

# HALLIBURTON

iCem<sup>®</sup> Service

## **TERRA ENERGY PARTNERS**

**For: Terra**

Date: Sunday, October 08, 2017

**SR 312-12 Production PJR**

API# 05-045-23302-00

Sincerely,

**Grand Junction Cement Engineering**

## 2.0 Real-Time Job Summary

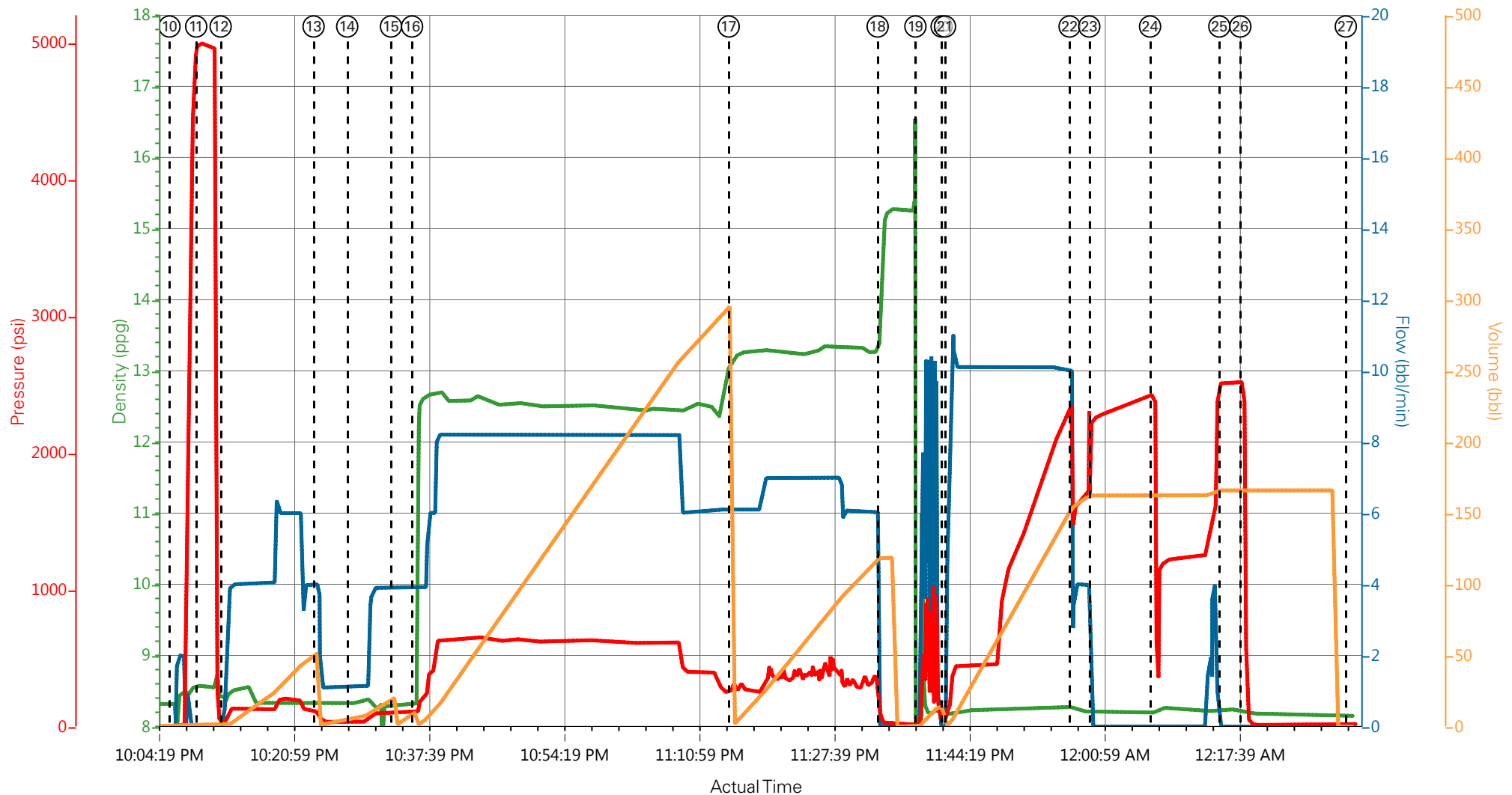
## 2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Pass-Side Pump Pressure (psi)	Pump Stage Total (bbl)	Comments
Event	1	Call Out	10/7/2017	06:35:00	USER					ALL HES CALLED - ON LOCATION TIME 14:00
Event	2	Pre-Convoy Safety Meeting	10/7/2017	09:35:00	USER					JOURNEY CREATED - ALL HES INVOLVED IN SAFETY MEETING
Event	3	Crew Leave Yard	10/7/2017	10:00:00	USER					1- F-550 PICKUP, 1-ELITE PUMP TRUCK, 1-660 BULK TRUCK
Event	4	Arrive At Loc	10/7/2017	12:00:00	USER					HES ARRIVED 2 HOURS EARLY
Event	5	Assessment Of Location Safety Meeting	10/7/2017	12:15:00	USER					RIG WAS RUNNING CASING - HES REP WENT AND SPOKE WITH CO-REP PRIOR TO SPOTTING EQUIPMENT
Event	6	Pre-Rig Up Safety Meeting	10/7/2017	13:00:00	USER					JSA FILLED OUT AND REVIEWED BY ALL HES
Event	7	Rig-Up Equipment	10/7/2017	13:15:00	USER					RIG-UP IRON TO THE STAND PIPE AND WASH-UP IRON TO THE PIT - WATER HOSE TO BOTH RIG UPRIGHTS - BULK SILO AND BULK TRUCK TO PUMP TRUCK
Event	8	Rig-Up Completed	10/7/2017	14:30:00	USER					RIG-UP COMPLETED SAFELY
Event	9	Pre-Job Safety Meeting	10/7/2017	15:30:00	USER					ALL HES, RIG CREW AND CO-REP INVOLVED IN SAFETY MEETING
Event	10	Start Job	10/7/2017	22:06:00	COM5					TD: 10104FT TP: 10094FT SJ: 28.5FT OH: 8.75 CSG: 4.5 11.6# P-110 SRF CSG: 9.625 36# J-55 SET AT 1437FT MUD WT: 9.9 WTR TEST: TEMP- 60 PH-7 CHLOR-0
Event	11	Test Lines	10/7/2017	22:09:18	COM5			5001.00		PRESSURE TEST LINES TO 5000PSI, PRESSURE TEST

