

# HALLIBURTON

iCem<sup>®</sup> Service

## **LARAMIE ENERGY LLC**

**For: Chuck Mallery**

Date: Thursday, July 13, 2017

## **Gunderson BCU 20-07E Surface PJR**

API # 05-077-10357-00

Sincerely,

**Grand Junction Cement Engineering**

## 1.0 Real-Time Job Summary

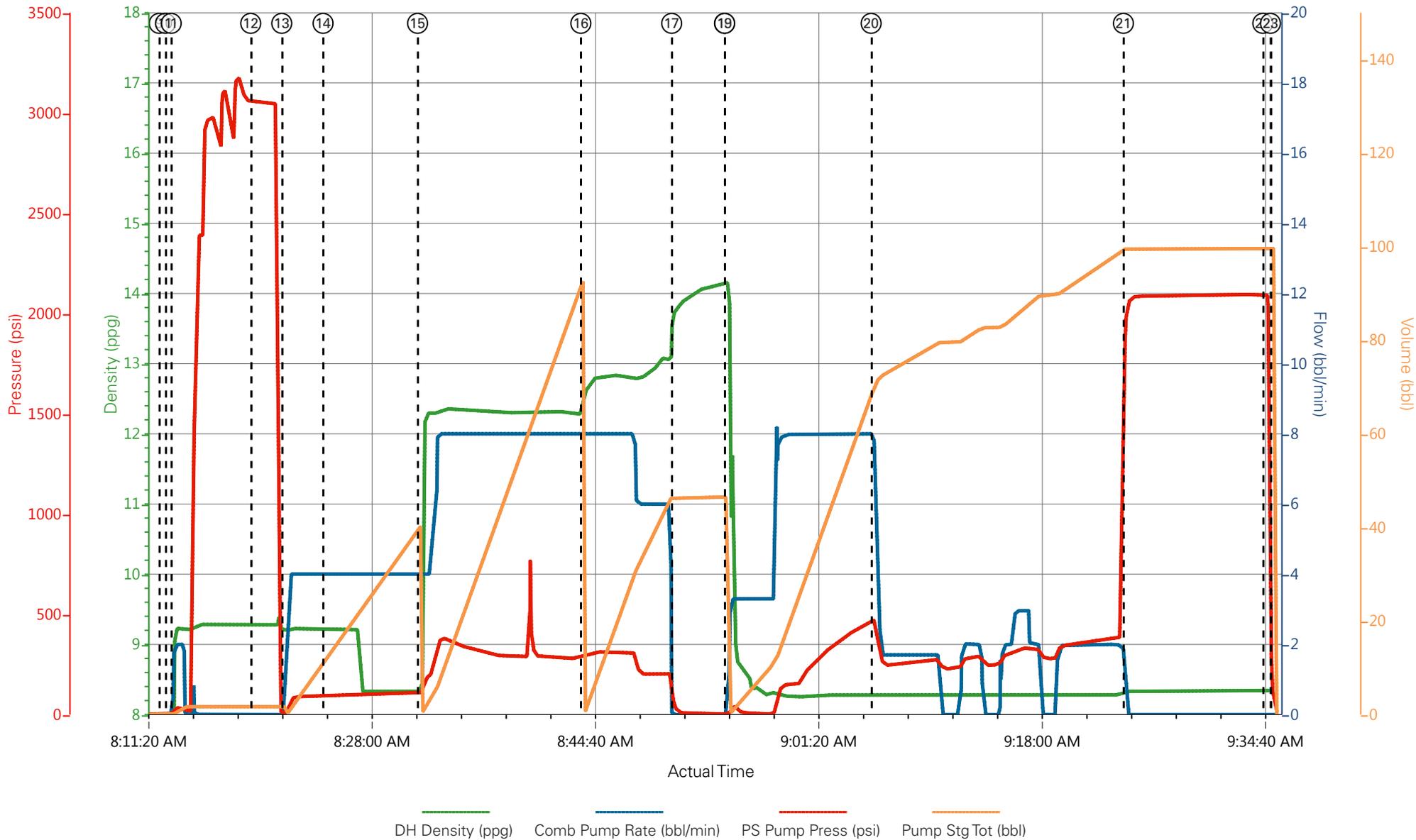
### 1.1 Job Event Log

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	7/13/2017	01:00:00	USER					REQUESTED ON LOCATION @ 7:00
Event	2	Pre-Convoy Safety Meeting	7/13/2017	03:45:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	7/13/2017	04:00:00	USER					1 HT 400 PUMP TRUCK E8, 1 660 BULK TRUCKS, 1 450 SERVICE PICKUP
Event	4	Arrive At Loc	7/13/2017	06:00:00	USER					HES SHOWED UP TO LOCATION ONE HOUR EARLY TO LOCATION. RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	7/13/2017	06:05:00	USER					MET WITH COMP REP, AND WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION AND COLLECTED WATER SAMPLE (PH- 7, CHLORIDES- 0, TEMP- 65F). COMP REP WAS OFFERED SDS FOR ALL CHEMICLES USED BY HES.
Event	6	Spot Equipment	7/13/2017	06:15:00	USER					1 HT 400 PUMP TRUCK E8, 1 660 BULK TRUCKS, 1 450 SERVICE PICKUP  ALL HES PRESENT
Event	7	Pre-Rig Up Safety Meeting	7/13/2017	06:30:00	USER					
Event	8	Pre-Job Safety Meeting	7/13/2017	07:45:00	USER					ALL HES EMPLOYEES AND RIG CREW PRESENT, RIG CIRCULATED @ 9.5 BPM PRIOR TO JOB,

