

The Road to Excellence Starts with Safety

| | | | | | | | | | | |
|--|-------------------|---|------------------------|---|-------------------------------|-----------------------------------|----------------------|---------------------|----------------------------|----------------------|
| Sold To #: 300466 | | Ship To #: 3848085 | | Quote #: 0022439470 | | Sales Order #: 0904838041 | | | | |
| Customer: ANADARKO PETROLEUM CORP-EBUS | | | | Customer Rep: Josh Johnson | | | | | | |
| Well Name: AZUL | | | Well #: 13-16HZ | | | API/UWI #: 05-123-46117-00 | | | | |
| Field: WATTENBERG | | City (SAP): HUDSON | | County/Parish: WELD | | State: COLORADO | | | | |
| Legal Description: SE SW-13-1N-66W-837FSL-2327FWL | | | | | | | | | | |
| Contractor: PRECISION DRLG | | | | Rig/Platform Name/Num: PRECISION 464 | | | | | | |
| Job BOM: 7523 7523 | | | | | | | | | | |
| Well Type: HORIZONTAL GAS | | | | | | | | | | |
| Sales Person: HALAMERICA\HX41066 | | | | Srvc Supervisor: Thomas Haas | | | | | | |
| Job | | | | | | | | | | |
| | | | | | | | | | | |
| Formation Name | | | | | | | | | | |
| Formation Depth (MD) | | Top | | Bottom | | | | | | |
| Form Type | | | | BHST | | | | | | |
| Job depth MD | | 12694ft | | Job Depth TVD | | 7328 | | | | |
| Water Depth | | | | Wk Ht Above Floor | | 6 | | | | |
| Perforation Depth (MD) | | From | | To | | | | | | |
| | | | | | | | | | | |
| Well Data | | | | | | | | | | |
| Description | New / Used | Size in | ID in | Weight lbm/ft | Thread | Grade | Top MD ft | Bottom MD ft | Top TVD ft | Bottom TVD ft |
| Casing | 0 | 9.625 | 8.921 | 36 | | J-55 | 0 | 1873 | 0 | 1873 |
| Casing | 0 | 5.5 | 4.892 | 17 | LTC | HCP110 | 0 | 12694 | 0 | 7328 |
| Open Hole Section | | | 7.875 | | | | 1873 | 12704 | 1873 | 7328 |
| | | | | | | | | | | |
| Tools and Accessories | | | | | | | | | | |
| Type | Size in | Qty | Make | Depth ft | | Type | Size in | Qty | Make | |
| Guide Shoe | 5.5 | | | | | Top Plug | 5.5 | | | |
| Float Shoe | 5.5 | 1 | HES | 12694 | | Bottom Plug | 5.5 | 2 | HES | |
| Float Collar | 5.5 | 1 | HES | 12682 | | SSR plug set | 5.5 | | | |
| Insert Float | 5.5 | | | | | Plug Container | 5.5 | 1 | HES | |
| Stage Tool | 5.5 | | | | | Centralizers | 5.5 | | | |
| | | | | | | | | | | |
| Fluid Data | | | | | | | | | | |
| Stage/Plug #: 1 | | | | | | | | | | |
| Fluid # | Stage Type | Fluid Name | Qty | Qty UoM | Mixing Density lbm/gal | Yield ft3/sack | Mix Fluid Gal | Rate bbl/min | Total Mix Fluid Gal | |
| 1 | Tuned Spacer III | Tuned Spacer III | 60 | bbl | 10.5 | 6.96 | 44.4 | 4 | 2131 | |
| 37.58 gal/bbl | | FRESH WATER | | | | | | | | |
| 0.70 gal/bbl | | DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665) | | | | | | | | |
| 0.25 gal/bbl | | D-AIR 3000L, 5 GAL PAIL (101007444) | | | | | | | | |

