

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

United States of America, COLORADO

For: Terra

Date: Monday, March 25, 2019

SG 441-21 Production PJR

API# 05-045-24130-00

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

2.1 Job Event Log

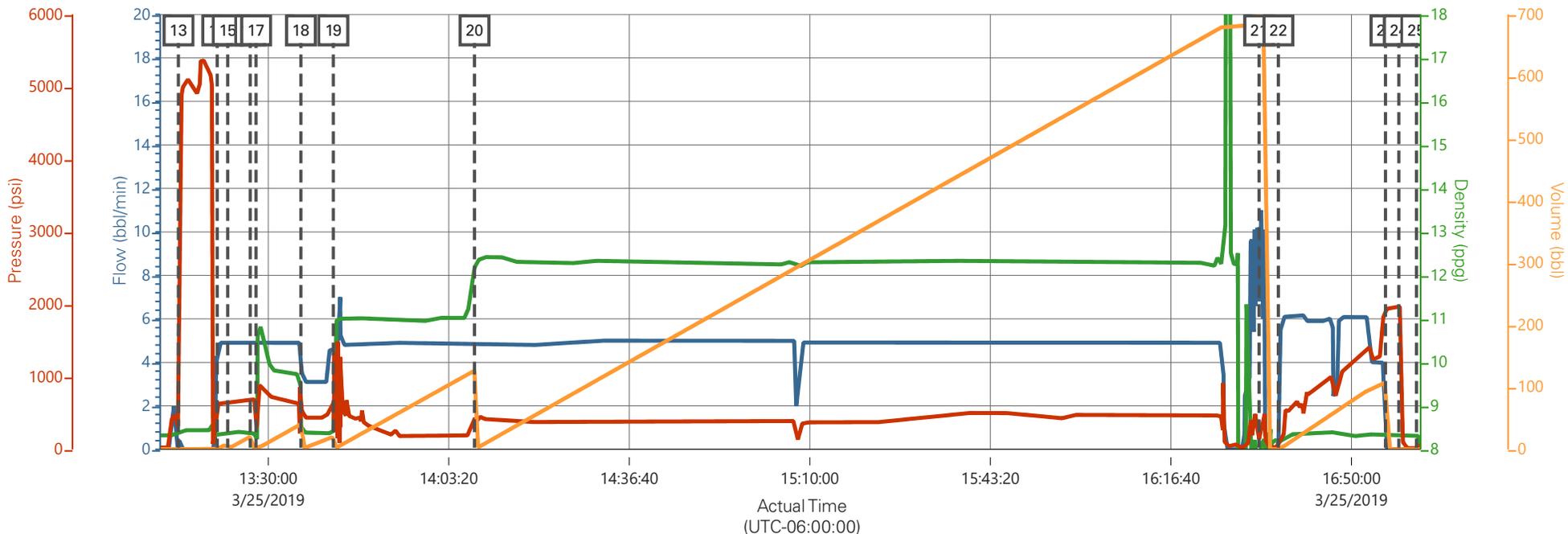
Type	Seq. No.	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	3/25/2019	02:00:00	USER					REQUESTED ON LOCATION 3/25/19 @ 06:00
Event	2	Depart Yard Safety Meeting	3/25/2019	02:05:00	USER					JSA COMPLETED
Event	3	Crew Leave Shop	3/25/2019	02:10:00	USER					
Event	4	Arrive At Loc	3/25/2019	05:00:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	3/25/2019	05:15:00	USER					JSA COMPLETED
Event	6	Pre-Rig Up Safety Meeting	3/25/2019	05:55:00	USER					JSA COMPLETED
Event	7	Rig-Up Equipment	3/25/2019	06:00:00	USER					
Event	8	Pre-Job Safety Meeting	3/25/2019	08:00:00	USER					JSA COMPLETED, PRESSURIZED MUD SCALES CALIBRATED TO FRESH WATER
Event	9	Start Job	3/25/2019	08:14:39	COM4					4 1/2"-11.6 CASING IN 8 3/4" OH, TD 6931', TP 6924.2', ST 32', MUD 9.8 PPG, WATER TEMP 65, PH 7, CHLORIDES
Event	10	Test Lines	3/25/2019	08:47:33	COM4			5000.00		TEST LINES TO 5000 PSI
Event	11	Pump Spacer 1	3/25/2019	08:53:13	COM4	4.70	8.33	325.00	7.00	10 BBLS FRESH WATER
Event	12	Other	3/25/2019	08:53:48	USER	4.70	8.33	697.00	1.40	CASING COLLAR SEPERATED FROM CASING, RIG PULLED JOINT, RAN A NEW JOINT AND CIRCULATED ANOTHER BOTTOMS UP

