

# HALLIBURTON

iCem<sup>®</sup> Service

## **LARAMIE ENERGY LLC**

Date: Tuesday, March 27, 2018

## **GUNDERSON 994-13-10W**

API # 05-77-10546-00

Laramie Gunderson 994-13-10W Surface

Job Date: Friday, March 09, 2018

Sincerely,

**Grand Junction Cement Engineering**

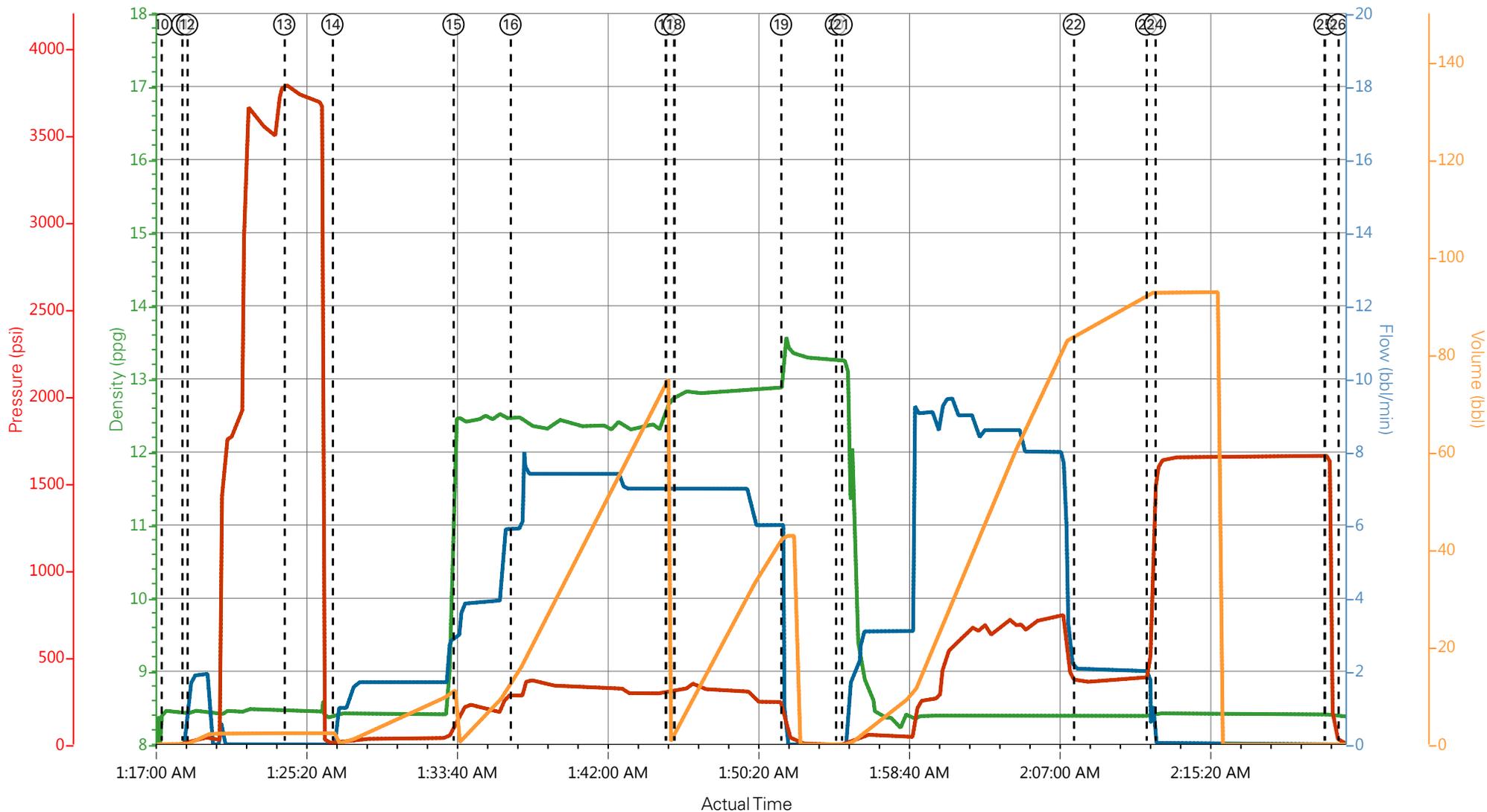
## 1.0 Real-Time Job Summary

### 1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	PS Pump Press <i>(psi)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	3/8/2018	19:00:00	USER					ON LOCATION REQUESTED 1:30
Event	2	Pre-Convoy Safety Meeting	3/8/2018	22:00:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	3/8/2018	22:10:00	USER					
Event	4	Arrive at Rig	3/8/2018	23:20:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	3/8/2018	23:45:00	USER					MET WITH COMPANY REP SDS OFFERED
Event	6	Pre-Rig Up Safety Meeting	3/9/2018	00:00:01	USER					ALL HES PRESENT
Event	7	Rig-Up Completed	3/9/2018	00:35:00	USER					1-ELITE,1-660 BULK TRAILER, 8.625" QL, 2" PUMP IRON, 4" SUCTION HOSE
Event	8	Pre-Job Safety Meeting	3/9/2018	01:00:00	USER					ALL HES AND RIG CREW PRESENT
Event	9	Other	3/9/2018	01:01:00	USER					RIG CIRCULATED .5 HOUR. 440 GPM 270PSI. WATER:TEMP-48, PH-7,CL-0
Event	10	Start Job	3/9/2018	01:17:30	USER	8.37	0.00	-2.00	0.0	TD-1569, TP-1563.1' SET @ 15558.1', SJ-46.75', CSG-8.625" 28# J55, OH-11", MUD-9.2PPG
Event	11	Prime Pumps	3/9/2018	01:18:39	USER	8.38	2.00	40.00	3.00	FRESH WATER
Event	12	Drop Bottom Plug	3/9/2018	01:18:55	USER	8.45	1.60	21.00	0.2	PLUG AWAY
Event	13	Test Lines	3/9/2018	01:24:17	COM5	8.46	0.00	3788.00	3.3	PRESSURE HELD ON LINES
Event	14	Pump Spacer 1	3/9/2018	01:26:57	COM5	8.39	3.00	119.00	11.0	FRESH WATER

Event	15	Pump Lead Cement	3/9/2018	01:33:39	COM5	12.30	7.50	370.00	76.7	VARICEM LEAD 175SKS, 12.3PPG, 2.46CF/K, 14.17GL/SK
Event	16	Check weight	3/9/2018	01:36:48	COM5					WEIGHT VERIFIED BY PRESSURIZED MUD SCALES
Event	17	Pump Tail Cement	3/9/2018	01:45:23	COM5	12.80	7.00	330.00	42.3	VARICEM TAIL 109SKS, 12.8PPG, 2.18CF/SK, 12.11GL/SK
Event	18	Check weight	3/9/2018	01:45:50	COM5					WEIGHT VERIFIED BY PRESSURIZED MUD SCALES
Event	19	Shutdown	3/9/2018	01:51:46	USER					WASHED UP ON TOP OF PLUG
