

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

United States of America, COLORADO

For: TEP

Date: Saturday, December 15, 2018

NR 314-3 Production PJR

API #: 05-045-23915

Sincerely,

Grand Junction Cement Engineering

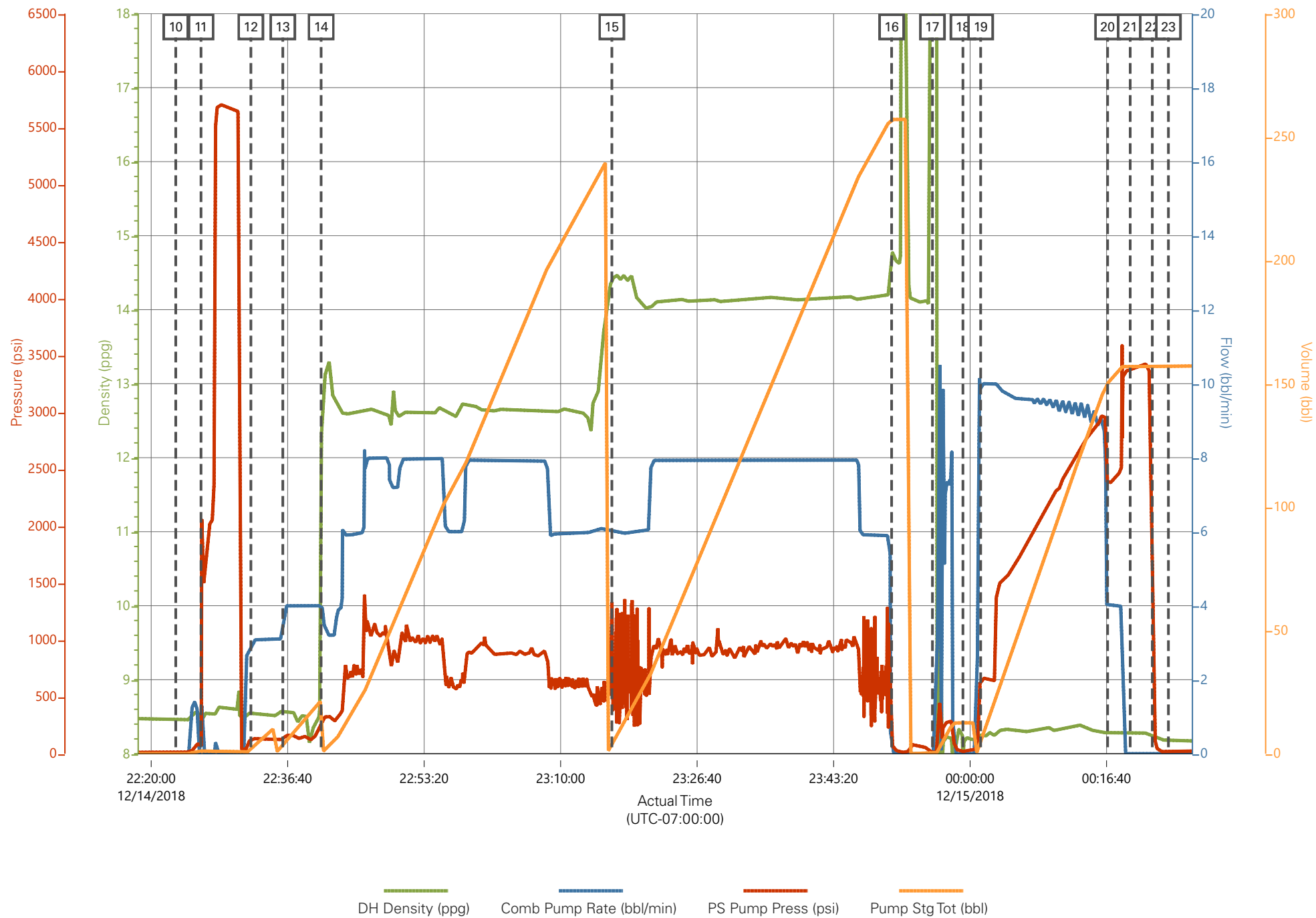
1.0 Real-Time Job Summary

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	12/14/2018	11:00:00	USER					
Event	2	Pre-Convoy Safety Meeting	12/14/2018	14:25:00	USER					
Event	3	Crew Leave Yard	12/14/2018	14:30:00	USER					
Event	4	Arrive At Loc	12/14/2018	17:00:00	USER					REQUESTED ON LOCATION TIME WAS 17:30, CREW ARRIVED AT 17:00, RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	12/14/2018	17:05:00	USER					
Event	6	Spot Equipment	12/14/2018	17:10:00	USER					
Event	7	Safety Meeting - Pre Rig-Up	12/14/2018	17:20:00	USER					
Event	8	Rig-Up Equipment	12/14/2018	17:30:00	USER					
Event	9	Pre-Job Safety Meeting	12/14/2018	21:00:00	USER					PRESSURIZED MUD SCALES VARIFIED ON DRINKING WATER PRIOR TO JOB.
Event	10	Start Job	12/14/2018	22:23:00	COM5					TD 10170', TP 10160', SHOE 32.4', CASING 4. 1/2" 11.5#, OH 8 3/4", MUD 11.5 PPG. WATER TEST: PH: 7, POTASSIUM 700, CHLORIDES 0, SULPHATES <200, TEMP 68.
Event	11	Test Lines	12/14/2018	22:26:05	COM5			5600		5500 PSI TEST SUCCESSFUL
Event	12	Pump Spacer 1	12/14/2018	22:32:10	COM5	8.33	4.0	215	10	10 BBL FRESH H2O SPACER
Event	13	Pump Spacer 2	12/14/2018	22:36:04	COM5	8.4	4	315	20	20 BBL MUD FLUSH SPACER
Event	14	Pump Lead Cement	12/14/2018	22:40:45	COM5	12.7	8	1100	219.1	665 SACK OF LEAD, 12.7 PPG, YIELD OF 1.85, WATER REQUIREMENT 8.94 GAL/SACK.

Event	15	Pump Tail Cement	12/14/2018	23:16:15	COM5	14.2	8	1015	224	740 SACKS OF TAIL, 14.2 PPG, YIELD OF 1.7, WATER REQUIREMENT 7.53 GAL/SACK.
