

HALLIBURTON

iCem[®] Service

Laramie Energy LLC-EBUS

For: Aaron Duncan

Date: Wednesday, May 09, 2018

GUNDERSON 994-13-16W Surface PJR

API #05-077-10536-00

Sincerely,

Grand Junction Cement Engineering

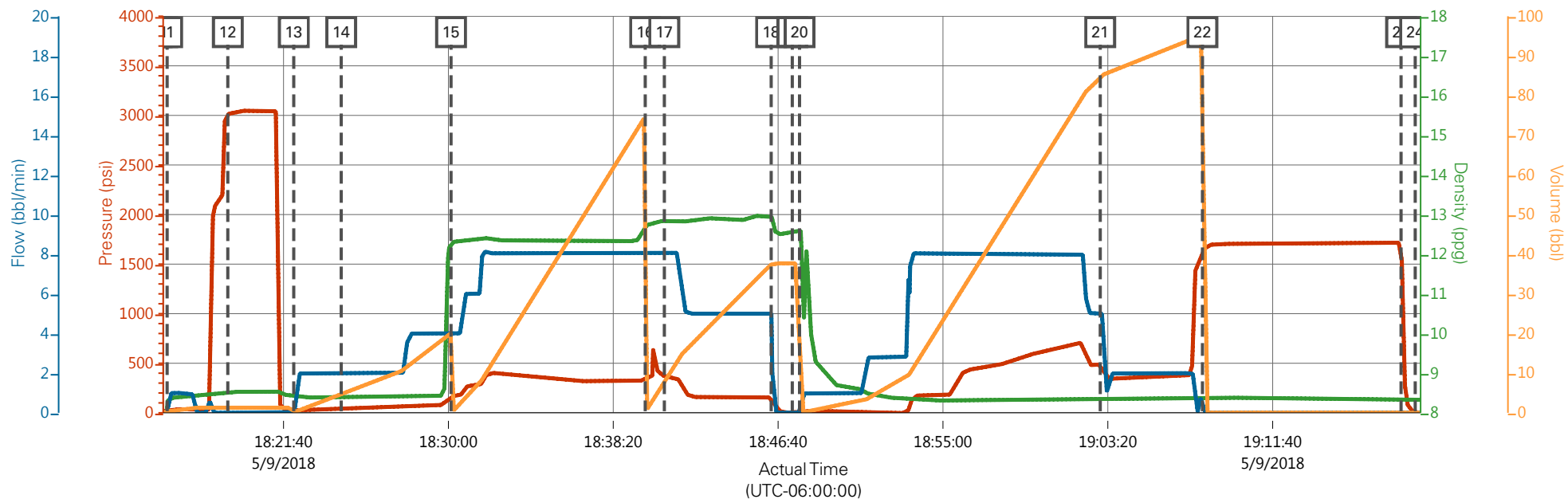
1.0 Real-Time Job Summary

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	5/9/2018	12:30:00	USER					REQUESTED ON LOCATION @ 12:30
Event	2	Depart Yard Safety Meeting	5/9/2018	14:45:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	5/9/2018	15:00:00	USER					1 HT 400 PUMP TRUCK E4, 1 660 BULK TRUCK, 1 550 SERVICE PICKUP
Event	4	Arrive At Loc	5/9/2018	17:00:00	USER					RIG FINISHING CASING UPON HES ARRIVAL
Event	5	Assessment Of Location Safety Meeting	5/9/2018	17:10:00	USER					MET WITH COMP REP, 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	5/9/2018	17:15:00	USER					1 HT 400 PUMP TRUCK E4, 1 660 BULK TRUCK, 1 550 SERVICE PICKUP
Event	7	Pre-Rig Up Safety Meeting	5/9/2018	17:20:00	USER					ALL HES PRESENT
Event	8	Pre-Job Safety Meeting	5/9/2018	18:00:00	USER					ALL HES EMPLOYEES AND RIG CREW PRESENT, RIG CIRCULATED @ 10 BPM PRIOR TO JOB, PRESSURE @ 250 PSI
Event	9	Start Job	5/9/2018	18:15:15	USER					TD-1585', TP-1575', SJ-43.91', CSG-8.625" 28# J55, OH-11", MUD-9.3PPG
Event	10	Drop Bottom Plug	5/9/2018	18:15:32	COM5					VERIFIED BY FLAG INDICATOR
Event	11	Prime Lines	5/9/2018	18:15:47	USER	8.33	1.0	40	3	FRESH WATER
Event	12	Test Lines	5/9/2018	18:18:51	COM5			3046		PRESSURE HELD