										PRESSURE @95 PSI
Event	9	Start Job	7/13/2017	08:12:22	USER					TD-1561', TP-1551', SJ-44.43', CSG-8.625" 24# J55, OH-11", MUD-9.3PPG
Event	10	Drop Bottom Plug	7/13/2017	08:12:50	USER					VERIFIED BY FLAG INDICATOR
Event	11	Prime Lines	7/13/2017	08:13:16	COM5	8.33	2.0	40	2	FRESH WATER
Event	12	Test Lines	7/13/2017	08:19:12	COM5			3060		PRESSURE HELD
Event	13	Pump H2O Spacer	7/13/2017	08:21:31	COM5	8.33	4.0	110	40	FRESH WATER
Event	14	Check weight	7/13/2017	08:24:36	COM5					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	15	Pump Lead Cement	7/13/2017	08:31:39	COM5	12.3	8.0	400	86.3	197 SKS VARICEM GJ5 CMT 12.3 PPG, 2.46 FT3/SK, 14.17 GAL/SK
Event	16	Pump Tail Cement	7/13/2017	08:43:50	COM5	12.8	8.0	310	42.3	109 SKS VARICEM GJ5 CMT 12.8 PPG, 2.18 FT3/SK, 12.11 GAL/SK
Event	17	Shutdown	7/13/2017	08:50:37	USER					END OF CMT
Event	18	Drop Top Plug	7/13/2017	08:54:33	COM5					VERIFIED BY FLAG INDICATOR
Event	19	Pump Displacement	7/13/2017	08:54:34	COM5	8.33	8.0	430	60	FRESH WATER
Event	20	Slow Rate	7/13/2017	09:05:30	USER	8.33	2.0	360	36	HAD TO SLOW RATE AND SHUTDOWN DURING DISPLACEMENT FOR CELLUR PUMP ISSUES
Event	21	Bump Plug	7/13/2017	09:24:19	COM5	8.33	2.0	380	96	PLUG BUMPED BROUGHT PRESSURE UP FOR A 10 MIN CASING TEST
Event	22	Check Floats	7/13/2017	09:34:43	COM5			2095		FLOATS HELD 1 BBL FLOW BACK TO TRUCK
Event	23	End Job	7/13/2017	09:35:17	COM5					33 BBL OF CMT TO SURFACE, RIG USED 30 LBS OF SUGAR
Event	24	Post-Job Safety Meeting (Pre Rig-Down)	7/13/2017	09:45:00	USER					ALL HES PRESENT

Event	25	Pre-Convoy Safety Meeting	7/13/2017	10:45:00	USER	ALL HES PRESENT
Event	26	Crew Leave Location	7/13/2017	11:00:00	USER	THANK YOU FOR CHOOSING HALLIBURTON CEMENT, DUSTIN HYDE AND CREW

# LARAMIE, GUNERSON 20-07E, 8 5/8" SURFACE



- |   |                             |                    |                     |   |                        |
|---|-----------------------------|--------------------|---------------------|---|------------------------|
| ① Call Out                              | ⑥ Spot Equipment            | ⑪ Prime Lines      | ⑯ Pump Tail Cement  | 21 Bump Plug                              | 26 Crew Leave Location |
| ② Pre-Convoy Safety Meeting             | ⑦ Pre-Rig Up Safety Meeting | ⑫ Test Lines       | ⑰ Shutdown          | 22 Check Floats                           |                        |
| ③ Crew Leave Yard                       | ⑧ Pre-Job Safety Meeting    | ⑬ Pump H2O Spacer  | ⑱ Drop Top Plug     | 23 End Job                                |                        |
| ④ Arrive At Loc                         | ⑨ Start Job                 | ⑭ Check weight     | ⑲ Pump Displacement | 24 Post-Job Safety Meeting (Pre Rig-Down) |                        |
| ⑤ Assessment Of Location Safety Meeting | ⑩ Drop Bottom Plug          | ⑮ Pump Lead Cement | 20 Slow Rate        | 25 Pre-Convoy Safety Meeting              |                        |

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Created: 2017-07-13 06:33:13, Version: 4.2.393

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Customer : LARAMIE ENERGY II LLC

