

HALLIBURTON

iCem[®] Service

Extraction Oil and Gas

Date: Wednesday, September 06, 2017

MLD #5 Production

Case 1

Job Date: Tuesday, September 05, 2017

Sincerely,

Justin Lansdale

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The Road to Excellence Starts with Safety

| | | | | | | | |
|--|--|--------------------|-----------|--------------------------------------|----------------------------|---------------------------|--|
| Sold To #: 369404 | | Ship To #: 3800232 | | Quote #: | | Sales Order #: 0904282186 | |
| Customer: EXTRACTION OIL & GAS | | | | Customer Rep: Shayne Hackford | | | |
| Well Name: MLD | | | Well #: 5 | | API/UWI #: 05-123-44821-00 | | |
| Field: WATTENBERG | | City (SAP): MEAD | | County/Parish: WELD | | State: COLORADO | |
| Legal Description: NW NW-22-4N-68W-804FNL-688FWL | | | | | | | |
| Contractor: PATTERSON-UTI ENERGY | | | | Rig/Platform Name/Num: PATTERSON 346 | | | |
| Job BOM: 7523 7523 | | | | | | | |
| Well Type: HORIZONTAL OIL | | | | | | | |
| Sales Person: HALAMERICA/HX38199 | | | | Srvc Supervisor: Bryce Muir | | | |

Job

| | | | |
|------------------------|---------|-------------------|---------|
| Formation Name | | | |
| Formation Depth (MD) | Top | Bottom | |
| Form Type | BHST | | |
| Job depth MD | 11530ft | Job Depth TVD | 6850 FT |
| Water Depth | | Wk Ht Above Floor | 3 FT |
| 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 | 3 | 9.625 | 8.921 | 36 | | J-55 | 0 | 1580 | 0 | 1580 |
| Casing | | 5.5 | 4.778 | 20 | | P-110 | 0 | 11530 | 0 | 0 |
| Open Hole Section | | | 8.5 | | | | 1580 | 11540 | 0 | 6850 |

Tools and Accessories

| Type | Size in | Qty | Make | Depth ft | Type | Size in | Qty | Make |
|--------------|---------|---------|------|----------|----------------|---------|-----|------|
| Guide Shoe | | | | | Top Plug | 5.5 | 1 | KLX |
| Float Shoe | 5.5 | ANTLOPE | 1 | 11530 | Bottom Plug | | | |
| Float Collar | 5.5 | ANTLOPE | 1 | 11525 | SSR plug set | | | |
| Insert Float | | | | | Plug Container | 5.5 | 1 | HES |
| Stage Tool | | | | | Centralizers | 5.5 | | |

Fluid Data

| Stage/Plug #: 1 | | | | | | | | | | |
|-----------------|------------------------------|---------------------------------|-----|---------|------------------------|-----------------------------|---------------|--------------|---------------------|--|
| Fluid # | Stage Type | Fluid Name | Qty | Qty UoM | Mixing Density lbm/gal | Yield ft ³ /sack | Mix Fluid Gal | Rate bbl/min | Total Mix Fluid Gal | |
| 1 | 11.5 lb/gal Tuned Spacer III | Tuned Spacer III | 50 | bbl | 11.5 | 3.73 | | 6 | | |
| 149.34 lbm/bbl | | BARITE, BULK (100003681) | | | | | | | | |
| 35 gal/bbl | | FRESH WATER | | | | | | | | |

| | |
|--------------|---|
| 0.50 gal/bbl | MUSOL A, 330 GAL TOTE - (790828) |
| 0.50 gal/bbl | DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665) |

| 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 | ElastiCem | ELASTICEM (TM) SYSTEM | 1900 | sack | 13.2 | 1.57 | | 5 | 7.54 |
| 0.25 % | | SCR-100 (100003749) | | | | | | | |
| 7.54 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 | Displacement | Displacement | 254.7 | bbl | 8.34 | | | | |

| Cement Left In Pipe | Amount | Reason | Shoe Joint |
|---------------------|--------|--------|------------|
| | 5 ft | | |