Event	16	Shutdown	12/14/2018	23:50:25	COM5					
Event	17	Clean Lines	12/14/2018	23:55:24	COM5					
Event	18	Drop Top Plug	12/14/2018	23:59:08	COM5					
Event	19	Pump Displacement	12/15/2018	00:01:17	COM5	8.48	10.00	2950	157	FRESH H2O DISP, WITH 1 GALLON MMCR, 3 POUNDS OF BE6, AND KCL.
Event	20	Slow Rate	12/15/2018	00:16:48	COM5	8.48	4.00	2381.00	147	
Event	21	Bump Plug	12/15/2018	00:19:33	COM5	8.48	4	3366.00	157	PLUG BUMPED AT CALCULATED DISPLACEMENT.
Event	22	Check Floats	12/15/2018	00:22:15	COM5					FLOATS HELD, GAINED 2 BBL BACK TO THE PUMP.
Event	23	End Job	12/15/2018	00:24:13	COM5					
Event	24	Post-Job Safety Meeting (Pre Rig-Down)	12/15/2018	00:40:00	USER					GOOD CIRCULATION THROUGHOUT JOB, PIPE WAS RECIPROCATED, NO ADD HOURS CHARGED.
Event	25	Rig-Down Equipment	12/15/2018	00:45:00	USER					TOP PLUG USED, 80 POUNDS OF MUD FLUSH USED, 1 GALLON OF MMCR, 3 POUNDS OF BE6, NO SUGAR USED.
Event	26	Depart Location Safety Meeting	12/15/2018	02:25:00	USER					
Event	27	Crew Leave Location	12/15/2018	02:30:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENTING, WESLEY GOWEN AND CREW.

TEP - CLOUGH NR 314-3 - 4 1/2" PRODUCTION



Job Information

Request/Slurry	2519230/1	Rig Name	H&P 318	Date	03/DEC/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	NR 314-3

Well Information

Casing/Liner Size	4.5 in	Depth MD	10196 ft	BHST	121°C / 250°F
Hole Size	8.75 in	Depth TVD	10011 ft	BHCT	88°C / 190°F
Pressure	6308 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>MP</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		NeoCem Lead					Slurry Density	12.7	lbm/gal
							Slurry Yield	1.85	ft3/sack
							Water Requirement	8.95	gal/sack
							Total Mix Fluid	8.95	gal/sack
							Water Source	Fresh Water	
							Water Chloride		

