Schlumberger

Company: **International Ocean Discovery Program**

Well: **Expedition 356, Site U1461 D**
Field: **Indonesian Throughflow**
Rig: **JOIDES Resolution** Ocean: **Indian**

Rig: JOIDES Resolution
Field: Indonesian Throughflow
Location: Latitude: S 20.213875 Deg
Well: Expedition 356, Site U1461 D
Company: International Ocean Discovery Pr

High Resolution Laterolog Array (HRLA)
Hostile Litho Density (HLDS)
Magnetic Susceptibility (MSS), (HNGS)

LOCATION

Latitude: S 20.213875 Deg
Longitude: E 115.0656483 Deg

Elev.: K.B. −138.30 m
G.L. 0.00 m
D.F. −138.30 m

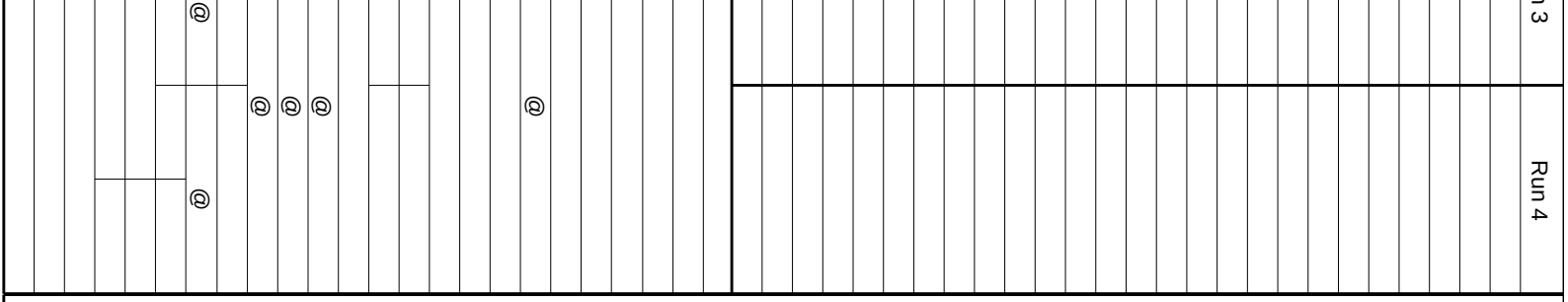
Permanent Datum: Sea Floor — Elev.: 0.00 m
Log Measured From: Sea Floor — 0.00 m above Perm. Datum
Drilling Measured From: Sea Floor

API Serial No.	Max. Hole Devi.	Longitude	Latitude
	0 deg	E 113.5778	S 28.6641

	Run 1	Run 2	Run

Logging Date		11−Aug−2015			
Run Number		1			
Depth Driller		1095 m			
Schlumberger Depth		1029 m			
Bottom Log Interval		1029 m			
Top Log Interval		0 m			
Casing Driller Size @ Depth		5.500 in	@ 216 m	@	
Casing Schlumberger		213 m			
Bit Size		9.875 in			
Type Fluid In Hole		Sepiolite with Barite			
MUD Density	Viscosity	1.318 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	0.147 @ 45	@ 45	@	@
Maximum Recorded Temperatures		45 degC			
Circulation Stopped	Time	29−Aug−2015	10:30		
Logger On Bottom	Time	29−Aug−2015	06:15		
Unit Number	Location	627314	Houma, LA		
Recorded By		K. Swain			
Witnessed By		M. Gurnis, Z. Mateo, E. Garrett			

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: FMS/DSI	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Hole drilled with RCB coring bit and bottom hole assembly (BHA). 9 7/8" BS	
Drill pipe set at 79 mbsf for wireline logging.	
Downlog run with corrections computed using bit size; uplogs corrected for actual hole size using caliper.	
Callapsed hole above logging tools caused significant pull at surface for most	
of open hole interval.	
Fluid type was sepiolite+barite at 11 lbs/gal. Corrections for this applied.	
Depth originally recorded from drill floor; played back with sea floor as reference zero.	
All logs presented in measured depth below sea floor (MDBSF).	
Maximum observed temperature on the MSS temperature was 45 degC.	

RUN 1

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

LOGGED INTERVAL	START	STOP

RUN 2

SERVICE ORDER #:
PROGRAM VERSION:
FLUID LEVEL:

LOGGED INTERVAL	START	STOP

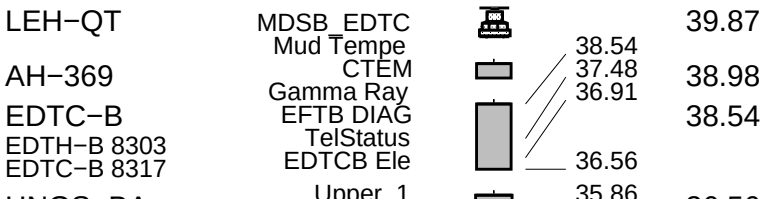
EQUIPMENT DESCRIPTION

RUN 1

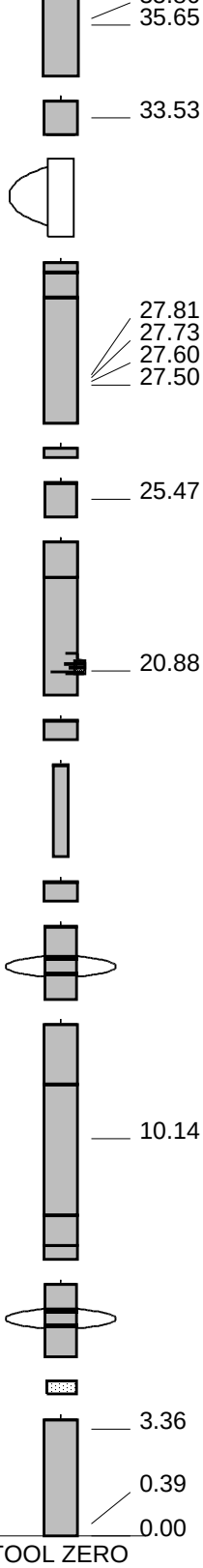
SURFACE EQUIPMENT

SFT−281 1
SFT−178 1
GSR−U 616008
WITM (EDTS)−A 1

DOWNHOLE EQUIPMENT



RUN 2



HNGS−BA 36.56
HNGS−BA 177
HNSH−BA 174

HNGC−B 34.06

ILE−F 33.00
ILE−F 72

AH−191 30.56

APS−C 30.25
APH−AC 121
APS−C 212
MNTR−F 6504

AH−190 26.31

LDSC−B 26.00

HLDS 24.94
GSR−Z 8113
HLDV−D 45
HLDS−D 45
HEH−H 47
HLDP−C 45

AH−184_NonMagKnuckleJoint 20.12

AH−NonMagSpacer 19.51
AH−NonMagSpacer 2

AH−184_NonMagKnuckleJoint 16.61

AH−MCD2 16.00
AH−MCD2 2

HRLT−B 13.72
HRUH−B 978
HRUC−B 764
HRLS−B 768
HRLH−B 968
HRLC−B 974
AH−270 1708

AH−MCD1 6.35
AH−MCD1 1

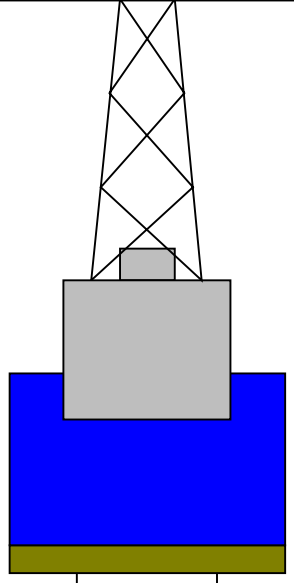
AH−230 4.07

MSS_LDEO−A 3.67
ELIC−A 1
MSS_LDEO−A 3

TOOL ZERO

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		−138.3				
Derrick Floor Elevation		−138.3				
Mean Sea Level		−127.3				
					4.1	
				0	4.1	Sea Floor
				79	9.875	Open Hole
				1095		Total Depth

Company: International Ocean Discovery Program | Well: Expedition 356, Site U1461 D

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_010LUP	FN:15	PRODUCER	29−Aug−2015 07:07	999.0 M	120.2 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_032PUP	FN:42	PRODUCER	03−Sep−2015 10:44	858.0 M	−20.7 M

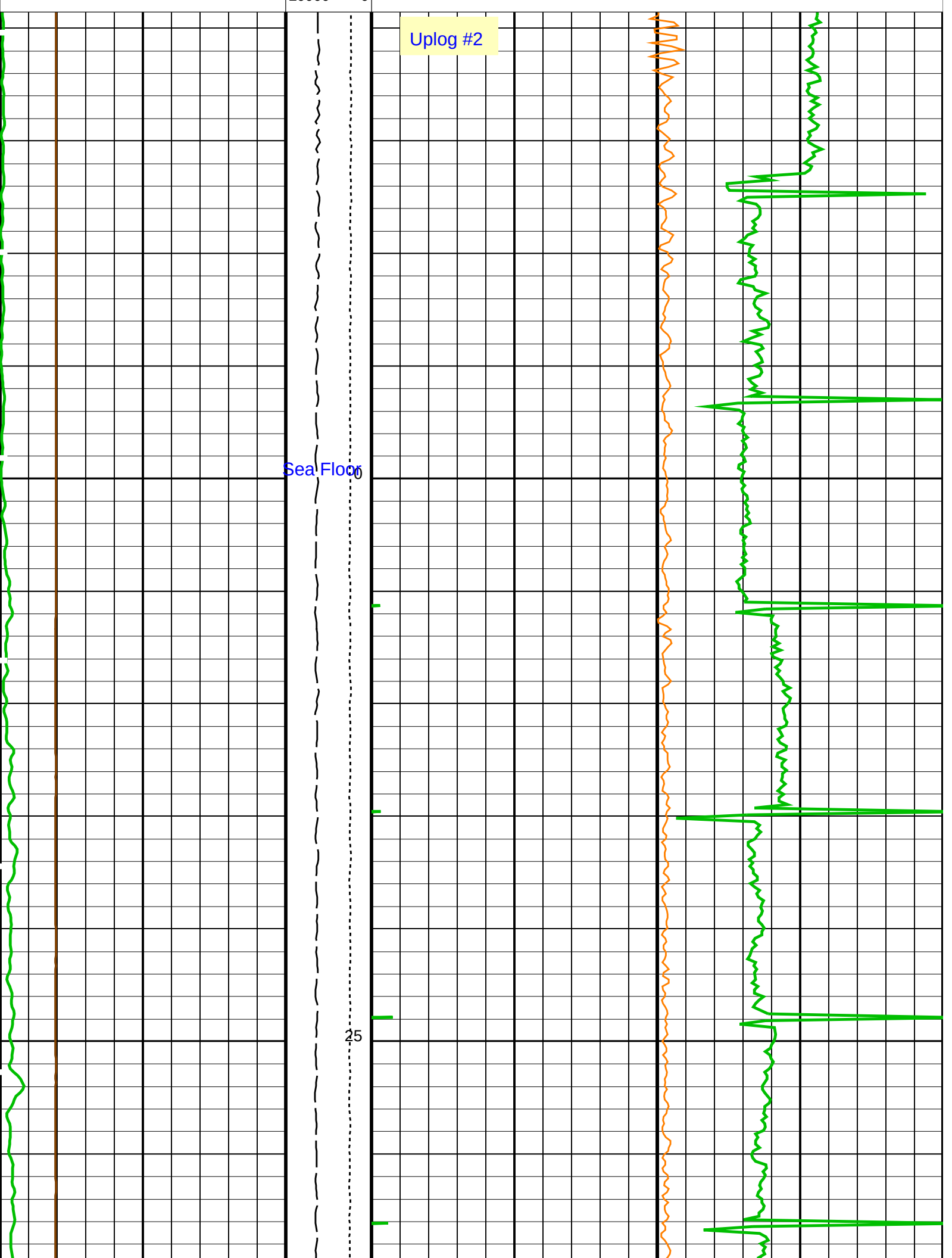
OP System Version: 19C0−187

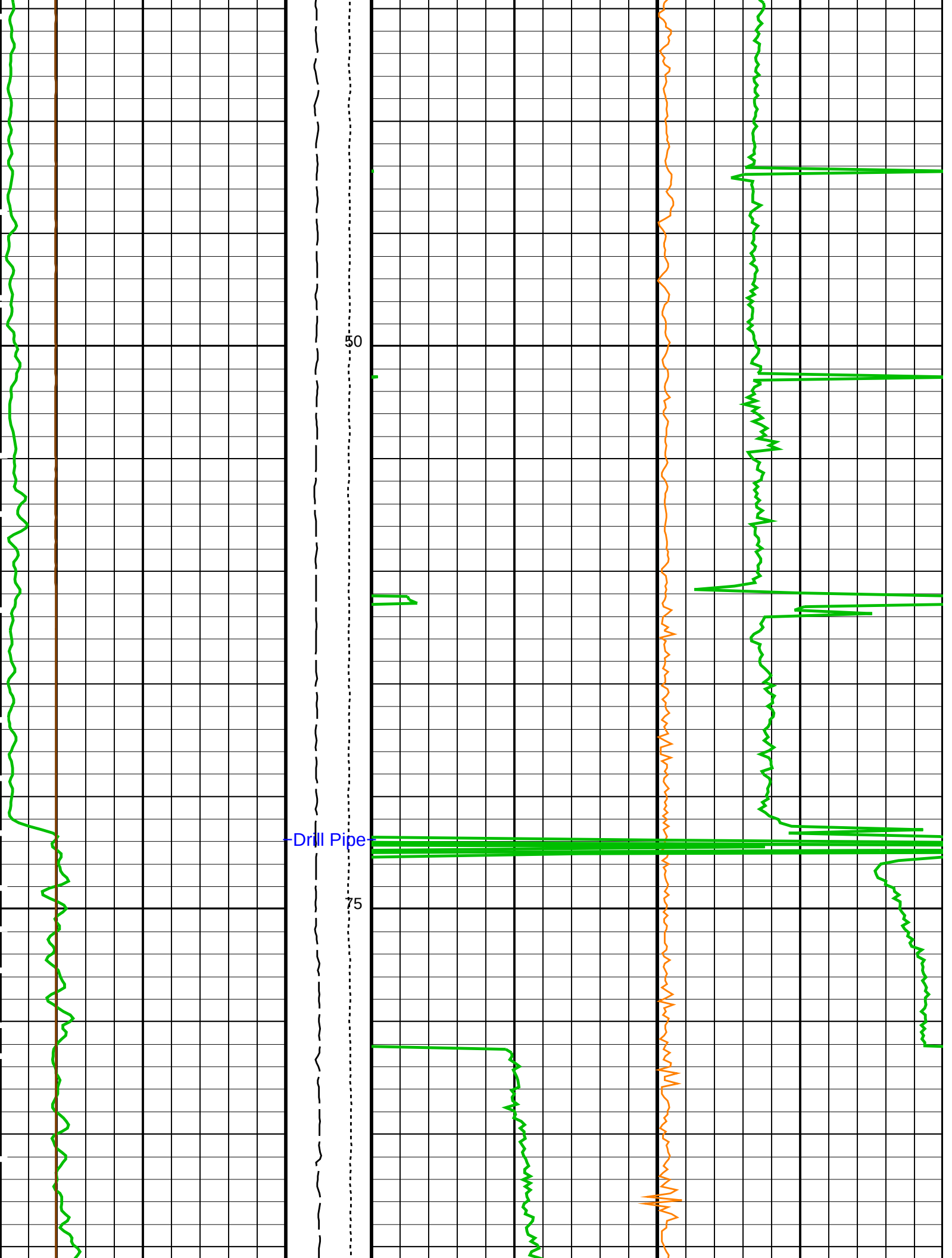
MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

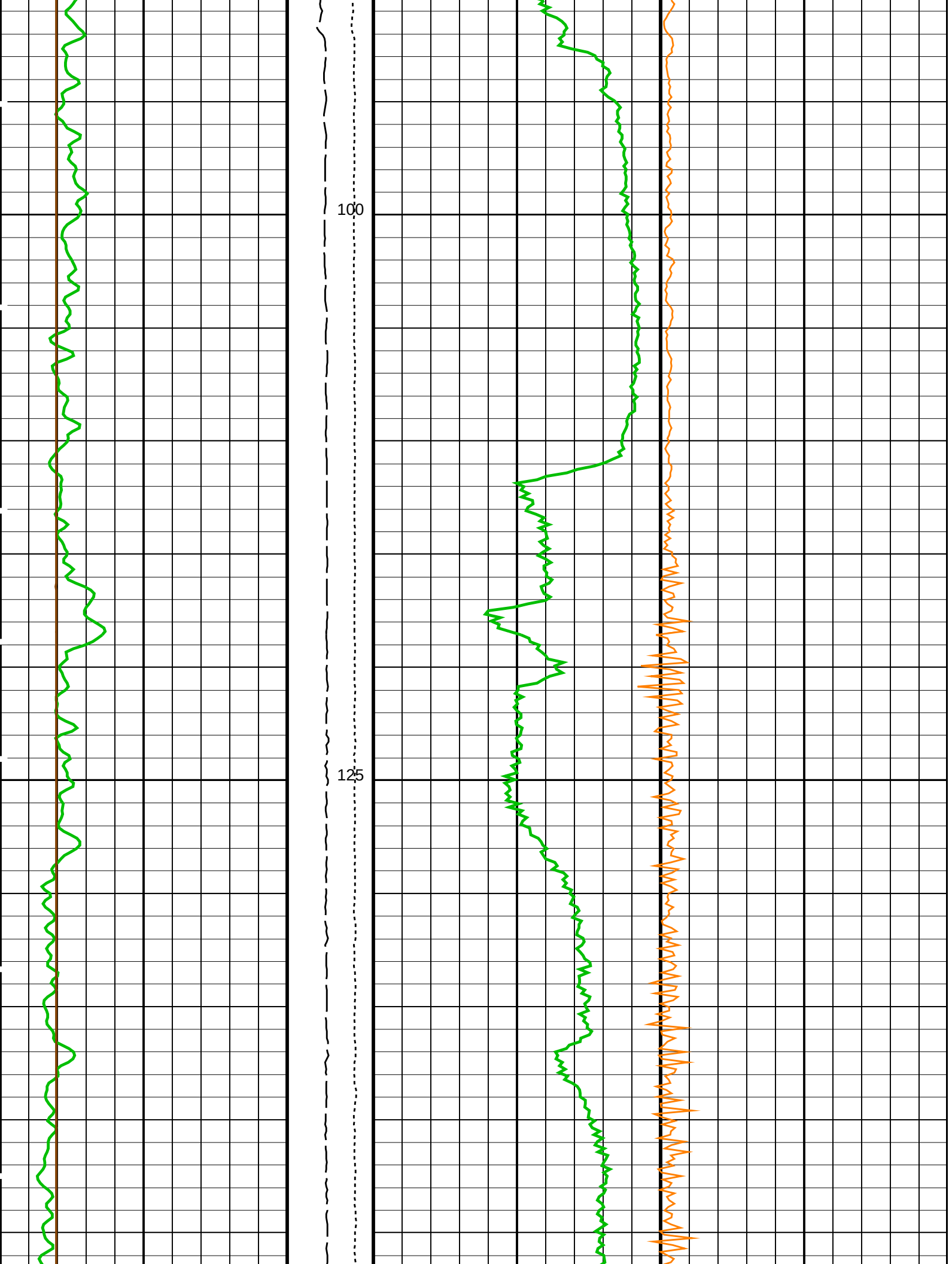
PIP SUMMARY

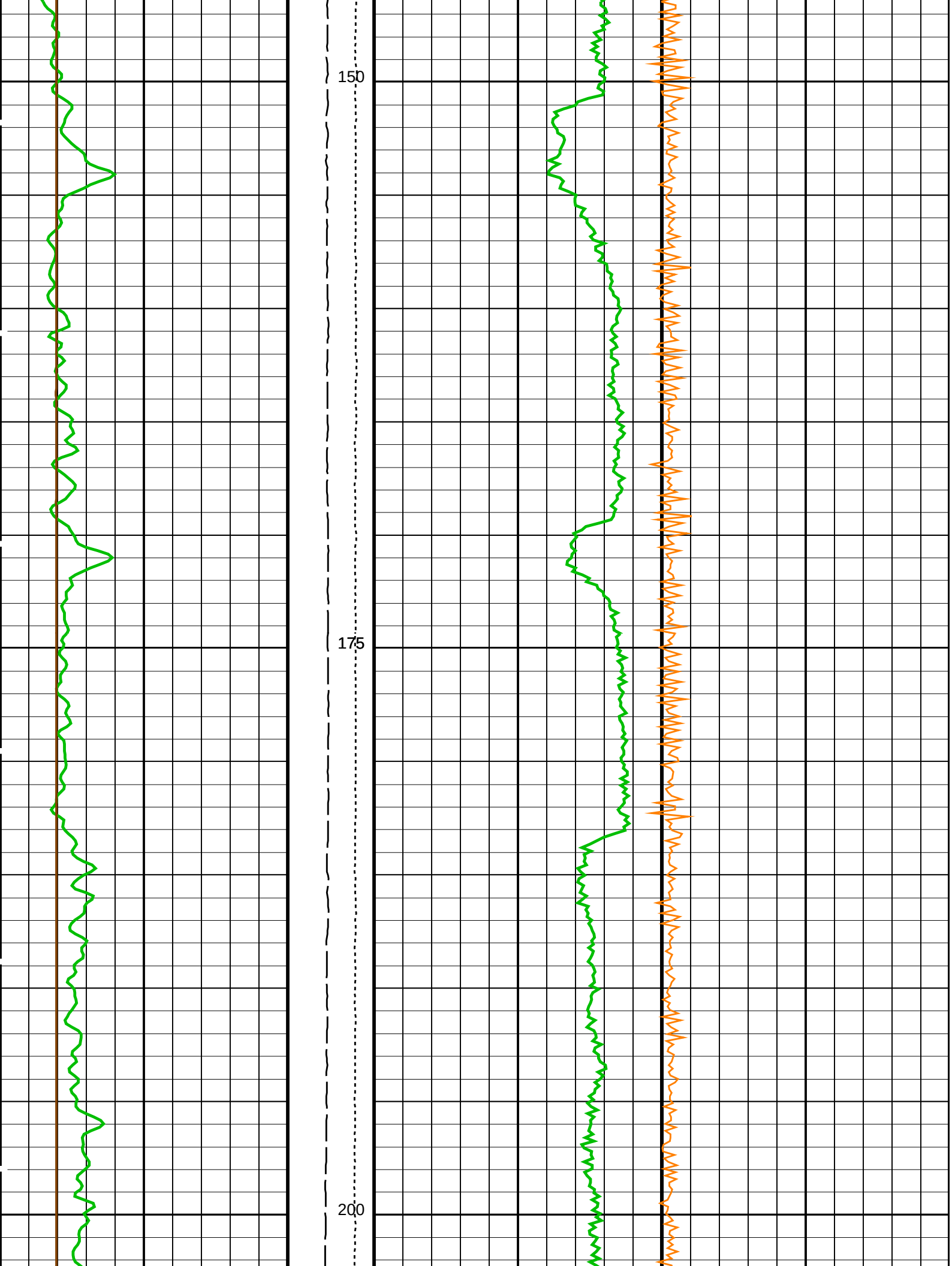
Time Mark Every 60 S

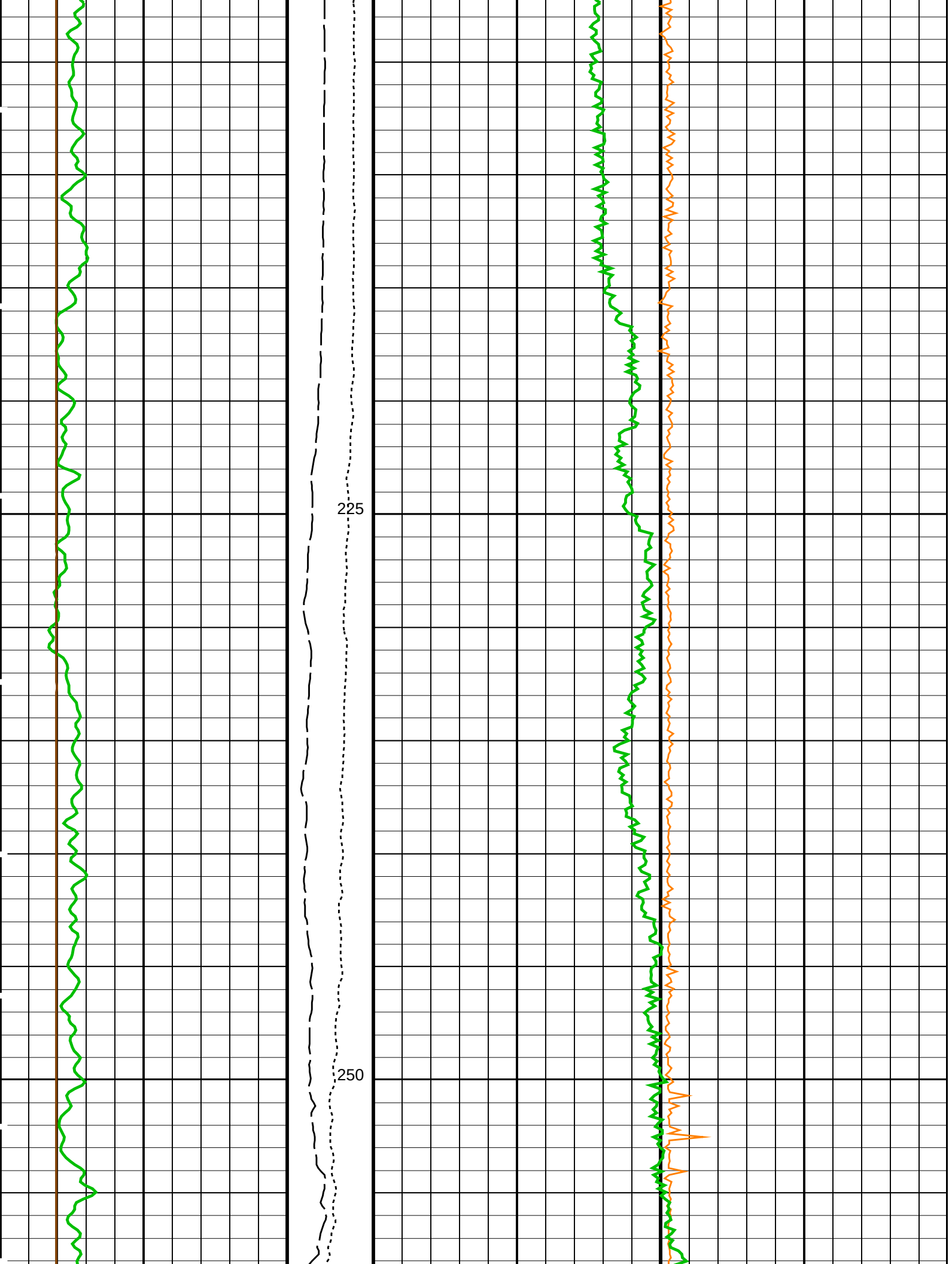
Gamma Ray (GR_EDTC) 0 (GAPI) 100	Calibrated Downhole Force (CDF) (LBF) 3000 0	Dual−Coil Susceptibility (MSSLSUS_LDEO) 0 (PPM) 5000
HLDS Caliper (LCAL) 0 (IN) 20	Tension (TENS) (LBF) 10000 0	Axial Acceleration (MSSZACC_LDEO) 0 (M/S2) 20

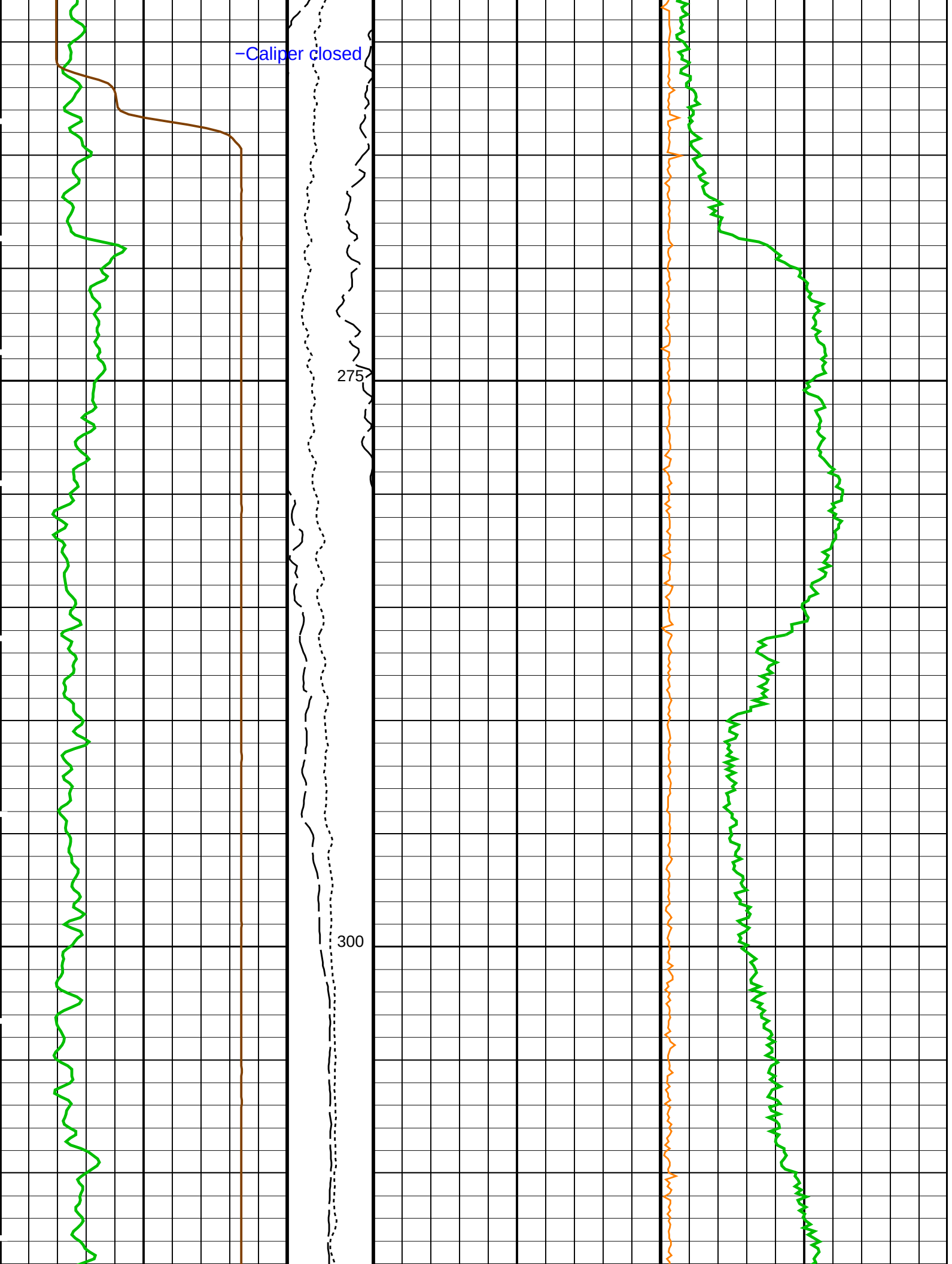

Uplog #2
Sea Floor
0
25

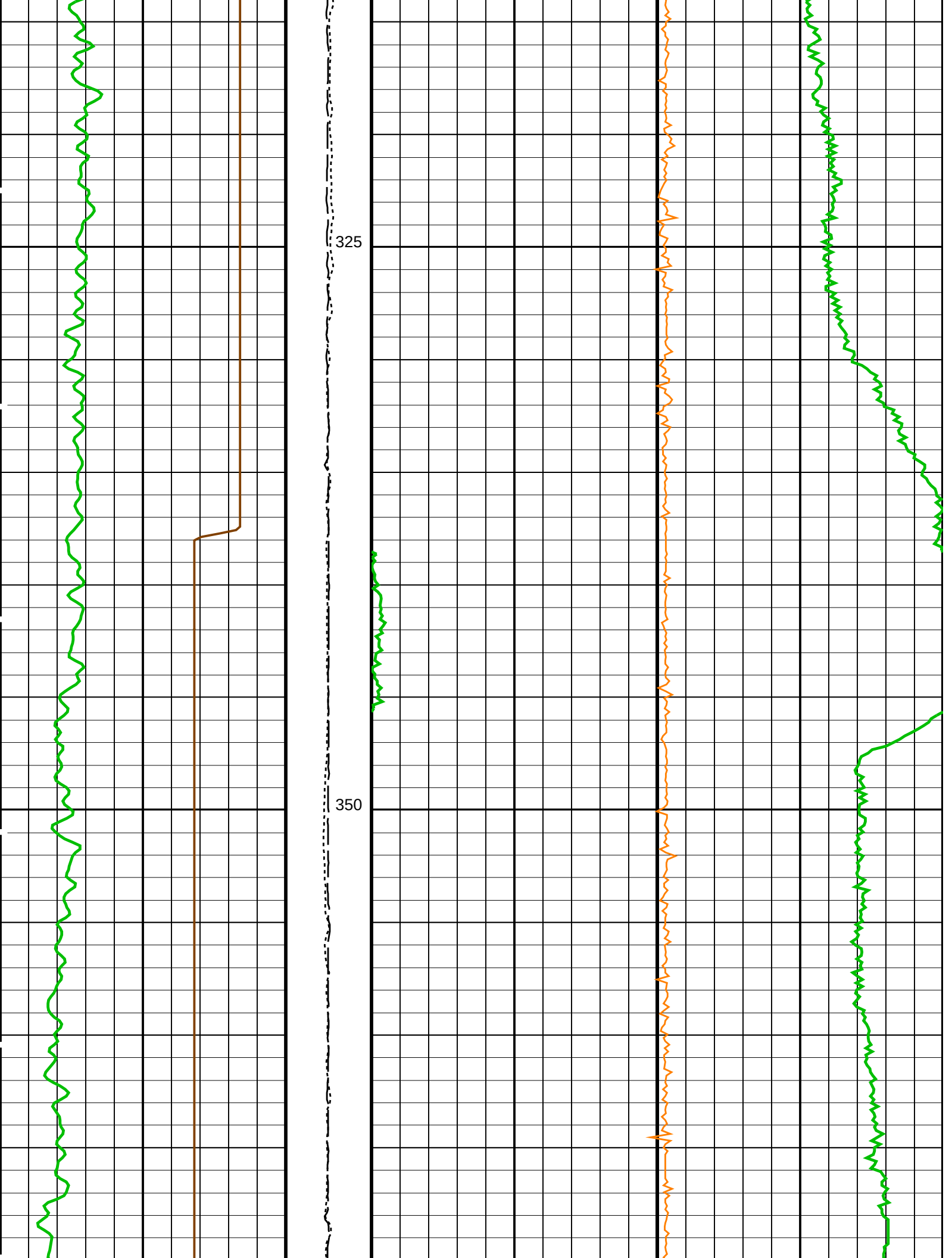

50
Drill Pipe
75

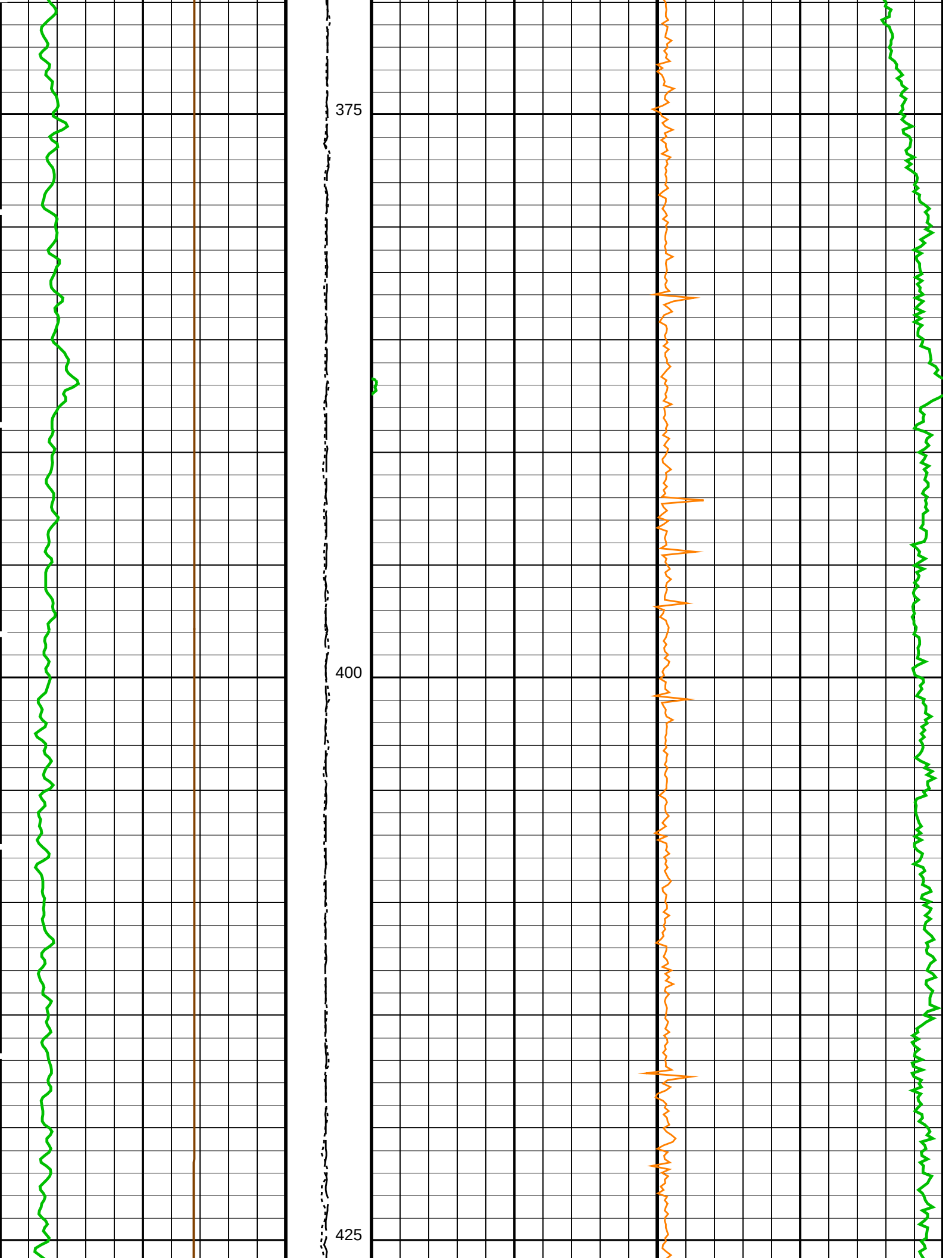

100
125

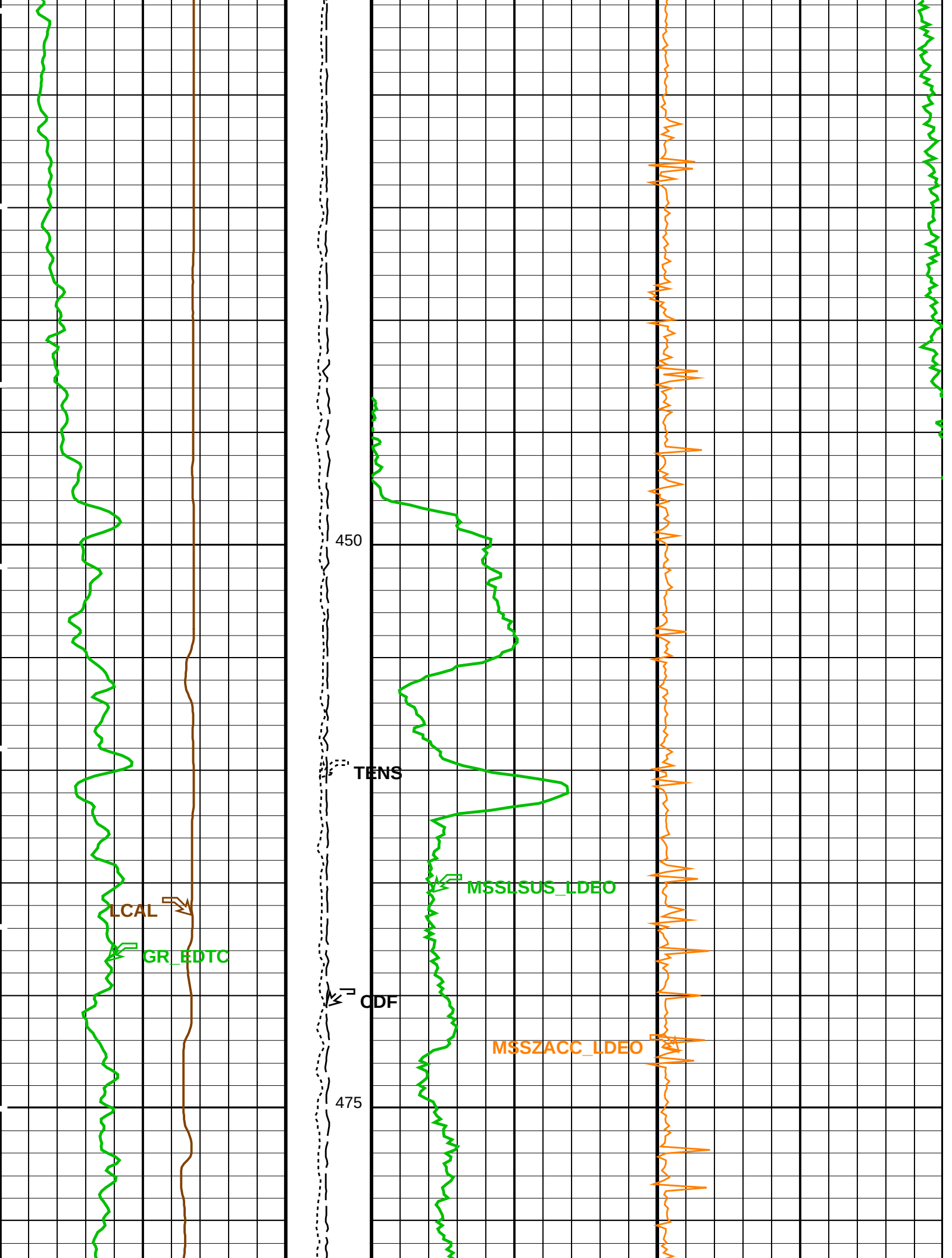

150
175
200

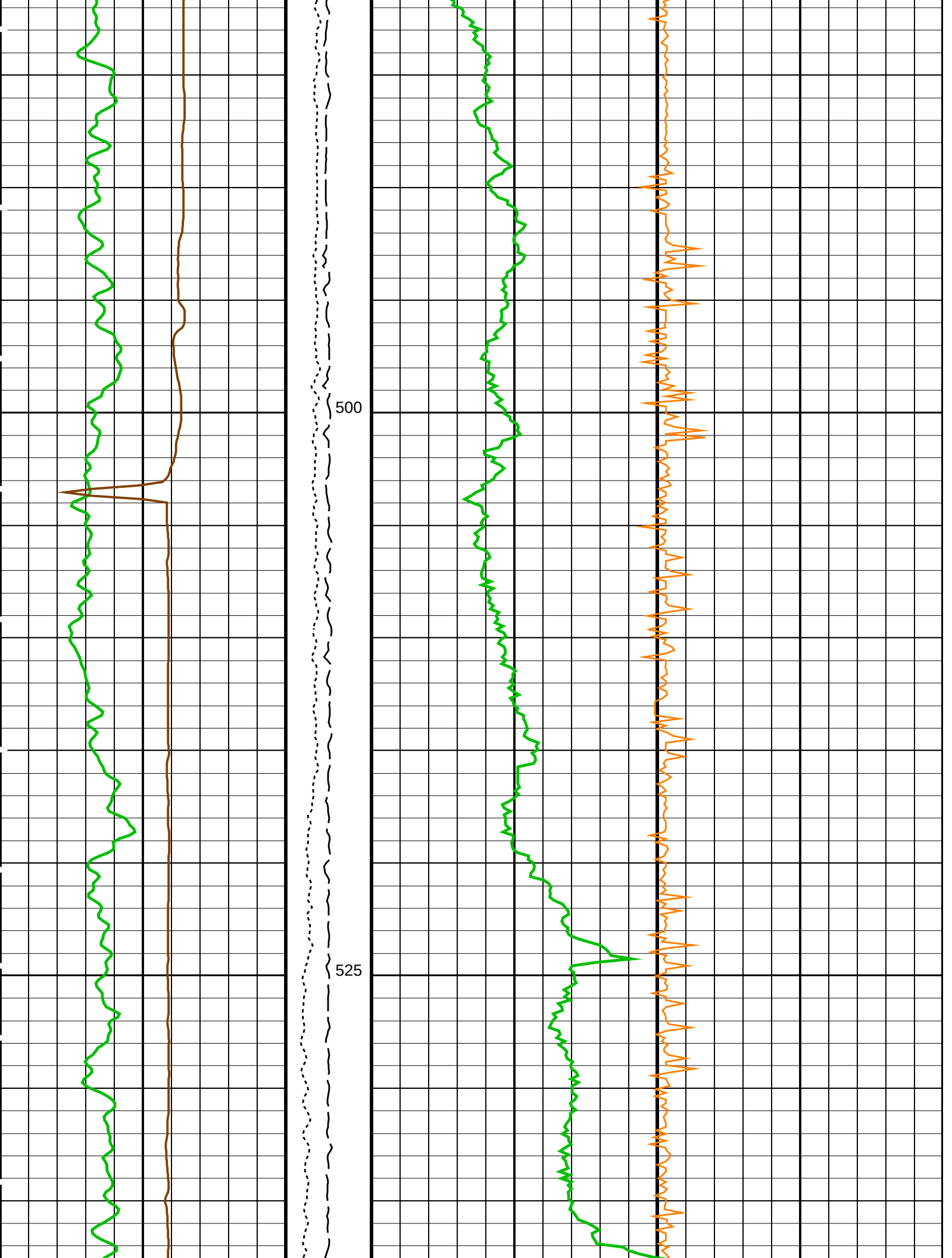

225
250

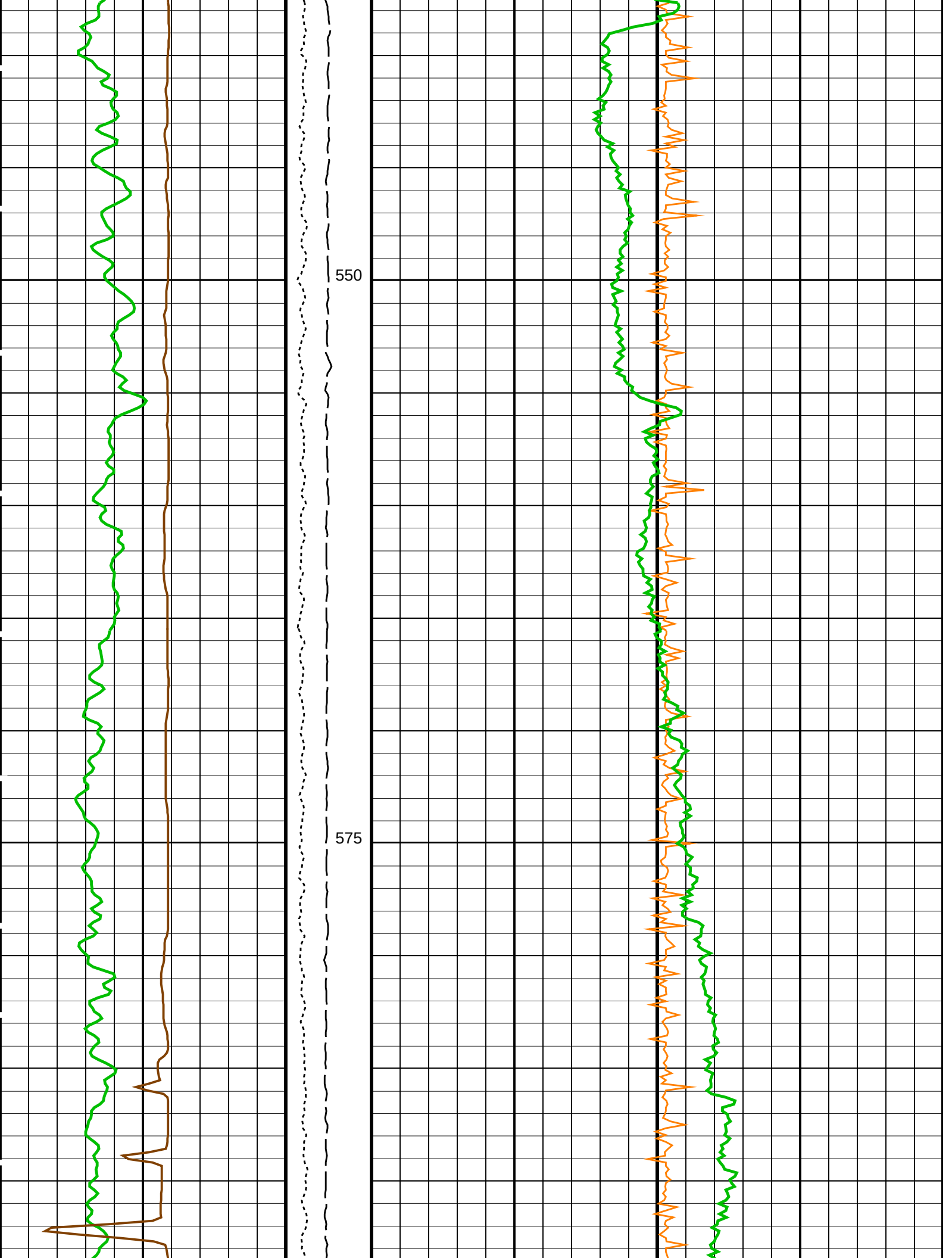

−Caliper closed
275
300

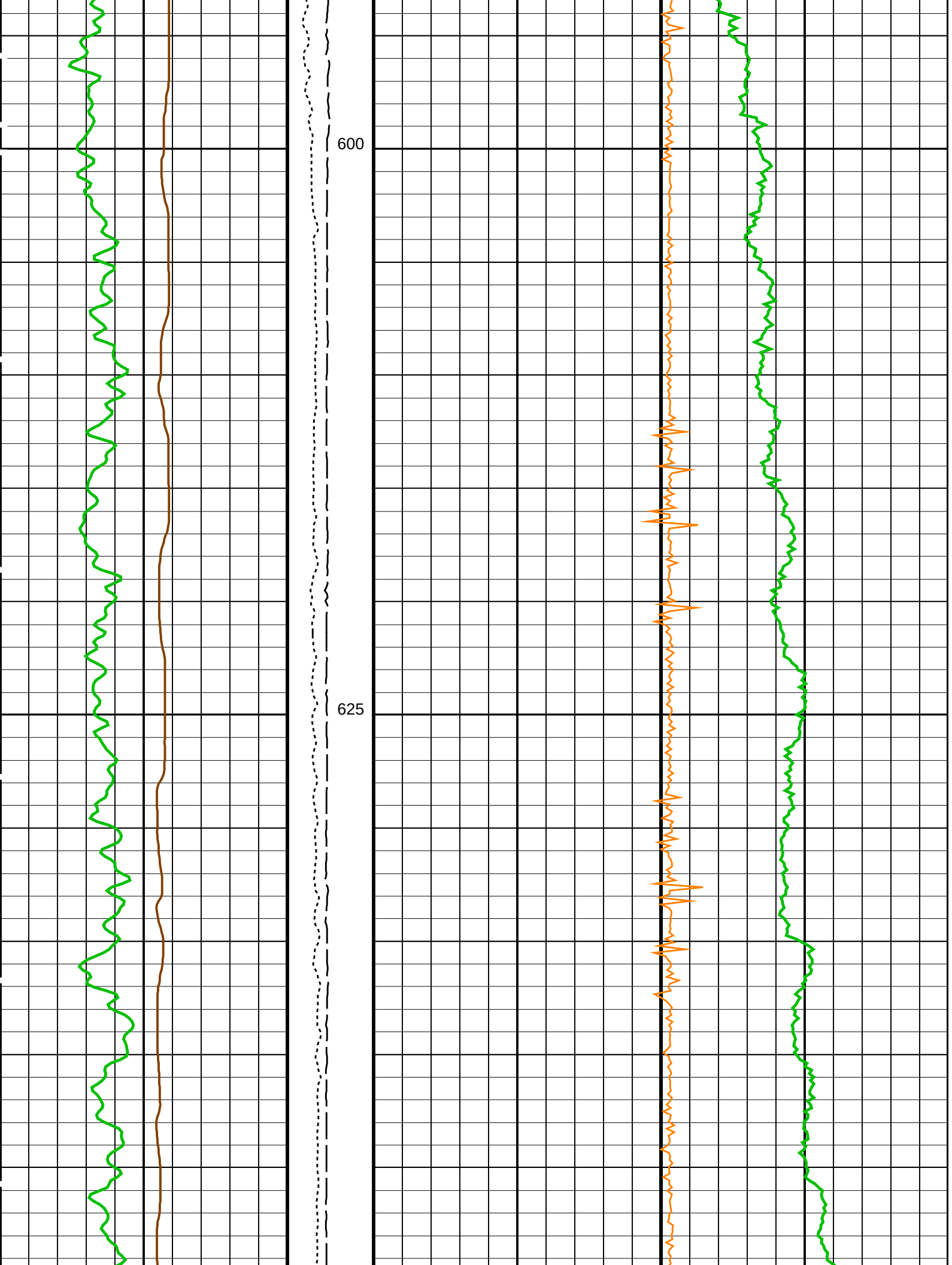

325
350

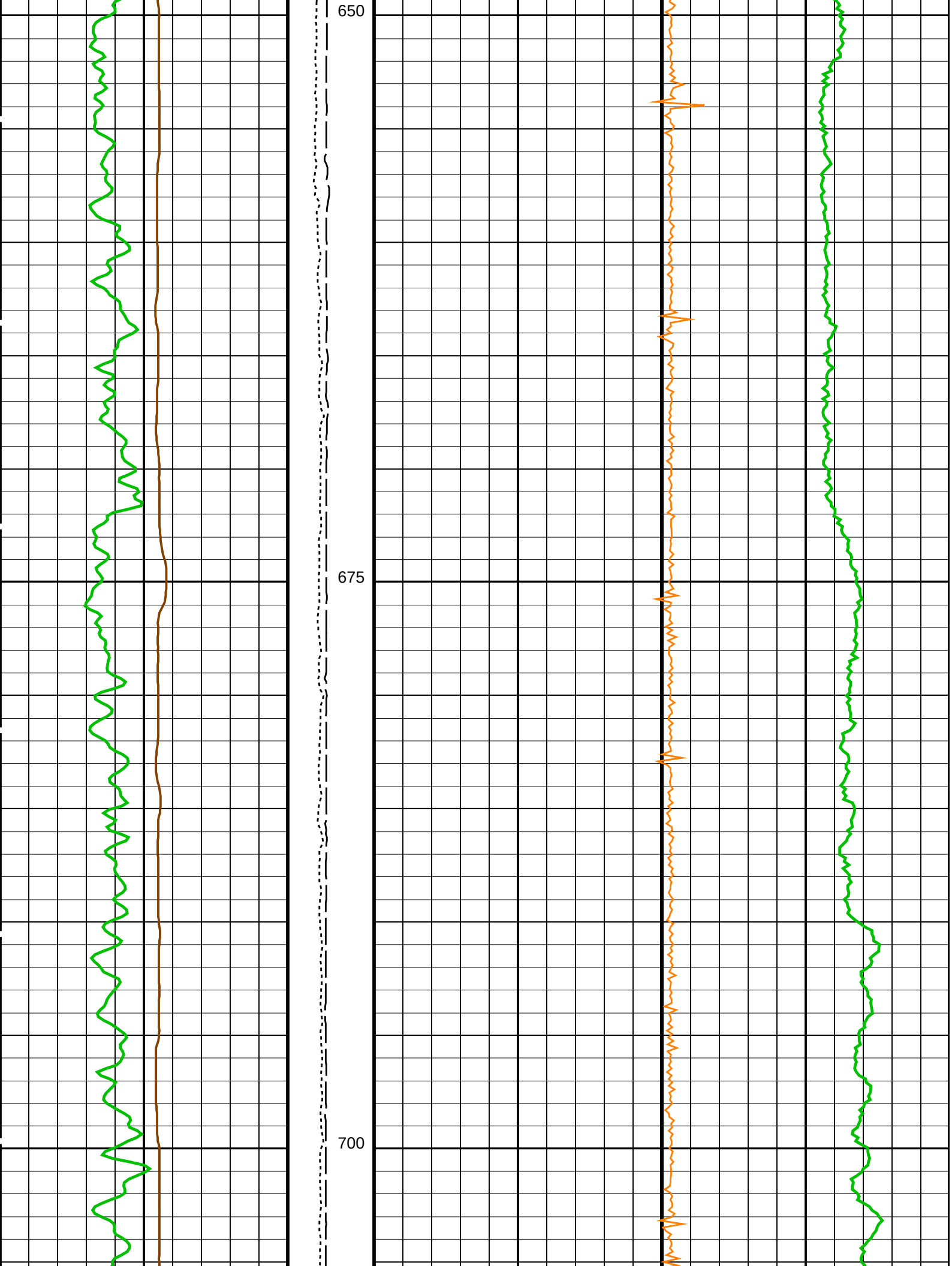

375
400
425

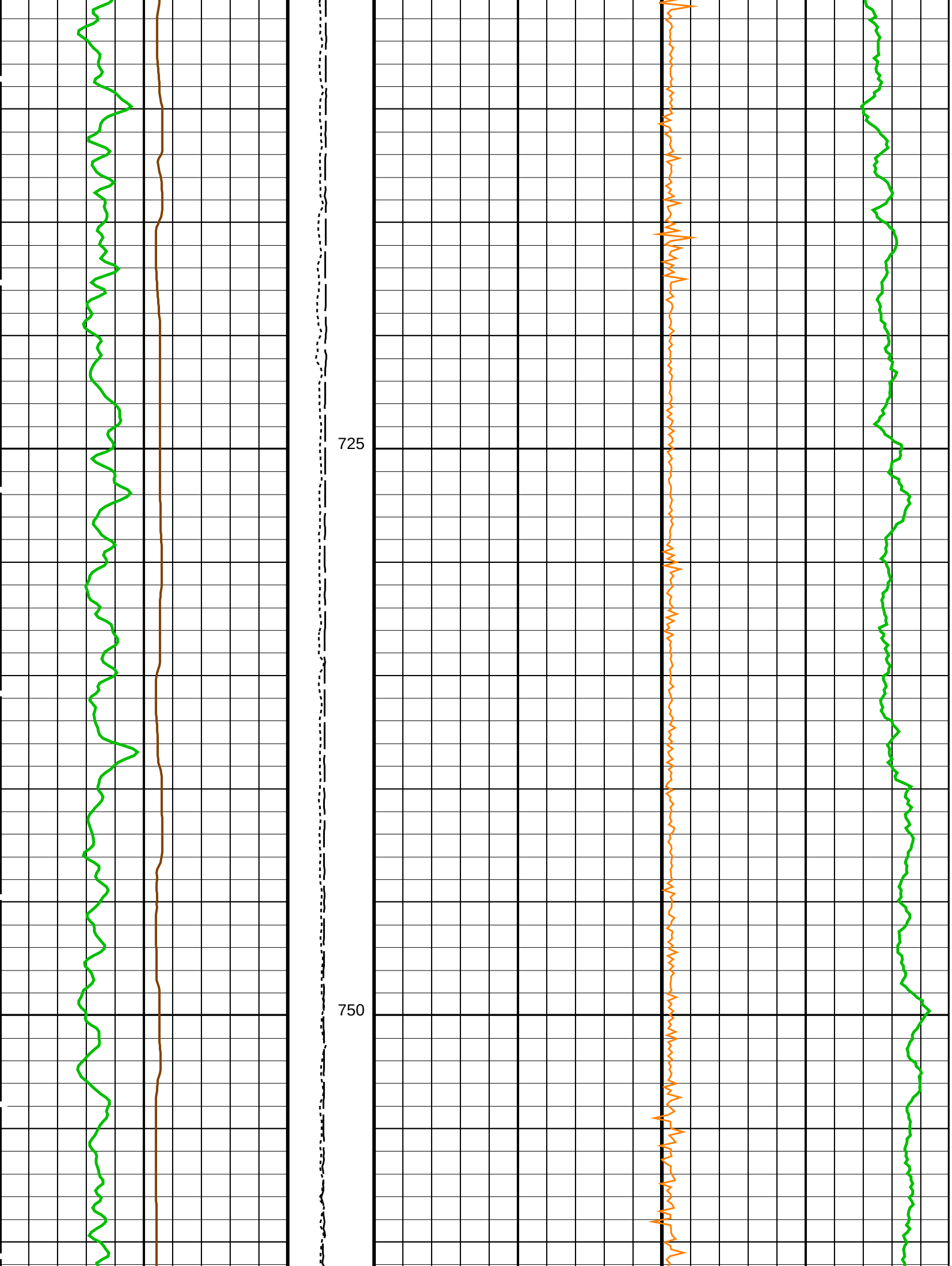

450
TENS
MSSLSUS_LDEO
LCAL
GR_EDTC
CDF
MSSZACC_LDEO
475

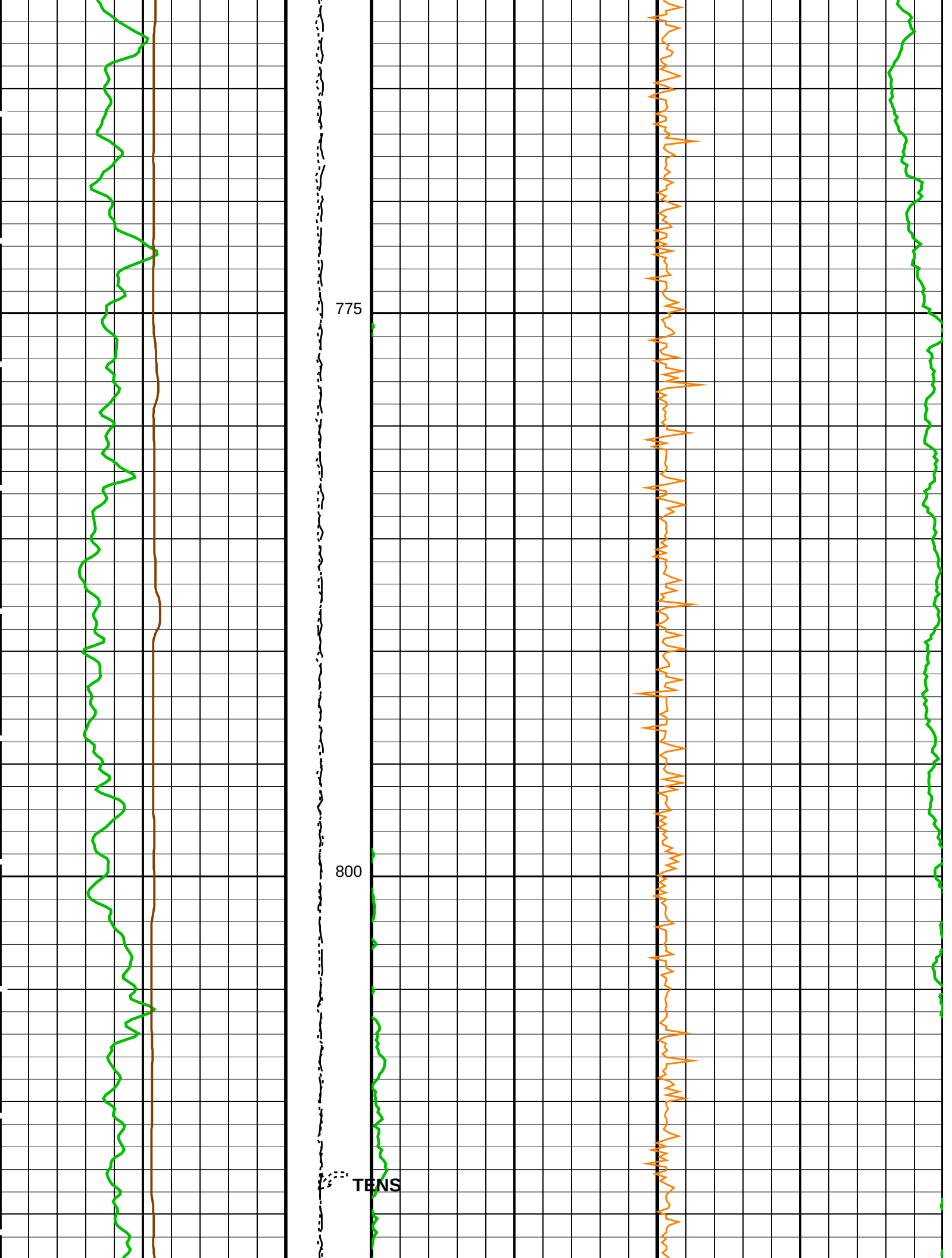

500
525

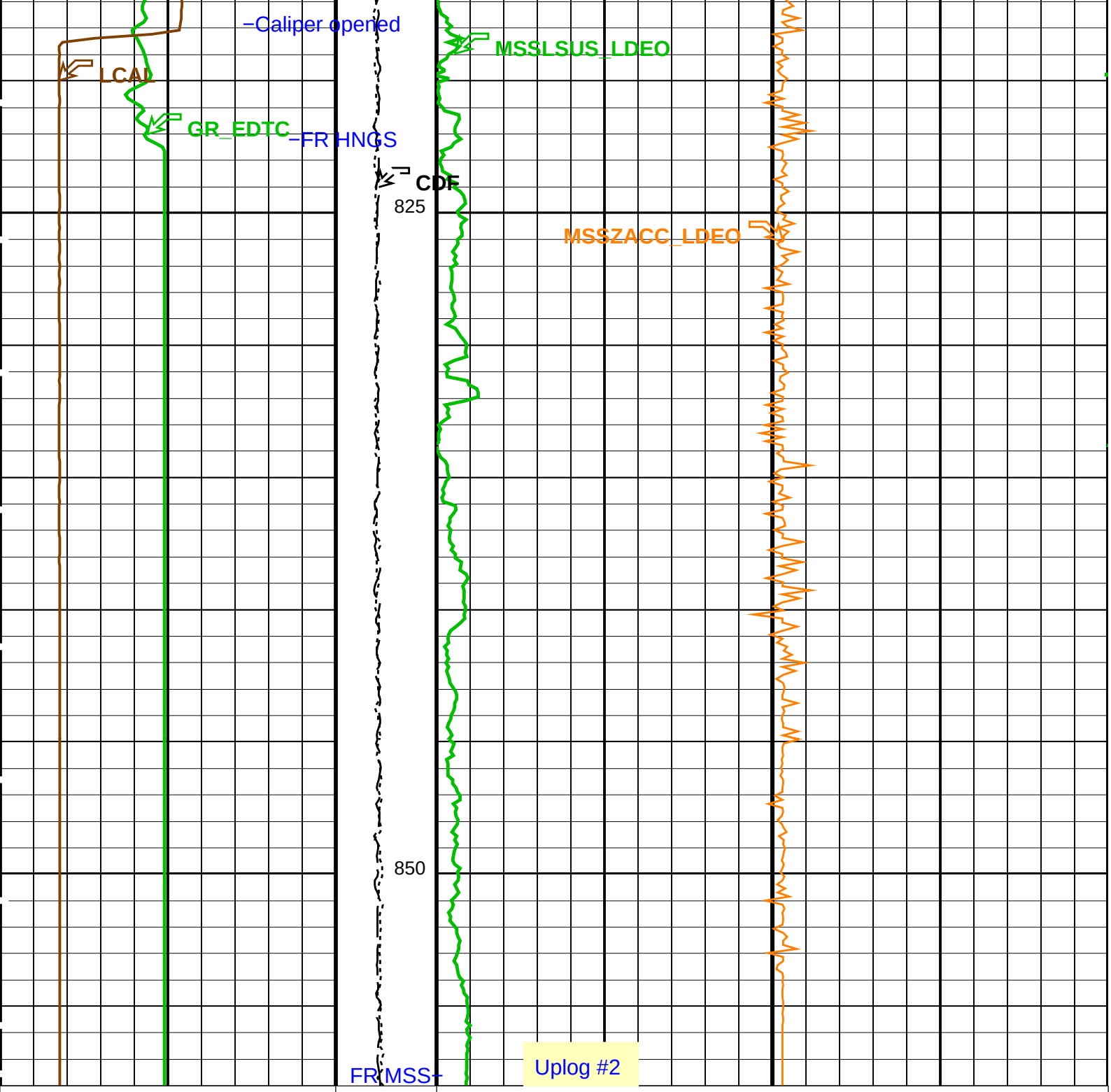

550
575


600
625


650
675
700


725
750


775
800
TENS



HLDS Caliper (LCAL)	Tension (TENS)	Axial Acceleration (MSSZACC_LDEO)
0 (IN) 20	10000 (LBF) 0	0 (M/S2) 20
Gamma Ray (GR_EDTC)	**Calibrated Downhole Force (CDF)**	**Dual−Coil Susceptibility (MSSLSUS_LDEO)**
0 (GAPI) 100	3000 (LBF) 0	0 (PPM) 5000

