

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

For: Terra

Date: Monday, February 12, 2018

PA 524-24 Production PJR

API #: 05-045-23660

Sincerely,

Grand Junction Cement Engineering

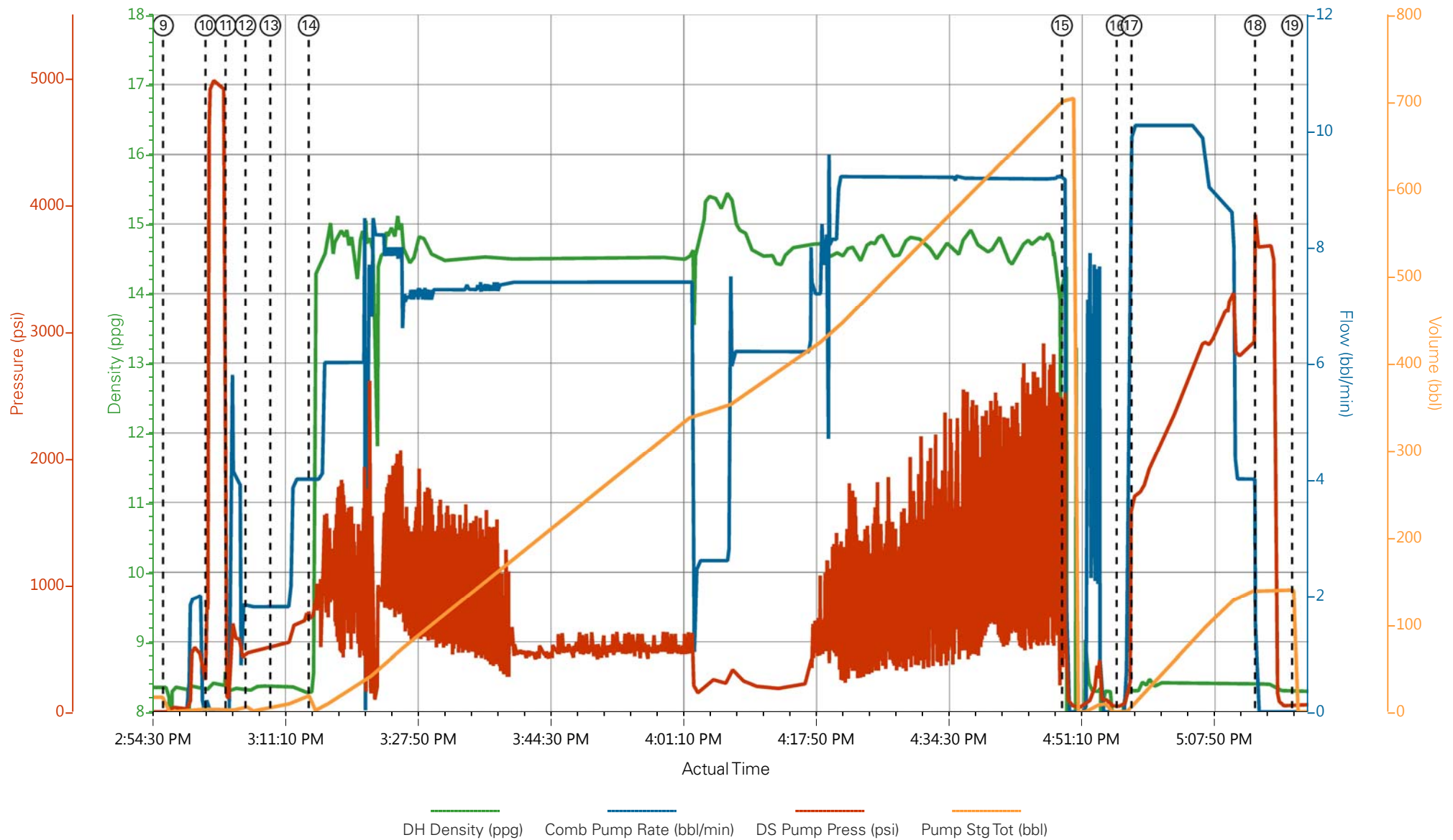
2.0 Real-Time Job Summary

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	2/12/2018	07:00:12						Requested on Location @ 12:00
Event	2	Pre-Convoy Safety Meeting	2/12/2018	09:00:32						
Event	3	Crew Leave Yard	2/12/2018	11:00:29						1 Elite, 1 660, 1 pickup
Event	4	Arrive At Loc	2/12/2018	13:30:21						Arrive on location @12:30 Due to interstate closed. Rig running casing
Event	5	Assessment Of Location Safety Meeting	2/12/2018	13:33:22						JSA completed - Customer offered/received SDS - water test pH 7.0, Cl <200, temp 50 degrees
Event	6	Pre-Rig Up Safety Meeting	2/12/2018	13:40:49						
Event	7	Rig-Up Equipment	2/12/2018	13:45:22						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	2/12/2018	14:34:58						All HES personnel, rig crew, and company rep. Rig Circulated 1 hr prior to cement job at 10 bpm 700 psi. Gas 63
Event	9	Start Job	2/12/2018	14:56:16						TD 8568, OH 8 3/4", TP 8562.81', SJ 33.27, CSG 4 1/2" 11.6#, Surface Csg @ 1147' 9 5/8" 32.3#, MUD 12.1#

Event	10	Test Lines	2/12/2018	15:01:36			4992		Held pressure 2 minutes
Event	11	Pump Spacer 1	2/12/2018	15:04:06	8.33	2	580	10	Fresh Water
Event	12	Pump Spacer 2	2/12/2018	15:06:36	8.4	4	470	20	80 lbs. Mud Flush III
Event	13	Check weight	2/12/2018	15:09:43					Density verified via mud cup
Event	14	Pump Cement	2/12/2018	15:14:32	14.5	7	900	454.9	1935 sks, 14.5 ppg, 1.32 Yield, 5.86 Gal/sk. ADC was not working half way through cement, had to mix manually
Event	15	Shutdown	2/12/2018	16:49:05					Wash lines to pit
