

Company: Crestone Peak Resources Operating LLC

Well: Sam 3F-25H-M166

Field: Wattenberg

County: Weld State: Colorado

Cement Bond Log
Surface Casing

Surface Casing				
Location:				
NWSW 25 - 1N - 66W		Elev.: K.B. 5096.00 ft		
1363' FSL& 310' FWL		G.L. 5083.00 ft		
		D.F. 5096.00 ft		
Permanent Datum:		Ground Level		
Log Measured From:		Kelly Bushing		
Drilling Measured From:		Kelly Bushing		
API Serial No. 05-123-46134		Section: 25		Township: 1N
				Range: 66W

Logging Date	24-Jun-2018			
Run Number	One			
Depth Driller	2500.00 ft			
Schlumberger Depth	2244.00 ft			
Bottom Log Interval	2244.00 ft			
Top Log Interval	50.00 ft			
Casing Fluid Type	Water			
Salinity				
Density	8.4 lbm/gal			
Fluid Level	8.00 ft			
BIT/CASING/TUBING STRING				
Bit Size	13.50 in			
From	0.00 ft			
To	2500.00 ft			
Casing/Tubing Size	9.625 in			
Weight	40 lbm/ft			
Grade	N/A			
From	0.00 ft			
To	2500.00 ft			
Max Recorded Temperatures				
Logger on Bottom				
Unit Number	Time	24-Jun-2018		09:15:00
	Location:	2377	FtMorgan	
Recorded By	Alan Moreno / Rob Stelter			
Witnessed By	Satch Bo			

Disclaimer

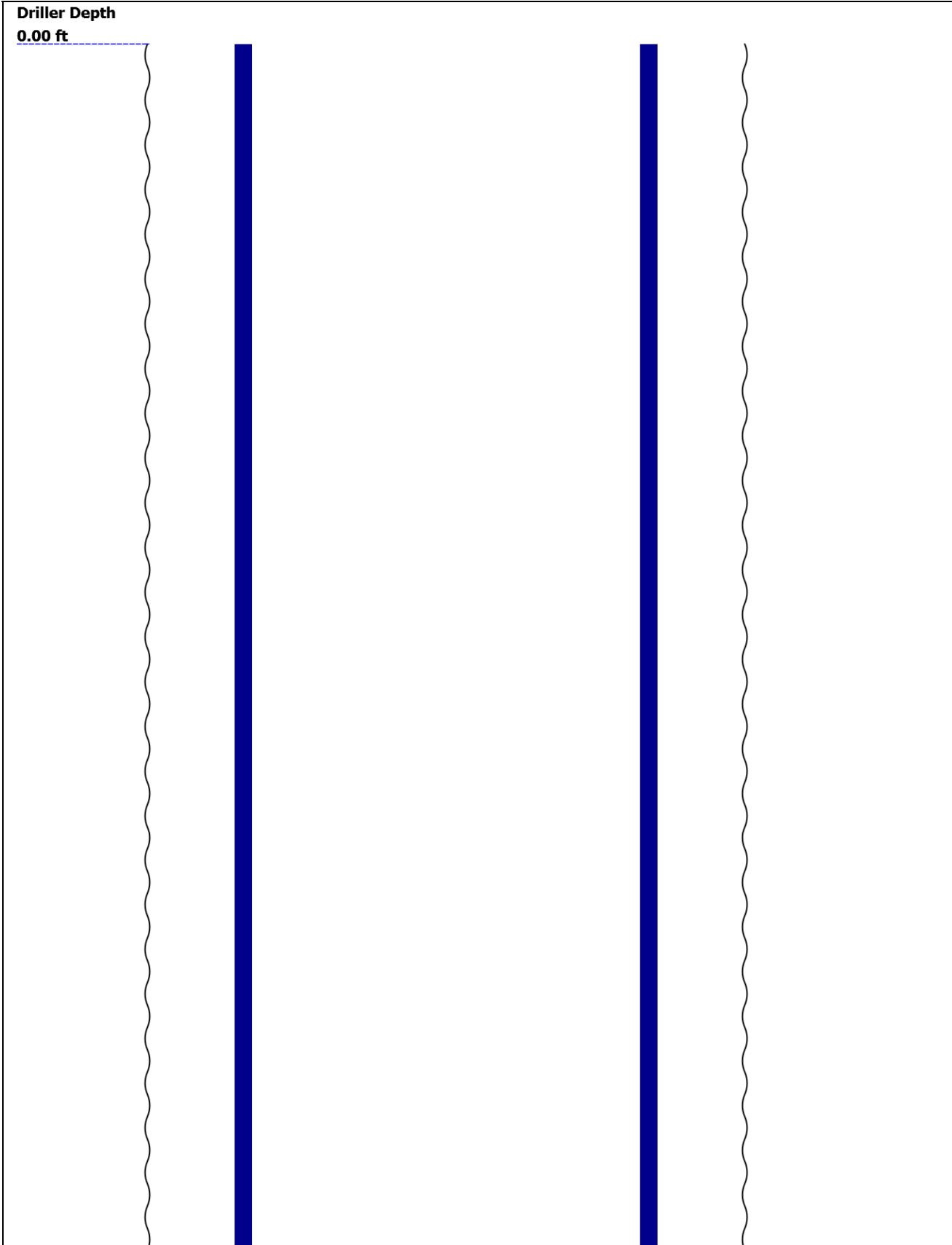
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

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Well Sketch




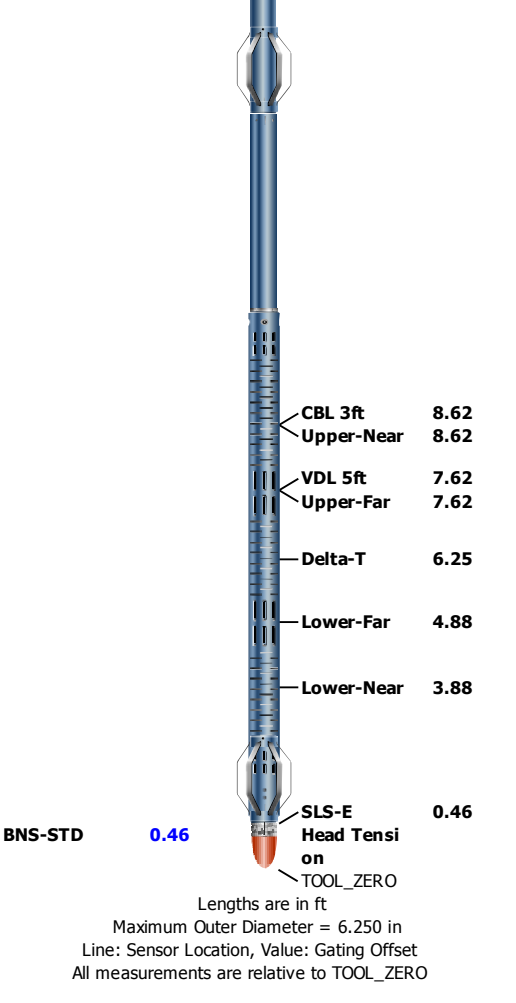


Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	13.5					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	2500					
Bottom Logger (ft)	2500					
Casing						
Size (in)	9.625					
Weight (lbm/ft)	40					
Inner Diameter (in)	8.835					
Grade	N/A					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	2500					
Bottom Logger (ft)	2500					

Remarks and Equipment Summary

One: Toolstring				One: Remarks	
<div><div><div>Equip name</div><div>LEH-QT</div><div>LEH-QT</div></div><div><div>Length</div><div>35.08</div></div><div><div>MP name</div><div>EDTC-B:9316</div><div>EDTH-B</div><div>EDTG-A</div><div>EDTC-B:9316</div></div><div><div>Offset</div><div>28.1</div><div>0.00</div><div>0.00</div><div>26.23</div><div>25.1</div></div></div> <div></div>	Thank you for choosing Schlumberger!				
	Log run for cement evaluation				
	Tool ran as per tool sketch				
	1 pass logged, no pressure applied				
AH-184[2]	25.1				
AH-184[1]	23.1				
DSLT-H:8279	21.1				
ECH-KH					
DSLCH:8279					
SLS-E:1563					



Depth Summary			
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	One		
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Depth Measuring Device			
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Type	IDW-B		
Serial Number			
Calibration Date			
Calibrator Serial Number			
Calibration Cable Type			
Wheel Correction 1	0		
Wheel Correction 2	0		

