

# HALLIBURTON

iCem<sup>®</sup> Service

**Laramie Energy LLC**

United States of America, COLORADO

Date: Thursday, October 11, 2018

**BCU-993-21-06W Surface**

LARAMIE-BCU-993-21-06W Surface

Job Date: Tuesday, September 25, 2018

Sincerely,

**Grand Junction Cement Engineering**

## 1.0 Real-Time Job Summary

### 1.1 Job Event Log

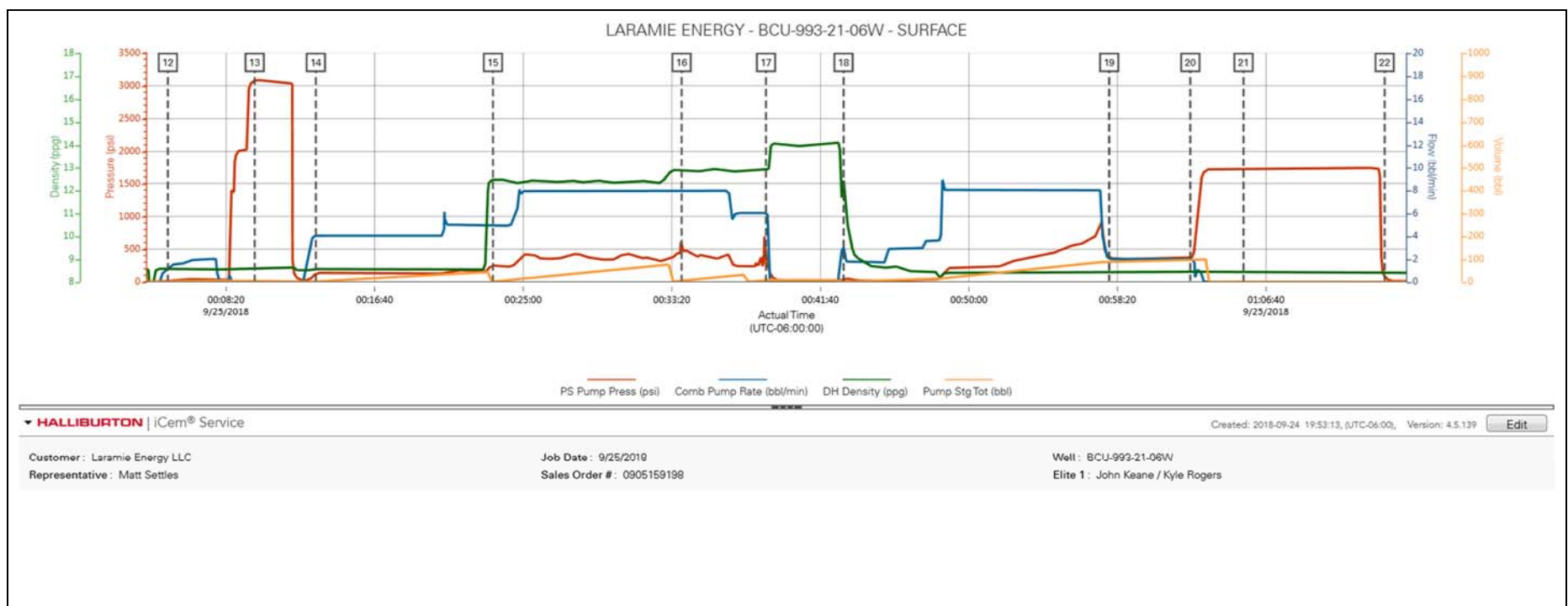
| Type  | Seq. No. | Activity                              | Date      | Time     | Source | PS Pump Press<br>(psi) | Comb Pump Rate<br>(bbl/min) | DH Density<br>(ppg) | Pump Stg Tot<br>(bbl) | Comments   |
|-------|----------|---------------------------------------|-----------|----------|--------|------------------------|-----------------------------|---------------------|-----------------------|--|
| Event | 1        | Call Out                              | 9/24/2018 | 14:30:00 | USER   |                        |                             |                     |                       | REQUESTED ON LOCATION TIME 20:00   |
| Event | 2        | Depart Yard Safety Meeting            | 9/24/2018 | 17:00:00 | USER   |                        |                             |                     |                       | WITH HES, 1 F-450, 1 ELITE CEMENTING UNIT, 1 660 BULK TRUCK, JSA COMPLETED                               |
| Event | 3        | Arrive At Loc                         | 9/24/2018 | 18:00:00 | USER   |                        |                             |                     |                       | RIG RUNNING CASING UPON HES, ARRIVAL   |
| Event | 4        | Assessment Of Location Safety Meeting | 9/24/2018 | 18:20:00 | USER   |                        |                             |                     |                       | WITH HES, JSA COMPLETED, SDS OFFERED FOR ALL HES MATERIALS   |
| Event | 5        | Pre-Rig Up Safety Meeting             | 9/24/2018 | 18:30:00 | USER   |                        |                             |                     |                       | WITH HES, JSA COMPLETED  |
| Event | 6        | Rig-Up Equipment                      | 9/24/2018 | 18:40:00 | USER   |                        |                             |                     |                       | 1 LINE RAN TO THE FLOOR, 1 8.625 IN QUICK-LATCH PLUG CONTAINER   |
| Event | 7        | Other                                 | 9/24/2018 | 18:50:00 | USER   |                        |                             |                     |                       | TD 1554 FT, SET AT 1544FT, CSG 1549 FT 8.625 IN 24 LB/FT J-55, HOLE 11 IN, SHOE 43.65 FT                 |
| Event | 8        | Other                                 | 9/24/2018 | 19:00:00 | USER   |                        |                             |                     |                       | RIG CIRCULATION, 300 BBL, 10 BBL/MIN, 188 PSI, RAT HOLE LENGTH 10 FT, PIPE WAS STATIC, MW 9.4 LB/GAL WBM |
| Event | 9        | Other                                 | 9/24/2018 | 20:00:00 | USER   |                        |                             |                     |                       | WATER TEST PH 7.1, CHLOR 0, TEMP 64DEG F   |
| Event | 10       | Pre-Job Safety Meeting                | 9/24/2018 | 23:50:00 | USER   | 4.00                   | 0.00                        | 8.53                | 0.00                  | WITH HES, LARAMIE, AND H&P 522   |
| Event | 11       | Start Job                             | 9/25/2018 | 00:02:46 | COM4   |                        |                             |                     |                       |  |
| Event | 12       | Prime Pumps                           | 9/25/2018 | 00:05:04 | USER   | 27.00                  | 1.10                        | 8.57                | 0.30                  | 5 BBL FRESH WATER, RETURNS AT 2 BBL AWAY   |

