

HALLIBURTON

iCem[®] Service

TEP ROCKY MOUNTAIN LLC

For: Terra

Date: Monday, November 27, 2017

SR 512-12 Production

API #05-045-23444-00

Sincerely,

Grand Junction Cement Engineering

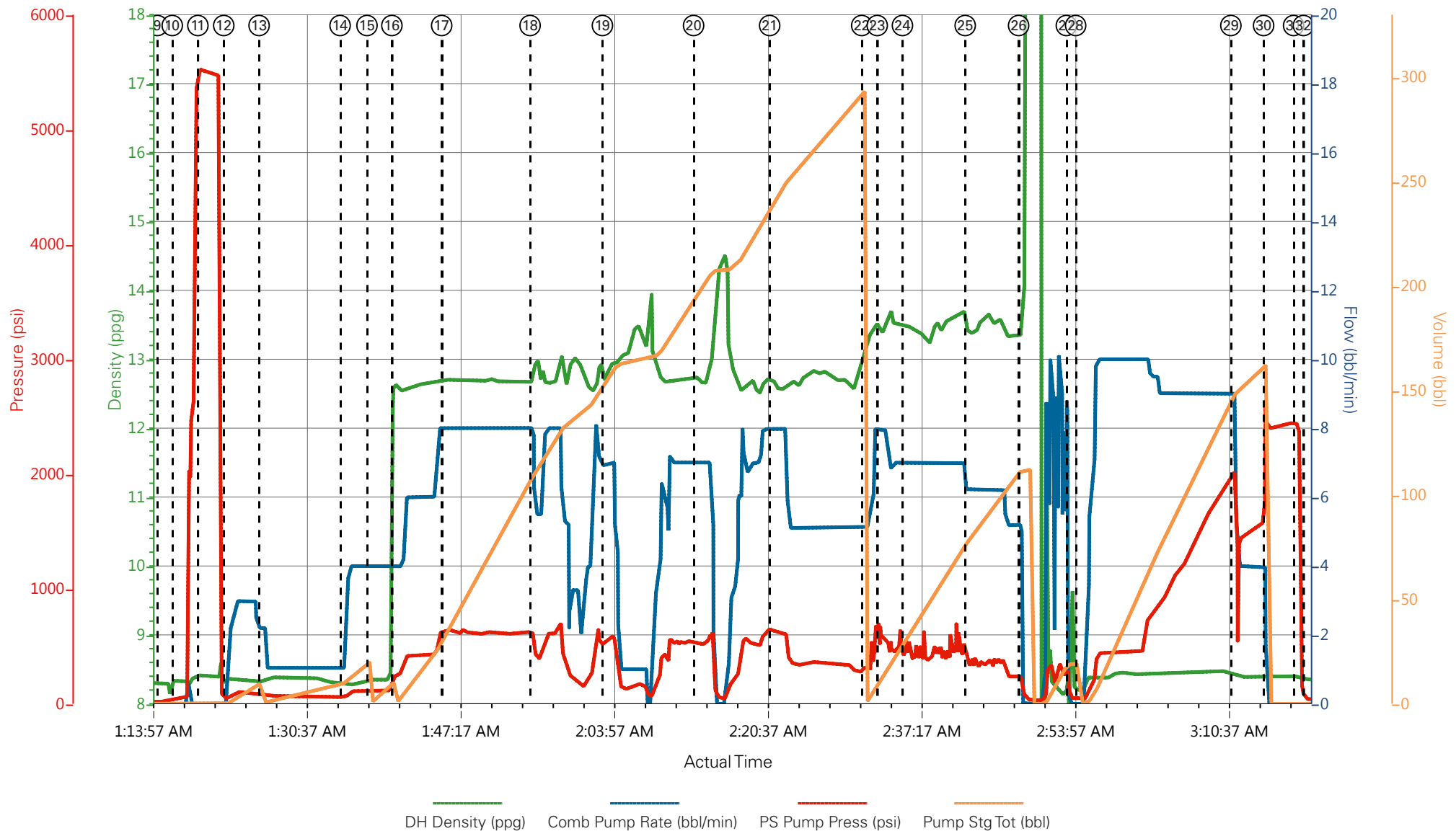
1.0 Real-Time Job Summary

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	11/26/2017	14:30:00	USER					REQUESTED ON LOCATION @ 21:00
Event	2	Pre-Convoy Safety Meeting	11/26/2017	16:45:00	USER					ALL HES EMPLOYEES PRESENT
Event	3	Crew Leave Yard	11/26/2017	17:00:00	USER					1 HT 400 PUMP TRUCK E4, 1 660 BULK TRUCK, 1 550 SERVICE PICKUP
Event	4	Arrive At Loc	11/26/2017	19:00:00	USER					HES SHOWED UP TO LOCATION 2 HOURS EARLY RIG RUNNING CASING UPON HES ARRIVAL
Event	5	Assessment Of Location Safety Meeting	11/26/2017	19:30:00	USER					ASSESSED LOCATION AND COLLECTED WATER SAMPLE (50F CHL 0 PH 7.5). MET WITH COMPANY REP, AND WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION COMPANY REP WAS OFFERED SDS FOR ALL CHEMICLES USED BY HES.
Event	6	Spot Equipment	11/26/2017	20:00:00	USER					1 HT 400 PUMP TRUCK E4, 1 660 BULK TRUCK, 1 550 SERVICE PICKUP
Event	7	Pre-Rig Up Safety Meeting	11/26/2017	20:30:00	USER					ALL HES EMPLOYEES PRESENT
Event	8	Pre-Job Safety Meeting	11/27/2017	00:30:00	USER					ALL HES EMPLOYEES AND RIG CREW PRESENT, RIG CIRCULATED @ 11 BPM PRIOR TO JOB PRESSURE @ 900 PSI.
Event	9	Start Job	11/27/2017	01:14:44	USER					TP 9931.65', SJ 44.57', FC @ 9902.63', SURFACE CSG 9 5/8" 32.3# H-40 SET @ 1130' PRODUCTION CSG 4 1/2" 11.6# P-110, OH 8 3/4", MUD 9.4 PPG
Event	10	Prime Pumps	11/27/2017	01:16:21	USER	8.33		30	2	PRIMED LINES WITH FRESH WATER VIA 6X5
Event	11	Test Lines	11/27/2017	01:19:08	COM5			5500		PRESSURE HELD
Event	12	Pump H2O Spacer	11/27/2017	01:21:56	COM5	8.33	2.0	40	10	FRESH WATER
Event	13	Pump Mud Flush III	11/27/2017	01:25:46	COM5	8.4	4.0	118	20	80 LBS MUD FLUSH III

Event	14	Check weight	11/27/2017	01:34:33	COM5					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	15	Pump H2O Spacer	11/27/2017	01:37:28	COM5	8.33	4.0	222	10	FRESH WATER
