

HALLIBURTON

iCem[®] Service

Laramie Energy LLC

United States of America, COLORADO

Date: Thursday, October 11, 2018

BCU-993-21-06W Surface

LARAMIE-BCU-993-21-06W Surface

Job Date: Tuesday, September 25, 2018

Sincerely,

Grand Junction Cement Engineering

1.0 Real-Time Job Summary

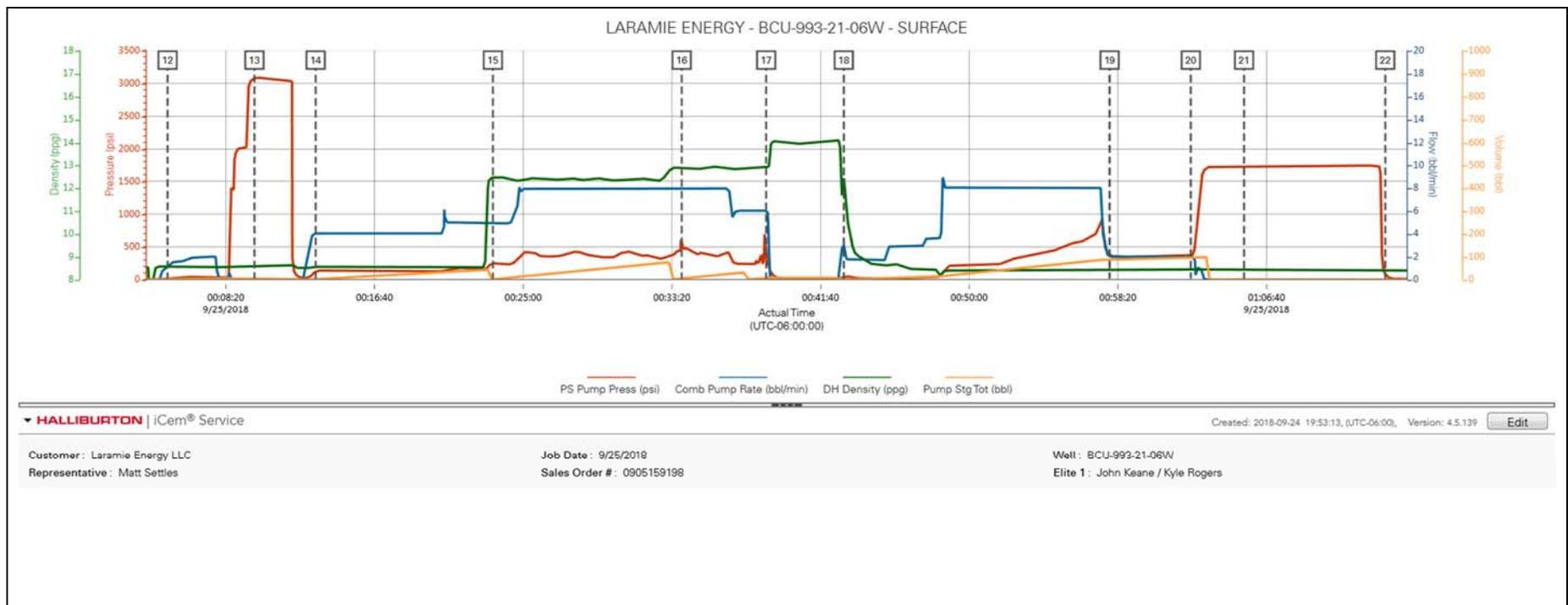
1.1 Job Event Log

Type	Seq. No.	Activity	Date	Time	Source	PS Pump Press <i>(psi)</i>	Comb Pump Rate <i>(bbl/min)</i>	DH Density <i>(ppg)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	9/24/2018	14:30:00	USER					REQUESTED ON LOCATION TIME 20:00
Event	2	Depart Yard Safety Meeting	9/24/2018	17:00:00	USER					WITH HES, 1 F-450, 1 ELITE CEMENTING UNIT, 1 660 BULK TRUCK, JSA COMPLETED
Event	3	Arrive At Loc	9/24/2018	18:00:00	USER					RIG RUNNING CASING UPON HES, ARRIVAL
Event	4	Assessment Of Location Safety Meeting	9/24/2018	18:20:00	USER					WITH HES, JSA COMPLETED, SDS OFFERED FOR ALL HES MATERIALS
Event	5	Pre-Rig Up Safety Meeting	9/24/2018	18:30:00	USER					WITH HES, JSA COMPLETED
Event	6	Rig-Up Equipment	9/24/2018	18:40:00	USER					1 LINE RAN TO THE FLOOR, 1 8.625 IN QUICK-LATCH PLUG CONTAINER
Event	7	Other	9/24/2018	18:50:00	USER					TD 1554 FT, SET AT 1544FT, CSG 1549 FT 8.625 IN 24 LB/FT J-55, HOLE 11 IN, SHOE 43.65 FT
Event	8	Other	9/24/2018	19:00:00	USER					RIG CIRCULATION, 300 BBL, 10 BBL/MIN, 188 PSI, RAT HOLE LENGTH 10 FT, PIPE WAS STATIC, MW 9.4 LB/GAL WBM
Event	9	Other	9/24/2018	20:00:00	USER					WATER TEST PH 7.1, CHLOR 0, TEMP 64DEG F
Event	10	Pre-Job Safety Meeting	9/24/2018	23:50:00	USER	4.00	0.00	8.53	0.00	WITH HES, LARAMIE, AND H&P 522
Event	11	Start Job	9/25/2018	00:02:46	COM4					
Event	12	Prime Pumps	9/25/2018	00:05:04	USER	27.00	1.10	8.57	0.30	5 BBL FRESH WATER, RETURNS AT 2 BBL AWAY

Event	13	Test Lines	9/25/2018	00:09:56	USER	3079.00	0.00	8.62	5.20	LOW TEST AT 880 PSI, HIGH TEST AT 3106 PSI, PRESSURE HOLDING
