

# HALLIBURTON

iCem<sup>®</sup> Service

## **LARAMIE ENERGY LLC**

United States of America, COLORADO

Date: Sunday, April 08, 2018

## **GUNDERSON 994-14-12E**

API # 05-077-10533-00

Laramie Gunderson 994-14-12E Surface

Job Date: Saturday, April 07, 2018

Sincerely,

**Grand Junction Cement Engineering**

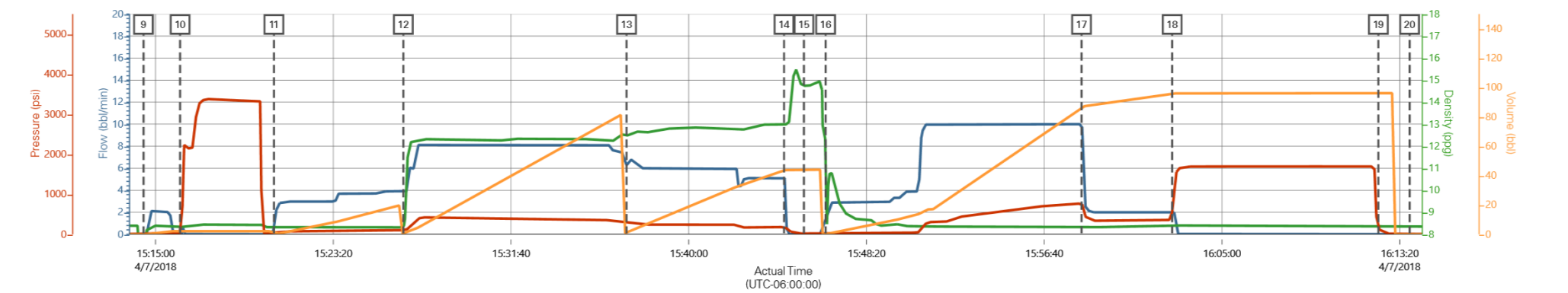
## 1.0 Real-Time Job Summary

## 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	4/7/2018	08:30:00	USER					
Event	2	Depart Yard Safety Meeting	4/7/2018	10:55:00	USER					JSA COMPLETED
Event	3	Crew Leave Shop	4/7/2018	11:00:00	USER					
Event	4	Arrive At Loc	4/7/2018	12:30:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	4/7/2018	12:35:00	USER					JSA COMPLETED
Event	6	Pre-Rig Up Safety Meeting	4/7/2018	12:55:00	USER					JSA COMPLETED
Event	7	Rig-Up Equipment	4/7/2018	13:00:00	USER					
Event	8	Pre-Job Safety Meeting	4/7/2018	15:00:00	USER					JSA COMPLETED
Event	9	Start Job	4/7/2018	15:14:26	COM4					CASING 8 5/8" - 32#, TD 1566', TP 1560', SJ 44.3', OH 11", MUD 8.9 PPG, WATER TEST 65 DEGREES, PH 7, CHLORIDES 0
Event	10	Test Lines	4/7/2018	15:16:09	COM4	0.00	8.35	3000.00	2.10	TEST LINES TO 3000 PSI
Event	11	Pump Spacer 1	4/7/2018	15:20:33	COM4	4.00	8.33	100.00	20.00	PUMP 20 BBL H2O SPACER. BOTTOM PLUG AWAY
Event	12	Pump Lead Cement	4/7/2018	15:26:37	COM4	8.00	12.30	375.00	73.20	PUMP 73.2 BBL LEAD CEMENT @ 12.3 PPG / 2.46 YLD / 14.17 GAL/SK H2O REQ, 375 PSI
Event	13	Pump Tail Cement	4/7/2018	15:37:05	COM4	6.00	12.80	275.00	42.30	PUMP TAIL CEMENT 42.3 BBL @ 12.8 PPG, 2.18 YLD, 12.11 GAL/SK H2O REQ, 250 PSI
Event	14	Shutdown	4/7/2018	15:44:28	USER					