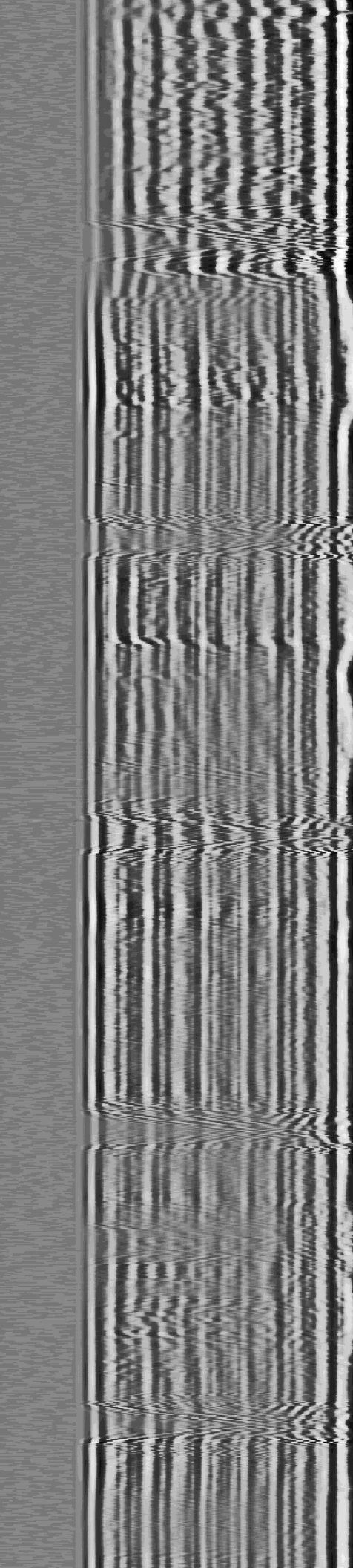
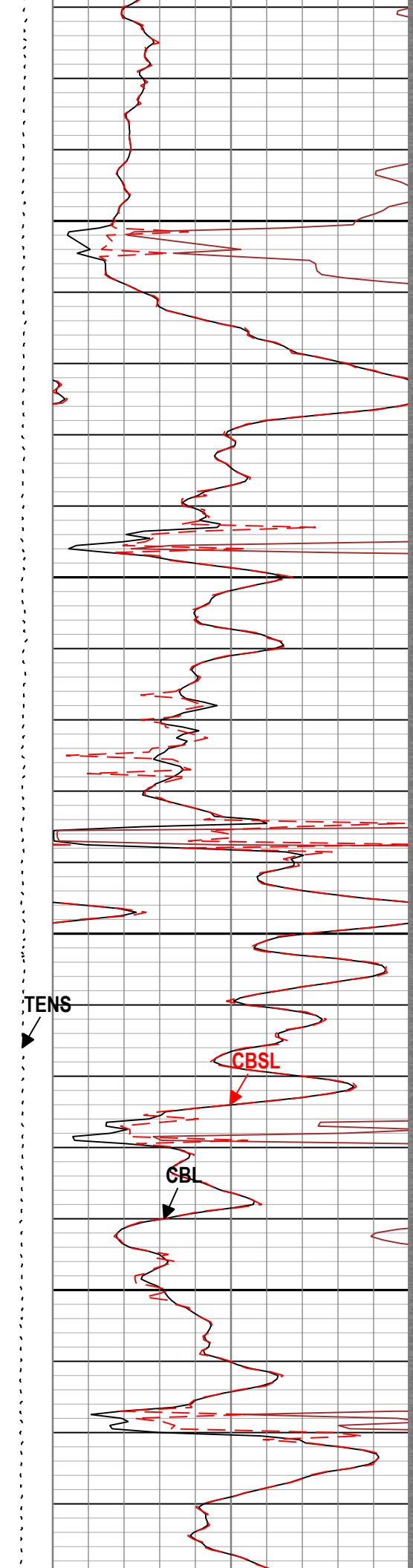
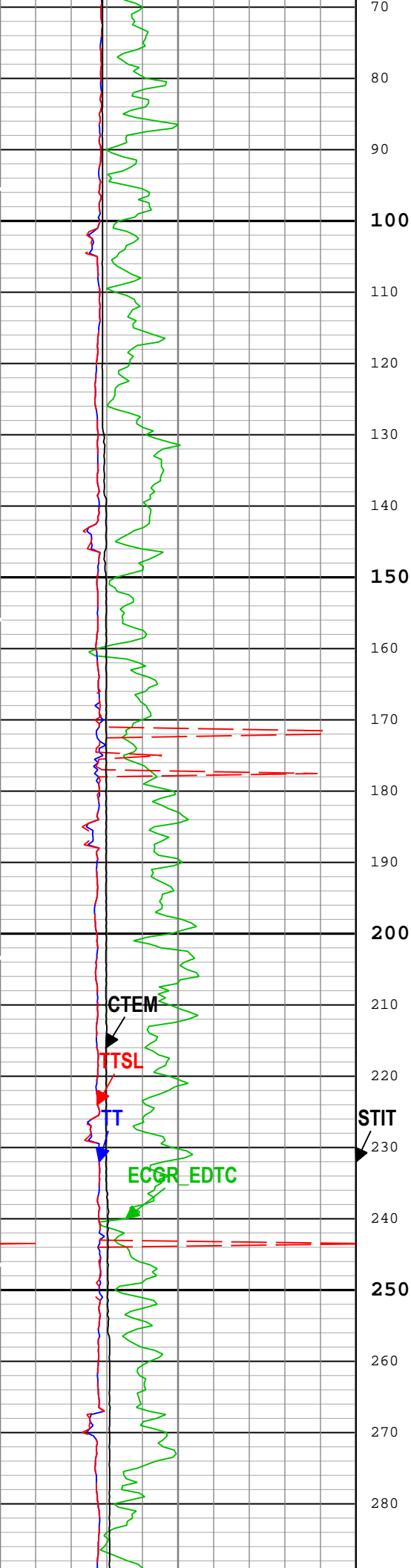
Tension Device			
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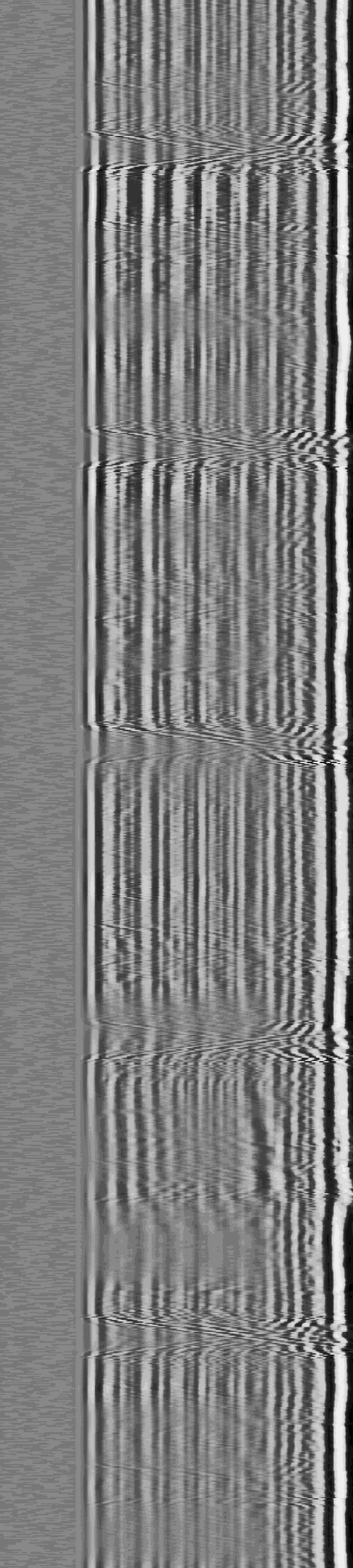
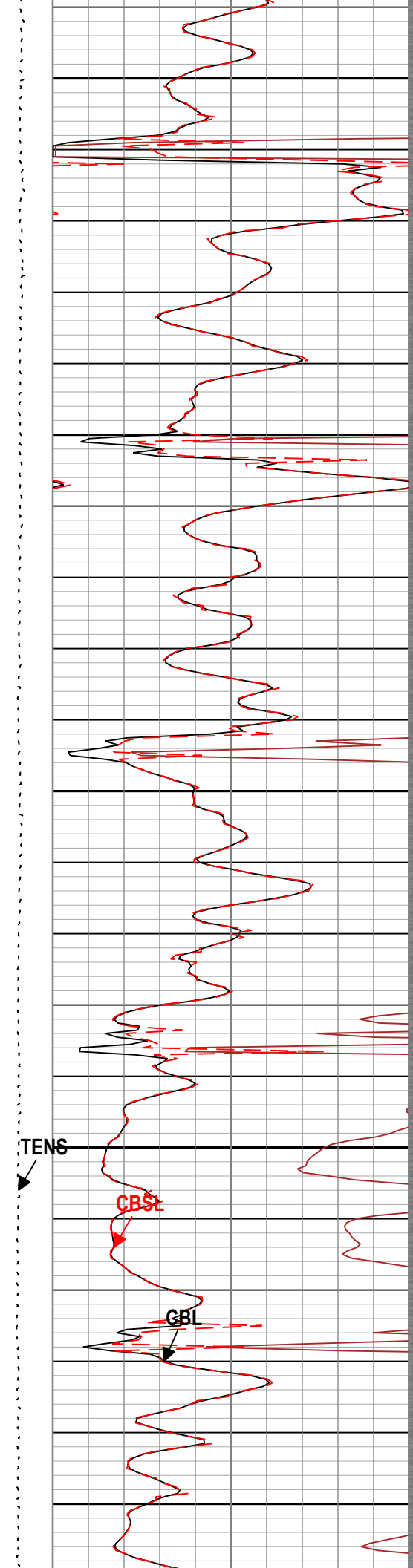
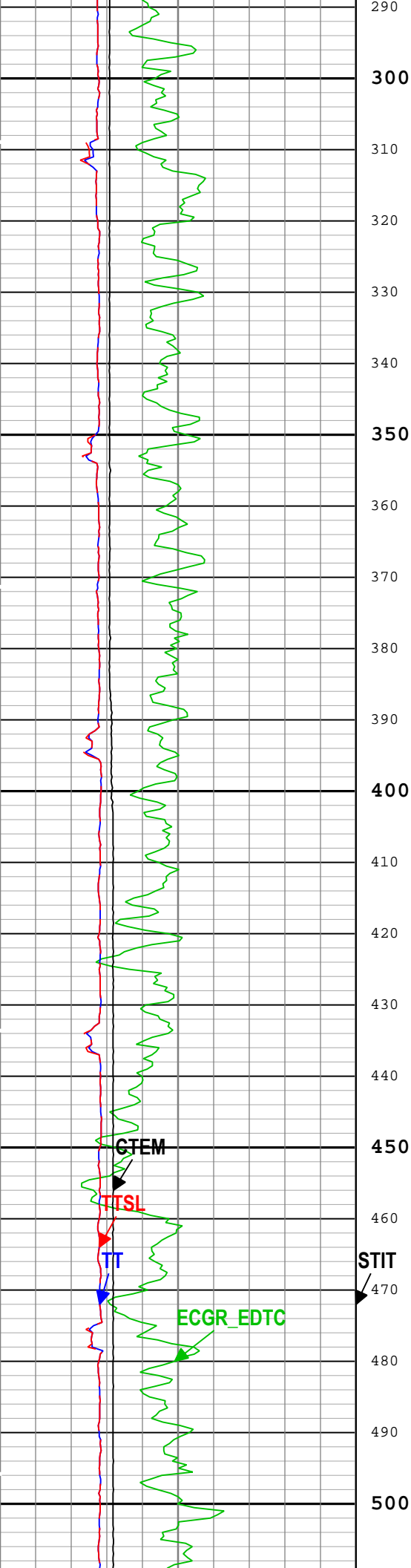
Type	CMTD-B/A		
Serial Number			
Calibration Date			
Calibrator Serial Number			
Number of Calibration Points	0		

