

HALLIBURTON

iCem[®] Service

Laramie Energy LLC

United States of America, COLORADO

For: Aaron Duncan

Date: Monday, August 05, 2019

CC Federal 0697-03-07W Surface PJR

API# 05-045-23936-00

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

2.1 Job Event Log

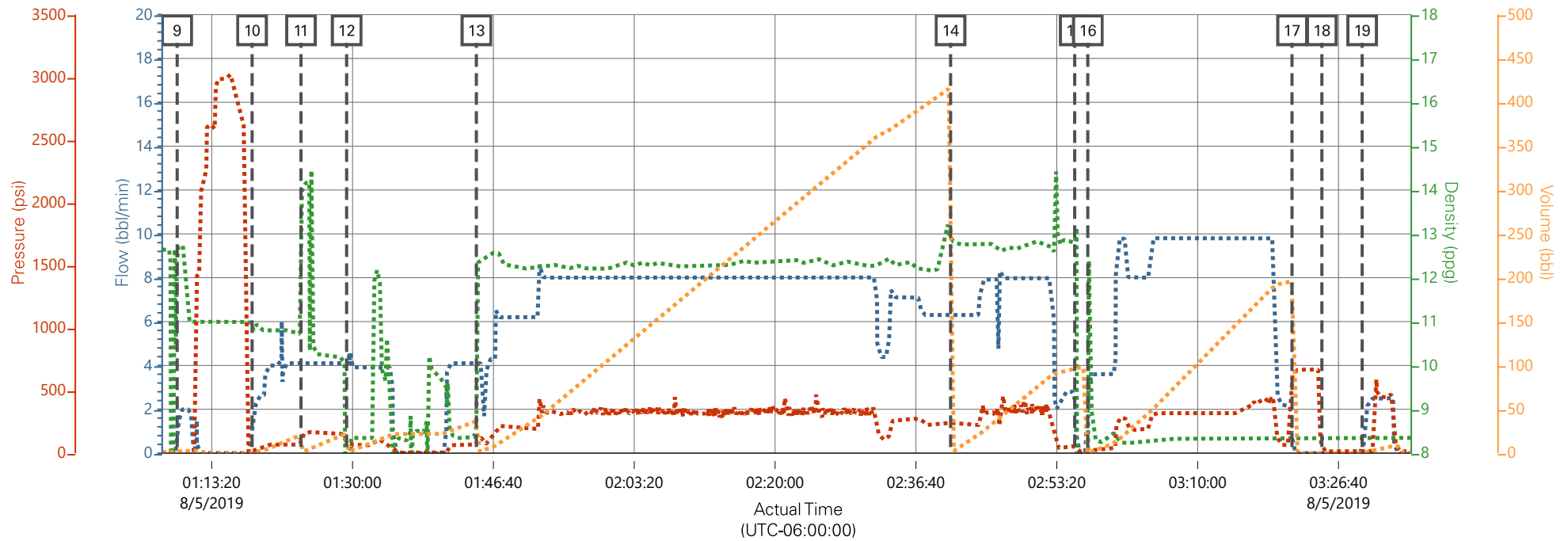
Type	Seq. No.	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	DH Density (ppg)	Comments
Event	1	Call Out	8/4/2019	18:30:00	USER					REQUESTED ON LOCATION 8/5/19 @ 00:30
Event	2	Depart Yard Safety Meeting	8/4/2019	18:55:00	USER					JSA COMPLETED
Event	3	Crew Leave Shop	8/4/2019	19:00:00	USER					
Event	4	Arrive At Loc	8/4/2019	23:00:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	8/4/2019	23:10:00	USER					JSA COMPLETED
Event	6	Pre-Rig Up Safety Meeting	8/4/2019	23:25:00	USER					JSA COMPLETED
Event	7	Rig-Up Equipment	8/4/2019	23:30:00	USER					
Event	8	Pre-Job Safety Meeting	8/5/2019	00:45:00	USER					JSA COMPLETED, PRESSURIZED MUD SCALES CALIBRATED TO FRESH WATER
Event	9	Start Job	8/5/2019	01:09:15	COM4					9 5/8"-36# CASING IN 14 3/4" OH, TD 2580', TP 2570', ST 42.2', MUD 8.9 PPG, WATER TEMP 50, PH 7, CHLORIDES 0
Event	10	Test Lines	8/5/2019	01:11:31	USER		3000.00			TEST LINES TO 3000 PSI
Event	11	Pump Spacer 1	8/5/2019	01:18:07	COM4	4.00	70.00	20.00	8.33	20 BBLS FRESH WATER
Event	12	Pump Spacer 2	8/5/2019	01:23:54	COM4	4.00	160.00	20.00	10.50	20 BBLS SUPERFLUSH
Event	13	Pump Spacer 1	8/5/2019	01:29:18	COM4	4.00	120.00	20.00	8.33	20 BBLS FRESH WATER

Event	14	Pump Lead Cement	8/5/2019	01:44:39	COM4	8.00	300.00	370.60	12.30	370.6 BBLS LEAD CEMENT, 878 SKS @ 12.3 PPG / 2.37 YLD / 13.74 GAL/SK
Event	15	Pump Tail Cement	8/5/2019	02:40:46	COM4	8.00	250.00	94.70	12.80	94.7 BBLS TAIL CEMENT, 252 SKS @ 12.8 PPG / 2.11 YLD / 11.75 GAL/SK
Event	16	Drop Top Plug	8/5/2019	02:55:27	COM4					PLUG AWAY
Event	17	Pump Displacement	8/5/2019	02:57:00	USER	10.00	400.00	195.40	8.33	195.4 BBLS FRESH WATER DISPLACEMENT
Event	18	Bump Plug	8/5/2019	03:21:10	COM4	2.00	65.00	195.40	8.33	PLUG BUMPED AT CALCULATED DISPLACEMENT, FINAL LIFT PRESSURE 65 PSI @ 2 BBL/MIN, BROUGHT TO 660 PSI
Event	19	CHECK FLOATS	8/5/2019	03:24:42	COM4					FLOATS HELD, .5 BBL BACK TO PUMP
Event	20	CLEAR PARASITE LINE	8/5/2019	03:29:28	COM4	2.50	440.00	8.00	8.33	PUMP 8 BBLS SUGAR WATER TO CLEAR PARASITE LINE
Event	21	Pump Cement	8/5/2019	04:08:58	COM4	2.00	70.00	85.00	15.60	PUMP 85 BBLS TOP OUT CEMENT, 401 SKS @ 15.6 PPG / 1.19 YLD / 5.24 GAL/SK, 10 BBLS SUPERFLUSH AND 3 SKS CaCl USED
Event	22	Pump Cement	8/5/2019	06:22:13	USER	2.00	70.00	22.30	15.60	22.3 BBLS TOP OUT CEMENT, 105 SKS @ 15.6 PPG / 1.19 YLD / 5.24 GAL/SK, 5 BBLS SUPERFLUSH AND 1 SK CaCl USED, CEMENT TO SURFACE
Event	23	End Job	8/5/2019	06:50:04	COM4					PIPE LEFT STATIC, NO RETURNS THROUGHOUT, TOP PLUG AND 10 LBS SUGAR USED. 7 TRANSPORT HOURS. NO ADD HOURS. 506 SKS TOP OUT CEMENT, 15 BBLS SUPERFLUSH AND 4 SKS CaCl TOTAL USED FOR TOP OUT
Event	24	Pre-Rig Down Safety Meeting	8/5/2019	06:55:00	USER					JSA COMPLETED
Event	25	Rig-Down Equipment	8/5/2019	07:00:00	USER					
Event	26	Pre-Convoy Safety Meeting	8/5/2019	07:55:00	USER					JSA COMPLETED