Job Date : 7/13/2017

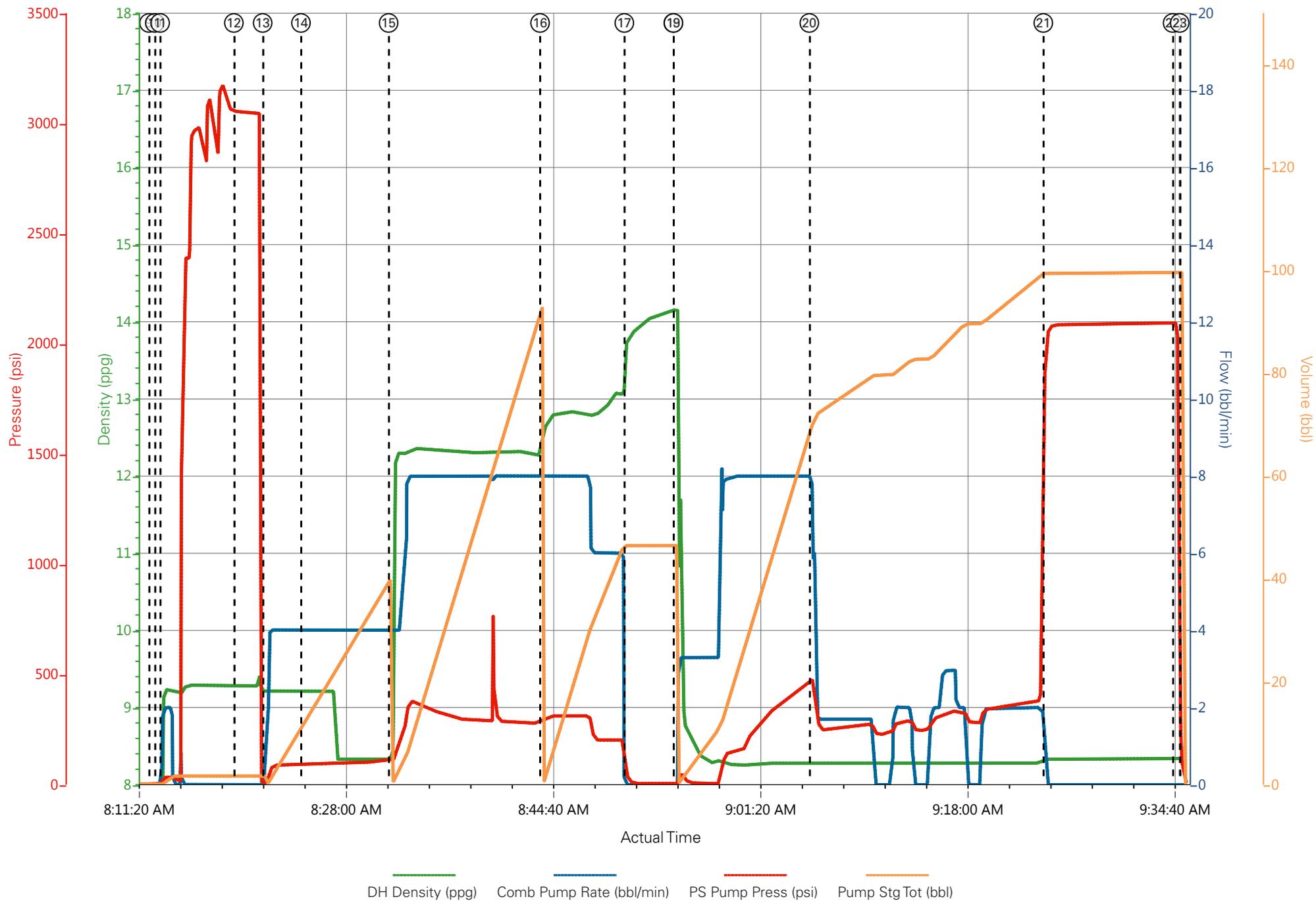
Well : GUNDERSON 20-07E

Representative : SHANE HEARD

Sales Order # : 904161074

E8 : R. MARTIN / HYDE

# LARAMIE, GUNERSON 20-07E, 8 5/8" SURFACE



# HALLIBURTON

iCem<sup>®</sup> Service

## **LARAMIE ENERGY LLC**

**For: Chuck Mallery**

Date: Sunday, July 16, 2017

## **Gunderson BCU 20-07E Production PJR**

API# 05-077-10357-00

Sincerely,

**Grand Junction Cement Engineering**

## 2.0 Real-Time Job Summary

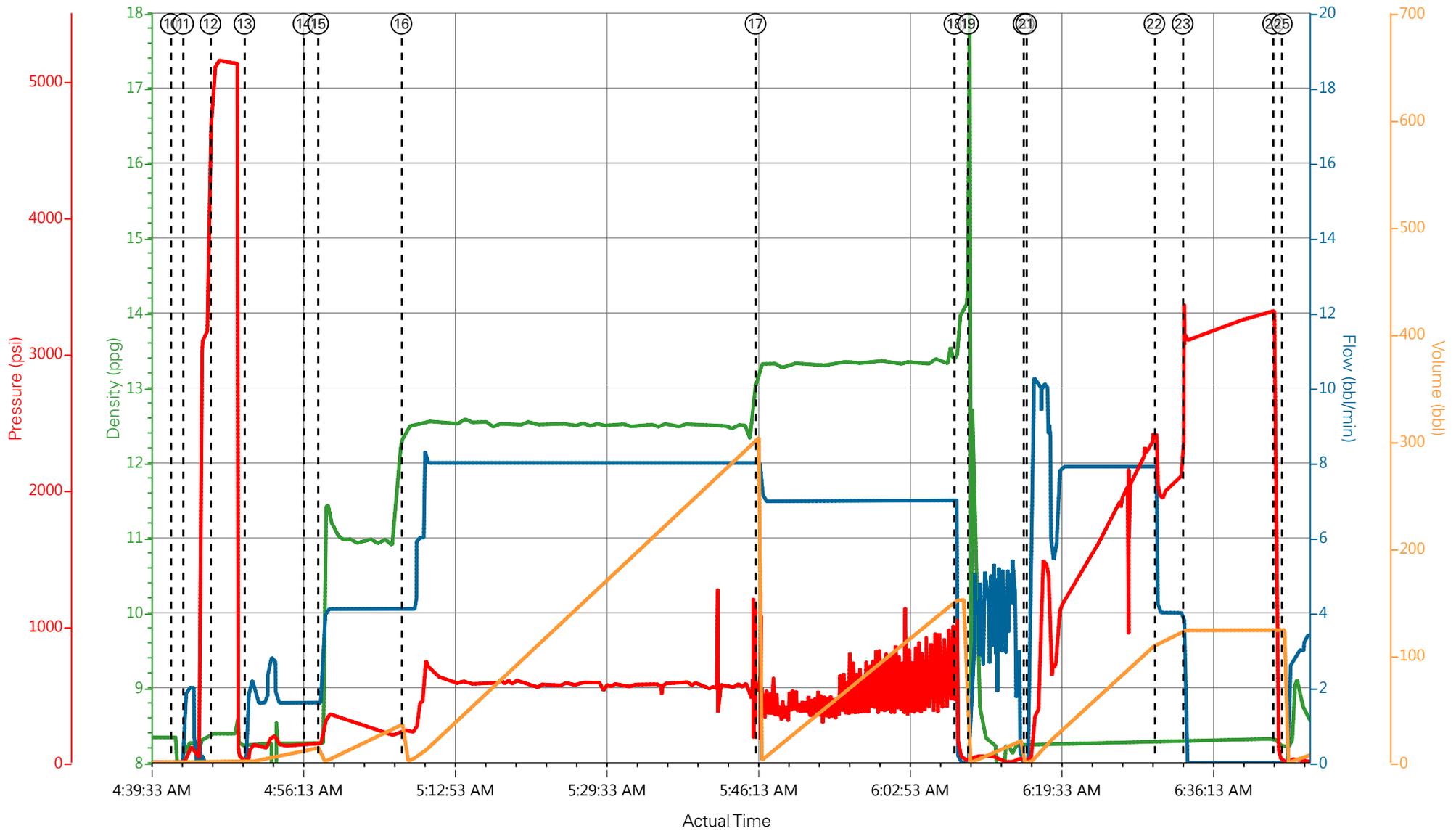
### 2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Pass-Side Pump Pressure (psi)	Pump Stage Total (bbl)	Comments
Event	1	Call Out	7/15/2017	21:00:00	USER					ALL HES CALLED OUT
Event	2	Pre-Convoy Safety Meeting	7/15/2017	23:00:00	USER					JOURNEY CREATED, ALL HES INVOLVED IN SAFETY MEETING
Event	3	Crew Leave Yard	7/15/2017	23:30:00	USER					1-F-550 PICKUP, 1-ELITE PUMP TRUCK, 1-660 BULK TRUCK, 2-CEMENT STORAGE SILOS ON LOCATION
Event	4	Arrive At Loc	7/16/2017	01:00:00	USER					HES CREW ARRIVED 2 HOURS EARLY
