

## PLUG AND ABANDONMENT PROCEDURE

### Champlin 86 Amoco Q #1

1. Note: Production Casing = 5-1/2" OD, 17#/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 IOC (970-506-5980) at least 24 hr prior to rig move. Request they catch and remove plunger, isolate production equipment and remove any automation prior to rig MIRU.
3. MIRU slickline services and VES. Pull bumper spring and tag bottom. Run gyro survey from 8080' to surface with stops every 100'. Forward gyro survey data and invoices to Sabrina Frantz. RD slickline services and VES.
4. Prepare location for base beam equipped rig. Install perimeter fence as needed.
5. Check and record Bradenhead pressure. If Bradenhead valve is not accessible, re-plumb so that valve is above GL.
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: 96 cu ft/ 70 sx "G" w/20% silica flour, 0.4% CD-32, 0.4% ASA-301 and R-3 to achieve 2:30 pump time mixed at 15.8 ppg and 1.38 cuft/sk yield (670' inside 5-1/2" casing).
  - 7.2 SX Suicide: 655 cu ft/ 570 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 (1000' in 7-7/8" OH + 60% excess. 1000' inside 5-1/2" casing, no excess).
  - 7.3 Balanced Plug: 372 cu ft/ 280 sx Type III CaCl<sub>2</sub> cement w/0.25 pps cello flake mixed at 14.8 ppg and 1.33 cf/sx (100' inside 5-1/2" csg, 755' inside 7-7/8" OH + 40% excess, and 207' inside 8-5/8" surface casing).
8. TOOH 2-3/8" production tubing. Stand back.
9. RU WL. PU gauge ring and RIH to 8200'. TOOH and LD gauge ring.
10. RIH CIBP w/WL. Set at +/- 8150. Dump bail 2 sx neat 'G' cmt. POOH.
11. RIH CIBP w/WL. Set at 7700'. Pressure test CIBP to 1000 psi. POOH.
12. Run CBL from 7000' – surface to verify there is no cement above 6690'. RD WL. Note: it is important to get a good quality CBL. It may be necessary to circulate from just above CIBP to surface in order to get gas out of the hole.
13. RIH w/ 2-3/8" tubing to 7700' while hydrotesting to 3000 psi.
14. RU Cementers. Pump Niobrara Plug: 96 cu ft/ 70 sx "G" w/20% silica flour, 0.4% CD-32, 0.4% ASA-301 and R-3 to achieve 2:30 pump time mixed at 15.8 ppg and 1.38 cuft/sk yield (670' inside 5-1/2" Casing, no excess) to place cement in production casing from 7700' to 7030'.
15. PUH to 6800'. Circulate 160 bbls water containing biocide to clear tubing. Then, TOOH and SB remainder of tbg.
16. RU WL. PU 3-1/8" perf guns with 3 spf, 0.5" dia 120deg phasing. Shoot 1' of squeeze holes at 5300' and 4300'. RD WL.

17. PU and RIH w/ CICR on 2-3/8" tubing and set CICR at approximately 4330'.
18. RU Cementers. Pump 5 bbl water w/biocide, 20 bbl Sodium Metasilicate, and another 5 bbl water spacer immediately preceding cement. Pump SX Suicide: 655 cu ft/ 570 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 to place suicide squeeze between perfs from 5300' to 4300'. Under displace and sting out of CICR to leave 3 bbls on top of retainer.
19. PUH to 4000'. Circulate 95 bbls water containing biocide to clear tubing. Then, TOO H.
20. RU WL. Shoot off casing at or below 1120'. RDMO WL. Circulate 30 bbls water containing biocide down casing and up annulus to remove any gas.
21. NDBOP, NDTH.
22. Install BOP on casing head with 5-1/2" pipe rams.
23. TOO H with 5-1/2" casing, LD.
24. RIH with 2-3/8 " tubing to 1220'.
25. RU Cementers. Pump 10 bbl SAPP with a minimum of 20 bbl fresh water spacer. Pump Balanced Plug: 372 cu ft/ 280 sx Type III CaCl<sub>2</sub> cement w/0.25 pps cello flake mixed at 14.8 ppg and 1.33 cf/sx from 1220' to 410'.
26. PUH to 200'. Circulate 5 bbls water containing biocide to clear cement and tubing.
27. TOO H. WOC 4 hrs. Tag Cement. Cement top needs to be at or above 410'; Proceed assuming TOC is at or above 410'. 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. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
37. Properly abandon flowlines per Rule 1103.
38. Back fill hole with fill. Clean location, level.
39. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed. File electronic Form 42 once abandonment complete.