|       |    |                             |           |          |      |         |      |       |       |   |
|-------|----|-----------------------------|-----------|----------|------|---------|------|-------|-------|---|
| Event | 13 | Test Lines                  | 9/25/2018 | 00:09:56 | USER | 3079.00 | 0.00 | 8.62  | 5.20  | LOW TEST AT 880 PSI, HIGH TEST AT 3106 PSI, PRESSURE HOLDING  |
| Event | 14 | Pump Spacer 1               | 9/25/2018 | 00:13:22 | USER | 124.00  | 4.00 | 8.56  | 1.70  | 40 BBL FRESH WATER  |
| Event | 15 | Pump Lead Cement            | 9/25/2018 | 00:23:18 | USER | 254.00  | 4.90 | 12.47 | 0.90  | MIXED AT 12.3 LB/GAL, 171 SKS, 2.46 FT3/SK, 14.17 GAL/SK, DENSITY VERIFIED USING PRESSURIZED MUD SCALES   |
| Event | 16 | Pump Tail Cement            | 9/25/2018 | 00:33:53 | USER | 503.00  | 8.00 | 12.88 | 4.90  | MIXED AT 12.8 LB/GAL, 94 SKS, 2.18 FT3/SK, 12.11 GAL/SK, DENSITY VERIFIED USING PRESSURIZED MUD SCALES  |
| Event | 17 | Shutdown                    | 9/25/2018 | 00:38:37 | USER | 421.00  | 6.00 | 12.89 | 6.80  |   |
| Event | 18 | Pump Displacement           | 9/25/2018 | 00:42:58 | USER | 46.00   | 3.00 | 12.47 | 0.60  | FRESH WATER   |
| Event | 19 | Slow Rate                   | 9/25/2018 | 00:57:52 | USER | 379.00  | 2.00 | 8.40  | 87.50 | SLOWED AT 85 BBL AWAY TO 2 BBL/MIN  |
| Event | 20 | Bump Plug                   | 9/25/2018 | 01:02:25 | USER | 370.00  | 2.00 | 8.41  | 96.60 | PLUG BUMPED AT CALCULATED DISPLACEMENT, 377 PSI   |
| Event | 21 | Drop Top Plug               | 9/25/2018 | 01:05:24 | USER | 1729.00 | 0.00 | 8.44  | 0.00  | PLUG LAUNCHED, CUSTOMER WITNESSED   |
| Event | 22 | Check Floats                | 9/25/2018 | 01:13:19 | USER | 81.00   | 0.00 | 8.40  | 0.00  | FLOATS HOLDING, 1 BBL RETURNED TO THE TRUCK, PERFORMED A 10 MIN. CASING TEST AT 1600 PSI, PRESSURE HOLDING  |
| Event | 23 | Other                       | 9/25/2018 | 01:15:40 | COM4 | 8.00    | 0.00 | 8.39  | 0.00  |   |
| Event | 24 | End Job                     | 9/25/2018 | 01:20:00 | USER |         |      |       |       | GOOD CIRCULATION, RIG USED HES TOP PLUG, RIG DID NOT USE SUGAR, NO ADD HOURS  |
| Event | 25 | Pre-Rig Down Safety Meeting | 9/25/2018 | 01:30:00 | USER |         |      |       |       | WITH HES, JSA COMPLETD  |
| Event | 26 | Rig Down Lines              | 9/25/2018 | 01:45:00 | USER |         |      |       |       |   |
| Event | 27 | Other                       | 9/25/2018 | 02:00:00 | USER |         |      |       |       | SPACER 40 BBL FRESH WATER, LEAD CEMENT 74.9 BBL, TAIL CEMENT 36.5 BBL, FINAL DISPLACEMENT 95.7 BBL, 15 BBL CEMENT CIRCULATED TO SURFACE, TOP OF TAIL CEMENT 1323 FT |
| Event | 28 | Pre-Convoy Safety Meeting   | 9/25/2018 | 02:10:00 | USER |         |      |       |       | WITH HES, JSA COMPLETED   |
| Event | 29 | Crew Leave Location         | 9/25/2018 | 02:20:00 | USER |         |      |       |       | THANKS FOR USING HALLIBURTON, JOHN KEANE AND CREW   |