Event	20	Drop Top Plug	3/9/2018	01:54:48	USER					PLUG AWAY
Event	21	Pump Displacement	3/9/2018	01:55:07	COM5	8.39	9.00	782.00	94.6	FRESH WATER
Event	22	Slow Rate	3/9/2018	02:07:58	USER	8.39	2.10	363.00	84.3	SLOW RATE LAST 10 BBLS
Event	23	Bump Plug	3/9/2018	02:11:58	COM5	8.39	2.00	380.00	94.6	PLUG BUMPED 380 PSI
Event	24	Casing Test	3/9/2018	02:12:27	COM5	8.43	0.00	1593.00	94.6	10 MINUTE 1600PSI CASING TEST
Event	25	Check Floats	3/9/2018	02:21:50	USER	8.41	0.00	1659.00	0.0	FLOATS HELD .5 BBLS BACK
Event	26	End Job	3/9/2018	02:22:34	COM5					GOOD RETURNS THROUGH OUT JOB, 34 BBLS CEMENT TO SURFACE
Event	27	Post-Job Safety Meeting (Pre Rig-Down)	3/9/2018	02:32:00	USER					ALL HES PRESENT
Event	28	Rig-Down Completed	3/9/2018	03:00:00	USER					
Event	29	Pre-Convoy Safety Meeting	3/9/2018	03:15:00	USER					ALL HES PRESENT
Event	30	Crew Leave Location	3/9/2018	03:30:00	USER					THANK YOU FOR CHOOSING HALLIBURTON, ANDREW BRENNECKE AND CREW

# LARAMIE - GUNDERSON 994-13-10W - 8.625" SURFACE



DH Density (ppg) 8.39    Comb Pump Rate (bbl/min) 0    PS Pump Press (psi) -1    Pump Stg Tot (bbl) 0

- |   |                             |                    |                    |                      |   |
|---|-----------------------------|--------------------|--------------------|----------------------|---|
| ① Call Out                              | ⑥ Pre-Rig Up Safety Meeting | ⑪ Prime Pumps      | ⑯ Check weight     | 21 Pump Displacement | 26 End Job                                |
| ② Pre-Convoy Safety Meeting             | ⑦ Rig-Up Completed          | ⑫ Drop Bottom Plug | ⑰ Pump Tail Cement | 22 Slow Rate         | 27 Post-Job Safety Meeting (Pre Rig-Down) |
| ③ Crew Leave Yard                       | ⑧ Pre-Job Safety Meeting    | ⑬ Test Lines       | ⑱ Check weight     | 23 Bump Plug         | 28 Rig-Down Completed                     |
| ④ Arrive at Rig                         | ⑨ Other                     | ⑭ Pump Spacer 1    | ⑲ Shutdown         | 24 Casing Test       | 29 Pre-Convoy Safety Meeting              |
| ⑤ Assessment Of Location Safety Meeting | ⑩ Start Job                 | ⑮ Pump Lead Cement | 20 Drop Top Plug   | 25 Check Floats      | 30 Crew Leave Location                    |

