

PLUG AND ABANDONMENT PROCEDURE

BELL L 12-16

- | Step | Description of Work |
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| 1 | 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 foreman or lead operator at least 24 hr prior to rig move. Request they catch and remove the plunger, isolate production equipment and remove any automation prior to rig showing up. Install perimeter fence as needed. |
| 2 | Notify IOC when rig mobilizes to location to generate workorder for flowline removal & one call for line locates. |
| 3 | Prepare location for base beam equipped rig. |
| 4 | MIRU, kill well as necessary using fresh water with biocide. ND WH. NU BOP. Unseat landing jt. |
| 5 | Pick up 1.90" IJ tbg to tag fill - 219 jts = 7442' reported in hole. Spot sand plug in 2 7/8" casing up to 7200'. POH with tbg to ~6000' and allow sand plug to settle. Tag plug to be sure it is at or above 7240'. |
| 6 | LD 1.90" tbg. Pressure test 2 7/8" csg and sand plug to 3000 psi for 15 minutes. If casing pressure tests, it can be used to spot cement plugs in subsequent steps. If not, a work string will be needed. |
| 7 | MIRU WL service. Run a CBL to verify TOC of primary cement job @ 5822'. Run a gyro directional survey from PBSD to surface with 100' stations. Forward results to Sabrina Frantz in Evans Engineering. Dump bail one sack of cement on sand plug. |
| 8 | ND BOP and wellhead. Install BOP on surface casing head with 2 7/8" pipe rams. Install 3000 psi ball valves on both casing head outlets. Install a choke or choke manifold on one outlet. |
| 9 | RU WL. Free point and cut off 2 7/8" casing at 4750' per CCL. RDMO WL. Circulate bottoms up using drilling mud and continue circulating to remove any gas from wellbore. |
| 10 | MIRU cementers and equalize an open-hole plug from 4750' to 4350': 310 sx "G" w/ 0.25pps cello flake, 0.4% CD-32, 0.4% ASA-301 mixed at 15.8 ppg and 1.15 cuft/sk; 357 cuft of slurry. Precede cement with 20 bbl sodium metasilicate and 5 bbl water spacers. Cement volume based on 11 1/2" hole size with 20% excess (Caliper log on file). |
| 11 | Pull 2 7/8" tbg up to ~3000' and circulate clean. WOC per cement company recommendation. |
| 12 | Tag plug at 4350'. LD 2 7/8" to bring end of tbg to 1410'. |
| 13 | RU Cementers. Equalize cement plug: 640 sx Type III w/0.25 pps cello flake and CaCl ₂ as necessary mixed at 14.8 ppg and 1.33 cuft/sk; 851 cuft of slurry. Volume based on 11" hole 1410'-570' with 40% excess and 8 5/8" casing 570'-370'. |
| 14 | TOH and WOC per cement company recommendation. |
| 15 | Tag cement to confirm TOC is at or above 470' |

- 16 MIRU WL. Run and set 8 5/8" CIBP at 80'. PT CIBP and surface casing 1000 psi for 15 min. Assuming successful test, RD wireline and rig.
- 17 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.
- 18 Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
- 19 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
- 20 Excavate hole around surface casing enough to allow welder to cut 8 5/8" casing minimum 5' below ground level.
- 21 Welder cut 8 5/8" casing minimum 5' below ground level.
- 22 Fill surface casing with 4500 psi compressive strength cement, (NO gravel).
- 23 Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
- 24 Properly abandon flowlines per Rule 1103.
- 25 Obtain GPS location data per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
- 26 Back fill hole with fill. Clean location, level.
- 27 Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed. File electronic Form 42 once abandonment complete.

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