



1 Job Details & Summary

1.1 Geometry

| Type | Function | OD (in) | ID (in) | Weight (lb/ft) | Thread | Top (ft) | Bottom (ft) | Excess (%) |
|-----------|----------|---------|---------|----------------|--------|----------|-------------|------------|
| Casing | Outer | 9.625 | 8.921 | 36 | n/a | 0 | 1541 | 0 |
| Open Hole | Outer | n/a | 8.5 | n/a | n/a | 1541 | 12018 | 18 |
| Casing | Inner | 5.5 | 4.892 | 17 | n/a | 0 | 12008 | 0 |

1.2 Equipment / People

| Unit Type | Unit | Power Unit | Employee #1 | Employee #2 | Mileage |
|--------------------|------|------------|-----------------|------------------|---------|
| Silo | 657 | | | | 140 |
| Silo | 658 | | | | 140 |
| Bulk Trailer | 504 | | Garcia, Anthony | | 140 |
| Cement Pump | 103 | | Cook, John | Seghetti, Joshua | 140 |
| Light Duty Pickups | 4 | | Hyde, Andrew | | 140 |

1.3 Timing

| Event | Date/Time |
|-----------------|-----------------|
| Call Out | 6/13/2017 23:00 |
| Depart Facility | 6/14/2017 00:30 |
| On Location | 6/14/2017 02:30 |
| Rig Up Iron | 6/14/2017 03:00 |
| Job Started | 6/14/2017 04:35 |
| Job Completed | 6/14/2017 07:53 |
| Rig Down Iron | 6/14/2017 08:10 |
| Depart Location | 6/14/2017 09:30 |

1.4 General Job Information

| Metrics | Value |
|-------------------------|-------------|
| Well Fluid Density | 10.2 lb/gal |
| Well Fluid Type | WBM |
| Rig Circulation Vol | 350 bbls |
| Rig Circulation Time | 1.5 hours |
| Calculated Displacement | 278 bbls |
| Actual Displacement | 280 bbls |
| Total Spacer to Surface | 40 bbls |
| Total CMT to Surface | 30 bbls |

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 | 10.2 lb/gal |
| Well Fluid Density Out of Well | 10.2 lb/gal |

1.7 Job Details (cont.)

| Metrics | Value |
|---------|--------|
| BHCT | 220 °F |
| BHST | 220 °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 | Water | Flush | 8.33 | | | 42.00 | | 40.00 | 0 |
| 1 | 2 | CD Spacer | Spacer | 11.00 | | | 33.78 | | 40.00 | 0 |
| 1 | 3 | ALTCem P100-X2 | Lead | 12.50 | 2.06 | 11.77 | | 200.00 | 73.49 | 0 |
| 1 | 4 | ALTCem P100-X2 | Lead | 12.50 | 2.07 | 11.81 | | 680.00 | 250.74 | 1534 |
| 1 | 5 | ALTCem P50-X1 | Tail | 13.50 | 1.47 | 7.43 | | 965.00 | 253.44 | 6750 |
| 1 | 6 | Water & MMCR | Displacement | 8.33 | | | 41.90 | | 10.00 | 11597 |
| 1 | 7 | Water w/ Clay Protection and Biocide | DisplacementFinal | 8.33 | | | 41.91 | | 270.00 | 0 |



