

APPENDIX L

CEMENT BOND LOG

1 of 9

APPENDIX L

CEMENT BOND LOGS

APPENDIX L

Cement bond Logs

SURFACE CASING CEMENT BOND LOGS

- Cement Bond Log

1st INTERMEDIATE CASING CEMENT BOND LOGS

- Cement Bond Log
- VDL Wide Prints
- Isolation Scanner / Cement Evaluation Field Print

2nd INTERMEDIATE CASING CEMENT BOND LOGS

- Ultrasonic Imager / Composite Print / Gamma Ray
- Cement Bond Log / SSLT-GR-CCL
- UltraSonic Imager / Cement Evaluation / Gamma Ray
- VDL Wide Print

PRODUCTION CASING

- Ace - Advance Cement Evaluation
- Pace Peak Analysis of the CBL Waveform
- RCBL / GR / CCL Log

SURFACE CASING CEMENT BOND LOGS

- Cement Bond Log

Company: DCP Midstream LP

Well: Zia AGI D2

Field: AGI; Devonian Exploration

County: State: New Mexico

Cement Bond Log

Gamma Ray

1893' FSL & 950' FWL	Elev.:	K.B.	3574.00 ft
Section: 19, T19S, R32E		G.L.	3547.00 ft
		D.F.	3573.00 ft
Permanent Datum:	Ground Level	Elev.:	3547.00 f
Log Measured From:	Kelly Bushing	27.00 ft	above Perm.Datum
Drilling Measured From:	Kelly Bushing		
API Serial No.	Section:	Township:	Range:
30-025-42207	19	T19S	R32E

County:
Field:
Location:
Well:
Company:

AGI; Devonian Exploration
1893' FSL & 950' FWL
Zia AGI D2
DCP Midstream LP

Logging Date	05-Nov-2016
Run Number	1A
Depth Driller	826.00 ft
Schlumberger Depth	773.00 ft
Bottom Log Interval	773.00 ft
Top Log Interval	20.00 ft
Casing Fluid Type	Water
Salinity	
Density	8.4 lbm/gal
Fluid Level	8.00 ft
BIT/CASING/TUBING STRING	
Bit Size	26.00 in
From	0.00 ft
To	826.00 ft
Casing/Tubing Size	20 in
Weight	106.5 lbm/ft
Grade	N/A
From	0.00 ft
To	826.00 ft
Max Recorded Temperatures	104 degF
Logger on Bottom	05-Nov-2016 02:54:00
Unit Number	9101
Recorded By	Stephanie Anderson
Witnessed By	Jared Smith

Disclaimer

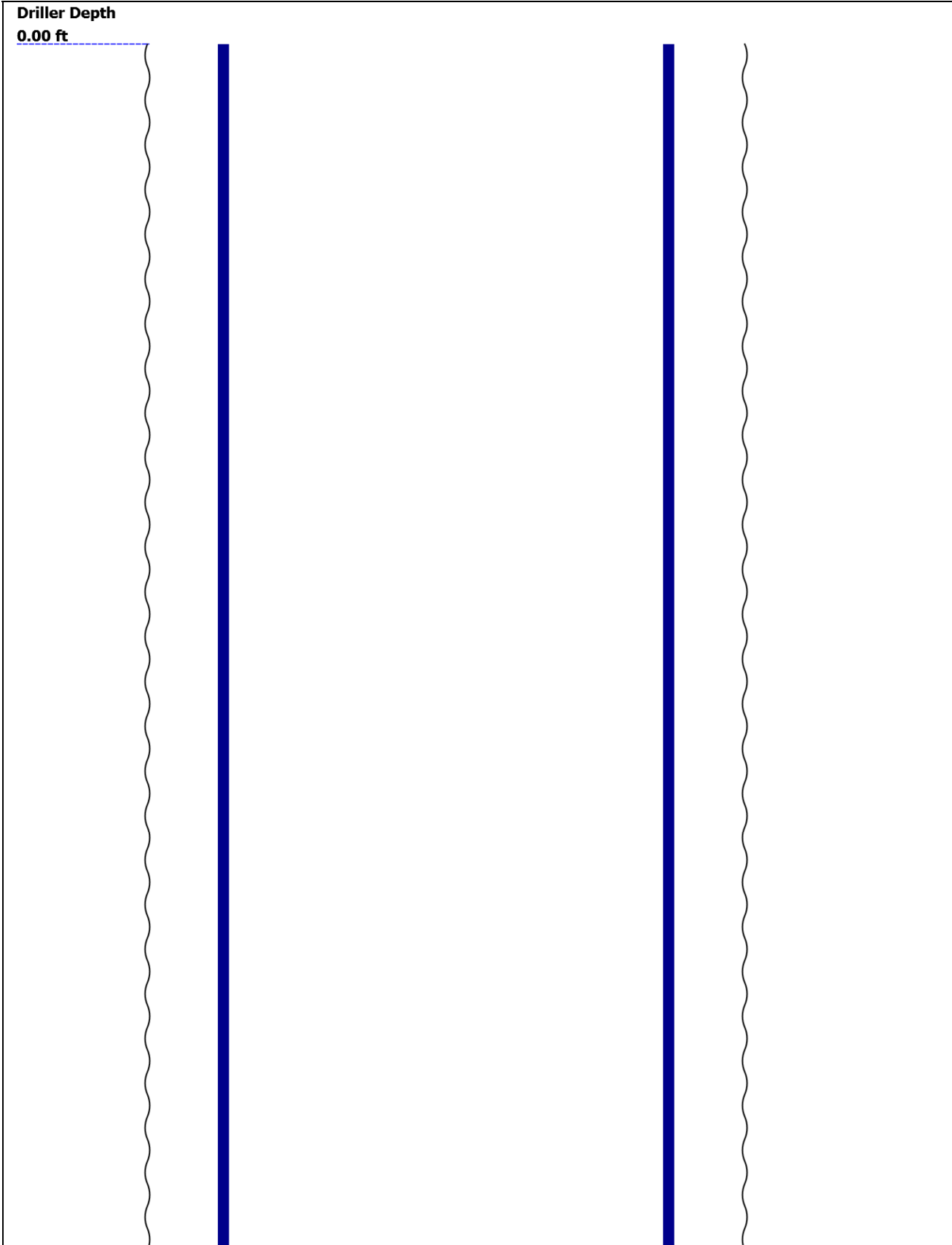
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (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.

Contents

- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Well Sketch
- 5. Borehole Size/Casing/Tubing Record
- 6. Remarks and Equipment Summary
- 7. Depth Summary
- 8. 1A Main Pass 5" = 100'
 - 8.1 Integration Summary
 - 8.2 Composite Summary
 - 8.3 Log (MAST_CE_DCBL_3050)
 - 8.4 Parameter Listing
- 9. 1A Repeat Analysis 5" = 100'
 - 9.1 Composite Summary
 - 9.2 Log (MAST_CE_DCBL_3050 RA)
- 10. Tail

--	--

Well Sketch



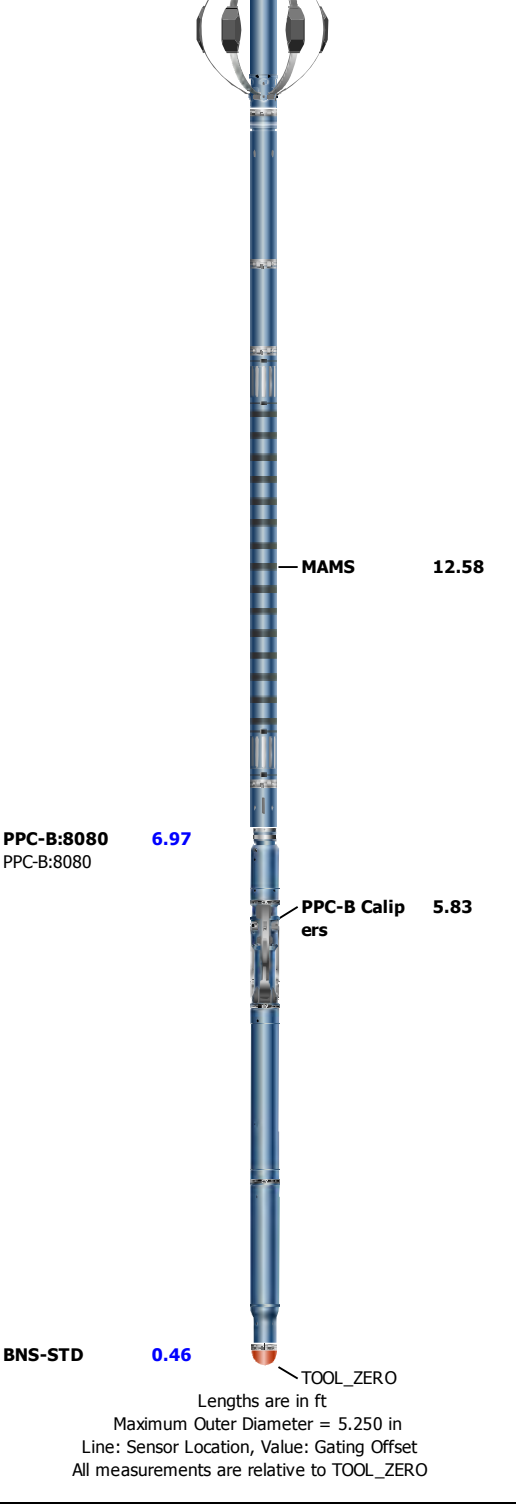


Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	26					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	826					
Bottom Logger (ft)	826					
Casing						
Size (in)	20					
Weight (lbm/ft)	106.5					
Inner Diameter (in)	19					
Grade	N/A					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	826					
Bottom Logger (ft)	826					

Remarks and Equipment Summary

1A: Toolstring				1A: Remarks
Equip name	Length	MP name	Offset	Logging Objective: Cement TD to surface. Toolstring run as per toolsketch. 1 PPC extended arm kit, and 2 CME-Z's used for centralization. SLB TD: 773ft. Main and Repeat pass correlated to down pass. No pressure applied as per client request. Casing Info: 20in. 106.5#. Expected free pipe amplitude is 38mV.
LEH-QC	40.47			
CAL-YA	38.02			
CAL-YA		CCL	37.22	
EDTC-B:9195	34.52			
EDTH-B:9350				
EDTG-A				
EDTC-B:9195				
		CTEM	31.02	
		ACCZ	0.00	
		HV	0.00	
		Gamma Ray	29.15	
		TelStatus	28.02	
MAST-B:8574	28.02			
ECH-SF:8081				
MAPC-BA:8081				
MAMS-BA:8574				



Depth Summary

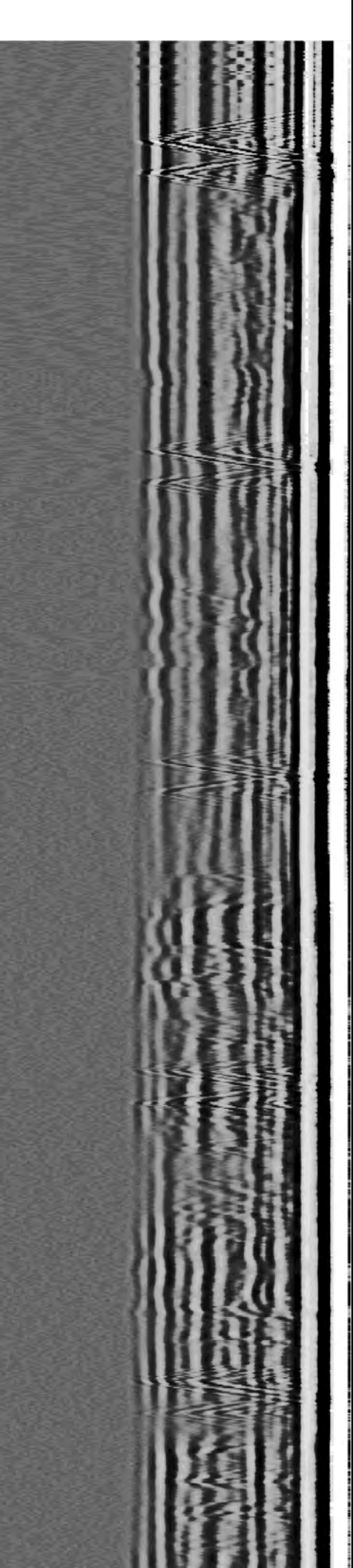
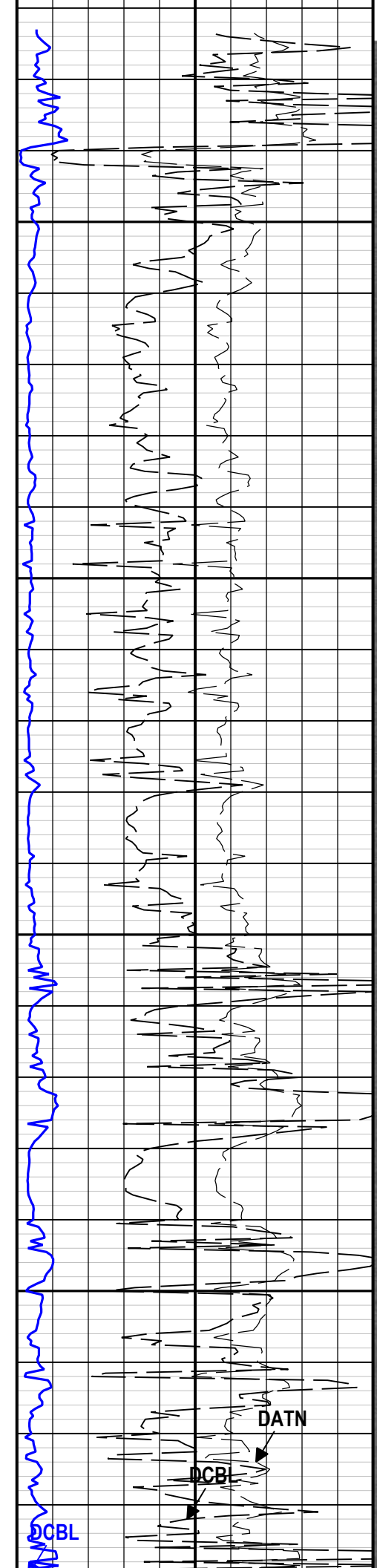
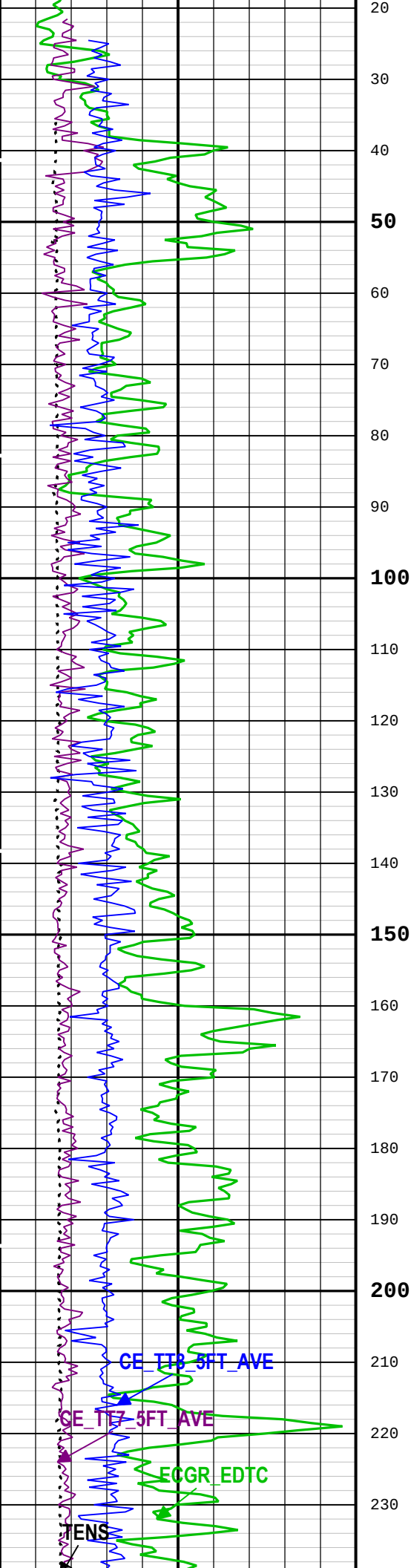
	1A		
--	----	--	--

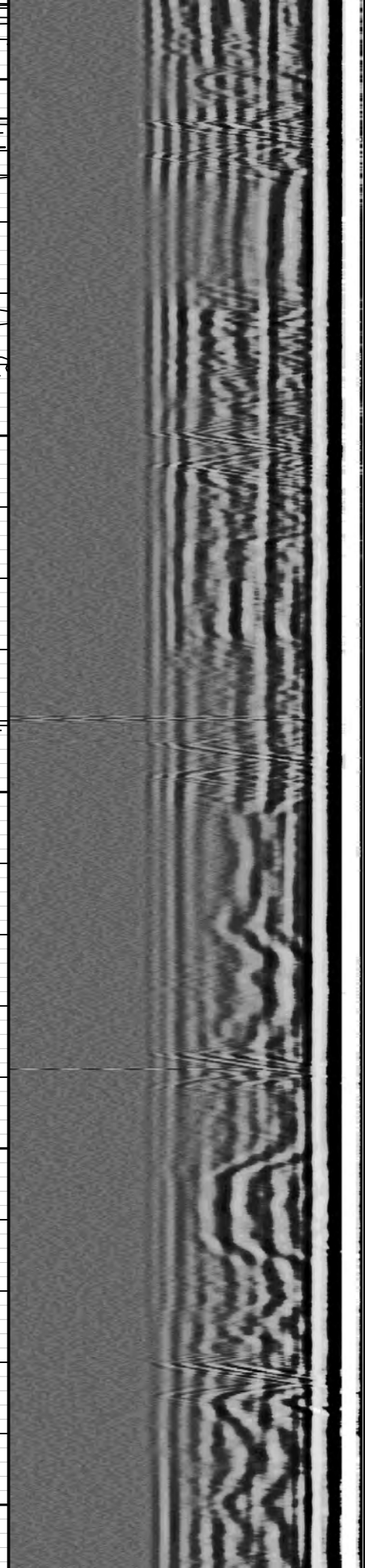
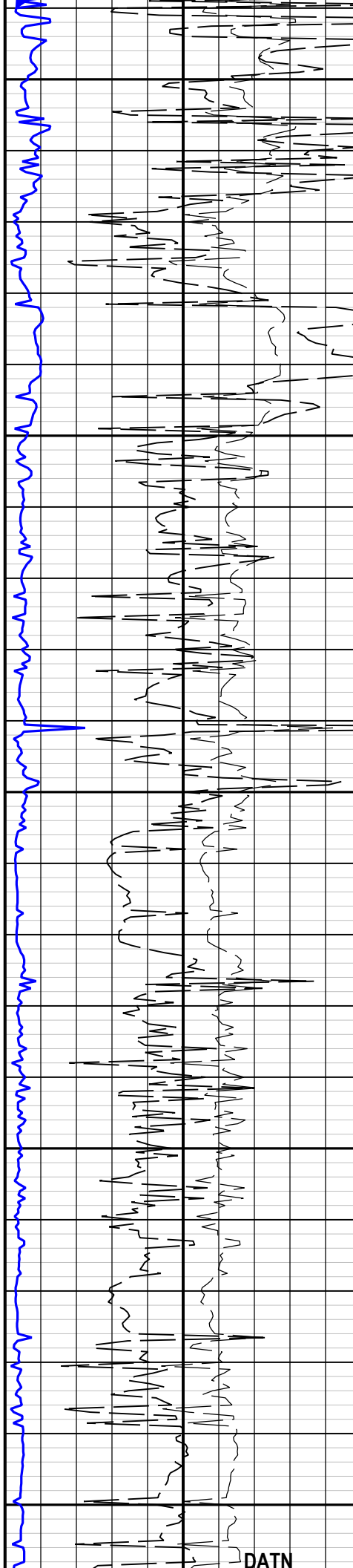
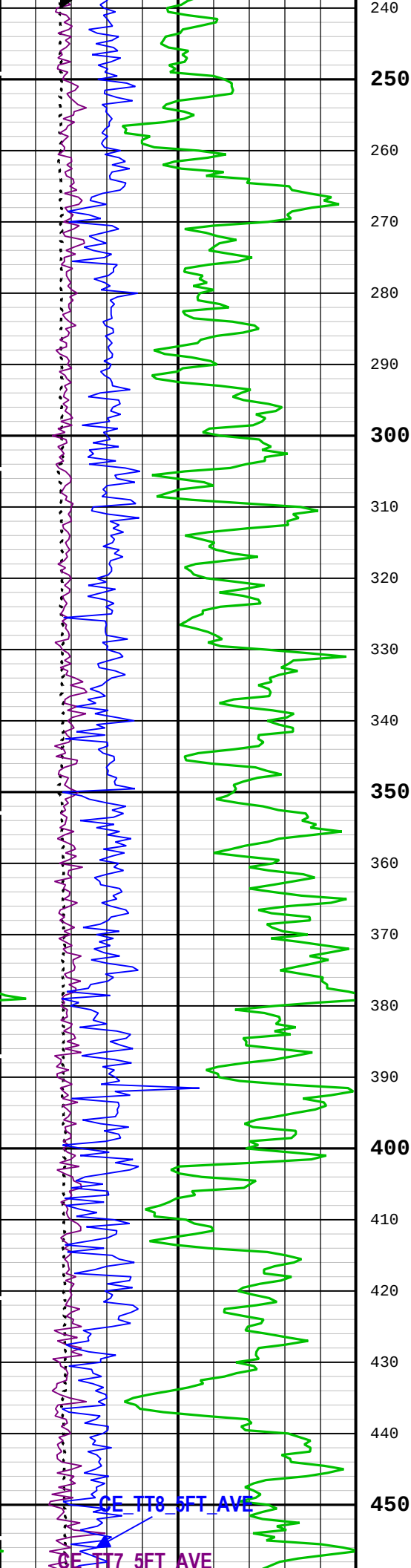
Depth Measuring Device

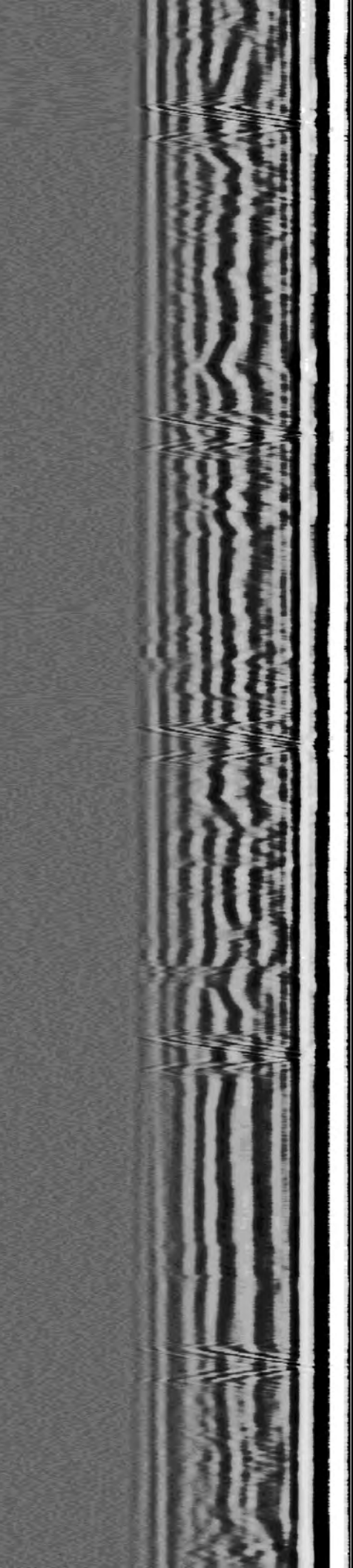
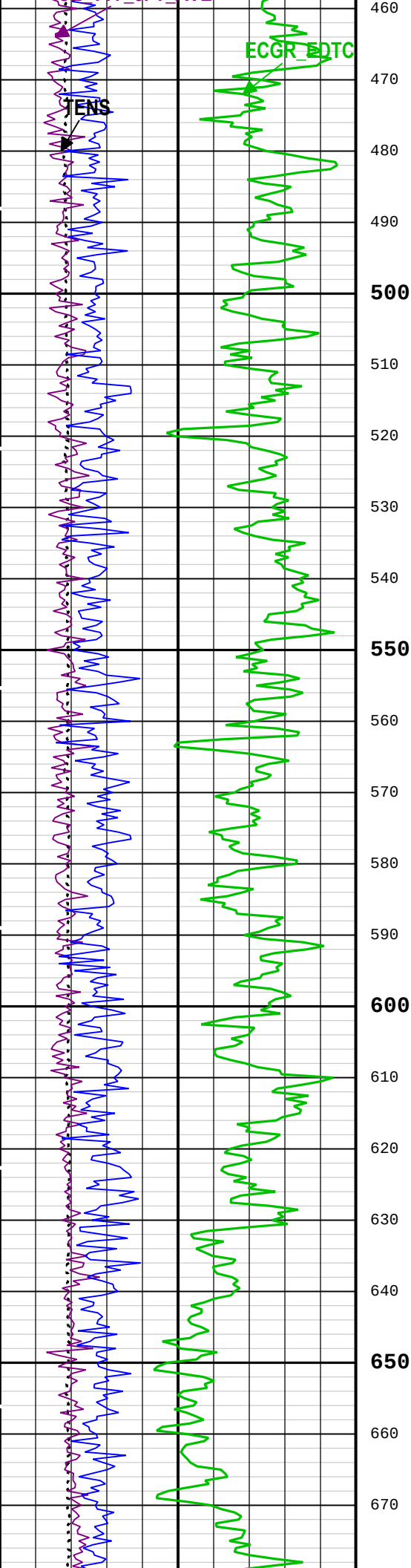
Type	IDW-B		
Serial Number	7267		
Calibration Date	05-Oct-2015		
Calibrator Serial Number	7267		
Calibration Cable Type	7-46PXS		
Wheel Correction 1	-4		
Wheel Correction 2	-2		

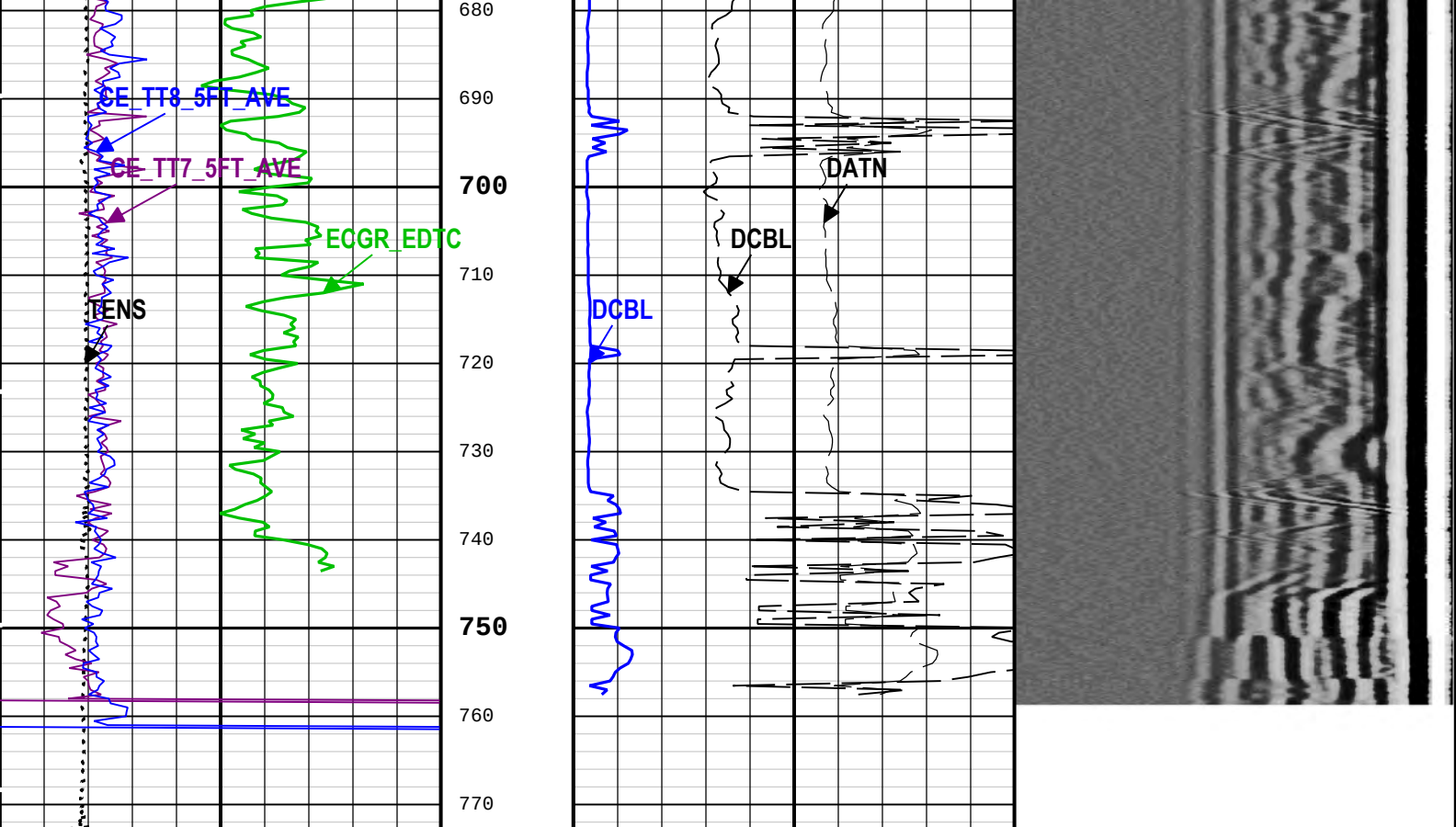
Tension Device

Type	CMTD-B/A		
Serial Number	5036		









Cable Tension (TENS)		
0	lbf	5000
Gamma Ray (ECGR_EDTC) EDTC-B		
0	gAPI	150
Transit Time 5 ft Average from Monopole Upper High Frequency Waveform (CE_TT7_5FT_AVE) MAST-B		
650	us	350
Transit Time 5 ft Average from Monopole Lower High Frequency Waveform (CE_TT8_5FT_AVE) MAST-B		
650	us	350

Synthetic CBL from Discriminated Attenuation (DCBL) MAST-B		
0	mV	100
Synthetic CBL from Discriminated Attenuation (DCBL) MAST-B		
0	mV	10
Discriminated BHC Attenuation (DATN) MAST-B		
20	dB/ft	0

Min	Amplitude	Max
200	us	1200

TIME_1900 - Time Marked every 60.00 (s)

Description: MAST_CE_DCBL_3050 Format: Log (MAST_CE_DCBL_3050) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 05-Nov-2016 16:56:34

Channel Processing Parameters

1A: 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	26	in
CBLO	Casing Bottom (Logger)	WLSESSION	826	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	MAST-B	34	mV
CDEN	Cement Density	EDTC-B	2	g/cm3
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.5	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DT_MIN_MLH	Detection Minimum Slowness for Monopole Lower	MAST-B	44.25	us/ft

DTF	Delta-T Fluid	Borehole	189	us/ft
FDET_LEN_MLH	Fixed Detection Time Length for Monopole Lower Transmitter High Frequency Firing	MAST-B	Time Zoned	us
FDET_STRT_MLH	Fixed Detection Start Time for Monopole Lower Transmitter High Frequency Firing	MAST-B	Time Zoned	us
FDET_STRT_MUH	Fixed Detection Start Time for Monopole Upper Transmitter High Frequency Firing	MAST-B	Time Zoned	us
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
GOBO	Good Bond	MAST-B	4.78	mV
GOBO_CURR	Good Bond in Arbitrary Cement	MAST-B	4.78	mV
MATT	Maximum Attenuation	MAST-B	8.84	dB/ft
MATT_CURR	Maximum Attenuation in Arbitrary Cement	MAST-B	8.84	dB/ft
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	MAST-B	2.93	mV

Time Zone Parameters					
Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
FDET_LEN_MLH	80	05-Nov-2016 03:41:41	05-Nov-2016 03:42:48	772.99	753.38
FDET_LEN_MLH	62.73	05-Nov-2016 03:42:48	05-Nov-2016 04:03:18	753.38	35.47
FDET_STRT_MLH	456.15	05-Nov-2016 03:41:41	05-Nov-2016 03:44:44	772.99	698.6
FDET_STRT_MLH	442.6	05-Nov-2016 03:44:44	05-Nov-2016 04:03:18	698.6	35.47
FDET_STRT_MUH	440.42	05-Nov-2016 03:41:41	05-Nov-2016 03:42:41	772.99	755.58
FDET_STRT_MUH	427.77	05-Nov-2016 03:42:41	05-Nov-2016 04:03:18	755.58	35.47

All depth are at tool zero.

