



Laramie Energy

End of Well Cement Report

Bruton 19-14E 05-077-10377
S:30 T:9S R:93W Mesa CO

CallSheet #: 1073 (Surface), 1097 (Production)
Proposal #: 13502



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 1716 East Allison Rd., Cheyenne WY, 82007
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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 | 1559 | 75 |
| Casing | Inner | 8.625 | 8.097 | 24 | STC | 0 | 1549 | 0 |
| Casing | Outer | 16 | 15.25 | 65 | n/a | 0 | 60 | 0 |

1.2 Equipment / People

| Unit Type | Unit | Employee #1 | Employee #2 | Mileage |
|--------------------|----------|-------------------|-------------|---------|
| Cement Pump | PPC11250 | Christian McClure | | 120 |
| Light Duty Pickups | 3 | Shane Helton | Andrew Linn | 120 |
| Bulk Trailer | E391 | Gonzalez, Omar | | 120 |
| Cement Chemical | 403 | Johnson, Brandon | | 120 |
| Bulk Trailer | 512 | | | 120 |

1.3 Timing

| Event | Date/Time |
|-----------------|-----------------|
| Call Out | 7/27/2017 20:15 |
| Depart Facility | 7/27/2017 21:00 |
| On Location | 7/27/2017 23:00 |
| Rig Up Iron | 7/27/2017 23:15 |
| Job Started | 7/28/2017 02:27 |
| Job Completed | 7/28/2017 03:40 |
| Rig Down Iron | 7/28/2017 03:45 |
| Depart Location | 7/28/2017 05:00 |

1.4 General Job Information

| Metrics | Value |
|-------------------------|------------|
| Well Fluid Density | 8.5 lb/gal |
| Well Fluid Type | WBM |
| Rig Circulation Vol | 450 bbls |
| Rig Circulation Time | 0.75 hours |
| Calculated Displacement | 95.6 bbls |
| Actual Displacement | 95 bbls |
| Total Spacer to Surface | 40 bbls |
| Total CMT to Surface | 20 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 | 8.5 lb/gal |
| Well Fluid Density Out of Well | 8.5 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 | ALTCem S100-12 | Lead | 12.00 | 2.53 | 14.85 | | 201.00 | 91.00 | 0 |
| 1 | 3 | ALTCem S100-12 | Tail | 12.50 | 2.22 | 12.58 | | 107.00 | 42.37 | 1050 |
| 1 | 4 | Water | DisplacementFinal | 8.33 | | | 42.00 | | 95.60 | 0 |

