

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS-EBUS

For: Terra

Date: Saturday, May 26, 2018

RU 424-17 Production PJR

API# 05-045-23742-00

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

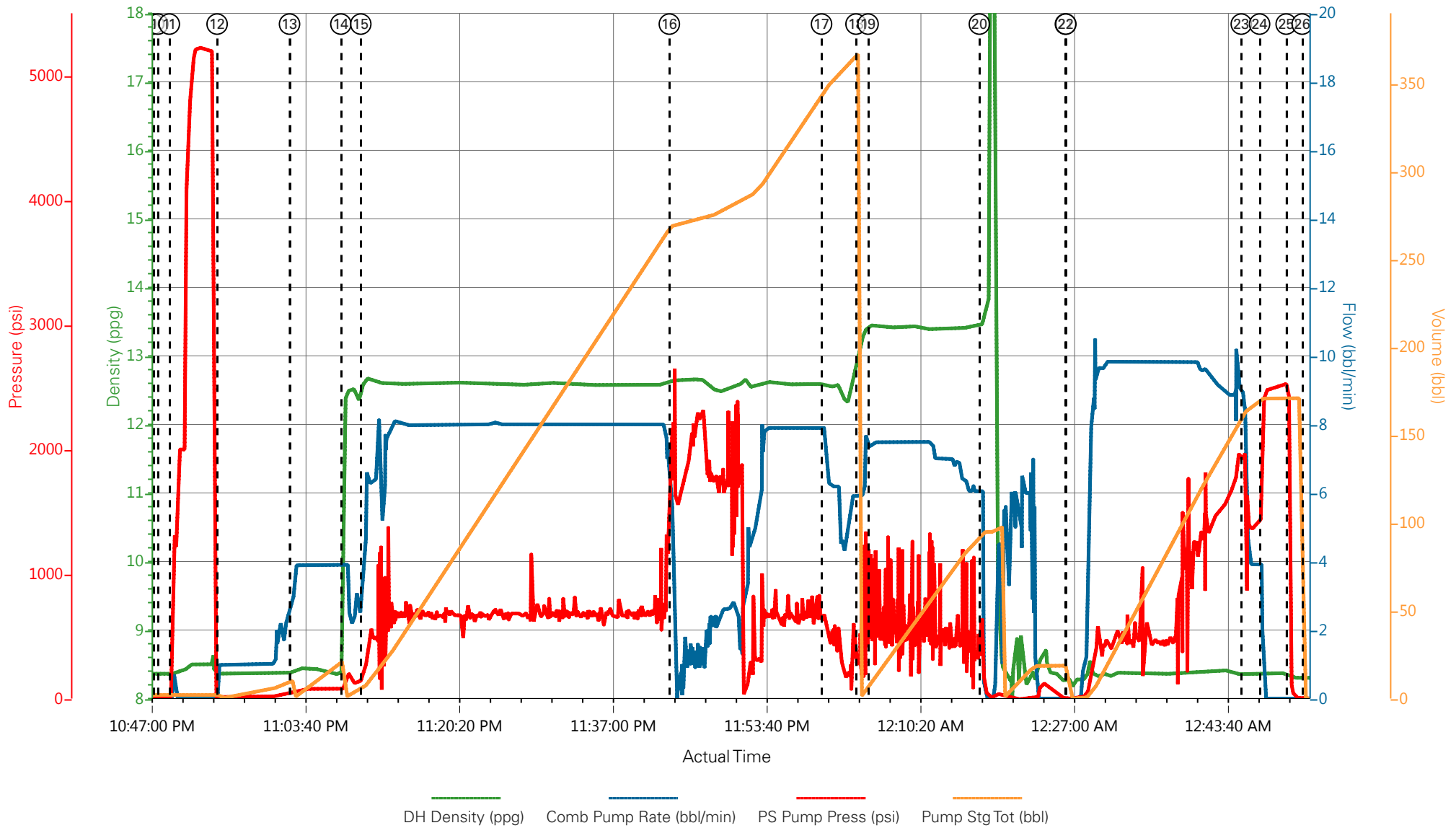
2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	PS Pump Press <i>(psi)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	5/25/2018	12:30:00	USER					REQUESTED ON LOCATION @ 18:00
Event	2	Pre-Convoy Safety Meeting	5/25/2018	14:00:00	USER					ALL HES EMPLOYEES PRESENT
Event	3	Crew Leave Yard	5/25/2018	14:15:00	USER					1 HT 400 PUMP TRUCK E1, 1 660 BULK TRUCK, 1 F450 SERVICE TRUCK
Event	4	Arrive At Loc	5/25/2018	16:30:00	USER					RIG RUNNING CASING UPON HES ARRIVAL
Event	5	Assessment Of Location Safety Meeting	5/25/2018	16:40:00	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- 60F). COMP REP WAS OFFERED SDS FOR ALL CHEMICLES USED BY HES.
Event	6	Pre-Rig Up Safety Meeting	5/25/2018	16:50:00	USER					ALL HES PRESENT
Event	7	Rig-Up Equipment	5/25/2018	17:00:00	USER					HES RIGGED UP EQUIPMENT WITHOUT ENTERING RED ZONE.
Event	8	Pre-Job Safety Meeting	5/25/2018	22:10:00	USER					ALL HES EMPLOYEES AND RIG CREW PRESENT, RIG CIRCULATED @ 10.5 BPM PRIOR TO JOB PRESSURE @ 1200 PSI, 2500 CFM

