

HALLIBURTON

iCem[®] Service

LARAMIE ENERGY LLC-EBUS

For: Aaron Duncan

Date: Tuesday, March 13, 2018

Gunderson 994-13-11W Surface PJR

API# 05-077-10531-00

Sincerely,

Grand Junction Cement Engineering

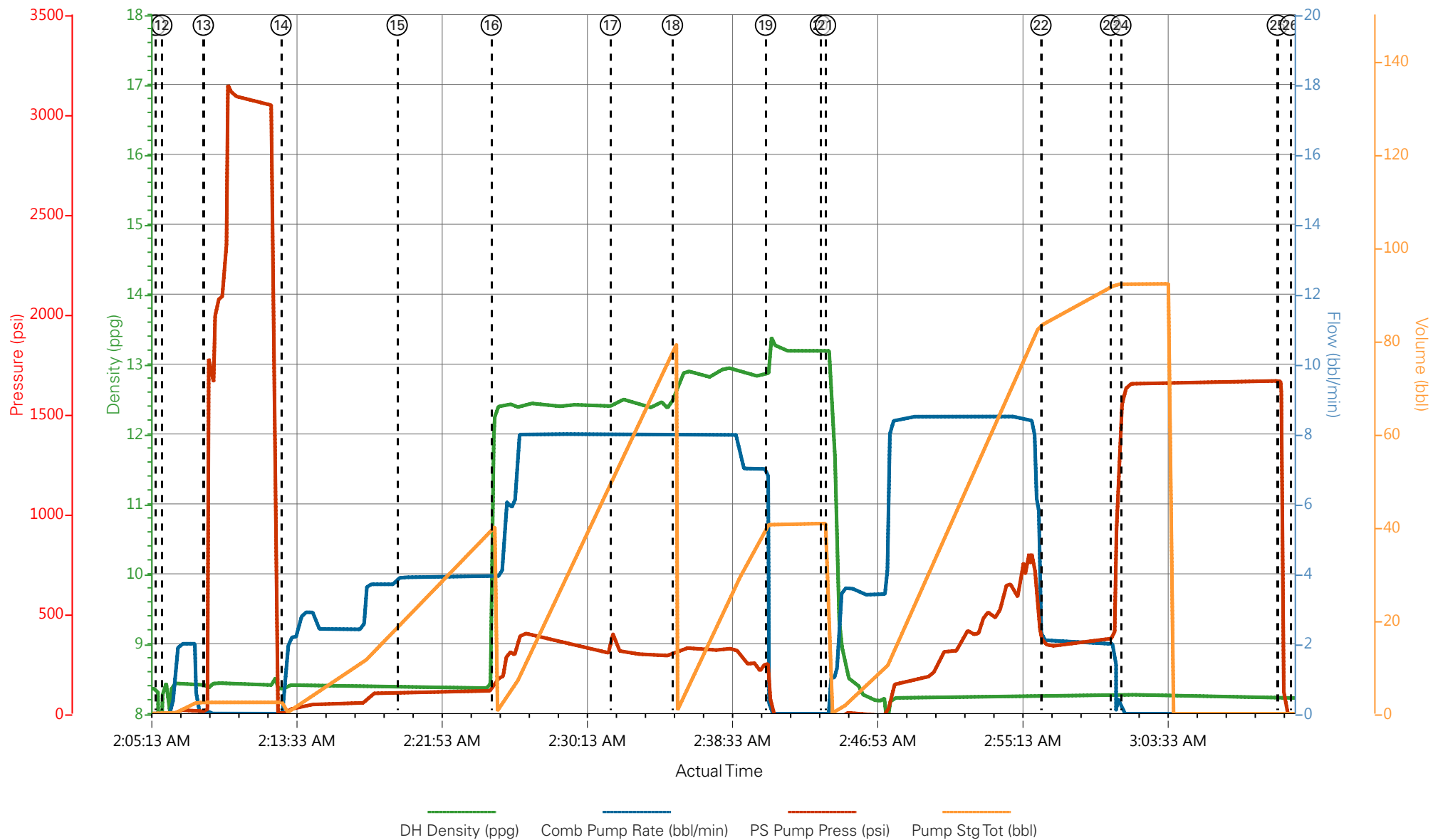
2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	3/12/2018	18:00:00	USER					ON LOCATION REQUESTED 23:30
Event	2	Pre-Convoy Safety Meeting	3/12/2018	19:45:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	3/12/2018	20:00:00	USER					
Event	4	Arrive at Location from Service Center	3/12/2018	22:00:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	3/12/2018	22:05:00	USER					MET WITH COMPANY REP SDS OFFERED
Event	6	Pre-Rig Up Safety Meeting	3/12/2018	22:15:00	USER					ALL HES PRESENT
Event	7	Rig-Up Completed	3/13/2018	01:15:00	USER					1-ELITE, 1-660 BULK TRAILER, 8.625" QL, 2" PUMP IRON, 4" SUCTION HOSE
Event	8	Other	3/13/2018	01:29:00	USER					RIG CIRCULATED 9 BPM 154 PSI. WATER:TEMP-50, CL-0, PH-7
Event	9	Pre-Job Safety Meeting	3/13/2018	01:30:01	USER					ALL HES AND RIG CREW PRESENT
Event	10	Start Job	3/13/2018	02:05:00	USER	8.36	0.00	9.00	0.0	TD-1569', TP-1563.1', SJ-45.09', CSG-8.625" 28# J55, OH-11", MUD-9.2PPG
Event	11	Prime Pumps	3/13/2018	02:05:38	USER	4.44	0.00	20.00	3.0	FRESH WATER
Event	12	Drop Bottom Plug	3/13/2018	02:06:00	USER					PLUG AWAY
Event	13	Test Lines	3/13/2018	02:08:22	COM5	8.41	0.00	3116.00	3.1	PRESSURE HELD ON LINES

