

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

United States of America, COLORADO

For: Terra

Date: Monday, August 20, 2018

PA 334-26 Production PJR

API# 05-045-23705-00

Sincerely,

Grand Junction Cement Engineering

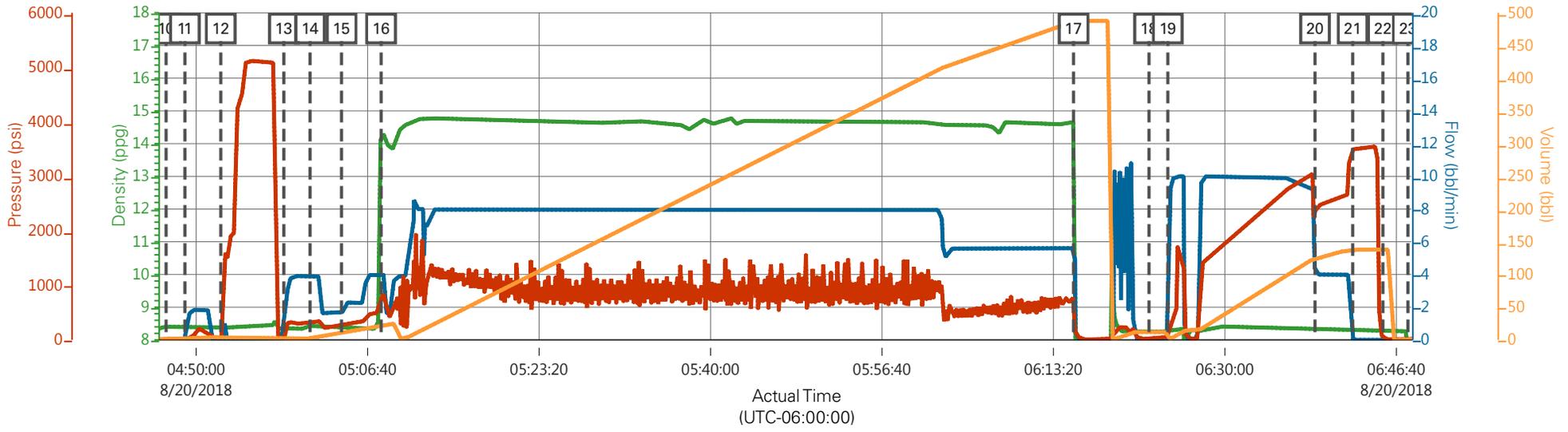
1.0 Real-Time Job Summary

1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	8/19/2018	17:30:00						Requested on Location @ 00:00
Event	2	Pre-Convoy Safety Meeting	8/19/2018	21:00:00						
Event	3	Crew Leave Yard	8/19/2018	21:10:00						1 Elite, 1 660's, 1 pickup
Event	4	Arrive At Loc	8/19/2018	23:59:00						Rig running casing
Event	5	Assessment Of Location Safety Meeting	8/20/2018	00:10:00						JSA completed - Customer offered/received SDS - water test pH 7.0, Cl <200, temp 83 degrees
Event	6	Pre-Rig Up Safety Meeting	8/20/2018	00:20:00						
Event	7	Rig-Up Equipment	8/20/2018	00:30:00						DME iron to ground manifold, standpipe, hardline to pit. Water hoses to both uprights, bulk hoses to Silo and 660.
Event	8	Other	8/20/2018	00:40:00						Rig Circulated 2 hrs prior to cement job at 430 gpm 1200 psi. Mud scales calibrated to drinking water prior to job.
Event	9	Pre-Job Safety Meeting	8/20/2018	03:00:00						All HES personnel, rig crew, and company rep.
Event	10	Start Job	8/20/2018	04:47:05						TD 8484', TP 8476.87', SJ 32.51', OH 8.75'', Csg 4.5'' 11.6 lb/ft P-110, Mud 11.0 ppg.
Event	11	Fill Lines	8/20/2018	04:48:55		8.33	2	260	5	Fresh Water
Event	12	Test Lines	8/20/2018	04:52:24				5112		Held pressure 2 minutes

