

HALLIBURTON

iCem[®] Service

Laramie Energy LLC

United States of America, COLORADO

For: Laramie

Date: Tuesday, April 24, 2018

Gunderson 994-14-16E Surface PJR

API #: 05-077-10528

Sincerely,

Grand Junction Cement Engineering

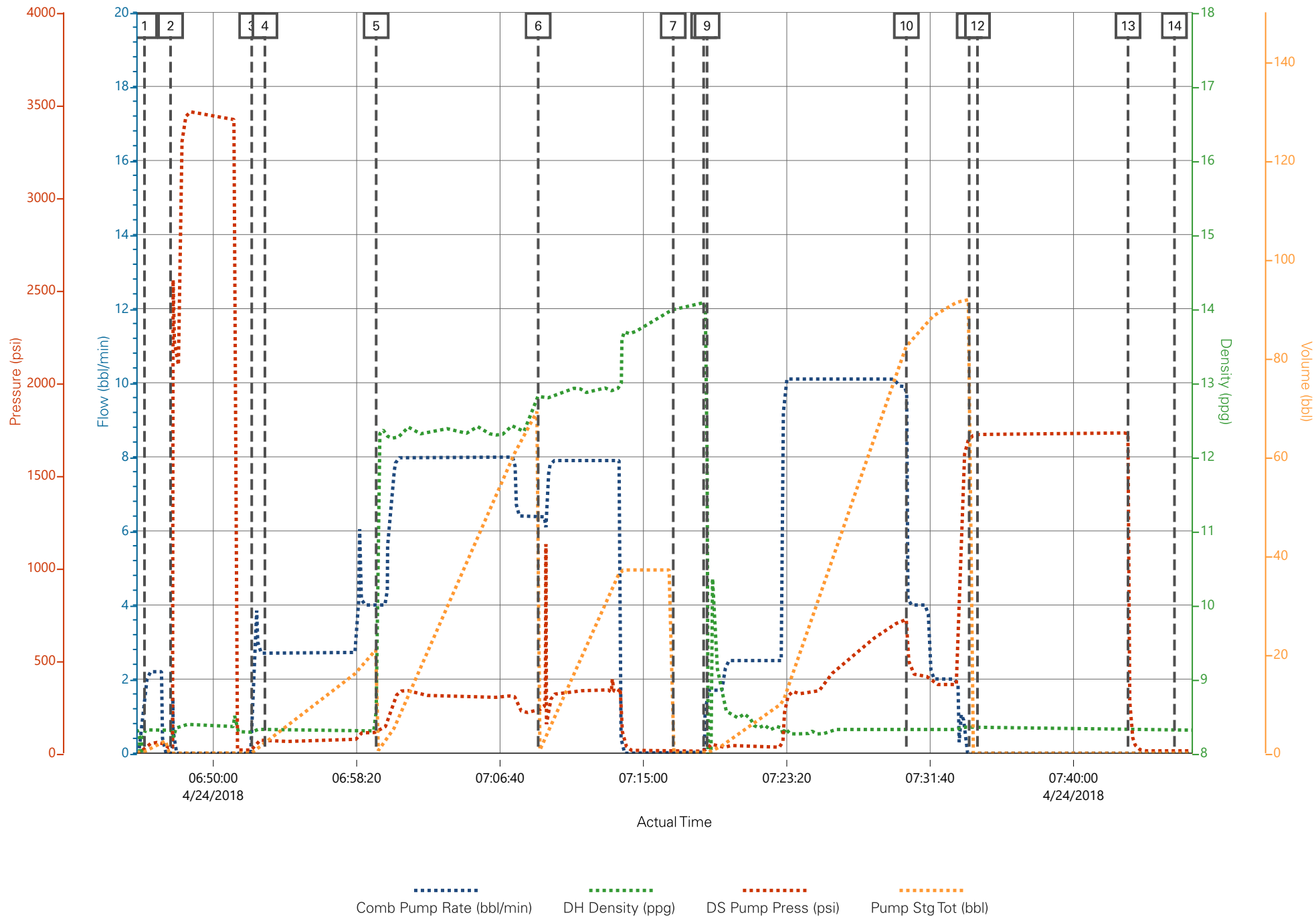
2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	4/24/2018	01:00:00	USER					
Event	2	Pre-Convoy Safety Meeting	4/24/2018	04:00:00	USER					JSA COMPLETE
Event	3	Crew Leave Yard	4/24/2018	04:15:00	USER					
Event	4	Arrive At Loc	4/24/2018	05:30:00	USER					
Event	5	Rig-Up Equipment	4/24/2018	05:45:00	USER					
Event	6	Pre-Job Safety Meeting	4/24/2018	06:30:00	USER					JSA COMPLETE
Event	7	Start Job	4/24/2018	06:46:00	COM4					8 5/8 32# TP- 1561, TD- 1571, S.J.- 39.62, HOLE-11, MW- 9.1 WATER TEST: PH- 7, CL-0, TEMP-65
Event	8	Test Lines	4/24/2018	06:47:31	COM4		8.33	3466	0.00	3465 PSI
Event	9	Pump Spacer 1	4/24/2018	06:52:14	COM4	4.00	8.33	102	20.0	FRESH WATER
Event	10	Drop Bottom Plug	4/24/2018	06:53:00	USER					AWAY
Event	11	Pump Lead Cement	4/24/2018	06:59:28	COM4	8.00	12.3	320	69.2	158 SKS VARICEM, 12.3 PPG, 2.46 FT3/SK, 14.17 GAL/SK
Event	12	Pump Tail Cement	4/24/2018	07:08:53	COM4	8.00	12.80	360.0	36.8	95 SKS VARICEM, 12.8 PPG, 2.18 FT3/SK, 12.11 GAL/SK
Event	13	Shutdown	4/24/2018	07:16:44	COM4					TO DROP TOP PLUG AND CLEAN UP ON TOP OF PLUG
Event	14	Drop Top Plug	4/24/2018	07:18:30	COM4					AWAY
Event	15	Pump Displacement	4/24/2018	07:18:42	COM4	10.00	8.33	700	92.6	FRESH WATER