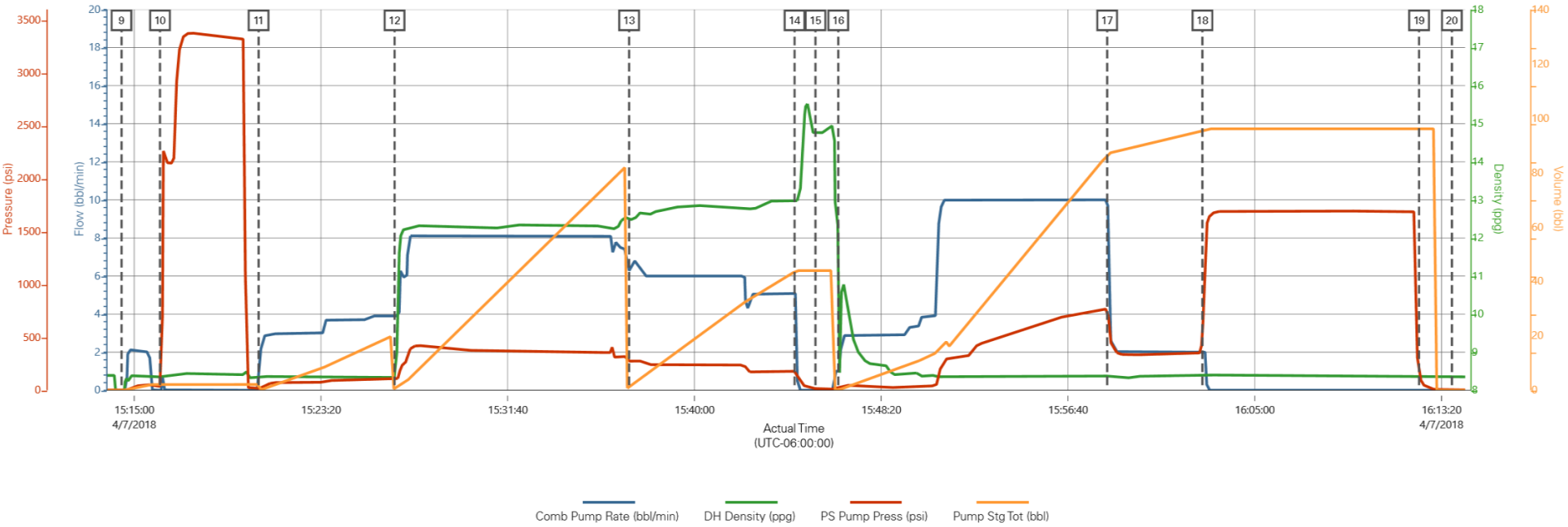
Event	15	Drop Top Plug	4/7/2018	15:45:24	COM4					PLUG AWAY
Event	16	Pump Displacement	4/7/2018	15:46:25	COM4	10.00	8.33	760.00	92.30	PUMP 92.3 BBL H2O DISPLACEMENT, 760 PSI
Event	17	Slow Rate	4/7/2018	15:58:25	USER	2.00	8.33	350.00	82.00	SLOW RATE TO 2 BBL/MIN, 350 PSI
Event	18	Bump Plug	4/7/2018	16:02:40	COM4	2.00	8.33	350.00	92.30	PLUG BUMPED AT CALCULATED, 32 BBLS OF LEAD TO SURFACE. HOLD 1600 PSI FOR 10 MIN CASING TEST.
Event	19	Check Floats	4/7/2018	16:12:20	USER					FLOATS HELD, 3/4 BBL BACK TO PUMP
Event	20	End Job	4/7/2018	16:13:48	COM4					GOOD RETURNS THROUGHOUT JOB, PIPE LEFT STATIC THROUGHOUT JOB, 32 BBLS LEAD TO SURFACE, 40LBS SUGAR USED, NO ADD HOURS CHARGED.
Event	21	Pre-Rig Down Safety Meeting	4/7/2018	16:20:00	USER					JSA COMPLETED
Event	22	Rig-Down Equipment	4/7/2018	16:25:00	USER					
Event	23	Pre-Convoy Safety Meeting	4/7/2018	16:55:00	USER					JSA COMPLETED
Event	24	Crew Leave Location	4/7/2018	17:00:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENTING OF GRAND JUNCTION, CO - RYAN MARTIN AND CREW

