

# HALLIBURTON

iCem<sup>®</sup> Service

## **LARAMIE ENERGY LLC**

**For: Laramie Energy**

Date: Friday, April 28, 2017

**Piceance Federal 29-20E Surface PJR**

API/UWI #: 05-077-09989-00

Sincerely,

**Grand Junction Cement Engineering**

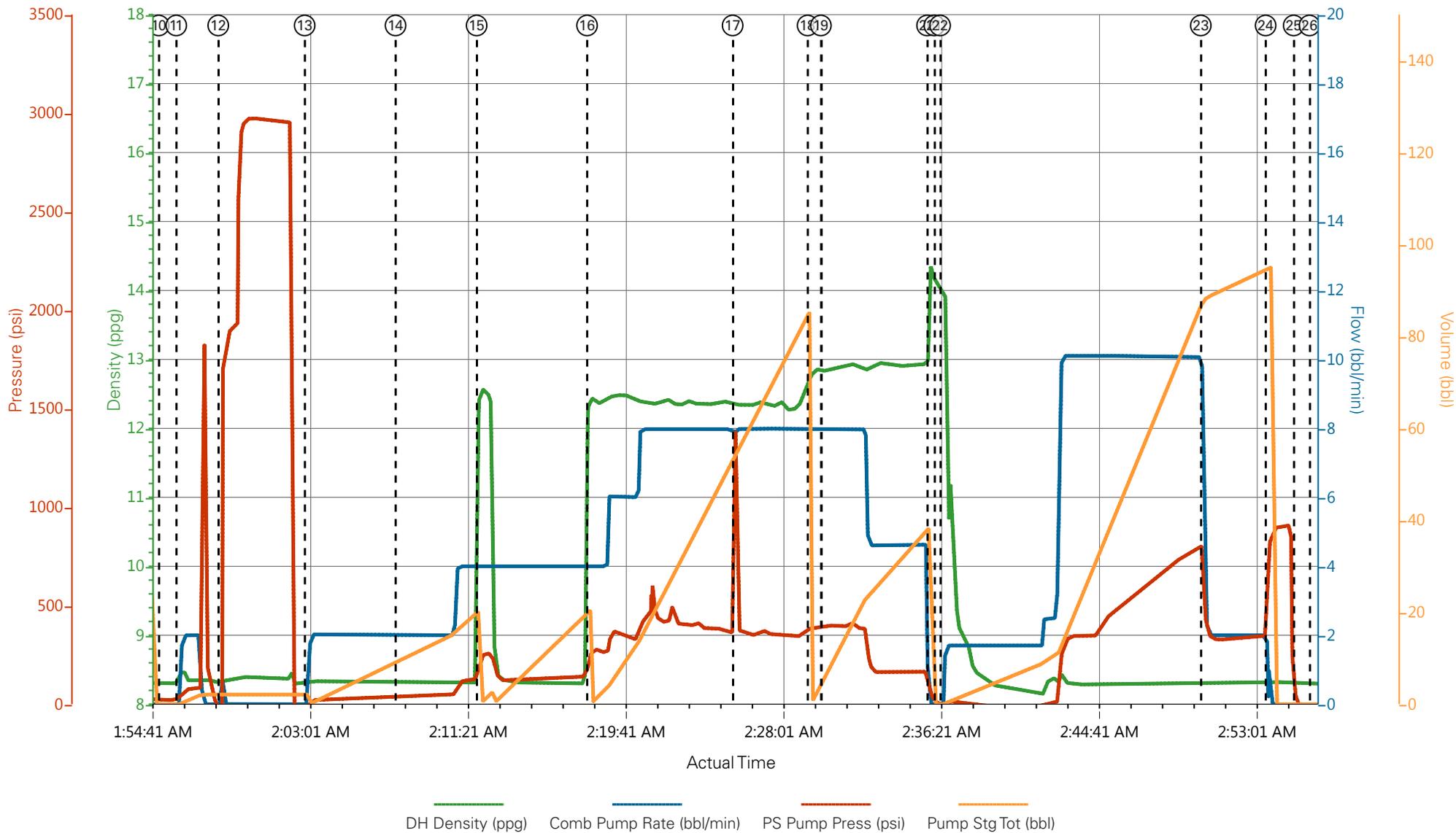
## 1.0 Real-Time Job Summary

### 1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	4/27/2017	17:00:00	USER					Requested on Location @ 23:00
Event	2	Pre-Convoy Safety Meeting	4/27/2017	18:45:00	USER					
Event	3	Crew Leave Yard	4/27/2017	19:00:00	USER					1 Elite, 1 660, 1 pickup
Event	4	Arrive at Location	4/27/2017	21:30:00	USER					
Event	5	Assessment Of Location Safety Meeting	4/27/2017	21:45:00	USER					JSA completed - Customer offered/received SDS - water test pH 7.5, Cl <200, temp 43 degrees
Event	6	Pre-Rig Up Safety Meeting	4/27/2017	21:55:00	USER					All HES personnel, Rig Crew, and Company Rep.
Event	7	Rig-Up Equipment	4/27/2017	22:00:00	USER					1 hardline to standpipe, water hoses to upright and day tank, bulk hoses to 660.
Event	8	Other	4/28/2017	01:00:00	USER					Rig Circulated 1 hour prior to cement job at 10 bpm 250 psi. Mud report 8.8 ppg.
Event	9	Pre-Job Safety Meeting	4/28/2017	01:30:00	USER					All HES personnel, Rig Crew, and Company Rep.
Event	10	Start Job	4/28/2017	01:55:10	USER					TD 1562', TP 1552', SJ 41', OH 11'', Csg. 8.625" 24 lb/ft J-55
Event	11	Fill Lines	4/28/2017	01:56:06	COM6	8.4	2	80	2	Fresh water
Event	12	Test Lines	4/28/2017	01:58:19	COM6	8.4	.5	2975	.5	Held pressure 2 minutes no leaks
Event	13	Pump H2O Spacer	4/28/2017	02:02:53	COM6	8.4	4	230	40	Fresh water, drop bottom plug ahead of spacer.

