

HALLIBURTON

iCem[®] Service

TERRA ENERGY LTD.

For: Terra

Date: Sunday, March 25, 2018

RU 512-17 Production

API #: 05-045-23732

Sincerely,

Grand Junction Cement Engineering

1.0 Real-Time Job Summary

1.1 Job Event Log

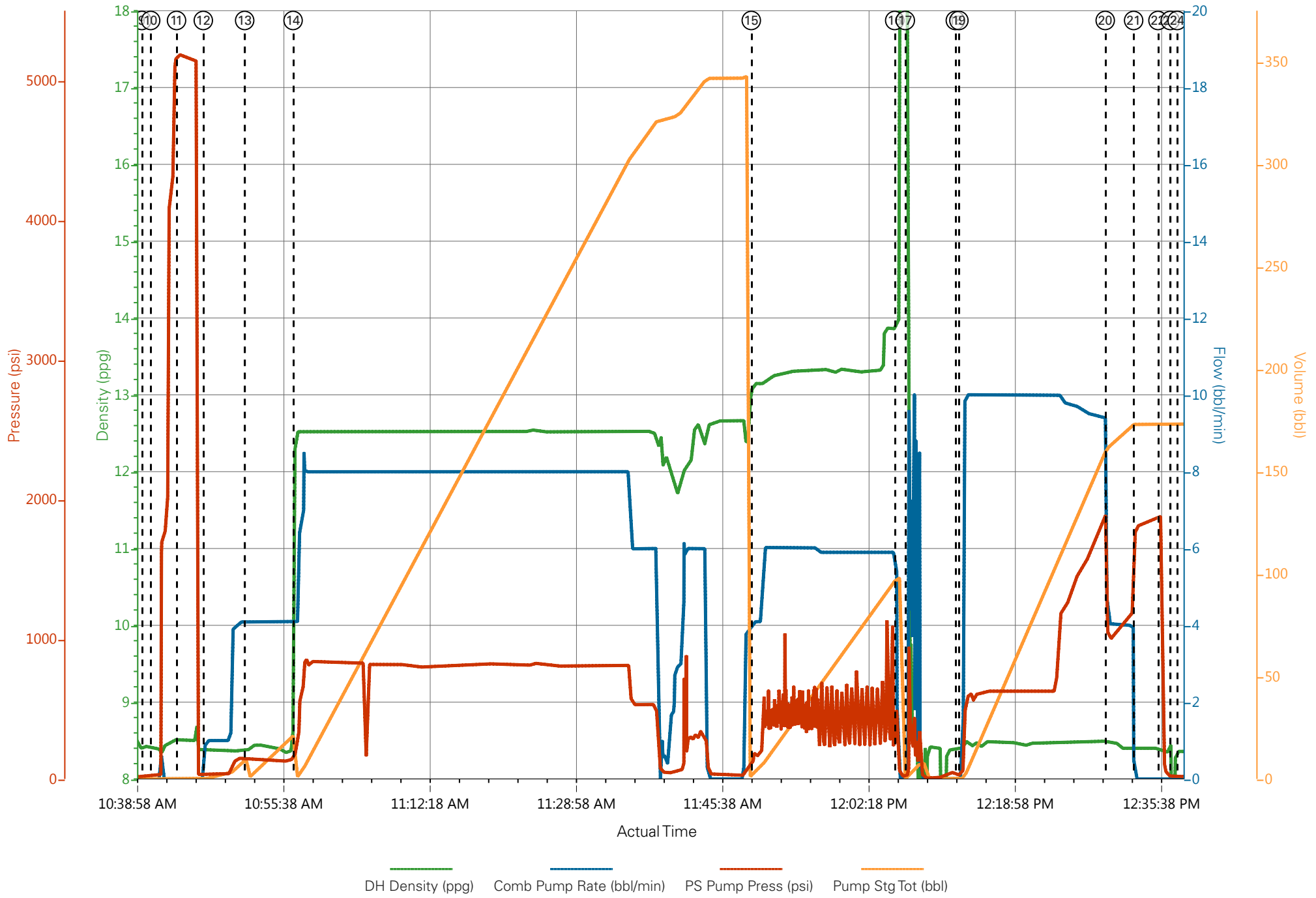
Type	Seq. No.	Graph Label	Date	Time	Source	Pass-Side Pump Pressure (psi)	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Pump Stage Total (bbl)	Comments
Event	1	Call Out	3/24/2018	20:00:00	USER					REQUESTED ON LOCATION @ 0300
Event	2	Pre-Convoy Safety Meeting	3/24/2018	21:35:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	3/24/2018	21:45:00	USER					1 F550, 1 PUMP TRUCK & 2 660 BULK TURCKS
Event	4	Arrive At Loc	3/25/2018	02:00:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	3/25/2018	02:10:00	USER					MET WITH COMP REP, N. BURR AND WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION AND COLLECTED WATER SAMPLE (PH- 7, CHLORIDES- 0, TEMP- 63F). COMP REP WAS OFFERED SDS FOR ALL CHEMICLES USED BY HES.
Event	6	Pre-Rig Up Safety Meeting	3/25/2018	02:15:00	USER					ALL HES PRESENT
Event	7	Rig-Up Equipment	3/25/2018	02:25:00	USER					HES RIGGED UP EQUIPMENT WITHOUT ENTERING RED ZONE.
Event	8	Pre-Job Safety Meeting	3/25/2018	10:00:00	USER					ALL HES AND RIG CREW PRESENT
Event	9	Start Job	3/25/2018	10:39:50	COM3					TD 10804', TP 10794', SJ 29.92', OH 8.75'', CSG 4.5'' 11.6#, MUD 8.9 PPG. RIG CIRCULATED WELL @ 10.5 BPM WITH 850 PSI.