▼ **HALLIBURTON** | iCem® Service

Created: 2018-03-08 21:02:57, Version: 4.2.393

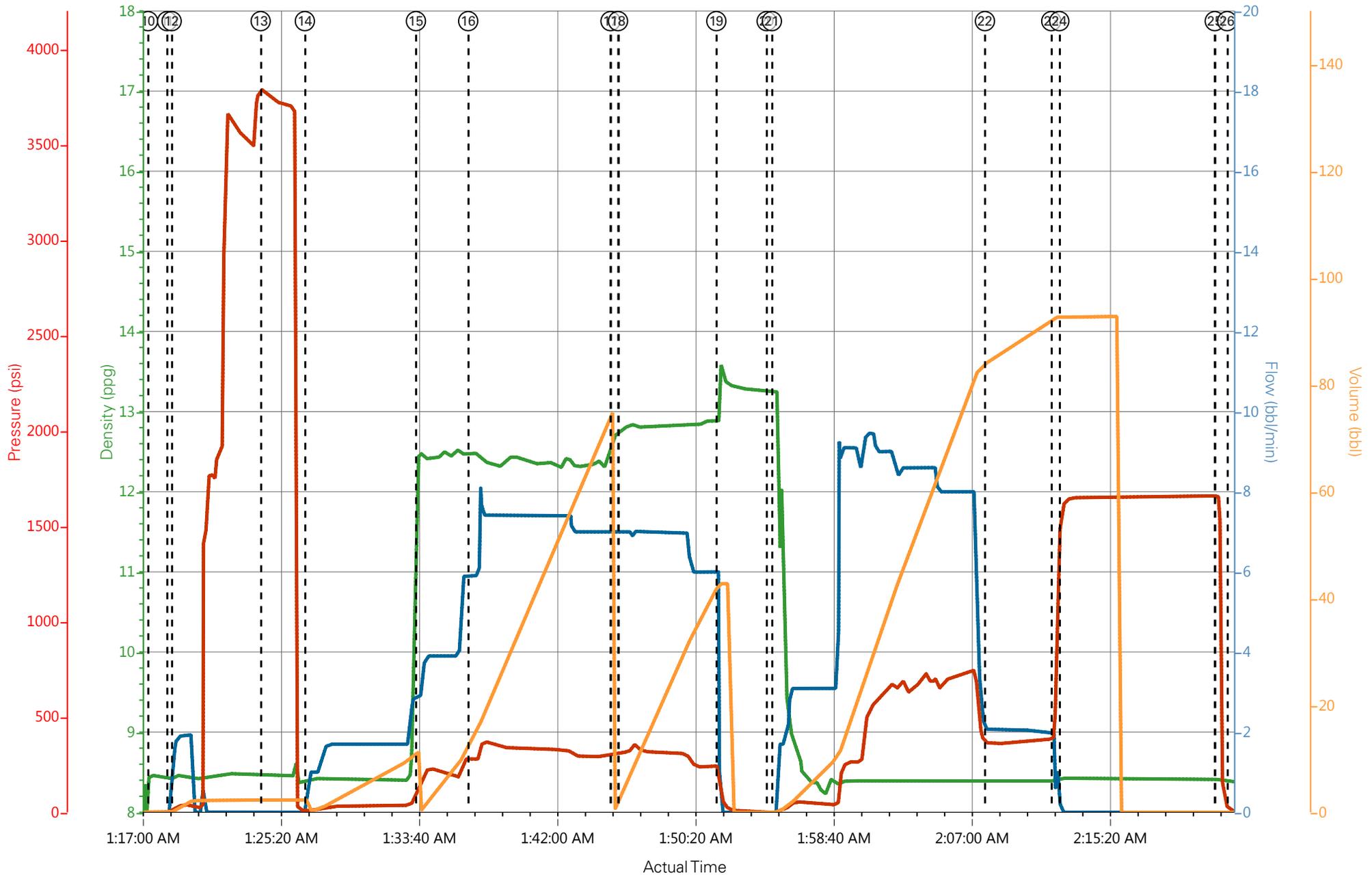
[Edit](#)

Customer : LARAMIE ENERGY II LLC  
 Representative : TYLER HALE

Job Date : 3/9/2018 12:24:29 AM  
 Sales Order # : 904693392

Well : GUNDERSON 994-13-10W  
 ELITE #1 : D.BRENNECKE

# LARAMIE - GUNDERSON 994-13-10W - 8.625" SURFACE



DH Density (ppg) 8.39    Comb Pump Rate (bbl/min) 0    PS Pump Press (psi) -1    Pump Stg Tot (bbl) 0