Event	16	Drop Top Plug	2/12/2018	16:55:57					Co-Rep Verify Plug Launched
Event	17	Pump Displacement	2/12/2018	16:57:48	8.4	10	3280	132.2	3 lbs BE-6, 1 gal MMCR, 2% KCl
Event	18	Bump Plug	2/12/2018	17:13:19			3400	132.2	Plug Bumped at 2900 psi, Brought up to 3300 psi
Event	19	End Job	2/12/2018	17:17:58					Good returns throughout job. Pipe was reciprocated during job, 10 bbl of Cement to Surface.
Event	20	Pre-Rig Down Safety Meeting	2/12/2018	17:43:13					No sugar, HES top plug used, 0 add hours
Event	21	Rig-Down Equipment	2/12/2018	17:49:44					
Event	22	Pre-Convoy Safety Meeting	2/12/2018	18:05:41					
Event	23	Crew Leave Location	2/12/2018	18:10:56					Thanks For Using Halliburton Cement. Chris Martinez And Crew

PA 524-24 Production



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|---|---|--------------------------------|---------------------------------|------------------------------|
| ① Call Out n/a;n/a;n/a;n/a | ⑤ Assessment Of Location Safety Meeting -0.01;0;100;0.3 | ⑨ Start Job 8.35;0;0;0 | ⑬ Check weight 8.36;1.8;511;5.7 | ⑰ Pump Displacement 8.32;10 |
| ② Pre-Convoy Safety Meeting n/a;n/a;n/a;n/a | ⑥ Pre-Rig Up Safety Meeting -0.01;0;101;0.3 | ⑩ Test Lines 8.31;0;4596;3.1 | ⑭ Pump Cement 8.28;4;755;20.1 | ⑱ Bump Plug 8.41;0;3662;139. |
| ③ Crew Leave Yard n/a;n/a;n/a;n/a | ⑦ Rig-Up Equipment -0.01;0;101;0.3 | ⑪ Pump Spacer 1 8.3;0;104;0 | ⑮ Shutdown 14.26;5.9;615;704.2 | ⑲ End Job 8.29;0;48;0 |
| ④ Arrive At Loc -0.01;0;99;0.3 | ⑧ Pre-Job Safety Meeting -0.01;0;104;0.3 | ⑫ Pump Spacer 2 8.31;1.8;465;0 | ⑯ Drop Top Plug 6.25;0;54;0 | 20 Pre-Rig Down Safety Meeti |

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Created: 2018-02-12 13:54:13, Version: 4.2.393