LARAMIE - GUNDERSON 994-14-12E - 8 5/8" SURFACE



Description	Actual Time (UTC-06:00:00)	Comb Pump Rate (bbl/min)	DH Density (ppg)	PS Pump Press (psi)	Pump Stg Tot (bbl)
13 Pump Tail Cement	15:37:05	6.30	12.50	279.00	1.20
14 Shutdown	15:44:28	5.10	12.97	179.00	43.50
15 Drop Top Plug	15:45:24	0.00	14.75	16.00	44.00
16 Pump Displacement	15:46:25	1.00	11.80	24.00	0.20
17 Slow Rate	15:58:25	10.00	8.37	764.00	86.40

LARAMIE - GUNDERSON 994-14-12E - 8 5/8" SURFACE



# HALLIBURTON

iCem<sup>®</sup> Service

## **LARAMIE ENERGY II LLC**

**For: Laramie**

Date: Wednesday, April 11, 2018

## **GUNDERSON 994-14-12E Production PJR**

API # 05-077-10533-00

Sincerely,

**Grand Junction Cement Engineering**

## 1.0 Real-Time Job Summary

### 1.1 Job Event Log

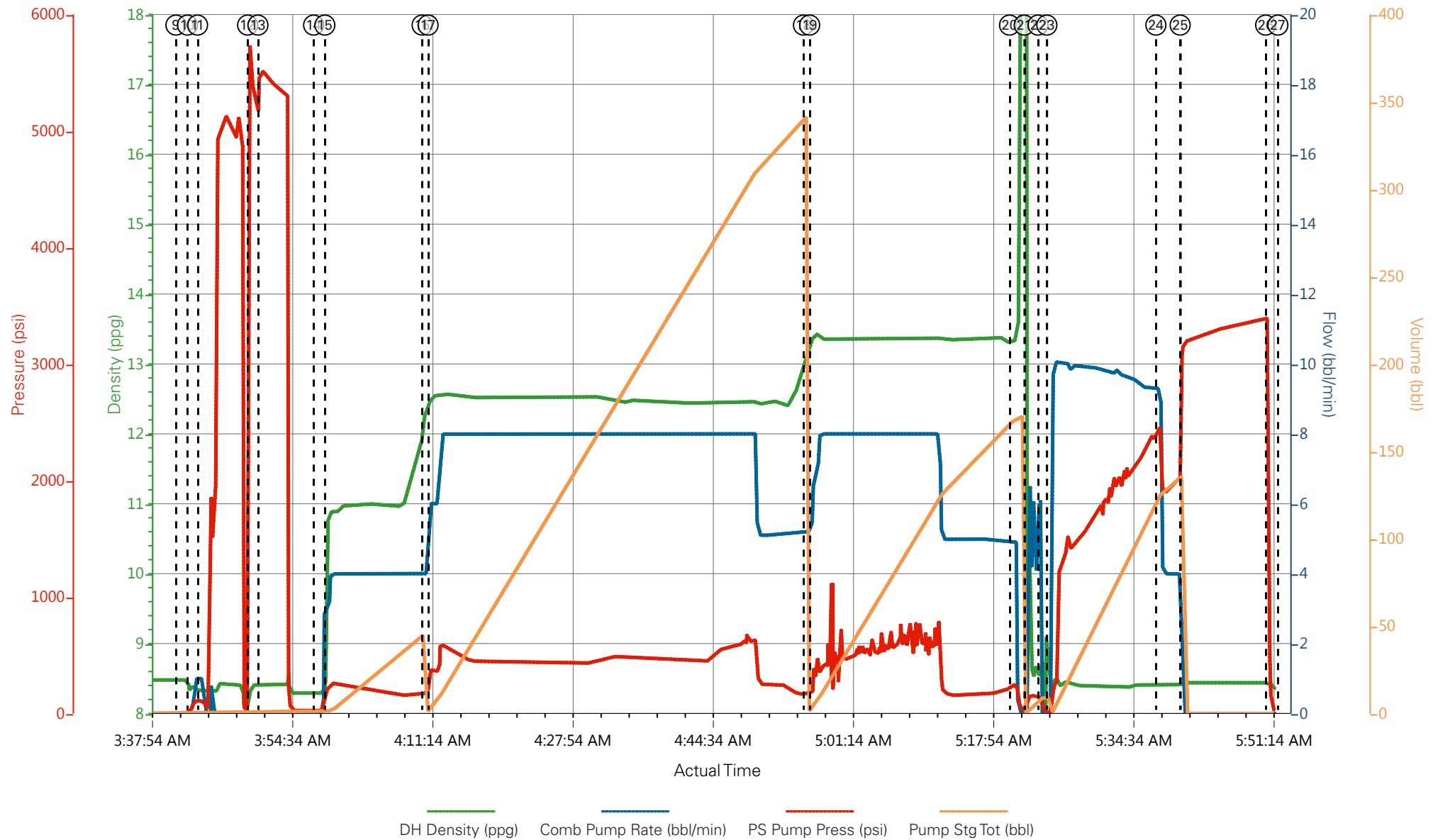
Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	4/10/2018	18:00:00	USER					REQUESTED ON LOCATION @ 3:00
Event	2	Pre-Convoy Safety Meeting	4/10/2018	20:45:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	4/10/2018	21:00:00	USER					1 HT 400 PUMP TRUCK E4, 1 660 BULK TRUCK, 1 550 SERVICE PIC
Event	4	Arrive At Loc	4/11/2018	02:00:00	USER					RIG LANDING CASING
Event	5	Assessment Of Location Safety Meeting	4/11/2018	02:01:00	USER					MET WITH COMP REP, AND WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION AND COLLECTED WATER SAMPLE. COMP REP WAS OFFERED SDS FOR ALL CHEMICLES USED BY HES.
Event	6	Spot Equipment	4/11/2018	02:02:00	USER					1 HT 400 PUMP TRUCK E4, 1 660 BULK TRUCK, 1 550 SERVICE PIC
Event	7	Pre-Rig Up Safety Meeting	4/11/2018	02:15:00	USER					ALL HES PRESENT
Event	8	Pre-Job Safety Meeting	4/11/2018	03:10:00	USER					ALL HES EMPLOYEES AND RIG CREW PRESENT, RIG CIRCULATED @ 9 BPM PRIOR TO JOB PRESSURE @ 650 PSI.

