

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

For: Terra

Date: Monday, February 19, 2018

PA 414-24 Production

API#05-045-23653

Sincerely,

Grand Junction Cement Engineering

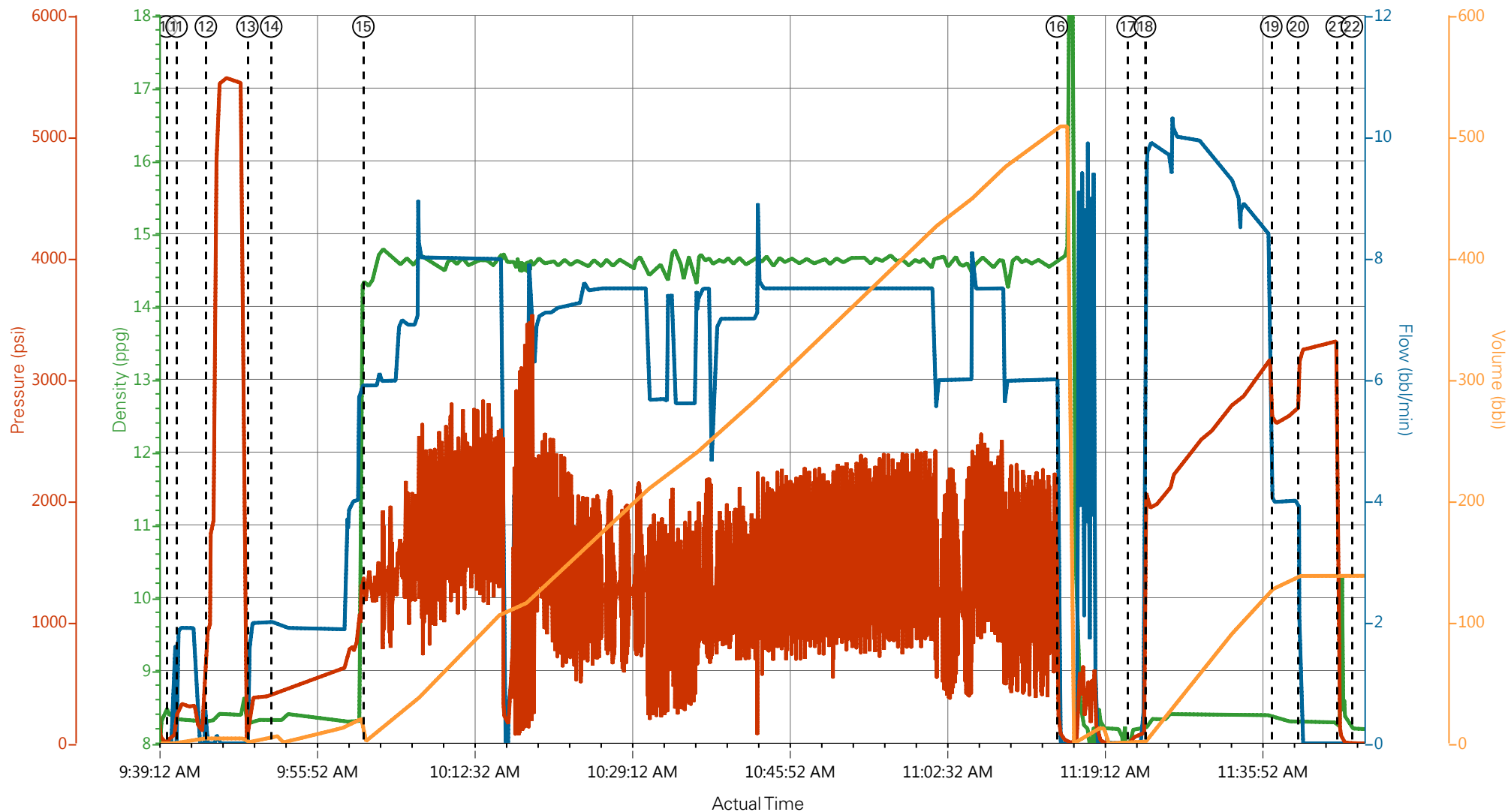
2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Driv-Side Pump Pressure (psi)	Pump Stage Total (bbl)	Comments
Event	1	Call Out	2/18/2018	20:00:00						Requested on Location @ 02:30
Event	2	Pre-Convoy Safety Meeting	2/18/2018	22:00:00						
Event	3	Crew Leave Yard	2/18/2018	22:15:00						1 Elite, 1 660, 1 pickup
Event	4	Arrive At Loc	2/19/2018	02:30:00						Rig running casing
Event	5	Assessment Of Location Safety Meeting	2/19/2018	02:35:00						JSA completed - Customer offered/received SDS - water test pH 7.0, CI <200, temp 60 degrees
Event	6	Pre-Rig Up Safety Meeting	2/19/2018	02:45:00						
Event	7	Rig-Up Equipment	2/19/2018	03:00:00						DME iron to ground manifold, standpipe, hardline to pit. Water hoses to uprights, bulk hoses to silo and 660.
Event	8	Pre-Job Safety Meeting	2/19/2018	08:30:00						All HES personnel, rig crew, and company rep.
Event	9	Other	2/19/2018	08:35:00						Rig Circulated 2 hrs prior to cement job at 10 bpm 1093 psi.
Event	10	Start Job	2/19/2018	09:40:17						
Event	11	Fill Lines	2/19/2018	09:41:21		8.33	2	360	5	Fresh Water
Event	12	Test Lines	2/19/2018	09:44:27				5578		Held pressure 2 minutes
Event	13	Pump Spacer	2/19/2018	09:48:51		8.33	2	390	5	Fresh Water
Event	14	Pump Mud Flush	2/19/2018	09:51:22		8.4	4	850	20	80 lbs. Mud Flush III
Event	15	Pump Cement	2/19/2018	10:01:07		14.5	7.5	2150	472.5	2010 sks, 14.5 ppg, 1.32 yield, 5.85 gal/sk
Event	16	Shutdown	2/19/2018	11:14:27						Wash lines to pit
Event	17	Drop Top Plug	2/19/2018	11:21:57						Co-Rep Verify Plug Launched
Event	18	Pump Displacement	2/19/2018	11:23:47		8.4	10	3152	137.8	3 lbs BE-6, 1 gal MMCR, 2% KCl

