

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

United States of America, COLORADO

For: Terra

Date: Thursday, August 30, 2018

PA 311-26 Production PJR

API# 05-045-23719-00

Sincerely,

Grand Junction Cement Engineering

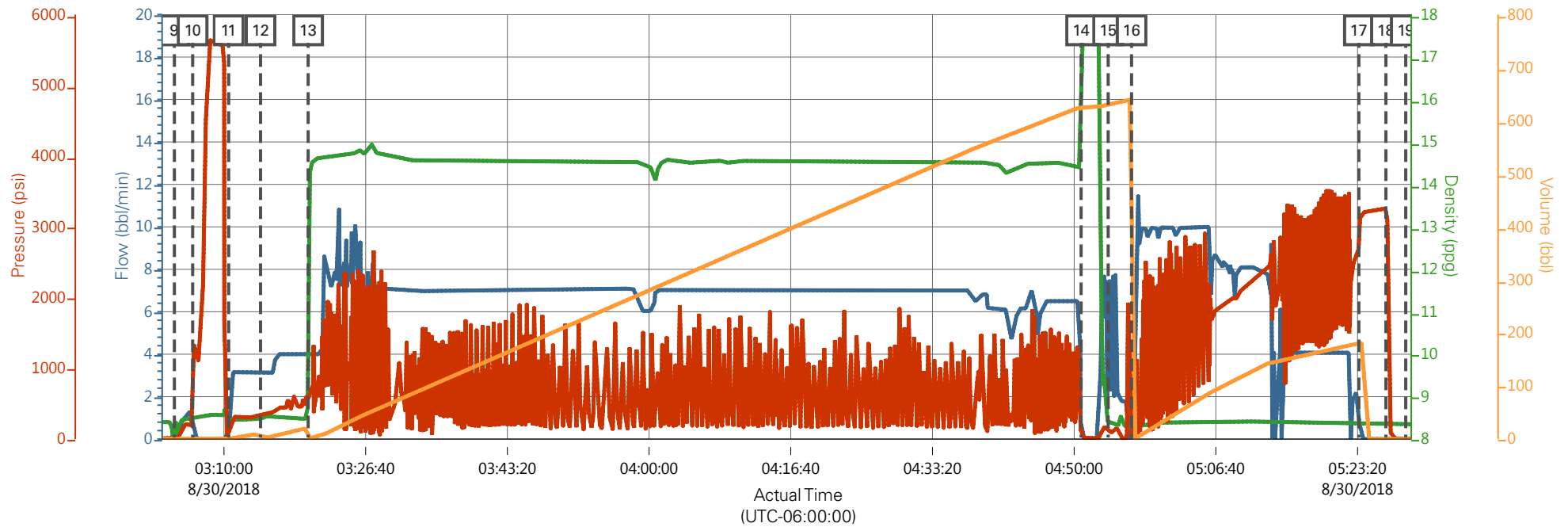
2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	8/29/2018	18:00:00	USER					REQUESTED ON LOCATION 8/29/18 @ 23:30
Event	2	Depart Yard Safety Meeting	8/29/2018	19:55:00	USER					JSA COMPLETED
Event	3	Crew Leave Shop	8/29/2018	20:00:00	USER					
Event	4	Arrive At Loc	8/29/2018	21:30:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	8/29/2018	21:35:00	USER					JSA COMPLETED
Event	6	Pre-Rig Up Safety Meeting	8/29/2018	21:55:00	USER					JSA COMPLETED
Event	7	Rig-Up Equipment	8/29/2018	22:00:00	USER					
Event	8	Pre-Job Safety Meeting	8/30/2018	02:30:00	USER					JSA COMPLETED, PRESSURIZED MUD SCALES CALIBRATED TO FRESH WATER
Event	9	Start Job	8/30/2018	03:04:10	COM4					4 1/2"-11.6# CASING IN 8 3/4" OH, TD 9396', TP 9389', ST 30.2', MUD 12.0 PPG, WATER TEMP 70, PH 7, CHLORIDES 0
Event	10	Test Lines	8/30/2018	03:06:19	COM4			5000.00		TEST LINES TO 5000 PSI
Event	11	Pump Spacer 1	8/30/2018	03:10:33	COM4	3.00	8.33	300.00	10.00	10 BBLS FRESH WATER
Event	12	Pump Spacer 2	8/30/2018	03:14:18	COM4	4.00	8.40	470.00	20.00	20 BBLS MUDFLUSH
Event	13	Pump Cement	8/30/2018	03:19:54	COM4	7.00	14.50	550.00	459.60	459.6 BBLS PRIMARY CEMENT, 1955 SKS @ 14.5 PPG / 1.32 YLD / 5.85 GAL/SK

