

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS-EBUS

For: Terra

Date: Friday, April 20, 2018

RU 413-17 Production PJR

API# 05-045-23740

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

2.1 Job Event Log

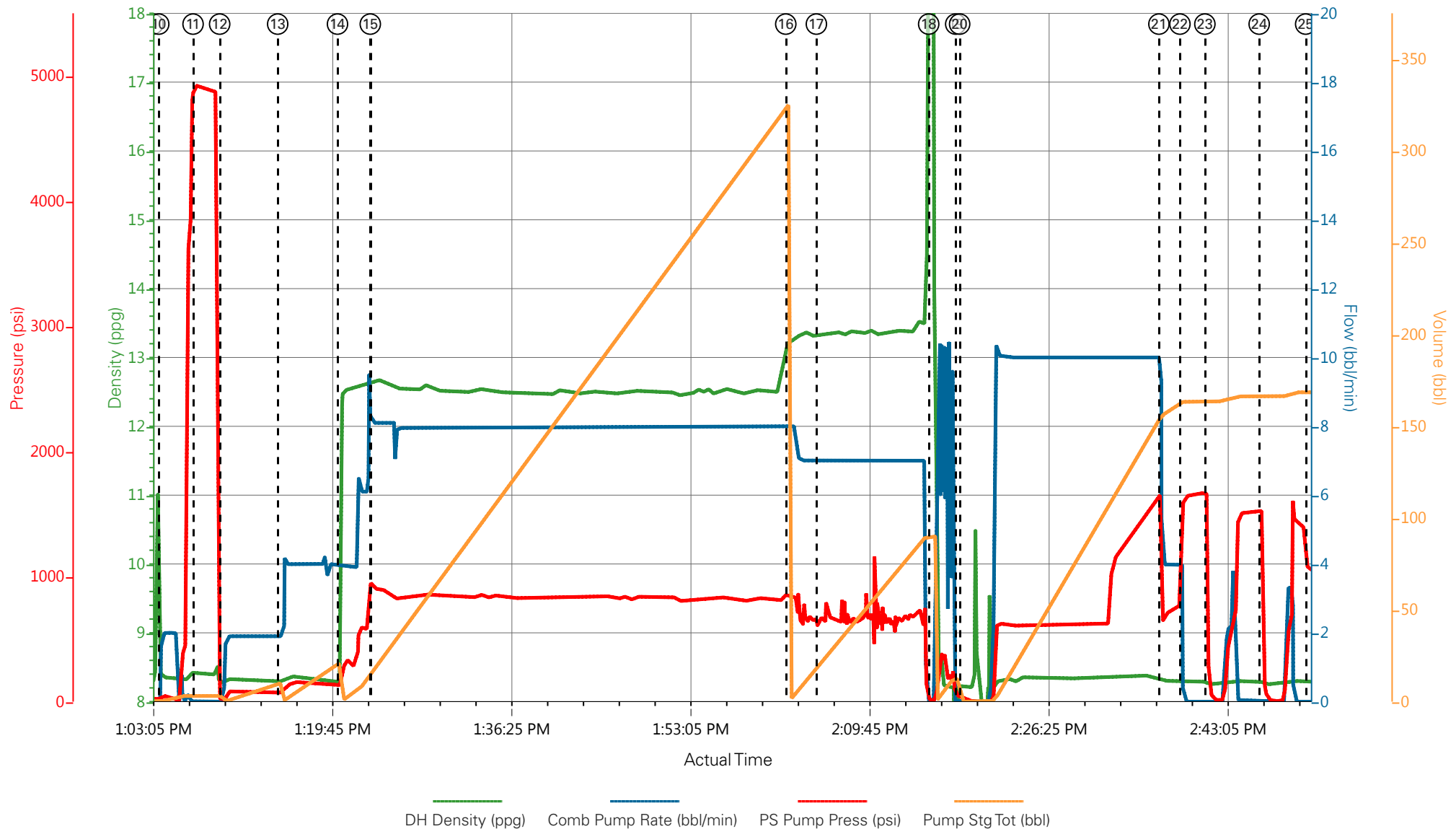
Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	4/19/2018	22:00:00	USER					REQUESTED ON LOCATION @ 04:00
Event	2	Pre-Convoy Safety Meeting	4/20/2018	00:00:00	USER					ALL HES EMPLOYEES PRESENT
Event	3	Crew Leave Yard	4/20/2018	00:15:00	USER					1 HT 400 PUMP TRUCK E1, 1 660 BULK TRUCK, 1 F450 SERVICE TRUCK, 1 F250 PICKUP
Event	4	Arrive At Loc	4/20/2018	02:00:00	USER					RIG RUNNING CASING UPON HES ARRIVAL
Event	5	Assessment Of Location Safety Meeting	4/20/2018	02:15:00	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- 75F). COMP REP WAS OFFERED SDS FOR ALL CHEMICALS USED BY HES.
Event	6	Pre-Rig Up Safety Meeting	4/20/2018	02:30:00	USER					ALL HES PRESENT
Event	7	Rig-Up Equipment	4/20/2018	02:35:00	USER					HES RIGGED UP EQUIPMENT WITHOUT ENTERING RED ZONE.
Event	8	Pre-Job Safety Meeting	4/20/2018	12:45:00	USER					ALL HES EMPLOYEES AND RIG CREW PRESENT, RIG CIRCULATED @ 12 BPM PRIOR TO JOB PRESSURE @ 1375 PSI, 2200 CFM