Event	19	Slow Rate	2/19/2018	11:37:08	8.4	4	2700	127	Slow Rate 10 bbls to Calculated Displacement
Event	20	Bump Plug	2/19/2018	11:39:56			3250		Plug Bumped at 2700 psi, Brought up to 3200 psi
Event	21	Check Floats	2/19/2018	11:44:04					Floats Held-1 ½ bbl back to truck
Event	22	End Job	2/19/2018	11:45:40					Good returns throughout job. Pipe was reciprocated during job.
Event	23	Pre-Rig Down Safety Meeting	2/19/2018	12:07:16					No sugar, HES top plug used, 2 add hours
Event	24	Rig-Down Equipment	2/19/2018	12:10:47					
Event	25	Pre-Convoy Safety Meeting	2/19/2018	12:19:38					
Event	26	Crew Leave Location	2/19/2018	12:25:38					Thanks For Using Halliburton Cement. Chris Martinez And Crew

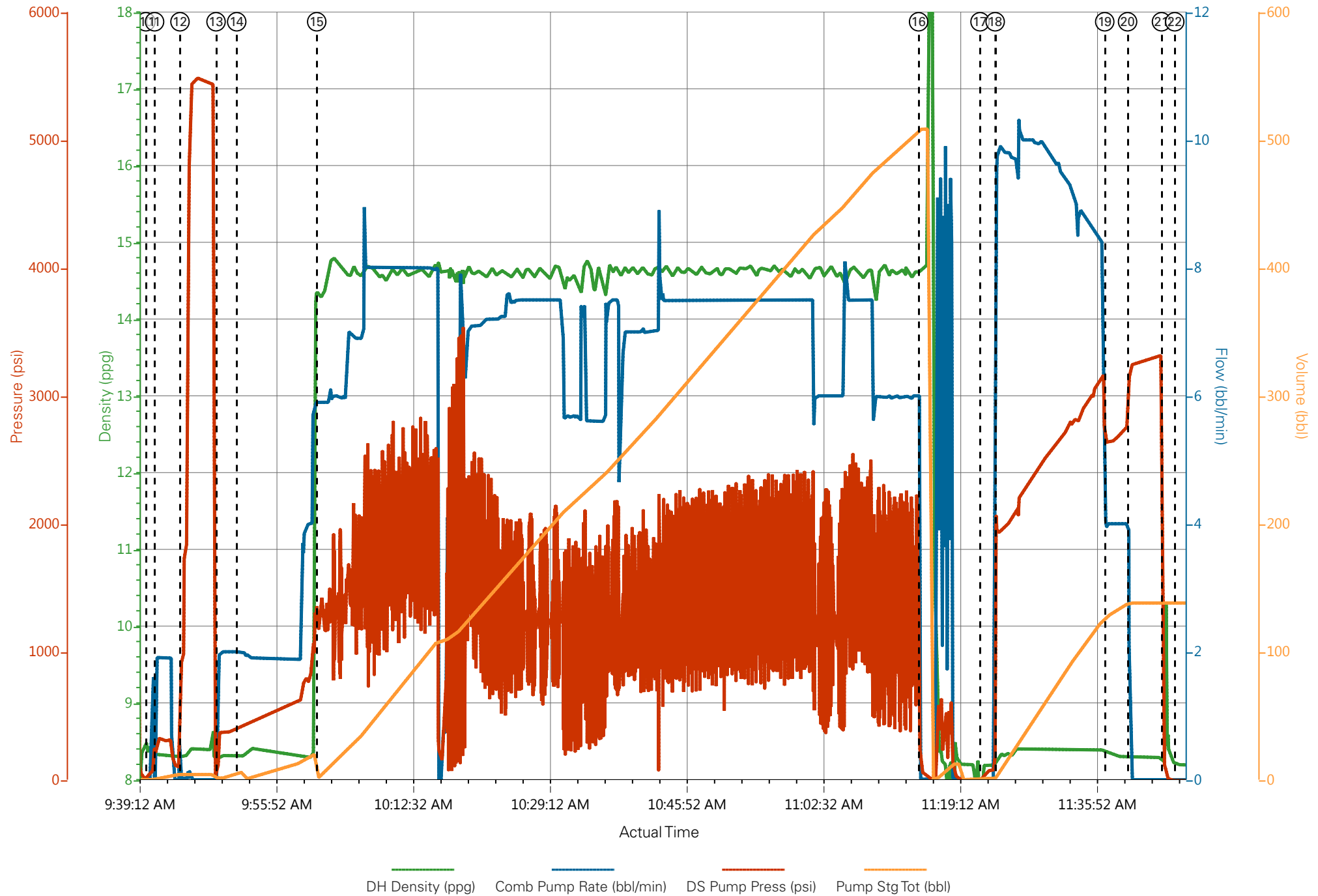
PA 414-24 Production



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

⑤ Assessment Of Location Safety Meeting n/a;n/a;n/a;n/a	⑨ Other 0.01;0;0;0	⑬ Pump Spacer 8.29;2;363;0.4	⑰ Drop Top Plug 8.19;0;8;0	21 Check Floats 8.22;0;96;138.1