Event	14	Pump Water Spacer	3/13/2018	02:12:50	COM5	8.40	4.00	120.00	40.0	FRESH WATER
Event	15	Check weight	3/13/2018	02:19:30	COM5					WEIGHT VERIFIED BY PRESSURIZED MUD SCALES
Event	16	Pump Lead Cement	3/13/2018	02:24:54	COM5	12.30	8.00	390.00	78.0	LEAD CEMENT 178SKS, 12.3PPG, 2.46CF/SK, 14.17GL/SK
Event	17	Bottom Plug Ruptured	3/13/2018	02:31:44	COM5					BOTTOM PLUG RUPTURED 1100 PSI
Event	18	Pump Tail Cement	3/13/2018	02:35:18	COM5	12.80	8.00	316.00	42.3	TAIL CEMENT 109SKS, 12.8PPG, 2.18CF/SK, 12.11GL/SK
Event	19	Shutdown	3/13/2018	02:40:38	USER					WASHED UP ON TOP OF PLUG
Event	20	Drop Top Plug	3/13/2018	02:43:48	USER					PLUG AWAY
Event	21	Pump Displacement	3/13/2018	02:44:05	COM5	8.30	8.50	810.00	94.7	FRESH WATER
Event	22	Slow Rate	3/13/2018	02:56:27	USER	8.24	2.10	349.00	83.7	SLOW RATE LAST 10 BBLS
Event	23	Bump Plug	3/13/2018	03:00:27	COM5	8.25	2.00	375.00	94.7	PLUG BUMPED 375 PSI
Event	24	Casing Test	3/13/2018	03:01:02	COM5	8.29	0.00	1590.00	0.0	10 MINUTE CASING TEST 1600PSI
Event	25	Check Floats	3/13/2018	03:10:01	USER	8.24	0.00	1655.00	0.0	FLOATS HELD 1/2BBL BACK
Event	26	End Job	3/13/2018	03:10:46	COM5					GOOD RETURNS THROUGH OUT JOB, 26 BBLS CEMENT TO SURFACE
Event	27	Post-Job Safety Meeting (Pre Rig-Down)	3/13/2018	03:15:00	USER					ALL HES PRESENT
Event	28	Rig-Down Completed	3/13/2018	03:40:00	USER					
Event	29	Pre-Convoy Safety Meeting	3/13/2018	03:50:00	USER					ALL HES PRESENT
Event	30	Crew Leave Location	3/13/2018	04:00:00	USER					THANK YOU FOR CHOOSING HALLIBURTON, ANDREW BRENNECKE AND CREW