Event	13	Pump Spacer	5/9/2018	18:22:11	COM5	8.33	4.0	140	20	FRESH WATER
Event	14	Check Weight	5/9/2018	18:24:35	COM5					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	15	Pump Lead Cement	5/9/2018	18:30:08	COM5	12.3	8.0	380	69.2	158 SKS VARICEM GJ5 CMT 12.3 PPG, 2.46 FT3/SK, 14.17 GAL/SK
Event	16	Pump Tail Cement	5/9/2018	18:39:57	COM5	12.8	8.0	350	37	95 SKS VARICEM GJ5 CMT 12.8 PPG, 2.18 FT3/SK, 12.11 GAL/SK
Event	17	Check Weight	5/9/2018	18:40:55	COM5					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	18	Shutdown	5/9/2018	18:46:19	USER					END OF CEMENT
Event	19	Drop Top Plug	5/9/2018	18:47:23	USER					VERIFIED BY FLAG INDICATOR
Event	20	Pump Displacement	5/9/2018	18:47:45	COM5	8.33 8.33	8.0 5.0	660 510	78 5	FRESH WATER
Event	21	Slow Rate	5/9/2018	19:02:57	USER	8.33	2.0	380	10	SLOWED TO BUMP PLUG
Event	22	Bump Plug	5/9/2018	19:08:07	COM5	8.33	2.0	380	93	PLUG BUMPED TOOK TO 1600 PSI FOR CASING TEST
Event	23	Check Floats	5/9/2018	19:18:09	USER			1721		FLOATS HELD .5 BBL FLOW BACK TO TRUCK
Event	24	End Job	5/9/2018	19:18:52	USER					RETURNS THROUGHOUT JOB. 15 BBL CEMENT TO SURFACE, USED 40 LBS SUGAR
Event	25	Post-Job Safety Meeting (Pre Rig-Down)	5/9/2018	19:23:19	USER					ALL HES PRESENT
Event	26	Pre-Convoy Safety Meeting	5/9/2018	20:15:00	USER					ALL HES PRESENT
Event	27	Depart Location	5/9/2018	20:30:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENT, DUSTIN HYDE AND CREW

