Schlumberger

Company: **Lamont Doherty**

Well: **Expedition 335 Site U1256D**
Field: **Superfast Spreading Crust IV**
Rig: **Joides Resolution** Ocean: **Pacific Ocean**

Rig: Joides Resolution
Field: Superfast Spreading Crust IV
Location:
Well: Expedition 335 Site U1256D
Company: Lamont Doherty

Hostile Litho Density
Accelerator Porosity Sonde
Gamma Ray

LOCATION

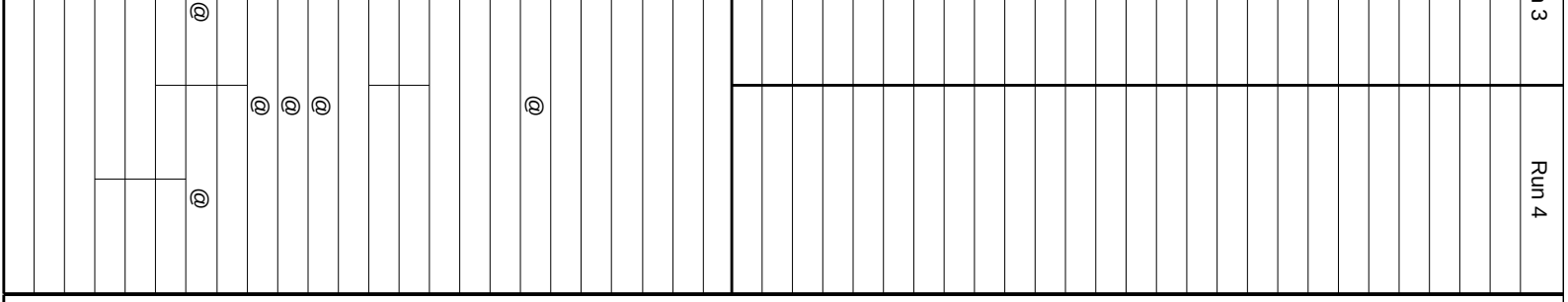
Elev.: K.B. −3656.00 m
G.L. 0.00 m
D.F. −3656.00 m

Permanent Datum: Mean Sea Level — Elev.: 0.00 m
Log Measured From: Rig Floor — −3656.00 m above Perm. Datum
Drilling Measured From: Rig Floor

API Serial No.	Max. Hole Devi. 5 deg	Longitude 91* 56.0612 W	Latitude 6* 44.1631 N

	Run 1	Run 2	Run 1	Run 2
Logging Date	26−May−2011			
Run Number	One			
Depth Driller	1520 m			
Schlumberger Depth	1524 m			
Bottom Log Interval	1503 m			
Top Log Interval	232 m			
Casing Driller Size @ Depth	16.000 in @ 269 m		@	@
Casing Schlumberger	269 m			
Bit Size	9.875 in			
Type Fluid In Hole	Sea water			
MUD Density / Viscosity	1 g/cm3			
MUD Fluid Loss / PH				
MUD Source Of Sample				
RM @ Measured Temperature	@		@	
RMF @ Measured Temperature	@		@	
RMC @ Measured Temperature	@		@	
Source RMF / RMC				
RM @ MRT / RMF @ MRT	@ 80	@ 80	@	@
Maximum Recorded Temperatures	80 degC			
Circulation Stopped / Time	26−May−2011	18:00		
Logger On Bottom / Time	27−May−2011	2:00		
Unit Number / Location	625003	Webster, TX		
Recorded By	K. Swain			
Witnessed By	G. Guerin, N. Zakharova			

	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			



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

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
All logs referenced to Sea Floor in this print.	
Original files downlog47 and uplog50.dlis recorded from rig floor depth.	
Casing and sea floor depth information provided by IODP/LDEO.	
APS turned off on downlog and caliper LCAL closed on downlog.	
Hole top section logged in ODP leg 206 and Exp 309, 312.	
Log correlated to 16 inch casing at 269 m for both down and uplogs.	
At 4850mbrf or 1209mbsf, uplog speed increased to 3600ft/hr from 900ft/hr.	
Downlog flipped and used for repeat as a 2nd uplog was not made due	
to difficulty in opening the caliper.	
HRLT utilized Inversion for uplog with LCAL as input. Downlog used BS as input.	
Toolsketch shows layout of tools, with note that the HRLA was	
centralized using 2 MCD centralizers above/below the HRLA.	
The remaining upper part of the tool was eccentralized with an ILE bowspring	
for the APS and caliper with HLDS. 4 AH184 knuckle joints were utilized	
between HLDS and the top MCD centralizer to eliminate issues between	
centralized and eccentralized tools.	
Arrays RLA1,2 and RXO removed as they are affected by large hole and large	RM/RT

RUN 1	RUN 2
SERVICE ORDER #:	SERVICE ORDER #:
PROGRAM VERSION: 17C0−154	PROGRAM VERSION:
FLUID LEVEL:	FLUID LEVEL:

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1

SURFACE EQUIPMENT

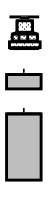
SFT−281 1
SFT−178 1
WITM (EDTS)−A 1

DOWNHOLE EQUIPMENT

LEH−MT 101

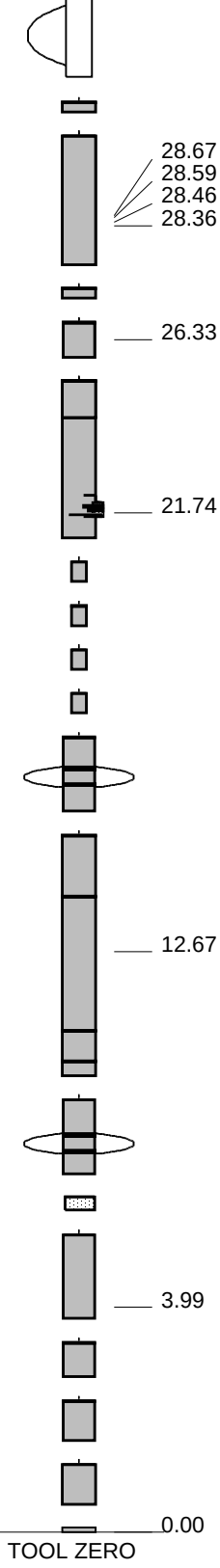
AH−369
EDTC−B
EDTH−B 8303
EDTC−B 8317

MDSB_EDTC
Mud Tempe
CTEM
Gamma Ray
TelStatus
EDTCB Ele



37.24
35.84
34.77
34.20
33.86
36.28
35.84

RUN 2



ILE−F 14
ILE−F
33.86

AH−191
31.42

APS−C
APH−AC 22
APS−C 22
MNTR−F 5589
31.12

AH−190
27.17

LDSC−B 521
26.86

HLDS
GSR−Z 2397
HLDV−D 51
HLDS−D 45
HEH−H 53
HLDP−C 61
25.80

AH−knuckle 1835
20.98

AH−knuckle 1855
20.37

AH−knuckle 1856
19.76

AH−knuckle 895
19.15

AH−MCD
AH−MCD 22
18.54

HRLT−B
HRUH−B 769
HRUC−B 764
HRLS−B 969
HRLH−B 759
HRLC−B 759
AH−270 773
16.26

AH−MCD
AH−MCD 1663
8.88

AH−230 3
6.61

MTT_LDEO−A
MTT_LDEO−A 2
6.21

AH−ssij 8194
3.63

DTA−A
ECH−KE 8456
2.58

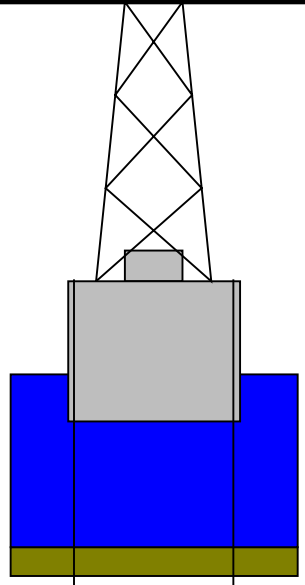
GPIT−A/B
GPIC−AC 719
1.36

BNS−CCS
0.14

TOOL ZERO

MAXIMUM STRING DIAMETER 4.50 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

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

Derrick Floor Elevation			−3656			−3656	5.500	Casing String
Mean Sea Level			0					
						0.0	9.875	Borehole Segment
						269	5.500	Casing Shoe

Input DLIS Files

DEFAULT	MTT_LDEO_HRLA_LDL_050LUP	FN:53	PRODUCER	27−May−2011 08:48	5168.6 M	3872.8 M

Output DLIS Files

DEFAULT	MTT_LDEO_HRLA_LDL_068PUP	FN:9	PRODUCER	08−Jun−2011 18:05	1527.8 M	231.8 M

OP System Version: 17C0−154

GPIT−A/B	SRPC−3971−Q1_2010_OP17	DTA−A	17C0−154
MTT_LDEO−A	17C0−154	HRLT−B	SRPC−3971−Q1_2010_OP17
HLDS	SPC−3961−OP17_NUCL	LDSC−B	SPC−3961−OP17_NUCL
APS−C	SPC−3961−OP17_NUCL	EDTC−B	SRPC−3971−Q1_2010_OP17

PIP SUMMARY

Time Mark Every 60 S

HLDS HR Bulk Density Correction (HBDC)
−0.25 (G/C3) 0.25

Tension (TENS)
10000 (LBF) 0

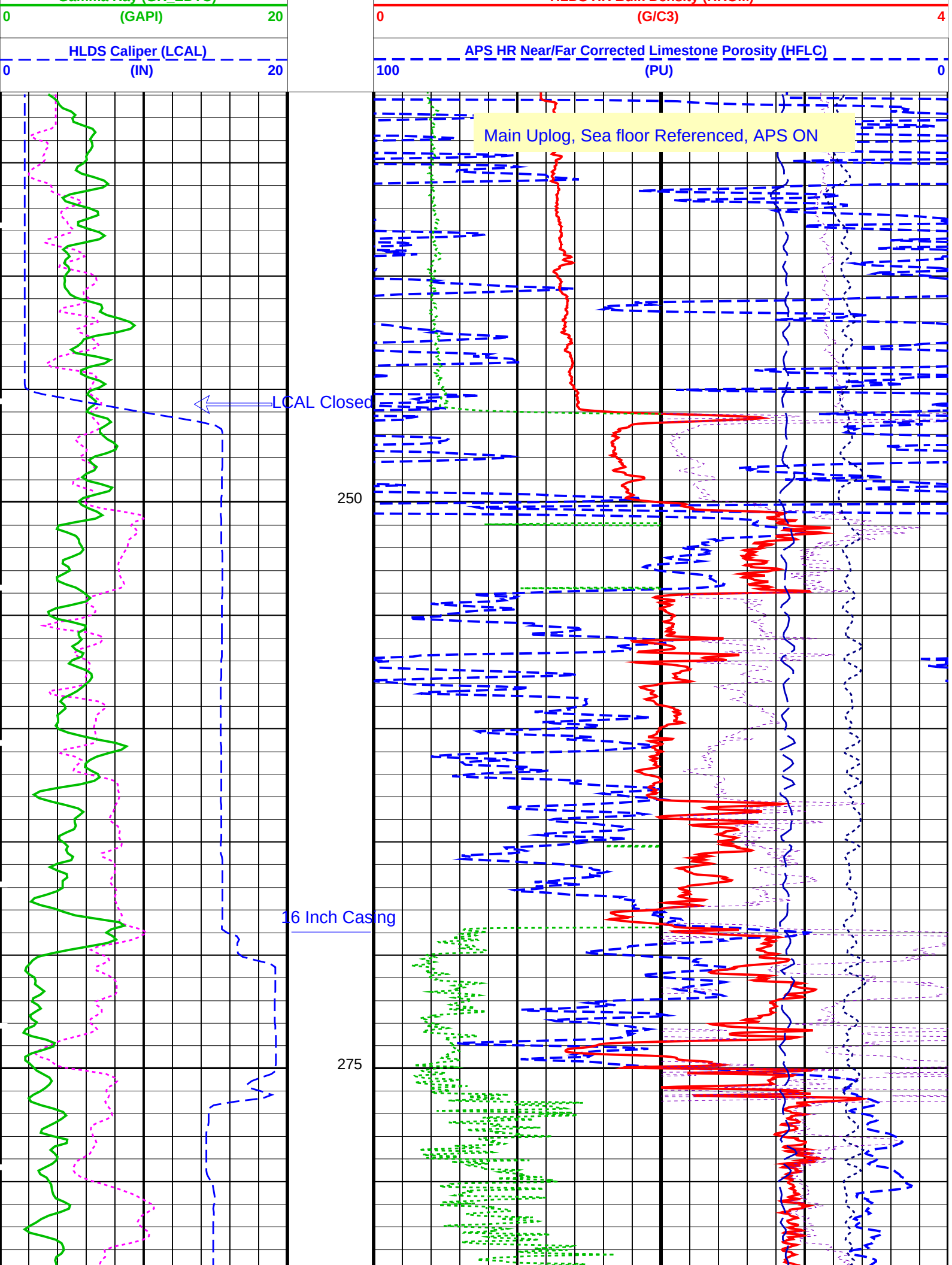
APS Effective Standoff in Limestone (STOF)
−1 (IN) 4

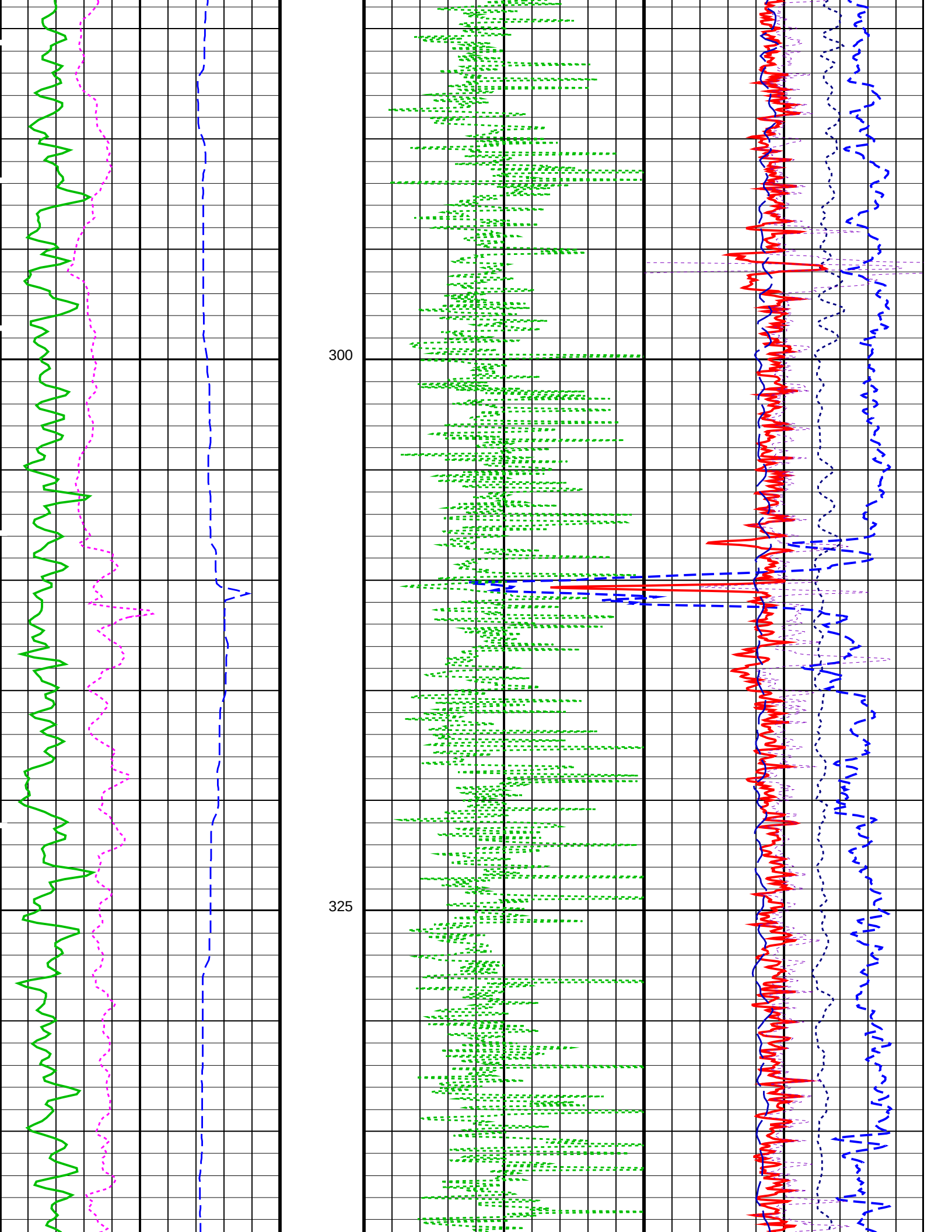
HLDS HR Long Spaced Photoelectric Effect (HLEF)
0 (−−−−) 10

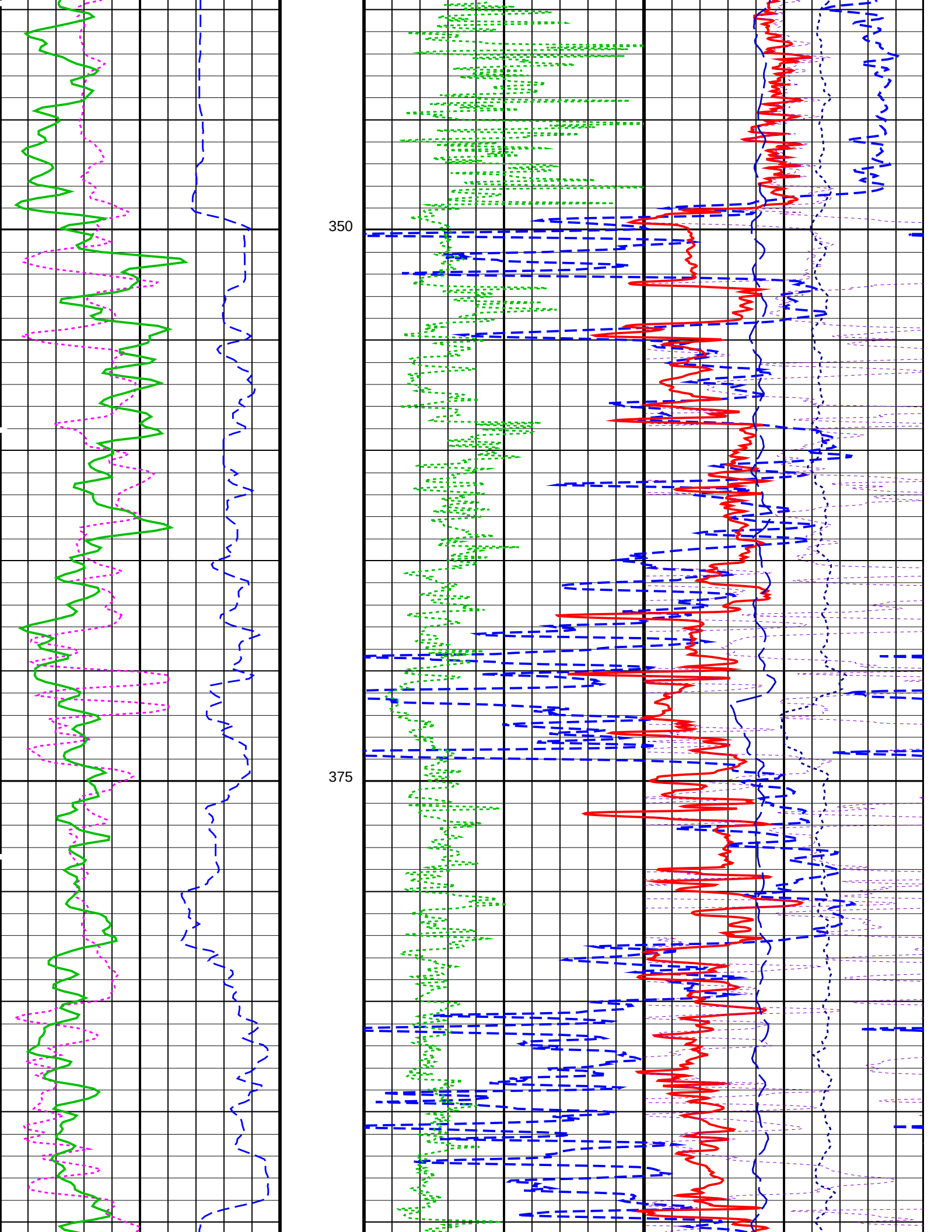
Calibrated Downhole Force (CDF)
5000 (LBF) 0

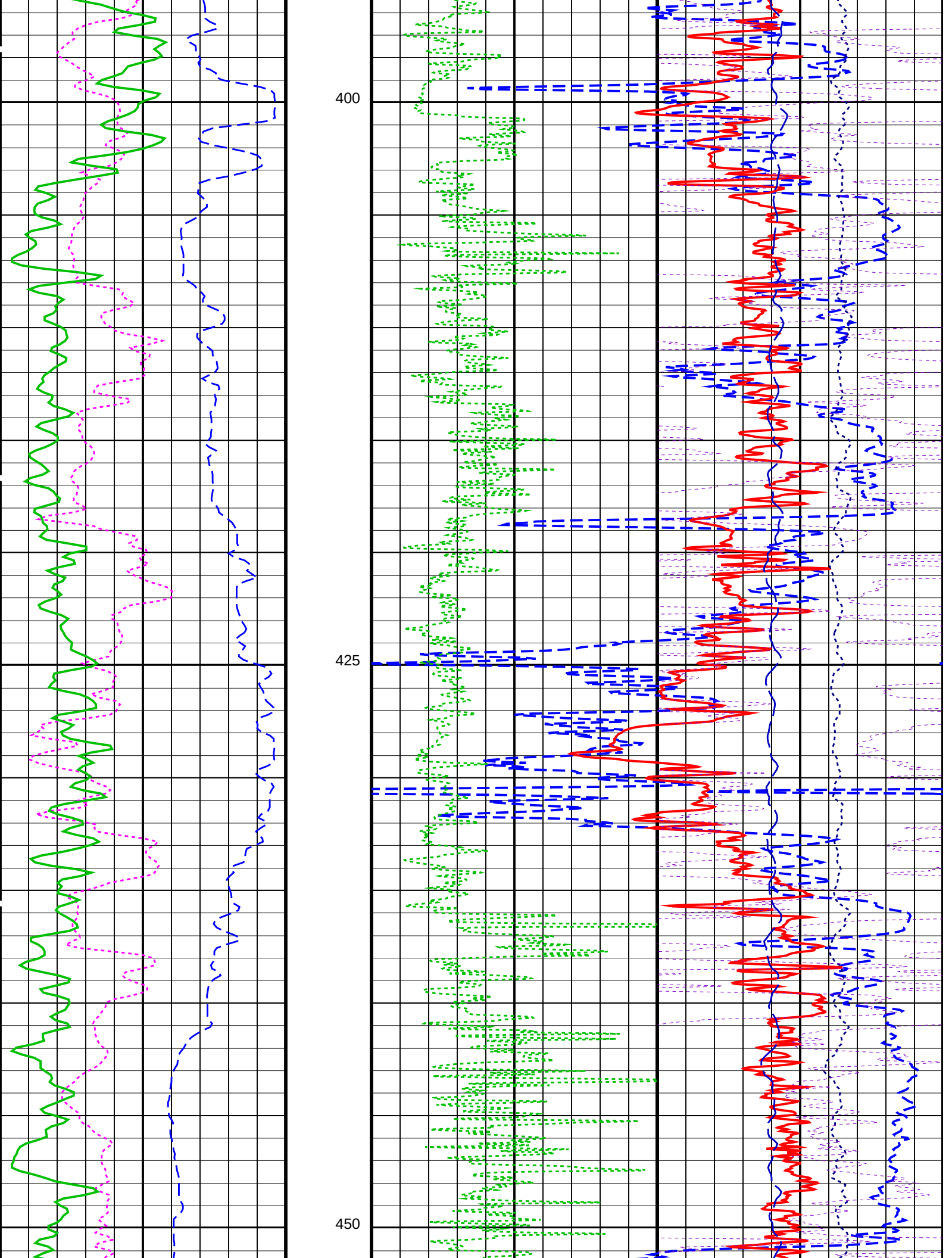
Gamma Ray (GR_EDTC)

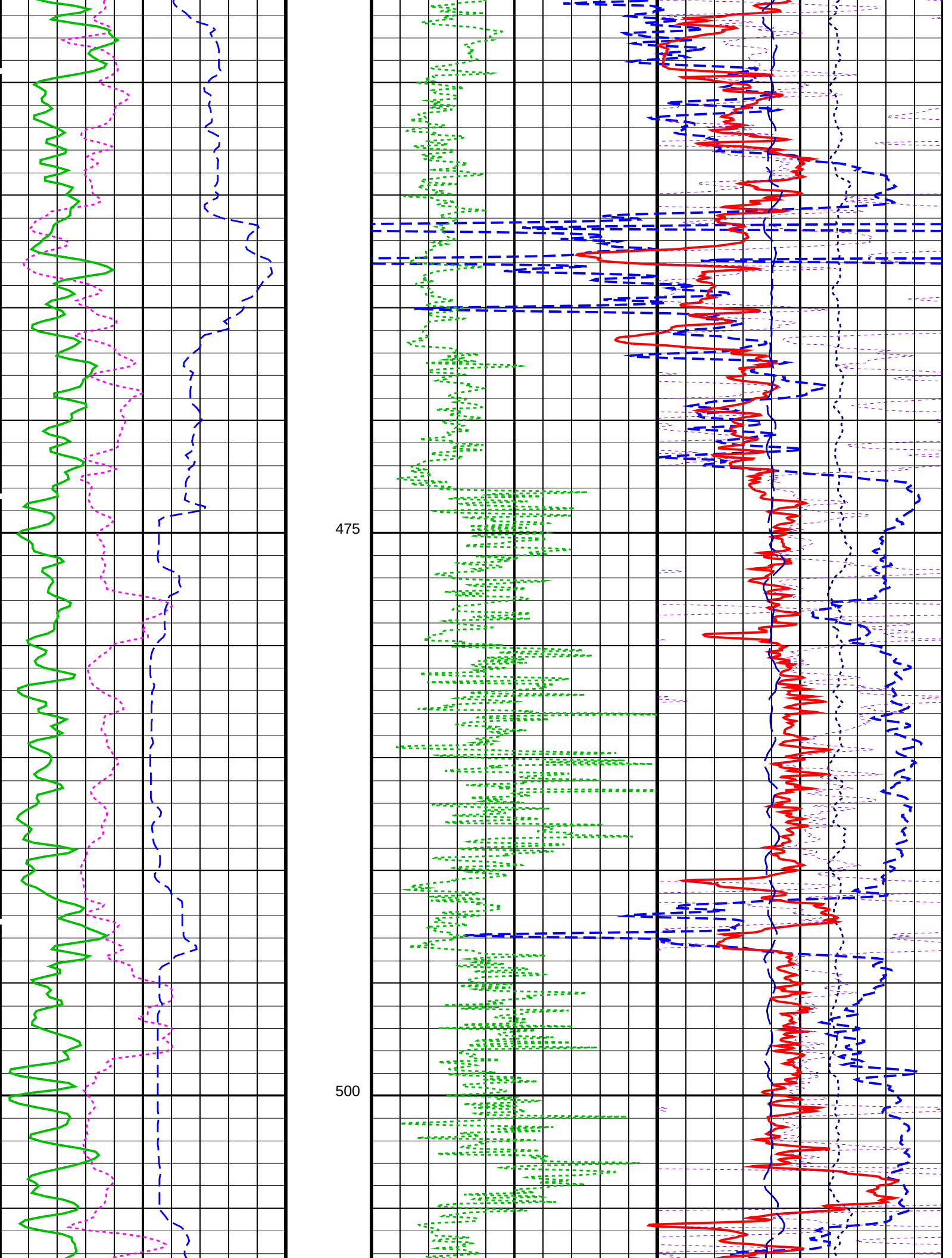
HLDS HR Bulk Density (HROM)