Event 27 Crew Leave Location 8/5/2019 08:00:00 USER

THANK YOU FOR CHOOSING HALLIBURTON
CEMENTING OF GRAND JUNCTION, CO - RYAN
MARTIN AND CREW

LARAMIE - CC FEDERAL 697-03-07W - 9 5/8" SURFACE CASING



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

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	01:09:15	0.00	12.62	6.00	0.00	
10 Pump Spacer 1	01:18:07	0.00	10.98	0.00	0.00	
11 Pump Spacer 2	01:23:54	4.10	12.10	70.00	0.60	
12 Pump Spacer 1	01:29:18	4.10	6.92	86.00	0.60	
13 Pump Lead Cement	01:44:39	4.10	8.60	61.00	0.00	
14 Pump Tail Cement	02:40:46	6.30	12.81	236.00	0.10	
15 Drop Top Plug	02:55:27	2.80	12.80	56.00	96.90	
16 Pump Displacement	02:57:00	1.70	5.08	13.00	0.30	
17 Bump Plug	03:21:10	0.00	8.36	611.00	196.10	
18 CHECK FLOATS	03:24:42	0.00	8.34	51.00	0.00	
19 CLEAR PARASITE LINE	03:29:28	0.00	8.37	5.00	0.00	

▼ **HALLIBURTON** | iCem® Service

Created: 2019-08-04 23:44:56, (UTC-06:00), Version: 4.5.139

Edit

Customer : Laramie Energy LLC

Job Date : 8/5/2019

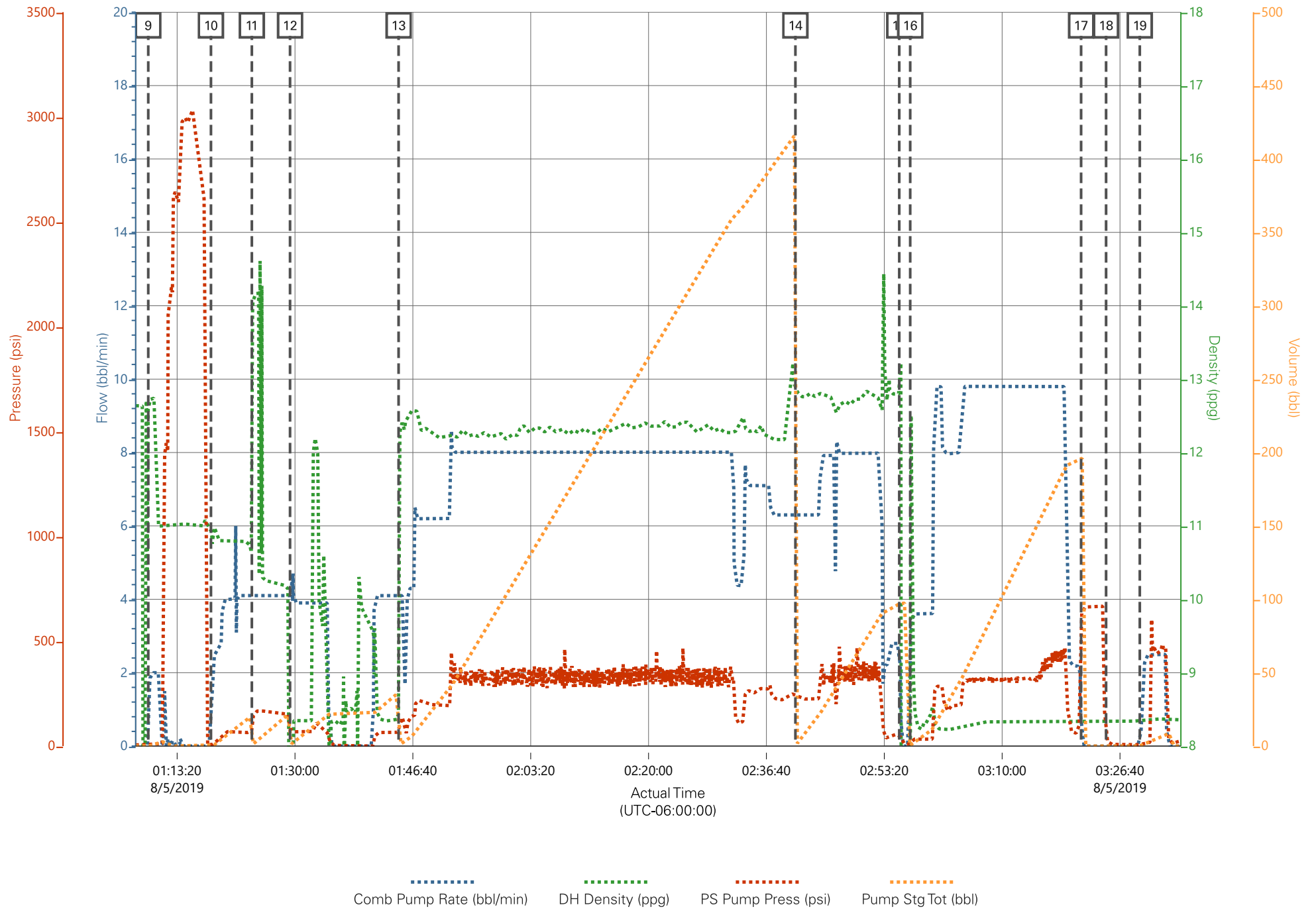
Well : CC FEDERAL 697-03-07W

Representative : MATT SETTLES

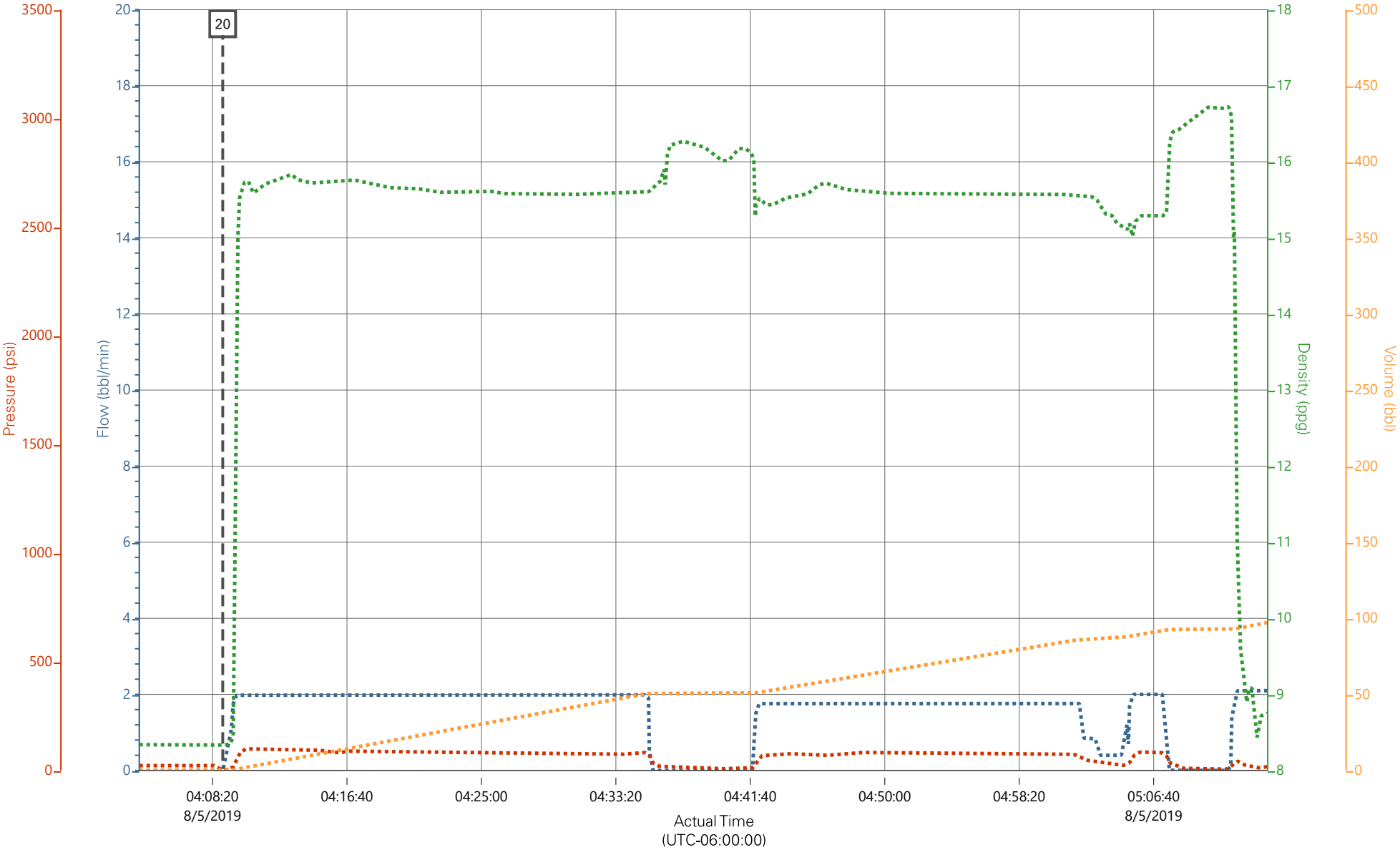
Sales Order # : 905887114

ELITE #8 : WES GOWEN / RYAN MARTIN

LARAMIE - CC FEDERAL 697-03-07W - 9 5/8" SURFACE CASING

