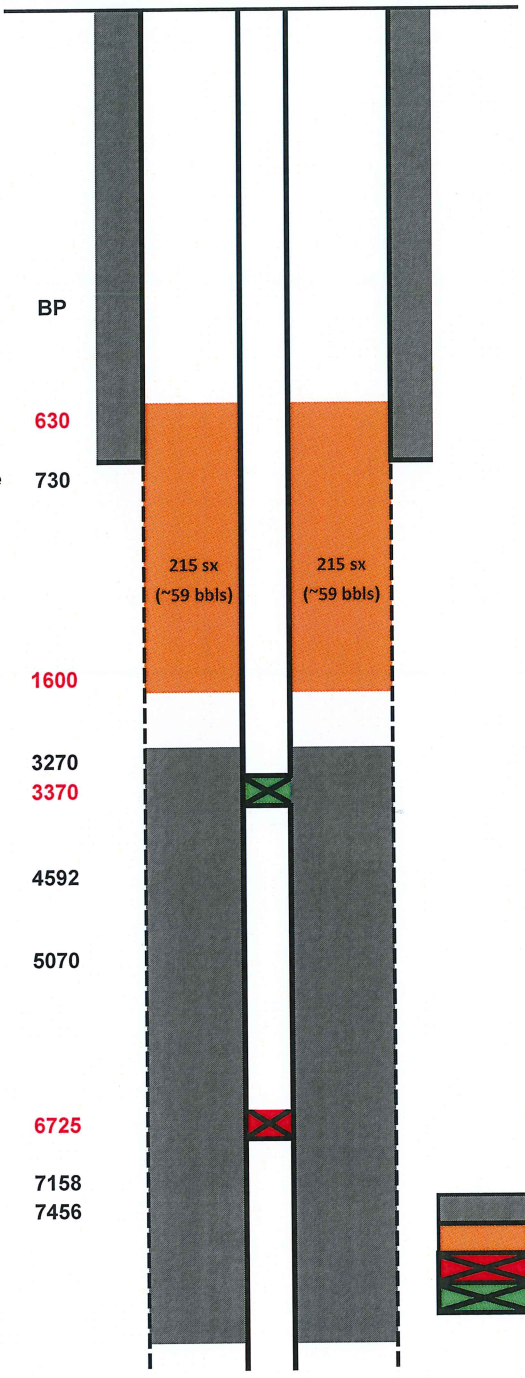
27 Pressure test to 1,000 psi for 15 minutes to be sure packer is set properly.

28 Broach tubing to seating nipple. ND BOP's, NU master valve and tubing head adaptor. Hydrotest tubing head to 5000 psi for 15 minutes.

29 RDMO WO rig.

30 Clean location and swab well back to production. Notify field foreman/field coordinator of finished work and turn well back over to production team.

Morning 41-15 05-123-25350 Proposed WBD
(Bradenhead)
7-7/8" Prod Hole



Fox Hills	BP
Proposed TOC	630
Surface Casing Shoe	730
Proposed Squeeze Holes	1600
Current TOC	3270
Production Packer	3370
SX Top	4592
SH Top	5070
RBP	6725
Top NB perfs	7158
Bottom CD perfs	7456

Between 8-5/8" Casing 24# and 4.5" casing	0.24715	ft^3/ft
Between 8-5/8" Casing 24# and 4.5" casing	0.04402	bbl/ft
7 7/8" Open hole and 4.5" casing	0.2278	ft^3/ft
7 7/8" Open hole and 4.5" casing	0.0406	bbl/ft
8" Open hole and 4.5" casing	0.2386	ft^3/ft
8" Open hole and 4.5" casing	0.0425	bbl/ft
8.5" Open hole and 4.5" casing	0.2836	ft^3/ft
8.5" Open hole and 4.5" casing	0.05051	bbl/ft
9" Open hole and 4.5" casing	0.3313	ft^3/ft
9" Open hole and 4.5" casing	0.0590	bbl/ft
10" Open hole and 4.5" casing	0.4350	ft^3/ft
10" Open hole and 4.5" casing	0.0775	bbl/ft
10.5" Open hole and 4.5" casing	0.4909	ft^3/ft
10.5" Open hole and 4.5" casing	0.0874	bbl/ft
11" Open hole and 4.5" casing	0.5495	ft^3/ft
11" Open hole and 4.5" casing	0.0979	bbl/ft
11.5" Open hole and 4.5" casing	0.6108	ft^3/ft
11.5" Open hole and 4.5" casing	0.1088	bbl/ft
12.5" Open hole and 4.5" casing	0.7417	ft^3/ft
12.5" Open hole and 4.5" casing	0.1321	bbl/ft
Class Cement yield (zone 1, SX/SH) 15.8ppg	1.15	ft^3/ft
Class Cement yield (zone 2, Fox Hills) 14ppg	1.53	ft^3/ft

0.2 excess

Zone 2 (Fox Hills)

(0.2836*(1600 - 630'))/1.53 * 1.2 = 215 sx

(0.05051*(1600 - 630')) * 1.2 = 59 bbls

Existing Cement
Proposed Cement
RBP
Production Packer