1.9 Job Fluid Details

| Job | Fluid | Type | Fluid | Product | Function | Conc. | Uom |
|-----|-------|------|----------------|---------|-----------------|--------|-------|
| 1 | 2 | Lead | ALTCem S100-12 | AC3-10 | Cement | 100.00 | % |
| 1 | 2 | Lead | ALTCem S100-12 | ACL-10 | Accelerator | 2.00 | lb/sk |
| 1 | 2 | Lead | ALTCem S100-12 | ACL-20 | Accelerator | 5.00 | %BWOB |
| 1 | 2 | Lead | ALTCem S100-12 | ADF-11 | Defoamer | 0.30 | %BWOB |
| 1 | 2 | Lead | ALTCem S100-12 | ALC-10 | LostCirculation | 0.13 | lb/sk |
| 1 | 2 | Lead | ALTCem S100-12 | AXE-30 | Extender | 2.00 | lb/sk |
| 1 | 3 | Tail | ALTCem S100-12 | AC3-10 | Cement | 100.00 | % |
| 1 | 3 | Tail | ALTCem S100-12 | ACL-10 | Accelerator | 2.00 | lb/sk |
| 1 | 3 | Tail | ALTCem S100-12 | ACL-20 | Accelerator | 5.00 | %BWOB |
| 1 | 3 | Tail | ALTCem S100-12 | ADF-11 | Defoamer | 0.30 | %BWOB |
| 1 | 3 | Tail | ALTCem S100-12 | ALC-10 | LostCirculation | 0.13 | lb/sk |
| 1 | 3 | Tail | ALTCem 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 | Location | 7/28/2017 | 01:00 | | | | | Customer requested on location 01:00 |
| 2 | Yard Call | 7/27/2017 | 20:15 | | | | | Yard Call |
| 3 | Journey Management | 7/27/2017 | 20:50 | | | | | Journey Management |
| 4 | Depart Facility | 7/27/2017 | 21:00 | | | | | Depart Facility |
| 5 | Arrive on Location | 7/27/2017 | 23:00 | | | | | Arrive on Location |
| 6 | Steacs Briefing | 7/27/2017 | 23:15 | | | | | Steacs Briefing |
| 7 | Rig up Equipment | 7/27/2017 | 23:25 | | | | | Rig up Equipment |
| 8 | WOR | 7/28/2017 | 00:00 | | | | | Wait on Rig |
| 9 | Casing on Bottom | 7/28/2017 | 02:00 | | | | | Casing on Bottom |
| 10 | Steacs Briefing | 7/28/2017 | 02:20 | | | | | Steacs Briefing |
| 11 | Rig up Cement Head | 7/28/2017 | 02:25 | | | | | Rig up Cement Head |
| 12 | Load Line | 7/28/2017 | 02:30 | 8.34 | | 5 | 125 | Load Line |
| 13 | Pressure Test | 7/28/2017 | 02:35 | 8.34 | | | 3000 | Pressure Test |
| 14 | Start Spacer | 7/28/2017 | 02:37 | 8.34 | 4.2 | 35 | 208 | Start Fresh Water Spacer |
| 15 | Start Lead Slurry | 7/28/2017 | 02:44 | 12 | 4.2 | | 214 | Start Lead Cement |
| 16 | Lead Slurry | 7/28/2017 | 02:55 | 12 | 5.7 | 50 | 275 | 50 Bbls Lead Cement |
| 17 | Lead Slurry | 7/28/2017 | 03:00 | 12 | 4.9 | 75 | 226 | 75 Bbls Lead Cement |
| 18 | Lead Slurry | 7/28/2017 | 03:05 | 12 | 4.9 | 90 | 234 | 90 Bbls Lead Cement |
| 19 | Start Tail Slurry | 7/28/2017 | 03:05 | 12.5 | 4.9 | | 234 | Start Tail Cement |
| 20 | Tail Slurry | 7/28/2017 | 03:10 | 12.5 | 5 | 25 | 240 | 25 Bbls Tail Cement |
| 21 | Shut Down | 7/28/2017 | 03:15 | | | 42 | 0 | Shut and Drop Plug |
| 22 | Displacement | 7/28/2017 | 03:17 | 8.34 | 6.7 | | 112 | Start Displacement |
| 23 | Slow Rate | 7/28/2017 | 03:27 | 8.34 | 2.8 | 83 | 455 | Slow Rate |
| 24 | Land Plug | 7/28/2017 | 03:30 | 8.34 | | 95 | 2045 | Land Plug & Start Casing Test |
| 25 | Check Float | 7/28/2017 | 03:40 | | | | | Good 1 Bbl returned |



3 Water Analysis

| Metrics | Value | Recommended |
|------------------|-----------|-------------|
| Water Source | None | |
| Temperature | 68.2 °F | 50-80 °F |
| pH Level | 7 | 5.5-8.5 |
| Chlorides | 29 mg/L | 0-3000 mg/L |
| Total Alkalinity | 250 | 0-1000 |
| Total Hardness | 140 mg/L | 0-500 mg/L |
| Carbonates | N/A mg/L | 0-100 mg/L |
| Sulfates | 180 mg/L | 0-1500 mg/L |
| Potassium | 1500 mg/L | 0-3000 mg/L |
| Iron | 0 mg/L | 0-300 mg/L |

