

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

For: Terra

Date: Monday, July 30, 2018

PA 512-26 Production PJR

API# 05-045-23723-00

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	7/29/2018	21:30:00	USER					REQUESTED ON LOCATION @ 00:30
Event	2	Pre-Convoy Safety Meeting	7/29/2018	23:00:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	7/29/2018	23:05:00	USER					1 HT 400 PUMP TRUCK E1, 1 660 BULK TRUCK, 1 550 SERVICE PICKUP
Event	4	Arrive At Loc	7/30/2018	00:30:00	USER					RIG RUNNING CASING WHEN HES ARRIVED AT LOCATION
Event	5	Assessment Of Location Safety Meeting	7/30/2018	00:45:00	USER					MET WITH COMP REP, AND WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION AND COLLECTED WATER SAMPLE (PH- 7.0, CHLORIDES- 500, TEMP- 73F). COMP REP WAS OFFERED SDS FOR ALL CHEMICLES USED BY HES.
Event	6	Pre-Rig Up Safety Meeting	7/30/2018	00:45:00	USER					ALL HES PRESENT
Event	7	Rig-Up Equipment	7/30/2018	00:50:00	USER					HES RIGGED UP 1 HT400 PUMP TRUCK, 1 660 BULK TRUCK, 2 CEMENT SILOS, 2" DISCHARGE IRON, AND 4" SUCTION HOSE WITHOUT ENTERING RED ZONE.
Event	8	Pre-Job Safety Meeting	7/30/2018	11:30:00	USER					ALL HES EMPLOYEES AND RIG CREW PRESENT, RIG CIRCULATED @ 8.5 BPM PRIOR TO JOB PRESSURE @ 533 PSI.
Event	9	Start Job	7/30/2018	11:38:58	COM6					TD 8558', TP 8550', SJ 31.48', SURFACE CSG 9