										OK
Event	12	Fresh Water Spacer	10/7/2017	22:12:19	COM5	8.34	6	205	50	50BBLS WATER AHEAD TO VERIFY RETURNS - NO RETURNS WERE ESTABLISHED I SPOKE WITH THE COMPANY REP. HE STATED TO CONTINUE WITH JOB AS NORMAL
Event	13	Mud Flush Spacer	10/7/2017	22:23:47	COM5	8.5	4	100	20	20BBL MUD FLUSH SPACER AHEAD
Event	14	Check weight	10/7/2017	22:27:56	COM5	12.5				VERIFIED WEIGHT OF FIRST TUB OF CEMENT
Event	15	Fresh Water Spacer	10/7/2017	22:33:20	COM5	8.34	4	100	10	10BBL FRESH WATER SPACER AHEAD
Event	16	Pump Lead Cement	10/7/2017	22:35:56	COM5	12.5	8	620	269.5	780SKS OF NEOCEM CEMENT (269.5BBLS) 12.5PPG 1.94YIELD 9.6GAL/SK - WEIGHT OF CEMENT VERIFIED VIA PRESSURIZED MUD SCALES THROUGHOUT LEAD CEMENT
Event	17	Pump Tail Cement	10/7/2017	23:15:00	COM5	13.3	7	400	81.6	265SKS OF THERMACEM CEMENT (81.6BBLS) 13.3PPG 1.73YIELD 7.81GAL/SK - WEIGHT OF CEMENT VERIFIED VIA PRESSURIZED MUD SCALES THROUGHOUT TAIL CEMENT
Event	18	Shutdown	10/7/2017	23:33:22	USER	13.3			81.6	SHUTDOWN END OF CEMENT
Event	19	Clean Lines	10/7/2017	23:38:02	USER					CLEAN LINES TO THE PIT WITH RIG SUPPLIED AIR, CLEAN LINES TO THE PIT READY TANKS FOR DISPLACEMENT
Event	20	Drop Top Plug	10/7/2017	23:41:16	USER					TOP PLUG AWAY NO PROBLEMS
Event	21	Pump Displacement	10/7/2017	23:41:41	COM5	8.34	10	2350	146	FRESH WATER DISPLACEMENT WITH 3 POUNDS OF BE-6 1-GAL MMCR AND 1-BAG OF KCL PER 10 BBLS OF WATER THROUGHOUT DISPLACEMENT
Event	22	Slow Rate	10/7/2017	23:57:03	USER	8.34	4	1640	8.5	SLOW RATE TO BUMP THE PLUG - PRESSURE PRIOR TO SLOWING RATE WAS 2350PSI AT 10BPM
Event	23	Bump Plug	10/7/2017	23:59:29	COM5	8.34	4	1700	154.5	PLUG BUMPED AT 154.5BBLS AWAY - PLUG BUMPED AT 1700 PSI AT 4BPM - TOOK TO 2230 PSI
Event	24	Check Floats	10/8/2017	00:06:59	COM5			2431		FLOATS DID NOT HOLD - 3.5 BBLS OF WATER BACK