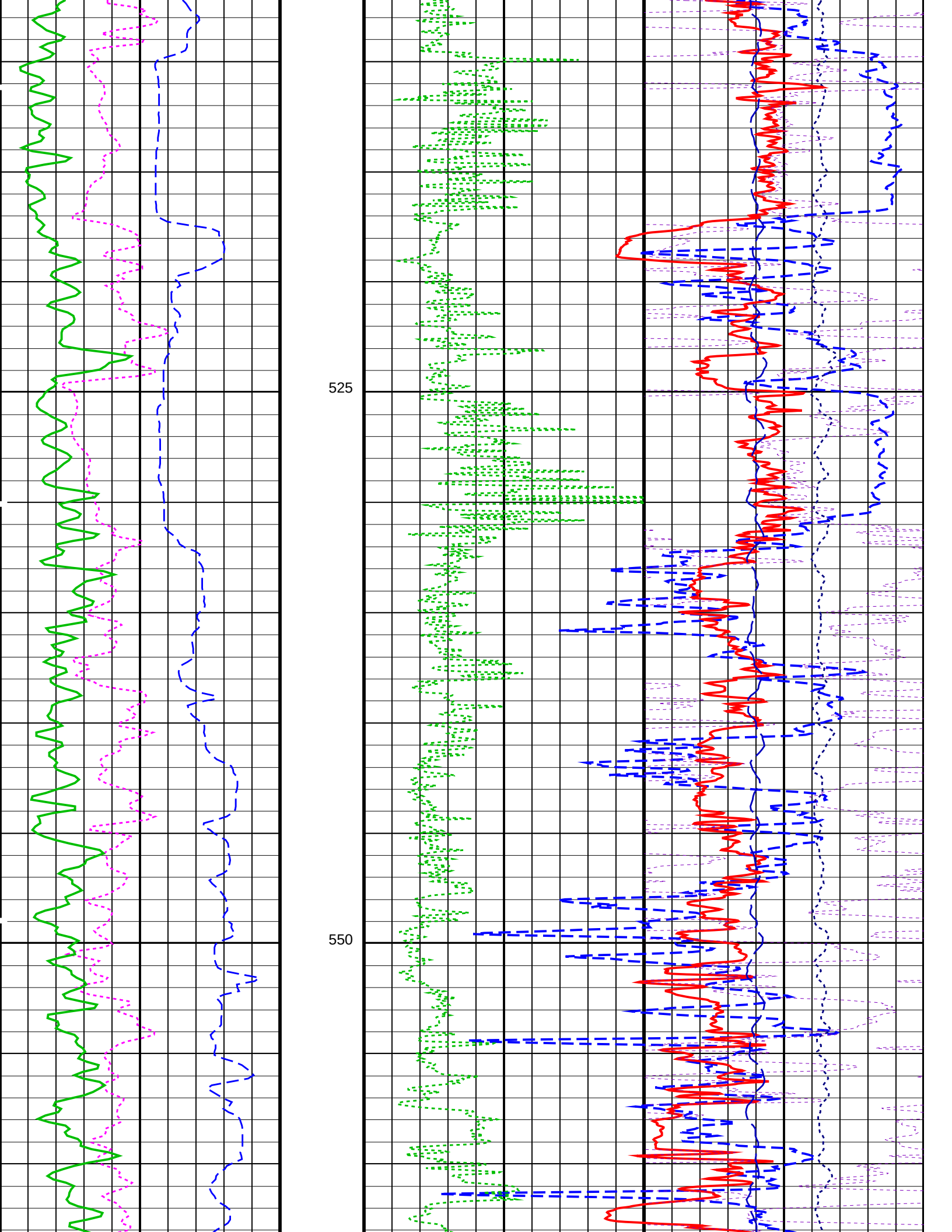

0
(GAPI)
20
HLDS Caliper (LCAL)
0
(IN)
20
0
(G/C3)
4
APS HR Near/Far Corrected Limestone Porosity (HFLC)
100
(PU)
0
Main Uplog, Sea floor Referenced, APS ON
LCAL Closed
250
16 Inch Casing
275

