

Company: CRESTONE PEAK RESOURCES OPERATING LLC

Well: Cosslett 1J-22H-B168

Field: WATTENBERG

County: WELD State: COLORADO

CASING BOND LOG
CBL/VDL/CCL/GR

CASING BOND LOG

CBL/VDL/CCL/GR

County:		WELD	
Field:		WATTENBERG	
Location:		NWNE 22 1N68W 6 PM	
Well:		Cosslett 1J-22H-B168	
Company:		CRESTONE PEAK RESOURCES OPERATING LLC	
Location:			
NWNE 22 1N68W 6 PM		Elev.:	K.B. 5196.00 ft
925 FNL & 2180 FEL			G.L. 5173.00 ft
			D.F. 5195.00 ft
Permanent Datum:		Ground Level	Elev.: 5173.00 f
Log Measured From:		Kelly Bushing	23.00 ft
Drilling Measured From:		Kelly Bushing	above Perm.Datum
API Serial No.	Section:	Township:	Range:
05-123-47672	22	1N	68W

Logging Date	26-Oct-2018		
Run Number	ONE		
Depth Driller	530.00 ft		
Schlumberger Depth	530.00 ft		
Bottom Log Interval	522.00 ft		
Top Log Interval	40.00 ft		
Casing Fluid Type	Water		
Salinity			
Density	10 lbm/gal		
Fluid Level	8.00 ft		
BIT/CASING/TUBING STRING			
Bit Size	17.50 in		
From	0.00 ft		
To	530.00 ft		
Casing/Tubing Size	13.375 in		
Weight	54.5 lbm/ft		
Grade	N/A		
From	0.00 ft		
To	530.00 ft		
Max Recorded Temperatures			
Logger on Bottom	Time		
Unit Number	Location:	2377	FORT MORGAN
Recorded By	C.STILES		
Witnessed By	ROBERTO Escojeda		

