

# HALLIBURTON

iCem<sup>®</sup> Service

**Laramie Energy LLC**

United States of America, COLORADO

**For: Laramie**

Date: Sunday, July 01, 2018

**CC 0697-03-08E Surface PJR**

API #: 05-045-23807

Sincerely,

**Grand Junction Cement Engineering**

⑤	0.0	Shutdown
⑥	0.0	Rig-Up Equipment
⑦	0.0	Pump Spacer 2
⑧	0.0	Bump Plug
⑨	0.0	Start Job
⑩	0.0	Test Lines
⑪	0.0	Pump Spacer 1
⑫	0.0	Call Out
⑬	0.0	Pump Displacement
⑭	0.0	Pre-Rig Up Safety Meeting
⑮	0.0	Check Floats
⑯	0.0	Pump Lead Cement
⑰	0.0	Pump Spacer 2
⑱	0.0	Shutdown
⑲	0.0	Pump Tail Cement
20	0.0	Pump Spacer 1
21	0.0	Crew Leave Yard
22	0.0	Assessment Of Location Safety Meeting
23	0.0	Other
24	0.0	Pump Spacer 1
25	0.0	Other
26	0.0	Standby - Other - see comments
27	0.0	Slow Rate
28	0.0	Pump Spacer 2
29	0.0	Pump Spacer 2
30	0.0	Pre-Job Safety Meeting
31	0.0	Pump Spacer 1
32	0.0	Prime Pumps
33	0.0	Pump Cement
34	0.0	End Job
35	0.0	Post-Job Safety Meeting (Pre Rig-Down)
36	0.0	Crew Leave Location