Edit

Customer : TERRA ENERGY PARTNERS

Job Date : 2/12/2018 1:56:16 PM

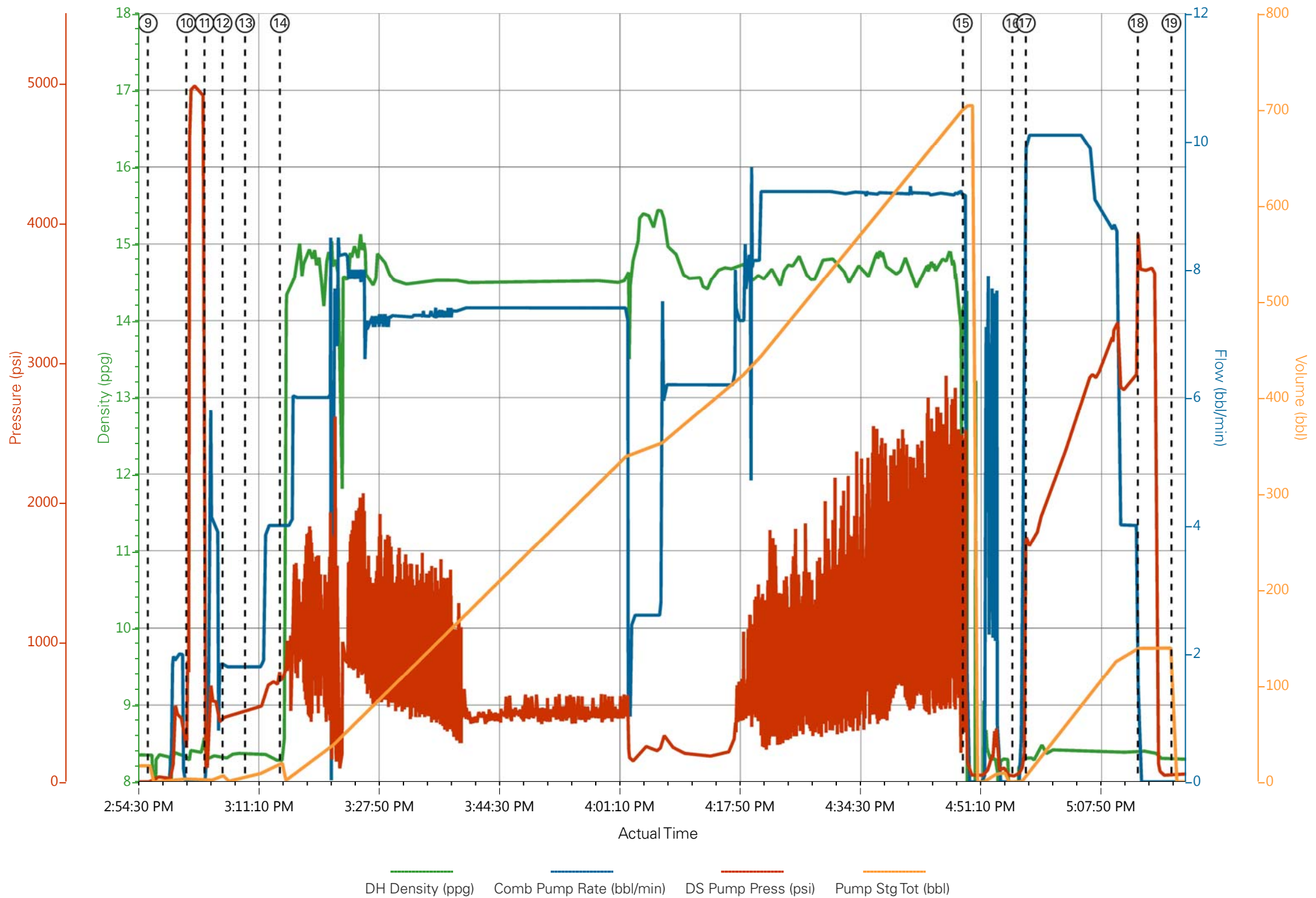
Well : 524-24

Representative : Chris Martinez

Sales Order # : 904634622

Elite 4 :

PA 524-24 Production



HALLIBURTON

Rockies, Grand Junction

Lab Results- Primary

Job Information

Request/Slurry	2451844/1	Rig Name	H&P 271	Date	07/FEB/2018
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	PA 524-24

Well Information

Casing/Liner Size	4.5 in	Depth MD	8592 ft	BHST	102°C / 216°F
Hole Size	8.75 in	Depth TVD	7987 ft	BHCT	63°C / 146°F
Pressure	4891 psi				