Disclaimer

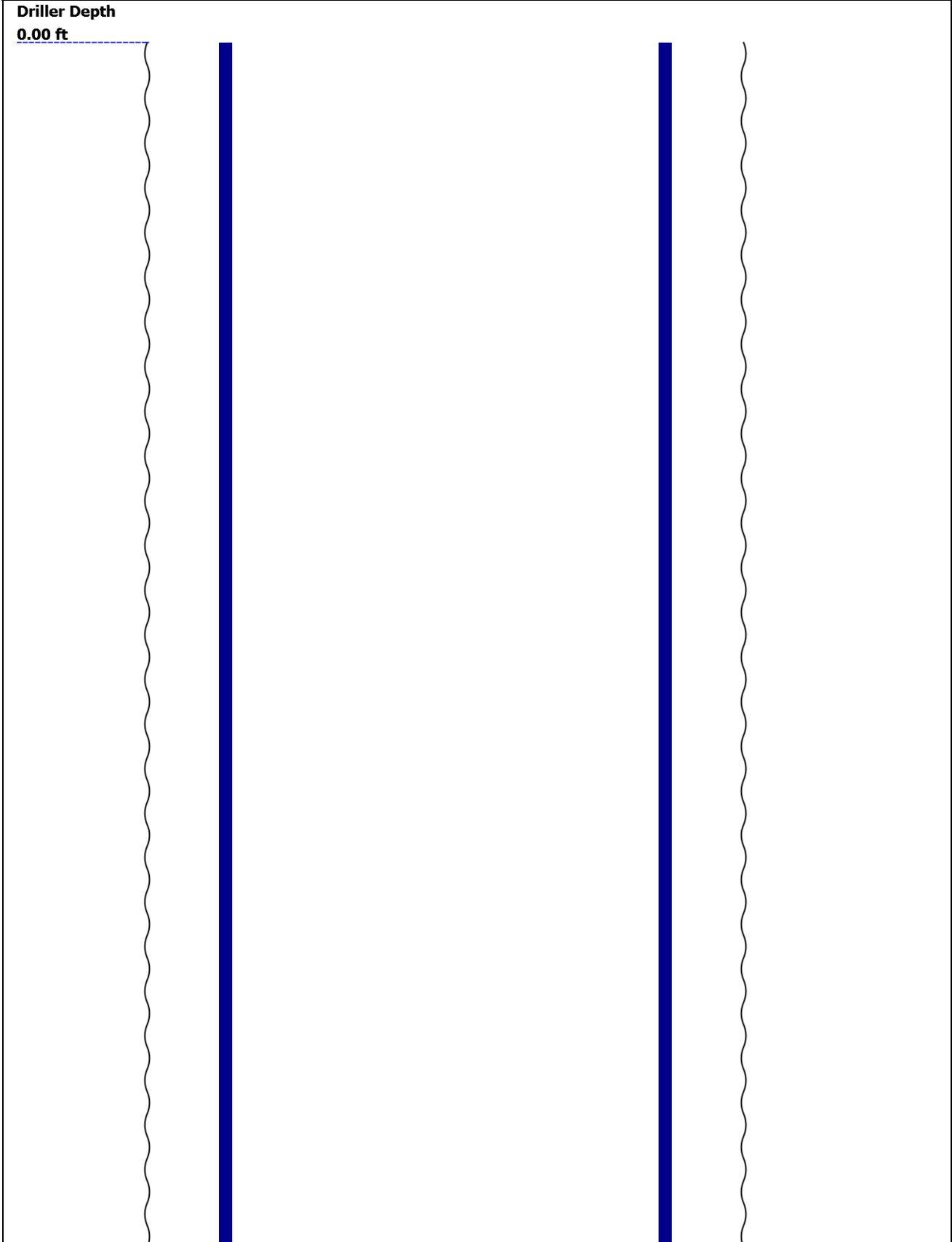
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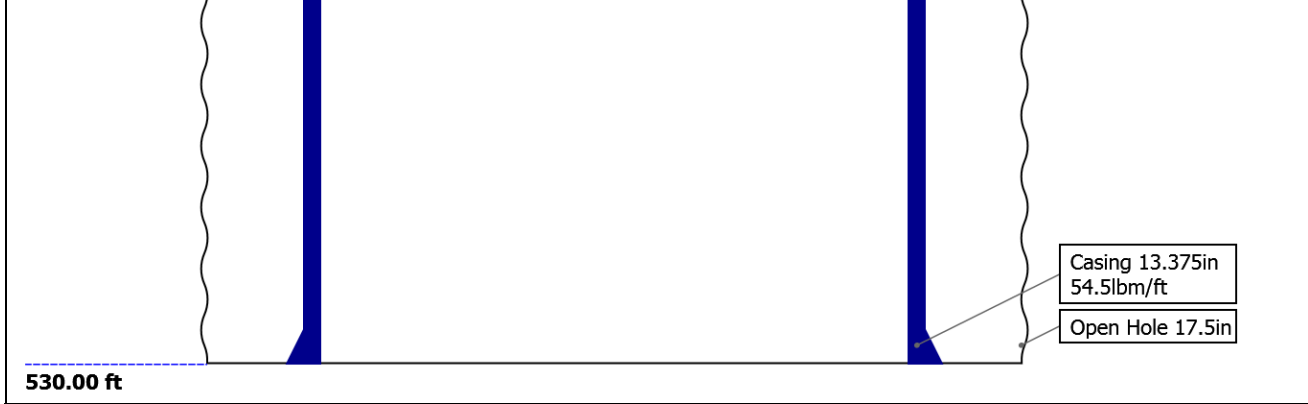
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Well Sketch