Event	9	Start Job	4/11/2018	03:41:06	USER					TD 8330', TP 8320' OF 4 ½" P-110 CSG, SJ 81.74', SURFACE CSG 8 5/8" 32# J55 SET @ 1566', OH 7 7/8", MUD 9.5 PPG
Event	10	Drop Bottom Plug	4/11/2018	03:42:28	USER					VERIFIED BY FLAG INDICATOR
Event	11	Prime Lines	4/11/2018	03:43:40	USER	8.33	1.0	120	2	FRESH WATER
Event	12	Prime Lines	4/11/2018	03:49:37	USER					PRIMED LINES VIA 6X5
Event	13	Test Lines	4/11/2018	03:50:50	COM5			5530		PRESSURE HELD
Event	14	Check weight	4/11/2018	03:57:28	COM5					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	15	Pump Spacer	4/11/2018	03:58:48	COM5	11.0	4.0	200	40	40 BBL TUNED SPACER III, 11 PPG, 4.86 FT3/SK, 31.9 GAL/SK
Event	16	Pump Lead Cement	4/11/2018	04:10:22	COM5	12.5	8.0	600	300	869 SKS OF NEOCEM CMT 12.5 PPG, 1.94 FT3/SK, 9.6 GAL/SK.
Event	17	Check weight	4/11/2018	04:11:04	COM5					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	18	Pump Tail Cement	4/11/2018	04:55:42	COM5	13.3	8.0	590	122	395 SKS THERMACEM CMT 13.3 PPG, 1.73 FT3/SK, 7.81 GAL/SK.
Event	19	Check weight	4/11/2018	04:56:26	COM5					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	20	Shutdown	4/11/2018	05:20:12	USER					END OF CEMENT
Event	21	Clean Lines	4/11/2018	05:21:56	COM5					WASHED UP INTO CELLUR
Event	22	Drop Top Plug	4/11/2018	05:23:35	USER					VERIFIED BY FLAG INDICATOR
Event	23	Pump Displacement	4/11/2018	05:24:38	COM5	8.4	10	2480	117.7	1 GAL MMCR IN FIRST 10 BBLs, 5 GALS CLAY WEB, 5 GAL AVANCID THROUGH DISPLACEMENT
Event	24	Slow Rate	4/11/2018	05:37:36	USER	8.4	4.0	1900	10	SLOWED TO BUMP PLUG



