

Company: Crestone Peak Resources Operating LLC

Well: Sam 3H-25H-M166

Field: Wattenberg

County: Weld State: Colorado

Cement Bond Log
Surface Casing

Surface Casing				
Location:				
NWSW 25 - 1N - 66W		Elev.: 5095.00 ft		
1343' FSL & 310' FWL		K.B. 5082.00 ft		
		G.L. 5095.00 ft		
		D.F.		
Permanent Datum:		Elev.: 5082.00 f		
Log Measured From:		Kelly Bushing 13.00 ft		
Drilling Measured From:		above Perm.Datum		
API Serial No.	Section:	Township:	Range:	
05-123-46127	25	1N	66W	

Run Number	One			
Depth Driller	2500.00 ft			
Schlumberger Depth	2296.00 ft			
Bottom Log Interval	2296.00 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	89 degF			
Logger on Bottom	Time		12:05:00	
Unit Number	Location:		Fort Morgan	
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	
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<div>Driller Depth 0.00 ft</div> <div></div>			
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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>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></div></div>		<div><div>CTEM</div><div>ACCZ</div><div>HV</div><div>Gamma Ray</div><div>TelStatus</div></div> <div><div>28.1</div><div>0.00</div><div>0.00</div><div>26.23</div><div>25.1</div></div>	Thank you for choosing Schlumberger!		
			Log run for cement evaluation		
			Tools ran as per tool sketch		
			1 pass done with no pressure		
<div><div>AH-184[2]</div></div> <div><div>25.1</div></div>					
<div><div>AH-184[1]</div></div> <div><div>23.1</div></div>					
<div><div>DSLT-H:8279</div><div>ECH-KH</div><div>DSLCH:8279</div><div>SLS-E:1563</div></div> <div><div>21.1</div></div>					

AH-184[2]

25.1

AH-184[1]

23.1

DSLT-H:8279

21.1

ECH-KH

DSLCH:8279

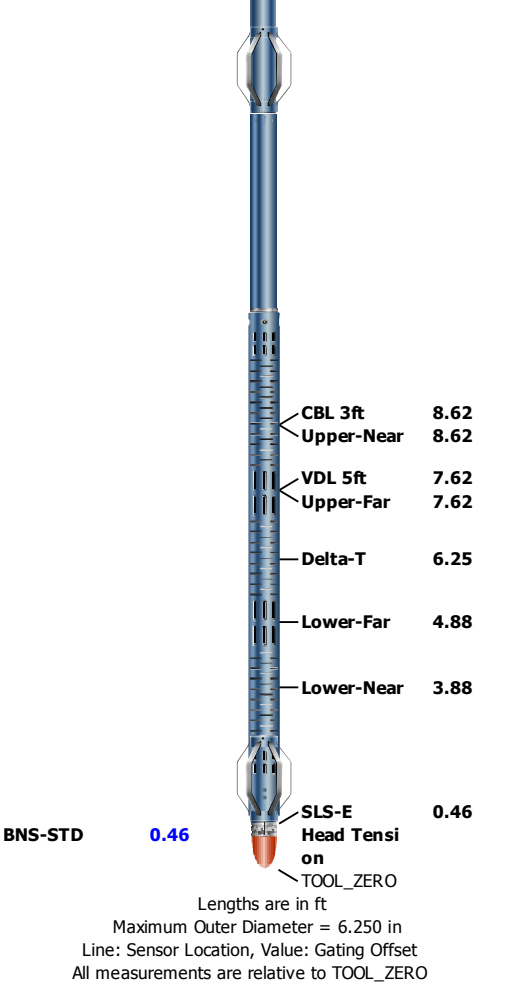
SLS-E:1563

Thank you for choosing Schlumberger!

Log run for cement evaluation

Tools ran as per tool sketch

1 pass done with no pressure



Depth Summary

	One		
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Depth Measuring Device

Type	IDW-B		
Serial Number			
Calibration Date			
Calibrator Serial Number			
Calibration Cable Type			
Wheel Correction 1	0		
Wheel Correction 2	0		

