

HALLIBURTON

iCem[®] Service

TERRA ENERGY Partners

For: Terra

SR 534-12 Production PJR

API #:05-045-23457

Job Date: Tuesday, January 16, 2018

Sincerely,

Grand Junction Cement Engineering

1.0 Real-Time Job Summary

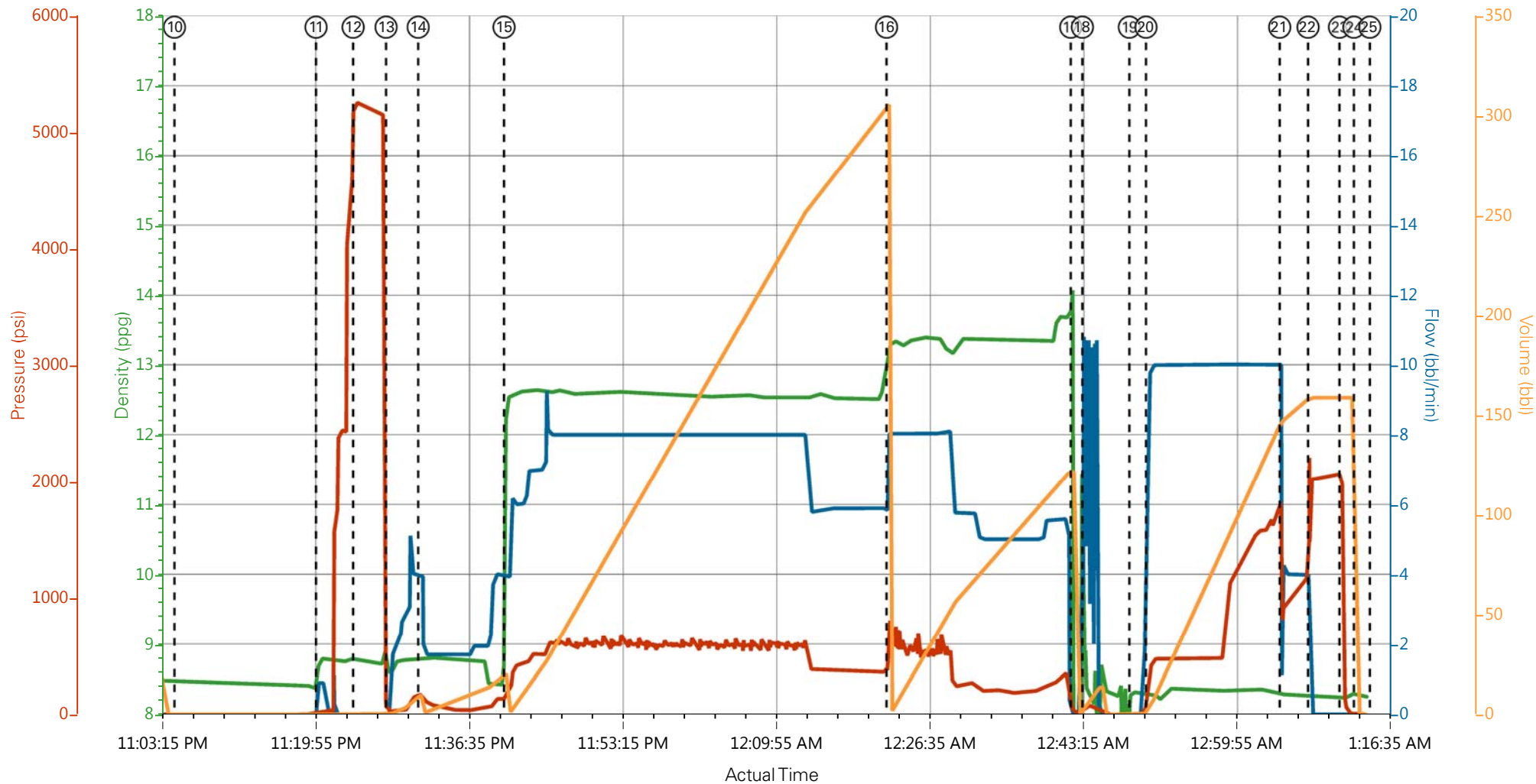
1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	Pass-Side Pump Pressure (psi)	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Pump Stage Total (bbl)	Comments
Event	1	Call Out	1/15/2018	23:00:00	USER					REQUESTED ON LOCATION @ 0500
Event	2	Pre-Convoy Safety Meeting	1/16/2018	00:30:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	1/16/2018	00:35:00	USER					1 F550, 1 PUMP TRUCK & 1 660 BULK TURCK
Event	4	Shutdown	1/16/2018	00:45:00	USER					END OF CMT
Event	5	Arrive At Loc	1/16/2018	02:30:00	USER					RIG RUNNING CASING
Event	6	Assessment Of Location Safety Meeting	1/16/2018	02:35:00	USER					MET WITH COMP REP AND WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION AND COLLECTED WATER SAMPLE (PH- 7, CHLORIDES- 0, TEMP- 61F). COMP REP WAS OFFERED SDS FOR ALL CHEMICLES USED BY HES.
Event	7	Pre-Rig Up Safety Meeting	1/16/2018	02:45:00	USER					ALL HES PRESENT
Event	8	Rig-up Lines	1/16/2018	02:50:00	USER					HES RIGGED UP EQUIPMENT WITHOUT ENTERING RED ZONE.
Event	9	Pre-Job Safety Meeting	1/16/2018	22:00:00	USER					ALL HES AND RIG CREW PRESENT
Event	10	Start Job	1/16/2018	23:18:00	COM6					TD 9825', TP 9814.27', SJ 30', OH 8.75'', CSG 4.5'' 11.6#, MUD 9.2 PPG. RIG CIRCULATED WELL @ 10

