

PLUG AND ABANDONMENT PROCEDURE

GORDON TURKEY FARMS POOLING UNIT #1

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 the plunger and isolate production equipment and remove any automation prior to rig MIRU.
2	Prepare location for base beam equipped rig. Install perimeter fence as needed.
3	MIRU slickline services. Pull bumper spring and tag bottom. Run pressure bomb and obtain pressure gradient survey from surface to 7994' making gradient stops every 1000'. Forward pressure bomb results to Evans Engineering. RDMO slickline services.
4	Check and record Bradenhead pressure. If Bradenhead valve is not accessible, re-plumb so that valve is above GL.
5	MIRU, kill as necessary using clean fresh water with biocide. ND WH. NU BOP. Unseat landing jt, LD.
6	POOH and stand back 2-3/8" tbg. (252 jnts landed at 7970').
7	PU scraper for 4-1/2" casing and RIH to 7930'. POOH and LD scraper.
8	PU 4-1/2" CIBP on 2-3/8" tbg and RIH and set at +/- 7900'. Circulate gas out of the hole from just above the CIBP and PT CIBP and casing to 1000 psi for 15 minutes. Assuming passing PT, POOH.
9	RU WL. Run CBL from ~7900' to surface. Find the TOC above the J Sand and the Bottom and Top of Cement at the DV Tool at 842' and identify any other anomalies. Forward results to Reed.Boeger@Anadarko.com and Brent.Marchant@Anadarko.com. Contact Evans Engineering in case cement volumes and perf depths need to change.
10	PU dumpbailer and set 2 sacks neat "G" on top of the CIBP at 7930'. POOH and LD dumpbailer.
11	PU 2-1' 3-1/8" perf guns w/ 0.6" diam, 120 phasing and shoot 1' of squeeze holes at 7330' and 6850'. Adjust bottom sqz holes based on results from CBL to be ~20' from TOC. RDMO WL.
12	Notify Cementers to be on call.
13	PU 4-1/2" CICR on 2-3/8" tbg and RIH while hydrotesting to 3000 psi. Set CICR at 6890' +/- 10' pending CCL. Establish circulation through sqz holes with fresh water and biocide.
14	"RU Cementers. Pump Niobrara Suicide plug consisting of 170 sx (51.8 bbls) 50/50 Poz ""G"" w/ 20% silica flour, 3% gel, 0.1% sodium metasilicate and 0.4% FL-52. Mixed at 13.5 ppg and 1.71 cuft/ sk yield. Underdisplace by 3 bbls and unsting from CICR. Spot final 3 bbls on top of the CICR to leave ~150' on top of the CICR and sqz holes. Volume based on 9"" x 4-1/2"" annulus with 40% excess from 6850' to 7330', and 4-1/2"" casing from 6700' to 7330'. RD Cementers.
15	PUH 6 stands and circulate hole clean with fresh water and biocide. POOH standing back 140 jnts.
16	MIRU WL. PU 2-1' 3-1/8" perf guns w/ 0.59" diam, 120 phasing and shoot 1' of squeeze holes at 5125' and 4360'. RDMO WL.
17	PU 4-1/2" CICR on 2-3/8" tbg. RIH and Set CICR at 4400' +/- 10' pending CCL. Establish circulation through sqz holes.
18	RU Cementers. Pump Sussex Suicide plug: Pump 5 bbls fresh water followed by 20 bbls sodium metasilicate followed by 5 bbls fresh water ahead of cement: 700 sks (143.4 bbls) "G" w/ 0.25 pps cello flake, 0.4% CD-32, 0.4% ASA-301 with CaCl2 as necessary. Mixed at 15.8 ppg, 1.15 cuft/sack. 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 12" x 4-1/2" annulus with 40% excess from 4360' to 5125', and 4-1/2" casing from 4200' to 5125'. RD Cementers.
19	PUH 6 stands and circulate hole clean with fresh water and biocide. POOH standing back 29 jnts.
20	MIRU WL. PU 2-1' 3-1/8" perf guns w/ 0.6" diam, 120 phasing and shoot 1' of squeeze holes at 1300' and 860'. Adjust top perf to be ~ 20' below BOC at the DV Tool based on the CBL.
21	PU 4-1/2" Thunderbird tension-set CICR and RIH and set at 900' +/- 10' based on CCL. RDMO WL.

- 22 PU stinger on 2-3/8" tbg and RIH to CICR at 900'. Sting in, chain down tbg, and establish circulation through sqz holes with fresh water and biocide.
- 23 MIRU Cementers. Pump Fox Hills Suicide plug: Pump 350 sx (83 bbls) Type III w/cello flake and CaCl₂ as deemed necessary, mixed at 1.33 cf per sack, 14.8 ppg. Underdisplace by 3 bbls and unsting from CICR. Spot final 3 bbls on top of CICR. Volumes based on 12" x 4-1/2" annulus with 40% excess from 860' to 1300' and 4-1/2" casing from 700' to 1300'.
- 24 PUH to 500' (below TOC in annulus) and circulate hole clean to ensure TOC above CICR is below the TOC behind pipe based on the CBL. POOH and stand back 22 jnts. Contact Evans Engineering prior to next step.
- 25 MIRU WL. Crack couplings or jet cut 4-1/2" csg at 500'. Adjust depth to be above TOC by ~20'. RDMO WL. Circulate approximately 120 bbls of fresh water and biocide to remove any gas from wellbore.
- 26 ND BOP and tubing head. Install a 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.
- 27 POOH and LD 4-1/2" csg. Remove the 4-1/2" pipe rams and Install 2-3/8" pipe rams.
- 28 RIH w/ 2-3/8" WS open ended ~200' past the 4-1/2" csg stub to 700'. Tag TOC and pick up 10'.
- 29 MIRU Cementers. Pump Fox Hills Balanced plug: Pump mud flush of 10 bbls SAPP followed by 20 bbls water ahead of 270 sx (64 bbls) Type III w/cello flake and CaCl₂ as deemed necessary, mixed at 1.33 cf per sack, 14.8 ppg. POH and WOC per cementing company recommendation. Plug size is based on 4-1/2" casing from 500' to 700' and 12" hole with 40% excess covering 500' to shoe of surface casing at 242' plus capacity of surface casing to 100'. PUH to 100' and Circulate out any excess cmt. TOH and WOC per cement company recommendation.
- 30 RIH and tag top of plug. Plug needs to be tagged at 140' or shallower. POOH and LD 2-3/8" tbg.
- 31 RU wireline. Run and set CIBP in the 8 5/8", 24# surface casing at 80'. PT CIBP and surface casing to 1000 psi for 15 minutes. Assuming successful test, RD wireline. RDMO workover rig.
- 32 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.
- 33 Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
- 34 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
- 35 Excavate hole around surface casing enough to allow welder to cut casing minimum 5' below ground level.
- 36 Welder cut casing minimum 5' below ground level.
- 37 Fill casing to surface using 4500 psi compressive strength cement, (NO gravel).
- 38 Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
- 39 Properly abandon flowlines per Rule 1103. File electronic Form 42 once abandonment complete.
- 40 Back fill hole with fill. Clean location, level.
- 41 Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.

Reed Boeger – Sr. Production Engineer
970-506-5987 – Office 512-217-1852 – Cell
Reed.boeger@anadarko.com