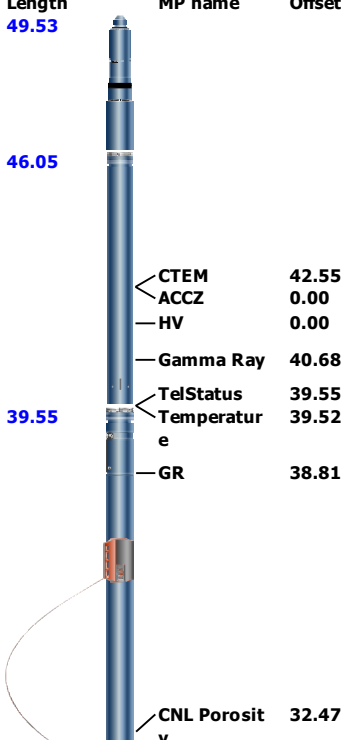




Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	17.5					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	530					
Bottom Logger (ft)	530					
Casing						
Size (in)	13.375					
Weight (lbm/ft)	54.5					
Inner Diameter (in)	12.615					
Grade	N/A					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	530					
Bottom Logger (ft)	530					

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>49.53</div></div><div><div>MP name</div><div></div></div><div><div>Offset</div><div></div></div></div>					
<div><div>EDTC-B</div><div>EDTH-B</div><div>EDTG-A</div><div>EDTC-B</div></div> <div><div>Length</div><div>46.05</div></div> <div><div>MP name</div><div></div></div> <div><div>Offset</div><div></div></div>					
<div><div>CTEM</div><div>ACCZ</div><div>HV</div></div> <div><div>Offset</div><div>42.55</div><div>0.00</div><div>0.00</div></div>					
<div><div>Gamma Ray</div></div> <div><div>Offset</div><div>40.68</div></div>					
<div><div>TelStatus</div><div>Temperature</div></div> <div><div>Offset</div><div>39.55</div><div>39.52</div></div>					
<div><div>HGNS-H</div><div>HGNH</div><div>NSR-F</div><div>NPV-N</div><div>HMCA-H</div><div>HGNS-H</div><div>HACCZ-H</div></div> <div><div>Length</div><div>39.55</div></div> <div><div>MP name</div><div></div></div> <div><div>Offset</div><div></div></div>					
<div><div>GR</div></div> <div><div>Offset</div><div>38.81</div></div>					
<div><div>CNL Porosit</div></div> <div><div>Offset</div><div>32.47</div></div>					



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		

Wheel Correction Z

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

Log Sequence

First Log In the Well

Rig Up Length At Surface

Rig Up Length At Bottom

Rig Up Length Correction

Stretch Correction

Tool Zero Check At Surface

ONE

Software Version

Acquisition System

Version

Maxwell 2018 SP2

8.2.104493.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[4]:Up	Up	22.73 ft	523.93 ft	26-Oct-2018 12:33:08 PM	26-Oct-2018 12:44:22 PM	ON	1.00 ft	No

All depths are referenced to toolstring zero

Log

Company:CRESTONE PEAK RESOURCES OPERATING LLC

Well:Cosslett 1J-22H-B168

ONE: Log[4]:Up:S007

Description: CBL_Fluid_Compensated

Format: Log (Sonic Fluid-Compensated CBL with VDL)

Index Scale: 5 in per 100 ft

Index Unit: ft

Index Type:

Measured Depth

Creation Date: 26-Oct-2018 15:02:18

TIME_1900 - Time Marked every 60.00 (s)

