

HALLIBURTON

iCem[®] Service

TEP ROCKY MOUNTAIN LLC

For: Terra

Date: Friday, July 14, 2017

Chevron TR 512-24-597 Production

Sincerely,
Grand Junction Cement Engineering

1.0 Real-Time Job Summary

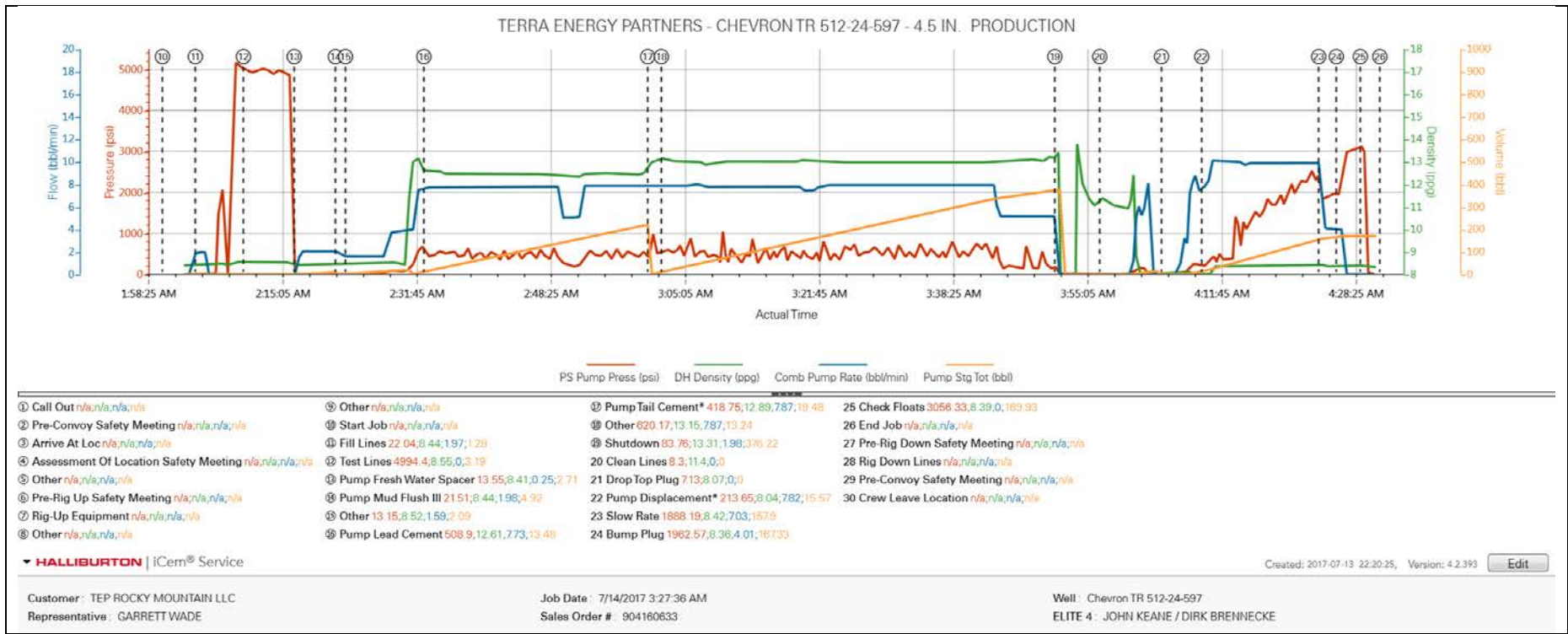
1.1 Job Event Log

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	7/13/2017	15:00:00	USER					REQUESTED ON LOCATION TIME 21:00
Event	2	Pre-Convoy Safety Meeting	7/13/2017	18:15:00	USER					WITH HES, 1 F-550, 1 660 BULK TRUCK, 1 ELITE CEMENTING UNIT
Event	3	Arrive At Loc	7/13/2017	21:00:00	USER					RIG RUNNING CASING UPON HES ARRIVAL, ALL MATERIALS AND EQUIPMENT ON LOCATION
Event	4	Assessment Of Location Safety Meeting	7/13/2017	21:15:00	USER					WITH HES, JSA COMPLETED, SDS OFFERED FOR ALL HES MATERIALS
Event	5	Other	7/13/2017	21:30:00	USER					WATER TEST, PH 7.1, CHLOR 50, TEMP 70 DEG F
Event	6	Pre-Rig Up Safety Meeting	7/13/2017	23:00:00	USER					WITH HES, JSA COMPLETED
Event	7	Rig-Up Equipment	7/13/2017	23:15:00	USER					1 LINE RAN TO THE FLOOR, 1 LINE RAN TO THE PIT, MANIFOLD ON THE GROUND, 1 4.5 IN. QUICK-LATCH PLUG CONTAINER
Event	8	Other	7/13/2017	23:20:00	USER					RIG CIRCULATION: 1380 BBL, 1300 PSI, 11.5 BBL/MIN, 1500 CFM AIR, PIPE WAS STATIC, RAT HOLE LENGTH 10 FT, MWT 8.9 LB/GAL WBM
Event	9	Other	7/13/2017	23:20:01	USER					TD 10392 FT, TP 10382 FT, CSG 4.5 IN. 11.6 LB/FT P-110, HOLE 8.75 IN, SURF CSG SET AT 3025 FT, 9.625 IN 36 LB/FT J-55, SHOE 27.7 FT
Event	10	Start Job	7/14/2017	02:00:24	USER					
Event	11	Fill Lines	7/14/2017	02:04:29	RTD Import	22.0	8.33	2.00	4.0	4 BBL FRESH WATER
Event	15	Test Lines	7/14/2017	02:10:28	RTD Import	4985.0	8.33	0.00	4.0	LOW TEST AT 220 PSI, HIGH TEST AT 4985 PSI, PRESSURE HOLDING
Event	16	Pump Fresh Water Spacer	7/14/2017	02:16:47	RTD Import	223.0	8.33	4.00	10.0	10 BBL FRESH WATER SPACER