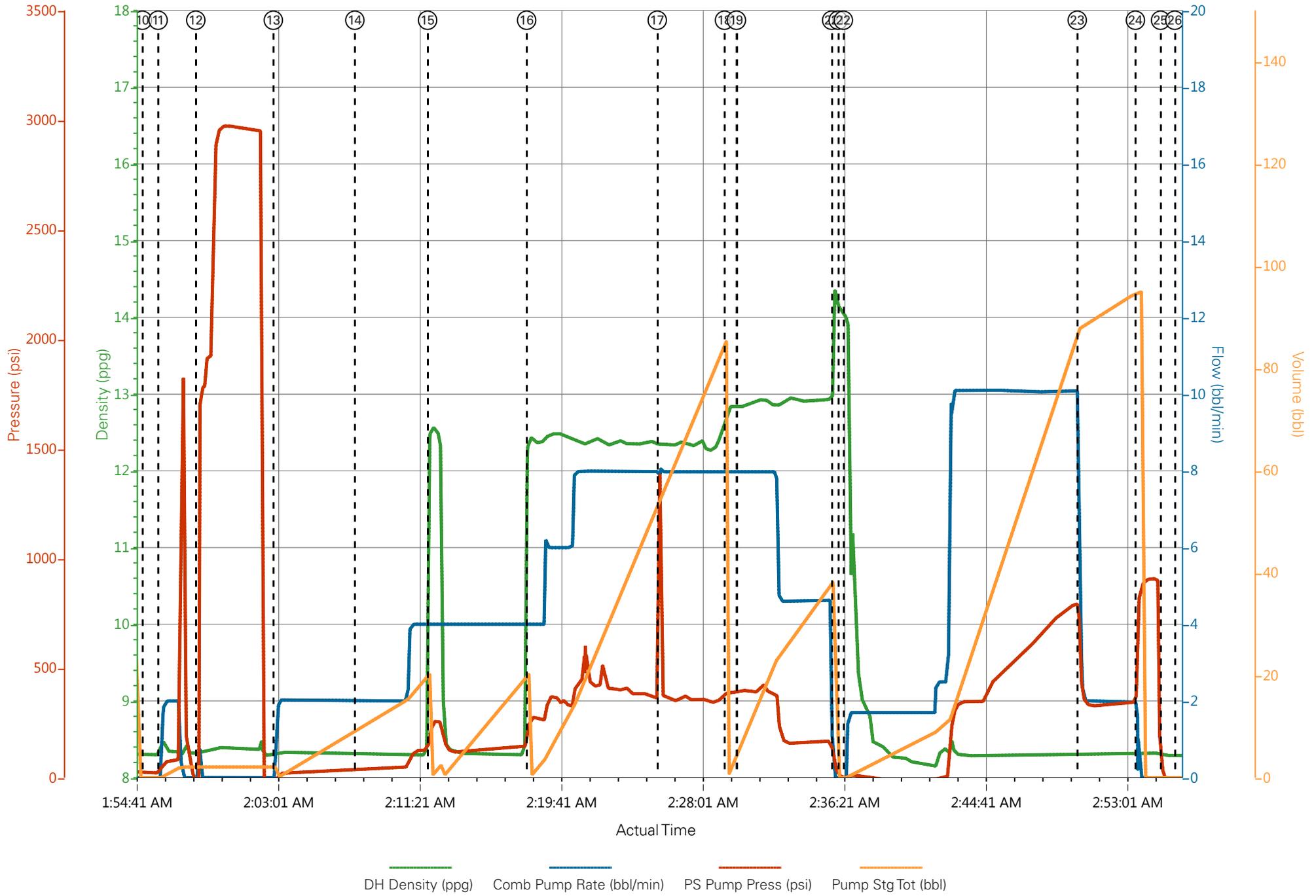
Event	14	Check weight	4/28/2017	02:07:41	COM6					Density verified via mud scales
Event	15	Pump Lead Cement	4/28/2017	02:11:58	COM6					Operator swapped to cement at 20 bbls on H2O spacer when we needed to pump 40.
Event	16	Pump Lead Cement	4/28/2017	02:17:48	COM6	12.3	8	500	86.3	197 Sks 12.3 ppg 2.46 yield 14.17 gal/sk
Event	17	Bump Bottom Plug	4/28/2017	02:25:29	USER					Plug burst at 1380 psi
Event	18	Pump Tail Cement	4/28/2017	02:29:27	COM6	12.8	8	385	42.3	109 Sks 12.8 ppg 2.18 yield 12.11 gal/sk
Event	19	Check weight	4/28/2017	02:30:09	COM6					Density verified via mud scales
Event	20	Shutdown	4/28/2017	02:35:46	USER					Wash up on top of plug
Event	21	Drop Plug	4/28/2017	02:36:09	USER					Verify plug launched
Event	22	Pump Displacement	4/28/2017	02:36:27	COM6	8.4	10	810	96	Fresh water
Event	23	Slow Rate	4/28/2017	02:50:13	USER	8.4	2	340	86	Slow Rate 10 bbls prior to Calculated Displacement
Event	24	Bump Plug	4/28/2017	02:53:39	USER	8.4	10	850	96	Plug Bumped at 380 psi, Brought up to 850 psi
Event	25	Check Floats	4/28/2017	02:55:08	USER			908		Floats held – ½ bbl back to the truck
Event	26	End Job	4/28/2017	02:55:58	USER					Good returns throughout job, pipe was not reciprocated during cement, 36 bbls of cement to surface.
Event	27	Pre-Rig Down Safety Meeting	4/28/2017	18:17:12	USER					20 lbs sugar, No add hours
Event	28	Rig-Down Equipment	4/28/2017	18:17:15	USER					
Event	29	Pre-Convoy Safety Meeting	4/28/2017	18:17:17	USER					
Event	30	Crew Leave Location	4/28/2017	18:17:49	USER					Thank you for using Halliburton – Ryan Muhlestein and crew.