Event	9	Start Job	5/25/2018	22:47:30	COM6						TD 10491', TP 10481', SJ 31.79', SURFACE CSG 9 5/8" 32.3# H-40 SET @ 1105' PRODUCTION CSG 4 1/2" 11.6# P-110, OH 8 3/4", MUD 8.8 PPG
Event	10	Fill Lines	5/25/2018	22:48:00	COM6	8.33	2	60	2		8.33 PPG FRESH WATER
Event	11	Test Lines	5/25/2018	22:49:14	COM6					5230	ALL LINES HELD PRESSURE AT 5230 PSI
Event	12	Pump H2O Spacer	5/25/2018	22:54:25	COM6	8.33	2	60	10		8.33 PPG FRESH WATER
Event	13	Mud Flush	5/25/2018	23:02:16	COM6	8.4	4	85	20		20 BBL MUDFLUSH III
Event	14	Pump Lead Cement	5/25/2018	23:07:50	COM6	12.5	8	680	323		935 SKS NEOCEM CMT 12.5 PPG, 1.94 FT3/SK, 9.60 GAL/SK
Event	15	Check weight	5/25/2018	23:10:00	COM6						WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	16	Slow Rate	5/25/2018	23:43:27	USER	12.5	2	2100	269		SLOWED RATE DUE TO PRESSURE SPIKE
Event	17	Slow Rate	5/25/2018	23:59:57	USER						SLOWED TO END LEAD SILO
Event	18	Pump Tail Cement	5/26/2018	00:03:41	COM6	13.3	7	500	81.7		265 SKS THERMACEM CMT 13.3 PPG, 1.73 FT3/SK, 7.81 GAL/SK.
Event	19	Check weight	5/26/2018	00:05:00	COM6						WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	20	Shutdown	5/26/2018	00:17:03	USER						END OF CEMENT. CLEAN PUMPS AND LINES TO PIT.
Event	21	Pump Displacement	5/26/2018	00:26:23	COM6	8.4	10	1950	162		1 GAL MMCR IN FIRST 10 BBLS, 3 LBS BE-6 IN FIRST 30 BBLS, 1 50 LB. BAG KCL THROUGHOUT DISPLACEMENT
Event	22	Drop Top Plug	5/26/2018	00:26:26	USER						VERIFIED BY FLAG INDICATOR

