

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

For: Terra

Date: Thursday, April 26, 2018

RU 513-17 Production PJR

API #: 05-045-23734

Sincerely,

Grand Junction Cement Engineering

1.0 Real-Time Job Summary

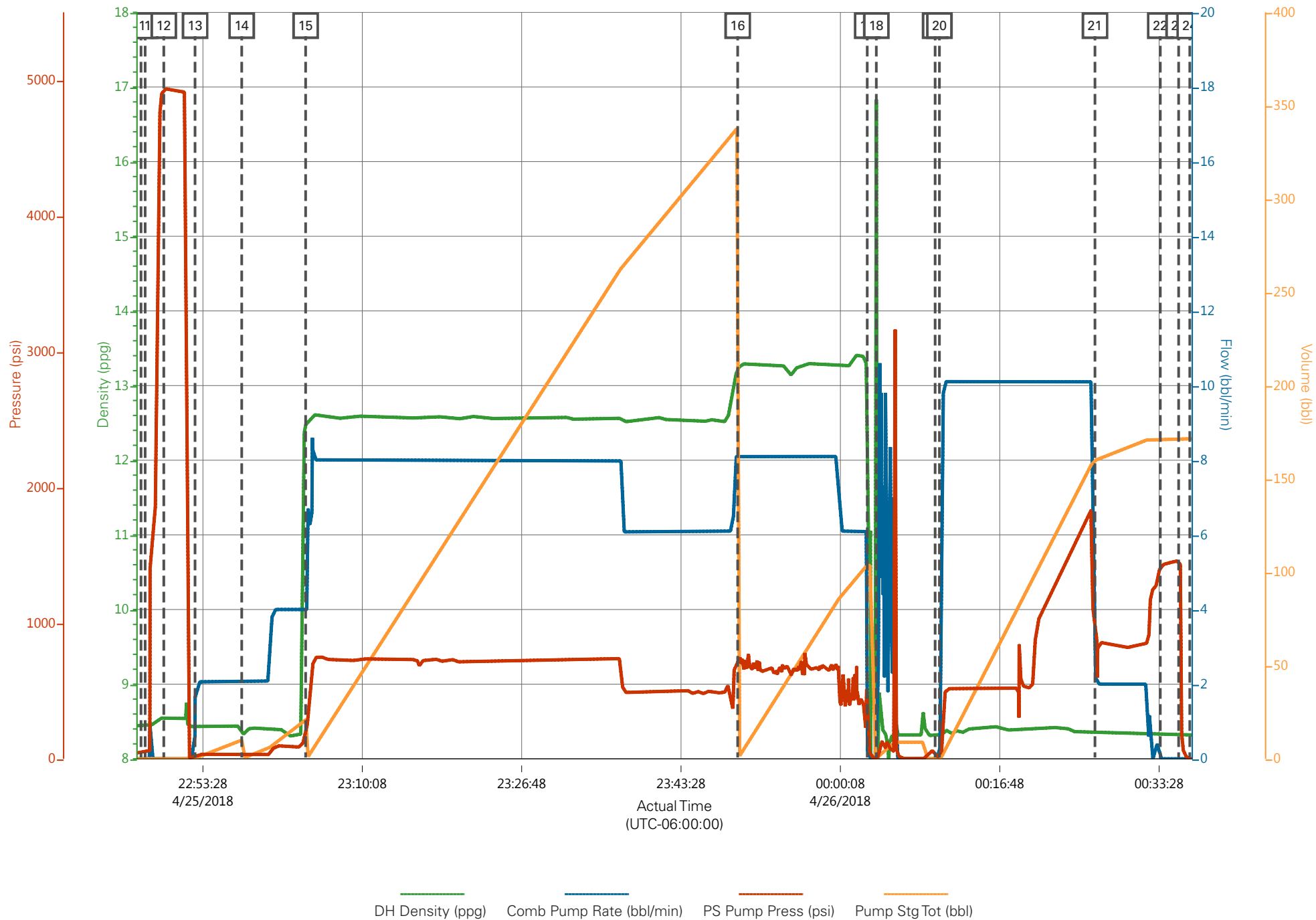
1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	4/25/2018	06:00:00	USER					REQUESTED ON LOCATION @ 1200, CO REP CALLED COORDINATOR AFTER CREW HAD LEFT THE YARD AND MOVED THE ON LOCATION TIME BACK 1600.
Event	2	Pre-Convoy Safety Meeting	4/25/2018	08:00:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	4/25/2018	08:10:00	USER					1 F550, 1 PUMP TRUCK, 1 660 BULK TURCK & 1 BODY LOAD, CREW WAITED IN RIFLE FOR 5 HOURS.
Event	4	Arrive at Location from Service Center	4/25/2018	16:30:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	4/25/2018	16:45:00	USER					MET WITH COMP REP AND WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION AND COLLECTED WATER SAMPLE (PH- 7, CHLORIDES- 0, TEMP- 71F). COMP REP WAS OFFERED SDS FOR ALL CHEMICALS USED BY HES.
Event	6	Pre-Rig Up Safety Meeting	4/25/2018	17:00:00	USER					ALL HES PRESENT
Event	7	Rig-Up Completed	4/25/2018	18:00:00	USER					HES RIGGED UP EQUIPMENT WITHOUT ENTERING RED ZONE.
Event	8	Prime Pumps	4/25/2018	18:53:38	COM3					8.33 PPG FRESH WATER