# HALLIBURTON

iCem<sup>®</sup> Service

## **LARAMIE ENERGY LLC-EBUS**

**For: Aaron Duncan**

Date: Monday, March 12, 2018

## **Gunderson 994-13-10W Production PJR**

API# 05-077-10546-00

Sincerely,

**Grand Junction Cement Engineering**

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	3/11/2018	18:00:00	USER					ON LOCATION REQUESTED 00:00 3/12/18
Event	2	Pre-Convoy Safety Meeting	3/11/2018	20:45:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	3/11/2018	21:00:00	USER					
Event	4	Arrive at Location from Service Center	3/11/2018	22:45:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	3/11/2018	23:00:00	USER					SDS OFFERED
Event	6	Pre-Rig Up Safety Meeting	3/11/2018	23:10:00	USER					ALL HES PRESENT
Event	7	Rig-Up Completed	3/12/2018	00:30:00	USER					1-ELITE, 1-660 BULK TRAILER, 2- FIELD SILO, 4.5" QL, 2" PUMP IRON, 4" SUCTION HOSE
Event	8	Pre-Job Safety Meeting	3/12/2018	01:30:00	USER					ALL HES AND RIG CREW PRESENT
Event	9	Other	3/12/2018	01:45:00	USER					RIG CIRCULATED 1.5 SURFACE TO SURFACE 420GPM 715PSI. WATER:TEMP-60,PH-7, CL-0
Event	10	Start Job	3/12/2018	02:14:00	USER	8.40	0.00	5.00	0.0	TD-7767', TP-7762', SJ-82.38', CSG-4.5" 11.6# P110, SCSG-8.625" 28# SET AT 1558', OH-7.875", MUD-9.5PPG
Event	11	Prime Pumps	3/12/2018	02:14:34	USER	8.43	1.80	149.00	3.0	FRESH WATER
Event	12	Drop Bottom Plug	3/12/2018	02:14:53	USER					PLUG AWAY

Event	13	Test Lines	3/12/2018	02:20:46	COM5	8.39	0.00	5174.00	3.0	ALL PRESSURE HELD ON LINES
Event	14	Pump Water	3/12/2018	02:23:22	USER	8.30	1.30	131.00	4.0	WATER AHEAD TO ESTABLISH RETURNS
Event	15	Pump Tuned Spacer	3/12/2018	02:27:58	COM5	11.00	4.00	208.00	40.0	TUNED SPACER III, 11.0PPG, 4.86CF/SK, 31.9CF/SK
Event	16	Pump Lead Cement	3/12/2018	02:38:41	COM5	12.50	8.00	554.00	269.2	NEOCEM LEAD 779SKS, 12.5PPG, 1.94CF/SK, 9.6GL/SK
Event	17	Check weight	3/12/2018	02:43:12	COM5					WEIGHT VERIFIED BY PRESSURIZED MUD SCALES
Event	18	Pump Tail Cement	3/12/2018	03:17:19	COM5	13.30	8.00	545.00	122.0	THERMACEM TAIL 396SKS, 13.3PPG, 1.73CF/SK, 7.81GL/SK
Event	19	Check weight	3/12/2018	03:27:02	COM5					WEIGHT VERIFIED BY PRESSURIZED MUD SCALES
Event	20	Shutdown	3/12/2018	03:40:00	USER					END OF CEMENT
Event	21	Clean Lines	3/12/2018	03:42:00	USER					CLEANED PUMPS AND LINES TO CELLAR
Event	22	Pump Displacement	3/12/2018	03:48:56	COM5	8.36	10.00	2350.00	119.0	FRESH WATER. 5 GAL CLA-WEB, 1 GAL MMCR ADDED, AND 5 GAL BIOCIDES ADDED (PROVIDED BY RIG).
Event	23	Drop Top Plug	3/12/2018	03:49:03	COM5					PLUG AWAY
Event	24	Slow Rate	3/12/2018	04:02:50	USER	8.32	4.00	2036.00	109.0	SLOW RATE LAST 10 BBLS
Event	25	Bump Plug	3/12/2018	04:05:09	COM5	8.32	4.00	2160.00	119.0	PLUG BUMPED 2160PSI
Event	26	Casing Test	3/12/2018	04:05:32	COM5	8.33	0.00	3000.00	119.0	10 MINUTE CASING TEST
Event	27	Check Floats	3/12/2018	04:14:39	USER	8.31	0.00	3365.00	0.0	FLOATS HELD 1.5 BBLS BACK
Event	28	End Job	3/12/2018	04:16:05	COM5					GOOD RETURNS THROUGH OUT JOB, 30 BBLS TUNED SPACER TO SURFACE
Event	29	Post-Job Safety Meeting (Pre Rig-Down)	3/12/2018	04:18:13	USER					ALL HES PRESENT
Event	30	Rig-Down Completed	3/12/2018	05:20:00	USER					
Event	31	Pre-Convoy Safety	3/12/2018	05:45:00	USER					ALL HES PRESENT