Event	23	Slow Rate	5/26/2018	00:45:27	USER	8.4	4	1360	152	SLOW RATE TO 4 BPM TO BUMP PLUG
Event	24	Bump Plug	5/26/2018	00:47:26	COM6	8.4	4	1550	162	LANDED PLUG AT 1550 PSI, BROUGHT UP TO 2480 PSI
Event	25	Check Floats	5/26/2018	00:50:19	USER					FLOATS HELD, 1.5BBLS BACK TO TRUCK
Event	26	End Job	5/26/2018	00:52:03	COM6					HAD RETURNS BEFORE JOB AND PARCIAL RETURNS THROUGHT CEMENT. LOST RETURNS DURING WASH UP AND REGAINED RETURNS AT 60BBLS GONE ON DISPLACEMENT, BUT LOST RETURNS AT 130BBLS GONE ON DISPLACEMENT.
Event	27	Post-Job Safety Meeting (Pre Rig-Down)	5/26/2018	01:00:00	USER					ALL HES PRESENT
Event	28	Rig-Down Equipment	5/26/2018	01:15:00	USER					ALL HES PRESENT
Event	29	Pre-Convoy Safety Meeting	5/26/2018	02:00:00	USER					ALL HES PRESENT
Event	30	Crew Leave Location	5/26/2018	02:03:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENT, SHAWN BLOSSOM AND CREW

TERRA RU 424-17, 4.5" PRODUCTION



- | | | | | |
|-----------------------------------------|--------------------------|--------------------|----------------------|-------------------------------------------|
| ① Call Out | ⑦ Rig-Up Equipment | ⑬ Mud Flush | ⑰ Check weight | 25 Check Floats |
| ② Pre-Convoy Safety Meeting | ⑧ Pre-Job Safety Meeting | ⑭ Pump Lead Cement | 20 Shutdown | 26 End Job |
| ③ Crew Leave Yard | ⑨ Start Job | ⑮ Check weight | 21 Pump Displacement | 27 Post-Job Safety Meeting (Pre Rig-Down) |
| ④ Arrive At Loc | ⑩ Fill Lines | ⑯ Slow Rate | 22 Drop Top Plug | 28 Rig-Down Equipment |
| ⑤ Assessment Of Location Safety Meeting | ⑪ Test Lines | ⑰ Slow Rate | 23 Slow Rate | 29 Pre-Convoy Safety Meeting |
| ⑥ Pre-Rig Up Safety Meeting | ⑫ Pump H2O Spacer | ⑱ Pump Tail Cement | 24 Bump Plug | 30 Crew Leave Location |

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Created: 2018-05-25 13:51:42, Version: 4.2.393