										TO TANKS - CLOSED RELEASE VALVE AND SPOKE WITH COMPANY REPS
Event	25	Bump Plug	10/8/2017	00:15:32	COM5	8.34	4	2515	3.5	PUMPED THE 3.5 BBLS OF WATER WE GOT BACK TO THE TANKS - PLUG BUMPED AGAIN TOOK PRESSURE TO 2515 PSI AT 4 BPM
Event	26	Check Floats	10/8/2017	00:18:07	COM5			2520		CHECK FLOATS AGAIN - FLOATS HELD 2 BBLS BACK TO TANKS - MONITORED FLOATS FOR 10 MINS WITH COMPANY REP - RIG USED NO SUGAR AND SPARATIC RETURNS THROUGHOUT CEMENT JOB
Event	27	End Job	10/8/2017	00:31:08	COM5					THANK YOU FOR CHOOSING HALLIBURTON CEMENT CARL KUKUS AND CREW
Event	28	Pre-Rig Down Safety Meeting	10/8/2017	00:45:00	USER					JSA REVIEWED - ALL HES INVOLVED IN SAFETY MEETING
Event	29	Rig-Down Equipment	10/8/2017	00:50:00	USER					WASH UP AND BLOW DOWN PUMP TRUCK - RIG DOWN ALL IRON - WATER HOSES - BULK EQUIPMENT - READY SLOW TO BE MOVED TO NEW LOCATION
Event	30	Rig-Down Completed	10/8/2017	02:30:00	USER					RIG-DOWN COMPLETED SAFELY
Event	31	Pre-Convoy Safety Meeting	10/8/2017	02:45:00	USER					JOURNEY CREATED - ALL HES IN ATTENDANCE FOR SAFETY MEETING
Event	32	Crew Leave Location	10/8/2017	02:50:00	USER					1-F-550 PICKUP, 1-ELITE PUMP TRUCK, 1-660 BULK TRUCK