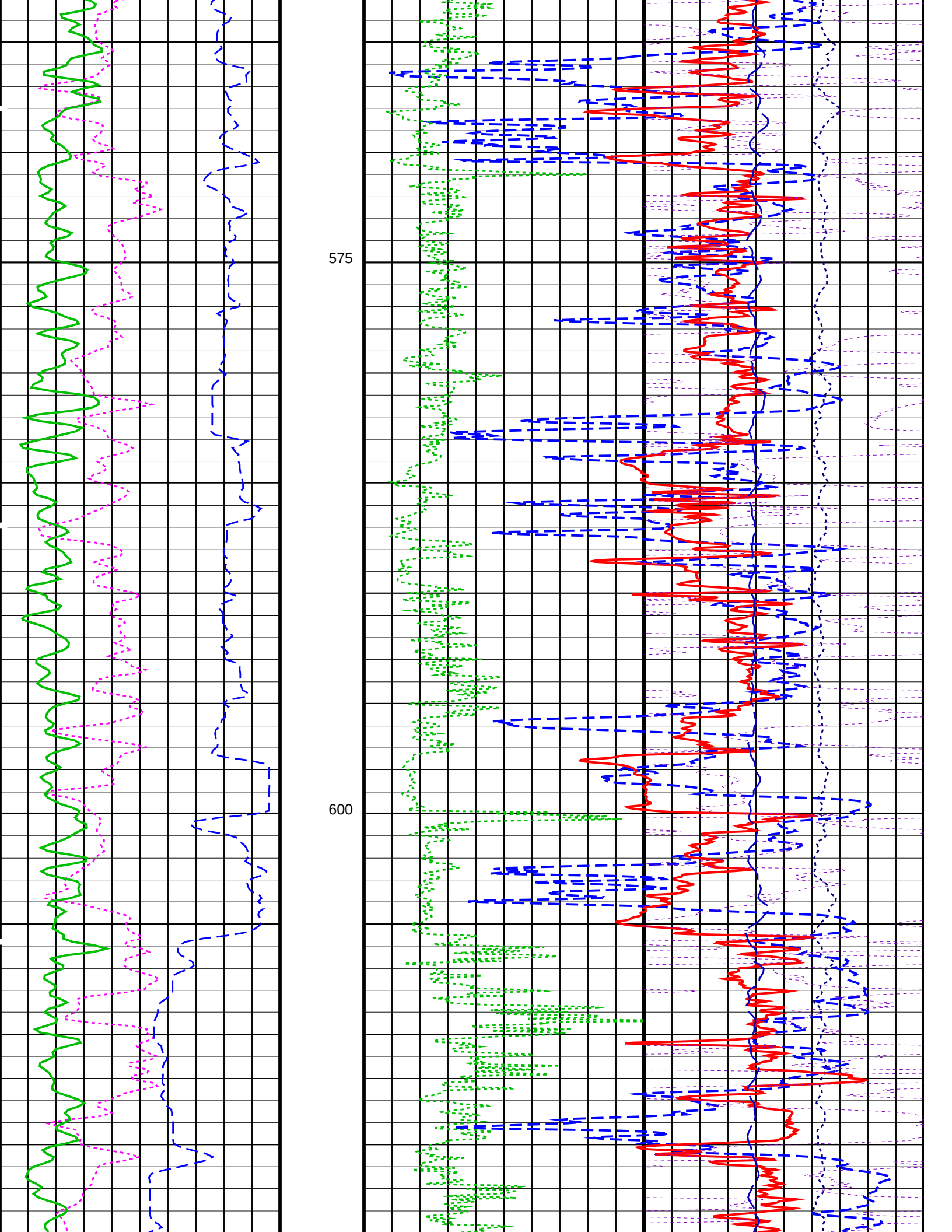

300
325

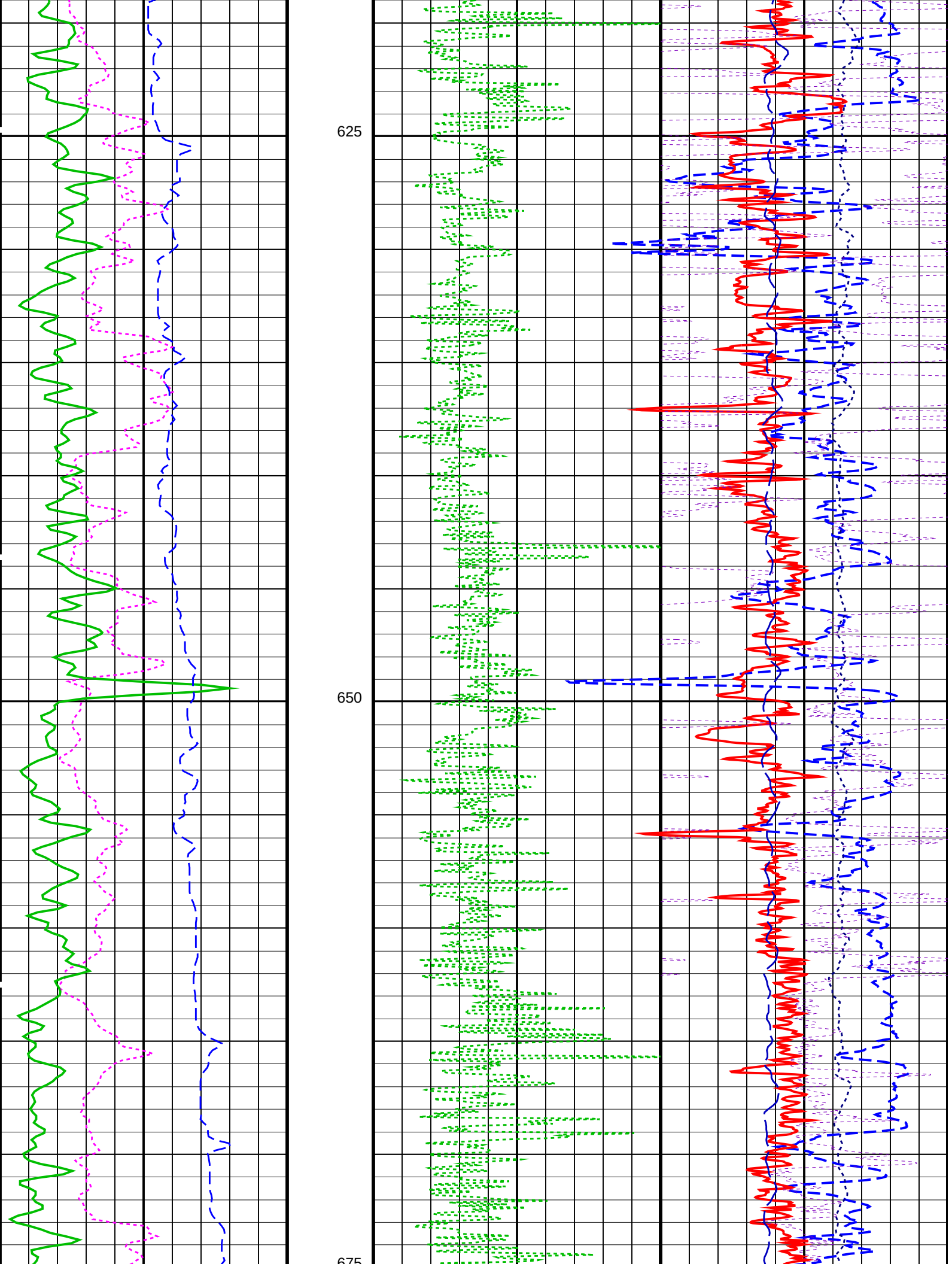

350
375

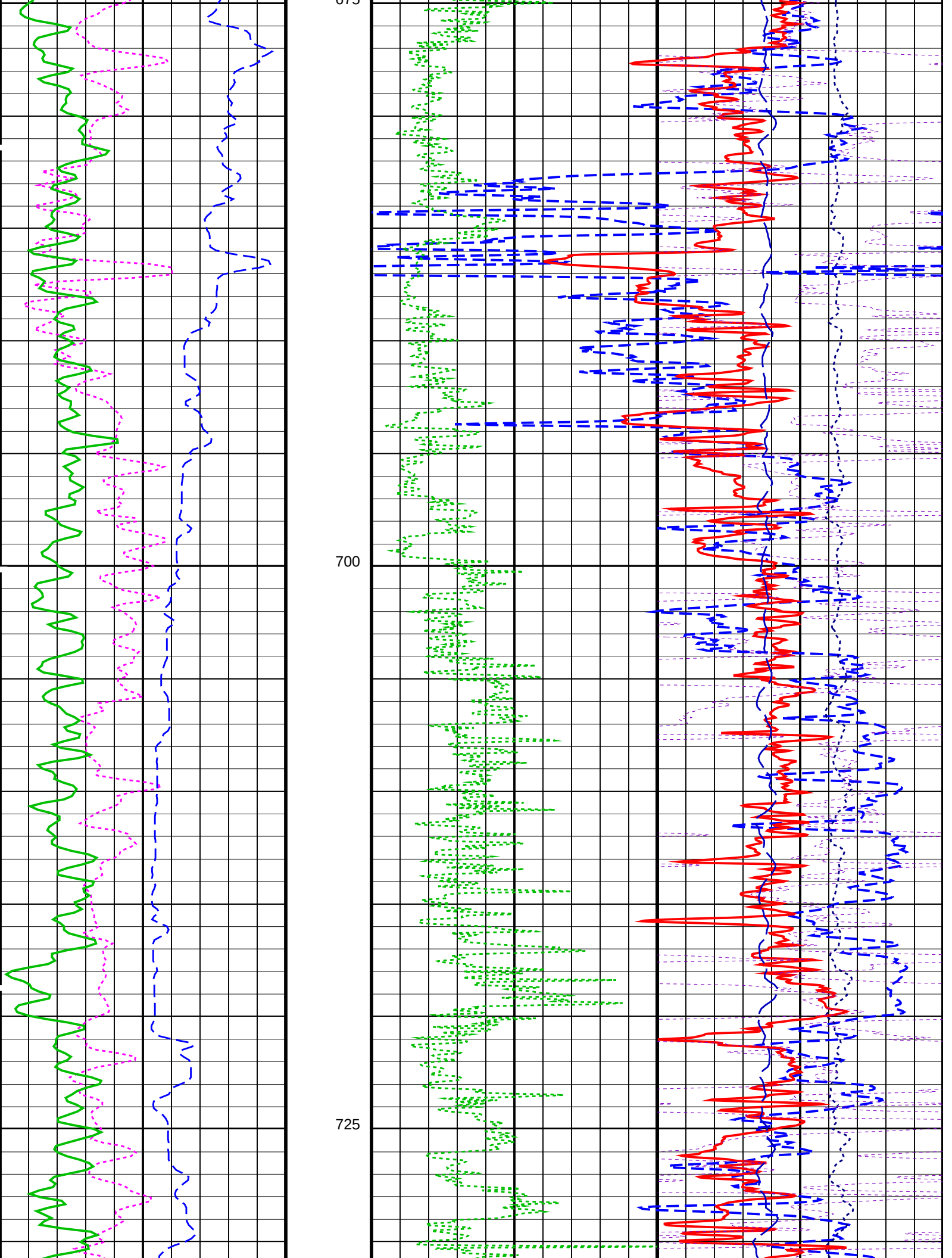

400
425
450

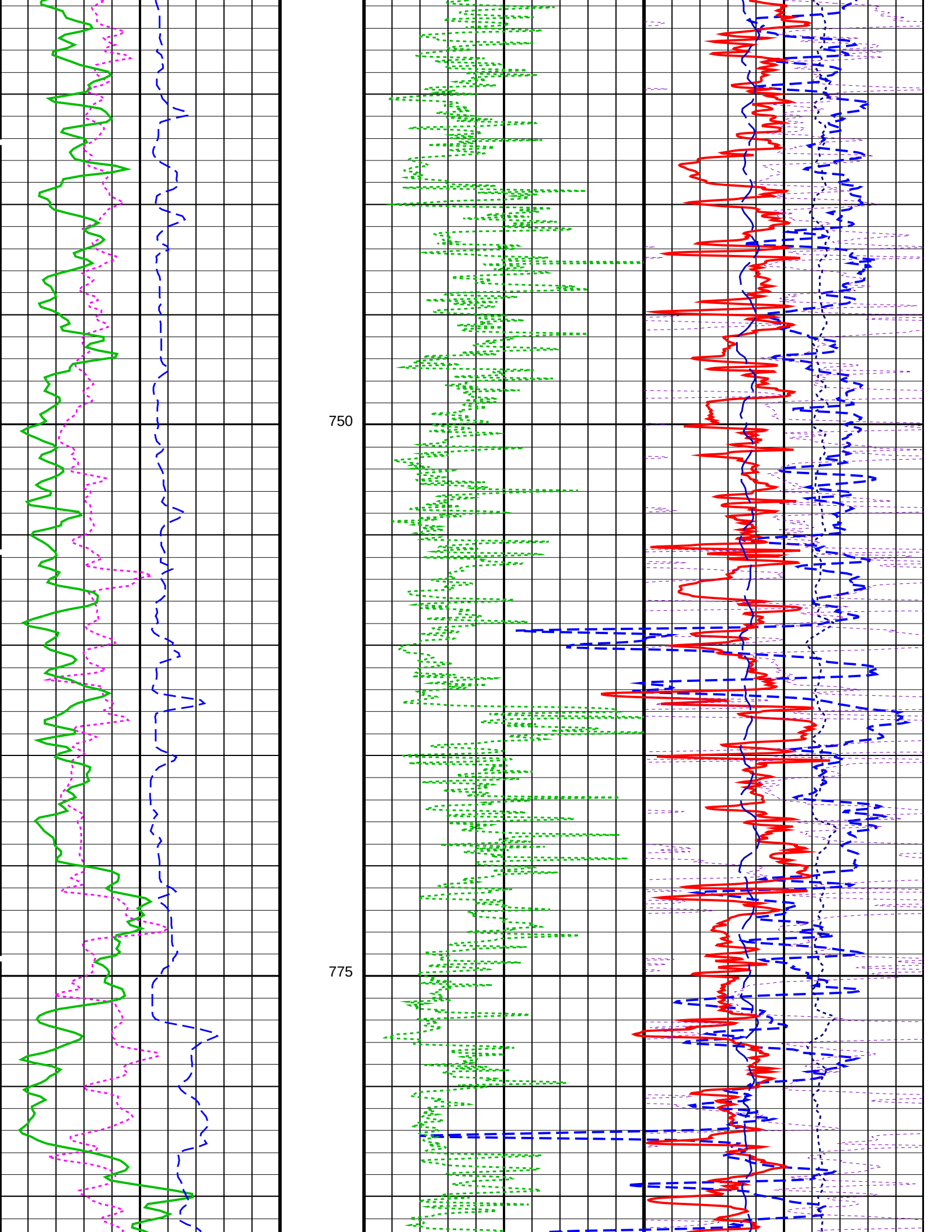

475
500

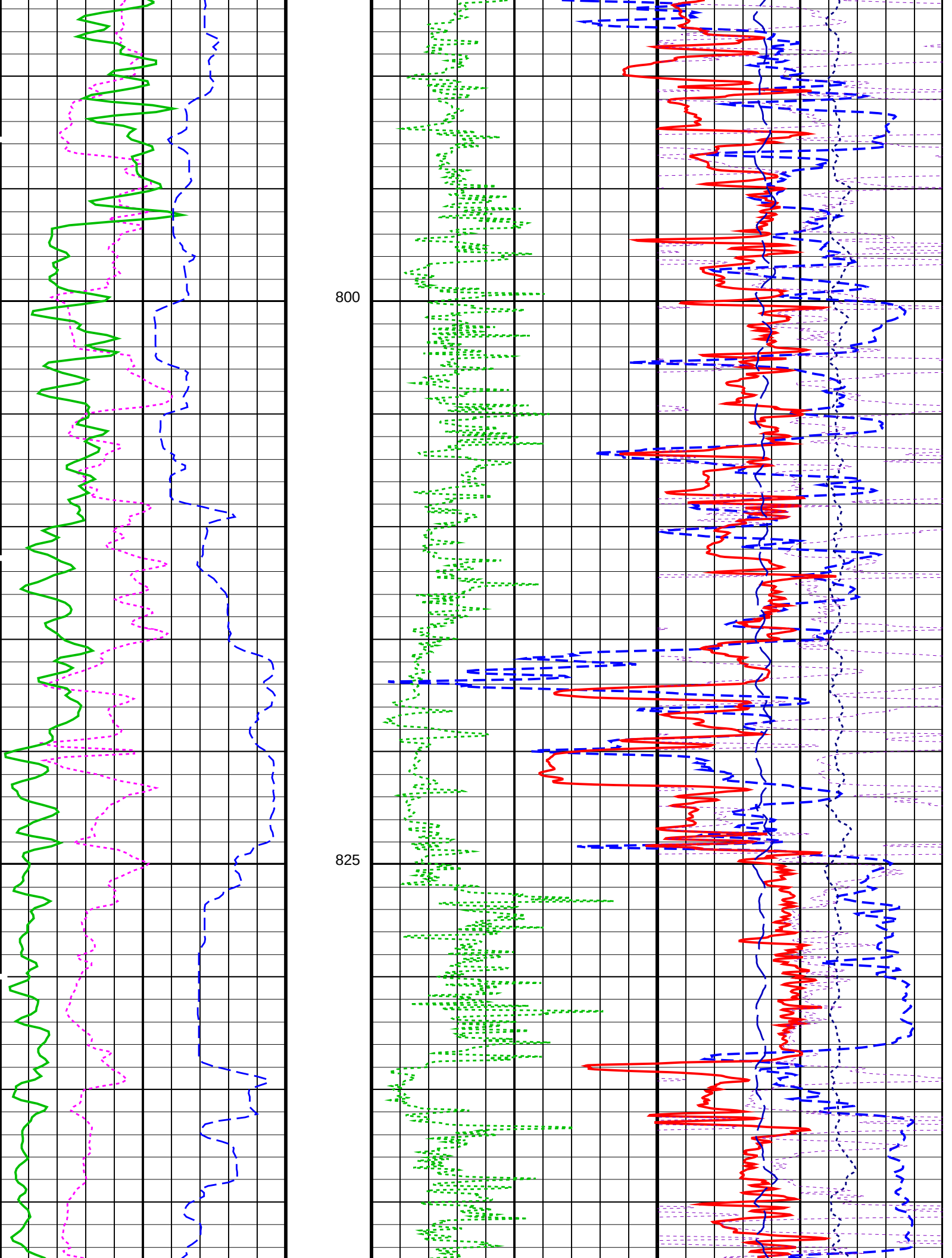

525
550

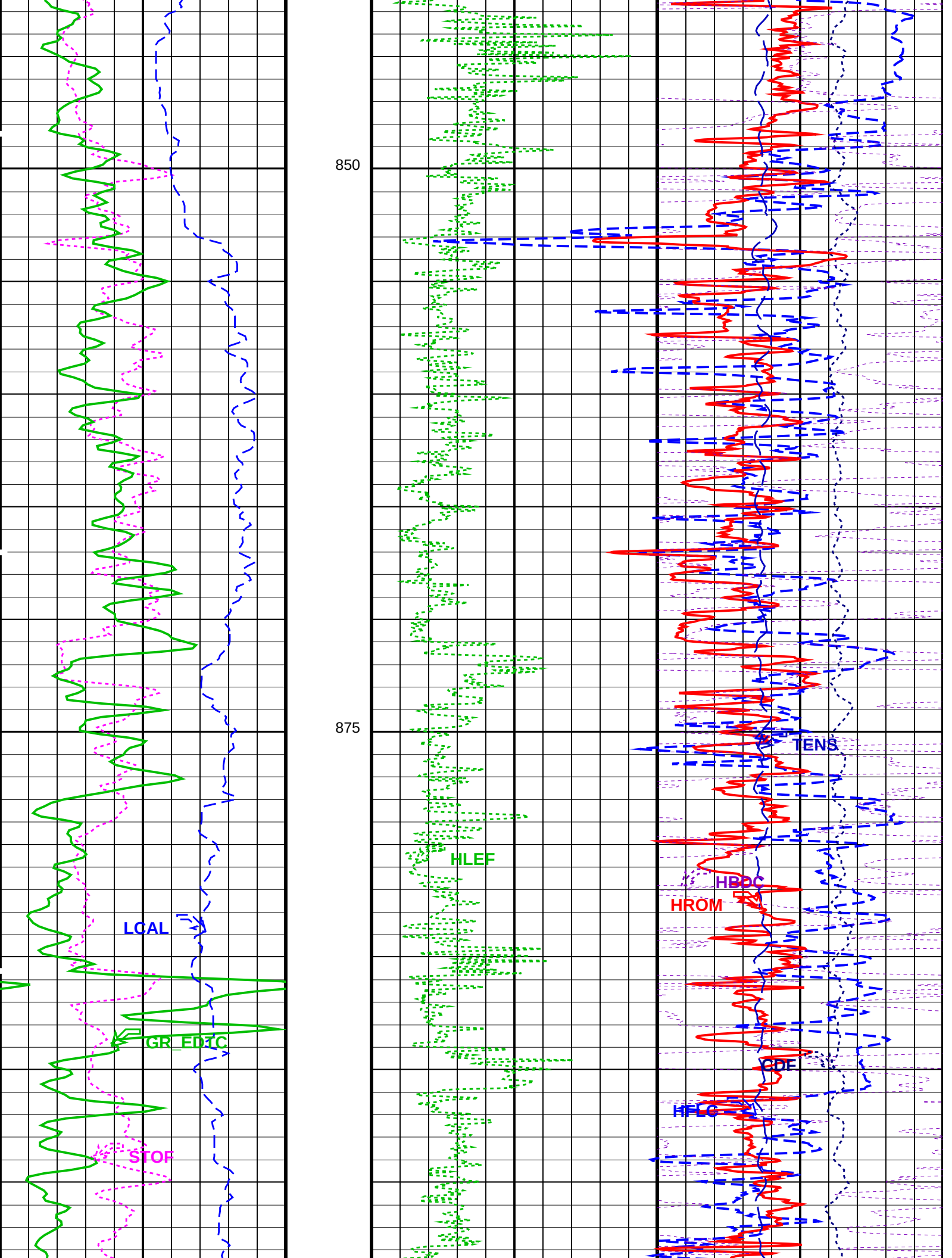

575
600

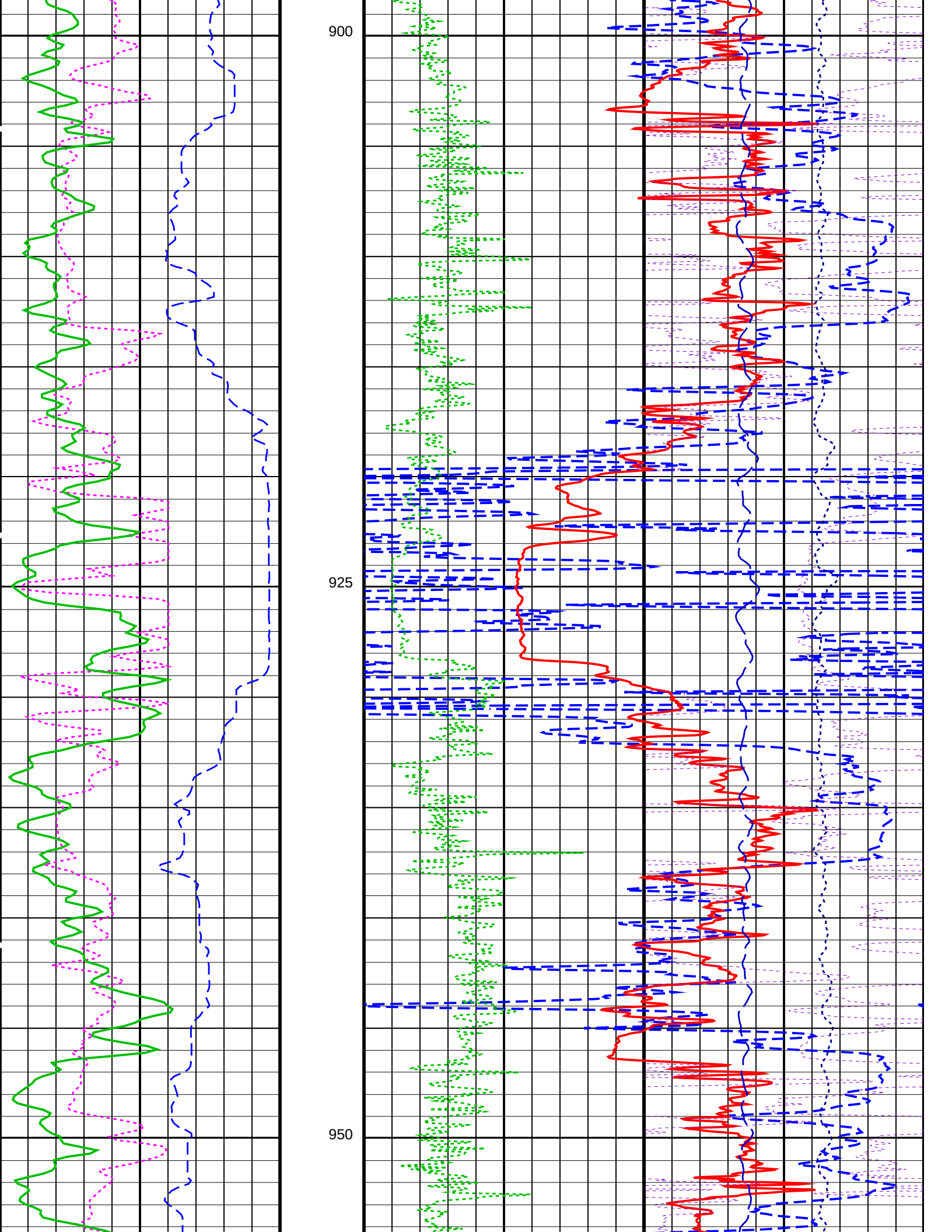

625
650
675

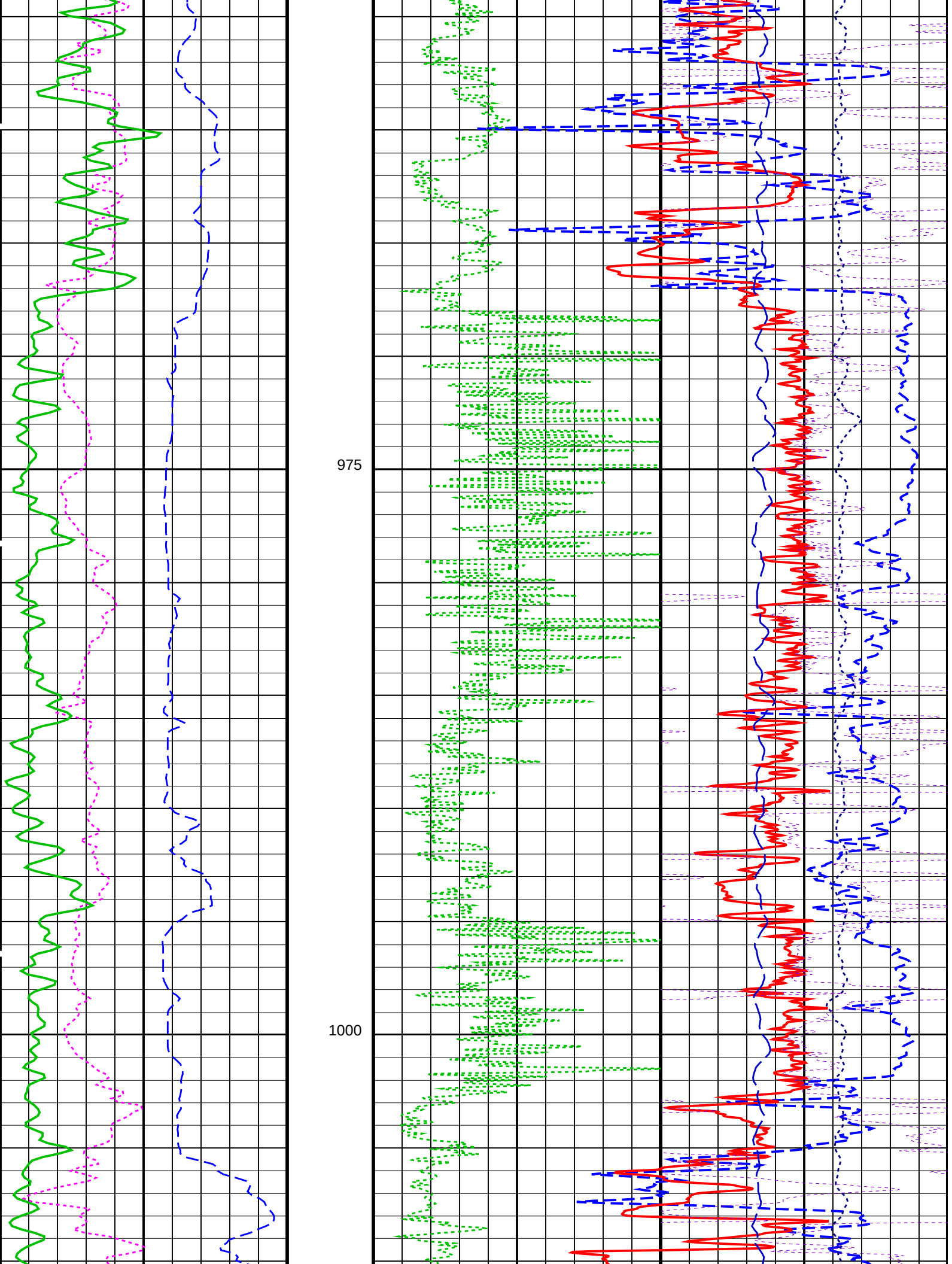

675
700
725

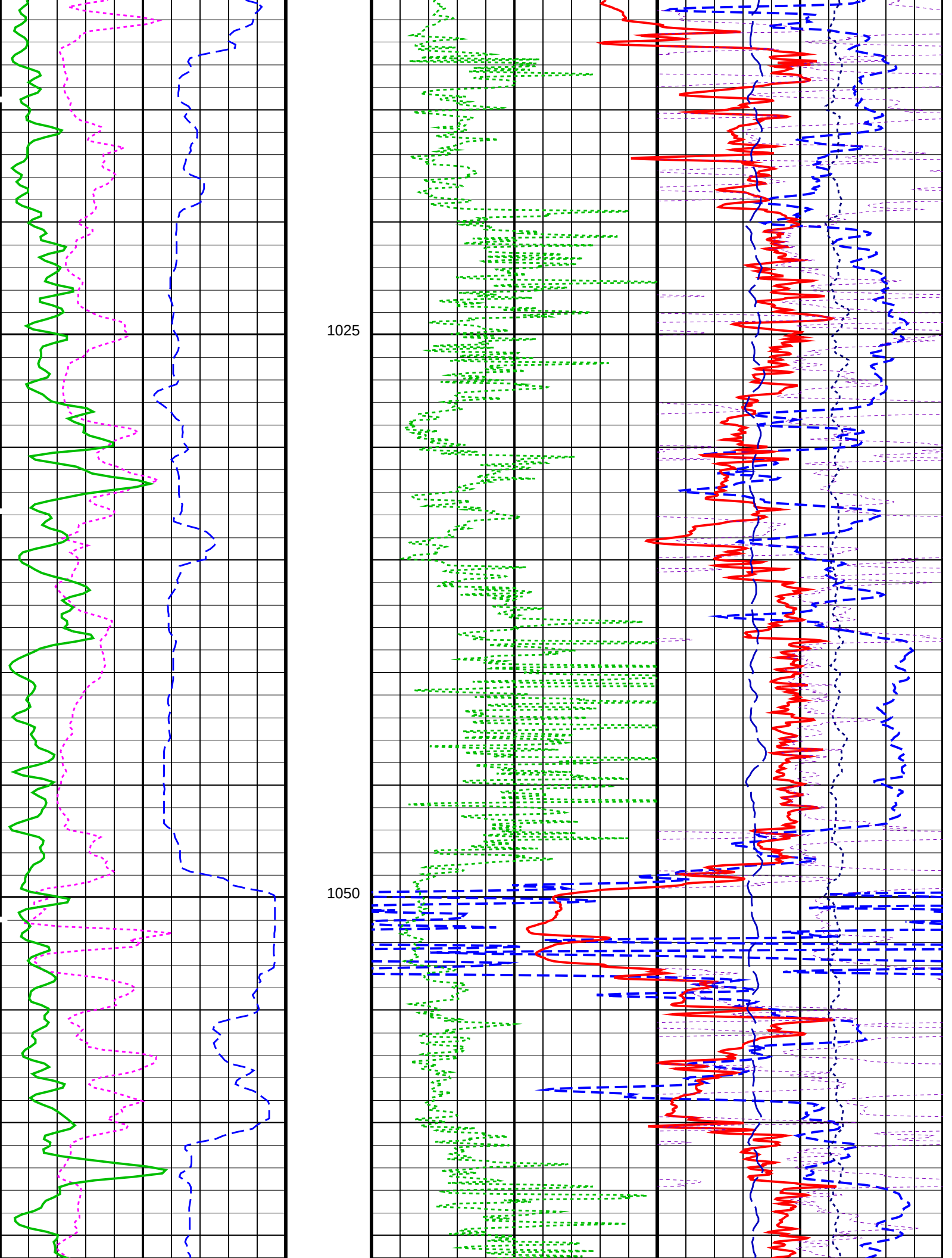

750
775

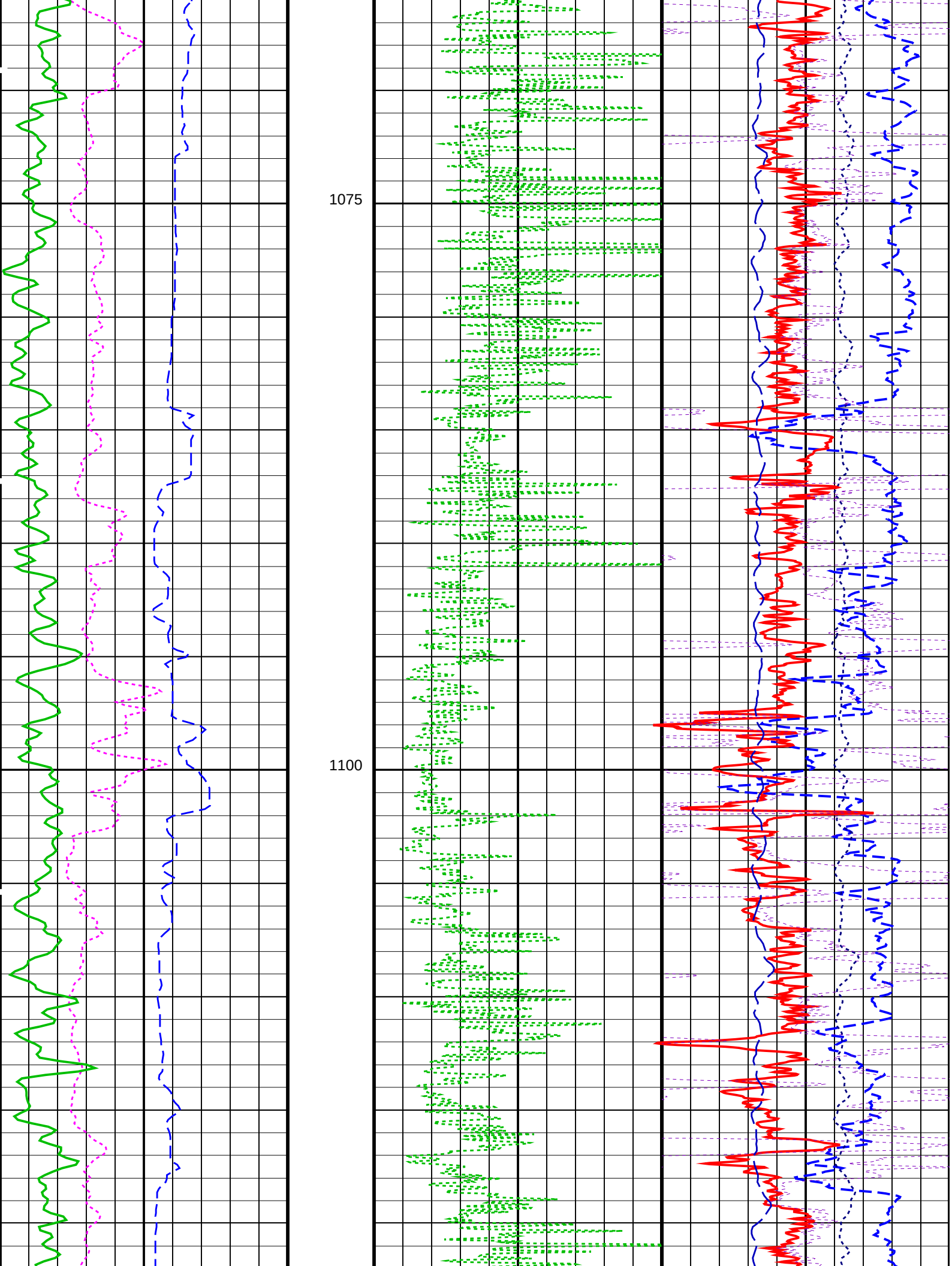

800
825

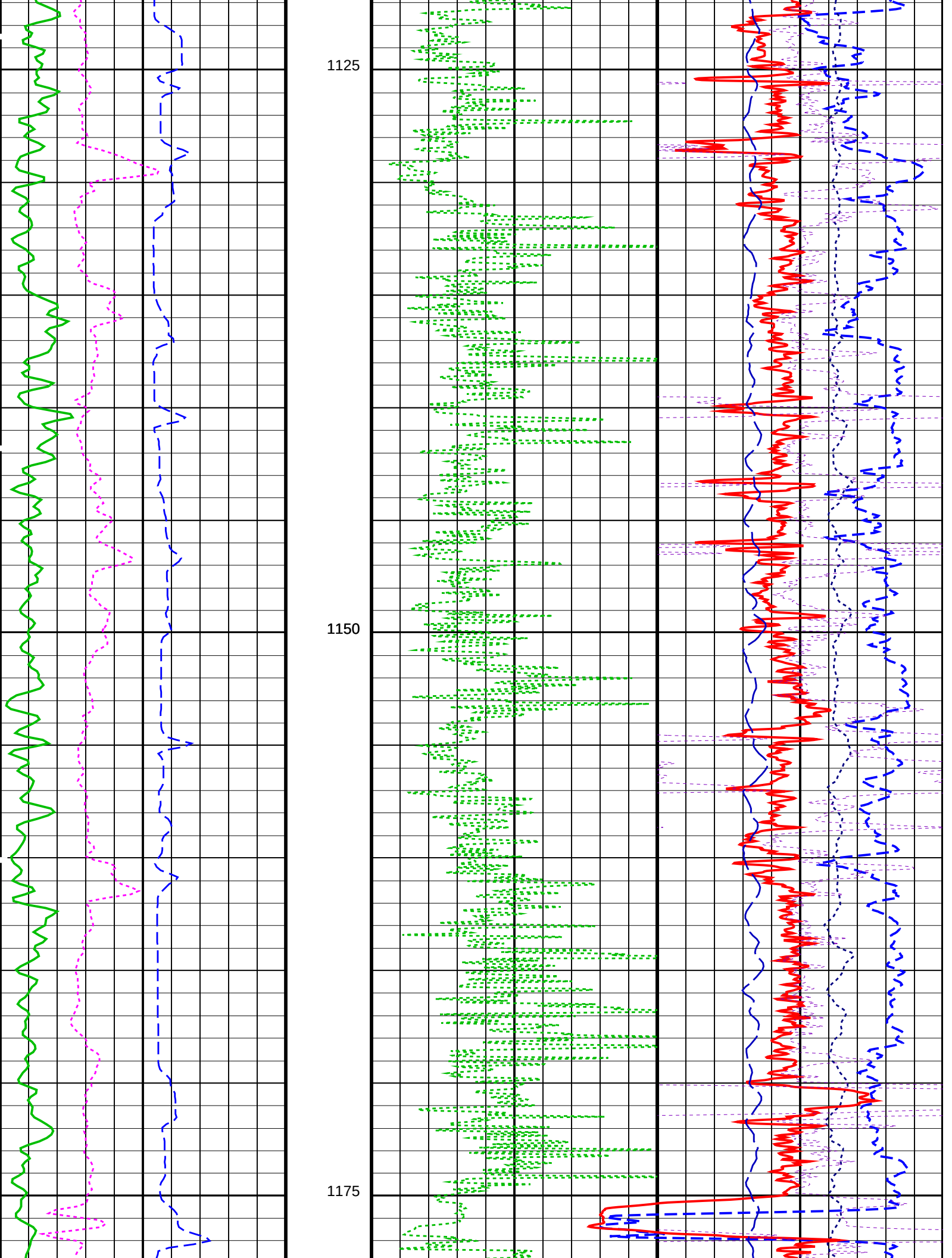

850
875
LCAL
GR_EDTC
STOF
HLEF
HBDC
HROM
TENS
CDE
HFLC

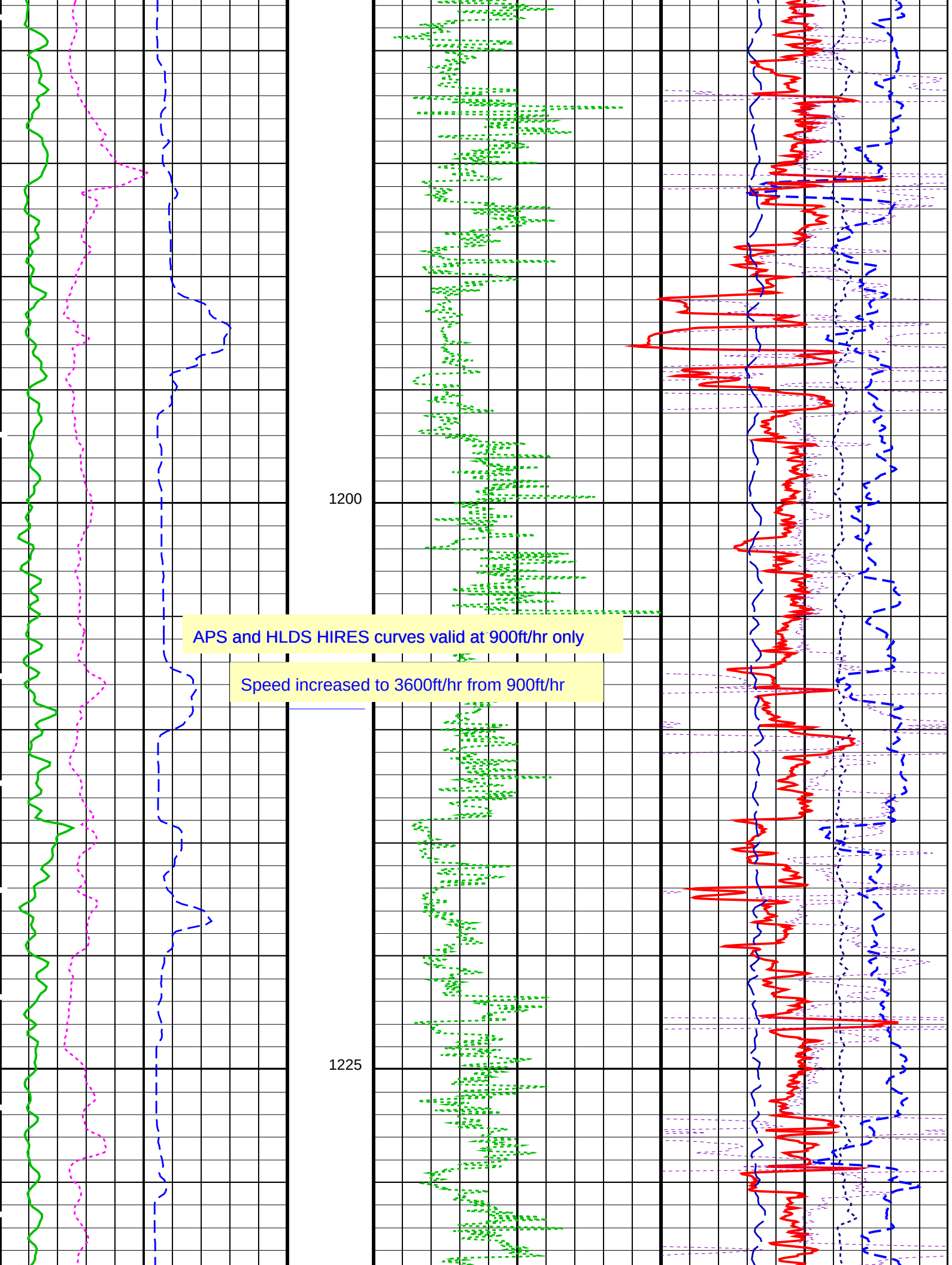

900
925
950

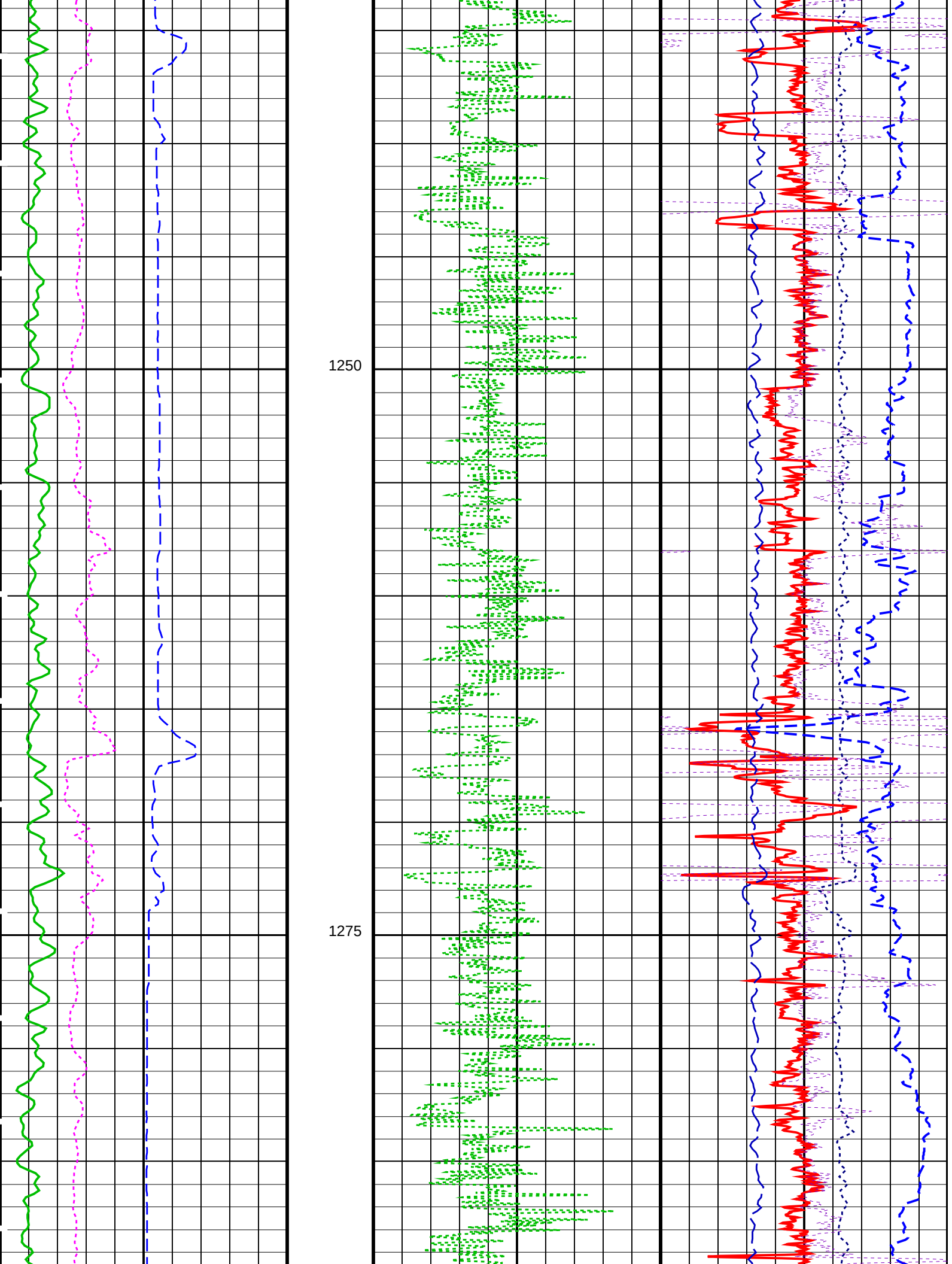

975
1000

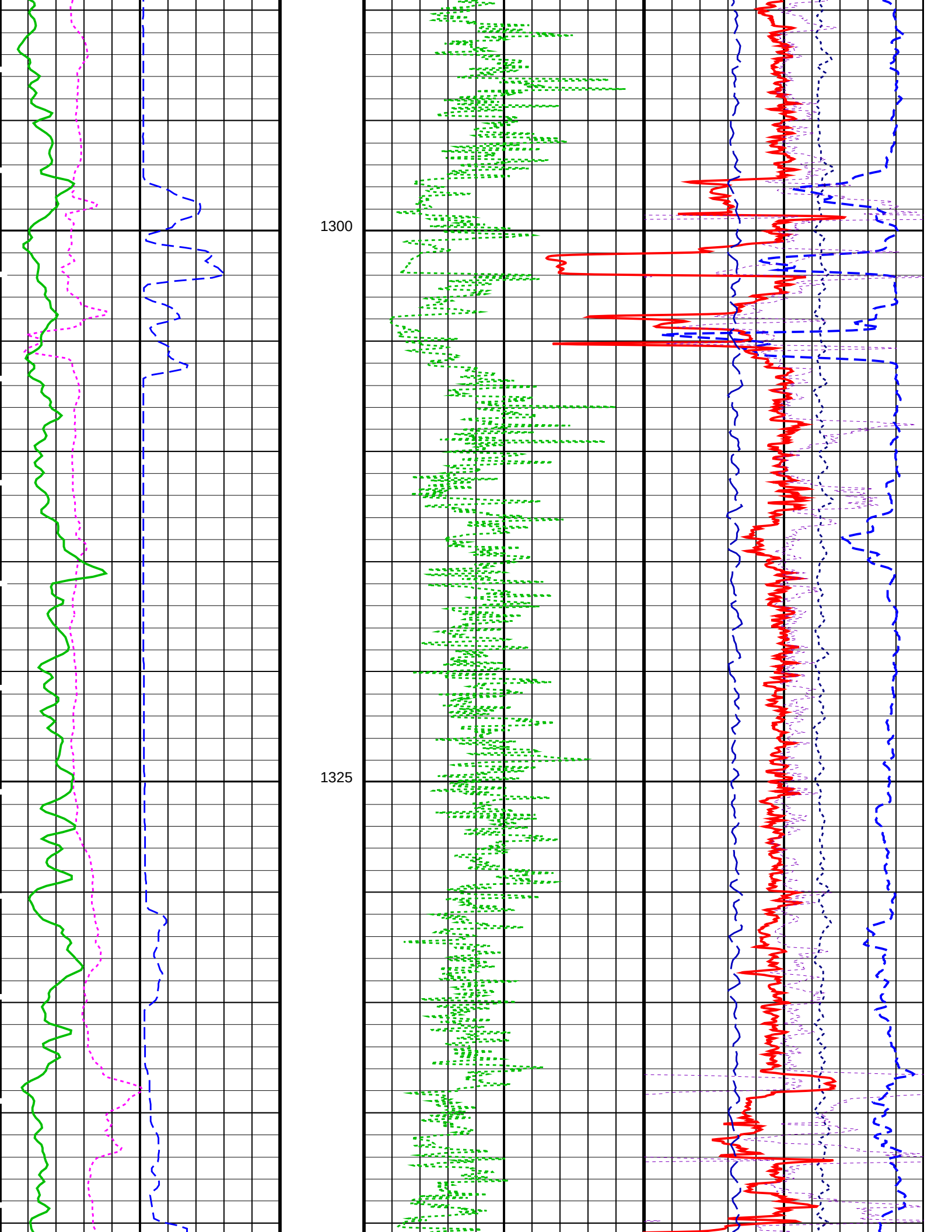

1025
1050

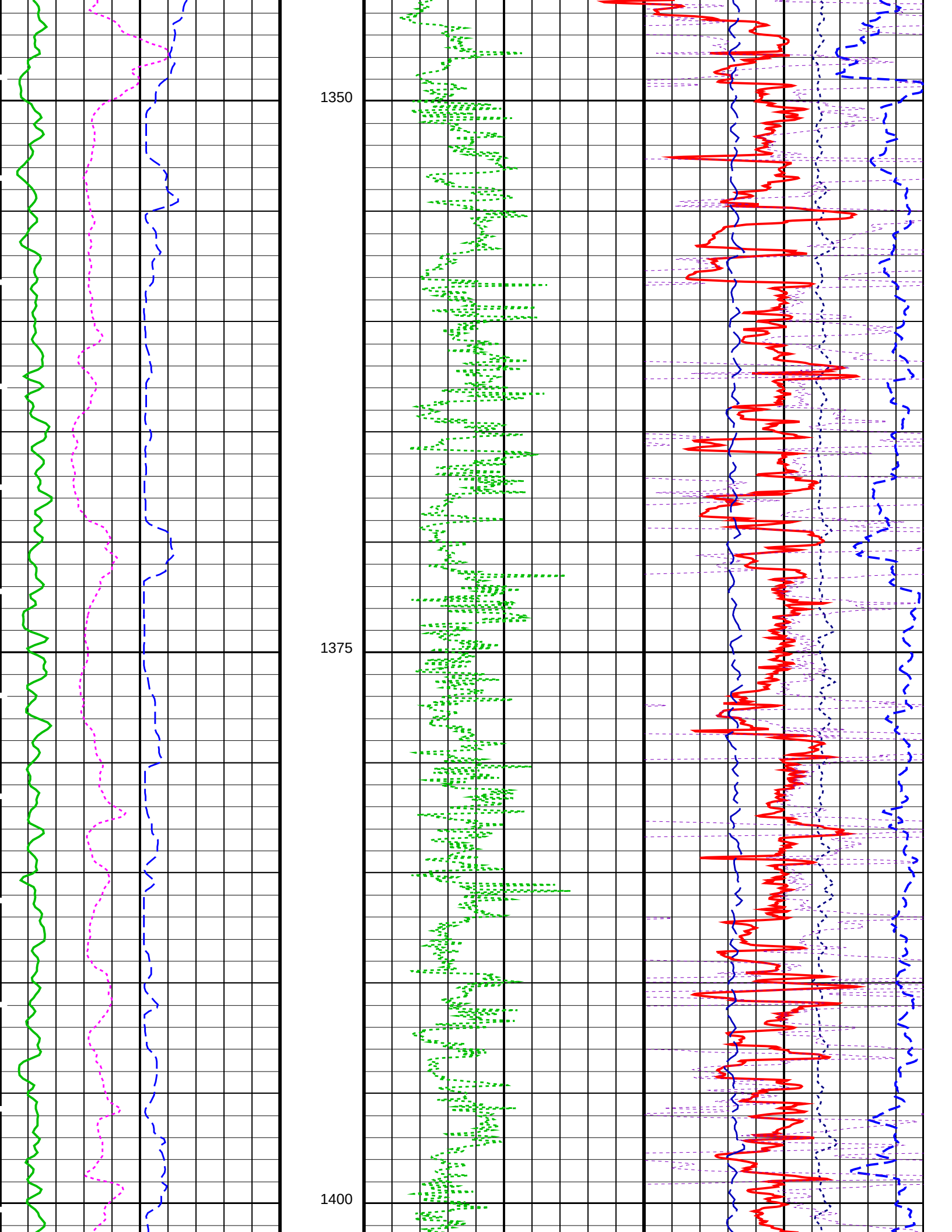

1075
1100

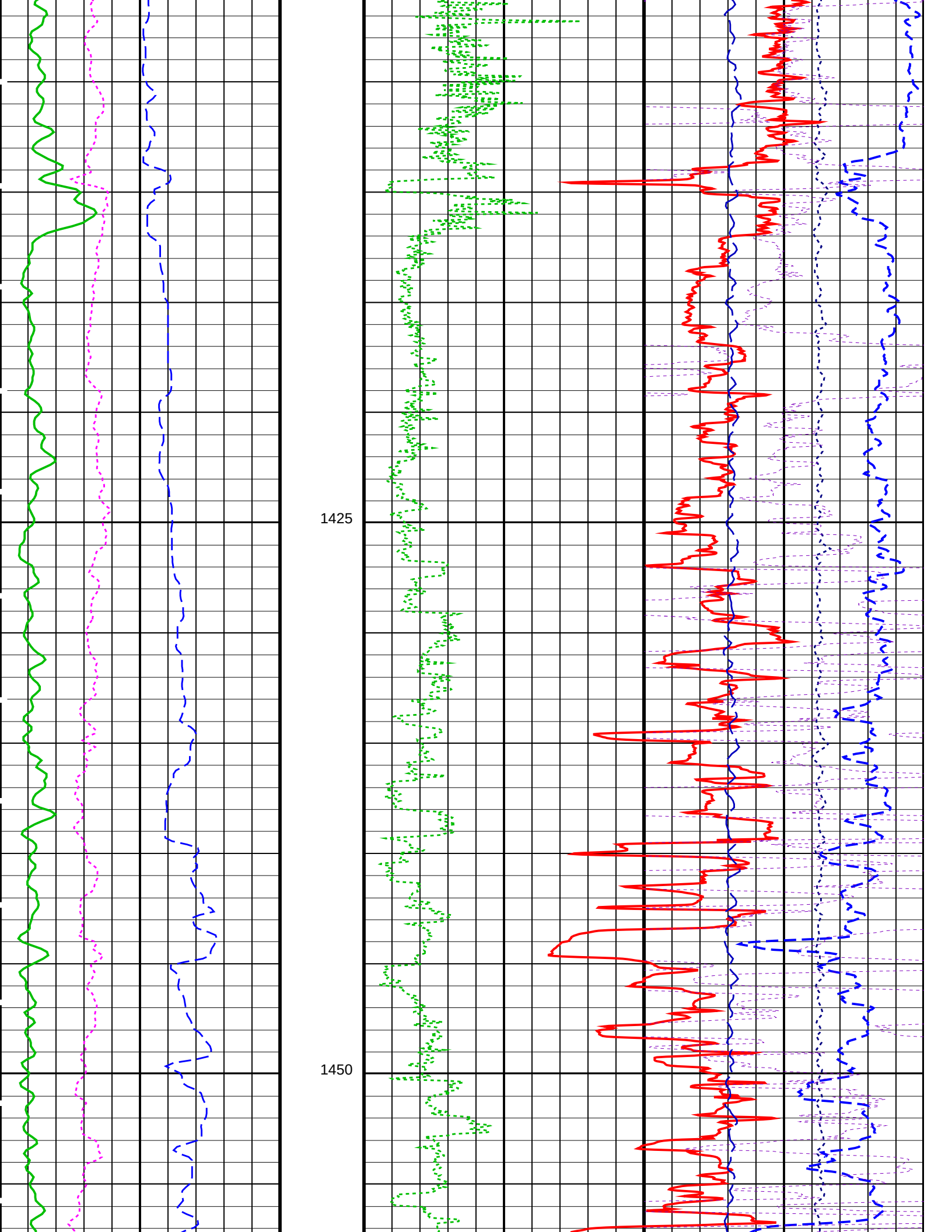

1125
1150
1175

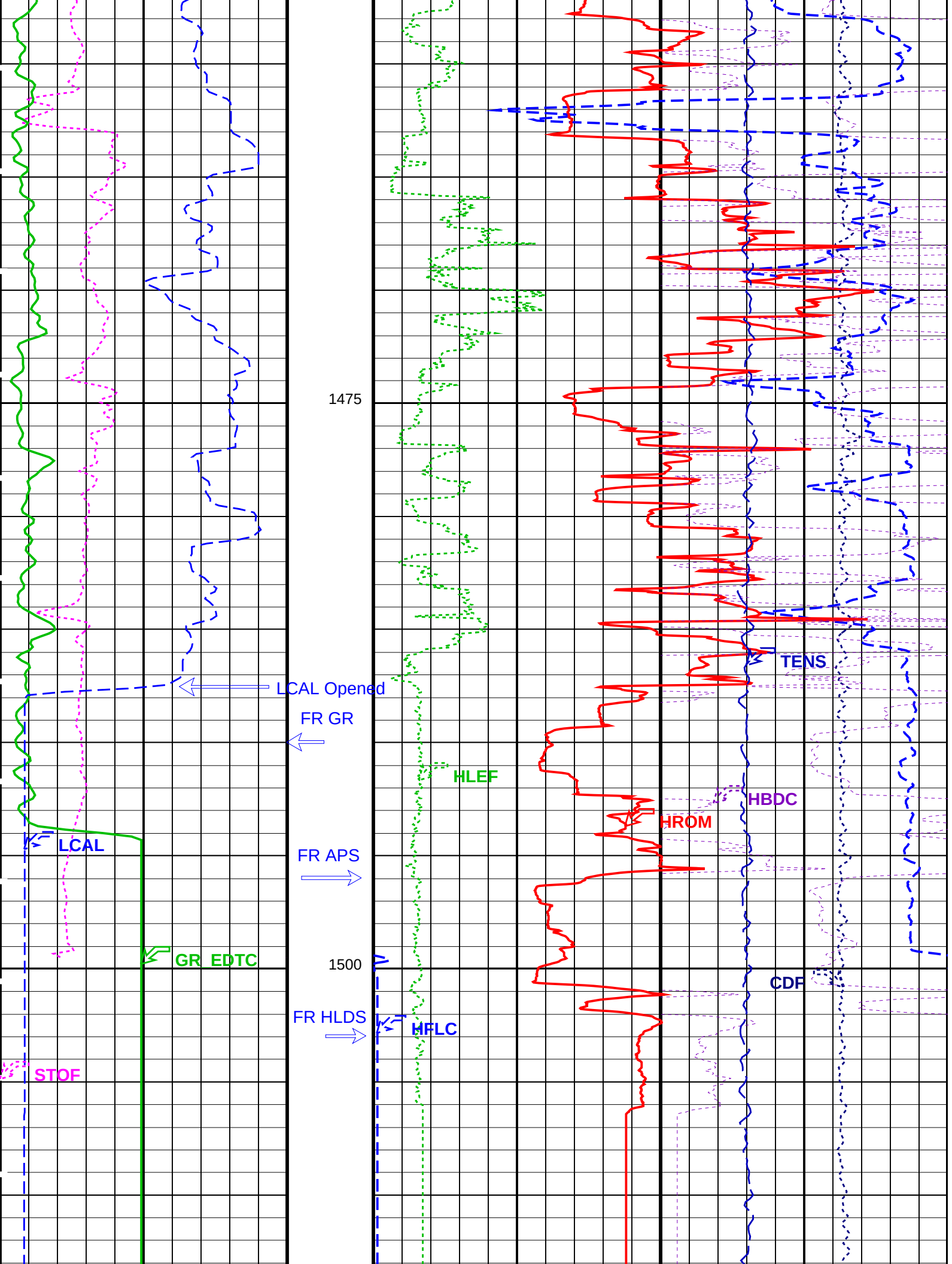

1200
APS and HLDS HIRES curves valid at 900ft/hr only
Speed increased to 3600ft/hr from 900ft/hr
1225

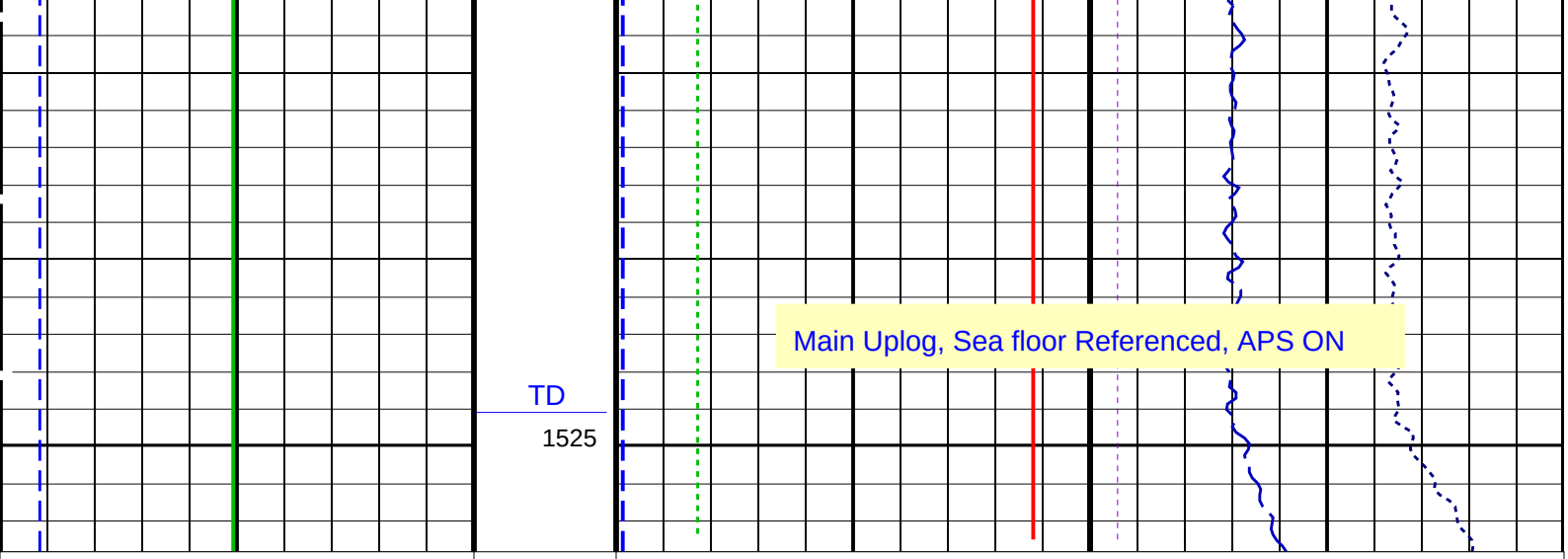

1250
1275


1300
1325


1350
1375
1400


1425
1450


1475
1500
LCAL Opened
FR GR
FR APS
FR HLDS
LCAL
GR_EDTC
STOF
HLEF
HFLC
HROM
HBDC
TENS
CDF



HLDS Caliper (LCAL)
0 (IN) 20

APS HR Near/Far Corrected Limestone Porosity (HFLC)
100 (PU) 0

Gamma Ray (GR_EDTC)
0 (GAPI) 20

HLDS HR Bulk Density (HROM)
0 (G/C3) 4

APS Effective Standoff in Limestone (STOF)
−1 (IN) 4

HLDS HR Long Spaced Photoelectric Effect (HLEF)
0 (−−−−) 10

Calibrated Downhole Force (CDF)
5000 (LBF) 0

Tension (TENS)
10000 (LBF) 0

HLDS HR Bulk Density Correction (HBDC)
−0.25 (G/C3) 0.25

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	GPIT−A/B: General Purpose Inclinometer		
ACPP	Accelerometer PROM Presence	PRESENT	
AFMO	Accelerometer Filtering Mode	MOVING_AVERAGE	
ART	Accelerometer Reference Temperature	20	DEGC
GLM	GPIT Logging Mode	DIPM	
ICMO	Inclinometry Computation Mode	AUTOMATIC_SELECTION	
MAPP	Magnetometer PROM Presence	PRESENT	
MDEC	Magnetic Field Declination	3.78617	DEG
MRTE	Magneto Reference Temperature	19	DEGC
TEMS	GPIT Temperature Sensor Used	BOTH	
U−GPOF	Playback OLD VERSION GPIT FILE (BEFORE OP14 + SRPC−3098−FEB_2006_C) ?	NO	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	80	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	70.262	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	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	NOBARITE	
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	20	DEGC
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	2.71	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1000	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	
APS−C: Accelerator−Porosity Tool			
	APS Software Version	0	
AASD	APS Thermal and Array Detectors High Voltage Setting	1963.66	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2114.42	V
