

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

For:

Date: Monday, May 21, 2018

PA 331-26 Production PJR

API #: 05-045-23717

Sincerely,

Grand Junction Cement Engineering

1.0 Real-Time Job Summary

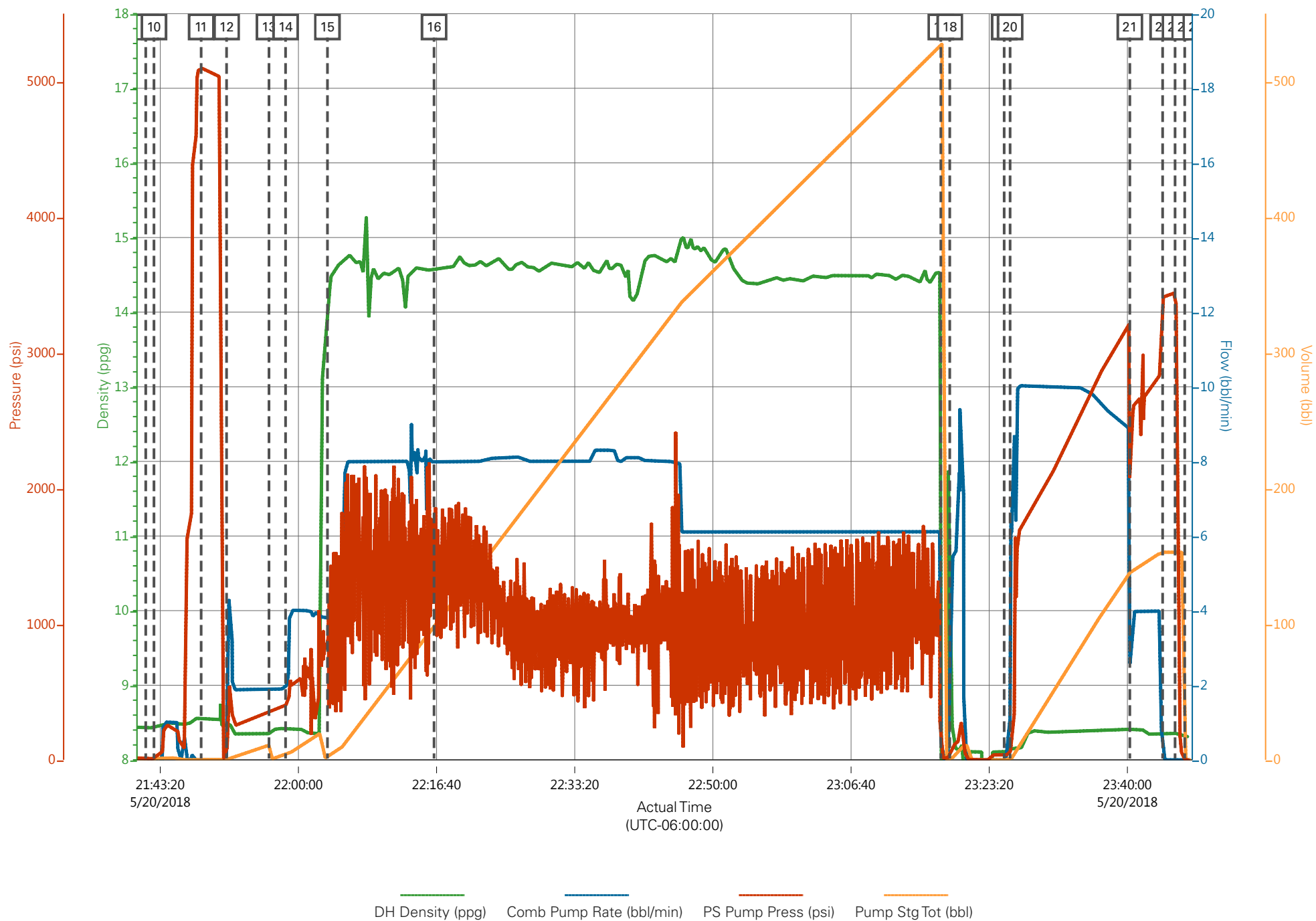
1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	5/20/2018	12:00:00	USER					REQUESTED ON LOCATION @ 1800
Event	2	Pre-Convoy Safety Meeting	5/20/2018	14:50:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	5/20/2018	15:00:00	USER					1 F550, 1 PUMP TRUCK & 1 660 BULK TURCK
Event	4	Arrive at Location from Service Center	5/20/2018	16:45:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	5/20/2018	17:00:00	USER					MET WITH COMP REP AND WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION AND COLLECTED WATER SAMPLE (PH- 7, CHLORIDES- 0, TEMP- 63F). COMP REP WAS OFFERED SDS FOR ALL CHEMICLES USED BY HES.
Event	6	Pre-Rig Up Safety Meeting	5/20/2018	18:00:00	USER					ALL HES PRESENT
Event	7	Rig-Up Completed	5/20/2018	19:00:00	USER					HES RIGGED UP EQUIPMENT WITHOUT ENTERING RED ZONE.
Event	8	Pre-Job Safety Meeting	5/20/2018	21:00:00	USER					ALL HES AND RIG CREW PRESENT
Event	9	Start Job	5/20/2018	21:41:35	COM6					TD 9322', TP 9314.2', SJ 28.54', OH 8.75", CSG 4.5" 11.6#, MUD 12.5 PPG.
Event	10	Prime Pumps	5/20/2018	21:42:35	USER	60.00	8.33	1.00	2.10	8.33 PPG FRESH WATER