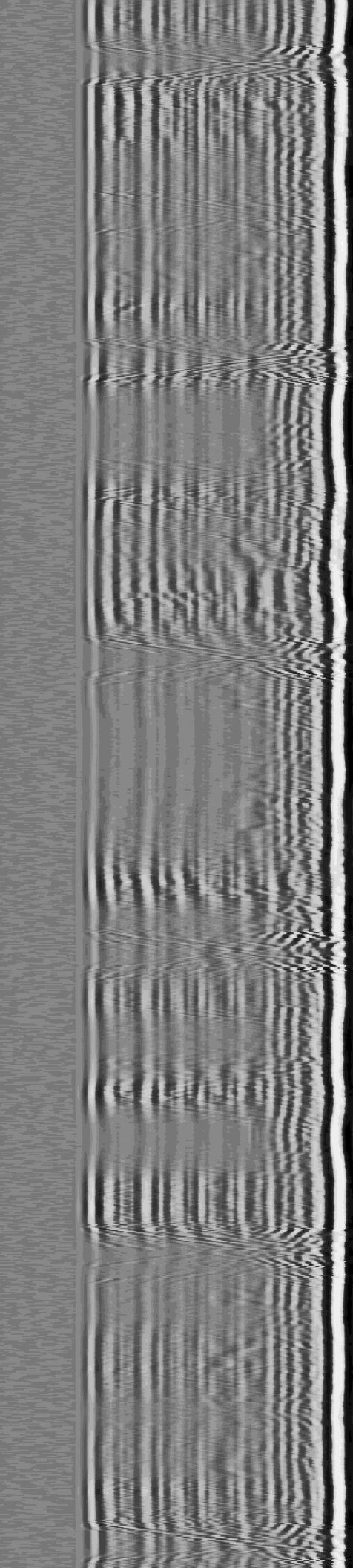
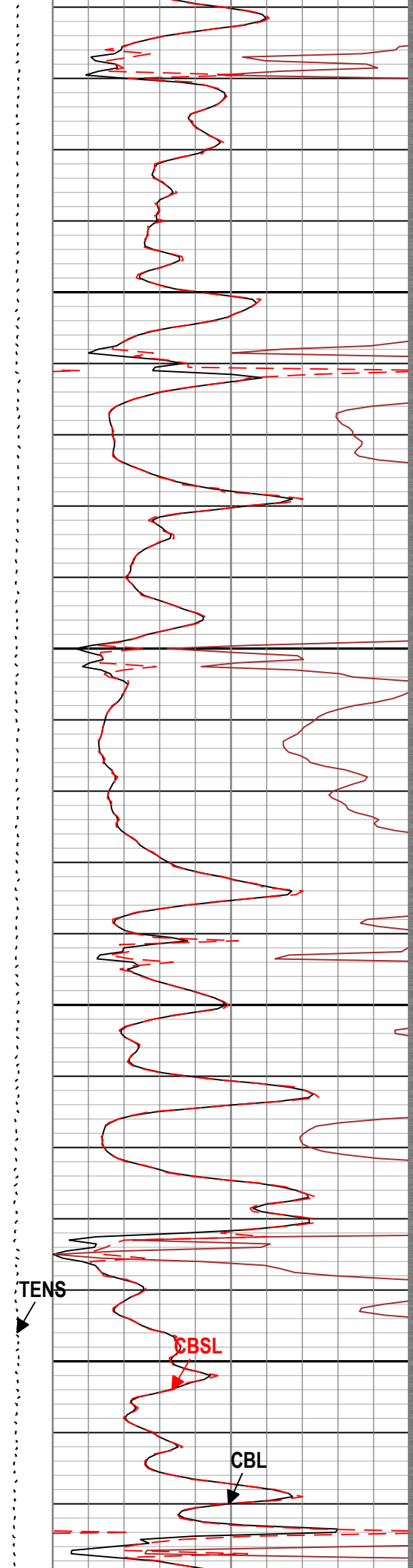
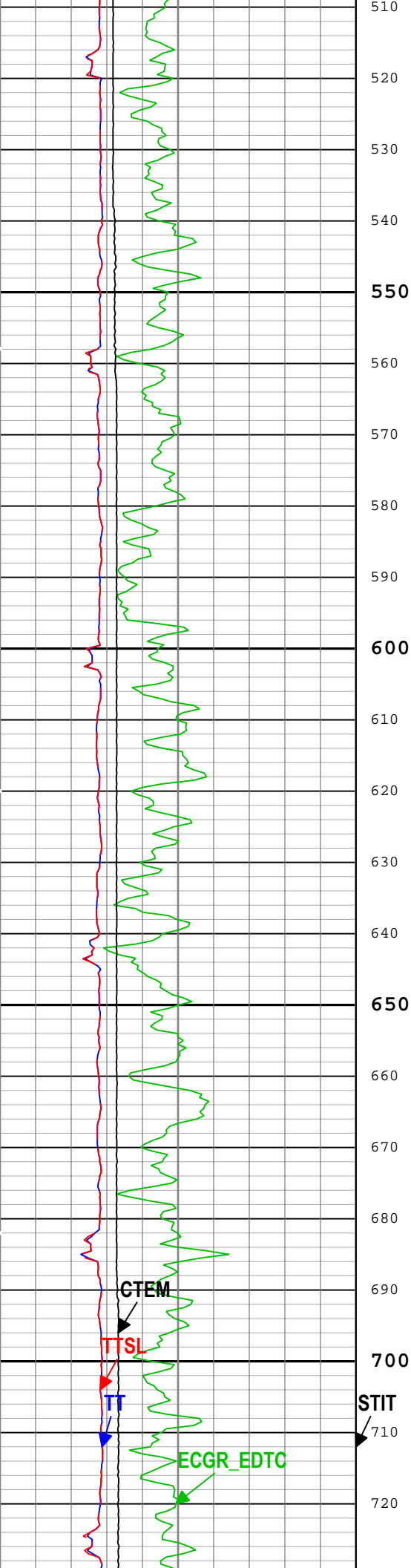
Logging Cable			
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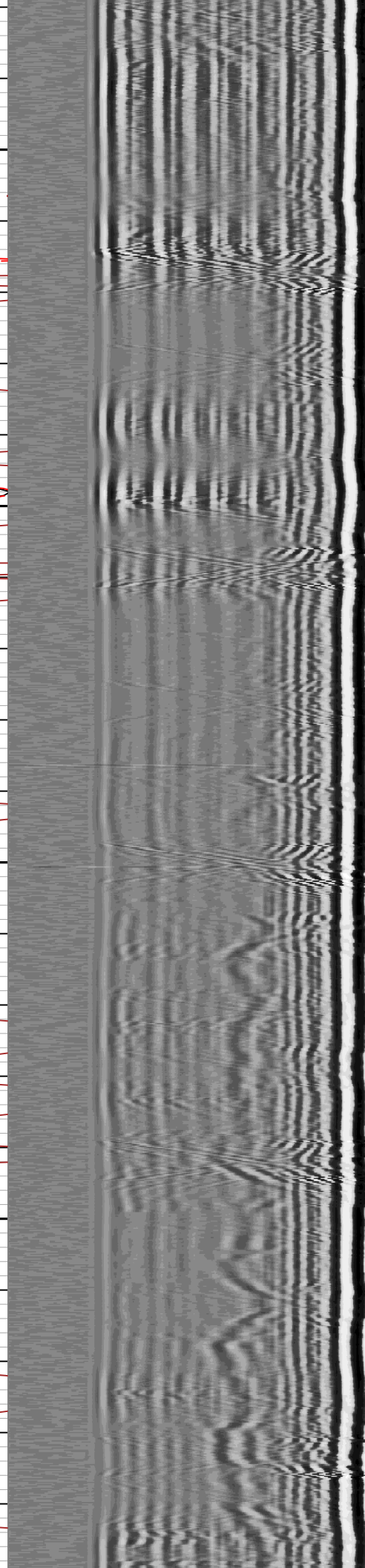
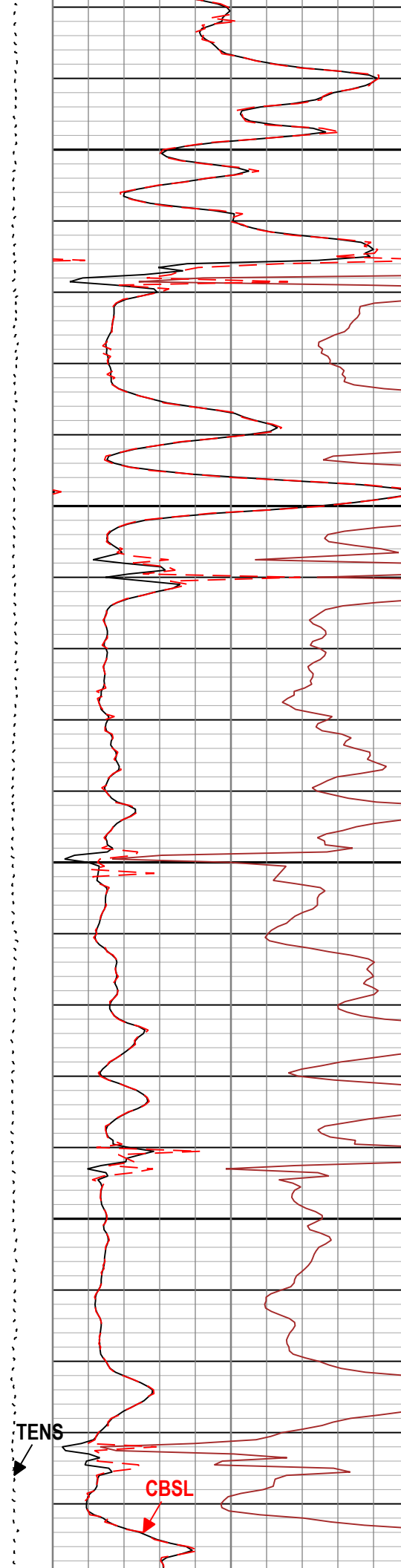
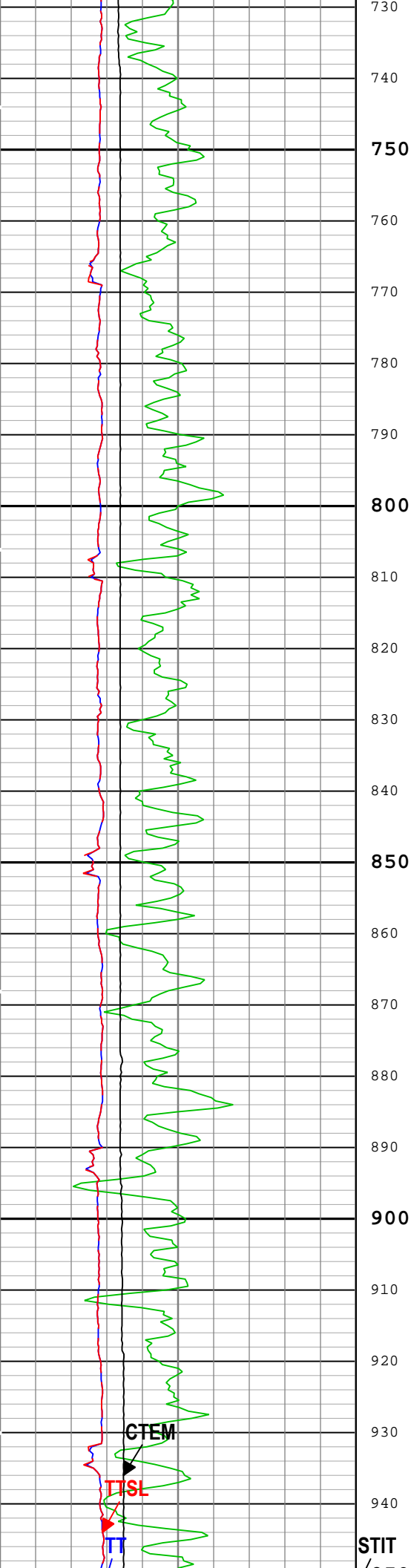
Type	7-46NT-XS		
Serial Number			
Length	24000.00 ft		
Conveyance Type	Wireline		
Rig Type			

