



Laramie Energy

End of Well Cement Report

Bruton 19-04W 05-077-10437
S:19 T:9S R:93W Mesa CO

CallSheet #: 1300 (Surface), 1304 (Production)
Proposal #: 13923



Attention: Mr. Chuck Mallary | (303) 859-3634 | cmallary@laramie-energy.com
Laramie Energy
1401 17th St, Suite 1400 | Denver, CO 80202

Dear Mr. Mallary,

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,

Zen Keith

Technical Specialist-II | (307) 757-7178 | Zen.Keith@bjservices.com

Field Office 28730 US-6, Rifle, CO 81650
Phone: (307) 360-3062

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



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Surface Post Job Report

1 Job Details & Summary

1.1 Geometry

| Type | Function | OD (in) | ID (in) | Weight (lb/ft) | Thread | Top (ft) | Bottom (ft) | Excess (%) |
|-----------|----------|---------|---------|----------------|--------|----------|-------------|------------|
| Open Hole | Outer | n/a | 11 | n/a | n/a | 60 | 1570 | 75 |
| Casing | Inner | 8.625 | 8.097 | 24 | STC | 0 | 1560 | 0 |
| Casing | Outer | 16 | 15.25 | 65 | n/a | 0 | 60 | 0 |

1.2 Equipment / People

| Unit Type | Unit | Employee #1 | Employee #2 | Mileage |
|--------------------|----------|--------------------|------------------|---------|
| Bulk Trailer | E949 | Velazquez, Damien | | 160 |
| Bulk Trailer | 512 | | | |
| Light Duty Pickups | 2 | Gilliam, Glen | Roush, James | 160 |
| Cement Chemical | 403 | Busheri, Hamza | Richey, Steven | 160 |
| Cement Pump | PPC11250 | Youngberg, Wendell | McNeal, Lawrence | 160 |

1.3 Timing

| Event | Date/Time |
|-----------------|----------------|
| Call Out | 9/5/2017 20:30 |
| Depart Facility | 9/6/2017 01:30 |
| On Location | 9/6/2017 03:00 |
| Rig Up Iron | 9/6/2017 03:15 |
| Job Started | 9/6/2017 04:08 |
| Job Completed | 9/6/2017 05:25 |
| Rig Down Iron | 9/6/2017 05:30 |
| Depart Location | 9/6/2017 06:30 |

1.4 General Job Information

| Metrics | Value |
|-------------------------|------------|
| Well Fluid Density | 9.1 lb/gal |
| Well Fluid Type | WBM |
| Rig Circulation Vol | 400 bbls |
| Rig Circulation Time | 2 hours |
| Calculated Displacement | 96 bbls |
| Actual Displacement | 95 bbls |
| Total Spacer to Surface | 0 bbls |
| Total CMT to Surface | 26 bbls |
| Well Topped Out | No |

1.5 Job Details

| Metrics | Value |
|--------------------------------|------------|
| Flare Prior to Job | No |
| Flare During Job | No |
| Flare at End of Job | No |
| Well Full Prior to Job | Yes |
| Well Fluid Density Into Well | 9.1 lb/gal |
| Well Fluid Density Out of Well | 9.1 lb/gal |

1.6 Job Details (cont.)

| Metrics | Value |
|---------|--------|
| BHCT | 82 °F |
| BHST | 106 °F |

1.7 Circulation

| |
|------------------------------|
| Lost Circulation Experienced |
| No |



1.8 Job Execution Information

| Job | Fluid | Product | Function | Density (lb/gal) | Yield (ft ³ /sk) | Water Rq. (gal/sk) | Water Rq. (gal/bbl) | Volume (sk) | Volume (bbl) | Top (ft) |
|-----|-------|---------|-------------------|---------------------|--------------------------------|--------------------------|---------------------------|----------------|-----------------|-------------|
| 1 | 1 | Water | Flush | 8.33 | | | 42.00 | | 40.00 | 0 |
| 1 | 2 | S100-12 | Lead | 12.00 | 2.53 | 14.85 | | 190.00 | 85.49 | 0 |
| 1 | 3 | S100-12 | Tail | 12.50 | 2.22 | 12.58 | | 120.00 | 47.52 | 1050 |
| 1 | 4 | Water | DisplacementFinal | 8.33 | | | 42.00 | | 97.00 | 0 |