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	HRLT_R: High Resolution Laterolog Array - R	

	HRLT−B: High Resolution Laterolog Array − B		
BHS	**Borehole Status**	**OPEN**	
BHT	**Bottom Hole Temperature (used in calculations)**	**45**	**DEGC**
CALSTAT	**HRLTB Calibration Status**	**SHALLOW_DONE**	
CALTEMP	**HRLTB Calibration Temperature**	**20.9455**	**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**	**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**	**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**	**2.6**	**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**	**1938.41**	**V**
ADSO	**APS Array Detectors Data Source Switch**	**Both**	
AFSD	**APS Far Detector High Voltage Setting**	**2034.64**	**V**
AHCS	**APS Holesize Correction Source**	**GCSE**	
AHSS	**APS Holesize Correction Switch**	**ON**	
AMTY	**APS Environmental Corrections Mud Type**	**WaterBaseBarite**	
ANSD	**APS Near Detector High Voltage Setting**	**1700.34**	**V**
ASOS	**APS Standoff Correction Switch**	**ON**	
ATSS	**APS Temperature−Pressure−Salinity Correction Switch**	**OFF**	
BHFL_APS	**APS TNPH Borehole Fluid Type**	**WATER**	
BHS	**Borehole Status**	**OPEN**	
BHT	**Bottom Hole Temperature (used in calculations)**	**45**	**DEGC**
BSCO_APS	**APS TNPH Borehole Salinity Correction Option**	**NO**	
DPPM	**Density Porosity Processing Mode**	**HIRS**	
DSCO_APS	**APS TNPH Density Source Correction Option**	**MEASURED**	
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**	**BARITE**	
MATR	**Rock Matrix for Neutron Porosity Corrections**	**LIMESTONE**	
MCCO_APS	**APS TNPH Mud Cake Correction Option**	**NO**	
MCOR_APS	**APS TNPH Mud Correction**	**BARI**	
MWCO_APS	**APS TNPH Mud Weight Correction Option**	**YES**	
NARC	**APS Near/Array Calibration Ratio**	**1.0863**	

NFRC	APS Near/Far Calibration Ratio	0.97772	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	NO	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	YES	
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)	45	DEGC
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	0.018227	DC/M
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	−0.00110818	
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	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.991778	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00117	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	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	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	20	DEGC
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	1.32	G/C3
DO	Depth Offset for Playback	−141.0	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	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	−50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	1100	M
TDD	Total Depth − Driller	1095.00	M
TDL	Total Depth − Logger	1029.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

OP System Version: 19C0−187

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

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_010LUP	FN:15	PRODUCER	29−Aug−2015 07:07	999.0 M	120.2 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_032PUP	FN:42	PRODUCER	03−Sep−2015 10:44

Company: International Ocean Discovery Program — Well: Expedition 356, Site U1461 D

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_009LUP	FN:13	PRODUCER	29−Aug−2015 06:19	1168.1 M	1020.0 M

Output DLIS Files

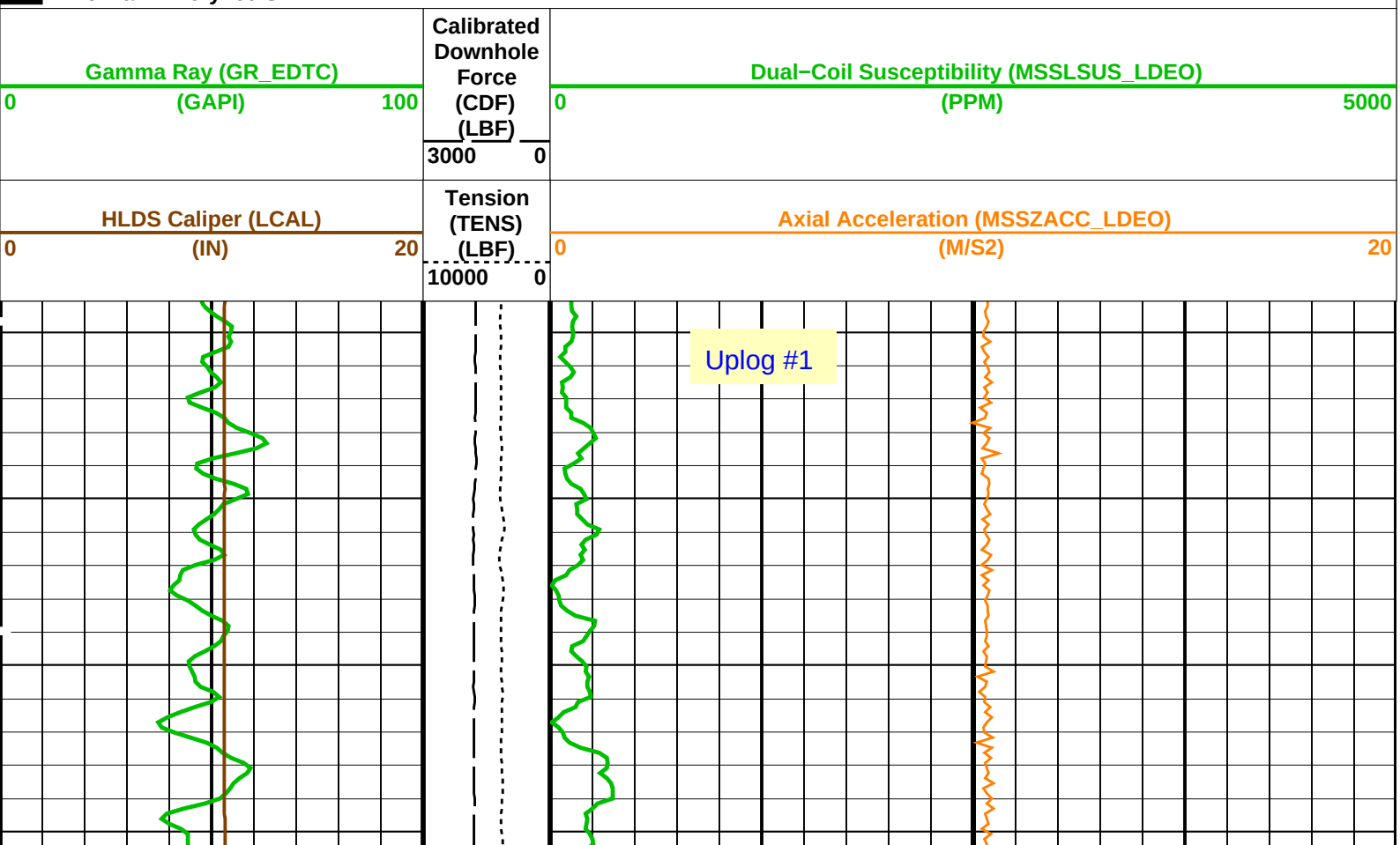
DEFAULT	MSS_LDEO_HRLA_LDL_031PUP	FN:41	PRODUCER	03−Sep−2015 09:58	1027.2 M	879.0 M

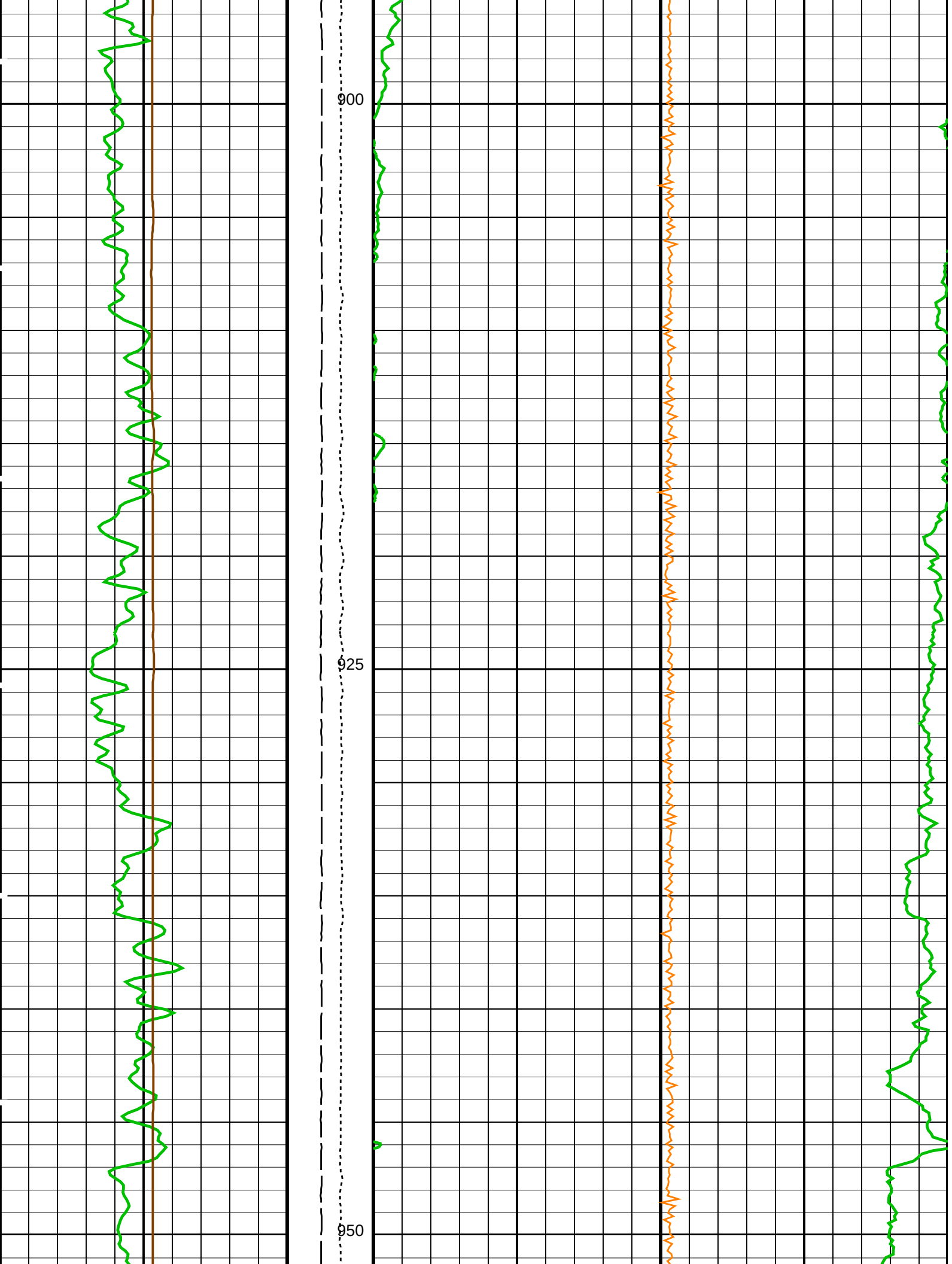
OP System Version: 19C0−187

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

PIP SUMMARY

Time Mark Every 60 S

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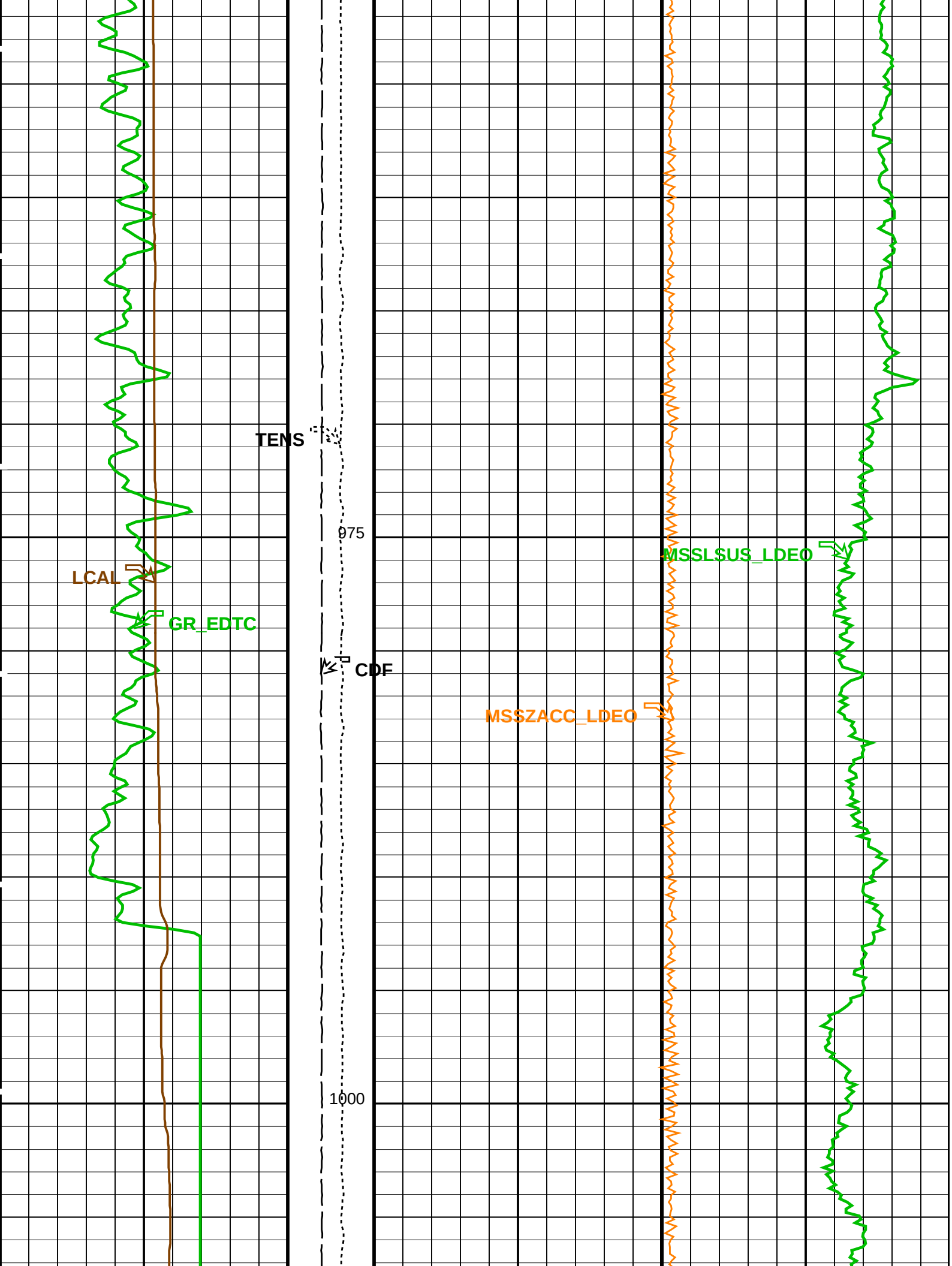
925
950


TENS
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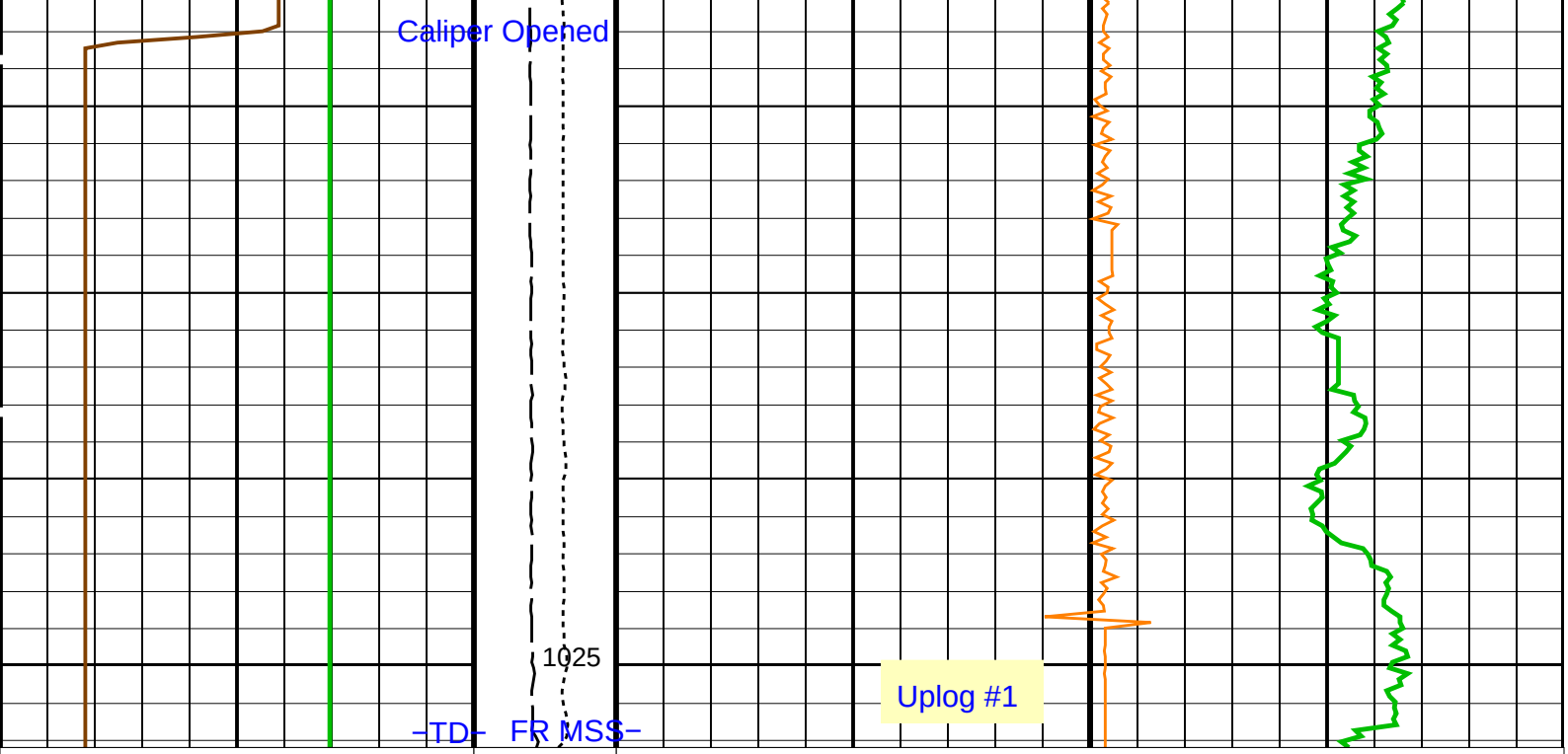
LCAL
GR_EDTC
CDF
MSSLSUS_LDEO
MSSZACC_LDEO
1000



HLDS Caliper (LCAL)	Tension (TENS)	Axial Acceleration (MSSZACC_LDEO)
0 (IN) 20	(LBF) 10000 0	0 (M/S2) 20
Gamma Ray (GR_EDTC)	**Calibrated Downhole Force (CDF) (LBF)**	**Dual−Coil Susceptibility (MSSLSUS_LDEO)**
0 (GAPI) 100	3000 0	0 (PPM) 5000

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	20.9455	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	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	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	2.6	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	1938.41	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2034.64	V
AHCS	APS Holesize Correction Source	GCSE	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1700.34	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature−Pressure−Salinity Correction Switch	OFF	
BHFL_APS	APS TNPH Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	DEGC
BSCO_APS	APS TNPH Borehole Salinity Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source Correction Option	MEASURED	
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	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	NO	
MCOR_APS	APS TNPH Mud Correction	BARI	
MWCO_APS	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.0863	
NFRC	APS Near/Far Calibration Ratio	0.97772	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	NO	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	YES	
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)	45	DEGC
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	0.018227	DC/M
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	−0.00110818	
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	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.991778	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00117	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	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	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	20	DEGC
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	1.32	G/C3
DO	Depth Offset for Playback	−141.0	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	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	−50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	1100	M
TDD	Total Depth − Driller	1095.00	M
TDL	Total Depth − Logger	1029.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: MSS_Logging Vertical Scale: 1:200 Graphics File Created: 03−Sep−2015 09:59

OP System Version: 19C0−187

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

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_009LUP	FN:13	PRODUCER	29−Aug−2015 06:19	1168.1 M	1020.0 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_031PUP	FN:41	PRODUCER	03−Sep−2015 09:58

Company: International Ocean Discovery Program Well: Expedition 356, Site U1461 D

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_HRLA_028LUP	PRODUCER	03−Sep−2015 09:20	1170.1 M	82.3 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_030PUP	FN:40	PRODUCER	03−Sep−2015 09:36	1029.2 M	−58.7 M

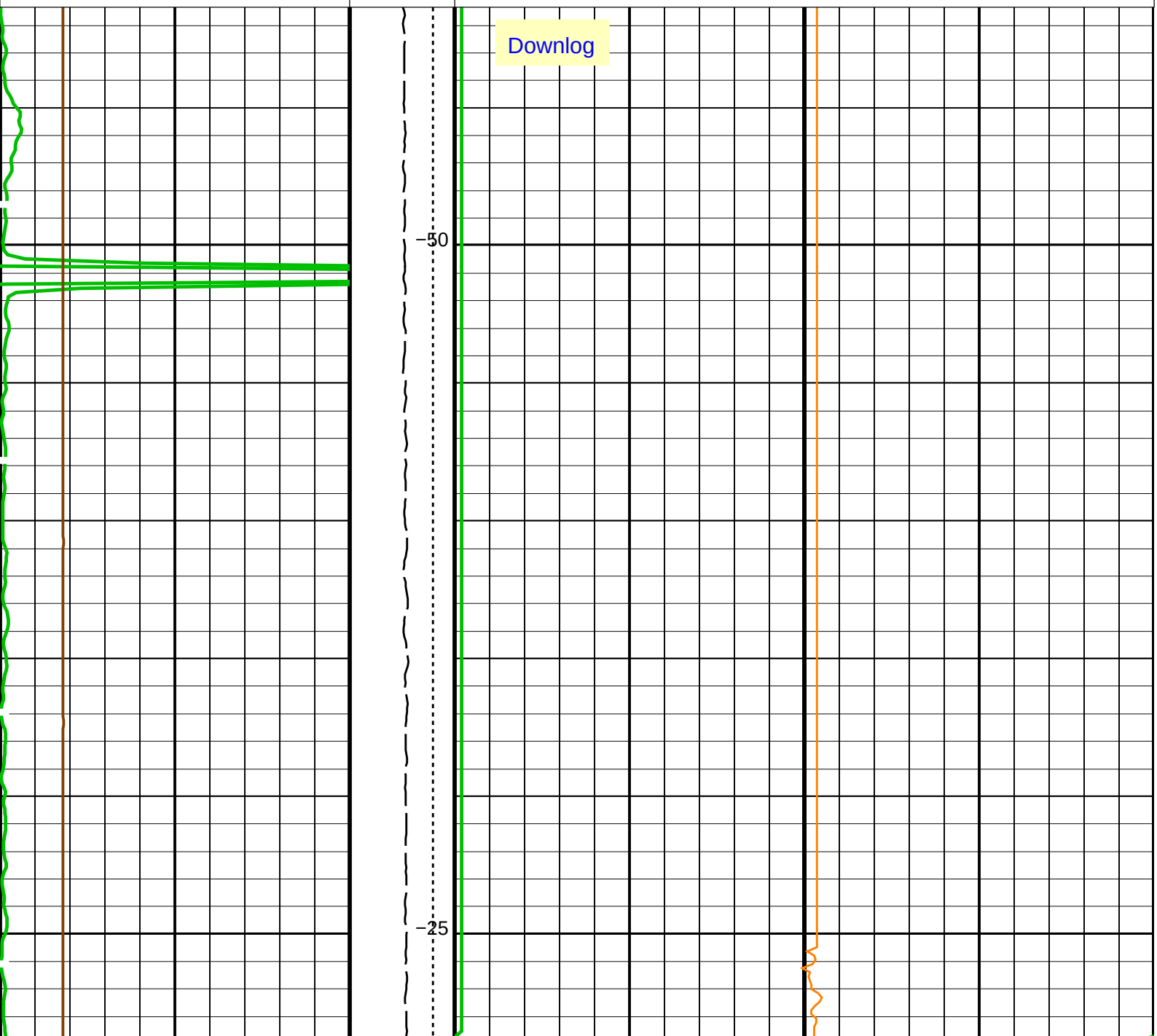
OP System Version: 19C0−187

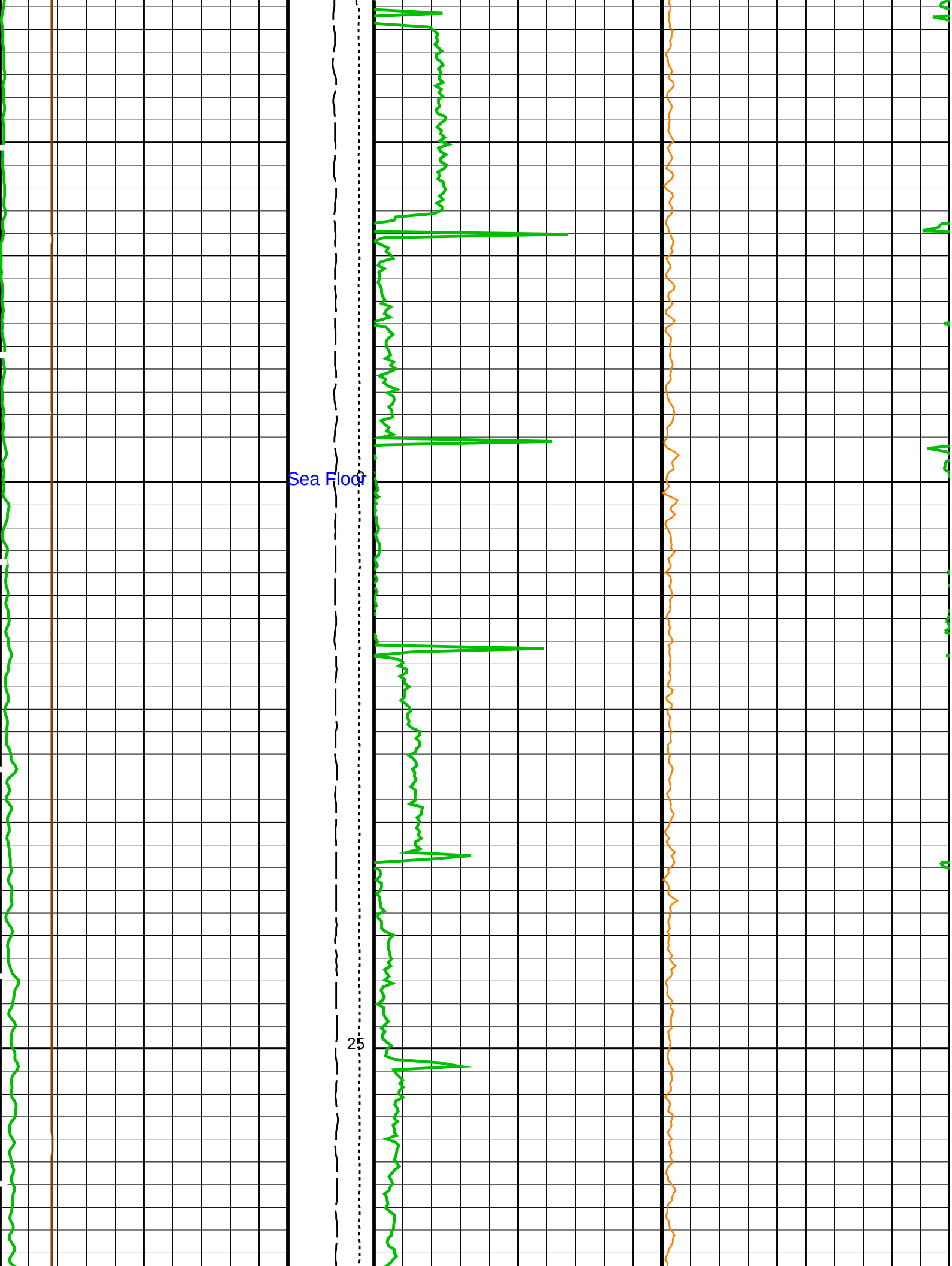
MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

PIP SUMMARY

Time Mark Every 60 S

Gamma Ray (GR_EDTC)	Calibrated Downhole Force (CDF) (LBF)	Dual−Coil Susceptibility (MSSLSUS_LDEO)
0 (GAPI) 100	3000 0	0 (PPM) 5000
HLDS Caliper (LCAL)	**Tension (TENS) (LBF)**	**Axial Acceleration (MSSZACC_LDEO)**
0 (IN) 20	10000 0	0 (M/S2) 20




Sea Floor
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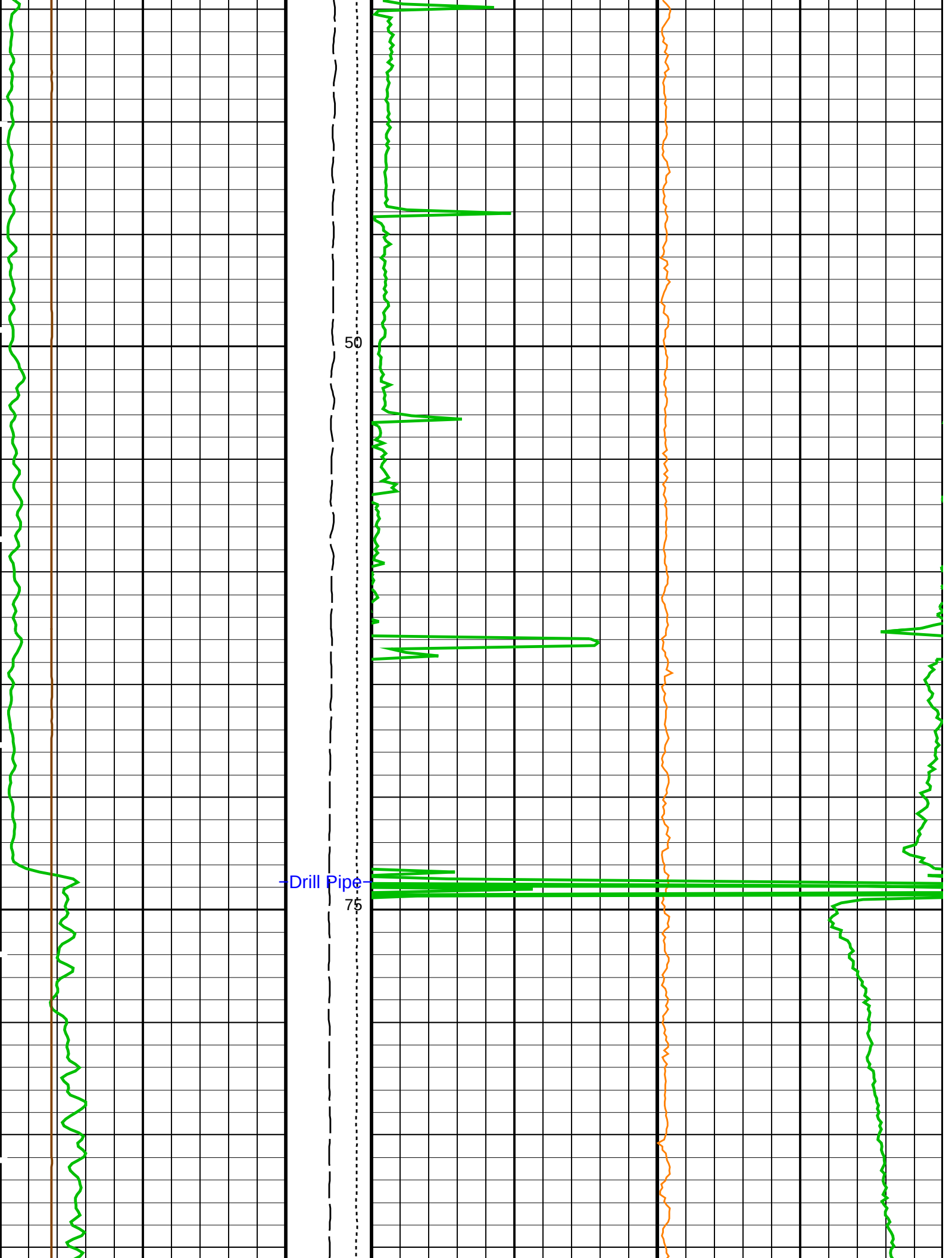
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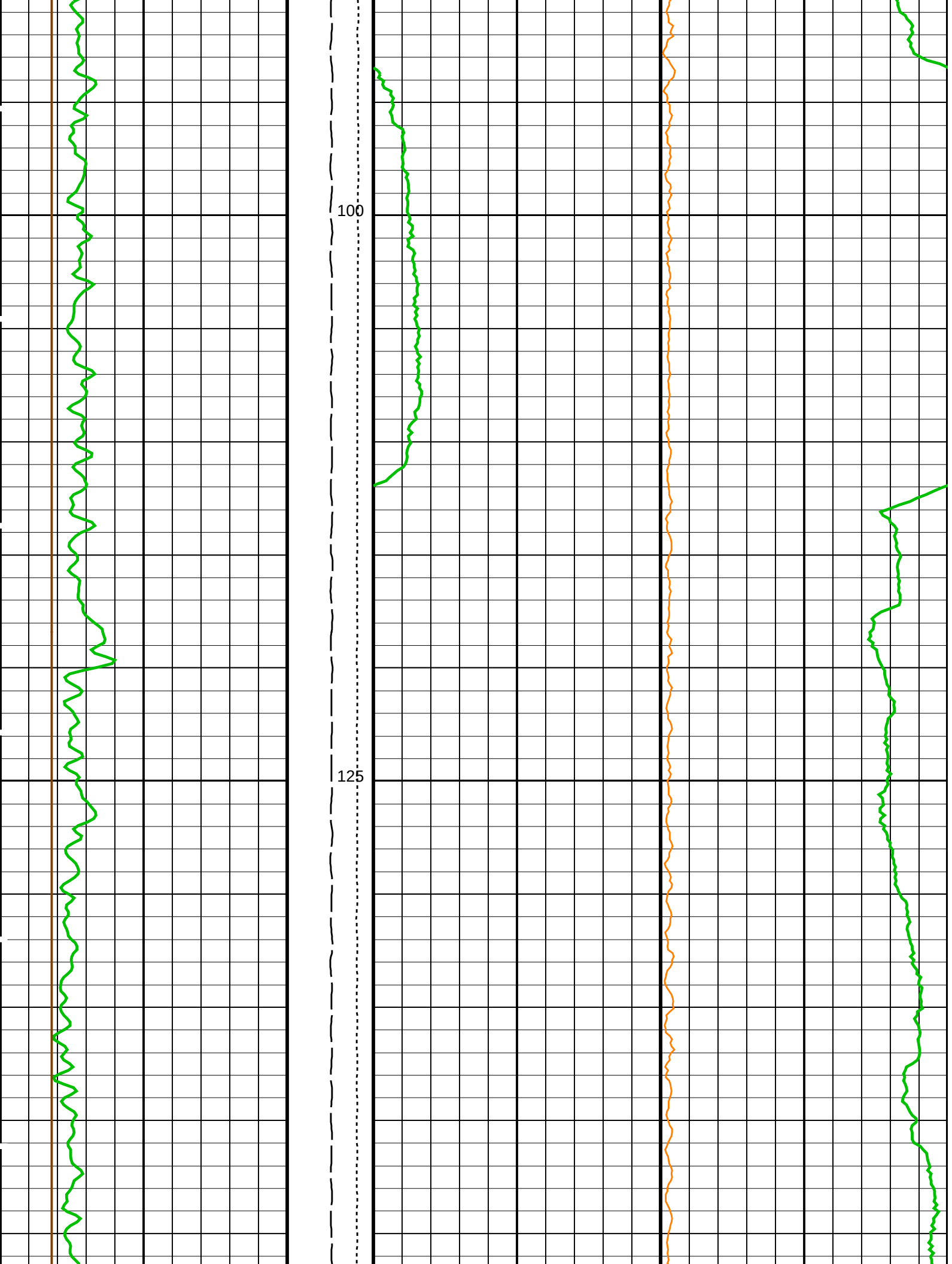
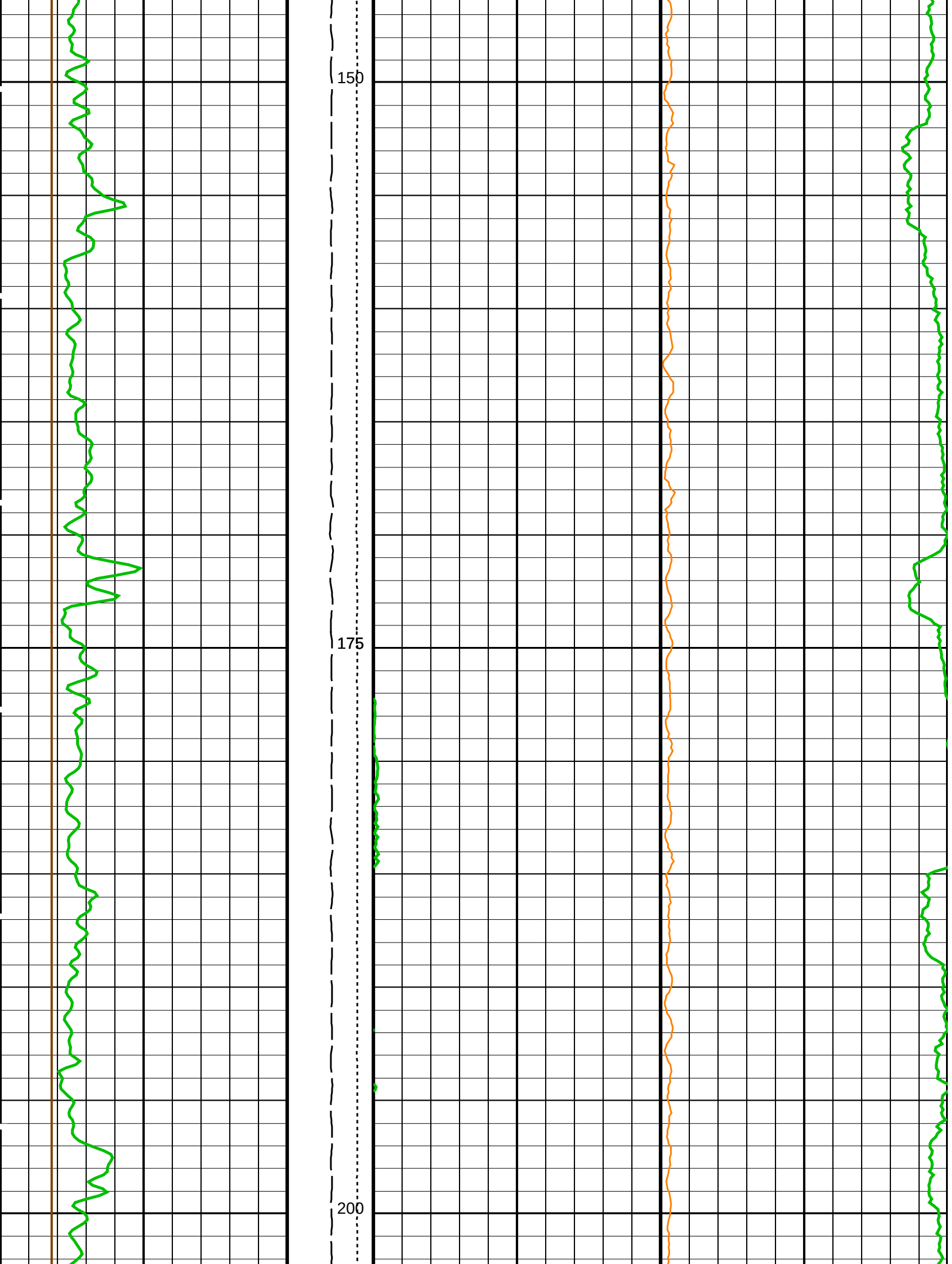
Drill Pipe
75