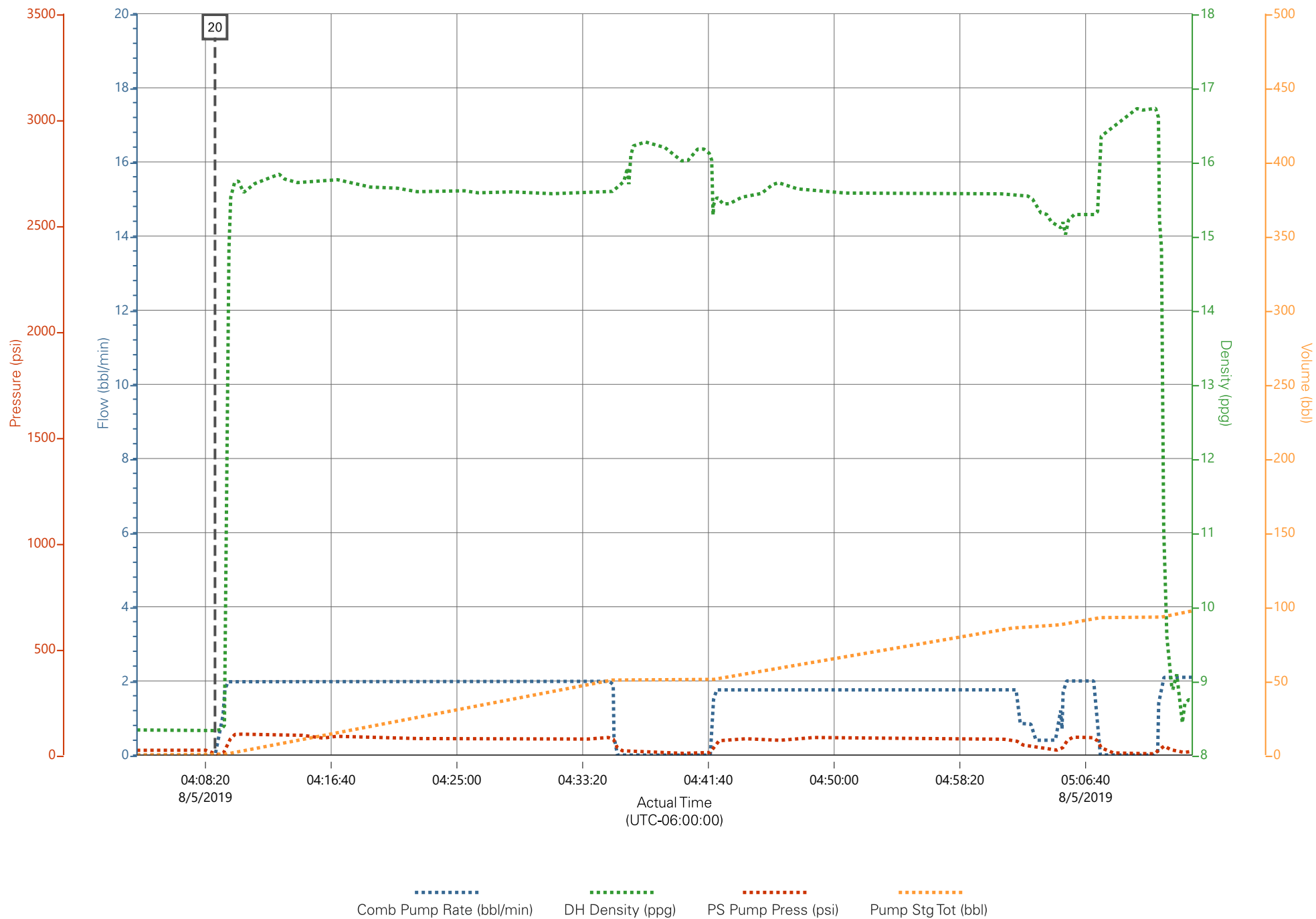


LARAMIE - CC FEDERAL 697-03-07W - TOP OUT #1

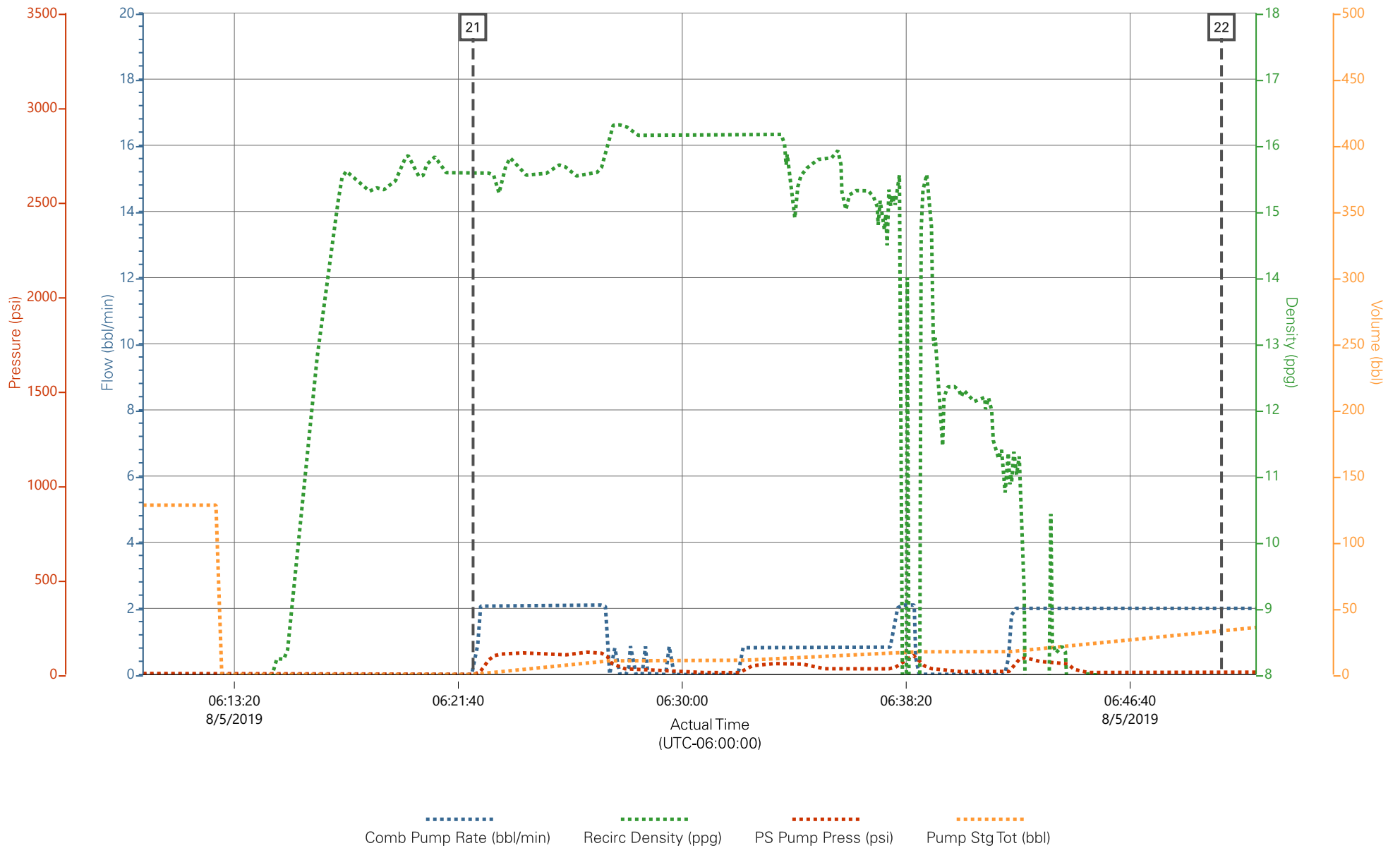


Description	Actual Time (UTC-06:00:00)	Comb Pump Rate (bbl/min)	DH Density (ppg)	PS Pump Press (psi)	Pump Stg Tot (bbl)
20 Pump Cement	04:08:58	0.00	8.33	2.00	0.00

LARAMIE - CC FEDERAL 697-03-07W - TOP OUT #1



LARAMIE - CC FEDERAL 697-03-07W - TOP OUT #2



Description	Actual Time (UTC-06:00:00)	Comb Pump Rate (bbl/min)	Recirc Density (ppg)	PS Pump Press (psi)	Pump Stg Tot (bbl)	
21 Pump Cement	06:22:13	0.00	15.58	0.00	0.00	
22 End Job	06:50:04	2.00	-0.26	7.00	32.78	