Event	9	Start Job	4/20/2018	13:03:21	COM6					TD 10722', TP 10715', SJ 30.42', SURFACE CSG 9 5/8" 32.3# H-40 SET @ 1138' PRODUCTION CSG 4 1/2" 11.6# P-110, OH 8 3/4", MUD 8.8 PPG
Event	10	Prime Lines	4/20/2018	13:03:53	USER	8.33	2	45	3	8.33 PPG FRESH WATER
Event	11	Test Lines	4/20/2018	13:07:05	COM6			4927		ALL LINES HELD PRESSURE AT 4927 PSI
Event	12	Pump H2O Spacer	4/20/2018	13:09:33	COM6	8.33	2	75	10	FRESH WATER
Event	13	Mud Flush	4/20/2018	13:14:57	COM6	8.4	4	150	20	20 BBL MUDFLUSH III
Event	14	Pump Lead Cement	4/20/2018	13:20:31	COM6	12.5	8	830	324.8	940 SKS NEOCEM CMT 12.5 PPG, 1.94 FT3/SK, 9.6 GAL/SK
Event	15	Check weight	4/20/2018	13:23:34	COM6					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	16	Pump Tail Cement	4/20/2018	14:02:15	COM6	13.3	7	660	81.7	265 SKS THERMACEM CMT 13.3 PPG, 1.73 FT3/SK, 7.81 GAL/SK.
Event	17	Check weight	4/20/2018	14:05:06	COM6					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	18	Clean Lines	4/20/2018	14:15:33	COM6					END OF CEMENT. CLEAN PUMPS AND LINES TO PIT.
Event	19	Drop Top Plug	4/20/2018	14:18:04	COM6					VERIFIED BY FLAG INDICATOR
Event	20	Pump Displacement	4/20/2018	14:18:25	COM6	8.4	10	1670	165.6	1 GAL MMCR IN FIRST 10 BBLs, 3 LBS BE-6 IN FIRST 30 BBLs, 1 50 LB. BAG KCL THROUGHOUT DISPLACEMENT
Event	21	Slow Rate	4/20/2018	14:36:58	USER	8.4	4	700	155.6	SLOW RATE TO 4 BPM TO BUMP PLUG
Event	22	Bump Plug	4/20/2018	14:38:56	COM6	8.4	4	1660	165.6	LANDED PLUG AT 800 PSI,

BROUGHT UP TO 1660 PSI

Event	23	Check Floats	4/20/2018	14:41:15	USER	3BBLS BACK TO TRUCK, FLOATS DID NOT HOLD. PRESSURE WELL BACK UP TO 1500PSI
Event	24	Check Floats	4/20/2018	14:46:18	USER	3BBLS BACK TO TRUCK, FLOATS DID NOT HOLD. PRESSURED WELL BACK UP TO 1000PSI
Event	25	End Job	4/20/2018	14:50:38	COM6	HAD RETURNS THROUGHT CEMENT. LOST RETURNS IN THE BEGINNING OF DISPLACEMENT, REGAINED RETURNS AT 100BBLS GONE ON DISPLACEMENT. FLOATS DID NOT HOLD, SHUT IN WELL WITH 1000PSI PRE CO REP.
Event	26	Post-Job Safety Meeting (Pre Rig-Down)	4/20/2018	15:00:00	USER	ALL HES PRESENT
Event	27	Rig-Down Equipment	4/20/2018	15:10:00	USER	ALL HES PRESENT
Event	28	Pre-Convoy Safety Meeting	4/20/2018	16:20:00	USER	ALL HES PRESENT
Event	29	Crew Leave Location	4/20/2018	16:30:00	USER	THANK YOU FOR CHOOSING HALLIBURTON CEMENT, SHAWN BLOSSOM AND CREW