LARAMIE - GUNDERSON 994-13-11W - 8.625" SURFACE



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

▼ **HALLIBURTON** | iCem® Service

Created: 2018-03-12 22:35:00, Version: 4.2.393

Edit

Customer : LARAMIE ENERGY II LLC

Job Date : 3/12/2018 10:54:48 PM

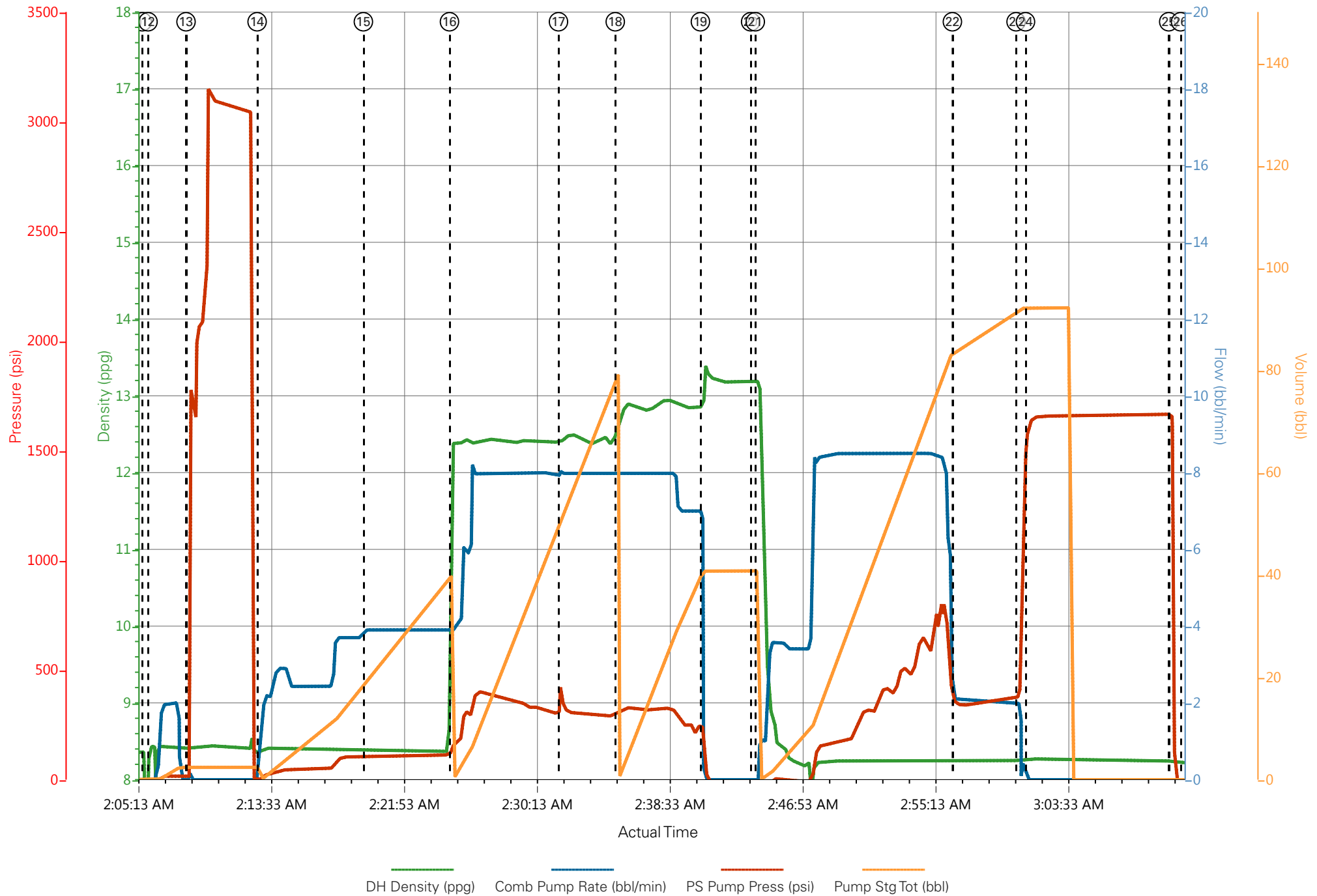
Well : GUNDERSON 994-13-11W

Representative : SHANE HEARD

Sales Order # : 904705512

ELITE #2 : D.BRENNECKE

LARAMIE - GUNDERSON 994-13-11W - 8.625" SURFACE



HALLIBURTON

iCem[®] Service

LARAMIE ENERGY LLC-EBUS

For: Aaron Duncan

Date: Thursday, March 15, 2018

Gunderson 994-13-11W Production PJR

API# 05-077-10531-00

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

2.1 Job Event Log

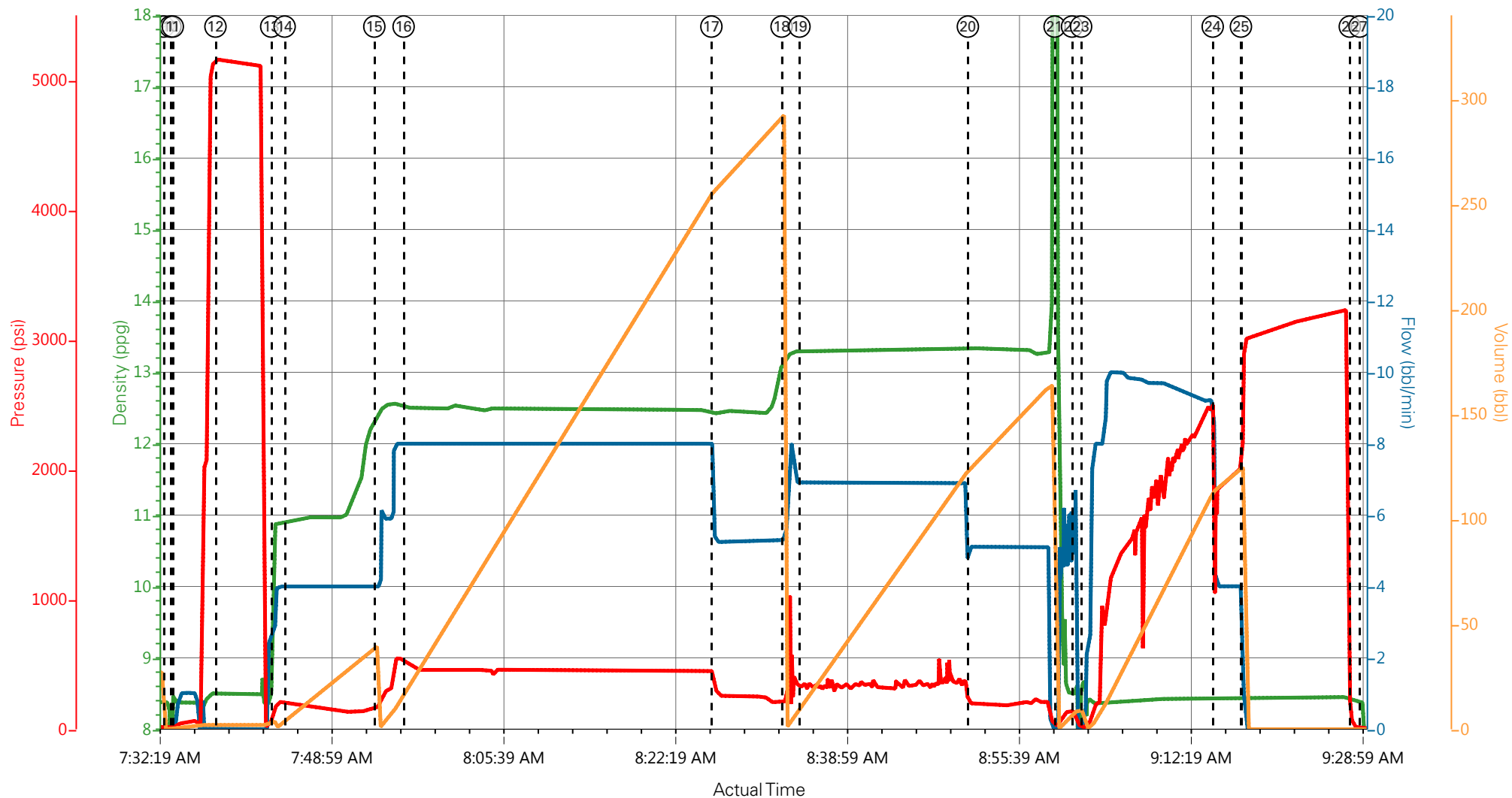
Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	3/15/2018	02:00:00	USER					REQUESTED ON LOCATION @ 07:30
Event	2	Pre-Convoy Safety Meeting	3/15/2018	04:00:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	3/15/2018	04:15:00	USER					1 HT 400 PUMP TRUCK E4, 1 660 BULK TRUCK, 1 550 SERVICE PICKUP