# TEP - YOUNBERG SR 312-12 - 904345999 - 4 1/2 PRODUCTION



DH Density (ppg) 8.15   Comb Pump Rate (bbl/min) 0   PS Pump Press (psi) 18   Pump Stg Tot (bbl) 0

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

▼ **HALLIBURTON** | iCem® Service

Created: 2017-10-07 14:01:29, Version: 4.2.393

Edit

Customer : TERRA ENERGY PARTNERS

Job Date : 10/7/2017 2:03:56 PM

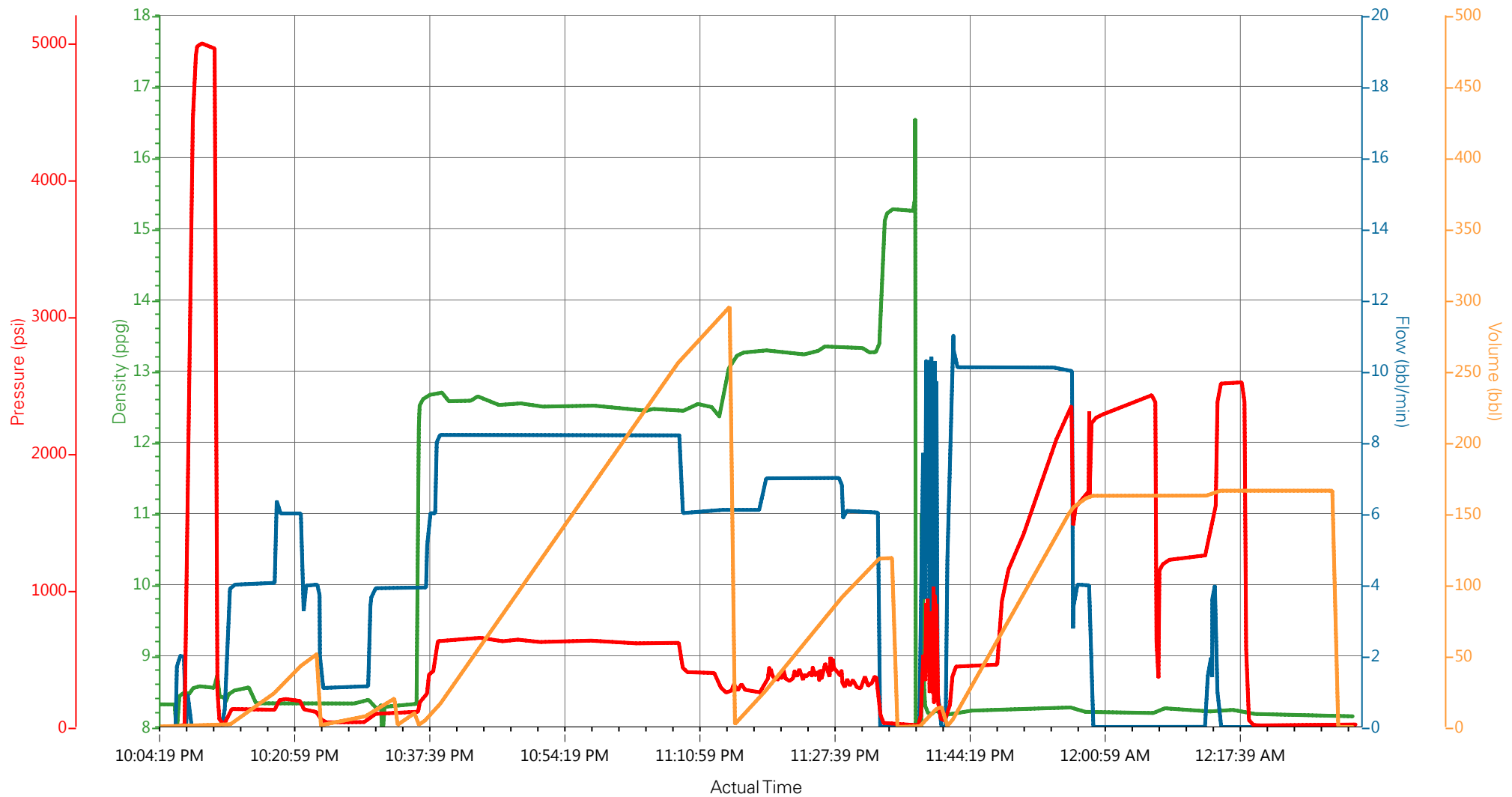
Well : YOUNBERG SR 312-12

Co-Man : Bobby Brown

Sales Order # : 904345999

Elite 4 : Dillon Martin/Carlton Kukus

# TEP - YOUNBERG SR 312-12 - 904345999 - 4 1/2 PRODUCTION



### Job Information

<b>Request/Slurry</b>	2420545/1	<b>Rig Name</b>	H&P 318	<b>Date</b>	02/OCT/2017
<b>Submitted By</b>	Patrick Ealey	<b>Job Type</b>	Production Casing	<b>Bulk Plant</b>	Grand Junction
