

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

United States of America, COLORADO

Date: Friday, June 08, 2018

RU 24-17

API # 05-045-23749-00

Terra RU 24-17 Production

Job Date: Sunday, June 03, 2018

Sincerely,

Grand Junction Cement Engineering

1.0 Real-Time Job Summary

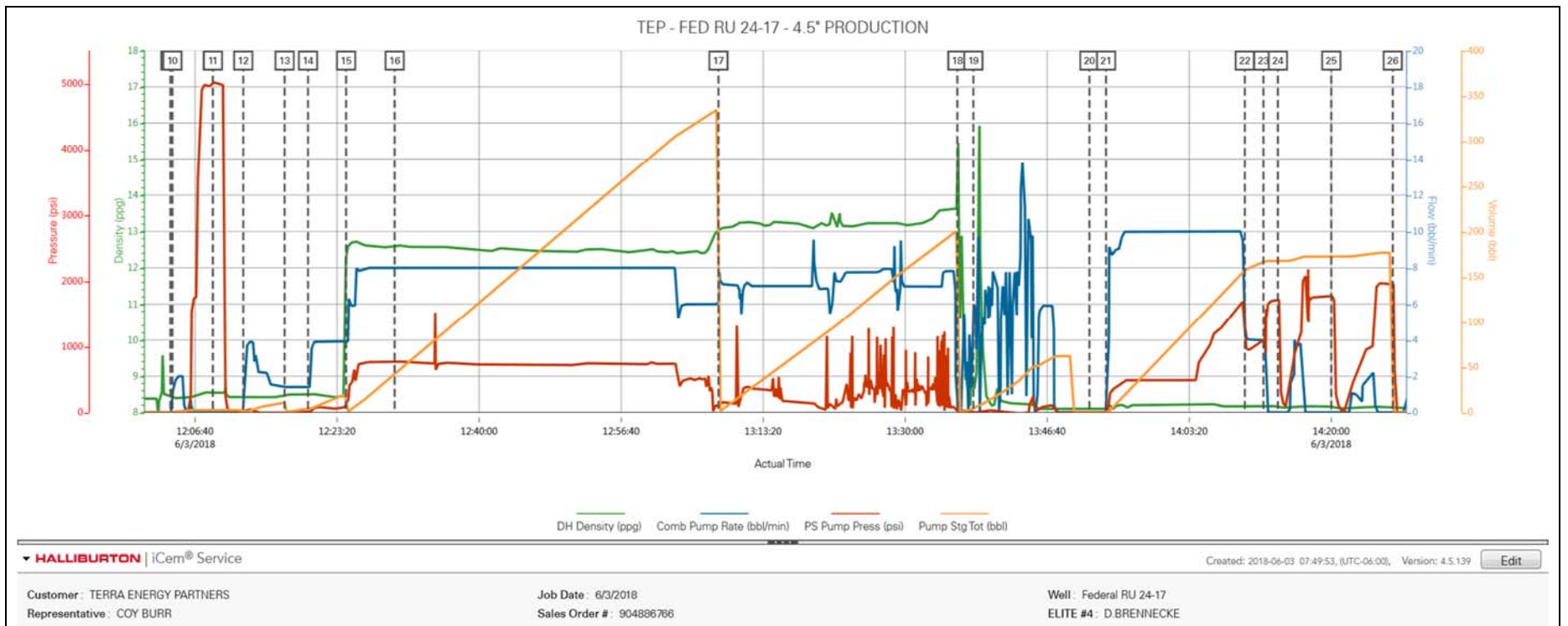
1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	6/3/2018	01:30:00	USER					Requested on Location @ 8:00
Event	2	Pre-Convoy Safety Meeting	6/3/2018	04:30:00	USER					All HES Present
Event	3	Crew Leave Yard	6/3/2018	04:50:00	USER					1 Elite, 1 660,1 Silo 1 pickup
Event	4	Arrive at Location from Service Center	6/3/2018	06:45:00	USER					Rig running casing
Event	5	Assessment Of Location Safety Meeting	6/3/2018	07:00:00	USER					JSA completed - Customer offered/received SDS - water test pH 7.0, Cl <200, temp 60 degrees
Event	6	Pre-Rig Up Safety Meeting	6/3/2018	07:15:00	USER					1 hardline to standpipe, water hoses to upright, bulk hose to 660 and silo
Event	7	Other	6/3/2018	08:30:00	USER					Rig Circulated 1.5 bottoms up prior to cement job at 450 gpm 800 psi. WATER:TEMP-65, PH-7, CL-0
Event	8	Pre-Job Safety Meeting	6/3/2018	11:00:00	USER					All HES personnel, rig crew, and company rep
Event	9	Start Job	6/3/2018	12:03:46	USER	8.46	0.00	-1.00	0.00	TD 10357', TP 10333', SJ 31', OH 8.75'', Csg - 4.5" 11.6# p110, Scsg 9.625'' 32.3 lb/ft H-40 shoe @ 1132', Mud 8.9 ppg.
Event	10	Fill Lines	6/3/2018	12:04:00	USER	8.40	0.90	29.00	3.00	Fresh Water
Event	11	Test Lines	6/3/2018	12:08:45	COM5	8.56	0.00	5006.00	3.00	All Pressure Held on Lines
Event	12	Pump Water Spacer	6/3/2018	12:12:19	COM5	8.44	4.00	42.00	10.00	Fresh Water
Event	13	Pump Mud Flush III	6/3/2018	12:17:10	COM5	8.45	4.00	86.00	20.00	Mud Flush III