4 Pump Diagrams

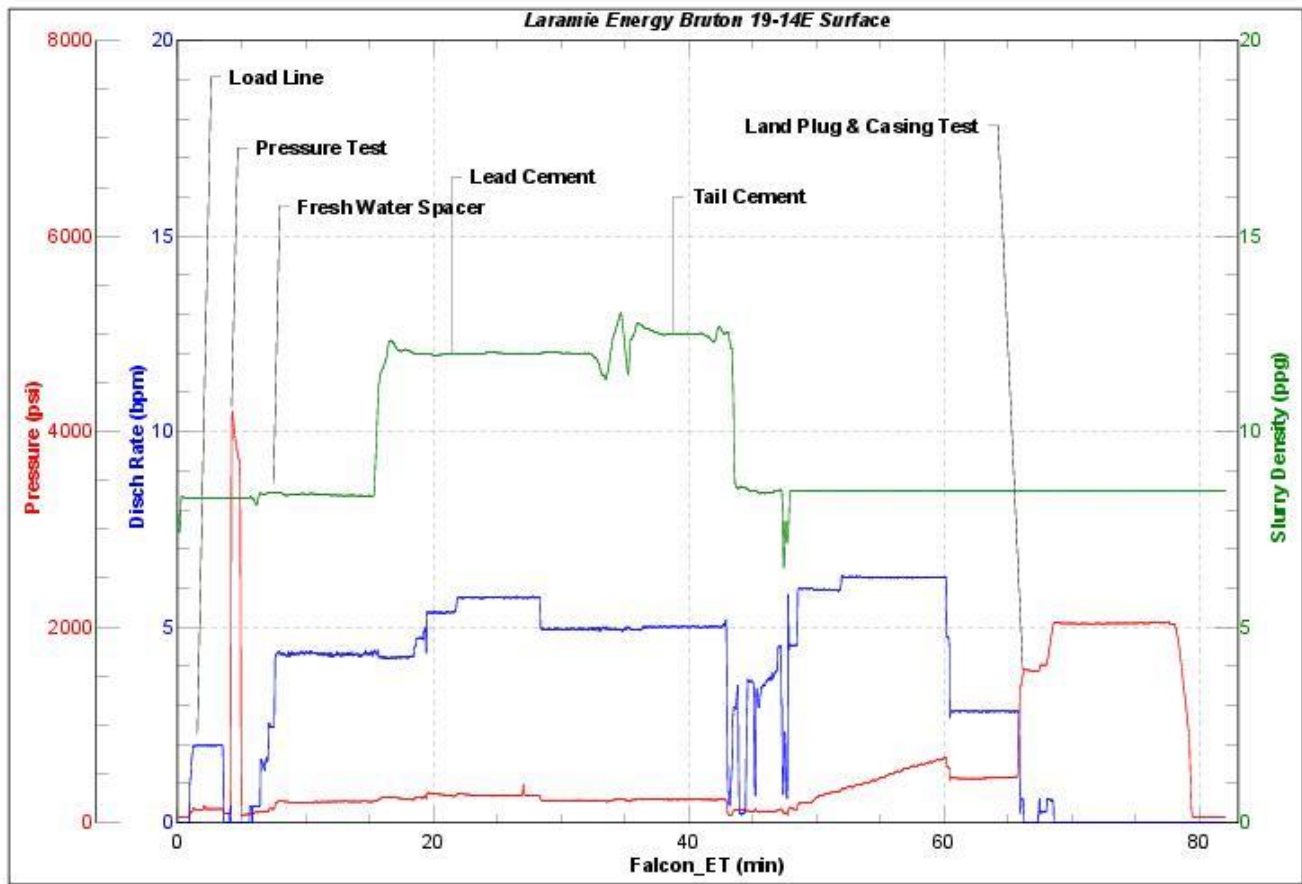


JobMaster Program Version 4.02C1

Job Number:

Customer: Laramie Energy

Well Name: Bruton 19-14E



BJ Services

Job Start: Friday, July 28, 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 | 1549 | 0 |
| Casing | Inner | 4.5 | 4 | 11.6 | LTC | 0 | 8155 | 0 |
| Open Hole | Outer | n/a | 8.88 | n/a | n/a | 1524 | 8165 | 10 |

1.2 Equipment / People

| Unit Type | Unit | Employee #1 | Employee #2 | Mileage |
|--------------------|----------|--------------------|----------------|---------|
| Cement Pump | PPC11250 | McClure, Christian | | 130 |
| Silo | 6 (Silo) | | | |
| Silo | 7 (silo) | | | |
| Cement Chemical | 401 | Johnson, Brandon | Rhaun Cose | 130 |
| Bulk Trailer | E491 | Gonzalez, Omar | | 130 |
| Light Duty Pickups | 3 | Helton, Shane | | 130 |
| Light Duty Pickups | 02 | Roush, James | Allen Tippitts | 130 |

1.3 Timing

| Event | Date/Time |
|-----------------|-----------------|
| Call Out | 7/31/2017 18:20 |
| Depart Facility | 7/31/2017 18:40 |
| On Location | 7/31/2017 20:40 |
| Rig Up Iron | 7/31/2017 20:55 |
| Job Started | 8/1/2017 03:00 |
| Job Completed | 8/1/2017 05:20 |
| Rig Down Iron | 8/1/2017 05:25 |
| Depart Location | 8/1/2017 06:45 |

