PLUG AND ABANDOMENT PROCEDURE

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FT SAINT VRAIN 26

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 Group at least 24 hr prior to rig move. Request they pull plunger, isolate production equipment and remove any automation prior to rig MIRU.
2	Check and report surface casing pressure. If surface casing is not accessible at ground level, re-plumb so valve is at ground level.
3	Prepare location for base beam equipped rig. Install perimeter fence as needed.
4	MIRU slickline services. Pull bumper spring and tag bottom. Run a bottom-hole pressure survey from mid-perf Codell @ 7085' to surface with gradient stops every 1000'. Forward results of both surveys to Sabrina Frantz in Evans Engineering. RDMO slickline services. NOTE: BHP survey must be completed before the well is blown down or killed!
5	MIRU, kill as necessary using clean fresh water with biocide. ND WH. NU BOP. Unseat landing jt, LD. Tbg is landed @ 7076' KB w/ 223 jts.
6	TOOH and stand back 6740' 2 3/8" tbg. LD remainder.
7	MIRU WL. RIH gauge ring for 4 1/2" 12.6# casing to 6780'. POH.
8	RIH 4 1/2" CIBP and set @ 6740' to abandon Codell and Niobrara perfs. Presure test CIBP and casing to 1000 psi for 15 minutes. RDWL.
9	TIH w 2 3/8" tbg open ended to CIBP at 6740'. Hydro-test tbg to 3000 psi.
10	RU cementers and equalize a cement plug above CIBP from 6740' to 6340' as follows: 25 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. (35 cuft of slurry).
11	POH 10 stands and circulate tbg clean using fresh water treated with biocide. TOOH standing back 3840' of tbg.
12	RUWL. PU 2 - 3-1/8" perf guns with 3 spf, 0.5" dia 120° phasing. Shoot 1' of squeeze holes at 4210' and 2' of squeeze holes at 3810'. RDWL.
13	PU CICR on 2 3/8" tbg. RIH and set CICR at 3840'.
14	RU Cementers. Establish circulation and pump 5 bbl water w/ biocide, 20 bbl Sodium Metasilicate, and another 5 bbl spacer immediately preceding cement.
15	Pump Sussex suicide squeeze: 180 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 cuft/sk (207 cuft of slurry) to place cement between perfs. Underdisplace and sting out of CICR to leave 3 bbls cement on top of retainer. Cement volume based on 9" hole with 20% excess. Caliper log on file.

16 POH 15 stands. Circulate water containing biocide to clear tubing. POH standing back 920' of tbg.

17 RU WL. Crack coupling or cut casing at 820'. RDMO WL. Circulate bottoms up and continue circulating to remove any gas from wellbore.

18 ND BOP and tubing head. Install BOP on surface casing head with 4 1/2" pipe rams. Install 3000 psi ball valves on both casing head outlets. Install a choke or choke manifold on one outlet.

19 TOOH and LD 4 1/2'' casing. Change pipe rams to 2 3/8".

20 RIH with 2 3/8'' tubing open-ended to 920' (100' inside 4 1/2" stub).

21 RU cementers. Establish circulation with water and pump 10 bbl SAPP (Sodium Acid Pyrophosphate) followed by 20 bbl (min.) fresh water spacer immediately preceding cement.

22 Pump balanced Stub Plug 920'-311' : 220 sx Type III w/0 .25#/sk cello flake and CaCl2 as deemed necessary for 4 hour tag mixed at 14.8 ppg and 1.33 cf/sx (293 cuft of slurry). Cement volume based on 100' in 4 1/2'' csg, 200' in 8 5/8" csg, and 309' in 9.0" OH + 40% excess.

23 TOOH. WOC per cementing company recommendation. Tag Cement. TOC should be at or above 411'. If not, consult Evans Engineering.

24 MIRU WL. RIH 8 5/8'' CIBP to 80'. Set and PT to 1000 psi for 15 min. If tests, RDMO WL and WO rig.

25 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.

26 Supervisor submit paper copies of all invoices, logs, and reports to Evans Engineering Specialist.

27 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.

28 Excavate hole around surface casing enough to allow welder to cut 8 5/8” casing minimum 5’ below ground level.

29 Welder cut 8 5/8'' casing minimum 5' below ground level.

30 Fill casing to surface using 4500 psi compressive strength cement, (NO gravel).

31 Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.

32 Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.

33 Properly abandon flowlines per Rule 1103. File electronic Form 42 once abandonment complete.

34 Back fill hole with fill. Clean location, level.

35 Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.

COA Requirement/ Bradenhead/Casing Integrity 8/15/2015
Gyro date 8/30/2013