

# HALLIBURTON

iCem<sup>®</sup> Service

## **TERRA ENERGY PARTNERS**

United States of America, COLORADO

### **For: Terra**

Date: Tuesday, July 10, 2018

### **PA 422-26 Production PJR**

API# 05-045-23716-00

Sincerely,

**Grand Junction Cement Engineering**

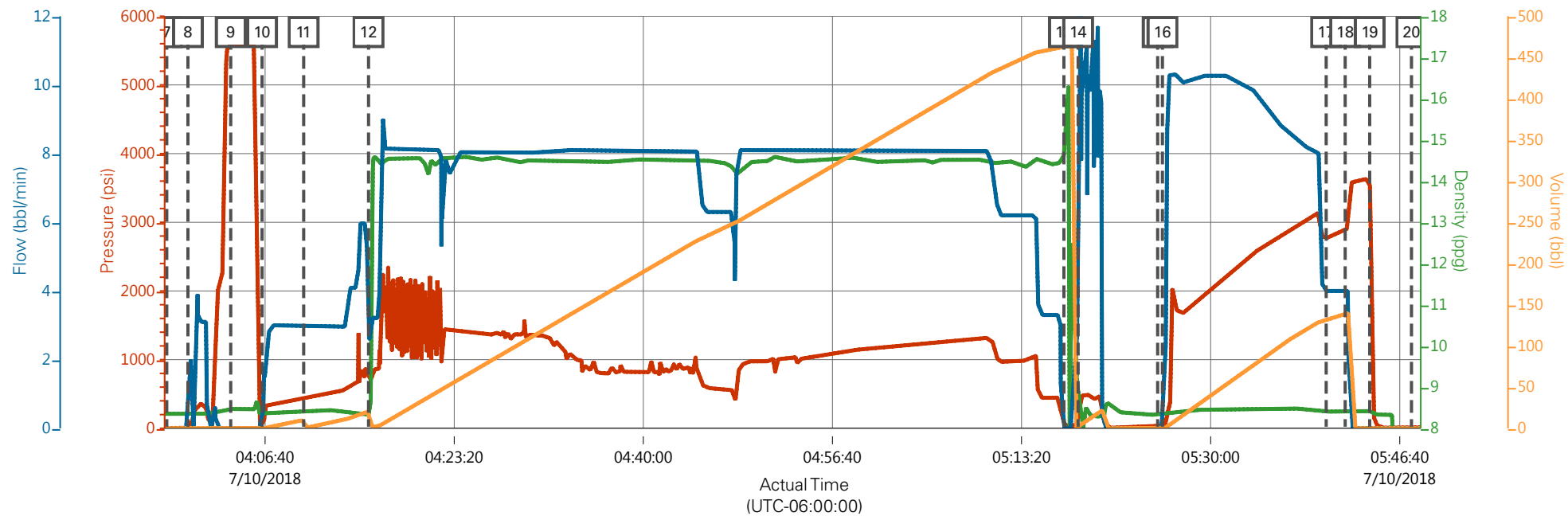
## 2.0 Real-Time Job Summary

## 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	7/9/2018	21:00:00	USER					
Event	2	Pre-Convoy Safety Meeting	7/9/2018	22:45:00	USER					JOURNEY MANAGEMENT COMPLETE, AS WELL AS JSA
Event	3	Crew Leave Yard	7/9/2018	23:00:00	USER					
Event	4	Arrive At Loc	7/10/2018	00:15:00	USER					JOURNEY MANAGEMENT CLOSED OUT.
Event	5	Assessment Of Location Safety Meeting	7/10/2018	00:30:00	USER					
Event	6	Other	7/10/2018	00:44:08	USER					WATER TEST: PH-6.8, TEMP-64, CL-0 TP-8573.57, TD-8580, S.J.-32.22, HOLE- 8 3/4, MUD#-12.5, 9 5/8 SET @ 1124
Event	7	Pre-Rig Up Safety Meeting	7/10/2018	01:00:00	USER					JSA COMPLETE
Event	8	Rig-Up Equipment	7/10/2018	01:30:00	USER					
Event	9	Pre-Job Safety Meeting	7/10/2018	03:30:00	USER					JSA COMPLETE
Event	10	Start Job	7/10/2018	03:58:00	COM5					
Event	11	Prime Pumps	7/10/2018	03:59:52	COM5	8.33	0.00	2.00	0.00	FRESH WATER
Event	12	Test Lines	7/10/2018	04:03:38	COM5	8.33	0.00	5617.00	0.00	5617 PSI
Event	13	Pump Spacer 1	7/10/2018	04:06:24	COM5	8.33	3.00	420	10.0	FRESH WATER
Event	14	Pump Spacer 2	7/10/2018	04:10:04	COM5	8.40	3.00	560	20.00	MUD FLUSH