▼ HALLIBURTON | iCem® Service

Created: 2019-08-04 23:44:56, (UTC-06:00), Version: 4.5.139

Edit

Customer : Laramie Energy LLC

Job Date : 8/5/2019

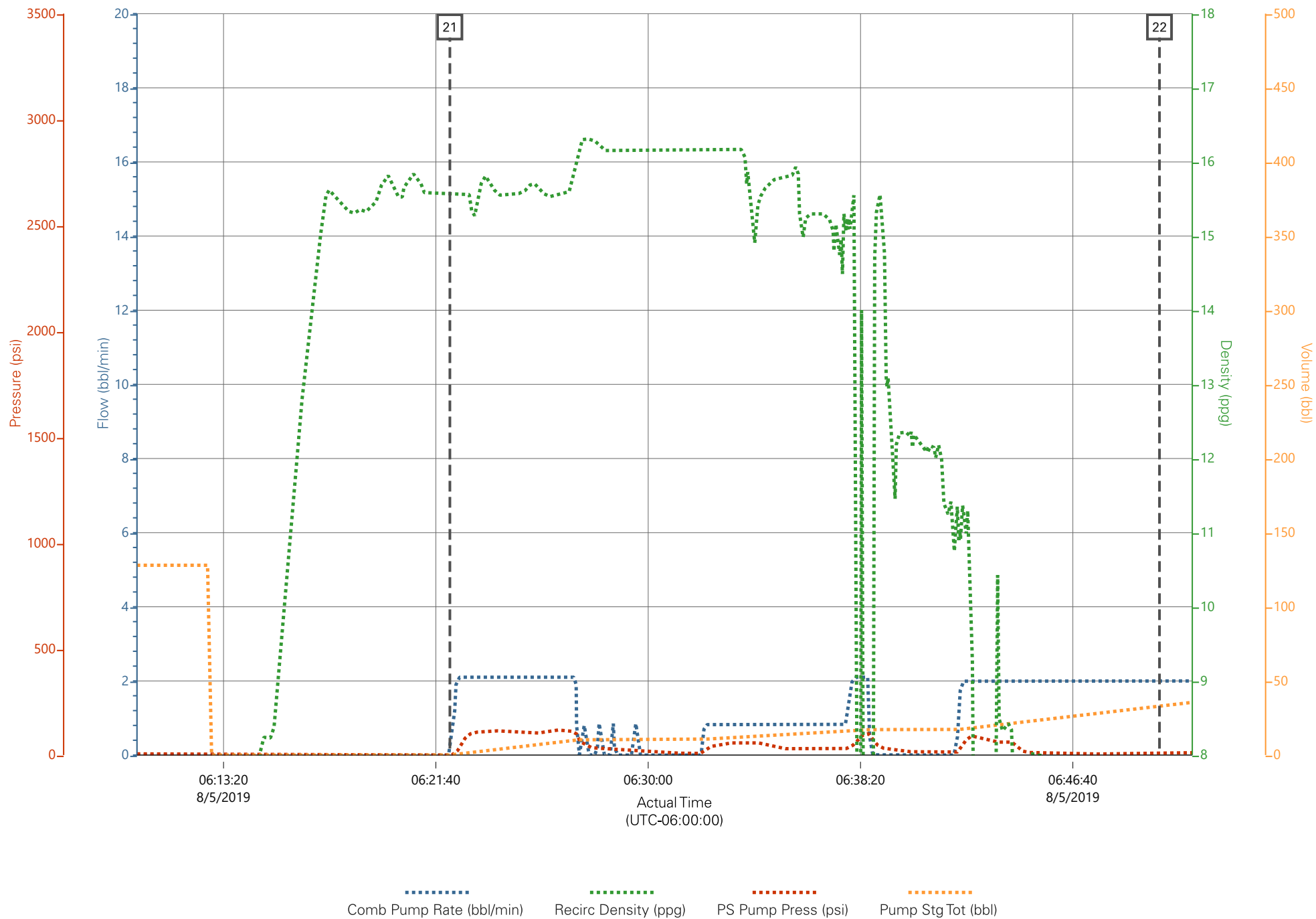
Well : CC FEDERAL 697-03-07W

Representative : MATT SETTLES

Sales Order # : 905887114

ELITE #8 : WES GOWEN / RYAN MARTIN

LARAMIE - CC FEDERAL 697-03-07W - TOP OUT #2



HALLIBURTON

iCem[®] Service

Laramie Energy LLC

Rock Springs District, Colorado

For: Aaron Duncan

Date: Thursday, August 08, 2019

CC Federal 0697-03-07W Production PJR

API# 05-045-23936-00

Sincerely,

Grand Junction Cement Engineering

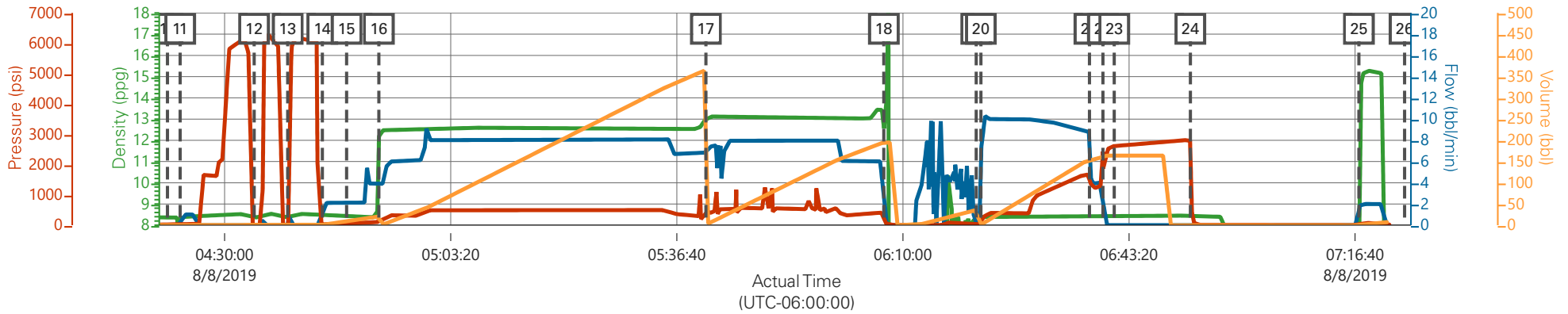
1.0 Real-Time Job Summary

1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	8/7/2019	20:00:00						Requested on Location @ 02:00
Event	2	Pre-Convoy Safety Meeting	8/7/2019	21:50:00						
Event	3	Crew Leave Yard	8/7/2019	22:00:00						1 Elite, 1 660, 1 pickup
Event	4	Arrive At Loc	8/8/2019	02:00:00						Rig running casing
Event	5	Assessment Of Location Safety Meeting	8/8/2019	02:10:00						JSA completed - Customer offered/received SDS - water test pH 7.0, Cl <200, temp 66 degrees
Event	6	Pre-Rig Up Safety Meeting	8/8/2019	02:20:00						
Event	7	Rig-Up Equipment	8/8/2019	02:30:00						1 hardline to standpipe, water hoses to upright, bulk hoses to silo's and 660.
Event	8	Other	8/8/2019	02:40:00						Mud scales calibrated to drinking water prior to job.
Event	9	Pre-Job Safety Meeting	8/8/2019	03:50:00						All HES personnel, rig crew, and company rep
Event	10	Start Job	8/8/2019	04:21:35						TD 10056', TP 10046, SJ 43.21', OH 8 3/4", Csg 4.5" 11.6 lb/ft P-110, Mud 9.0 ppg, 9 5/8" 36# Surface casing @ 2570'
Event	11	Fill Lines	8/8/2019	04:23:27		8.33	2	18	2	Fresh Water
Event	12	Other	8/8/2019	04:34:21						Fix Leak
Event	13	Test Lines	8/8/2019	04:39:18				6244		No Leaks

Event	14	Pump Spacer 1	8/8/2019	04:44:24	8.4	4	84	20	80 lbs. Mud Flush III
Event	15	Check Weight	8/8/2019	04:47:59					Density Verified via Mud Scales,
Event	16	Pump Lead Cement	8/8/2019	04:52:45	12.5	8	572	349.3	1127 Sks 12.5 ppg 1.74 yield 9.1 gal/sk
Event	17	Pump Tail Cement	8/8/2019	05:40:57	13.0	8	560	160.8	519 Sks 13.0 ppg 1.74 yield 7.99 gal/sk
Event	18	Shutdown	8/8/2019	06:07:11					Wash lines to pit
Event	19	Drop Top Plug	8/8/2019	06:20:48					Customer verified top plug
Event	20	Pump Displacement	8/8/2019	06:21:29	8.33	10	1750		1 gal MMCR, 5 Gal Clay-web
Event	21	Slow Rate	8/8/2019	06:37:30	8.33	4	1308	145	Slow Rate 10 bbls to Calculated Displacement
Event	22	Bump Plug	8/8/2019	06:39:29			2808	155	Plug Bumped at 1308 psi, Brought up to 2808 psi
Event	23	Pressure Test	8/8/2019	06:41:09					10 Min. Casing Test
Event	24	Check Floats	8/8/2019	06:52:23					Floats held – 1.5 bbl back to
Event	25	Pump Cement	8/8/2019	07:17:13	15.6	2	70	6.3	30 sks, 15.6 ppg, 1.18 Yield, 5.23 gal/sk
Event	26	End Job	8/8/2019	07:23:57					Good returns throughout job, . 5 bbl of mudflush to surface
Event	27	Pre-Rig Down Safety Meeting	8/8/2019	07:31:26					40 lb sugar used, No add hr
Event	28	Rig-Down Equipment	8/8/2019	07:36:31					
Event	29	Pre-Convoy Safety Meeting	8/8/2019	08:00:00					
Event	30	Crew Leave Location	8/8/2019	08:20:00					Thank you for using Halliburton – Chris Martinez and crew.