Event	14	Pump Spacer 1	9/25/2018	00:13:22	USER	124.00	4.00	8.56	1.70	40 BBL FRESH WATER
Event	15	Pump Lead Cement	9/25/2018	00:23:18	USER	254.00	4.90	12.47	0.90	MIXED AT 12.3 LB/GAL, 171 SKS, 2.46 FT3/SK, 14.17 GAL/SK, DENSITY VERIFIED USING PRESSURIZED MUD SCALES
Event	16	Pump Tail Cement	9/25/2018	00:33:53	USER	503.00	8.00	12.88	4.90	MIXED AT 12.8 LB/GAL, 94 SKS, 2.18 FT3/SK, 12.11 GAL/SK, DENSITY VERIFIED USING PRESSURIZED MUD SCALES
Event	17	Shutdown	9/25/2018	00:38:37	USER	421.00	6.00	12.89	6.80	
Event	18	Pump Displacement	9/25/2018	00:42:58	USER	46.00	3.00	12.47	0.60	FRESH WATER
Event	19	Slow Rate	9/25/2018	00:57:52	USER	379.00	2.00	8.40	87.50	SLOWED AT 85 BBL AWAY TO 2 BBL/MIN
Event	20	Bump Plug	9/25/2018	01:02:25	USER	370.00	2.00	8.41	96.60	PLUG BUMPED AT CALCULATED DISPLACEMENT, 377 PSI
Event	21	Drop Top Plug	9/25/2018	01:05:24	USER	1729.00	0.00	8.44	0.00	PLUG LAUNCHED, CUSTOMER WITNESSED
Event	22	Check Floats	9/25/2018	01:13:19	USER	81.00	0.00	8.40	0.00	FLOATS HOLDING, 1 BBL RETURNED TO THE TRUCK, PERFORMED A 10 MIN. CASING TEST AT 1600 PSI, PRESSURE HOLDING
Event	23	Other	9/25/2018	01:15:40	COM4	8.00	0.00	8.39	0.00	
Event	24	End Job	9/25/2018	01:20:00	USER					GOOD CIRCULATION, RIG USED HES TOP PLUG, RIG DID NOT USE SUGAR, NO ADD HOURS
Event	25	Pre-Rig Down Safety Meeting	9/25/2018	01:30:00	USER					WITH HES, JSA COMPLETD
Event	26	Rig Down Lines	9/25/2018	01:45:00	USER					
Event	27	Other	9/25/2018	02:00:00	USER					SPACER 40 BBL FRESH WATER, LEAD CEMENT 74.9 BBL, TAIL CEMENT 36.5 BBL, FINAL DISPLACEMENT 95.7 BBL, 15 BBL CEMENT CIRCULATED TO SURFACE, TOP OF TAIL CEMENT 1323 FT
Event	28	Pre-Convoy Safety Meeting	9/25/2018	02:10:00	USER					WITH HES, JSA COMPLETED
Event	29	Crew Leave Location	9/25/2018	02:20:00	USER					THANKS FOR USING HALLIBURTON, JOHN KEANE AND CREW