BPM WITH 1100 PSI.										
Event	11	Prime Pumps	1/16/2018	23:20:21	USER	232.00	8.34	2.00	2.00	8.33 PPG FRESH WATER
Event	12	Test Lines	1/16/2018	23:24:23	COM6	5262.00	8.34	0.05	0.05	ALL LINES HELD PRESSURE AT 5257 PSI
Event	13	Pump Spacer 1	1/16/2018	23:27:57	COM6	178.00	8.34	4.00	10.00	8.33 PPG FRESH WATER (10 BBL)
Event	14	Pump Spacer 2	1/16/2018	23:31:26	COM6	174.00	8.45	4.00	20.00	8.4 PPG MUDFLUSH III (20 BBL)
Event	15	Pump Lead Cement	1/16/2018	23:40:45	COM6	640.00	12.50	8.00	280.00	NEOCER CEMENT 805 SKS (280 BBLS), 12.5 PPG, 1.96 FT3/SK, 9.35 GAL/SK
Event	16	Pump Tail Cement	1/17/2018	00:22:15	COM6	530.00	13.30	8.00	82.00	THERMACER CEMENT 265 SKS (82 BBLS), 13.3 PPG, 1.73 FT3/SK, 7.81 GAL/SK
Event	17	Shutdown	1/17/2018	00:42:15	USER					END OF CMT
Event	18	Clean Lines	1/17/2018	00:43:30	USER					WASH UP PUMPS AND LINES TO THE PIT
Event	19	Drop Plug	1/17/2018	00:48:36	USER					PLUG WENT, VERIFIED BY CO REP
Event	20	Pump Displacement	1/17/2018	00:50:25	COM6	1800.00	8.34	10.00	142.00	8.34 PPG FRESH WATER (151.7 BBLS) 3 BAGS BE6, 1 GAL MMCR & 14 SKS KCL
Event	21	Slow Rate	1/17/2018	01:04:55	USER	940.00	8.34	4.00	10.00	SLOW RATE TO 4 BPM PER CO REP TO LAND PLUG
Event	22	Bump Plug	1/17/2018	01:07:59	USER	1160.00	8.34	4.00	152.00	LAND PLUG AT 1160 PSI, BROUGHT UP TO 2025 PSI
Event	23	Check Floats	1/17/2018	01:11:24	USER					FLOATS HELD, 1 BBL BACK TO TRUCK
Event	24	End Job	1/17/2018	01:12:58	COM6					
Event	25	Post-Job Safety Meeting (Pre Rig-Down)	1/17/2018	01:14:42	USER					ALL HES PRESENT