Event	5	Assessment Of Location Safety Meeting	7/16/2017	01:15:00	USER					RIG WAS RUNNING CASING, HES REP SPOKE WITH COMPANY REP PRIOR TO SPOTTING EQUIPMENT
Event	6	Pre-Rig Up Safety Meeting	7/16/2017	02:30:00	USER					JSA FILLED OUT AND REVIEWED BY ALL HES CREW
Event	7	Rig-Up Equipment	7/16/2017	02:45:00	USER					RIG-UP IRON TO THE STAND PIPE AND WASH UP LINE TO RIG CELLAR, WATER HOSES TO BOTH THE RIG TANK AND FRESH WATER UPRIGHT, BULK HOSES AND EQUIPMENT TO PUMP TRUCK
Event	8	Rig-Up Completed	7/16/2017	03:30:00	USER					RIG-UP COMPLETED SAFELY
Event	9	Pre-Job Safety Meeting	7/16/2017	04:15:00	USER					ALL HES, RIG CREW AND COMPANY REP IN ATTENDANCE TO DISCUSS JOB AND PROCEDURES
Event	10	Start Job	7/16/2017	04:42:00	COM5					TD: 8009FT TP: 7999FT OH: 7 7/8 CSG: 4.5 11.6# I-80 SRF CSG: 8.625 24# SET AT 1561FT MUD WT: 9.5 VISC: 41 WTR TEST: TEMP-60 CHLOR-0 PH-7
Event	11	Prime Lines	7/16/2017	04:43:21	USER	8.34	2	138	2	FILL LINES WITH 2BBLS OF WATER AHEAD TO PRESSURE TEST

