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## PLUG and ABANDONMENT PROCEDURE

MAGNESS FEDERAL 12-6A

API: 05-123-20758

### Description

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 catch and remove plunger, isolate production equipment, and remove any automation prior to rig MIRU.
2. MIRU Slickline. Pull production equipment and tag bottom. Record tag depth in Open Wells. Directional Survey was run on 02/11/02. RDMO Slickline.
3. Prepare location for base beam equipped rig. Install perimeter fence as needed.
4. COA: Verify Form 17 (State Bradenhead Test) has been run within 60 days of RU. If Form 17 required sampling, contact Engineering to verify plugging orders before beginning P&A operations.
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. Refer to BOP testing guidelines, fluid barrier management, and tripping best practices as applicable. All wireline operations will need a flanged changeover, WL BOP, Lubricator with an ID to fit the largest OD of the toolstring, and a packoff. Please contact foreman to discuss arrangement of stack, or alternate plan. Contact your foremen with any questions regarding standard operating procedures or any potential deviations.
7. MIRU WO rig. Kill well as necessary using biocide treated fresh water. Verify BOP and wellhead rating, inspect for appropriate API standards, pressure test BOP according to BOP testing guidelines. ND WH. NU BOP. Unland tbg using unlanding joint and LD.
8. TOOH and SB 1060' of 2-3/8" tbg. LD remaining 2-3/8" tbg.
9. MIRU WL. PU and RIH with (4-1/2", 11.6#) gauge ring to 8010'. POOH.
10. PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 8000' (collars at 7970' & 8010'). POOH.
11. RIH and dump 2 sx cement on CIBP. POOH.
12. PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 7325' (collars at 7306' & 7348'). POOH.
13. Top fill hole with biocide treated fresh water to minimize gas interference. PT CIBP to 500 psi for 15 minutes. A good PT has less than 10% loss in pressure and stabilization at the end of the test. Test can be extended longer in time if need be. Contact Foreman or Engineer to confirm proceeding after pressure test.
14. RIH and dump 2 sx cement on CIBP. POOH.
15. PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 4325' (collars at 4306' & 4348'). POOH.
16. RIH and dump 2 sx cement on CIBP. POOH.
17. COA: Confirm and document static conditions in the well. If there is evidence of pressure or fluid migration at any time after placing the Sussex plug, contact Engineering.
18. PU and RIH with 4' 3-1/8" perf gun with 3 spf, shot type TAG 3375-301, 0.59 EHD, 120° phasing, 4.72" penetration, and 20 gram charge. Shoot 4' of squeeze holes at 1500'. POOH.

19. Pump down the surface casing and up the annulus. Establish circulation with fresh water and several sweeps of mud thinner with the rig pump. Pump at least two hole volumes (134 bbl) or until returns are clean. If unable to gain circulation, contact Foreman to discuss reverse circulation. Note: start with rig pump first. Step up pump rate as long as barrel in and barrel out is being maintained. Try to get pump rate to 6 bpm as this will clean the annulus, but maintain a safe operating rate for your rig pump.
20. PU and RIH with 4' 3-1/8" perf gun with 3 spf, shot type TAG 3375-301, 0.59 EHD, 120° phasing, 4.72" penetration, and 20 gram charge. Shoot 4' of squeeze holes at 1000'. POOH. RDMO WL.
21. PU and TIH with (4.5") CICR on 2.375" tbg. Set CICR at 1060'.
22. Note: AGM cement will be used with a quick set time - ensure rig crew is ready to pull tubing as soon as cement is done pumping to prevent stuck tubing. If you were not able to clean the annulus with water at 6 bpm using your rig pump, use the cement truck to establish circulation at 6 bpm to ensure the annulus is cleaned.
23. MIRU Cementers. Pump 10 bbl pre flush then a 5 bbl water spacer. Pump Bradenhead Circulation Plug: 185 sx (42 bbls or 234 cuft) Class G, assuming 15.8 ppg & 1.23 yld with 0.40% Latex, 2% Calcium Chloride, and 4% Gypsum. Mix water must be +/-70°F (may have to bring out cold water to dilute heated water). Volume is based on 50' in 4.5" production casing on top of the CICR, 440' in 4.5" production casing under the CICR, and 500' in 4.5" production casing x 7.875" open hole with 60% excess. This plug is designed to cover 1500' - 1010'. Collect wet and dry samples of cement to be left on rig. RDMO Cementers. Notify engineering if circulation is ever lost during the job.
24. Pull out of cement at a rate of 1 jt/min. TOOH to 1010'. Reverse circulate with water to ensure no cement is left in the tbg and to clean up top perforation holes. TOOH and LD all 2.375" tbg.
25. Establish circulation down casing and up annulus with water to ensure top perforations at 1000' are able to circulate before SDFN. Contact engineer/foremen if mud desired for this well. Once holes have been cleaned with water, establish circulation with 12 ppg mud pump at least one hole volume (68 bbl) with 10 bbl excess and leave overnight. Note: this will establish additional hydrostatic pressure on the well.
26. COA: Verify and document that all pressure and fluid migration has been eliminated prior to placing the SC shoe plug at 1000'. If there is evidence of pressure or fluid migration, contact Engineering.
27. Open bradenhead. Establish circulation down the 4-1/2" casing, up the annulus with fresh water. Hole should already be clean so pump rates and volumes not critical - this will remove the mud from the well.
28. ND BOP. Connect B1 swedge to 4-1/2" casing.
29. MIRU Cementers. Pump 10 bbl pre flush then a 5 bbl water spacer. Pump surface circulation plug: 390 sx (86 bbls or 480 cuft) Class G, assuming 15.8 ppg & 1.23 yld with 0.40% Latex, 2% Calcium Chloride, and 4% Gypsum. Mix water must be 70°F (may have to bring out cold water to dilute heated water). Volume is based on 1000' in 4.5" production casing with no excess, 401' in 4.5" production casing x 7.875 open hole annulus with 100% excess, and 599' in 4.5" production casing x 8-5/8" surface casing annulus with no excess plus an additional 50 sx. This plug is designed to cover 1000' - 0'. Excess is calculated into the job - pump cement until you receive 15.8 ppg cement on the backside. Collect wet and dry samples of cement to be left on rig. RDMO Cementers. Notify engineering if circulation is ever lost during the job.
30. Monitor well 4 hours to ensure cement does not fall back. RDMO WO rig.
31. Note: the AGM cement has a quick set time - make sure crew is ready to TOOH with tubing to prevent stuck tubing. Consult with engineer/foremen if it is desired to shut-in the well with applied pressure while the cement begins to set-up.
32. Top off cement to surface if necessary. RDMO cementers. RDMO WO rig.

33. COA: If cement was not circulated to surface, then WOC 4 hours. Tag TOC. TOC must be 80' or shallower. If tag is too deep or there is evidence of pressure or fluid migration, contact Engineering.
34. 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.
35. Supervisor submit paper copies of all invoices, logs, and reports to VWP Engineering Specialist.
36. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
37. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
38. Welder cut casing minimum 5' below ground level.
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).
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.