

DISCLAIMER
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OTHER SERVICES1
 OS1: FMS/DSI
 OS2:
 OS3: MSS/HRLA/HLDS/HNGS
 OS4:
 OS5:

OTHER SERVICES2
 OS1:
 OS2:
 OS3:
 OS4:
 OS5:

REMARKS: RUN NUMBER 1
 Hole drilled with RCB coring bit and bottom hole assembly (BHA). 9.875" BS
 Drill pipe set at 751.38 mbrf for wireline logging.
 GPIT run with non magnetic 3m housing above.
 UBI run in 500khz, 0.2 in vert resolution, 180 sample/rev, 129m/hr.
 UBI run with rotating sub model "A" which is 3.56 inch diameter.
 Fluid system was with a water centralizer in addition to one MCD centralizer.
 Depth recorded at drill floor.
 All logs presented in measured depth below drill floor (MBRF).
 Maximum observed temperature on the MSS temperature was 18 degC.

REMARKS: RUN NUMBER 2

RUN 1

SERVICE ORDER #: _____
 PROGRAM VERSION: 19C0-187
 FLUID LEVEL: _____

LOGGED INTERVAL	START	STOP

RUN 2

SERVICE ORDER #: _____
 PROGRAM VERSION: _____
 FLUID LEVEL: _____

LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1

SURFACE EQUIPMENT

GSR-U 616008
 WITM (EDTS)-A 1

RUN 2

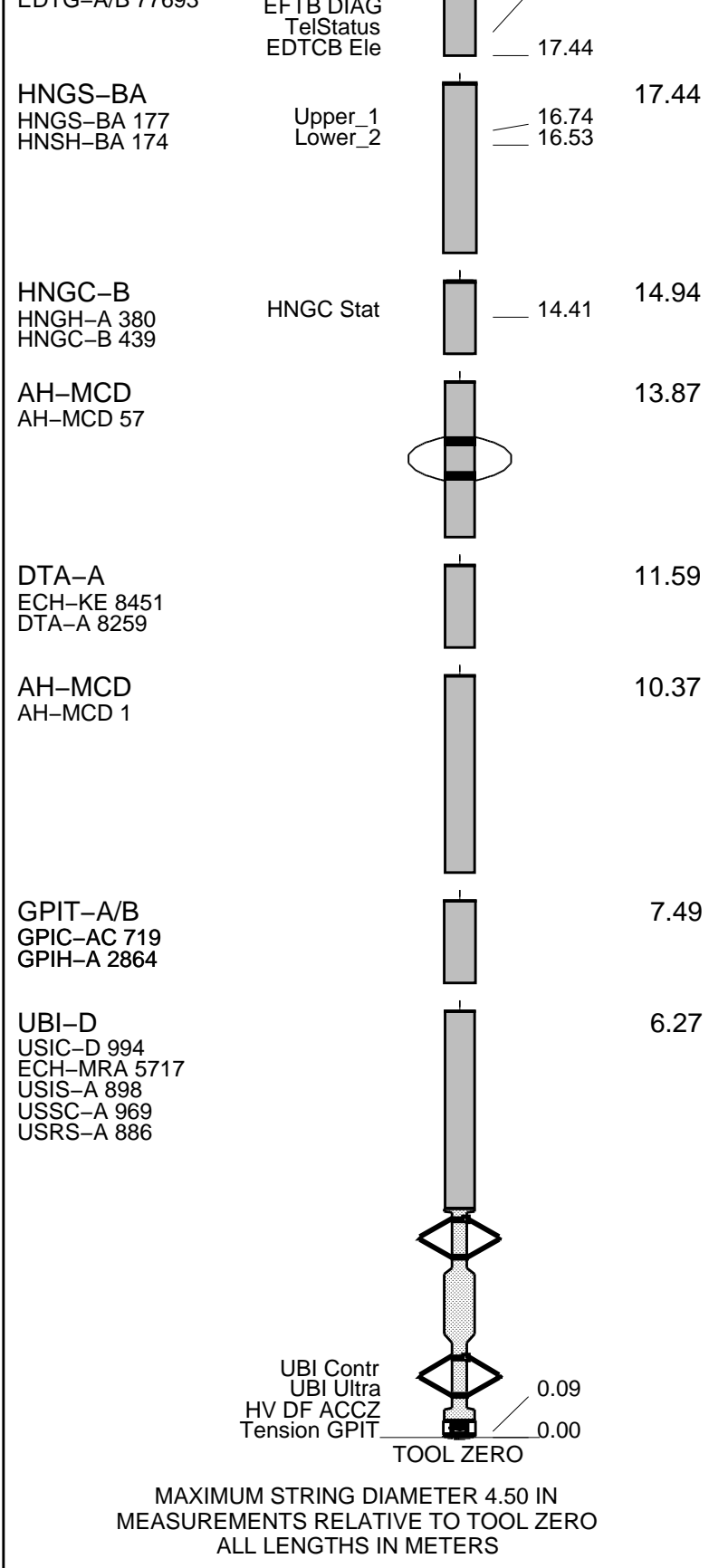
DOWNHOLE EQUIPMENT

LEH-MT 20.38
 LEH-MT 101

MDSB_EDTC Mud Tempe 19.42

EDTC-B 19.42
 EDTH-B 8528 CTEM 18.35
 EDTC-B 8529 Gamma Ray 17.78
 EDTC A/B 77603





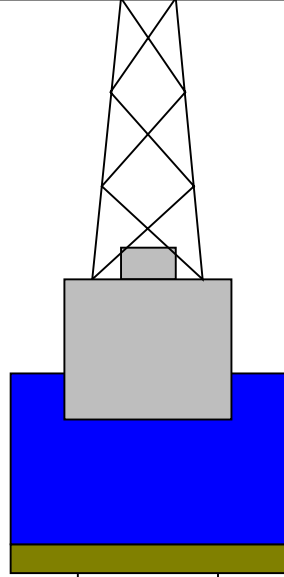
Production String	(in)	(M)	Well Schematic	(M)	(in)	Casing String
	OD	ID		MD	MD	

Kelly Bushing Elevation
Derrick Floor Elevation

Mean Sea Level

0
0

11



4.1



721 4.1

766.51 11.4375

1510.2

Sea Floor

Open Hole

Total Depth

Input DLIS Files

DEFAULT UBI_NGS_070LUP FN:102 PRODUCER 24-Jan-2016 20:00 1499.6 M 713.8 M

Output DLIS Files

DEFAULT UBI_NGS_094PUP FN:128 PRODUCER 29-Jan-2016 07:15 1499.6 M 713.8 M

OP System Version: 19C0-187

UBI-D SRPC-5095-H2-2011-OP19
 DTA-A 19C0-187
 HNGS-BA 19C0-187

GPIT-A/B 19C0-187
 HNGC-B 19C0-187
 EDTC-B SKK-5169-EDTCB

	HIGH Amplitude (FA75) <hr/> 0 (DB) 50
Gamma Ray (GR_ EDTC) (GAPI)	MEDIAN of Amplitude (FAED) <hr/> 0 (DB) 50
Fluid velocity (CFVL) (US/F)	Maximum of Amplitude (UAMX)

Radius max (UTMX) <hr/> 4 (IN) 8
Radius min (UTMN) <hr/> 4 (IN) 8
Radius HIGH (FT75) <hr/> 4 (IN) 8

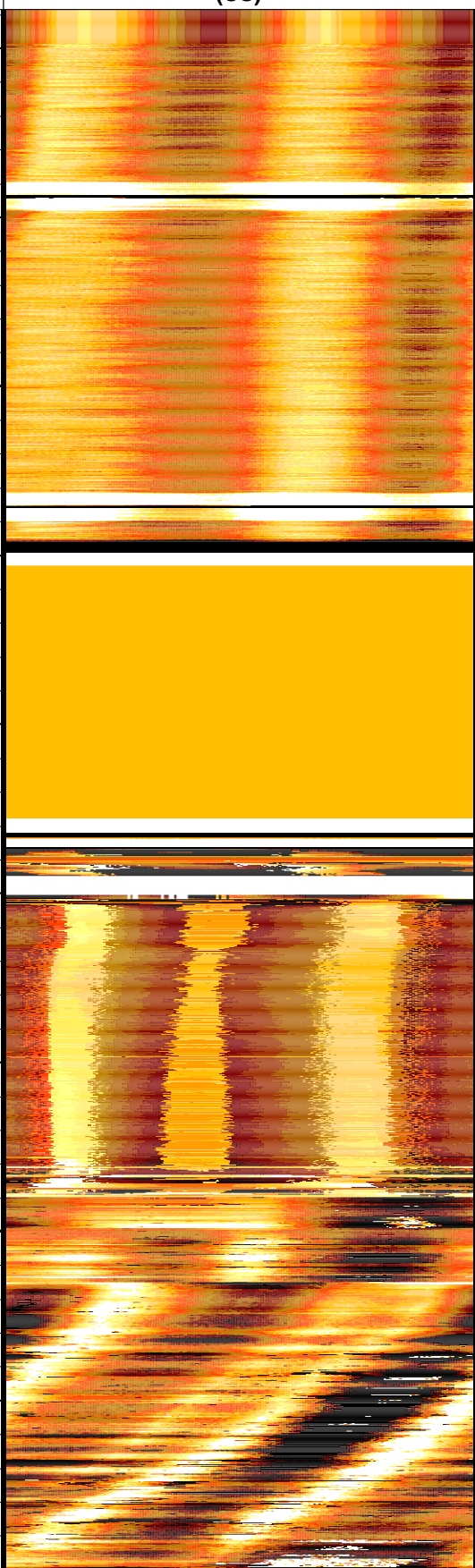
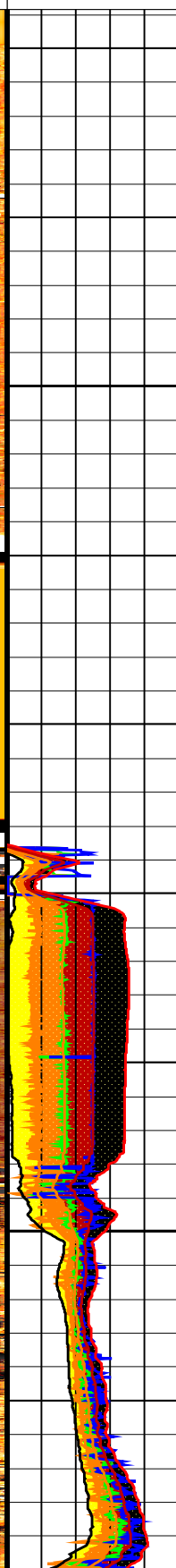
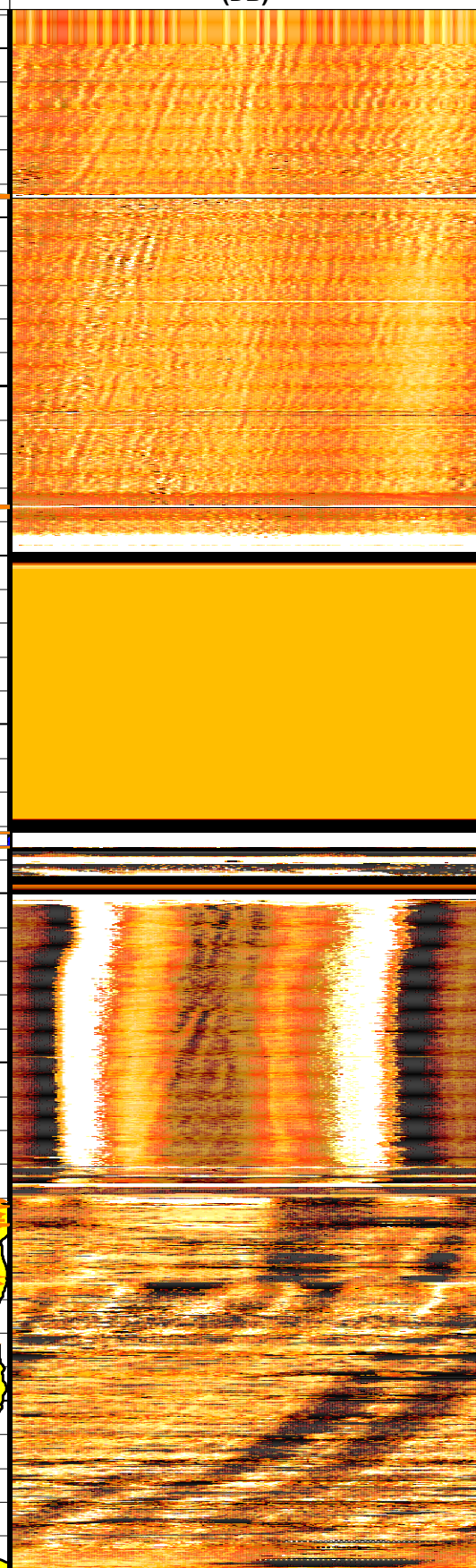
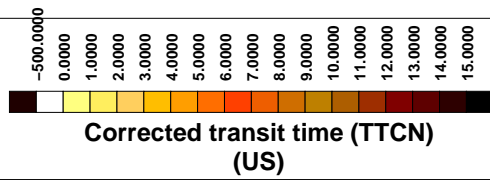
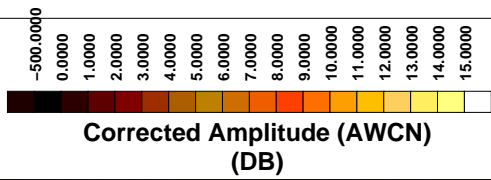
150 250 0 (DB) 50
Cable Speed (CS) (M/HR)
0 1000