Event	4	Arrive At Loc	3/15/2018	05:30:00	USER					RIG RUNNING CASING WHEN HES ARRIVED AT LOCATION
Event	5	Assessment Of Location Safety Meeting	3/15/2018	05:45:00	USER					MET WITH COMP REP, AND WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION AND COLLECTED WATER SAMPLE (PH- 7.0, CHLORIDES- 0, TEMP- 55F). COMP REP WAS OFFERED SDS FOR ALL CHEMICLES USED BY HES.
Event	6	Pre-Rig Up Safety Meeting	3/15/2018	05:50:00	USER					ALL HES PRESENT
Event	7	Rig-Up Equipment	3/15/2018	06:00:00	USER					HES RIGGED UP 1 HT400 PUMP TRUCK, 1 660 BULK TRUCK, 2 CEMENT SILOS, 2" DISCHARGE IRON, AND 4" SUCTION HOSE WITHOUT ENTERING RED ZONE.
Event	8	Pre-Job Safety Meeting	3/15/2018	07:15:00	USER					ALL HES EMPLOYEES AND RIG CREW PRESENT, RIG CIRCULATED @ 9.5 BPM PRIOR TO JOB PRESSURE @ 570PSI.
Event	9	Start Job	3/15/2018	07:33:00	COM6					TD 7694', TP 7684' OF 4 ½" 11.6# P110 CSG, SJ 86.83', SURFACE CSG 8 5/8" 28# J55 SET @ 1559', OH 7 7/8", MUD 9.1 PPG