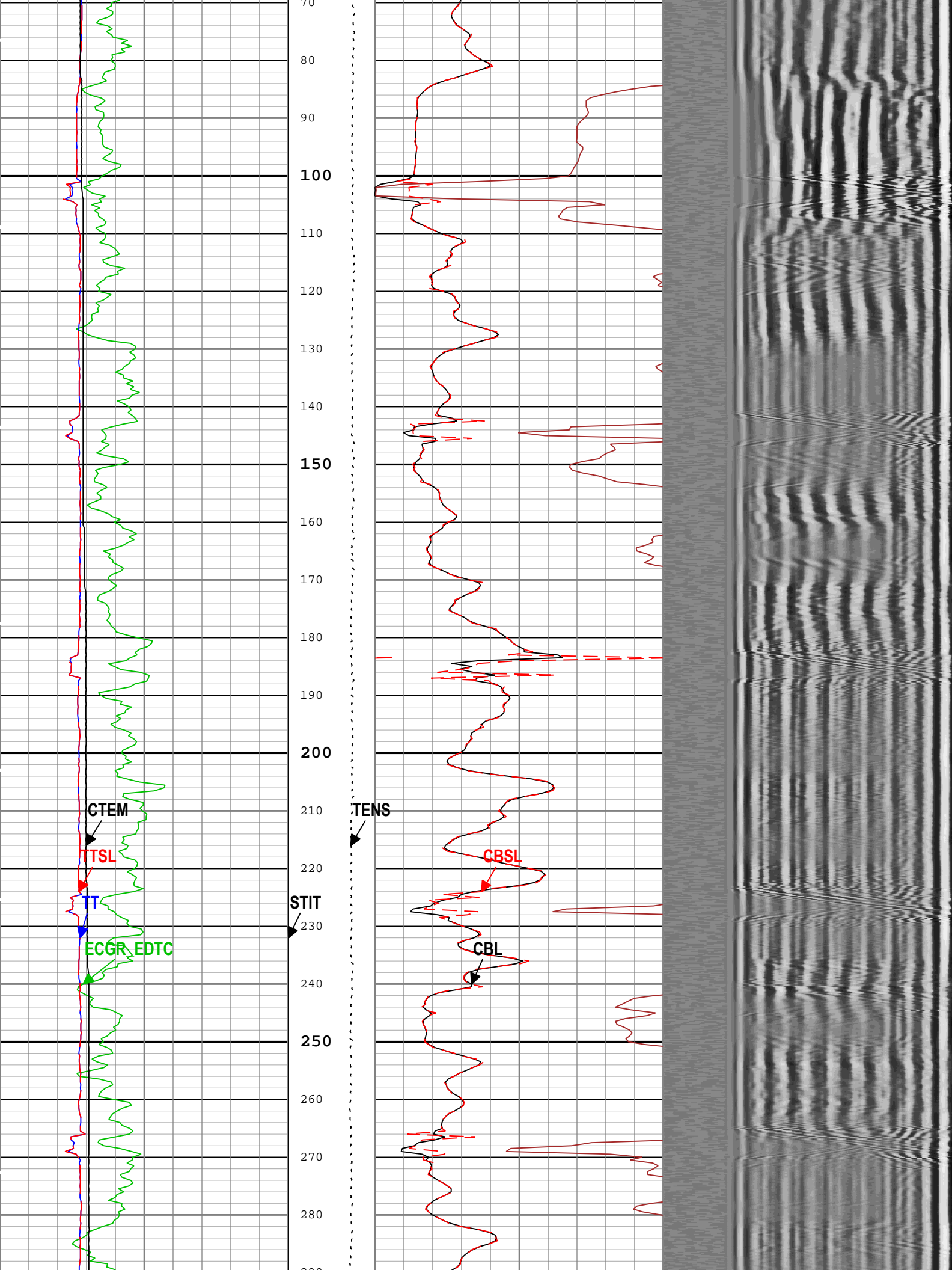
Tension Device

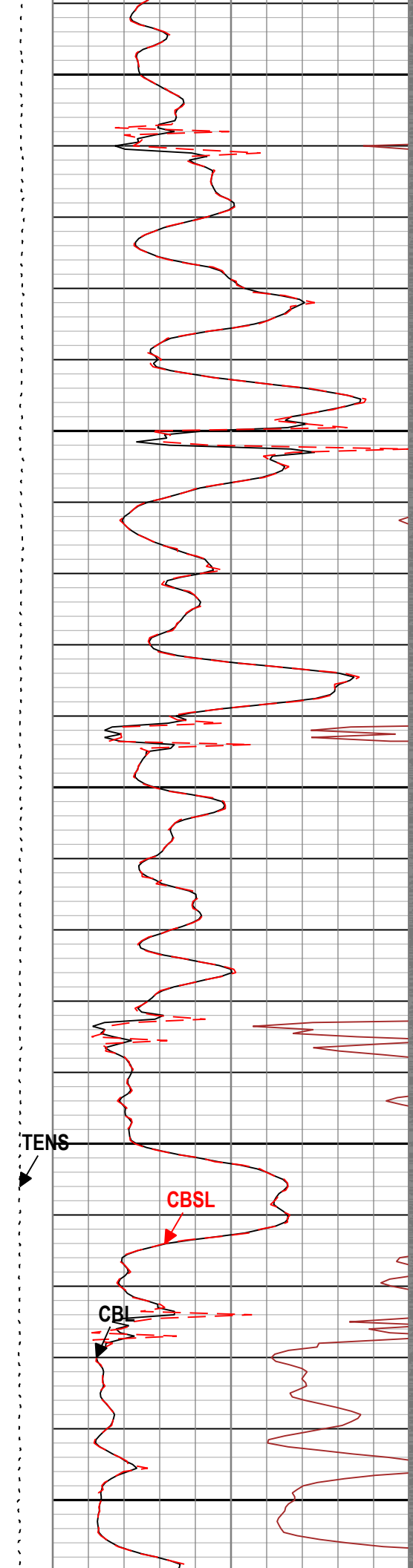
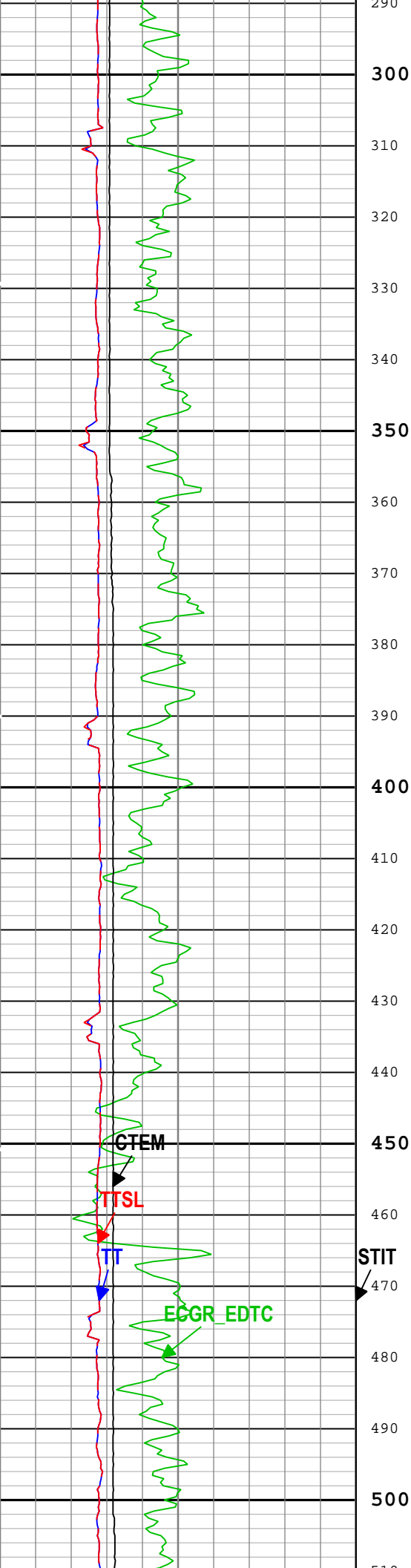
Type	CMTD-B/A		
Serial Number			
Calibration Date			
Calibrator Serial Number			
Number of Calibration Points	0		

