



Great Western Operating Company, LLC

Surface Post Job Report

B Farm LD 18-039HC (API 05-001-10090)

S:7 T:1S R:67W Adams CO



Great Western Operating Company, LLC

Great Western Operating Company, LLC | 1801 Broadway, Suite 500 | Denver, CO 80202

Dear Great Western Operating Company,

Thank you for the opportunity to provide cementing services on this well. BJ Services strives to achieve complete customer satisfaction. If you have any questions regarding the services or data provided, please contact BJ Services at any time.

Sincerely,
Jacob Ojeda
Field Engineer I | (763) 516-3012 | jacob.ojeda@bjservices.com

Field Office 1716 East Allison Rd., Cheyenne WY, 82007
Phone: (307) 638-5585

Sales Office 999 18th St. Suite 1200 Denver, CO 80202
Phone: (281) 408-2361

Cementing Treatment



| | | | |
|---------------------------|--------------------------------------|-----------------------|--------------------|
| Start Date | 12/29/2017 | Well | B-FARM LD 18-039HC |
| End Date | 12/29/2017 | County | ADAMS |
| Client | GREAT WESTERN OPERATING COMPANY, LLC | State/Province | CO |
| Service Supervisor | Zach Hyde | API | 05-001-10090 |
| District | Cheyenne, WY | Type of Job | Surface |

WELL GEOMETRY

| Type | ID (in) | OD (in) | Wt. (lb/ft) | MD (ft) | TVD (ft) | Excess(%) | Grade | Thread |
|-----------|---------|---------|-------------|----------|----------|-----------|-------|--------|
| Open Hole | 13.50 | | | 1,712.00 | 1,712.00 | 25.00 | | |
| Casing | 8.92 | 9.63 | 36.00 | 1,712.00 | | | J-55 | LTC |

Shoe Length (ft.): 42

HARDWARE

| | | | |
|-----------------------------|----------|----------------------------------|-------|
| Bottom Plug Used? | No | Landing Collar Depth (ft) | 1,668 |
| Top Plug Used? | Yes | Job Pumped Through | Iron |
| Top Plug Provided By | Customer | Top Connection Thread | LTC |
| Top Plug Size | 9.625 | Top Connection Size | 9.625 |
| Centralizers Used | Yes | | |

CIRCULATION PRIOR TO JOB

| | | | |
|----------------------------------|-----|---|----|
| Well Circulated By | Rig | Lost Circulation Prior to Cement Job | No |
| Circulation Prior to Job | Yes | Solids Present at End of Circulation | No |
| Circulation Time (min) | 30 | Flare Prior to/during the Cement Job | No |
| Circulation Rate (bpm) | 7 | Gas Present | No |
| Circulation Volume (bbls) | 126 | | |

Cementing Treatment



TEMPERATURE

| | | | |
|----------------------------|----|--------------------------------|----|
| Ambient Temperature (°F) | 50 | Slurry Cement Temperature (°F) | 70 |
| Mix Water Temperature (°F) | 70 | | |

BJ FLUID DETAILS

| Fluid Type | Fluid Name | Density (ppg) | Yield (Cu Ft/sk) | H2O Req. (gals/sk) | Vol (sk) | Vol (Cu Ft) | Vol (bbls) |
|----------------------------|------------|---------------|------------------|--------------------|----------|-------------|------------|
| Spacer / Pre Flush / Flush | Water | 8.3300 | | | | | 20.0000 |
| Tail Slurry | S100-22 | 14.5000 | 1.3901 | 6.78 | 760 | 1,056.0000 | 188.0000 |
| Displacement Final | Water | 8.3300 | | | | 0.0000 | 128.2000 |

| Fluid Type | Fluid Name | Component | Concentration | UOM |
|-------------|------------|------------------------|---------------|---------|
| Tail Slurry | S100-22 | CEMENT, ASTM TYPE III | 100.00 | PCT |
| Tail Slurry | S100-22 | FOAM PREVENTER, FP-13L | 0.03 | GALS/SK |

TREATMENT SUMMARY

| Time | Fluid | Rate (bpm) | Fluid Vol. (bbls) | Pipe Pressure (psi) | Annulus Pressure (psi) | Comments |
|------|---------|------------|-------------------|---------------------|------------------------|----------|
| | Water | 5.00 | 20.00 | | | |
| | S100-22 | 5.00 | 188.00 | | | |
| | Water | 5.00 | 128.20 | | | |