⑥ Pre-Rig Up Safety Meeting n/a;n/a;n/a;n/a	⑩ Start Job 8.44;0;28;0	⑭ Pump Mud Flush 8.31;1.9;412;5.4	⑱ Pump Displacement 8.24;9.9;1930;4.2	22 End Job 8.2;0;-8;138.1
⑦ Rig-Up Equipment n/a;n/a;n/a;n/a	⑪ Fill Lines 8.34;1.9;328;0.7	⑮ Pump Cement 14.24;5.9;1329;2.6	⑲ Slow Rate 8.37;4;2624;128	23 Pre-Rig Down Safety Meeting n/a;n/a;n/a;n/a
⑧ Pre-Job Safety Meeting 0;0;1;0	⑫ Test Lines 8.3;0;919;4	⑯ Shutdown 14.66;0;79;508.5	20 Bump Plug 8.31;0;3231;138.1	24 Rig-Down Equipment n/a;n/a;n/a;n/a

PA 414-24 Production



Job Information

Request/Slurry	2453074/2	Rig Name	H&P 271	Date	13/FEB/2018
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	PA 414-24

Well Information

Casing/Liner Size	4.5 in	Depth MD	8920 ft	BHST	102°C / 216°F
Hole Size	8.75 in	Depth TVD	7977 ft	BHCT	63°C / 146°F
Pressure	4884 psi				

Drilling Fluid Information

Mud Supplier Name	AMC	Mud Trade Name	Density
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Cement Information - Primary Design



Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
		VariCem				Slurry Density	14.5	lbm/gal
						Slurry Yield	1.32	ft3/sack
						Water Requirement	5.852	gal/sack
						Total Mix Fluid	5.852	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Operation Test Results Request ID 2453074/2

Thickening Time - ON-OFF-ON

15/FEB/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	4884	50	4:21	4:21	4:21	4:21	11	60	15	13

Composite:

CS0440 TR#2878 450 SKS

CS0441 TR 1656 450 SKS

CS0442 TR 2398 210 SKS

deflected from 14Bc--- > 13Bc

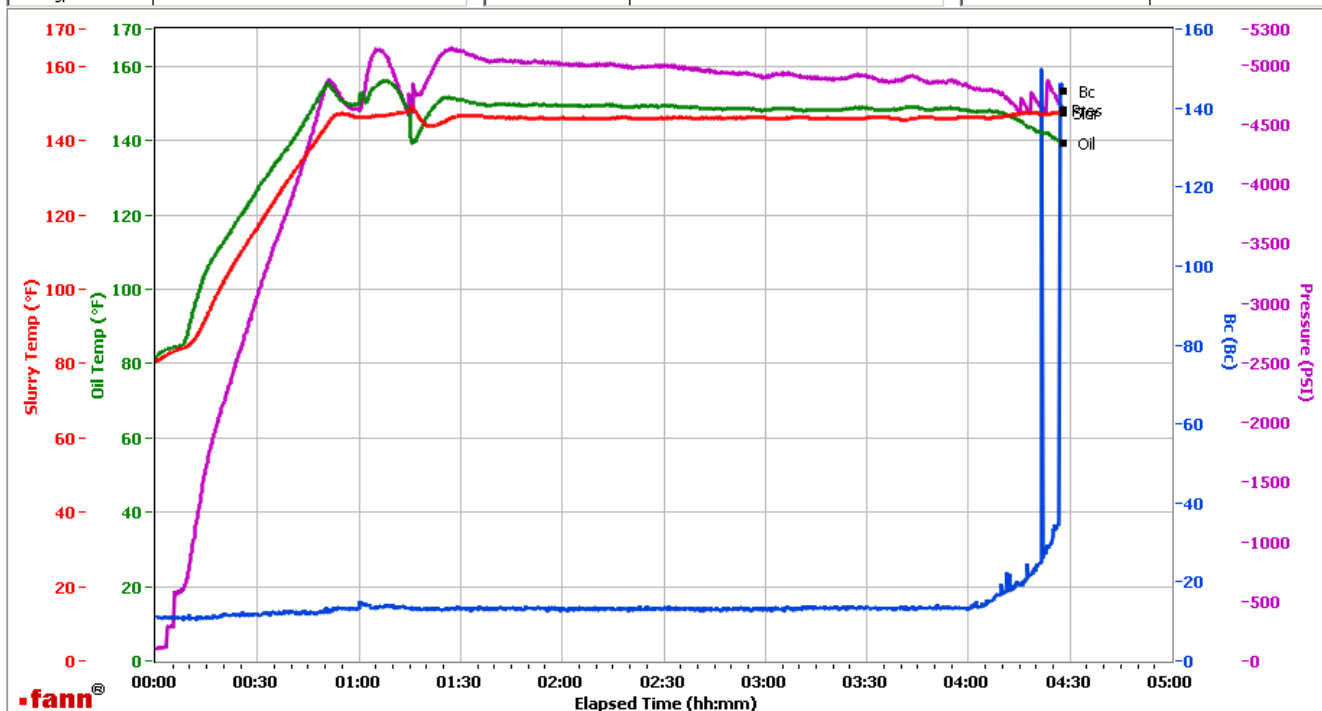
Heat of hydration at 4:13 should be the pump off

Grand Junction Colorado

Fields	Values
Project Name	GJ2453074-2 TERRA PRODUCTION PRIMAR
Test ID	35256459
Request ID	2453074-2
Tested by	JASON
Customer	TERRA ENERGY PARTNERS
Well No	PA 414-24
Rig	H&P 271
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	02/15/18
Test Time	02:29 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	04h:21m
40.00 Bc	04h:21m
50.00 Bc	04h:21m
70.00 Bc	04h:21m
100.00 Bc	04h:21m
00h:30m	11.60
01h:00m	13.27
01h:30m	13.43