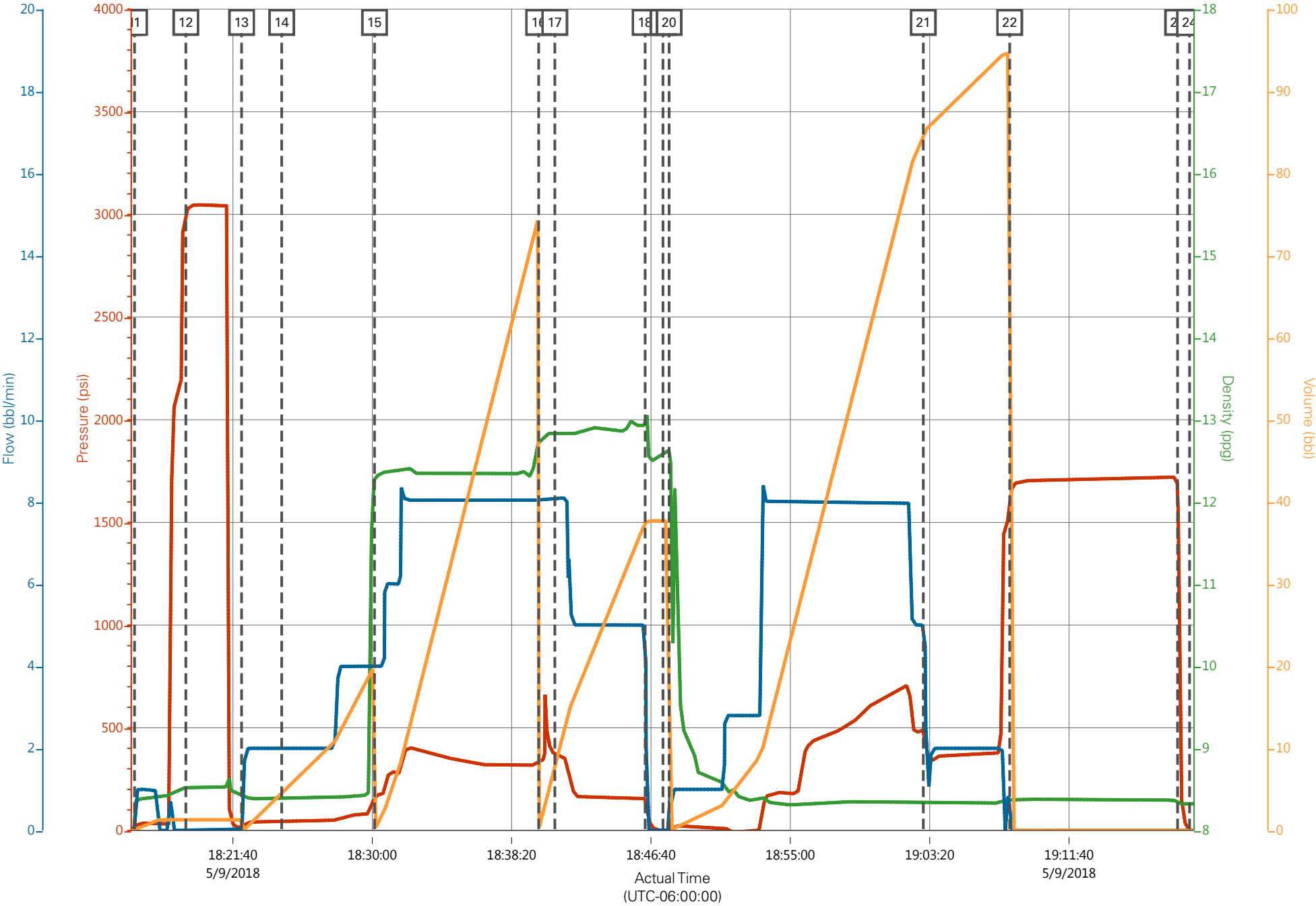
Gunderson 994-13-16W Surface



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

Description	Actual Time (UTC-06:00:00)	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	
11 Prime Lines	18:15:47	21.00	8.30	0.10	0.00	
12 Test Lines	18:18:51	3013.00	8.53	0.00	1.30	
13 Pump Spacer	18:22:11	15.00	8.45	0.00	0.00	
14 Check Weight	18:24:35	46.00	8.40	2.00	4.50	
15 Pump Lead Cement	18:30:08	157.00	12.28	4.00	0.00	
16 Pump Tail Cement	18:39:57	335.00	12.73	8.10	0.10	
17 Check Weight	18:40:55	372.00	12.82	8.10	7.90	
18 Shutdown	18:46:19	158.00	12.93	5.00	37.40	
19 Drop Top Plug	18:47:23	0.00	12.58	0.00	37.70	
20 Pump Displacement	18:47:45	-1.00	12.63	0.00	0.00	
21 Slow Rate	19:02:57	487.00	8.35	5.00	84.60	
22 Bump Plug	19:08:07	1618.00	8.37	0.00	94.60	
23 Check Floats	19:18:09	1639.00	8.36	0.00	0.00	
24 End Job	19:18:52	2.00	8.32	0.00	0.00	