## 2.0 Attachments

### 2.1 LARAMIE-BCU-993-21-06W-SURFACE.png



# HALLIBURTON

iCem<sup>®</sup> Service

**Laramie Energy LLC**

United States of America, COLORADO

Date: Wednesday, October 17, 2018

**BCU 0993-21-06W Production**

Laramie BCU 0993-21-06W Production

Job Date: Thursday, September 27, 2018

MyCem# 428500

Sincerely,

**Grand Junction Cement Engineering**

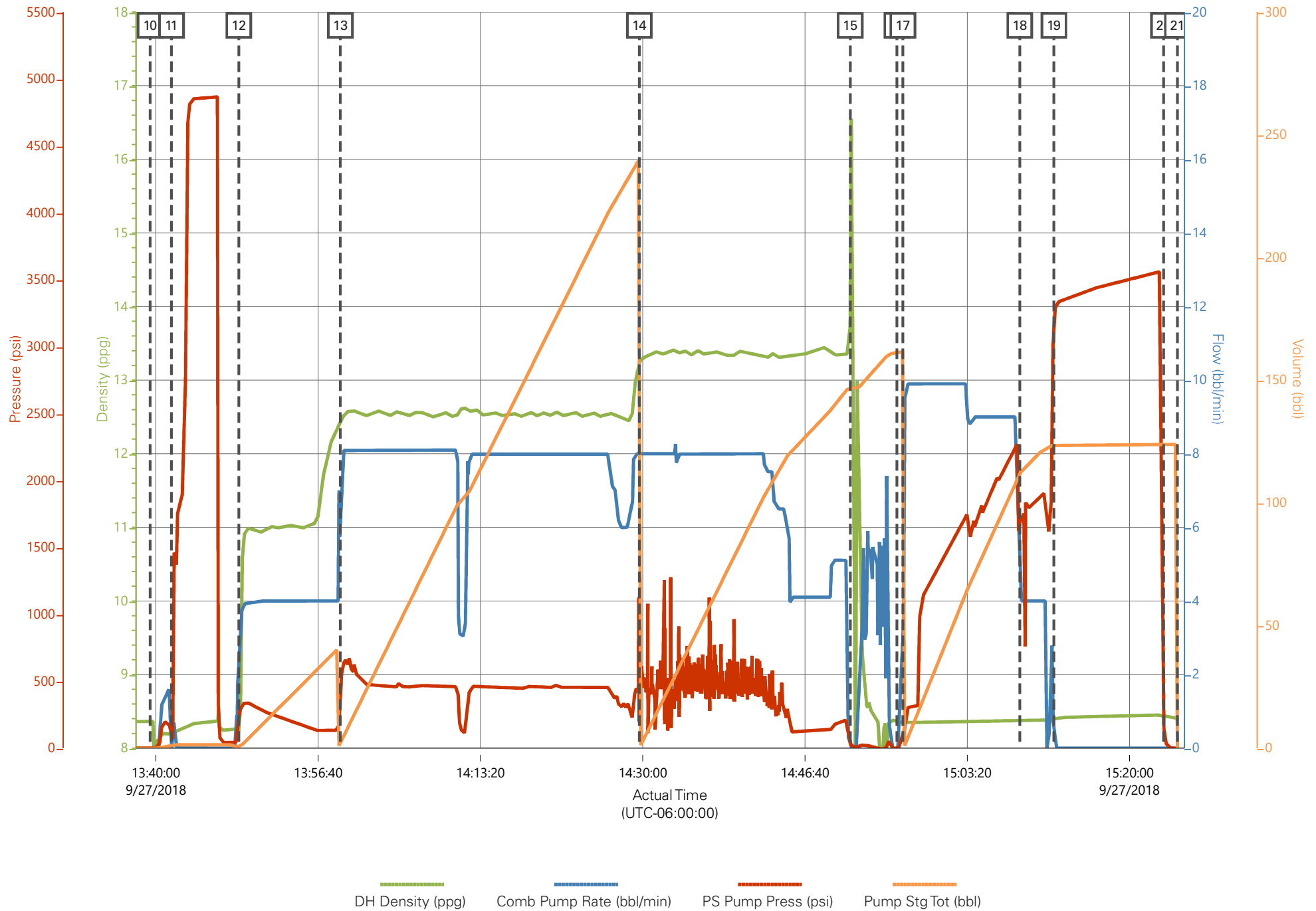
## 1.0 Real-Time Job Summary

## 1.1 Job Event Log

| Type  | Seq. No. | Activity                              | Date      | Time     | Source | DH Density<br>(ppg) | Comb Pump Rate<br>(bbl/min) | PS Pump Press<br>(psi) | Pump Stg Tot<br>(bbl) | Comments  |
|-------|----------|---------------------------------------|-----------|----------|--------|---------------------|-----------------------------|------------------------|-----------------------|---|
| Event | 1        | Call Out                              | 9/27/2018 | 07:30:00 | USER   |                     |                             |                        |                       |   |
| Event | 2        | Pre-Convoy Safety Meeting             | 9/27/2018 | 09:45:00 | USER   |                     |                             |                        |                       |   |
| Event | 3        | Crew Leave Yard                       | 9/27/2018 | 10:00:00 | USER   |                     |                             |                        |                       |   |
| Event | 4        | Arrive At Loc                         | 9/27/2018 | 11:30:00 | USER   |                     |                             |                        |                       | CREW WAS REQUESTED ON LOC @ 1330, CREW ARRIVED AT 1130, RIG WAS APPROX 4 JTS FROM BOTTOM  |
| Event | 5        | Assessment Of Location Safety Meeting | 9/27/2018 | 11:40:00 | USER   |                     |                             |                        |                       |   |
| Event | 6        | Other                                 | 9/27/2018 | 11:45:00 | USER   |                     |                             |                        |                       |   |
| Event | 7        | Pre-Rig Up Safety Meeting             | 9/27/2018 | 11:50:00 | USER   |                     |                             |                        |                       |   |
| Event | 8        | Rig-Up Equipment                      | 9/27/2018 | 12:00:00 | USER   |                     |                             |                        |                       |   |
| Event | 9        | Pre-Job Safety Meeting                | 9/27/2018 | 12:10:00 | USER   |                     |                             |                        |                       |   |
| Event | 10       | Start Job                             | 9/27/2018 | 13:39:24 | COM5   |                     |                             |                        |                       | TD: 7704 TP: 7694 SJ: 85.6 MW: 9.4 4 1/2" 11.6#/FT CSG IN 7 7/8" OH WATER TEST: PH: 6.5 POTTASIMUM: 450 CHLORIDES: 0 SULFATES: <200 TEMP: 64 DEGREES PRESSURIZED MUD SCALES VERIFIED ON DRINKING WATER PRIOR TO JOB |
| Event | 11       | Test Lines                            | 9/27/2018 | 13:41:36 | COM5   |                     |                             | 5000.00                |                       | 5000 PSI TEST SUCCESSFUL  |
| Event | 12       | Pump Spacer 1                         | 9/27/2018 | 13:48:31 | COM5   | 11.00               | 4.0                         | 277.00                 | 40.00                 | 40 BBL TUNED SPACER @ 11.0 PPG  |