Event	16	Pump Lead Cement	11/27/2017	01:40:10	COM5	12.5	8.0	630	280	810 SKS NEOCEM CMT, 12.5 PPG, 1.94 FT3/SK, 9.6 GAL/SK
Event	17	Check weight	11/27/2017	01:45:34	COM5					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	18	Slow Rate	11/27/2017	01:55:10	USER					SLOWED RATE TO MIXING ISSUES
Event	19	Check weight	11/27/2017	02:03:00	COM5					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	20	Check weight	11/27/2017	02:12:53	COM5					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	21	Check weight	11/27/2017	02:21:09	COM5					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	22	Pump Tail Cement	11/27/2017	02:31:08	COM5	13.3	7.0	450	82	265 SKS THERMACEM CMT, 13.3 PPG, 1.73 FT3/SK, 7.81 GAL/SK
Event	23	Check weight	11/27/2017	02:32:49	COM5					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	24	Check weight	11/27/2017	02:35:33	COM5					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	25	Check weight	11/27/2017	02:42:21	COM5					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	26	Shutdown	11/27/2017	02:48:08	COM5					END OF CEMENT. CLEAN LINES AND PUMP INTO PIT
Event	27	Drop Top Plug	11/27/2017	02:53:19	USER					VERIFIED BY FLAG INDICATOR
Event	28	Pump Displacement	11/27/2017	02:54:20	COM5	8.4	10.0	2020	144	1 GAL MMCR IN FIRST 10 BBLS, 3 LBS BE-6 IN FIRST 30 BBLS, 1 50 LB. BAG KCL THROUGHOUT DISPLACEMENT
Event	29	Slow Rate	11/27/2017	03:11:09	USER	8.4	4.0	1560	10	SLOWED TO BUMP PLUG
Event	30	Bump Plug	11/27/2017	03:14:43	COM5	8.4	4.0	1560	154	PLUG BUMPED
Event	31	Check Floats	11/27/2017	03:17:58	USER			2299		FLOATS HELD 1.5 BBL FLOW BACK TO TRUCK
Event	32	End Job	11/27/2017	03:19:02	USER					HAD TO SLOW RATES AND SHUTDOWN TO MAINTAIN DENSITY
Event	33	Post-Job Safety Meeting (Pre Rig-Down)	11/27/2017	03:25:00	USER					ALL HES EMPLOYEES PRESENT
Event	34	Pre-Convoy Safety Meeting	11/27/2017	04:45:00	USER					ALL HES EMPLOYEES PRESENT
Event	35	Depart Location	11/27/2017	05:00:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENT, DUSTIN HYDE AND CREW

