

# HALLIBURTON

iCem<sup>®</sup> Service

**Laramie Energy LLC**

Rock Springs District, Colorado

**For: Laramie**

Date: Wednesday, July 31, 2019

**CC 697-03-06W Surface**

**API#05-045-23931**

Sincerely,

**Grand Junction Cement Engineering**

## 1.0 Real-Time Job Summary

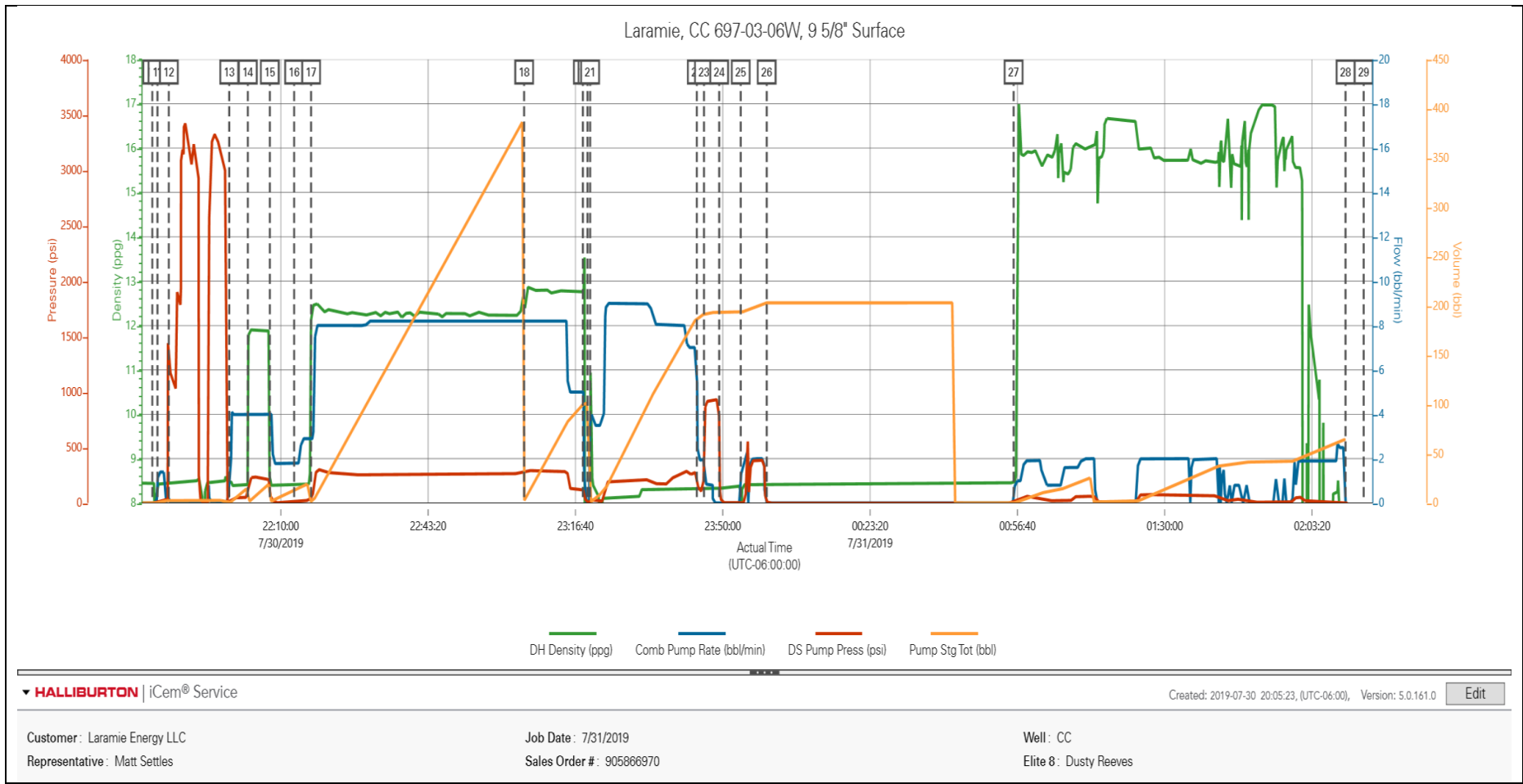
### 1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	7/30/2019	15:00:00						Requested on Location @ 20:30
Event	2	Pre-Convoy Safety Meeting	7/30/2019	16:50:00						
Event	3	Crew Leave Yard	7/30/2019	17:00:00						1 Elite, 1 660, 1 Transport, 1 pickup
Event	4	Arrive At Loc	7/30/2019	20:30:00						Rig running casing
Event	5	Assessment Of Location Safety Meeting	7/30/2019	20:40:00						JSA completed - Customer offered/received SDS - water test pH 7.0, CI <200, temp 67 degrees
Event	6	Pre-Rig Up Safety Meeting	7/30/2019	21:00:00						
Event	7	Rig-Up Equipment	7/30/2019	21:20:00						1 hardline to Cellar, water hoses to upright, bulk hoses to silo and 660.
Event	8	Other	7/30/2019	21:24:21						Mud scales calibrated to drinking water prior to job.
Event	9	Pre-Job Safety Meeting	7/30/2019	21:26:55						All HES personnel, rig crew, and company rep
Event	10	Start Job	7/30/2019	21:40:57						TD 2590', TP 2580, SJ 42.2', OH 14 3/4", Csg 9.625" 36 lb/ft J-55, Mud 8.4 ppg
Event	11	Fill Lines	7/30/2019	21:42:07		8.33	2	23	5	Fresh Water
Event	12	Test Lines	7/30/2019	21:44:41				3400		No Leaks.
Event	13	Pump Spacer	7/30/2019	21:58:21		8.33	4	50	15	Fresh Water
Event	14	Pump Spacer	7/30/2019	22:02:33		11.7	4	240	20	Super Flush
Event	15	Pump Spacer	7/30/2019	22:07:32		8.33	4	50	20	Fresh Water
Event	16	Check Weight	7/30/2019	22:13:02						Density Verified via Mud Scales
Event	17	Pump Lead Cement	7/30/2019	22:16:52		12.3	8	316	370.6	878 Sks 12.3 ppg 2.37 yield 13.74 gal/sk