|       |    |  |           |          |      |       |       |         |        |   |
|-------|----|--|-----------|----------|------|-------|-------|---------|--------|---|
| Event | 13 | Pump Lead Cement                       | 9/27/2018 | 13:58:57 | COM5 | 12.50 | 8.00  | 377.00  | 220.80 | 639 SKS @ 12.5 PPG 1.94 YLD 9.59 GAL/SK H2O   |
| Event | 14 | Pump Tail Cement                       | 9/27/2018 | 14:29:39 | COM5 | 13.30 | 8.00  | 510.00  | 108.50 | 350 SKS @ 13.3 PPG 1.74 YLD 7.8 GAL/SK H2O  |
| Event | 15 | Clean Lines                            | 9/27/2018 | 14:51:19 | COM5 |       |       |         |        |   |
| Event | 16 | Drop Top Plug                          | 9/27/2018 | 14:56:07 | COM5 |       |       |         |        | PLUG AWAY   |
| Event | 17 | Pump Displacement                      | 9/27/2018 | 14:56:44 | COM5 | 8.33  | 10.00 | 2120.00 | 117.90 | FRESH H2O DISPLACEMENT W/ MMCR, CLAY-WEB, BACTERIACIDE (CUSTOMER SUPPLIED)  |
| Event | 18 | Slow Rate                              | 9/27/2018 | 15:08:44 | USER | 8.38  | 4.00  | 1686.00 | 107.00 |   |
| Event | 19 | Bump Plug                              | 9/27/2018 | 15:12:14 | COM5 | 8.33  | 4.00  | 3186.00 | 117.90 | PLUG BUMPED AT CALCULATED DISPLACEMENT. PRESSURED UP TO 3000PSI FOR A 10 MIN CASING TEST  |
| Event | 20 | Other                                  | 9/27/2018 | 15:23:30 | COM5 |       |       |         |        | FLOATS HELD, GAINED 1.5 BBL BACK TO PUMP  |
| Event | 21 | End Job                                | 9/27/2018 | 15:24:56 | COM5 |       |       |         |        |   |
| Event | 22 | Post-Job Safety Meeting (Pre Rig-Down) | 9/27/2018 | 15:30:00 | USER |       |       |         |        |   |
| Event | 23 | Rig-Down Equipment                     | 9/27/2018 | 15:45:00 | USER |       |       |         |        | GOOD CIRCULATION THROUGHOUT JOB. PIPE WAS LEFT STATIC THROUGHOUT JOB. CIRCULATED 20 BBL TUNED SPACER TO SURFACE. NO ADD HOURS CHARGED. TOP AND BOTTOM PLUGS USED. 20# SUGAR USED. |
| Event | 24 | Safety Meeting                         | 9/27/2018 | 16:40:00 | USER |       |       |         |        |   |
| Event | 25 | Crew Leave Location                    | 9/27/2018 | 16:45:00 | USER |       |       |         |        | THANK YOU FOR CHOOSING HALLIBURTON CEMENTING OF GRAND JCT, CO ANTHONY ANDREWS AND CREW  |

# LARAMIE - BCU 0993-21-06W - 4 1/2" PRODUCTION



### Job Information

|                       |                 |                 |                   |                   |                 |
|-----------------------|-----------------|-----------------|-------------------|-------------------|-----------------|
| <b>Request/Slurry</b> | 2503753/3       | <b>Rig Name</b> | H&P 522           | <b>Date</b>       | 21/SEP/2018     |
| <b>Submitted By</b>   | Connor Matthews | <b>Job Type</b> | Production Casing | <b>Bulk Plant</b> | Grand Junction  |
| <b>Customer</b>       | Laramie Energy  | <b>Location</b> | Garfield          | <b>Well</b>       | BCU 0993-21-06W |

### Well Information

|                          |          |                  |         |             |               |
|--------------------------|----------|------------------|---------|-------------|---------------|
| <b>Casing/Liner Size</b> | 4.5 in   | <b>Depth MD</b>  | 7702 ft | <b>BHST</b> | 103°C / 218°F |
| <b>Hole Size</b>         | 7.875 in | <b>Depth TVD</b> | 7693 ft | <b>BHCT</b> | 63°C / 146°F  |
| <b>Pressure</b>          | 4685 psi |                  |         |             |               |

### Drilling Fluid Information

|                          |        |                       |            |                |             |
|--------------------------|--------|-----------------------|------------|----------------|-------------|
| <b>Mud Supplier Name</b> | Baroid | <b>Mud Trade Name</b> | BARADRIL-N | <b>Density</b> | 9.9 lbm/gal |
|--------------------------|--------|-----------------------|------------|----------------|-------------|