TERRA - SR 512-12 - 4 1/2" PRODUCTION



- | | | | | | |
|---|-----------------------------|----------------------|---------------------|----------------------|---|
| ① Call Out | ⑦ Pre-Rig Up Safety Meeting | ⑬ Pump Mud Flush III | ⑲ Check weight | 25 Check weight | 31 Check Floats |
| ② Pre-Convoy Safety Meeting | ⑧ Pre-Job Safety Meeting | ⑭ Check weight | 20 Check weight | 26 Shutdown | 32 End Job |
| ③ Crew Leave Yard | ⑨ Start Job | ⑮ Pump H2O Spacer | 21 Check weight | 27 Drop Top Plug | 33 Post-Job Safety Meeting (Pre Rig-Down) |
| ④ Arrive At Loc | ⑩ Prime Pumps | ⑯ Pump Lead Cement | 22 Pump Tail Cement | 28 Pump Displacement | 34 Pre-Convoy Safety Meeting |
| ⑤ Assessment Of Location Safety Meeting | ⑪ Test Lines | ⑰ Check weight | 23 Check weight | 29 Slow Rate | 35 Depart Location |
| ⑥ Spot Equipment | ⑫ Pump H2O Spacer | ⑱ Slow Rate | 24 Check weight | 30 Bump Plug | |