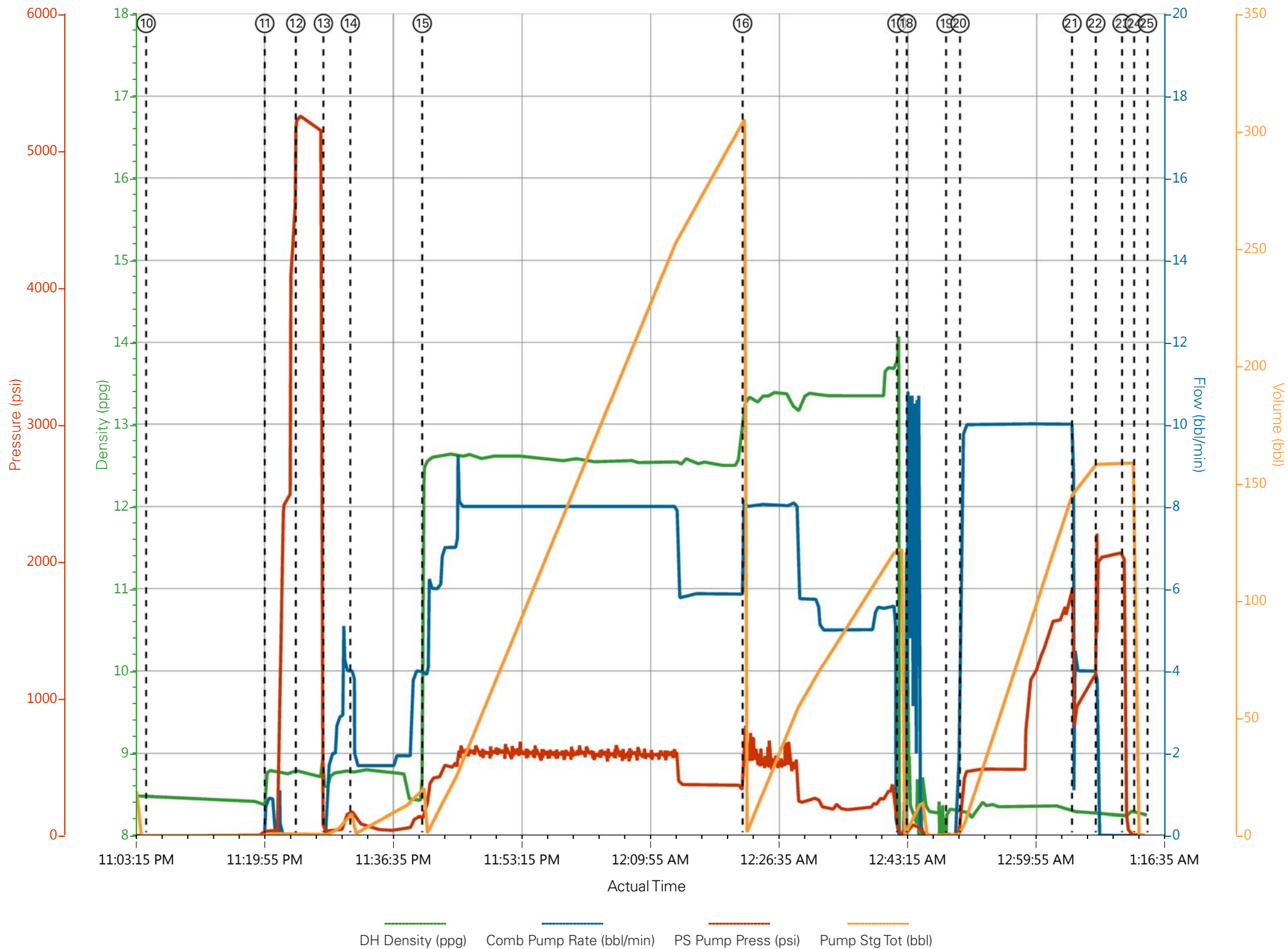
Event	26	Rig-Down Equipment	1/17/2018	01:30:00	USER	ALL HES PRESENT
Event	27	Pre-Convoy Safety Meeting	1/17/2018	02:00:00	USER	ALL HES PRESENT
Event	28	Crew Leave Location	1/17/2018	02:15:00	USER	THANK YOU FOR CHOOSING HALLIBURTON CEMENT, CHRIS SMITH AND CREW