### Cement Information - Lead Design

| <u>Conc</u> | <u>UOM</u> | <u>Cement/Additive</u> | <u>Sample Type</u> | <u>Sample Date</u> | <u>Lot No.</u> | <b>Cement Properties</b> |                     |          |
|-------------|------------|------------------------|--------------------|--------------------|----------------|--------------------------|---------------------|----------|
|             |            | NeoCem                 |                    |                    |                | Slurry Density           | 12.5                | lbm/gal  |
|             |            |                        |                    |                    |                | Slurry Yield             | 1.944               | ft3/sack |
|             |            |                        |                    |                    |                | Water Requirement        | 9.607               | gal/sack |
|             |            |                        |                    |                    |                | Total Mix Fluid          | 9.607               | gal/sack |
|             |            |                        |                    |                    |                | Water Source             | Field (Fresh) Water |          |
|             |            |                        |                    |                    |                | Water Chloride           |                     |          |

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# Operation Test Results Request ID 2503753/3

## Thickening Time - ON-OFF-ON

26/SEP/2018

| Test Temp (degF) | Pressure (psi) | Reached in (min) | 30 Bc (hh:min) | 50 Bc (hh:min) | 70 Bc (hh:min) | 100 Bc (hh:min) | Start Bc | Stirring before stop (mins) | Static Period (min) | Peak reading (BC) |
|------------------|----------------|------------------|----------------|----------------|----------------|-----------------|----------|-----------------------------|---------------------|-------------------|
| 146              | 4685           | 40               | 7:59           | 8:09           | 8:29           | 10:26           | 10       | 50                          | 15                  | 11                |

CS2135 TR 8677 319.5 SKS

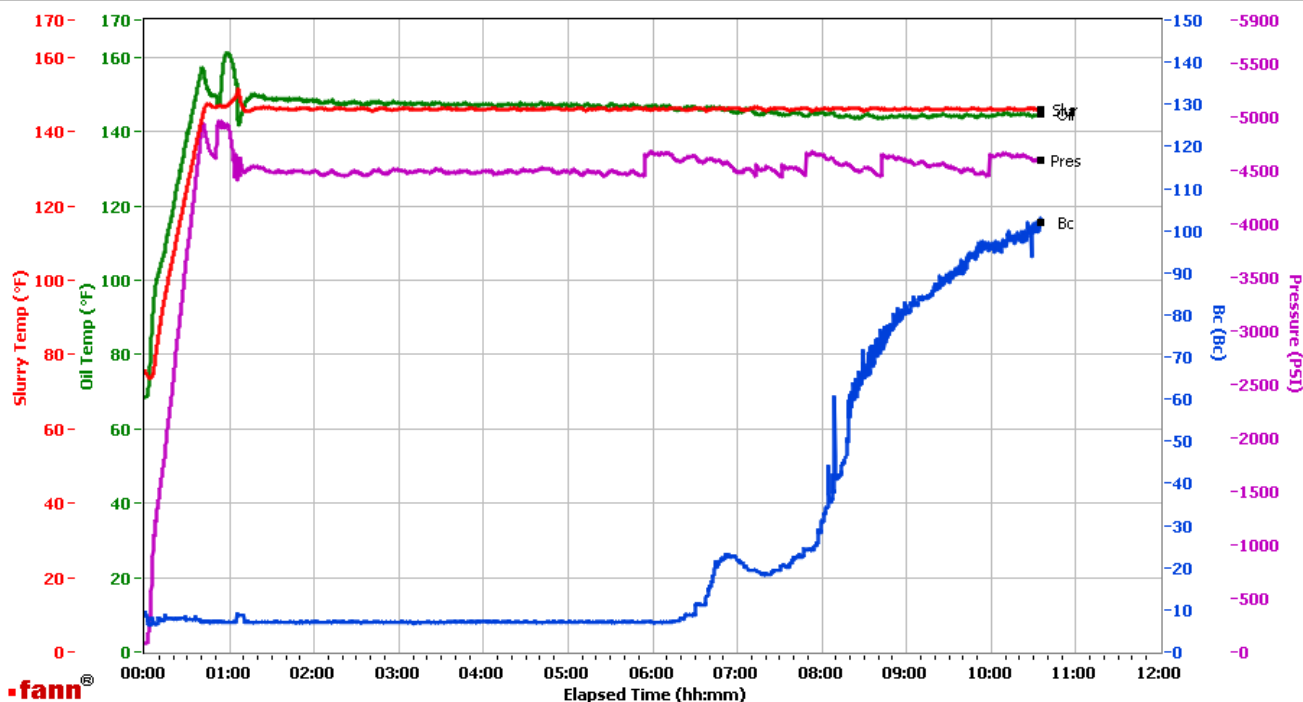
Deflected 7-- > 11

## Grand Junction, Colorado

| Fields            | Values                              |
|-------------------|-------------------------------------|
| Project Name      | GJ2503753-3 LARAMIE PRODUCTION BULK |
| Test ID           | 35849606                            |
| Request ID        | 2503753-3                           |
| Tested by         | JASON                               |
| Customer          | LARAMIE                             |
| Well No           | BCU 0993-21-06W                     |
| Rig               | H8P 522                             |
| Casing/Liner Size | 4.5 INCH                            |

| Fields         | Values        |
|----------------|---------------|
| Job Type       | PRODUCTION    |
| Cement Type    | GCC TYPE I-II |
| Cement Weight  | Light Weight  |
| Test Date      | 09/25/18      |
| Test Time      | 10:45 AM      |
| Temp. Units    | degF          |
| Pressure Units | PSI           |
| SW Version     | 2.1.0.507     |

| Events    | Results |
|-----------|---------|
| 30.00 Bc  | 07h:59m |
| 40.00 Bc  | 08h:04m |
| 50.00 Bc  | 08h:09m |
| 70.00 Bc  | 08h:29m |
| 100.00 Bc | 10h:26m |
| 00h:30m   | 7.56    |
| 01h:00m   | 7.13    |
| 01h:30m   | 7.06    |



