

# HALLIBURTON

iCem<sup>®</sup> Service

## **Laramie Energy LLC**

**For: Laramie**

Date: Friday, October 19, 2018

**BCU 0993-21-02W SURFACE PJR**

**API #: 05-077-10523**

Sincerely,

**Grand Junction Cement Engineering**

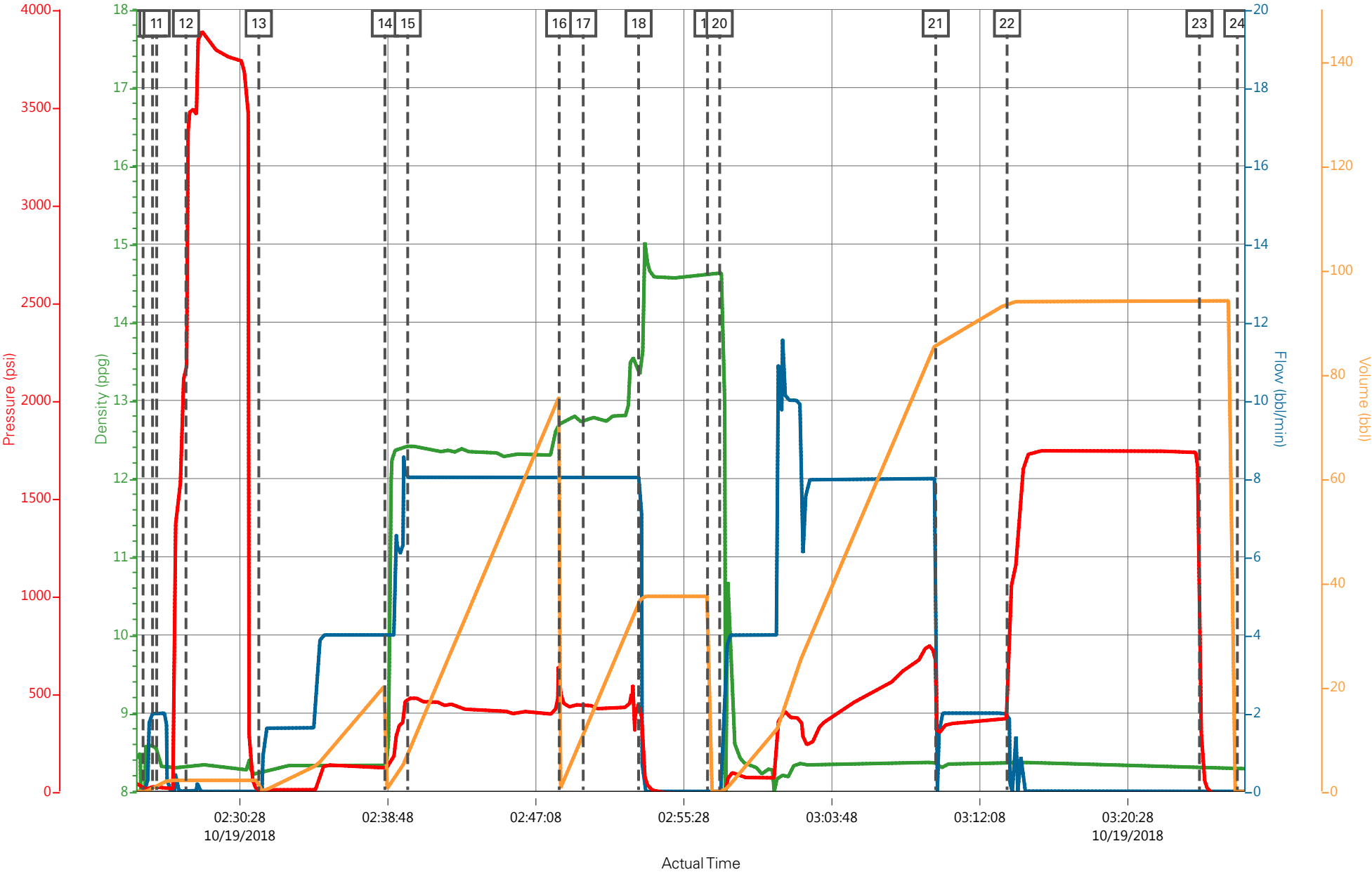
## 2.0 Real-Time Job Summary

### 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	10/18/2018	20:30:00	USER					REQUESTED ON LOCATION @ 02:30
Event	2	Pre-Convoy Safety Meeting	10/18/2018	22:00:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	10/18/2018	22:10:00	USER					1 HT 400 PUMP TRUCK E8, 1 660 BULK TRUCK, 1 550 SERVICE PICKUP
Event	4	Arrive At Loc	10/18/2018	23:00:00	USER					RIG RUNNING CASING WHEN HES ARRIVED AT LOCATION
Event	5	Assessment Of Location Safety Meeting	10/18/2018	23:15:00	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- 50F). COMP REP WAS OFFERED SDS FOR ALL CHEMICLES USED BY HES.
Event	6	Pre-Rig Up Safety Meeting	10/18/2018	23:20:00	USER					ALL HES PRESENT
Event	7	Rig-Up Equipment	10/18/2018	23:30:00	USER					HES RIGGED UP 1 HT400 PUMP TRUCK, 1 660 BULK TRUCK, 2" DISCHARGE IRON, AND 4" SUCTION HOSE WITHOUT ENTERING RED ZONE.
Event	8	Pre-Job Safety Meeting	10/19/2018	02:15:00	USER					ALL HES EMPLOYEES AND RIG CREW PRESENT, RIG CIRCULATED @ 10 BPM PRIOR TO JOB PRESSURE @ 350 PSI. CALIBRATED SCALES ON WATER
Event	9	Start Job	10/19/2018	02:25:01	COM6					TD-1552', TP-1542', SJ-47.14', CSG-8.625" 24# J55, OH-11", MUD-9.2PPG
Event	10	Prime Lines	10/19/2018	02:25:33	USER	8.33	2	70	2	FRESH WATER
Event	11	Drop Bottom Plug	10/19/2018	02:25:47	USER					VERIFIED BY FLAG INDICATOR

Event	12	Test Lines	10/19/2018	02:27:26	COM6			3800		ALL LINES HELD PRESSURE AT 3800 PSI