100
125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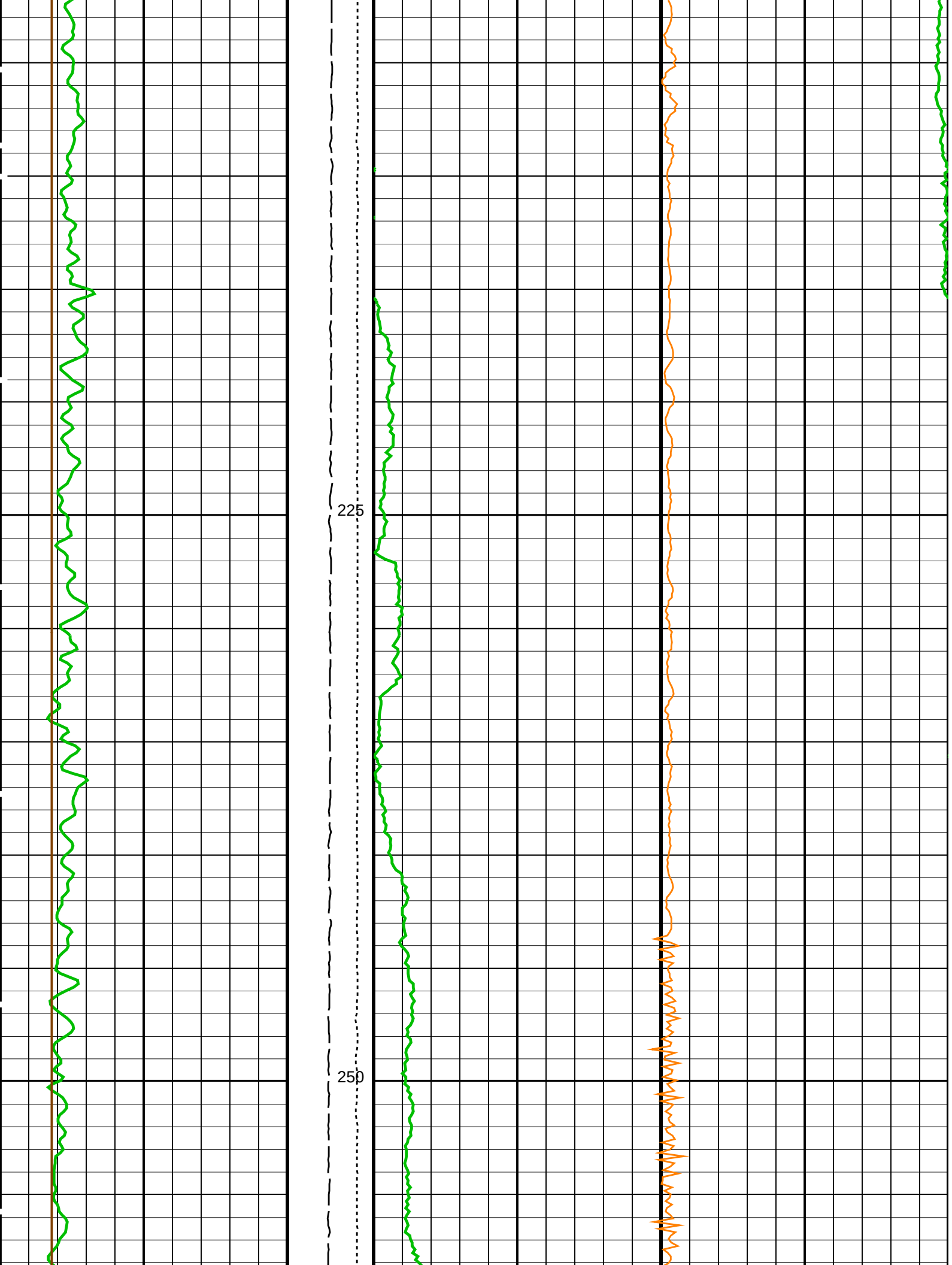
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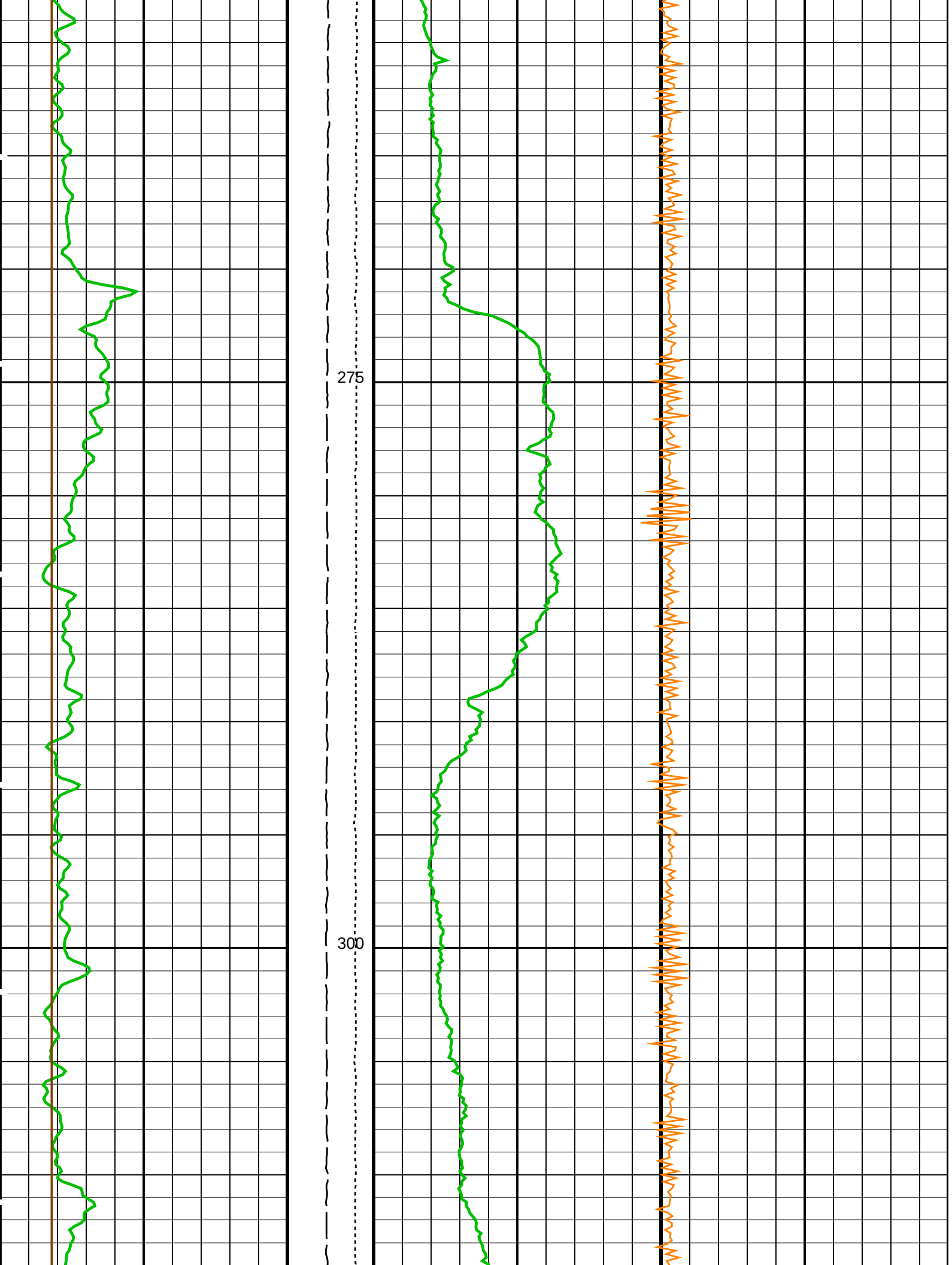
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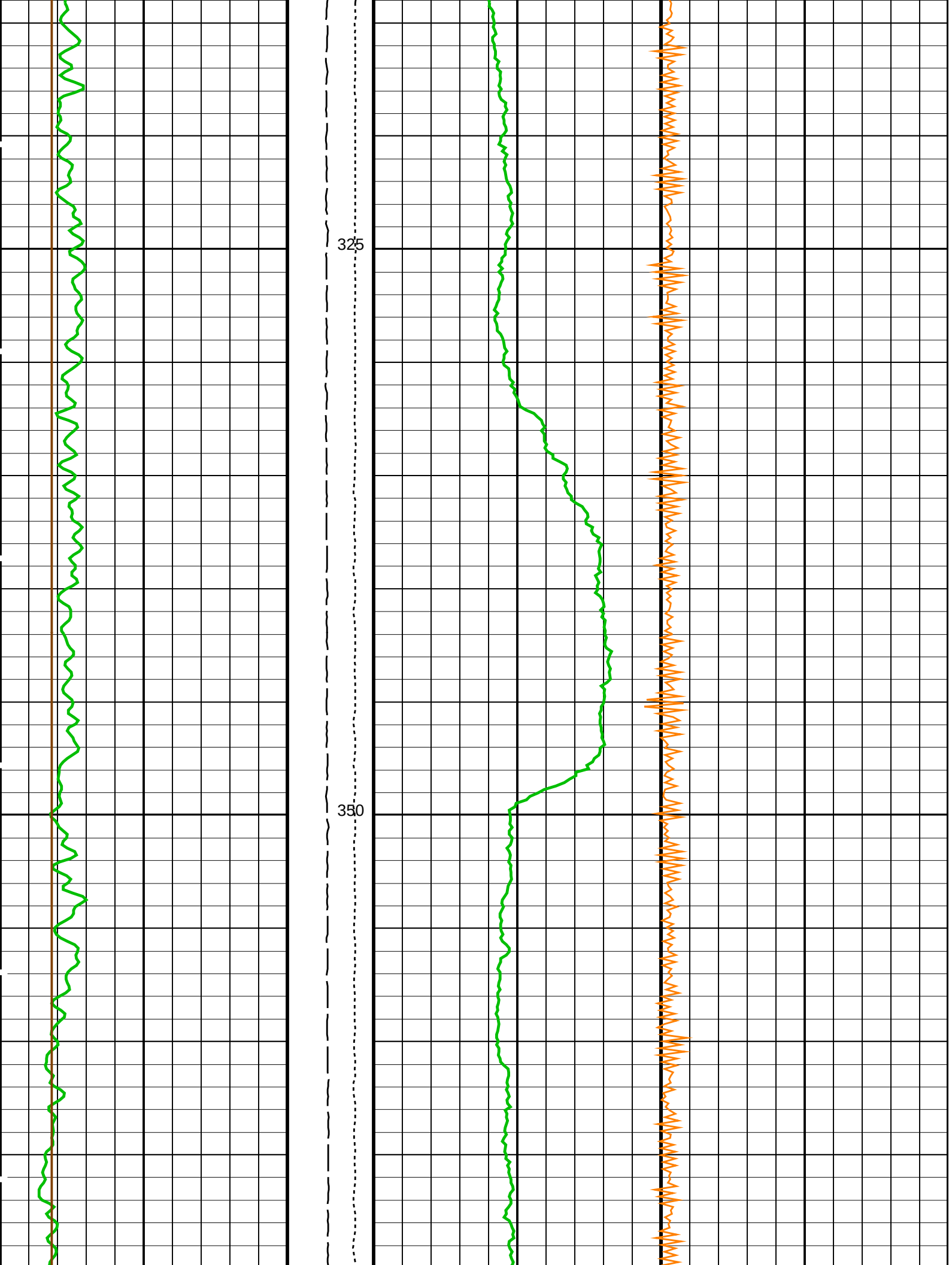
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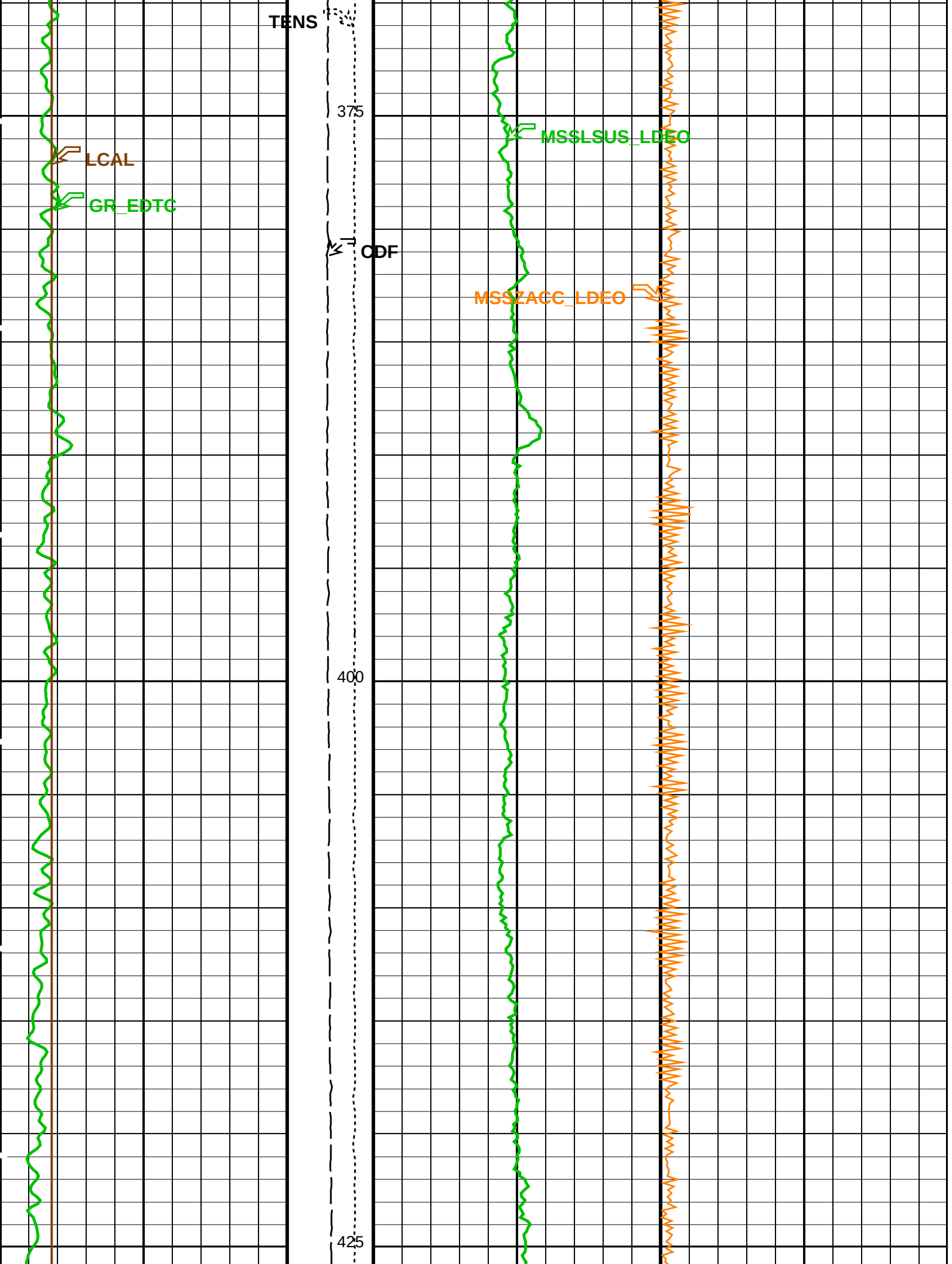
TENS
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GR_EDTC
CDF
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MSSZACC_LDEO
400
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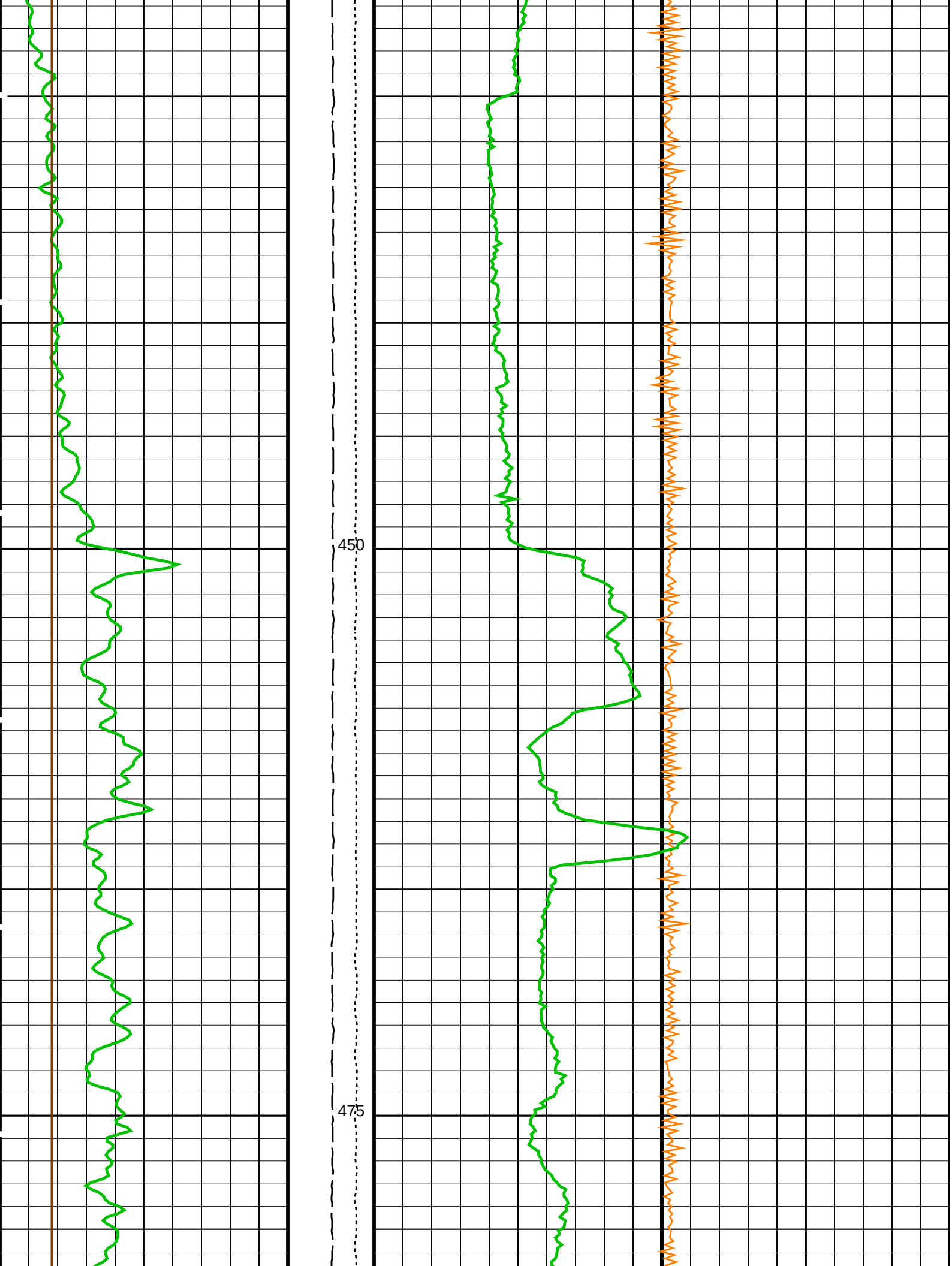
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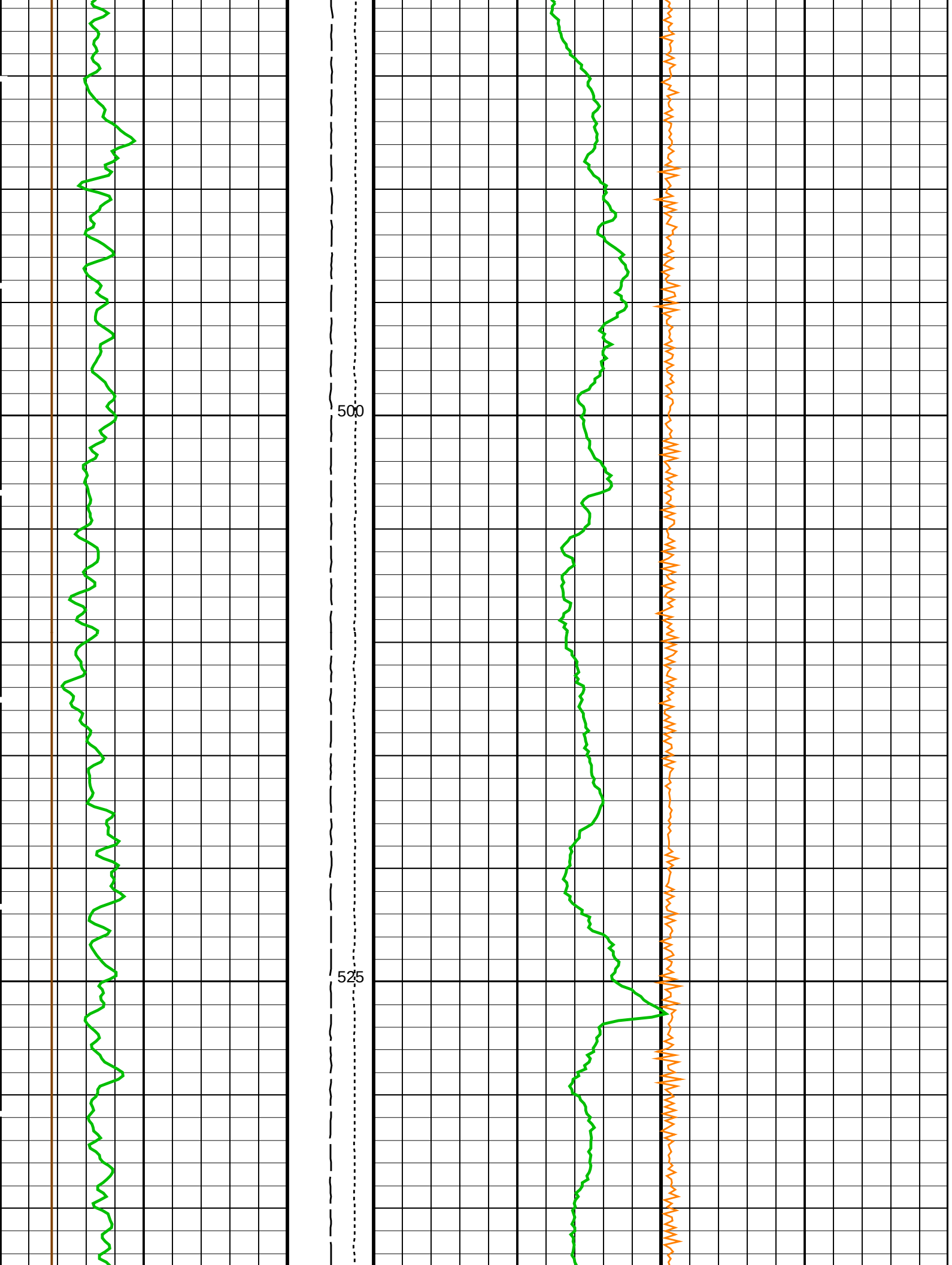
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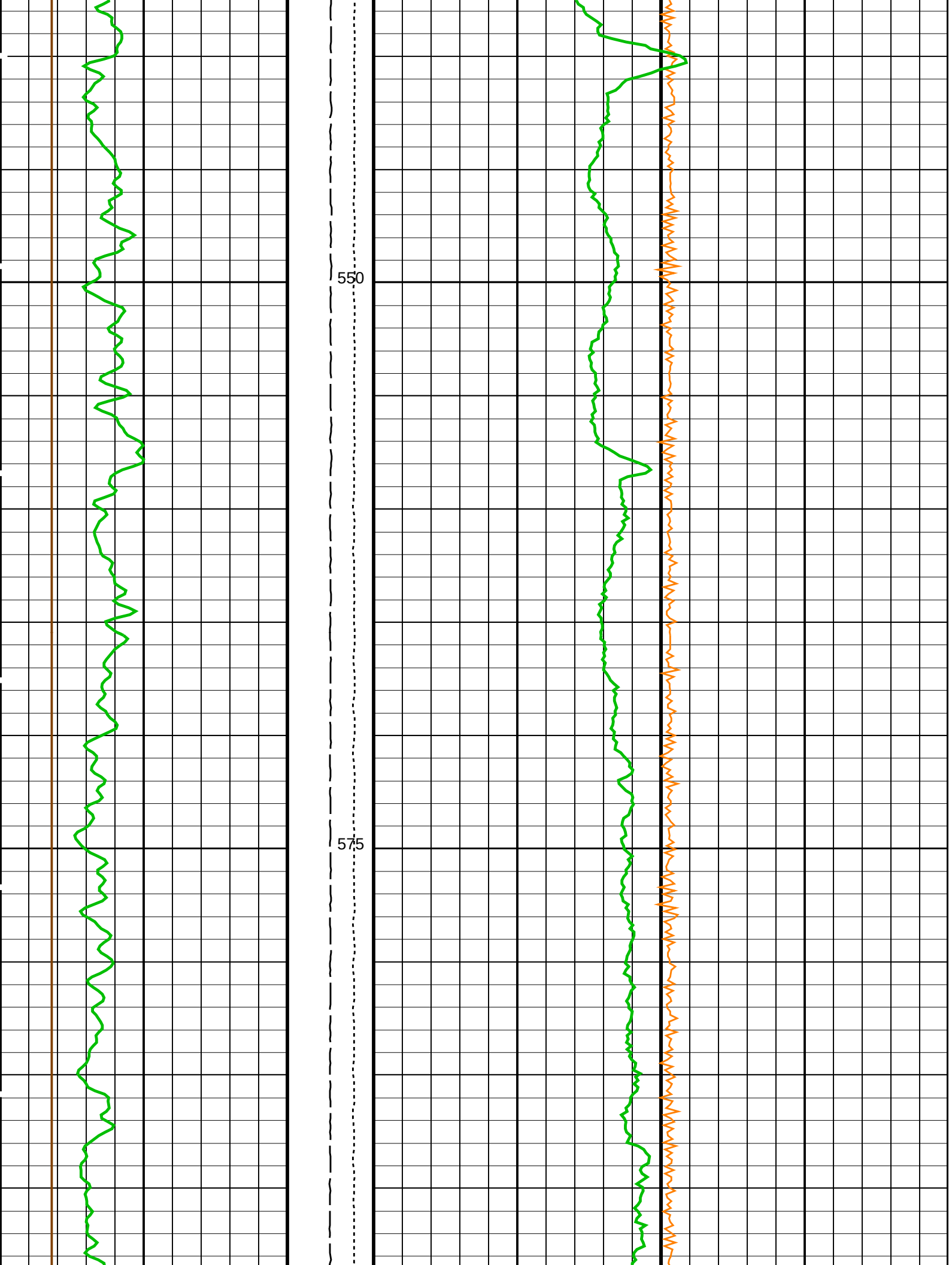
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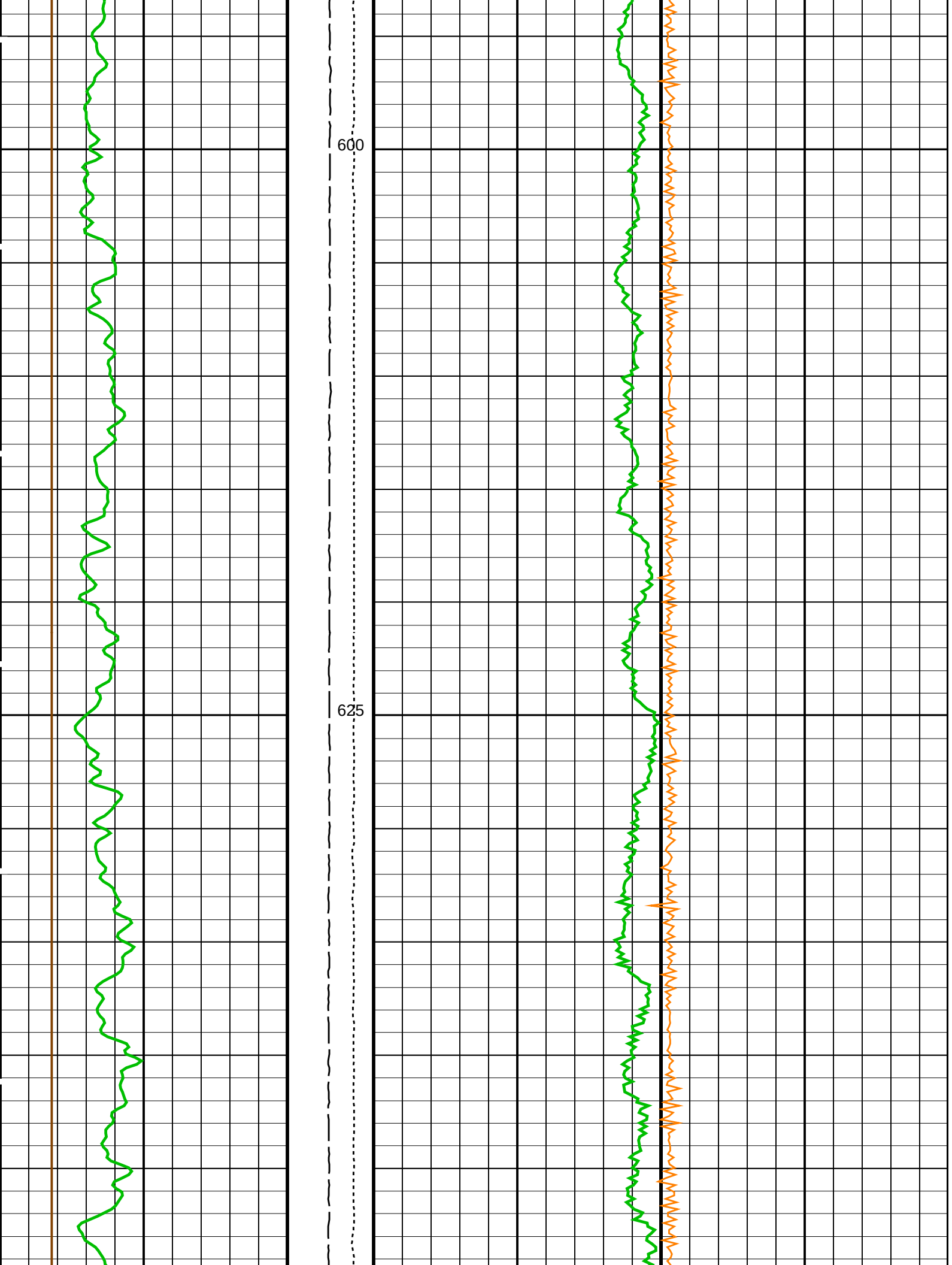
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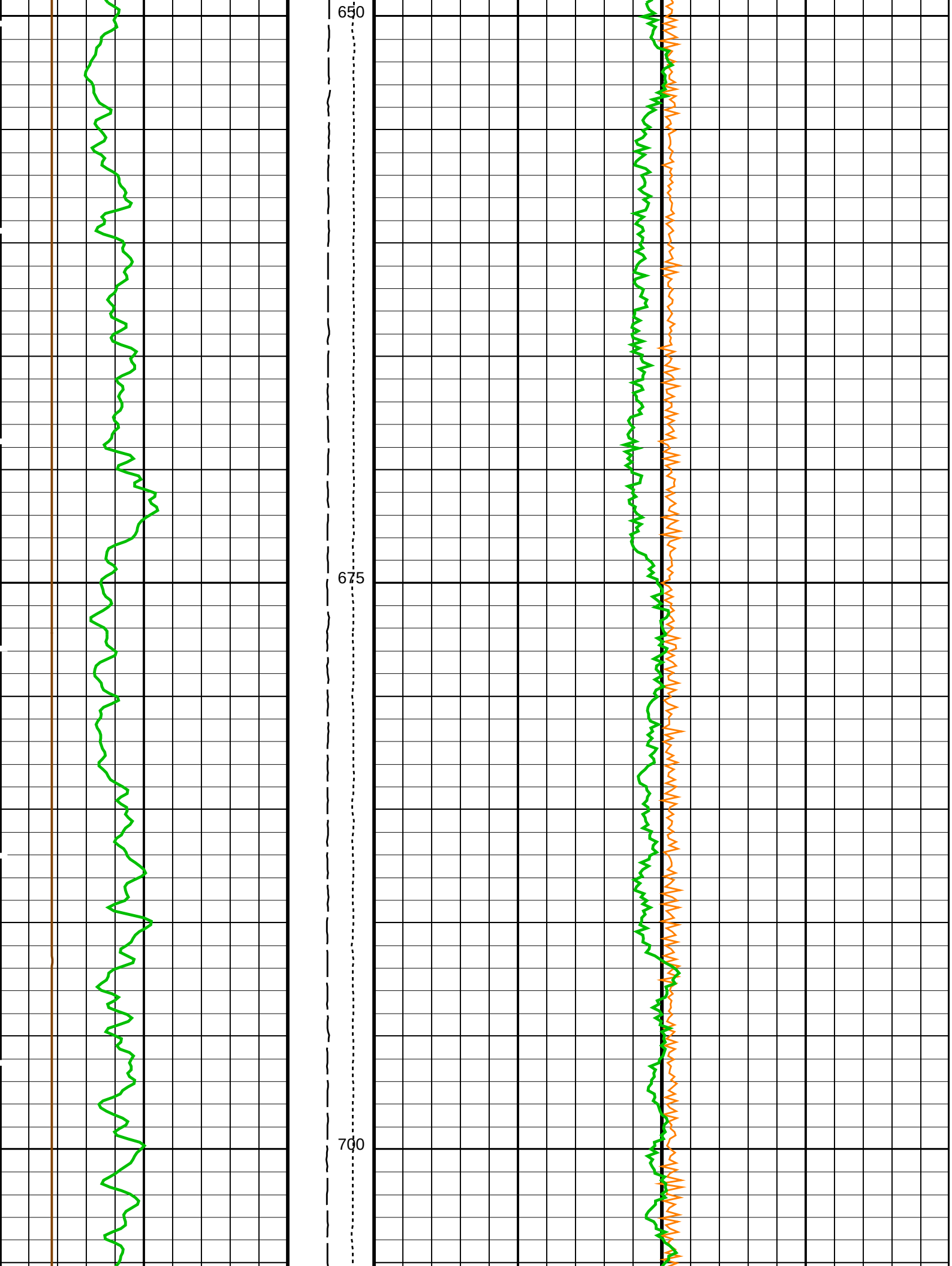
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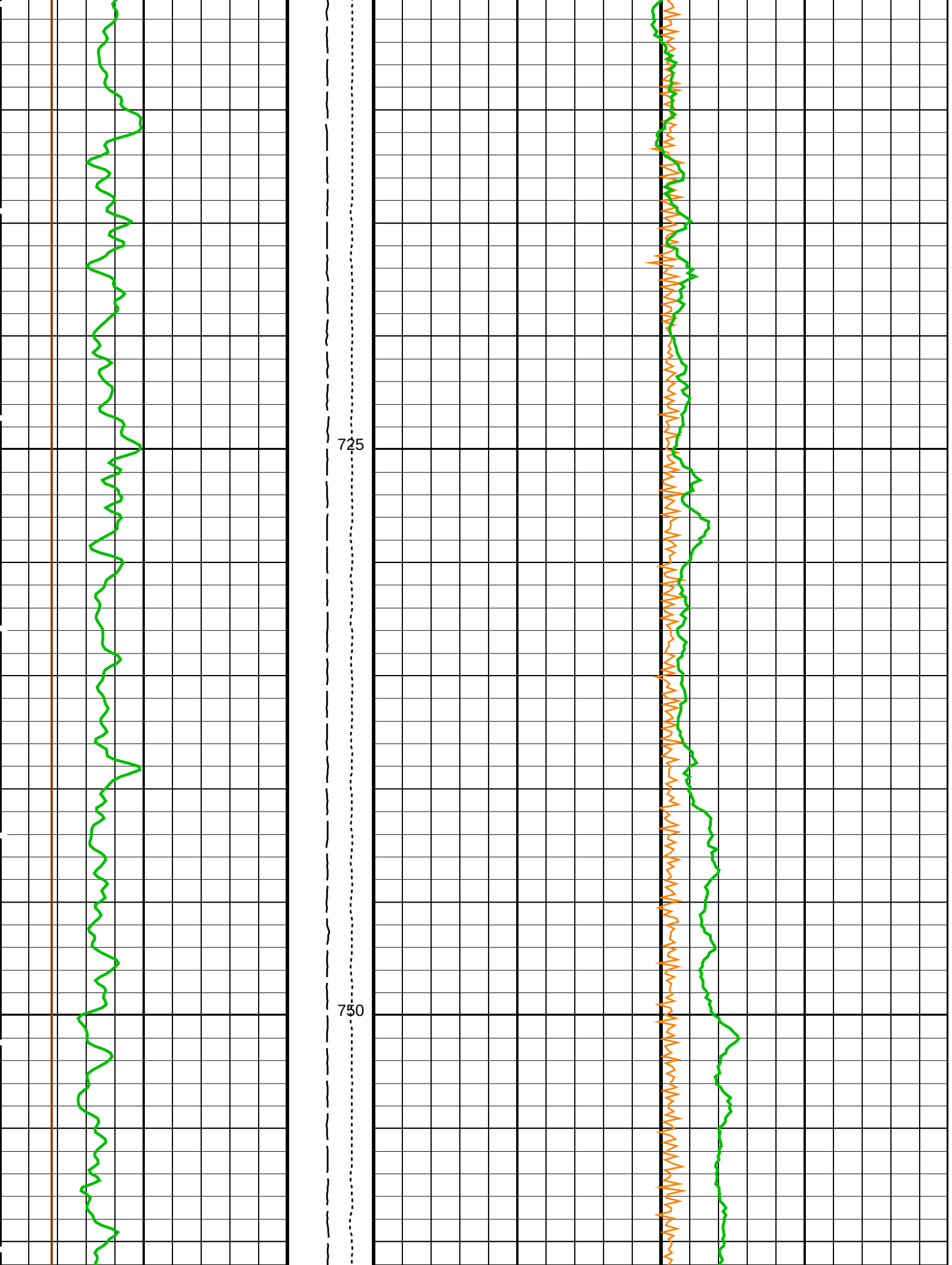
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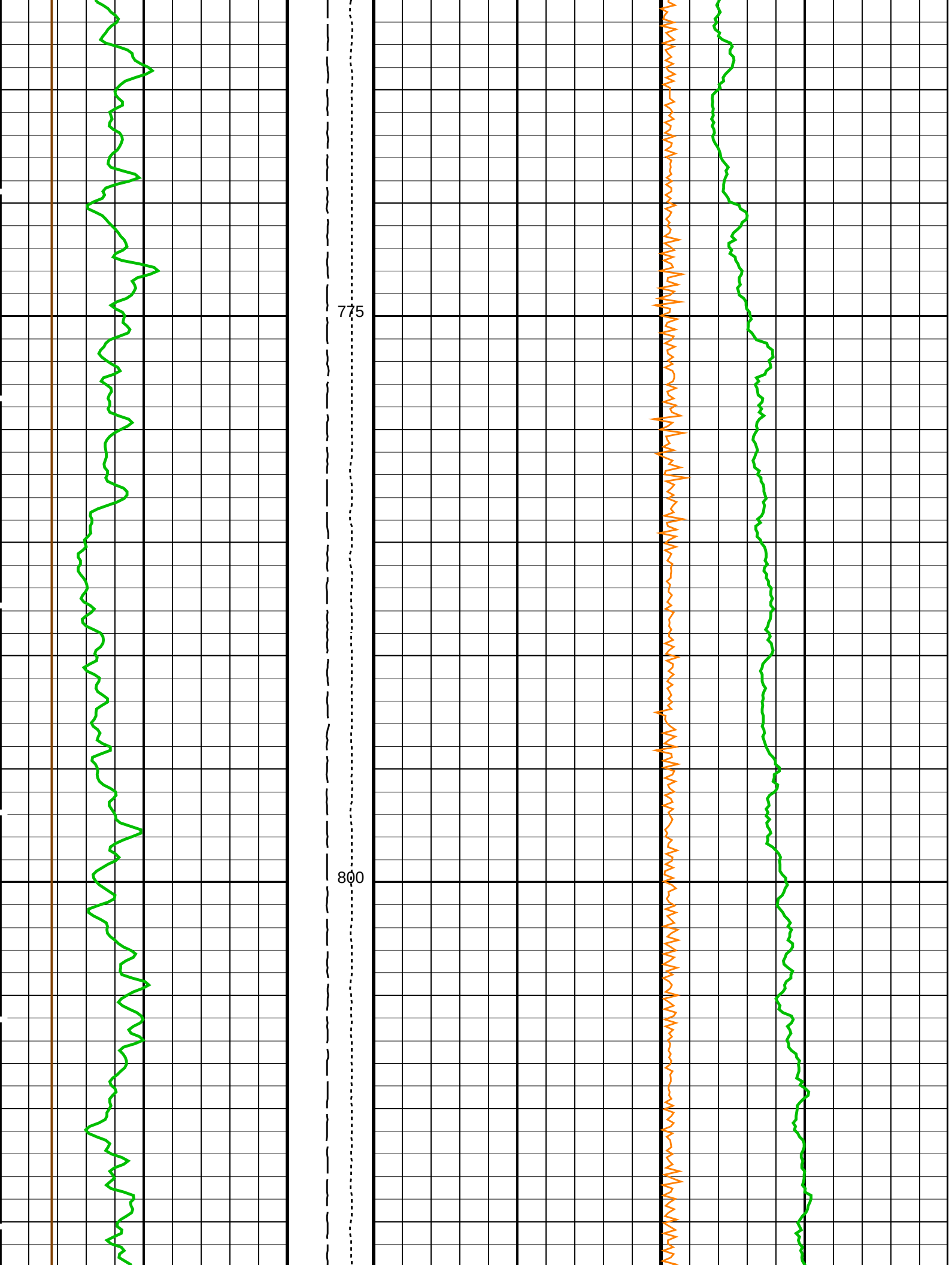
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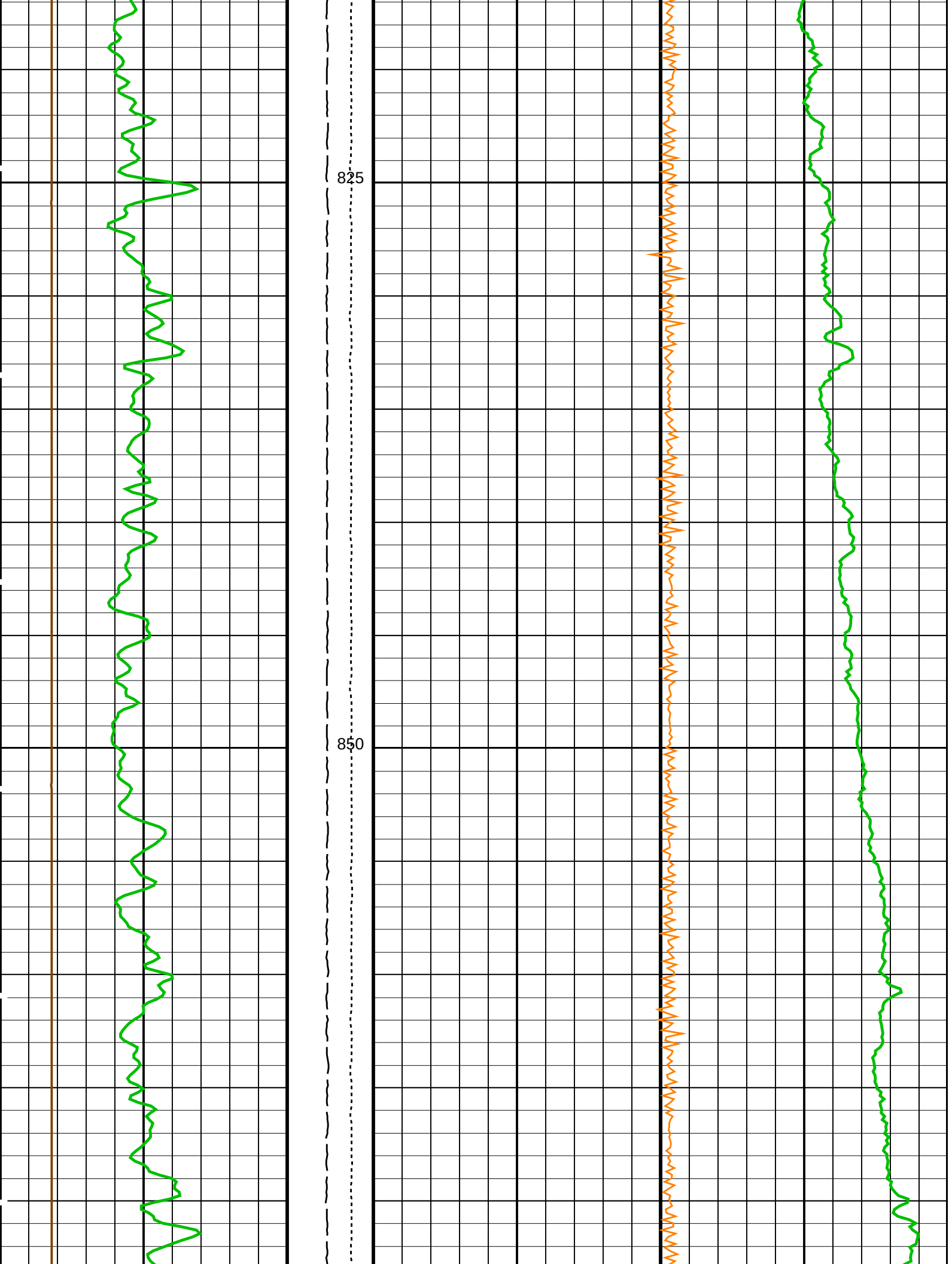
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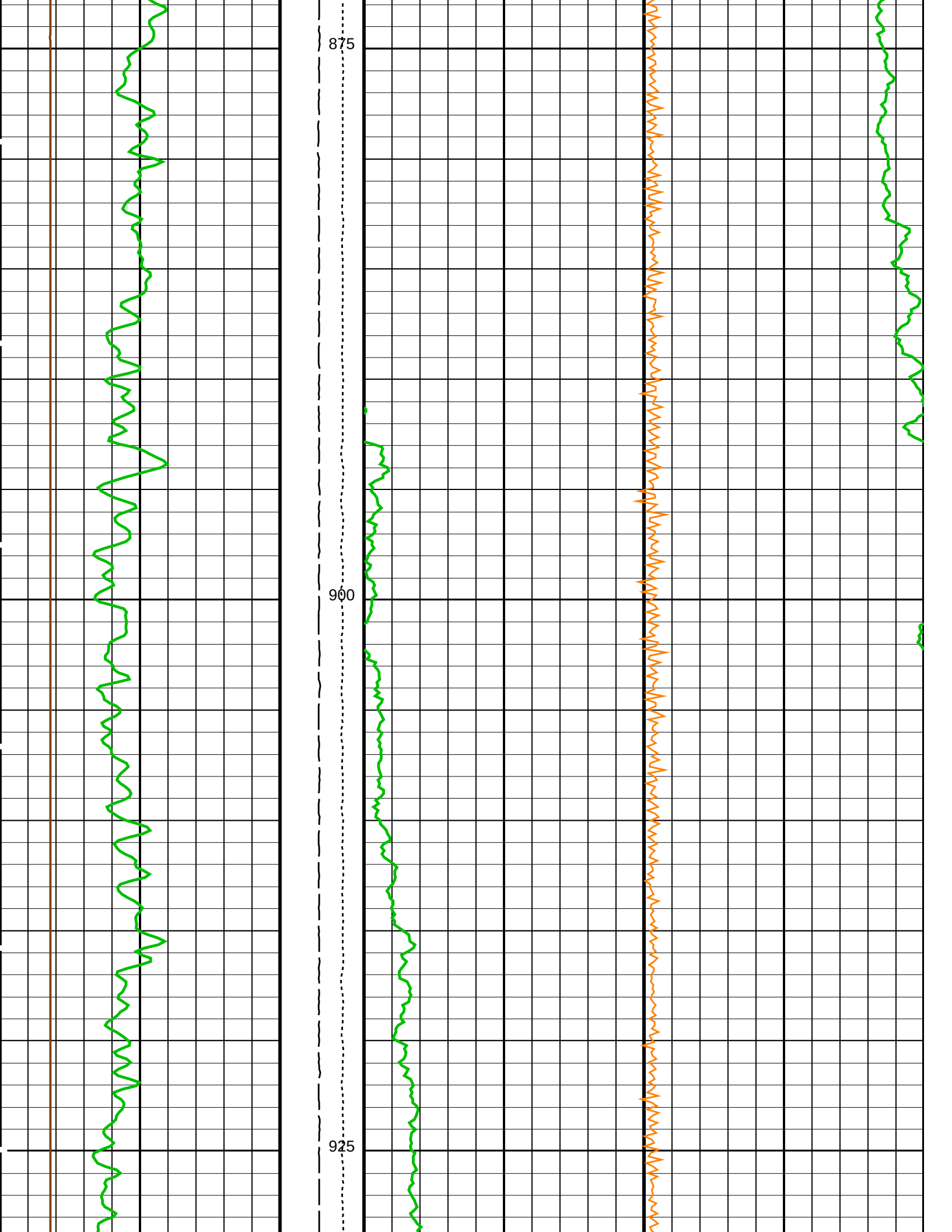
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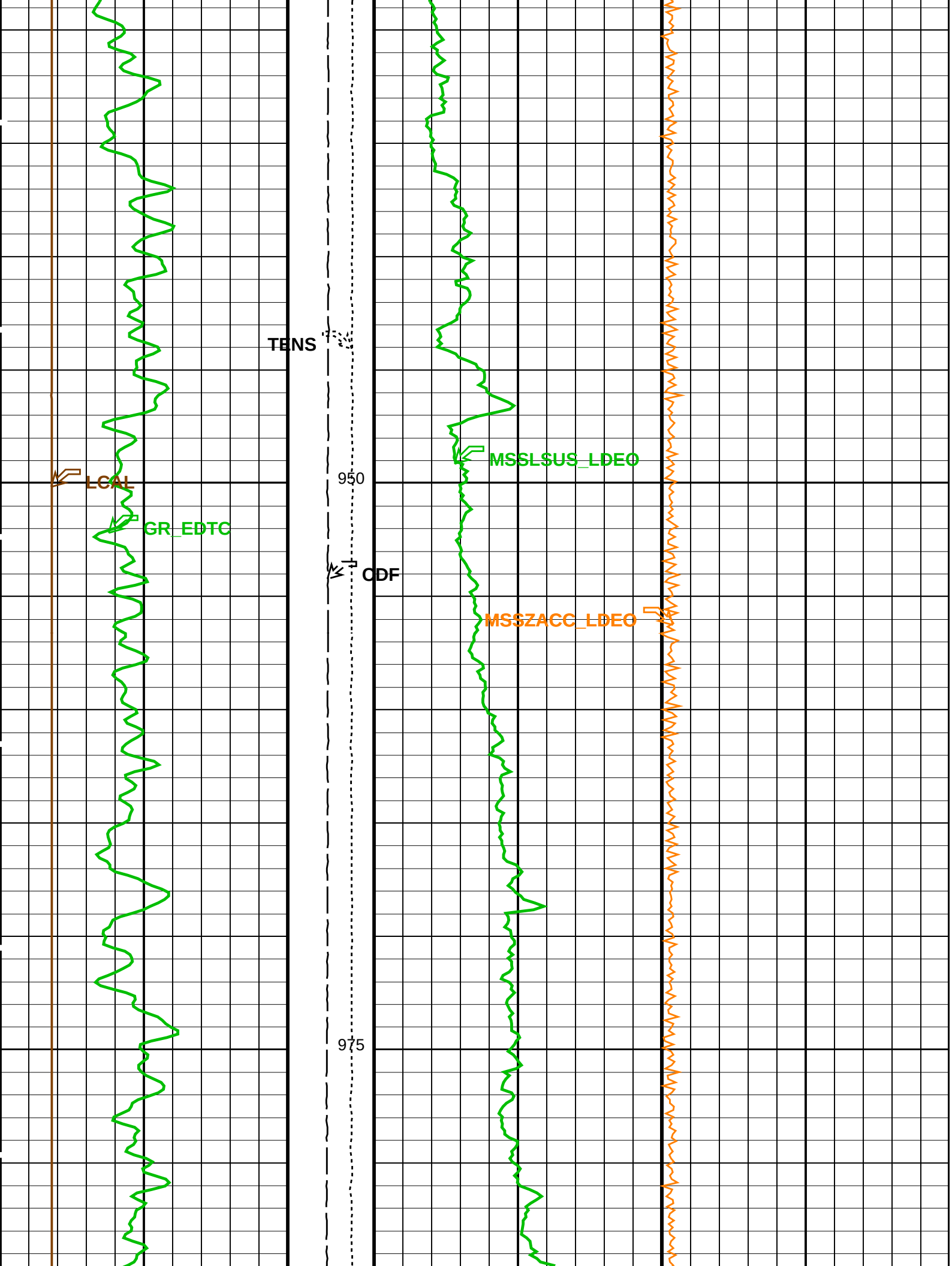
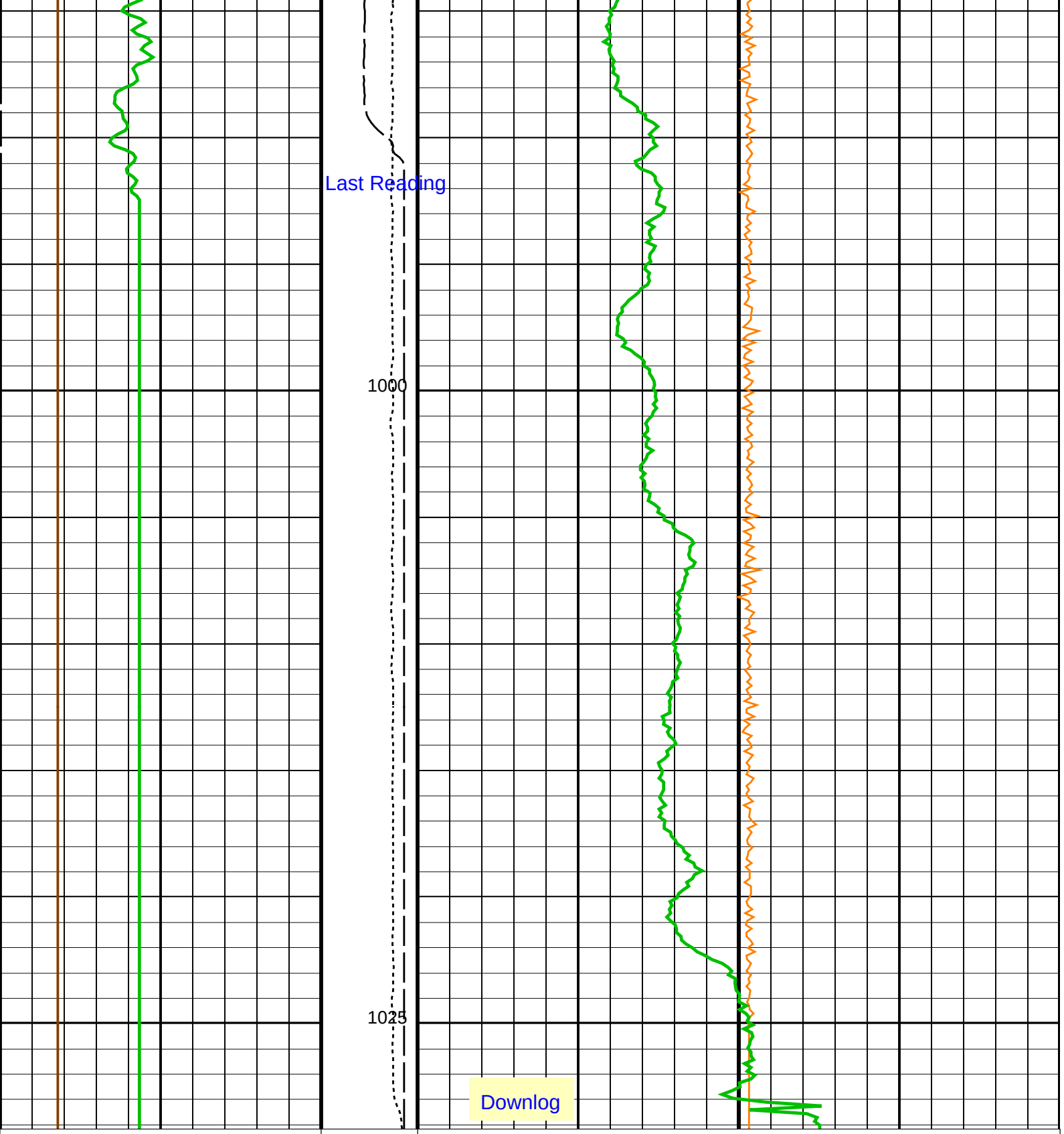
925


TENS
MSSLSUS_LDEO
LCAL
950
GR_EDTC
CDF
MSSZACC_LDEO
975



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	3000 0	0 (PPM) 5000

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	20.9455	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	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	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	2.6	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	1938.41	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2034.64	V
AHCS	APS Holesize Correction Source	GCSE	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1700.34	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature−Pressure−Salinity Correction Switch	OFF	
BHFL_APS	APS TNPH Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	DEGC
BSCO_APS	APS TNPH Borehole Salinity Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source Correction Option	MEASURED	
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	BARITE	

ISSBAR	Barite Mud Switch	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	NO	
MCOR_APS	APS TNPH Mud Correction	BARI	
MWCO_APS	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.0863	
NFRC	APS Near/Far Calibration Ratio	0.97772	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	NO	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	YES	
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)	45	DEGC
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	0.018227	DC/M
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	−0.00110818	
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	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.991778	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00117	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	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	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	20	DEGC
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	1.32	G/C3
DO	Depth Offset for Playback	−141.0	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	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	−50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM

TD	Total Depth	1233	M
TDD	Total Depth − Driller	1095.00	M
TDL	Total Depth − Logger	1029.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: MSS_Logging Vertical Scale: 1:200 Graphics File Created: 03−Sep−2015 09:37

OP System Version: 19C0−187

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

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_HRLA_028LUP		PRODUCER	03−Sep−2015 09:20	1170.1 M	82.3 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_030PUP	FN:40	PRODUCER	03−Sep−2015 09:36		

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_010LUP	FN:15	PRODUCER	29−Aug−2015 07:07	999.0 M	120.2 M

Output DLIS Files

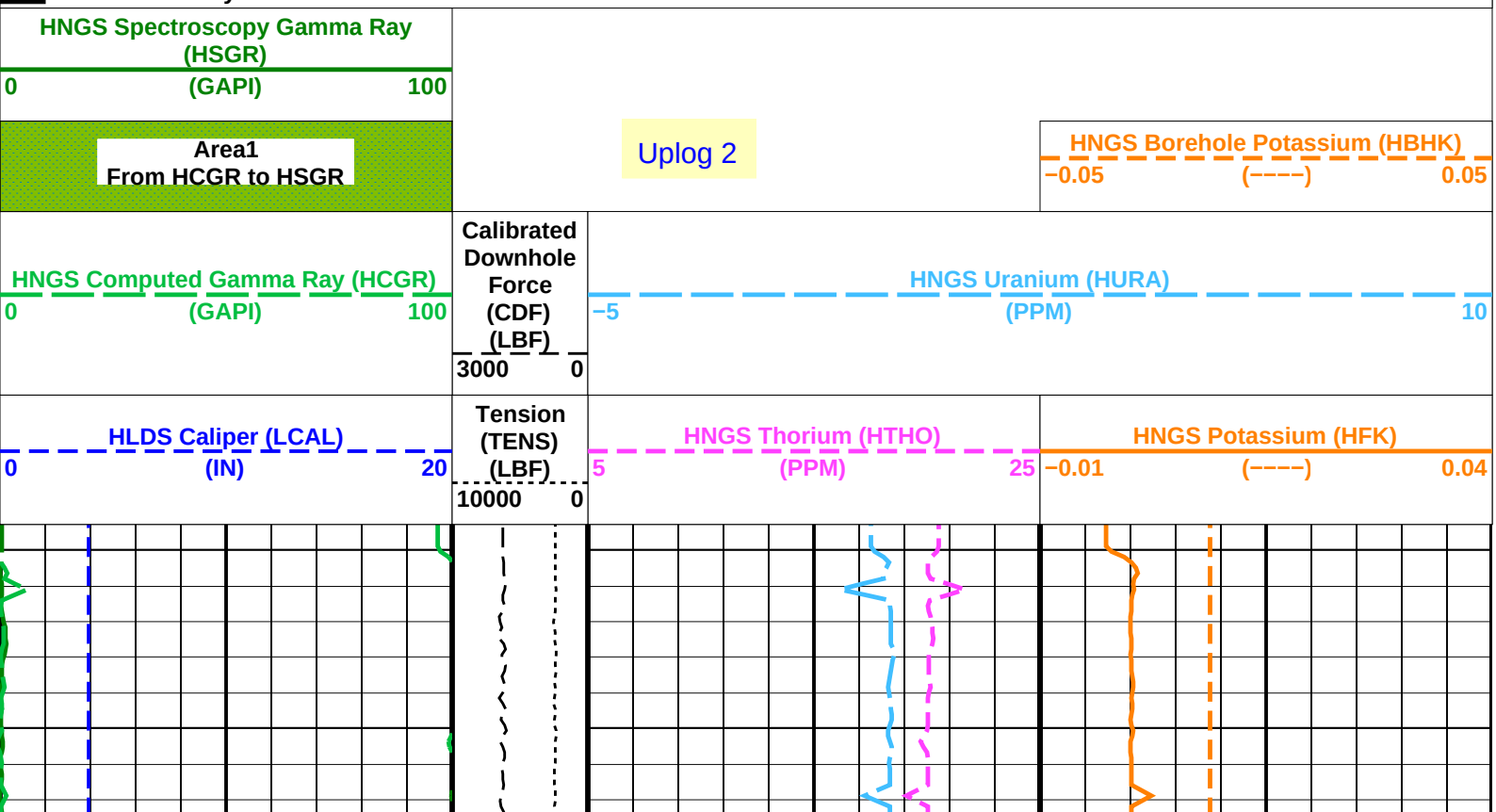
DEFAULT	MSS_LDEO_HRLA_LDL_032PUP	FN:42	PRODUCER	03−Sep−2015 10:44	858.0 M	−20.7 M

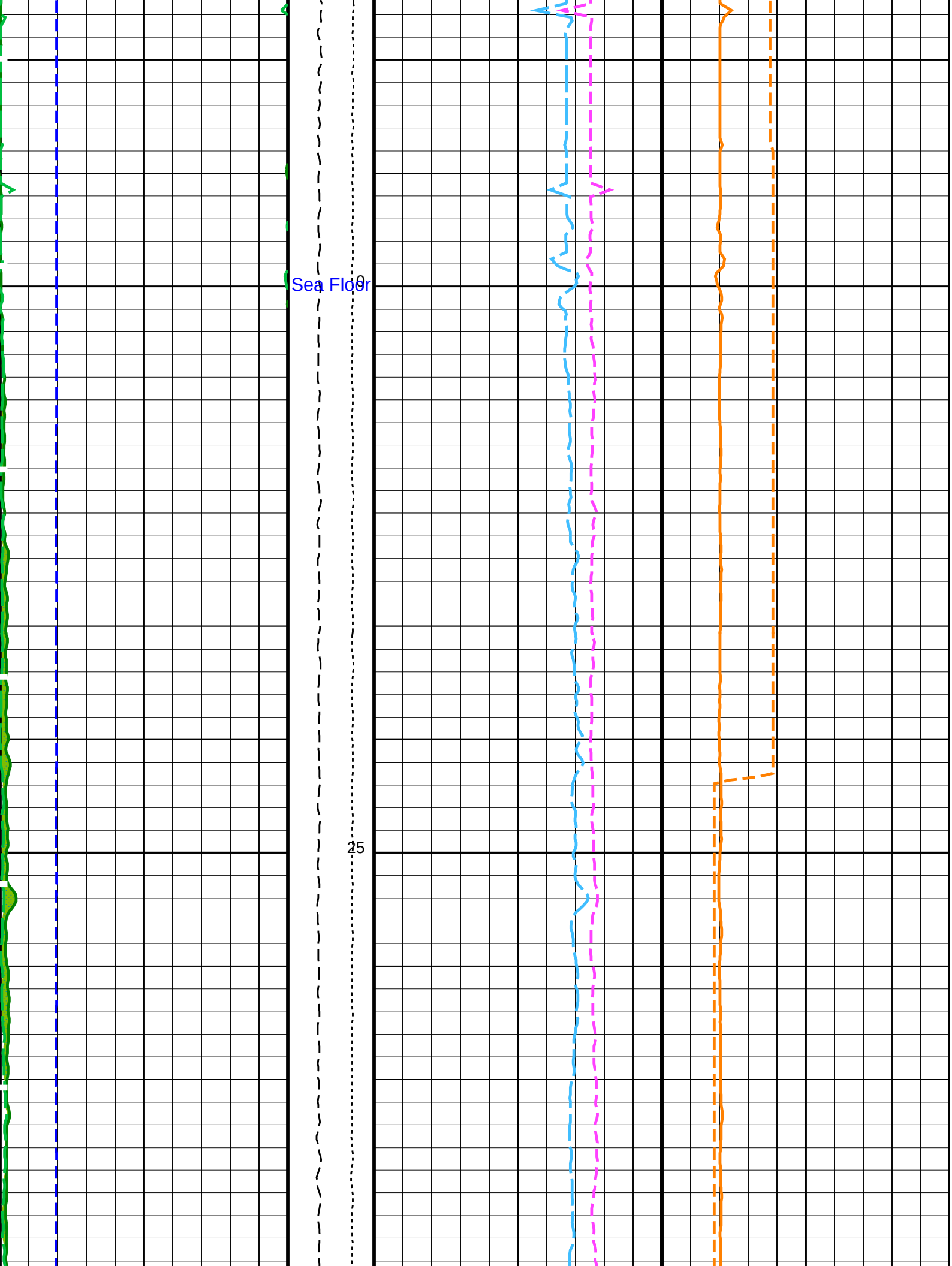
OP System Version: 19C0−187

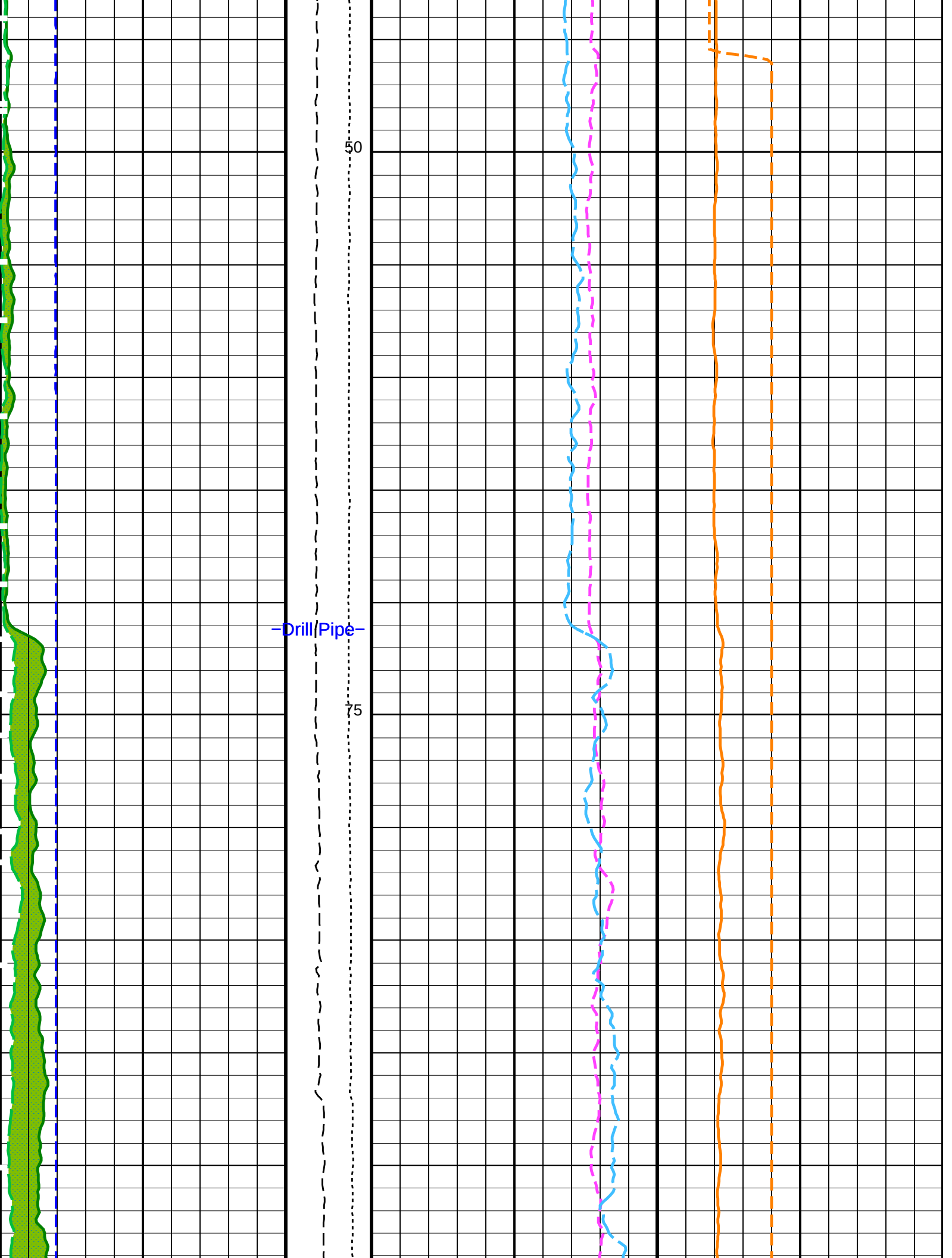
MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

