



COGCC doc # 2597422

Caerus

Surface Post Job Report

Puckett 13A-19 05-045-23198

S:24 T:6S R:97W Garfield CO

Quote #:

Execution #:





Caerus

Attention: Mr. Steve Schmitz | (720) 880-6412 | sschmitz@caerusoilandgas.com

Caerus | 1001 17th Street, Suite 1600 | Denver, CO 80202

Dear Mr. Schmitz,

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,

Gage Putnam
Field Engineer I | (970) 632-2006 | Gage.Putnam@BJServices.com

Field Office 28730 US-6, Rifle, CO 81650
Phone: (970) 632-2412

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

Cementing Treatment



| | | | |
|---------------------------|-----------------------|-----------------------|----------------|
| Start Date | 12/31/2017 | Well | Puckett 13A-19 |
| End Date | 1/31/2018 | County | GARFIELD |
| Client | CAERUS OPERATING, LLC | State/Province | CO |
| Client Field Rep | PAT BLACKMER | API | 05-045-23198 |
| Service Supervisor | James Roush | Formation | - |
| Field Ticket No. | Surface | Rig | H&P 329 |
| District | Rifle, CO | Type of Job | Surface |

WELL GEOMETRY

| Type | ID (in) | OD (in) | Wt. (lb/ft) | MD (ft) | Excess(%) | Grade |
|-----------------|---------|---------|-------------|----------|-----------|-------|
| Previous Casing | 19.50 | 20.00 | 52.73 | 100.00 | 0.00 | |
| Open Hole | 14.75 | | | 2,000.00 | 25.00 | |
| Open Hole | 14.75 | | | 2,550.00 | 0.00 | |
| Casing | 8.92 | 9.63 | 36.00 | 2,501.00 | | J-55 |

Shoe Length (ft): 44

HARDWARE

| | | | |
|----------------------------------|--------|---|--------------|
| Bottom Plug Used? | No | Tool Type | Float Collar |
| Bottom Plug Provided By | - | Tool Depth (ft) | 2,484.00 |
| Bottom Plug Size | - | Max Tubing Pressure - Rated (psi) | - |
| Top Plug Used? | No | Max Tubing Pressure - Operated (psi) | - |
| Top Plug Provided By | Non BJ | Max Casing Pressure - Rated (psi) | 3,520.00 |
| Top Plug Size | 9.625 | Max Casing Pressure - Operated (psi) | 2,000.00 |
| Centralizers Used | No | Pipe Movement | None |
| Centralizers Quantity | 8.00 | Job Pumped Through | No Manifold |
| Centralizers Type | Bow | Top Connection Thread | BUTT |
| Landing Collar Depth (ft) | 2,484 | Top Connection Size | 9.625 |

Cementing Treatment



CIRCULATION PRIOR TO JOB

| | | | |
|---|--------|---|------|
| Well Circulated By | Rig | Solids Present at End of Circulation | No |
| Circulation Prior to Job | No | 10 sec SGS | 2.00 |
| Circulation Time (min) | 60.00 | 10 min SGS | 2.00 |
| Circulation Rate (bpm) | 7.00 | 30 min SGS | 4.00 |
| Circulation Volume (bbls) | 192.00 | Flare Prior to/during the Cement Job | No |
| Lost Circulation Prior to Cement Job | Yes | Gas Present | No |
| Mud Density In (ppg) | 8.32 | Gas Units | 0 |
| Mud Density Out (ppg) | 0.00 | | |
| PV Mud In | 3 | | |
| PV Mud Out | 0 | | |
| YP Mud In | 2 | | |
| YP Mud Out | 0 | | |

TEMPERATURE

| | | | |
|-----------------------------------|-------|---------------------------------------|-------|
| Ambient Temperature (°F) | 32.00 | Slurry Cement Temperature (°F) | 73.00 |
| Mix Water Temperature (°F) | 55.00 | Flow Line Temperature (°F) | 78.00 |