Event	14	Check Weight	6/3/2018	12:19:55	COM5					Weight Verified by Pressurized Mud Scales
Event	15	Pump Lead Cement	6/3/2018	12:24:23	COM5	12.50	8.00	780.00	321.30	NeoCem 930sks, 12.5ppg, 1.94CF/SK, 9.6GL/SK
Event	16	Check Weight	6/3/2018	12:30:05	COM5					Weight Verified By Pressurized Mud Scales
Event	17	Pump Tail Cement	6/3/2018	13:08:05	COM5	13.30	7.00	480.00	81.60	ThermaCem 265sks, 13.3ppg, 1.73CF/SK, 7.81GL/SK. Returns Slowed Transitioning into Tail Stage
Event	18	Shutdown	6/3/2018	13:36:07	USER					End of Cement
Event	19	Clean Lines	6/3/2018	13:38:00	USER					Cleaned Pumps and lines to Pit and re primed truck
Event	20	Drop Top Plug	6/3/2018	13:51:37	USER					Plug away
Event	21	Pump Displacement	6/3/2018	13:53:34	COM5	8.30	10.00	1700.00	159.70	KCL water, 3# Be6, 1gal MMCR
Event	22	Slow Rate	6/3/2018	14:09:51	USER	8.35	4.00	1235.00	149.70	Slow Rate 10 bbls to calculated displacement
Event	23	Bump Plug	6/3/2018	14:12:02	COM5	8.36	4.00	1109.00	159.7	Plug Bumped 1109psi
Event	24	Check Floats	6/3/2018	14:13:44	USER	8.37	0.00	1724.00		Floats did not hold 4 bbls back
Event	25	Check Floats	6/3/2018	14:20:00	USER	8.36	0.00	2000.00		Pumped 4 bbls back into well, floats did not hold
Event	26	End Job	6/3/2018	14:27:13	COM5	8.35	0.00	2000.00		Well Was Shut in with 2000Psi
Event	27	Post-Job Safety Meeting (Pre Rig-Down)	6/3/2018	14:30:00	USER					
Event	28	Pre-Convoy Safety Meeting	6/3/2018	15:45:00	USER					
Event	29	Crew Leave Location	6/3/2018	16:00:00	USER					Thanks for choosing Halliburton, Andrew Brennecke and crew

