

PLUG AND ABANDONMENT PROCEDURE

HSR-Elliot Farms 7-18

Note: Production Casing = 2-7/8" OD, 6.5 #/ft, J-55; Production Hole Drilled @ 7-7/8"; Prod Tbg 1.38" ID. MI ~15 additional 1-1/4" prod tbg jts and 4700' 2-3/8" work string.

- 1 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.
- 2 MIRU slickline services and VES. Pull bumper spring, tag bottom, and run survey from 7250' to surface with stops every 100'. Forward gyro survey data to Sabrina Frantz and invoices to Sabrina Frantz. RDMO slickline services and VES.
- 3 Notify IOC when rig mobilizes to location to generate workorder for flowline removal and one call for line locates.
- 4 Prepare location for base beam equipped rig.
- 5 MIRU, kill as necessary using clean fresh water with biocide and circulate. ND WH. NU BOP. Unseat landing jt, LD.
- 6 Notify cementers to be on call. Provide volumes (20 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 (inside 2-7/8"); 25 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 (Inside 2-7/8"); 455 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 (10.5"+20% Caliper Log in file); 210 sx Type III CaCl₂ cement mixed at 14.0 ppg and 1.53 cf/sx (205' in 12.25" open hole (20% excess), & 315' inside 8-5/8" casing (no excess))).
- 7 TOOH 1.25" production tubing. Stand back.
- 8 MIRU WL. RIH gauge ring for 2.875" 6.5#/ft csg to 6870'.
- 9 RIH CIBP w/ WL and set at 6870'. PT Casing to 3000 psi. If 2-7/8" casing pressure tests to 3000 psi, use 2-7/8" as work string for Sussex/Shannon plug (step 21). Dump bail 2 sx cement on top of CIBP.
- 10 RIH w/ 1.25" tubing while hydrotesting to 3000 psi.
- 11 RU cement services. Pump 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 (inside 2.875") to place balanced plug.
- 12 PUH 13 stands. Circulate 35 BBL water containing biocide to clear tubing.
- 13 Place 9.0 ppg mud containing biocide from 6260' to 5555' (~5 bbl).
- 14 RU cement services. Pump 25 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 (inside 2.875") to place balanced plug.
- 15 PUH 15 stands. Circulate 25 BBL water containing biocide to clear tubing.
- 16 TOOH & LD 1.25" production tubing. WOC 4 hrs.
- 17 RUWL. PU jet cutter, tag cement, & cut casing at 4620'. RDWL. Circulate hole using 20 BBL 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", PU 2-3/8" work string and RIH to pump cement plug over casing stub. Hydrotest 2-3/8" while RIH.

- 18 NDBOP, NDTH.
- 19 Install BOP on casing head with pipe rams that fit work string (2-7/8" or 2-3/8").
- 20 RU cement services. Pump 5 bbls water, 20 bbl Sodium Metasilicate, followed by another 5 bbls water spacer immediately preceding cement.
- 21 Pump 455 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 (10.5"+20% Caliper Log in file) to place balanced plug.
- 22 PUH 17 stands. Circulate 21 BBL water containing biocide to clear tubing. WOC 4 hours. Tag cement. Cement needs to be above 3765'. If cement is above 3765', proceed; otherwise, call production engineer.
- 23 Place 9.0 ppg mud containing biocide from 3750' to 800' (~316 bbl).
- 24 RU cementers. Spot 210 sx Type III CaCl₂ cement mixed at 14.0 ppg and 1.53 cf/sx (205' in 12.25" open hole (20% excess), & 315' inside 8-5/8" casing (no excess)). PUH & circulate water with biocide to clear work string.
- 25 TOO. WOC 4 hrs. Tag cement. Top needs to be above 380'; Assuming TOC above 380' → proceed.
- 26 MIRU WL. RIH 8-5/8" CIBP to 100'. Set, PT to 1000 psi for 15 min. If tests, RDMO WL and WO rig.
- 27 Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
- 28 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
- 29 Excavate hole around surface casing enough to allow welder to cut 8 5/8" casing minimum 5' below ground level.
- 30 Welder cut 8 5/8" casing minimum 5' below ground level.
- 31 MIRU ready cement mixer. Use 4500psi compressive strength cement, (NO gravel) fill stubout.
- 32 Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
- 33 Properly abandon flowlines per Rule 1103.
- 34 Back fill hole with fill. Clean location, level.
- 35 Submit Form 6 to COGCC ensuring to provide "As performed" WBD identifying operations completed.

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