

HALLIBURTON

iCem[®] Service

Laramie Energy LLC-EBUS

United States of America, COLORADO

For: Aaron Duncan

Date: Tuesday, August 28, 2018

BCU 0993-21-09W Surface PJR

API# 05-077-10520-00

Sincerely,

Grand Junction Cement Engineering

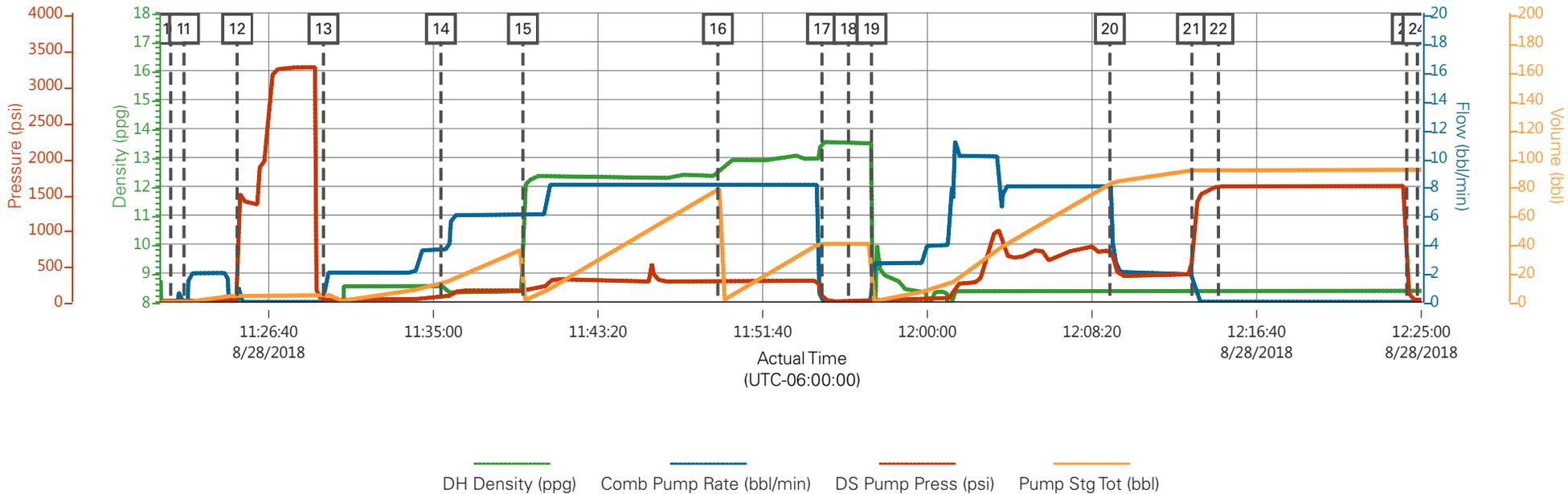
1.0 Real-Time Job Summary

1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	8/28/2018	05:30:00						Requested on Location @ 10:30
Event	2	Pre-Convoy Safety Meeting	8/28/2018	08:00:00						
Event	3	Crew Leave Yard	8/28/2018	08:10:00						1 Elite, 1 660's, 1 pickup
Event	4	Arrive At Loc	8/28/2018	10:00:00						Rig running casing
Event	5	Assessment Of Location Safety Meeting	8/28/2018	10:05:00						JSA completed - Customer offered/received SDS - water test pH 7.0, Cl <200, temp 76 degrees
Event	6	Pre-Rig Up Safety Meeting	8/28/2018	10:10:00						
Event	7	Rig-Up Equipment	8/28/2018	10:20:00						DME iron to ground manifold, standpipe. Water hose to both upright, bulk hose to 660.
Event	8	Other	8/28/2018	10:30:00						Rig Circulated 1 hrs prior to cement job at 8 bpm @ 300 psi. Mud scales calibrated to drinking water prior to job.
Event	9	Pre-Job Safety Meeting	8/28/2018	10:40:00						All HES personnel, rig crew, and company rep.
Event	10	Start Job	8/28/2018	11:21:42						TD 1547', TP 1536.10', SJ 42.17', OH 11'', Csg 8 5/8" 32 lb/ft J-55, Mud 9.3 ppg.
Event	11	Fill Lines	8/28/2018	11:22:22		8.33	2	38	5	Fresh Water
Event	12	Test Lines	8/28/2018	11:25:04				3238		Held pressure 2 minutes
Event	13	Pump Spacer	8/28/2018	11:29:26		8.33	6	150	35	Fresh Water