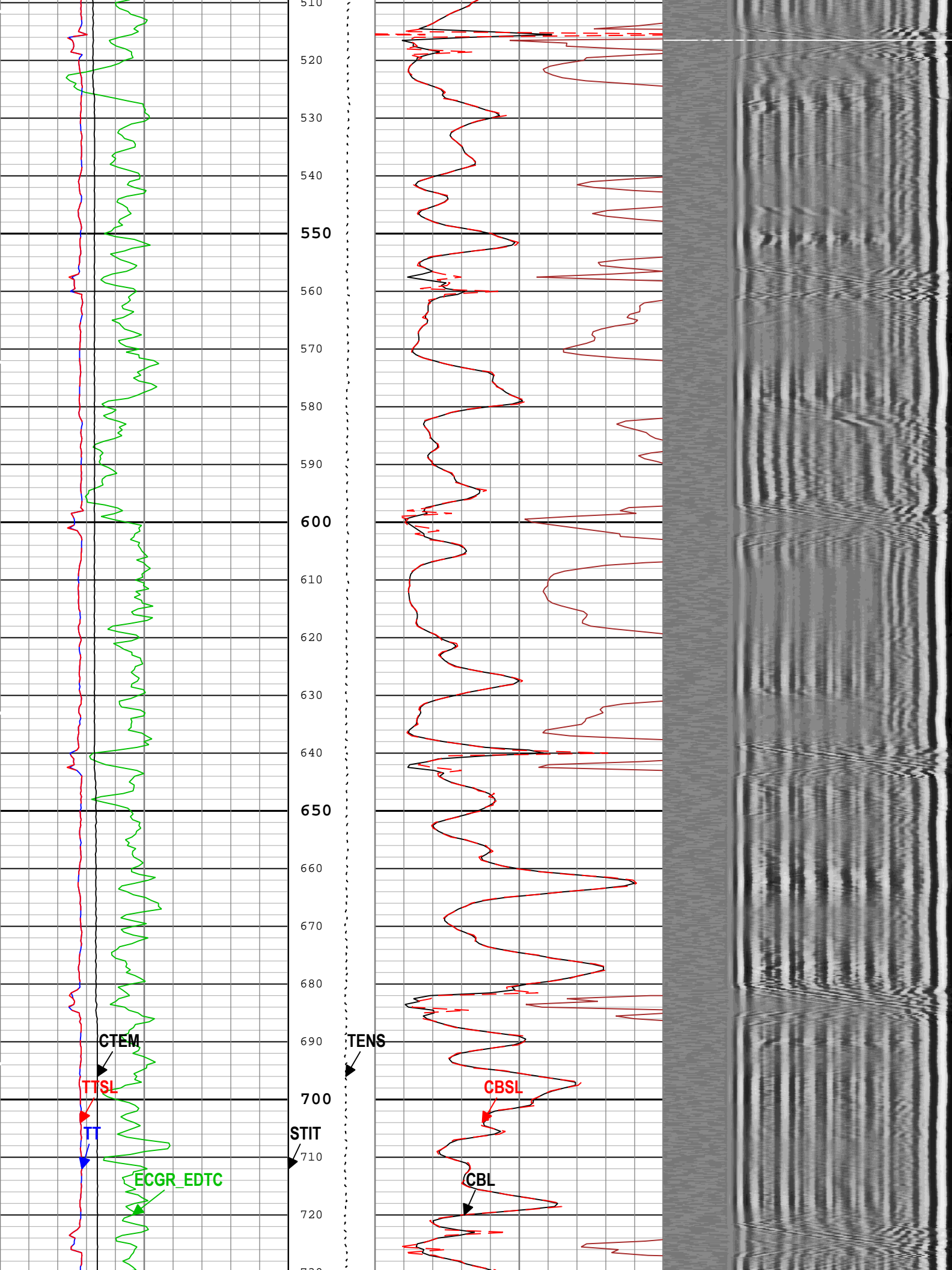
Logging Cable

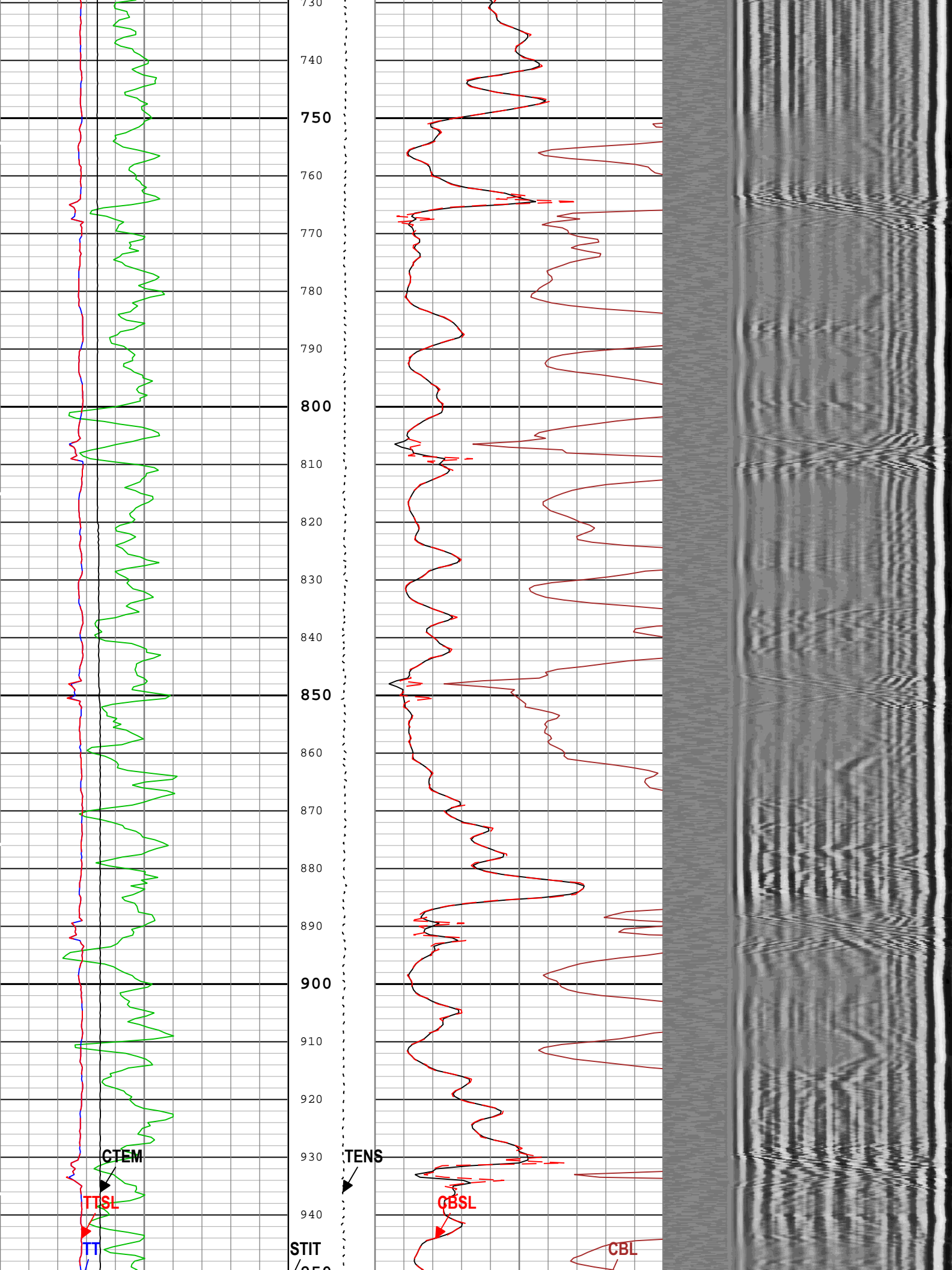
Type	7-46NT-XS		
Serial Number			
Length	24000.00 ft		
Conveyance Type	Wireline		
Rig Type			

