

HALLIBURTON

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TERRA ENERGY PARTNERS

United States of America, COLORADO

Date: Wednesday, March 13, 2019

SG 311-22 Production

Terra SG 311-22 Production

API# 05-045-24142-00

Job Date : February 24, 2019

Sincerely,

Grand Junction Cement Engineering

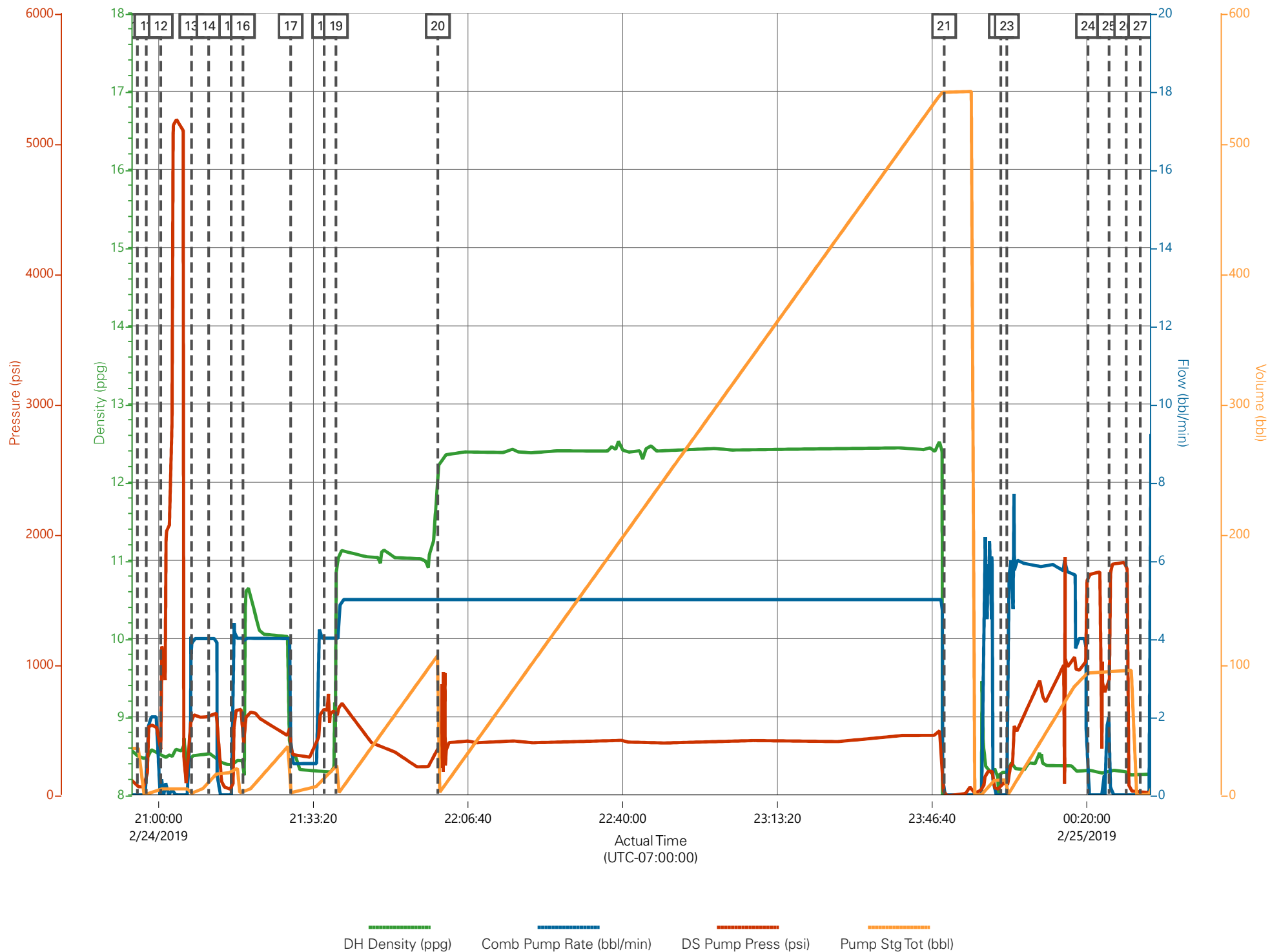
1.0 Real-Time Job Summary

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	2/24/2019	07:30:00						Requested on Location @ 12:00
Event	2	Pre-Convoy Safety Meeting	2/24/2019	08:50:00						
Event	3	Crew Leave Yard	2/24/2019	09:00:00						1 Elite, 1 660, 1 pickup, 1 Transport
Event	4	Arrive At Loc	2/24/2019	12:00:00						Rig running casing
Event	5	Assessment Of Location Safety Meeting	2/24/2019	12:10:00						JSA completed - Customer offered/received SDS - water test pH 7.0, Cl <200, temp 83 degrees
Event	6	Pre-Rig Up Safety Meeting	2/24/2019	12:30:00						
Event	7	Rig-Up Equipment	2/24/2019	12:40:00						DME iron to ground manifold, standpipe, hardline to pit. Water hoses to both uprights, bulk hoses to Silo and 660's.
Event	8	Other	2/24/2019	13:00:00						Mud scales calibrated to drinking water prior to job.
Event	9	Pre-Job Safety Meeting	2/24/2019	19:50:00						All HES personnel, rig crew, and company rep.
Event	10	Start Job	2/24/2019	20:55:24						TD 6115', TP 6108.53', SJ 32.38', OH 8.75", Csg 4.5" 11.6 lb/ft HCP-110 Prev. Csg. 9.625" 36# @ 1035', Mud 9.6 ppg.
Event	11	Fill Lines	2/24/2019	20:57:21		8.33	2	550	5	Fresh Water
Event	12	Test Lines	2/24/2019	21:00:27				5206		Held pressure 2 minutes