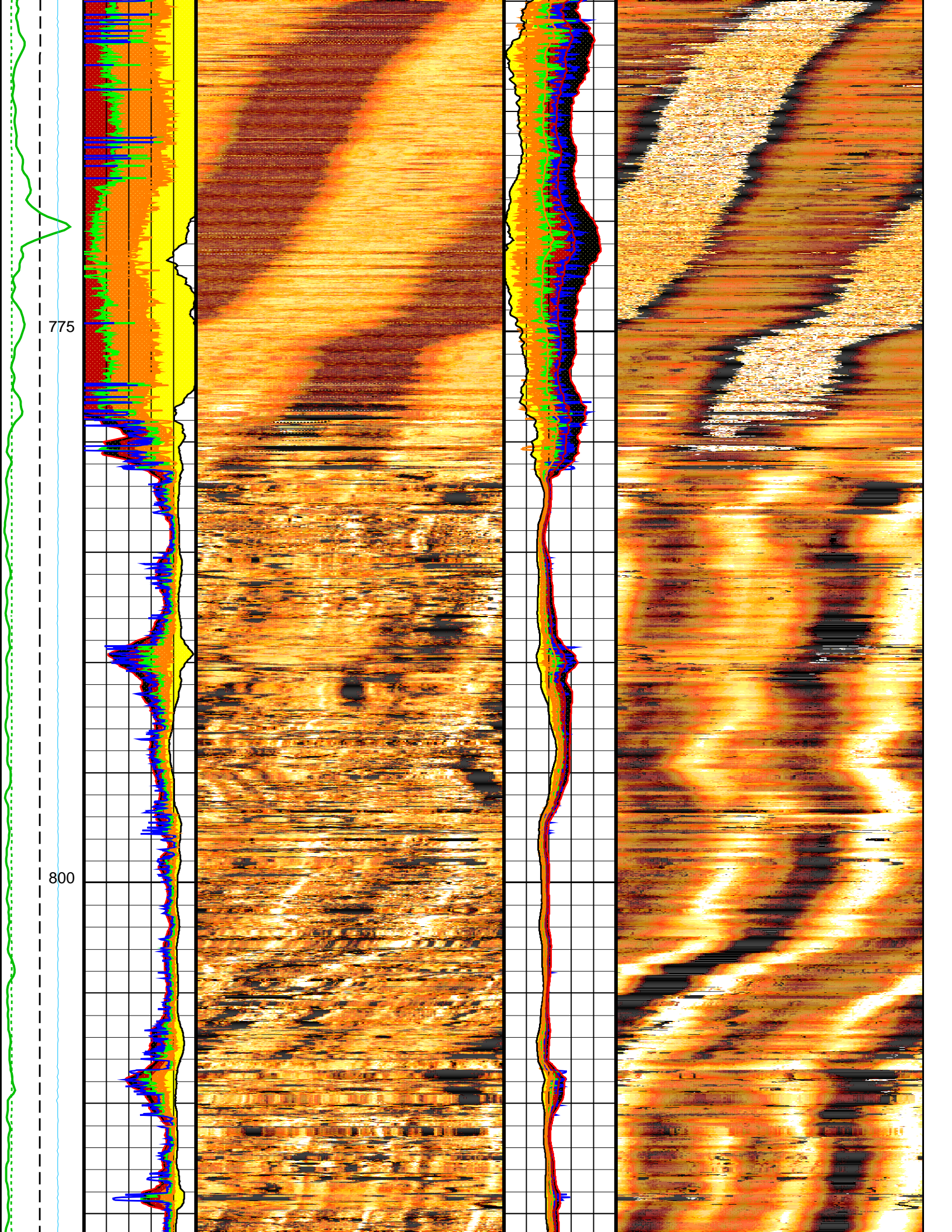
Rev. speed (RSAV) (RPS) 6 8
LOW Amplitude (FA25) (DB) 0 50