Event	18	Pump Tail Cement	7/30/2019	23:05:04	12.8	8	330	94.7	252 Sks 12.8 ppg 2.11 yield 11.75 gal/sk
Event	19	Shutdown	7/30/2019	23:18:21					Wash up on top of plug
Event	20	Drop Top Plug	7/30/2019	23:19:24					Customer verified top plug launched
Event	21	Pump Displacement	7/30/2019	23:20:00	8.33	9	320	196.2	Fresh Water
Event	22	Slow Rate	7/30/2019	23:44:08	8.33	2	200	186	Slow Rate 10 bbls to Calculated Displacement
Event	23	Bump Plug	7/30/2019	23:45:45			920		Plug Bumped at 200 psi, Brought up to 920 psi
Event	24	Check Floats	7/30/2019	23:49:12					Floats held – 1 bbl back to the truck
Event	25	Pump Spacer	7/30/2019	23:54:04					Pump 10 bbl of sugar water down parasite line.
Event	26	Shutdown	7/30/2019	23:59:57					10 bbl of super flush down back side
Event	27	Pump Cement	7/31/2019	00:55:48					420 sks, 15.6, 1.19 Yield, 5.24 gal/sk
Event	28	Shutdown	7/31/2019	02:10:54					Cement holding at surface.
Event	29	End Job	7/31/2019	02:15:00					No returns throughout job, pipe was not reciprocated.
Event	30	Pre-Rig Down Safety Meeting	7/31/2019	02:30:00					40 lbs sugar, No add hours
Event	31	Rig-Down Equipment	7/31/2019	02:40:00					
Event	32	Pre-Convoy Safety Meeting	7/31/2019	03:20:00					
Event	33	Crew Leave Location	7/31/2019	03:30:00					Thank you for using Halliburton – Chris Martinez and crew.