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\CDER4HUV\GJ2503753-3 LARAMIE PRODUCTION BULK LEAD[1].tdms

Comments CS2135 TR 8677 319.5 SKS

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# Operation Test Results Request ID 2503753/2

## Thickening Time - ON-OFF-ON

26/SEP/2018

| Test Temp (degF) | Pressure (psi) | Reached in (min) | 30 Bc (hh:mm) | 50 Bc (hh:mm) | 70 Bc (hh:mm) | Start Bc | Stirring before stop (mins) | Static Period (min) | Peak reading (BC) | Termination time (hh:mm) | Termination Bc |
|------------------|----------------|------------------|---------------|---------------|---------------|----------|-----------------------------|---------------------|-------------------|--------------------------|----------------|
| 146              | 4685           | 40               | 7:07          | 7:24          | 9:24          | 3        | 50                          | 15                  | 3                 | 22:52                    | 74             |

CS2134 TR 8658 319.5 SKS

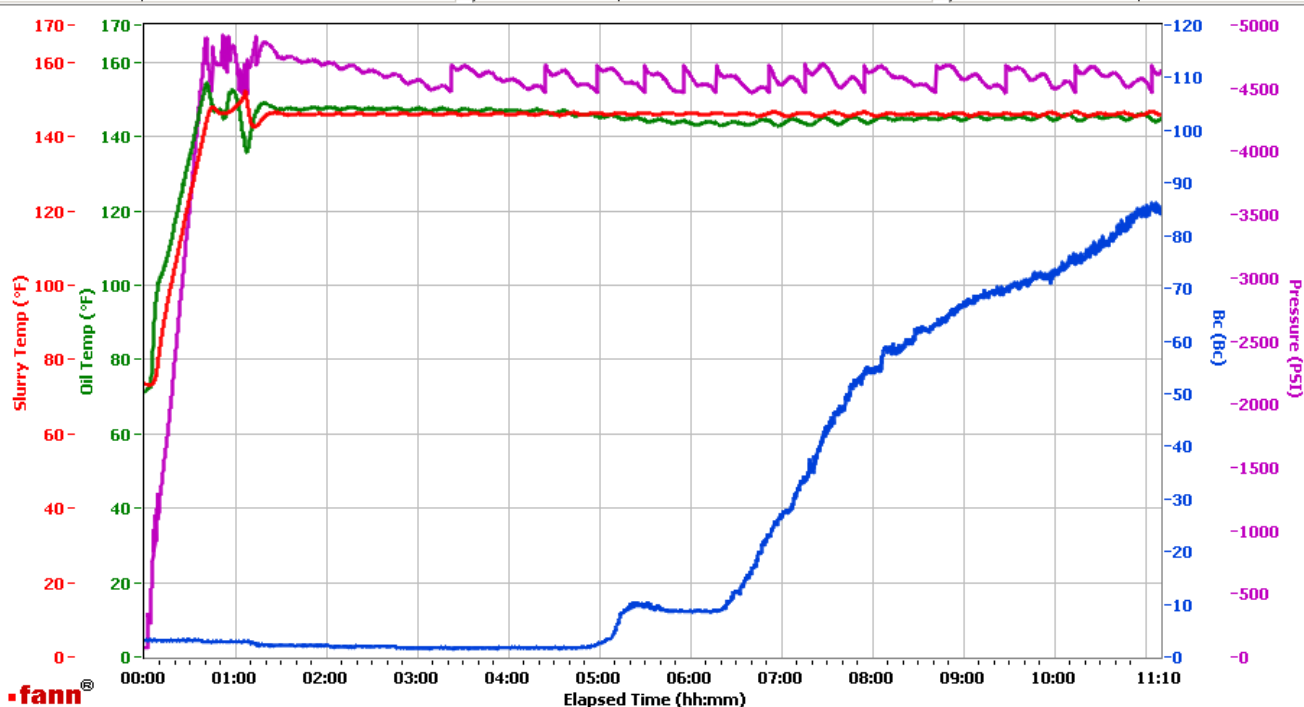
No deflection. 60% of slurry was core set and balled up around paddle, spinning in the cup.

## Grand Junction Colorado

| Fields            | Values                              |
|-------------------|-------------------------------------|
| Project Name      | GJ2503753-2 LARAMIE PRODUCTION BULK |
| Test ID           | 35849595                            |
| Request ID        | 2503753-2                           |
| Tested by         | JASON                               |
| Customer          | LARAMIE                             |
| Well No           | BCU 0993-21-06W                     |
| Rig               | H8P 522                             |
| Casing/Liner Size | 4.5 INCH                            |

| Fields         | Values        |
|----------------|---------------|
| Job Type       | PRODUCTION    |
| Cement Type    | GCC TYPE I-II |
| Cement Weight  | Light Weight  |
| Test Date      | 11/02/11      |
| Test Time      | 08:19 AM      |
| Temp. Units    | degF          |
| Pressure Units | PSI           |
| SW Version     | 2.1.0.1219    |

| Events    | Results |
|-----------|---------|
| 30.00 Bc  | 07h:07m |
| 40.00 Bc  | 07h:24m |
| 50.00 Bc  | 07h:45m |
| 70.00 Bc  | 09h:24m |
| 100.00 Bc | NaN     |
| 00h:30m   | 70.23   |
| 01h:00m   | 70.23   |
| 01h:30m   | 70.23   |



Data File C:\Documents and Settings\HPHT\Desktop\Test Data\GJ2503753-2 LARAMIE PRODUCTION BULK LEAD.tdms

Comments CS2134 TR 8658 319.5 SKS

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# Operation Test Results Request ID 2503753/1

