

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

United States of America, COLORADO

Date: Saturday, May 19, 2018

PA 321-26

API # 05-045-23708

Terra PA 321-26 Production

Job Date: Sunday, May 13, 2018

Sincerely,

Grand Junction Cement Engineering

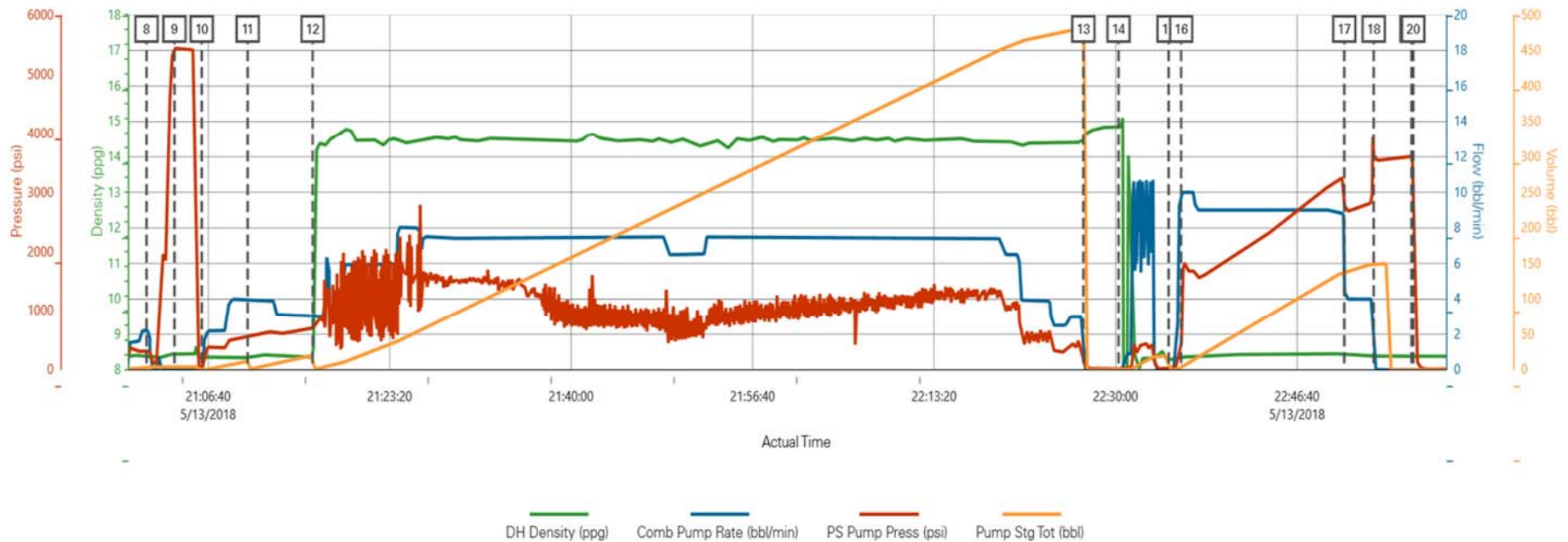
1.0 Real-Time Job Summary

1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	5/13/2018	10:30:00	USER					
Event	2	Pre-Convoy Safety Meeting	5/13/2018	13:00:00	USER					JSA COMPLETE
Event	3	Arrive At Loc	5/13/2018	14:30:00	USER					RIG RUNNING CASING
Event	4	Assessment Of Location Safety Meeting	5/13/2018	17:00:00	USER					
Event	5	Safety Meeting - Pre Rig-Up	5/13/2018	17:30:00	USER					JSA COMPLETE
Event	6	Comment	5/13/2018	18:00:00	USER					WATER TEST PH-6.8, TEMP-65, CL-0 TP- 9221.5, TD-9228, S.J.-31.6, OH-8 3/4, MUD#-12.5, 9 5/8 36#@1124
Event	7	Safety Meeting - Pre Job	5/13/2018	19:30:00	USER					JSA COMPLETE
Event	8	Start Job	5/13/2018	21:01:00	COM5					
Event	9	Test Lines	5/13/2018	21:03:34	COM5	8.33	0.00	5496.0	4.10	5496 PSI
Event	10	Pump Spacer 1	5/13/2018	21:06:04	COM5	8.33	4.00	550.00	10.00	FRESH WATER
Event	11	Pump Spacer 2	5/13/2018	21:10:17	COM5	8.34	4.00	558.00	20.00	MUD FLUSH
Event	12	Pump Cement	5/13/2018	21:16:15	COM5	14.50	7.5	1100	433.7	1845 SKS EXPANDACEM, 14.5 PPG, 1.32 FT3/SK, 5.85 GAL/SK
Event	13	Shutdown	5/13/2018	22:27:02	COM5					TO WASH UP PUMPS AND LINES
Event	14	Clean Lines	5/13/2018	22:30:16	COM5					TO PIT FROM FLOOR USING AIR, PUMP TO PIT