Event	11	Test Lines	5/20/2018	21:48:16	COM6	5102.00	8.33	0.50	0.50	ALL LINES HELD PRESSURE AT 5102 PSI
Event	12	Pump Spacer 1	5/20/2018	21:51:20	USER	355.00	8.33	4.00	10.00	8.33 PPG FRESH WATER (10 BBL)
Event	13	Pump Spacer 2	5/20/2018	21:56:27	COM6	355.00	8.33	20.00	20.00	8.4 PPG MUDFLUSH III (20 BBL)
Event	14	Check Weight	5/20/2018	21:58:27	COM6					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	15	Pump Cement	5/20/2018	22:03:30	COM6	1218.00	14.50	8.00	463.00	EXPANDACEM CEMENT 1970 SKS (463 BBLS), 14.5 PPG, 1.32 FT3/SK, 5.85 GAL/SK
Event	16	Check Weight	5/20/2018	22:16:22	COM6					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	17	Shutdown	5/20/2018	23:17:30	USER					END OF CMT
Event	18	Clean Lines	5/20/2018	23:18:34	USER					WASH UP PUMPS AND LINES
Event	19	Drop Top Plug	5/20/2018	23:25:08	USER					PLUG WENT, VERIFIED BY CO REP
Event	20	Pump Displacement	5/20/2018	23:25:51	COM6	3204.00	8.33	10.0	133.90	8.34 PPG FRESH WATER (143.9 BBLS) 3 BAGS BE6, 1 GAL MMCR & 14 SKS KCL
Event	21	Slow Rate	5/20/2018	23:40:18	USER	2640.00	8.33	4.00	10.00	SLOW RATE TO 4 BPM PER CO REP TO LAND PLUG
Event	22	Bump Plug	5/20/2018	23:44:15	USER	2900.00	8.33	4.00	143.90	LAND PLUG AT 2900 PSI, BROUGHT UP TO 3412 PSI FOR A 10 MIN CSG TEST.
Event	23	Check Floats	5/20/2018	23:45:45	USER	3400.00	8.33	0	143.90	FLOATS HELD, 1 BBL BACK TO TRUCK
Event	24	End Job	5/20/2018	23:46:55	USER					GOOD RETURNS THROUGHOUT, PIPE WAS RECIPROCATED, HES DID NOT VERIFY ANY SPACER TO

						SURFACE.
Event	25	Post-Job Safety Meeting (Pre Rig-Down)	5/20/2018	23:48:16	USER	ALL HES PRESENT
Event	26	Rig-Down Completed	5/21/2018	00:45:00	USER	ALL HES PRESENT
Event	27	Pre-Convoy Safety Meeting	5/21/2018	00:50:00	USER	ALL HES PRESENT
Event	28	Crew Leave Location	5/21/2018	01:00:00	USER	THANK YOU FOR CHOOSING HALLIBURTON CEMENT, CHRIS SMITH AND CREW