Tool Control Parameters

1A: Parameters				
Parameter	Description	Tool	Value	Unit
ACQ_DOMAIN	Custom Acquisition Domain Name	MAST-B	[UMHF, LMHF]	
ACQCTL	Acquisition Control	MAST-B	[1, 1]	
CBOOTSTA_MAPC	MAMS Controller Boot Status	MAST-B	1	
CONTROLLER_FIRM_REV_MAPC	MAPC Firmware Revision of Controller Electronics	MAST-B	1840	
COMPCTL	Data Compression Control	MAST-B	[MZIPA, MZIPA]	
DHMODALCTL	Downhole/Surface Modal Computation Control	MAST-B	[OFF, OFF]	
DIGDEL	Waveform Digitizing Delay	MAST-B	[0, 0]	us
DIGDT	Sonic Waveform Digitizing Slowness	MAST-B	[0, 0]	us/ft
DIGTIME	Digitizing Time	MAST-B	[1200, 1200]	us
DIIN_WF_CHN	Dipole Inline Component Waveform Data Channel Name	MAST-B	[.]	
DIIN_WFN_CHN	Dipole Inline Component Waveform Normalization Data Channel Name	MAST-B	[.]	
DIOF_WF_CHN	Dipole Offline Component Waveform Data Channel Name	MAST-B	[.]	
DIOF_WFN_CHN	Dipole Offline Component Waveform Normalization Data Channel Name	MAST-B	[.]	
GNINT	Automatic Gain Selection Time Interval	MAST-B	[1200, 1200]	us
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3801	ft/h
MAX_TOOL_SPEED	Maximum service speed allowed for, or attained by, a logging tool.	MAST-B	3801	ft/h
MONO_WF_CHN	Monopole Component Waveform Data Channel Name	MAST-B	[SWMUH_M, SWMLH_M]	
MONO_WFN_CHN	Monopole Component Waveform Normalization Data Channel Name	MAST-B	[SWMUHN_M, SWMLHN_M]	
MSMT_LIST	Measurement List	MAST-B	[MUH, MLH]	
NUMMSMT	Number of active measurements	MAST-B	2	
PROD_MASTUI	MAST Product Class Selection	MAST-B	CBL	
SENSOR10_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #10	MAST-B	1057	
SENSOR11_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #11	MAST-B	1057	

SENSOR12_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #12	MAST-B	1057	
SENSOR13_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #13	MAST-B	1057	
SENSOR1_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #1	MAST-B	1057	
SENSOR2_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #2	MAST-B	1057	
SENSOR3_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #3	MAST-B	1057	
SENSOR4_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #4	MAST-B	1057	
SENSOR5_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #5	MAST-B	1057	
SENSOR6_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #6	MAST-B	1057	
SENSOR7_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #7	MAST-B	1057	
SENSOR8_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #8	MAST-B	1057	
SENSOR9_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #9	MAST-B	1057	
RBOOTSTA_MAPC	MAMS Receiver Boot Status	MAST-B	1	
RXSEL	Receiver Station Select	MAST-B	[[Off, Off], [Off, Off], [Off, Off], [Off, Off], [On, On], [On, On], [On, On], [On, On], [On, On], [Off, Off], [Off, Off], [Off, Off], [Off, Off]]	
SAMINT	Sonic Waveform Sampling Interval	MAST-B	[10, 10]	
SERVICE_LIST	Service Selection List	MAST-B	[DCBLVDL]	
SNSR_WF_CHN	Sensor Waveforms Data Channel Name	MAST-B	[RSWMLH, RSWMLH]	
SNSR_WFN_CHN	Sensor Waveforms Normalization Factor Channel Name	MAST-B	[SWMLHN, SWMLHN]	
SNSRSEL	Sensor Element Select	MAST-B	[[On, On], [On, On], [On, On], [On, On], [On, On], [On, On], [On, On], [On, On]]	
TX_AMP	Transmitter Amplitude Factor	MAST-B	[FULL, FULL]	
TX_WF_SIGNAL	Sonic Drive Signal	MAST-B	[PREDEFINED, PREDEFINED]	
TXSEL	Transmitter Drive Selection	MAST-B	[UM, LM]	
VDL_INT	Variable Density Log Step Interval	MAST-B	STANDARD	
CE_VDL_MODE	Variable Density Log Mode	MAST-B	STANDARD	
WF_CR_CHN	Waveform Compression Rate Channel Name	MAST-B	[WCRMLH, WCRMLH]	
WF_DEPTH_CHN	Waveform Depth Channel Name	MAST-B	[WDMUH, WDMUH]	
WF_QI_CHN	Waveform Quality Indicator Channel Name	MAST-B	[WQMLH, WQMLH]	
WFSEL	Transmitter Drive Waveform Selection	MAST-B	[mp_hf_d, mp_hf_d]	

1A

Repeat Analysis 5" = 100'

Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1A	Repeat[3]:Up	Up	35.47 ft	772.99 ft	05-Nov-2016 3:41:41 AM	05-Nov-2016 4:03:18 AM	ON	-0.18 ft	Yes
1A	Main[4]:Up	Up	33.88 ft	772.31 ft	05-Nov-2016 4:10:53 AM	05-Nov-2016 4:28:30 AM	ON	-0.79 ft	Yes

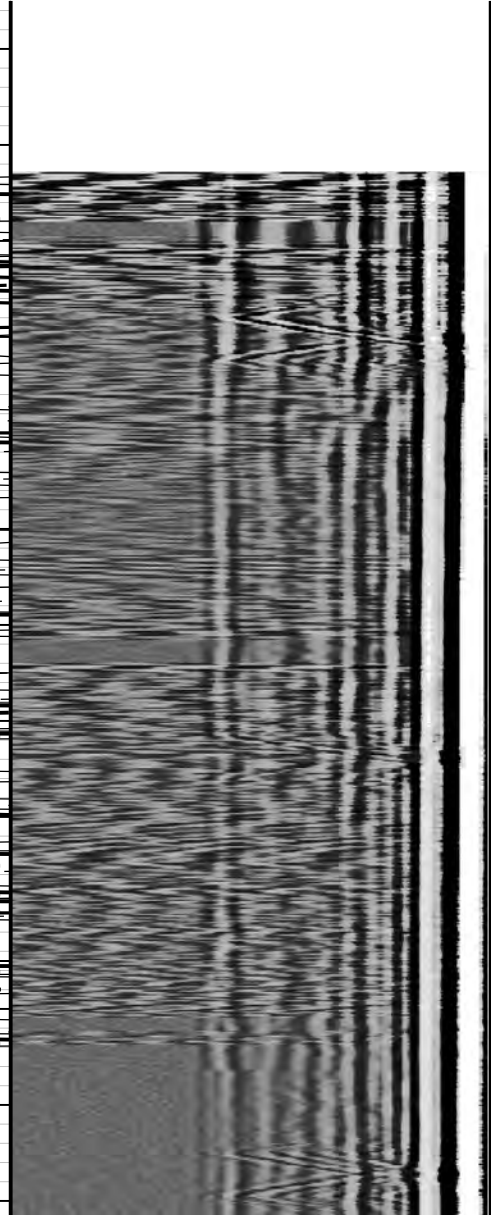
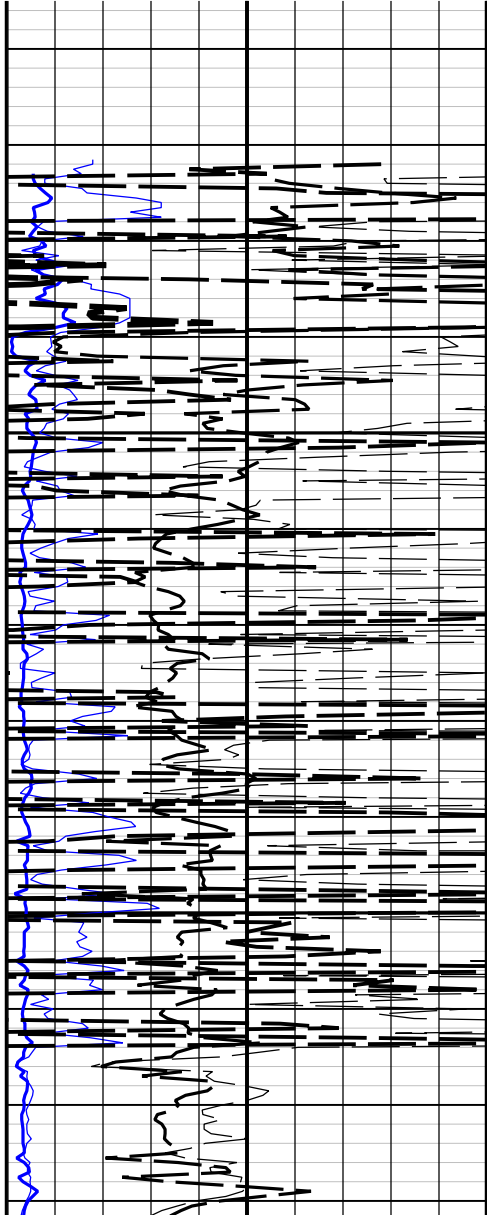
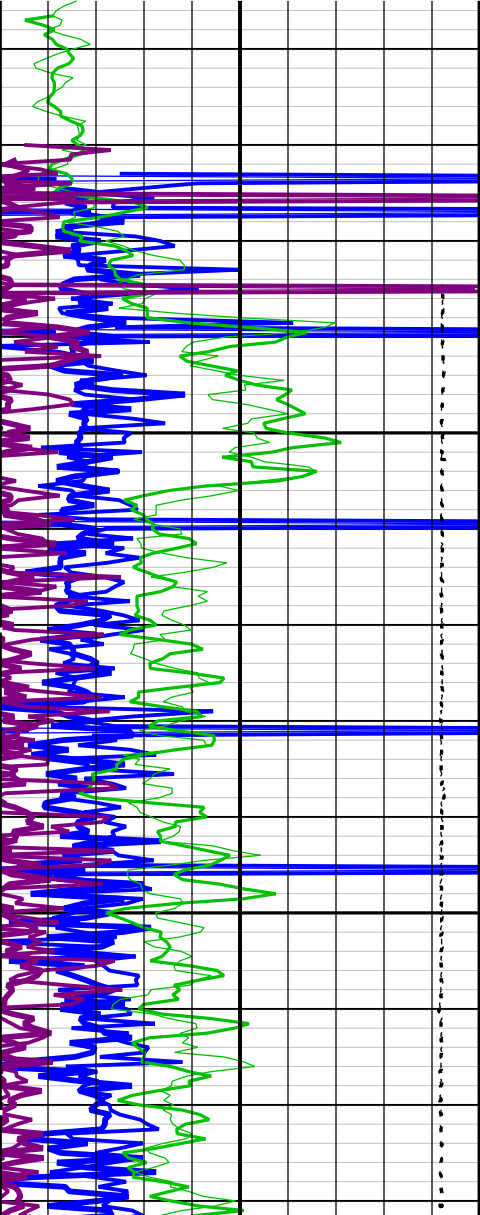
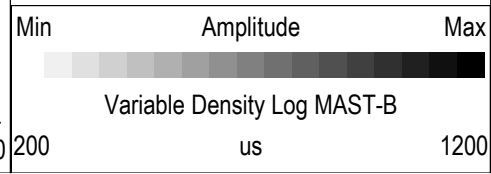
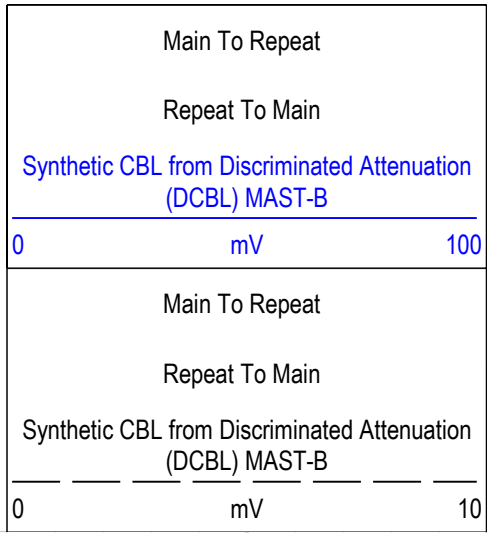
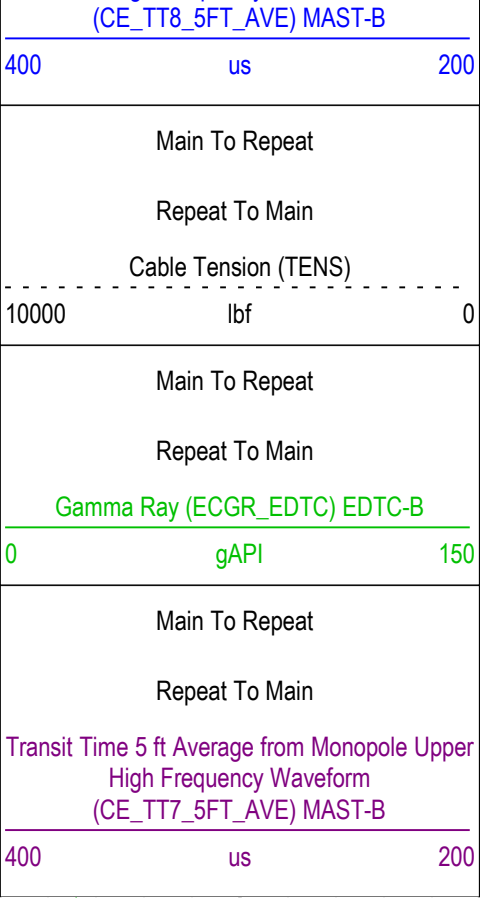
All depths are referenced to toolstring zero

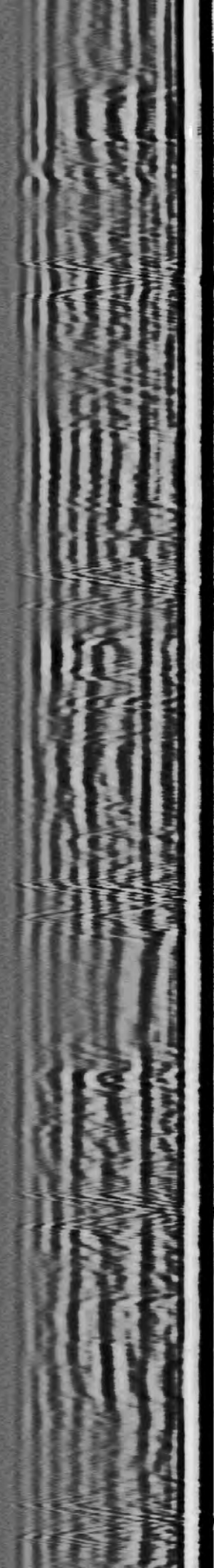
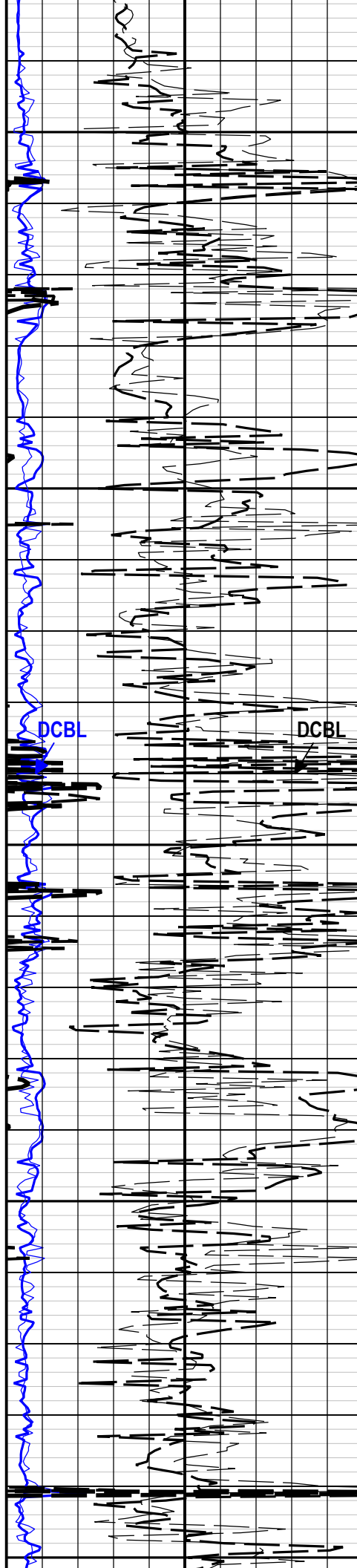
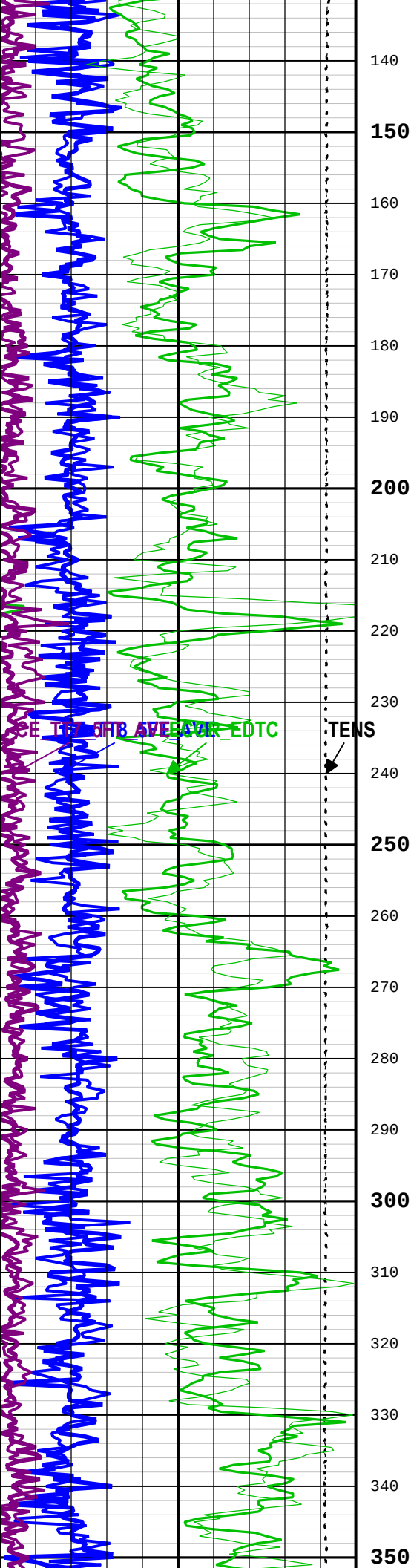
Log	Company:DCP Midstream LP Well:Zia AGI D2 1A: Main[4]:Up:S007
-----	--

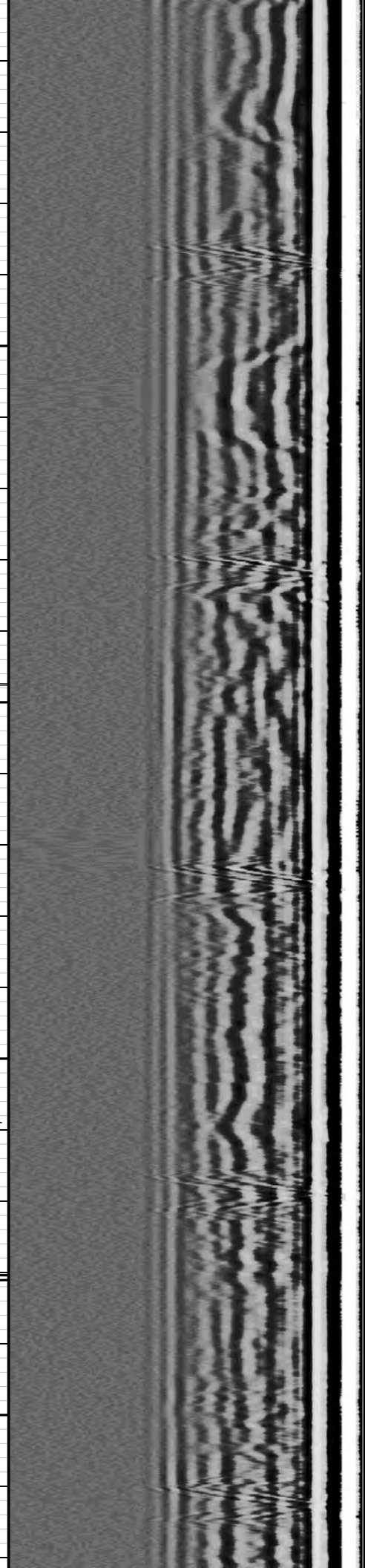
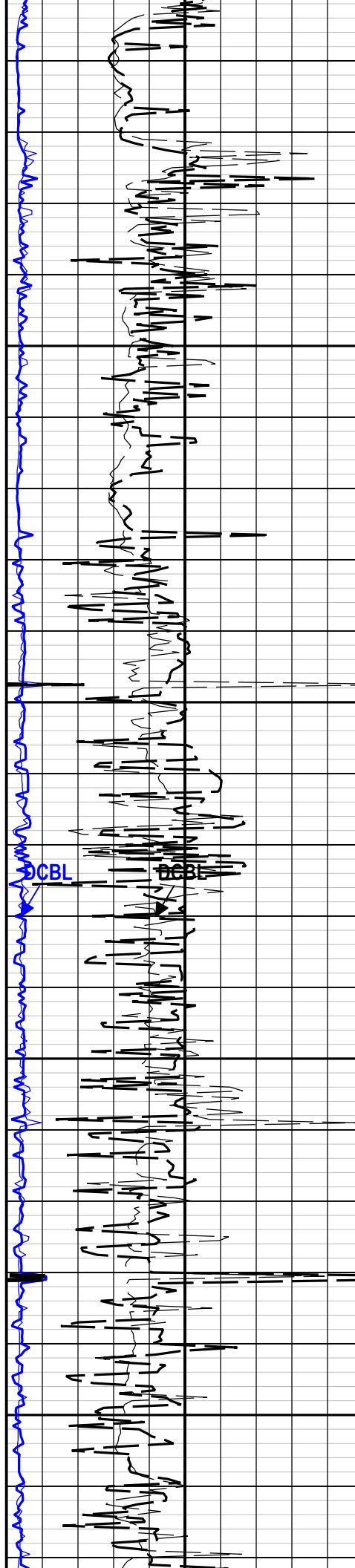
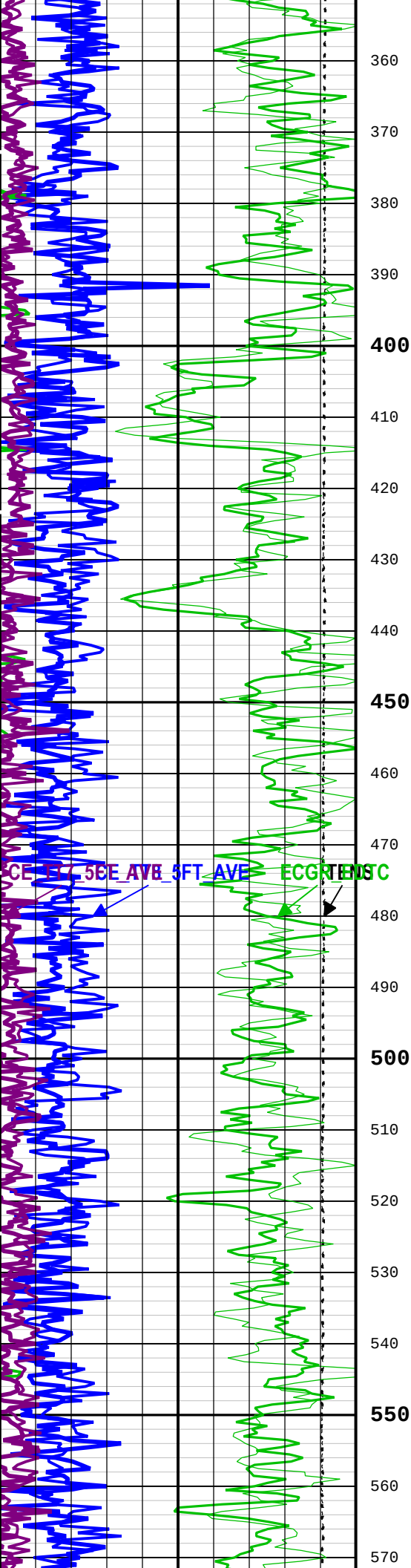
Description: MAST_CE_DCBL_3050 Format: Log (MAST_CE_DCBL_3050 RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 05-Nov-2016 16:56:37

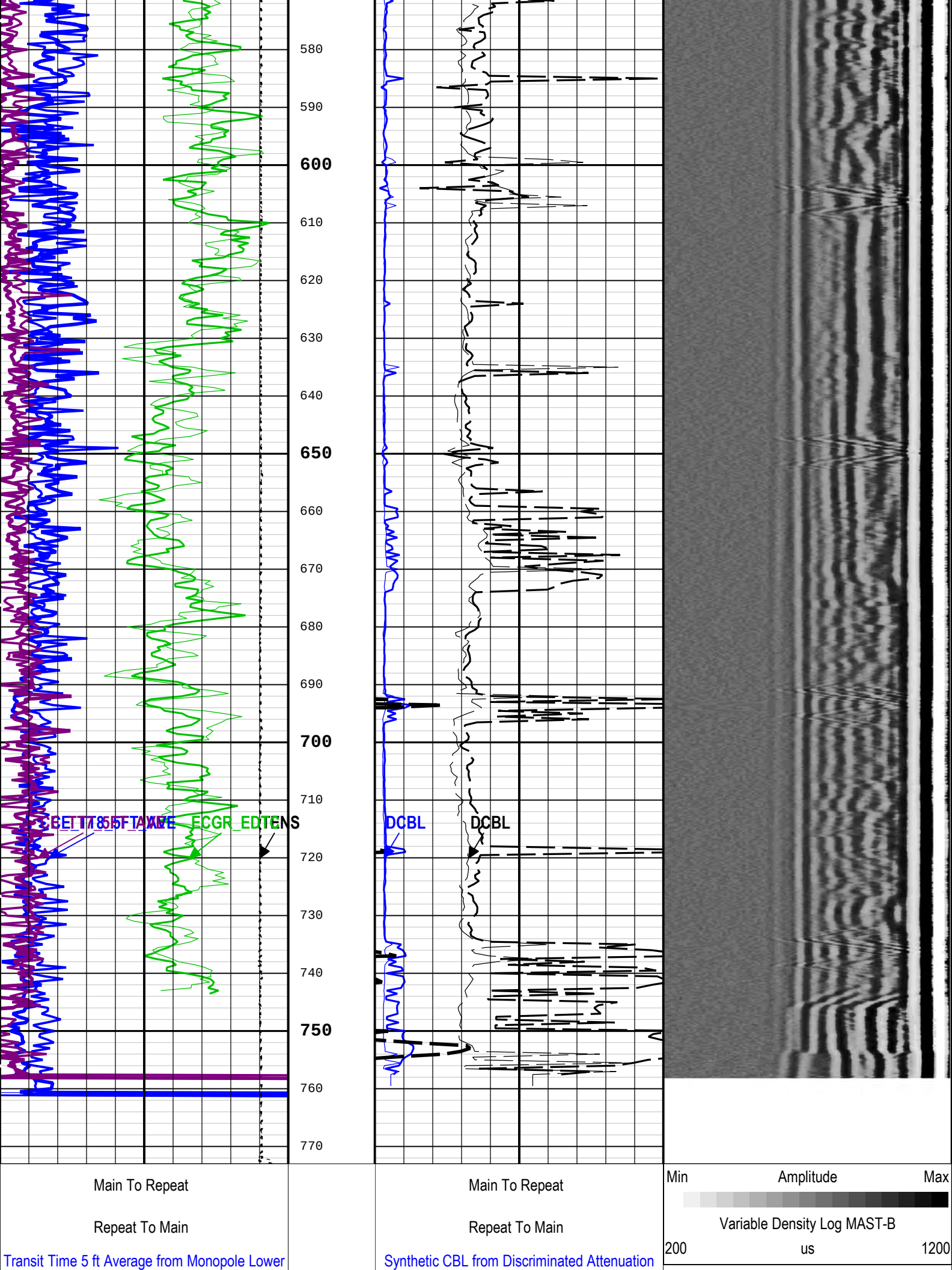
TIME_1900 - Time Marked every 60.00 (s)

Main To Repeat
Repeat To Main
Transit Time 5 ft Average from Monopole Lower High Frequency Waveform









High Frequency Waveform (CE_TT8_5FT_AVE) MAST-B		
400	us	200
Main To Repeat		
Repeat To Main		
Cable Tension (TENS)		
10000	lbf	0
Main To Repeat		
Repeat To Main		
Gamma Ray (ECGR_EDTC) EDTC-B		
0	gAPI	150
Main To Repeat		
Repeat To Main		
Transit Time 5 ft Average from Monopole Upper High Frequency Waveform (CE_TT7_5FT_AVE) MAST-B		
400	us	200

(DCBL) MAST-B		
0	mV	100
Main To Repeat		
Repeat To Main		
Synthetic CBL from Discriminated Attenuation (DCBL) MAST-B		
0	mV	10

TIME_1900 - Time Marked every 60.00 (s)

Description: MAST_CE_DCBL_3050 Format: Log (MAST_CE_DCBL_3050 RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 05-Nov-2016 16:56:37

Channel Processing Parameters				
1A: 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	26	in
CBLO	Casing Bottom (Logger)	WLSESSION	826	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	MAST-B	34	mV
CDEN	Cement Density	EDTC-B	2	g/cm3
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.5	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DT_MIN_MLH	Detection Minimum Slowness for Monopole Lower Transmitter High Frequency Firing	MAST-B	44.25	us/ft
DTF	Delta-T Fluid	Borehole	189	us/ft
FDET_LEN_MLH	Fixed Detection Time Length for Monopole Lower Transmitter High Frequency Firing	MAST-B	62.73	us
FDET_STRT_MLH	Fixed Detection Start Time for Monopole Lower Transmitter High Frequency Firing	MAST-B	442.6	us
FDET_STRT_MUH	Fixed Detection Start Time for Monopole Upper Transmitter High Frequency Firing	MAST-B	427.77	us
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
GOBO	Good Bond	MAST-B	4.78	mV
GOBO_CURR	Good Bond in Arbitrary Cement	MAST-B	4.78	mV
MATT	Maximum Attenuation	MAST-B	8.84	dB/ft
MATT_CURR	Maximum Attenuation in Arbitrary Cement	MAST-B	8.84	dB/ft
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	MAST-B	2.93	mV

Tool Control Parameters				
1A: Parameters				
Parameter	Description	Tool	Value	Unit
ACQ_DOMAIN	Custom Acquisition Domain Name	MAST-B	[UMHF, LMHF]	
ACQCTL	Acquisition Control	MAST-B	[1, 1]	
CBOOTSTA_MAPC	MAMS Controller Boot Status	MAST-B	1	
CONTROLLER_FIRM_REV_MAPC	MAPC Firmware Revision of Controller Electronics	MAST-B	1840	
COMPCTL	Data Compression Control	MAST-B	[MZIPA, MZIPA]	
DHMODALCTL	Downhole/Surface Modal Computation Control	MAST-B	[OFF, OFF]	
DIGDEL	Waveform Digitizing Delay	MAST-B	[0, 0]	us
DIGDT	Sonic Waveform Digitizing Slowness	MAST-B	[0, 0]	us/ft
DIGTIME	Digitizing Time	MAST-B	[1200, 1200]	us
DIIN_WF_CHN	Dipole Inline Component Waveform Data Channel Name	MAST-B	[.]	
DIIN_WFN_CHN	Dipole Inline Component Waveform Normalization Data Channel Name	MAST-B	[.]	
DIOF_WF_CHN	Dipole Offline Component Waveform Data Channel Name	MAST-B	[.]	
DIOF_WFN_CHN	Dipole Offline Component Waveform Normalization Data Channel Name	MAST-B	[.]	
GNINT	Automatic Gain Selection Time Interval	MAST-B	[1200, 1200]	us
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3818	ft/h
MAX_TOOL_SPEED	Maximum service speed allowed for, or attained by, a logging tool.	MAST-B	3818	ft/h
MONO_WF_CHN	Monopole Component Waveform Data Channel Name	MAST-B	[SWMUH_M, SWMLH_M]	
MONO_WFN_CHN	Monopole Component Waveform Normalization Data Channel Name	MAST-B	[SWMUHN_M, SWMLHN_M]	
MSMT_LIST	Measurement List	MAST-B	[MUH, MLH]	
NUMMSMT	Number of active measurements	MAST-B	2	
PROD_MASTUI	MAST Product Class Selection	MAST-B	CBL	
SENSOR10_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #10	MAST-B	1057	
SENSOR11_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #11	MAST-B	1057	
SENSOR12_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #12	MAST-B	1057	
SENSOR13_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #13	MAST-B	1057	
SENSOR1_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #1	MAST-B	1057	
SENSOR2_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #2	MAST-B	1057	
SENSOR3_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #3	MAST-B	1057	
SENSOR4_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #4	MAST-B	1057	
SENSOR5_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #5	MAST-B	1057	
SENSOR6_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #6	MAST-B	1057	
SENSOR7_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #7	MAST-B	1057	
SENSOR8_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #8	MAST-B	1057	
SENSOR9_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #9	MAST-B	1057	
RBOOTSTA_MAPC	MAMS Receiver Boot Status	MAST-B	1	
RXSEL	Receiver Station Select	MAST-B	[[Off, Off], [Off, Off], [Off, Off], [Off, Off], [On, On], [On, On], [On, On], [On, On], [On, On], [On, On], [Off, Off], [Off, Off], [Off, Off], [Off, Off]]	
SAMINT	Sonic Waveform Sampling Interval	MAST-B	[10, 10]	
SERVICE_LIST	Service Selection List	MAST-B	[DCBLVDL]	
SNSR_WF_CHN	Sensor Waveforms Data Channel Name	MAST-B	[RSWMUH, RSWMLH]	
SNSR_WFN_CHN	Sensor Waveforms Normalization Factor Channel Name	MAST-B	[SWMUHN, SWMLHN]	
SNSRSEL	Sensor Element Select	MAST-B	[[On, On], [On, On], [On, On], [On, On], [On, On], [On, On], [On, On], [On, On], [On, On], [On, On]]	
TX_AMP	Transmitter Amplitude Factor	MAST-B	[FULL, FULL]	
TX_WF_SIGNAL	Sonic Drive Signal	MAST-B	[PREDEFINED]	

MP_HF_SIGNAL	Compressor Drive Signal	MAST-B	[PREDEFINED, PREDEFINED]	
TXSEL	Transmitter Drive Selection	MAST-B	[UM, LM]	
VDL_INT	Variable Density Log Step Interval	MAST-B	STANDARD	
CE_VDL_MODE	Variable Density Log Mode	MAST-B	STANDARD	
WF_CR_CHN	Waveform Compression Rate Channel Name	MAST-B	[WCRMUH, WCRMLH]	
WF_DEPTH_CHN	Waveform Depth Channel Name	MAST-B	[WDMUH, WDMLH]	
WF_QI_CHN	Waveform Quality Indicator Channel Name	MAST-B	[WQMUH, WQMLH]	
WFSEL	Transmitter Drive Waveform Selection	MAST-B	[mp_hf_d, mp_hf_d]	

Company: DCP Midstream LP

Schlumberger

Well: Zia AGI D2

Field: AGI; Devonian Exploration

County:

State: New Mexico

Cement Bond Log

Gamma Ray

FIRST INTERMEDIATE CASING CEMENT BOND LOGS

- Cement Bond Log
- VDL Wide Prints
- Isolation Scanner / Cement Evaluation Field Print

Company: DCP Midstream LP

Well: Zia AGI D2

Field: AGI Devonian Exploration

County: Lea State: New Mexico

Cement Bond Log			
Gamma Ray - CCL			
Location:		Elev.:	
1893' FSL & 950' FWL		K.B. 3572.00 ft	
Section: 19 Township: T19S Abstract: R32E		G.L. 3547.00 ft	
Permanent Datum:		Elev.:	
Log Measured From:		25.00 ft	
Drilling Measured From:		above Perm.Datum	
API Serial No.	Section:	Township:	Abstract:
30-025-42207	19	T19S	R32E
Logging Date		10-Nov-2016	

Run Number	3A
Depth Driller	2555.00 ft
Schlumberger Depth	2470.00 ft
Bottom Log Interval	2470.00 ft
Top Log Interval	100.00 ft
Casing Fluid Type	Fresh Water
Salinity	
Density	8.5 lbm/gal
Fluid Level	8.00 ft
BIT/CASING/TUBING STRING	
Bit Size	17.50 in
From	826.00 ft
To	2555.00 ft
Casing/Tubing Size	13.375 in
Weight	61 lbm/ft
Grade	N/A
From	0.00 ft
To	2550.00 ft
Max Recorded Temperatures	
Logger on Bottom	10-Nov-2016 13:29:00
Unit Number	2140 Midland
Recorded By	Stephanie Anderson
Witnessed By	Jared Smith

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.

Contents
1. Header
2. Disclaimer
3. Contents
4. Remarks and Equipment Summary
5. Depth Summary
6. 3A Main Pass 5" = 100'
6.1 Integration Summary
6.2 Software Version
6.3 Composite Summary
6.4 Log (CH CBL VDL 5)
6.5 Parameter Listing
7. 3A Repeat Analysis 5" = 100'
7.1 Composite Summary
7.2 Log (CH CBL VDL RA)
8. Tail

Remarks and Equipment Summary

3A: Toolstring				3A: Remarks
Equip name	Length	MP name	Offset	Logging Objective: Cement and corrosion evaluation from TD to Surface. Toolstring run as per toolsketch. 2 PPCs and 2 Inlines used for centralization. SLB TD: 2470ft. Main and repeat pass correlated to GR in ' Borehole Profile Log' by Schlumberger on 08-Nov-2016. Correlated to GR peaks at 2341ft, 2225 ft, 2095ft. No pressure applied as per client request. Drilling fluid: Fresh water, Annular fluid:10# Brine. Casing Info: 13.375in 61#. Casing ER: 6.6875in, IR: 6.2575in, Thickness: .43in. Cement Information: 13.5lb Lead, 14.8lb Tail. Fluid slowness: Automatic, Acoustic Impedance: Inversion Normalization. IBC main pass logged in 10deg 6in.
LEH-QC	56.86			
CAL-YA:1	54.4			
556				
CAL-YA:15		CCL	53.61	
56				
EDTC-B:8	50.9			
360				
EDTH-B:87				
01				
EDTG-A:7		CTEM	47.4	
7275		ACCZ	0.00	
EDTC-B:83		HV	0.00	
60		Gamma	45.53	
PPC-B[2]	44.4	Ray		
:8225		TelStatu	44.4	
PPC-B:822		s		
5		PPC-B C	43.25	
		alipers		
ASLT-B:E	37.88			
NP41				
ASLT-BB:E				
NP41				
		CBL_UP	31.35	
		VDL_UP	30.35	
		RX_ARR	28.85	
		AY		
		VDL_LO	27.35	
		W		
		DT_DD	26.85	
		BHC		
		CBL_LO	26.35	
		W		

PPC-B[1] 23.23

:8080
PPC-B:808
0

PPC-B C 22.08
alipers

USIT-E:99 16.71

2
ECH-MFA:
1964
USAC-A:9
92
USIS-A:27
39
USSC-B:17
07
IBCS-C:79
0
FAR-SENS
OR:4482
NEAR-SEN
SOR:4483
USI-SENS
OR:4488
EMITTER-
SENSOR:4
491

USI Sen 1.07
sor

TOOL_ZERO

Lengths are in ft

Maximum Outer Diameter = 6.689 in

Line: Sensor Location, Value: Gating Offset

All measurements are relative to TOOL_ZERO

Depth Summary

3A

Depth Measuring Device

Type	IDW-B
Serial Number	7339
Calibration Date	25-Jun-2016
Calibrator Serial Number	34
Calibration Cable Type	7-39PI XXS
Wheel Correction 1	-4
Wheel Correction 2	-4

Tension Device

Type	CMTD-B/A
Serial Number	1500
Calibration Date	05-Nov-2016

Calibrator Serial Number	26		
Number of Calibration Points	10		
Calibration Root Mean Square Error	8		
Calibration Peak Error	15		

Logging Cable

Type	7-39PI-XXS		
Serial Number	F715186		
Length	20100.00 ft		
Conveyance Type	Wireline		
Rig Type	Land		

3A:Depth Control Parameters

Depth Control Remarks

Log Sequence	Subsequent Trip To the Well	IDW used as primary depth control.
Reference Log Name	Borehole Profile Log	Z-Chart used as secondary depth control.
Reference Log Run Number	2A	
Reference Log Date	08-Nov-2016	
Subsequent Trip Down Log Correction		

3A

Main Pass 5" = 100'

Software Version

Acquisition System	Version
Maxwell 2016 SP1	6.1.58882.3100
Application Patch	Wireline_Hotfix-Perfo-2016SP1_6.1.63773
	Wireline_Hotfix-RTB-2016SP1_6.1.68160
	Wireline_NPD-PNX-2016SP1_6.1.74487

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
3A	Main[2]:Up	Up	64.22 ft	2474.14 ft	10-Nov-2016 2:15:18 PM	10-Nov-2016 3:14:23 PM	ON	3.44 ft	No