Event	13	Test Lines	3/25/2019	13:13:25	COM4			5000.00		TEST LINES TO 5000 PSI
Event	14	Pump H2O	3/25/2019	13:20:36	COM4	5.00	8.33	650.00	10.00	10 BBLS FRESH WATER
Event	15	Pump MUDFLUSH	3/25/2019	13:22:32	COM4	5.00	8.40	650.00	20.00	20 BBLS MUDFLUSH
Event	16	Pump H2O	3/25/2019	13:26:41	COM4	5.00	8.33	650.00	5.00	5 BBLS FRESH WATER
Event	17	Pump SUPERFLUSH	3/25/2019	13:27:45	COM4	5.00	10.00	780.00	40.00	40 BBLS SUPERFLUSH
Event	18	Pump H2O	3/25/2019	13:36:02	COM4	5.00	8.33	500.00	20.00	20 BBLS FRESH WATER
Event	19	Pump Cement	3/25/2019	13:42:02	COM4	5.00	11.00	200.00	100.00	100 BBLS SCAVENGER CEMENT, 242 SKS @ 11.0 PPG / 2.32 YLD / 12.57 GAL/, 30# WELL LIFE THROUGHOUT
Event	20	Pump Lead Cement	3/25/2019	14:08:06	COM4	5.00	12.30	430.00	627.40	627.4 BBLS PRIMARY CEMENT, 1710 SKS @ 12.3 PPG / 2.06 YLD / 10.11 GAL/SK, 150# WELL LIFE THROUGHOUT FIRST 300 BBLS
Event	21	Drop Top Plug	3/25/2019	16:32:57	COM4					PLUG AWAY
Event	22	Pump Displacement	3/25/2019	16:36:31	COM4	6.00	8.40	1350.00	106.80	106.8 BBLS KCL WATER DISPLACEMENT WITH 3# BE-6 AND 1 GALLON MMCR
Event	23	Bump Plug	3/25/2019	16:56:17	COM4	4.00	8.40	1300.00	106.80	PLUG BUMPED AT CALCULATED, FINAL CIRCULATING PRESSURE 1300 PSI @ 4 BBL/MIN, BROUGHT TO 1950 PSI
Event	24	Check Floats	3/25/2019	16:58:44	USER					FLOATS HELD, 1 BBL BACK TO PUMP
Event	25	End Job	3/25/2019	17:02:00	COM4					PARTIAL RETURNS UNTIL 400 BBLS AWAY ON PRIMARY, NO RETURNS FOR THE REST OF THE JOB, SPACER TO SURFACE, 80# SUGAR USED, 3 ADD HOURS CHARGED
Event	26	Pre-Rig Down Safety Meeting	3/25/2019	17:25:00	USER					JSA COMPLETED
Event	27	Rig-Down Equipment	3/25/2019	17:30:00	USER					
Event	28	Pre-Convoy Safety Meeting	3/25/2019	17:55:00	USER					JSA COMPLETED