Event	10	Prime Lines	3/15/2018	07:33:40	USER	8.33	2	60	2	8.33 PPG FRESH WATER
Event	11	Drop Bottom Plug	3/15/2018	07:33:53	USER					VERIFIED BY PLUG INDICATOR
Event	12	Test Lines	3/15/2018	07:38:02	COM6			5160		ALL LINES HELD PRESSURE AT 5160 PSI
Event	13	Tuned Spacer	3/15/2018	07:43:26	COM6	11	4	200	40	40 BBL TUNED SPACER III, 11 PPG, 4.86 FT3/SK, 31.9 GAL/SK
Event	14	Check weight	3/15/2018	07:44:44	COM6					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	15	Pump Lead Cement	3/15/2018	07:53:26	COM6	12.5	8	480	265	767 SKS OF NEOCEM CMT 12.5 PPG, 1.94 FT3/SK, 9.6 GAL/SK.
Event	16	Check weight	3/15/2018	07:56:16	COM6					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	17	Slow Rate	3/15/2018	08:26:08	USER					SLOWED TO END LEAD SILO
Event	18	Pump Tail Cement	3/15/2018	08:32:56	COM6	13.3	7	380	122	396 SKS THERMACEM CMT 13.3 PPG, 1.73 FT3/SK, 7.81 GAL/SK.
Event	19	Check weight	3/15/2018	08:34:40	COM6					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	20	Slow Rate	3/15/2018	08:51:00	USER					SLOWED TO END TAIL SILO
Event	21	Shutdown	3/15/2018	08:59:25	USER					END OF CEMENT. CLEAN PUMPS AND LINES TO CELLAR.
Event	22	Drop Top Plug	3/15/2018	09:01:06	USER					VERIFIED BY PLUG INDICATOR
Event	23	Pump Displacement	3/15/2018	09:01:59	COM6	8.4	10	2500	117.8	1 GAL MMCR IN FIRST 10 BBLS, 5 GALS CLAY WEB THROUGHT DISPLACEMENT
Event	24	Slow Rate	3/15/2018	09:14:45	USER	8.4	4	1900	107.8	SLOW RATE TO 4 BPM TO BUMP PLUG
Event	25	Bump Plug	3/15/2018	09:17:29	COM6	8.4	4	2000	117.8	LANDED PLUG AT 2000 PSI, BROUGHT UP TO 3000 PSI. HELD PRESSURE FOR TEN MINS FOR CASING TEST.
Event	26	Check Floats	3/15/2018	09:28:03	USER					FLOATS HELD, 1.5 BBL BACK TO TRUCK
Event	27	End Job	3/15/2018	09:29:00	COM6					RETURNS THROUGHT JOB, 40BBLS OF TUNED

SPACER TO SURFACE. 40# OF SUGAR USED.

Event	28	Post-Job Safety Meeting (Pre Rig-Down)	3/15/2018	09:35:00	USER	ALL HES PRESENT
Event	29	Rig-Down Equipment	3/15/2018	09:40:00	USER	ALL HES PRESENT
Event	30	Pre-Convoy Safety Meeting	3/15/2018	10:30:00	USER	ALL HES PRESENT
Event	31	Crew Leave Location	3/15/2018	10:45:00	USER	THANK YOU FOR CHOOSING HALLIBURTON CEMENT, SHAWN BLOSSOM AND CREW

LARAMIE GUNDERSON 994-13-11W, 4.5" PRODUCTION



DH Density (ppg) 0.01 Comb Pump Rate (bbl/min) 0 PS Pump Press (psi) 6 Pump Stg Tot (bbl) 0

- | | | | | | |
|---|--------------------------|--------------------|----------------------|---|------------------------|
| ① Call Out | ⑦ Rig-Up Equipment | ⑬ Tuned Spacer | ⑰ Check weight | 25 Bump Plug | 31 Crew Leave Location |
| ② Pre-Convoy Safety Meeting | ⑧ Pre-Job Safety Meeting | ⑭ Check weight | 20 Slow Rate | 26 Check Floats | |
| ③ Crew Leave Yard | ⑨ Start Job | ⑮ Pump Lead Cement | 21 Shutdown | 27 End Job | |
| ④ Arrive At Loc | ⑩ Prime Lines | ⑯ Check weight | 22 Drop Top Plug | 28 Post-Job Safety Meeting (Pre Rig-Down) | |
| ⑤ Assessment Of Location Safety Meeting | ⑪ Drop Bottom Plug | ⑱ Slow Rate | 23 Pump Displacement | 29 Rig-Down Equipment | |
| ⑥ Pre-Rig Up Safety Meeting | ⑫ Test Lines | ⑲ Pump Tail Cement | 24 Slow Rate | 30 Pre-Convoy Safety Meeting | |