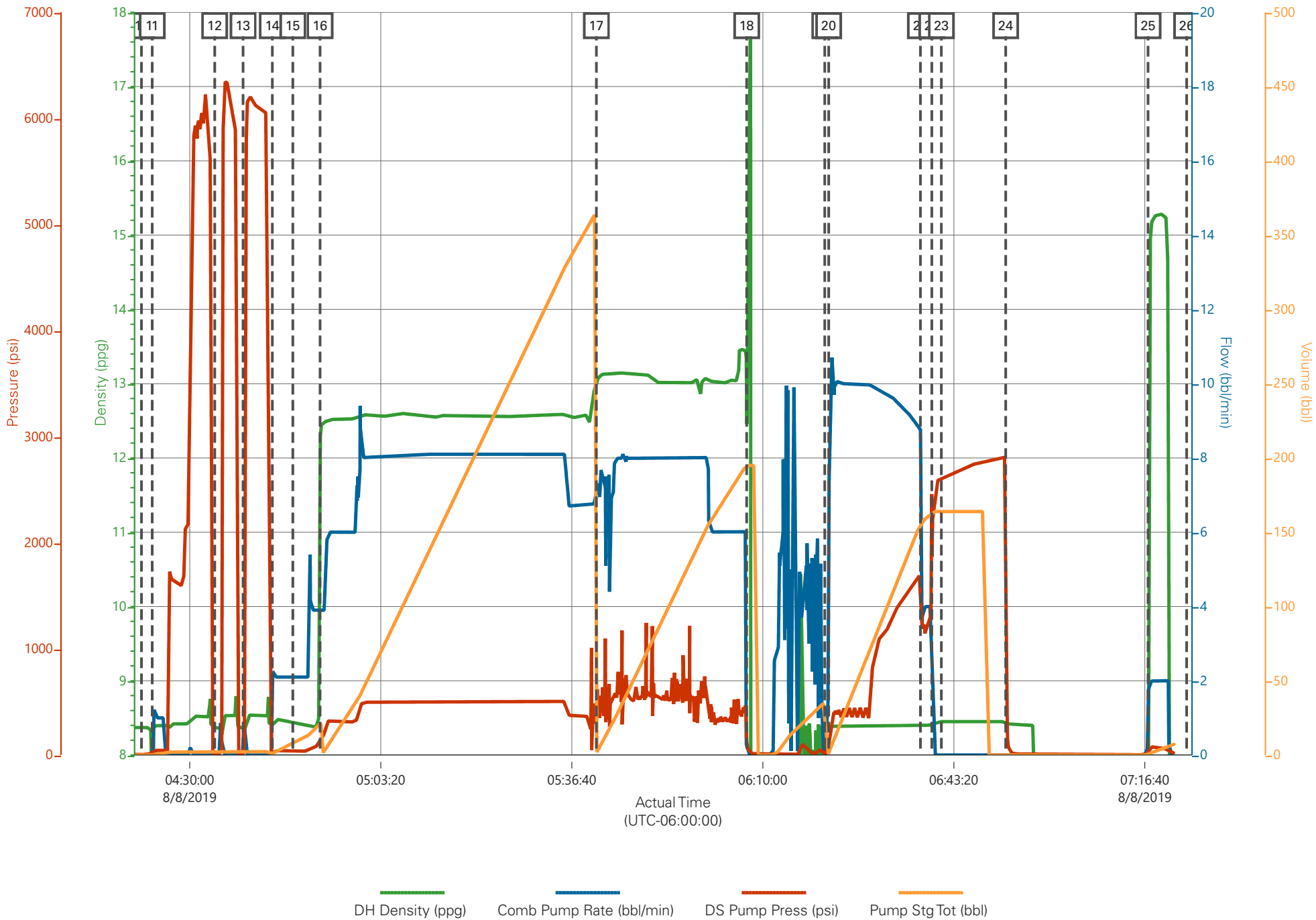
Laramie, CC 697-03-07W, 4 1/2" Production



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

Description	Actual Time (UTC-06:00:00)	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Pump Stg Tot (bbl)	
10 Start Job	04:21:35	8.37	0.00	5.00	0.00	
11 Fill Lines	04:23:27	8.36	0.00	33.00	0.00	
12 Other	04:34:21	8.37	0.00	8.00	2.10	
13 Test Lines	04:39:18	8.38	0.00	6.00	2.20	
14 Pump Spacer 1	04:44:24	8.40	1.00	23.00	0.10	
15 Check Weight	04:47:59	8.44	2.10	32.00	7.50	
16 Pump Lead Cement	04:52:45	12.09	3.90	116.00	21.00	
17 Pump Tail Cement	05:40:57	12.99	6.80	285.00	1.30	
18 Shutdown	06:07:11	12.58	0.00	132.00	195.00	
19 Drop Top Plug	06:20:48	8.38	0.00	7.00	34.90	
20 Pump Displacement	06:21:29	8.39	5.80	93.00	0.60	
21 Slow Rate	06:37:30	8.42	8.80	1666.00	155.30	
22 Bump Plug	06:39:29	8.41	4.00	2459.00	163.80	
23 Pressure Test	06:41:09	8.45	0.00	2608.00	163.90	
24 Check Floats	06:52:23	8.45	0.00	2784.00	0.00	
25 Pump Cement	07:17:13	6.10	1.50	18.00	0.10	
26 End Job	07:23:57	n/a	n/a	n/a	n/a	

Laramie, CC 697-03-07W, 4 1/2" Production



Job Information

Request/Slurry	2574347/1	Rig Name	H&P 522	Date	01/AUG/2019
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	CC Federal 0697-03-07W

Well Information

Casing/Liner Size	4.5 in	Depth MD	10150 ft	BHST	118°C / 245°F
Hole Size	8.75 in	Depth TVD	9735 ft	BHCT	79°C / 175°F
Pressure	6115 psi				

Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
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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>	Cement Properties		
		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		