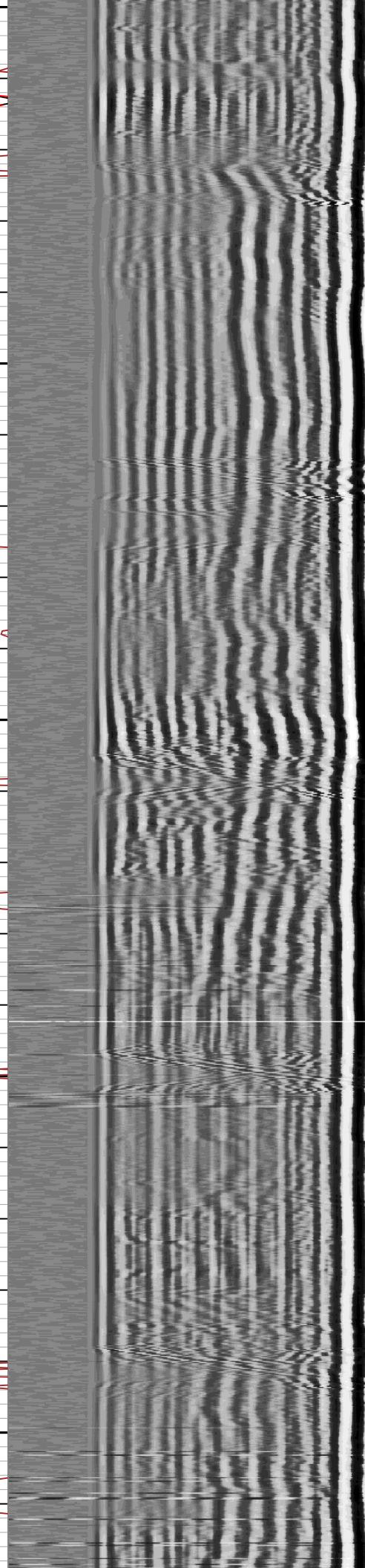
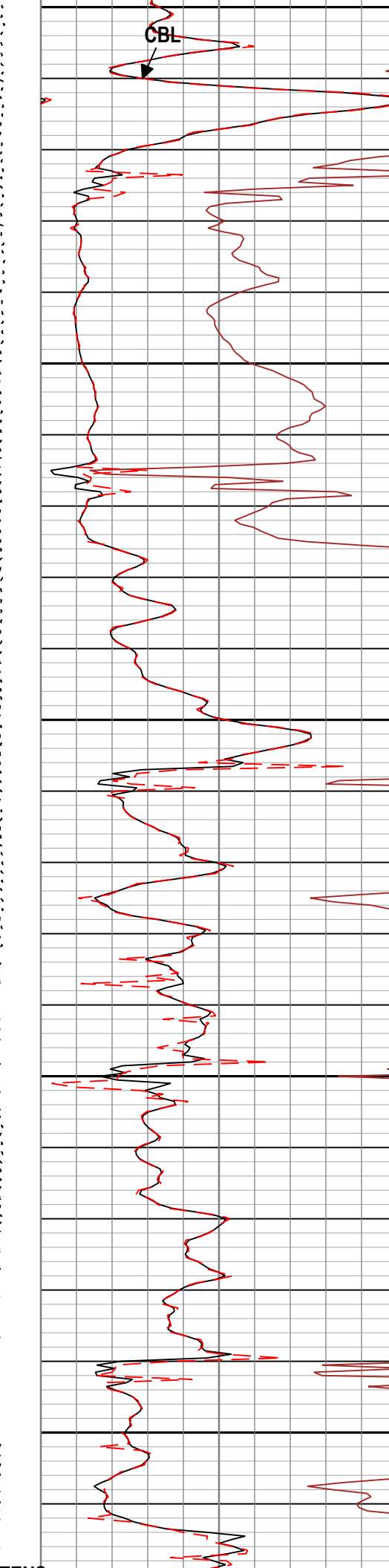
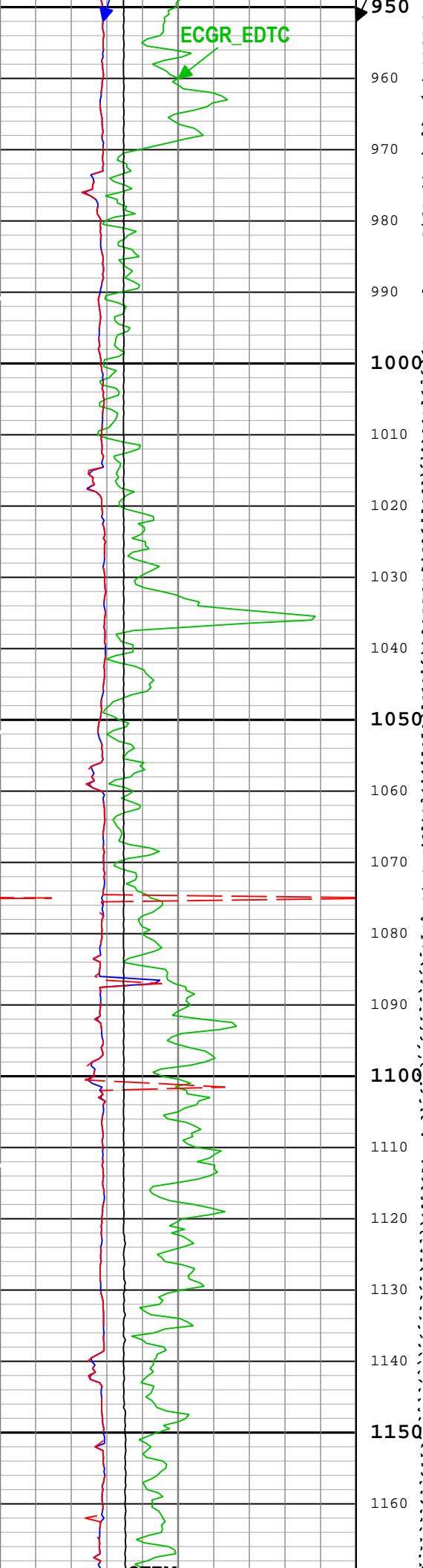
One:Depth Control Parameters	Depth Control Remarks
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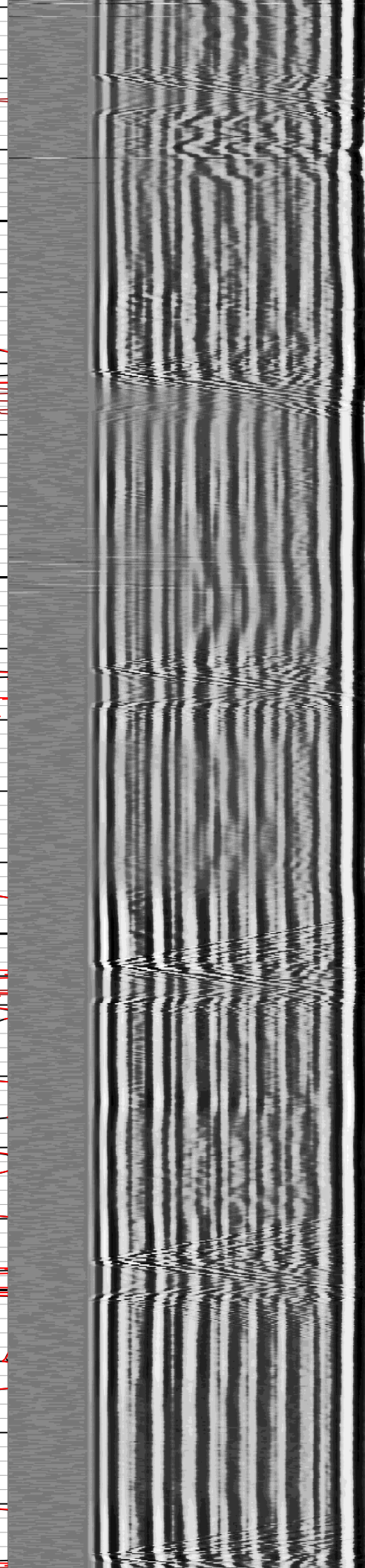
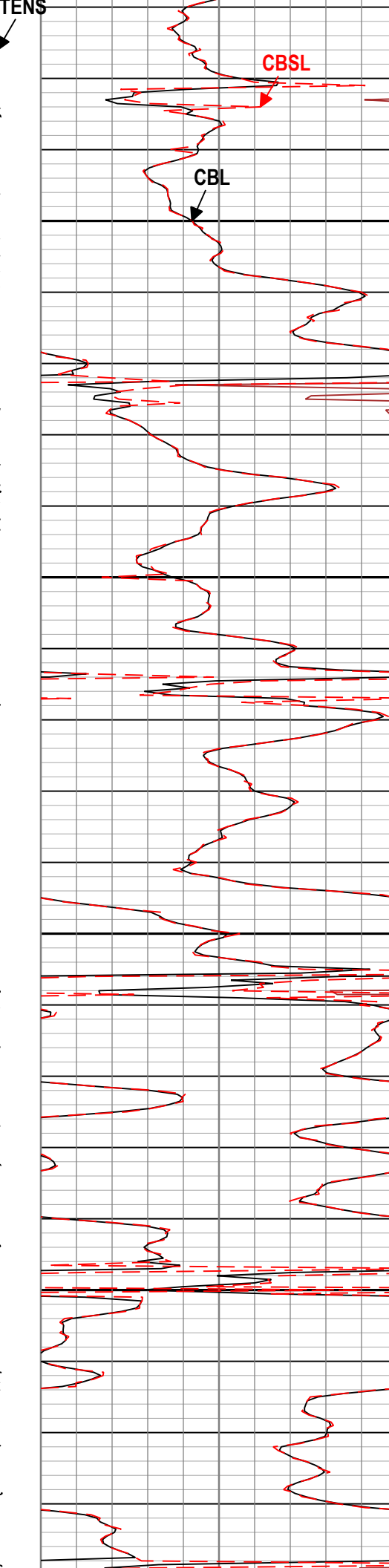
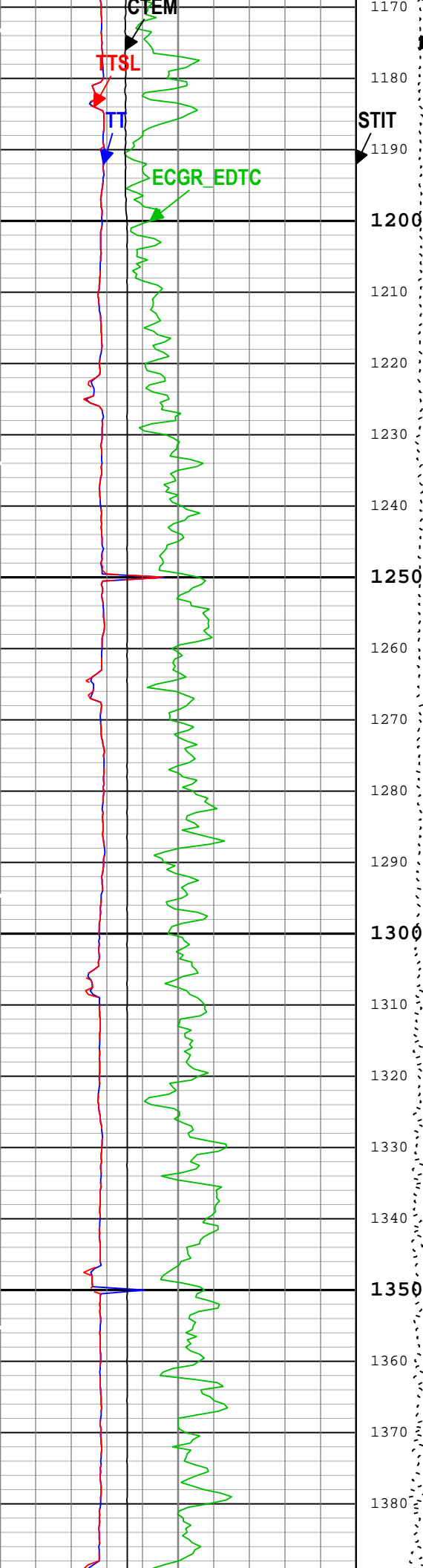


