Schlumberger

Company: **International Ocean Discovery Program**

Well: **Expedition 382, Site U1536E**
Field: **Iceberg Alley and Subantarctic Ice**
Rig: **JOIDES Resolution** Ocean: **Southern**

Rig: JOIDES Resolution
Field: Iceberg Alley and Subantarctic Ic
Location: Latitude: S 59.4408*
Well: Expedition 382, Site U1536E
Company: International Ocean Discovery Pr

High Resolution Laterolog Array (HRLA)
Hostile Litho Density Sonde (HLDS)
Dipole Sonic, MSS, GR

LOCATION

Latitude: S 59.4408*
Longitude: W 41.0606*

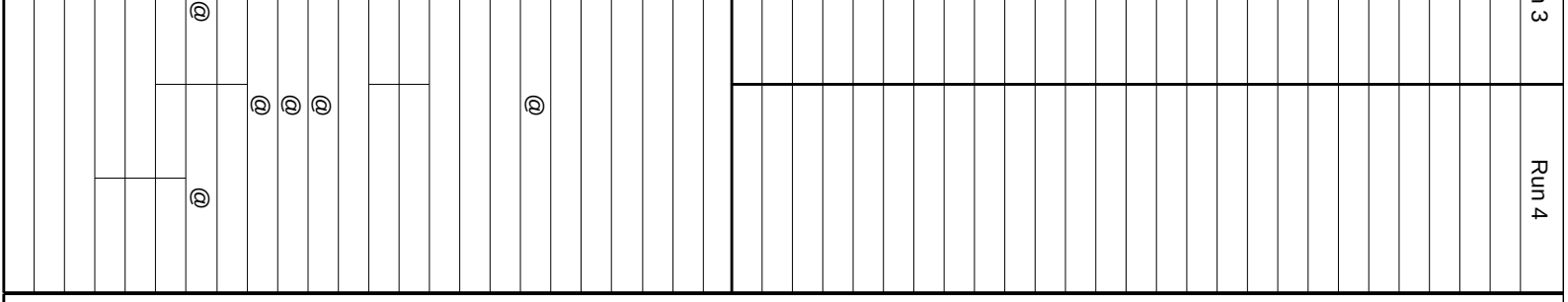
Elev.: K.B. 0.00 m
G.L. −3230.00 m
D.F. 0.00 m

Permanent Datum: Sea Floor — Elev.: −3230.00 m
Log Measured From: Rig Floor — 3230.00 m above Perm. Datum
Drilling Measured From: Rig Floor

API Serial No.	Max. Hole Devi. 0 deg	Longitude W 41.0606	Latitude S 59.4408

	Run 1	Run 2	Run
Logging Date	25−Apr−2019		
Run Number	1		
Depth Driller	3875.4 m		
Schlumberger Depth	3868 m		
Bottom Log Interval	3868 m		
Top Log Interval	3230 m		
Casing Driller Size @ Depth	5.500 in @ 3313.4 m	@	@
Casing Schlumberger	3307 m		
Bit Size	9.875 in		
Type Fluid In Hole	Sepiolite		
MUD Density / Viscosity	1.26 g/cm3		
MUD Fluid Loss / PH		8.07	
MUD Source Of Sample	Mudpit		
RM @ Measured Temperature	0.220 ohm.m @ 23 degC	@	@
RMF @ Measured Temperature	@	@	@
RMC @ Measured Temperature	@	@	@
Source RMF / RMC	N/A	N/A	
RM @ MRT / RMF @ MRT	0.236 @ 20	@ 20	@ @
Maximum Recorded Temperatures	20 degC		
Circulation Stopped / Time	24−Apr−2019	20:00	
Logger On Bottom / Time	25−Apr−2019	1:00	
Unit Number / Location	627314	Larose, LA	
Recorded By	K. Swain		
Witnessed By	Z. Mateo, T. Williams		

	Run 1	Run 2	Run
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth	@		
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
MUD Density / Viscosity			
MUD Fluid Loss / PH			
MUD Source Of Sample			
RM @ Measured Temperature	@		
RMF @ Measured Temperature	@		
RMC @ Measured Temperature	@		
Source RMF / RMC			
RM @ MRT / RMF @ MRT	@	@	
Maximum Recorded Temperatures			
Circulation Stopped / Time			
Logger On Bottom / Time			
Unit Number / Location			
Recorded By			
Witnessed By			



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 OF 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.

OTHER SERVICES1	OTHER SERVICES2
OS1:	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Hole drilled with RCB bottom hole assembly (BHA) at 9−7/8" BS	
Bit dropped using Mechanical Bit Release (MBR) prior to logging.	
Drilled TD was 3875.4 mbrf.	
Drill pipe set at 3313.4 mbrf.	
DSI Compressional SAM4 data reprocessed to correct labeling.	
Fluid type was Sepeolite mud weighted with Barite to a density of 10.5ppg (g/cc)	
Depth recorded from drill floor; logs presented as−logged without depth corrections or shifts, as per client instructions.	
All logs presented in wireline measured depth below rig floor (MBRF).	
Caliper opened during upward passes; closed inside pipe.	
Hole size corrections made using caliper measurements for upward passes.	
AHC not used on log passes due to controller needing a reboot and	
it was decided to proceed without it to save time in troublshooting.	
10.5 lb/gal mud pumped in hole prior to logging.	
HNGS run close to bottom to maximize GR depth.	
APS was not run due to limited power required.	
Calibration of HLDS, HNGS done on Mar 16 23019 and not per date shown in DLIS.	
Low count rates in Density calibration due to weak source but density unaffected	

RUN 1		RUN 2	
SERVICE ORDER #:		SERVICE ORDER #:	
PROGRAM VERSION:	19C0−187	PROGRAM VERSION:	
FLUID LEVEL:		FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

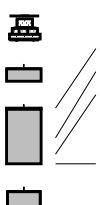
EQUIPMENT DESCRIPTION

RUN 1 RUN 2

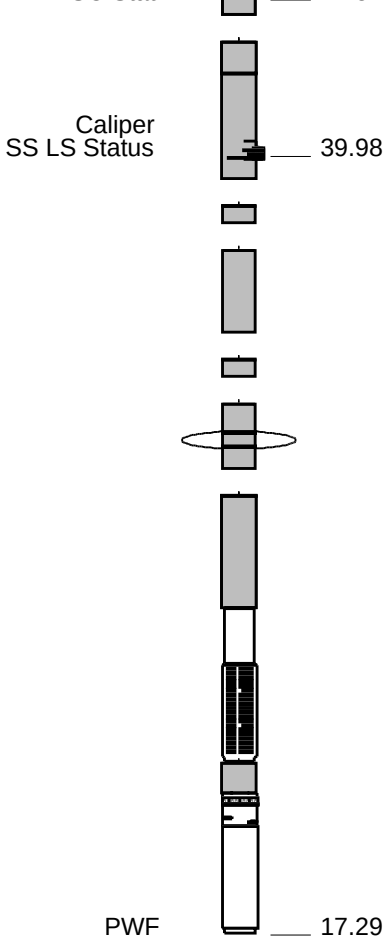
SURFACE EQUIPMENT

GSR−U 6098
WITM (EDTS)−A 1

DOWNHOLE EQUIPMENT



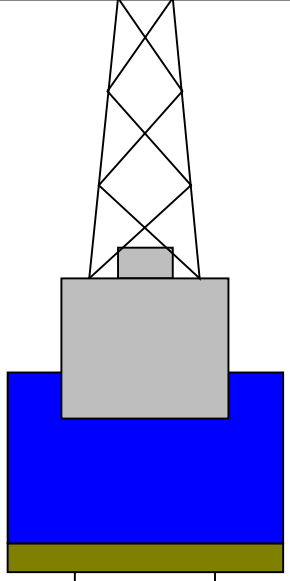
LEH−QT	MDSB_EDTC Mud Tempe	47.09	48.41
AH−369	CTEM Gamma Ray	46.02 45.45	47.52
EDTC−B EDTH−B 8303	EFTB DIAG TelStatus EDTCB Ele	45.11	47.09
LDSC−B	LDSC Stat	44.57	45.11



HLDS HLDV-D 67 HLDS-D 77 GSR-ZA 2945 HLDP-C 83 HEH-H 67	44.04
AH-184	39.22
AH-ECH-MRA AH-ECH-MRA 5714	38.61
AH-184	35.72
AH-MCD2 AH-MCD2 1663	35.11
DSST-B SPAC-B 8194 ECH-SD 8183 SMDR-BD 8232 SSIJ-BA 8204 SMDX-AA 8194	32.83
HRLT-B HRUH-B 975 HRUC-B 964 HRLS-B 768 HRLH-B 1869 HRLC-B 1897 AH-270 773	17.29
AH-MCD AH-MCD 82	9.91
HNGS-BA HNGS-BA 99 HNSH-BA 102	7.63
HNGC-B	5.13
AH-230	4.07
MSS_LDEO-A ELIC-A 1 MSS_LDEO-A 1	3.67

MAXIMUM STRING DIAMETER 3.75 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

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

Kelly Bushing Elevation		0			
Derrick Floor Elevation		0			
Mean Sea Level		11			
				4.1	
				3230	4.1 Sea Floor
				3313.4	9.875 Open Hole
				3875.4	Total Depth

Company: International Ocean Discovery Program | Well: Expedition 382, Site U1536E

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_NGS_016LUP		PRODUCER	25−Apr−2019 20:48	3872.3 M	3129.5 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_021PUP	FN:35	PRODUCER	25−Apr−2019 21:10	3872.3 M	3129.5 M
BACKUP	MSS_LDEO_NGS_HRLA_021PUP	FN:36	PRODUCER	25−Apr−2019 21:10	3872.3 M	3129.5 M

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)		
0	(GAPI)	100
Peak Coherence / TA − Lower Dipole (CHT1)		
−2	(−−−−)	8
Peak Coherence / RA − Lower Dipole		

(CHR1)

0 (----) 10

Waveform Data Copy Indicator 1 − Lower Dipole (WCI1)

0 (----) 10

HLDS Caliper (LCAL)

0 (IN) 20

Downlog, Low Frequency Dipole at 0.8khz

SAM1 Waveform Gain (WFG1)

0 (----) 1000

Calibrated Downhole Force (CDF) (LBF)

5000 0

Min Amplitude Max

Tr.Array L.Dipole Slow Proj. CVDL (SPT1)

75 (US/F) 1200

Min Amplitude Max

Rec.Array L.Dipole Slow Proj. CVDL (SPR1)

75 (US/F) 1200

Bit Size (BS)

0 (IN) 20

Tension (TENS) (LBF)

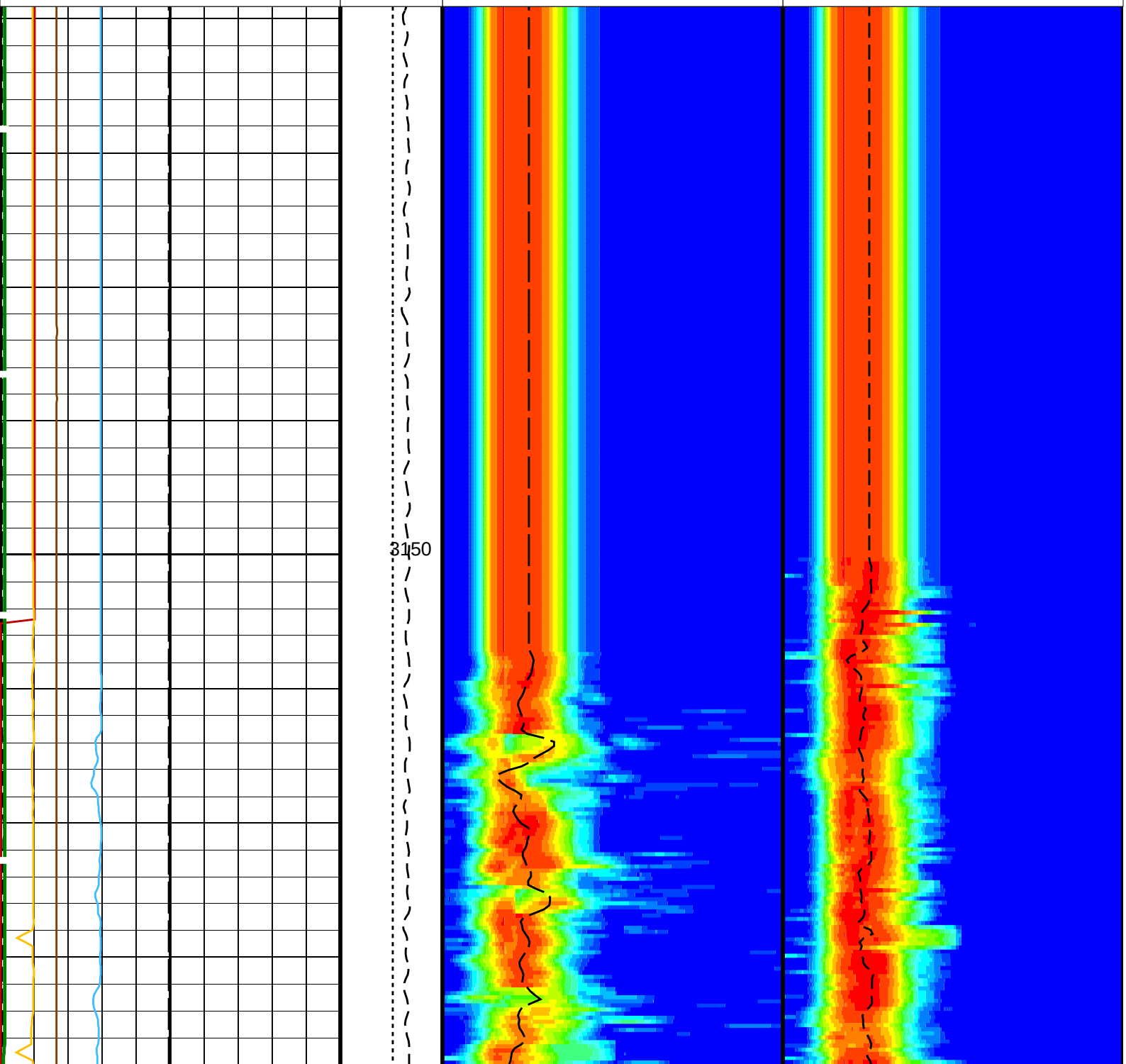
10000 0

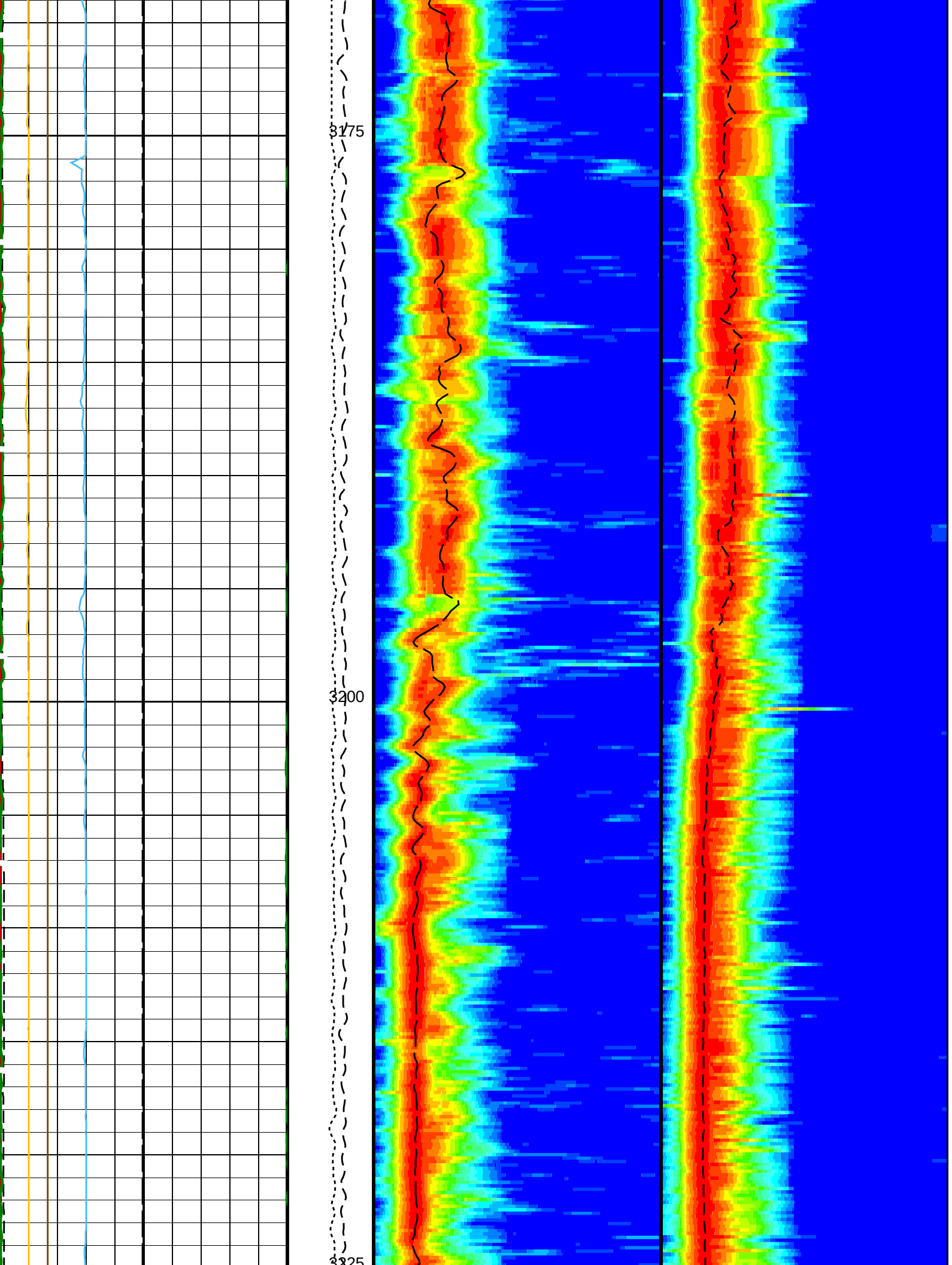
Delta−T Shear / TA − Lower Dipole (DT1T)

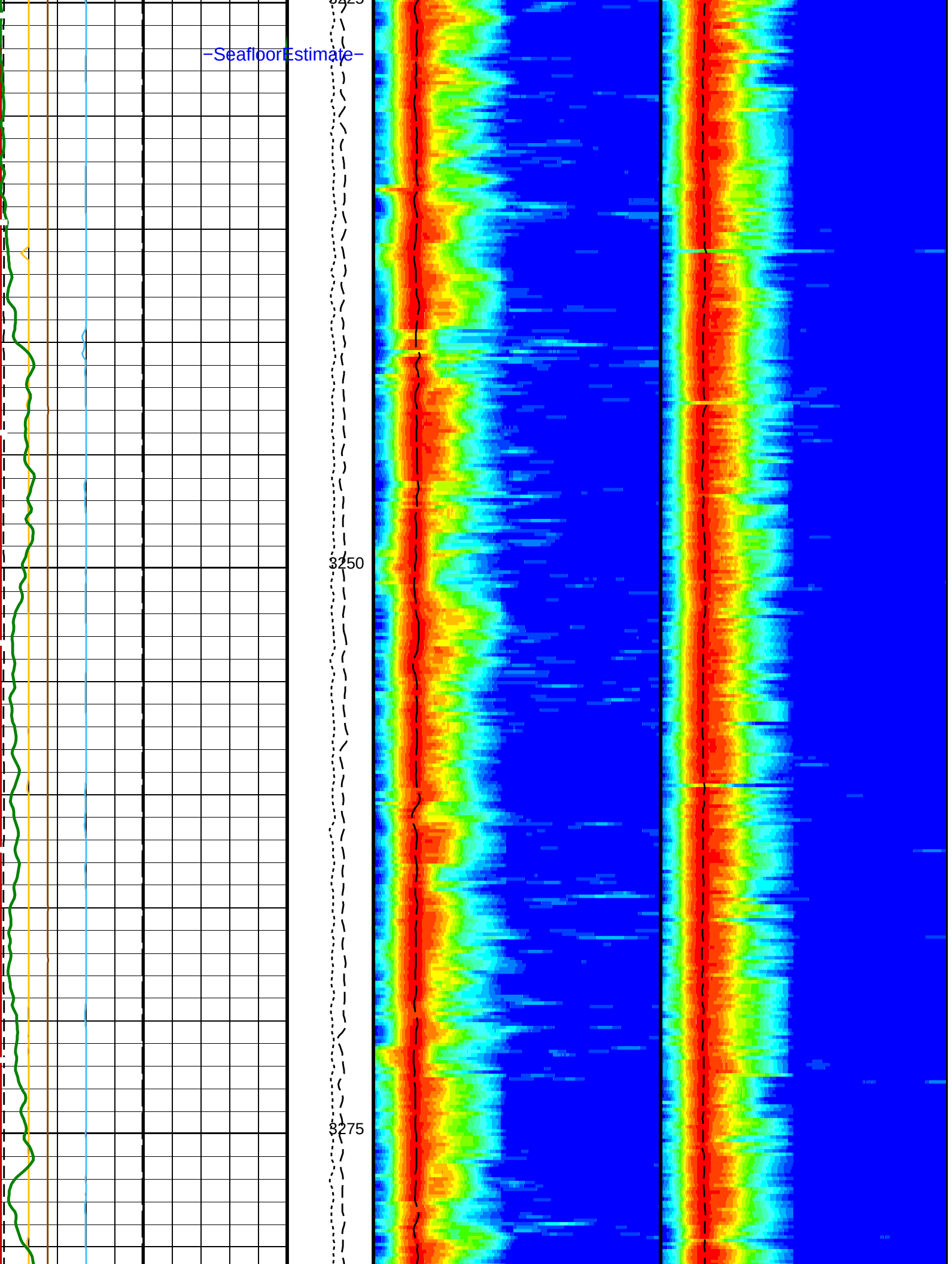
75 (US/F) 1200

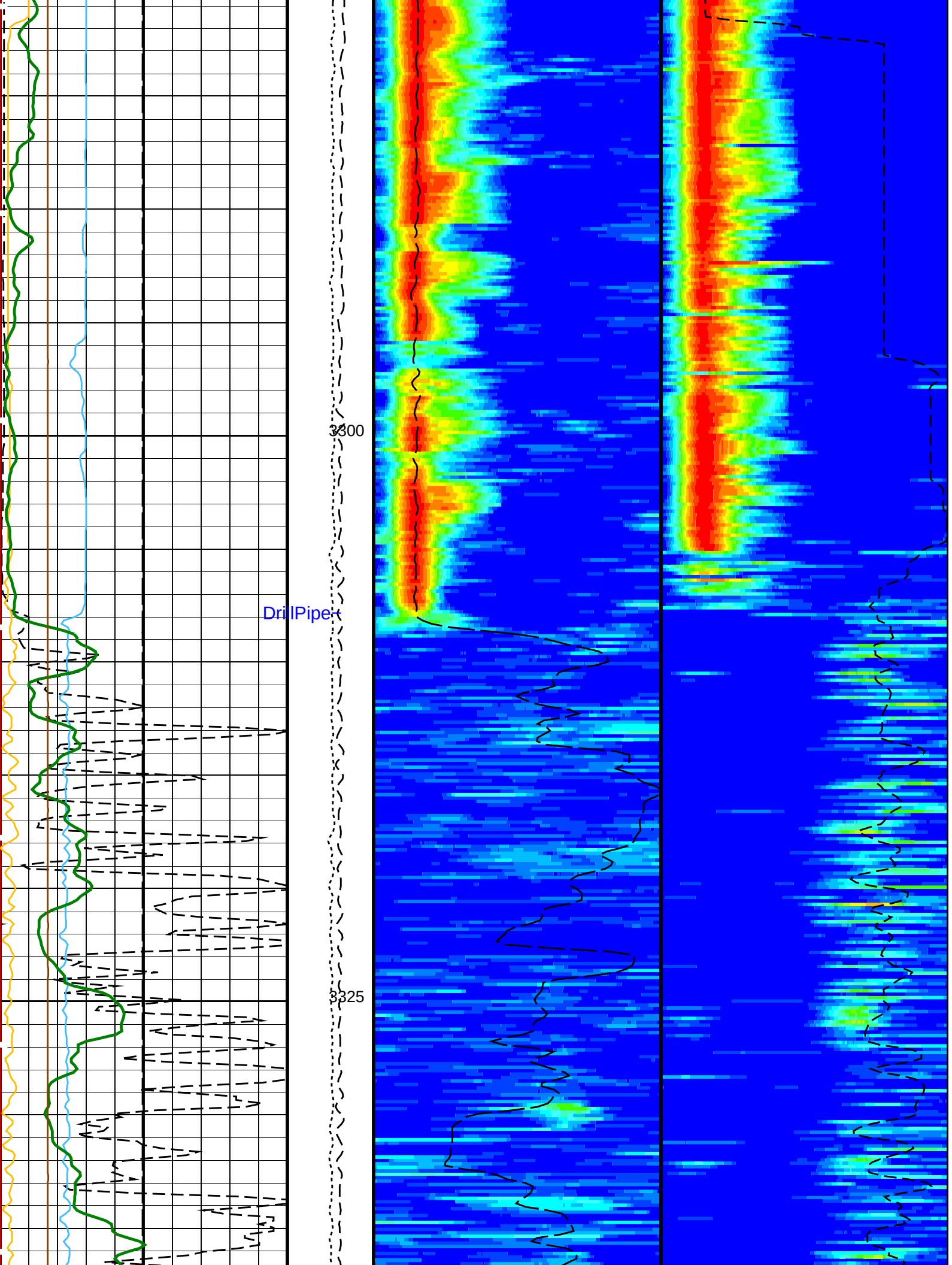
Delta−T Shear / RA − Lower Dipole (DT1R)

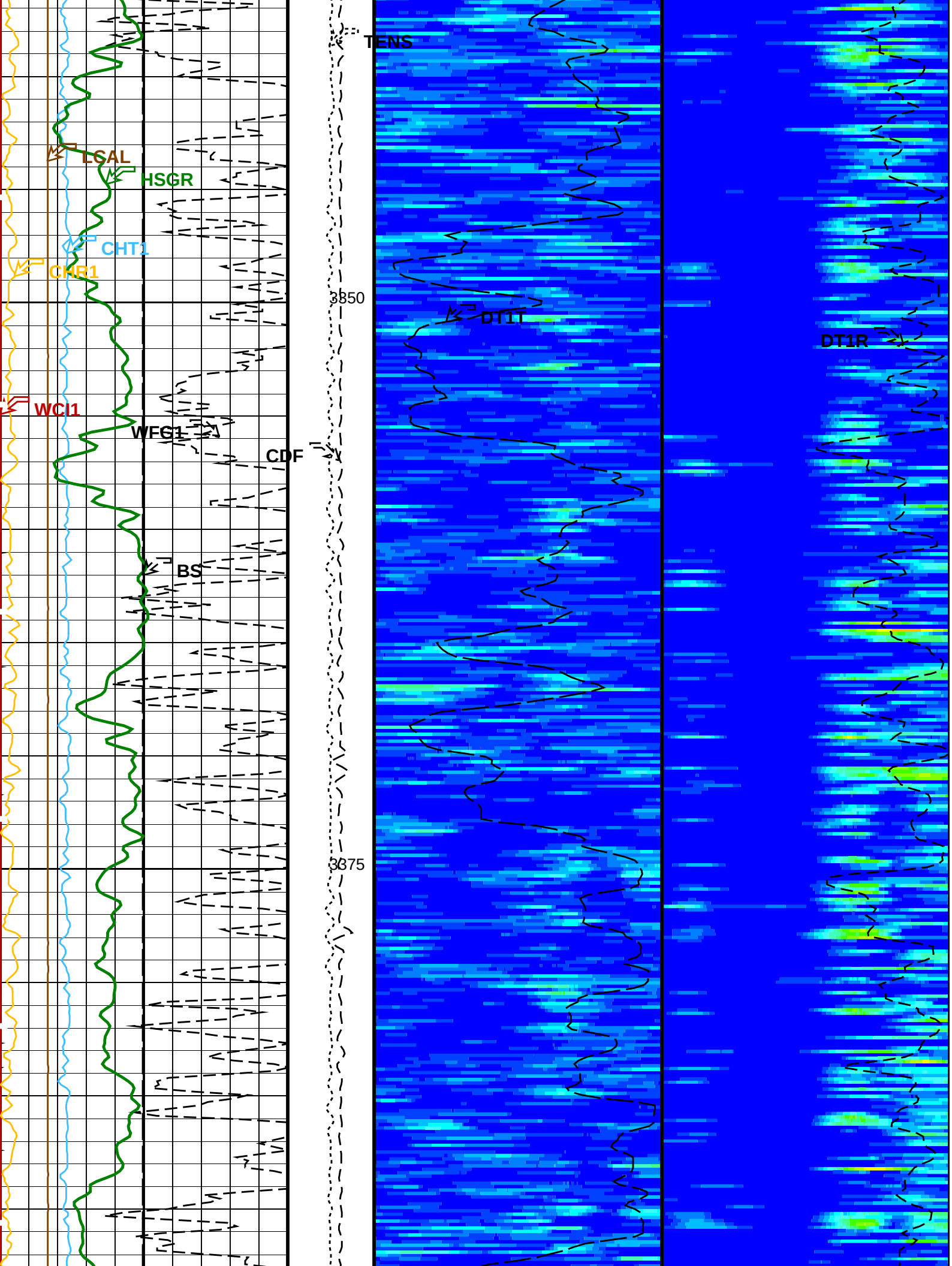
75 (US/F) 1200

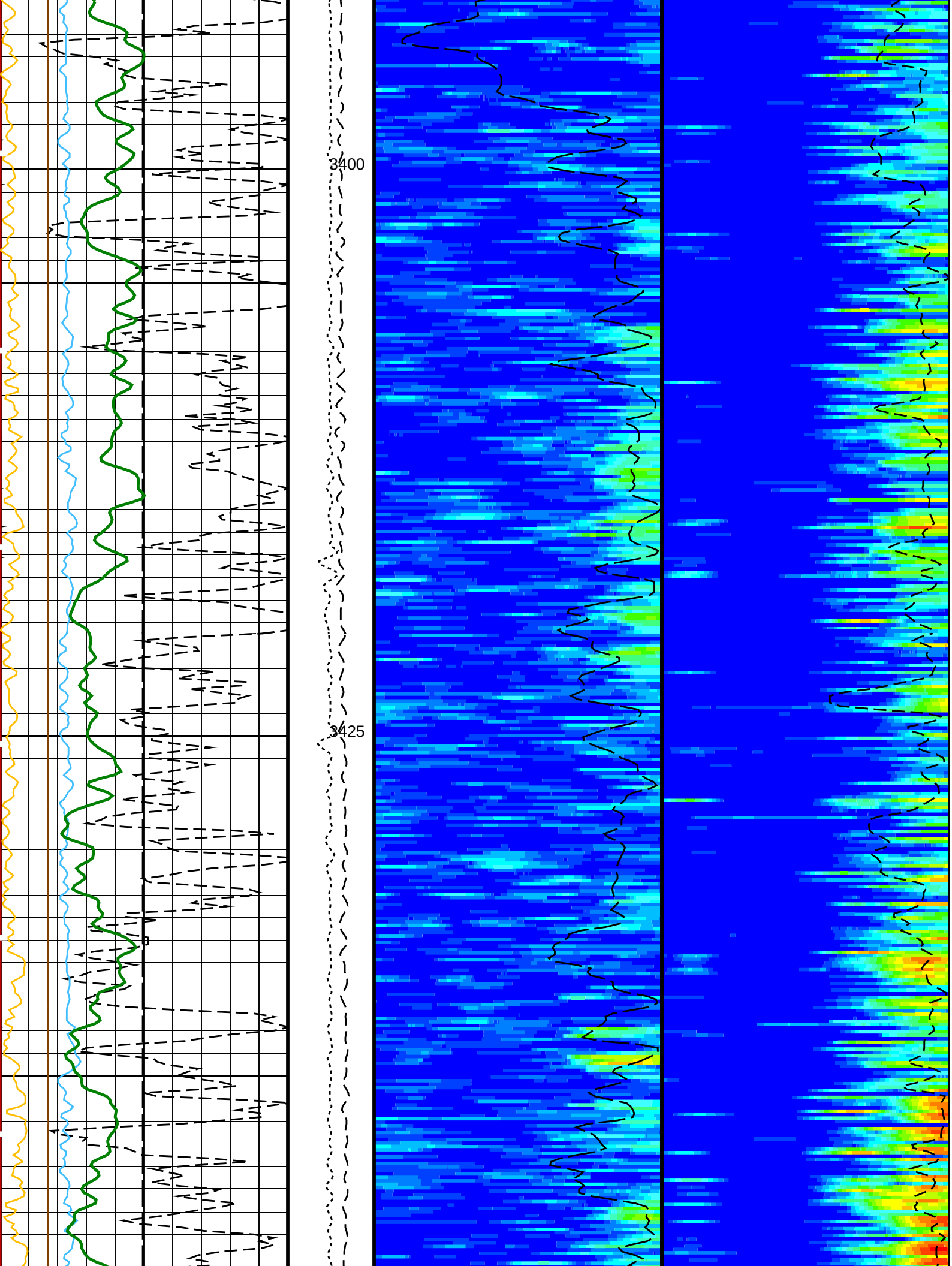


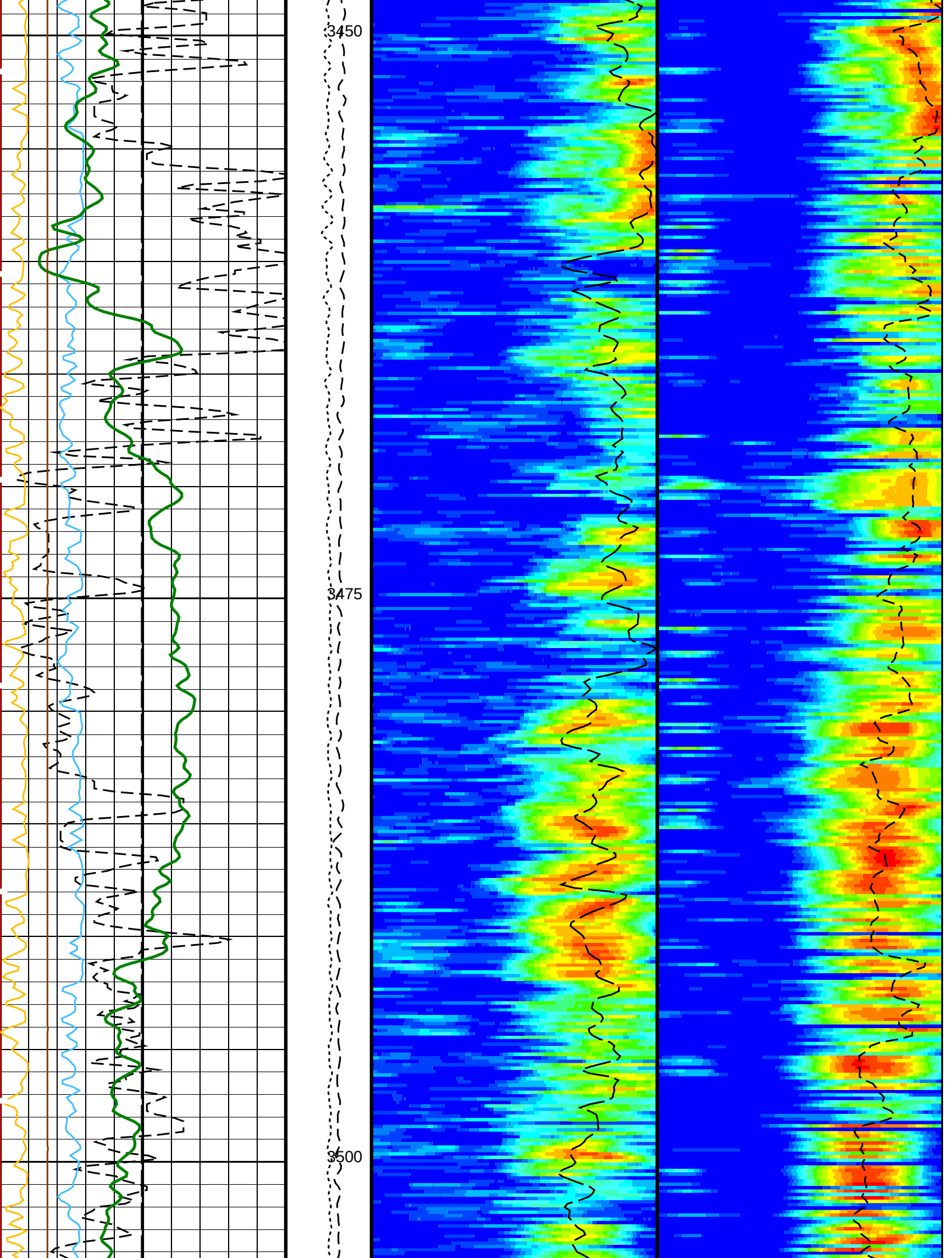

3175
3200
3225

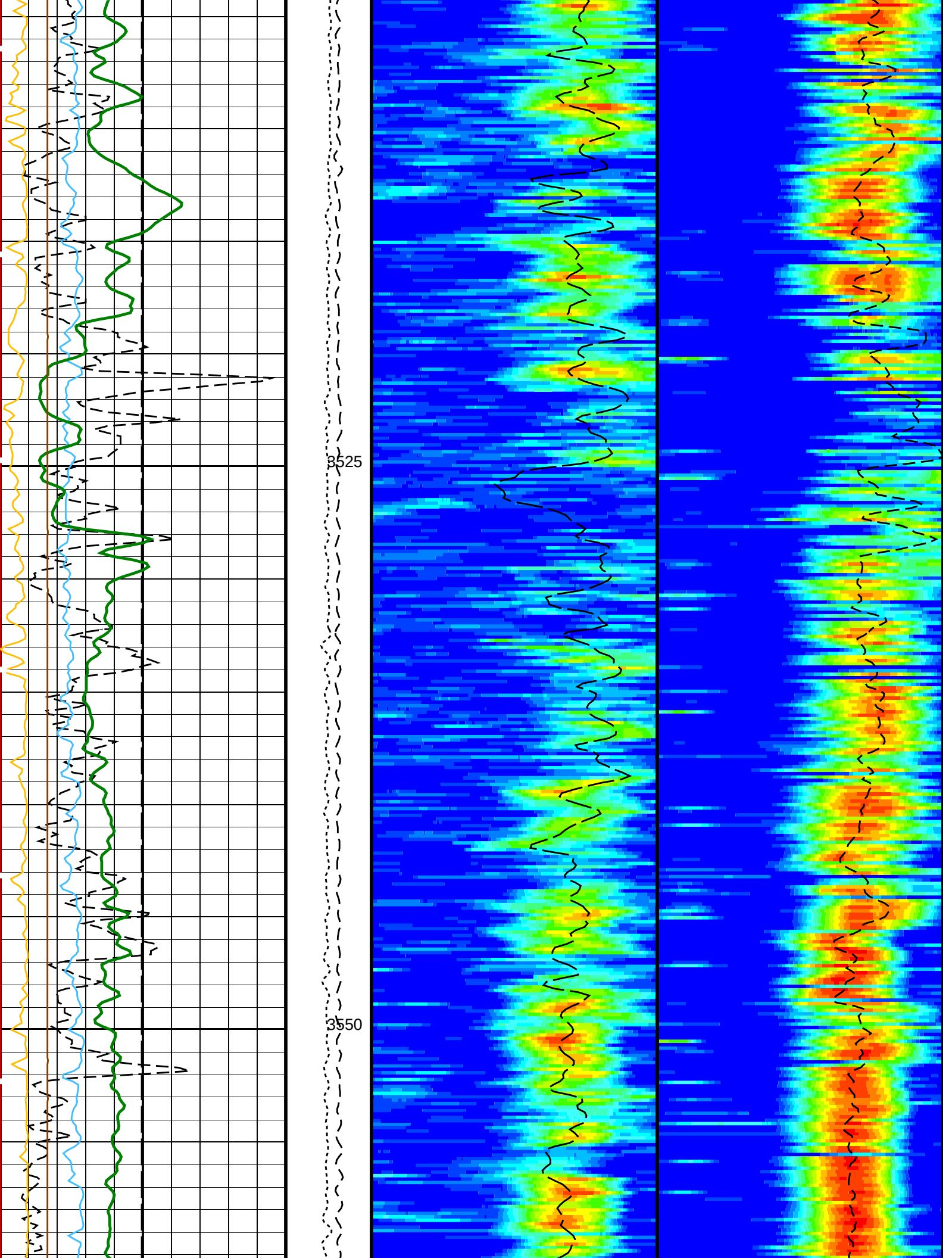

−SeafloorEstimate−
3250
3275


3300
DrillPipe
3325


TENS
LCAL
HSGR
CHT1
CHR1
3850
DT1T
DT1R
WCI1
WFG1
CDF
BS
3875


3400
3425


3450
3475
3500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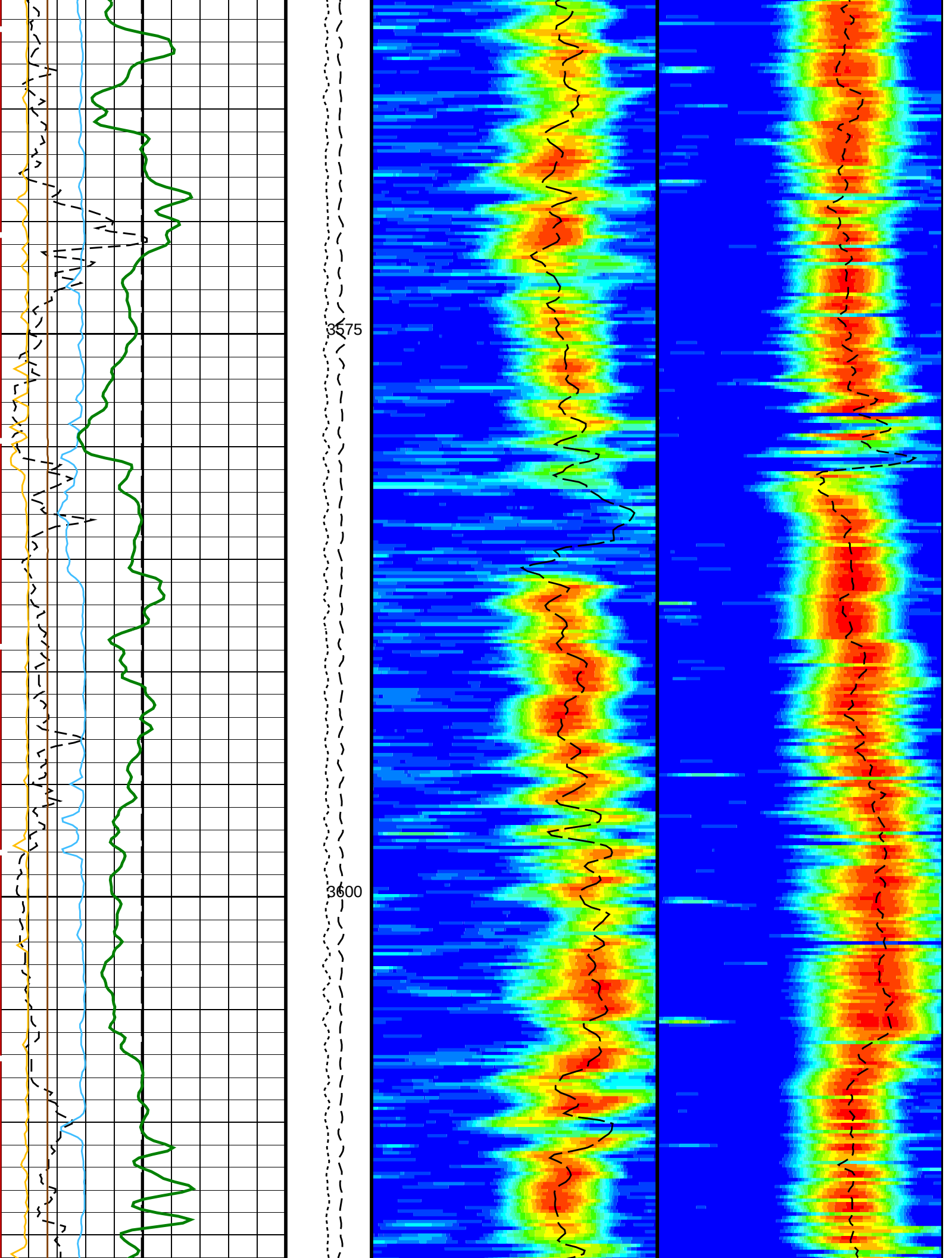
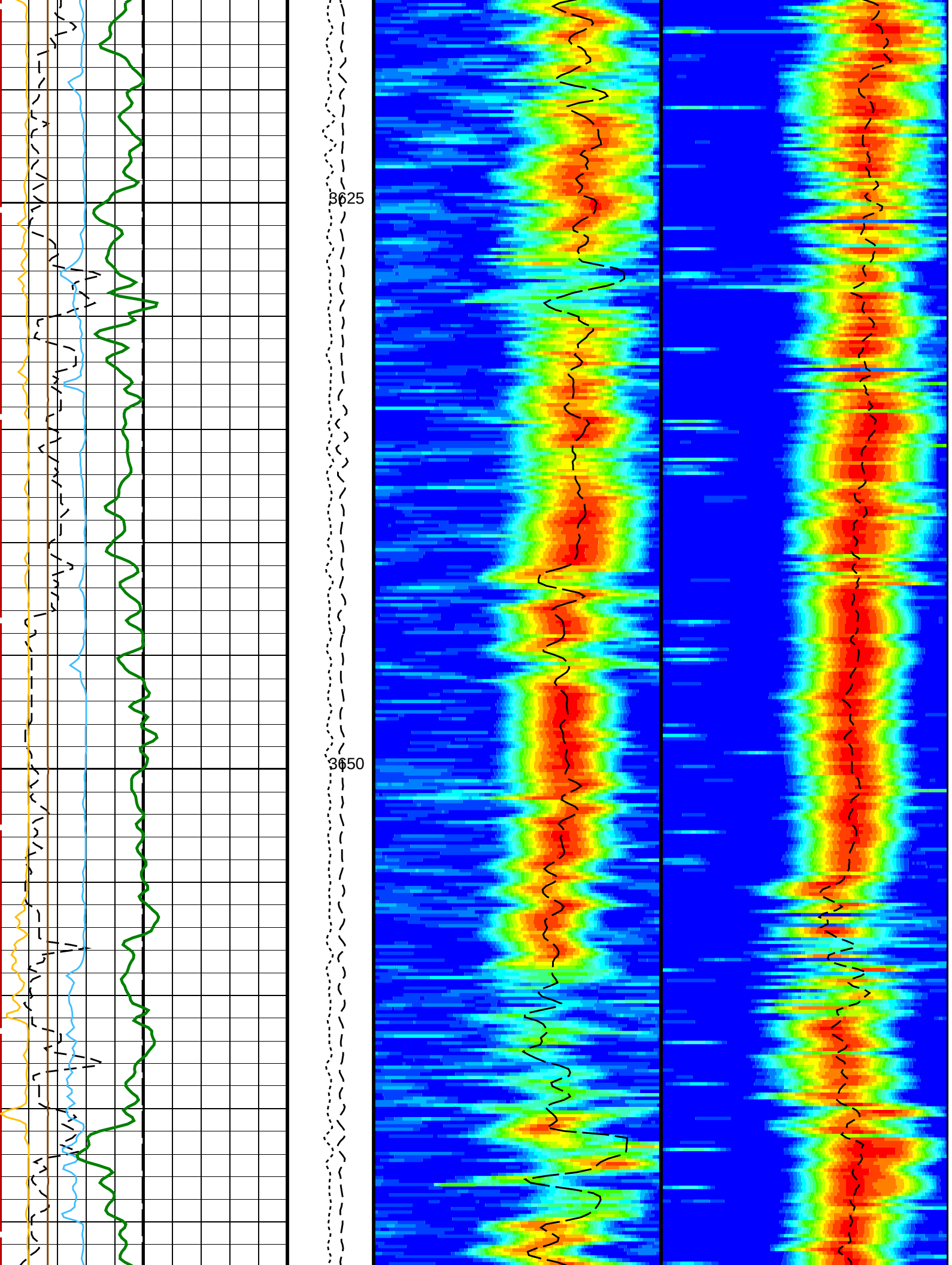
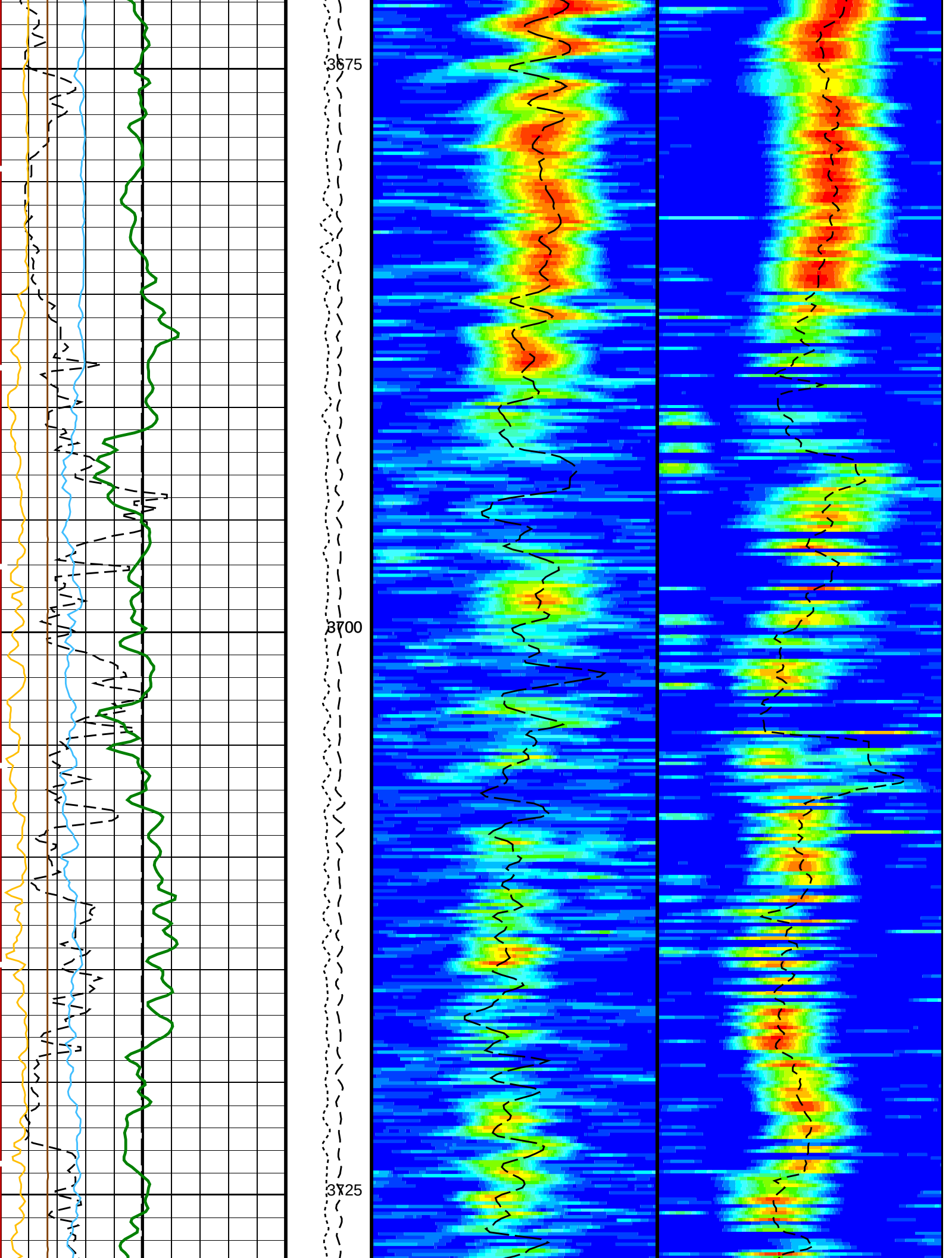
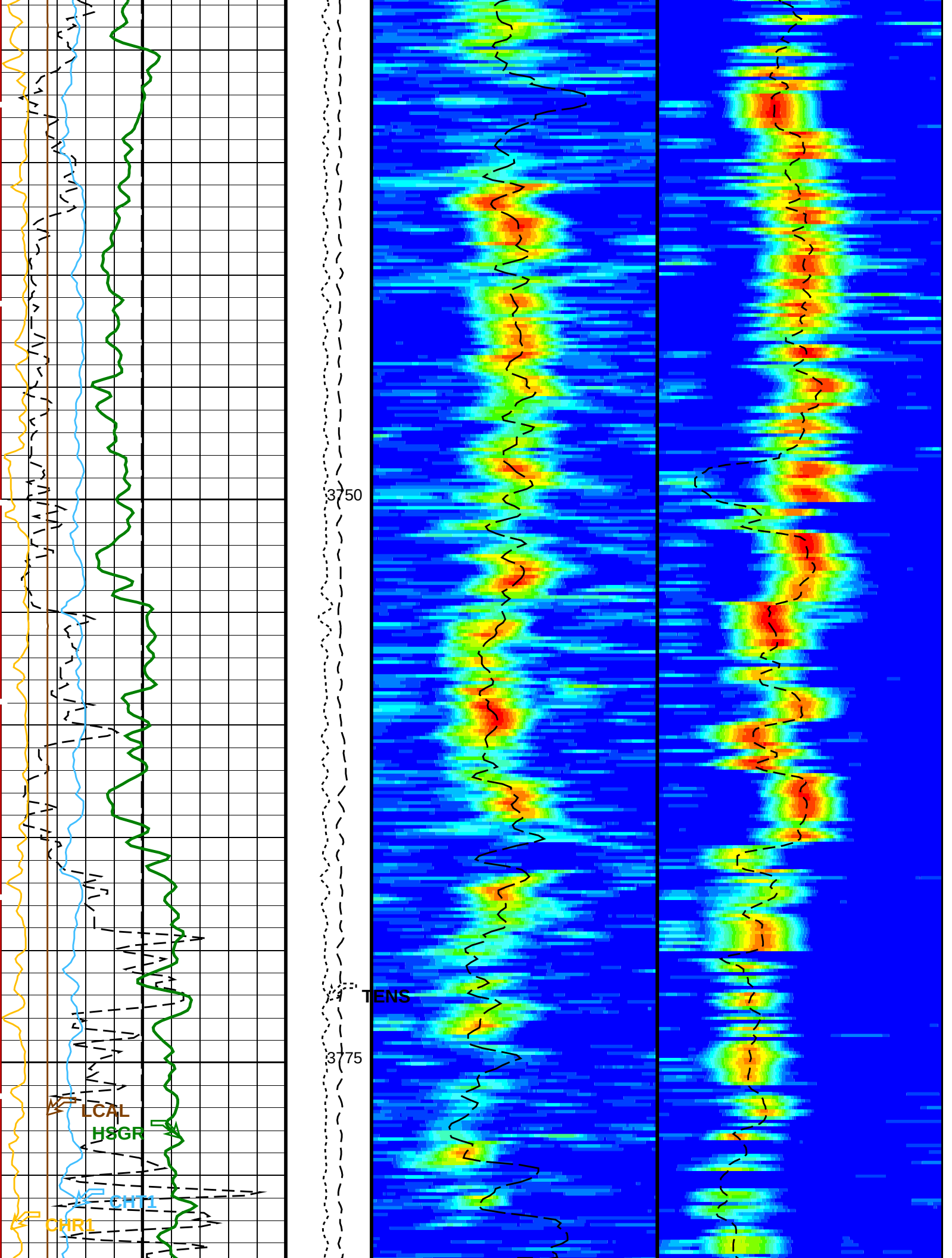
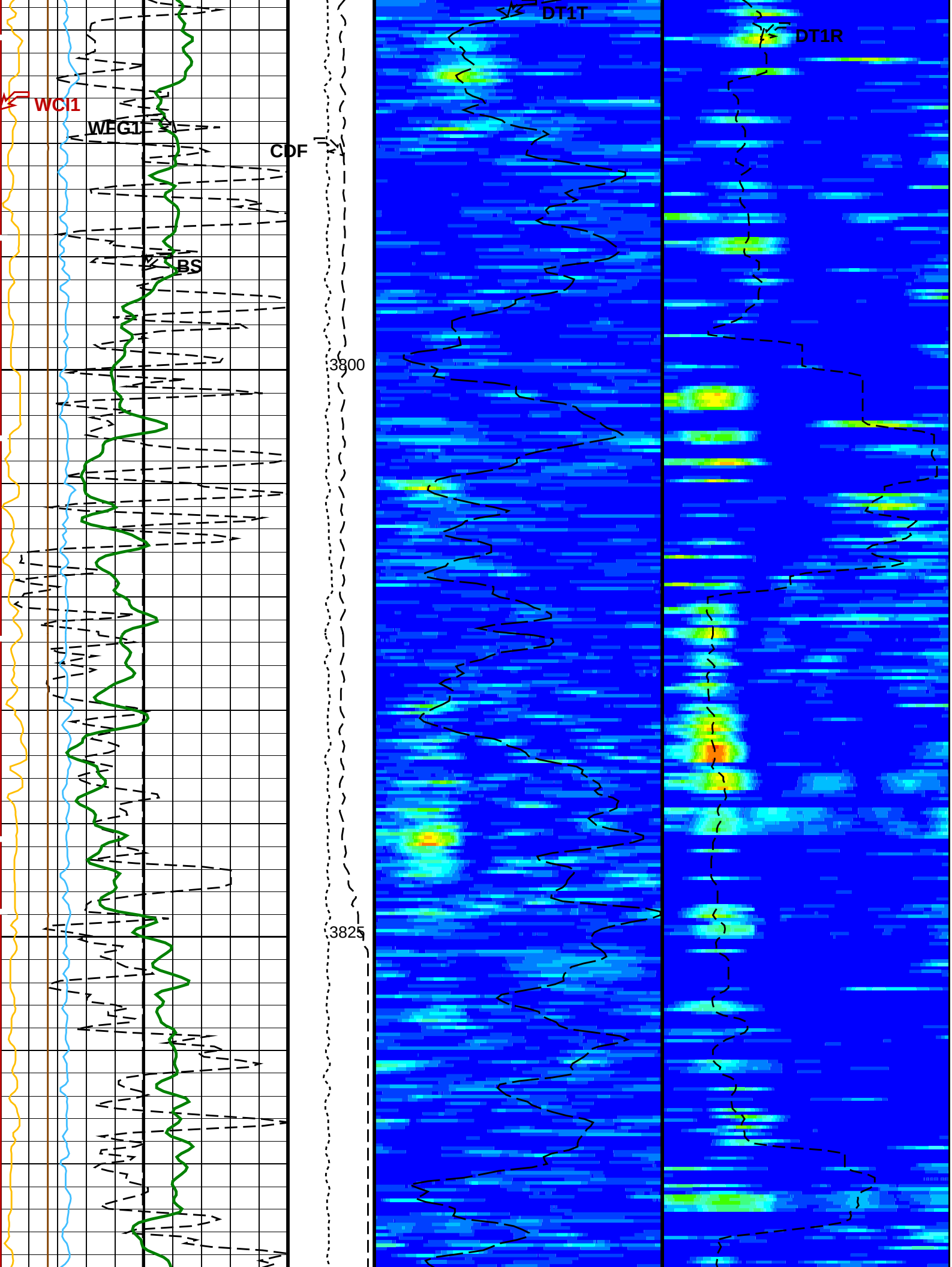
3550

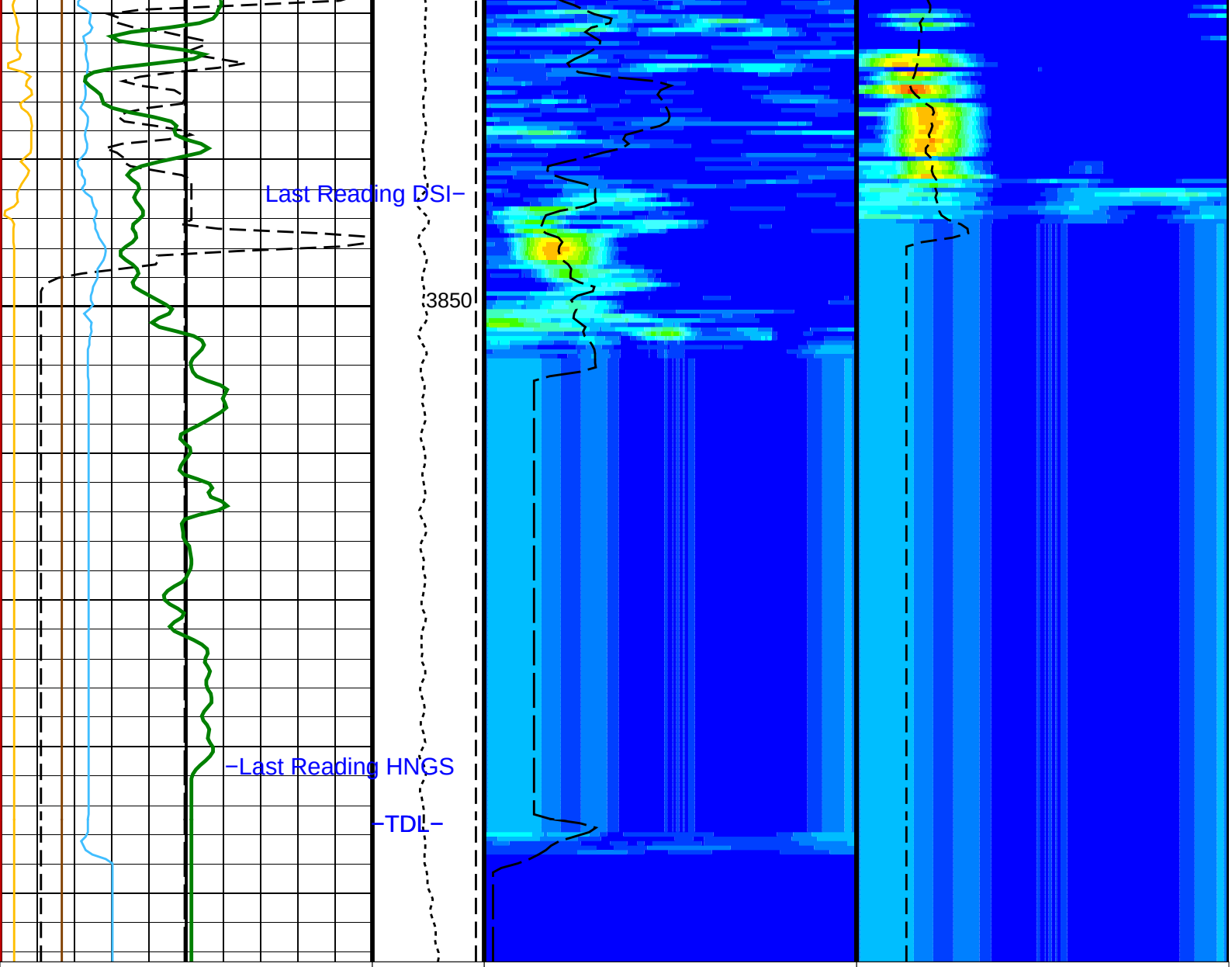

3575
3600


3625
3650


3675
3700
3725


3750
TENS
3775
LCAL
HSGR
CHT1
CHR1


DT1T
DT1R
WCI1
WEG1
CDF
BS
3800
3825



Bit Size (BS) (IN) 0 20	Tension (TENS) (LBF) 10000 0	Delta−T Shear / TA − Lower Dipole (DT1T) (US/F) 75 1200	Delta−T Shear / RA − Lower Dipole (DT1R) (US/F) 75 1200
SAM1 Waveform Gain (WFG1) (−−−−) 0 1000	Calibrated Downhole Force (CDF) (LBF) 5000 0	Min Amplitude Max Tr.Array L.Dipole Slow Proj. CVDL (SPT1) (US/F) 75 1200	Min Amplitude Max Rec.Array L.Dipole Slow Proj. CVDL (SPR1) (US/F) 75 1200
HLDS Caliper (LCAL) (IN) 0 20			
Waveform Data Copy Indicator 1 − Lower Dipole (WCI1) (−−−−) 0 10			
Peak Coherence / RA − Lower Dipole (CHR1) (−−−−) 0 10			
Peak Coherence / TA − Lower Dipole (CHT1) (−−−−) −2 8			
HNGS Spectroscopy Gamma Ray (HSGR) (GAPI) 0 100			

Downlog, Low Frequency Dipole at 0.8khz

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.0028203	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
TPOS	Tool Position	CENT	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.997292	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00458	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	DSST−B: Dipole Shear Imager − B		
BHS	Borehole Status	OPEN	
DDE1	Digitizing Delay 1	0	US
DDEX	Digitizing Delay X	0	US
DLCS	Label Compressional Source − Dipole Shear	USE	
DSHL	Label Slowness Lower Limit − Dipole Shear	75	US/F
DSHU	Label Slowness Upper Limit − Dipole Shear	1200	US/F
DSI1	Digitizer Sample Interval 1	40	US
DSIX	Digitizer Sample Interval X	40	US
DTCS	Compressional Delta−T Source for DTCO Channel	PS_COMP	
DWC1	Digitizer Word Count 1	512	
DWCX	Digitizer Word Count X	512	
GCSE	Generalized Caliper Selection	BS	
LTXG	Lower Dipole Transmitter Geometry	156	IN
NWI1	Number Waveform Items 1	8	
NWIX	Number Waveform Items X	0	
RX1G	Receiver 1 Geometry	294	IN
RX2G	Receiver 2 Geometry	300	IN
RX3G	Receiver 3 Geometry	306	IN
RX4G	Receiver 4 Geometry	312	IN
RX5G	Receiver 5 Geometry	318	IN
RX6G	Receiver 6 Geometry	324	IN
RX7G	Receiver 7 Geometry	330	IN
RX8G	Receiver 8 Geometry	336	IN
SAM1	DSST Sonic Acquisition Mode 1 − Lower Dipole Mode	LFD_EVEN	
SAMX	DSST Sonic Acquisition Mode X − Both Dipoles or Monopole Mode for Expert	OFF	
SAS1	STC Sonic Array Status − Lower Dipole	255	
SBO1	STC Search Band Offset − Lower Dipole	3000	US
SBW1	STC Search Bandwidth − Lower Dipole	8000	US
SFC1	STC Formation Character − Lower Dipole	SELECTABLE	
SFM1	STC Filter − Lower Dipole	B.3−1.5K	
SLL1	STC Slowness Lower Limit − Lower Dipole	75	US/F
SST1	STC Slowness Step − Lower Dipole	4	US/F
SSW1	STC Source Waveform − Lower Dipole	WF_SAM1	
SUL1	STC Slowness Upper Limit − Lower Dipole	1200	US/F
SWD1	STC Slowness Width − Lower Dipole	40	US/F
TBF1	STC Time for Baseline Fill − Lower Dipole	0	US
TLL1	STC Time Lower Limit − Lower Dipole	600	US
TST1	STC Time Step − Lower Dipole	200	US
TUL1	STC Time Upper Limit − Lower Dipole	20440	US
TWD1	STC Time Width − Lower Dipole	2000	US
TWI1	STC Integration Time Window − Lower Dipole	1600	US
TWSX	Transmitter Waveform Select X	0	
WFM1	Waveform Mode 1	W1	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	

System and Miscellaneous

BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	RECOMPUTE	

Format: DSST_LOWER_DIPOLE_RC_TR_VDL_COLOR Vertical Scale: 1:200 Graphics File Created: 25-Apr-2019 21:10

OP System Version: 19C0-187

MSS_LDEO-A	19C0-187	HNGC-B	19C0-187
HNGS-BA	19C0-187	HRLT-B	19C0-187
DSST-B	19C0-187	HLDS	19C0-187
LDSC-B	19C0-187	EDTC-B	SKK-5169-EDTCB

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_NGS_016LUP	PRODUCER	25-Apr-2019 20:48	3872.3 M	3129.5 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_021PUP	FN:35	PRODUCER	25-Apr-2019 21:10	
BACKUP	MSS_LDEO_NGS_HRLA_021PUP	FN:36	PRODUCER	25-Apr-2019 21:10	

Company: International Ocean Discovery Program Well: Expedition 382, Site U1536E

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_NGS_016LUP	PRODUCER	25-Apr-2019 20:48	3872.3 M	3129.5 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_021PUP	FN:35	PRODUCER	25-Apr-2019 21:10	3872.3 M	3129.5 M
BACKUP	MSS_LDEO_NGS_HRLA_021PUP	FN:36	PRODUCER	25-Apr-2019 21:10	3872.3 M	3129.5 M

OP System Version: 19C0-187

MSS_LDEO-A	19C0-187	HNGC-B	19C0-187
HNGS-BA	19C0-187	HRLT-B	19C0-187
DSST-B	19C0-187	HLDS	19C0-187
LDSC-B	19C0-187	EDTC-B	SKK-5169-EDTCB

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

Peak Coherence / TA - Upper Dipole (CHT2)
-2 (----) 8

Peak Coherence / RA - Upper Dipole (CHR2)
0 (----) 10

Waveform Data Copy Indicator 2 - Upper Dipole (WCI2)
0 (----) 10

HLDS Caliper (LCAL)
0 (IN) 20

Downlog Caliper Closed

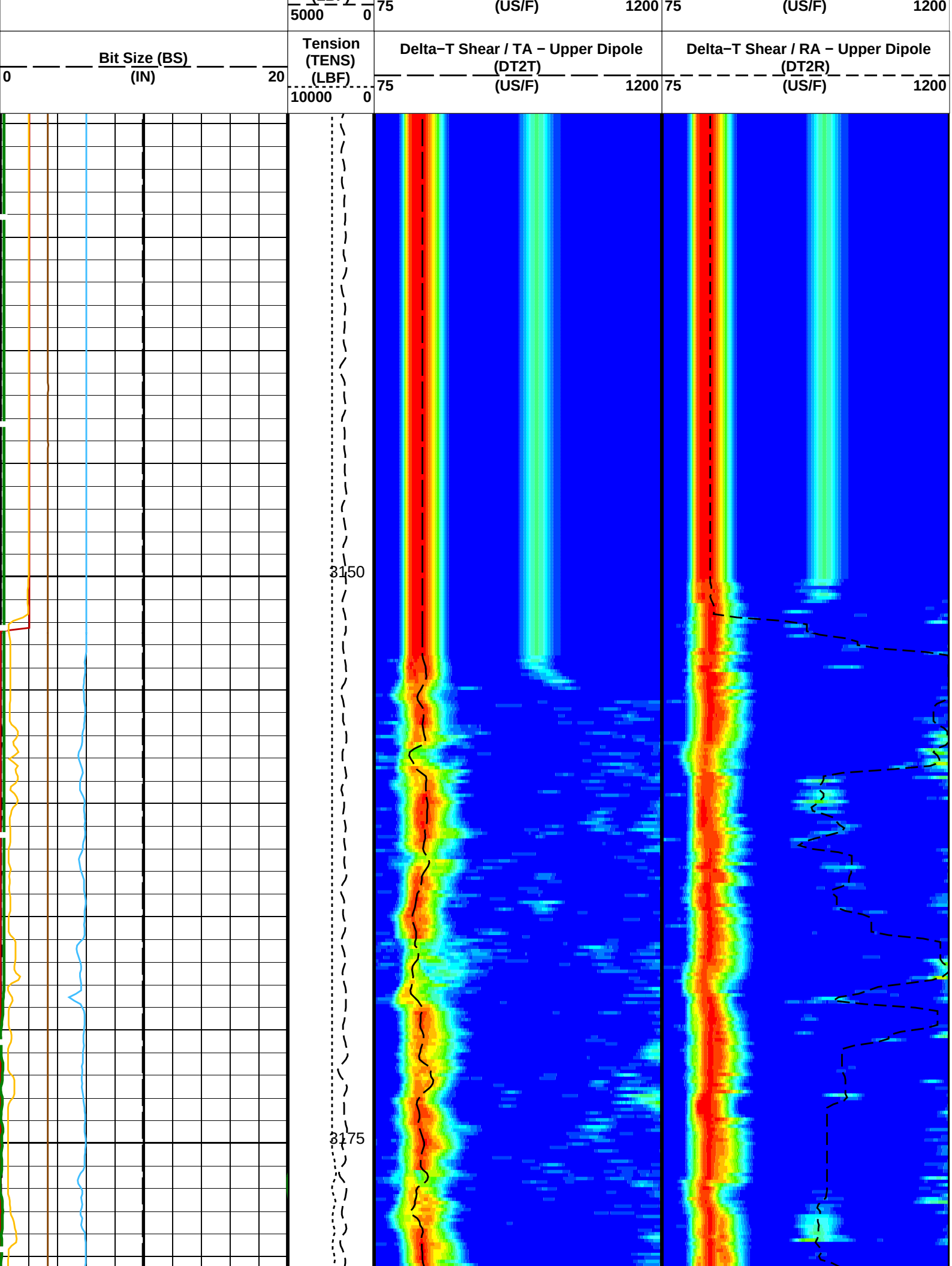
Upper Dipole Standard Frequency, 2khz

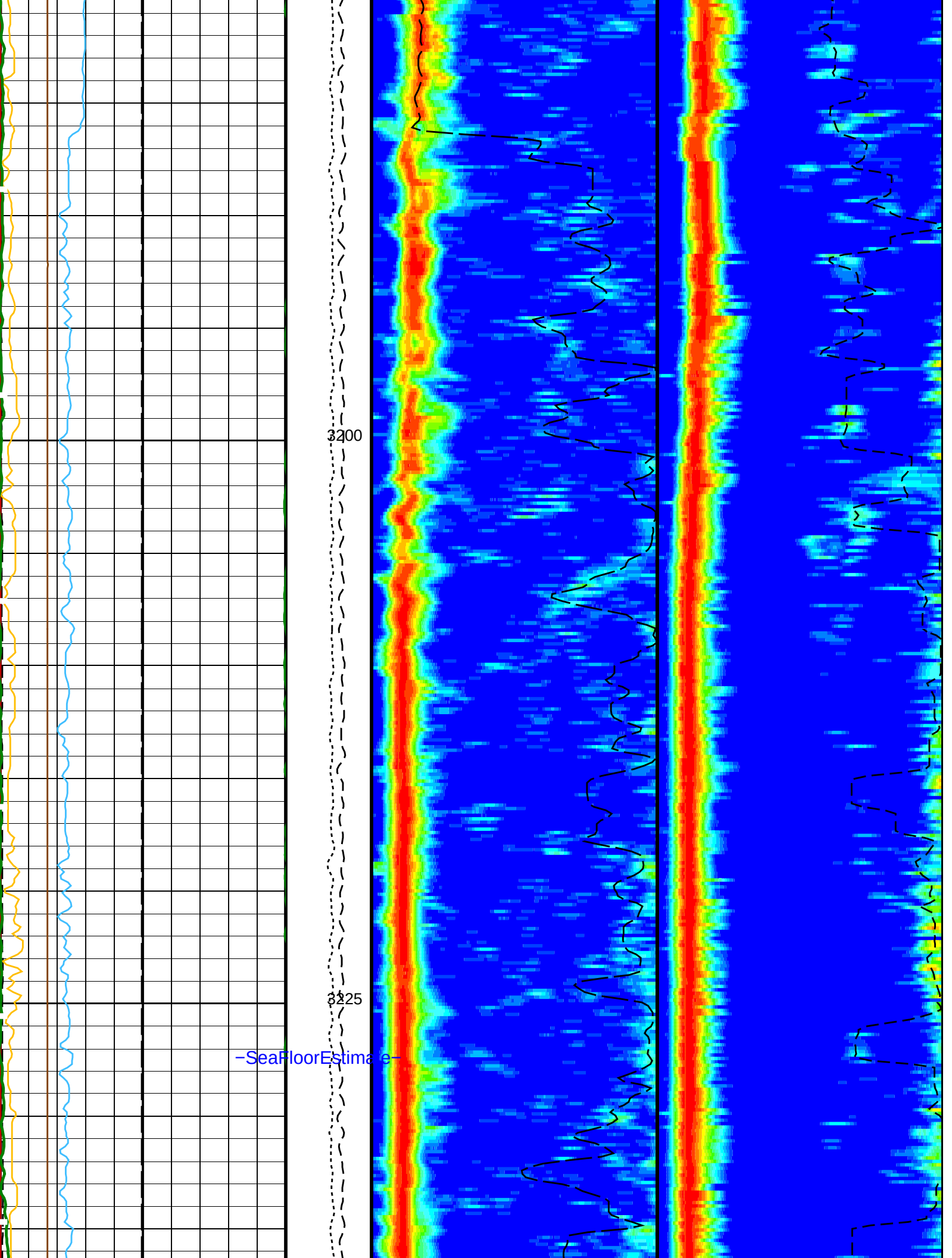
SAM2 Waveform Gain (WFG2)
0 (----) 1000

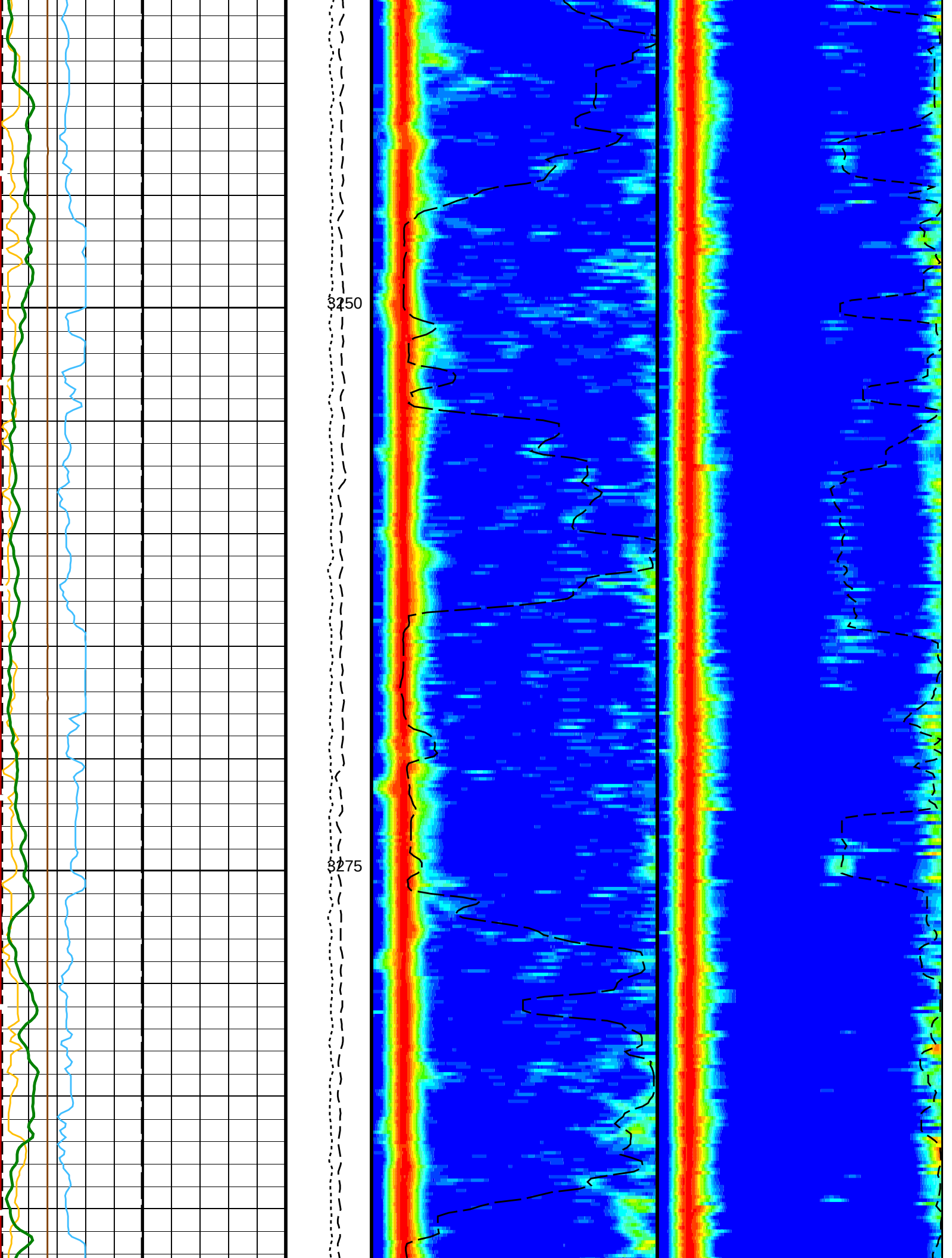
Calibrated Downhole Force (CDF) (LBF)

Min Amplitude Max
Tr.Array U.Dipole Slow Proj. CVDL (SPT2)

Min Amplitude Max
Rec.Array U.Dipole Slow Proj. CVDL (SPR2)


5000
0
75
(US/F)
1200
75
(US/F)
1200
Bit Size (BS)
0
(IN)
20
Tension
(TENS)
(LBF)
10000
0
Delta−T Shear / TA − Upper Dipole
(DT2T)
75
(US/F)
1200
Delta−T Shear / RA − Upper Dipole
(DT2R)
75
(US/F)
1200
3150
3175


