

Engineer: Elizabeth Hunt  
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## PLUG and ABANDONMENT PROCEDURE

### WEISS 1-34

#### Step Description of Work

1. Provide 48 hour notice to COGCC prior to rig up per request on approved Form 6 (e.g. call field coordinator, submit Form 42, etc.). Notify Automation Removal Group at least 24 hours prior to rig move. Request they isolate production equipment, and remove any automation prior to rig MIRU.
2. MIRU Slickline and VES. WELL NEEDS GYRO RAN from 4000'-7600'. Well has stage tool at +/- 4249' that needs to be pulled. Once pulled, run gyro to 7650', making stops every 100'. RDMO Slickline and VES.
3. Prepare location for base beam equipped rig. Install perimeter fence as needed.
4. Verify COAs before RU.
5. Upon RU, check and record bradenhead pressure. If bradenhead valve is not accessible, re-plumb so that valve is above GL. Blow down bradenhead and re-check pressure the next day. Repeat until pressure stays at 0 psi.
6. MIRU WO rig. Spot a min of 100 jts of 2-3/8" 4.7# J-55 tbg (possibility of corroded tbg). Kill well as necessary using clean fresh water with biocide. ND WH. NU BOP. Unland tbg using unlanding joint and LD.
7. TOO H and SB 7610' of 2-3/8" tbg. LD any remaining tbg.
8. PU and TIH with (4.5", 11.6#) bit and scraper on 2-3/8" tbg to 7610'. TOO H, LD bit and scraper.
9. MIRU WL. PU and RIH with (4.5", 11.6#) CIBP and set at +/- 7600' (collars at 7586' and 7628'). POOH. RIH and dump 2 sx cement on CIBP. POOH. SB WL.
10. TIH with 2-3/8" tbg to 2500'. Load hole with biocide treated fresh water and circulate the gas out of the well. PT to 1000 psi for 15 minutes. TOO H. SB all 2-3/8" tbg.
11. MIRU WL. RIH with two 3-1/8" perf guns with 3 spf, min 0.5" EHD, 120° phasing. Shoot 2' of squeeze holes at 6800' and 4' of squeeze holes at 6400'. POOH. RDMO WL.
12. PU and TIH with (4.5" 11.6#) CICR on 2-3/8" tbg. TIH while hydrotesting tubing to 3000 psi. Set CICR at 6430'.
13. Establish circulation to surface with biocide treated fresh water, and pump 200 bbls to clean up hole.
14. MIRU cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water spacer. Pump Niobrara Squeeze: 230 sxs (348 cf) w/ 0.25 lb/sk polyflake, assuming 15.8 ppg & 1.51 cf/sk. Underdisplace by 3 bbls. Volume based on 370' below the CICR inside 4-1/2" production casing, 400' in the 4-1/2" csg annulus assuming 7.88" bit size with 60% excess, and 190' on top of the CICR. RD cementers.
15. Slowly pull out of the cement and TOO H to 5800'. Reverse circulate using biocide treated fresh water, to ensure the tubing is clean. TOO H and SB 3950' of 2-3/8" tbg. LD stinger and remaining tbg.
16. MIRU WL. RIH with two 3-1/8" perf guns with 3 spf, min 0.5" EHD, 120° phasing. Shoot 2' of squeeze holes at 4330' and 4' of squeeze holes at 3920'. POOH. RDMO WL.
17. PU and TIH with (4.5" 11.6#) CICR on 2-3/8" tbg. Set CICR at 3950'.
18. Establish circulation to surface with biocide treated fresh water, and pump 100 bbls to clean up hole.

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19. RU Cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water spacer. Pump Sussex Squeeze: 230 sxs (348 cf) w/ 0.25 lb/sk polyflake, assuming 15.8 ppg & 1.51 cf/sk. Underdisplace by 3 bbls. Volume is based on 380' below the CICR inside 4-1/2" production casing, 410' in the 4-1/2" csg annulus assuming 7.88" bit size with 60% excess, and 190' on top of the CICR. RD cementers.
20. Slowly pull out of the cement and PUH to 3200'. Reverse circulate to ensure no cement is left in the tbg.
21. TOOH and SB 760' of 2-3/8" tbg. LD stinger and remaining tbg.
22. MIRU WL. RIH and jet cut (4.5" 11.6#) casing at 660'. RDMO WL.
23. Attempt to establish circulation and circulate (72 bbl) with fresh water containing biocide to remove any gas.
24. ND BOP. ND TH. Un-land casing using a casing spear, not a lifting sub. Rig max pull shall be 100,000#. Max pull over string weight shall be 50,000#. If unable to unland, contact Engineering.
25. Install BOP on casing head with 4.5" 11.6# pipe rams.
26. TOOH and LD all of 4.5" casing. Remove 4.5" pipe rams and install 2-3/8" pipe rams.
27. TIH with mule shoe and 2-3/8" tbg to 760'.
28. Establish circulation with biocide treated fresh water and pump one hole volume (74 bbl).
29. RU Cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water spacer. Pump Stub Plug: 250 sxs (375 cf) w/ 0.25 lb/sk Polyflake, assuming 15.8 ppg and 1.50 cf/sk. Volume is based on 100' in 4-1/2" production casing with no excess, 350' in open hole assuming 7.88" bit size with 60% excess, and 200' in 8-5/8" surface casing with no excess. The plug will cover 760' - 110'. RDMO cementers.
30. Slowly pull out of the cement and PUH to 100'. Circulate using biocide treated fresh water, to ensure the tubing is clean.
31. MIRU WL. Tag cement as needed. RIH with 8-5/8" CIBP to 80'. RDMO WL and WO rig.
32. Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries to [rscDJVendors@anadarko.com](mailto:rscDJVendors@anadarko.com) within 24 hours of completion of the job.
33. Supervisor submit paper copies of all invoices, logs, and reports to Evans Engineering Specialist.
34. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
35. Capping crew will set and secure night cap on 8 5/8" casing head, restrain the casing head, pressure test CIBP to 500 psi with hydrotest pump, then remove night cap and casing head restraints.
36. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
37. Welder cut casing minimum 5' below ground level.
38. Fill casing to surface using 4500 psi compressive strength cement (NO gravel).
39. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
40. Obtain GPS location data as per COGCC Rule 215 and send to [rscDJVendors@anadarko.com](mailto:rscDJVendors@anadarko.com).

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41. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
42. Back fill hole with fill. Clean location, and level.
43. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.