▼ **HALLIBURTON** | iCem® Service

Created: 2017-11-26 21:06:36, Version: 4.2.393

Edit

Customer: TEP ROCKY MOUNTAIN LLC

Job Date: 11/26/2017

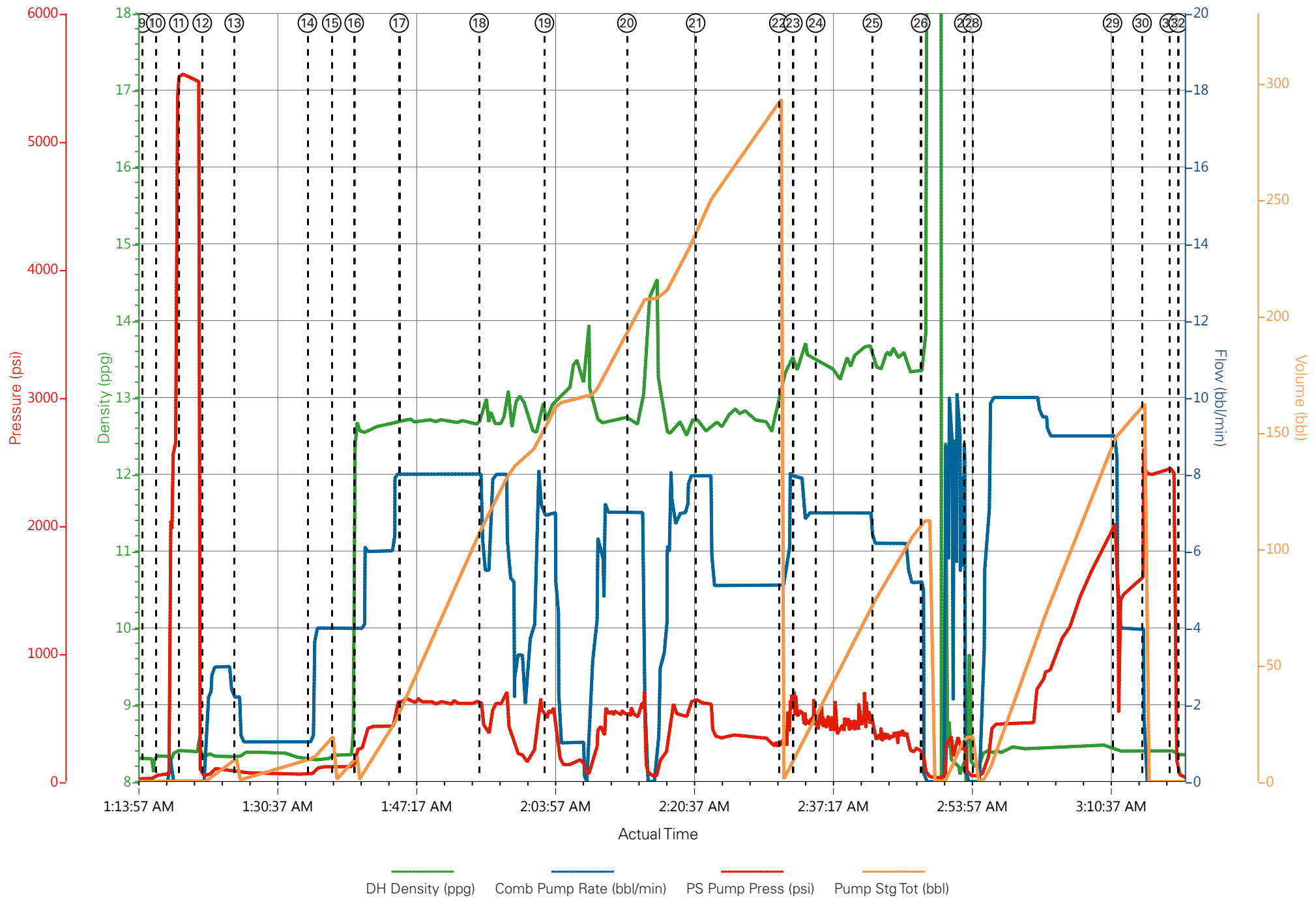
Well: SR 512-12

Representative: JOSH PHILLIPS

Sales Order #: 904453925

E4: HYDE / ANGELO

TERRA - SR 512-12 - 4 1/2" PRODUCTION



Job Information

Request/Slurry	2431630/1	Rig Name	H&P 318	Date	20/NOV/2017
Submitted By	Aaron Katz	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	SR 512-12

Well Information

Casing/Liner Size	4.5 in	Depth MD	10156 ft	BHST	118°C / 245°F
Hole Size	8.75 in	Depth TVD	9712 ft	BHCT	79°C / 175°F
Pressure	6100 psi				