3200
3225
−SeaFloorEstima e−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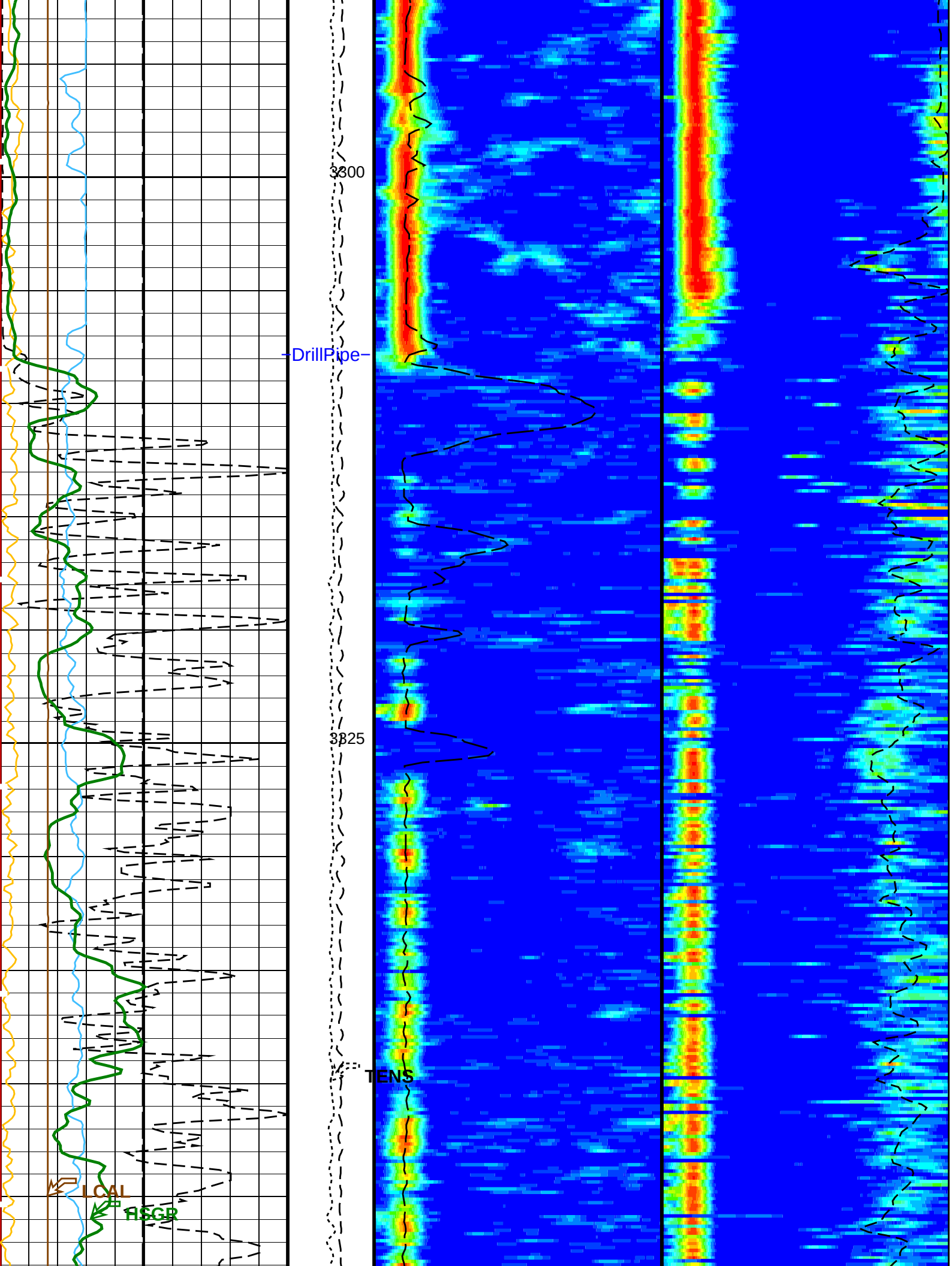
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−DrillPipe−
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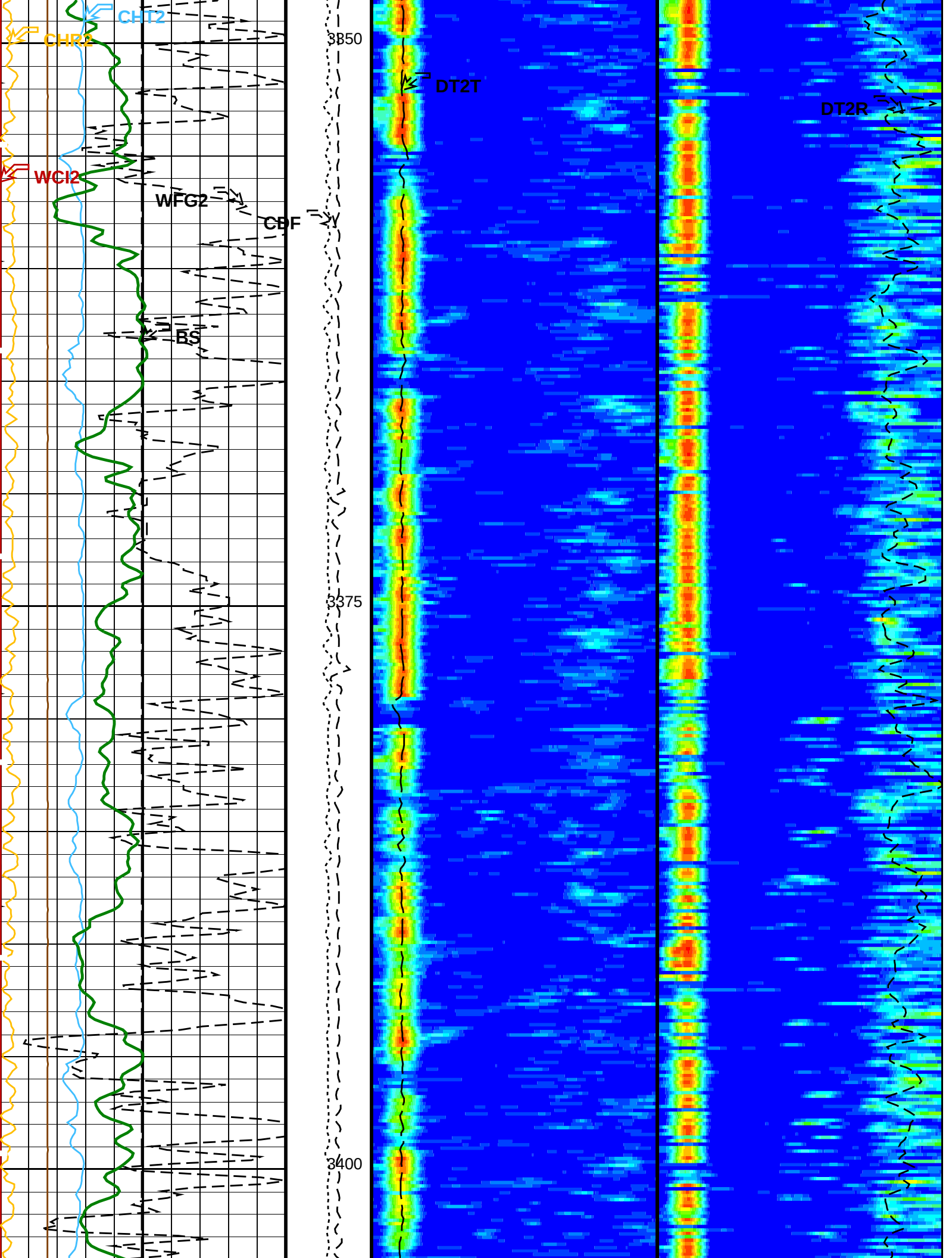
TENS
LCAL
HSGR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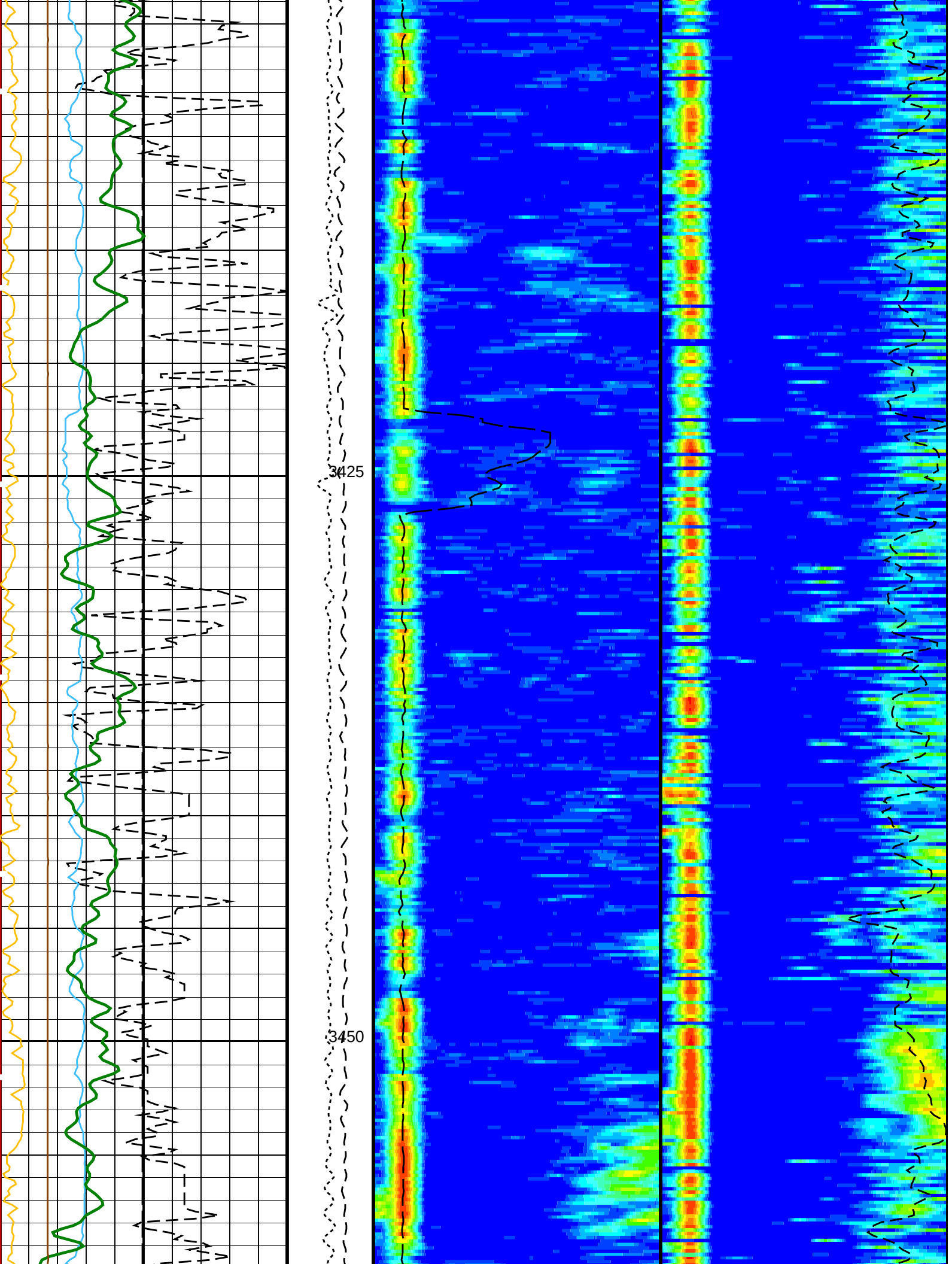
CHR2
WCI2
WFG2
CBF
BS
3350
DT2T
DT2R
3375
3400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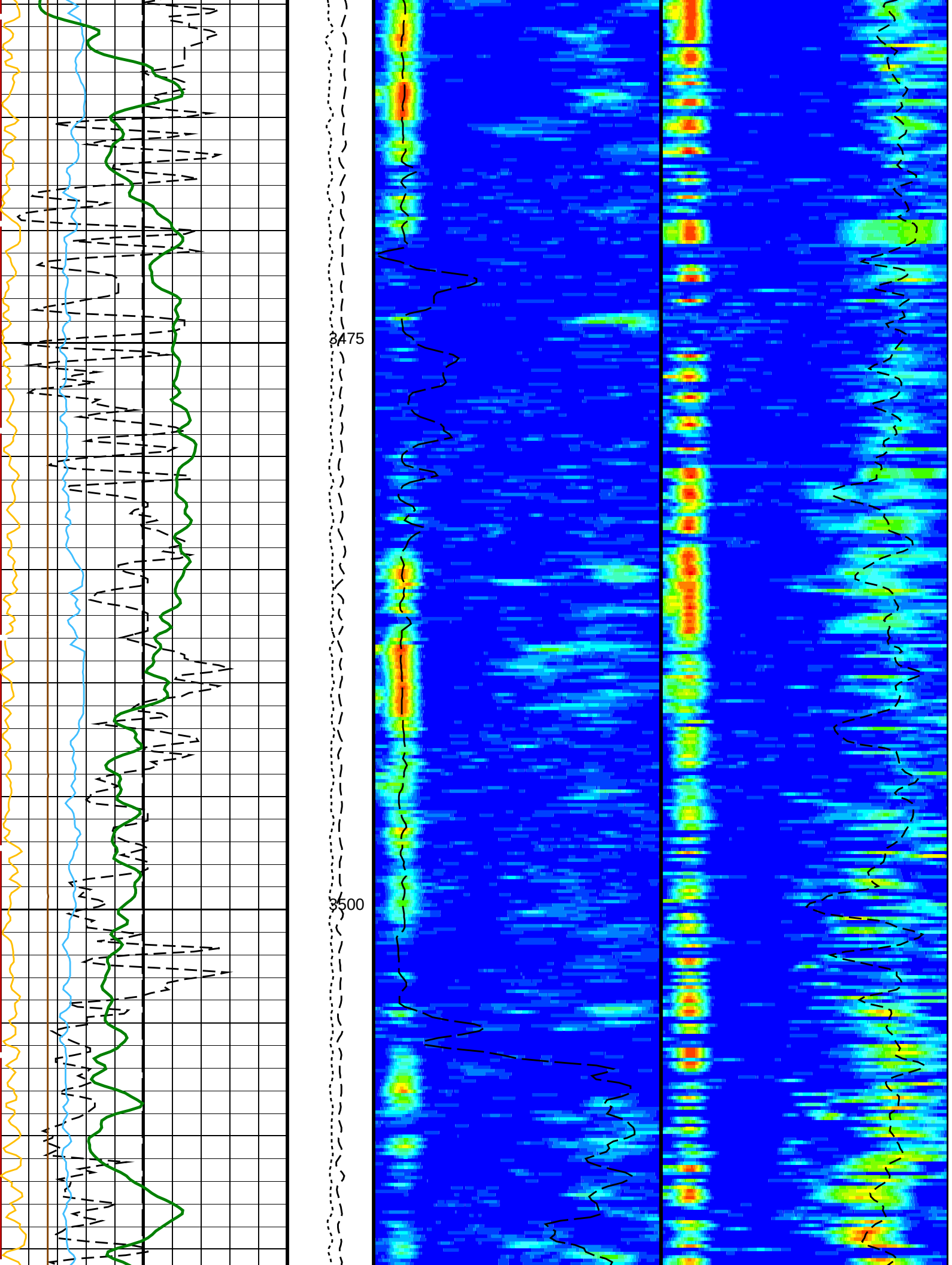
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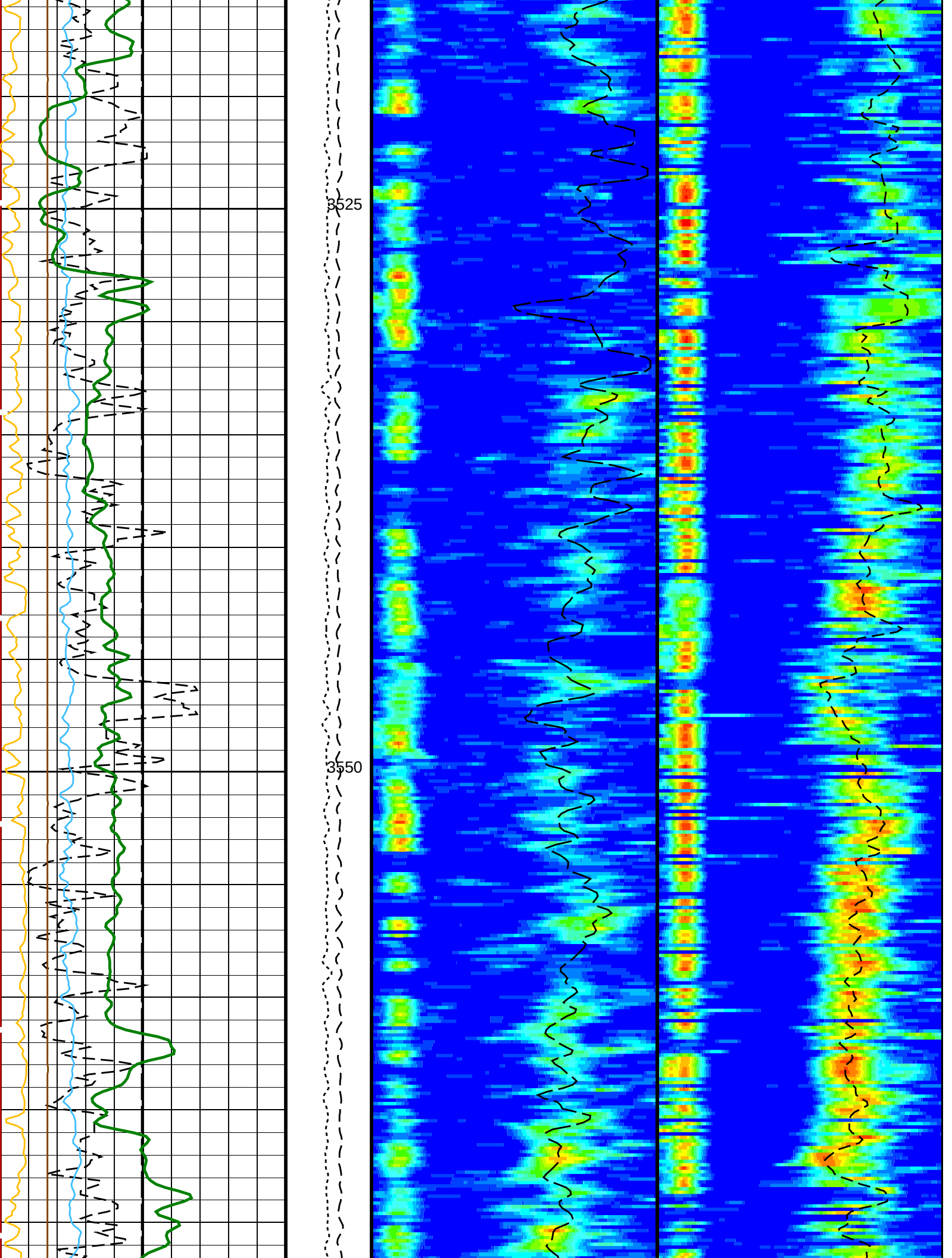
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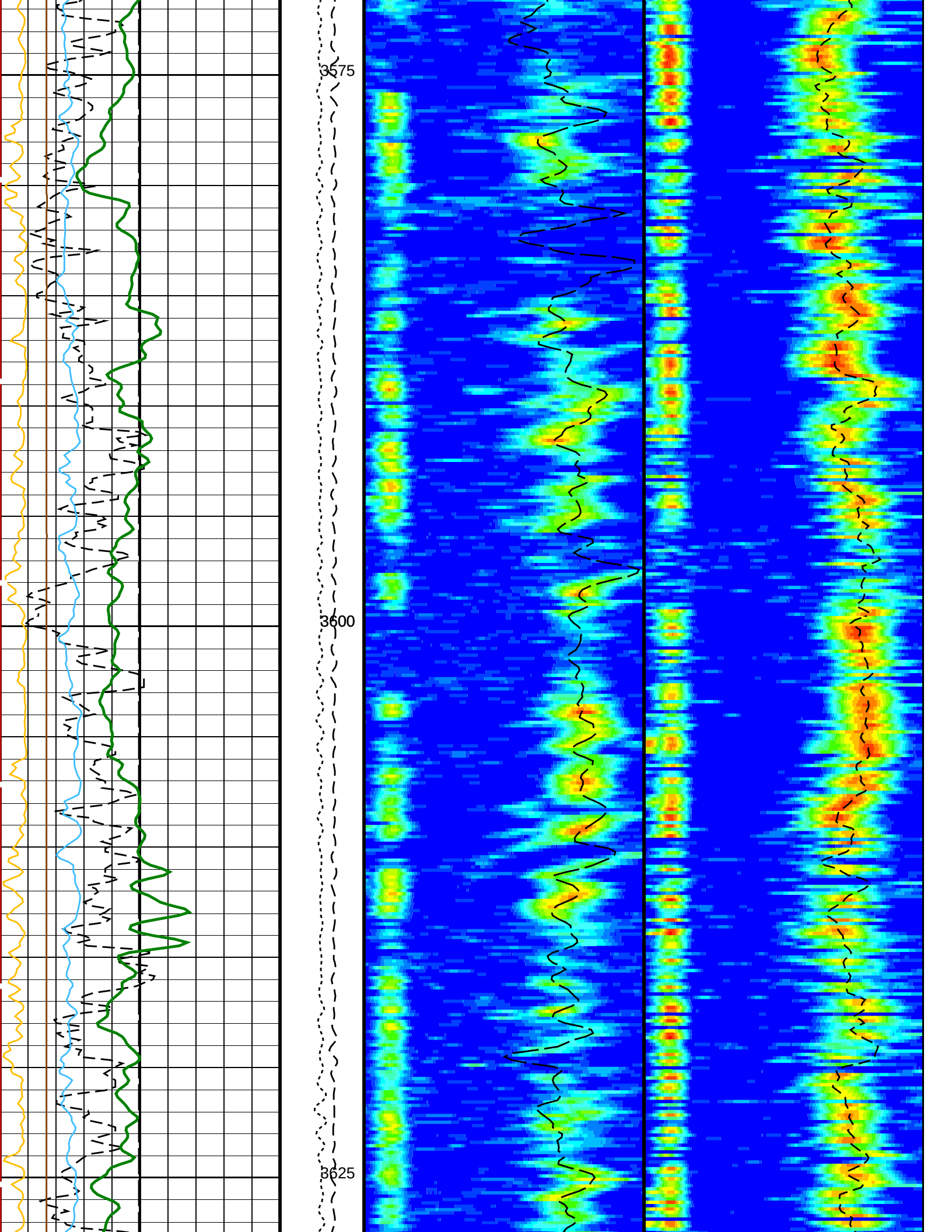
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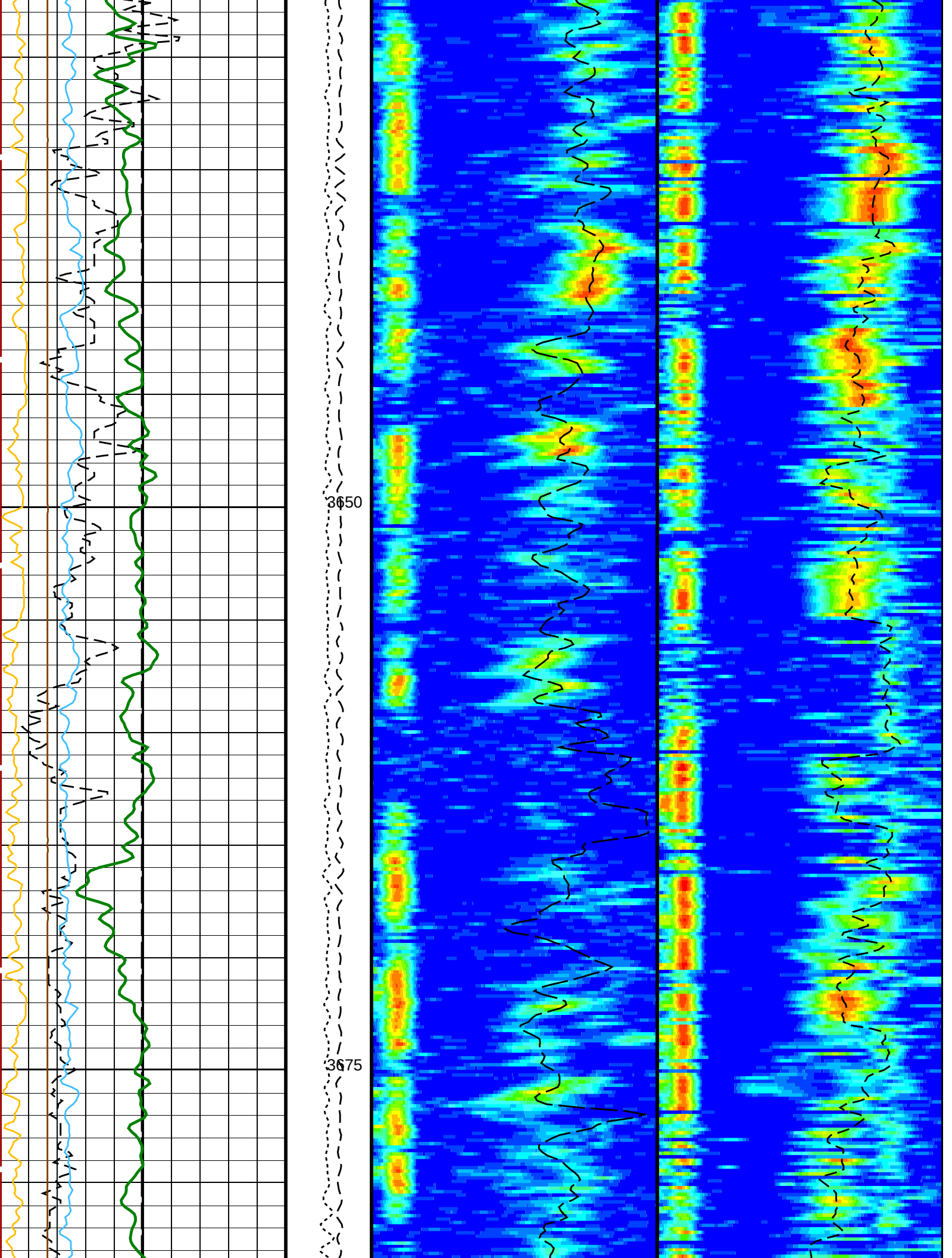
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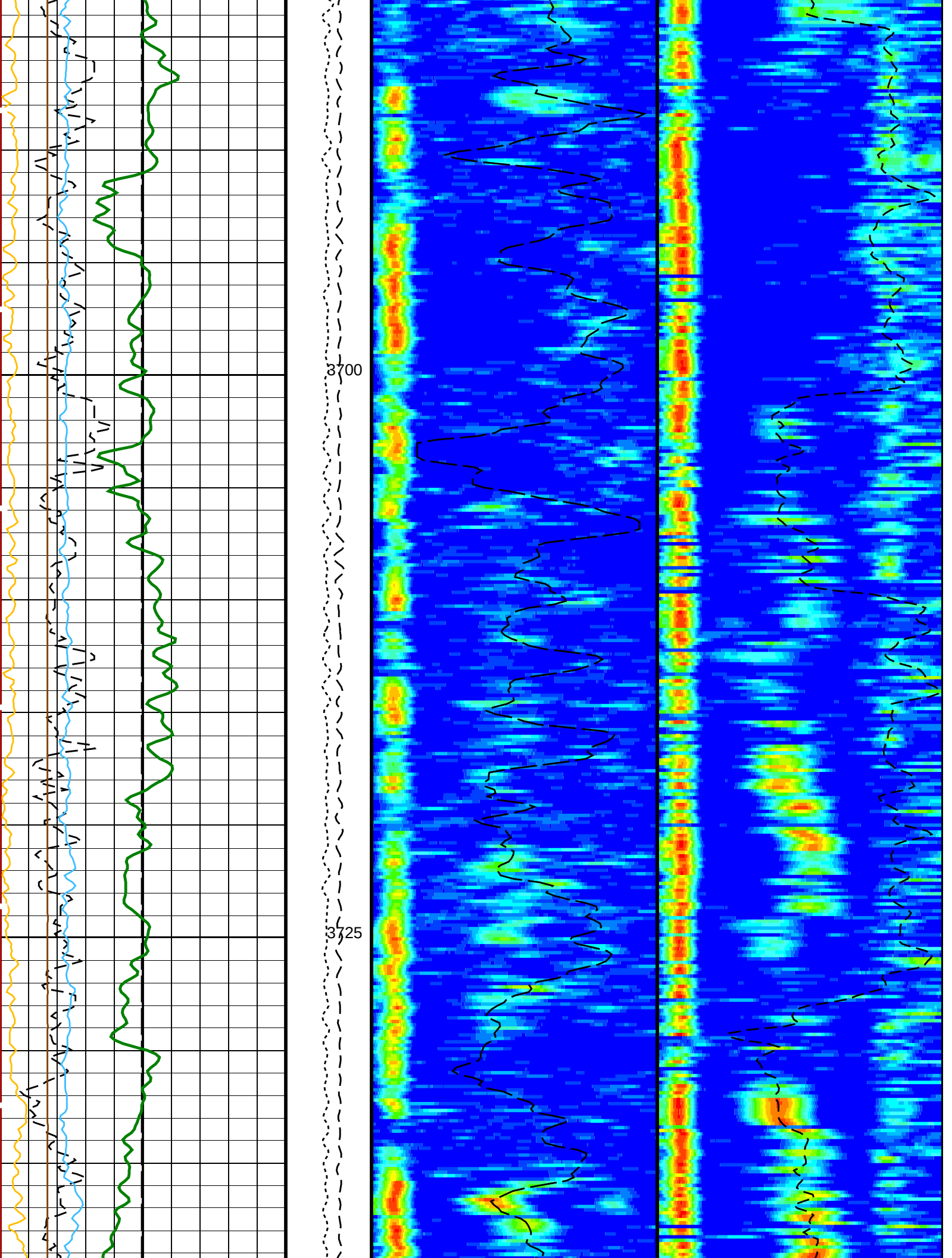
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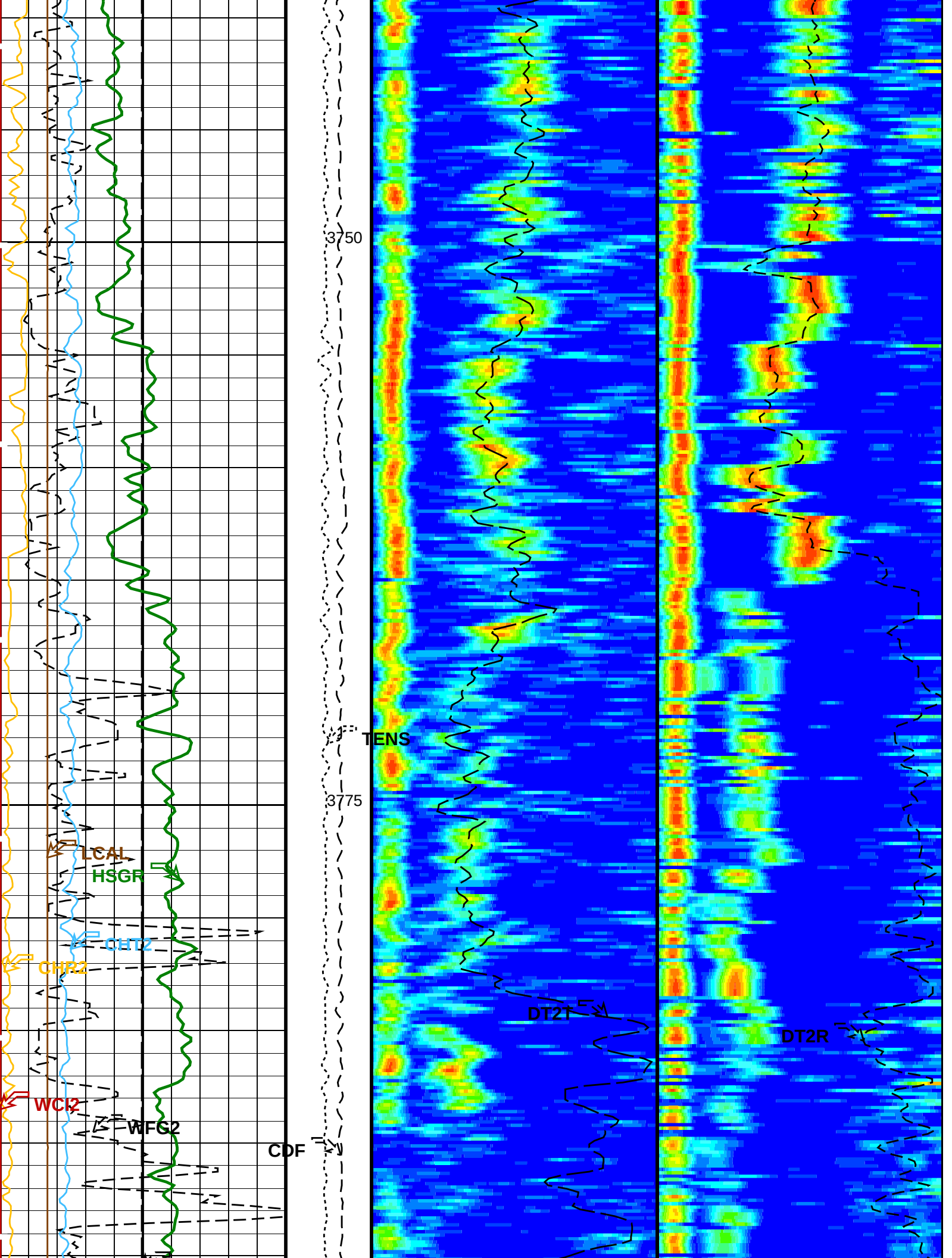
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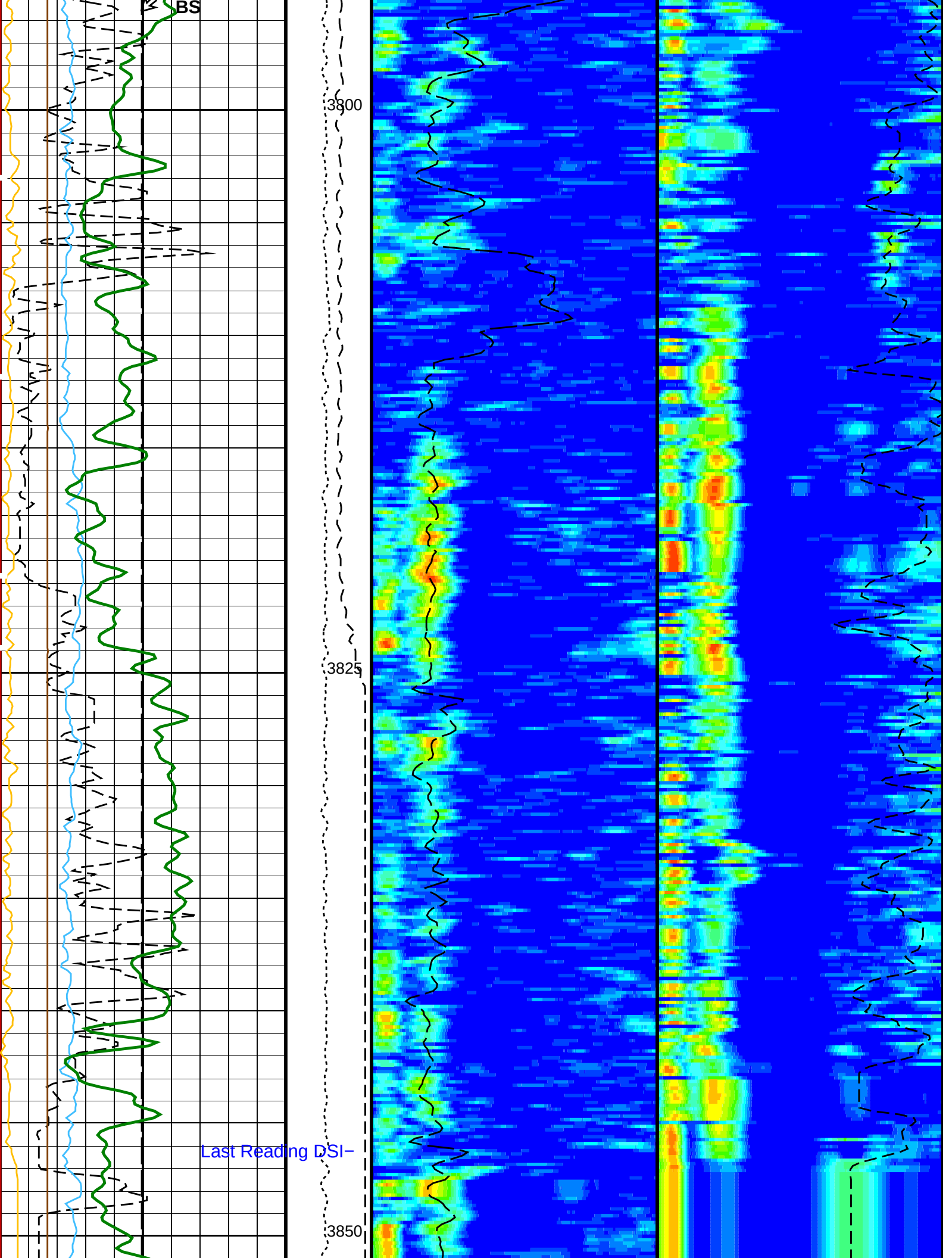
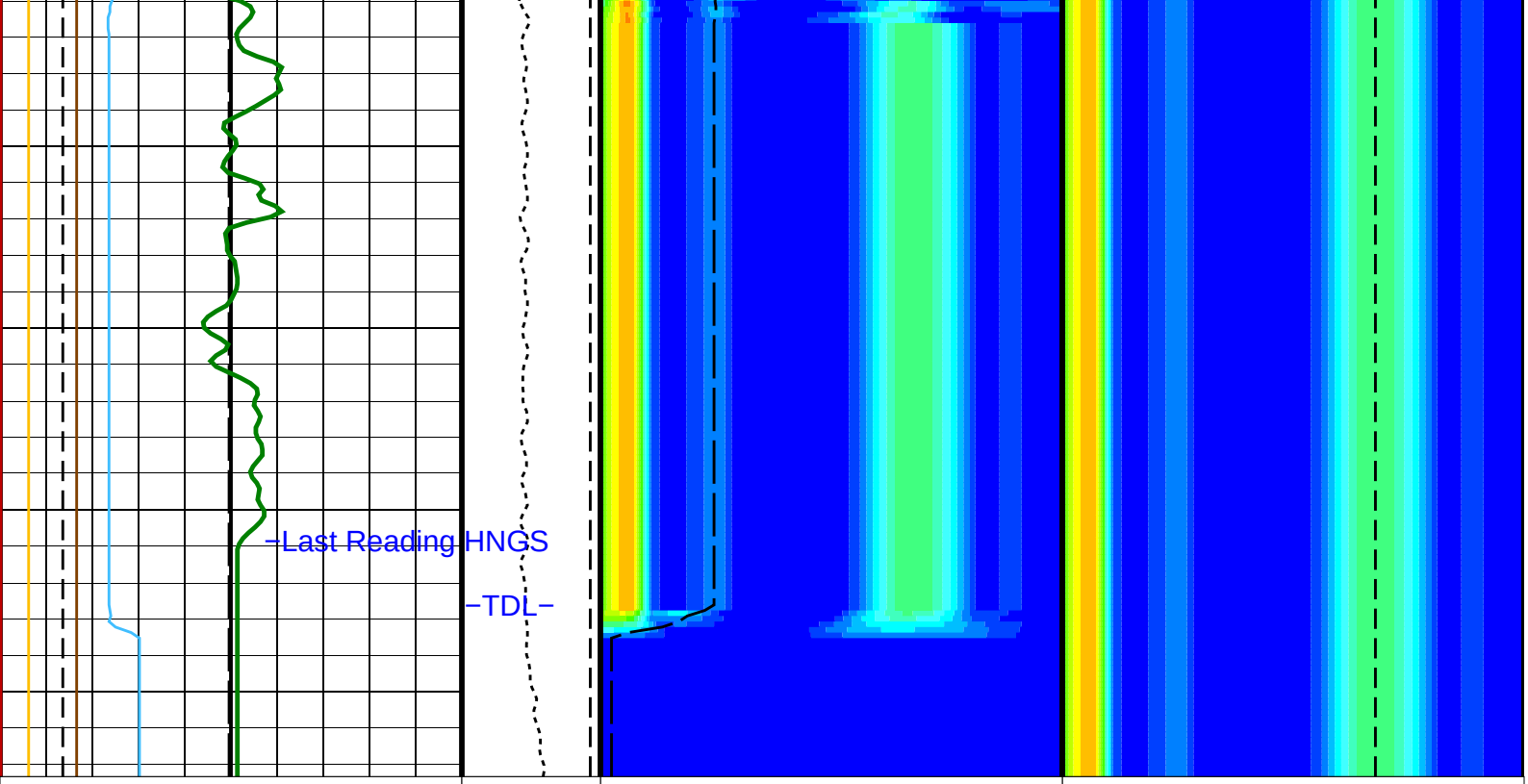
TENS
3775
LCAL
HSGR
CHT2
CHR2
WCI2
WFG2
CDF
DT2T
DT2R


BS
3800
3825
Last Reading DSI−
3850



Bit Size (BS) (IN) 0 20	Tension (TENS) (LBF) 10000 0	Delta−T Shear / TA − Upper Dipole (DT2T) (US/F) 75 1200	Delta−T Shear / RA − Upper Dipole (DT2R) (US/F) 75 1200
SAM2 Waveform Gain (WFG2) (−−−−) 0 1000	Calibrated Downhole Force (CDF) (LBF) 5000 0	Min Amplitude Max Tr.Array U.Dipole Slow Proj. CVDL (SPT2) (US/F) 75 1200	Min Amplitude Max Rec.Array U.Dipole Slow Proj. CVDL (SPR2) (US/F) 75 1200
HLDS Caliper (LCAL) (IN) 0 20			
Waveform Data Copy Indicator 2 − Upper Dipole (WCI2) (−−−−) 0 10			
Peak Coherence / RA − Upper Dipole (CHR2) (−−−−) 0 10			
Peak Coherence / TA − Upper Dipole (CHT2) (−−−−) −2 8			
HNGS Spectroscopy Gamma Ray (HSGR) (GAPI) 0 100			

Downlog Caliper Closed

Upper Dipole Standard Frequency 2khz

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F

CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.0028203	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
TPOS	Tool Position	CENT	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.997292	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00458	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	DSST−B: Dipole Shear Imager − B		
BHS	Borehole Status	OPEN	
DDE2	Digitizing Delay 2	0	US
DDEX	Digitizing Delay X	0	US
DLCS	Label Compressional Source − Dipole Shear	USE	
DSHL	Label Slowness Lower Limit − Dipole Shear	75	US/F
DSHU	Label Slowness Upper Limit − Dipole Shear	1200	US/F
DSI2	Digitizer Sample Interval 2	40	US
DSIX	Digitizer Sample Interval X	40	US
DTCS	Compressional Delta−T Source for DTCO Channel	PS_COMP	
DWC2	Digitizer Word Count 2	512	
DWCX	Digitizer Word Count X	512	
GCSE	Generalized Caliper Selection	BS	
NWI2	Number Waveform Items 2	8	
NWIX	Number Waveform Items X	0	
RX1G	Receiver 1 Geometry	294	IN
RX2G	Receiver 2 Geometry	300	IN
RX3G	Receiver 3 Geometry	306	IN
RX4G	Receiver 4 Geometry	312	IN
RX5G	Receiver 5 Geometry	318	IN
RX6G	Receiver 6 Geometry	324	IN
RX7G	Receiver 7 Geometry	330	IN
RX8G	Receiver 8 Geometry	336	IN
SAM2	DSST Sonic Acquisition Mode 2 − Upper Dipole Mode	ODD	
SAMX	DSST Sonic Acquisition Mode X − Both Dipoles or Monopole Mode for Expert	OFF	
SAS2	STC Sonic Array Status − Upper Dipole	255	
SBO2	STC Search Band Offset − Upper Dipole	3000	US
SBW2	STC Search Bandwidth − Upper Dipole	8000	US
SFC2	STC Formation Character − Upper Dipole	SELECTABLE	
SFM2	STC Filter − Upper Dipole	B1−3K	
SLL2	STC Slowness Lower Limit − Upper Dipole	75	US/F
SST2	STC Slowness Step − Upper Dipole	4	US/F
SSW2	STC Source Waveform − Upper Dipole	WF_SAM2	
SUL2	STC Slowness Upper Limit − Upper Dipole	1200	US/F
SWD2	STC Slowness Width − Upper Dipole	40	US/F
TBF2	STC Time for Baseline Fill − Upper Dipole	0	US
TLL2	STC Time Lower Limit − Upper Dipole	600	US
TST2	STC Time Step − Upper Dipole	200	US
TUL2	STC Time Upper Limit − Upper Dipole	20200	US
TWD2	STC Time Width − Upper Dipole	2000	US
TWI2	STC Integration Time Window − Upper Dipole	1600	US
TWSX	Transmitter Waveform Select X	0	
UTXG	Upper Dipole Transmitter Geometry	162	IN
WFM2	Waveform Mode 2	W1	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	System and Miscellaneous		
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	RECOMPUTE	

Format: DSST_UPPER_DIPOLE_RC_TR_VDL_COLOR Vertical Scale: 1:200 Graphics File Created: 25−Apr−2019 21:10

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_NGS_016LUP	PRODUCER	25−Apr−2019 20:48	3872.3 M	3129.5 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_021PUP	FN:35	PRODUCER	25−Apr−2019 21:10	
BACKUP	MSS_LDEO_NGS_HRLA_021PUP	FN:36	PRODUCER	25−Apr−2019 21:10	

Company: International Ocean Discovery Program | Well: Expedition 382, Site U1536E

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_NGS_016LUP	PRODUCER	25−Apr−2019 20:48	3872.3 M	3129.5 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_021PUP	FN:35	PRODUCER	25−Apr−2019 21:10	3872.3 M	3129.5 M
BACKUP	MSS_LDEO_NGS_HRLA_021PUP	FN:36	PRODUCER	25−Apr−2019 21:10	3872.3 M	3129.5 M

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

Peak Coherence / TA − P & S Shear (CHTS)
−1 (−−−−) 9

Peak Coherence / RA − P & S Shear (CHRS)
−1 (−−−−) 9

Peak Coherence / TA − P & S Comp (CHTP)
0 (−−−−) 10

Peak Coherence / RA − P & S Comp (CHRP)
0 (−−−−) 10

Waveform Data Copy Indicator 4 − Monopole P&S (WCI4)
0 (−−−−) 10

Downlog, Compressional driven with Monopole Source, standard frequency at 15khz

HLDS Caliper (LCAL)
0 (IN) 20

Min Amplitude Max
Tr.Array P&S Slow Proj. CVDL (SPT4)
40 (US/F) 240

Min Amplitude Max
Rec.Array P&S Slow Proj. CVDL (SPR4)
40 (US/F) 240

SAM4 Waveform Gain (WFG4)
0 (−−−−) 1000

Delta−T Shear / TA − P & S (DTTS)
40 (US/F) 240

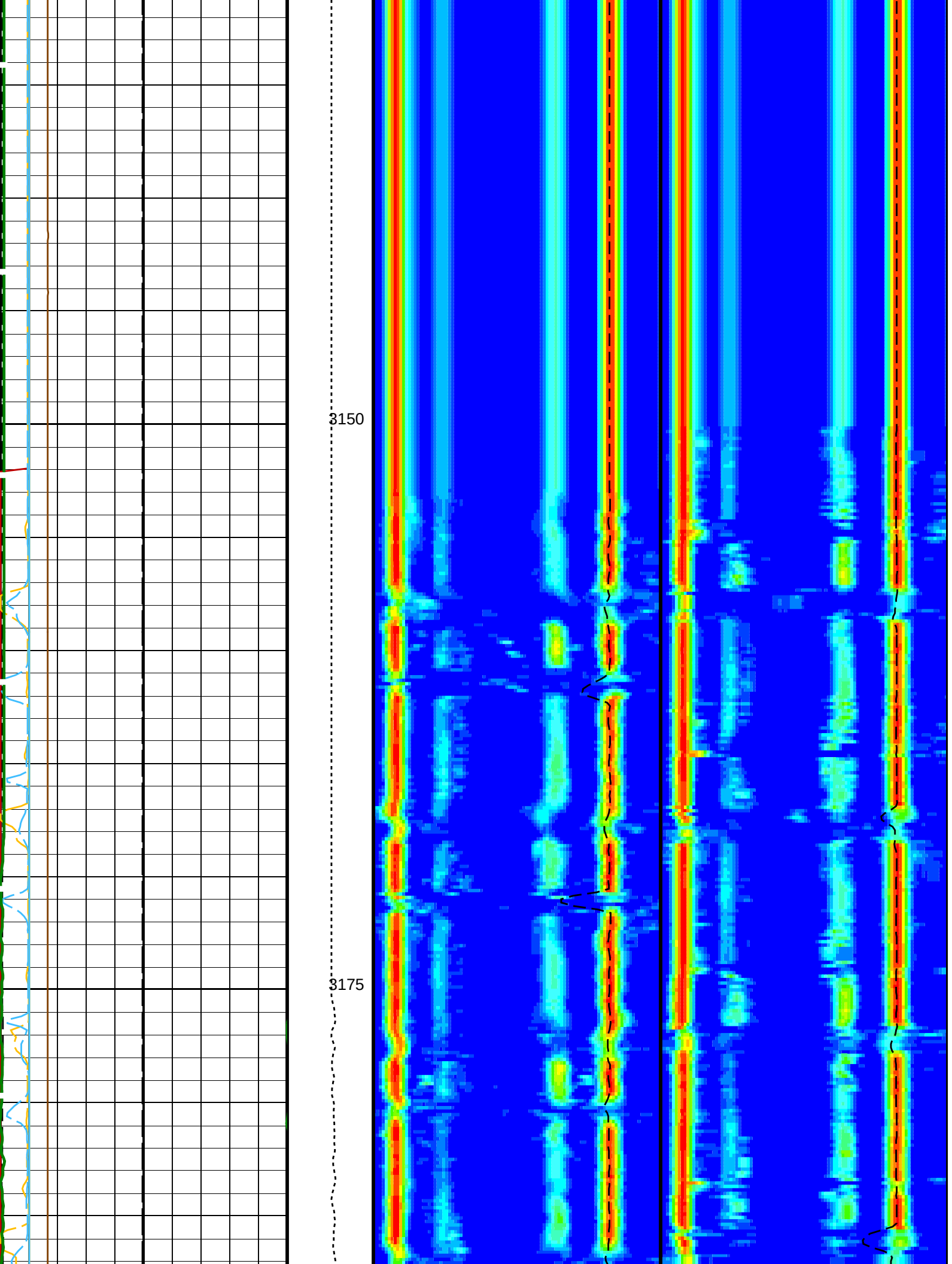
Delta−T Shear / RA − P & S (DTRS)
40 (US/F) 240

Bit Size (BS)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

Delta−T Comp / TA − P & S (DTTP)
40 (US/F) 240

Delta−T Comp / RA − P & S (DTRP)
40 (US/F) 240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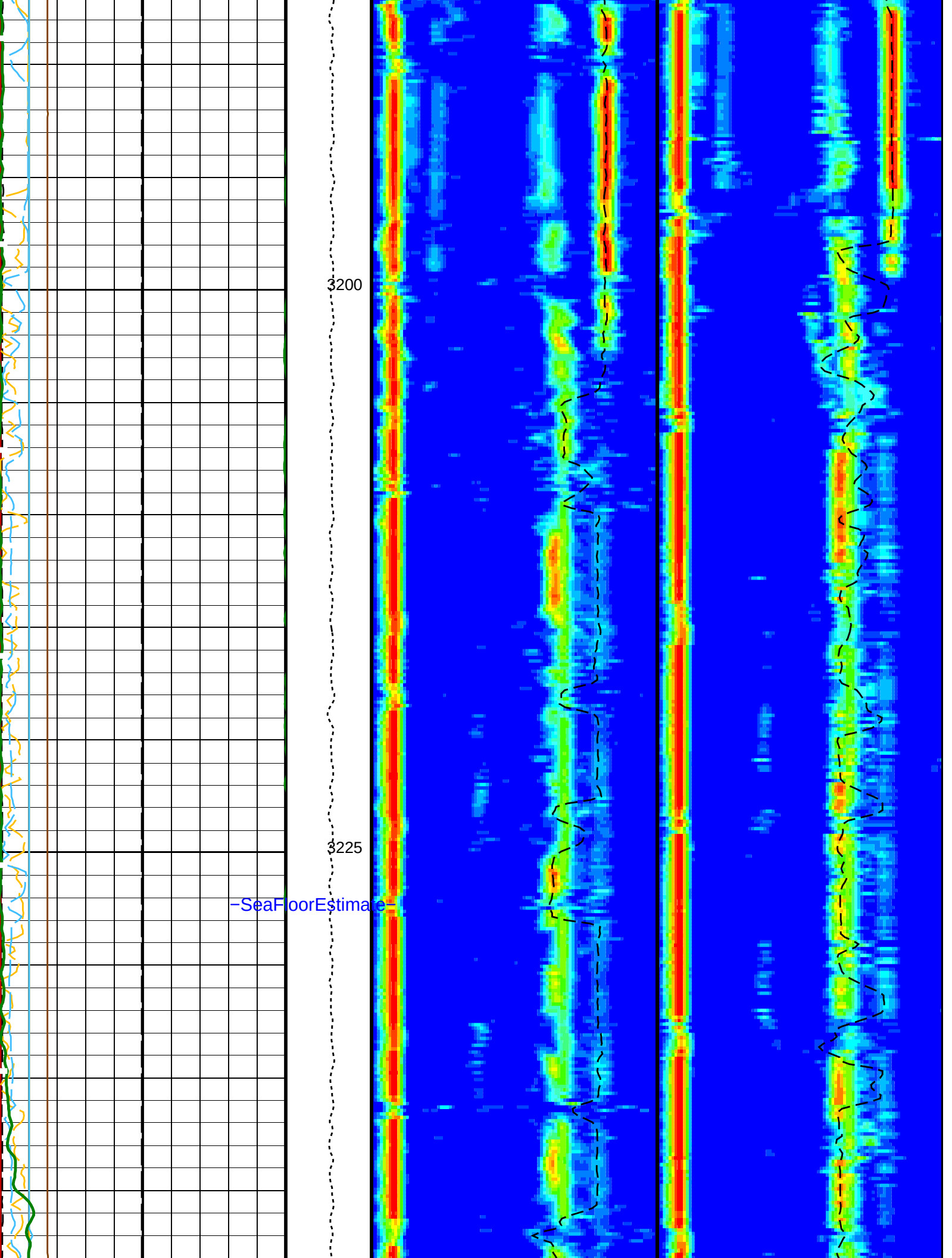
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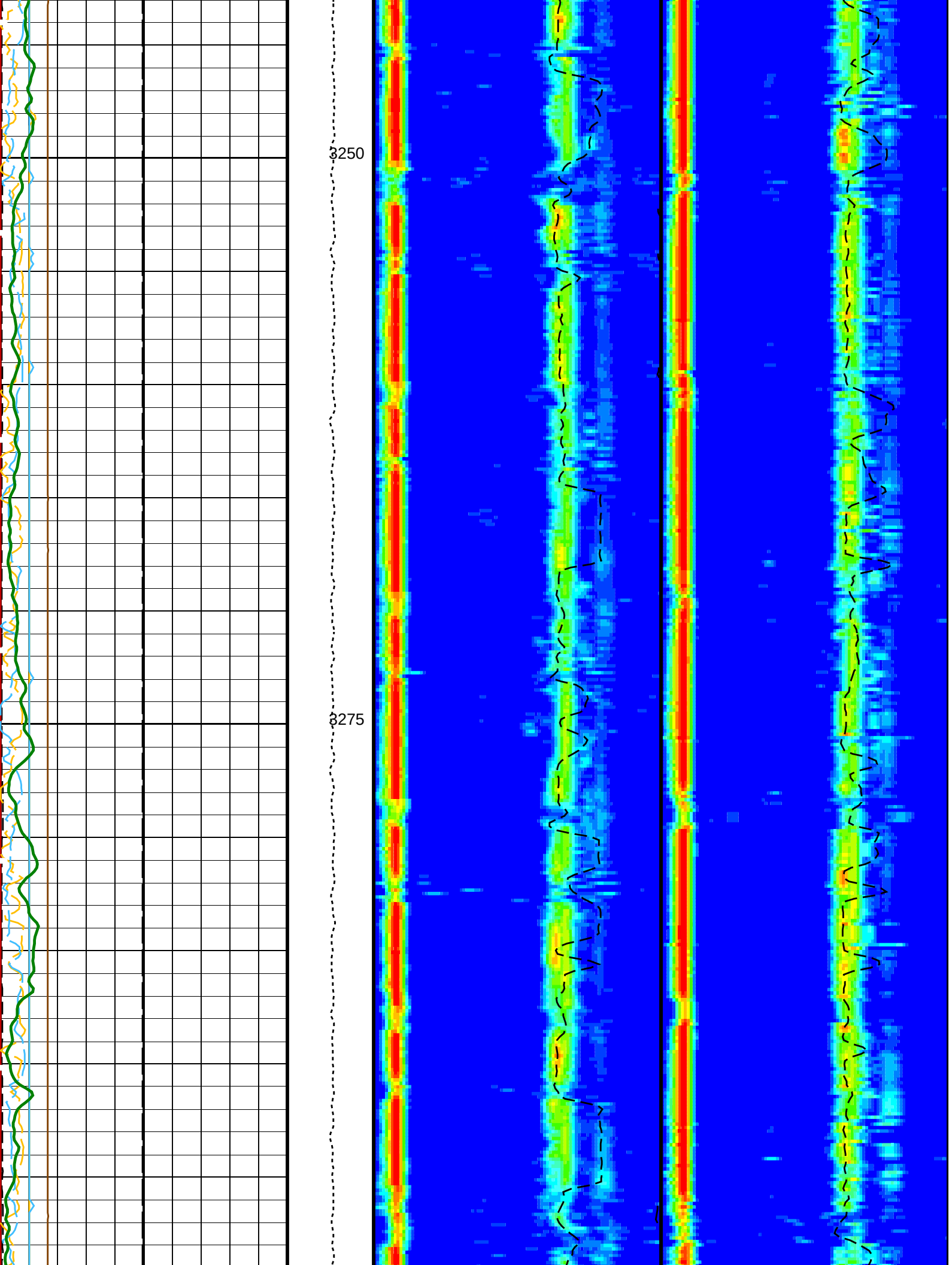
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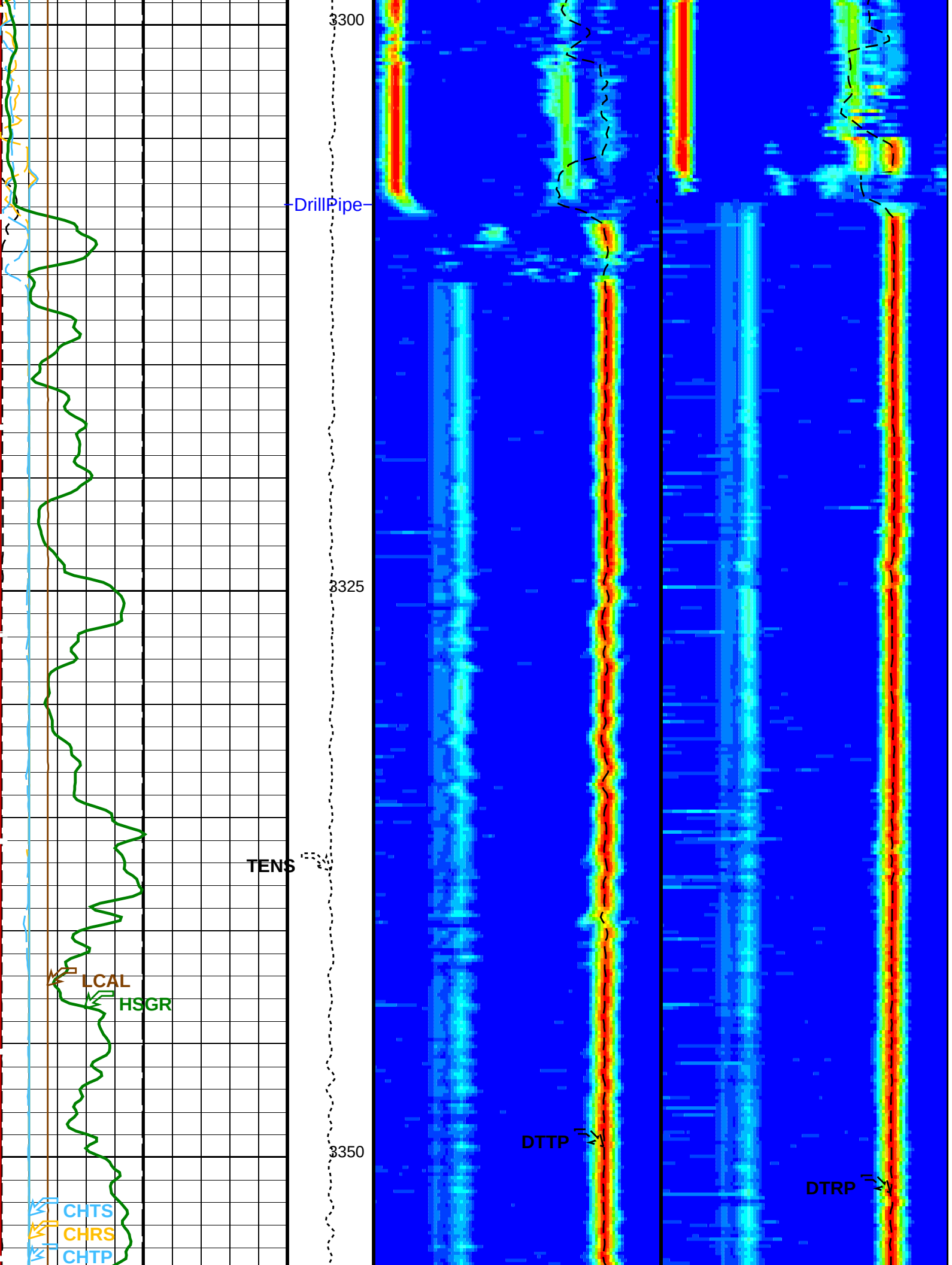
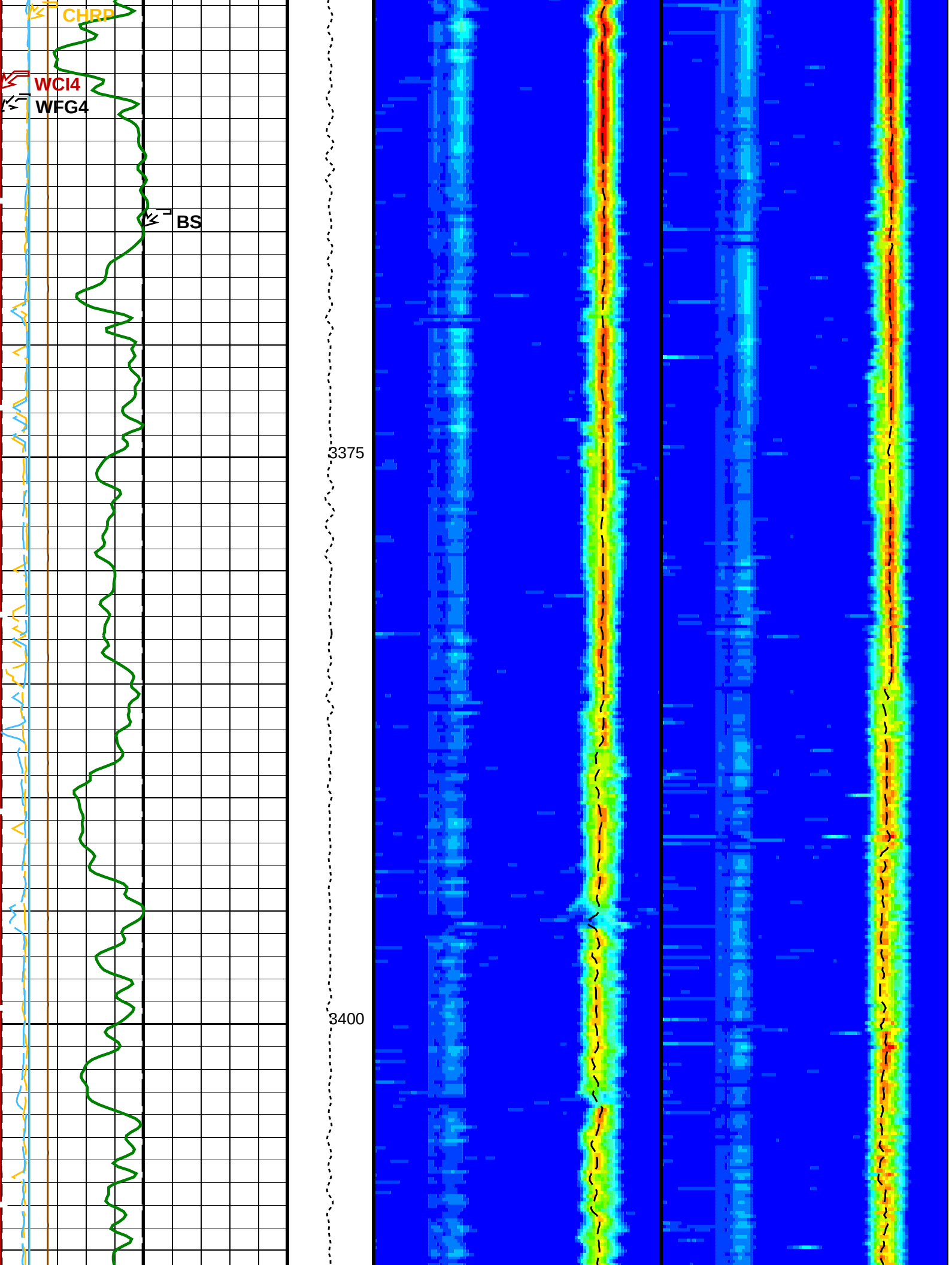
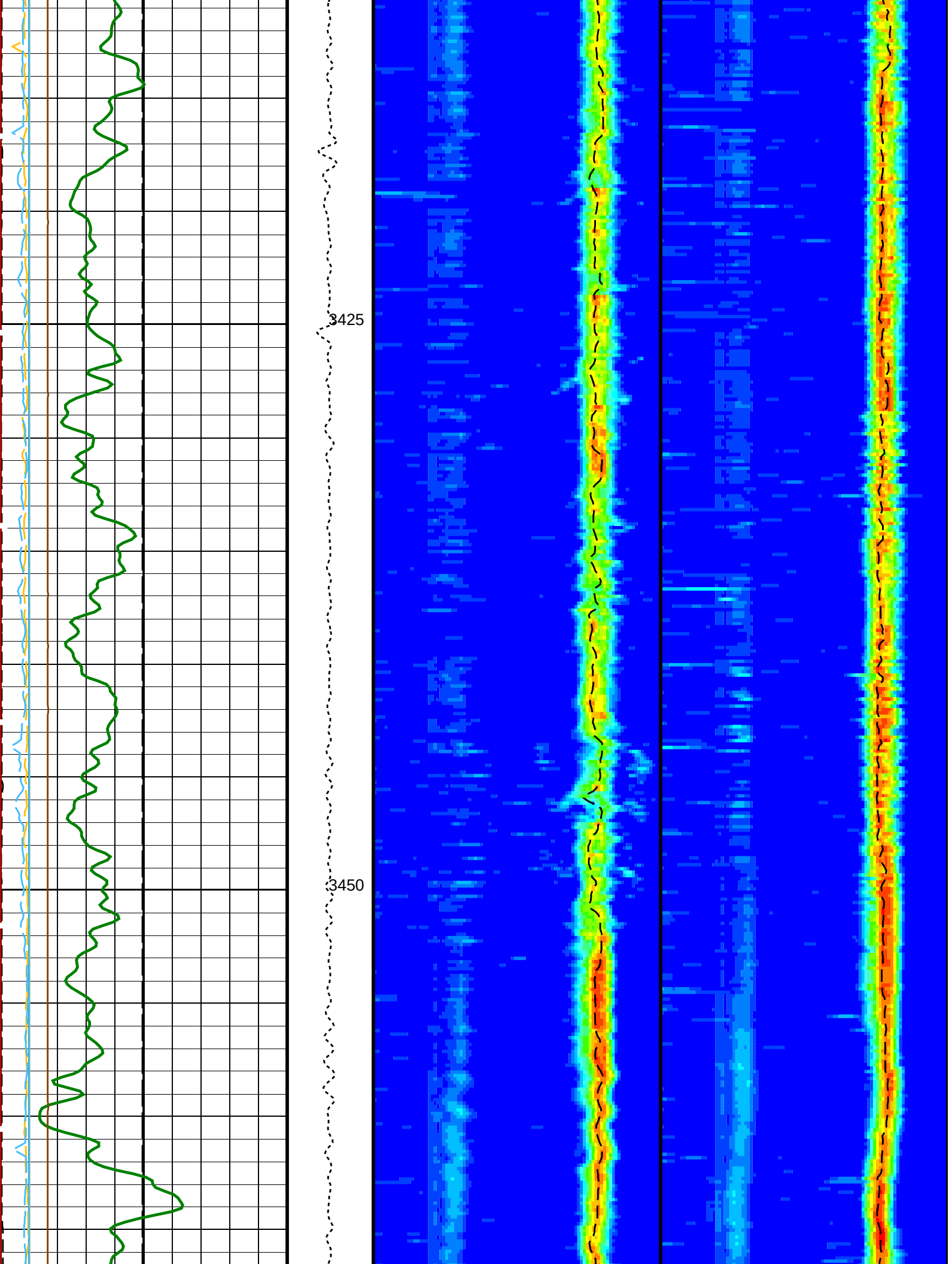

3300
DrillPipe
3325
TENS
LCAL
HSGR
3350
CHTS
CHRS
CHTP
DTTP
DTRP


CHRP
WCI4
WFG4
BS
3375
3400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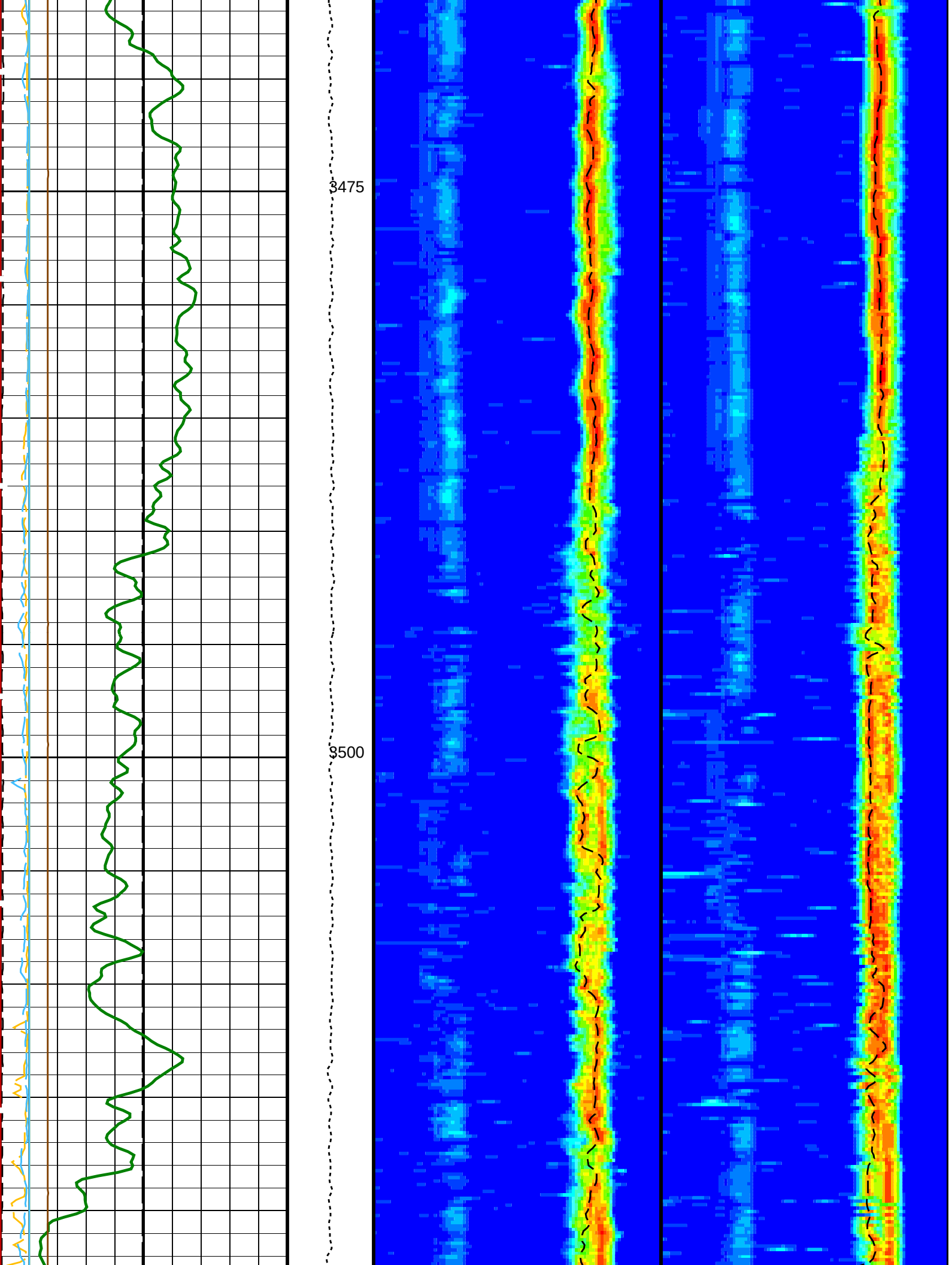
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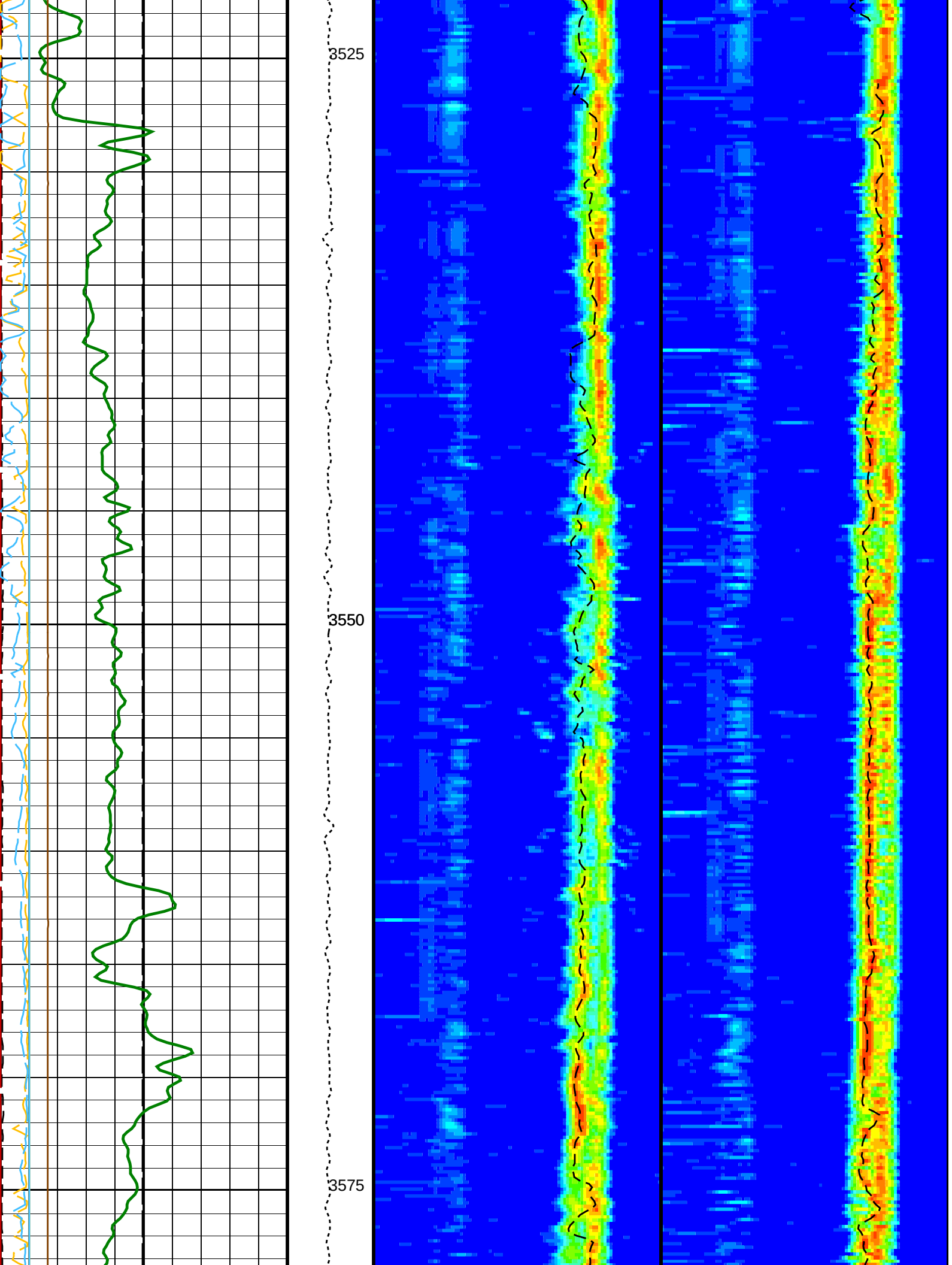
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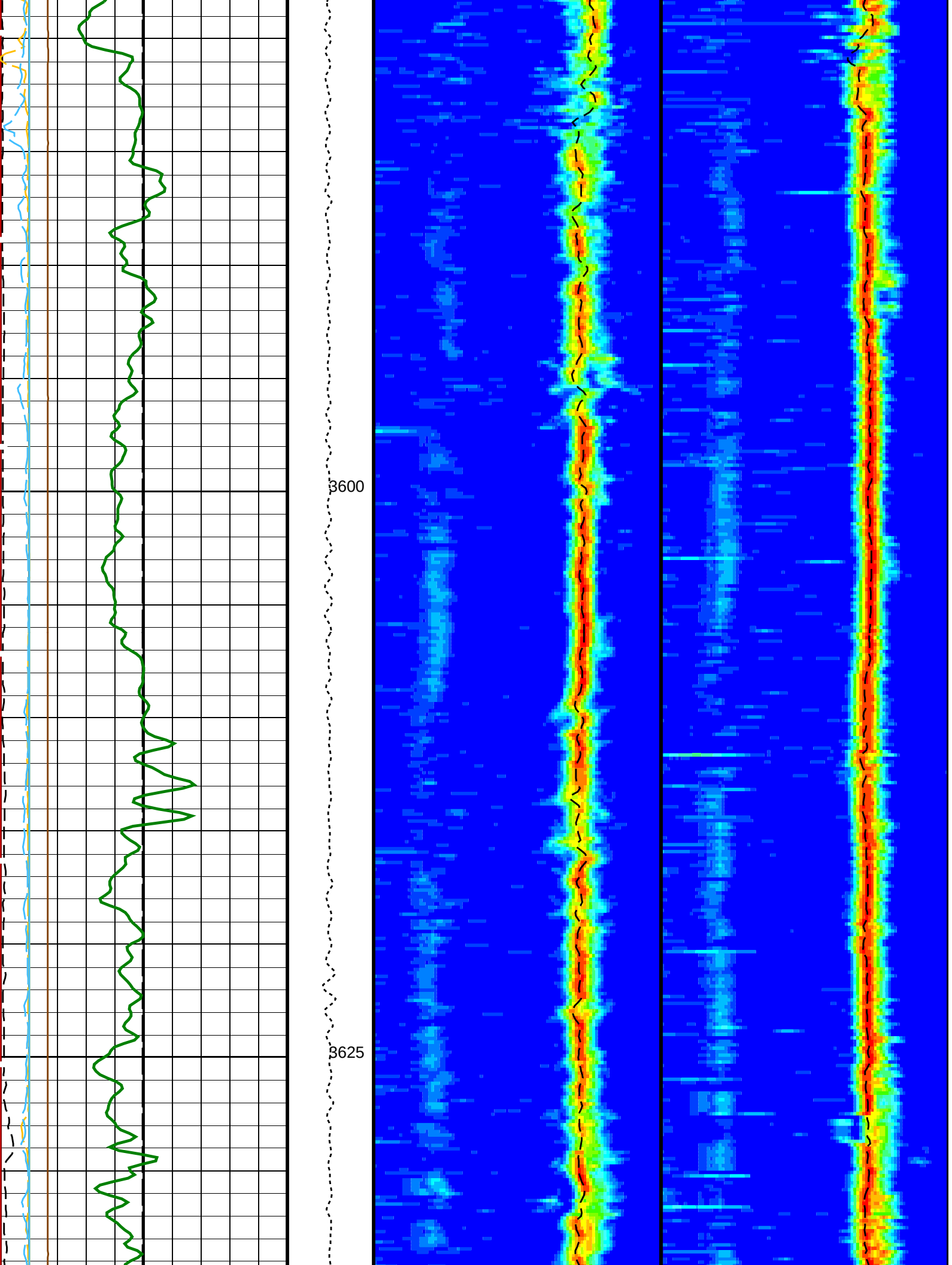
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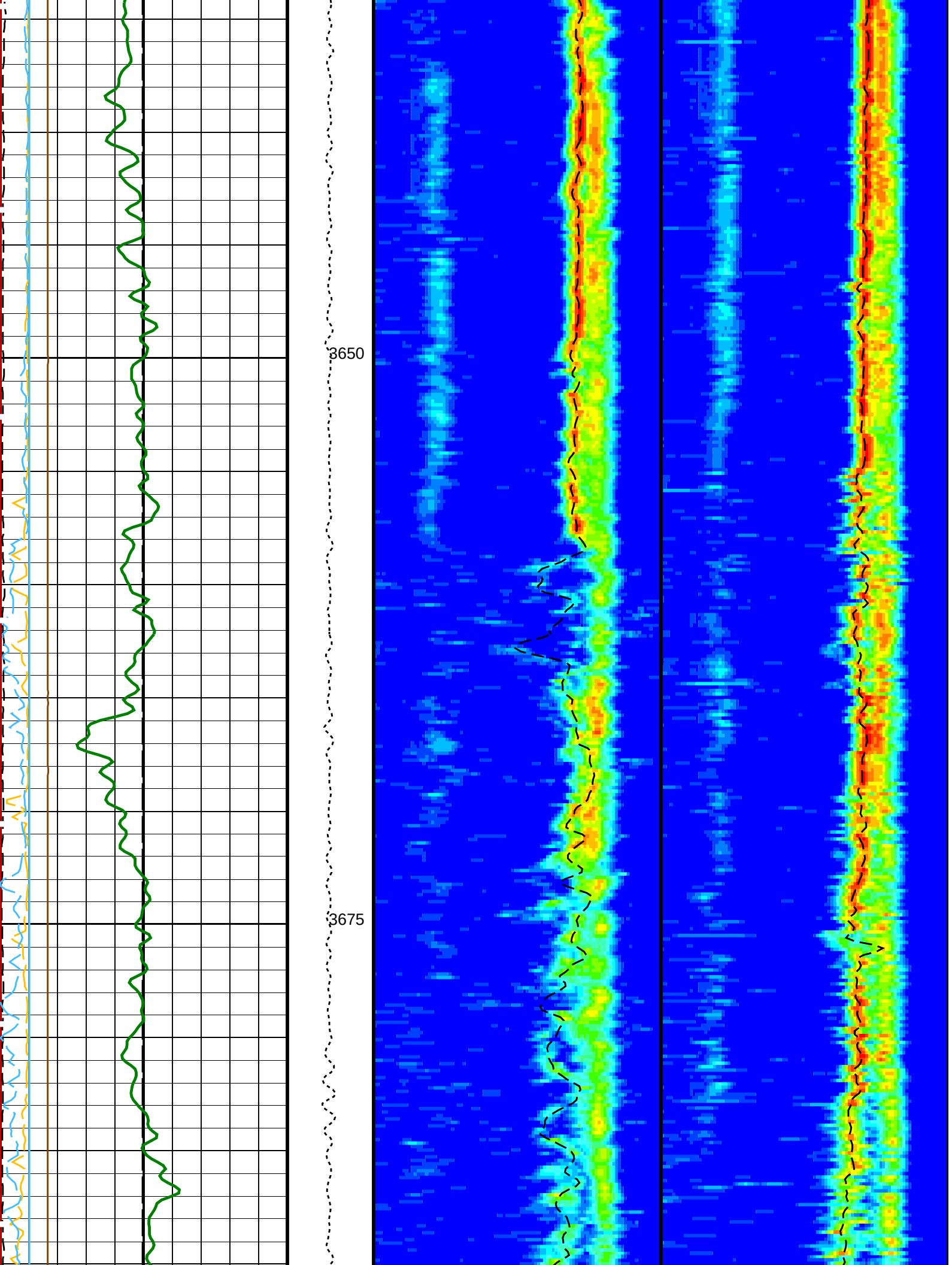
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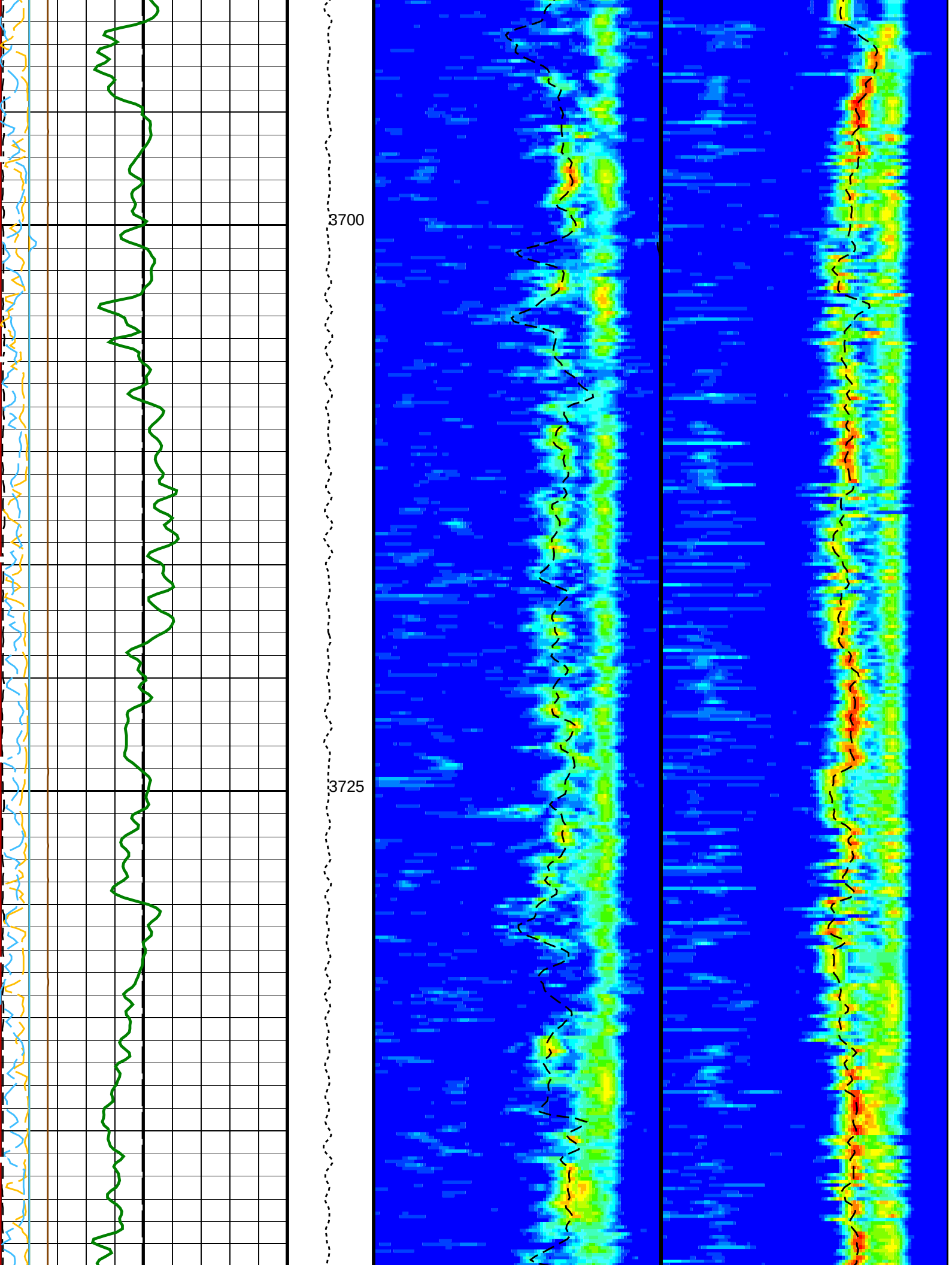
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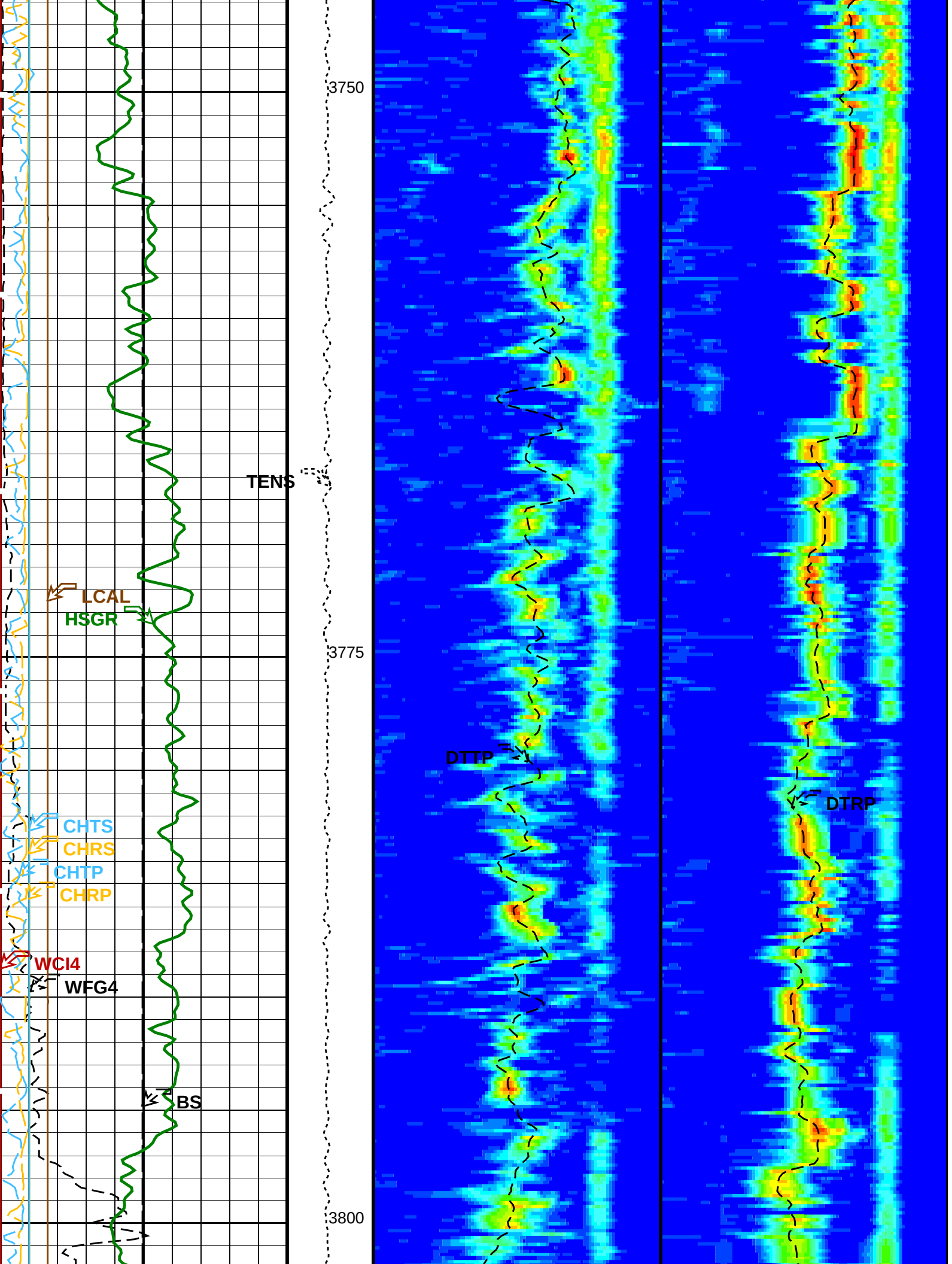
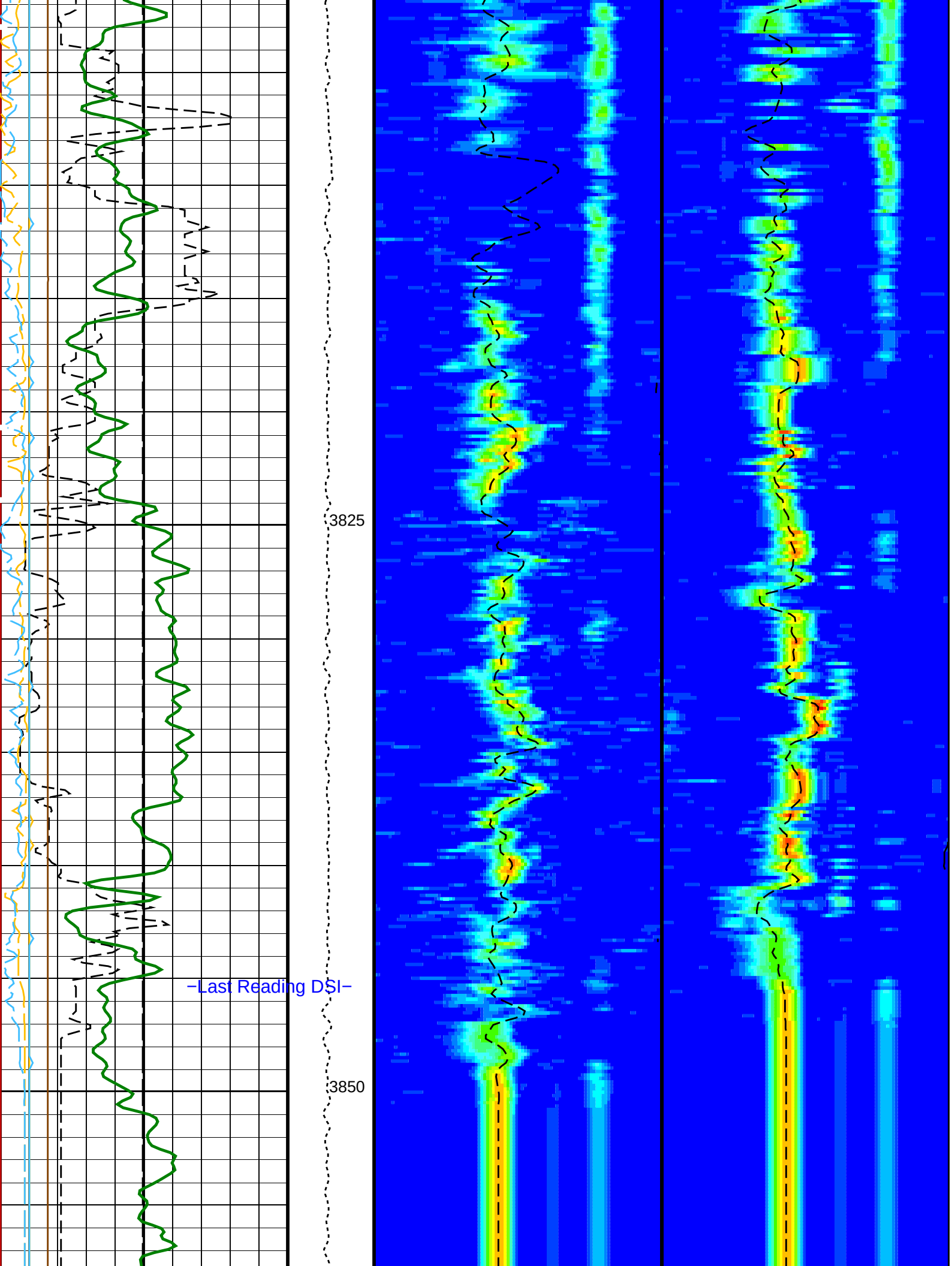
3725


3750
TENS
LCAL
HSGR
3775
DTTP
DTRP
CHTS
CHRS
CHTP
CHRP
WCI4
WFG4
BS
3800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−Last Reading DSI−
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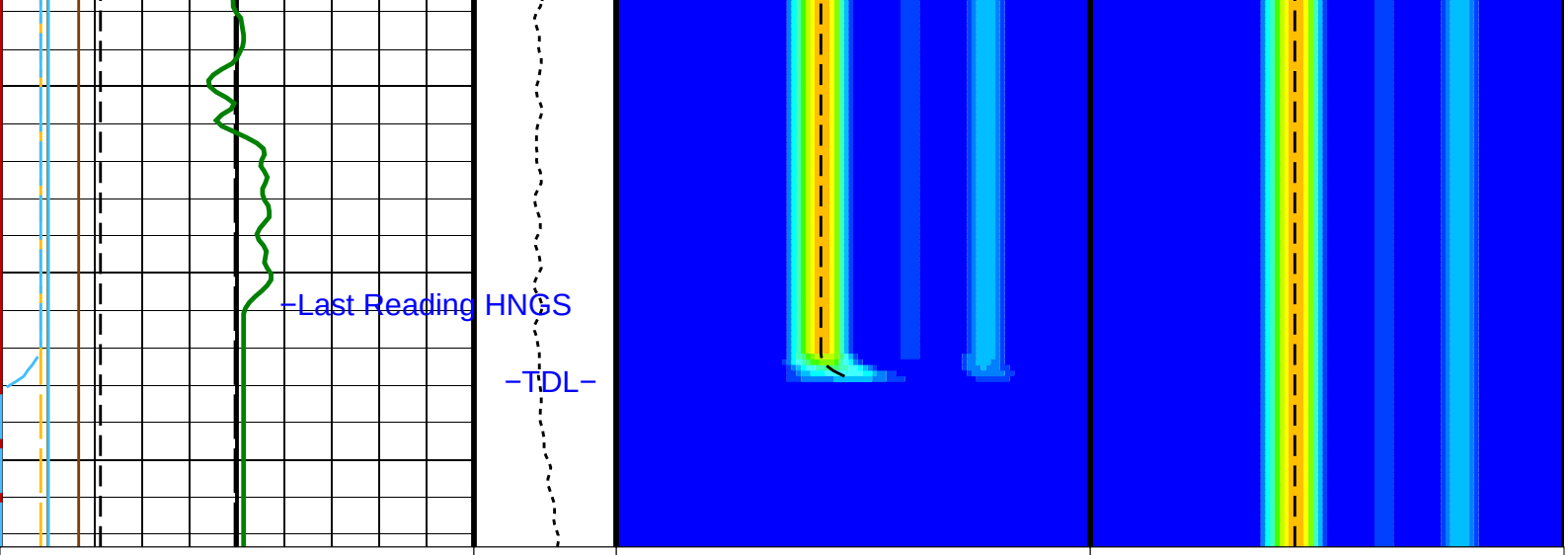


Bit Size (BS)	Tension (TENS)	Delta–T Comp / TA – P & S (DTTP)	Delta–T Comp / RA – P & S (DTRP)
0 (IN) 20	10000 (LBF) 0	40 (US/F) 240	40 (US/F) 240
SAM4 Waveform Gain (WFG4)		**Delta–T Shear / TA – P & S (DTTS)**	**Delta–T Shear / RA – P & S (DTRS)**
0 (----) 1000		40 (US/F) 240	40 (US/F) 240
HLDS Caliper (LCAL)		Min Amplitude Max **Tr.Array P&S Slow Proj. CVDL (SPT4)**	Min Amplitude Max **Rec.Array P&S Slow Proj. CVDL (SPR4)**
0 (IN) 20		40 (US/F) 240	40 (US/F) 240
Waveform Data Copy Indicator 4 – Monopole P&S (WCI4)			
0 (----) 10			
Peak Coherence / RA – P & S Comp (CHRP)			
0 (----) 10			
Peak Coherence / TA – P & S Comp (CHTP)			
0 (----) 10			
Peak Coherence / RA – P & S Shear (CHRS)			
–1 (----) 9			
Peak Coherence / TA – P & S Shear (CHTS)			
–1 (----) 9			
HNGS Spectroscopy Gamma Ray (HSGR)			
0 (GAPI) 100			

Downlog, Compressional driven with Monopole Source, standard frequency

at 15khz

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HNGS–BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	

H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.0028203	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
TPOS	Tool Position	CENT	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.997292	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00458	
HRLT−B: High Resolution Laterolog Array − B			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
DSST−B: Dipole Shear Imager − B			
BHS	Borehole Status	OPEN	
CASF	Label Casing Function − Monopole P&S	50	
COLL	Label Slowness Lower Limit − Monopole P&S Compressional	80	US/F
COUL	Label Slowness Upper Limit − Monopole P&S Compressional	185	US/F
DDE4	Digitizing Delay 4	0	US
DDEX	Digitizing Delay X	0	US
DSI4	Digitizer Sample Interval 4	10	US
DSIX	Digitizer Sample Interval X	40	US
DTF	Delta−T Fluid	189	US/F
DWC4	Digitizer Word Count 4	512	
DWCX	Digitizer Word Count X	512	
FILG	Label Fill Gap Control − Monopole P&S	COMP_SHEAR	
GCSE	Generalized Caliper Selection	BS	
LFC	Label Formation Character − Monopole P&S	DYNAMIC	
MCS	Mean Casing Slowness	57	US/F
MTXG	Monopole Transmitter Geometry	186	IN
NWI4	Number Waveform Items 4	8	
NWIX	Number Waveform Items X	0	
RSMN	Label Shear/Compressional Minimum Ratio − Monopole P&S	1.4	
RSMX	Label Shear/Compressional Maximum Ratio − Monopole P&S	2.12	
RX1G	Receiver 1 Geometry	294	IN
RX2G	Receiver 2 Geometry	300	IN
RX3G	Receiver 3 Geometry	306	IN
RX4G	Receiver 4 Geometry	312	IN
RX5G	Receiver 5 Geometry	318	IN
RX6G	Receiver 6 Geometry	324	IN
RX7G	Receiver 7 Geometry	330	IN
RX8G	Receiver 8 Geometry	336	IN
SAM4	DSST Sonic Acquisition Mode 4 − Monopole Mode for P&S	EVEN	
SAMX	DSST Sonic Acquisition Mode X − Both Dipoles or Monopole Mode for Expert	OFF	
SAS4	STC Sonic Array Status − Monopole P&S	255	
SBO4	STC Search Band Offset − Monopole P&S	500	US
SBR4	STC Baseline Removal − Monopole P&S	ON	
SBW4	STC Search Bandwidth − Monopole P&S	2000	US
SFC4	STC Formation Character − Monopole P&S	SELECTABLE	
SFM4	STC Filter − Monopole P&S	B3−20K	
SHLL	Label Slowness Lower Limit − Monopole P&S Shear	235	US/F
SHUL	Label Slowness Upper Limit − Monopole P&S Shear	240	US/F
SLL4	STC Slowness Lower Limit − Monopole P&S	40	US/F
SST4	STC Slowness Step − Monopole P&S	2	US/F
SSW4	STC Source Waveform − Monopole P&S	WF_SAM4	
STLL	Label Slowness Lower Limit − Monopole Stoneley	180	US/F
STUL	Label Slowness Upper Limit − Monopole Stoneley	780	US/F
SUL4	STC Slowness Upper Limit − Monopole P&S	240	US/F
SWD4	STC Slowness Width − Monopole P&S	10	US/F
TBF4	STC Time for Baseline Fill − Monopole P&S	300	US
TLL4	STC Time Lower Limit − Monopole P&S	150	US
TST4	STC Time Step − Monopole P&S	50	US
TUL4	STC Time Upper Limit − Monopole P&S	3660	US
TWD4	STC Time Width − Monopole P&S	1000	US
TWI4	STC Integration Time Window − Monopole P&S	500	US
TWSX	Transmitter Waveform Select X	0	
WFM4	Waveform Mode 4	W1	
EDTC−B: Enhanced DTS Cartridge			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
System and Miscellaneous			
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	RECOMPUTE	

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_NGS_016LUP	PRODUCER	25−Apr−2019 20:48	3872.3 M	3129.5 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_021PUP	FN:35	PRODUCER	25−Apr−2019 21:10
BACKUP	MSS_LDEO_NGS_HRLA_021PUP	FN:36	PRODUCER	25−Apr−2019 21:10

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_NGS_016LUP	PRODUCER	25−Apr−2019 20:48	3872.3 M	3129.5 M

Output DLIS Files

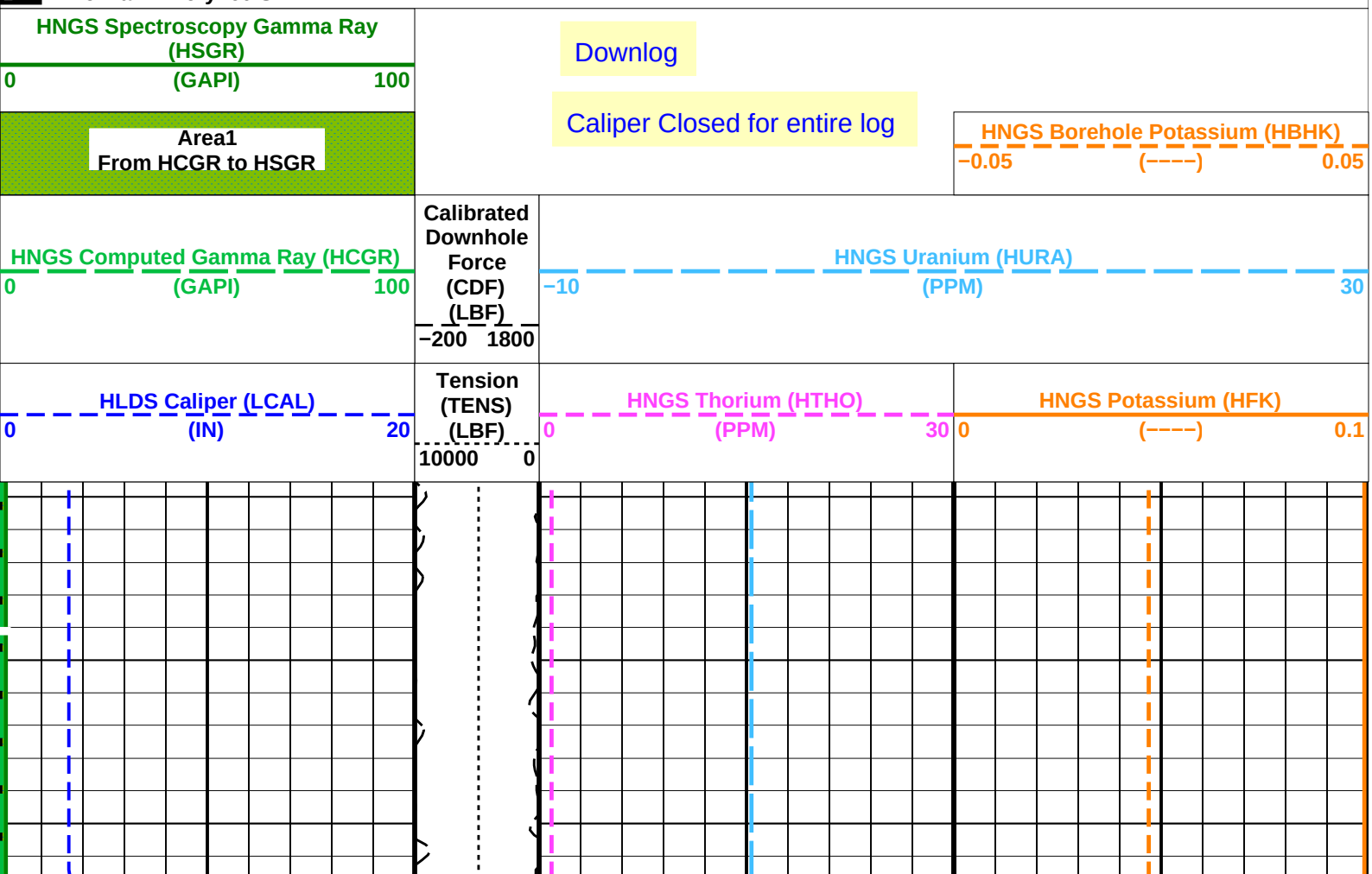
DEFAULT	MSS_LDEO_NGS_HRLA_021PUP	FN:35	PRODUCER	25−Apr−2019 21:10	3872.3 M	3129.5 M
BACKUP	MSS_LDEO_NGS_HRLA_021PUP	FN:36	PRODUCER	25−Apr−2019 21:10	3872.3 M	3129.5 M