1.4 General Job Information

| Metrics | Value |
|-------------------------|-------------|
| Well Fluid Density | 9.5 lb/gal |
| Well Fluid Type | WBM |
| Rig Circulation Vol | 600 bbls |
| Rig Circulation Time | 1 hours |
| Calculated Displacement | 125.32 bbls |
| Actual Displacement | 126.5 bbls |
| Total Spacer to Surface | 0 bbls |
| Total CMT to Surface | 0 bbls |

1.5 Well Fluid Details

| Metrics | Value |
|-------------------|-------|
| Plastic Viscosity | 23 |
| Yield Point | 19 |
| 10 sec. SGS | 5 |
| 10 min. SGS | 19 |
| 30 min. SGS | 44 |
| Filtrate | 0.08 |
| Flow Line Temp. | 117 |

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 | 9.5 lb/gal |
| Well Fluid Density Out of Well | 9.5 lb/gal |

1.7 Job Details (cont.)

| Metrics | Value |
|---------|--------|
| BHCT | 178 °F |
| BHST | 240 °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 | | | 33.15 | | 40.00 | 115 |
| 1 | 2 | ALTCem P100-X2 | Lead | 12.70 | 1.97 | 11.07 | | 862.00 | 302.00 | 1024 |
| 1 | 3 | ALTCem P70-X1 | Tail | 13.50 | 1.90 | 9.55 | | 402.00 | 136.00 | 6005 |
| 1 | 4 | Water w/ ASF-50 | DisplacementFinal | 8.33 | | | 41.92 | | 125.32 | 0 |