TERRA - SR 534-12 - 4.5" PRODUCTION



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|---|--------------------------|----------------------|---|
| ① Call Out | ⑧ Rig-up Lines | ⑮ Pump Lead Cement | 22 Bump Plug |
| ② Pre-Convoy Safety Meeting | ⑨ Pre-Job Safety Meeting | ⑯ Pump Tail Cement | 23 Check Floats |
| ③ Crew Leave Yard | ⑩ Start Job | ⑰ Shutdown | 24 End Job |
| ④ Shutdown | ⑪ Prime Pumps | ⑱ Clean Lines | 25 Post-Job Safety Meeting (Pre Rig-Down) |
| ⑤ Arrive At Loc | ⑫ Test Lines | ⑲ Drop Plug | 26 Rig-Down Equipment |
| ⑥ Assessment Of Location Safety Meeting | ⑬ Pump Spacer 1 | 20 Pump Displacement | 27 Pre-Convoy Safety Meeting |
| ⑦ Pre-Rig Up Safety Meeting | ⑭ Pump Spacer 2 | 21 Slow Rate | 28 Crew Leave Location |

TERRA - SR 534-12 - 4.5" PRODUCTION



Job Information

Request/Slurry	2444333/1	Rig Name	H&P 318	Date	12/JAN/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	SR 534-12

Well Information

Casing/Liner Size	4.5 in	Depth MD	9800 ft	BHST	119°C / 247°F
Hole Size	8.75 in	Depth TVD	9478 ft	BHCT	81°C / 177°F
Pressure	6160 psi				

Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
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Cement Information - Lead 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		
		NeoCem Lead				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.941	ft3/sack
						Water Requirement	9.623	gal/sack
						Total Mix Fluid	9.623	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