Event	25	Bump Plug	4/11/2018	05:40:29	COM5	8.4	4.0	2100	127.7	PLUG BUMPED. BROUGHT PRESSURE UP TO 3000 PSI FOR 10 MIN CASING TEST.
Event	26	Check Floats	4/11/2018	05:50:39	USER			3395		FLOATS HELD 1.5 BBL FLOW BACK TO TANK
Event	27	End Job	4/11/2018	05:52:06	USER					RETURNS THROUGHOUT JOB. 37 BBL TUNED SPACER III TO SURFACE
Event	28	Post-Job Safety Meeting (Pre Rig-Down)	4/11/2018	06:00:00	USER					ALL HES PRESENT
Event	29	Pre-Convoy Safety Meeting	4/11/2018	07:45:00	USER					AL HES PRESENT
Event	30	Crew Leave Location	4/11/2018	08:00:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENT, DUSTIN HYDE AND CREW

# LARAMIE - GUNDERSON 994-14-12E - 4 1/2" PRODUCTION



- |   |                             |                |                    |                      |   |
|---|-----------------------------|----------------|--------------------|----------------------|---|
| ① Call Out                              | ⑥ Spot Equipment            | ⑪ Prime Lines  | ⑯ Pump Lead Cement | 21 Clean Lines       | 26 Check Floats                           |
| ② Pre-Convoy Safety Meeting             | ⑦ Pre-Rig Up Safety Meeting | ⑫ Prime Lines  | ⑰ Check weight     | 22 Drop Top Plug     | 27 End Job                                |
| ③ Crew Leave Yard                       | ⑧ Pre-Job Safety Meeting    | ⑬ Test Lines   | ⑱ Pump Tail Cement | 23 Pump Displacement | 28 Post-Job Safety Meeting (Pre Rig-Down) |
| ④ Arrive At Loc                         | ⑨ Start Job                 | ⑭ Check weight | ⑲ Check weight     | 24 Slow Rate         | 29 Pre-Convoy Safety Meeting              |
| ⑤ Assessment Of Location Safety Meeting | ⑩ Drop Bottom Plug          | ⑮ Pump Spacer  | 20 Shutdown        | 25 Bump Plug         | 30 Crew Leave Location                    |

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Created: 2018-04-11 02:44:52, Version: 4.2.393

