

PLUG AND ABANDONMENT PROCEDURE

DINNEL L 14-17

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 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.
2	MIRU slickline services. Pull bumper spring and tag bottom. RIH with pressure bomb from surface to 7385' stopping every 1000'. 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. Note: Form 17 completed on 9/4/2014 had a bradenhead pressure of 214 psig after a 20 minute test, and produced 20 gallons of condensate.
5	MIRU, kill as necessary using clean fresh water with biocide. ND WH. NU BOP. Unseat landing jt, LD.
6	TOOH and SB 2 3/8" production tubing (222 jts landed @ 7364').
7	MIRU WL. RIH junk basket w/ gauge ring for 4 1/2" 11.6#/ft casing to 7350'. POOH.
8	Set 4 1/2" CIBP at 7300' (collars at 7271' and 7314') to abandon Codell perfs. RDMO WL.
9	Pressure test the CIBP to 1000 psi.
10	MIRU hydrotester. Hydrotest 2 3/8" tubing to 3000 psi while TIH open ended. Tag CIBP @ 7300' and PU 5'.
11	RU Cementers. Pump Niobrara/Codell plug: 40 sx (56 cuft) class "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/sx (630' inside 4 1/2" csg, no excess). The plug will cover 7300' - 6670'. RD cementers.
12	PUH to 6400' and circulate tubing clean to ensure no cement is left in the tubing.
13	PUH 4360' of tubing, LD remainder.
14	MIRU WL. PU and RIH with 2, one foot 3 1/8" perf guns shoot squeeze holes at 4730' and 4330' with 3 spf, 0.59" diam, 120 degree phasing. RDMO WL.
15	PU and RIH with a 4 1/2" CICR on 2 3/8" tubing and set at 4360'. Establish circulation with fresh water treated with biocide.
16	MIRU Cementers. Pump 20 bbls sodium metasilicate and a 5 bbls water spacer followed by Sussex Suicide Squeeze: 180 sx (207 cuft) Class "G" cement with 0.25 pps cello flake, 0.4% CD-32, 0.4% ASA-301 mixed at 15.8 ppg and 1.15 cuft/sx (400' in 9" OH from caliper with 20% excess, 400' in 4 1/2" production casing with no excess). Underdisplace by 3 bbls and unsting from CICR spotting at least 100' of cement over squeeze perfs. The plug will cover 4730' - 4330'. RDMO cementers.
17	PUH to 4100' and circulate tubing clean to ensure no cement is in the tubing. PUH 1330' of tubing, LD remainder.
18	MIRU WL. RIH and jet cut casing at 1230'. RDMO WL.
19	Circulate with fresh water containing biocide to remove any gas.
20	NDBOP, NDTH. Install BOP on casing head with 4 1/2" pipe rams.

- 21 TOOH with 1230' of 4 1/2" casing, LD. Replace 4 1/2" pipe rams with 2 3/8" pipe rams.
- 22 RIH with 1330' of 2 3/8" tubing (100' into casing stub at 1230').
- 23 MIRU Cementers. preceding cement, pump 10 bbl (min) SAPP followed by a 20 bbl fresh water spacer. Pump Stub Plug: 300 sx (399 cuft) Type III w/ cello flake and CaCl₂ as deemed necessary, mixed at 14.8 ppg and 1.33 cuft/sx (100' in 4 1/2" casing with no excess, 507' in 9" OH from caliper with 40% excess, 203' in 8 5/8" surface csg with no excess). The plug will cover 1330' - 520'. RD cementers.
- 24 Pull up to 100' and circulate tubing clean using fresh water treated with biocide. TOOH.
- 25 WOC per cement company recommendation. Tag cement. Cement top needs to be above 523'.
- 26 MIRU WL. RIH 8 5/8" CIBP to 80'. Set and pressure test to 1000 psi for 15 minutes. RDMO WL and WO rig.
- 27 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.
- 28 Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
- 29 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
- 30 Excavate hole around surface casing enough to allow welder to cut casing minimum 5' below ground level.
- 31 Welder cut casing minimum 5' below ground level.
- 32 Fill casing to surface using 4500 psi compressive strength cement, (NO gravel).
- 33 Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
- 34 Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
- 35 Properly abandon flowlines per Rule 1103. File electronic Form 42 once abandonment complete.
- 36 Back fill hole with fill. Clean location, level.
- 37 Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.

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