

PLUG AND ABANDONMENT PROCEDURE

ACCO-TERRA-STATE 5

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. RDMO slickline services.
3	Check and report surface casing pressure. If surface casing is not accessible at ground level, re-plumb so valve is at ground level.
4	Prepare location for base beam equipped rig. Install perimeter fence as needed.
5	Arrange delivery of Work String to location: 7800' 2 3/8" tbg.
6	MIRU, kill as necessary using clean fresh water with biocide. ND WH. NU BOP. Unseat landing jt, LD.
7	TOOH and LD 1.90" production tubing (242 jts landed @7756').
8	PU scraper for 4 1/2" 11.6# casing and 2 3/8" tbg work string. RIH to 7750'. POH standing back 6630' of tbg.
9	MIRU Warrior WL. RIH 4 1/2" CIBP and set at 7700' to abandon J sand perfs. Pressure test csg and CIBP to 1000 psi for 15 minutes.
10	Run a CBL from 7000' to surface. Forward results to Evans Engineering.
11	Run a gyro directional survey from 7700' to surface with 100' stations. Forward results to Sabrina Frantz in Evans Engineering.
12	PU dump bailer and spot 2 sx cement on CIBP @ 7700'.
13	PU 2 - 1' 3-1/8" perf guns with 3 spf, 0.5" dia 120° phasing. Shoot 1' of squeeze holes at 6830' and 6600'. RDWL
14	PU CICR on 2 3/8" tbg Work String. RIH to 6630' while hydro-testing tbg to 3000 psi. Set CICR @ 6630'.
15	RU Cementers. Pump Niobrara Suicide job : 90 sx 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 cf/sk (154 cuft of slurry). Underdisplace and sting out of CICR to leave 3 bbls cmt on top of retainer. Volume based on 9.5" hole size w/ 20% excess. Caliper log on file.
16	POH 10 stands and circulate tbg clean using fresh water treated with biocide. POH standing back 4300' of tbg.
17	RUWL. PU 2 - 1' 3-1/8" perf guns with 3 spf, 0.5" dia 120° phasing. Shoot 1' of squeeze holes at 4700' and 4250'. RDWL.
18	PU CICR on 2 3/8" tbg. RIH and set CICR at 4280'.
19	RU Cementers. Pump 5 bbl water w/ biocide, 20 bbl Sodium Metasilicate, and another 5 bbl spacer immediately preceding cement.
20	Pump Sussex Suicide job: 310 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 (357 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 11" hole with 20% excess. Caliper log on file.
21	POH 10 stands. Circulate water containing biocide to clear tubing. POH standing back ~1690' of tbg.
22	ND BOP and wellhead. 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.

- 23 RU WL. Crack coupling or cut casing at 1590'. RDMO WL. Circulate bottoms up and continue circulating to remove any gas from wellbore.
- 24 TOOH and LD 1590' of 4 1/2" casing.
- 25 RIH with 2 3/8" tubing open-ended to 1690' (100' inside 4 1/2" stub).
- 26 RU cementers. Pump 10 bbl SAPP (Sodium Acid Pyrophosphate) followed by 20 bbl (min.) fresh water spacer immediately preceding cement.
- 27 Pump balanced Stub Plug from 1690' to 750' : 460 sx Type III w/0 .25#/sk cello flake and CaCl₂ as deemed necessary mixed at 14.8 ppg and 1.33 cf/sk (612 cuft of slurry). Cement volume based on 100' in 4 1/2" csg, 326' in 8 5/8" csg, and 514' in 11" OH + 40% excess.
- 28 TOOH. WOC per cementing company recommendation. Tag Cement. TOC should be at or above 876'. If not, consult Evans Engineering.
- 29 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.
- 30 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.
- 31 Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
- 32 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
- 33 Excavate hole around surface casing enough to allow welder to cut 8 5/8" casing minimum 5' below ground level.
- 34 Welder cut 8 5/8" casing minimum 5' below ground level.
- 35 Fill casing to surface using 4500 psi compressive strength cement, (NO gravel).
- 36 Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
- 37 Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
- 38 Properly abandon flowlines per Rule 1103. File electronic Form 42 once abandonment complete.
- 39 Back fill hole with fill. Clean location, level.
- 40 Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.

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