TEP - PA 331-26 - 4.5" PRODUCTION



Job Information

Request/Slurry	2473008/3	Rig Name	H&P 271	Date	07/MAY/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	PA 331-26

Well Information

Casing/Liner Size	4.5 in	Depth MD	9379 ft	BHST	106°C / 223°F
Hole Size	8.75 in	Depth TVD	8416 ft	BHCT	67°C / 153°F
Pressure	5191 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				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 2473008/3

Thickening Time - ON-OFF-ON

14/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)
153	5191	43	1:08	4:08	4:08	4:09	53	15	32

total sks=1970

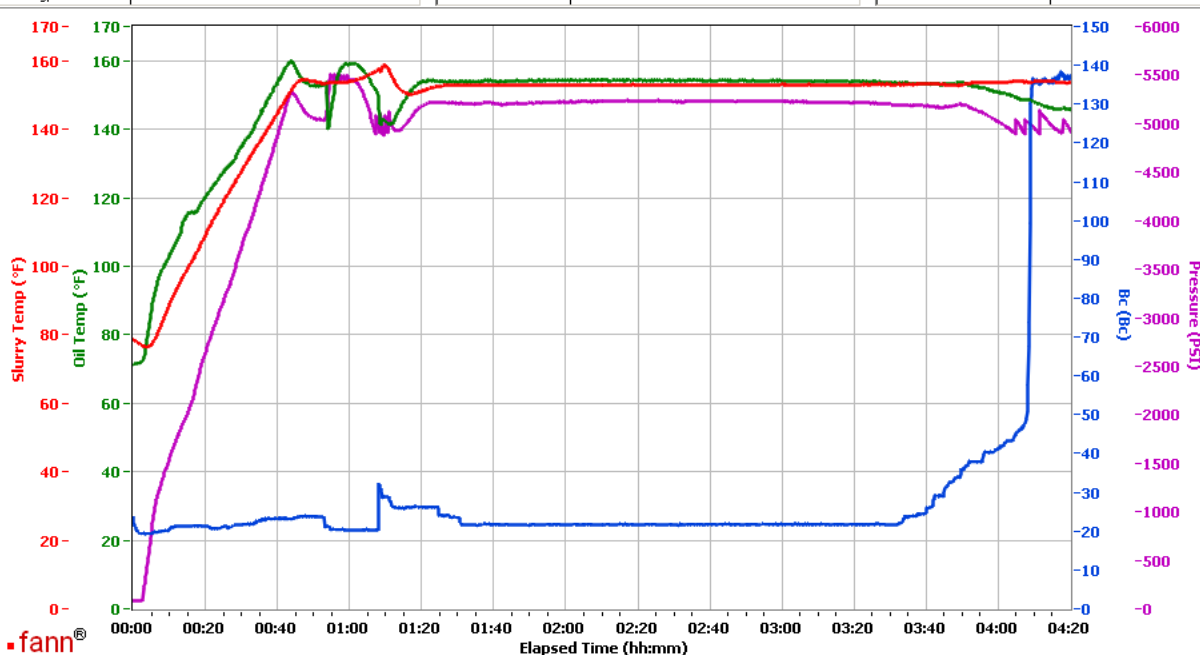
CS1044 TR#6813 270 SKS

deflected from 20Bc--- > 32Bc

heat of hydration at 3:45

Grand Junction Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2473008-3 TERRA PRODUCTION BULK PR	Job Type	PRODUCTION CASING	30.00 Bc	01h:08m
Test ID	35496973	Cement Type	MOUNTAIN G	40.00 Bc	03h:56m
Request ID	GJ2473008-3	Cement Weight	Standard	50.00 Bc	04h:08m
Tested by	DEBA	Test Date	05/14/18	70.00 Bc	04h:08m
Customer	TERRA ENERGY PARTNERS	Test Time	12:36 PM	100.00 Bc	04h:09m
Well No	PA 331-26	Temp. Units	degF	00h:30m	21.66
Rig	H&P 271	Pressure Units	PSI	01h:00m	20.34
Casing/Liner Size	4.5"	SW Version	2.1.0.507	01h:30m	23.62