# Laramie Energy - Piceance 29-20E - Surface Casing



- |   |                          |                    |                     |                               |
|---|--------------------------|--------------------|---------------------|-------------------------------|
| ① Call Out                              | ⑦ Rig-Up Equipment       | ⑬ Pump H2O Spacer  | ⑰ Check weight      | ⑲ Check Floats                |
| ② Pre-Convoy Safety Meeting             | ⑧ Other                  | ⑭ Check weight     | ⑱ Shutdown          | ⑳ End Job                     |
| ③ Crew Leave Yard                       | ⑨ Pre-Job Safety Meeting | ⑮ Pump Lead Cement | ⑳ Drop Plug         | ㉑ Pre-Rig Down Safety Meeting |
| ④ Arrive at Location                    | ⑩ Start Job              | ⑯ Pump Lead Cement | ㉒ Pump Displacement | ㉒ Rig-Down Equipment          |
| ⑤ Assessment Of Location Safety Meeting | ⑪ Fill Lines             | ⑰ Bump Bottom Plug | ㉓ Slow Rate         | ㉓ Pre-Convoy Safety Meeting   |
| ⑥ Pre-Rig Up Safety Meeting             | ⑫ Test Lines             | ⑱ Pump Tail Cement | ㉔ Bump Plug         | ㉔ Crew Leave Location         |