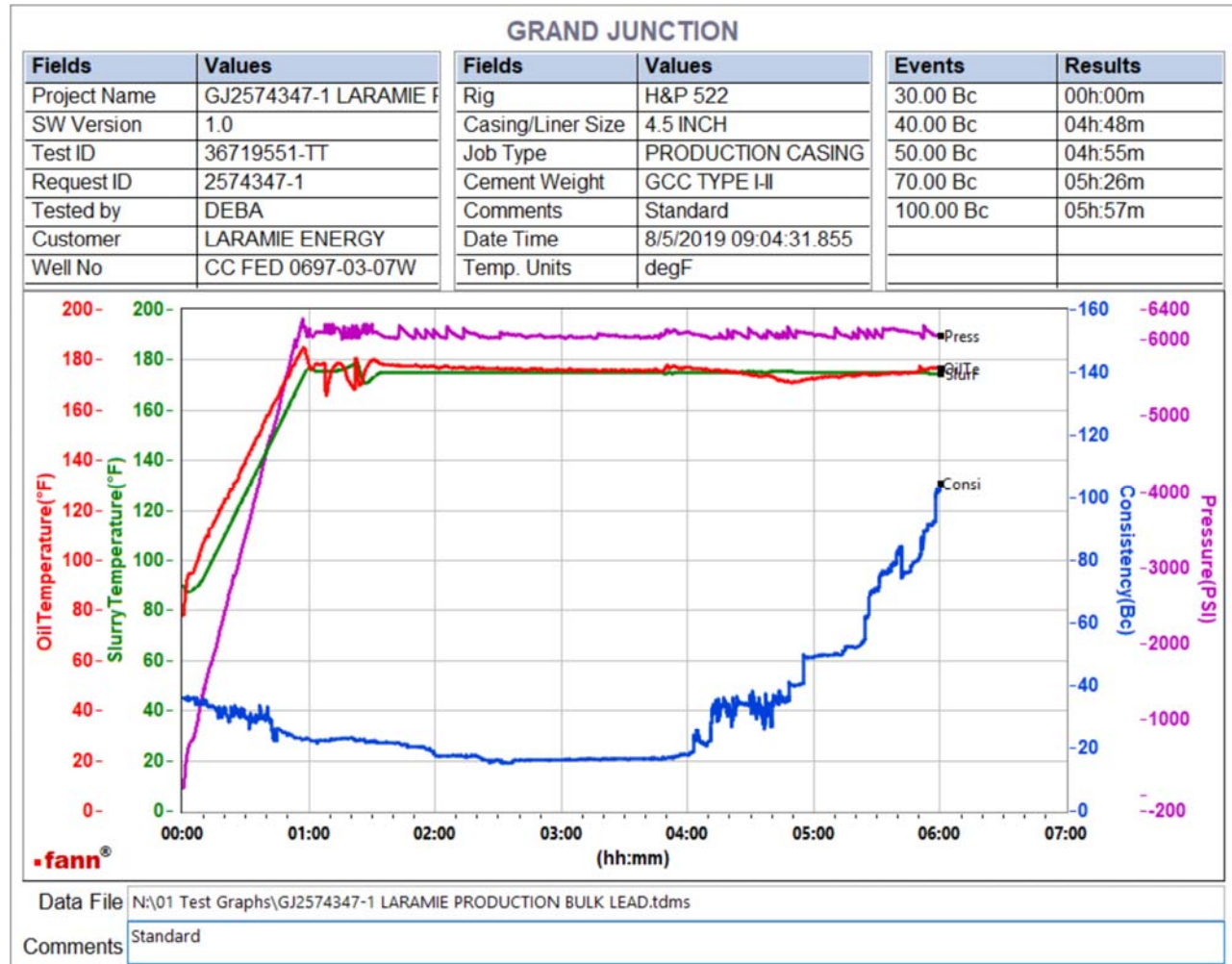
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Operation Test Results Request ID 2574347/1

Thickening Time - ON-OFF-ON, Request Test ID:36719551

06/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)
175	6115	57	0:00	4:55	5:26	5:57	22	67	15	23



Total sks=1127
 CS0916 TR#8677 500 SKS
 CS0917 TR#1513 500 SKS
 No deflection

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Operation Test Results Request ID 2574347/2

Thickening Time - ON-OFF-ON, Request Test ID:36733134

07/AUG/2019

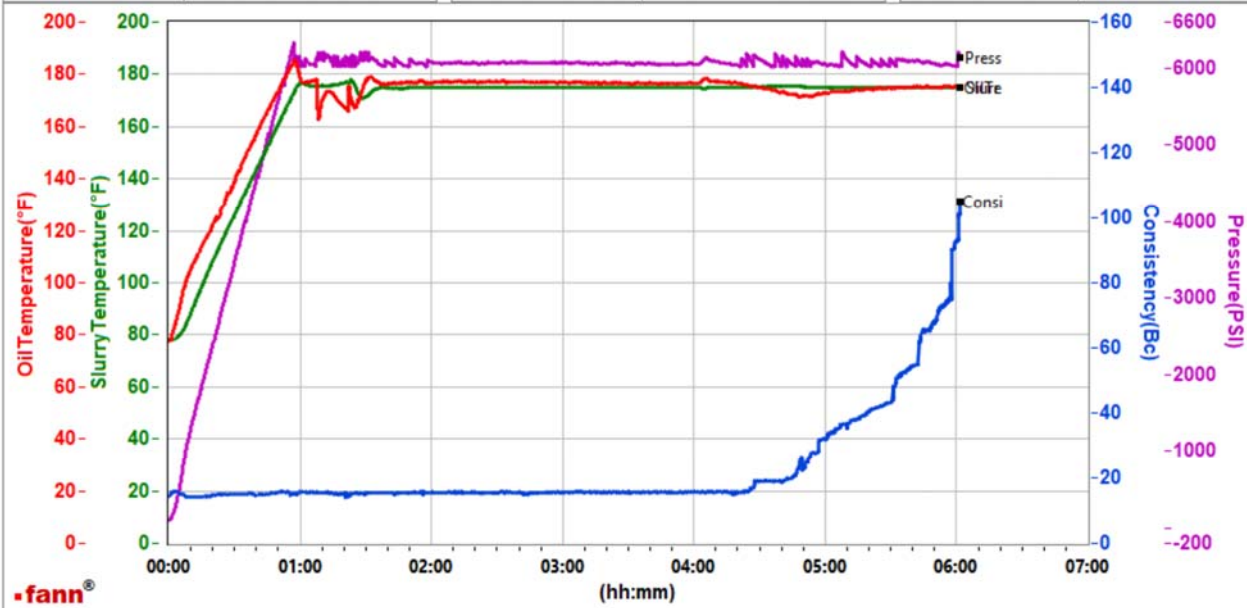
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
175	6115	57	4:57	5:32	5:51	5:59	14	67	15	15

GRAND JUNCTION

Fields	Values
Project Name	GJ2574347-2 LARAMIE F
SW Version	1.0
Test ID	36733134-TT
Request ID	2574347-2
Tested by	JASON
Customer	LARAMIE ENERGY
Well No	CC FED 0697-03-07W

Fields	Values
Rig	H&P 522
Casing/Liner Size	4.5 INCH
Job Type	PRODUCTION CASING
Cement Weight	GCC TYPE I-II
Comments	Standard
Date Time	8/6/2019 06:07:48.932
Temp. Units	degF

Events	Results
30.00 Bc	04h:57m
40.00 Bc	05h:18m
50.00 Bc	05h:32m
70.00 Bc	05h:51m
100.00 Bc	05h:59m



Data File N:\01 Test Graphs\GJ2574347-2 LARAMIE PRODUCTION BULK LEAD.tdms

Comments Standard

Total sks=1127
CS0922 TR 6813 127 SKS
No deflection

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Job Information

Request/Slurry	2574348/1	Rig Name	H&P 522	Date	01/AUG/2019
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	CC Federal 0697-03-07W

Well Information

Casing/Liner Size	4.5 in	Depth MD	10150 ft	BHST	118°C / 245°F
Hole Size	8.75 in	Depth TVD	9735 ft	BHCT	79°C / 175°F
Pressure	6115 psi				

Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
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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>	Cement Properties		
		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		