Event	14	SHUT DOWN	8/30/2018	04:50:49	COM4					
Event	15	Drop Top Plug	8/30/2018	04:54:00	USER					PLUG AWAY
Event	16	Pump Displacement	8/30/2018	04:56:45	COM4	8.00	8.40	2550.00	145.10	145.1 BBLS KCL WATER DISPLACEMENT WITH 1 GALLON MMCR AND 3# BE-6
Event	17	Bump Plug	8/30/2018	05:23:29	COM4	2.00	8.40	2550.00	145.10	PLUG BUMPED AT CALCULATED, BROUGHT TO 3200 PSI
Event	18	CHECK FLOATS	8/30/2018	05:26:40	COM4					FLOATS HELD, 1.5 BBL BACK TO PUMP
Event	19	End Job	8/30/2018	05:29:00	COM4					PIPE WAS RECIPRICATED FOR PART OF CEMENT, GOOD RETURNS THROUGHOUT, 1 - 4 1/2" TOP PLUG, 1 GALLON MMCR AND 3# BE-6 USED, NO SUGAR AND NO ADD HOURS CHARGED
Event	20	Pre-Rig Down Safety Meeting	8/30/2018	05:55:00	USER					JSA COMPLETED
Event	21	Rig-Down Equipment	8/30/2018	07:00:00	USER					
Event	22	Pre-Convoy Safety Meeting	8/30/2018	07:05:00	USER					JSA COMPLETED
Event	23	Crew Leave Location	8/30/2018	07:10:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENTING OF GRAND JUNCTION, CO - RYAN MARTIN AND CREW

TERRA - FEDERAL PA 311-26 - 4 1/2" PRODUCTION CASING



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

Description	Actual Time (UTC-06:00:00)	Comb Pump Rate (bbl/min)	DH Density (ppg)	PS Pump Press (psi)	Pump Stg Tot (bbl)
9 Start Job	03:04:10	0.00	8.39	0.00	0.00
10 Test Lines	03:06:19	0.80	8.47	172.00	1.70
11 Pump Spacer 1	03:10:33	0.00	8.44	39.00	1.80
12 Pump Spacer 2	03:14:18	3.10	8.47	343.00	0.50
13 Pump Cement	03:19:54	4.00	10.00	550.00	0.80
14 SHUT DOWN	04:50:49	0.00	15.38	90.00	625.80
15 Drop Top Plug	04:54:00	3.00	8.42	56.00	631.90
16 Pump Displacement	04:56:45	0.00	8.29	8.00	0.00
17 Bump Plug	05:23:29	2.20	8.36	2774.00	181.40
18 CHECK FLOATS	05:26:40	0.00	8.37	3264.00	0.00
19 End Job	05:29:00	0.00	8.35	-1.00	0.00

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Created: 2018-08-29 22:50:44, (UTC-06:00), Version: 4.5.139