AHCS	APS Holesize Correction Source	BS	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1732.37	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature−Pressure−Salinity Correction Switch	ON	
BHFL_APS	APS TNPH Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	80	DEGC
BSCO_APS	APS TNPH Borehole Salinity Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source Correction Option	COMPUTED	
FSAL	Formation Salinity	−50000	PPM
FSCO_APS	APS TNPH Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO_APS	APS TNPH Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	YES	
MCOR_APS	APS TNPH Mud Correction	NATU	
MWCO_APS	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.05665	
NFRC	APS Near/Far Calibration Ratio	0.883456	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	YES	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	YES	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	80	DEGC
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	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
ISSBAR_EDTC	Nuclear Mud Type	NOBARITE	

MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0.5	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Eccentered	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	−50000.00	PPM
CSIZ	Current Casing Size	0.000	IN
CWEI	Casing Weight	0.00	LB/F
DFD	Drilling Fluid Density	1.00	G/C3
DO	Depth Offset for Playback	−3641.0	M
FLEV	Fluid Level	−50000.00	M
MST	Mud Sample Temperature	−50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	−50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	5170	M
TDD	Total Depth − Driller	5165.00	M
TDL	Total Depth − Logger	5165.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: APSLiquidPorosity_1 Vertical Scale: 1:200 Graphics File Created: 08−Jun−2011 18:05

OP System Version: 17C0−154

GPIT−A/B	SRPC−3971−Q1_2010_OP17	DTA−A	17C0−154
MTT_LDEO−A	17C0−154	HRLT−B	SRPC−3971−Q1_2010_OP17
HLDS	SPC−3961−OP17_NUCL	LDSC−B	SPC−3961−OP17_NUCL
APS−C	SPC−3961−OP17_NUCL	EDTC−B	SRPC−3971−Q1_2010_OP17

Input DLIS Files

DEFAULT	MTT_LDEO_HRLA_LDL_050LUP	FN:53	PRODUCER	27−May−2011 08:48	5168.6 M	3872.8 M

Output DLIS Files

DEFAULT	MTT_LDEO_HRLA_LDL_068PUP	FN:9	PRODUCER	08−Jun−2011 18:05		

Input DLIS Files

DEFAULT	Flip_MTT_LDEO_HRLA_060LUP		PRODUCER	08−Jun−2011 15:58	5098.8 M	3793.2 M

Output DLIS Files

DEFAULT	MTT_LDEO_HRLA_LDL_066PUP	FN:7	PRODUCER	08−Jun−2011 16:15	1440.9 M	149.2 M

OP System Version: 17C0−154

GPIT−A/B	SRPC−3971−Q1_2010_OP17	DTA−A	17C0−154
MTT_LDEO−A	17C0−154	HRLT−B	SRPC−3971−Q1_2010_OP17
HLDS	SPC−3961−OP17_NUCL	LDSC−B	SPC−3961−OP17_NUCL
APS−C	SPC−3961−OP17_NUCL	EDTC−B	SRPC−3971−Q1_2010_OP17

PIP SUMMARY

Time Mark Every 60 S

Tension (TENS)
10000 (LBF) 0

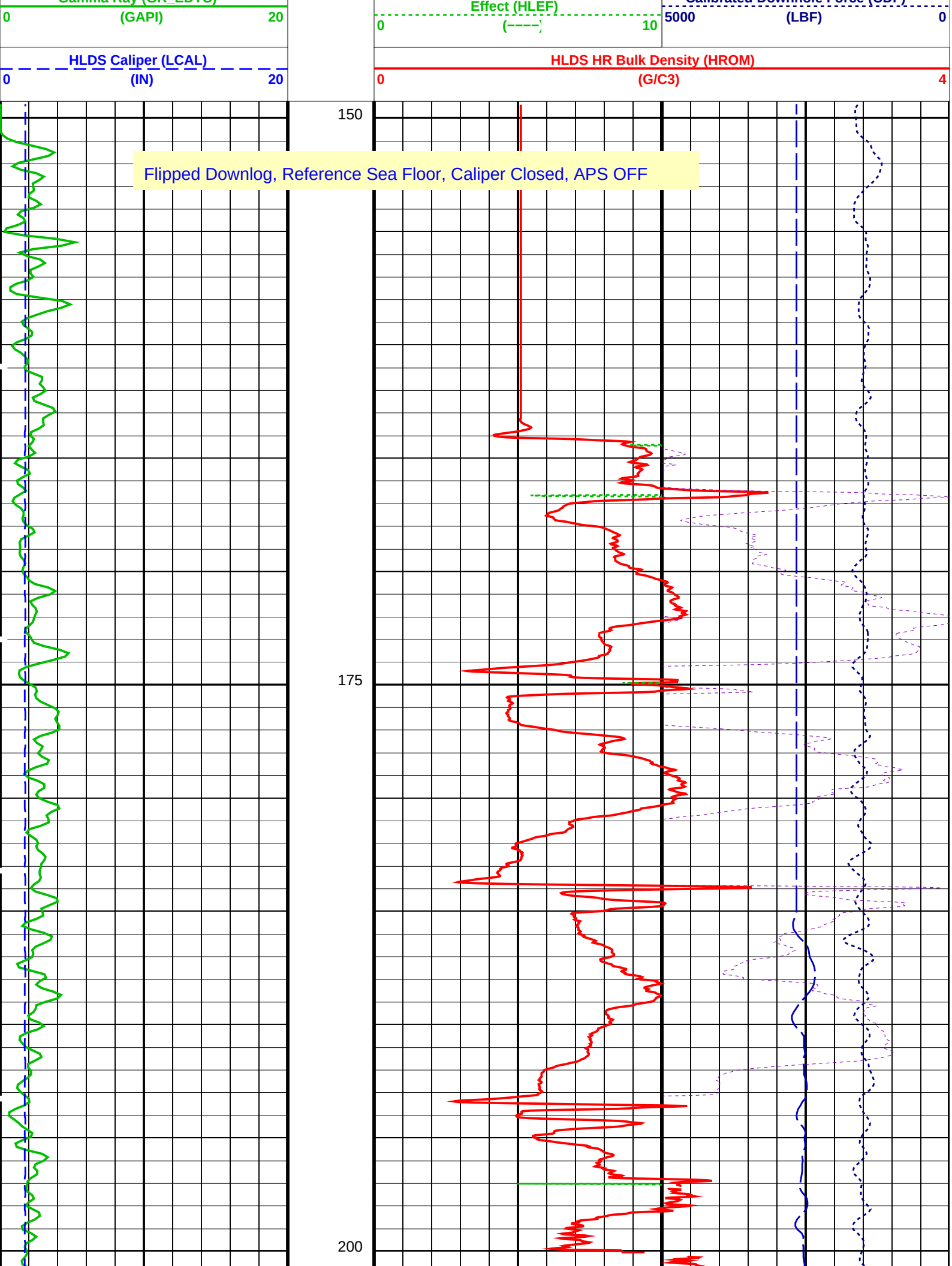
APS Effective Standoff in Limestone (STOF)
−1 (IN) 4

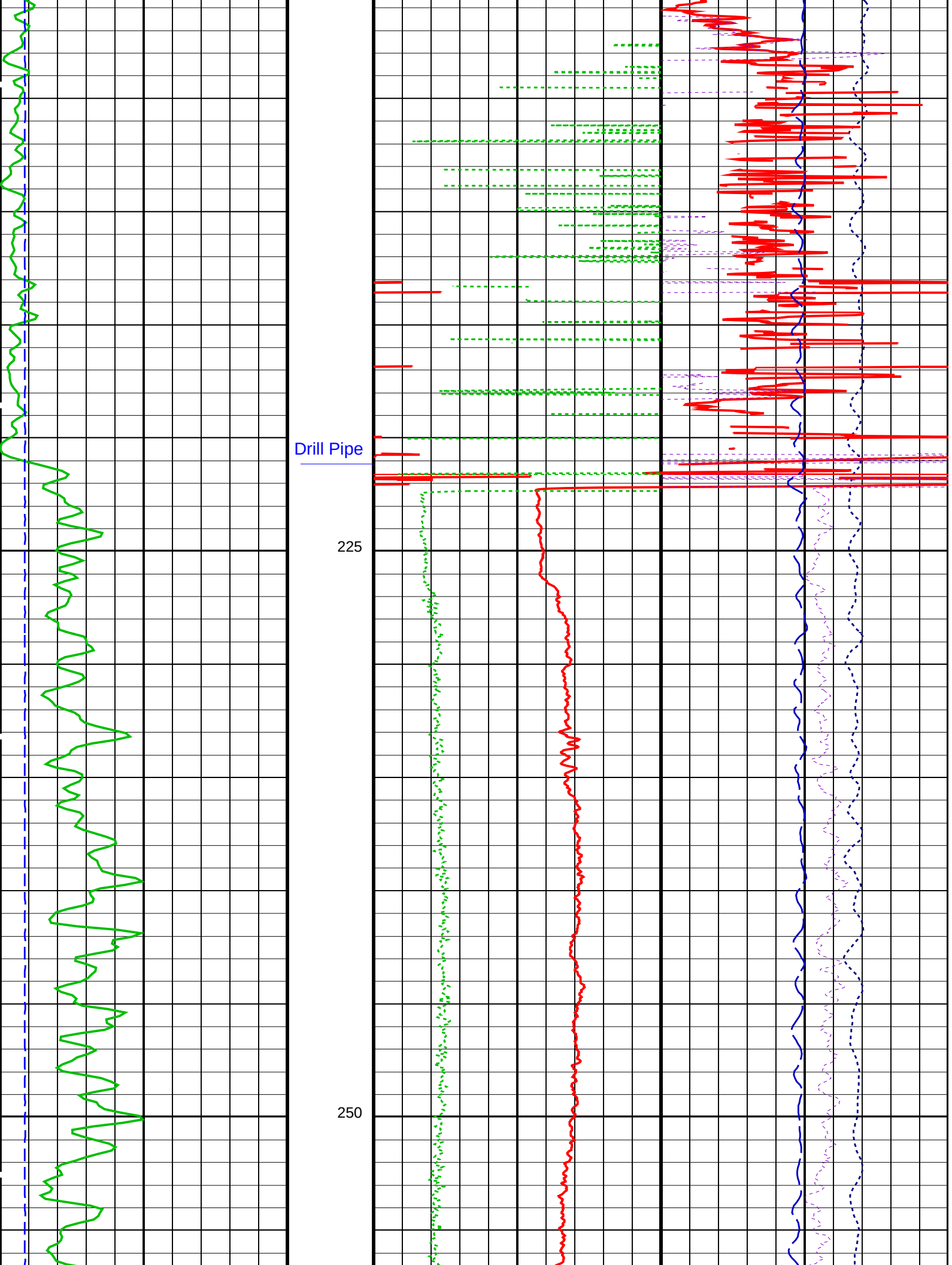
HLDS HR Bulk Density Correction (HBDC)
−0.25 (G/C3) 0.25