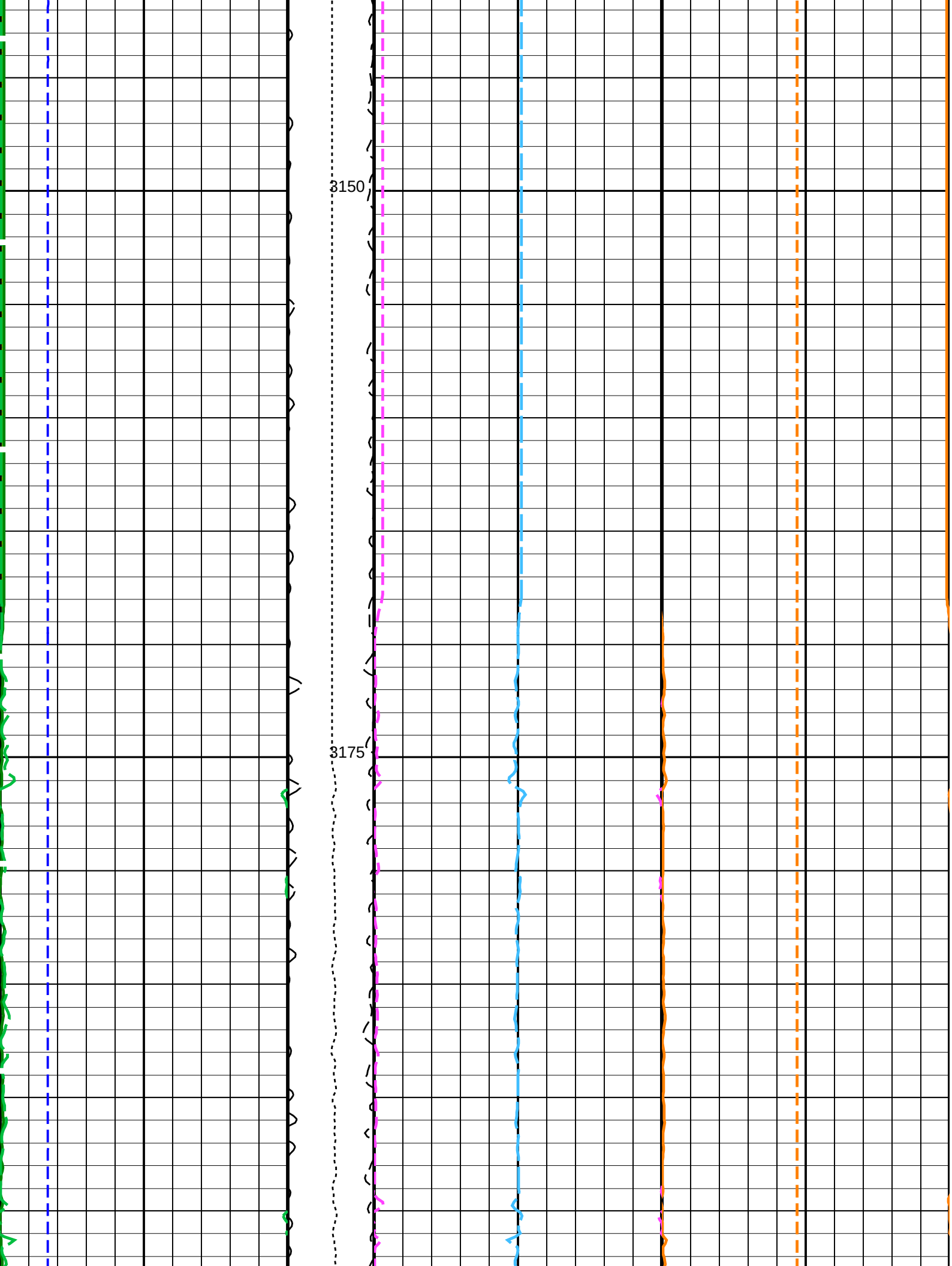
OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

PIP SUMMARY

Time Mark Every 60 S

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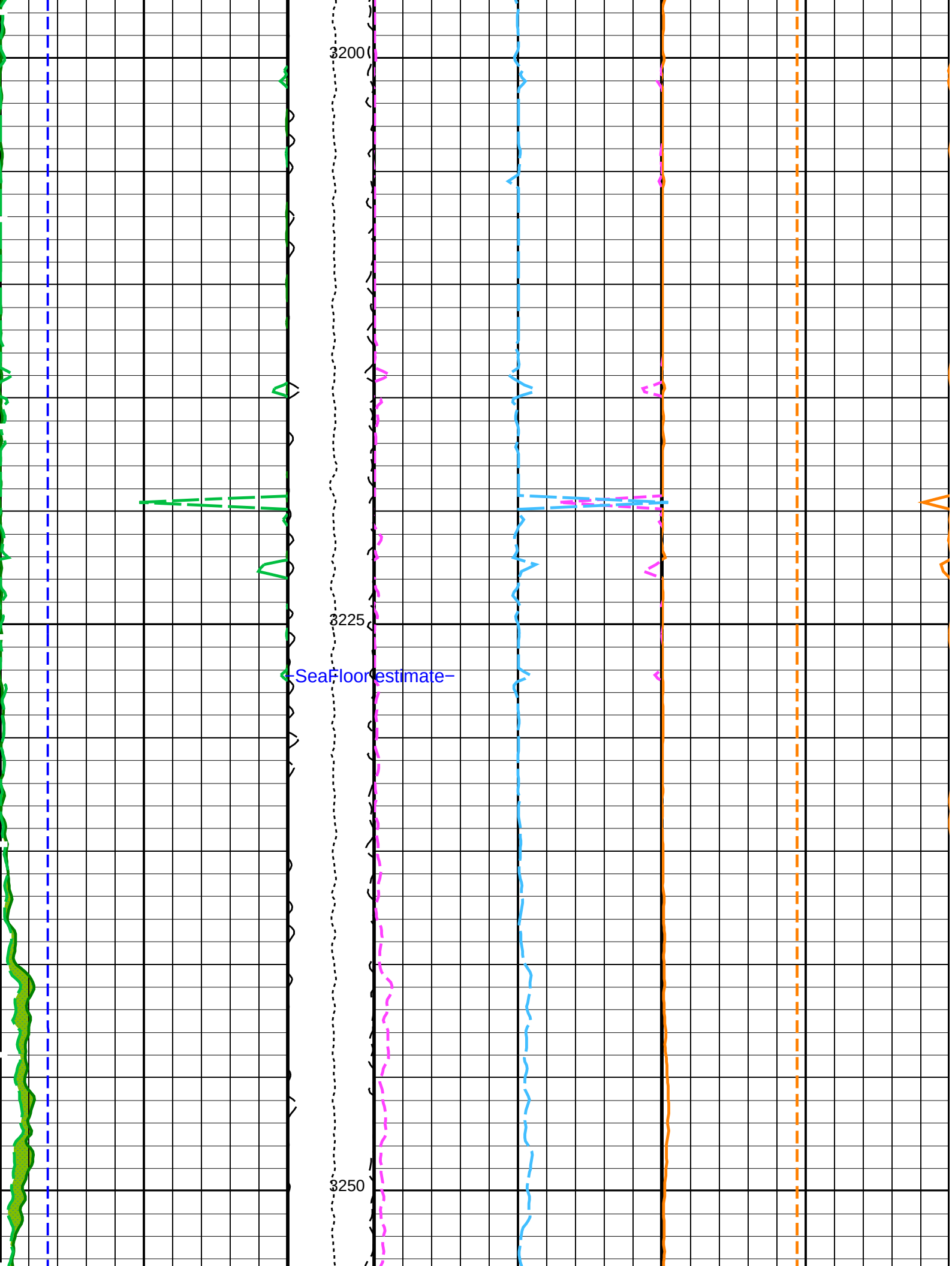
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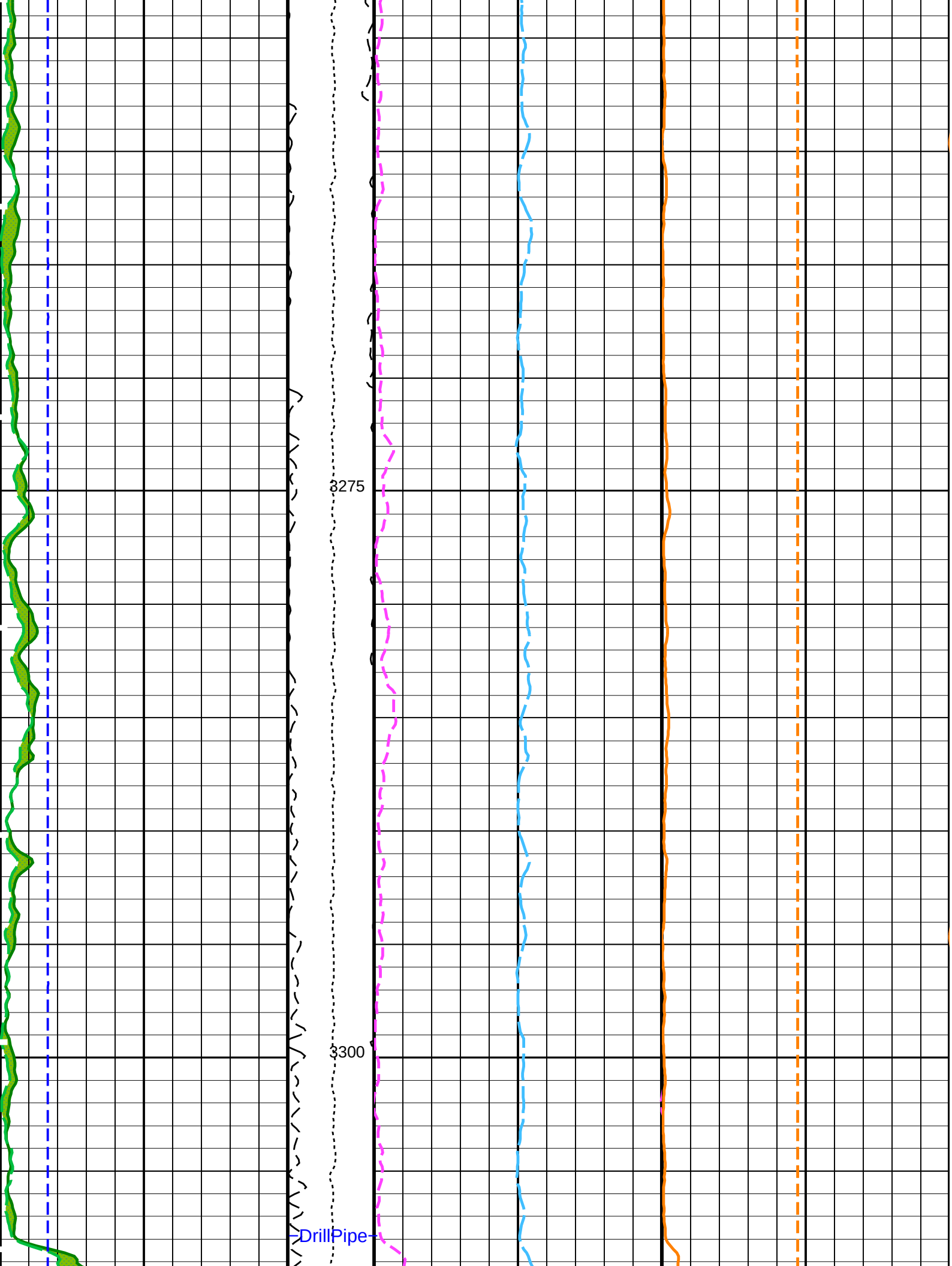
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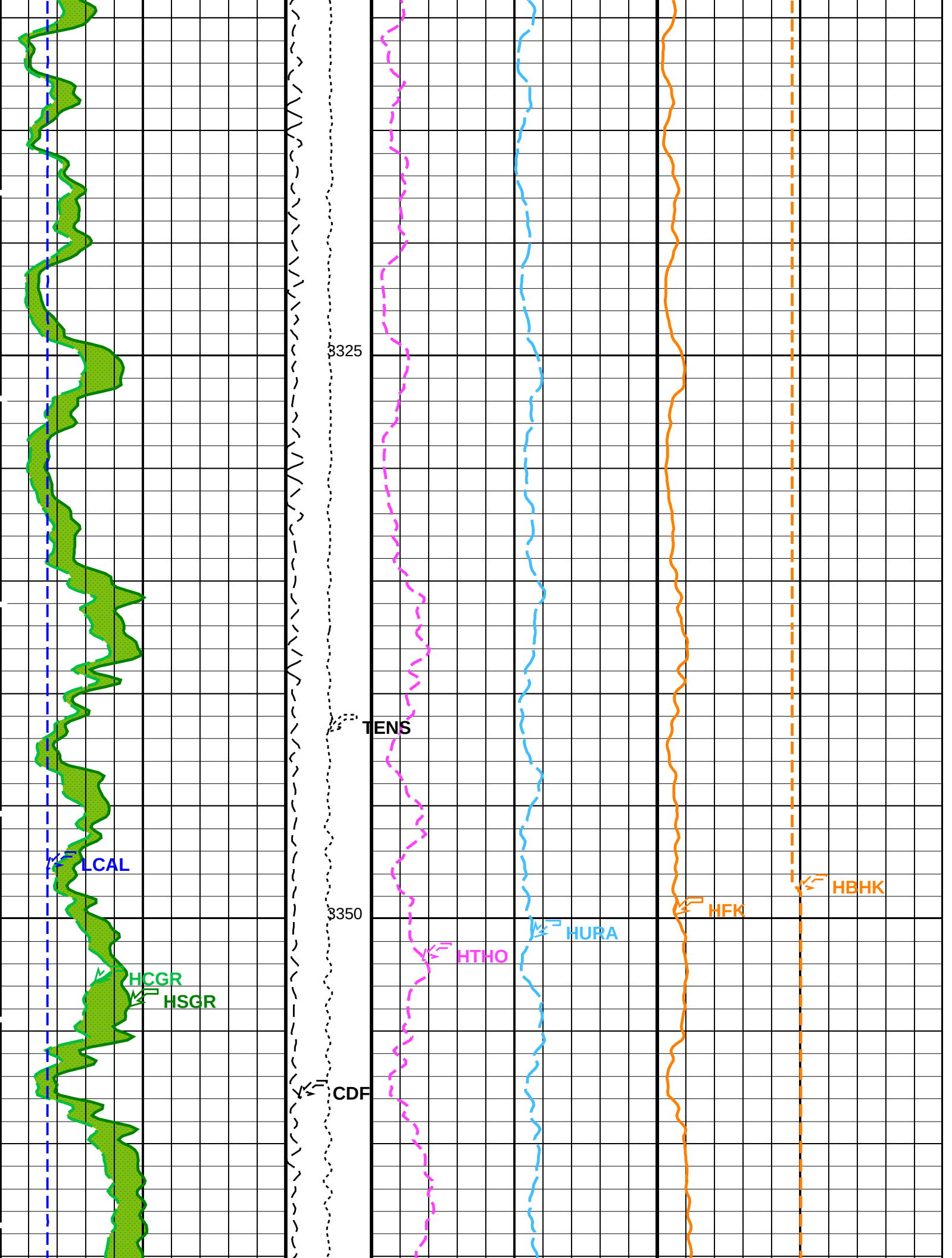
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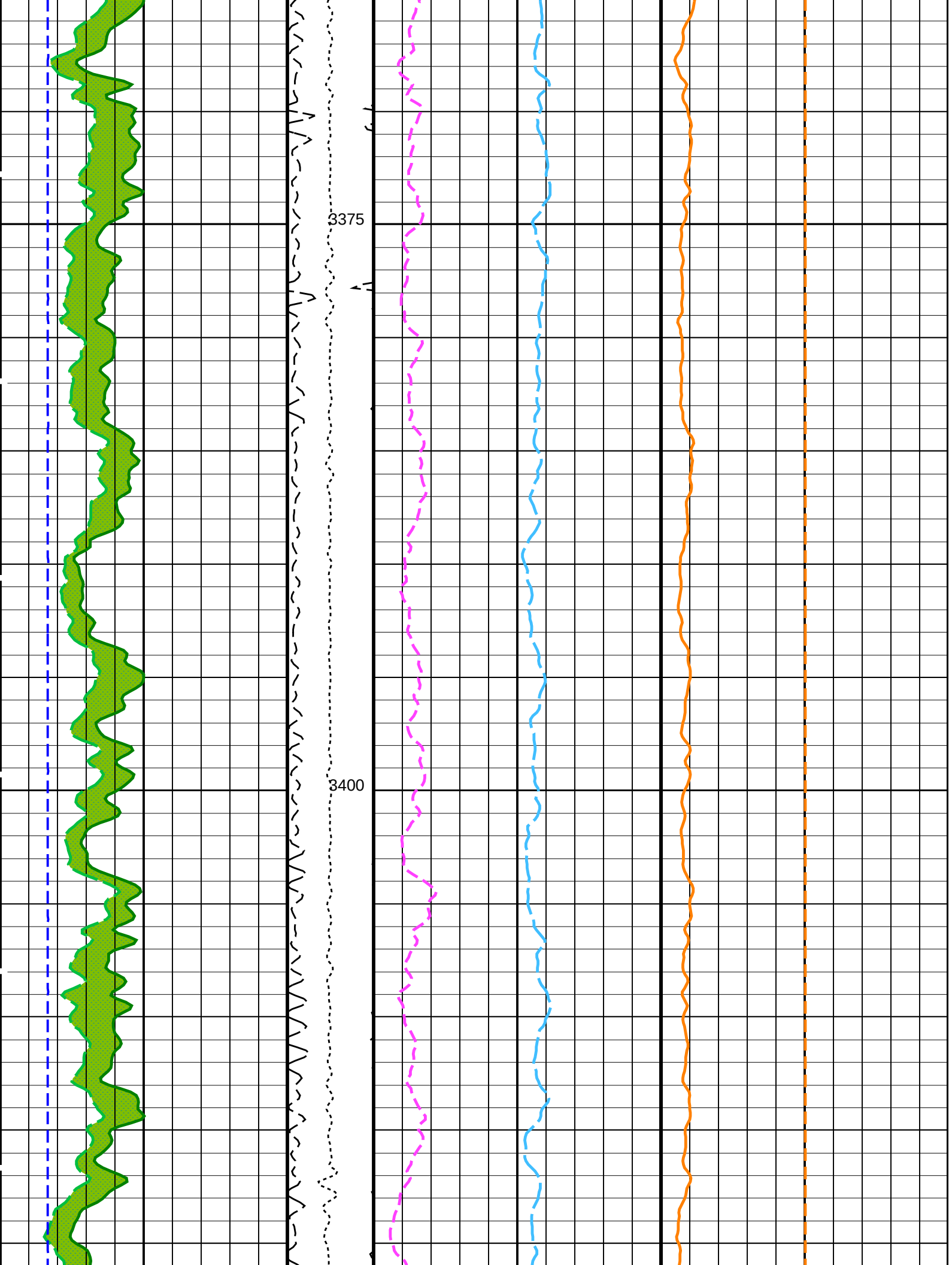
HSGR
HTHO
HURA
HFK
HBHK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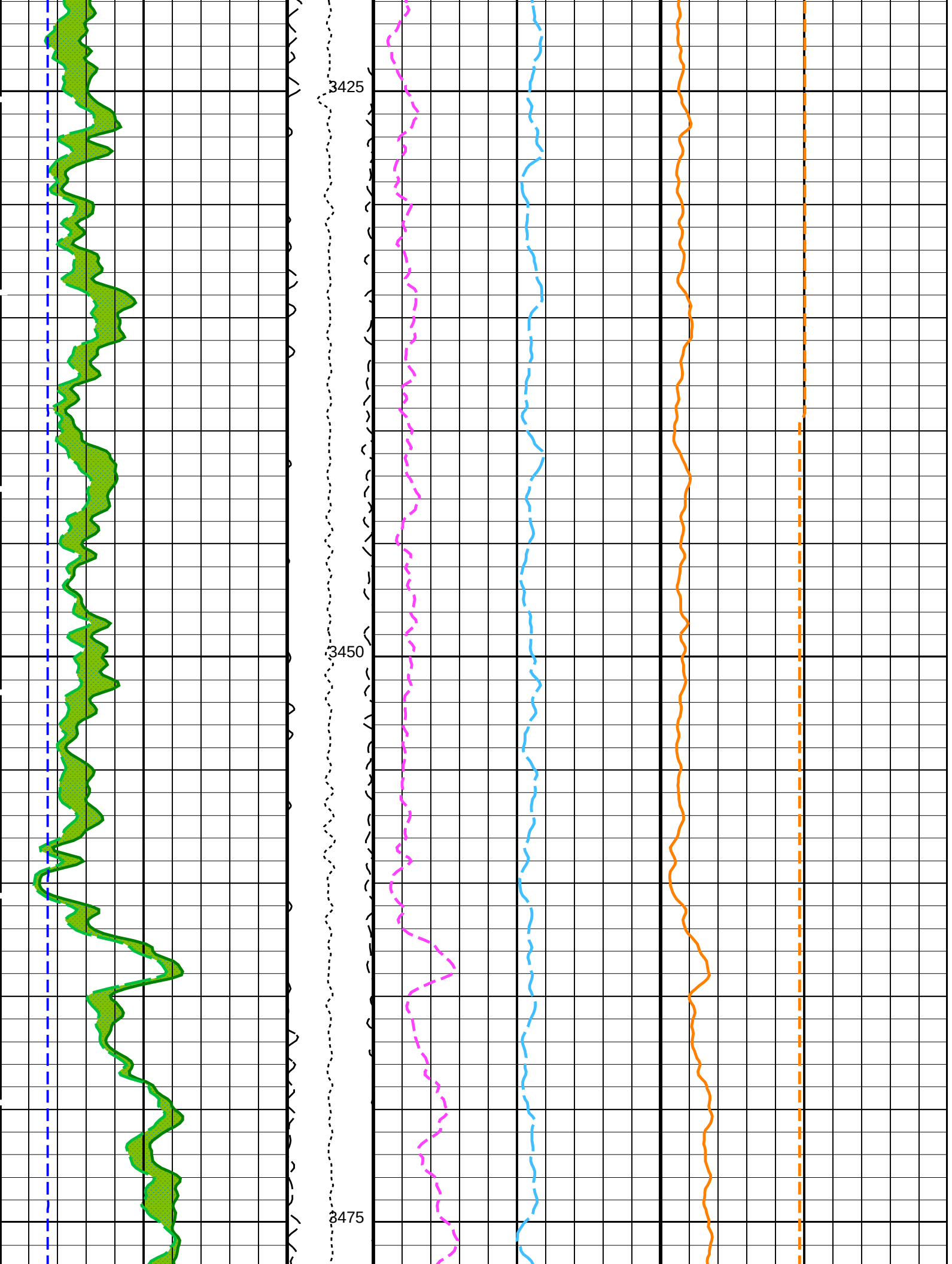
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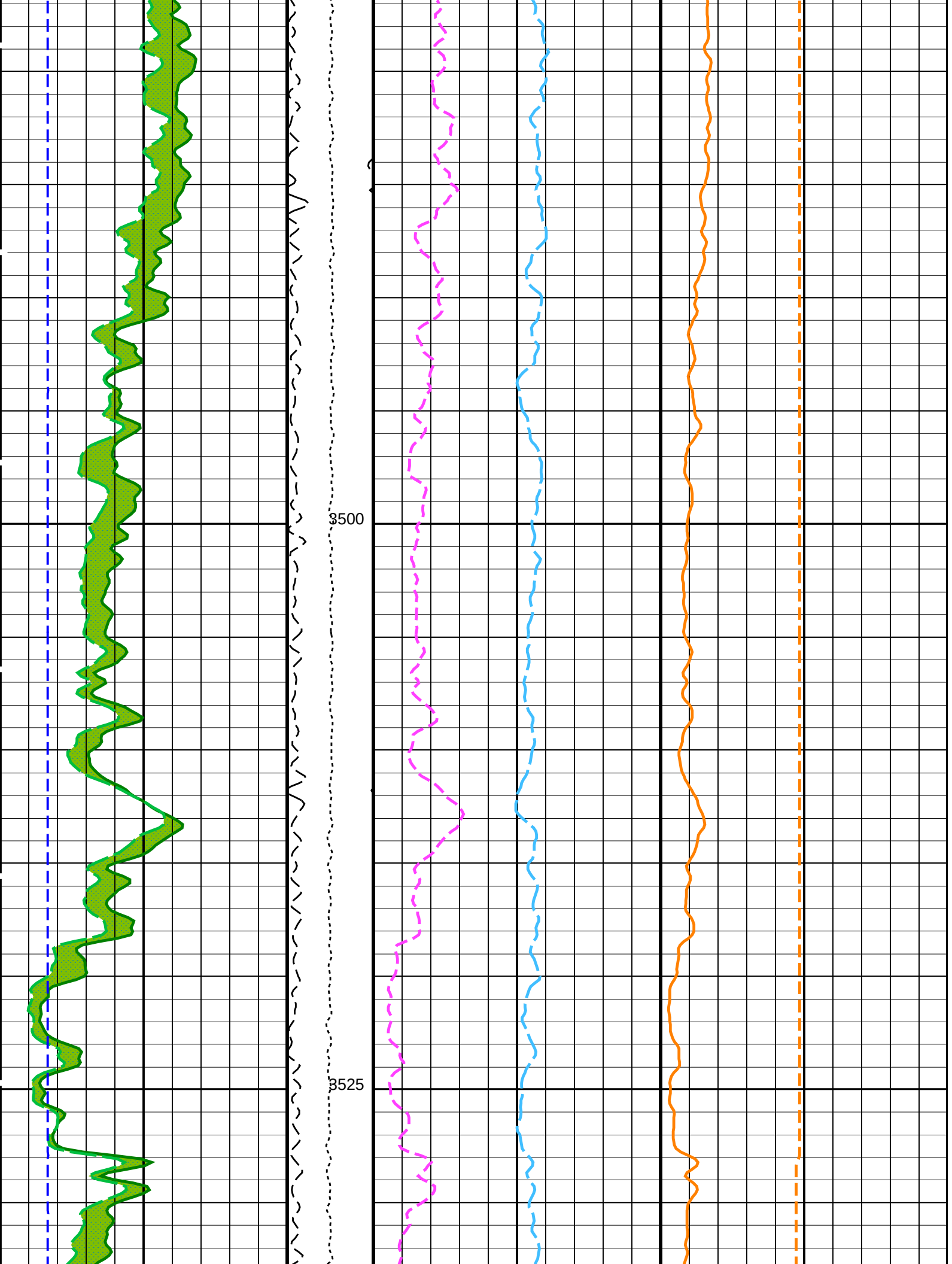
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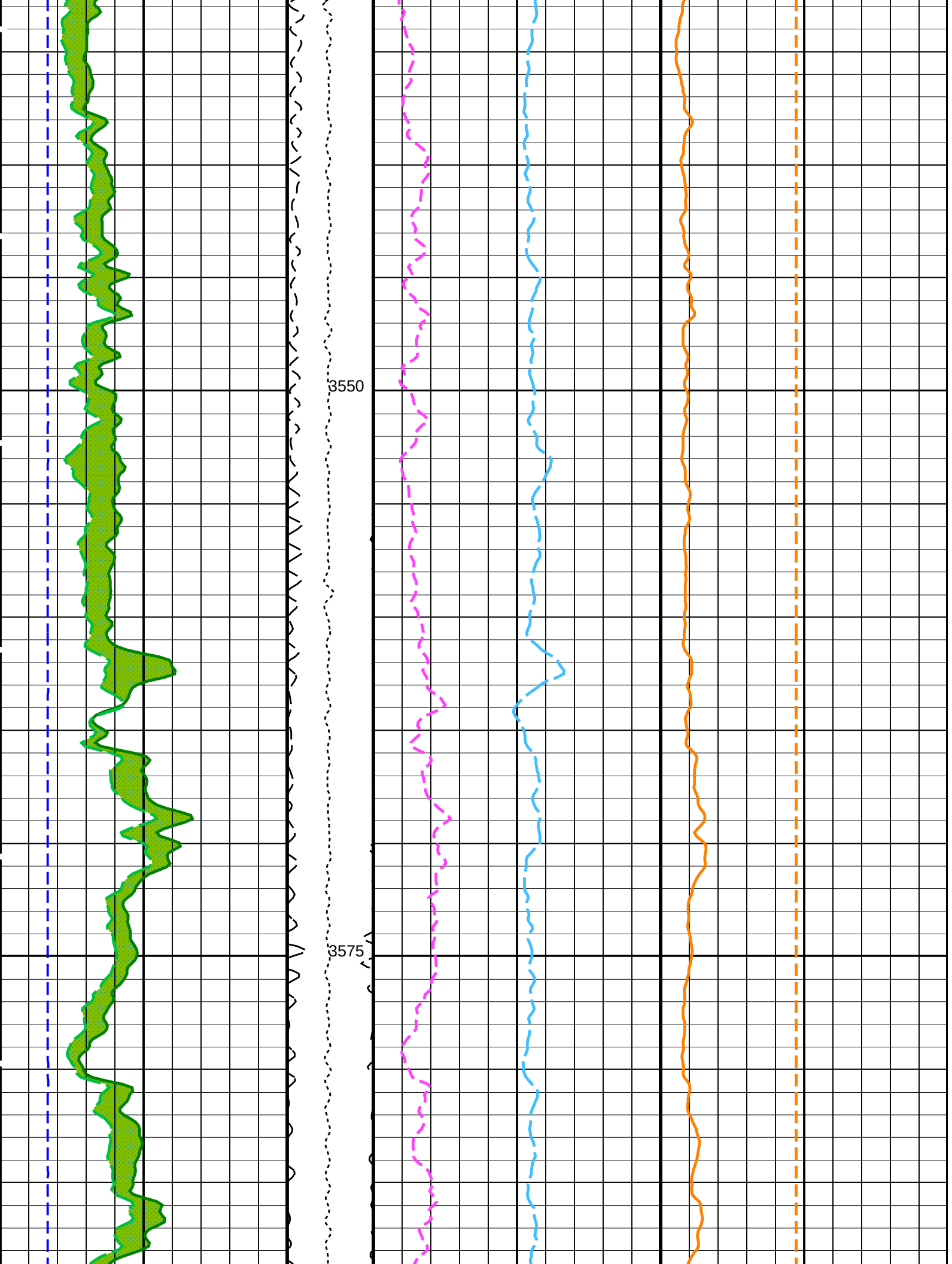
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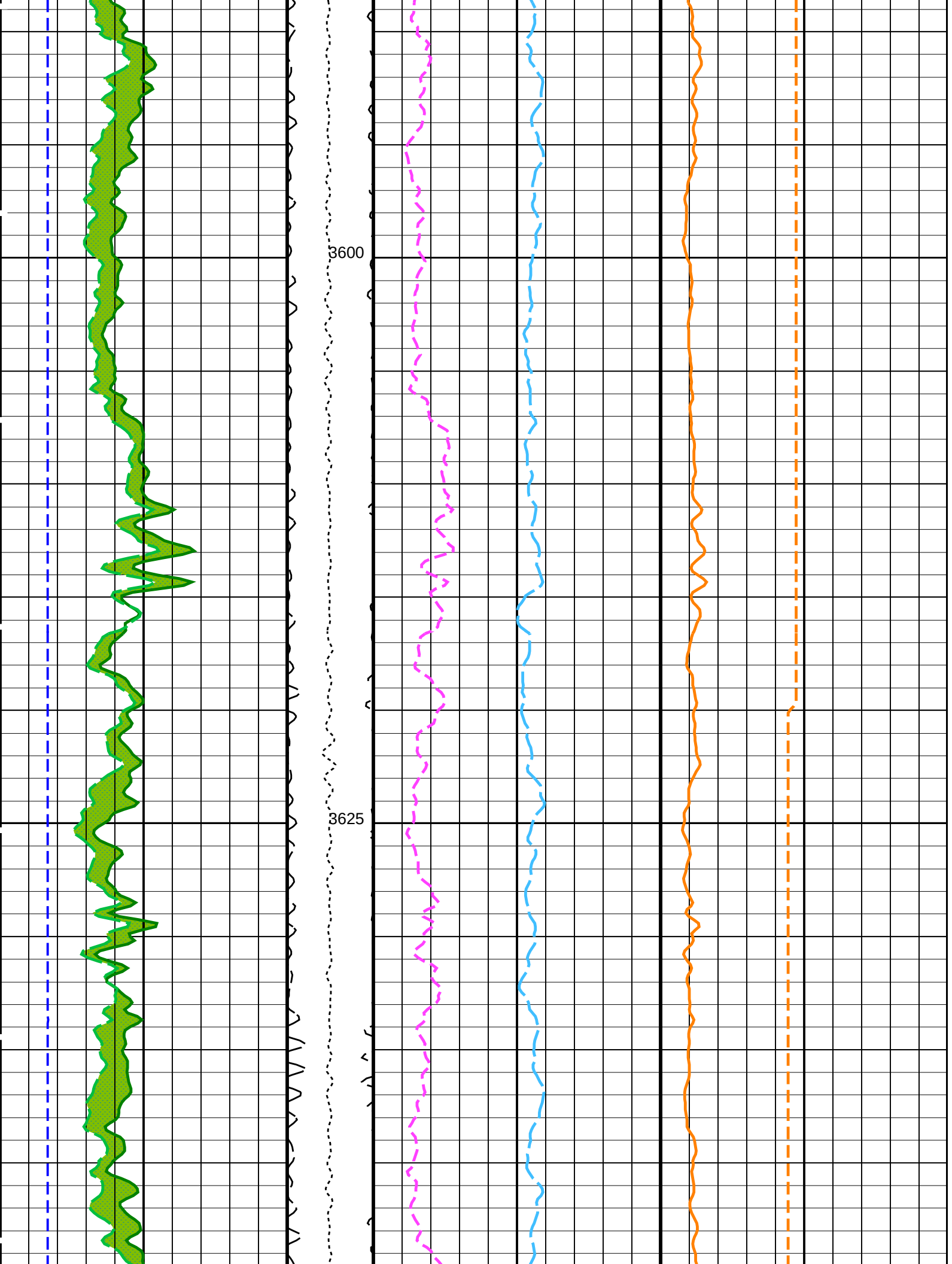
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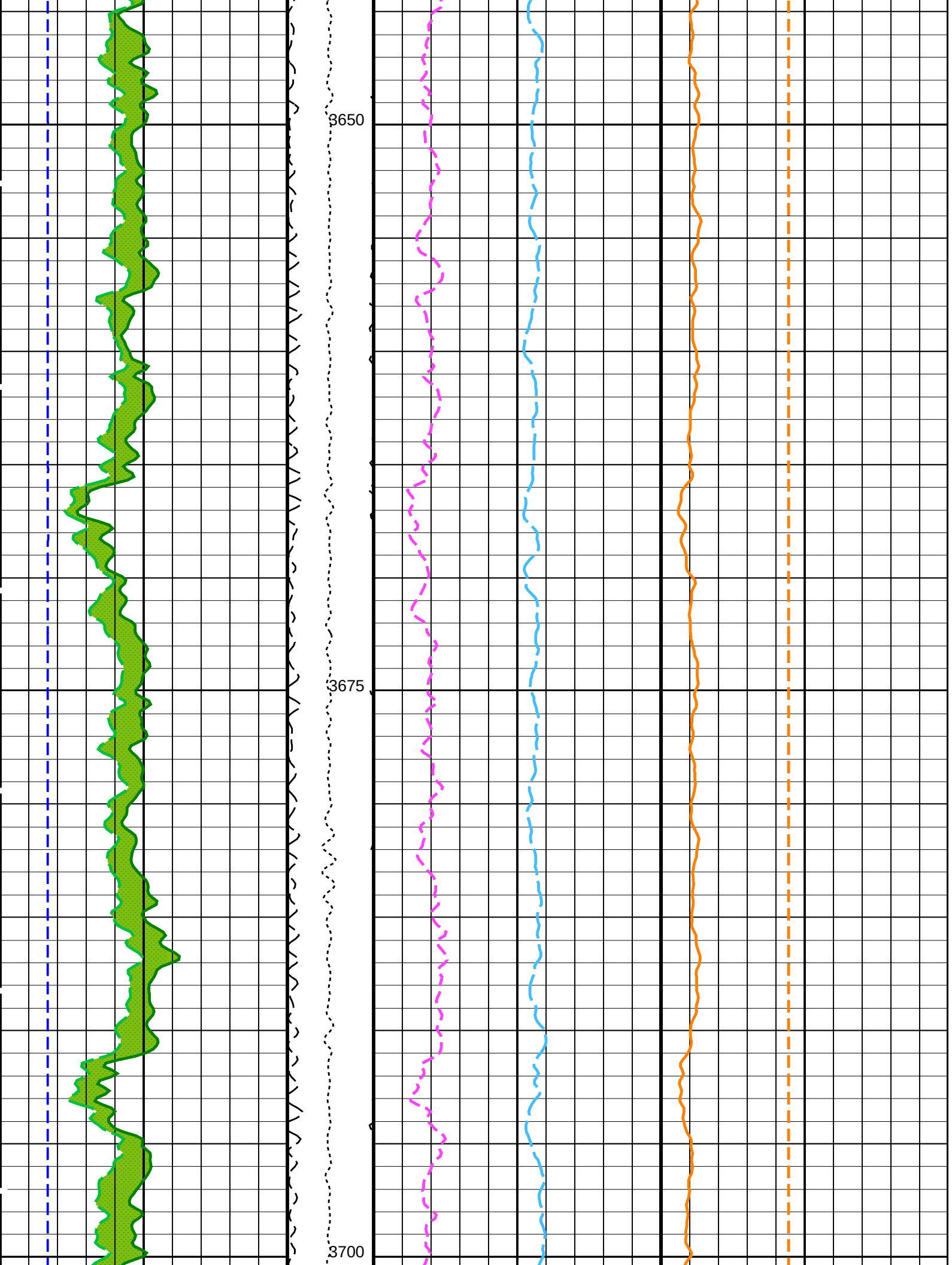
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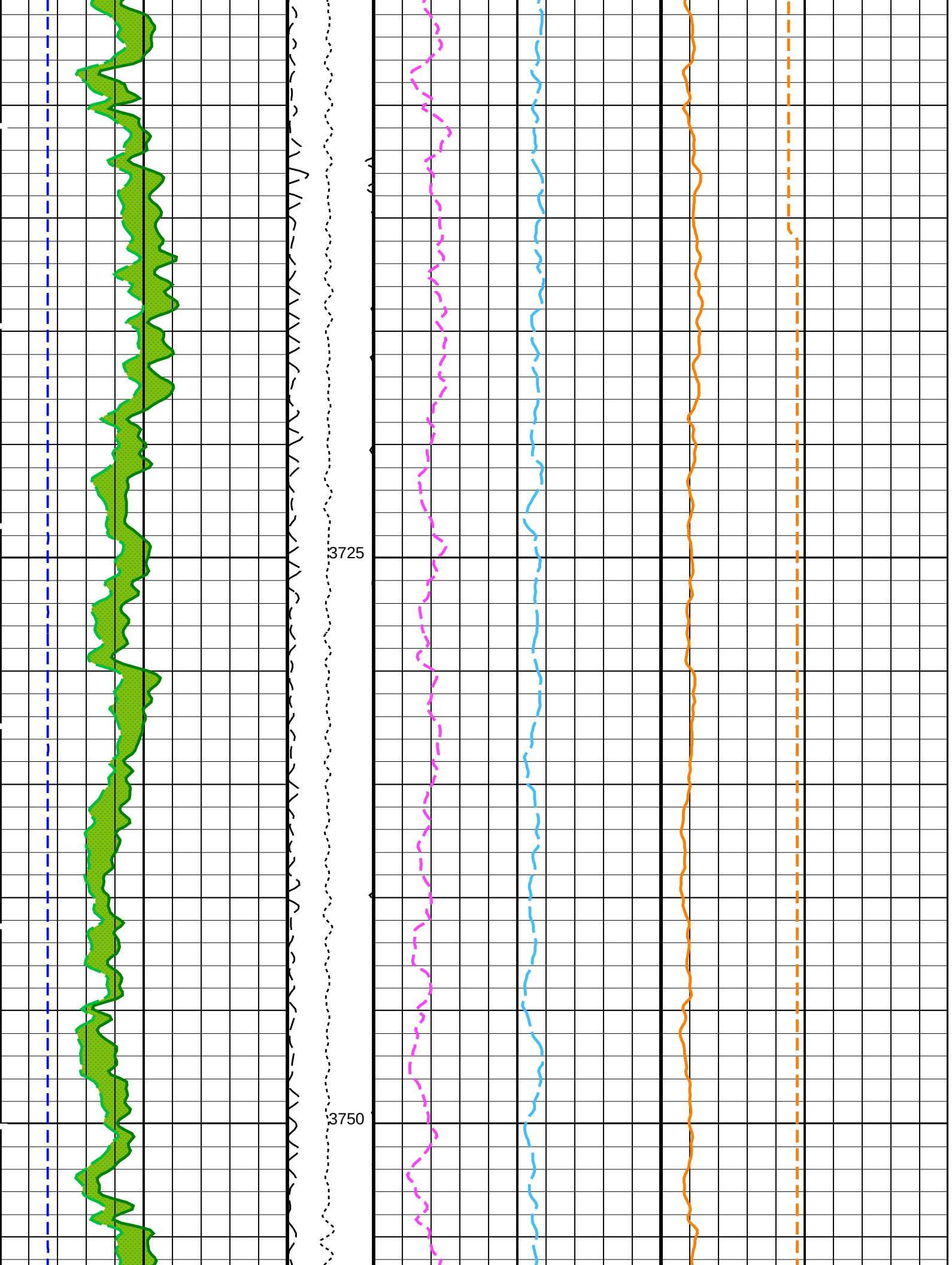
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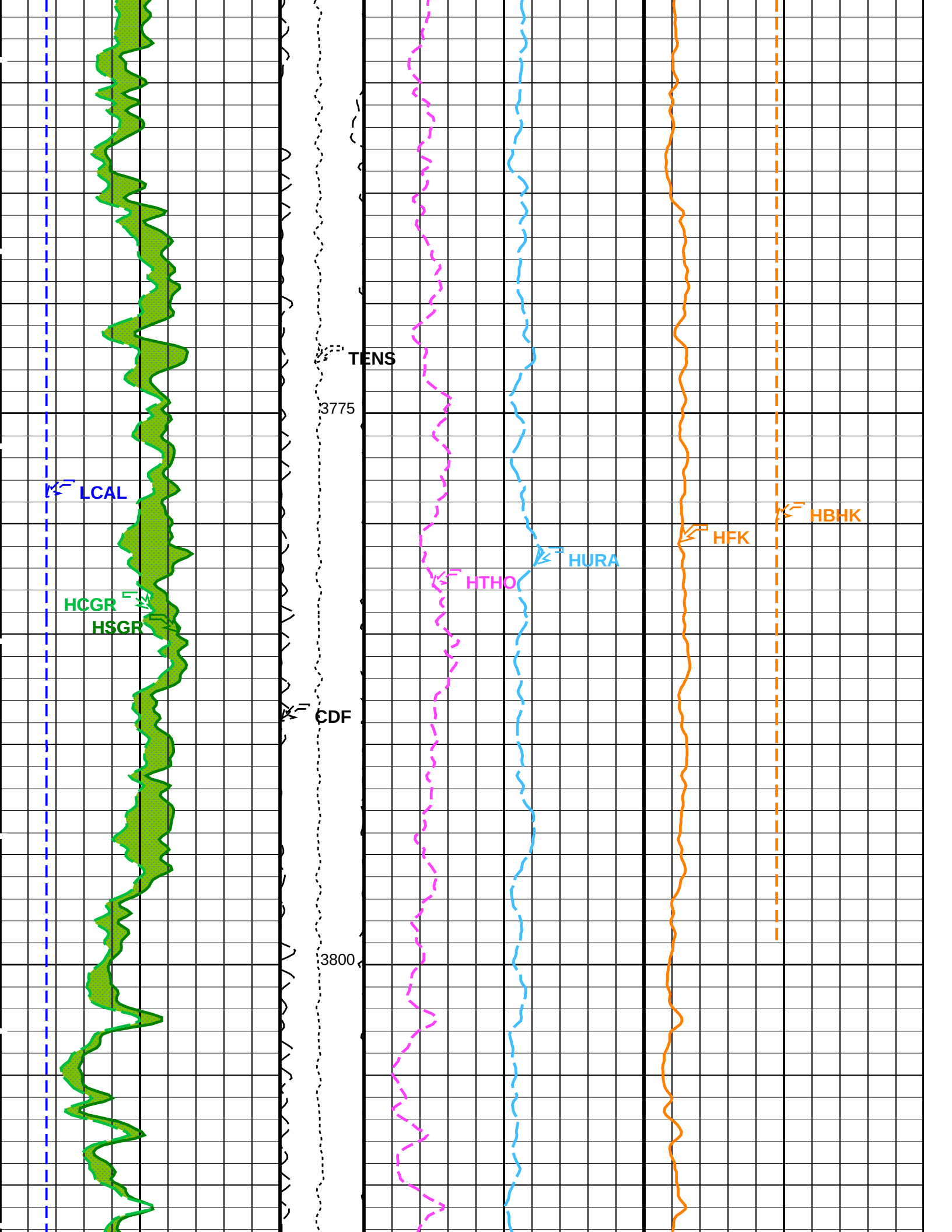
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HSGR
CDF
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HBHK
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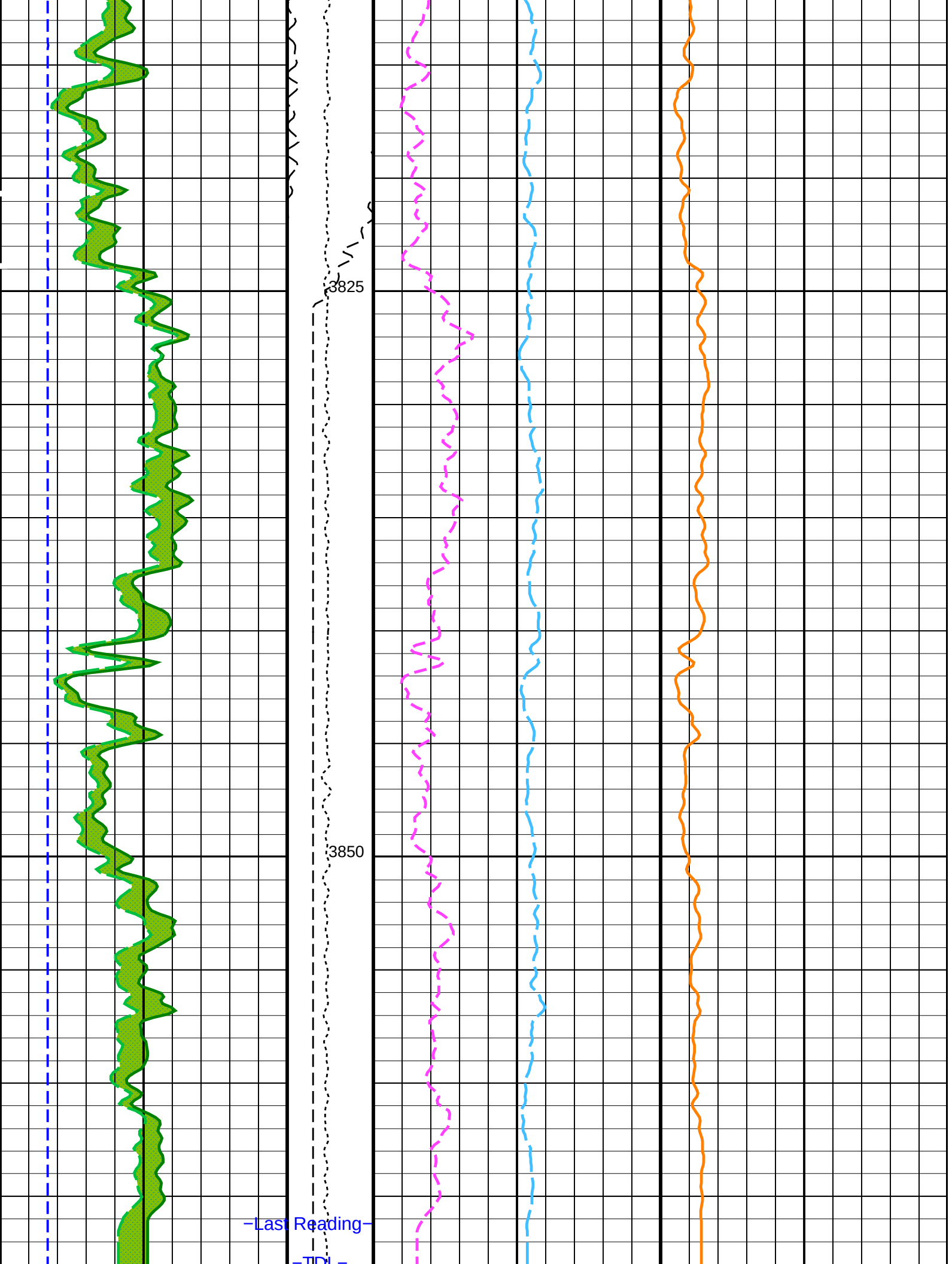
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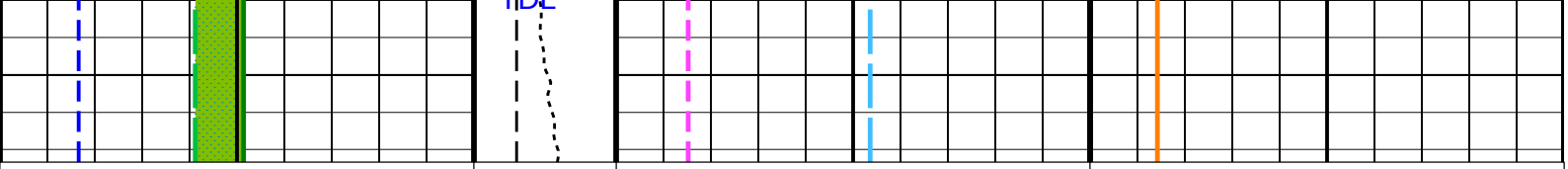
−Last Reading−
−TDL−



Parameters

DLIS Name	Description	Value	
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.0028203	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
TPOS	Tool Position	CENT	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.997292	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00458	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	DSST−B: Dipole Shear Imager − B		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	System and Miscellaneous		
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	RECOMPUTE	

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 25−Apr−2019 21:10

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187

LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_NGS_016LUP		PRODUCER	25−Apr−2019 20:48	3872.3 M	3129.5 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_021PUP	FN:35	PRODUCER	25−Apr−2019 21:10		
BACKUP	MSS_LDEO_NGS_HRLA_021PUP	FN:36	PRODUCER	25−Apr−2019 21:10		

Company: International Ocean Discovery Program | Well: Expedition 382, Site U1536E

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_NGS_016LUP		PRODUCER	25−Apr−2019 20:48	3872.3 M	3129.5 M

Output DLIS Files

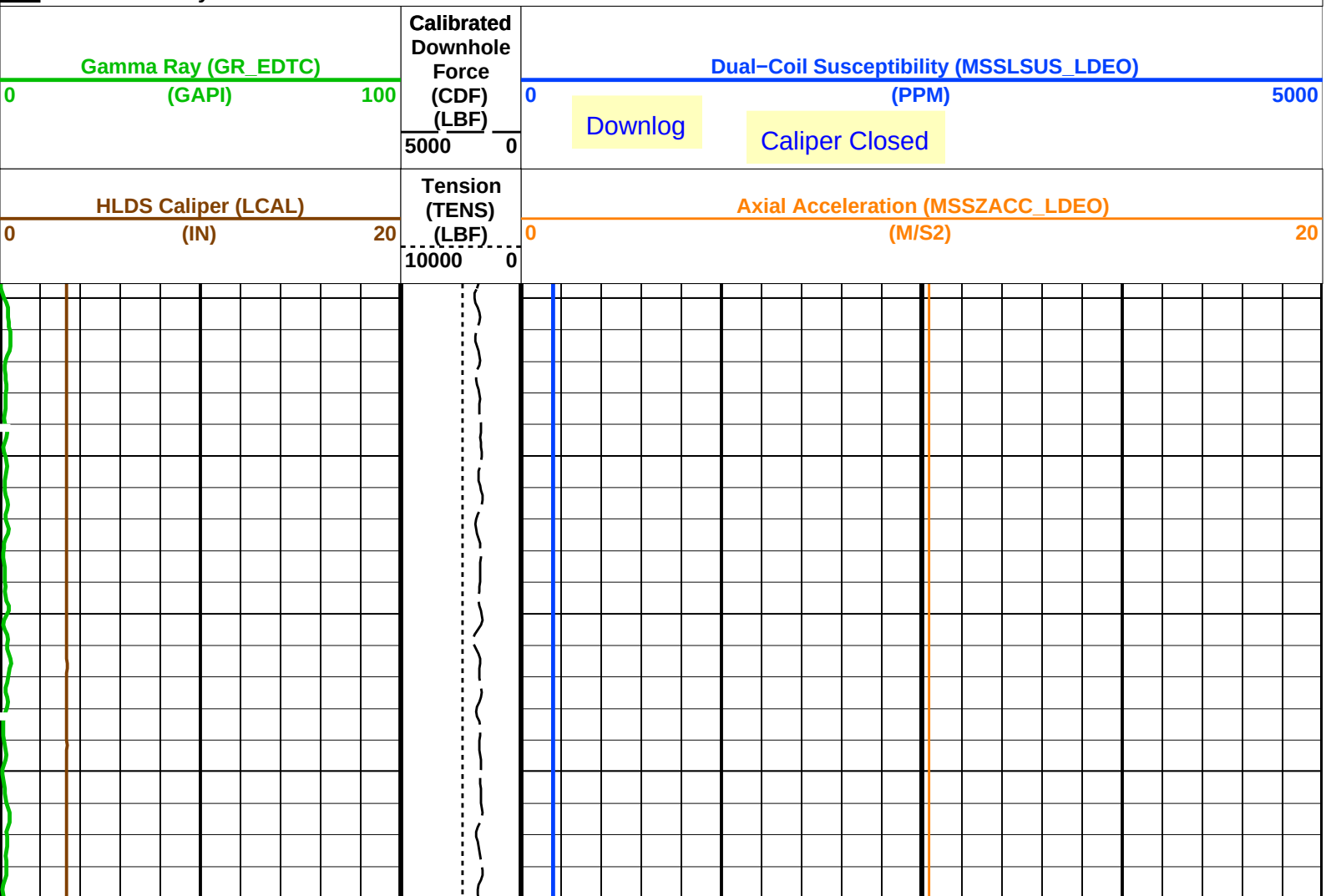
DEFAULT	MSS_LDEO_NGS_HRLA_021PUP	FN:35	PRODUCER	25−Apr−2019 21:10	3872.3 M	3129.5 M
BACKUP	MSS_LDEO_NGS_HRLA_021PUP	FN:36	PRODUCER	25−Apr−2019 21:10	3872.3 M	3129.5 M

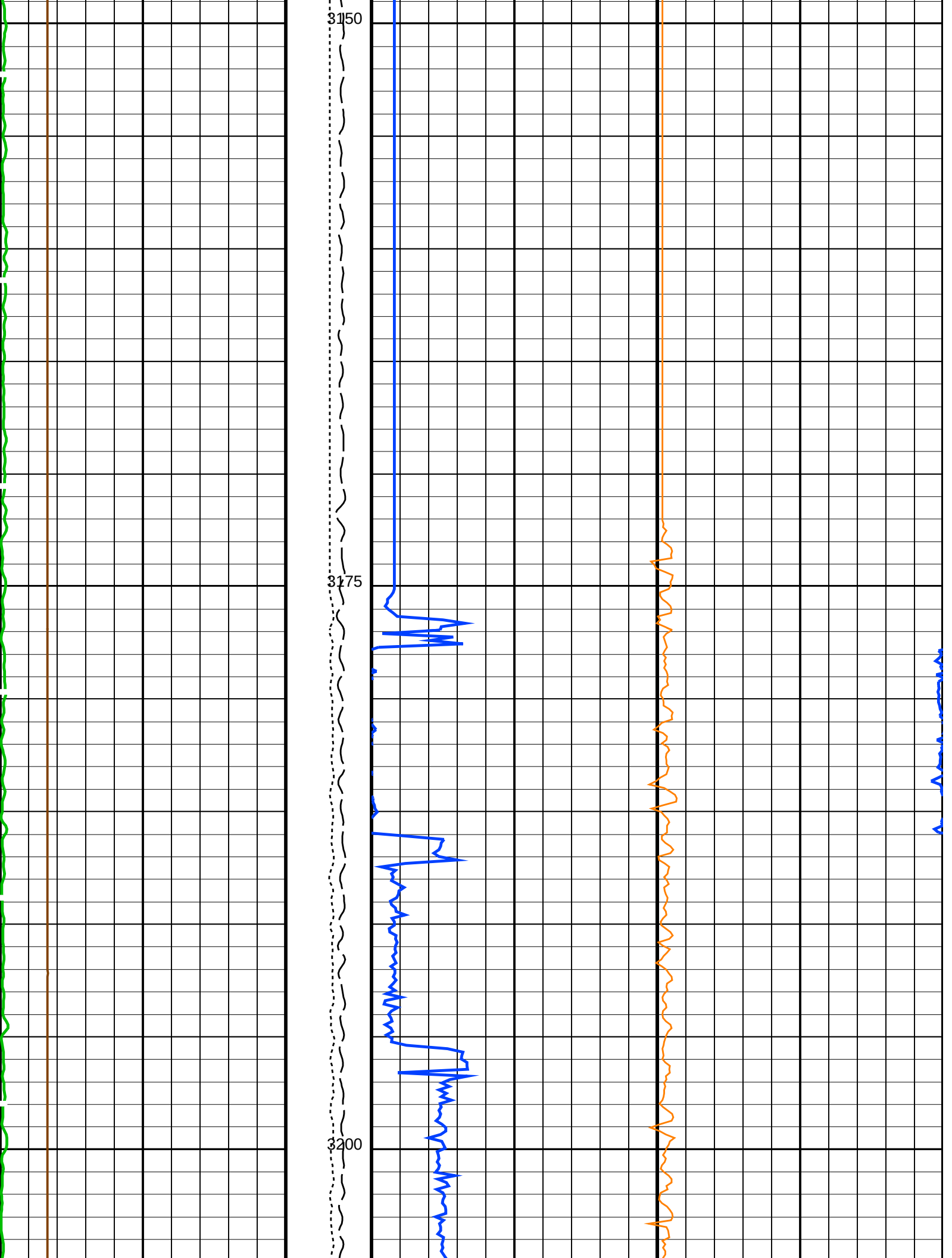
OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

PIP SUMMARY

Time Mark Every 60 S

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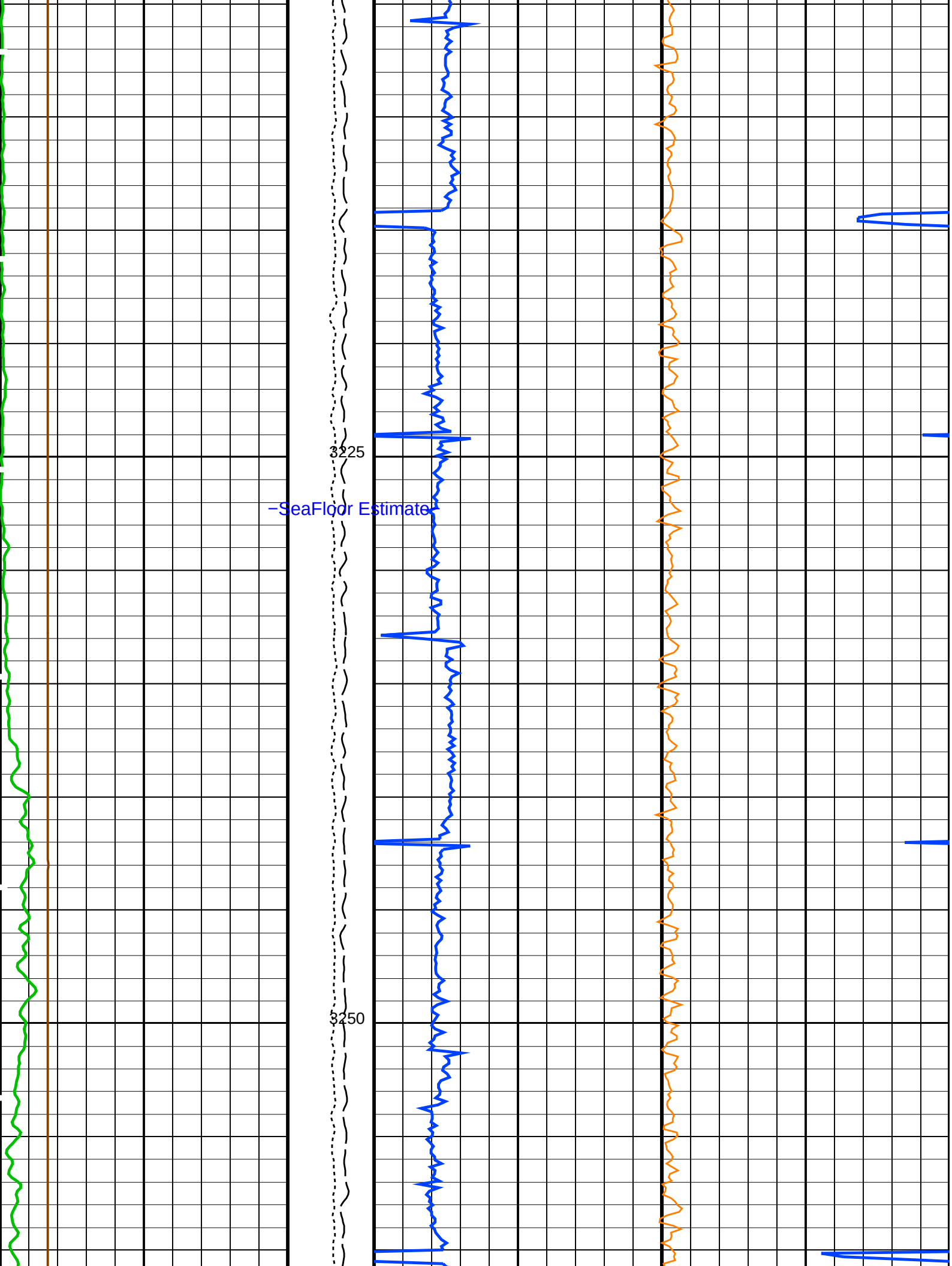
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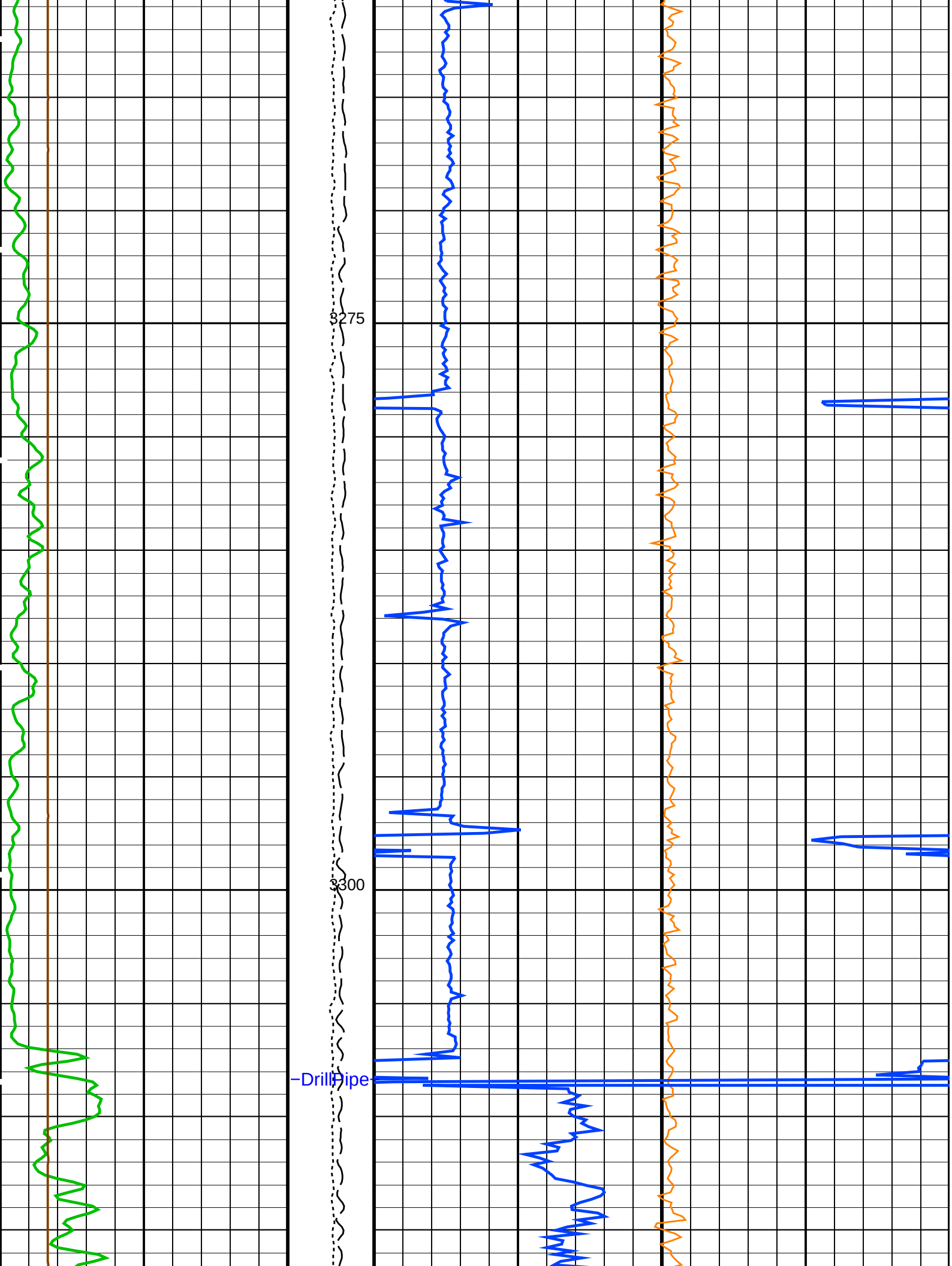
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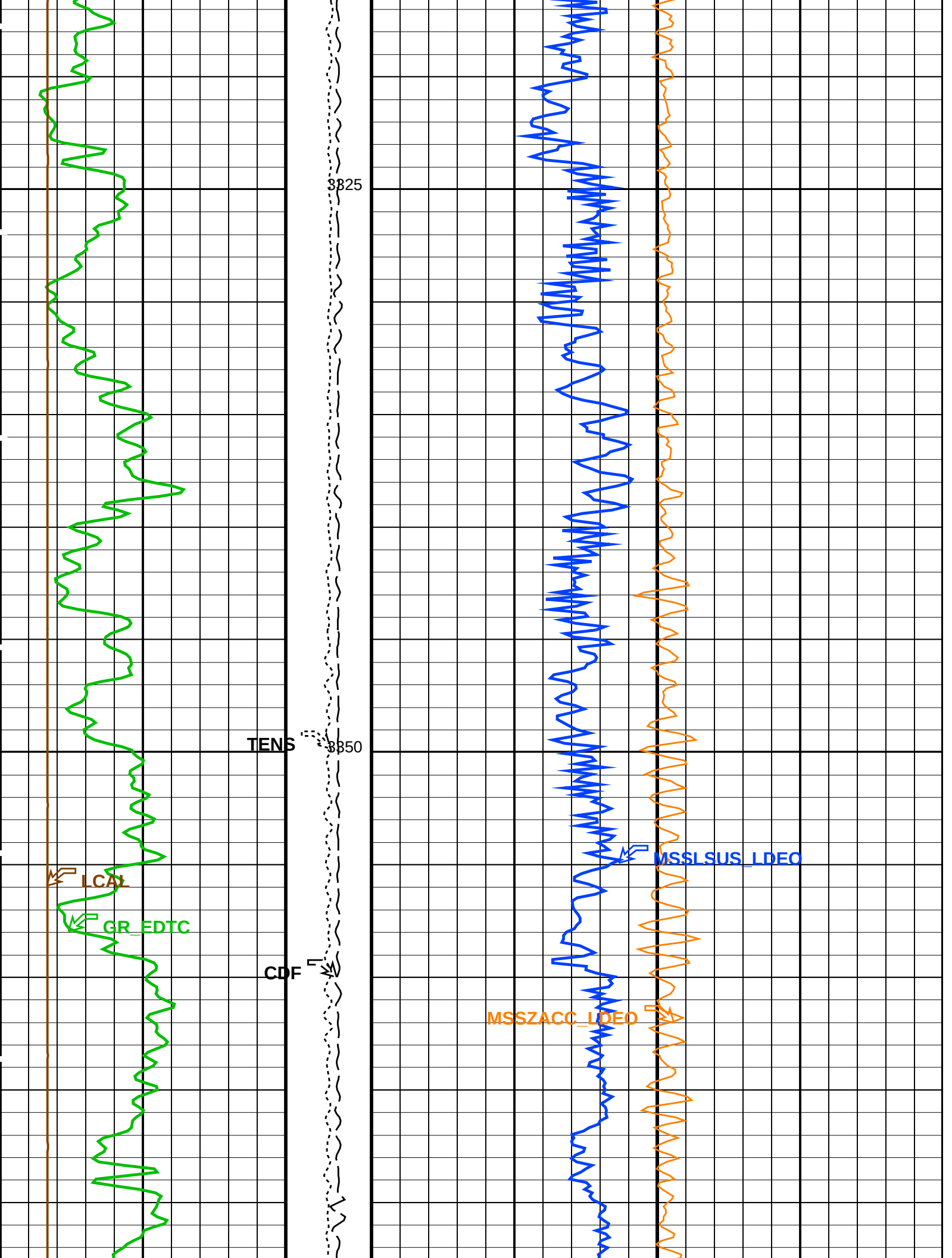
Drill Pipe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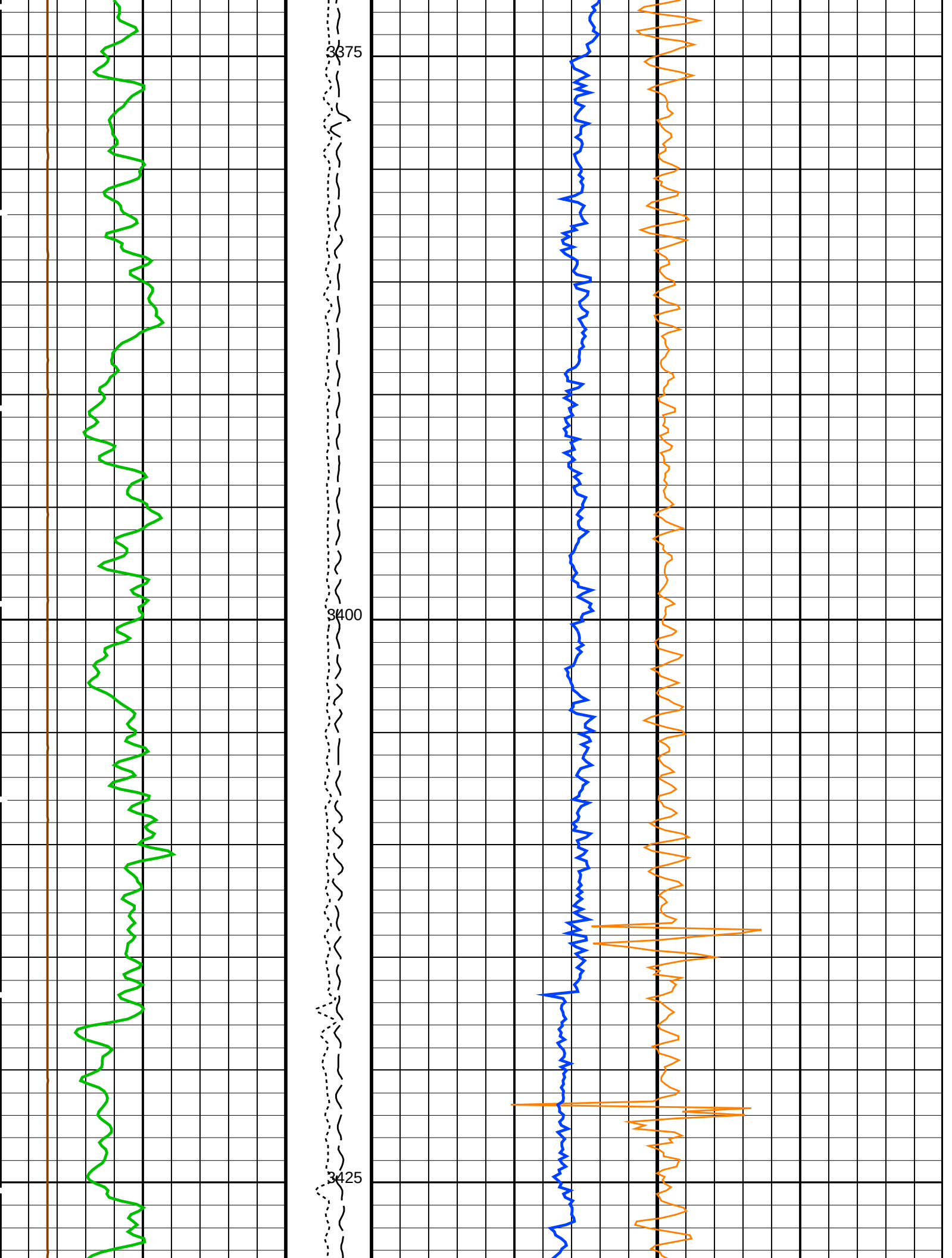
LCAL
GR_EDTC
CDF
MSSLSUS_LDEO
MSSZACC_LDEO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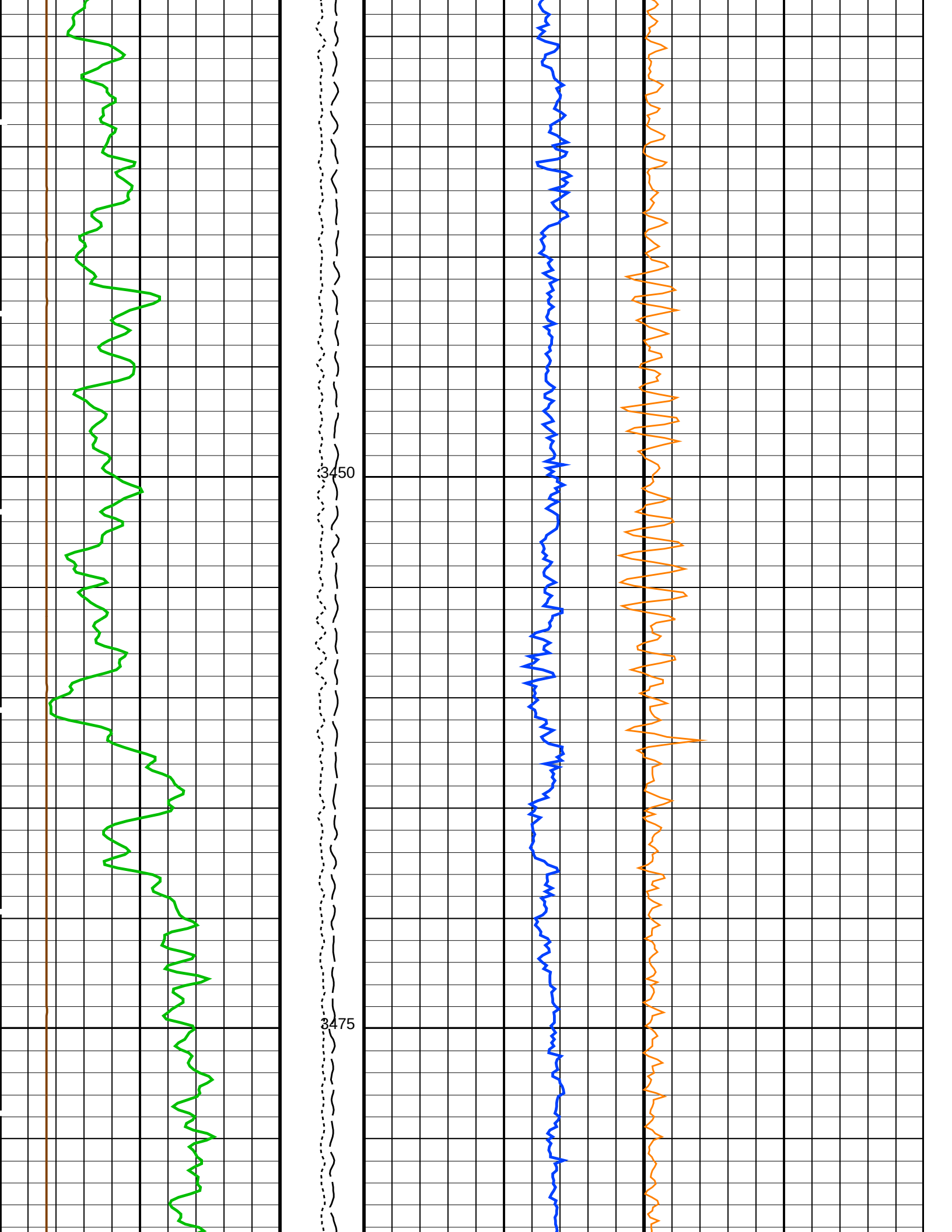
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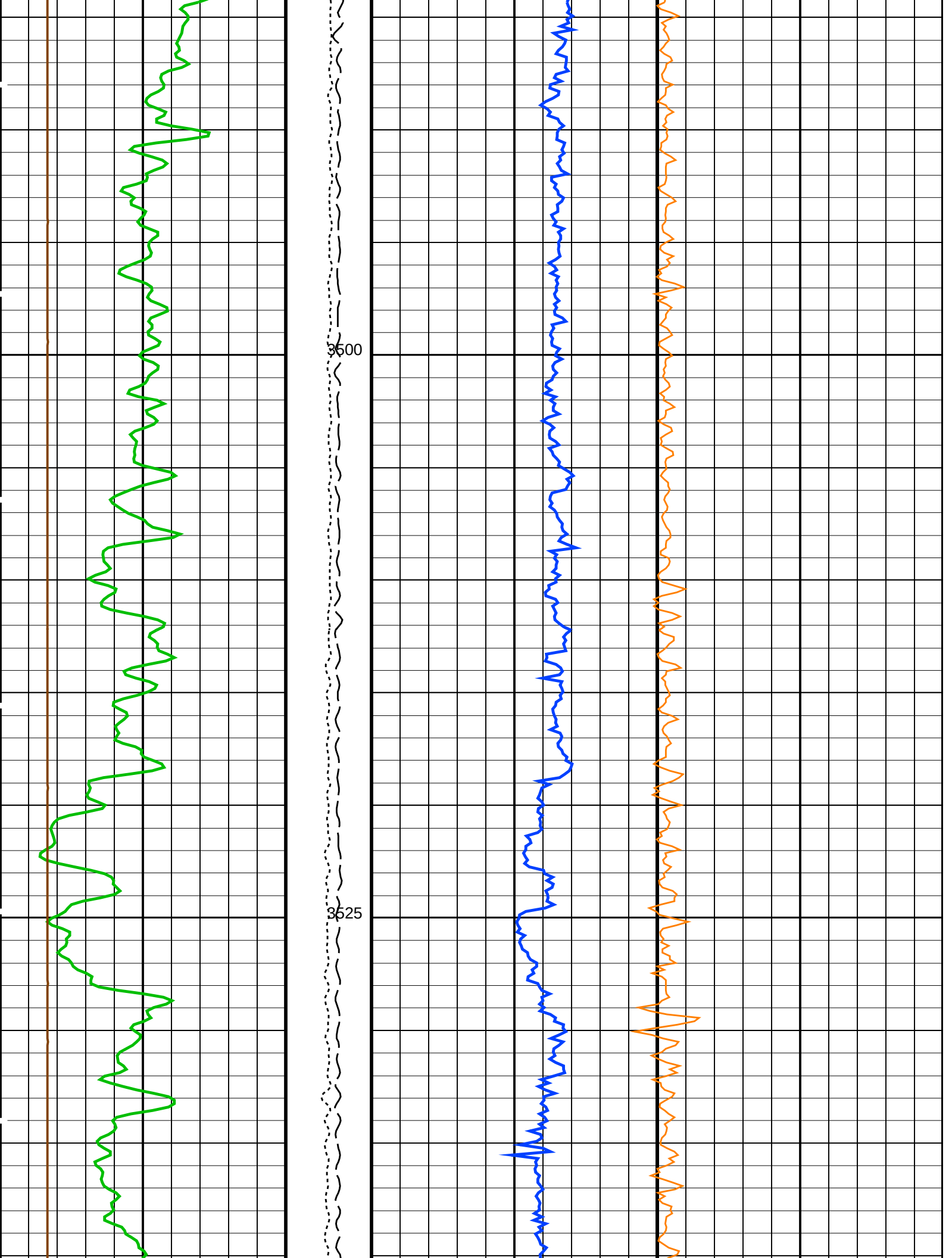
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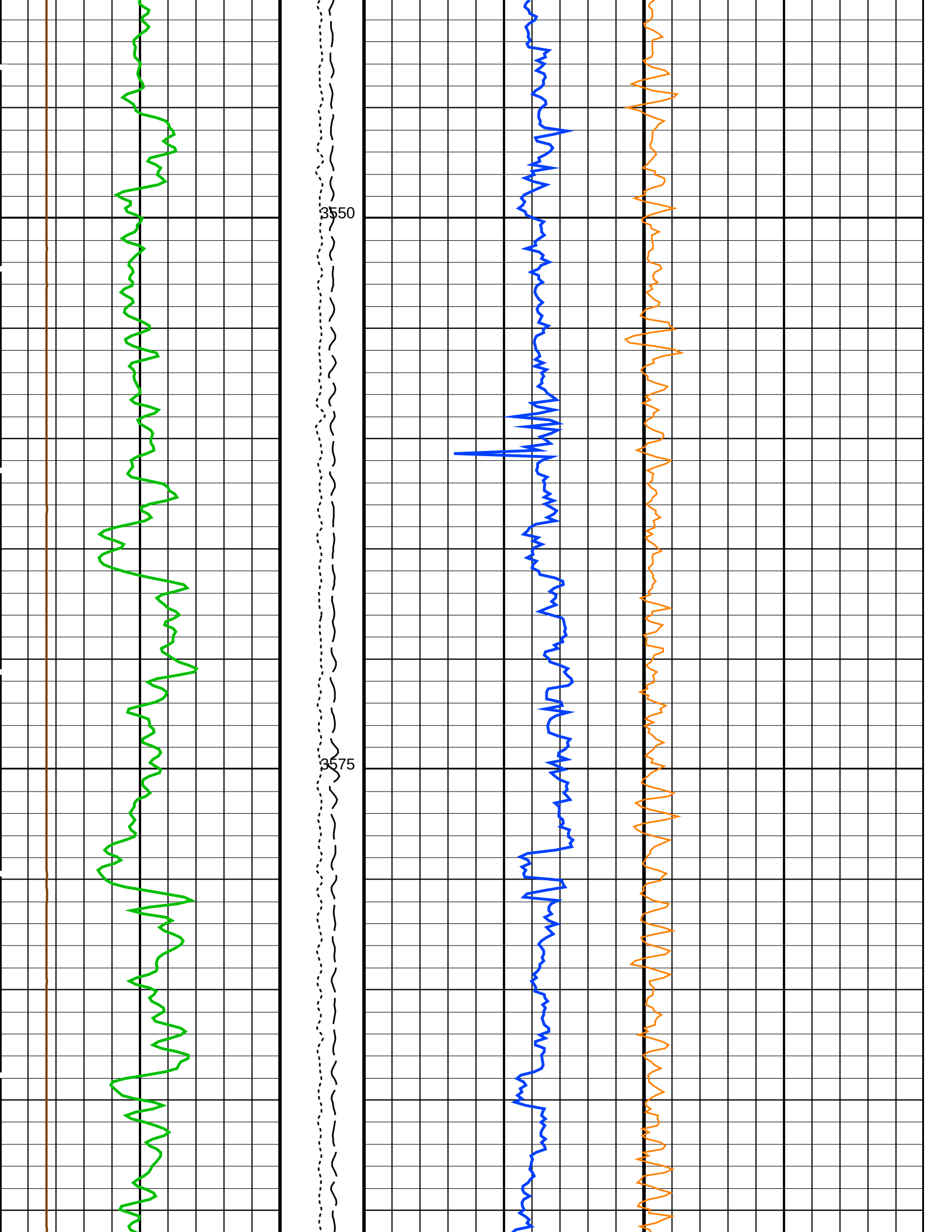
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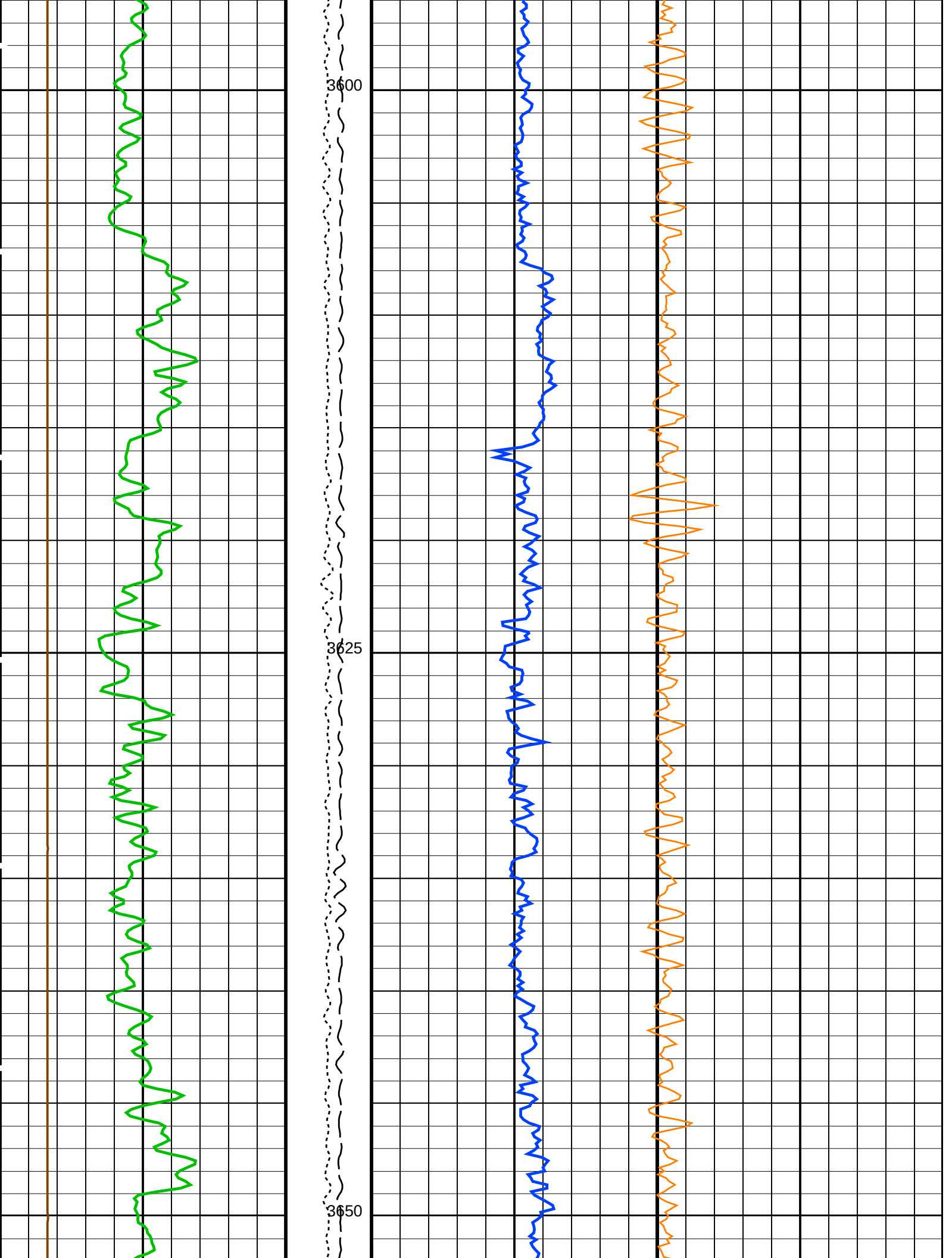
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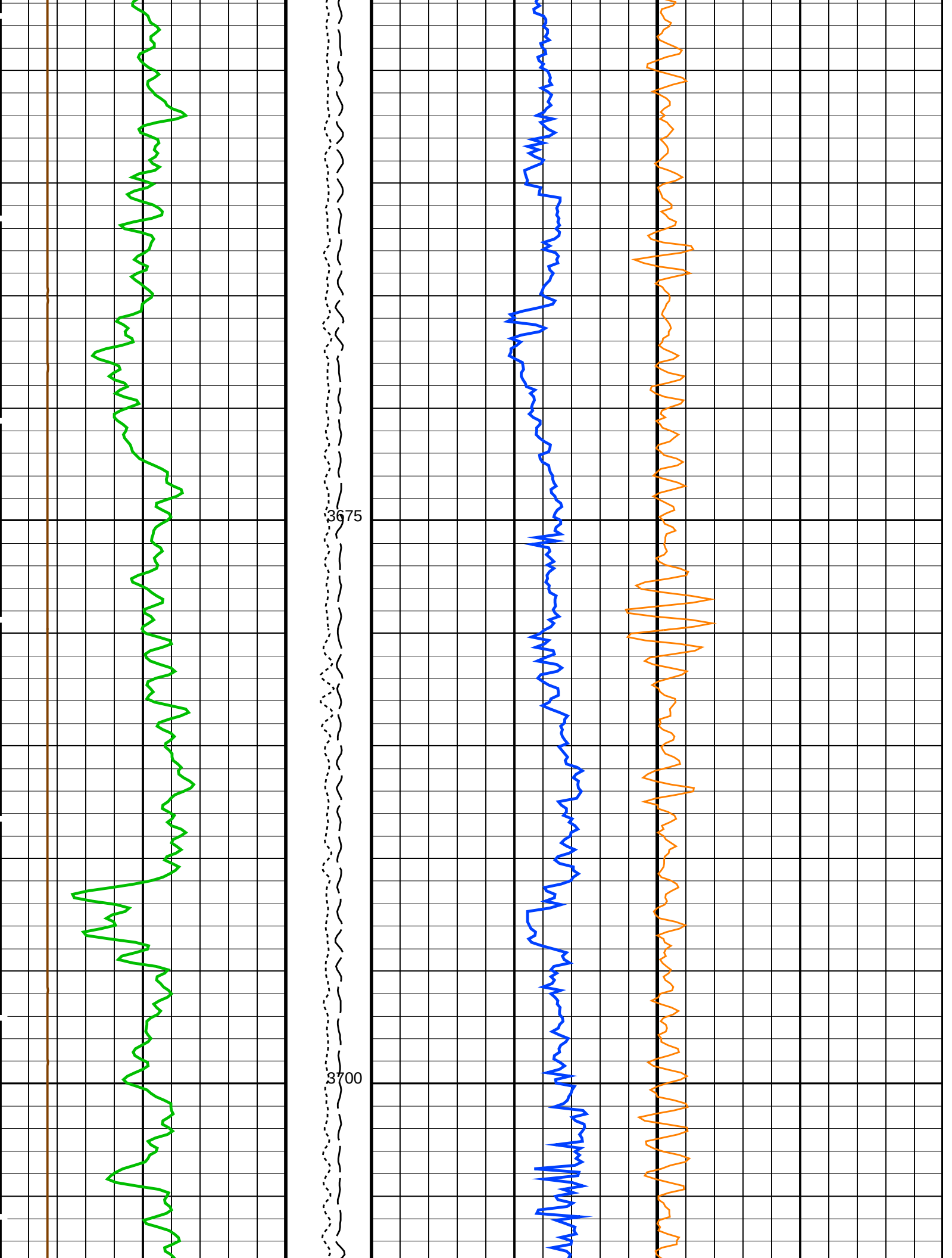
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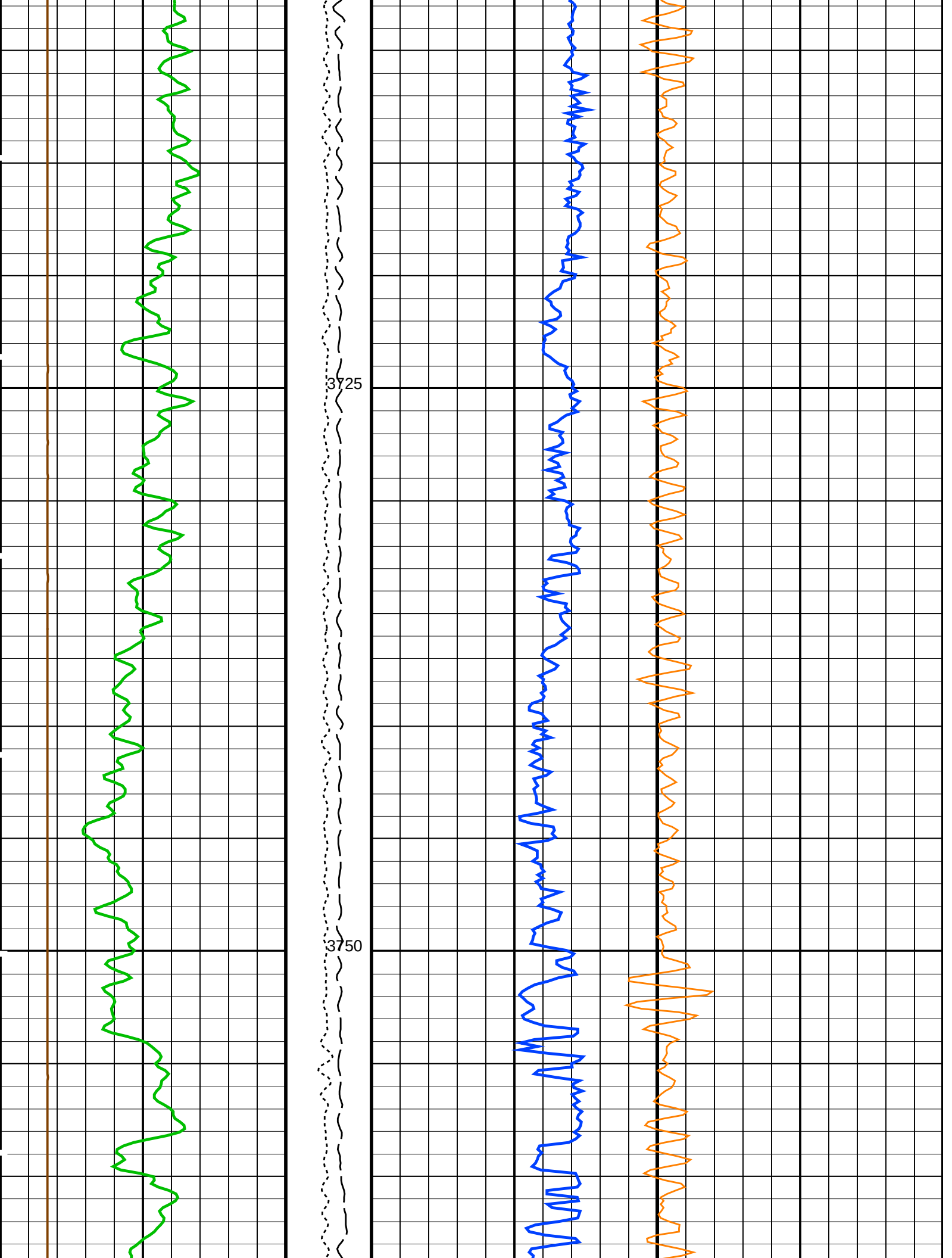
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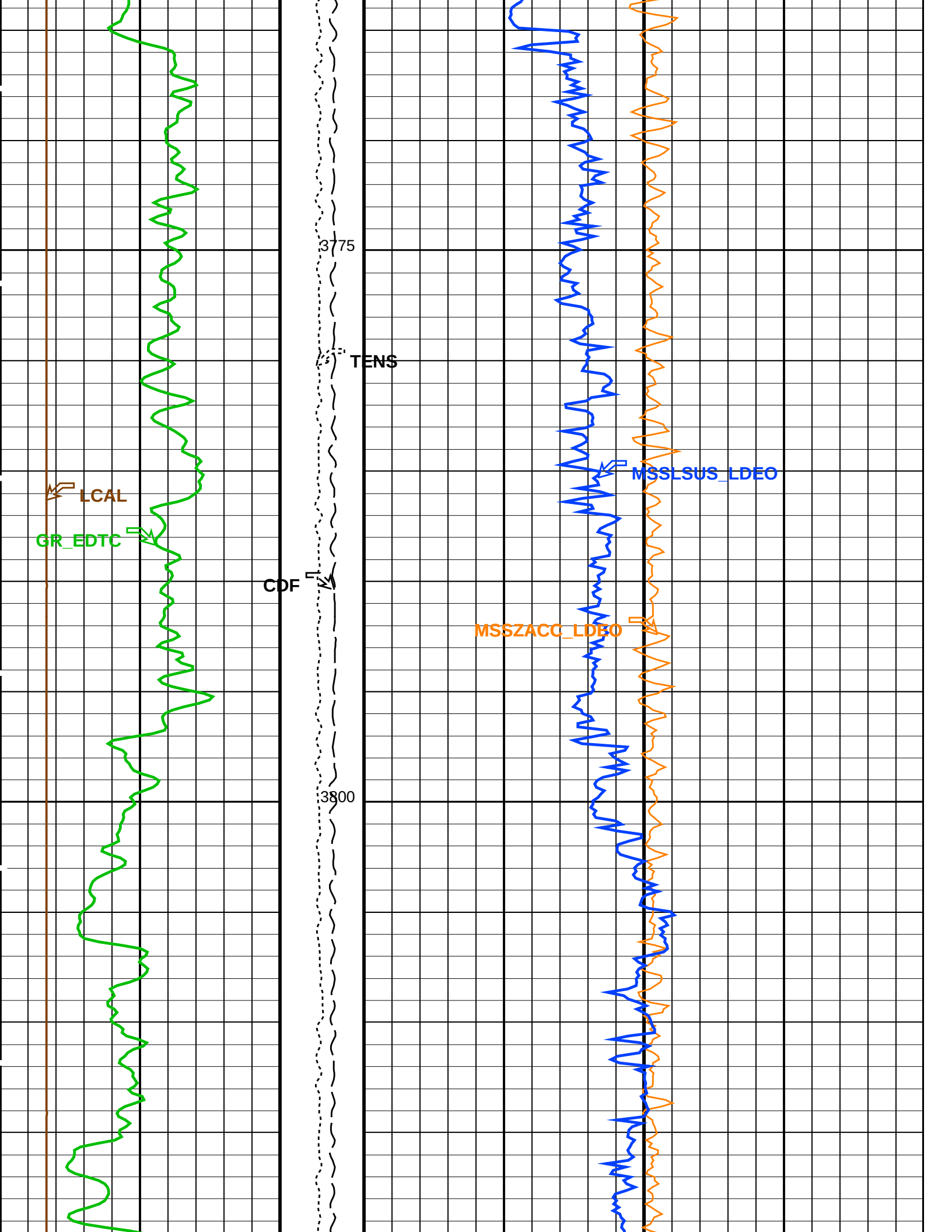
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LCAL
GR_EDTC
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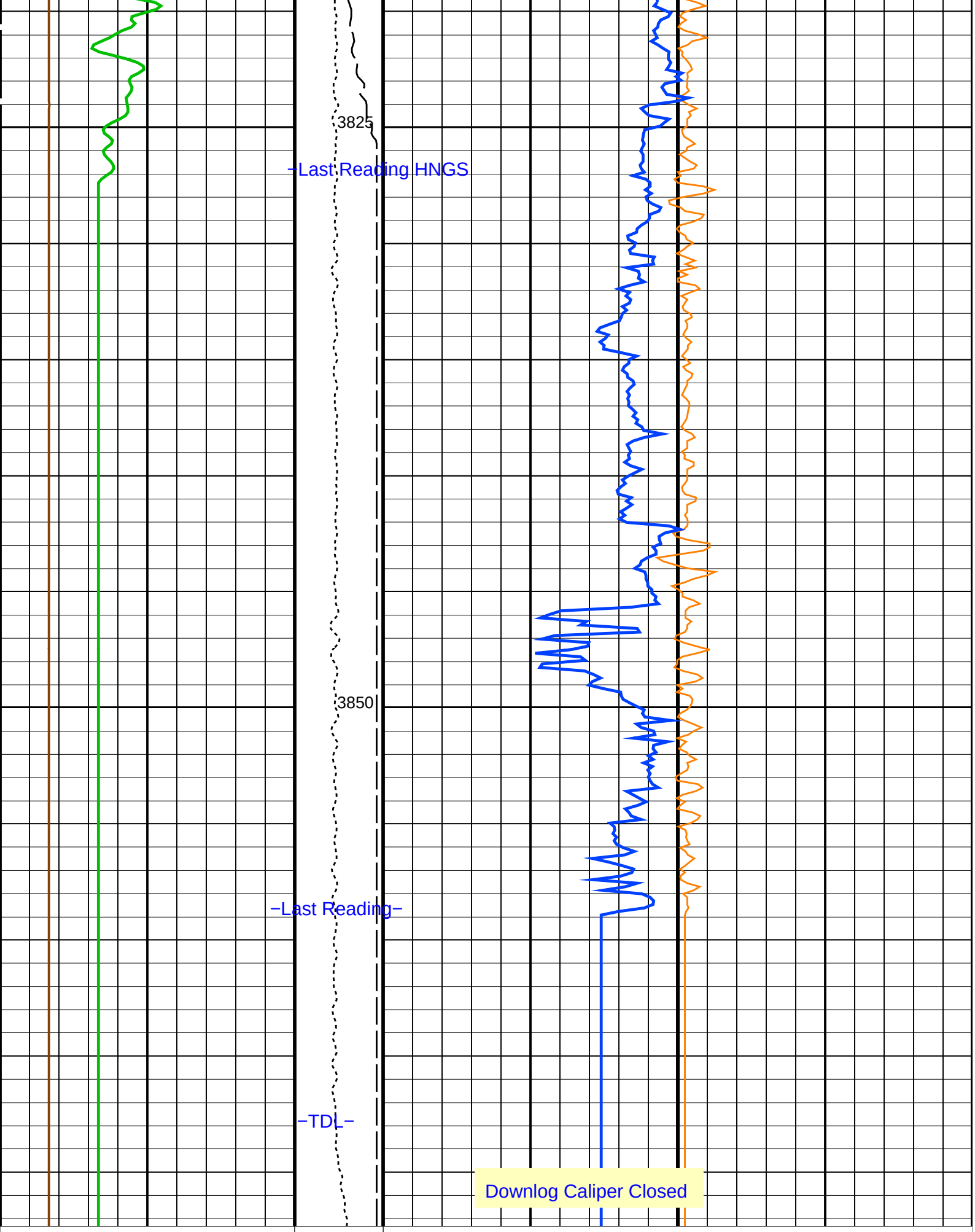
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−Last Reading HNGS
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−Last Reading−
−TDL−
Downlog Caliper Closed
HLDS Caliper (LCAL)
0
(IN)
20
Tension
(TENS)
(LBF)
10000
0
Axial Acceleration (MSSZACC_LDEO)
0
(M/S2)
20