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 | Sodium Silicate Spacer | 10.0000 | | | | | 20.0000 |
| Spacer / Pre Flush / Flush | Water | 8.3300 | | | | | 20.0000 |
| Spacer / Pre Flush / Flush | Water | 8.3300 | | | | | 20.0000 |
| Lead Slurry | S100-12 | 12.0000 | 2.5329 | 14.89 | 704 | 1,774.0000 | 315.9000 |
| Tail Slurry | S100-12 | 12.5000 | 2.2282 | 12.62 | 162 | 358.0000 | 63.7000 |
| Displacement Final | Displacement | 8.3300 | | | | 0.0000 | 190.2000 |
| Top Out Slurry | S100-12 | 12.5000 | 2.2282 | 12.62 | 252 | 559.0000 | 99.6000 |

Cementing Treatment



| Fluid Type | Fluid Name | Component | Concentration | UOM |
|----------------------------|------------------------|---|---------------|--------|
| Spacer / Pre Flush / Flush | Sodium Silicate Spacer | SILICATE, SODIUM, A-3L | 21.00 | GPB |
| Spacer / Pre Flush / Flush | Water | Fresh Water | 100.00 | PCT |
| Spacer / Pre Flush / Flush | Water | Fresh Water | 100.00 | PCT |
| Lead Slurry | S100-12 | CEMENT, ASTM TYPE III | 100.00 | PCT |
| Lead Slurry | S100-12 | ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS | 2.00 | LBS/SK |
| Lead Slurry | S100-12 | FP-25, Dry Foam Preventer (BJS Only) | 0.30 | BWOB |
| Lead Slurry | S100-12 | IntegraSeal CELLO | 0.13 | LBS/SK |
| Lead Slurry | S100-12 | CEMENT EXTENDER, GYPSUM, A-10 | 5.00 | BWOB |
| Lead Slurry | S100-12 | CEMENT EXTENDER, SODIUM METASILICATE, A-2 | 2.00 | LBS/SK |
| Tail Slurry | S100-12 | CEMENT, ASTM TYPE III | 100.00 | PCT |
| Tail Slurry | S100-12 | CEMENT EXTENDER, SODIUM METASILICATE, A-2 | 2.00 | LBS/SK |
| Tail Slurry | S100-12 | FP-25, Dry Foam Preventer (BJS Only) | 0.30 | BWOB |
| Tail Slurry | S100-12 | CEMENT EXTENDER, GYPSUM, A-10 | 5.00 | BWOB |
| Tail Slurry | S100-12 | ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS | 2.00 | LBS/SK |
| Tail Slurry | S100-12 | IntegraSeal CELLO | 0.13 | LBS/SK |
| Top Out Slurry | S100-12 | CEMENT, ASTM TYPE III | 100.00 | PCT |
| Top Out Slurry | S100-12 | CEMENT EXTENDER, SODIUM METASILICATE, A-2 | 2.00 | LBS/SK |
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Cementing Treatment



TREATMENT SUMMARY

| Time | Fluid | Rate (bpm) | Fluid Vol. (bbls) | Pipe Pressure (psi) | Comments |
|--------------------|------------------------|------------|-------------------|---------------------|----------|
| 12/31/2017 6:06 PM | Water | 6.00 | 20.00 | 281.00 | |
| 12/31/2017 6:10 PM | Sodium Silicate Spacer | 6.00 | 20.00 | 280.00 | |
| 12/31/2017 6:15 PM | Water | 6.00 | 20.00 | 290.00 | |
| 12/31/2017 6:26 PM | S100-12 | 6.00 | 315.90 | 330.00 | Lead |
| 12/31/2017 7:35 PM | S100-12 | 4.50 | 63.70 | 203.00 | Tail |
| 12/31/2017 8:00 PM | Displacement | 5.00 | 190.20 | 219.00 | |
| 12/31/2017 9:32 PM | S100-12 | 3.00 | 99.60 | 90.00 | Top Out |

| | Min | Max | Avg |
|----------------|------|----------|--------|
| Pressure (psi) | 0.00 | 1,500.00 | 350.00 |
| Rate (bpm) | 0.00 | 6.00 | 4.00 |