1.10 Job Fluid Details

| Job | Fluid | Type | Fluid | Product | Function | Conc. | Uom |
|-----|-------|-------------------|-----------------|---------|-----------------------|--------|---------|
| 1 | 1 | Spacer | CD Spacer | ASR-20 | StrengthRetrogression | 179.73 | lb/bbl |
| 1 | 1 | Spacer | CD Spacer | AR-10 | Retarder | 1.40 | lb/bbl |
| 1 | 1 | Spacer | CD Spacer | ASF-20 | Surfactant | 0.50 | gal/bbl |
| 1 | 1 | Spacer | CD Spacer | AVS-10 | Viscosifier | 0.80 | lb/bbl |
| 1 | 2 | Lead | ALTCem P100-X2 | AC3-10 | Cement | 100.00 | % |
| 1 | 2 | Lead | ALTCem P100-X2 | ABX-30 | BondEnhancer | 0.30 | %BWOB |
| 1 | 2 | Lead | ALTCem P100-X2 | ADF-11 | Defoamer | 0.30 | %BWOB |
| 1 | 2 | Lead | ALTCem P100-X2 | ADS-10 | Dispersant | 0.10 | %BWOB |
| 1 | 2 | Lead | ALTCem P100-X2 | AR-10 | Retarder | 0.50 | %BWOB |
| 1 | 2 | Lead | ALTCem P100-X2 | AVS-10 | Viscosifier | 0.10 | %BWOB |
| 1 | 3 | Tail | ALTCem P70-X1 | ACG-10 | Cement | 70.00 | % |
| 1 | 3 | Tail | ALTCem P70-X1 | AFA-10 | Extender | 20.00 | % |
| 1 | 3 | Tail | ALTCem P70-X1 | AXE-20 | Extender | 10.00 | % |
| 1 | 3 | Tail | ALTCem P70-X1 | ABX-30 | BondEnhancer | 0.20 | %BWOB |
| 1 | 3 | Tail | ALTCem P70-X1 | ADF-11 | Defoamer | 0.30 | %BWOB |
| 1 | 3 | Tail | ALTCem P70-X1 | AFL-10 | FluidLoss | 0.40 | %BWOB |
| 1 | 3 | Tail | ALTCem P70-X1 | AR-10 | Retarder | 0.30 | %BWOB |
| 1 | 3 | Tail | ALTCem P70-X1 | ASR-20 | StrengthRetrogression | 25.00 | %BWOB |
| 1 | 3 | Tail | ALTCem 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 | On Location Time 23:00 | 7/30/2017 | 18:15 | | | | | Customer requested Crew @ 23:00 |
| 2 | Yard Call | 7/31/2017 | 18:15 | | | | | Yard Call |
| 3 | Safety Meeting | 7/31/2017 | 18:25 | | | | | Journey Management |
| 4 | Depart Facility | 7/31/2017 | 18:40 | | | | | Depart Facility |
| 5 | Arrived on Location | 7/31/2017 | 20:40 | | | | | Arrived on Location |
| 6 | Steacs Briefing | 7/31/2017 | 20:50 | | | | | Steacs Briefing |
| 7 | Rig up Equipment | 7/31/2017 | 20:55 | | | | | Rig up Equipment |
| 8 | WOR | 7/31/2017 | 21:30 | | | | | Wait on Rig |
| 9 | Casing on Bottom | 8/1/2017 | 02:00 | | | | | Casing on Bottom |
| 10 | Rig Circulate Well | 8/1/2017 | 03:00 | | | | | Rig Circulate well |
| 11 | Steacs Briefing | 8/1/2017 | 02:45 | | | | | Steacs Briefing |
| 12 | Load Line | 8/1/2017 | 03:05 | 8.34 | 4 | 5 | 289 | Load Line |
| 13 | Pressure Test Line | 8/1/2017 | 03:10 | 8.34 | | | 5050 | Pressure Test Line |
| 14 | Start CD Spacer | 8/1/2017 | 03:18 | 11 | 4.2 | 42 | 295 | Start Weighted Spacer |
| 15 | Start Lead Slurry | 8/1/2017 | 03:29 | 12.7 | 7 | | 600 | Start Lead Cement |
| 16 | Lead Slurry | 8/1/2017 | 03:40 | 12.7 | 7 | 50 | 620 | 50 Bbls Lead Cement |
| 17 | Lead Slurry | 8/1/2017 | 03:47 | 12.7 | 7 | 100 | 614 | 100 Bbls Lead Cement |
| 18 | Lead Slurry | 8/1/2017 | 03:55 | 12.7 | 7 | 150 | 635 | 150 Bbls Lead Cement |
| 19 | Lead Slurry | 8/1/2017 | 04:01 | 12.7 | 7 | 200 | 632 | 200 Bbls Lead Cement |
| 20 | Lead Slurry | 8/1/2017 | 04:09 | 12.7 | 7 | 250 | 606 | 250 Bbls Lead Cement |
| 21 | Lead Slurry | 8/1/2017 | 04:14 | 12.7 | 5.5 | 285 | 475 | 285 Bbls Lead Cement Slow Rate |
| 22 | Lead Slurry | 8/1/2017 | 04:17 | 12.7 | | 308 | | 308 Bbls Lead Cement |
| 23 | Start Tail Slurry | 8/1/2017 | 04:18 | 13.5 | 6.3 | | 656 | Start Tail Cement |
| 24 | Tail Slurry | 8/1/2017 | 04:25 | 13.5 | 7 | 50 | 813 | 50 Bbls Tail Cement |
| 25 | Tail Slurry | 8/1/2017 | 04:31 | 13.5 | 7 | 100 | 775 | 100 Bbls Tail Cement |
| 26 | Tail Slurry | 8/1/2017 | 04:35 | 13.5 | 4 | 117 | 400 | 117 Bbls Tail Cement Slow Rate |
| 27 | Tail Slurry | 8/1/2017 | 04:40 | 13.5 | | 135 | | 135 Bbls Tail Cement |
| 28 | Wash Pumps & Line | 8/1/2017 | 04:42 | | | | | Wash Pumps & Line |
| 29 | Drop Plug | 8/1/2017 | 04:48 | | | | | Drop Plug |
| 30 | Start Displacement | 8/1/2017 | 04:48 | 8.34 | 7.5 | | 300 | Start Displacement |
| 31 | Displacement | 8/1/2017 | 04:55 | 8.34 | 7.5 | 50 | 1137 | 50 Bbls Displacement |
| 32 | Displacement | 8/1/2017 | 05:02 | 8.34 | 7.2 | 100 | 2035 | 100 Bbls Displacement |
| 33 | Displacement | 8/1/2017 | 05:05 | 8.34 | 7.2 | 115 | 2039 | 115 Bbls Displacement Slow Rate |
| 34 | Displacement | 8/1/2017 | 05:05 | 8.34 | 3 | | 1671 | Displacement Slow Rate |
| 35 | Land Plug | 8/1/2017 | 05:10 | 8.34 | | 126.5 | 2991 | Land Plug, Start Casing Test |
| 36 | Check Float | 8/1/2017 | 05:20 | | | | | Check Floats Good |
| 37 | End Job | 8/1/2017 | 05:20 | | | | | Thanks Shane , Crew |