Event	12	Test Lines	7/16/2017	04:46:21	COM5			5155		PRESSURE TEST LINES TO 5155PSI, PRESSURE TEST OK
Event	13	Water Spacer	7/16/2017	04:50:05	COM5	8.34	2	138	15	15BBLS OF WATER PUMPED AHEAD TO VERIFY CIRCULATION AND TO BUILD A TUB OF TUNED SPACER
Event	14	Check weight	7/16/2017	04:56:34	COM5	11				VERIFIED WEIGHT OF FIRST TUB OF TUNED SPACER
Event	15	Tuned Spacer	7/16/2017	04:58:11	COM5	11	4	320	40	40BBLS OF TUNED SPACER 11PPG 4.86YIELD 31.9GAL/SK WEIGHT OF TUNED SPACER VERIFIED VIA MUD SCALES THROUGHOUT TUNED SPACER
Event	16	Pump Lead Cement	7/16/2017	05:07:21	COM5	12.5	8	605	292.9	848SKS OF NEOCEM CEMENT (292.9BBLS) 12.5PPG 1.94YIELD 9.6GAL/SK WEIGHT OF CEMENT VERIFIED VIA MUD SCALES THROUGHOUT LEAD CEMENT
Event	17	Pump Tail Cement	7/16/2017	05:46:16	COM5	13.3	7	460	135.6	440SKS OF THERMACEM CEMENT (135.6BBLS) 13.3PPG 1.73YIELD 7.81GAL/SK WEIGHT OF CEMENT VERIFIED VIA MUD SCALES THROUGHOUT TAIL CEMENT
Event	18	Shutdown	7/16/2017	06:08:07	USER					SHUTDOWN END OF CEMENT
Event	19	Clean Lines	7/16/2017	06:09:37	USER					CLEAN LINES TO RIG CELLAR, READY TANKS FOR DISPLACEMENT
Event	20	Drop Top Plug	7/16/2017	06:15:43	USER					TOP PLUG AWAY NO PROBLEMS
Event	21	Pump Displacement	7/16/2017	06:16:00	COM5	8.34	8	2440	112.6	FRESH WATER DISPLACEMENT WITH 1-GAL MMCR AND 5-GALS OF CLA-WEB ADDED THROUGHOUT DISPLACEMENT
Event	22	Slow Rate	7/16/2017	06:30:06	USER	8.34	4	2060	10	SLOW RATE TO BUMP THE PLUG, PRESSURE PRIOR TO SLOWING RATE WAS 2440PSI, PRESSURE AFTER SLOWING RATE WAS 2060PSI
Event	23	Bump Plug	7/16/2017	06:33:12	COM5	8.34	4	2130	122.6	PLUG BUMPED AT CALCULATED DISPLACEMENT, PLUG BUMPED AT 2130PSI TOOK TO 3100PSI FOR 10MIN CASING TEST, 25BBLS OF TUNED SPACER TO

								SURFACE
Event	24	Check Floats	7/16/2017	06:43:08	USER	3316	1.5	FLOATS HELD 1.5BBLS BACK TO TRUCK, 25BBLS OF TUNED SPACER TO SURFACE, RIG USED 20 POUNDS OF SUGAR
Event	25	End Job	7/16/2017	06:44:07	COM5			THANK YOU FOR CHOOSING HALLIBURTON CEMENT CARL KUKUS AND CREW
Event	26	Pre-Rig Down Safety Meeting	7/16/2017	06:50:00	USER			JSA REVIEWED, ALL HES INVOLVED IN SAFETY MEETING
Event	27	Rig-Down Equipment	7/16/2017	07:00:00	USER			WASH UP AND BLOW DOWN PUMP TRUCK, RIG DOWN ALL LINES AND EQUIPMENT
Event	28	Rig-Down Completed	7/16/2017	08:00:00	USER			RIG-DOWN COMPLETED SAFELY
Event	29	Pre-Convoy Safety Meeting	7/16/2017	08:10:00	USER			JOURNEY CREATED ALL HES INVOLVED IN SAFETY MEETING
Event	30	Crew Leave Location	7/16/2017	08:20:20	USER			1-F-550 PICKUP, 1-ELITE PUMP TRUCK, 1-660 BULK TRUCK

# LARAMIE - GUNDERSON 20-07E - 90416554 - PRODUCTION



DH Density (ppg) 8.46    Comb Pump Rate (bbl/min) 3.8    PS Pump Press (psi) 2    Pump Stg Tot (bbl) 10.6

- on Safety Meeting    ⑦ Rig-Up Equipment    ⑨ Pre-Job Safety Meeting    ⑪ Prime Lines    ⑬ Water Spacer    ⑮ Tuned Spacer    ⑰ Pump Tail Cement    ⑲ Clean Lines    21 Pump Displacement    23
- ting    ⑧ Rig-Up Completed    ⑩ Start Job    ⑫ Test Lines    ⑭ Check weight    ⑯ Pump Lead Cement    ⑱ Shutdown    20 Drop Top Plug    22 Slow Rate    24