Event	9	Pre-Job Safety Meeting	4/25/2018	20:00:00	USER					ALL HES AND RIG CREW PRESENT
Event	10	Start Job	4/25/2018	22:47:00	COM3					TD 10710', TP 10704', SJ 26.77', OH 8.75'', CSG 4.5'' 11.6#, MUD 9.2 PPG. RIG CIRCULATED WELL WITH ERRATIC RETURNS UP TO WHEN HES TOOK OVER.
Event	11	Prime Pumps	4/25/2018	22:47:26	USER	152.00	8.33	1.00	2.00	8.33 PPG FRESH WATER
Event	12	Test Lines	4/25/2018	22:49:23	COM3	4936.00	8.33	0.50	0.50	ALL LINES HELD PRESSURE AT 4932 PSI
Event	13	Pump Spacer 1	4/25/2018	22:52:39	COM3	141.00	8.33	4.00	0.00	8.33 PPG FRESH WATER (10 BBL)
Event	14	Pump Spacer 2	4/25/2018	22:57:32	COM3	133.00	8.33	4.10	10.00	8.4 PPG MUDFLUSH III (20 BBL)
Event	15	Pump Lead Cement	4/25/2018	23:04:13	COM3	724.00	12.48	8.00	325.00	NEOCHEM CEMENT 940 SKS (325 BBLs), 12.5 PPG, 1.94 FT3/SK, 9.6 GAL/SK
Event	16	Pump Tail Cement	4/25/2018	23:49:24	COM3	708.00	13.32	8.00	82.00	THERMACEM CEMENT 265 SKS (82 BBLs), 13.3 PPG, 1.73 FT3/SK, 7.81 GAL/SK
Event	17	Shutdown	4/26/2018	00:02:57	USER					END OF CMT
Event	18	Clean Lines	4/26/2018	00:03:54	USER					WASH UP PUMPS AND LINES
Event	19	Drop Top Plug	4/26/2018	00:10:03	USER					PLUG WENT, VERIFIED BY CO REP
Event	20	Pump Displacement	4/26/2018	00:10:30	COM3	1830.00	8.32	10.00	155.40	8.34 PPG FRESH WATER (165.4 BBLs) 3 BAGS BE6, 1 GAL MMCR & 16 SKS KCL
Event	21	Slow Rate	4/26/2018	00:26:46	USER	969.00	8.35	2.00	10.00	SLOW RATE TO 2 BPM PER CO REP TO LAND PLUG
Event	22	Bump Plug	4/26/2018	00:33:36	USER	1413.00	8.34	2.00	165.50	LAND PLUG AT 970 PSI, BROUGHT UP TO 1413 PSI

Event	23	Check Floats	4/26/2018	00:35:31	USER	1460.00	8.34	0.00	165.50	FLOATS HELD, 1 BBL BACK TO TRUCK
Event	24	End Job	4/26/2018	00:36:41	USER					RETURNS TO START JOB, PARTIAL RETURNS ON CEMENT AND DISPLACEMENT, LAND PRESSURE WAS ABOUT HALF OF CALCULATED, PIPE WAS RECIPROCATED
Event	25	Post-Job Safety Meeting (Pre Rig-Down)	4/26/2018	00:38:21	USER					ALL HES PRESENT
Event	26	Rig-Down Completed	4/26/2018	00:55:26	USER					ALL HES PRESENT
Event	27	Pre-Convoy Safety Meeting	4/26/2018	00:59:35	USER					ALL HES PRESENT
Event	28	Crew Leave Location	4/26/2018	01:01:16	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENT, CHRIS SMITH AND CREW

