

# HALLIBURTON

iCem<sup>®</sup> Service

**Laramie Energy LLC**

United States of America, COLORADO

Date: Friday, June 01, 2018

**CASCADE CREEK 0697-03-12W**

API # 05-045-23796-00

Laramie Cascade Creek 0697-03-12W Surface

Job Date: Tuesday, May 22, 2018

Sincerely,

**Grand Junction Cement Engineering**

## 1.0 Real-Time Job Summary

## 1.1 Job Event Log

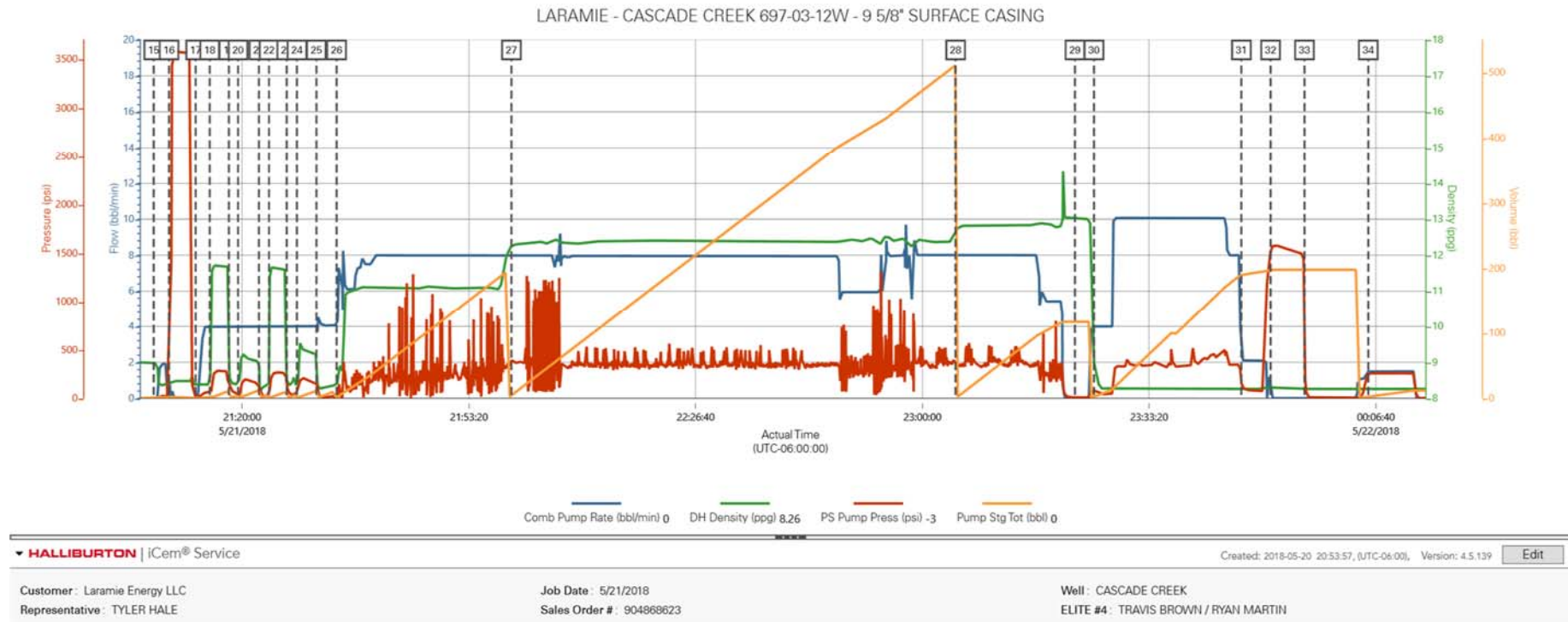
Type	Seq. No.	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	5/20/2018	16:30:00	USER					ORIGINAL ON LOCATION 5/21/18 @ 00:30, CUSTOMER CALLED ON WAY TO LOCATION AND REQUESTED LATER ON LOCATION 5/21/18 @ 06:00 TO PUMP DOWN PARASITE LINE AS CASING IS RAN
Event	2	Depart Yard Safety Meeting	5/20/2018	19:25:00	USER					JSA COMPLETED
Event	3	Crew Leave Shop	5/20/2018	19:30:00	USER					
Event	4	Arrive At Loc	5/21/2018	06:00:00	USER					RIG BREAKING DOWN BHA
Event	5	Assessment Of Location Safety Meeting	5/21/2018	06:05:00	USER					JSA COMPLETED
Event	6	Pre-Rig Up Safety Meeting	5/21/2018	06:25:00	USER					JSA COMPLETED
Event	7	Rig-Up Equipment	5/21/2018	06:30:00	USER					
Event	8	Pre-Job Safety Meeting	5/21/2018	09:30:00	USER					PRE-JOB MEETING WITH CASING CREW
Event	9	Start Job	5/21/2018	11:39:36	COM4					PUMP DOWN 1.9" PARASITE LINE WHILE RUNNING CASING
Event	10	Other	5/21/2018	11:40:24	COM4	0.00	8.33	-3.00	5.00	PUMP 5 BBL DOWN PARASITE LINE @ 150'
Event	11	Other	5/21/2018	13:43:22	COM4	0.20	8.33	15.00	2.00	PUMP 2 BBL DOWN PARASITE LINE @ 750'
Event	12	Other	5/21/2018	16:05:54	COM4	0.00	8.33	13.00	3.50	PUMP 3.5 BBL DOWN PARASITE LINE @ 1350'
Event	13	Other	5/21/2018	18:19:41	COM4	0.00	8.33	-1.00	4.50	PUMP 4.5 BBL DOWN PARASITE LINE @ 1950'