2.0 Attachments

2.1 CC 697-03-06W-Custom Results.png



# HALLIBURTON

iCem<sup>®</sup> Service

**Laramie Energy LLC**

**For: Aaron Duncan**

Date: Saturday, August 03, 2019

**CC Federal 0697-03-06W Production PJR**

API #05-045-23931-00

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	8/2/2019	20:30:00	USER					REQUESTED ON LOCATION @ 03:00
Event	2	Pre-Convoy Safety Meeting	8/2/2019	22:00:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	8/2/2019	22:10:00	USER					1 HT 400 PUMP TRUCK, 1 660 BULK TRUCK, 1 FRUEHAUF, 1 550 SERVICE PICKUP
Event	4	Arrive At Loc	8/3/2019	00:15:00	USER					RIG RUNNING CASING WHEN HES ARRIVED AT LOCATION
Event	5	Assessment Of Location Safety Meeting	8/3/2019	00:20:00	USER					MET WITH COMP REP, AND WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION AND COLLECTED WATER SAMPLE (PH-7.0, CHLORIDES-500, TEMP-70F). COMP REP WAS OFFERED SDS FOR ALL CHEMICALS USED BY HES. CALIBRATED MUD SCALES ON WATER.
Event	6	Pre-Rig Up Safety Meeting	8/3/2019	00:30:00	USER					ALL HES PRESENT
Event	7	Rig-Up Equipment	8/3/2019	00:40:00	USER					HES RIGGED UP 1 HT 400 PUMP TRUCK, 1 660 BULK TRUCK, 2 CEMENT SILOS, 2" DISCHARGE IRON, AND 4" SUCTION HOSE WITHOUT ENTERING RED ZONE.
Event	8	Pre-Job Safety Meeting	8/3/2019	06:20:00	USER					ALL HES EMPLOYEES AND RIG CREW PRESENT. RIG CIRCULATED @ 10.5 BPM PRIOR TO JOB. PRESSURE WAS 272PSI. 0 UNITS OF GAS. WITH 1250CFM ON PARASITE LINE.

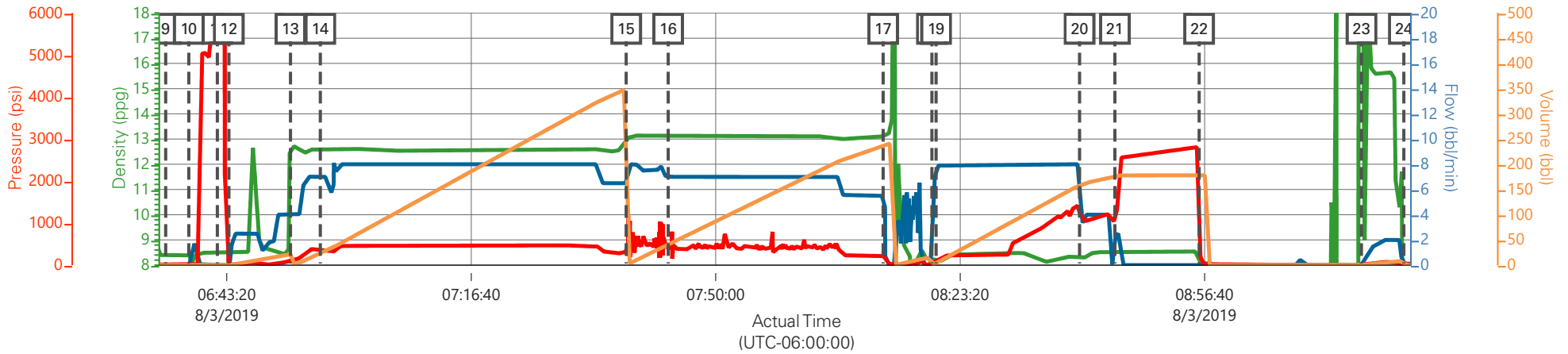
Event	9	Start Job	8/3/2019	06:35:00	COM4					TD 10,666', TP 10,656' OF 4 ½" 11.6# P110 CSG, SJ 45.21', SURFACE CSG 9 5/8" 36# J55 SET @ 2530', OH 8 3/4", MUD 9 PPG
Event	10	Prime Lines	8/3/2019	06:38:09	USER	8.33	2	28	3	FRESH WATER
Event	11	Test Lines	8/3/2019	06:42:03	COM4			5400		ALL LINES HELD PRESSURE AT 5400 PSI
Event	12	Pump Mud Flush	8/3/2019	06:43:37	COM4	8.4	4	65	20	20BBLS MUD FLUSH
Event	13	Pump Lead Cement	8/3/2019	06:52:01	COM4	12.5	8	458	353.4	1140 SKS OF ECONOCEM CMT 12.5 PPG, 1.74 FT3/SK, 9.1 GAL/SK.
Event	14	Check Weight	8/3/2019	06:56:05	USER					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	15	Pump Tail Cement	8/3/2019	07:37:48	COM4	13.00	7	432	195.9	632 SKS EXPANDACEM CMT 13. PPG, 1.74 FT3/SK, 7.99 GAL/SK.
Event	16	Check Weight	8/3/2019	07:43:31	USER					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	17	Shutdown	8/3/2019	08:12:50	USER					END OF CEMENT. CLEAN PUMPS AND LINES TO CELLAR.
Event	18	Pump Displacement	8/3/2019	08:19:29	COM4	8.4	8	1452	164.5	1 GAL MMCR IN FIRST 10 BBLS, 5 GALS CLAY WEB THROUGHT DISPLACEMENT
Event	19	Drop Top Plug	8/3/2019	08:20:03	USER					VERIFIED BY PLUG INDICATOR
Event	20	Slow Rate	8/3/2019	08:39:37	USER	8.4	4	1200	154.5	SLOW RATE TO 4 BPM TO BUMP PLUG
Event	21	Bump Plug	8/3/2019	08:44:26	USER	8.4	4	1200	164.5	LANDED PLUG AT 1200 PSI, BROUGHT UP TO 2570 PSI. HELD PRESSURE FOR A TEN MIN CASING TEST.
Event	22	Check Floats	8/3/2019	08:55:55	USER					FLOATS HELD, 1.5 BBL BACK TO TRUCK
Event	23	Pump Down Parasite	8/3/2019	09:18:03	COM4	15.6	2	100	6.3	PUMPED 6.3BBLS OF TOP OUT DOWN THE PARASITE STRING 30 SKS OF TYPE I-II CMT 15.6 PPG, 1.18 FT3/SK, 5.23 GAL/SK.
Event	24	End Job	8/3/2019	09:23:50	COM4					PARTIAL RETURNS THROUGHT JOB WITH 1250CFM ON PARASITE. SHUT OFF AIR TO