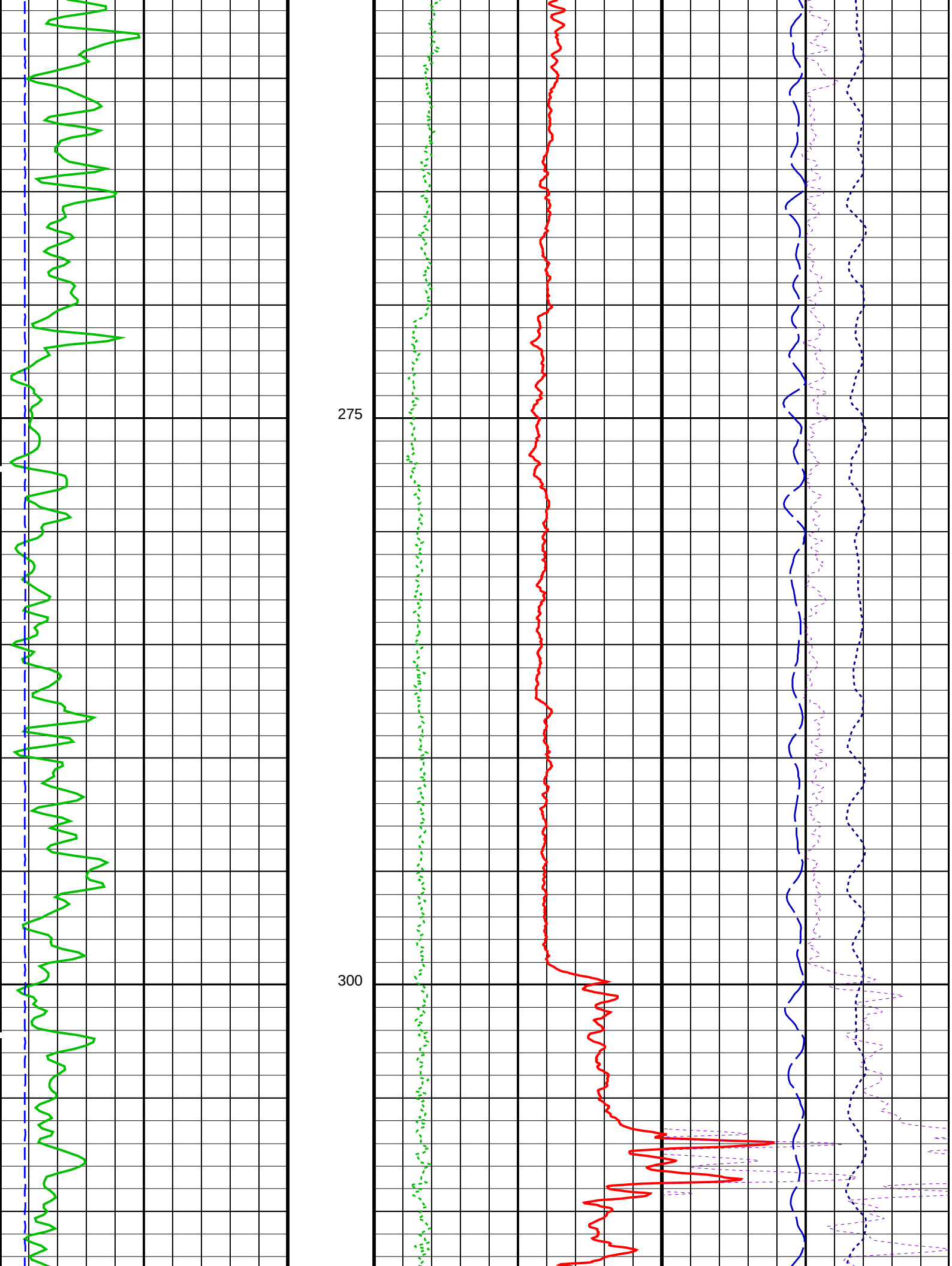
Gamma Ray (GR_EDTC)

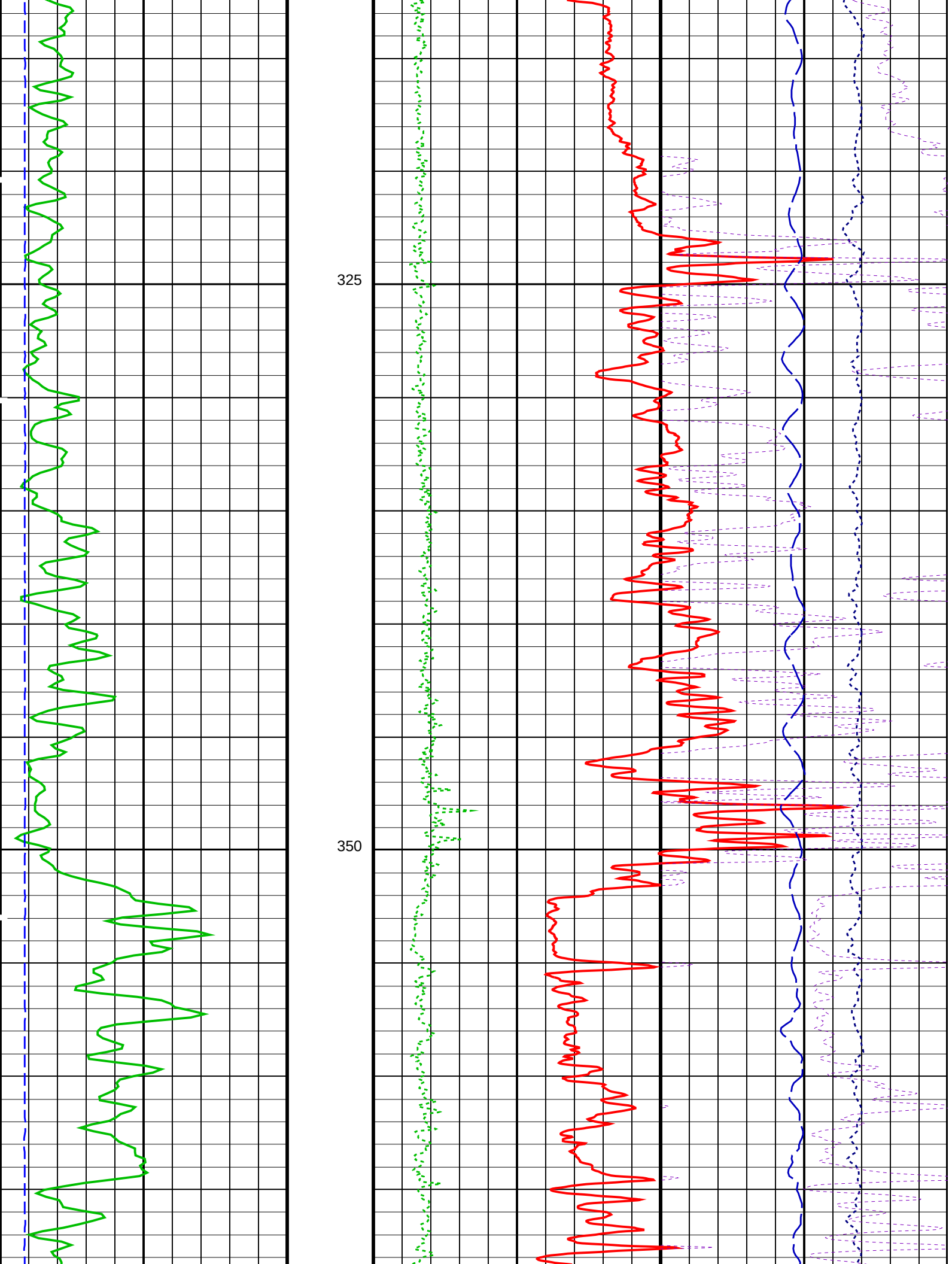
HLDS HR Long Spaced Photoelectric

Calibrated Downhole Force (CDF)


Gamma Ray (GR_EDTC)
0
(GAPI)
20
Effect (HLEF)
0
(----)
10
Calibrated Downhole Force (CDF)
5000
(LBF)
0
HLDS Caliber (LCAL)
0
(IN)
20
HLDS HR Bulk Density (HROM)
0
(G/C3)
4
Flipped Downlog, Reference Sea Floor, Caliper Closed, APS OFF
150
175
200


Drill Pipe
225
250


275
300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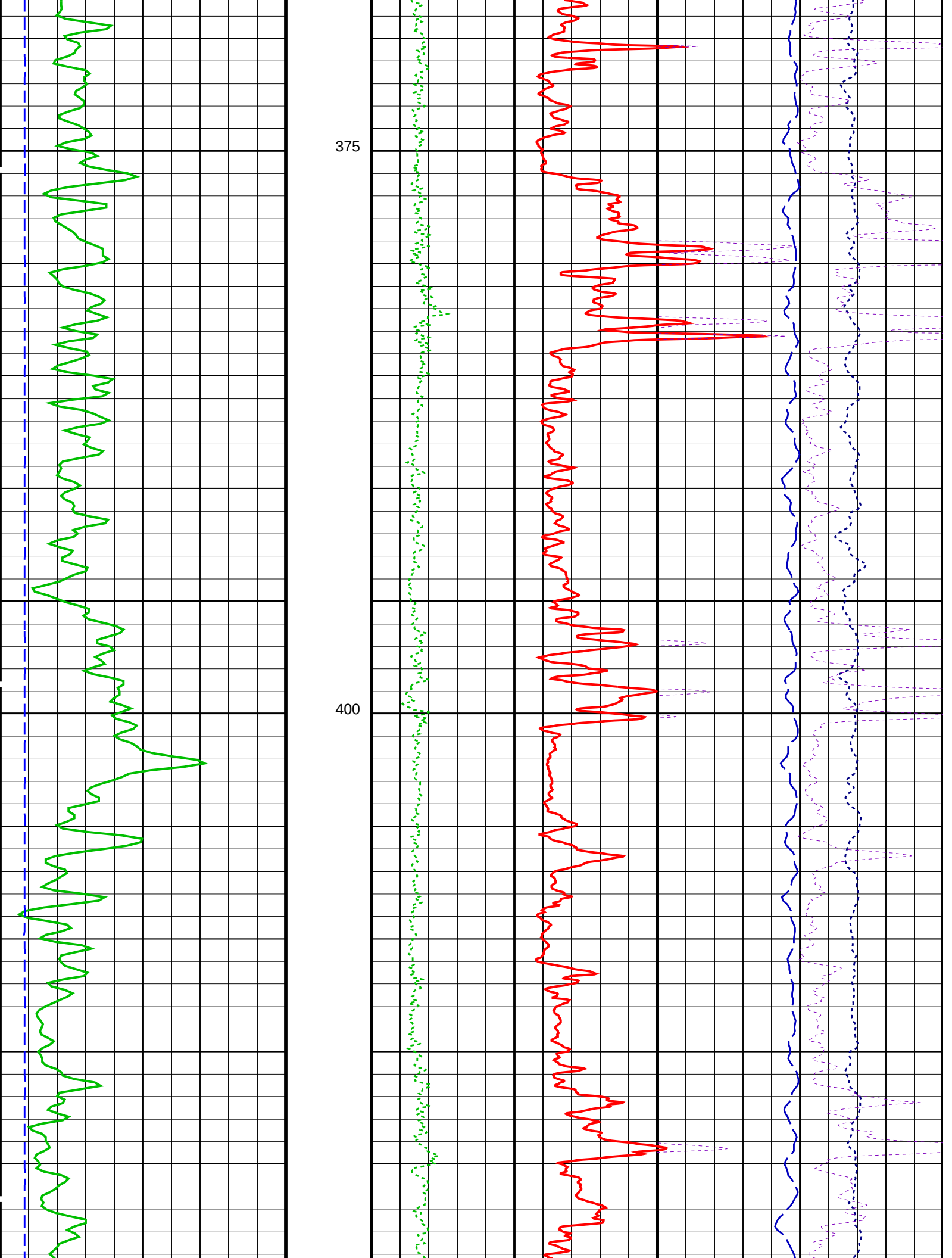
350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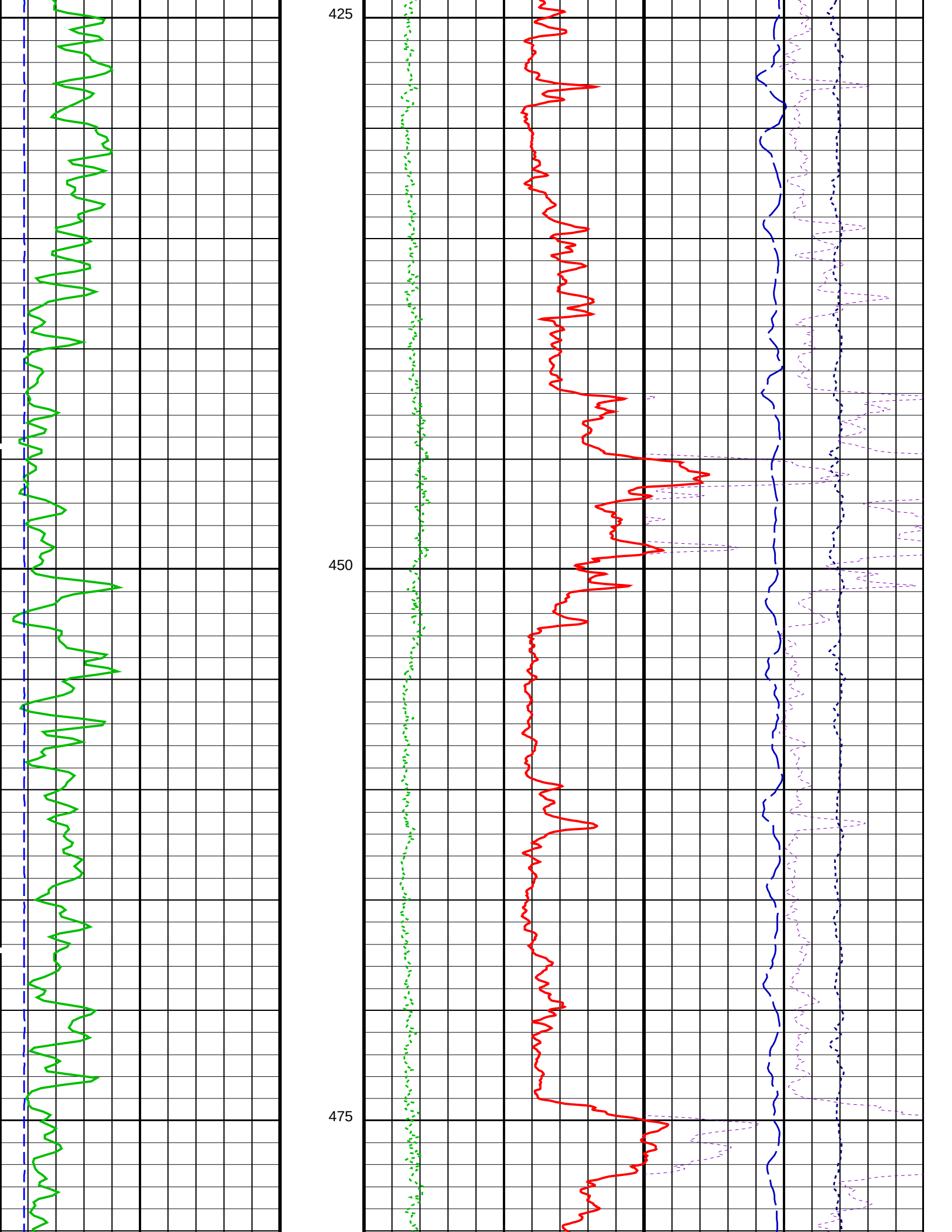
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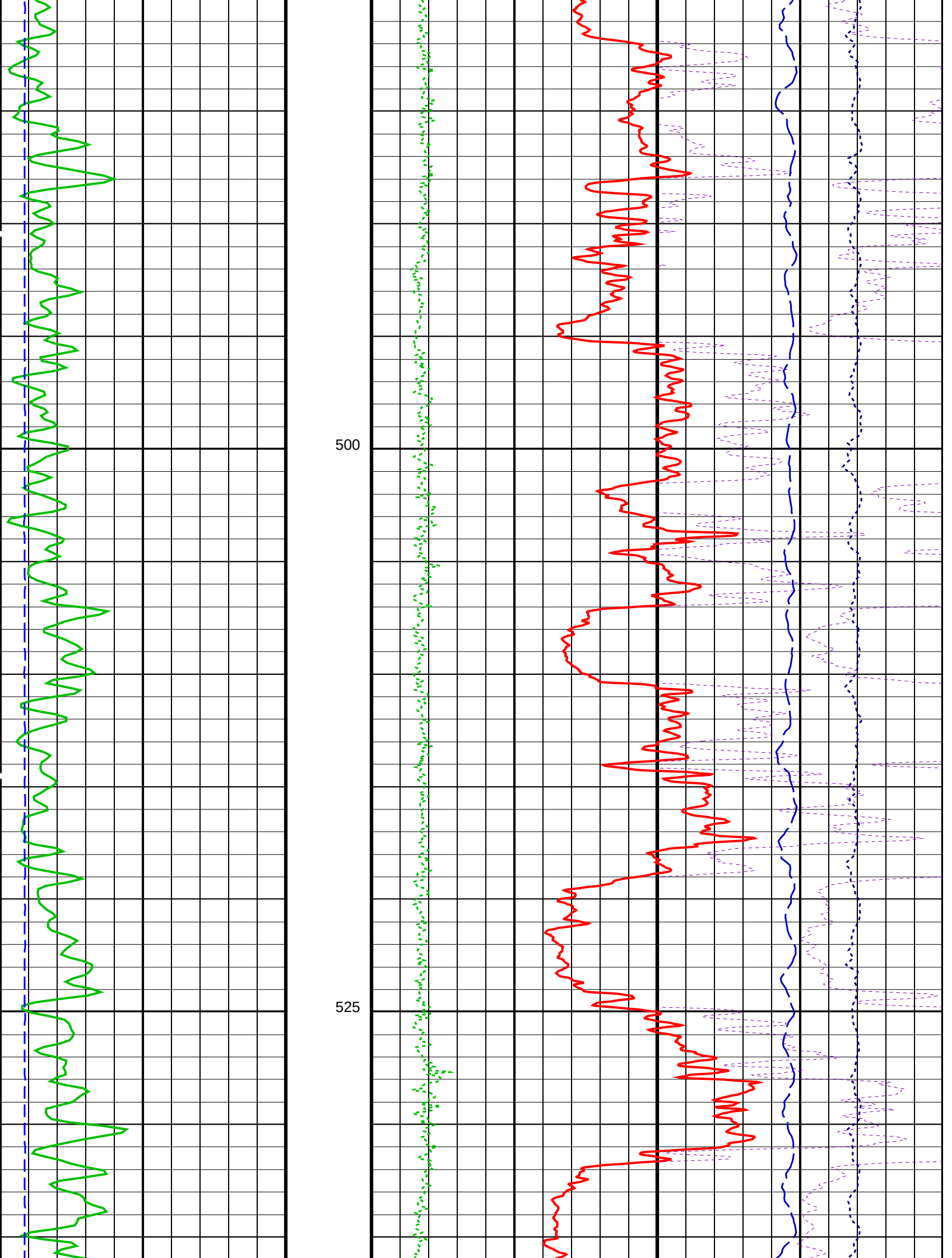
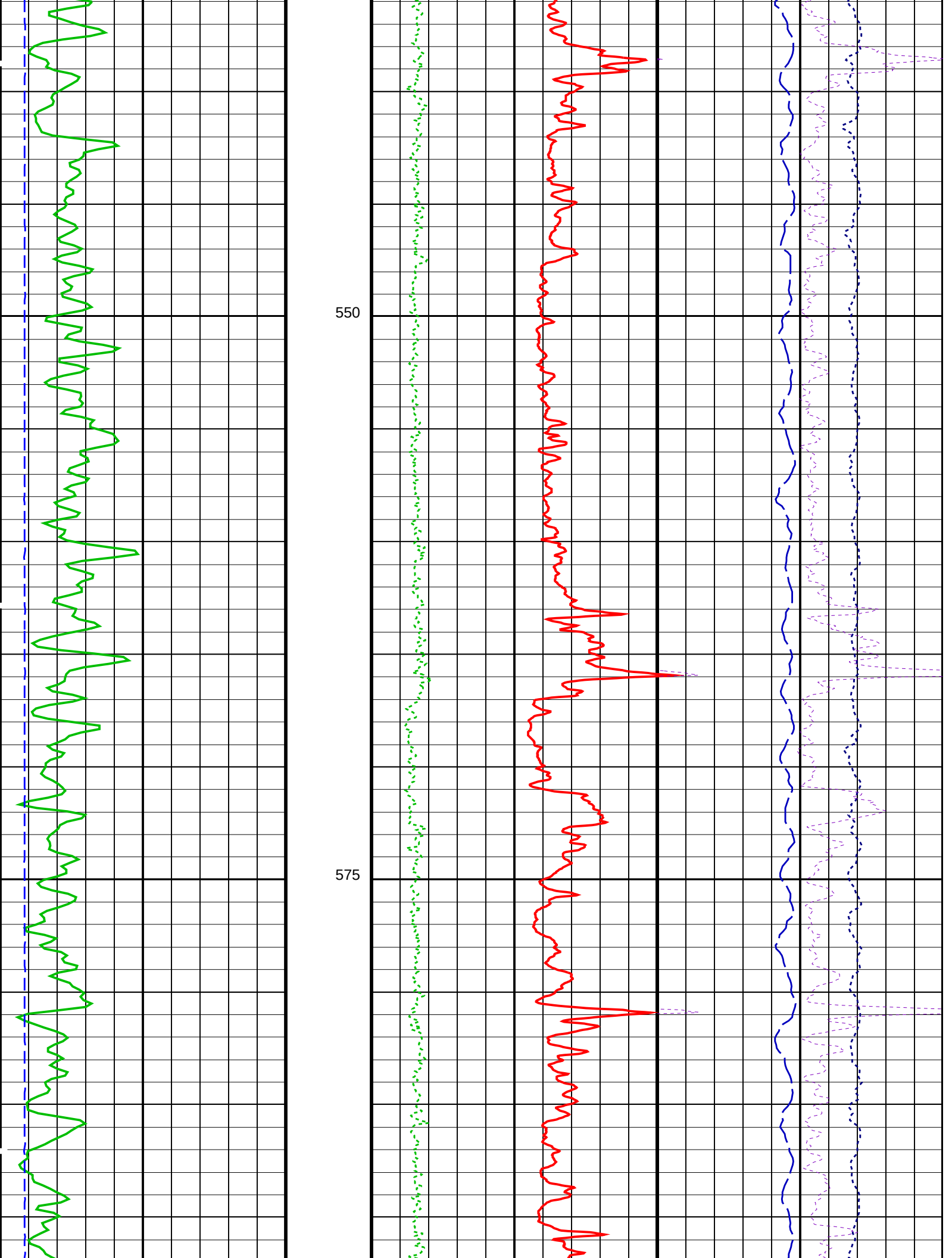
450
475


500
525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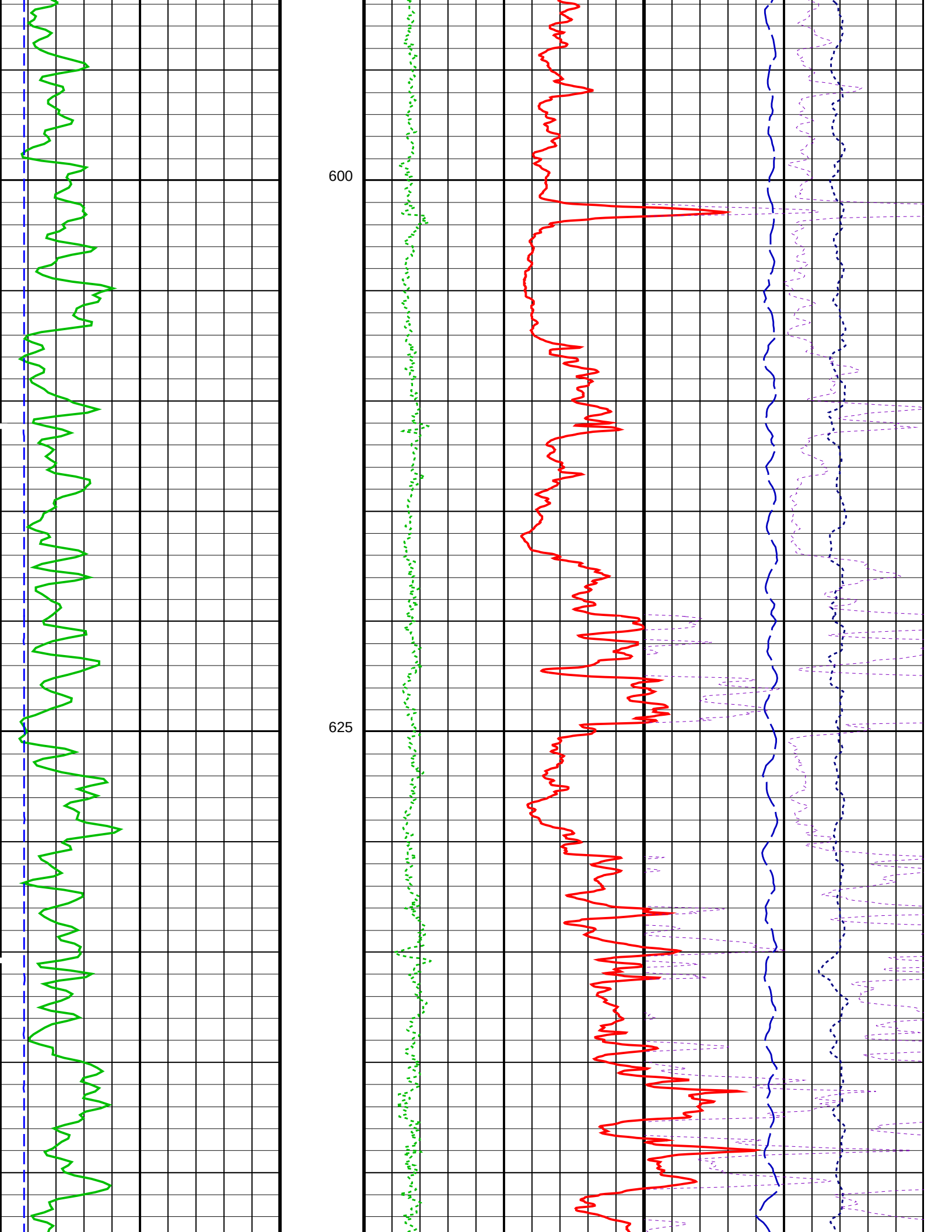
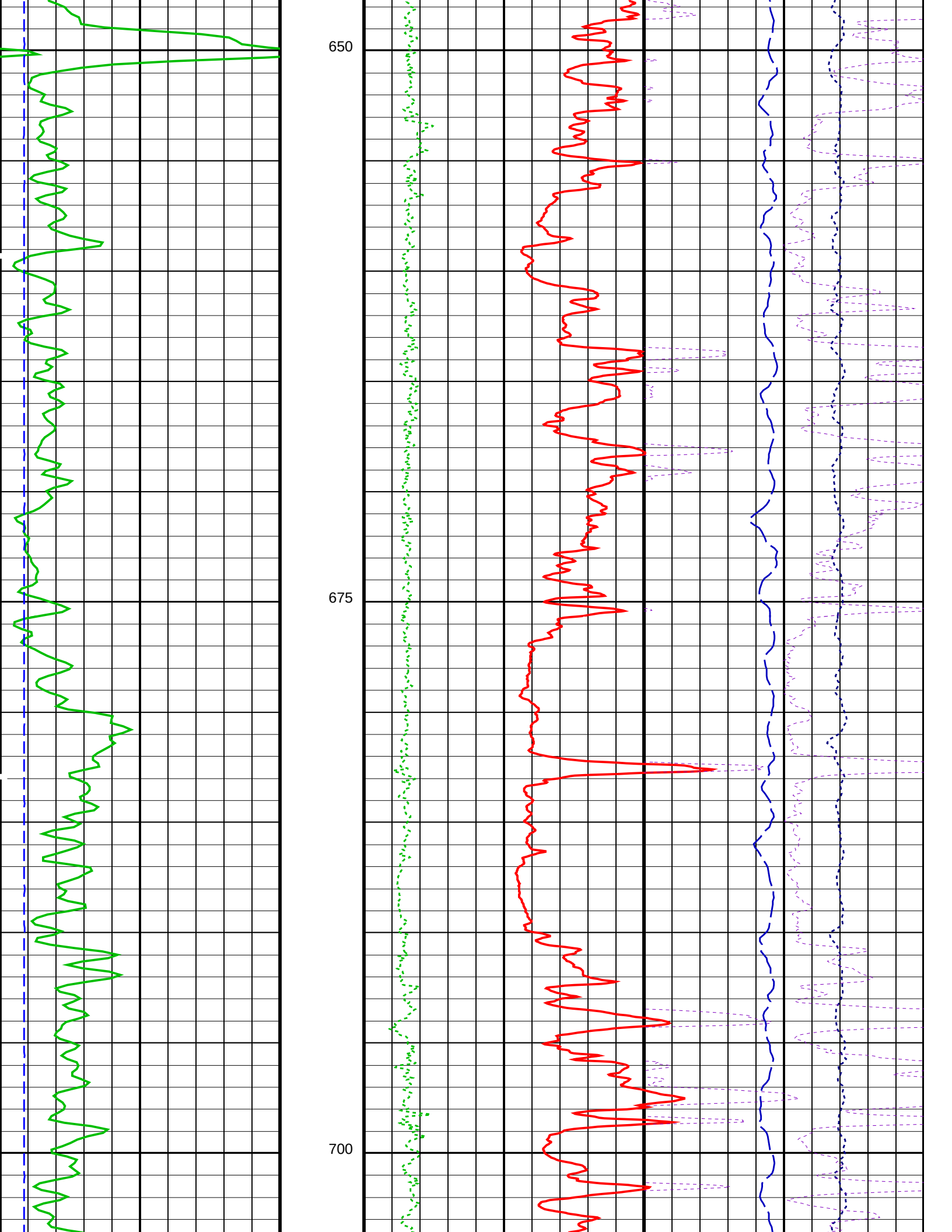