<b>Customer</b>	Terra Energy Partners	<b>Location</b>	Garfield	<b>Well</b>	SR 312-12

### Well Information

<b>Casing/Liner Size</b>	4.5 in	<b>Depth MD</b>	10111 ft	<b>BHST</b>	115°C / 239°F
<b>Hole Size</b>	8.75 in	<b>Depth TVD</b>	9328 ft	<b>BHCT</b>	76°C / 169°F
<b>Pressure</b>	5830 psi				

### Drilling Fluid Information

<b>Mud Supplier Name</b>	<b>Mud Trade Name</b>	<b>Density</b>
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### Cement Information - Lead Design



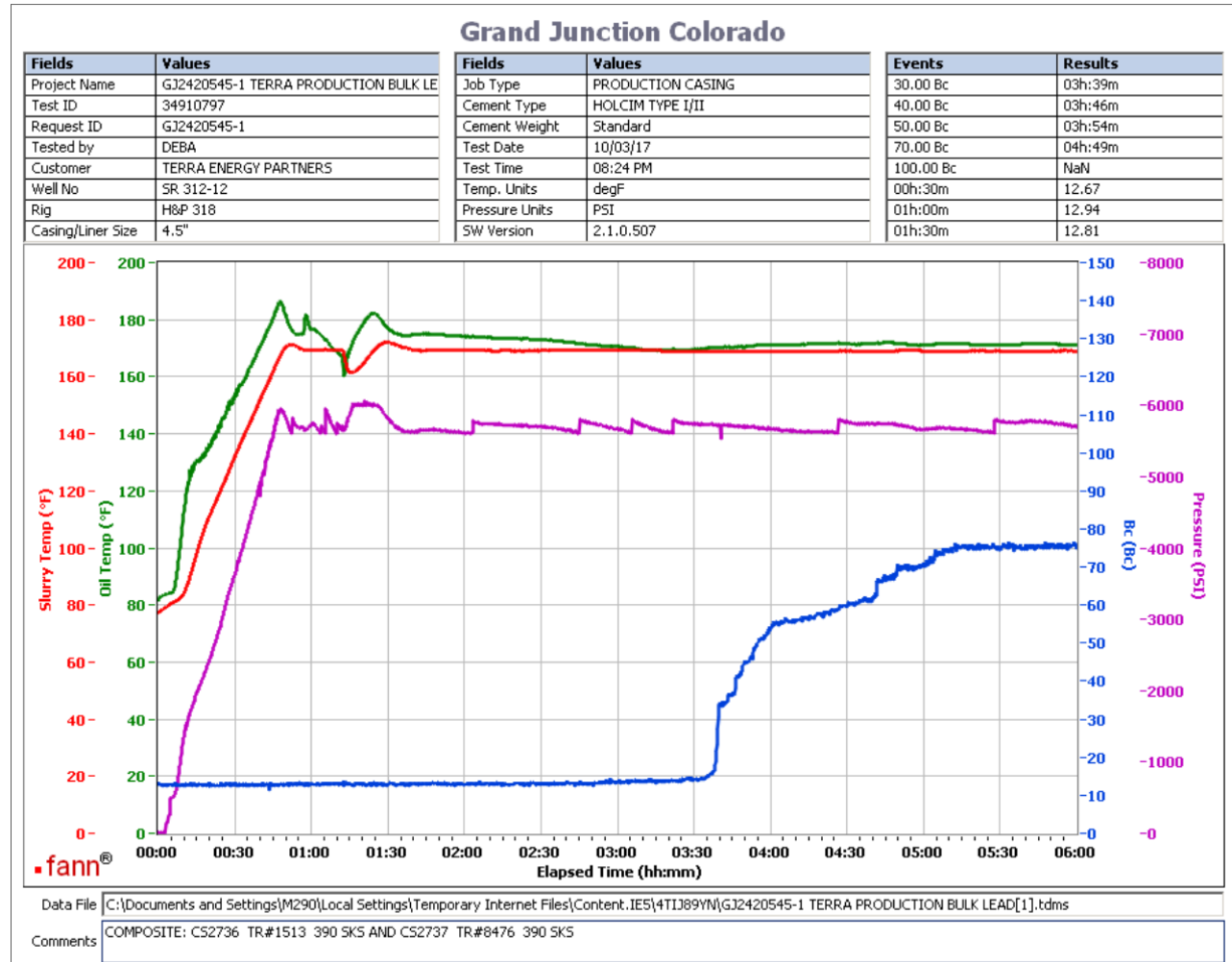
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	<b>Cement Properties</b>		
		NeoCem Lead				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.941	ft3/sack
						Water Requirement	9.623	gal/sack
						Total Mix Fluid	9.623	gal/sack
						Water Source	Fresh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

