

OPENHOLE RE-ENTRY PLUG AND ABANDONMENT PROCEDURE

Reed Boeger - Sr. Production Engineer
reed.boeger@anadarko.com
970.506.5987 (work) 512.217.1852 (cell)

VAWTER ESTATE 1

Step	Description of Work
------	---------------------

- | | |
|----|---|
| 1 | Well is situated in a field. This well was D&A'd in 1978 and is openhole down to 5000'. Well was filled with 10 # mud during D&A operations. |
| 2 | Locate and expose 8 5/8" casing stub. Extend stub to surface and install 8 5/8"x 11" SOW, 3M casing head with 3000 psi ball valves in both outlets. Prepare location for workover rig. Install perimeter fence as needed. |
| 3 | Provide notice to COGCC prior to rig up per request on approved Form 6 (e.g. call field coordinator, submit Form 42, etc.). |
| 4 | MIRU workover rig equipped for openhole re-entry work. NU 9" 3000 psi BOP stack on casing head. PT BOP and csg head per approved Form 6. Function test BOPE . NU rotating head on BOP. Hook up return line to shale shaker on flat tank. Spot trailer with 158 jnts of 2-7/8" WS, necessary drill collars and bits. |
| 5 | PU 7 7/8" junk mill or rock bit, necessary drill collars and drill pipe/work string (WS). Drill through existing cement plugs at surface (10 sk) and at the base of surface casing (15 sk plug ~200'-270') using fresh water with biocide. |
| 6 | Once surface cement plugs are drilled, displace hole with drilling mud and continue in hole. |
| 7 | Drill out Fox Hills isolation plug from ~600' - 950' (150 sacks). |
| 8 | Continue to RIH to 5000' and tag TD. Circulate to condition the hole and remove all gas. |
| 9 | POOH and lay down drill bit and drill collars as necessary. |
| 10 | Notify Cementers to be on call. |
| 11 | RIH 2-7/8" WS while hydrotesting to 3000 psi open ended to TD @ 5000'. |
| 12 | RU VES. Run gyro from EOT to surface making stops every 100'. Send invoice and results to Sabrina Frantz. RD VES. |
| 13 | Pump Sussex balanced plug. Spot cement plug consisting of 265 cu-ft (230 sx) "G" w/0.25 pps cello flake, 0.4% CD-32, 0.4% ASA-301 with CaCl ₂ as necessary. Mixed at 15.8 ppg, 1.15 cuft/sack. Cement to be preceded by sodium metasilicate mixed in 20 bbls water followed by 5 bbls fresh water spacer per cementing company recommendation. Calculated top of plug is 4690' based on 9" hole with 20% excess. |

- 14 POOH to ~ 4500' and circulate clean. WOC 4 hrs, RIH and tag TOC. P&LD WS to place end of WS at 1240'.
- 15 Pump Fox Hills balanced plug. Pump mud flush of 10 bbls SAPP then 20 bbls water spacer ahead of 125.5 bbls (530 sx) Type III w/cello flake and CaCl₂ as deemed necessary, mixed at 1.33 cf per sack, 14.8 ppg. Plug size is based on 9" hole with 40% excess covering 1240' to shoe of surface casing at 241' plus capacity of surface casing to 100'.
- 16 POOH to ~ 100' and circulate clean. TOOH and WOC per cement company recommendation. Tag TOC @ 141' or shallower. Contact Evans Engineering if tag is deeper.
- 17 PU casing scraper for 8-5/8" and RIH to 100'. POOH and LD scraper and WS.
- 18 RU WL. Run and set CIBP in the 8 5/8", 24# surface casing at 80'. PT CIBP and surface casing to 1000 psi for 15 minutes. Assuming successful test, RD WL. RDMO WO Rig.
- 19 Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries to rscDJVendors@anadarko.com within 24 hrs of completion of the job.
- 20 Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
- 21 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
- 22 Excavate hole around surface casing enough to allow welder to cut casing minimum 5' below ground level.
- 23 Welder cut casing minimum 5' below ground level.
- 24 Fill casing to surface using 4500 psi compressive strength cement, (NO gravel).
- 25 Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
- 26 Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
- 27 Properly abandon flowlines per Rule 1103. File electronic Form 42 once abandonment complete.
- 28 Back fill hole with fill. Clean location, level.
- 29 Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.