Gamma Ray (GR_EDTC)	Calibrated Downhole Force (CDF) (LBF)	Dual−Coil Susceptibility (MSSLSUS_LDEO)
0 (GAPI) 100	5000 0	0 (PPM) 5000

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.0028203	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
SHT	Surface Hole Temperature	30	DEGF
TPOS	Tool Position	CENT	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.997292	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00458	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	0.4377	DEGC
FREQ0	HRLT Frequency Index for Mode 0	32	
FREQ1	HRLT Frequency Index for Mode 1	128	
FREQ2	HRLT Frequency Index for Mode 2	104	
FREQ3	HRLT Frequency Index for Mode 3	86	
FREQ4	HRLT Frequency Index for Mode 4	56	
FREQ5	HRLT Frequency Index for Mode 5	44	
FREQ6	HRLT Frequency Index for Mode 6	116	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	BARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROCINV	Inversion Selection	ON	
PROCMFL	Inversion Micro−Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	30	DEGF
	DSST−B: Dipole Shear Imager − B		

AGC1	Automatic Gain Control 1	ON	
AGC2	Automatic Gain Control 2	ON	
AGC3	Automatic Gain Control 3	ON	
AGC4	Automatic Gain Control 4	ON	
AGC5	Automatic Gain Control 5	ON	
AGCX	Automatic Gain Control X	ON	
BARS_MTR1	Length for Monopole Transmitter to Receiver 1	2.7432	M
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
CASF	Label Casing Function − Monopole P&S	50	
CDTS	C−Delta−T Shale	100	US/F
COLL	Label Slowness Lower Limit − Monopole P&S Compressional	80	US/F
COUL	Label Slowness Upper Limit − Monopole P&S Compressional	185	US/F
DDE1	Digitizing Delay 1	0	US
DDE2	Digitizing Delay 2	0	US
DDE3	Digitizing Delay 3	0	US
DDE4	Digitizing Delay 4	0	US
DDE5	Digitizing Delay 5	0	US
DDEX	Digitizing Delay X	0	US
DLCS	Label Compressional Source − Dipole Shear	USE	
DLHS	Label Hole Diameter Source for SOBS Channel	AUTO	
DSHL	Label Slowness Lower Limit − Dipole Shear	75	US/F
DSHU	Label Slowness Upper Limit − Dipole Shear	1200	US/F
DSI1	Digitizer Sample Interval 1	40	US
DSI2	Digitizer Sample Interval 2	40	US
DSI3	Digitizer Sample Interval 3	40	US
DSI4	Digitizer Sample Interval 4	10	US
DSI5	Digitizer Sample Interval 5	10	US
DSIX	Digitizer Sample Interval X	40	US
DTCS	Compressional Delta−T Source for DTCO Channel	PS_COMP	
DTF	Delta−T Fluid	189	US/F
DTM	Delta−T Matrix	56	US/F
DTSS	Shear Delta−T Source for DTSM Channel	UPPER_DIPOLE	
DWC1	Digitizer Word Count 1	512	
DWC2	Digitizer Word Count 2	512	
DWC3	Digitizer Word Count 3	512	
DWC4	Digitizer Word Count 4	512	
DWC5	Digitizer Word Count 5	512	
DWCX	Digitizer Word Count X	512	
FDE1	Firing Delay 1	0	
FDE2	Firing Delay 2	0	
FDE3	Firing Delay 3	0	
FDE4	Firing Delay 4	0	
FDE5	Firing Delay 5	0	
FDEX	Firing Delay X	0	
FGM5	First Motion Gate Moveout 5	40	US/F
FGMX	First Motion Gate Moveout X	40	US/F
FILG	Label Fill Gap Control − Monopole P&S	COMP_SHEAR	
FMG5	First Motion Minimum Gate 5	500	US
FMGX	First Motion Minimum Gate X	500	US
FMLL	Slowness Lower Limit − FMD	40	US/F
FMRC	Restart Control − FMD	CONTINUE	
FMT5	First Motion Threshold 5	UP	
FMTX	First Motion Threshold X	NONE	
FMUL	Slowness Upper Limit − FMD	180	US/F
FNC5	First Motion Noise Counter Input 5	ALO	
FNCX	First Motion Noise Counter Input X	ALO	
FPM	Processing Mode − FMD	NONE	
FTD5	First Motion Threshold Direction 5	UP	
FTDX	First Motion Threshold Direction X	UP	
GAI1	Manual Gain 1	10	
GAI2	Manual Gain 2	10	
GAI3	Manual Gain 3	6	
GAI4	Manual Gain 4	16	
GAI5	Manual Gain 5	16	
GAIX	Manual Gain X	10	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GDT1	Gain Delta−T 1	800	US/F
GDT2	Gain Delta−T 2	800	US/F
GDT3	Gain Delta−T 3	800	US/F
GDT4	Gain Delta−T 4	160	US/F
GDT5	Gain Delta−T 5	160	US/F
GDTX	Gain Delta−T X	800	US/F
GGRD	Geothermal Gradient	0.01	DF/F
GIN1	Gain Interval 1	15360	US
GIN2	Gain Interval 2	15360	US
GIN3	Gain Interval 3	15360	US
GIN4	Gain Interval 4	2560	US
GIN5	Gain Interval 5	1600	US
GINX	Gain Interval X	15360	US
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HPF1	High Pass Filter 1	F80	
HPF2	High Pass Filter 2	F80	

HPF3	High Pass Filter 3	F80	
HPF4	High Pass Filter 4	F8K	
HPF5	High Pass Filter 5	F8K	
HPFX	High Pass Filter X	F80	
ISSBAR	Barite Mud Switch	BARITE	
ITTS	Integrated Transit Time Source	DTCO	
LFC	Label Formation Character − Monopole P&S	DYNAMIC	
LPF1	Low Pass Filter 1	F5K	
LPF2	Low Pass Filter 2	F5K	
LPF3	Low Pass Filter 3	F5K	
LPF4	Low Pass Filter 4	F30K	
LPF5	Low Pass Filter 5	F30K	
LPFX	Low Pass Filter X	F5K	
LTXG	Lower Dipole Transmitter Geometry	156	IN
MAI5	Slowness Averaging Interval − FMD	42	IN
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCS	Mean Casing Slowness	57	US/F
MDS5	Multishot Delta−T Scatter − FMD	20	US
MTXG	Monopole Transmitter Geometry	186	IN
MUX1	Sum Difference Multiplexor Input 1	RR	
MUX2	Sum Difference Multiplexor Input 2	RR	
MUX3	Sum Difference Multiplexor Input 3	RR	
MUX4	Sum Difference Multiplexor Input 4	RR	
MUX5	Sum Difference Multiplexor Input 5	RR	
MUXX	Sum Difference Multiplexor Input X	RR	
NTI5	Number Threshold Items 5	0	
NTIX	Number Threshold Items X	0	
NWI1	Number Waveform Items 1	8	
NWI2	Number Waveform Items 2	8	
NWI3	Number Waveform Items 3	0	
NWI4	Number Waveform Items 4	8	
NWI5	Number Waveform Items 5	0	
NWIX	Number Waveform Items X	0	
NWS1	Number Waveforms Stacked 1	1	
NWS2	Number Waveforms Stacked 2	1	
NWS3	Number Waveforms Stacked 3	1	
NWS4	Number Waveforms Stacked 4	1	
NWS5	Number Waveforms Stacked 5	1	
NWSX	Number Waveforms Stacked X	1	
RATE	Firing Rate	R7	
RSMN	Label Shear/Compressional Minimum Ratio − Monopole P&S	1.4	
RSMX	Label Shear/Compressional Maximum Ratio − Monopole P&S	2.12	
RX1G	Receiver 1 Geometry	294	IN
RX2G	Receiver 2 Geometry	300	IN
RX3G	Receiver 3 Geometry	306	IN
RX4G	Receiver 4 Geometry	312	IN
RX5G	Receiver 5 Geometry	318	IN
RX6G	Receiver 6 Geometry	324	IN
RX7G	Receiver 7 Geometry	330	IN
RX8G	Receiver 8 Geometry	336	IN
SAM1	DSST Sonic Acquisition Mode 1 − Lower Dipole Mode	LFD_EVEN	
SAM2	DSST Sonic Acquisition Mode 2 − Upper Dipole Mode	ODD	
SAM3	DSST Sonic Acquisition Mode 3 − Monopole Mode for Stoneley	OFF	
SAM4	DSST Sonic Acquisition Mode 4 − Monopole Mode for P&S	EVEN	
SAM5	DSST Sonic Acquisition Mode 5 − Monopole Mode for FMD	OFF	
SAMX	DSST Sonic Acquisition Mode X − Both Dipoles or Monopole Mode for Expert	OFF	
SAS1	STC Sonic Array Status − Lower Dipole	255	
SAS2	STC Sonic Array Status − Upper Dipole	255	
SAS3	STC Sonic Array Status − Monopole Stoneley	255	
SAS4	STC Sonic Array Status − Monopole P&S	255	
SAS5	Sonic Array Status − FMD	255	
SBO1	STC Search Band Offset − Lower Dipole	3000	US
SBO2	STC Search Band Offset − Upper Dipole	3000	US
SBO3	STC Search Band Offset − Monopole Stoneley	3000	US
SBO4	STC Search Band Offset − Monopole P&S	500	US
SBR4	STC Baseline Removal − Monopole P&S	ON	
SBW1	STC Search Bandwidth − Lower Dipole	8000	US
SBW2	STC Search Bandwidth − Upper Dipole	8000	US
SBW3	STC Search Bandwidth − Monopole Stoneley	8000	US
SBW4	STC Search Bandwidth − Monopole P&S	2000	US
SFC1	STC Formation Character − Lower Dipole	SELECTABLE	
SFC2	STC Formation Character − Upper Dipole	SELECTABLE	
SFC3	STC Formation Character − Monopole Stoneley	SELECTABLE	
SFC4	STC Formation Character − Monopole P&S	SELECTABLE	
SFM1	STC Filter − Lower Dipole	B.3−1.5K	
SFM2	STC Filter − Upper Dipole	B1−3K	
SFM3	STC Filter − Monopole Stoneley	B.5−1.5K	
SFM4	STC Filter − Monopole P&S	B3−20K	
SHLL	Label Slowness Lower Limit − Monopole P&S Shear	235	US/F
SHT	Surface Hole Temperature	30	DEGF
SHUL	Label Slowness Upper Limit − Monopole P&S Shear	240	US/F
SLL1	STC Slowness Lower Limit − Lower Dipole	75	US/F
SLL2	STC Slowness Lower Limit − Upper Dipole	75	US/F

SLL3	STC Slowness Lower Limit − Monopole Stoneley	180	US/F
SLL4	STC Slowness Lower Limit − Monopole P&S	40	US/F
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPSO	Sonic Porosity Source	DTCO	
SST1	STC Slowness Step − Lower Dipole	4	US/F
SST2	STC Slowness Step − Upper Dipole	4	US/F
SST3	STC Slowness Step − Monopole Stoneley	4	US/F
SST4	STC Slowness Step − Monopole P&S	2	US/F
SSW1	STC Source Waveform − Lower Dipole	WF_SAM1	
SSW2	STC Source Waveform − Upper Dipole	WF_SAM2	
SSW3	STC Source Waveform − Monopole Stoneley	WF_SAM3	
SSW4	STC Source Waveform − Monopole P&S	WF_SAM4	
STLL	Label Slowness Lower Limit − Monopole Stoneley	180	US/F
STUL	Label Slowness Upper Limit − Monopole Stoneley	780	US/F
SUL1	STC Slowness Upper Limit − Lower Dipole	1200	US/F
SUL2	STC Slowness Upper Limit − Upper Dipole	1200	US/F
SUL3	STC Slowness Upper Limit − Monopole Stoneley	780	US/F
SUL4	STC Slowness Upper Limit − Monopole P&S	240	US/F
SWD1	STC Slowness Width − Lower Dipole	40	US/F
SWD2	STC Slowness Width − Upper Dipole	40	US/F
SWD3	STC Slowness Width − Monopole Stoneley	40	US/F
SWD4	STC Slowness Width − Monopole P&S	10	US/F
TBDB	Tool String Bottom to DSST Bottom	680.708	IN
TBF1	STC Time for Baseline Fill − Lower Dipole	0	US
TBF2	STC Time for Baseline Fill − Upper Dipole	0	US
TBF3	STC Time for Baseline Fill − Monopole Stoneley	0	US
TBF4	STC Time for Baseline Fill − Monopole P&S	300	US
TLL1	STC Time Lower Limit − Lower Dipole	600	US
TLL2	STC Time Lower Limit − Upper Dipole	600	US
TLL3	STC Time Lower Limit − Monopole Stoneley	600	US
TLL4	STC Time Lower Limit − Monopole P&S	150	US
TST1	STC Time Step − Lower Dipole	200	US
TST2	STC Time Step − Upper Dipole	200	US
TST3	STC Time Step − Monopole Stoneley	200	US
TST4	STC Time Step − Monopole P&S	50	US
TTDB	Tool String Top to DSST Bottom	1225.31	IN
TUL1	STC Time Upper Limit − Lower Dipole	20440	US
TUL2	STC Time Upper Limit − Upper Dipole	20200	US
TUL3	STC Time Upper Limit − Monopole Stoneley	12000	US
TUL4	STC Time Upper Limit − Monopole P&S	3660	US
TWA1	Transmitter Waveform Amplitude 1	179	
TWA2	Transmitter Waveform Amplitude 2	179	
TWA3	Transmitter Waveform Amplitude 3	166	
TWA4	Transmitter Waveform Amplitude 4	150	
TWA5	Transmitter Waveform Amplitude 5	150	
TWAX	Transmitter Waveform Amplitude X	179	
TWD1	STC Time Width − Lower Dipole	2000	US
TWD2	STC Time Width − Upper Dipole	2000	US
TWD3	STC Time Width − Monopole Stoneley	2000	US
TWD4	STC Time Width − Monopole P&S	1000	US
TWI1	STC Integration Time Window − Lower Dipole	1600	US
TWI2	STC Integration Time Window − Upper Dipole	1600	US
TWI3	STC Integration Time Window − Monopole Stoneley	2400	US
TWI4	STC Integration Time Window − Monopole P&S	500	US
TWR1	Transmitter Waveform Sample Rate 1	20	US
TWR2	Transmitter Waveform Sample Rate 2	5	US
TWR3	Transmitter Waveform Sample Rate 3	5	US
TWR4	Transmitter Waveform Sample Rate 4	5	US
TWR5	Transmitter Waveform Sample Rate 5	5	US
TWRX	Transmitter Waveform Sample Rate X	5	US
TWS1	Transmitter Waveform Select 1	2	
TWS2	Transmitter Waveform Select 2	0	
TWS3	Transmitter Waveform Select 3	4	
TWS4	Transmitter Waveform Select 4	6	
TWS5	Transmitter Waveform Select 5	6	
TWSX	Transmitter Waveform Select X	0	
UTXG	Upper Dipole Transmitter Geometry	162	IN
WFDTSP1	SAM1 Waveform Delta for Spectrum	0	US/F
WFDTSP2	SAM2 Waveform Delta for Spectrum	0	US/F
WFDTSP3	SAM3 Waveform Delta for Spectrum	0	US/F
WFDTSP4	SAM4 Waveform Delta for Spectrum	0	US/F
WFDTSPX	SAMX Waveform Delta for Spectrum	0	US/F
WFLLSP1	SAM1 Waveform Lower Limit for Spectrum	0	US
WFLLSP2	SAM2 Waveform Lower Limit for Spectrum	0	US
WFLLSP3	SAM3 Waveform Lower Limit for Spectrum	0	US
WFLLSP4	SAM4 Waveform Lower Limit for Spectrum	0	US
WFLLSPX	SAMX Waveform Lower Limit for Spectrum	0	US
WFM1	Waveform Mode 1	W1	
WFM2	Waveform Mode 2	W1	
WFM3	Waveform Mode 3	W1	
WFM4	Waveform Mode 4	W1	
WFM5	Waveform Mode 5	W1	
WFMX	Waveform Mode X	W1	
WFULSP1	SAM1 Waveform Upper Limit for Spectrum	20000	US
WFULSP2	SAM2 Waveform Upper Limit for Spectrum	20000	US

WFULSP3	SAM3 Waveform Upper Limit for Spectrum	20000	US
WFULSP4	SAM4 Waveform Upper Limit for Spectrum	5000	US
WFULSPX	SAMX Waveform Upper Limit for Spectrum	20000	US
XMT1	Transmitter Select 1	DLO	
XMT2	Transmitter Select 2	DUP	
XMT3	Transmitter Select 3	MONO	
XMT4	Transmitter Select 4	MONO	
XMT5	Transmitter Select 5	MONO	
XMTX	Transmitter Select X	DUP	
HLDS: Hostile Litho−Density Sonde			
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.6	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1500	V
PSDL	HLDS LS Pulse Shape Compensation DAC	30000	
PSDS	HLDS SS Pulse Shape Compensation DAC	30000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	BARITE	
ISSBAR_EDTC	Nuclear Mud Type	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	BARI	
MWCO	Mud Weight Correction Option	YES	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	30	DEGF
SOCN	Standoff Distance	0.5	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Eccentered	
U−ETELM_EDTS	Telemetry Mode for eWAFE	Standard_EDTS	
U−TELM_EDTS	Telemetry Mode for WAFE	Standard_EDTS	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	38000.00	PPM
CSIZ	Current Casing Size	5.500	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	0.0	M
FLEV	Fluid Level	−50000.00	M
MST	Mud Sample Temperature	23.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	−50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	12713	FT
TDD	Total Depth − Driller	3890.00	M
TDL	Total Depth − Logger	3900.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: MSS_Logging Vertical Scale: 1:200 Graphics File Created: 25−Apr−2019 21:10

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187

DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_NGS_016LUP	PRODUCER	25−Apr−2019 20:48	3872.3 M	3129.5 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_021PUP	FN:35	PRODUCER	25−Apr−2019 21:10	
BACKUP	MSS_LDEO_NGS_HRLA_021PUP	FN:36	PRODUCER	25−Apr−2019 21:10	

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_NGS_016LUP	PRODUCER	25−Apr−2019 20:48	3872.3 M	3129.5 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_021PUP	FN:35	PRODUCER	25−Apr−2019 21:10	3872.3 M	3129.5 M
BACKUP	MSS_LDEO_NGS_HRLA_021PUP	FN:36	PRODUCER	25−Apr−2019 21:10	3872.3 M	3129.5 M

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

PIP SUMMARY

Time Mark Every 60 S

HRLT True Resistivity (RT_HRLT)
0.2 (OHMM) 20

HRLT Resistivity 1 (RLA1)
0.2 (OHMM) 20

HRLT Resistivity 2 (RLA2)
0.2 (OHMM) 20

HRLT Resistivity 3 (RLA3)
0.2 (OHMM) 20

HLDS Bulk Density Correction (DRH)
−0.25 (G/C3) 0.25

Downlog Caliper Closed

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

Calibrated Downhole Force (CDF) (LBF)
3000 0

HRLT Resistivity 5 (RLA5)
0.2 (OHMM) 20

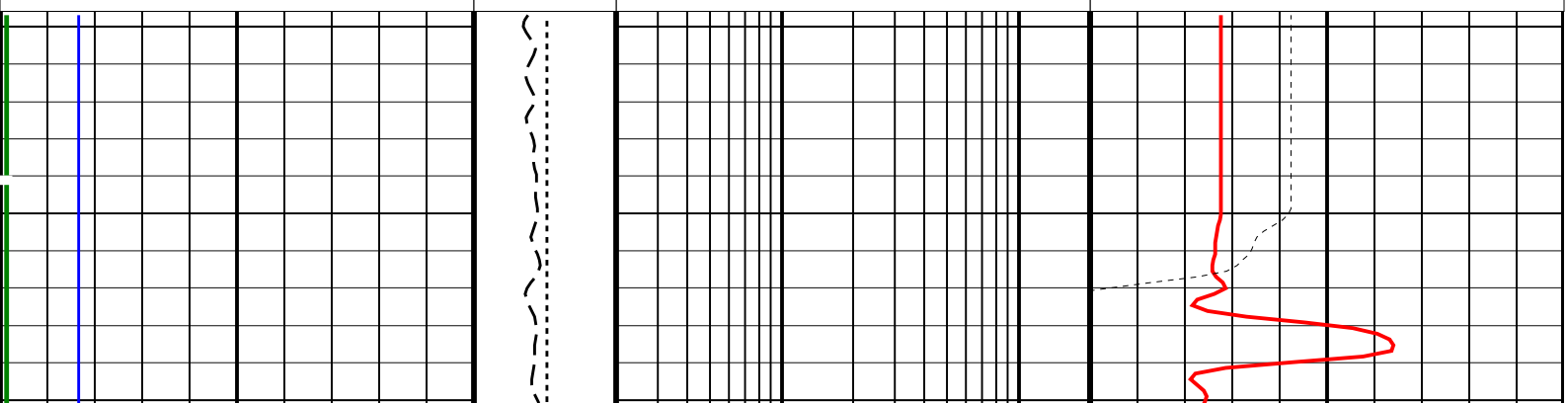
HLDS Bulk Density (RHOM)
0 (G/C3) 4

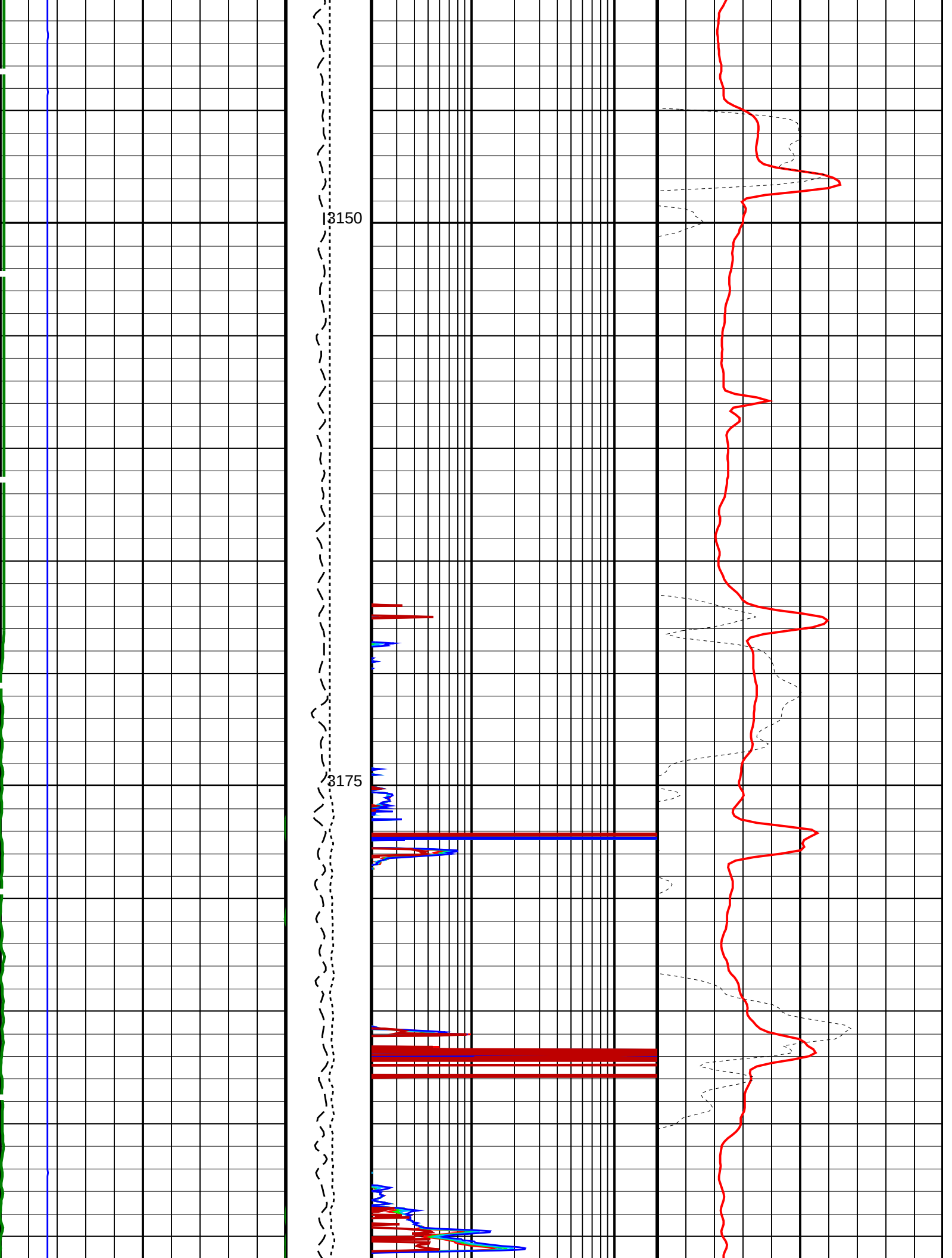
HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

HRLT Resistivity 4 (RLA4)
0.2 (OHMM) 20

HLDS Long Spaced Photoelectric Effect (PEFL)
0 (−−−−) 10

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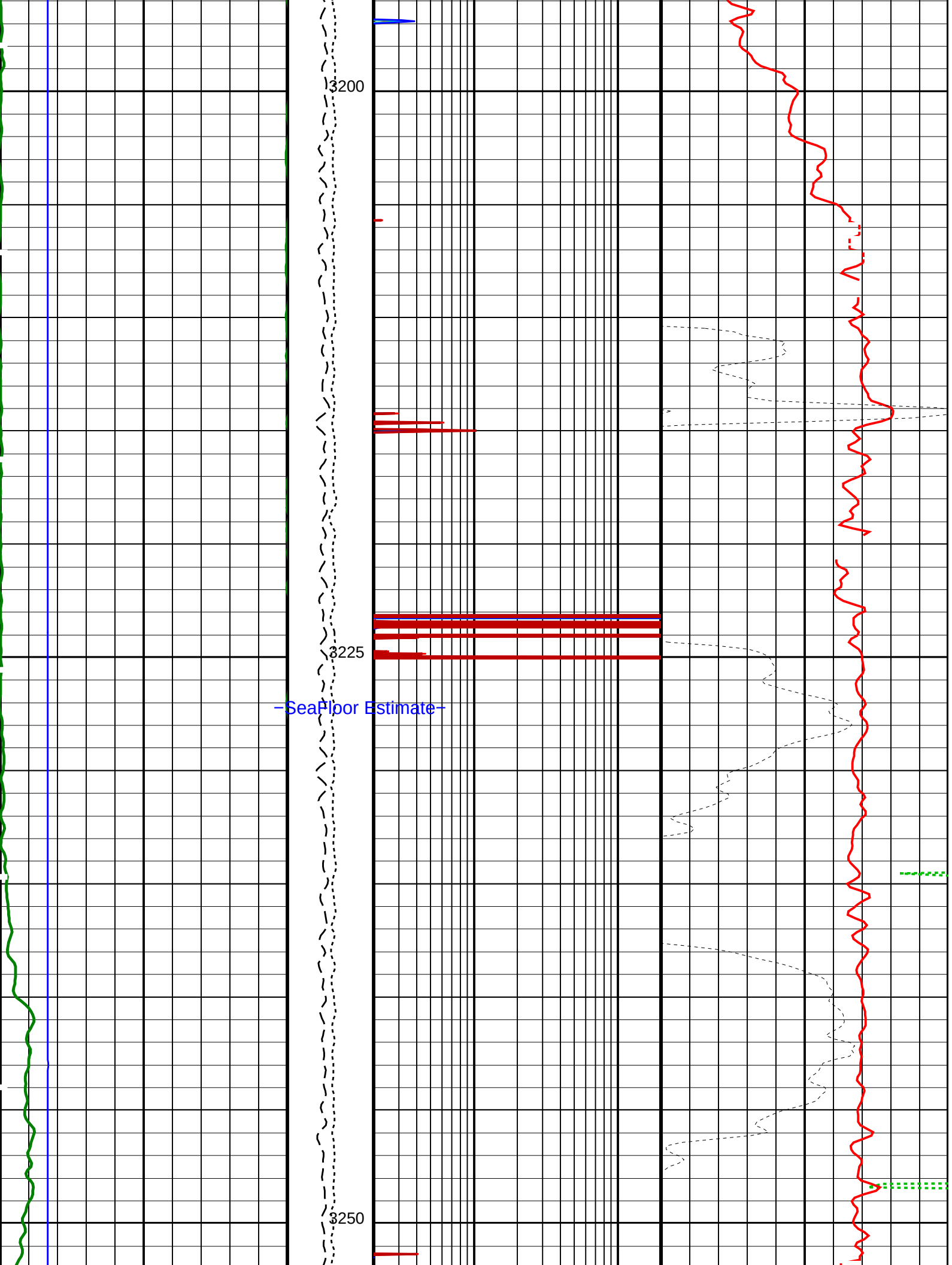
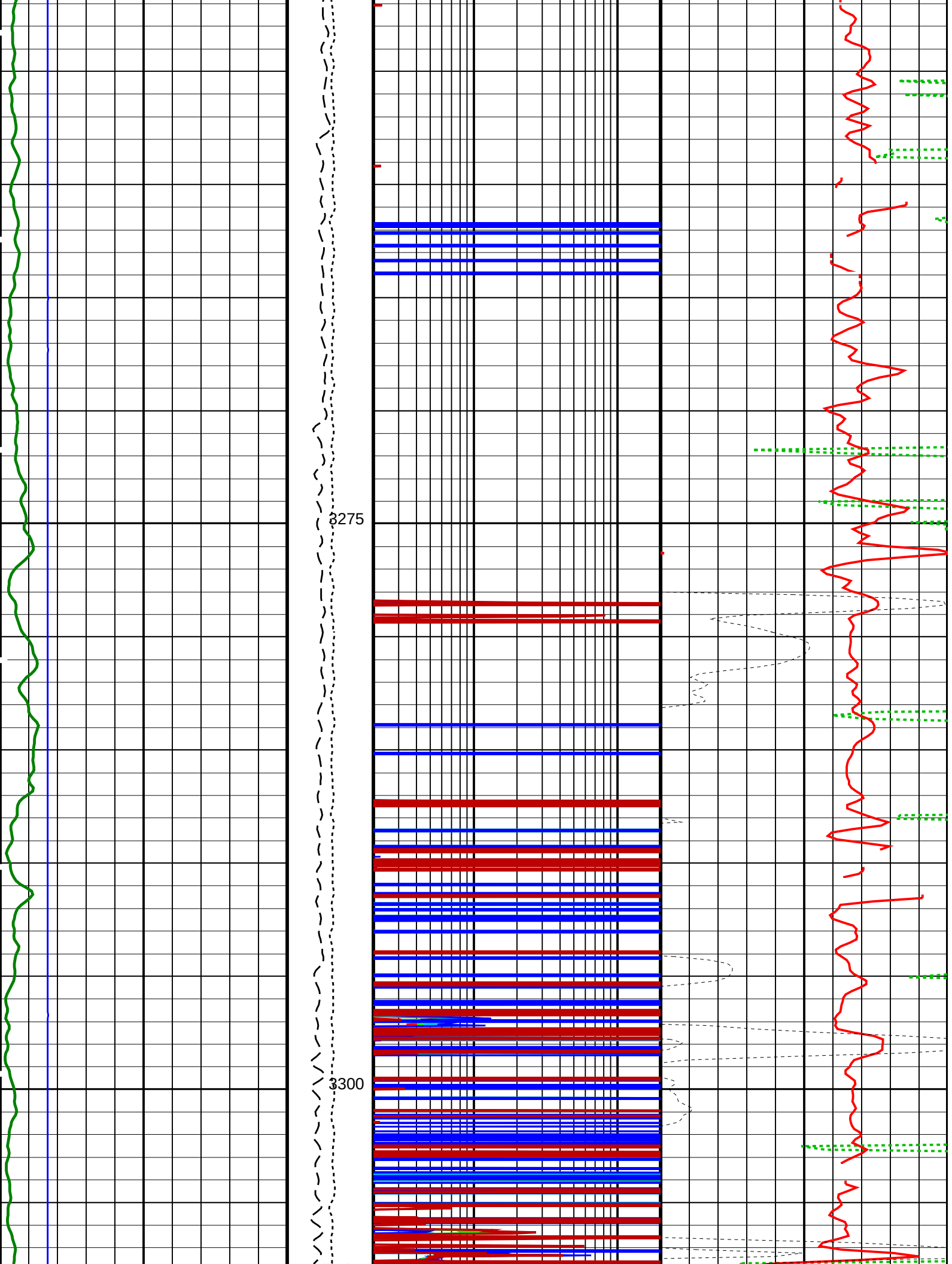

3200
3225
−SeaFloor Estimate−
3250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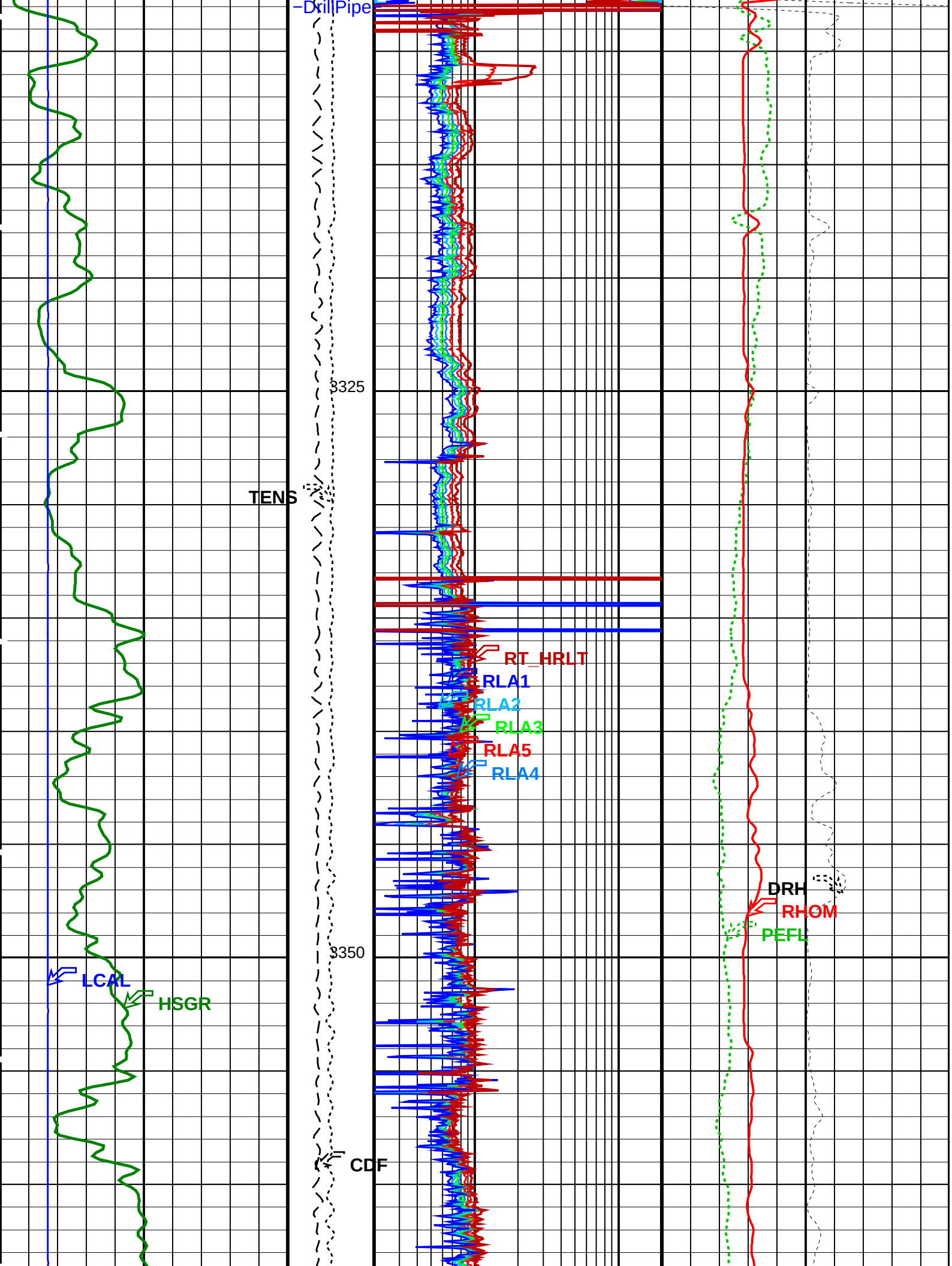
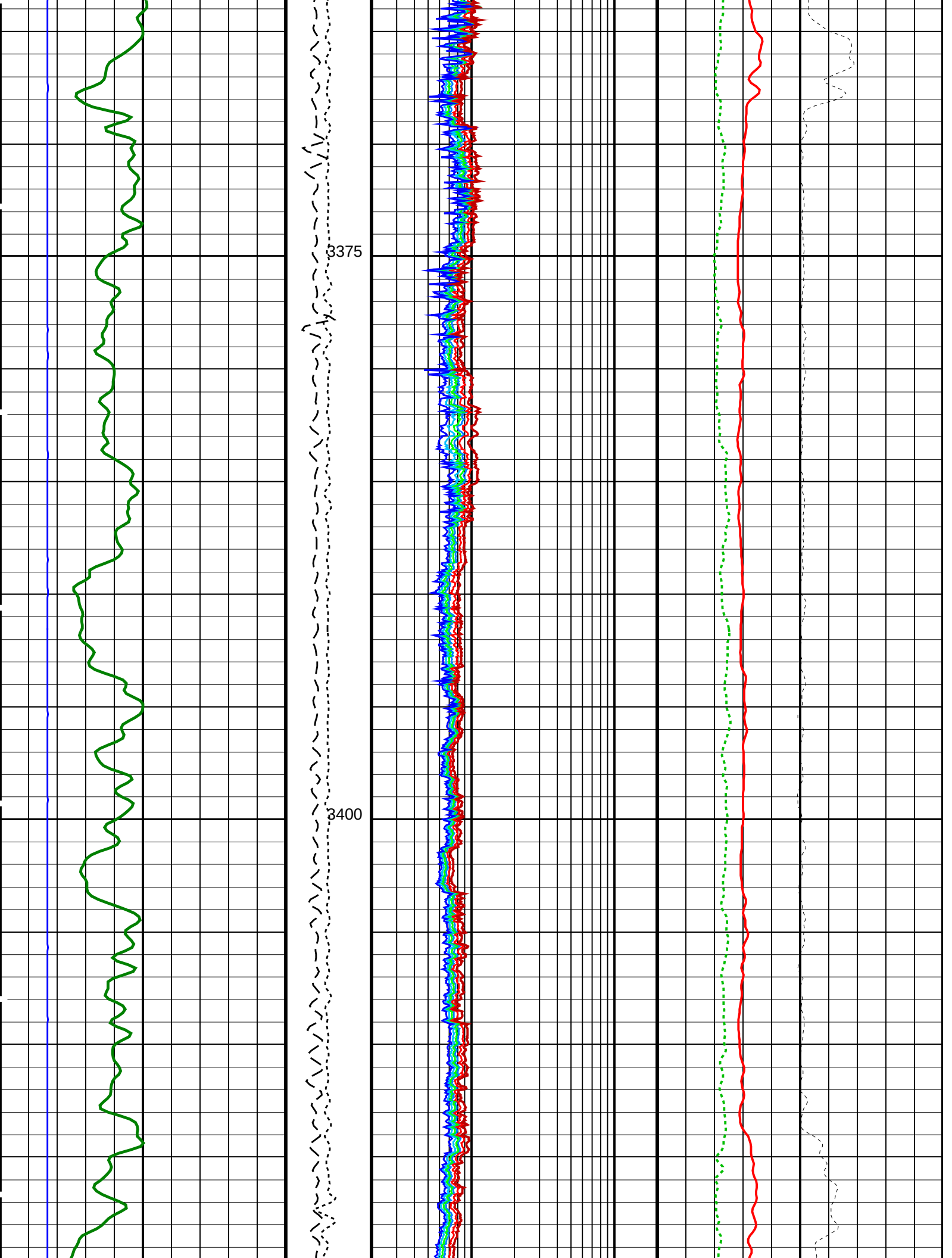

-DrillPipe
3325
TENS
RT_HRLT
RLA1
RLA2
RLA3
RLA5
RLA4
DRH
RHOM
PEFL
3350
LCAL
HSGR
CDF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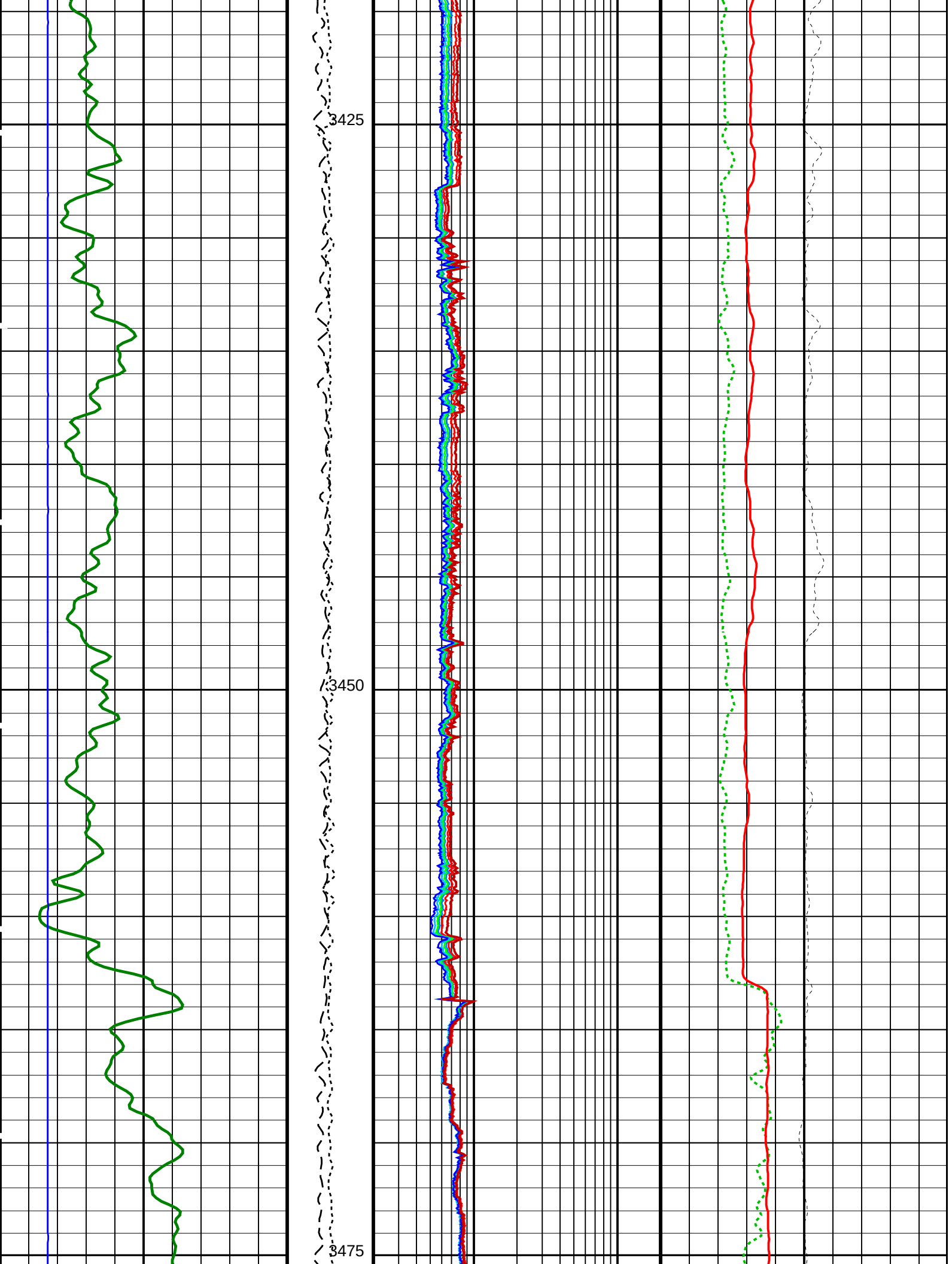
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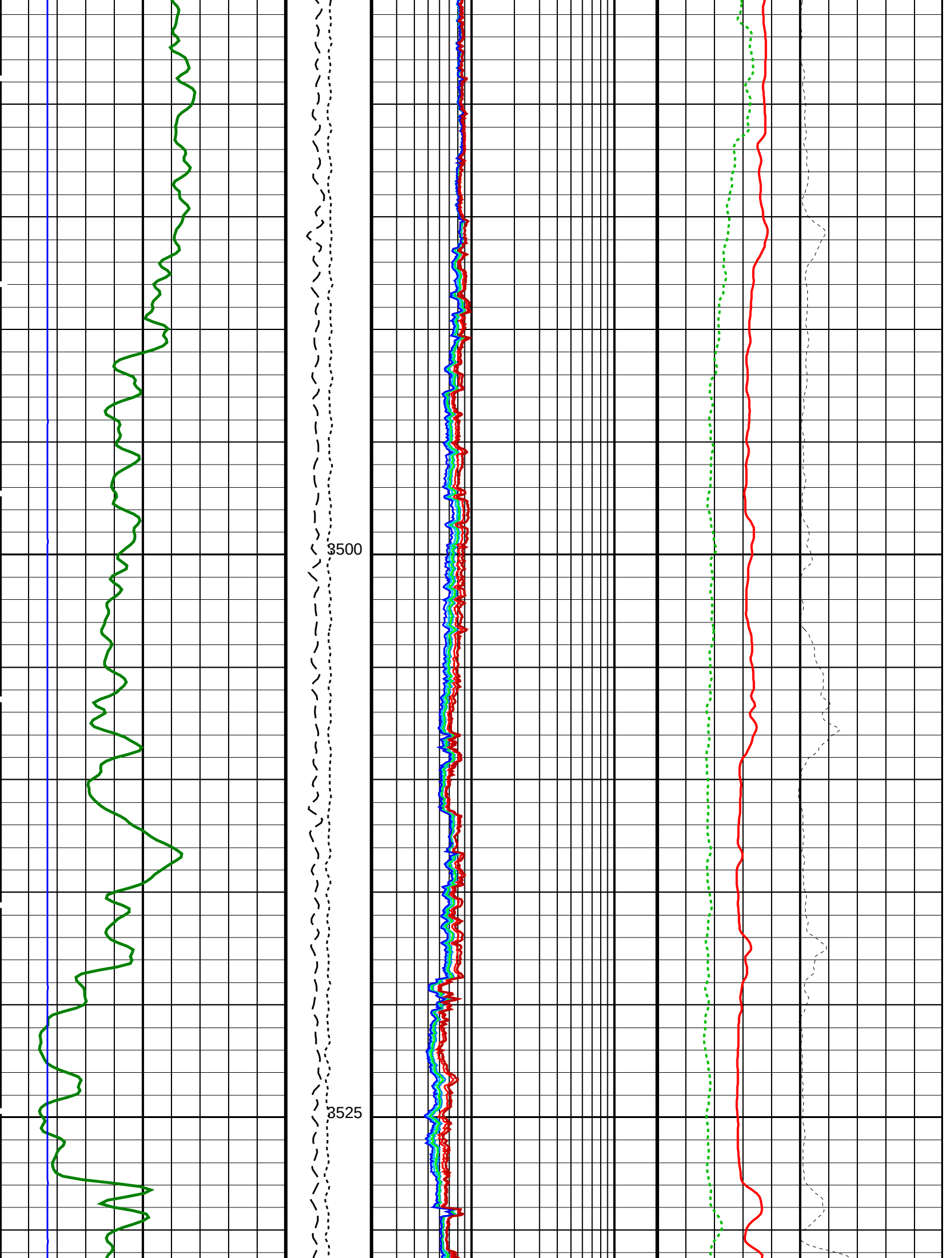
3500
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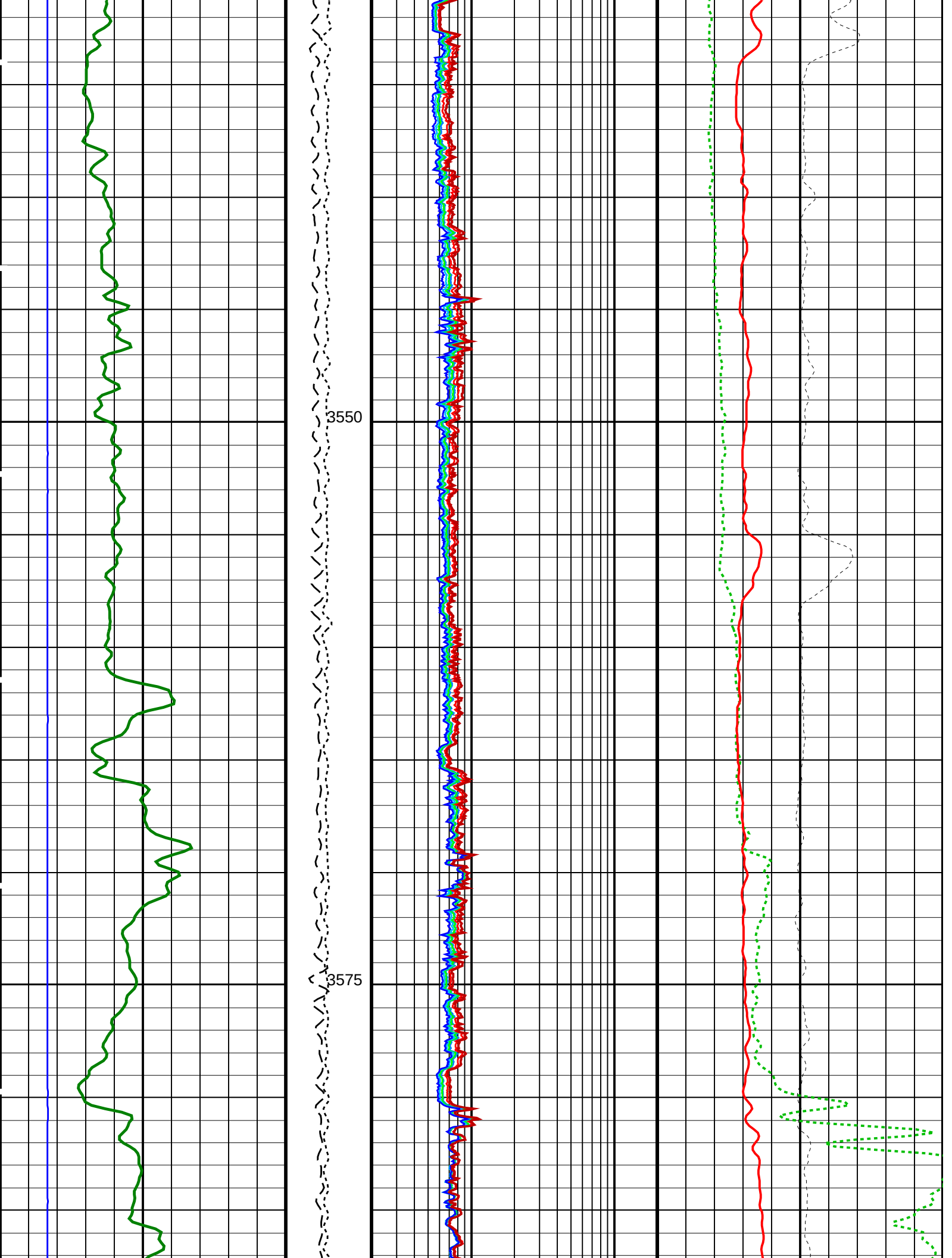
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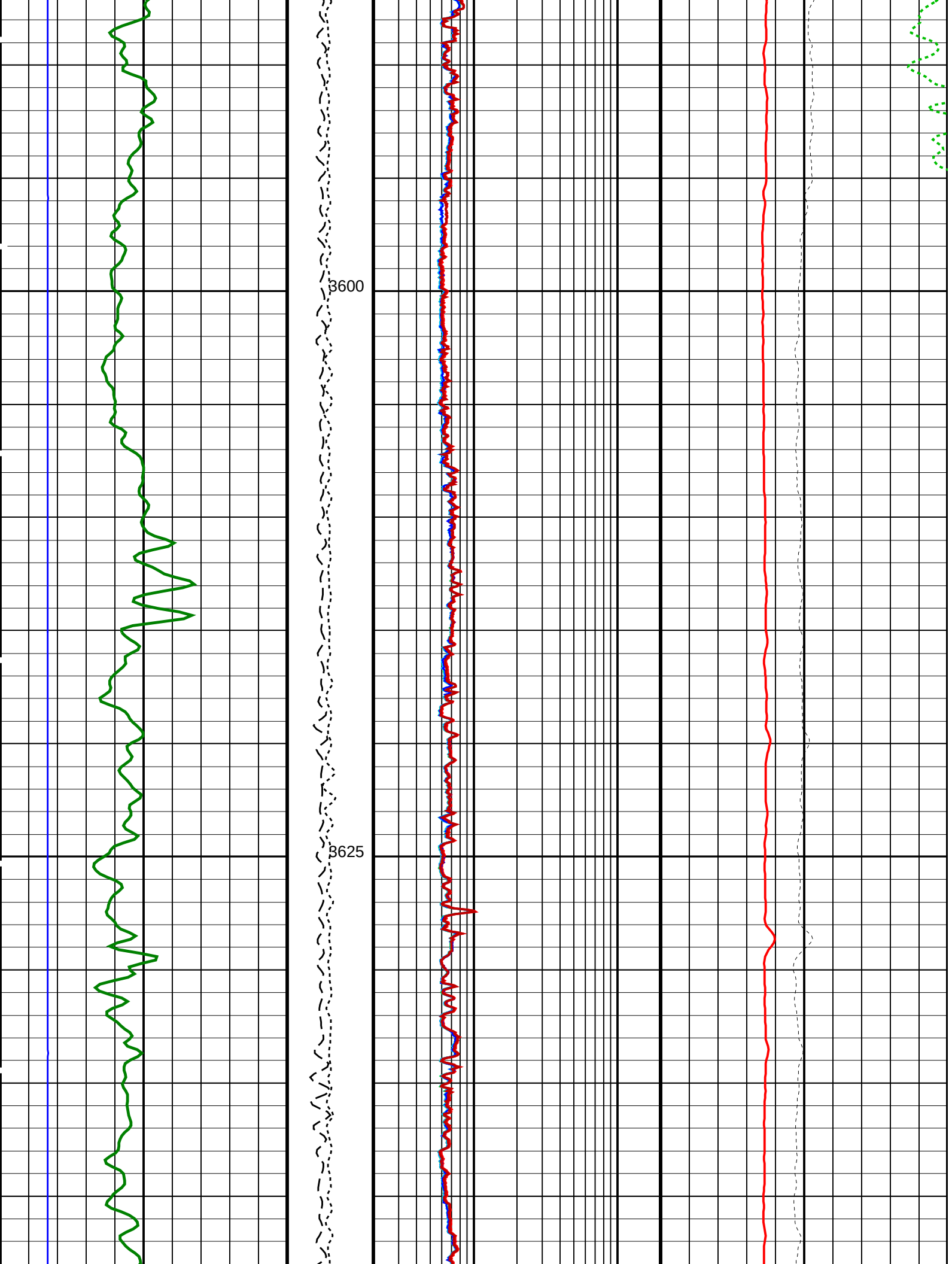
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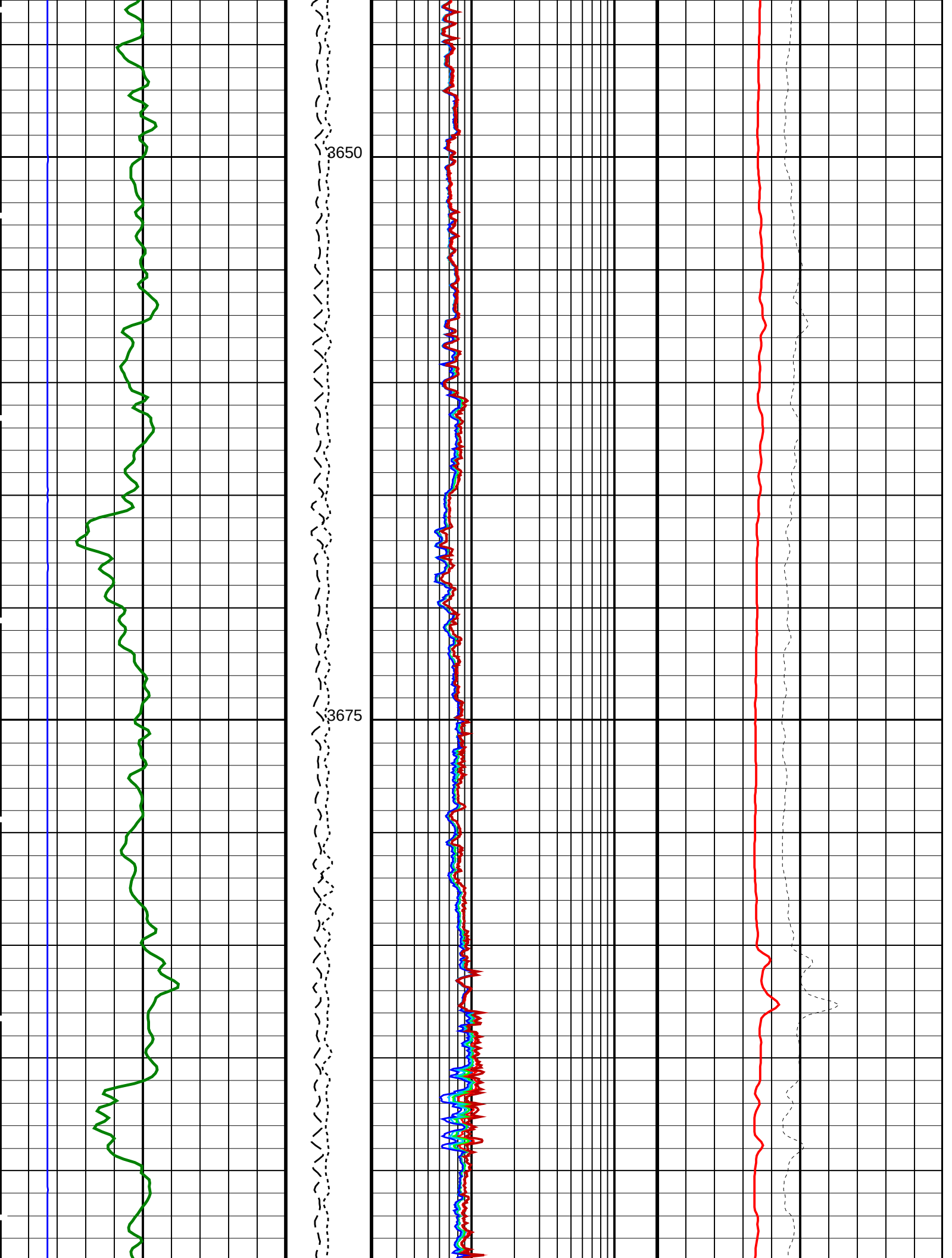
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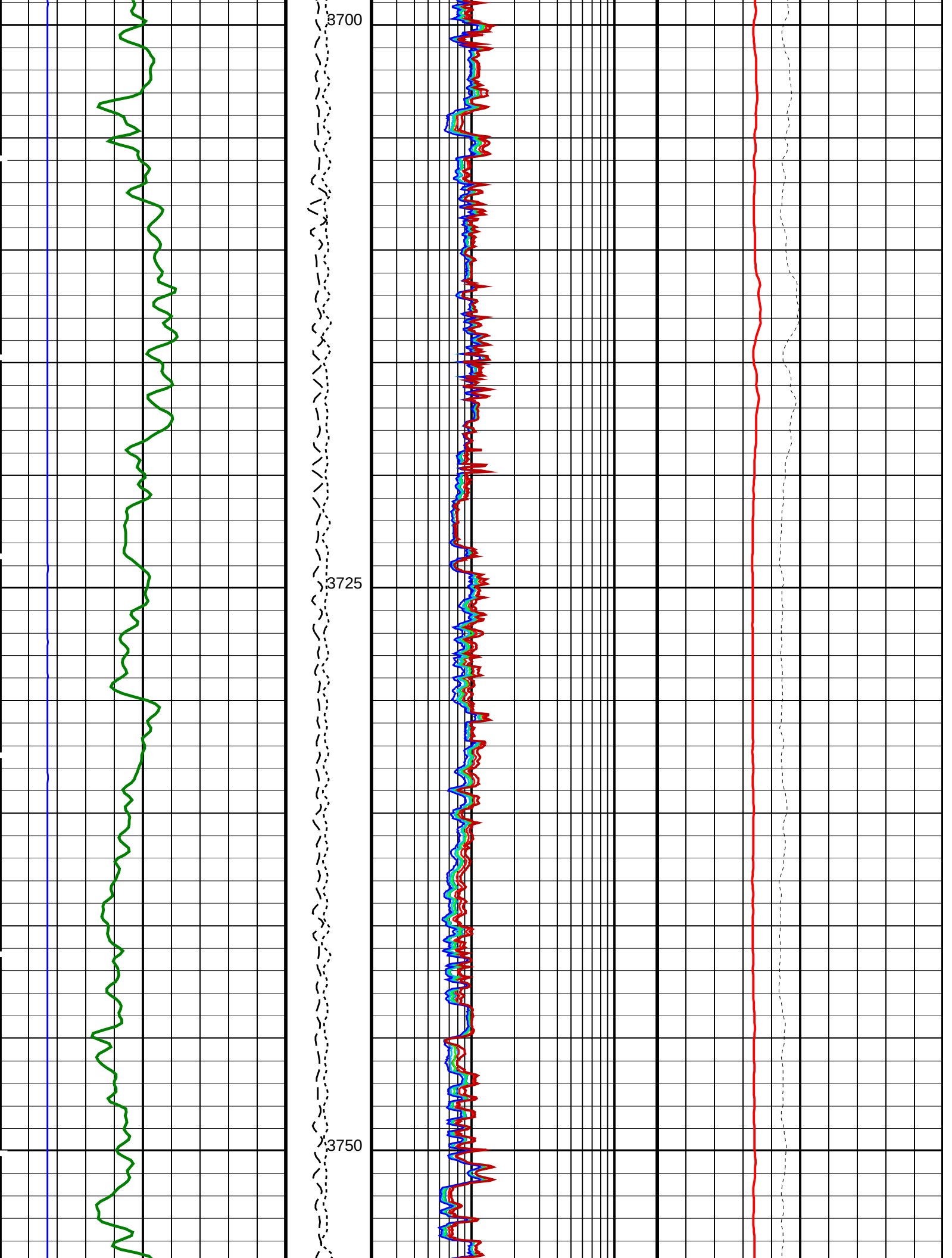
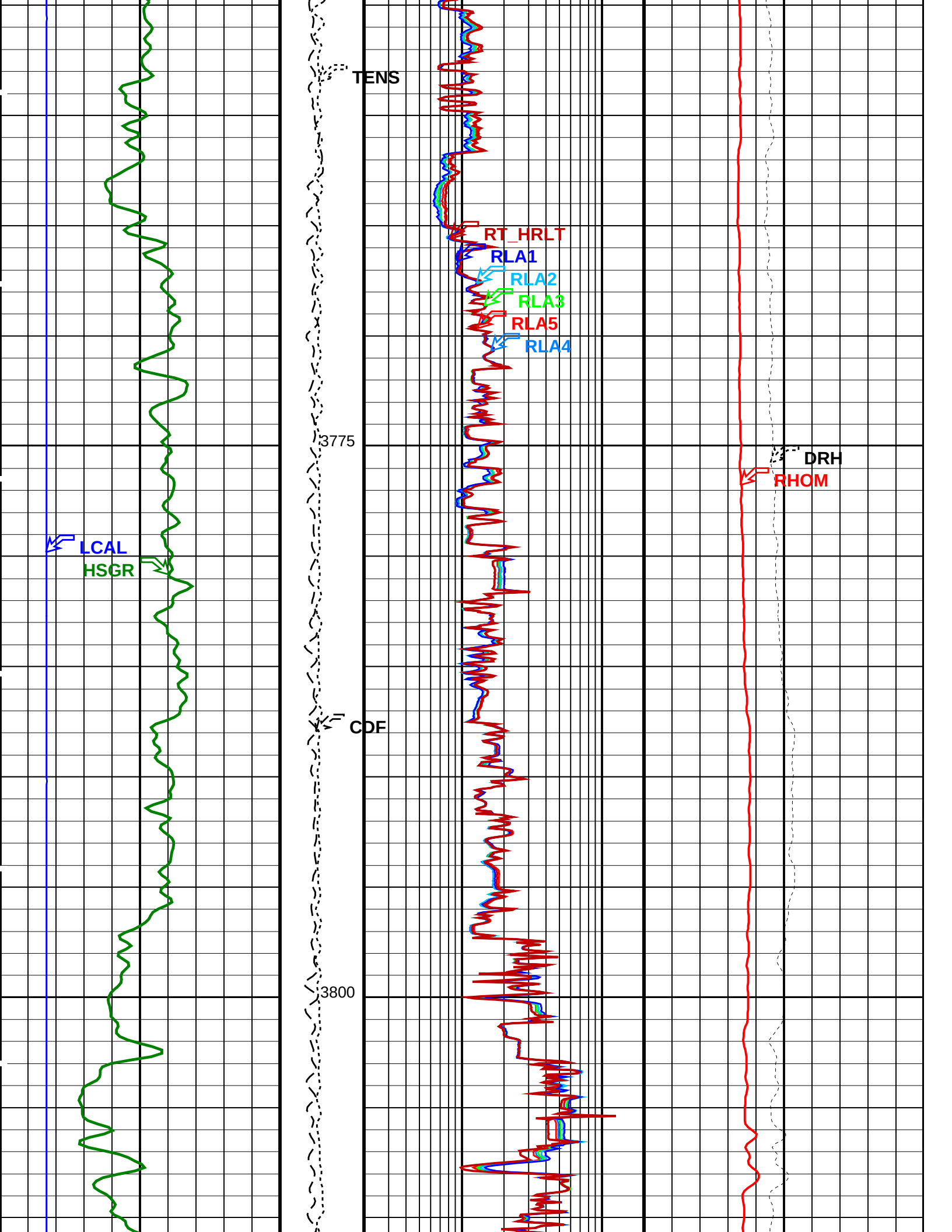
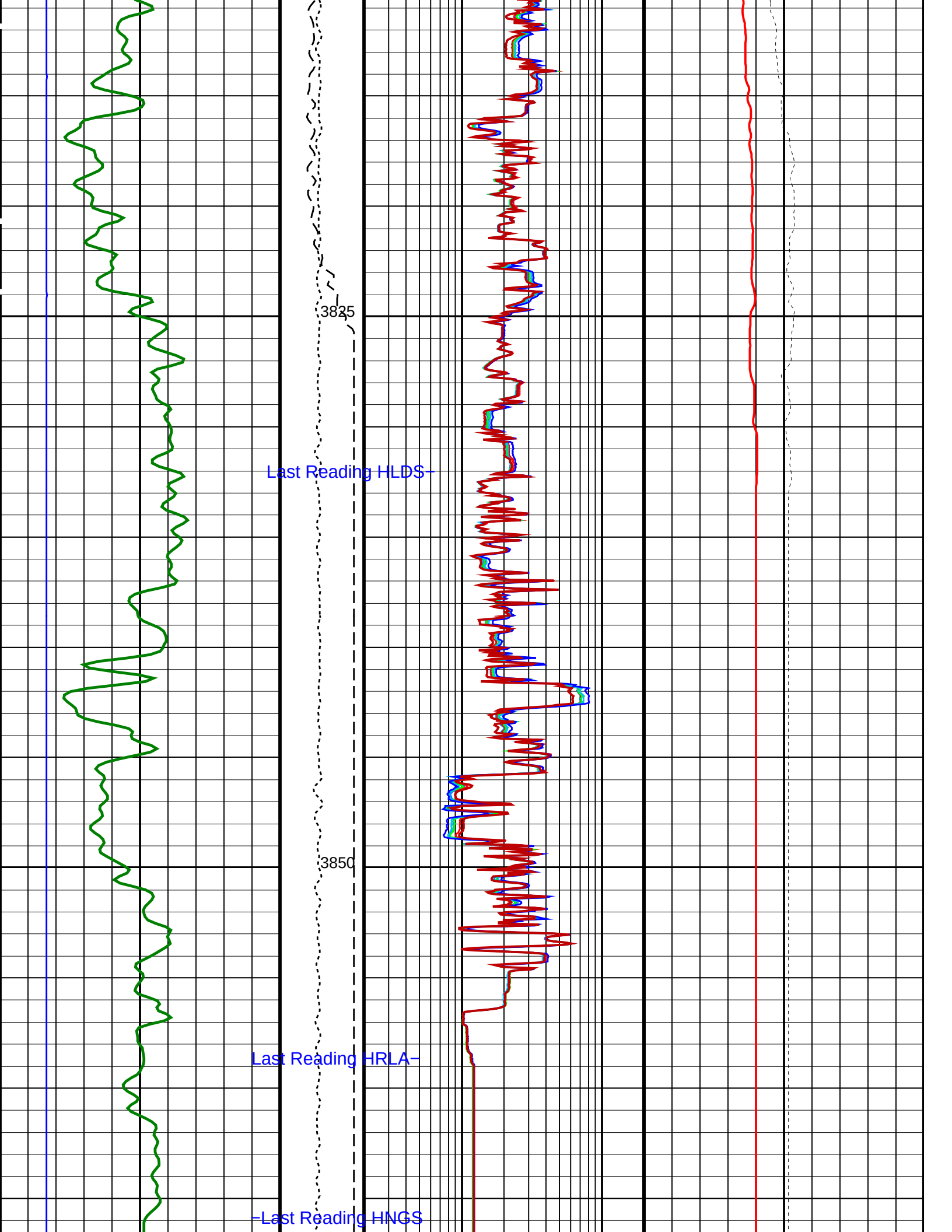

3700
3725
3750


TENS
RT_HRLT
RLA1
RLA2
RLA3
RLA5
RLA4
3775
DRH
RHOM
LCAL
HSGR
CDF
3800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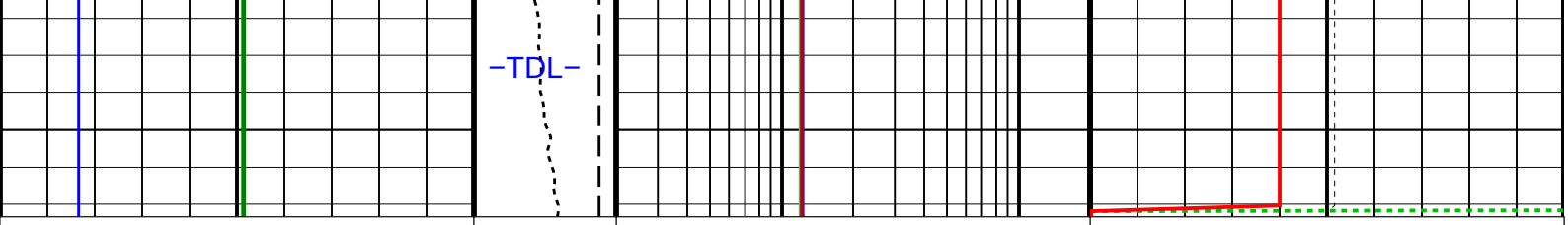
Last Reading HLDS
3850
Last Reading HRLA
Last Reading HNGS



HLDS Caliper (LCAL)	Tension (TENS) (LBF)	HRLT Resistivity 4 (RLA4)	HLDS Long Spaced Photoelectric Effect (PEFL)
0 (IN) 20	10000 0	0.2 (OHMM) 20	0 (−−−−) 10
HNGS Spectroscopy Gamma Ray (HSGR)	**Calibrated Downhole Force (CDF) (LBF)**	**HRLT Resistivity 5 (RLA5)**	**HLDS Bulk Density (RHOM)**
0 (GAPI) 100	3000 0	0.2 (OHMM) 20	0 (G/C3) 4
Downlog Caliper Closed		**HRLT Resistivity 3 (RLA3)**	**HLDS Bulk Density Correction (DRH)**
		0.2 (OHMM) 20	−0.25 (G/C3) 0.25
		HRLT Resistivity 2 (RLA2)	
		0.2 (OHMM) 20	
		HRLT Resistivity 1 (RLA1)	
		0.2 (OHMM) 20	
		HRLT True Resistivity (RT_HRLT)	
		0.2 (OHMM) 20	

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.0028203	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
SHT	Surface Hole Temperature	30	DEGF
TPOS	Tool Position	CENT	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.997292	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00458	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	0.4377	DEGC
FREQ0	HRLT Frequency Index for Mode 0	32	
FREQ1	HRLT Frequency Index for Mode 1	128	

FREQ2	HRLT Frequency Index for Mode 2	104	
FREQ3	HRLT Frequency Index for Mode 3	86	
FREQ4	HRLT Frequency Index for Mode 4	56	
FREQ5	HRLT Frequency Index for Mode 5	44	
FREQ6	HRLT Frequency Index for Mode 6	116	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	BARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROCINV	Inversion Selection	ON	
PROCMFL	Inversion Micro−Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	30	DEGF
DSST−B: Dipole Shear Imager − B			
AGC1	Automatic Gain Control 1	ON	
AGC2	Automatic Gain Control 2	ON	
AGC3	Automatic Gain Control 3	ON	
AGC4	Automatic Gain Control 4	ON	
AGC5	Automatic Gain Control 5	ON	
AGCX	Automatic Gain Control X	ON	
BARS_MTR1	Length for Monopole Transmitter to Receiver 1	2.7432	M
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
CASF	Label Casing Function − Monopole P&S	50	
CDTS	C−Delta−T Shale	100	US/F
COLL	Label Slowness Lower Limit − Monopole P&S Compressional	80	US/F
COUL	Label Slowness Upper Limit − Monopole P&S Compressional	185	US/F
DDE1	Digitizing Delay 1	0	US
DDE2	Digitizing Delay 2	0	US
DDE3	Digitizing Delay 3	0	US
DDE4	Digitizing Delay 4	0	US
DDE5	Digitizing Delay 5	0	US
DDEX	Digitizing Delay X	0	US
DLCS	Label Compressional Source − Dipole Shear	USE	
DLHS	Label Hole Diameter Source for SOBS Channel	AUTO	
DSHL	Label Slowness Lower Limit − Dipole Shear	75	US/F
DSHU	Label Slowness Upper Limit − Dipole Shear	1200	US/F
DSI1	Digitizer Sample Interval 1	40	US
DSI2	Digitizer Sample Interval 2	40	US
DSI3	Digitizer Sample Interval 3	40	US
DSI4	Digitizer Sample Interval 4	10	US
DSI5	Digitizer Sample Interval 5	10	US
DSIX	Digitizer Sample Interval X	40	US
DTCS	Compressional Delta−T Source for DTCO Channel	PS_COMP	
DTF	Delta−T Fluid	189	US/F
DTM	Delta−T Matrix	56	US/F
DTSS	Shear Delta−T Source for DTSM Channel	UPPER_DIPOLE	
DWC1	Digitizer Word Count 1	512	
DWC2	Digitizer Word Count 2	512	
DWC3	Digitizer Word Count 3	512	
DWC4	Digitizer Word Count 4	512	
DWC5	Digitizer Word Count 5	512	
DWCX	Digitizer Word Count X	512	
FDE1	Firing Delay 1	0	
FDE2	Firing Delay 2	0	
FDE3	Firing Delay 3	0	
FDE4	Firing Delay 4	0	
FDE5	Firing Delay 5	0	
FDEX	Firing Delay X	0	
FGM5	First Motion Gate Moveout 5	40	US/F
FGMX	First Motion Gate Moveout X	40	US/F
FILG	Label Fill Gap Control − Monopole P&S	COMP_SHEAR	
FMG5	First Motion Minimum Gate 5	500	US
FMGX	First Motion Minimum Gate X	500	US
FMLL	Slowness Lower Limit − FMD	40	US/F
FMRC	Restart Control − FMD	CONTINUE	
FMT5	First Motion Threshold 5	UP	
FMTX	First Motion Threshold X	NONE	
FMUL	Slowness Upper Limit − FMD	180	US/F
FNC5	First Motion Noise Counter Input 5	ALO	
FNCX	First Motion Noise Counter Input X	ALO	

FPM	Processing Mode − FMD	NONE	
FTD5	First Motion Threshold Direction 5	UP	
FTDX	First Motion Threshold Direction X	UP	
GAI1	Manual Gain 1	10	
GAI2	Manual Gain 2	10	
GAI3	Manual Gain 3	6	
GAI4	Manual Gain 4	16	
GAI5	Manual Gain 5	16	
GAIX	Manual Gain X	10	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GDT1	Gain Delta−T 1	800	US/F
GDT2	Gain Delta−T 2	800	US/F
GDT3	Gain Delta−T 3	800	US/F
GDT4	Gain Delta−T 4	160	US/F
GDT5	Gain Delta−T 5	160	US/F
GDTX	Gain Delta−T X	800	US/F
GGRD	Geothermal Gradient	0.01	DF/F
GIN1	Gain Interval 1	15360	US
GIN2	Gain Interval 2	15360	US
GIN3	Gain Interval 3	15360	US
GIN4	Gain Interval 4	2560	US
GIN5	Gain Interval 5	1600	US
GINX	Gain Interval X	15360	US
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HPF1	High Pass Filter 1	F80	
HPF2	High Pass Filter 2	F80	
HPF3	High Pass Filter 3	F80	
HPF4	High Pass Filter 4	F8K	
HPF5	High Pass Filter 5	F8K	
HPFX	High Pass Filter X	F80	
ISSBAR	Barite Mud Switch	BARITE	
ITTS	Integrated Transit Time Source	DTCO	
LFC	Label Formation Character − Monopole P&S	DYNAMIC	
LPF1	Low Pass Filter 1	F5K	
LPF2	Low Pass Filter 2	F5K	
LPF3	Low Pass Filter 3	F5K	
LPF4	Low Pass Filter 4	F30K	
LPF5	Low Pass Filter 5	F30K	
LPFX	Low Pass Filter X	F5K	
LTXG	Lower Dipole Transmitter Geometry	156	IN
MAI5	Slowness Averaging Interval − FMD	42	IN
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCS	Mean Casing Slowness	57	US/F
MDS5	Multishot Delta−T Scatter − FMD	20	US
MTXG	Monopole Transmitter Geometry	186	IN
MUX1	Sum Difference Multiplexor Input 1	RR	
MUX2	Sum Difference Multiplexor Input 2	RR	
MUX3	Sum Difference Multiplexor Input 3	RR	
MUX4	Sum Difference Multiplexor Input 4	RR	
MUX5	Sum Difference Multiplexor Input 5	RR	
MUXX	Sum Difference Multiplexor Input X	RR	
NTI5	Number Threshold Items 5	0	
NTIX	Number Threshold Items X	0	
NWI1	Number Waveform Items 1	8	
NWI2	Number Waveform Items 2	8	
NWI3	Number Waveform Items 3	0	
NWI4	Number Waveform Items 4	8	
NWI5	Number Waveform Items 5	0	
NWIX	Number Waveform Items X	0	
NWS1	Number Waveforms Stacked 1	1	
NWS2	Number Waveforms Stacked 2	1	
NWS3	Number Waveforms Stacked 3	1	
NWS4	Number Waveforms Stacked 4	1	
NWS5	Number Waveforms Stacked 5	1	
NWSX	Number Waveforms Stacked X	1	
RATE	Firing Rate	R7	
RSMN	Label Shear/Compressional Minimum Ratio − Monopole P&S	1.4	
RSMX	Label Shear/Compressional Maximum Ratio − Monopole P&S	2.12	
RX1G	Receiver 1 Geometry	294	IN
RX2G	Receiver 2 Geometry	300	IN
RX3G	Receiver 3 Geometry	306	IN
RX4G	Receiver 4 Geometry	312	IN
RX5G	Receiver 5 Geometry	318	IN
RX6G	Receiver 6 Geometry	324	IN
RX7G	Receiver 7 Geometry	330	IN
RX8G	Receiver 8 Geometry	336	IN
SAM1	DSST Sonic Acquisition Mode 1 − Lower Dipole Mode	LFD_EVEN	
SAM2	DSST Sonic Acquisition Mode 2 − Upper Dipole Mode	ODD	
SAM3	DSST Sonic Acquisition Mode 3 − Monopole Mode for Stoneley	OFF	
SAM4	DSST Sonic Acquisition Mode 4 − Monopole Mode for P&S	EVEN	
SAM5	DSST Sonic Acquisition Mode 5 − Monopole Mode for FMD	OFF	
SAMX	DSST Sonic Acquisition Mode X − Both Dipoles or Monopole Mode for Expert	OFF	

SAS1	STC Sonic Array Status − Lower Dipole	255	
SAS2	STC Sonic Array Status − Upper Dipole	255	
SAS3	STC Sonic Array Status − Monopole Stoneley	255	
SAS4	STC Sonic Array Status − Monopole P&S	255	
SAS5	Sonic Array Status − FMD	255	
SBO1	STC Search Band Offset − Lower Dipole	3000	US
SBO2	STC Search Band Offset − Upper Dipole	3000	US
SBO3	STC Search Band Offset − Monopole Stoneley	3000	US
SBO4	STC Search Band Offset − Monopole P&S	500	US
SBR4	STC Baseline Removal − Monopole P&S	ON	
SBW1	STC Search Bandwidth − Lower Dipole	8000	US
SBW2	STC Search Bandwidth − Upper Dipole	8000	US
SBW3	STC Search Bandwidth − Monopole Stoneley	8000	US
SBW4	STC Search Bandwidth − Monopole P&S	2000	US
SFC1	STC Formation Character − Lower Dipole	SELECTABLE	
SFC2	STC Formation Character − Upper Dipole	SELECTABLE	
SFC3	STC Formation Character − Monopole Stoneley	SELECTABLE	
SFC4	STC Formation Character − Monopole P&S	SELECTABLE	
SFM1	STC Filter − Lower Dipole	B.3−1.5K	
SFM2	STC Filter − Upper Dipole	B1−3K	
SFM3	STC Filter − Monopole Stoneley	B.5−1.5K	
SFM4	STC Filter − Monopole P&S	B3−20K	
SHLL	Label Slowness Lower Limit − Monopole P&S Shear	235	US/F
SHT	Surface Hole Temperature	30	DEGF
SHUL	Label Slowness Upper Limit − Monopole P&S Shear	240	US/F
SLL1	STC Slowness Lower Limit − Lower Dipole	75	US/F
SLL2	STC Slowness Lower Limit − Upper Dipole	75	US/F
SLL3	STC Slowness Lower Limit − Monopole Stoneley	180	US/F
SLL4	STC Slowness Lower Limit − Monopole P&S	40	US/F
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPSO	Sonic Porosity Source	DTCO	
SST1	STC Slowness Step − Lower Dipole	4	US/F
SST2	STC Slowness Step − Upper Dipole	4	US/F
SST3	STC Slowness Step − Monopole Stoneley	4	US/F
SST4	STC Slowness Step − Monopole P&S	2	US/F
SSW1	STC Source Waveform − Lower Dipole	WF_SAM1	
SSW2	STC Source Waveform − Upper Dipole	WF_SAM2	
SSW3	STC Source Waveform − Monopole Stoneley	WF_SAM3	
SSW4	STC Source Waveform − Monopole P&S	WF_SAM4	
STLL	Label Slowness Lower Limit − Monopole Stoneley	180	US/F
STUL	Label Slowness Upper Limit − Monopole Stoneley	780	US/F
SUL1	STC Slowness Upper Limit − Lower Dipole	1200	US/F
SUL2	STC Slowness Upper Limit − Upper Dipole	1200	US/F
SUL3	STC Slowness Upper Limit − Monopole Stoneley	780	US/F
SUL4	STC Slowness Upper Limit − Monopole P&S	240	US/F
SWD1	STC Slowness Width − Lower Dipole	40	US/F
SWD2	STC Slowness Width − Upper Dipole	40	US/F
SWD3	STC Slowness Width − Monopole Stoneley	40	US/F
SWD4	STC Slowness Width − Monopole P&S	10	US/F
TBDB	Tool String Bottom to DSST Bottom	680.708	IN
TBF1	STC Time for Baseline Fill − Lower Dipole	0	US
TBF2	STC Time for Baseline Fill − Upper Dipole	0	US
TBF3	STC Time for Baseline Fill − Monopole Stoneley	0	US
TBF4	STC Time for Baseline Fill − Monopole P&S	300	US
TLL1	STC Time Lower Limit − Lower Dipole	600	US
TLL2	STC Time Lower Limit − Upper Dipole	600	US
TLL3	STC Time Lower Limit − Monopole Stoneley	600	US
TLL4	STC Time Lower Limit − Monopole P&S	150	US
TST1	STC Time Step − Lower Dipole	200	US
TST2	STC Time Step − Upper Dipole	200	US
TST3	STC Time Step − Monopole Stoneley	200	US
TST4	STC Time Step − Monopole P&S	50	US
TTDB	Tool String Top to DSST Bottom	1225.31	IN
TUL1	STC Time Upper Limit − Lower Dipole	20440	US
TUL2	STC Time Upper Limit − Upper Dipole	20200	US
TUL3	STC Time Upper Limit − Monopole Stoneley	12000	US
TUL4	STC Time Upper Limit − Monopole P&S	3660	US
TWA1	Transmitter Waveform Amplitude 1	179	
TWA2	Transmitter Waveform Amplitude 2	179	
TWA3	Transmitter Waveform Amplitude 3	166	
TWA4	Transmitter Waveform Amplitude 4	150	
TWA5	Transmitter Waveform Amplitude 5	150	
TWAX	Transmitter Waveform Amplitude X	179	
TWD1	STC Time Width − Lower Dipole	2000	US
TWD2	STC Time Width − Upper Dipole	2000	US
TWD3	STC Time Width − Monopole Stoneley	2000	US
TWD4	STC Time Width − Monopole P&S	1000	US
TWI1	STC Integration Time Window − Lower Dipole	1600	US
TWI2	STC Integration Time Window − Upper Dipole	1600	US
TWI3	STC Integration Time Window − Monopole Stoneley	2400	US
TWI4	STC Integration Time Window − Monopole P&S	500	US
TWR1	Transmitter Waveform Sample Rate 1	20	US
TWR2	Transmitter Waveform Sample Rate 2	5	US
TWR3	Transmitter Waveform Sample Rate 3	5	US