1.9 Job Fluid Details

| Job | Fluid | Type | Fluid | Product | Function | Conc. | Uom |
|-----|-------|------|---------|---------|-----------------|--------|-------|
| 1 | 2 | Lead | S100-12 | AC3-10 | Cement | 100.00 | % |
| 1 | 2 | Lead | S100-12 | ACL-10 | Accelerator | 2.00 | lb/sk |
| 1 | 2 | Lead | S100-12 | ACL-20 | Accelerator | 5.00 | %BWOB |
| 1 | 2 | Lead | S100-12 | ADF-11 | Defoamer | 0.30 | %BWOB |
| 1 | 2 | Lead | S100-12 | ALC-10 | LostCirculation | 0.13 | lb/sk |
| 1 | 2 | Lead | S100-12 | AXE-30 | Extender | 2.00 | lb/sk |
| 1 | 3 | Tail | S100-12 | AC3-10 | Cement | 100.00 | % |
| 1 | 3 | Tail | S100-12 | ACL-10 | Accelerator | 2.00 | lb/sk |
| 1 | 3 | Tail | S100-12 | ACL-20 | Accelerator | 5.00 | %BWOB |
| 1 | 3 | Tail | S100-12 | ADF-11 | Defoamer | 0.30 | %BWOB |
| 1 | 3 | Tail | S100-12 | ALC-10 | LostCirculation | 0.13 | lb/sk |
| 1 | 3 | Tail | S100-12 | AXE-30 | Extender | 2.00 | lb/sk |



2 Job Logs

| Line | Event | Date (MM/DD/YY) | Time (HH:MM) | Density (lb/gal) | Pump Rate (bpm) | Pump Volume (bbls) | Pipe Pressure (psi) | Comment |
|------|-----------------------|--------------------|-----------------|---------------------|-----------------------|--------------------------|---------------------------|--|
| 1 | Callout | 9/5/2017 | 20:30 | | | | | RTS 04:00 9-6-17 |
| 2 | Safety Meeting | 9/6/2017 | 01:20 | | | | | STEACS with BJ Crew |
| 3 | BJ Crew departs yard | 9/6/2017 | 01:30 | | | | | crew departs yard |
| 4 | Arrive On Location | 9/6/2017 | 03:00 | | | | | BJ crew arrives on location |
| 5 | Safety Meeting | 9/6/2017 | 03:15 | | | | | STEACS with BJ Crew. Begin rig up |
| 6 | Stab head | 9/6/2017 | 03:40 | | | | | BJ crew stabs head |
| 7 | Safety Meeting | 9/6/2017 | 04:00 | | | | | BJ crew and rig safety meeting |
| 8 | Fill Lines | 9/6/2017 | 04:08 | 8.34 | 2.5 | 5 | 51 | Broke circulation |
| 9 | Pressure Test Lines | 9/6/2017 | 04:15 | | | | | Test lines 3000 PSI |
| 10 | batch up lead cement | 9/6/2017 | 04:22 | 12 | | | | batch up lead cement at 12 PPG |
| 11 | lead cement down hole | 9/6/2017 | 04:29 | 12 | 6 | 86 | 291 | lead cement down hole |
| 12 | 50 bbls lead gone | 9/6/2017 | 04:39 | 12 | 6 | 50 | 234 | 50 bbls gone lead cement |
| 13 | batch up tail cement | 9/6/2017 | 04:44 | 12.5 | | | | batch up tail cement at 12.5 PPG |
| 14 | 25 bbls gone tail | 9/6/2017 | 04:49 | 12.5 | 6 | 25 | 306 | 25 bbls gone tail cement |
| 15 | Shutdown | 9/6/2017 | 04:55 | | | | | shut down drop top plug |
| 16 | Displacement | 9/6/2017 | 04:56 | 8.34 | 5 | | 254 | Start displacement |
| 17 | 50 bbls gone | 9/6/2017 | 05:09 | 8.34 | 8 | 50 | 452 | 50 bbls gone |
| 18 | Land Plug | 9/6/2017 | 05:12 | | 2 | 95 | 470 | bump plug FCP-470 took to 2050 PSI, 26 bbls cement back to surface |
| 19 | Check Floats | 9/6/2017 | 05:22 | | | | | check floats .5 bbls back |
| 20 | Safety Meeting | 9/6/2017 | 05:24 | | | | | rig down meeting with crew |
| 21 | Rig Down Iron | 9/6/2017 | 05:30 | | | | | BJ crew rigs down equipment |
| 22 | Depart Location | 9/6/2017 | 06:30 | | | | | BJ crew departs location |