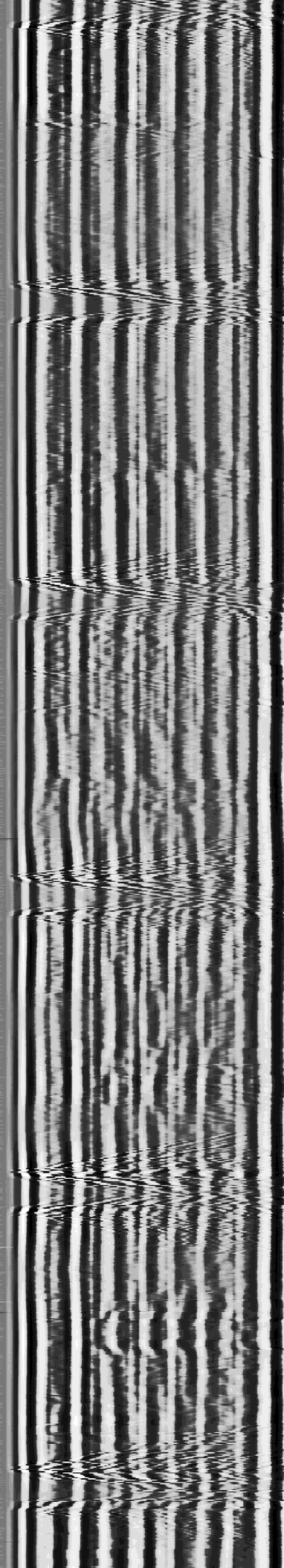
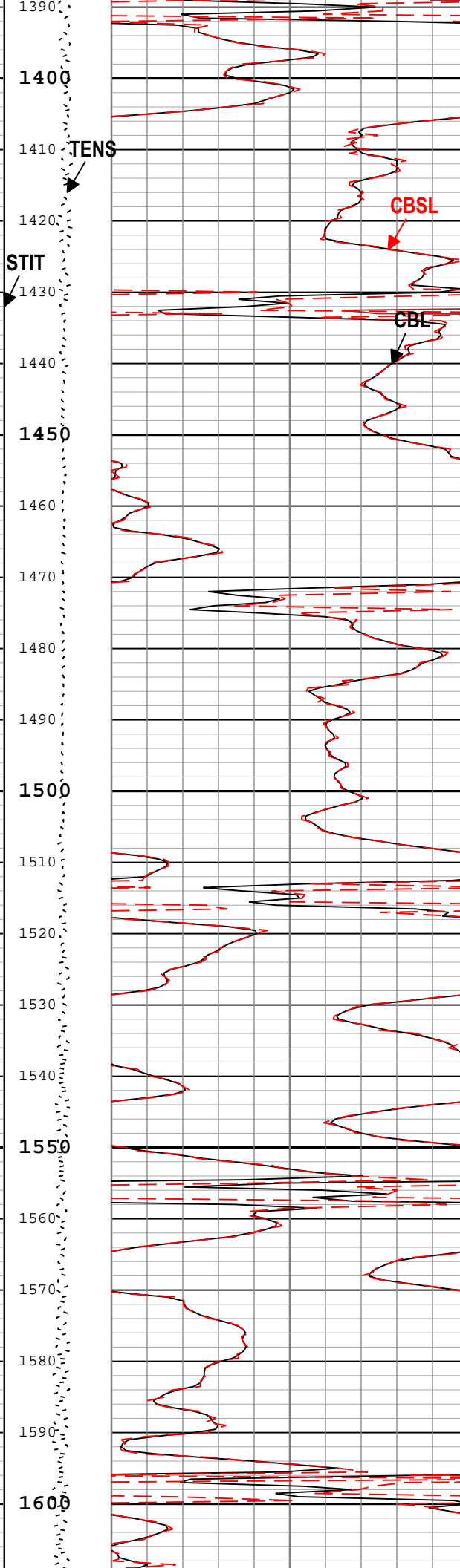
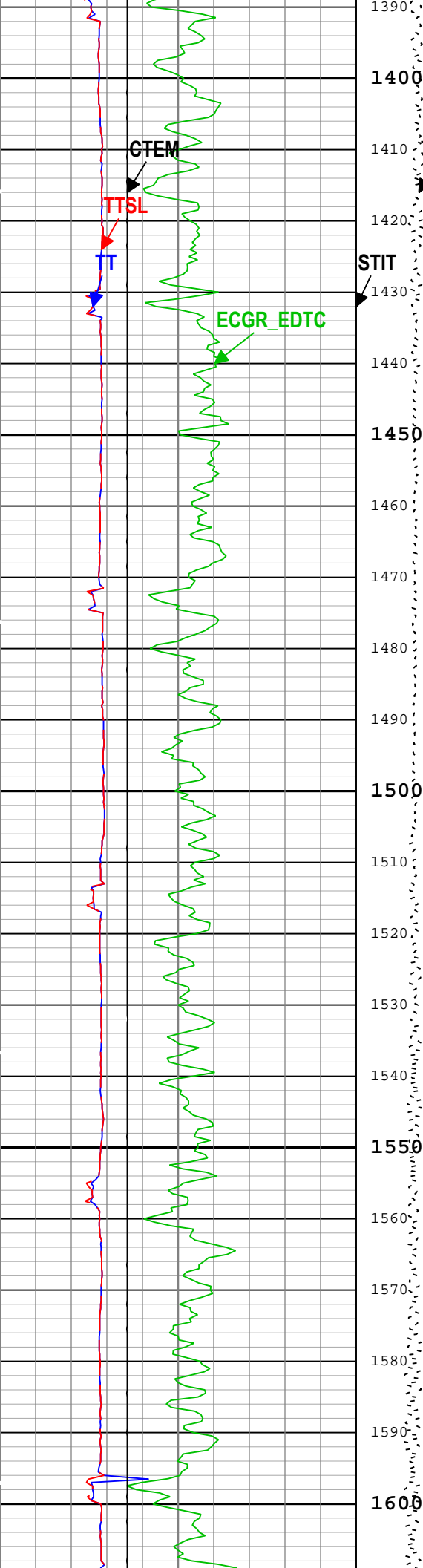