Event	13	Pump H2O Spacer	10/19/2018	02:31:32	COM6	8.33	4	150	20	20BBLS FRESH WATER
Event	14	Pump Lead Cement	10/19/2018	02:38:38	COM6	12.3	8	430	76	172 SKS VARICEM GJ5 CMT 12.3 PPG, 2.46 FT3/SK, 14.17 GAL/SK
Event	15	Check Weight	10/19/2018	02:39:55	COM6					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	16	Pump Tail Cement	10/19/2018	02:48:27	COM6	12.8	8	480	37	95 SKS VARICEM GJ5 CMT 12.8 PPG, 2.18 FT3/SK, 12.11 GAL/SK
Event	17	Check Weight	10/19/2018	02:49:48	COM6					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	18	Shutdown	10/19/2018	02:52:55	USER					END OF CEMENT, WASH UP ON TOP OF PLUG.
Event	19	Drop Top Plug	10/19/2018	02:56:48	COM6					VERIFIED BY FLAG INDICATOR
Event	20	Pump Displacement	10/19/2018	02:57:29	COM6	8.33	8	740	95.2	FRESH WATER
Event	21	Slow Rate	10/19/2018	03:09:39	USER	8.33	2	350	85.2	SLOW RATE TO 2 BPM TO BUMP PLUG
Event	22	Bump Plug	10/19/2018	03:13:40	USER	8.33	2	380	95.2	LAND PLUG AT 380 PSI, BROUGHT UP TO 1740 PSI AND HELD FOR TEN MINS FOR CASING TEST
Event	23	Check Floats	10/19/2018	03:24:30	USER					FLOATS HELD, 1 BBL BACK TO TRUCK
Event	24	End Job	10/19/2018	03:26:38	COM6					RETURNS THROUGHOUT JOB, 23 BBLS CMT TO SURFACE. 40# OF SUGAR, TOP PLUG AND BOTTOM PLUG USED.
Event	25	Post-Job Safety Meeting (Pre Rig-Down)	10/19/2018	03:30:00	USER					ALL HES PRESENT
Event	26	Rig Down Lines	10/19/2018	03:35:00	USER					ALL HES PRESENT
Event	27	Pre-Convoy Safety Meeting	10/19/2018	04:30:00	USER					ALL HES PRESENT
Event	28	Crew Leave Location	10/19/2018	04:45:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENT, SHAWN BLOSSOM AND CREW