Edit

Customer : TERRA ENERGY PARTNERS-EBUS

Job Date : 5/25/2018

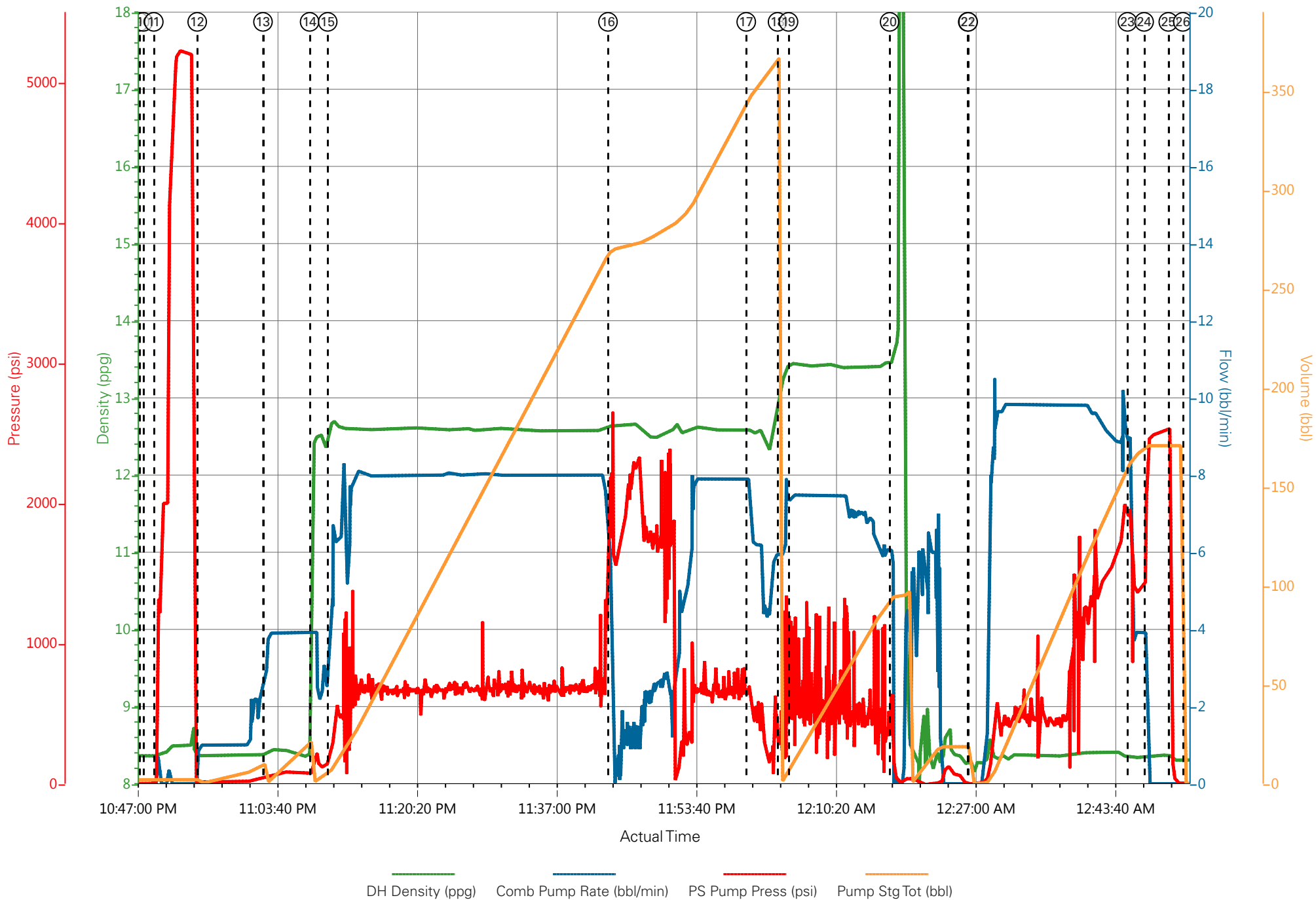
Well : RU 424-17

Representative : NATHAN BURR

Sales Order # : 904868610

ELITE 4 : D.BRENNECKE/ S.BLOSSOM

TERRA RU 424-17, 4.5" PRODUCTION



Job Information

Request/Slurry	2475338/1	Rig Name	H&P 318	Date	17/MAY/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	RU 424-17

Well Information

Casing/Liner Size	4.5 in	Depth MD	10690 ft	BHST	127°C / 260°F
Hole Size	8.75 in	Depth TVD	10567 ft	BHCT	92°C / 197°F
Pressure	6694 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>	<u>Cement Properties</u>		
		NeoCem				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.941	ft ³ /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 2475338/1

Thickening Time - ON-OFF-ON

22/MAY/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)
197	6694	52	3:58	4:21	4:30	4:53	11	62	15