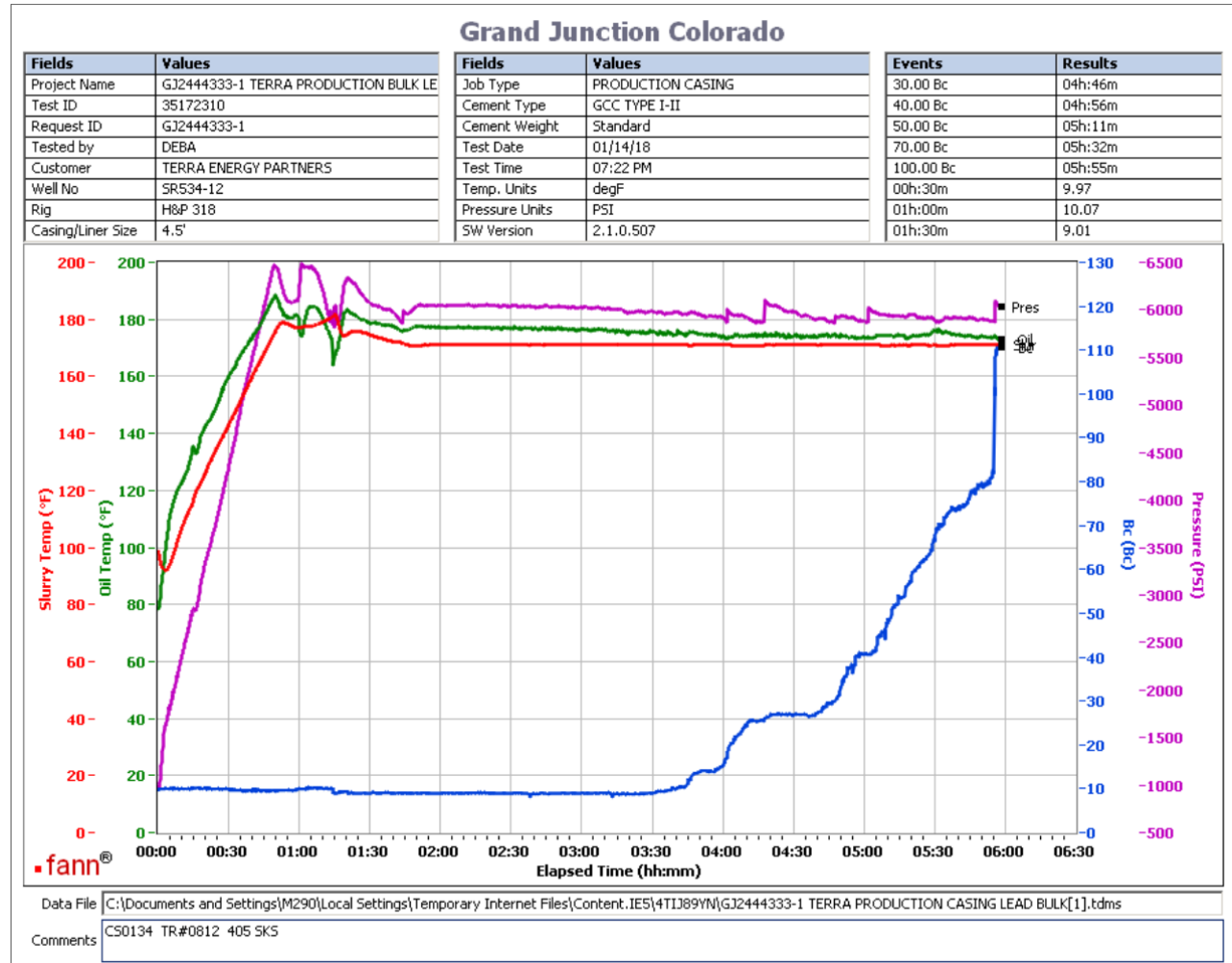
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Operation Test Results Request ID 2444333/1

Thickening Time - ON-OFF-ON

14/JAN/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)
177	6160	49	4:46	5:11	5:32	5:55	9	59	15	9



Total sks=810

CS0134 TR#0812 405 SKS

no deflection was observed. 9Bc--- > 9Bc

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Operation Test Results Request ID 2444333/2