Event 29 Crew Leave Location 3/25/2019 18:00:00 USER

THANK YOU FOR CHOOSING HALLIBURTON
CEMENTING OF GRAND JUNCTION, CO - RYAN
MARTIN AND CREW

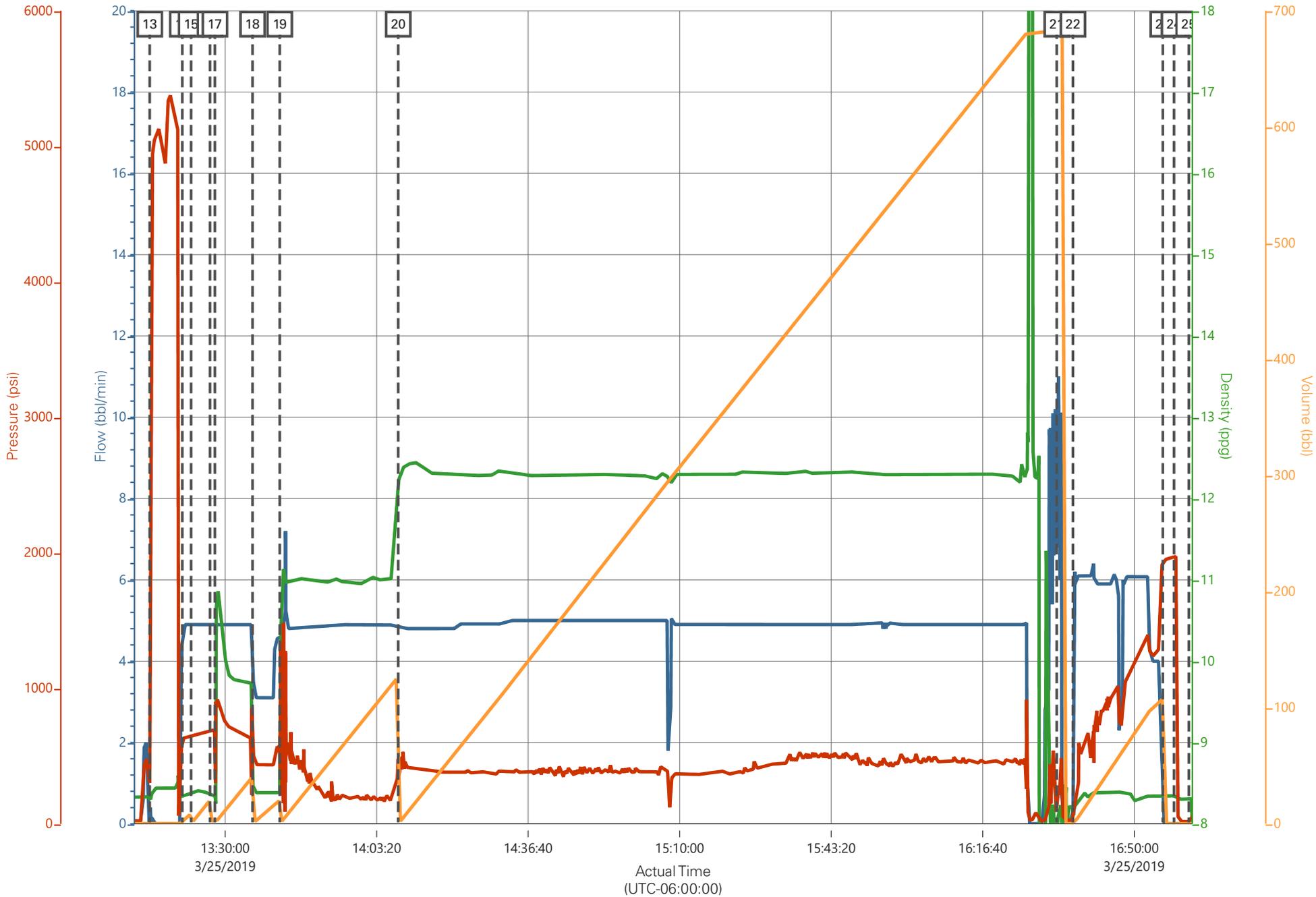
TERRA - FEDERAL SG 441-21 - 4 1/2" PRODUCTION CASING



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

Description	Actual Time (UTC-06:00:00)	Comb Pump Rate (bbl/min)	DH Density (ppg)	PS Pump Press (psi)	Pump Stg Tot (bbl)
13 Test Lines	13:13:25	0.00	8.33	301.00	0.00
14 Pump H2O	13:20:36	4.90	8.34	623.00	1.30
15 Pump MUDFLUSH	13:22:32	4.90	8.35	640.00	9.50
16 Pump H2O	13:26:41	4.90	8.37	685.00	0.00
17 Pump SUPERFLUSH	13:27:45	4.90	8.37	626.00	5.30
18 Pump H2O	13:36:02	4.90	8.58	714.00	40.60
19 Pump Cement	13:42:02	4.50	8.37	488.00	0.00
20 Pump Lead Cement	14:08:06	4.80	12.17	457.00	126.70
21 Drop Top Plug	16:32:57	9.70	7.63	77.00	700.70
22 Pump Displacement	16:36:31	0.30	8.21	19.00	0.00
23 Bump Plug	16:56:17	0.00	8.34	1937.00	107.10
24 Check Floats	16:58:44	0.00	8.34	1972.00	0.00
25 End Job	17:02:00	0.00	8.31	16.00	0.00