Cementing Treatment



DISPLACEMENT AND END OF JOB SUMMARY

| | | | |
|---------------------------------------|-----|------------------------------------|---------|
| Displaced By | BJ | Were Returns Planned at Surface | Yes |
| Calculated Displacement Volume (bbls) | 128 | Cement returns During Job | Yes |
| Actual Displacement Volume (bbls) | 128 | Amount of Cement to Surface | 20 bbls |
| Did Float Hold? | Yes | Amount Bled Back After Job | 2400 |
| Bump Plug | Yes | Top Out Cement Spotted | No |
| Bump Plug Pressure (psi) | 600 | Lost Circulation During Cement Job | No |

CEMENT PLUG

| | | | |
|------------------------|----|-------------------|----|
| Bottom of Cement Plug? | No | Wiper Balls Used? | No |
| Wiper Ball Quantity | | Plug Catcher | No |
| Number of Plugs | | | |

Customer Name Great Weastern
 Well Name 18-039HC B-FARM LD 18-039HC
 Job Type Surface

District Cheyenne
 Supervisor Zach Hyde
 Engineer



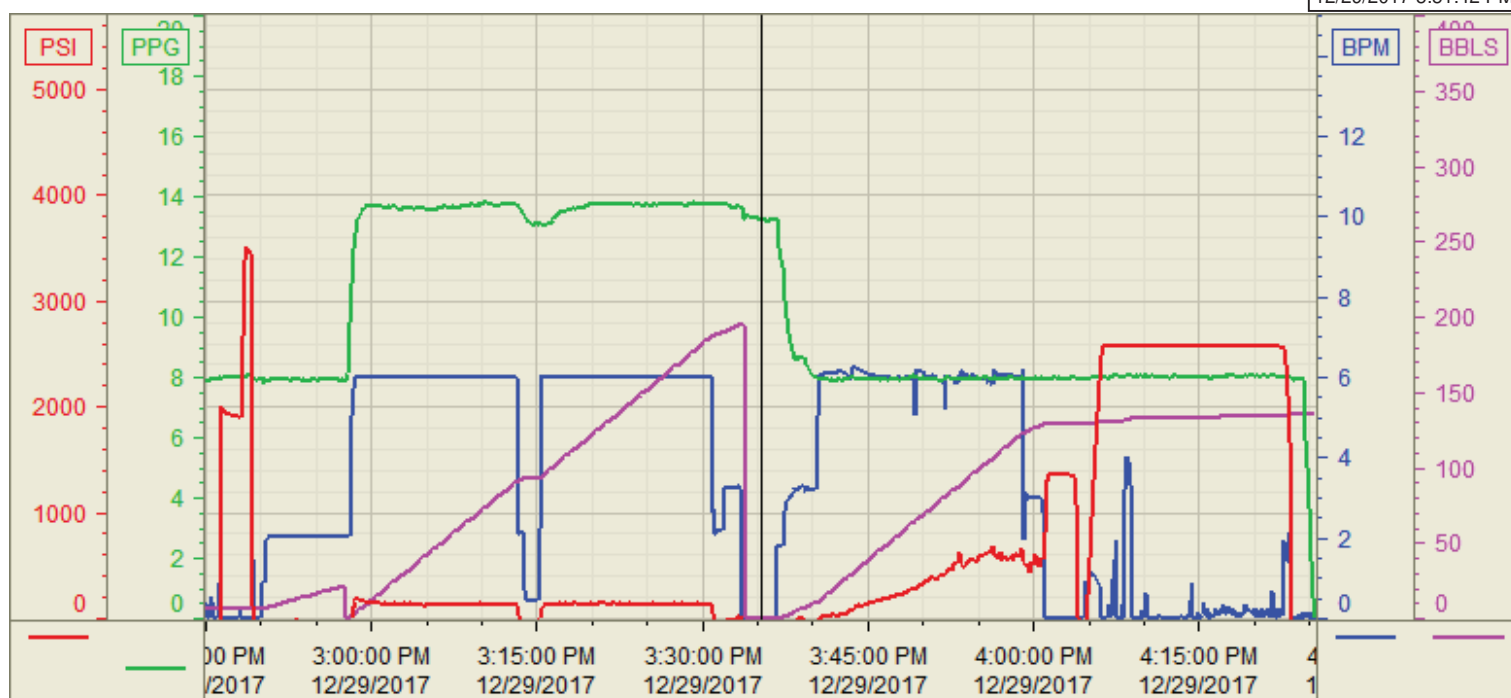
| Seq No. | Start Date/Time | Category | Event | Equipment | Event ID | Density (lb/gal) | Pump Rate (bpm) | Pump Vol (bbls) | Pipe Pressure (psi) | Comments |
|---------|------------------|----------|-----------------|-----------|----------|---------------------|--------------------|--------------------|------------------------|---|
| 1 | 12/29/2017 5:00 | | Call Out | | | | | | | Crew gets called out. Requested time was 1100 |
| 2 | 12/29/2017 7:00 | | Depart Facility | | | | | | | Crew leaves facility |
| 3 | 12/29/2017 8:00 | | On Location | | | | | | | On location at 800 |
| 4 | 12/29/2017 8:00 | | Wait | | | | | | | Crew waits for rig to start running casing so we can spot in |
| 5 | 12/29/2017 10:00 | | Rig Up | | | | | | | Crew rigs up iron and hoses needed for the job |
| 6 | 12/29/2017 10:00 | | Wait | | | | | | | Crew waits for rig to finish running casing |
| 7 | 12/29/2017 14:30 | | Safety Meeting | | | | | | | Crew has safety meeting with company man and rig crew discussing the job |
| 8 | 12/29/2017 14:37 | | Fill Lines | | | 8.33 | 2 | 5 | 0 | Fill lines 5 bbls at 2 bpm |
| 9 | 12/29/2017 14:47 | | Pressure Test | | | | | | | Pressure test to 3500 psi |
| 10 | 12/29/2017 14:57 | | Water Spacer | | | 8.33 | 4 | 15 | 150 | 15 bbls of water spacer at 4 bpm with 50 psi |