Gunderson 994-13-16W Surface



HALLIBURTON

iCem[®] Service

Laramie Energy LLC-EBUS

United States of America, COLORADO

For: Aaron Duncan

Date: Saturday, May 12, 2018

Gunderson 994-13-16W Production PJR

API# 05-077-10536-00

Sincerely,

Grand Junction Cement Engineering

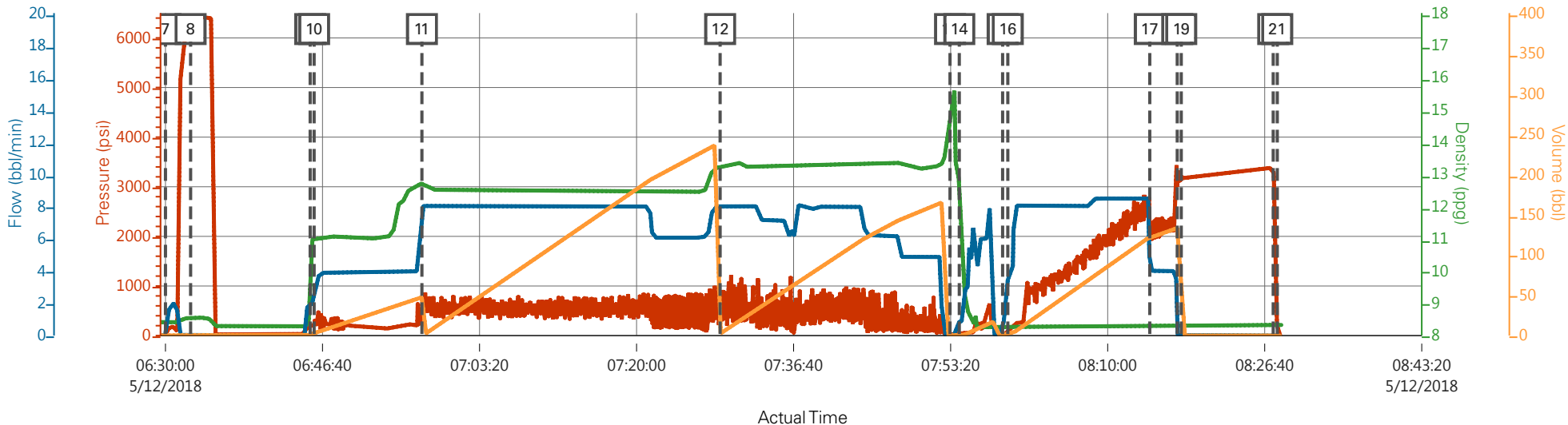
2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Comments
Event	1	CALL OUT	5/11/2018	22:30:00	USER					
Event	2	PRE-CONVOY	5/12/2018	02:00:00	USER					JSA COMPLETE
Event	3	ARRIVE AT LOC	5/12/2018	02:30:00	USER					RIG RUNNING CASING
Event	4	Pre-Rig Up Safety Meeting	5/12/2018	03:00:00	USER					JSA COMPLETE
Event	5	Comment	5/12/2018	04:50:00	USER					WATER TEST: PH-7, TEMP- 55, CL-0, TP- 8156, TD- 8166, S.J.- 86.77, OH- 7 7/8, MUD#- 9.5, SURFACE SET AT 1575
Event	6	Pre-Job Safety Meeting	5/12/2018	06:20:00	USER					JSA COMPLETE
Event	11	Start Job	5/12/2018	06:30:00	USER					
Event	14	Test Lines	5/12/2018	06:32:40	USER					6372 PSI
Event	36	Pump Spacer 1	5/12/2018	06:45:21	USER	162.60	11.00	4.00	40.0	TUNED SPACER 11 PPG, 4.86 FT3/SK, 31.9 GAL/SK
Event	38	Drop Bottom Plug	5/12/2018	06:45:47	USER					AWAY
Event	51	Pump Lead Cement	5/12/2018	06:57:13	USER	453.23	12.5	8.04	238	689 SKS NEOCEM, 12.5 PPG, 1.94 FT3/SK, 9.6 GAL/SK
Event	101	Pump Tail Cement	5/12/2018	07:28:52	USER	721.36	13.30	8.01	138	448 SKS THERMACEM, 13.3 PPG, 1.73 FT3/SK, 7.81 GAL/SK
Event	174	Shutdown	5/12/2018	07:53:16	USER					CLEAN PUMPS AND LINES, DROP TOP PLUG
Event	175	Clean Lines	5/12/2018	07:54:15	USER					CLEAN LINES TO CELLAR