Event	15	Drop Top Plug	5/13/2018	22:34:52	COM5					AWAY
Event	16	Pump Displacement	5/13/2018	22:36:01	COM5	8.40	10.00	3230.0	142.4	KCL WATER WITH 3 BAGS BE-6, 1 GAL MMCR
Event	17	SLOW RATE	5/13/2018	22:51:00	COM5	8.40	4.00	2780.0	132.4	TO BUMP PLUG
Event	18	Bump Plug	5/13/2018	22:53:42	COM5	8.40	0.00	3599.00	142.4	PLUG BUMPED
Event	19	Other	5/13/2018	22:57:10	COM5					FLOATS HELD, 1 3/4 BBLS BACK TO TRUCK
Event	20	End Job	5/13/2018	22:57:20	USER					GOOD CIRCULATION THROUGH OUT JOB, PIPE WORKED 5-8 FT.
Event	21	Post-Job Safety Meeting (Pre Rig-Down)	5/13/2018	23:10:00	USER					
Event	22	Pre-Convoy Safety Meeting	5/14/2018	00:45:00	USER					JSA COMPLETE
Event	23	Crew Leave Location	5/14/2018	01:00:00	USER					THANK YOU FOR USING HALLIBURTON CEMENT, JAMES LEIST AND CREW

TEP - FEDERAL PA 321-26 - 4.5 PRODUCTION CASING



Job Information

Request/Slurry	2471660/3	Rig Name	H&P 271	Date	01/MAY/2018
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	PA 321-26

Well Information

Casing/Liner Size	4.5 in	Depth MD	9236 ft	BHST	107°C / 224°F
Hole Size	8.75 in	Depth TVD	8456 ft	BHCT	68°C / 154°F
Pressure	5219 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	5.849	gal/sack
						Total Mix Fluid	5.849	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Operation Test Results Request ID 2471660/3

Thickening Time - ON-OFF-ON

08/MAY/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)
154	5219	43	3:28	3:36	3:41	3:45	15	53	15	26

