

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

For: Terra

Date: Tuesday, October 24, 2017

GM 513-4

API: 05-045-23507-00

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Downhole Density <i>(ppg)</i>	Combined Pump Rate <i>(bbl/min)</i>	Pass-Side Pump Pressure <i>(psi)</i>	Pump Stage Total <i>(bbl)</i>	Comments
Event	1		Call Out	10/24/2017	03:30:00	USER					ALL HES CALLED OUT - ON LOCATION TIME 08:30
Event	2		Pre-Convoy Safety Meeting	10/24/2017	05:00:00	USER					JOURNEY CREATED - ALL HES IN ATTENDANCE FOR SAFETY MEETING
Event	3		Crew Leave Yard	10/24/2017	05:30:00	USER					1-F-550 PICKUP, 1-ELITE PUMP TRUCK, 1-660 BULK TRUCK
Event	4		Arrive At Loc	10/24/2017	07:00:00	USER					HES ARRIVED 1.5 HOURS EARLY
Event	5		Assessment Of Location Safety Meeting	10/24/2017	07:10:00	USER					RIG WAS RUNNING CASING - HES REP WENT AND SPOKE WITH COMPANY REP
Event	6		Pre-Rig Up Safety Meeting	10/24/2017	07:45:00	USER					JSA FILLED OUT - ALL HES IN ATTENDANCE
Event	7		Rig-Up Equipment	10/24/2017	07:50:00	USER					RIG-UP IRON TO THE RIG FLOOR AND WASH UP LINE TO WASH UP TANKS - WATER HOSES TO BOTH WATER UPRIGHTS - BULK EQUIPMENT TO PUMP TRUCK
Event	8		Rig-Up Completed	10/24/2017	08:30:00	USER					COMPLETED SAFELY
Event	9		Pre-Job Safety Meeting	10/24/2017	08:35:00	USER					ALL HES, RIG CREW AND COMPANY REP IN ATTENDANCE TO DISCUSS JOB PROCEDURES