Comment: WE ARRIVED ON LOCATION AT 1800 HOURS ON 09/05/2017. WE SPOTTED IN OUR EQUIPMENT AND RIGGED UP OUR IRON TO THE RED ZONE. THE RIG WAS STILL RUNNING CASING. WE WAITED ON LOCATION UNTIL THE CASING WAS RAN. AT 2015 HOURS WE RIGGED UP THE PLUG CONTAINER AND THE RIG CIRCULATED THROUGH OUR PLUG CONTAINER WHILE WE HELD OUR SAFETY MEETING. AFTER THE MEETING WE STARTED THE CEMENT JOB. WE PUMPED 50 BBLs OF TUNED SPACER. WE THEN PUMPED OUR 531 BBLs OF PRIMARY CEMENT. WE PUMPED THE JOB AT 8 BARREL PER MINUTE MONITORING PRESSURE THROUGHOUT THE JOB. WHEN ALL THE CEMENT WAS PUMPED DOWNHOLE WE SHUTDOWN TO DROP THE TOP PLUG. 5.5" TOP PLUG WAS DROPPED BY BRYCE MUIR. WE BEGAN PUMPING OUR 254.7 BBLs OF FRESH WATER DISPALCEMENT. WE PUMPED DISPLACEMENT AT 10 BPM, BUT SLOWED OUR RATE THE LAST 20 BBLs OF DISPLACEMENT TO 5 BARRELS PER MINUTE. WE GOT GOOD CEMENT TO SURFACE AT 205 BBLs DISPLACEMENT PUMPED FOR A TOTAL OF 49 BBLs OF CEMENT TO SURFACE. WE LANDED THE PLUG AT 254 BBLs PUMPED. PLUG WAS LANDED AT 2150 PSI AND WE PRESSURED UP TO 2830 PSI. WE THEN STARTED PUMPING TO RUPTURE THE DISK TO PUMP OUR 5 BBL WET SHOE. DISK RUPTURED AT 3624 PSI. CHECKED THE FLOATS AND THEY HELD. WE GOT 1½ BBL OF FLUID BACK TO THE RCM.

1.0 Real-Time Job Summary

1.1 Job Event Log

| Type | Seq. No. | Activity | Graph Label | Date | Time | Source | Comments |
|-------|----------|--|--|----------|----------|--------|---|
| Event | 1 | Call Out | Call Out | 9/5/2017 | 13:00:00 | USER | CREW CALLED OUT FOR PRODUCTION JOB. LOAD UP ALL REQUIRED MATERIALS AND EQUIPMENT TO PERFORM JOB. |
| Event | 2 | Pre-Convoy Safety Meeting | Pre-Convoy Safety Meeting | 9/5/2017 | 17:15:00 | USER | DISCUSS HAZARDS ASSOCIATED WITH DRIVING TRUCKS TO LOCATION. DISCUSS SAFEST ROUTE OF TRAVEL, CONVOY ORDER, AND PROPER PLACES TO PULL OVER IF NEEDED. |
| Event | 3 | Depart from Service Center or Other Site | Depart from Service Center or Other Site | 9/5/2017 | 17:30:00 | USER | |
| Event | 4 | Arrive at Location from Service Center | Arrive at Location from Service Center | 9/5/2017 | 18:00:00 | USER | |
| Event | 5 | Assessment Of Location Safety Meeting | Assessment Of Location Safety Meeting | 9/5/2017 | 18:05:00 | USER | ASSESS LOCATION TO IDENTIFY POTENTIAL HAZARDS. DISCUSS BEST WAY TO SPOT EQUIPMENT. SPOT EQUIPMENT. |
| Event | 6 | Pre-Rig Up Safety Meeting | Pre-Rig Up Safety Meeting | 9/5/2017 | 18:15:00 | USER | DISCUSS HAZARDS ASSOCIATED WITH RIGGING UP AND PACKING IRON ON LOCATION. |
| Event | 7 | Rig-Up Equipment | Rig-Up Equipment | 9/5/2017 | 18:25:00 | USER | |
| Event | 8 | Other | Other | 9/5/2017 | 18:50:00 | USER | WAIT FOR THE RIG TO FINISH RUNNING CASING. |
| Event | 9 | Rig-Up Equipment | Rig-Up Equipment | 9/5/2017 | 20:15:00 | USER | RIG UP PLUG CONTAINER AND IRON ON THE RIG FLOOR. RIG CIRCULATED THROUGH OUR PLUG CONTAINER. |
| Event | 10 | Pre-Job Safety Meeting | Pre-Job Safety Meeting | 9/5/2017 | 20:30:00 | USER | DISCUSS HES SAFETY AND JOB PROCEDURES WITH RIG CREW AND COMPANY MAN. IDENTIFY CLOSEST HOSPITAL, MUSTER AREAS, AND FIRST AID LOCATIONS. |