2.0 Attachments

2.1 LARAMIE-BCU-993-21-06W-SURFACE.png



HALLIBURTON

iCem[®] Service

Laramie Energy LLC

United States of America, COLORADO

Date: Wednesday, October 17, 2018

BCU 0993-21-06W Production

Laramie BCU 0993-21-06W Production

Job Date: Thursday, September 27, 2018

MyCem# 428500

Sincerely,

Grand Junction Cement Engineering

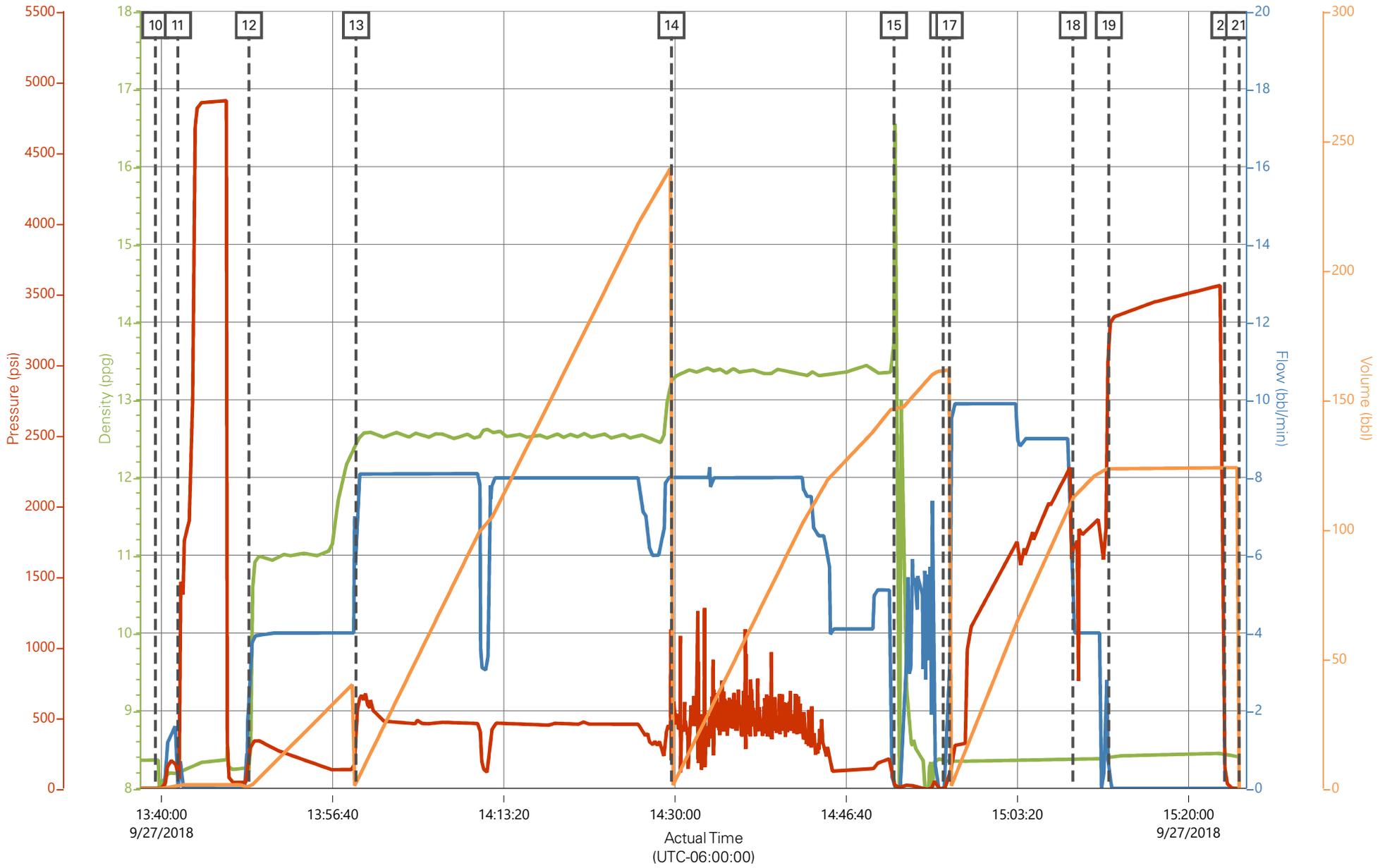
1.0 Real-Time Job Summary

1.1 Job Event Log

Type	Seq. No.	Activity	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	9/27/2018	07:30:00	USER					
Event	2	Pre-Convoy Safety Meeting	9/27/2018	09:45:00	USER					
Event	3	Crew Leave Yard	9/27/2018	10:00:00	USER					
Event	4	Arrive At Loc	9/27/2018	11:30:00	USER					CREW WAS REQUESTED ON LOC @ 1330, CREW ARRIVED AT 1130, RIG WAS APPROX 4 JTS FROM BOTTOM
Event	5	Assessment Of Location Safety Meeting	9/27/2018	11:40:00	USER					
Event	6	Other	9/27/2018	11:45:00	USER					
Event	7	Pre-Rig Up Safety Meeting	9/27/2018	11:50:00	USER					
Event	8	Rig-Up Equipment	9/27/2018	12:00:00	USER					
Event	9	Pre-Job Safety Meeting	9/27/2018	12:10:00	USER					
Event	10	Start Job	9/27/2018	13:39:24	COM5					TD: 7704 TP: 7694 SJ: 85.6 MW: 9.4 4 1/2" 11.6#/FT CSG IN 7 7/8" OH WATER TEST: PH: 6.5 POTTASIMUM: 450 CHLORIDES: 0 SULFATES: <200 TEMP: 64 DEGREES PRESSURIZED MUD SCALES VERIFIED ON DRINKING WATER PRIOR TO JOB
Event	11	Test Lines	9/27/2018	13:41:36	COM5			5000.00		5000 PSI TEST SUCCESSFUL
Event	12	Pump Spacer 1	9/27/2018	13:48:31	COM5	11.00	4.0	277.00	40.00	40 BBL TUNED SPACER @ 11.0 PPG