Event	10	Prime Pumps	3/25/2018	10:40:50	USER	132.00	8.33	1.00	2.0	8.33 PPG FRESH WATER (2 BBL)
Event	11	Test Lines	3/25/2018	10:43:46	COM3	5188.00	8.33	0.50	0.5	ALL LINES HELD PRESSURE AT 5188 PSI
Event	12	Pump Spacer 1	3/25/2018	10:46:49	COM3	169.00	8.38	4.00	10.0	8.33 PPG FRESH WATER (10 BBL)
Event	13	Pump Spacer 2	3/25/2018	10:51:32	COM3	240.00	8.33	4.00	20.0	8.4 PPG MUDFLUSH III (20 BBL)
Event	14	Pump Lead Cement	3/25/2018	10:57:03	COM3	847.00	12.51	8.00	325.0	NEOCEM CEMENT 940 SKS (325 BBLs), 12.5 PPG, 1.94 FT3/SK, 9.6 GAL/SK
Event	15	Pump Tail Cement	3/25/2018	11:49:15	COM3	290.00	13.3	6.00	82.0	THERMACEM CEMENT 265 SKS (82 BBLs), 13.3 PPG, 1.73 FT3/SK, 7.81 GAL/SK, SHUTDOWN DUE TO BULK DELIVERY.
Event	16	Shutdown	3/25/2018	12:05:36	USER					END OF CMT
Event	17	Clean Lines	3/25/2018	12:06:48	USER					WASH UP PUMPS AND LINES TO THE PIT
Event	18	Drop Top Plug	3/25/2018	12:12:30	USER					PLUG WENT, VERIFIED BY CO REP.
Event	19	Pump Displacement	3/25/2018	12:12:55	COM3	1862.00	8.33	10.00	156.9	8.34 PPG FRESH WATER (166.9 BBLs) 3 BAGS BE6, 1 GAL MMCR & 16 SKS KCL
Event	20	Slow Rate	3/25/2018	12:29:35	USER	1006.00	8.33	4.10	10.0	SLOW RATE TO 4 BPM PER CO REP TO LAND PLUG
Event	21	Bump Plug	3/25/2018	12:32:49	USER	1150.00	8.33	4.00	166.9	LAND PLUG AT 1150 PSI, BROUGHT UP TO 1882 PSI
Event	22	Check Floats	3/25/2018	12:35:36	USER	1882.00	8.33	0.00	166.9	FLOATS HELD, 1 BBL BACK TO TRUCK
Event	23	End Job	3/25/2018	12:37:00	COM3					RETURNS THROUGHOUT CEMENT AND NO RETURNS DURING DISPLACEMENT,

LAND PRESSURE WAS
ABOUT HALF OF
CALCULATED, PIPE WAS
RECIPROCATED

Event	24	Post-Job Safety Meeting (Pre Rig-Down)	3/25/2018	12:37:47	USER	ALL HES PRESENT
Event	25	Rig-Down Equipment	3/25/2018	12:40:27	USER	ALL HES PRESENT
Event	26	Crew Leave Location	3/25/2018	13:50:51	USER	THANK YOU FOR CHOOSING HALLIBURTON CEMENT, CHRIS SMITH AND CREW