PARASITE AT 100BBLS GONE ON DISPLACEMENT  
 AND LOST RETURNS AT 120BBLS GONE. 5BBLS OF  
 SPACER TO SURFACE, USED 2 TOP PLUGS AND NO  
 SUGAR USED.

Event	25	Post-Job Safety Meeting (Pre Rig-Down)	8/3/2019	09:30:00	USER	ALL HES PRESENT
Event	26	Rig-Down Equipment	8/3/2019	09:40:00	USER	ALL HES PRESENT
Event	27	Pre-Convoy Safety Meeting	8/3/2019	11:00:00	USER	ALL HES PRESENT
Event	28	Crew Leave Location	8/3/2019	11:10:00	USER	THANK YOU FOR CHOOSING HALLIBURTON CEMENT, SHAWN BLOSSOM AND CREW.



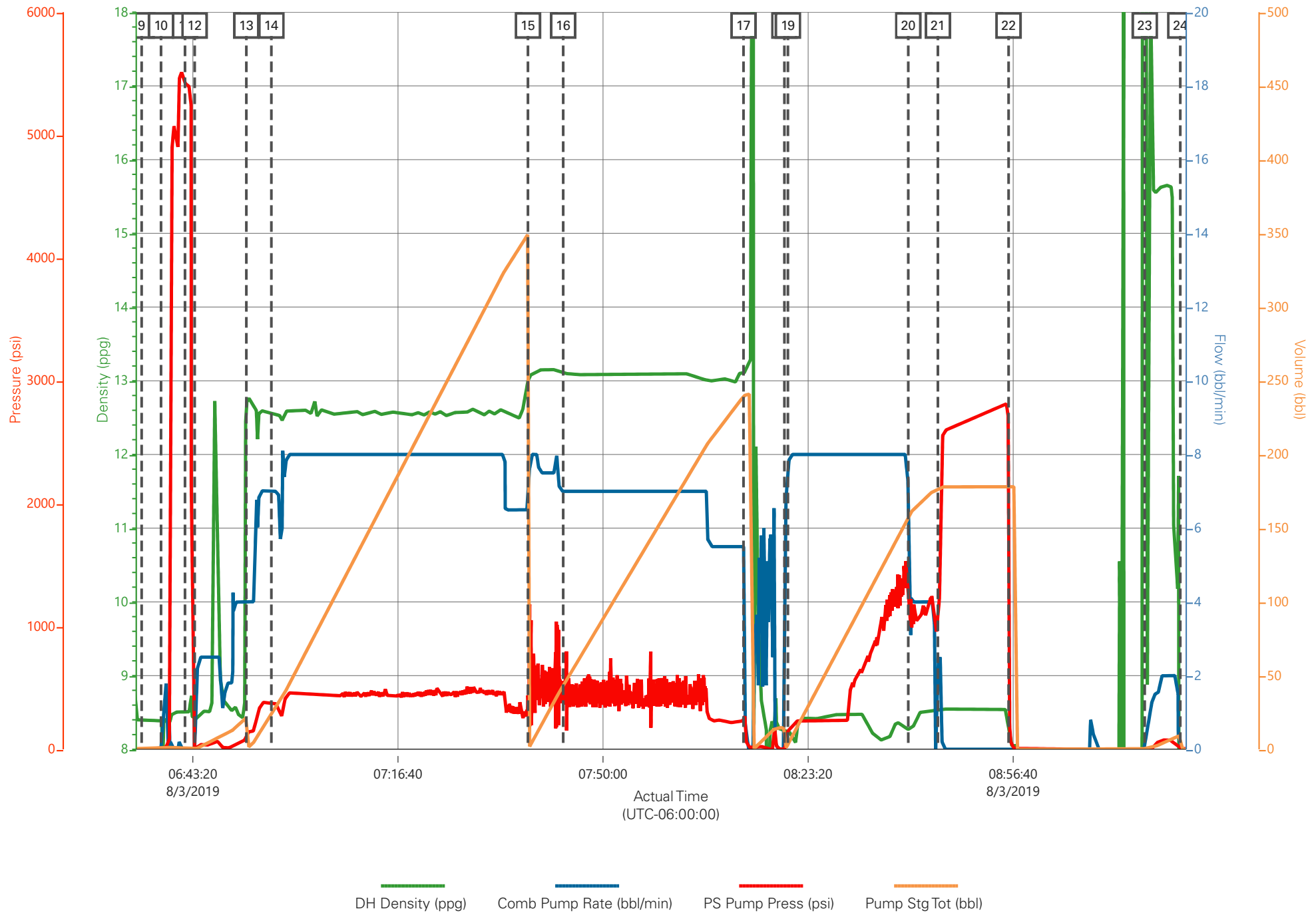
# LARAMIE CC FED 0697-03-06W, 4.5" PRODUCTION