Event	13	Pump Spacer	8/20/2018	04:58:31	8.33	4	300	5	Fresh Water
Event	14	Pump Spacer	8/20/2018	05:01:04	8.4	4	490	20	80 lbs. Mud Flush III
Event	15	Check Weight	8/20/2018	05:04:08					Density verified via mud cup
Event	16	Pump Tail Cement	8/20/2018	05:07:59	14.5	8	1900	431.4	1835 sks, 14.5 ppg, 1.32 Yield, 5.85 gal/sk
Event	17	Shutdown	8/20/2018	06:15:17					Wash lines to pit
Event	18	Drop Top Plug	8/20/2018	06:22:38					Co-Rep Verify Plug Launched
Event	19	Pump Displacement	8/20/2018	06:24:28	8.4	10	3032	130.9	3 lbs BE-6, 1 gal MMCR, 2% KCl
Event	20	Slow Rate	8/20/2018	06:38:46	8.4	4	2650	120	Slow Rate 10 bbls to Calculated Displacement
Event	21	Bump Plug	8/20/2018	06:42:26			3548		Plug Bumped at 2650 psi, Brought up to 3548 psi
Event	22	Check Floats	8/20/2018	06:45:22					Floats held – 1.5 bbl back to the truck
Event	23	End Job	8/20/2018	06:47:48					Good returns throughout job. Pipe was reciprocated during job.
Event	24	Pre-Rig Down Safety Meeting	8/20/2018	06:55:52					No sugar, HES top plug used, 0 add hours
Event	25	Rig-Down Equipment	8/20/2018	06:59:06					
Event	26	Pre-Convoy Safety Meeting	8/20/2018	07:13:13					
Event	27	Crew Leave Location	8/20/2018	07:17:04					Thanks for using Halliburton Cement, Chris Martinez and crew.