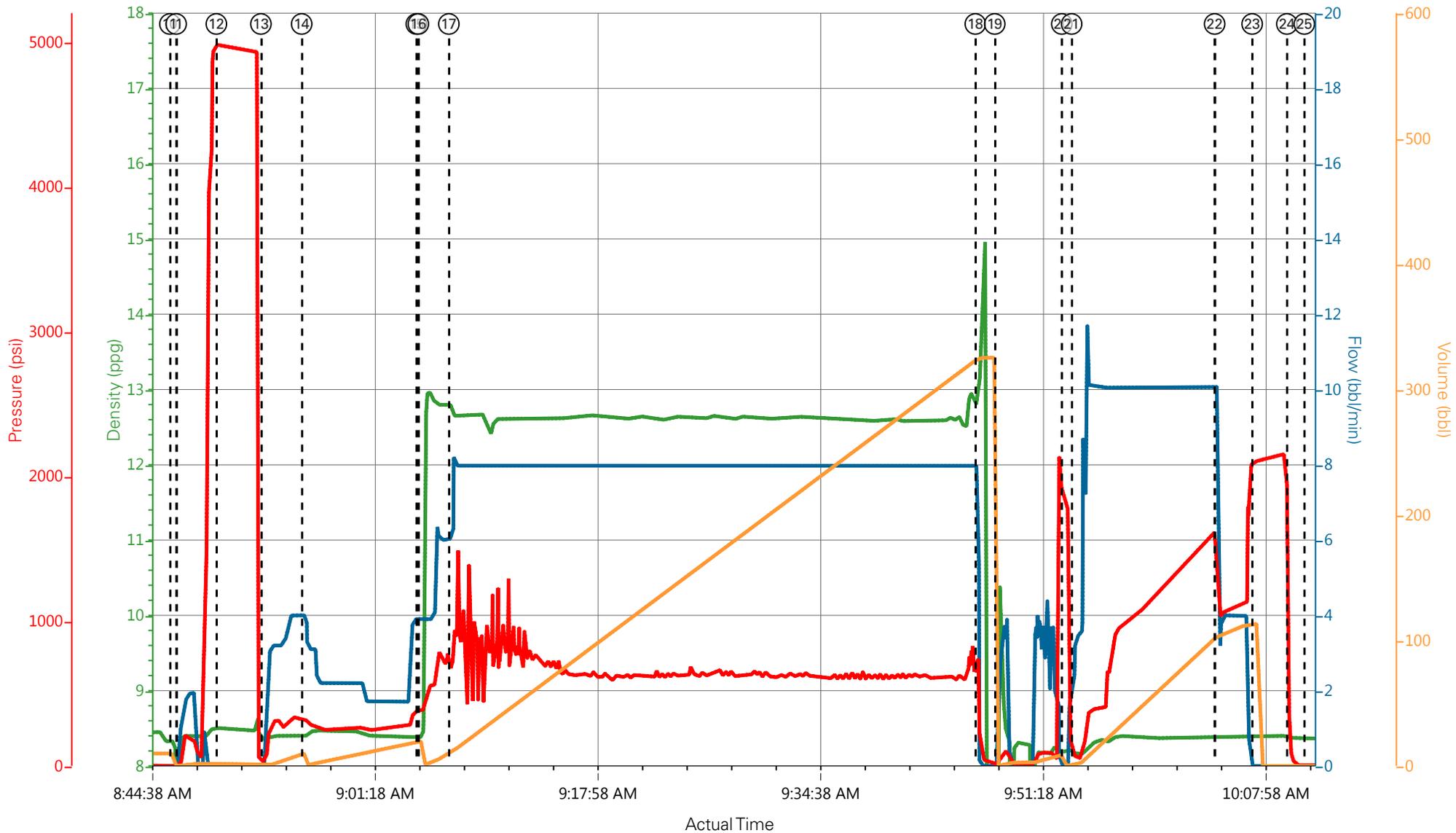
Event	10	Start Job	10/24/2017	08:46:12	COM5						TD: 7066FT TP: 7056FT SJ: 31FT OH: 8 3/4" CSG: 4 1/2" 11.6# P-110 MUD WT: 9.8 SRF CSG: 9 5/8" 32.3# SET AT- 1022FT WTR TEST: TEMP- 60 PH- 7 CHLOR- 0
Event	11	Fill Lines	10/24/2017	08:46:40	USER	8.34	2	252	2		2 BBLS OF WATER AHEAD TO FILL LINES TO PRESSURE TEST
Event	12	Test Lines	10/24/2017	08:49:40	COM5			4986			PRESSURE TEST LINES TO 4986 PSI - PRESSURE TEST OK
Event	13	Water Spacer	10/24/2017	08:53:00	COM5	8.34	4	340	10		10 BBL WATER SPACER AHEAD PUMPED AT 4 BPM PRESSURE WAS 340 PSI
Event	14	Mud Flush Spacer	10/24/2017	08:56:03	COM5	8.56	4	370	20		20 BBL MUD FLUSH SPACER AHEAD PUMPED AT 4 BPM PRESSURE WAS 370 PSI
Event	15	Check weight	10/24/2017	09:04:38	COM5	12.5					VERIFIED WEIGHT OF CEMENT VIA PRESSURIZED MUD SCALES PRIOR TO PUMPING CEMENT
Event	16	Pump Cement	10/24/2017	09:04:47	COM5	12.5	8	700	300.2		860 SKS OF NEOCEM CEMENT (300.2BBLS) 12.5PPG 1.96YIELD 9.38GAL/SK WEIGHT OF CEMENT VERIFIED VIA PRESSURIZED MUD SCALES THROUGHOUT CEMENT
Event	17	Check weight	10/24/2017	09:07:04	COM5	12.5					VERIFIED WEIGHT OF CEMENT
Event	18	Shutdown	10/24/2017	09:46:28	USER	12.5			300.2		SHUTDOWN END OF CEMENT
Event	19	Clean Lines	10/24/2017	09:47:56	USER						CLEAN LINES TO RIG CATCH TANK WITH FRESH WATER - BLOW DOWN STAN PIPE