Event	13	Pump Lead Cement	9/27/2018	13:58:57	COM5	12.50	8.00	377.00	220.80	639 SKS @ 12.5 PPG 1.94 YLD 9.59 GAL/SK H2O
Event	14	Pump Tail Cement	9/27/2018	14:29:39	COM5	13.30	8.00	510.00	108.50	350 SKS @ 13.3 PPG 1.74 YLD 7.8 GAL/SK H2O
Event	15	Clean Lines	9/27/2018	14:51:19	COM5					
Event	16	Drop Top Plug	9/27/2018	14:56:07	COM5					PLUG AWAY
Event	17	Pump Displacement	9/27/2018	14:56:44	COM5	8.33	10.00	2120.00	117.90	FRESH H2O DISPLACEMENT W/ MMCR, CLAY-WEB, BACTERIACIDE (CUSTOMER SUPPLIED)
Event	18	Slow Rate	9/27/2018	15:08:44	USER	8.38	4.00	1686.00	107.00	
Event	19	Bump Plug	9/27/2018	15:12:14	COM5	8.33	4.00	3186.00	117.90	PLUG BUMPED AT CALCULATED DISPLACEMENT. PRESSURED UP TO 3000PSI FOR A 10 MIN CASING TEST
Event	20	Other	9/27/2018	15:23:30	COM5					FLOATS HELD, GAINED 1.5 BBL BACK TO PUMP
Event	21	End Job	9/27/2018	15:24:56	COM5					
Event	22	Post-Job Safety Meeting (Pre Rig-Down)	9/27/2018	15:30:00	USER					
Event	23	Rig-Down Equipment	9/27/2018	15:45:00	USER					GOOD CIRCULATION THROUGHOUT JOB. PIPE WAS LEFT STATIC THROUGHOUT JOB. CIRCULATED 20 BBL TUNED SPACER TO SURFACE. NO ADD HOURS CHARGED. TOP AND BOTTOM PLUGS USED. 20# SUGAR USED.
Event	24	Safety Meeting	9/27/2018	16:40:00	USER					
Event	25	Crew Leave Location	9/27/2018	16:45:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENTING OF GRAND JCT, CO ANTHONY ANDREWS AND CREW

LARAMIE - BCU 0993-21-06W - 4 1/2" PRODUCTION



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

Job Information

Request/Slurry	2503753/3	Rig Name	H&P 522	Date	21/SEP/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	BCU 0993-21-06W

