

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 | 13.5 | n/a | n/a | 0 | 1549 | 25 |
| Casing | Inner | 9.625 | 8.921 | 36 | LTC | 0 | 1539 | 0 |

1.2 Equipment / People

| Unit Type | Unit | Employee #1 | Mileage |
|--------------------|----------|---------------------|---------|
| Bulk Trailer | PPC41311 | Zuniga, Jesus | 170 |
| Bulk Trailer | 503 | Garcia, Anthony | 170 |
| Cement Pump | C992 | Valenzuela, Yannick | 170 |
| Light Duty Pickups | 4 | Boyd, Brian | 170 |

1.3 Timing

| Event | Date/Time |
|-----------------|-----------------|
| Call Out | 7/23/2017 00:00 |
| Depart Facility | 7/23/2017 12:30 |
| On Location | 7/23/2017 13:30 |
| Rig Up Iron | 7/23/2017 13:50 |
| Job Started | 7/23/2017 17:20 |
| Job Completed | 7/23/2017 18:38 |
| Rig Down Iron | 7/23/2017 18:50 |
| Depart Location | 7/23/2017 19:45 |

1.4 General Job Information

| Metrics | Value |
|-------------------------|------------|
| Well Fluid Density | 8.7 lb/gal |
| Well Fluid Type | WBM |
| Rig Circulation Vol | 250 bbls |
| Rig Circulation Time | 0.5 hours |
| Calculated Displacement | 116 bbls |
| Actual Displacement | 116 bbls |
| Total Spacer to Surface | 20 bbls |
| Total CMT to Surface | 34 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 | 8.7 lb/gal |
| Well Fluid Density Out of Well | 8.33 lb/gal |

1.6 Job Details (cont.)

| Metrics | Value |
|---------|--------|
| BHCT | 88 °F |
| BHST | 110 °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 | | 20.00 | 0 |
| 1 | 2 | ALTCem S100-12 | Lead | 12.00 | 2.53 | 14.85 | | 260.00 | 116.99 | 0 |
| 1 | 3 | ALTCem S100-12 | Tail | 12.50 | 2.22 | 12.58 | | 146.00 | 57.82 | 873 |
| 1 | 4 | Water | DisplacementFinal | 8.33 | | | 42.00 | | 117.00 | 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 | Call Out | 7/23/2017 | 11:00 | | | | | Customer requested crew in location at 16:00 |
| 2 | Depart Shop | 7/23/2017 | 12:30 | | | | | Crew departs shop after journey management briefing |
| 3 | Arrive On Location | 7/23/2017 | 13:30 | | | | | Arrive on location meet with customer and get numbers |
| 4 | Steacs Briefing | 7/23/2017 | 13:45 | | | | | Steacs briefing with BJ crew over rigging up iron and hoses |
| 5 | Rig Up Iron | 7/23/2017 | 13:50 | | | | | Crew rigs up iron and hose |
| 6 | Waiting | 7/23/2017 | 14:30 | | | | | Waiting on rig to run casing |
| 7 | Rig Lands Casing | 7/23/2017 | 16:35 | | | | | Rig lands casing |
| 8 | Steacs Briefing | 7/23/2017 | 16:58 | | | | | Steacs briefing with BJ crew, rig crew and company man over job and hazards |
| 9 | Fill Lines | 7/23/2017 | 17:20 | 8.33 | 3 | 3 | 120 | Fill pumps and lines |
| 10 | Pressure Test | 7/23/2017 | 17:22 | 8.33 | 0.5 | 0.5 | 3000 | Pressure test iron and cement head to 3000 PSI |
| 11 | Pump Flush | 7/23/2017 | 17:25 | 8.33 | 5 | 20 | 143 | Pump 20 bbls of flush with red dye |
| 12 | Pump Lead | 7/23/2017 | 17:30 | 12 | 5.5 | 117 | 170 | Pump 117 bbls of lead cement 12 PPG (260 sks, 2.53 Yield, 14.85 Gals/Sks) |
| 13 | Pump Tail | 7/23/2017 | 17:56 | 12.5 | 5.5 | 58 | 119 | Pump 58 bbls of Tail cement 12.5 PPG (146 Sks, 2.22 Yield, 12.58 Gals/Sks) |
| 14 | Shut Down | 7/23/2017 | 18:11 | | | | | Shut down pumping |
| 15 | Drop Plug | 7/23/2017 | 18:12 | 8.33 | | | | Drop top plug |
| 16 | Pump Displacement | 7/23/2017 | 18:13 | 8.33 | 6 | 116 | 310 | Pump 116 bbls of fresh water displacement |
| 17 | Cement To Surface | 7/23/2017 | 18:26 | 8.33 | 6 | 82 | 348 | 82 bbls into displacement got cement to surface 34 bbls of cement to surface |
| 18 | Slow Rate | 7/23/2017 | 18:31 | 8.33 | 2.5 | 10 | 541 | Last 10 bbls of displacement slow rate to 2.5 bpm |
| 19 | Land Plug | 7/23/2017 | 18:35 | 8.33 | | | 1049 | Bump plug to 1041 PSI FCP of 571 PSI |
| 20 | Check Floats | 7/23/2017 | 18:38 | | | | | Hold floats for 3 mins and bleed back to truck and got .5 bbl back |
| 21 | Steacs Briefing | 7/23/2017 | 18:45 | | | | | Steacs briefing with BJ crew over rigging down iron and hoses |
| 22 | Rig Down Iron | 7/23/2017 | 18:50 | | | | | Crew rigs down iron and hoses |
| 23 | Depart Location | 7/23/2017 | 19:45 | | | | | BJ crew departs from location |