Casing Collar Locator Amplitude (CCL) CAL-YA

-9

1

Gamma Ray (ECGR_EDTC) EDTC-B

0

gAPI

150

Borehole Diameter (GHD) RT

6

in

16

Transit Time for CBL (TT) DSLT-H

450

us

350

Transit Time 1 (TT1) DSLT-H

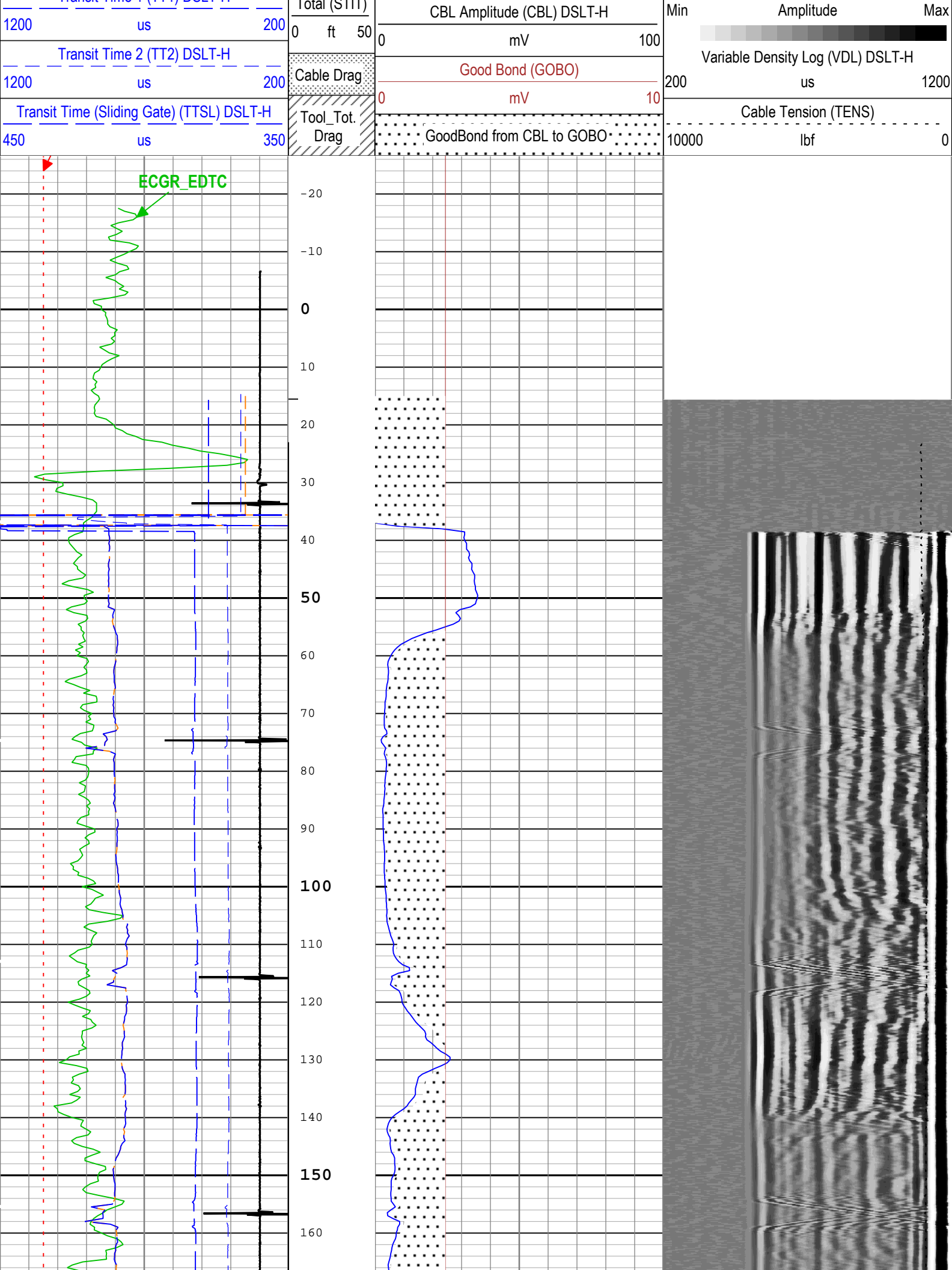
Stuck Tool Indicator, T-1 (ST1)