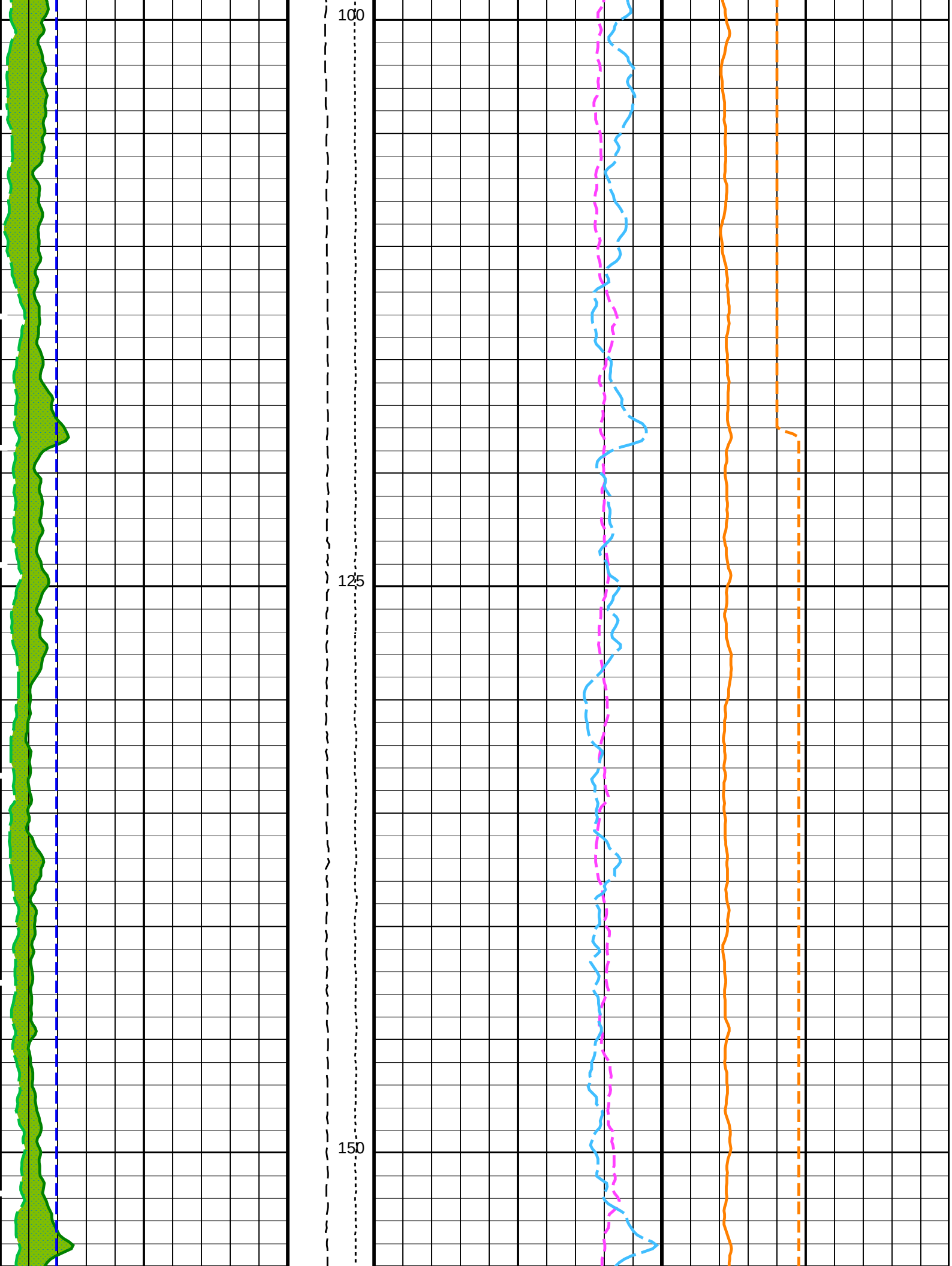
PIP SUMMARY

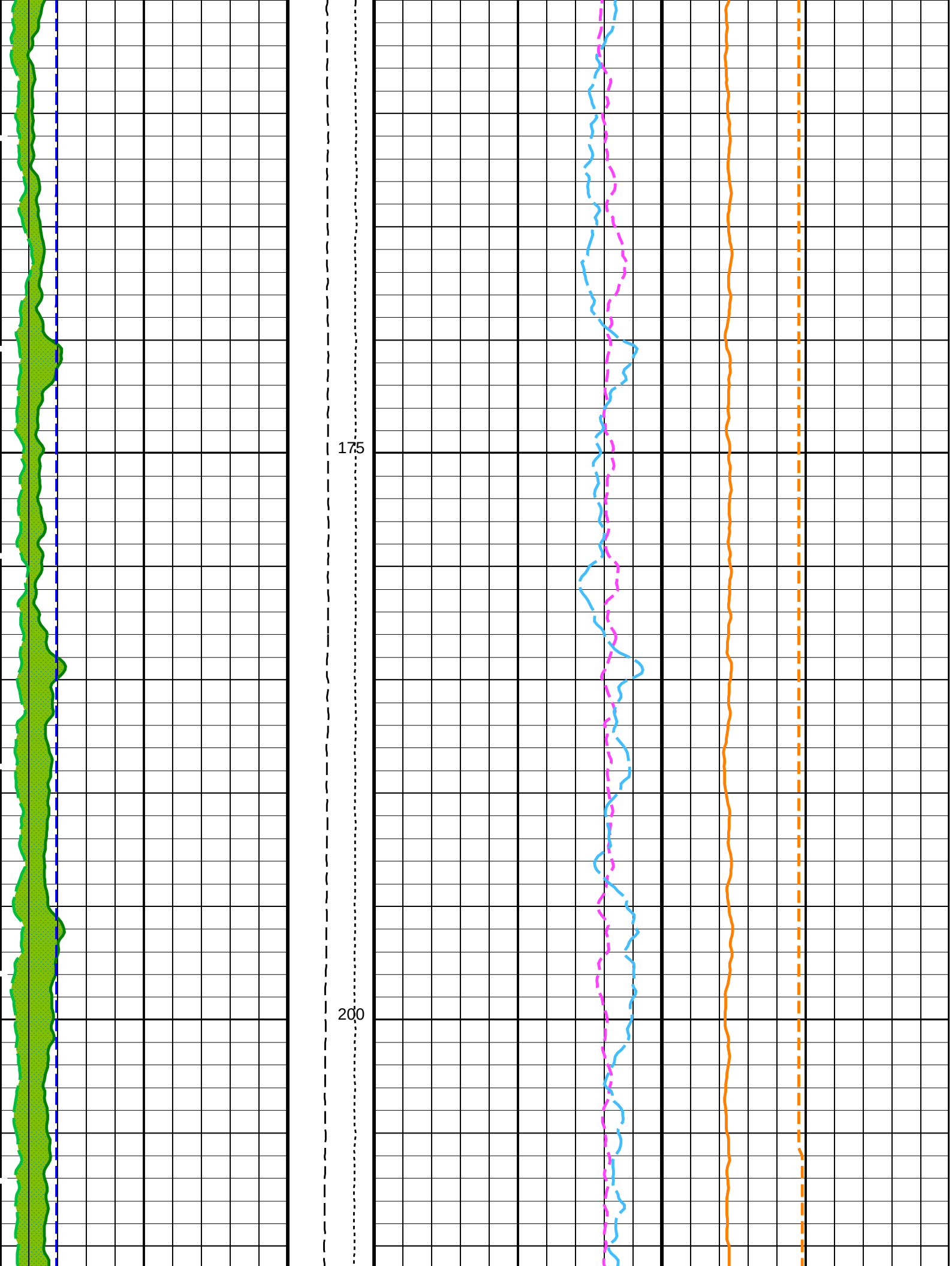
Time Mark Every 60 S

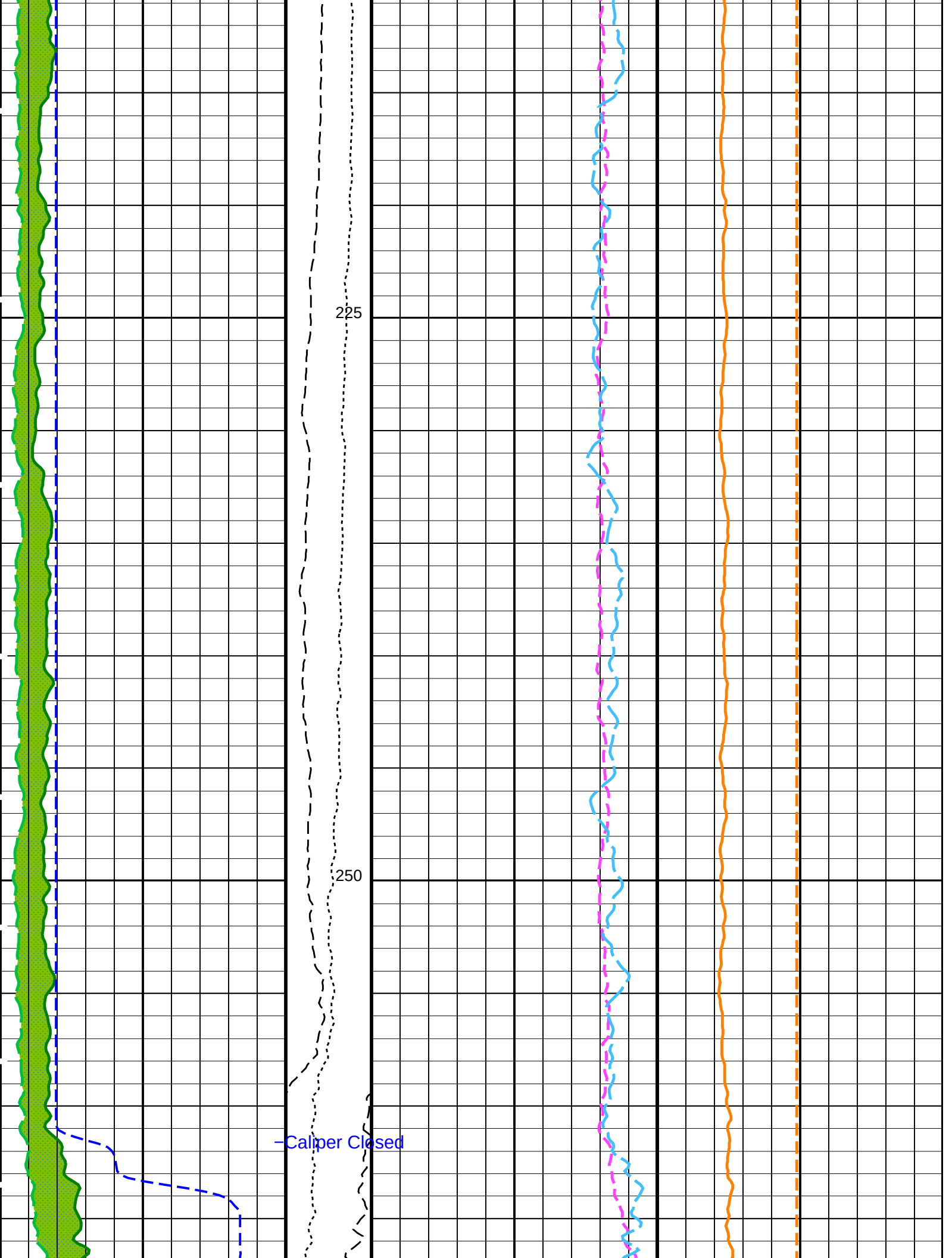


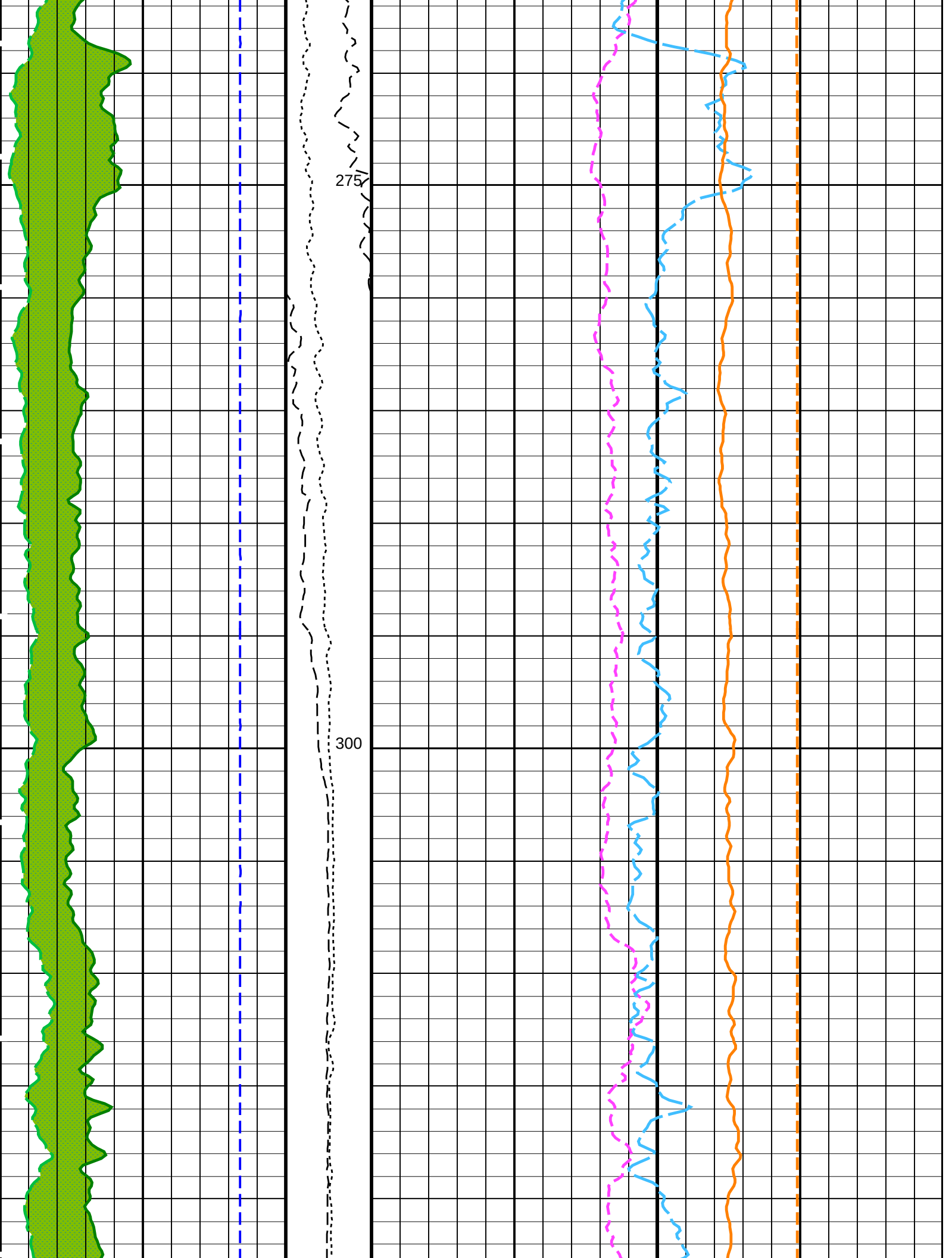

Sea Floor
0
25

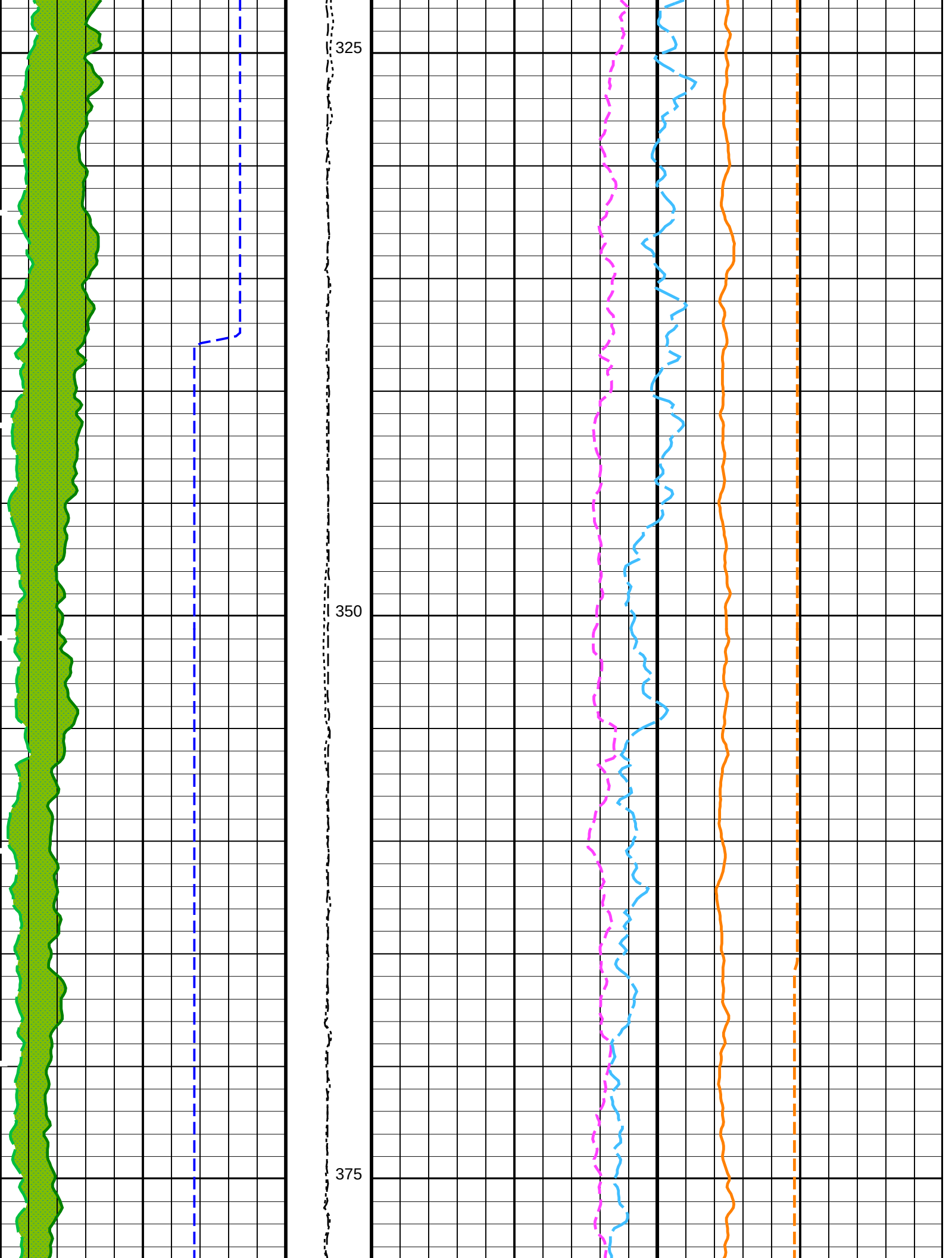

50
Drill Pipe
75

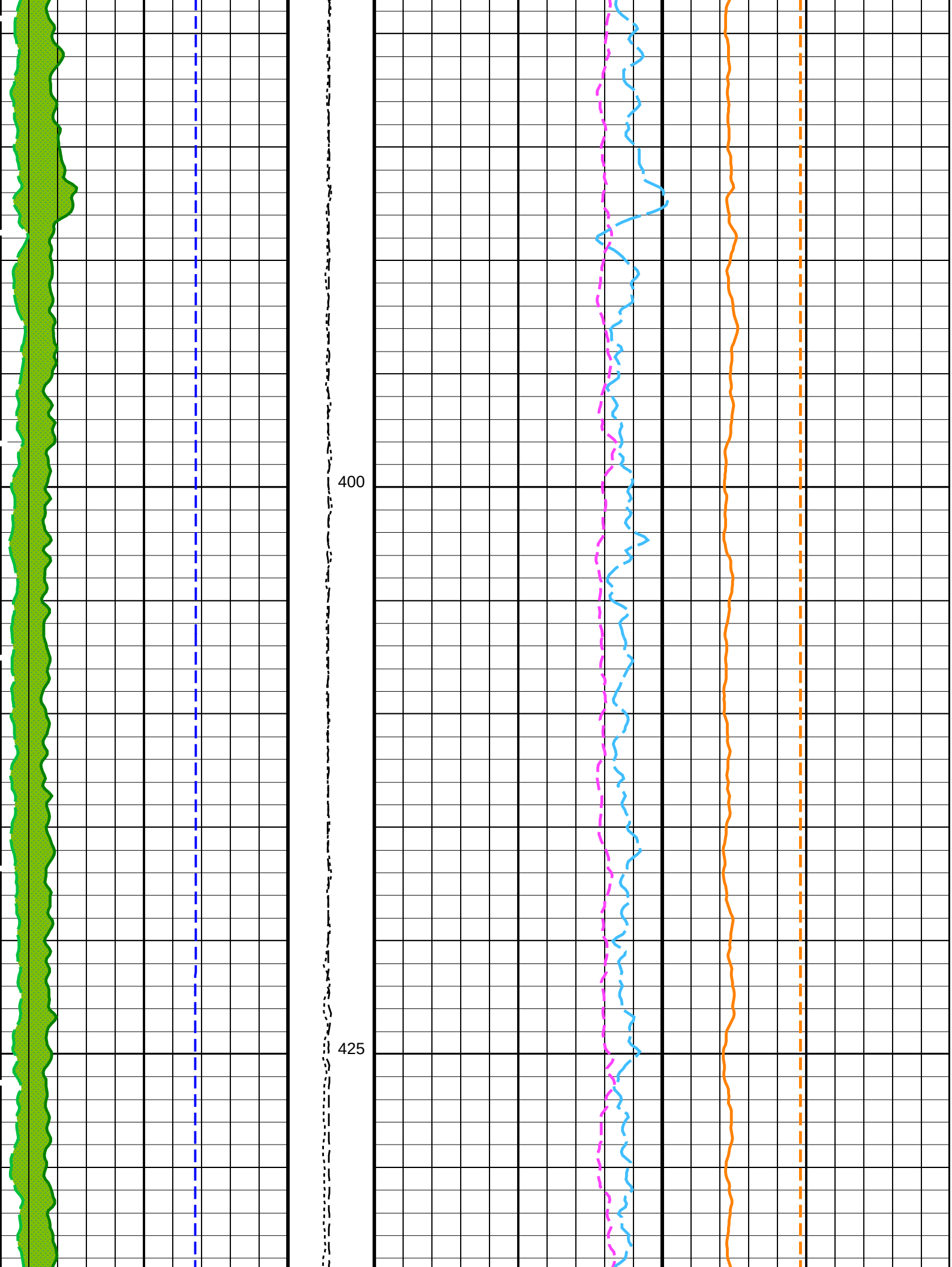

100
125
150

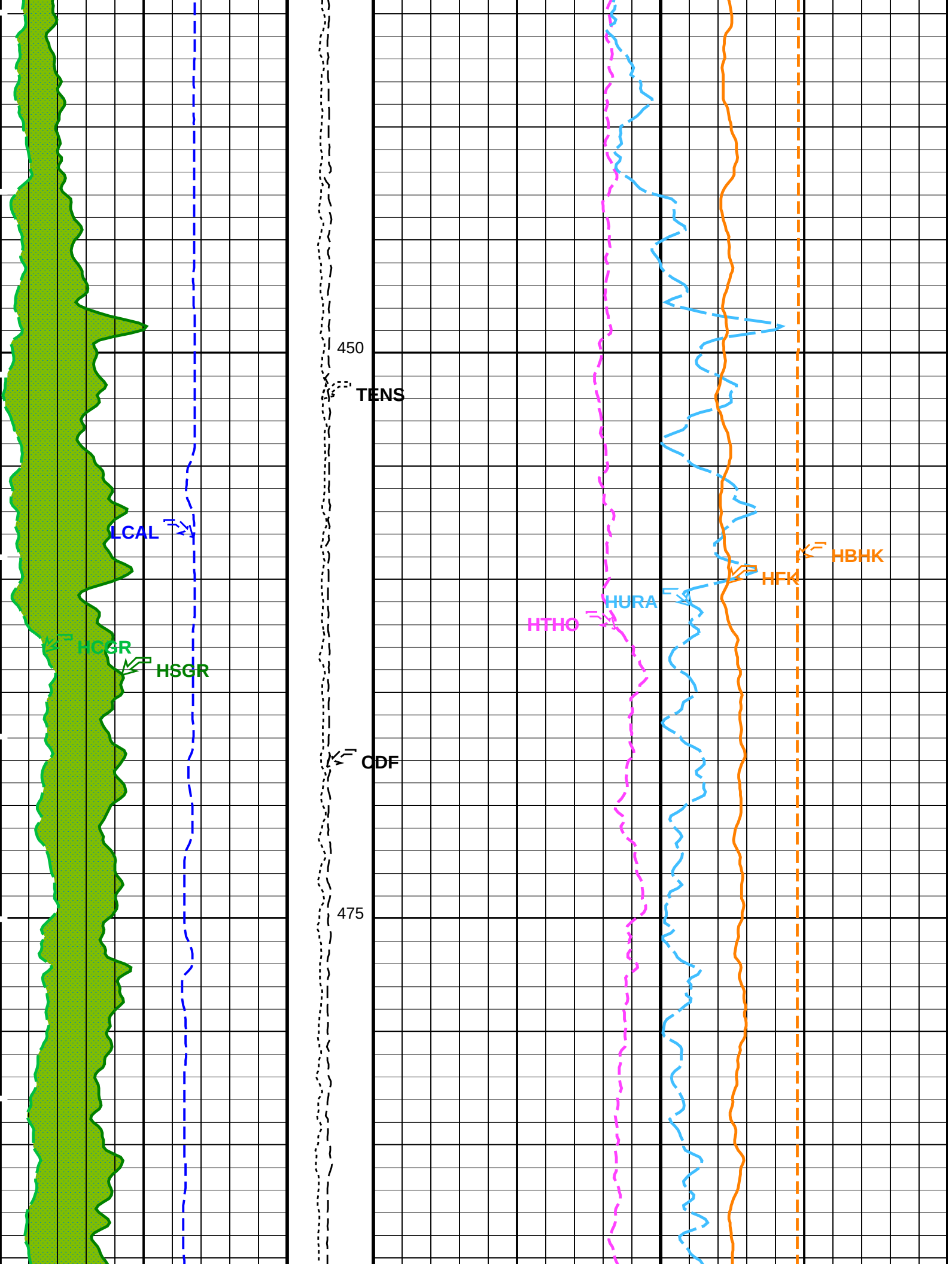

175
200

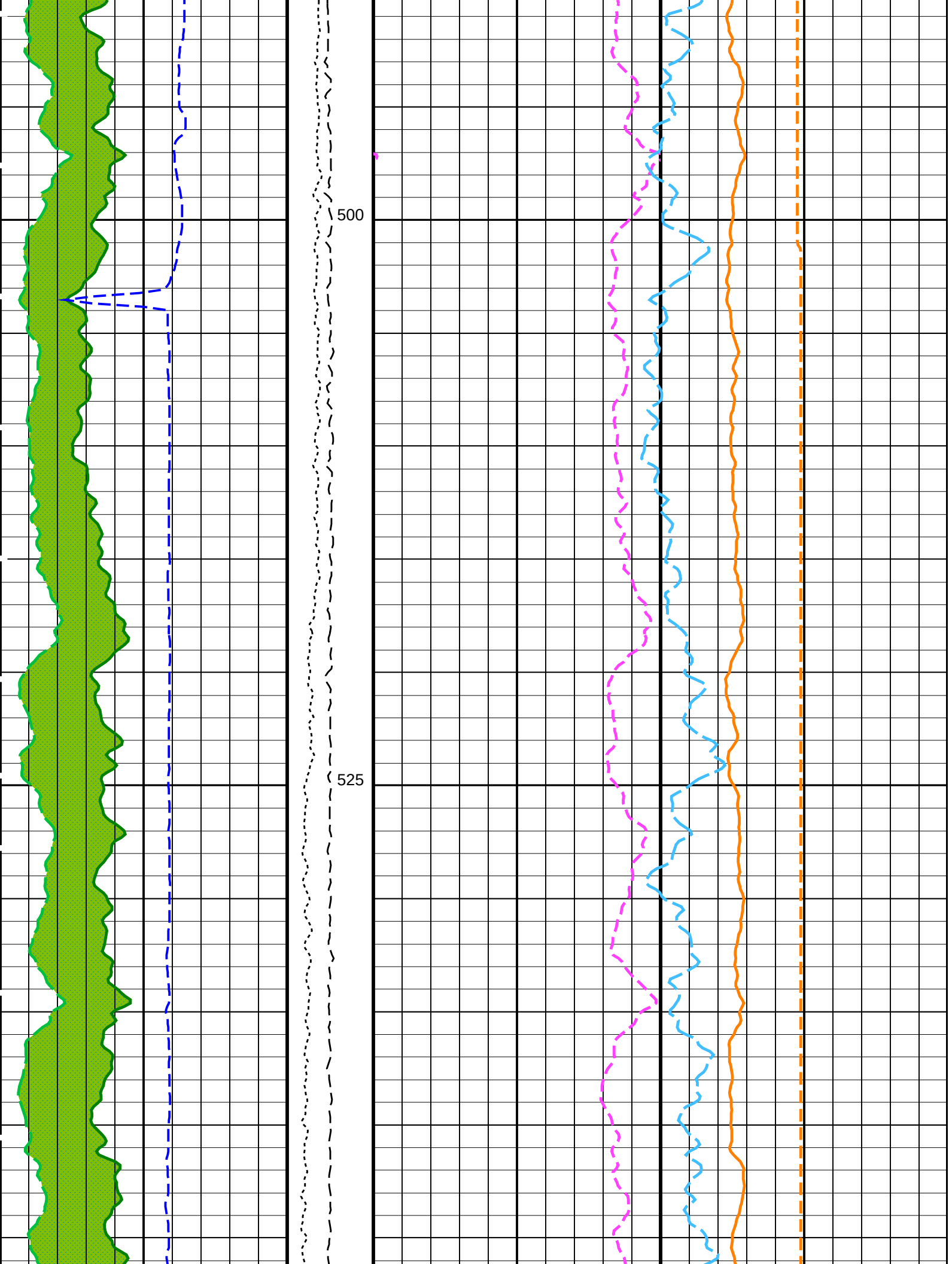

225
250
Caliper Closed


275
300


325
350
375


400
425


450
TENS
LCAL
HCGR
HSGR
CDF
HBHK
HFK
HURA
HTHO
475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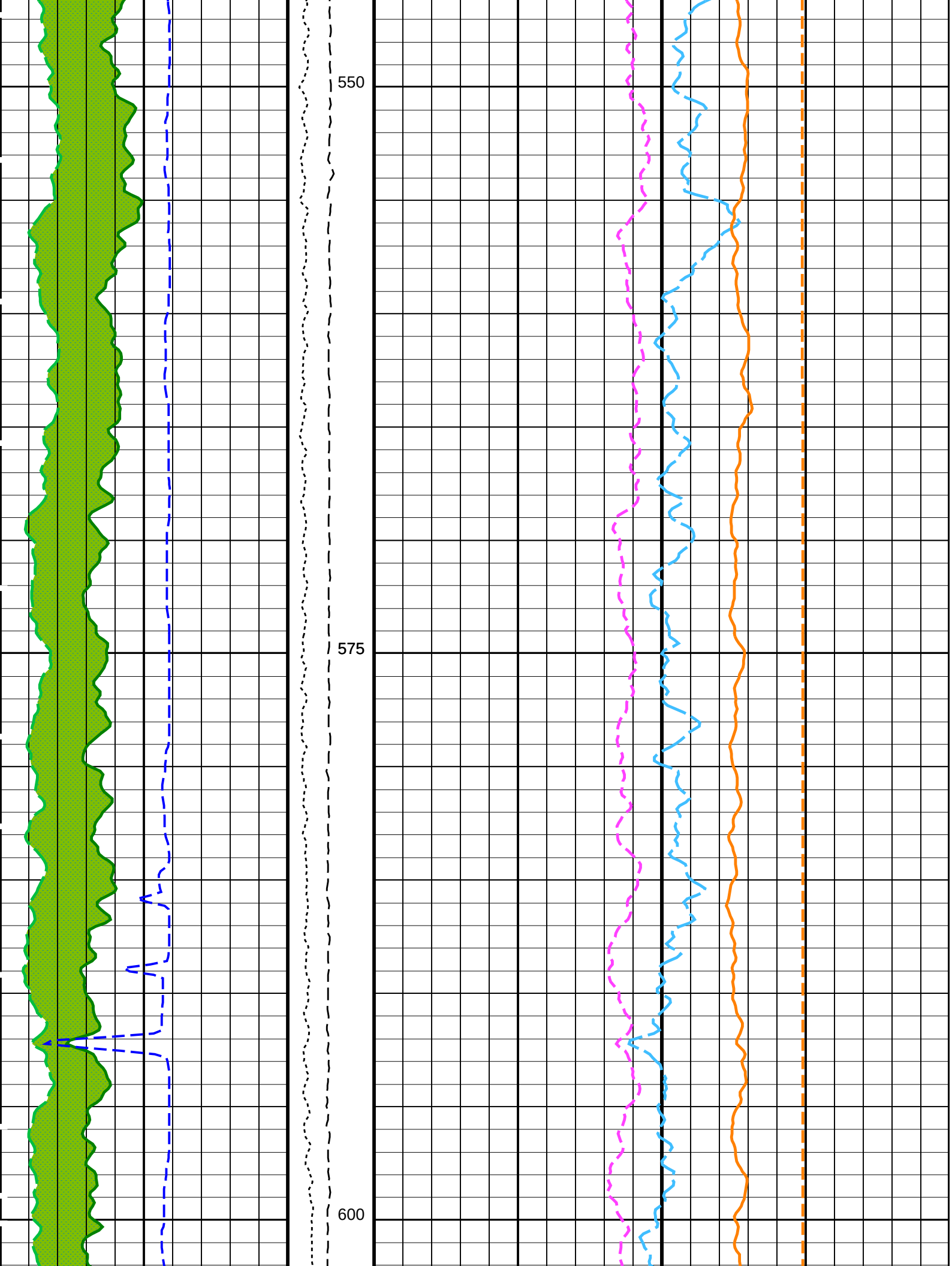
525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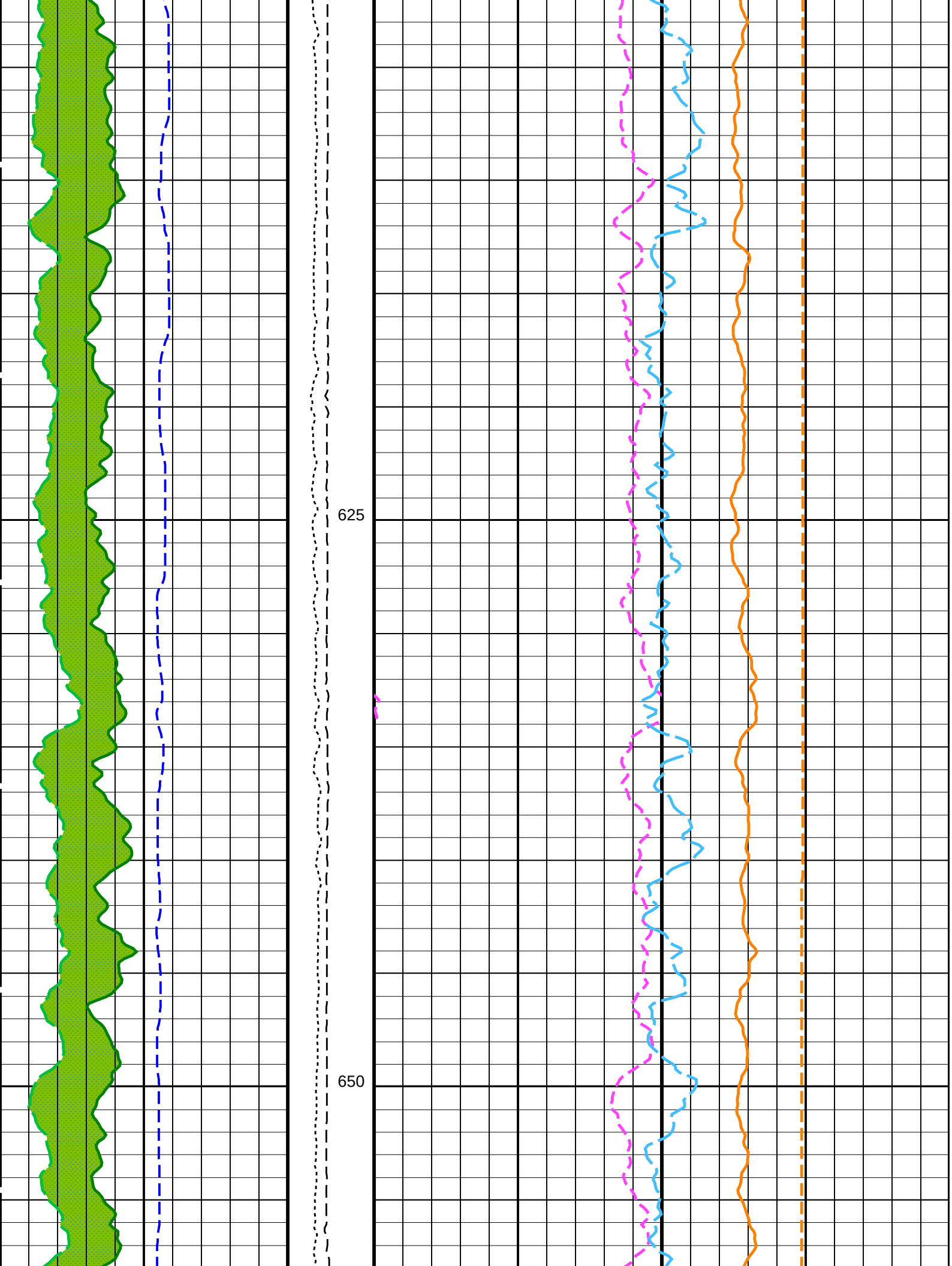
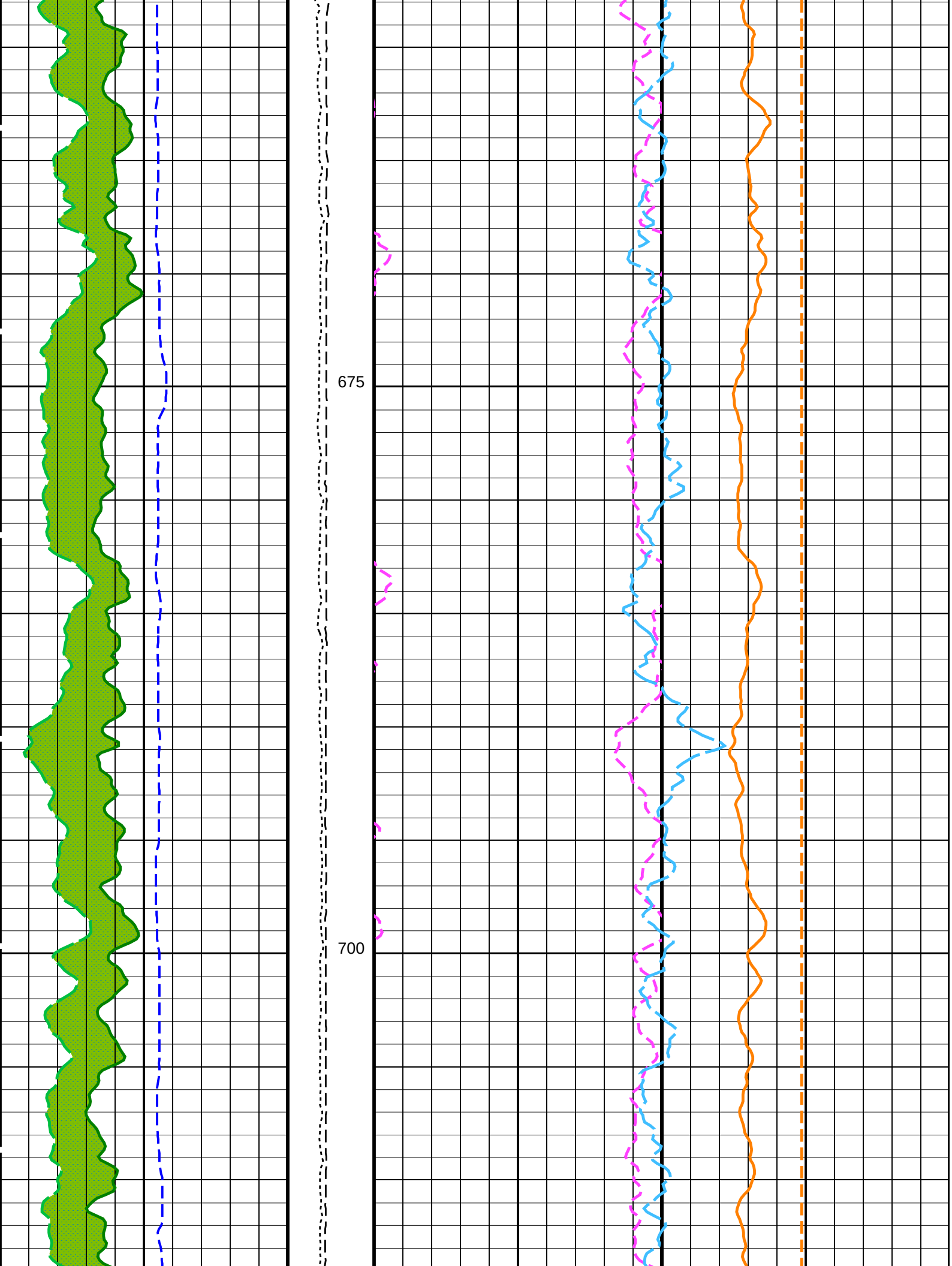
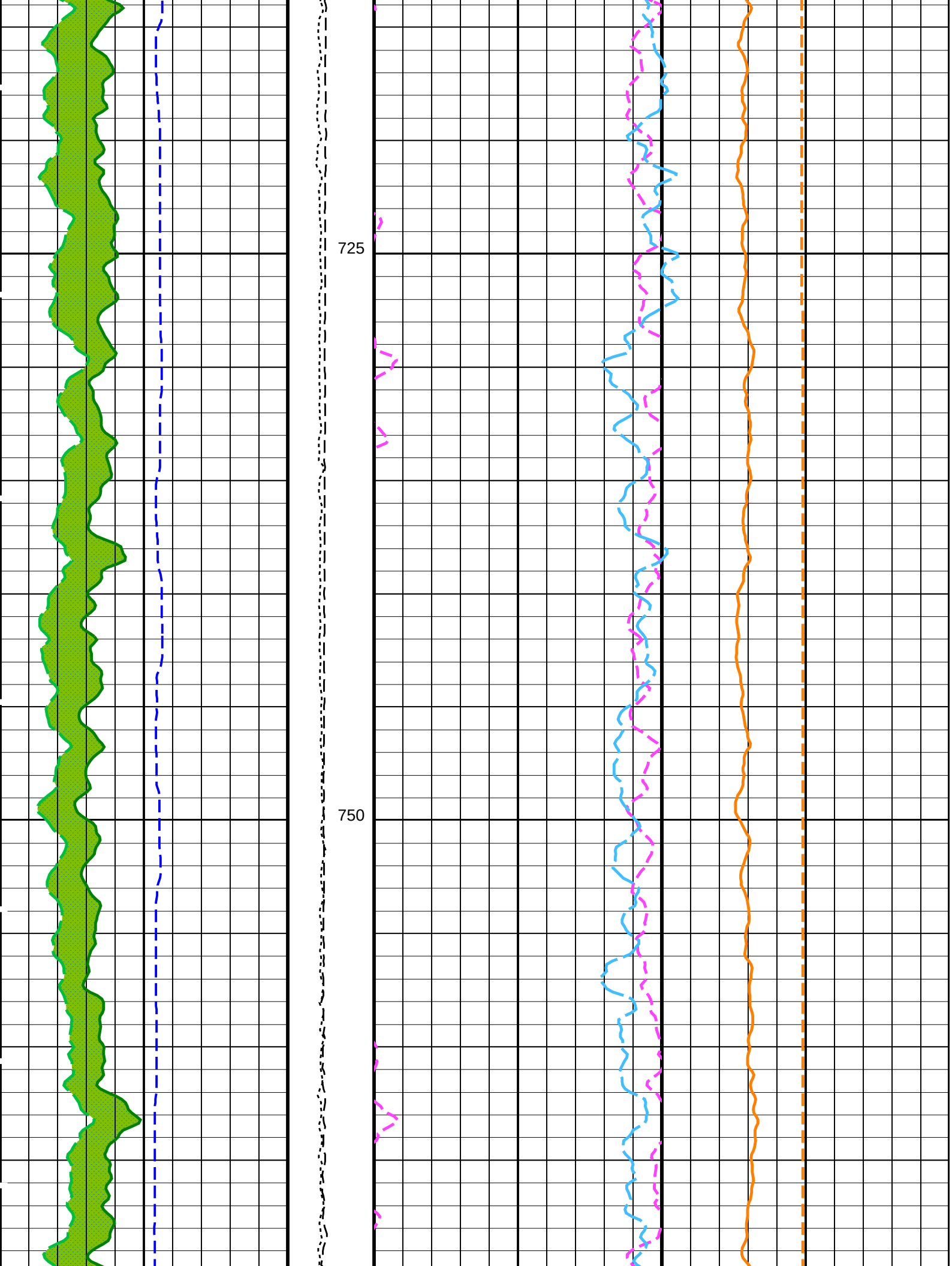
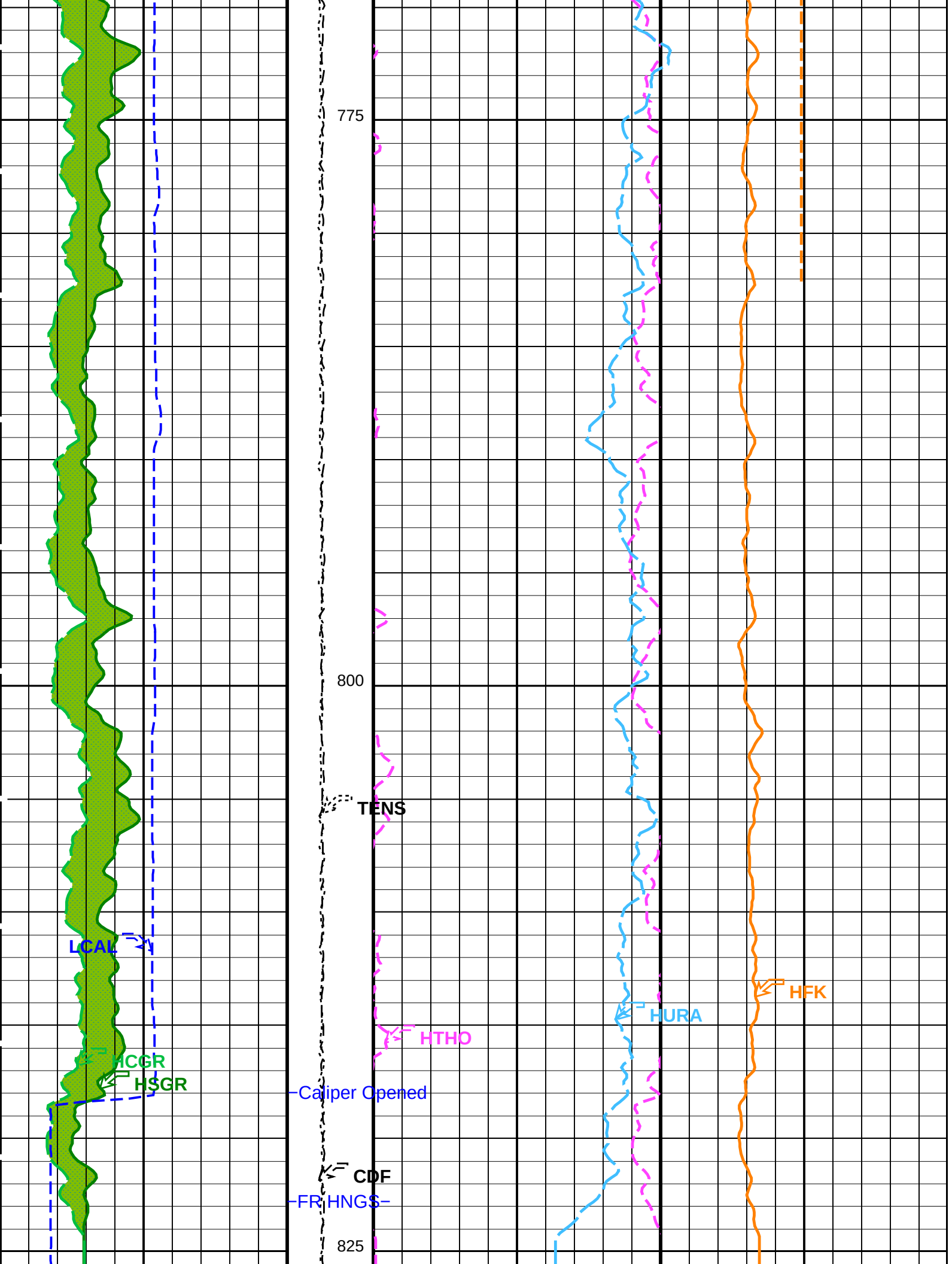
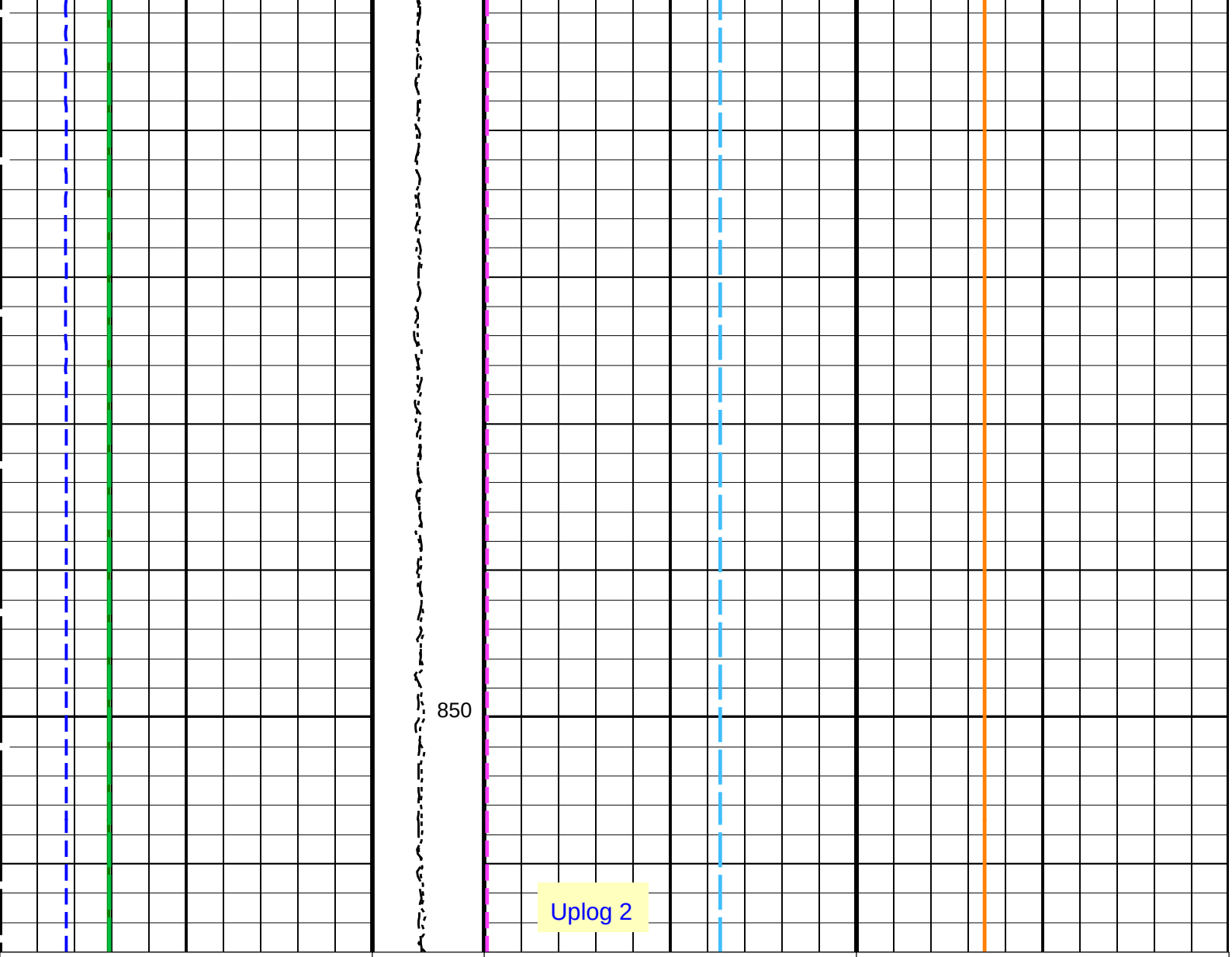
575
600


625
650


675
700


725
750


775
800
825
TENS
LCAL
HCGR
HSGR
Caliper Opened
CDF
FR HNGS
HTHO
HURA
HFK



HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
5 (PPM) 25

HNGS Potassium (HFK)
−0.01 (−−−−) 0.04

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

Calibrated Downhole Force (CDF) (LBF)
3000 0

HNGS Uranium (HURA)
−5 (PPM) 10

Area1
From HCGR to HSGR

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
	HRLT−B: High Resolution Laterolog Array − B	
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	LCAL
	APS−C: Accelerator−Porosity Tool	
BHS	Borehole Status	OPEN

GCSE	Generalized Caliper Selection	LCAL	
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	−0.00110818	
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	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.991778	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00117	
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	1.32	G/C3
DO	Depth Offset for Playback	−141.0	M
PP	Playback Processing	NORMAL	

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 03−Sep−2015 10:44

OP System Version: 19C0−187

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

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_010LUP	FN:15	PRODUCER	29−Aug−2015 07:07	999.0 M	120.2 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_032PUP	FN:42	PRODUCER	03−Sep−2015 10:44

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_009LUP	FN:13	PRODUCER	29−Aug−2015 06:19	1168.1 M	1020.0 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_031PUP	FN:41	PRODUCER	03−Sep−2015 09:58	1027.2 M	879.0 M

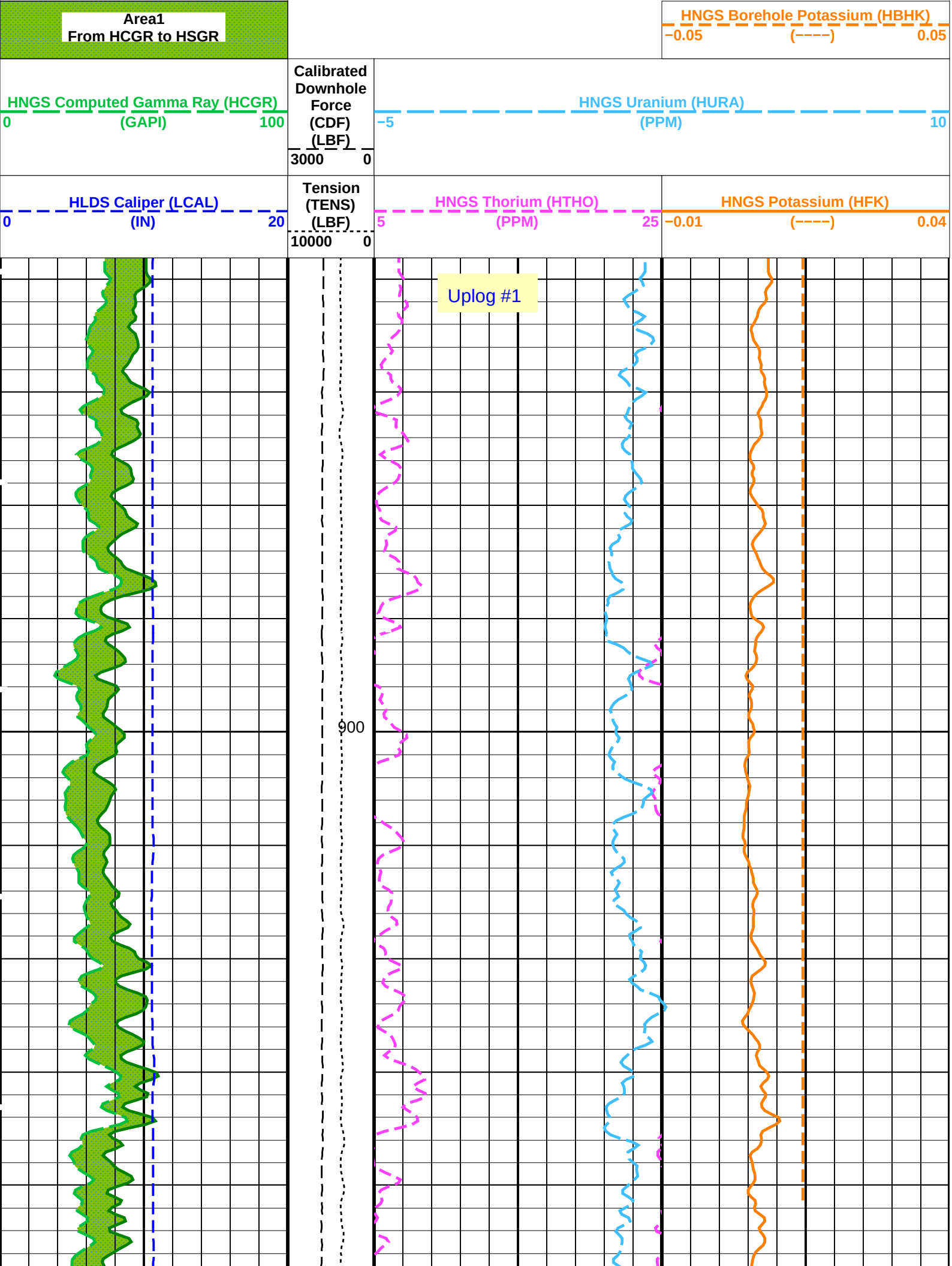
OP System Version: 19C0−187

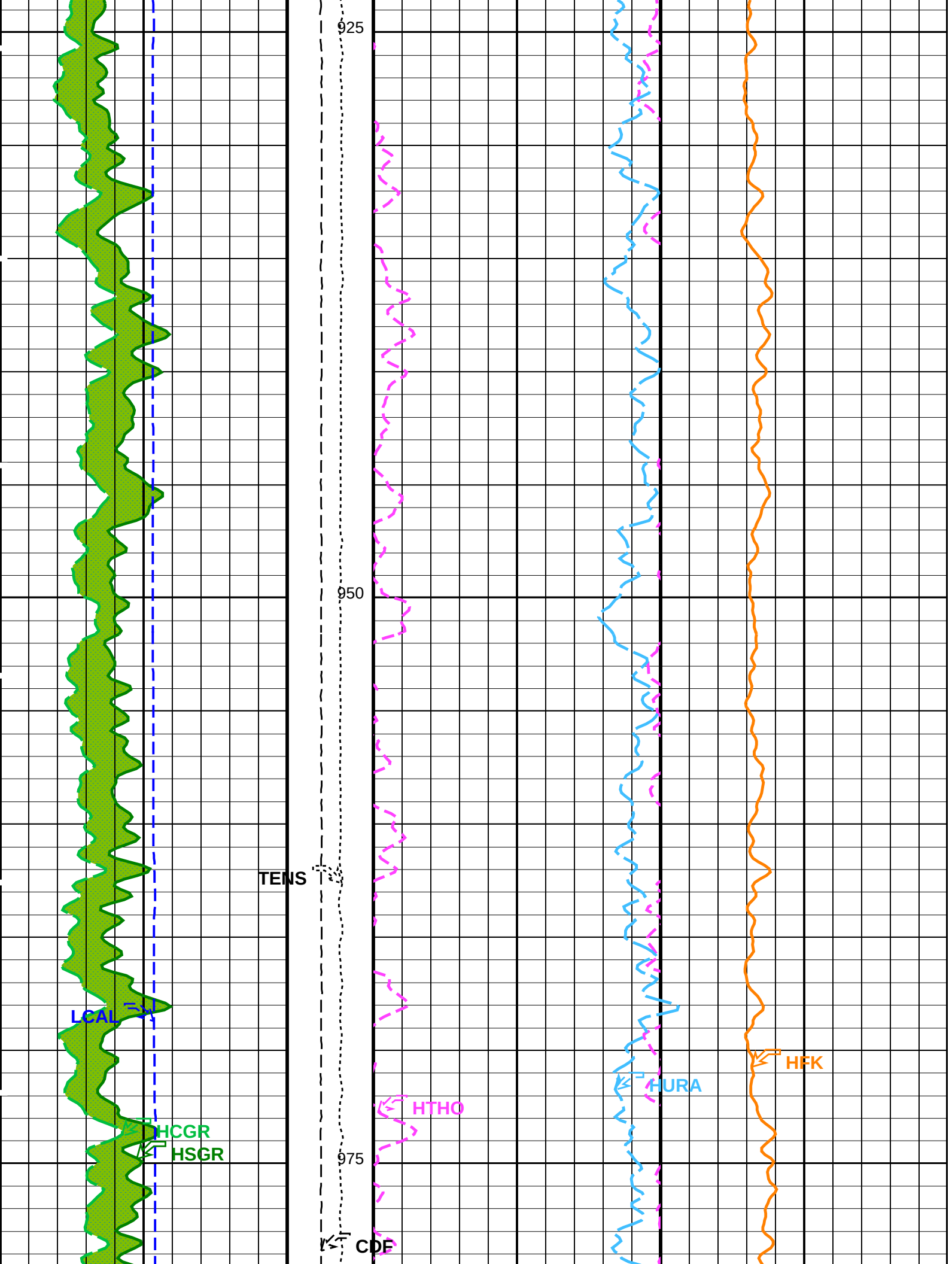
MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

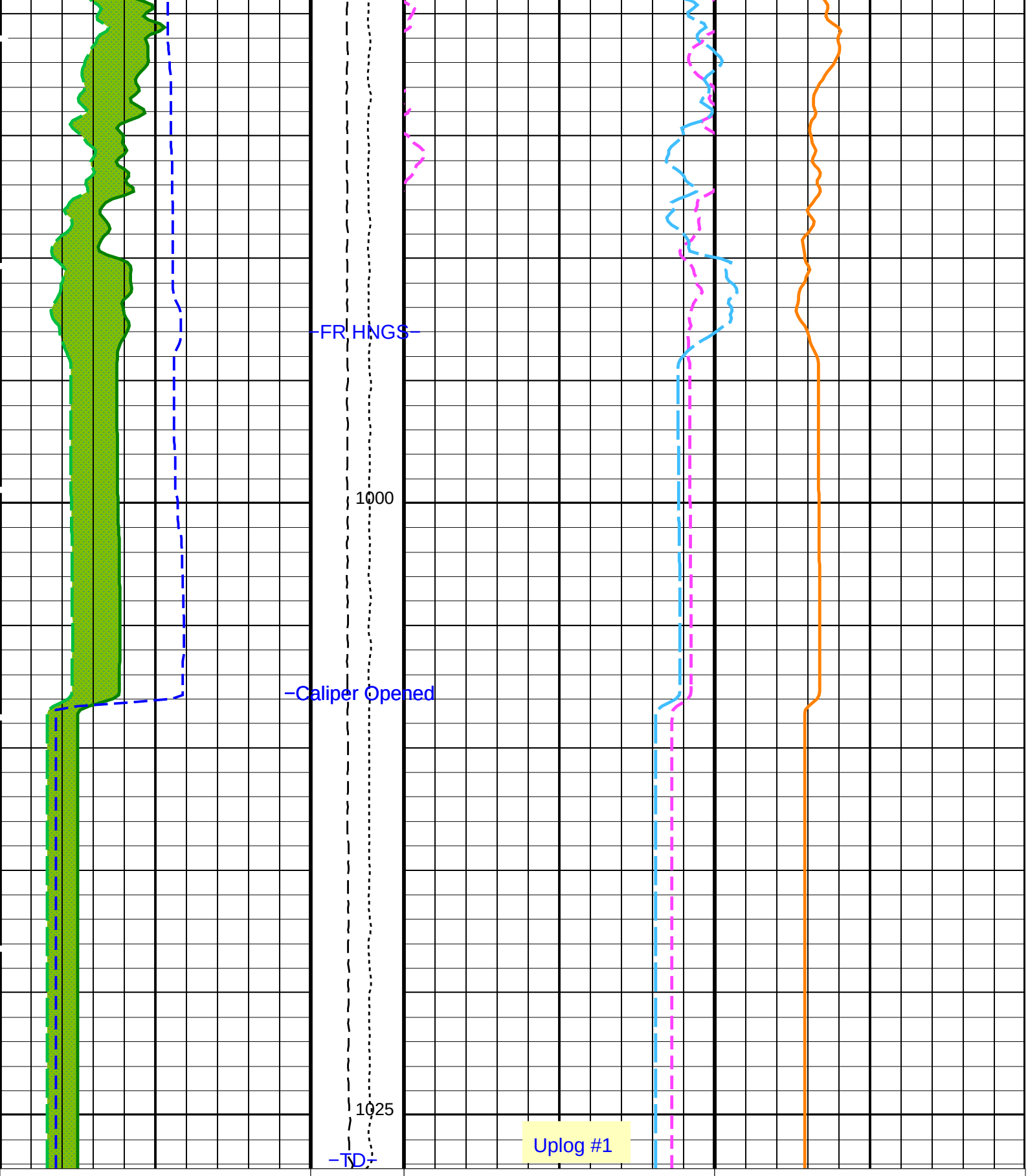
PIP SUMMARY

Time Mark Every 60 S

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


Area1
From HCGR to HSGR
HNGS Borehole Potassium (HBHK)
−0.05
(−−−−)
0.05
HNGS Computed Gamma Ray (HCGR)
0
(GAPI)
100
Calibrated Downhole Force (CDF) (LBF)
3000
0
HNGS Uranium (HURA)
−5
(PPM)
10
HLDS Caliper (LCAL)
0
(IN)
20
Tension (TENS) (LBF)
10000
0
HNGS Thorium (HTHO)
5
(PPM)
25
HNGS Potassium (HFK)
−0.01
(−−−−)
0.04
Uplog #1
900


925
950
975
TENS
LCAL
HCGR
HSGR
HTHO
HURA
HFK
CDF



HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
5 (PPM) 25

HNGS Potassium (HFK)
−0.01 (−−−−) 0.04

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

Calibrated Downhole Force (CDF) (LBF)
3000 0

HNGS Uranium (HURA)
−5 (PPM) 10

Area1 From HCGR to HSGR		HNGS Borehole Potassium (HBHK)
HNGS Spectroscopy Gamma Ray (HSGR)		−0.05 (−−−−) 0.05
0 (GAPI) 100		

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	APS−C: Accelerator−Porosity Tool		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	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	−0.00110818	
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	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.991778	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00117	
	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	1.32	G/C3
DO	Depth Offset for Playback	−141.0	M
PP	Playback Processing	NORMAL	

Format: HNGSYields   Vertical Scale: 1:200   Graphics File Created: 03−Sep−2015 09:59

OP System Version: 19C0−187

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

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_009LUP	FN:13	PRODUCER	29−Aug−2015 06:19	1168.1 M	1020.0 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_031PUP	FN:41	PRODUCER	03−Sep−2015 09:58

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_HRLA_028LUP	PRODUCER	03−Sep−2015 09:20	1170.1 M	82.3 M

Output DLIS Files

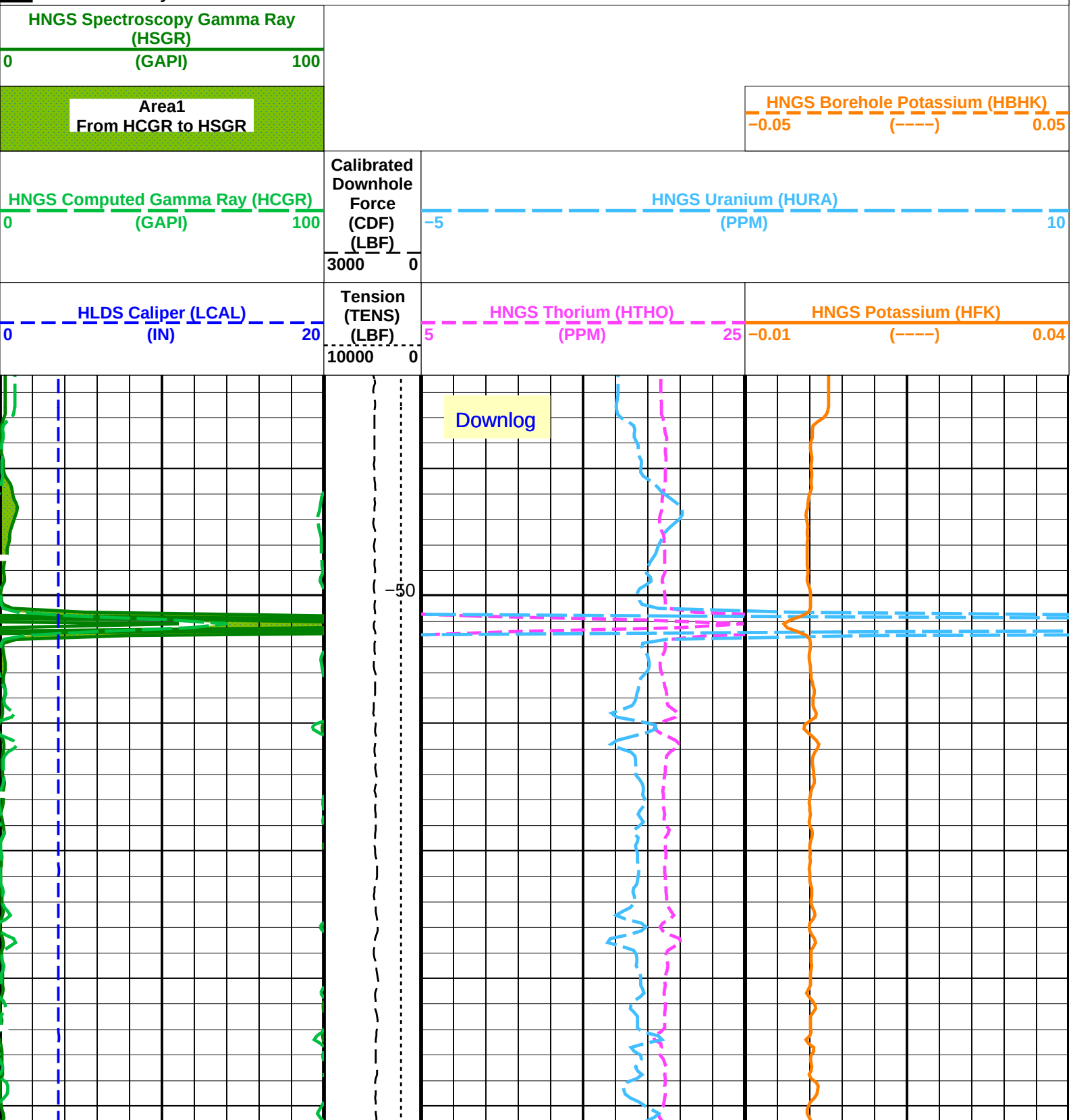
DEFAULT MSS_LDEO_HRLA_LDL_030PUP FN:40 PRODUCER 03−Sep−2015 09:36 1029.2 M −58.7 M

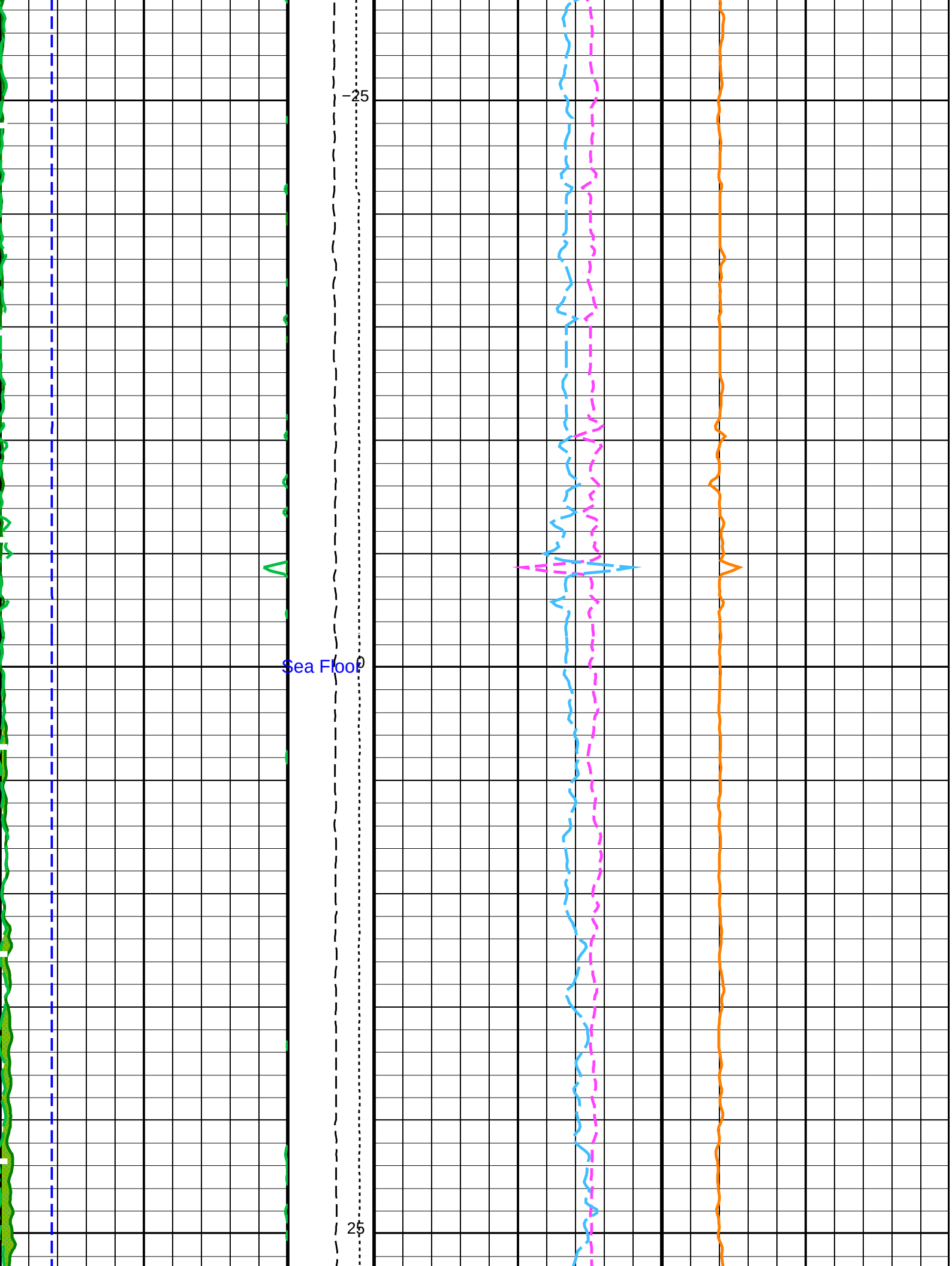
OP System Version: 19C0−187

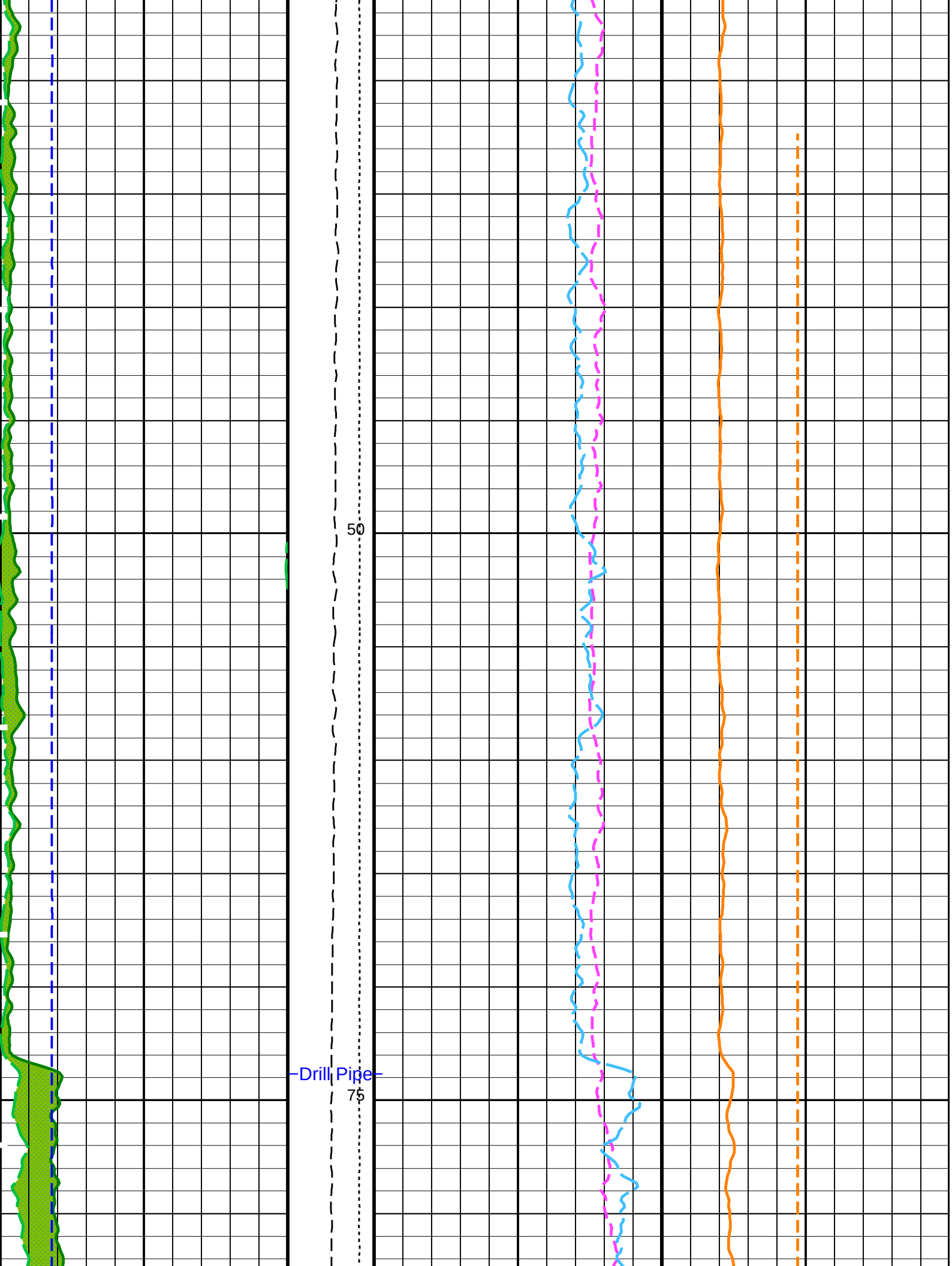
MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