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Thickening Time - ON-OFF-ON

04/OCT/2017

Test Temp (°F)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)	Termination time (hh:mm)	Termination Bc
169	5830	47	3:39	3:54	4:49	12	57	15	13	10:57	90



Total sks= 780  
 Composite:  
 CS2736 TR#1513 390 SKS  
 CS2737 TR#8476 390 SKS  
 Deflection: 13 - 13

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# HALLIBURTON

## Rockies, Grand Junction

## Lab Results- Tail

### Job Information

<b>Request/Slurry</b>	2420546/1	<b>Rig Name</b>	H&P 318	<b>Date</b>	02/OCT/2017
<b>Submitted By</b>	Patrick Ealey	<b>Job Type</b>	Production Casing	<b>Bulk Plant</b>	Grand Junction
<b>Customer</b>	Terra Energy Partners	<b>Location</b>	Garfield	<b>Well</b>	SR 312-12

### Well Information

<b>Casing/Liner Size</b>	4.5 in	<b>Depth MD</b>	10111 ft	<b>BHST</b>	115°C / 239°F
<b>Hole Size</b>	8.75 in	<b>Depth TVD</b>	9328 ft	<b>BHCT</b>	76°C / 169°F
<b>Pressure</b>	5830 psi				

### Drilling Fluid Information

<b>Mud Supplier Name</b>	<b>Mud Trade Name</b>	<b>Density</b>
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### Cement Information - Tail Design