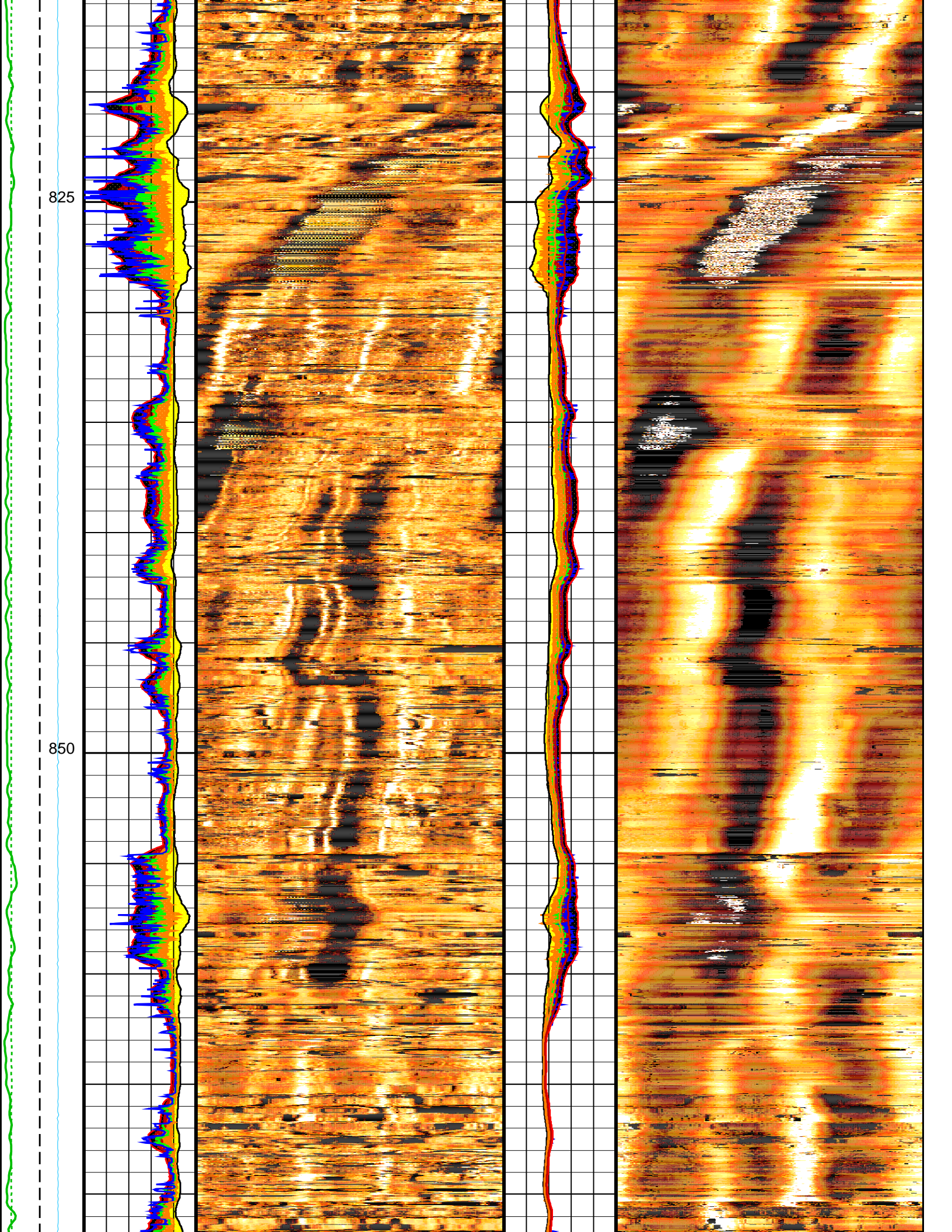
Main Uplog

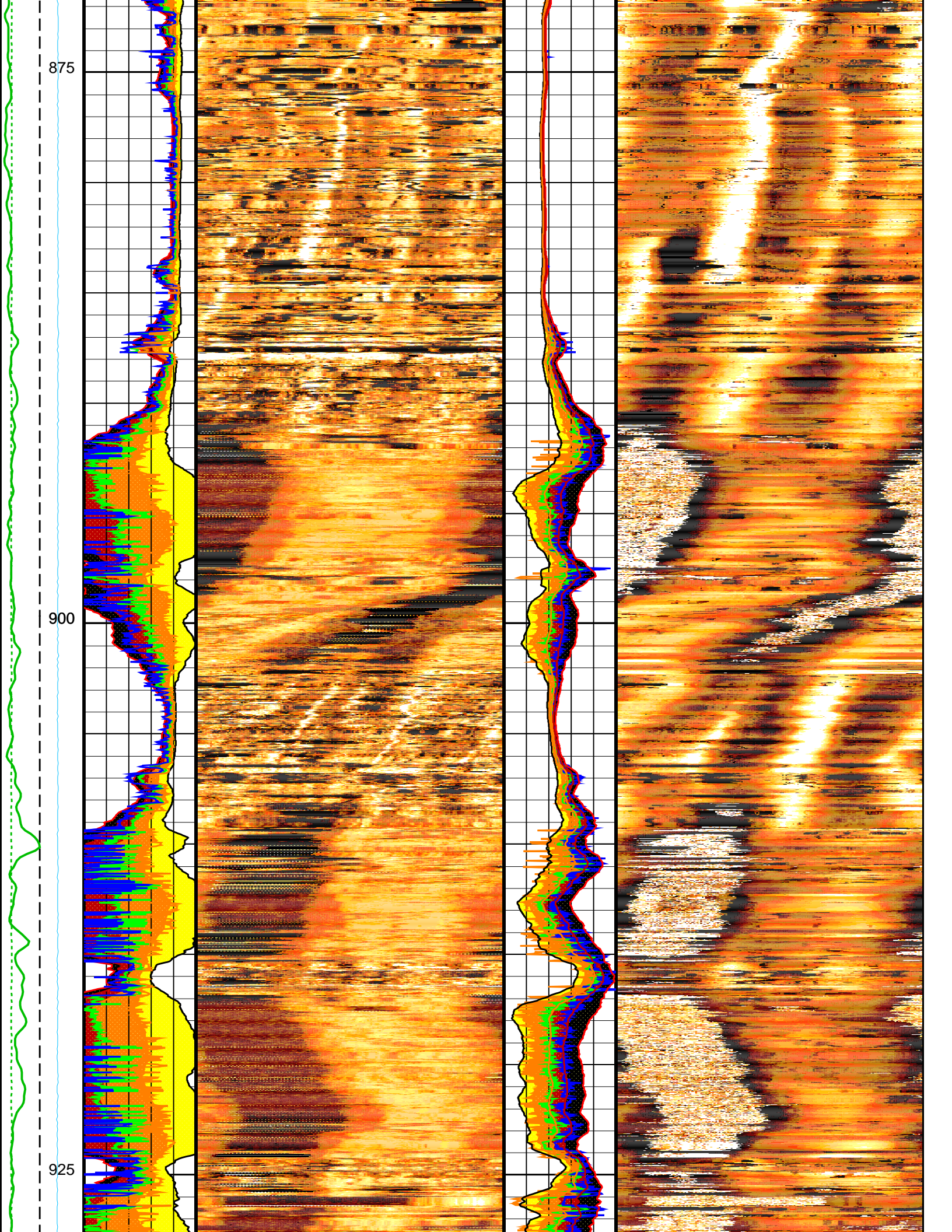
Radius LOW (FT25) (IN) 4 8

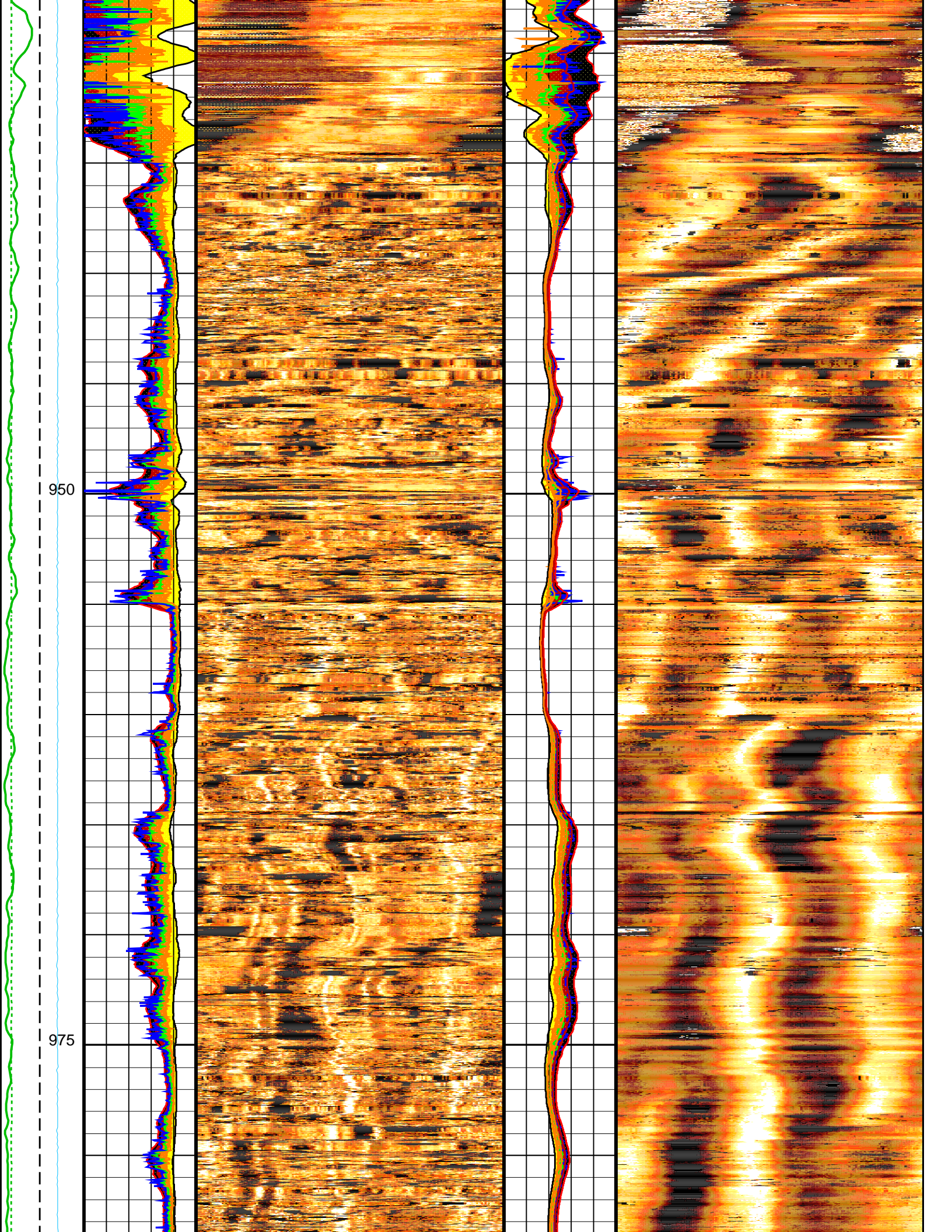
MEDIAN Radius (FTED) (IN) 4 8

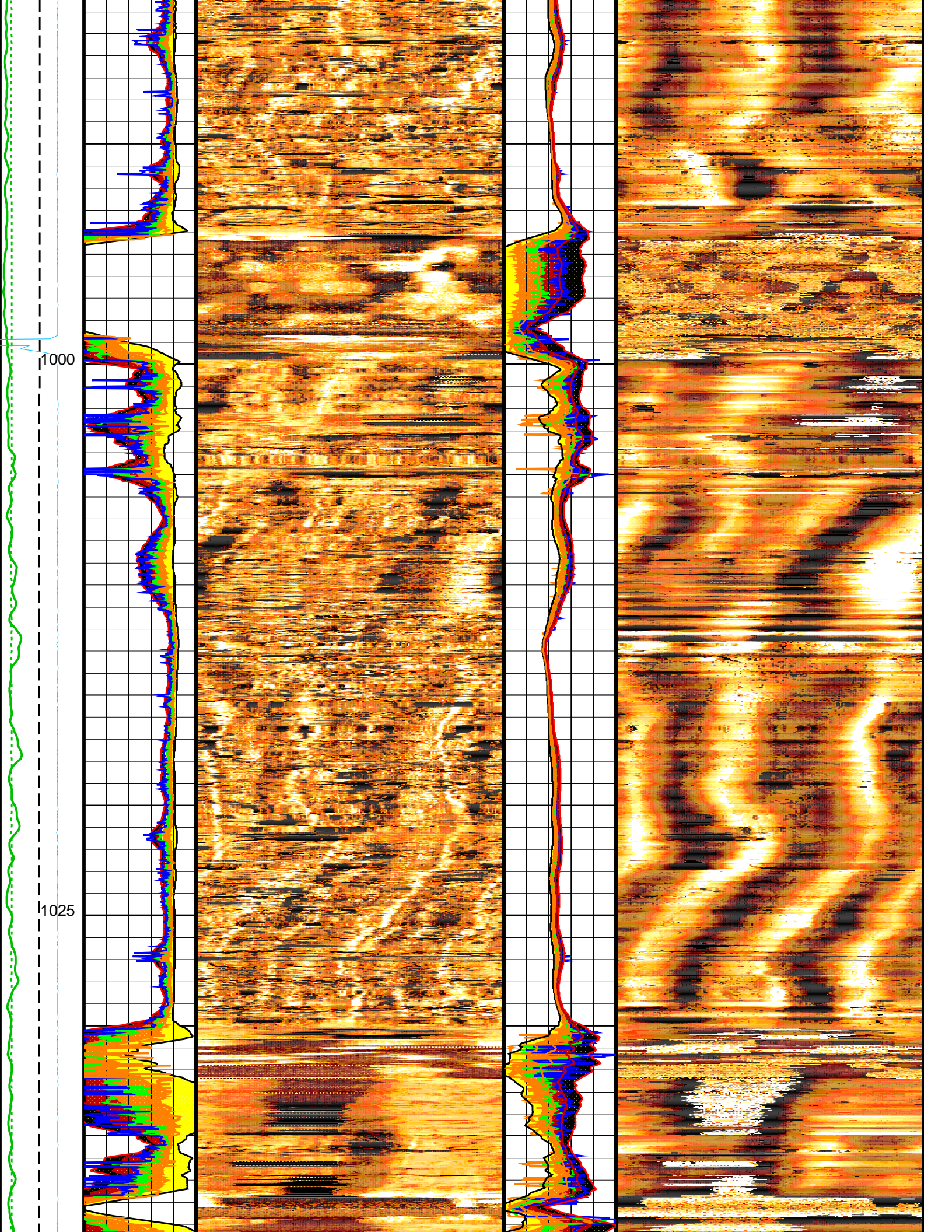


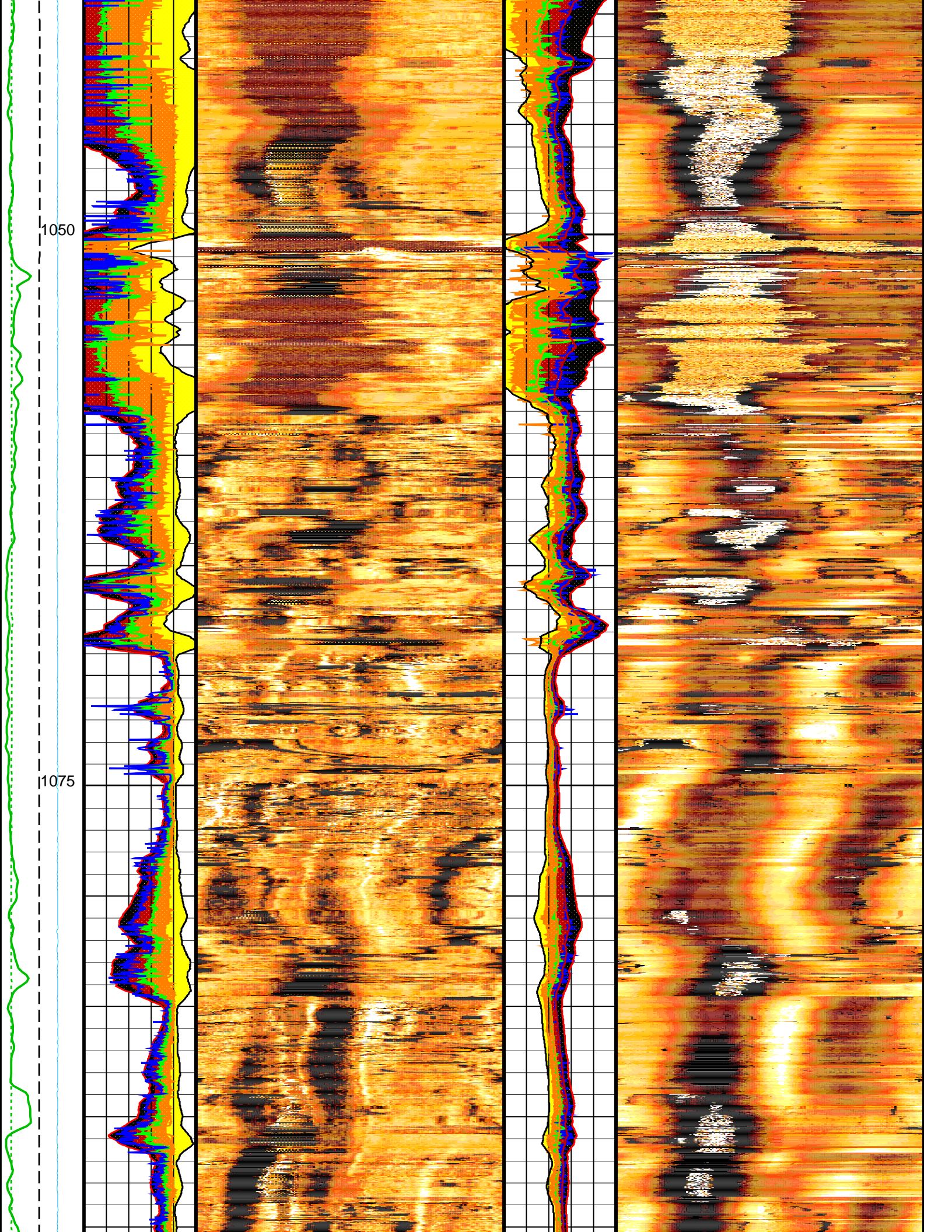


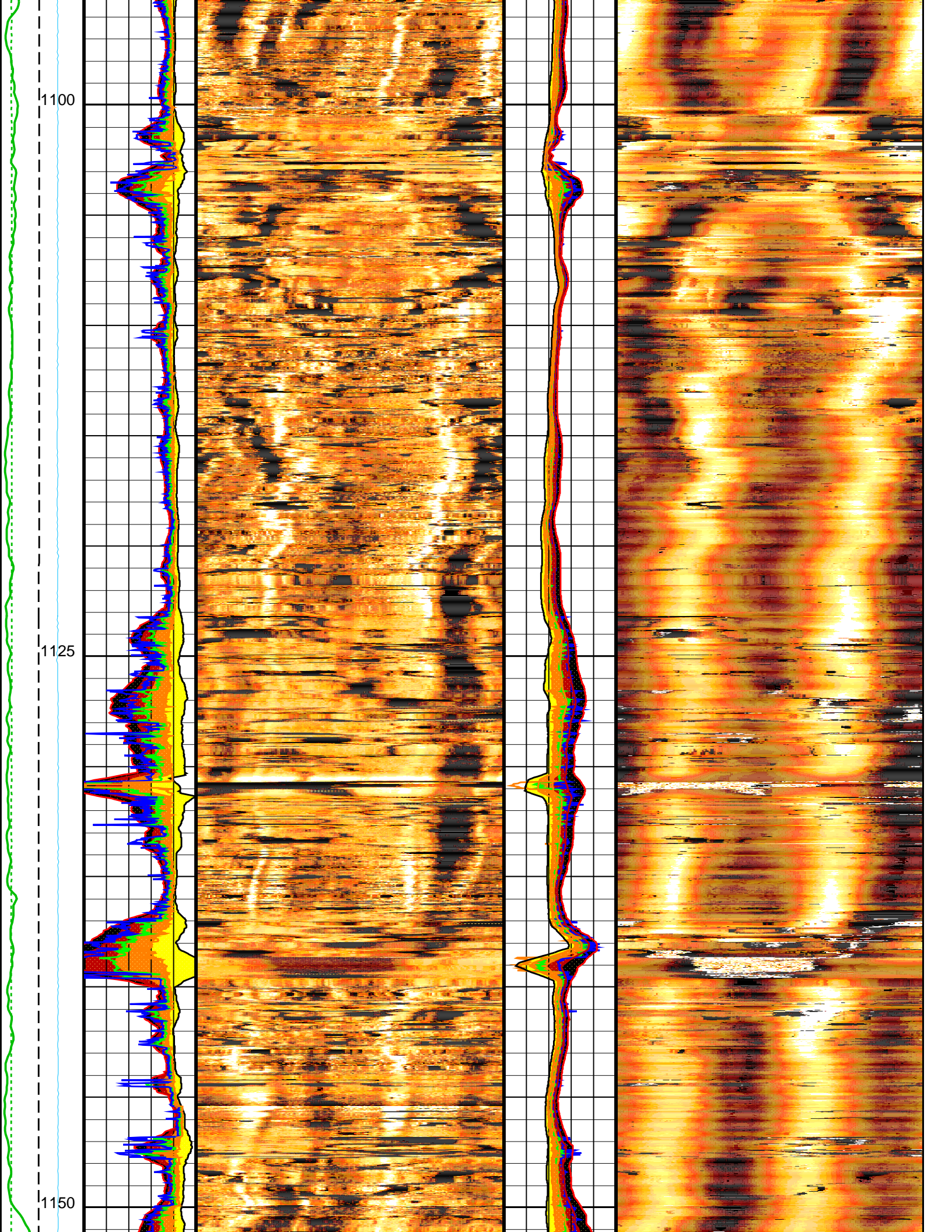


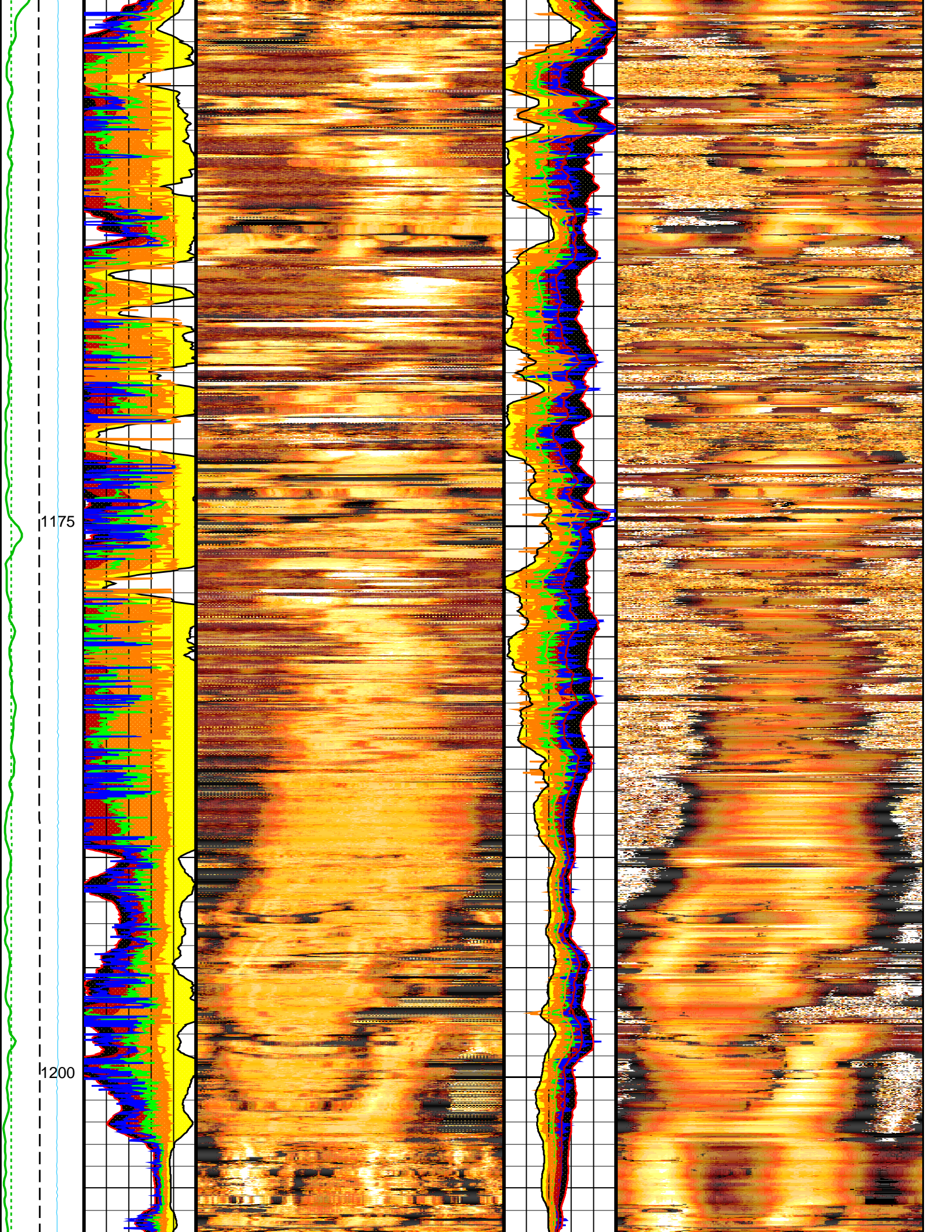


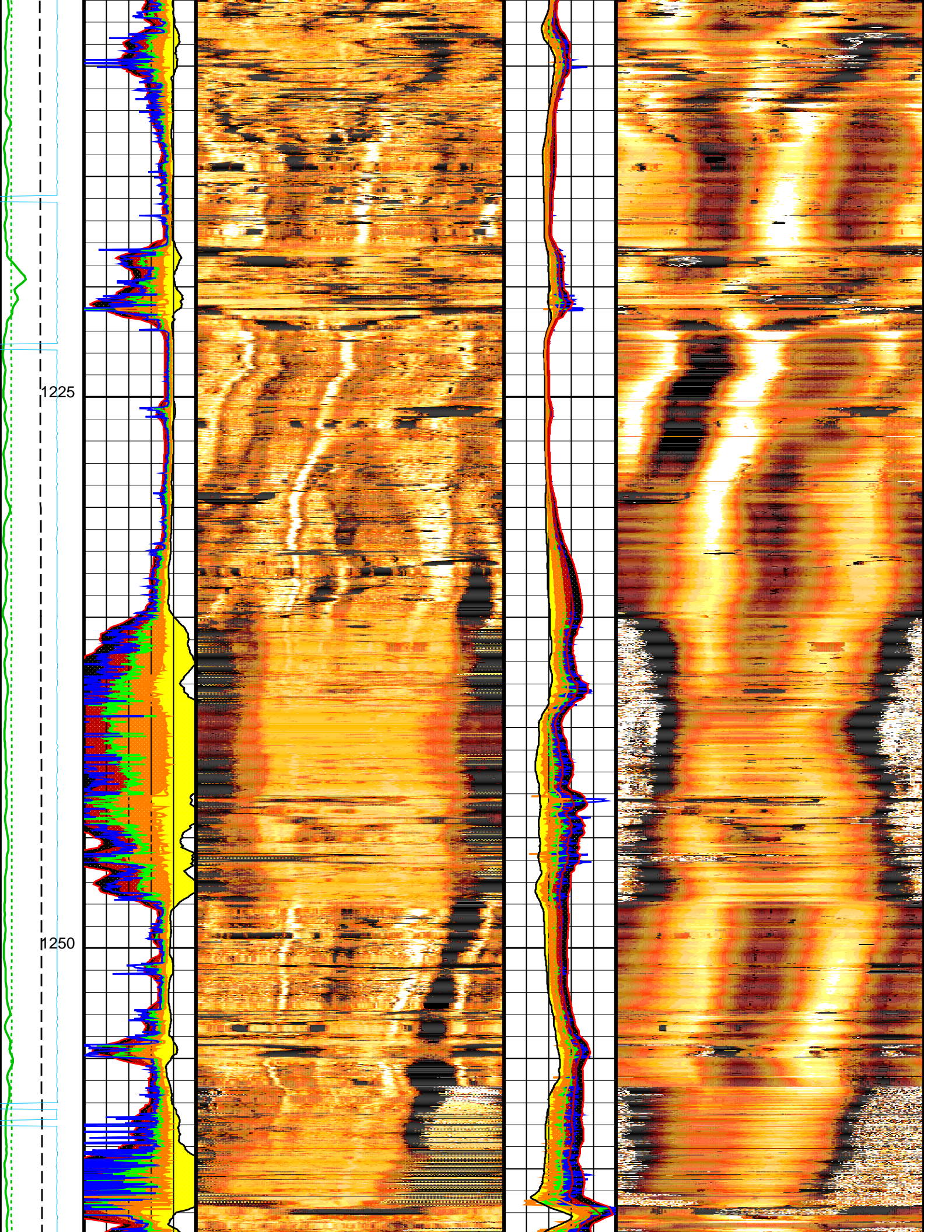






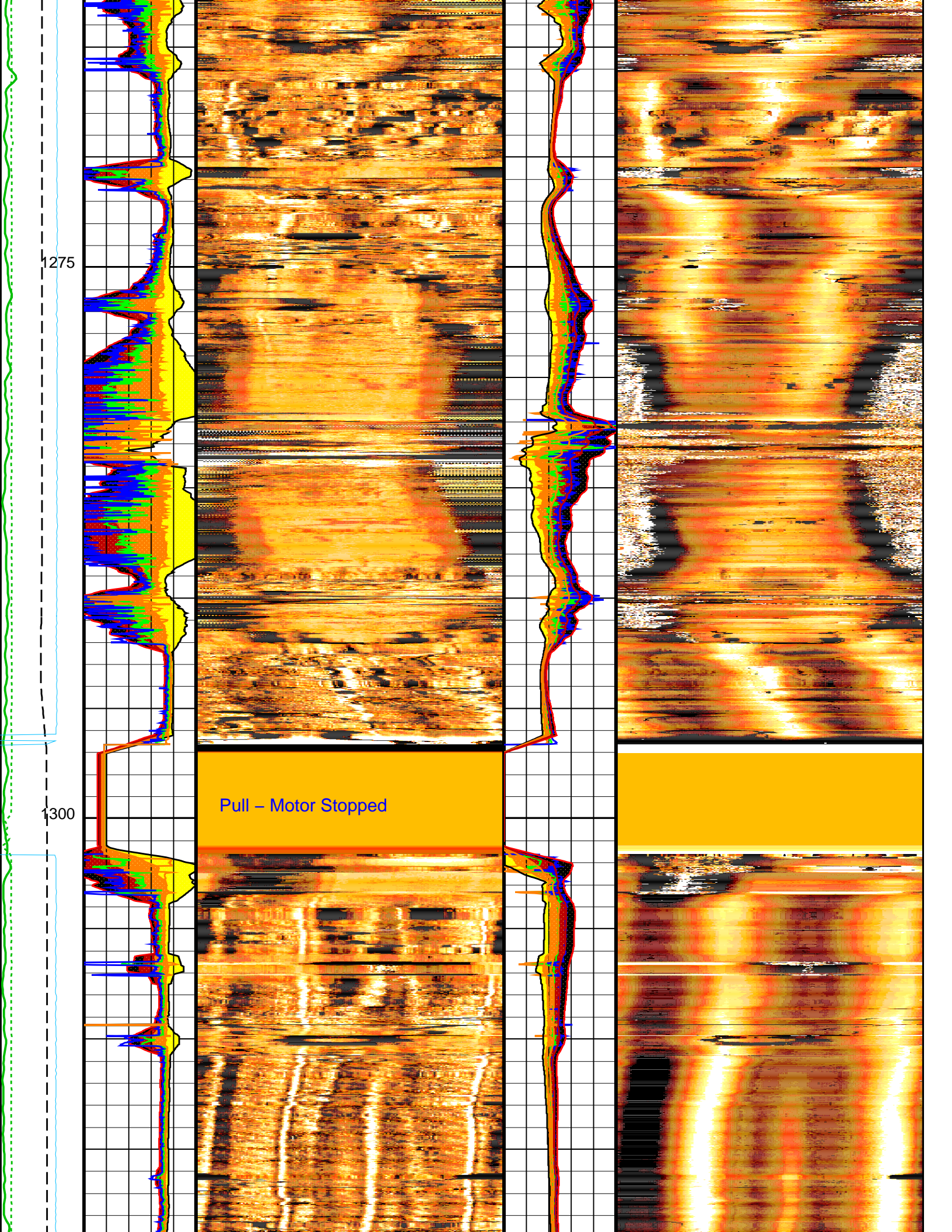


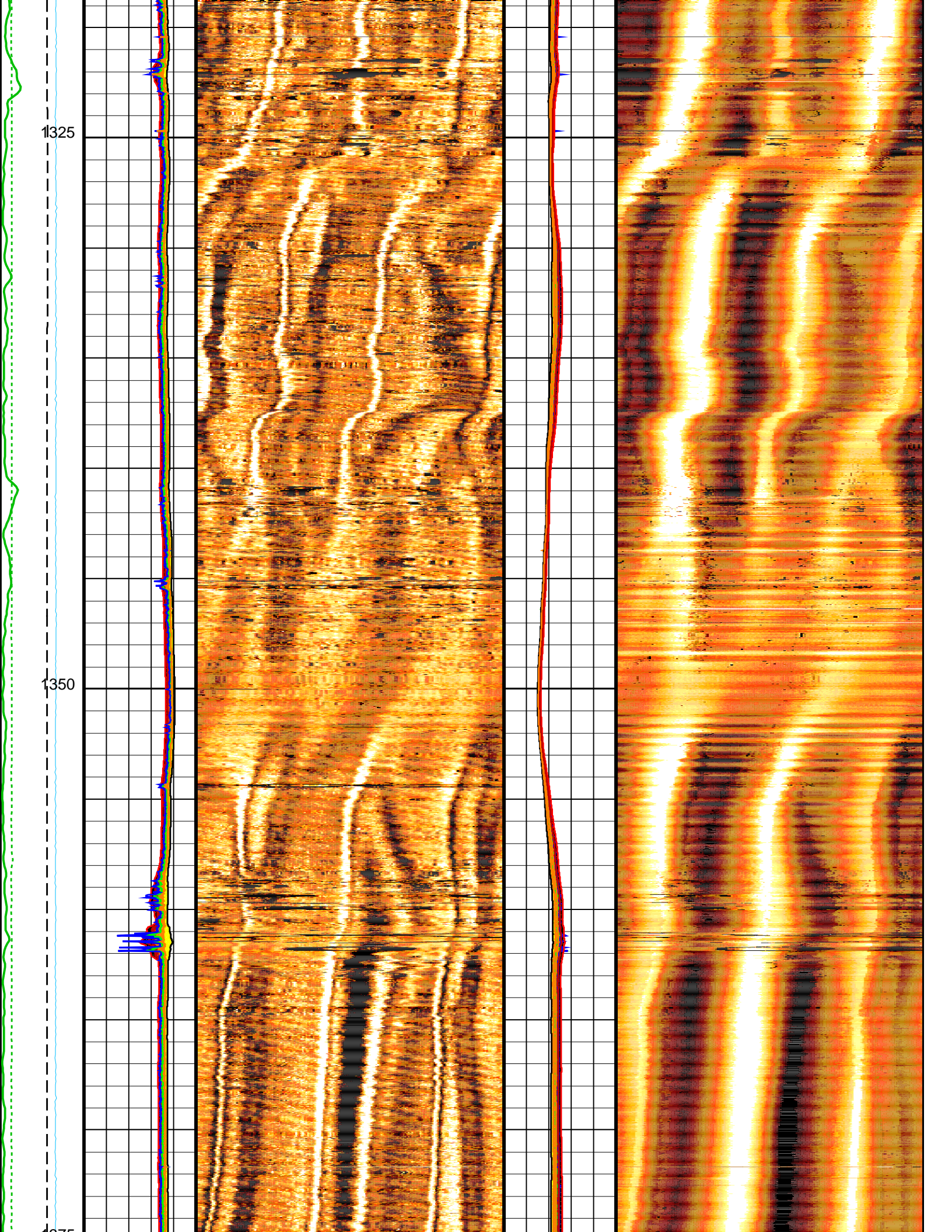


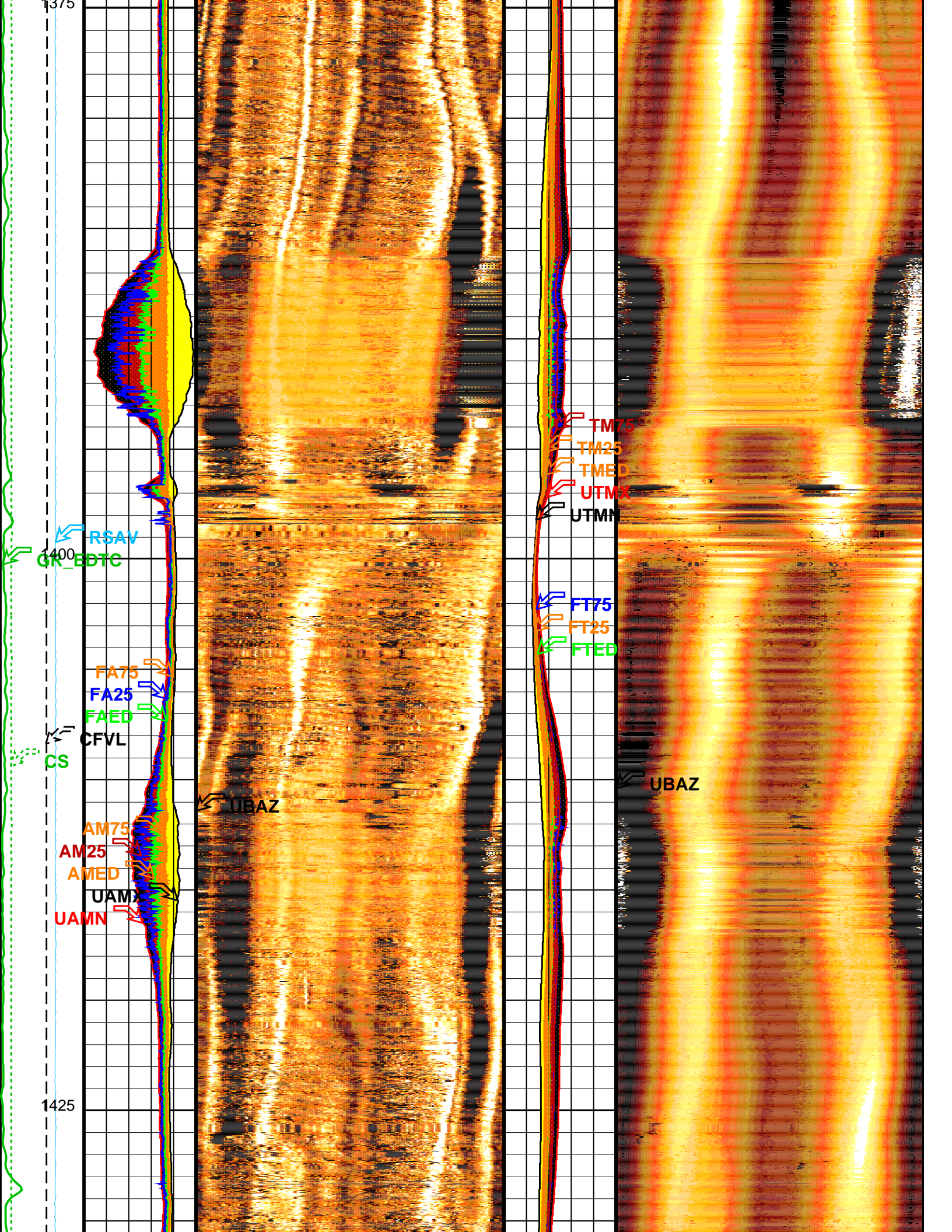


1225

1250







1375

RSAV
GR_EDTC

FA75
FA25
FAED
CFVL
CS

AM75
AM25
AMED
UAMX
UAMN

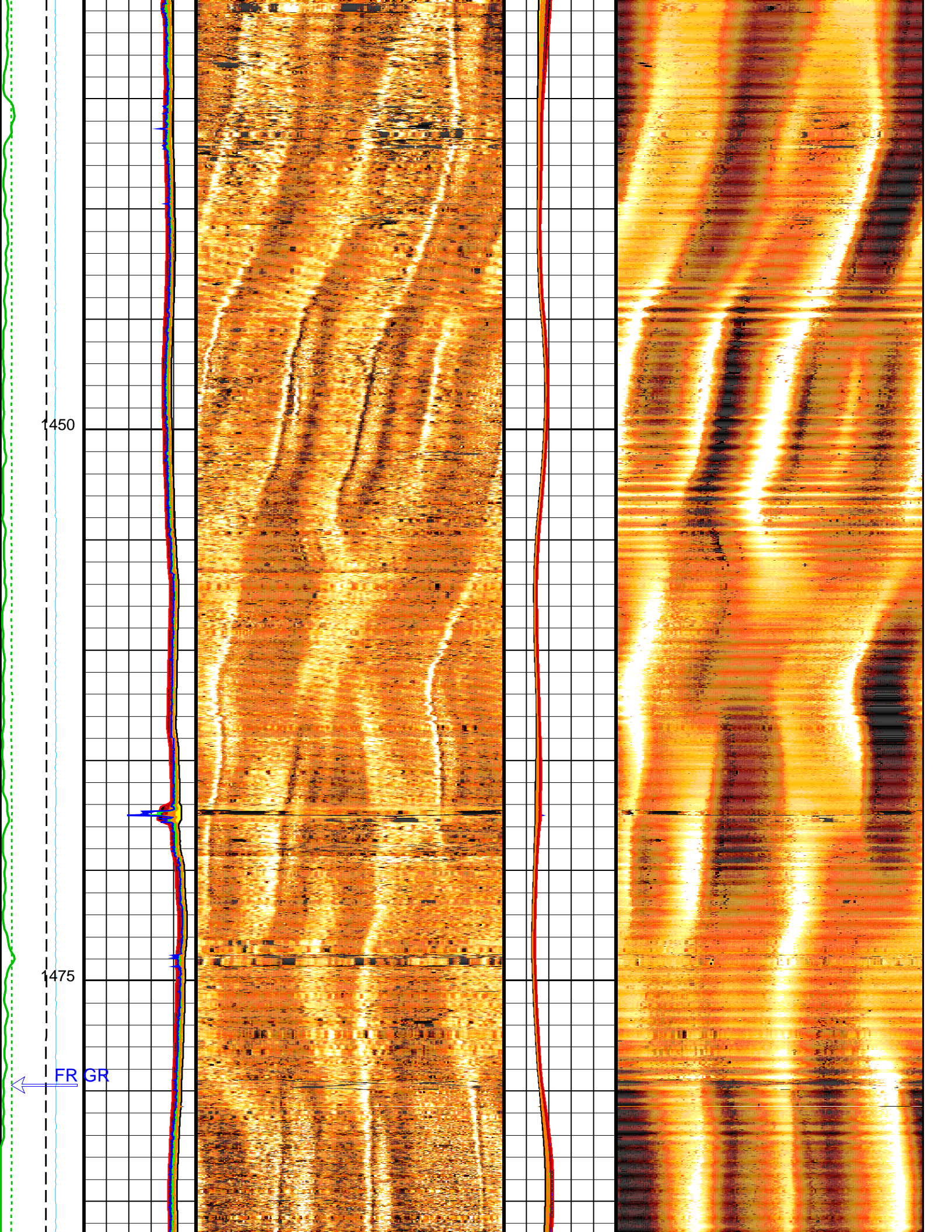
1425

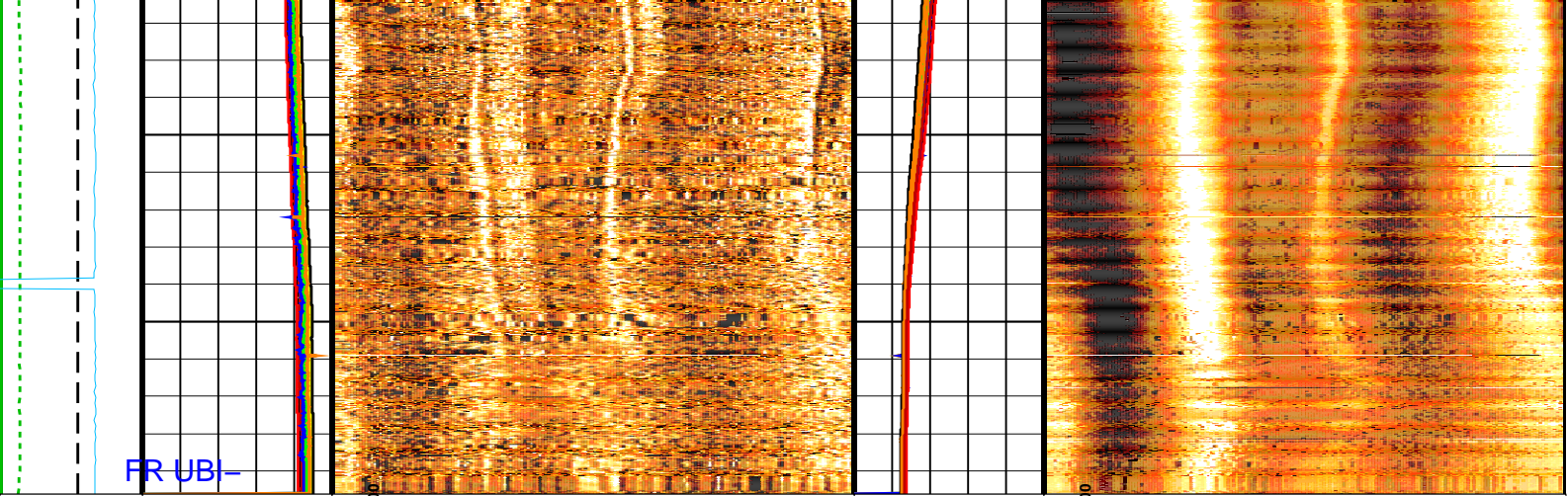
TM75
TM25
TMED
UTMX
UTMN

FT75
FT25
FTED

UBAZ