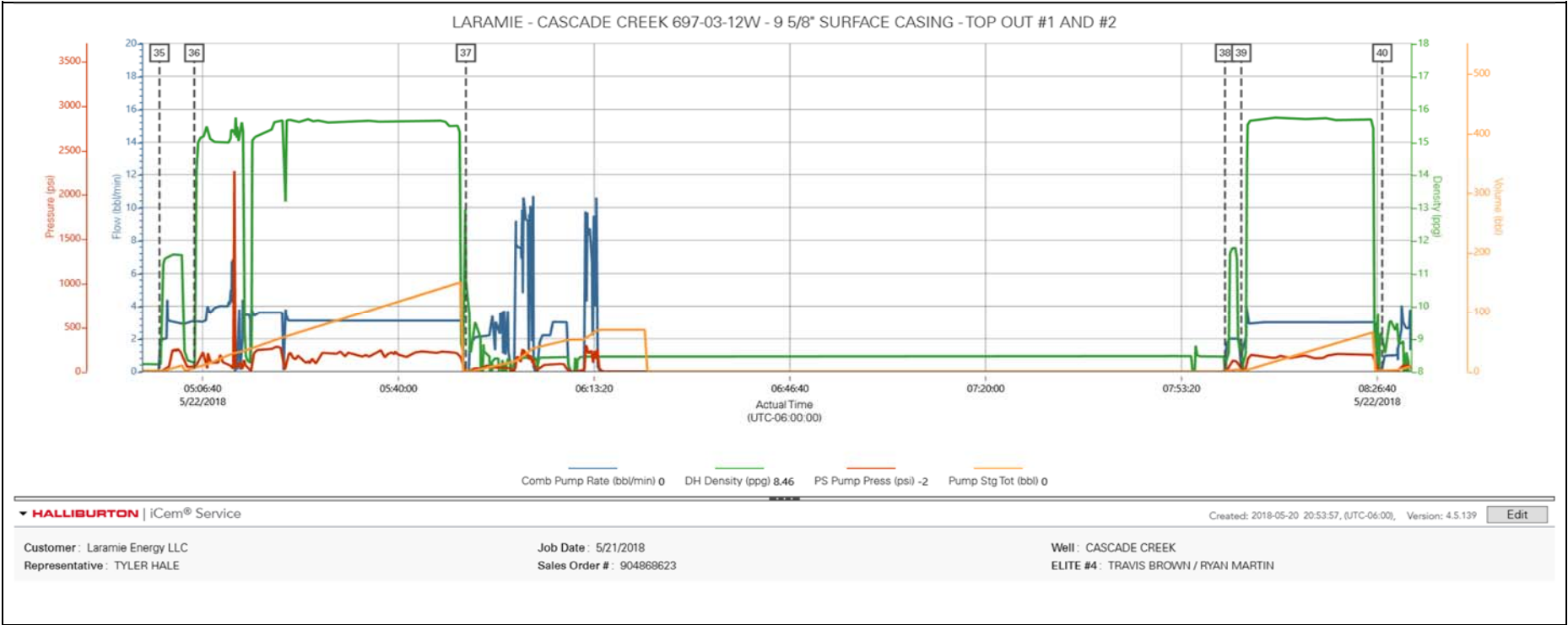
Event	14	Other	5/21/2018	20:40:13	COM4	0.00	8.33	-5.00	9.00	PUMP 9 BBLS DOWN PARASITE LINE AT 2546'
Event	15	Pre-Job Safety Meeting	5/21/2018	20:50:00	USER					JSA COMPLETED
Event	16	Start Cement Job	5/21/2018	21:07:00	USER					TD 2558', TP 2546', SJ 44.5', CASING 9 5/8"-36#, OH 14 3/4", MUD 8.9 PPG, PARASITE LINE 1.9" TUBING, WATER TEMP 60, CHLORIDES 0, PH 7
Event	17	Test Lines	5/21/2018	21:09:15	COM4	2.00	8.33	3000.00	2.00	TEST LINES TO 3000 PSI
Event	18	Pump Spacer 1	5/21/2018	21:13:10	COM4	4.00	8.33	16.00	5.00	5 BBL H2O
Event	19	Pump Spacer 2	5/21/2018	21:15:14	COM4	4.00	11.70	66.00	10.00	10 BBL SUPER FLUSH
Event	20	Pump Spacer 1	5/21/2018	21:18:03	COM4	4.00	8.33	16.00	5.00	5 BBL H2O
Event	21	Pump Spacer 2	5/21/2018	21:19:24	COM4	4.00	9.20	49.00	10.00	10 BBL CaCl SPACER
Event	22	Pump Spacer 1	5/21/2018	21:22:28	COM4	4.00	8.33	126.00	5.00	5 BBL H2O
Event	23	Pump Spacer 2	5/21/2018	21:23:57	COM4	4.00	11.70	66.00	10.00	10 BBL SUPER FLUSH
Event	24	Pump Spacer 1	5/21/2018	21:26:33	COM4	4.00	8.33	161.00	5.00	5 BBL H2O
Event	25	Pump Spacer 2	5/21/2018	21:28:03	COM4	4.00	9.20	55.00	10.00	10 BBL CaCl SPACER
Event	26	Pump Spacer 1	5/21/2018	21:30:55	COM4	4.00	8.33	160.00	10.00	10 BBL H2O
Event	27	Pump Cement	5/21/2018	21:33:53	COM4	8.00	11.00	395.00	124.30	124.3 BBL SCAVENGER, 306 SKS / 11 PPG / 2.28 YLD / 12.38 GAL/SK, 45 LBS TUFF FIBER USED
Event	28	Pump Lead Cement	5/21/2018	21:59:35	COM4	8.00	12.30	405.00	430.50	430.5 BBL LEAD CEMENT , 1020 SKS / 12.3 PPG / 2.37 YLD / 13.74 GAL/SK
Event	29	Pump Tail Cement	5/21/2018	23:04:53	COM4	8.00	12.80	350.00	112.30	112.3 BBLS TAIL CEMENT, 292 SKS / 12.8 PPG / 2.16 YLD / 12.35 GAL/SK
Event	30	Drop Top Plug	5/21/2018	23:22:26	COM4					PLUG AWAY
Event	31	Pump Displacement	5/21/2018	23:25:14	COM4	10.00	8.33	350.00	193.40	193.4 BBL FRESHWATER DISPLACEMENT
Event	32	Slow Rate	5/21/2018	23:46:54	USER	2.00	8.33	159.00	183.00	SLOW RATE TO 2 BBL/MIN
Event	33	Bump Plug	5/21/2018	23:51:12	COM4	2.00	8.33	1500.00	193.40	PLUG BUMPED AT CALCULATED, FINAL CIRCULATING PRESSURE 80 PSI, BROUGHT TO 1500 PSI FOR CASING TEST

Event	34	Check Floats	5/21/2018	23:56:11	COM4					FLOATS HELD, 1.5 BBL BACK TO PUMP
Event	35	Pump Down Parasite Line	5/22/2018	00:05:34	USER	1.50	8.33	240.00	12.00	PUMP 12 BBLS SUGAR WATER TO CLEAR PARASITE LINE, BROKE OVER AT 240 PSI
Event	36	Pump Spacer	5/22/2018	04:59:19	USER	3.00	11.70	50.00	10.00	PUMP 10 BBL SUPER FLUSH
Event	37	Pump Cement	5/22/2018	05:05:15	USER	3.00	15.60	51.00	85.80	PUMP 85.8 BBL TOP OUT CEMENT, 404.6 SKS / 15.6 PPG / 1.19 YLD / 5.24 GAL/SK, 2120 GALLONS TOTAL MIX WATER USED, 300 LBS CaCl USED
Event	38	Shutdown	5/22/2018	05:51:30	USER					
Event	39	Pump Spacer	5/22/2018	08:00:45	USER	3.00	11.70	50.00	5.00	5 BBL SUPER FLUSH
Event	40	Pump Cement	5/22/2018	08:03:31	USER	3.00	15.60	33.00	43.30	43.3 BBL TOP OUT, 204.2 SKS / 15.6 PPG / 1.19 YLD / 5.24 GAL/SK, 1070 GALLONS TOTAL MIX WATER USED, 150 LBS CaCl USED
Event	41	Shutdown	5/22/2018	08:27:31	USER					
Event	42	Pump Spacer 1	5/22/2018	10:17:43	USER	3.00	11.70	50.00	5.00	5 BBL SUPER FLUSH
Event	43	Pump Cement	5/22/2018	10:23:36	COM4	3.00	15.60	50.00	32.20	32.2 BBL TOP OUT, 151.9 SKS / 15.6 PPG / 1.19 YLD / 5.24 GAL/SK, 796 GALLONS TOTAL MIX WATER USED, 100 LBS CaCl USED
Event	44	End Job	5/22/2018	10:53:30	COM4					PIPE LEFT STATIC THROUGHOUT JOB, NO RETURNS THROUGHOUT, 30# SUGAR, 45# TUFF FIBER, 1550# CaCl, 761 SKS TOPOUT USED, 21 ADD HOURS CHARGED
Event	45	Pre-Rig Down Safety Meeting	5/22/2018	11:45:00	USER					JSA COMPLETED
Event	46	Rig-Down Equipment	5/22/2018	11:50:00	USER					
Event	47	Pre-Convoy Safety Meeting	5/22/2018	12:55:00	USER					JSA COMPLETED
Event	48	Crew Leave Location	5/22/2018	13:00:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENTING OF GRAND JUNCTION, CO – RYAN MARTIN AND CREW