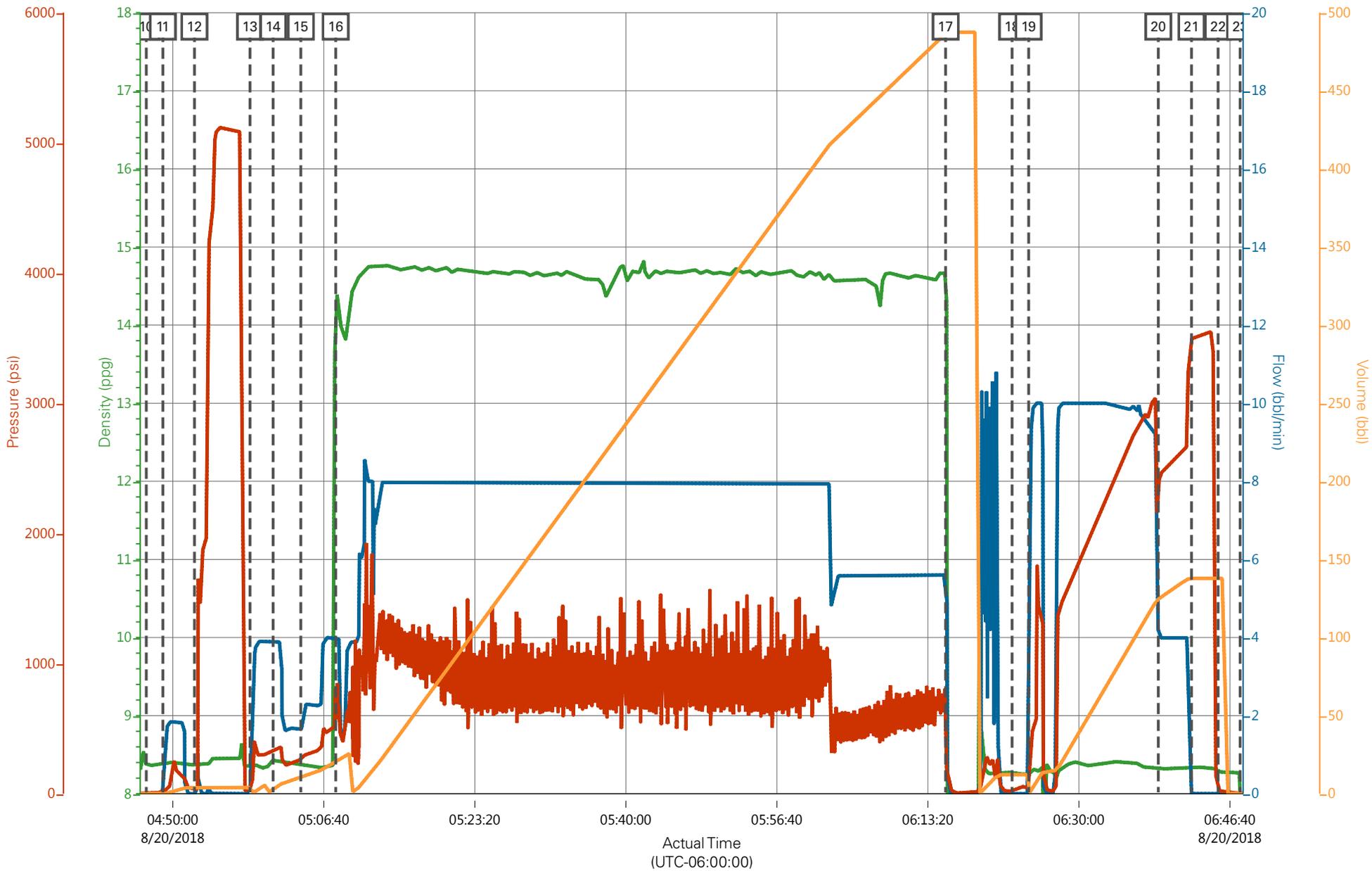
Terra, PA 334-26, 4 1/2" Production



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

Description	Actual Time (UTC-06:00:00)	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Pump Stg Tot (bbl)
10 Start Job	04:47:05	8.38	0.00	17.00	0.00
11 Fill Lines	04:48:55	8.37	0.00	21.00	0.00
12 Test Lines	04:52:24	8.37	0.00	35.00	3.90
13 Pump Spacer	04:58:31	8.35	0.00	43.00	4.00
14 Pump Spacer	05:01:04	8.43	3.90	327.00	2.90
15 Check Weight	05:04:08	8.40	1.70	259.00	10.10
16 Pump Tail Cement	05:07:59	14.31	4.00	720.00	21.30
17 Shutdown	06:15:17	14.66	5.60	710.00	486.60
18 Drop Top Plug	06:22:38	8.27	0.00	20.00	12.20
19 Pump Displacement	06:24:28	8.26	1.80	52.00	0.10
20 Slow Rate	06:38:46	8.33	3.90	2346.00	124.70
21 Bump Plug	06:42:26	8.34	0.00	3510.00	137.90
22 Check Floats	06:45:22	8.27	0.00	36.00	137.90
23 End Job	06:47:48	8.24	0.00	3.00	0.00

Terra, PA 334-26, 4 1/2" Production



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

Job Information

Request/Slurry	2494173/2	Rig Name	H&P 271	Date	12/AUG/2018
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	PA 334-26

Well Information

Casing/Liner Size	4.5 in	Depth MD	8500 ft	BHST	105°C / 221°F
Hole Size	8.75 in	Depth TVD	8271 ft	BHCT	66°C / 151°F
Pressure	5090 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>	<u>Cement Properties</u>		
		ExpandaCem				Slurry Density	14.5	lbm/gal
						Slurry Yield	1.32	ft ³ /sack
						Water Requirement	5.849	gal/sack
						Total Mix Fluid	5.849	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Operation Test Results Request ID 2494173/2

Thickening Time - ON-OFF-ON

18/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)
151	5090	42	4:02	4:11	4:13	4:16	18	52	15	19