											WITH RIG SUPPLIED AIR - READY TANKS FOR DISPLACEMENT
Event	20	Drop Top Plug	10/24/2017	09:52:57	USER						TOP PLUG AWAY NO PROBLEMS - POSITIVE DISPLACEMENT WAS USED
Event	21	Pump Displacement	10/24/2017	09:53:41	COM5	8.35	10	1625	98.8		FRESH WATER DISPLACEMENT WITH 1- BAG OF KCL PER 10 BBLS, 3- POUND OF BE-6 IN THE FIRST 30 BBLS AND 1-GAL OF MMCR IN THE FIRST 10 BBLS
Event	22	Slow Rate	10/24/2017	10:04:23	USER	8.35	4	1070	10		SLOW RATE TO BUMP THE PLUG - PRESSURE PRIOR TO SLOWING WAS 1625 PSI AT 10 BPM - AFTER SLOWING TO 4 BPM PRESSURE WAS 1070 PSI
Event	23	Bump Plug	10/24/2017	10:07:12	COM5	8.35	4	1200	108.8		PLUG BUMPED AT CALCULATED DISPLACEMENT - PLUG BUMPED AT 1200 PSI AT 4 BPM TOOK TO 1700 PSI
Event	24	Check Floats	10/24/2017	10:09:47	COM5			1700			FLOATS HELD 1 BBL BACK TO TANKS - RIG USED 10 POUND OF SUGAR - GOOD RETURNS THROUGHOUT CEMENT JOB
Event	25	End Job	10/24/2017	10:11:06	COM5						THANK YOU FOR CHOOSING HALLIBURTON CEMENT CARL KUKUS AND CREW
Event	26	Pre-Rig Down Safety Meeting	10/24/2017	10:15:00	USER						JSA REVIEWED - ALL HES IN ATTENDANCE
Event	27	Rig-Down Equipment	10/24/2017	10:20:00	USER						WASH UP AND BLOW DOWN PUMP TRUCK - RIG DOWN ALL IRON, WATER

HOSES AND BULK
EQUIPMENT - PREPARE
CEMENT SILOS FOR RIG
MOVE

Event	28	Rig-Down Completed	10/24/2017	11:20:00	USER	COMPLETED SAFELY
Event	29	Pre-Convoy Safety Meeting	10/24/2017	11:25:00	USER	JOURNEY CREATED - ALL HES IN ATTENDANCE
Event	30	Crew Leave Location	10/24/2017	11:30:00	USER	1-F-550 PICKUP WITH IRON TRAILER, 1-ELITE PUMP TRUCK, 1-660 BULK TRUCK