600
625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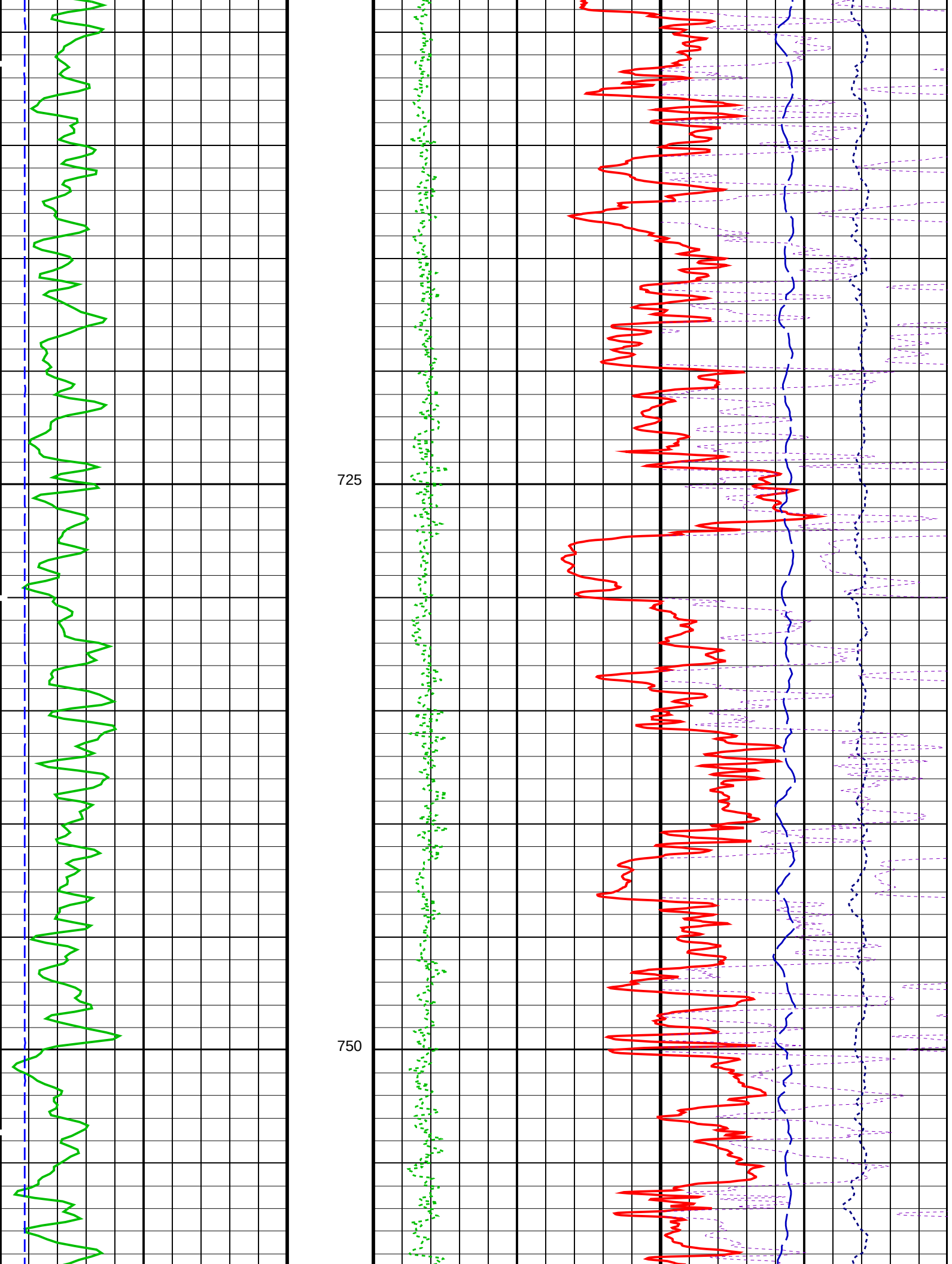
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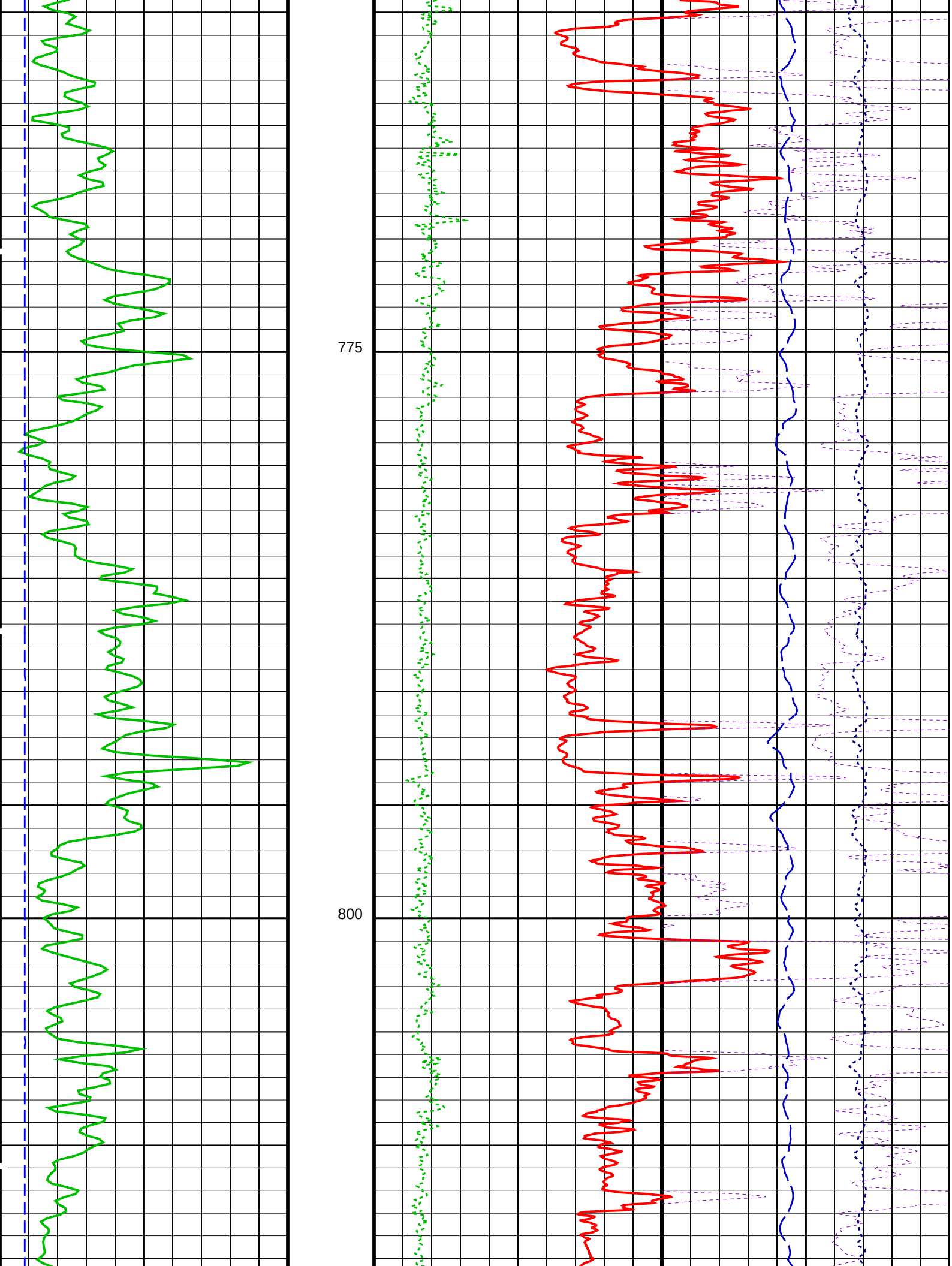
750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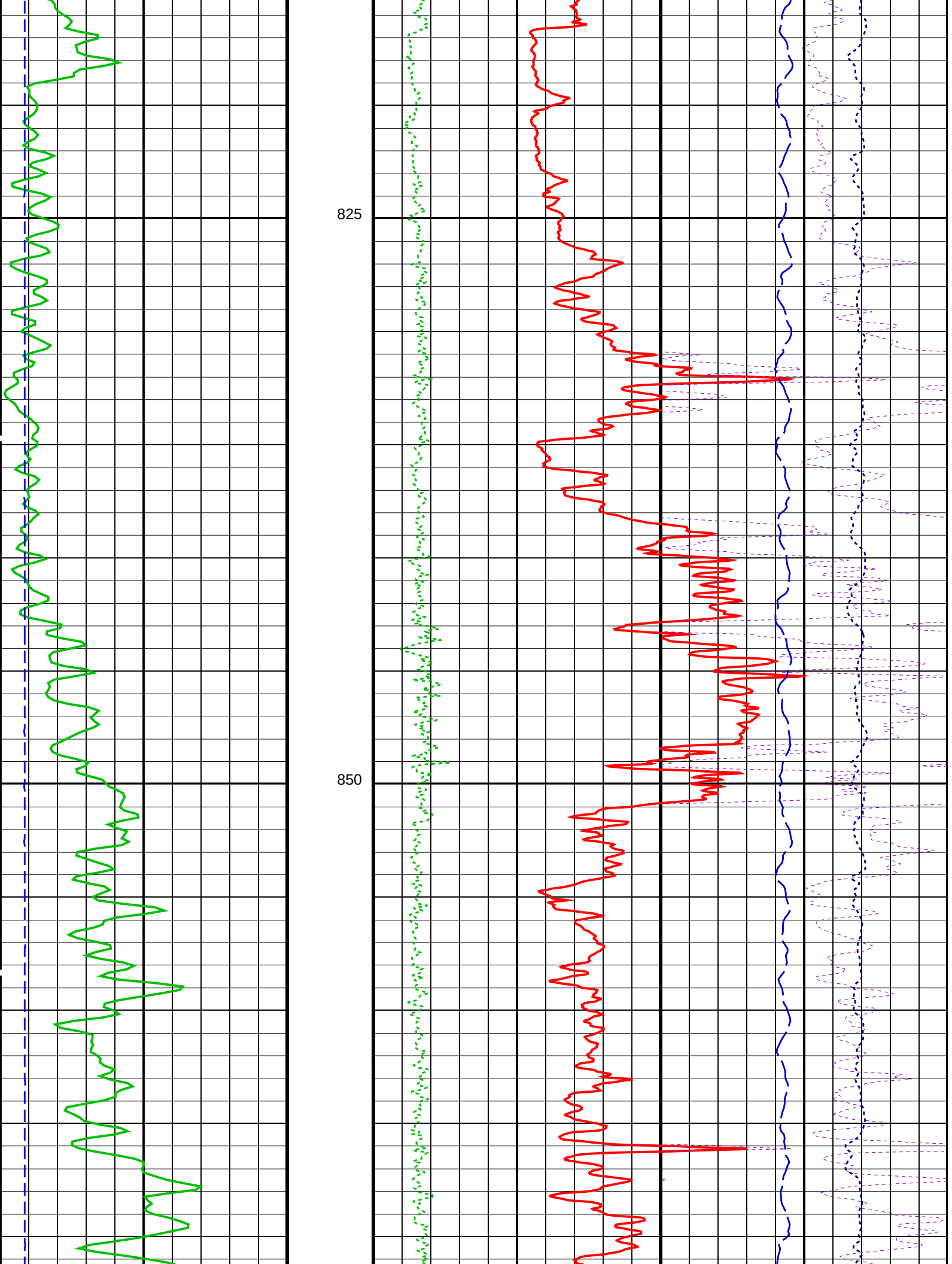
800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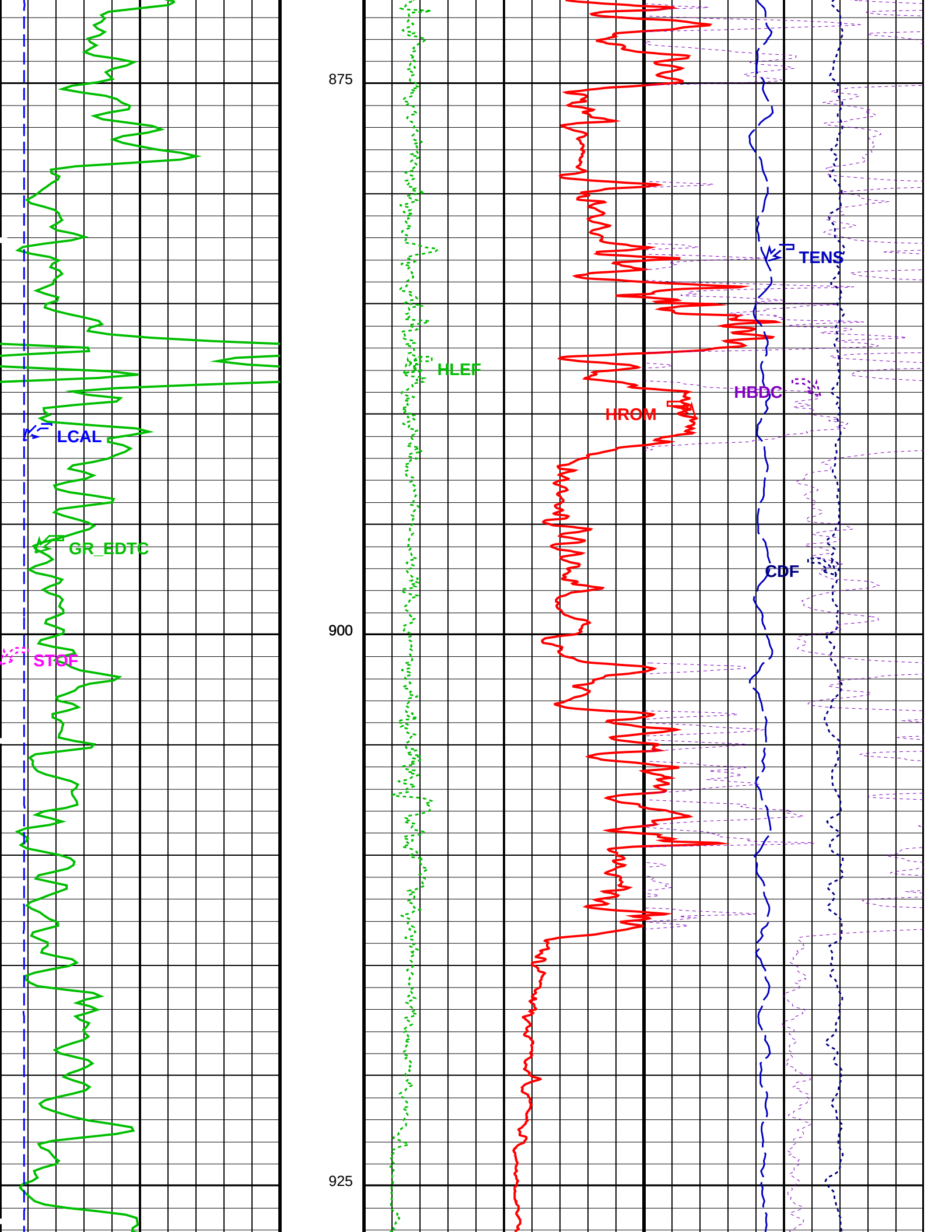
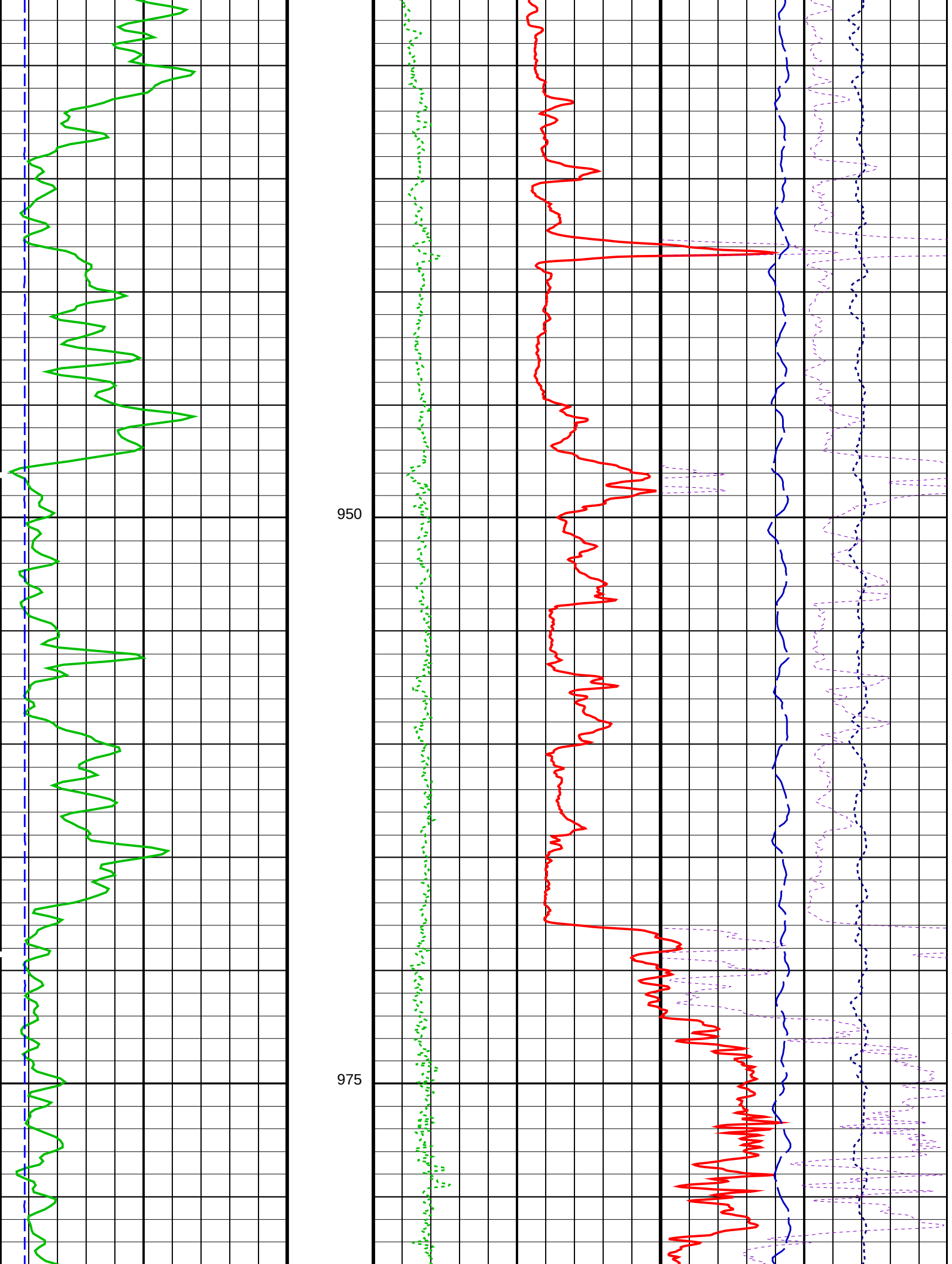
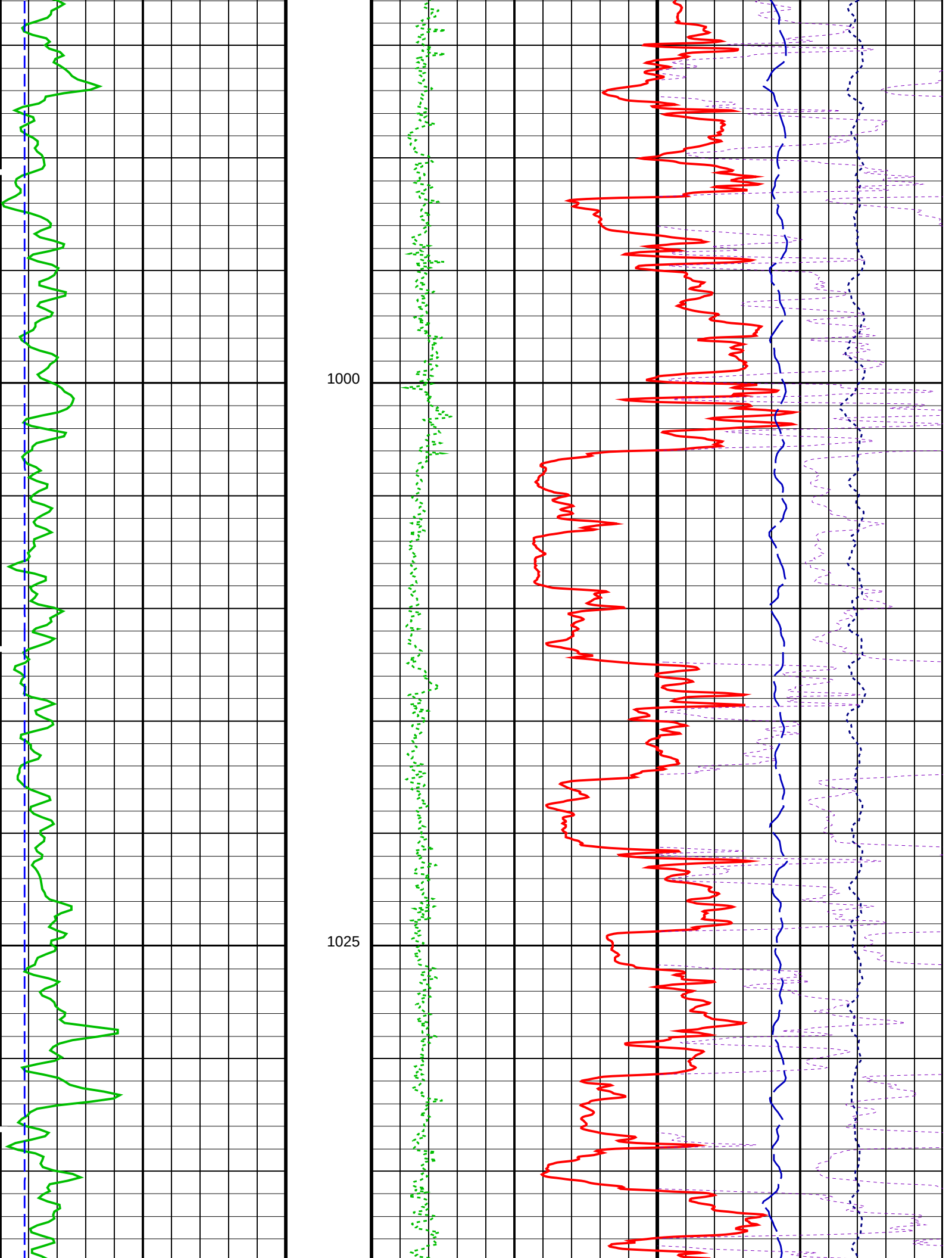
850