LARAMIE BCU 0993-21-02W, 8 5/8" SURFACE



# HALLIBURTON

iCem<sup>®</sup> Service

## **Laramie Energy LLC**

United States of America, COLORADO

Date: Monday, October 22, 2018

## **BCU 0993-21-02W Production**

Laramie BCU 0993-21-02W Production

API # 05-045-23759

Job Date: Monday, October 22, 2018

Sincerely,

**Grand Junction Cement Engineering**

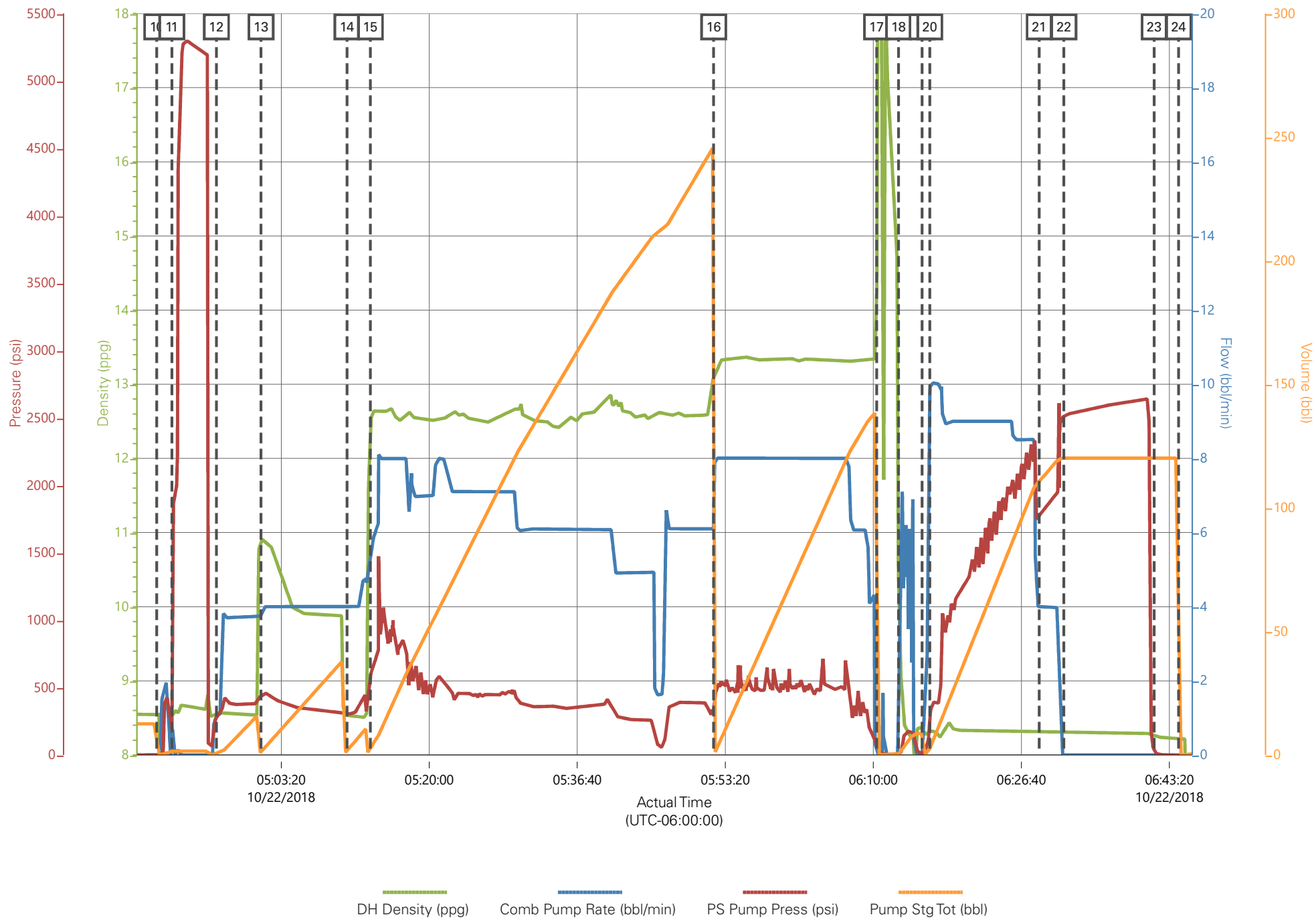
## 1.0 Real-Time Job Summary

## 1.1 Job Event Log

Type	Seq. No.	Activity	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	10/21/2018	21:00:00	USER					
Event	2	Pre-Convoy Safety Meeting	10/21/2018	23:40:00	USER					
Event	3	Crew Leave Yard	10/22/2018	00:00:00	USER					
Event	4	Arrive At Loc	10/22/2018	01:00:00	USER					REQUESTED ON LOC TIME WAS 0300, CREW ARRIVED AT 0100. RIG RUNNING CASING.
Event	5	Assessment Of Location Safety Meeting	10/22/2018	01:05:00	USER					
Event	6	Other	10/22/2018	01:10:00	USER					
Event	7	Pre-Rig Up Safety Meeting	10/22/2018	01:15:00	USER					
Event	8	Rig-Up Equipment	10/22/2018	01:30:00	USER					
Event	9	Pre-Job Safety Meeting	10/22/2018	03:30:00	USER					PRESSURIZED MUD SCALES VERIFIED ON DRINKING WATER PRIOR TO JOB
Event	10	Start Job	10/22/2018	04:49:19	COM5					TD: 7805 TP: 7795 SJ: 85.03' MW: 9.2PPG 4 1/2" 11.6#/FT CSG IN 7 7/8" OH WATER TEST: PH: 7 POTASSIUM: 450 CHLORIDES: 0 SULFATES: <200 TEMP: 68
Event	11	Test Lines	10/22/2018	04:51:01	COM5			5000.00		5000 PSI TEST SUCCESSFUL
Event	12	Pump Spacer 1	10/22/2018	04:56:02	COM5	8.59	4.00	305.00	15.00	FRESH H2O SPACER W/ POL-E-FLAKE, DROP BOTTOM PLUG #1
Event	13	Pump Spacer 2	10/22/2018	05:01:04	COM5	10.90	3.70	446.00	40.00	40 BBL SUPERFLUSH SPACER