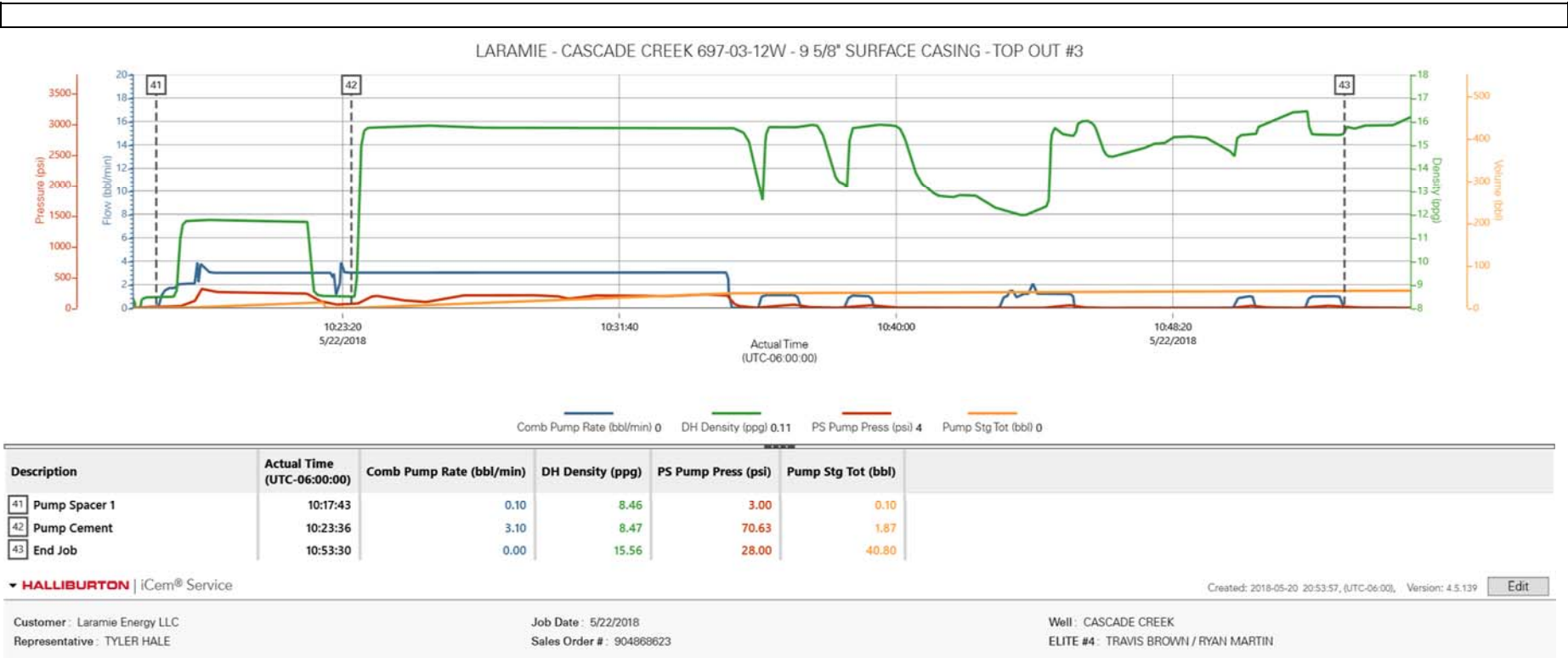
## 2.0 Attachments

### 2.1 904868623-Custom Results (1).png





2.2 904868623-Custom Results.png



## Job Information

Request/Slurry	2475585/2	Rig Name	Any	Date	18/MAY/2018
Submitted By	Lukas Van Zyl	Job Type	Surface Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Cascade Creek 0697-03-12W

## Well Information

Casing/Liner Size	9.625 in	Depth MD	2530 ft	BHST	50°C / 122°F
Hole Size	12.25 in	Depth TVD	2470 ft	BHCT	34°C / 94°F
Pressure	1459 psi				

## Drilling Fluid Information

Mud Supplier Name	AMC	Mud Trade Name	Density
-------------------	-----	----------------	---------

## Cement Information - Lead Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
		VariCem				Slurry Density	12.3	lbm/gal
						Slurry Yield	2.374	ft3/sack
						Water Requirement	13.738	gal/sack
						Total Mix Fluid	13.738	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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

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 2475585/2

## Thickening Time

20/MAY/2018

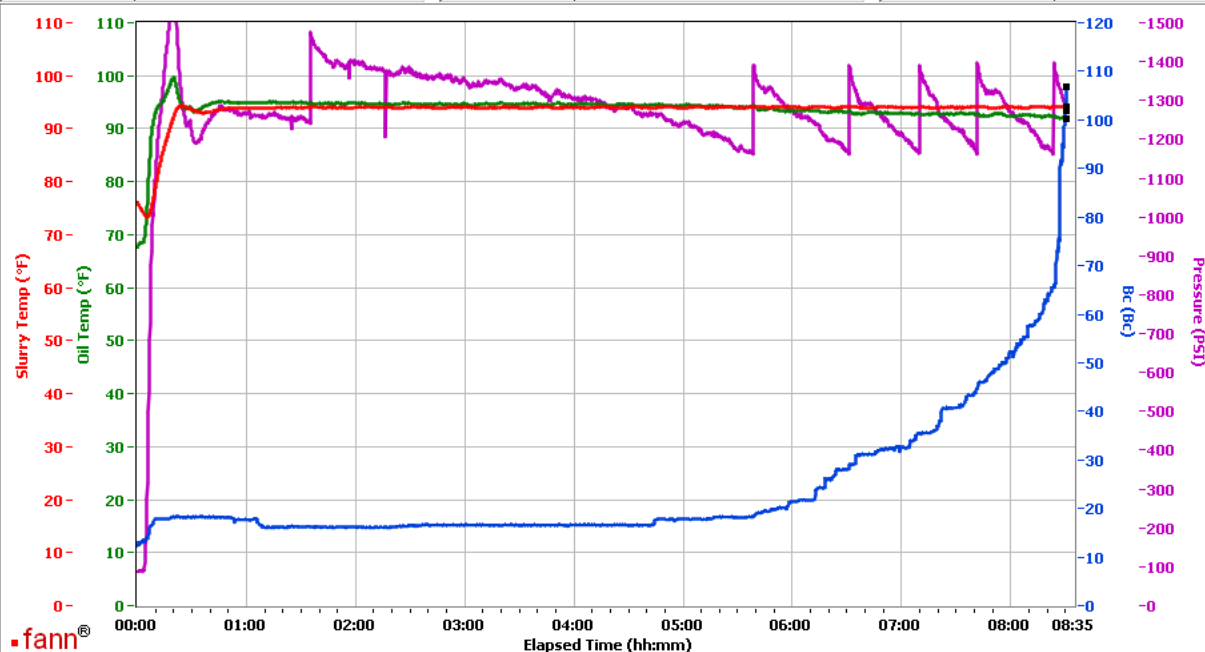
Temp (degF)	Pressure (psi)	Reached in (min)	Start Bc	30 Bc (hh:mm)	40 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)
94	1459	19	13	6:35	7:22	7:55	8:24	8:29