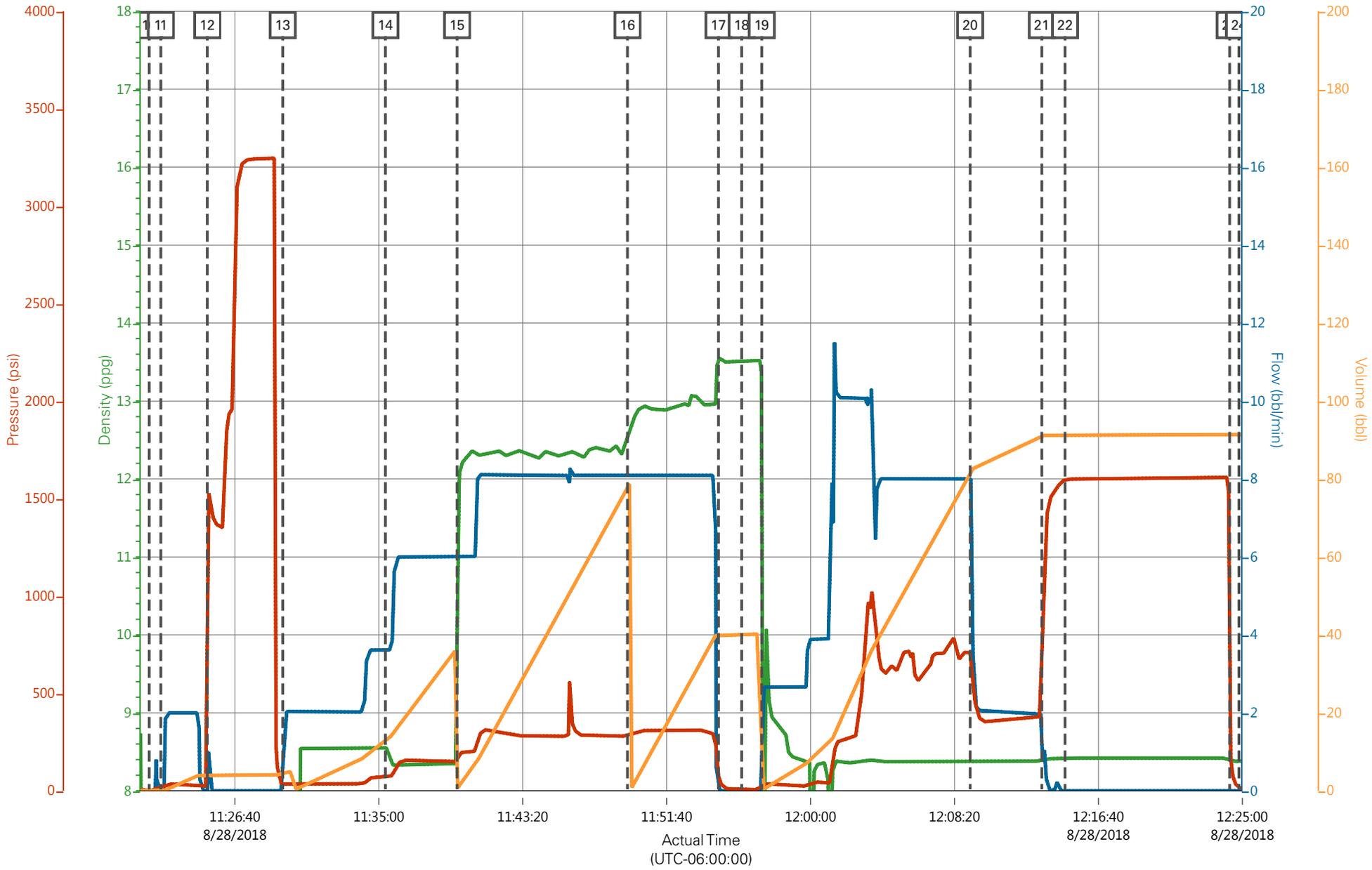
Event	14	Check Weight	8/28/2018	11:35:23					Density verified via mud cup
Event	15	Pump Lead Cement	8/28/2018	11:39:32	12.3	8	340	77.6	177 sacks, 12.3 ppg, 2.46 yield, 14.17 gal/sk
Event	16	Pump Tail Cement	8/28/2018	11:49:24	12.8	8	300	38.8	100 sks, 12.8 ppg, 2.18 Yield, 12.11 gal/sk
Event	17	Shutdown	8/28/2018	11:54:40					Wash up on plug
Event	18	Drop Top Plug	8/28/2018	11:56:00					Co-Rep Verify Plug Launched
Event	19	Pump Displacement	8/28/2018	11:57:10	8.33	10	680	91	Fresh Water
Event	20	Slow Rate	8/28/2018	12:09:14	8.33	2	380	81	Slow Rate 10 bbls to Calculated Displacement
Event	21	Bump Plug	8/28/2018	12:13:23			1605		Plug Bumped at 380 psi, Brought up to 1605 psi
Event	22	Pressure Test	8/28/2018	12:14:44					10 min casing test
Event	23	Check Floats	8/28/2018	12:24:16					Floats held – .5 bbl back to the truck
Event	24	End Job	8/28/2018	12:24:48					Good returns throughout job. bbl of cement to surface
Event	25	Pre-Rig Down Safety Meeting	8/28/2018	12:38:50					40 lbs of sugar used, HES top plug used, 0 add hours.
Event	26	Rig-Down Equipment	8/28/2018	12:40:51					
Event	27	Pre-Convoy Safety Meeting	8/28/2018	12:47:21					
Event	28	Crew Leave Location	8/28/2018	12:48:42					Thanks for using Halliburton Cement, Chris Martinez and crew.