Total sks = 935

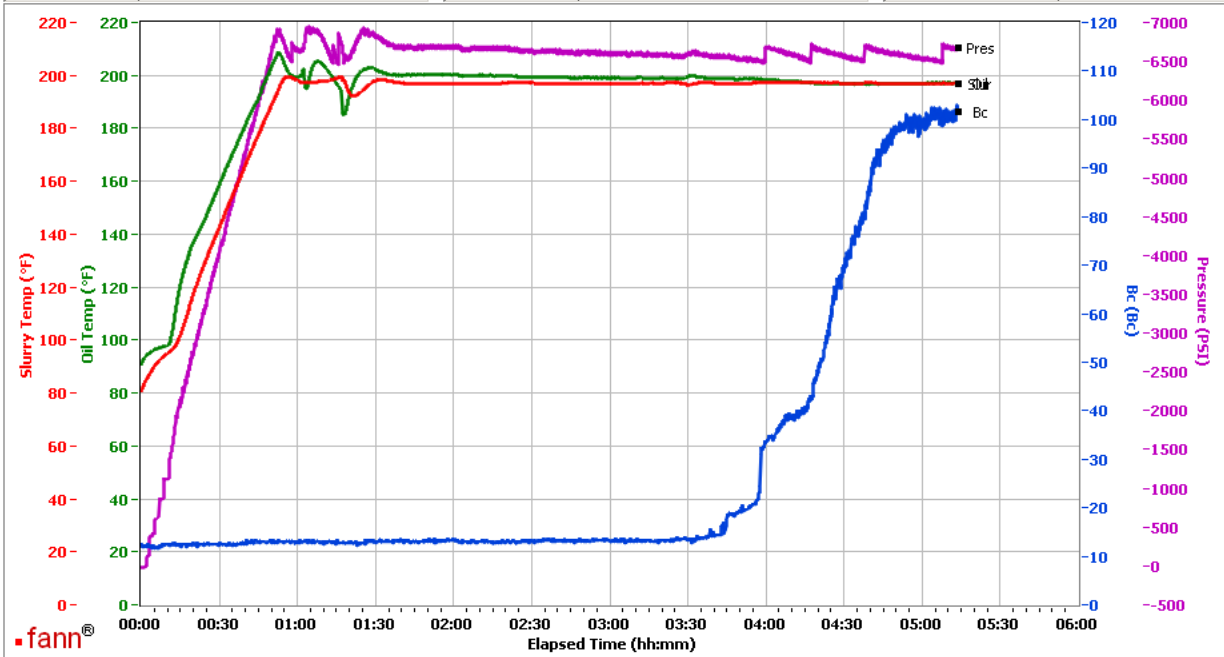
CS1077 TR#8658 400 SKS

CS1078 TR#8677 400 SKS

CS1079 TR#5692 135 SKS

Grand Junction Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2475338-1 TERRA PRODUCTION BULK LE	Job Type	PRODUCTION CASING	30.00 Bc	03h:58m
Test ID	35507025	Cement Type	GCC TYPE I-II	40.00 Bc	04h:11m
Request ID	GJ2475338-1	Cement Weight	Standard	50.00 Bc	04h:21m
Tested by	DEBA	Test Date	05/21/18	70.00 Bc	04h:30m
Customer	TERRA ENERGY PARTNERS	Test Time	07:11PM	100.00 Bc	04h:53m
Well No	RU 424-17	Temp. Units	degF	00h:30m	12.80
Rig	H&P 318	Pressure Units	PSI	01h:00m	12.90
Casing/Liner Size	4.5"	SW Version	2.1.0.507	01h:30m	13.11



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\4TIJ89YN\GJ2475338-1 TERRA PRODUCTION BULK LEAD[1].tdms
 Comments CS1077 TR#8658 400 SKS, CS1078 TR#8677 400 SKS AND CS1079 TR#5692 135 SKS

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Job Information

Request/Slurry	2475339/1	Rig Name	H&P 318	Date	17/MAY/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	RU 424-17

Well Information

Casing/Liner Size	4.5 in	Depth MD	10690 ft	BHST	127°C / 260°F
Hole Size	8.75 in	Depth TVD	10567 ft	BHCT	92°C / 197°F
Pressure	6697 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>	<u>Cement Properties</u>		
		ThermaCem				Slurry Density	13.3	lbm/gal
						Slurry Yield	1.734	ft ³ /sack
						Water Requirement	7.809	gal/sack
						Total Mix Fluid	7.809	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Operation Test Results Request ID 2475339/1