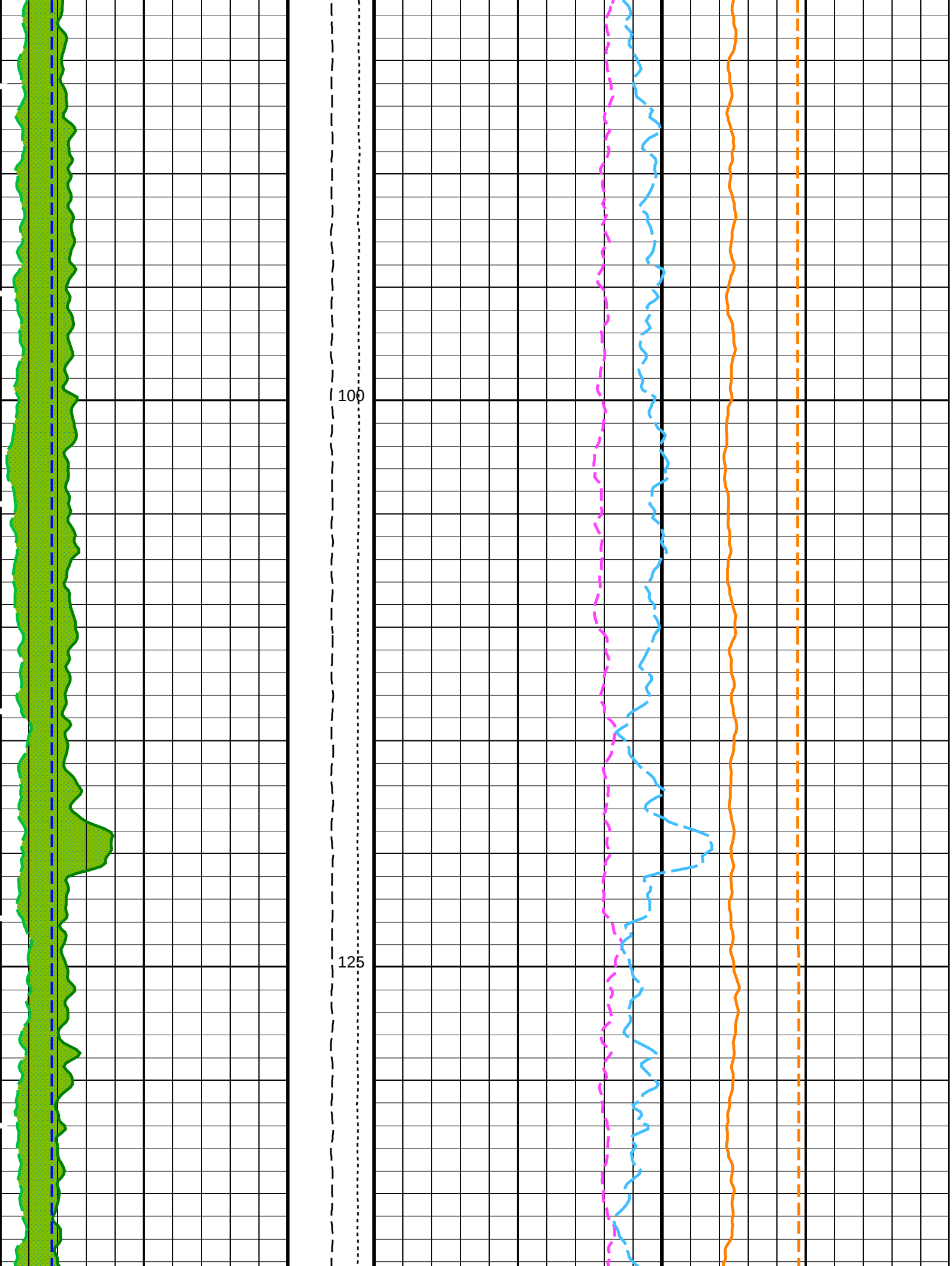
PIP SUMMARY

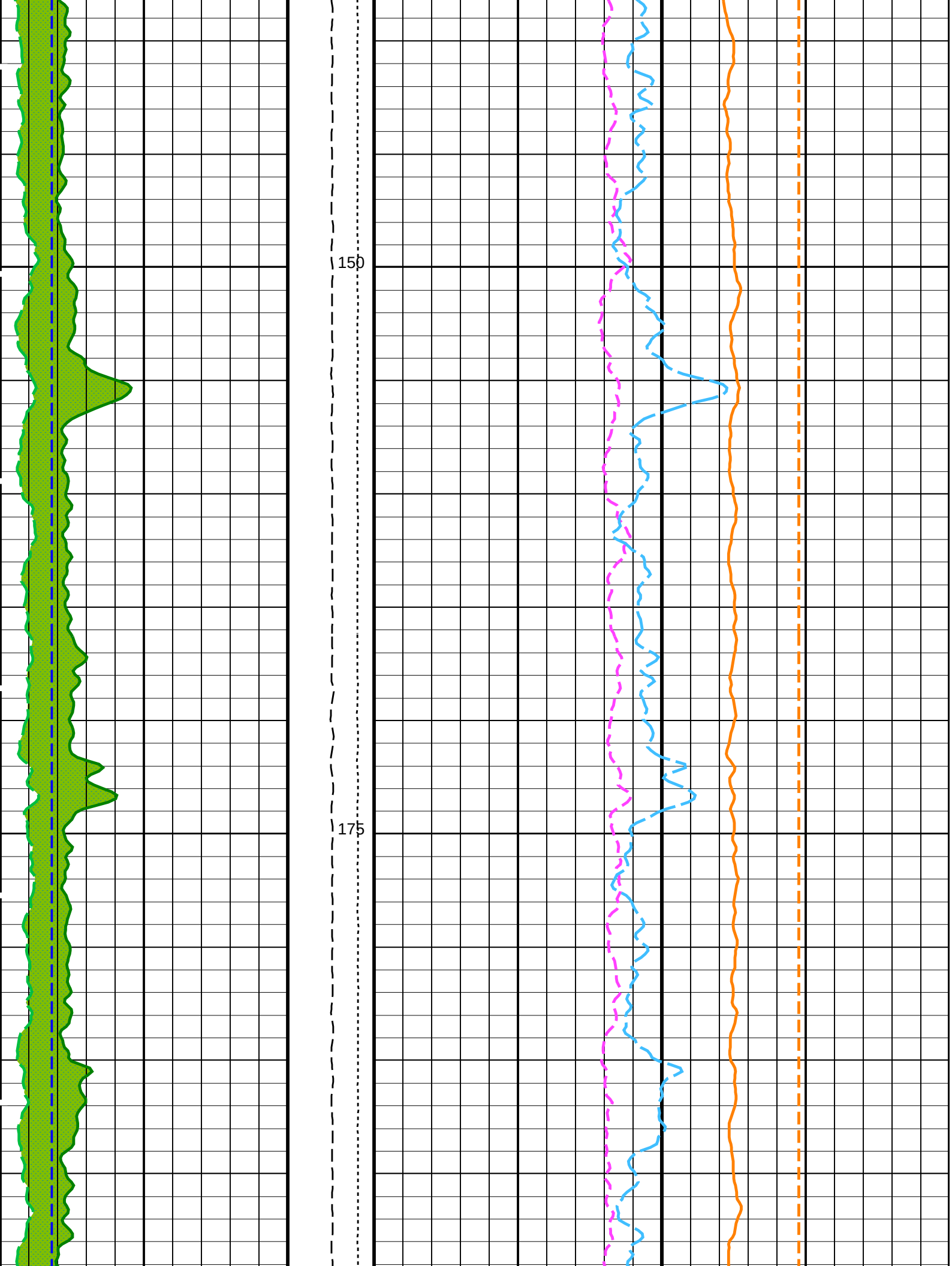
Time Mark Every 60 S

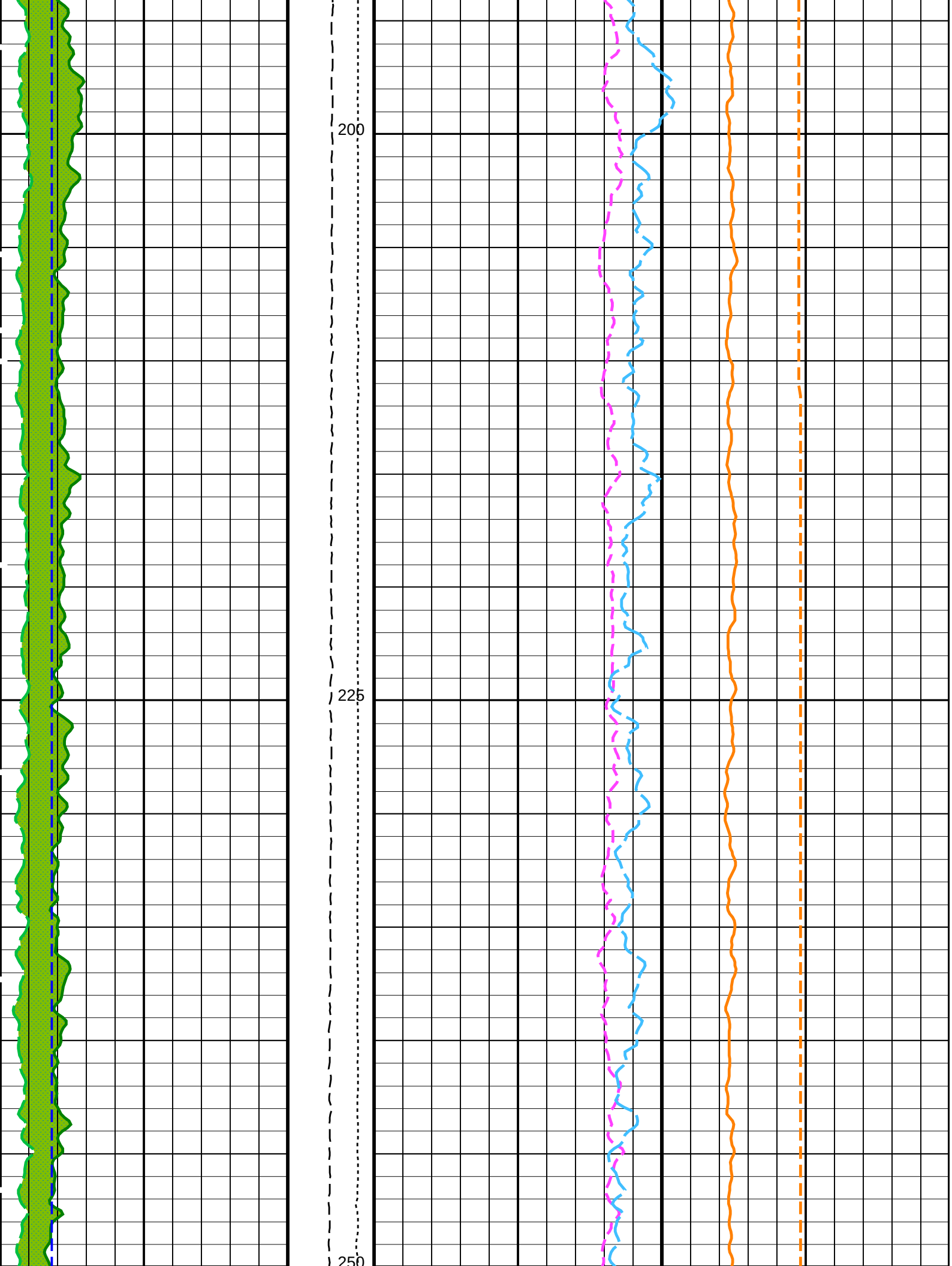


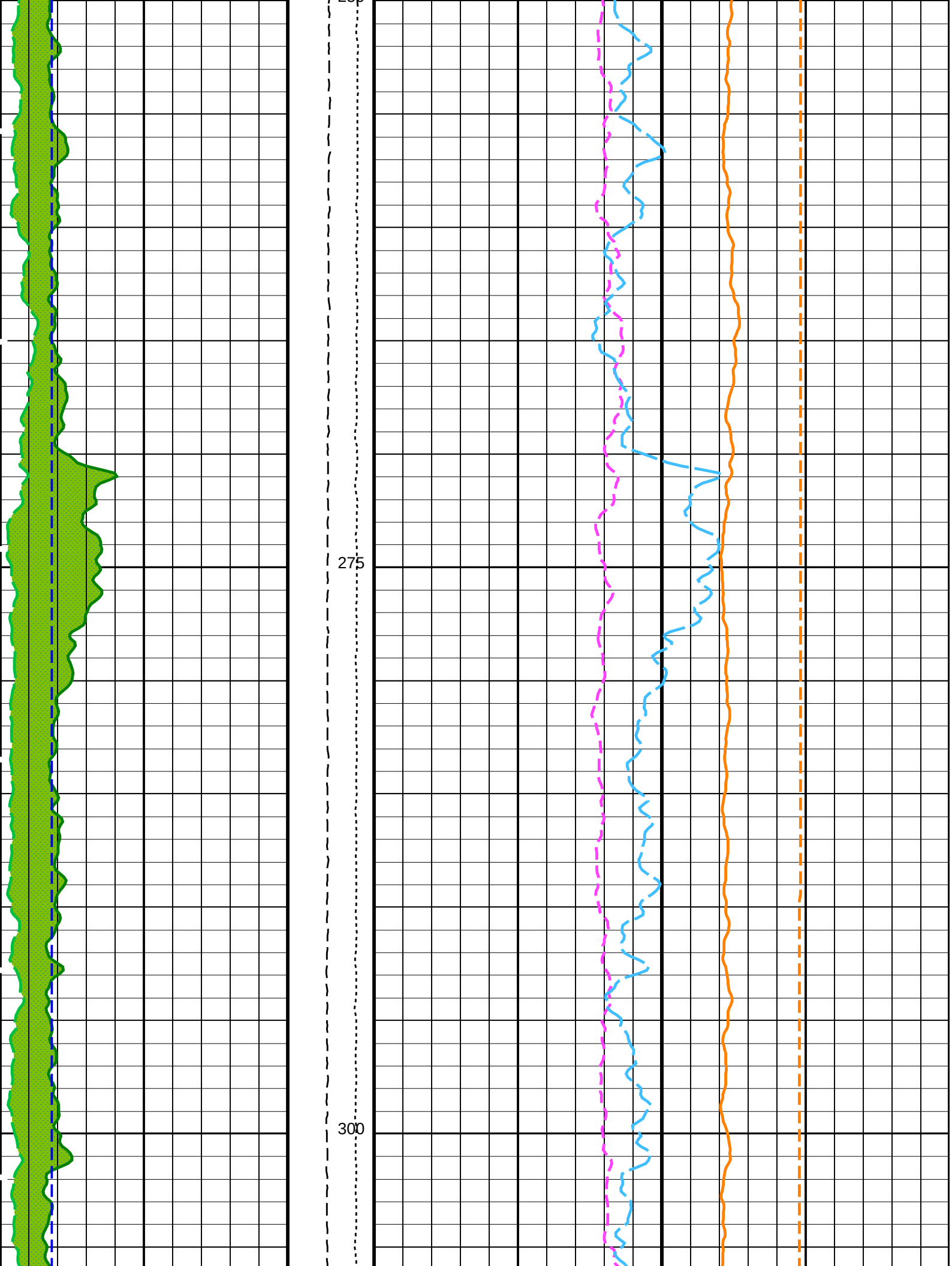

−25
Sea Floor
0
25

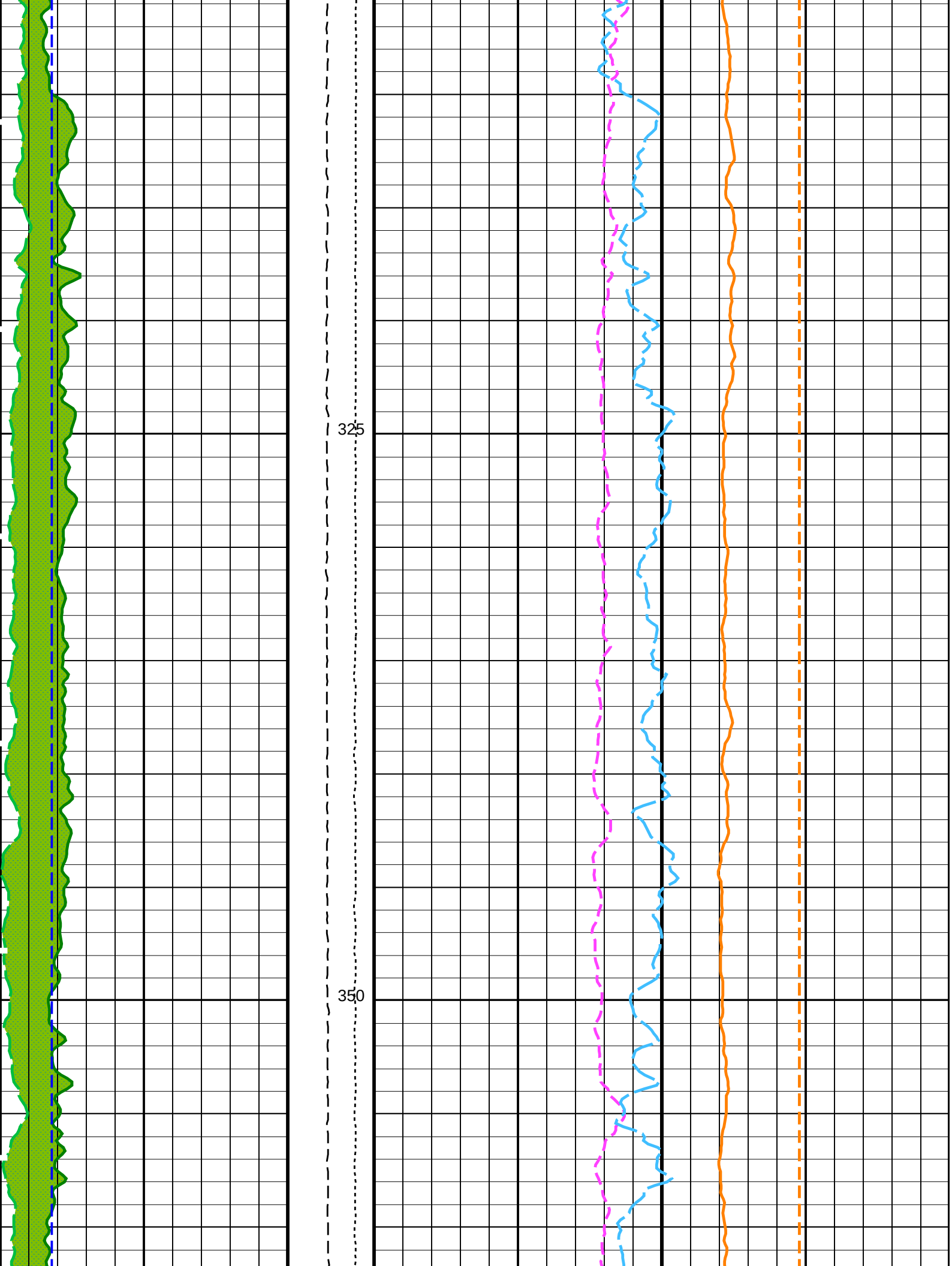

50
Drill Pipe
75

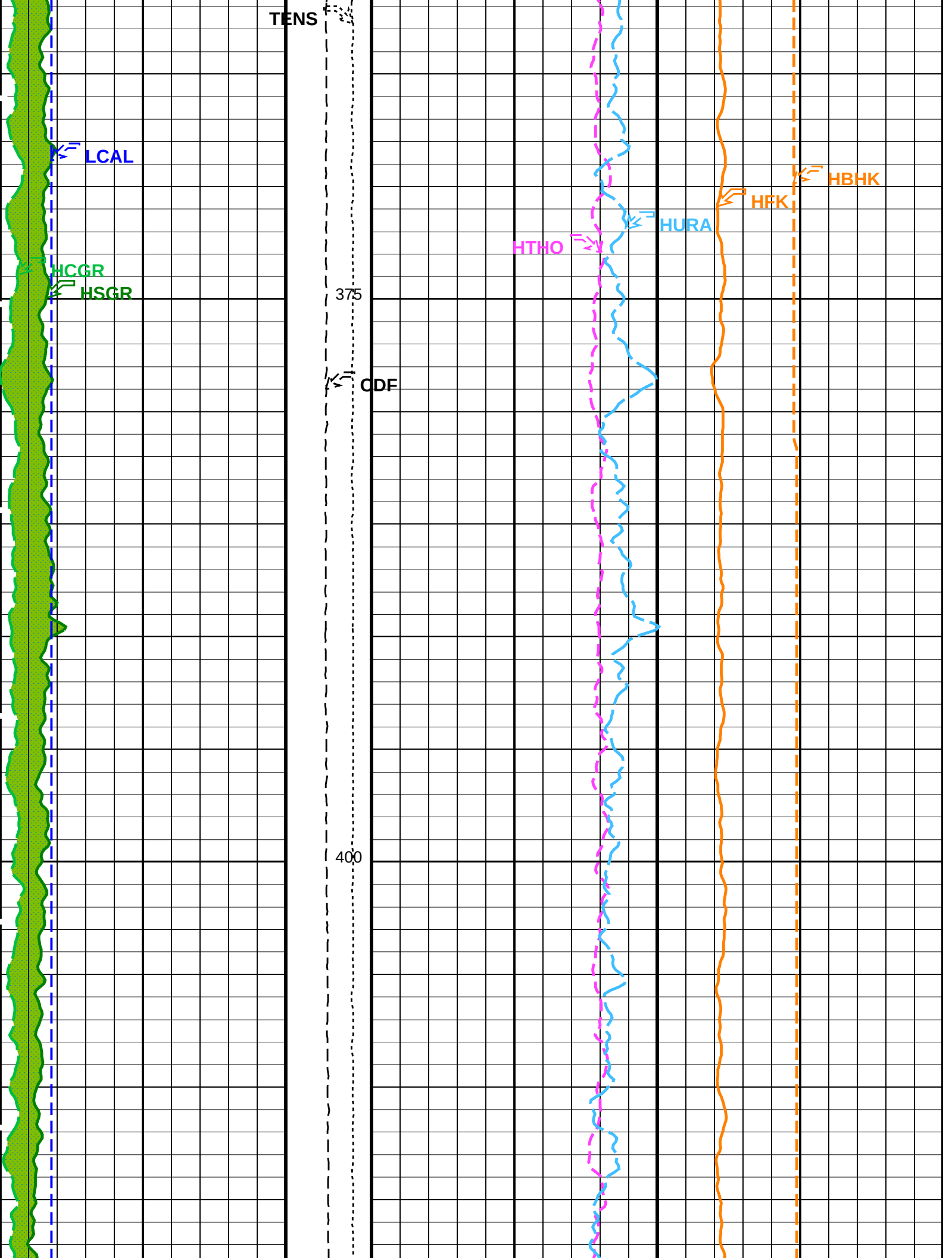

100
125

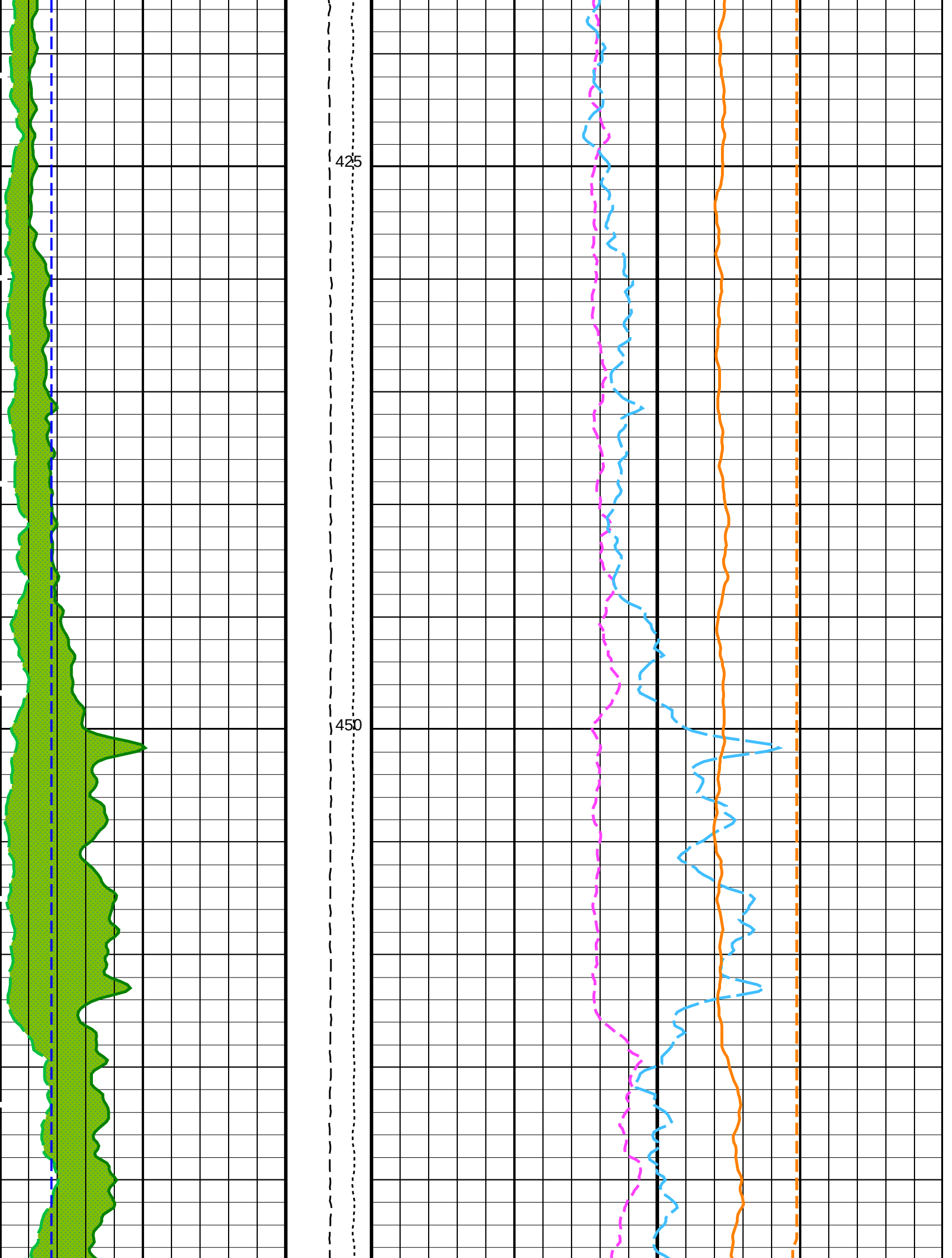

150
175

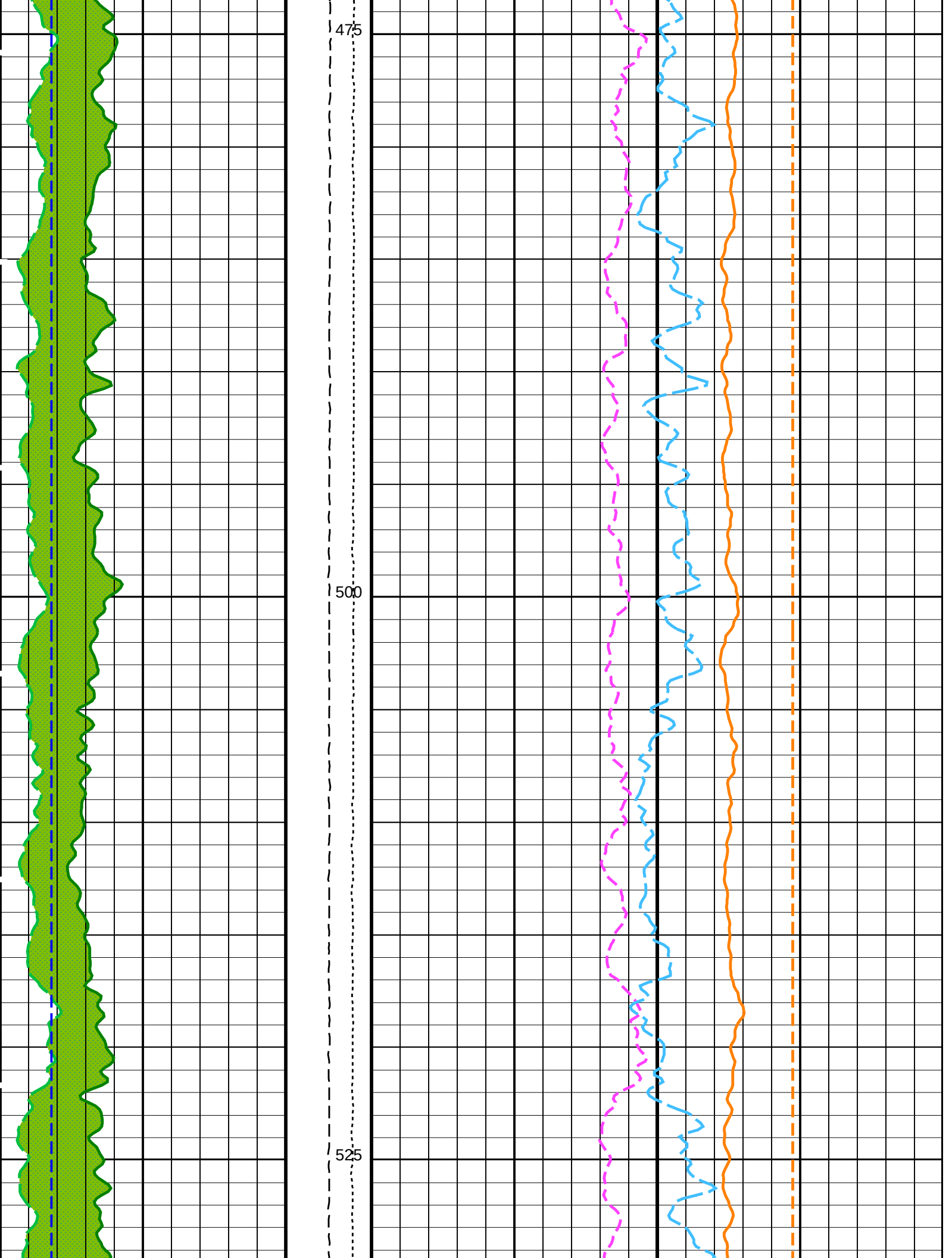

200
225
250

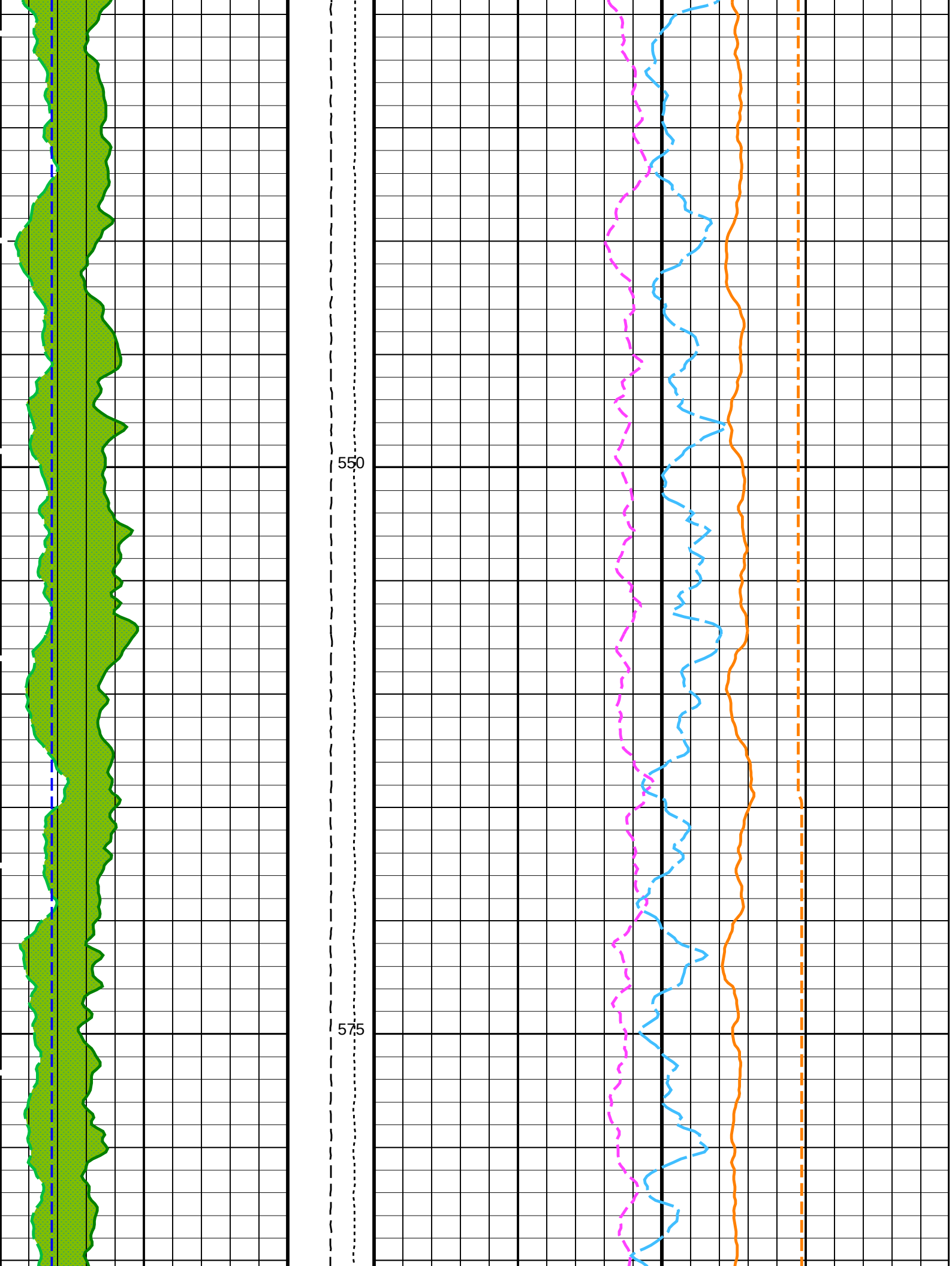

275
300

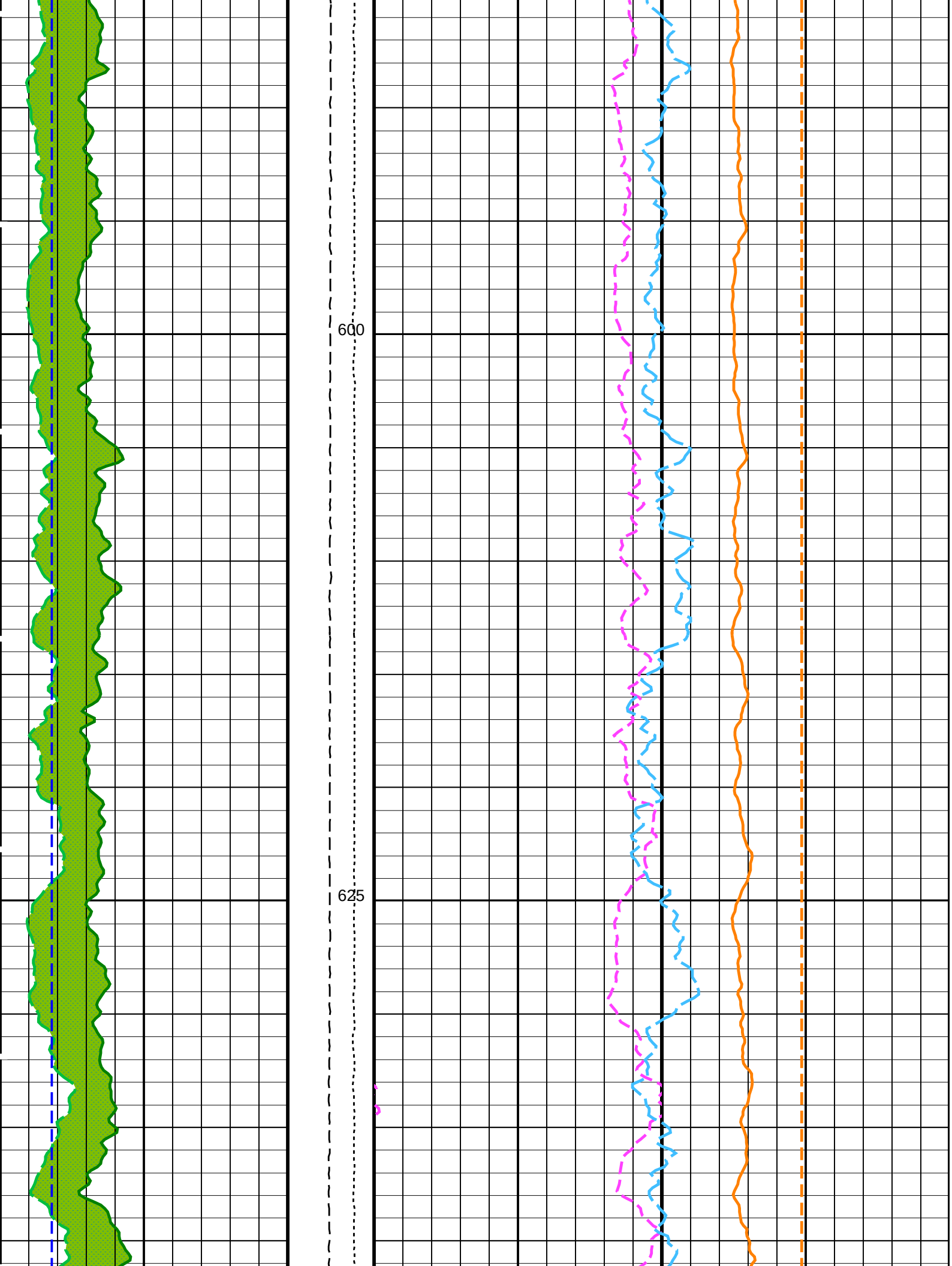

325
350

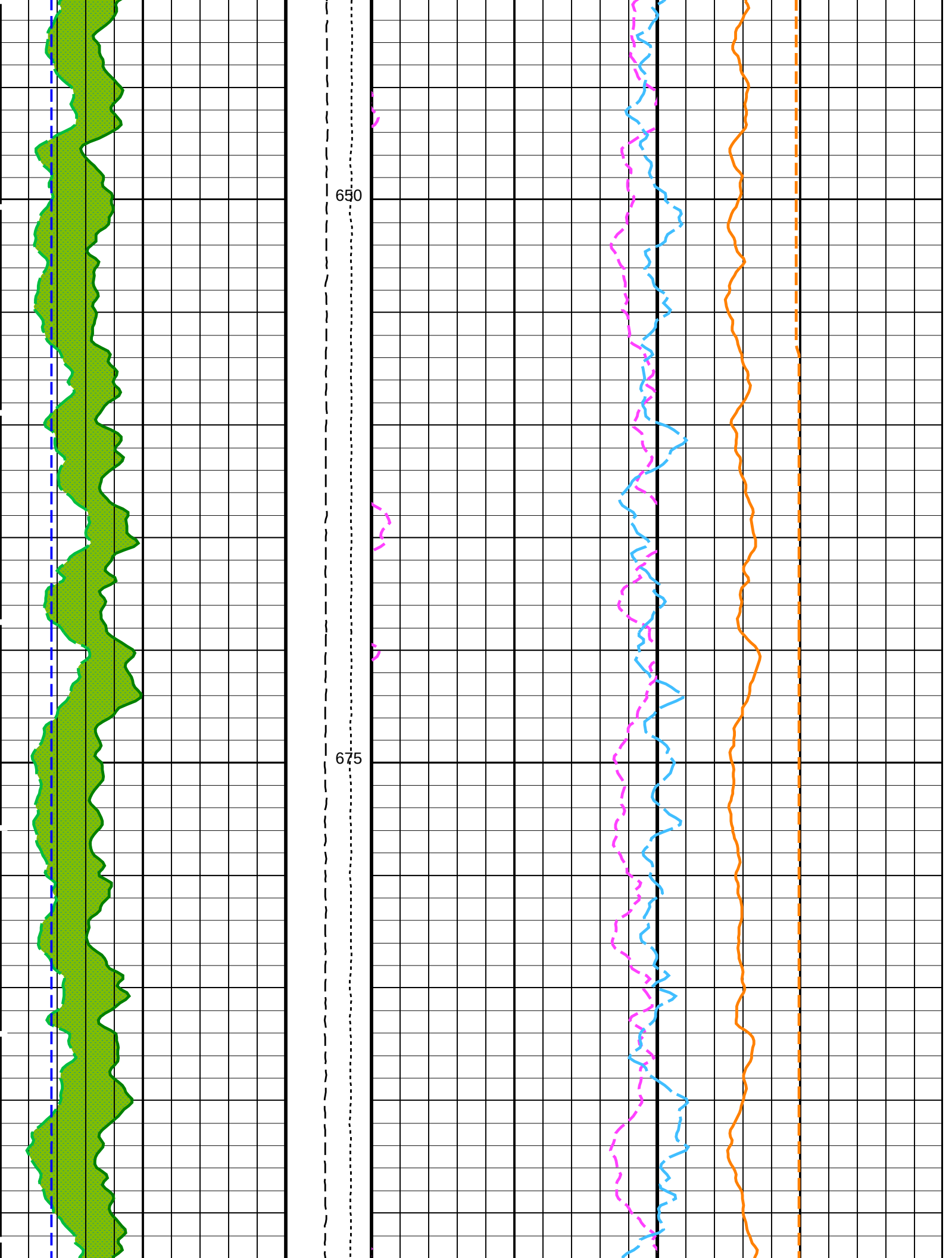

TENS
LCAL
HCGR
HSGR
375
CDF
400
HTHO
HURA
HFK
HBHK

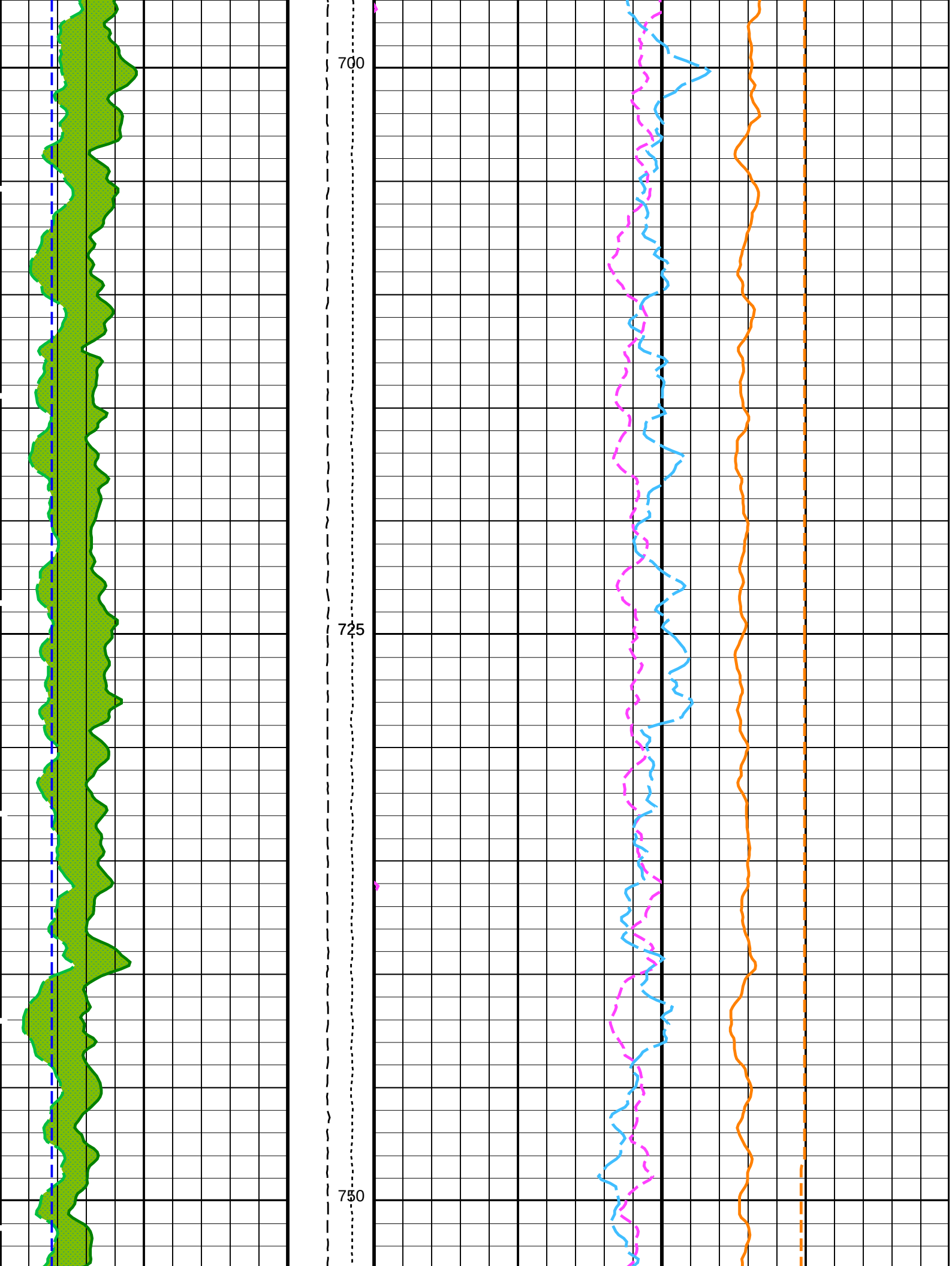

425
450

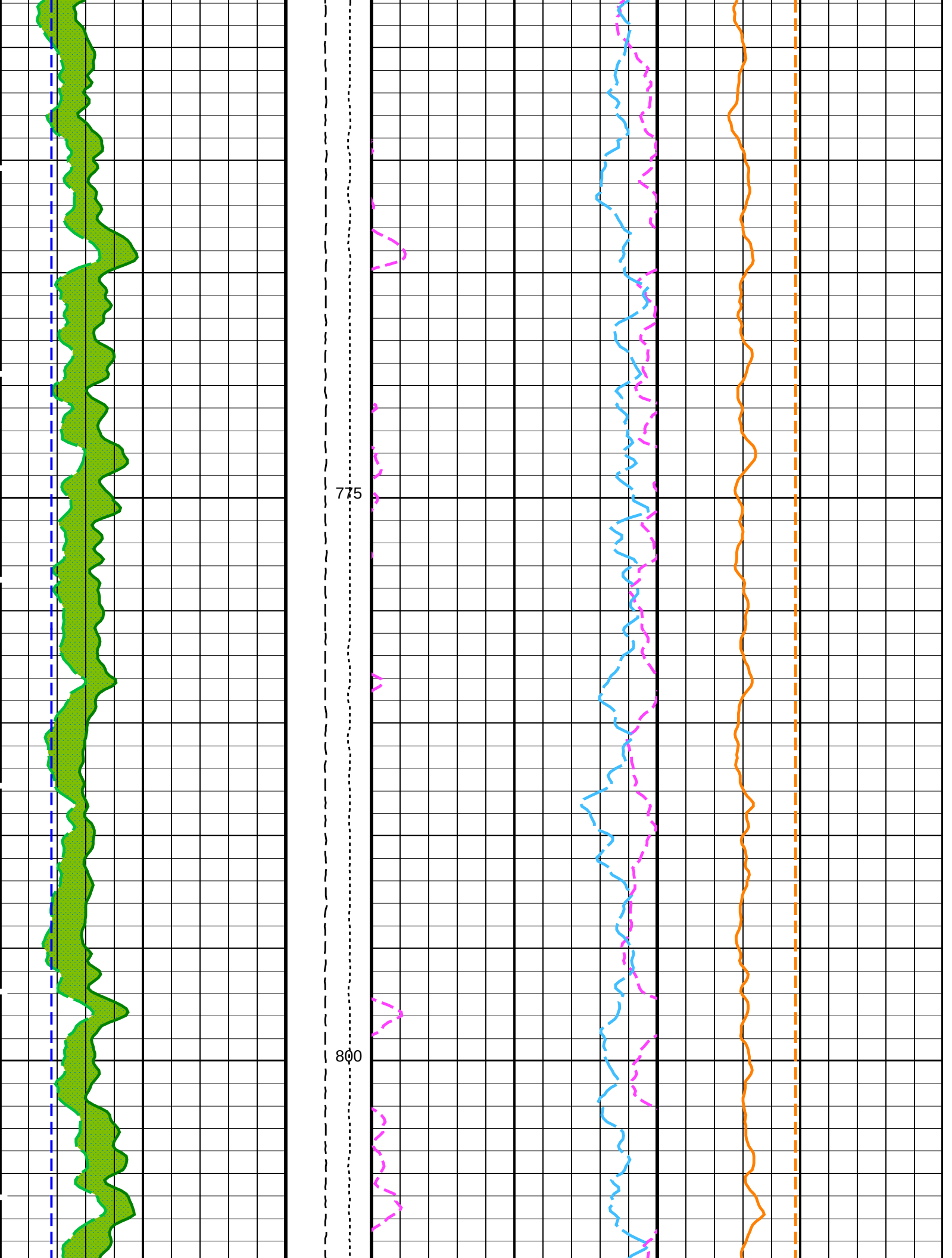

475
500
525

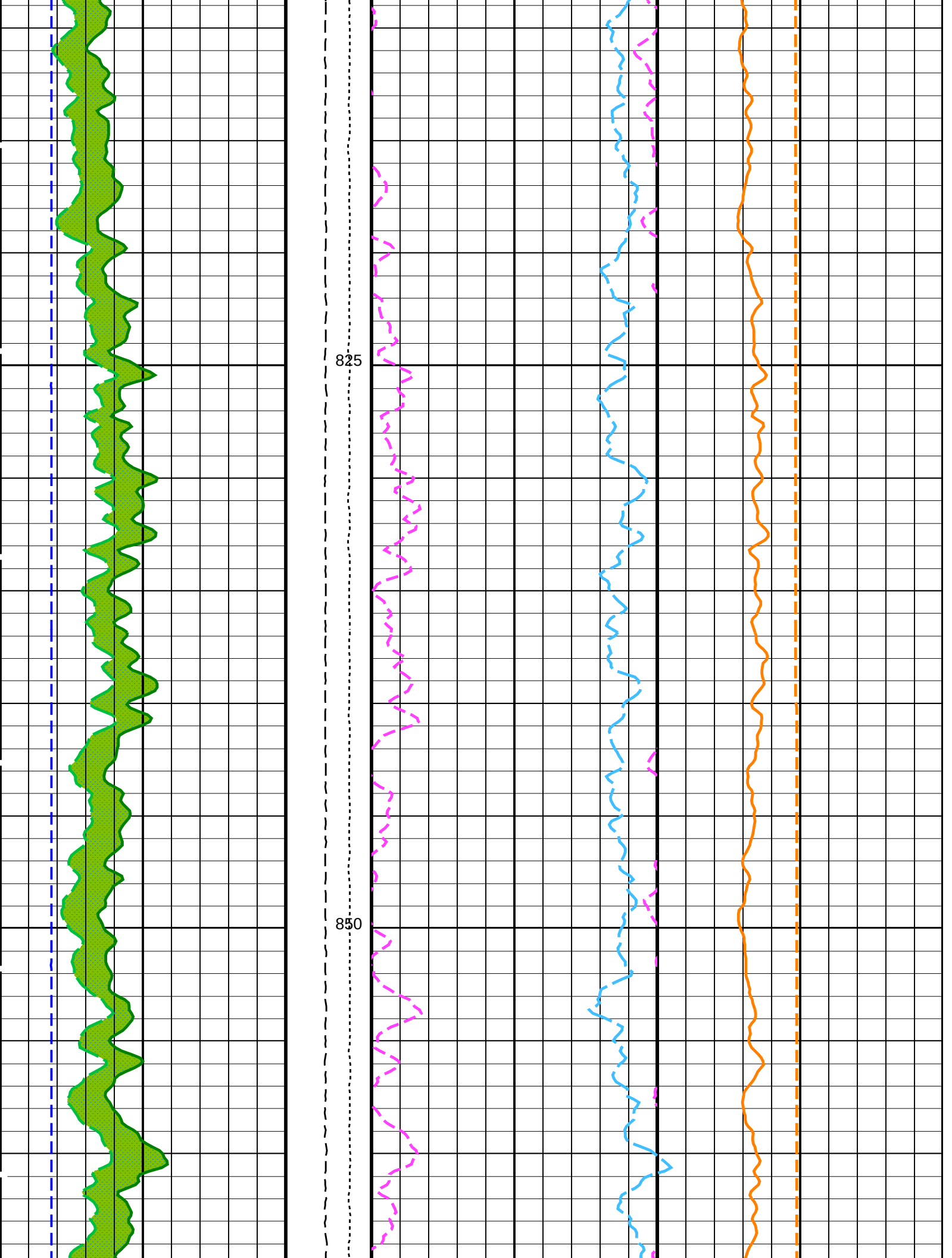

550
575

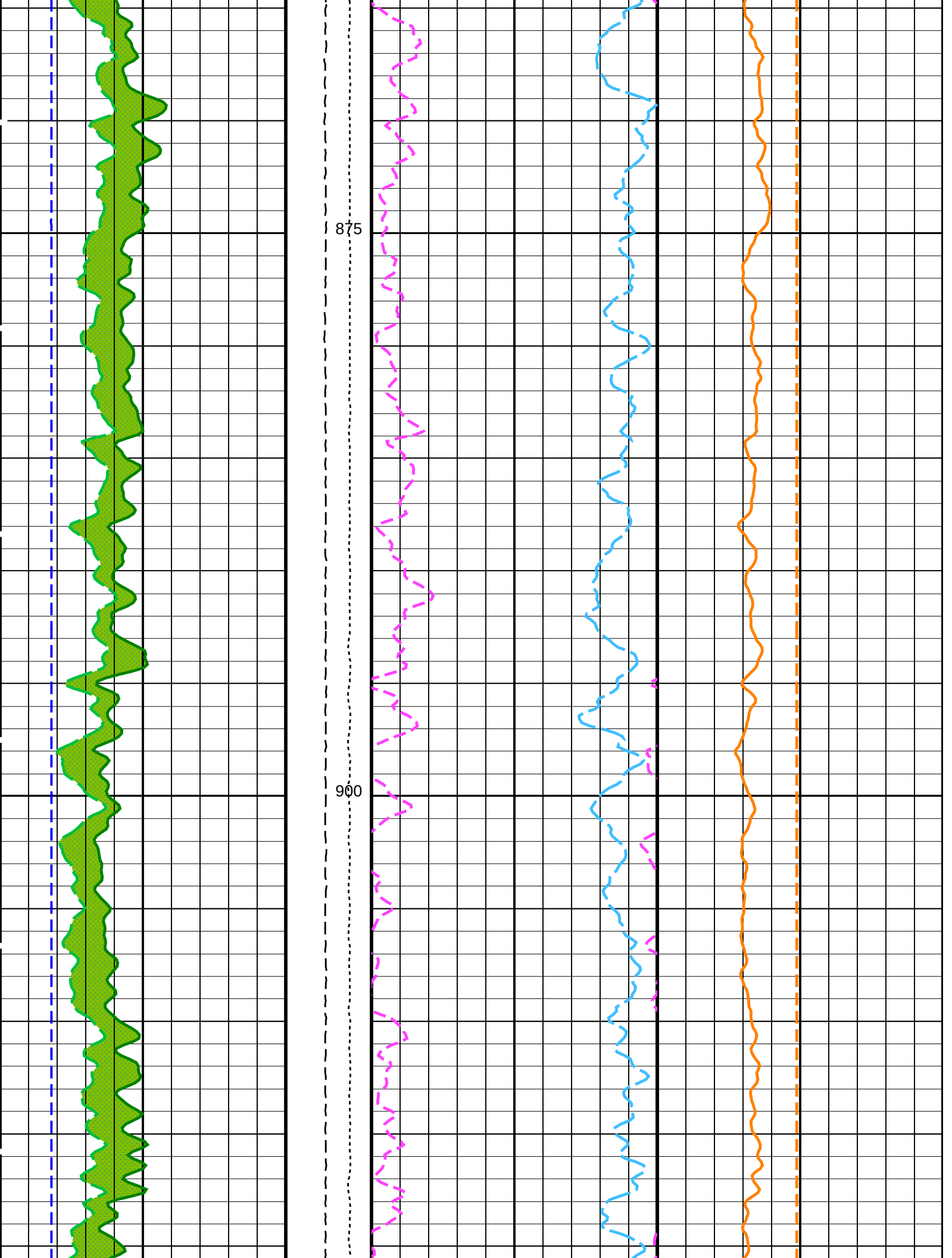

600
625

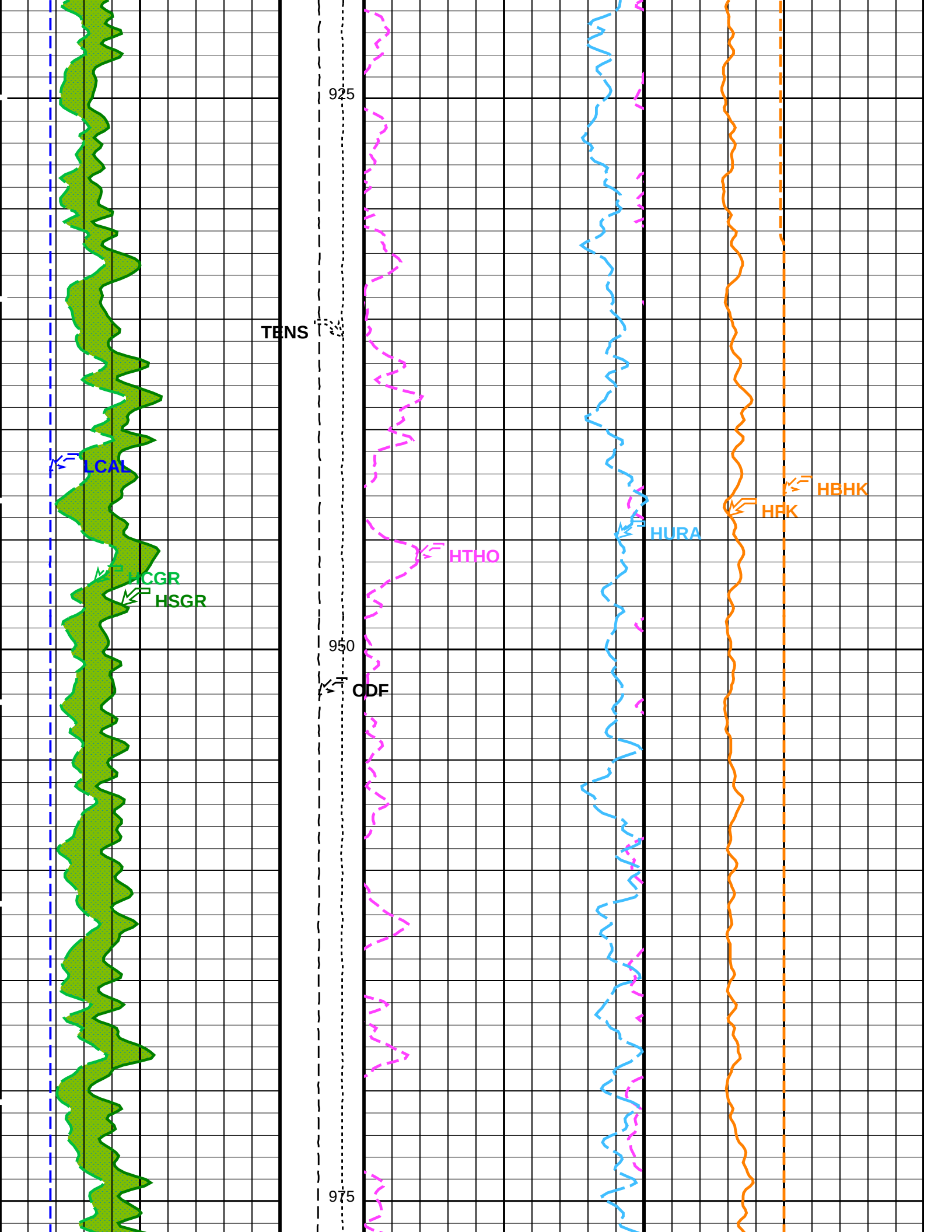

650
675

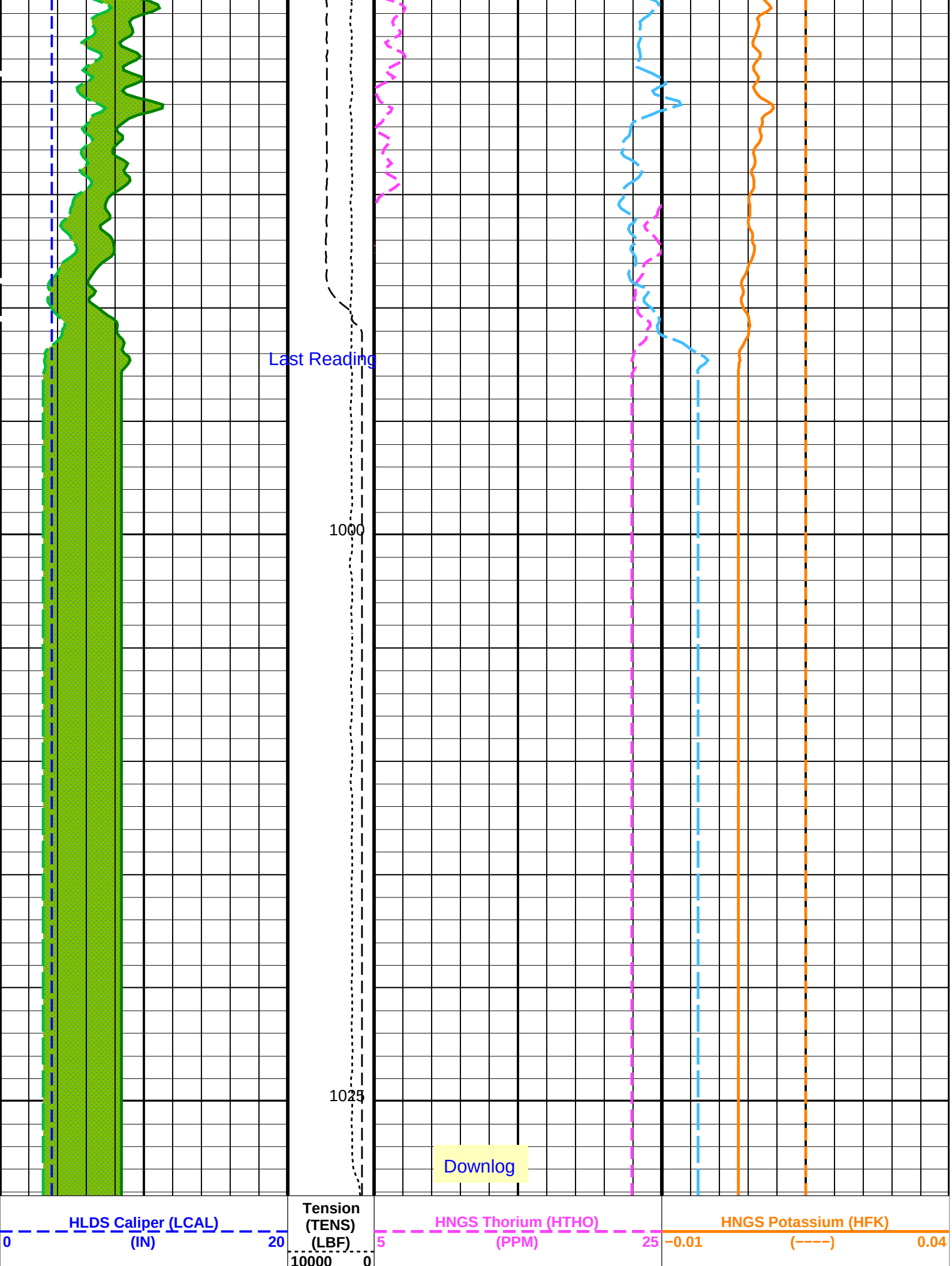

700
725
750

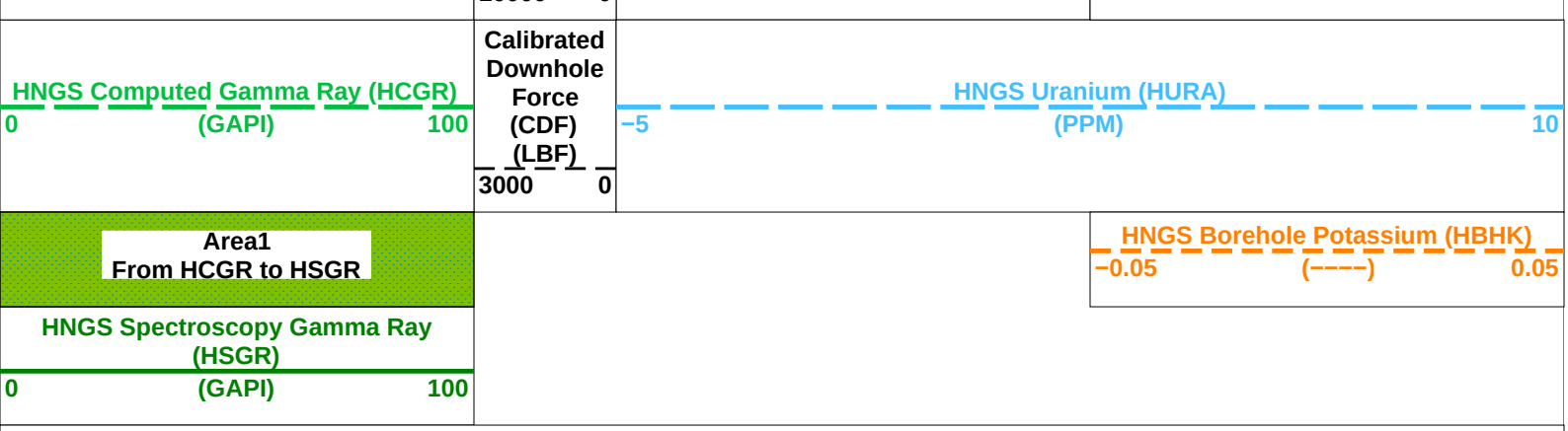

775
800


825
850


875
900


925
TENS
LCAL
HTHO
HBHK
HFK
HURA
HCGR
HSGR
950
ODF
975


Last Reading
1000
1025
Downlog
HLDS Caliper (LCAL)
0
(IN)
20
Tension
(TENS)
(LBF)
10000
0
HNGS Thorium (HTHO)
5
(PPM)
25
HNGS Potassium (HFK)
−0.01
(−−−−)
0.04



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	APS−C: Accelerator−Porosity Tool		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	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	−0.00110818	
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	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.991778	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00117	
	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	1.32	G/C3
DO	Depth Offset for Playback	−141.0	M
PP	Playback Processing	NORMAL	

Format: HNGSYields **Vertical Scale: 1:200** **Graphics File Created: 03−Sep−2015 09:37**

OP System Version: 19C0−187

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

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_HRLA_028LUP	PRODUCER	03−Sep−2015 09:20	1170.1 M	82.3 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_030PUP.... FN:40	PRODUCER	03−Sep−2015 09:36		

DEFAULT MSS_LDEO_HRLA_LDL_030PUP FN:40 PRODUCER 03-Sep-2015 09:36

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_010LUP	FN:15	PRODUCER	29-Aug-2015 07:07	999.0 M	120.2 M

Output DLIS Files

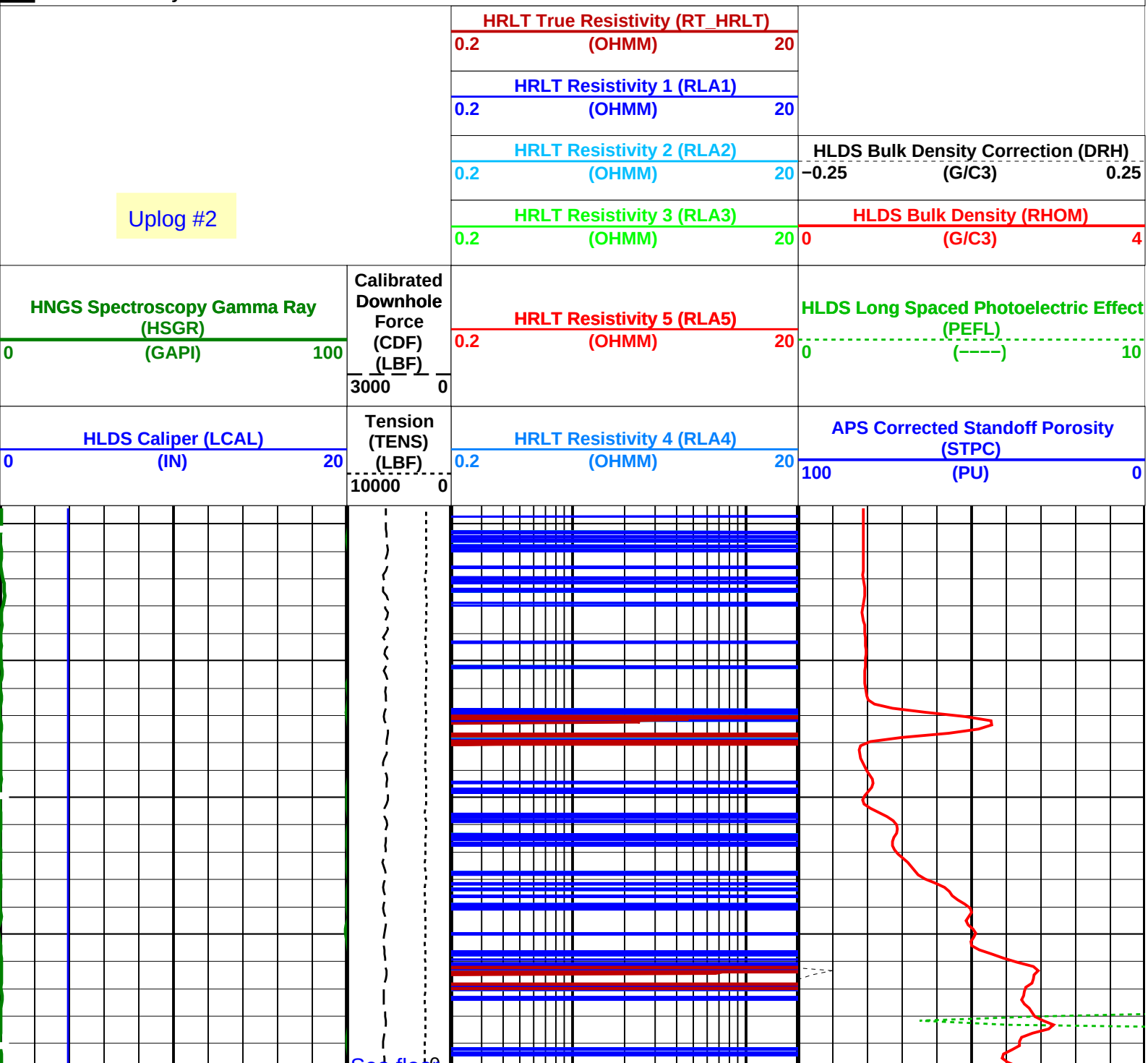
DEFAULT	MSS_LDEO_HRLA_LDL_032PUP	FN:42	PRODUCER	03-Sep-2015 10:44	858.0 M	-20.7 M