Laramie BCU 993-21-09W, 9 5/8" Surface



Description	Actual Time (UTC-06:00:00)	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Pump Stg Tot (bbl)
10 Start Job	11:21:42	0.00	0.00	1.00	0.00
11 Fill Lines	11:22:22	0.00	0.00	14.00	0.00
12 Test Lines	11:25:04	0.00	0.00	24.00	4.10
13 Pump Spacer	11:29:26	0.00	0.00	24.00	4.10
14 Check Weight	11:35:23	8.55	3.60	73.00	12.90
15 Pump Lead Cement	11:39:32	9.51	6.00	151.00	0.60
16 Pump Tail Cement	11:49:24	12.54	8.10	289.00	77.80
17 Shutdown	11:54:40	13.58	0.00	75.00	40.20
18 Drop Top Plug	11:56:00	13.51	0.00	6.00	40.20
19 Pump Displacement	11:57:10	13.10	2.70	12.00	0.10
20 Slow Rate	12:09:14	8.39	8.00	716.00	81.60
21 Bump Plug	12:13:23	8.38	1.80	549.00	91.10
22 Pressure Test	12:14:44	8.41	0.00	1597.00	91.40
23 Check Floats	12:24:16	8.45	0.00	314.00	91.40
24 End Job	12:24:48	8.38	0.00	14.00	91.40