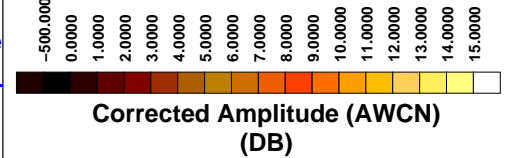
UBAZ





FR UBI-

Rev. speed (RSAV) 6 (RPS) 8
 LOW Amplitude (FA25) 0 (DB) 50



MEDIAN Radius (FTED) 4 (IN) 8

Corrected transit time (TTCN) (US)

Cable Speed (CS) (M/HR) 0 1000
 Min. of Amplitude (UAMN) 0 (DB) 50

Main Uplog

Radius LOW (FT25) 4 (IN) 8

Fluid velocity (CFVL) (US/F) 150 250
 Maximum of Amplitude (UAMX) 0 (DB) 50

Radius HIGH (FT75) 4 (IN) 8

Gamma Ray (GR_EDTC) (GAPI) 0 25
 MEDIAN of Amplitude (FAED) 0 (DB) 50

Radius min (UTMN) 4 (IN) 8

HIGH Amplitude (FA75) 0 (DB) 50

Radius max (UTMX) 4 (IN) 8

Format: UBI_Image Vertical Scale: 1:200 Graphics File Created: 29-Jan-2016 07:15

OP System Version: 19C0-187

UBI-D	SRPC-5095-H2-2011-OP19	GPIT-A/B	19C0-187
DTA-A	19C0-187	HNGC-B	19C0-187