DISPLACEMENT AND END OF JOB SUMMARY

| | | | |
|---------------------------------------|--------|------------------------------------|--------|
| Displaced By | BJ | Amount of Cement Returned/Reversed | 1.00 |
| Calculated Displacement Volume (bbls) | 192.00 | Method Used to Verify Returns | Visual |
| Actual Displacement Volume (bbls) | 190.00 | Amount of Spacer to Surface | 0.00 |
| Did Float Hold? | Yes | Pressure Left on Casing (psi) | 0.00 |
| Bump Plug | Yes | Amount Bled Back After Job | 0.50 |
| Bump Plug Pressure (psi) | 906.00 | Total Volume Pumped (bbls) | 751.00 |
| Were Returns Planned at Surface | Yes | Top Out Cement Spotted | Yes |
| Cement returns During Job | None | Lost Circulation During Cement Job | Yes |



Customer Name CAERUS
 Well Name PUCKETT 13A-19
 Job Type Surface

District Rifle
 Supervisor JAMES ROUSH
 Engineer GAGE PUTNAM

| Seq No. | Start Date | Start Time | Category | Event | Density (lb/gal) | Pump Rate (bpm) | Pump Vol (bbls) | Pipe Pressure (psi) | Comments |
|---------|------------|------------|--------------|--------------------|------------------|-----------------|-----------------|---------------------|--|
| 1 | 12/31/2017 | 10:00 | Mobilization | Callout | | | | | BJ CREW CALLED OUT WITH A RTS OF 17:00 PM 12/31/17 |
| 2 | 12/31/2017 | 12:00 | Mobilization | | | | | | JOURNEY MANAGEMENT WITH BJ CREW |
| 3 | 12/31/2017 | 12:30 | Mobilization | Leave Location | | | | | LEAVE DISTRICT |
| 4 | 12/31/2017 | 14:30 | Mobilization | Arrive on Location | | | | | ARRIVE ON LOCATION |
| 5 | 12/31/2017 | 14:45 | Operational | | | | | | STEACS BRIEFING WITH BJ CREW |
| 6 | 12/31/2017 | 15:00 | Operational | Spot Units | | | | | SPOT TRUCKS |
| 7 | 12/31/2017 | 15:15 | Operational | Rig Up | | | | | RIG UP ALL EQUIPMENT |
| 8 | 12/31/2017 | 16:30 | StandBy | Customer | | | | | BJ ON STANDBY, RIG RUNNING CASING |
| 9 | 12/31/2017 | 16:45 | Operational | Prime Up | | | | | PIPE ON BOTTOM, RIG TO CIRCULATE |
| 10 | 12/31/2017 | 17:11 | Operational | Safety Meeting | | | | | SAFETY MEETING WITH BJ CREW, COMPANY, AND RIG CREW |
| 11 | 12/31/2017 | 17:45 | Operational | Rig Up | | | | | RIG UP CEMENT HEAD TO CASING |
| 12 | 12/31/2017 | 18:02 | Operational | Start Pumping | 8.34 | 3 | 5 | 85 | BREAK CIRCULATION |
| 13 | 12/31/2017 | 18:04 | Operational | Pressure Test | | | | | TEST LINES 3000 |
| 14 | 12/31/2017 | 18:06 | Operational | Pump Spacer | 8.34 | 6 | 15 | 281 | FRESH WATER SPACER |