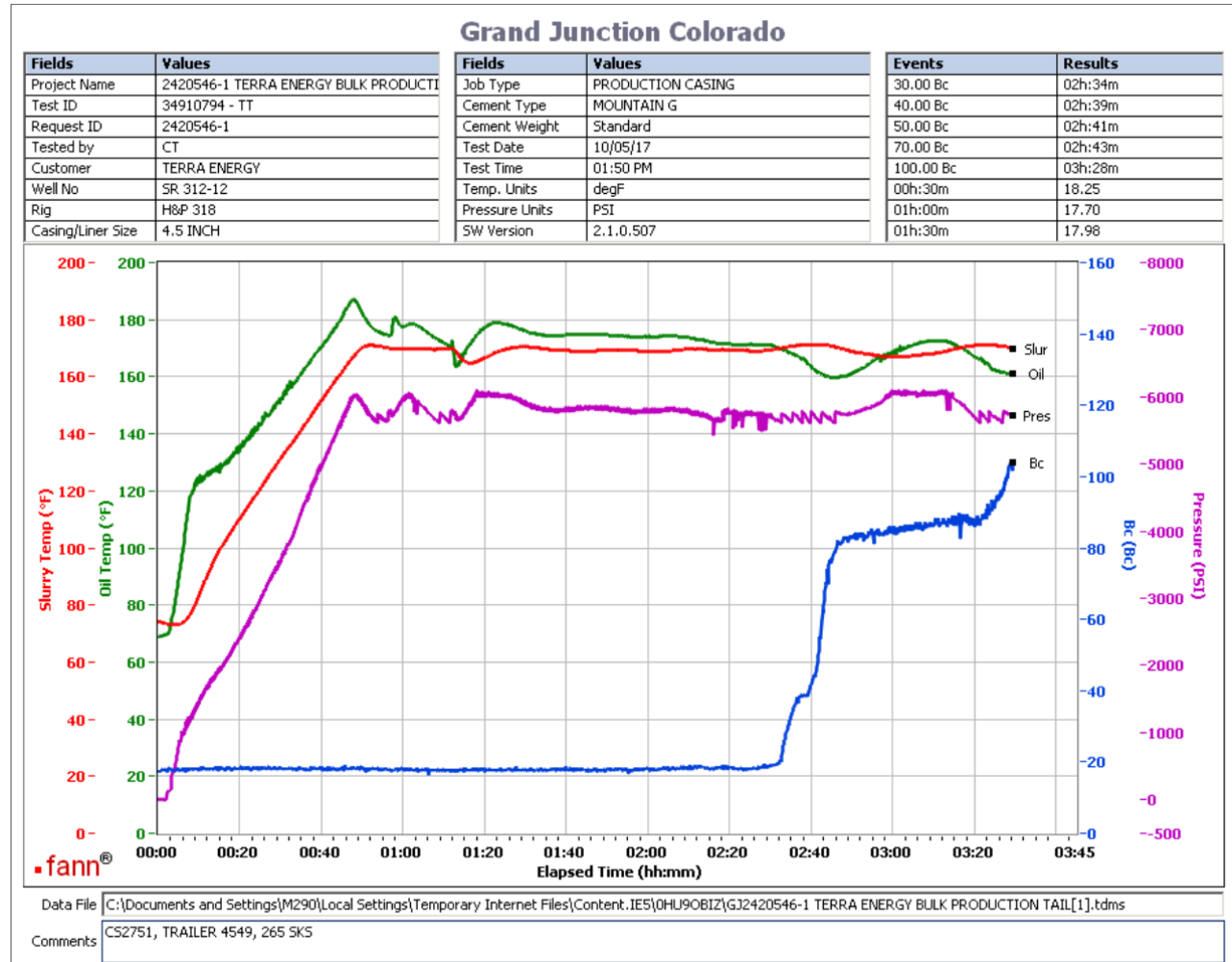
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	<b>Cement Properties</b>		
		ThermaCem Tail				Slurry Density	13.3	lbm/gal
						Slurry Yield	1.733	ft3/sack
						Water Requirement	7.799	gal/sack
						Total Mix Fluid	7.799	gal/sack
						Water Source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

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Thickening Time - ON-OFF-ON

05/OCT/2017

Test Temp (°F)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
169	5830	47	2:34	2:41	2:43	3:28	17	57	15	18



265 sks tail  
CS2751, Trailer 4549, 265 sks  
No deflection

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