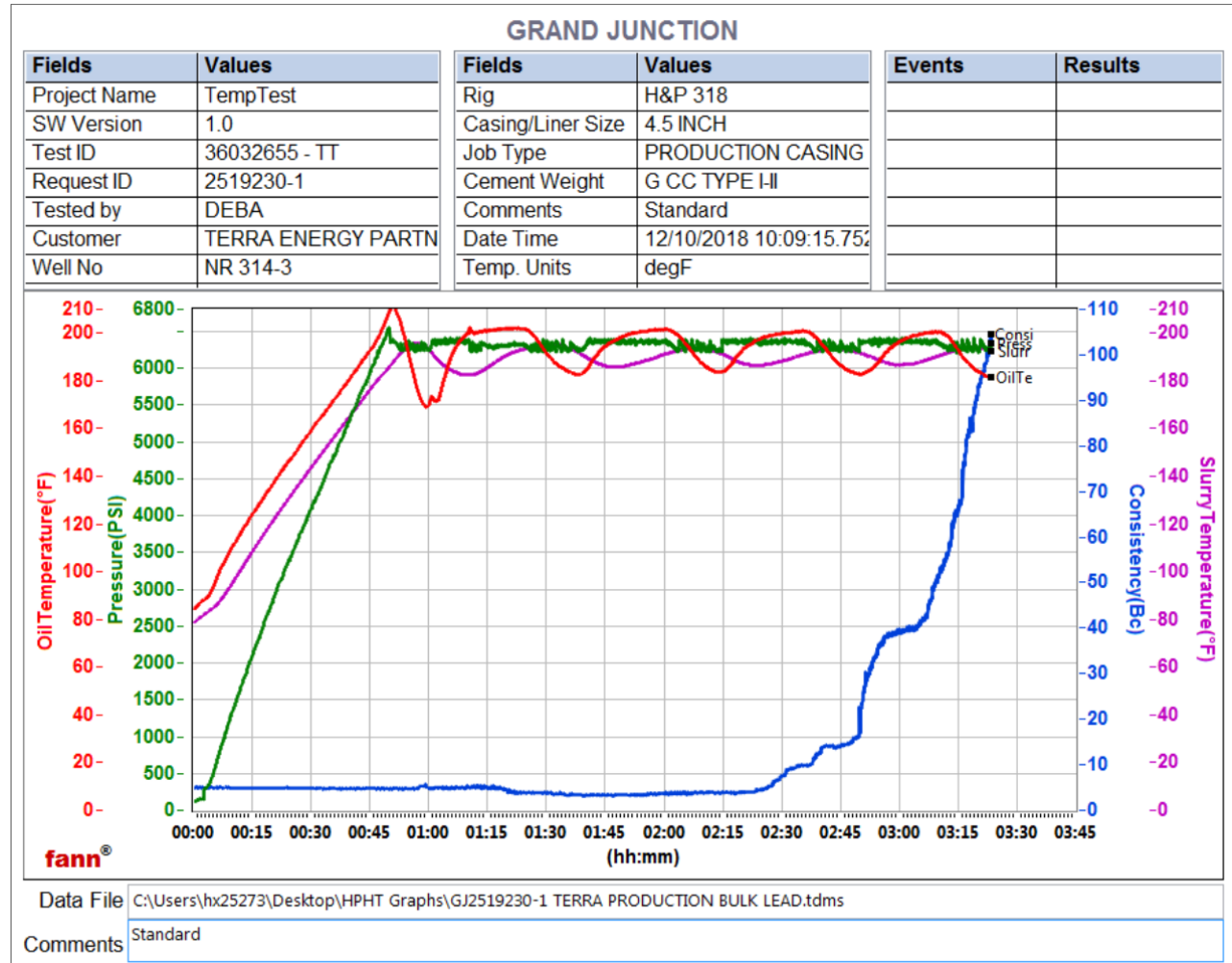
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Operation Test Results Request ID 2519230/1

Thickening Time - ON-OFF-ON, Request Test ID:36032655

10/DEC/2018

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)
190	6308	50	2:52	3:09	3:15	3:22	5	60	15	5



Total Sks = 665
 CS2578 TR#8658 335 sks
 CS2580 TR#6813 330 SKS
 No deflection, 5Bc-- > 5Bc

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Job Information

Request/Slurry	2519231/1	Rig Name	H&P 318	Date	03/DEC/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	NR 314-3

Well Information

Casing/Liner Size	4.5 in	Depth MD	10196 ft	BHST	121°C / 250°F
Hole Size	8.75 in	Depth TVD	10011 ft	BHCT	88°C / 190°F
Pressure	6308 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>MP</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		ThermaCem Tail					Slurry Density	14.2	lbm/gal
							Slurry Yield	1.7	ft3/sack
							Water Requirement	7.53	gal/sack
							Total Mix Fluid	7.53	gal/sack
							Water Source	Fresh Water	
							Water Chloride		