Well Information

Casing/Liner Size	4.5 in	Depth MD	7702 ft	BHST	103°C / 218°F
Hole Size	7.875 in	Depth TVD	7693 ft	BHCT	63°C / 146°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				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.944	ft3/sack
						Water Requirement	9.607	gal/sack
						Total Mix Fluid	9.607	gal/sack
						Water Source	Field (Fresh) Water	
						Water Chloride		

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Operation Test Results Request ID 2503753/3

Thickening Time - ON-OFF-ON

26/SEP/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)
146	4685	40	7:59	8:09	8:29	10:26	10	50	15	11

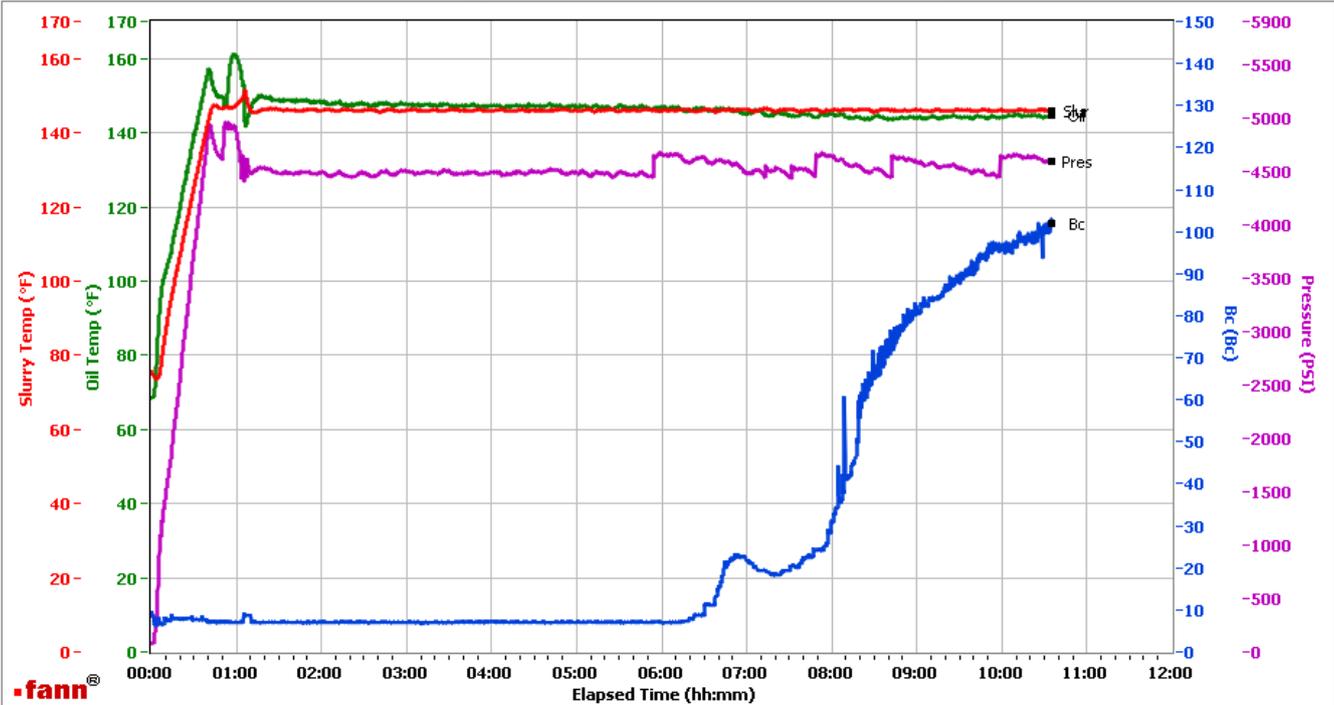
CS2135 TR 8677 319.5 SKS
Deflected 7-- > 11

Grand Junction, Colorado

Fields	Values
Project Name	GJ2503753-3 LARAMIE PRODUCTION BULK
Test ID	35849606
Request ID	2503753-3
Tested by	JASON
Customer	LARAMIE
Well No	BCU 0993-21-06W
Rig	H8P 522
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION
Cement Type	GCC TYPE I-II
Cement Weight	Light Weight
Test Date	09/25/18
Test Time	10:45 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	07h:59m
40.00 Bc	08h:04m
50.00 Bc	08h:09m
70.00 Bc	08h:29m
100.00 Bc	10h:26m
00h:30m	7.56
01h:00m	7.13
01h:30m	7.06