Event	13	Pump Spacer	2/24/2019	21:07:04		8.33	4	606	5	Fresh Water
Event	14	Pump Spacer	2/24/2019	21:10:46		8.4	4	610	20	80 lbs. Mud Flush III
Event	15	Pump Spacer	2/24/2019	21:15:38		8.33	4	650	5	Fresh Water
Event	16	Pump Spacer	2/24/2019	21:18:09		10.0	4	610	40	Super Flush 101
Event	17	Pump Spacer	2/24/2019	21:28:28		8.33	4	605	20	Fresh Water

Event	18	Check Weight	2/24/2019	21:35:40					Density verified via mud cup
Event	19	Pump Lead Cement	2/24/2019	21:38:11	11.0	5	650	100	242 sks, 11.0 ppg, 2.32 yield, 12.67 gal/sk
Event	20	Pump Tail Cement	2/24/2019	22:00:10	12.3	5	450	528.3	1440 sks, 12.3 ppg, 2.06 Yield, 10.11 gal/sk good returns during cement
Event	21	Shutdown	2/24/2019	23:49:16					Wash lines to pit
Event	22	Drop Top Plug	2/25/2019	00:01:29					Co-Rep Verify Plug Launched
Event	23	Pump Displacement	2/25/2019	00:02:47	8.4	6	1060	94.2	3 lbs BE-6, 1 gal MMCR, 2% KCl, lost returns
Event	24	Slow Rate	2/25/2019	00:20:17	8.4	4	1060	84	Slow Rate 10 bbls to Calculated Displacement
Event	25	Bump Plug	2/25/2019	00:24:49			1710		Plug Bumped at 1060 psi, Brought up to 1710 psi
Event	26	Check Floats	2/25/2019	00:28:29					Floats held – .5 bbl back to the truck
Event	27	End Job	2/25/2019	00:31:31					Pipe was reciprocated during job.
Event	28	Pre-Rig Down Safety Meeting	2/25/2019	00:53:07					40 lbs sugar used, HES top plug used, 5 add hours, 13 transport hours
Event	29	Rig-Down Equipment	2/25/2019	00:59:51					
Event	30	Pre-Convoy Safety Meeting	2/25/2019	01:20:00					40 bbl of spacer to surface
Event	31	Crew Leave Location	2/25/2019	01:34:00					Thanks for using Halliburton Cement, Chris Martinez and crew.