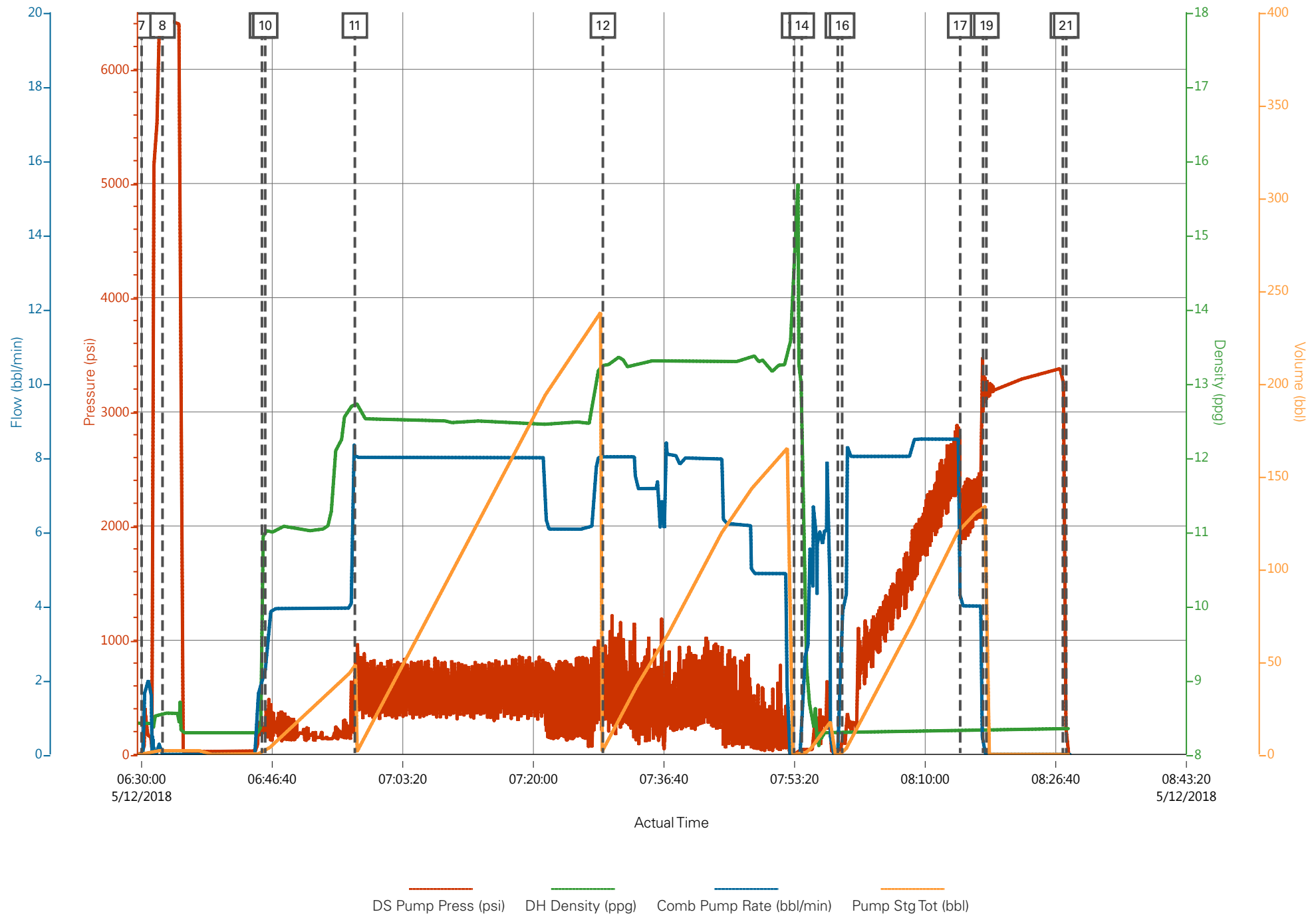
Event	178	Pump Displacement	5/12/2018	07:58:51	USER	2500	8.33	8.5	125.1	FRESH WATER WITH 5 GAL CLA WEB, 1 GAL MMCR
Event	179	Drop Top Plug	5/12/2018	07:59:24	USER					AWAY
Event	181	SLOW RATE	5/12/2018	08:14:28	USER	2160	8.33	4.00	115	SLOW RATE TO BUMP PLUG
Event	182	Bump Plug	5/12/2018	08:17:23	USER	2290	8.33	4.00	125.1	PLUG BUMPED
Event	184	CASING TEST	5/12/2018	08:17:48	USER	3150	8.33	0.00	0.00	TEST CASING TO 3150 PSI FOR 10 MIN
Event	185	CHECK FLOATS	5/12/2018	08:27:34	USER	3382.02	8.34	0.00	0.00	1.5 BBLS BACK TO TRUCK
Event	186	End Job	5/12/2018	08:28:00	USER					
Event	187	Rig-Down Equipment	5/12/2018	08:55:00	USER					
Event	188	Post-Job Safety Meeting (Pre Rig-Down)	5/12/2018	09:00:00	USER					JSA COMPLETE
Event	189	Crew Leave Location	5/12/2018	11:00:00	USER					THANK YOU FOR USING HALLIBURTON CEMENT, JAMES LEIST AND CREW