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Created: 2017-07-16 00:38:15, Version: 4.2.393

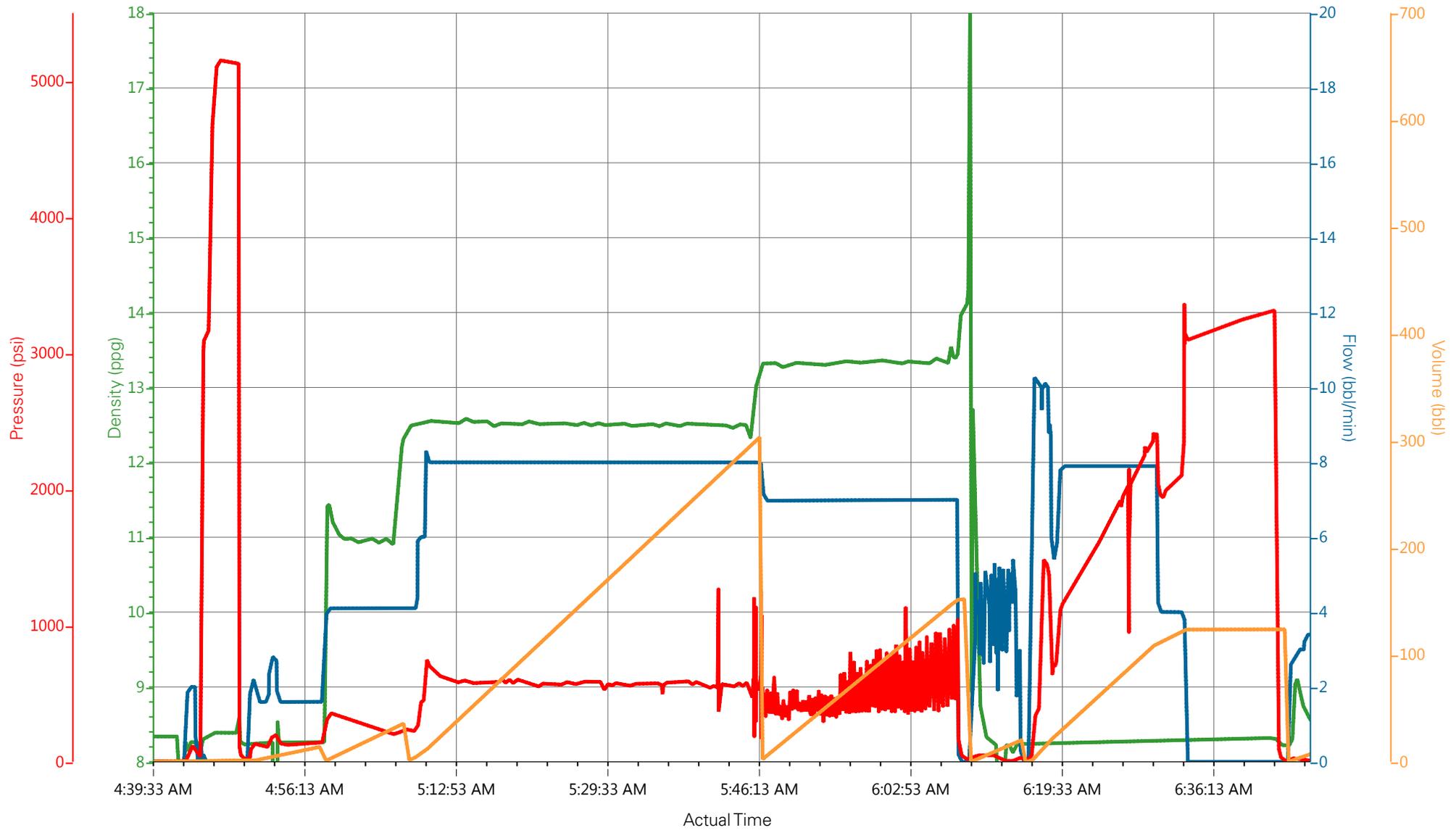
[Edit](#)

Customer : LARAMIE ENERGY II LLC  
 Representative : Shane Heard

Job Date : 7/16/2017 3:44:25 AM  
 Sales Order # : 90416554

Well : GUNDERSON 20-07E  
 Elite 1 : Dillon Martin/Carlton Kukus

# LARAMIE - GUNDERSON 20-07E - 90416554 - PRODUCTION



DH Density (ppg) 8.46    Comb Pump Rate (bbl/min) 3.8    PS Pump Press (psi) 2    Pump Stg Tot (bbl) 10.6

### Job Information

<b>Request/Slurry</b>	2400994/1	<b>Rig Name</b>	H&P 522	<b>Date</b>	13/JUL/2017
<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>	Gunderson BCU 20-07E

### Well Information

<b>Casing/Liner Size</b>	4.5 in	<b>Depth MD</b>	8011 ft	<b>BHST</b>	113°C / 235°F
<b>Hole Size</b>	7.875 in	<b>Depth TVD</b>	7551 ft	<b>BHCT</b>	76°C / 168°F
<b>Pressure</b>	4590 psi				

