7/21/2014

Engineer: Tyler Davis

Cell: 303-717-0764

PLUG AND ABANDOMENT PROCEDURE

UPRR 42 Pan Am S #1

1. Note: Production Casing = 4 1/2" OD, 10.5#/ft; Production Hole Drilled @ 7 7/8."

2. Provide 48 hr notice to COGCC prior to rig up per request on approved Form 6 (e.g. call field coordinator, submit Form 42, etc.). Call foreman or lead operator at least 24 hr prior to rig move. Request they catch and remove the plunger, isolate production equipment and remove any automation prior to rig showing up. Install perimeter fence as needed.

3. MIRU slickline services. MIRU slickline services and VES. Pull bumper spring and tag bottom. Run pressure bomb and obtain pressure gradient survey from surface to 8123' making gradient stops every 1000'. Forward pressure bomb results to Sabrina Frantz. RD slickline services.

4. Notify IOC when rig mobilizes to location to generate workorder for flowline removal & one call for line locates.

5. Prepare location for base beam equipped rig.

6. MIRU, kill as necessary using clean fresh water with biocide and circulate. ND WH. NU BOP. Unseat landing jt, LD.

7. Notify cementers to be on call. Provide volumes listed below:

    7.1) Niobrara Plug: 188 cu ft/ 110 sx 50/50 Poz "G" w/20% silica flour, 3% gel, 0.1% sodium metasilicate and 0.4% FL-52 Mixed at 13.5 ppg and 1.71 cuft/sk yield (300' inside 10" OH + 20% excess and 300' inside 4-1/2" casing).

    7.2) SX Suicide: 943 cu ft/ 820 sx class "G" w/0.25 pps cello flake, 0.4% CD-32, 0.4% ASA-301 mixed at 15.8 ppg and 1.15 cf/sx (1200' between 11.25" OH + 20% excess. 1200' inside 4 1/2" casing, no excess).

    7.3) Stub Plug: 678 cu ft/510 sx Type III CaCl2 cement w/0.25 pps cello flake mixed at 14.8 ppg and 1.33 cf/sx (100' inside 4-1/2" csg, 726' in 11-1/4" OH + 40% excess, 203' in 8-5/8" surface casing, and 437' in 4-1/2" production casing).

8. TOOH 2-3/8" production tubing. Stand back.

9. MIRU WL. RIH gauge ring for 4-1/2" 10.5#/ft casing to 8100'. POOH.

10. RIH CIBP w/ WL. Set at +/- 8050'. POOH. PT CIBP to 1000 psi for 15 minutes. Dump bail 2 sx class "G" cement on CIBP. POOH.

11. Run CBL from CIBP to Surface. Send results to Tyler.Davis@anadarko.com immediately. Do not proceed without engineering consent (may need to change amount of cement and setting depths). If there is cement coverage to ~7010', we don't need to do a Niobrara squeeze.

12. PU 2 - 1' 3-1/8" perf guns with 3 spf, 0.5" dia 120deg phasing. Shoot 1' of squeeze holes at 7310' and 7010'. RD WL.

13. PU CICR and RIH on 2-3/8" tbg while hydrotesting tbg to 3000 psi. Set CICR at approximately 30' below the top perf pending collar locator on CBL.

14. RU Cementers. Pump Niobrara Suicide: 188 cu ft/ 110 sx 50/50 Poz “G” w/20% silica flour, 3% gel, 0.1% sodium metasilicate and 0.4% FL-52 mixed at 13.5 ppg and 1.71 cuft/sk yield (300’ in 10” OH + 20% excess and 300’ inside 4-1/2" Casing, no excess) to place suicide squeeze between perfs from 7310’ to 7010’. Underdisplace and sting out of CICR to leave 3 bbls on top of retainer.

15. PUH to 5500’. Circulate 80 bbls water containing biocide to clear tubing. Then, TOOH and SB remainder of tbg.

16. PU 2 - 1' 3-1/8" perf guns with 3 spf, 0.5" dia 120deg phasing. Shoot 1' of squeeze holes at 5500' and 4300'.

17. PU and RIH w/ CICR and 2-3/8" tubing and set CICR at approximately 30' below the top perf pending collar locator on CBL.

18. RU Cementers. Pump 5 bbl water w/biocide, 20 bbl Sodium Metasilicate, and another 5 bbl spacer immediately preceding cement.

19. Pump SX Suicide: 943 cu ft/ 820 sx class "G" w/0.25 pps cello flake, 0.4% CD-32, 0.4% ASA-301 mixed at 15.8 ppg and 1.15 cf/sx (1200’ in 11.25” OH + 20% excess and 1200’ inside 4-1/2” casing) to place suicide squeeze between perfs from 5500’ to 4300’. Under displace and sting out of CICR to leave 3 bbls on top of retainer.

20. PUH 300’. Circulate 50 bbls water containing biocide to clear tubing. Then, TOOH and LD all but 1320’ of tbg.

21. RU WL. Shoot off casing at or below 1220'. RDMO WL. Circulate water containing biocide to remove any gas.

22. NDBOP, NDTH.

23. Install BOP on casing head with 4-1/2" pipe rams.

24. TOOH with 4-1/2" casing, LD.

25. RIH with 2-3/8 " tubing to 1320'.

26. RU Cementers. Spot Stub Plug: 678 cu ft/510 sx Type III CaCl2 cement w/0.25 pps cello flake mixed at 14.8 ppg and 1.33 cf/sx (100' in 4-1/2" prod casing, 437' in 11-1/4" OH + 40% excess, and 203' in 8-5/8" surface casing).

27. TOOH. WOC 4 hrs. Tag Cement. Cement top needs to be above 580'; Proceed assuming TOC is above 580'. Otherwise, call production engineer.

28. MIRU WL. RIH 8-5/8” CIBP to 80'. Set, PT to 1000 psi for 15 min. If tests, RDMO WL and WO rig.

29. Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries and invoices to rscDJVendors@anadarko.com within 24 hrs of the completion of the job.

30. Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.

31. Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.

32. Excavate hole around surface casing enough to allow welder to cut 8 5/8” casing minimum 5’ below ground level.

33. Welder cut 8 5/8" casing minimum 5' below ground level.

34. MIRU ready cement mixer. Use 4500 psi compressive strength cement, (NO gravel) fill stubout.

35. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.

36. Properly abandon flowlines per Rule 1103.

37. Back fill hole with fill. Clean location, level.

38. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed. File electronic Form 42 once abandonment complete.