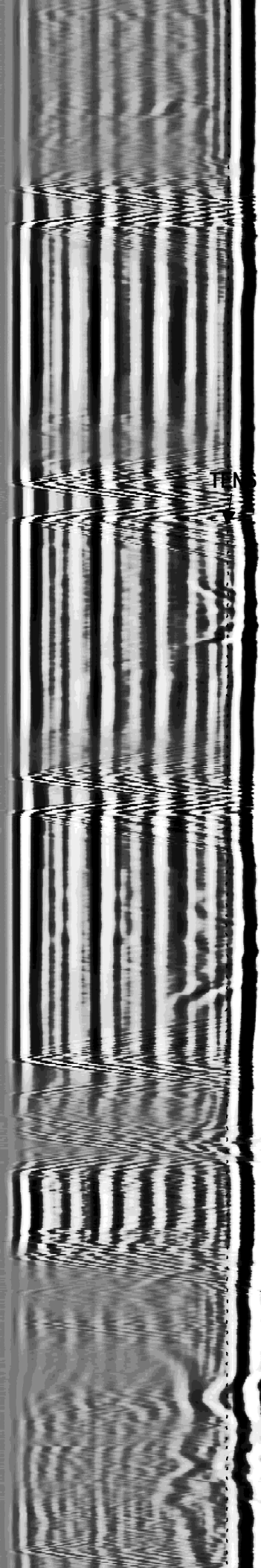
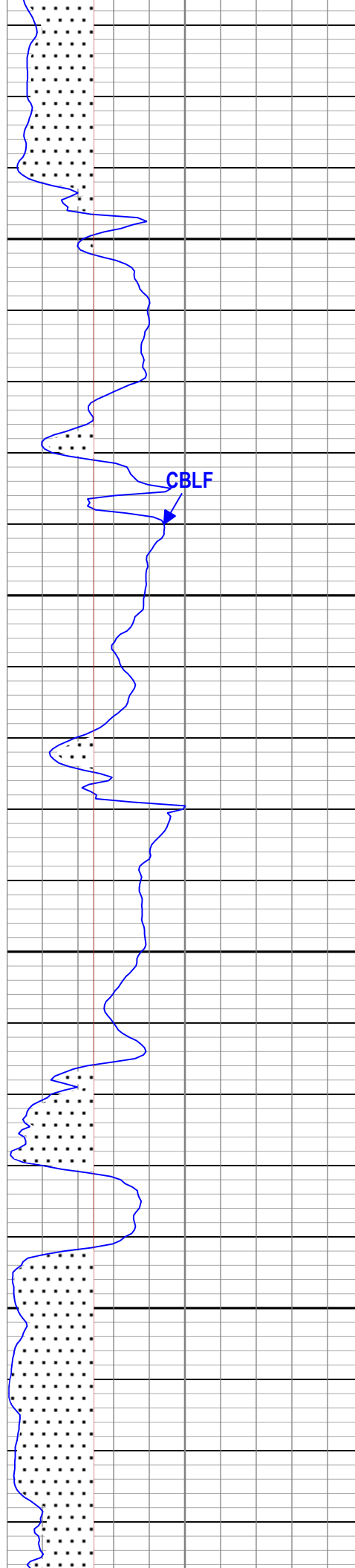
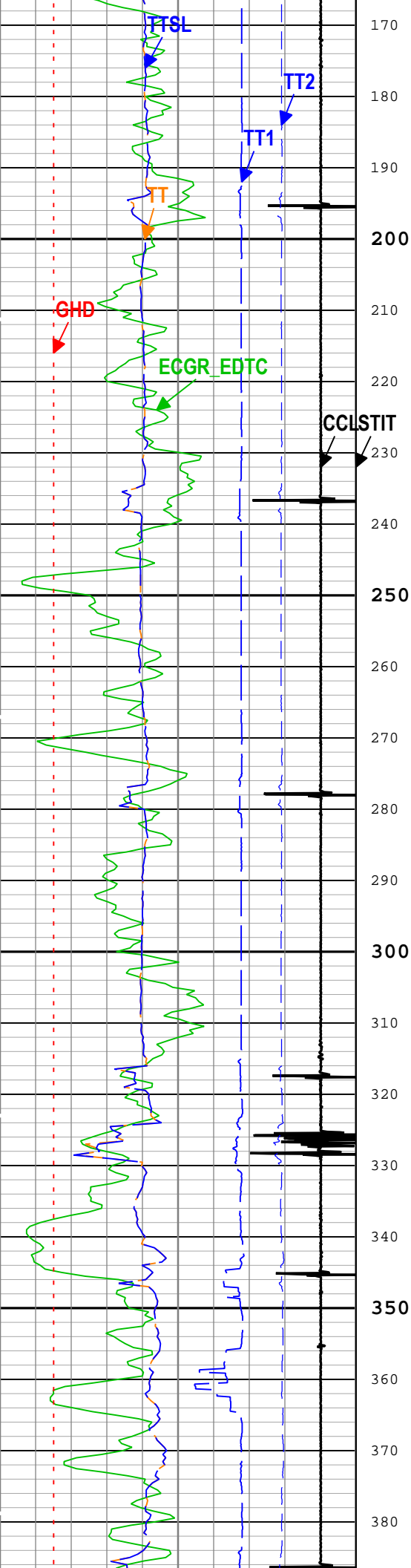
0