All depths are referenced to toolstring zero

Log

Company:DCP Midstream LP Well:Zia AGI D2

3A: Main[2]:Up:S007

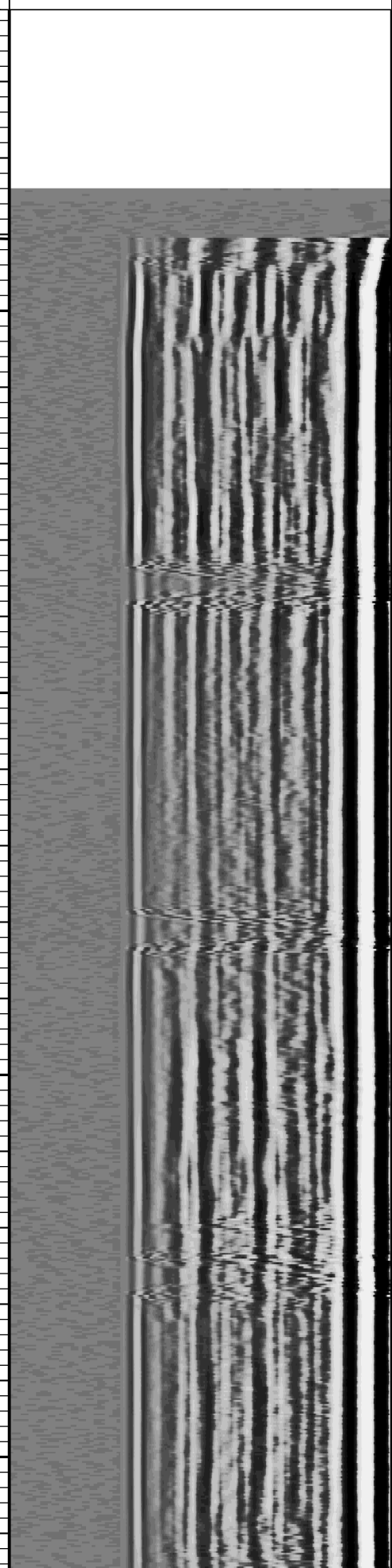
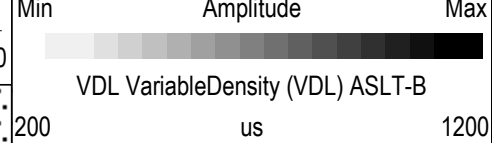
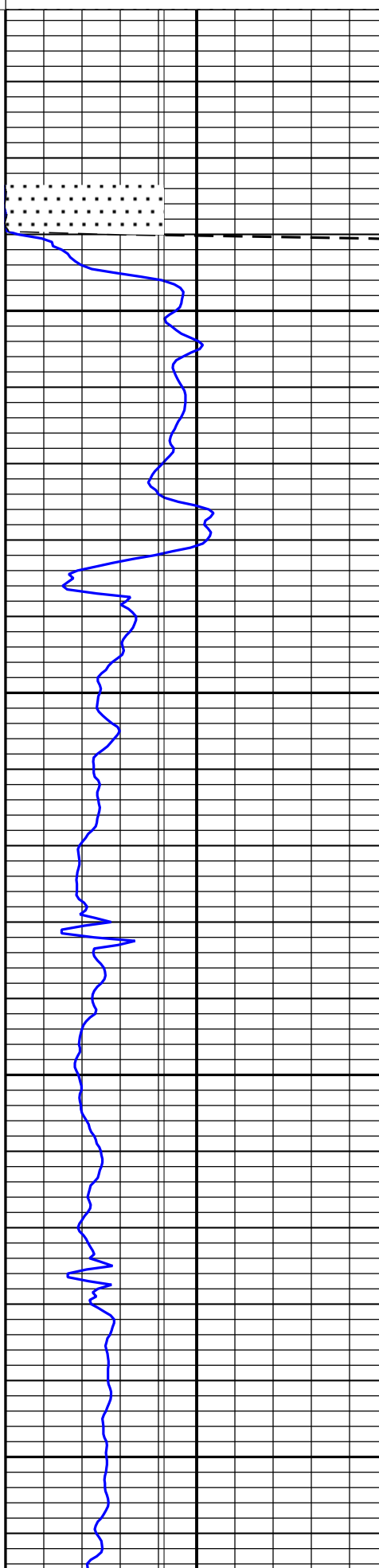
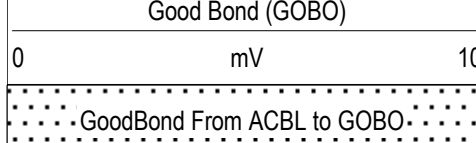
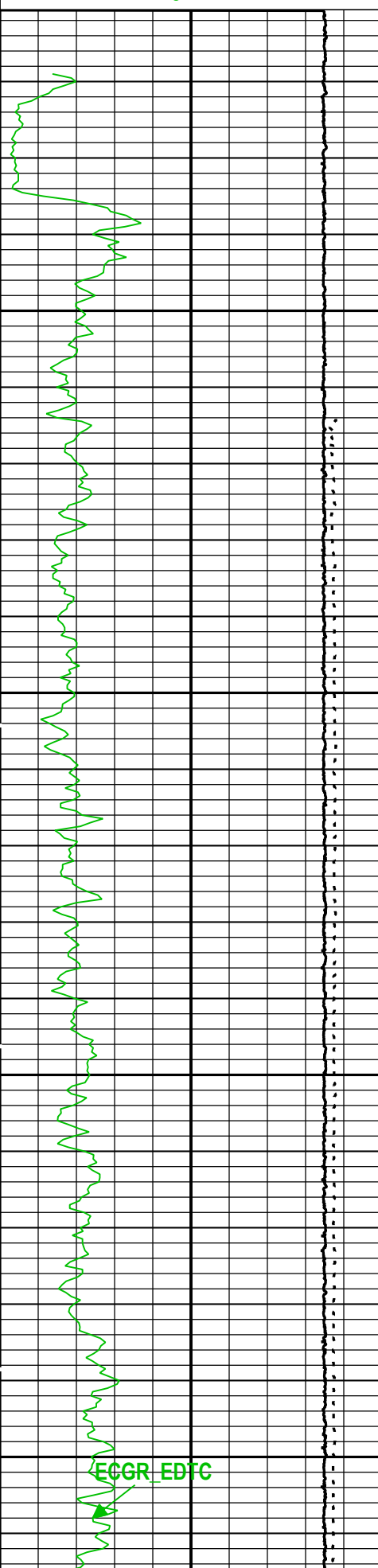
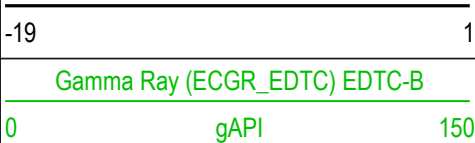
Description: CBL_VDL Format: Log (CH CBL VDL 5) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 10-Nov-2016 16:20:43

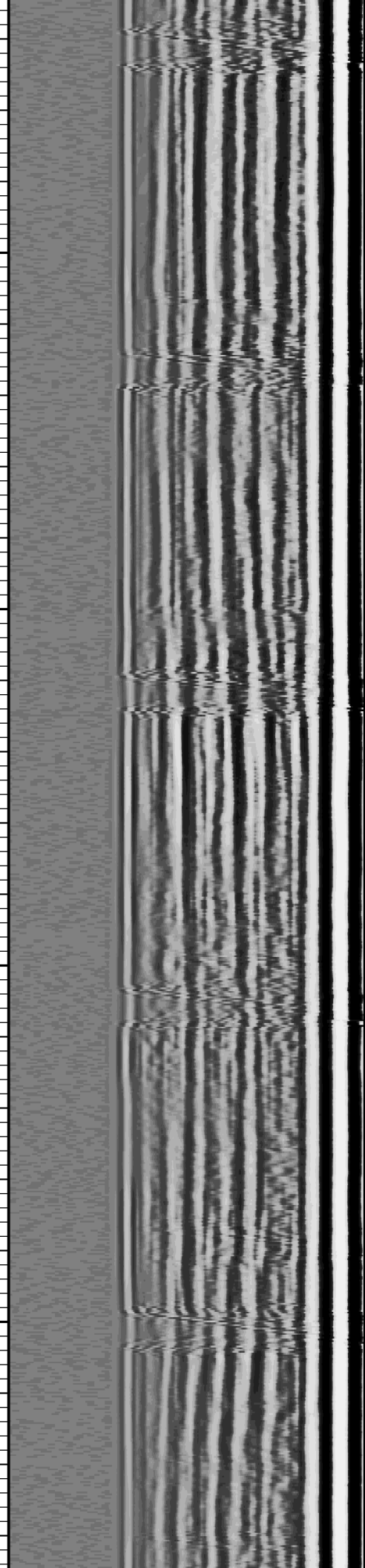
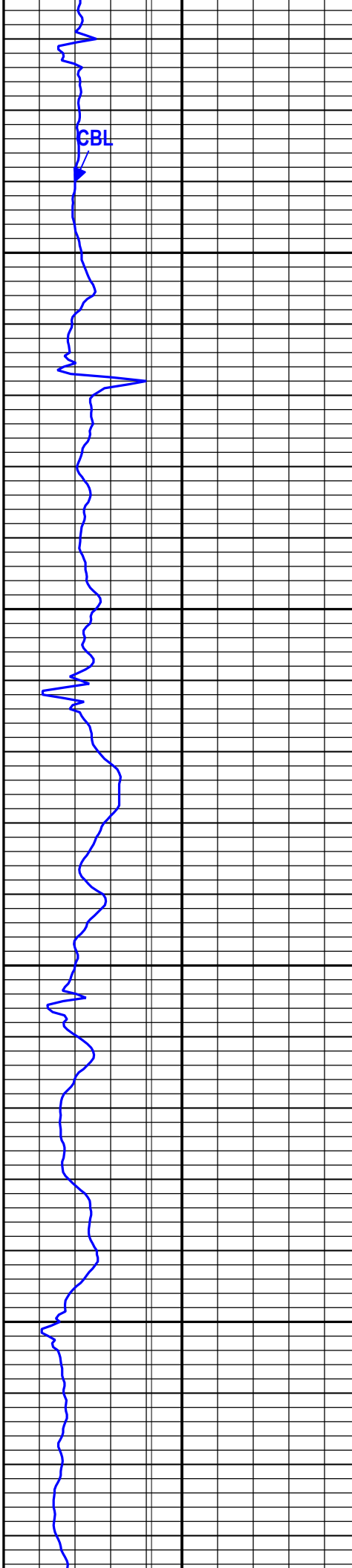
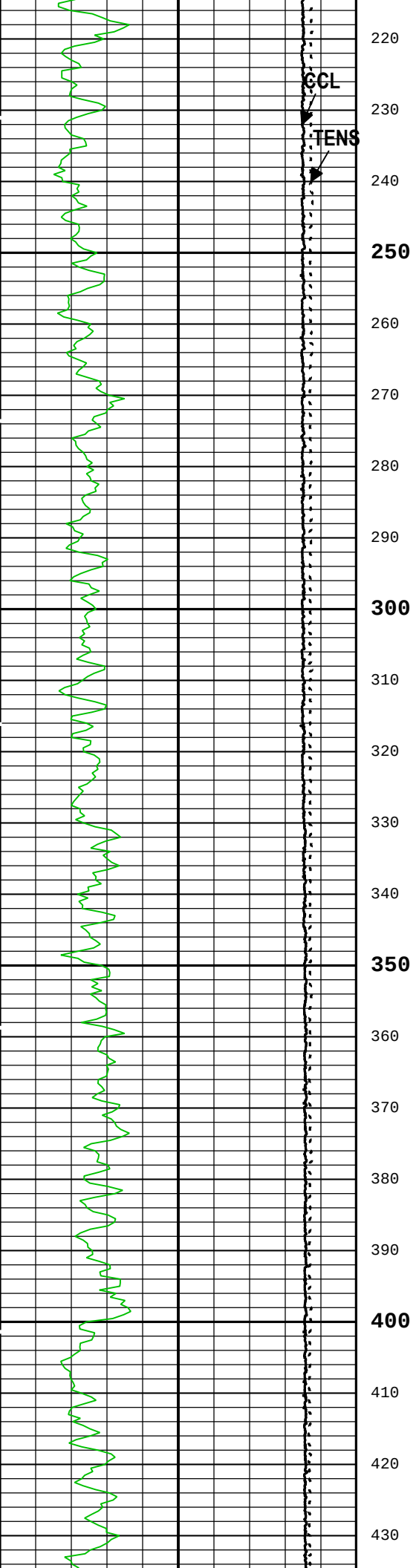
Channel	Source	Sampling
CBL	ASLT-B:ASLT-BB:ASLT-BB	6in
CCL	CAL-YA:CAL-YA:CAL-YA	1in
GR	EDTC-B:EDTC-B:EDTC-B	6in
TENS	WLWorkflow	1in
TIME_1900	WLWorkflow	0.1in

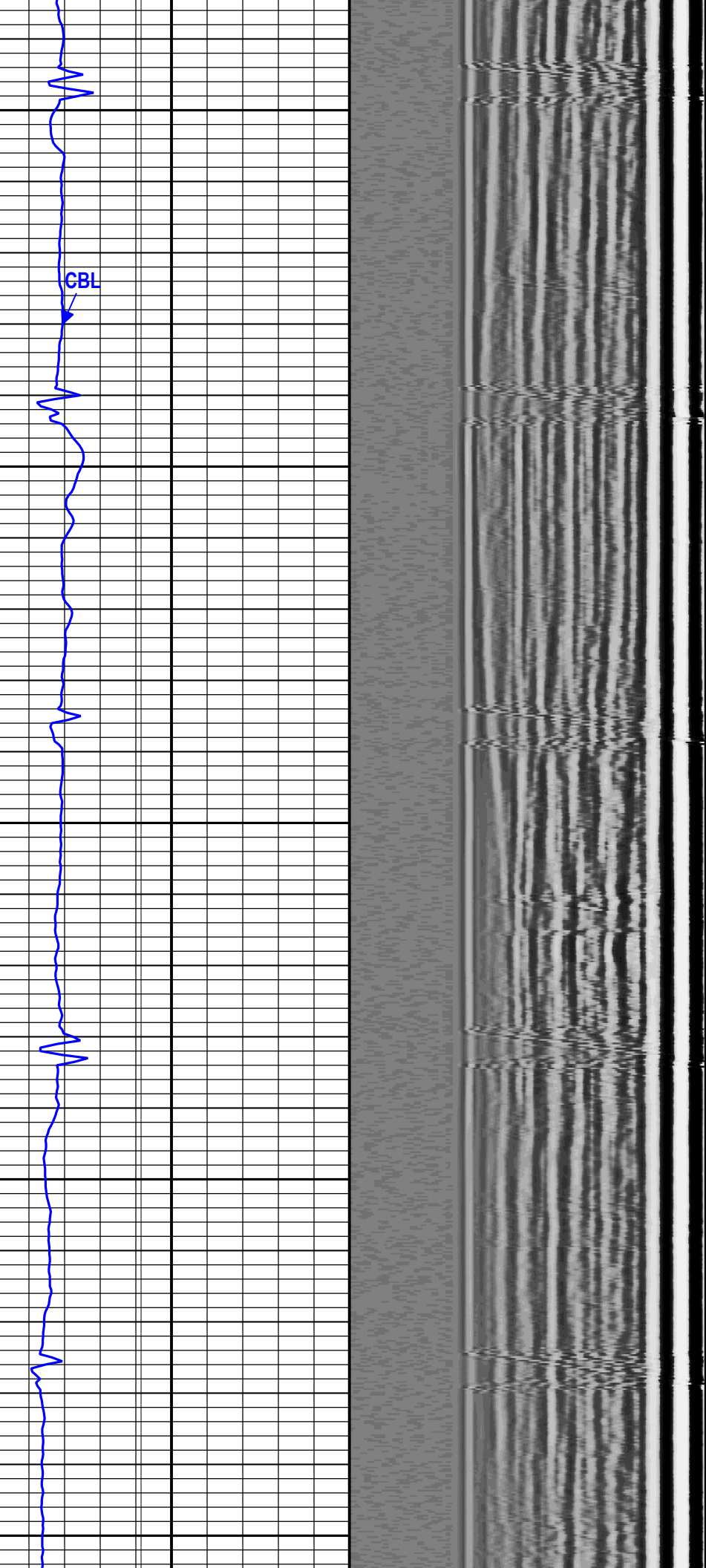
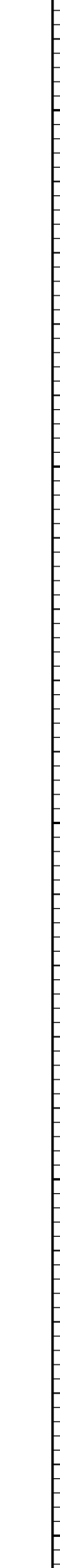
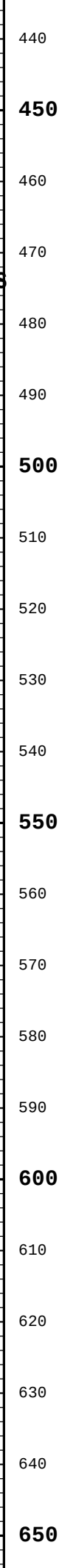
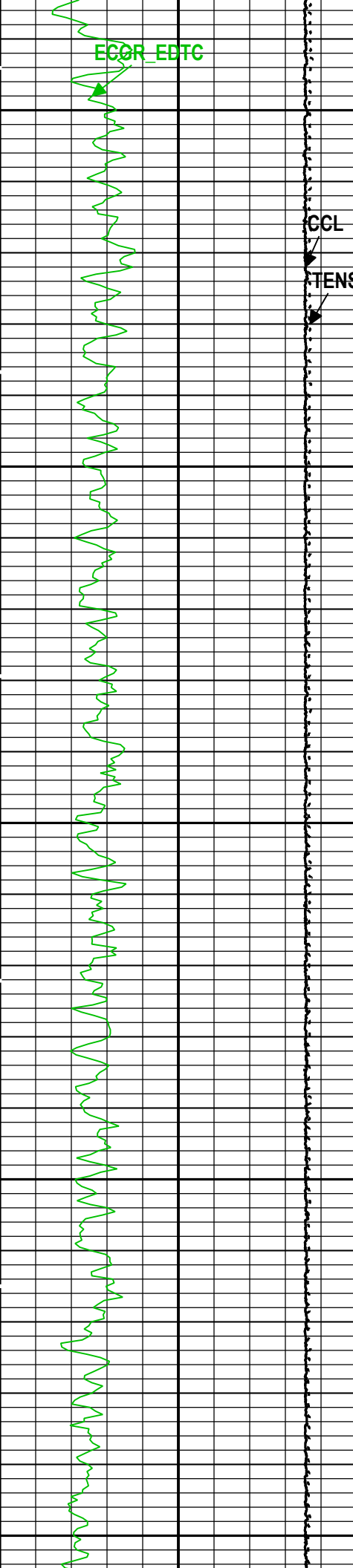
TIME_1900 - Time Marked every 60.00 (s)

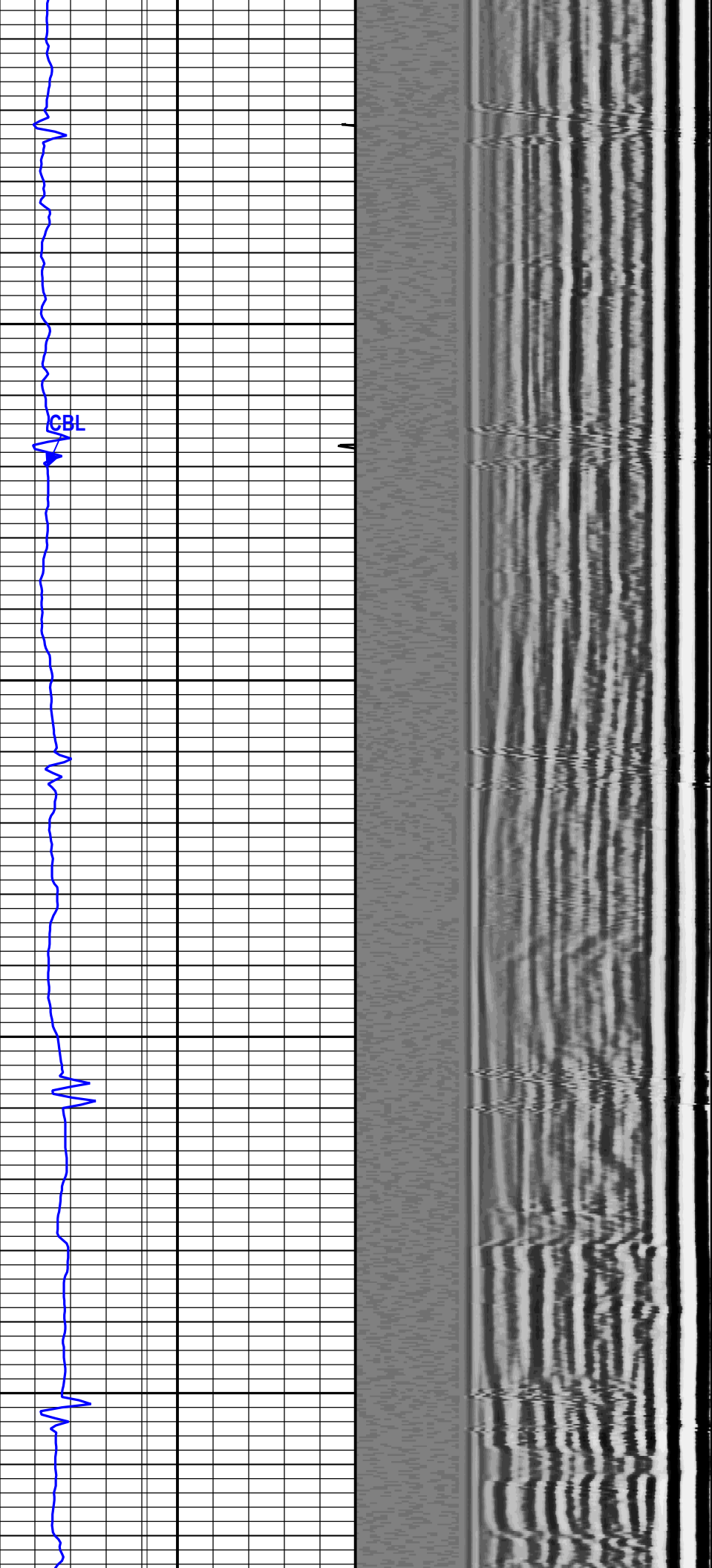
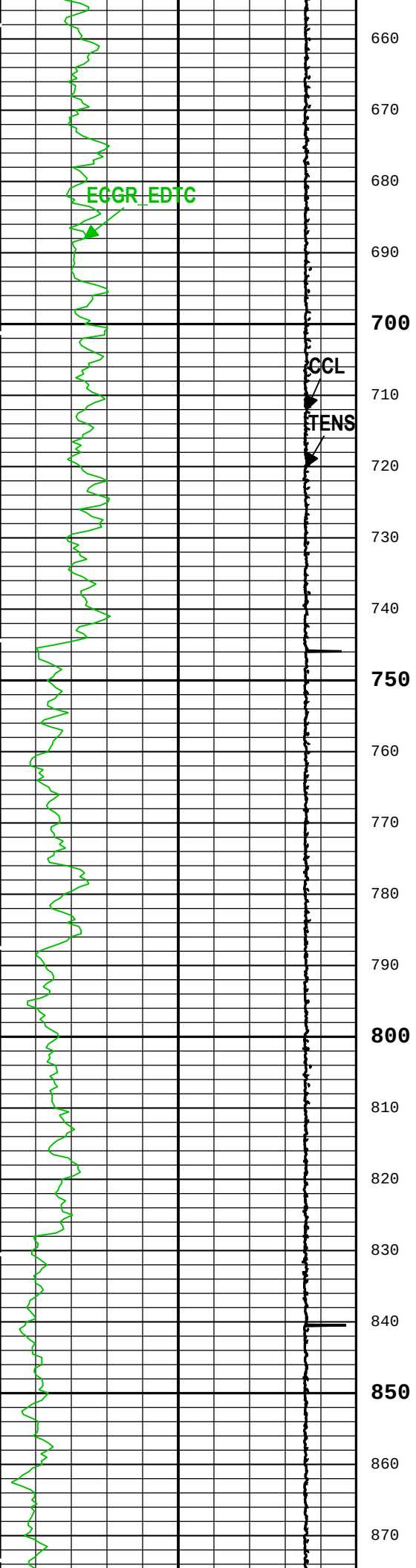
Cable Tension (TENS)	
10000	0
lbf	
Casing Collar Locator Amplitude (CCL) CAL-YA	

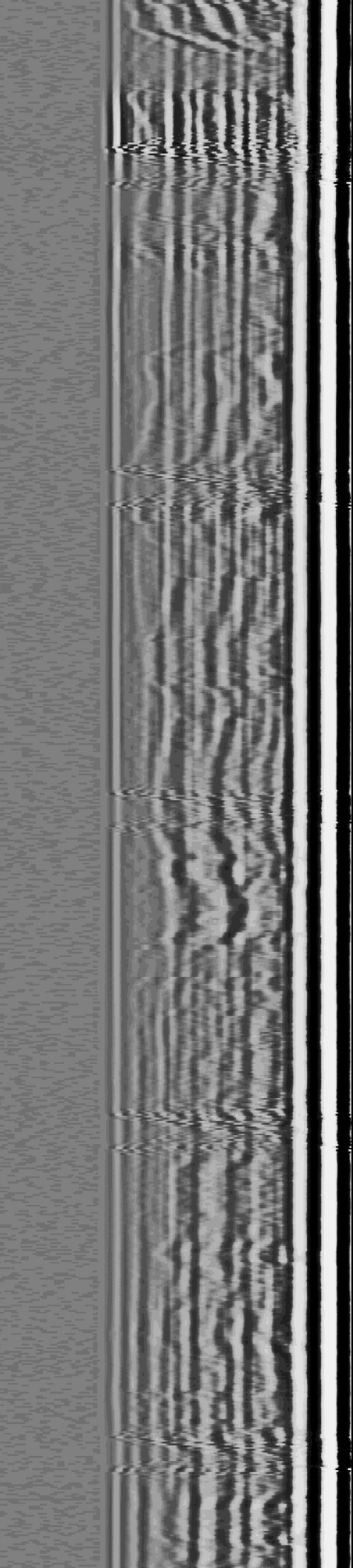
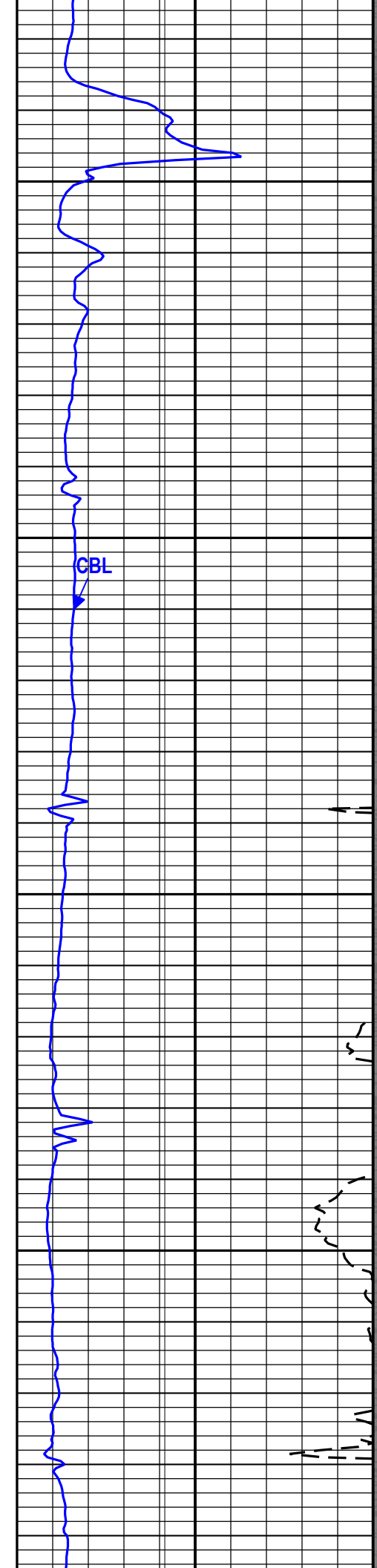
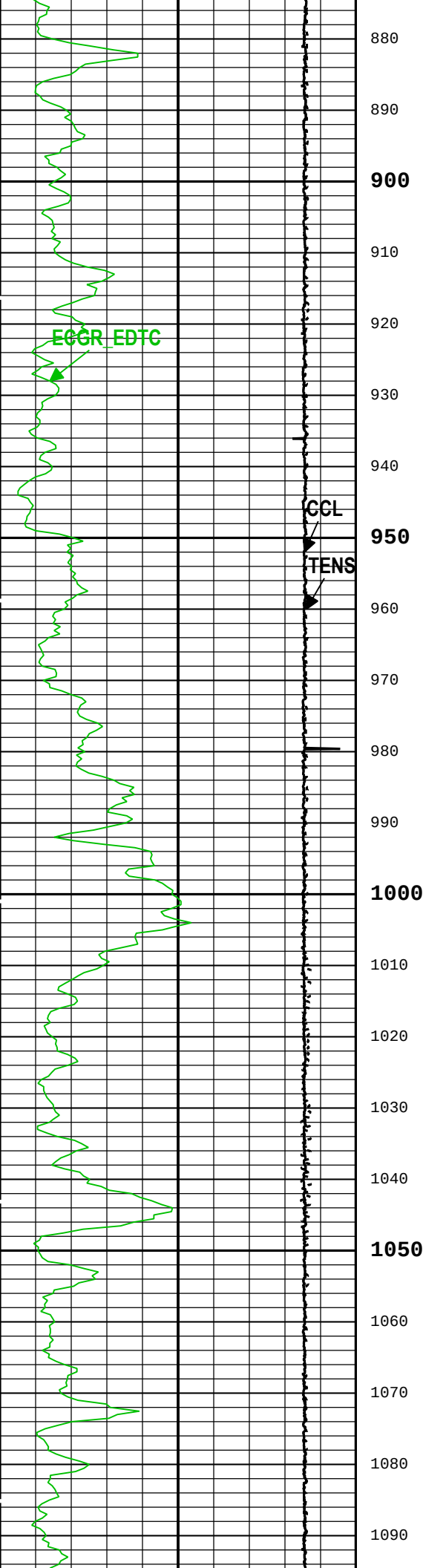
CBL Amplitude (CBL) ASLT-B		
0	mV	100
CBL Amplitude (CBL) ASLT-B		
0	mV	10

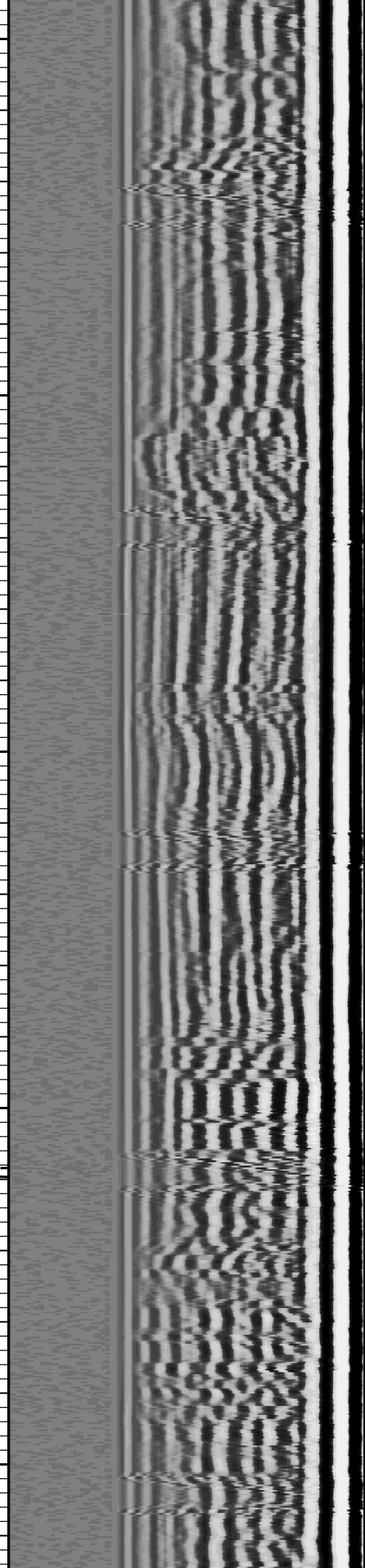
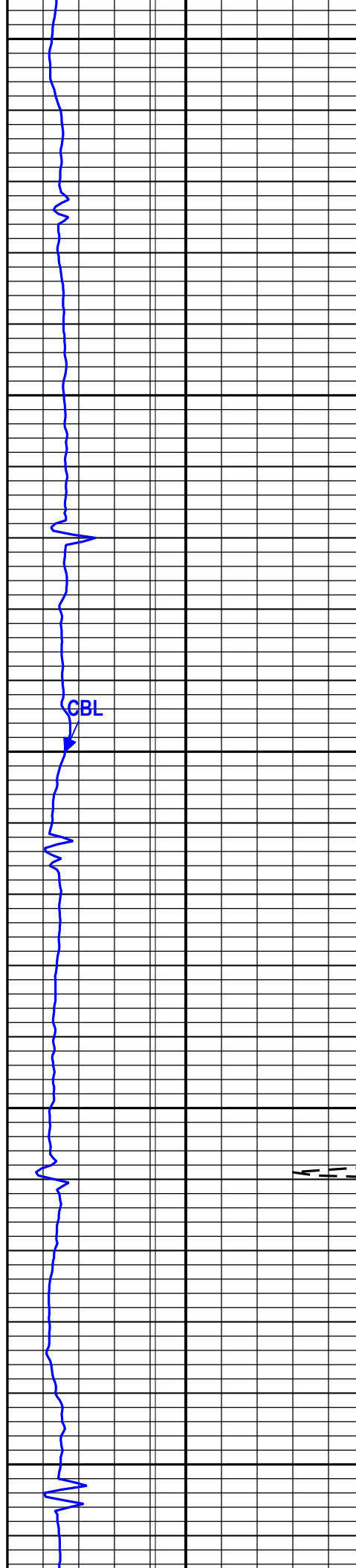
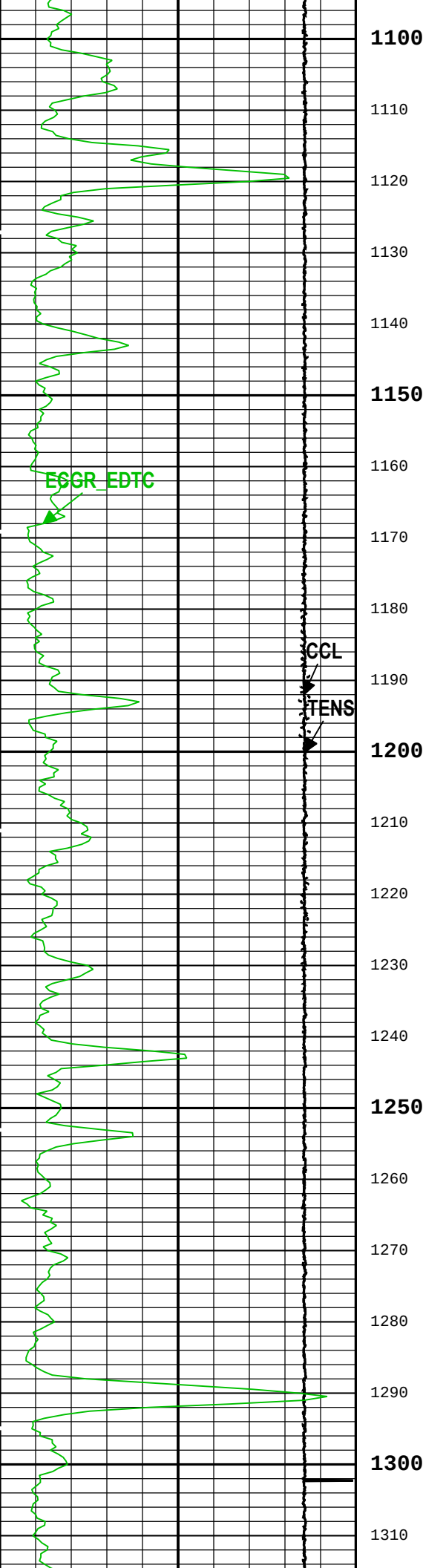


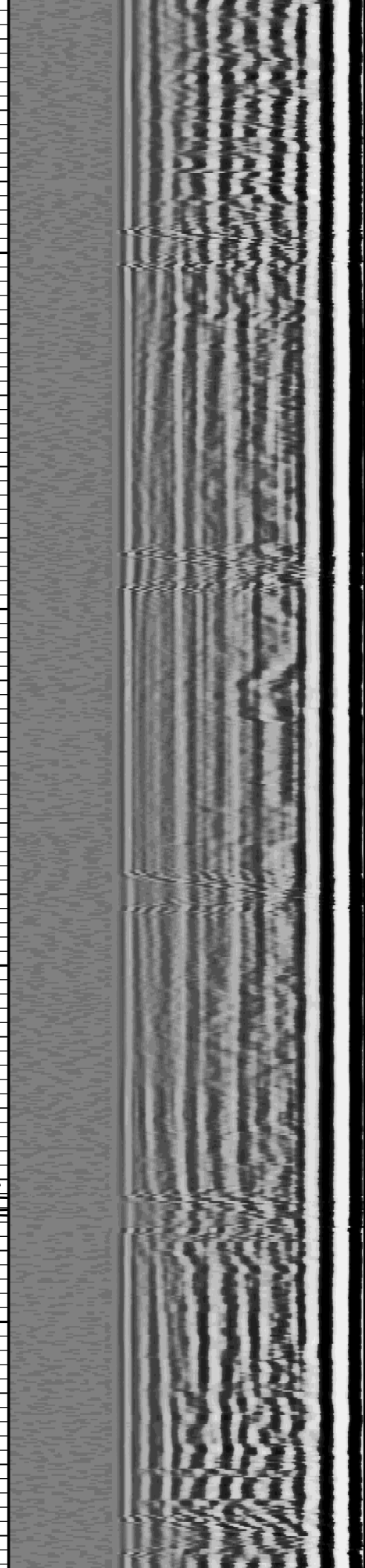
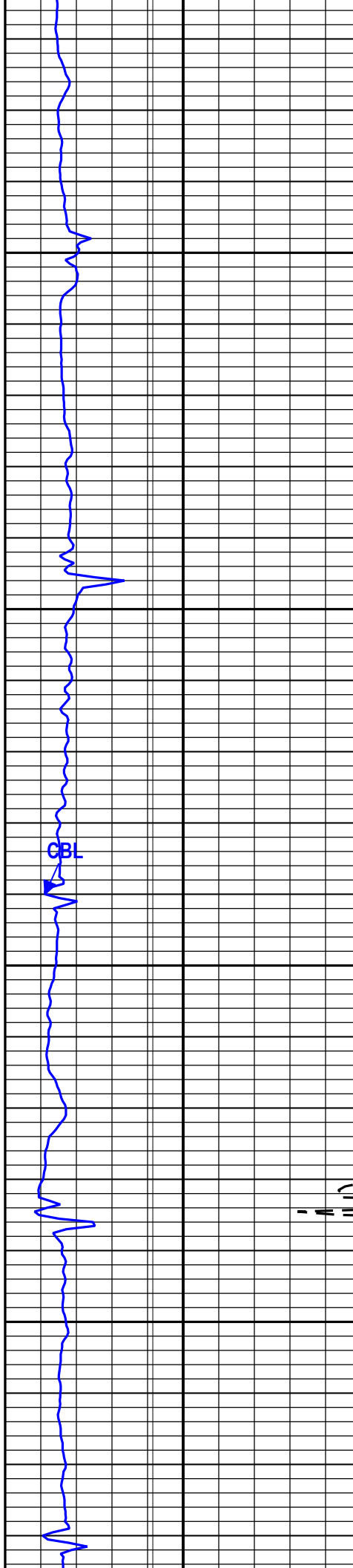
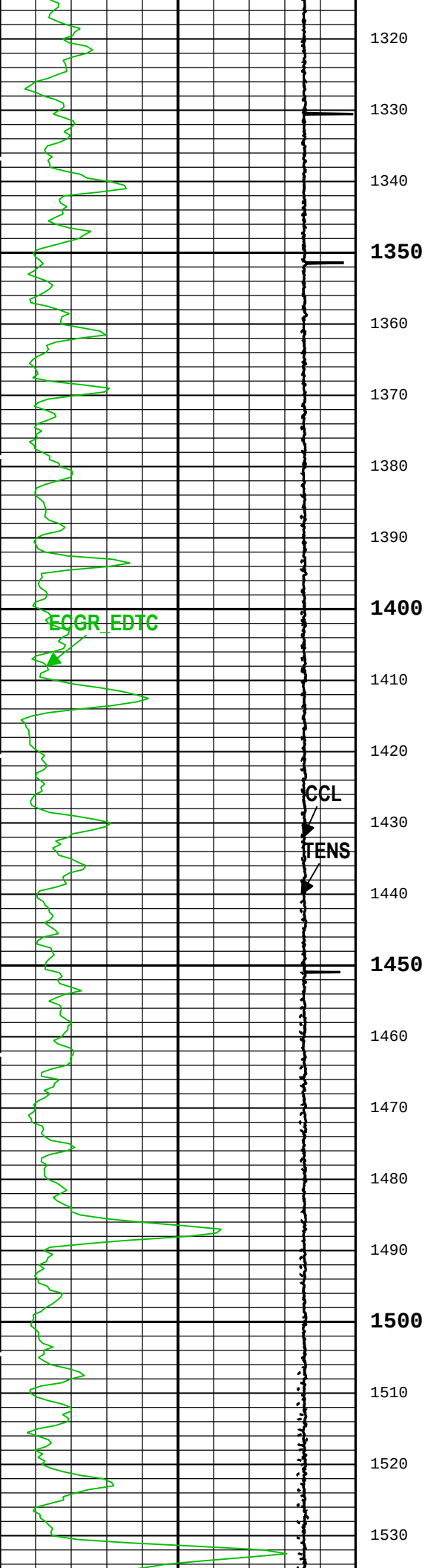