TWR4	Transmitter Waveform Sample Rate 4	5	US
TWR5	Transmitter Waveform Sample Rate 5	5	US
TWRX	Transmitter Waveform Sample Rate X	5	US
TWS1	Transmitter Waveform Select 1	2	
TWS2	Transmitter Waveform Select 2	0	
TWS3	Transmitter Waveform Select 3	4	
TWS4	Transmitter Waveform Select 4	6	
TWS5	Transmitter Waveform Select 5	6	
TWSX	Transmitter Waveform Select X	0	
UTXG	Upper Dipole Transmitter Geometry	162	IN
WFDTSP1	SAM1 Waveform Delta for Spectrum	0	US/F
WFDTSP2	SAM2 Waveform Delta for Spectrum	0	US/F
WFDTSP3	SAM3 Waveform Delta for Spectrum	0	US/F
WFDTSP4	SAM4 Waveform Delta for Spectrum	0	US/F
WFDTSPX	SAMX Waveform Delta for Spectrum	0	US/F
WFLLSP1	SAM1 Waveform Lower Limit for Spectrum	0	US
WFLLSP2	SAM2 Waveform Lower Limit for Spectrum	0	US
WFLLSP3	SAM3 Waveform Lower Limit for Spectrum	0	US
WFLLSP4	SAM4 Waveform Lower Limit for Spectrum	0	US
WFLLSPX	SAMX Waveform Lower Limit for Spectrum	0	US
WFM1	Waveform Mode 1	W1	
WFM2	Waveform Mode 2	W1	
WFM3	Waveform Mode 3	W1	
WFM4	Waveform Mode 4	W1	
WFM5	Waveform Mode 5	W1	
WFMX	Waveform Mode X	W1	
WFULSP1	SAM1 Waveform Upper Limit for Spectrum	20000	US
WFULSP2	SAM2 Waveform Upper Limit for Spectrum	20000	US
WFULSP3	SAM3 Waveform Upper Limit for Spectrum	20000	US
WFULSP4	SAM4 Waveform Upper Limit for Spectrum	5000	US
WFULSPX	SAMX Waveform Upper Limit for Spectrum	20000	US
XMT1	Transmitter Select 1	DLO	
XMT2	Transmitter Select 2	DUP	
XMT3	Transmitter Select 3	MONO	
XMT4	Transmitter Select 4	MONO	
XMT5	Transmitter Select 5	MONO	
XMTX	Transmitter Select X	DUP	
HLDS: Hostile Litho−Density Sonde			
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.6	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1500	V
PSDL	HLDS LS Pulse Shape Compensation DAC	30000	
PSDS	HLDS SS Pulse Shape Compensation DAC	30000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	BARITE	
ISSBAR_EDTC	Nuclear Mud Type	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	BARI	
MWCO	Mud Weight Correction Option	YES	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	30	DEGF
SOCN	Standoff Distance	0.5	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Eccentered	
U−ETELM_EDTS	Telemetry Mode for eWAFE	Standard_EDTS	

U−TELM_EDTS	Telemetry Mode for WAFE	Standard_EDTS	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	38000.00	PPM
CSIZ	Current Casing Size	5.500	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	0.0	M
FLEV	Fluid Level	−50000.00	M
MST	Mud Sample Temperature	23.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	−50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	12713	FT
TDD	Total Depth − Driller	3890.00	M
TDL	Total Depth − Logger	3900.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo Vertical Scale: 1:200 Graphics File Created: 25−Apr−2019 21:10

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_NGS_016LUP		PRODUCER	25−Apr−2019 20:48	3872.3 M	3129.5 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_021PUP	FN:35	PRODUCER	25−Apr−2019 21:10		
BACKUP	MSS_LDEO_NGS_HRLA_021PUP	FN:36	PRODUCER	25−Apr−2019 21:10		

Input DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_012LUP	FN:19	PRODUCER	25−Apr−2019 10:00	3872.5 M	3220.1 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_026PUP	FN:45	PRODUCER	25−Apr−2019 22:08	3872.5 M	3220.2 M
BACKUP	MSS_LDEO_NGS_HRLA_026PUP	FN:46	PRODUCER	25−Apr−2019 22:08	3872.5 M	3220.2 M

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

Area1
From HCGR to HSGR

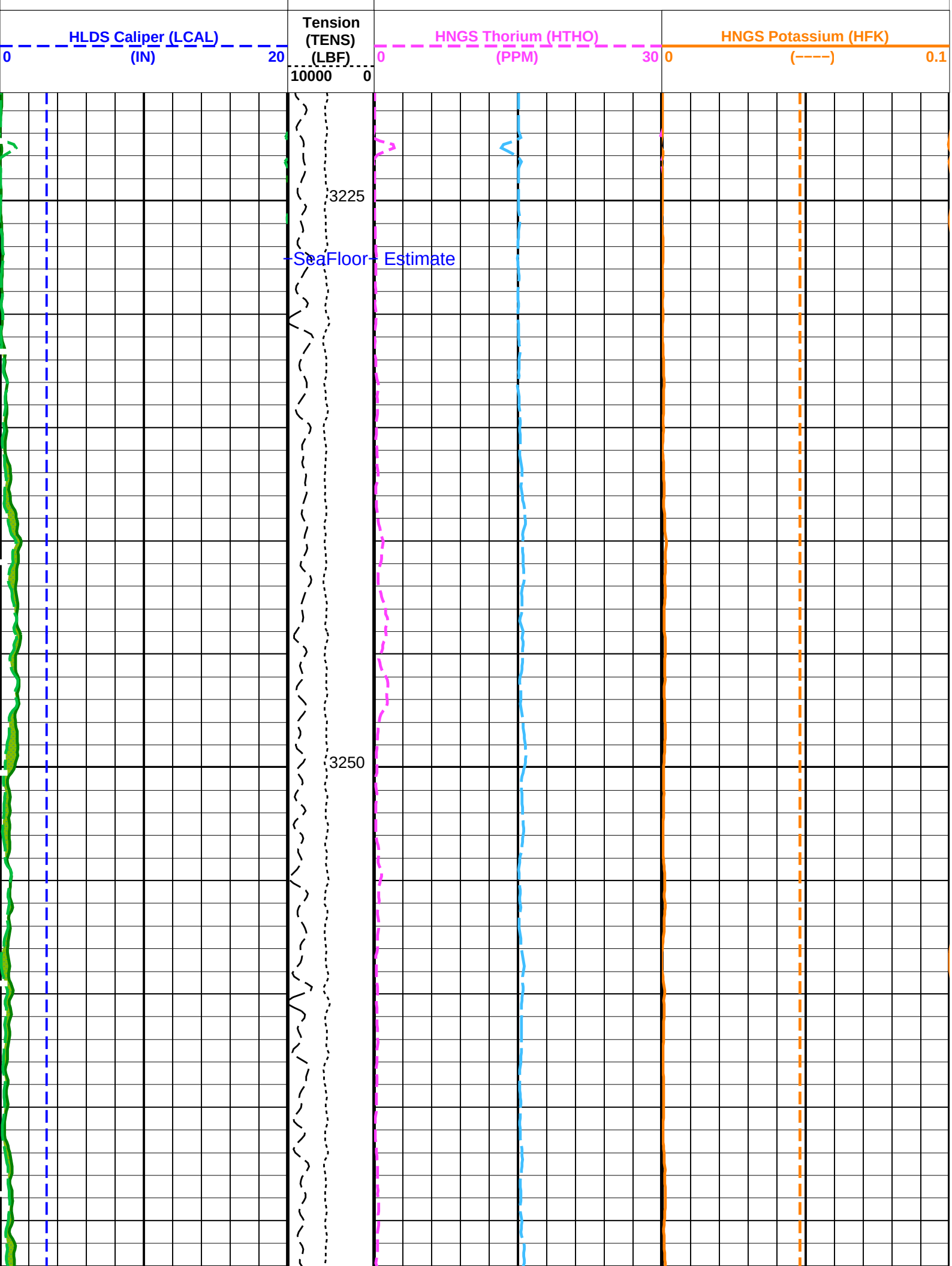
Uplog

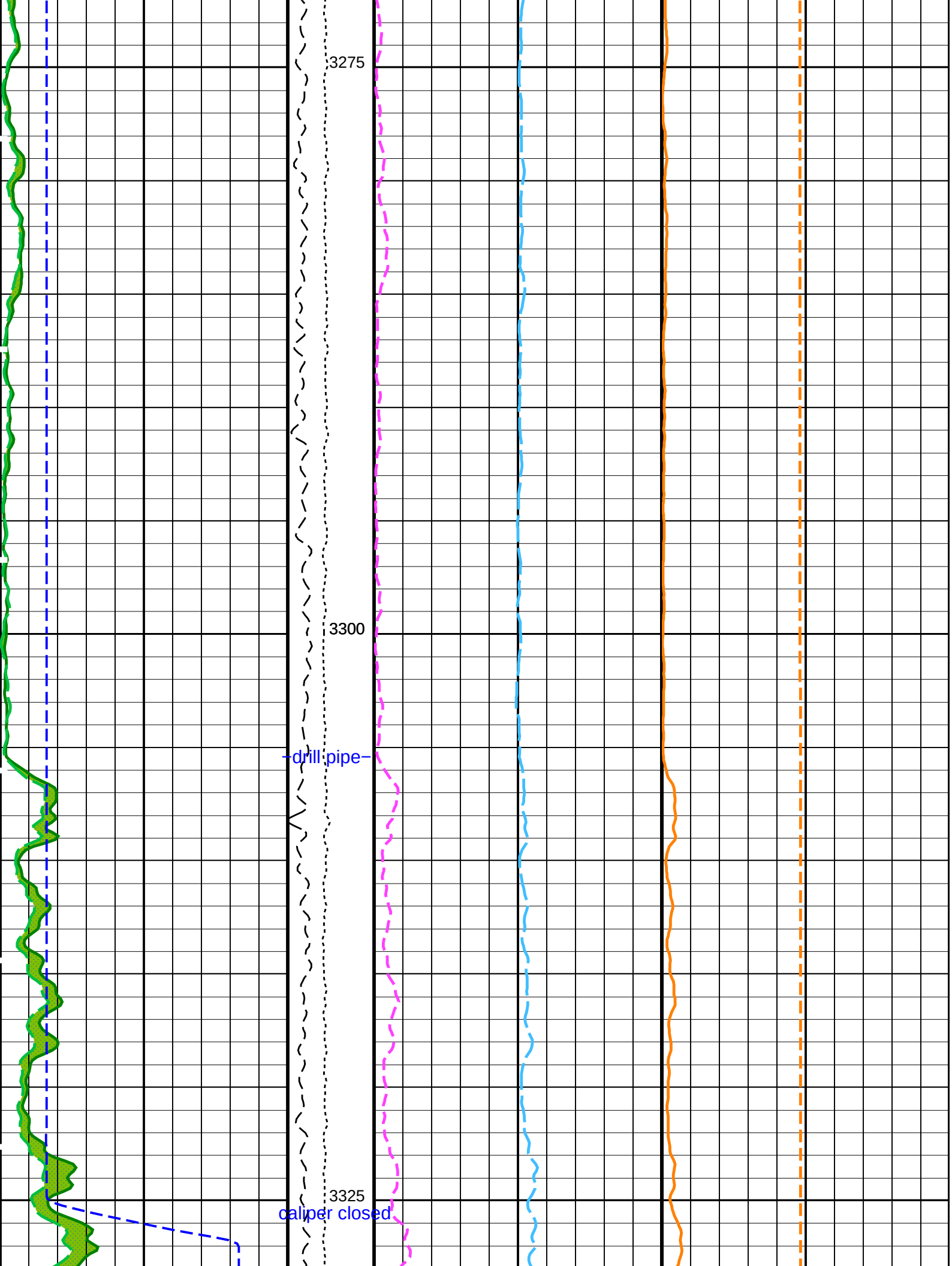
HNGS Borehole Potassium (HBHK)
−0.05 (−−−−) 0.05

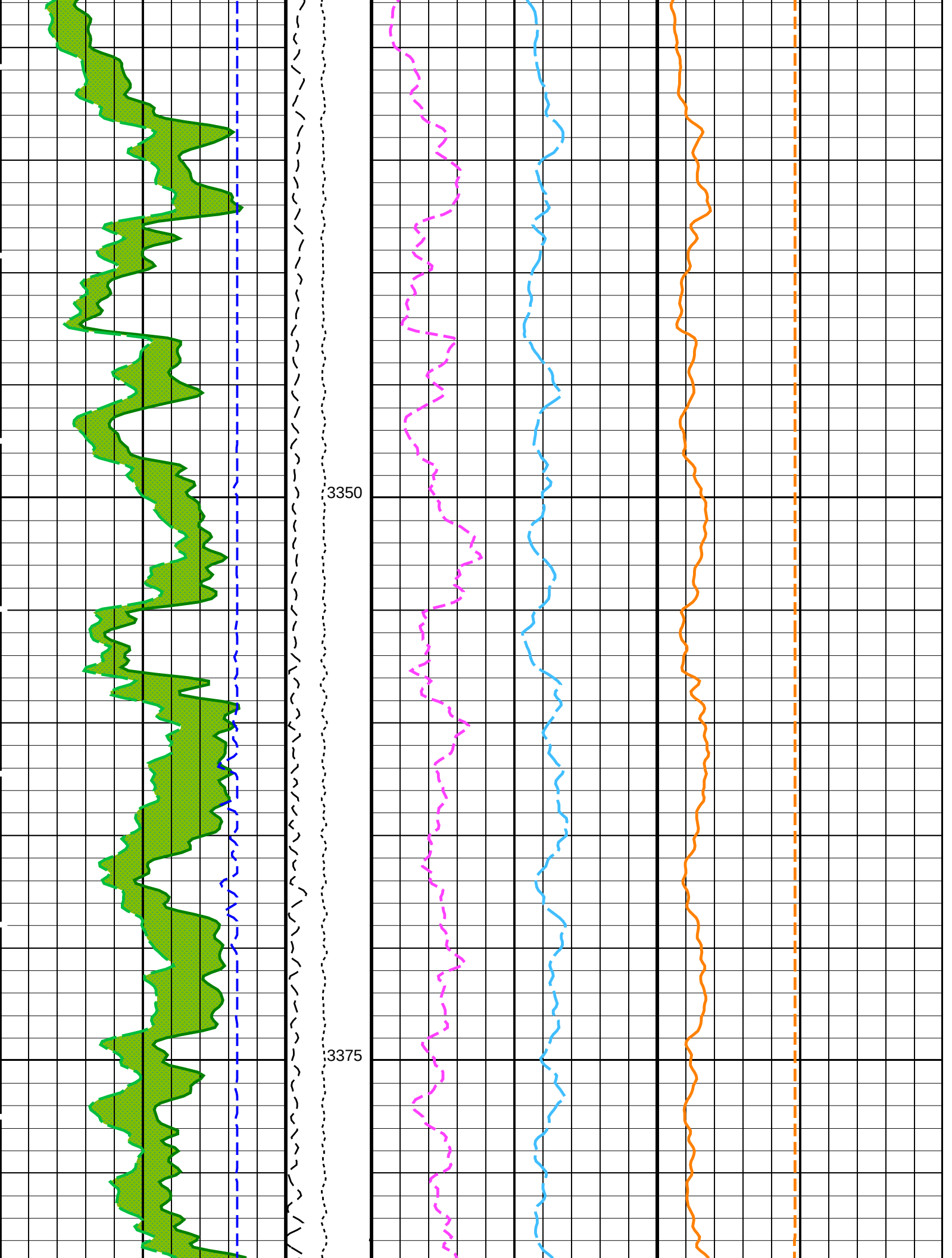
HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 100

Calibrated Downhole Force (CDF) (LBF)
−200 1800

HNGS Uranium (HURA)
−10 (PPM) 30


HLDS Caliper (LCAL)
0
(IN)
20
Tension
(TENS)
(LBF)
10000
0
HNGS Thorium (HTHO)
0
(PPM)
30
HNGS Potassium (HFK)
0
(----)
0.1
3225
SeaFloor Estimate
3250


3275
3300
drill pipe
3325
caliper closed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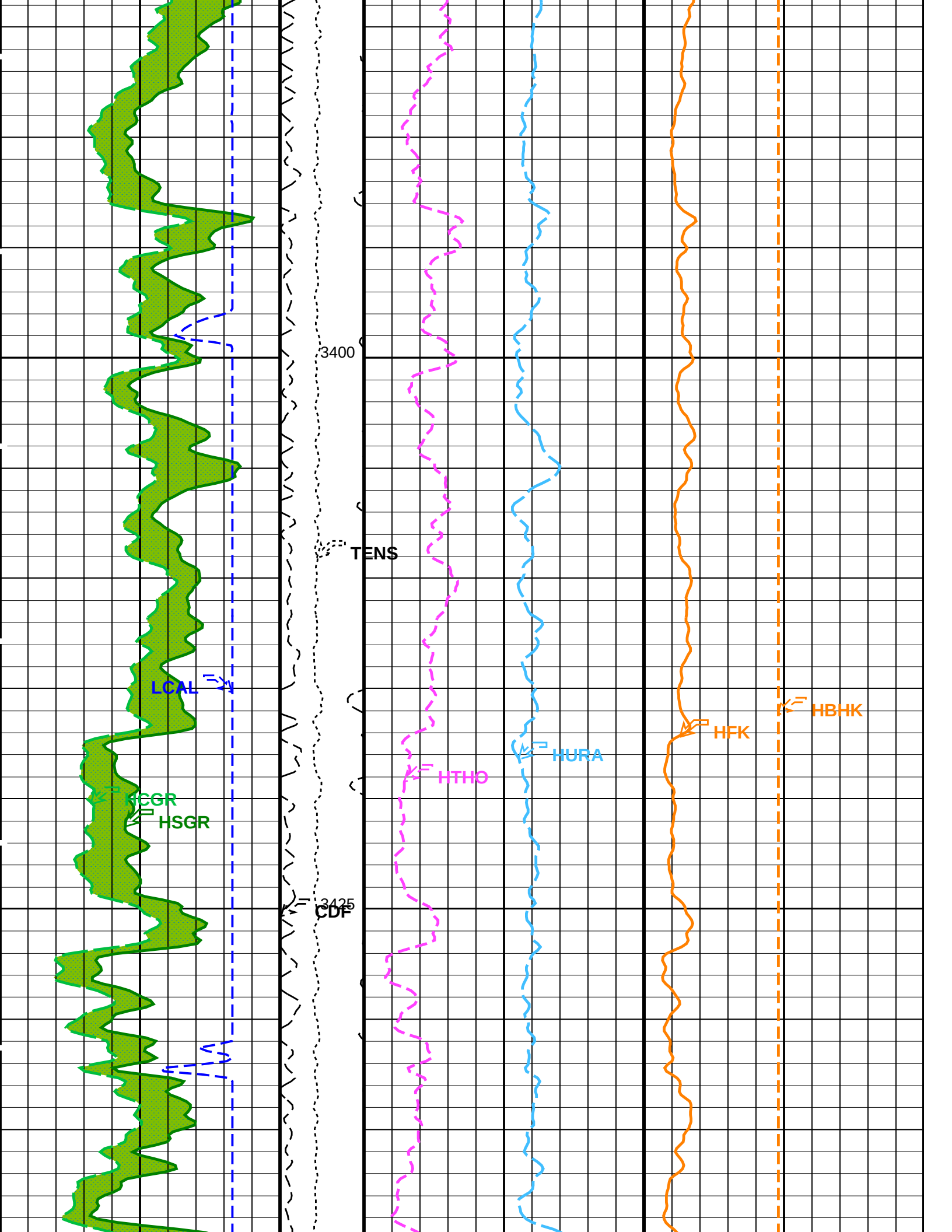
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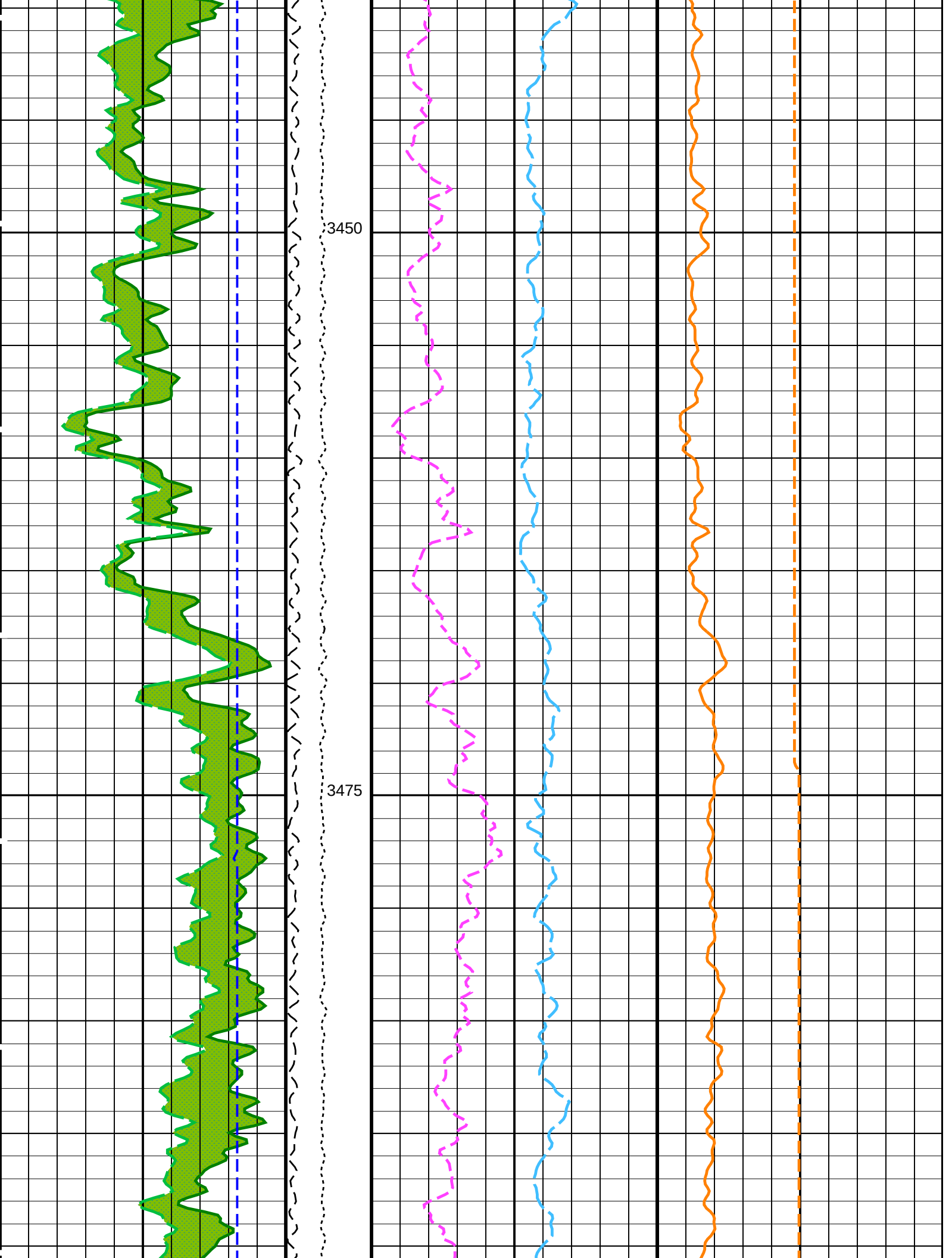
TENS
LCAL
HCGR
HSGR
3425
CDF
HTHO
HURA
HFK
HBHK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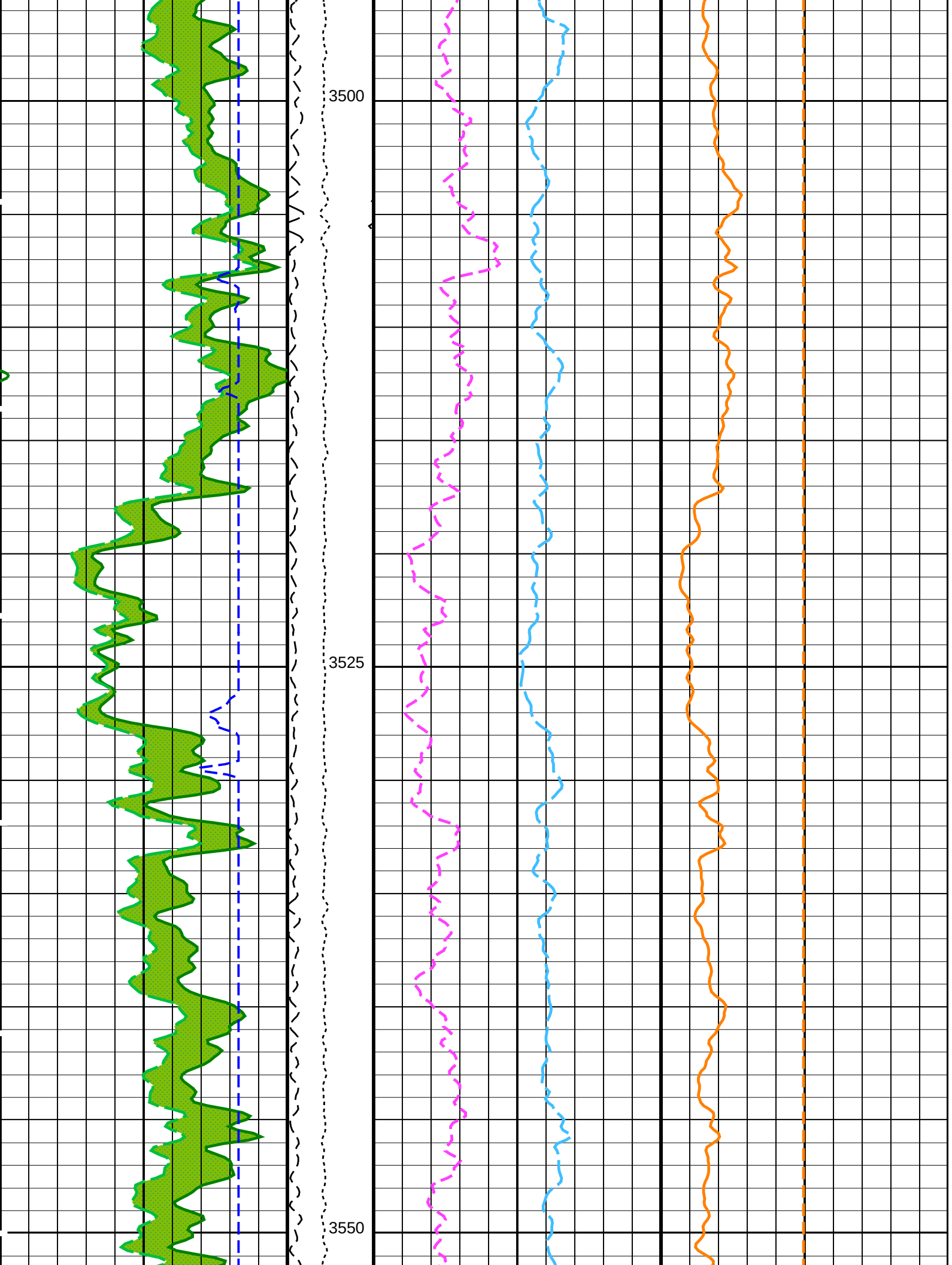
3475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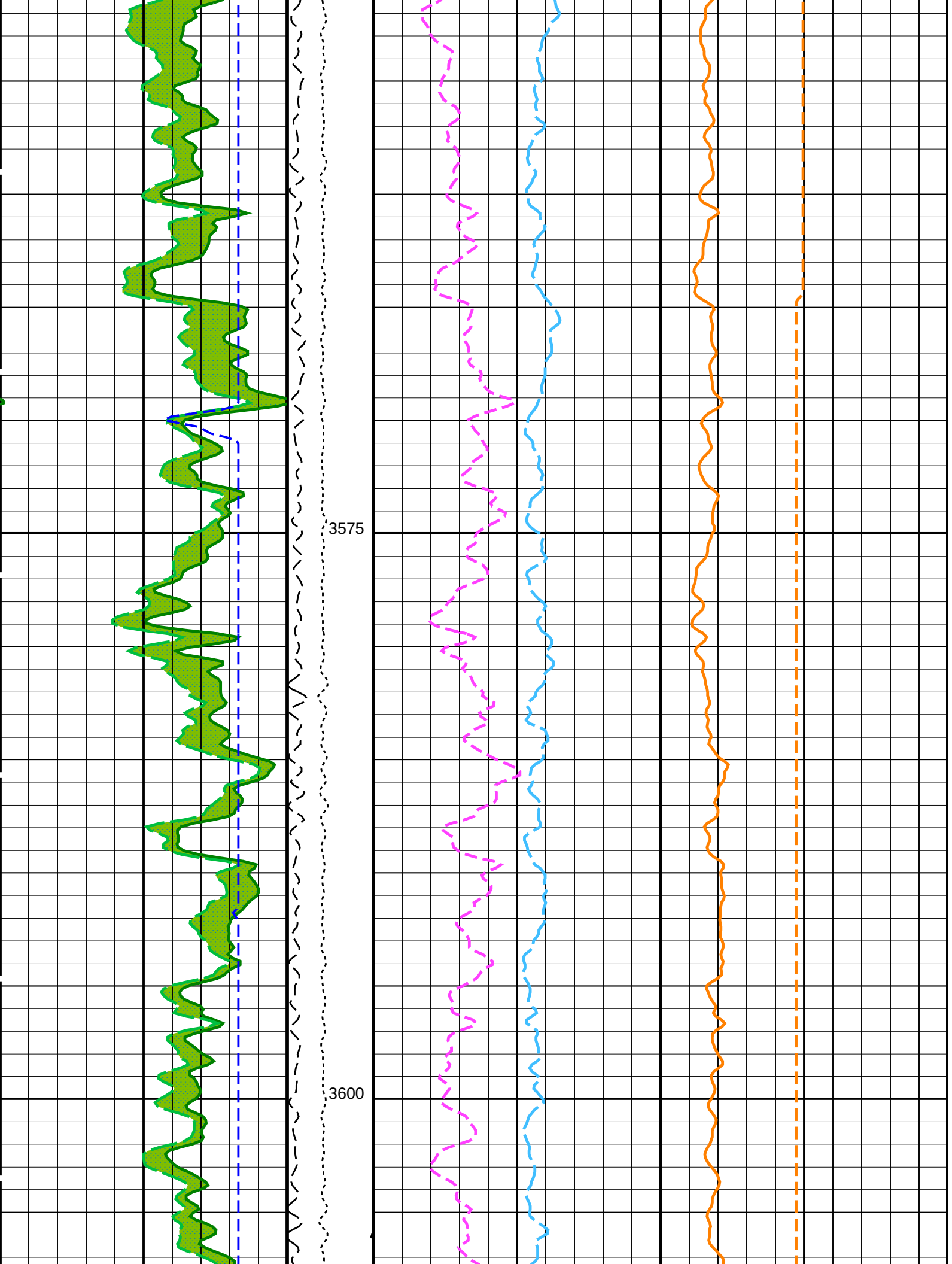
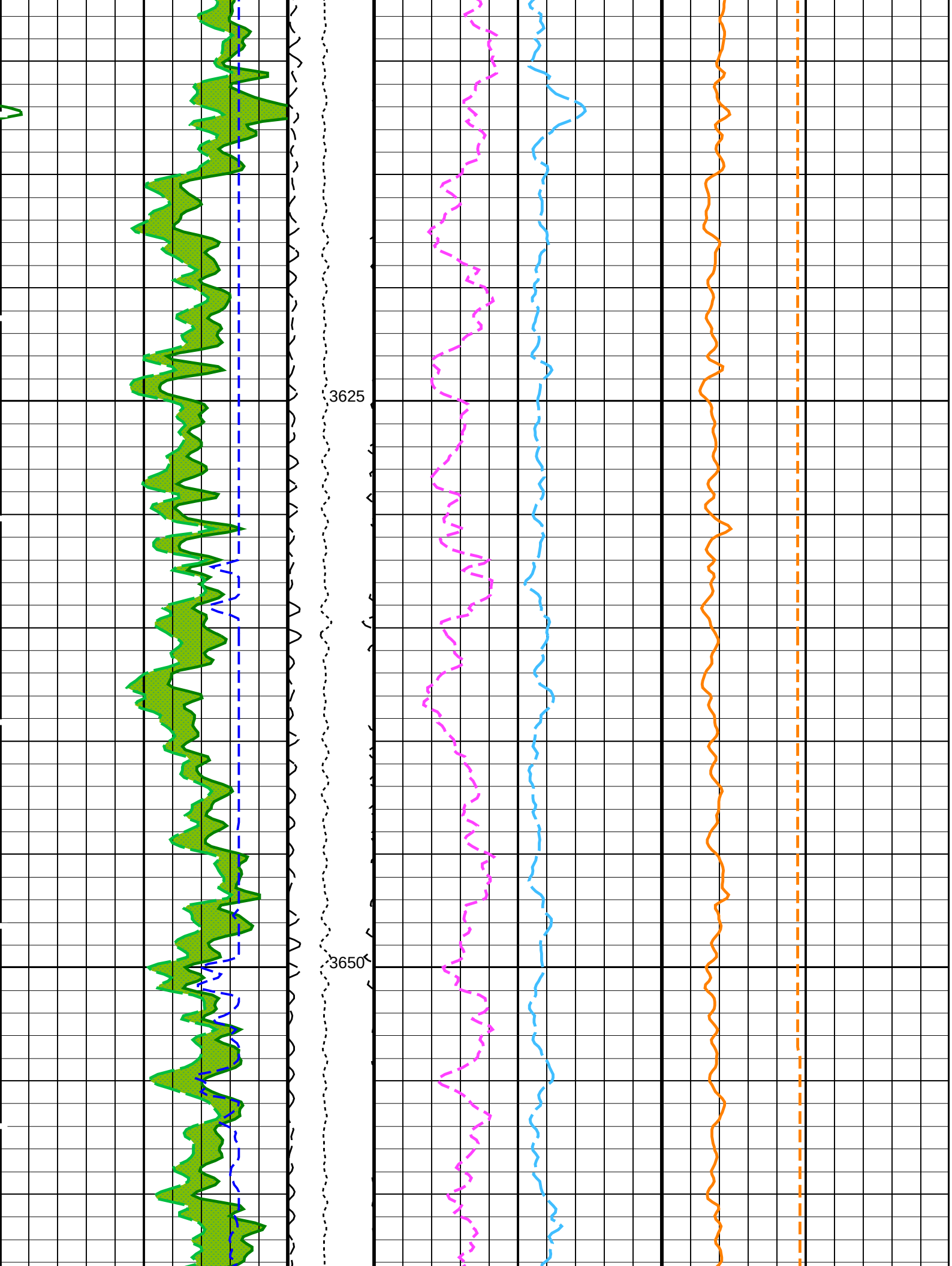
3525
3550


3575
3600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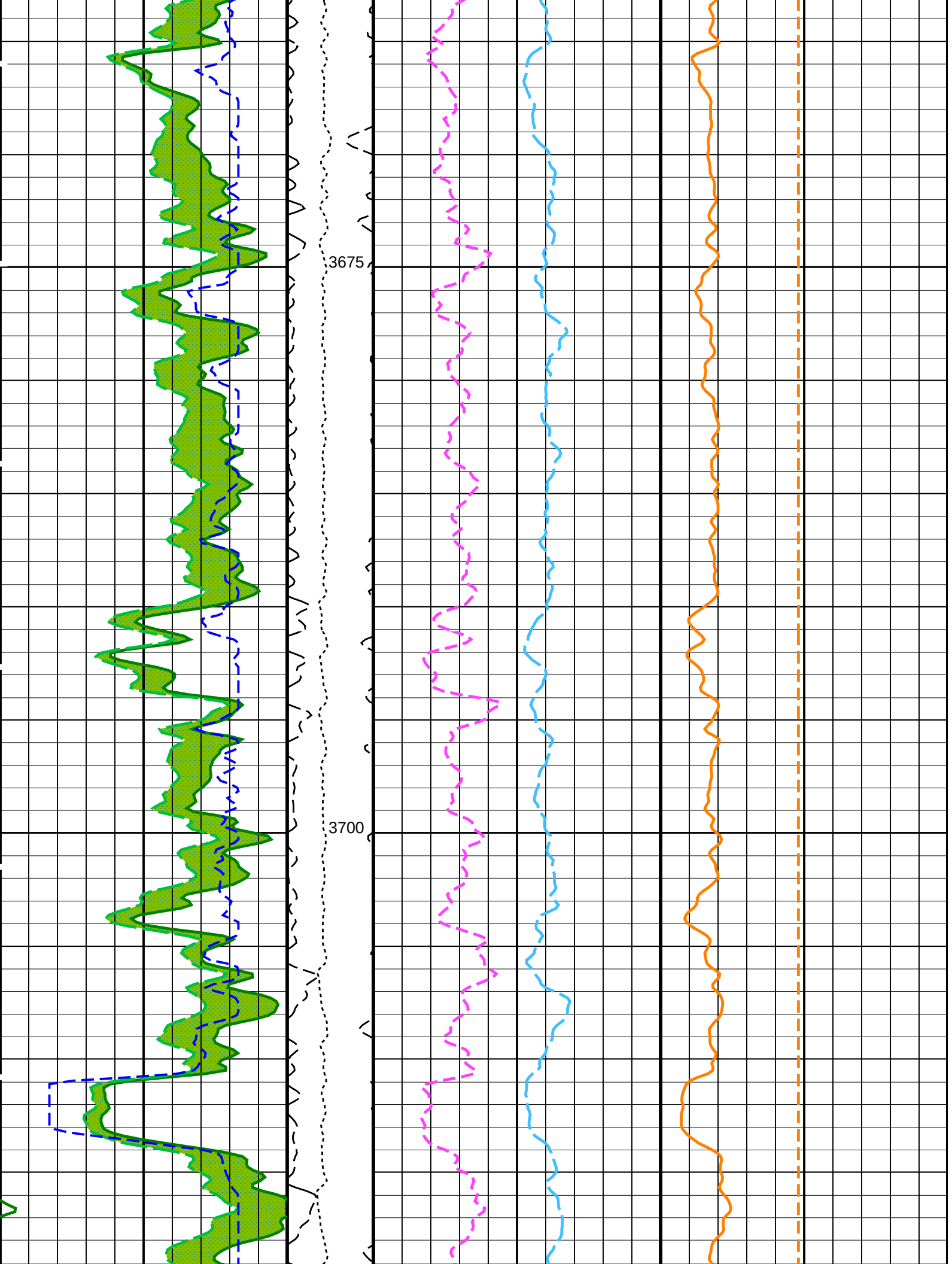
3650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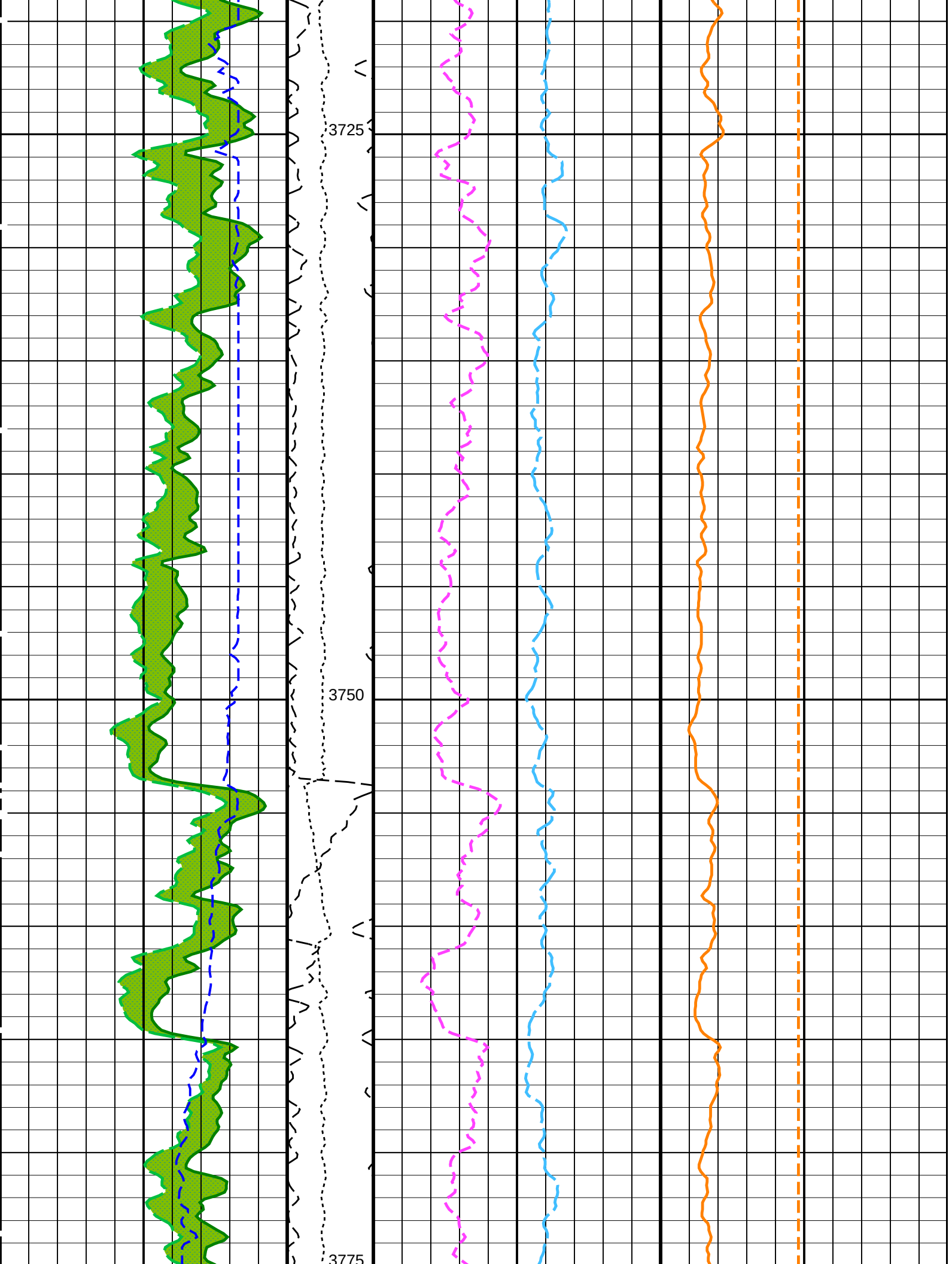
3700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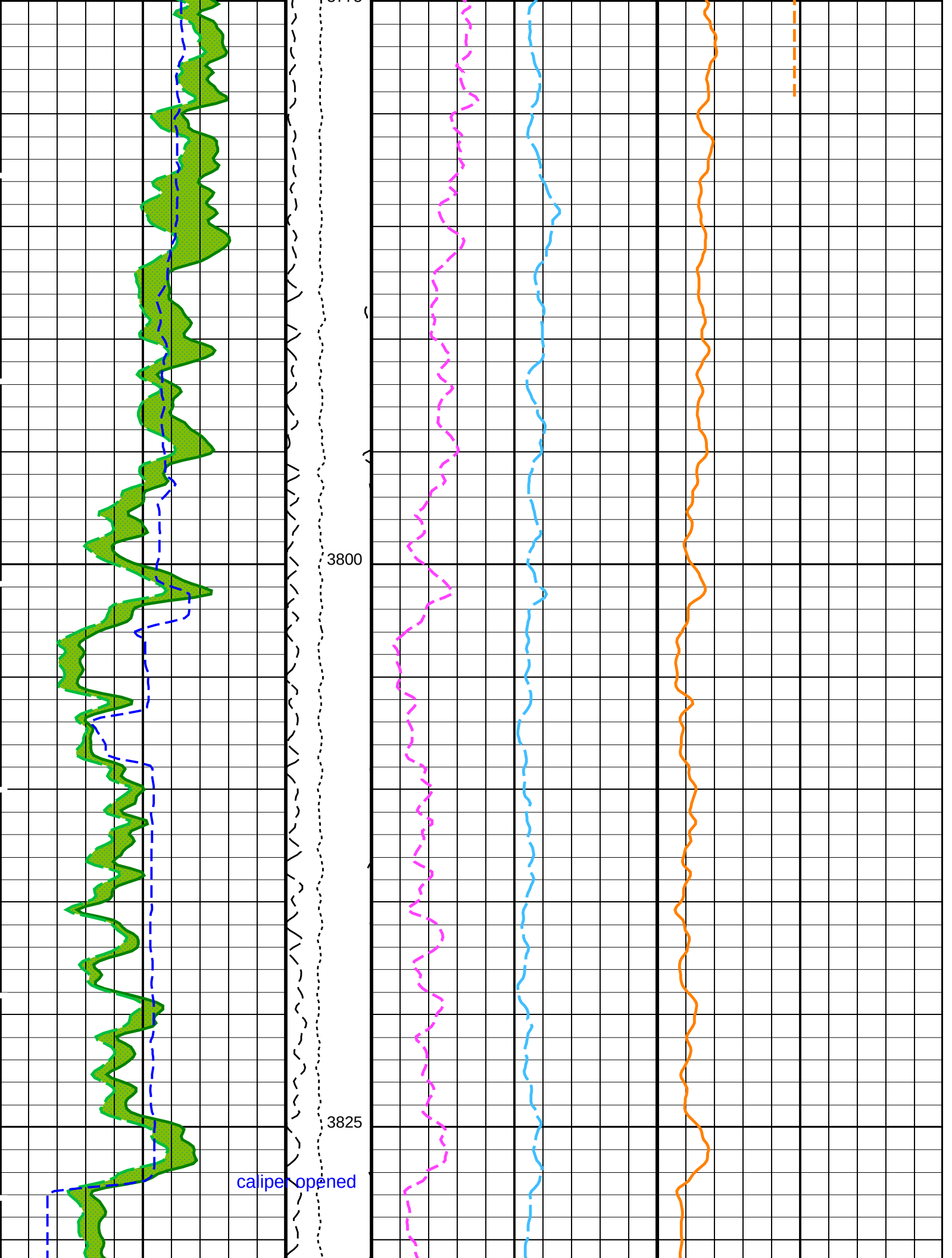
3750
3775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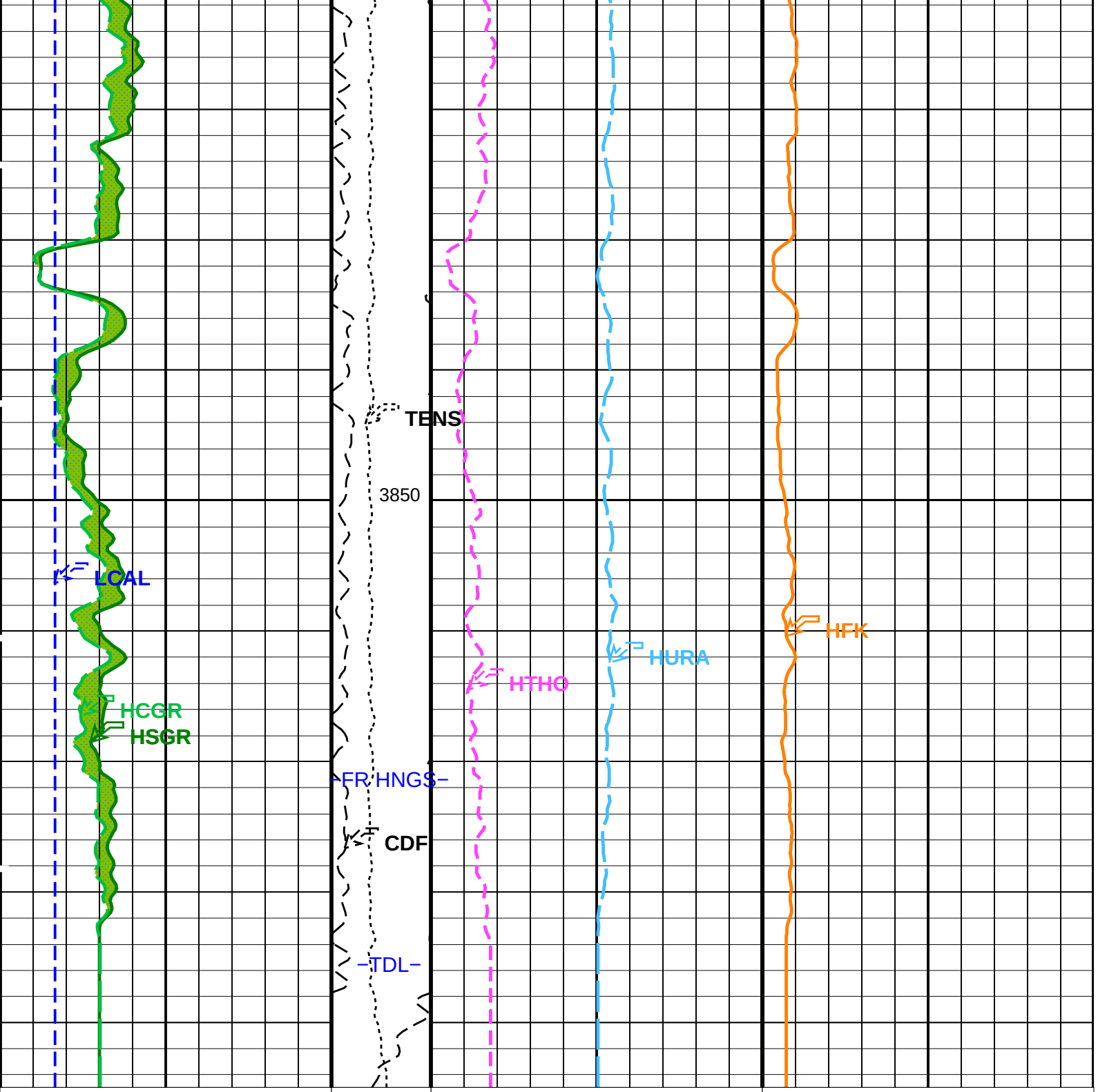
3825
caliper opened



HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
0 (PPM) 30

HNGS Potassium (HFK)
0 (----) 0.1

HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 100

Calibrated Downhole Force (CDF) (LBF)
−200 1800

HNGS Uranium (HURA)
−10 (PPM) 30

Area1
From HCGR to HSGR

Uplog

HNGS Borehole Potassium (HBHK)
−0.05 (----) 0.05

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	LCAL	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.00207569	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
TPOS	Tool Position	CENT	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.99207	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.0061	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	DSST−B: Dipole Shear Imager − B		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	System and Miscellaneous		
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	RECOMPUTE	

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 25−Apr−2019 22:08

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_012LUP	FN:19	PRODUCER	25−Apr−2019 10:00	3872.5 M	3220.1 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_026PUP	FN:45	PRODUCER	25−Apr−2019 22:08		
BACKUP	MSS_LDEO_NGS_HRLA_026PUP	FN:46	PRODUCER	25−Apr−2019 22:08		

Company: International Ocean Discovery Program Well: Expedition 382, Site U1536E

Input DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_012LUP	FN:19	PRODUCER	25−Apr−2019 10:00	3872.5 M	3220.1 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_026PUP	FN:45	PRODUCER	25−Apr−2019 22:08	3872.5 M	3220.2 M
BACKUP	MSS_LDEO_NGS_HRLA_026PUP	FN:46	PRODUCER	25−Apr−2019 22:08	3872.5 M	3220.2 M

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

Peak Coherence / TA − Lower Dipole (CHT1)
−2 (−−−−) 8

Peak Coherence / RA − Lower Dipole (CHR1)
0 (−−−−) 10

Waveform Data Copy Indicator 1 − Lower Dipole (WCI1)
0 (−−−−) 10

HLDS Caliper (LCAL)
0 (IN) 20

Low frequency drive at 0.8Khz

Uplog

SAM1 Waveform Gain (WFG1)
0 (−−−−) 1000

Calibrated Downhole Force (CDF) (LBF)
5000 0

Min Amplitude Max
Tr.Array L.Dipole Slow Proj. CVDL (SPT1)
75 (US/F) 1200

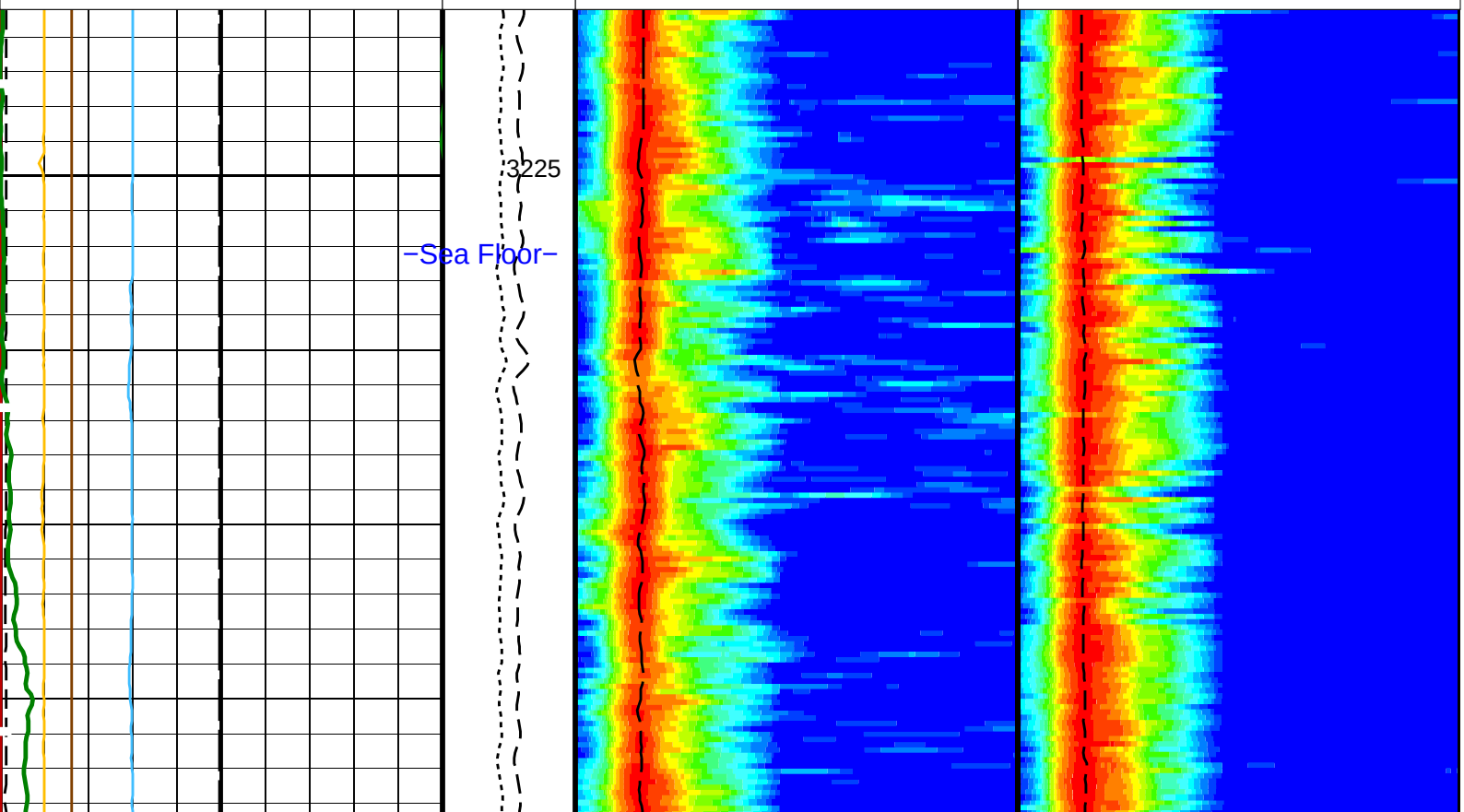
Min Amplitude Max
Rec.Array L.Dipole Slow Proj. CVDL (SPR1)
75 (US/F) 1200

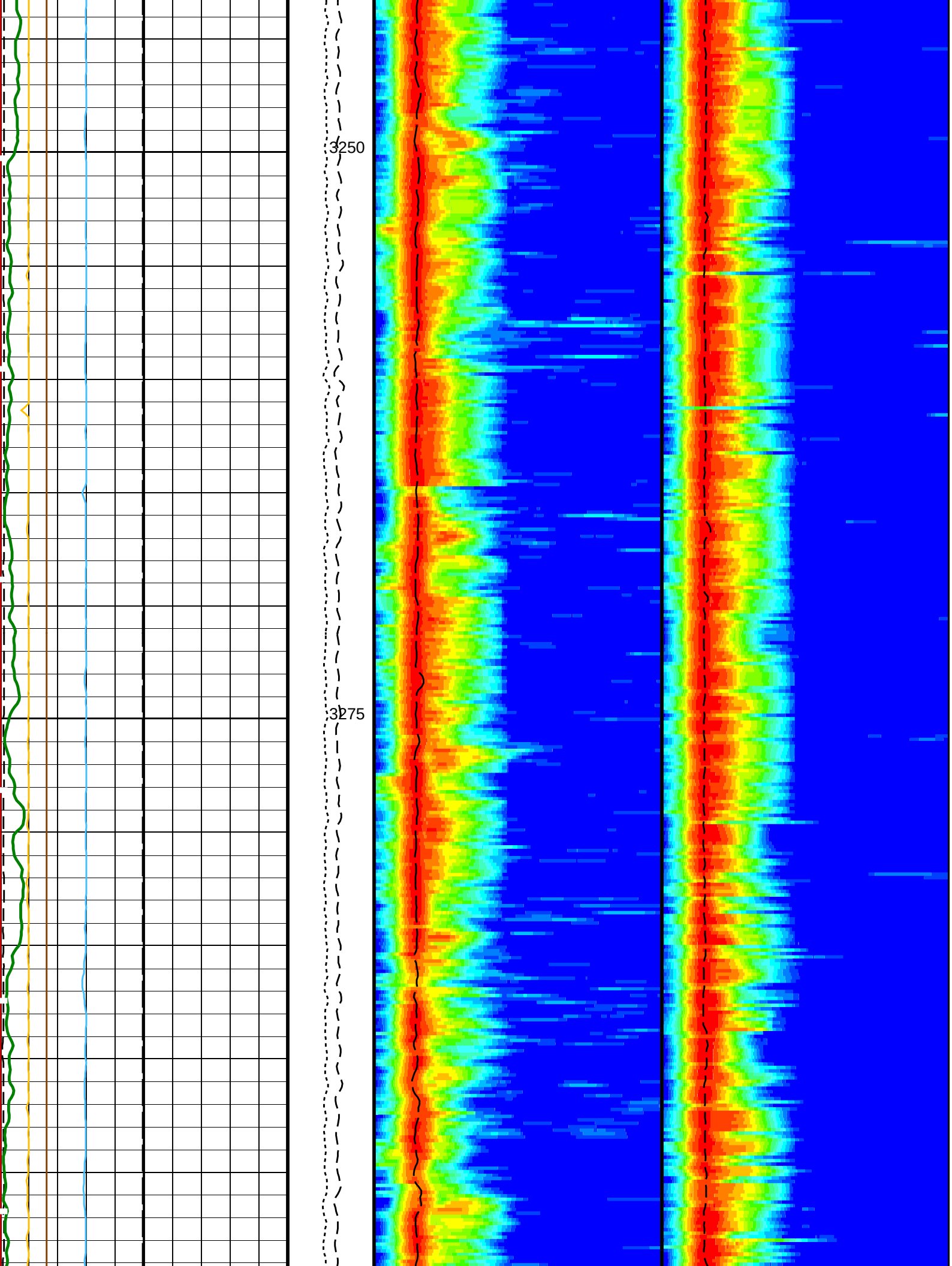
Bit Size (BS)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

Delta−T Shear / TA − Lower Dipole (DT1T)
75 (US/F) 1200

Delta−T Shear / RA − Lower Dipole (DT1R)
75 (US/F) 1200

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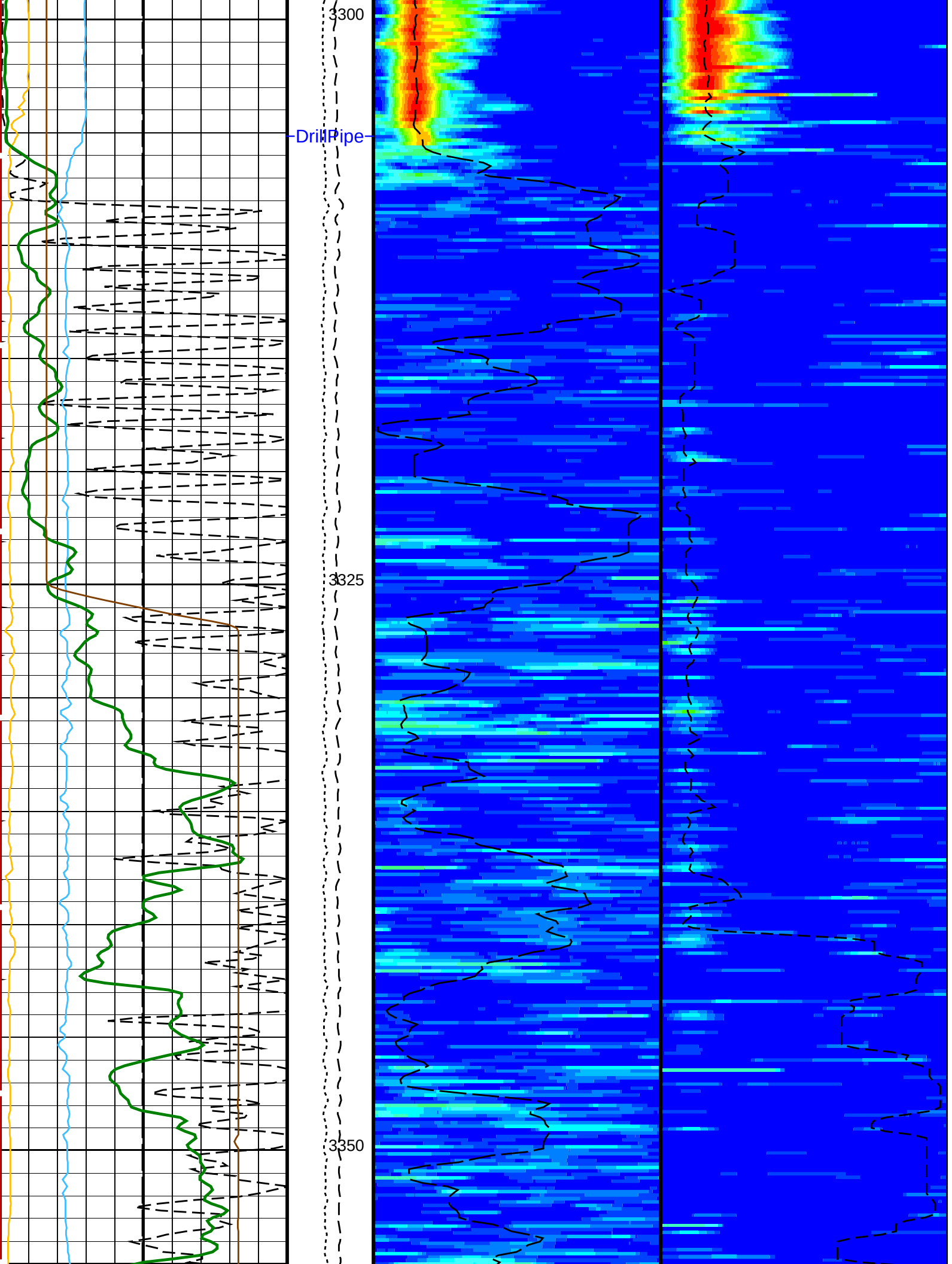
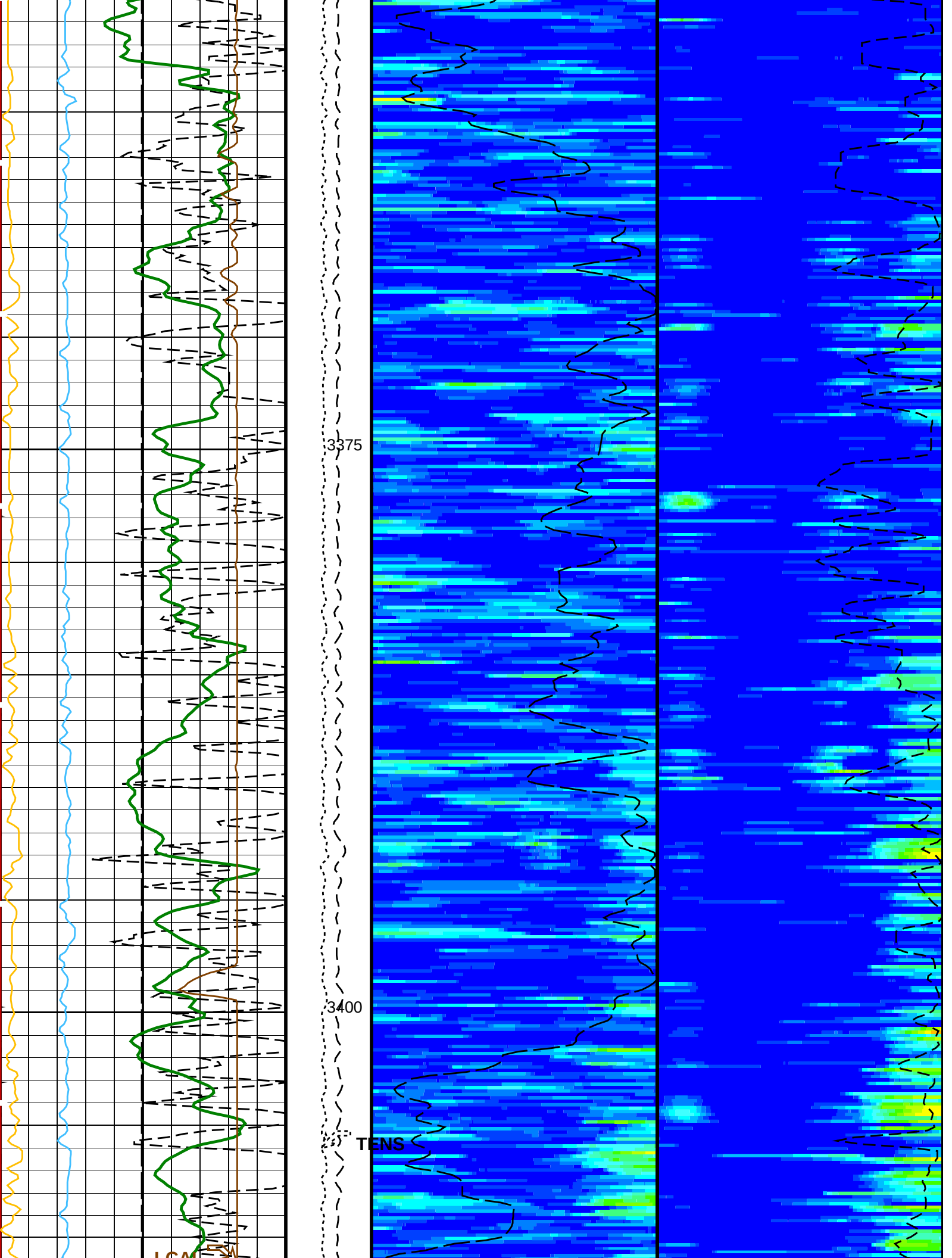
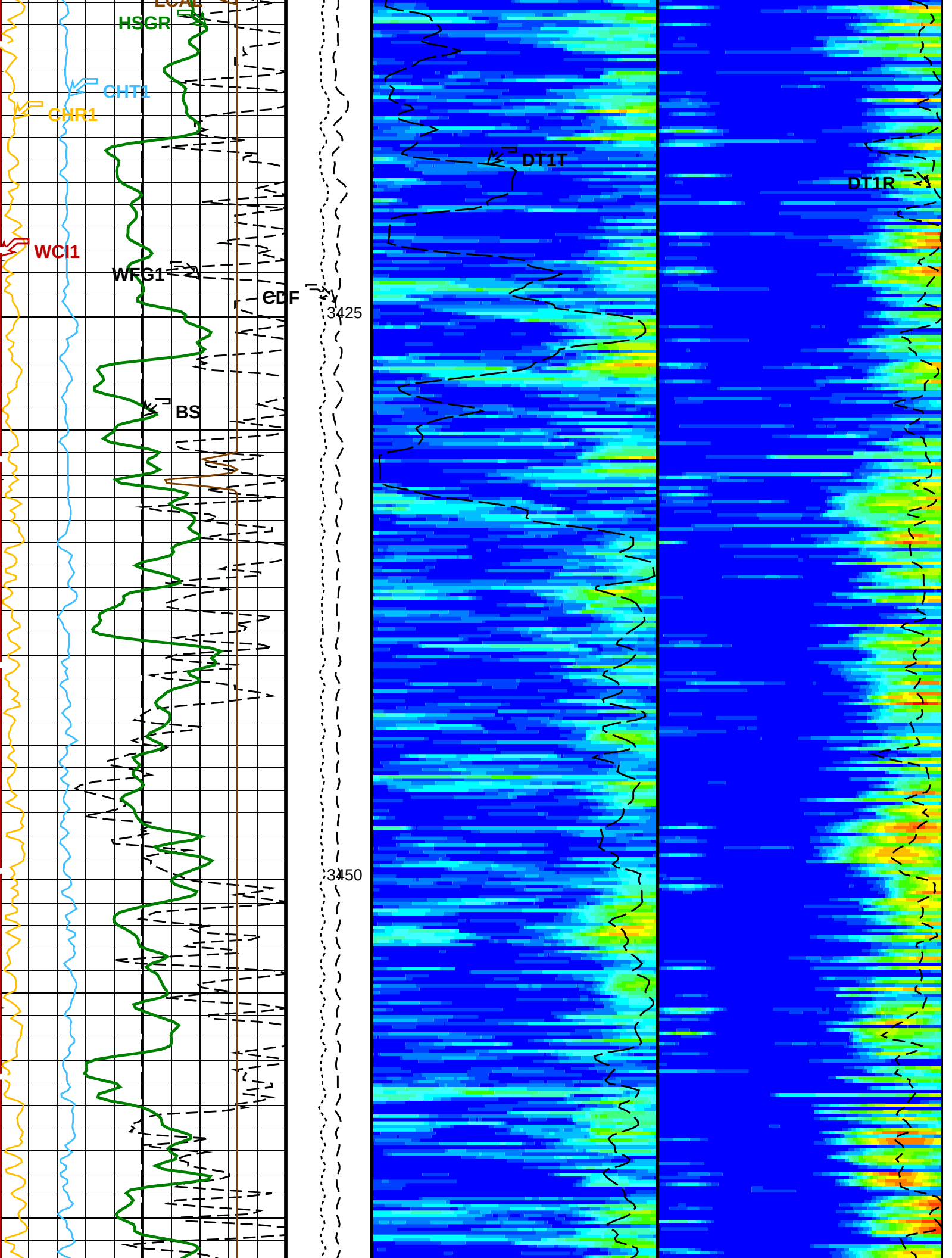
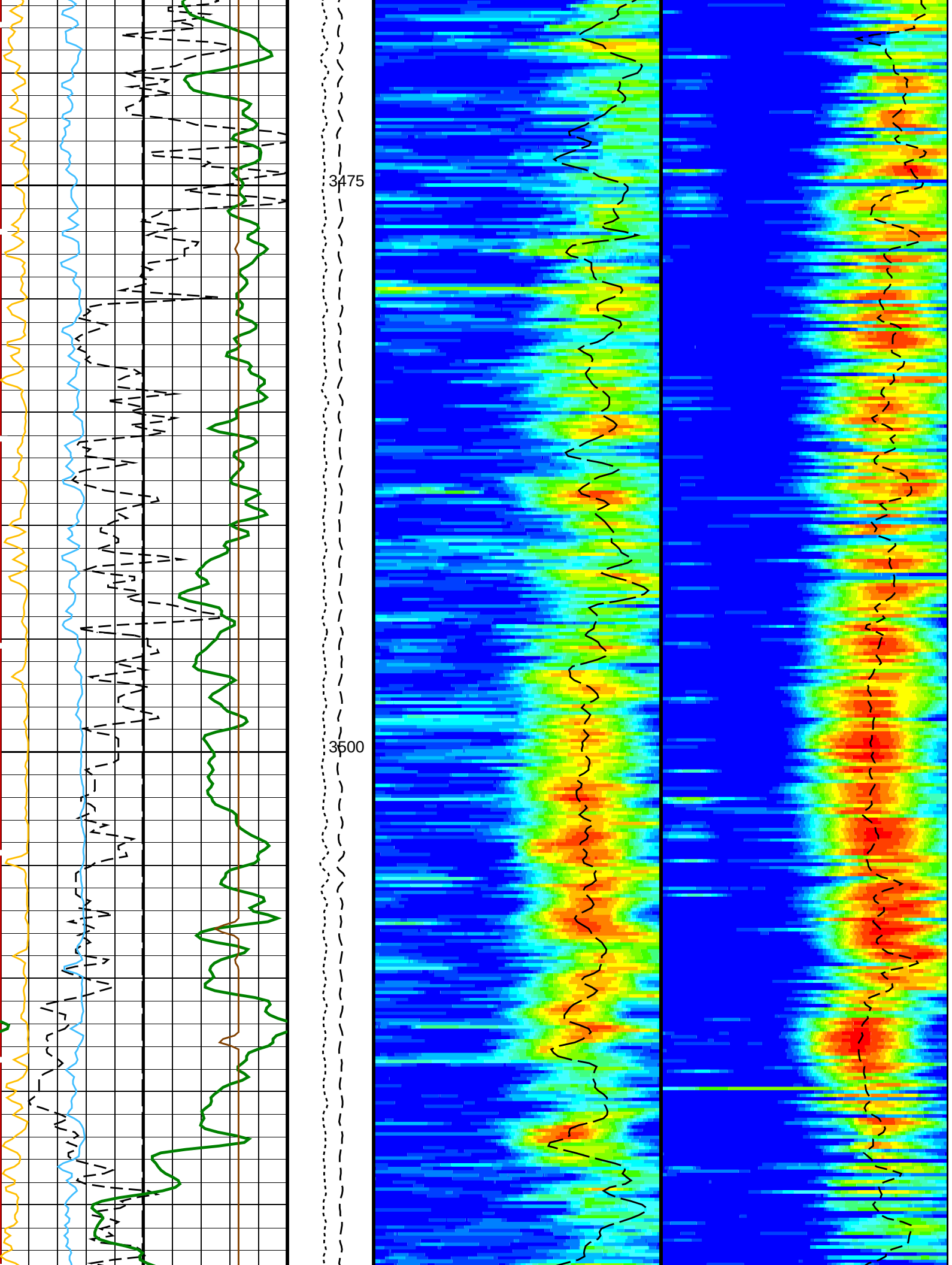
3275


3300
DrillPipe
3325
3350


3375
3400
TENS


LCAL
HSGR
CHT1
CHR1
WCI1
WFG1
CDF
BS
DT1T
DT1R
3425
3450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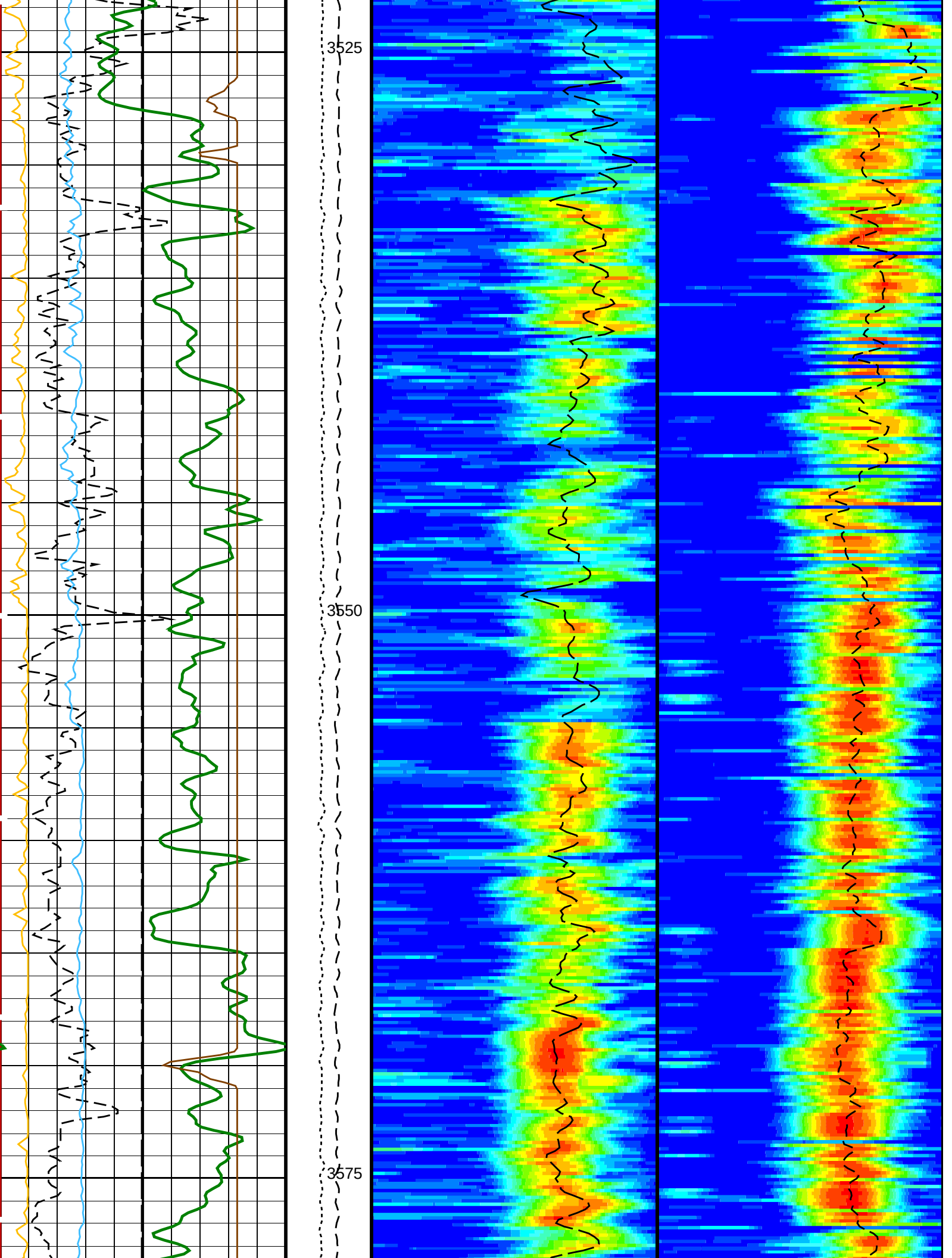
3500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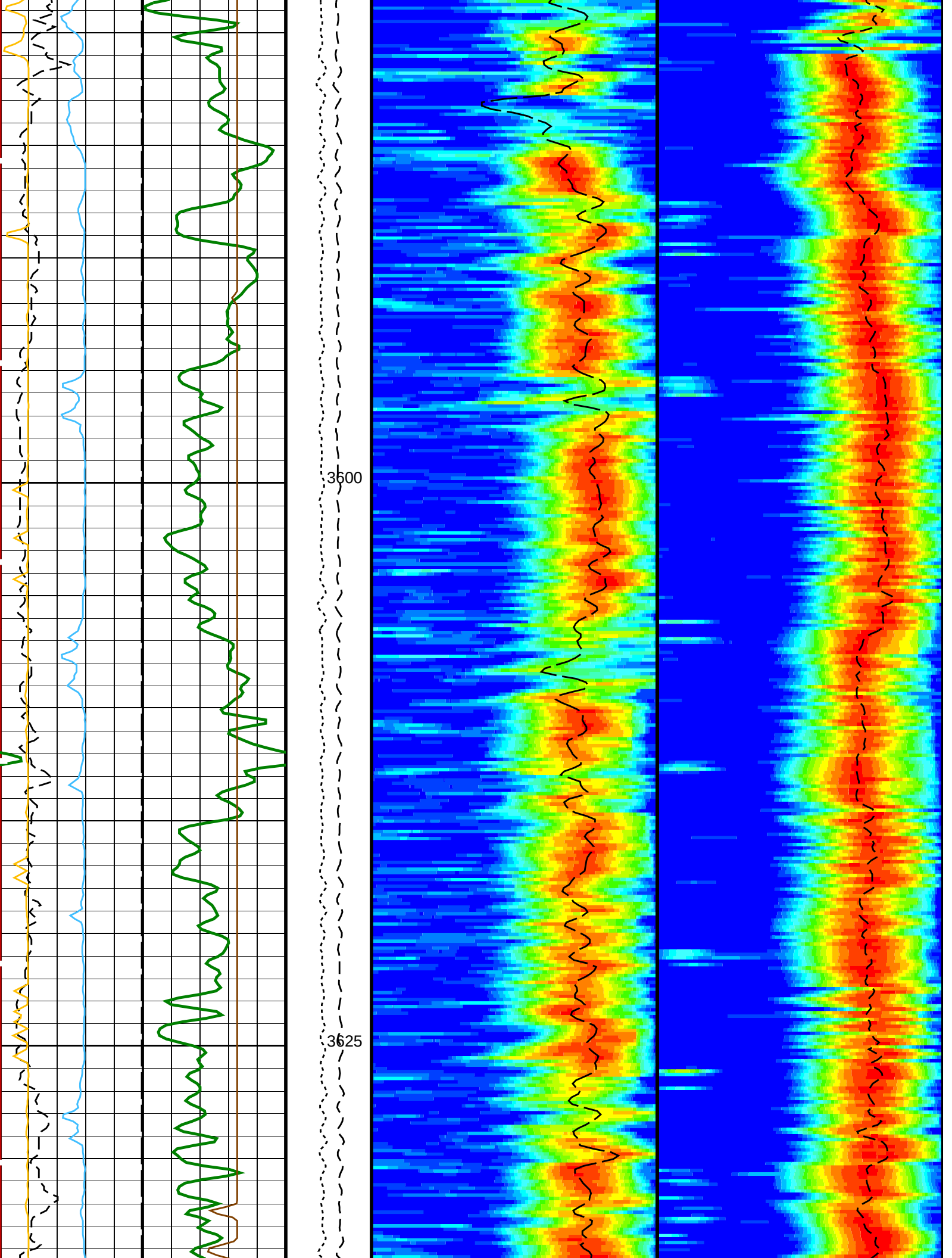
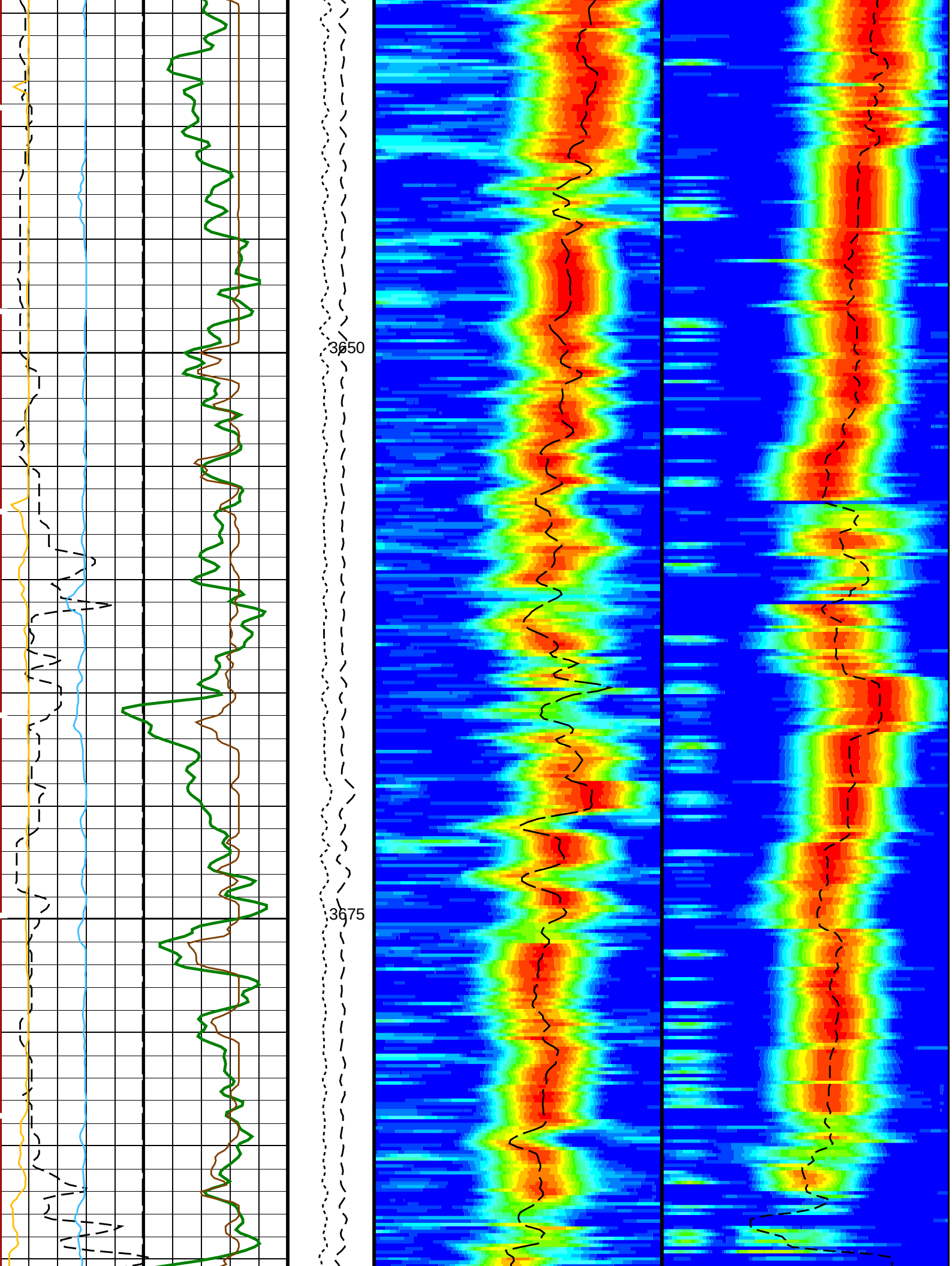
3550
3575


3600
3625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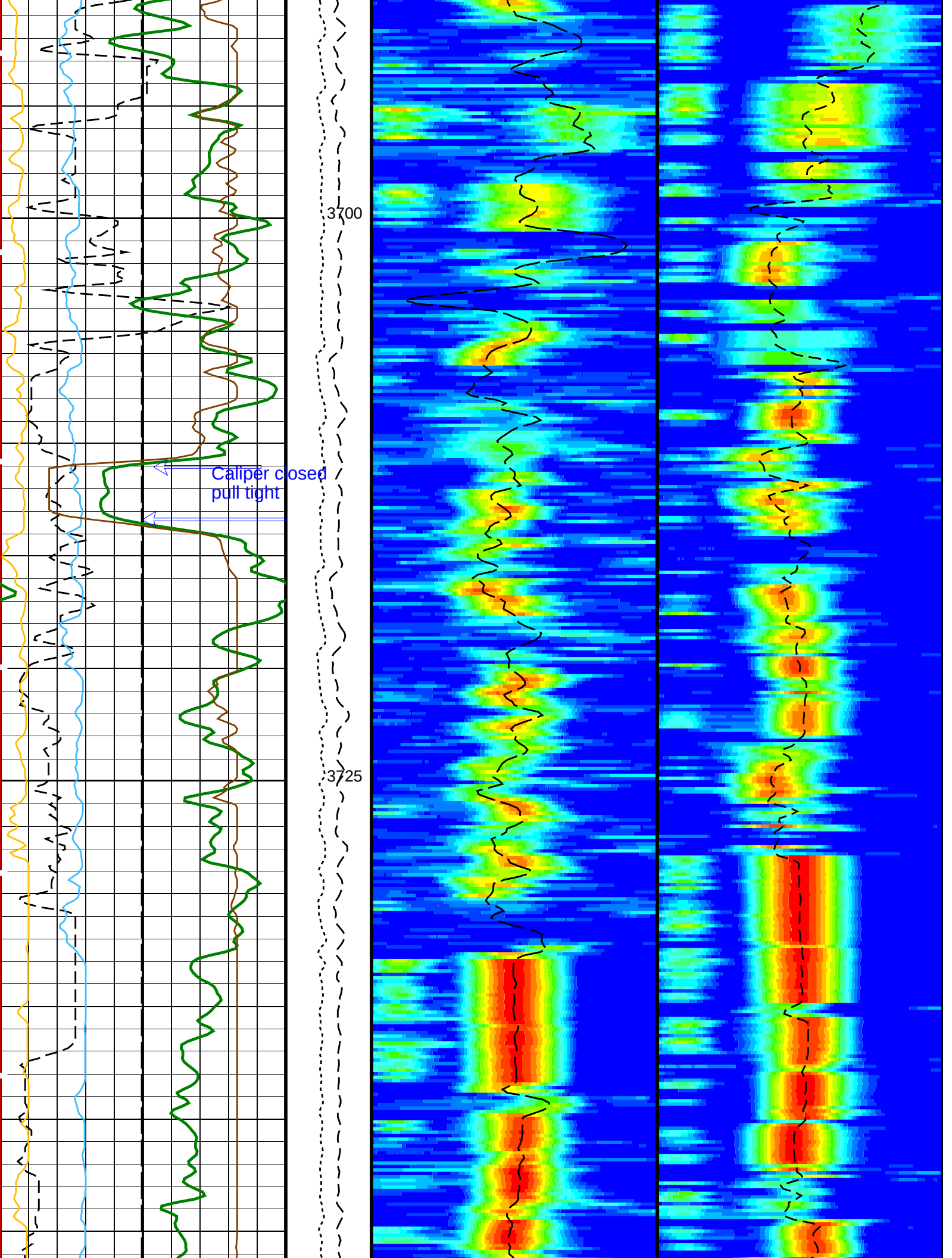
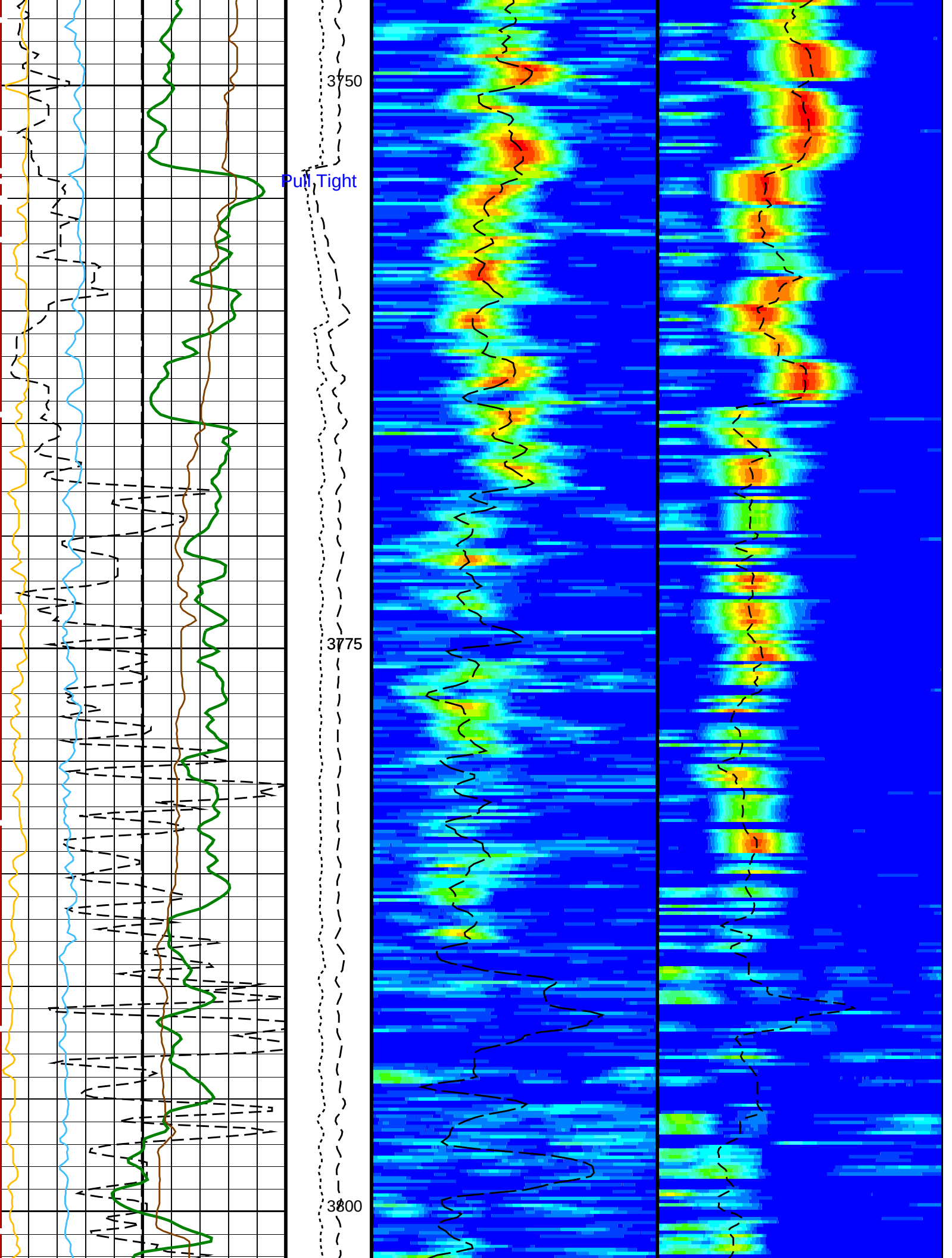
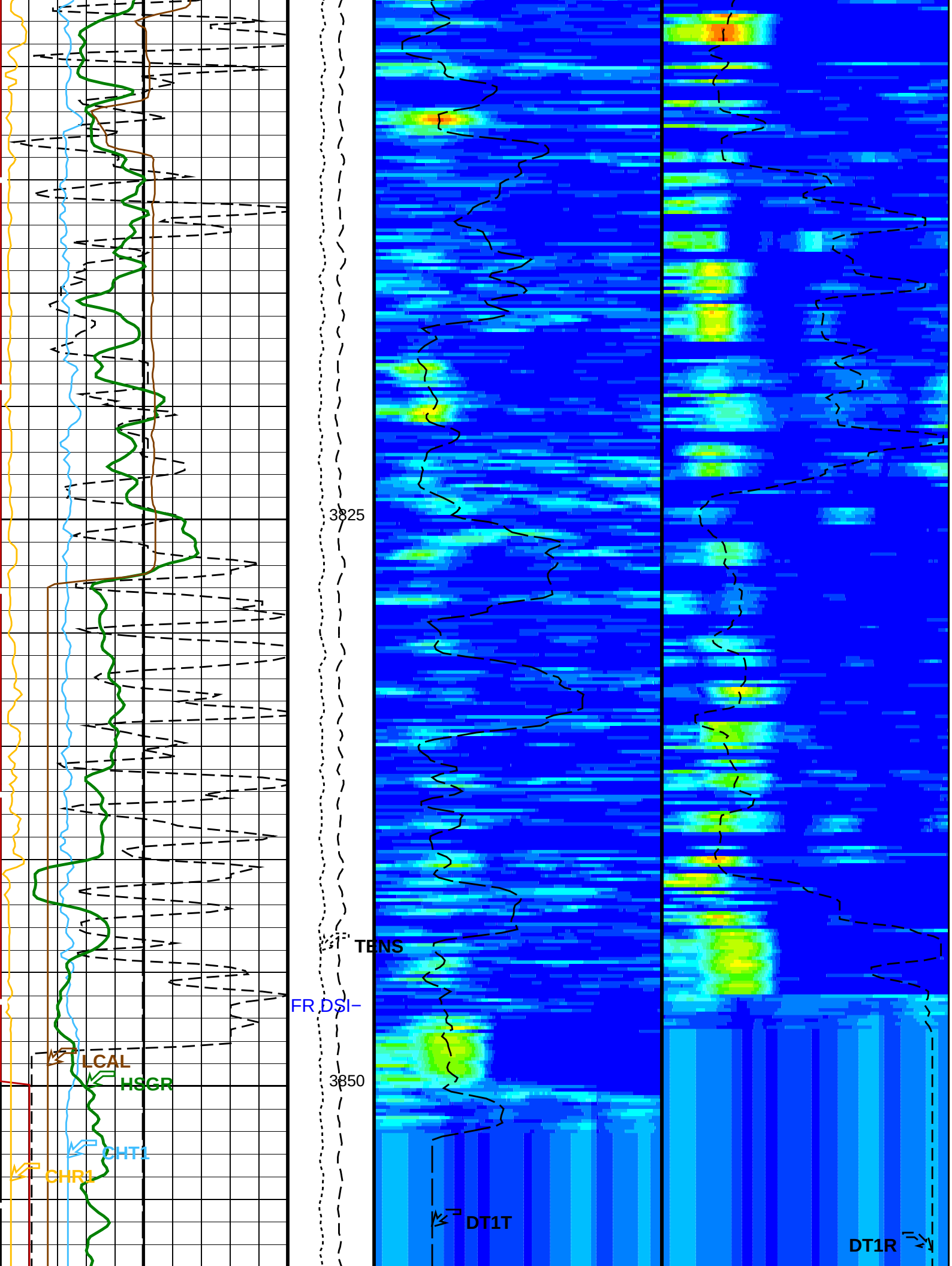
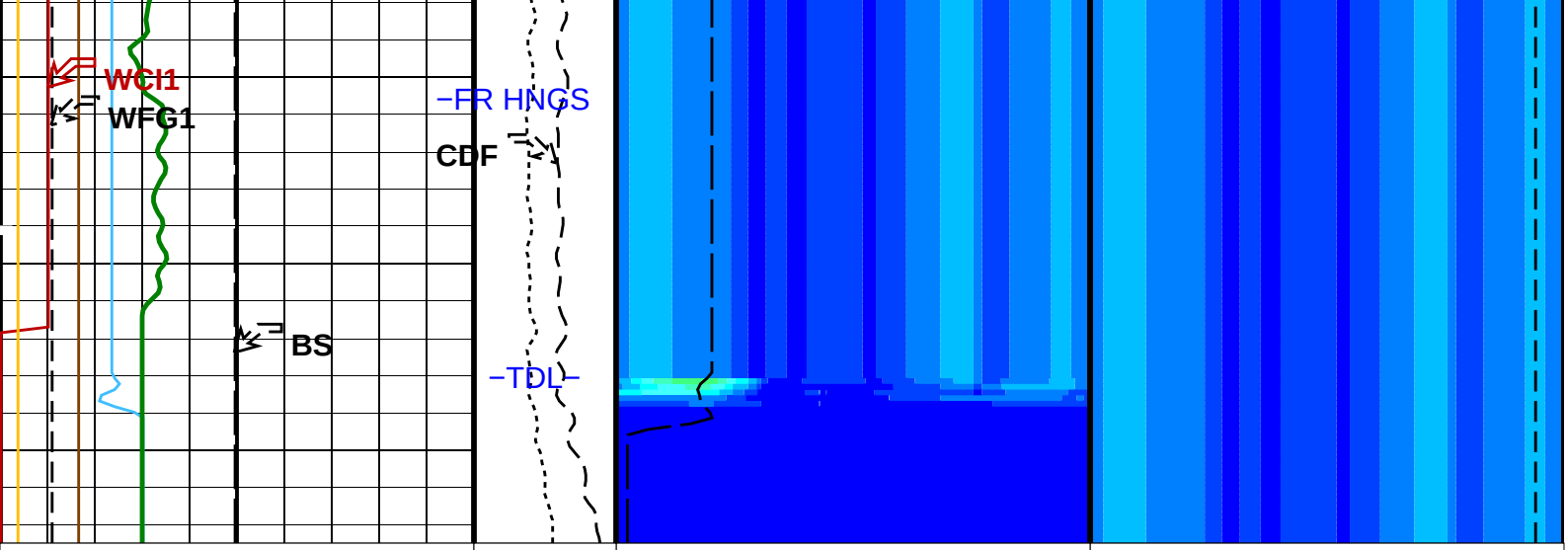
3675