Event	14	Pump Spacer 1	10/22/2018	05:10:44	COM5	8.33	4.00	301.00	10.00	10 BBL FRESH H2O SPACER, DROP BOTTOM PLUG #2

Event	15	Pump Lead Cement	10/22/2018	05:13:22	COM5	12.50	7.00	573.00	236.00	683 SKS @ 12.5 PPG 1.94 YLD 9.59 GAL/SK H2O
Event	16	Pump Tail Cement	10/22/2018	05:52:01	COM5	13.30	8.00	303.00	113.40	366 SKS @ 13.3 PPG 1.74 YLD 7.8 GAL/SK H2O
Event	17	Shutdown	10/22/2018	06:10:22	USER					
Event	18	Clean Lines	10/22/2018	06:12:50	COM5					
Event	19	Drop Top Plug	10/22/2018	06:15:29	COM5					PLUG AWAY
Event	20	Pump Displacement	10/22/2018	06:16:21	COM5	8.33	10.00	2350.00	119.50	FRESH H2O DISPLACEMENT W/ 3# BE-6, 5 GAL CLA-WEB, 5 GAL CUSTOMER SUPPLIED BACTERIACIDE
Event	21	Slow Rate	10/22/2018	06:28:40	USER	8.33	4.00	1795.00	109.00	FINAL CIRC PRESSURE 1850PSI
Event	22	Bump Plug	10/22/2018	06:31:27	COM5	8.33	4.00	2518.00	119.50	PLUG BUMPED AT CALCULATED DISPLACEMENT, PRESSURE UP TO 2500 PSI FOR 10 MIN CASING TEST.
Event	23	Check Floats	10/22/2018	06:41:37	USER					FLOATS HELD, GAINED 1 BBL BACK TO PUMP
Event	24	End Job	10/22/2018	06:44:22	COM5					
Event	25	Post-Job Safety Meeting (Pre Rig-Down)	10/22/2018	07:00:00	USER					
Event	26	Rig-Down Equipment	10/22/2018	07:05:00	USER					GOOD CIRCULATION THROUGHOUT JOB. PIPE WAS LEFT STATIC. CIRCULATED 20 BBL SUPER FLUSH SPACER TO SURFACE. NO ADD HOURS CHARGED. TOP AND BOTTOM PLUGS USED.
Event	27	Pre-Convoy Safety Meeting	10/22/2018	07:55:00	USER					
Event	28	Crew Leave Location	10/22/2018	08:00:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENTING. ANTHONY ANDREWS AND CREW

# LARAMIE - BCU 0993-21-02W - 4 1/2" PRODUCTION





## Job Information

Request/Slurry	2508967/1	Rig Name	H&P 522	Date	16/OCT/2018
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	BCU 0993-21-02W