Meeting

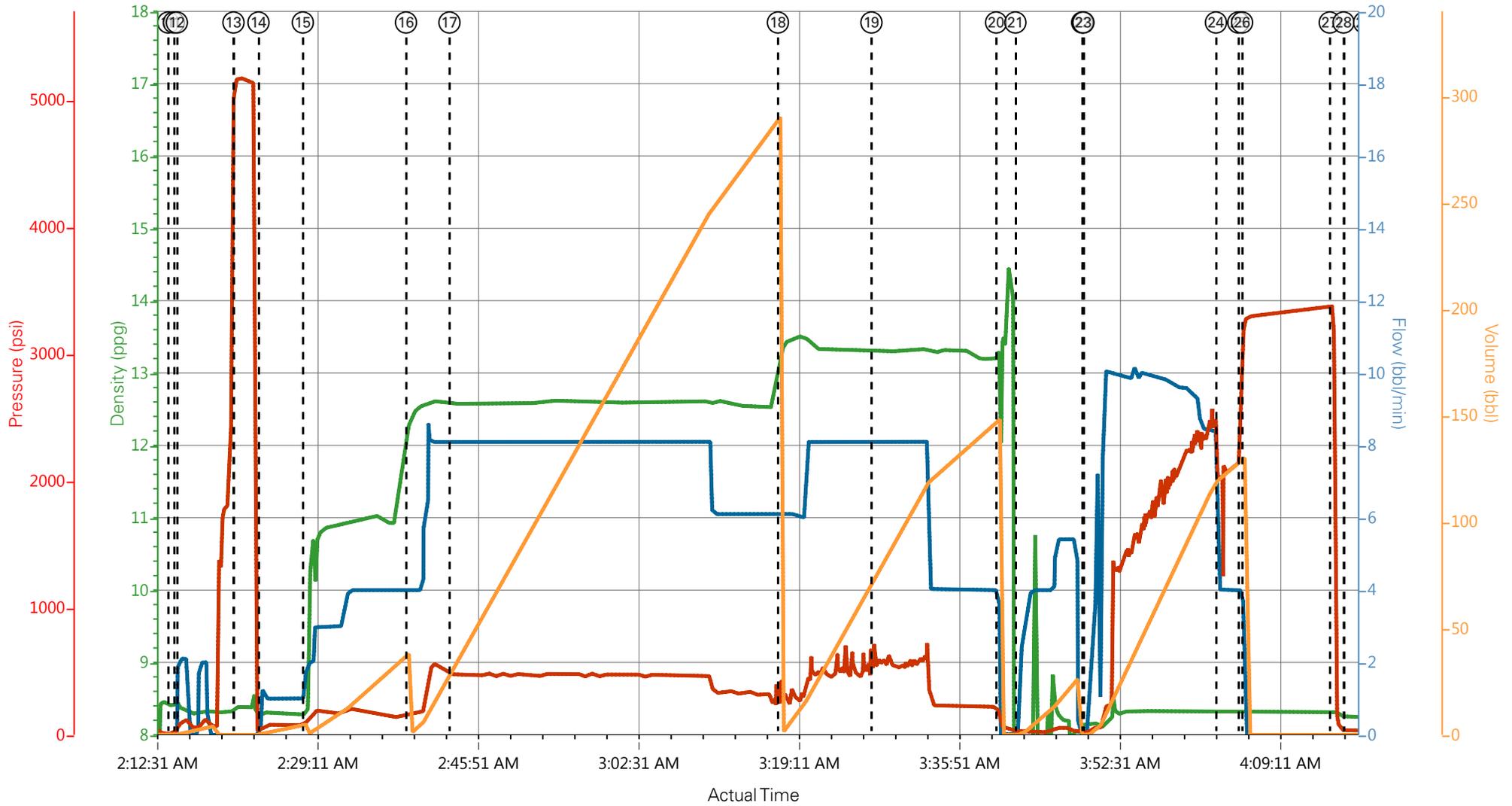
---

Event 32 Crew Leave Location 3/12/2018 06:00:00 USER

---

THANK YOU FOR CHOOSING HALLIBURTON,  
ANDREW BRENNECKE AND CREW

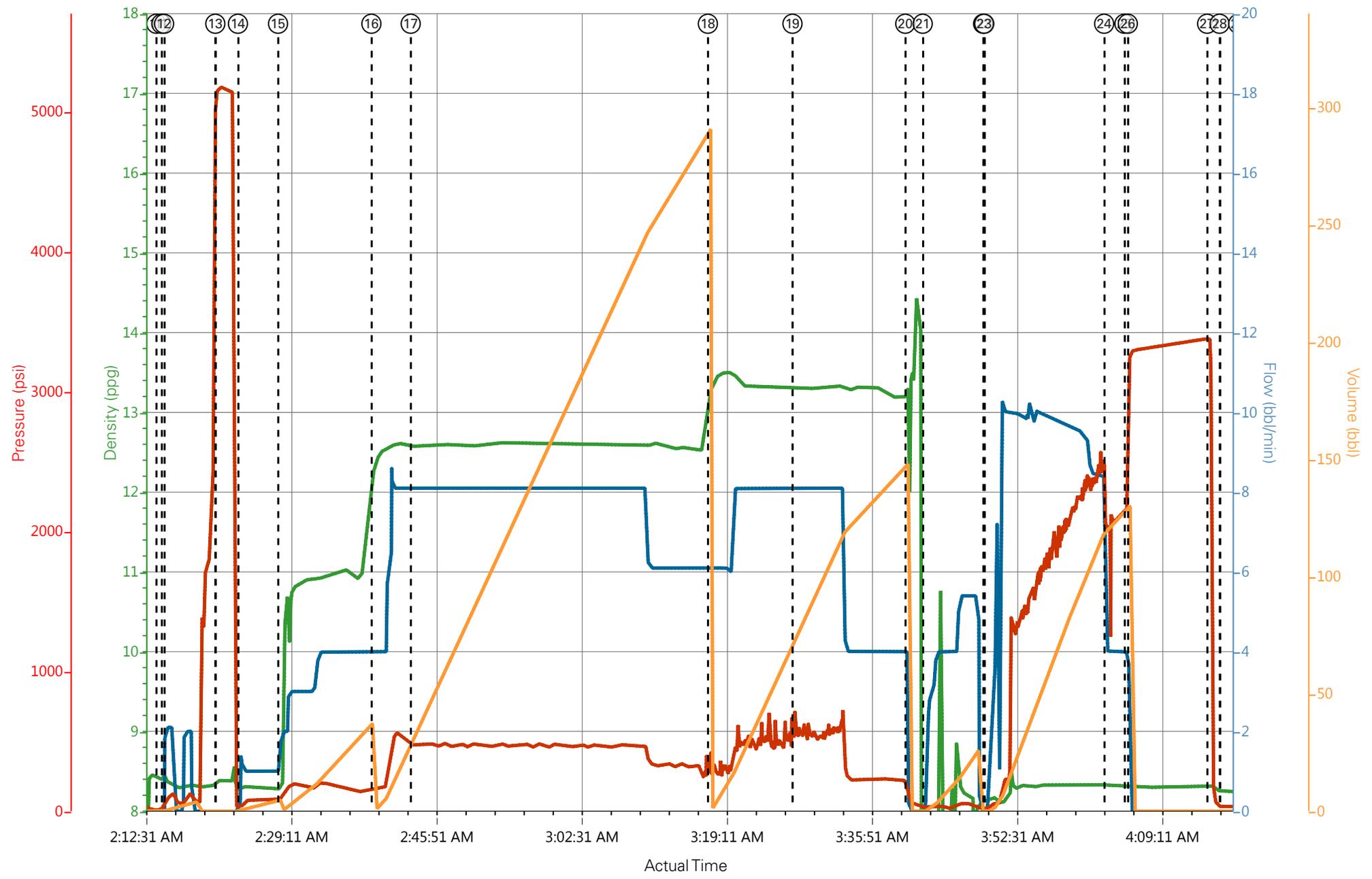
# LARAMIE - GUNDERSON 994-13-10W - 4.5" PRODUCTION



DH Density (ppg) 8.24    Comb Pump Rate (bbl/min) 0    PS Pump Press (psi) 31    Pump Stg Tot (bbl) 0

- |  |   |                    |                     |                    |                      |                 |   |
|--|---|--------------------|---------------------|--------------------|----------------------|-----------------|---|
| ① Call Out                               | ⑤ Assessment Of Location Safety Meeting | ⑨ Other            | ⑬ Test Lines        | ⑰ Check weight     | 21 Clean Lines       | 25 Bump Plug    | 2 |
| ② Pre-Convoy Safety Meeting              | ⑥ Pre-Rig Up Safety Meeting             | ⑩ Start Job        | ⑭ Pump Water        | ⑱ Pump Tail Cement | 22 Pump Displacement | 26 Casing Test  | 3 |
| ③ Crew Leave Yard                        | ⑦ Rig-Up Completed                      | ⑪ Prime Pumps      | ⑮ Pump Tuned Spacer | ⑲ Check weight     | 23 Drop Top Plug     | 27 Check Floats | 3 |