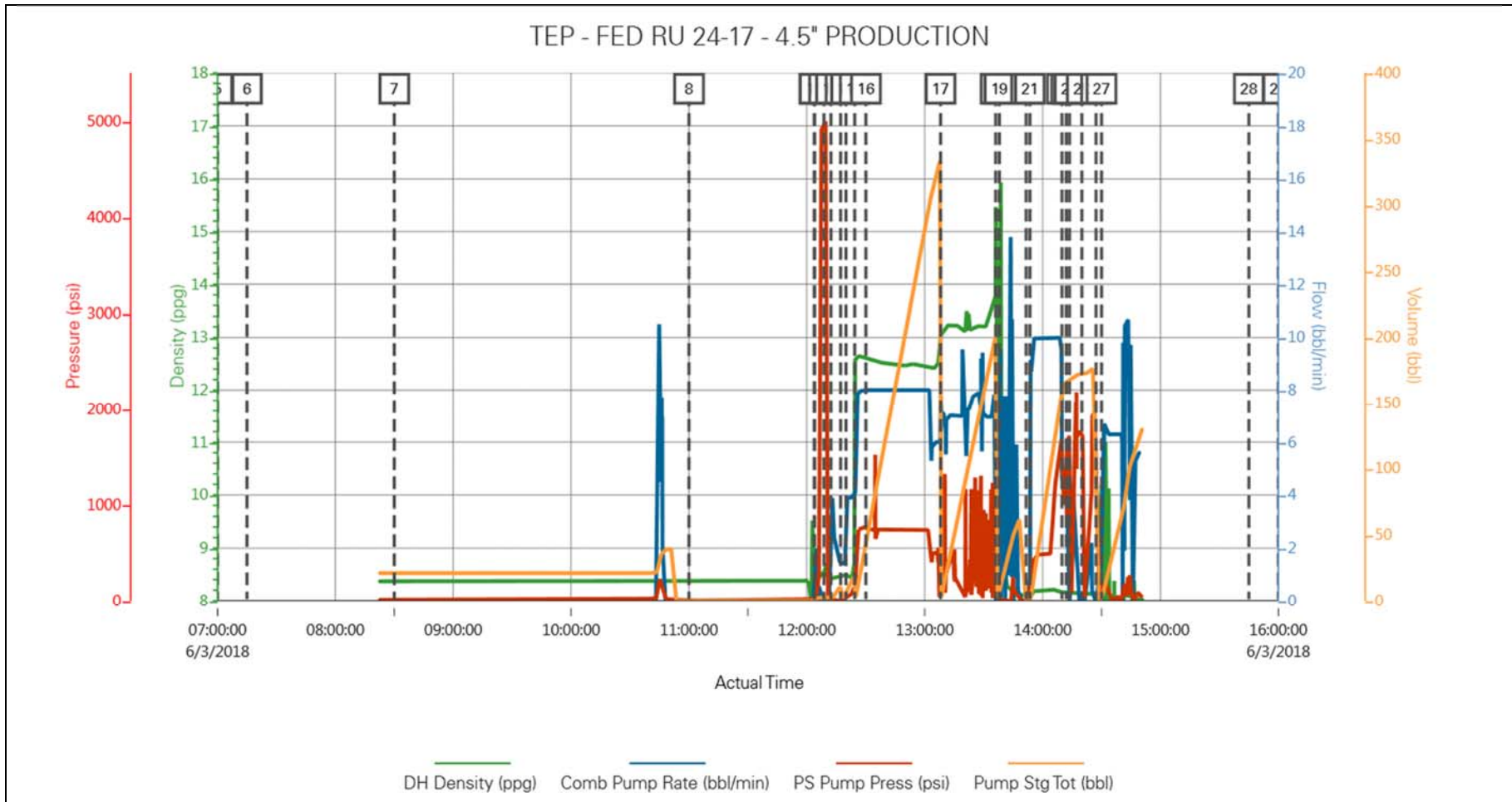
2.0 Attachments

2.1 904886766 4.5 PRODUCTION-Custom Results.png



3.0 Custom Graphs

3.1 Custom Graph



Job Information

Request/Slurry	2477325/1	Rig Name	H&P 318	Date	26/MAY/2018
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	RU 24-17

Well Information

Casing/Liner Size	4.5 in	Depth MD	10612 ft	BHST	127°C / 260°F
Hole Size	8.75 in	Depth TVD	10574 ft	BHCT	92°C / 198°F
Pressure	6702 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>		
						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		

These are draft results and have not been approved for final use.