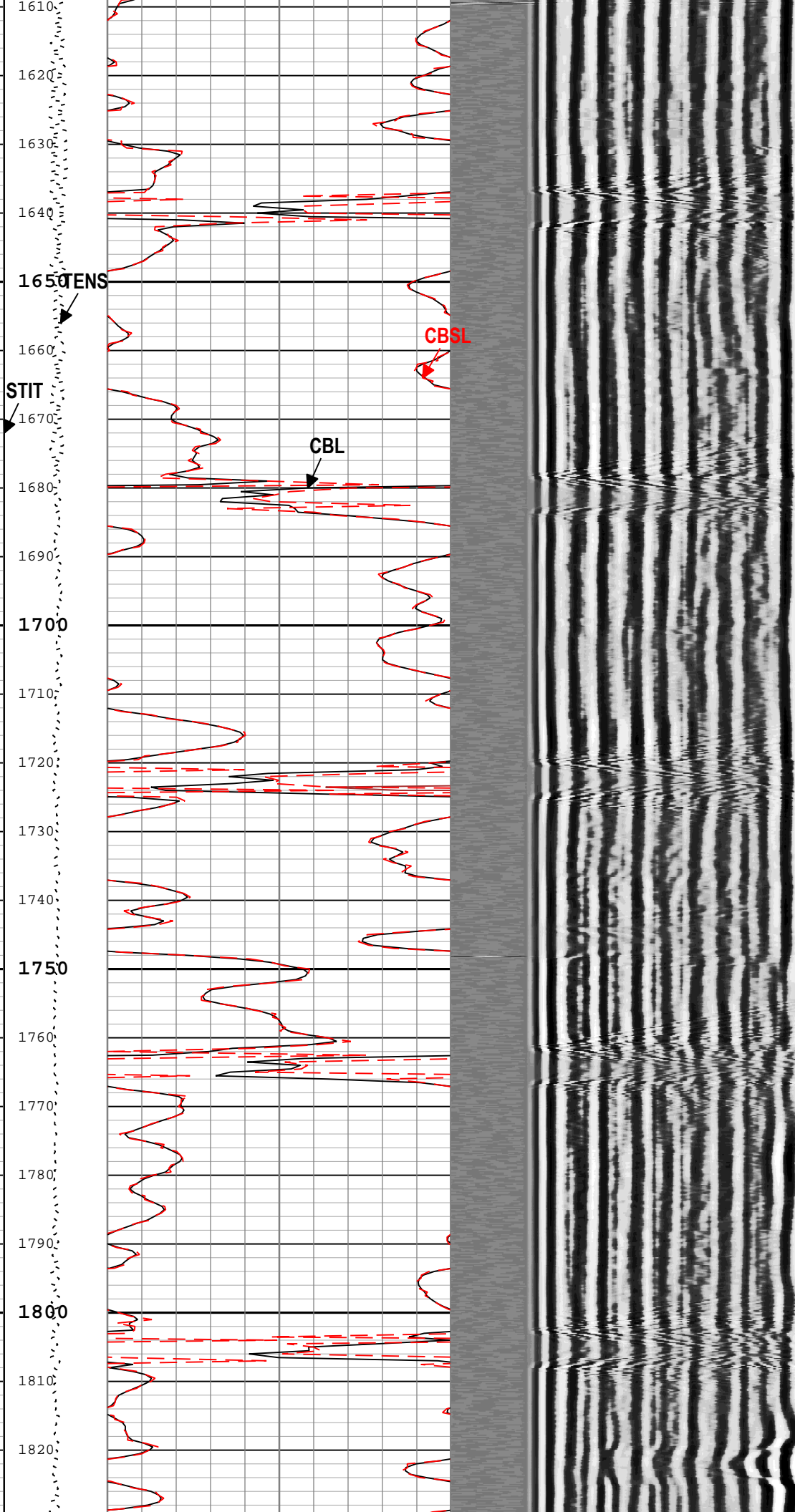
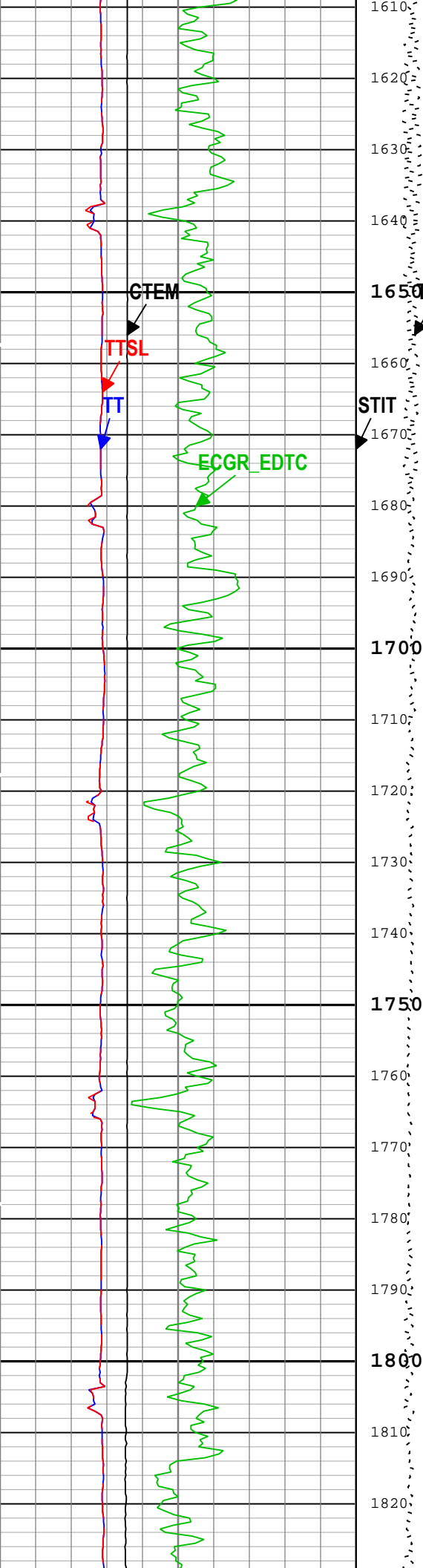