3700
Caliper closed
pull tight
3725


3750
Pull Tight
3775
3800


3825
TENS
FR DSI−
3850
LCAL
HSGR
CHT1
CHR1
DT1T
DT1R



Bit Size (BS) 0 (IN) 20	Tension (TENS) (LBF) 10000 0	Delta−T Shear / TA − Lower Dipole (DT1T) 75 (US/F) 1200	Delta−T Shear / RA − Lower Dipole (DT1R) 75 (US/F) 1200
SAM1 Waveform Gain (WFG1) 0 (−−−−) 1000	Calibrated Downhole Force (CDF) (LBF) 5000 0	Min Amplitude Max Tr.Array L.Dipole Slow Proj. CVDL (SPT1) 75 (US/F) 1200	Min Amplitude Max Rec.Array L.Dipole Slow Proj. CVDL (SPR1) 75 (US/F) 1200

HLDS Caliper (LCAL)
0 (IN) 20

Waveform Data Copy Indicator 1 − Lower Dipole (WCI1)
0 (−−−−) 10

Peak Coherence / RA − Lower Dipole (CHR1)
0 (−−−−) 10

Peak Coherence / TA − Lower Dipole (CHT1)
−2 (−−−−) 8

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

Uplog

Low frequency drive at 0.8Khz

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	LCAL	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.00207569	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	

S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
TPOS	Tool Position	CENT	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.99207	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.0061	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	DSST−B: Dipole Shear Imager − B		
BHS	Borehole Status	OPEN	
DDE1	Digitizing Delay 1	0	US
DDEX	Digitizing Delay X	0	US
DLCS	Label Compressional Source − Dipole Shear	USE	
DSHL	Label Slowness Lower Limit − Dipole Shear	75	US/F
DSHU	Label Slowness Upper Limit − Dipole Shear	1200	US/F
DSI1	Digitizer Sample Interval 1	40	US
DSIX	Digitizer Sample Interval X	40	US
DTCS	Compressional Delta−T Source for DTCO Channel	PS_COMP	
DWC1	Digitizer Word Count 1	512	
DWCX	Digitizer Word Count X	512	
GCSE	Generalized Caliper Selection	LCAL	
LTXG	Lower Dipole Transmitter Geometry	156	IN
NWI1	Number Waveform Items 1	8	
NWIX	Number Waveform Items X	0	
RX1G	Receiver 1 Geometry	294	IN
RX2G	Receiver 2 Geometry	300	IN
RX3G	Receiver 3 Geometry	306	IN
RX4G	Receiver 4 Geometry	312	IN
RX5G	Receiver 5 Geometry	318	IN
RX6G	Receiver 6 Geometry	324	IN
RX7G	Receiver 7 Geometry	330	IN
RX8G	Receiver 8 Geometry	336	IN
SAM1	DSST Sonic Acquisition Mode 1 − Lower Dipole Mode	LFD_EVEN	
SAMX	DSST Sonic Acquisition Mode X − Both Dipoles or Monopole Mode for Expert	OFF	
SAS1	STC Sonic Array Status − Lower Dipole	255	
SBO1	STC Search Band Offset − Lower Dipole	3000	US
SBW1	STC Search Bandwidth − Lower Dipole	8000	US
SFC1	STC Formation Character − Lower Dipole	SELECTABLE	
SFM1	STC Filter − Lower Dipole	B.3−1.5K	
SLL1	STC Slowness Lower Limit − Lower Dipole	75	US/F
SST1	STC Slowness Step − Lower Dipole	4	US/F
SSW1	STC Source Waveform − Lower Dipole	WF_SAM1	
SUL1	STC Slowness Upper Limit − Lower Dipole	1200	US/F
SWD1	STC Slowness Width − Lower Dipole	40	US/F
TBF1	STC Time for Baseline Fill − Lower Dipole	0	US
TLL1	STC Time Lower Limit − Lower Dipole	600	US
TST1	STC Time Step − Lower Dipole	200	US
TUL1	STC Time Upper Limit − Lower Dipole	20440	US
TWD1	STC Time Width − Lower Dipole	2000	US
TWI1	STC Integration Time Window − Lower Dipole	1600	US
TWSX	Transmitter Waveform Select X	0	
WFM1	Waveform Mode 1	W1	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	System and Miscellaneous		
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	RECOMPUTE	

Format: DSST_LOWER_DIPOLE_RC_TR_VDL_COLOR Vertical Scale: 1:200 Graphics File Created: 25−Apr−2019 22:08

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_012LUP	FN:19	PRODUCER	25−Apr−2019 10:00	3872.5 M	3220.1 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_026PUP	FN:45	PRODUCER	25−Apr−2019 22:08
BACKUP	MSS_LDEO_NGS_HRLA_026PUP	FN:46	PRODUCER	25−Apr−2019 22:08

Company: International Ocean Discovery Program | **Well: Expedition 382, Site U1536E**

Input DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_012LUP	FN:19	PRODUCER	25−Apr−2019 10:00	3872.5 M	3220.1 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_026PUP	FN:45	PRODUCER	25−Apr−2019 22:08	3872.5 M	3220.2 M
BACKUP	MSS_LDEO_NGS_HRLA_026PUP	FN:46	PRODUCER	25−Apr−2019 22:08	3872.5 M	3220.2 M

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

Peak Coherence / TA − Upper Dipole (CHT2)
−2 (−−−−) 8

Peak Coherence / RA − Upper Dipole (CHR2)
0 (−−−−) 10

Waveform Data Copy Indicator 2 − Upper Dipole (WCI2)
0 (−−−−) 10

HLDS Caliper (LCAL)
0 (IN) 20

Dipole frequency drive at 2khz

Uplog

SAM2 Waveform Gain (WFG2)
0 (−−−−) 1000

Calibrated Downhole Force (CDF) (LBF)
5000 0

Min Amplitude Max
Tr.Array U.Dipole Slow Proj. CVDL (SPT2)
75 (US/F) 1200

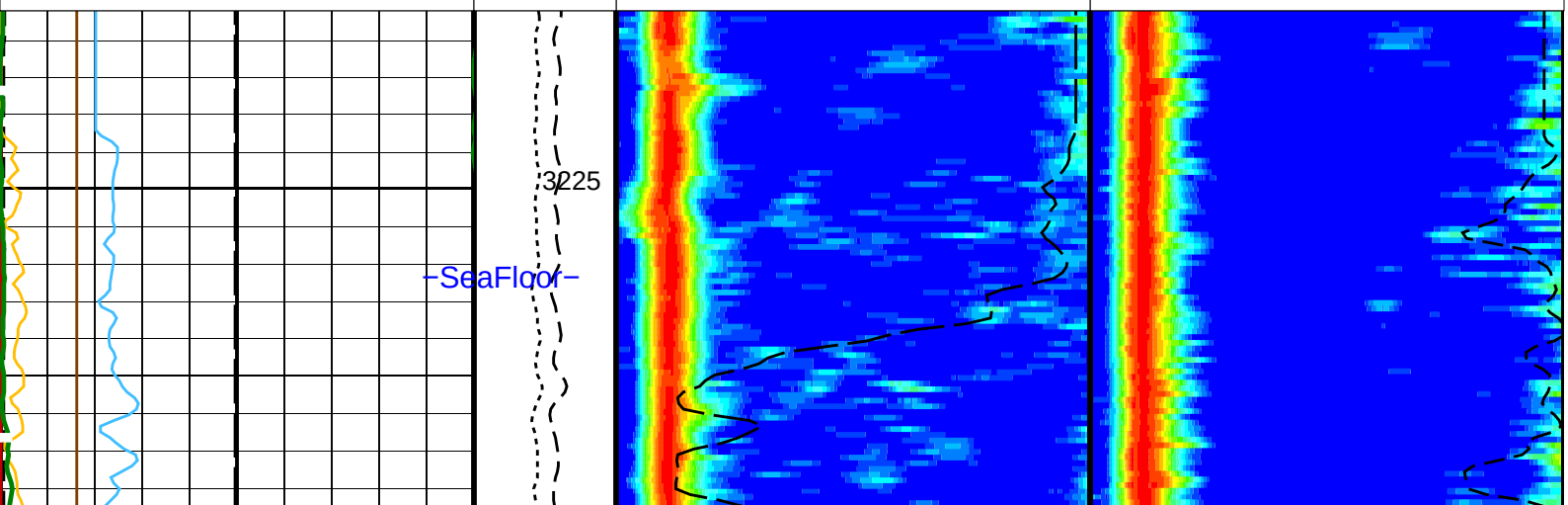
Min Amplitude Max
Rec.Array U.Dipole Slow Proj. CVDL (SPR2)
75 (US/F) 1200

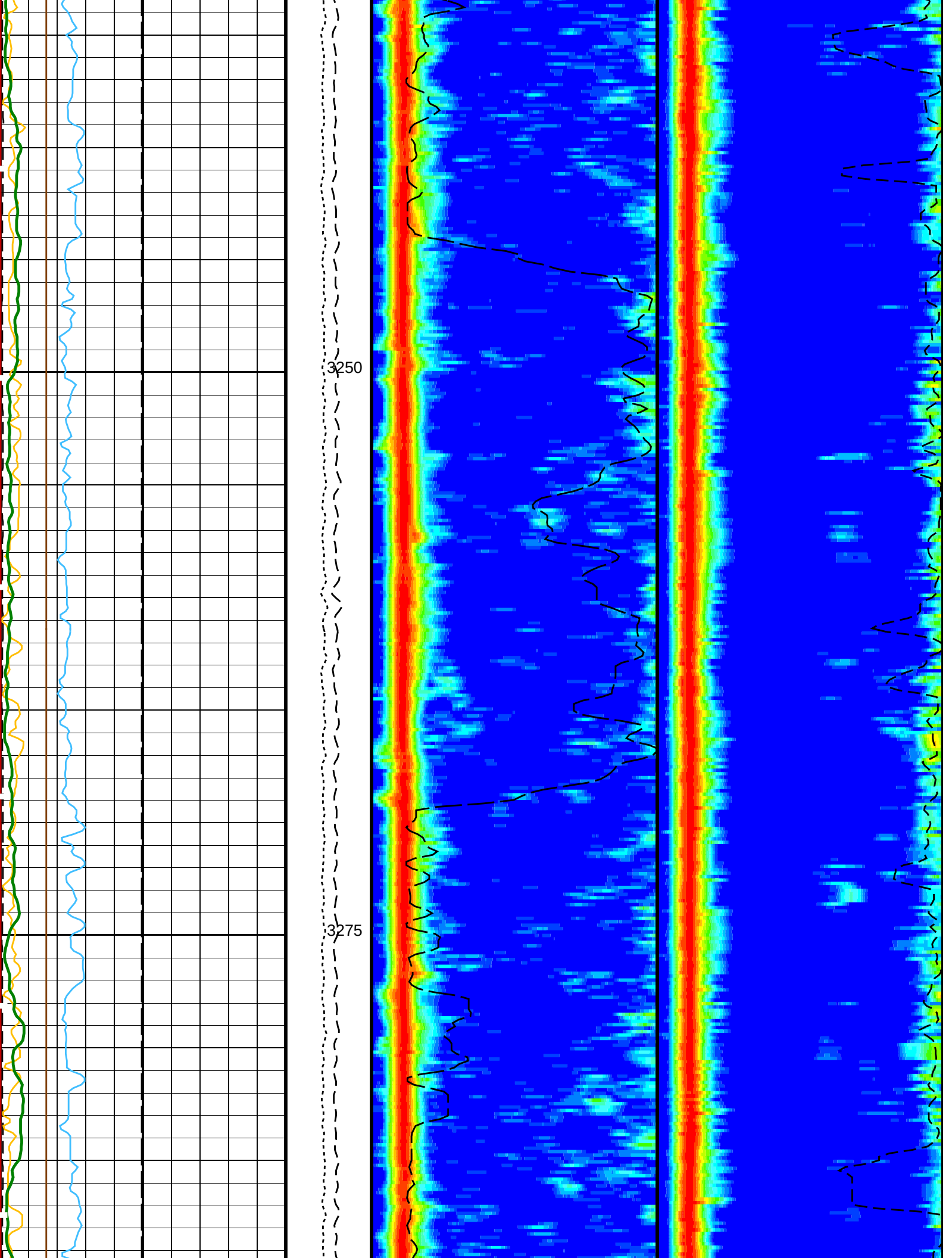
Bit Size (BS)
0 (IN) 20

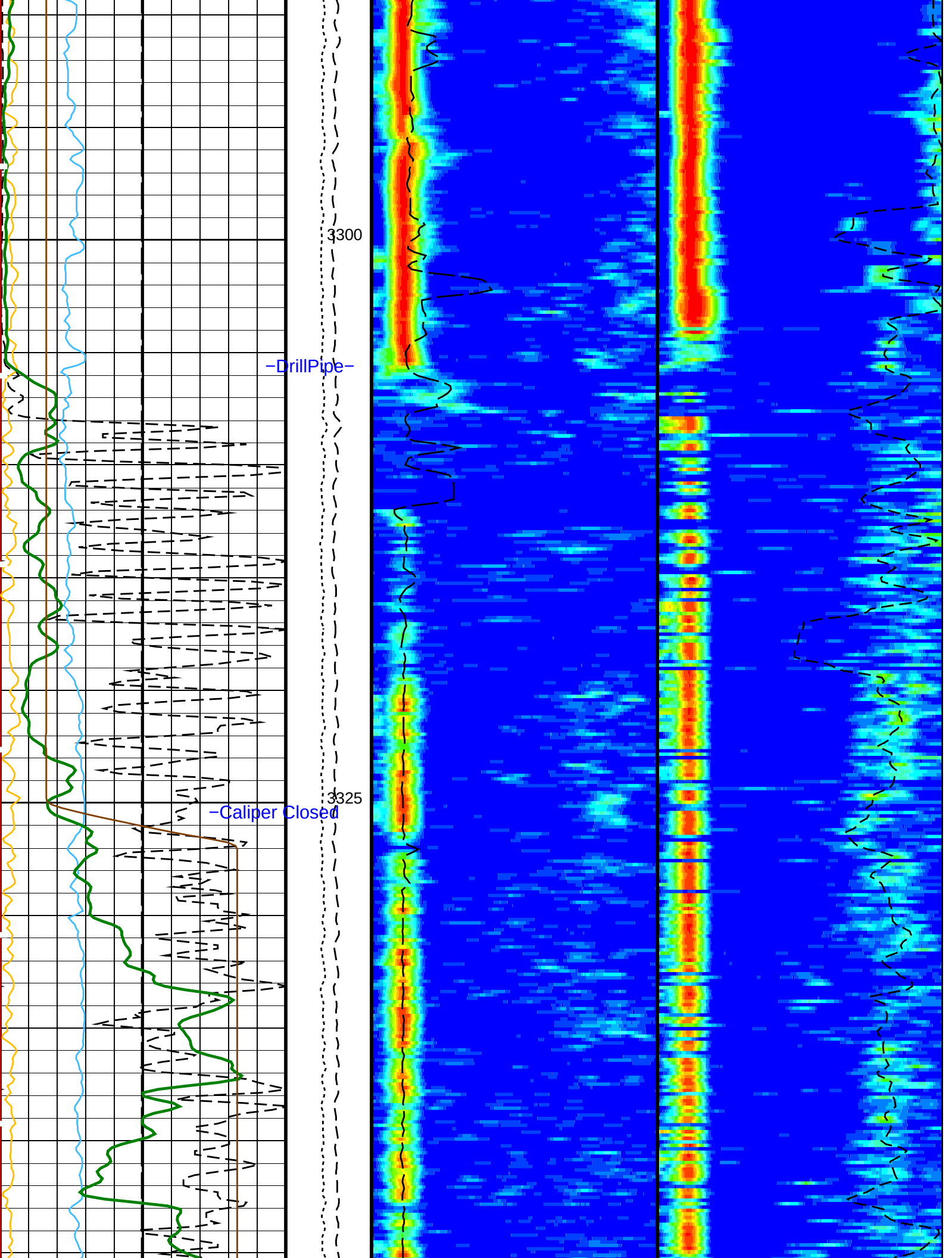
Tension (TENS) (LBF)
10000 0

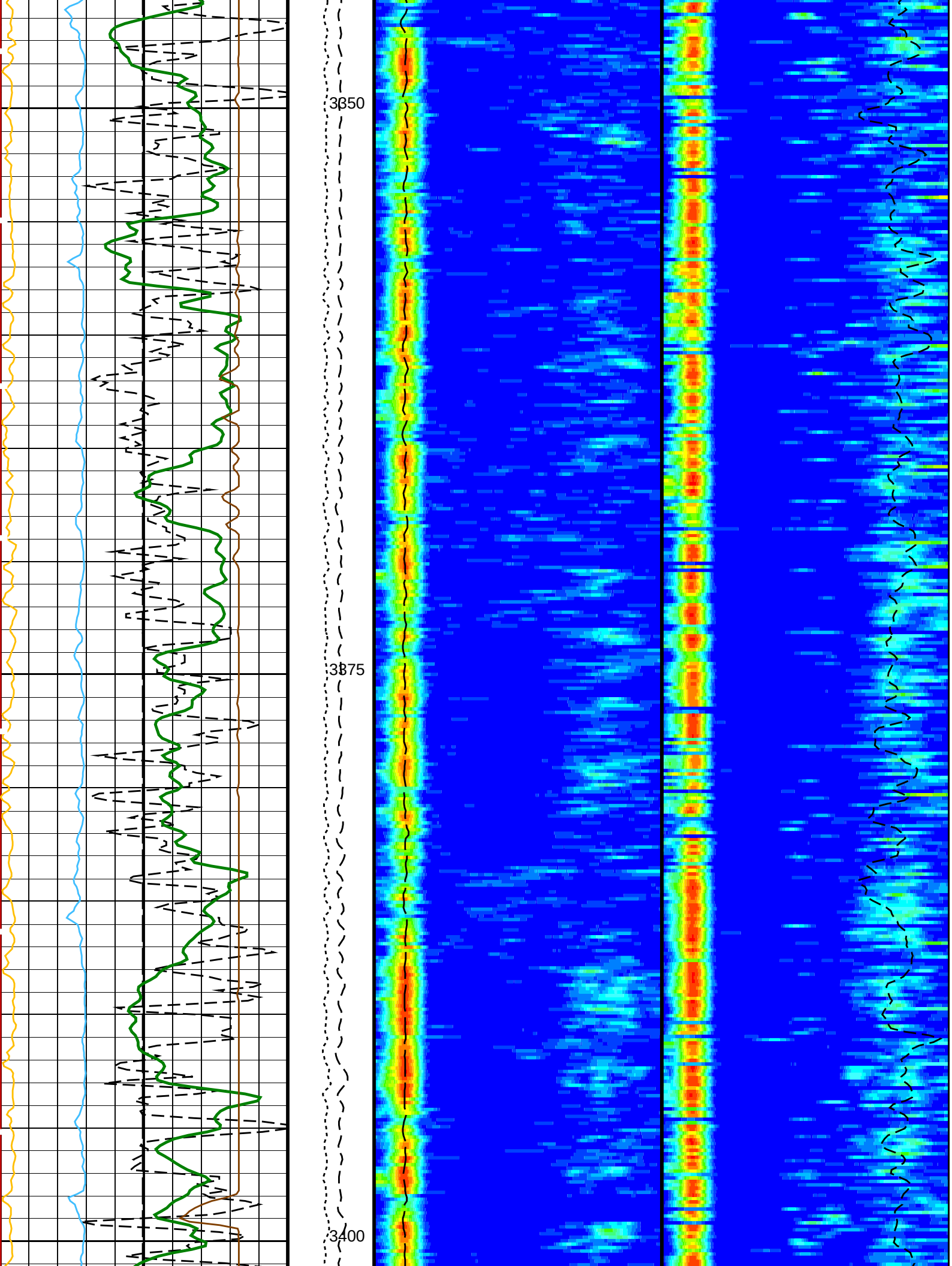
Delta−T Shear / TA − Upper Dipole (DT2T)
75 (US/F) 1200

Delta−T Shear / RA − Upper Dipole (DT2R)
75 (US/F) 1200




3250
3275


3300
−DrillPipe−
3325
−Caliper Closed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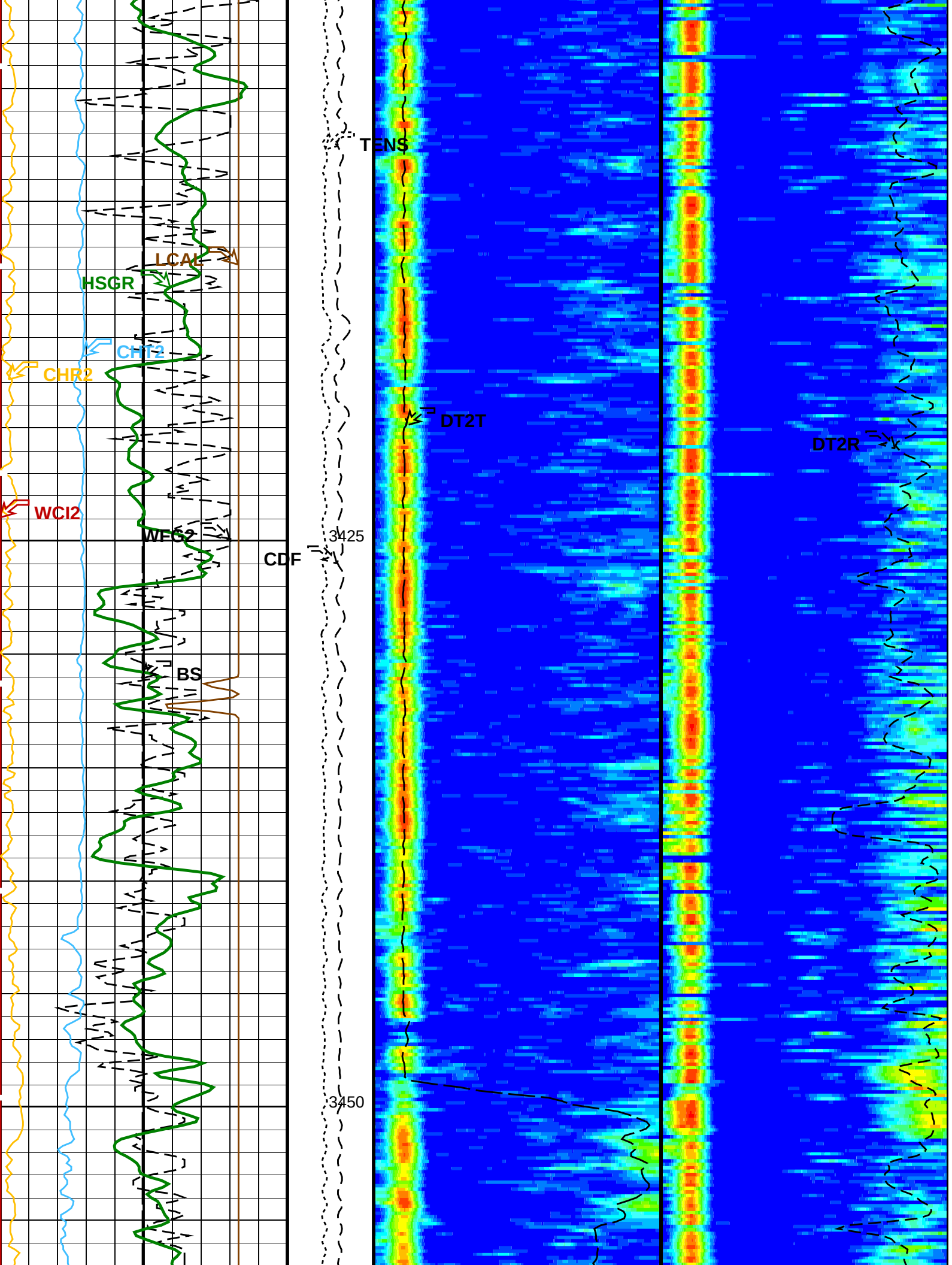
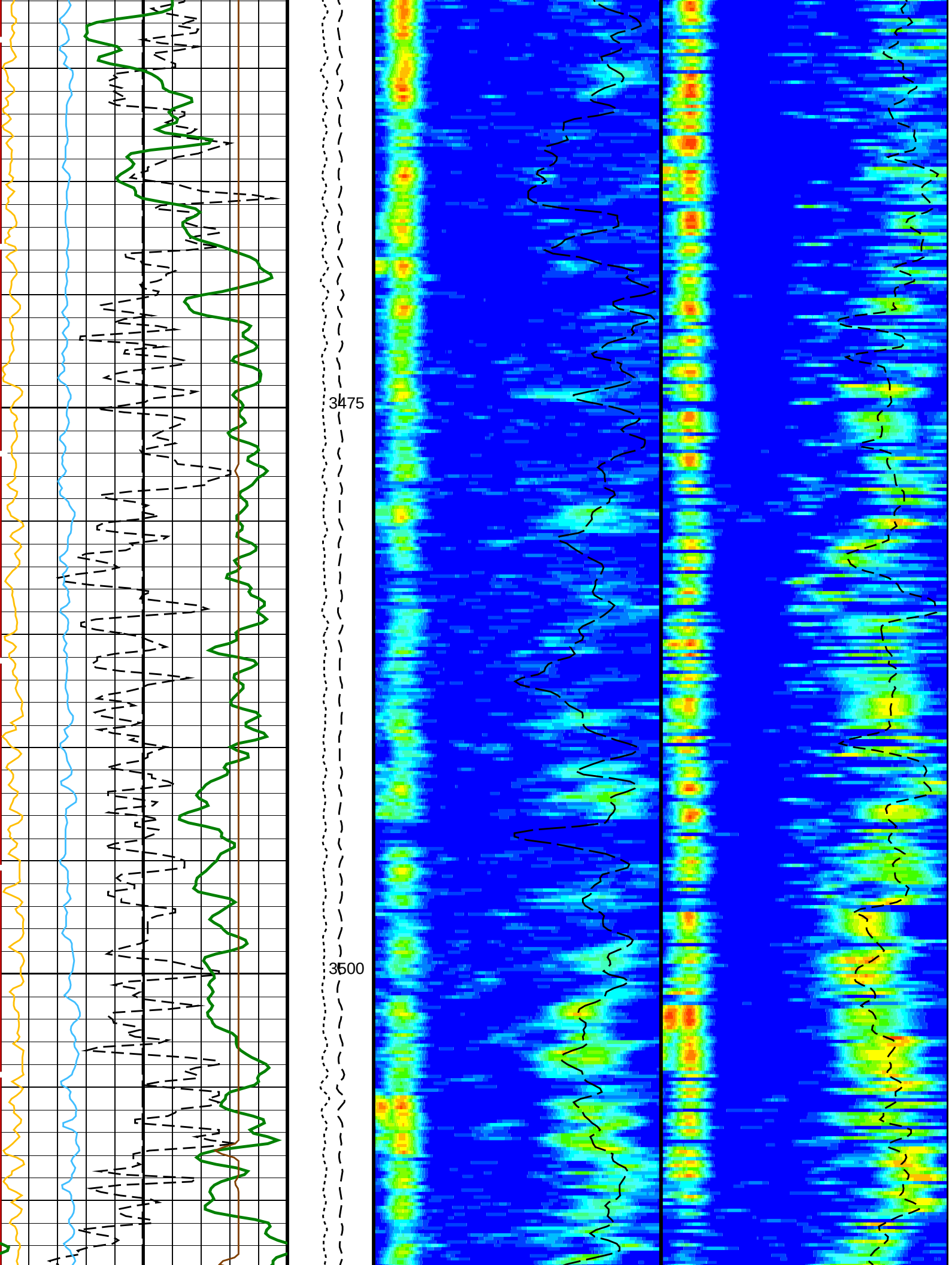

TENS
LCAL
HSGR
CHT2
CHR2
DT2T
DT2R
WCI2
WEG2
3425
CDF
BS
3450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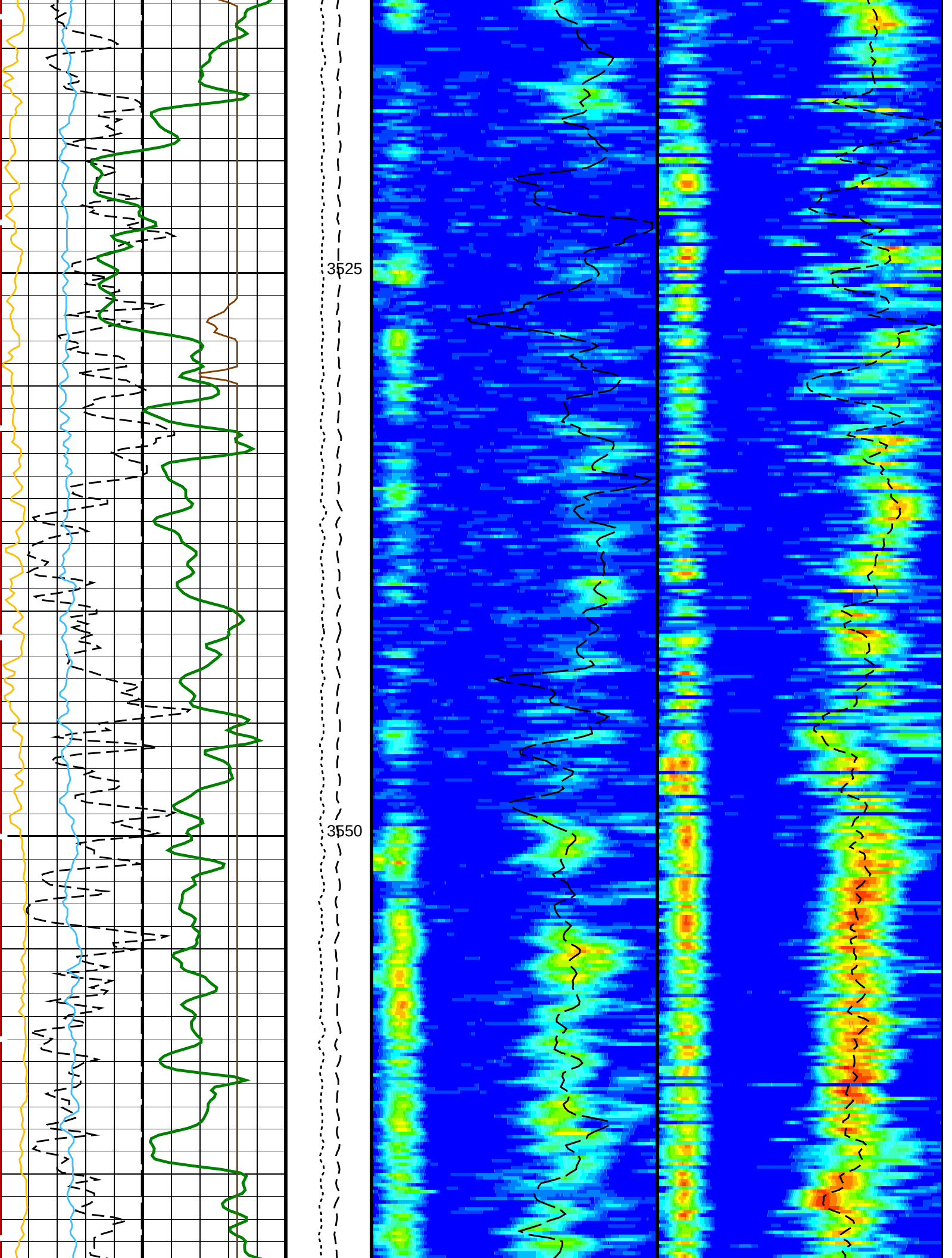
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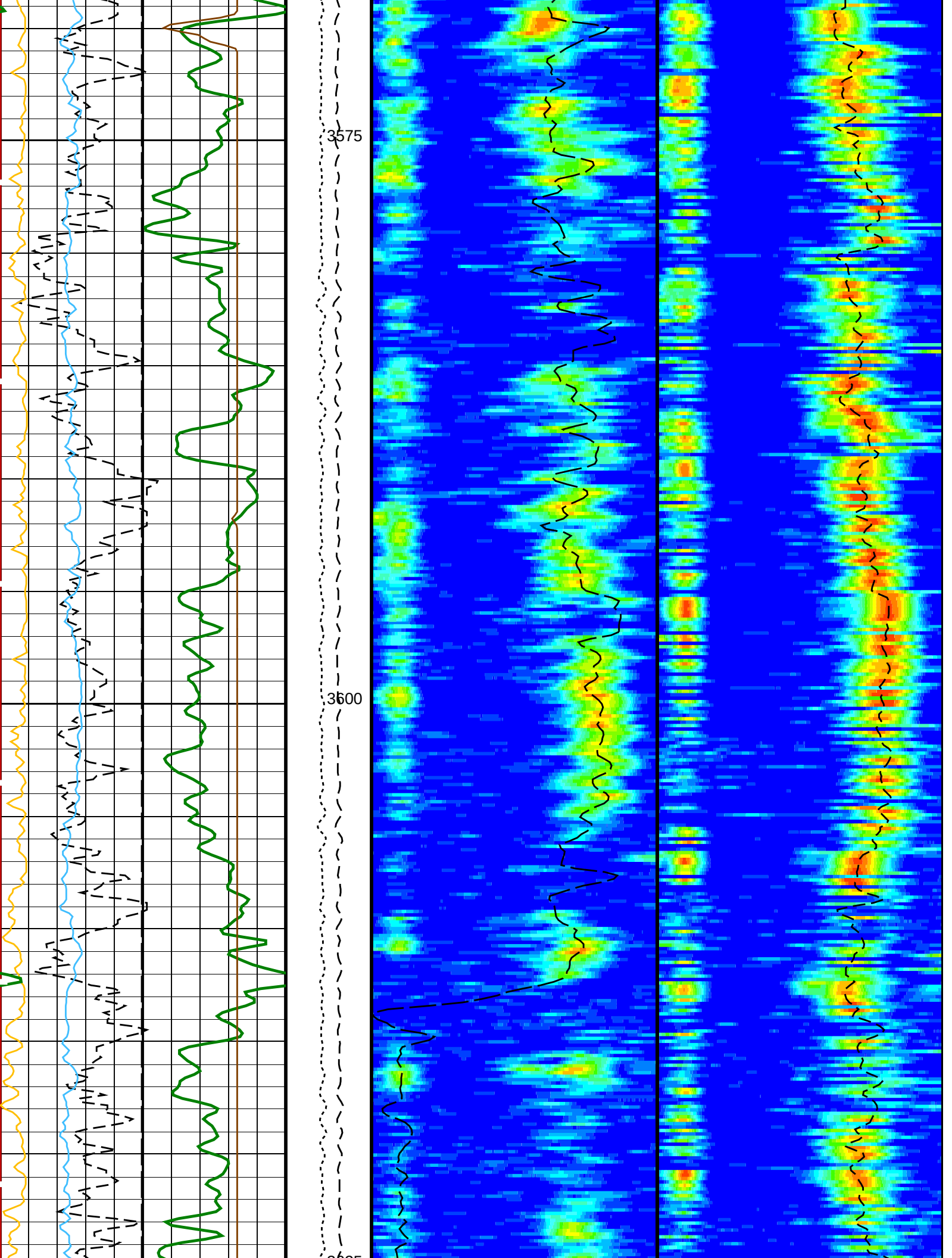
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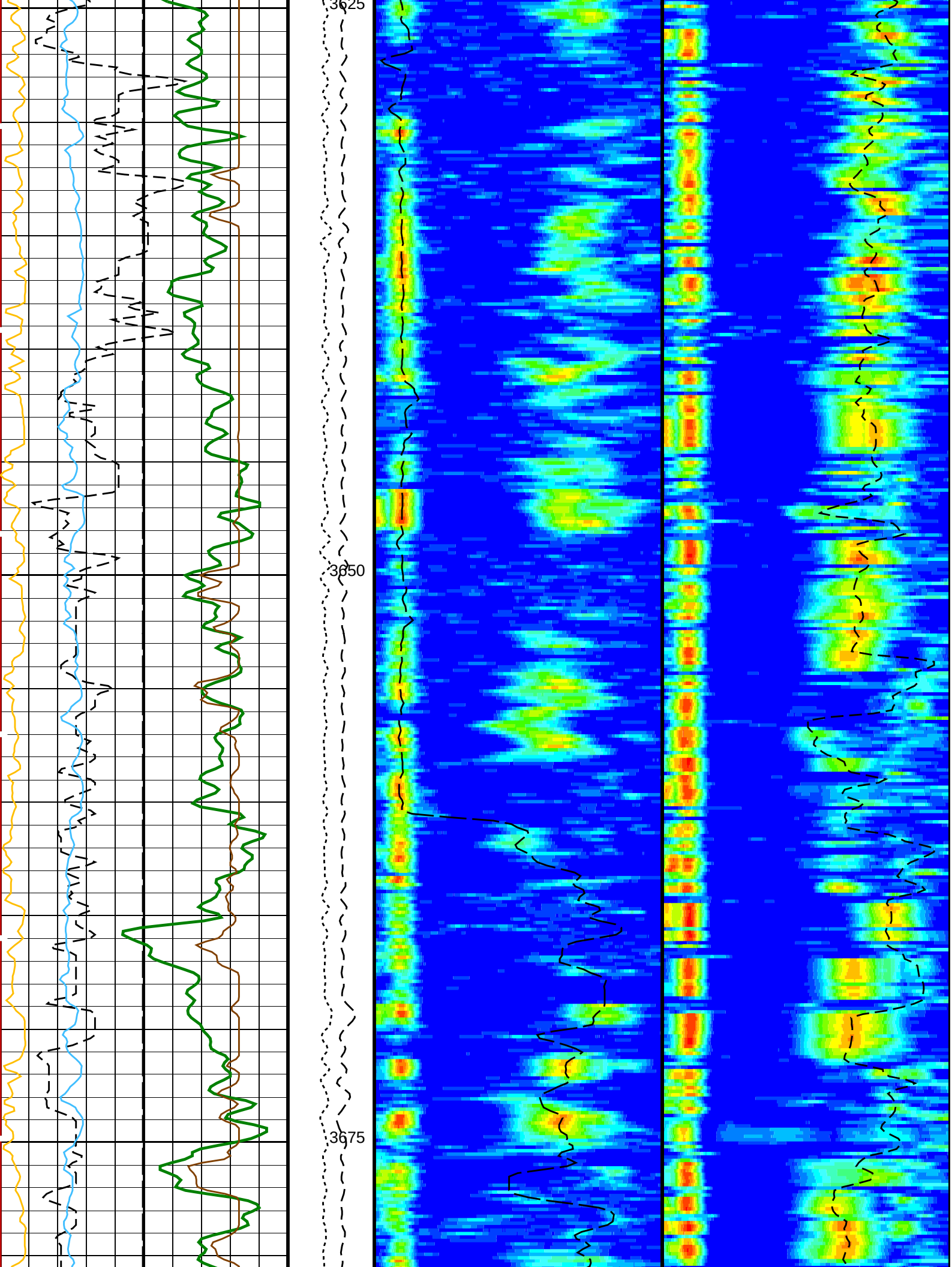
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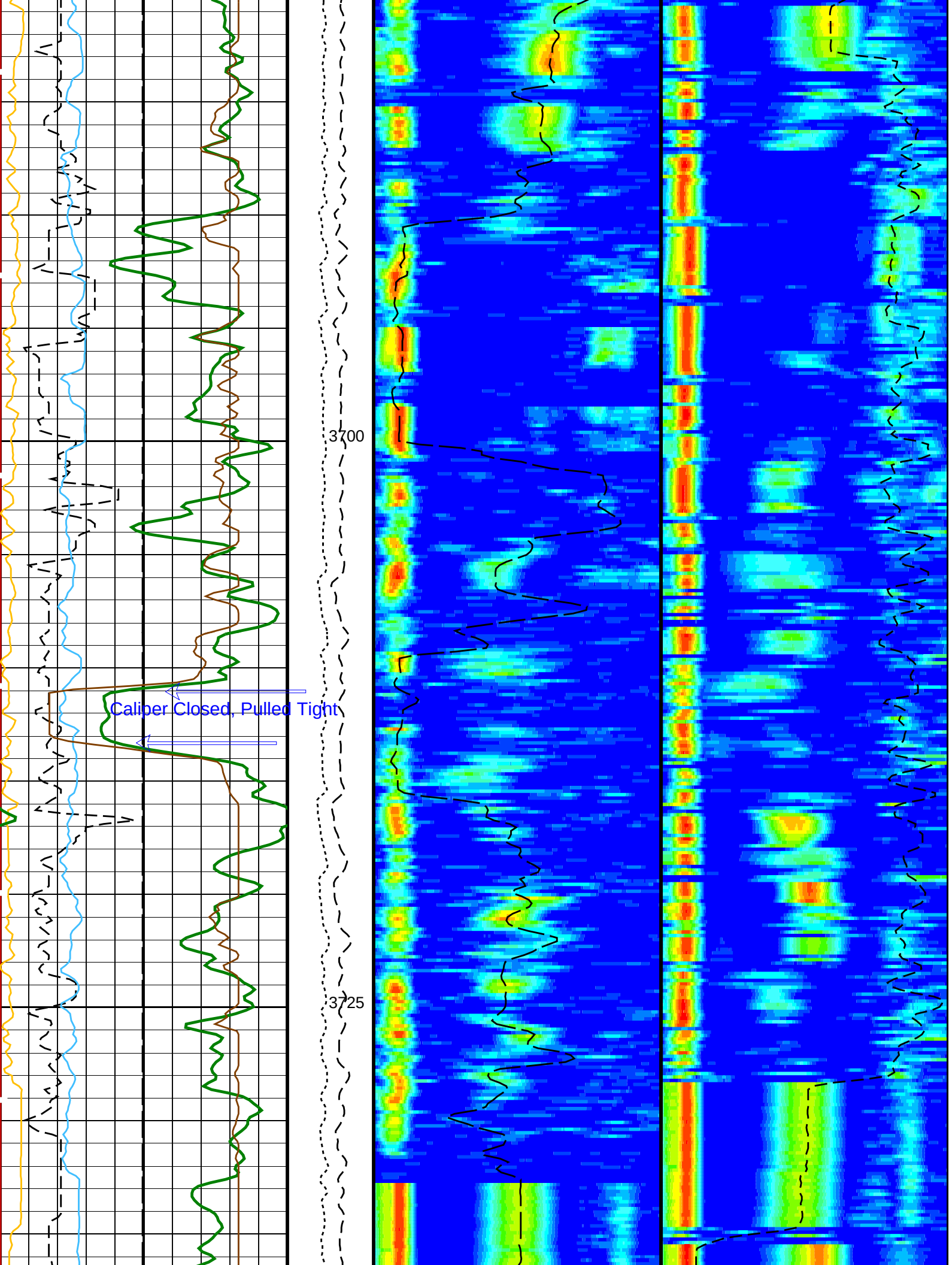
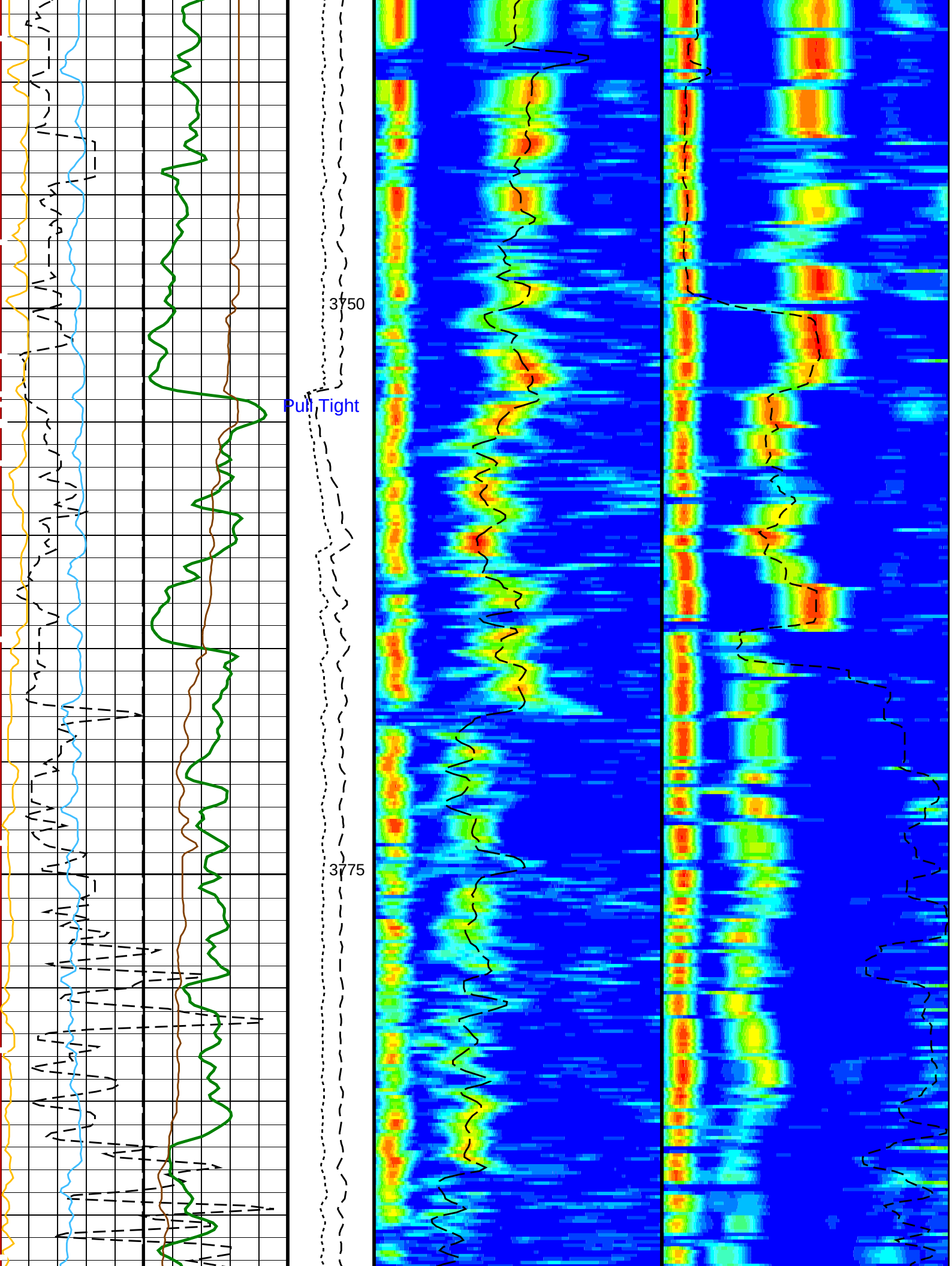

3700
Caliper Closed, Pulled Tight
3725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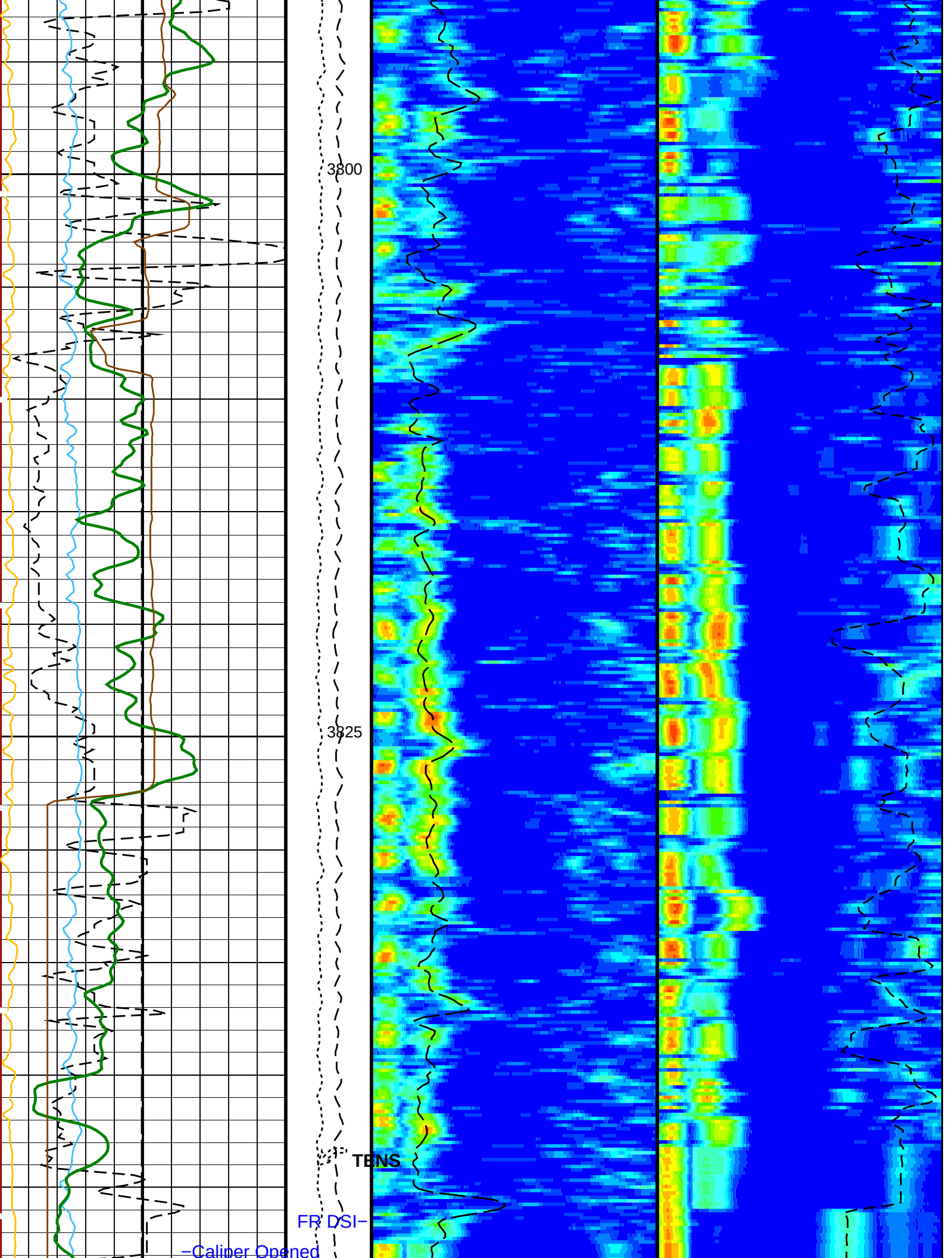
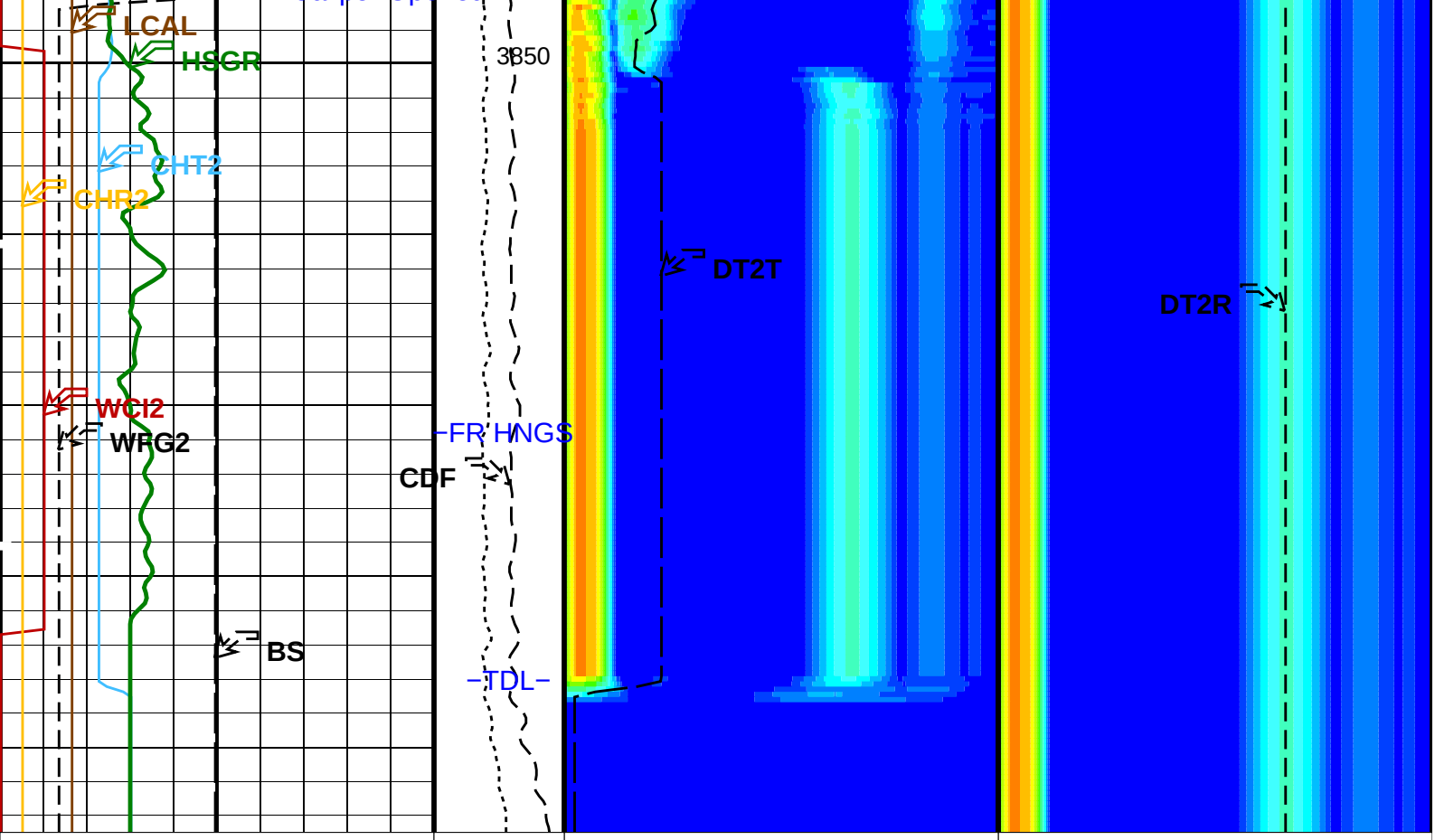
Pull Tight
3775


3800
3825
TENS
FR DSI−
−Caliper Opened



Bit Size (BS) 0 (IN) 20	Tension (TENS) (LBF) 10000 0	Delta−T Shear / TA − Upper Dipole (DT2T) 75 (US/F) 1200	Delta−T Shear / RA − Upper Dipole (DT2R) 75 (US/F) 1200
SAM2 Waveform Gain (WFG2) 0 (−−−−) 1000	Calibrated Downhole Force (CDF) (LBF) 5000 0	Min Amplitude Max Tr.Array U.Dipole Slow Proj. CVDL (SPT2) 75 (US/F) 1200	Min Amplitude Max Rec.Array U.Dipole Slow Proj. CVDL (SPR2) 75 (US/F) 1200
HLDS Caliper (LCAL) 0 (IN) 20		Uplog	
Waveform Data Copy Indicator 2 − Upper Dipole (WCI2) 0 (−−−−) 10		Dipole frequency drive at 2khz	
Peak Coherence / RA − Upper Dipole (CHR2) 0 (−−−−) 10			
Peak Coherence / TA − Upper Dipole (CHT2) −2 (−−−−) 8			
HNGS Spectroscopy Gamma Ray (HSGR) 0 (GAPI) 100			

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	HNGS−BA: Hostile Natural Gamma Ray Sonde	
BAR1	HNGS Detector 1 Barite Constant	1
BAR2	HNGS Detector 2 Barite Constant	1

BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	LCAL	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.00207569	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
TPOS	Tool Position	CENT	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.99207	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.0061	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	DSST−B: Dipole Shear Imager − B		
BHS	Borehole Status	OPEN	
DDE2	Digitizing Delay 2	0	US
DDEX	Digitizing Delay X	0	US
DLCS	Label Compressional Source − Dipole Shear	USE	
DSHL	Label Slowness Lower Limit − Dipole Shear	75	US/F
DSHU	Label Slowness Upper Limit − Dipole Shear	1200	US/F
DSI2	Digitizer Sample Interval 2	40	US
DSIX	Digitizer Sample Interval X	40	US
DTCS	Compressional Delta−T Source for DTCO Channel	PS_COMP	
DWC2	Digitizer Word Count 2	512	
DWCX	Digitizer Word Count X	512	
GCSE	Generalized Caliper Selection	LCAL	
NWI2	Number Waveform Items 2	8	
NWIX	Number Waveform Items X	0	
RX1G	Receiver 1 Geometry	294	IN
RX2G	Receiver 2 Geometry	300	IN
RX3G	Receiver 3 Geometry	306	IN
RX4G	Receiver 4 Geometry	312	IN
RX5G	Receiver 5 Geometry	318	IN
RX6G	Receiver 6 Geometry	324	IN
RX7G	Receiver 7 Geometry	330	IN
RX8G	Receiver 8 Geometry	336	IN
SAM2	DSST Sonic Acquisition Mode 2 − Upper Dipole Mode	ODD	
SAMX	DSST Sonic Acquisition Mode X − Both Dipoles or Monopole Mode for Expert	OFF	
SAS2	STC Sonic Array Status − Upper Dipole	255	
SBO2	STC Search Band Offset − Upper Dipole	3000	US
SBW2	STC Search Bandwidth − Upper Dipole	8000	US
SFC2	STC Formation Character − Upper Dipole	SELECTABLE	
SFM2	STC Filter − Upper Dipole	B1−3K	
SLL2	STC Slowness Lower Limit − Upper Dipole	75	US/F
SST2	STC Slowness Step − Upper Dipole	4	US/F
SSW2	STC Source Waveform − Upper Dipole	WF_SAM2	
SUL2	STC Slowness Upper Limit − Upper Dipole	1200	US/F
SWD2	STC Slowness Width − Upper Dipole	40	US/F
TBF2	STC Time for Baseline Fill − Upper Dipole	0	US
TLL2	STC Time Lower Limit − Upper Dipole	600	US
TST2	STC Time Step − Upper Dipole	200	US
TUL2	STC Time Upper Limit − Upper Dipole	20200	US
TWD2	STC Time Width − Upper Dipole	2000	US
TWI2	STC Integration Time Window − Upper Dipole	1600	US
TWSX	Transmitter Waveform Select X	0	
UTXG	Upper Dipole Transmitter Geometry	162	IN
WFM2	Waveform Mode 2	W1	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	System and Miscellaneous		
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	RECOMPUTE	

Format: DSST_UPPER_DIPOLE_RC_TR_VDL_COLOR Vertical Scale: 1:200 Graphics File Created: 25−Apr−2019 22:08

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187

HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_012LUP	FN:19	PRODUCER	25−Apr−2019 10:00	3872.5 M	3220.1 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_026PUP	FN:45	PRODUCER	25−Apr−2019 22:08		
BACKUP	MSS_LDEO_NGS_HRLA_026PUP	FN:46	PRODUCER	25−Apr−2019 22:08		

Company: International Ocean Discovery Program — Well: Expedition 382, Site U1536E

Input DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_012LUP	FN:19	PRODUCER	25−Apr−2019 10:00	3872.5 M	3220.1 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_026PUP	FN:45	PRODUCER	25−Apr−2019 22:08	3872.5 M	3220.2 M
BACKUP	MSS_LDEO_NGS_HRLA_026PUP	FN:46	PRODUCER	25−Apr−2019 22:08	3872.5 M	3220.2 M

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

Peak Coherence / TA − P & S Shear (CHTS)
−1 (−−−−) 9

Peak Coherence / RA − P & S Shear (CHRS)
−1 (−−−−) 9

Peak Coherence / TA − P & S Comp (CHTP)
0 (−−−−) 10

Peak Coherence / RA − P & S Comp (CHRP)
0 (−−−−) 10

Waveform Data Copy Indicator 4 − Monopole P&S (WCI4)
0 (−−−−) 10

Compressional driven by low frequency 5khz

Uplog

HLDS Caliper (LCAL)
0 (IN) 20

Min Amplitude Max
Tr.Array P&S Slow Proj. CVDL (SPT4)
40 (US/F) 240

Min Amplitude Max
Rec.Array P&S Slow Proj. CVDL (SPR4)
40 (US/F) 240

SAM4 Waveform Gain (WFG4)
0 (−−−−) 1000

Delta−T Shear / TA − P & S (DTTS)
40 (US/F) 240

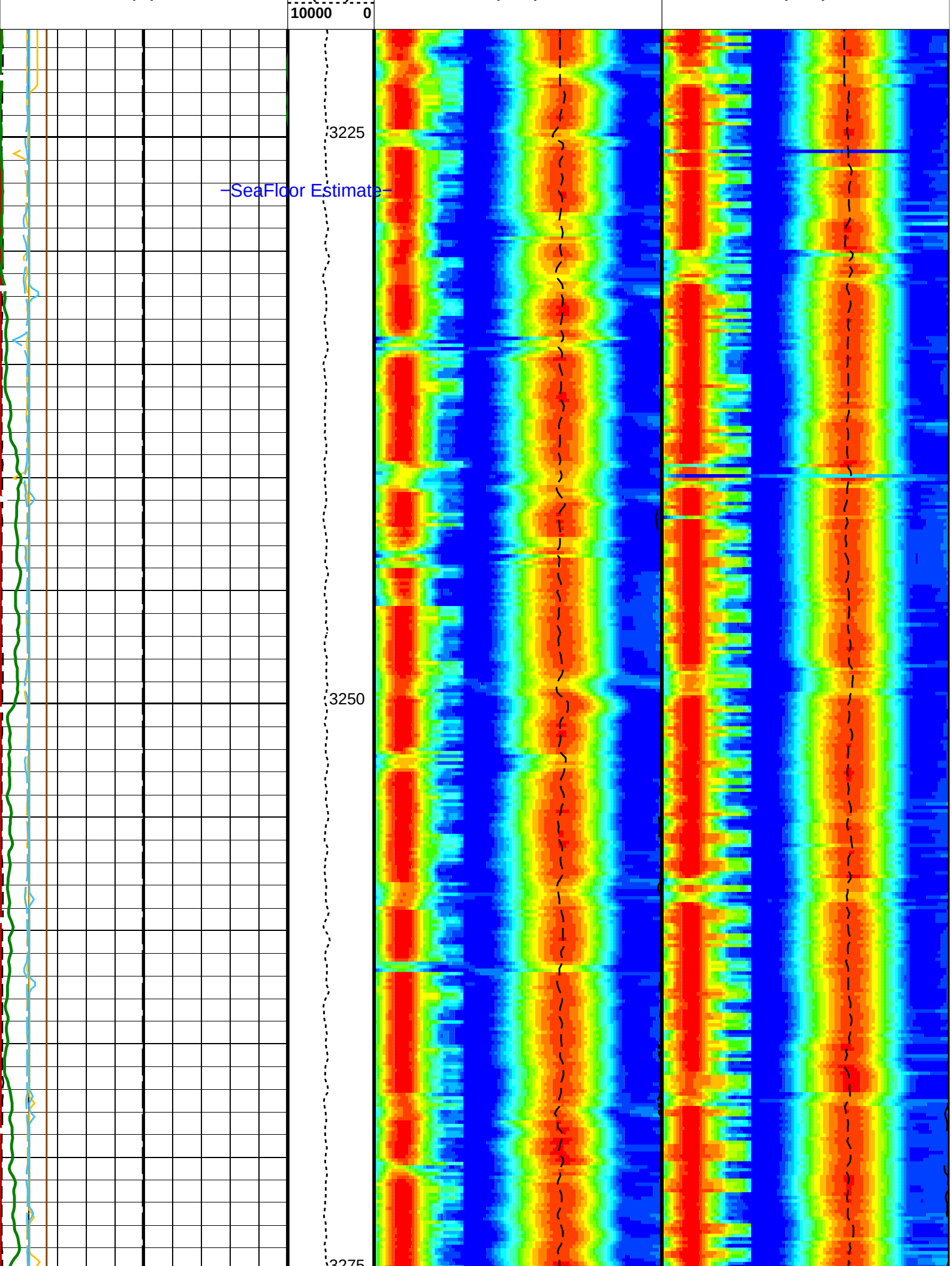
Delta−T Shear / RA − P & S (DTRS)
40 (US/F) 240

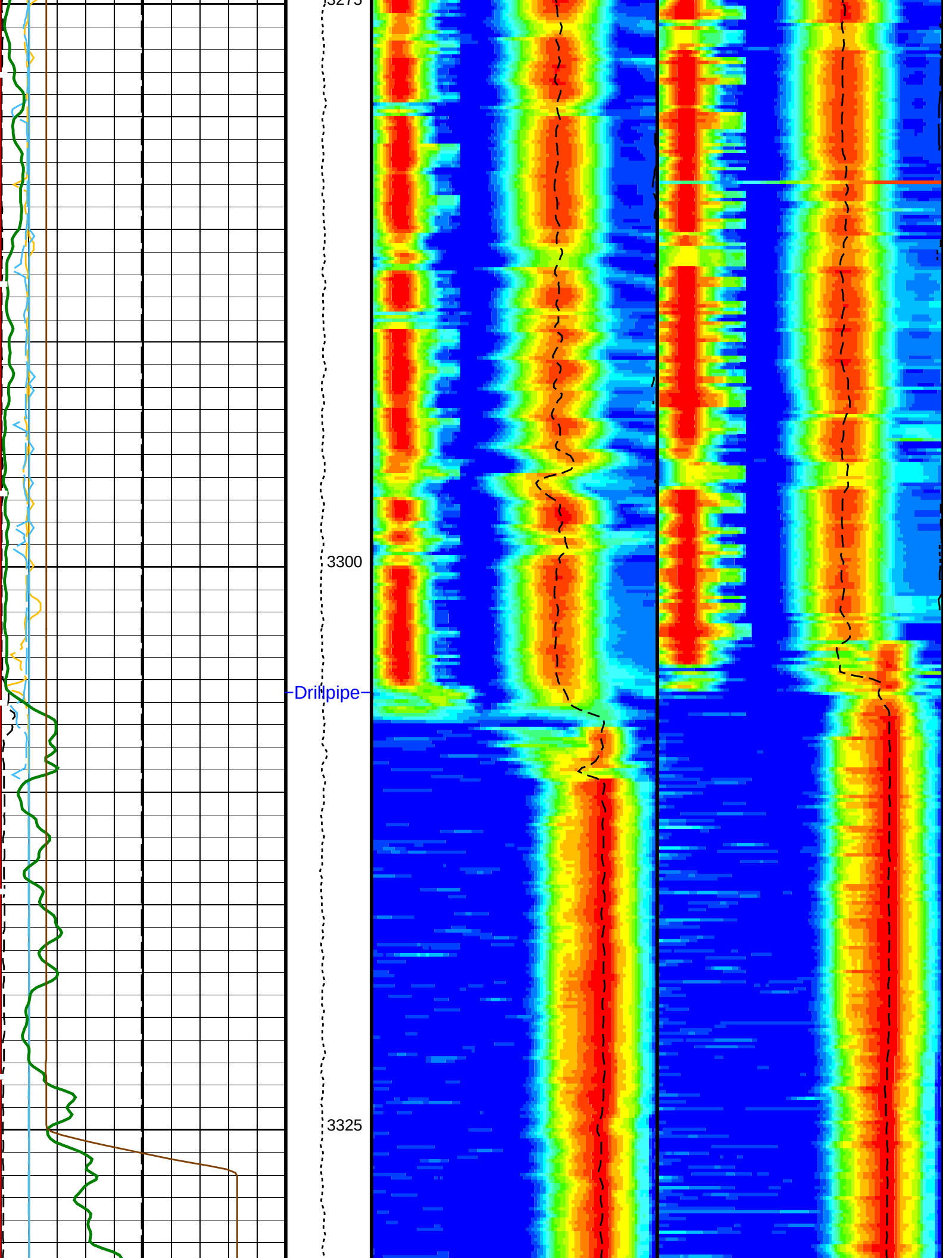
Bit Size (BS)
0 (IN) 20

Tension (TENS) (LBF)

Delta−T Comp / TA − P & S (DTTP)
40 (US/F) 240

Delta−T Comp / RA − P & S (DTRP)
40 (US/F) 240


10000
0
3225
SeaFloor Estimate
3250
3275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Drillpipe
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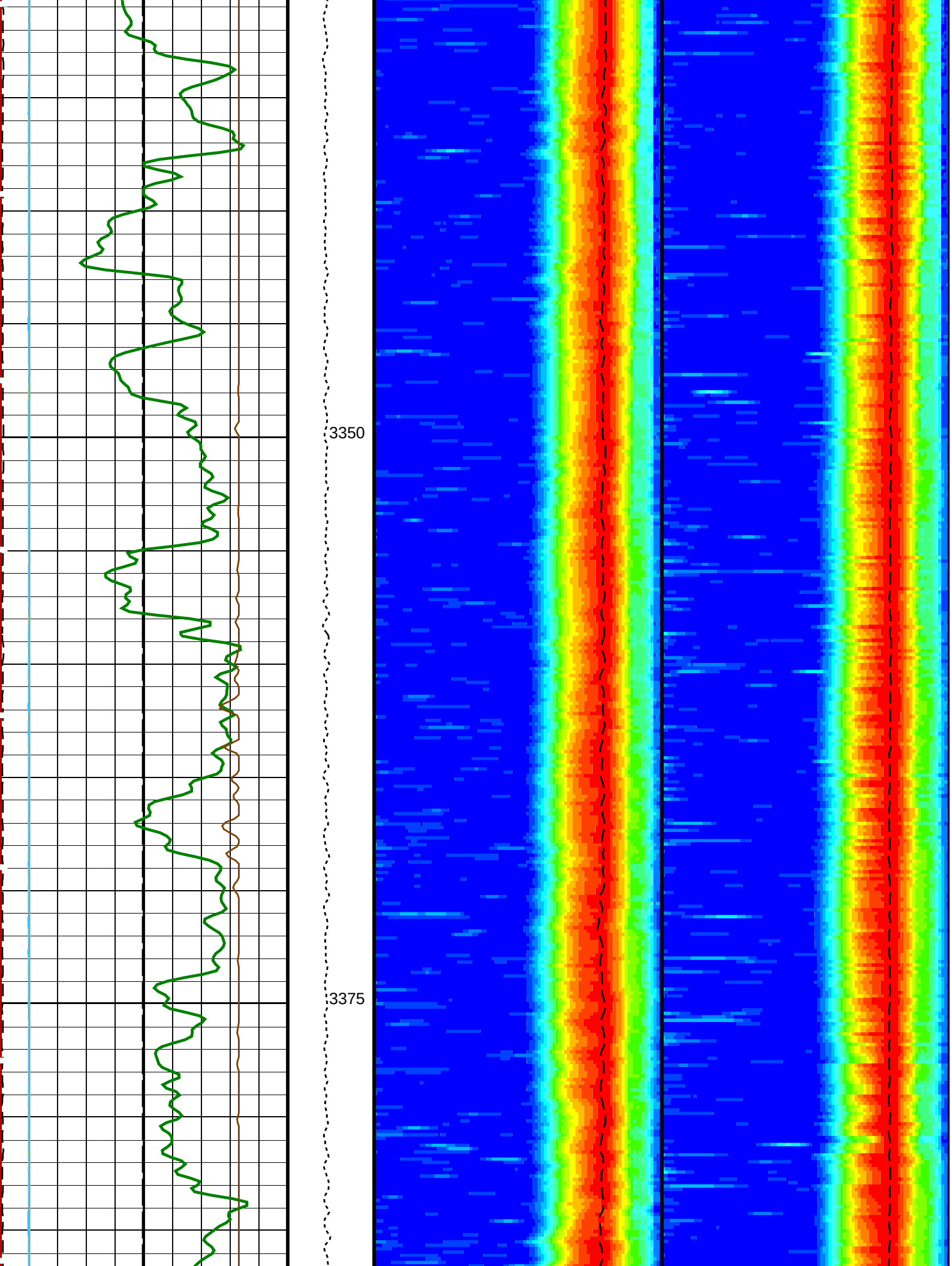
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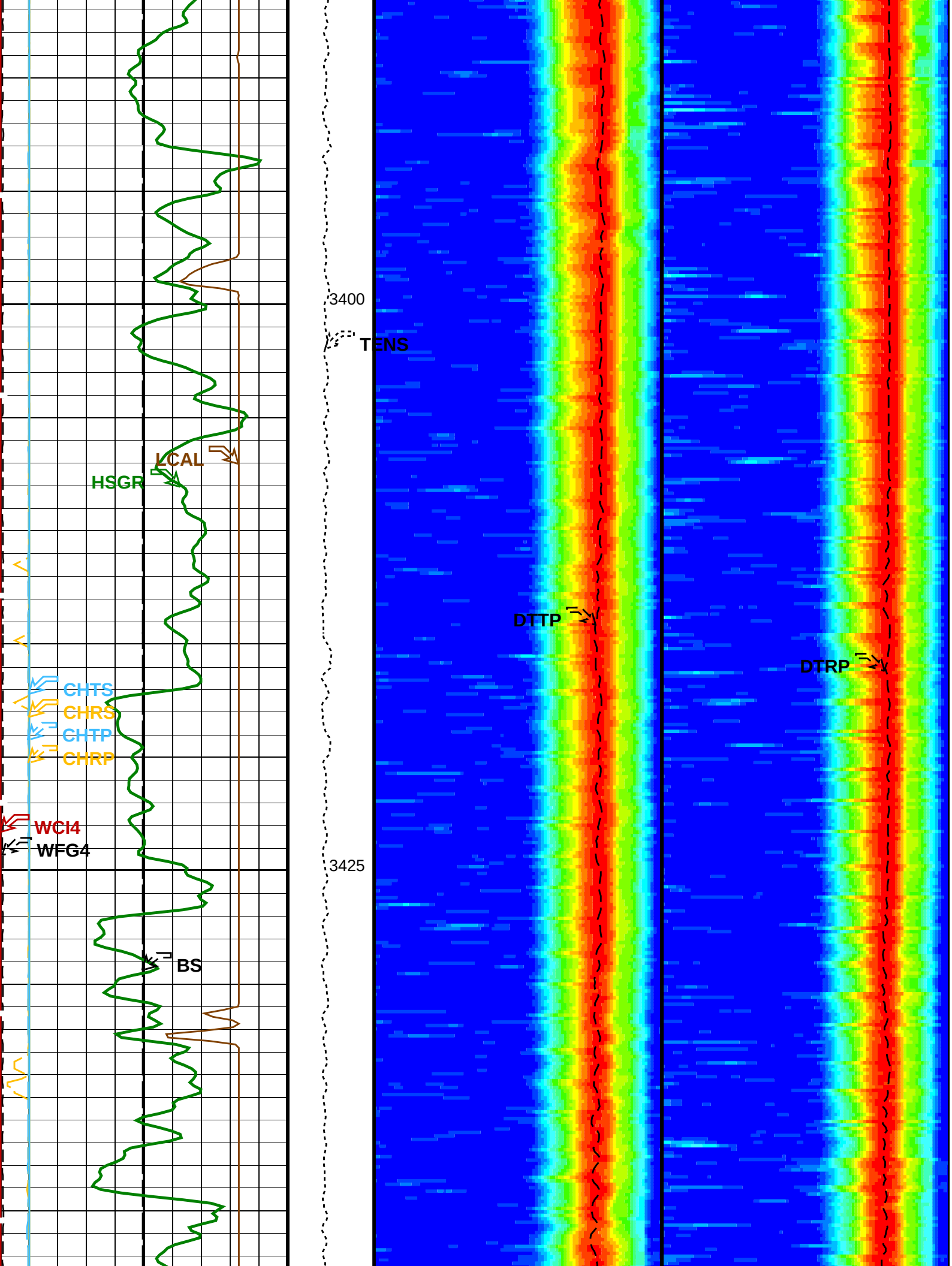
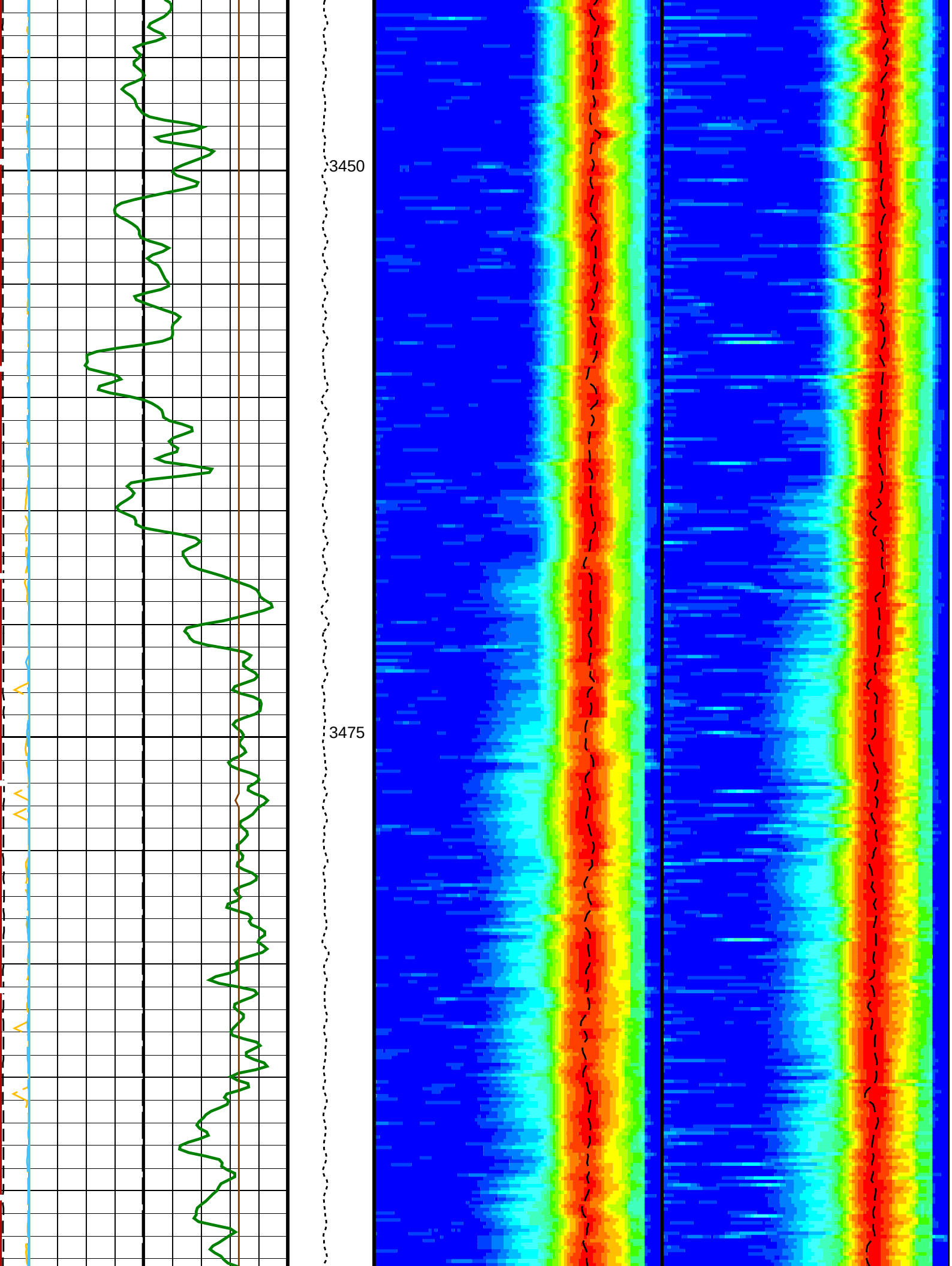

3400
TENS
LCAL
HSGR
DTTP
DTRP
CHTS
CHRS
CHTP
CHRP
WCI4
WFG4
3425
BS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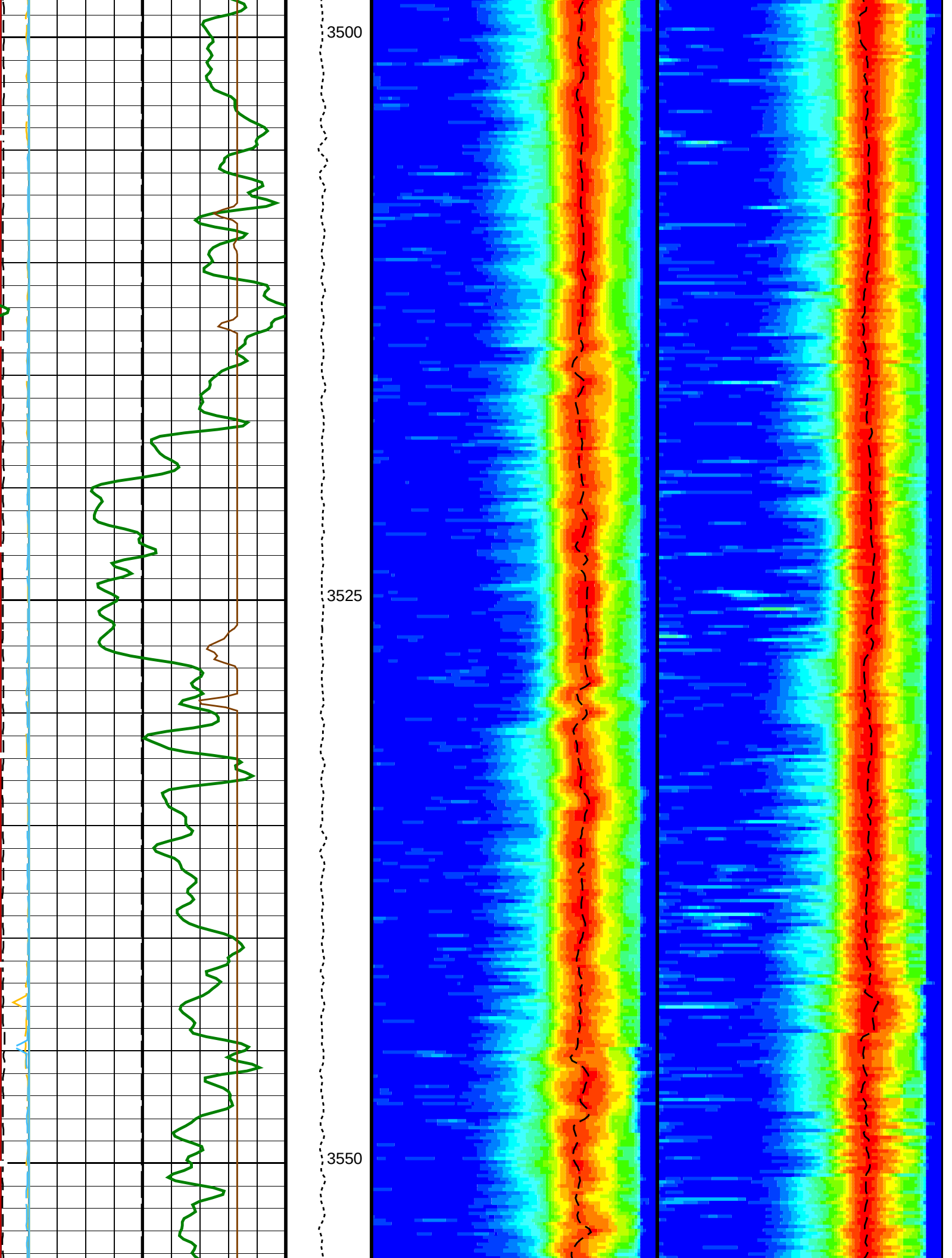
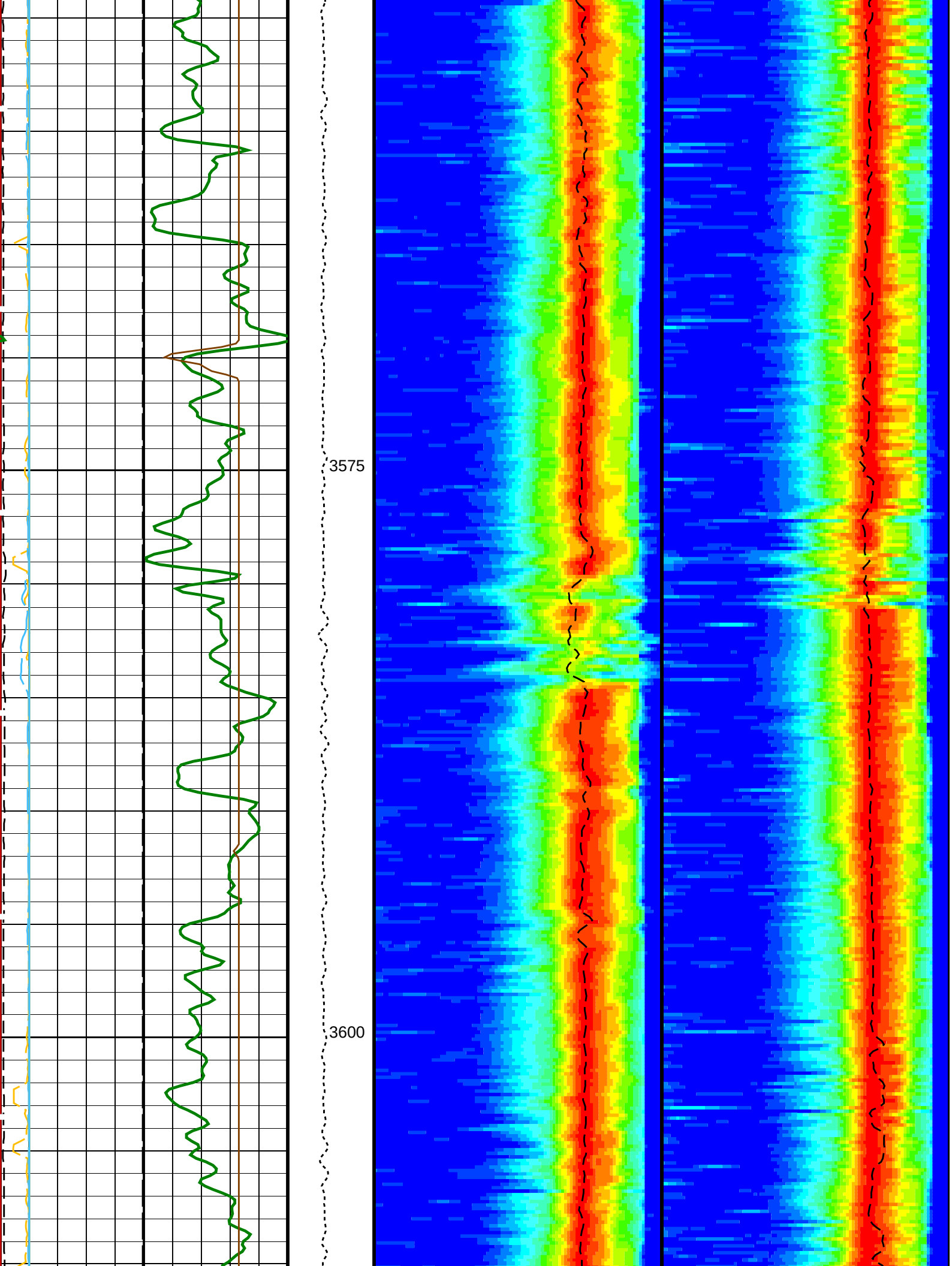

