

## Rankin J Walter Unit#2 P&A

1. Call foreman or Lead Operator before rig up to isolate and remove automation and production equipment. Install fence if needed.
2. MIRU slickline services & VES. Pull bumper spring, tag bottom and run Gyro stopping every 100' from 7644'. (Gyro ordered 8/29/13) Forward survey data and invoices to Sabrina Frantz. RDMO SL.
3. Provide notice to COGCC prior to MIRU per Form 6 COA.
4. Notify IOC when rig moves on location to generate work order for flowline removal and one call for line locates.
5. Prepare location for base beam rig.
6. MIRU WO rig. Haul in additional joints of 2 3/8" TBG for replacements. Kill well; circulate as necessary, with water containing biocide (Casing Leaks Possible). ND wellhead. NU BOP's. Unseat landing joint and lay down.
7. Place cement services on will call when rig moves on location, providing expected volumes of cement needed. (~250sx for top plug; ~200 sx for Sx/Sh plug and 130 sx for NB/CD plug).
8. TOOH and stand back 2-3/8" TBG.
9. MIRU wireline services. RIH gauge ring for 4-1/2" casing (10.50# & 11.06#) to 7650'
10. PU 4-1/2" CIBP and RIH to 7600', set CIBP. Note: Cannot PT due to the casing leaks.
11. Dump bail 2 sacks of cement on top of CIBP at 7600'.
12. PU two 1' 3- 1/8" perf guns loaded with 3 spf, 0.5" EHD, 120 phasing. RIH w/ guns, shoot at 6870, PUH to 6470', shoot second gun. RD wireline.
13. PU 4-1/2" CICR and RIH on 2 3/8" production tubing to 6530'. Hydrotest to 3000 psi while TIH. Set CICR. (Test full string).

14. Initiate circulation using water containing biocide. Note rate and pressure.
15. MIRU cementing services. Pump 130 sx (Open Hole diameter from caliper log of 9" with 20% excess) of 50/50 Poz Class "G" cement with 20% silica flour, 3.0% gel, 0.1% sodium metasilicate and 0.4% FL-52 mixed at 13.5 ppg and 1.71 cuft/sk yield. Underdisplace by 3 BBL.
16. Unsting from CICR, dump remaining cement on top of CICR.
17. PUH 6 stands. Circulate (TBG Vol + Excess) to CLR TBG. RD cementing services
18. Load hole and circulate with 9.0 ppg mud containing biocide.
19. P&SB 4530' of TBG. LD remainder.
20. RU wireline services. PU two 1' 3-1/8" perf guns loaded with 3 spf, 0.5" EHD, 120 phasing. Shoot 1' of squeeze holes at 4745' and 4470'. RD wireline.
21. PU 4-1/2" CICR and RIH on 2 3/8" production tubing to 4530'. Set CICR.
22. Initiate circulation through CICR using water containing biocide.
23. RU cementing services. Preflush with 5 bbl H2O, 20 bbl of sodium metasilicate, 5 bbl H2O.
24. Pump 200 sx (Open Hole diameter from caliper log of 10" with 20% excess) of Class "G" cement with ¼ #/sx cello-flake, 0.4% CD-32 and 0.4% ASA-301 with 1.15 cuft./sk yield..
25. Underdisplace by 3 BBL cement. Unsting from CICR, dump 3 BBL remaining on top of CICR.
26. PUH 6 stands. Circulate 9.0 ppg mud with biocide to CLR TBG. P&SB 930' TBG, LD remainder. RD cementing services.
27. RU wireline services. Crack closest coupling at 930' or shoot off. RD wireline.
28. Circulate with mud w/ biocide.
29. NDBOP, NDTH.
30. NU BOP on casing head. Install 4-1/2" pipe rams.
31. TOOH with 4-1/2" casing and lay down.
32. RIH with 2-3/8" TBG into casing stub to 1030'.

33. RU Cementing services. Spot 250 sx (Open Hole diameter from caliper of 10" with 20% excess) of Type III cement from 930' to 230' (Mixed at 14.0 ppg and 1.53 cuft/sk). PUH & circulate 9.0 PPG mud w/ biocide to clear TBG. TOOH. WOC 4 hrs
34. TIH and tag cement plug. If plug top is below 230', top as necessary.
35. MIRU wireline services. PU 8-5/8" CIBP and RIH to 100'. Set CIBP. Pressure test CIBP to 1000 psi for 15 minutes. If plug tests, RDMO wireline and WO rig.
36. Wellsite supervisor turn all paper copies of cementing reports/invoices and logs in to Sabrina Frantz. NOTE: During the job, wellsite supervisor should instruct the logging and cementing contractors to e-mail all logs, job reports/invoices to Sabrina Frantz.
37. Have excavation contractor notify One-Call to clear for excavating around wellhead and flowline removal.
38. Excavate hole around surface casing of sufficient size and depth to allow welder to cut off 8-5/8" surface casing and at least 5' below ground level.
39. Have welder cut off 8-5/8" surface casing at least 5' below ground level.
40. MIRU ready cement mixer. Use 4,500 psi compressive strength redi-mix cement (sand and cement only, no gravel) Fill STUB. RDMO cement services.
41. Have welder spot weld steel marker plate on top of surface casing. (Note: marker shall be labeled with well name and number, legal location (¼ ¼ description) and API number.
42. Properly abandon flowlines as per Rule 1103.
43. Have excavation contractor back fill hole with native material. Clean up location and have leveled.
44. Submit Form 6 to COGCC. Provide "As Plugged" wellbore diagram identifying the specific plugging completed.