— 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)
9 Start Job	06:35:00	8.39	0.00	-4.00	0.10
10 Prime Lines	06:38:09	8.39	0.00	-4.00	0.10
11 Test Lines	06:42:03	8.51	0.00	5419.00	1.30
12 Pump Mud Flush	06:43:37	8.41	0.00	4.00	0.00
13 Pump Lead Cement	06:52:01	12.68	4.00	116.00	21.50
14 Check Weight	06:56:05	12.55	7.00	385.00	23.80
15 Pump Tail Cement	07:37:48	13.00	6.50	394.00	0.10
16 Check Weight	07:43:31	13.11	7.00	355.00	43.20
17 Shutdown	08:12:50	13.11	5.50	226.00	239.40
18 Pump Displacement	08:19:29	8.26	0.00	1.00	0.00
19 Drop Top Plug	08:20:03	8.25	7.50	153.00	2.90
20 Slow Rate	08:39:37	8.26	6.20	1202.00	158.80
21 Bump Plug	08:44:26	8.52	2.00	1213.00	176.50
22 Check Floats	08:55:55	8.22	0.00	2014.00	178.10
23 Pump Down Parasite	09:18:03	39.00	0.00	-4.00	0.40
24 End Job	09:23:50	-0.18	0.00	6.00	0.00

# LARAMIE CC FED 0697-03-06W, 4.5" PRODUCTION



## Job Information

<b>Request/Slurry</b>	2573749/1	<b>Rig Name</b>	H&P 522	<b>Date</b>	30/JUL/2019
<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>	CC Federal 0697-03-06W

## Well Information

<b>Casing/Liner Size</b>	4.5 in	<b>Depth MD</b>	10719 ft	<b>BHST</b>	123°C / 254°F
<b>Hole Size</b>	8.75 in	<b>Depth TVD</b>	10260 ft	<b>BHCT</b>	89°C / 193°F
<b>Pressure</b>	6482 psi				

## Drilling Fluid Information

<b>Mud Supplier Name</b>	<b>Mud Trade Name</b>	<b>Density</b>
--------------------------	-----------------------	----------------

## Cement Information - Lead Design



<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>MP</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	<b>Cement Properties</b>		
		EconoCem Lead					Slurry Density	12.5	lbm/gal
							Slurry Yield	1.74	ft3/sack
							Water Requirement	9.1	gal/sack
							Total Mix Fluid	9.1	gal/sack
							Water Source	Fresh Water	
							Water Chloride		