3 Water Analysis

| Metrics | Value | Recommended |
|------------------|-----------|-------------|
| Water Source | None | |
| Temperature | 117 °F | 50-80 °F |
| pH Level | 6 | 5.5-8.5 |
| Chlorides | 29 mg/L | 0-3000 mg/L |
| Total Alkalinity | 120 | 0-1000 |
| Total Hardness | 250 mg/L | 0-500 mg/L |
| Carbonates | N/A mg/L | 0-100 mg/L |
| Sulfates | 200 mg/L | 0-1500 mg/L |
| Potassium | 1500 mg/L | 0-3000 mg/L |
| Iron | 0 mg/L | 0-300 mg/L |

4 Pump Diagrams

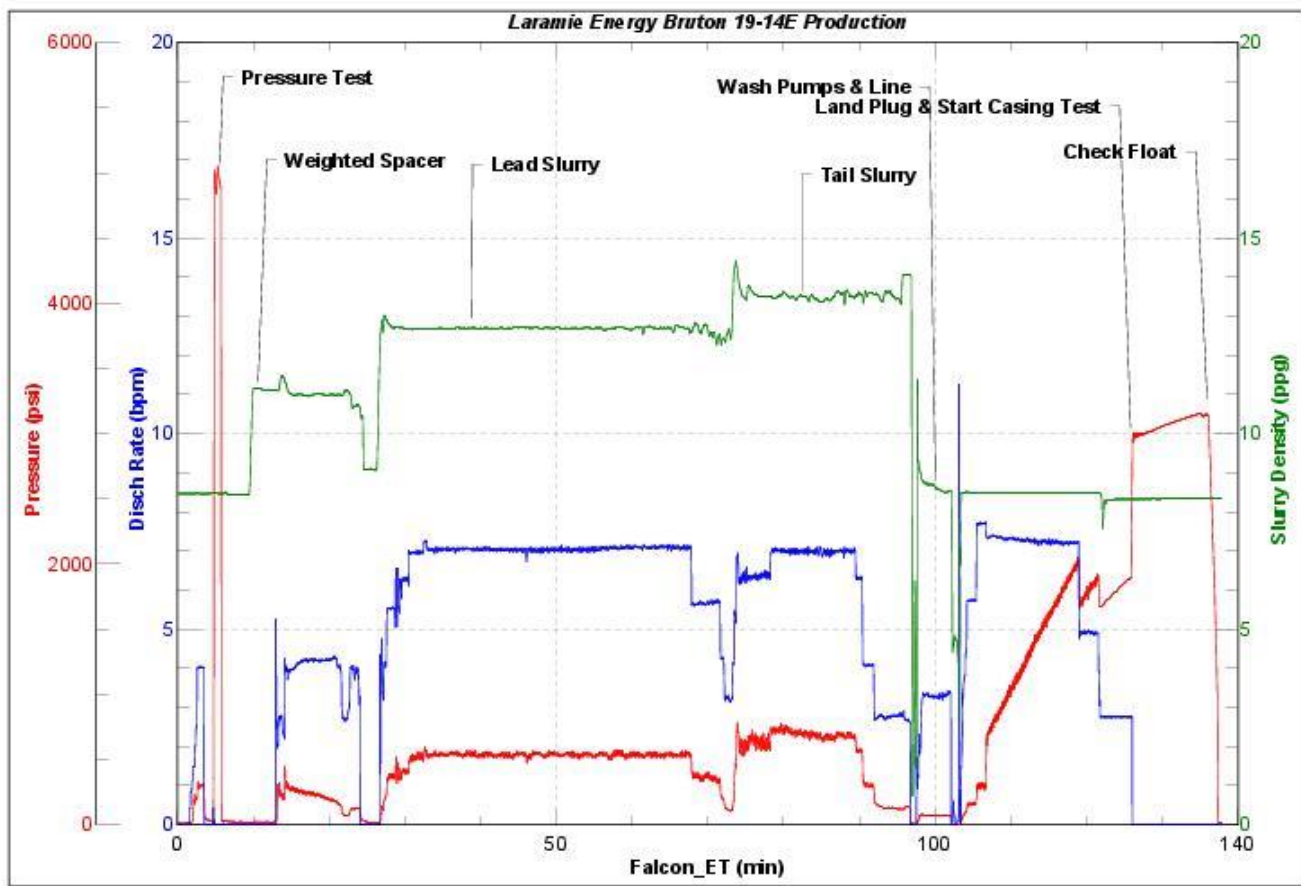


JobMaster Program Version 4.02C1

Job Number: 1097

Customer: Laramie Energy

Well Name: Bruton 19-14E



BJ Services

Job Start: Tuesday, August 01, 2017