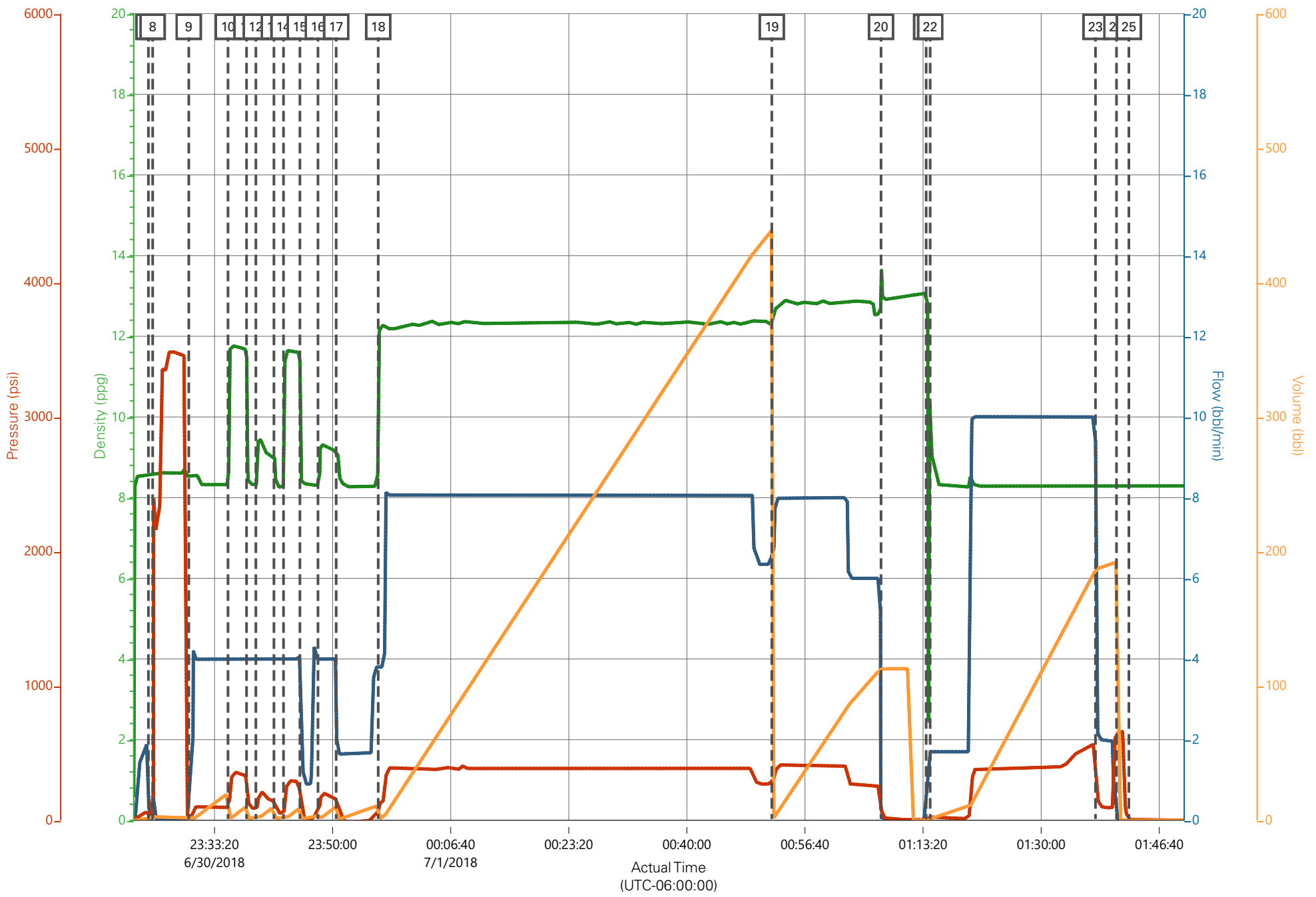
## 2.0 Real-Time Job Summary

### 2.1 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	6/30/2018	17:00:00	USER					
Event	2	Pre-Convoy Safety Meeting	6/30/2018	19:30:00	USER					JOURNEY MANAGEMENT COMPLETE, AS WELL AS JSA
Event	3	Crew Leave Yard	6/30/2018	19:45:00	USER					
Event	4	Arrive At Loc	6/30/2018	22:00:00	USER					JOURNEY MANAGEMENT CLOSED OUT.
Event	5	Assessment Of Location Safety Meeting	6/30/2018	22:30:00	USER					
Event	6	Other	6/30/2018	22:45:00	USER					WATER TEST: PH-7, TEMP-64, CL-0 TP- 2577, TD- 2587, F.C-2532.16, HOLE- 14 3/4, MUD#- 9
Event	7	Pre-Rig Up Safety Meeting	6/30/2018	22:50:00	USER					JSA COMPLETE
Event	8	Rig-Up Equipment	6/30/2018	22:55:00	USER					
Event	9	Pre-Job Safety Meeting	6/30/2018	23:00:00	USER					JSA COMPLETE
Event	10	Start Job	6/30/2018	23:24:00	COM5					
Event	11	Test Lines	6/30/2018	23:24:36	COM5	8.33	0.00	3522.0	2.50	3522 PSI
Event	12	Pump Spacer 1	6/30/2018	23:29:42	COM5	8.33	4.00	100.0	20.0	FRESH WATER
Event	13	Pump Spacer 2	6/30/2018	23:35:14	COM5	11.7	4.00	95.00	10.0	SUPERFLUSH
Event	14	Pump Spacer 1	6/30/2018	23:37:51	COM5	8.33	4.00	207.00	5.0	FRESH WATER

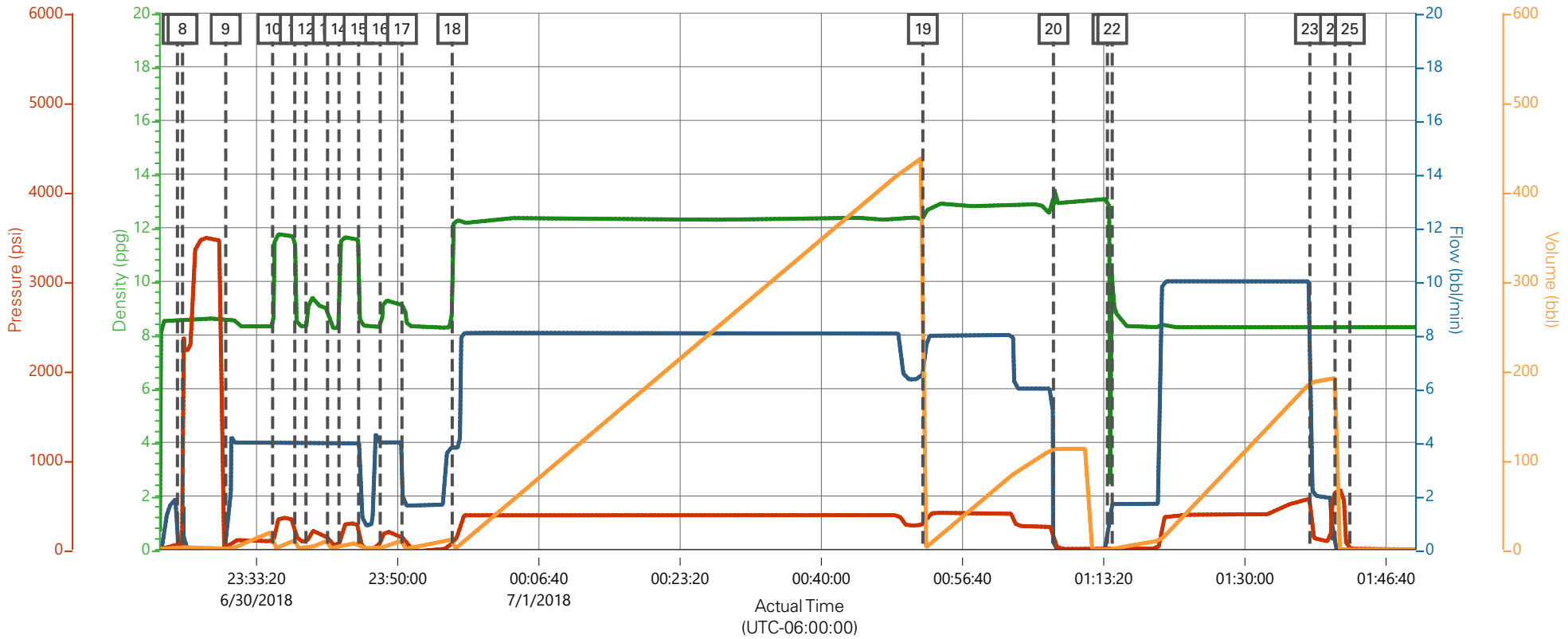
Event	15	Pump Spacer 2	6/30/2018	23:39:10	COM5	9.7	4.00	88.00	10.0	CALCIUM CHLORIDE WATER 10 LBS/BBL
Event	16	Pump Spacer 1	6/30/2018	23:41:43	COM5	8.33	4.00	144.00	5.0	FRESH WATER