Total sks = 1020

CS1065, Trailer 2878, 146 sks

## Grand Junction Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2475585-2 LARAMIE BULK SURFACE LEAD	Job Type	SURFACE CASING	30.00 Bc	06h:35m
Test ID	35511922 - TT	Cement Type	GCC TYPE I-II	40.00 Bc	07h:22m
Request ID	2475585-1	Cement Weight	Standard	50.00 Bc	07h:55m
Tested by	CT	Test Date	05/19/18	70.00 Bc	08h:24m
Customer	LARAMIE ENERGY	Test Time	11:49 AM	100.00 Bc	08h:29m
Well No	CASCADE CREEK	Temp. Units	degF	00h:30m	18.28
Rig	H&P 522	Pressure Units	PSI	01h:00m	17.67
Casing/Liner Size	9.625 INCH	SW Version	2.1.0.507	01h:30m	16.08



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\4TIJ89YN\GJ2475585-2 LARAMIE BULK SURFACE LEAD[1].tdms

Comments CS1065, TRAILER 2878, 146 SKS

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

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

20/MAY/2018

Temp (degF)	Pressure (psi)	Reached in (min)	Start BC	30 Bc (hh:mm)	40 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)
94	1459	19	16	8:07	8:11	8:18	8:24	8:41

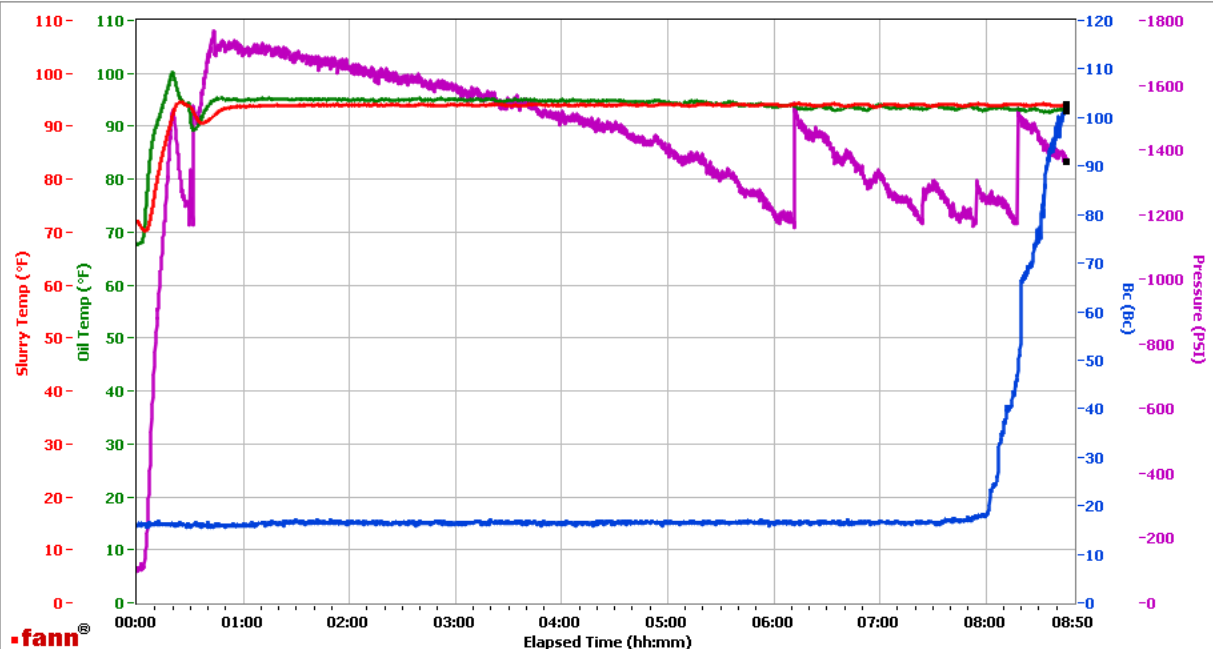
Total sks = 1020

CS1063, Trailer 1513, 437 sks

CS1064, Trailer 8476, 437 sks

Grand Junction Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2475585-1 LARAMIE BULK SURFACE LEAD	Job Type	SURFACE CASING	30.00 Bc	08h:07m
Test ID	35510251 - TT	Cement Type	GCC TYPE I-II	40.00 Bc	08h:11m
Request ID	2475585-1	Cement Weight	Standard	50.00 Bc	08h:18m
Tested by	CT	Test Date	05/19/18	70.00 Bc	08h:24m
Customer	LARAMIE ENERGY	Test Time	10:01 AM	100.00 Bc	08h:41m
Well No	CASCADE CREEK 0697-03-12W	Temp. Units	degF	00h:30m	15.50
Rig	H&P 522	Pressure Units	PSI	01h:00m	15.64
Casing/Liner Size	9.625 INCH	SW Version	2.1.0.507	01h:30m	16.83



Data File	C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files\Content.IE5\O3KLGZVR\GJ2475585-1 LARAMIE BULK SURFACE LEAD[1].tdms
Comments	CS1063, TRAILER 1513, 437 SKS - CS1064, TRAILER 8476, 437 SKS

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

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	2475586/1	Rig Name	Any	Date	18/MAY/2018
Submitted By	Lukas Van Zyl	Job Type	Surface Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Cascade Creek 0697-03-12W

Well Information					
Casing/Liner Size	9.625 in	Depth MD	2530 ft	BHST	50°C / 122°F
Hole Size	12.25 in	Depth TVD	2470 ft	BHCT	34°C / 94°F
Pressure	1459 psi				

Drilling Fluid Information			
Mud Supplier Name	AMC	Mud Trade Name	Density

Cement Information - Tail Design							
Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties	
		VariCem				Slurry Density	12.8 lbm/gal
						Slurry Yield	2.108 ft3/sack
						Water Requirement	11.748 gal/sack
						Total Mix Fluid	11.748 gal/sack
						Water Source	Fresh Water
						Water Chloride	

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

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 2475586/1

## Thickening Time

20/MAY/2018

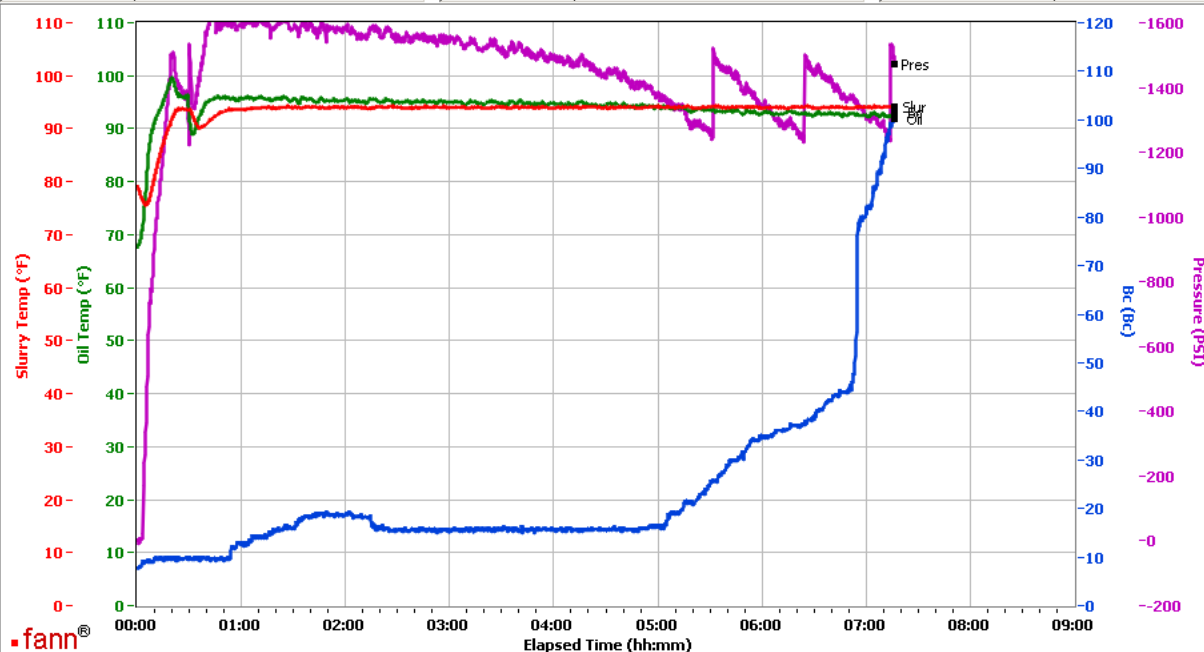
Temp (degF)	Pressure (psi)	Reached in (min)	Start Bc	30 Bc (hh:mm)	40 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)
94	1459	19	8	5:41	6:31	6:53	6:54	7:15