One:Depth Control Parameters	Depth Control Remarks
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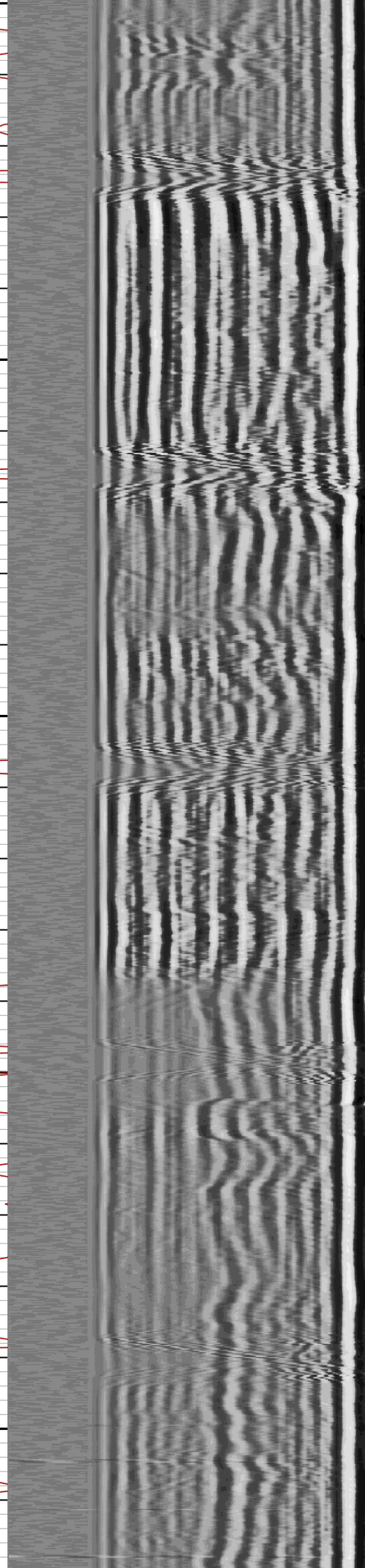
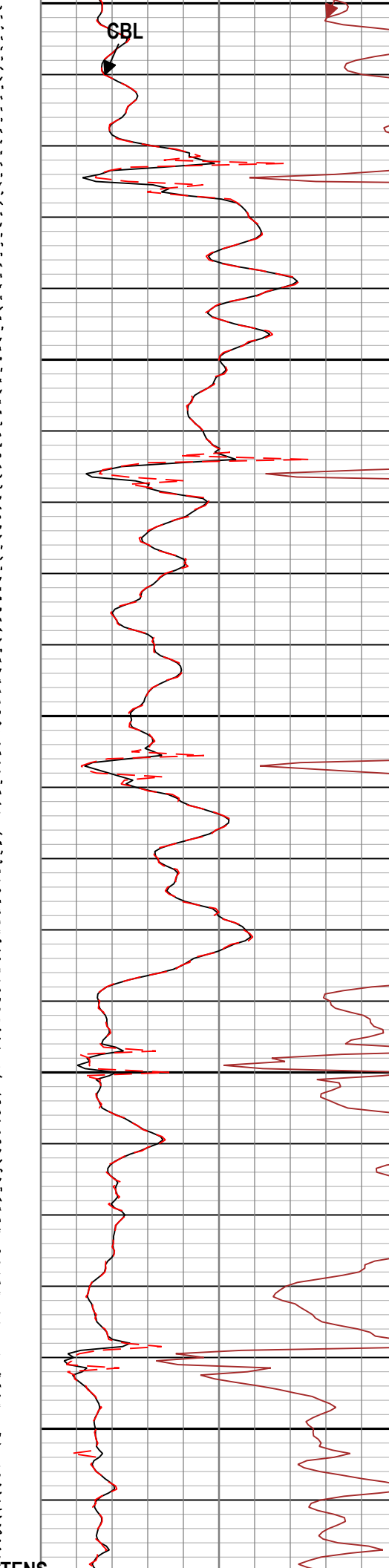


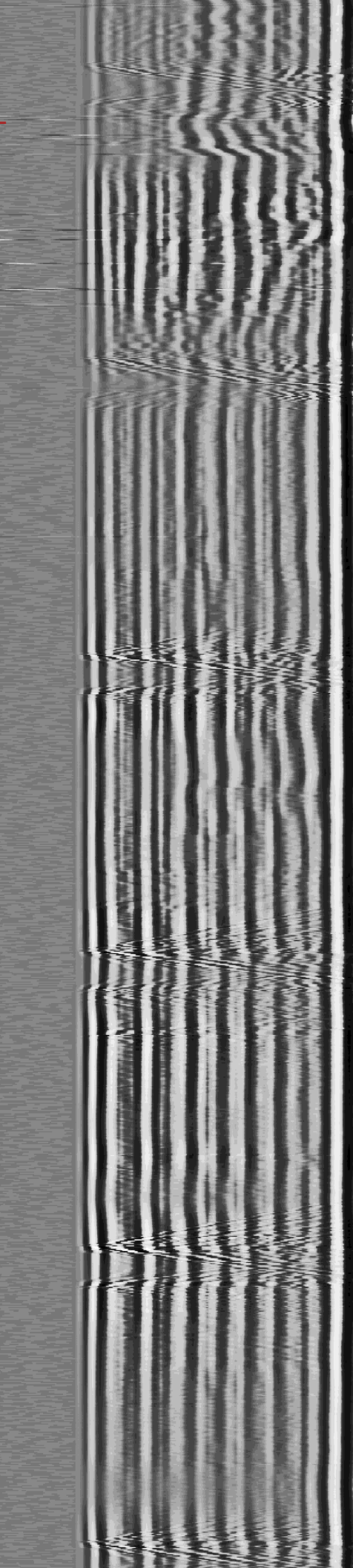
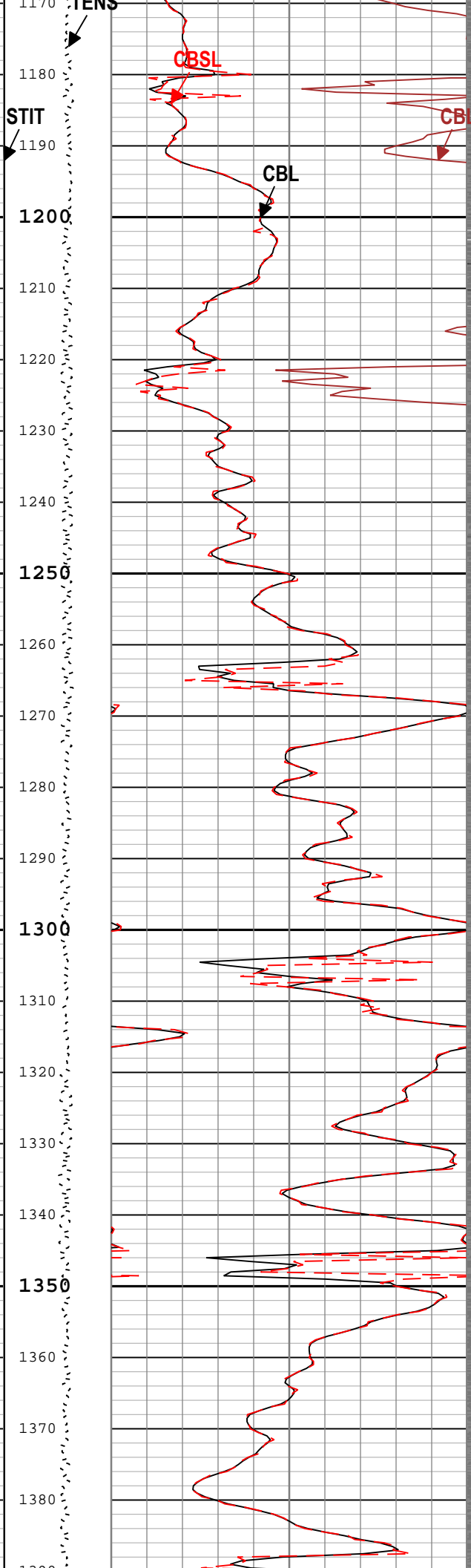
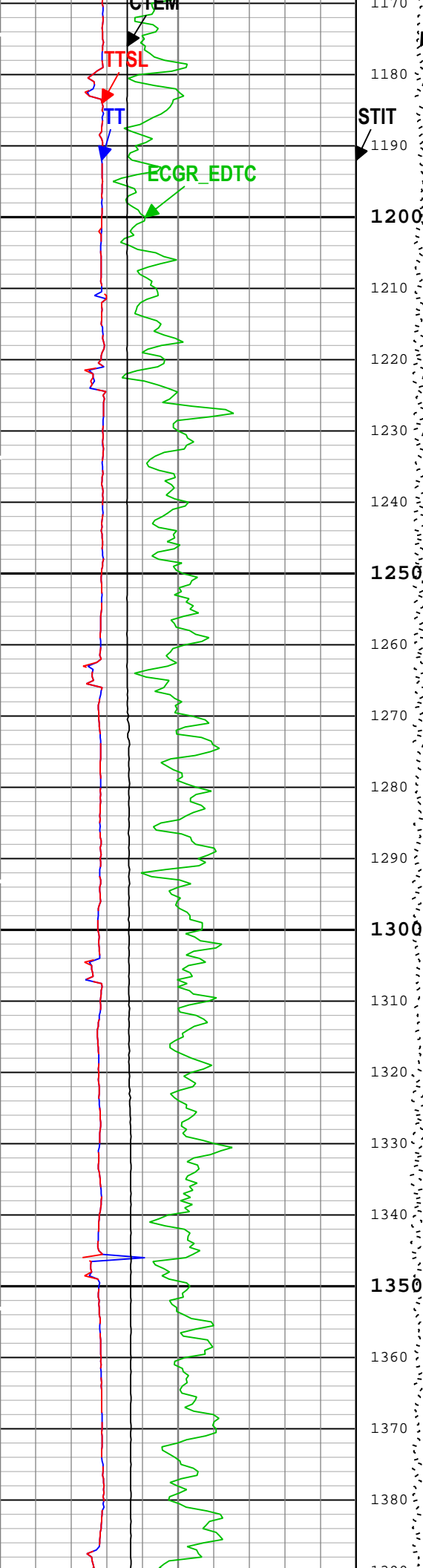