5/8" 36# H-40 SET @ 1137' PRODUCTION CSG 4
½" 11.6# P-110, OH 8 3/4", MUD 12.7#

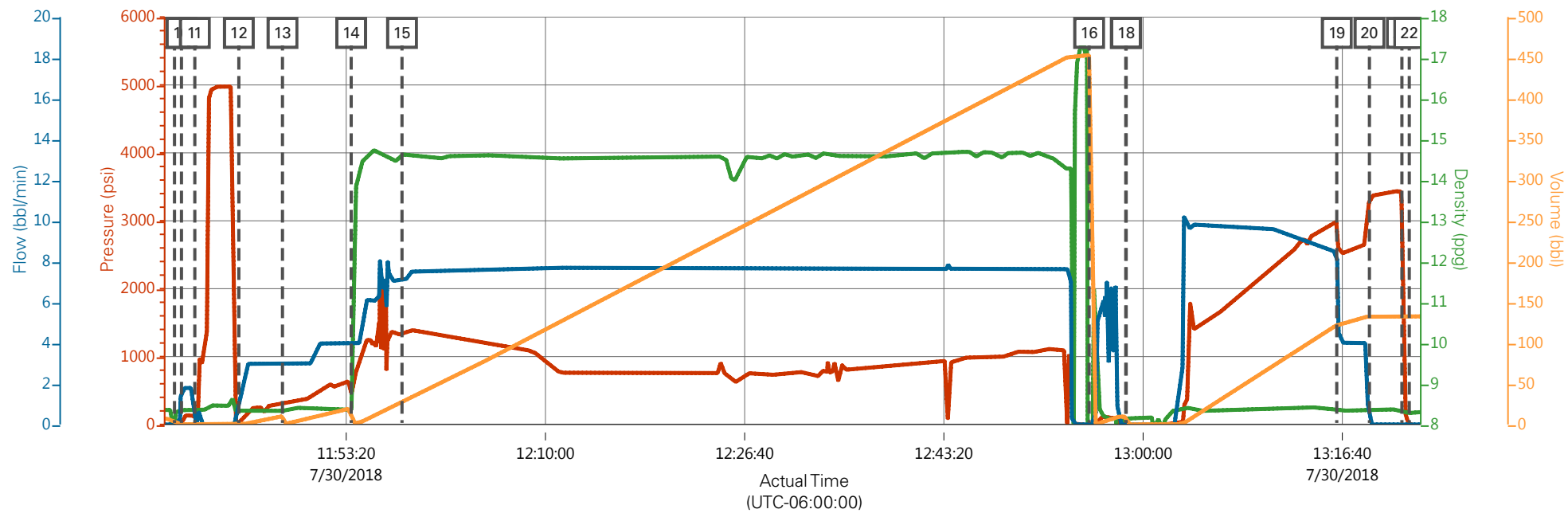
Event	10	Prime Lines	7/30/2018	11:39:33	USER	8.33	2	200	2	FRESH WATER
Event	11	Test Lines	7/30/2018	11:40:40	COM6			5042		ALL LINES HELD PRESSURE AT PSI 5042
Event	12	Pump H2O Spacer	7/30/2018	11:44:21	COM6	8.33	3	310	10	10BBLs FRESH WATER
Event	13	Mud Flush	7/30/2018	11:48:00	COM6	8.4	4	650	20	20 BBL MUDFLUSH III
Event	14	Pump Cement	7/30/2018	11:53:45	COM6	14.5	7.5	1250	426	1810 SKS EXPANDACEM CMT 14.5 PPG, 1.32 FT3/SK, 5.85 GAL/SK
Event	15	Check Weight	7/30/2018	11:58:00	COM6					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	16	Clean Lines	7/30/2018	12:55:29	COM6					END OF CEMENT. CLEAN PUMPS AND LINES TO PIT.
Event	17	Drop Top Plug	7/30/2018	12:58:33	COM6					VERIFIED BY FLAG INDICATOR
Event	18	Pump Displacement	7/30/2018	12:58:35	COM6	8.4	10	3025	132	1 GAL MMCR IN FIRST 10 BBLs, 3 LBS BE-6 IN FIRST 30 BBLs, 1 50 LB. BAG KCL THROUGHOUT DISPLACEMENT
Event	19	Slow Rate	7/30/2018	13:16:12	USER	8.4	4	2525	122	SLOW RATE TO 4 BPM TO BUMP PLUG
Event	20	Bump Plug	7/30/2018	13:18:56	COM6	8.4	4	2675	132	LANDED PLUG AT 2675 PSI, BROUGHT UP TO 3400 PSI
Event	21	Check Floats	7/30/2018	13:21:39	USER					FLOATS HELD. 1.5BBLs BACK TO TRUCK.
Event	22	End Job	7/30/2018	13:22:16	USER					RETURNS THROUGH JOB. PIPE WAS RECIPRICATED DURING JOB.NO SUGAR USED.
Event	23	Post-Job Safety Meeting (Pre Rig-Down)	7/30/2018	13:30:00	USER					ALL HES PRESENT
Event	24	Rig Down Lines	7/30/2018	13:40:00	USER					ALL HES PRESENT
Event	25	Pre-Convoy Safety	7/30/2018	14:45:00	USER					ALL HES PRESENT

Meeting

Event	26	Crew Leave Location	7/30/2018	15:00:00	USER
-------	----	---------------------	-----------	----------	------

