

## Miller UPRR 41-29 Plug and Abandonment

- 1 Gyro ran on 03/02/2012.
- 2 Call Foreman or Lead Operator 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.
- 3 Provide notice of MIRU to COGCC field inspector as specified in approved Form 6.
- 4 Notify CDC when rig moves on location to generate workorder for flowline removal and one call for line locates.
- 5 Spot 160 joints of 1-1/4" tubing.
- 6 Level location for base beam equipped rig.
- 7 MIRU WO rig. Kill well, as necessary, with freshwater and biocide. ND wellhead. NU BOP.
- 8 TOO H with production tubing and stand in derick. This tubing should be good as it was just EMI on 11/20/2012.
- 9 TIH w/ 1-1/4" tbg and tag sand plug (last tag on 11/21/12 @ 5343'). Rig up circulating equipment and clean out to 7200' and circulate clean. TOO H and SB tbg.
- 10 RU WL.
- 11 RIH with wireline set CIBP at 7150 (2.75" 6.5# N-80 casing) (collars at 7197+, 7165+, 7137+, 7105+), which is 69' above the top perforation NB perforation 7219-7226). Dump bail 2 sacks of cement on top of CIBP
- 12 Spear into and unland the 2-7/8" production casing from the casing hanger. Stack out casing and then check 2-7/8" production casing stretch and use measured stretch distance to estimate TOC for 2-7/8" production casing.
- 13 RIH with jet cutter and cut production casing at 4340'. TOO H and lay down 1 jt of 2-7/8" 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 2-7/8" production casing can be TOO H and laid down.
- 14 Once successful cut is made. PU 1 jt and circulate drilling mud (9ppg minimum and treated with biocide) until returns are seen at surface (Estimated volume is +/- 550 bbls, which is 1-1/4 times the hole volume) to ensure gas is circulated out of hole.
- 15 TOO H and lay down 2-7/8" production casing.
- 16 PU 1-1/4" tubing and TIH, landing EOT at 4440' (100' below 2-7/8" production casing stub).
- 17 MIRU cementing services. Establish circulation pumping mud. Once circulation established pump 5 bbls water, followed by 20 bbls of meta-silicate or seal bond, followed by 5 bbls water spacer, followed by 250 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/sx. Displace with mud to 1/2 bbl short of estimated TOC at 4040'.
- 18 POOH with 1500' so EOT at 2540'. Circulate conventionally with mud until returns are clean. P&SB entire tubing string.
- 19 WOC to set a minimum of 4 hours of overnight.
- 20 RIH to tag top of cement plug with 2-3/8" blue and yellow band tubing. Record depth in Open Wells. POOH. If cement coverage inadequate, contact engineer for plugging modifications.
- 21 POOH and land EOT at 725'. Establish circulation pumping mud. Once circulation established, pump 150 sx of Type III w/ CaCl<sub>2</sub> 14 ppg, 1.53 cf/sk (Attempt to cement from 725' to 400'). Displace cement as necessary to 400'.

- 22 RDMO cementer. TOO H and LD 2-3/8" tubing.
- 23 WOC to set a minimum of 4 hours or overnight.
- 24 PU and TIH with 2-3/8" tubing open ended. Tag top of cement and record depth in OpenWells. TOO H with 2-3/8" tubing. \*\*If tagged cement was any deeper than 522', arrange cementer to pump additional cement to fill surface casing .If cement was tagged any shallower than 522', proceed.
- 25 MIRU WL. PU and RIH with CIBP for 8-5/8" , 24# casing. Set CIBP at +/- 400' or as deep as possible. POOH. RDMO WL.
- 26 Pressure test CIBP to 1000 psi for 15 min. If pressure test passes, proceed.
- 27 PUH with 2-3/8" tubing to just above CIBP.
- 28 MIRU cementing services. Spot 150 sx of Type III w/ CaCl<sub>2</sub> 14 ppg, 1.53 cf/sk (estimated top of cement plug at approx. 10'). RDMO cementer.
- 29 TOO H and lay down all but one stand of 2-3/8" tubing.
- 30 Allow cement to set a minimum of 4 hours or overnight.
- 31 PU and TIH with 2-3/8" tubing open ended. Tag top of cement and record depth in OpenWells. TOO H with 2-3/8" tubing. RDMO WO rig.
- 32 Cut surface casing 5 ft below ground level and weld on cap.
- 33 Wellsite supervisor turn all paper copies of cementing reports/invoices and logs in to Sabrina Frantz.
- 34 NOTE: During the job, wellsite supervisor should instruct the logging and cementing contractors to e-mail all logs, job reports/invoices to Sabrina Frantz.
- 35 Have excavation contractor notify One-Call to clear for digging around wellhead and flowline removal.
- 36 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.
- 37 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.
- 38 Have welder cut off 8-5/8" surface casing at least 5' below ground level.
- 39 If needed, MIRU ready cement mixer. 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.
- 40 Have welder spot weld on steel marker plate. (Note: marker shall be labeled with well name and number, legal location (¼ ¼ description) and API number.
- 41 Properly abandon flowlines as per Rule 1103.
- 42 Have excavation contractor back fill hole with native material. Clean up location and have leveled to plant any vegetation required.
- 43 Submit Form 6 to COGCC. Provide "As Plugged" wellbore diagram identifying the specific plugging completed.