

PLUG AND ABANDON PROCEDURE

UPRR 42 Pan Am Unit J #1

Engineer: Tyler Davis - Cell: 303-717-0764

- | Step | Description of Work |
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| 1 | Note: Production Casing = 4 1/2" OD, 10.5-11.6#/ft, I-80; 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 IOC (970-506-5980) at least 24 hr prior to rig move. Request they catch and remove plunger, isolate production equipment and remove any automation prior to rig MIRU. |
| 3 | MIRU slickline services. Pull bumper spring and tag bottom. RDMO slickline services. |
| 4 | Prepare location for base beam equipped rig. Install perimeter fence as needed. |
| 5 | Check and record Bradenhead pressure. If Bradenhead valve is not accessible, re-plumb so that valve is above GL. |
| 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: 69 cu ft/ 50 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 (640' Inside 4 1/2" Casing, no excess) |
| 7.2 | SX Balanced Plug: 29 cu ft/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 (300' inside 4-1/2" csg). |
| 7.3 | SX Suicide: 149 cu ft/ 130 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 (200' in 10.75" OH + 20% excess and 200' inside 4 1/2" casing, no excess) |
| 7.4 | Stub Plug: 319 cu ft/ 240 sx Type III CaCl ₂ cement w/0.25 pps cello flake mixed at 14.8 ppg and 1.33 cf/sx (100' inside 4-1/2" casing, 278' in 11" OH + 40% excess, and 122' in 8 5/8" surface casing) |
| 8 | TOOH 2 3/8" production tubing. Stand Back. |
| 9 | PU scraper and RIH to 8050' with 2-3/8" tubing. POOH. |
| 10 | MIRU WL. RIH CIBP w/ WL. Set at +/- 8000'. POOH. Dump bail 2 sx class "G" cement on CIBP. POOH. |
| 11 | RIH CIBP w/ WL. Set at +/- 7560'. POOH. PT to 500 psi. Note squeeze perfs at 4278', 4990', and 7520'. POOH. |
| 12 | Run CBL from CIBP to Surface. Send results to Tyler.Davis@anadarko.com and Brent.Marchant@anadarko.com immediately. Do not proceed without engineering consent. Confirm cement coverage from 7540' - 6400' and 856' - 533'. RD WL. |
| 13 | RIH to ~7560' w/ 2 3/8 " tubing while hydrotesting to 3,000 psi. |
| 14 | RU Cementers. Pump Niobrara Plug: 69 cu ft/ 50 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 4 1/2" Casing, no excess) to place balanced plug from 7560' to 6930'. |
| 15 | PUH to 5100'. Circulate 85 bbls water containing biocide to clear tubing. |
| 16 | RU Cementers. Pump Balanced Plug: 25 sx class "G" 0.4% CD-32, 0.4% ASA-301 mixed at 15.8 ppg and 1.15 cf/sx from 5100' to 4800'. |
| 17 | PUH to 4200'. Circulate 65 bbls water containing biocide to clear tubing. WOC 4 hours. |

- 18 Tag TOC at 4800' then TOO H.
- 19 RU WL. PU 3-1/8" perf guns with 3 spf, 0.5" dia 120deg phasing. Shoot 1' of squeeze holes at 4160' and 3960'. RD WL.
- 20 PU and RIH w/ CICR on 2-3/8" tubing and set CICR at approximately 30' below the top perf pending collar locator on CBL. RDWL
- 21 RU Cementers. Pump 5 bbl water w/biocide, 20 bbl Sodium Metasilicate, and another 5 bbl spacer immediately preceding cement.
- 22 Pump SX Suicide: 149 cu ft/ 130 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 (200' in 10.75" + 20% excess and 200' inside 4-1/2" casing) to place suicide squeeze from 4160' - 3960'. Underdisplace and sting out of CICR to leave 3 bbls on top of retainer.
- 23 PUH to 3000'. Circulate 50 bbls water containing biocide to clear tubing. Then, TOO H.
- 24 RU WL. Shoot off casing at 500'. RD WL. Circulate water containing biocide to remove any gas.
- 25 NDBOP, NDTH.
- 26 Install BOP on casing head with with 4-1/2" pipe rams.
- 27 TOO H with 4-1/2" casing, LD.
- 28 RIH with 2-3/8" tubing to 600'.
- 29 RU Cementers. Pump 10 bbl SAPP with a minimum of 20 bbl fresh water spacer. Spot stub plug: 266 cu ft/ 240 sx Type III CaCl₂ cement w/0.25 pps cello flake mixed at 14.8 ppg and 1.33 cf/sx (100' inside 4-1/2" casing, 278' in 11" OH + 40% excess, and 122' in 8-5/8" surface casing) from 600' to 100'.
- 30 PUH to 100' and circulate 5 bbls water containing biocide to clear tubing. WOC 4 hrs.
- 31 Tag Cement. Cement top needs to be at 100'; Proceed assuming TOC is at 100'. Otherwise, call production engineer.
- 32 MIRU WL. RIH 4-1/2" CIBP to 80'. Set, PT to 1000 psi for 15 min. If tests, RDMO WL and WO rig.
- 33 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.
- 34 Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
- 35 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
- 36 Excavate hole around surface casing enough to allow welder to cut 8 5/8" casing minimum 5' below ground level.
- 37 Welder cut 8 5/8" casing minimum 5' below ground level.
- 38 MIRU ready cement mixer. Use 4500 psi compressive strength cement, (NO gravel) fill stubout.
- 39 Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
- 40 Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
- 41 Properly abandon flowlines per Rule 1103.
- 42 Back fill hole with fill. Clean location, level.
- 43 Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed. File electronic Form 42 once abandonment complete.