## Thickening Time - ON-OFF-ON

25/SEP/2018

| Test Temp (degF) | Pressure (psi) | Reached in (min) | 30 Bc (hh:mm) | 50 Bc (hh:mm) | 70 Bc (hh:mm) | Start Bc | Stirring before stop (mins) | Static Period (min) | Peak reading (BC) | Termination time (hh:mm) | Termination Bc |
|------------------|----------------|------------------|---------------|---------------|---------------|----------|-----------------------------|---------------------|-------------------|--------------------------|----------------|
| 146              | 4685           | 40               | 7:32          | 7:54          | 12:03         | 18       | 50                          | 15                  | 18                | 13:57                    | 70             |

Total sks = 639

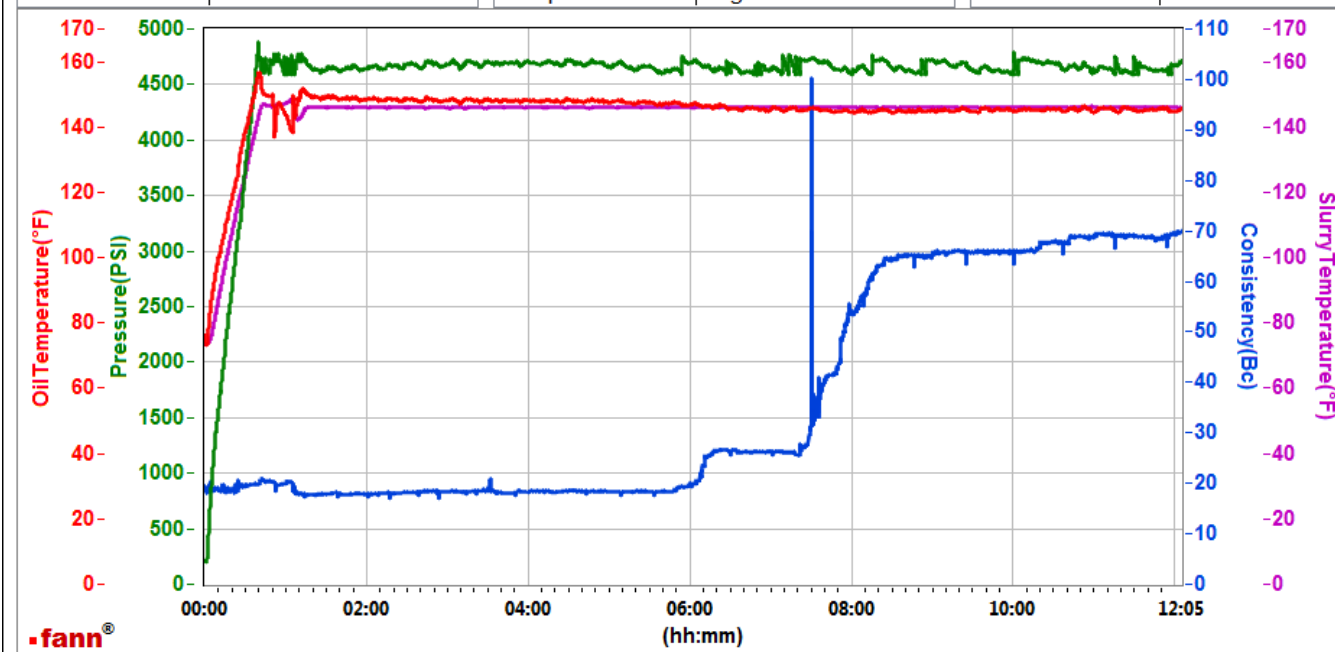
CS 2134 TRS8658 319.5 SKS

CS 2135 TR#8677 319.5 SKS

No deflection. Please note a small heat of hydration started around 5:45.

## GRAND JUNCTION

| Fields       | Values                 | Fields            | Values                 | Events | Results |
|--------------|------------------------|-------------------|------------------------|--------|---------|
| Project Name | GJ2503753-1 Laramie Pr | Rig               | H&P 522                | 30 Bc  | 07:32   |
| SW Version   | 1.0                    | Casing/Liner Size | 4.5 INCH               | 50 Bc  | 07:54   |
| Test ID      | 35842589 - TT          | Job Type          | PRODUCTION CASING      | 70 Bc  | 12:03   |
| Request ID   | 2503753-1              | Cement Weight     | GCC TYPE I/II          |        |         |
| Tested by    | DEBA                   | Comments          | Standard               |        |         |
| Customer     | LARAMIE ENERGY         | Date Time         | 9/24/2018 11:36:08.245 |        |         |
| Well No      | BCU 0993-21-06E        | Temp. Units       | degF                   |        |         |



Data File N:\01 Test Graphs\GJ2503753-1 LARAMIE PRODUCTION BULK LEAD.tdms

Comments Standard

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# HALLIBURTON

## Rockies, Grand Junction

## Lab Results- Tail

### Job Information

|                |                 |          |                   |            |                 |
|----------------|-----------------|----------|-------------------|------------|-----------------|
| Request/Slurry | 2503754/1       | Rig Name | H&P 522           | Date       | 21/SEP/2018     |
| Submitted By   | Connor Matthews | Job Type | Production Casing | Bulk Plant | Grand Junction  |
| Customer       | Laramie Energy  | Location | Garfield          | Well       | BCU 0993-21-06W |

### Well Information

|                   |          |           |         |      |               |
|-------------------|----------|-----------|---------|------|---------------|
| Casing/Liner Size | 4.5 in   | Depth MD  | 7702 ft | BHST | 103°C / 218°F |
| Hole Size         | 7.875 in | Depth TVD | 7693 ft | BHCT | 63°C / 146°F  |
| Pressure          | 4685 psi |           |         |      |               |