Event	16	SLOW RATE	4/24/2018	07:30:17	COM4	2.00	8.33	360	82.50	SLOW RATE TO BUMP PLUG
Event	17	Bump Plug	4/24/2018	07:33:56	COM4	2.00	8.33	380	92.6	PLUG BUMPED
Event	18	CASING TEST	4/24/2018	07:34:25	COM4			1727.00		TESTED CASING TO 1727 PSI TEST WAS GOOD
Event	19	CHECK FLOATS	4/24/2018	07:43:10	COM4			1727.00		FLOATS HELD, 3/4 BBL BACK TO PUMP
Event	20	End Job	4/24/2018	07:45:52	COM4					22 BBLS OF CEMENT TO SURFACE, GOOD RETURNS THROUGHOUT JOB, NO PIPE MOVEMENT
Event	21	Crew Leave Location	4/24/2018	09:00:00	USER					THANK YOU FOR USING HALLIBURTON CEMENT, JAMES LEIST AND CREW

LARAMIE - GUNDERSON 994-14-16E - 8 5/8 SURFACE



HALLIBURTON

iCem[®] Service

LARAMIE ENERGY LLC-EBUS

For: Aaron Duncan

Date: Saturday, April 28, 2018

Gunderson 994-14-16E Production PJR

API# 05-077-10528-00

Sincerely,

Grand Junction Cement Engineering

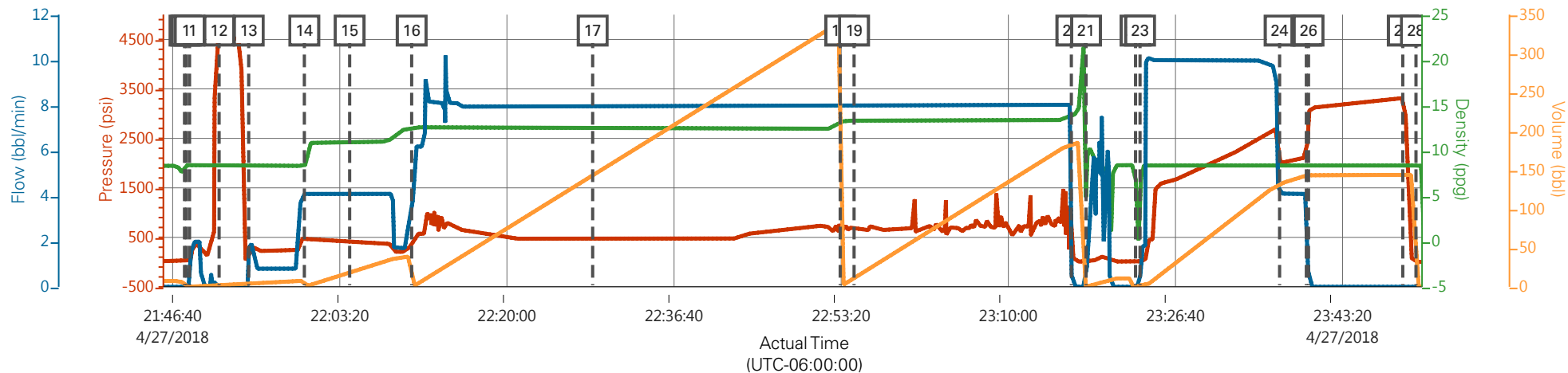
2.0 Real-Time Job Summary

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	4/27/2018	12:30:00	USER					ON LOCATION REQUESTED 18:30
Event	2	Pre-Convoy Safety Meeting	4/27/2018	14:30:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	4/27/2018	14:45:00	USER					
Event	4	Arrive at Location from Service Center	4/27/2018	16:20:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	4/27/2018	16:30:00	USER					MET WITH COMPANY REP SDS OFFERED
Event	6	Pre-Rig Up Safety Meeting	4/27/2018	16:45:00	USER					ALL HES PRESENT
Event	7	Rig-Up Completed	4/27/2018	20:00:00	USER					1-ELITE, 1-660 BULK TRAILER, 4.5" QL, 2" PUMP IRON, 4" SUCTION HOSE, 2-FIELD SILO
Event	8	Pre-Job Safety Meeting	4/27/2018	21:15:00	USER					ALL HES AND RIG CREW PRESENT
Event	9	Start Job	4/27/2018	21:47:51	USER	8.40	0.00	0.00	0.00	TD-8800', TP-8795' SET @ 8790', SJ-85.43', CSG-4.5" 11.6# P110, SCG-8.625" 32# SHOE @ 1561', OH-7.875", MUD-9.2PPG
Event	10	Drop Bottom Plug	4/27/2018	21:48:02	USER	8.41	0.00	6.00	0.00	PLUG AWAY
Event	11	Prime Pumps	4/27/2018	21:48:21	USER	8.45	2.00	350.00	2.00	FRESH WATER
Event	12	Test Lines	4/27/2018	21:51:18	COM5	8.40	0.00	4530.00	2.10	ALL PRESSURE HELD ON LINES
Event	13	Pump Water	4/27/2018	21:54:15	USER	8.28	1.50	160.00	2.10	ESTABLISH RETURNS
Event	14	Pump Spacer 1	4/27/2018	21:59:48	COM5	11.00	4.10	480.00	40.00	TUNED SPACER III, 40 BBLs, 11.0PPG, 4.86CF/SK, 31.9GL/SK
Event	15	Check Weight	4/27/2018	22:04:19	COM5					WEIGHT VERIFIED BY PRESSURIZED MUD SCALES