3 Water Analysis

| Metrics | Value | Recommended |
|------------------|------------------|-------------|
| Water Source | Upright Rig Tank | |
| Temperature | 63 °F | 50-80 °F |
| pH Level | 7 | 5.5-8.5 |
| Chlorides | 0 mg/L | 0-3000 mg/L |
| Total Alkalinity | 80 | 0-1000 |
| Total Hardness | 70 mg/L | 0-500 mg/L |
| Carbonates | 140 mg/L | 0-100 mg/L |
| Sulfates | <200 mg/L | 0-1500 mg/L |
| Potassium | 450 mg/L | 0-3000 mg/L |
| Iron | 0 mg/L | 0-300 mg/L |



4 Pump Diagrams

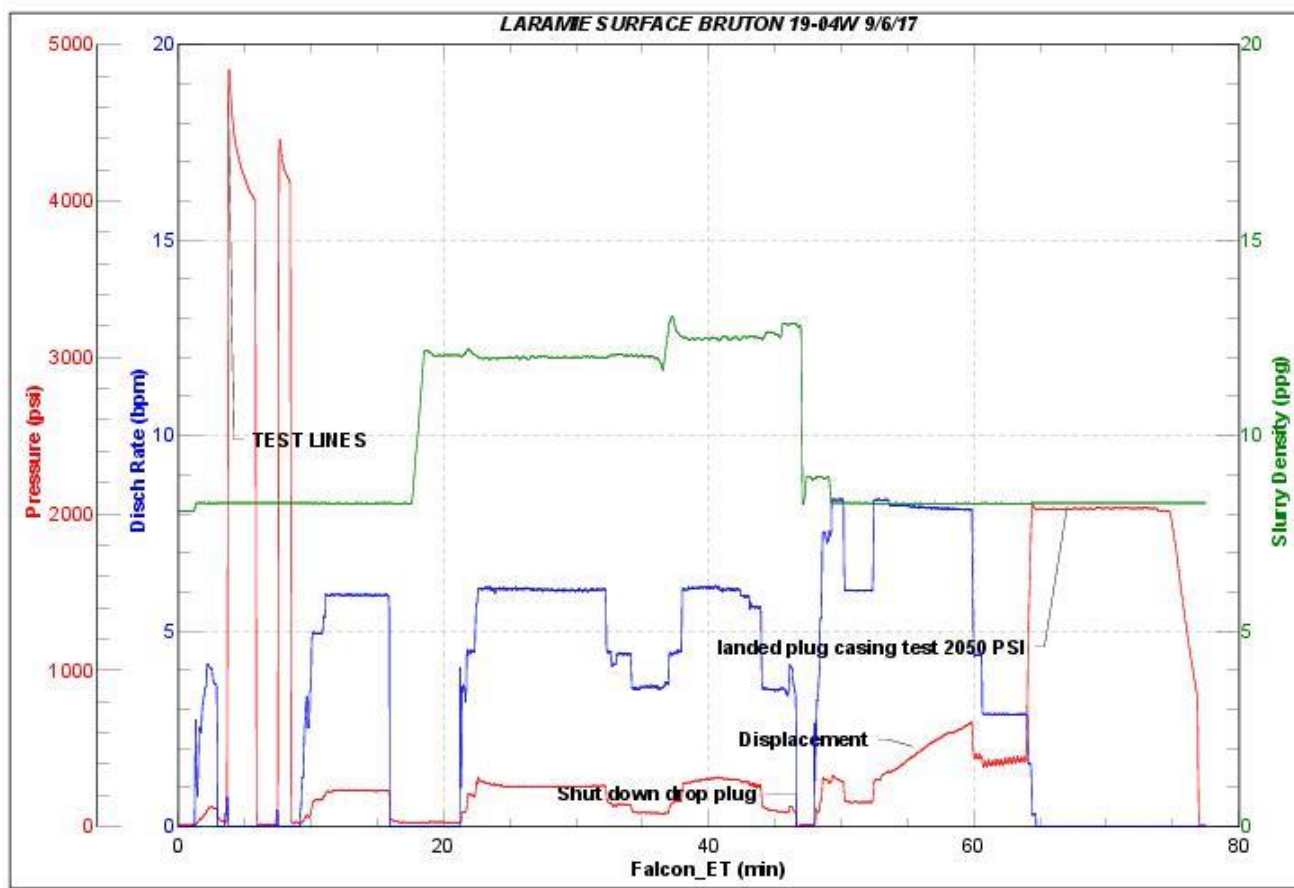


JobMaster Program Version 4.02C1

Job Number: 1300

Customer: LARAMIE

Well Name: BRUTON 19-04W



BJ Services

Job Start: Wednesday, September 06, 2017

Production Post Job Report

1 Job Details & Summary

1.1 Geometry

| Type | Function | OD (in) | ID (in) | Weight (lb/ft) | Thread | Top (ft) | Bottom (ft) | Excess (%) |
|-----------|----------|---------|---------|----------------|--------|----------|-------------|------------|
| Casing | Outer | 8.625 | 8.097 | 24 | STC | 0 | 1550 | 0 |
| Casing | Inner | 4.5 | 4 | 11.6 | LTC | 0 | 7868 | 0 |
| Open Hole | Outer | n/a | 8.88 | n/a | n/a | 1550 | 7868 | 10 |

1.2 Equipment / People

| Unit Type | Unit | Employee #1 | Employee #2 | Mileage |
|--------------------|----------|--------------------|------------------|---------|
| Cement Chemical | 403 | Velazquez, Damien | | 160 |
| Light Duty Pickups | 2 | Gilliam, Glen | | 160 |
| Bulk Trailer | E491 | Busheri, Hamza | | 160 |
| Bulk Trailer | E496 | Richey, Steven | | 160 |
| Cement Pump | PPC11250 | Youngberg, Wendell | McNeal, Lawrence | 160 |
| Silo | 6 (Silo) | | | |
| Silo | 7 (silo) | | | |

1.3 Timing

| Event | Date/Time |
|-----------------|----------------|
| Call Out | 9/8/2017 13:30 |
| Depart Facility | 9/8/2017 14:00 |
| On Location | 9/8/2017 16:00 |
| Rig Up Iron | 9/8/2017 16:15 |
| Job Started | 9/8/2017 22:01 |