1.10 Job Fluid Details

| Job | Fluid | Type | Fluid | Product | Function | Conc. | Uom |
|-----|-------|-------------------|--------------------------------------|---------|---------------------|--------|---------|
| 1 | 2 | Spacer | CD Spacer | ASR-20 | StrengthRetgression | 179.59 | lb/bbl |
| 1 | 2 | Spacer | CD Spacer | AVS-10 | Viscosifier | 1.00 | lb/bbl |
| 1 | 3 | Lead | ALTCem P100-X2 | AC3-10 | Cement | 100.00 | % |
| 1 | 3 | Lead | ALTCem P100-X2 | ADF-11 | Defoamer | 0.30 | %BWOB |
| 1 | 3 | Lead | ALTCem P100-X2 | AFL-10 | FluidLoss | 0.30 | %BWOB |
| 1 | 3 | Lead | ALTCem P100-X2 | AR-31 | Retarder | 0.20 | %BWOB |
| 1 | 3 | Lead | ALTCem P100-X2 | AVS-20 | Viscosifier | 0.10 | %BWOB |
| 1 | 4 | Lead | ALTCem P100-X2 | AC3-10 | Cement | 100.00 | % |
| 1 | 4 | Lead | ALTCem P100-X2 | ABX-30 | BondEnhancer | 0.40 | %BWOB |
| 1 | 4 | Lead | ALTCem P100-X2 | ADF-11 | Defoamer | 0.30 | %BWOB |
| 1 | 4 | Lead | ALTCem P100-X2 | AFL-10 | FluidLoss | 0.30 | %BWOB |
| 1 | 4 | Lead | ALTCem P100-X2 | AR-31 | Retarder | 0.20 | %BWOB |
| 1 | 4 | Lead | ALTCem P100-X2 | AVS-20 | Viscosifier | 0.10 | %BWOB |
| 1 | 5 | Tail | ALTCem P50-X1 | ACG-10 | Cement | 50.00 | % |
| 1 | 5 | Tail | ALTCem P50-X1 | AFA-10 | Extender | 50.00 | % |
| 1 | 5 | Tail | ALTCem P50-X1 | ADF-11 | Defoamer | 0.30 | %BWOB |
| 1 | 5 | Tail | ALTCem P50-X1 | AFL-50 | FluidLoss | 0.20 | %BWOB |
| 1 | 5 | Tail | ALTCem P50-X1 | AR-20 | Retarder | 0.10 | %BWOB |
| 1 | 5 | Tail | ALTCem P50-X1 | AVS-10 | Viscosifier | 0.10 | %BWOB |
| 1 | 5 | Tail | ALTCem P50-X1 | AVS-50 | Viscosifier | 2.00 | %BWOB |
| 1 | 6 | Displacement | Water & MMCR | AR-61 | Retarder | 0.10 | gal/bbl |
| 1 | 7 | DisplacementFinal | Water w/ Clay Protection and Biocide | ASF-50 | ClayProtection | 0.08 | gal/bbl |
| 1 | 7 | DisplacementFinal | Water w/ Clay Protection and Biocide | Biocide | Other | 0.01 | 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 | 6/12/2017 | 23:00 | | | | | Bj crew gets called out and requested on location at 5:00 |
| 2 | Safety Meeting | 6/13/2017 | 00:15 | | | | | BJ crew talks about the hazards of driving to location |
| 3 | Depart Yard | 6/13/2017 | 00:30 | | | | | BJ crew leaves yard |
| 4 | Arrive On Location | 6/14/2017 | 02:30 | | | | | Bj crew arrives on location |
| 5 | Safety Meeting | 6/14/2017 | 02:45 | | | | | BJ crew talks about the hazards of spotting in equipment and rigging up |
| 6 | Rig Up | 6/14/2017 | 03:00 | | | | | Rig up |
| 7 | Safety Meeting | 6/14/2017 | 04:00 | | | | | BJ and rig crew talk about the hazards of pumping the job |
| 8 | Fill Lines | 6/14/2017 | 04:35 | 8.33 | 2 | 3 | 290 | Pump 3 bbls of water to fill lines |
| 9 | Pressure Test | 6/14/2017 | 04:38 | | | | | Pressure test pumps and lines to 5000 psi |
| 10 | Pump Water | 6/14/2017 | 04:42 | 8.33 | 5 | 40 | 230 | Pump 40 bbls of water |
| 11 | Pump Spacer | 6/14/2017 | 04:57 | 11 | 5 | 40 | 650 | Pump 40 bbls of CD spacer at 11 ppg |
| 12 | Pump Lead Cement | 6/14/2017 | 05:03 | 12.5 | 6 | 73.5 | 690 | Mix up and pump 200 sks of ALTCem P100-X2 Lead cement @ 12.5 ppg, yield 2.06, 11.77 gal/sk, 73.5 bbls |
| 13 | Pump Lead Cement | 6/14/2017 | 05:15 | 12.5 | 6 | 250 | 680 | Mix up and pump 680 sks of ALTCem P100-X2 Lead cement @ 12.5 ppg, yield 2.07, 11.81 gal/sk, 250.7 bbls |
| 14 | Pump Tail Cement | 6/14/2017 | 06:05 | 13.5 | 6 | 253 | 390 | Mix up and pump 965 sks of ALTCem P50-X1 Tail cement @ 13.5 ppg, yield 1.47, 7.43 gal/sk, 253 bbls |
| 15 | Shutdown | 6/14/2017 | 06:49 | | | | | Shutdown to line out manifold to wash pumps and lines |
| 16 | Wash Pumps Lines | 6/14/2017 | 06:52 | | | | | Wash pumps and lines to 3 sided tank |
| 17 | Drop Bottom Plug | 6/14/2017 | 07:00 | | | | | Company man witness bottom plug leave manifold |
| 18 | Pump Water | 6/14/2017 | 07:02 | 8.33 | 5 | 10 | 250 | Pump 10 bbls of water with 1 gal AR-61 |
| 19 | Drop Top Plug | 6/14/2017 | 07:04 | | | | | Company man witness top plug leave manifold |
| 20 | Pump Displacement | 6/14/2017 | 07:05 | 8.33 | 8 | 258 | 1450 | Pump 278 bbls of water with clay protection and bioside |
| 21 | Slow Rate | 6/14/2017 | 07:44 | 8.33 | 2.5 | 20 | 1780 | Slow rate the last 20 bbls to land plug |



| | | | | | | | | |
|----|-----------------|-----------|-------|--|--|--|--|---|
| 22 | Bump Plug | 6/14/2017 | 07:50 | | | | | Bump plug at 1850 psi, took it up to 2500 psi |
| 23 | Check Floats | 6/14/2017 | 07:53 | | | | | Got 2.5 bbls back to the truck |
| 24 | Safety Meeting | 6/14/2017 | 07:55 | | | | | BJ crew talks about the hazards of rigging down |
| 25 | Rig Down | 6/14/2017 | 08:00 | | | | | Rig down |
| 26 | Depart Location | 6/14/2017 | 09:30 | | | | | Depart location |
| 27 | Other | 6/14/2017 | 09:31 | | | | | Estimated top of tail at 5808 ft, 40 bbls cement to surface |

3 Water Analysis

| Metrics | Value | Recommended |
|------------------|------------------|-------------|
| Water Source | Upright Rig Tank | |
| Temperature | 60 °F | 50-80 °F |
| pH Level | 6 | 5.5-8.5 |
| Chlorides | 72 mg/L | 0-3000 mg/L |
| Total Alkalinity | 120 | 0-1000 |
| Total Hardness | 300 mg/L | 0-500 mg/L |
| Carbonates | 140 mg/L | 0-100 mg/L |
| Sulfates | <200 mg/L | 0-1500 mg/L |
| Potassium | 300 mg/L | 0-3000 mg/L |
| Iron | 7 mg/L | 0-300 mg/L |

4 Pump Diagrams