Drilling Fluid Information

Mud Supplier Name	AMC	Mud Trade Name	Density
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Cement Information - Primary 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		
		VariCem Primary				Slurry Density	14.5	lbm/gal
						Slurry Yield	1.32	ft3/sack
						Water Requirement	5.856	gal/sack
						Total Mix Fluid	5.856	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

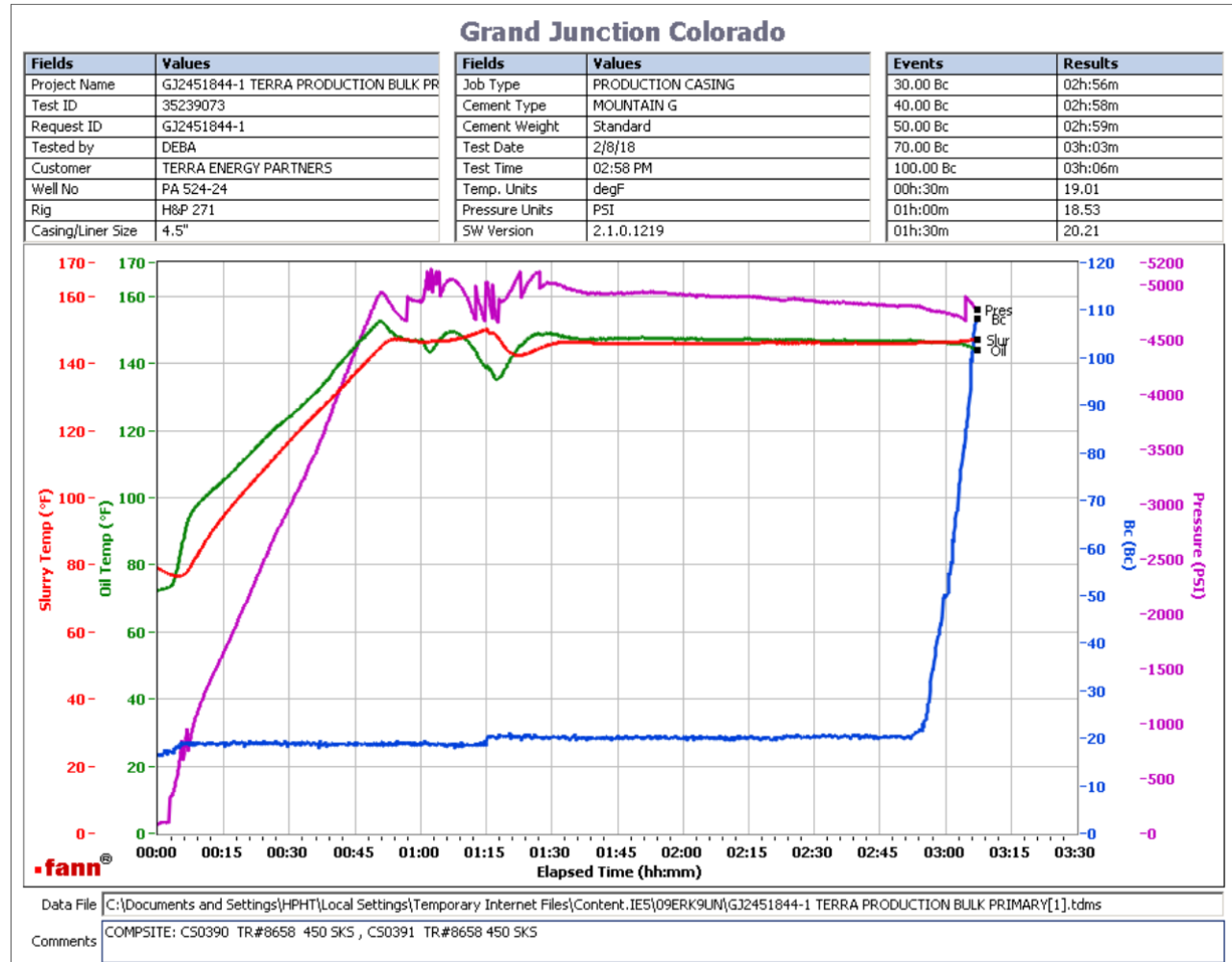
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Operation Test Results Request ID 2451844/1