| ④ Arrive at Location from Service Center | ⑧ Pre-Job Safety Meeting                | ⑫ Drop Bottom Plug | ⑯ Pump Lead Cement  | 20 Shutdown        | 24 Slow Rate         | 28 End Job      | 3 |

# LARAMIE - GUNDERSON 994-13-10W - 4.5" PRODUCTION



— DH Density (ppg) 8.24    
 — Comb Pump Rate (bbl/min) 0    
 — PS Pump Press (psi) 31    
 — Pump Stg Tot (bbl) 0

### Job Information

<b>Request/Slurry</b>	2459388/1	<b>Rig Name</b>	H&P 522	<b>Date</b>	MAR/09/2018
<b>Submitted By</b>	Patrick Ealey	<b>Job Type</b>	Production Casing	<b>Bulk Plant</b>	Grand Junction
<b>Customer</b>	Laramie Energy	<b>Location</b>	Garfield	<b>Well</b>	Gunderson 994-13-10W

### Well Information

<b>Casing/Liner Size</b>	4.5 in	<b>Depth MD</b>	7786 ft	<b>BHST</b>	113°C / 236°F
<b>Hole Size</b>	7.875 in	<b>Depth TVD</b>	7602 ft	<b>BHCT</b>	76°C / 169°F
<b>Pressure</b>	4621 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>	<u>Cement Properties</u>		
		NeoCem™ Lead				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.941	ft3/sack
						Water Requirement	9.623	gal/sack