TERRA RU 413-17, 4.5" PRODUCTION



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

▼ **HALLIBURTON** | iCem® Service

Created: 2018-04-19 22:42:57, Version: 4.2.393

Edit

Customer: TERRA ENERGY PARTNERS-EBUS

Job Date: 4/20/2018

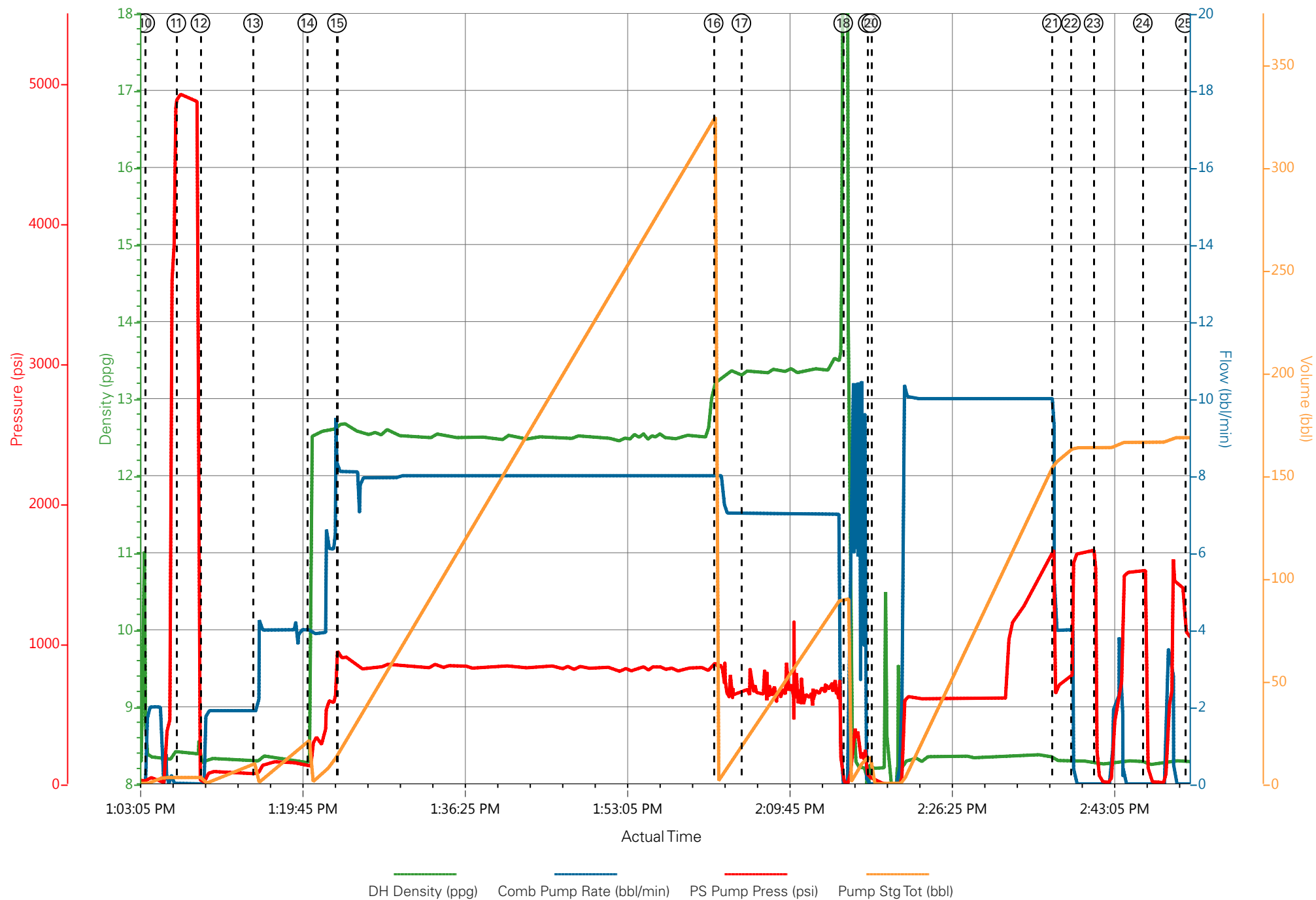
Well: RU 413-17

Representative: BOBBY BROWN

Sales Order #: 904780319

ELITE 1: PSALAZAR / S.BLOSSOM

TERRA RU 413-17, 4.5" PRODUCTION



HALLIBURTON

Rockies, Grand Junction

Lab Results- Lead

Job Information

Request/Slurry	2466668/1	Rig Name	H&P 318	Date	11/APR/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	RU 413-17