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\0HU9OBIZ\GJ2473008-3 TERRA PRODUCTION BULK PRIMARY[1].tdms

Comments CS1044 TR#6813 270 SKS

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Operation Test Results Request ID 2473008/2

Thickening Time - ON-OFF-ON

14/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)
153	5191	43	3:39	3:53	3:53	3:55	18	53	15	15

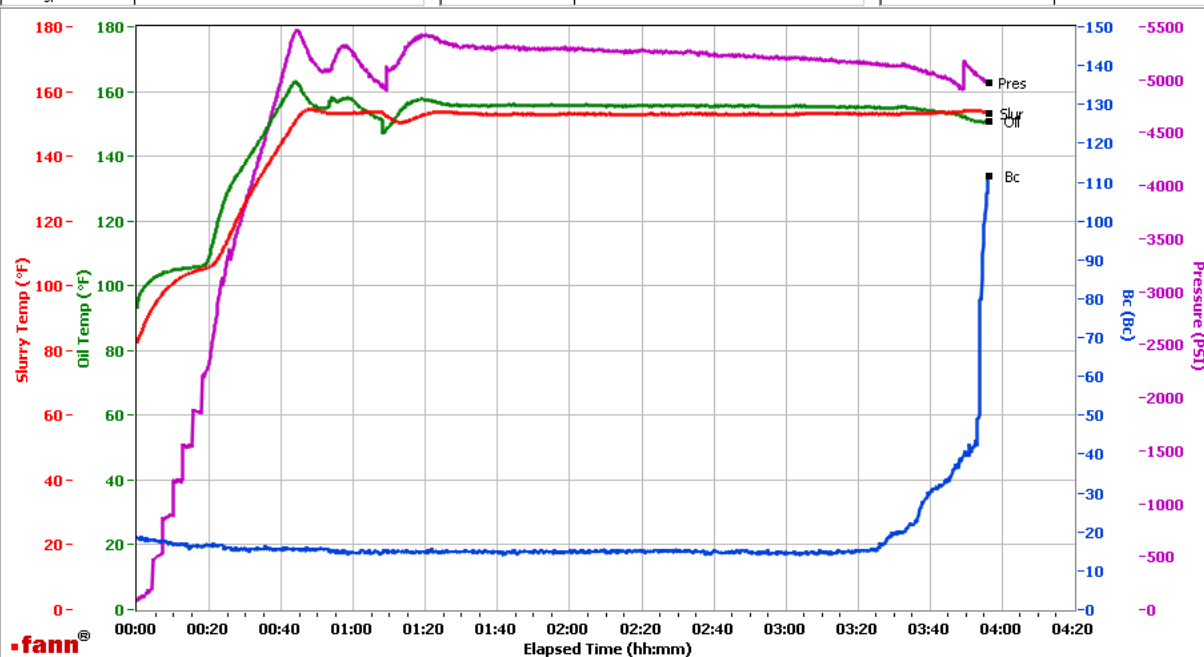
total sks=1970

CS1042 TR#8476 425 SKS

No deflection

Grand Junction Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2473008-2 TERRA PRODUCTION BULK PR	Job Type	PRODUCTION CASING	30.00 Bc	03h:39m
Test ID	35494982	Cement Type	MOUNTAIN G	40.00 Bc	03h:49m
Request ID	GJ2473008-2	Cement Weight	Standard	50.00 Bc	03h:53m
Tested by	DEBA	Test Date	05/14/18	70.00 Bc	03h:53m
Customer	TERRA ENERGY PARTNERS	Test Time	04:45 AM	100.00 Bc	03h:55m
Well No	PA 331-26	Temp. Units	degF	00h:30m	15.79
Rig	H&P 271	Pressure Units	PSI	01h:00m	14.63
Casing/Liner Size	4.5"	SW Version	2.1.0.507	01h:30m	15.05



Data File C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files\Content.IE5\OTUB09Y7\GJ2473008-2 TERRA PRODUCTION BULK PRIMARY[1].tdms

