

Cement Verification Report - Cementer's Well Service, Inc.

P.O. BOX 336220 • GREELEY, CO 80633 • (970) 353-7299 • FAX (970) 353-7712

COGCC Operator Guidance **RULE #308.A.B(2)A.ii**



| | | |
|---|------------------------------|---------------|
| CLIENT: PDC - Petroleum Development Corp | Cementer's FIELD TICKET # | 300007 |
|---|------------------------------|---------------|

Requested Operator Guidance:

| | | | | |
|--|--|------------------|--|------------|
| 1) Well Name & Number | Lease | Erwin | Well No. | 2N |
| 2) Well API Number | 05-123-49381 - | | | |
| 3) Job Date | 11/12/20 | Time on | 18:00 | 24 hr time |
| 4) Job Type | New Well Surface | | | |
| 5) Cementing Company | Cementer's Well Service, Inc | Contact | Nate Kvamme - 303-324-4296 | |
| 6) Ambient conditions | clear / rain / snow / other | - | temp deg F | |
| 7) Slurry Description | | | | |
| a) Purpose | Surface - 9 5/8" CSG, 12 1/4" hole | | | |
| b) Cement Class | Type I / II | | | |
| c) Cement Yield | 1.61 | cuft / sk | | |
| d) Cement Density | 13.9 | PPG | | |
| e) Number of sks | 530 | sks (94# equiv) | | |
| f) Cement Volume (dry) | 530 | cuft (ft^3) | | |
| g) Mix Fluid Type | | | | |
| Water / Cement | 8.5 | Gal / sk | | |
| h) Slurry mixed | 152.0 | BBLs slurry | | |
| i) Additives used | 1.50% | CaCl2 | 3.00% | Bentonite |
| Total Water Used | 281.0 | BBLs H2O | | |
| j) Displacement Fluid Vol | 123.8 | BBLs H2O | | |
| k) Method of Placement | | | | |
| l) Set Depth | 1,657 | feet (ft) | | |
| m) Stage tool depth | n/a | | | |
| n) Float Collar Depth | 1,601 | feet (ft) | | |
| o) Designed Top of Cement | n/a | to surface | | |
| p) Centralizer depths | | | | feet (ft) |
| 8) Charts - (pressure, density, pump rate) | | | | |
| Landed Plug @ | 900 | psi | Final Lift Pressure @ | 640 psi |
| Cement Density (as weighed during job) @ | 13.9 | PPG | | |
| 9) Job notes | | | | |
| a) Plug down | <input checked="" type="radio"/> Y / <input type="radio"/> N | Time | 19:45 | 24 hr time |
| b) Floats held | <input checked="" type="radio"/> Y / <input type="radio"/> N | | | |
| c) Full Returns | <input checked="" type="radio"/> Y / <input type="radio"/> N | Lost Circulation | <input checked="" type="radio"/> Y / <input type="radio"/> N | |
| d) Cement to surface | <input checked="" type="radio"/> Y / <input type="radio"/> N | 21.0 | BBLs to surface | |
| e) If no returns, top off | BBLs | | | |
| f) Top off detail | | | | |



Centralizer Depths

Well Name: Erwin 2N

Surface, Set Depth: 1,657.1ftKB

| | | | | | | | | | | | |
|-----------------------------------|--|--|-----------------------------|------------------------------------|--------------------|--------------|--|---------------------------------------|--|--|--|
| API 05123493810000 | | Surface Legal Location SWSE 27 5N 64W | | Field Name Wattenberg | | State CO | | Well Configuration Type Horizontal | | | |
| Ground Elevation (ft) 4,639.00 | Original KB Elevation (ft) 4,667.00 | KB-Ground Distance (ft) 28.00 | Spud Date 2/6/2021 00:00 | Rig Release Date 2/8/2021 17:00 | On Production Date | Abandon Date | | | | | |

Casing Run Tally

| Run # | Ref # | Item Des | OD (in) | Wt (lb/ft) | Grade | Run? | Len (ft) | Centralized? | Ext Jw/ry | Connections | Top (ftKB) | Cum Len (ft) |
|-------|-------|---------------|---------|------------|-------|------|----------|--------------|-----------|-------------|------------|--------------|
| 2 | 1 | Casing Joints | 9 5/8 | 36.00 | J-55 | Yes | 41.42 | Yes | | LT&C | 1,613.8 | 43.27 |
| 7 | 6 | Casing Joints | 9 5/8 | 36.00 | J-55 | Yes | 41.58 | Yes | | LT&C | 1,410.0 | 247.10 |
| 12 | 11 | Casing Joints | 9 5/8 | 36.00 | J-55 | Yes | 40.67 | Yes | | LT&C | 1,208.9 | 448.19 |
| 17 | 16 | Casing Joints | 9 5/8 | 36.00 | J-55 | Yes | 41.40 | Yes | | LT&C | 1,004.4 | 652.67 |
| 22 | 21 | Casing Joints | 9 5/8 | 36.00 | J-55 | Yes | 40.33 | Yes | | LT&C | 802.3 | 854.85 |
| 27 | 26 | Casing Joints | 9 5/8 | 36.00 | J-55 | Yes | 41.10 | Yes | | LT&C | 598.7 | 1,058.43 |
| 32 | 31 | Casing Joints | 9 5/8 | 36.00 | J-55 | Yes | 40.50 | Yes | | LT&C | 395.7 | 1,261.42 |
| 37 | 36 | Casing Joints | 9 5/8 | 36.00 | J-55 | Yes | 40.55 | Yes | | LT&C | 196.2 | 1,460.91 |