875
900
925
TENS
HLEF
HBDC
HROM
LCAL
CDF
GR_EDTC
STOF


950
975


1000
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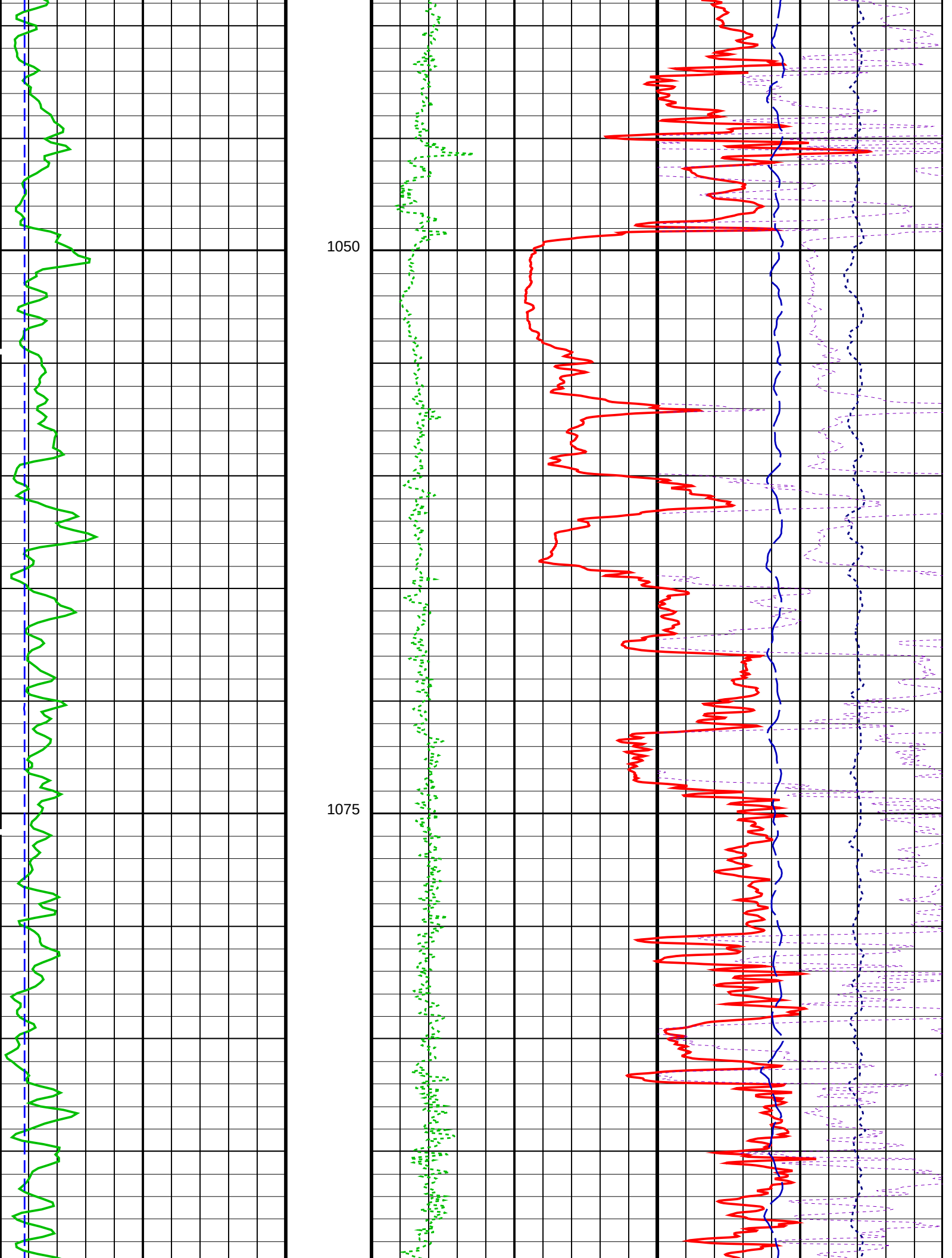
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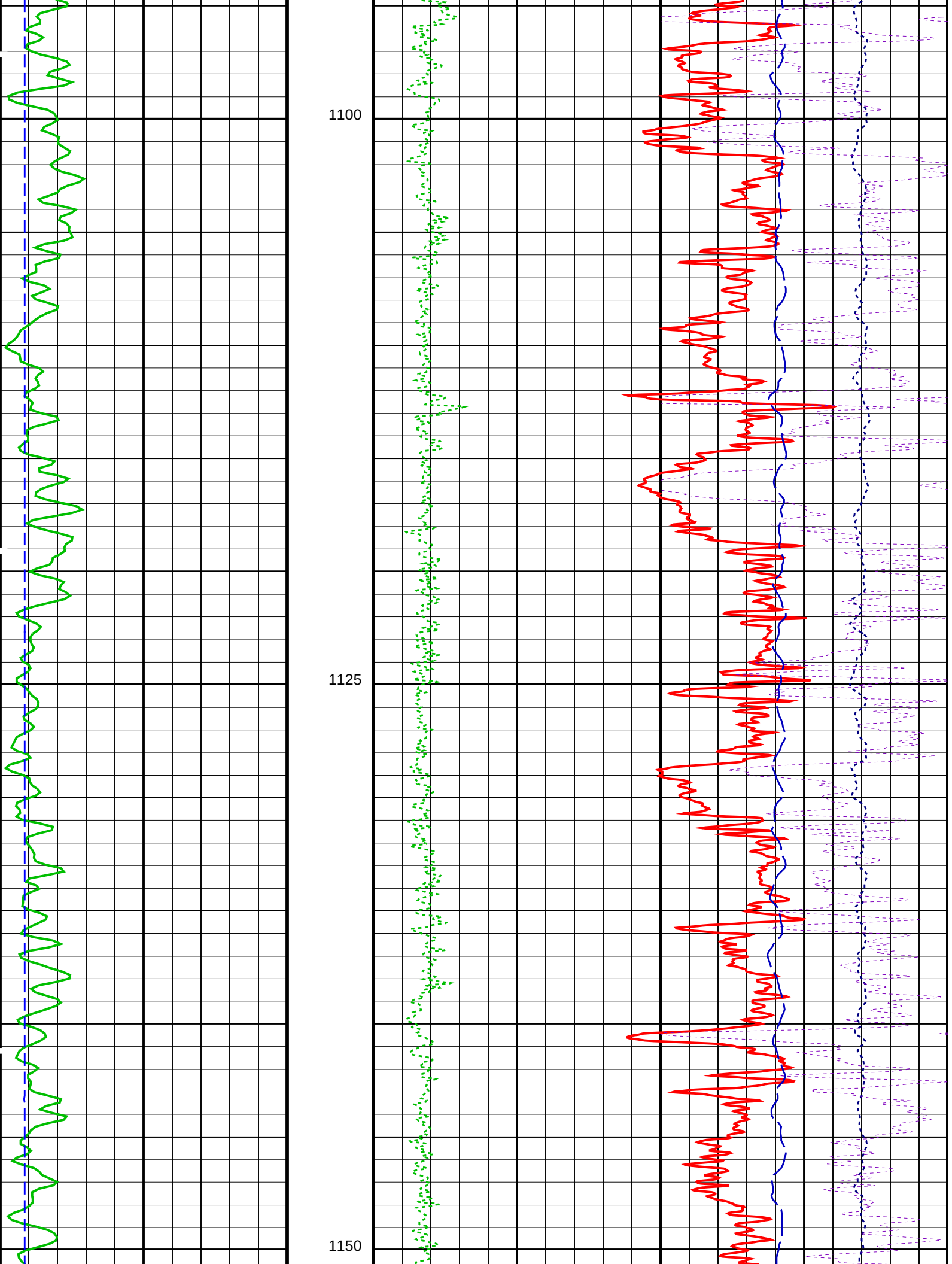
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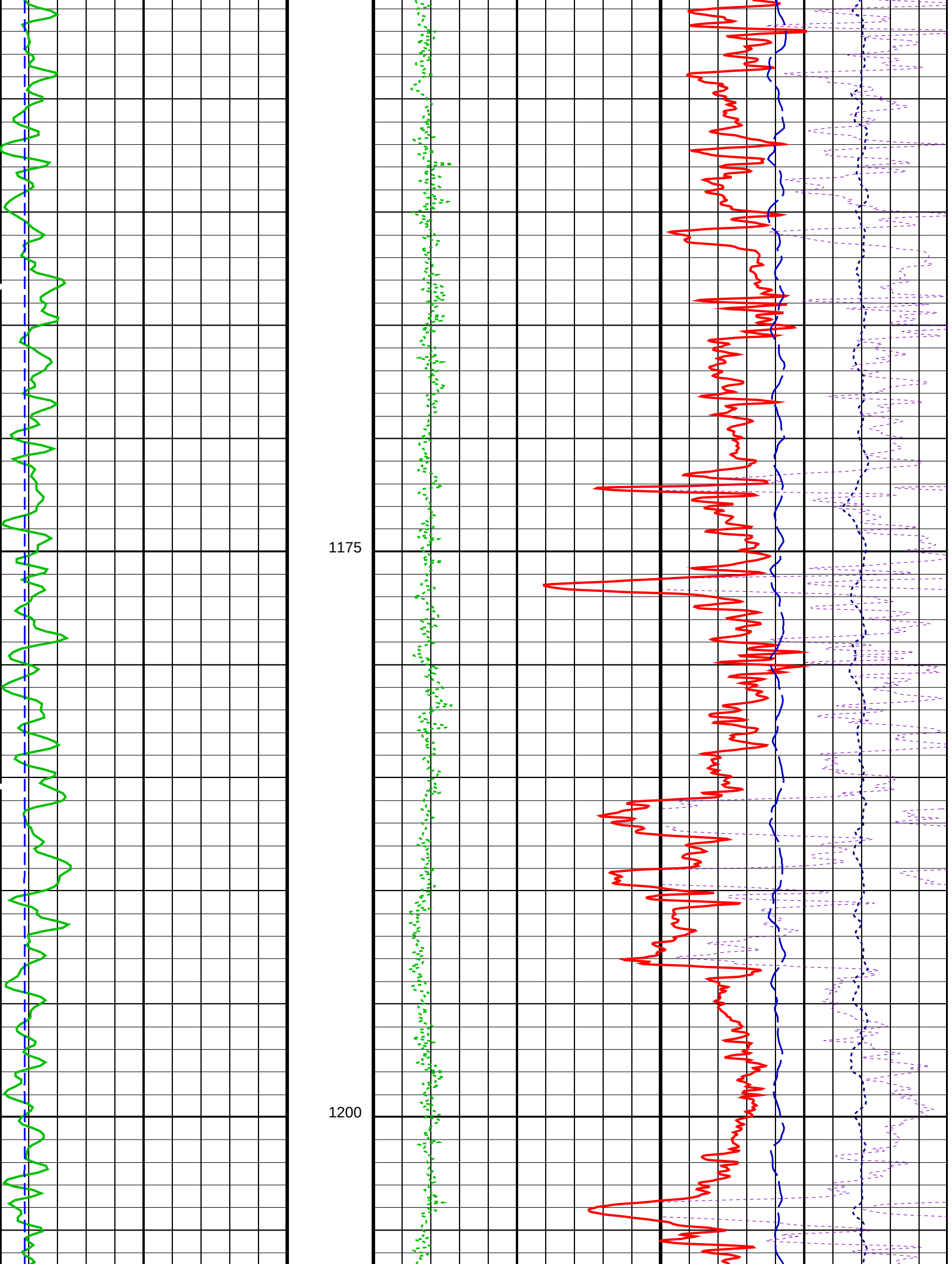
1125
1150


1175
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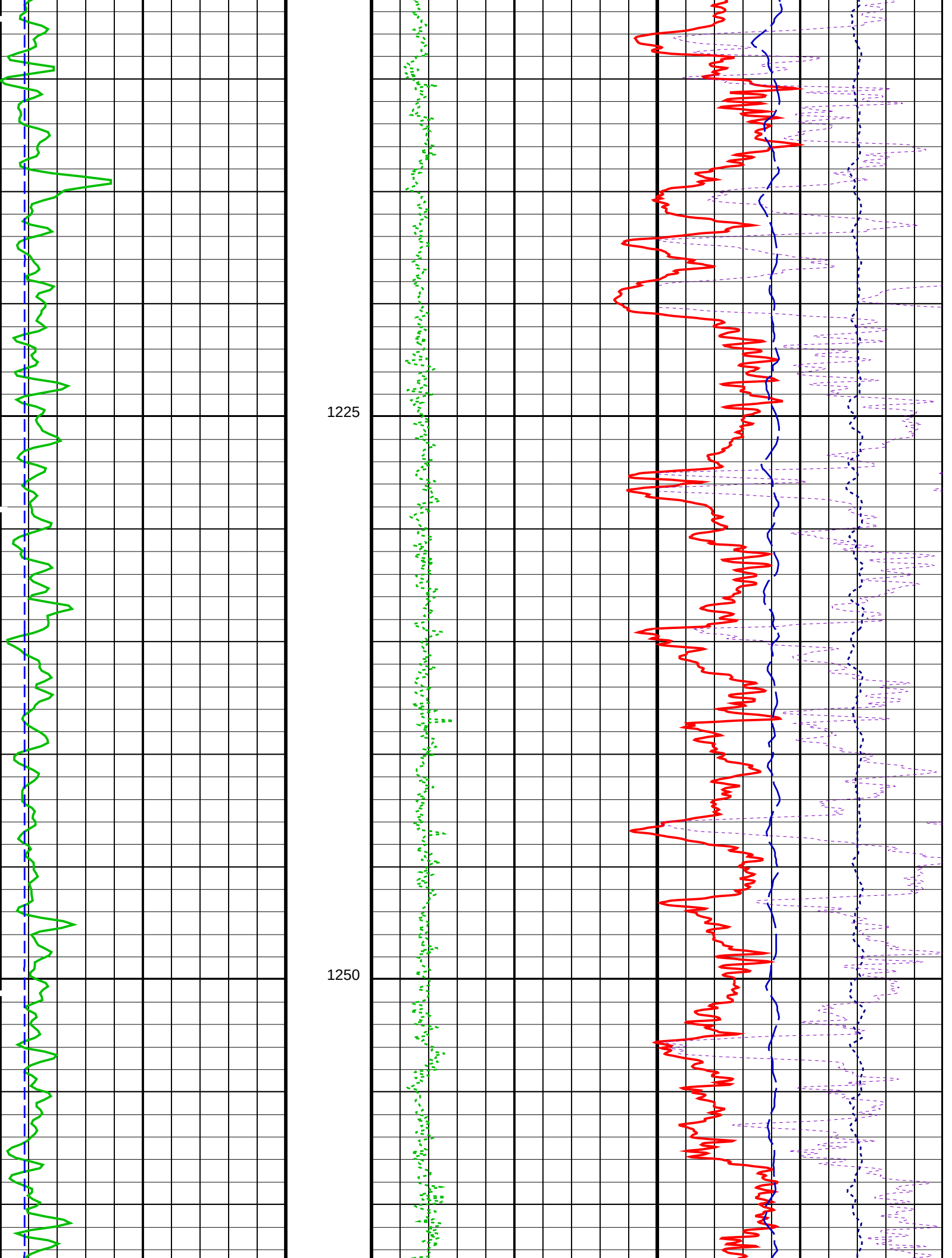
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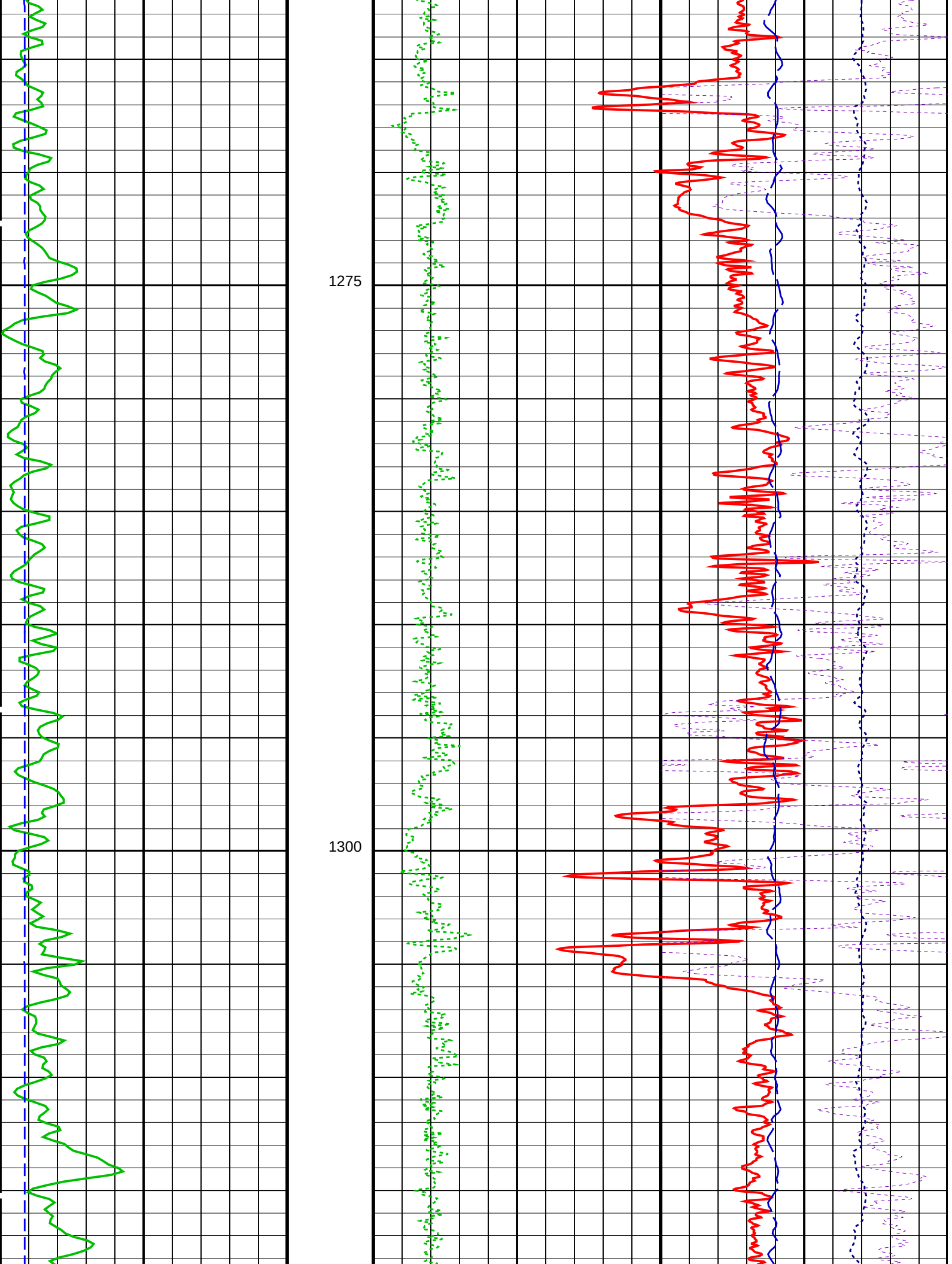
1250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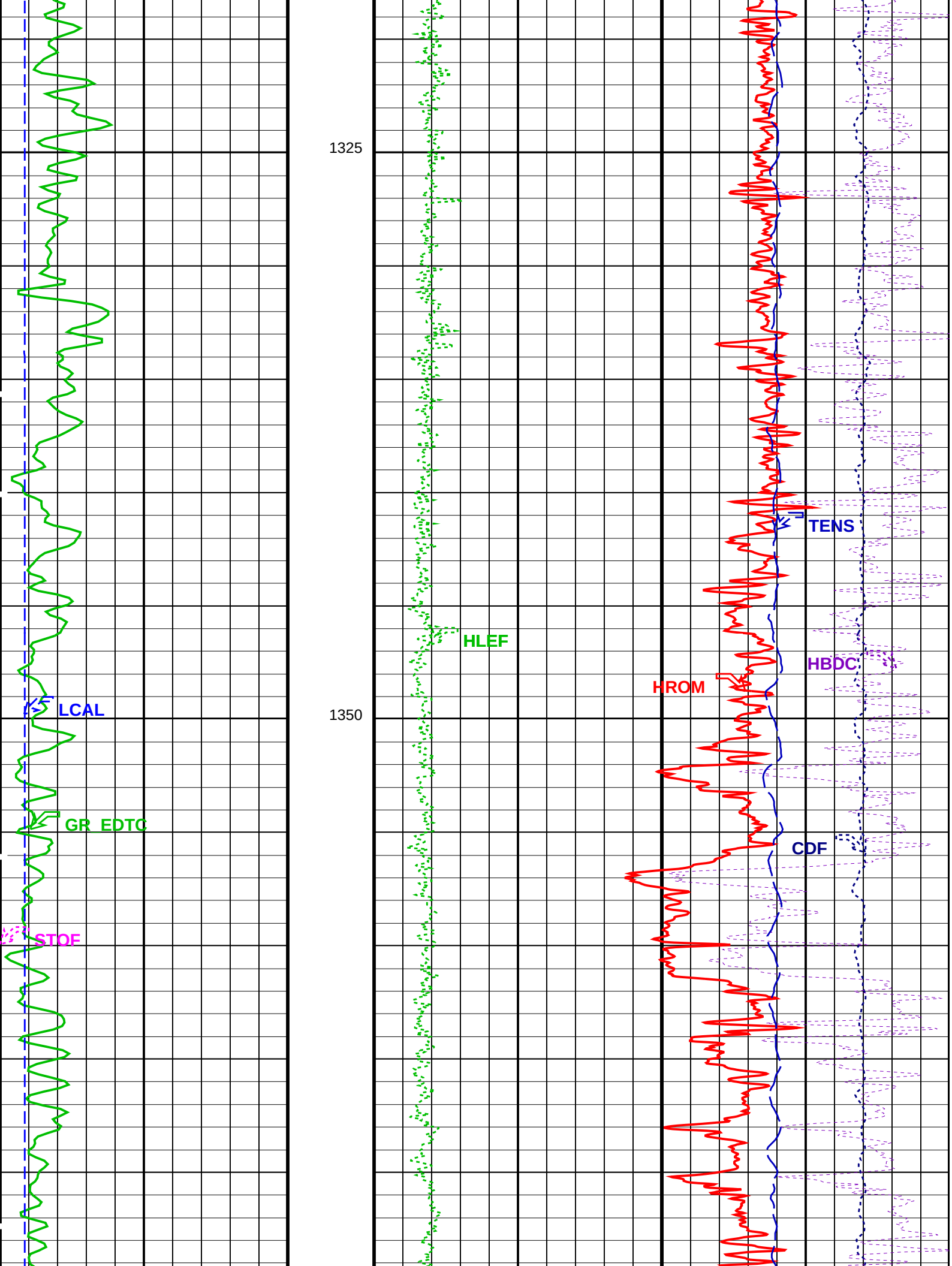
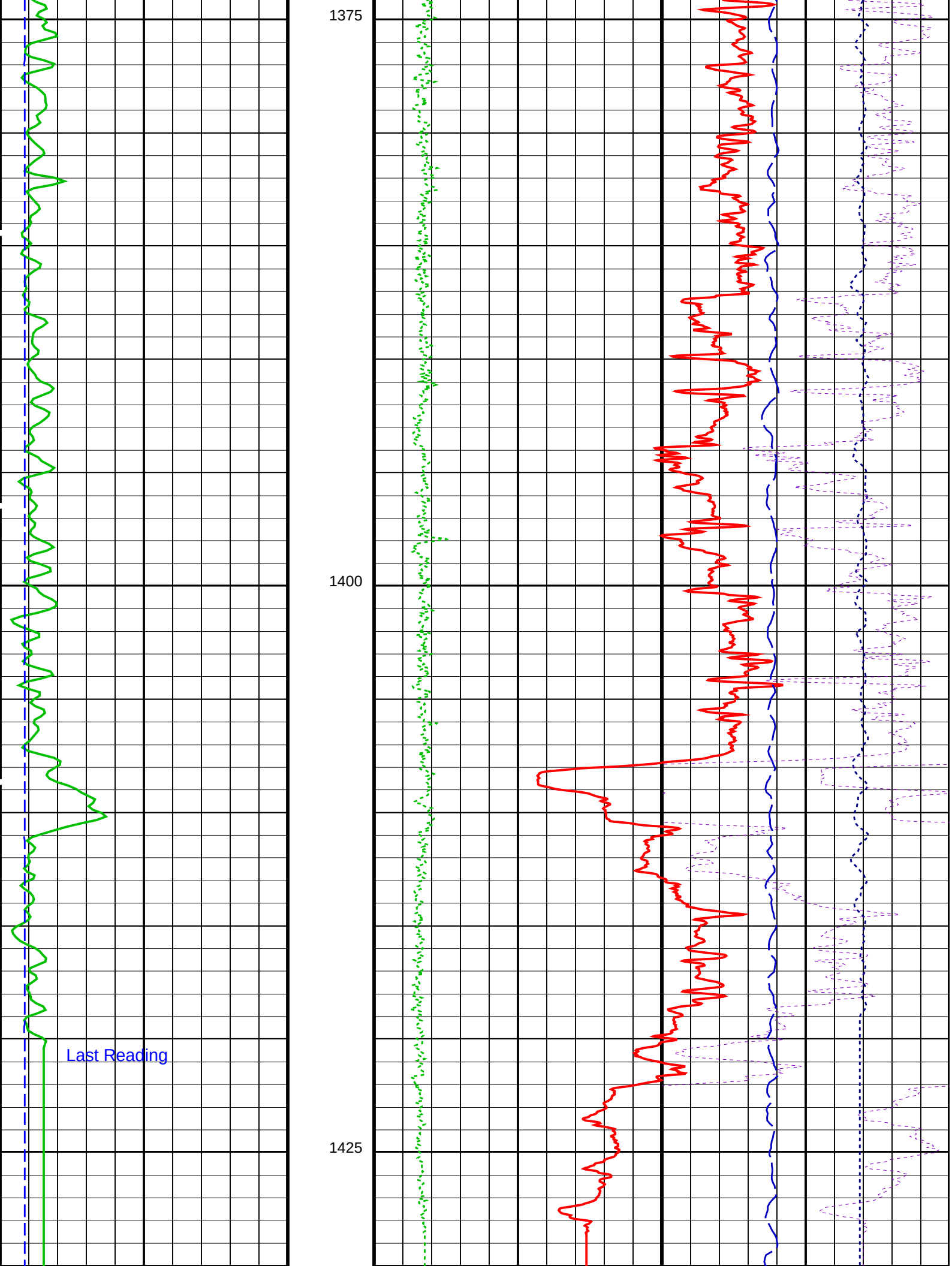

1325
1350
TENS
HLEF
HBDC
HROM
LCAL
GR_EDTC
CDF
STOF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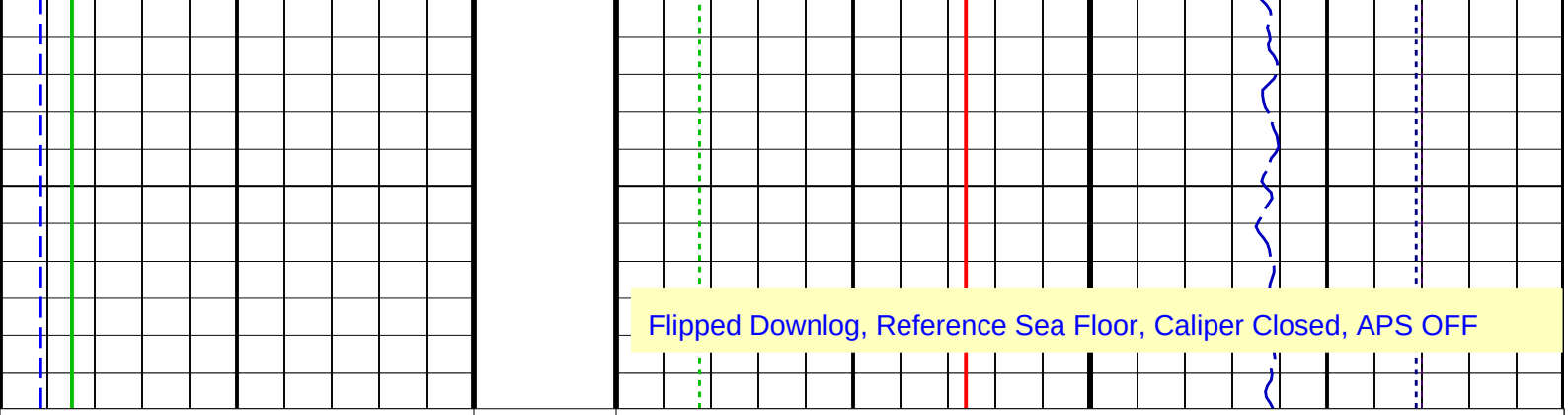
1400
1425
Last Reading



Parameters

DLIS Name	Description	Value	
	GPIT−A/B: General Purpose Inclinometer		
ACPP	Accelerometer PROM Presence	PRESENT	
AFMO	Accelerometer Filtering Mode	MOVING_AVERAGE	
ART	Accelerometer Reference Temperature	20	DEGC
GLM	GPIT Logging Mode	DIPM	
ICMO	Inclinometry Computation Mode	AUTOMATIC_SELECTION	
MAPP	Magnetometer PROM Presence	PRESENT	
MDEC	Magnetic Field Declination	3.7872	DEG
MRTE	Magneto Reference Temperature	19	DEGC
TEMS	GPIT Temperature Sensor Used	BOTH	
U−GPOF	Playback OLD VERSION GPIT FILE (BEFORE OP14 + SRPC−3098−FEB_2006_C) ?	NO	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	80	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	39.9885	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	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	NOBARITE	
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	OFF	
PROCMFL	Inversion Micro−Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN

PROCMSO	Mechanical Standoff Pin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	20	DEGC
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	2.71	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1000	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	
APS−C: Accelerator−Porosity Tool			
	APS Software Version	0	
AASD	APS Thermal and Array Detectors High Voltage Setting	1963.66	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2114.42	V
AHCS	APS Holesize Correction Source	BS	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1732.37	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature−Pressure−Salinity Correction Switch	ON	
BHFL_APS	APS TNPH Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	80	DEGC
BSCO_APS	APS TNPH Borehole Salinity Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source Correction Option	COMPUTED	
FSAL	Formation Salinity	−50000	PPM
FSCO_APS	APS TNPH Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO_APS	APS TNPH Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	YES	
MCOR_APS	APS TNPH Mud Correction	NATU	
MWCO_APS	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.05665	
NFRC	APS Near/Far Calibration Ratio	0.883456	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	YES	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	YES	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	80	DEGC
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	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
ISSBAR_EDTC	Nuclear Mud Type	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0.5	IN
SOCO	Standoff Correction Option	NO	

TPOS_EDTC	**EDTC Tool Centered/Eccentered**	**Eccentered**	
System and Miscellaneous			
ALTDPCHAN	**Name of alternate depth channel**	**SpeedCorrectedDepth**	
BS	**Bit Size**	**9.875**	**IN**
BSAL	**Borehole Salinity**	**−50000.00**	**PPM**
CSIZ	**Current Casing Size**	**0.000**	**IN**
CWEI	**Casing Weight**	**0.00**	**LB/F**
DFD	**Drilling Fluid Density**	**1.00**	**G/C3**
DO	**Depth Offset for Playback**	**−3644.0**	**M**
FLEV	**Fluid Level**	**−50000.00**	**M**
MST	**Mud Sample Temperature**	**−50000.00**	**DEGC**
PBVSADP	**Use alternate depth channel for playback**	**NO**	
PP	**Playback Processing**	**NORMAL**	
RMFS	**Resistivity of Mud Filtrate Sample**	**−50000.0000**	**OHMM**
RW	**Resistivity of Connate Water**	**1.0000**	**OHMM**
TD	**Total Depth**	**5170**	**M**
TDD	**Total Depth − Driller**	**5165.00**	**M**
TDL	**Total Depth − Logger**	**5165.00**	**M**
TWS	**Temperature of Connate Water Sample**	**37.78**	**DEGC**