### Operation Test Results Request ID 2459388/1

**Mixability (0 - 5) - 0 is not mixable, Request Test ID:35320061** **MAR/09/2018**

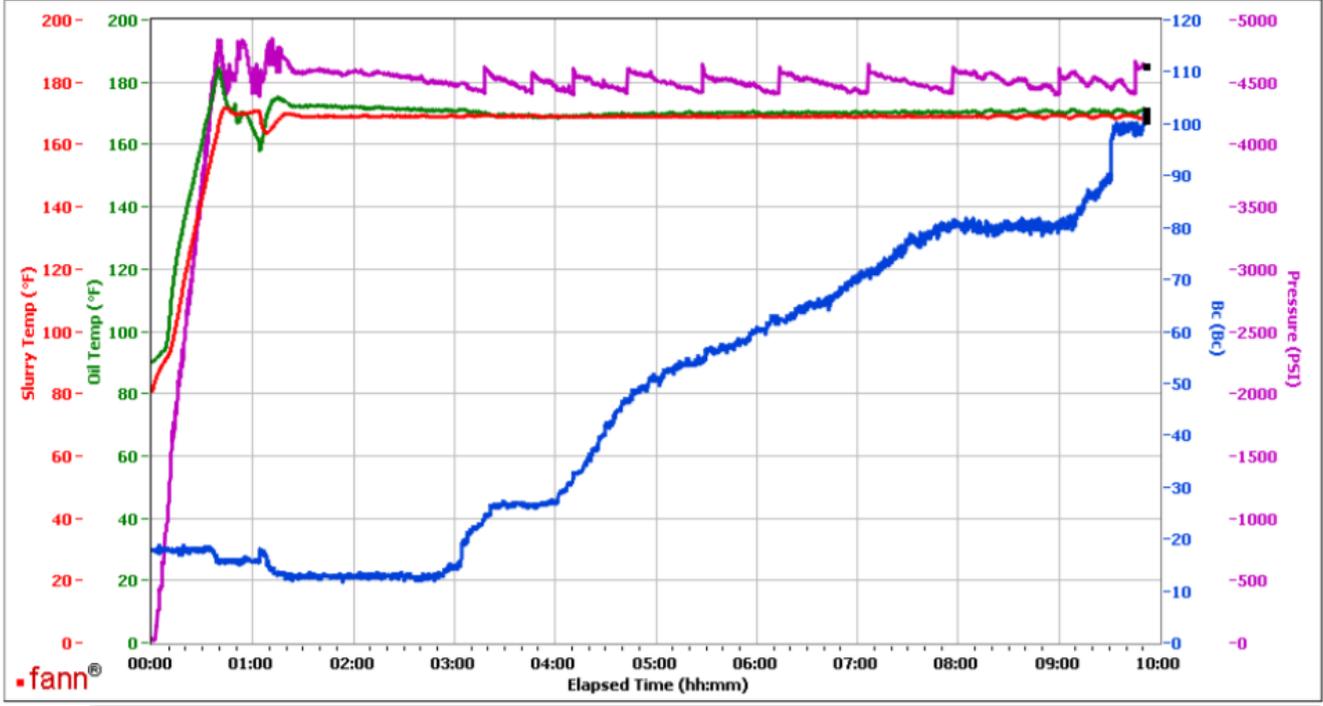
<b>Mixability rating (0 - 5)</b>	<b>Avg rpm mixing under load (~12,000)</b>	<b>Blend addition time (sec) @ 4,000 RPM</b>
5	12000	0

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

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)
169	4621	39	4:07	4:55	6:56	9:34	18	49	15	18

Grand Junction, Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	2459388-1 LARAMIE BULK PRODUCTION LE	Job Type	H&P 522	30.00 Bc	04h:07m
Test ID	35322391 - TT	Cement Type	HOLCIM TYPE I-II	40.00 Bc	04h:28m
Request ID	2459388-1	Cement Weight	Standard	50.00 Bc	04h:55m
Tested by	CT	Test Date	03/10/18	70.00 Bc	06h:56m
Customer	LARAMIE ENERGY	Test Time	11:05 PM	100.00 Bc	09h:34m
Well No	GUNDERSON 994-13-10W	Temp. Units	degF	00h:30m	18.28
Rig	H&P 522	Pressure Units	PSI	01h:00m	15.63
Casing/Liner Size	4.5 INCH	SW Version	2.1.0.507	01h:30m	12.74



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\4TJ389YN\GJ2459388-1 LARAMIE BULK PRODUCTION LEAD CONFIRMATION[1].tdms  
 Comments CS0599, TRAILER 8658, 389.5 SKS - CS0600, TRAILER 8677, 389.5 SKS

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

# HALLIBURTON

Rockies, Grand Junction

Lab Results- Tail

## Job Information

Request/Slurry	2459389/1	Rig Name	H&P 522	Date	MAR/09/2018
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Gunderson 994-13-10W