Laramie BCU 993-21-09W, 9 5/8" Surface



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

HALLIBURTON

iCem[®] Service

LARAMIE ENERGY LLC-EBUS

For: Aaron Duncan

Date: Thursday, August 30, 2018

BCU 0993-21-09W Production PJR

API# 05-077-10520-00

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	8/30/2018	09:30:00	USER					ON LOCATION REQUESTED 16:00
Event	2	Pre-Convoy Safety Meeting	8/30/2018	11:30:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	8/30/2018	12:00:00	USER					
Event	4	Arrive at Location from Service Center	8/30/2018	14:00:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	8/30/2018	14:15:00	USER					MET WITH COMPANY REP SDS OFFERED
Event	6	Pre-Rig Up Safety Meeting	8/30/2018	14:30:00	USER					ALL HES PRESENT
Event	7	Other	8/30/2018	15:39:59	USER					WATER TEST- PH-7, TEMP 72, CL-0
Event	8	Rig-Up Completed	8/30/2018	16:00:00	USER					1-ELITE, 1-660 BULK TRAILER, 2-FIELD SILOS, 8.625" QL, 2" PUMP IRON, 4" SUCTION HOSE
Event	9	Pre-Job Safety Meeting	8/30/2018	17:40:48	USER					ALL HES AND RIG CREW PRESENT, RIG CIRCULATED 1 HOUR 11BPM, 770PSI
Event	10	Start Job	8/30/2018	18:39:45	USER	8.42	0.00	0.00	0.00	TD-7722', TP-7717', SJ-85.9', CSG-4.5" 11.6# P110, SCSG-8.625" 32# SET @ 1537', OH-7 7/8, MUD-9.2PPG
Event	11	Prime Pumps	8/30/2018	18:41:02	COM5	8.43	1.00	73.00	3.00	FRESH WATER
Event	12	Test Lines	8/30/2018	18:45:04	USER	8.55	0.00	5133.00	3.10	ALL PRESSURE HELD
Event	13	Drop Bottom Plug	8/30/2018	18:50:57	COM5	8.41	0.00	40.00	2.70	PLUG AWAY

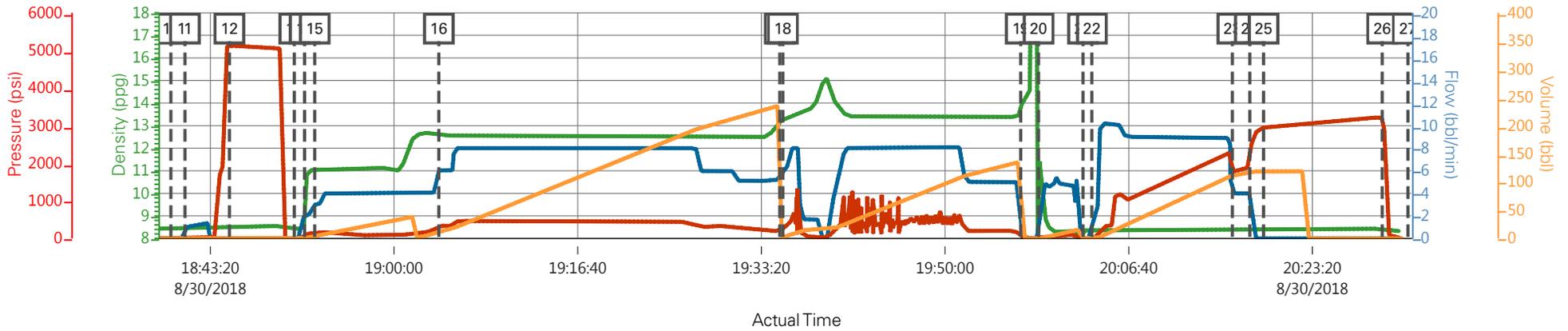
Event	14	Pump Tuned Spacer	8/30/2018	18:51:53	USER	11.00	4.00	190.00	40.00	TUNED SPACER 40BBLS, 11.0PPG, 4.86CF/SK, 31.9GL/SK
Event	15	Check Weight	8/30/2018	18:52:48	COM5					WEIGHT VERIFIED BY PRESSURIZED MUD SCALES
Event	16	Pump Lead Cement	8/30/2018	19:04:04	USER	12.50	8.00	480.00	222.90	NEOCEM 645SKS, 12.5PPG, 1.94CF/SK, 9.59GL/SK
Event	17	Pump Tail Cement	8/30/2018	19:35:00	USER	13.30	8.00	650.00	108.5	THERMACEM 350SKS, 13.3PPG, 1.74CF/SK, 7.8GL/SK
Event	18	Check Weight	8/30/2018	19:35:17	COM5					WEIGHT VERIFIED BY PRESSURIZED MUD SCALES
Event	19	Shutdown	8/30/2018	19:56:52	USER					END OF CEMENT
Event	20	Clean Lines	8/30/2018	19:58:29	USER					CLEANED PUMPS AND LINES TO CELLAR
Event	21	Drop Top Plug	8/30/2018	20:02:31	COM5					PLUG AWAY
Event	22	Pump Displacement	8/30/2018	20:03:19	USER	8.34	10.00	2280.00	118.30	FRESH WATER, 5 GAL CLAWEB, 1 GAL MMCR ADDED
Event	23	Slow Rate	8/30/2018	20:16:04	USER	8.39	4.00	1750.00	108.30	SLOW RATE LAST 10 BBLS OF CALCULATED DISPLACEMENT
Event	24	Bump Plug	8/30/2018	20:17:39	USER	8.39	4.00	1903.00	118.30	PLUG BUMPED AT 1903 PSI
Event	25	Casing Test	8/30/2018	20:18:54	USER	8.43	0.00	2966.00	118.80	10 MINUTE CASING TEST
Event	26	Check Floats	8/30/2018	20:29:40	USER	8.43	0.00	3223.00	0.00	FLOATS HELD, 1 ½ BBLS BACK
Event	27	End Job	8/30/2018	20:32:00	USER					GOOD RETURNS THROUGH OUT JOB, 40BBLS TUNED SPACER TO SURFACE
Event	28	Post-Job Safety Meeting (Pre Rig-Down)	8/30/2018	20:35:00	USER					ALL HES PRESENT
Event	31	Rig-Down Completed	8/30/2018	21:25:00	USER					
Event	32	Pre-Convoy Safety	8/30/2018	21:30:00	USER					ALL HES PRESENT