▼ **HALLIBURTON** | iCem® Service

Created: 2018-03-15 06:18:12, Version: 4.2.393

Edit

Customer : LARAMIE ENERGY II LLC EBUSINESS

Job Date : 3/15/2018

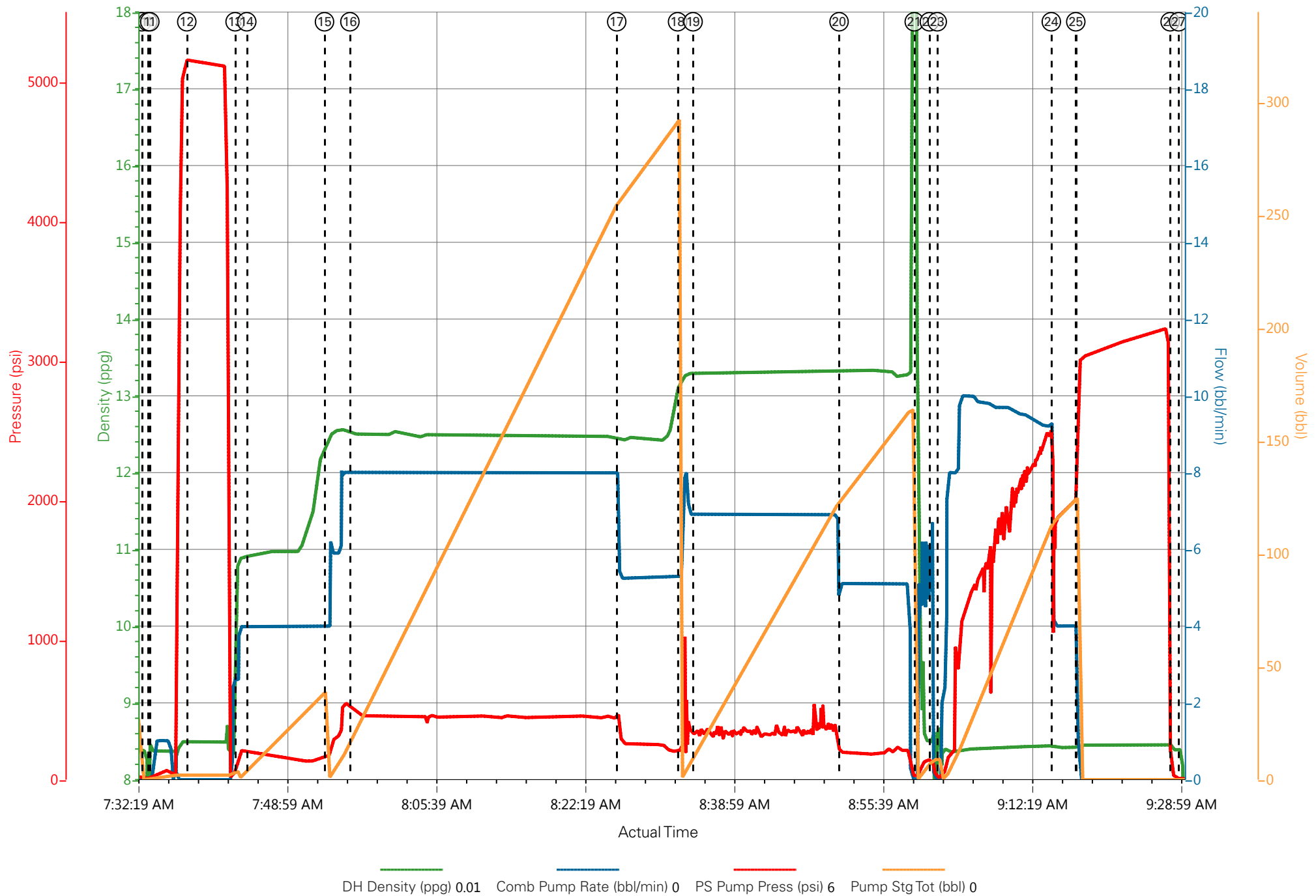
Well : GUNDERSON 994-13-11W

Representative : SHANE HEARD

Sales Order # : 904709132

ELITE 4 : A.ANGELO/S.BLOSSOM

LARAMIE GUNDERSON 994-13-11W, 4.5" PRODUCTION



Job Information

Request/Slurry	2459947/1	Rig Name	H&P 522	Date	12/MAR/2018
Submitted By	Aaron Katz	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Gunderson 0994-13-11W