Drilling Fluid Information

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



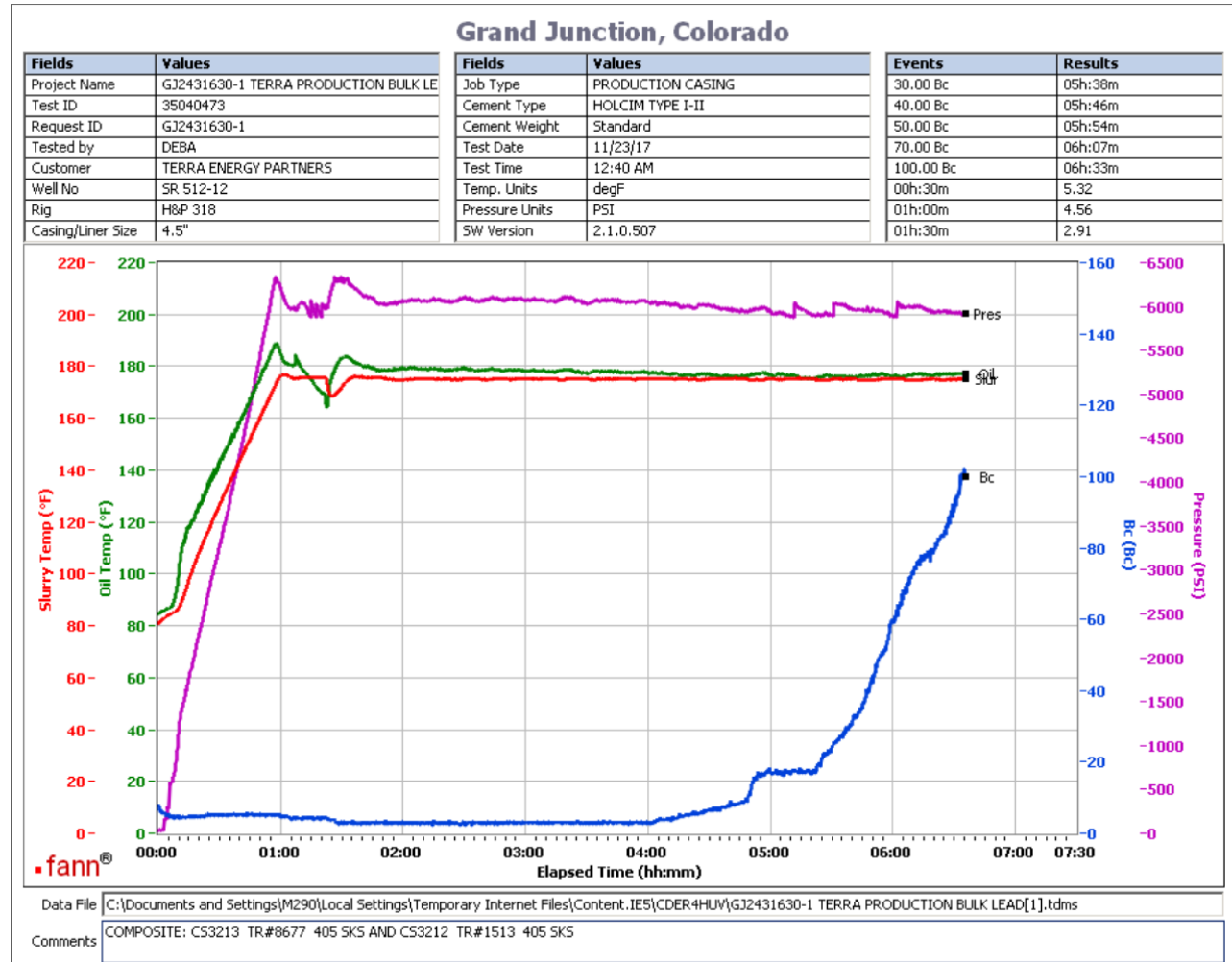
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		NeoCem Lead				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.941	ft3/sack
						Water Requirement	9.623	gal/sack
						Total Mix Fluid	9.623	gal/sack
						Water Source	Fresh Water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

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Thickening Time - ON-OFF-ON

22/NOV/2017

Test Temp (degF)	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)
175	6100	57	5:38	5:54	6:07	6:33	8	67	15	4



Total sks= 810
 Composite:
 CS3213 TR#8677 405 SKS
 CS3214 TR# 1513 405SKS
 Deflection: 4 - 4

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HALLIBURTON

Rockies, Grand Junction

Lab Results- Tail

Job Information

Request/Slurry	2431631/1	Rig Name	H&P 318	Date	20/NOV/2017
Submitted By	Aaron Katz	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	SR 512-12

Well Information

Casing/Liner Size	4.5 in	Depth MD	10156 ft	BHST	118°C / 245°F
Hole Size	8.75 in	Depth TVD	9712 ft	BHCT	79°C / 175°F
Pressure	6100 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		
		NeoCem 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		