3500
3525
3550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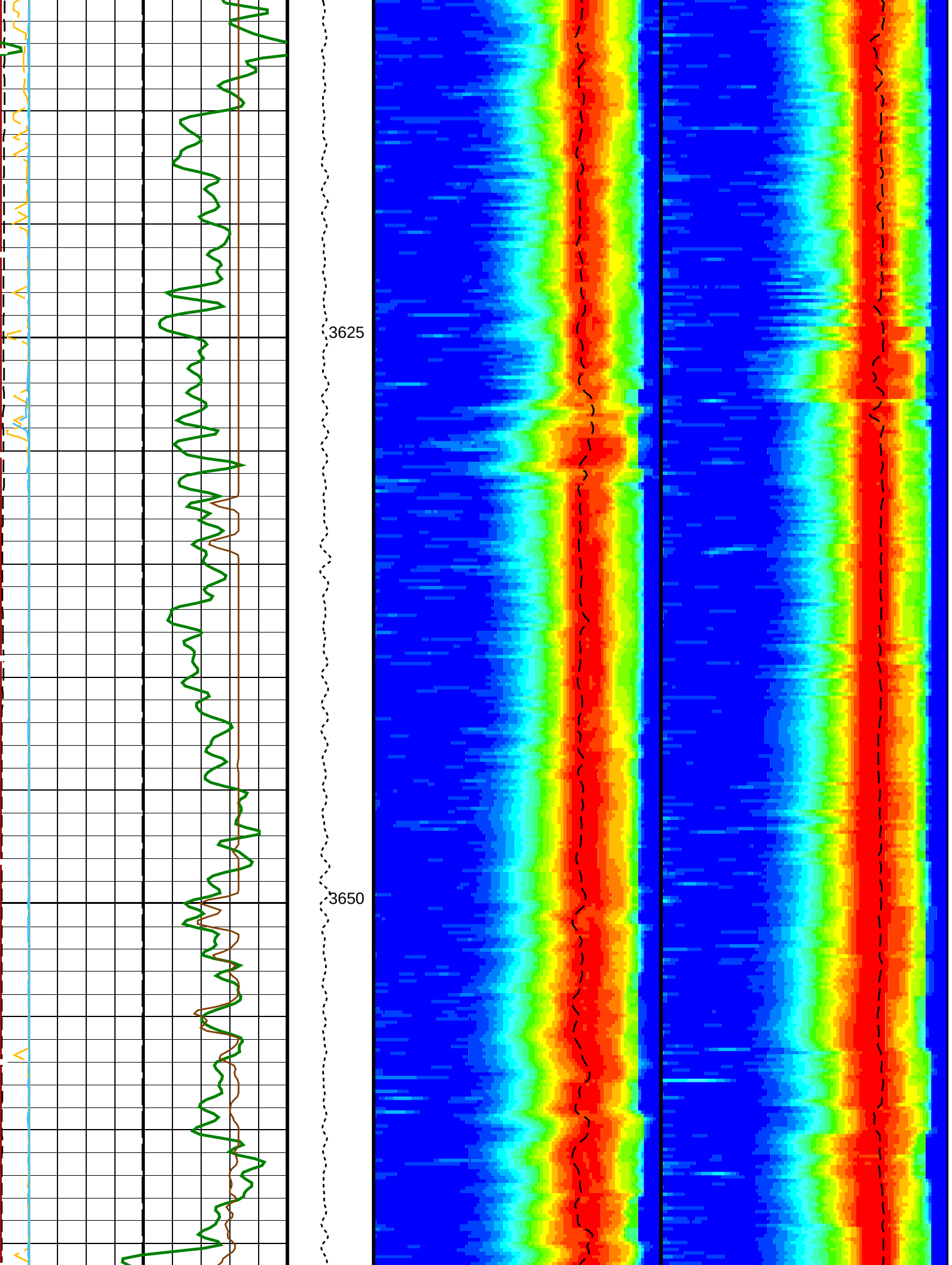
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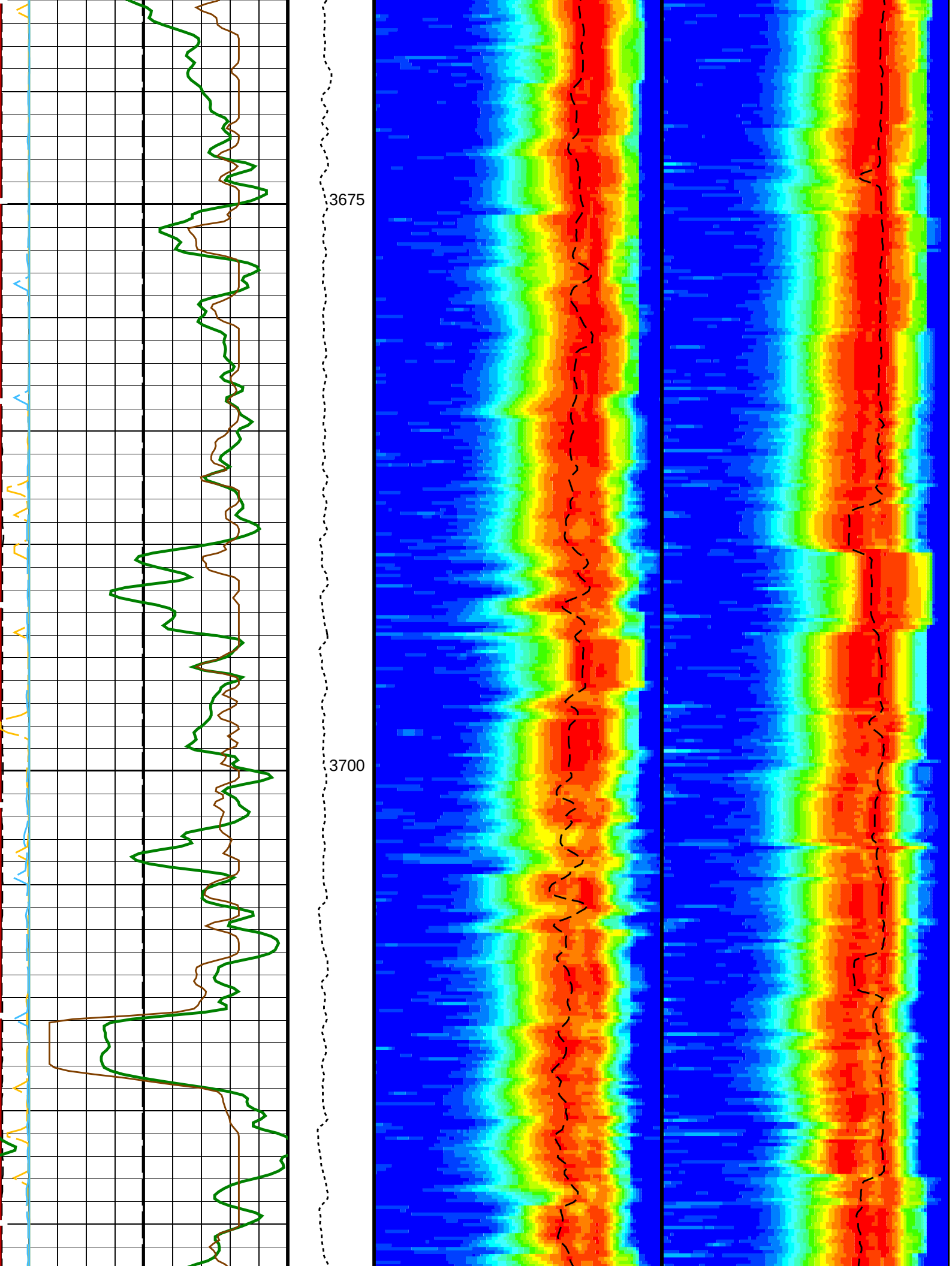
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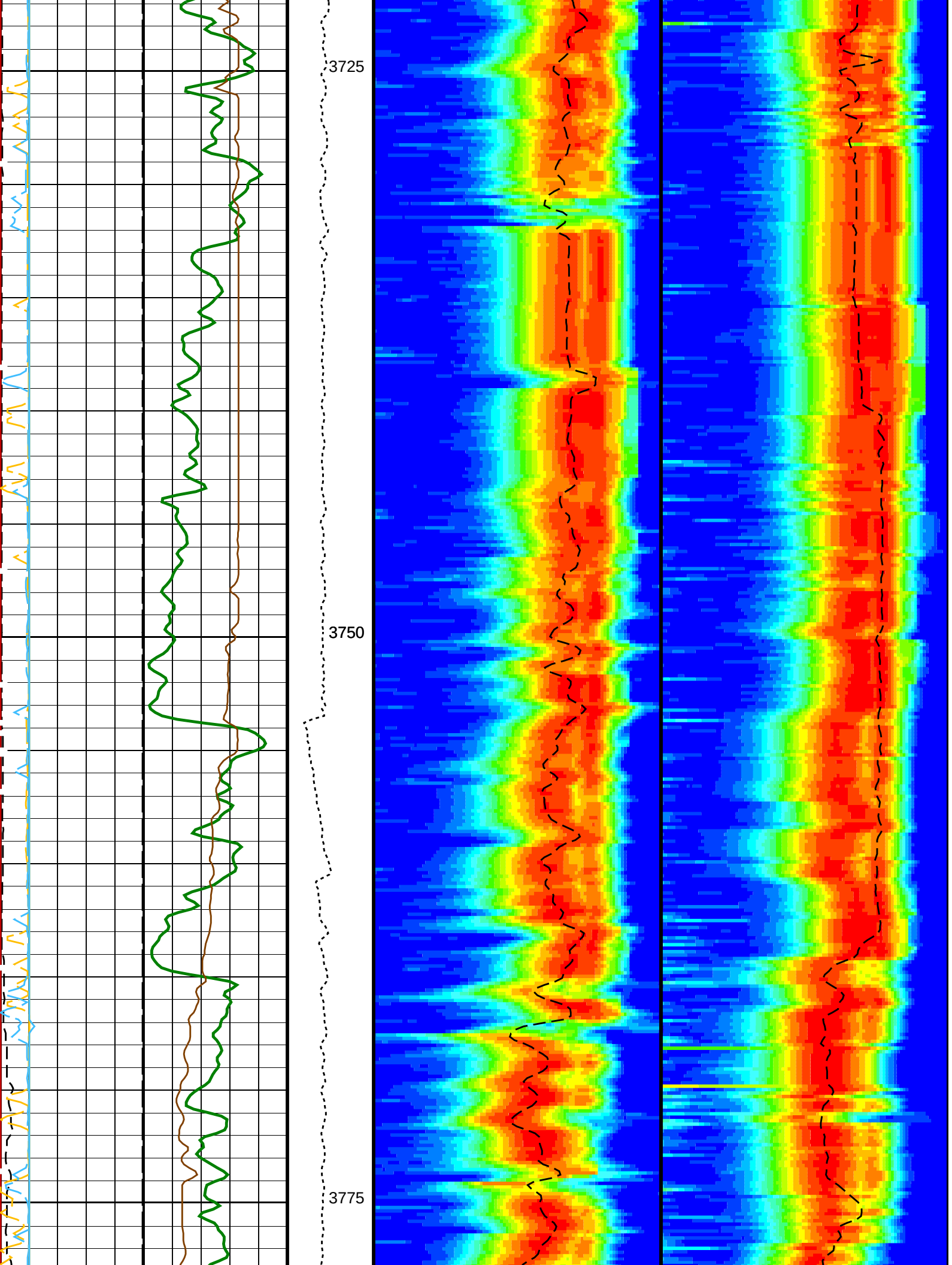
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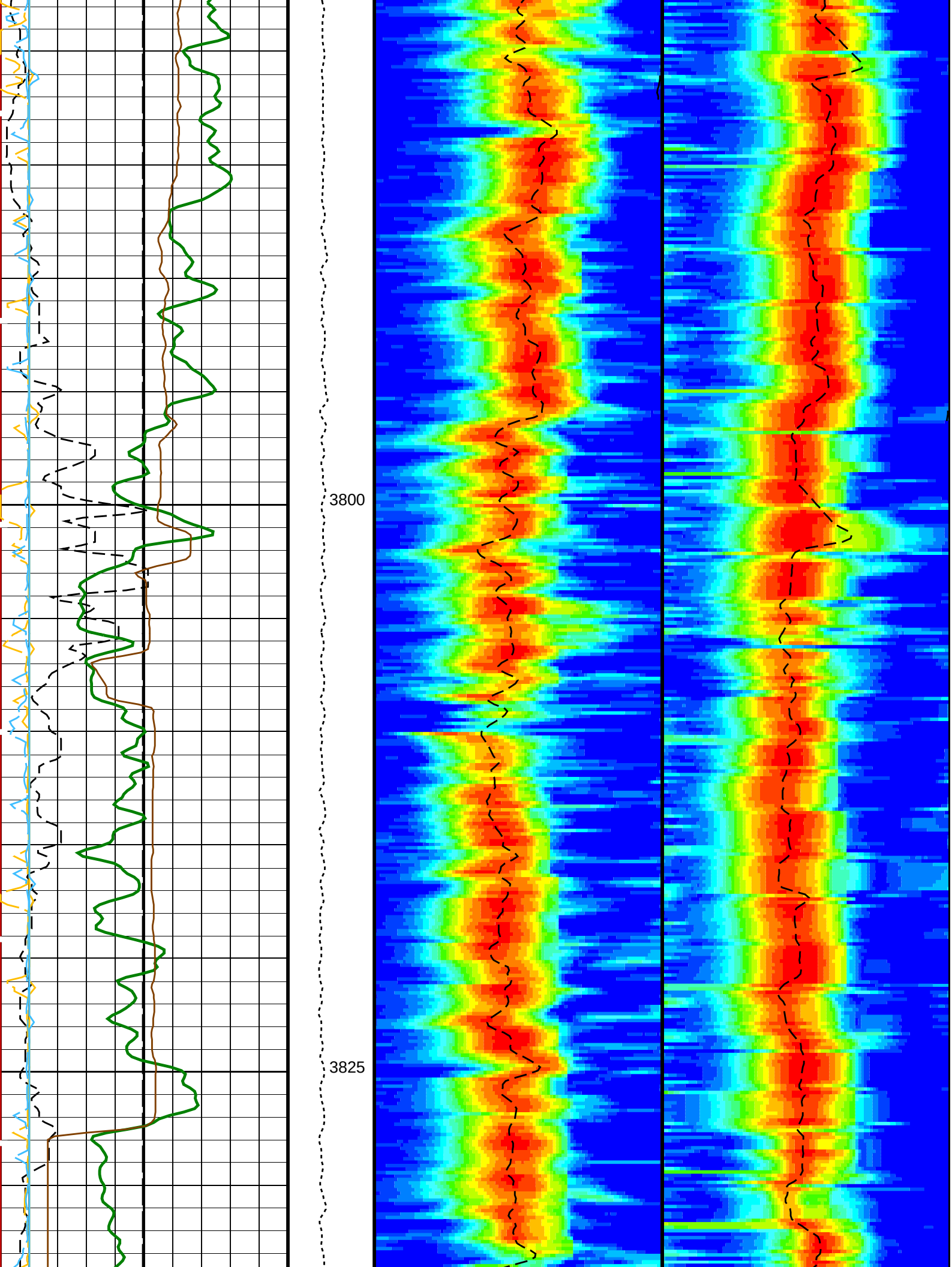
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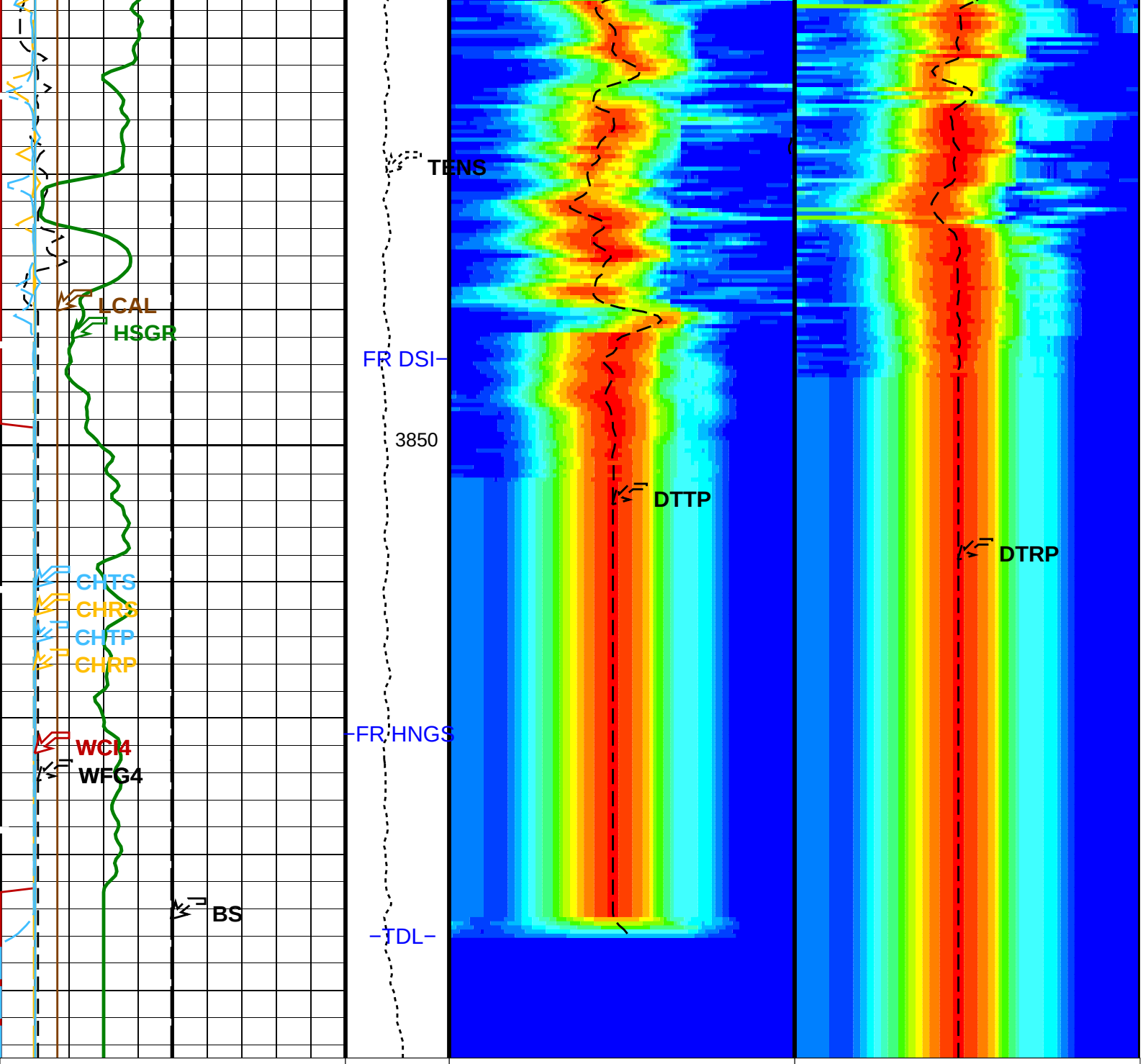
3825



Bit Size (BS)	Tension (TENS)	Delta−T Comp / TA − P & S (DTTP)	Delta−T Comp / RA − P & S (DTRP)
0 (IN) 20	10000 (LBF) 0	40 (US/F) 240	40 (US/F) 240
SAM4 Waveform Gain (WFG4)		**Delta−T Shear / TA − P & S (DTTS)**	**Delta−T Shear / RA − P & S (DTRS)**
0 (−−−−) 1000		40 (US/F) 240	40 (US/F) 240
HLDS Caliper (LCAL)		Min Amplitude Max	Min Amplitude Max
0 (IN) 20		Tr.Array P&S Slow Proj. CVDL (SPT4)	Rec.Array P&S Slow Proj. CVDL (SPR4)
Waveform Data Copy Indicator 4 − Monopole P&S (WCI4)		40 (US/F) 240	40 (US/F) 240
0 (−−−−) 10			
Peak Coherence / RA − P & S Comp (CHRP)			
0 (−−−−) 10			
Peak Coherence / TA − P & S Comp			

Uplog

Compressional driven by low frequency 5khz

(CHTP)

0 (----) 10

Peak Coherence / RA − P & S Shear (CHRS)

−1 (----) 9

Peak Coherence / TA − P & S Shear (CHTS)

−1 (----) 9

HNGS Spectroscopy Gamma Ray (HSGR)

0 (GAPI) 100

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	LCAL	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.00207569	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
TPOS	Tool Position	CENT	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.99207	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.0061	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	DSST−B: Dipole Shear Imager − B		
BHS	Borehole Status	OPEN	
CASF	Label Casing Function − Monopole P&S	50	
COLL	Label Slowness Lower Limit − Monopole P&S Compressional	80	US/F
COUL	Label Slowness Upper Limit − Monopole P&S Compressional	180	US/F
DDE4	Digitizing Delay 4	0	US
DDEX	Digitizing Delay X	0	US
DSI4	Digitizer Sample Interval 4	10	US
DSIX	Digitizer Sample Interval X	40	US
DTF	Delta−T Fluid	196	US/F
DWC4	Digitizer Word Count 4	512	
DWCX	Digitizer Word Count X	512	
FILG	Label Fill Gap Control − Monopole P&S	COMP_SHEAR	
GCSE	Generalized Caliper Selection	LCAL	
LFC	Label Formation Character − Monopole P&S	DYNAMIC	
MCS	Mean Casing Slowness	57	US/F
MTXG	Monopole Transmitter Geometry	186	IN
NWI4	Number Waveform Items 4	8	
NWIX	Number Waveform Items X	0	
RSMN	Label Shear/Compressional Minimum Ratio − Monopole P&S	1.4	
RSMX	Label Shear/Compressional Maximum Ratio − Monopole P&S	2.12	
RX1G	Receiver 1 Geometry	294	IN
RX2G	Receiver 2 Geometry	300	IN
RX3G	Receiver 3 Geometry	306	IN
RX4G	Receiver 4 Geometry	312	IN
RX5G	Receiver 5 Geometry	318	IN
RX6G	Receiver 6 Geometry	324	IN
RX7G	Receiver 7 Geometry	330	IN
RX8G	Receiver 8 Geometry	336	IN
SAM4	DSST Sonic Acquisition Mode 4 − Monopole Mode for P&S	LFD_EVEN	
SAMX	DSST Sonic Acquisition Mode X − Both Dipoles or Monopole Mode for Expert		

		OFF	
SAS4	STC Sonic Array Status − Monopole P&S	255	
SBO4	STC Search Band Offset − Monopole P&S	500	US
SBR4	STC Baseline Removal − Monopole P&S	ON	
SBW4	STC Search Bandwidth − Monopole P&S	2000	US
SFC4	STC Formation Character − Monopole P&S	SELECTABLE	
SFM4	STC Filter − Monopole P&S	B3−12K	
SHLL	Label Slowness Lower Limit − Monopole P&S Shear	235	US/F
SHUL	Label Slowness Upper Limit − Monopole P&S Shear	240	US/F
SLL4	STC Slowness Lower Limit − Monopole P&S	40	US/F
SST4	STC Slowness Step − Monopole P&S	2	US/F
SSW4	STC Source Waveform − Monopole P&S	WF_SAM4	
STLL	Label Slowness Lower Limit − Monopole Stoneley	180	US/F
STUL	Label Slowness Upper Limit − Monopole Stoneley	780	US/F
SUL4	STC Slowness Upper Limit − Monopole P&S	240	US/F
SWD4	STC Slowness Width − Monopole P&S	10	US/F
TBF4	STC Time for Baseline Fill − Monopole P&S	300	US
TLL4	STC Time Lower Limit − Monopole P&S	150	US
TST4	STC Time Step − Monopole P&S	50	US
TUL4	STC Time Upper Limit − Monopole P&S	3660	US
TWD4	STC Time Width − Monopole P&S	1000	US
TWI4	STC Integration Time Window − Monopole P&S	500	US
TWSX	Transmitter Waveform Select X	0	
WFM4	Waveform Mode 4	W1	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	System and Miscellaneous		
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	RECOMPUTE	

Format: DSST_P_S_RC_TR_VDL_COLOR **Vertical Scale: 1:200** **Graphics File Created: 25−Apr−2019 22:08**

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_012LUP	FN:19	PRODUCER	25−Apr−2019 10:00	3872.5 M	3220.1 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_026PUP	FN:45	PRODUCER	25−Apr−2019 22:08		
BACKUP	MSS_LDEO_NGS_HRLA_026PUP	FN:46	PRODUCER	25−Apr−2019 22:08		

Company: International Ocean Discovery Program **Well: Expedition 382, Site U1536E**

Input DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_012LUP	FN:19	PRODUCER	25−Apr−2019 10:00	3872.5 M	3220.1 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_026PUP	FN:45	PRODUCER	25−Apr−2019 22:08	3872.5 M	3220.2 M
BACKUP	MSS_LDEO_NGS_HRLA_026PUP	FN:46	PRODUCER	25−Apr−2019 22:08	3872.5 M	3220.3 M

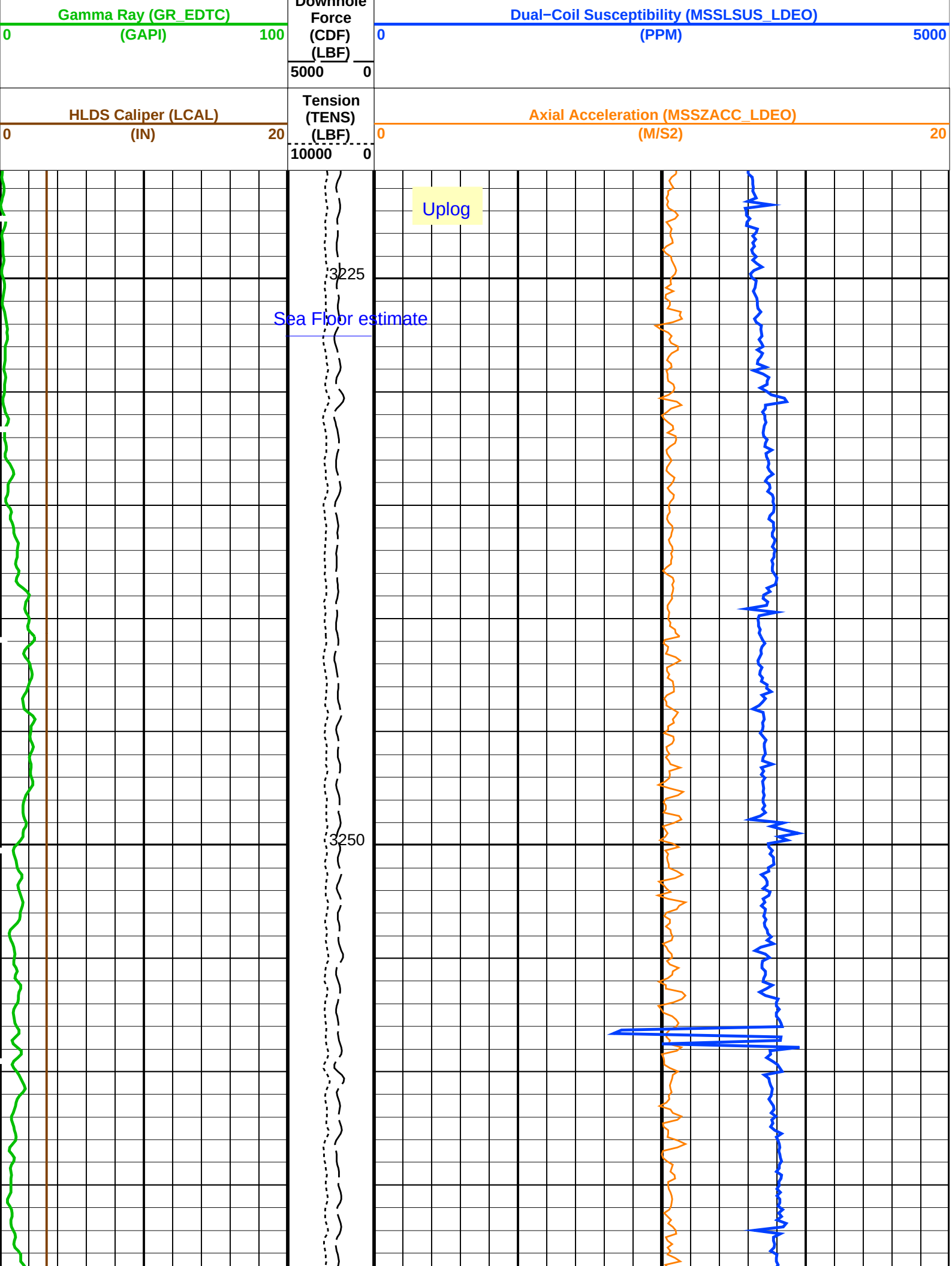
OP System Version: 19C0−187

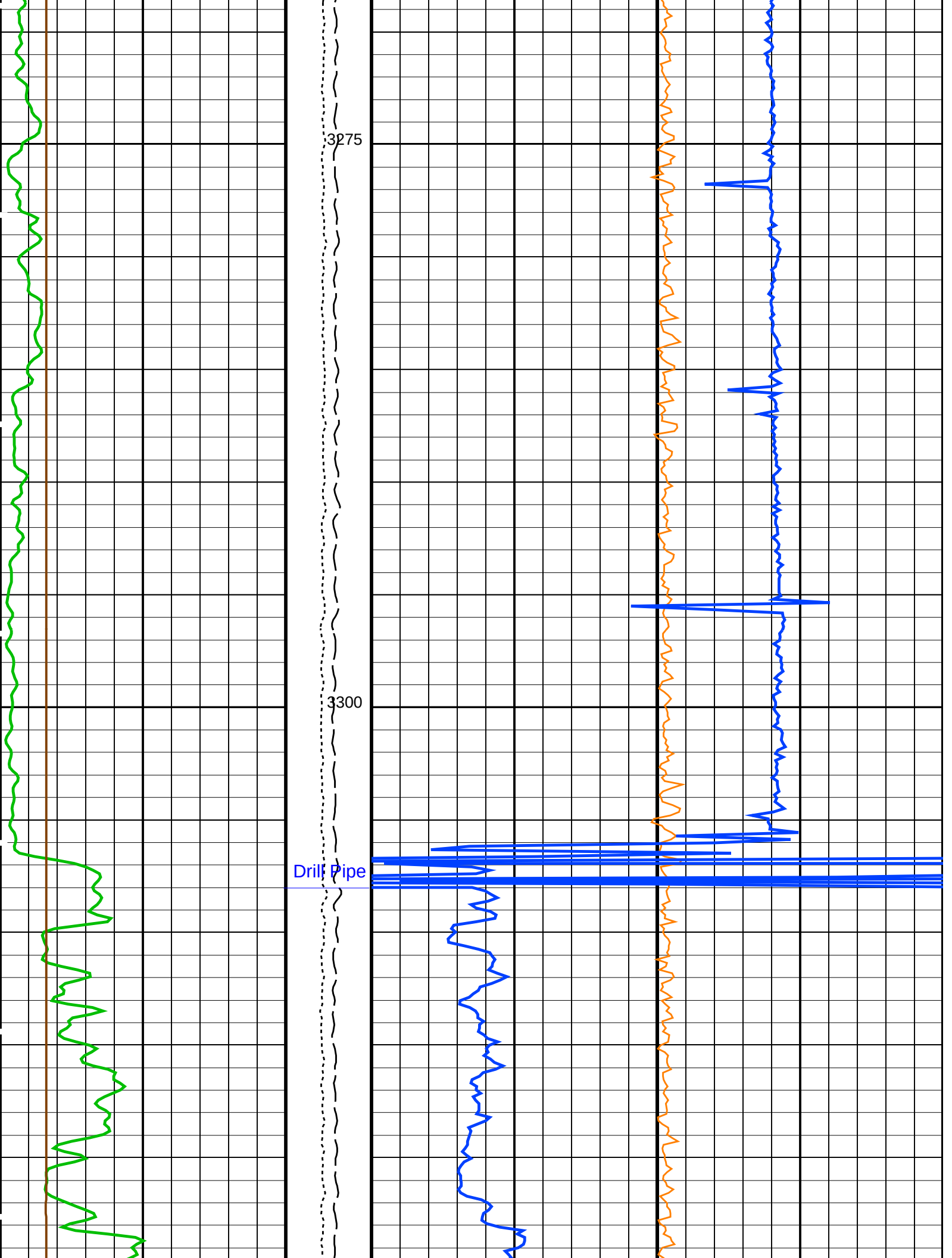
MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

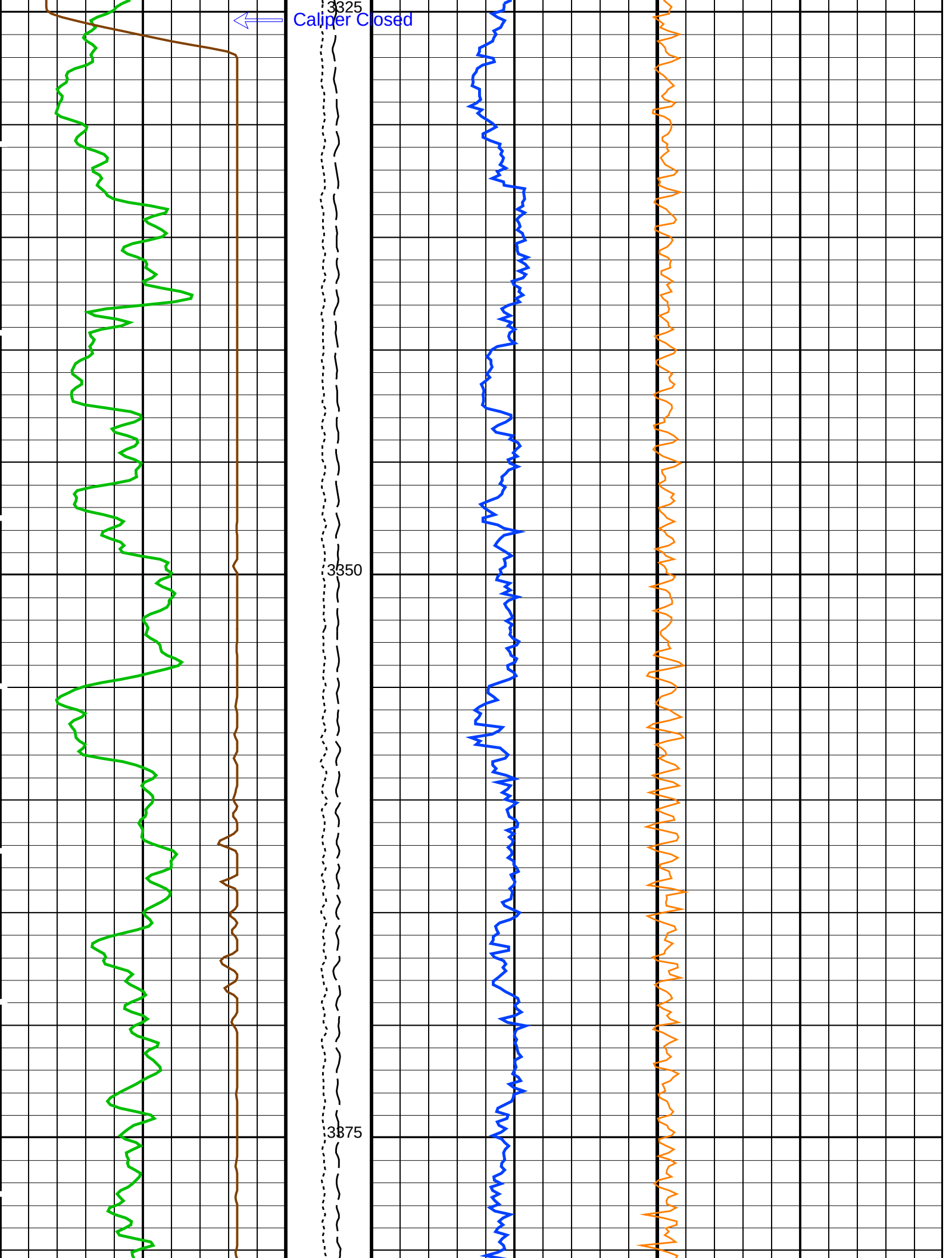
PIP SUMMARY

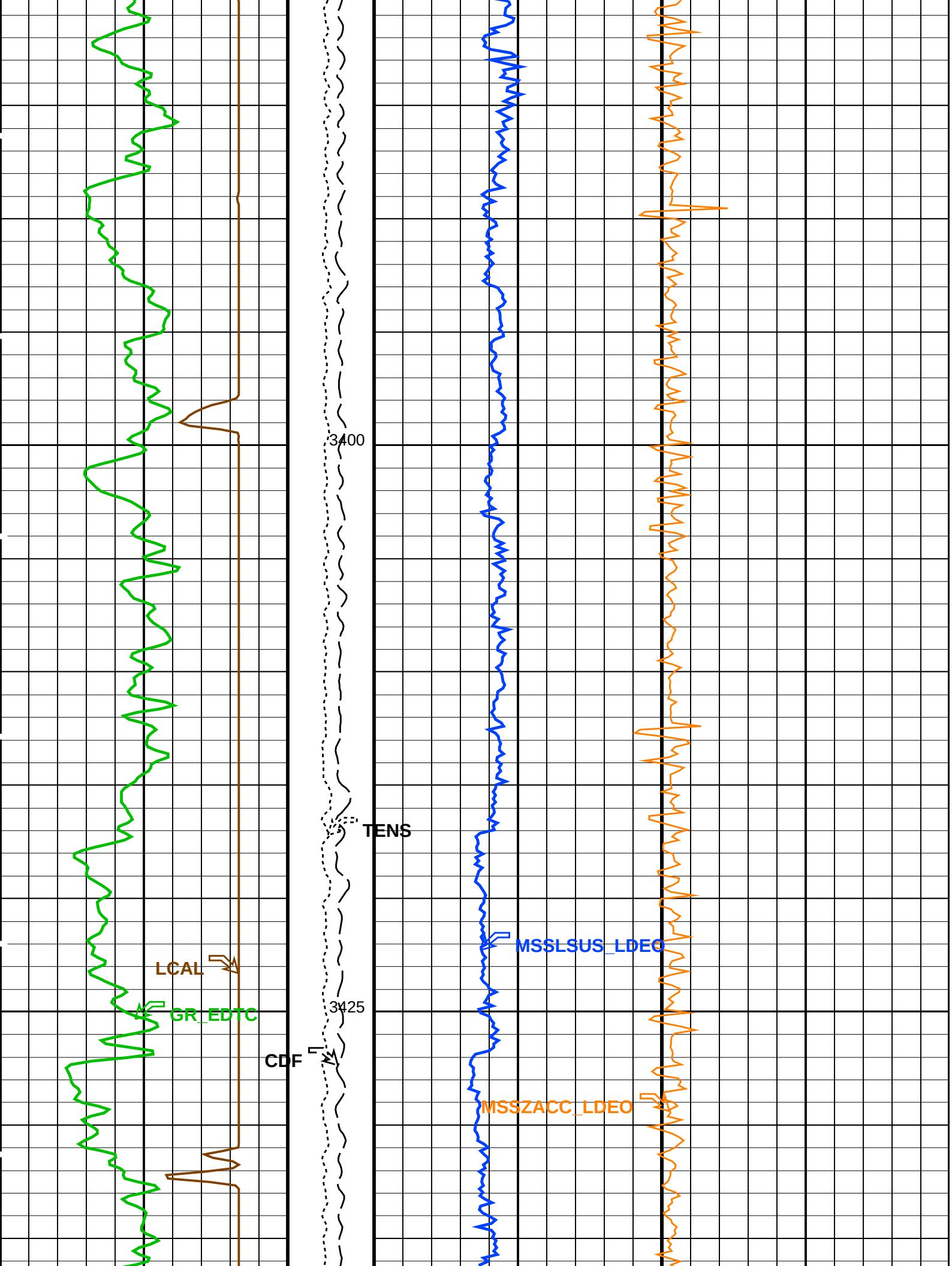
Time Mark Every 60 S

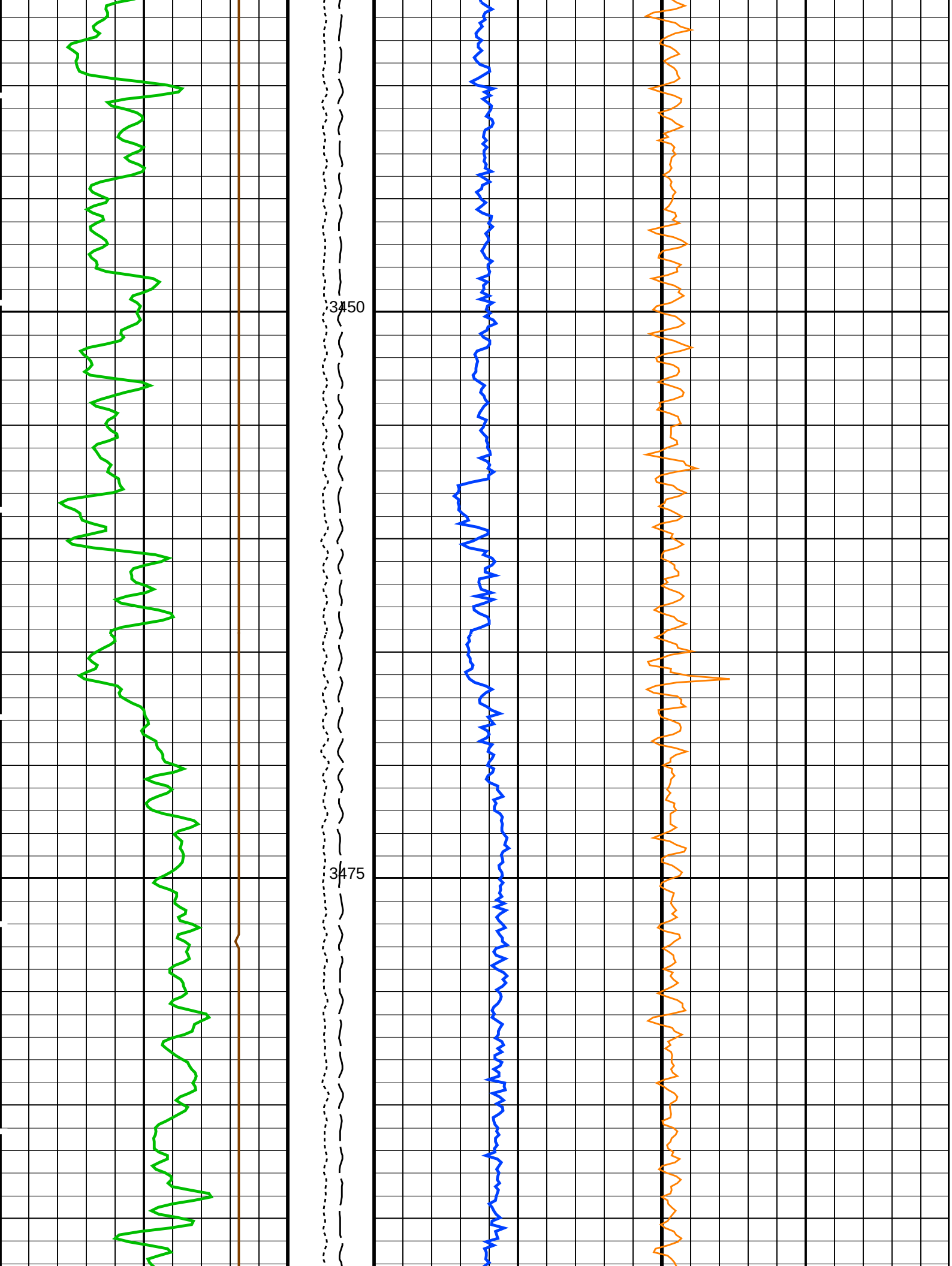
	Calibrated Downhole

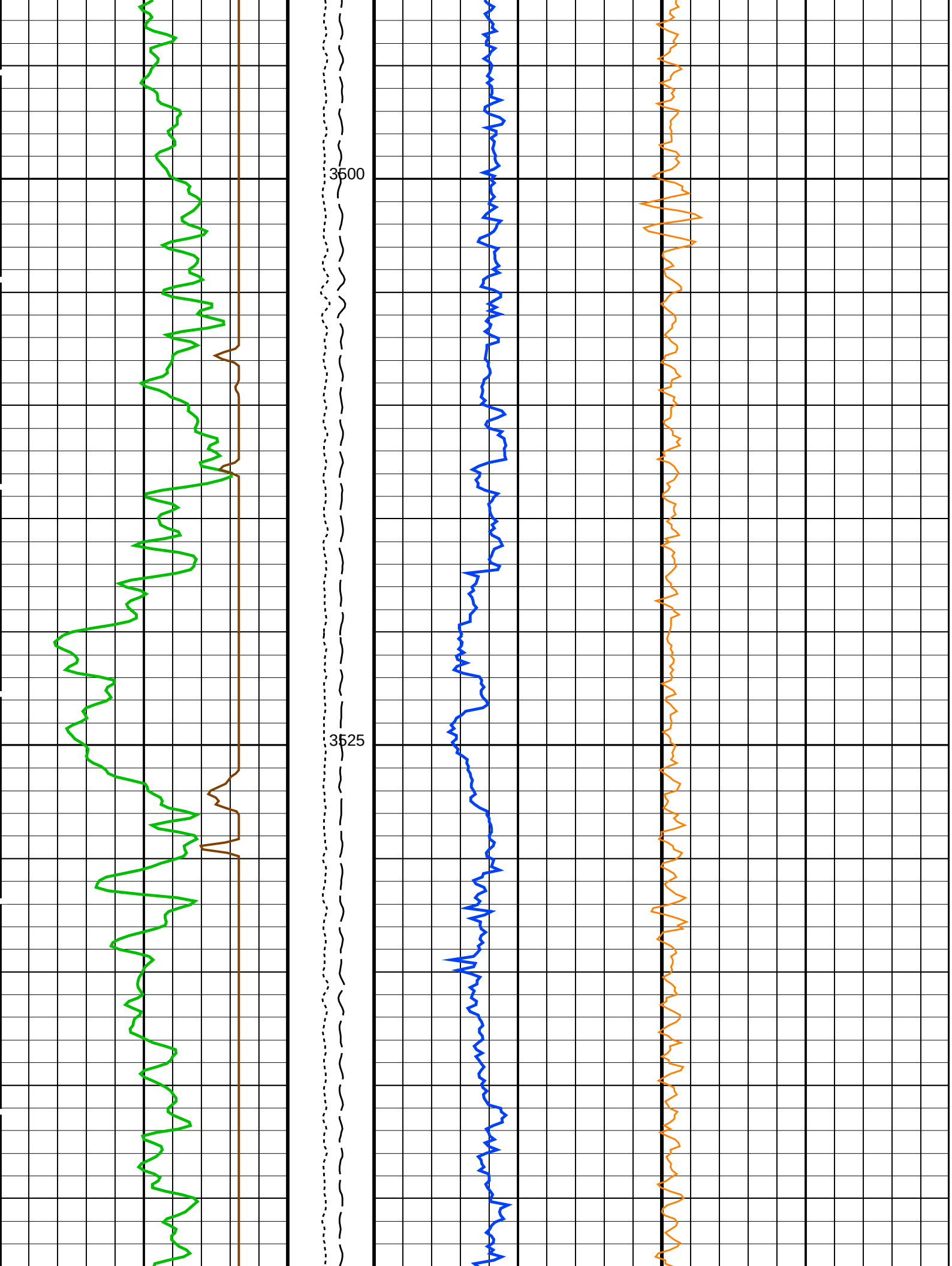

Gamma Ray (GR_EDTC)
0
(GAPI)
100
Downhole Force (CDF) (LBF)
5000
0
Dual−Coil Susceptibility (MSSLSUS_LDEO)
0
(PPM)
5000
HLDS Caliper (LCAL)
0
(IN)
20
Tension (TENS) (LBF)
10000
0
Axial Acceleration (MSSZACC_LDEO)
0
(M/S2)
20
Uplog
3225
Sea Floor estimate
3250

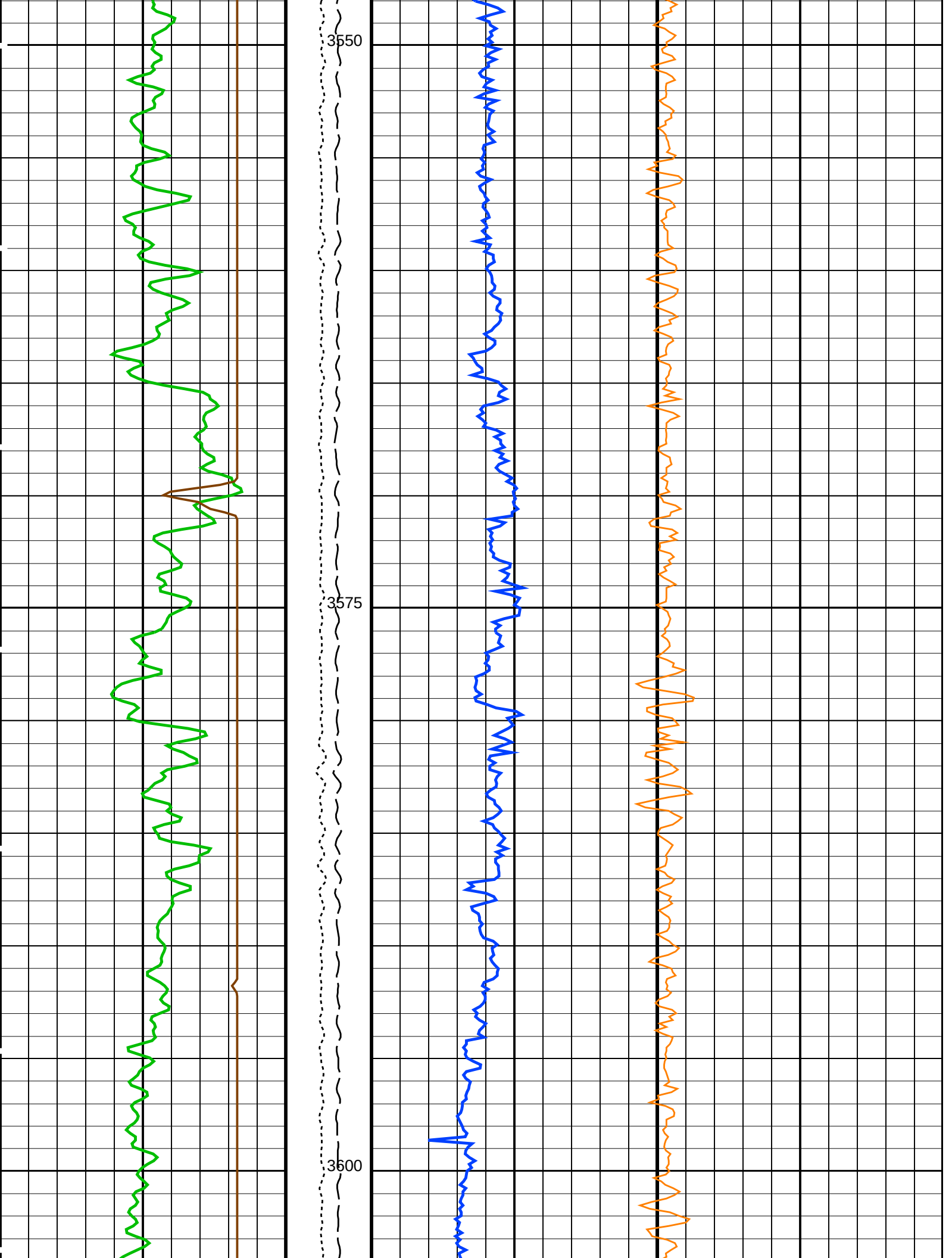

3275
3300
Drill Pipe

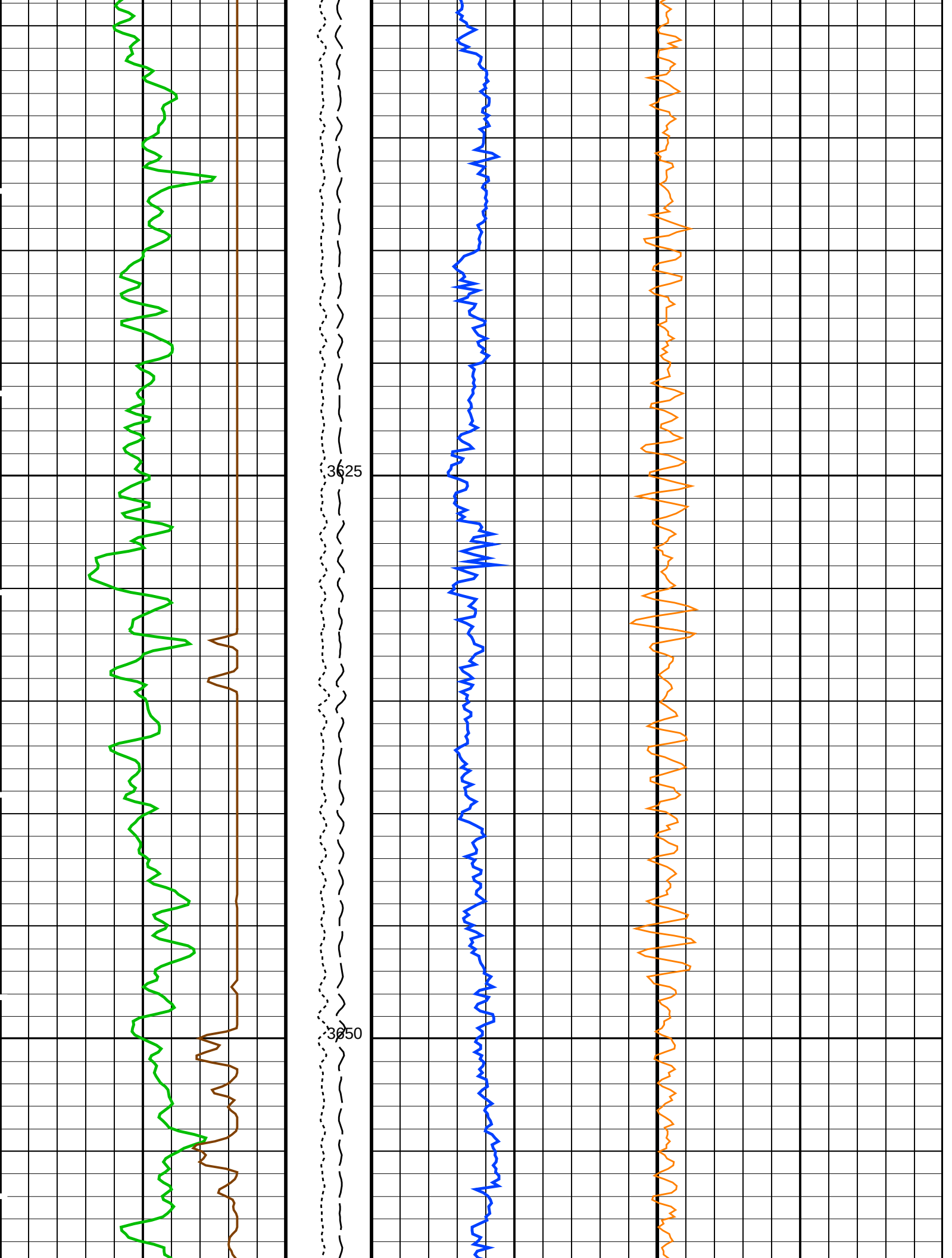

3325
Caliper Closed
3350
3375

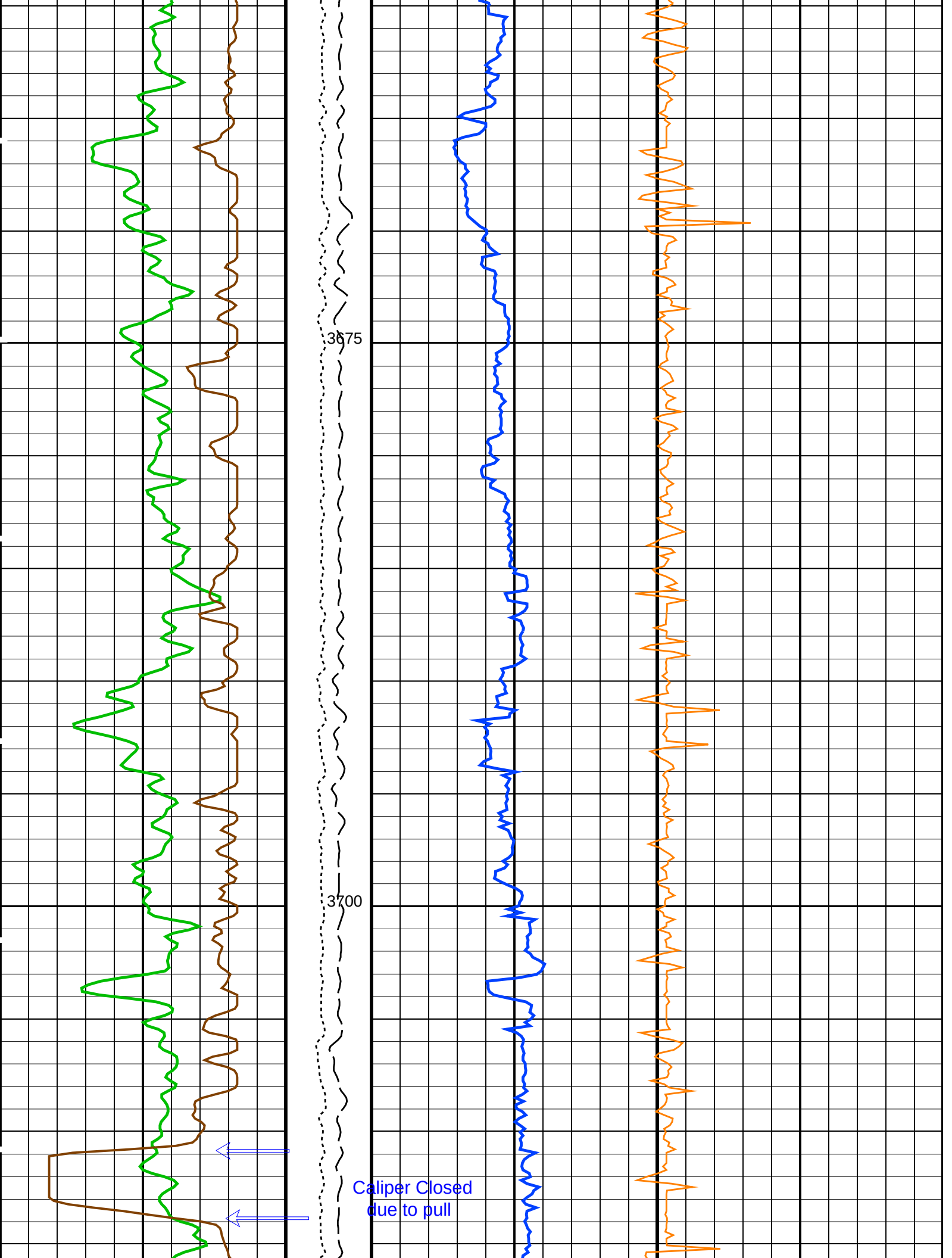

3400
TENS
MSSLSUS_LDEO
LCAL
GR_EDTC
3425
CDF
MSSZACC_LDEO

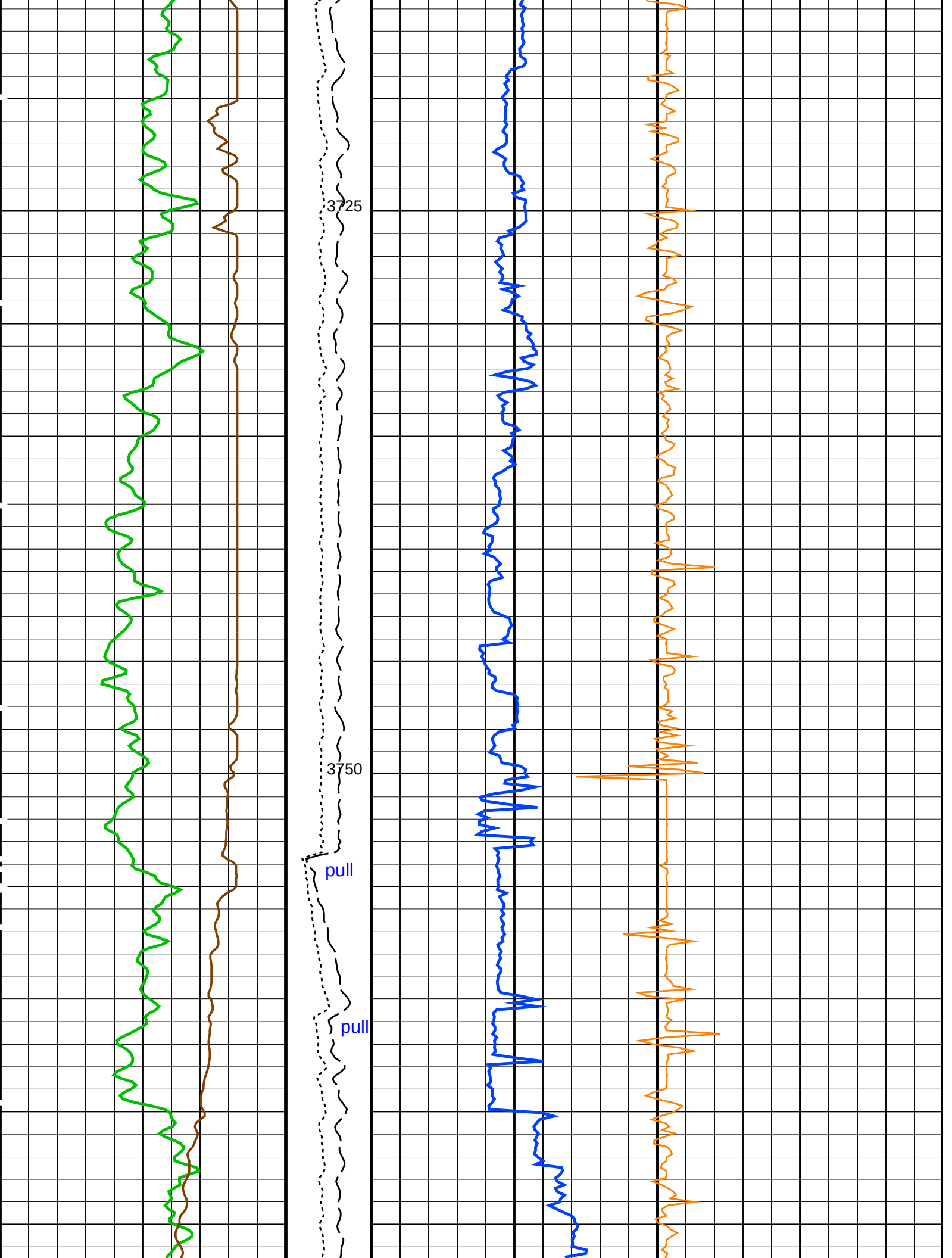

3450
3475

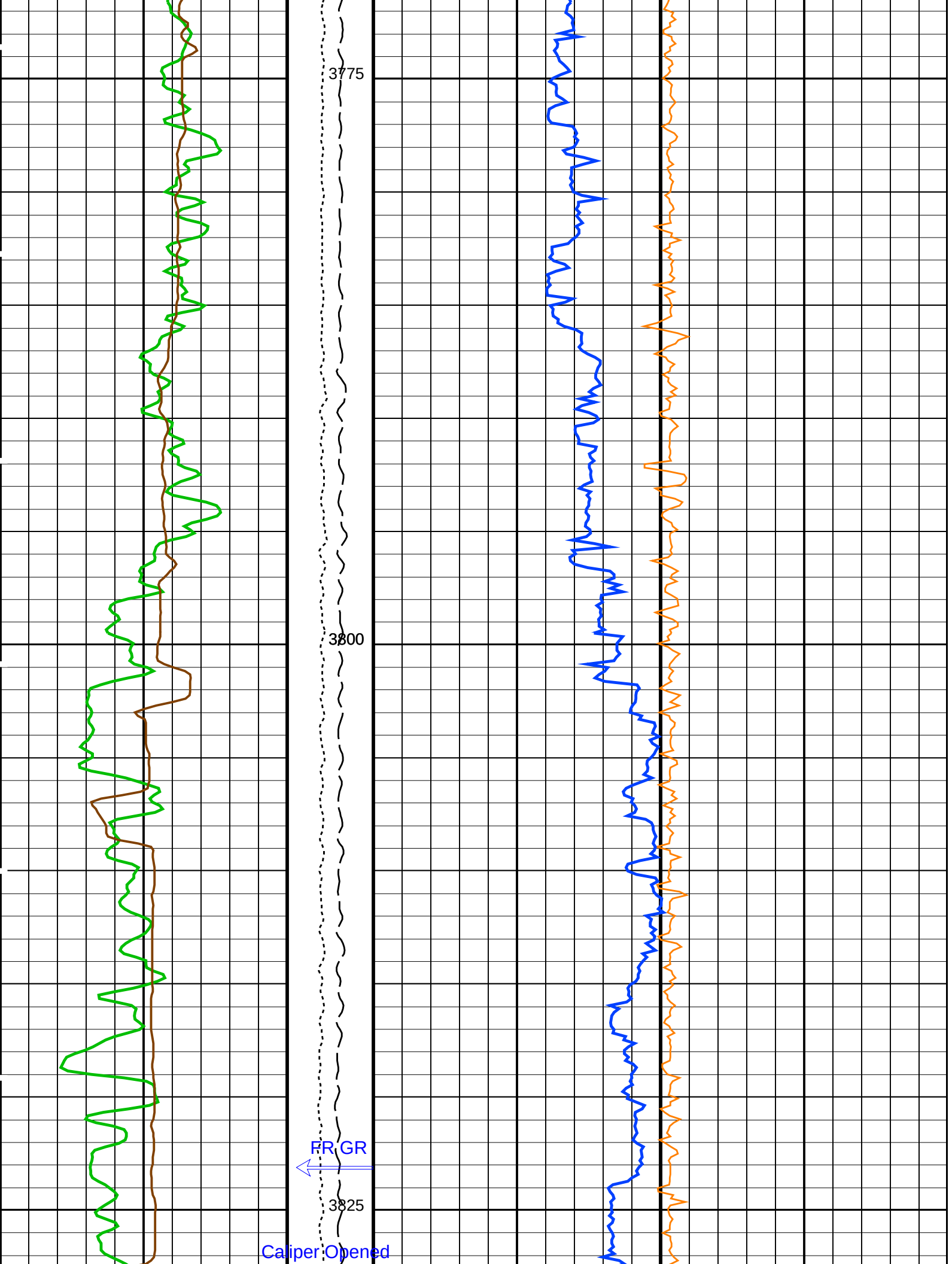

3500
3525

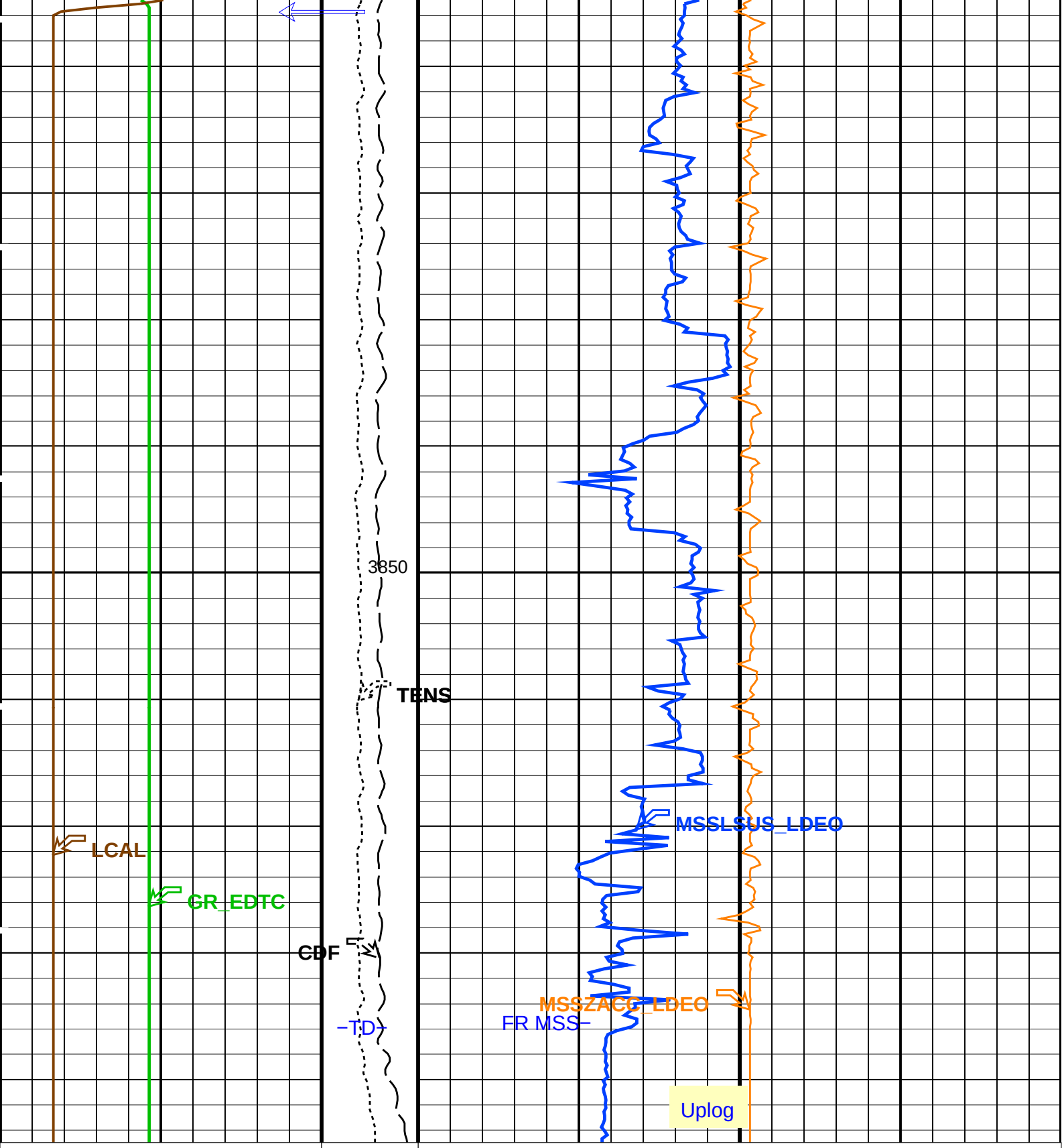

3550
3575
3600


3625
3650


3675
3700
Caliper Closed
due to pull


3725
3750
pull
pull


3775
3800
FR GR
3825
Caliper Opened



HLDS Caliper (LCAL)	Tension (TENS) (LBF)	Axial Acceleration (MSSZACC_LDEO)
0 (IN) 20	10000 0	0 (M/S2) 20
Gamma Ray (GR_EDTC)	**Calibrated Downhole Force (CDF) (LBF)**	**Dual−Coil Susceptibility (MSSLSUS_LDEO)**
0 (GAPI) 100	5000 0	0 (PPM) 5000

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.00207569	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
SHT	Surface Hole Temperature	30	DEGF
TPOS	Tool Position	CENT	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.99207	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.0061	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	0.4377	DEGC
FREQ0	HRLT Frequency Index for Mode 0	32	
FREQ1	HRLT Frequency Index for Mode 1	128	
FREQ2	HRLT Frequency Index for Mode 2	104	
FREQ3	HRLT Frequency Index for Mode 3	86	
FREQ4	HRLT Frequency Index for Mode 4	56	
FREQ5	HRLT Frequency Index for Mode 5	44	
FREQ6	HRLT Frequency Index for Mode 6	116	
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	BARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROCINV	Inversion Selection	ON	
PROCMFL	Inversion Micro−Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	30	DEGF
	DSST−B: Dipole Shear Imager − B		
AGC1	Automatic Gain Control 1	ON	
AGC2	Automatic Gain Control 2	ON	
AGC3	Automatic Gain Control 3	ON	
AGC4	Automatic Gain Control 4	ON	
AGC5	Automatic Gain Control 5	ON	
AGCX	Automatic Gain Control X	ON	
BARS_MTR1	Length for Monopole Transmitter to Receiver 1	2.7432	M
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
CASF	Label Casing Function − Monopole P&S	50	
CDTS	C−Delta−T Shale	100	US/F
COLL	Label Slowness Lower Limit − Monopole P&S Compressional	80	US/F

COUL	Label Slowness Upper Limit − Monopole P&S Compressional	180	US/F
DDE1	Digitizing Delay 1	0	US
DDE2	Digitizing Delay 2	0	US
DDE3	Digitizing Delay 3	0	US
DDE4	Digitizing Delay 4	0	US
DDE5	Digitizing Delay 5	0	US
DDEX	Digitizing Delay X	0	US
DLCS	Label Compressional Source − Dipole Shear	USE	
DLHS	Label Hole Diameter Source for SOBS Channel	AUTO	
DSHL	Label Slowness Lower Limit − Dipole Shear	75	US/F
DSHU	Label Slowness Upper Limit − Dipole Shear	1200	US/F
DSI1	Digitizer Sample Interval 1	40	US
DSI2	Digitizer Sample Interval 2	40	US
DSI3	Digitizer Sample Interval 3	40	US
DSI4	Digitizer Sample Interval 4	10	US
DSI5	Digitizer Sample Interval 5	10	US
DSIX	Digitizer Sample Interval X	40	US
DTCS	Compressional Delta−T Source for DTCO Channel	PS_COMP	
DTF	Delta−T Fluid	196	US/F
DTM	Delta−T Matrix	56	US/F
DTSS	Shear Delta−T Source for DTSM Channel	UPPER_DIPOLE	
DWC1	Digitizer Word Count 1	512	
DWC2	Digitizer Word Count 2	512	
DWC3	Digitizer Word Count 3	512	
DWC4	Digitizer Word Count 4	512	
DWC5	Digitizer Word Count 5	512	
DWCX	Digitizer Word Count X	512	
FDE1	Firing Delay 1	0	
FDE2	Firing Delay 2	0	
FDE3	Firing Delay 3	0	
FDE4	Firing Delay 4	0	
FDE5	Firing Delay 5	0	
FDEX	Firing Delay X	0	
FGM5	First Motion Gate Moveout 5	40	US/F
FGMX	First Motion Gate Moveout X	40	US/F
FILG	Label Fill Gap Control − Monopole P&S	COMP_SHEAR	
FMG5	First Motion Minimum Gate 5	500	US
FMGX	First Motion Minimum Gate X	500	US
FMLL	Slowness Lower Limit − FMD	40	US/F
FMRC	Restart Control − FMD	CONTINUE	
FMT5	First Motion Threshold 5	UP	
FMTX	First Motion Threshold X	NONE	
FMUL	Slowness Upper Limit − FMD	180	US/F
FNC5	First Motion Noise Counter Input 5	ALO	
FNCX	First Motion Noise Counter Input X	ALO	
FPM	Processing Mode − FMD	NONE	
FTD5	First Motion Threshold Direction 5	UP	
FTDX	First Motion Threshold Direction X	UP	
GAI1	Manual Gain 1	10	
GAI2	Manual Gain 2	10	
GAI3	Manual Gain 3	6	
GAI4	Manual Gain 4	16	
GAI5	Manual Gain 5	16	
GAIX	Manual Gain X	10	
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GDT1	Gain Delta−T 1	800	US/F
GDT2	Gain Delta−T 2	800	US/F
GDT3	Gain Delta−T 3	800	US/F
GDT4	Gain Delta−T 4	160	US/F
GDT5	Gain Delta−T 5	160	US/F
GDTX	Gain Delta−T X	800	US/F
GGRD	Geothermal Gradient	0.01	DF/F
GIN1	Gain Interval 1	15360	US
GIN2	Gain Interval 2	15360	US
GIN3	Gain Interval 3	15360	US
GIN4	Gain Interval 4	2560	US
GIN5	Gain Interval 5	1600	US
GINX	Gain Interval X	15360	US
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HPF1	High Pass Filter 1	F80	
HPF2	High Pass Filter 2	F80	
HPF3	High Pass Filter 3	F80	
HPF4	High Pass Filter 4	F80	
HPF5	High Pass Filter 5	F8K	
HPFX	High Pass Filter X	F80	
ISSBAR	Barite Mud Switch	BARITE	
ITTS	Integrated Transit Time Source	DTCO	
LFC	Label Formation Character − Monopole P&S	DYNAMIC	
LPF1	Low Pass Filter 1	F5K	
LPF2	Low Pass Filter 2	F5K	
LPF3	Low Pass Filter 3	F5K	
LPF4	Low Pass Filter 4	F30K	
LPF5	Low Pass Filter 5	F30K	

LPF5	Low Pass Filter 5	F30K	
LPFX	Low Pass Filter X	F5K	
LTXG	Lower Dipole Transmitter Geometry	156	IN
MAI5	Slowness Averaging Interval − FMD	42	IN
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCS	Mean Casing Slowness	57	US/F
MDS5	Multishot Delta−T Scatter − FMD	20	US
MTXG	Monopole Transmitter Geometry	186	IN
MUX1	Sum Difference Multiplexor Input 1	RR	
MUX2	Sum Difference Multiplexor Input 2	RR	
MUX3	Sum Difference Multiplexor Input 3	RR	
MUX4	Sum Difference Multiplexor Input 4	RR	
MUX5	Sum Difference Multiplexor Input 5	RR	
MUXX	Sum Difference Multiplexor Input X	RR	
NTI5	Number Threshold Items 5	0	
NTIX	Number Threshold Items X	0	
NWI1	Number Waveform Items 1	8	
NWI2	Number Waveform Items 2	8	
NWI3	Number Waveform Items 3	0	
NWI4	Number Waveform Items 4	8	
NWI5	Number Waveform Items 5	0	
NWIX	Number Waveform Items X	0	
NWS1	Number Waveforms Stacked 1	1	
NWS2	Number Waveforms Stacked 2	1	
NWS3	Number Waveforms Stacked 3	1	
NWS4	Number Waveforms Stacked 4	1	
NWS5	Number Waveforms Stacked 5	1	
NWSX	Number Waveforms Stacked X	1	
RATE	Firing Rate	R7	
RSMN	Label Shear/Compressional Minimum Ratio − Monopole P&S	1.4	
RSMX	Label Shear/Compressional Maximum Ratio − Monopole P&S	2.12	
RX1G	Receiver 1 Geometry	294	IN
RX2G	Receiver 2 Geometry	300	IN
RX3G	Receiver 3 Geometry	306	IN
RX4G	Receiver 4 Geometry	312	IN
RX5G	Receiver 5 Geometry	318	IN
RX6G	Receiver 6 Geometry	324	IN
RX7G	Receiver 7 Geometry	330	IN
RX8G	Receiver 8 Geometry	336	IN
SAM1	DSST Sonic Acquisition Mode 1 − Lower Dipole Mode	LFD_EVEN	
SAM2	DSST Sonic Acquisition Mode 2 − Upper Dipole Mode	ODD	
SAM3	DSST Sonic Acquisition Mode 3 − Monopole Mode for Stoneley	OFF	
SAM4	DSST Sonic Acquisition Mode 4 − Monopole Mode for P&S	LFD_EVEN	
SAM5	DSST Sonic Acquisition Mode 5 − Monopole Mode for FMD	OFF	
SAMX	DSST Sonic Acquisition Mode X − Both Dipoles or Monopole Mode for Expert	OFF	
SAS1	STC Sonic Array Status − Lower Dipole	255	
SAS2	STC Sonic Array Status − Upper Dipole	255	
SAS3	STC Sonic Array Status − Monopole Stoneley	255	
SAS4	STC Sonic Array Status − Monopole P&S	255	
SAS5	Sonic Array Status − FMD	255	
SBO1	STC Search Band Offset − Lower Dipole	3000	US
SBO2	STC Search Band Offset − Upper Dipole	3000	US
SBO3	STC Search Band Offset − Monopole Stoneley	3000	US
SBO4	STC Search Band Offset − Monopole P&S	500	US
SBR4	STC Baseline Removal − Monopole P&S	ON	
SBW1	STC Search Bandwidth − Lower Dipole	8000	US
SBW2	STC Search Bandwidth − Upper Dipole	8000	US
SBW3	STC Search Bandwidth − Monopole Stoneley	8000	US
SBW4	STC Search Bandwidth − Monopole P&S	2000	US
SFC1	STC Formation Character − Lower Dipole	SELECTABLE	
SFC2	STC Formation Character − Upper Dipole	SELECTABLE	
SFC3	STC Formation Character − Monopole Stoneley	SELECTABLE	
SFC4	STC Formation Character − Monopole P&S	SELECTABLE	
SFM1	STC Filter − Lower Dipole	B.3−1.5K	
SFM2	STC Filter − Upper Dipole	B1−3K	
SFM3	STC Filter − Monopole Stoneley	B.5−1.5K	
SFM4	STC Filter − Monopole P&S	B3−12K	
SHLL	Label Slowness Lower Limit − Monopole P&S Shear	235	US/F
SHT	Surface Hole Temperature	30	DEGF
SHUL	Label Slowness Upper Limit − Monopole P&S Shear	240	US/F
SLL1	STC Slowness Lower Limit − Lower Dipole	75	US/F
SLL2	STC Slowness Lower Limit − Upper Dipole	75	US/F
SLL3	STC Slowness Lower Limit − Monopole Stoneley	180	US/F
SLL4	STC Slowness Lower Limit − Monopole P&S	40	US/F
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPSO	Sonic Porosity Source	DTCO	
SST1	STC Slowness Step − Lower Dipole	4	US/F
SST2	STC Slowness Step − Upper Dipole	4	US/F
SST3	STC Slowness Step − Monopole Stoneley	4	US/F
SST4	STC Slowness Step − Monopole P&S	2	US/F
SSW1	STC Source Waveform − Lower Dipole	WF_SAM1	
SSW2	STC Source Waveform − Upper Dipole	WF_SAM2	
SSW3	STC Source Waveform − Monopole Stoneley	WF_SAM3	
SSW4	STC Source Waveform − Monopole P&S	WF_SAM4	

STLL	Label Slowness Lower Limit − Monopole Stoneley	180	US/F
STUL	Label Slowness Upper Limit − Monopole Stoneley	780	US/F
SUL1	STC Slowness Upper Limit − Lower Dipole	1200	US/F
SUL2	STC Slowness Upper Limit − Upper Dipole	1200	US/F
SUL3	STC Slowness Upper Limit − Monopole Stoneley	780	US/F
SUL4	STC Slowness Upper Limit − Monopole P&S	240	US/F
SWD1	STC Slowness Width − Lower Dipole	40	US/F
SWD2	STC Slowness Width − Upper Dipole	40	US/F
SWD3	STC Slowness Width − Monopole Stoneley	40	US/F
SWD4	STC Slowness Width − Monopole P&S	10	US/F
TBDB	Tool String Bottom to DSST Bottom	680.708	IN
TBF1	STC Time for Baseline Fill − Lower Dipole	0	US
TBF2	STC Time for Baseline Fill − Upper Dipole	0	US
TBF3	STC Time for Baseline Fill − Monopole Stoneley	0	US
TBF4	STC Time for Baseline Fill − Monopole P&S	300	US
TLL1	STC Time Lower Limit − Lower Dipole	600	US
TLL2	STC Time Lower Limit − Upper Dipole	600	US
TLL3	STC Time Lower Limit − Monopole Stoneley	600	US
TLL4	STC Time Lower Limit − Monopole P&S	150	US
TST1	STC Time Step − Lower Dipole	200	US
TST2	STC Time Step − Upper Dipole	200	US
TST3	STC Time Step − Monopole Stoneley	200	US
TST4	STC Time Step − Monopole P&S	50	US
TTDB	Tool String Top to DSST Bottom	1225.31	IN
TUL1	STC Time Upper Limit − Lower Dipole	20440	US
TUL2	STC Time Upper Limit − Upper Dipole	20200	US
TUL3	STC Time Upper Limit − Monopole Stoneley	12000	US
TUL4	STC Time Upper Limit − Monopole P&S	3660	US
TWA1	Transmitter Waveform Amplitude 1	179	
TWA2	Transmitter Waveform Amplitude 2	179	
TWA3	Transmitter Waveform Amplitude 3	166	
TWA4	Transmitter Waveform Amplitude 4	200	
TWA5	Transmitter Waveform Amplitude 5	150	
TWAX	Transmitter Waveform Amplitude X	179	
TWD1	STC Time Width − Lower Dipole	2000	US
TWD2	STC Time Width − Upper Dipole	2000	US
TWD3	STC Time Width − Monopole Stoneley	2000	US
TWD4	STC Time Width − Monopole P&S	1000	US
TWI1	STC Integration Time Window − Lower Dipole	1600	US
TWI2	STC Integration Time Window − Upper Dipole	1600	US
TWI3	STC Integration Time Window − Monopole Stoneley	2400	US
TWI4	STC Integration Time Window − Monopole P&S	500	US
TWR1	Transmitter Waveform Sample Rate 1	20	US
TWR2	Transmitter Waveform Sample Rate 2	5	US
TWR3	Transmitter Waveform Sample Rate 3	5	US
TWR4	Transmitter Waveform Sample Rate 4	15	US
TWR5	Transmitter Waveform Sample Rate 5	5	US
TWRX	Transmitter Waveform Sample Rate X	5	US
TWS1	Transmitter Waveform Select 1	2	
TWS2	Transmitter Waveform Select 2	0	
TWS3	Transmitter Waveform Select 3	4	
TWS4	Transmitter Waveform Select 4	6	
TWS5	Transmitter Waveform Select 5	6	
TWSX	Transmitter Waveform Select X	0	
UTXG	Upper Dipole Transmitter Geometry	162	IN
WFDTSP1	SAM1 Waveform Delta for Spectrum	0	US/F
WFDTSP2	SAM2 Waveform Delta for Spectrum	0	US/F
WFDTSP3	SAM3 Waveform Delta for Spectrum	0	US/F
WFDTSP4	SAM4 Waveform Delta for Spectrum	0	US/F
WFDTSPX	SAMX Waveform Delta for Spectrum	0	US/F
WFLLSP1	SAM1 Waveform Lower Limit for Spectrum	0	US
WFLLSP2	SAM2 Waveform Lower Limit for Spectrum	0	US
WFLLSP3	SAM3 Waveform Lower Limit for Spectrum	0	US
WFLLSP4	SAM4 Waveform Lower Limit for Spectrum	0	US
WFLLSPX	SAMX Waveform Lower Limit for Spectrum	0	US
WFM1	Waveform Mode 1	W1	
WFM2	Waveform Mode 2	W1	
WFM3	Waveform Mode 3	W1	
WFM4	Waveform Mode 4	W1	
WFM5	Waveform Mode 5	W1	
WFMX	Waveform Mode X	W1	
WFULSP1	SAM1 Waveform Upper Limit for Spectrum	20000	US
WFULSP2	SAM2 Waveform Upper Limit for Spectrum	20000	US
WFULSP3	SAM3 Waveform Upper Limit for Spectrum	20000	US
WFULSP4	SAM4 Waveform Upper Limit for Spectrum	5000	US
WFULSPX	SAMX Waveform Upper Limit for Spectrum	20000	US
XMT1	Transmitter Select 1	DLO	
XMT2	Transmitter Select 2	DUP	
XMT3	Transmitter Select 3	MONO	
XMT4	Transmitter Select 4	MONO	
XMT5	Transmitter Select 5	MONO	
XMTX	Transmitter Select X	DUP	

HLDS: Hostile Litho−Density Sonde

CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	

CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.6	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1500	V
PSDL	HLDS LS Pulse Shape Compensation DAC	30000	
PSDS	HLDS SS Pulse Shape Compensation DAC	30000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	BARITE	
ISSBAR_EDTC	Nuclear Mud Type	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	BARI	
MWCO	Mud Weight Correction Option	YES	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	30	DEGF
SOCN	Standoff Distance	0.5	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Eccentered	
U−ETELM_EDTS	Telemetry Mode for eWAFE	Standard_EDTS	
U−TELM_EDTS	Telemetry Mode for WAFE	Standard_EDTS	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	38000.00	PPM
CSIZ	Current Casing Size	5.500	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	0.0	M
FLEV	Fluid Level	−50000.00	M
MST	Mud Sample Temperature	23.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	−50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	12713	FT
TDD	Total Depth − Driller	3890.00	M
TDL	Total Depth − Logger	3900.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: MSS_Logging Vertical Scale: 1:200 Graphics File Created: 25−Apr−2019 22:08

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_012LUP	FN:19	PRODUCER	25−Apr−2019 10:00	3872.5 M	3220.1 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_026PUP	FN:45	PRODUCER	25−Apr−2019 22:08		
BACKUP	MSS_LDEO_NGS_HRLA_026PUP	FN:46	PRODUCER	25−Apr−2019 22:08		

Input DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_012LUP	FN:19	PRODUCER	25−Apr−2019 10:00	3872.5 M	3220.1 M

Output DLIS Files

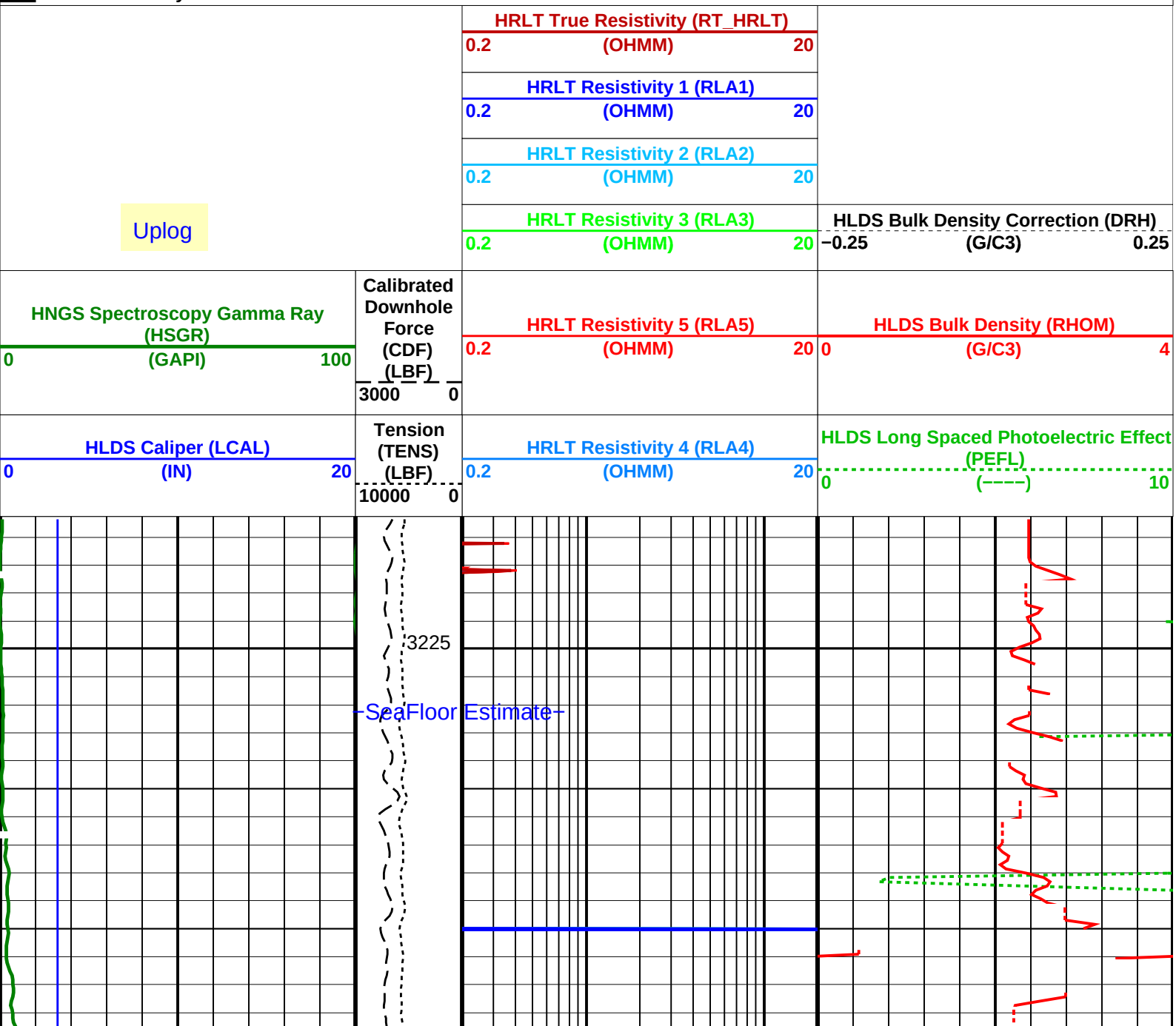
DEFAULT	MSS_LDEO_NGS_HRLA_026PUP	FN:45	PRODUCER	25−Apr−2019 22:08	3872.5 M	3220.2 M
BACKUP	MSS_LDEO_NGS_HRLA_026PUP	FN:46	PRODUCER	25−Apr−2019 22:08	3872.5 M	3220.2 M

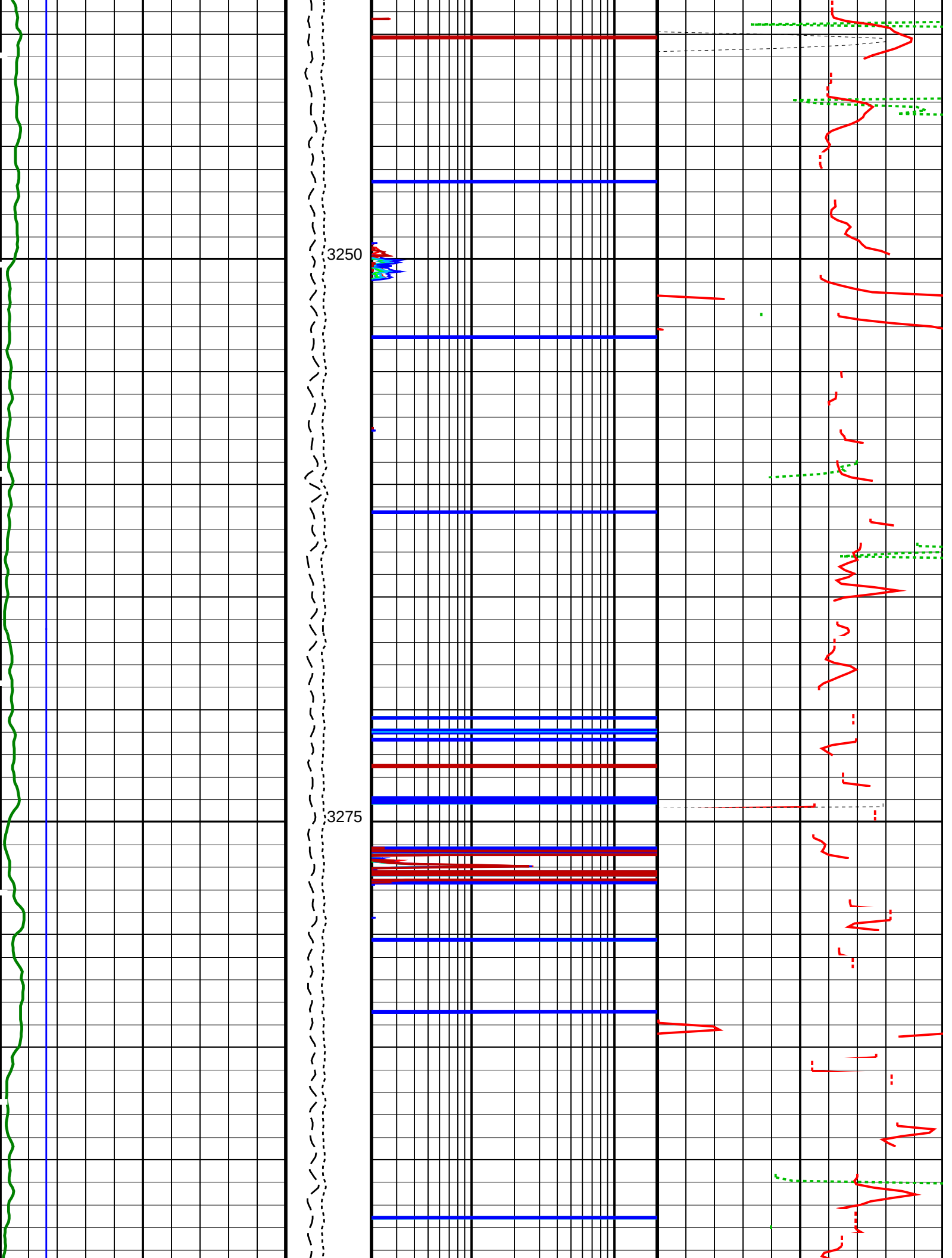
OP System Version: 19C0−187

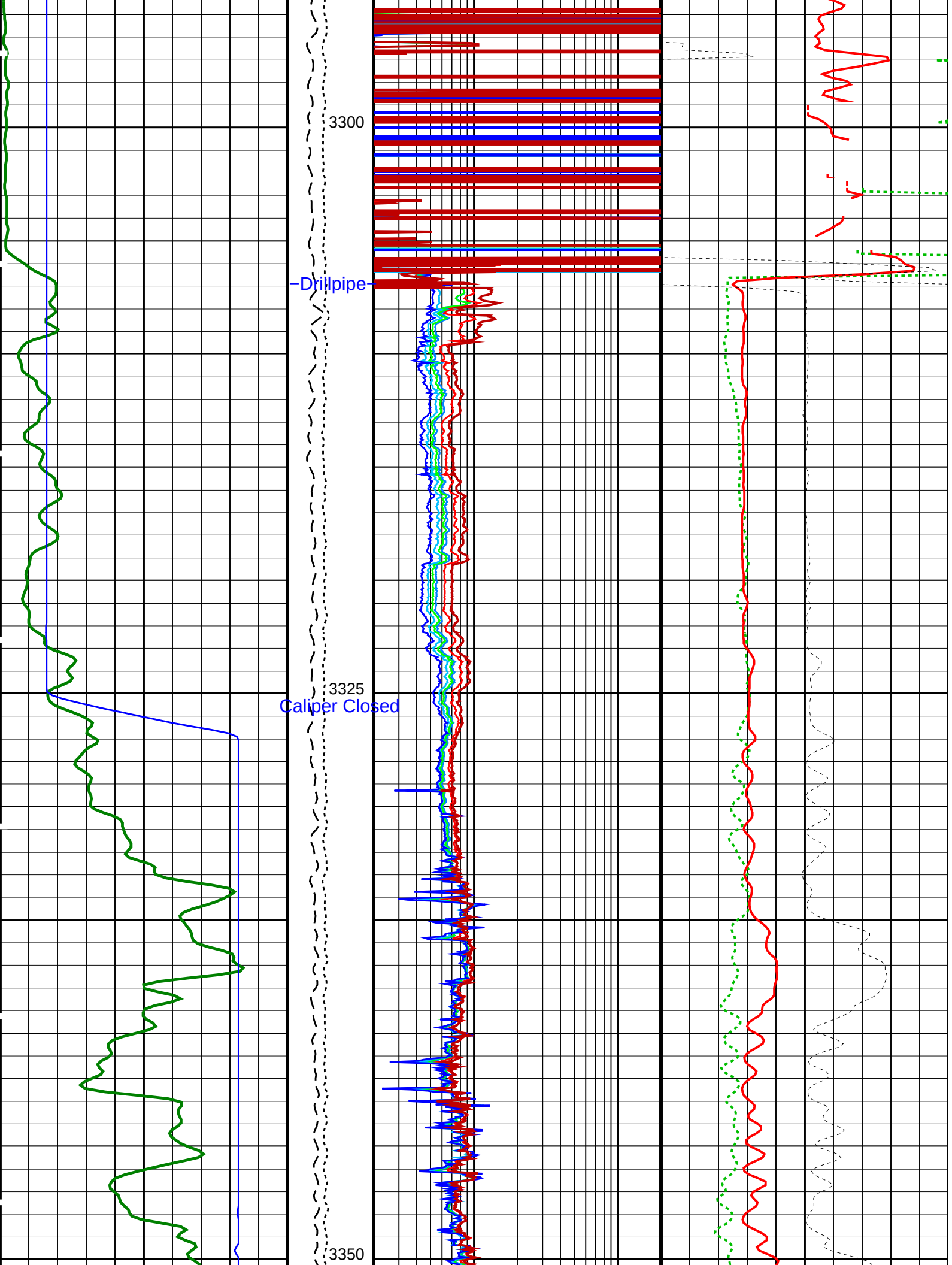
MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