TEP - RU 512-17 - 4.5" PRODUCTION



Job Information

Request/Slurry	2461154/1	Rig Name	H&P 318	Date	17/MAR/2018
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	RU 512-17

Well Information

Casing/Liner Size	4.5 in	Depth MD	10981 ft	BHST	127°C / 260°F
Hole Size	8.75 in	Depth TVD	10573 ft	BHCT	92°C / 198°F
Pressure	6701 psi				

Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
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Cement Information - Lead Design

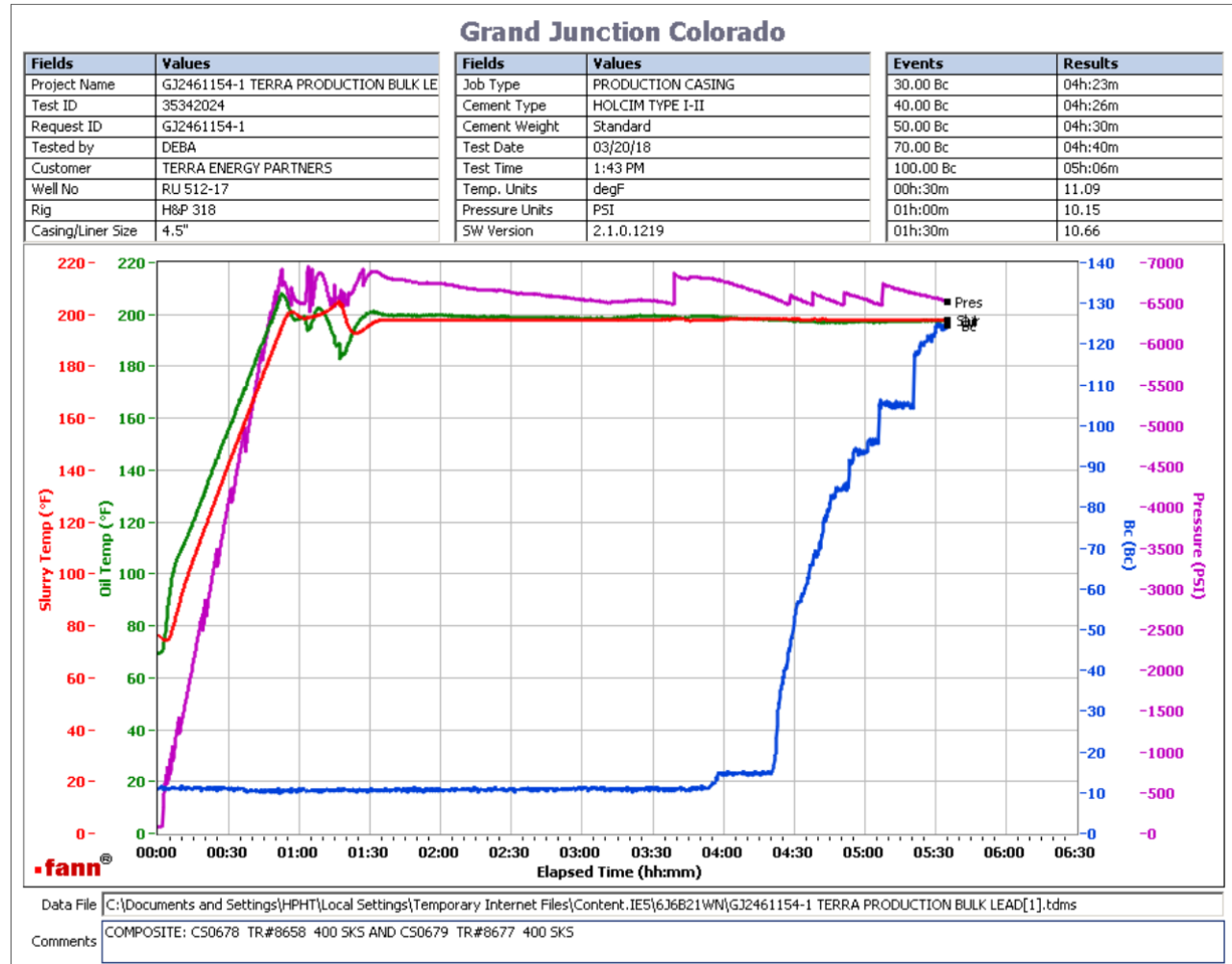
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		NeoCem Lead				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.941	ft3/sack
						Water Requirement	9.623	gal/sack
						Total Mix Fluid	9.623	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Thickening Time - ON-OFF-ON