| 11 | 12/29/2017 15:05 | | Primary | | | 14.5 | 6 | 191 | 150 | 191 bbls of Primary cement at 14.5 ppg(760 sks, 1.39 yld , 6.78gal/sk) at 6 bpm with 150 psi |
| 12 | 12/29/2017 15:40 | | Shutdown | | | | | | | Shutdown |
| 13 | 12/29/2017 15:47 | | Drop Plug | | | | | | | Drop top plug |
| 14 | 12/29/2017 15:47 | | Displacement | | | 8.33 | 4 | 10 | 50 | 10 bbls of displacement away at 4 bpm washing up on top of the plug with 50 psi |
| 15 | 12/29/2017 15:51 | | Displacement | | | 8.33 | 6 | 110 | 600 | 118 bbls away at 6 bpm with |
| 16 | 12/29/2017 16:06 | | Slow Rate | | | | | | | Slow rate last 10 bbls to 3 bpm to land the plug |
| 17 | 12/29/2017 16:06 | | Displacement | | | 8.33 | 3 | 8 | 600 | 128 bbls away at 3 bpm with 600 psi |
| 18 | 12/29/2017 16:08 | | Land Plug | | | | | | | Landed plug went 500 psi over FCP which was 600 psi brought it up to 1100 |
| 19 | 12/29/2017 16:11 | | Check Floats | | 68 | | | | | Check Floats |
| 20 | 12/29/2017 16:12 | | Casing Test | | | | | | | 2400 psi casing test for 15 minutes |
| 21 | 12/29/2017 16:30 | | Check Floats | | | | | | | .5 bbls back |
| 22 | 12/29/2017 16:30 | | Job Complete | | | | | | | Job complete got 20 bbls cement to surface |
| 23 | 12/29/2017 17:00 | | Rig Down | | | | | | | Rig down |
| 24 | 12/29/2017 17:00 | | Depart Location | | | | | | | Depart location |
| 25 | | | | | | | | | | |
| 26 | | | | | | | | | | |
| 27 | | | | | | | | | | |
| 28 | | | | | | | | | | |
| 29 | | | | | | | | | | |
| 30 | | | | | | | | | | |
| 31 | | | | | | | | | | |
| 32 | | | | | | | | | | |
| 33 | | | | | | | | | | |
| 34 | | | | | | | | | | |

Customer: Great Western
Well Number: 18-039HC B-FARM
Lease Info:



Print Date/Time

12/29/2017 5:51:42 PM



| | Name | Y value | X value/time stamp | Tag name Y |
|---|--------------------------------|---------|--------------------------|----------------------------------|
| 1 | DS - Press (PSI) | -82.5 | 12/29/2017 3:35:18 PM | Cementer\DS_DISCHARGE_PRESS_DIAL |
| 2 | Den2 - Discharge Density (PPG) | 13.26 | 12/29/2017 3:35:18 PM | Cementer\DENSITY2_ACTUAL_RATE |
| 3 | Down Hole Total (BBLS) | 0.0 i. | 12/29/2017 3:35:17 PM i. | Cementer\DOWNHOLE_FLOW_TOTAL |
| 4 | Combined Rate (BPM) | 0.00 i. | 12/29/2017 3:35:17 PM i. | Cementer\Flow_Combined |
| 5 | | | | |

Source: Control1 5:51:38 PM