

# HALLIBURTON

iCem<sup>®</sup> Service

## **TERRA ENERGY PARTNERS**

United States of America, COLORADO

### **For: Terra**

Date: Saturday, May 05, 2018

### **RU 314-17 Production**

API# 05-045-23744

Sincerely,

**Grand Junction Cement Engineering**

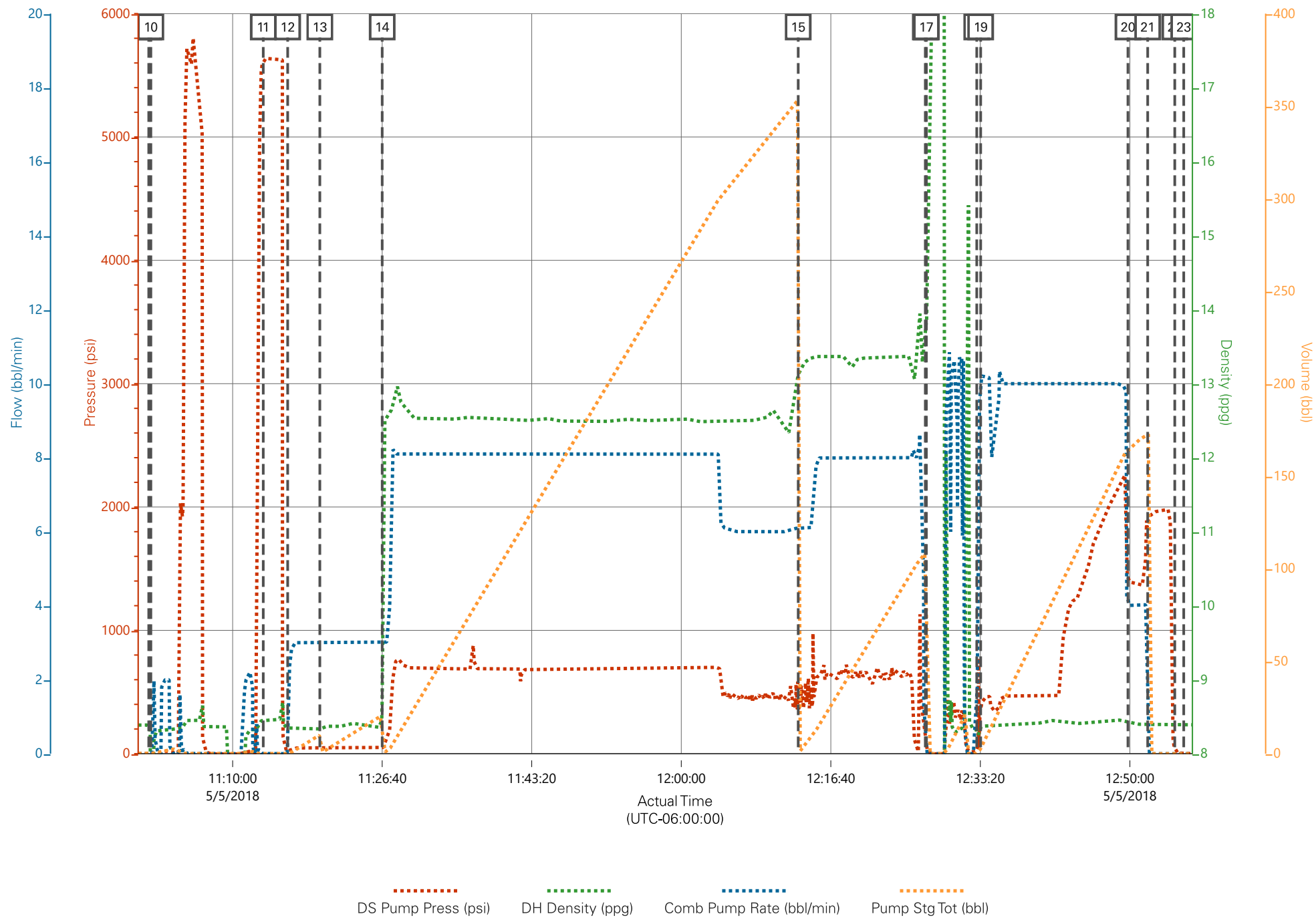
## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	5/5/2018	01:30:00	USER					
Event	2	Pre-Convoy Safety Meeting	5/5/2018	04:00:00	USER					JSA COMPLETE
Event	3	Crew Leave Yard	5/5/2018	04:15:00	USER					
Event	4	Arrive at Location from Service Center	5/5/2018	06:00:00	USER					RIG RUNNIN CASING
Event	5	Other	5/5/2018	06:15:00	USER					4.5 11.6# TP- 10732.87, TD-10738, F.C.- 10697.71, HOLE- 8 3/4, MUD#-9, 9 5/8 32# SET@ 1125, WATER TEST: PH- 6.8, TEMP- 60, CL-0
Event	6	Pre-Rig Up Safety Meeting	5/5/2018	07:00:00	USER					JSA COMPLETE
Event	7	Rig-Up Equipment	5/5/2018	07:15:00	USER					
Event	8	Pre-Job Safety Meeting	5/5/2018	10:30:00	USER					JSA COMPLETE
Event	9	Start Job	5/5/2018	11:00:39	COM4					
Event	10	Prime Pumps	5/5/2018	11:00:53	COM4					FRESH WATER
Event	11	Test Lines	5/5/2018	11:13:25	COM4					5642 PSI
Event	12	Pump Spacer 1	5/5/2018	11:16:08	COM4	48.00	8.33	3.00	10.00	FRESH WATER
Event	13	Pump Spacer 2	5/5/2018	11:19:43	COM4	44.00	8.33	3.00	20.00	MUD FLUSH
Event	14	Pump Lead Cement	5/5/2018	11:26:40	COM4	720.0	12.5	8.00	324.8	940 SKS NEOCEM, 12.5 PPG, 1.94 FT3/SK, 9.6 GAL/SK
Event	15	Pump Tail Cement	5/5/2018	12:13:02	COM4	630.0	13.30	8.00	81.6	265 SKS THERMACEM, 13.3 PPG, 1.73 FT3/SK, 7.81 GAL/SK
Event	16	Shutdown	5/5/2018	12:27:12	COM4					TO CLEAN LINES AND DROP TOP PLUG