TERRA - FEDERAL SG 441-21 - 4 1/2" PRODUCTION CASING



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

Job Information

Request/Slurry	2543626/1	Rig Name	H&P 318	Date	21/MAR/2019
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	SG 441-21

Well Information

Casing/Liner Size	4.5 in	Depth MD	7013 ft	BHST	87°C / 189°F
Hole Size	7.875 in	Depth TVD	6434 ft	BHCT	52°C / 126°F
Pressure	3804 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>	<u>Cement Properties</u>		
							Slurry Density	12.3	lbm/gal
							Slurry Yield	2.07	ft ³ /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 2543626/1

Thickening Time - ON-OFF-ON, Request Test ID:36338231

23/MAR/2019

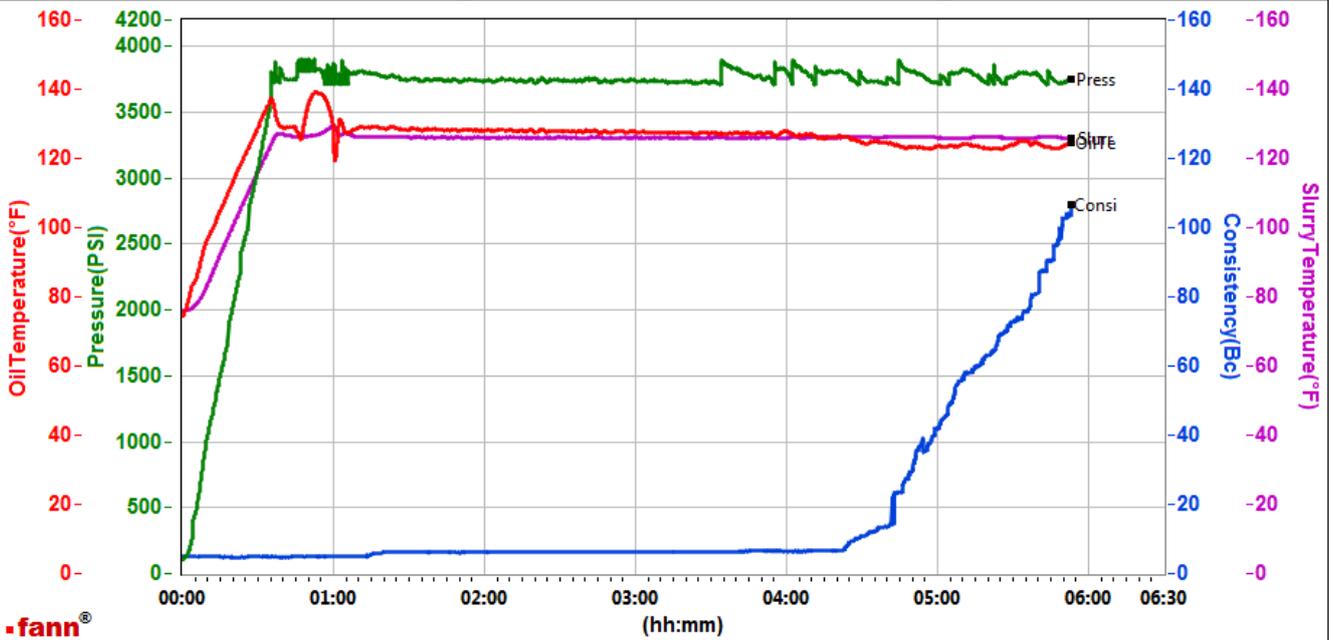
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:min)	50 Bc (hh:min)	70 Bc (hh:min)	100 Bc (hh:min)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
126	3804	35	4:49	5:06	5:26	5:49	5	45	15	5

GRAND JUNCTION

Fields	Values
Project Name	H&P 318 Terra Energy Bu
SW Version	1.0
Test ID	36338231 - TT
Request ID	2543626-1
Tested by	CT
Customer	TERRA ENERGY PARTN
Well No	SG 441-21

Fields	Values
Rig	H&P 318
Casing/Liner Size	4.5 INCH
Job Type	PRODUCTION CASING
Cement Weight	GCC TYPE III
Comments	Standard
Date Time	3/22/2019 12:52:33.908
Temp. Units	degF

Events	Results
30 BC	4:49
50 BC	5:06
70 BC	5:26
100 BC	5:49



Data File C:\Users\H185329\Desktop\000 Graphs\GJ2543626-1 TERRA BULK PRODUCTION PRIMARY.tdms

Comments Standard

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