Thickening Time - ON-OFF-ON

08/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	4891	50	2:56	2:59	3:03	3:06	16	60	15	19



1935 sks Total
 CS0390 TR#8658 450 SKS
 CS0391 TR#8677 450 SKS
 deflected from 16Bc--- > 19Bc

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Operation Test Results Request ID 2451844/2

Thickening Time - ON-OFF-ON

09/FEB/2018

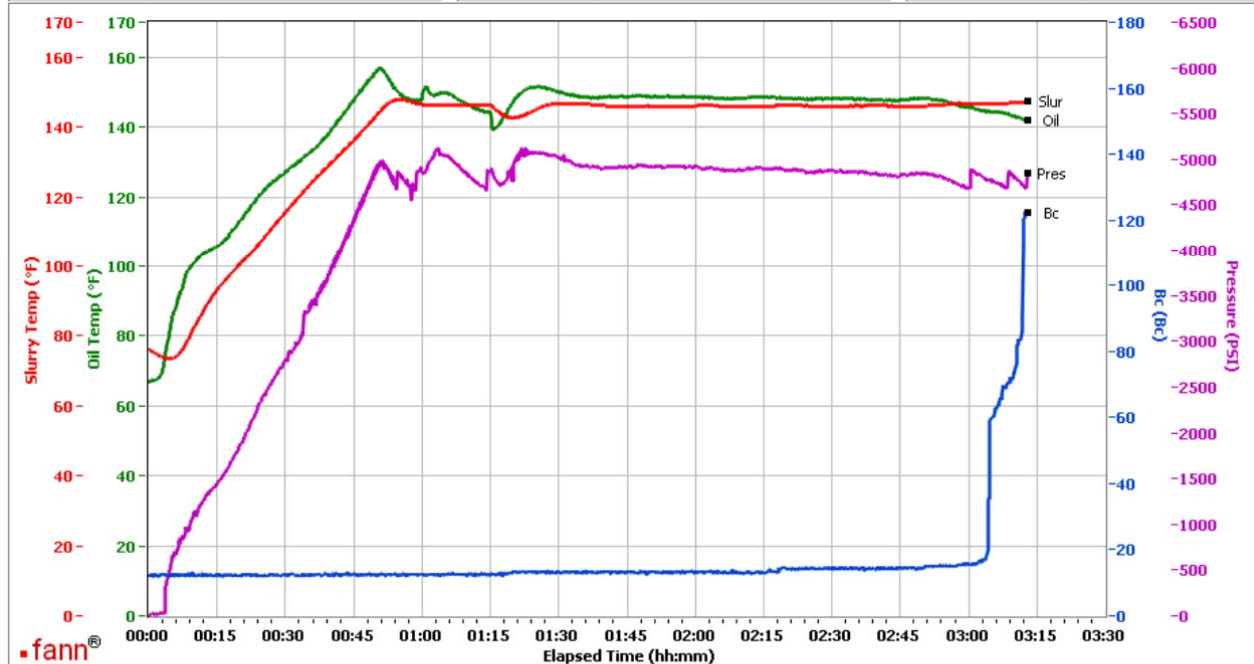
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:min)	50 Bc (hh:min)	70 Bc (hh:min)	100 Bc (hh:min)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
146	4891	50	3:04	3:04	3:08	3:12	12	60	15	13

Grand Junction Colorado

Fields	Values
Project Name	GJ2451844-2 TERRA PRODUCTION BULK PR
Test ID	35242233
Request ID	GJ2451844-2
Tested by	DEBA
Customer	TERRA ENERGY PARTNERS
Well No	PA 524-24
Rig	H&P 271
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	02/08/18
Test Time	09:11 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	03h:04m
40.00 Bc	03h:04m
50.00 Bc	03h:04m
70.00 Bc	03h:08m
100.00 Bc	03h:12m
00h:30m	12.20
01h:00m	12.75
01h:30m	13.38



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\CDER4HUV\GJ2451844-2 TERRA PRODUCTION BULK PRIMARY[1].tdms

Comments COMPOSTIE: CS0392 TR#8678 450 SKS, CS0394 TR#3212 135 SKS

1935 sks Total

CS0392 TR#8678 450 SKS

CS0392 TR#0812 450 SKS

CS0394 TR#3212 135 SKS

No deflection. Please not that the heat of hydration started around 2:56.

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