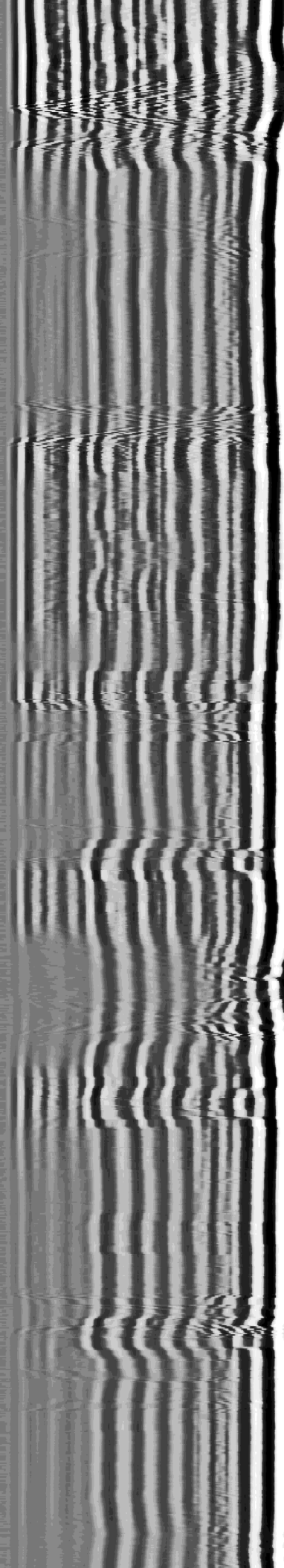
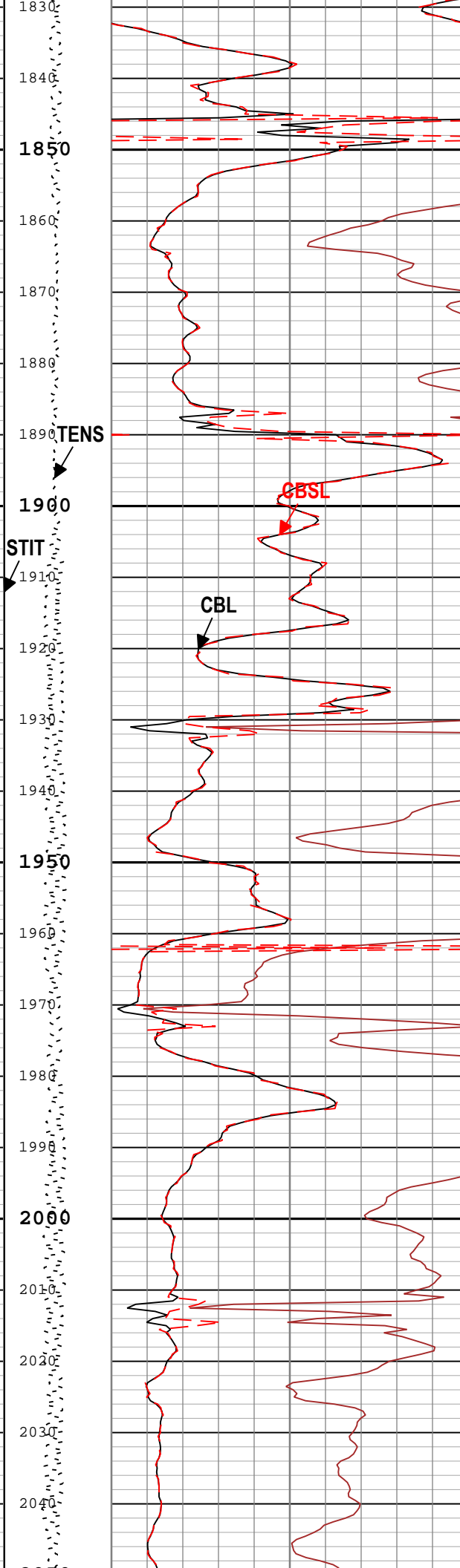
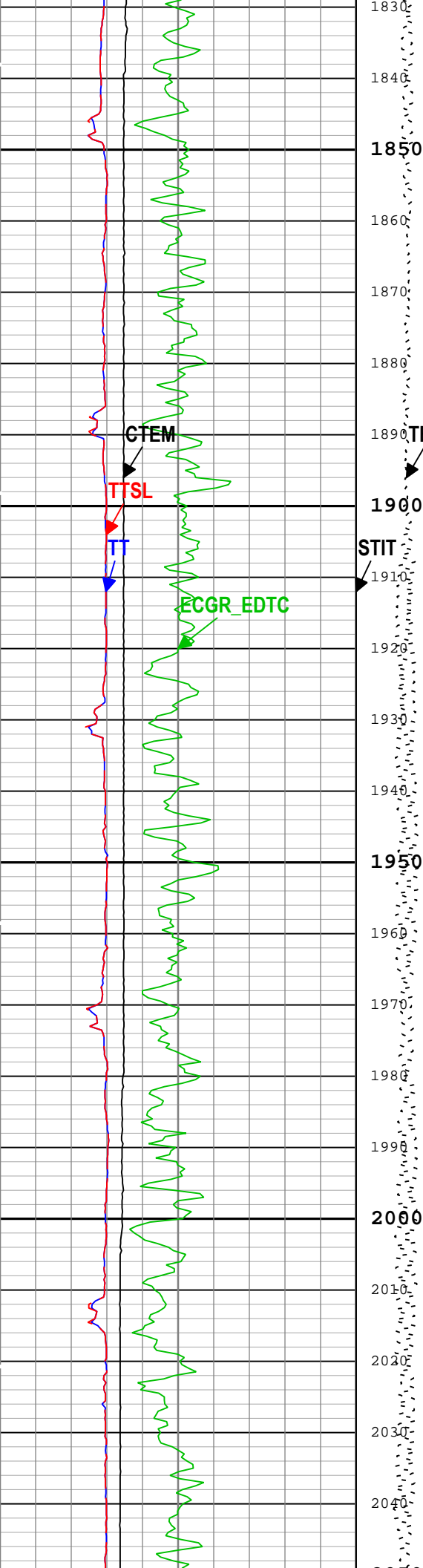