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\CDER4HJW\GJ2503753-3 LARAMIE PRODUCTION BULK LEAD[1].tdms
Comments CS2135 TR 8677 319.5 SKS

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Operation Test Results Request ID 2503753/2

Thickening Time - ON-OFF-ON

26/SEP/2018

Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)	Termination time (hh:mm)	Termination Bc
146	4685	40	7:07	7:24	9:24	3	50	15	3	22:52	74

CS2134 TR 8658 319.5 SKS

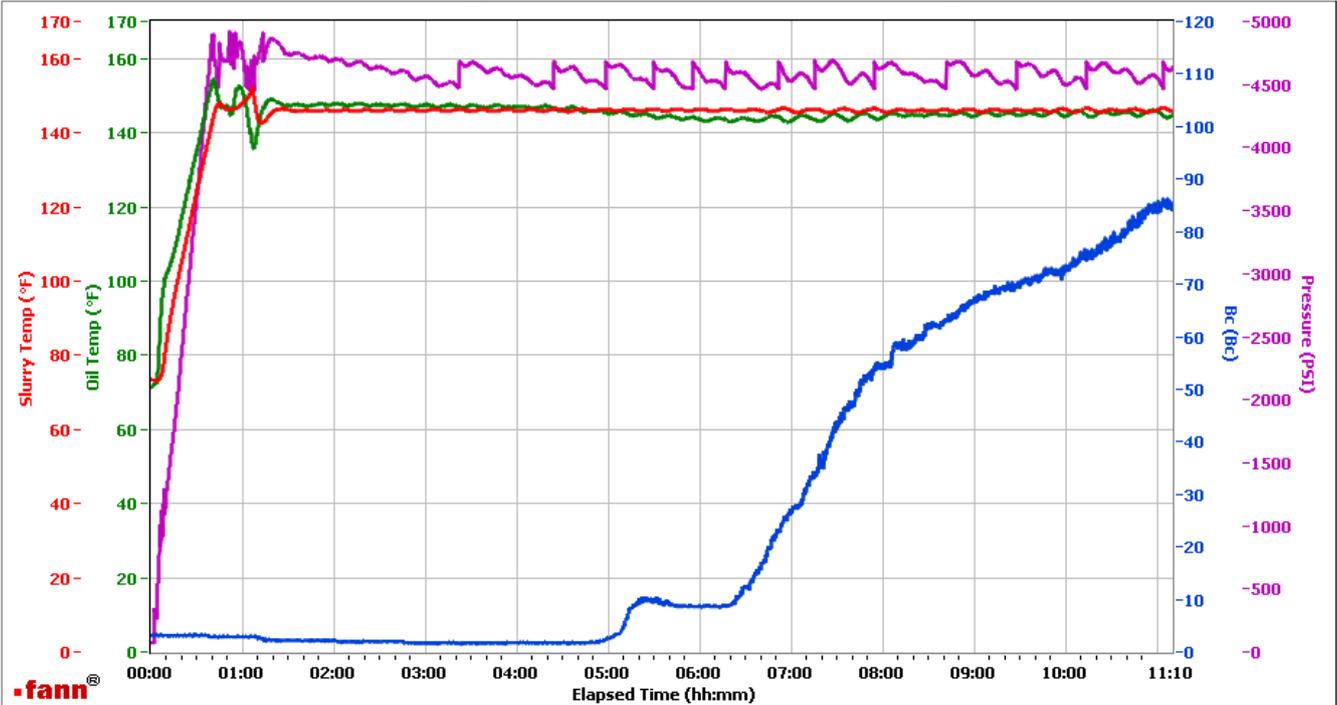
No deflection. 60% of slurry was core set and balled up around paddle, spinning in the cup.

Grand Junction Colorado

Fields	Values
Project Name	GJ2503753-2 LARAMIE PRODUCTION BULK
Test ID	35849595
Request ID	2503753-2
Tested by	JASON
Customer	LARAMIE
Well No	BCU 0993-21-06W
Rig	H8P 522
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION
Cement Type	GCC TYPE I-II
Cement Weight	Light Weight
Test Date	11/02/11
Test Time	08:19 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.1219

Events	Results
30.00 Bc	07h:07m
40.00 Bc	07h:24m
50.00 Bc	07h:45m
70.00 Bc	09h:24m
100.00 Bc	NaN
00h:30m	70.23
01h:00m	70.23
01h:30m	70.23