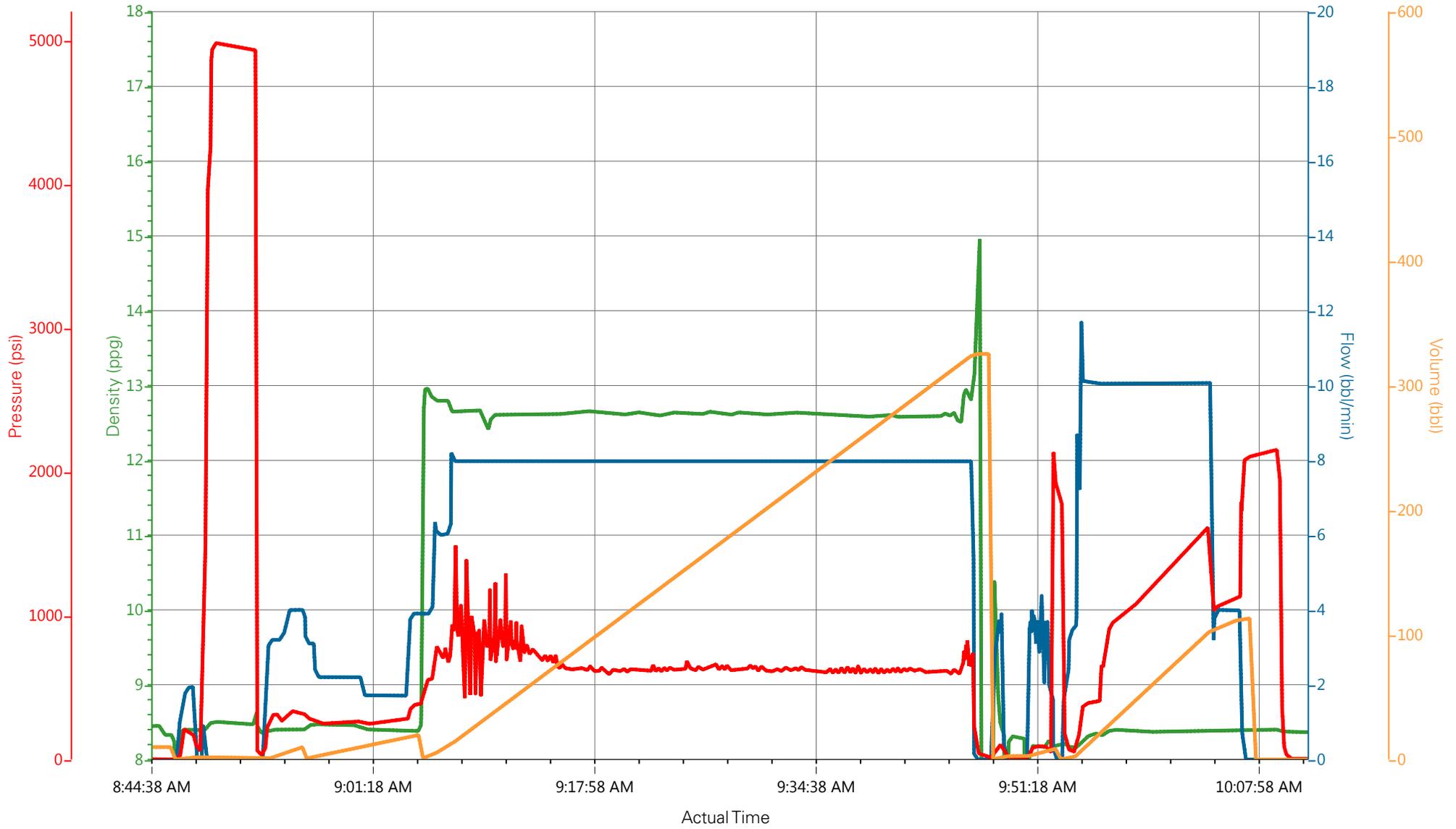
TEP - GM 513-4 - 904384066 - PRODUCTION



DH Density (ppg) 8.36 Comb Pump Rate (bbl/min) 0 PS Pump Press (psi) 6 Pump Stg Tot (bbl) 0

- ① Call Out ③ Crew Leave Yard ⑤ Assessment Of Location Safety Meeting ⑦ Rig-Up Equipment ⑨ Pre-Job Safety Meeting ⑪ Fill Lines ⑬ Water Spacer ⑮ Check weight
- ② Pre-Convoy Safety Meeting ④ Arrive At Loc ⑥ Pre-Rig Up Safety Meeting ⑧ Rig-Up Completed ⑩ Start Job ⑫ Test Lines ⑭ Mud Flush Spacer ⑯ Pump Cement

TEP - GM 513-4 - 904384066 - PRODUCTION



DH Density (ppg) 8.36 Comb Pump Rate (bbl/min) 0 PS Pump Press (psi) 6 Pump Stg Tot (bbl) 0

Job Information

Request/Slurry	2424301/1	Rig Name	H&P 271	Date	19/OCT/2017
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	GM 513-4

Well Information

Casing/Liner Size	4.5 in	Depth MD	7118 ft	BHST	89°C / 193°F
Hole Size	8.75 in	Depth TVD	6671 ft	BHCT	54°C / 129°F
Pressure	3970 psi				

Drilling Fluid Information

Mud Supplier Name	Baroid	Mud Trade Name	BARADRIL-N	Density	9.2 lbm/gal
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Cement Information - Primary Design