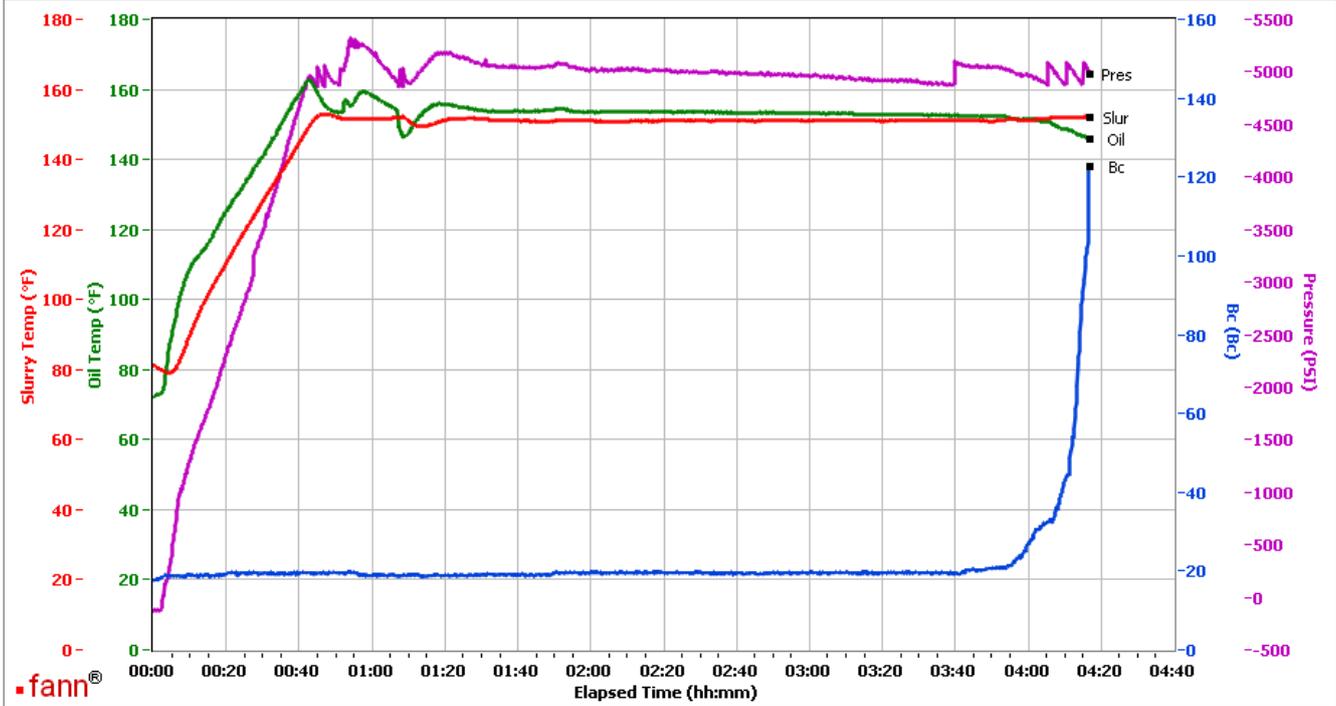
total sks=1835
 CS1805, Trailer 4053, 135 sks
 CS1806, Trailer 8677, 425 sks
 Deflection: 19 - 19

Grand Junction Colorado

Fields	Values
Project Name	GJ2494173-2 TERRA BULK PRODUCTION PR
Test ID	35749072 - TT
Request ID	2494173-2
Tested by	CT
Customer	TERRA ENERGY PARTNERS
Well No	PA 334-26
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	08/17/18
Test Time	05:31 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	04h:02m
40.00 Bc	04h:09m
50.00 Bc	04h:11m
70.00 Bc	04h:13m
100.00 Bc	04h:16m
00h:30m	19.54
01h:00m	19.17
01h:30m	18.98



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\CDER4HUV\GJ2494173-2 TERRA BULK PRODUCTION PRIMARY[1].tdms
 Comments CS1805, TRAILER 4053, 135 SKS - CS1806, TRAILER 8677, 425 SKS

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Operation Test Results Request ID 2494173/1

Thickening Time - ON-OFF-ON

16/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)
151	5090	42	4:31	4:38	4:39	4:42	13	52	15	25