Event	17	Clean Lines	5/5/2018	12:27:19	COM4					FLUSHED FROM FLOOR WITH AIR TO PIT, THEN CLEANED UP PUMP.
Event	18	Pump Displacement	5/5/2018	12:32:56	COM4	2180.0	8.34	10.00	165.8	KCL DISPLACEMENT WITH 3 BAGS BE-6, 1 GAL MMCR
Event	19	Drop Top Plug	5/5/2018	12:33:22	COM4					AWAY
Event	20	Slow Rate	5/5/2018	12:49:47	COM4	1375.0	8.34	4.00	155.0	TO BUMP PLUG
Event	21	Bump Plug	5/5/2018	12:51:59	COM4	1368.0	8.34	0.00	165.8	PLUG BUMPED ON CALULATED
Event	22	Check Floats	5/5/2018	12:55:00	USER	1960				FLOATS HELD, 1.25 BBLS BACK TO TRUCK
Event	23	End Job	5/5/2018	12:56:00	USER					RETURNS WERE CAUGHT AT 100 TOTAL BBLS GONE IN JOB, THEN MAINTAINED GOOD RETURNS THROUGHOUT JOB, PIPE WAS RECIPROCATED
Event	24	Post-Job Safety Meeting (Pre Rig-Down)	5/5/2018	13:20:00	USER					JSA COMPLETE
Event	25	Rig Down Lines	5/5/2018	14:00:00	USER					
Event	26	Crew Leave Location	5/5/2018	14:30:00	USER					THANK YOU FOR USING HALLIBURTON CEMENT, JAMES LEIST AND CREW

# TEP - RU 314-17 - 4.5 PRODUCTION CASING



## Job Information

Request/Slurry	2470835/1	Rig Name	H&P 318	Date	27/APR/2018
Submitted By	Aaron Katz	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	RU 314-17

## Well Information

Casing/Liner Size	4.5 in	Depth MD	10952 ft	BHST	127°C / 260°F
Hole Size	8.75 in	Depth TVD	10572 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

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
		NeoCem				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		

## Operation Test Results Request ID 2470835/1

Mixability (0 - 5) - 0 is not mixable			30/APR/2018		
Mixability rating (0 - 5)			Avg rpm mixing under load (~12,000)		
5			12000		

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# Thickening Time - ON-OFF-ON

01/MAY/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)
198	6700	52	4:25	4:34	4:41	4:49	11	62	15	12