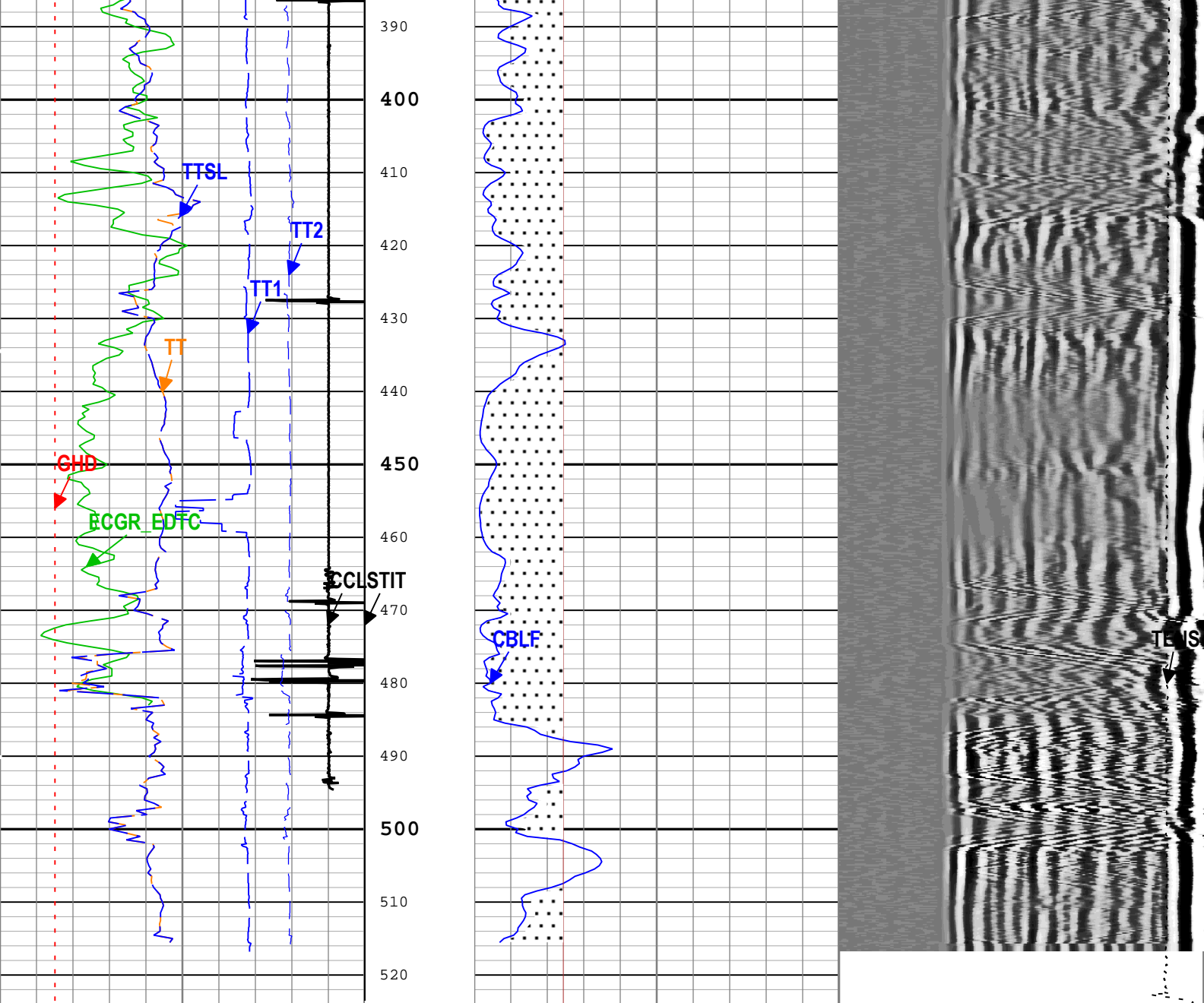
mV

100

BIEP - Bond Index Event Pips DSLT-H







Casing Collar Locator Amplitude (CCL) CAL-YA		
-9		1
Gamma Ray (ECGR_EDTC) EDTC-B		
0		150
gAPI		
6		16
Borehole Diameter (GHD) RT		
6		16
in		
Transit Time for CBL (TT) DSLT-H		
450		350
us		
Transit Time 1 (TT1) DSLT-H		
1200		200
us		
Transit Time 2 (TT2) DSLT-H		
1200		200
us		
Transit Time (Sliding Gate) (TTSL) DSLT-H		
450		350
us		

TIME_1900 - Time Marked every 60.00 (s)

Stuck Tool Indicator, Total (STIT)

0 ft 50

Cable Drag

Tool_Tot. Drag

CBL Amplitude (Fluid Compensated) (CBLF) DSLT-H		
0	mV	100
CBL Amplitude (CBL) DSLT-H		
0	mV	100
Good Bond (GOBO)		
0	mV	10
GoodBond from CBL to GOBO		

Min	Amplitude	Max
200	us	1200
10000	lb	0

BIEP - Bond Index Event Pips DSLT-H

Description: CBL_Fluid_Compensated Format: Log (Sonic Fluid-Compensated CBL with VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type:

Channel Processing Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	17.5	in
CBLG	CBL Gate Width	DSLTH	75	us
CBLO	Casing Bottom (Logger)	WLSESSION	530	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	DSLTH	43	mV
CCL_MULTIPLIER	Casing Collar Locator Multiplier	CAL-YA	1	
CDEN	Cement Density	EDTC-B	2	g/cm3
DETE	Delta-T Detection	DSLTH	E1	
DFD	Drilling Fluid Density	Borehole	10	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	2.43	mV
MAHTR	Manual High Threshold Reference for first arrival detection	DSLTH	120	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	DSLTH	11.3	dB/ft
MCI	Minimum Cemented Interval for Isolation	DSLTH	21.68	ft