| | | | | | | | |
|-------|----|---------------|---------------|----------|----------|------|--|
| Event | 11 | Start Job | Start Job | 9/5/2017 | 21:00:56 | COM6 | |
| Event | 12 | Other | Other | 9/5/2017 | 21:01:00 | USER | PUMP 3 BBLS FRESH WATER TO FILL PUMPS AND LINES. |
| Event | 13 | Test Lines | Test Lines | 9/5/2017 | 21:04:42 | COM6 | CONDUCT A LOW PRESSURE TEST TO 500 PSI TO TEST RCM PRESSURE KICKOUTS. KICKOUTS FUNCTIONING PROPERLY. |
| Event | 14 | Test Lines | Test Lines | 9/5/2017 | 21:05:00 | USER | CONDUCT A HIGH PRESSURE TEST TO 4700 PSI TO TEST PUMPS AND LINES. |
| Event | 15 | Pump Spacer 1 | Pump Spacer 1 | 9/5/2017 | 21:12:36 | COM6 | PUMP 50 BBLS OF SPACER. PUMPED AT 11.5 #/GAL 3.73 CUFT/SK 23.4 GAL/SK. SPACER PUMPED AT 3 BPM AT 350 PSI. WE ADDED THE ADDITIVES ON THE FLY AS WE PUMPED. |
| Event | 16 | Check Weight | Check weight | 9/5/2017 | 21:22:52 | COM6 | SPACER WEIGHT VERIFIED BY PRESSURIZED MUD BALANCE. |
| Event | 17 | Pump Cement | Pump Cement | 9/5/2017 | 21:26:43 | COM6 | PUMPED 531 BBLS OF PRIMARY CEMENT. 1900 SACKS @ 13.2#/GAL 1.57 CUFT/SK 7.54 GAL/SK. CEMENT WAS PUMPED AT 8 BPM WITH A CIRCULATING PRESSURE OF 550 PSI. WE HAD GREAT CIRCULATION. |
| Event | 18 | Check Weight | Check weight | 9/5/2017 | 21:28:03 | COM6 | CEMENT WEIGHT VERIFIED BY PRESSURIZED MUD BALANCE. |
| Event | 19 | Check Weight | Check weight | 9/5/2017 | 21:31:57 | COM6 | CEMENT WEIGHT VERIFIED BY PRESSURIZED MUD BALANCE. |
| Event | 20 | Check Weight | Check weight | 9/5/2017 | 21:42:16 | COM6 | |
| Event | 21 | Check Weight | Check weight | 9/5/2017 | 21:44:59 | COM6 | |
| Event | 22 | Check Weight | Check weight | 9/5/2017 | 21:49:44 | COM6 | CEMENT WEIGHT VERIFIED BY PRESSURIZED MUD BALANCE. |
| Event | 23 | Check Weight | Check weight | 9/5/2017 | 22:01:59 | COM6 | CEMENT WEIGHT VERIFIED BY PRESSURIZED MUD BALANCE. |
| Event | 24 | Check Weight | Check weight | 9/5/2017 | 22:09:57 | COM6 | |
| Event | 25 | Check Weight | Check weight | 9/5/2017 | 22:29:35 | COM6 | CEMENT WEIGHT VERIFIED BY |