Total sks =940

CS0970 TR# 8677 400 SKS

CS0971 TR# 8658 400 SKS

CS0972 TR#7428 400 SKS

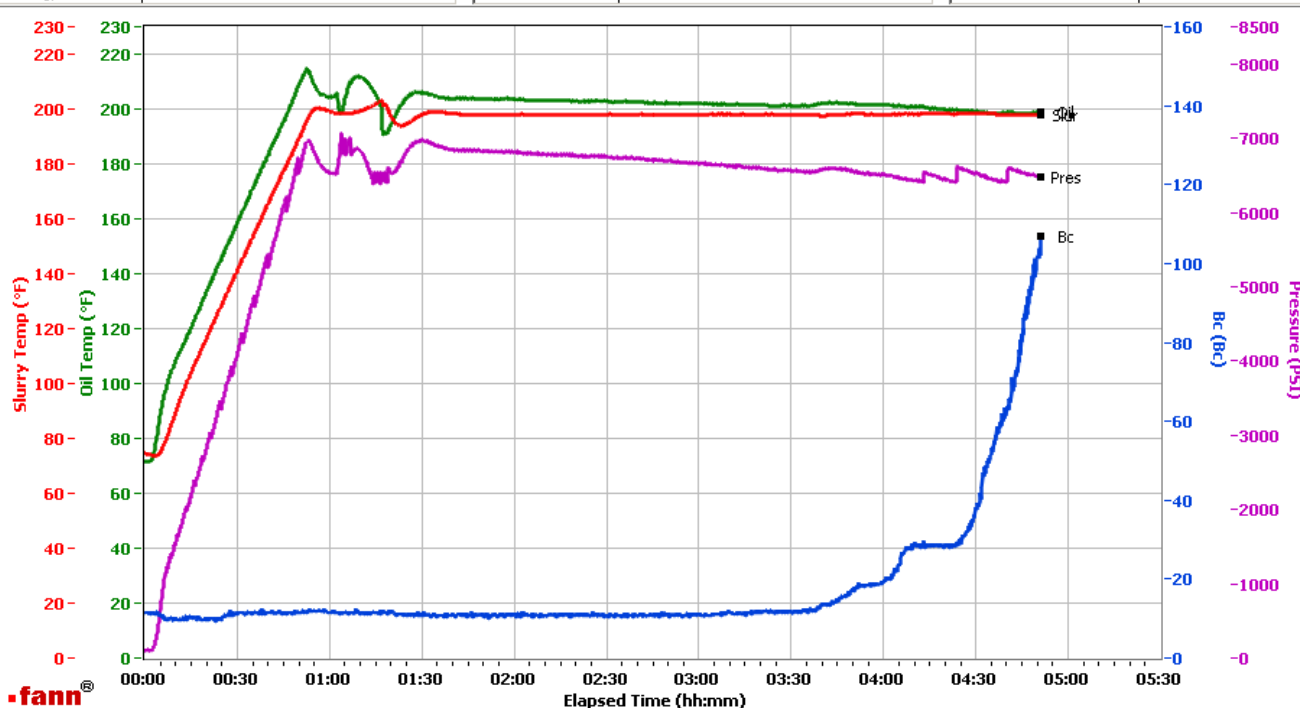
No deflection.

## Grand Junction Colorado

Fields	Values
Project Name	GJ2470835-1 TERRA PRODUCTION BULK LE
Test ID	35452279
Request ID	GJ2470835-1
Tested by	DEBA
Customer	TERRA ENERGY PARTNERS
Well No	RU 314-17
Rig	H&P 318
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	GCC TYPE I/II
Cement Weight	Standard
Test Date	05/01/18
Test Time	06:33 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	04h:25m
40.00 Bc	04h:31m
50.00 Bc	04h:34m
70.00 Bc	04h:41m
100.00 Bc	04h:49m
00h:30m	11.51
01h:00m	11.74
01h:30m	10.62



Data File C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files\Content.IE5\AFG5UB25\GJ2470835-1 TERRA PRODUCTION BULK LEAD[1].tdms

Comments CS0970 TR# 8677 400 SKS AND CS0971 TR#8658 400 SKS AND CS0972 TR#7428 140 SKS

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## Job Information

Request/Slurry	2470836/1	Rig Name	H&P 318	Date	27/APR/2018
Submitted By	Aaron Katz	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	RU 314-17

## Well Information

Casing/Liner Size	4.5 in	Depth MD	10952 ft	BHST	127°C / 260°F
Hole Size	8.75 in	Depth TVD	10572 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 - Tail Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
		ThermaCem				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		