MNHTR	Minimum High Threshold Reference for first arrival detection	DSLTH	100	
MSA	Minimum Sonic Amplitude	DSLTH	1.19	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	DSLTH	1.19	mV
NMSG	Near Minimum Sliding Gate	DSLTH	365	us
SGAD	Sliding Gate Status	DSLTH	Off	
SGDT	Sliding Gate Delta-T	DSLTH	57	us/ft

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	3600	ft/h
SGAI	Selectable Acquisition Gain	DSLTH	x1	

Calibration Report							
DSLTH-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 (Measured):		09:56:52 29-Mar-2018					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Upper Far Amplitude		Master	4200.0	3200.0	3230.1		
Upper Near Raw Amplitude	mV	Master	33.000	27.000	33.807	43.000	
Lower Far Amplitude		Master	4200.0	3200.0	4360.3		
Lower Near Raw Amplitude	mV	Master	46.000	27.000	42.780	68.000	

CBL Normalization - CBL/VDL Coefficients							
Master (Measured):		09:56:52 29-Mar-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 (Measured):		12:26:25 26-Oct-2018					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
CBL Amplitude	mV	Before	60.00	15.00	50.92	174.00	
CBL Reference Amplitude (CBRA)	mV	Before			43.00		
Measurement Depth	ft	Before			218.30		

CBL Free Pipe Adjustment - CBL Amplitude Coefficient

Before (Measured):		12:26:25 26-Oct-2018					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
CBL Adjustment Factor		Before	1.000	0.200	0.844	5.000	
Depth of Before Calibration	ft	Before			218.30		

Field:	WATTENBERG
County:	WELD
State:	COLORADO

CASING BOND LOG

CBL/VDL/CCL/GR