Edit

Customer : LARAMIE ENERGY II LLC

Job Date : 4/11/2018

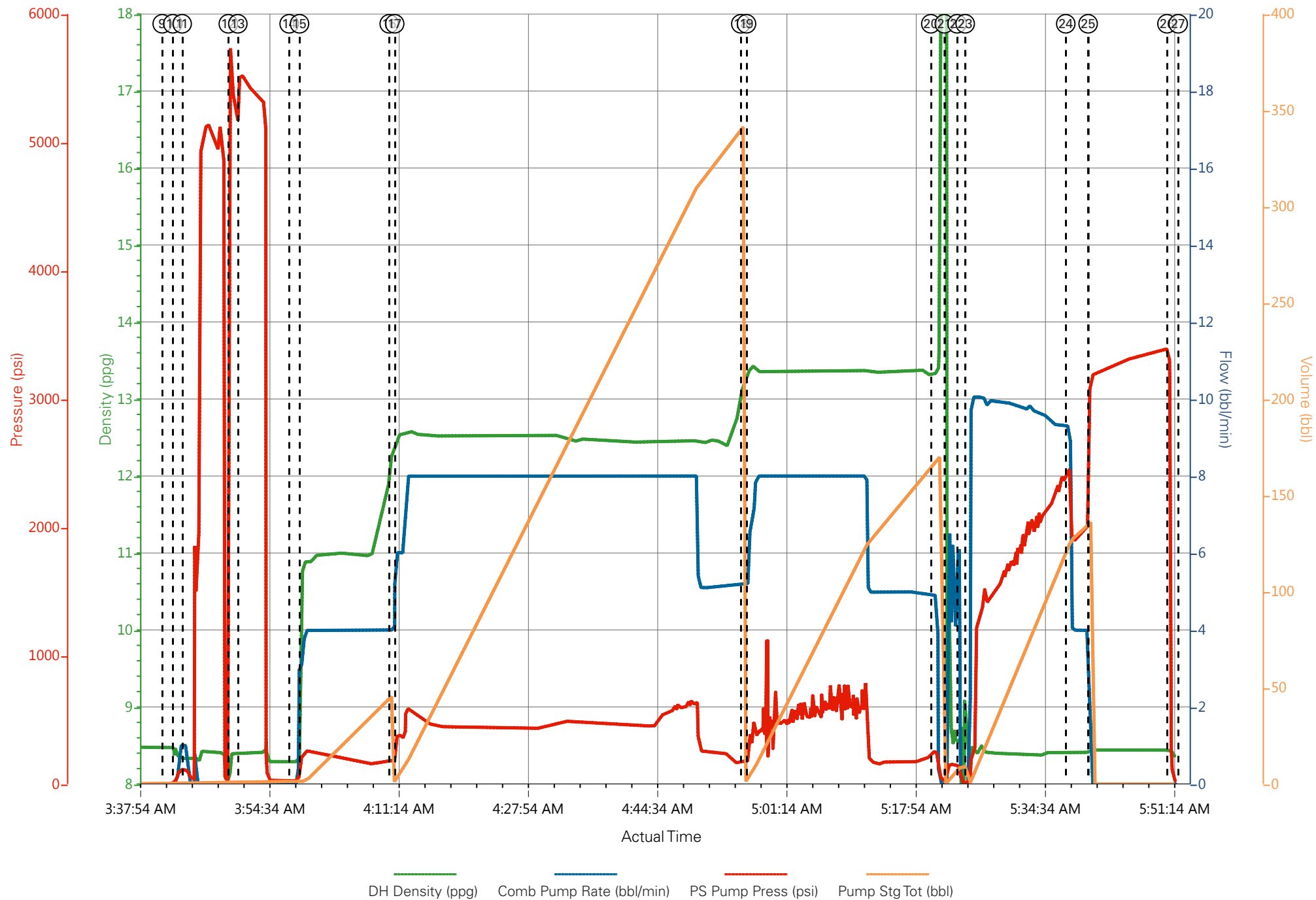
Well : GUNDERSON 994-14-12E

Representative : SHANE HEARD

Sales Order # : 904769644

E4 : HYDE / ANGELO

# LARAMIE - GUNDERSON 994-14-12E - 4 1/2" PRODUCTION



## Job Information

Request/Slurry	2465592/1	Rig Name	H&P 522	Date	06/APR/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Gunderson 994-14-12E

## Well Information

Casing/Liner Size	4.5 in	Depth MD	8314 ft	BHST	112°C / 233°F
Hole Size	7.875 in	Depth TVD	7476 ft	BHCT	75°C / 167°F
Pressure	4533 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		
		NeoCem				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.941	ft3/sack
						Water Requirement	9.623	gal/sack
						Total Mix Fluid	9.623	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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## Operation Test Results Request ID 2465592/1

### Thickening Time - ON-OFF-ON

08/APR/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)
167	4533	48	3:17	4:37	4:46	4:46	19	58	15	20