## Operation Test Results Request ID 2470836/1

Mixability (0 - 5) - 0 is not mixable	01/MAY/2018
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Mixability rating (0 - 5)	Avg rpm mixing under load (~12,000)
4	12000

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# Thickening Time - ON-OFF-ON

01/MAY/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)
198	6700	52	6:03	6:20	6:44	6:53	15	62	15	14

Total sks = 265

CS0975 TR 8321 265 SKS

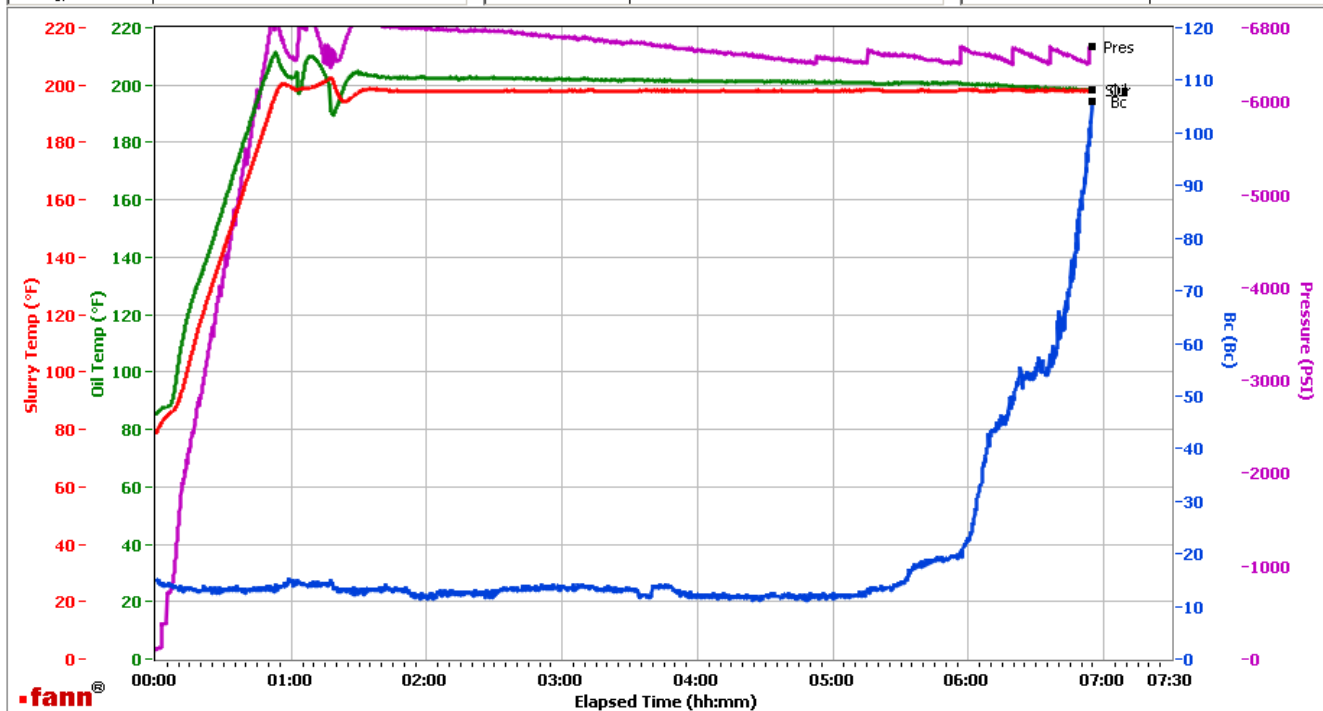
no deflection, 14Bc--- > 14Bc

## Grand Junction Colorado

Fields	Values
Project Name	GJ2470836-1 TERRA PRODUCTION BULK TA
Test ID	35452281
Request ID	2470836-1
Tested by	JASON
Customer	TERRA ENERGY PARTNERS
Well No	RU 314-17
Rig	H&P 318
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION
Cement Type	MOUNTAIN G
Cement Weight	Light Weight
Test Date	05/01/18
Test Time	10:39 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	06h:03m
40.00 Bc	06h:08m
50.00 Bc	06h:20m
70.00 Bc	06h:44m
100.00 Bc	06h:53m
00h:30m	13.26
01h:00m	14.85
01h:30m	12.48



Data File C:\Documents and Settings\Administrator\Local Settings\Temporary Internet Files\Content.IE5\O3KLGZ\GJ2470836-1 TERRA PRODUCTION BULK TAIL[1].tdms

Comments CS0975 TR 8321 265 SKS

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