Event	15	Pump Cement	7/10/2018	04:15:47	COM5	14.5	8.00	1320	414.0	1760 SKS EXTENDACEM, 14.5 PPG, 1.32 FT3/SK, 5.85 GAL/SK
Event	16	Shutdown	7/10/2018	05:17:04	COM5					TO DROP TOP PLUG AND WASH UP PUMPS AND LINES
Event	17	Clean Lines	7/10/2018	05:18:19	COM5					BLEW AIR FROM FLOOR TO PIT, CLEANED UP PUMP AND LINES TO PIT
Event	18	Drop Top Plug	7/10/2018	05:25:20	COM5					AWAY, POSITIVE DISPLACEMENT
Event	19	Pump Displacement	7/10/2018	05:25:45	COM5	8.33	9.00	3140.0	132.4	KCL WATER WITH 1 GAL MMCR, 3 BAGS BE-6
Event	20	Slow Rate	7/10/2018	05:40:11	COM5	8.33	4.00	2800	122.30	TO BUMP PLUG
Event	21	Bump Plug	7/10/2018	05:41:51	COM5	8.33	4.00	2910.0	132.4	PLUG BUMPED
Event	22	Check Floats	7/10/2018	05:44:01	COM5			3625.00		FLOATS HELD, 1.5 BBLS BACK TO TRUCK
Event	23	End Job	7/10/2018	05:47:42	COM5					GOOD RETURNS THROUGHOUT JOB, PIPE WORKED 5-10 FT. THROUGHOUT CMT AND SPACER, PARKED ON DISPLACEMENT
Event	24	Post-Job Safety Meeting (Pre Rig-Down)	7/10/2018	05:55:00	USER					JSA COMPLETE
Event	25	Crew Leave Location	7/10/2018	07:00:00	USER					THANK YOU FOR USING HALLIBURTON CEMENT, JAMES LEIST AND CREW