Total sks = 869

CS0826, Trailer 8658, 434.5 sks

CS0827, Trailer 8678, 434.5 sks

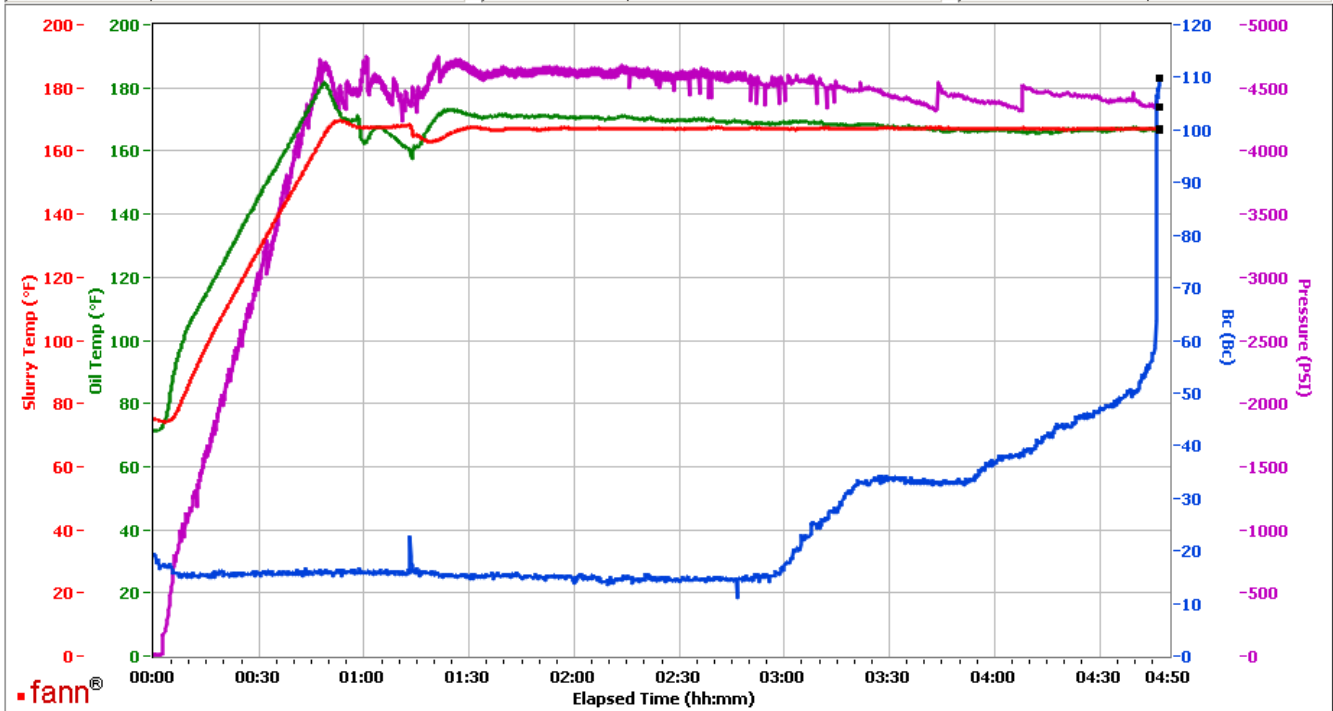
deflected from 16Bc--- > 20Bc

### Grand Junction, Colorado

Fields	Values
Project Name	2465592-1 LARAMIE BULK PRODUCTION LE
Test ID	35398341 - TT
Request ID	2465592-1
Tested by	CT
Customer	LARAMIE ENERGY
Well No	GUNDERSON 994-14-12E
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	04/08/18
Test Time	09:06 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	03h:17m
40.00 Bc	04h:11m
50.00 Bc	04h:37m
70.00 Bc	04h:46m
100.00 Bc	04h:46m
00h:30m	15.43
01h:00m	15.89
01h:30m	14.88



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\K9YZ0P2R\GJ2465592-1 LARAMIE BULK PRODUCTION LEAD[1].tdms

Comments CS0826, TRAILER 8658, 434.5 SKS - CS0827, TRAILER 8678, 434.5 SKS

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# HALLIBURTON

## Rockies, Grand Junction

## Lab Results- Tail

### Job Information

Request/Slurry	2465593/1	Rig Name	H&P 522	Date	06/APR/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Gunderson 994-14-12E

### Well Information

Casing/Liner Size	4.5 in	Depth MD	8314 ft	BHST	112°C / 233°F
Hole Size	7.875 in	Depth TVD	7476 ft	BHCT	75°C / 167°F
Pressure	4533 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



Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties	
		ThermaCem				Slurry Density	13.3 lbm/gal
						Slurry Yield	1.733 ft3/sack
						Water Requirement	7.799 gal/sack
						Total Mix Fluid	7.799 gal/sack
						Water Source	Field (Fresh) Water
						Water Chloride	N/A

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## Operation Test Results Request ID 2465593/1