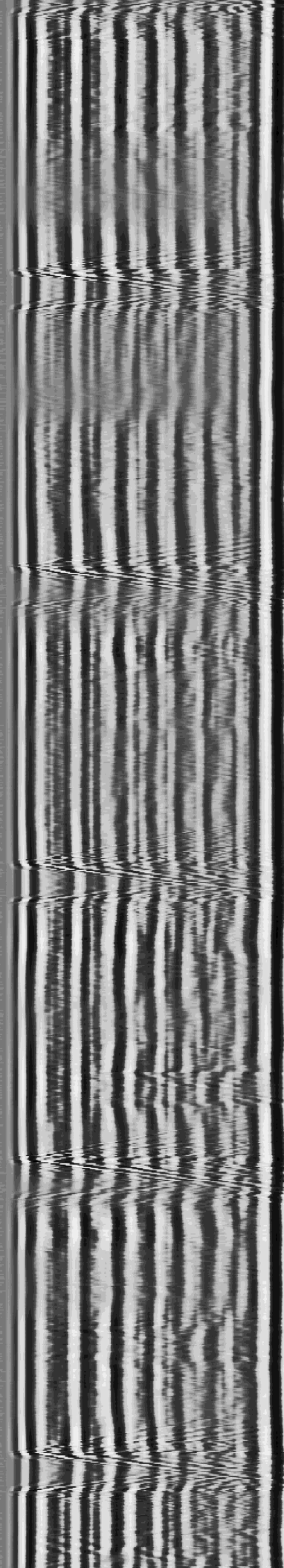
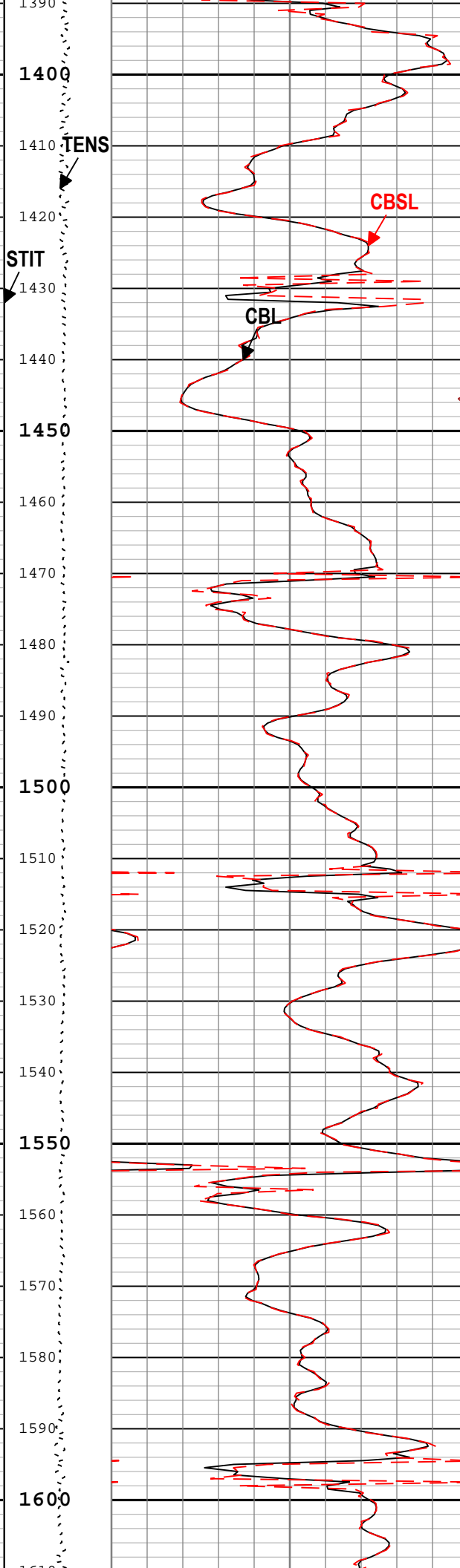
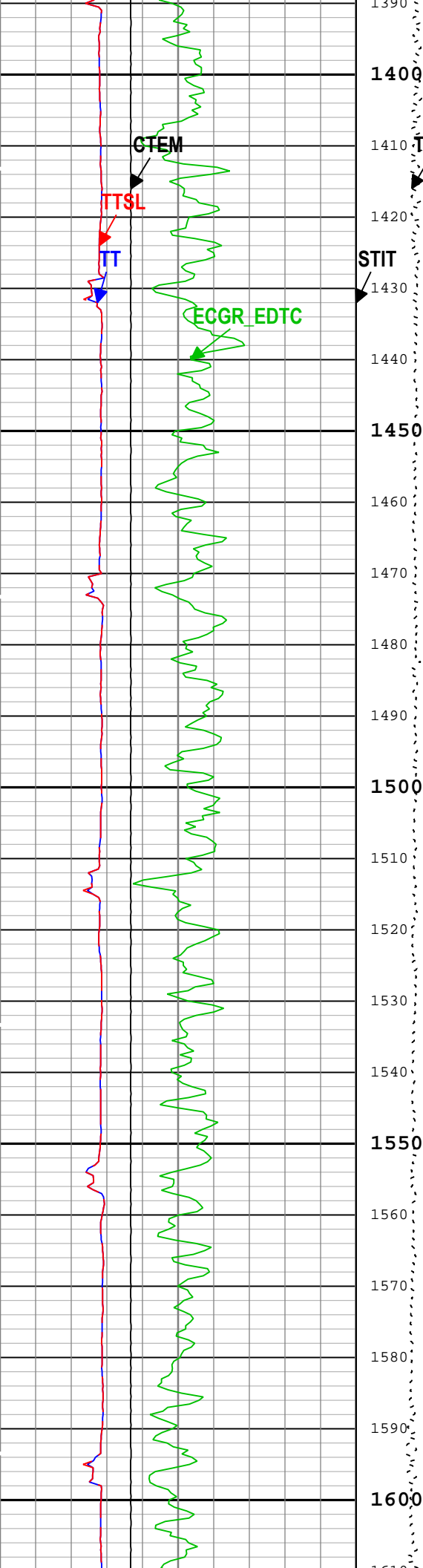