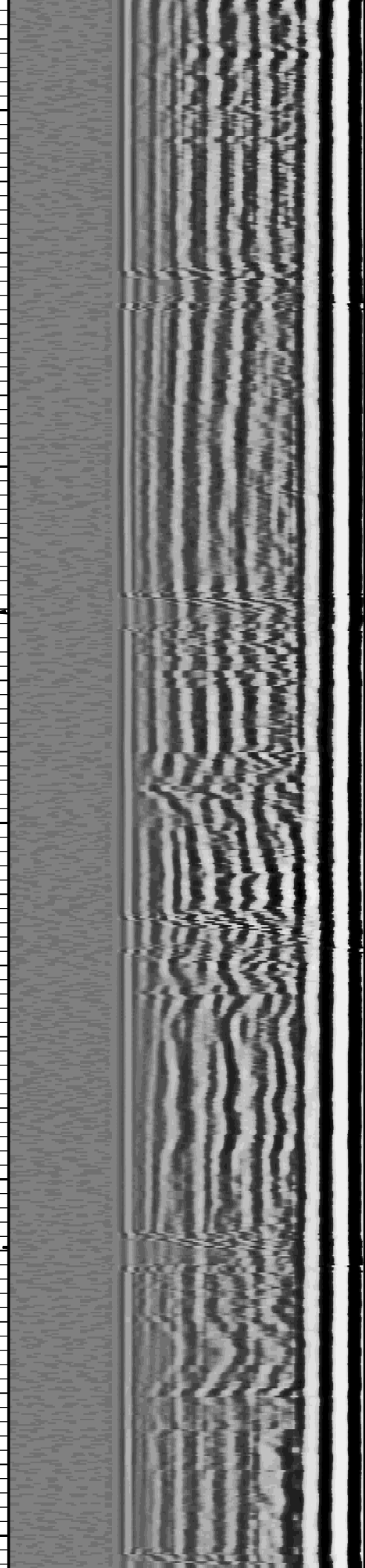
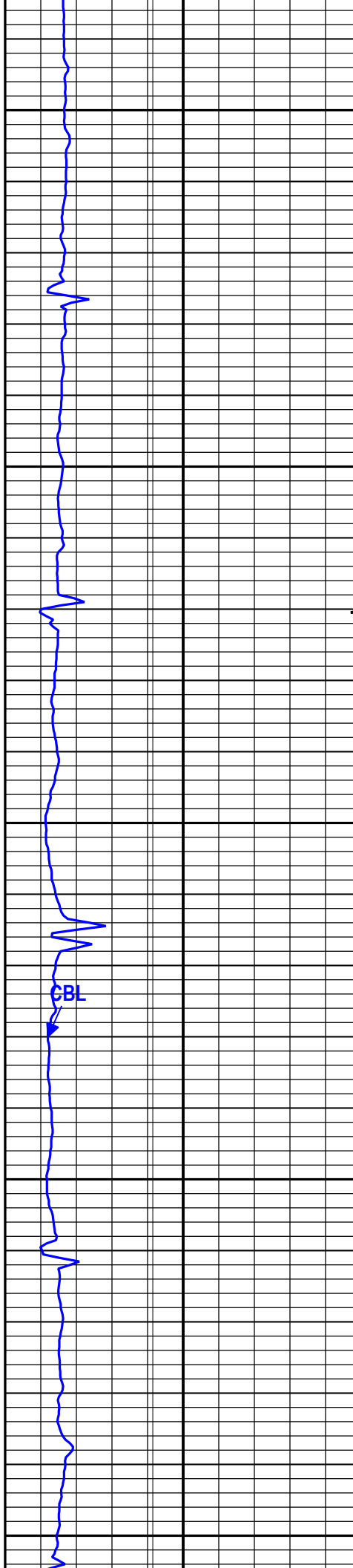
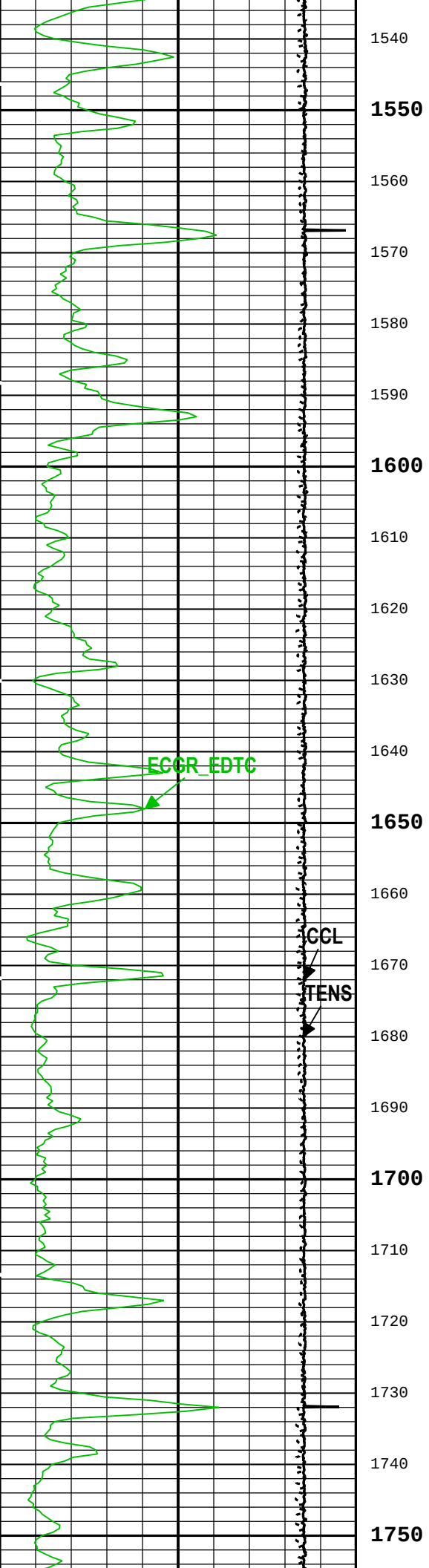


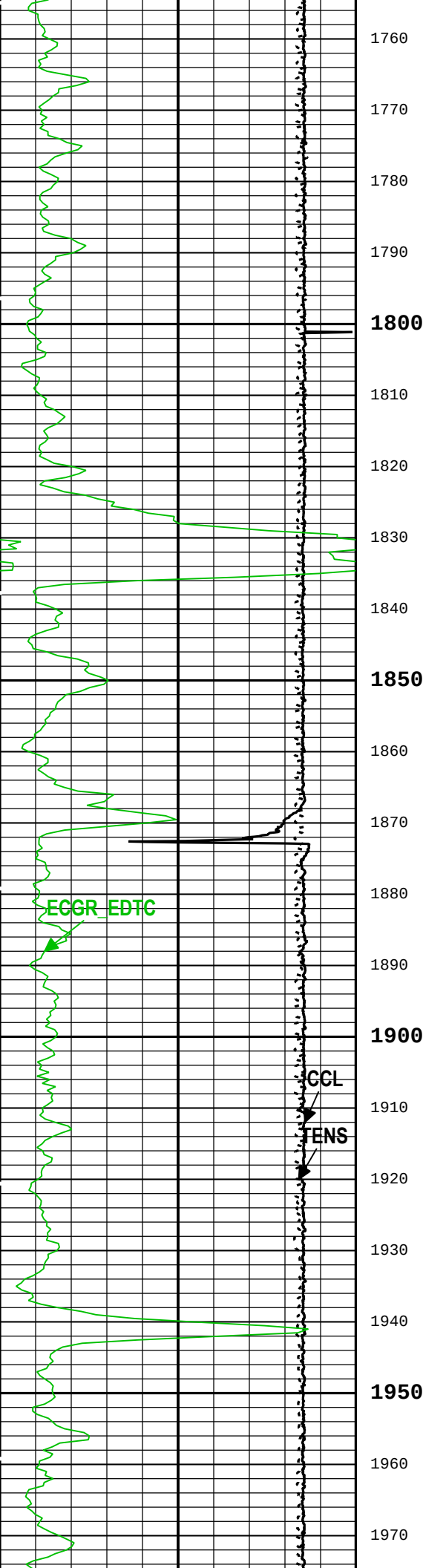




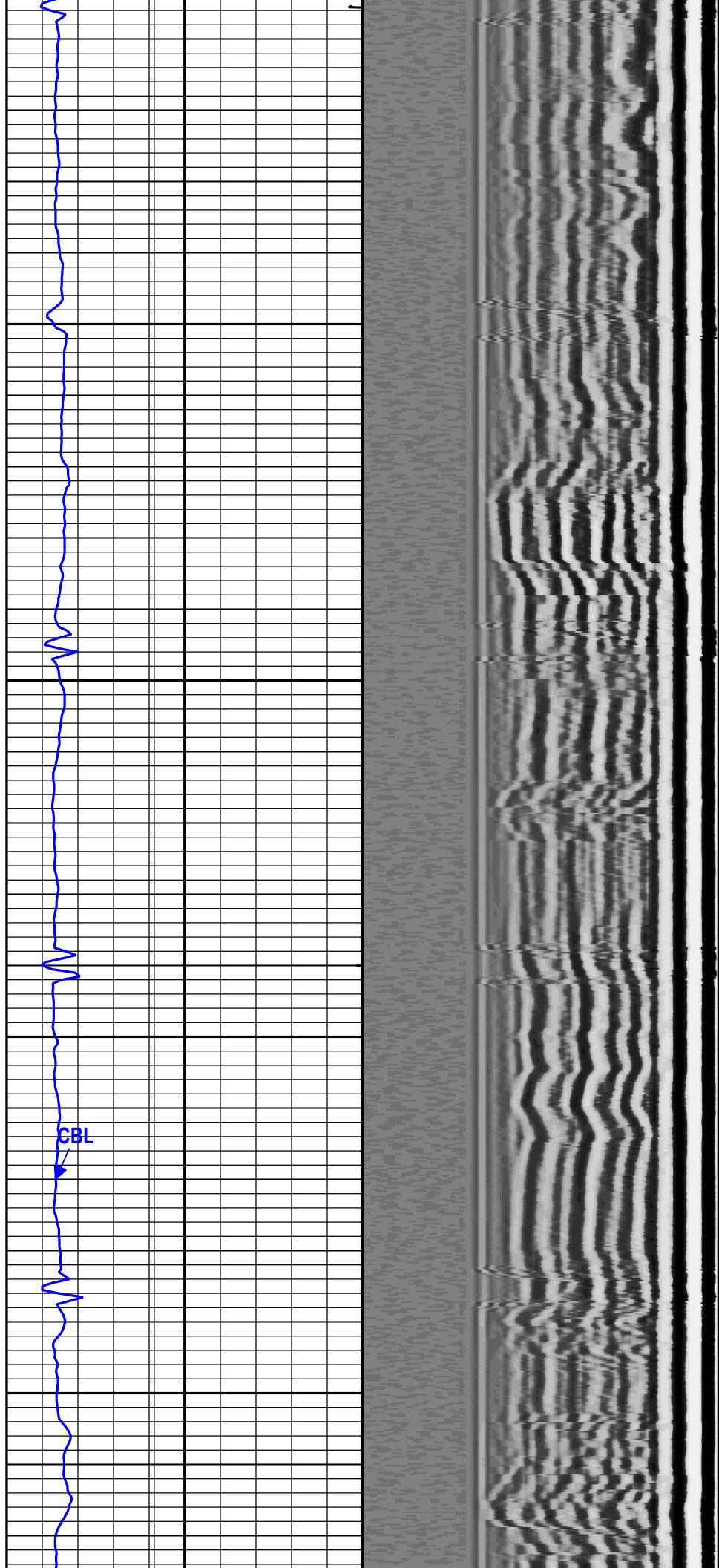


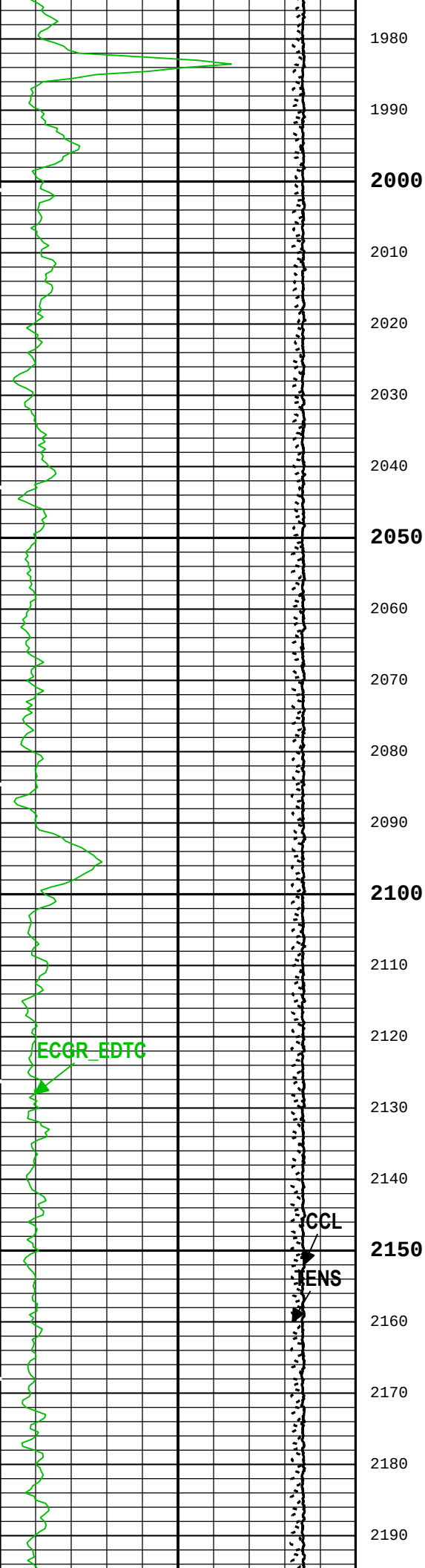




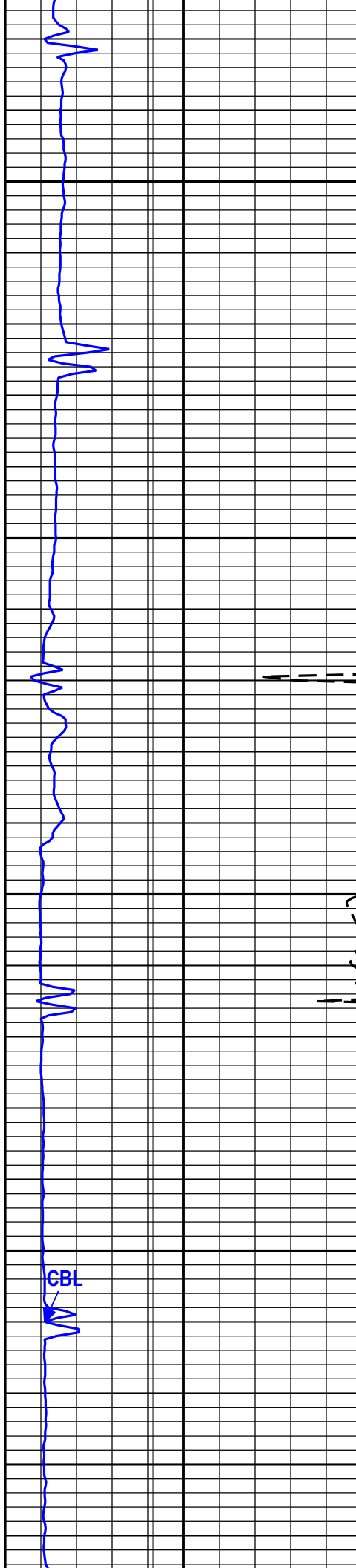


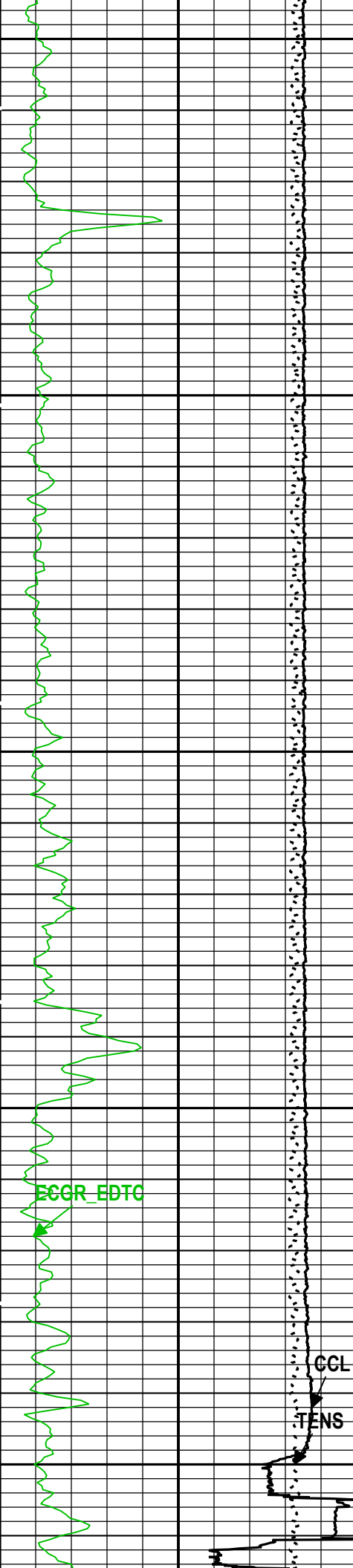
1760
1770
1780
1790
1800
1810
1820
1830
1840
1850
1860
1870
1880
1890
1900
1910
1920
1930
1940
1950
1960
1970





1980
1990
2000
2010
2020
2030
2040
2050
2060
2070
2080
2090
2100
2110
2120
2130
2140
2150
2160
2170
2180
2190





2200

2210

2220

2230

2240

2250

2260

2270

2280

2290

2300

2310

2320

2330

2340

2350

2360

2370

2380

2390

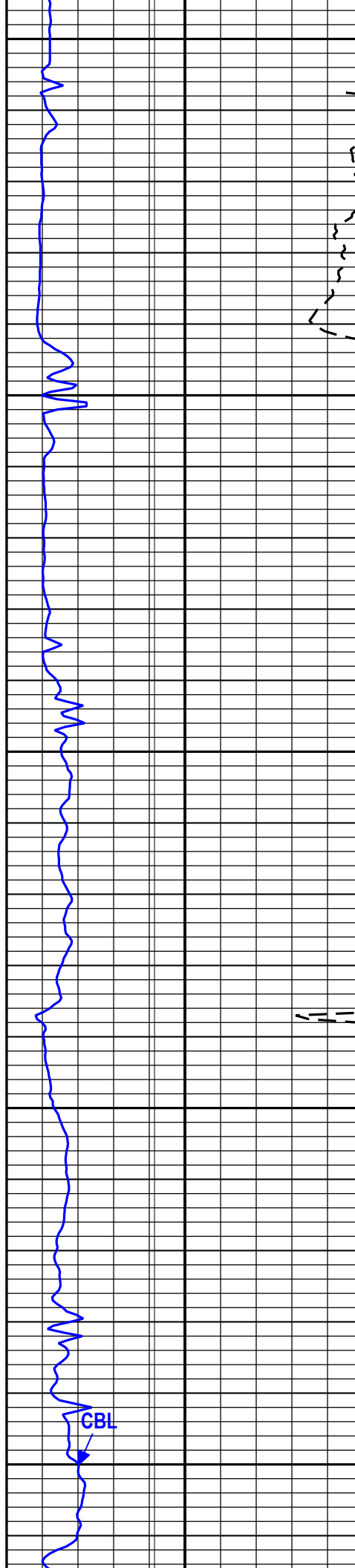
2400

2410

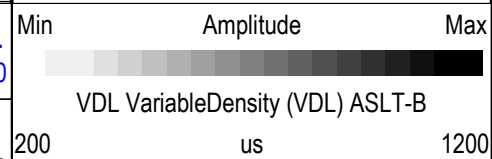
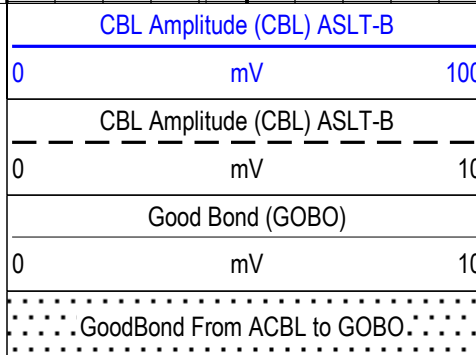
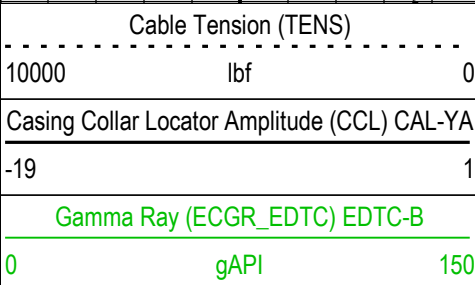
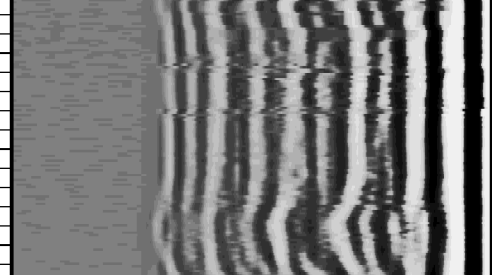
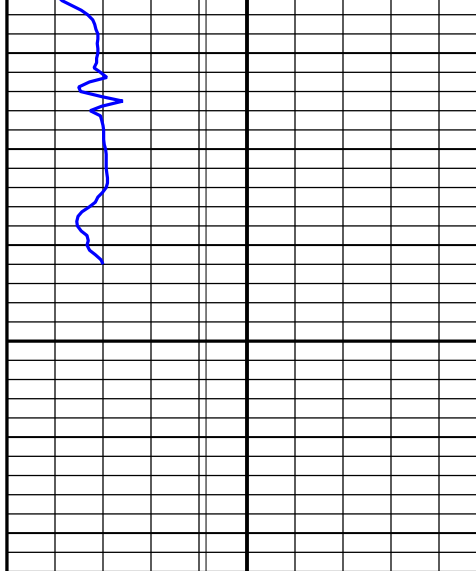
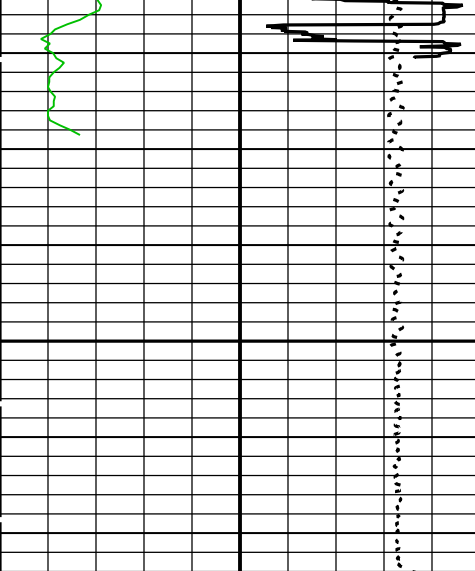
ECCR_EDTC

CCL

TENS



CBL



TIME_1900 - Time Marked every 60.00 (s)

Description: CBL_VDL Format: Log (CH CBL VDL 5) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 10-Nov-2016 16:20:43

Channel Processing Parameters	
-------------------------------	--

3A: 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	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	2550	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	ASLT-B	43	mV
CCL_MULTIPLIER	Casing Collar Locator Multiplier	CAL-YA	1	
CDEN	Cement Density	EDTC-B	2	g/cm3
CDEN	Cement Density	USIT-E	0	g/cm3
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.5	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
GOBO_CURR	Good Bond in Arbitrary Cement	ASLT-B	4.14	mV
FSOD	USIT IBC Fluid Slowness Fits Casing Outer Diameter	USIT-E	0_OFF	
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	Inversion Norm.	
IMAR	Image Rotation	USIT-E	Off	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	ASLT-B	10.1	dB/ft
MSA	Minimum Sonic Amplitude	ASLT-B	2.31	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	ASLT-B	2.31	mV

WISA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	ASLT-B	2.31	in
U-USIT_OCDI	Outer Casing Diameter	USIT-E	0	in
U-USIT_OCSH	Outer Casing Shoe	USIT-E	0	ft
U-USIT_OCWE	Outer Casing Weight	USIT-E	0	lbm/ft
RUN_SNUM	Run Sequence Number	WSDRUN	2	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	2.01	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	0	dB/m
UFGDE	Fiberglass Density	USIT-E	1.95	g/cm3
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	26	10.67	826
BS	17.5	826	2474.17

All depth are actual.

Tool Control Parameters

3A: Parameters

Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	2700	ft/h
MODE	SSLT Firing Mode	ASLT-B	CBL	
RATE	Firing Rate	ASLT-B	4.46	Hz
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	189.71	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	233	us
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	158.61	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	202	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 300 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	2470	ft
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VDM	SSLT VDL Display Mode	ASLT-B	R5	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	109.39	us
WINE	Window End Time	USIT-E	149.39	us

3A

Repeat Analysis 5" = 100'

Software Version

Acquisition System	Version
Maxwell 2016 SP1	6.1.58882.3100
Application Patch	Wireline_Hotfix-Perfo-2016SP1_6.1.63773
	Wireline_Hotfix-RTB-2016SP1_6.1.68160
	Wireline_NPD-PNX-2016SP1_6.1.74487

Pass Summary

[illegible]

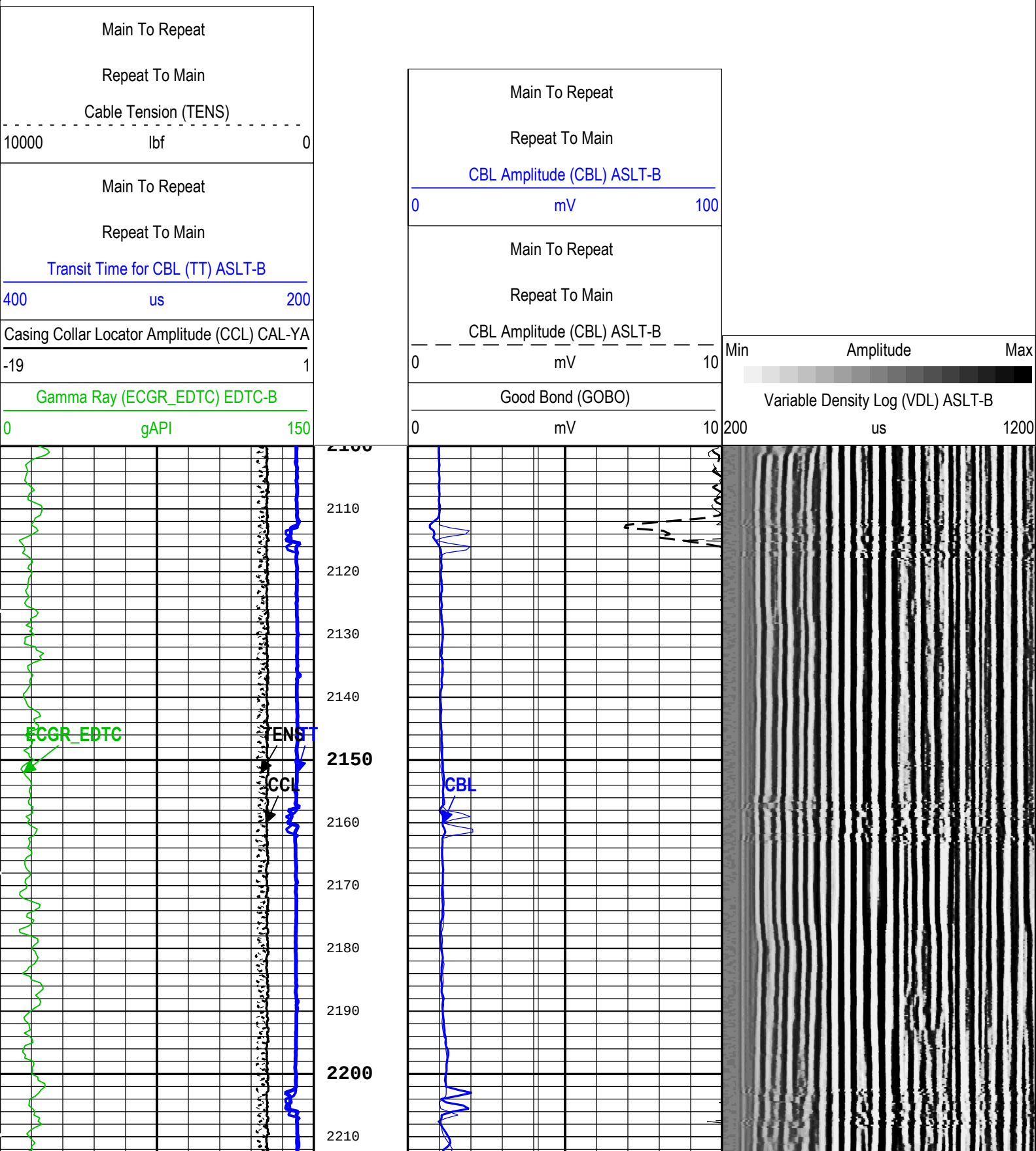
3A	Repeat[1]:Up	Up	1974.51 ft	2472.06 ft	10-Nov-2016 1:54:55 PM	10-Nov-2016 2:09:43 PM	ON	1.98 ft	No
3A	Main[2]:Up	Up	64.22 ft	2474.14 ft	10-Nov-2016 2:15:18 PM	10-Nov-2016 3:14:23 PM	ON	3.44 ft	No

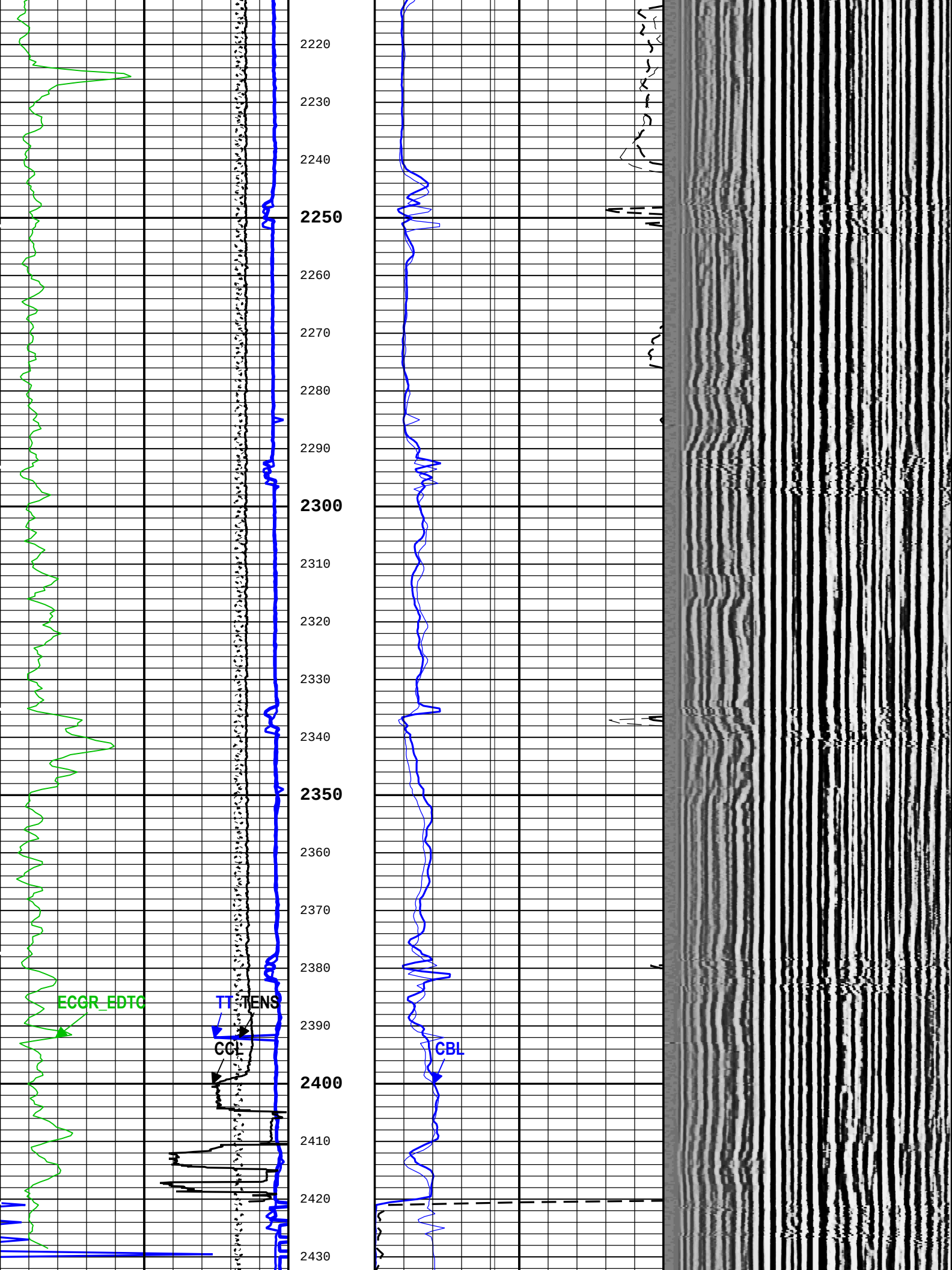
All depths are referenced to toolstring zero

Log	Company:DCP Midstream LP	Well:Zia AGI D2
		3A: Main[2]:Up:S007

Description: CBL_VDL Format: Log (CH CBL VDL RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 10-Nov-2016 16:20:46

TIME_1900 - Time Marked every 60.00 (s)





IMAR	Image Rotation	USIT-E	Off	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	ASLT-B	10.1	dB/ft
MSA	Minimum Sonic Amplitude	ASLT-B	2.31	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	ASLT-B	2.31	mV
U-USIT_OCDI	Outer Casing Diameter	USIT-E	0	in
U-USIT_OCSH	Outer Casing Shoe	USIT-E	0	ft
U-USIT_OCWE	Outer Casing Weight	USIT-E	0	lbm/ft
RUN_SNUM	Run Sequence Number	WSDRUN	2	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	2.01	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	0	dB/m
UFGDE	Fiberglass Density	USIT-E	1.95	g/cm3
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	

Tool Control Parameters

3A: Parameters

Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	2700	ft/h
MODE	SSLT Firing Mode	ASLT-B	CBL	
RATE	Firing Rate	ASLT-B	4.46	Hz
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	189.71	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	233	us
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	158.61	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	202	us
UPAT	USIT Emission Pattern	USIT-E	Pattern 300 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	2470	ft
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VDM	SSLT VDL Display Mode	ASLT-B	R5	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	109.39	us
WINE	Window End Time	USIT-E	149.39	us

Company:	DCP Midstream LP	
Well:	Zia AGI D2	
Field:	AGI Devonian Exploration	
County:	Lea	
State:	New Mexico	
Cement Bond Log		
Gamma Ray - CCL		

Company: DCP Midstream LP

Well: Zia AGI D2

Field: AGI Devonian Exploration

County: Lea State: New Mexico

VDL Wide Prints	
CCL-GR	
1893' FSL & 950' FWL Section: 19 Township: T19S Abstract: R32E	Elev.: K.B. 3572.00 ft G.L. 3547.00 ft D.F. 3571.00 ft
Permanent Datum: Log Measured From: Drilling Measured From:	Ground Level Kelly Bushing Kelly Bushing
API Serial No. 30-025-42207	Section: 19 Township: T19S
Abstract: R32E	

Logging Date	10-Nov-2016
Run Number	3A
Depth Driller	2555.00 ft
Schlumberger Depth	2470.00 ft
Bottom Log Interval	2470.00 ft
Top Log Interval	100.00 ft
Casing Fluid Type	Fresh Water
Salinity	
Density	8.5 lbm/gal
Fluid Level	8.00 ft
BIT/CASING/TUBING STRING	
Bit Size	17.50 in
From	826.00 ft
To	2555.00 ft
Casing/Tubing Size	13.375 in
Weight	61 lbm/ft
Grade	N/A
From	0.00 ft
To	2550.00 ft
Max Recorded Temperatures	
Logger on Bottom	10-Nov-2016 13:29:00
Unit Number	2140
Recorded By	Stephanie Anderson
Witnessed By	Jared Smith

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.