## Well Information

Casing/Liner Size	4.5 in	Depth MD	7806 ft	BHST	100°C / 212°F
Hole Size	7.875 in	Depth TVD	7676 ft	BHCT	61°C / 141°F
Pressure	4673 psi				

## Drilling Fluid Information

Mud Supplier Name	Baroid	Mud Trade Name	BARADRIL-N	Density	9.9 lbm/gal
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## Cement Information - Lead Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
						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	Field (Fresh) Water	
						Water Chloride		

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# Operation Test Results Request ID 2508967/1

## Thickening Time - ON-OFF-ON

19/OCT/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)
141	4673	40	6:57	7:18	8:19	9:02	12	50	15	11

Total sks = 683

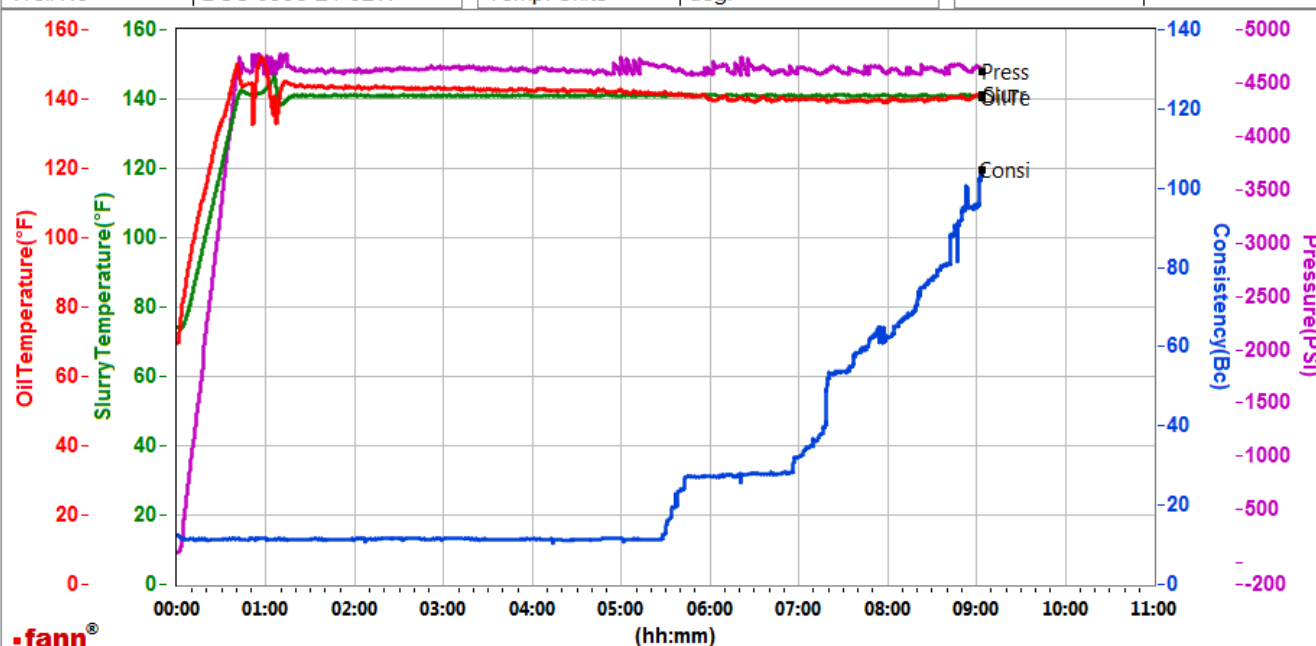
CS2313 TR#2878 413 SKS

CS2314 TR#7094 270 SKS

No deflection.

## GRAND JUNCTION

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2508967-1 Laramie Pr	Rig	H&P 522	30 Bc	06:57
SW Version	1.0	Casing/Liner Size	4.5"	40 Bc	07:17
Test ID	35905455-TT	Job Type	PRODUCTION CASING	50 Bc	07:18
Request ID	GJ2508967-1	Cement Weight	GCC TYPE I-II	70 Bc	08:19
Tested by	DEBA	Comments	Standard	100 Bc	09:02
Customer	LARAMIE ENERGY	Date Time	10/18/2018 08:39:42.234		
Well No	BCU 0993-21-02W	Temp. Units	degF		