Thickening Time - ON-OFF-ON

14/JAN/2018

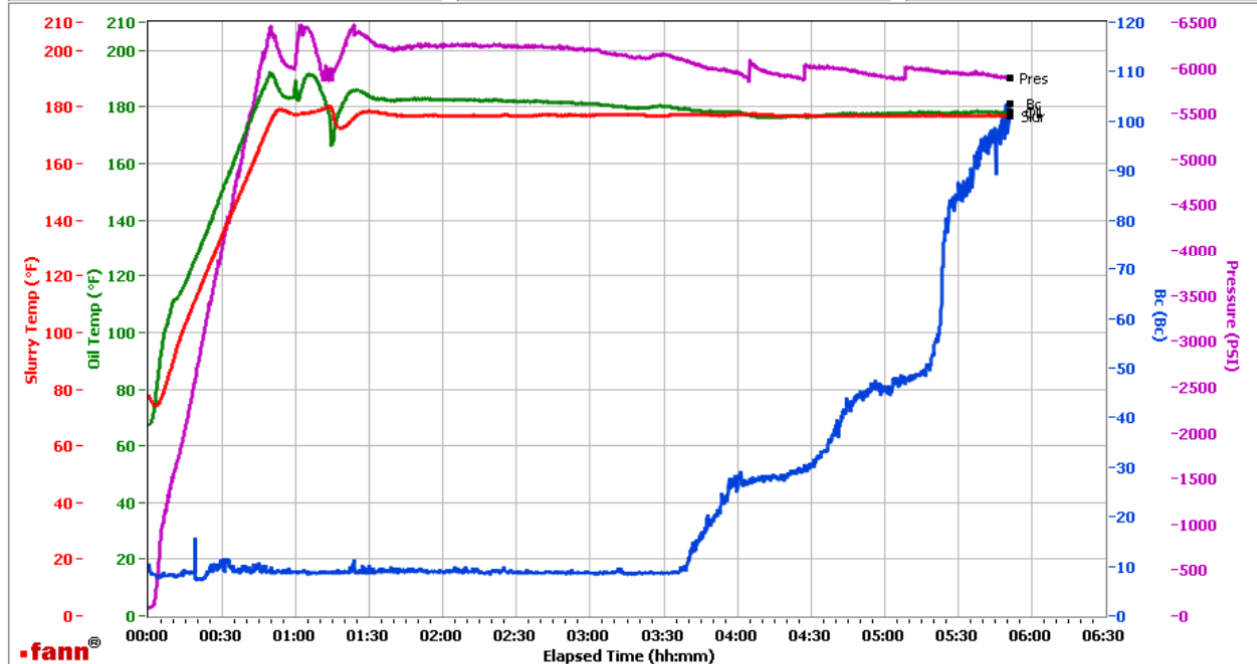
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:min)	50 Bc (hh:min)	70 Bc (hh:min)	100 Bc (hh:min)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
177	6160	49	4:27	5:17	5:23	5:47	10	59	15	8

Grand Junction Colorado

Fields	Values
Project Name	GJ2444333-2 TERRA PRODUCTION BULK LE
Test ID	35175381
Request ID	GJ2444333-2
Tested by	DEBA
Customer	TERRA ENERGY PARTNERS
Well No	SR 534-12
Rig	H&P318
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	GCC TYPE I-II
Cement Weight	Standard
Test Date	01/14/18
Test Time	09:08 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	04h:27m
40.00 Bc	04h:42m
50.00 Bc	05h:17m
70.00 Bc	05h:23m
100.00 Bc	05h:47m
00h:30m	10.33
01h:00m	8.97
01h:30m	9.08



Data File C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files\Content.IE5\O3KLGZ\GJ2444333-2 TERRA PRODUCTION BULK LEAD[1].tdms

Comments CS0136 TR#0813 405 SKS

total sks=810

CS0136 TR#0813 405 SKS

no deflection was observed. 8Bc--- > 8Bc

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Rockies, Grand Junction

Lab Results- Tail

Job Information

Request/Slurry	2444334/1	Rig Name	H&P 318	Date	12/JAN/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	SR 534-12

Well Information

Casing/Liner Size	4.5 in	Depth MD	9800 ft	BHST	116°C / 241°F
Hole Size	8.75 in	Depth TVD	9478 ft	BHCT	77°C / 171°F
Pressure	5935 psi				

Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
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Cement Information - Tail 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		
		ThermaCem Tail				Slurry Density	13.3	lbm/gal
						Slurry Yield	1.733	ft3/sack
						Water Requirement	7.799	gal/sack
						Total Mix Fluid	7.799	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