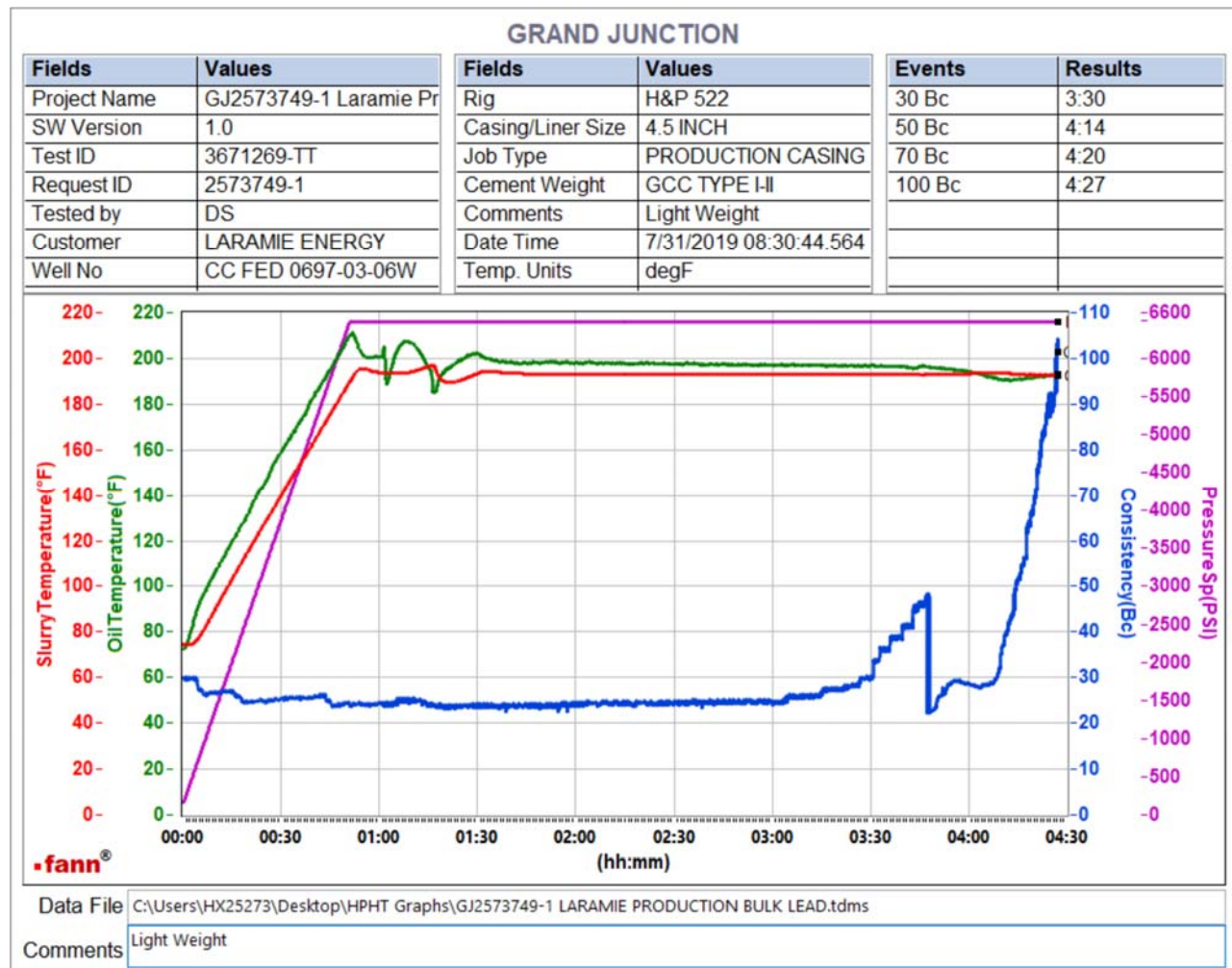
This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or 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.

# **Operation Test Results Request ID 2573749/1**

**Thickening Time - ON-OFF-ON, Request Test ID:36712469**

**01/AUG/2019**

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)
193	6482	51	3:30	4:14	4:20	4:27	28	61	15	24



Total sks= 1140  
 CS0898 TR#8658 500 SKS  
 CS0899 TR#8678 500 SKS  
 no deflection, 24Bc---- > 24Bc  
 Heat of hydration at 4:04