| Job Completed | 9/9/2017 01:00 |
| Rig Down Iron | 9/9/2017 00:25 |
| Depart Location | 9/9/2017 02:00 |

1.4 General Job Information

| Metrics | Value |
|-------------------------|------------|
| Well Fluid Density | 9.8 lb/gal |
| Well Fluid Type | WBM |
| Rig Circulation Vol | 10 bbls |
| Rig Circulation Time | 1 hours |
| Calculated Displacement | 121 bbls |
| Actual Displacement | 120 bbls |
| Total Spacer to Surface | 30 bbls |
| Total CMT to Surface | 0 bbls |

1.5 Well Fluid Details

| Metrics | Value |
|-------------------|-------|
| Plastic Viscosity | 36 |
| Yield Point | 35 |
| 10 sec. SGS | 9 |
| 10 min. SGS | 28 |
| 30 min. SGS | 66 |
| Filtrate | 7.5 |
| Flow Line Temp. | 113 |

1.6 Job Details

| Metrics | Value |
|--------------------------------|------------|
| Flare Prior to Job | No |
| Flare During Job | No |
| Flare at End of Job | No |
| Well Full Prior to Job | Yes |
| Well Fluid Density Into Well | 9.8 lb/gal |
| Well Fluid Density Out of Well | 9.8 lb/gal |

1.7 Job Details (cont.)

| Metrics | Value |
|---------|--------|
| BHCT | 176 °F |
| BHST | 237 °F |

**1.8 Circulation**

| Lost Circulation Experienced |
|------------------------------|
| No |

1.9 Job Execution Information

| Job | Fluid | Product | Function | Density (lb/gal) | Yield (ft ³ /sk) | Water Rq. (gal/sk) | Water Rq. (gal/bbl) | Volume (sks) | Volume (bbl) | Top (ft) |
|-----|-------|-----------------|-------------------|------------------|-----------------------------|--------------------|---------------------|--------------|--------------|----------|
| 1 | 1 | CD Spacer | Spacer | 11.00 | | | 32.84 | | 60.00 | 0 |
| 1 | 2 | P100-X2 | Lead | 12.70 | 1.97 | 11.07 | | 805.00 | 282.91 | 1024 |
| 1 | 3 | P70-X1 | Tail | 13.50 | 1.90 | 9.55 | | 402.00 | 136.00 | 5710 |
| 1 | 4 | Water w/ ASF-50 | DisplacementFinal | 8.33 | | | 41.92 | | 121.00 | 0 |