Total sks = 292

CS1065, Trailer 2878, 292 sks

## Grand Junction, Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2475586-1 LARAMIE BULK SURFACE TAIL	Job Type	SURFACE CASING	30.00 Bc	05h:41m
Test ID	35510253 - TT	Cement Type	GCC TYPE I-II	40.00 Bc	06h:31m
Request ID	2475586 - TT	Cement Weight	Standard	50.00 Bc	06h:53m
Tested by	CT	Test Date	05/19/18	70.00 Bc	06h:54m
Customer	LARAMIE ENERGY	Test Time	11:52 AM	100.00 Bc	07h:15m
Well No	CASCADE CREEK 0697-03-12W	Temp. Units	degF	00h:30m	9.54
Rig	H&P 522	Pressure Units	PSI	01h:00m	12.69
Casing/Liner Size	9.625 INCH	SW Version	2.1.0.507	01h:30m	15.81



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\4TIJ89YN\GJ2475586-1 LARAMIE BULK SURFACE TAIL[1].tdms

Comments CS1065, TRAILER 2878, 292 SKS

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

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

iCem<sup>®</sup> Service

## **LARAMIE ENERGY II LLC**

Date: Wednesday, June 06, 2018

### **Cascade Creek 0697-03-12W**

API # 05-045-23796-00

Cascade Creek 0697-03-12W Production

Job Date: Saturday, May 26, 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	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	5/26/2018	05:30:00	USER					REQUESTED ON LOCATION @ 0400
Event	2	Pre-Convoy Safety Meeting	5/26/2018	08:00:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	5/26/2018	08:15:00	USER					1 F550, 1 PUMP TRUCK & 1 660 BULK TURCK
Event	4	Arrive at Location from Service Center	5/26/2018	10:00:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	5/26/2018	10:20:00	USER					MET WITH COMP REP AND WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION AND COLLECTED WATER SAMPLE (PH- 7, CHLORIDES- 0, TEMP- 71F). COMP REP WAS OFFERED SDS FOR ALL CHEMICLES USED BY HES.
Event	6	Pre-Rig Up Safety Meeting	5/26/2018	10:30:00	USER					ALL HES PRESENT
Event	7	Rig-Up Completed	5/26/2018	11:30:00	USER					HES RIGGED UP EQUIPMENT WITHOUT ENTERING RED ZONE.
Event	8	Pre-Job Safety Meeting	5/26/2018	13:00:00	USER					ALL HES AND RIG CREW PRESENT
Event	9	Start Job	5/26/2018	13:47:00	COM6					TD 9716', TP 9706', SJ 83.7', OH 8.75", CSG 4.5" 11.6#, MUD 8.6 PPG. RIG CIRCULATED WELL @ APPROX 10 BPM WITH 280 PSI AND 1800 CFM ON THE PARASITE.
Event	10	Prime Pumps	5/26/2018	13:48:06	USER	29.00	8.33	0.00	0.00	8.33 PPG FRESH WATER
Event	11	Test Lines	5/26/2018	13:50:36	COM6	5240.00	8.33	0.00	0.00	ALL LINES HELD PRESSURE AT 5240 PSI

Event	12	Pump Spacer 1	5/26/2018	13:53:54	COM6	130.00	8.40	0.00	0.00	MUDFLUSH III (20 BBL), 8.4 PPG
Event	13	Pump Spacer 2	5/26/2018	14:00:19	COM6	160.00	11.00	4.00	20.20	TUNED SPACER III (40 BBL), 11 PPG. 15# OF TUFF FIBER.
Event	14	Drop Bottom Plug	5/26/2018	14:09:50	USER					PLUG WENT, VERIFIED BY CO REP
Event	15	Pump Lead Cement	5/26/2018	14:12:26	COM6	508.00	12.50	8.00	413.00	NEOCEM CEMENT 1195 SKS (413 BBLs), 12.5 PPG, 1.94 FT3/SK, 9.6 GAL/SK
Event	16	Pump Tail Cement	5/26/2018	15:19:37	COM6	455.00	13.00	6.00	191.00	NEOCEM HT CEMENT 519 SKS (191 BBLs), 13 PPG, 2.07 FT3/SK, 9.42 GAL/SK.
Event	17	Shutdown	5/26/2018	15:55:21	USER					END OF CMT
Event	18	Clean Lines	5/26/2018	15:56:38	USER					WASH UP PUMPS AND LINES
Event	19	Drop Top Plug	5/26/2018	16:03:22	USER					PLUG WENT, VERIFIED BY CO REP
Event	20	Pump Displacement	5/26/2018	16:04:06	COM6	1497.00	8.33	8.00	139.20	8.34 PPG FRESH WATER (149.2 BBLs) 5 GAL CLA WEB & 1 GAL MMCR
Event	21	Slow Rate	5/26/2018	16:23:31	USER	996.00	8.33	2.00	10.00	SLOW RATE TO 2 BPM PER CO REP TO LAND PLUG
Event	22	Bump Plug	5/26/2018	16:30:01	USER	3079.00	8.33	2.00	149.20	LAND PLUG AT 1100 PSI, BROUGHT UP TO 3101 PSI FOR A 10 MIN CSG TEST.
Event	23	Check Floats	5/26/2018	16:40:03	USER	3345.00	8.33	0.00	149.20	FLOATS HELD, 1 BBL BACK TO TRUCK
Event	24	Pump Cement	5/26/2018	16:50:49	USER	90.00	15.6	2.00	6.00	TYPE I/II CEMENT 35 SKS (6 BBLs), 15.6 PPG, 1.19 FT3/SK, 5.24 GAL/SK
Event	25	End Job	5/26/2018	16:57:21	USER					PIPE WAS NOT RECIPROCATED DURING THE JOB, 0 BBL OF SPACER BACK TO SURFACE, RETURNS THROUGHOUT CEMENT, ONCE THE AIR WAS SHUT OFF ALL RETURNS WERE LOST.
Event	26	Post-Job Safety Meeting (Pre Rig-Down)	5/26/2018	16:58:57	USER					ALL HES PRESENT
Event	27	Rig-Down Completed	5/26/2018	17:45:00	USER					ALL HES PRESENT
Event	28	Pre-Convoy Safety Meeting	5/26/2018	18:00:00	USER					ALL HES PRESENT
Event	29	Crew Leave Location	5/26/2018	18:15:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENT, CHRIS SMITH AND CREW