# Laramie Energy - Piceance 29-20E - Surface Casing



# HALLIBURTON

iCem<sup>®</sup> Service

## **LARAMIE ENERGYLLC**

**For: Laramie**

Date: Monday, May 01, 2017

**Piceance Fed 29-20E Production**

API/UWI #: 05-077-10363-00

Sincerely,

**Grand Junction Cement Engineering**

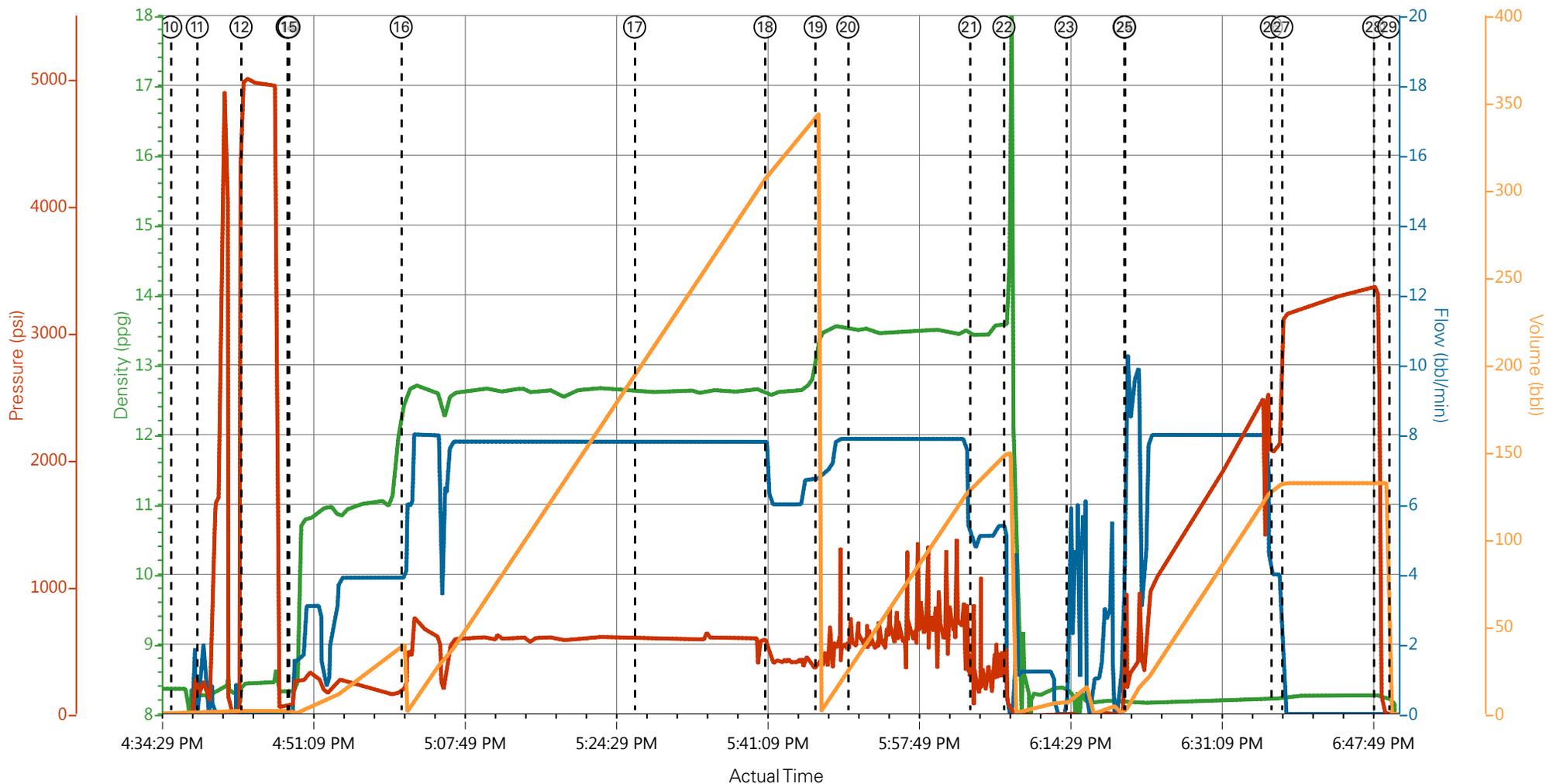
## 1.0 Real-Time Job Summary

### 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	5/1/2017	06:00:00	USER					Crew Requested on Location at 1200
Event	2	Pre-Convoy Safety Meeting	5/1/2017	09:00:00	USER					With All HES Personnel
Event	3	Crew Leave Yard	5/1/2017	09:15:00	USER					1 Elite, 1 660, 1 pickup
Event	4	Arrive At Loc	5/1/2017	11:00:00	USER					Rig Running Casing Upon HES Arrival
Event	5	Assessment Of Location Safety Meeting	5/1/2017	11:10:00	USER					JSA completed - Customer offered/received SDS - Water test pH 7.0, Cl <200, temp 52 degrees
Event	6	Spot Equipment	5/1/2017	11:20:00	USER					1 Elite, 1 660, 1 pickup
Event	7	Pre-Rig Up Safety Meeting	5/1/2017	12:00:00	USER					With All HES Personnel
Event	8	Rig-Up Equipment	5/1/2017	12:15:00	USER					Iron to ground manifold, standpipe, wash up to cellar. Water hoses to upright and day tank, bulk hoses to silos and 660.
Event	9	Pre-Job Safety Meeting	5/1/2017	16:20:00	USER					With All Personnel
Event	10	Start Job	5/1/2017	16:35:49	COM6					TD 8132', TP 8121.17', SJ 87.44', SFC CSG 8 5/8" 24 LB/FT Set @ 1552', CSG 4 1/2" 11.6 LB/FT I-80, OH 7 7/8", Mud 9.3 PPG 39 Visc,
Event	11	Prime Lines	5/1/2017	16:38:45	USER	8.4	2.0	270.0	2.0	Fresh Water
Event	12	Test Lines	5/1/2017	16:43:34	COM6			5070.0		Tested Lines to 5070 PSI, Pressure Holding
Event	13	Check weight	5/1/2017	16:48:38	COM6					Density verified via mud cup
Event	14	Drop Bottom Plug	5/1/2017	16:48:40	USER					Verify Plug Launched
Event	15	Pump Tuned Spacer	5/1/2017	16:48:50	COM6	11.0	4.0	200.0	40.0	Tuned Spacer III @ 11 ppg, drop bottom plug ahead of spacer

Event	16	Pump Lead Cement	5/1/2017	17:01:11	COM6	12.5	8.0	600.0	309.6	896 sks 12.5 ppg 1.94 yield 9.6 gal/sk
Event	17	Check weight	5/1/2017	17:26:53	COM6					Density verified via mud cup
Event	18	Slow Rate	5/1/2017	17:41:14	USER	12.5	6.0	513.00	280.0	Slowed Rate to Finish Lead Cement
Event	19	Pump Tail Cement	5/1/2017	17:46:46	COM6	13.3	8.0	700.0	126.3	410 Sks 13.3 ppg 1.73 yield 7.81 gal/sk
Event	20	Check weight	5/1/2017	17:50:21	COM6					Density verified via mud cup
Event	21	Slow Rate	5/1/2017	18:03:46	USER	13.3	5.0	265.00	110.0	Slowed Rate to Finish Tail Cement
Event	22	Shutdown	5/1/2017	18:07:32	USER					
Event	23	Clean Lines	5/1/2017	18:14:22	USER					Cleaned Pumps and Lines to Cellar
Event	24	Pump Displacement	5/1/2017	18:20:46	COM6	8.4	8.0	2502.0	124.5	Fresh Water with 1 gal MMCR, 5 gals Clay-Web II
Event	25	Drop Top Plug	5/1/2017	18:20:50	USER					Verify Plug Launched
Event	26	Slow Rate	5/1/2017	18:36:59	USER	8.4	4.00	2073.00	114.0	Slow Rate 10 bbls prior to Calculated Displacement
Event	27	Bump Plug	5/1/2017	18:38:07	COM6					Plug Bumped at 2502 psi, Brought up to 3365 psi
Event	28	Check Floats	5/1/2017	18:48:15	USER				3365.0	Floats Holding Returned 1 BBL to Pump
Event	29	End Job	5/1/2017	18:49:54	COM6					Good Returns Throughout job, Pipe was Static During Job. 35 BBLS Tuned Spacer to surface. 40 Lbs Sugar Used, No Add Hours.
Event	30	Pre-Rig Down Safety Meeting	5/1/2017	19:00:00	USER					With all HES Personnel
Event	31	Rig-Down Equipment	5/1/2017	19:10:00	USER					
Event	32	Pre-Convoy Safety Meeting	5/1/2017	20:30:00	USER					With all HES Personnel
Event	33	Crew Leave Location	5/1/2017	20:40:00	USER					
Event	34	Comment	5/1/2017	21:00:00	USER					Thank You for Using Halliburton Cement Department, Steven Wardell and Crew.