1.10 Job Fluid Details

| Job | Fluid | Type | Fluid | Product | Function | Conc. | Uom |
|-----|-------|-------------------|-----------------|---------|-----------------------|--------|---------|
| 1 | 1 | Spacer | CD Spacer | ASR-20 | StrengthRetrogression | 179.97 | lb/bbl |
| 1 | 1 | Spacer | CD Spacer | AR-10 | Retarder | 1.40 | lb/bbl |
| 1 | 1 | Spacer | CD Spacer | ASF-20 | Surfactant | 0.80 | gal/bbl |
| 1 | 1 | Spacer | CD Spacer | AVS-10 | Viscosifier | 0.80 | lb/bbl |
| 1 | 2 | Lead | P100-X2 | AC3-10 | Cement | 100.00 | % |
| 1 | 2 | Lead | P100-X2 | ABX-30 | BondEnhancer | 0.30 | %BWOB |
| 1 | 2 | Lead | P100-X2 | ADF-11 | Defoamer | 0.30 | %BWOB |
| 1 | 2 | Lead | P100-X2 | ADS-10 | Dispersant | 0.10 | %BWOB |
| 1 | 2 | Lead | P100-X2 | AR-10 | Retarder | 0.50 | %BWOB |
| 1 | 2 | Lead | P100-X2 | AVS-10 | Viscosifier | 0.10 | %BWOB |
| 1 | 3 | Tail | P70-X1 | ACG-10 | Cement | 70.00 | % |
| 1 | 3 | Tail | P70-X1 | AFA-10 | Extender | 20.00 | % |
| 1 | 3 | Tail | P70-X1 | AXE-20 | Extender | 10.00 | % |
| 1 | 3 | Tail | P70-X1 | ABX-30 | BondEnhancer | 0.20 | %BWOB |
| 1 | 3 | Tail | P70-X1 | ADF-11 | Defoamer | 0.30 | %BWOB |
| 1 | 3 | Tail | P70-X1 | AFL-10 | FluidLoss | 0.40 | %BWOB |
| 1 | 3 | Tail | P70-X1 | AR-10 | Retarder | 0.30 | %BWOB |
| 1 | 3 | Tail | P70-X1 | ASR-20 | StrengthRetrogression | 25.00 | %BWOB |
| 1 | 3 | Tail | P70-X1 | AVS-50 | Viscosifier | 6.00 | %BWOB |
| 1 | 4 | DisplacementFinal | Water w/ ASF-50 | ASF-50 | ClayProtection | 0.08 | gal/bbl |