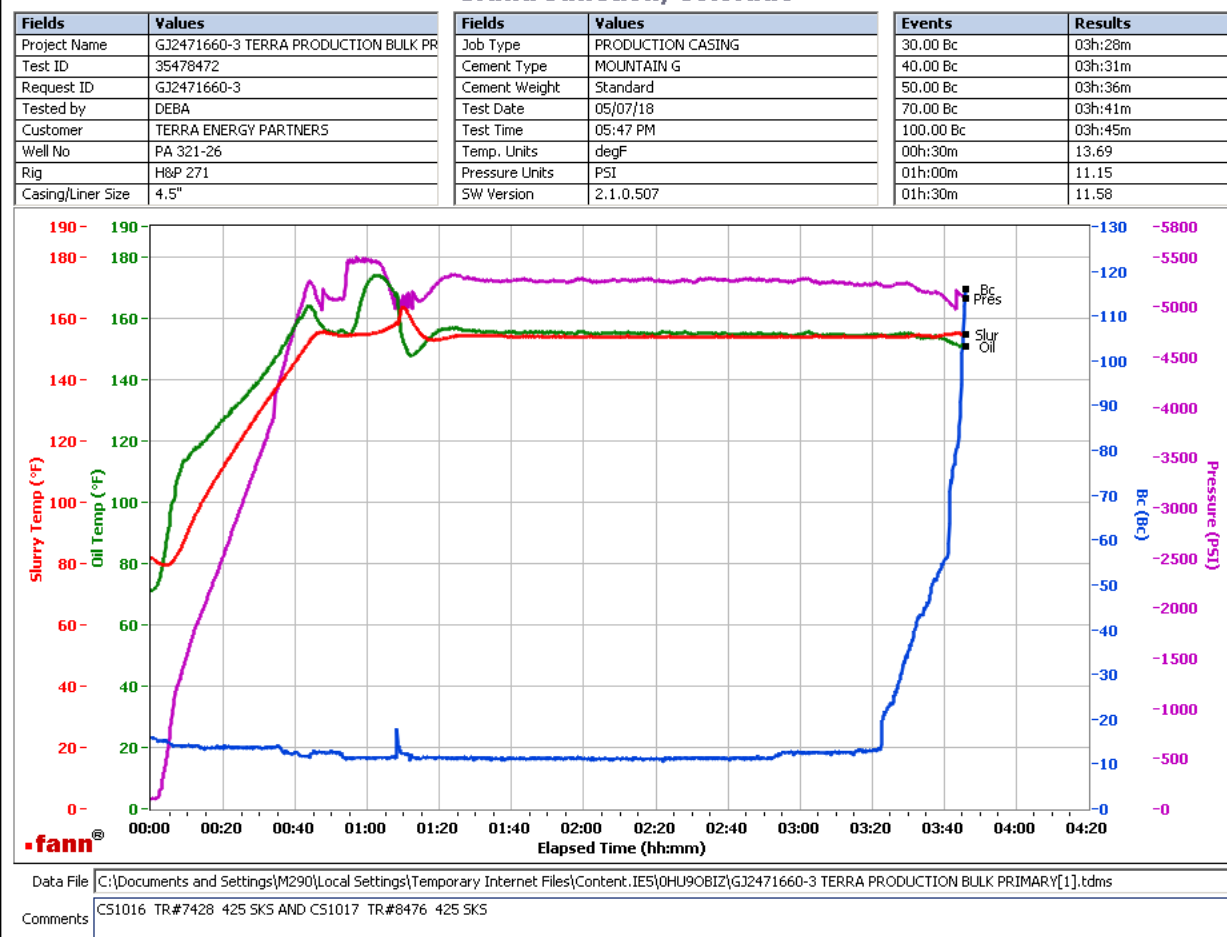
total sks=1845

CS1016 TR#7428 425 SKS

CS1017 TR#8486 425 SKS

deflected from 11Bc--- > 26Bc---11Bc within one minute

Grand Junction, Colorado



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Operation Test Results Request ID 2471660/2

Thickening Time - ON-OFF-ON

07/MAY/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)
154	5219	43	3:47	4:00	4:00	4:02	14	53	15	24

total sks=1845

Composite:

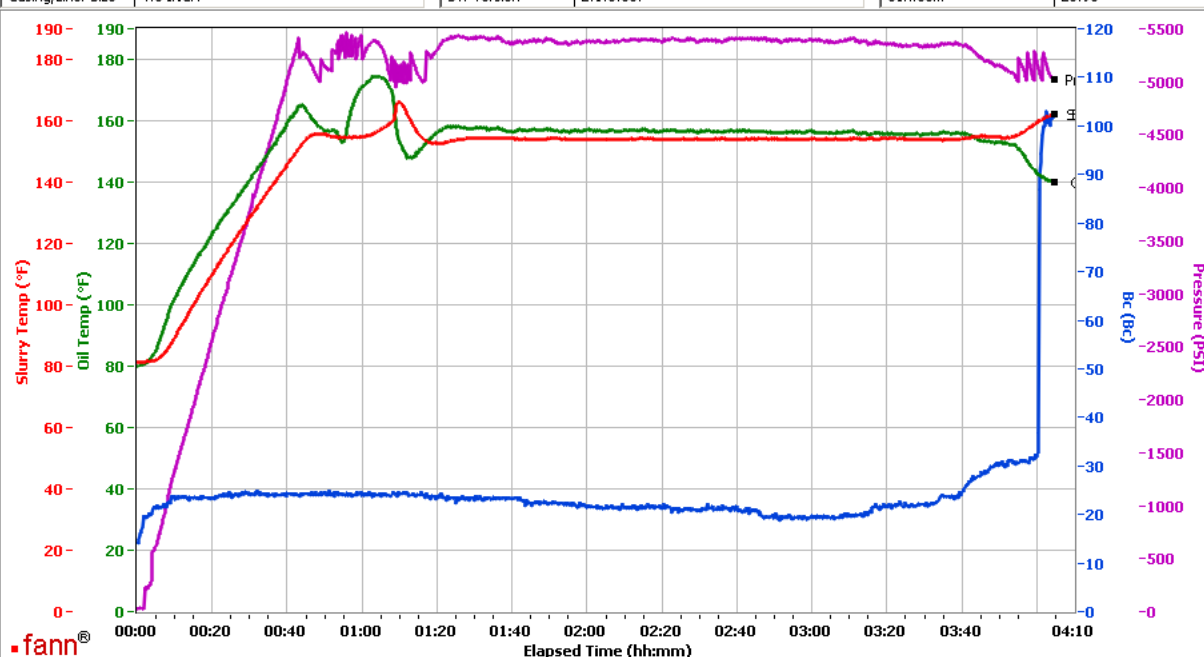
CS1014 TR 2878 425 SKS

CS1015 TR 1513 425 SKS

no deflection, 24Bc--- > 24Bc please note, heat of hydration at 3:51

Grand Junction, Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2471660-2 TERRA PRODUCTION BULK PR	Job Type	PRODUCTION	30.00 Bc	03h:47m
Test ID	35477597	Cement Type	MOUNTAIN G	40.00 Bc	04h:00m
Request ID	2471660-2	Cement Weight	Standard	50.00 Bc	04h:00m
Tested by	JASON	Test Date	05/07/18	70.00 Bc	04h:00m
Customer	TERRA ENERGY PARTNERS	Test Time	12:26 PM	100.00 Bc	04h:02m
Well No	PA 321-26	Temp. Units	degF	00h:30m	24.46
Rig	H&P 271	Pressure Units	PSI	01h:00m	24.03
Casing/Liner Size	4.5 INCH	SW Version	2.1.0.507	01h:30m	23.98