Well Information

Casing/Liner Size	4.5 in	Depth MD	7729 ft	BHST	113°C / 236°F
Hole Size	7.875 in	Depth TVD	7597 ft	BHCT	76°C / 169°F
Pressure	4621 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



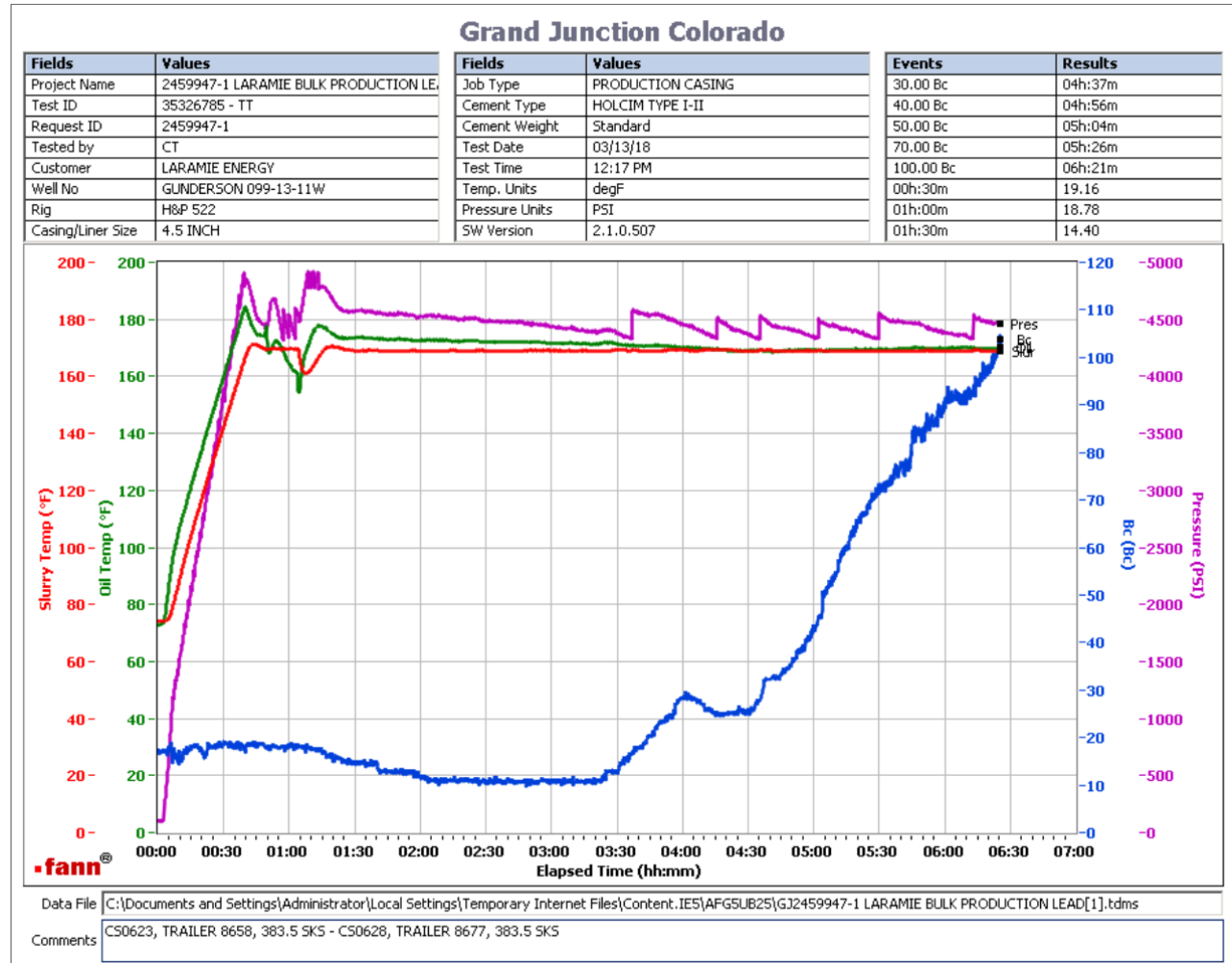
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		NeoCem Lead				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.941	ft3/sack
						Water Requirement	9.623	gal/sack
						Total Mix Fluid	9.623	gal/sack
						Water Source	Fresh Water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

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Thickening Time - ON-OFF-ON

13/MAR/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)
169	4621	39	4:37	5:04	5:26	6:21	18	49	15	19



Total sks = 767

CS0623, Trailer 8658, 383.5 sks

CS0628, Trailer 8677, 383.5 sks

Deflected from 18Bc---> 19Bc

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Job Information

Request/Slurry	2459948/1	Rig Name	H&P 522	Date	12/MAR/2018
Submitted By	Aaron Katz	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Gunderson 0994-13-11W