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Operation Test Results Request ID 2477325/1

Thickening Time - ON-OFF-ON

01/JUN/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)
198	6702	52	4:32	5:39	5:45	5:45	12	62	15	12

Total sks = 930

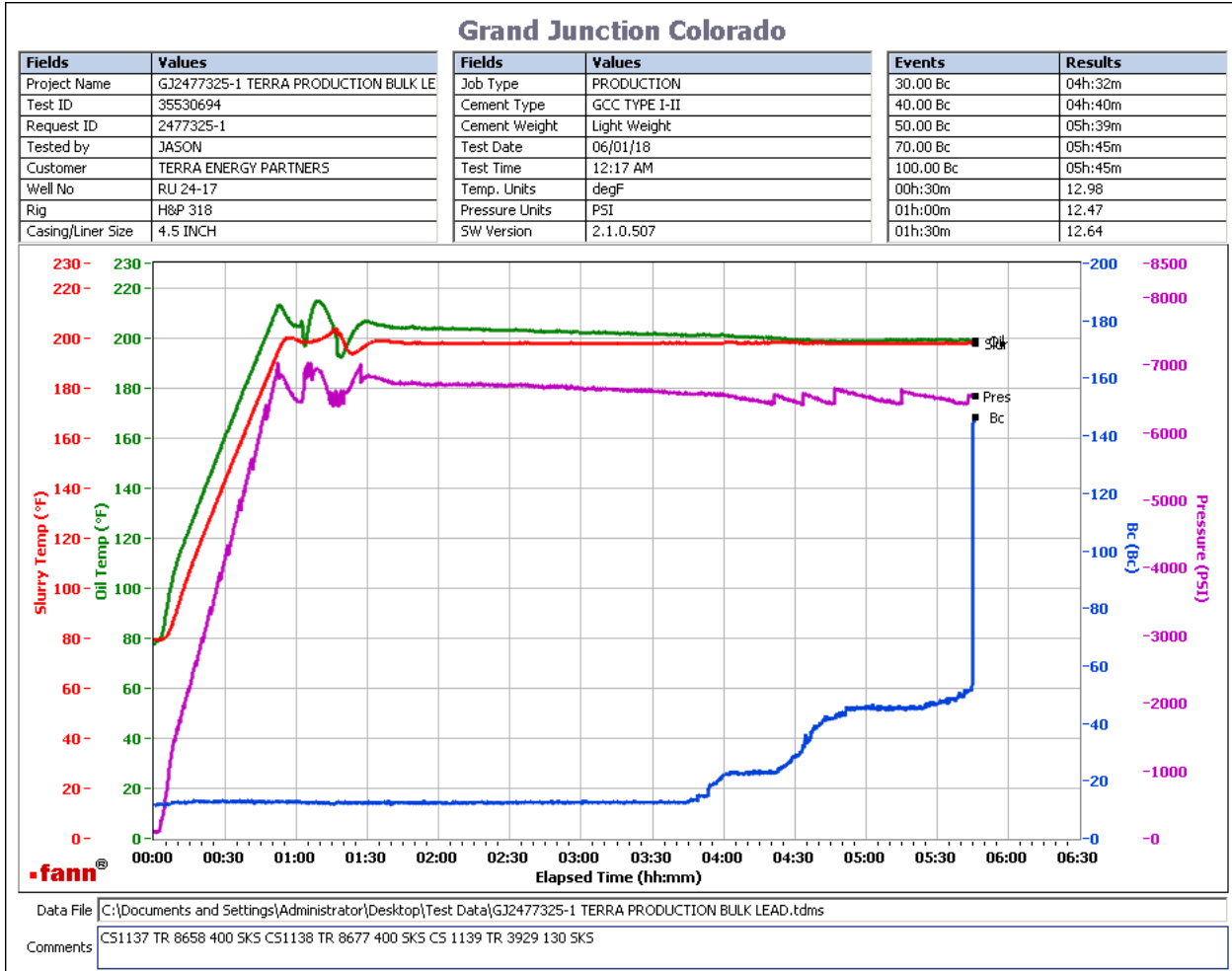
Composite:

CS1137 TR 8658 400 SKS

CS1138 TR 8677 400 SKS

CS1139 TR 3929 130 SKS

No deflection



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Job Information

Request/Slurry	2477326/1	Rig Name	H&P 318	Date	26/MAY/2018
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	RU 24-17

Well Information

Casing/Liner Size	4.5 in	Depth MD	10612 ft	BHST	127°C / 260°F
Hole Size	8.75 in	Depth TVD	10574 ft	BHCT	92°C / 198°F
Pressure	6702 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>		
						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 2477326/1