Terra,SG 311-22, 4 1/2" Production



Job Information

Request/Slurry	2536967/2	Rig Name	H&P 318	Date	21/FEB/2019
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	SG 311-22

Well Information

Casing/Liner Size	4.5 in	Depth MD	6227 ft	BHST	85°C / 185°F
Hole Size	7.875 in	Depth TVD	6191 ft	BHCT	50°C / 122°F
Pressure	3634 psi				

Drilling Fluid Information

Mud Supplier Name	Baroid	Mud Trade Name	BARADRIL-N	Density
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Cement Information - Lead Design



<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>MP</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
							Slurry Density	12.3	lbm/gal
							Slurry Yield	2.07	ft3/sack
							Water Requirement	10.16	gal/sack
							Total Mix Fluid	10.16	gal/sack
							Water Source	Fresh Water	
							Water Chloride		

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Operation Test Results Request ID 2536967/2

Thickening Time - ON-OFF-ON, Request Test ID:36257481

22/FEB/2019

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)
122	3634	34	6:10	6:24	7:05	7:16	6	44	15	6

Total sks = 1440

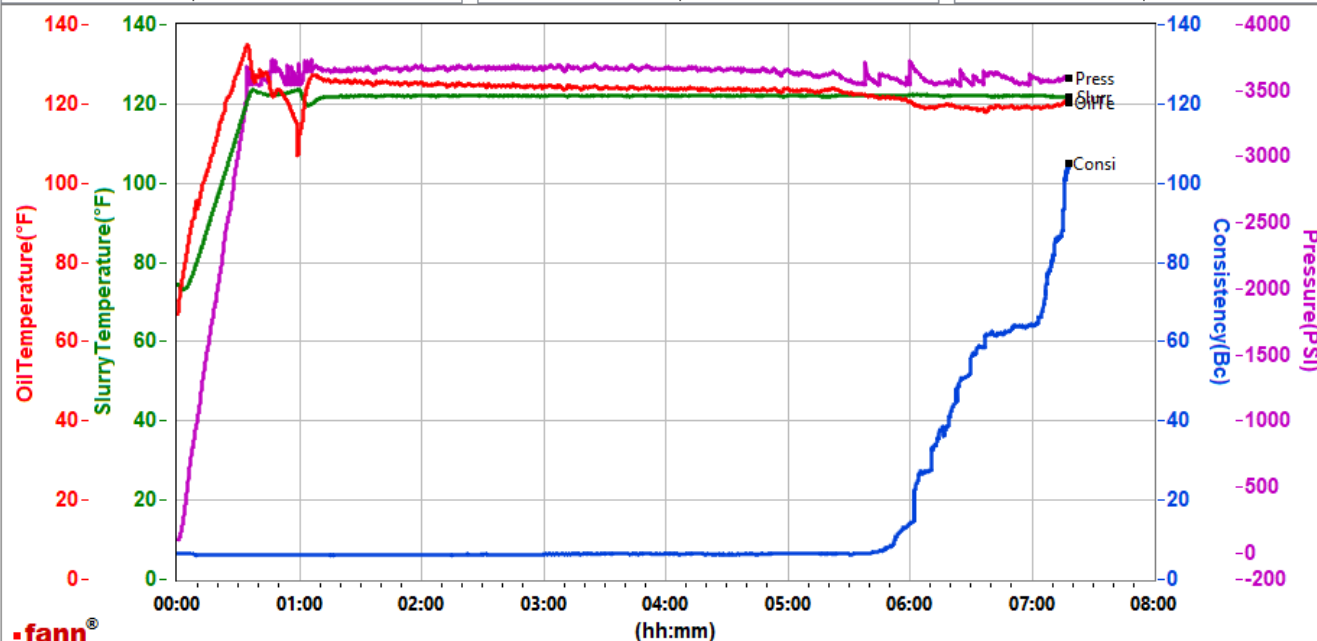
CS0239 TR#7304 240 SKS

CS0240 TR# 1513 400 SKS

No deflection. Please note slight heat of hydration started around 5:54.