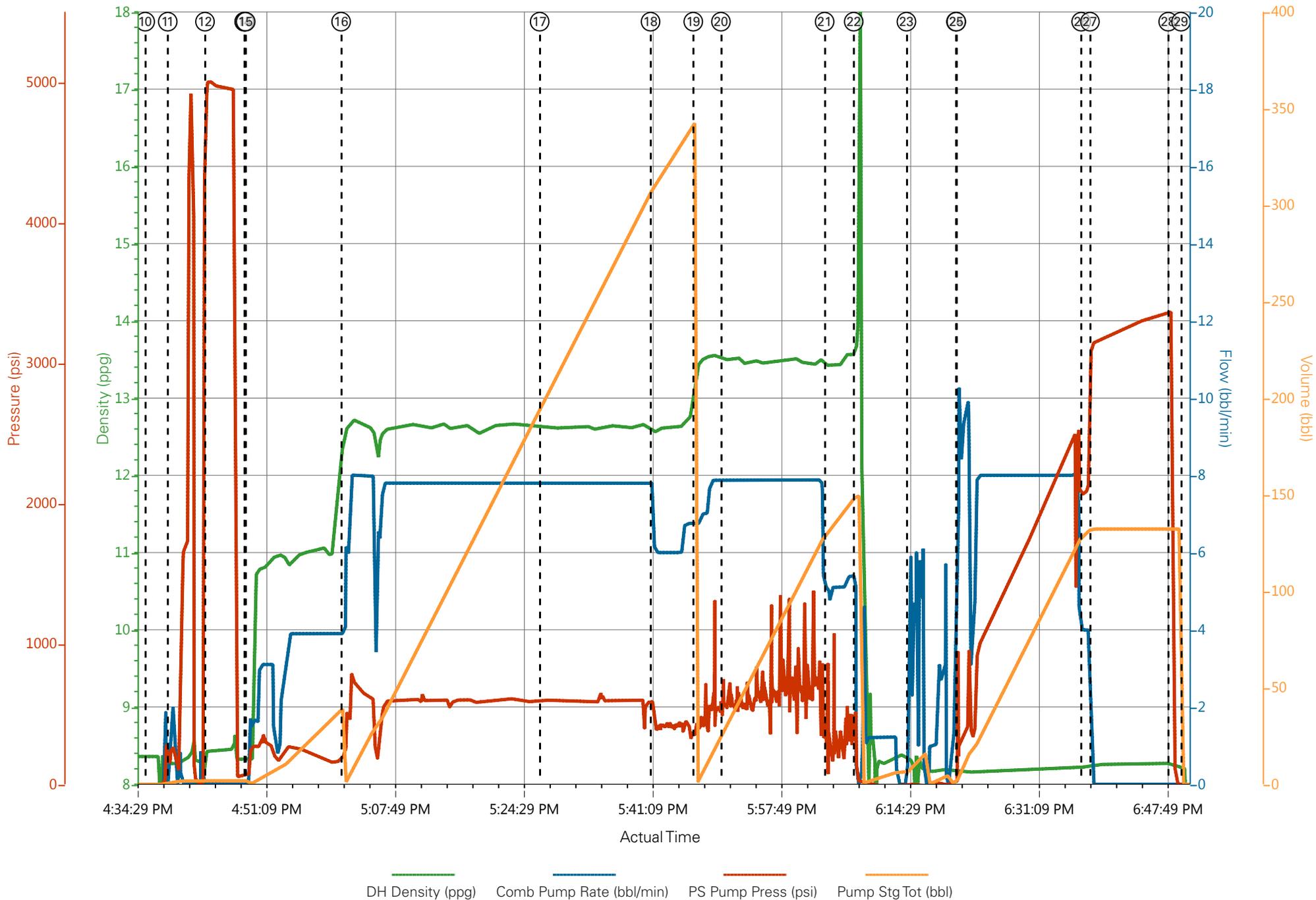
# Laramie Energy II LLC - Piceance Fed 29-20E - Production