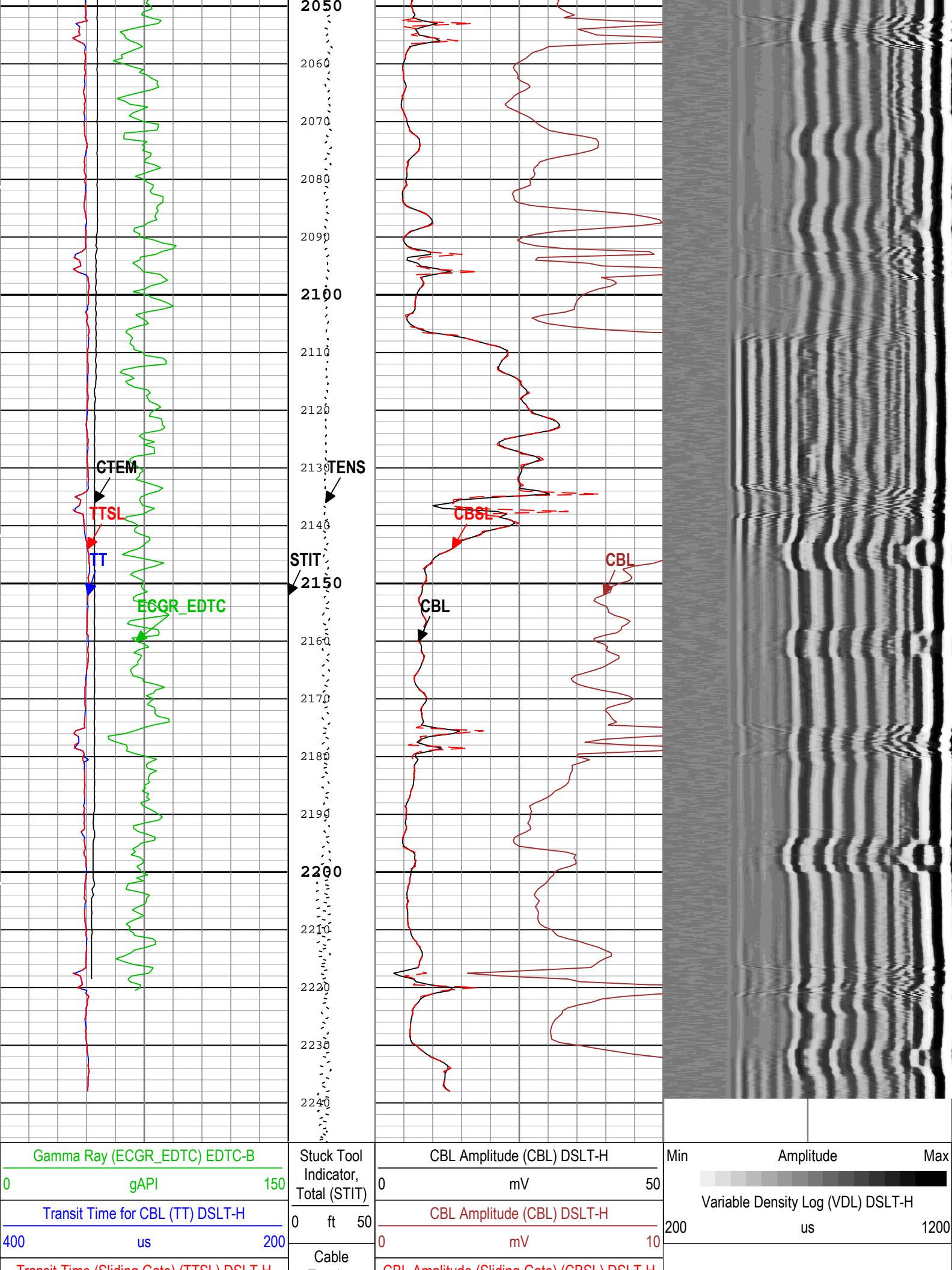












Transit Time (Sliding Gate) (TISE) DSLT-H			Tension (TENS)		CBL Amplitude (Sliding Gate) (CBL) DSLT-H	
400	us	200	2000 lbf 0		0	mV 50
Cartridge Temperature (CTEM) EDTC-B						
20	degF	220	Cable Drag			
			Tool_Tot. Drag			
			BIEP - Bond Index Event Pips DSLT-H			

TIME_1900 - Time Marked every 60.00 (s)

Description: CBL_VDL Format: Log (Sonic CBL with VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 24-Jun-2018 10:34:11

Channel Processing Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	13.5	in
CBLG	CBL Gate Width	DSLTH	100	us
CBLO	Casing Bottom (Logger)	WLSESSION	2500	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	DSLTH	52	mV
CDEN	Cement Density	EDTC-B	2	g/cm3
DETE	Delta-T Detection	DSLTH	E1	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
GOBO_CURR	Good Bond in Arbitrary Cement	DSLTH	3.09	mV
MAHTR	Manual High Threshold Reference for first arrival detection	DSLTH	120	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	DSLTH	10.91	dB/ft
MCI	Minimum Cemented Interval for Isolation	DSLTH	14.81	ft
MNHTR	Minimum High Threshold Reference for first arrival detection	DSLTH	100	
MSA	Minimum Sonic Amplitude	DSLTH	1.53	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	DSLTH	1.53	mV
NMSG	Near Minimum Sliding Gate	DSLTH	262	us
SGAD	Sliding Gate Status	DSLTH	Off	
SGDT	Sliding Gate Delta-T	DSLTH	57	us/ft
VDLG	VDL Manual Gain	DSLTH	3.37	

Tool Control Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
MODE	DSLTH Acquisition Mode	DSLTH	CBL	
RATE	DSLTH Firing Rate	DSLTH	15 Hz	
DTFS	DSLTH Telemetry Frame Size	DSLTH	536	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	5000	ft/h

Calibration Report

DSLTH (Digitizing Sonic Logging Tool - H) Calibration - Run One

Primary Equipment :

Sonic Logging Sonde E supports 3'-5'BHC DT and CBL/VDL

SLS-E

1563

CBL Normalization - CBL Accumulations

Master (Manual Entry):		12:37:57 23-Jun-2018					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Upper Far Amplitude - 0		Master	----	----	----	----	
Upper Near Raw Amplitude - 0	mV	Master	----	----	----	----	
Lower Far Amplitude - 0		Master	----	----	----	----	
Lower Near Raw Amplitude - 0	mV	Master	----	----	----	----	
CBL Normalization - CBL/VDL Coefficients							
Master (Manual Entry):		12:37:57 23-Jun-2018					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
CBL Correction Factor for UT		Master	3.500	2.700	3.431	4.300	
CBL Correction Factor for LT		Master	2.500	1.700	2.712	4.300	
VDL Ratio between UT and LT for CBLB Mode		Master	1.000		1.350		
CBL Free Pipe Adjustment - Free Pipe Measurement							
Before (Manual Entry):		10:17:57 24-Jun-2018					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
CBL Amplitude - 0	mV	Before	----	----	----	----	
CBL Reference Amplitude (CBRA) - 0	mV	Before	----	----	----	----	
Measurement Depth - 0	ft	Before	----	----	----	----	
CBL Free Pipe Adjustment - CBL Amplitude Coefficient							
Before (Manual Entry):		10:17:57 24-Jun-2018					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
CBL Adjustment Factor		Before	1.000	0.200	1.468	5.000	
Depth of Before Calibration	ft	Before			50.72		

Company:	Crestone Peak Resources Operating LLC	Schlumberger
Well:	Sam 3F-25H-M166	
Field:	Wattenberg	
County:	Weld	
State:	Colorado	
Cement Bond Log		
Surface Casing		