LARAMIE - GUNDERSON 994-13-16W - 4.5 PRODUCTION CASING



Description	Actual Time	DS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)
7 Start Job	06:30:00	1.34	8.41	0.00	0.05
8 Test Lines	06:32:40	6449.57	8.56	0.00	1.99
9 Pump Spacer 1	06:45:21	162.60	10.11	1.97	1.03
10 Drop Bottom Plug	06:45:47	225.41	11.04	2.25	1.86
11 Pump Lead Cement	06:57:13	453.23	12.72	8.04	47.71
12 Pump Tail Cement	07:28:52	721.36	13.25	8.01	2.41
13 Shutdown	07:53:16	6.03	14.52	0.00	0.00
14 Clean Lines	07:54:15	48.22	12.44	0.89	0.15
15 Pump Displacement	07:58:51	6.03	8.28	0.00	0.00
16 Drop Top Plug	07:59:24	57.59	8.29	3.47	0.97
17 SLOW RATE	08:14:28	1842.62	8.34	4.09	122.31
18 Bump Plug	08:17:23	3072.64	8.34	0.00	133.52
19 CASING TEST	08:17:48	3110.15	8.34	0.00	0.00
20 CHECK FLOATS	08:27:34	3382.02	8.34	0.00	0.00
21 End Job	08:28:00	36.97	8.38	0.00	0.00

LARAMIE - GUNDERSON 994-13-16W - 4.5 PRODUCTION CASING



HALLIBURTON

Rockies, Grand Junction

Lab Results- Lead

Job Information

Request/Slurry	2473013/1	Rig Name	H&P 522	Date	07/MAY/2018
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Gunderson 994-13-16W

Well Information

Casing/Liner Size	4.5 in	Depth MD	8134 ft	BHST	121°C / 249°F
Hole Size	7.875 in	Depth TVD	8127 ft	BHCT	82°C / 179°F
Pressure	4989 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				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 2473013/1

Thickening Time - ON-OFF-ON

09/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)
179	4989	42	3:55	4:20	4:33	5:50	20	52	15	22