Contents

- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Well Sketch
- 5. Borehole Size/Casing/Tubing Record
- 6. Remarks and Equipment Summary
- 7. Depth Summary
- 8. USIT FPM
 - 8.1 USI Fluid Properties Measurement
- 9. 3A Main Pass 5" = 100'
 - 9.1 Integration Summary
 - 9.2 Composite Summary
 - 9.3 Log (USI IBC VDL WIDE)
 - 9.4 Parameter Listing
- 10. 3A Repeat Pass 5" = 100'
 - 10.1 Integration Summary
 - 10.2 Composite Summary

10.3 Log (USI IBC VDL WIDE)

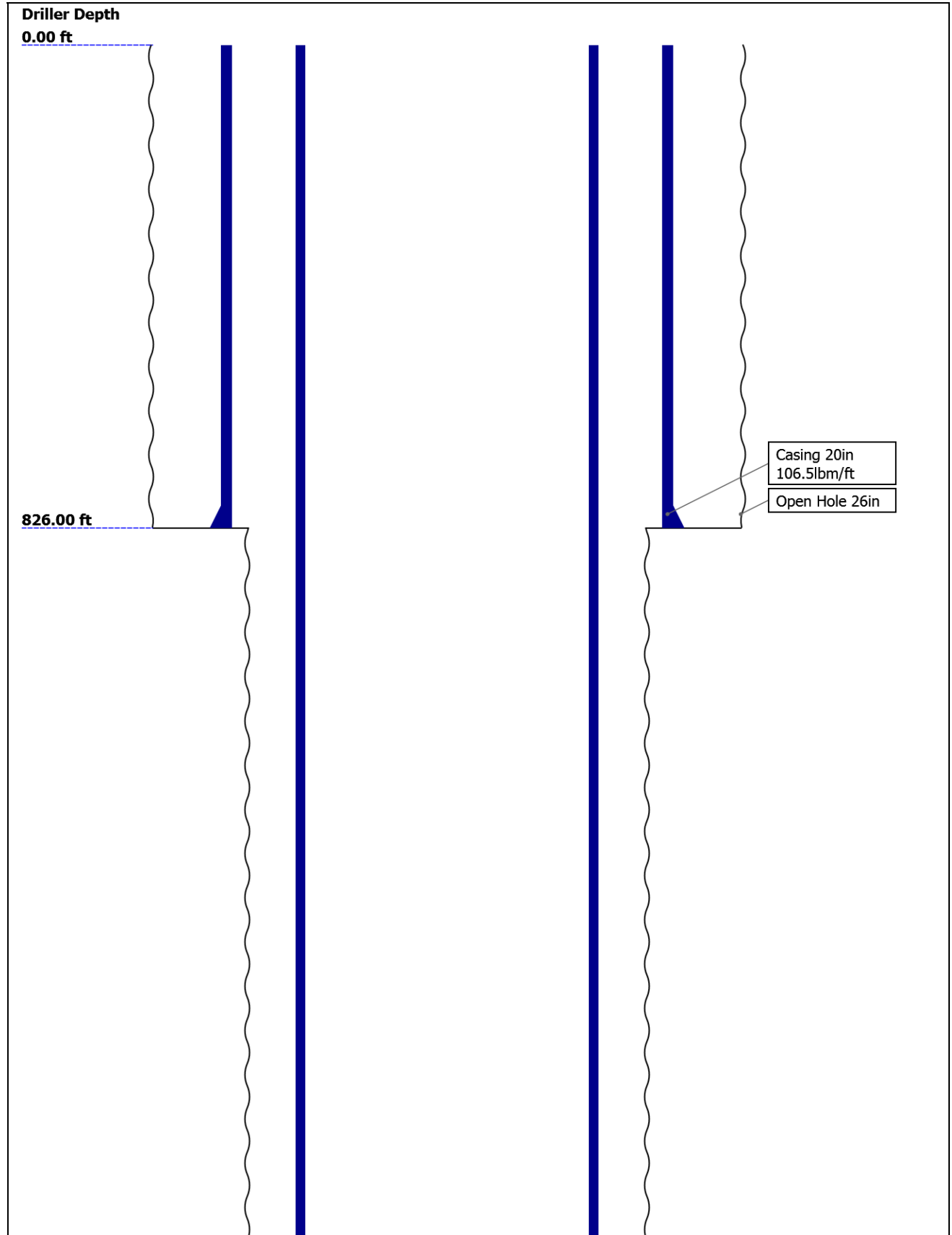
10.4 Parameter Listing

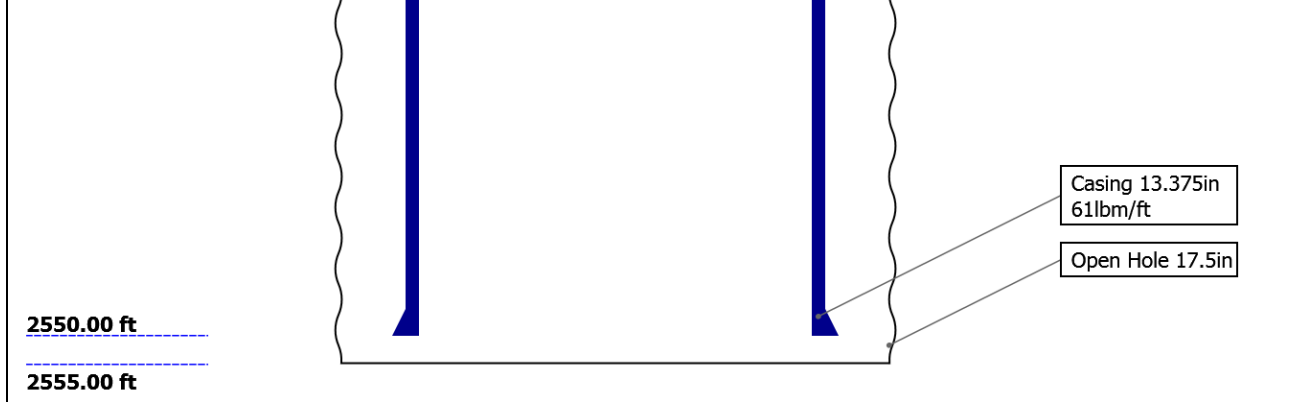
11. XYZ (IBC Fluid Acoustic Slowness vs Depth 6.0 in)

12. Xyz (Import of USI Acoustic Impedance of Mud vs
Depth 6.0 in)

13. Tail

Well Sketch





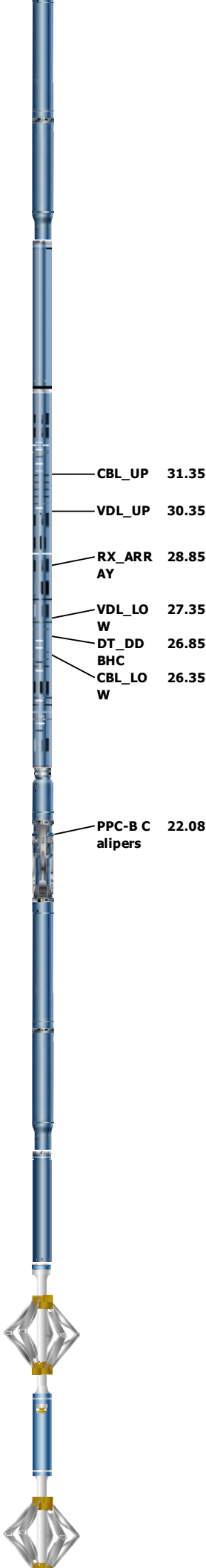
Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	26	17.5				
Top Driller (ft)	0	826				
Top Logger (ft)	0	826				
Bottom Driller (ft)	826	2555				
Bottom Logger (ft)	826	2555				
Casing						
Size (in)	20	13.375				
Weight (lbm/ft)	106.5	61				
Inner Diameter (in)	19	12.515				
Grade	N/A	N/A				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	826	2550				
Bottom Logger (ft)	826	2550				

Remarks and Equipment Summary

3A: Toolstring				3A: Remarks		
Equip name	Length	MP name	Offset	Logging Objective: Cement and corrosion evaluation from TD to Surface.		
LEH-QC	56.86			Toolstring run as per toolsketch. 2 PPCs and 2 Inlines used for centralization.		
CAL-YA:1	54.4			SLB TD: 2470ft.		
556				Main and repeat pass correlated to GR in ' Borehole Profile Log' by Schlumberger on 08-Nov-2016.		
CAL-YA:15				Correlated to GR peaks at 2341ft, 2225 ft, 2095ft.		
56				No pressure applied as per client request.		
EDTC-B:8	50.9			Drilling fluid: Fresh water, Annular fluid:10# Brine.		
360				Casing Info: 13.375in 61#.		
EDTH-B:87				Casing ER: 6.6875in, IR: 6.2575in, Thickness: .43in.		
01				Cement Information: 13.5lb Lead, 14.8lb Tail.		
EDTG-A:7				Fluid slowness: Automatic, Acoustic Impedance: Inversion Normalization.		
7275				IBC main pass logged in 10deg 6in.		
EDTC-B:83						
60						
PPC-B[2]	44.4					
:8225						
PPC-B:822						
5						

ASLT-B:E 37.88
NP41
ASLT-BB:E
NP41



PPC-B[1] 23.23
:8080
PPC-B:808
0

USIT-E:99 16.71
2
ECH-MFA:
1964
USAC-A:9
92
USIS-A:27
39
USSC-B:17
07
IBCS-C:79
0
FAR-SENS
OR:4482
NEAR-SEN
SOR:4483
USI-SENS
OR:4488
EMITTER-
SENSOR:4
491



USI Sen 1.07
sor

TOOL_ZERO

Lengths are in ft

Maximum Outer Diameter = 6.689 in

Line: Sensor Location, Value: Gating Offset

All measurements are relative to TOOL_ZERO

Depth Summary

3A

Depth Measuring Device

Type	IDW-B
Serial Number	7339
Calibration Date	25-Jun-2016
Calibrator Serial Number	34
Calibration Cable Type	7-39PI XXS
Wheel Correction 1	-4
Wheel Correction 2	-4

Tension Device

Type	CMTD-B/A
Serial Number	1500
Calibration Date	05-Nov-2016
Calibrator Serial Number	26
Number of Calibration Points	10
Calibration Root Mean Square Error	8
Calibration Peak Error	15

Logging Cable

Type	7-39PI-XXS
Serial Number	F715186
Length	20100.00 ft
Conveyance Type	Wireline
Rig Type	Land

3A:Depth Control Parameters

Log Sequence	Subsequent Trip To the Well
Reference Log Name	Borehole Profile Log
Reference Log Run Number	2A
Reference Log Date	08-Nov-2016
Subsequent Trip Down Log Correction	

Depth Control Remarks

IDW used as primary depth control.
Z-Chart used as secondary depth control.

USIT FPM

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 2	Main[2]:Up	2474.14	64.22

Fluid Velocity = "Automatic".
CFVL equals DFSL channel

Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)
-----------------	----------------	--------------------	------------------

Mud Impedance = "Inversion Norm."

IBC Inversion normalization zone is : 33.01m(108.30ft) to 37.52m(123.09ft)
MUD_N_INV = 1.04
DFD = 1.02g/cm3(8.50lbm/gal)
CZMD median computed in inversion normalization interval = 1.61 MRayl

Start Depth(ft)	Stop Depth(ft)	Start Value(Mrayl)	End Value(Mrayl)
-----------------	----------------	--------------------	------------------

3A

Main Pass 5" = 100'

Pass Summary

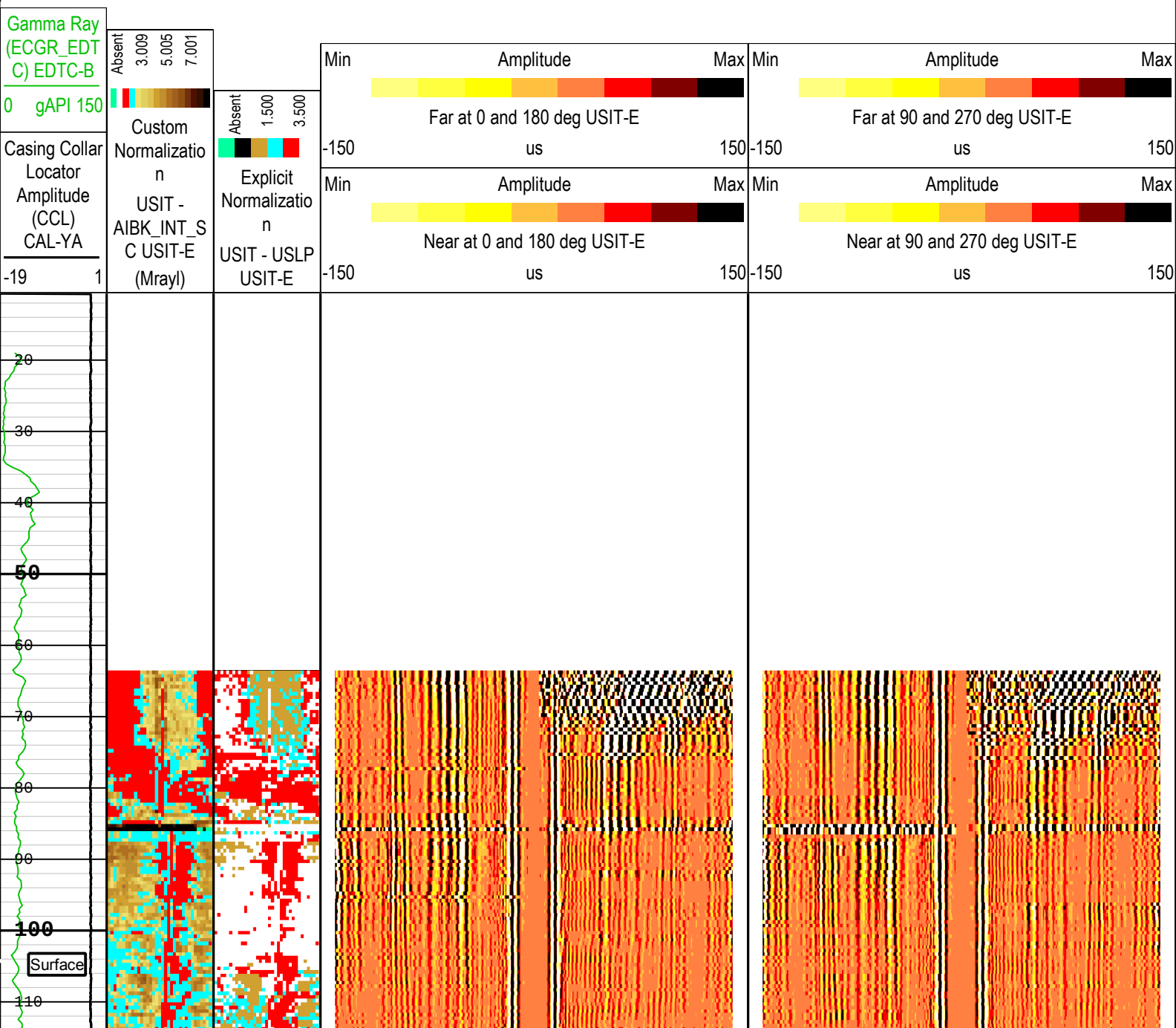
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
3A	Main[2]:Up	Up	64.22 ft	2474.14 ft	10-Nov-2016 2:15:18 PM	10-Nov-2016 3:14:23 PM	ON	3.44 ft	No

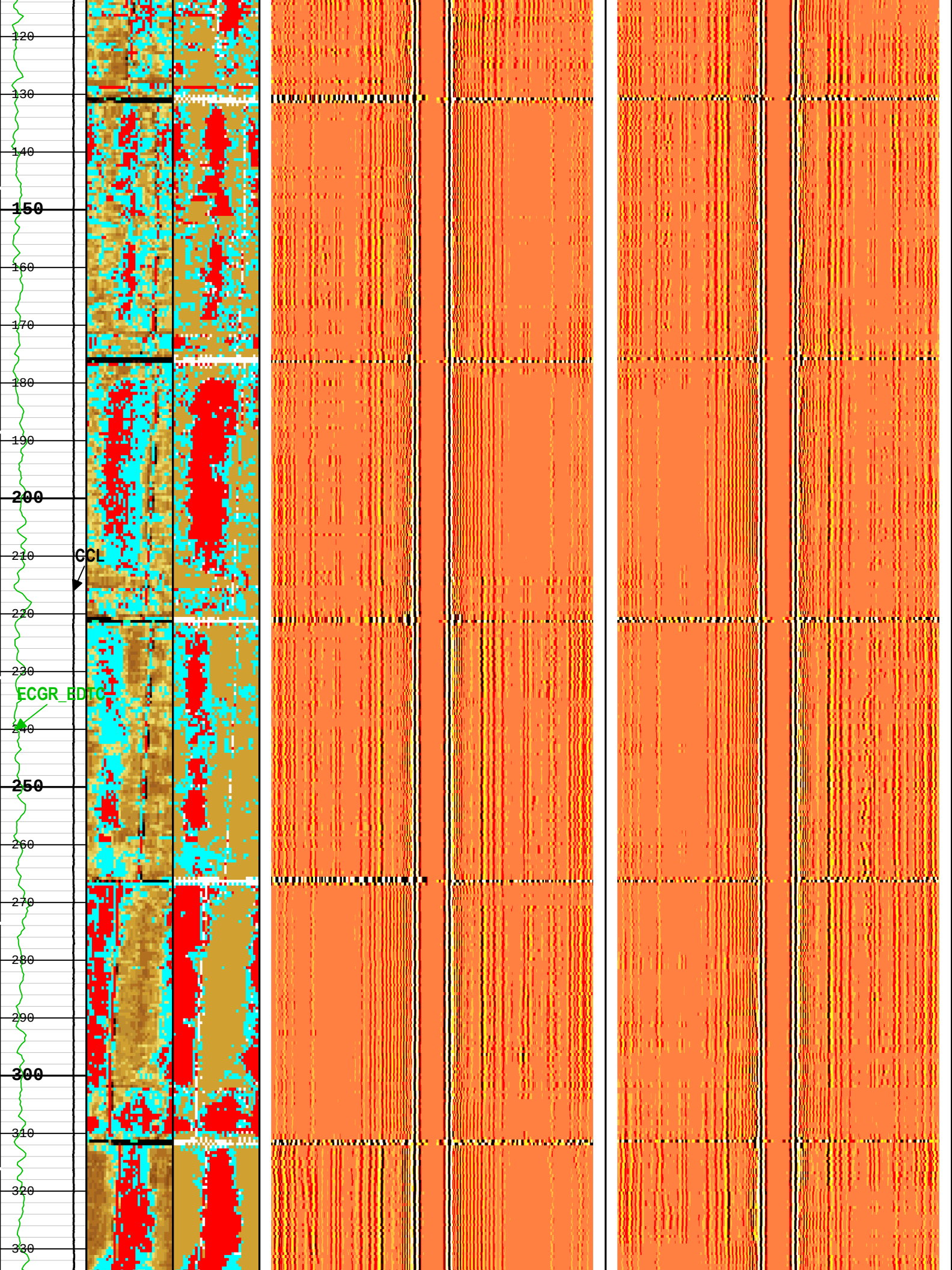
All depths are referenced to toolstring zero

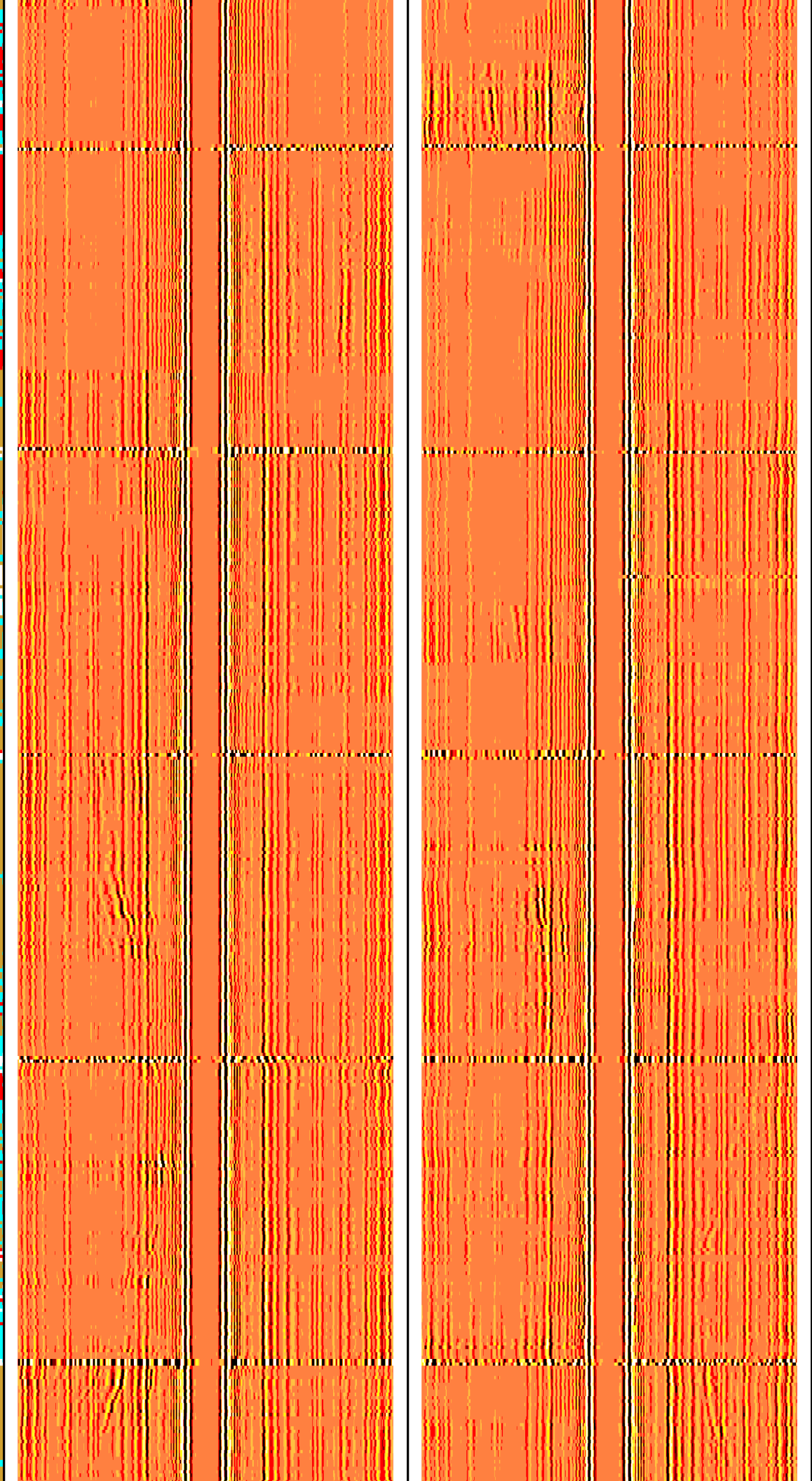
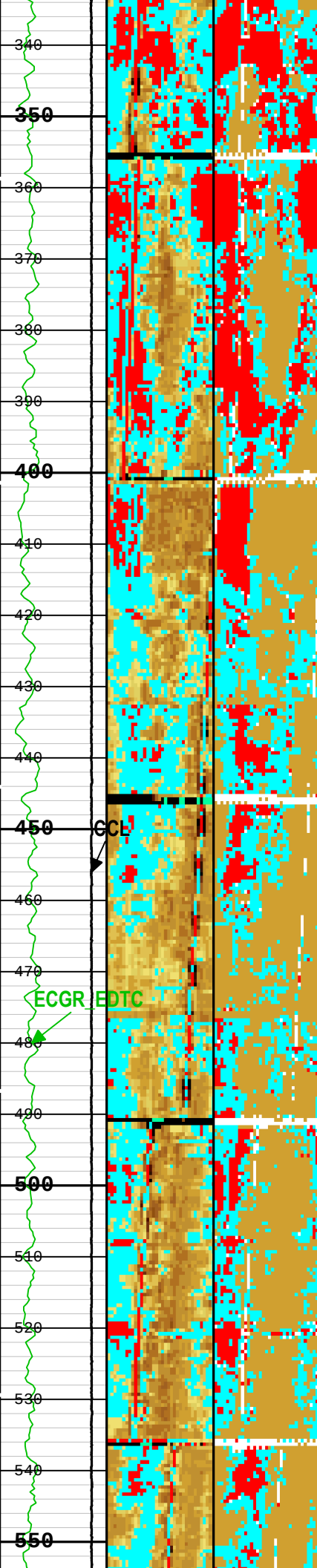
Log	Company:DCP Midstream LP Well:Zia AGI D2 3A: Main[2]:Up:S007
-----	--

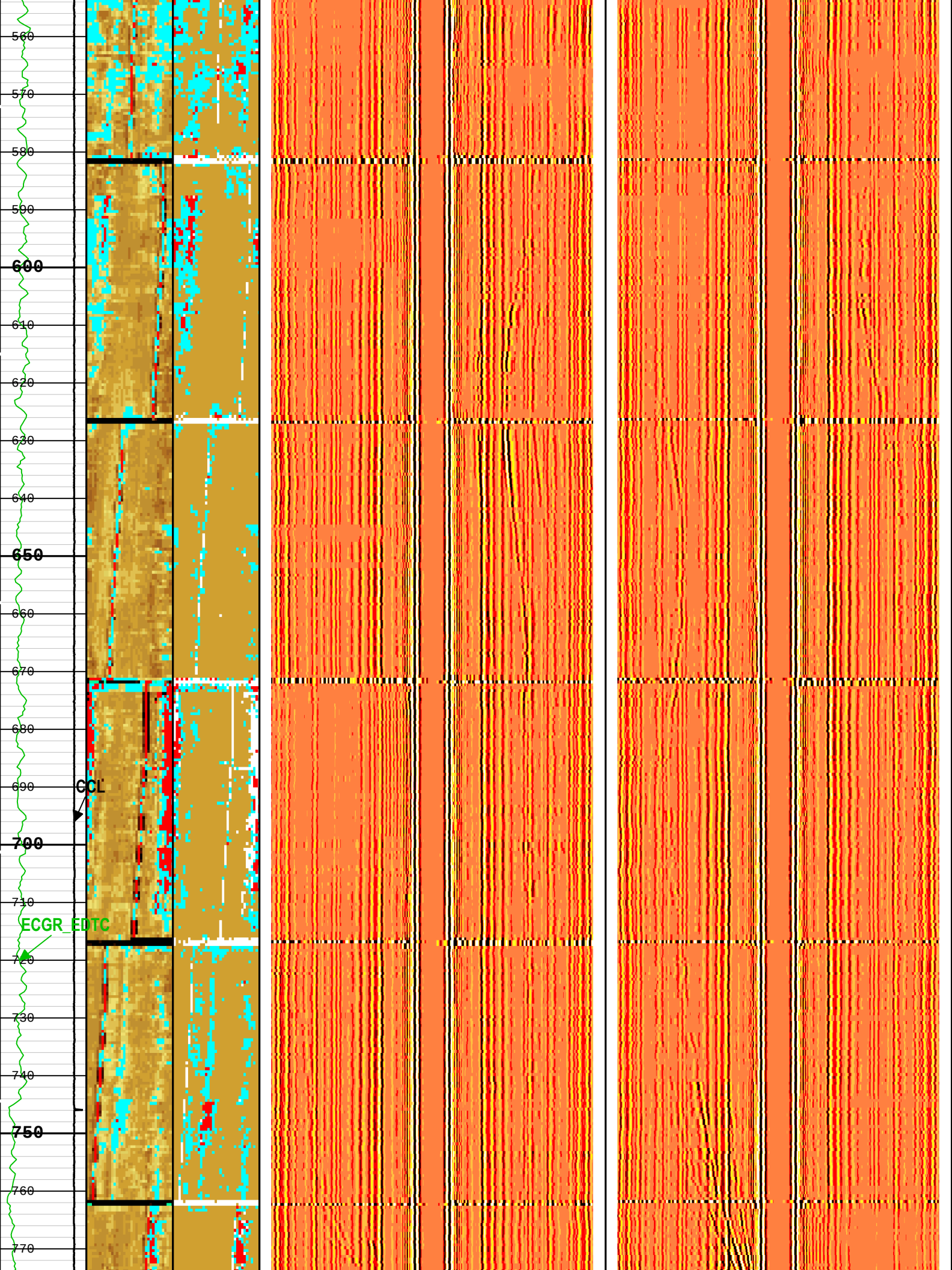
Description: USI IBC VDL WIDE Format: Log (USI IBC VDL WIDE) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 10-Nov-2016 16:21:01

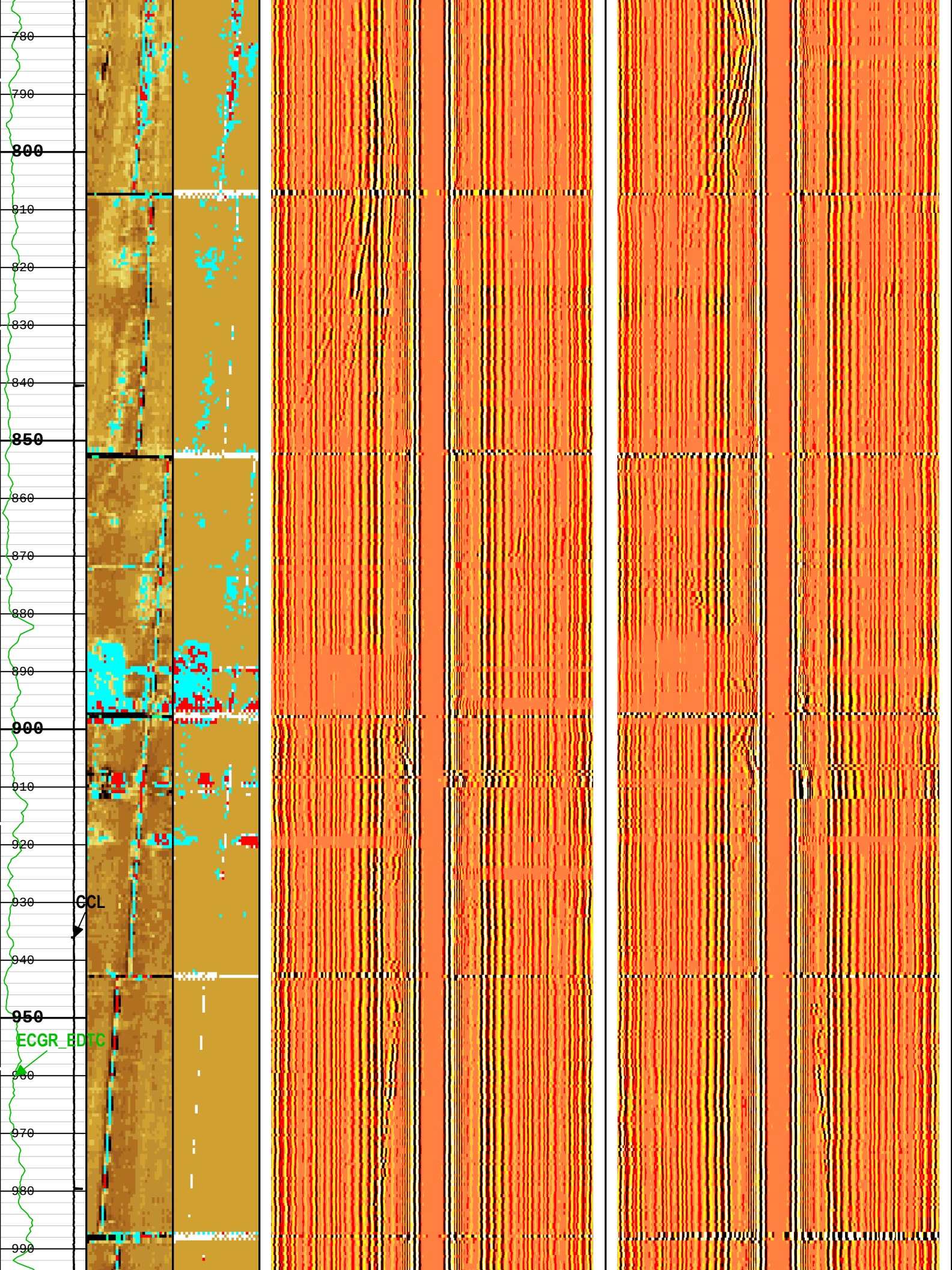
TIME_1900 - Time Marked every 60.00 (s)

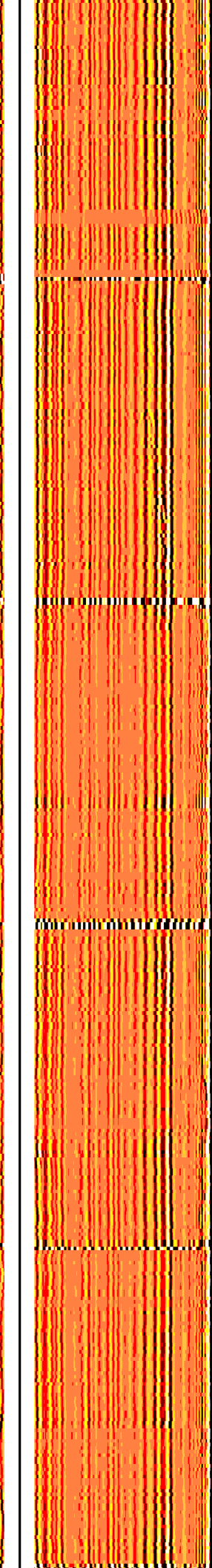
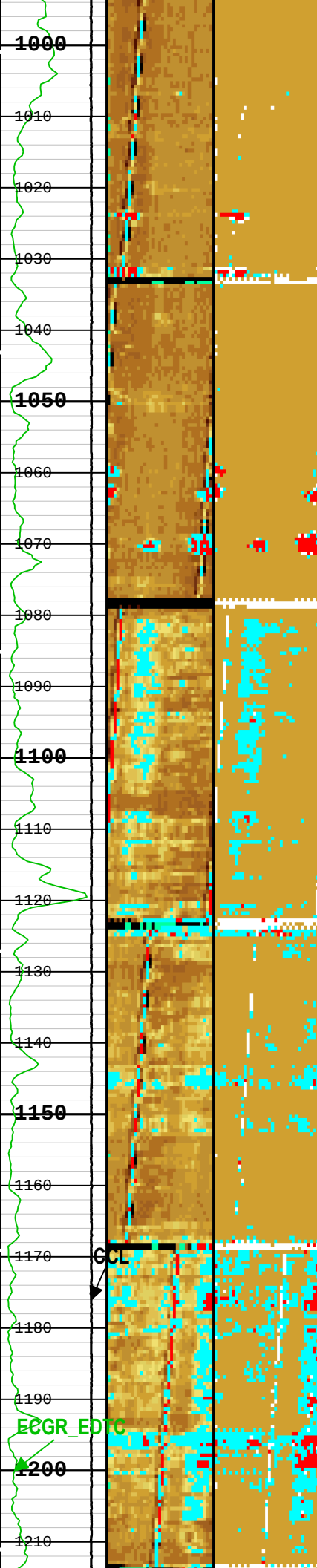