| 15 | 12/31/2017 | 18:10 | Operational | Pump Spacer | 10 | 6 | 20 | 280 | SODIUM SILICATE SPACER |
| 16 | 12/31/2017 | 18:15 | Operational | Pump Spacer | 8.34 | 6 | 20 | 290 | FRESH WATER SPACER |
| 17 | 12/31/2017 | 18:22 | Operational | Pump Lead Cement | | | | | BATCH UP LEAD CEMENT @ 12.0 PPG (704 SXS Y- 2.53 MW- 14.89) |
| 18 | 12/31/2017 | 18:26 | Operational | Pump Lead Cement | 12 | 6 | 317 | 330 | LEAD CEMENT @ 12.0 PPG DOWNHOLE |
| 19 | 12/31/2017 | 18:33 | Operational | Pump Lead Cement | 12 | 6 | | 400 | 50 BBLs GONE LEAD SLURRY |
| 20 | 12/31/2017 | 18:42 | Operational | Pump Lead Cement | 12 | 6 | | 400 | 100 BBLs GONE LEAD SLURRY |
| 21 | 12/31/2017 | 18:51 | Operational | Pump Lead Cement | 12 | 6 | | 400 | 150 BBLs GONE LEAD SLURRY |
| 22 | 12/31/2017 | 18:59 | Operational | Pump Lead Cement | 12 | 6 | | 389 | 200 BBLs GONE LEAD SLURRY |
| 23 | 12/31/2017 | 19:08 | Operational | Pump Lead Cement | 12 | 6 | | 420 | 250 BBLs GONE LEAD SLURRY |
| 24 | 12/31/2017 | 19:25 | Operational | Pump Lead Cement | 12 | 4 | | 198 | 300 BBLs GONE LEAD SLURRY |
| 25 | 12/31/2017 | 19:34 | Operational | Pump Tail Cement | 12.5 | | | | BATCH UP TAIL SLURRY @ 12.5 PPG (162 SXS Y- 2.22 MW-12.62) |
| 26 | 12/31/2017 | 19:35 | Operational | Pump Tail Cement | 12.5 | 4.5 | 64 | 203 | TAIL CEMENT @ 12.5 PPG DOWN HOLE |
| 27 | 12/31/2017 | 19:43 | Operational | Pump Tail Cement | 12.5 | 4 | | 180 | 50 BBLs GONE TAIL SLURRY |
| 28 | 12/31/2017 | 19:50 | Operational | Pump Displacement | | | 180 | | DROP TOP PLUG START DISPLACEMENT |
| 29 | 12/31/2017 | 19:51 | Operational | Pump Displacement | 12.5 | 3 | 2 | 53 | 2 BBLs @ 12.5 PPG ON TOP OF PLUG |
| 30 | 12/31/2017 | 20:00 | Operational | Pump Displacement | 8.34 | 5 | | 219 | 50 BBLs GONE DISPLACEMENT |
| 31 | 12/31/2017 | 20:11 | Operational | Pump Displacement | 8.34 | 5 | | 185 | 100 BBLs GONE DISPLACEMENT |
| 32 | 12/31/2017 | 20:20 | Operational | Pump Displacement | 8.34 | 5 | | 249 | 150 BBLs GONE DISPLACEMENT |
| 33 | 12/31/2017 | 20:28 | Operational | Pump Displacement | 8.34 | 2.5 | 10 | 335 | SLOW RATE TO BUMP PLUG |
| 34 | 12/31/2017 | 20:32 | Operational | Land Plug | | | | 906 | BUMP PLUG 906 PSI |
| 35 | 12/31/2017 | 20:38 | Operational | Check Floats | | | | | BLEED PRESSURE, CHECK FLOATS 0.5 BBLs BACK |
| 36 | 12/31/2017 | 20:48 | | | | | | | RIG UP TO PUMP PARASITE LINE |
| 37 | 12/31/2017 | 20:54 | Operational | Start Pumping | 8.34 | 1 | 10 | 230 | PUMP 10 BBLs SUGAR WATER |