2 Job Logs

| Line | Event | Date (MM/DD/YY) | Time (HH:MM) | Density (lb/gal) | Pump Rate (bpm) | Pump Volume (bbls) | Pipe Pressure (psi) | Comment |
|------|--------------------|--------------------|-----------------|---------------------|-----------------------|--------------------------|---------------------------|--|
| 1 | CALL OUT | 9/8/2017 | 13:30 | | | | | RTS- 20:00 |
| 2 | SAFETY MEETING | 9/8/2017 | 13:45 | | | | | BJ journey meeting with crew |
| 3 | DEPART YARD | 9/8/2017 | 14:00 | | | | | BJ CREW DEPARTS YARD |
| 4 | ON LOCATION | 9/8/2017 | 16:00 | | | | | BJ CREW ON LOCATION |
| 5 | RIG UP MEETING | 9/8/2017 | 16:15 | | | | | STEACS RIG UP W/ BJ CREW |
| 6 | CREW RIGS UP | 9/8/2017 | 16:30 | | | | | BJ CREW RIGS UP EQUIPMENT |
| 7 | LAND CASING | 9/8/2017 | 20:45 | | | | | PIPE ON BOTTOM |
| 8 | SAFETY MEETING | 9/8/2017 | 21:50 | | | | | BJ/RIG CREW SAFETY MEETING |
| 9 | STAB HEAD | 9/8/2017 | 22:00 | | | | | STAB HEAD, RIG CIRCULATED 1hr |
| 10 | FILL LINES | 9/8/2017 | 22:03 | 8.34 | 2 | 5 | 200 | BROKE CIRCULATION |
| 11 | TEST LINES | 9/8/2017 | 22:07 | | | | | TEST LINES 5000 PSI |
| 12 | SPACER | 9/8/2017 | 22:10 | 11 | | | | BATCH UP SPACER AT 11 PPG |
| 13 | SPACER | 9/8/2017 | 22:12 | 11 | 5 | | 355 | SPACER DOWN HOLE |
| 14 | LEAD CEMENT | 9/8/2017 | 22:29 | 12.7 | | | | BATCH UP LEAD AT 12.7 PPG |
| 15 | LEAD CEMENT | 9/8/2017 | 22:34 | 12.7 | 7.5 | | 471 | LEAD DOWN HOLE |
| 16 | LEAD CEMENT | 9/8/2017 | 22:41 | 12.7 | 7.5 | 50 | 416 | 50 BBLS LEAD CEMENT GONE |
| 17 | LEAD CEMENT | 9/8/2017 | 22:47 | 12.7 | 7.5 | 100 | 443 | 100 BBLS LEAD CEMENT |
| 18 | LEAD CEMENT | 9/8/2017 | 22:54 | 12.7 | 7.5 | 150 | 449 | 150 BBLS LEAD CEMENT |
| 19 | LEAD CEMENT | 9/8/2017 | 23:00 | 12.7 | 7.5 | 200 | 457 | 200 BBLS LEAD CEMENT |
| 20 | LEAD CEMENT | 9/8/2017 | 23:08 | 12.7 | 3 | 250 | 95 | 250 BBLS LEAD CEMENT |
| 21 | BATCH UP TAIL | 9/8/2017 | 23:11 | 13.5 | | | | BATCH UP TAIL CEMENT |
| 22 | TAIL CEMENT | 9/8/2017 | 23:13 | 13.5 | 6 | | 400 | TAIL CEMENT DOWN HOLE |
| 23 | TAIL CEMENT | 9/8/2017 | 23:19 | 13.5 | 7.5 | 50 | 650 | 50 BBLS TAIL CEMENT |
| 24 | TAIL CEMENT | 9/8/2017 | 23:29 | 13.5 | 6 | 100 | 375 | 100 BBLS TAIL CEMENT |
| 25 | SHUT DOWN | 9/8/2017 | 23:35 | | | | | SHUT DOWN WASH LINES, DROP PLUG |
| 26 | DISPLACEMENT | 9/8/2017 | 23:44 | 8.34 | 5 | | 600 | START DISPLACEMENT |
| 27 | 50 BBLS | 9/8/2017 | 23:52 | 8.34 | 10 | 50 | 1500 | 50 BBLS |
| 28 | 100 BBLS | 9/8/2017 | 23:58 | 8.34 | 10 | 100 | 2050 | 100 BBLS |
| 29 | BUMP PLUG | 9/9/2017 | 00:04 | 8.34 | | | 1850 | FCP- 1850 TOOK TO 3060 PSI. 30 BBLS SPACER TO SURFACE |
| 30 | BLED PRESSURE | 9/9/2017 | 00:14 | | | | 3260 | BLED PRESSURE, CHECKED FLOATS 1.5 BBLS BACK |
| 31 | SAFETY MEETING | 9/9/2017 | 00:20 | | | | | RIG DOWN MEETING |
| 32 | RIG DOWN | 9/9/2017 | 00:25 | | | | | RIGS DOWN EQUIPMENT |
| 33 | JOB COMPLETE | 9/9/2017 | 01:00 | | | | | JOB COMPLETE |
| 34 | DEPART LOCATION | 9/9/2017 | 02:00 | | | | | BJ CREW DEPARTS LOCATION |



3 Water Analysis

| Metrics | Value | Recommended |
|------------------|------------------|-------------|
| Water Source | Upright Rig Tank | |
| Temperature | 72 °F | 50-80 °F |
| pH Level | 7.2 | 5.5-8.5 |
| Chlorides | 0 mg/L | 0-3000 mg/L |
| Total Alkalinity | 80 | 0-1000 |
| Total Hardness | 71 mg/L | 0-500 mg/L |
| Carbonates | 145 mg/L | 0-100 mg/L |
| Sulfates | <200 mg/L | 0-1500 mg/L |
| Potassium | 450 mg/L | 0-3000 mg/L |
| Iron | 0 mg/L | 0-300 mg/L |