### Drilling Fluid Information

|                   |        |                |            |         |             |
|-------------------|--------|----------------|------------|---------|-------------|
| Mud Supplier Name | Baroid | Mud Trade Name | BARADRIL-N | Density | 9.9 lbm/gal |
|-------------------|--------|----------------|------------|---------|-------------|

### Cement Information - Tail Design



| <u>Conc</u> | <u>UOM</u> | <u>Cement/Additive</u> | <u>Sample Type</u> | <u>Sample Date</u> | <u>Lot No.</u> | <u>Cement Properties</u> |                     |
|-------------|------------|------------------------|--------------------|--------------------|----------------|--------------------------|---------------------|
|             |            | ThermaCem              |                    |                    |                | Slurry Density           | 13.3 lbm/gal        |
|             |            |                        |                    |                    |                | Slurry Yield             | 1.737 ft3/sack      |
|             |            |                        |                    |                    |                | Water Requirement        | 7.785 gal/sack      |
|             |            |                        |                    |                    |                | Total Mix Fluid          | 7.785 gal/sack      |
|             |            |                        |                    |                    |                | Water Source             | Field (Fresh) Water |
|             |            |                        |                    |                    |                | Water Chloride           |                     |

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# Operation Test Results Request ID 2503754/1

## Thickening Time - ON-OFF-ON

24/SEP/2018

| Test Temp (degF) | Pressure (psi) | Reached in (min) | 30 Bc (hh:mm) | 50 Bc (hh:mm) | 70 Bc (hh:mm) | 100 Bc (hh:mm) | Start Bc | Stirring before stop (mins) | Static Period (min) | Peak reading (BC) |
|------------------|----------------|------------------|---------------|---------------|---------------|----------------|----------|-----------------------------|---------------------|-------------------|
| 146              | 4685           | 40               | 3:35          | 3:47          | 4:05          | 4:23           | 16       | 50                          | 15                  | 16                |

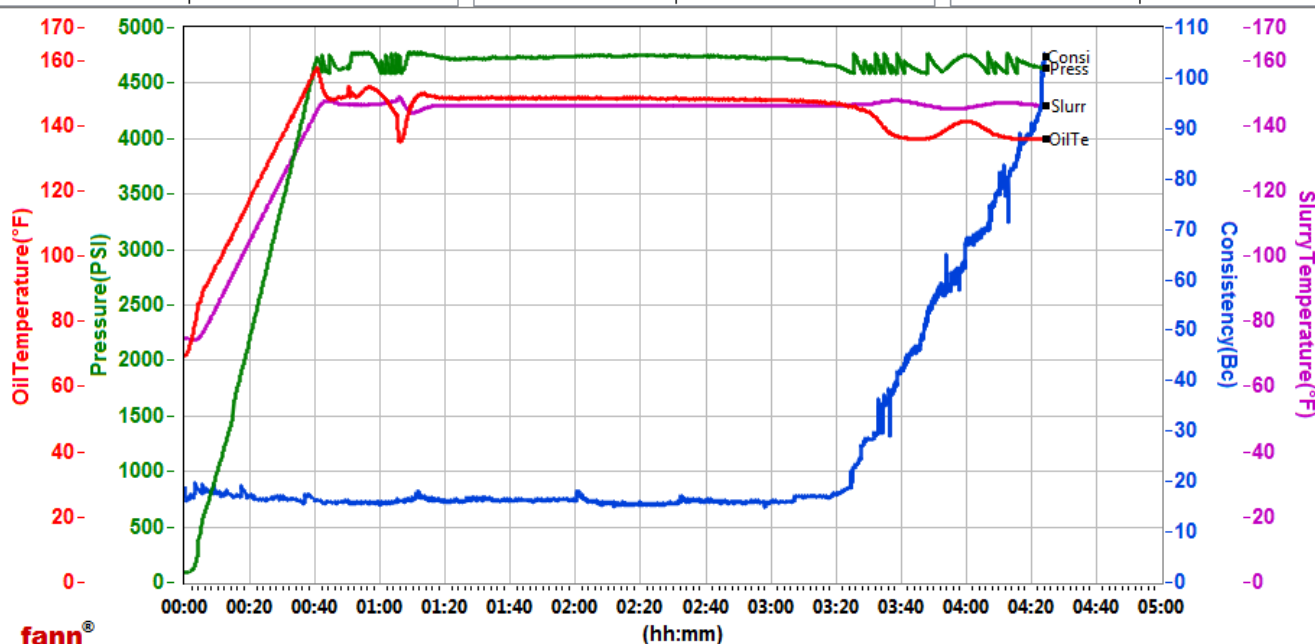
Total sks = 350

CS2132 TR#8678 350 SKS

no deflection, 16Bc--- > 16Bc

## GRAND JUNCTION

| Fields       | Values         | Fields            | Values                 | Events | Results |
|--------------|----------------|-------------------|------------------------|--------|---------|
| Project Name | TempTest       | Rig               | H&P 318                |        |         |
| SW Version   | 1.0            | Casing/Liner Size | 4.5INCH                |        |         |
| Test ID      | 35826330 - TT  | Job Type          | PRODUCTION CASING      |        |         |
| Request ID   | 2503754-1      | Cement Weight     | MOUNTAIN G             |        |         |
| Tested by    | DEBA           | Comments          | Standard               |        |         |
| Customer     | LARAMIE ENERGY | Date Time         | 9/24/2018 10:17:11.876 |        |         |
| Well No      | NR 23-3        | Temp. Units       | degF                   |        |         |



Data File C:\Users\hx25273\Desktop\new Graph M290\GJ2503754-1 LARAMIE BULK PRODUCTION TAIL.tdms

Comments Standard

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