TEP - RU 513-17 - 4.5" PRODUCTION



Job Information

Request/Slurry	2467634/1	Rig Name	H&P 318	Date	16/APR/2018
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	RU 513-17

Well Information

Casing/Liner Size	4.5 in	Depth MD	10908 ft	BHST	127°C / 260°F
Hole Size	8.75 in	Depth TVD	10571 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		

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Operation Test Results Request ID 2467634/1

Thickening Time - ON-OFF-ON

20/APR/2018

Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:min)	50 Bc (hh:min)	70 Bc (hh:min)	100 Bc (hh:min)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
198	6700	52	3:32	4:30	4:58	4:58	22	62	15	18

Total sks =940

CS0910, Trailer 2878, 400 sks

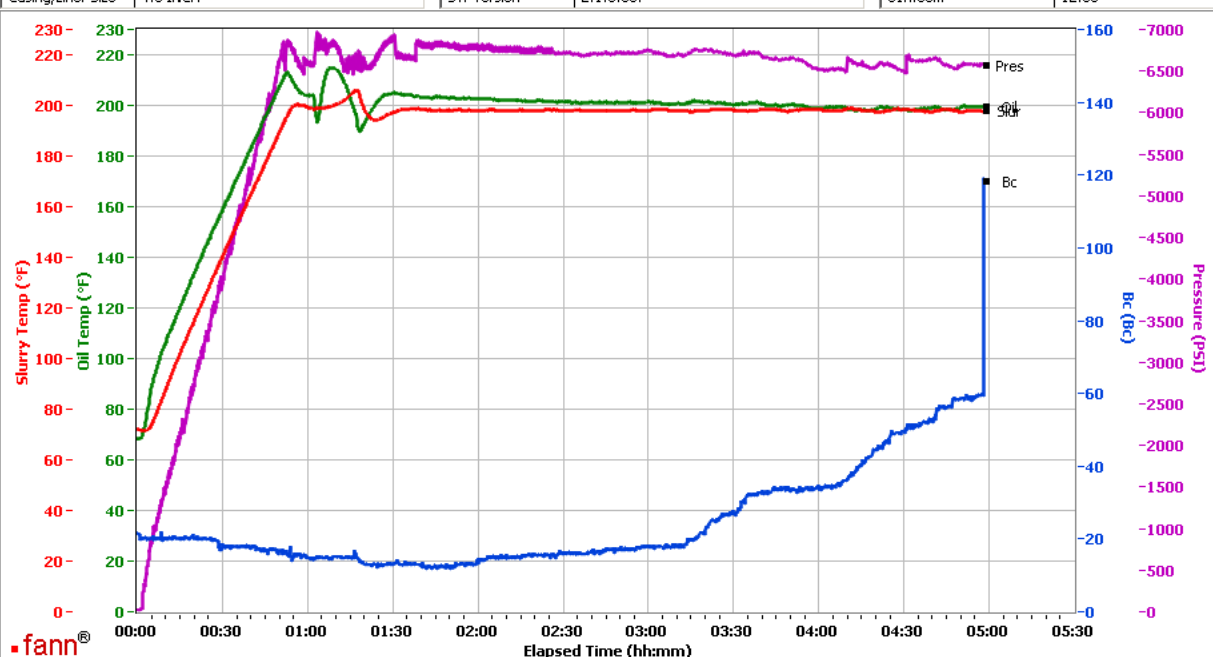
CS0911, Trailer 1513, 400 sks

CS0912, Trailer 4549, 140 sks

Deflected 15-- > 18

Grand Junction, Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2467634-1 TERRA BULK PRODUCTION LE	Job Type	PRODUCTION CASING	30.00 Bc	03h:32m
Test ID	35423328 - TT	Cement Type	GCC TYPE I-II	40.00 Bc	04h:14m
Request ID	2467634-1	Cement Weight	Standard	50.00 Bc	04h:30m
Tested by	CT	Test Date	04/20/18	70.00 Bc	04h:58m
Customer	TERRA ENERGY PARTNERS	Test Time	07:13 PM	100.00 Bc	04h:58m
Well No	RU 513-17	Temp. Units	degF	00h:30m	18.50
Rig	H&P 318	Pressure Units	PSI	01h:00m	14.92
Casing/Liner Size	4.5 INCH	SW Version	2.1.0.507	01h:30m	12.88



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\CDER4HUV\GJ2467634-1 TERRA BULK PRODUCTION LEAD[1].tdms