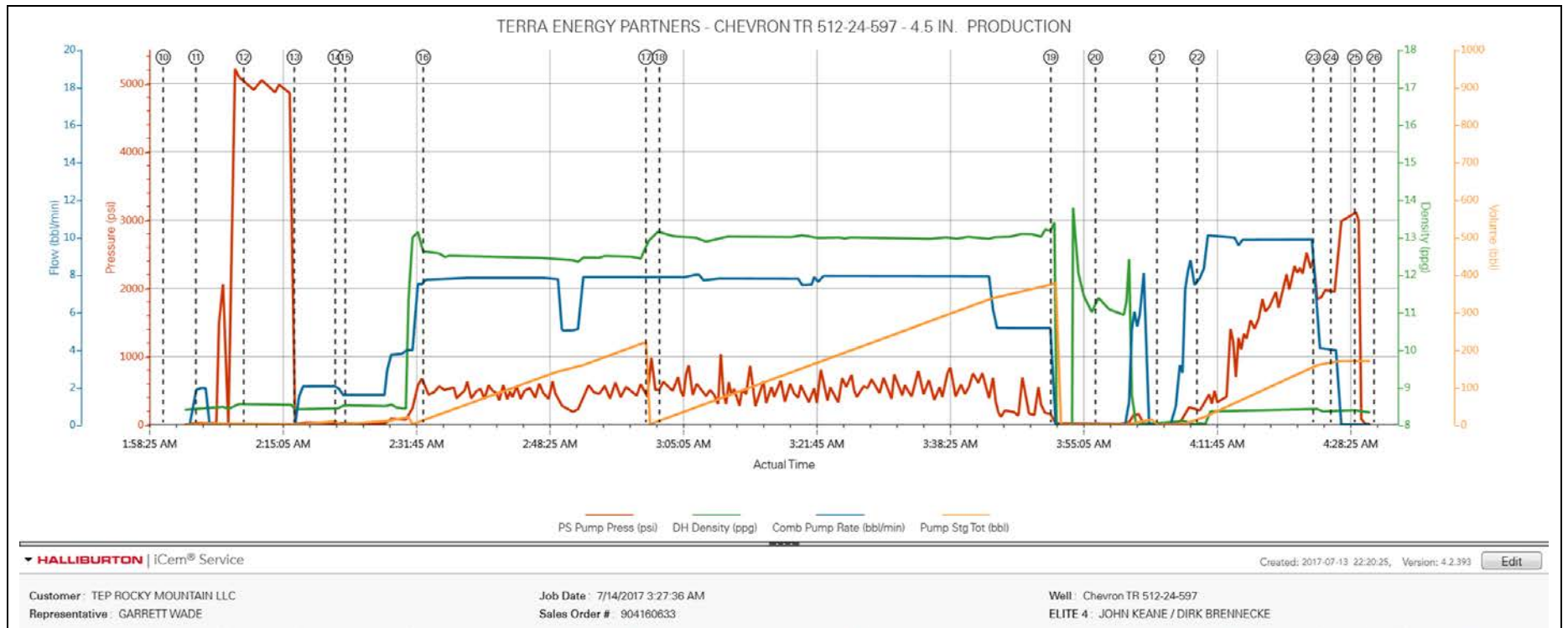
Event	18	Pump Mud Flush III	7/14/2017	02:21:54	RTD Import	250.0	8.40	4.00	20.0	20 BBL MUD FLUSH III, 80 LBS MUD FLUSH III MIXED ON THE FLY
Event	21	Other	7/14/2017	02:23:08	USER					ESTABLISHED RETURNS
Event	35	Pump Lead Cement	7/14/2017	02:32:53	RTD Import	530.0	12.50	8.00	198.6	MIXED AT 12.5 LB/GAL, 575 SKS, 1.94 FT3/SK, 9.58 GAL/SK, DENSITY VERIFIED USING PRESSURIZED MUD SCALES, 90.6 LBS TUFF FIBER MIXED ON THE FLY
Event	78	Pump Tail Cement*	7/14/2017	03:00:42	RTD Import	540.0	13.0	8.00	325.0	MIXED AT 13.0 LB/GAL, 885 SKS, 2.07 FT3/SK, 9.43 GAL/SK, DENSITY VERIFIED USING PRESSURIZED MUD SCALES
Event	80	Other	7/14/2017	03:02:23	USER	620.17	13.15	7.87	13.2	RIG SHUT OFF AIR, LOST RETURNS AT THE START OF TAIL CEMENT
Event	224	Shutdown	7/14/2017	03:51:16	USER	200.00	13.0	0.00	325.0	
Event	228	Clean Lines	7/14/2017	03:56:50	USER					WASHED PUMPS AND LINES TO THE RESERVE PIT
Event	238	Drop Top Plug	7/14/2017	04:04:31	USER					PLUG LAUNCHED, CUSTOMER WITNESSED
Event	241	Pump Displacement*	7/14/2017	04:09:31	RTD Import	2394	8.40	10.0	150.0	KCL, 1 GAL MMCR ADDED TO THE FIRST TANK, BE-6 ADDED TO THE FIRST 3 TANKS
Event	244	Slow Rate	7/14/2017	04:24:02	USER	1667	8.40	4.0	10.0	SLOWED AT 150 BBL AWAY