Event	16	Pump Lead Cement	4/27/2018	22:10:30	COM5	12.50	8.00	700.00	297.5	NEOCER LEAD, 861SKS, 12.5PPG, 1.94CF/SK, 9.6GL/SK
Event	17	Check Weight	4/27/2018	22:28:33	COM5					WEIGHT VERIFIED BY PRESSURIZED MUD SCALES
Event	18	Pump Tail Cement	4/27/2018	22:53:14	COM5	13.30	8.00	700.00	153.7	THERMACER 499SKS, 13.3PPG, 1.73CF/SK, 7.81GL/SK
Event	19	Check Weight	4/27/2018	22:54:37	COM5					WEIGHT VERIFIED BY PRESSURIZED MUD SCALES
Event	20	Shutdown	4/27/2018	23:16:17	USER					END OF CEMENT
Event	21	Clean Lines	4/27/2018	23:17:45	COM5					CLEANED AND BLEW AIR BACK THROUGH LINES TO CELLAR
Event	22	Drop Top Plug	4/27/2018	23:22:41	COM5					PLUG AWAY
Event	23	Pump Displacement	4/27/2018	23:23:08	COM5	8.40	10.00	2720.00	134.9	FRESH WATER WITH 5 GAL CLAWEB, 1 GAL MMCR, AND 5 GAL BIOCID (PROVIDED BY THE RIG)
Event	24	Slow Rate	4/27/2018	23:37:03	USER	8.39	4.10	1983.00	125.0	SLOW RATE LAST 10 BBLS
Event	25	Bump Plug	4/27/2018	23:39:43	COM5	8.41	4.10	2116.00	134.90	PLUG BUMPED 2116 PSI
Event	26	Casing Test	4/27/2018	23:39:56	USER	8.42	0.00	3046.00	134.90	10 MINUTE CASING TEST
Event	27	Check Floats	4/27/2018	23:49:20	USER	8.39	0.00	3322.00	0.00	FLOATS HELD 1.5 BBLS BACK
Event	28	End Job	4/27/2018	23:50:39	COM5	8.37	0.00	7.00	0.00	GOOD RETURNS THROUGH OUT JOB, 35 BBLS CEMENT TO SURFACE
Event	29	Post-Job Safety Meeting (Pre Rig-Down)	4/27/2018	23:55:00	USER					ALL HES PRESENT
Event	30	Rig-Down Completed	4/28/2018	00:20:00	USER					
Event	31	Pre-Convoy Safety Meeting	4/28/2018	00:30:00	USER					ALL HES PRESENT
Event	32	Crew Leave Location	4/28/2018	00:45:00	USER					THANK YOU FOR CHOOSING HALLIBURTON, ANDREW BRENNER AND CREW