### Thickening Time - ON-OFF-ON

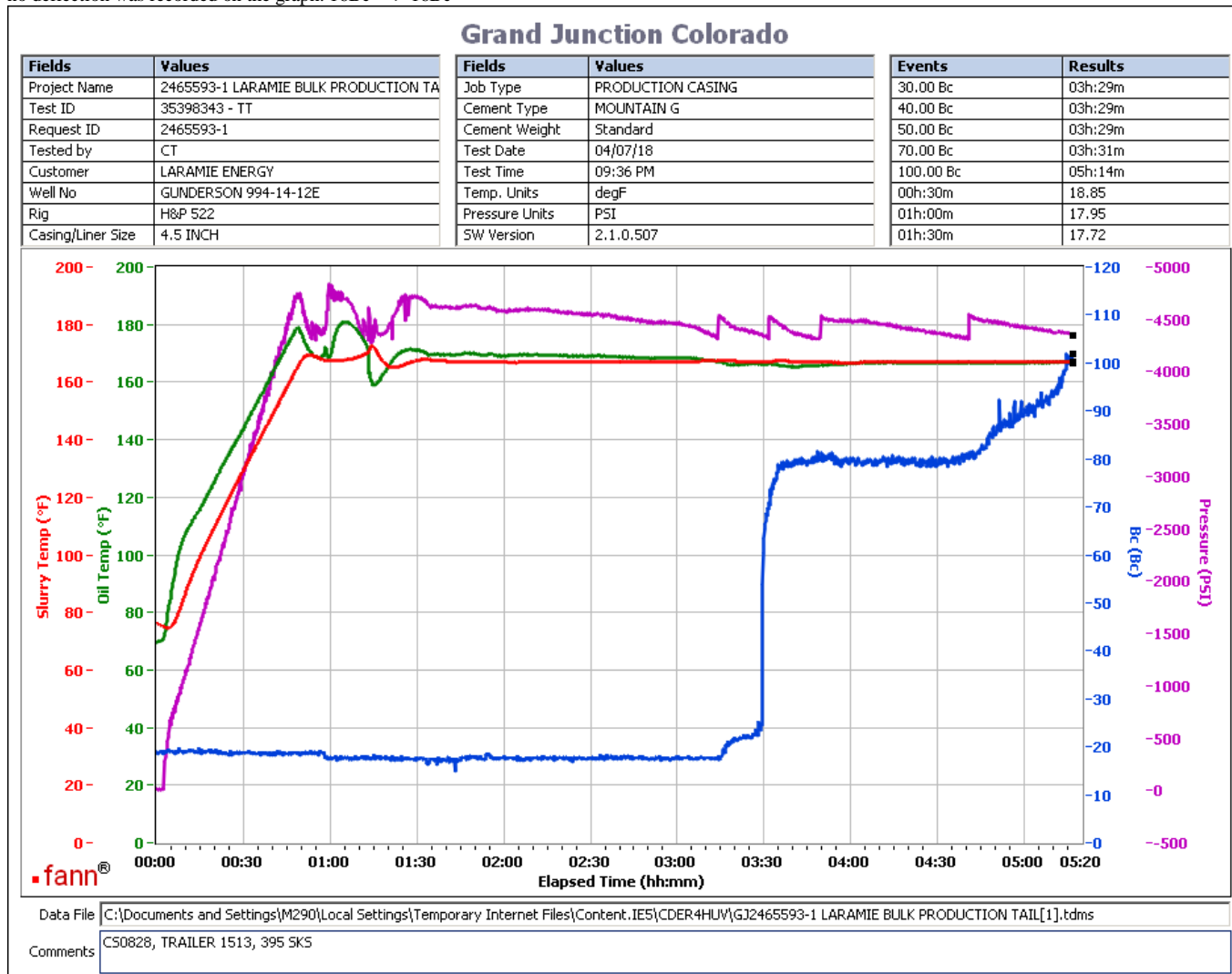
08/APR/2018

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)
167	4533	48	3:29	3:29	3:31	5:14	19	58	15	16

Total sks = 395

CS0828, Trailer 1513, 395 sks

no deflection was recorded on the graph. 16Bc--- > 16Bc



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