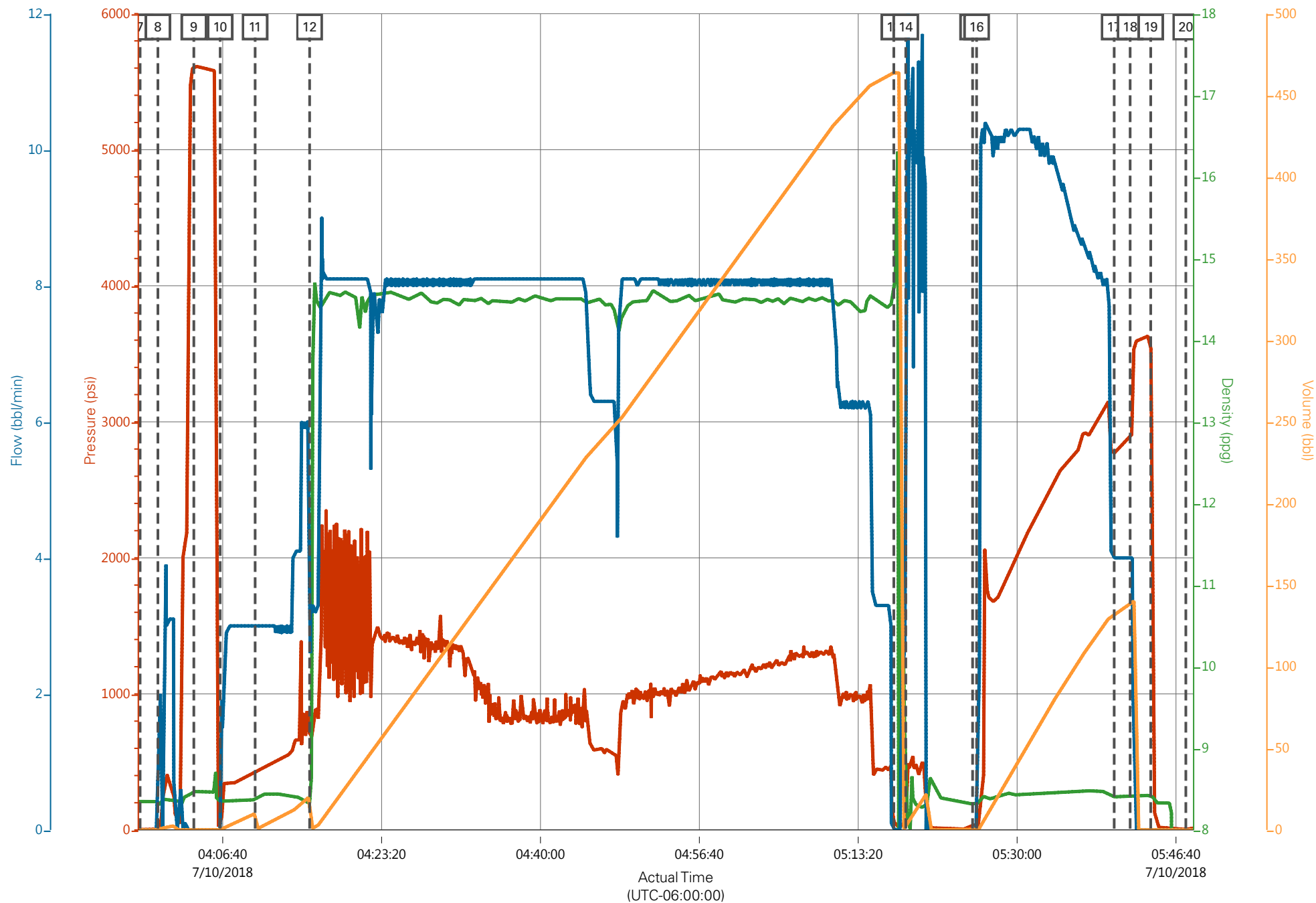
# TEP PA 422-36 Production



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

Description	Actual Time (UTC-06:00:00)	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)
7 Start Job	03:58:00	2.00	8.35	0.00	0.00
8 Prime Pumps	03:59:52	2.00	8.35	0.00	0.00
9 Test Lines	04:03:38	5616.00	8.47	0.00	0.00
10 Pump Spacer 1	04:06:24	27.00	8.35	0.00	0.00
11 Pump Spacer 2	04:10:04	421.00	8.37	3.00	10.10
12 Pump Cement	04:15:47	710.00	8.32	4.00	20.40
13 Shutdown	05:17:04	59.00	14.64	0.00	463.70
14 Clean Lines	05:18:19	152.00	8.75	6.40	1.30
15 Drop Top Plug	05:25:20	55.00	8.33	0.00	0.00
16 Pump Displacement	05:25:45	16.00	8.33	0.00	0.00
17 Slow Rate	05:40:11	2768.00	8.41	4.00	132.20
18 Bump Plug	05:41:51	2890.00	8.40	4.00	139.00
19 Check Floats	05:44:01	3605.00	8.43	0.00	0.00
20 End Job	05:47:42	4.00	-0.02	0.00	0.00

## TEP PA 422-36 Production



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

Request/Slurry	2484836/2	Rig Name	H&P 271	Date	30/JUN/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	PA 422-26

## Well Information

Casing/Liner Size	4.5 in	Depth MD	8586 ft	BHST	108°C / 226°F
Hole Size	8.75 in	Depth TVD	8199 ft	BHCT	69°C / 156°F
Pressure	5310 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		
		ExpandaCem				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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# Operation Test Results Request ID 2484836/2