Event	245	Bump Plug	7/14/2017	04:26:14	RTD Import	1810.0	8.40	4.0	160.0	PLUG BUMPED AT CALCULATED DISPLACEMENT
Event	246	Check Floats	7/14/2017	04:29:13	USER	3100.0	8.40	0.0	160.0	FLOATS HOLDING, 1.5 BBL RETURNED TO THE TRUCK
Event	247	End Job	7/14/2017	04:31:38	USER					NO ADD HOURS, RIG DID NOT USE SUGAR, RIG SUPPLIED THE TOP PLUG
Event	248	Pre-Rig Down Safety Meeting	7/14/2017	04:40:00	USER					WITH HES, JSA COMPLETED
Event	249	Rig Down Lines	7/14/2017	04:50:00	USER					
Event	250	Pre-Convoy Safety Meeting	7/14/2017	05:50:00	USER					WITH HES, JSA COMPLETED
Event	251	Other	7/14/2017	05:55:55	USER					MUD FLUSH III 20 BBL, LEAD 198.6 BBL, TAIL 325 BBL, FINAL DISPLACEMENT 160 BBL, FINAL CIRCULATING PRESSURE 1810 PSI
Event	252	Crew Leave Location	7/14/2017	06:00:00	USER					THANKS FOR USING HALLIBURTON, JOHN KEANE AND CREW

2.0 Attachments

2.1 TEP-CHEVRON -TR 512-24-597-PRODUCTION-Custom Results.png



2.2 TEP-CHEVRON -TR 512-24-597-PRODUCTION-Custom Results (1).png



HALLIBURTON

Rockies, Grand Junction

Lab Results- Lead

Job Information

Request/Slurry	2400373/1	Rig Name	H&P 271	Date	10/JUL/2017
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	TR 512-24-597