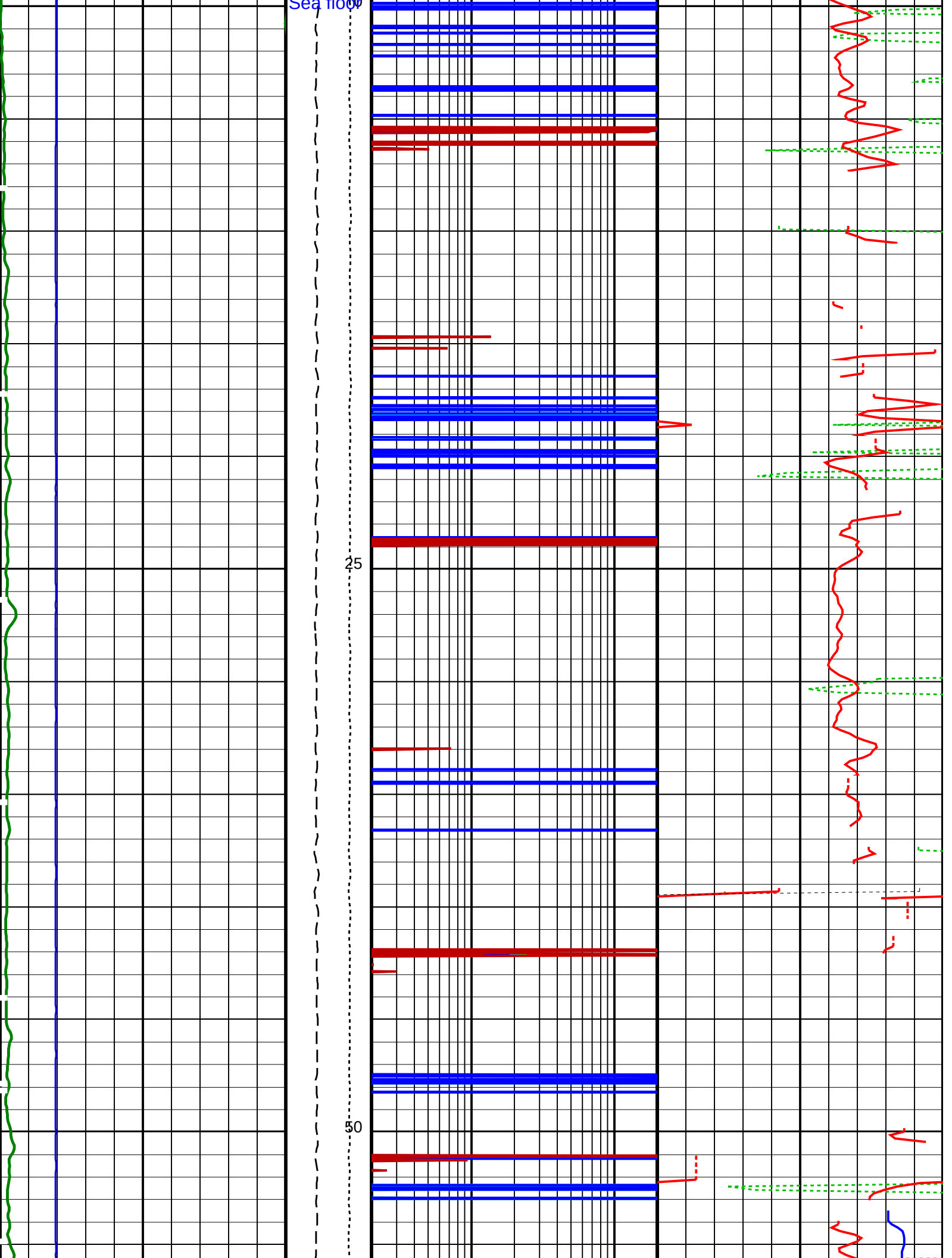
OP System Version: 19C0-187

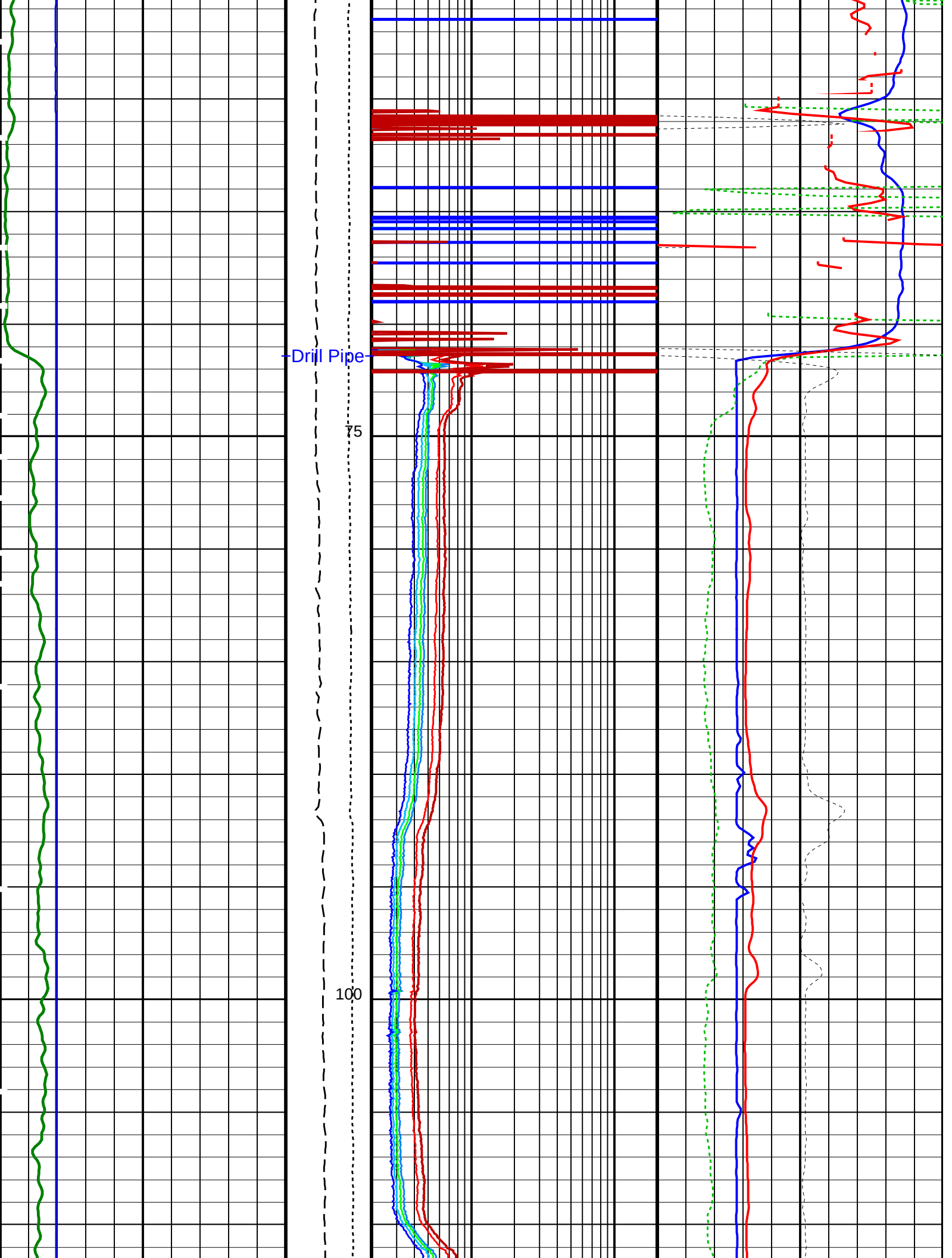
MSS_LDEO-A	19C0-187	HRLT-B	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
APS-C	19C0-187	HNGC-B	19C0-187
HNGS-BA	19C0-187	EDTC-B	SKK-5169-EDTCB

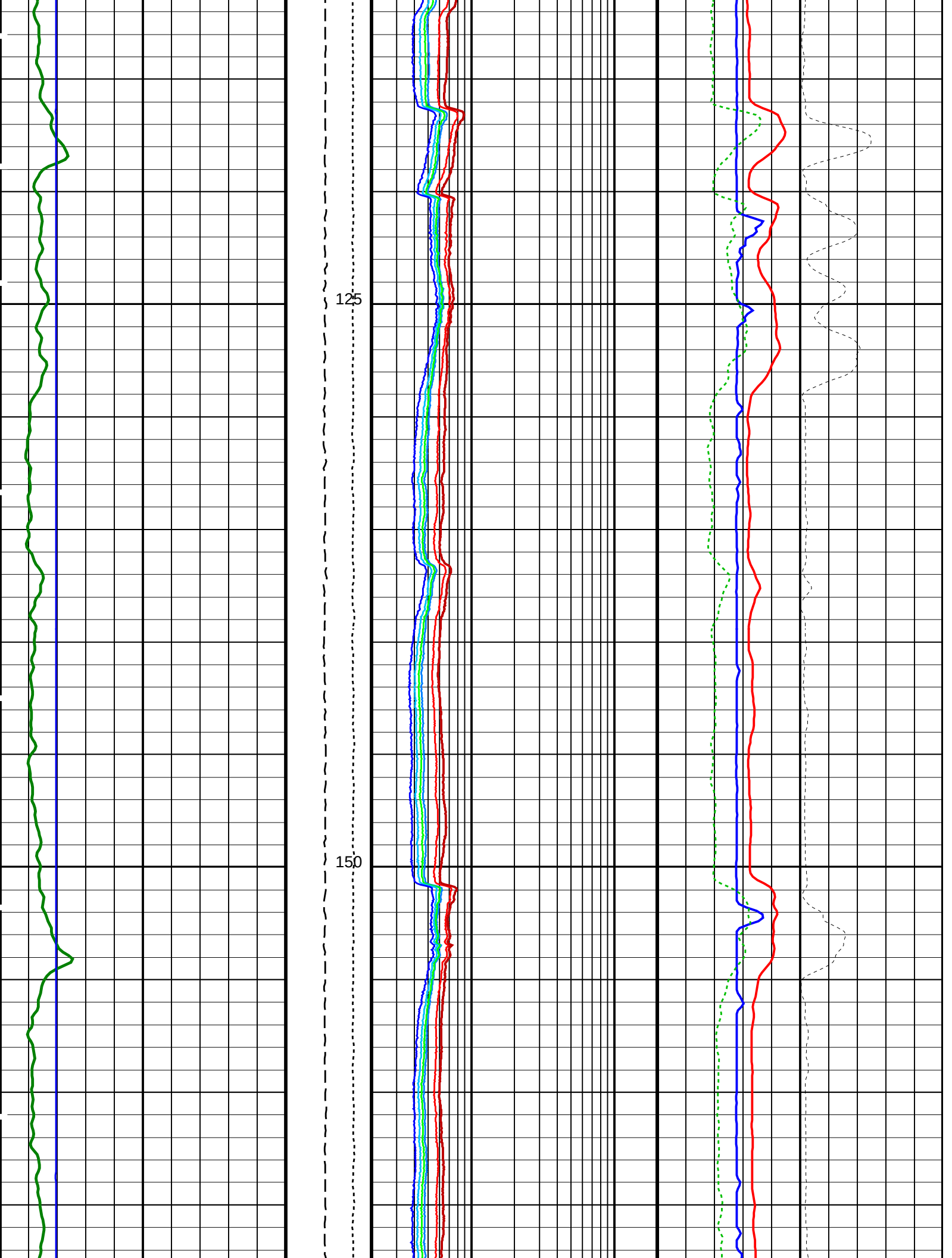
PIP SUMMARY

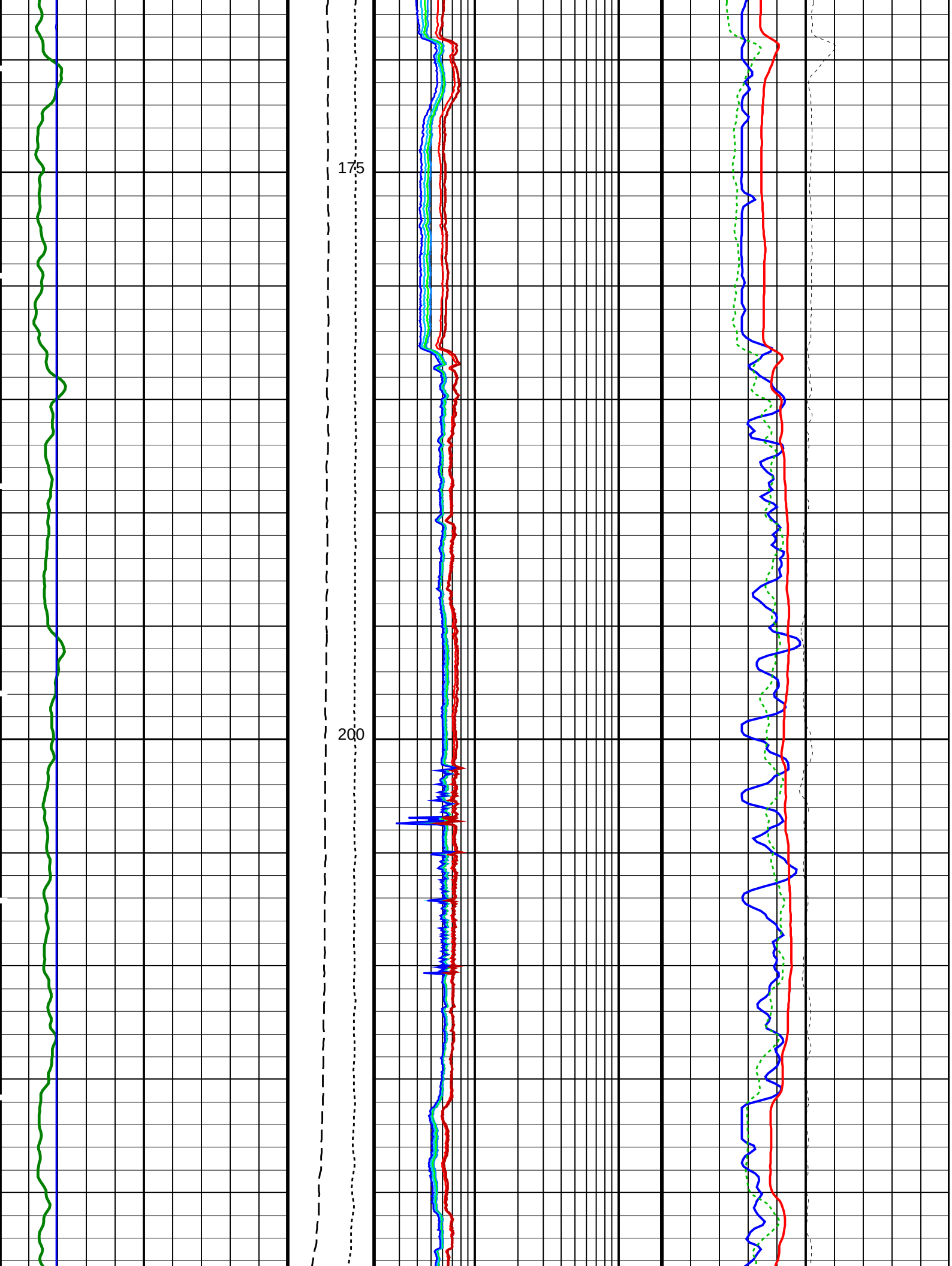
Time Mark Every 60 S

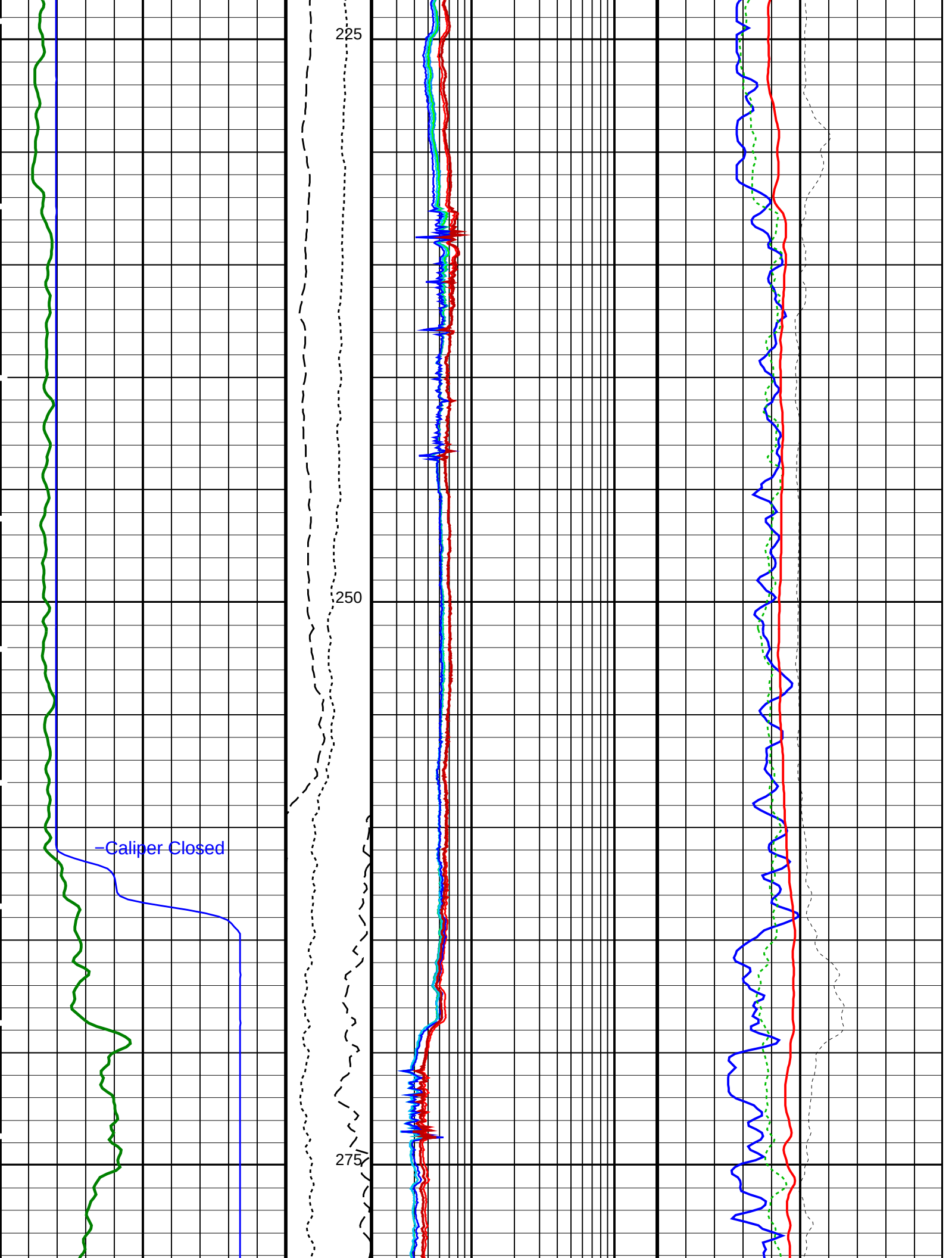


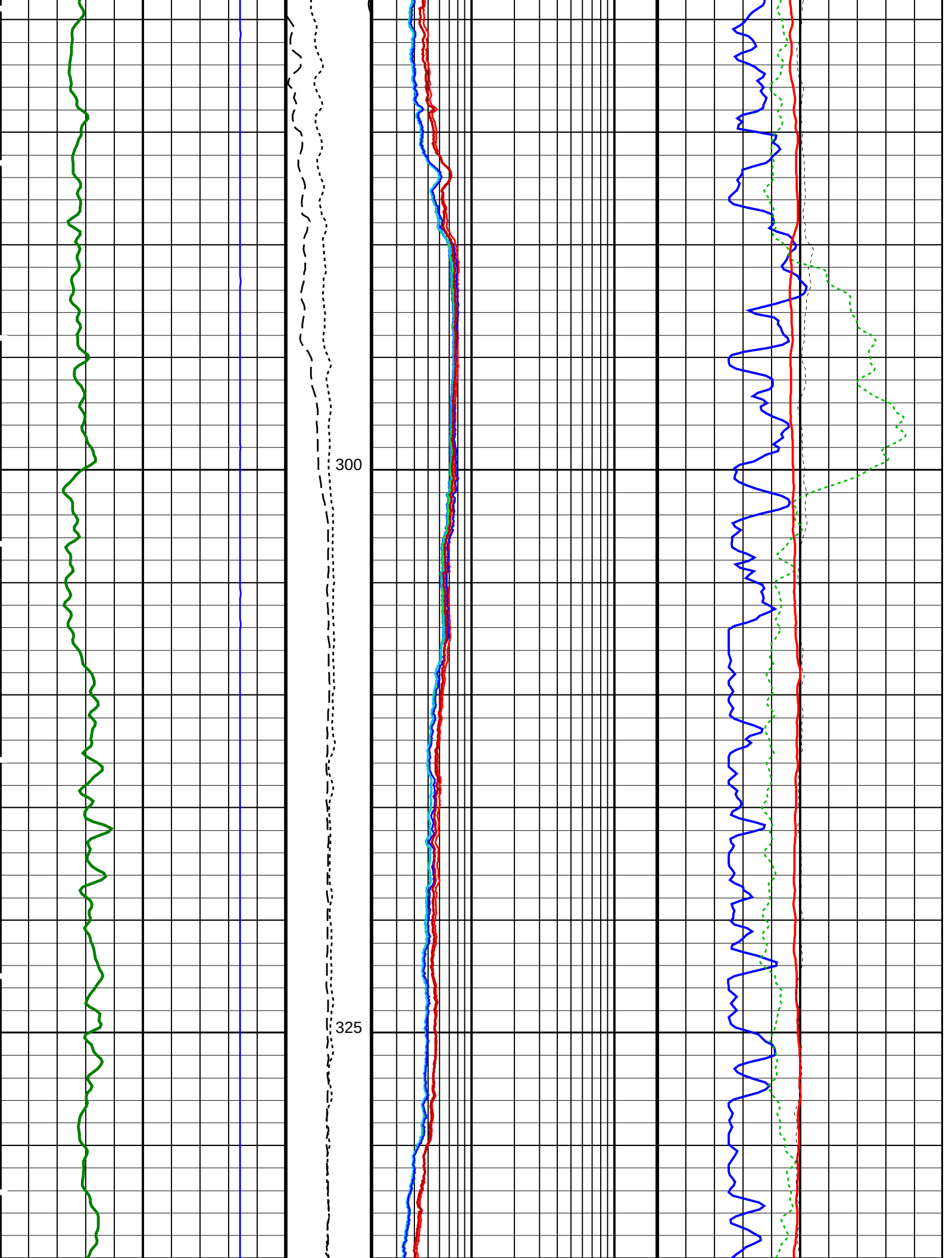

Sea floor
0
25
50

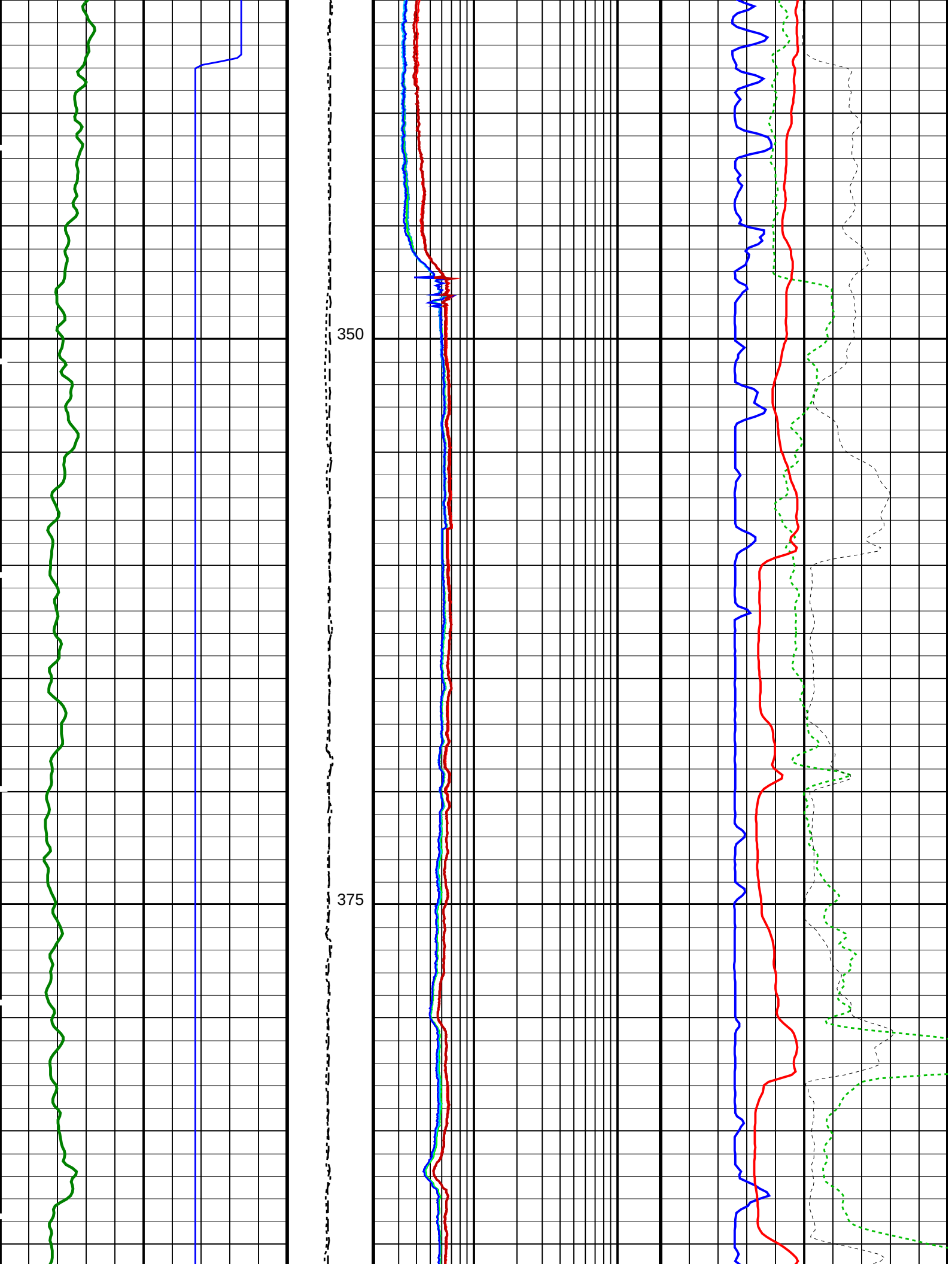

Drill Pipe
75
100

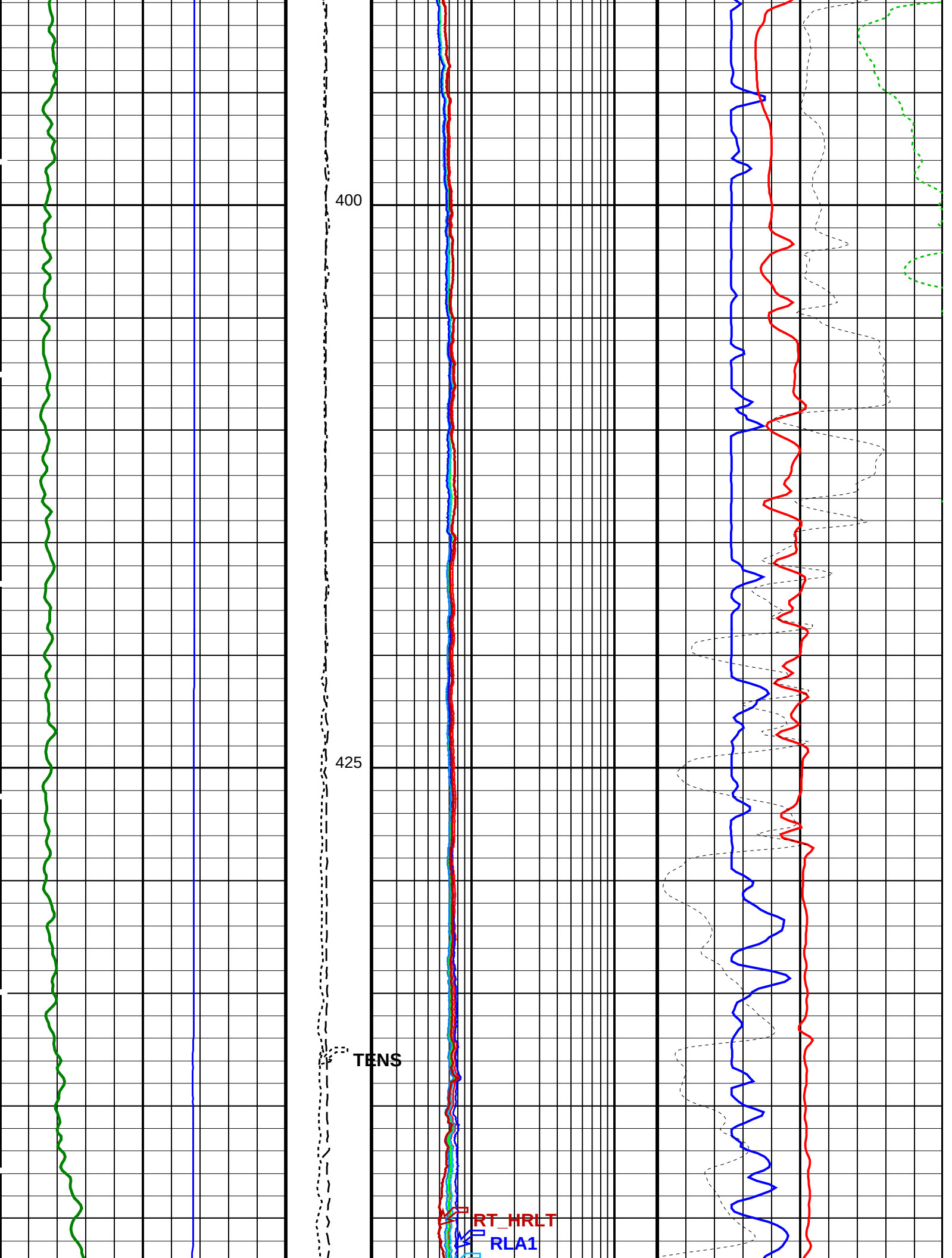

125
150

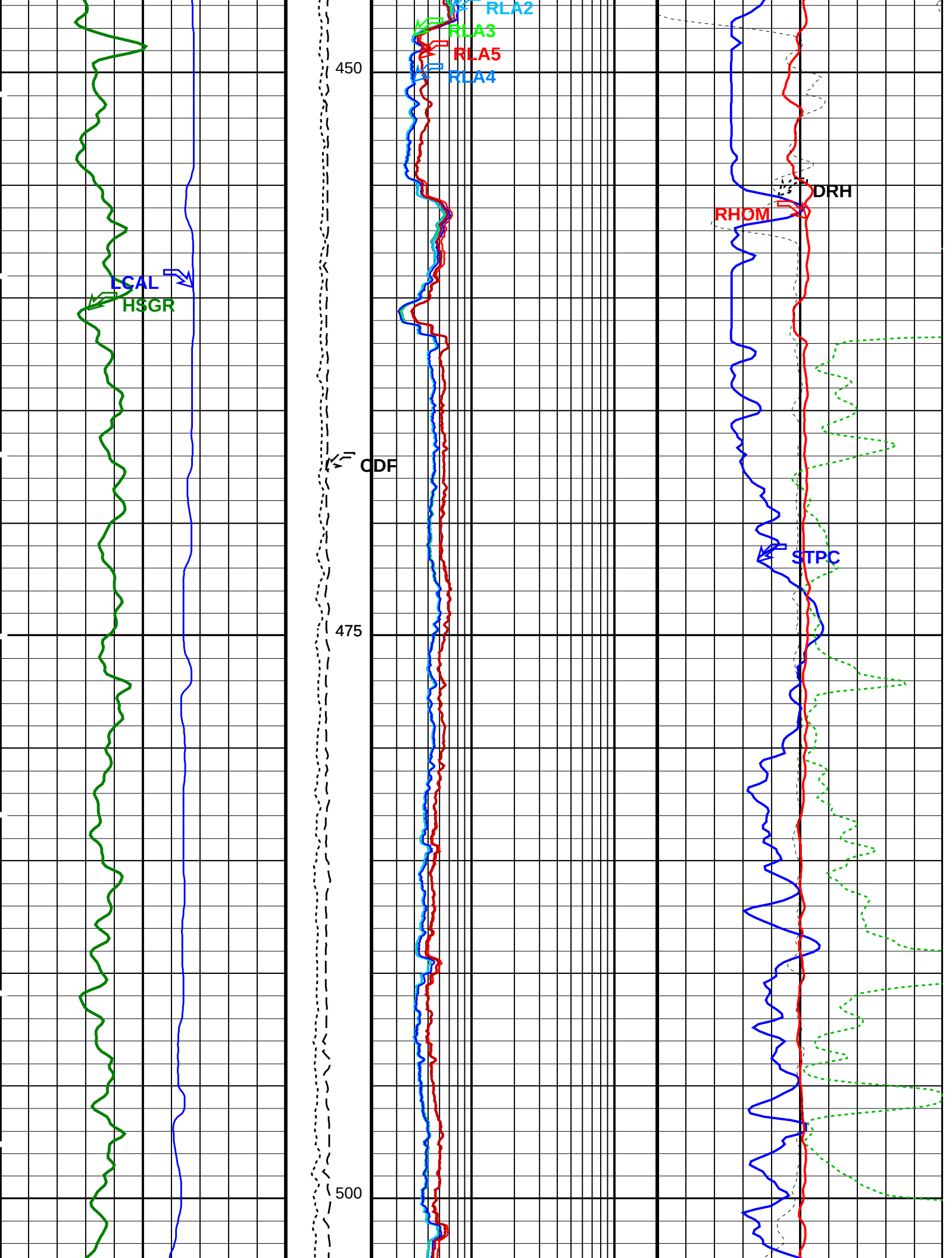

175
200

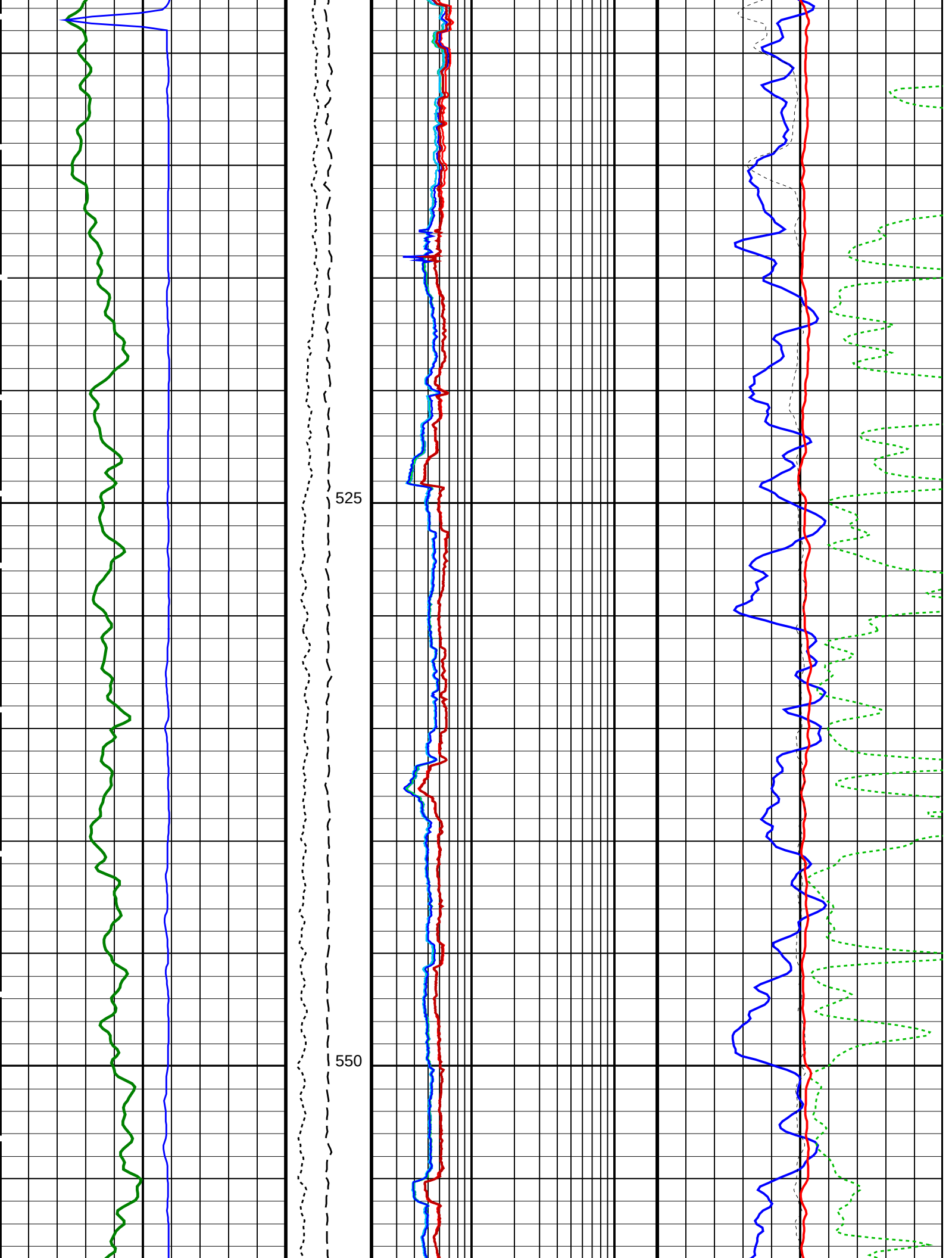

225
250
275
−Caliper Closed

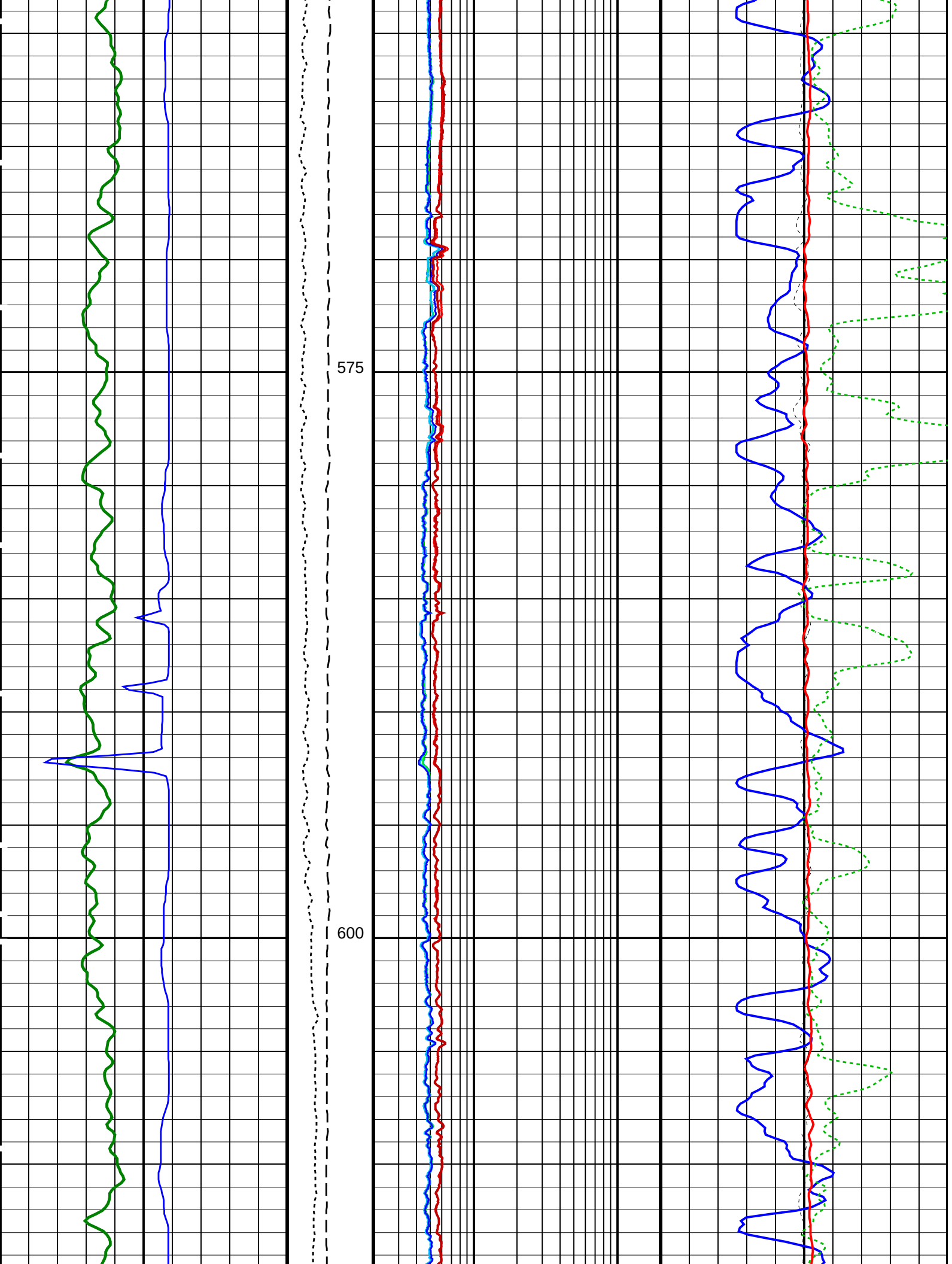

300
325

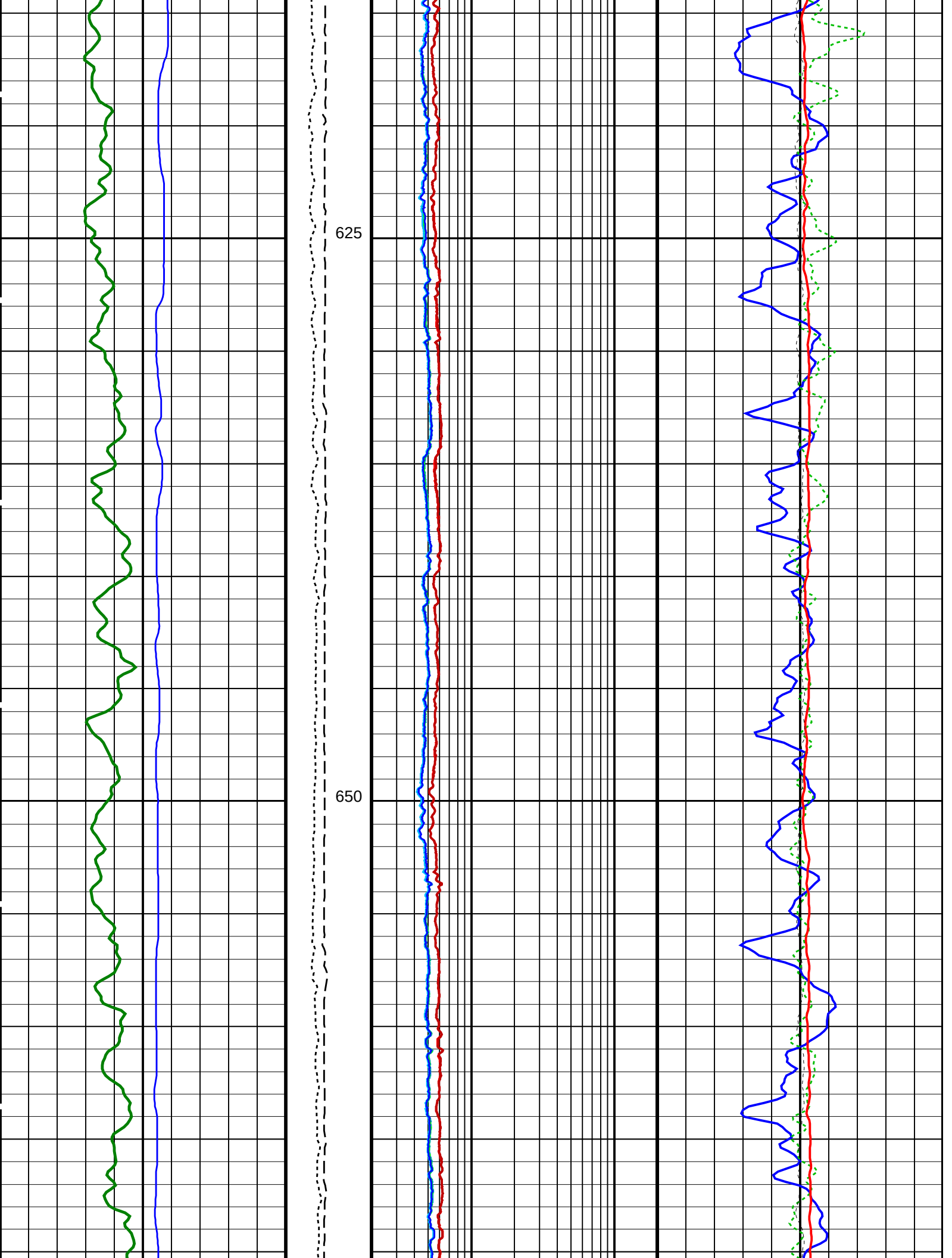

350
375

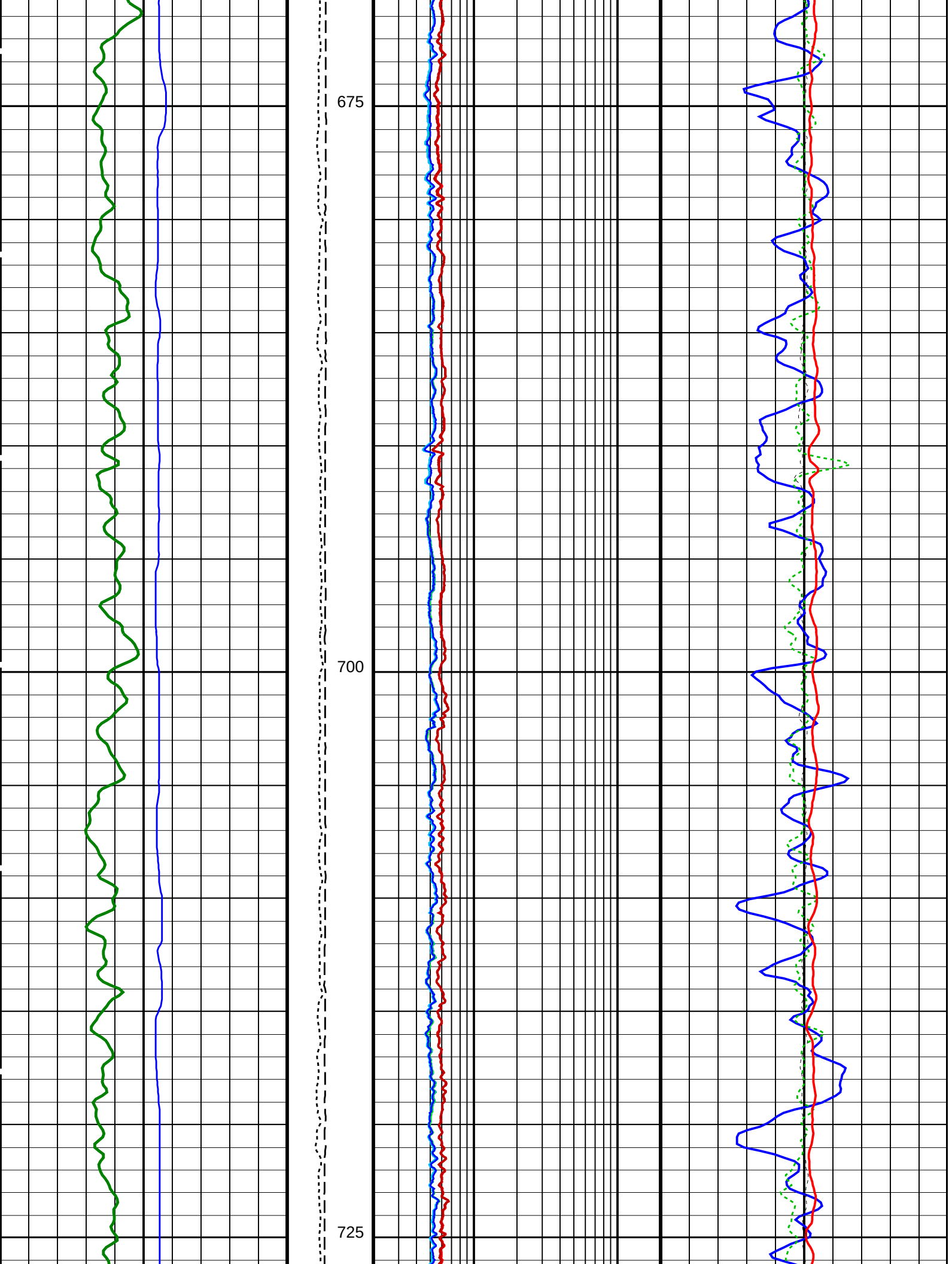

400
425
TENS
RT_HRLT
RLA1

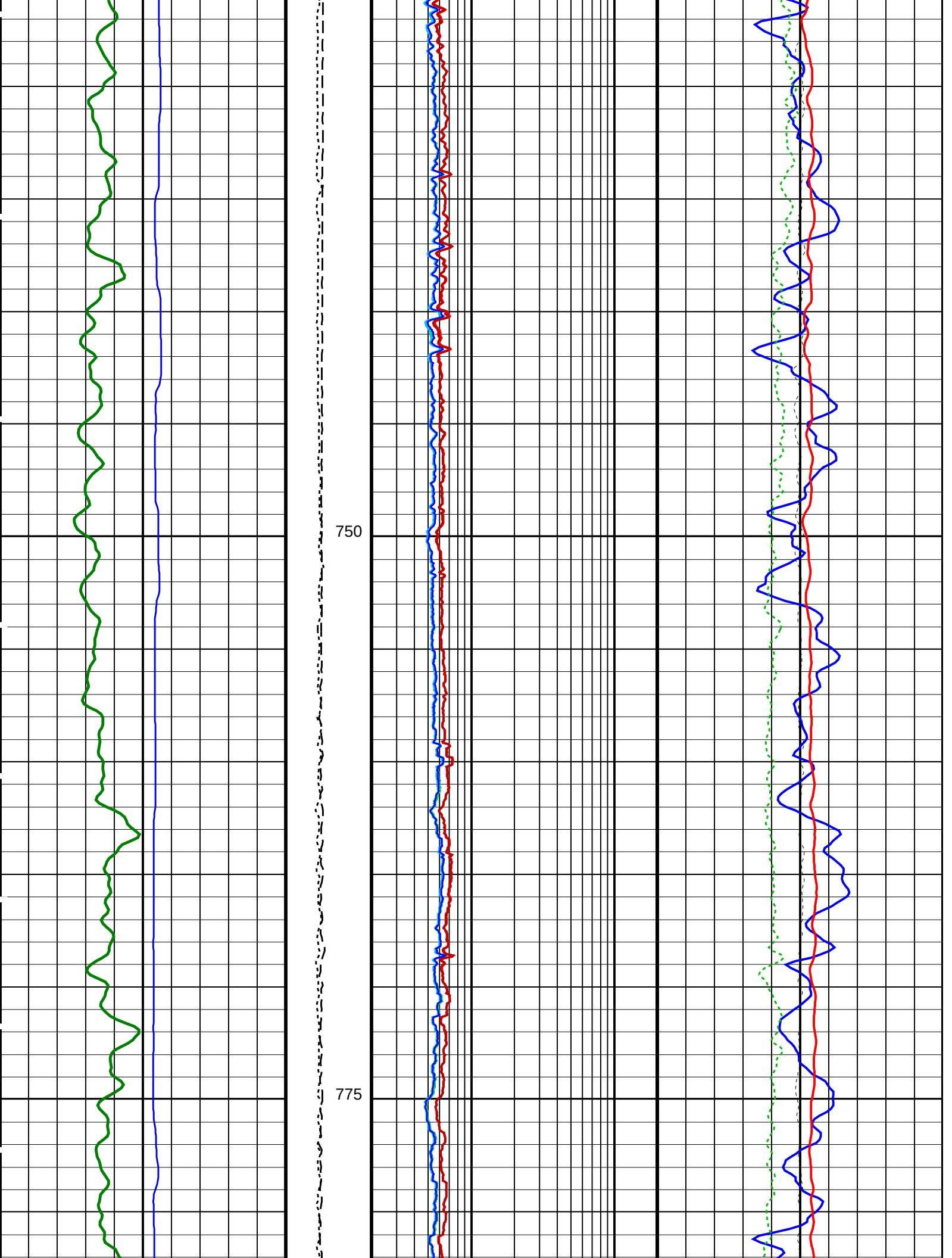

RLA2
RLA3
RLA5
RLA4
450
DRH
RHOM
LCAL
HSGR
CDF
STPC
475
500

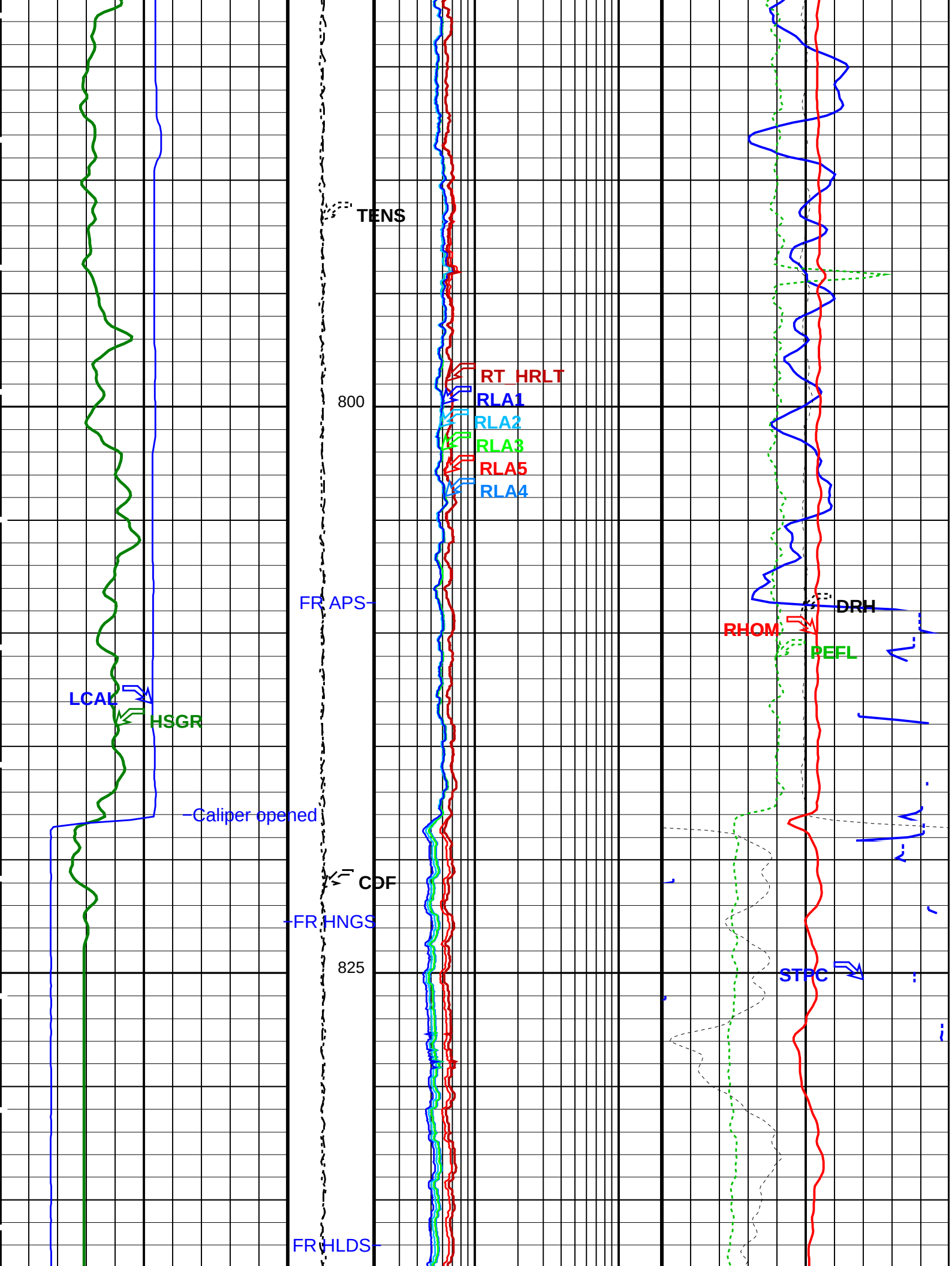

525
550

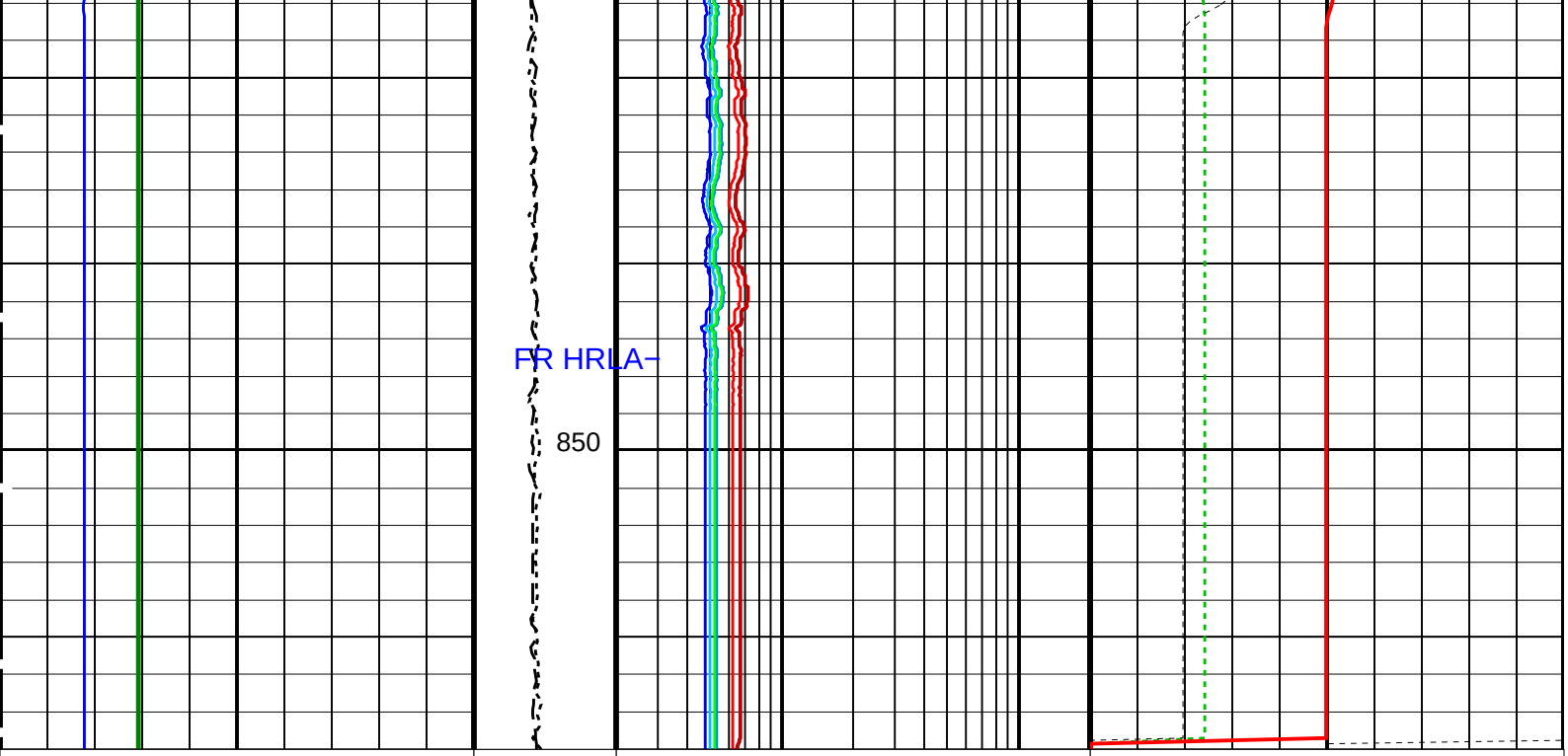

575
600


625
650


675
700
725


750
775


TENS
RT_HRLT
RLA1
RLA2
RLA3
RLA5
RLA4
800
FR APS
DRH
RHOM
PEFL
LCAL
HSGR
Caliper opened
CDF
FR HNGS
825
STPC
FR HLDS



HLDS Caliper (LCAL) 0 (IN) 20	Tension (TENS) (LBF) 10000 0	HRLT Resistivity 4 (RLA4) 0.2 (OHMM) 20	APS Corrected Standoff Porosity (STPC) 100 (PU) 0
HNGS Spectroscopy Gamma Ray (HSGR) 0 (GAPI) 100	Calibrated Downhole Force (CDF) (LBF) 3000 0	HRLT Resistivity 5 (RLA5) 0.2 (OHMM) 20	HLDS Long Spaced Photoelectric Effect (PEFL) 0 (−−−−) 10
Uplog #2		HRLT Resistivity 3 (RLA3) 0.2 (OHMM) 20	HLDS Bulk Density (RHOM) 0 (G/C3) 4
		HRLT Resistivity 2 (RLA2) 0.2 (OHMM) 20	HLDS Bulk Density Correction (DRH) −0.25 (G/C3) 0.25
		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	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	20.9455	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	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	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	2.6	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	1938.41	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2034.64	V
AHCS	APS Holesize Correction Source	GCSE	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1700.34	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature−Pressure−Salinity Correction Switch	OFF	
BHFL_APS	APS TNPH Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	DEGC
BSCO_APS	APS TNPH Borehole Salinity Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source Correction Option	MEASURED	
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	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	NO	
MCOR_APS	APS TNPH Mud Correction	BARI	
MWCO_APS	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.0863	
NFRC	APS Near/Far Calibration Ratio	0.97772	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	NO	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	YES	
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)	45	DEGC
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	0.018227	DC/M

GGRD	Geothermal Gradient	0.018227	DC/M
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	−0.00110818	
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	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.991778	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00117	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	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	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	20	DEGC
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	1.32	G/C3
DO	Depth Offset for Playback	−141.0	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	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	−50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	1100	M
TDD	Total Depth − Driller	1095.00	M
TDL	Total Depth − Logger	1029.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo Vertical Scale: 1:200 Graphics File Created: 03−Sep−2015 10:44

OP System Version: 19C0−187

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

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_010LUP	FN:15	PRODUCER	29−Aug−2015 07:07	999.0 M	120.2 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_032PUP	FN:42	PRODUCER	03−Sep−2015 10:44	

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_009LUP	FN:13	PRODUCER	29−Aug−2015 06:19	1168.1 M	1020.0 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_031PUP	FN:41	PRODUCER	03−Sep−2015 09:58	1027.2 M	879.0 M

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	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

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

HRLT Resistivity 3 (RLA3) 0.2 (OHMM) 20

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

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

Calibrated Downhole Force (CDF) (LBF) 3000 0

HRLT Resistivity 5 (RLA5) 0.2 (OHMM) 20

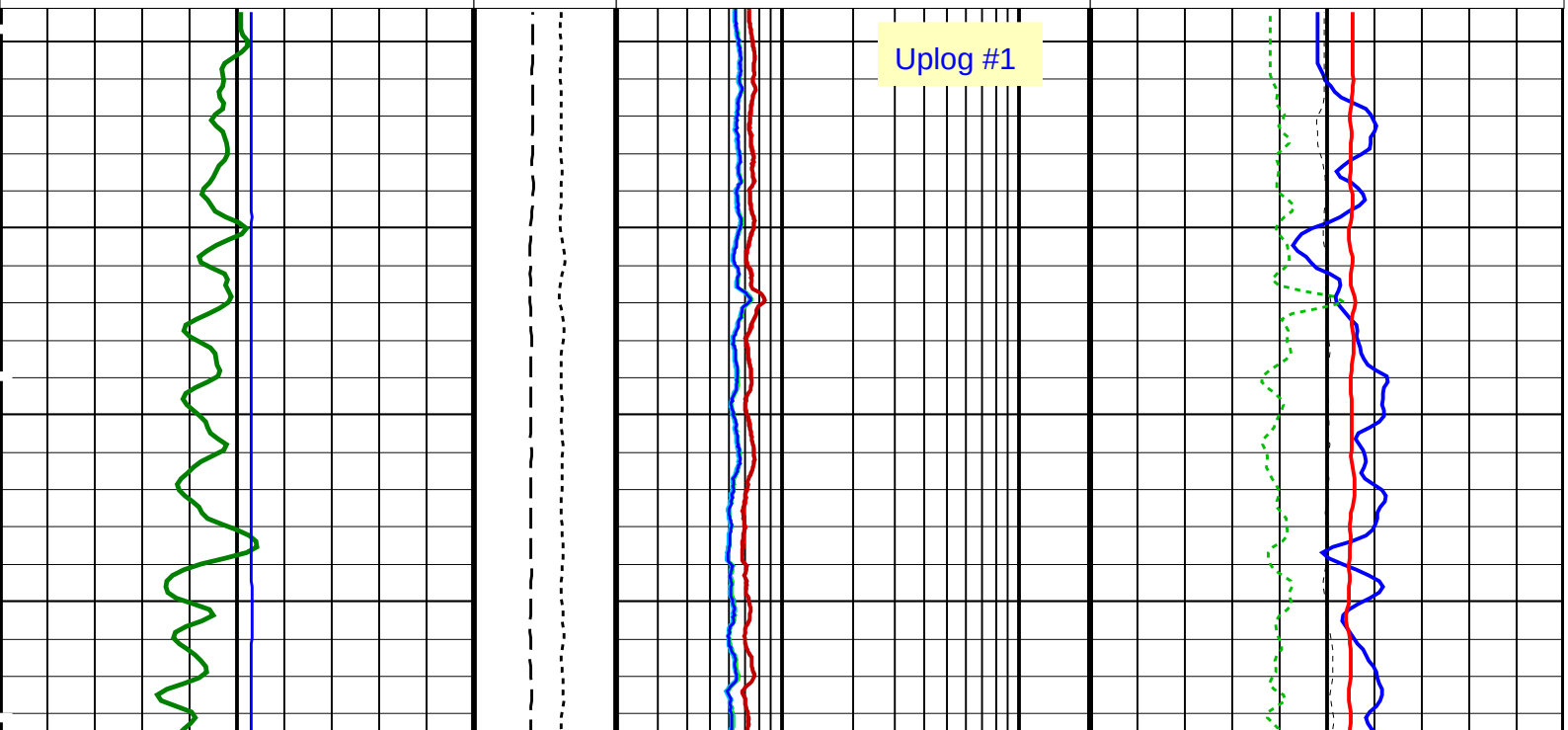
HLDS Long Spaced Photoelectric Effect (PEFL) 0 (−−−−) 10