Edit

Customer : TERRA ENERGY PARTNERS

Job Date : 8/30/2018

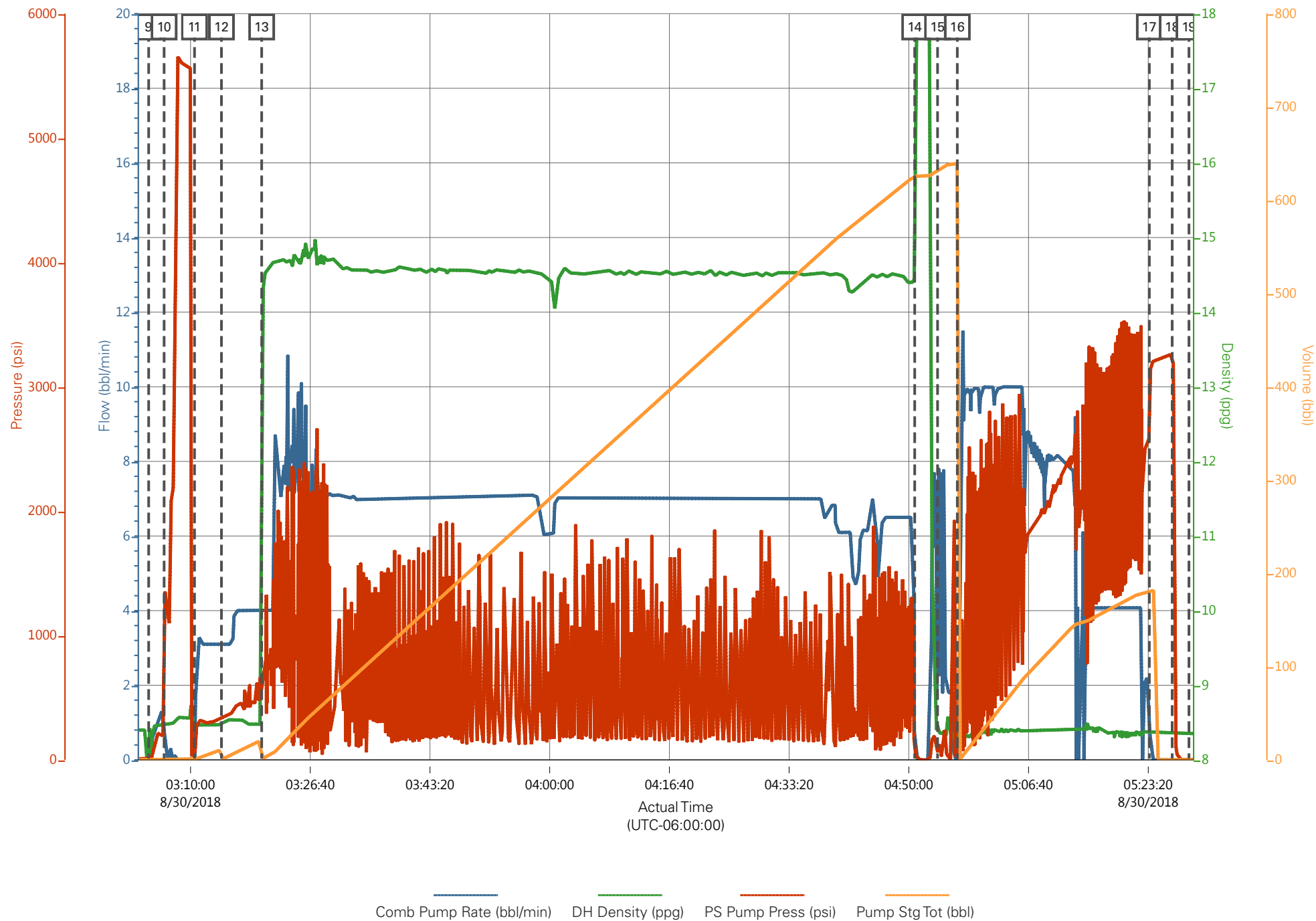
Well : FEDERAL PA 311-26

Representative : ADAM ABFALL

Sales Order # : 905088617

ELITE #8 : KIEL CHRIST / RYAN MARTIN

TERRA - FEDERAL PA 311-26 - 4 1/2" PRODUCTION CASING



Job Information

Request/Slurry	2493223/1	Rig Name	H&P 271	Date	07/AUG/2018
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	PA 311-26

Well Information

Casing/Liner Size	4.5 in	Depth MD	9423 ft	BHST	107°C / 224°F
Hole Size	8.75 in	Depth TVD	8466 ft	BHCT	68°C / 154°F
Pressure	5226 psi				