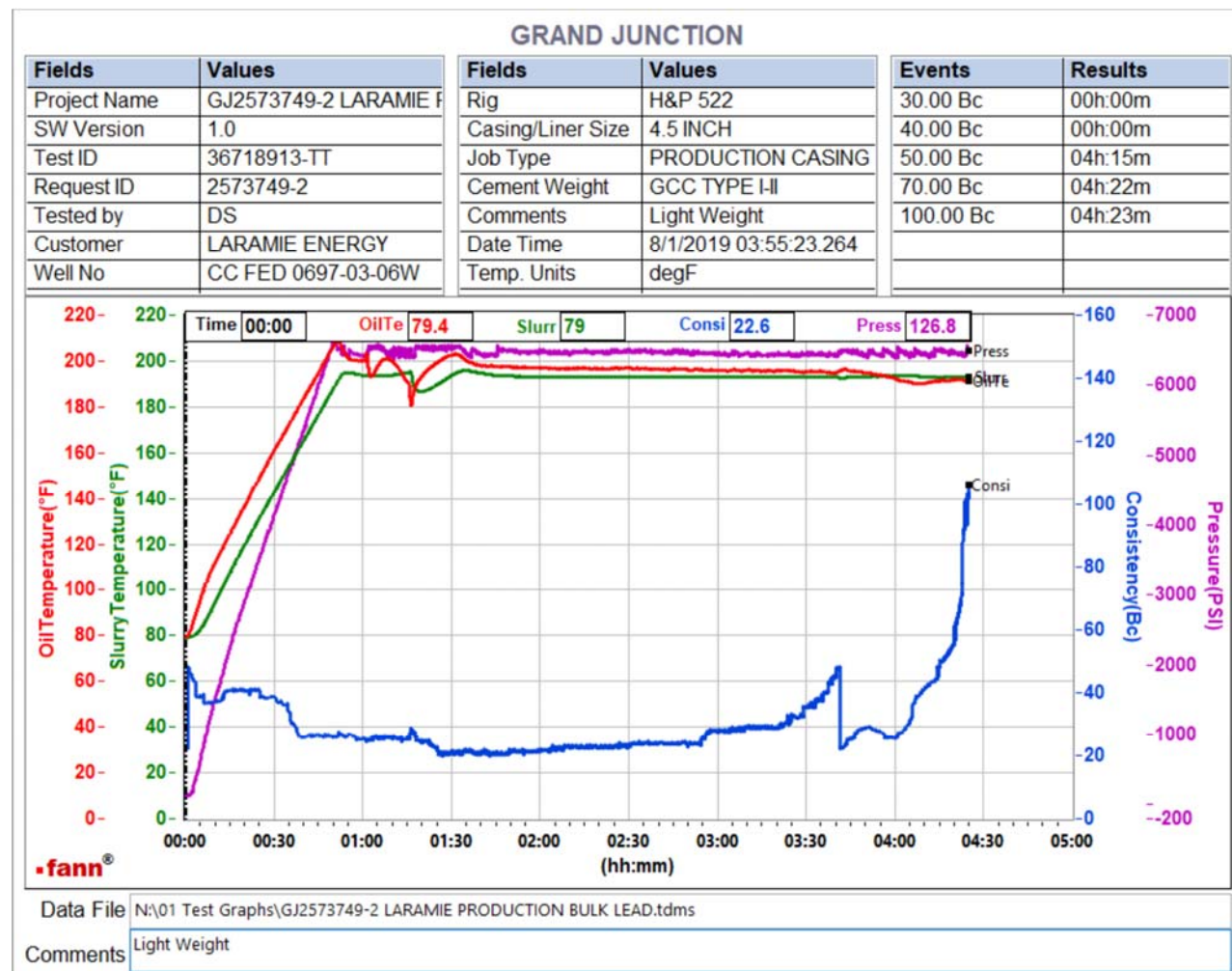
This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or 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.

## Operation Test Results Request ID 2573749/2

Thickening Time - ON-OFF-ON, Request Test ID:36718913

01/AUG/2019

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)
193	6432	51	0:00	4:15	4:22	4:23	22	61	15	27



Total sks=1140  
CS0902 TR#8321 140 sks  
Deflected 25-- > 27

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.

## Job Information

<b>Request/Slurry</b>	2573750/1	<b>Rig Name</b>	H&P 522	<b>Date</b>	30/JUL/2019
<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>	CC Federal 0697-03-06W

## Well Information

<b>Casing/Liner Size</b>	4.5 in	<b>Depth MD</b>	10719 ft	<b>BHST</b>	123°C / 254°F
<b>Hole Size</b>	8.75 in	<b>Depth TVD</b>	10260 ft	<b>BHCT</b>	89°C / 193°F
<b>Pressure</b>	6482 psi				

## Drilling Fluid Information

<b>Mud Supplier Name</b>	<b>Mud Trade Name</b>	<b>Density</b>
--------------------------	-----------------------	----------------

## Cement Information - Tail Design

<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>MP</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	<b>Cement Properties</b>		
		ThermaCem Tail					Slurry Density	13	lbm/gal
							Slurry Yield	1.74	ft3/sack
							Water Requirement	7.99	gal/sack
							Total Mix Fluid	7.99	gal/sack
							Water Source	Fresh Water	
							Water Chloride		

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.