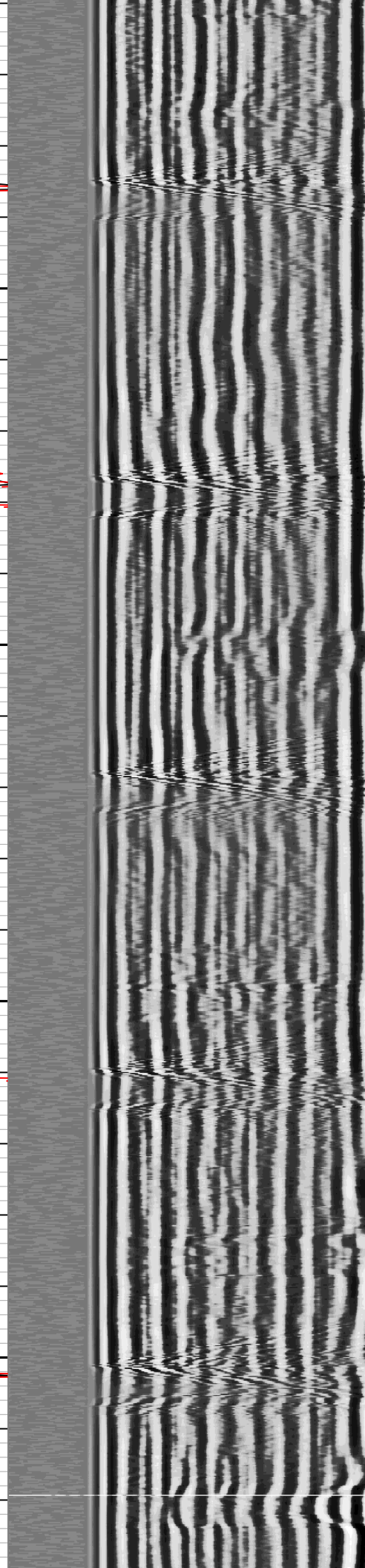
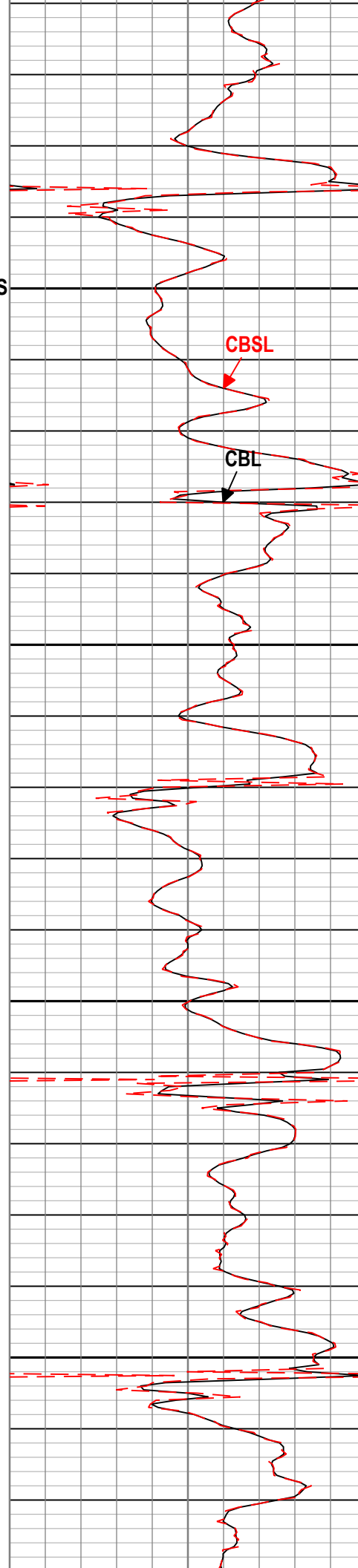
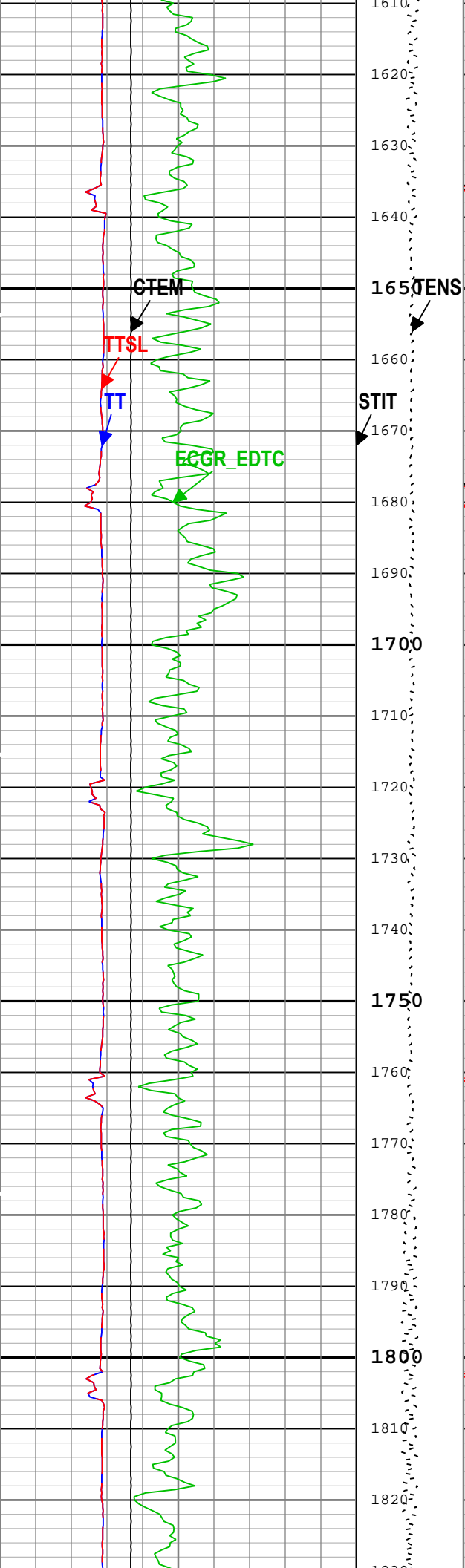