Meeting

Event 33 Crew Leave Location 8/30/2018 21:45:00 USER

THANK YOU FOR CHOOSING HALLIBURTON,
ANDREW BRENNECKE AND CREW

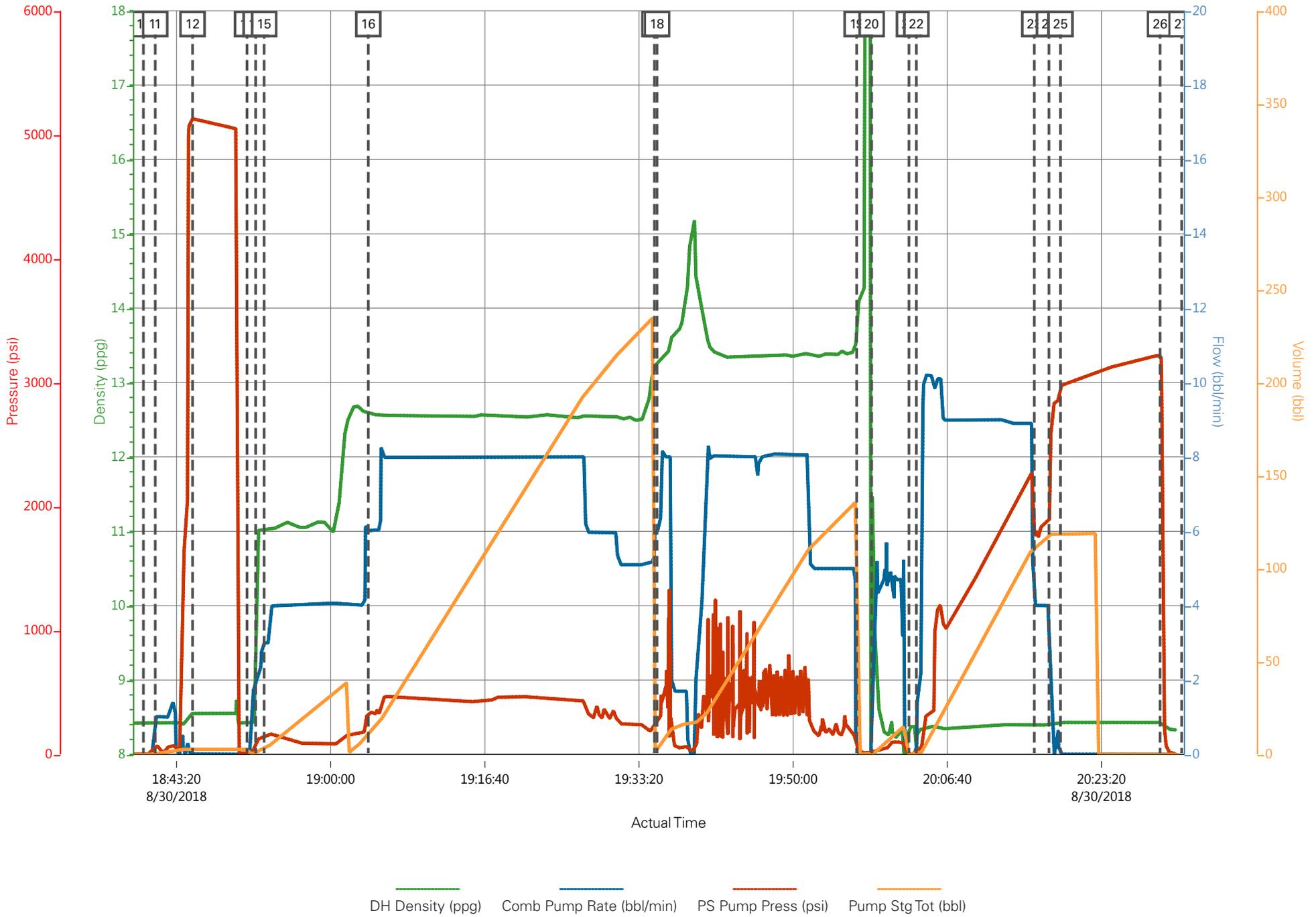
LARAMIE - BCU 993-21-09W - 4.5" PRODUCTION