Event	17	Pump Spacer 2	6/30/2018	23:43:04	COM5	11.7	4.00	213.0	10.0	SUPERFLUSH
Event	18	Pump Spacer 1	6/30/2018	23:45:23	COM5	8.33	4.00	72.00	5.0	FRESH WATER
Event	19	Pump Spacer 2	6/30/2018	23:47:56	COM5	9.7	4.00	161.00	10.0	CALCIUM CHLORIDE WATER 10 LBS/BBL
Event	20	Pump Spacer 1	6/30/2018	23:50:30	COM5	8.33	1.5	45.0	10.00	FRESH WATER
Event	21	Pump Lead Cement	6/30/2018	23:56:26	COM5	12.3	8.0	390	428.4	1015 SKS VARICEM, 12.3 PPG, 2.37 FT3/SK, 13.74 GAL/SK
Event	22	Pump Tail Cement	7/1/2018	00:51:59	COM5	12.80	8.0	400	109.7	292 SKS VARICEM, 12.8 PPG, 2.11 FT3/SK, 11.75 GAL/SK
Event	23	Shutdown	7/1/2018	01:07:24	COM5					TO DROP TOP PLUG, WASH UP ON TOP OF PLUG
Event	24	Drop Top Plug	7/1/2018	01:13:46	COM5					AWAY
Event	25	Pump Displacement	7/1/2018	01:14:20	COM5	8.33	10.0	560	195.7	FRESH WATER, NO RETURNS THROUGHOUT JOB, NO PIPE MOVEMENT.
Event	26	Slow Rate	7/1/2018	01:37:40	COM5	8.33	2.0	100.0	185.0	TO BUMP PLUG
Event	27	Bump Plug	7/1/2018	01:40:38	COM5	8.33	0.00	95.0	195.7	PLUG BUMPED
Event	28	Check Floats	7/1/2018	01:42:23	COM5			673.0		FLOATS HELD, 0.5 BBLS BACK TO TRUCK
Event	29	Other	7/1/2018	02:08:28	COM5	8.33	2.0	74.0	10.00	PUMP PARASITE STRING WITH 10 BBLS SUGAR WATER
Event	30	Shutdown	7/1/2018	02:15:45	COM5					
Event	31	Standby - Other - see comments	7/1/2018	02:18:00	USER					WAIT FOR CO REP BEFORE TOPPING OUT WELL.