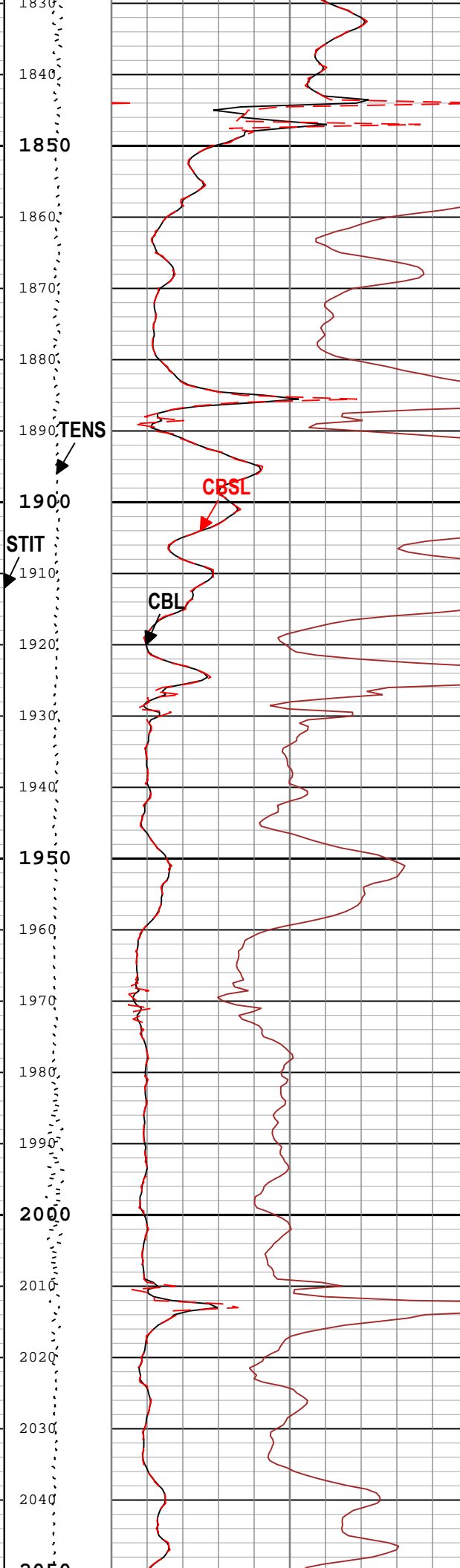
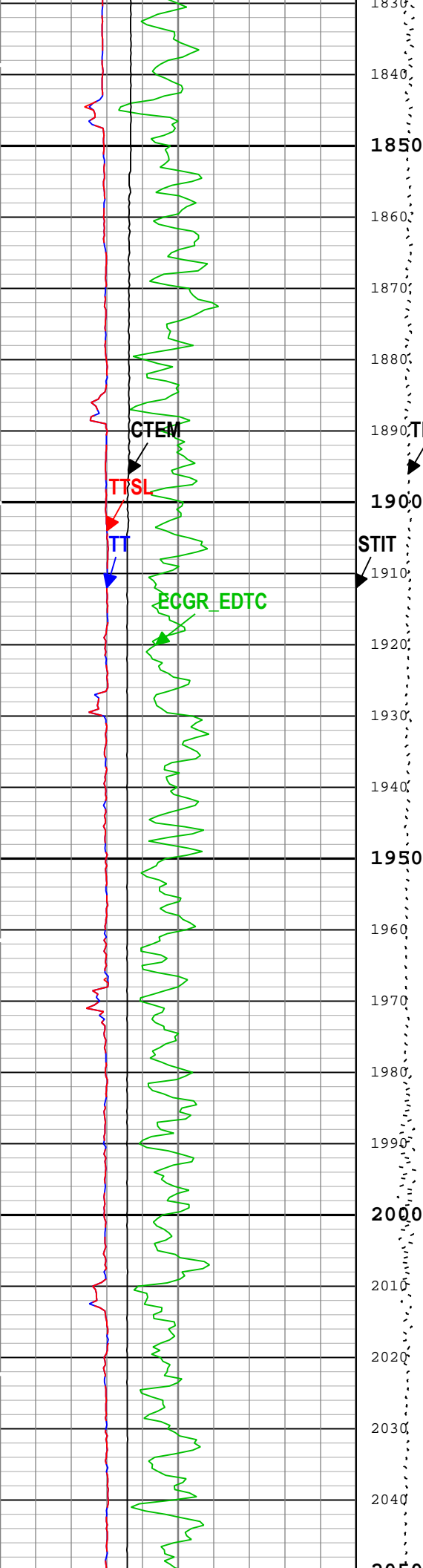
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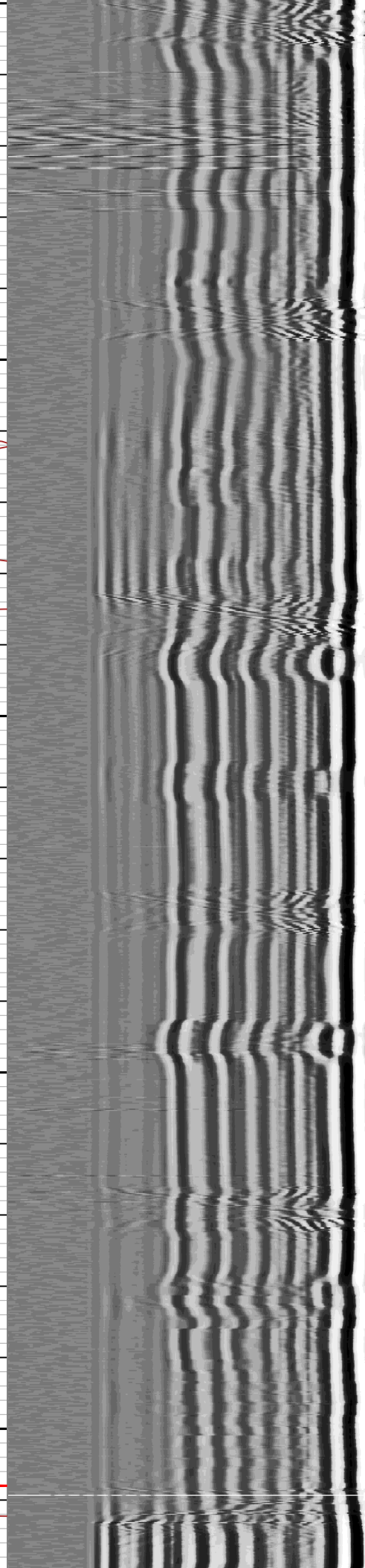
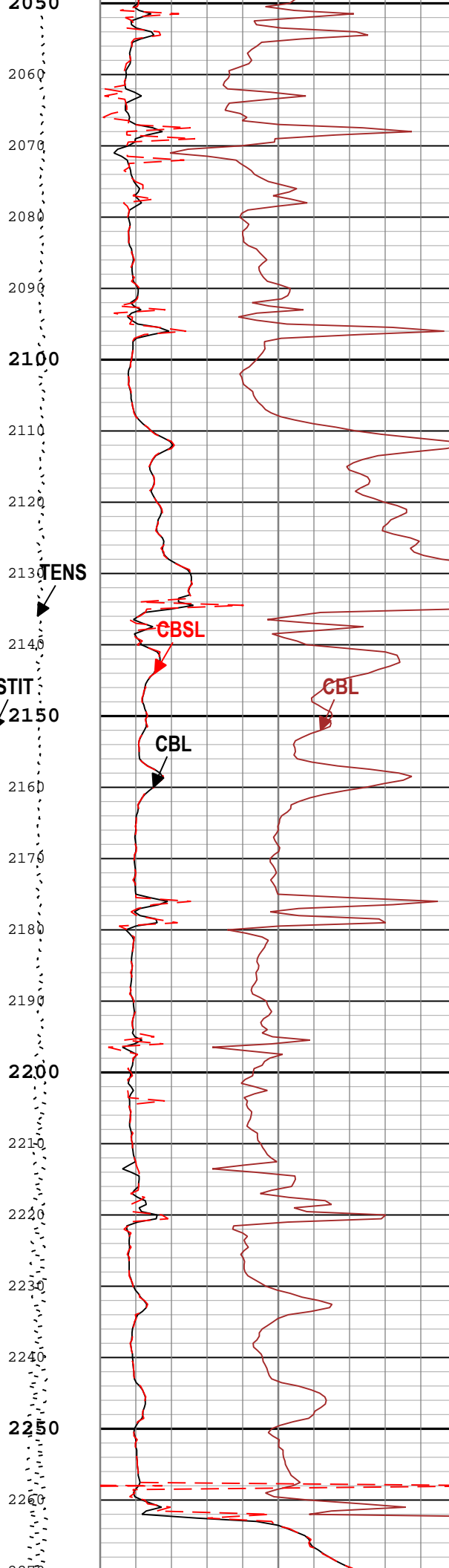
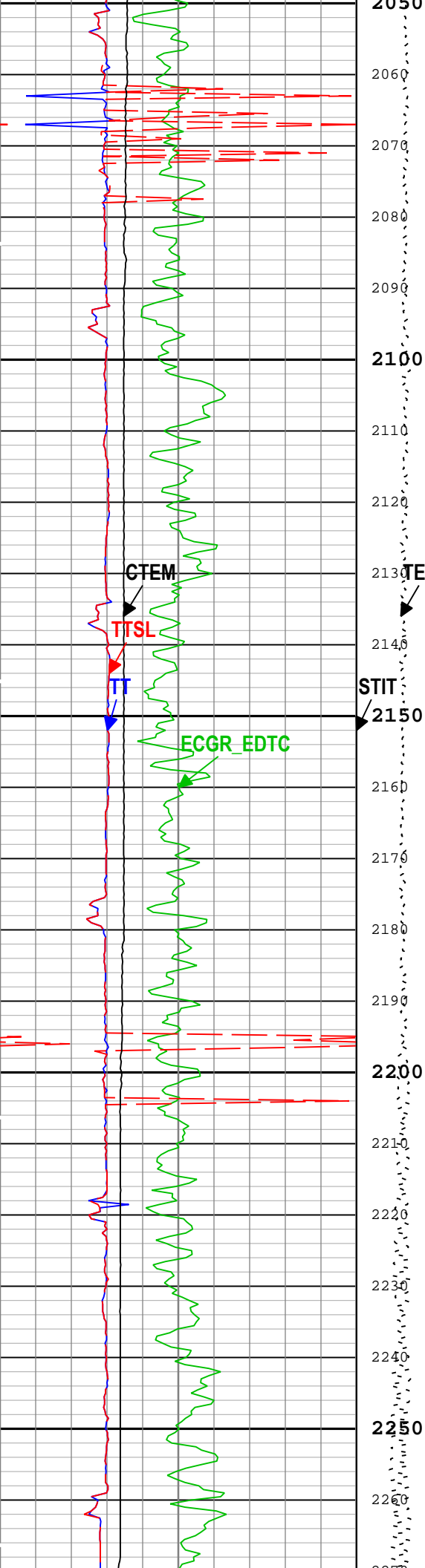