Customer Name CAERUS
 Well Name PUCKETT 13A-19
 Job Type Surface

District Rifle
 Supervisor JAMES ROUSH
 Engineer GAGE PUTNAM

| Seq No. | Start Date | Start Time | Category | Event | Density (lb/gal) | Pump Rate (bpm) | Pump Vol (bbls) | Pipe Pressure (psi) | Comments |
|---------|------------|------------|--------------|------------------------|------------------|-----------------|-----------------|---------------------|--|
| | 12/31/2017 | 21:06 | Operational | Pressure Test | | | | | ATTEMPT TO DO 1500 PSI CASING TEST, PRESSURED UP TO 1500 PSI, PRESSURE THEN BLED BACK TO 650 PSI, BJ BLED PRESSURE, FLOATS STILL HOLDING |
| 38 | 12/31/2017 | 21:25 | Operational | Pumping Cement | | | | | RIG UP TO PUMP 200 SXS DOWN BACKSIDE |
| 39 | 12/31/2017 | 21:30 | Operational | Pumping Cement | 12.5 | | | | BATCH UP 12.5 PPG CEMENT |
| 40 | 12/31/2017 | 21:32 | Operational | Pumping Cement | 12.5 | 3 | 79 | 90 | CEMENT DOWNHOLE |
| 41 | 12/31/2017 | 21:49 | Operational | Pumping Cement | 12.5 | 3 | | 80 | 50 BBLs GONE TOPOUT SLURRY |
| 42 | 12/31/2017 | 21:58 | Operational | Clean Pumps and Lines | | | | | SHUTDOWN START WASH UP |
| 43 | 12/31/2017 | 22:00 | StandBy | Customer | | | | | BJ ON STANDBY, WAIT 4 HOURS TO DO TOP OUT JOB |
| 44 | 1/1/2018 | 2:45 | Operational | Rig Up | | | | | BJ RIG UP TO DO TOPOUT JOB |
| 45 | 1/1/2018 | 3:40 | Operational | Pump Spacer | 8.6 | 2.5 | 3 | 50 | PUMP CACL WATER AHEAD |
| 46 | 1/1/2018 | 3:42 | Operational | | | | | | START INJECTING SODIUM SILICATE |
| 47 | 1/1/2018 | 3:45 | Operational | Pumping Cement | 12.5 | | | | BATCH UP CEMENT @ 12.5 PPG |
| 48 | 1/1/2018 | 3:48 | Operational | Pumping Cement | 12.5 | 3 | | 100 | PUMP CEMENT DOWNHOLE @ 12.5 PPG |
| 49 | 1/1/2018 | 4:04 | Operational | Pumping Cement | 12.5 | 3 | | 91 | 50 BBLs GONE TOPOUT SLURRY |
| 50 | 1/1/2018 | 4:22 | Operational | Pumping Cement | 12.5 | 1.5 | | 52 | 100 BBLs GONE TOPOUT SLURRY |
| | 1/1/2018 | 4:28 | Operational | Cement Back to Surface | | | | | CEMENT TO SURFACE |
| 53 | 1/1/2018 | 4:32 | Operational | End Pumping | | | | | SHUT DOWN BLEED PRESSURE |
| 54 | 1/1/2018 | 4:45 | Operational | Safety Meeting | | | | | RIG DOWN MEETING WITH BJ CREW |
| 55 | 1/1/2018 | 4:55 | Operational | Clean Pumps and Lines | | | | | START WASH UP OF PUMP AND RIG DOWN EQUIPMENT |
| 56 | 1/1/2018 | 6:40 | Operational | Safety Meeting | | | | | JOURNEY MANAGEMENT WITH BJ CREW |
| 57 | 1/1/2018 | 7:00 | Mobilization | Leave Location | | | | | LEAVE LOCATION |
| 58 | | | | | | | | | |
| 59 | 1/1/2018 | | | | | | | | FCP-350 PSI, BUMP PLUG- 906 PSI, BLEED PRESSURE FLOATS HOLDING- 0.5 BBLs |
| 60 | | | | | | | | | |
| 61 | | | | | | | | | CALCULATED CEMENT TOPS- LEAD - 0' TAIL- 2044' |
| 62 | | | | | | | | | |
| 63 | | | | | | | | | TOPOUT- 252 SXS Y-2.22 MW-12.62 (100 BBLs) 1 BBL TO SURFACE |



Caerus Puckett 13A-19 12/31/17 Surface



