

RE-ENTER AND PLUG AND ABANDONMENT PROCEDURE

Brethawer Jake B 1

- | Step | Description of Work |
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| 1 | 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. |
| 2 | Provide notice to COGCC prior to rig up per request on approved Form 6 (e.g. call field coordinator, submit Form 42, etc.). |
| 3 | MIRU workover rig. NU 9" 3000 psi BOP stack on casing head. PT BOP and csg head per approved Form 2. Function test BOPE . NU rotating head on BOP. Hook up return line to shale shaker on flat tank |
| 4 | PU 7 7/8" mill tooth 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 (100 sk plug ~485' to ~590') using fresh water with biocide. |
| 5 | Once surface cement plugs are drilled, Displace hole with drilling mud and continue washing down to cement plug at ~4040' |
| 6 | TOH with WS and bit. RIH with WS open-ended to top of cement plug at ~ 4040'. Circulate and condition hole for additional cement plug. |
| 7 | Run gyro survey from ~4040' to surface. Forward results to Evans Engineering. |
| 8 | RU Cementers. Spot cement plug consisting of 200 sx "G" w/0.25pps cello flake, 0.4 % CD-32, 0.4% ASA-301 and CaCl ₂ as deemed necessary. POOH to ~3000' and circulate clean. WOC per cement company recommendation. Plug size is based on 13" hole plus 20% excess. Coverage from 4040' to 3840' |
| 9 | Tag top of plug at ~3840'. LD WS to place end of WS at ~780'. Spot cement plug consisting of 270 sx Type III w/0.25pps cello flake and CaCl ₂ as deemed necessary, mixed at 1.53 cf per sack, 14.0 ppg. POH and WOC per cementing company recommendation. Plug size is based on 13" hole with 20% excess covering 780' to base of surface casing at 537' plus capacity of surface casing to 337'. |
| 10 | Tag top of plug at ~337'. POOH and LD WS. |
| 11 | RU wireline. Run and set CIBP in the 8 5/8", 24# surface casing at 100'. PT CIBP and surface casing to 1000 psi for 15 minutes. Assuming successful test, RD wireline. |
| 12 | RDMO workover rig. |
| 13 | 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. |
| 14 | Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer. |

- 15 Excavate hole around surface casing of sufficient size to allow welder to cut off 8 5/8" casing at least 5' Below ground level (depending on land owner requirements).
- 16 Fill sfc casing with 4500 psi compressive strength redi-mix cement (sand and cement only - no gravel)
- 17 Spot weld steel marker plate on top of sfc casing stub. Marker shall be labeled with well name, well number, legal location (1/4 1/4 descriptor) and API number.
- 18 Back fill hole with native material. Reclaim location to landowner specifications
- 19 Submit Form 6 to COGCC. Provide "As plugged" wellbore diagram identifying the specific plugging completed.