## Thickening Time - ON-OFF-ON

07/JUL/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)
156	5310	44	4:01	4:07	4:11	4:13	18	54	15	25

total sks=1760

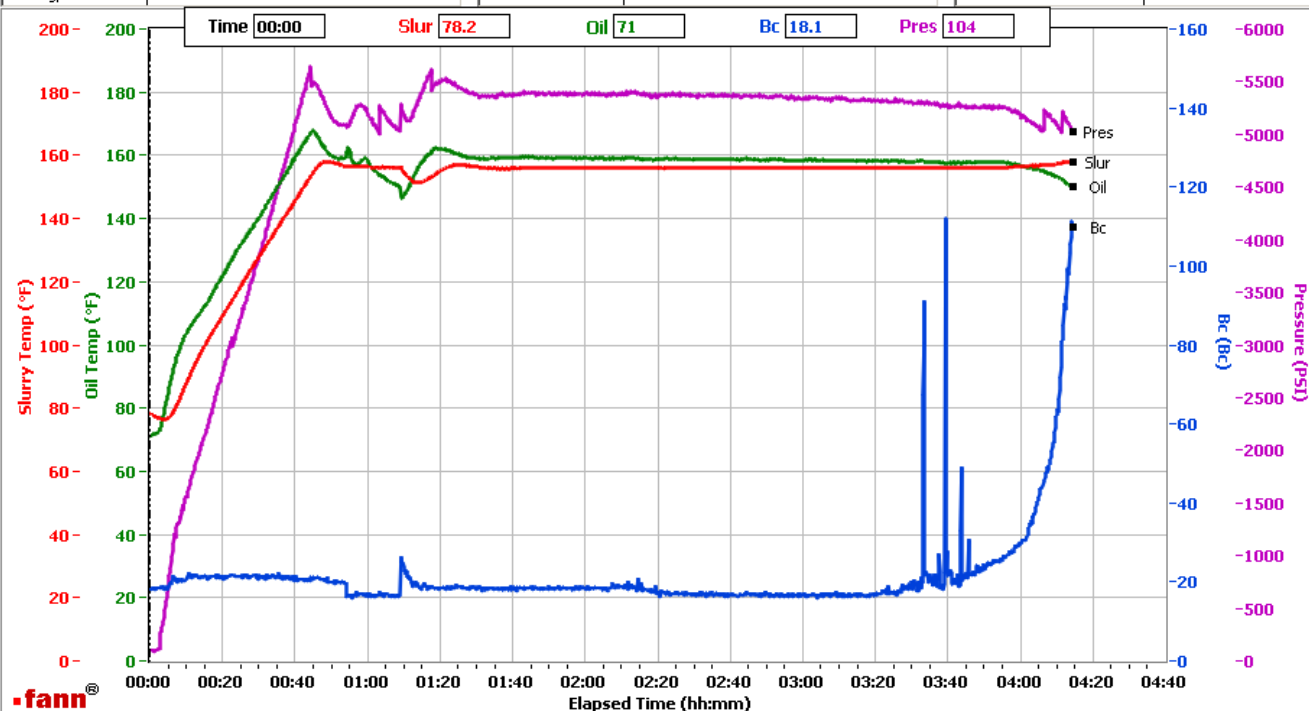
CS1451, Trailer 2878, 400 sks

CS1452, Trailer 8677, 400 sks

Deflection: 16 - 25

## Grand Junction Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2484836-2 TERRA BULK PRODUCTION PR	Job Type	PRODUCTION CASING	30.00 Bc	04h:01m
Test ID	35641261 - TT	Cement Type	MOUNTAIN G	40.00 Bc	04h:04m
Request ID	2484836-2	Cement Weight	Standard	50.00 Bc	04h:07m
Tested by	CT	Test Date	07/07/18	70.00 Bc	04h:11m
Customer	TERRA ENERGY PARTNERS	Test Time	08:34 PM	100.00 Bc	04h:13m
Well No	PA 442-26	Temp. Units	degF	00h:30m	20.95
Rig	H&P 271	Pressure Units	PSI	01h:00m	16.27
Casing/Liner Size	4.5 INCH	SW Version	2.1.0.507	01h:30m	18.09



Data File C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files\Content.IE5\O3KLGZVR\GJ2484836-2 TERRA BULK PRODUCTION PRIMARY[1].tdms

Comments CS1451, TRAILER 2878, 400 SKS - CS1452, TRAILER 8677, 400 SKS

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# Operation Test Results Request ID 2484836/1