Well Information

Casing/Liner Size	4.5 in	Depth MD	10601 ft	BHST	125°C / 257°F
Hole Size	8.75 in	Depth TVD	10384 ft	BHCT	91°C / 195°F
Pressure	6570 psi				

Drilling Fluid Information

Mud Supplier Name	Baroid	Mud Trade Name	BARADRIL-N	Density	10.4 lbm/gal
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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		

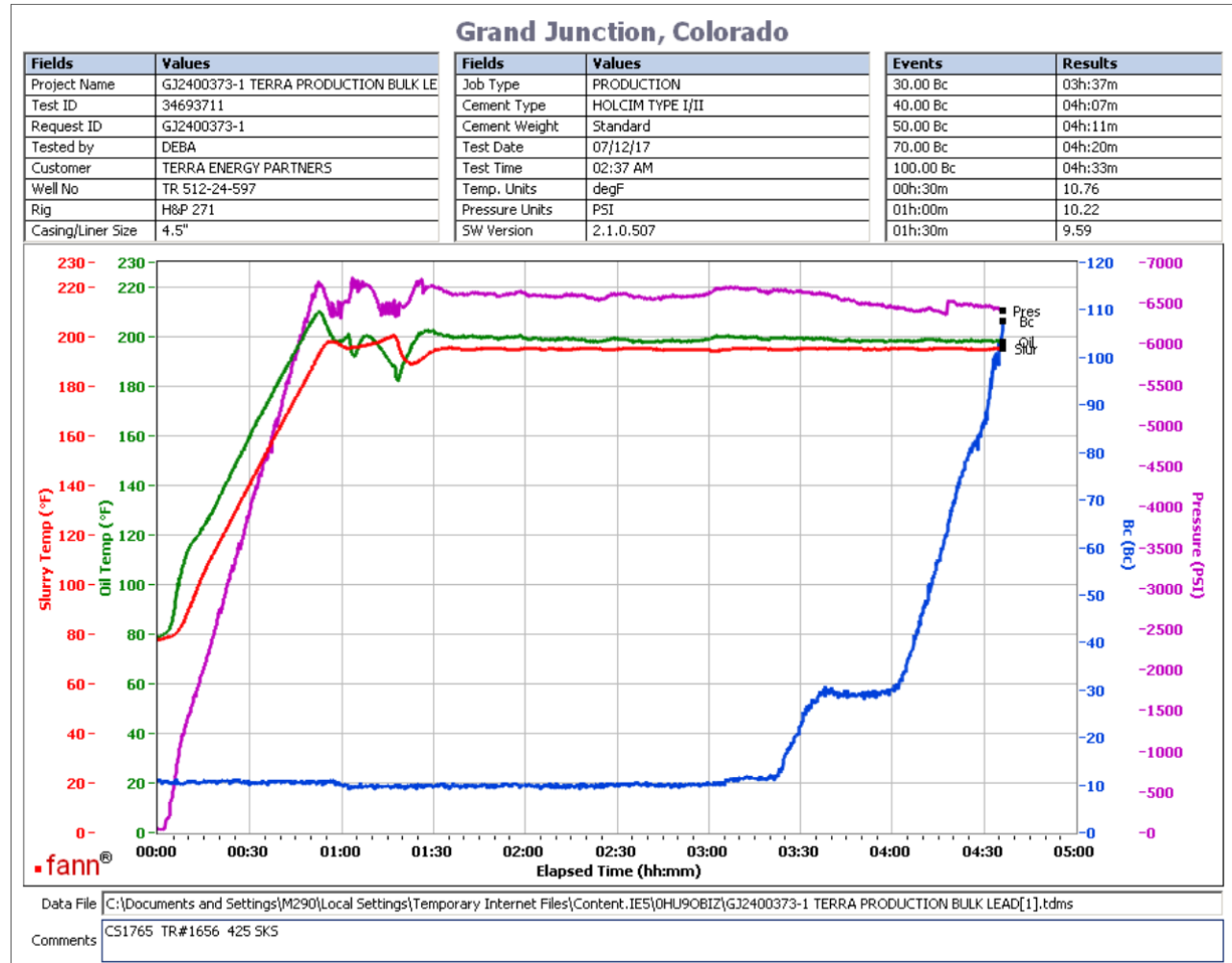
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Operation Test Results Request ID 2400373/1