Well Information

Casing/Liner Size	4.5 in	Depth MD	10905 ft	BHST	127°C / 260°F
Hole Size	8.75 in	Depth TVD	10571 ft	BHCT	92°C / 198°F
Pressure	6700 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 GJ1 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		

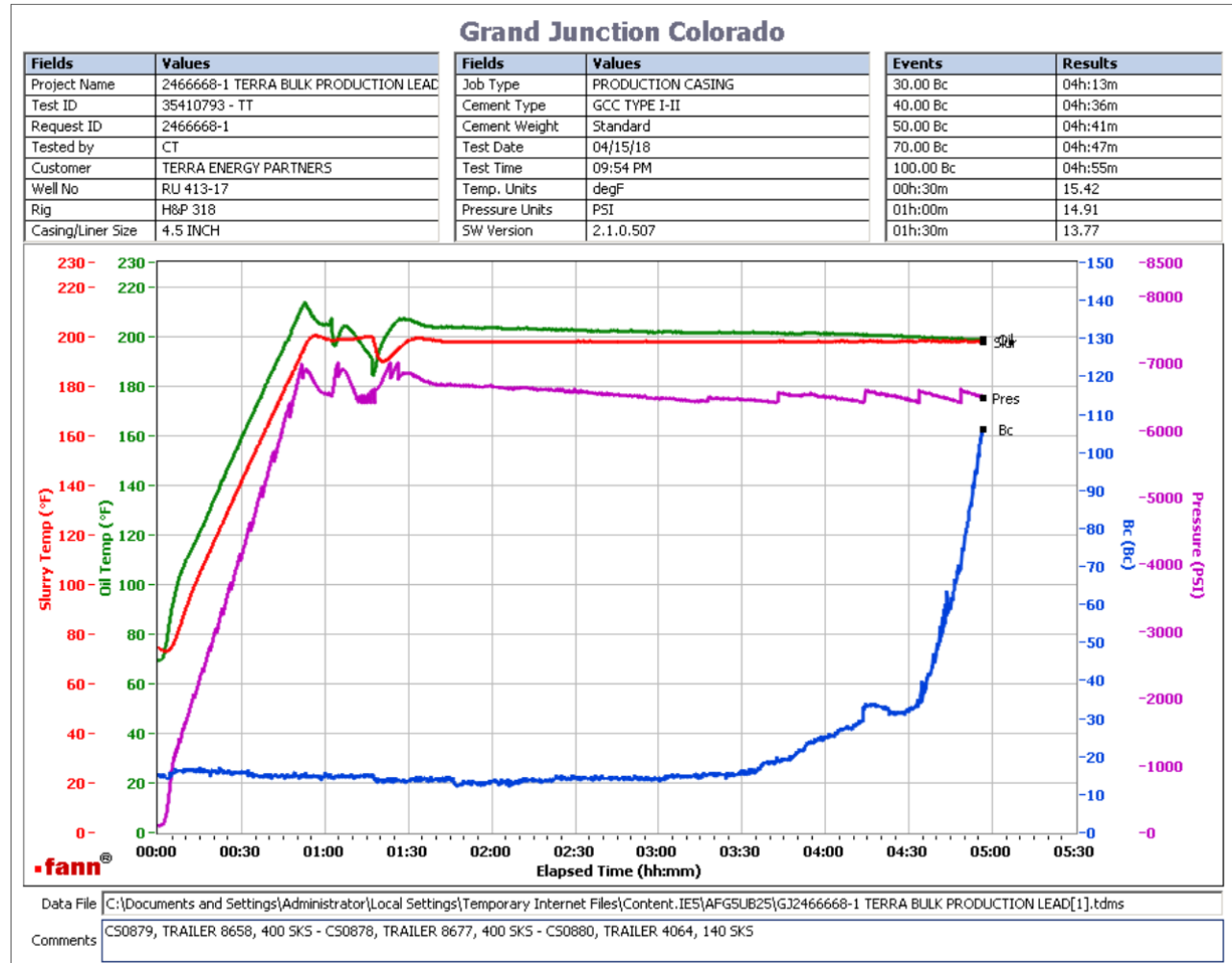
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Operation Test Results Request ID 2466668/1

Thickening Time - ON-OFF-ON

16/APR/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	6700	52	4:13	4:41	4:47	4:55	15	62	15	15



Total sks =940

CS0879, Trailer 8658, 400 sks

CS0878, Trailer 8677, 400 sks

CS0880, Trailer 4064, 140 sks

No deflection.