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

- |   |                          |                     |                      |                                |
|---|--------------------------|---------------------|----------------------|--------------------------------|
| ① Call Out                              | ⑧ Rig-Up Equipment       | ⑮ Pump Tuned Spacer | 22 Shutdown          | 29 End Job                     |
| ② Pre-Convoy Safety Meeting             | ⑨ Pre-Job Safety Meeting | ⑯ Pump Lead Cement  | 23 Clean Lines       | 30 Pre-Rig Down Safety Meeting |
| ③ Crew Leave Yard                       | ⑩ Start Job              | ⑰ Check weight      | 24 Pump Displacement | 31 Rig-Down Equipment          |
| ④ Arrive At Loc                         | ⑪ Prime Lines            | ⑱ Slow Rate         | 25 Drop Top Plug     | 32 Pre-Convoy Safety Meeting   |
| ⑤ Assessment Of Location Safety Meeting | ⑫ Test Lines             | ⑲ Pump Tail Cement  | 26 Slow Rate         | 33 Crew Leave Location         |
| ⑥ Spot Equipment                        | ⑬ Check weight           | 20 Check weight     | 27 Bump Plug         | 34 Comment                     |
| ⑦ Pre-Rig Up Safety Meeting             | ⑭ Drop Bottom Plug       | 21 Slow Rate        | 28 Check Floats      |                                |

# Laramie Energy II LLC - Piceance Fed 29-20E - Production



### Job Information

<b>Request/Slurry</b>	2385018/2	<b>Rig Name</b>	H&P 522	<b>Date</b>	29/APR/2017
<b>Submitted By</b>	Aaron Katz	<b>Job Type</b>	Production Casing	<b>Bulk Plant</b>	Grand Junction
<b>Customer</b>	Laramie Energy	<b>Location</b>	Garfield	<b>Well</b>	Piceance Federal 29-20E

### Well Information

<b>Casing/Liner Size</b>	4.5 in	<b>Depth MD</b>	8126 ft	<b>BHST</b>	114°C / 238°F
<b>Hole Size</b>	7.875 in	<b>Depth TVD</b>	7671 ft	<b>BHCT</b>	77°C / 171°F
<b>Pressure</b>	4670 psi				

### Drilling Fluid Information

<b>Mud Supplier Name</b>	Baroid	<b>Mud Trade Name</b>	BARADRIL-N	<b>Density</b>	9.9 lbm/gal
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### 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>	
						Slurry Density	12.5 lbm/gal
						Slurry Yield	1.941 ft <sup>3</sup> /sack
						Water Requirement	9.623 gal/sack
						Total Mix Fluid	9.623 gal/sack
						Water Source	Field (Fresh) Water
						Water Chloride	

**These are draft results and have not been approved for final use.**

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**Operation Test Results Request ID 2385018/2**

**Thickening Time - ON-OFF-ON**

**01/MAY/2017**

Test Temp (°F)      Pressure (psi)      Reached in (min)      50 Bc (hh:min)      70 Bc (hh:min)      100 Bc (hh:min)  
 171                      4670                      49                      5:12                      5:32                      12:02

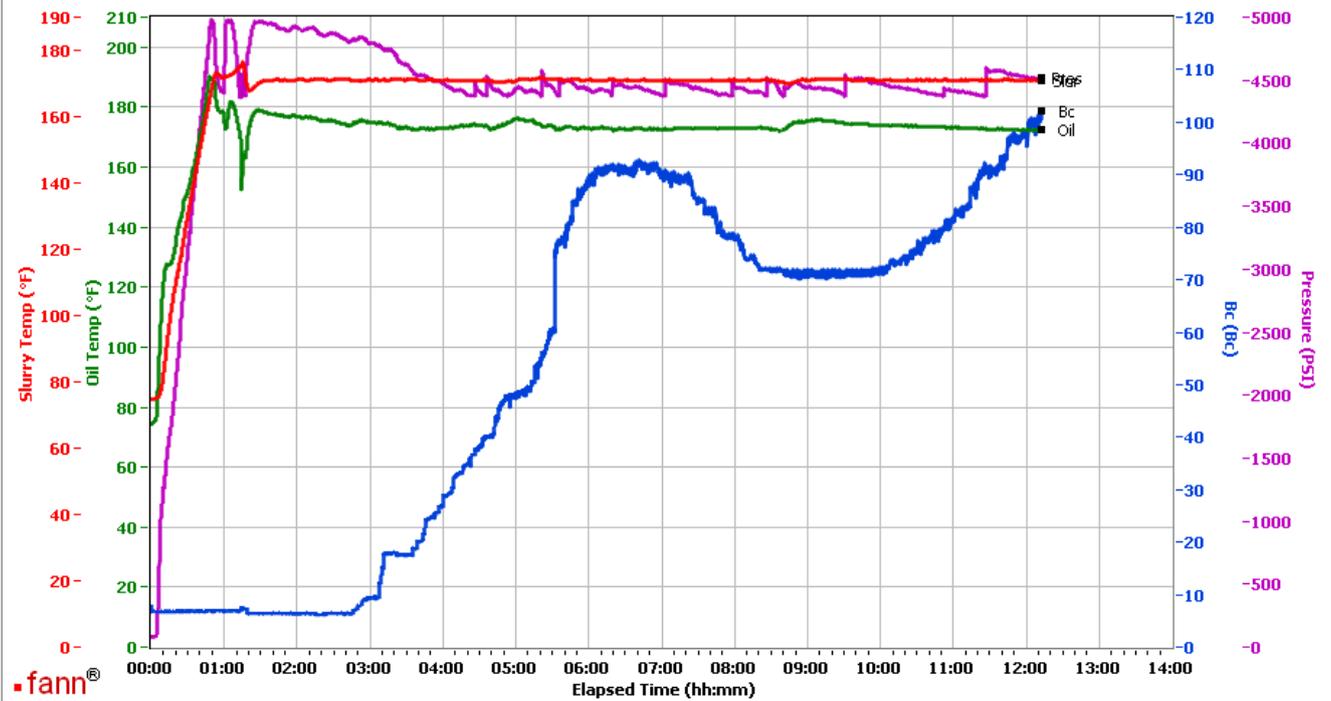
Total sks=896  
 CS0942 Trailer 4080 96 sks