Format: APSLiquidPorosity_1 Vertical Scale: 1:200 Graphics File Created: 08−Jun−2011 16:15

OP System Version: 17C0−154

GPIT−A/B	**SRPC−3971−Q1_2010_OP17**	**DTA−A**	**17C0−154**
MTT_LDEO−A	**17C0−154**	**HRLT−B**	**SRPC−3971−Q1_2010_OP17**
HLDS	**SPC−3961−OP17_NUCL**	**LDSC−B**	**SPC−3961−OP17_NUCL**
APS−C	**SPC−3961−OP17_NUCL**	**EDTC−B**	**SRPC−3971−Q1_2010_OP17**

Input DLIS Files

DEFAULT	**Flip_MTT_LDEO_HRLA_060LUP**	**PRODUCER**	**08−Jun−2011 15:58**	**5098.8 M**	**3793.2 M**

Output DLIS Files

DEFAULT	**MTT_LDEO_HRLA_LDL_066PUP**	**FN:7**	**PRODUCER**	**08−Jun−2011 16:15**

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
General Purpose Inclinometer Wellsite Calibration − CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY							
Before: 27−May−2011 4:18							
TEMPERATURE REFERENCE :	N/A	N/A	20	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	92	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	10	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	448	N/A	N/A	N/A	
General Purpose Inclinometer Wellsite Calibration − CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY							
Before: 27−May−2011 4:18							
TEMPERATURE REFERENCE :	N/A	N/A	19	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	99	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	12	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	428	N/A	N/A	N/A	
High Resolution Laterolog Array − B Wellsite Calibration − HRLT M01							
Before: 27−May−2011 8:45 After: 27−May−2011 12:33							
HRLT M0−M1 Voltage Plus − 0	0	N/A	−317.7	−318.8	−1.120	9.681	UV
HRLT M0−M1 Voltage Plus − 1	0	N/A	−338.9	−335.0	3.970	9.681	UV
HRLT M0−M1 Voltage Plus − 2	0	N/A	−336.4	−335.4	1.043	9.681	UV
HRLT M0−M1 Voltage Plus − 3	0	N/A	−338.7	−338.7	0.006348	9.681	UV
HRLT M0−M1 Voltage Plus − 4	0	N/A	−324.9	−326.0	−1.162	9.681	UV
HRLT M0−M1 Voltage Plus − 5	0	N/A	−320.9	−322.0	−1.096	9.681	UV
HRLT M0−M1 Voltage Plus − 6	0	N/A	328.9	326.9	−1.960	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: 27−May−2011 8:45 After: 27−May−2011 12:33							
HRLT M1−M2 Voltage Plus − 0	0	N/A	1766	1755	−11.42	53.42	UV
HRLT M1−M2 Voltage Plus − 1	0	N/A	1871	1841	−30.80	53.42	UV
HRLT M1−M2 Voltage Plus − 2	0	N/A	1856	1839	−17.62	53.42	UV
HRLT M1−M2 Voltage Plus − 3	0	N/A	1873	1858	−15.07	53.42	UV
HRLT M1−M2 Voltage Plus − 4	0	N/A	1802	1791	−11.02	53.42	UV
HRLT M1−M2 Voltage Plus − 5	0	N/A	1782	1770	−12.46	53.42	UV

HRLT M1−M2 Voltage Plus −	6	0	N/A	−1822	−1804	18.37	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: 27−May−2011 8:45 After: 27−May−2011 12:33

HRLT M2−M3 Voltage Plus −	0	0	N/A	1752	1740	−11.53	53.42	UV
HRLT M2−M3 Voltage Plus −	1	0	N/A	1871	1838	−33.40	53.42	UV
HRLT M2−M3 Voltage Plus −	2	0	N/A	1856	1837	−19.38	53.42	UV
HRLT M2−M3 Voltage Plus −	3	0	N/A	1876	1860	−16.02	53.42	UV
HRLT M2−M3 Voltage Plus −	4	0	N/A	1798	1786	−11.38	53.42	UV
HRLT M2−M3 Voltage Plus −	5	0	N/A	1779	1767	−12.62	53.42	UV
HRLT M2−M3 Voltage Plus −	6	0	N/A	−1811	−1790	21.05	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: 27−May−2011 8:45 After: 27−May−2011 12:33

HRLT A3−A4 Voltage Plus −	0	0	N/A	68720	68450	−276.0	2100	UV
HRLT A3−A4 Voltage Plus −	1	0	N/A	73170	72070	−1103	2100	UV
HRLT A3−A4 Voltage Plus −	2	0	N/A	72900	72340	−552.1	2100	UV
HRLT A3−A4 Voltage Plus −	3	0	N/A	73940	73510	−427.3	2100	UV
HRLT A3−A4 Voltage Plus −	4	0	N/A	70830	70570	−257.4	2100	UV
HRLT A3−A4 Voltage Plus −	5	0	N/A	70110	69800	−304.8	2100	UV
HRLT A3−A4 Voltage Plus −	6	0	N/A	−69800	−69190	610.2	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: 27−May−2011 8:45 After: 27−May−2011 12:33

HRLT A4−A5 Voltage Plus −	0	0	N/A	68970	68730	−237.7	2100	UV
HRLT A4−A5 Voltage Plus −	1	0	N/A	73520	72470	−1049	2100	UV
HRLT A4−A5 Voltage Plus −	2	0	N/A	73230	72710	−515.9	2100	UV
HRLT A4−A5 Voltage Plus −	3	0	N/A	74260	73870	−395.4	2100	UV
HRLT A4−A5 Voltage Plus −	4	0	N/A	71090	70870	−221.3	2100	UV
HRLT A4−A5 Voltage Plus −	5	0	N/A	70360	70090	−272.5	2100	UV
HRLT A4−A5 Voltage Plus −	6	0	N/A	−70150	−69580	571.2	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: 27−May−2011 8:45 After: 27−May−2011 12:33

HRLT A5−A6 Voltage Plus −	0	0	N/A	68870	68630	−244.0	2100	UV
HRLT A5−A6 Voltage Plus −	1	0	N/A	73240	72170	−1066	2100	UV
HRLT A5−A6 Voltage Plus −	2	0	N/A	72990	72460	−530.7	2100	UV
HRLT A5−A6 Voltage Plus −	3	0	N/A	74060	73660	−396.2	2100	UV
HRLT A5−A6 Voltage Plus −	4	0	N/A	70950	70730	−220.6	2100	UV
HRLT A5−A6 Voltage Plus −	5	0	N/A	70250	69970	−271.2	2100	UV
HRLT A5−A6 Voltage Plus −	6	0	N/A	−69890	−69280	606.8	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: 27−May−2011 8:45 After: 27−May−2011 12:33

HRLT Torpedo−M0 Voltage −	0	0	N/A	−68570	−68310	260.6	2100	UV
HRLT Torpedo−M0 Voltage −	1	0	N/A	−73610	−72520	1087	2100	UV
HRLT Torpedo−M0 Voltage −	2	0	N/A	−73330	−72800	529.5	2100	UV
HRLT Torpedo−M0 Voltage −	3	0	N/A	−74380	−73960	417.4	2100	UV
HRLT Torpedo−M0 Voltage −	4	0	N/A	−71190	−70930	257.9	2100	UV
HRLT Torpedo−M0 Voltage −	5	0	N/A	−70430	−70120	311.0	2100	UV
HRLT Torpedo−M0 Voltage −	6	0	N/A	70170	69590	−586.3	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: 27−May−2011 8:45 After: 27−May−2011 12:33

HRLT Bridle#9−M0 Voltage −	0	0	N/A	−68570	−68300	269.6	2100	UV
HRLT Bridle#9−M0 Voltage −	1	0	N/A	−73590	−72500	1084	2100	UV
HRLT Bridle#9−M0 Voltage −	2	0	N/A	−73310	−72770	539.6	2100	UV
HRLT Bridle#9−M0 Voltage −	3	0	N/A	−74370	−73940	428.9	2100	UV
HRLT Bridle#9−M0 Voltage −	4	0	N/A	−71190	−70930	264.9	2100	UV
HRLT Bridle#9−M0 Voltage −	5	0	N/A	−70440	−70130	314.7	2100	UV
HRLT Bridle#9−M0 Voltage −	6	0	N/A	70150	69550	−597.0	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: 27−May−2011 8:45 After: 27−May−2011 12:33

HRLT Source Current Plus −	0	0	N/A	285.9	284.8	−1.066	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: 27−May−2011 8:45 After: 27−May−2011 12:33

HRLT Vertical Voltage Pl − 0	0	N/A	−322.8	−321.3	1.506	9.681	UV
HRLT Vertical Voltage Pl − 1	0	N/A	−333.9	−329.0	4.915	9.681	UV
HRLT Vertical Voltage Pl − 2	0	N/A	−331.4	−328.6	2.723	9.681	UV
HRLT Vertical Voltage Pl − 3	0	N/A	−332.5	−330.5	2.034	9.681	UV
HRLT Vertical Voltage Pl − 4	0	N/A	−317.0	−315.7	1.317	9.681	UV
HRLT Vertical Voltage Pl − 5	0	N/A	−328.5	−326.9	1.616	9.681	UV
HRLT Vertical Voltage Pl − 6	0	N/A	336.9	334.0	−2.925	9.681	UV
HRLT Vertical Voltage Pl − 7	0	N/A	−322.7	−322.7	0	9.681	UV

Hostile Litho−Density Sonde Wellsite Calibration − Background Measurement

Master: 7−Apr−2011 5:00 Before: 17−Apr−2011 20:21 After: 27−May−2011 13:15

SS Cs Resolution Bkg	9.000	8.421	8.552	8.381	−0.1705	1.800	%
LS Cs Resolution Bkg	9.000	8.647	8.637	8.635	−0.001844	1.800	%
LSW1 Background	100.0	73.32	72.16	72.44	0.2852	3.000	CPS
LSW2 Background	100.0	67.30	65.90	66.11	0.2139	3.000	CPS
LSW3 Background	200.0	149.6	148.2	149.6	1.430	6.000	CPS
LSW4 Background	250.0	182.5	182.4	180.1	−2.311	7.500	CPS
LSW5 Background	600.0	412.6	411.5	410.6	−0.8688	18.00	CPS
SSW1 Background	100.0	73.02	72.78	71.75	−1.032	3.000	CPS
SSW2 Background	200.0	124.5	124.2	124.3	0.1552	6.000	CPS
SSW3 Background	500.0	331.6	329.1	330.7	1.533	15.00	CPS
SSW4 Background	270.0	176.9	177.0	176.0	−1.033	8.100	CPS
SSW5 Background	200.0	128.6	126.6	126.4	−0.2029	6.000	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Aluminum Measurement

Master: 7−Apr−2011 5:35

LSW1 Aluminum	600.0	528.0	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	780.2	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	954.5	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	479.7	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	447.8	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2247	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6431	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	9367	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	3952	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	528.3	N/A	N/A	N/A	N/A	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Lithology Measurement

Master: 7−Apr−2011 5:20

LSW1 Iron	400.0	370.3	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	645.6	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	866.1	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	449.2	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	418.0	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1722	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5519	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8788	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3729	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	487.2	N/A	N/A	N/A	N/A	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Caliper Calibration

Before: 17−Apr−2011 20:29

HLDS Caliper Small Ring	11.88	N/A	13.46	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	16.89	N/A	N/A	N/A	IN

Accelerator−Porosity Tool Wellsite Calibration − Detector Background

Master: 8−Apr−2011 5:40 Before: 27−May−2011 5:18

Near Det Bkg Cntrate	30.00	33.54	31.97	N/A	N/A	N/A	CPS
Far Det Bkg Cntrate	30.00	32.81	33.85	N/A	N/A	N/A	CPS
Array−1 Det Bkg Cntrate	30.00	29.03	30.64	N/A	N/A	N/A	CPS
Array−2 Det Bkg Cntrate	30.00	30.21	30.41	N/A	N/A	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	32.80	32.21	N/A	N/A	N/A	CPS

Accelerator−Porosity Tool Wellsite Calibration − Calibration Ratios

Master: 8−Apr−2011 5:40

Near/Far Calibration Ratio	0.9250	0.8835	N/A	N/A	N/A	N/A	
Near/Array Calibration Ratio	1.030	1.057	N/A	N/A	N/A	N/A	
Near/Array Cal Ratio Up/Down	1.000	1.003	N/A	N/A	N/A	N/A	

Accelerator−Porosity Tool Wellsite Calibration − Tank Check

Master: 8−Apr−2011 5:41

Array−1 Standoff Porosity	11.75	11.34	N/A	N/A	N/A	N/A	PU
Array−2 Standoff Porosity	11.75	11.41	N/A	N/A	N/A	N/A	PU
Average Slowing Down Time	6.000	5.888	N/A	N/A	N/A	N/A	US
Array−1 SDT Ratio Up/Down	1.000	0.9889	N/A	N/A	N/A	N/A	
Array−2 SDT Ratio Up/Down	1.000	0.9810	N/A	N/A	N/A	N/A	
Sigma Formation	27.50	26.90	N/A	N/A	N/A	N/A	CU

Accelerator−Porosity Tool Wellsite Calibration − CCR7 signal boxes

Master: 8−Apr−2011 4:59

Near Detector Plateau Setting	1650	1732	N/A	N/A	N/A	N/A	V

Far Detector Plateau Setting	2000	2114	N/A	N/A	N/A	N/A	V
Array Detector Plateau Setting	2000	1964	N/A	N/A	N/A	N/A	V

Enhanced DTS Cartridge Wellsite Calibration − EDTC Accelerometer Calibration
Before: 27−May−2011 4:20

EDTC Z−Axis Acceleration	9.810	N/A	9.728	N/A	N/A	N/A	M/S2

Enhanced DTS Cartridge Wellsite Calibration − Detector Calibration
Before: Calibration out of date 30−Apr−2011 23:52

Gamma Ray (Jig − Bkg)	159.0	N/A	159.0	N/A	N/A	14.45	GAPI
Gamma Ray (Calibrated)	164.0	N/A	164.0	N/A	N/A	15.00	GAPI

Accelerator−Porosity Tool − Detector Plateau Settings :

Near Detector Plateau Setting 1732 V
Far Detector Plateau Setting 2114 V
Array Detector Plateau Setting 1964 V

General Purpose Inclinometer / Equipment Identification

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

High Resolution Laterolog Array − B / Equipment Identification

Primary Equipment:		
HRLT Sonde	HRLS − B	969
Auxiliary Equipment:		
HRLT lower Housing	HRLH − B	759
HRLT Lower Cartridge	HRLC − B	759
HRLT upper Housing	HRUH − B	769
HRLT Upper Cartridge	HRUC − B	764

Hostile Litho−Density Sonde / Equipment Identification

Primary Equipment:		
Hostile Litho Density Sonde	HLDS − D	45
Hostile Litho Density High Voltage	HLDV − D	51
Gamma Source Radioactive	GSR − Z	2397
Auxiliary Equipment:		
Hostile Litho Density Pad	HLDP − C	61
Hostile Litho Density High Voltage Housi	HEH − H	53

Hostile Litho−Density Sonde Wellsite Calibration

Background Measurement

Phase	SS Cs Resolution Bkg %	Value
Master		8.421
Before		8.552
After		8.381
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Phase	LS Cs Resolution Bkg %	Value
Master		8.647
Before		8.637
After		8.635
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Phase	LSW1 Background CPS	Value
Master		73.32
Before		72.16
After		72.44
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	LSW2 Background CPS	Value
Master		67.30
Before		65.90
After		66.11
	50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)	

Phase	LSW3 Background CPS	Value
Master		149.6
Before		148.2
After		149.6
	110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)	

Phase	LSW4 Background CPS	Value
Master		182.5
Before		182.4
After		180.1
	140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)	

Phase	LSW5 Background CPS	Value
Master		412.6
Before		411.5
After		410.6
330.0 (Minimum)	600.0 (Nominal)	830.0 (Maximum)

Phase	SSW1 Background CPS	Value
Master		73.02
Before		72.78
After		71.75
55.00 (Minimum)	100.0 (Nominal)	150.0 (Maximum)

Phase	SSW2 Background CPS	Value
Master		124.5
Before		124.2
After		124.3
100.0 (Minimum)	200.0 (Nominal)	260.0 (Maximum)

Phase	SSW3 Background CPS	Value
Master		331.6
Before		329.1
After		330.7
280.0 (Minimum)	500.0 (Nominal)	700.0 (Maximum)

Phase	SSW4 Background CPS	Value
Master		176.9
Before		177.0
After		176.0
150.0 (Minimum)	270.0 (Nominal)	380.0 (Maximum)

Phase	SSW5 Background CPS	Value
Master		128.6
Before		126.6
After		126.4
110.0 (Minimum)	200.0 (Nominal)	270.0 (Maximum)

Master: 7−Apr−2011 5:00 Before: 17−Apr−2011 20:21 After: 27−May−2011 13:15

Hostile Litho−Density Sonde Master Calibration

Detector Background Measurement

Phase	LSW1 Background CPS	Value
Master		73.32
55.00 (Minimum)	100.0 (Nominal)	150.0 (Maximum)

Phase	LSW2 Background CPS	Value
Master		67.30
50.00 (Minimum)	100.0 (Nominal)	140.0 (Maximum)

Phase	LSW3 Background CPS	Value
Master		149.6
110.0 (Minimum)	200.0 (Nominal)	290.0 (Maximum)

Phase	LSW4 Background CPS	Value
Master		182.5
140.0 (Minimum)	250.0 (Nominal)	360.0 (Maximum)

Phase	LSW5 Background CPS	Value
Master		412.6
330.0 (Minimum)	600.0 (Nominal)	830.0 (Maximum)

Phase	LS Cs Resolution Bkg %	Value
Master		8.647
7.000 (Minimum)	9.000 (Nominal)	11.00 (Maximum)

Phase	SSW1 Background CPS	Value
Master		73.02
55.00 (Minimum)	100.0 (Nominal)	150.0 (Maximum)

Phase	SSW2 Background CPS	Value
Master		124.5
100.0 (Minimum)	200.0 (Nominal)	260.0 (Maximum)

Phase	SSW3 Background CPS	Value
Master		331.6
280.0 (Minimum)	500.0 (Nominal)	700.0 (Maximum)

Phase	SSW4 Background CPS	Value
Master		176.9
150.0 (Minimum)	270.0 (Nominal)	380.0 (Maximum)

Phase	SSW5 Background CPS	Value
Master		128.6
110.0 (Minimum)	200.0 (Nominal)	270.0 (Maximum)

Phase	SS Cs Resolution Bkg %	Value
Master		8.421
7.000 (Minimum)	9.000 (Nominal)	11.00 (Maximum)

Master: 7−Apr−2011 5:00

Hostile Litho−Density Sonde Master Calibration

Detector Aluminum Measurement (bkgd−subtracted)

Phase	LSW1 Aluminum CPS	Value
Master		528.0
420.0 (Minimum)	600.0 (Nominal)	770.0 (Maximum)

Phase	LSW2 Aluminum CPS	Value
Master		780.2
650.0 (Minimum)	900.0 (Nominal)	1150 (Maximum)

Phase	LSW3 Aluminum CPS	Value
Master		954.5
800.0 (Minimum)	1100 (Nominal)	1450 (Maximum)

Phase	LSW4 Aluminum CPS	Value
Master		479.7
410.0 (Minimum)	580.0 (Nominal)	740.0 (Maximum)

Phase	LSW5 Aluminum CPS	Value
Master		447.8
410.0 (Minimum)	570.0 (Nominal)	740.0 (Maximum)

Phase	SSW1 Aluminum CPS	Value
Master		2247
2000 (Minimum)	2800 (Nominal)	3200 (Maximum)

Phase	SSW2 Aluminum CPS	Value
Master		6431
5800 (Minimum)	8000 (Nominal)	9300 (Maximum)

Phase	SSW3 Aluminum CPS	Value
Master		9367
8300 (Minimum)	11600 (Nominal)	13500 (Maximum)

Phase	SSW4 Aluminum CPS	Value
Master		3952
3500 (Minimum)	5000 (Nominal)	5800 (Maximum)

Phase	SSW5 Aluminum CPS	Value
Master		528.3
470.0 (Minimum)	660.0 (Nominal)	770.0 (Maximum)

Master: 7−Apr−2011 5:35

Hostile Litho−Density Sonde Master Calibration

Detector Litholog Measurement (bkgd−subtracted)

Phase	LSW1 Iron CPS	Value
Master		370.3
290.0 (Minimum)	400.0 (Nominal)	560.0 (Maximum)

Phase	LSW2 Iron CPS	Value
Master		645.6
520.0 (Minimum)	730.0 (Nominal)	950.0 (Maximum)

Phase	LSW3 Iron CPS	Value
Master		866.1
720.0 (Minimum)	1000 (Nominal)	1350 (Maximum)

Phase	LSW4 Iron CPS	Value
Master		449.2
370.0 (Minimum)	520.0 (Nominal)	700.0 (Maximum)

Phase	LSW5 Iron CPS	Value
Master		418.0
340.0 (Minimum)	470.0 (Nominal)	750.0 (Maximum)

Phase	SSW1 Iron CPS	Value
Master		1722
1500 (Minimum)	2100 (Nominal)	2400 (Maximum)

Phase	SSW2 Iron CPS	Value
Master		5519
	4900 (Minimum) 6800 (Nominal) 7900 (Maximum)	

Phase	SSW3 Iron CPS	Value
Master		8788
	7800 (Minimum) 10800 (Nominal) 12600 (Maximum)	

Phase	SSW4 Iron CPS	Value
Master		3729
	3300 (Minimum) 4600 (Nominal) 5400 (Maximum)	

Phase	SSW5 Iron CPS	Value
Master		487.2
	420.0 (Minimum) 580.0 (Nominal) 680.0 (Maximum)	

Master: 7−Apr−2011 5:20

Hostile Litho−Density Sonde Master Calibration

Quality Ratios

Phase	AL CALIBRATION RATIO 1	Value
Master		1.029
	0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)	

Phase	AL CALIBRATION RATIO 2	Value
Master		2.091
	1.900 (Minimum) 2.100 (Nominal) 2.300 (Maximum)	

Phase	AL CALIBRATION RATIO 3	Value
Master		0.5693
	0.4500 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum)	

Phase	AL CALIBRATION RATIO 4	Value
Master		0.5015
	0.4000 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum)	

Phase	Pad−Wear SS Ratio	Value
Master		0.9939
	0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum)	

Phase	Pad−Wear LS Ratio	Value
Master		0.9925
	0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum)	

Phase	Pad−Position SS Ratio	Value
Master		1.001
	0.9900 (Minimum) 0.9940 (Nominal) 1.015 (Maximum)	

Phase	Pad−Position LS Ratio	Value
Master		0.9862
	0.9850 (Minimum) 0.9940 (Nominal) 1.010 (Maximum)	

Master: 7−Apr−2011 5:35

Litho−Density Spectroscopy Cartridge − B / Equipment Identification

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

Accelerator−Porosity Tool / Equipment Identification

Primary Equipment:		
Accelerator−Porosity Sonde	APS − C	22
APS Minitron	MNTR − F	5589
Auxiliary Equipment:		
Accelerator−Porosity Housing	APH − AC	22
APS Calibration Water Tank	SFT − 178	1
APS Aluminum Calibrator Sleeve	SFT − 281	1

Accelerator−Porosity Tool Wellsite Calibration

Detector Background

Phase	Near Det Bkg Cntrate CPS	Value
Master		33.54
Before		31.97
	1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	

Phase	Far Det Bkg Cntrate CPS	Value
Master		32.81
Before		33.85
	1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	

Phase	Array−1 Det Bkg Cntrate CPS	Value
Master		29.03
Before		30.64
	1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	

Phase	Array−2 Det Bkg Cntrate CPS	Value
Master		30.21
Before		30.41
	1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	

Phase	Array Therm Det Bkg Cntrate CPS	Value
Master		32.80
Before		32.21
	1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	

Master: 8−Apr−2011 5:40 Before: 27−May−2011 5:18

Accelerator−Porosity Tool Wellsite Calibration

Calibration Ratios

Phase	Near/Far Calibration Ratio	Value

Phase	Near/Array Calibration Ratio	Value

Phase	Near/Array Cal Ratio Up/Down	Value

Master		0.8835	Master		1.057	Master		1.003
0.8000 (Minimum)	0.9250 (Nominal)	1.050 (Maximum)	0.9000 (Minimum)	1.030 (Nominal)	1.170 (Maximum)	0.9700 (Minimum)	1.000 (Nominal)	1.030 (Maximum)

Master: 8−Apr−2011 5:40

Accelerator−Porosity Tool Wellsite Calibration

Tank Check

Phase	Array−1 Standoff Porosity PU	Value	Phase	Array−2 Standoff Porosity PU	Value	Phase	Average Slowing Down Time US	Value
Master		11.34	Master		11.41	Master		5.888
9.900 (Minimum)	11.75 (Nominal)	13.60 (Maximum)	9.900 (Minimum)	11.75 (Nominal)	13.60 (Maximum)	5.500 (Minimum)	6.000 (Nominal)	6.250 (Maximum)
Phase	Array−1 SDT Ratio Up/Down	Value	Phase	Array−2 SDT Ratio Up/Down	Value	Phase	Sigma Formation CU	Value
Master		0.9889	Master		0.9810	Master		26.90
0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	20.00 (Minimum)	27.50 (Nominal)	35.00 (Maximum)

Master: 8−Apr−2011 5:41

Accelerator−Porosity Tool Master Calibration

Detector Calibration

Phase	Near/Far Calibration Ratio	Value	Phase	Near/Array Calibration Ratio	Value	Phase	Near/Array Cal Ratio Up/Down	Value
Master		0.8835	Master		1.057	Master		1.003
0.8000 (Minimum)	0.9250 (Nominal)	1.050 (Maximum)	0.9000 (Minimum)	1.030 (Nominal)	1.170 (Maximum)	0.9700 (Minimum)	1.000 (Nominal)	1.030 (Maximum)

Master: 8−Apr−2011 5:40

Accelerator−Porosity Tool Master Calibration

Tank Check

Phase	Array−1 Standoff Porosity PU	Value	Phase	Array−2 Standoff Porosity PU	Value	Phase	Average Slowing Down Time US	Value
Master		11.34	Master		11.41	Master		5.888
9.900 (Minimum)	11.75 (Nominal)	13.60 (Maximum)	9.900 (Minimum)	11.75 (Nominal)	13.60 (Maximum)	5.500 (Minimum)	6.000 (Nominal)	6.250 (Maximum)
Phase	Array−1 SDT Ratio Up/Down	Value	Phase	Array−2 SDT Ratio Up/Down	Value	Phase	Sigma Formation CU	Value
Master		0.9889	Master		0.9810	Master		26.90
0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	20.00 (Minimum)	27.50 (Nominal)	35.00 (Maximum)

Master: 8−Apr−2011 5:41

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		9.728
9.610 (Minimum)	9.810 (Nominal)	10.01 (Maximum)

Before: 27−May−2011 4:20

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		6.630	Before		159.0	Before		164.0
0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)	144.5 (Minimum)	159.0 (Nominal)	173.5 (Maximum)	149.0 (Minimum)	164.0 (Nominal)	179.0 (Maximum)

Before: Calibration out of date 30−Apr−2011 23:52

Company:	**Lamont Doherty**
Well:	**Expedition 335 Site U1256D**
Field:	**Superfast Spreading Crust IV**
Rig:	**Joides Resolution**
Ocean:	**Pacific Ocean**

Schlumberger

Hostile Litho Density
Accelerator Porosity Sonde
Gamma Ray