HNGS-BA	19C0-187	EDTC-B	SKK-5169-EDTCB

Parameters

DLIS Name	Description	Value
UBI-D: Ultrasonic Borehole Imager - D		
AAMN	Automatic Amplitude Minimum Scale	2 DB
ANGO	Angular Offset	-17 DEG
ATMN	Automatic Transit Time Minimum Scale	2 US
CSID	Casing Inner Diameter	0 IN
DCMN	Window Decrement Down	0.8
DCMX	Window Decrement Up	0.6
DFVL	Default Fluid Velocity	206 US/F
DOT	Diameter of Tool	1.85 IN
ECRL	Eccentering Correction Level	FIRST
ERDB	Eccentering Rejection	12 DB
FDOS	FVEL Depth Offset	0 M
FMOS	FVEL Measurement Offset	0 US/F
GCSW	Gain Correction	ON
IMAR	Image Rotation	OFF
LIM1	Minimum Limit Control	AUTO
LIM2	Maximum Limit Control	MANUAL

NBCD	Color Correction Depth Level	80	
NBLD	Eccentering Correction Depth Level	1	
NCDI	Noise Correction Depth Interval	30	
PNSW	Processing Noise Correction	ON	
RCSO	Reference Calibrator Standoff	0.795	IN
RJ60	60 Hz Correction	ON	
SWLV	Sliding Window Minimum	Inh_18us	
SWMX	Sliding Window Maximum	Inh_167us	
UFON	UBI Flagging of Lost Echoes	OFF	
UGOS	UBI/UCI GPIT Offset	3.63	IN
USTO	Ultrasonic Time Offset	-3	US
USUB	UBI Sub Identifier	Sub_5_inch	
UWKM	Current Working Mode	UBI7_SW500_180_1	
UHSV: UBI Hole Shape Analysis			
AAMN	Automatic Amplitude Minimum Scale	2	DB
ANGO	Angular Offset	-17	DEG
ATMN	Automatic Transit Time Minimum Scale	2	US
CSID	Casing Inner Diameter	0	IN
DCMN	Window Decrement Down	0.8	
DCMX	Window Decrement Up	0.6	
DFVL	Default Fluid Velocity	206	US/F
DOT	Diameter of Tool	1.85	IN
ECRL	Eccentering Correction Level	FIRST	
ERDB	Eccentering Rejection	12	DB
FDOS	FVEL Depth Offset	0	M
FMOS	FVEL Measurement Offset	0	US/F
GCSW	Gain Correction	ON	
IMAR	Image Rotation	OFF	
LIM1	Minimum Limit Control	AUTO	
LIM2	Maximum Limit Control	MANUAL	
NBCD	Color Correction Depth Level	80	
NBLD	Eccentering Correction Depth Level	1	
NCDI	Noise Correction Depth Interval	30	
PNSW	Processing Noise Correction	ON	
RCSO	Reference Calibrator Standoff	0.795	IN
RJ60	60 Hz Correction	ON	
SWLV	Sliding Window Minimum	Inh_18us	
SWMX	Sliding Window Maximum	Inh_167us	
UFON	UBI Flagging of Lost Echoes	OFF	
UGOS	UBI/UCI GPIT Offset	3.63	IN
USTO	Ultrasonic Time Offset	-3	US
USUB	UBI Sub Identifier	Sub_5_inch	
UWKM	Current Working Mode	UBI7_SW500_180_1	
System and Miscellaneous			
BS	Bit Size	9.875	IN
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	NORMAL	