Well Information

Casing/Liner Size	4.5 in	Depth MD	7729 ft	BHST	113°C / 236°F
Hole Size	7.875 in	Depth TVD	7597 ft	BHCT	76°C / 169°F
Pressure	4621 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



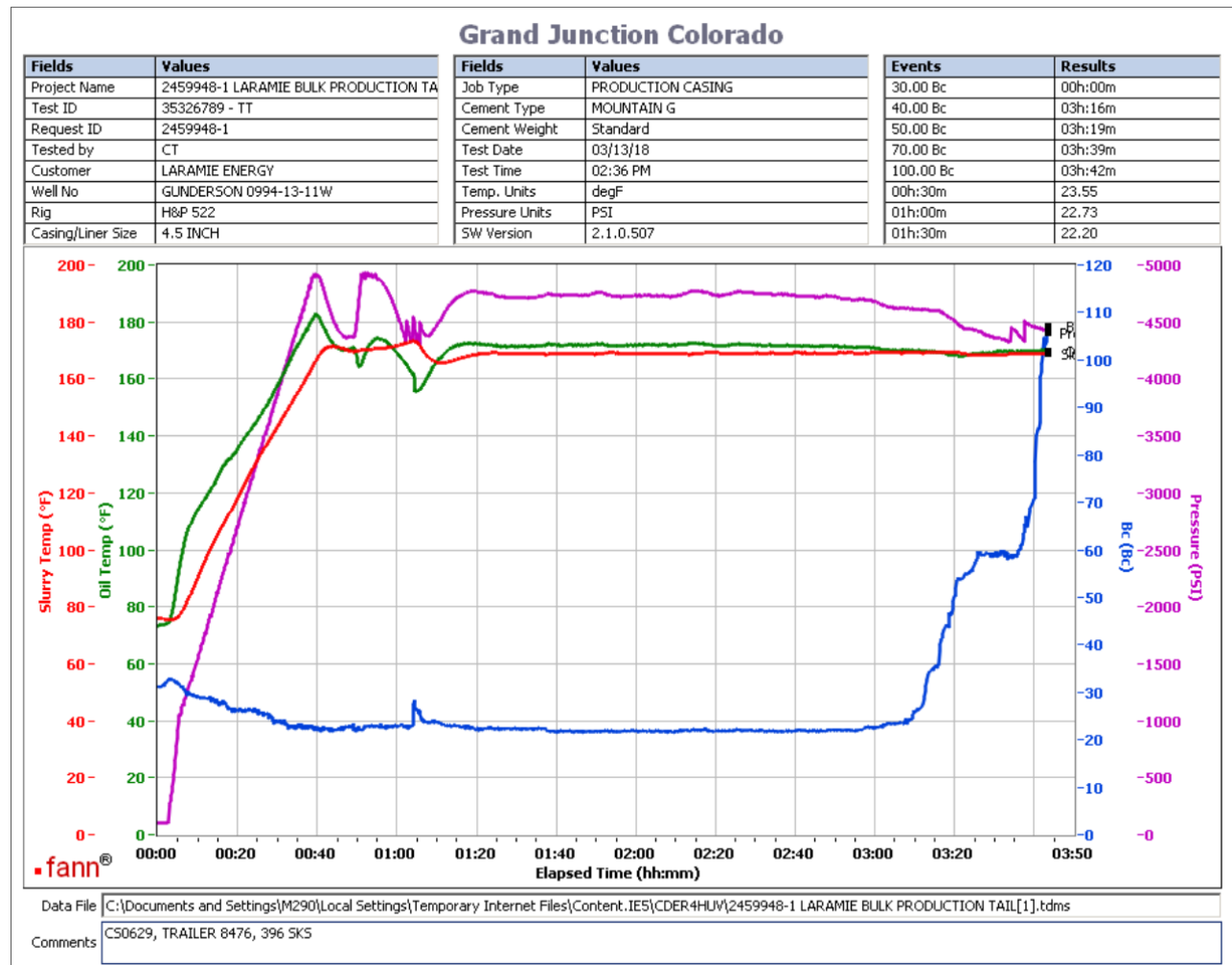
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		ThermaCem Tail				Slurry Density	13.3	lbm/gal
						Slurry Yield	1.733	ft3/sack
						Water Requirement	7.799	gal/sack
						Total Mix Fluid	7.799	gal/sack
						Water Source	Field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

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Thickening Time - ON-OFF-ON

13/MAR/2018

Test Temp (degF)	Pressure (psi)	Reached in (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)
169	4621	39	3:19	3:39	3:42	31	49	15	28



Total sks = 396
 CS0629, Trailer 8476, 396 sks
 deflected from 23Bc--- > 28bc ---- > 25Bc

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