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\4TJ389YN\GJ2471660-2 TERRA PRODUCTION BULK PRIMARY[1].tdms

Comments CS1014 TR 2878 425 SKS CS1015 TR 1513 425 SKS

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Operation Test Results Request ID 2471660/1

Thickening Time - ON-OFF-ON

07/MAY/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	5219	43	4:02	4:19	4:22	4:22	20	53	15	28

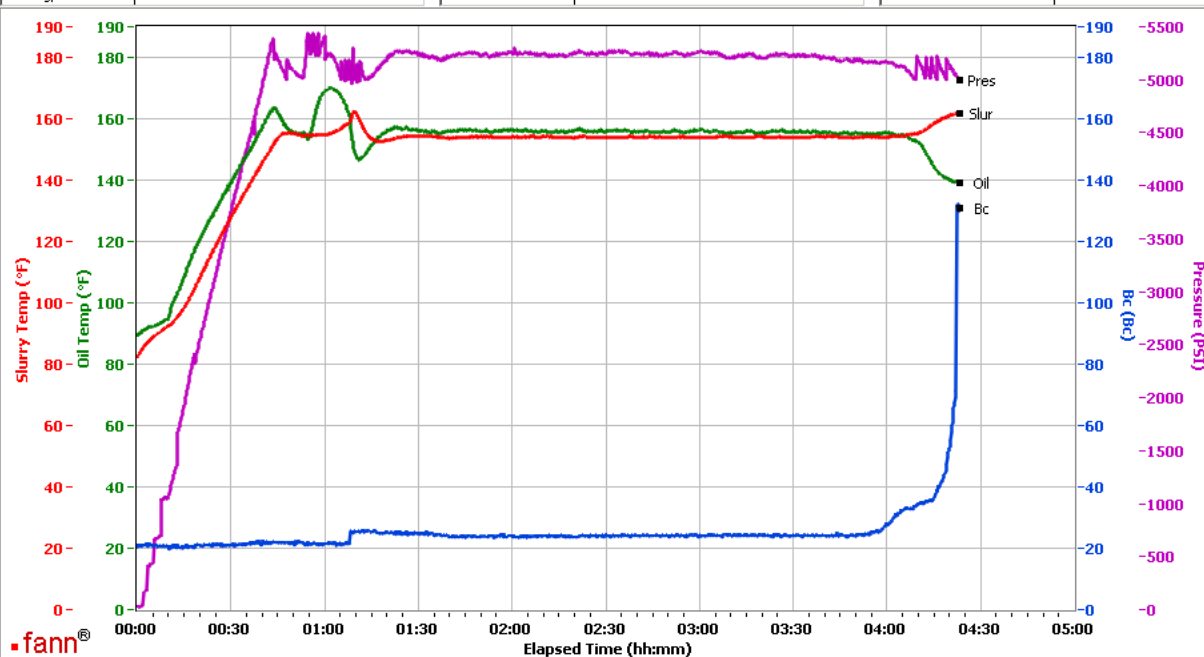
total sks=1845

CS1012 TR#8658 425SKS

Deflected 21-->28-->25 after 1 minute.

Grand Junction, Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2471660-1TERRA PRODUCTION BULK PRI	Job Type	PRODUCTION CASING	30.00 Bc	04h:02m
Test ID	35461477	Cement Type	MOUNTAIN G	40.00 Bc	04h:16m
Request ID	GJ2471660-1	Cement Weight	Standard	50.00 Bc	04h:19m
Tested by	DEBA	Test Date	05/07/18	70.00 Bc	04h:22m
Customer	TERRA ENERGY PARTNERS	Test Time	04:29 AM	100.00 Bc	04h:22m
Well No	PA 321-26	Temp. Units	degF	00h:30m	20.98
Rig	H8P271	Pressure Units	PSI	01h:00m	21.91
Casing/Liner Size	4.5"	SW Version	2.1.0.507	01h:30m	24.77



Data File C:\Documents and Settings\M290\Desktop\Test Data\GJ2471660-1TERRA PRODUCTION BULK PRIMARY .tdms

Comments CS1012 TR#8658 425 SKS

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