Data File C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files\Content.IE5\O3KLGZVR\GJ2453074-2 TERRA PRODUCTION PRIMARY BULK[1].tdms

Comments CS0440 TR 2878 450 SKS CS0441 TR 1656 450 SKS CS0442 TR 2398 210 SKS

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Operation Test Results Request ID 2453074/1

Thickening Time - ON-OFF-ON

14/FEB/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	4884	50	3:44	3:53	3:57	4:00	76	60	15	28

2010 sks Total

Composite:

CS0438 TR# 8677 450 sks

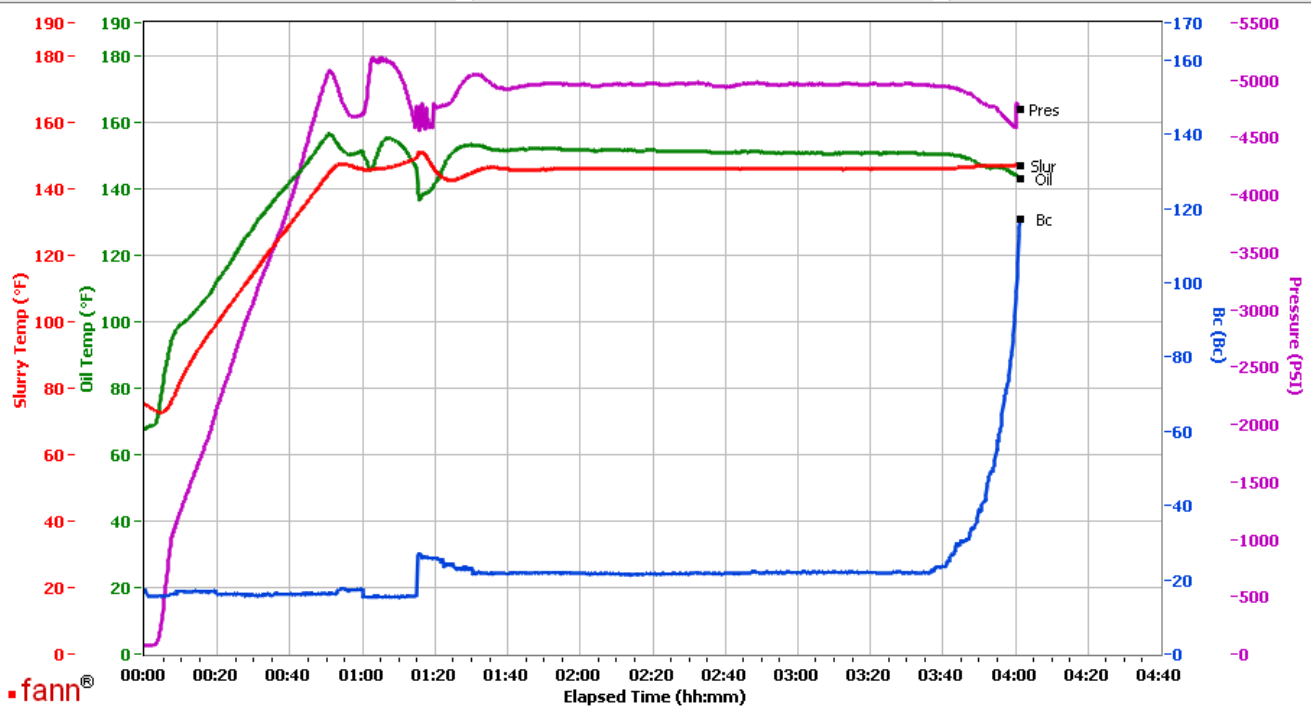
CS0439 TR# 8678 450 sks

Grand Junction Colorado

Fields	Values
Project Name	GJ2453074-1 TERRA PRODUCTION BULK PR
Test ID	35253423
Request ID	GJ2453074-1
Tested by	DEBA
Customer	TERRA ENERGY PARTNERS
Well No	PA 414-24
Rig	H&P 271
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	02/14/18
Test Time	08:26 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	03h:44m
40.00 Bc	03h:50m
50.00 Bc	03h:53m
70.00 Bc	03h:57m
100.00 Bc	04h:00m
00h:30m	15.77
01h:00m	17.37
01h:30m	23.14



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Comments COMPOSITE: CS0438 TR#8677 450 SKS AND CS0439 TR#8678 450 SKS

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