# Custom Results



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

# Custom Results



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

Description	Actual Time (UTC-06:00:00)	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)
16 Pump Spacer 2	23:47:56	8.30	4.00	72.00	0.00
17 Pump Spacer 1	23:50:30	9.15	4.00	161.00	10.20
18 Pump Lead Cement	23:56:26	9.85	3.80	66.00	0.00
19 Pump Tail Cement	00:51:59	12.28	6.50	280.00	438.80
20 Shutdown	01:07:24	13.09	0.00	117.00	112.80
21 Drop Top Plug	01:13:46	13.07	0.00	5.00	0.00
22 Pump Displacement	01:14:20	9.89	1.70	30.00	0.80
23 Slow Rate	01:37:40	8.31	10.00	572.00	186.00
24 Bump Plug	01:40:38	8.31	0.00	646.00	191.90
25 Check Floats	01:42:23	8.29	0.00	9.00	0.00

# HALLIBURTON

iCem<sup>®</sup> Service

**Laramie Energy LLC**

United States of America, COLORADO

**For: Laramie**

Date: Wednesday, July 04, 2018

**CASCADE CREEK 697-03-08E Production PJR**

API #: 05-045-23807

Sincerely,

**Grand Junction Cement Engineering**

## 2.0 Real-Time Job Summary

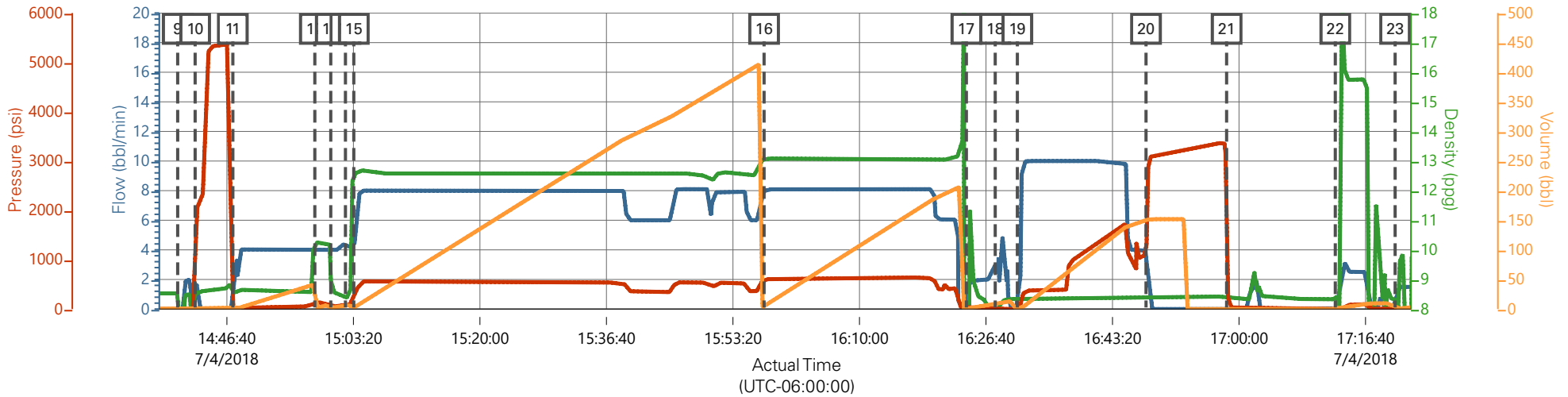
### 2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	7/4/2018	06:00:00	USER					REQUESTED ON LOCATION 7/4/18 @ 12:00
Event	2	Depart Yard Safety Meeting	7/4/2018	08:55:00	USER					JSA COMPLETED
Event	3	Crew Leave Shop	7/4/2018	09:00:00	USER					
Event	4	Arrive At Loc	7/4/2018	11:00:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	7/4/2018	11:05:00	USER					JSA COMPLETED
Event	6	Pre-Rig Up Safety Meeting	7/4/2018	11:15:00	USER					JSA COMPLETED
Event	7	Rig-Up Equipment	7/4/2018	11:20:00	USER					
Event	8	Pre-Job Safety Meeting	7/4/2018	14:00:00	USER					JSA COMPLETED
Event	9	Start Job	7/4/2018	14:40:11	COM4					4.5"-11.6# CASING IN 8.75" OH, TD 9807', TP 9797', ST 80.6', MUD 9.0 PPG, WATER TEMP 65, PH 7, CHLORIDES 0
Event	10	Test Lines	7/4/2018	14:42:29	COM4			5000.00		TEST TO 5000 PSI
Event	11	Pump Spacer 1	7/4/2018	14:47:27	COM4	4.00	8.40	50.00	40.00	40 BBL MUDFLUSH
Event	12	Pump Spacer 2	7/4/2018	14:58:15	COM4	4.00	10.00	140.00	10.00	10 BBL SUPERFLUSH
Event	13	Pump Spacer 1	7/4/2018	15:00:21	COM4	4.00	8.33	104.00	10.00	10 BBL FRESH WATER
Event	14	Drop Bottom Plug	7/4/2018	15:02:17	COM4					PLUG AWAY

Event	15	Pump Lead Cement	7/4/2018	15:03:23	COM4	8.00	12.50	550.00	391.80	391.8 BBL LEAD, 1134 SKS @ 12.5 PPG / 1.94 YLD / 9.59 GAL/SK
Event	16	Pump Tail Cement	7/4/2018	15:57:26	COM4	8.00	13.00	630.00	178.80	178.8 BBL TAIL 485 SKS @ 13.0 PPG / 2.07 YLD / 9.41 GAL/SK
Event	17	Clean Lines	7/4/2018	16:24:05	COM4					CLEAN LINES TO CELLAR, 30 BBL SPACER BACK AIR SHUT OFF
Event	18	Drop Top Plug	7/4/2018	16:27:53	COM4					PLUG AWAY
Event	19	Pump Displacement	7/4/2018	16:30:48	COM4	10.00	8.40	1110.00	150.60	150.6 BBL H2O DISPLACEMENT WITH 1 GAL MMCR, 5 GAL CLA WEB, 5 GAL BIOCIDES PROVIDED BY , NO RETURNS WITH AIR SHUT OFF
Event	20	Bump Plug	7/4/2018	16:47:45	COM4	4.00	8.36	1104.00	150.60	PLUG BUMPED AT CALCULATED, FINAL CIRCULATING PRESSURE 1110 PSI, BROUGHT TO 3000 PSI FOR 10 MIN CASING TEST
Event	21	Check Floats	7/4/2018	16:58:22	COM4					FLOATS HELD, 2 BBL BACK TO PUMP
Event	22	Pump Cement	7/4/2018	17:12:41	COM4	2.50	15.60	100.00	7.40	FILL PARASITE, 7.4 BBL CEMENT, 35 SKS @ 15.6 PPG / 1.19 YLD 5.24 GAL/SK
Event	23	End Job	7/4/2018	17:20:34	COM4					GOOD RETURNS WITH AIR ON, NO RETURNS WITH AIR OFF DURING ALL OF DISPLACEMENT, PIPE LEFT STATIC, NO SUGAR USED, 10 BBL SUPERFLUSH, 1 GAL MMCR, 5 GAL CLA WEB USED, NO ADD HOURS CHARGED

Event	24	Pre-Rig Down Safety Meeting	7/4/2018	17:30:00	USER	JSA COMPLETED
Event	25	Rig-Down Equipment	7/4/2018	17:35:00	USER	
Event	26	Pre-Convoy Safety Meeting	7/4/2018	17:55:00	USER	JSA COMPLETED
Event	27	Crew Leave Location	7/4/2018	18:00:00	USER	THANK YOU FOR CHOOSING HALLIBURTON CEMENTING OF GRAND JUNCTION, CO - RYAN MARTIN AND CREW