| | | | | | | | |
|-------|----|-----------------------------|-----------------------------|----------|----------|------|--|
| | | | | | | | PRESSURIZED MUD BALANCE. |
| Event | 26 | Shutdown | Shutdown | 9/5/2017 | 22:39:29 | COM6 | WASH PUMPS AND LINES. |
| Event | 27 | Drop Top Plug | Drop Top Plug | 9/5/2017 | 22:40:00 | USER | DROP 5.5" TOP LATCH DOWN PLUG. PLUG CONTAINER CAP WAS REMOVED AND PLUG LOADED BY BRYCE MUIR AND KLX HAND. |
| Event | 28 | Pump Displacement | Pump Displacement | 9/5/2017 | 22:45:00 | COM6 | PUMPED 254.7 BBLS OF FRESH WATER DISPLACEMENT. DISPLACEMENT WAS PUMPED AT 10 BPM WITH A CIRCULATING PRESSURE OF 1950 PSI. PRESSURE VARIED DURING THE JOB AS WE PUMPED. |
| Event | 29 | Displ Reached Cmnt | Displ Reached Cmnt | 9/5/2017 | 22:53:00 | COM6 | AFTER PUMPING 45 BBLS OF DISPLACEMENT THE PLUG REACHED CEMENT. CIRCULATING PRESSURE BEGAN TO RISE. WE GOT TUNED SPACER BACK TO SURFACE AT 155 BBLS OF DISPLACEMENT PUMPED. WE GOT ALL 50 BBLS OF TUNED SPACER BACK TO SURFACE AND 49 BBL OF GOOD CEMENT BACK TO SURFACE. |
| Event | 30 | Bump Plug | Bump Plug | 9/5/2017 | 23:24:41 | COM6 | WE LANDED THE PLUG ON CALCULATED DISPLACEMENT. PLUG WAS LANDED AT 2150 PSI AND WE PRESSURED UP TO 2830 PSI. HELD FOR A BRIEF MINUTE. |
| Event | 31 | Shutdown | Shutdown | 9/5/2017 | 23:27:28 | COM6 | |
| Event | 32 | Other | Other | 9/5/2017 | 23:28:00 | USER | BEGAN TO PUMP TO RUPTURE THE DISK TO PUMP OUR WET SHOE. DISK RUPTURED AT 3624 PSI AND WE PUMPED A 5 BBL WET SHOE. |
| Event | 33 | Shutdown | Shutdown | 9/5/2017 | 23:30:00 | USER | |
| Event | 34 | Check Floats | Check Floats | 9/5/2017 | 23:31:00 | USER | FLOATS HELD. WE GOT 1 1/2 BBLS OF WATER BACK TO THE RCM. |
| Event | 35 | End Job | End Job | 9/5/2017 | 23:34:09 | COM6 | |
| Event | 36 | Pre-Rig Down Safety Meeting | Pre-Rig Down Safety Meeting | 9/5/2017 | 23:45:00 | USER | DISCUSS HAZARDS ASSOCIATED WITH RIGGING DOWN AND PACKING IRON ON LOCATION. |

| | | | | | | | |
|-------|----|--|--|----------|----------|------|--|
| Event | 37 | Rig-Down Equipment | Rig-Down Equipment | 9/6/2017 | 00:00:00 | USER | |
| Event | 38 | Pre-Convoy Safety Meeting | Pre-Convoy Safety Meeting | 9/6/2017 | 01:00:00 | USER | DISCUSSED HAZARDS ASSOCIATED WITH DRIVING TRUCKS BACK TO THE SERVICE CENTER AT NIGHT. DISCUSSED DRIVER FATIGUE AND WHAT TO DO IF TOO TIRED TO DRIVE. |
| Event | 39 | Depart Location for Service Center or Other Site | Depart Location for Service Center or Other Site | 9/6/2017 | 01:20:00 | USER | JOB WAS SAFELY COMPLETED BY BRYCE MUIR AND CREW. THANK YOU AND STAY SAFE. |

2.0 Attachments

2.1 Job Chart



