

HSR-Gun Club 9-34 – P&A Procedure

- 1 Call Foreman or Field Coordinator at least 24 hr prior to rig move. Request that they catch and remove plunger, isolate production equipment and remove any automation equipment prior to the rig showing up. Install perimeter fence as needed.
- 2 Provide notice of MIRU to COGCC field inspector as specified in approved Form 6.
- 3 Notify CDC when rig moves on location to generate workorder for flowline removal and one call for line locates.
- 4 Prepare location for base beam type rig.
- 5 MI and spot a minimum of 200 jts of 2-1/16", 3.25#, J-55, 8RD EUE tubing to use as workstring. NOTE: 34 jts of 2-1/16", 3.25#, J-55 tubing currently in the hole.
- 6 Put cementers on will-call for upcoming cement jobs.
- 7 MIRU WO rig. Kill well using water with biocide. ND wellhead. NU BOP.
- 8 PUH with tubing to break any sand bridges, noting to not exceed the safety tensile load for 2-1/16" tubing of 39,200 lbs. (80% of upset joint yield strength). Lay down landing joint.
- 9 P&SB entire tubing string (34 jts of 2-1/16", 3.25#).
- 10 PU casing scraper for 3-1/2", 7.7# and RIH on workstring. NOTE: Top of fish exact depth unclear from reports (+/- 7,052). Scrape casing down to 7,000' or as deep as possible. Circulate hole clean with water and biocide. P&SB workstring and LD scraper.
- 11 MI Vaughn Energy Services (VES). NOTE: Top of fish exact depth unclear from reports (+/- 7,052). RIH to approx. 7,000' KB and run gyro survey to surface with stops every 100'. Forward gyro survey data to Sabrina Frantz and invoices to John Tonello. RDMO slickline services and VES.
- 12 MIRU WL. PU and RIH with CCL and CIBP for 3-1/2", 7.7#. Tie into Brandex CBL dated 3/5/96. Set CIBP at +/- 6,984', according to casing collars. POOH.
- 13 MIRU hydrotesters. While hydrotesting 2-1/16" tubing to 3,000 psi, PU and TIH with packer for 3-1/2", 7.7# casing. Set packer at +/-4,780'. Pressure test CIBP down tubing to 1,000 psi. If pressure test passes, proceed. Release packer and TOO H while standing back tubing and LD packer.
- 14 TIH open-ended and land EOT just above CIBP.
- 15 MIRU cementing services.
- 16 Establish circulation pumping fresh water. Once circulation is established, pump 20 sk balanced cement plug consisting of the following: "G" class cement w/ 0.4% CD-32, 0.4% ASA-301, and 20% S-8. PUH 1,000' and hang 2-1/16" tubing. Circulate with water until returns are clean.
- 17 TIH w/ 5 jts to +/- 6,150' (300' above designed TOC).
- 18 Circulate hole full of drilling mud (minimum 9 ppg and treated with biocide). P&SB tubing string.

- 19 PU and TIH with CICR on 2-1/16" tubing and set at +/- 4,650', with collars located at 4,626' and 4,670'.
- 20 MIRU cementing services. Establish injection pumping fresh water. Once injection is established, pump 20 bbls sodium metasilicate, followed by 60 sks Class G 15.8# cement w/ 0.4% CD-32 and 0.4% ASA-301. Displace with mud 2 bbl short of CICR at 4,650'. Sting out of retainer and slowly POOH allowing cement to fall out of tubing onto retainer. (2-1/16" 3.25# tubing capacity 0.002979 bbl/ft)
- 21 P&SB 30 jts (+/-945') so EOT at 3,700' KB. Circulate with mud until returns are clean. P&LD remaining tubing string.
- 22 WOC to set overnight.
- 23 Spear into and unland the 3-1/2" production casing from the casing hanger. Stack out casing and then check 3-1/2" production casing stretch and use measured stretch distance to estimate freepoint for 3-1/2" production casing.
- 24 RIH with jet cutter and cut production casing at 826'. TOO H and lay down 1 jt of 3-1/2" production casing. If unable to pull production casing contact engineer/COGCC for plugging modifications. If necessary, repeat jet cutting production casing in 100' increments until 3-1/2" production casing can be TOO H and laid down.
- 25 Once successful cut is made. PU 1 jt and circulate drilling mud until returns are seen at surface (Estimated volume is +/- 72 bbls, which is 1-1/4 times the hole volume) to ensure gas is circulated out of hole.
- 26 TOO H and lay down 3-1/2" production casing.
- 27 PU 2-1/16" tubing and TIH, landing EOT at 926' (100' below 3-1/2" production casing stub).
- 28 Establish circulation pumping mud. Once circulation established, pump 185 sks Type III cement with 2% CaCl. Estimated top of cement plug at 200' KB). Displace cement as necessary to 200' KB.
- 29 RDMO cementing services. TOO H and LD 2-1/16" tubing.
- 30 WOC to set overnight.
- 31 PU and TIH with 2-1/16" tubing open ended. Tag top of cement and record depth in OpenWells. TOO H with 2-1/16" tubing. ***If tagged cement was any deeper than 626', arrange cementers to pump additional cement to fill surface casing. If cement was tagged any shallower than 626', proceed.
- 32 MIRU WL. PU and RIH with CIBP for 8-5/8", 24# casing. Set CIBP at +/- 100' KB. POOH. RDMO WL.
- 33 Pressure test CIBP to 1,000 psi for 15 minutes. If pressure test passes, proceed.
- 34 RDMO WO rig. Arrange for redi-mix cementers to fill surface casing. Use 4,500 psi compressive strength redi-mix cement (sand and cement only, no gravel) to finish filling surface casing to top of cut off.
- 35 Wellsite supervisor turn all paper copies of cementing reports/invoices and logs in to Sabrina Frantz.

- 36 NOTE: During the job, wellsite supervisor should instruct the logging and cementing contractors to e-mail all logs, job reports/invoices to Sabrina Frantz.
- 37 Have excavation contractor notify One-Call to clear for digging around wellhead and flowline removal.
- 38 Check top of cement inside 8-5/8" surface casing. If cement is not of sufficient height (less than 25' below ground level), place redi-mix cementer on will call.
- 39 Excavate hole around surface casing of sufficient size and depth to allow welder to cut off 8-5/8" surface casing at least 5' below ground level.
- 40 Have welder cut off 8-5/8" surface casing at least 5' below ground level.
- 41 Have welder weld on steel marker plate. (Note: marker shall be labeled with well name and number, legal location (¼ ¼ description) and API number.
- 42 Properly abandon flowlines as per Rule 1103.
- 43 Have excavation contractor back fill hole with native material. Clean up location and have leveled to plant any vegetation required.
- 44 Submit Form 6 to COGCC. Provide "As Plugged" wellbore diagram identifying the specific plugging completed.