Thickening Time - ON-OFF-ON

12/JUL/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)
195	6570	52	3:37	4:11	4:20	4:33	10	62	15	10



Total sks = 575

CS1765 TR#1556 425 SKS

no significant deflection - from 9BC to 10BC

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Operation Test Results Request ID 2400373/2

Thickening Time - ON-OFF-ON

12/JUL/2017

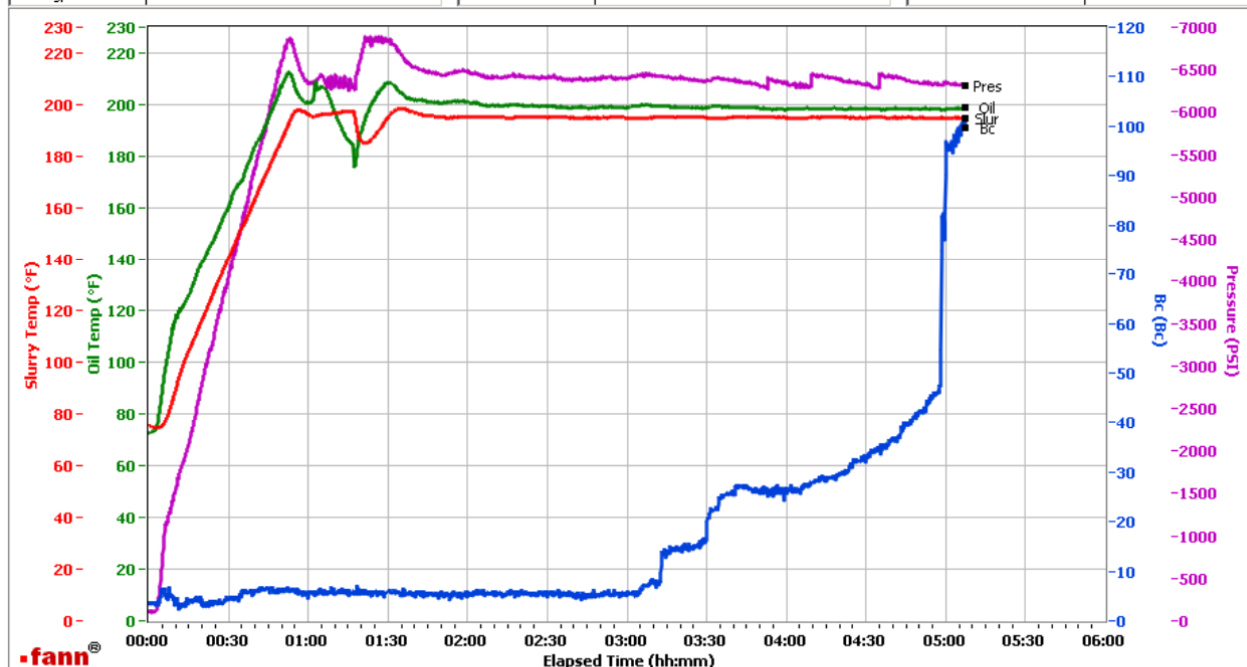
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195	6570	52	4:21	4:58	4:58	5:05	4	62	15	5

Grand Junction Colorado

Fields	Values
Project Name	GJ2400373-2 TERRA PRODUCTION BULK LE
Test ID	34699176
Request ID	GJ2400373-2
Tested by	DEBA
Customer	TERRA ENERGY PARTNERS
Well No	TR 512-24-597
Rig	H&P 271
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION
Cement Type	HOLCIM TYPE I/II
Cement Weight	Standard
Test Date	07/12/17
Test Time	09:31 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	04h:21m
40.00 Bc	04h:45m
50.00 Bc	04h:58m
70.00 Bc	04h:58m
100.00 Bc	05h:05m
00h:30m	4.08
01h:00m	4.46
01h:30m	6.05



Data File C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files\Content.IE5\AFGSUB25\GJ2400373-2 TERRA PRODUCTION BULK LEAD[1].tdms