| 0.70 gal/bbl | | MUSOL A, 330 GAL TOTE - (790828) | | | | | | | | |
|---|------------------------|--|---------------------|---------|---------------------------|-------------------|------------------|------------------------|------------------------|-------|
| 79.92 lbm/bbl | | BARITE, BULK (100003681) | | | | | | | | |
| | | | | | | | | | | |
| Fluid # | Stage Type | Fluid Name | Qty | Qty UoM | Mixing Density lbm/gal | Yield ft3/sack | Mix Fluid Gal | Rate bbl/min | Total Mix Fluid Gal | |
| 2 | Gasstop B1 | GASSTOP (TM) SYSTEM | 400 | sack | 13.2 | 1.6 | 7.58 | 6 | 3032 | |
| 0.10 % | | FE-2 (100001615) | | | | | | | | |
| 0.60 % | | SCR-100 (100003749) | | | | | | | | |
| 5.08 Gal | | FRESH WATER | | | | | | | | |
| | | | | | | | | | | |
| Fluid # | Stage Type | Fluid Name | Qty | Qty UoM | Mixing Density lbm/gal | Yield ft3/sack | Mix Fluid Gal | Rate bbl/min | Total Mix Fluid Gal | |
| 3 | EconoCem | ECONOCER (TM) SYSTEM | 730 | sack | 13.5 | 1.68 | 7.99 | 8 | 5833 | |
| 0.20 % | | SA-1015, 50 LB SACK (102077046) | | | | | | | | |
| 7.99 Gal | | FRESH WATER | | | | | | | | |
| 0.35 % | | HR-5, 50 LB SK (100005050) | | | | | | | | |
| | | | | | | | | | | |
| Fluid # | Stage Type | Fluid Name | Qty | Qty UoM | Mixing Density lbm/gal | Yield ft3/sack | Mix Fluid Gal | Rate bbl/min | Total Mix Fluid Gal | |
| 4 | Biocide Water and MMCR | Biocide Water and MMCR | 20 | bbl | 8.34 | | | | | |
| 0.50 gal/bbl | | MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781) | | | | | | | | |
| | | | | | | | | | | |
| Fluid # | Stage Type | Fluid Name | Qty | Qty UoM | Mixing Density lbm/gal | Yield ft3/sack | Mix Fluid Gal | Rate bbl/min | Total Mix Fluid Gal | |
| 5 | Biocide Water | Biocide Water | 274 | bbl | 8.34 | | | | | |
| | | | | | | | | | | |
| Cement Left In Pipe | | Amount | 0 | | Reason WET SHOE | | | Shoe Joint | | |
| Mix Water: | | pH 7 | Mix Water Chloride: | | | <300 ppm | | Mix Water Temperature: | | 68 °F |
| Cement Temperature: | | N/A | Plug Displaced by: | | | 8.33 lb/gal FW | | Disp. Temperature: | | N/A |
| Plug Bumped? | | Yes | Bump Pressure: | | | 2370 psi | | Floats Held? | | Yes |
| Cement Returns: | | 0 bbl | Returns Density: | | | N/A | | Returns Temperature: | | N/A |
| Comment : Pumped calculated displacement of 294 BBL, plug bumped at 2370 PSI, checked floats floats held 3bbl back to truck. Pressured up to 2750 for 15 min casing, ruptured disk at 5100 psi 2.5 BBL back to truck. No cement to surface. | | | | | | | | | | |

2.0 Real-Time Job Summary

2.1 Job Event Log

| Type | Seq. No. | Activity | Graph Label | Date | Time | Source | Comments |
|-------|----------|---------------------------|---------------------------|----------|----------|--------|---|
| Event | 1 | Call Out | Call Out | 5/8/2018 | 17:30:00 | USER | CREW CALLED OUT AT 17:30 5/8/2018, REQUESTED ON LOCATION 21:30 5/8/2018. CREW PICKED UP CEMENT, CHEMICALS (40 GAL MUSOL A, 40 GAL DUAL SPACER B, 70 GAL D-AIR, 10 GAL MMCR), 200 LBS SUGAR, PLUG CONTAINER AND MANIFOLD FROM FORT LUPTON, CO. BULK 660: 11071589/10867439, BULK 660: 11360555/11689672, CHEMICAL TRUCK: 11859221/12051659, IORN TRUCK: 12100990 PUMP ELITE 11897034/11545460. |
| Event | 2 | Pre-Convoy Safety Meeting | Pre-Convoy Safety Meeting | 5/8/2018 | 20:45:00 | USER | DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW |
| Event | 3 | Crew Leave Yard | Crew Leave Yard | 5/8/2018 | 21:00:00 | USER | STARTED JOURNEY MANAGEMENT. |
| Event | 4 | Arrive At Loc | Arrive At Loc | 5/8/2018 | 21:15:00 | USER | END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING: 9.625" 36# @ 1873', CASING: 5.5" 17# @ 12694', 12' SHOE JOINT, 7.875" OPEN HOLE, TVD @ 7328', 10.1 PPG WELL FLUID, FRESH WATER DISPLACEMENT. |
| Event | 5 | Pre-Rig Up Safety Meeting | Pre-Rig Up Safety Meeting | 5/8/2018 | 21:30:00 | USER | HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER. |
| Event | 6 | Rig-Up Equipment | Rig-Up Equipment | 5/8/2018 | 21:45:00 | USER | CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB. |
| Event | 7 | Pre-Job Safety Meeting | Pre-Job Safety Meeting | 5/8/2018 | 23:45:00 | USER | MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS. |