4 Pump Diagrams

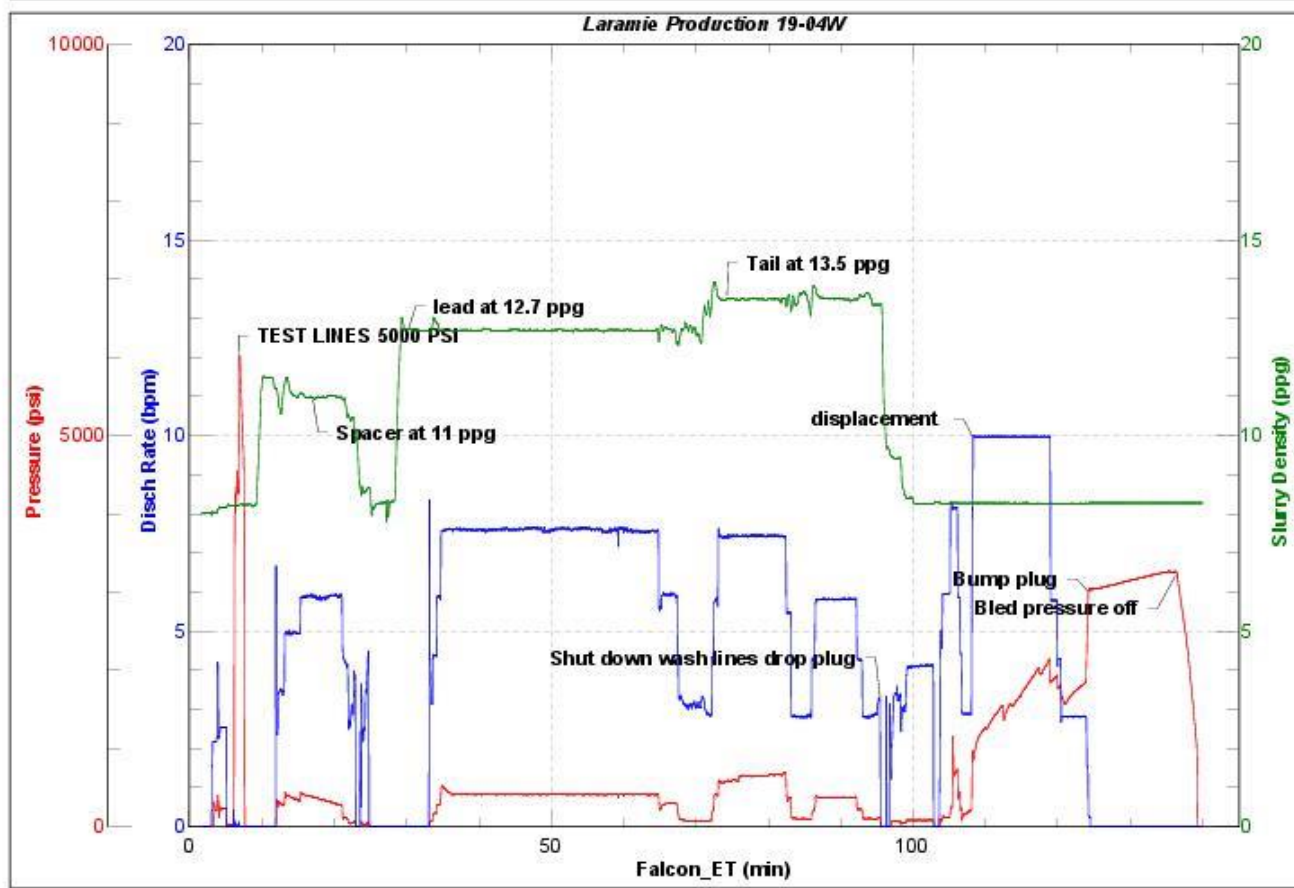


JobMaster Program Version 4.02C1

Job Number: 1304

Customer: Laramie

Well Name: Bruton 19-04W



BJ Services

Job Start: Friday, September 08, 2017