Data File C:\Documents and Settings\HPHT\Desktop\Test Data\GJ2503753-2 LARAMIE PRODUCTION BULK LEAD.tdms
 Comments CS2134 TR 8658 319.5 SKS

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Operation Test Results Request ID 2503753/1

Thickening Time - ON-OFF-ON

25/SEP/2018

Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)	Termination time (hh:min)	Termination Bc
146	4685	40	7:32	7:54	12:03	18	50	15	18	13:57	70

Total sks = 639

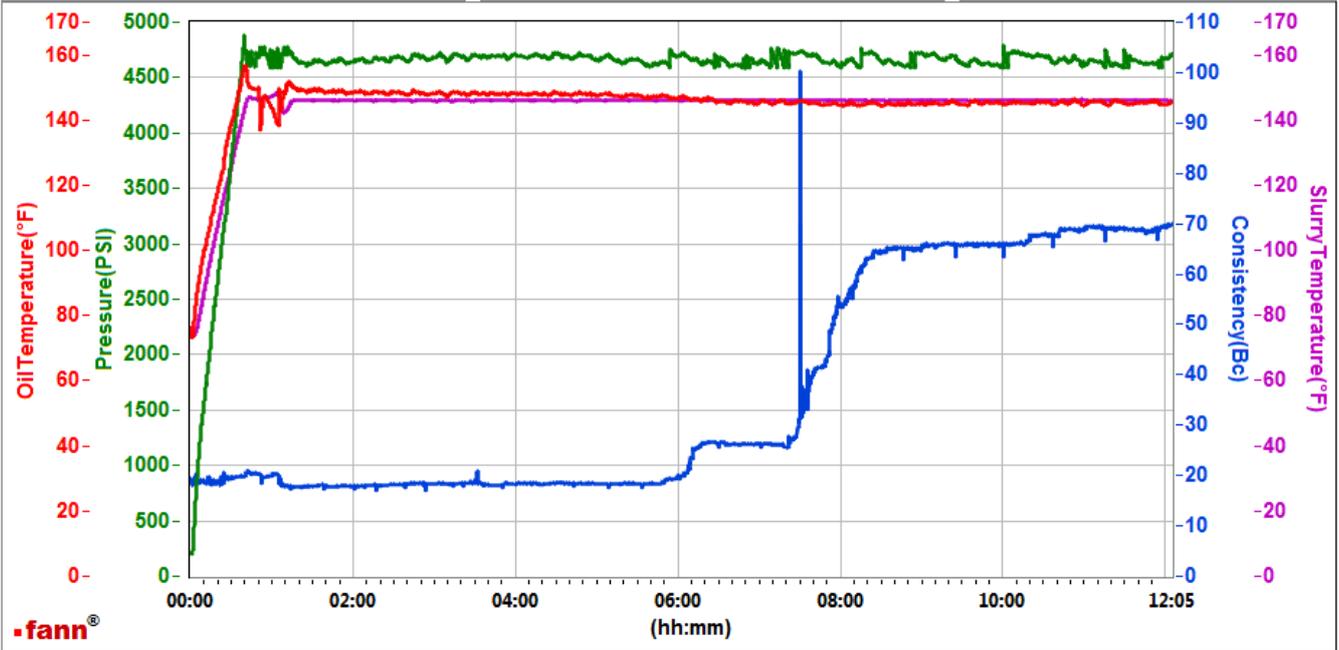
CS 2134 TRS8658 319.5 SKS

CS 2135 TR#8677 319.5 SKS

No deflection. Please note a small heat of hydration started around 5:45.

GRAND JUNCTION

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2503753-1 Laramie Pr	Rig	H&P 522	30 Bc	07:32
SW Version	1.0	Casing/Liner Size	4.5 INCH	50 Bc	07:54
Test ID	35842589 - TT	Job Type	PRODUCTION CASING	70 Bc	12:03
Request ID	2503753-1	Cement Weight	GCC TYPE III		
Tested by	DEBA	Comments	Standard		
Customer	LARAMIE ENERGY	Date Time	9/24/2018 11:36:08.245		
Well No	BCU 0993-21-06E	Temp. Units	degF		



Data File	N:\01 Test Graphs\GJ2503753-1 LARAMIE PRODUCTION BULK LEAD.tdms
Comments	Standard

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Job Information

Request/Slurry	2503754/1	Rig Name	H&P 522	Date	21/SEP/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Laramie Energy	Location	Garfield	Well	BCU 0993-21-06W