Drilling Fluid Information

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

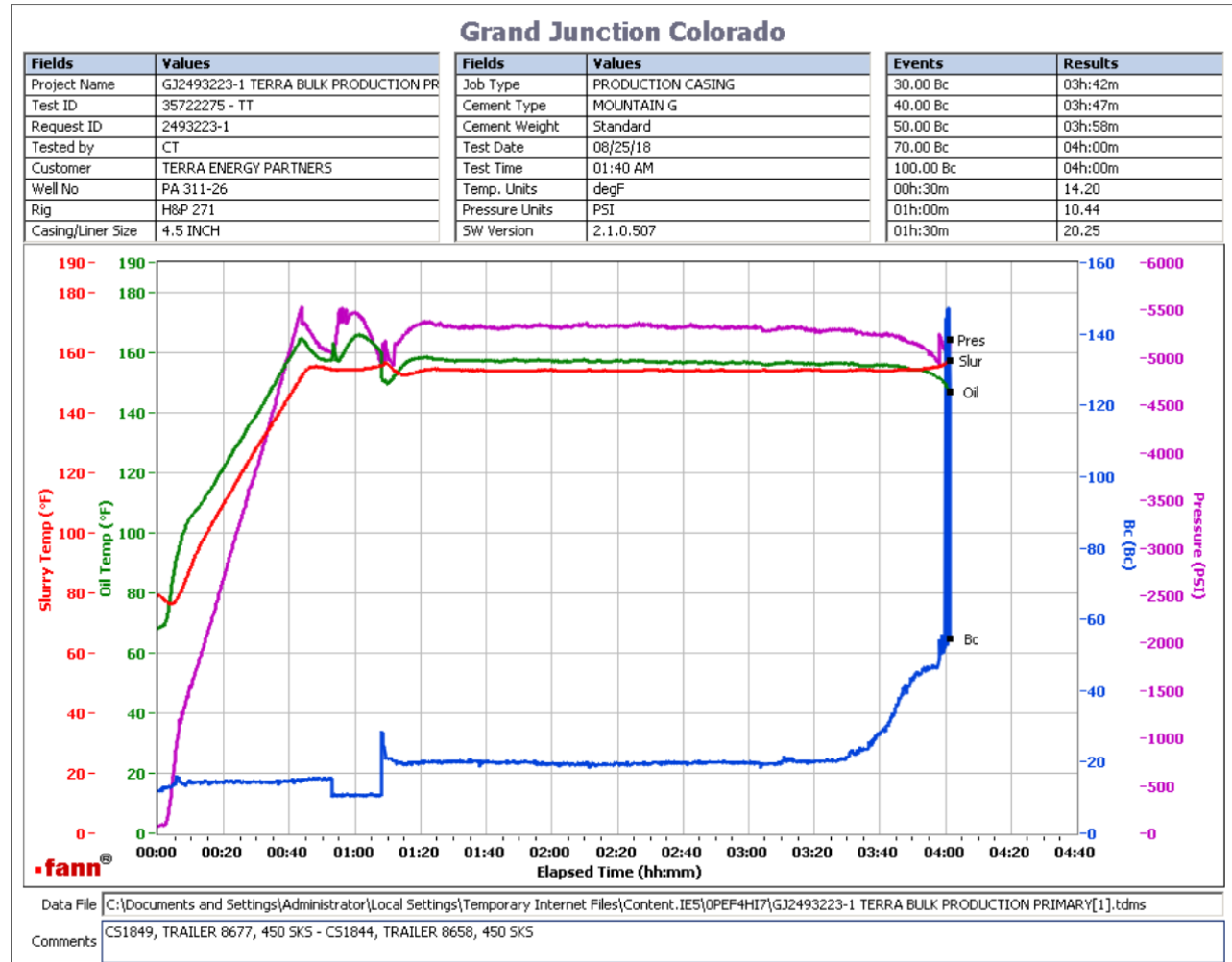
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		Expandacem Primary				Slurry Density	14.5	lbm/gal
						Slurry Yield	1.32	ft3/sack
						Water Requirement	5.849	gal/sack
						Total Mix Fluid	5.849	gal/sack
						Water Source	Fresh Water	
						Water Chloride	N/A	