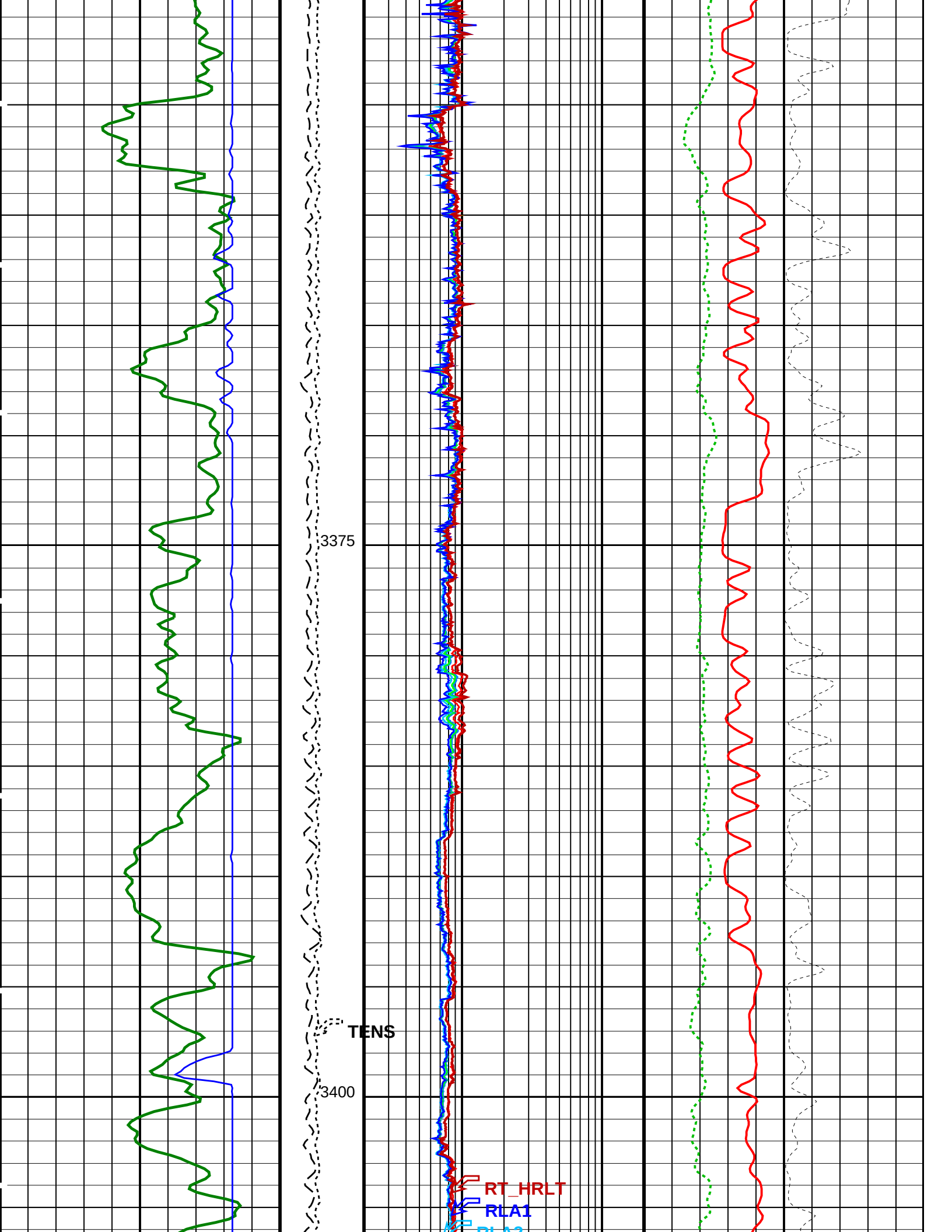
PIP SUMMARY

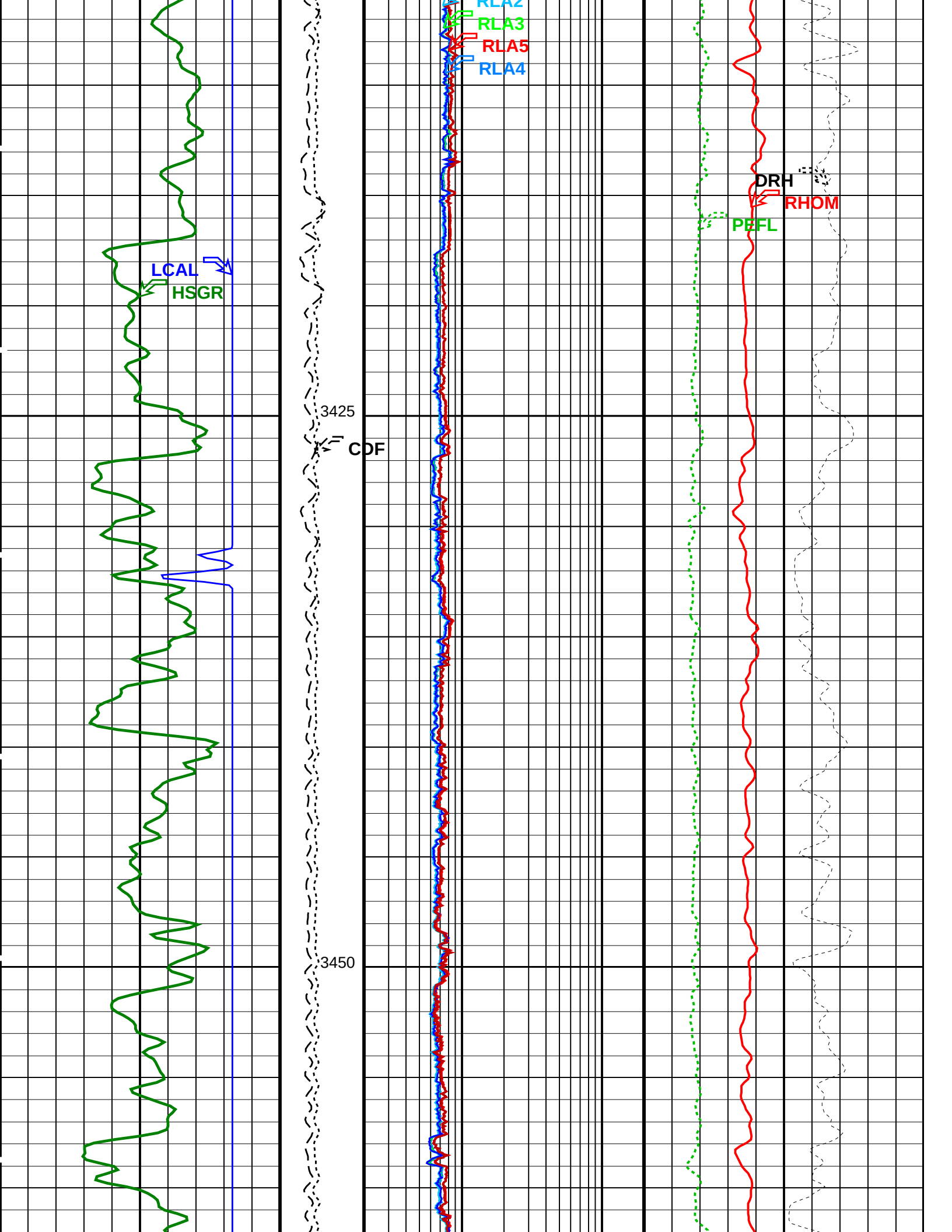
Time Mark Every 60 S

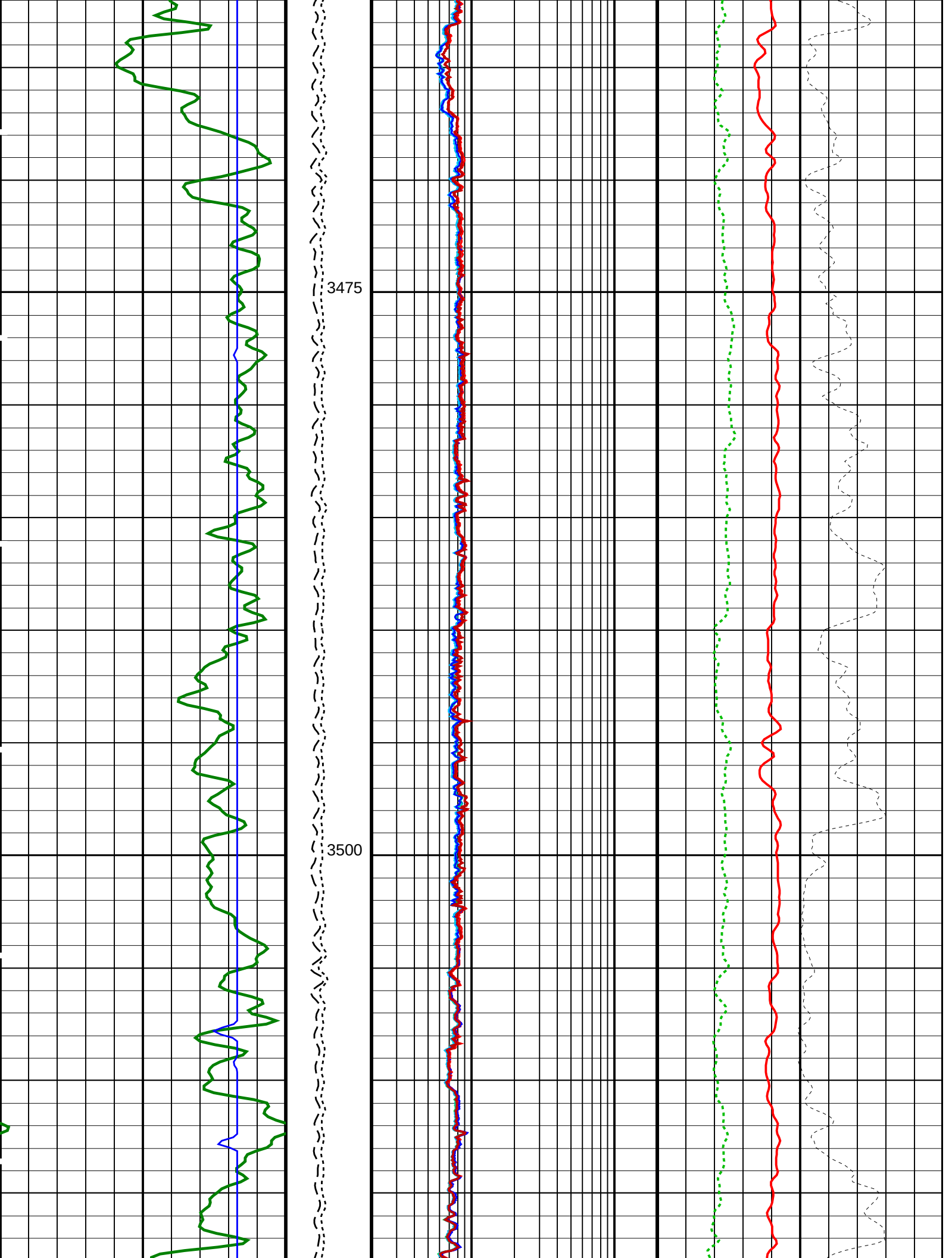


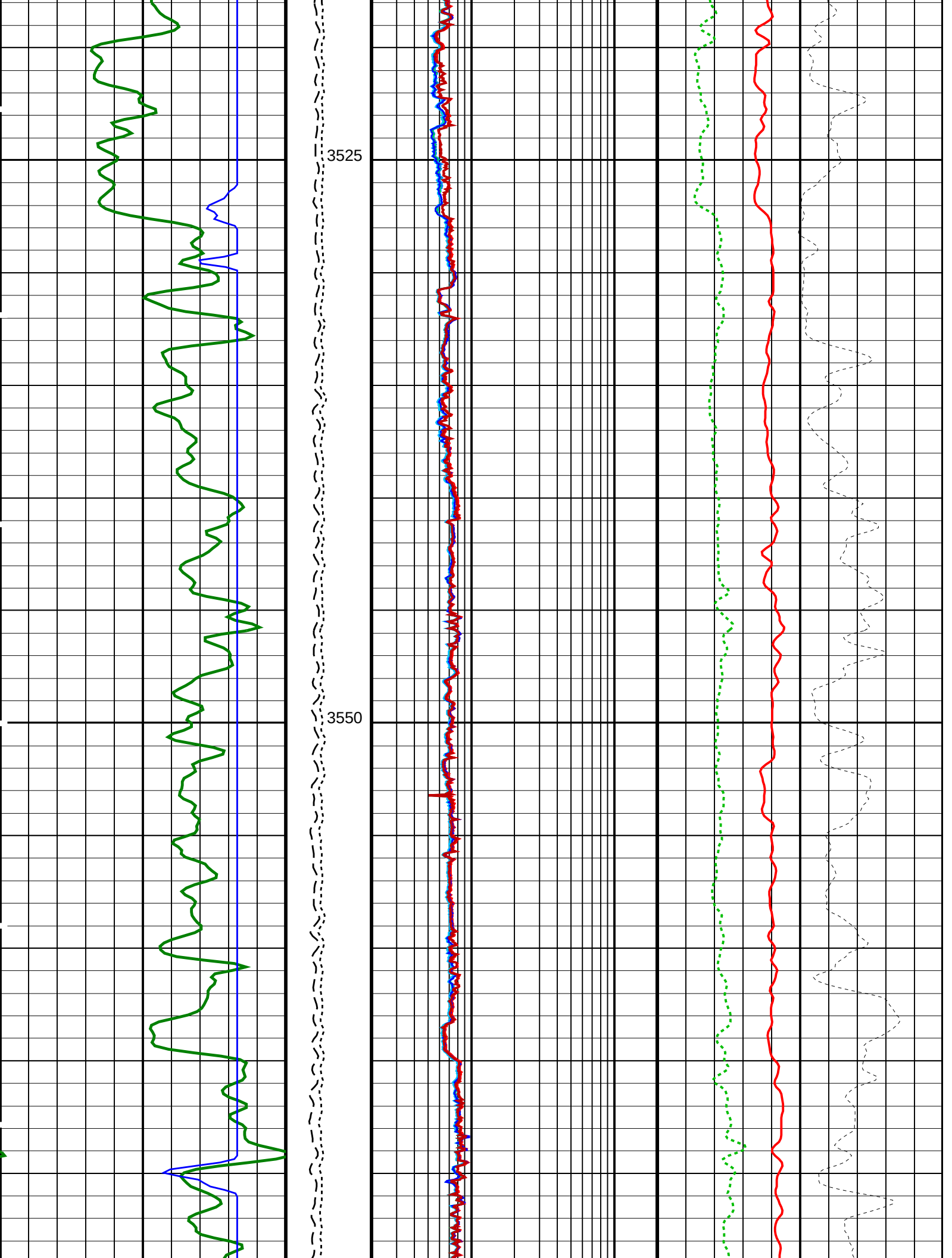

3250
3275

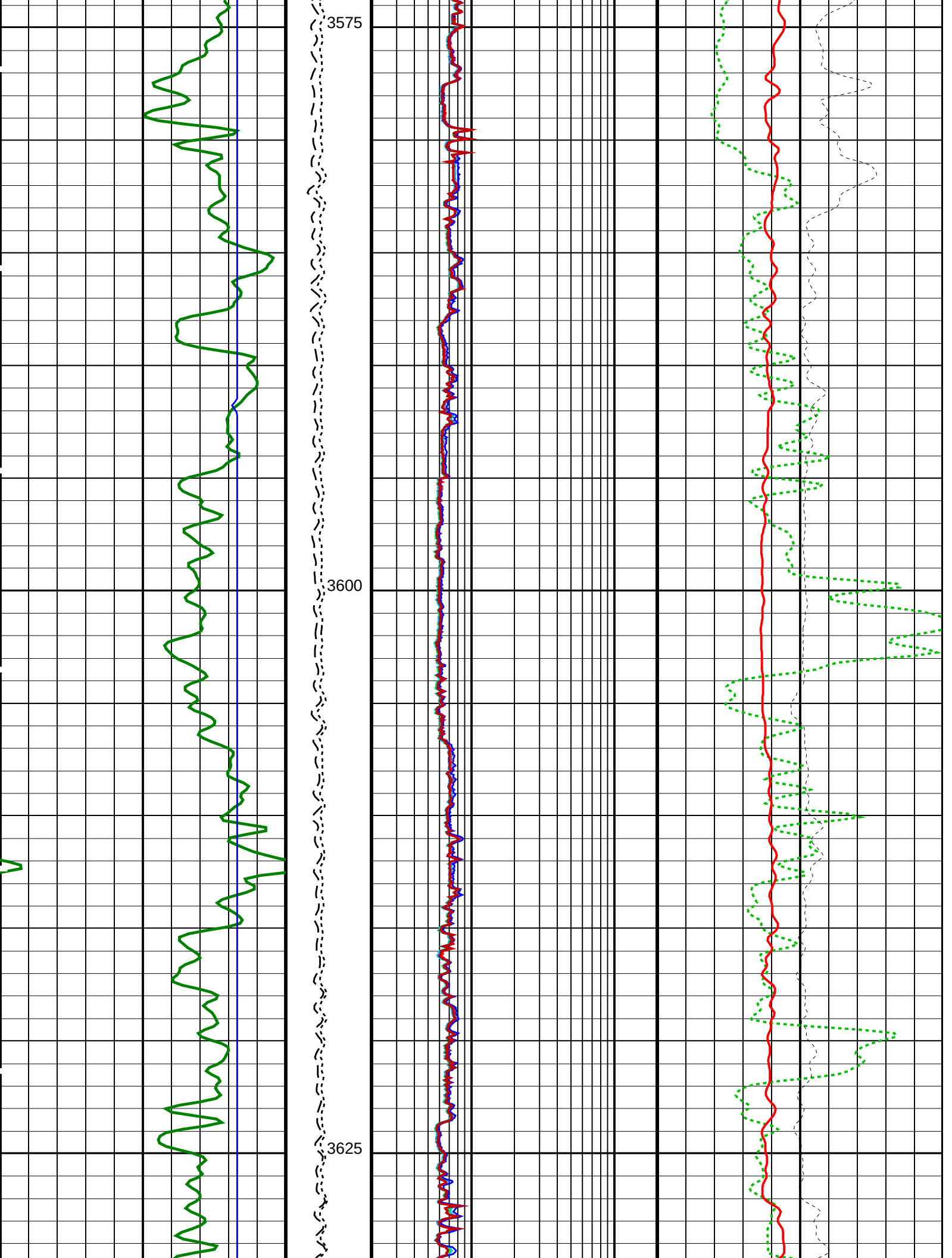

3300
Drillpipe
3325
Caliper Closed
3350

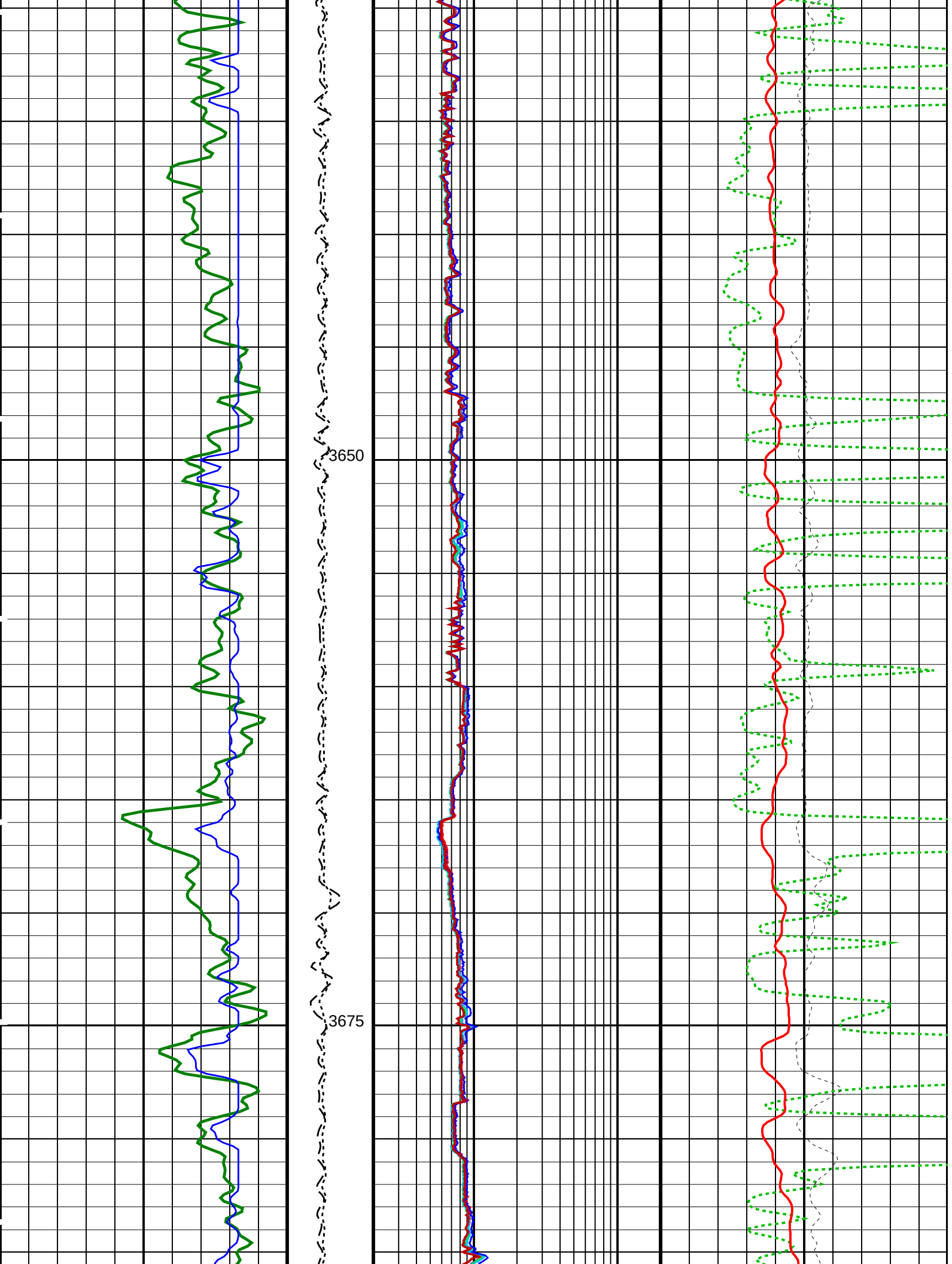

3375
TENS
3400
RT_HRLT
RLA1

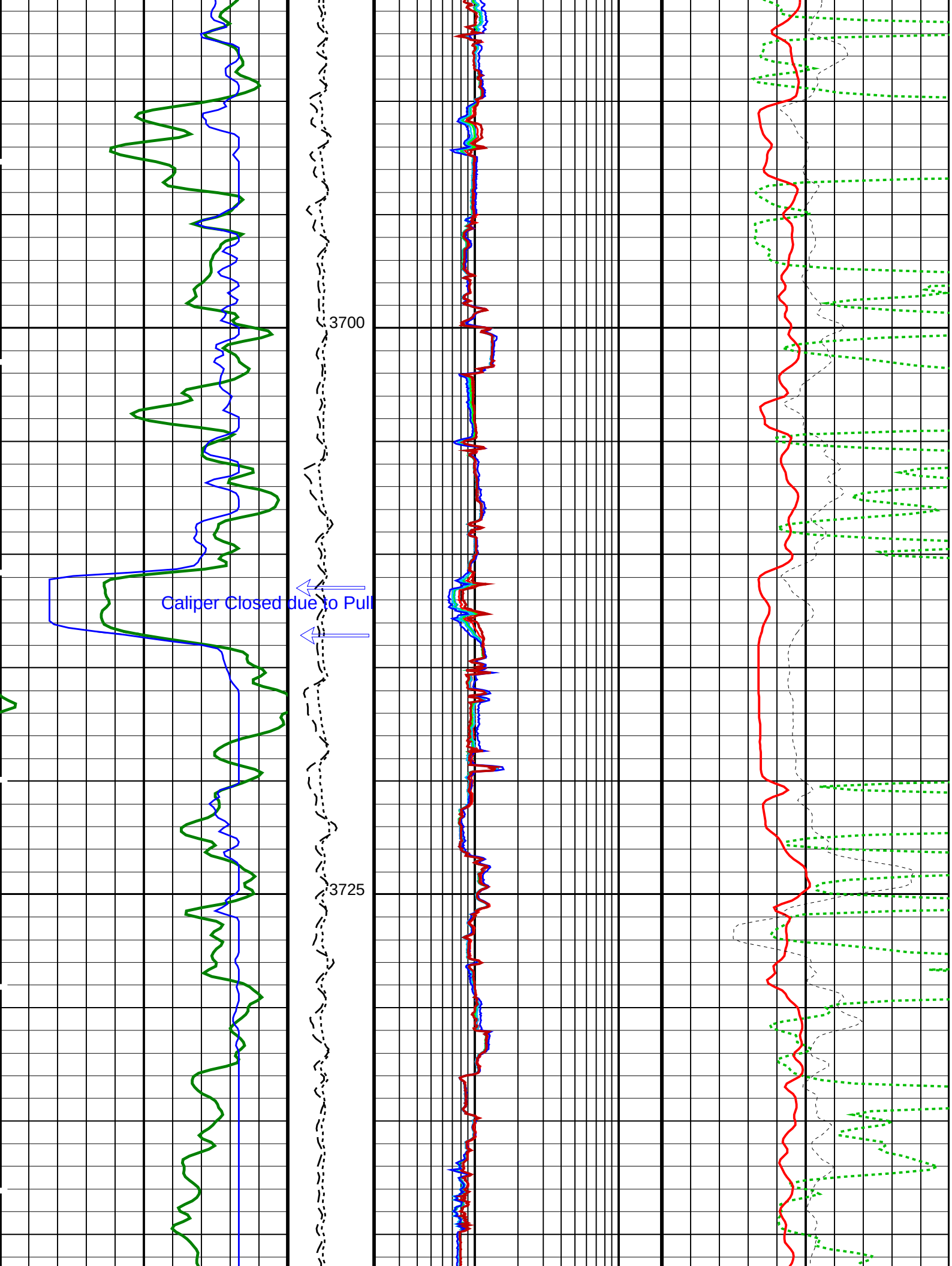

RLA2
RLA3
RLA5
RLA4
DRH
RHOM
PEFL
LCAL
HSGR
3425
COF
3450

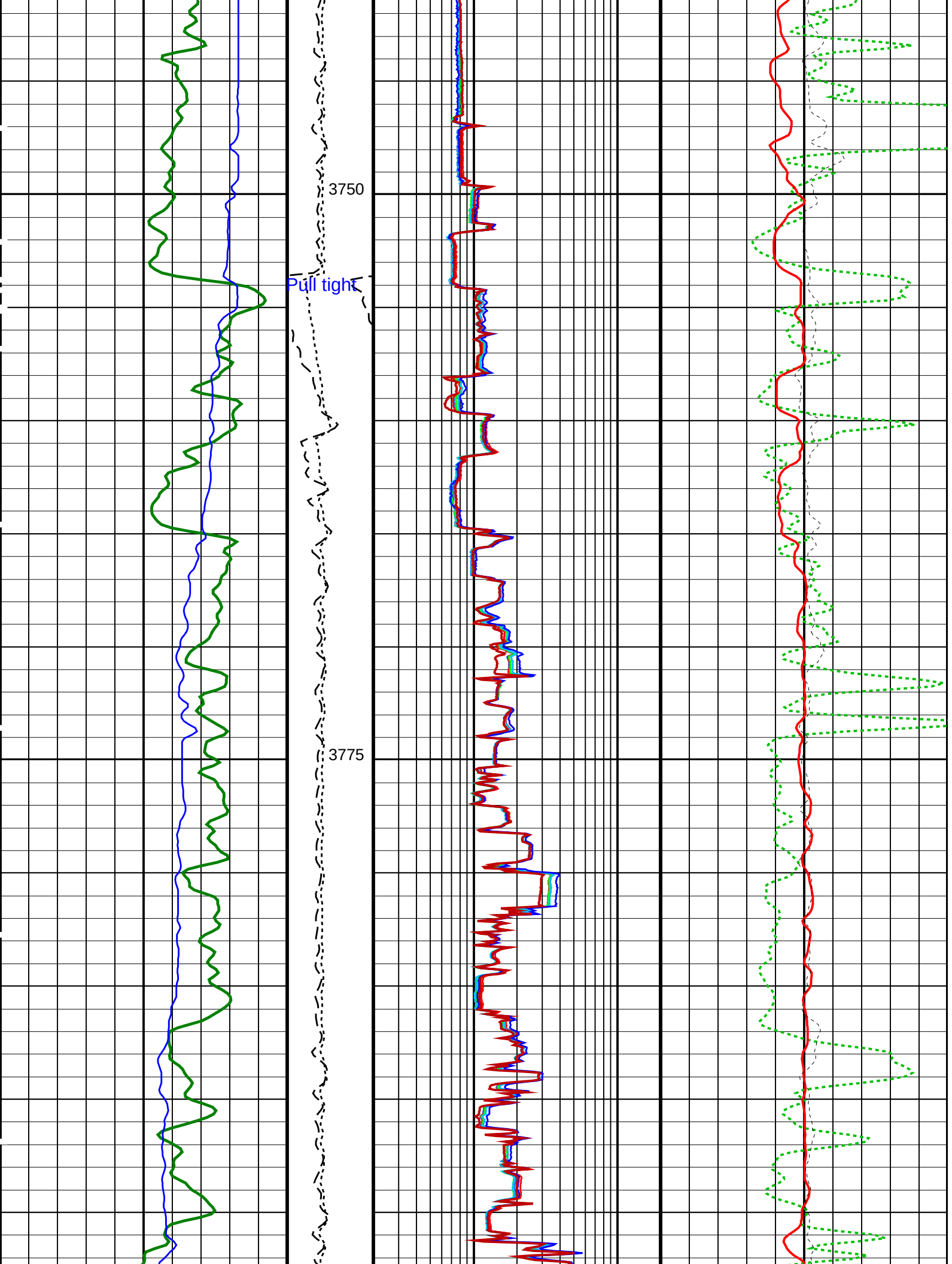

3475
3500

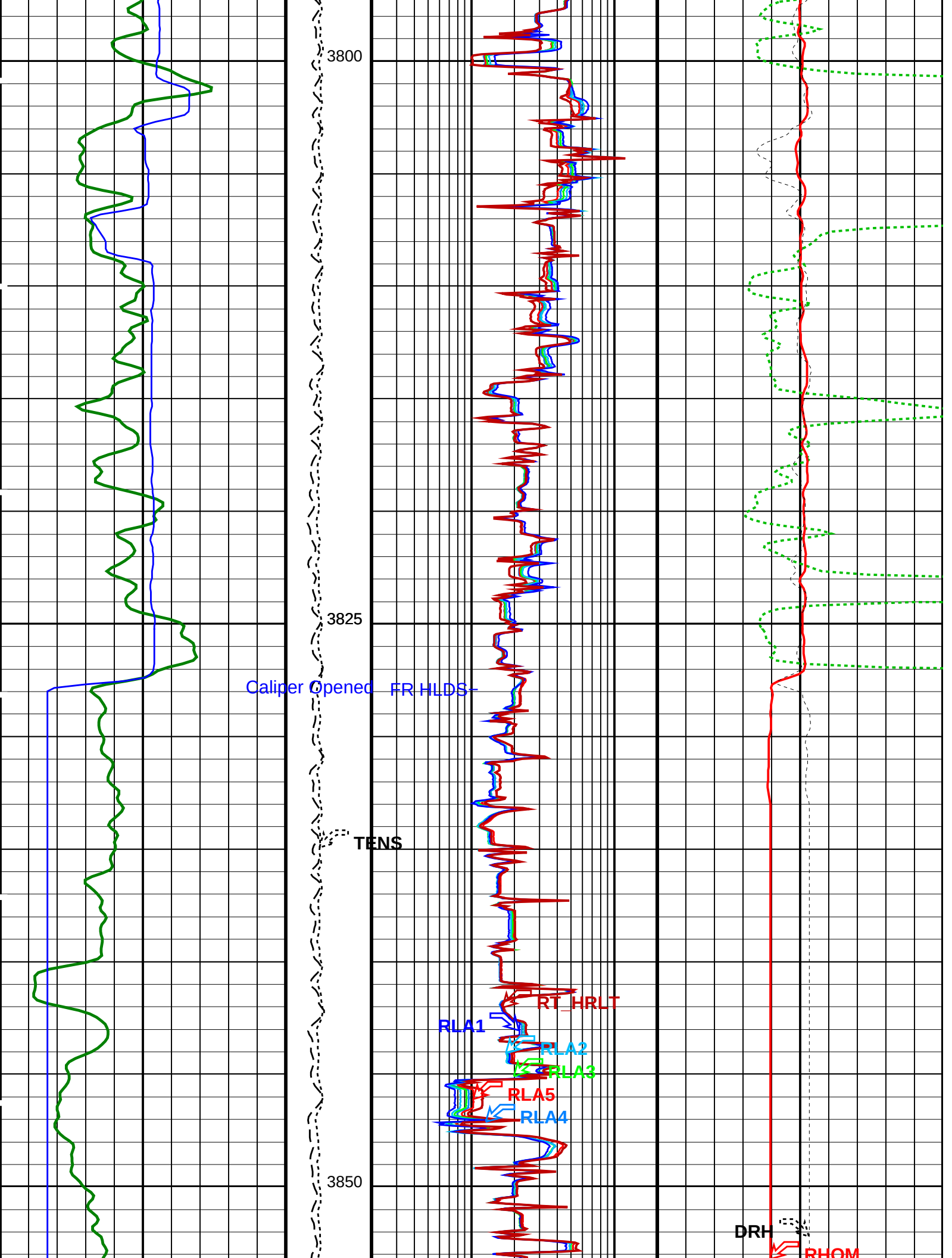

3525
3550

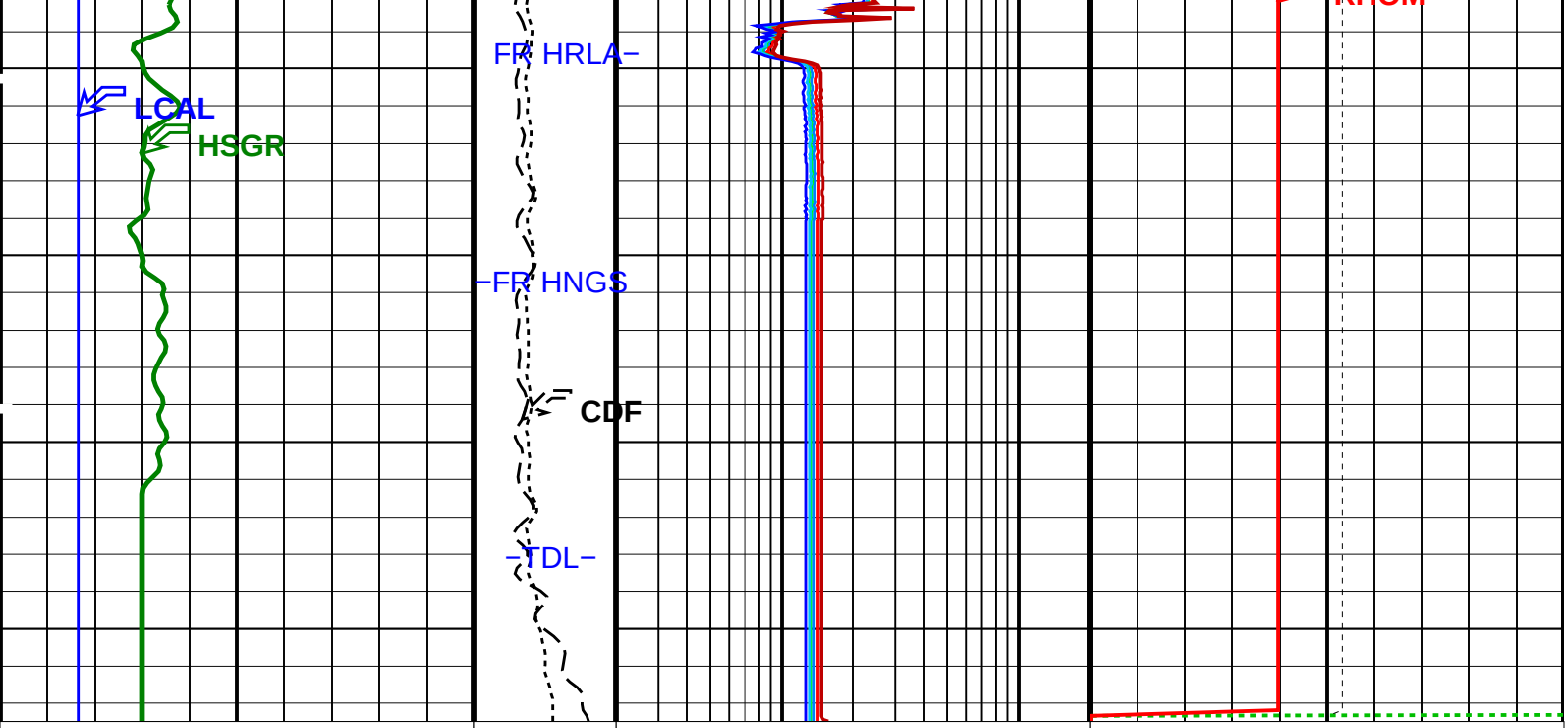

3575
3600
3625


3650
3675


3700
Caliper Closed due to Pull
3725


3750
Pull tight
3775


3800
3825
3850
Caliper Opened
FR HLDS
TENS
RT_HRLT
RLA1
RLA2
RLA3
RLA5
RLA4
DRH
RHOM



HLDS Caliper (LCAL) 0 (IN) 20	Tension (TENS) (LBF) 10000 0	HRLT Resistivity 4 (RLA4) 0.2 (OHMM) 20	HLDS Long Spaced Photoelectric Effect (PEFL) 0 (−−−−) 10
HNGS Spectroscopy Gamma Ray (HSGR) 0 (GAPI) 100	Calibrated Downhole Force (CDF) (LBF) 3000 0	HRLT Resistivity 5 (RLA5) 0.2 (OHMM) 20	HLDS Bulk Density (RHOM) 0 (G/C3) 4
Uplog		HRLT Resistivity 3 (RLA3) 0.2 (OHMM) 20	HLDS Bulk Density Correction (DRH) −0.25 (G/C3) 0.25
		HRLT Resistivity 2 (RLA2) 0.2 (OHMM) 20	
		HRLT Resistivity 1 (RLA1) 0.2 (OHMM) 20	
		HRLT True Resistivity (RT_HRLT) 0.2 (OHMM) 20	

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.00207569	

HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
SHT	Surface Hole Temperature	30	DEGF
TPOS	Tool Position	CENT	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.99207	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.0061	
HRLT−B: High Resolution Laterolog Array − B			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	0.4377	DEGC
FREQ0	HRLT Frequency Index for Mode 0	32	
FREQ1	HRLT Frequency Index for Mode 1	128	
FREQ2	HRLT Frequency Index for Mode 2	104	
FREQ3	HRLT Frequency Index for Mode 3	86	
FREQ4	HRLT Frequency Index for Mode 4	56	
FREQ5	HRLT Frequency Index for Mode 5	44	
FREQ6	HRLT Frequency Index for Mode 6	116	
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	BARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROCINV	Inversion Selection	ON	
PROCMFL	Inversion Micro−Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	30	DEGF
DSST−B: Dipole Shear Imager − B			
AGC1	Automatic Gain Control 1	ON	
AGC2	Automatic Gain Control 2	ON	
AGC3	Automatic Gain Control 3	ON	
AGC4	Automatic Gain Control 4	ON	
AGC5	Automatic Gain Control 5	ON	
AGCX	Automatic Gain Control X	ON	
BARS_MTR1	Length for Monopole Transmitter to Receiver 1	2.7432	M
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
CASF	Label Casing Function − Monopole P&S	50	
CDTS	C−Delta−T Shale	100	US/F
COLL	Label Slowness Lower Limit − Monopole P&S Compressional	80	US/F
COUL	Label Slowness Upper Limit − Monopole P&S Compressional	180	US/F
DDE1	Digitizing Delay 1	0	US
DDE2	Digitizing Delay 2	0	US
DDE3	Digitizing Delay 3	0	US
DDE4	Digitizing Delay 4	0	US
DDE5	Digitizing Delay 5	0	US
DDEX	Digitizing Delay X	0	US
DLCS	Label Compressional Source − Dipole Shear	USE	
DLHS	Label Hole Diameter Source for SOBS Channel	AUTO	
DSHL	Label Slowness Lower Limit − Dipole Shear	75	US/F
DSHU	Label Slowness Upper Limit − Dipole Shear	1200	US/F
DSI1	Digitizer Sample Interval 1	40	US
DSI2	Digitizer Sample Interval 2	40	US
DSI3	Digitizer Sample Interval 3	40	US
DSI4	Digitizer Sample Interval 4	10	US
DSI5	Digitizer Sample Interval 5	10	US
DSIX	Digitizer Sample Interval X	40	US
DTCS	Compressional Delta−T Source for DTCO Channel	PS_COMP	
DTF	Delta−T Fluid	196	US/F
DTM	Delta−T Matrix	56	US/F
DTSS	Shear Delta−T Source for DTSM Channel	UPPER_DIPOLE	
DWC1	Digitizer Word Count 1	512	
DWC2	Digitizer Word Count 2	512	
DWC3	Digitizer Word Count 3	512	
DWC4	Digitizer Word Count 4	512	

DWC4	Digitizer Word Count 4	512	
DWC5	Digitizer Word Count 5	512	
DWCX	Digitizer Word Count X	512	
FDE1	Firing Delay 1	0	
FDE2	Firing Delay 2	0	
FDE3	Firing Delay 3	0	
FDE4	Firing Delay 4	0	
FDE5	Firing Delay 5	0	
FDEX	Firing Delay X	0	
FGM5	First Motion Gate Moveout 5	40	US/F
FGMX	First Motion Gate Moveout X	40	US/F
FILG	Label Fill Gap Control − Monopole P&S	COMP_SHEAR	
FMG5	First Motion Minimum Gate 5	500	US
FMGX	First Motion Minimum Gate X	500	US
FMLL	Slowness Lower Limit − FMD	40	US/F
FMRC	Restart Control − FMD	CONTINUE	
FMT5	First Motion Threshold 5	UP	
FMTX	First Motion Threshold X	NONE	
FMUL	Slowness Upper Limit − FMD	180	US/F
FNC5	First Motion Noise Counter Input 5	ALO	
FNCX	First Motion Noise Counter Input X	ALO	
FPM	Processing Mode − FMD	NONE	
FTD5	First Motion Threshold Direction 5	UP	
FTDX	First Motion Threshold Direction X	UP	
GAI1	Manual Gain 1	10	
GAI2	Manual Gain 2	10	
GAI3	Manual Gain 3	6	
GAI4	Manual Gain 4	16	
GAI5	Manual Gain 5	16	
GAIX	Manual Gain X	10	
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GDT1	Gain Delta−T 1	800	US/F
GDT2	Gain Delta−T 2	800	US/F
GDT3	Gain Delta−T 3	800	US/F
GDT4	Gain Delta−T 4	160	US/F
GDT5	Gain Delta−T 5	160	US/F
GDTX	Gain Delta−T X	800	US/F
GGRD	Geothermal Gradient	0.01	DF/F
GIN1	Gain Interval 1	15360	US
GIN2	Gain Interval 2	15360	US
GIN3	Gain Interval 3	15360	US
GIN4	Gain Interval 4	2560	US
GIN5	Gain Interval 5	1600	US
GINX	Gain Interval X	15360	US
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HPF1	High Pass Filter 1	F80	
HPF2	High Pass Filter 2	F80	
HPF3	High Pass Filter 3	F80	
HPF4	High Pass Filter 4	F80	
HPF5	High Pass Filter 5	F8K	
HPFX	High Pass Filter X	F80	
ISSBAR	Barite Mud Switch	BARITE	
ITTS	Integrated Transit Time Source	DTCO	
LFC	Label Formation Character − Monopole P&S	DYNAMIC	
LPF1	Low Pass Filter 1	F5K	
LPF2	Low Pass Filter 2	F5K	
LPF3	Low Pass Filter 3	F5K	
LPF4	Low Pass Filter 4	F30K	
LPF5	Low Pass Filter 5	F30K	
LPFX	Low Pass Filter X	F5K	
LTXG	Lower Dipole Transmitter Geometry	156	IN
MAI5	Slowness Averaging Interval − FMD	42	IN
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCS	Mean Casing Slowness	57	US/F
MDS5	Multishot Delta−T Scatter − FMD	20	US
MTXG	Monopole Transmitter Geometry	186	IN
MUX1	Sum Difference Multiplexor Input 1	RR	
MUX2	Sum Difference Multiplexor Input 2	RR	
MUX3	Sum Difference Multiplexor Input 3	RR	
MUX4	Sum Difference Multiplexor Input 4	RR	
MUX5	Sum Difference Multiplexor Input 5	RR	
MUXX	Sum Difference Multiplexor Input X	RR	
NTI5	Number Threshold Items 5	0	
NTIX	Number Threshold Items X	0	
NWI1	Number Waveform Items 1	8	
NWI2	Number Waveform Items 2	8	
NWI3	Number Waveform Items 3	0	
NWI4	Number Waveform Items 4	8	
NWI5	Number Waveform Items 5	0	
NWIX	Number Waveform Items X	0	
NWS1	Number Waveforms Stacked 1	1	
NWS2	Number Waveforms Stacked 2	1	
NWS3	Number Waveforms Stacked 3	1	

NWS4	Number Waveforms Stacked 4	1	
NWS5	Number Waveforms Stacked 5	1	
NWSX	Number Waveforms Stacked X	1	
RATE	Firing Rate	R7	
RSMN	Label Shear/Compressional Minimum Ratio − Monopole P&S	1.4	
RSMX	Label Shear/Compressional Maximum Ratio − Monopole P&S	2.12	
RX1G	Receiver 1 Geometry	294	IN
RX2G	Receiver 2 Geometry	300	IN
RX3G	Receiver 3 Geometry	306	IN
RX4G	Receiver 4 Geometry	312	IN
RX5G	Receiver 5 Geometry	318	IN
RX6G	Receiver 6 Geometry	324	IN
RX7G	Receiver 7 Geometry	330	IN
RX8G	Receiver 8 Geometry	336	IN
SAM1	DSST Sonic Acquisition Mode 1 − Lower Dipole Mode	LFD_EVEN	
SAM2	DSST Sonic Acquisition Mode 2 − Upper Dipole Mode	ODD	
SAM3	DSST Sonic Acquisition Mode 3 − Monopole Mode for Stoneley	OFF	
SAM4	DSST Sonic Acquisition Mode 4 − Monopole Mode for P&S	LFD_EVEN	
SAM5	DSST Sonic Acquisition Mode 5 − Monopole Mode for FMD	OFF	
SAMX	DSST Sonic Acquisition Mode X − Both Dipoles or Monopole Mode for Expert	OFF	
SAS1	STC Sonic Array Status − Lower Dipole	255	
SAS2	STC Sonic Array Status − Upper Dipole	255	
SAS3	STC Sonic Array Status − Monopole Stoneley	255	
SAS4	STC Sonic Array Status − Monopole P&S	255	
SAS5	Sonic Array Status − FMD	255	
SBO1	STC Search Band Offset − Lower Dipole	3000	US
SBO2	STC Search Band Offset − Upper Dipole	3000	US
SBO3	STC Search Band Offset − Monopole Stoneley	3000	US
SBO4	STC Search Band Offset − Monopole P&S	500	US
SBR4	STC Baseline Removal − Monopole P&S	ON	
SBW1	STC Search Bandwidth − Lower Dipole	8000	US
SBW2	STC Search Bandwidth − Upper Dipole	8000	US
SBW3	STC Search Bandwidth − Monopole Stoneley	8000	US
SBW4	STC Search Bandwidth − Monopole P&S	2000	US
SFC1	STC Formation Character − Lower Dipole	SELECTABLE	
SFC2	STC Formation Character − Upper Dipole	SELECTABLE	
SFC3	STC Formation Character − Monopole Stoneley	SELECTABLE	
SFC4	STC Formation Character − Monopole P&S	SELECTABLE	
SFM1	STC Filter − Lower Dipole	B.3−1.5K	
SFM2	STC Filter − Upper Dipole	B1−3K	
SFM3	STC Filter − Monopole Stoneley	B.5−1.5K	
SFM4	STC Filter − Monopole P&S	B3−12K	
SHLL	Label Slowness Lower Limit − Monopole P&S Shear	235	US/F
SHT	Surface Hole Temperature	30	DEGF
SHUL	Label Slowness Upper Limit − Monopole P&S Shear	240	US/F
SLL1	STC Slowness Lower Limit − Lower Dipole	75	US/F
SLL2	STC Slowness Lower Limit − Upper Dipole	75	US/F
SLL3	STC Slowness Lower Limit − Monopole Stoneley	180	US/F
SLL4	STC Slowness Lower Limit − Monopole P&S	40	US/F
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPSO	Sonic Porosity Source	DTCO	
SST1	STC Slowness Step − Lower Dipole	4	US/F
SST2	STC Slowness Step − Upper Dipole	4	US/F
SST3	STC Slowness Step − Monopole Stoneley	4	US/F
SST4	STC Slowness Step − Monopole P&S	2	US/F
SSW1	STC Source Waveform − Lower Dipole	WF_SAM1	
SSW2	STC Source Waveform − Upper Dipole	WF_SAM2	
SSW3	STC Source Waveform − Monopole Stoneley	WF_SAM3	
SSW4	STC Source Waveform − Monopole P&S	WF_SAM4	
STLL	Label Slowness Lower Limit − Monopole Stoneley	180	US/F
STUL	Label Slowness Upper Limit − Monopole Stoneley	780	US/F
SUL1	STC Slowness Upper Limit − Lower Dipole	1200	US/F
SUL2	STC Slowness Upper Limit − Upper Dipole	1200	US/F
SUL3	STC Slowness Upper Limit − Monopole Stoneley	780	US/F
SUL4	STC Slowness Upper Limit − Monopole P&S	240	US/F
SWD1	STC Slowness Width − Lower Dipole	40	US/F
SWD2	STC Slowness Width − Upper Dipole	40	US/F
SWD3	STC Slowness Width − Monopole Stoneley	40	US/F
SWD4	STC Slowness Width − Monopole P&S	10	US/F
TBDB	Tool String Bottom to DSST Bottom	680.708	IN
TBF1	STC Time for Baseline Fill − Lower Dipole	0	US
TBF2	STC Time for Baseline Fill − Upper Dipole	0	US
TBF3	STC Time for Baseline Fill − Monopole Stoneley	0	US
TBF4	STC Time for Baseline Fill − Monopole P&S	300	US
TLL1	STC Time Lower Limit − Lower Dipole	600	US
TLL2	STC Time Lower Limit − Upper Dipole	600	US
TLL3	STC Time Lower Limit − Monopole Stoneley	600	US
TLL4	STC Time Lower Limit − Monopole P&S	150	US
TST1	STC Time Step − Lower Dipole	200	US
TST2	STC Time Step − Upper Dipole	200	US
TST3	STC Time Step − Monopole Stoneley	200	US
TST4	STC Time Step − Monopole P&S	50	US
TTDB	Tool String Top to DSST Bottom	1225.31	IN
TUL1	STC Time Upper Limit − Lower Dipole	20440	US

TUL2	STC Time Upper Limit − Upper Dipole	20200	US
TUL3	STC Time Upper Limit − Monopole Stoneley	12000	US
TUL4	STC Time Upper Limit − Monopole P&S	3660	US
TWA1	Transmitter Waveform Amplitude 1	179	
TWA2	Transmitter Waveform Amplitude 2	179	
TWA3	Transmitter Waveform Amplitude 3	166	
TWA4	Transmitter Waveform Amplitude 4	200	
TWA5	Transmitter Waveform Amplitude 5	150	
TWAX	Transmitter Waveform Amplitude X	179	
TWD1	STC Time Width − Lower Dipole	2000	US
TWD2	STC Time Width − Upper Dipole	2000	US
TWD3	STC Time Width − Monopole Stoneley	2000	US
TWD4	STC Time Width − Monopole P&S	1000	US
TWI1	STC Integration Time Window − Lower Dipole	1600	US
TWI2	STC Integration Time Window − Upper Dipole	1600	US
TWI3	STC Integration Time Window − Monopole Stoneley	2400	US
TWI4	STC Integration Time Window − Monopole P&S	500	US
TWR1	Transmitter Waveform Sample Rate 1	20	US
TWR2	Transmitter Waveform Sample Rate 2	5	US
TWR3	Transmitter Waveform Sample Rate 3	5	US
TWR4	Transmitter Waveform Sample Rate 4	15	US
TWR5	Transmitter Waveform Sample Rate 5	5	US
TWRX	Transmitter Waveform Sample Rate X	5	US
TWS1	Transmitter Waveform Select 1	2	
TWS2	Transmitter Waveform Select 2	0	
TWS3	Transmitter Waveform Select 3	4	
TWS4	Transmitter Waveform Select 4	6	
TWS5	Transmitter Waveform Select 5	6	
TWSX	Transmitter Waveform Select X	0	
UTXG	Upper Dipole Transmitter Geometry	162	IN
WFDTSP1	SAM1 Waveform Delta for Spectrum	0	US/F
WFDTSP2	SAM2 Waveform Delta for Spectrum	0	US/F
WFDTSP3	SAM3 Waveform Delta for Spectrum	0	US/F
WFDTSP4	SAM4 Waveform Delta for Spectrum	0	US/F
WFDTSPX	SAMX Waveform Delta for Spectrum	0	US/F
WFLLSP1	SAM1 Waveform Lower Limit for Spectrum	0	US
WFLLSP2	SAM2 Waveform Lower Limit for Spectrum	0	US
WFLLSP3	SAM3 Waveform Lower Limit for Spectrum	0	US
WFLLSP4	SAM4 Waveform Lower Limit for Spectrum	0	US
WFLLSPX	SAMX Waveform Lower Limit for Spectrum	0	US
WFM1	Waveform Mode 1	W1	
WFM2	Waveform Mode 2	W1	
WFM3	Waveform Mode 3	W1	
WFM4	Waveform Mode 4	W1	
WFM5	Waveform Mode 5	W1	
WFMX	Waveform Mode X	W1	
WFULSP1	SAM1 Waveform Upper Limit for Spectrum	20000	US
WFULSP2	SAM2 Waveform Upper Limit for Spectrum	20000	US
WFULSP3	SAM3 Waveform Upper Limit for Spectrum	20000	US
WFULSP4	SAM4 Waveform Upper Limit for Spectrum	5000	US
WFULSPX	SAMX Waveform Upper Limit for Spectrum	20000	US
XMT1	Transmitter Select 1	DLO	
XMT2	Transmitter Select 2	DUP	
XMT3	Transmitter Select 3	MONO	
XMT4	Transmitter Select 4	MONO	
XMT5	Transmitter Select 5	MONO	
XMTX	Transmitter Select X	DUP	
HLDS: Hostile Litho−Density Sonde			
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.6	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1500	V
PSDL	HLDS LS Pulse Shape Compensation DAC	30000	
PSDS	HLDS SS Pulse Shape Compensation DAC	30000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity:	50000	PPM

FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	BARITE	
ISSBAR_EDTC	Nuclear Mud Type	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	BARI	
MWCO	Mud Weight Correction Option	YES	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	30	DEGF
SOCN	Standoff Distance	0.5	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Eccentered	
U−ETELM_EDTS	Telemetry Mode for eWAFE	Standard_EDTS	
U−TELM_EDTS	Telemetry Mode for WAFE	Standard_EDTS	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	38000.00	PPM
CSIZ	Current Casing Size	5.500	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	0.0	M
FLEV	Fluid Level	−50000.00	M
MST	Mud Sample Temperature	23.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	−50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	12713	FT
TDD	Total Depth − Driller	3890.00	M
TDL	Total Depth − Logger	3900.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo **Vertical Scale: 1:200** **Graphics File Created: 25−Apr−2019 22:08**

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	HRLT−B	19C0−187
DSST−B	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_012LUP	FN:19	PRODUCER	25−Apr−2019 10:00	3872.5 M	3220.1 M

Output DLIS Files

DEFAULT	MSS_LDEO_NGS_HRLA_026PUP	FN:45	PRODUCER	25−Apr−2019 22:08
BACKUP	MSS_LDEO_NGS_HRLA_026PUP	FN:46	PRODUCER	25−Apr−2019 22:08

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 1 Check							
Master: Calibration out of date 17−Mar−2004 18:46 Before: 24−Mar−2019 18:56 After: 24−Mar−2019 20:19							
Na 511 Peak Loc	40.00	39.52	39.50	39.69	0.1917	1.000	
Na 511 Peak Res	15.50	15.76	16.26	15.19	−1.069	2.000	%
High Voltage	1150	1171	1177	1180	3.072	N/A	V
Na 1785 Peak Loc	142.6	142.2	142.5	142.4	−0.1344	7.000	
Na 1785 Peak Res	8.500	7.571	8.733	9.156	0.4228	2.000	%
Temperature	15.50	13.09	16.34	16.42	0.07784	N/A	DEGC
Na Count Rate	45.00	20.01	19.95	20.40	0.4482	8.000	CPS

All Master Calibrations performed on 16 March 2019

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 2 Check

All Master Calibrations performed on 16 March 2019

Master: Calibration out of date 17−Mar−2004 18:46 Before: 24−Mar−2019 18:56 After: 24−Mar−2019 20:19

Na 511 Peak Loc	40.00	39.70	39.44	39.53	0.08980	1.000	
Na 511 Peak Res	15.50	14.44	16.07	15.83	−0.2349	2.000	%
High Voltage	1150	1095	1100	1095	−4.762	N/A	V
Na 1785 Peak Loc	142.6	141.1	141.1	140.8	−0.2890	7.000	
Na 1785 Peak Res	8.500	8.651	7.557	8.932	1.375	2.000	%
Temperature	15.50	13.69	16.84	17.03	0.1946	N/A	DEGC
Na Count Rate	45.00	20.12	19.76	20.51	0.7454	8.000	CPS

All Master Calibrations performed on 16 March 2019

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Ratio Of Detector 1 To Detector 2

Master: Calibration out of date 17−Mar−2004 18:46 Before: 24−Mar−2019 18:56 After: 24−Mar−2019 20:19

Coincidence Count Rate Ratio	1.000	0.9948	1.012	0.9989	−0.01268	0.05000	

Hostile Natural Gamma Ray Sonde Master Calibration − Detector 1 Calibration

Master: Calibration out of date 17−Mar−2004 18:38

Na 511 Peak Set Point	40.00	41.00	−−	−−	−−	−−	
Th Peak Loc	209.6	211.1	−−	−−	−−	−−	
Th Peak Res	7.000	6.747	−−	−−	−−	−−	%
Background Count Rate	142.5	33.05	−−	−−	−−	−−	CPS
Gain Ratio	1.000	1.016	−−	−−	−−	−−	

Hostile Natural Gamma Ray Sonde Master Calibration − Detector 2 Calibration

Master: Calibration out of date 17−Mar−2004 18:38

Na 511 Peak Set Point	40.00	41.00	−−	−−	−−	−−	
Th Peak Loc	209.6	207.1	−−	−−	−−	−−	
Th Peak Res	7.000	6.684	−−	−−	−−	−−	%
Background Count Rate	142.5	31.66	−−	−−	−−	−−	CPS
Gain Ratio	1.000	0.9931	−−	−−	−−	−−	

High Resolution Laterolog Array − B Wellsite Calibration − HRLT M01

Before: 25−Apr−2019 3:47 After: 26−Mar−2019 5:11

HRLT M0−M1 Voltage Plus − 0	0	N/A	−318.4	−318.5	−0.1407	9.681	UV
HRLT M0−M1 Voltage Plus − 1	0	N/A	−328.7	−330.0	−1.258	9.681	UV
HRLT M0−M1 Voltage Plus − 2	0	N/A	−336.2	−337.4	−1.198	9.681	UV
HRLT M0−M1 Voltage Plus − 3	0	N/A	−327.3	−328.4	−1.145	9.681	UV
HRLT M0−M1 Voltage Plus − 4	0	N/A	−319.6	−319.6	−0.07785	9.681	UV
HRLT M0−M1 Voltage Plus − 5	0	N/A	−321.3	−321.5	−0.2507	9.681	UV
HRLT M0−M1 Voltage Plus − 6	0	N/A	318.2	319.3	1.146	9.681	UV
HRLT M0−M1 Voltage Plus − 7	0	N/A	−322.7	−322.7	0	9.681	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT M12

Before: 25−Apr−2019 3:47 After: 26−Mar−2019 5:11

HRLT M1−M2 Voltage Plus − 0	0	N/A	1736	1739	3.670	53.42	UV
HRLT M1−M2 Voltage Plus − 1	0	N/A	1800	1809	9.036	53.42	UV
HRLT M1−M2 Voltage Plus − 2	0	N/A	1833	1843	9.734	53.42	UV
HRLT M1−M2 Voltage Plus − 3	0	N/A	1783	1792	9.092	53.42	UV
HRLT M1−M2 Voltage Plus − 4	0	N/A	1739	1743	3.677	53.42	UV
HRLT M1−M2 Voltage Plus − 5	0	N/A	1749	1754	4.509	53.42	UV
HRLT M1−M2 Voltage Plus − 6	0	N/A	−1750	−1759	−8.892	53.42	UV
HRLT M1−M2 Voltage Plus − 7	0	N/A	1781	1781	0	53.42	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT M23

Before: 25−Apr−2019 3:47 After: 26−Mar−2019 5:11

HRLT M2−M3 Voltage Plus − 0	0	N/A	1729	1731	1.673	53.42	UV
HRLT M2−M3 Voltage Plus − 1	0	N/A	1802	1811	8.817	53.42	UV
HRLT M2−M3 Voltage Plus − 2	0	N/A	1838	1847	8.608	53.42	UV
HRLT M2−M3 Voltage Plus − 3	0	N/A	1792	1799	6.953	53.42	UV
HRLT M2−M3 Voltage Plus − 4	0	N/A	1743	1744	1.712	53.42	UV
HRLT M2−M3 Voltage Plus − 5	0	N/A	1754	1756	2.866	53.42	UV
HRLT M2−M3 Voltage Plus − 6	0	N/A	−1742	−1750	−7.729	53.42	UV
HRLT M2−M3 Voltage Plus − 7	0	N/A	1781	1781	0	53.42	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT V34

Before: 25−Apr−2019 3:47 After: 26−Mar−2019 5:11

HRLT A3−A4 Voltage Plus − 0	0	N/A	68510	68620	105.4	2100	UV
HRLT A3−A4 Voltage Plus − 1	0	N/A	71290	71620	333.7	2100	UV
HRLT A3−A4 Voltage Plus − 2	0	N/A	72990	73320	331.9	2100	UV
HRLT A3−A4 Voltage Plus − 3	0	N/A	71380	71720	334.7	2100	UV
HRLT A3−A4 Voltage Plus − 4	0	N/A	69380	69480	107.0	2100	UV
HRLT A3−A4 Voltage Plus − 5	0	N/A	69820	69960	137.9	2100	UV
HRLT A3−A4 Voltage Plus − 6	0	N/A	−67920	−68220	−302.5	2100	UV
HRLT A3−A4 Voltage Plus − 7	0	N/A	70000	70000	0	2100	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT V45

Before: 25−Apr−2019 3:47 After: 26−Mar−2019 5:11

HRLT A4−A5 Voltage Plus − 0	0	N/A	68600	68710	112.9	2100	UV
HRLT A4−A5 Voltage Plus − 1	0	N/A	71510	71830	320.9	2100	UV
HRLT A4−A5 Voltage Plus − 2	0	N/A	73180	73510	328.6	2100	UV
HRLT A4−A5 Voltage Plus − 3	0	N/A	71530	71860	325.6	2100	UV
HRLT A4−A5 Voltage Plus − 4	0	N/A	69480	69590	107.0	2100	UV
HRLT A4−A5 Voltage Plus − 5	0	N/A	69920	70050	137.9	2100	UV
HRLT A4−A5 Voltage Plus − 6	0	N/A	−68130	−68420	−290.4	2100	UV

HRLT A4−A5 Voltage Plus − 7	0	N/A	70000	70000	0	2100	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT V56
Before: 25−Apr−2019 3:47 After: 26−Mar−2019 5:11

HRLT A5−A6 Voltage Plus − 0	0	N/A	68440	68550	117.9	2100	UV
HRLT A5−A6 Voltage Plus − 1	0	N/A	71320	71670	343.8	2100	UV
HRLT A5−A6 Voltage Plus − 2	0	N/A	73010	73360	349.2	2100	UV
HRLT A5−A6 Voltage Plus − 3	0	N/A	71390	71730	339.3	2100	UV
HRLT A5−A6 Voltage Plus − 4	0	N/A	69340	69440	105.0	2100	UV
HRLT A5−A6 Voltage Plus − 5	0	N/A	69780	69920	138.5	2100	UV
HRLT A5−A6 Voltage Plus − 6	0	N/A	−67960	−68260	−300.8	2100	UV
HRLT A5−A6 Voltage Plus − 7	0	N/A	70000	70000	0	2100	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT VTP
Before: 25−Apr−2019 3:47 After: 26−Mar−2019 5:11

HRLT Torpedo−M0 Voltage − 0	0	N/A	−68000	−68070	−70.08	2100	UV
HRLT Torpedo−M0 Voltage − 1	0	N/A	−71150	−71470	−322.5	2100	UV
HRLT Torpedo−M0 Voltage − 2	0	N/A	−72870	−73200	−323.0	2100	UV
HRLT Torpedo−M0 Voltage − 3	0	N/A	−71310	−71610	−300.2	2100	UV
HRLT Torpedo−M0 Voltage − 4	0	N/A	−69320	−69400	−78.52	2100	UV
HRLT Torpedo−M0 Voltage − 5	0	N/A	−69760	−69870	−109.4	2100	UV
HRLT Torpedo−M0 Voltage − 6	0	N/A	67730	68020	287.8	2100	UV
HRLT Torpedo−M0 Voltage − 7	0	N/A	−70000	−70000	0	2100	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT VBD
Before: 25−Apr−2019 3:47 After: 26−Mar−2019 5:11

HRLT Bridle#9−M0 Voltage − 0	0	N/A	−68040	−68110	−75.48	2100	UV
HRLT Bridle#9−M0 Voltage − 1	0	N/A	−71250	−71570	−321.6	2100	UV
HRLT Bridle#9−M0 Voltage − 2	0	N/A	−72960	−73270	−316.7	2100	UV
HRLT Bridle#9−M0 Voltage − 3	0	N/A	−71390	−71690	−297.3	2100	UV
HRLT Bridle#9−M0 Voltage − 4	0	N/A	−69370	−69450	−79.79	2100	UV
HRLT Bridle#9−M0 Voltage − 5	0	N/A	−69800	−69910	−109.4	2100	UV
HRLT Bridle#9−M0 Voltage − 6	0	N/A	67820	68110	291.9	2100	UV
HRLT Bridle#9−M0 Voltage − 7	0	N/A	−70000	−70000	0	2100	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT ISO
Before: 25−Apr−2019 3:47 After: 26−Mar−2019 5:11

HRLT Source Current Plus − 0	0	N/A	283.9	284.2	0.3019	8.520	UA
HRLT Source Current Plus − 1	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus − 2	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus − 3	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus − 4	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus − 5	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus − 6	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus − 7	0	N/A	281.1	281.1	0	8.520	UA

High Resolution Laterolog Array − B Wellsite Calibration − HRLT MV
Before: 25−Apr−2019 3:47 After: 26−Mar−2019 5:11

HRLT Vertical Voltage Pl − 0	0	N/A	−320.3	−320.2	0.1550	9.681	UV
HRLT Vertical Voltage Pl − 1	0	N/A	−323.7	−324.6	−0.9148	9.681	UV
HRLT Vertical Voltage Pl − 2	0	N/A	−329.8	−330.8	−1.041	9.681	UV
HRLT Vertical Voltage Pl − 3	0	N/A	−319.3	−320.2	−0.8865	9.681	UV
HRLT Vertical Voltage Pl − 4	0	N/A	−308.7	−308.7	0.09625	9.681	UV
HRLT Vertical Voltage Pl − 5	0	N/A	−325.3	−325.3	−0.01758	9.681	UV
HRLT Vertical Voltage Pl − 6	0	N/A	325.8	326.9	1.095	9.681	UV
HRLT Vertical Voltage Pl − 7	0	N/A	−322.7	−322.7	0	9.681	UV

All Master Calibrations performed on 16 March 2019

Hostile Litho−Density Sonde Wellsite Calibration − Background Measurement
Master: Calibration out of date 20−Nov−2004 2:09 Before: 24−Mar−2019 18:54 After: 24−Mar−2019 20:01

SS Cs Resolution Bkg	9.000	7.644	7.635	7.666	0.03141	1.800	%
LS Cs Resolution Bkg	9.000	8.032	7.983	8.000	0.01712	1.800	%
LSW1 Background	100.0	74.48	72.99	74.38	1.392	3.000	CPS
LSW2 Background	100.0	67.45	66.79	67.71	0.9257	3.000	CPS
LSW3 Background	200.0	152.3	151.9	151.3	−0.5494	6.000	CPS
LSW4 Background	250.0	191.2	188.6	189.8	1.252	7.500	CPS
LSW5 Background	600.0	445.1	445.1	443.2	−1.864	18.00	CPS
SSW1 Background	100.0	72.92	72.34	71.80	−0.5384	3.000	CPS
SSW2 Background	200.0	124.4	125.4	123.1	−2.222	6.000	CPS
SSW3 Background	500.0	347.1	347.5	348.5	1.004	15.00	CPS
SSW4 Background	270.0	187.3	186.5	187.1	0.5383	8.100	CPS
SSW5 Background	200.0	134.0	134.5	133.3	−1.227	6.000	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Aluminum Measurement
Master: Calibration out of date 16−Mar−2004 20:23

All Master Calibrations performed on 16 March 2019

LSW1 Aluminum	600.0	446.7	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	669.6	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	822.2	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	411.0	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	379.8	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2216	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6194	N/A	N/A	N/A	N/A	CPS

SSW3 Aluminum	11600	8613	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	3474	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	409.1	N/A	N/A	N/A	N/A	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Lithology Measurement
Master: Calibration out of date 16−Mar−2004 20:18 All Master Calibrations performed on 16 March 2019

LSW1 Iron	400.0	307.4	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	543.0	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	720.9	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	374.3	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	346.2	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1609	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5160	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	7869	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3165	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	359.9	N/A	N/A	N/A	N/A	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Caliper Calibration
Before: Calibration out of date 16−Mar−2004 20:50

HLDS Caliper Small Ring	12.00	N/A	16.58	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	20.71	N/A	N/A	N/A	IN

Enhanced DTS Cartridge Wellsite Calibration − EDTC Accelerometer Calibration
Before: 25−Apr−2019 3:48

EDTC Z−Axis Acceleration	9.810	N/A	9.768	N/A	N/A	N/A	M/S2

Enhanced DTS Cartridge Wellsite Calibration − Detector Calibration
Before: Calibration out of date 24−Mar−2019 19:30 After: Calibration out of date 24−Mar−2019 20:04

Gamma Ray (Jig − Bkg)	132.7	N/A	132.7	135.7	2.967	12.06	GAPI
Gamma Ray (Calibrated)	164.0	N/A	164.0	167.7	3.667	15.00	GAPI

Hostile Natural Gamma Ray Cartridge − B / Equipment Identification

Primary Equipment:

HNGC Cartridge	HNGC − B	304

Auxiliary Equipment:

HNGC Housing	HNGH − A	3

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:

HNGS Sonde	HNGS − BA	99

Auxiliary Equipment:

HNGS Sonde Housing	HNSH − BA	102
Gamma Source Radioactive	GSR − U	6098

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value
Master		39.52
Before		39.50
After		39.69
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		15.76
Before		16.26
After		15.19
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1171
Before		1177
After		1180
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		142.2
Before		142.5
After		142.4
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		7.571
Before		8.733
After		9.156
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

Phase	Temperature DEGC	Value
Master		13.09
Before		16.34
After		16.42
	−28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		20.01
Before		19.95
After		

After		20.40
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

Master: Calibration out of date 17−Mar−2004 18:46 Before: 24−Mar−2019 18:56 After: 24−Mar−2019 20:19

All Master Calibrations performed on 16 March 2019

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value
Master		39.70
Before		39.44
After		39.53
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		14.44
Before		16.07
After		15.83
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1095
Before		1100
After		1095
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		141.1
Before		141.1
After		140.8
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		8.651
Before		7.557
After		8.932
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

Phase	Temperature DEGC	Value
Master		13.69
Before		16.84
After		17.03
	−28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		20.12
Before		19.76
After		20.51
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

Master: Calibration out of date 17−Mar−2004 18:46 Before: 24−Mar−2019 18:56 After: 24−Mar−2019 20:19

All Master Calibrations performed on 16 March 2019

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		0.9948
Before		1.012
After		0.9989
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	

Master: Calibration out of date 17−Mar−2004 18:46

Before: 24−Mar−2019 18:56

After: 24−Mar−2019 20:19

All Master Calibrations performed on 16 March 2019

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 1 Calibration

Phase	Na 511 Peak Set Point	Value
Master		41.00
	38.00 (Minimum) 40.00 (Nominal) 43.00 (Maximum)	

Phase	Th Peak Loc	Value
Master		211.1
	201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)	

Phase	Th Peak Res %	Value
Master		6.747
	5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)	

Phase	Background Count Rate CPS	Value
Master		33.05
	10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)	

Phase	Gain Ratio	Value
Master		1.016
	0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)	

Master: Calibration out of date 17−Mar−2004 18:38

All Master Calibrations performed on 16 March 2019

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 2 Calibration

Phase	Na 511 Peak Set Point	Value
Master		41.00
	38.00 (Minimum) 40.00 (Nominal) 43.00 (Maximum)	

Phase	Th Peak Loc	Value
Master		207.1
	201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)	

Phase	Th Peak Res %	Value
Master		6.684
	5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)	

Phase	Background Count Rate CPS	Value
Master		31.66
	10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)	

Phase	Gain Ratio	Value
Master		0.9931
	0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)	

Master: Calibration out of date 17−Mar−2004 18:38

All Master Calibrations performed on 16 March 2019

High Resolution Laterolog Array − B / Equipment Identification

Primary Equipment:		
HRLT Sonde	HRLS − B	768
Auxiliary Equipment:		
HRLT lower Housing	HRLH − B	1869
HRLT Lower Cartridge	HRLC − B	1897
HRLT upper Housing	HRUH − B	975
HRLT Upper Cartridge	HRUC − B	964

High Resolution Laterolog Array − B Wellsite Calibration

HRLT M01

Idx	Phase	HRLT M0−M1 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−318.4	−322.7	−280.7	−379.7
	After		−318.5			
1	Before		−328.7	−322.7	−280.7	−379.7
	After		−330.0			
2	Before		−336.2	−322.7	−280.7	−379.7
	After		−337.4			
3	Before		−327.3	−322.7	−280.7	−379.7
	After		−328.4			
4	Before		−319.6	−322.7	−280.7	−379.7
	After		−319.6			
5	Before		−321.3	−322.7	−280.7	−379.7
	After		−321.5			
6	Before		318.2	322.7	379.7	280.7
	After		319.3			
7	Before		−322.7	−322.7	−280.7	−379.7
	After		−322.7			
		(Minimum) (Nominal) (Maximum)				

Before: 25−Apr−2019 3:47

After: 26−Mar−2019 5:11

High Resolution Laterolog Array − B Wellsite Calibration

HRLT M12

Idx	Phase	HRLT M1−M2 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1736	1781	2095	1549
	After		1739			
1	Before		1800	1781	2095	1549
	After		1809			
2	Before		1833	1781	2095	1549
	After		1843			
3	Before		1783	1781	2095	1549
	After		1792			
4	Before		1739	1781	2095	1549
	After		1743			
5	Before		1749	1781	2095	1549
	After		1754			
	Before		−1750			

6	After		−1759	−1781	−1549	−2095
7	Before		1781	1781	2095	1549
	After		1781			
		(Minimum) (Nominal) (Maximum)				

Before: 25−Apr−2019 3:47
After: 26−Mar−2019 5:11

High Resolution Laterolog Array − B Wellsite Calibration

HRLT M23

Idx	Phase	HRLT M2−M3 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1729	1781	2095	1549
	After		1731			
1	Before		1802	1781	2095	1549
	After		1811			
2	Before		1838	1781	2095	1549
	After		1847			
3	Before		1792	1781	2095	1549
	After		1799			
4	Before		1743	1781	2095	1549
	After		1744			
5	Before		1754	1781	2095	1549
	After		1756			
6	Before		−1742	−1781	−1549	−2095
	After		−1750			
7	Before		1781	1781	2095	1549
	After		1781			
		(Minimum) (Nominal) (Maximum)				

Before: 25−Apr−2019 3:47
After: 26−Mar−2019 5:11

High Resolution Laterolog Array − B Wellsite Calibration

HRLT V34

Idx	Phase	HRLT A3−A4 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68510	70000	82360	60900
	After		68620			
1	Before		71290	70000	82360	60900
	After		71620			
2	Before		72990	70000	82360	60900
	After		73320			
3	Before		71380	70000	82360	60900
	After		71720			
4	Before		69380	70000	82360	60900
	After		69480			
5	Before		69820	70000	82360	60900
	After		69960			
6	Before		−67920	−70000	−60900	−82360
	After		−68220			
7	Before		70000			

7	Before		70000	70000	82360	60900
	After		70000			
		(Minimum) (Nominal) (Maximum)				

Before: 25−Apr−2019 3:47
After: 26−Mar−2019 5:11

High Resolution Laterolog Array − B Wellsite Calibration

HRLT V45

Idx	Phase	HRLT A4−A5 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68600	70000	82360	60900
	After		68710			
1	Before		71510	70000	82360	60900
	After		71830			
2	Before		73180	70000	82360	60900
	After		73510			
3	Before		71530	70000	82360	60900
	After		71860			
4	Before		69480	70000	82360	60900
	After		69590			
5	Before		69920	70000	82360	60900
	After		70050			
6	Before		−68130	−70000	−60900	−82360
	After		−68420			
7	Before		70000	70000	82360	60900
	After		70000			
		(Minimum) (Nominal) (Maximum)				

Before: 25−Apr−2019 3:47
After: 26−Mar−2019 5:11

High Resolution Laterolog Array − B Wellsite Calibration

HRLT V56

Idx	Phase	HRLT A5−A6 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68440	70000	82360	60900
	After		68550			
1	Before		71320	70000	82360	60900
	After		71670			
2	Before		73010	70000	82360	60900
	After		73360			
3	Before		71390	70000	82360	60900
	After		71730			
4	Before		69340	70000	82360	60900
	After		69440			
5	Before		69780	70000	82360	60900
	After		69920			
6	Before		−67960	−70000	−60900	−82360
	After		−68260			
7	Before		70000	70000	82360	60900
	After		70000			

		(Minimum)	(Nominal)	(Maximum)				

Before: 25−Apr−2019 3:47

After: 26−Mar−2019 5:11

High Resolution Laterolog Array − B Wellsite Calibration

HRLT VTP

Idx	Phase	HRLT Torpedo−M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−68000	−70000	−60900	−82360
	After		−68070			
1	Before		−71150	−70000	−60900	−82360
	After		−71470			
2	Before		−72870	−70000	−60900	−82360
	After		−73200			
3	Before		−71310	−70000	−60900	−82360
	After		−71610			
4	Before		−69320	−70000	−60900	−82360
	After		−69400			
5	Before		−69760	−70000	−60900	−82360
	After		−69870			
6	Before		67730	70000	82360	60900
	After		68020			
7	Before		−70000	−70000	−60900	−82360
	After		−70000			
		(Minimum) (Nominal) (Maximum)				

Before: 25−Apr−2019 3:47

After: 26−Mar−2019 5:11

High Resolution Laterolog Array − B Wellsite Calibration

HRLT VBD

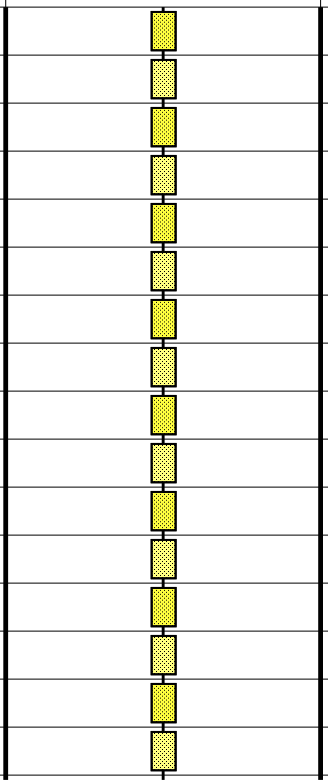
Idx	Phase	HRLT Bridle#9−M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−68040	−70000	−60900	−82360
	After		−68110			
1	Before		−71250	−70000	−60900	−82360
	After		−71570			
2	Before		−72960	−70000	−60900	−82360
	After		−73270			
3	Before		−71390	−70000	−60900	−82360
	After		−71690			
4	Before		−69370	−70000	−60900	−82360
	After		−69450			
5	Before		−69800	−70000	−60900	−82360
	After		−69910			
6	Before		67820	70000	82360	60900
	After		68110			
7	Before		−70000	−70000	−60900	−82360
	After		−70000			
		(Minimum) (Nominal) (Maximum)				

Before: 25−Apr−2019 3:47

After: 26−Mar−2019 5:11

High Resolution Laterolog Array − B Wellsite Calibration

HRLT_ISO

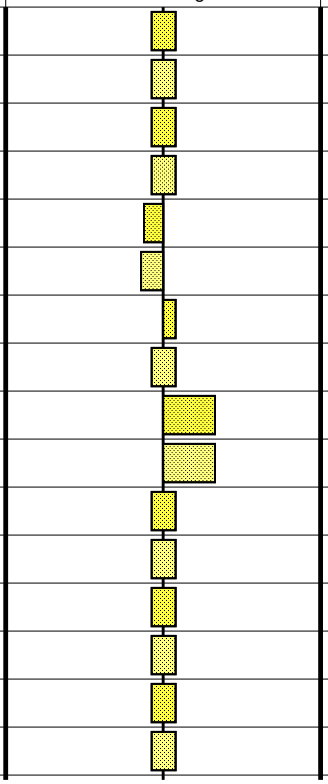
Idx	Phase	HRLT Source Current Plus UA	Value	Nominal	Maximum	Minimum
0	Before		283.9	284.0	334.1	247.0
	After		284.2			
1	Before		281.1	281.1	330.7	244.4
	After		281.1			
2	Before		281.1	281.1	330.7	244.4
	After		281.1			
3	Before		281.1	281.1	330.7	244.4
	After		281.1			
4	Before		281.1	281.1	330.7	244.4
	After		281.1			
5	Before		281.1	281.1	330.7	244.4
	After		281.1			
6	Before		281.1	281.1	330.7	244.4
	After		281.1			
7	Before		281.1	281.1	330.7	244.4
	After		281.1			
		(Minimum) (Nominal) (Maximum)				

Before: 25−Apr−2019 3:47

After: 26−Mar−2019 5:11

High Resolution Laterolog Array − B Wellsite Calibration

HRLT_MV

Idx	Phase	HRLT Vertical Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−320.3	−322.7	−280.7	−379.7
	After		−320.2			
1	Before		−323.7	−322.7	−280.7	−379.7
	After		−324.6			
2	Before		−329.8	−322.7	−280.7	−379.7
	After		−330.8			
3	Before		−319.3	−322.7	−280.7	−379.7
	After		−320.2			
4	Before		−308.7	−322.7	−280.7	−379.7
	After		−308.7			
5	Before		−325.3	−322.7	−280.7	−379.7
	After		−325.3			
6	Before		325.8	322.7	379.7	280.7
	After		326.9			
7	Before		−322.7	−322.7	−280.7	−379.7
	After		−322.7			
		(Minimum) (Nominal) (Maximum)				

Before: 25−Apr−2019 3:47

After: 26−Mar−2019 5:11

Hostile Litho−Density Sonde / Equipment Identification

Hostile Litho Density Sonde / Equipment Identification

Primary Equipment:		
Gamma Source Radioactive	GSR − ZA	2945
Hostile Litho Density Sonde	HLDS − D	77
Hostile Litho Density High Voltage	HLDV − D	67
Auxiliary Equipment:		
Hostile Litho Density High Voltage Housi	HEH − H	67
Hostile Litho Density Pad	HLDP − C	83

Hostile Litho−Density Sonde Wellsite Calibration

Background Measurement

Phase	SS Cs Resolution Bkg %	Value
Master		7.644
Before		7.635
After		7.666
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Phase	LS Cs Resolution Bkg %	Value
Master		8.032
Before		7.983
After		8.000
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Phase	LSW1 Background CPS	Value
Master		74.48
Before		72.99
After		74.38
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	LSW2 Background CPS	Value
Master		67.45
Before		66.79
After		67.71
	50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)	

Phase	LSW3 Background CPS	Value
Master		152.3
Before		151.9
After		151.3
	110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)	

Phase	LSW4 Background CPS	Value
Master		191.2
Before		188.6
After		189.8
	140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)	

Phase	LSW5 Background CPS	Value
Master		445.1
Before		445.1
After		443.2
	330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)	

Phase	SSW1 Background CPS	Value
Master		72.92
Before		72.34
After		71.80
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	SSW2 Background CPS	Value
Master		124.4
Before		125.4
After		123.1
	100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum)	

Phase	SSW3 Background CPS	Value
Master		347.1
Before		347.5
After		348.5
	280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum)	

Phase	SSW4 Background CPS	Value
Master		187.3
Before		186.5
After		187.1
	150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum)	

Phase	SSW5 Background CPS	Value
Master		134.0
Before		134.5
After		133.3
	110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum)	

Master: Calibration out of date 20−Nov−2004 2:09 Before: 24−Mar−2019 18:54 After: 24−Mar−2019 20:01

All Master Calibrations performed on 16 March 2019

Hostile Litho−Density Sonde Master Calibration

Detector Background Measurement

Phase	LSW1 Background CPS	Value
Master		74.48
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	LSW2 Background CPS	Value
Master		67.45
	50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)	

Phase	LSW3 Background CPS	Value
Master		152.3
	110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)	

Phase	LSW4 Background CPS	Value
Master		191.2
	140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)	

Phase	LSW5 Background CPS	Value
Master		445.1
	330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)	

Phase	LS Cs Resolution Bkg %	Value
Master		8.032
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Phase	SSW1 Background CPS	Value
Master		72.92
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	SSW2 Background CPS	Value
Master		124.4
	100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum)	

Phase	SSW3 Background CPS	Value
Master		347.1
	280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum)	

Phase	SSW4 Background CPS	Value
Master		187.3
	150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum)	

Phase	SSW5 Background CPS	Value
Master		134.0
	110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum)	

Phase	SS Cs Resolution Bkg %	Value
Master		7.644
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Master: Calibration out of date 20−Nov−2004 2:09

All Master Calibrations performed on 16 March 2019

Hostile Litho−Density Sonde Master Calibration

Detector Aluminum Measurement (bkgd−subtracted)

Phase	LSW1 Aluminum CPS	Value
Master		446.7

Phase	LSW2 Aluminum CPS	Value
Master		669.6

Phase	LSW3 Aluminum CPS	Value
Master		822.2

Phase	LSW4 Aluminum CPS	Value
Master		411.0
410.0 (Minimum)	580.0 (Nominal)	740.0 (Maximum)

Phase	LSW5 Aluminum CPS	Value
Master	EXCEEDS LIMIT	379.8
410.0 (Minimum)	570.0 (Nominal)	740.0 (Maximum)

Phase	SSW1 Aluminum CPS	Value
Master		2216
2000 (Minimum)	2800 (Nominal)	3200 (Maximum)

Phase	SSW2 Aluminum CPS	Value
Master		6194
5800 (Minimum)	8000 (Nominal)	9300 (Maximum)

Phase	SSW3 Aluminum CPS	Value
Master		8613
8300 (Minimum)	11600 (Nominal)	13500 (Maximum)

Phase	SSW4 Aluminum CPS	Value
Master	EXCEEDS LIMIT	3474
3500 (Minimum)	5000 (Nominal)	5800 (Maximum)

Phase	SSW5 Aluminum CPS	Value
Master	EXCEEDS LIMIT	409.1
430.0 (Minimum)	660.0 (Nominal)	770.0 (Maximum)

Density master calibration count rates low due to weak source
Does not effect end density measurement

Master: Calibration out of date 16−Mar−2004 20:23

All Master Calibrations performed on 16 March 2019

Hostile Litho−Density Sonde Master Calibration

Detector Litholog Measurement (bkgd−subtracted)

Phase	LSW1 Iron CPS	Value
Master		307.4
290.0 (Minimum)	400.0 (Nominal)	560.0 (Maximum)

Phase	LSW2 Iron CPS	Value
Master		543.0
520.0 (Minimum)	730.0 (Nominal)	950.0 (Maximum)

Phase	LSW3 Iron CPS	Value
Master		720.9
720.0 (Minimum)	1000 (Nominal)	1350 (Maximum)

Phase	LSW4 Iron CPS	Value
Master		374.3
370.0 (Minimum)	520.0 (Nominal)	700.0 (Maximum)

Phase	LSW5 Iron CPS	Value
Master		346.2
340.0 (Minimum)	470.0 (Nominal)	750.0 (Maximum)

Phase	SSW1 Iron CPS	Value
Master		1609
1500 (Minimum)	2100 (Nominal)	2400 (Maximum)

Phase	SSW2 Iron CPS	Value
Master		5160
4900 (Minimum)	6800 (Nominal)	7900 (Maximum)

Phase	SSW3 Iron CPS	Value
Master		7869
7800 (Minimum)	10800 (Nominal)	12600 (Maximum)

Phase	SSW4 Iron CPS	Value
Master	EXCEEDS LIMIT	3165
3300 (Minimum)	4600 (Nominal)	5400 (Maximum)

Phase	SSW5 Iron CPS	Value
Master	EXCEEDS LIMIT	359.9
420.0 (Minimum)	580.0 (Nominal)	680.0 (Maximum)

Density master calibration count rates low due to weak source
Does not effect end density measurement

Master: Calibration out of date 16−Mar−2004 20:18

All Master Calibrations performed on 16 March 2019

Hostile Litho−Density Sonde Master Calibration

Quality Ratios

Phase	AL CALIBRATION RATIO 1	Value
Master		1.040
0.9000 (Minimum)	1.000 (Nominal)	1.100 (Maximum)

Phase	AL CALIBRATION RATIO 2	Value
Master		2.218
1.900 (Minimum)	2.100 (Nominal)	2.300 (Maximum)

Phase	AL CALIBRATION RATIO 3	Value
Master		0.5650
0.4500 (Minimum)	0.5500 (Nominal)	0.6500 (Maximum)

Phase	AL CALIBRATION RATIO 4	Value
Master		0.5708
0.4000 (Minimum)	0.5500 (Nominal)	0.6500 (Maximum)

Phase	Pad−Wear SS Ratio	Value
Master		0.9957
0.9800 (Minimum)	0.9880 (Nominal)	0.9960 (Maximum)

Phase	Pad−Wear LS Ratio	Value
Master		0.9904
0.9800 (Minimum)	0.9880 (Nominal)	0.9960 (Maximum)

Phase	Pad−Position SS Ratio	Value
Master		1.002
0.9900 (Minimum)	0.9940 (Nominal)	1.015 (Maximum)

Phase	Pad−Position LS Ratio	Value
Master	EXCEEDS LIMIT	0.9836
0.9850 (Minimum)	0.9940 (Nominal)	1.010 (Maximum)

Master: Calibration out of date 16−Mar−2004 20:12

All Master Calibrations performed on 16 March 2019

Litho−Density Spectroscopy Cartridge − B / Equipment Identification

Primary Equipment:		
LDSC Cartridge	LDSC − B	521
Auxiliary Equipment:		
LDSC Housing	LDSH − A	319

Enhanced DTS Cartridge / Equipment Identification

Primary Equipment:

EDTC Gamma Ray Detector	EDTG − A/B	8305
Enhanced DTS Cartridge	EDTC − B	8317
Auxiliary Equipment:		
EDTC Housing	EDTH − B	8303

Enhanced DTS Cartridge Wellsite Calibration

EDTC Accelerometer Calibration

Phase	EDTC Z−Axis Acceleration M/S2	Value
Before		9.768

9.610 (Minimum) 9.810 (Nominal) 10.01 (Maximum)

Before: 25−Apr−2019 3:48

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		8.677	Before		132.7	Before		164.0
After		8.919	After		135.7	After		167.7

0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)

120.6 (Minimum) 132.7 (Nominal) 144.8 (Maximum)

149.0 (Minimum) 164.0 (Nominal) 179.0 (Maximum)

Before: Calibration out of date 24−Mar−2019 19:30 After: Calibration out of date 24−Mar−2019 20:04

Company: **International Ocean Discovery Program**

Schlumberger

Well: **Expedition 382, Site U1536E**
Field: **Iceberg Alley and Subantarctic Ice**
Rig: **JOIDES Resolution**
Ocean: **Southern**

High Resolution Laterolog Array (HRLA)
Hostile Litho Density Sonde (HLDS)
Dipole Sonic, MSS, GR