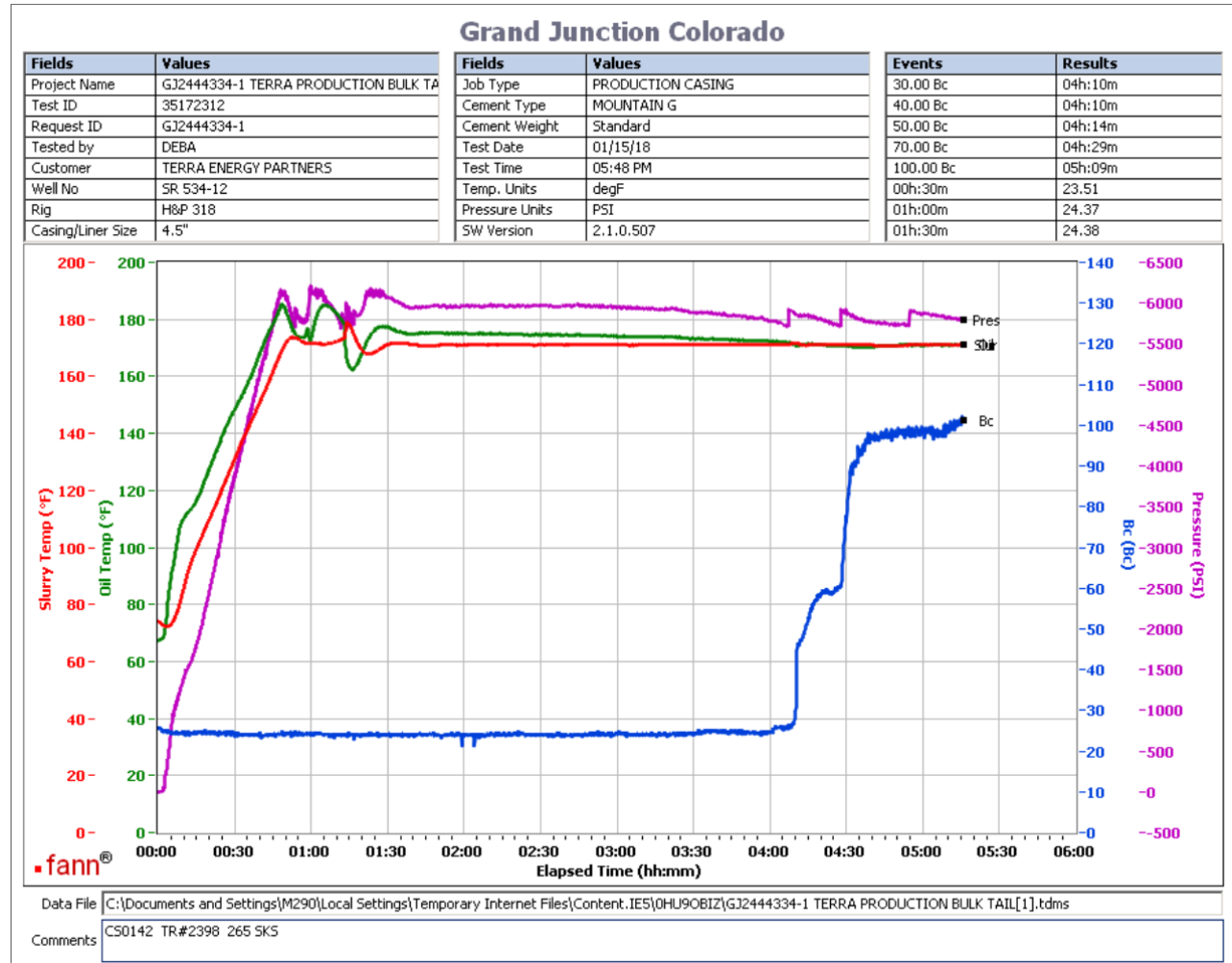
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Operation Test Results Request ID 2444334/1

Thickening Time - ON-OFF-ON

16/JAN/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)
171	5935	48	4:10	4:14	4:29	5:09	24	58	15	24



265 sks tail
CS0142 TR#2398 265 SKS
No deflection.

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