THANK YOU FOR CHOOSING HALLIBURTON
CEMENT, SHAWN BLOSSOM AND CREW

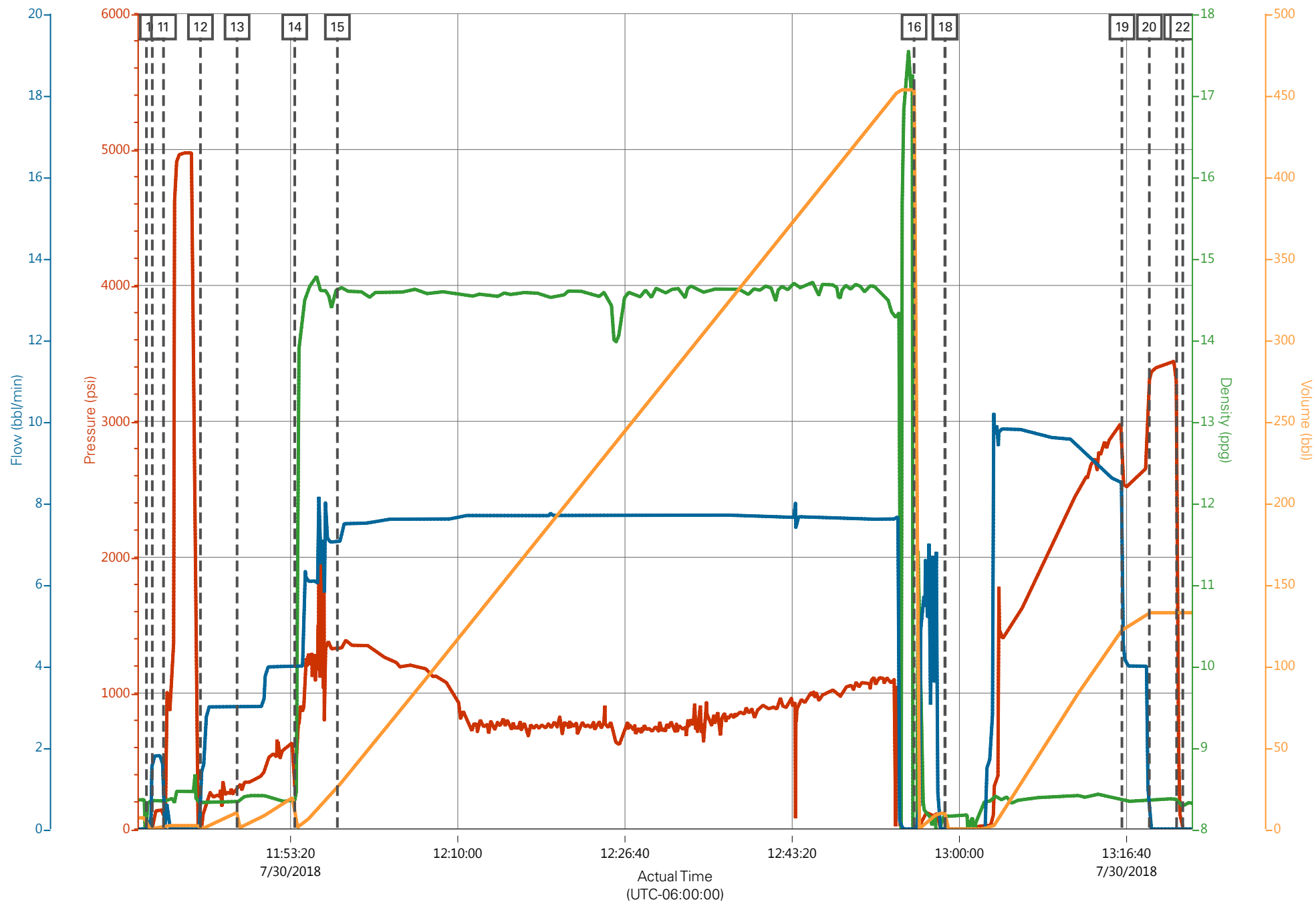
TEP PA 512-26 Production 4 1/2"



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

Description	Actual Time (UTC-06:00:00)	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)
9 Start Job	11:38:58	-22.70	7.91	0.00	6.90
10 Prime Lines	11:39:33	9.30	8.35	1.70	0.20
11 Test Lines	11:40:40	115.30	8.35	0.00	2.10
12 Pump H2O Spacer	11:44:21	-14.70	8.33	0.80	0.00
13 Mud Flush	11:48:00	295.30	8.33	3.00	0.00
14 Pump Cement	11:53:45	426.30	8.35	4.00	20.10
15 Check Weight	11:58:00	1323.30	14.61	7.00	25.60
16 Clean Lines	12:55:29	-16.70	0.00	0.00	453.30
17 Drop Top Plug	12:58:33	-31.70	8.15	0.00	9.70
18 Pump Displacement	12:58:35	-30.70	8.15	0.00	0.00
19 Slow Rate	13:16:12	2991.30	8.36	8.50	122.10
20 Bump Plug	13:18:56	3300.30	8.37	0.00	132.70
21 Check Floats	13:21:39	3046.30	8.37	0.00	132.70
22 End Job	13:22:16	-0.70	8.27	0.00	132.70

TEP PA 512-26 Production 4 1/2"



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

HALLIBURTON

Rockies, Grand Junction

Lab Results- Primary

Job Information

Request/Slurry	2489596/1	Rig Name	H&P 271	Date	21/JUL/2018
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	PA 512-26