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

Description	Actual Time	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)
10 Start Job	18:39:45	8.42	0.00	4.00	0.00
11 Prime Pumps	18:41:02	8.43	1.00	73.00	0.20
12 Test Lines	18:45:04	8.55	0.00	5133.00	2.70
13 Drop Bottom Plug	18:50:57	8.41	0.00	6.00	2.70
14 Pump Tuned Spacer	18:51:53	8.99	2.10	137.00	0.70
15 Check Weight	18:52:48	11.00	3.00	145.00	3.00
16 Pump Lead Cement	19:04:04	12.60	6.00	350.00	10.20
17 Pump Tail Cement	19:35:00	13.19	5.70	285.00	0.80
18 Check Weight	19:35:17	13.27	6.00	266.00	2.40
19 Shutdown	19:56:52	13.83	0.00	67.00	135.70
20 Clean Lines	19:58:29	10.99	0.00	24.00	0.00
21 Drop Top Plug	20:02:31	8.36	0.00	0.00	0.00
22 Pump Displacement	20:03:19	8.16	0.00	19.00	0.00
23 Slow Rate	20:16:04	8.39	4.00	1750.00	111.50
24 Bump Plug	20:17:39	8.39	4.00	1903.00	117.90
25 Casing Test	20:18:54	8.43	0.00	2966.00	118.80
26 Check Floats	20:29:40	8.43	0.00	3223.00	0.00
27 End Job	20:32:00	n/a	n/a	n/a	n/a

LARAMIE - BCU 993-21-09W - 4.5" PRODUCTION



Job Information

Request/Slurry	2497528/1	Rig Name	H&P 522	Date	28/AUG/2018
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	BCU 0993-21-09W

Well Information

Casing/Liner Size	4.5 in	Depth MD	7725 ft	BHST	100°C / 212°F
Hole Size	7.875 in	Depth TVD	7693 ft	BHCT	61°C / 142°F
Pressure	4685 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