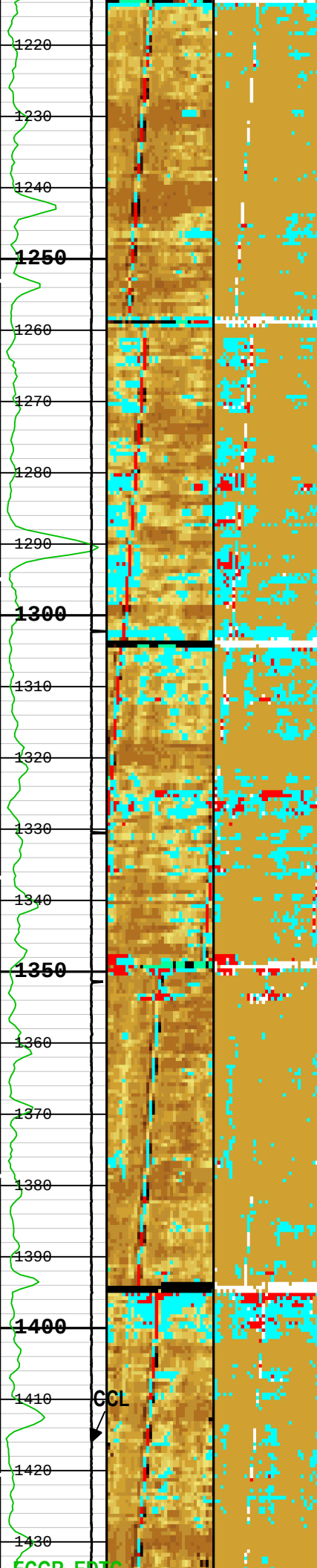


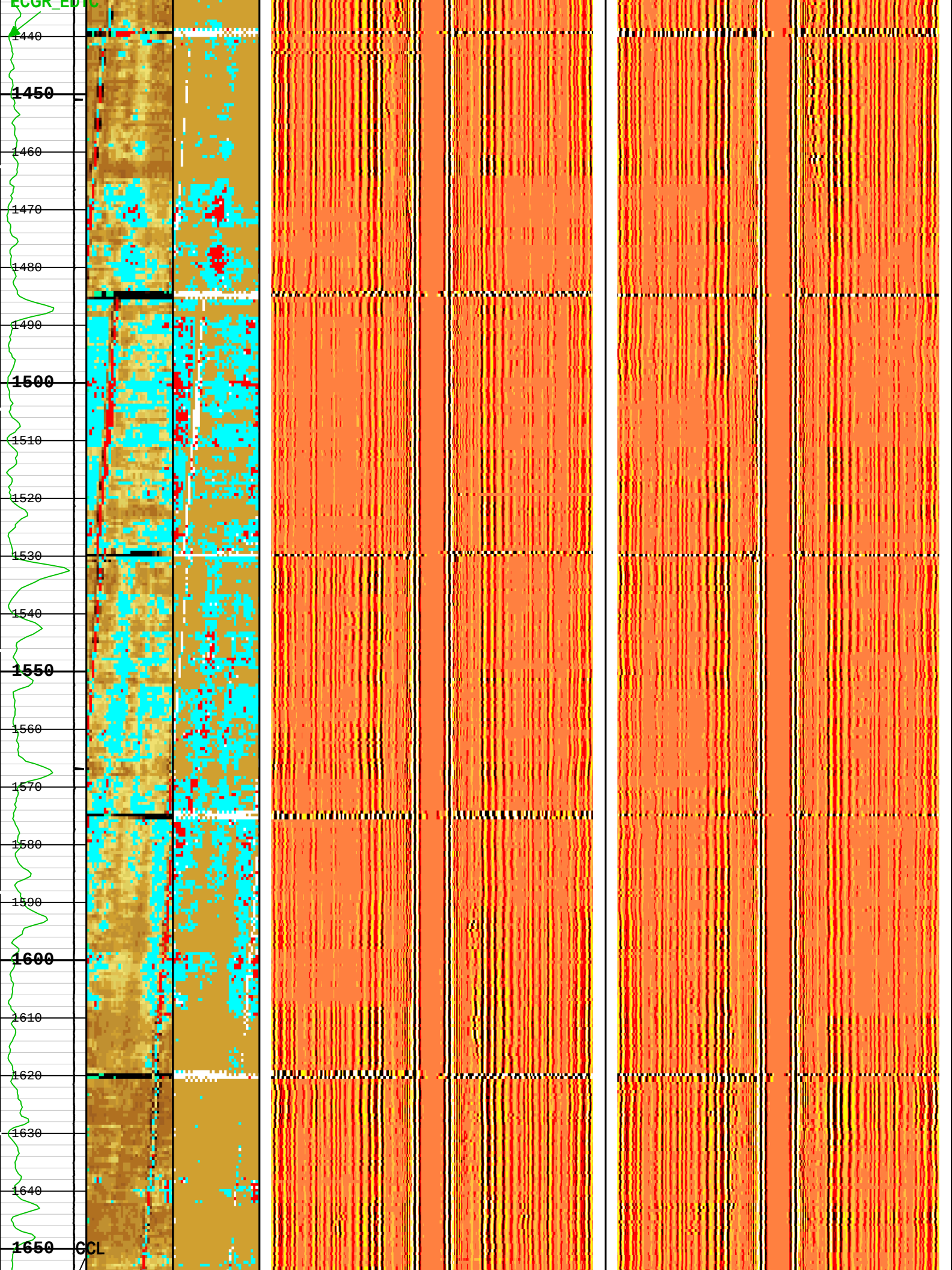


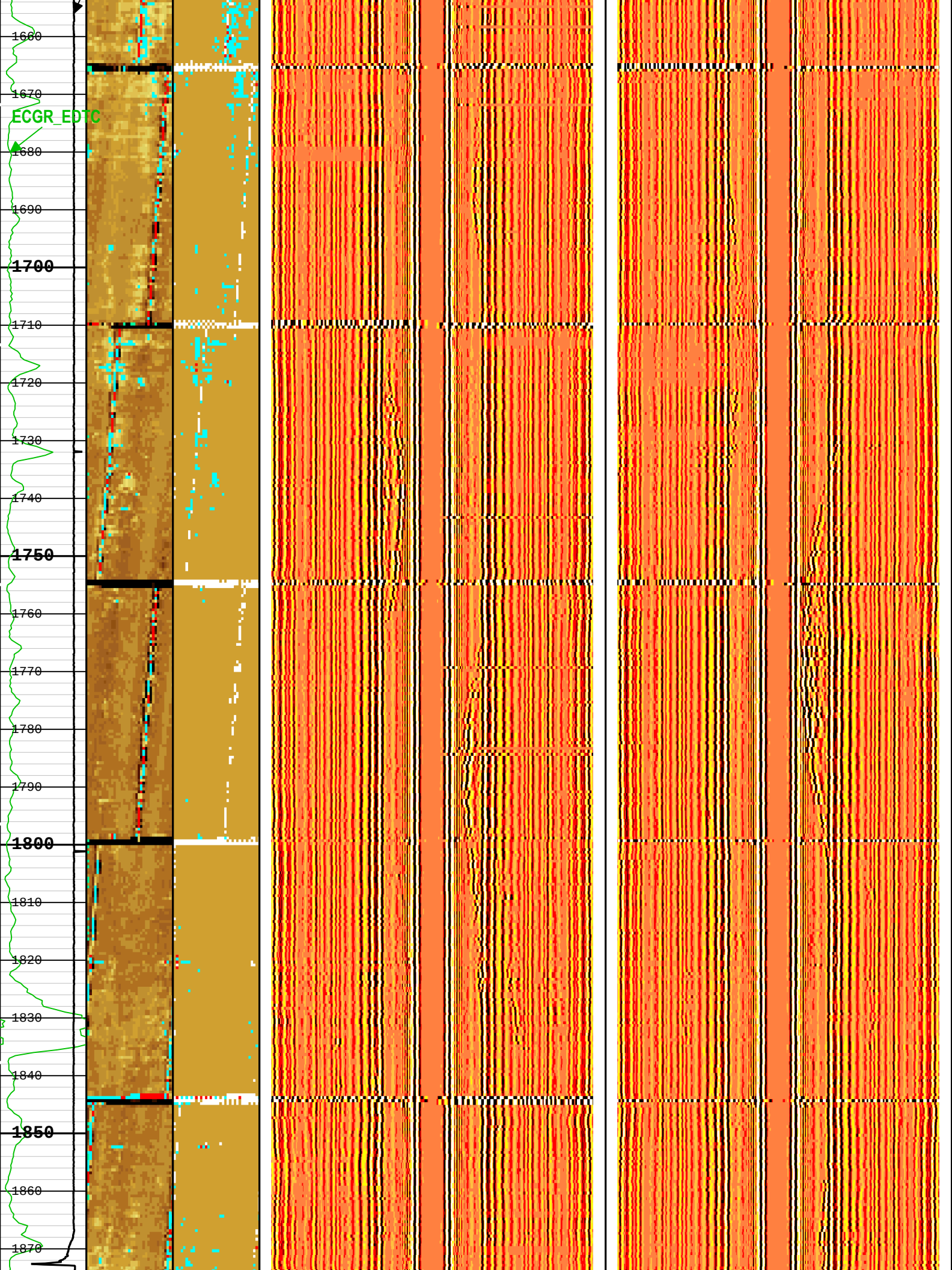


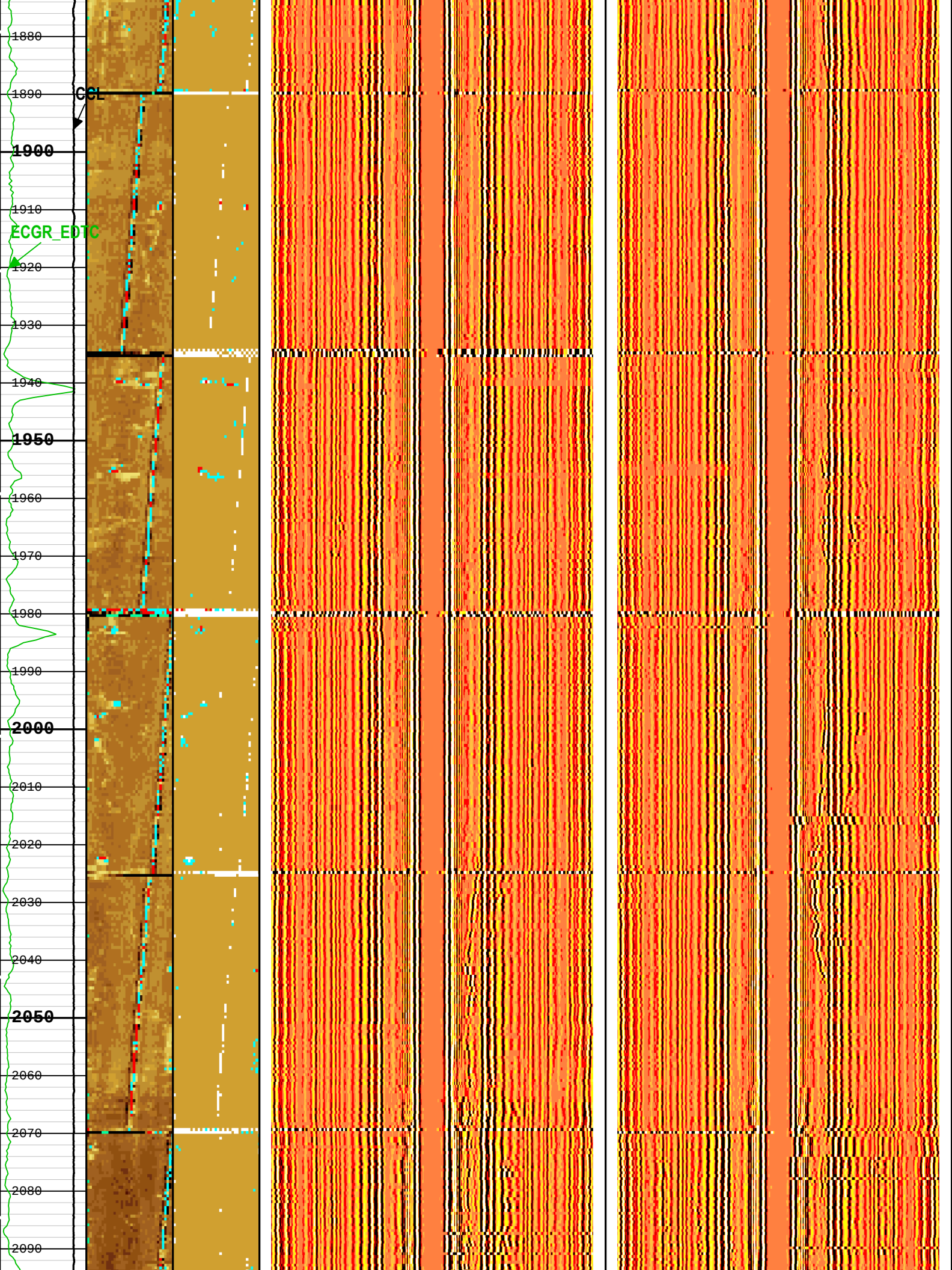


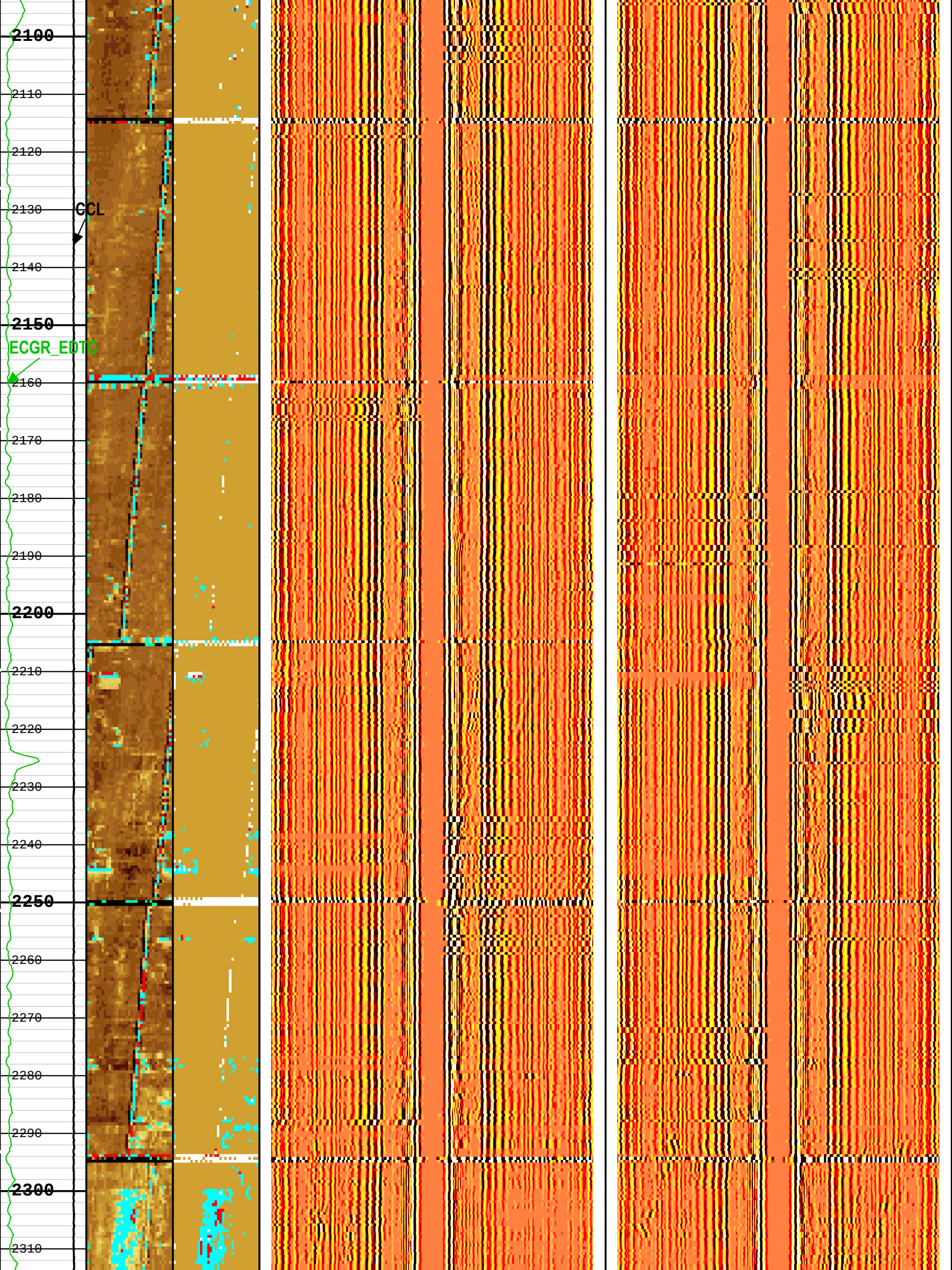












3A: Parameters

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	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	2550	ft
CCL_MULTIPLIER	Casing Collar Locator Multiplier	CAL-YA	1	
CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.5	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	192	us/ft
FD	Fluid Density	USIT-E	10	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
HEMA	Hematite Presence Flag	Borehole	No	
FSOD	USIT IBC Fluid Slowness Fits Casing Outer Diameter	USIT-E	0_OFF	
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	Inversion Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	26.92	us
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.04	
U-USIT_OCDI	Outer Casing Diameter	USIT-E	0	in
U-USIT_OCSH	Outer Casing Shoe	USIT-E	0	ft
U-USIT_OCWE	Outer Casing Weight	USIT-E	0	lbm/ft
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	2.01	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	0	dB/m
UFGDE	Fiberglass Density	USIT-E	16.27	lbm/gal
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.55	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.51	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	26	10.67	826
BS	17.5	826	2473

All depth are actual.

Tool Control Parameters

3A: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	54	dB
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	

EMXV	EMEX Voltage	USIT-E	Time Zoned	V
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	2700	ft/h
MOTOR_PROTECT	Motor Protection	USIT-E	Time Zoned	
TMUC	Type of Mud	USIT-E	BRI	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	189.71	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	233	us
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	158.61	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	202	us
USFR	Ultrasonic Sampling Frequency	USIT-E	500000	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 300 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	2470	ft
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	109.39	us
WINE	Window End Time	USIT-E	149.39	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	50	10-Nov-2016 14:15:18	10-Nov-2016 14:24:20	2474.14	2153.47
EMXV	60	10-Nov-2016 14:24:20	10-Nov-2016 15:14:23	2153.47	64.22
MOTOR_PROTECT	On	10-Nov-2016 14:15:18	10-Nov-2016 14:16:44	2474.14	2460.1
MOTOR_PROTECT	Off	10-Nov-2016 14:16:44	10-Nov-2016 15:14:23	2460.1	64.22

All depth are at tool zero.

3A

Repeat Pass 5" = 100'

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
3A	Repeat[1]:Up	Up	1974.51 ft	2472.06 ft	10-Nov-2016 1:54:55 PM	10-Nov-2016 2:09:43 PM	ON	1.98 ft	No

All depths are referenced to toolstring zero

Log

Company:DCP Midstream LP Well:Zia AGI D2

3A: Repeat[1]:Up:S007

Description: USI IBC VDL WIDE Format: Log (USI IBC VDL WIDE) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 10-Nov-2016 16:21:05

TIME_1900 - Time Marked every 60.00 (s)

Gamma Ray
(ECGR_EDT
C) EDTC-B

0 gAPI 150

Casing Collar
Locator
Amplitude
(CCL)
CAL-YA

-19 1

Absent
3.009
5.005
7.001

Custom
Normalization
USIT -
AIBK_INT_S
C USIT-E
(Mrayl)

Absent
1.500
3.500

Explicit
Normalization
USIT - USLP
USIT-E

Min

Amplitude

Max

Far at 0 and 180 deg USIT-E

-150

us

150

Min

Amplitude

Max

Near at 0 and 180 deg USIT-E

-150

us

150

Min

Amplitude

Max

Far at 90 and 270 deg USIT-E

-150

us

150

Min

Amplitude

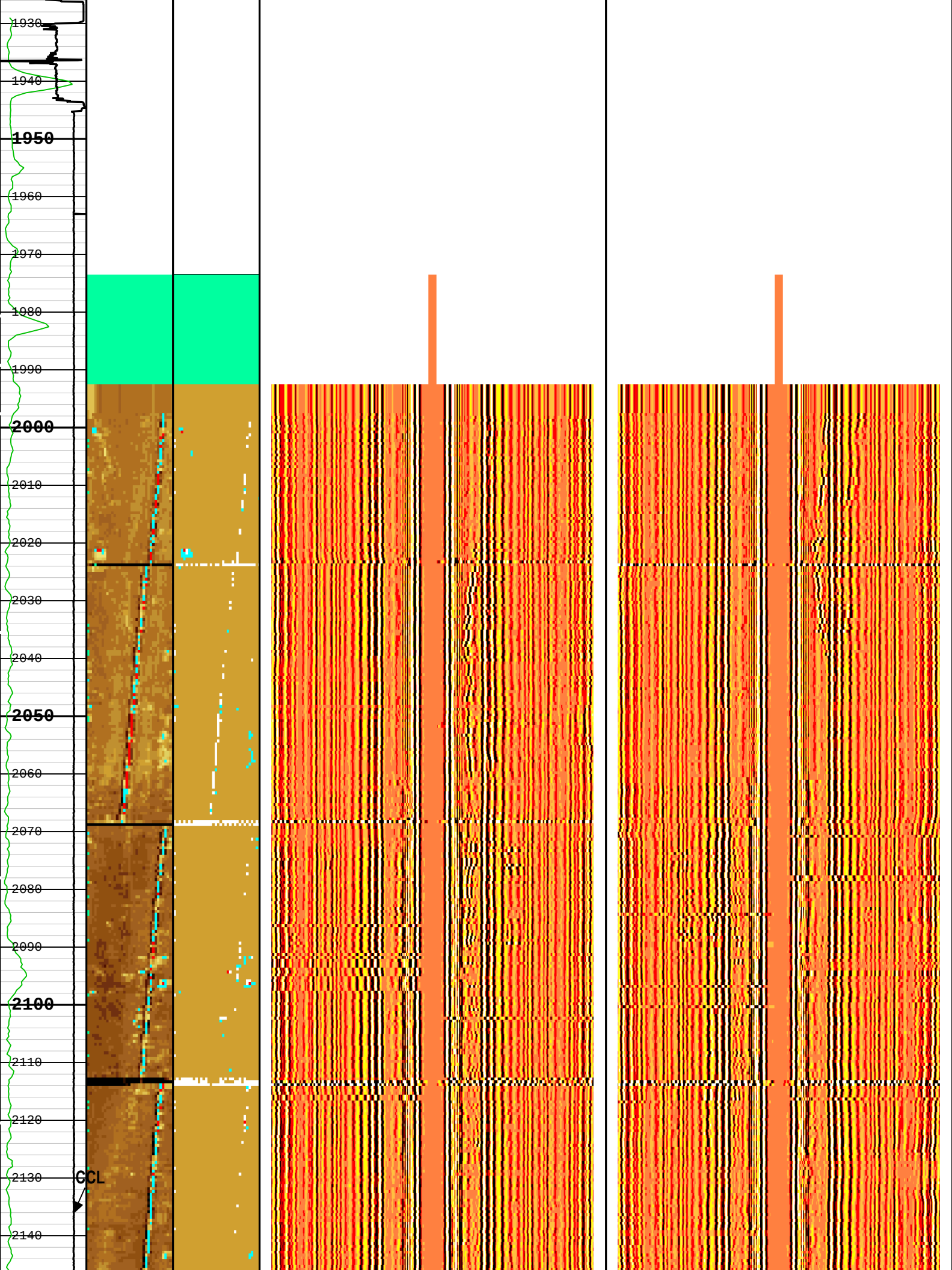
Max

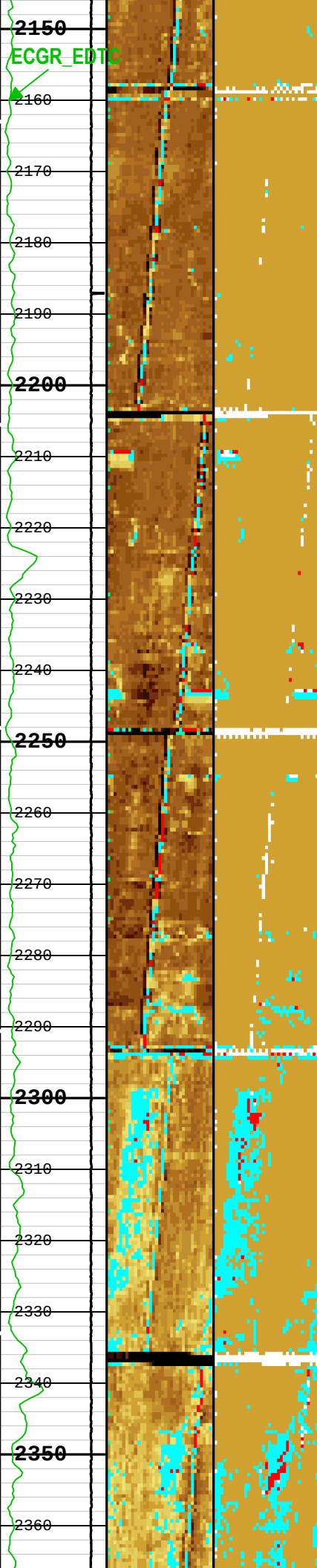
Near at 90 and 270 deg USIT-E

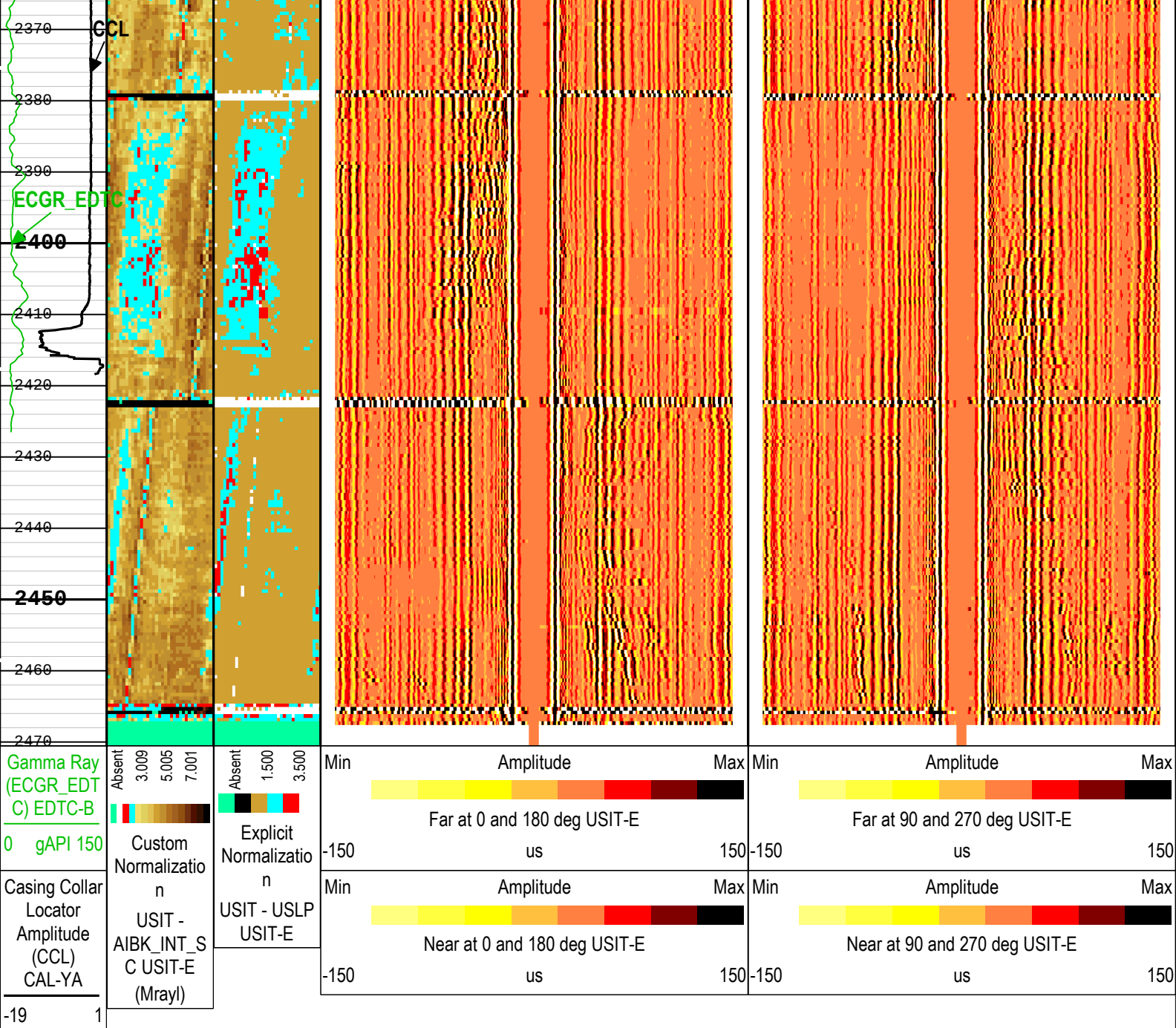
-150

us

150







TIME_1900 - Time Marked every 60.00 (s)

Description: USI IBC VDL WIDE Format: Log (USI IBC VDL WIDE) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 10-Nov-2016 16:21:05

Channel Processing Parameters

3A: 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	17.5	in
CBLO	Casing Bottom (Logger)	WLSESSION	2550	ft
CCL_MULTIPLIER	Casing Collar Locator Multiplier	CAL-YA	1	
CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DFD	Drilling Fluid Density	Borehole	8.5	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	192	us/ft

FD	Fluid Density	USIT-E	10	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
HEMA	Hematite Presence Flag	Borehole	No	
FSOD	USIT IBC Fluid Slowness Fits Casing Outer Diameter	USIT-E	0_OFF	
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	Inversion Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	26.92	us
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.04	
U-USIT_OCDI	Outer Casing Diameter	USIT-E	0	in
U-USIT_OCSH	Outer Casing Shoe	USIT-E	0	ft
U-USIT_OCWE	Outer Casing Weight	USIT-E	0	lbm/ft
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	2.01	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	0	dB/m
UFGDE	Fiberglass Density	USIT-E	16.27	lbm/gal
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.55	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.51	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Tool Control Parameters

3A: Parameters

Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	Time Zoned	dB
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
EMXV	EMEX Voltage	USIT-E	Time Zoned	V
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	2700	ft/h
MOTOR_PROTECT	Motor Protection	USIT-E	On	
TMUC	Type of Mud	USIT-E	BRI	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	233	us
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	Time Zoned	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	202	us
USFR	Ultrasonic Sampling Frequency	USIT-E	500000	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 300 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	2470	ft
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	109.39	us
WINE	Window End Time	USIT-E	149.39	us

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
AGMX	18	10-Nov-2016 13:54:55	10-Nov-2016 13:55:49	2472.06	2464.14
AGMX	54	10-Nov-2016 13:55:49	10-Nov-2016 14:09:43	2464.14	1974.51
EMXV	40	10-Nov-2016 13:54:55	10-Nov-2016 13:58:32	2472.06	2352.21
EMXV	50	10-Nov-2016 13:58:32	10-Nov-2016 14:09:43	2352.21	1974.51
U-USIT_UFWB	193	10-Nov-2016 13:54:55	10-Nov-2016 13:58:15	2472.06	2364.65
U-USIT_UFWB	189.71	10-Nov-2016 13:58:15	10-Nov-2016 14:09:43	2364.65	1974.51
U-USIT_UNWB	162	10-Nov-2016 13:54:55	10-Nov-2016 13:58:13	2472.06	2366.06
U-USIT_UNWB	158.61	10-Nov-2016 13:58:13	10-Nov-2016 14:09:43	2366.06	1974.51

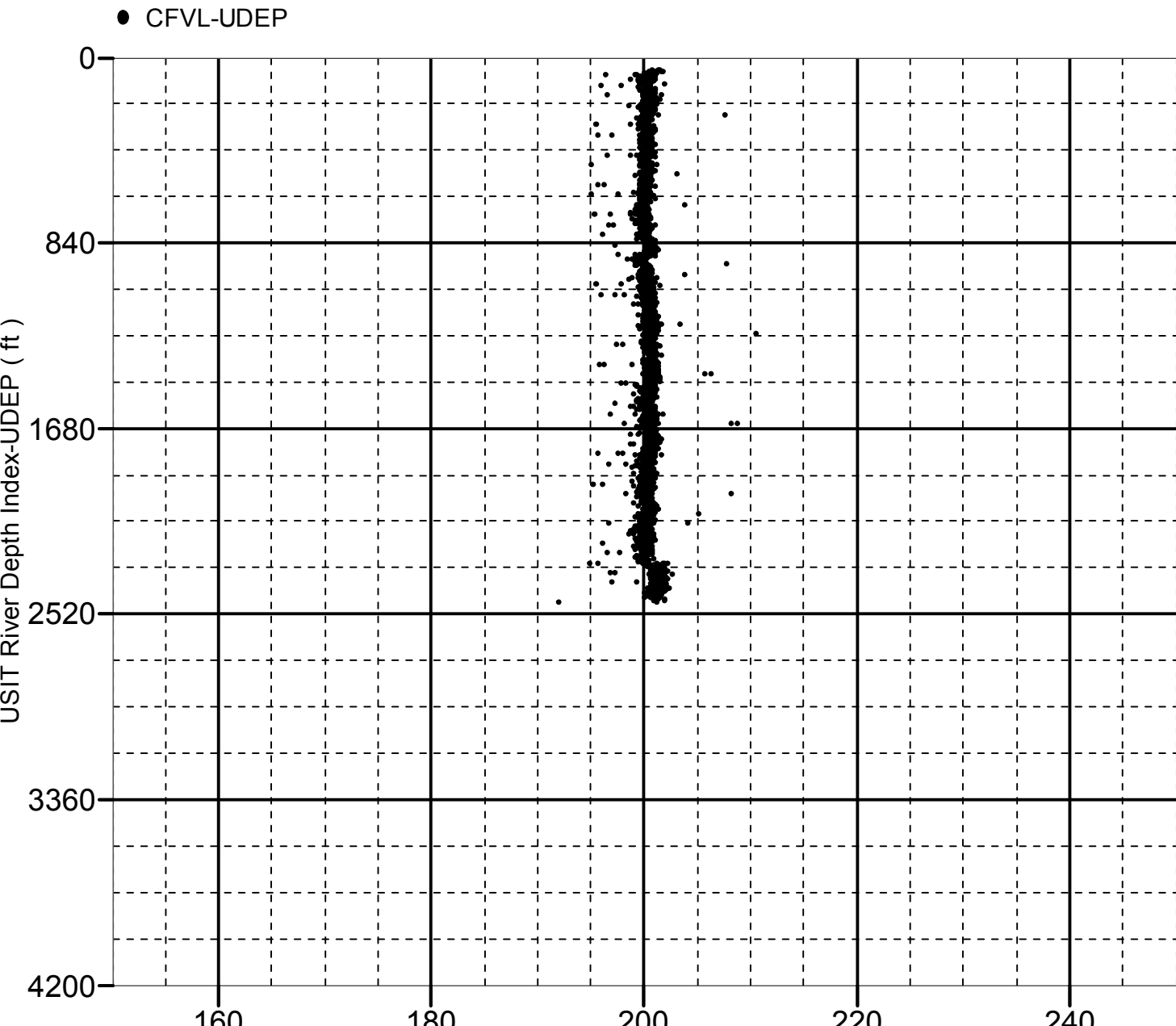
All depth are at tool zero.

XYZ

Company:DCP Midstream LP Well:Zia AGI D2
3A: Main[2]:Up:S007

Fluid Acoustic Slowness vs Depth
2D Cross Plot

Index Range: From 2473.00 to 63.50 ft

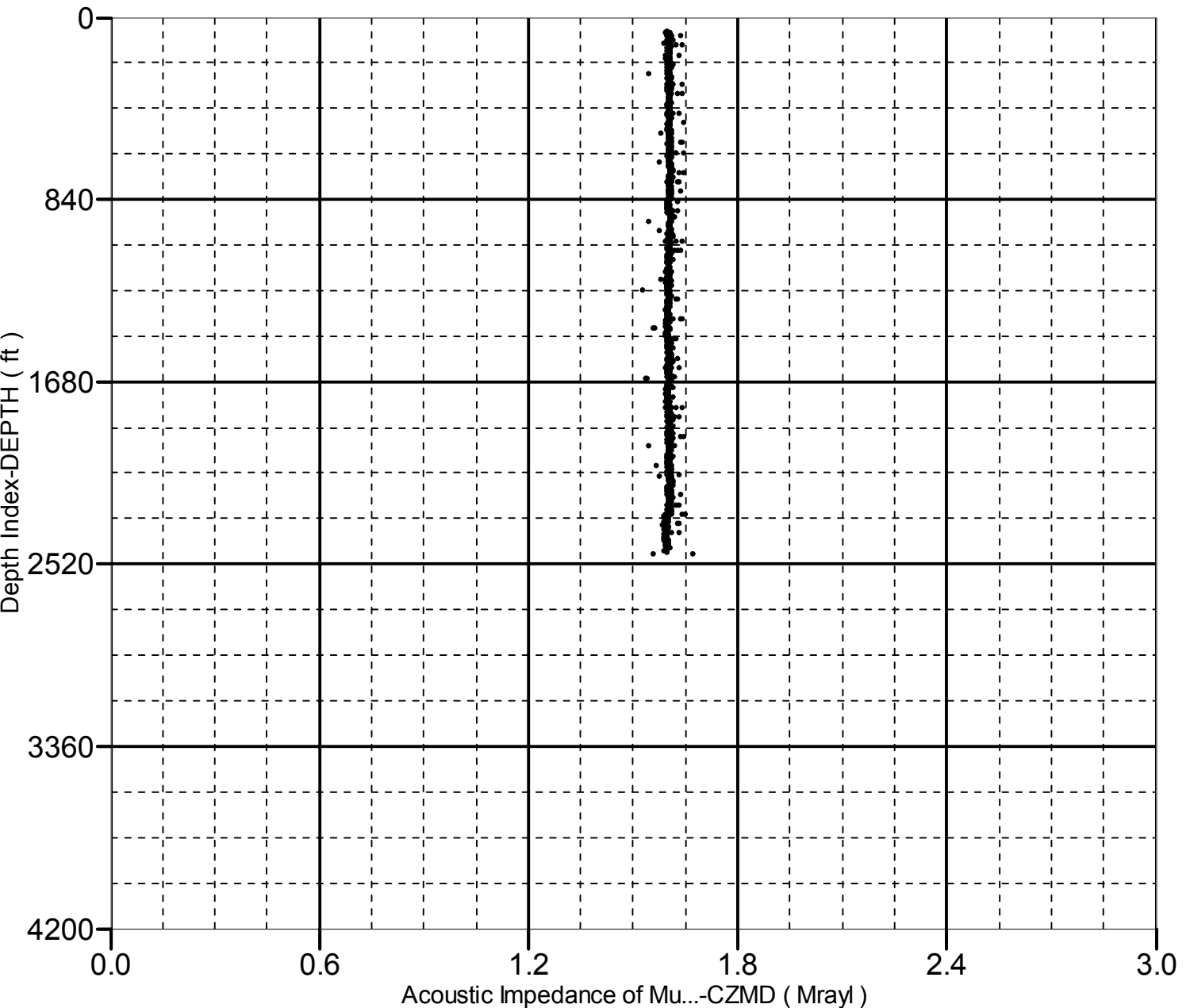


Acoustic Impedance of Mud vs Depth

2D Cross Plot

Index Range: From 2474.00 to 63.50 ft

● CZMD-DEPTH



Company:	DCP Midstream LP	Schlumberger
Well:	Zia AGI D2	
Field:	AGI Devonian Exploration	
County:	Lea	
Operator:	Midcon Energy	

VDL Wide Prints

CCL-GR

Company: DCP Midstream LP

Well: Zia AGI D2

Field: AGI Devonian Exploration

County: Lea State: New Mexico

Isolation Scanner

Cement Evaluation

** FIELD PRINT **

County: Lea

Field: AGI Devonian Exploration

Location: 1893' FSL & 950' FWL

Well: Zia AGI D2

Company: DCP Midstream LP

Location:

1893' FSL & 950' FWL

Section: 19 Township: T19S Abstract: R32E

Elev.: K.B. 3572.00 ft

G.L. 3547.00 ft

D.F. 3571.00 ft

Permanent Datum:

Log Measured From:

Drilling Measured From:

Ground Level

Kelly Bushing

Kelly Bushing

Elev.: 25.00 ft

3547.00 f

above Perm.Datum

API Serial No.