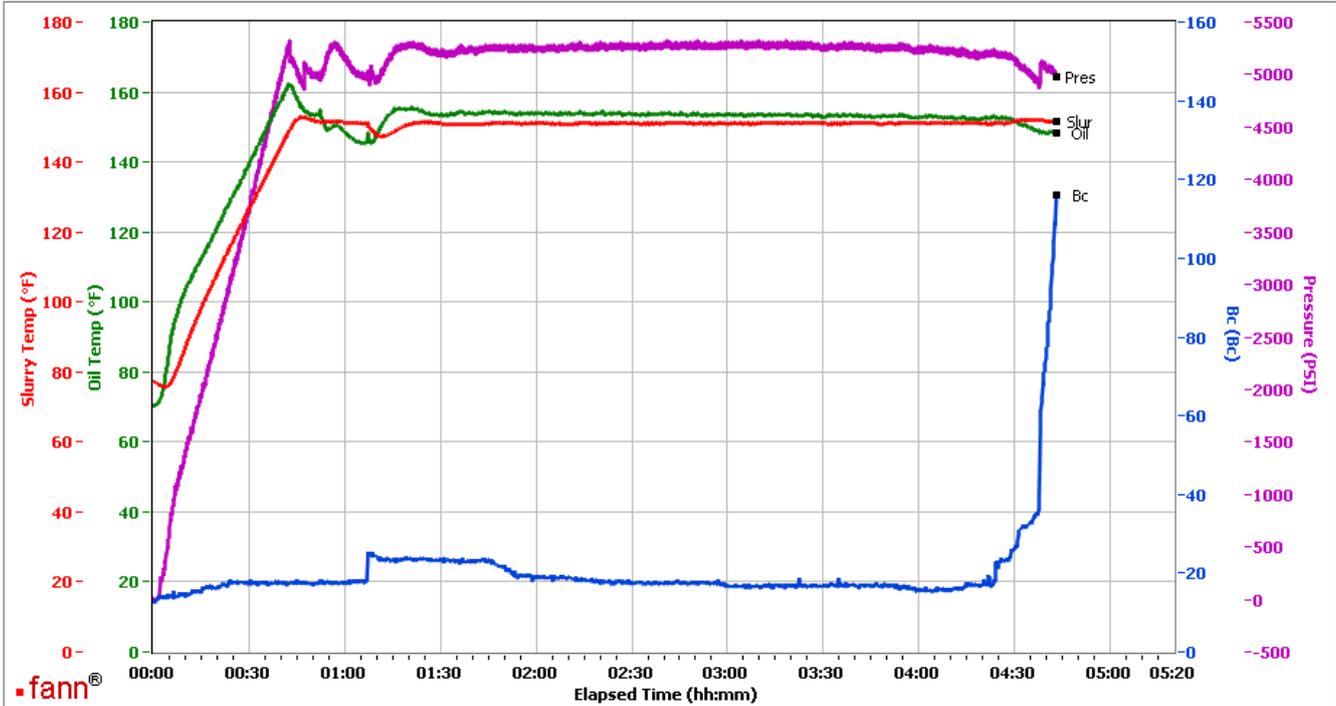
total sks=1830
 CS1787, Trailer 2878, 425 sks
 CS1788, Trailer 1513, 425 sks
 CS1792, Trailer 8476, 425 sks
 Deflected 18--> 25

Grand Junction, Colorado

Fields	Values
Project Name	GJ2494173-1 TERRA PRODUCTION BULK PR
Test ID	35733845
Request ID	2494173-1
Tested by	JASON
Customer	TERRA ENERGY
Well No	PA 334-26
Rig	H&P 271
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	08/16/18
Test Time	04:38 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	04h:31m
40.00 Bc	04h:38m
50.00 Bc	04h:38m
70.00 Bc	04h:39m
100.00 Bc	04h:42m
00h:30m	17.85
01h:00m	17.83
01h:30m	23.43



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\SPUJOLQV\GJ2494173-1 TERRA PRODUCTION BULK PRIMARY[1].tdms
 Comments CS1787 TR 2878 425 SKS - CS1788 TR 1513 425 SKS - CS1792, TRAILER 8476, 425 SKS

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