Comments CS1779 TR# 2398 REAR 150 sks

Total sks = 575

CS1779 TR# 2398 Front 150 SKS

No deflection

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Rockies, Grand Junction

Lab Results- Tail

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Cement Information - Tail Design



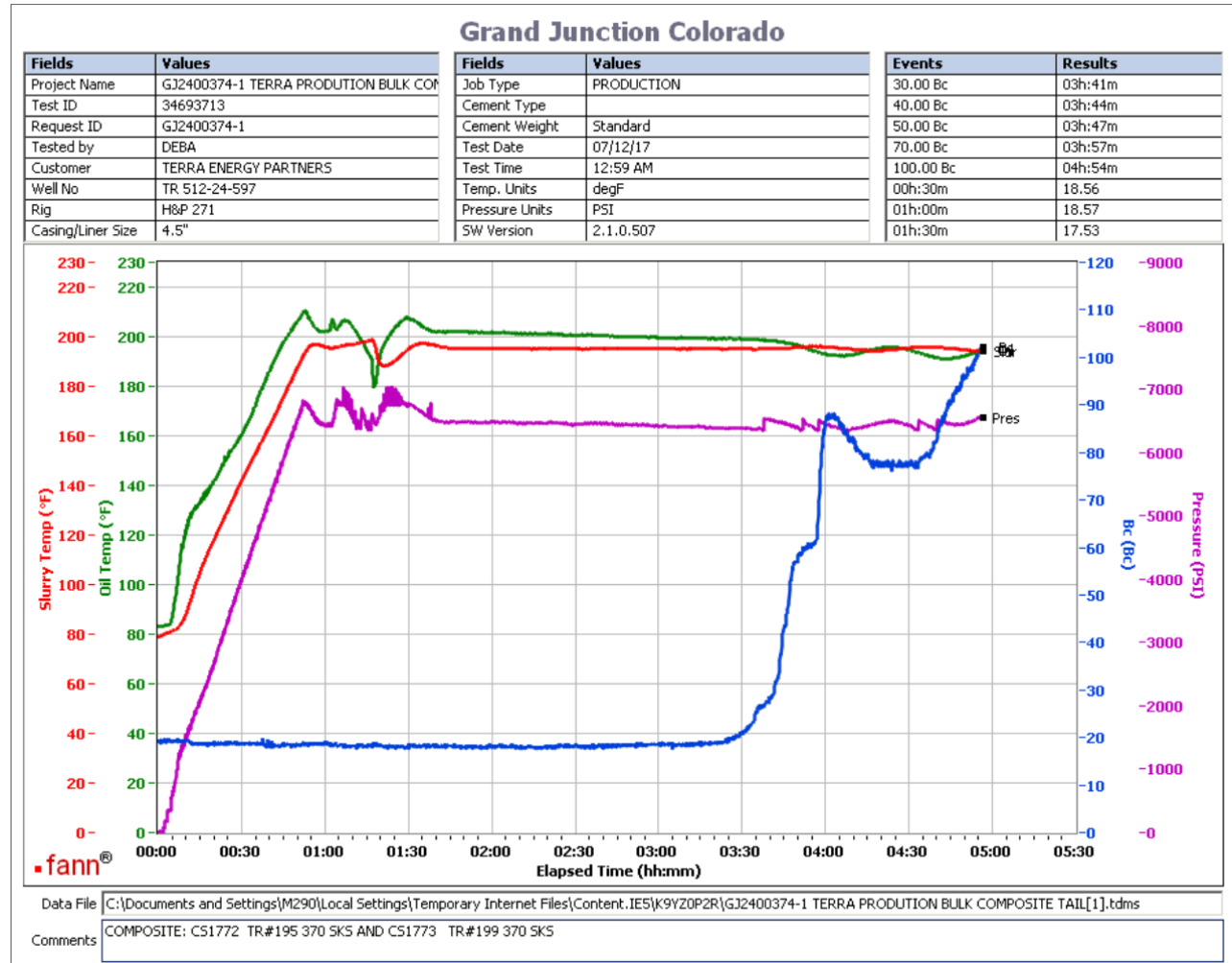
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		NeoCem Tail				Slurry Density	13	lbm/gal
						Slurry Yield	2.065	ft3/sack
						Water Requirement	9.424	gal/sack
						Total Mix Fluid	9.424	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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195	6570	52	3:41	3:47	3:57	4:54	19	62	15