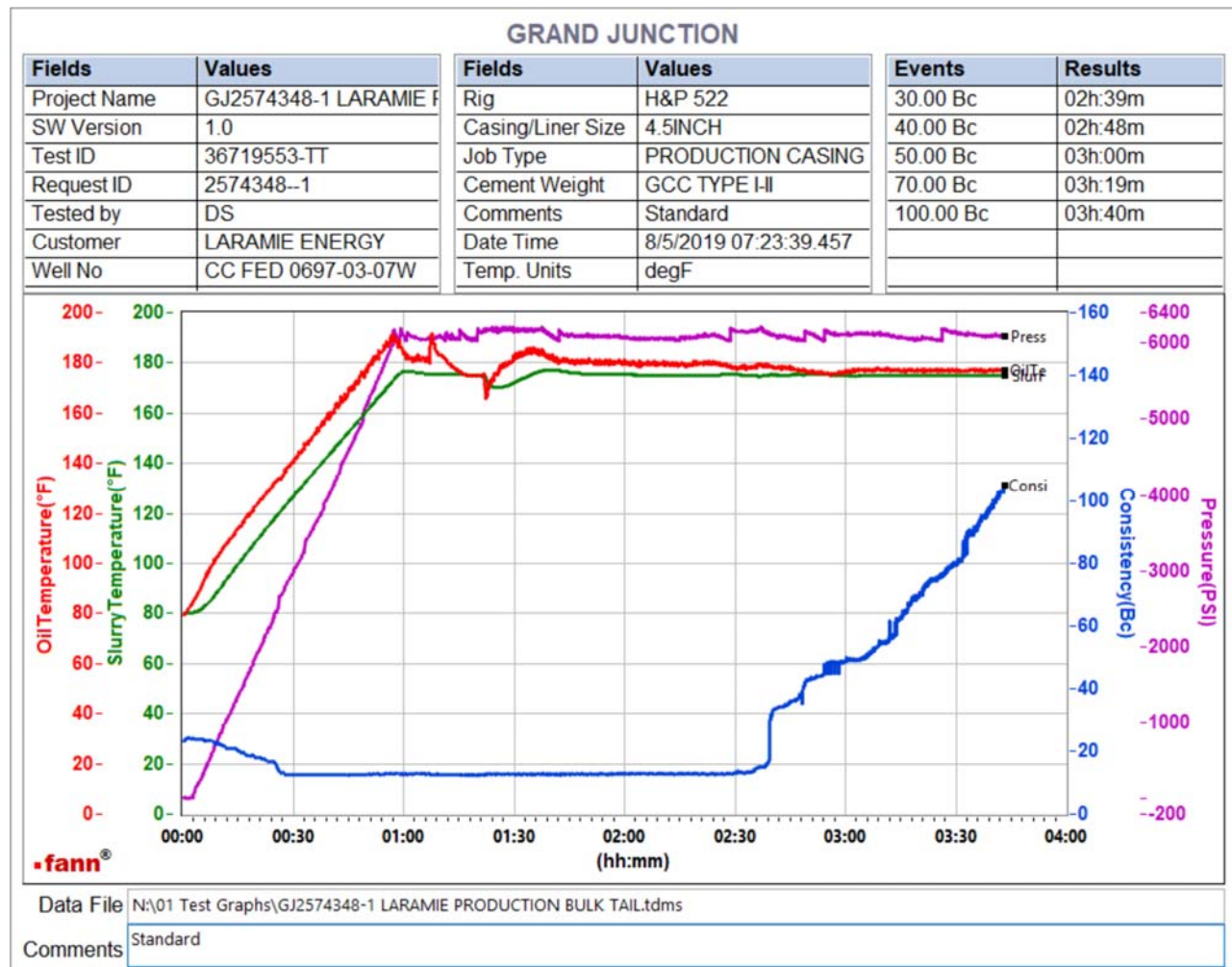
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Operation Test Results Request ID 2574348/1

Thickening Time - ON-OFF-ON, Request Test ID:36719553

06/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)
175	6115	57	2:39	3:00	3:19	3:40	23	67	15	12



Total sks=519
 CS0918 TR#1656 400 SKS
 No deflection

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Operation Test Results Request ID 2574348/2

Thickening Time - ON-OFF-ON, Request Test ID:36733155

06/AUG/2019

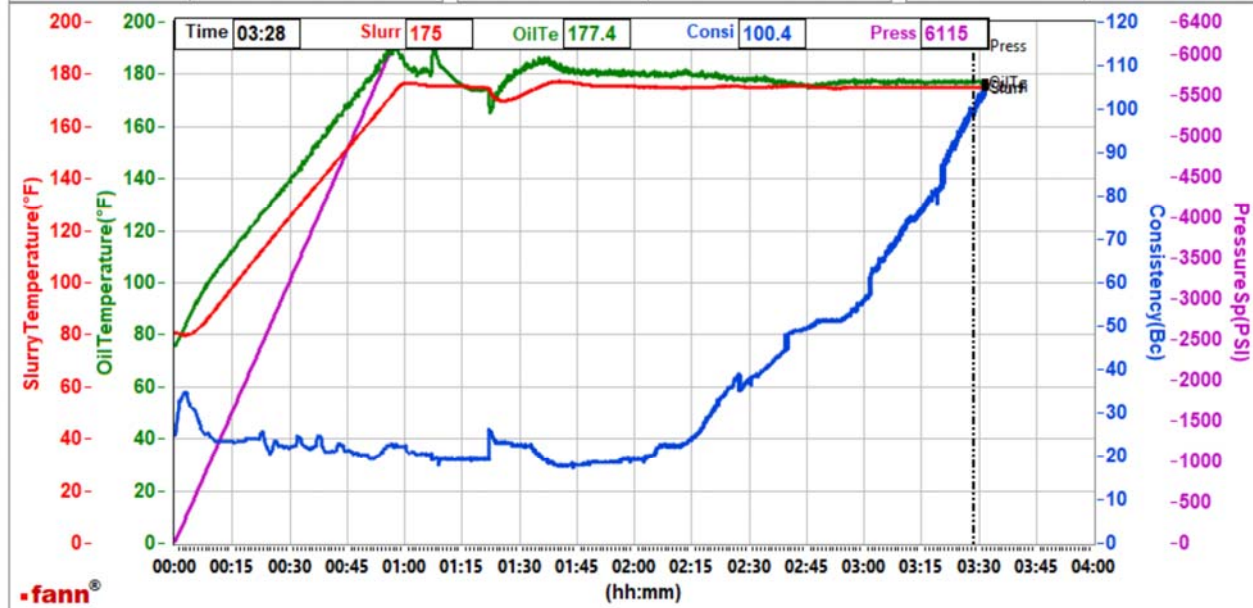
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
175	6115	57	2:20	2:47	3:08	3:28	23	67	15	26

GRAND JUNCTION

Fields	Values
Project Name	GJ2574348-1 Laramie Pr
SW Version	1.0
Test ID	36733155-TT
Request ID	2574348-2
Tested by	JASON
Customer	LARAMIE ENERGY
Well No	CC FED 0697-03-07W

Fields	Values
Rig	H&P 522
Casing/Liner Size	4.5INCH
Job Type	PRODUCTION CASING
Cement Weight	GCC TYPE I-II
Comments	Standard
Date Time	8/6/2019 04:18:42.077
Temp. Units	degF

Events	Results
30 Bc	2:20
50 Bc	2:47
70 Bc	3:08
100 Bc	3:28



Data File C:\Users\HX25273\Desktop\HPHT Graphs\GJ2574348-2 LARAMIE PRODUCTION BULK TAIL.tdms

Comments Standard

Total sks=519
CS0923 TR 6813 119 SKS
deflected from 19Bc---- > 26Bc---- > 24Bc

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