Well Information

Casing/Liner Size	4.5 in	Depth MD	8560 ft	BHST	105°C / 221°F
Hole Size	8.75 in	Depth TVD	8320 ft	BHCT	66°C / 151°F
Pressure	5124 psi				

Drilling Fluid Information

Mud Supplier Name	AMC	Mud Trade Name	Density
--------------------------	-----	-----------------------	----------------

Cement Information - Primary Design



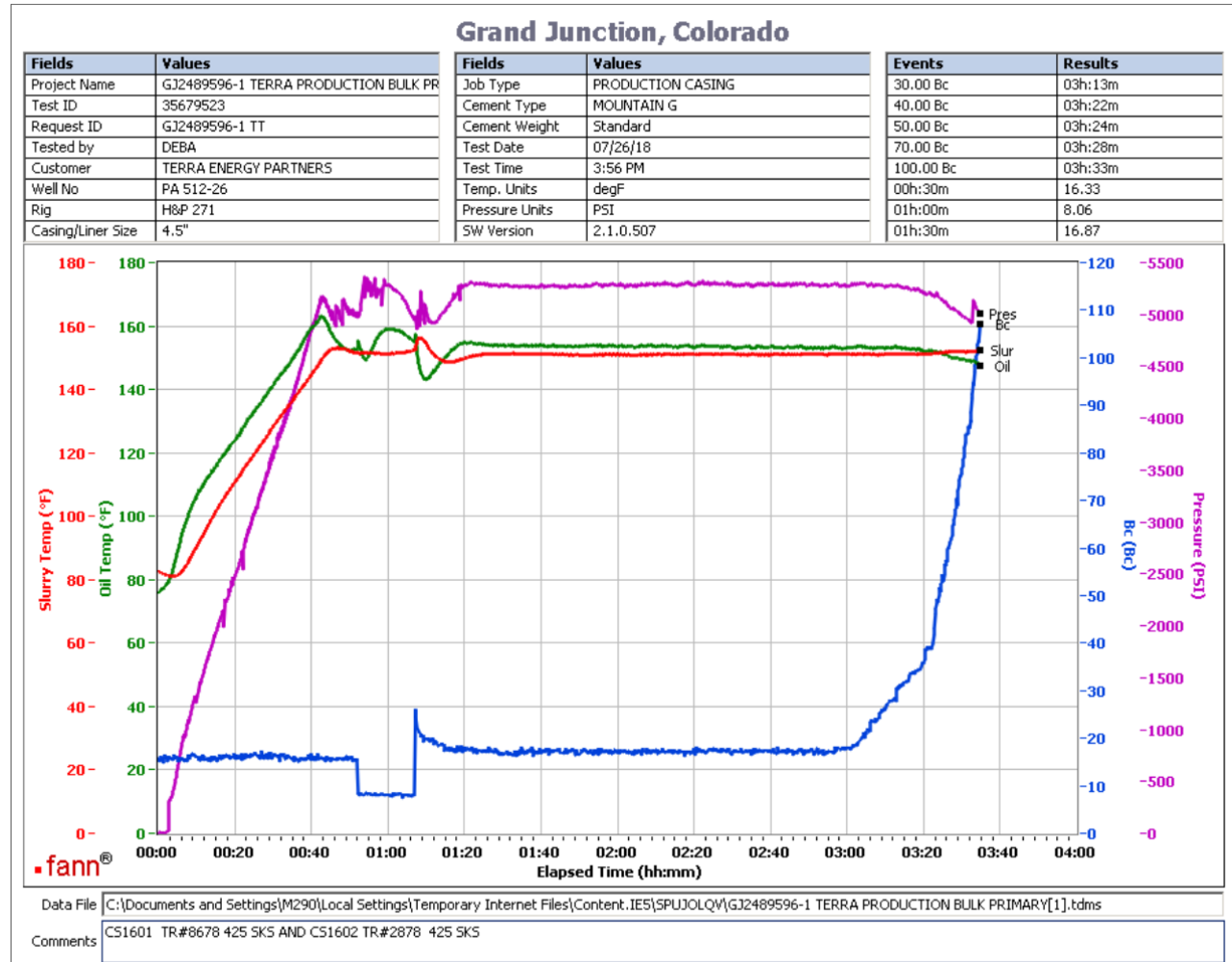
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		Expandacem Primary				Slurry Density	14.5	lbm/gal
						Slurry Yield	1.32	ft3/sack
						Water Requirement	5.849	gal/sack
						Total Mix Fluid	5.849	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