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Job Information

Request/Slurry	2466669/1	Rig Name	H&P 318	Date	11/APR/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	RU 413-17

Well Information

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Pressure	6700 psi				

Drilling Fluid Information

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



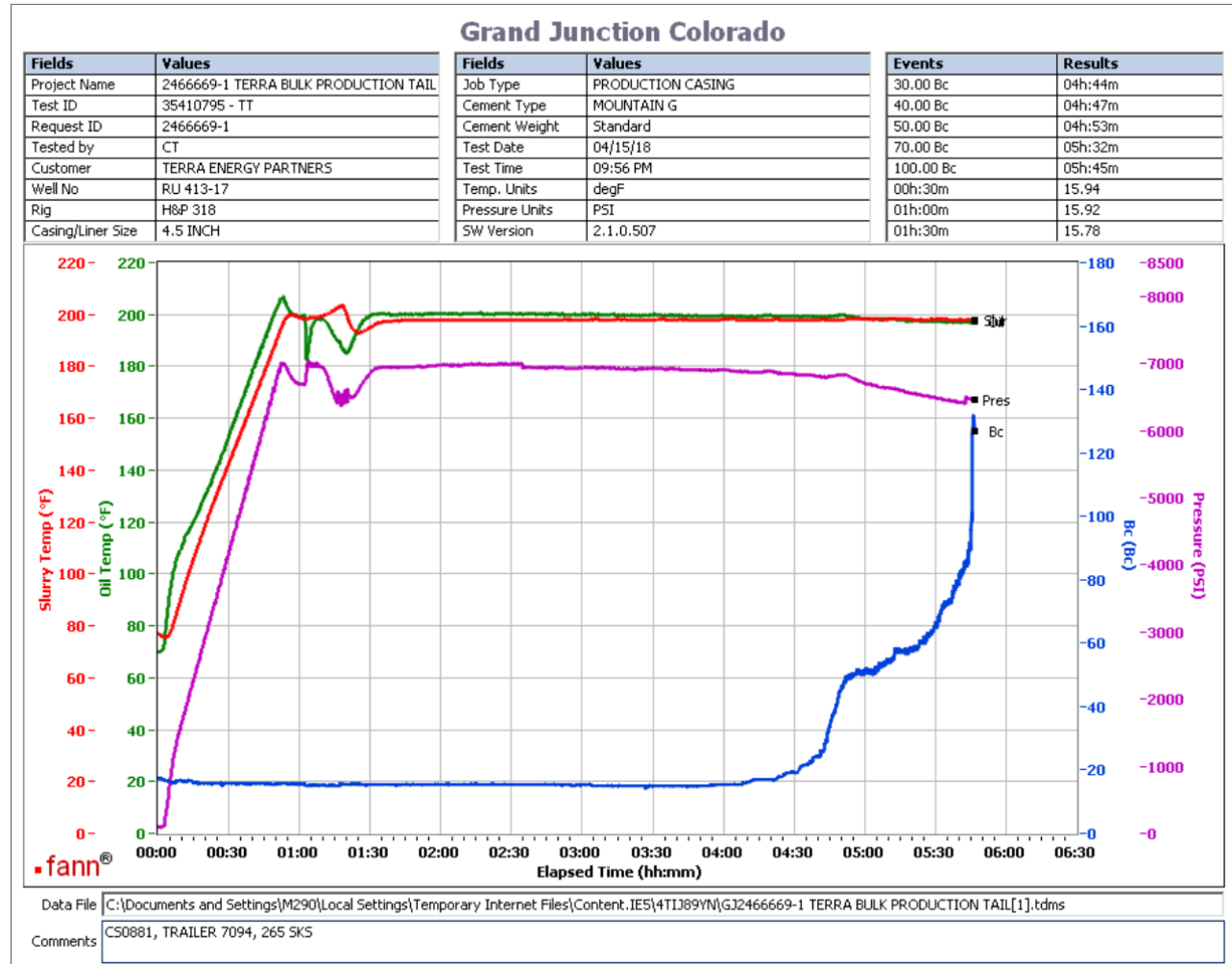
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		ThermaCem GJ1 Tail				Slurry Density	13.3	lbm/gal
						Slurry Yield	1.733	ft3/sack
						Water Requirement	7.799	gal/sack
						Total Mix Fluid	7.799	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Thickening Time - ON-OFF-ON

16/APR/2018

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198	6700	52	4:44	4:53	5:32	5:45	17	62	15	16



Total sks = 265
 CS0881, Trailer 7094, 265 sks
 Deflected 15-- > 16.

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