Comments CS1042 TR#8476 425 SKS

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Operation Test Results Request ID 2473008/1

Thickening Time - ON-OFF-ON

14/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)
153	5191	43	3:41	3:50	3:56	3:57	20	53	15	22

total sks=1970

CS1039 TR#8677 425 SKS

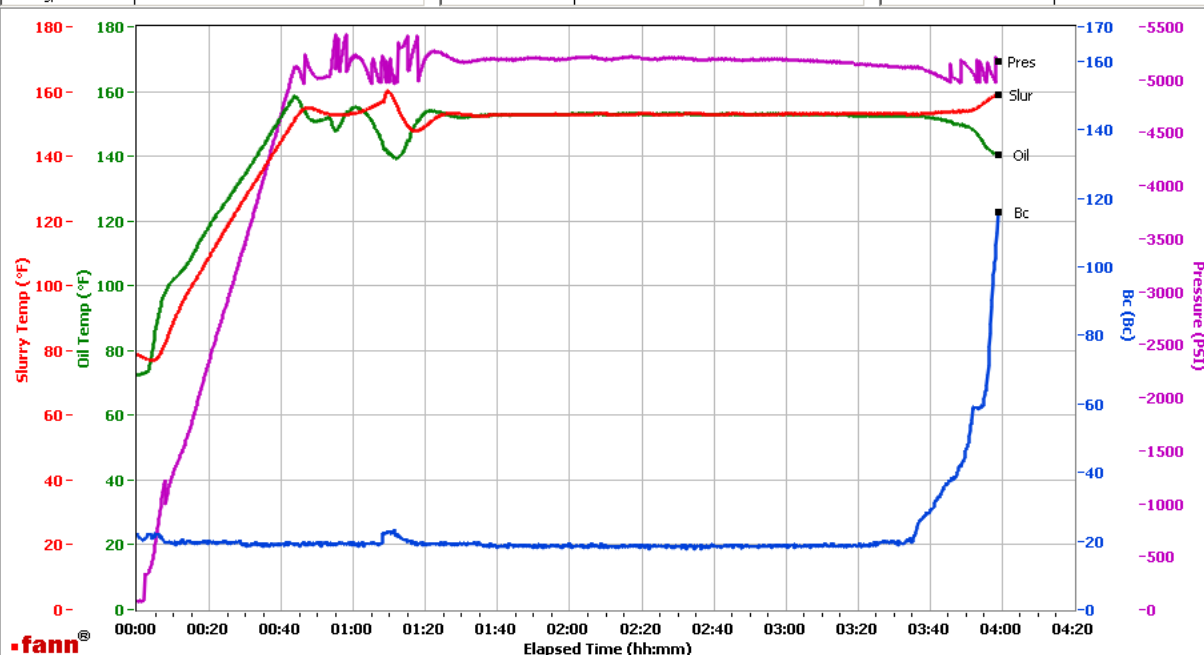
CS1040 TR#2878 425 SKS

CS1041 TR#1513 425 SKS

Deflected 19-- > 22

Grand Junction Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2473008-1 TERRA PRODUCTION BULK PR	Job Type	PRODUCTION CASING	30.00 Bc	03h:41m
Test ID	35477535	Cement Type	MOUNTAIN G	40.00 Bc	03h:47m
Request ID	GJ2473008-1	Cement Weight	Standard	50.00 Bc	03h:50m
Tested by	DEBA	Test Date	06/20/11	70.00 Bc	03h:56m
Customer	TERRA ENERGY PARTNERS	Test Time	05:11 PM	100.00 Bc	03h:57m
Well No	PA 331-26	Temp. Units	degF	00h:30m	18.39
Rig	H&P 271	Pressure Units	PSI	01h:00m	18.84
Casing/Liner Size	4.5"	SW Version	2.1.0.1219	01h:30m	19.19



Data File C:\Documents and Settings\HPHT\Desktop\Test Data\GJ2473008-1 TERRA PRODUCTION BULK PRIMARY.tdms

Comments CS1039 TR#8677 425 SKS, CS1040 TR#2878 425 SKS AND CS1041 TR#1513 425 SKS

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