

PLUG AND ABANDONMENT PROCEDURE

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HALLER 34-21

Step	Description of Work
1	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 Automation Removal Team at least 24 hr prior to rig move. Request they catch the plunger and isolate production equipment and remove any automation prior to rig MIRU.
2	MIRU slickline services. Pull bumper spring and tag bottom. Tag should not be any deeper than 7590' due to CIPB and 2 sks of cement to abandon J Sand. RDMO slickline services.
3	Prepare location for base beam equipped rig. Install perimeter fence as needed.
4	Check and record Bradenhead pressure. If Bradenhead valve is not accessible, re-plumb so that valve is above GL.
5	Notify Evans engineering if any bradenhead pressure exists.
6	MIRU, kill as necessary using clean fresh water with biocide. ND WH. NU BOP. Unseat landing jt
7	POOH and stand back 6530' of 2-3/8" tbg
8	PU 4-1/2" CIBP, RIH on 2-3/8" tbg and set at 6930'. Circulate all the gas out of the well. Attempt to pressure test CIPB to 500 psi. If it does not test its most likely due to a leaking squeeze uphole. POOH standing back.
9	MIRU wireline. Run CBL from just above the CIBP at 6930' to surface. Send results to Evans engineering. Confirm depths of squeeze holes moving forward based on the CBL results.
10	RIH and dump bail 2 sks of cement on top of CIPB at 6930'.
11	PU two 3-1/8" perf guns w/ 0.6" diam, 120 phasing and shoot 1' of squeeze holes at 6620' and 2' of squeeze holes at 6500'. RDMO WL.
12	Notify Cementers to be on call.
13	PU 4-1/2" CICR on 2-3/8" tbg RIH while hydrotesting to 3000 psi, RIH and Set CICR at 6530'. Establish circulation through sqz holes.
14	MIRU cementers. Establish circulation. Pump Nio Suicide Squeeze: Pump 55 sks (16.3 bbl) of Cement Blend: 1:1:3 'Poz:G:Gel' + 20% silica + 0.4% CFL-3 + 0.4% CFR-2 + 0.1% SMS. Mixed at 13.5 ppg and 1.66 cuft/ sk. Underdisplace by 3 bbls and unsting from CICR. Spot final 3 bbls on top of CICR to leave 150' on top of CICR and sqz holes. Volume based on 10" x 4-1/2" annulus with 20% excess from 6620' to 6500', and 4-1/2" casing from 6620' to 6350'. RD Cementers.
15	PUH to 6200' and circulate hole clean with fresh water and biocide. POOH standing back 4130' of tubing
16	MIRU WL. PU two 3-1/8" perf guns w/ 0.6" diam, 120 phasing and shoot 1' of squeeze holes at 4510' and 2' of squeeze holes at 4100'. RDMO WL.

- 17 PU 4-1/2" CICR on 2-3/8" tbg, RIH and Set CICR at 4130'. Establish circulation through sqz holes.
- 18 RU Cementers. Establish circulation. Pump Sussex Suicide plug: Pump 5 bbls fresh water followed by 20 bbls sodium metasilicate followed by 5 bbls fresh water ahead of cement: 270 sks (53.9 bbls): 1:1 'Poz:G + 0.6% CFL-2 + 0.5% CFR + 0.6% SMS + 0.2% SPC-2 + 0.1% LTR, mixed at 14.6 ppg and 1.12 cuft/sk. Underdisplace by 3 bbls and unsting from CICR. Spot final 3 bbls on top of CICR to leave 150' on top of CICR and sqz holes. Volume based on 10" x 4-1/2" annulus with 40% excess from 4510' to 4100', and 4-1/2" casing from 4510' to 3950'. RD Cementers.
- 19 PUH to 3600' and circulate hole clean with fresh water and biocide.
- 20 PUH to 1900'.
- 21 MIRU Cementers. Establish circulation and pump Fox Hills Balanced plug: Pump 100 sx (23.7 bbls) : Type III + 0.3% CFL-3 + 0.3% CFR-2 + 1% CaCl₂ + 0.25 lb/sk Polyflake, mixed at 14.8 ppg and 1.34 cuft/sk. POH and WOC per cementing company recommendation. Plug size is based on 4-1/2" casing from 1900' to 440'. PUH to 300' and Circulate out any excess cmt. TOH and WOC per cement company recommendation.
- 22 RIH and tag top of plug. Plug needs to be tagged at 540' or shallower. POOH and LD 2-3/8" tbg.
- 23 Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries to rscDJVendors@anadarko.com within 24 hrs of completion of the job.
- 24 Supervisor submit paper copies of all invoices, logs, and reports to Evans specialist.
- 25 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
- 26 Excavate hole around surface casing enough to allow welder to cut casing minimum 5' below ground level.
- 27 Welder cut casing minimum 5' below ground level.
- 28 Fill casing to surface using 4500 psi compressive strength cement, (NO gravel).
- 29 Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
- 30 Properly abandon flowlines per Rule 1103. File electronic Form 42 once abandonment complete.
- 31 Back fill hole with fill. Clean location, level.
- 32 Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.