### Drilling Fluid Information

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

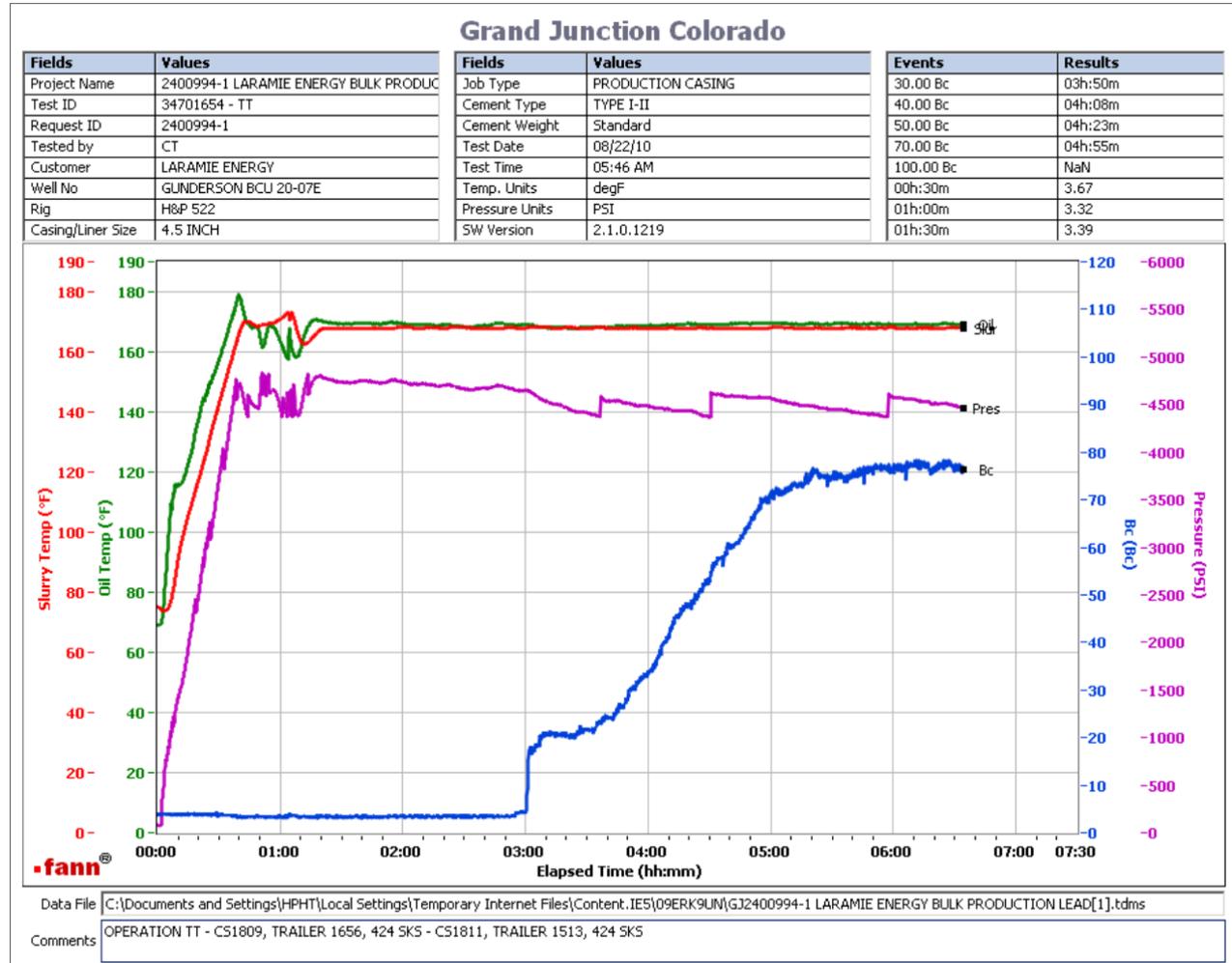
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	<b>Cement Properties</b>		
		NeoCem Lead				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.941	ft3/sack
						Water Requirement	9.623	gal/sack
						Total Mix Fluid	9.623	gal/sack
						Water Source	Field (Fresh) Water	
						Water Chloride		

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Thickening Time - ON-OFF-ON

15/JUL/2017

Test Temp (°F)	Pressure (psi)	Reached in (min)	30 Bc (hh:min)	50 Bc (hh:min)	70 Bc (hh:min)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)	Termination time (hh:min)	Termination Bc
168	4590	39	3:50	4:23	4:55	4	49	15	4	6:34	75



Total sks = 848  
 Composite:  
 CS1809 TR 1656 424 SKS  
 CS1811 TR 1513 424 SKS  
 Deflection: 4 - 4  
 This test was terminated at 6:34, 75 Bc's as per the engineers instructions.