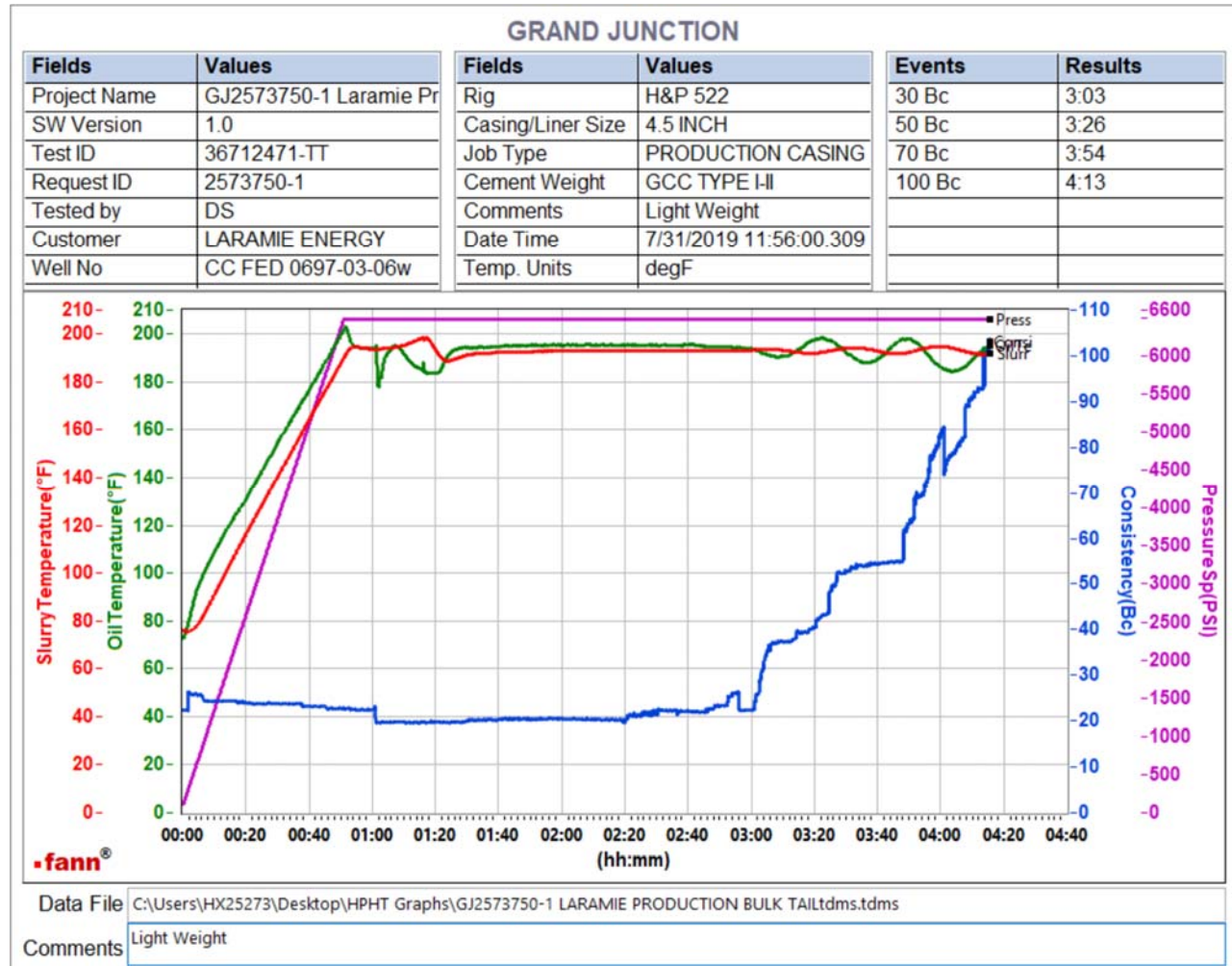


# **Operation Test Results Request ID 2573750/1**

**Thickening Time - ON-OFF-ON, Request Test ID:36712471**

**01/AUG/2019**

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)
193	6432	51	3:03	3:26	3:54	4:13	22	61	15	19



Total sks=632  
 CS0900 TR#1513 400 SKS  
 CS0901 TR#4064 232 SKS  
 no deflection, 19Bc--- > 19Bc  
 Heat of hydration at 3:01

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.