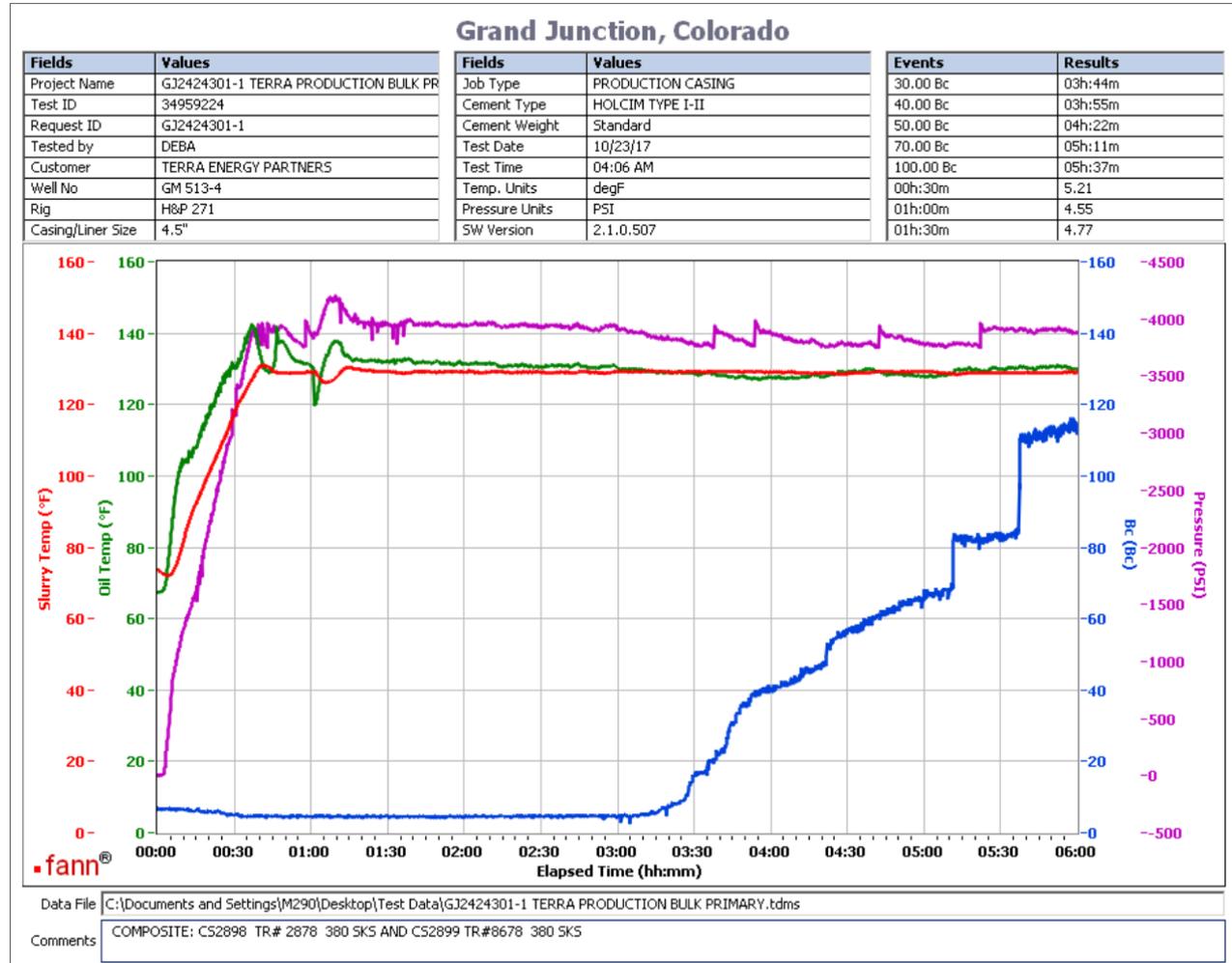
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		NeoCem Primary				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.962	ft ³ /sack
						Water Requirement	9.434	gal/sack
						Total Mix Fluid	9.434	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Thickening Time - ON-OFF-ON

23/OCT/2017

Test Temp (°F)	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)
129	3970	36	3:44	4:22	5:11	5:37	7	46	15	5