Total sks 885
 Composite:
 CS1772 TR#195 370 SKS
 CS1773 TR# 199 370 SKS
 Deflection: 17 – 17

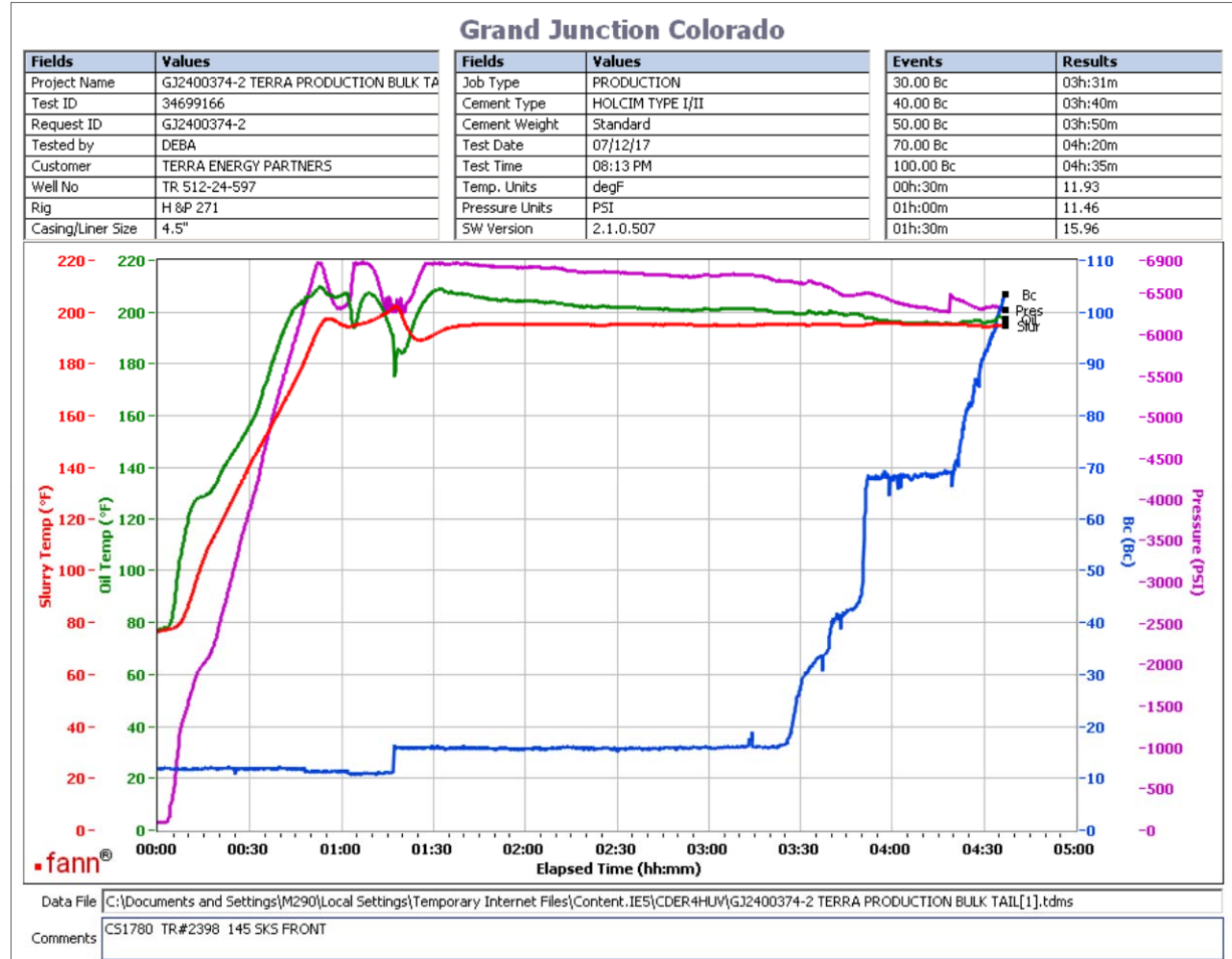
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Operation Test Results Request ID 2400374/2

Thickening Time - ON-OFF-ON

12/JUL/2017

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195	6570	52	3:31	3:50	4:20	4:35	12	62	15	16



Total sks 885

CS1780 TR#2398 145 SKS

deflected from 11Bc to 16Bc when the stirring was resumed.

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