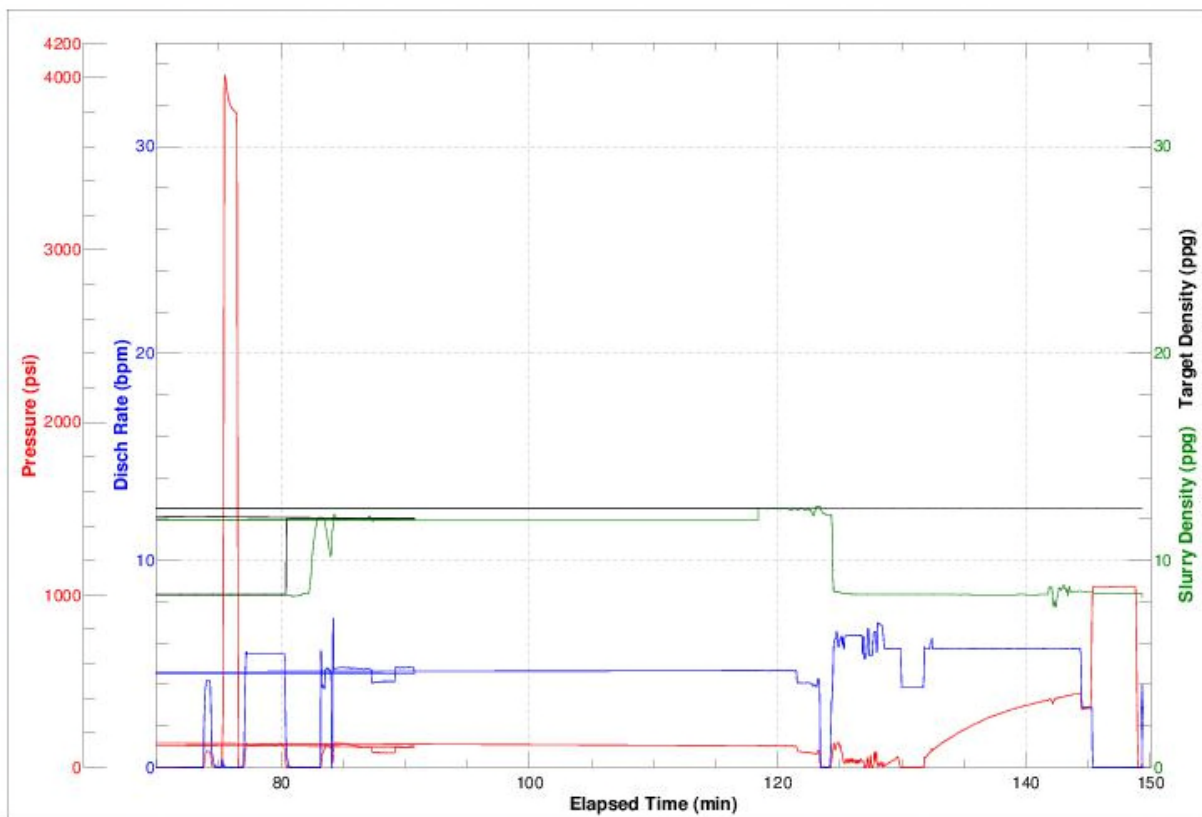
3 Water Analysis

| Metrics | Value | Recommended |
|------------------|------------------|-------------|
| Water Source | Upright Rig Tank | |
| Temperature | 70 °F | 50-80 °F |
| pH Level | 6 | 5.5-8.5 |
| Chlorides | 4 mg/L | 0-3000 mg/L |
| Total Alkalinity | 80 | 0-1000 |
| Total Hardness | 250 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 | 0.15 mg/L | 0-300 mg/L |

4 Pump Diagrams



JobMaster Program Version 4.02C1
Job Number: 1065
Customer: Cub Creek
Well Name: Litzenberger 19



BJ Services

Job Start: Sunday, July 23, 2017