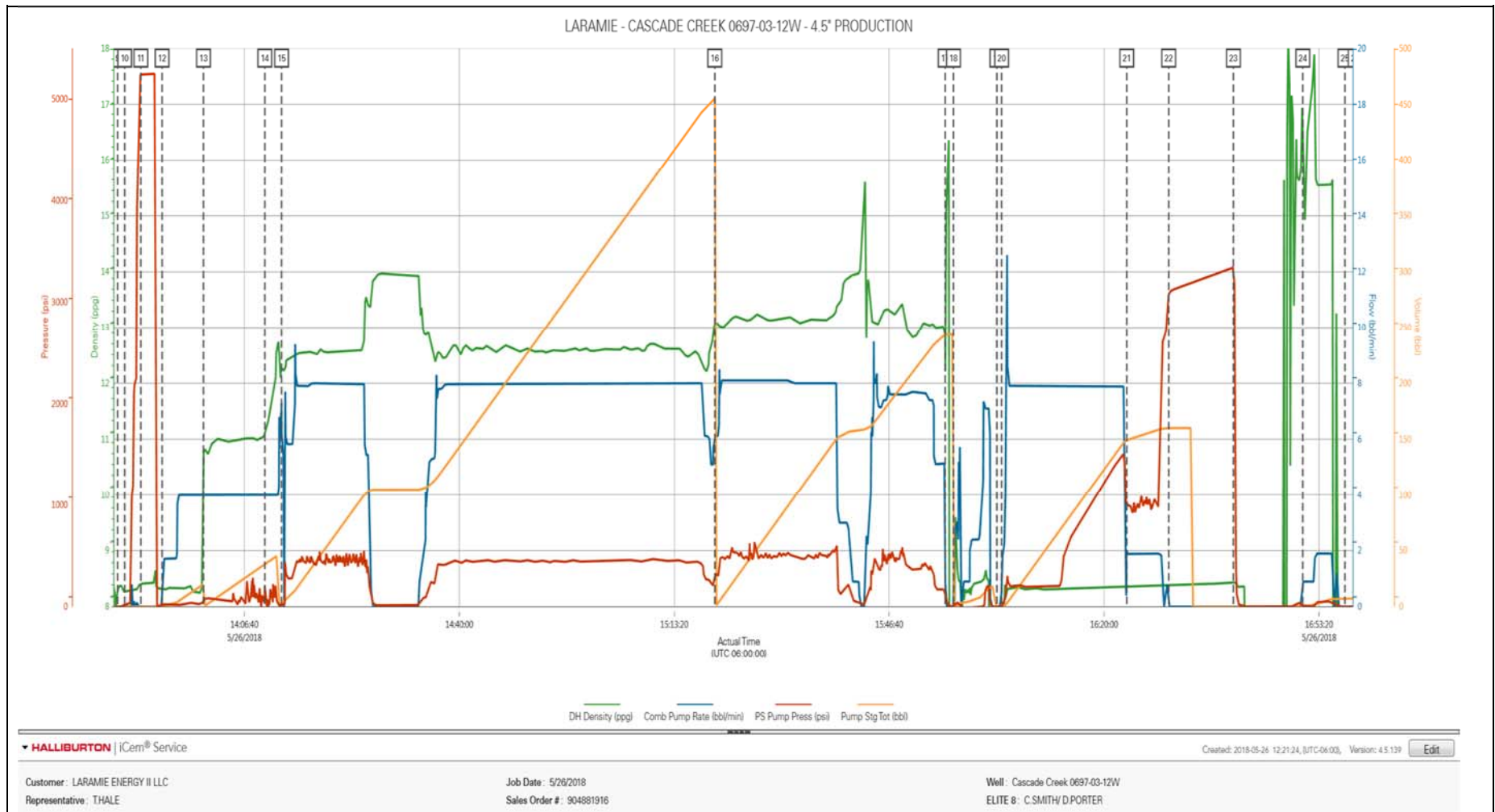
## 2.0 Attachments

---

### 2.1 CHART.png

---





## Job Information

Request/Slurry	2476830/2	Rig Name		Date	24/MAY/2018
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	CC 0697-03-12W

## Well Information

Casing/Liner Size	4.5 in	Depth MD	9766 ft	BHST	117°C / 242°F
Hole Size	8.75 in	Depth TVD	9548 ft	BHCT	78°C / 172°F
Pressure	5984 psi				

## Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
-------------------	----------------	---------

## Cement Information - Lead Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
		NeoCem				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.946	ft3/sack
						Water Requirement	9.615	gal/sack
						Total Mix Fluid	9.615	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 2476830/2

## Thickening Time - ON-OFF-ON

25/MAY/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)
172	5984	48	5:30	5:43	5:49	6:51	8	58	15	10

Total sks = 1195

CS1095, Trailer 1283, 295 sks

CS1096, Trailer 4080, 100 sks

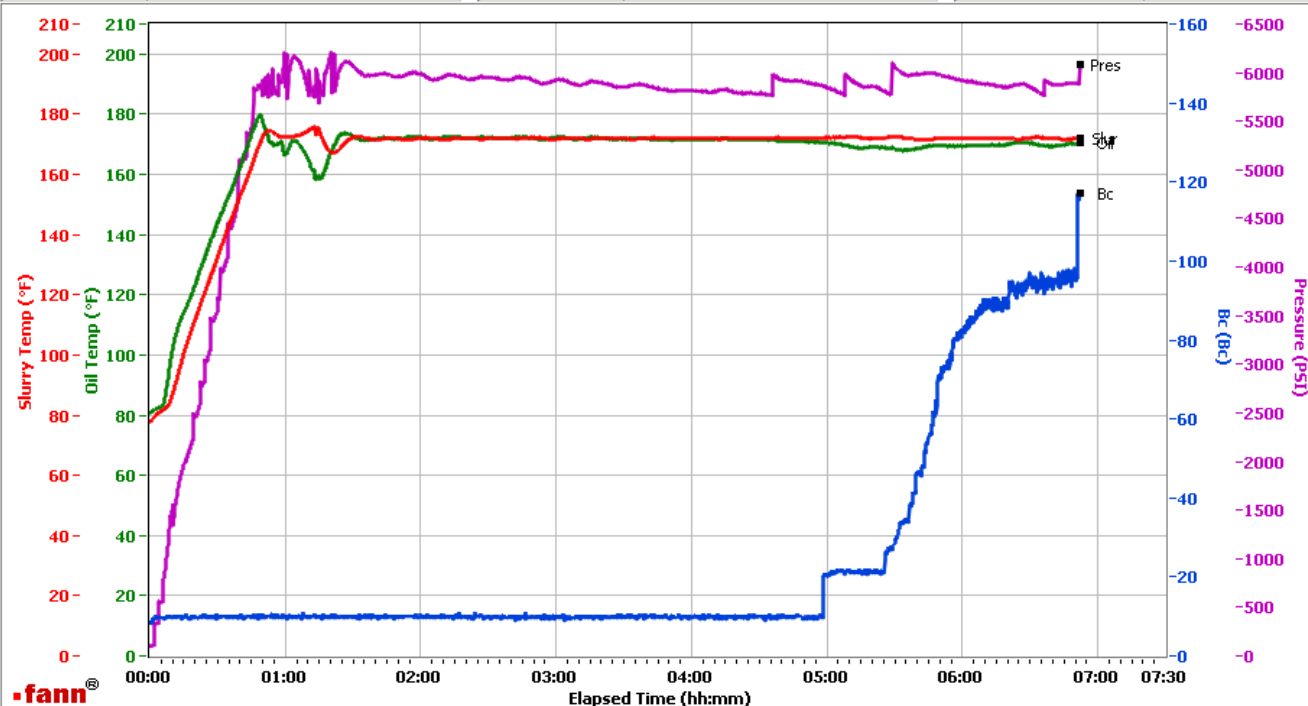
Deflection: 10 - 10

## Grand Junction Colorado

Fields	Values
Project Name	GJ2476830-2 LARAMIE BULK PRODUCTION
Test ID	35527783 - TT
Request ID	2476830-2
Tested by	CT
Customer	LARAMIE ENERGY
Well No	CC 0697-03-12W
Rig	H&P 522
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	GCC TYPE I-II
Cement Weight	Standard
Test Date	07/02/11
Test Time	06:40 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.1219