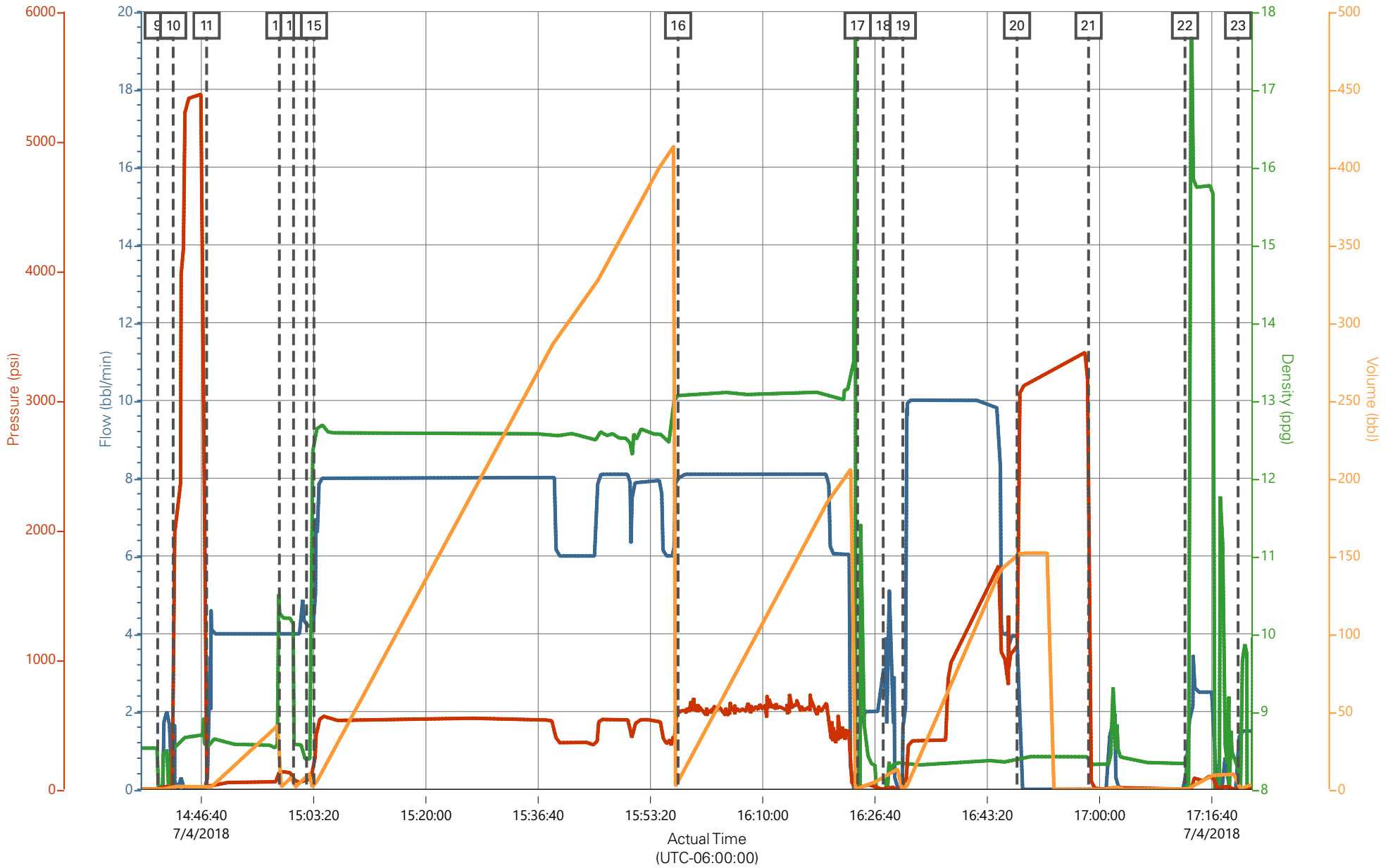
# LARAMIE - CASCADE CREEK 697-03-08E - 4 1/2" PRODUCTION CASING



— Comb Pump Rate (bbl/min) 1.5    
 — DH Density (ppg) 8.34    
 — PS Pump Press (psi) 13    
 — Pump Stg Tot (bbl) 8.6

Description	Actual Time (UTC-06:00:00)	Comb Pump Rate (bbl/min)	DH Density (ppg)	PS Pump Press (psi)	Pump Stg Tot (bbl)
9 Start Job	14:40:11	0.00	8.53	2.00	0.00
10 Test Lines	14:42:29	0.00	8.53	-16.00	1.80
11 Pump Spacer 1	14:47:27	0.00	8.56	11.00	1.90
12 Pump Spacer 2	14:58:15	4.00	10.29	140.00	0.50
13 Pump Spacer 1	15:00:21	4.00	9.07	104.00	0.40
14 Drop Bottom Plug	15:02:17	4.20	8.38	77.00	8.40
15 Pump Lead Cement	15:03:23	4.20	12.51	219.00	2.60
16 Pump Tail Cement	15:57:26	8.00	13.06	581.00	5.00
17 Clean Lines	16:24:05	0.00	-1.91	2.00	0.00
18 Drop Top Plug	16:27:53	3.10	7.29	2.00	7.50
19 Pump Displacement	16:30:48	0.10	8.31	16.00	0.00
20 Bump Plug	16:47:45	3.90	8.36	1104.00	150.60
21 Check Floats	16:58:22	0.00	8.42	2206.00	0.00
22 Pump Cement	17:12:41	0.00	8.33	1.00	0.00
23 End Job	17:20:34	0.00	8.32	0.00	0.00