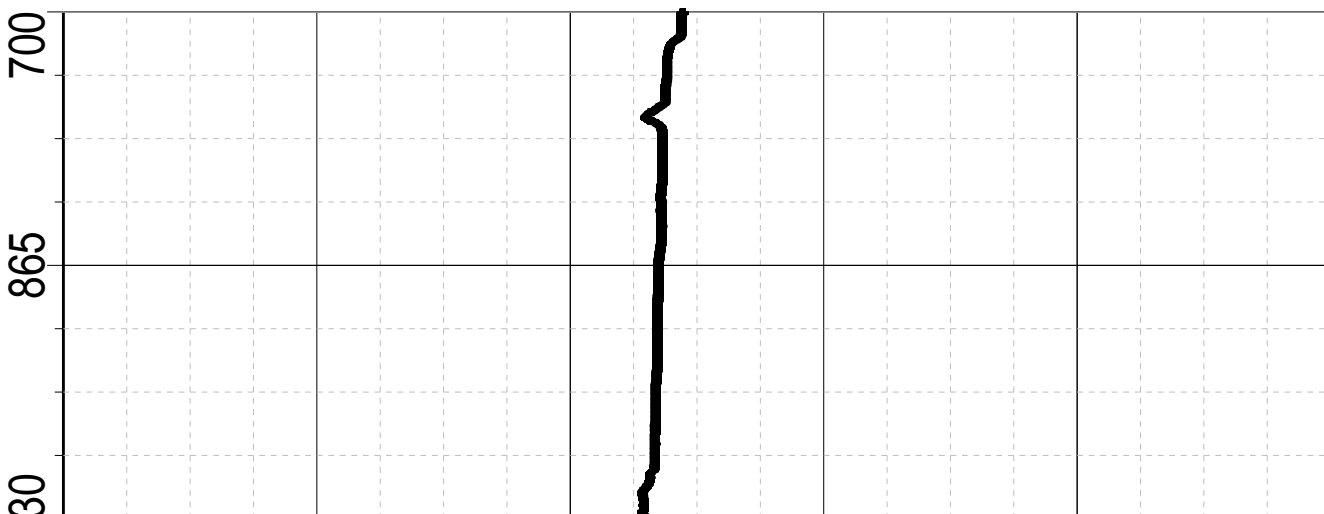
Input DLIS Files

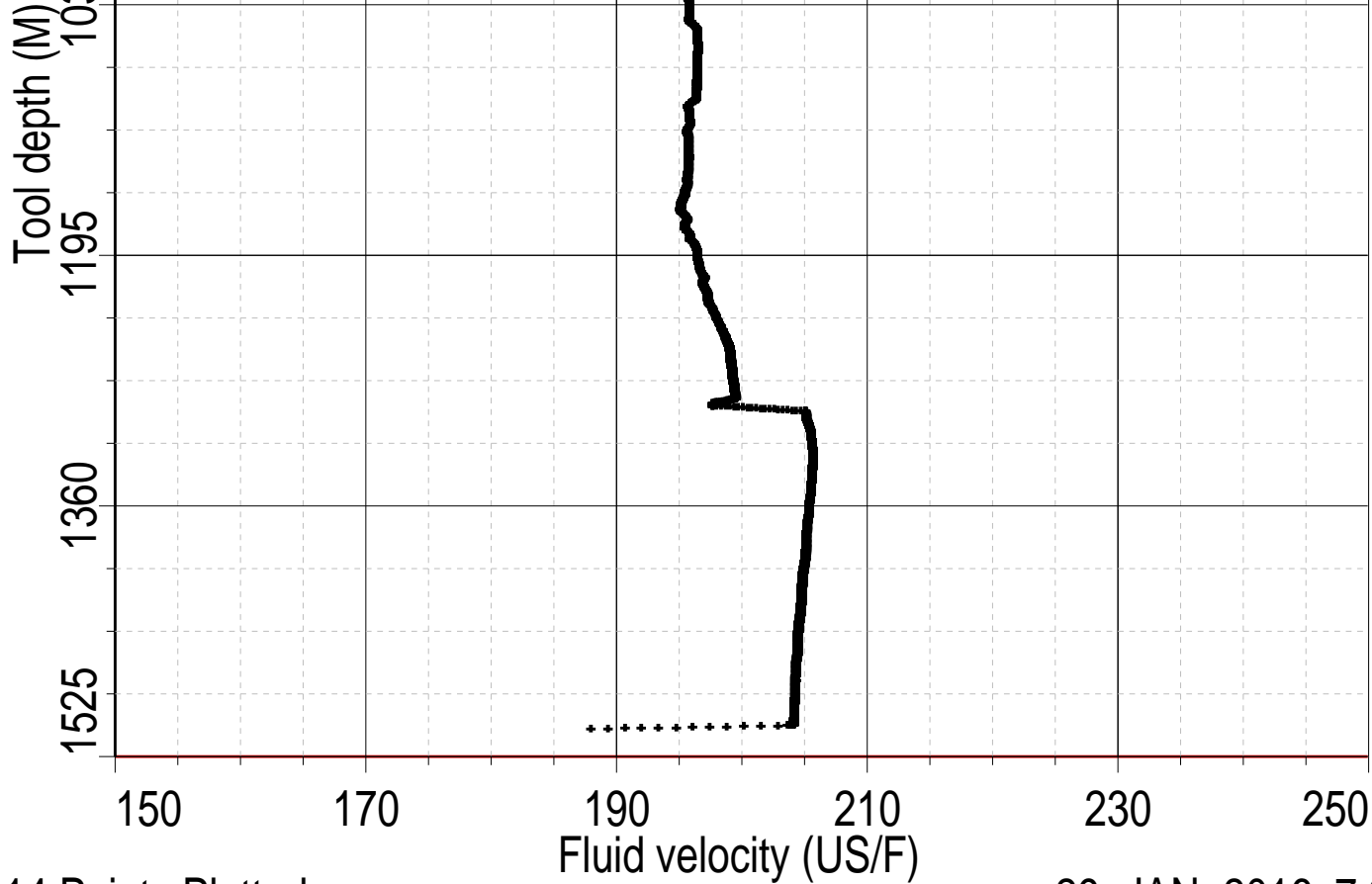
DEFAULT UBI_NGS_070LUP FN:102 PRODUCER 24-Jan-2016 20:00 1499.6 M 713.8 M

Output DLIS Files

DEFAULT UBI_NGS_094PUP FN:128 PRODUCER 29-Jan-2016 07:15

Index: 1506.2 – 681.2 M





5414 Points Plotted

29-JAN-2016 7:30

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
General Purpose Inclinometer Wellsite Calibration – CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY							
Before: 24-Jan-2016 17:57							
TEMPERATURE REFERENCE :	N/A	N/A	20	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	92	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	10	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	448	N/A	N/A	N/A	
General Purpose Inclinometer Wellsite Calibration – CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY							
Before: 24-Jan-2016 17:57							
TEMPERATURE REFERENCE :	N/A	N/A	19	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	99	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	12	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	428	N/A	N/A	N/A	
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 1 Check							
Master: 12-Jan-2016 5:26 Before: 12-Jan-2016 5:40							
Na 511 Peak Loc	40.00	38.59	38.75	N/A	N/A	1.000	
Na 511 Peak Res	15.50	16.84	16.24	N/A	N/A	2.000	%
High Voltage	1150	1233	1233	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	140.5	140.0	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.705	9.174	N/A	N/A	2.000	%
Temperature	15.50	33.02	32.90	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	38.61	39.06	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check							
Master: 12-Jan-2016 5:26 Before: 12-Jan-2016 5:40							
Na 511 Peak Loc	40.00	39.61	39.56	N/A	N/A	1.000	
Na 511 Peak Res	15.50	16.54	16.68	N/A	N/A	2.000	%
High Voltage	1150	1109	1109	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	143.6	143.4	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	9.385	9.834	N/A	N/A	2.000	%
Temperature	15.50	32.68	32.68	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	38.61	39.32	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Ratio Of Detector 1 To Detector 2							
Master: 12-Jan-2016 5:26 Before: 12-Jan-2016 5:40							
Coincidence Count Rate Ratio	1.000	0.9981	0.9913	N/A	N/A	0.05000	

Hostile Natural Gamma Ray Sonde Master Calibration – Detector 1 Calibration

Master: 12-Jan-2016 5:21

Na 511 Peak Set Point	40.00	40.00	--	--	--	--	
Th Peak Loc	209.6	211.3	--	--	--	--	
Th Peak Res	7.000	8.531	--	--	--	--	%
Background Count Rate	142.5	29.22	--	--	--	--	CPS
Gain Ratio	1.000	1.040	--	--	--	--	

Hostile Natural Gamma Ray Sonde Master Calibration – Detector 2 Calibration

Master: 12-Jan-2016 5:21

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	210.7	--	--	--	--	
Th Peak Res	7.000	7.393	--	--	--	--	%
Background Count Rate	142.5	29.42	--	--	--	--	CPS
Gain Ratio	1.000	1.011	--	--	--	--	

Enhanced DTS Cartridge Wellsite Calibration – EDTC Accelerometer Calibration

Before: 24-Jan-2016 18:00

EDTC Z-Axis Acceleration	9.810	N/A	9.817	N/A	N/A	N/A	M/S2
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Enhanced DTS Cartridge Wellsite Calibration – Detector Calibration

Before: 12-Jan-2016 5:47

Gamma Ray (Jig – Bkg)	154.5	N/A	154.5	N/A	N/A	14.04	GAPI
Gamma Ray (Calibrated)	164.0	N/A	164.0	N/A	N/A	15.00	GAPI

General Purpose Inclinomometer / Equipment Identification

Primary Equipment:			
GPIT Cartridge – AC		GPIC – AC	719
Auxiliary Equipment:			
GPIT Housing		GPIH – A	2864

Hostile Natural Gamma Ray Cartridge – B / Equipment Identification

Primary Equipment:			
HNGC Cartridge		HNGC – B	439
Auxiliary Equipment:			
HNGC Housing		HNGH – A	380

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:			
HNGS Sonde		HNGS – BA	177
Auxiliary Equipment:			
HNGS Sonde Housing		HNSH – BA	174
Gamma Source Radioactive		GSR – U	616008

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value
Master		38.59	Master		16.84	Master		1233
Before		38.75	Before		16.24	Before		1233
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)			12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)			900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	
Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value
Master		140.5	Master		8.705	Master		33.02
Before		140.0	Before		9.174	Before		32.90
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)			7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)			-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	
Phase	Na Count Rate CPS	Value						
Master		38.61						

Before	45.00	39.06
10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)

Master: 12-Jan-2016 5:26 Before: 12-Jan-2016 5:40

Hostile Natural Gamma Ray Sonde Wellsite Calibration									
Detector 2 Check									
Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value	
Master		39.61	Master		16.54	Master		1109	
Before		39.56	Before		16.68	Before		1109	
	37.50 (Minimum)	40.00 (Nominal)	43.50 (Maximum)	12.00 (Minimum)	15.50 (Nominal)	19.00 (Maximum)	900.0 (Minimum)	1150 (Nominal)	1600 (Maximum)
Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value	
Master		143.6	Master		9.385	Master		32.68	
Before		143.4	Before		9.834	Before		32.68	
	135.0 (Minimum)	142.6 (Nominal)	150.3 (Maximum)	7.000 (Minimum)	8.500 (Nominal)	11.00 (Maximum)	-28.89 (Minimum)	15.50 (Nominal)	60.00 (Maximum)
Phase	Na Count Rate CPS	Value							
Master		38.61							
Before		39.32							
	10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)						

Master: 12-Jan-2016 5:26 Before: 12-Jan-2016 5:40

Hostile Natural Gamma Ray Sonde Wellsite Calibration			
Ratio Of Detector 1 To Detector 2			
Phase	Coincidence Count Rate Ratio	Value	
Master		0.9981	
Before		0.9913	
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)

Master: 12-Jan-2016 5:26
Before: 12-Jan-2016 5:40

Hostile Natural Gamma Ray Sonde Master Calibration									
Detector 1 Calibration									
Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value	
Master		40.00	Master		211.3	Master		8.531	
	38.00 (Minimum)	40.00 (Nominal)	43.00 (Maximum)	201.0 (Minimum)	209.6 (Nominal)	218.3 (Maximum)	5.000 (Minimum)	7.000 (Nominal)	9.000 (Maximum)
Phase	Background Count Rate CPS	Value	Phase	Gain Ratio	Value				
Master		29.22	Master		1.040				
	10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)	0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)			

Master: 12-Jan-2016 5:21

Hostile Natural Gamma Ray Sonde Master Calibration									
Detector 2 Calibration									
Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value	
Master		41.00	Master		210.7	Master		7.393	
	38.00 (Minimum)	40.00 (Nominal)	43.00 (Maximum)	201.0 (Minimum)	209.6 (Nominal)	218.3 (Maximum)	5.000 (Minimum)	7.000 (Nominal)	9.000 (Maximum)
Phase	Background Count Rate CPS	Value	Phase	Gain Ratio	Value				
Master		29.42	Master		1.011				
	10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)	0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)			


Master: 12-Jan-2016 5:21




Enhanced DTS Cartridge / Equipment Identification		
Primary Equipment:	EDTG - A/B	77693
EDTC Gamma Ray Detector	EDTC - B	8529
Enhanced DTS Cartridge		

Auxiliary Equipment:
EDTC Housing

EDTH - B

8528

Enhanced DTS Cartridge Wellsite Calibration			
EDTC Accelerometer Calibration			
Phase	EDTC Z-Axis Acceleration	M/S2	Value
Before			9.817
	9.610 (Minimum)	9.810 (Nominal)	10.01 (Maximum)
Before: 24-Jan-2016 18:00			

Enhanced DTS Cartridge Wellsite Calibration											
Detector Calibration											
Phase	Gamma Ray Background	GAPI	Value	Phase	Gamma Ray (Jig - Bkg)	GAPI	Value	Phase	Gamma Ray (Calibrated)	GAPI	Value
Before			7.668	Before			154.5	Before			164.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		140.4 (Minimum)	154.5 (Nominal)	168.5 (Maximum)		149.0 (Minimum)	164.0 (Nominal)	179.0 (Maximum)
Before: 12-Jan-2016 5:47											

Company: **International Ocean Discovery Program**

Schlumberger

Well: **Expedition 360, Site U1473A**

Field: **SW Indian Ridge Lower Crust and Moho**

Rig: **JOIDES Resolution**

Ocean: **Indian**

Ultrasonic Borehole Imager (UBI)
Natural Gamma Ray