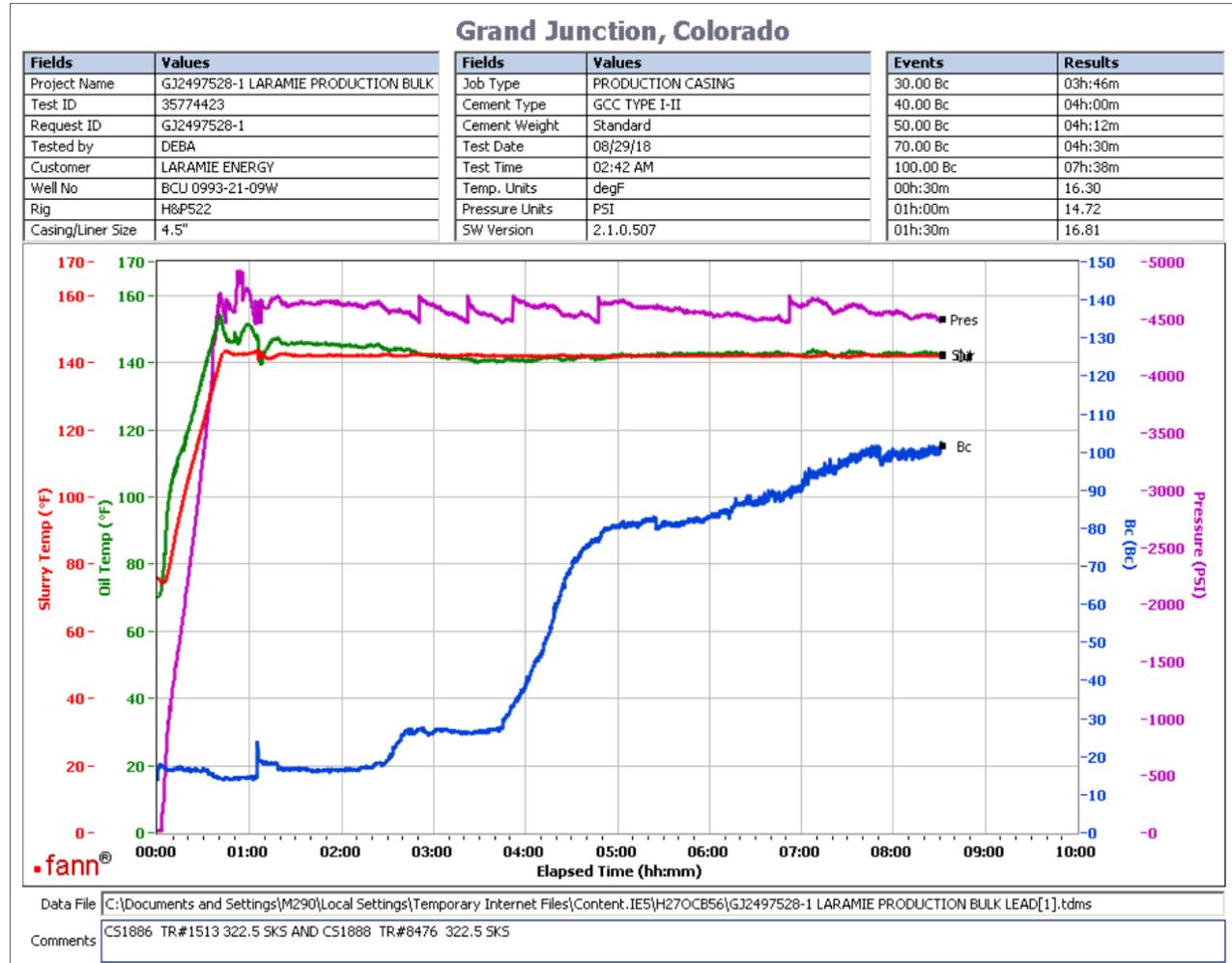
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	<u>Cement Properties</u>		
		NeoCem Lead				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.945	ft3/sack
						Water Requirement	9.614	gal/sack
						Total Mix Fluid	9.614	gal/sack
						Water Source	Field (Fresh) Water	
						Water Chloride		

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Thickening Time - ON-OFF-ON

29/AUG/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)
142	4685	40	3:46	4:12	4:30	7:38	17	50	15	22



Total sks = 645

CS1886 TR# 1513 322.5 SKs

CS1888 TR# 8476 322.5 SKs

Deflection from graph 14--> 22. Please note small temp oscillation starting around 2:50. 80% of slurry was core set and balled up around paddle when test was taken off.

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Job Information

Request/Slurry	2497529/1	Rig Name	H&P 522	Date	28/AUG/2018
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	BCU 0993-21-09W

Well Information

Casing/Liner Size	4.5 in	Depth MD	7725 ft	BHST	100°C / 212°F
Hole Size	7.875 in	Depth TVD	7693 ft	BHCT	61°C / 142°F
Pressure	4685 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