Total sks = 689

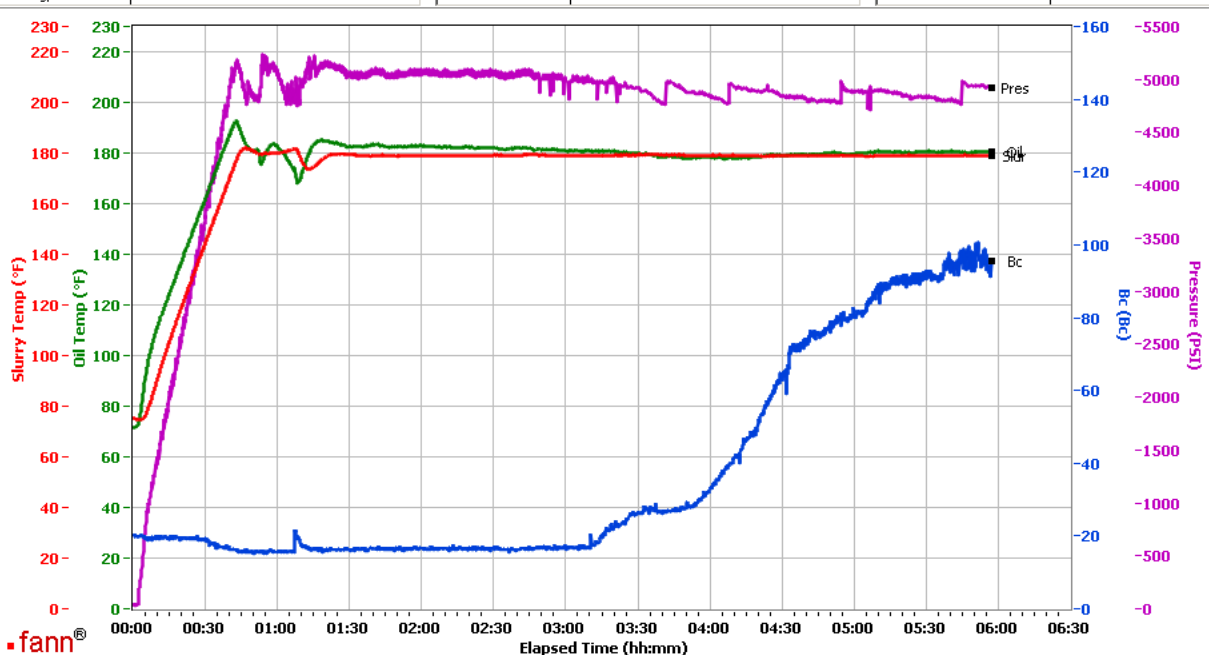
CS1026 TR# 8476 344 SKS

CS1027 TR#1513 345 SKS

Deflection: 16 - 22 - 21

Grand Junction, Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2473013-1 LARAMIE PRODUCTION BULK	Job Type	PRODUCTION CASING	30.00 Bc	03h:55m
Test ID	35477578	Cement Type	GCC TYPE I-II	40.00 Bc	04h:08m
Request ID	GJ2473013-1	Cement Weight	Standard	50.00 Bc	04h:20m
Tested by	DEBA	Test Date	05/09/18	70.00 Bc	04h:33m
Customer	LARAMIE ENERGY	Test Time	08:13 PM	100.00 Bc	05h:50m
Well No	GUNDERSON 994-13-16W	Temp. Units	degF	00h:30m	19.37
Rig	H8P522	Pressure Units	PSI	01h:00m	15.65
Casing/Liner Size	4.5"	SW Version	2.1.0.507	01h:30m	16.02



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\CDER4HUV\GJ2473013-1 LARAMIE PRODUCTION BULK LEAD[1].tdms

Comments CS1026 TR#8476 344 SKS AND CS1027 TR#1513 345 SKS

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HALLIBURTON

Rockies, Grand Junction

Lab Results- Tail

Job Information

Request/Slurry	2473014/1	Rig Name	H&P 522	Date	07/MAY/2018
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Gunderson 994-13-16W

Well Information

Casing/Liner Size	4.5 in	Depth MD	8134 ft	BHST	121°C / 249°F
Hole Size	7.875 in	Depth TVD	8127 ft	BHCT	82°C / 179°F
Pressure	4989 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 2473014/1