30-025-42207

Section: 19

Township: T19S

Abstract: R32E

Logging Date	10-Nov-2016
Run Number	3A
Depth Driller	2555.00 ft
Schlumberger Depth	2470.00 ft
Bottom Log Interval	2470.00 ft
Top Log Interval	100.00 ft
Casing Fluid Type	Fresh Water
Salinity	
Density	8.5 lbm/gal
Fluid Level	8.00 ft
BIT/CASING/TUBING STRING	
Bit Size	17.50 in
From	826.00 ft
To	2555.00 ft
Casing/Tubing Size	13.375 in
Weight	61 lbm/ft
Grade	N/A
From	0.00 ft
To	2550.00 ft
Max Recorded Temperatures	
Logger on Bottom	Time 10-Nov-2016 13:29:00
Unit Number	Location: 2140 Midland
Recorded By	Stephanie Anderson
Witnessed By	Jared Smith

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.

Contents

1. Header	12. Xyz (Import of IBC Fluid Acoustic Slowness vs Depth 6.0 in)
2. Disclaimer	13. Xyz (Import of IBC Acoustic Impedance of Mud vs Depth 6.0 in)
3. Contents	14. Tail
4. Well Sketch	
5. Borehole Size/Casing/Tubing Record	
6. Remarks and Equipment Summary	
7. Depth Summary	
8. Import of IBC Fluid Properties Measurement	
9. 3A Main Pass Goodwin Compressed	
9.1 Integration Summary	
9.2 Composite Summary	
9.3 Log (Import of IBC Goodwin)	
10. 3A Main Pass 5" = 100'	
10.1 Integration Summary	
10.2 Software Version	
10.3 Composite Summary	
10.4 Log (Import of USI IBC SLG)	

10.5 Parameter Listing

11. 3A Repeat Pass 5" = 100'

11.1 Integration Summary

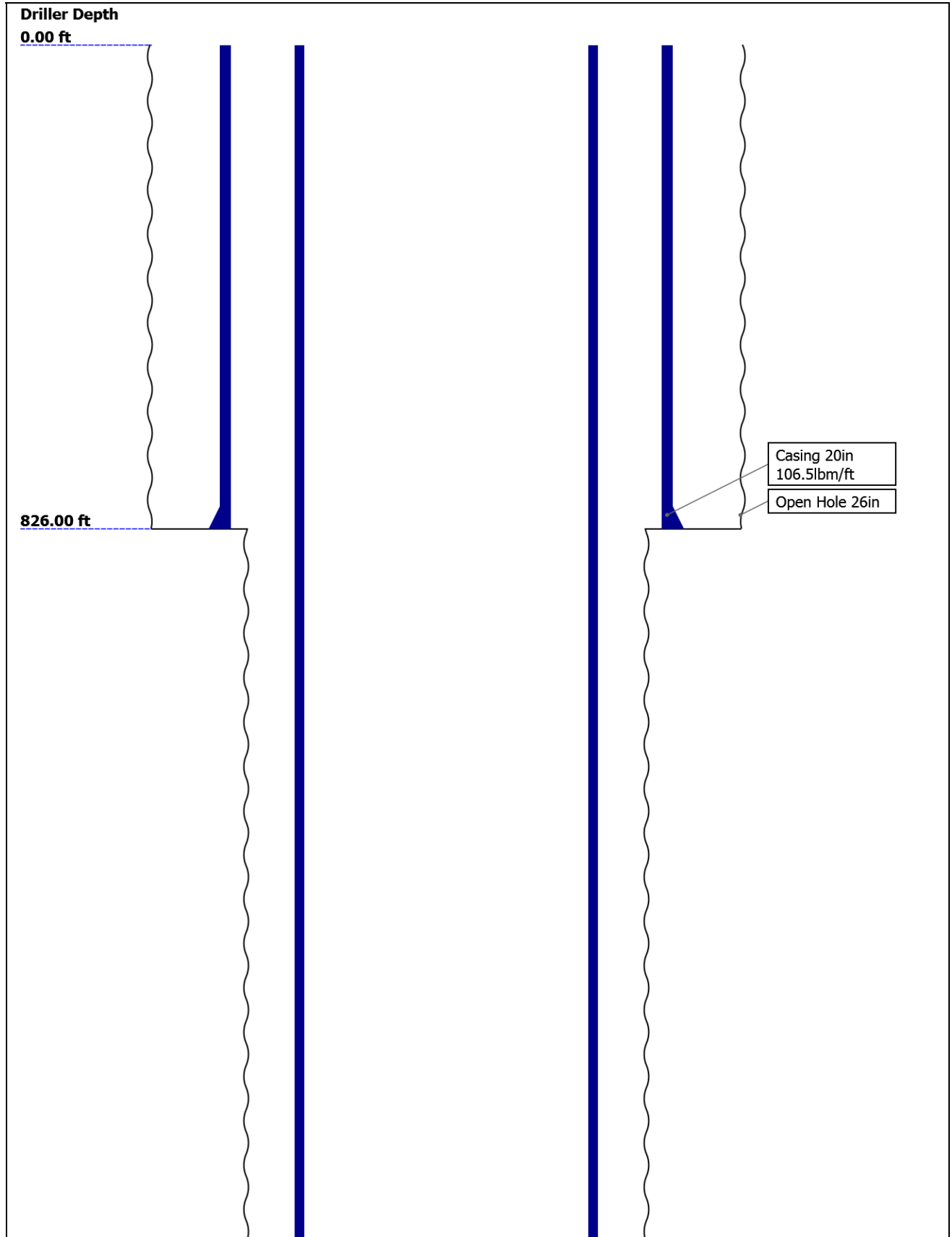
11.2 Software Version

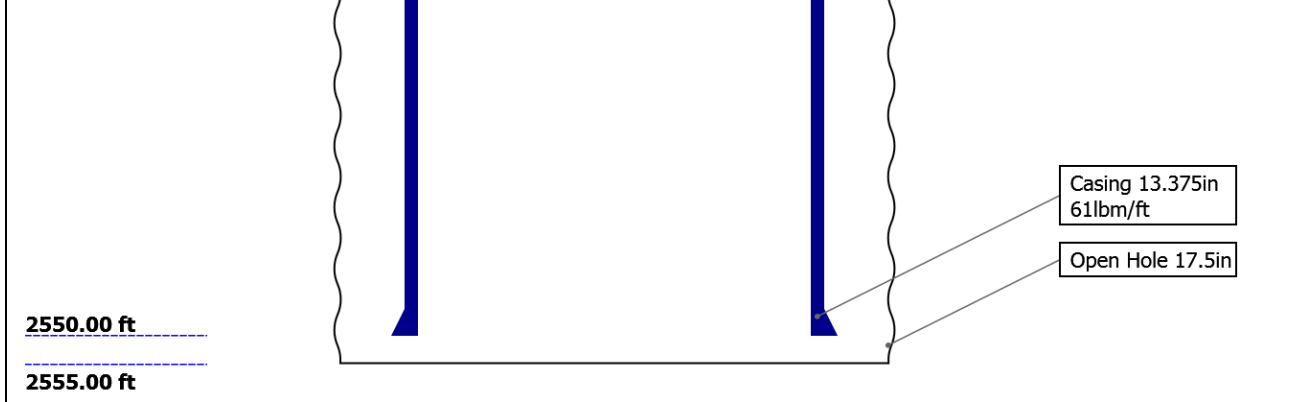
11.3 Composite Summary

11.4 Log (Import of USI IBC SLG)

11.5 Parameter Listing

Well Sketch





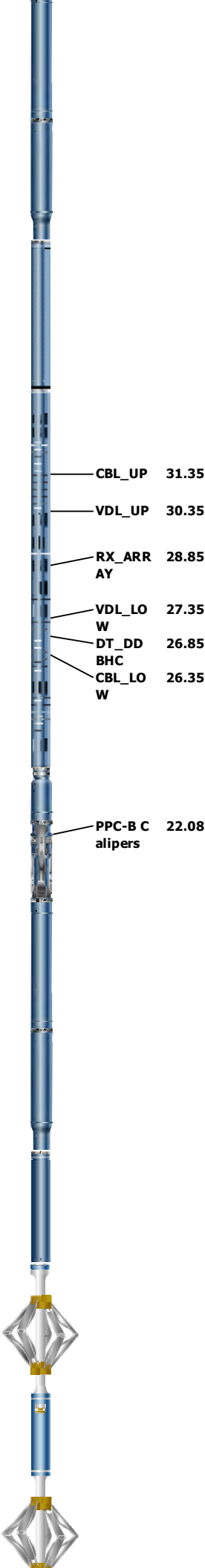
Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	26	17.5				
Top Driller (ft)	0	826				
Top Logger (ft)	0	826				
Bottom Driller (ft)	826	2555				
Bottom Logger (ft)	826	2555				
Casing						
Size (in)	20	13.375				
Weight (lbm/ft)	106.5	61				
Inner Diameter (in)	19	12.515				
Grade	N/A	N/A				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	826	2550				
Bottom Logger (ft)	826	2550				

Remarks and Equipment Summary

3A: Toolstring				3A: Remarks
Equip name	Length	MP name	Offset	Logging Objective: Cement and corrosion evaluation from TD to Surface.
LEH-QC	56.86			Toolstring run as per toolsketch. 2 PPCs and 2 Inlines used for centralization.
CAL-YA:1	54.4			SLB TD: 2470ft.
556				Main and repeat pass correlated to GR in ' Borehole Profile Log' by Schlumberger on 08-Nov-2016.
CAL-YA:15		CCL	53.61	Correlated to GR peaks at 2341ft, 2225 ft, 2095ft.
56				No pressure applied as per client request.
EDTC-B:8	50.9			Drilling fluid: Fresh water, Annular fluid:10# Brine.
360				Casing Info: 13.375in 61#.
EDTH-B:87		CTEM	47.4	Casing ER: 6.6875in, IR: 6.2575in, Thickness: .43in.
01		ACCZ	0.00	Cement Information: 13.5lb Lead, 14.8lb Tail.
EDTG-A:7		HV	0.00	Fluid slowness: Automatic, Acoustic Impedance: Inversion Normalization.
7275		Gamma	45.53	IBC main pass logged in 10deg 6in.
EDTC-B:83		Ray	44.4	
60		TelStatu	44.4	
PPC-B[2]	44.4			
:8225				
PPC-B:822		PPC-B C	43.25	
5		alipers		

ASLT-B:E 37.88
NP41
ASLT-BB:E
NP41



PPC-B[1] 23.23
:8080
PPC-B:808
0

USIT-E:99 16.71
2
ECH-MFA:
1964
USAC-A:9
92
USIS-A:27
39
USSC-B:17
07
IBCS-C:79
0
FAR-SENS
OR:4482
NEAR-SEN
SOR:4483
USI-SENS
OR:4488
EMITTER-
SENSOR:4
491



USI Sen 1.07
sor

TOOL_ZERO

Lengths are in ft

Maximum Outer Diameter = 6.689 in

Line: Sensor Location, Value: Gating Offset

All measurements are relative to TOOL_ZERO

Depth Summary

3A

Depth Measuring Device

Type	IDW-B
Serial Number	7339
Calibration Date	25-Jun-2016
Calibrator Serial Number	34
Calibration Cable Type	7-39PI XXS
Wheel Correction 1	-4
Wheel Correction 2	-4

Tension Device

Type	CMTD-B/A
Serial Number	1500
Calibration Date	05-Nov-2016
Calibrator Serial Number	26
Number of Calibration Points	10
Calibration Root Mean Square Error	8
Calibration Peak Error	15

Logging Cable

Type	7-39PI-XXS
Serial Number	F715186
Length	20100.00 ft
Conveyance Type	Wireline
Rig Type	Land

3A:Depth Control Parameters

Log Sequence	Subsequent Trip To the Well
Reference Log Name	Borehole Profile Log
Reference Log Run Number	2A
Reference Log Date	08-Nov-2016
Subsequent Trip Down Log Correction	

Depth Control Remarks

IDW used as primary depth control.
Z-Chart used as secondary depth control.

USIT - Fluid Properties Measurement

Run Name	Pass Name	Start Depth(ft)	Stop Depth(ft)
Run 2	Main[2]:Up	2474.14	64.22

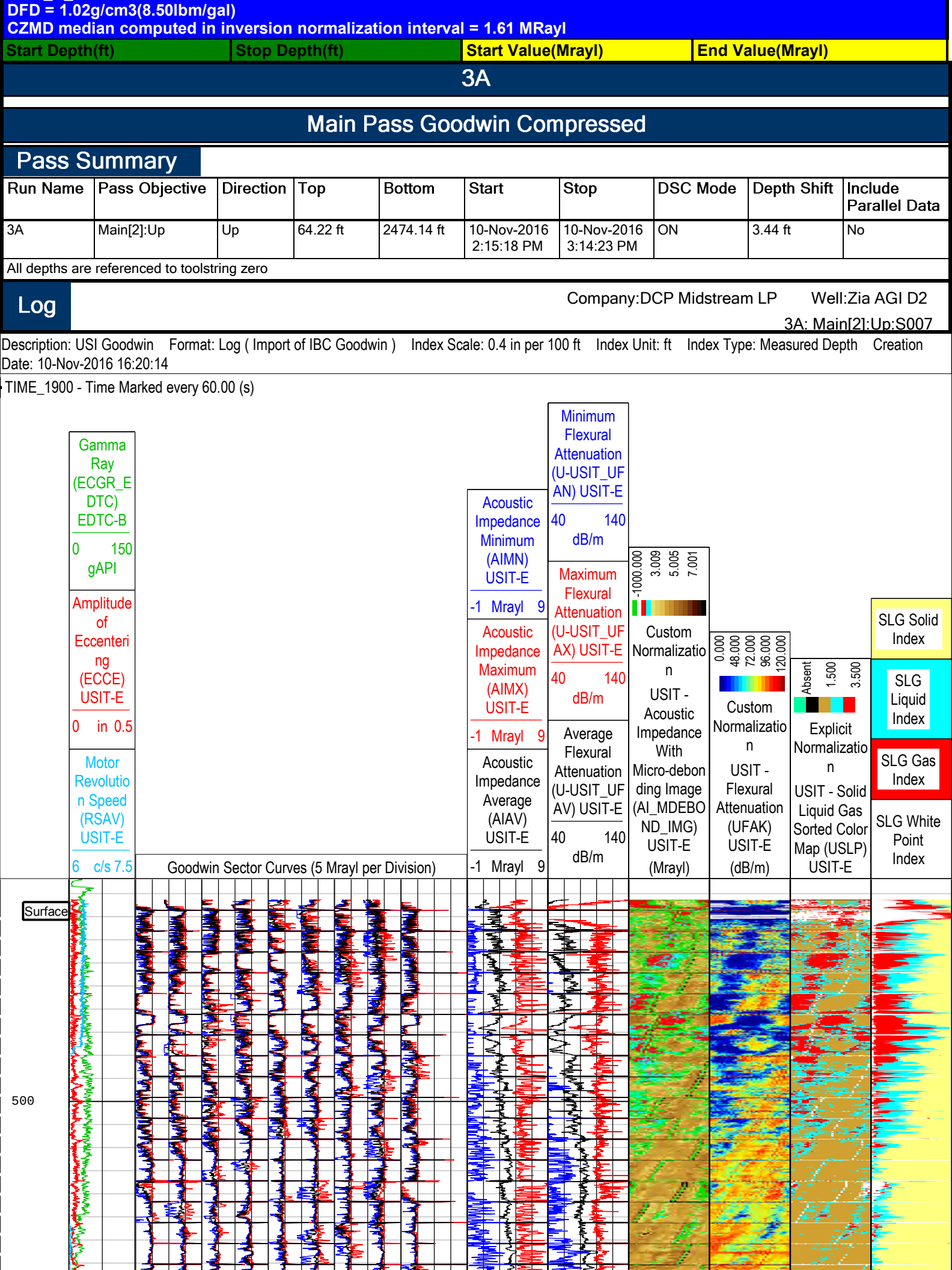
Fluid Velocity = "Automatic".
CFVL equals DFSL channel

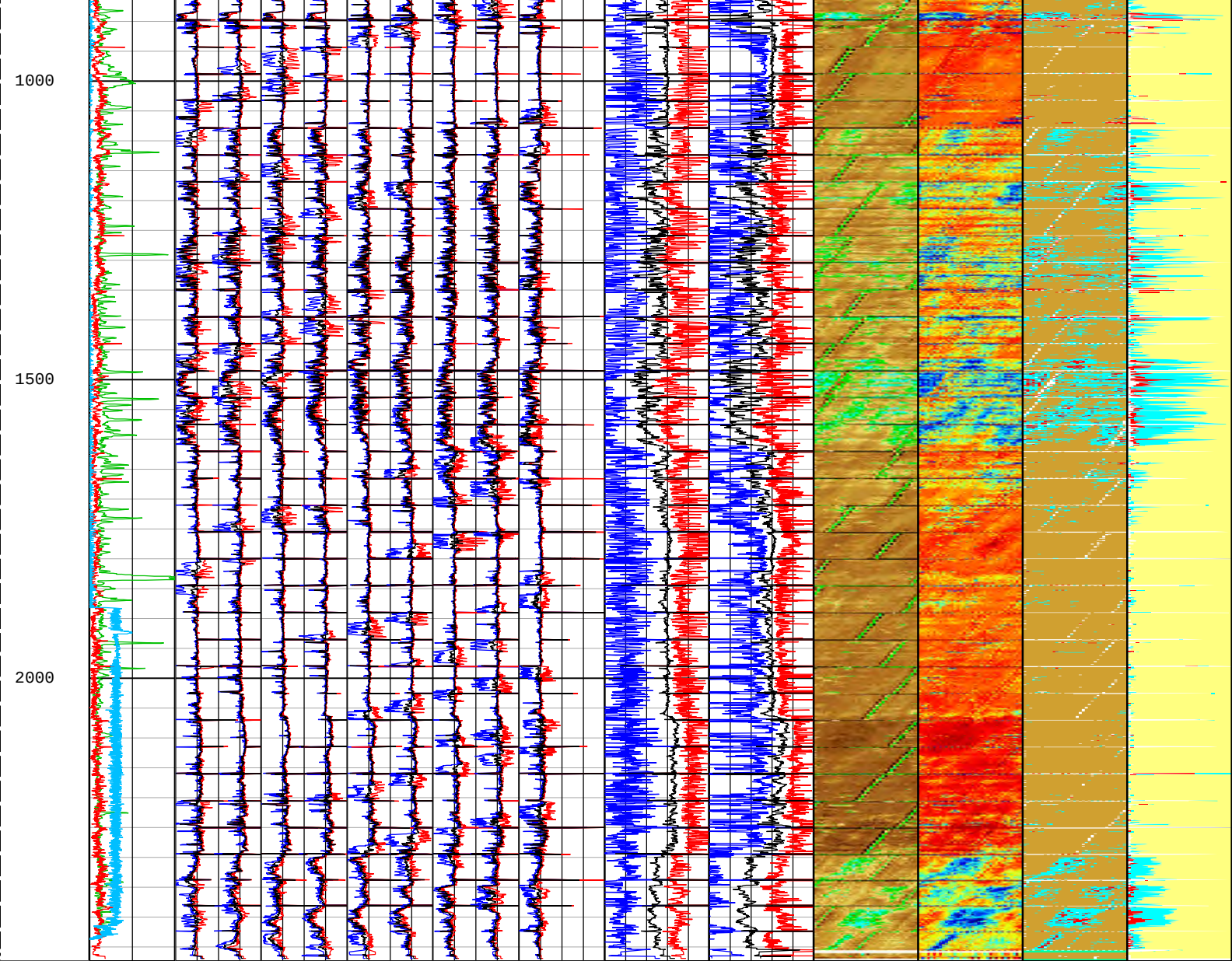
Start Depth(ft)	Stop Depth(ft)	Start Value(us/ft)	End Value(us/ft)
-----------------	----------------	--------------------	------------------

Mud Impedance = "Inversion Norm.".

IBC Inversion normalization zone is : 33.01m(108.30ft) to 37.52m(123.09ft)

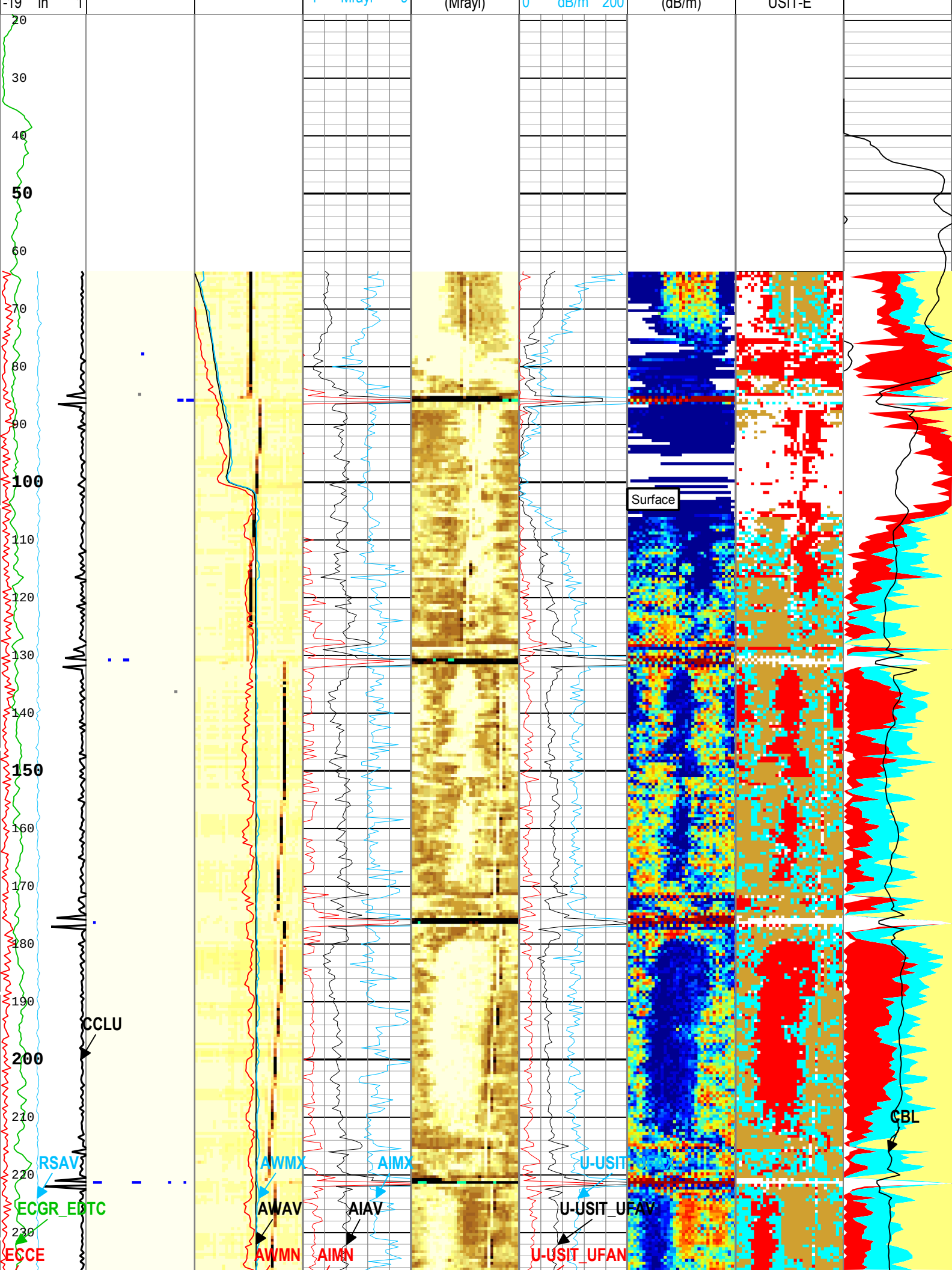
MUD_N_INV = 1.04

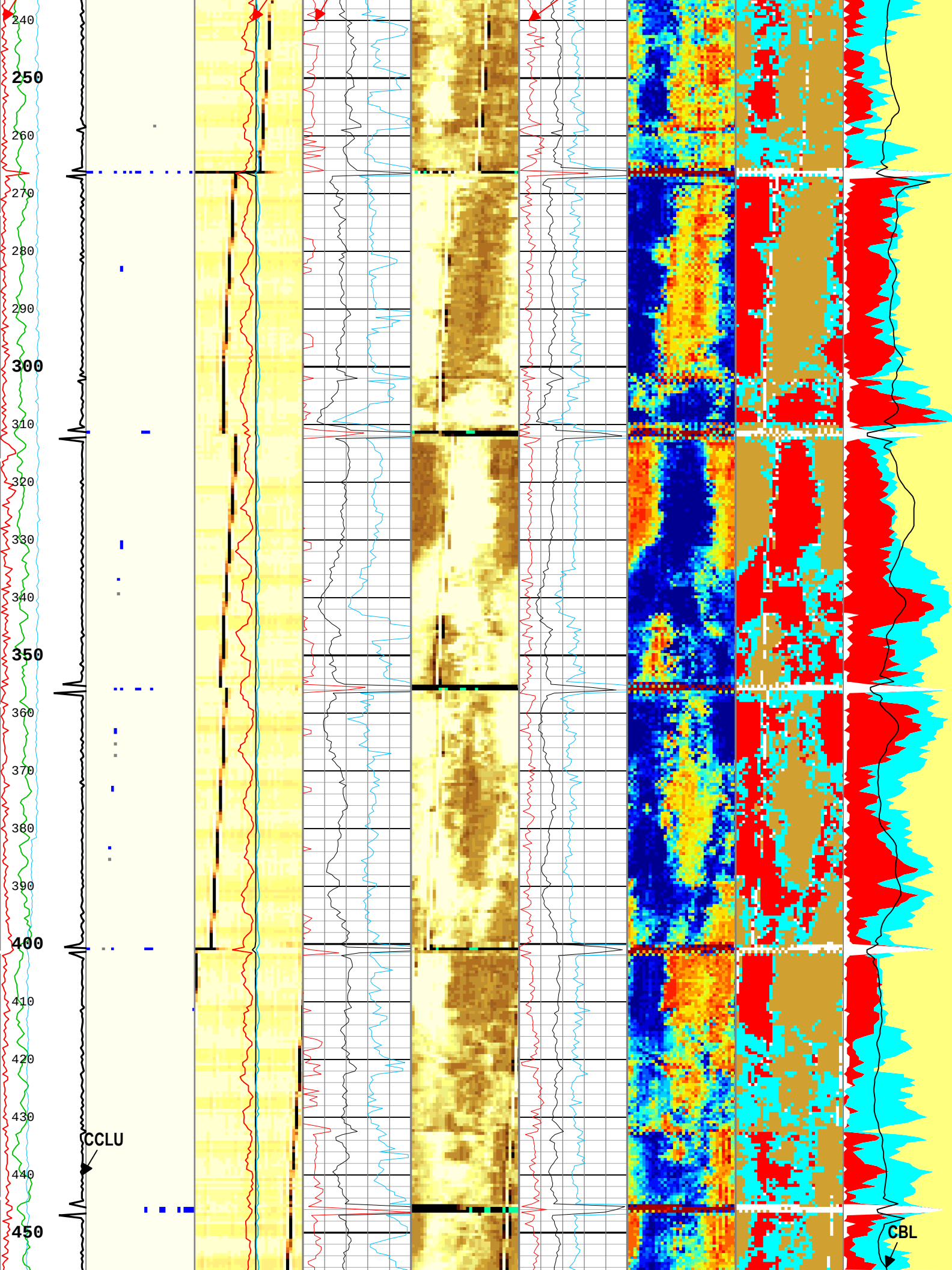


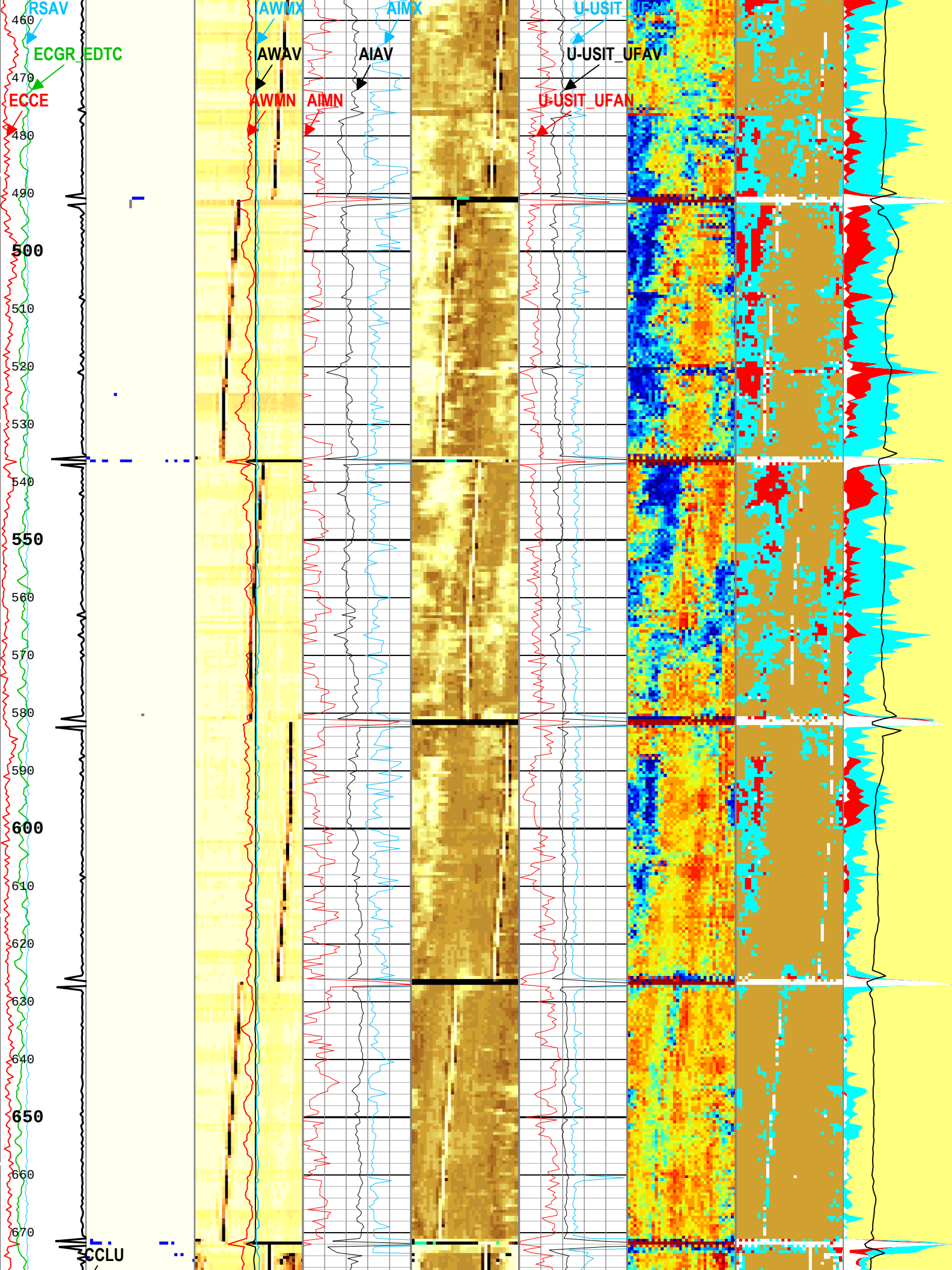


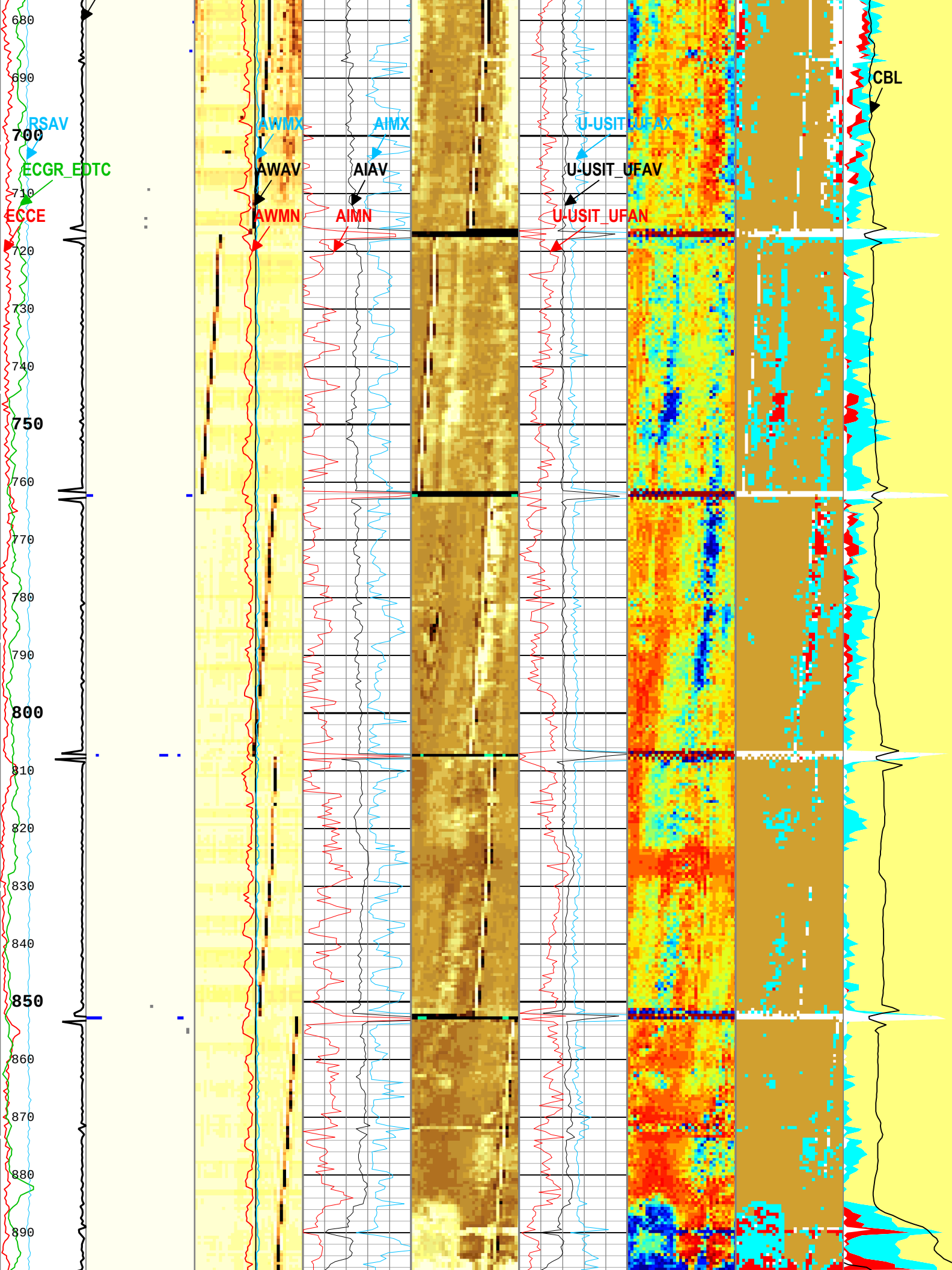
Gamma Ray (ECGR_E DTC) EDTC-B 0 150 gAPI Amplitude of Eccenteri ng (ECCE) USIT-E 0 in 0.5 Motor Revolutio n Speed (RSAV) USIT-E 6 c/s 7.5	Goodwin Sector Curves (5 Mrayl per Division)				Acoustic Impedance Minimum (AIMN) USIT-E -1 Mrayl 9 Acoustic Impedance Maximum (AIMX) USIT-E -1 Mrayl 9 Acoustic Impedance Average (AIAV) USIT-E -1 Mrayl 9	Minimum Flexural Attenuation (U-USIT_UF AN) USIT-E 40 140 dB/m Maximum Flexural Attenuation (U-USIT_UF AX) USIT-E 40 140 dB/m Average Flexural Attenuation (U-USIT_UF AV) USIT-E 40 140 dB/m	Custom Normalizatio n USIT - Acoustic Impedance With Micro-debon ding Image (AI_MDEBO ND_IMG) USIT-E (Mrayl)	Custom Normalizatio n USIT - Flexural Attenuation (UFAK) USIT-E (dB/m)	Explicit Normalizatio n USIT - Solid Liquid Gas Sorted Color Map (USLP) USIT-E	SLG Solid Index SLG Liquid Index SLG Gas Index SLG White Point Index