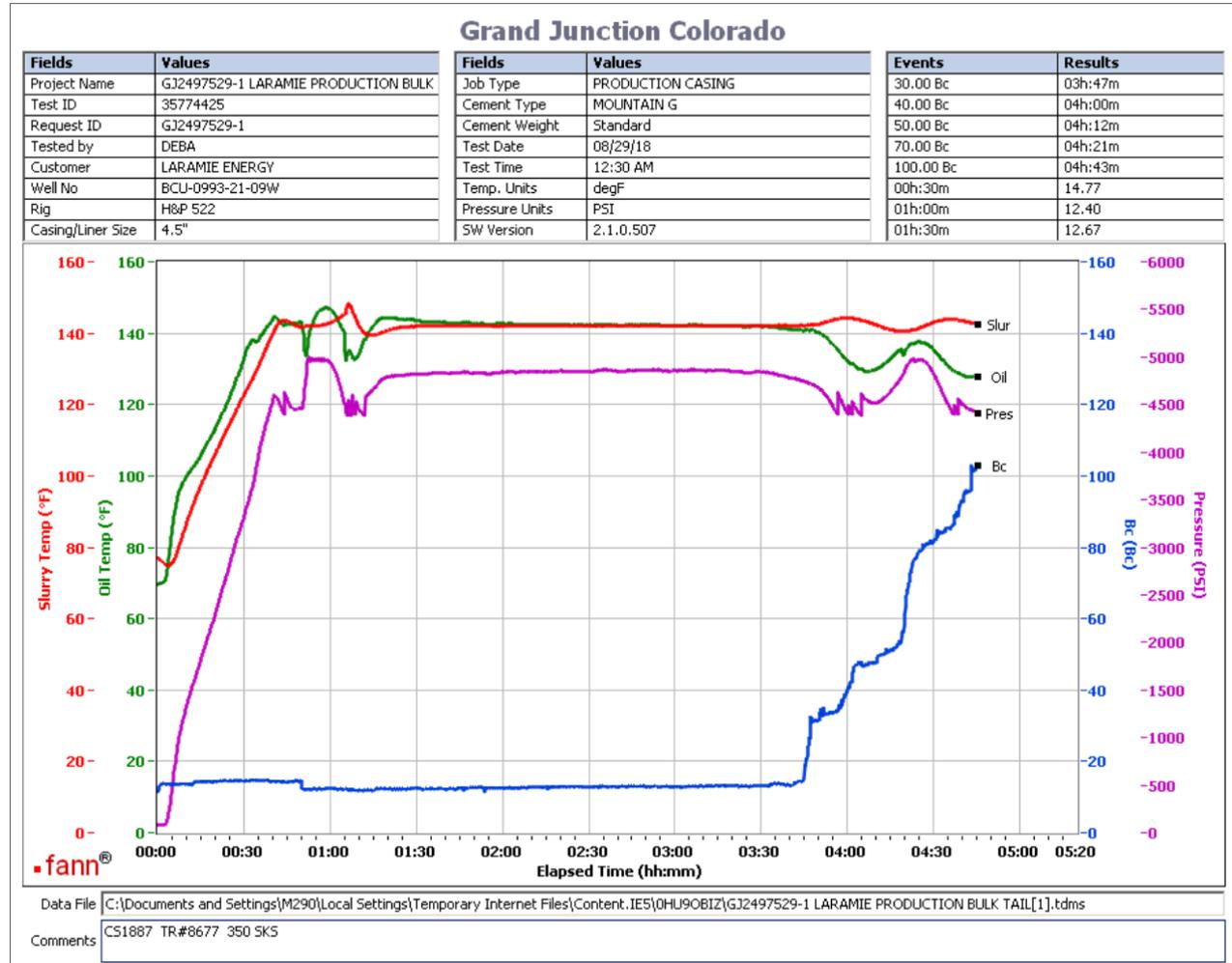
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	<u>Cement Properties</u>		
		ThermaCem Tail				Slurry Density	13.3	lbm/gal
						Slurry Yield	1.736	ft ³ /sack
						Water Requirement	7.787	gal/sack
						Total Mix Fluid	7.787	gal/sack
						Water Source	Field (Fresh) Water	
						Water Chloride		

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Thickening Time - ON-OFF-ON

29/AUG/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)
142	4685	40	3:47	4:12	4:21	4:43	11	50	15	12



Total sks = 350

CS1887 TR#8677 350 SKS

No deflection. Please note heat of hydration started around 3:45. 95% of slurry was core set and balled up around paddle when test was take off.

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