**Grand Junction Colorado**

Fields	Values
Project Name	GJ2385018-2
Test ID	GJ2385018-2 LARAMIE BULK LEAD TT
Request ID	
Tested by	DEBA
Customer	LARAMIE ENERGY
Well No	PICEANCE FED 29-20E
Rig	
Casing/Liner Size	

Fields	Values
Job Type	
Cement Type	
Cement Weight	Standard
Test Date	04/30/17
Test Time	06:31 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	04h:07m
40.00 Bc	04h:33m
50.00 Bc	05h:12m
70.00 Bc	05h:32m
100.00 Bc	12h:02m
00h:30m	6.84
01h:00m	6.88
01h:30m	6.57



Data File C:\Documents and Settings\M290\Desktop\Test Data\GJ2385018-2 LARAMIE BULK LEAD TT.tdms  
 Comments CS0942 TR#4080 96 SK5

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# Operation Test Results Request ID 2385018/1

## Thickening Time - ON-OFF-ON

30/APR/2017

Test Temp (°F)	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)
171	4670	49	3:31	4:03	4:35	5:16	2	59	15	8

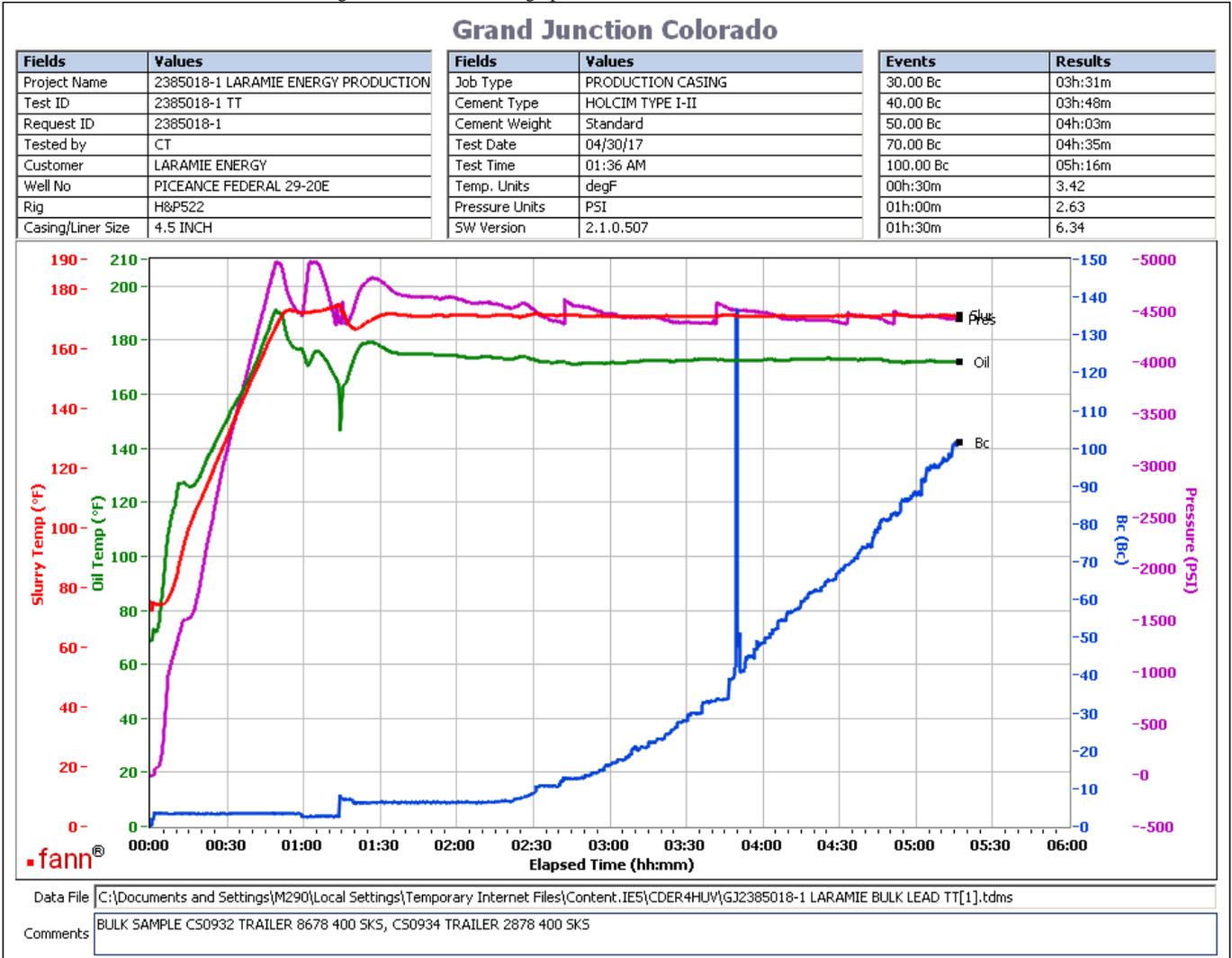
Total sks=896

Composite sample from:

