

ALMQUIST 41-10

PLUG AND ABANDON PROCEDURE

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- 1 WELL NEEDS GYRO.
- 2 Provide 48 hr notice to COGCC prior to rig up per request on approved Form 6. Submit Form 42 and call Automation Removal Group at least 24 hr prior to rig move. If not already completed, request that they isolate production equipment and remove any automation equipment prior to the rig showing up. Install perimeter fence as needed.
- 3 MIRU SL. VES Gyro. Well shouldn't have bumper spring. Tag PBMD (should be 7175'), enter tag depth in OpenWells. RUN GYRO from EOT at 6790' to surface, making stops every 100'. RDMO WL.
- 4 Prepare location for base beam rig.
- 5 Check and record Bradenhead pressure. If Bradenhead valve is not accessible, re-plumb so that valve is above GL. Contact engineer if Bradenhead pressure is greater than 0 psi. NOTE: this well has a csg leak currently isolated by a CIBP @ 7220'. There may be some remaining pressure on the Bradenhead. Blow down Bradenhead and re-check pressure the next day. Repeat until pressure stays at 0 psi. Contact Evans Engineering if pressure does not blow down to 0 and stay at 0.
- 6 Spot 25 jts of 2-1/16" 3.25# J-55 tbg.
- 7 MIRU WO rig. Well should be dead due to CIBP @ 7220'. ND WH, NU BOP.
- 8 Notify cementers of the needed volumes: 20 sx of Thermal 35 cement w/ 0.5% CFR-2, 0.25% FMC mixed at 15.6 ppg and 1.51 cf/sk (Niobrara plug); 110 sx of 0:1:0 Class G cement w/ 0.5% CFR-2, 0.2% FMC, 0.5% LWA, 0.25 pps polyflake mixed at 15.8 ppg and 1.15 cf/sk (Sussex suicide sqz); 180 sx of Type III cement w/ 0.3% CFL-3, 0.3% CFR-2, 0.25 pps polyflake and CaCl₂ mixed at 14.8 ppg and 1.33 cf/sk (FHM stub plug).
- 9 PU tbg out of landing bowl. Do not exceed 80% of tubing tensile strength, or 39,200 lb. LD landing jt. Tbg was replaced 11/5/15 and will not need hydrotesting.
- 10 TIH w/ 2-1/16" tbg and tag cmt cap on existing CIBP (TOC should be +/- 7175').
- 11 MIRU cement company. Spot 20 sx of Thermal 35 cement w/ 0.5% CFR-2, 0.25% FMC mixed at 15.6 ppg and 1.51 cf/sk (cement from 7175' to 6586' in 3-1/2" csg).
- 12 PUH to 6300'. Circulate fresh water w/ biocide to clear tbg.
- 13 TOOH, stand back 4440' of 2-1/16" tbg, LD remainder.
- 14 PU and RIH w/ packer on 2-1/16" tbg to 4440'. Set packer.
- 15 Test csg above and below packer to 500 psi for 15 min. Contact Evans Engineering w/ results of pressure tests to discuss potential changes in plans. **Steps below assume hole in casing is located ABOVE 4440'**
- 16 TOOH. Stand back 4440' of 2-1/16" tbg and LD remainder. LD packer.
- 17 MIRU WL. PU jet cutter and RIH to 4440', cut 3-1/2" csg. Circulate to remove any gas from wellbore. RDMO WL.
- 18 ND BOP, ND tbg head. NU BOP on surface csg w/ 3-1/2" pipe rams. Install 3000 psi ball valves on csg head outlets. Install choke or choke manifold on one outlet.

- 19 TOOH, LD all 3-1/2" csg.
- 20 Uninstall 3-1/2" pipe rams on BOP and install 2-1/16" pipe rams.
- 21 TIH w/ 2-1/16" tbg to +/- 4440'.
- 22 Establish circulation w/ fresh water and biocide and get bottoms up. MIRU cement company. Pump 5 bbls fresh water, 20 bbls sodium metasilicate, and 5 bbls fresh water followed w/ 110 sx of 0:1:0 Class G cement w/ 0.5% CFR-2, 0.2% FMC, 0.5% LWA, 0.25 pps polyflake mixed at 15.8 ppg and 1.15 cf/sk (balanced plug from 4440' to 4230', 9.5" avg open hole from caliper, 20% excess). PUH to 4000', circulate thoroughly to remove cement from wellbore. WOC per cementing company recommendations.
- 23 Drop down w/ 2-1/16" tbg and tag plug. Enter tag depth in OpenWells. Tag needs to be 4230' or higher.
- 24 PUH w/ 2-1/16" tbg to +/- 980' while LD.
- 25 Establish circulation w/ fresh water and biocide and get bottoms up. MIRU cement company. Pump 10 bbls SAPP, 20 bbls fresh water and biocide followed w/ 180 sx of Type III cement w/ 0.3% CFL-3, 0.3% CFR-2, 0.25 pps polyflake and CaCl₂ mixed at 14.8 ppg and 1.33 cf/sk (cement from 980' to 540', assume 9.5" avg hole from SX caliper, adding 40% excess).
- 26 TOOH w/ 2-1/16" tbg. WOC 4 hrs, tag plug. Tag needs to be 640' or higher. TOOH.
- 27 MIRU WL. RIH w/ 8-5/8" CIBP and set at 80'. Pressure test to 1000 psi for 15 min. If pressure holds, RDMO WL and RDMO WO rig.
- 28 Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries and invoices to rscDJVendors@anadarko.com w/in 24 hrs of the completion of the job.
- 29 Supervisor submit paper copies of all invoices, logs, and reports to Evans Engineering Specialist.
- 30 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
- 31 Excavate hole around surface casing enough to allow welder to cut 8-5/8" casing minimum 5' below ground level.
- 32 Welder cut 8-5/8" casing minimum 5' below ground level.
- 33 MIRU Redi Cement mixer. Use 4500 psi compressive strength cement, (NO gravel) to fill stubout.
- 34 Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
- 35 Properly abandon flowlines per Rule 1103.
- 36 Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
- 37 Back fill hole w/ fill. Clean location, level.
- 38 Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.