Thickening Time - ON-OFF-ON

26/JUL/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)
151	5124	42	3:13	3:24	3:28	3:33	15	52	15	31



total sks=1810

CS1601 TR# 8678 425 sks

CS1602 TR# 2878 425 sks

deflected from 8Bc-- > 31Bc ---- > 22Bc within one minute

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

Operation Test Results Request ID 2489596/2

Thickening Time - ON-OFF-ON

27/JUL/2018

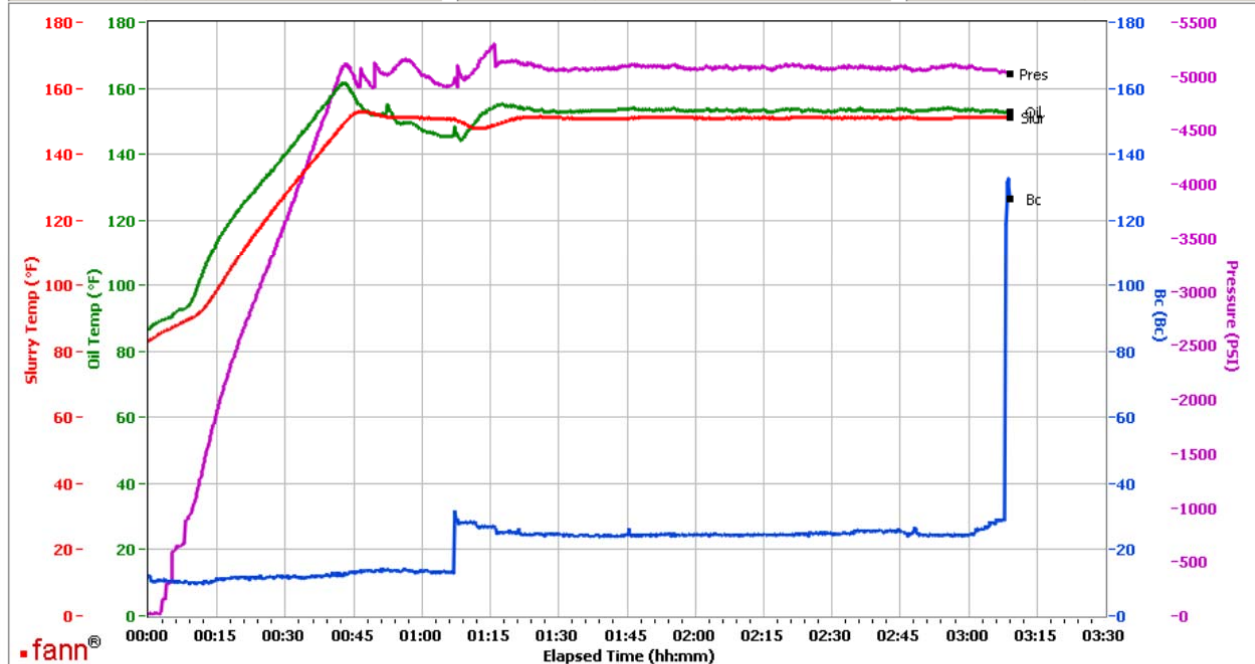
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:min)	50 Bc (hh:min)	70 Bc (hh:min)	100 Bc (hh:min)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
151	5124	42	1:07	3:08	3:08	3:08	12	52	15	36

Grand Junction, Colorado

Fields	Values
Project Name	GJ2489596-2 TERRA PRODUCTION BULK PR
Test ID	25693092
Request ID	GJ2489596-2
Tested by	DEBA
Customer	TERRA ENERGY PARTNERS
Well No	PA 512-26
Rig	H&P 271
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	07/27/18
Test Time	04:18 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	01h:07m
40.00 Bc	03h:08m
50.00 Bc	03h:08m
70.00 Bc	03h:08m
100.00 Bc	03h:08m
00h:30m	11.80
01h:00m	13.16
01h:30m	24.70



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\H27OCB56\GJ2489596-2 TERRA PRODUCTION BULK PRIMARY[1].tdms

Comments CS1606 TR#8658 425 SKS AND CS1607 TR#8677 425 SKS

total sks=1810

CS1606 TR#8658 425 SKS

CS1607 TR#8677 425 SKS

Deflected 12-- > 36-- > 25 after 1 minute.