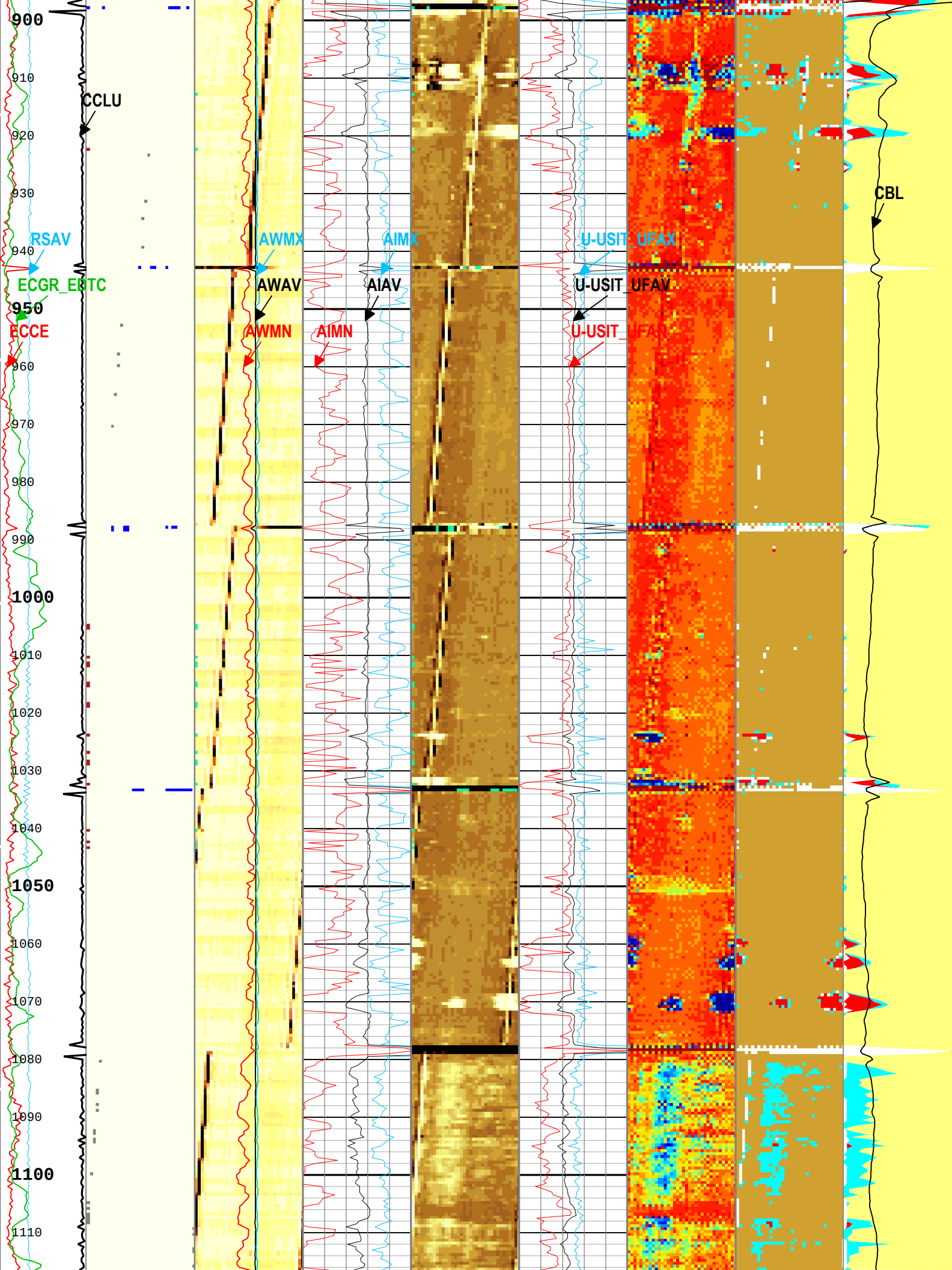
TIME_1900 - Time Marked every 60.00 (s)

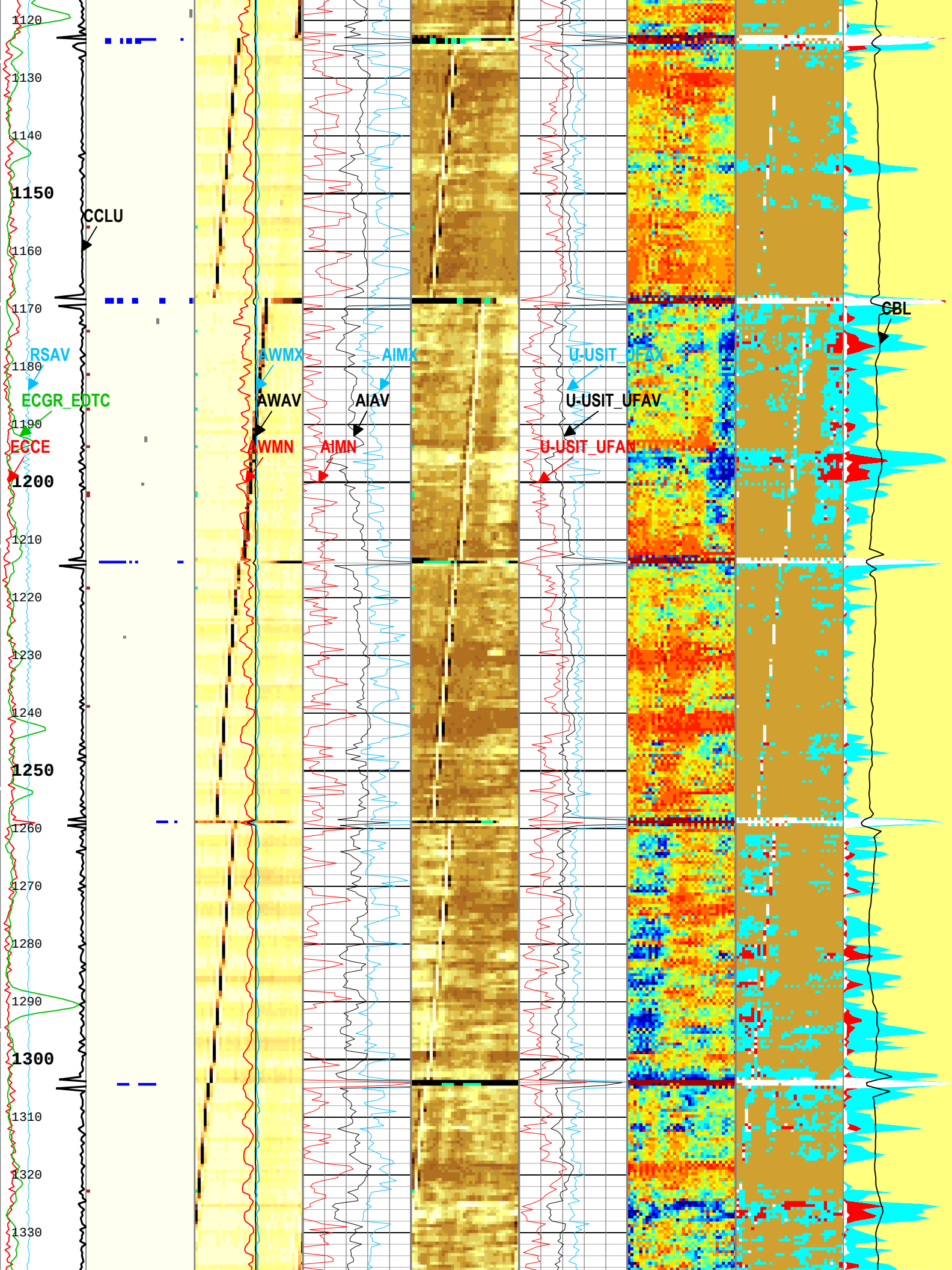


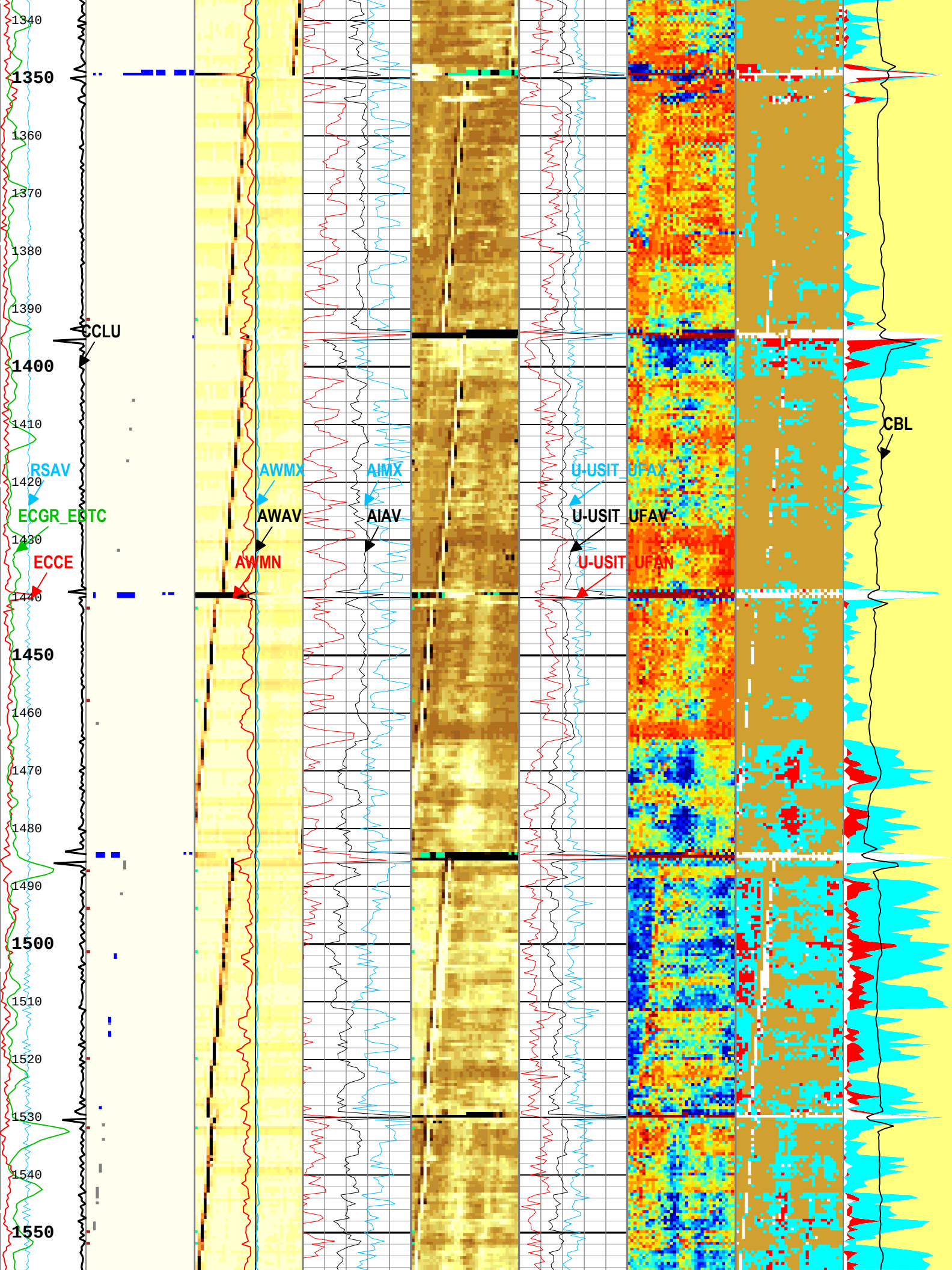


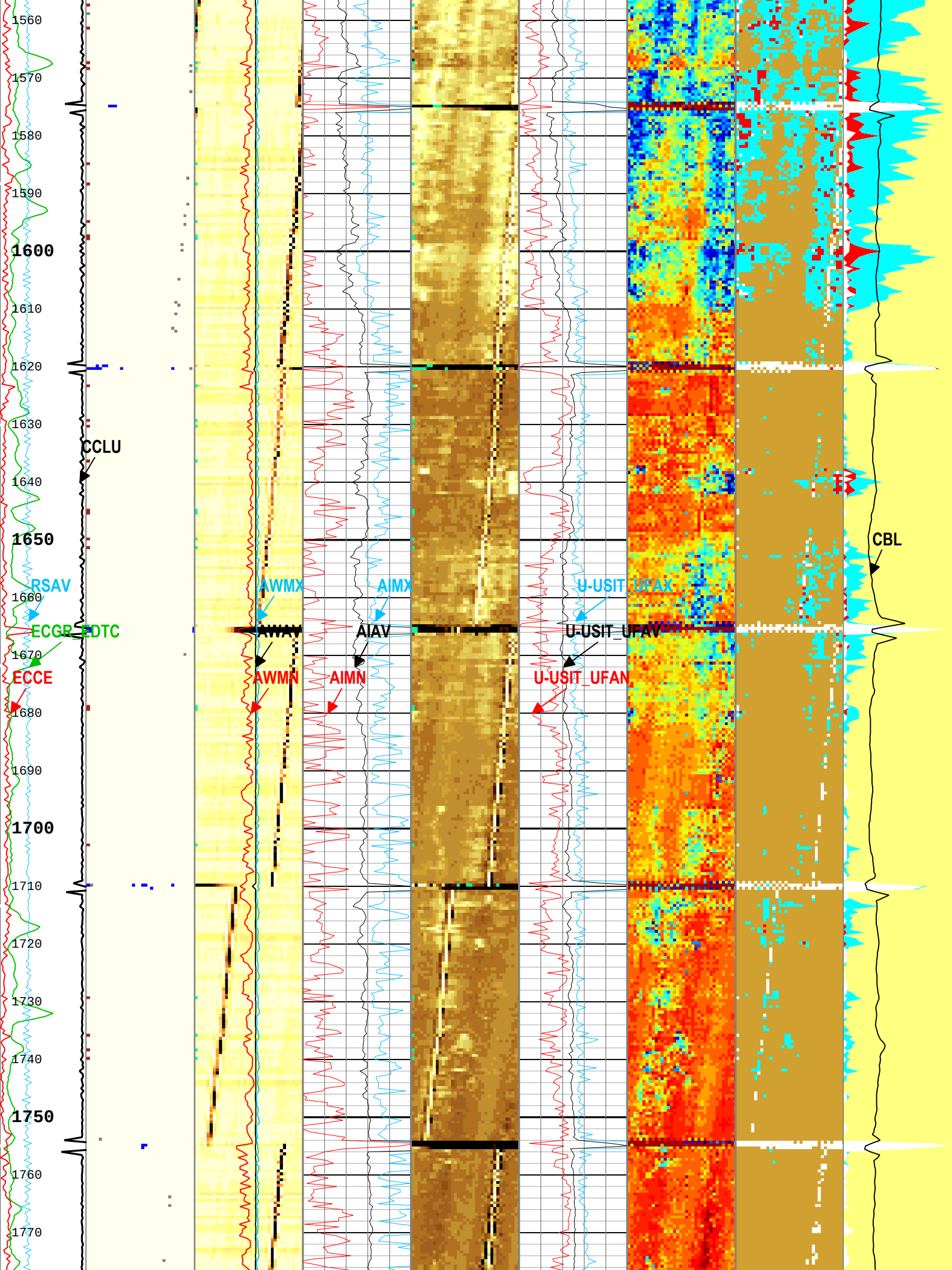


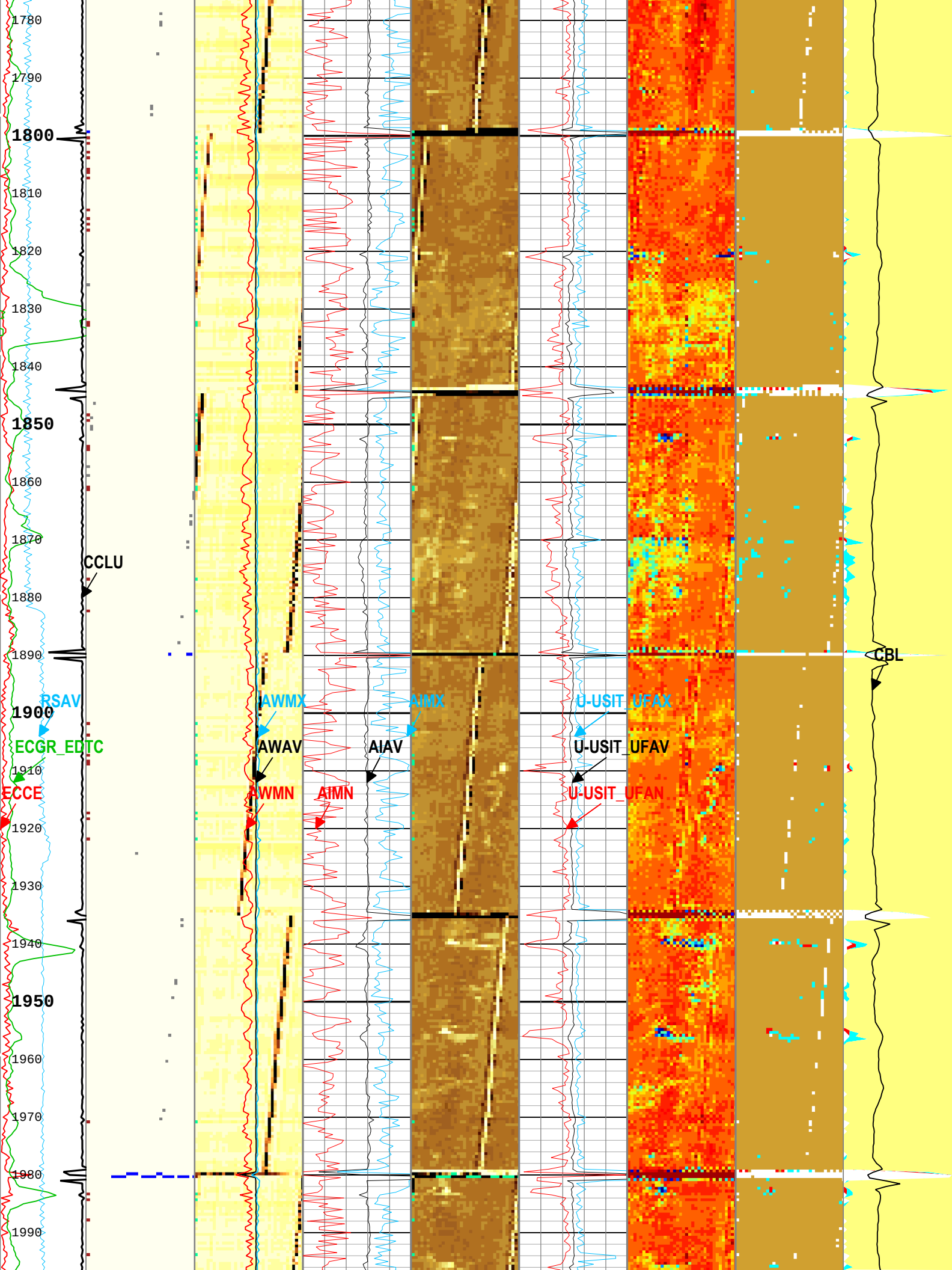


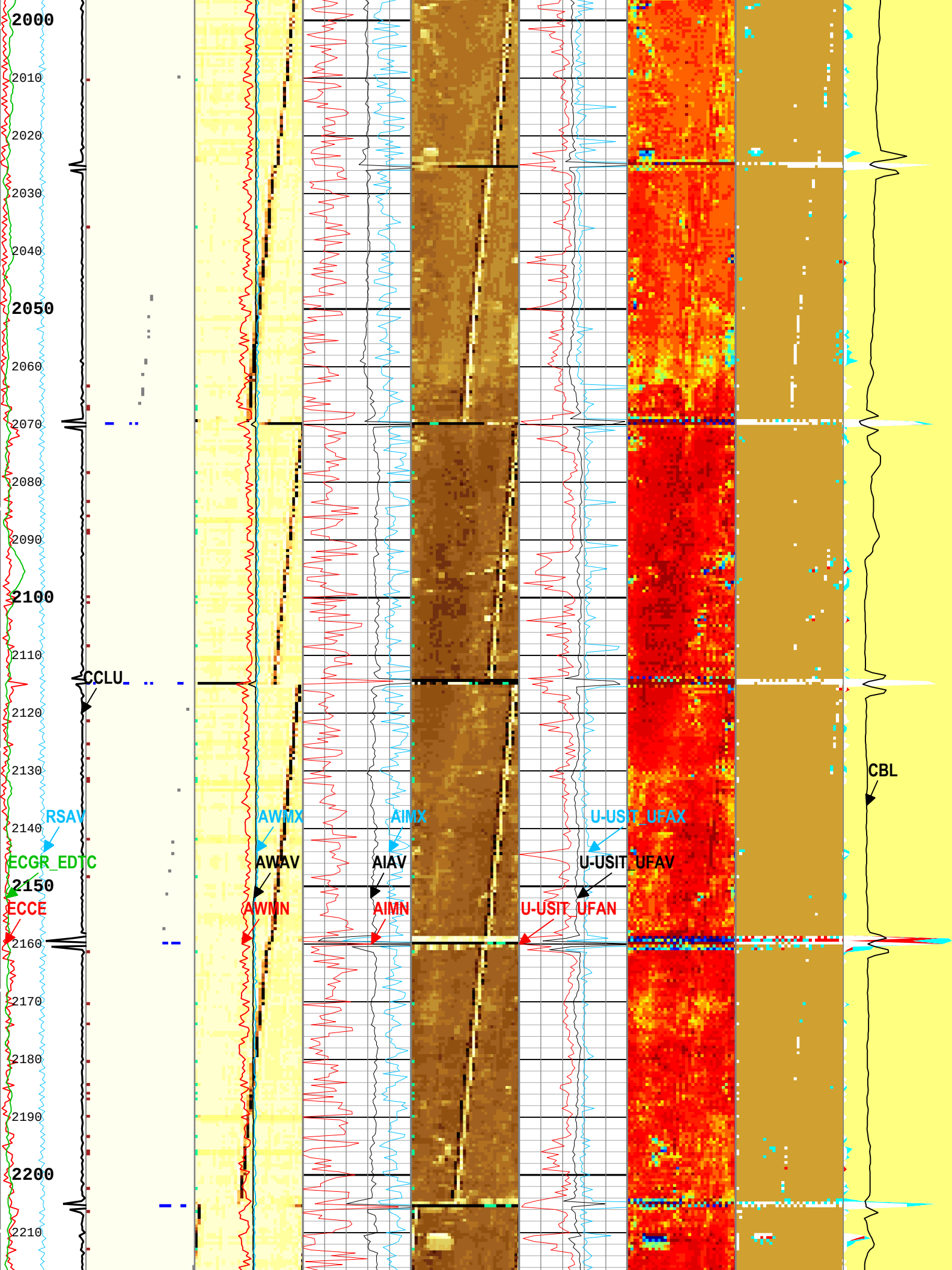


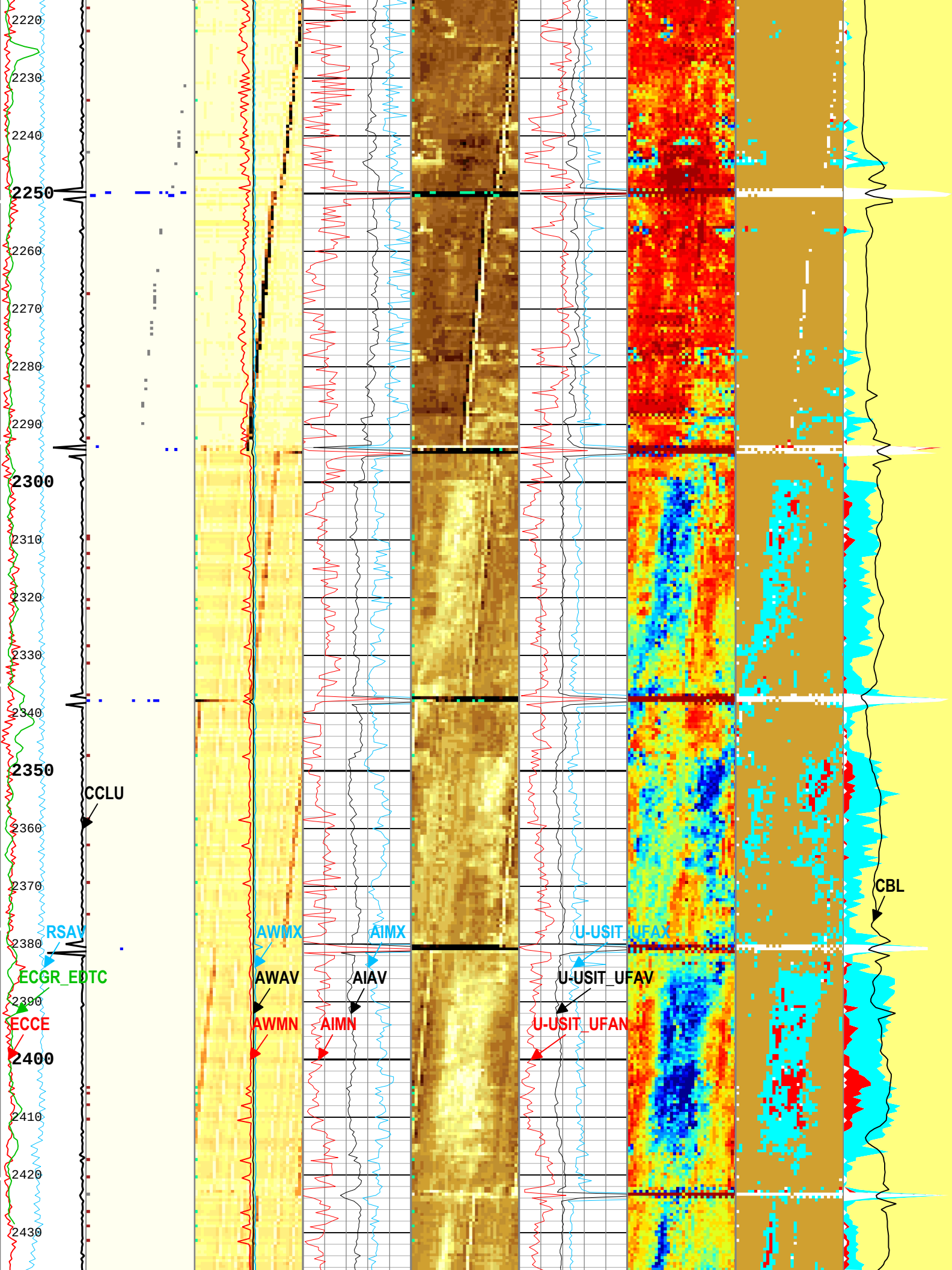


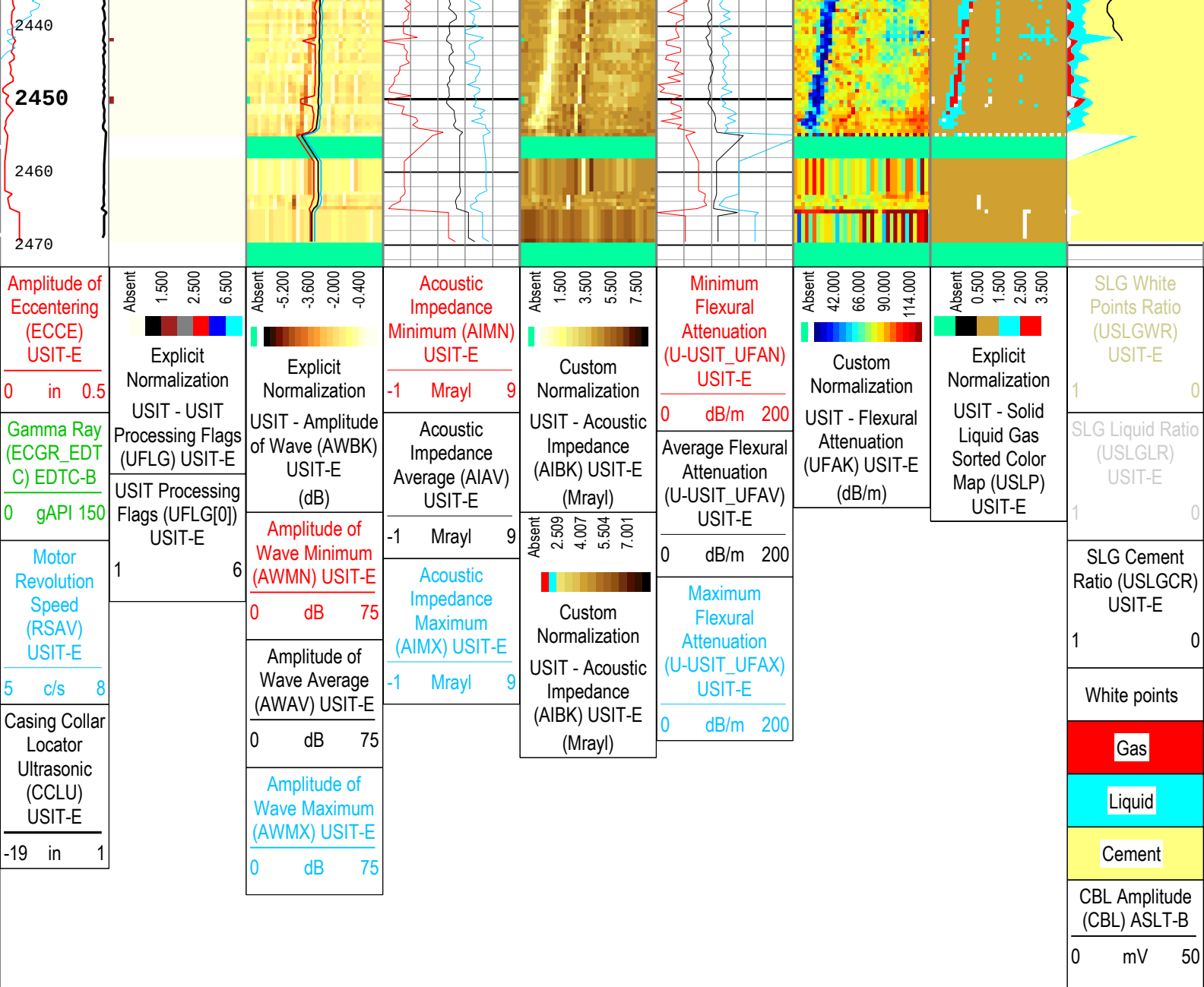












TIME_1900 - Time Marked every 60.00 (s)

USIT Processing Flags (UFLG[0]) USIT-E

- | | |
|---|---------------------------|
| 1 - UFLG 1 Value within [0.0 - 1.5] - : | UTIM Error |
| 2 - UFLG 2 Value within [1.5 - 2.44] - : | Pulse Origin Not Detected |
| 3 - UFLG 2 Value within [2.44 - 2.5] - : | Spiky Waveform |
| 4 - UFLG 3 Value within [2.5 - 3.5] - : | WINLEN Error |
| 5 - UFLG 4 UFLG 5 UFLG 6 Value within [3.5 - 6.5] - : | Casing Thickness Error |
| 6 - UFLG 7 UFLG 8 UFLG 9 Value within [6.5 - 10] - : | Loop Processing Error |

Description: USI IBC SLG Format: Log (Import of USI IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 10-Nov-2016 16:20:20

Channel Processing Parameters				
3A: 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	Depth Zoned	in
CBLO	Casing Bottom (Logger)	WLSESSION	2550	ft
CBRA	CBL LQC Reference Amplitude in Free Pipe	ASLT-B	43	mV

CDEN	Cement Density	USIT-E	0	lbm/gal
CDEN	Cement Density	EDTC-B	16.69	lbm/gal
CMTY(U-USIT_CEMT)	Cement Type	USIT-E	Regular Cement	
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.5	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	192	us/ft
FD	Fluid Density	USIT-E	10	lbm/gal
FDII	FPM Data Interpolation Interval	USIT-E	0	ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS	
GOBO_CURR	Good Bond in Arbitrary Cement	ASLT-B	4.14	mV
HEMA	Hematite Presence Flag	Borehole	No	
FSOD	USIT IBC Fluid Slowness Fits Casing Outer Diameter	USIT-E	0_OFF	
IBC_FVEL_SEL	IBC Fluid Velocity Selection	USIT-E	Automatic	
IBC_OFFSET_SEL	IBC Flexural Offset Selector	USIT-E	UFAO	
IBC_ZMUD_SEL	IBC Mud Impedance Selection	USIT-E	Inversion Norm.	
ICE_PROCESS	ICE Processing	USIT-E	Yes	
IMAR	Image Rotation	USIT-E	Off	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	ASLT-B	33.15	dB/m
MEAS_WLEN	Tcube Processing Window Length in Measurement Mode	USIT-E	26.92	us
MSA	Minimum Sonic Amplitude	ASLT-B	2.31	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	ASLT-B	2.31	mV
MUD_N_INV	IBC Inversion Mud Normalization Factor	USIT-E	1.04	
U-USIT_OCDI	Outer Casing Diameter	USIT-E	0	in
U-USIT_OCSH	Outer Casing Shoe	USIT-E	0	ft
U-USIT_OCWE	Outer Casing Weight	USIT-E	0	lbm/ft
RUN_SNUM	Run Sequence Number	WSDRUN	2	
U-USIT_DFSZ	Drilling Fluid Specific Acoustic Impedance	USIT-E	2.01	Mrayl
U-USIT_UFAO	SIT Flexural Attenuation Offset	USIT-E	0	dB/m
UFGDE	Fiberglass Density	USIT-E	16.27	lbm/gal
UFGPS	Fiberglass Processing Selection	USIT-E	No	
UFGVL	Fiberglass Velocity	USIT-E	9678.48	ft/s
U-USIT_UIAP	IBC Answer Product Enabled	USIT-E	SolidLiquidGasMap	
ZMUD	Acoustic Impedance of Mud	Borehole	1.55	Mrayl
ZTCM	Acoustic Impedance Threshold for Cement	USIT-E	2.51	Mrayl
ZTGS	Acoustic Impedance Threshold for Gas	USIT-E	0.3	Mrayl

Depth Zone Parameters			
Parameter	Value	Start (ft)	Stop (ft)
BS	26	19	826
BS	17.5	826	2473
All depth are actual.			

Tool Control Parameters				
3A: Parameters				
Parameter	Description	Tool	Value	Unit
AGMN	Minimum Gain of Cartridge	USIT-E	-12	dB
AGMX	Maximum Gain of Cartridge	USIT-E	54	dB
U-USIT_DDT5	USIC Downhole Decimation for T5 only	USIT-E	0_NONE	
EMXV	EMEX Voltage	USIT-E	Time Zoned	V

MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	2700	ft/h
MODE	SSLT Firing Mode	ASLT-B	CBL	
MOTOR_PROTECT	Motor Protection	USIT-E	Time Zoned	
RATE	Firing Rate	ASLT-B	4.46	Hz
TMUC	Type of Mud	USIT-E	BRI	
U-USIT_UFWB	Far Receiver Window Begin Time	USIT-E	189.71	us
U-USIT_UFWE	Far Receiver Window End Time	USIT-E	233	us
ULOG	Logging Objective	USIT-E	MEASUREMENT	
UMFR	Modulation Frequency	USIT-E	333333	Hz
U-USIT_UNWB	Near Receiver Window Begin Time	USIT-E	158.61	us
U-USIT_UNWE	Near Receiver Window End Time	USIT-E	202	us
USFR	Ultrasonic Sampling Frequency	USIT-E	500000	Hz
UPAT	USIT Emission Pattern	USIT-E	Pattern 300 KHz	
UWKM	USIT Working Mode	USIT-E	10 deg at 6.0 in LF	
USIT_DEPTHLOG	Starting Depth Log for Ultrasonics	USIT-E	2470	ft
U-USIT_UTAN	Transducer Angles	USIT-E	33_DEG	
VDM	SSLT VDL Display Mode	ASLT-B	R5	
VRES	Vertical Resolution	USIT-E	6.0 in	
WINB	Window Begin Time	USIT-E	109.39	us
WINE	Window End Time	USIT-E	149.39	us

Time Zone Parameters					
Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXV	50	10-Nov-2016 14:15:18	10-Nov-2016 14:24:20	2474.14	2153.47
EMXV	60	10-Nov-2016 14:24:20	10-Nov-2016 15:14:23	2153.47	64.22
MOTOR_PROTECT	On	10-Nov-2016 14:15:18	10-Nov-2016 14:16:44	2474.14	2460.1
MOTOR_PROTECT	Off	10-Nov-2016 14:16:44	10-Nov-2016 15:14:23	2460.1	64.22

All depth are at tool zero.

3A					
Repeat Pass 5" = 100'					

Software Version					
Acquisition System			Version		
Maxwell 2016 SP1			6.1.58882.3100		
Application Patch			Wireline_Hotfix-Perfo-2016SP1_6.1.63773		
			Wireline_Hotfix-RTB-2016SP1_6.1.68160		
			Wireline_NPD-PNX-2016SP1_6.1.74487		

Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
3A	Repeat[1]:Up	Up	1974.51 ft	2472.06 ft	10-Nov-2016 1:54:55 PM	10-Nov-2016 2:09:43 PM	ON	1.98 ft	No

All depths are referenced to toolstring zero

Log	Company:DCP Midstream LP Well:Zia AGI D2 3A: Repeat[1]:Up:S007								
-----	--	--	--	--	--	--	--	--	--

Description: USI IBC SLG Format: Log (Import of USI IBC SLG) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 10-Nov-2016 16:20:29

TIME_1900 - Time Marked every 60.00 (s)

USIT Processing Flags (UFLG[0]) USIT-E

1 - UFLG 1 Value within [0.0 - 1.5] - : UTIM Error