

PLUG AND ABANDONMENT PROCEDURE

HSR-ACORD 11-29

Step	Description of Work
1	Note: Production Casing = 4 1/2" OD, 11.6#/ft, I-70; Production Hole Drilled @ 7 7/8"; 2 7/8" Liner top at 7247'.
2	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 foreman or lead operator at least 24 hr prior to rig move. Request they catch and remove the plunger, isolate production equipment and remove any automation prior to rig showing up. Install perimeter fence as needed.
3	MIRU slickline services and VES. Pull bumper spring, tag bottom, and run survey from 7520' to surface with stops every 100'. Forward gyro survey data and invoices to tech (currently Sabrina Frantz). RDMO slickline services and VES.
4	Notify IOC when rig mobilizes to location to generate workorder for flowline removal & one call for line locates.
5	Prepare location for base beam equipped rig. MI ~15 additional 2 3/8 " prod tbgs jts.
6	MIRU, kill as necessary using clean fresh water with biocide and circulate. ND WH. NU BOP. Unseat landing jt, LD.
7	Notify cementers to be on call. Provide volumes listed below:
7.1	Niobrara Plug: 25 sx class G w/ 20% silica flour, 0.4% CD-32, 0.4% ASA-301 and R-3 mixed at 15.8 ppg and 1.38 cuft/sk (6.1 bbls) (Inside 2 7/8" Casing, no excess)
7.2	Sussex Casing Plug: 50 sx class "G", 0.4% CD-32, 0.4% ASA-301 mixed at 15.8 ppg and 1.15 cf/sx (9.4 bbls) (inside 4 1/2" casing)
7.3	Stub Plug: 340 sx Type III CaCl ₂ cement w/0.25 pps cello flake mixed at 14.8 ppg and 1.33 cf/sx (79.6 bbls) (100' in 4 1/2" prod casing, 306' in 13 1/2" OH + 20% excess, and 204' in 8 5/8" surface casing)
8	TOOH 2 3/8 " production tubing. Stand Back.
9	MIRU WL. RIH gauge ring for 2 7/8" 6.5#/ft casing to 7520'.
10	RIH CIBP w/ WL. Set at 7520'. PU dump bailer, dump bail 2 sx class 'G' cement on CIBP.
11	RIH CIBP w/ WL. Set at 6900'. PT 4 1/2" casing to 1000 psi.
12	Run CBL from CIBP to Surface. Send results to Mark.Hinaman@anadarko.com immediately. RDWL.
13	RIH to 6900' w/ 2 3/8 " tubing while hydrotesting to 3,000 psi.
14	RU Cementers. Pump Niobrara Plug: 25 sx class G w/ 20% silica flour, 0.4% CD-32, 0.4% ASA-301 and R-3 mixed at 15.8 ppg and 1.38 cuft/sk (6.1 bbls) (Inside 2 7/8" Casing, no excess) to place balanced plug.
15	PUH 9 stands. Circulate 90 bbls water containing biocide to clear tubing. P&LD tbgs to 4490'.
16	RU Cementers. Pump Sussex Casing Plug: 50 sx class "G", 0.4% CD-32, 0.4% ASA-301 mixed at 15.8 ppg and 1.15 cf/sx (9.4 bbls) (inside 4 1/2" casing) to place balanced plug from 4490' to 3885'.
17	PUH 12 stands. Circulate 55 bbls water containing biocide to clear tubing. TOOH & WOC 4 hrs. Tag Cement. If Cement is below 3885', call production engineer. Otherwise, P&LD tbgs to 1030'. SB Remainder.

- 18 RU WL. Shoot off casing at or below 930' based on CBL. RDMO WL. Circulate a full circulation with water containing biocide to remove any gas.
- 19 NDBOP, NDTH.
- 20 Install BOP on casing head with 4 1/2" pipe rams.
- 21 TOO H with 4 1/2" casing, LD.
- 22 RIH with 2 3/8 " tubing to 1030'.
- 23 RU Cementers. Spot Stub Plug: 340 sx Type III CaCl₂ cement w/0.25 pps cello flake mixed at 14.8 ppg and 1.33 cf/sx (79.6 bbls) (100' in 4 1/2" prod casing, 306' in 13 1/2" OH + 20% excess, and 204' in 8 5/8" surface casing).
- 24 Circulate 5 bbls water containing biocide to clear tubing.
- 25 TOO H. WOC 4 hrs. Tag Cement. Cement top needs to be above 524'; Proceed if TOC is above 524'. Otherwise, call production engineer.
- 26 MIRU WL. RIH 8 5/8" CIBP to 80'. Set CIBP, and PT to 1000 psi for 15 min. If tests, RDMO WL and WO rig.
- 27 Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries and invoices to rscDJVendors@anadarko.com within 24 hrs of the 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 8 5/8" casing minimum 5' below ground level.
- 31 Welder cut 8 5/8" casing minimum 5' below ground level.
- 32 MIRU ready cement mixer. Use 4500 psi compressive strength cement, (NO gravel) fill stubout.
- 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 Properly abandon flowlines per Rule 1103.
- 35 Back fill hole with fill. Clean location, level.
- 36 Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed. File electronic Form 42 once abandonment complete.