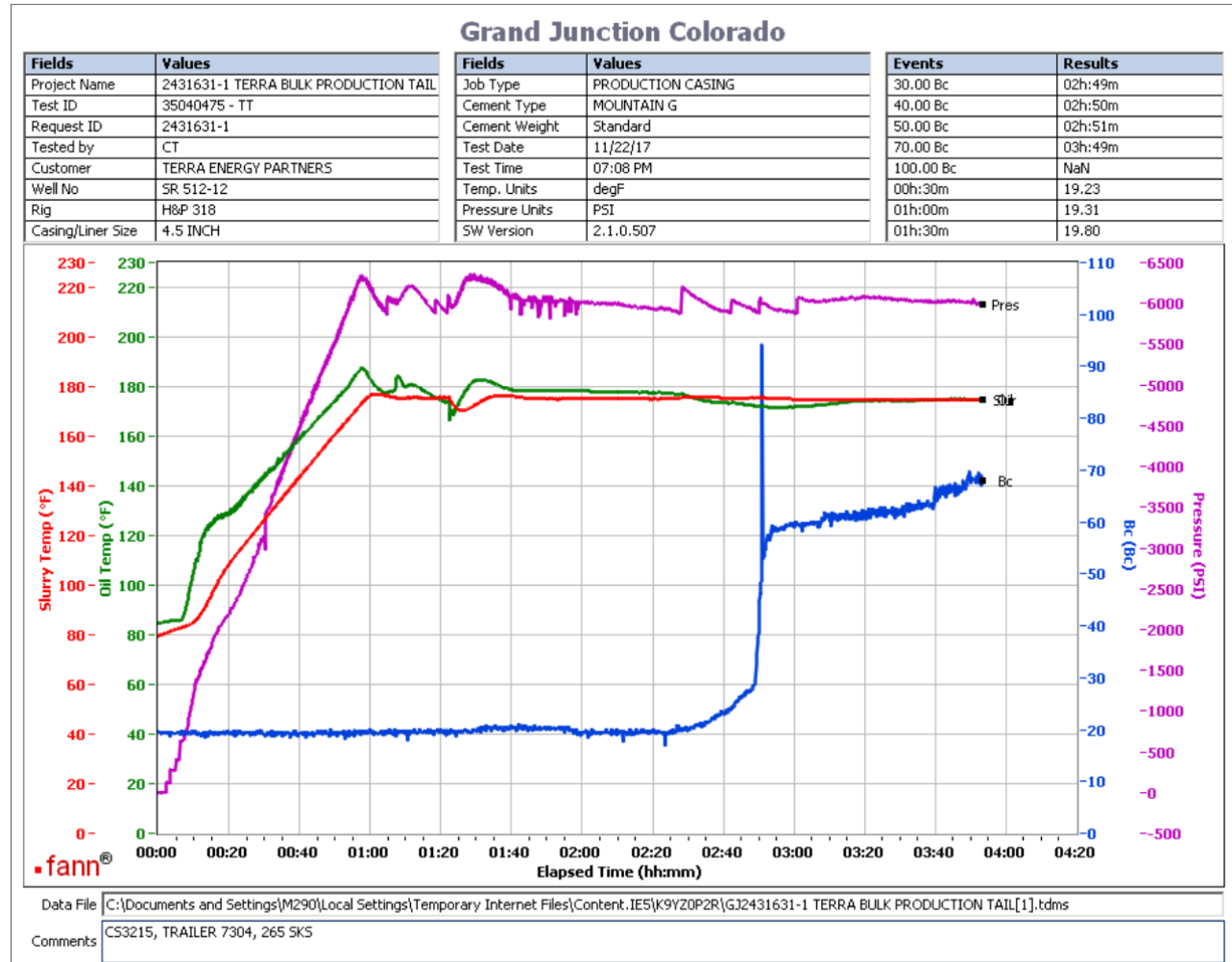
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Operation Test Results Request ID 2431631/1

Thickening Time - ON-OFF-ON

22/NOV/2017

Test Temp (degF)	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
175	6100	57	2:49	2:51	3:49	20	58	15	19	3:53	70



265 sks tail
CS3215, Trailer 7304, 265 sks
Deflection: 19 - 19

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