CS0932 Trailer 8678 400 sks

CS0934 Trailer 2878 400 sks

deflected from 2Bc to 8 Bc when the stirring was resumes from the graph



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### Job Information

Request/Slurry	2385019/1	Rig Name	H&P 522	Date	29/APR/2017
Submitted By	Aaron Katz	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Piceance Federal 29-20E

### Well Information

Casing/Liner Size	4.5 in	Depth MD	8126 ft	BHST	114°C / 238°F
Hole Size	7.875 in	Depth TVD	7671 ft	BHCT	77°C / 171°F
Pressure	4670 psi				

### Drilling Fluid Information

Mud Supplier Name	Baroid	Mud Trade Name	BARADRIL-N	Density	9.9 lbm/gal
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### 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>		
						Slurry Density	13.3	lbm/gal
						Slurry Yield	1.733	ft <sup>3</sup> /sack
						Water Requirement	7.799	gal/sack
						Total Mix Fluid	7.799	gal/sack
						Water Source	Field (Fresh) Water	
						Water Chloride		

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# Operation Test Results Request ID 2385019/1

## Thickening Time - ON-OFF-ON

30/APR/2017

Test Temp (°F)	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)
171	4670	49	3:15	3:55	3:58	4:00	15	59	15	19

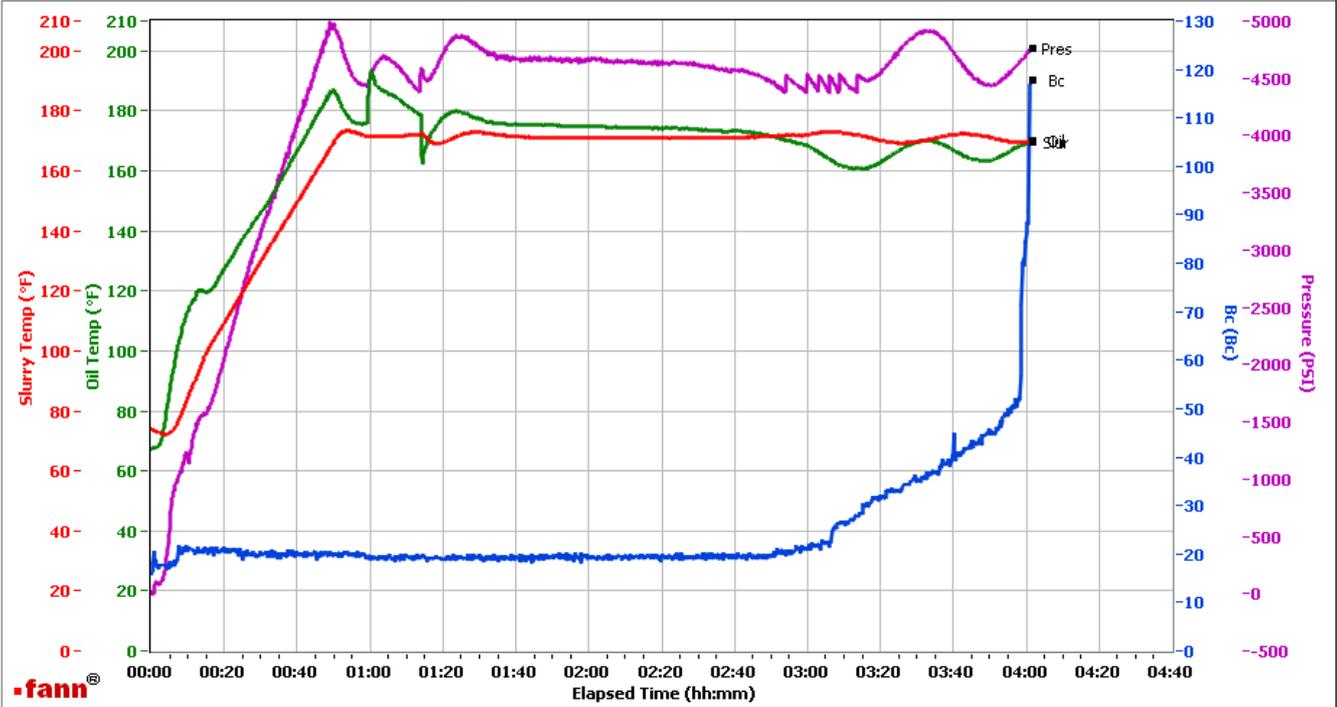
Total sks = 410  
 CS0935, Trailer 1656, 410sks  
 no deflection was recorded on the graph.  
 heat of hydration around 2:57

### Grand Junction Colorado

Fields	Values
Project Name	2385019-1 LARAMIE ENERGY PRODUCTION
Test ID	2385019-1 TT
Request ID	2385019-1
Tested by	CT
Customer	LARAMIE ENERGY
Well No	PICEANCE FEDERAL 29-20E
Rig	H&P 522
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	TYPE G
Cement Weight	Standard
Test Date	04/30/17
Test Time	03:59 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	03h:15m
40.00 Bc	03h:39m
50.00 Bc	03h:55m
70.00 Bc	03h:58m
100.00 Bc	04h:00m
00h:30m	19.51
01h:00m	19.61
01h:30m	19.01



Data File C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files\Content.IE5\OTUB09Y7\GJ2385019-1 LARAMIE BULK TAIL TT[1].tdms

Comments BULK SAMPLE CS0935 TRAILER 1656 410 SKS

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