## Well Information

Casing/Liner Size	4.5 in	Depth MD	7786 ft	BHST	113°C / 236°F
Hole Size	7.875 in	Depth TVD	7602 ft	BHCT	76°C / 169°F
Pressure	4621 psi				

## Drilling Fluid Information

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

## Cement Information - Tail Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
		ThermaCem Tail				Slurry Density	13.3	lbm/gal
						Slurry Yield	1.733	ft <sup>3</sup> /sack
						Water Requirement	7.799	gal/sack

## Operation Test Results Request ID 2459389/1

Mixability (0 - 5) - 0 is not mixable, Request Test ID:35320063

MAR/10/2018

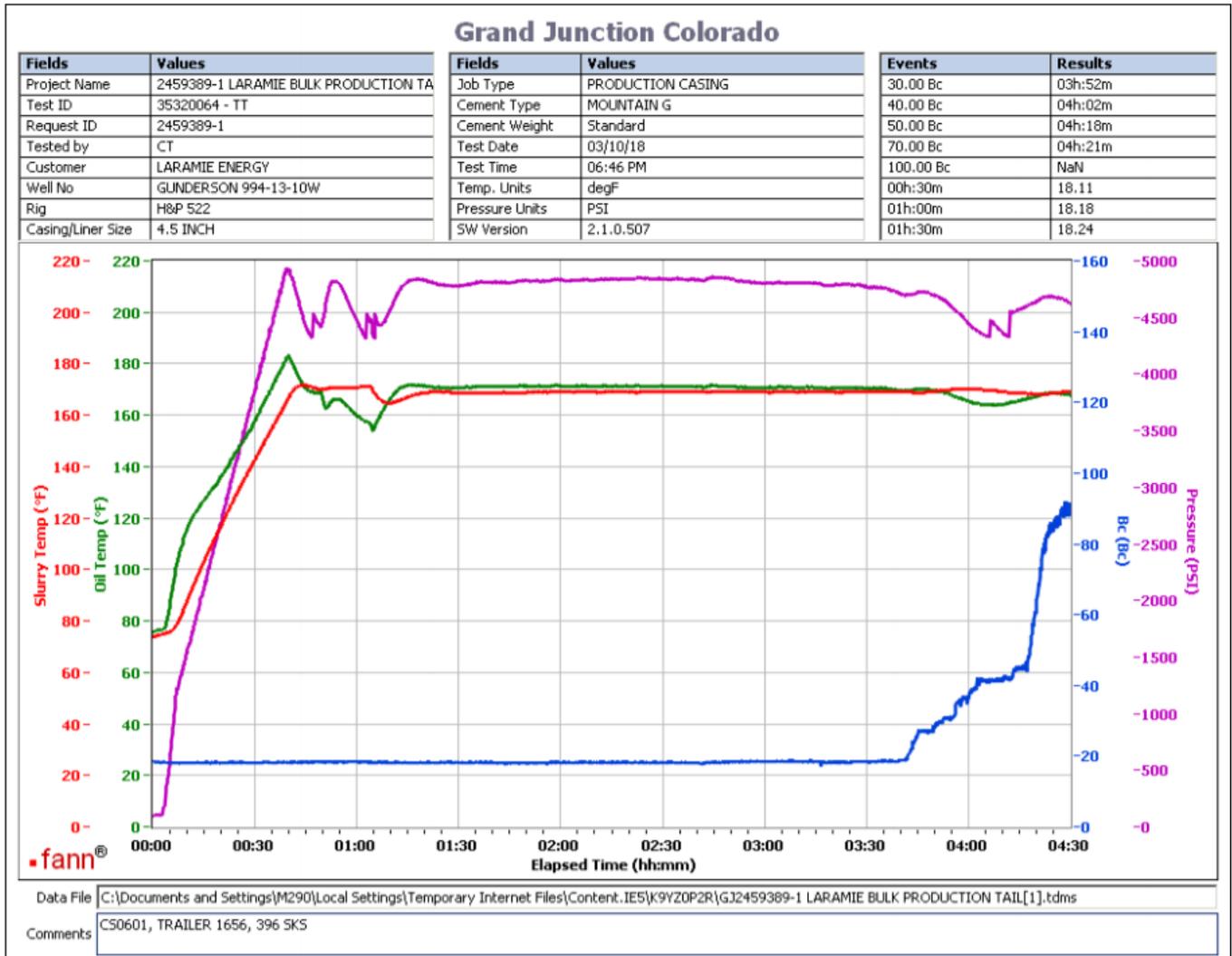
Mixability rating (0 - 5)	Avg rpm mixing under load (~12,000)	Blend addition time (sec) @ 4,000 RPM
5	12000	0

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

**Thickening Time - ON-OFF-ON, Request Test ID:35320064**

**MAR/10/2018**

Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:min)	50 Bc (hh:min)	70 Bc (hh:min)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)	Termination time (hh:min)	Termination Bc
169	4621	39	3:52	4:18	4:21	19	49	15	18	4:54	83



This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.