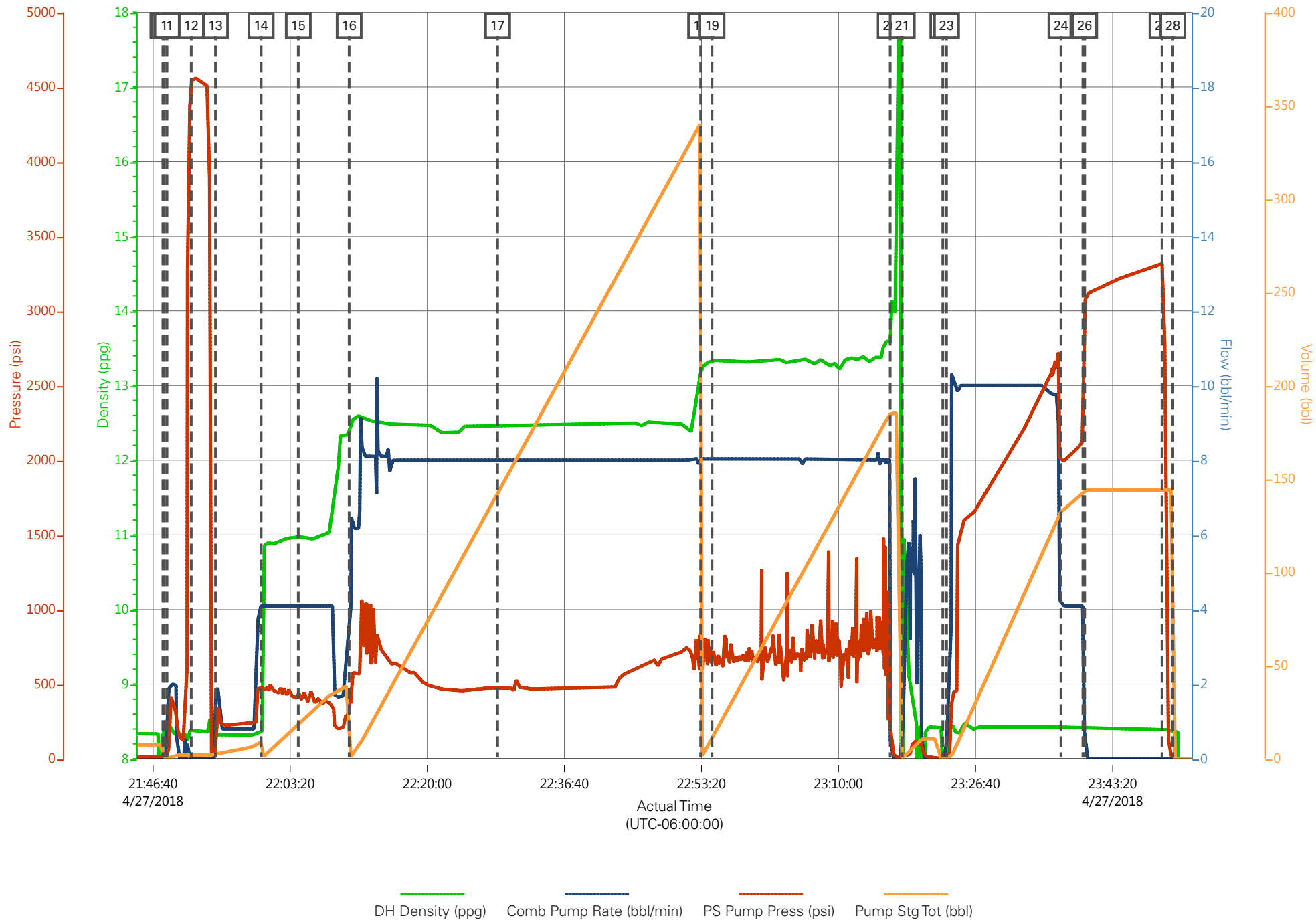
Gunderson 994-14-16E Production



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 Pumps	21:48:21	21.00	8.45	0.00	0.00
12 Test Lines	21:51:18	4530.00	8.40	0.00	2.10
13 Pump Water	21:54:15	36.00	8.28	1.50	2.10
14 Pump Spacer 1	21:59:48	480.00	8.36	4.10	9.00
15 Check Weight	22:04:19	423.00	10.98	4.10	18.40
16 Pump Lead Cement	22:10:30	360.00	12.42	3.70	0.20
17 Check Weight	22:28:33	462.52	12.47	8.00	142.34
18 Pump Tail Cement	22:53:14	639.92	13.17	8.00	202.66
19 Check Weight	22:54:37	639.00	13.33	8.10	11.20
20 Shutdown	23:16:17	364.00	13.58	4.30	185.20
21 Clean Lines	23:17:45	18.00	4.84	0.00	0.00
22 Drop Top Plug	23:22:41	-4.00	8.38	0.00	0.00
23 Pump Displacement	23:23:08	-3.00	0.02	0.00	0.00
24 Slow Rate	23:37:03	1983.00	8.39	4.10	132.40
25 Bump Plug	23:39:43	2116.00	8.41	4.10	143.30
26 Casing Test	23:39:56	3046.00	8.42	0.00	144.00
27 Check Floats	23:49:20	3322.00	8.39	0.00	144.00
28 End Job	23:50:39	7.00	8.37	0.00	0.00

Custom Results



Job Information

Request/Slurry	2469754/1	Rig Name	H&P 522	Date	22/APR/2018
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Gunderson 994-14-16E

Well Information

Casing/Liner Size	4.5 in	Depth MD	8808 ft	BHST	119°C / 246°F
Hole Size	7.875 in	Depth TVD	8002 ft	BHCT	80°C / 176°F
Pressure	4901 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	1.941 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 2469754/1

Thickening Time - ON-OFF-ON

24/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)
176	4901	41	2:32	3:12	3:26	4:06	16	51	15	29

Total sks = 861

Composite:

CS0933 TR#8658 430.5 SKS

CS0935 TR#8678 430.5 SKS

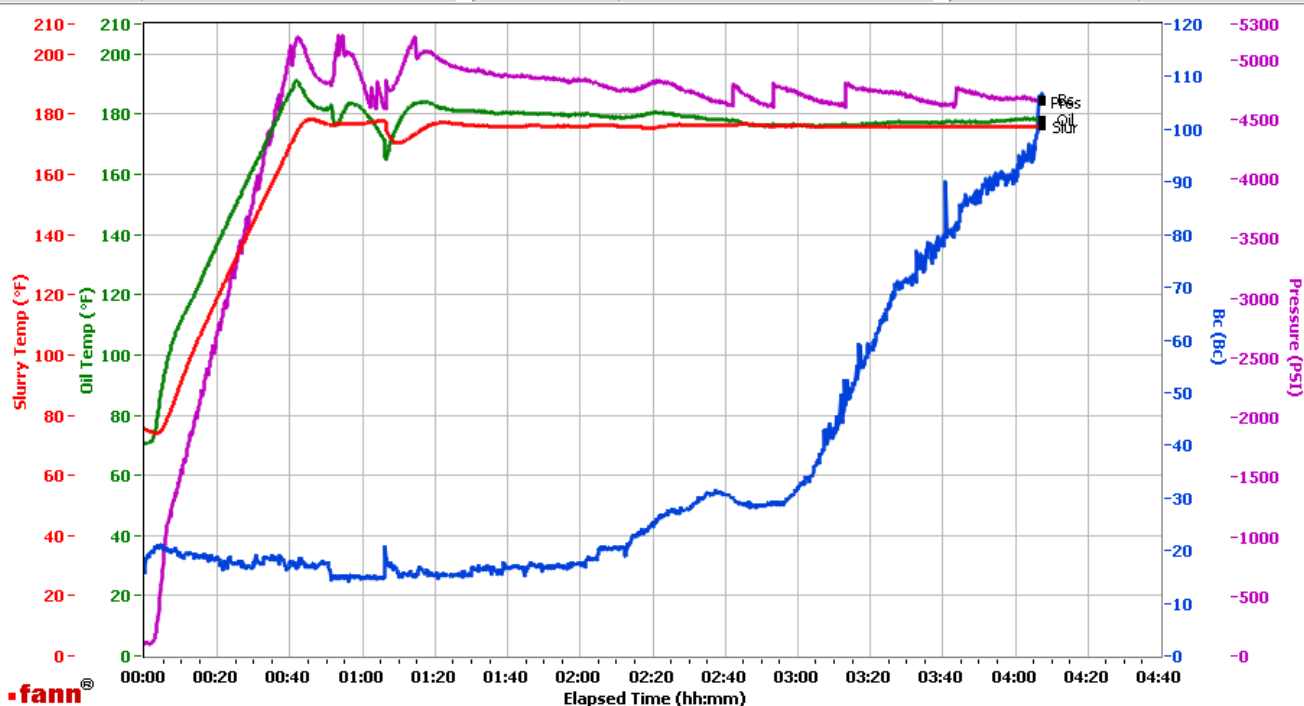
deflected from 14Bc--- > 29Bc and back down to 17Bc within one minute.

Grand Junction Colorado

Fields	Values
Project Name	GJ2469754-1 LARAMIE PRODUCTION BULK
Test ID	35439033
Request ID	GJ2469754-1
Tested by	DEBA
Customer	LARAMIE ENERGY
Well No	GUNDERSON 994-14-16E
Rig	H & P 522
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	GCC TYPE I-11
Cement Weight	Standard
Test Date	04/24/18
Test Time	3:55PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	02h:32m
40.00 Bc	03h:07m
50.00 Bc	03h:12m
70.00 Bc	03h:26m
100.00 Bc	04h:06m
00h:30m	17.87
01h:00m	15.08
01h:30m	15.52



Data File C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files\Content.IE5\AFG5UB25\GJ2469754-1 LARAMIE PRODUCTION BULK LEAD[1].tdms

Comments CS0933 TR#8658 430.5 SKS AND CS0935 TR#8678 430.5 sks

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HALLIBURTON

Rockies, Grand Junction

Lab Results- Tail

Job Information

Request/Slurry	2469755/1	Rig Name	H&P 522	Date	22/APR/2018
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	Gunderson 994-14-16E

Well Information

Casing/Liner Size	4.5 in	Depth MD	8808 ft	BHST	119°C / 246°F
Hole Size	7.875 in	Depth TVD	8002 ft	BHCT	80°C / 176°F
Pressure	4901 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	1.733 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 2469755/1

