

PLUG AND ABANDONMENT PROCEDURE

Barclay 2-28

Description of Work

- 1 Note: Production Casing = 2 7/8" OD, 6.5#/ft, ; Production Hole Drilled @ 7 7/8";
- 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. Pull bumper spring and tag bottom. RDMO slickline services.
- 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 ~7400' 1.66 " prod tbg jts (No tbg in hole).
- 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 (1.7 bbls) (Inside 2 7/8" Casing, no excess)
 - 7.2 Sussex Open Hole Plug: 210 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 cf/sx (43.5 bbls) (8 1/2 " +20% excess)
 - 7.3 Open Hole Surface Plug: 310 sx Type III CaCl₂ cement w/0.25 pps cello flake mixed at 14.0 ppg and 1.53 cf/sx (83 bbls) (665' in 9 1/2" OH +20% excess and 205' inside 8 5/8" surface casing)
- 8 PT 2 7/8" casing to 3000 psi.
- 9 PU & RIH to 7035' w/ 1.66" tubing while hydrotesting to 3,000 psi.
- 10 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 (1.7 bbls) (Inside 2 7/8" Casing, no excess) to place balanced plug from 7035' to 6735'.
- 11 PUH 20 stands. Circulate 30 bbls water containing biocide to clear tubing. P&LD tbg to 4800'.
- 12 If 2 7/8" casing pressure tested, TOO & LD 1.66" tubing. Otherwise, stand back 1.66" production tubing.
- 13 RUWL. PU jet cutter & cut casing at 4800'. RDWL. Circulate hole using water containing biocide to remove any gas. If 2 7/8" pressure tested to 3000 psi, use as work string to pump cement plug. If not, then TOO, LD 2 7/8", and RIH w/ 1.66" tubing to pump cement plug over casing stub. Hydrotest 1.66" to 3000 psi while RIH.
- 14 NDBOP, NDTH

- 15 Install BOP on casing head with pipe rams that fit work string (2 7/8" or 1.66").
- 16 RU Cementers. Pump 5 bbls water, 20 bbl Sodium Metasilicate, followed by another 5 bbls water spacer immediately preceding cement.
- 17 Pump Sussex Open Hole Plug: 210 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 cf/sx (43.5 bbls) (8 1/2 "+20% excess) to place balanced open hole plug.
- 18 PUH 13 stands. Circulate 280 bbls water containing biocide to clear tubing.
- 19 TOOH & WOC 4 hrs. Tag cement. Cement needs to be above 4200'. If cement is above 4200', proceed; otherwise, call production engineer. P&LD tbq to 1320'. SB remainder.
- 20 TIH to 1320'. RU Cementers. Pump Open Hole Surface Plug: 310 sx Type III CaCl₂ cement w/0.25 pps cello flake mixed at 14.0 ppg and 1.53 cf/sx (83 bbls) (665' in 9 1/2" OH +20% excess and 205' inside 8 5/8" surface casing) to place balanced open hole plug.
- 21 PUH & circulate one full circulation with water containing biocide to clear tubing. WOC 4 hrs. Tag Cement. Cement needs to be above at least 450'. If cement is not above 450', call production engineer. Proceed otherwise.
- 22 MIRU WL. RIH 8-5/8" CIBP to 100'. Set, PT to 1000 psi for 15 min. If tests, RDMO WL and WO rig.
- 23 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.
- 24 Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
- 25 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
- 26 Excavate hole around surface casing enough to allow welder to cut 8 5/8" casing minimum 5' below ground level.
- 27 Welder cut 8 5/8" casing minimum 5' below ground level.
- 28 MIRU ready cement mixer. Use 4500 psi compressive strength cement, (NO gravel) fill stubout.
- 29 Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
- 30 Properly abandon flowlines per Rule 1103.
- 31 Back fill hole with fill. Clean location, level.
- 32 Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed. File electronic Form 42 once abandonment complete.

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