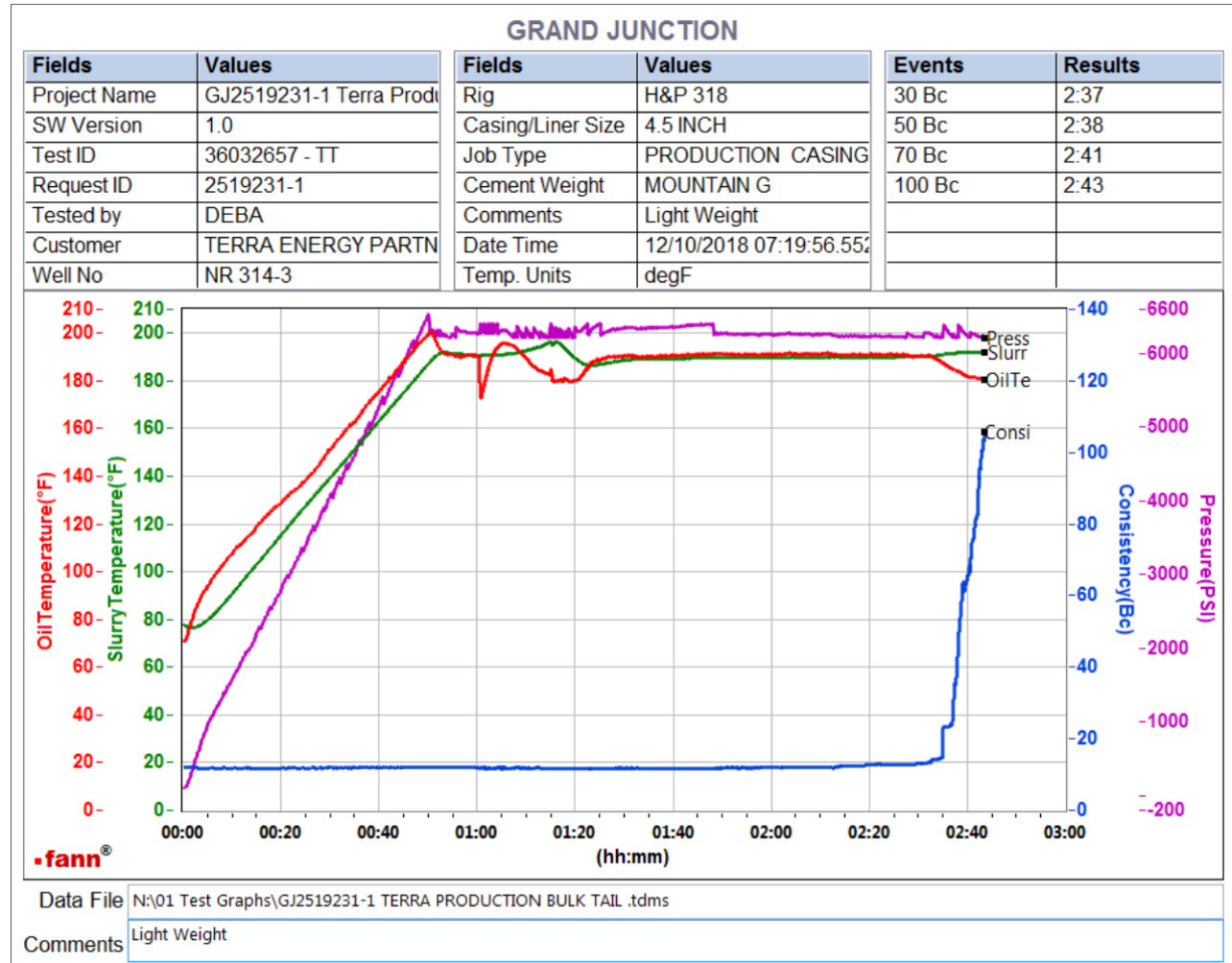
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Operation Test Results Request ID 2519231/1

Thickening Time - ON-OFF-ON, Request Test ID:36032657

10/DEC/2018

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)
190	6308	50	2:37	2:38	2:41	2:43	12	60	15	12



CS2577 TR 8678 370 SKS

CS2579 TR 1513 370 SKS

No deflection. Please note heat of hydration started around 2:32 and no evidence of slurry core setting or balling around paddle.

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