# LARAMIE - CASCADE CREEK 697-03-08E - 4 1/2" PRODUCTION CASING



— Comb Pump Rate (bb/min) 1.5    
 — DH Density (ppg) 8.34    
 — PS Pump Press (psi) 13    
 — Pump Stg Tot (bb) 8.6

### Job Information

<b>Request/Slurry</b>	2483968/2	<b>Rig Name</b>	H&P 522	<b>Date</b>	26/JUN/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>	Cascade Creek 0697-03-08E

### Well Information

<b>Casing/Liner Size</b>	4.5 in	<b>Depth MD</b>	9836 ft	<b>BHST</b>	118°C / 245°F
<b>Hole Size</b>	8.75 in	<b>Depth TVD</b>	9730 ft	<b>BHCT</b>	79°C / 175°F
<b>Pressure</b>	6111 psi				

### Drilling Fluid Information

<b>Mud Supplier Name</b>		<b>Mud Trade Name</b>		<b>Density</b>	
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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>	<u>Cement Properties</u>		
		NeoCem				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.946	ft <sup>3</sup> /sack
						Water Requirement	9.615	gal/sack
						Total Mix Fluid	9.615	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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**Operation Test Results Request ID 2483968/2**

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

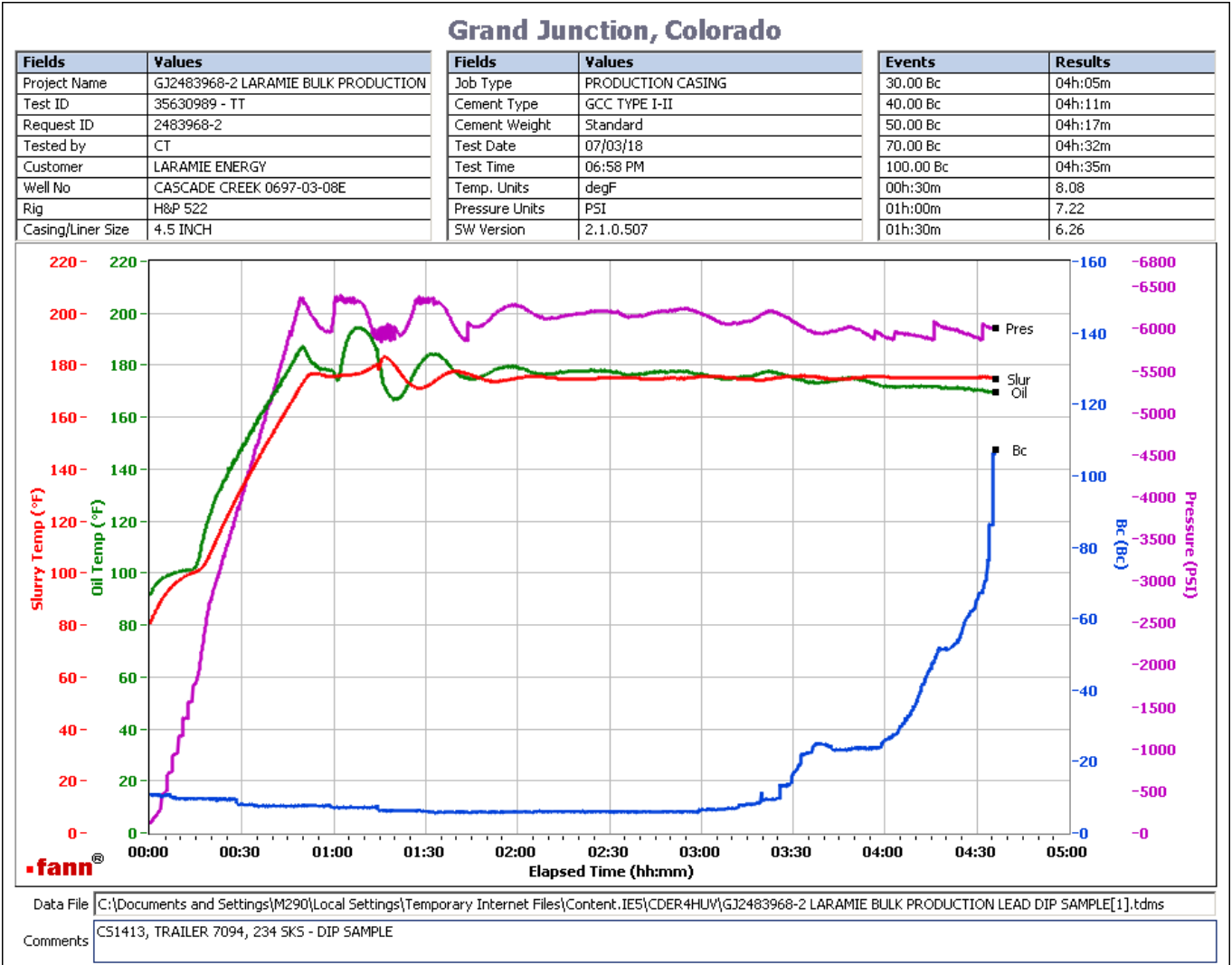
**03/JUL/2018**

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)
175	6111	49	4:05	4:17	4:32	4:35	11	59	15	17