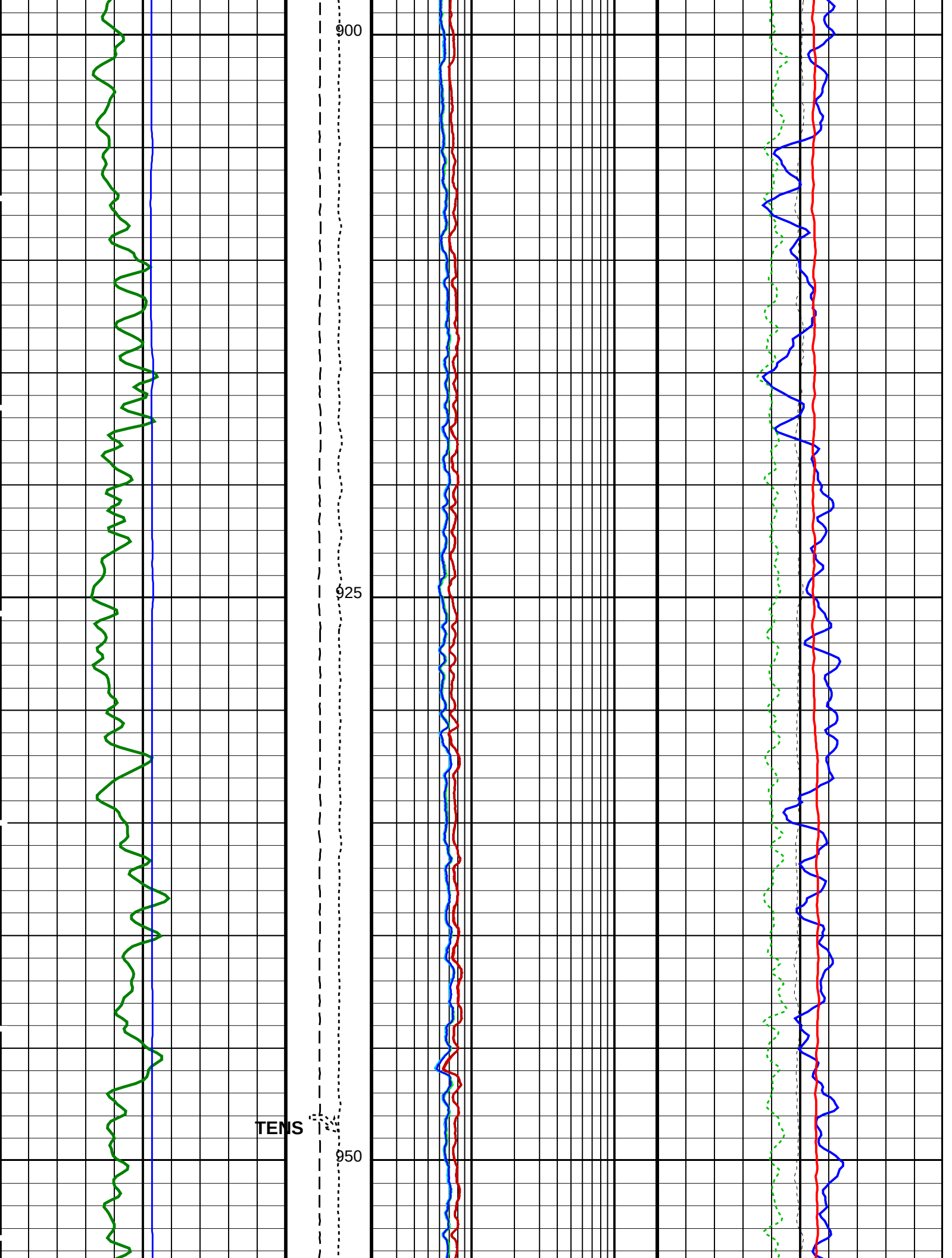
HLDS Caliper (LCAL) 0 (IN) 20

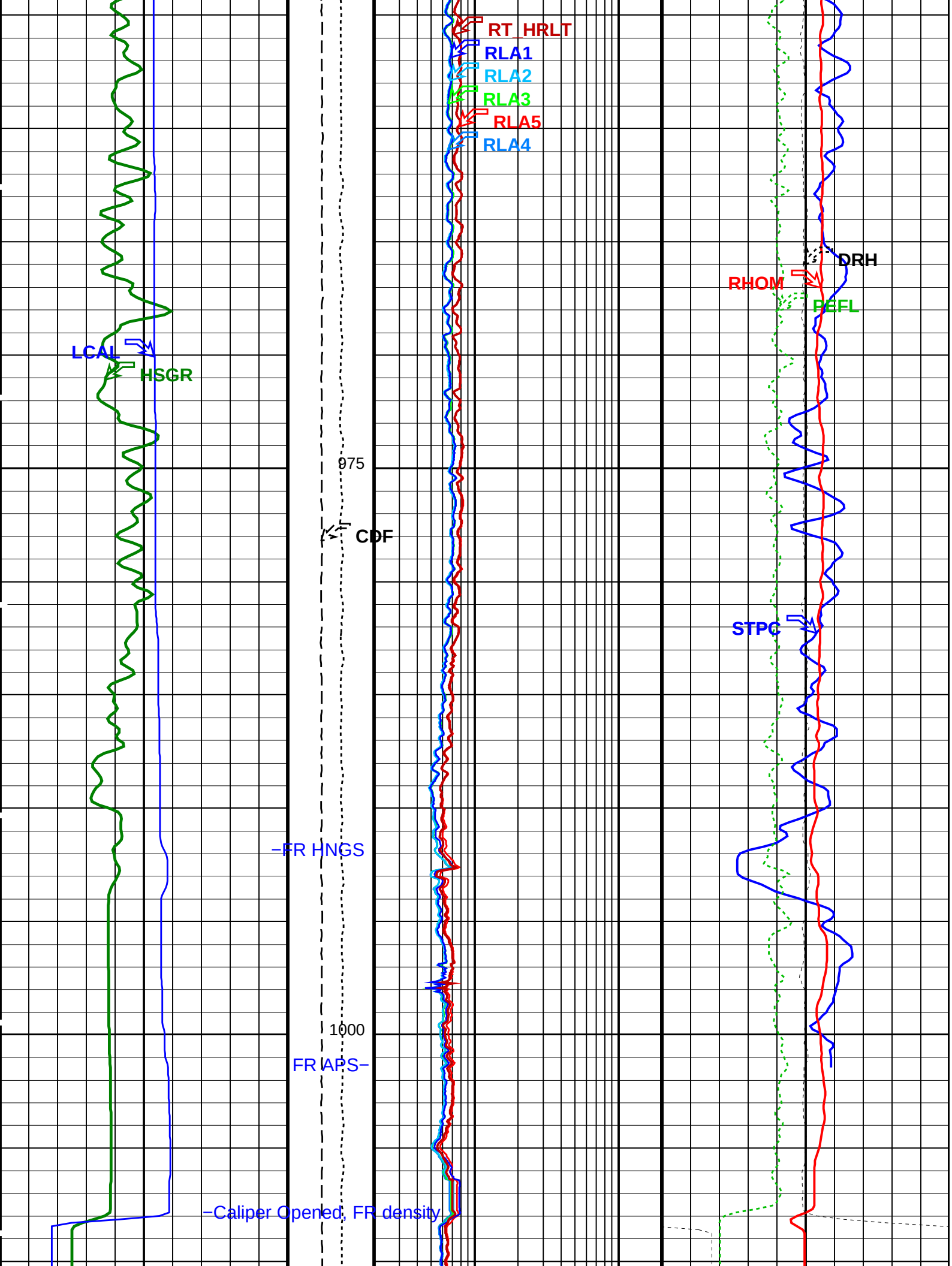
Tension (TENS) (LBF) 10000 0

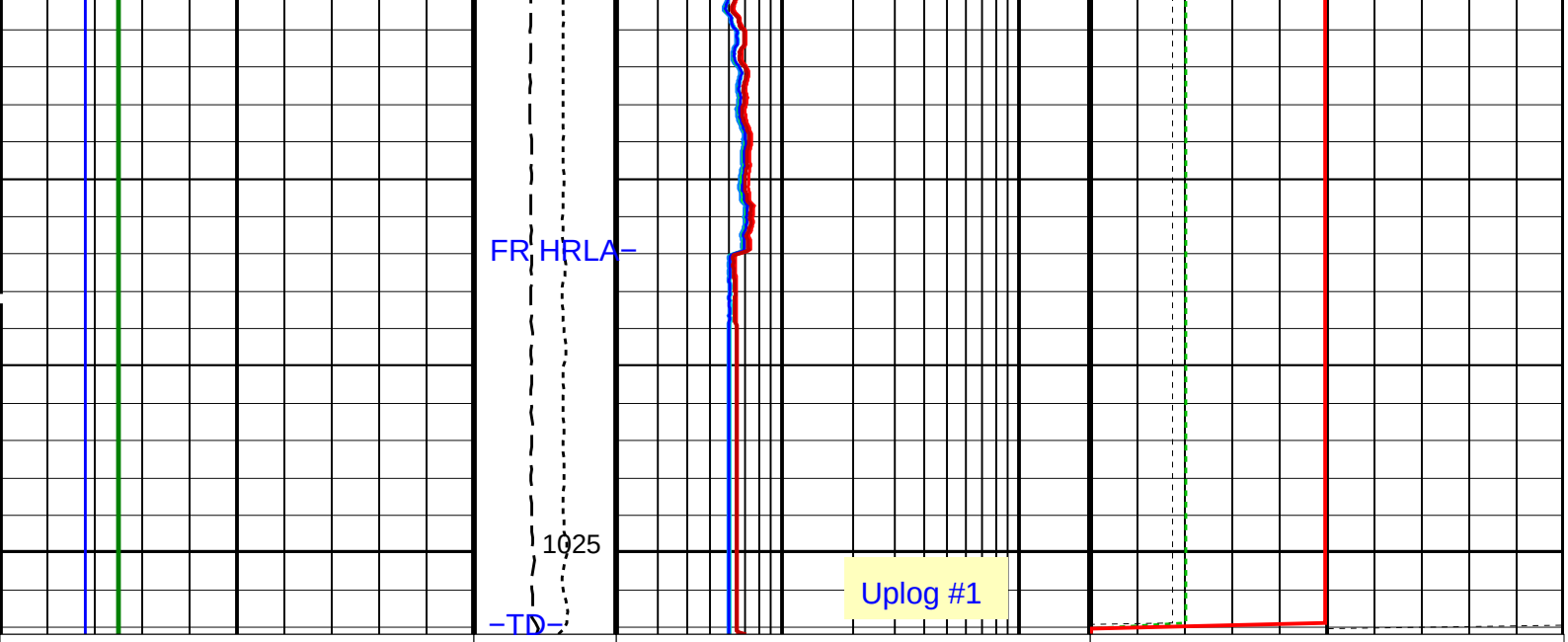
HRLT Resistivity 4 (RLA4) 0.2 (OHMM) 20

APS Corrected Standoff Porosity (STPC) 100 (PU) 0




900
925
TENS
950


RT_HRLT
RLA1
RLA2
RLA3
RLA5
RLA4
DRH
RHOM
PEFL
LCAL
HSGR
975
CDF
STPC
−FR HNGS
1000
FR APS−
−Caliper Opened, FR density



HLDS Caliper (LCAL) 0 (IN) 20	Tension (TENS) (LBF) 10000 0	HRLT Resistivity 4 (RLA4) 0.2 (OHMM) 20	APS Corrected Standoff Porosity (STPC) 100 (PU) 0
HNGS Spectroscopy Gamma Ray (HSGR) 0 (GAPI) 100	Calibrated Downhole Force (CDF) (LBF) 3000 0	HRLT Resistivity 5 (RLA5) 0.2 (OHMM) 20	HLDS Long Spaced Photoelectric Effect (PEFL) 0 (−−−−) 10
		HRLT Resistivity 3 (RLA3) 0.2 (OHMM) 20	HLDS Bulk Density (RHOM) 0 (G/C3) 4
		HRLT Resistivity 2 (RLA2) 0.2 (OHMM) 20	HLDS Bulk Density Correction (DRH) −0.25 (G/C3) 0.25
		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	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	20.9455	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	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	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	2.6	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	1938.41	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2034.64	V
AHCS	APS Holesize Correction Source	GCSE	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1700.34	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature−Pressure−Salinity Correction Switch	OFF	
BHFL_APS	APS TNPH Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	DEGC
BSCO_APS	APS TNPH Borehole Salinity Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source Correction Option	MEASURED	
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	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	NO	
MCOR_APS	APS TNPH Mud Correction	BARI	
MWCO_APS	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.0863	
NFRC	APS Near/Far Calibration Ratio	0.97772	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	NO	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	YES	
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)	45	DEGC
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	0.018227	DC/M
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	−0.00110818	
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	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.991778	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00117	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	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	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	20	DEGC
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	1.32	G/C3
DO	Depth Offset for Playback	−141.0	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	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	−50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	1100	M
TDD	Total Depth − Driller	1095.00	M
TDL	Total Depth − Logger	1029.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo **Vertical Scale: 1:200** **Graphics File Created: 03−Sep−2015 09:59**

OP System Version: 19C0−187

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

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_009LUP	FN:13	PRODUCER	29−Aug−2015 06:19	1168.1 M	1020.0 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_031PUP	FN:41	PRODUCER	03−Sep−2015 09:58

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_HRLA_028LUP	PRODUCER	03−Sep−2015 09:20	1170.1 M	82.3 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_030PUP	FN:40	PRODUCER	03−Sep−2015 09:36	1029.2 M	−58.7 M

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HRLT−B	19C0−187
HLDS	19C0−187	LDSC−B	19C0−187
APS−C	19C0−187	HNGC−B	19C0−187
HNGS−BA	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

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

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

Calibrated Downhole Force (CDF) (LBF) 3000 0

HRLT Resistivity 5 (RLA5) 0.2 (OHMM) 20

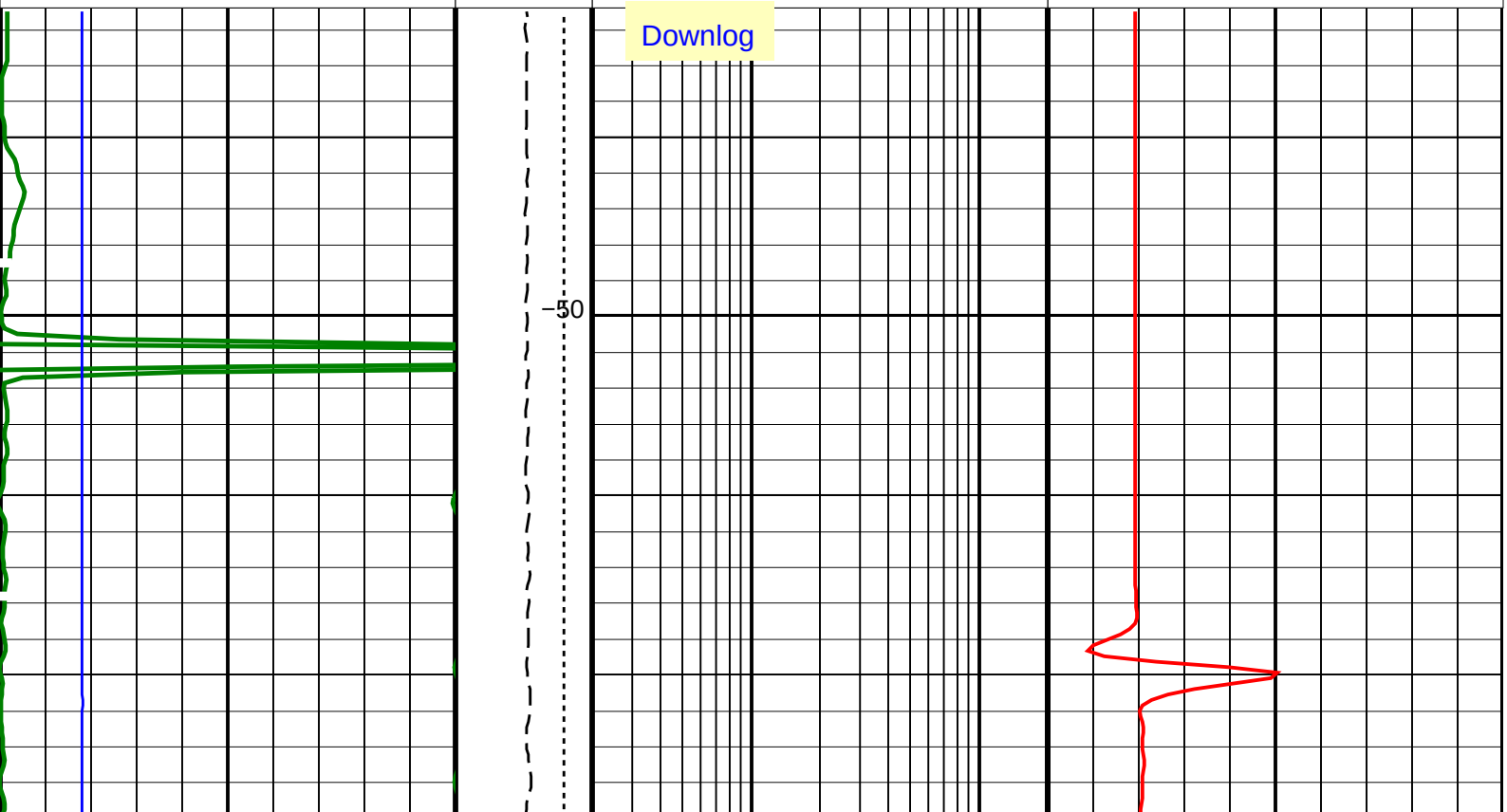
HLDS Long Spaced Photoelectric Effect (PEFL) 0 (−−−−) 10

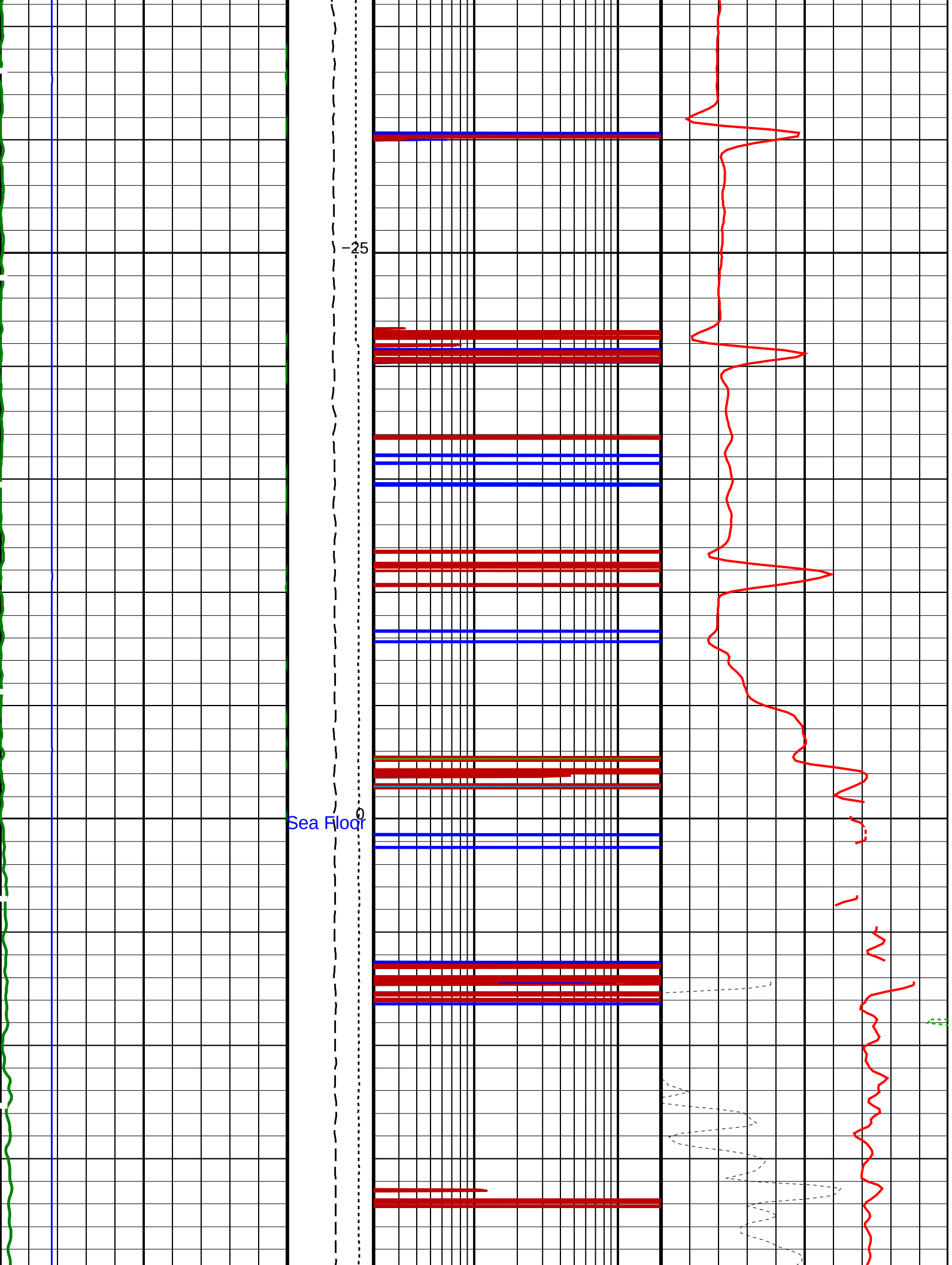
HLDS Caliper (LCAL) 0 (IN) 20

Tension (TENS) (LBF) 10000 0

HRLT Resistivity 4 (RLA4) 0.2 (OHMM) 20

APS Corrected Standoff Porosity (STPC) 100 (PU) 0

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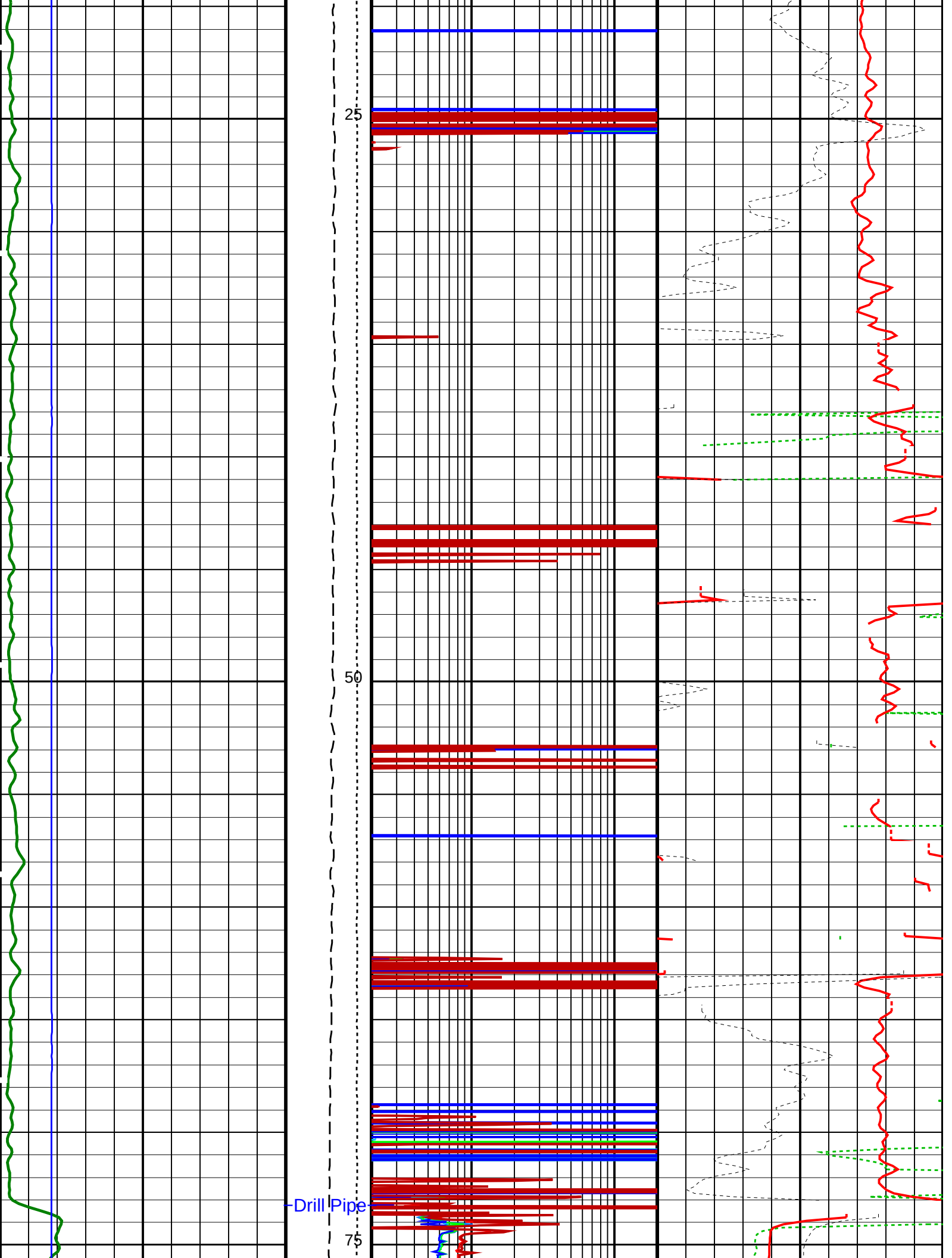
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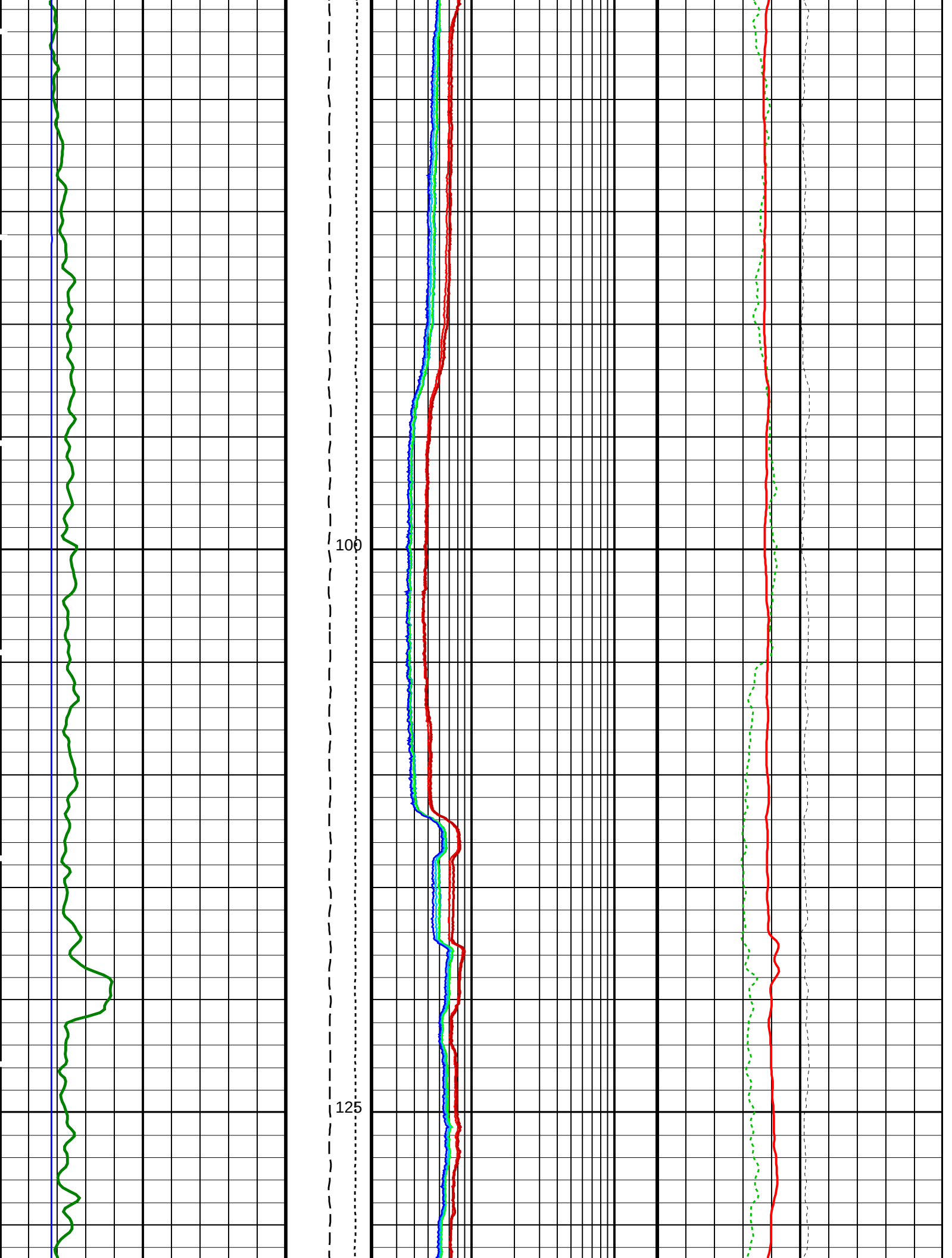
Drill Pipe
75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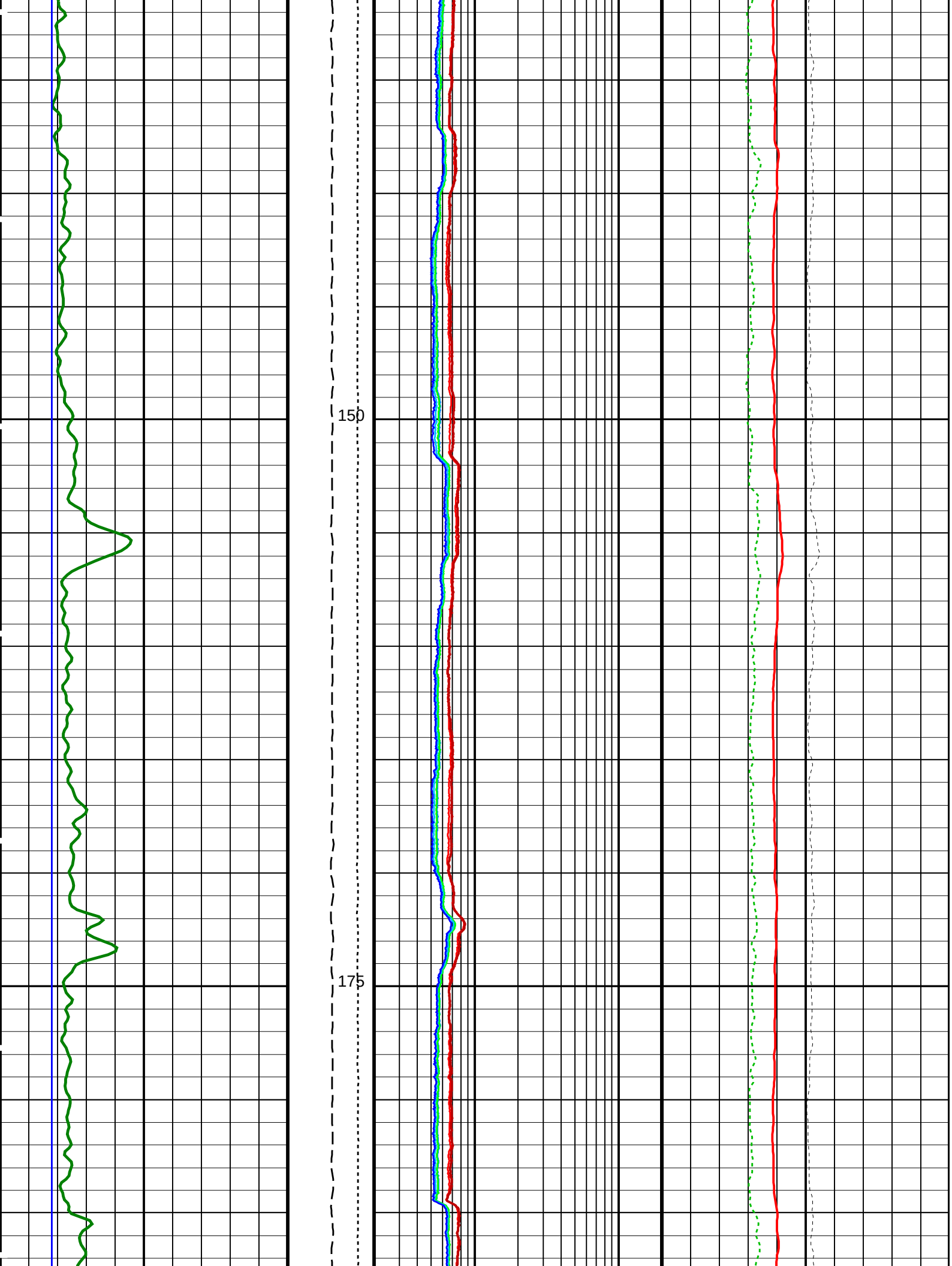
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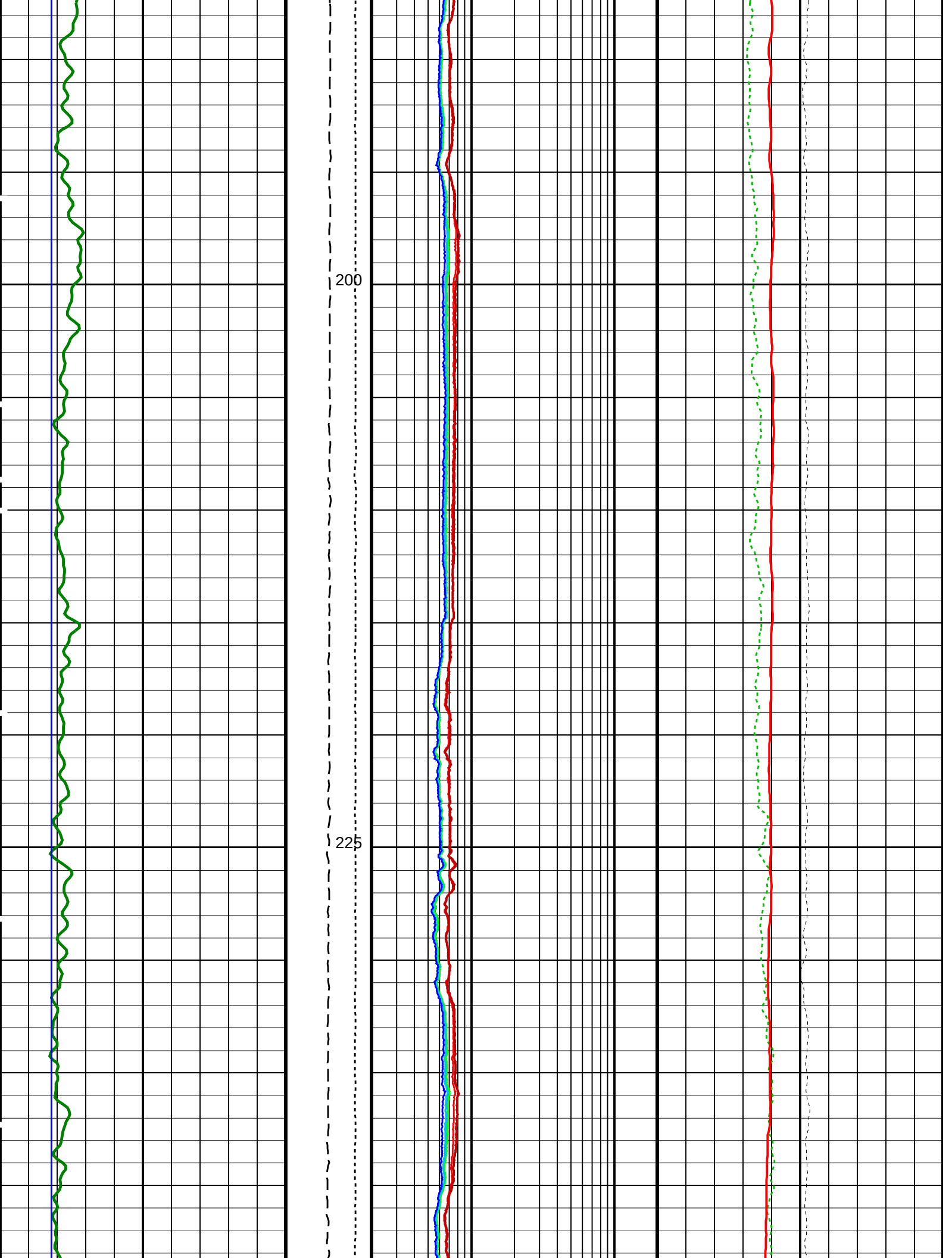
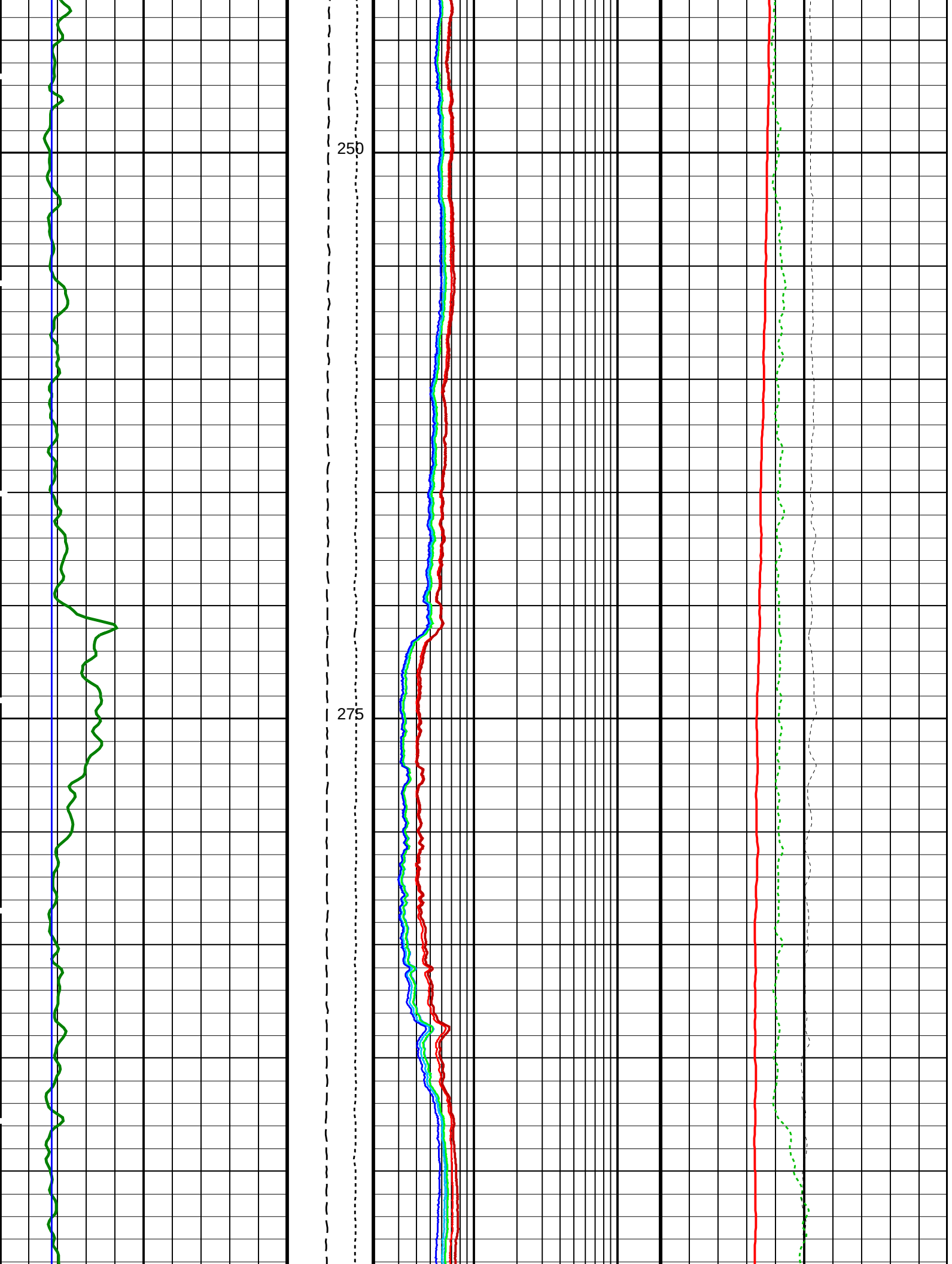
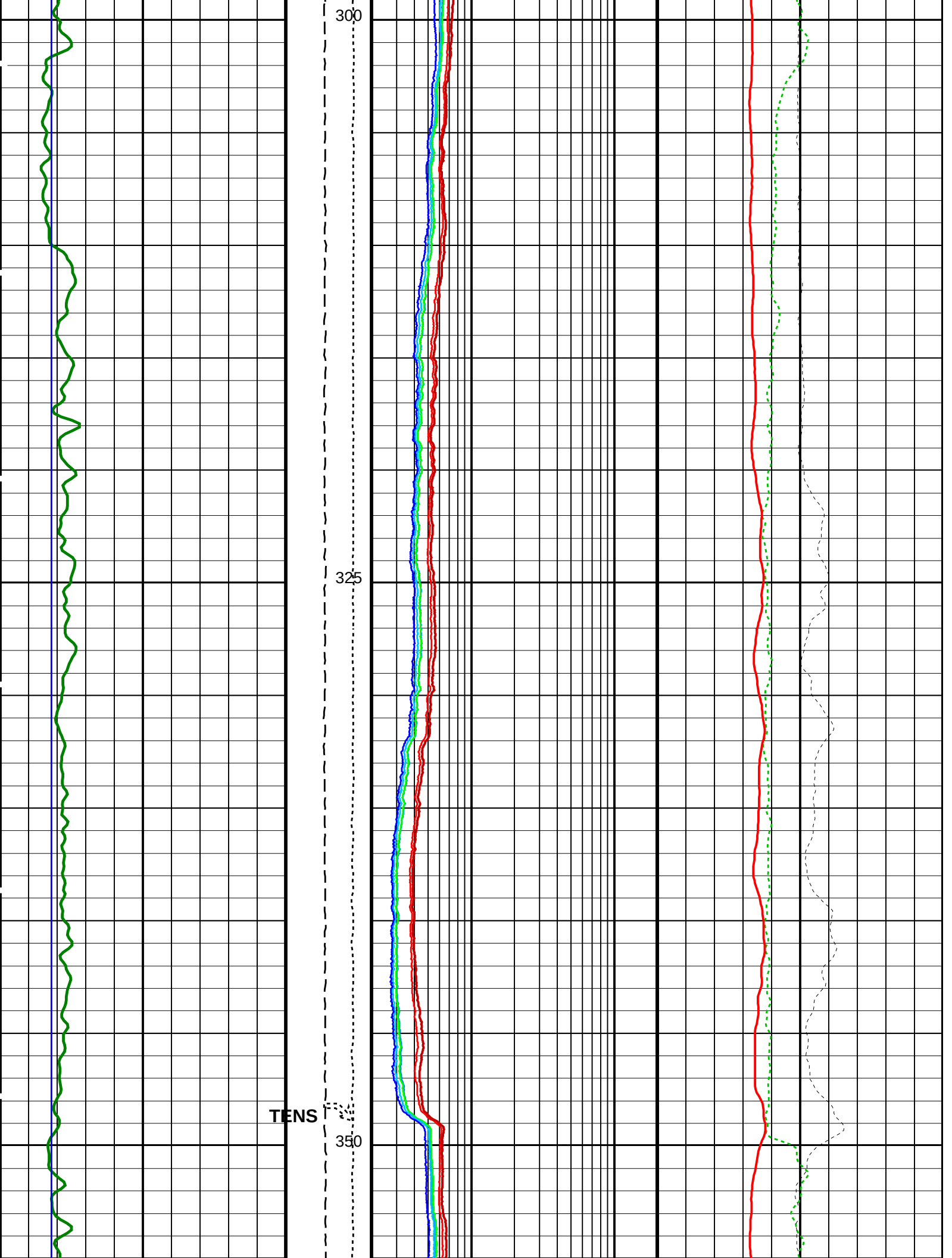
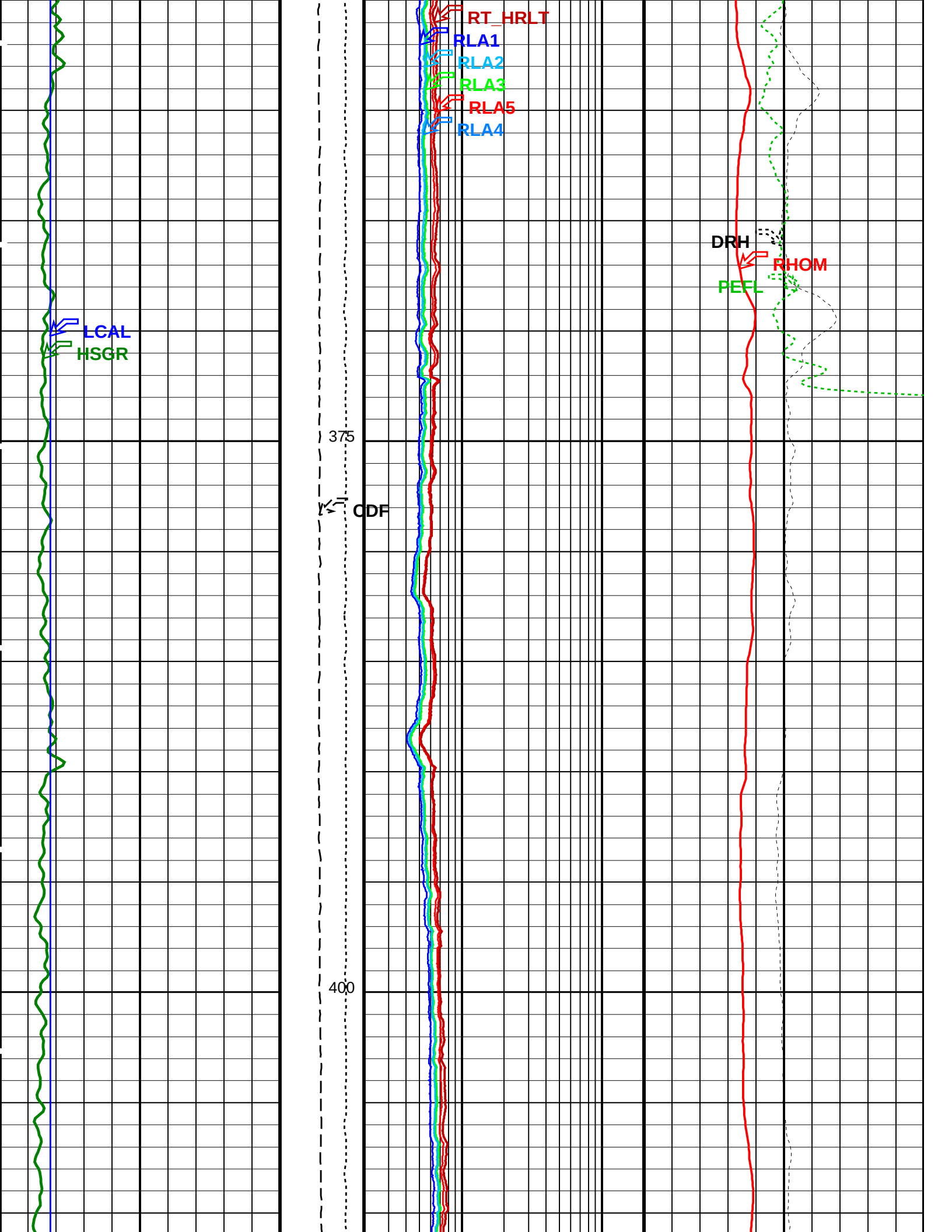
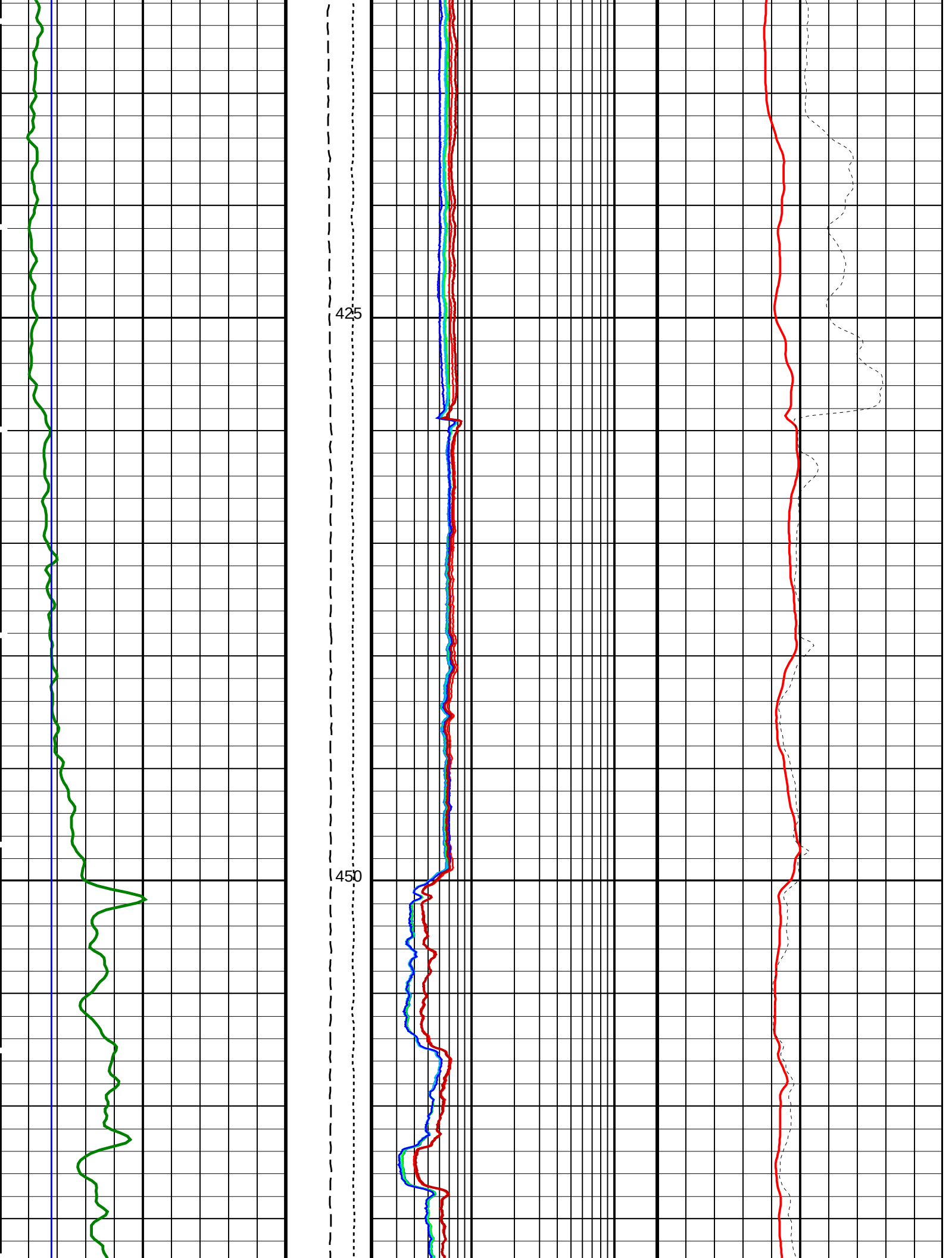
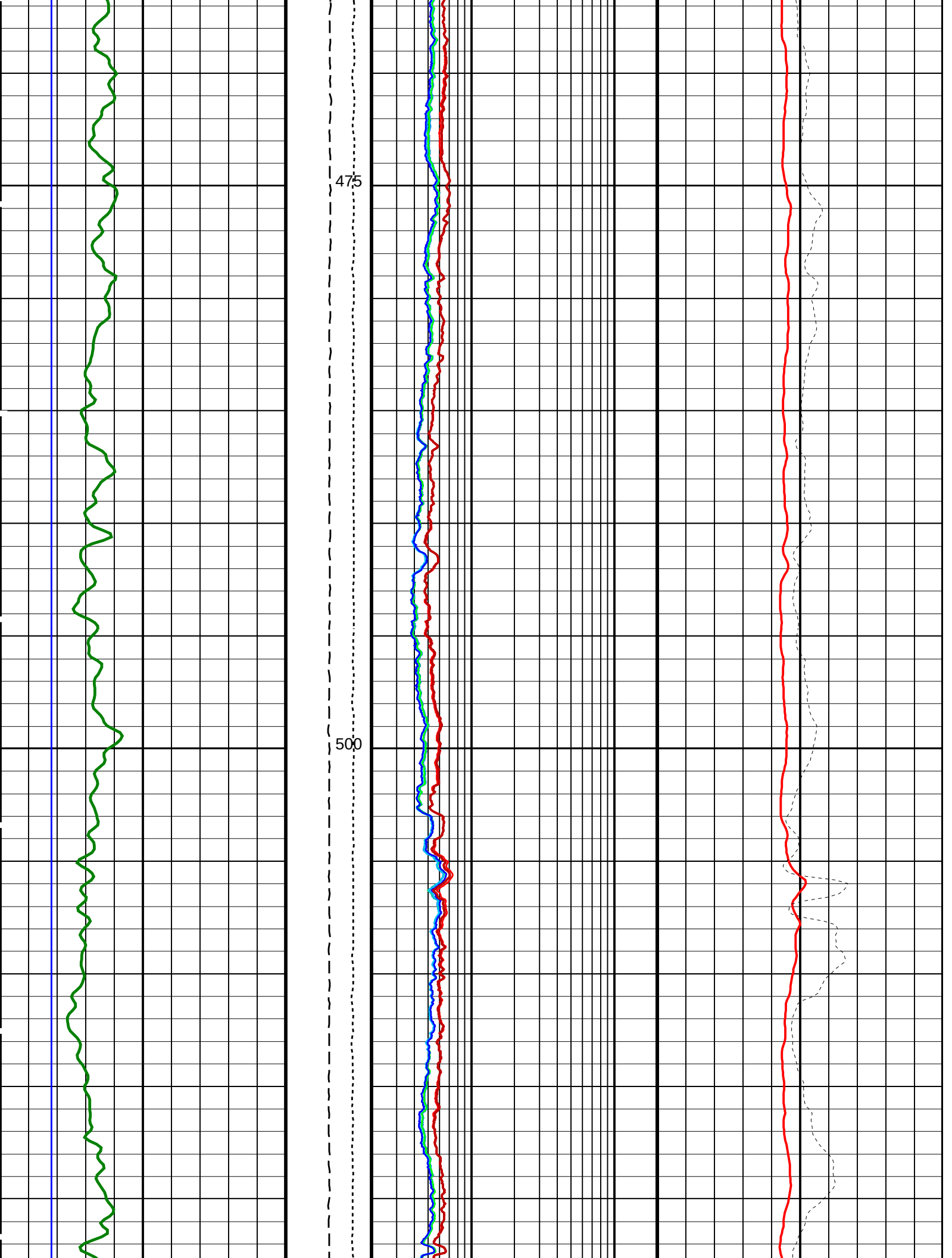