Thickening Time - ON-OFF-ON

24/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)
176	4901	41	3:31	3:54	4:15	4:51	8	51	15	12

Total sks = 499

CS0934 TR#1513 390 SKS

CS0936 TR#7304 109 SKS

no deflection 12Bc--- > 12Bc

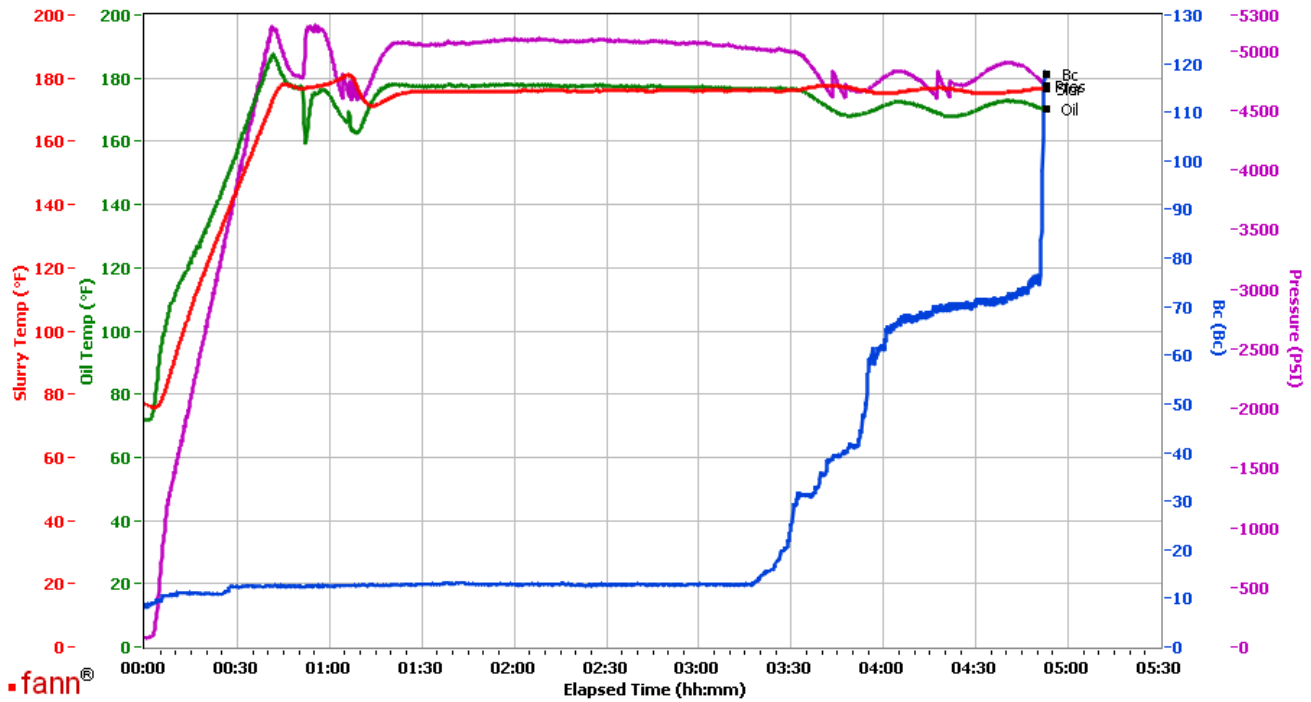
please note heat of hydration at 3:33

Grand Junction Colorado

Fields	Values
Project Name	GJ2469755-1 LARAMIE PRODUCTION BULK
Test ID	35439035
Request ID	GJ2469755-1
Tested by	DEBA
Customer	LARAMIE ENERGY
Well No	GUINDERSON 994-14-16E
Rig	H&P 522
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	04/24/18
Test Time	5:44PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	03h:31m
40.00 Bc	03h:46m
50.00 Bc	03h:54m
70.00 Bc	04h:16m
100.00 Bc	04h:51m
00h:30m	12.26
01h:00m	12.52
01h:30m	12.91



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\0HU9OBIZ\GJ2469755-1 LARAMIE PRODUCTION BULK TAIL[1].tdms

Comments CS0934 TR#1513 390 SKS , CS0936 TR#7304 109 SKS

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