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| Event | 8 | Start Job | Start Job | 5/9/2018 | 00:22:26 | COM4 | START JOB DATA RECORDING |
| Event | 9 | Test Lines | Test Lines | 5/9/2018 | 00:25:02 | COM4 | PRESSURE TESTED IRON TO 6615 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 1000 PSI, 5TH GEAR STALL OUT @ 2060 PSI. |
| Event | 10 | Pump Spacer 1 | Pump Spacer 1 | 5/9/2018 | 00:39:33 | COM4 | PUMP 60 BBLS OF TUNED SPACER @ 10.5 LB/GAL, ADDED 40 GAL MUSOL A, 40 GAL DUAL SPACER B, 20 GAL D-AIR, DENSITY VERIFIED BY PRESSURIZED MUD SCALES. |
| Event | 11 | Shutdown | Shutdown | 5/9/2018 | 00:59:40 | COM4 | SHUT DOWN TO DROP BOTTOM PLUG |
| Event | 12 | Drop Bottom Plug | Drop Bottom Plug | 5/9/2018 | 01:11:00 | USER | PLUG LEFT CONTAINER, VERIFIED BY CO. MAN. |
| Event | 13 | Pump Cement | Pump Lead Cement | 5/9/2018 | 01:13:21 | COM4 | PUMP 400 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.6 YIELD, 7.58 GAL/SK, 113 BBLS, CALCULATED TOL @ 1950', MIX WATER MIXED WITH 1000 GAL OF LATEX AND 70 GAL D-AIR, DENSITY VERIFIED BY PRESSURIZED MUD SCALES. |
| Event | 14 | Pump Tail Cement | Pump Tail Cement | 5/9/2018 | 01:33:57 | COM4 | PUMP 730 SKS OF ECONOCEM @ 13.5 LB/GAL, 1.68 YIELD, 7.98 GAL/SK, 218 BBLS, CALCULATED TOT @ 5639', DENSITY VERIFIED BY PRESSURIZED MUD SCALES. |
| Event | 15 | Other | Bottom Plug Reached Bottom | 5/9/2018 | 01:59:28 | USER | BOTTOM PLUG REACHED BOTTOM AND BURST @ 782 PSI |
| Event | 16 | Shutdown | Shutdown | 5/9/2018 | 02:07:22 | COM4 | SHUTDOWN TO WASH PUMPS AND LINES |
| Event | 17 | Drop Top Plug | Drop Top Plug | 5/9/2018 | 02:19:15 | COM4 | PLUG LEFT CONTAINER, VERIFIED BY CO. MAN. |
| Event | 18 | Pump Displacement | Pump Displacement | 5/9/2018 | 02:20:29 | COM4 | BEGIN CALCULATED DISPLACEMENT OF 294 BBLS WITH FRESH WATER. MMCR AND BIOCIDES ADDED TO 1ST 20 BBLS. BIOCIDES ADDED THROUGH REST OF DISPLACEMENT. |
| Event | 19 | Bump Plug | Bump Plug | 5/9/2018 | 03:14:05 | COM4 | PLUG BUMPED AT CALCULATED DISPLACEMENT. FINAL CIRCULATING |

| | | | | | | | |
|-------|----|-----------------------------|-----------------------------|----------|----------|------|---|
| | | | | | | | PRESSURE OF 2470 PSI. NOTHING RETURNED TO SURFACE. |
| Event | 20 | Check Floats | Check Floats | 5/9/2018 | 03:14:10 | COM4 | RELEASED PRESSURE, FLOATS HELD, 3 BBLs BACK. |
| Event | 21 | Test Lines | Test Lines | 5/9/2018 | 03:19:25 | COM4 | PRESSURE UP TO 2750 PSI FOR 15 MIN CASING TEST. |
| Event | 22 | Release Casing Pressure | Release Pressure | 5/9/2018 | 03:35:00 | USER | RELEASE PRESSURE. 2.5 BBL BACK TO TRUCK. |
| Event | 23 | End Job | End Job | 5/9/2018 | 03:36:38 | COM4 | STOP JOB DATA RECORDING |
| Event | 24 | Pre-Rig Down Safety Meeting | Pre-Rig Down Safety Meeting | 5/9/2018 | 03:40:00 | USER | DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES. |
| Event | 25 | Rig-Down Completed | Rig-Down Completed | 5/9/2018 | 05:00:00 | USER | ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL. |
| Event | 26 | Pre-Convoy Safety Meeting | Pre-Convoy Safety Meeting | 5/9/2018 | 05:15:00 | USER | DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW. |
| Event | 27 | Crew Leave Location | Crew Leave Location | 5/9/2018 | 05:30:00 | USER | THANK YOU FOR USING HALLIBURTON - THOMAS HAAS AND CREW. |

3.0 Attachments

3.1 Job Chart