200
225

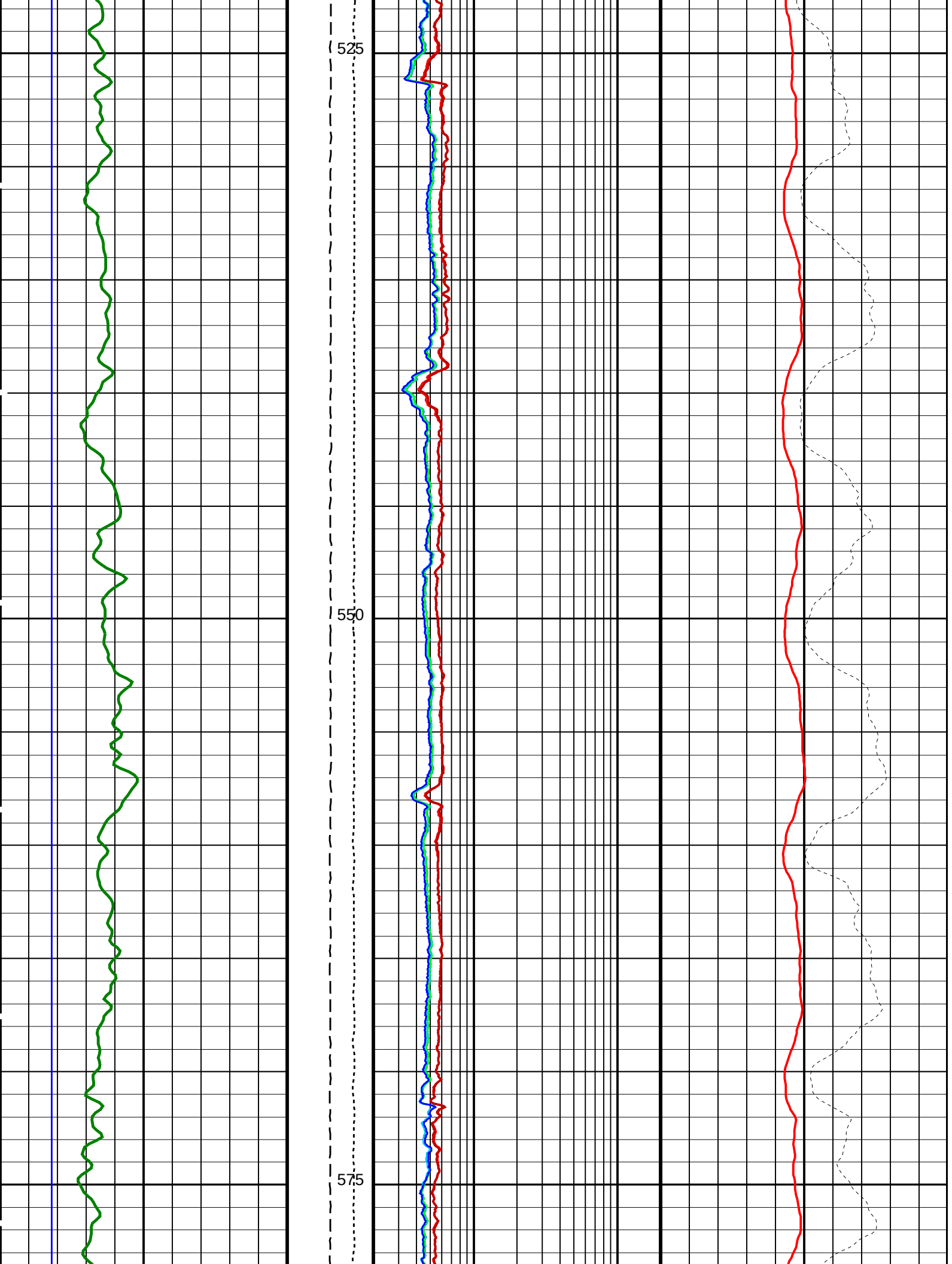

250
275

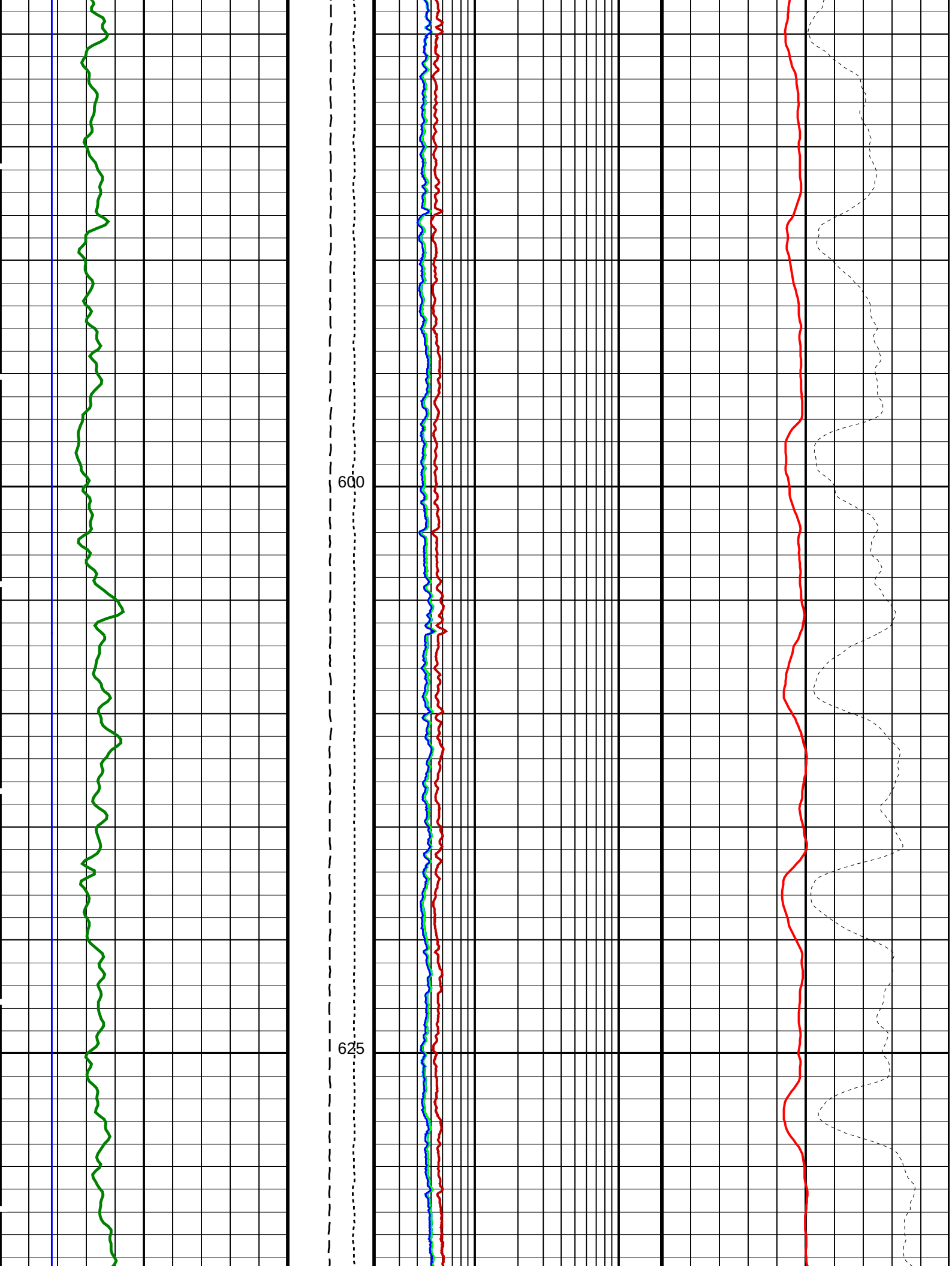

300
325
TENS
350

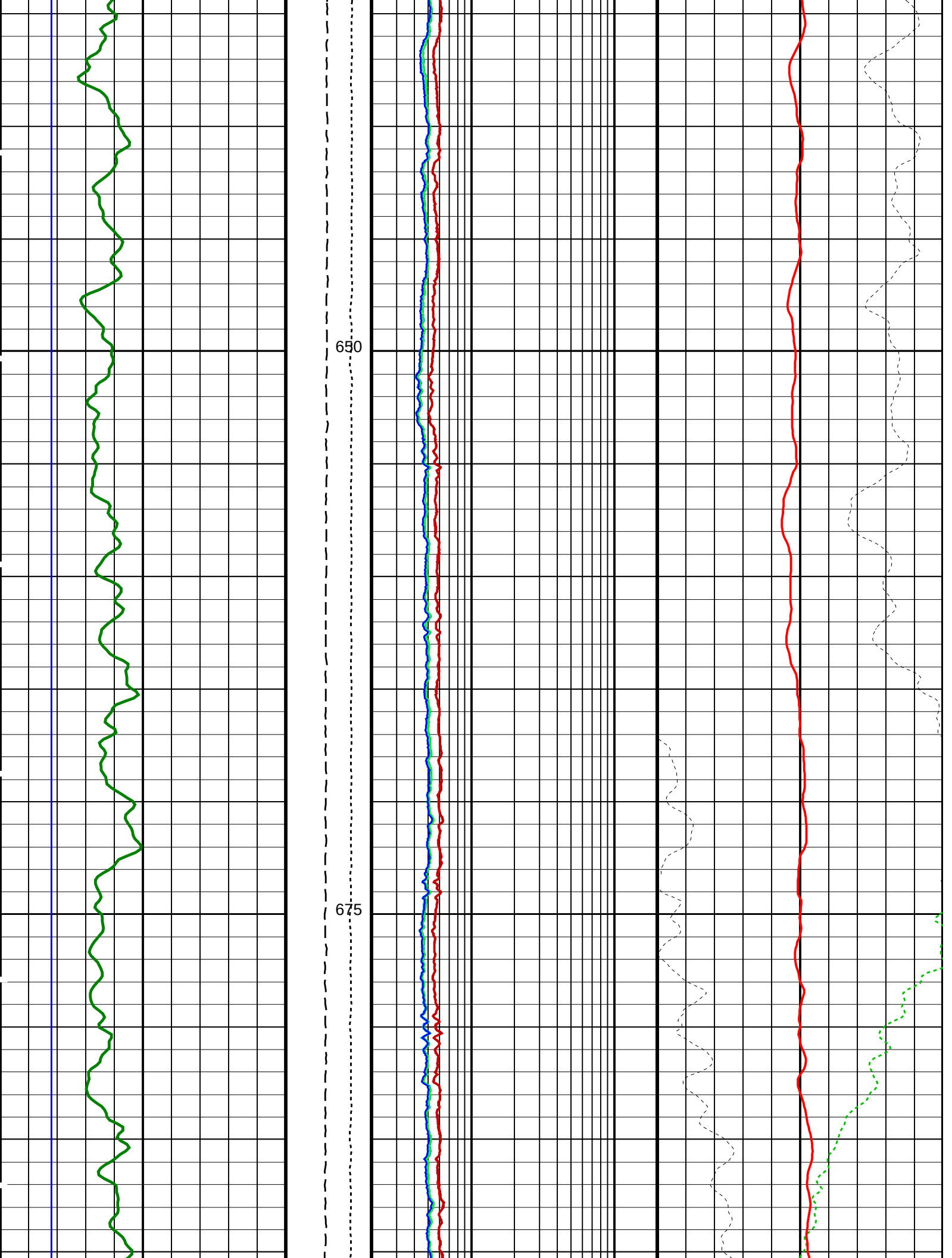

RT_HRLT
RLA1
RLA2
RLA3
RLA5
RLA4
DRH
RHOM
PEFL
LCAL
HSGR
375
CDF
400

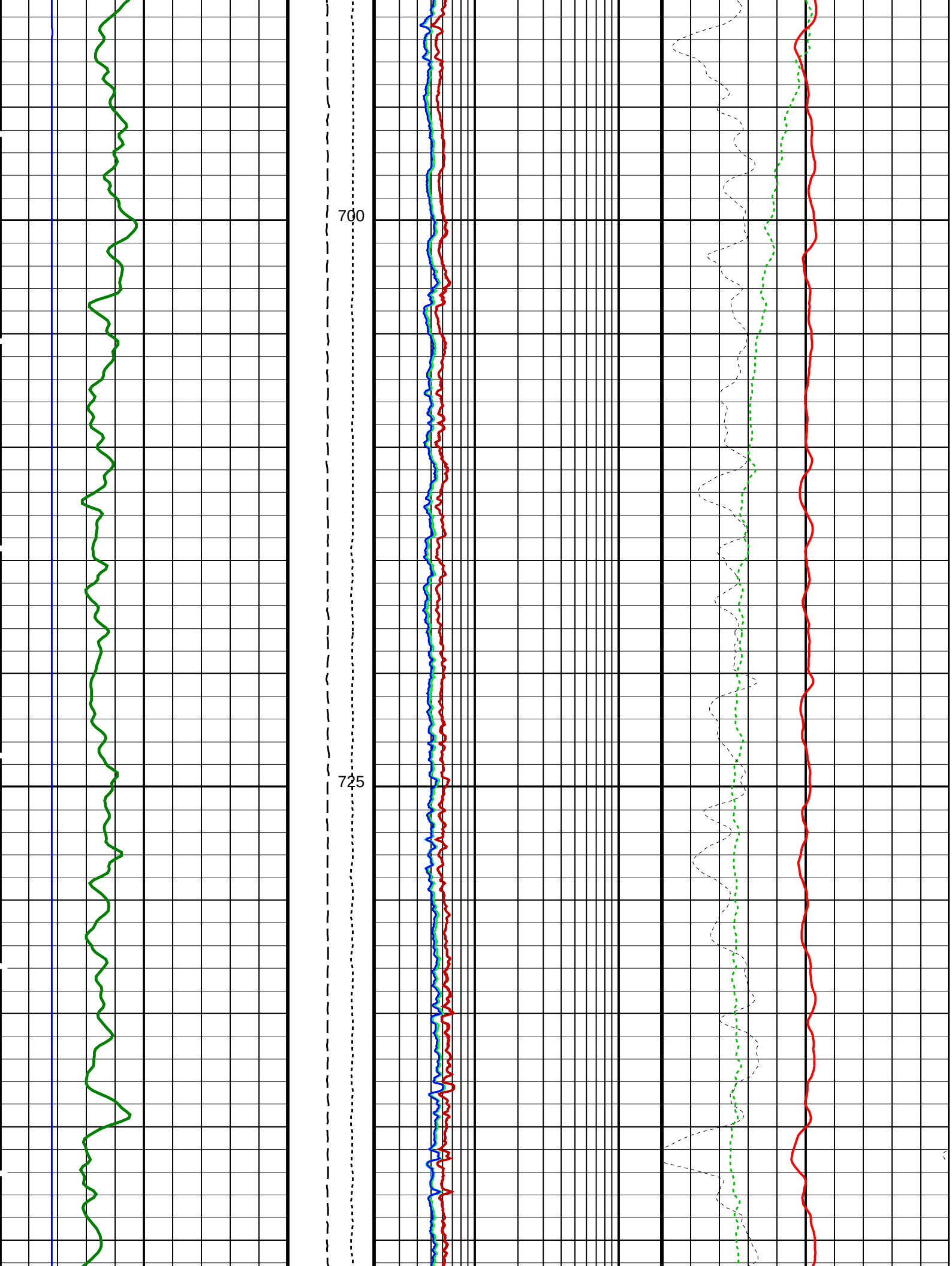

425
450

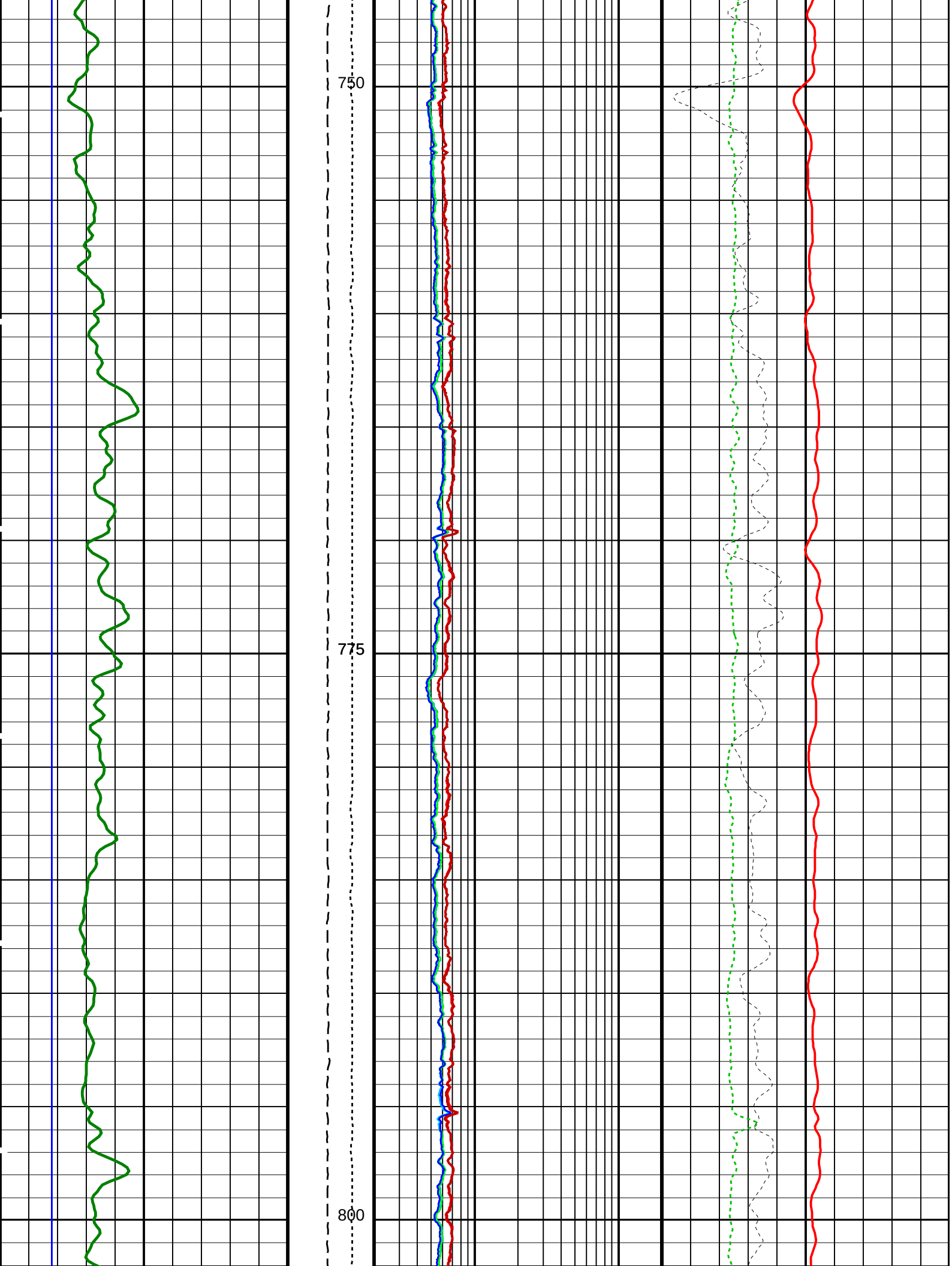

475
500

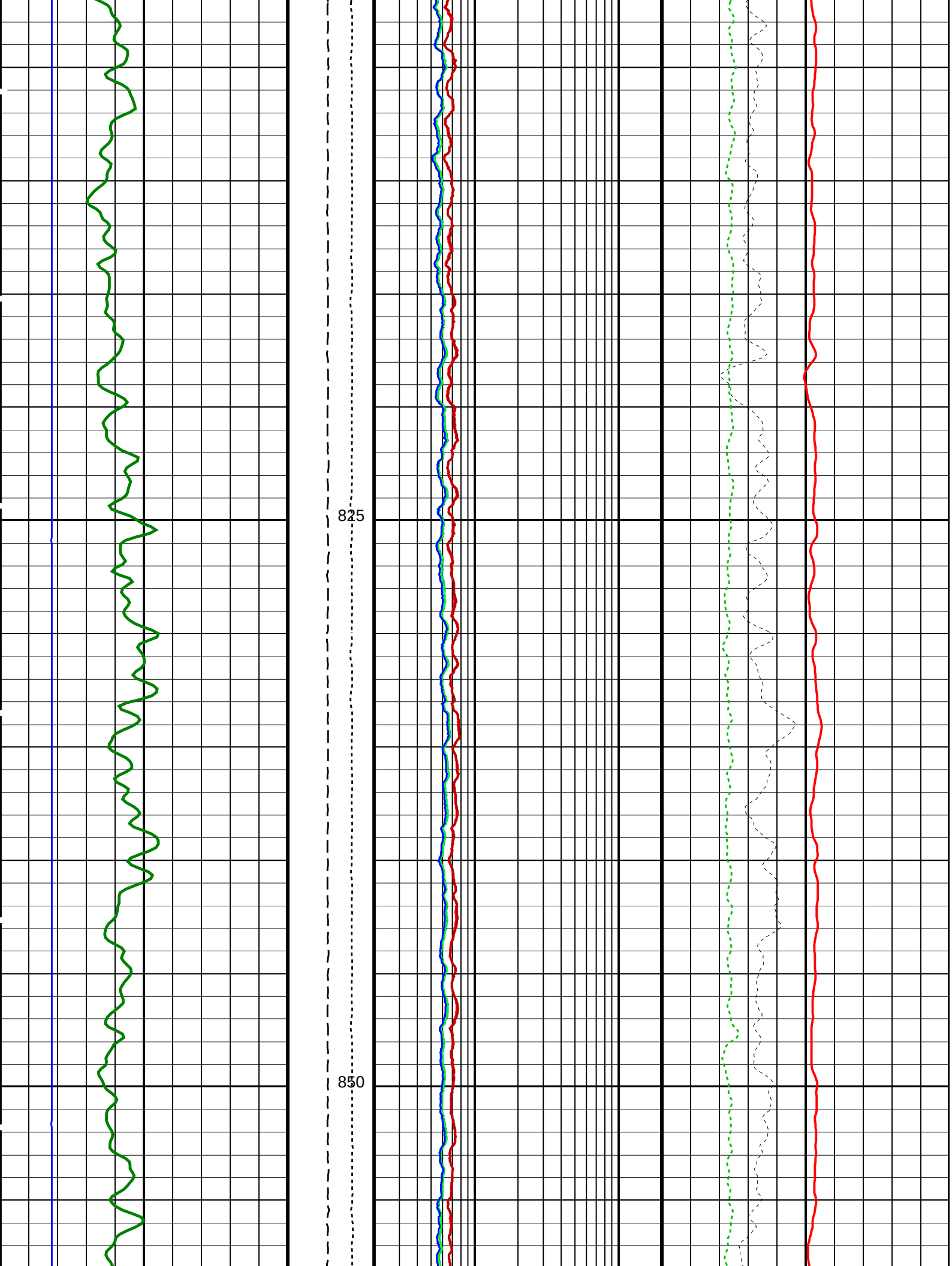

525
550
575

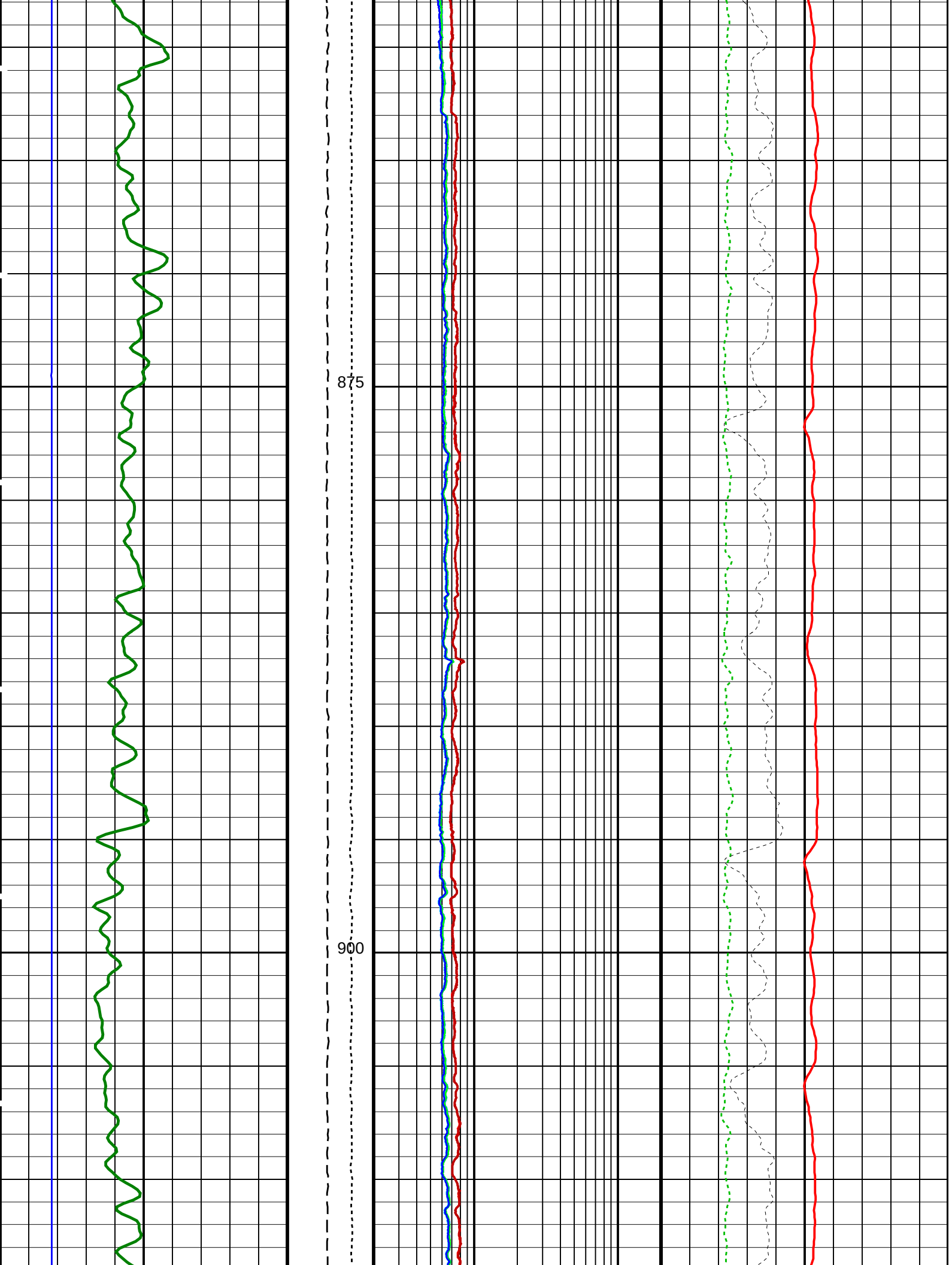

600
625

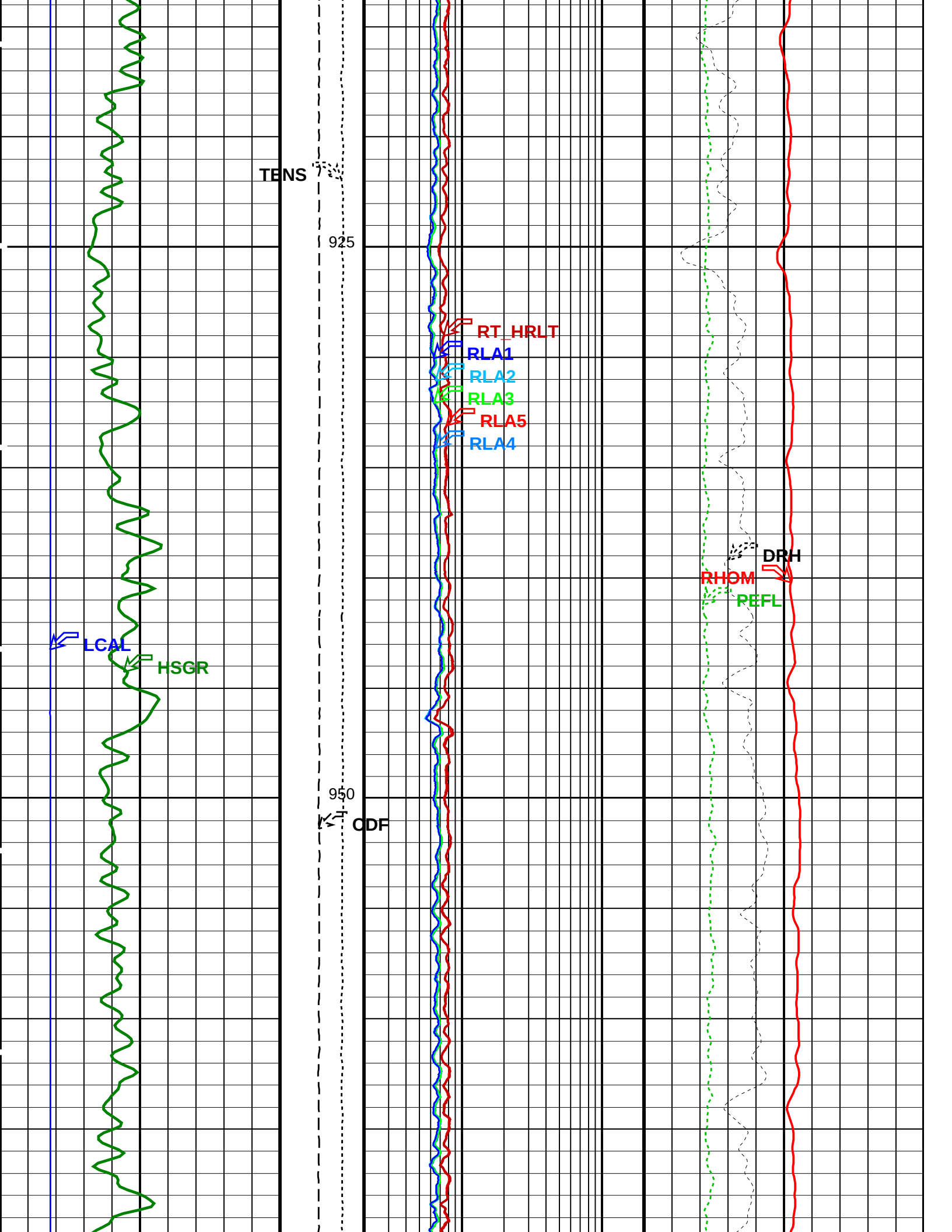

650
675

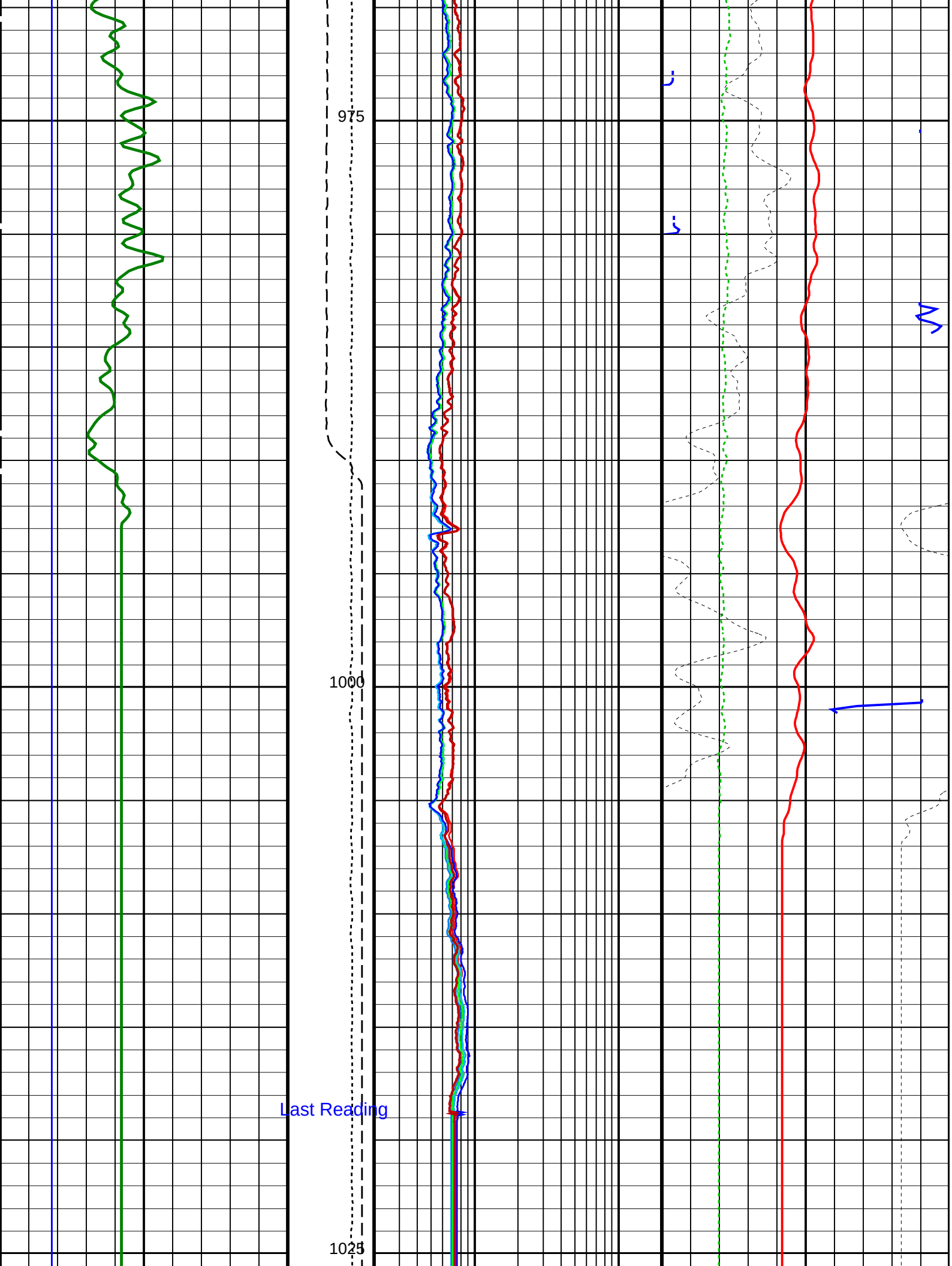

700
725


750
775
800


825
850


875
900


TENS
925
RT_HRLT
RLA1
RLA2
RLA3
RLA5
RLA4
DRH
RHOM
PEFL
LCAL
HSGR
950
CDF


975
1000
Last Reading
1025

HLDS Caliper (LCAL) 0 (IN) 20	Tension (TENS) (LBF) 10000 0	HRLT Resistivity 4 (RLA4) 0.2 (OHMM) 20	APS Corrected Standoff Porosity (STPC) 100 (PU) 0
HNGS Spectroscopy Gamma Ray (HSGR) 0 (GAPI) 100	Calibrated Downhole Force (CDF) (LBF) 3000 0	HRLT Resistivity 5 (RLA5) 0.2 (OHMM) 20	HLDS Long Spaced Photoelectric Effect (PEFL) 0 (−−−−) 10
		HRLT Resistivity 3 (RLA3) 0.2 (OHMM) 20	HLDS Bulk Density (RHOM) 0 (G/C3) 4
		HRLT Resistivity 2 (RLA2) 0.2 (OHMM) 20	HLDS Bulk Density Correction (DRH) −0.25 (G/C3) 0.25
		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	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	20.9455	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	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	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	2.6	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	1938.41	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2034.64	V
AHCS	APS Holesize Correction Source	GCSE	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1700.34	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature−Pressure−Salinity Correction Switch	OFF	
BHFL_APS	APS TNPH Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	DEGC
BSCO_APS	APS TNPH Borehole Salinity Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source Correction Option	MEASURED	
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	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	NO	
MCOR_APS	APS TNPH Mud Correction	BARI	
MWCO_APS	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.0863	
NFRC	APS Near/Far Calibration Ratio	0.97772	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	NO	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	YES	
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)	45	DEGC
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	0.018227	DC/M
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	−0.00110818	
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	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.991778	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00117	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	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	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	20	DEGC
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	1.32	G/C3
DO	Depth Offset for Playback	−141.0	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	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	−50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	1233	M
TDD	Total Depth − Driller	1095.00	M
TDL	Total Depth − Logger	1029.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo **Vertical Scale: 1:200** **Graphics File Created: 03−Sep−2015 09:37**

OP System Version: 19C0−187

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

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_HRLA_028LUP	PRODUCER	03−Sep−2015 09:20	1170.1 M	82.3 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_030PUP	FN:40	PRODUCER	03−Sep−2015 09:36

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High Resolution Laterolog Array − B Wellsite Calibration − HRLT M01							
Before: 29−Aug−2015 3:39 After: 5−Aug−2015 9:19							
HRLT M0−M1 Voltage Plus − 0	0	N/A	−318.4	−319.0	−0.5903	9.681	UV
HRLT M0−M1 Voltage Plus − 1	0	N/A	−330.2	−333.6	−3.400	9.681	UV
HRLT M0−M1 Voltage Plus − 2	0	N/A	−337.7	−340.5	−2.791	9.681	UV
HRLT M0−M1 Voltage Plus − 3	0	N/A	−328.8	−331.0	−2.169	9.681	UV
HRLT M0−M1 Voltage Plus − 4	0	N/A	−319.6	−320.5	−0.8708	9.681	UV
HRLT M0−M1 Voltage Plus − 5	0	N/A	−321.6	−322.3	−0.7267	9.681	UV
HRLT M0−M1 Voltage Plus − 6	0	N/A	319.7	323.4	3.722	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							

High Resolution Laterolog Array − B Wellsite Calibration − HRLT M12
Before: 29−Aug−2015 3:39 After: 5−Aug−2015 9:19

HRLT M1−M2 Voltage Plus − 0	0	N/A	1740	1744	4.606	53.42	UV
HRLT M1−M2 Voltage Plus − 1	0	N/A	1811	1831	19.94	53.42	UV
HRLT M1−M2 Voltage Plus − 2	0	N/A	1845	1862	16.63	53.42	UV
HRLT M1−M2 Voltage Plus − 3	0	N/A	1795	1808	13.30	53.42	UV
HRLT M1−M2 Voltage Plus − 4	0	N/A	1744	1750	6.256	53.42	UV
HRLT M1−M2 Voltage Plus − 5	0	N/A	1755	1761	5.403	53.42	UV
HRLT M1−M2 Voltage Plus − 6	0	N/A	−1762	−1783	−21.83	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: 29−Aug−2015 3:39 After: 5−Aug−2015 9:19

HRLT M2−M3 Voltage Plus − 0	0	N/A	1731	1735	4.117	53.42	UV
HRLT M2−M3 Voltage Plus − 1	0	N/A	1812	1832	19.50	53.42	UV
HRLT M2−M3 Voltage Plus − 2	0	N/A	1848	1865	16.43	53.42	UV
HRLT M2−M3 Voltage Plus − 3	0	N/A	1802	1815	13.16	53.42	UV
HRLT M2−M3 Voltage Plus − 4	0	N/A	1745	1750	5.822	53.42	UV
HRLT M2−M3 Voltage Plus − 5	0	N/A	1757	1762	5.015	53.42	UV
HRLT M2−M3 Voltage Plus − 6	0	N/A	−1752	−1773	−21.40	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: 29−Aug−2015 3:39 After: 5−Aug−2015 9:19

HRLT A3−A4 Voltage Plus − 0	0	N/A	68600	68770	162.5	2100	UV
HRLT A3−A4 Voltage Plus − 1	0	N/A	71660	72450	792.7	2100	UV
HRLT A3−A4 Voltage Plus − 2	0	N/A	73390	74010	627.7	2100	UV
HRLT A3−A4 Voltage Plus − 3	0	N/A	71780	72300	512.3	2100	UV
HRLT A3−A4 Voltage Plus − 4	0	N/A	69480	69700	221.3	2100	UV
HRLT A3−A4 Voltage Plus − 5	0	N/A	69990	70190	197.4	2100	UV
HRLT A3−A4 Voltage Plus − 6	0	N/A	−68290	−69120	−826.9	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: 29−Aug−2015 3:39 After: 5−Aug−2015 9:19

HRLT A4−A5 Voltage Plus − 0	0	N/A	68690	68850	156.2	2100	UV
HRLT A4−A5 Voltage Plus − 1	0	N/A	71870	72670	801.9	2100	UV
HRLT A4−A5 Voltage Plus − 2	0	N/A	73570	74200	622.8	2100	UV
HRLT A4−A5 Voltage Plus − 3	0	N/A	71950	72460	510.8	2100	UV
HRLT A4−A5 Voltage Plus − 4	0	N/A	69590	69810	225.3	2100	UV
HRLT A4−A5 Voltage Plus − 5	0	N/A	70090	70280	194.8	2100	UV
HRLT A4−A5 Voltage Plus − 6	0	N/A	−68490	−69320	−826.9	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: 29−Aug−2015 3:39 After: 5−Aug−2015 9:19

HRLT A5−A6 Voltage Plus − 0	0	N/A	68540	68710	166.2	2100	UV
HRLT A5−A6 Voltage Plus − 1	0	N/A	71730	72490	764.4	2100	UV
HRLT A5−A6 Voltage Plus − 2	0	N/A	73390	74070	672.9	2100	UV
HRLT A5−A6 Voltage Plus − 3	0	N/A	71780	72300	514.6	2100	UV
HRLT A5−A6 Voltage Plus − 4	0	N/A	69450	69690	244.7	2100	UV
HRLT A5−A6 Voltage Plus − 5	0	N/A	69950	70140	194.8	2100	UV
HRLT A5−A6 Voltage Plus − 6	0	N/A	−68340	−69160	−813.9	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: 29−Aug−2015 3:39 After: 5−Aug−2015 9:19

HRLT Torpedo−M0 Voltage − 0	0	N/A	−68070	−68210	−142.6	2100	UV
HRLT Torpedo−M0 Voltage − 1	0	N/A	−71530	−72300	−771.9	2100	UV
HRLT Torpedo−M0 Voltage − 2	0	N/A	−73260	−73880	−620.2	2100	UV
HRLT Torpedo−M0 Voltage − 3	0	N/A	−71710	−72200	−491.1	2100	UV
HRLT Torpedo−M0 Voltage − 4	0	N/A	−69410	−69620	−205.5	2100	UV
HRLT Torpedo−M0 Voltage − 5	0	N/A	−69910	−70090	−172.5	2100	UV
HRLT Torpedo−M0 Voltage − 6	0	N/A	68110	68910	800.7	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: 29−Aug−2015 3:39 After: 5−Aug−2015 9:19

HRLT Bridle#9−M0 Voltage − 0	0	N/A	−68100	−68250	−157.0	2100	UV
HRLT Bridle#9−M0 Voltage − 1	0	N/A	−71620	−72390	−776.3	2100	UV
HRLT Bridle#9−M0 Voltage − 2	0	N/A	−73330	−73980	−642.9	2100	UV
HRLT Bridle#9−M0 Voltage − 3	0	N/A	−71770	−72280	−507.0	2100	UV
HRLT Bridle#9−M0 Voltage − 4	0	N/A	−69450	−69670	−217.6	2100	UV
HRLT Bridle#9−M0 Voltage − 5	0	N/A	−69940	−70120	−185.5	2100	UV
HRLT Bridle#9−M0 Voltage − 6	0	N/A	68200	69000	804.0	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: 29−Aug−2015 3:39 After: 5−Aug−2015 9:19

HRLT Source Current Plus − 0	0	N/A	284.1	284.7	0.6274	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: 29−Aug−2015 3:39 After: 5−Aug−2015 9:19

HRLT Vertical Voltage Pl − 0	0	N/A	−320.3	−320.7	−0.3402	9.681	UV
HRLT Vertical Voltage Pl − 1	0	N/A	−325.2	−328.2	−3.017	9.681	UV
HRLT Vertical Voltage Pl − 2	0	N/A	−331.3	−333.7	−2.463	9.681	UV
HRLT Vertical Voltage Pl − 3	0	N/A	−320.7	−322.6	−1.838	9.681	UV
HRLT Vertical Voltage Pl − 4	0	N/A	−308.9	−309.5	−0.5981	9.681	UV
HRLT Vertical Voltage Pl − 5	0	N/A	−325.7	−326.1	−0.4426	9.681	UV
HRLT Vertical Voltage Pl − 6	0	N/A	327.3	331.0	3.631	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: 3−Aug−2015 21:03 Before: 29−Aug−2015 3:43 After: 5−Aug−2015 9:22

SS Cs Resolution Bkg	9.000	8.017	8.041	7.919	−0.1224	1.800	%
LS Cs Resolution Bkg	9.000	8.170	8.234	8.157	−0.07758	1.800	%
LSW1 Background	100.0	68.33	66.79	67.33	0.5388	3.000	CPS
LSW2 Background	100.0	63.65	61.90	61.96	0.06026	3.000	CPS
LSW3 Background	200.0	137.7	137.8	137.2	−0.5855	6.000	CPS
LSW4 Background	250.0	169.1	167.9	168.5	0.5783	7.500	CPS
LSW5 Background	600.0	386.6	382.9	383.4	0.4792	18.00	CPS
SSW1 Background	100.0	76.45	75.80	75.94	0.1326	3.000	CPS
SSW2 Background	200.0	136.4	135.3	137.6	2.332	6.000	CPS
SSW3 Background	500.0	362.4	363.8	365.1	1.225	15.00	CPS
SSW4 Background	270.0	190.8	188.8	189.5	0.6729	8.100	CPS
SSW5 Background	200.0	138.4	136.6	138.7	2.159	6.000	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Aluminum Measurement
Master: 3−Aug−2015 21:34

LSW1 Aluminum	600.0	504.7	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	726.8	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	878.5	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	443.6	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	408.1	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2360	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6396	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	8862	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	3644	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	446.4	N/A	N/A	N/A	N/A	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Lithology Measurement
Master: 3−Aug−2015 21:29

LSW1 Iron	400.0	344.5	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	588.5	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	781.6	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	405.5	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	370.3	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1732	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5346	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8101	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3320	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	398.5	N/A	N/A	N/A	N/A	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Caliper Calibration
Before: 3−Aug−2015 21:46

HLDS Caliper Small Ring	12.00	N/A	16.20	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	20.40	N/A	N/A	N/A	IN

Accelerator−Porosity Tool Wellsite Calibration − Detector Background
Master: 4−Aug−2015 18:37 Before: 29−Aug−2015 3:46 After: 5−Aug−2015 9:22

Near Det Bkg Cntrate	30.00	25.87	26.93	27.12	0.1873	N/A	CPS
Far Det Bkg Cntrate	30.00	28.00	28.70	27.50	−1.199	N/A	CPS
Array−1 Det Bkg Cntrate	30.00	26.10	26.91	25.94	−0.9755	N/A	CPS
Array−2 Det Bkg Cntrate	30.00	25.95	26.73	26.97	0.2379	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	27.77	25.20	26.97	1.768	N/A	CPS

Accelerator−Porosity Tool Wellsite Calibration − Calibration Ratios
Master: 4−Aug−2015 18:37

Near/Far Calibration Ratio	0.9250	0.9777	N/A	N/A	N/A	N/A	
Near/Array Calibration Ratio	1.030	1.086	N/A	N/A	N/A	N/A	
Near/Array Cal Ratio Up/Down	1.000	1.021	N/A	N/A	N/A	N/A	

Accelerator−Porosity Tool Wellsite Calibration − Tank Check
Master: 4−Aug−2015 18:37

Array−1 Standoff Porosity	11.75	10.45	N/A	N/A	N/A	N/A	PU
Array−2 Standoff Porosity	11.75	10.61	N/A	N/A	N/A	N/A	PU
Average Slowing Down Time	6.000	6.032	N/A	N/A	N/A	N/A	US

Average Slowing Down Time		0.952	N/A	N/A	N/A	N/A	US
Array−1 SDT Ratio Up/Down	1.000	0.9769	N/A	N/A	N/A	N/A	
Array−2 SDT Ratio Up/Down	1.000	0.9680	N/A	N/A	N/A	N/A	
Sigma Formation	27.50	34.31	N/A	N/A	N/A	N/A	CU

Accelerator−Porosity Tool Wellsite Calibration − CCR7 signal boxes
Master: 4−Aug−2015 18:00

Near Detector Plateau Setting	1650	1700	N/A	N/A	N/A	N/A	V
Far Detector Plateau Setting	2000	2035	N/A	N/A	N/A	N/A	V
Array Detector Plateau Setting	2000	1938	N/A	N/A	N/A	N/A	V

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 1 Check
Master: 31−Jul−2015 10:01 Before: 5−Aug−2015 7:59 After: 5−Aug−2015 9:23

Na 511 Peak Loc	40.00	37.71	37.63	37.62	−0.01348	1.000	
Na 511 Peak Res	15.50	16.11	15.42	15.72	0.3043	2.000	%
High Voltage	1150	1211	1201	1204	2.856	N/A	V
Na 1785 Peak Loc	142.6	136.7	136.8	136.3	−0.4773	7.000	
Na 1785 Peak Res	8.500	10.13	8.646	8.654	0.007848	2.000	%
Temperature	15.50	22.16	22.65	22.78	0.1236	N/A	DEGC
Na Count Rate	45.00	43.96	43.37	42.72	−0.6500	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 2 Check
Master: 31−Jul−2015 10:01 Before: 5−Aug−2015 7:59 After: 5−Aug−2015 9:23

Na 511 Peak Loc	40.00	39.69	39.55	39.58	0.02773	1.000	
Na 511 Peak Res	15.50	15.27	16.42	15.01	−1.409	2.000	%
High Voltage	1150	1084	1083	1085	2.161	N/A	V
Na 1785 Peak Loc	142.6	143.4	143.2	142.7	−0.5449	7.000	
Na 1785 Peak Res	8.500	8.457	8.664	8.451	−0.2128	2.000	%
Temperature	15.50	21.65	22.00	22.57	0.5625	N/A	DEGC
Na Count Rate	45.00	44.18	43.52	42.99	−0.5368	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Ratio Of Detector 1 To Detector 2
Master: 31−Jul−2015 10:01 Before: 5−Aug−2015 7:59 After: 5−Aug−2015 9:23

Coincidence Count Rate Ratio	1.000	0.9887	0.9903	0.9926	0.002269	0.05000	

Hostile Natural Gamma Ray Sonde Master Calibration − Detector 1 Calibration
Master: 31−Jul−2015 9:56

Na 511 Peak Set Point	40.00	39.00	−−	−−	−−	−−	
Th Peak Loc	209.6	206.7	−−	−−	−−	−−	
Th Peak Res	7.000	8.351	−−	−−	−−	−−	%
Background Count Rate	142.5	37.67	−−	−−	−−	−−	CPS
Gain Ratio	1.000	1.042	−−	−−	−−	−−	

Hostile Natural Gamma Ray Sonde Master Calibration − Detector 2 Calibration
Master: 31−Jul−2015 9:56

Na 511 Peak Set Point	40.00	41.00	−−	−−	−−	−−	
Th Peak Loc	209.6	211.5	−−	−−	−−	−−	
Th Peak Res	7.000	6.877	−−	−−	−−	−−	%
Background Count Rate	142.5	39.84	−−	−−	−−	−−	CPS
Gain Ratio	1.000	1.014	−−	−−	−−	−−	

Enhanced DTS Cartridge Wellsite Calibration − EDTC Accelerometer Calibration
Before: 11−Aug−2015 17:26

EDTC Z−Axis Acceleration	9.810	N/A	9.852	N/A	N/A	N/A	M/S2

Enhanced DTS Cartridge Wellsite Calibration − Detector Calibration
Before: 5−Aug−2015 7:56 After: 5−Aug−2015 9:33

Gamma Ray (Jig − Bkg)	152.3	N/A	152.3	152.9	0.5175	13.85	GAPI
Gamma Ray (Calibrated)	164.0	N/A	164.0	164.6	0.5571	15.00	GAPI

Accelerator−Porosity Tool − Detector Plateau Settings :

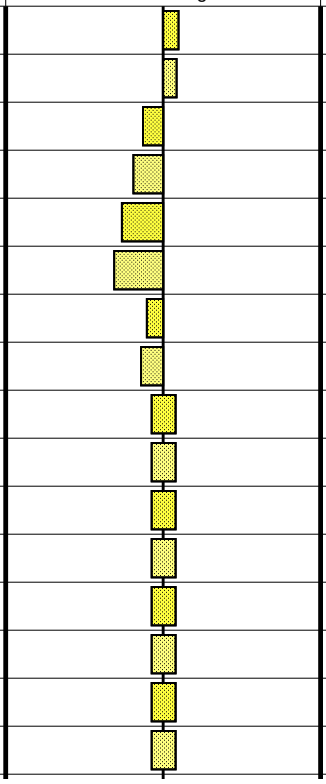
Near Detector Plateau Setting 1700 V
Far Detector Plateau Setting 2035 V
Array Detector Plateau Setting 1938 V

High Resolution Laterolog Array − B / Equipment Identification

Primary Equipment:		
HRLT Sonde	HRLS − B	768
Auxiliary Equipment:		
HRLT lower Housing	HRLH − B	968
HRLT Lower Cartridge	HRLC − B	974
HRLT upper Housing	HRUH − B	978
HRLT Upper Cartridge	HRUC − B	764

High Resolution Laterolog Array − B Wellsite Calibration

HRLT M01

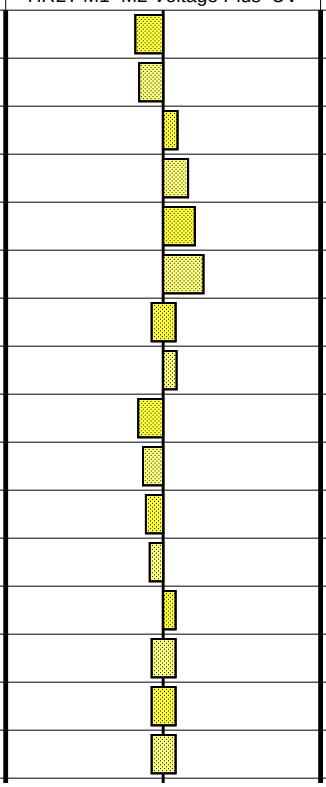
Idx	Phase	HRLT M0−M1 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−318.4	−322.7	−280.7	−379.7
	After		−319.0			
1	Before		−330.2	−322.7	−280.7	−379.7
	After		−333.6			
2	Before		−337.7	−322.7	−280.7	−379.7
	After		−340.5			
3	Before		−328.8	−322.7	−280.7	−379.7
	After		−331.0			
4	Before		−319.6	−322.7	−280.7	−379.7
	After		−320.5			
5	Before		−321.6	−322.7	−280.7	−379.7
	After		−322.3			
6	Before		319.7	322.7	379.7	280.7
	After		323.4			
7	Before		−322.7	−322.7	−280.7	−379.7
	After		−322.7			
		(Minimum) (Nominal) (Maximum)				

Before: 29−Aug−2015 3:39

After: 5−Aug−2015 9:19

High Resolution Laterolog Array − B Wellsite Calibration

HRLT M12

Idx	Phase	HRLT M1−M2 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1740	1781	2095	1549
	After		1744			
1	Before		1811	1781	2095	1549
	After		1831			
2	Before		1845	1781	2095	1549
	After		1862			
3	Before		1795	1781	2095	1549
	After		1808			
4	Before		1744	1781	2095	1549
	After		1750			
5	Before		1755	1781	2095	1549
	After		1761			
6	Before		−1762	−1781	−1549	−2095
	After		−1783			
7	Before		1781	1781	2095	1549
	After		1781			
		(Minimum) (Nominal) (Maximum)				

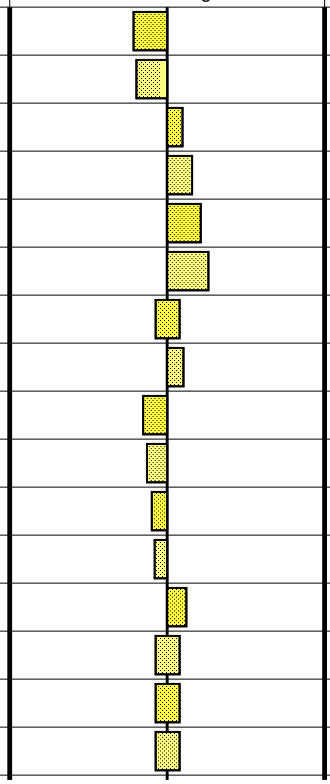
Before: 29−Aug−2015 3:39

After: 5−Aug−2015 9:19

High Resolution Laterolog Array − B Wellsite Calibration

HRLT M23

HRLT M2−M3

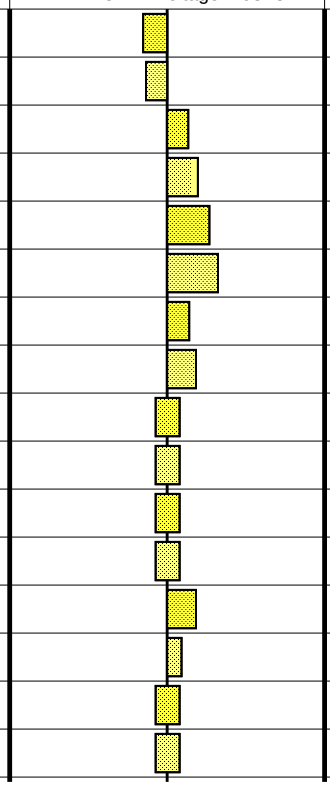
Idx	Phase	HRLT M2−M3 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1731	1781	2095	1549
	After		1735			
1	Before		1812	1781	2095	1549
	After		1832			
2	Before		1848	1781	2095	1549
	After		1865			
3	Before		1802	1781	2095	1549
	After		1815			
4	Before		1745	1781	2095	1549
	After		1750			
5	Before		1757	1781	2095	1549
	After		1762			
6	Before		−1752	−1781	−1549	−2095
	After		−1773			
7	Before		1781	1781	2095	1549
	After		1781			
		(Minimum) (Nominal) (Maximum)				

Before: 29−Aug−2015 3:39

After: 5−Aug−2015 9:19

High Resolution Laterolog Array − B Wellsite Calibration

HRLT V34

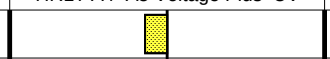
Idx	Phase	HRLT A3−A4 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68600	70000	82360	60900
	After		68770			
1	Before		71660	70000	82360	60900
	After		72450			
2	Before		73390	70000	82360	60900
	After		74010			
3	Before		71780	70000	82360	60900
	After		72300			
4	Before		69480	70000	82360	60900
	After		69700			
5	Before		69990	70000	82360	60900
	After		70190			
6	Before		−68290	−70000	−60900	−82360
	After		−69120			
7	Before		70000	70000	82360	60900
	After		70000			
		(Minimum) (Nominal) (Maximum)				

Before: 29−Aug−2015 3:39

After: 5−Aug−2015 9:19

High Resolution Laterolog Array − B Wellsite Calibration

HRLT V45

Idx	Phase	HRLT A4−A5 Voltage Plus UV	Value	Nominal	Maximum	Minimum
	Before		68690			

0	After	68850	70000	82360	60900
1	Before	71870	70000	82360	60900
	After	72670			
2	Before	73570	70000	82360	60900
	After	74200			
3	Before	71950	70000	82360	60900
	After	72460			
4	Before	69590	70000	82360	60900
	After	69810			
5	Before	70090	70000	82360	60900
	After	70280			
6	Before	−68490	−70000	−60900	−82360
	After	−69320			
7	Before	70000	70000	82360	60900
	After	70000			
	(Minimum) (Nominal) (Maximum)				

Before: 29−Aug−2015 3:39
After: 5−Aug−2015 9:19

High Resolution Laterolog Array − B Wellsite Calibration

HRLT V56

Idx	Phase	HRLT A5−A6 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68540	70000	82360	60900
	After		68710			
1	Before		71730	70000	82360	60900
	After		72490			
2	Before		73390	70000	82360	60900
	After		74070			
3	Before		71780	70000	82360	60900
	After		72300			
4	Before		69450	70000	82360	60900
	After		69690			
5	Before		69950	70000	82360	60900
	After		70140			
6	Before		−68340	−70000	−60900	−82360
	After		−69160			
7	Before		70000	70000	82360	60900
	After		70000			
	(Minimum) (Nominal) (Maximum)					

Before: 29−Aug−2015 3:39
After: 5−Aug−2015 9:19

High Resolution Laterolog Array − B Wellsite Calibration

HRLT VTP

Idx	Phase	HRLT Torpedo−M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−68070	−70000	−60900	−82360
	After		−68210			
1	Before		−71530			

1	After	−72300	−70000	−60900	−82360
2	Before	−73260	−70000	−60900	−82360
	After	−73880			
3	Before	−71710	−70000	−60900	−82360
	After	−72200			
4	Before	−69410	−70000	−60900	−82360
	After	−69620			
5	Before	−69910	−70000	−60900	−82360
	After	−70090			
6	Before	68110	70000	82360	60900
	After	68910			
7	Before	−70000	−70000	−60900	−82360
	After	−70000			
	(Minimum) (Nominal) (Maximum)				

Before: 29−Aug−2015 3:39
After: 5−Aug−2015 9:19

High Resolution Laterolog Array − B Wellsite Calibration

HRLT VBD

Idx	Phase	HRLT Bridle#9−M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−68100	−70000	−60900	−82360
	After		−68250			
1	Before		−71620	−70000	−60900	−82360
	After		−72390			
2	Before		−73330	−70000	−60900	−82360
	After		−73980			
3	Before		−71770	−70000	−60900	−82360
	After		−72280			
4	Before		−69450	−70000	−60900	−82360
	After		−69670			
5	Before		−69940	−70000	−60900	−82360
	After		−70120			
6	Before		68200	70000	82360	60900
	After		69000			
7	Before		−70000	−70000	−60900	−82360
	After		−70000			
	(Minimum) (Nominal) (Maximum)					

Before: 29−Aug−2015 3:39
After: 5−Aug−2015 9:19

High Resolution Laterolog Array − B Wellsite Calibration

HRLT ISO

Idx	Phase	HRLT Source Current Plus UA	Value	Nominal	Maximum	Minimum
0	Before		284.1	284.0	334.1	247.0
	After		284.7			
1	Before		281.1	281.1	330.7	244.4
	After		281.1			
	Before		281.1			

2	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: 29−Aug−2015 3:39
After: 5−Aug−2015 9:19

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		−320.7			
1	Before		−325.2	−322.7	−280.7	−379.7
	After		−328.2			
2	Before		−331.3	−322.7	−280.7	−379.7
	After		−333.7			
3	Before		−320.7	−322.7	−280.7	−379.7
	After		−322.6			
4	Before		−308.9	−322.7	−280.7	−379.7
	After		−309.5			
5	Before		−325.7	−322.7	−280.7	−379.7
	After		−326.1			
6	Before		327.3	322.7	379.7	280.7
	After		331.0			
7	Before		−322.7	−322.7	−280.7	−379.7
	After		−322.7			
	(Minimum) (Nominal) (Maximum)					

Before: 29−Aug−2015 3:39
After: 5−Aug−2015 9:19

Hostile Litho−Density Sonde / Equipment Identification

Primary Equipment:		
Hostile Litho Density Sonde	HLDS − D	45
Hostile Litho Density High Voltage	HLDV − D	45
Gamma Source Radioactive	GSR − Z	8113
Auxiliary Equipment:		
Hostile Litho Density Pad	HLDP − C	45
Hostile Litho Density High Voltage Housi	HEH − H	47

Hostile Litho−Density Sonde Wellsite Calibration

Background Measurement

Phase	SS Cs Resolution Bkg %	Value
Master		8.017
Before		8.041
After		7.919

7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)

Phase	LS Cs Resolution Bkg %	Value
Master		8.170
Before		8.234
After		8.157

7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)

Phase	LSW1 Background CPS	Value
Master		68.33
Before		66.79
After		67.33

55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)

Phase	LSW2 Background CPS	Value
Master		63.65
Before		61.90
After		61.96

50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)

Phase	LSW3 Background CPS	Value
Master		137.7
Before		137.8
After		137.2

110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)

Phase	LSW4 Background CPS	Value
Master		169.1
Before		167.9
After		168.5

140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)

Phase	LSW5 Background CPS	Value
Master		386.6
Before		382.9
After		383.4

330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)

Phase	SSW1 Background CPS	Value
Master		76.45
Before		75.80
After		75.94

55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)

Phase	SSW2 Background CPS	Value
Master		136.4
Before		135.3
After		137.6

100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum)

Phase	SSW3 Background CPS	Value
Master		362.4
Before		363.8
After		365.1

280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum)

Phase	SSW4 Background CPS	Value
Master		190.8
Before		188.8
After		189.5

150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum)

Phase	SSW5 Background CPS	Value
Master		138.4
Before		136.6
After		138.7

110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum)

Master: 3−Aug−2015 21:03 Before: 29−Aug−2015 3:43 After: 5−Aug−2015 9:22

Hostile Litho−Density Sonde Master Calibration

Detector Background Measurement

Phase	LSW1 Background CPS	Value
Master		68.33

55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)

Phase	LSW2 Background CPS	Value
Master		63.65

50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)

Phase	LSW3 Background CPS	Value
Master		137.7

110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)

Phase	LSW4 Background CPS	Value
Master		169.1

140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)

Phase	LSW5 Background CPS	Value
Master		386.6

330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)

Phase	LS Cs Resolution Bkg %	Value
Master		8.170

7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)

Phase	SSW1 Background CPS	Value
Master		76.45

55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)

Phase	SSW2 Background CPS	Value
Master		136.4

100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum)

Phase	SSW3 Background CPS	Value
Master		362.4

280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum)

Phase	SSW4 Background CPS	Value
Master		190.8

150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum)

Phase	SSW5 Background CPS	Value
Master		138.4

110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum)

Phase	SS Cs Resolution Bkg %	Value
Master		8.017

7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)

Master: 3−Aug−2015 21:03

Hostile Litho−Density Sonde Master Calibration

Detector Aluminum Measurement (bkgd−subtracted)

Phase	LSW1 Aluminum CPS	Value
Master		504.7

420.0 (Minimum) 600.0 (Nominal) 770.0 (Maximum)

Phase	LSW2 Aluminum CPS	Value
Master		726.8

650.0 (Minimum) 900.0 (Nominal) 1150 (Maximum)

Phase	LSW3 Aluminum CPS	Value
Master		878.5

800.0 (Minimum) 1100 (Nominal) 1450 (Maximum)

Phase	LSW4 Aluminum CPS	Value
Master		443.6

410.0 (Minimum) 580.0 (Nominal) 740.0 (Maximum)

Phase	LSW5 Aluminum CPS	Value
Master	EXCEEDS LIMIT	408.1

410.0 (Minimum) 570.0 (Nominal) 740.0 (Maximum)

Phase	SSW1 Aluminum CPS	Value
Master		2360

2000 (Minimum) 2800 (Nominal) 3200 (Maximum)

Phase	SSW2 Aluminum CPS	Value
Master		6396

5800 (Minimum) 8000 (Nominal) 9300 (Maximum)

Phase	SSW3 Aluminum CPS	Value
Master		8862

8300 (Minimum) 11600 (Nominal) 13500 (Maximum)

Phase	SSW4 Aluminum CPS	Value
Master		3644

3500 (Minimum) 5000 (Nominal) 5800 (Maximum)

Phase	SSW5 Aluminum CPS	Value

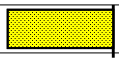
Phase		Value
Master		446.4
	430.0 (Minimum) 660.0 (Nominal) 770.0 (Maximum)	

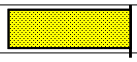
Master: 3−Aug−2015 21:34

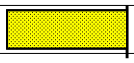
Hostile Litho−Density Sonde Master Calibration

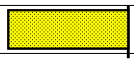
Detector Litholog Measurement (bkgd−subtracted)

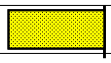
Phase	LSW1 Iron CPS	Value
Master		344.5
	290.0 (Minimum) 400.0 (Nominal) 560.0 (Maximum)	

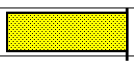
Phase	LSW2 Iron CPS	Value
Master		588.5
	520.0 (Minimum) 730.0 (Nominal) 950.0 (Maximum)	

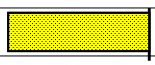
Phase	LSW3 Iron CPS	Value
Master		781.6
	720.0 (Minimum) 1000 (Nominal) 1350 (Maximum)	

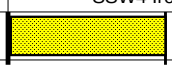
Phase	LSW4 Iron CPS	Value
Master		405.5
	370.0 (Minimum) 520.0 (Nominal) 700.0 (Maximum)	

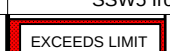
Phase	LSW5 Iron CPS	Value
Master		370.3
	340.0 (Minimum) 470.0 (Nominal) 750.0 (Maximum)	

Phase	SSW1 Iron CPS	Value
Master		1732
	1500 (Minimum) 2100 (Nominal) 2400 (Maximum)	

Phase	SSW2 Iron CPS	Value
Master		5346
	4900 (Minimum) 6800 (Nominal) 7900 (Maximum)	

Phase	SSW3 Iron CPS	Value
Master		8101
	7800 (Minimum) 10800 (Nominal) 12600 (Maximum)	

Phase	SSW4 Iron CPS	Value
Master		3320
	3300 (Minimum) 4600 (Nominal) 5400 (Maximum)	

Phase	SSW5 Iron CPS	Value
Master	 EXCEEDS LIMIT	398.5
	420.0 (Minimum) 580.0 (Nominal) 680.0 (Maximum)	

Master: 3−Aug−2015 21:29

Hostile Litho−Density Sonde Master Calibration

Quality Ratios

Phase	AL CALIBRATION RATIO 1	Value
Master		1.031
	0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)	

Phase	AL CALIBRATION RATIO 2	Value
Master		2.166
	1.900 (Minimum) 2.100 (Nominal) 2.300 (Maximum)	

Phase	AL CALIBRATION RATIO 3	Value
Master		0.5926
	0.4500 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum)	

Phase	AL CALIBRATION RATIO 4	Value
Master		0.5770
	0.4000 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum)	

Phase	Pad−Wear SS Ratio	Value
Master		0.9867
	0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum)	

Phase	Pad−Wear LS Ratio	Value
Master		0.9843
	0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum)	

Phase	Pad−Position SS Ratio	Value
Master		1.006
	0.9900 (Minimum) 0.9940 (Nominal) 1.015 (Maximum)	

Phase	Pad−Position LS Ratio	Value
Master		0.9952
	0.9850 (Minimum) 0.9940 (Nominal) 1.010 (Maximum)	

Master: 3−Aug−2015 21:34

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	212
APS Minitron	MNTR − F	6504
Auxiliary Equipment:		
Accelerator−Porosity Housing	APH − AC	121
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		

Phase	Far Det Bkg Cntrate CPS	Value
Master		

Phase	Array−1 Det Bkg Cntrate CPS	Value
Master		

Phase	Value
Master	25.87
Before	26.93
After	27.12

1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Phase	Value
Master	28.00
Before	28.70
After	27.50

1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Phase	Value
Master	26.10
Before	26.91
After	25.94

1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Phase	Array−2 Det Bkg Cntrate CPS	Value
Master		25.95
Before		26.73
After		26.97

1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Phase	Array Therm Det Bkg Cntrate CPS	Value
Master		27.77
Before		25.20
After		26.97

1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Master: 4−Aug−2015 18:37 Before: 29−Aug−2015 3:46 After: 5−Aug−2015 9:22

Accelerator−Porosity Tool Wellsite Calibration

Calibration Ratios

Phase	Near/Far Calibration Ratio	Value
Master		0.9777

0.8000 (Minimum) 0.9250 (Nominal) 1.050 (Maximum)

Phase	Near/Array Calibration Ratio	Value
Master		1.086

0.9000 (Minimum) 1.030 (Nominal) 1.170 (Maximum)

Phase	Near/Array Cal Ratio Up/Down	Value
Master		1.021

0.9700 (Minimum) 1.000 (Nominal) 1.030 (Maximum)

Master: 4−Aug−2015 18:37

Accelerator−Porosity Tool Wellsite Calibration

Tank Check

Phase	Array−1 Standoff Porosity PU	Value
Master		10.45

9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)

Phase	Array−2 Standoff Porosity PU	Value
Master		10.61

9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)

Phase	Average Slowing Down Time US	Value
Master		6.032

5.500 (Minimum) 6.000 (Nominal) 6.250 (Maximum)

Phase	Array−1 SDT Ratio Up/Down	Value
Master		0.9769

0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)

Phase	Array−2 SDT Ratio Up/Down	Value
Master		0.9680

0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)

Phase	Sigma Formation CU	Value
Master		34.31

20.00 (Minimum) 27.50 (Nominal) 35.00 (Maximum)

Master: 4−Aug−2015 18:37

Accelerator−Porosity Tool Master Calibration

Detector Calibration

Phase	Near/Far Calibration Ratio	Value
Master		0.9777

0.8000 (Minimum) 0.9250 (Nominal) 1.050 (Maximum)

Phase	Near/Array Calibration Ratio	Value
Master		1.086

0.9000 (Minimum) 1.030 (Nominal) 1.170 (Maximum)

Phase	Near/Array Cal Ratio Up/Down	Value
Master		1.021

0.9700 (Minimum) 1.000 (Nominal) 1.030 (Maximum)

Master: 4−Aug−2015 18:37

Accelerator−Porosity Tool Master Calibration

Tank Check

Phase	Array−1 Standoff Porosity PU	Value
Master		10.45

9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)

Phase	Array−2 Standoff Porosity PU	Value
Master		10.61

9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)

Phase	Average Slowing Down Time US	Value
Master		6.032

5.500 (Minimum) 6.000 (Nominal) 6.250 (Maximum)

Phase	Array−1 SDT Ratio Up/Down	Value
Master		0.9769

0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)

Phase	Array−2 SDT Ratio Up/Down	Value
Master		0.9680

0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)

Phase	Sigma Formation CU	Value
Master		34.31

20.00 (Minimum) 27.50 (Nominal) 35.00 (Maximum)

Master: 4−Aug−2015 18:37

Hostile Natural Gamma Ray Cartridge − B / Equipment Identification

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

Hostile Natural Gamma Ray Sonde / Equipment Identification

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

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value
Master		37.71
Before		37.63
After		37.62
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		16.11
Before		15.42
After		15.72
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1211
Before		1201
After		1204
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		136.7
Before		136.8
After		136.3
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		10.13
Before		8.646
After		8.654
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

Phase	Temperature DEGC	Value
Master		22.16
Before		22.65
After		22.78
	−28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		43.96
Before		43.37
After		42.72
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

Master: 31−Jul−2015 10:01 Before: 5−Aug−2015 7:59 After: 5−Aug−2015 9:23

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value
Master		39.69
Before		39.55
After		39.58
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		15.27
Before		16.42
After		15.01
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1084
Before		1083
After		1085
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		143.4
Before		143.2
After		142.7
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		8.457
Before		8.664
After		8.451
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

Phase	Temperature DEGC	Value
Master		21.65
Before		22.00
After		22.57
	−28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		44.18
Before		43.52
After		42.99
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

Master: 31−Jul−2015 10:01 Before: 5−Aug−2015 7:59 After: 5−Aug−2015 9:23

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		0.9887
Before		0.9903
After		0.9926

0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)

Master: 31−Jul−2015 10:01

Before: 5−Aug−2015 7:59

After: 5−Aug−2015 9:23

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 1 Calibration

Phase	Na 511 Peak Set Point	Value
Master		39.00
	38.00 (Minimum) 40.00 (Nominal) 43.00 (Maximum)	

Phase	Th Peak Loc	Value
Master		206.7
	201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)	

Phase	Th Peak Res %	Value
Master		8.351
	5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)	

Phase	Background Count Rate CPS	Value
Master		37.67
	10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)	

Phase	Gain Ratio	Value
Master		1.042
	0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)	

Master: 31−Jul−2015 9:56

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		211.5
	201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)	

Phase	Th Peak Res %	Value
Master		6.877
	5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)	

Phase	Background Count Rate CPS	Value
Master		39.84
	10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)	

Phase	Gain Ratio	Value
Master		1.014
	0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)	

Master: 31−Jul−2015 9:56

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		9.852
	9.610 (Minimum) 9.810 (Nominal) 10.01 (Maximum)	

Before: 11−Aug−2015 17:26

Enhanced DTS Cartridge Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value
Before		9.594
After		10.26
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)	

Phase	Gamma Ray (Jig − Bkg) GAPI	Value
Before		152.3
After		152.9
	138.5 (Minimum) 152.3 (Nominal) 166.2 (Maximum)	

Phase	Gamma Ray (Calibrated) GAPI	Value
Before		164.0
After		164.6
	149.0 (Minimum) 164.0 (Nominal) 179.0 (Maximum)	

Before: 5−Aug−2015 7:56 After: 5−Aug−2015 9:33

Company:	**International Ocean Discovery Program**
Well:	**Expedition 356, Site U1461 D**
Field:	**Indonesian Throughflow**
Rig:	**JOIDES Resolution**
Ocean:	**Indian**

Schlumberger

High Resolution Laterolog Array (HRLA)
Hostile Litho Density (HLDS)
Magnetic Susceptibility (MSS), (HNGS)