## Thickening Time - ON-OFF-ON

07/JUL/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)
156	5310	44	3:41	3:50	3:56	3:57	8	54	15	30

total sks= 1760

CS1445, Trailer 8476, 400 sks

CS1444, Trailer 1513, 400 sks

CS1450, Trailer 6813 - Front Pod, 160 sks

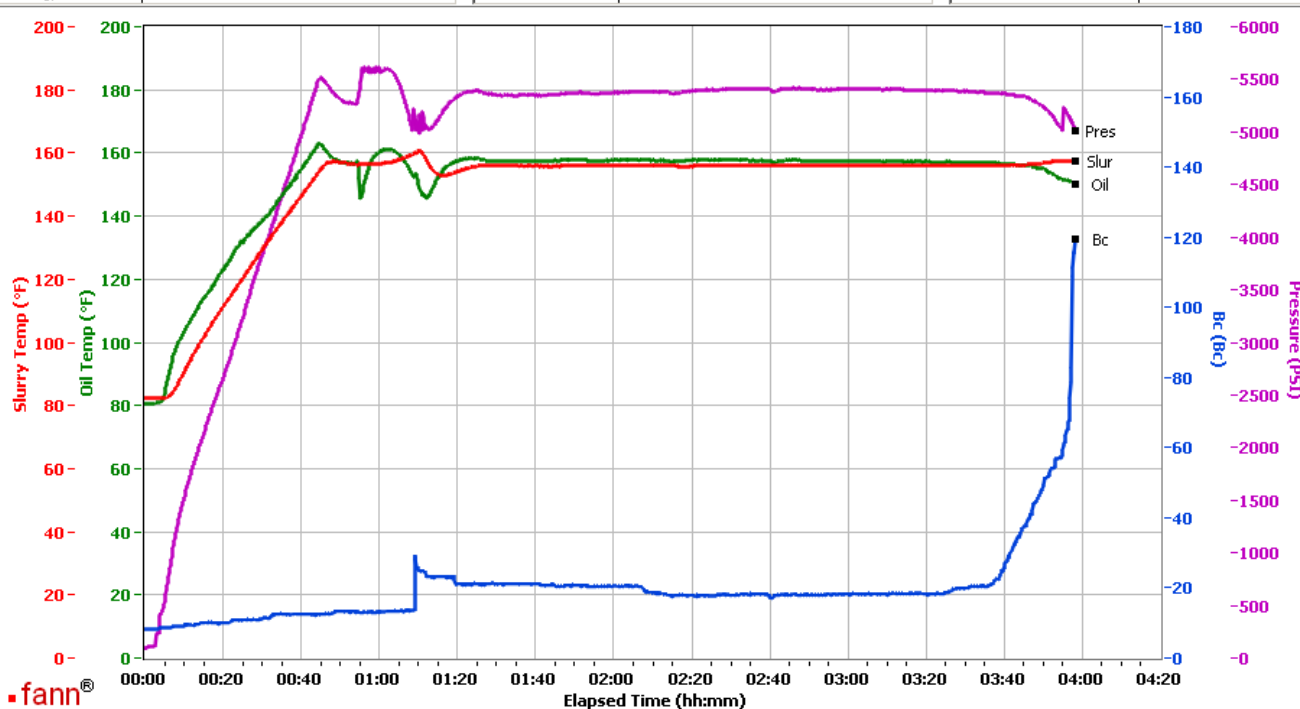
Deflection: 12 – 30

## Grand Junction Colorado

Fields	Values
Project Name	GJ2484836-1 TERRA PRODUCTION BULK PR
Test ID	35622585
Request ID	2484836-1
Tested by	JASON
Customer	TERRA
Well No	PA 442-26
Rig	H&P 271
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	07/07/18
Test Time	02:38 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	03h:41m
40.00 Bc	03h:46m
50.00 Bc	03h:50m
70.00 Bc	03h:56m
100.00 Bc	03h:57m
00h:30m	11.07
01h:00m	13.47
01h:30m	21.29



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\CDER4HUV\GJ2484836-1 TERRA PRODUCTION BULK PRIMARY[1].tdms

Comments CS1444 TR 1513 400 SKS - CS1445 TR 8476 400 SKS CS1450, TRAILER 6813 - FRONT POD, 160 SKS

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