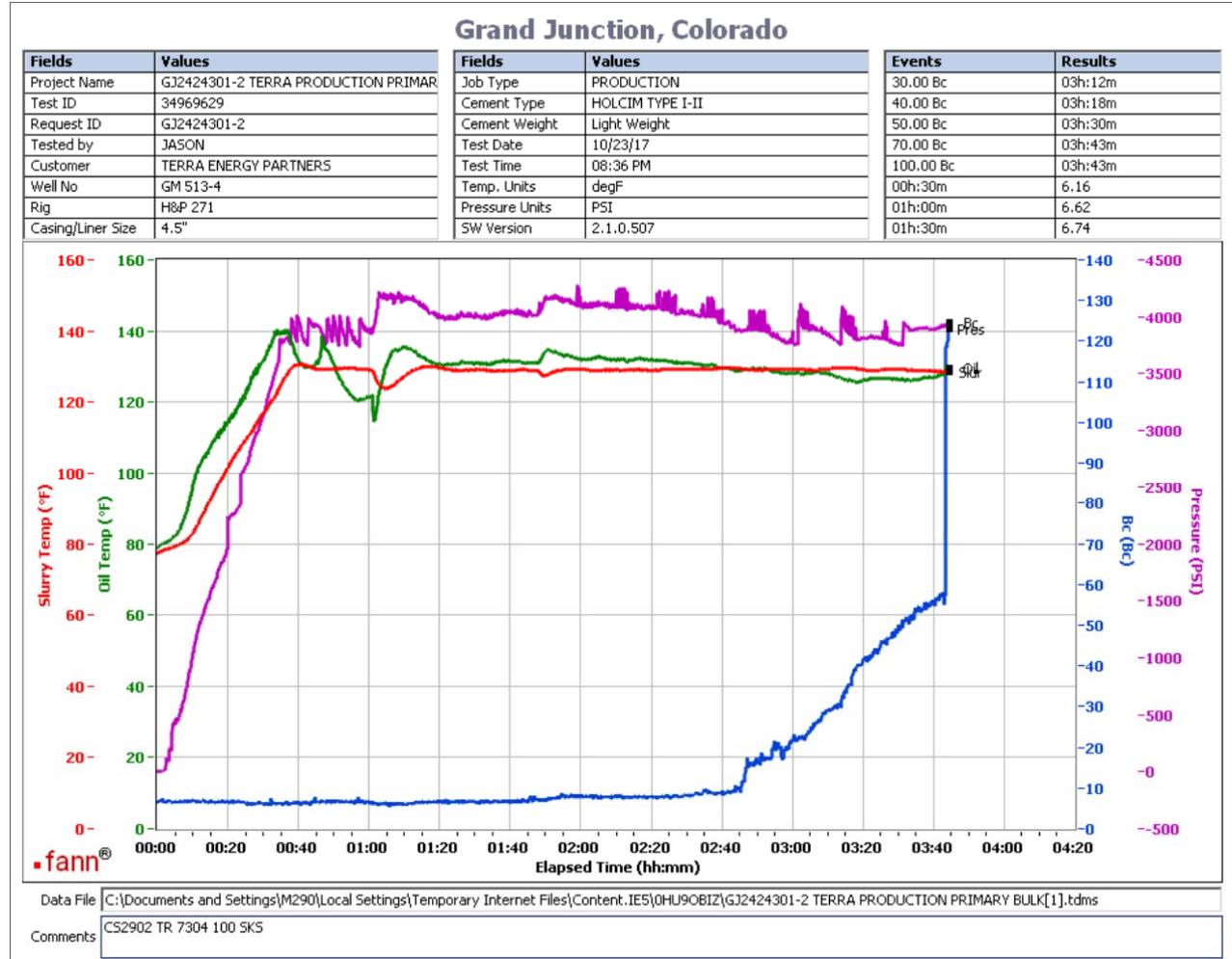
Total sks = 860
 Composite:
 CS2898 TR# 2878 380 SKS
 CS2899 TR# 8678 380 SKS
 No deflection

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Operation Test Results Request ID 2424301/2

Thickening Time - ON-OFF-ON 23/OCT/2017

Test Temp (°F)	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)
129	3970	36	3:12	3:30	3:43	3:43	7	46	15	6



Total sks = 860
CS2902 TR 7304 100 SKS

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