Well Information

Casing/Liner Size	4.5 in	Depth MD	7702 ft	BHST	103°C / 218°F
Hole Size	7.875 in	Depth TVD	7693 ft	BHCT	63°C / 146°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>	Cement Properties	
		ThermaCem				Slurry Density	13.3 lbm/gal
						Slurry Yield	1.737 ft ³ /sack
						Water Requirement	7.785 gal/sack
						Total Mix Fluid	7.785 gal/sack
						Water Source	Field (Fresh) Water
						Water Chloride	

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Operation Test Results Request ID 2503754/1

Thickening Time - ON-OFF-ON

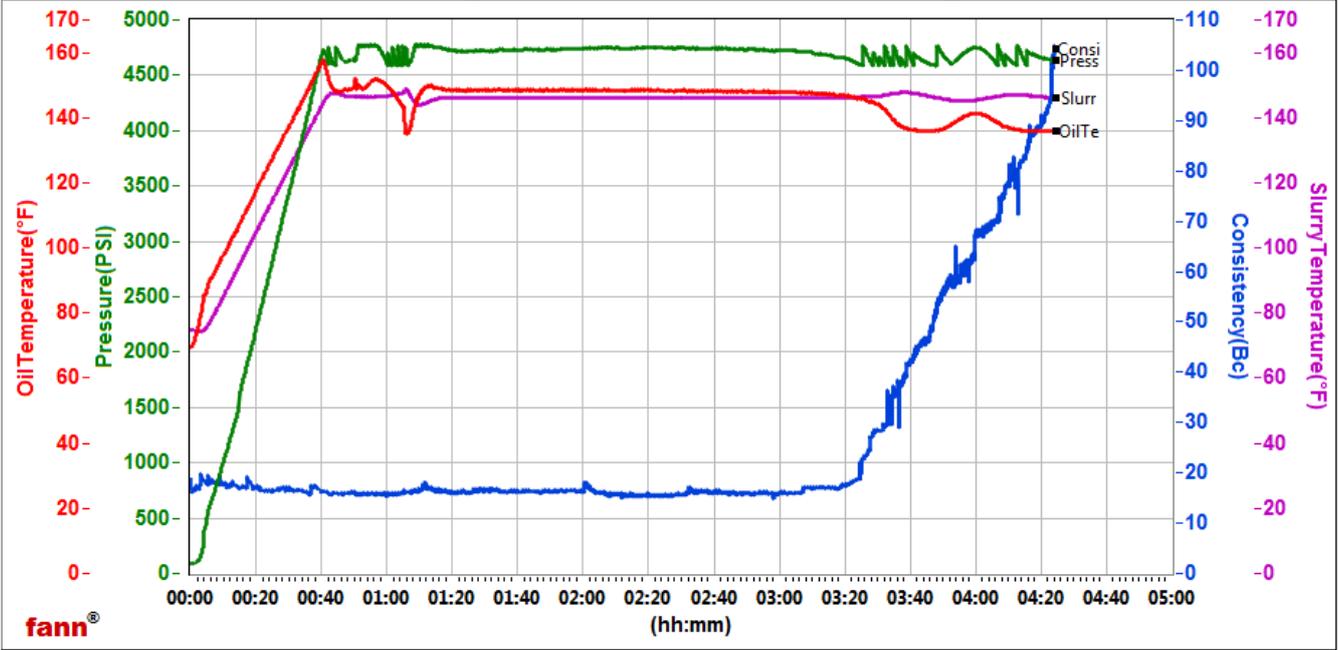
24/SEP/2018

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)
146	4685	40	3:35	3:47	4:05	4:23	16	50	15	16

Total sks = 350
 CS2132 TR#8678 350 SKS
 no deflection, 16Bc---> 16Bc

GRAND JUNCTION

Fields	Values	Fields	Values	Events	Results
Project Name	TempTest	Rig	H&P 318		
SW Version	1.0	Casing/Liner Size	4.5INCH		
Test ID	35826330 - TT	Job Type	PRODUCTION CASING		
Request ID	2503754-1	Cement Weight	MOUNTAIN G		
Tested by	DEBA	Comments	Standard		
Customer	LARAMIE ENERGY	Date Time	9/24/2018 10:17:11.876		
Well No	NR 23-3	Temp. Units	degF		



Data File C:\Users\hx25273\Desktop\new Graph M290\GJ2503754-1 LARAMIE BULK PRODUCTION TAIL.tdms
 Comments Standard

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