Data File N:\01 Test Graphs\GJ2508967-1 LARAMIE PRODUCTION LEADBULK .tdms

Comments Standard

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# HALLIBURTON

## Rockies, Grand Junction

## Lab Results- Tail

### Job Information

Request/Slurry	2508969/1	Rig Name	H&P 522	Date	16/OCT/2018
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	BCU 0993-21-02W

### Well Information

Casing/Liner Size	4.5 in	Depth MD	7806 ft	BHST	100°C / 212°F
Hole Size	7.875 in	Depth TVD	7676 ft	BHCT	61°C / 141°F
Pressure	4673 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	1.738 ft3/sack
						Water Requirement	7.795 gal/sack
						Total Mix Fluid	7.795 gal/sack
						Water Source	Field (Fresh) Water
						Water Chloride	N/A

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# Operation Test Results Request ID 2508969/1

## Thickening Time - ON-OFF-ON

18/OCT/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)
141	4673	40	8:27	8:27	8:27	8:27	12	50	15	14

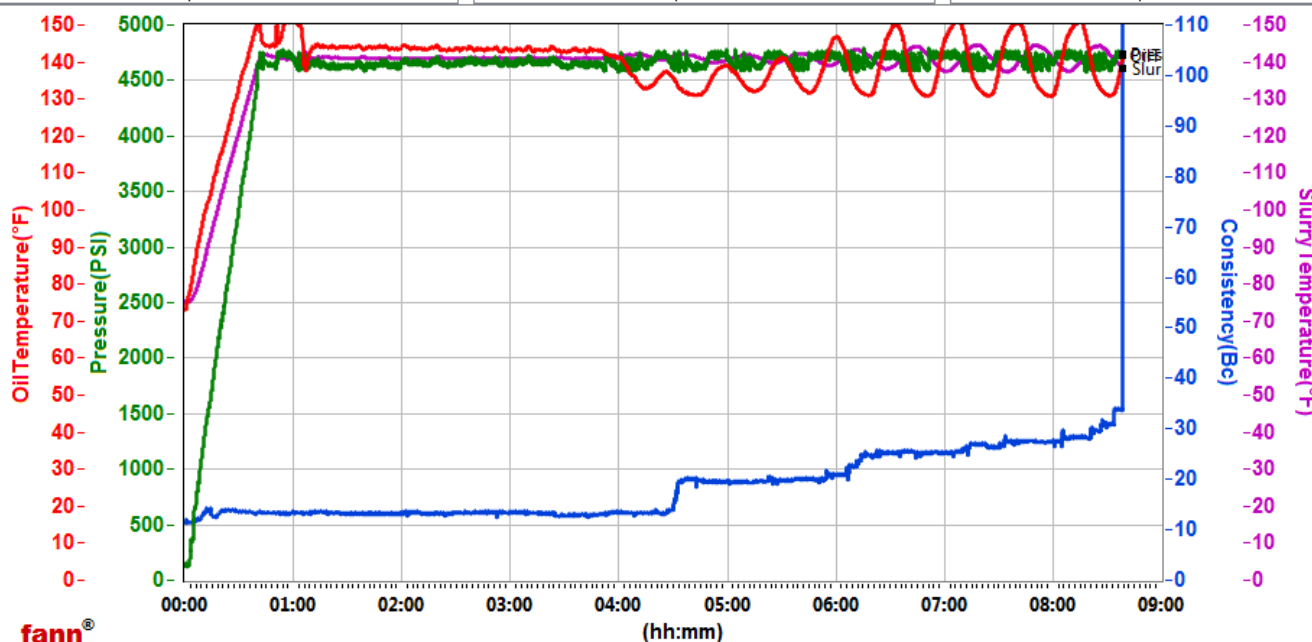
Total SKS = 366

CS2312 TR 8467 366 SKS

Heat of hydration at 3:47

## GRAND JUNCTION

Fields	Values	Fields	Values	Events	Results
Project Name	TempTest	Rig	H&P 522		
SW Version	1.0	Casing/Liner Size	4.5 INCH		
Test ID	35905465-TT	Job Type	PRODUCTION CASING		
Request ID	2508969-1	Cement Weight	MOUNTAIN G		
Tested by	JASON	Comments	Light Weight		
Customer	LARAMIE ENERGY	Date Time	10/18/2018 03:34:37.089		
Well No	BCU 0993-21-02W	Temp. Units	degF		



Data File C:\Users\hx25273\Desktop\new Graph M290\GJ2508969-1 LARAMIE PRODUCTION BULK TAIL.tdms

Comments Light Weight

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