Thickening Time - ON-OFF-ON

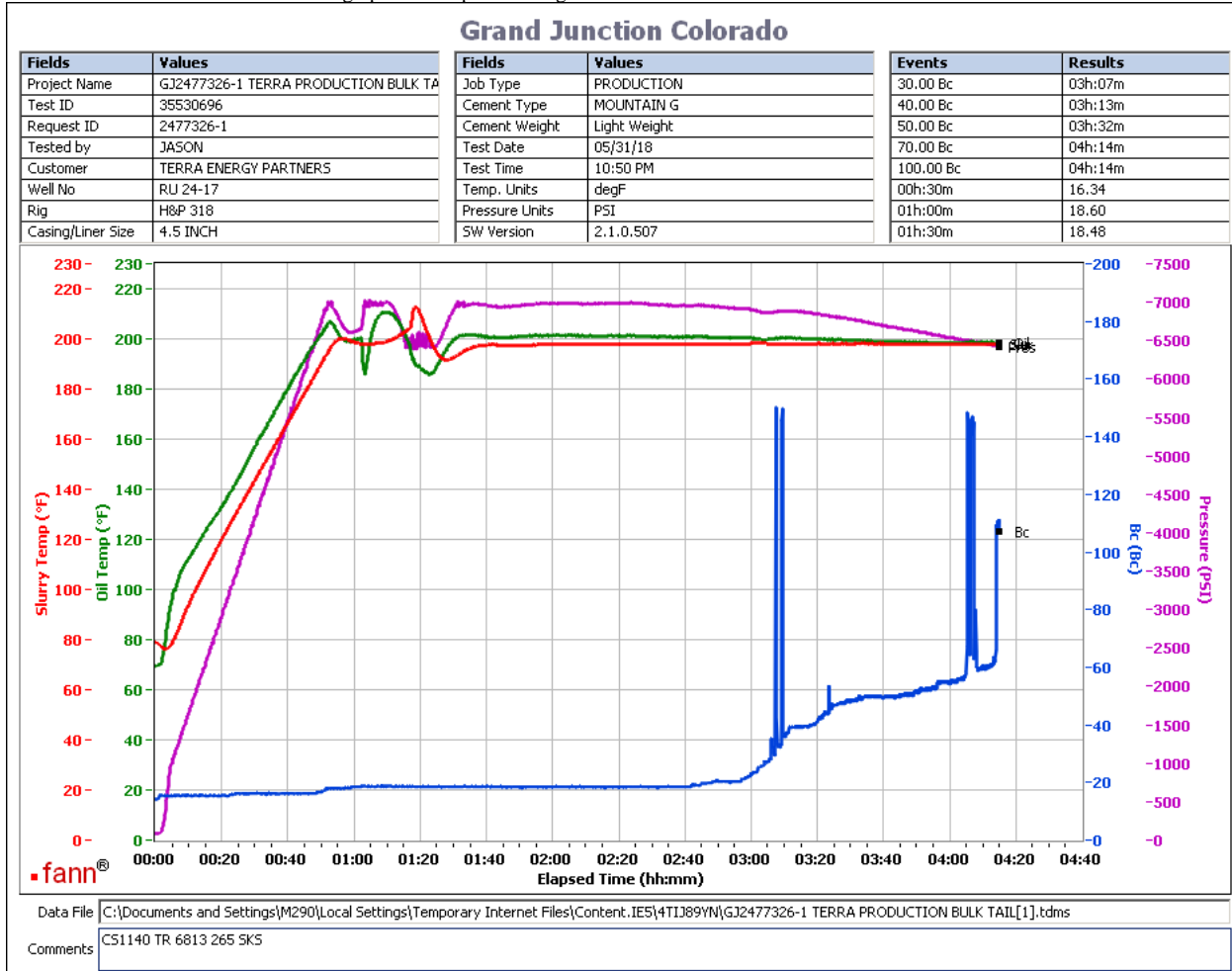
01/JUN/2018

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)
198	6702	52	3:07	3:32	4:14	4:14	14	62	15	19

Total sks = 265

CS1140 TR 6813 265 SKS

No deflection. Results were taken from graph due to spikes during test.



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