Total SKS = 1134

CS1413, Trailer 7094, 234SKS \*DIP SAMPLE\*

Deflection: 7 - 17



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**Operation Test Results Request ID 2483968/1**

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

**02/JUL/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)
175	6111	49	4:32	5:20	5:27	5:30	12	59	15	11

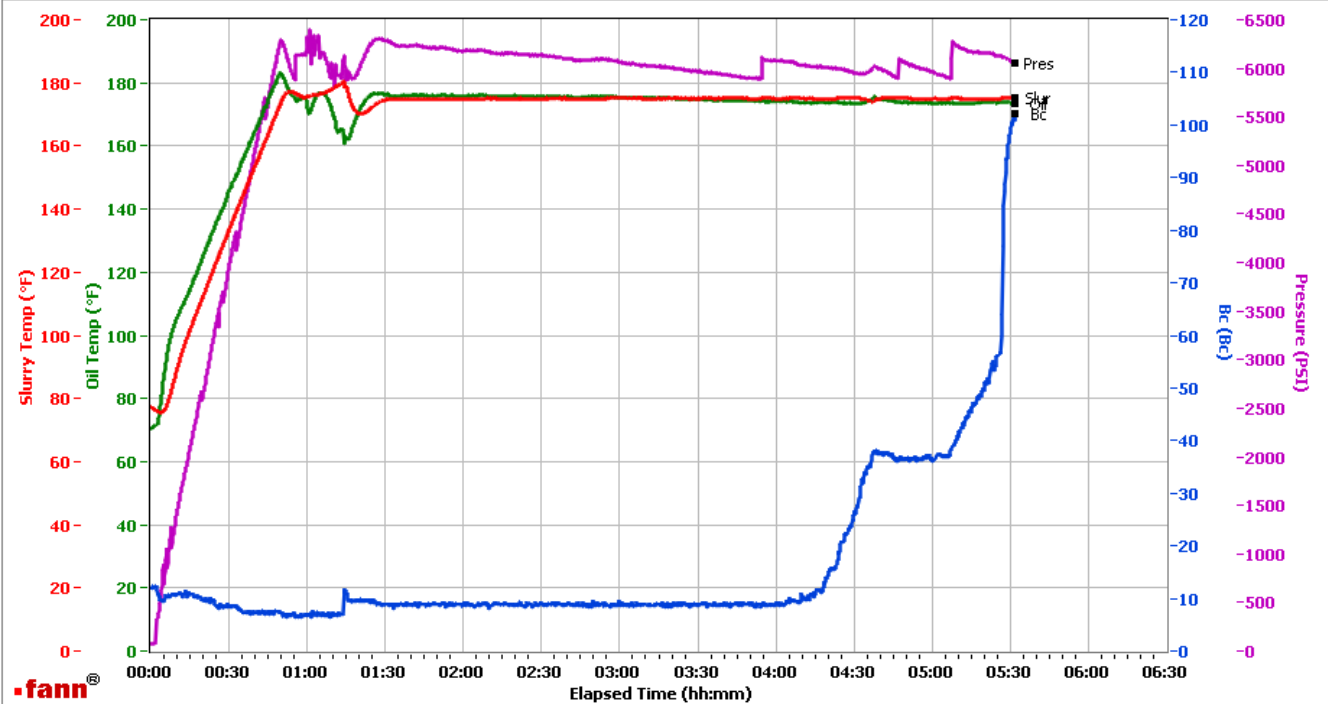
Total SKS = 1134  
 CS1388 TR#1513 400 SKS  
 CS1389 TR#8476 400 SKS  
 CS1390 TR#7428 100 sks  
 deflected 7Bc--- > 11BC

**Grand Junction Colorado**

Fields	Values
Project Name	GJ2483968-1 LARAMIE PRODUCTION BULK
Test ID	35611107
Request ID	GJ2483968-1
Tested by	DEBA
Customer	LARAMIE ENERGY
Well No	CC 0697-03-08E
Rig	H&P 522
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	GCC TYPE I-II
Cement Weight	Standard
Test Date	08/09/11
Test Time	02:27 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.1219

Events	Results
30.00 Bc	04h:32m
40.00 Bc	05h:09m
50.00 Bc	05h:20m
70.00 Bc	05h:27m
100.00 Bc	05h:30m
00h:30m	8.73
01h:00m	6.46
01h:30m	8.88



Data File C:\Documents and Settings\HPHT\Local Settings\Temporary Internet Files\Content.IE5\09ERK9UM\GJ2483968-1 LARAMIE PRODUCTION BULK LEAD[1].tdms  
 Comments CS1388 TR#1513 400 AND CS1389 TR#8476 400 SKS AND CS1390 TR#7428 100 SJKS

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### Job Information

<b>Request/Slurry</b>	2483969/1	<b>Rig Name</b>	H&P 522	<b>Date</b>	26/JUN/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>	Cascade Creek 0697-03-08E