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**Job Information**

<b>Request/Slurry</b>	2400995/1	<b>Rig Name</b>	H&P 522	<b>Date</b>	13/JUL/2017
<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>	Gunderson BCU 20-07E

**Well Information**

<b>Casing/Liner Size</b>	4.5 in	<b>Depth MD</b>	8011 ft	<b>BHST</b>	113°C / 235°F
<b>Hole Size</b>	7.875 in	<b>Depth TVD</b>	7551 ft	<b>BHCT</b>	76°C / 168°F
<b>Pressure</b>	4590 psi				

**Drilling Fluid Information**

<b>Mud Supplier Name</b>	Baroid	<b>Mud Trade Name</b>	BARADRIL-N	<b>Density</b>	9.9 lbm/gal
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**Cement Information - Tail Design** 

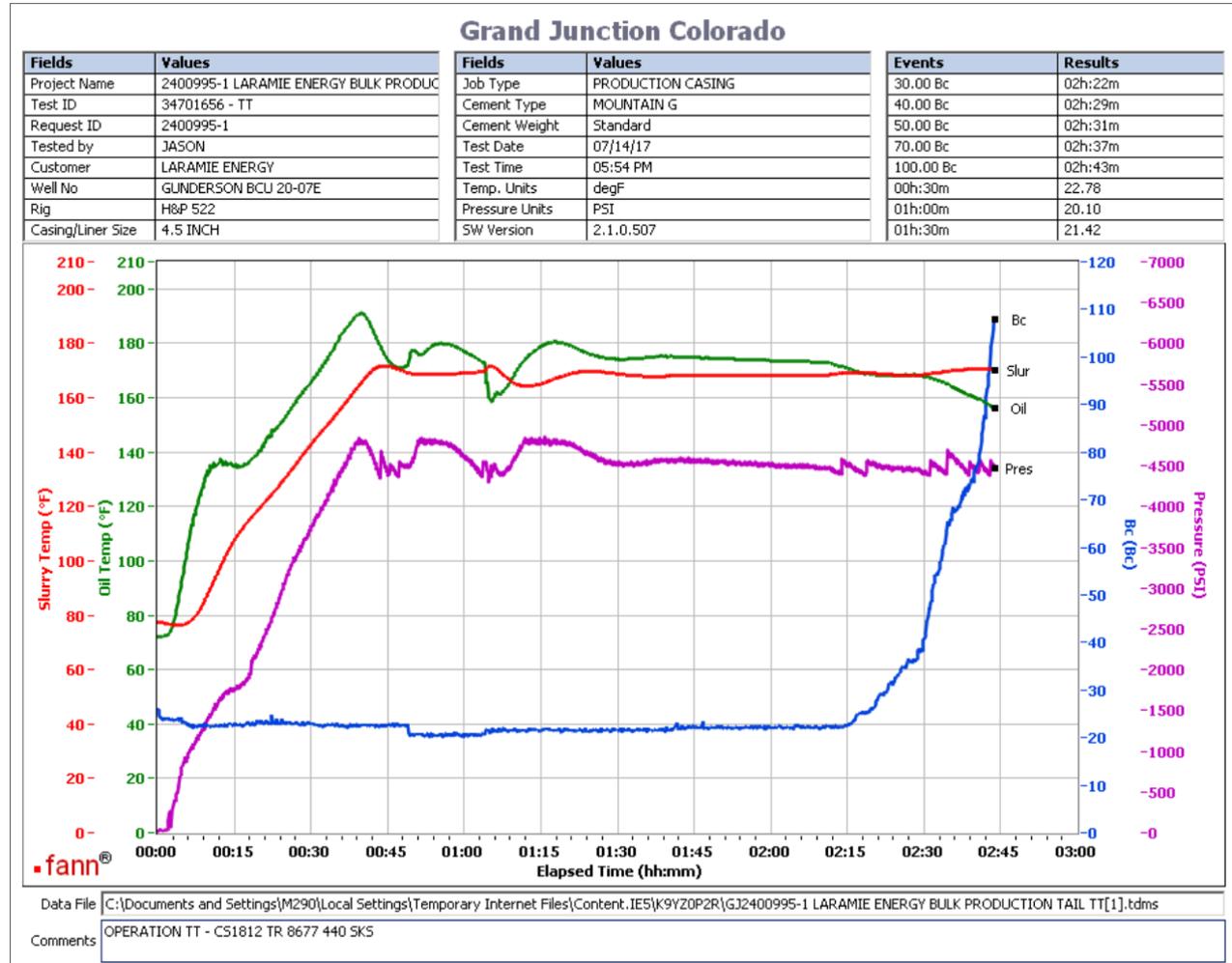
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	<b>Cement Properties</b>		
		ThermaCem Tail				Slurry Density	13.3	lbm/gal
						Slurry Yield	1.733	ft <sup>3</sup> /sack
						Water Requirement	7.799	gal/sack
						Total Mix Fluid	7.799	gal/sack
						Water Source	Field (Fresh) Water	
						Water Chloride		

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Thickening Time - ON-OFF-ON

15/JUL/2017

Test Temp (°F)	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)
168	4590	39	2:22	2:31	2:37	2:43	26	49	15	21



Total sks = 440  
 CS1812 TR 8677 440 SKS  
 Deflection: 21 - 21

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