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Thickening Time - ON-OFF-ON

24/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)
154	5226	43	3:42	3:58	4:00	4:00	12	54	15	35



total sks=1955

CS1849, Trailer 8677, 450 sks

CS1844, Trailer 8658, 450 sks

Deflection: 15 - 35 to 24 after one minute

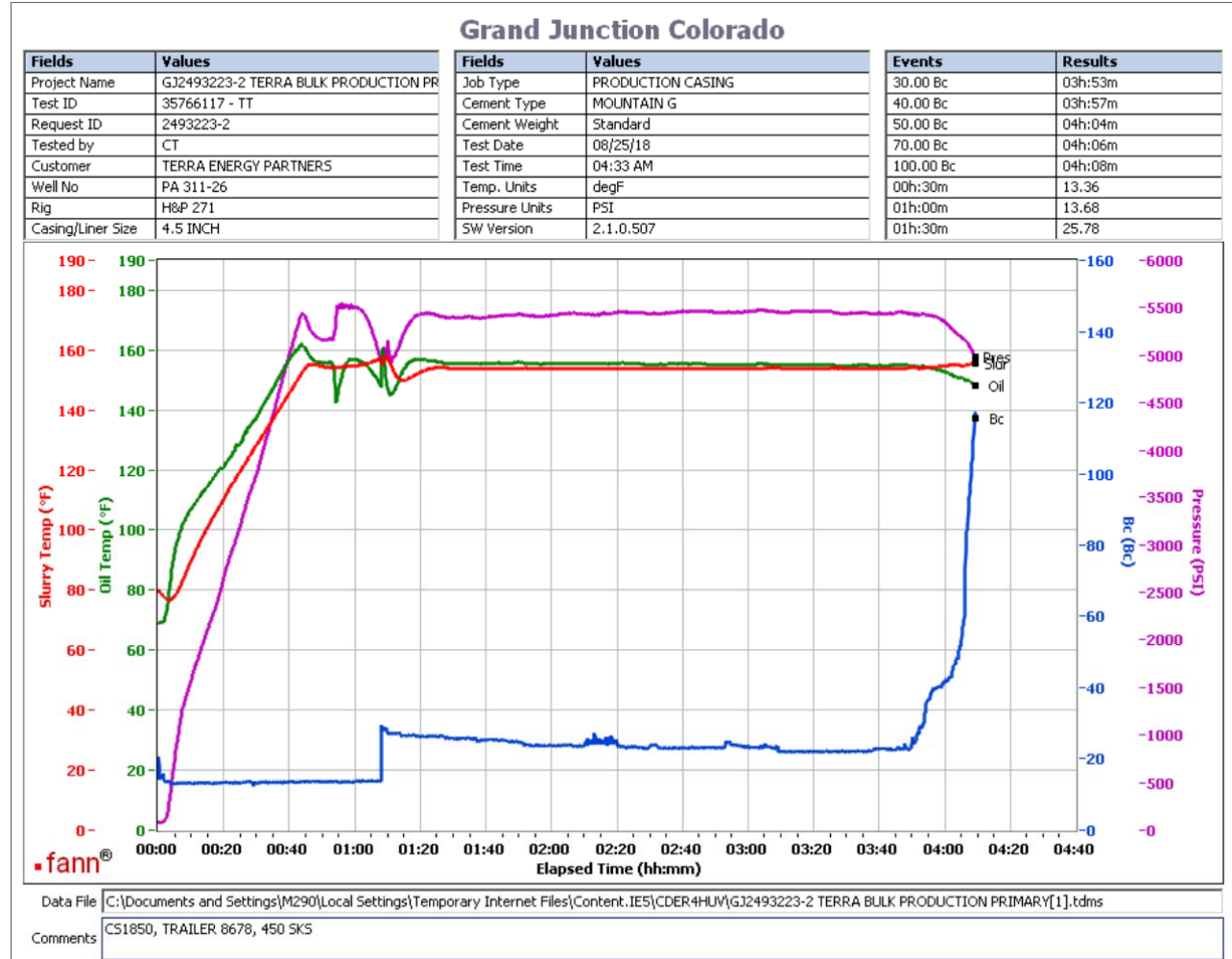
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Operation Test Results Request ID 2493223/2