GRAND JUNCTION

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2536967-2 Terra Prodi	Rig	H&P 318	30 Bc	6:10
SW Version	1.0	Casing/Liner Size	4.5 INCH	50 Bc	6:24
Test ID	36257481 - TT	Job Type	PRODUCTION CASING	70 Bc	7:05
Request ID	2536967-2	Cement Weight	GCC TYPE I-II	100 Bc	7:16
Tested by	DS	Comments	Light Weight		
Customer	TERRA ENERGY PARTN	Date Time	2/21/2019 11:43:21.013		
Well No	SG 311-22	Temp. Units	degF		



Data File N:\01 Test Graphs\GJ2536967-2 TERRA BULK PRODUCTION PRIMARY.tdms

Comments Light Weight

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Operation Test Results Request ID 2536967/1

Thickening Time - ON-OFF-ON, Request Test ID:36256505

22/FEB/2019

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)
122	3634	34	5:23	5:32	5:56	6:12	4	44	15	3

Total sks = 1440

CS0236 TR#2878 400 SKS

CS0238 TR#8476 400 SKS

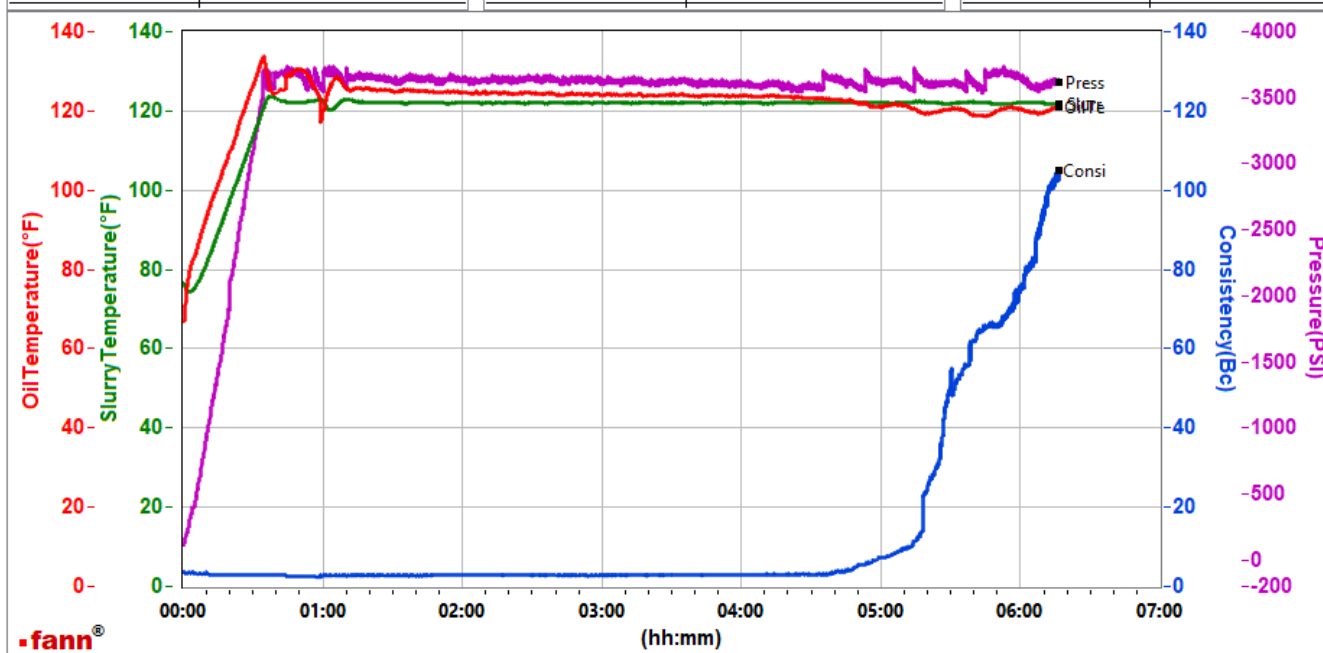
No deflection. Please note temp oscillation started around 4:52.

GRAND JUNCTION

Fields	Values
Project Name	GJ2536967-1 Terra Prodi
SW Version	1.0
Test ID	36256505 - TT
Request ID	2536967-1
Tested by	DS
Customer	TERRA ENERGY PARTN
Well No	SG 311-22

Fields	Values
Rig	H&P 318
Casing/Liner Size	4.5 INCH
Job Type	PRODUCTION CASING
Cement Weight	GCC TYPE I-II
Comments	Light Weight
Date Time	2/21/2019 10:40:34.501
Temp. Units	degF

Events	Results
30 Bc	5:23
50 Bc	5:32
70 Bc	5:56
100 Bc	6:12



Data File N:\01 Test Graphs\GJ2536967-1 TERRA PRODUCTION BULK PRIMARY.tdms

Comments Light Weight

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