Events	Results
30.00 Bc	05h:30m
40.00 Bc	05h:38m
50.00 Bc	05h:43m
70.00 Bc	05h:49m
100.00 Bc	06h:51m
00h:30m	10.33
01h:00m	9.96
01h:30m	10.09



Data File C:\Documents and Settings\HPHT\Local Settings\Temporary Internet Files\Content.IE5\09ERK9UN\GJ2476830-2 LARAMIE PRODUCTION BULK LEAD[1].tdms

Comments CS1095, TRAILER 1283, 295 SKS - CS1096, TRAILER 4080, 100 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.

# Operation Test Results Request ID 2476830/1

## Thickening Time - ON-OFF-ON

25/MAY/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)
172	5984	48	5:19	5:24	5:31	5:48	4	58	15	4

Total SKS = 1195

Composite:

CS1092 TR 8658 400 SKS

CS1094 TR 1513 400 SKS

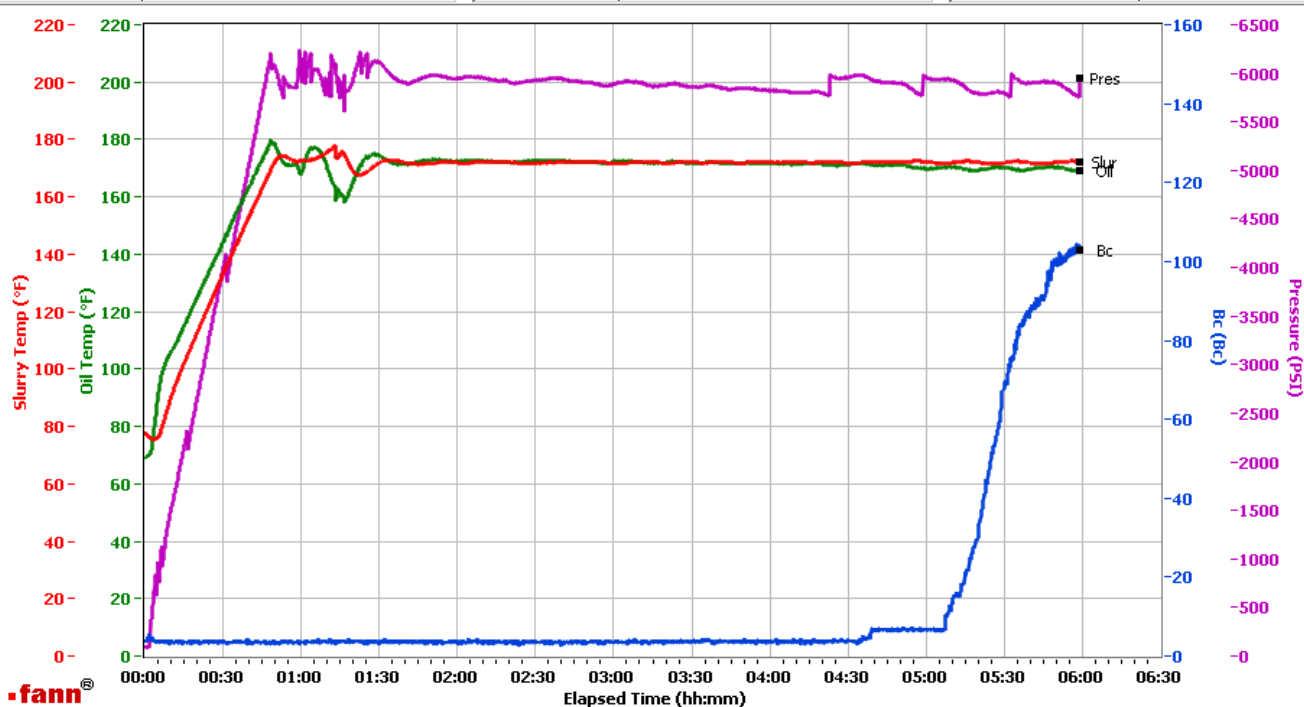
Deflection: 4 - 4

## Grand Junction Colorado

Fields	Values
Project Name	GJ2476830-1 LARAMIE PRODUCTION BULK
Test ID	35525198
Request ID	2476830-1
Tested by	JASON
Customer	LARAMIE ENERGY
Well No	CC 0697-03-12W
Rig	
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION
Cement Type	GCC TYPE I-II
Cement Weight	Light Weight
Test Date	07/01/11
Test Time	03:28 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.1219

Events	Results
30.00 Bc	05h:19m
40.00 Bc	05h:22m
50.00 Bc	05h:24m
70.00 Bc	05h:31m
100.00 Bc	05h:48m
00h:30m	3.98
01h:00m	3.48
01h:30m	3.76



Data File C:\Documents and Settings\HPHT\Local Settings\Temporary Internet Files\Content.IE5\8HEN8T6Z\GJ2476830-1 LARAMIE PRODUCTION BULK LEAD[1].tdms

Comments CS1092 TR 8658 400 SKS CS1094 TR 1513 400 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	2476831/2	Rig Name		Date	24/MAY/2018
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	CC 0697-03-12W

### Well Information

Casing/Liner Size	4.5 in	Depth MD	9766 ft	BHST	117°C / 242°F
Hole Size	8.75 in	Depth TVD	9548 ft	BHCT	78°C / 172°F
Pressure	5984 psi				

### Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
-------------------	----------------	---------

### 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>		
		NeoCem				Slurry Density	13	lbm/gal
						Slurry Yield	2.069	ft3/sack
						Water Requirement	9.417	gal/sack
						Total Mix Fluid	9.417	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 2476831/2

## Thickening Time - ON-OFF-ON

25/MAY/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)
172	5984	48	2:17	2:31	2:31	2:32	20	58	15	17