### Well Information

<b>Casing/Liner Size</b>	4.5 in	<b>Depth MD</b>	9836 ft	<b>BHST</b>	118°C / 245°F
<b>Hole Size</b>	8.75 in	<b>Depth TVD</b>	9730 ft	<b>BHCT</b>	79°C / 175°F
<b>Pressure</b>	6111 psi				

### Drilling Fluid Information

<b>Mud Supplier Name</b>		<b>Mud Trade Name</b>		<b>Density</b>	
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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>	<b>Cement Properties</b>		
		NeoCem				Slurry Density	13	lbm/gal
						Slurry Yield	2.069	ft <sup>3</sup> /sack
						Water Requirement	9.408	gal/sack
						Total Mix Fluid	9.408	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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**Operation Test Results Request ID 2483969/1**

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

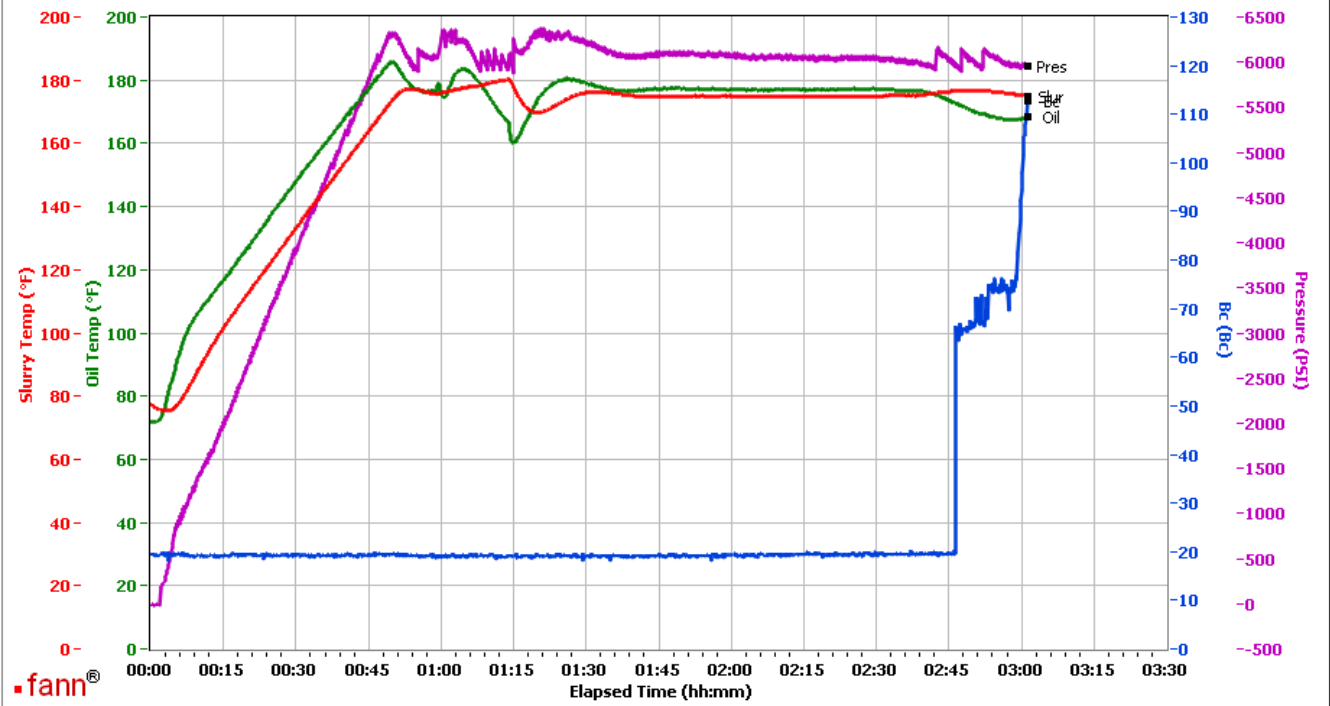
**02/JUL/2018**

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)
175	61111	49	2:46	2:46	2:50	3:00	19	59	15	19

Total SKS= 485  
 CS1392 TR# 2878 Front 360 SKS  
 CS1393 TR#4728 Rear 125 SKS  
 no deflection, 19Bc-- > 19Bc  
 heat of hydration at 2:43

**Grand Junction Colorado**

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2483969-1 LARAMIE PRODUCTION BULK	Job Type	PRODUCTION CASING	30.00 Bc	02h:46m
Test ID	35611109	Cement Type	GCC TYPE I/II	40.00 Bc	02h:46m
Request ID	GJ2483969-1	Cement Weight	Standard	50.00 Bc	02h:46m
Tested by	DEBA	Test Date	07/02/18	70.00 Bc	02h:50m
Customer	LARAMIE ENERGY	Test Time	05:42 PM	100.00 Bc	03h:00m
Well No	CC 0697-03-08E	Temp. Units	degF	00h:30m	19.11
Rig	H&P522	Pressure Units	PSI	01h:00m	18.75
Casing/Liner Size	4.5"	SW Version	2.1.0.507	01h:30m	19.13



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\CDER4HUV\GJ2483969-1 LARAMIE PRODUCTION BULK TAIL[1].tdms  
 Comments CS1392 TR#2878 FRONT 360 SKS AND CS1393 TR#7428 REAR 125 SKS

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