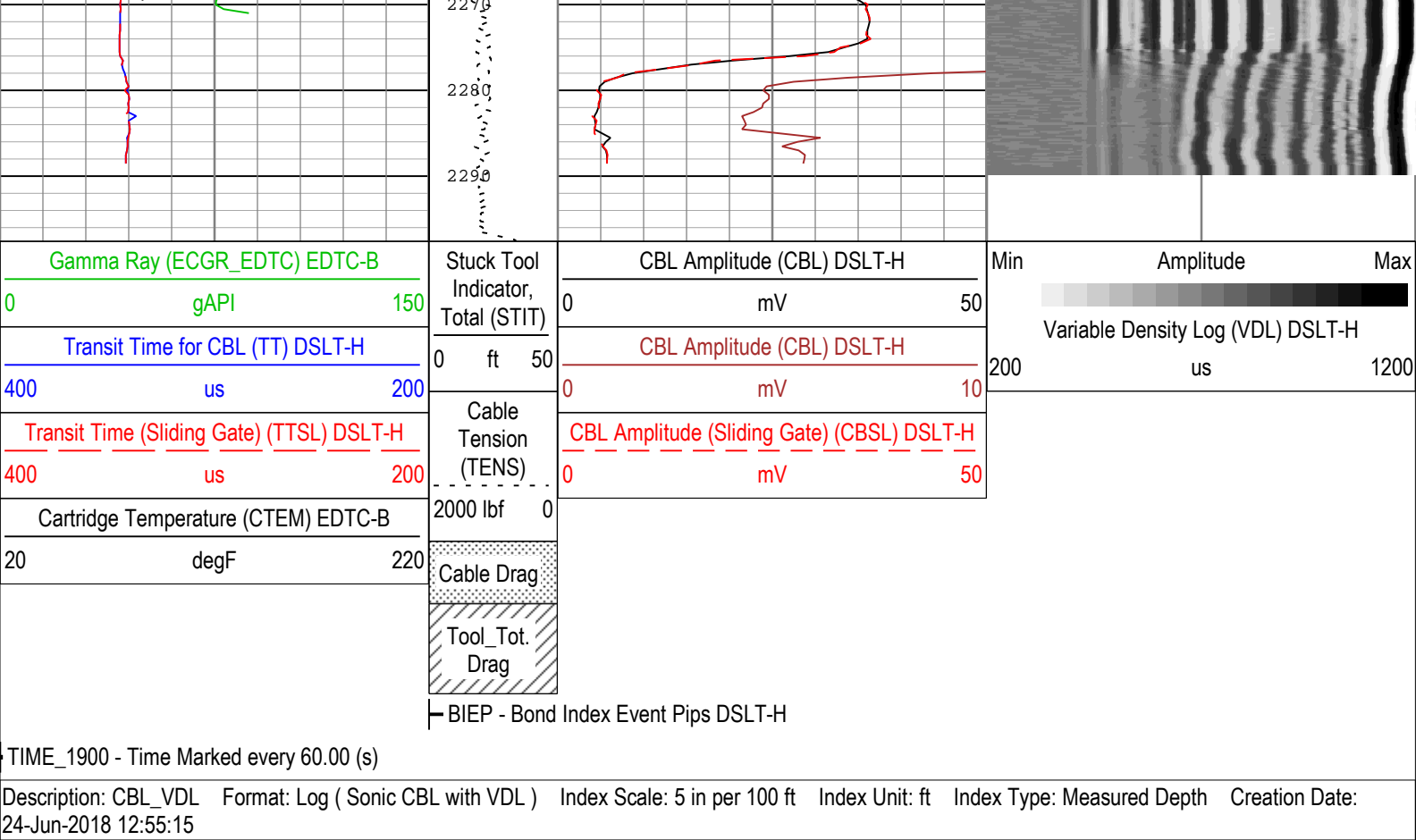












Channel Processing Parameters

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
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	319	us
SGAD	Sliding Gate Status	DSLTH	Off	
SGDT	Sliding Gate Delta-T	DSLTH	57	us/ft
VDLG	VDL Manual Gain	DSLTH	2.26	

Tool Control Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
MODE	DSLT Acquisition Mode	DSLT-H	CBL	
RATE	DSLT Firing Rate	DSLT-H	15 Hz	
DTFS	DSLT Telemetry Frame Size	DSLT-H	536	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	5000	ft/h
SGAI	Selectable Acquisition Gain	DSLT-H	x1	

Calibration Report

DSLT-H (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): 12:45:28 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): 12:45:28 24-Jun-2018

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit		
CBL Adjustment Factor		Before	1.000	0.200	0.980	5.000		
Depth of Before Calibration	ft	Before			50.72			

Company: Crestone Peak Resources Operating LLC

Schlumberger

Well: Sam 3H-25H-M166

Field: Wattenberg

County: Weld

State: Colorado

Cement Bond Log

Surface Casing