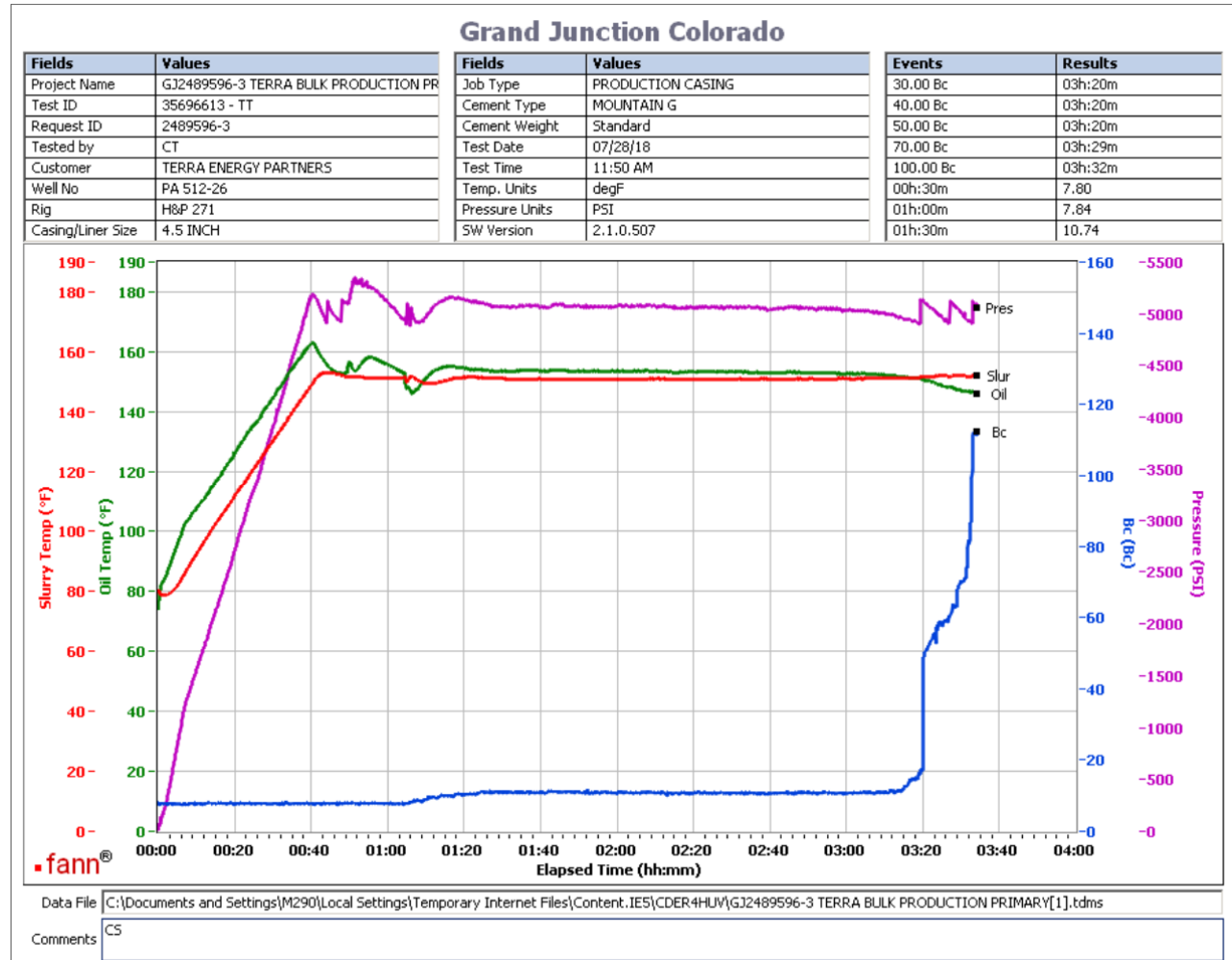
This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.

Operation Test Results Request ID 2489596/3

Thickening Time - ON-OFF-ON

28/JUL/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)
151	5124	42	3:20	3:20	3:29	3:32	8	52	15	7



total sks=1810
CS1610, trailer 4549, 110 sks
Deflection: 7 - 7

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.