Thickening Time - ON-OFF-ON

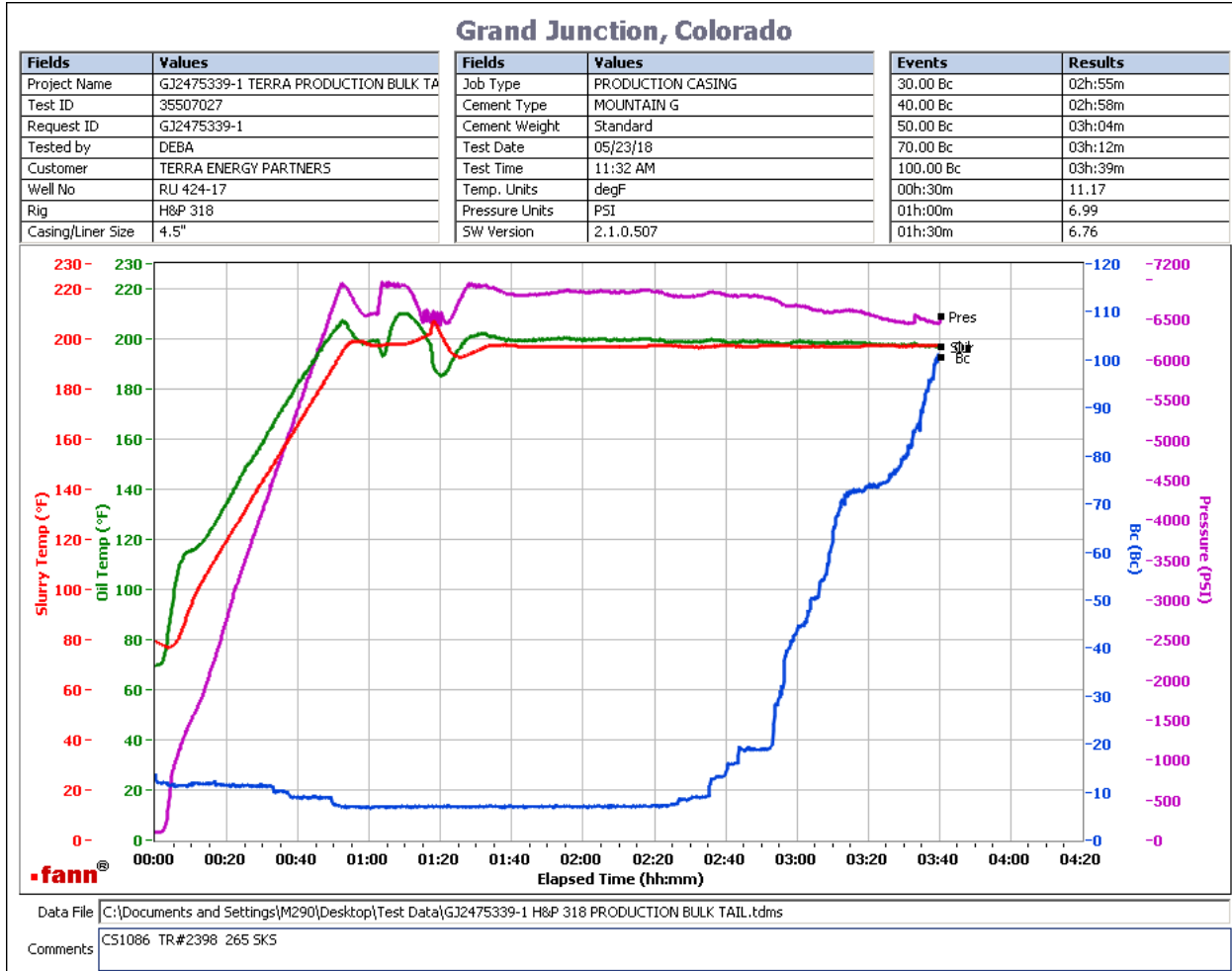
23/MAY/2018

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)
197	6697	52	2:53	3:04	3:12	3:39	12	62	15	7

Total sks = 265

CS1086 TR#2398 265 sks

no deflection 7Bc--- > 7Bc



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