Thickening Time - ON-OFF-ON

25/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)
154	5226	43	3:53	4:04	4:06	4:08	15	53	15	29



total sks=1955

CS1850, Trailer 8678, 450 sks

Deflection: 14 - 29 to 28 after one mi nute

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Operation Test Results Request ID 2493223/3

Thickening Time - ON-OFF-ON

25/AUG/2018

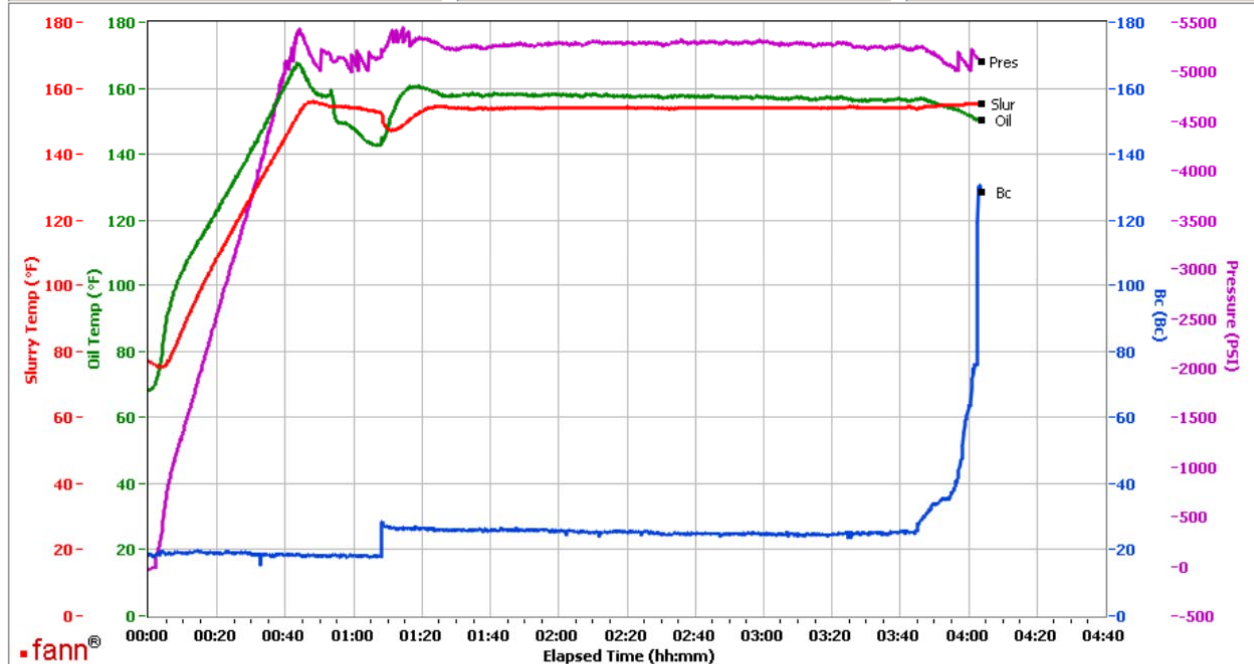
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:min)	50 Bc (hh:min)	70 Bc (hh:min)	100 Bc (hh:min)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
154	5226	43	3:46	3:58	4:01	4:02	19	54	15	29

Grand Junction, Colorado

Fields	Values
Project Name	GJ2493223-3 TERRA BULK PRODUCTION PR
Test ID	35767239 - TT
Request ID	2493223-3
Tested by	CT
Customer	TERRA ENERGY PARTNERS
Well No	PA 311-26
Rig	H&P 271
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	08/25/18
Test Time	05:30 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	03h:46m
40.00 Bc	03h:56m
50.00 Bc	03h:58m
70.00 Bc	04h:01m
100.00 Bc	04h:02m
00h:30m	18.80
01h:00m	18.51
01h:30m	25.82



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\SPUJOLQV\GJ2493223-3 TERRA BULK PRODUCTION PRIMARY[1].tdms

Comments CS1853, TRAILER 2878, 450 SKS - CS1856, TRAILER 8321, 156 SKS

total sks=1955

CS1853, Trailer 2878, 450 sks

CS1856, Trailer 8321, 156 sks

Deflection: 18 - 29 to 28 after one minute

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