20/MAR/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	6701	52	4:23	4:30	4:40	5:06	11	62	15	10



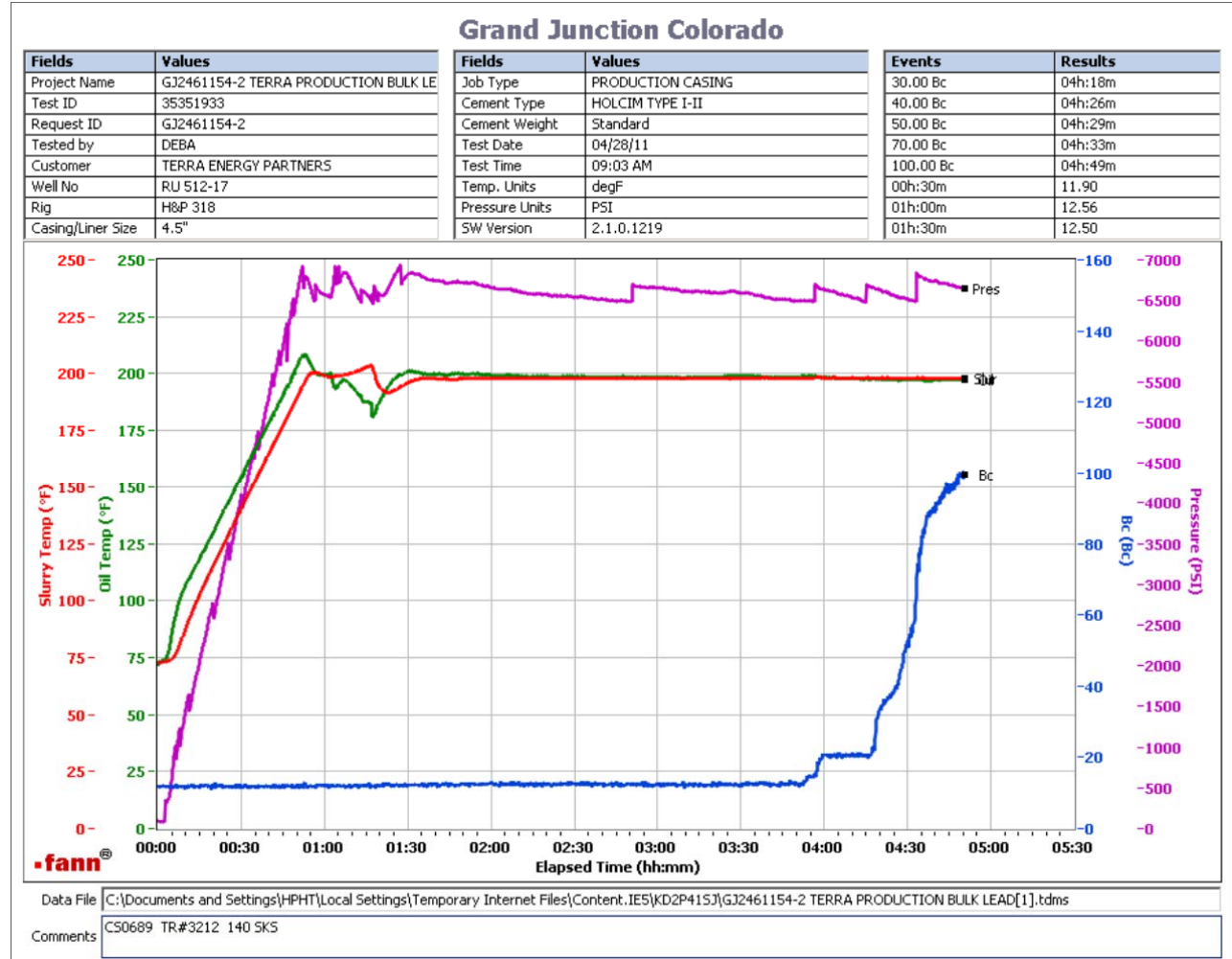
Total sks = 940
 Composite:
 CS0678 TR#8658 400 SKS
 CS0679 TR#8677 400 SKS
 no deflection - 10Bc--- > 10Bc

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Operation Test Results Request ID 2461154/2

Thickening Time - ON-OFF-ON 21/MAR/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	6701	52	4:18	4:29	4:33	4:49	11	62	15	12