Thickening Time - ON-OFF-ON

10/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)
179	4989	42	3:07	3:20	3:23	4:12	12	52	15

Total sks = 448

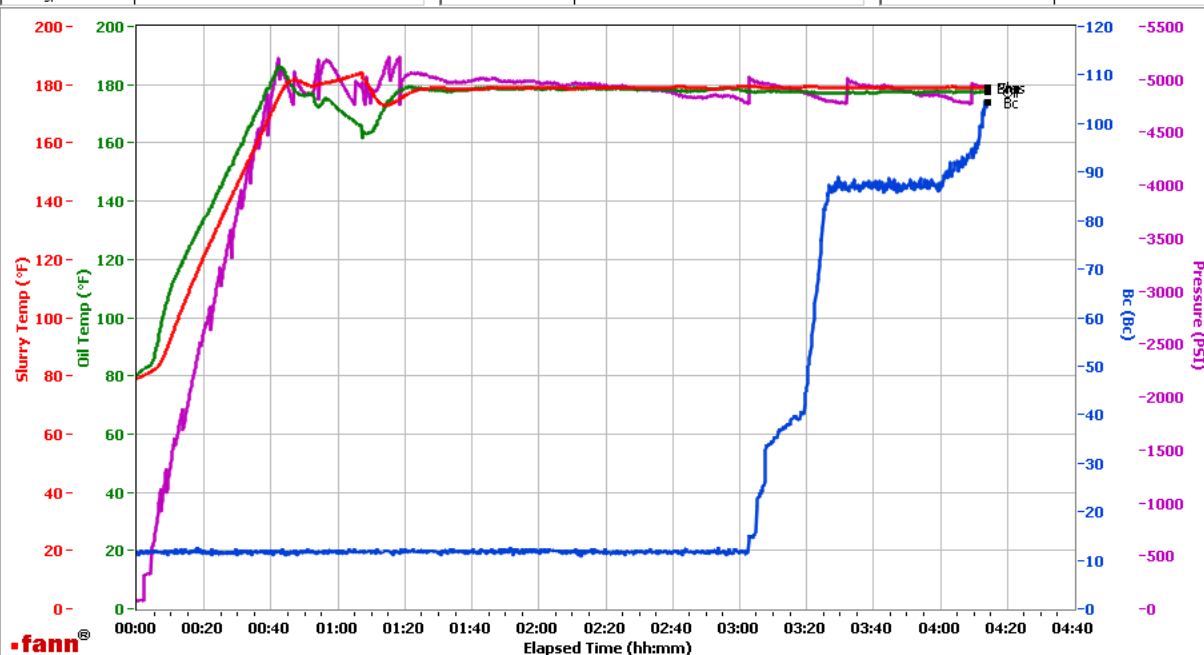
CS1028, Trailer 8677, 348 sks

CS1030, Trailer 1283, 100 sks

no deflection recorded on the graph, 10Bc-- > 10Bc

Grand Junction Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2473014-1 LARAMIE BULK PRODUCTION	Job Type	PRODUCTION CASING	30.00 Bc	03h:07m
Test ID	35477580 - TT	Cement Type	MOUNTAIN G	40.00 Bc	03h:18m
Request ID	2473014-1	Cement Weight	Standard	50.00 Bc	03h:20m
Tested by	CT	Test Date	05/10/18	70.00 Bc	03h:23m
Customer	LARAMIE ENERGY	Test Time	07:15 PM	100.00 Bc	04h:12m
Well No	GUNDERSON 994-13-16W	Temp. Units	degF	00h:30m	11.65
Rig	H&P 522	Pressure Units	PSI	01h:00m	11.75
Casing/Liner Size	4.5 INCH	SW Version	2.1.0.1219	01h:30m	11.41



Data File C:\Documents and Settings\HPHT\Local Settings\Temporary Internet Files\Content.IE5\KD2P415J\GJ2473014-1 LARAMIE BULK PRODUCTION TAIL[1].tdms

Comments CS1028, TRAILER 8677, 348 SKS - CS1030, TRAILER 1283, 100 SKS

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