Comments CS0910, TRAILER 2878, 400 SKS - CS0911, TRAILER 1513, 400 SKS - CS0912, TRAILER 4549, 140 SKS

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Rockies, Grand Junction

Lab Results- Tail

Job Information

Request/Slurry	2467635/1	Rig Name	H&P 318	Date	16/APR/2018
Submitted By	Patrick Ealey	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	RU 513-17

Well Information

Casing/Liner Size	4.5 in	Depth MD	10908 ft	BHST	127°C / 260°F
Hole Size	8.75 in	Depth TVD	10571 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



<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	<u>Cement Properties</u>	
		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	

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Operation Test Results Request ID 2467635/1

Thickening Time - ON-OFF-ON

21/APR/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	7:06	7:29	7:29	7:50	11	62	15	14

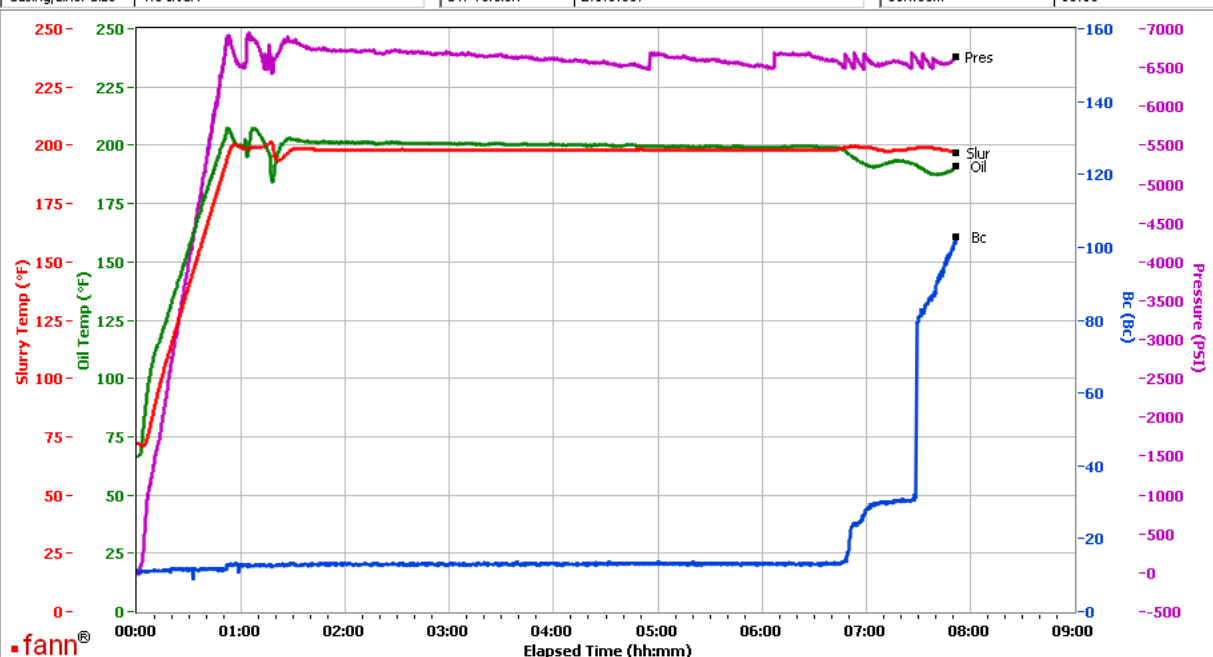
Total sks = 265

CS0923 TR 4053 265 SKS

Deflection: 14 - 14

Grand Junction Colorado

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2467635-1 TERRA BULK PRODUCTION TA	Job Type	PRODUCTION CASING	30.00 Bc	07h:06m
Test ID	35423330 - TT	Cement Type	MOUNTAIN G	40.00 Bc	07h:29m
Request ID	2467635-1	Cement Weight	Standard	50.00 Bc	07h:29m
Tested by	CT	Test Date	04/20/18	70.00 Bc	07h:29m
Customer	TERRA ENERGY PARTNERS	Test Time	09:02 PM	100.00 Bc	07h:50m
Well No	RU 513-17	Temp. Units	degF	00h:30m	11.72
Rig	H&P 318	Pressure Units	PSI	01h:00m	12.60
Casing/Liner Size	4.5 INCH	SW Version	2.1.0.507	01h:30m	13.18



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\CDER4HUV\GJ2467635-1 TERRA BULK PRODUCTION TAIL[1].tdms

Comments CS0923 TR 4053 265 SKS

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