Total SKS = 519

CS1093 TR 2878 259.5 SKS

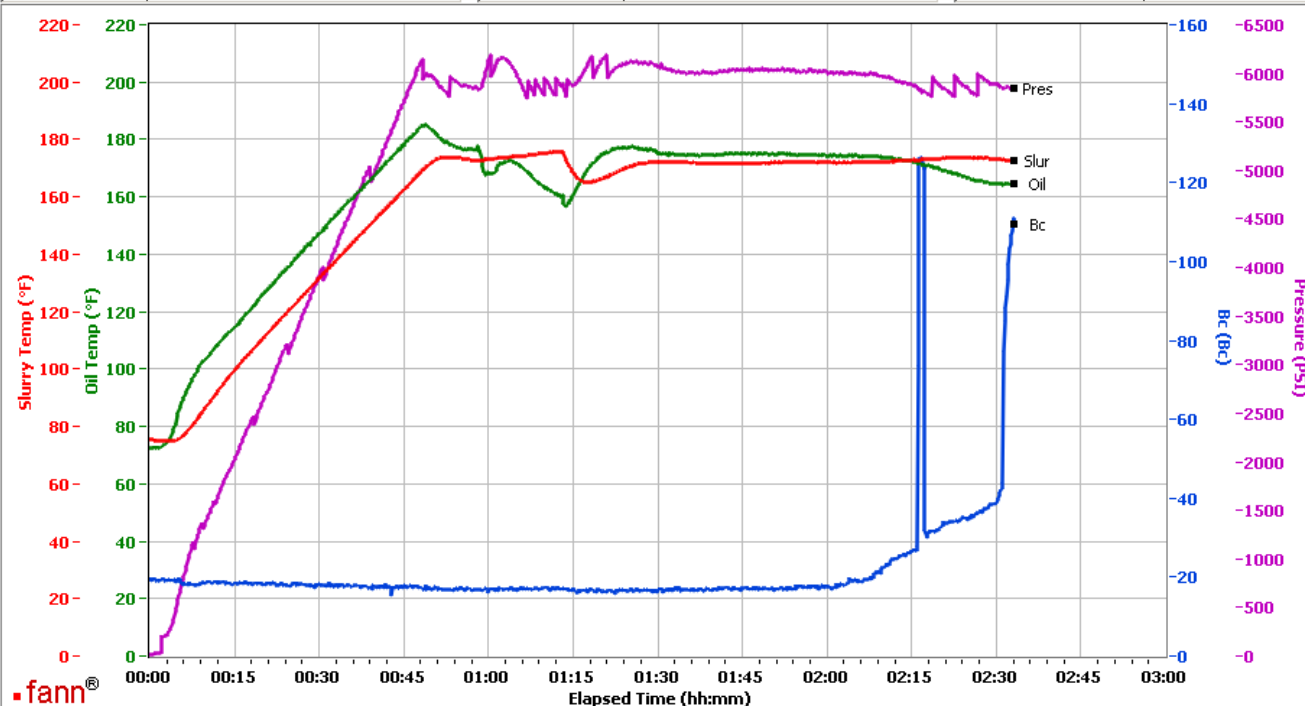
Deflection: 17 - 17

## Grand Junction, Colorado

Fields	Values
Project Name	GJ2476831-2 LARMIE PRODUCTION BULK T
Test ID	35526150
Request ID	2476831-2
Tested by	JASON
Customer	LARAMIE ENERGY
Well No	CC 0697-03-12W
Rig	
Casing/Liner Size	4.5

Fields	Values
Job Type	PRODUCTION
Cement Type	GCC TYPE I-II
Cement Weight	Light Weight
Test Date	05/24/18
Test Time	11:48 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	02h:17m
40.00 Bc	02h:30m
50.00 Bc	02h:31m
70.00 Bc	02h:31m
100.00 Bc	02h:32m
00h:30m	18.30
01h:00m	16.72
01h:30m	16.69



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\4TJ89YN\GJ2476831-2 LARMIE PRODUCTION BULK TAIL[1].tdms

Comments CS1093 TR 2878 259.5 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.

# Operation Test Results Request ID 2476831/1

## Thickening Time - ON-OFF-ON

25/MAY/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)
172	5984	48	2:34	2:44	2:44	2:44	16	58	15	16

Total SKS = 519

CS1091 TR 8678 259.5 SKS

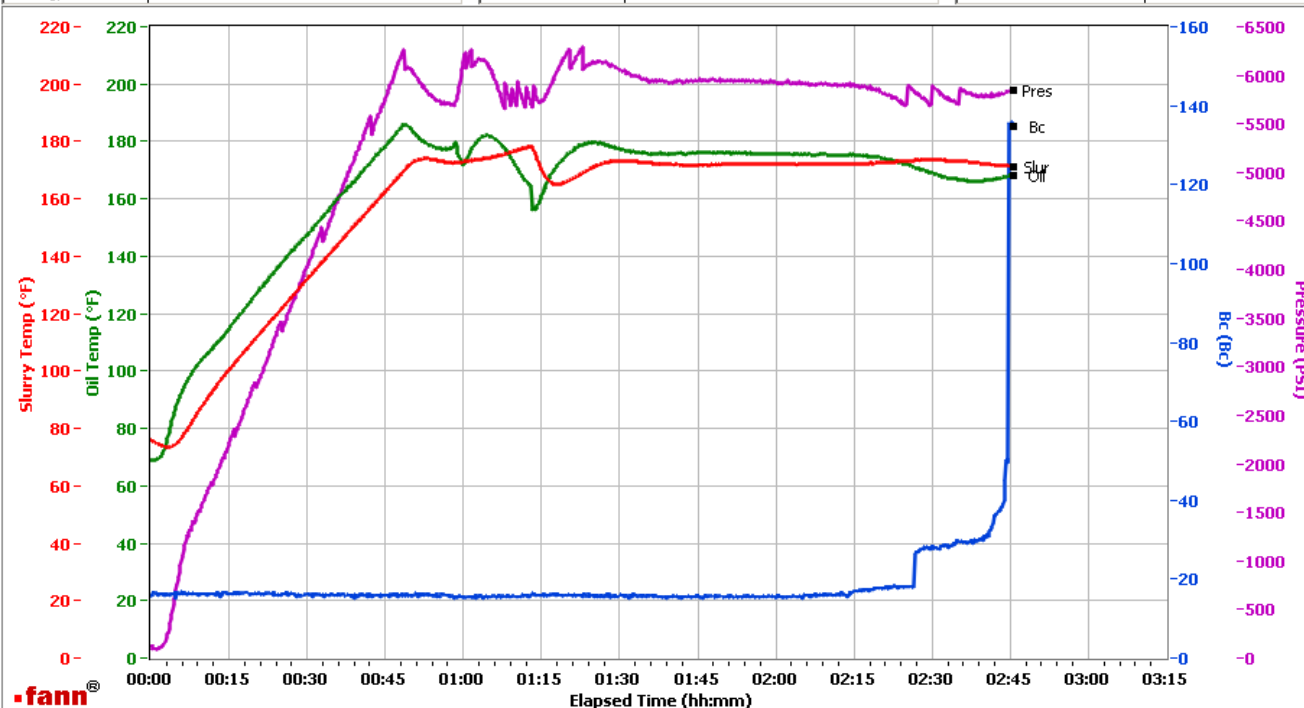
Deflection: 16 – 16

## Grand Junction Colorado

Fields	Values
Project Name	GJ2476831-1 LARAMIE PRODUCTION BULK
Test ID	35525200
Request ID	2476831-1
Tested by	JASON
Customer	LARAMIE ENERGY
Well No	CC 0697-03-12W
Rig	
Casing/Liner Size	4.5

Fields	Values
Job Type	PRODUCTION
Cement Type	GCC TYPE I-II
Cement Weight	Light Weight
Test Date	05/25/18
Test Time	12:23 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	02h:34m
40.00 Bc	02h:44m
50.00 Bc	02h:44m
70.00 Bc	02h:44m
100.00 Bc	02h:44m
00h:30m	16.06
01h:00m	15.48
01h:30m	15.79



Data File C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files\Content.IE5\OTUB09Y7\GJ2476831-1 LARAMIE PRODUCTION BULK TAIL [1].tdms

Comments CS1091 TR 8678 259.5 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.