Total sks = 940
 CS0689 tr#3212 140 sks
 Deflection: 12 - 12

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Mud Supplier Name		Mud Trade Name		Density	
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Cement Information - Tail Design 

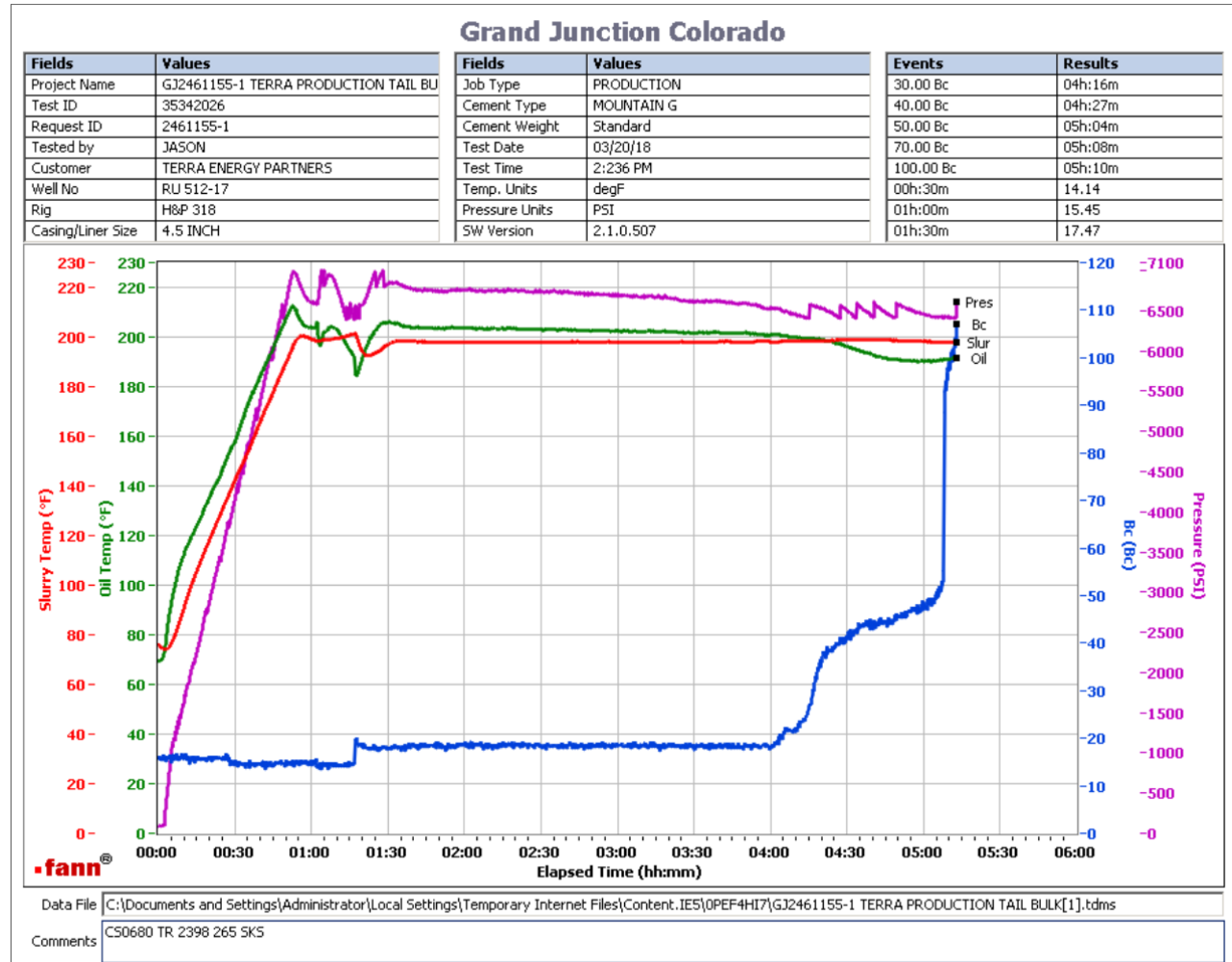
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		ThermaCem Tail				Slurry Density	13.3	lbm/gal
						Slurry Yield	1.733	ft3/sack
						Water Requirement	7.799	gal/sack
						Total Mix Fluid	7.799	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Thickening Time - ON-OFF-ON

20/MAR/2018

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198	6701	52	4:16	5:04	5:08	5:10	16	62	15	19



Total sks = 265
 CS0680 TR 2398 265 SKS
 deflected from 14Bc--- > 19BC
 please note the heat of hydration at 4:24

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