

Schlumberger

Company: **Vecta Oil & Gas LTD**

Well: **Torreys 44-33**

Field: **Wildcat**

County: **Cheyenne**

State: **Colorado**

Well: **Torrey's 44-33**
Field: **Wildcat**
County: **Cheyenne**
State: **Colorado**

Field: **Wildcat**
County: **Cheyenne**
State: **Colorado**

County: **Cheyenne** State: **Colorado**

1

[illegible]

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				
Density		Viscosity		
Fluid Loss		PH		
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				

OTHER SERVICES1	OTHER SERVICES2
OS1: FMI-Sonic Scanner	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
This is the first run in hole.	
Tool run as per tool sketch.	
Repeat Matrix: Sandstone 2.65	
Main Matrix: Limestone 2.71	

Induction
Temperatu
Power Sup

7.9

SP SENSOR
HTEN HMAS
Accelerom HV
Mud Resis
Tension

0.1

0.0

TOOL ZERO

MAXIMUM STRING DIAMETER 4.63 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Production String

(in)

(ft)

OD

ID

MD

Well Schematic

(ft)

(in)

MD

OD

ID

Casing String

Casing String

Casing Shoe
Borehole Segment

0.0

8.625

8.097

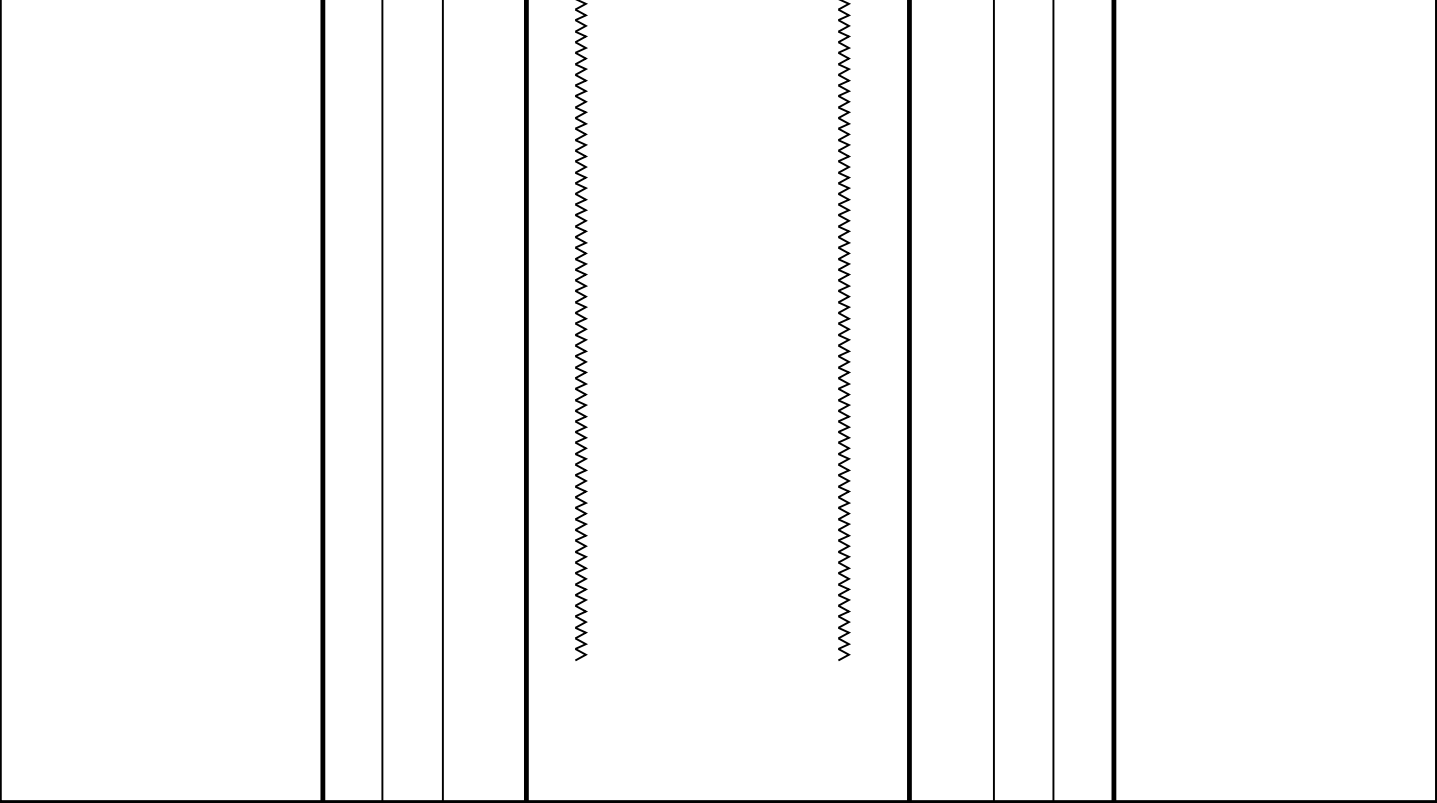
418.0

8.625

8.097

418.0

7.875



All Depths are Drillers



Main Porosity Log 5" = 100'

MAXIS Field Log

Output DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_010LUP FN:9 PRODUCER 07-Jan-2011 22:18 5544.0 FT 368.5 FT

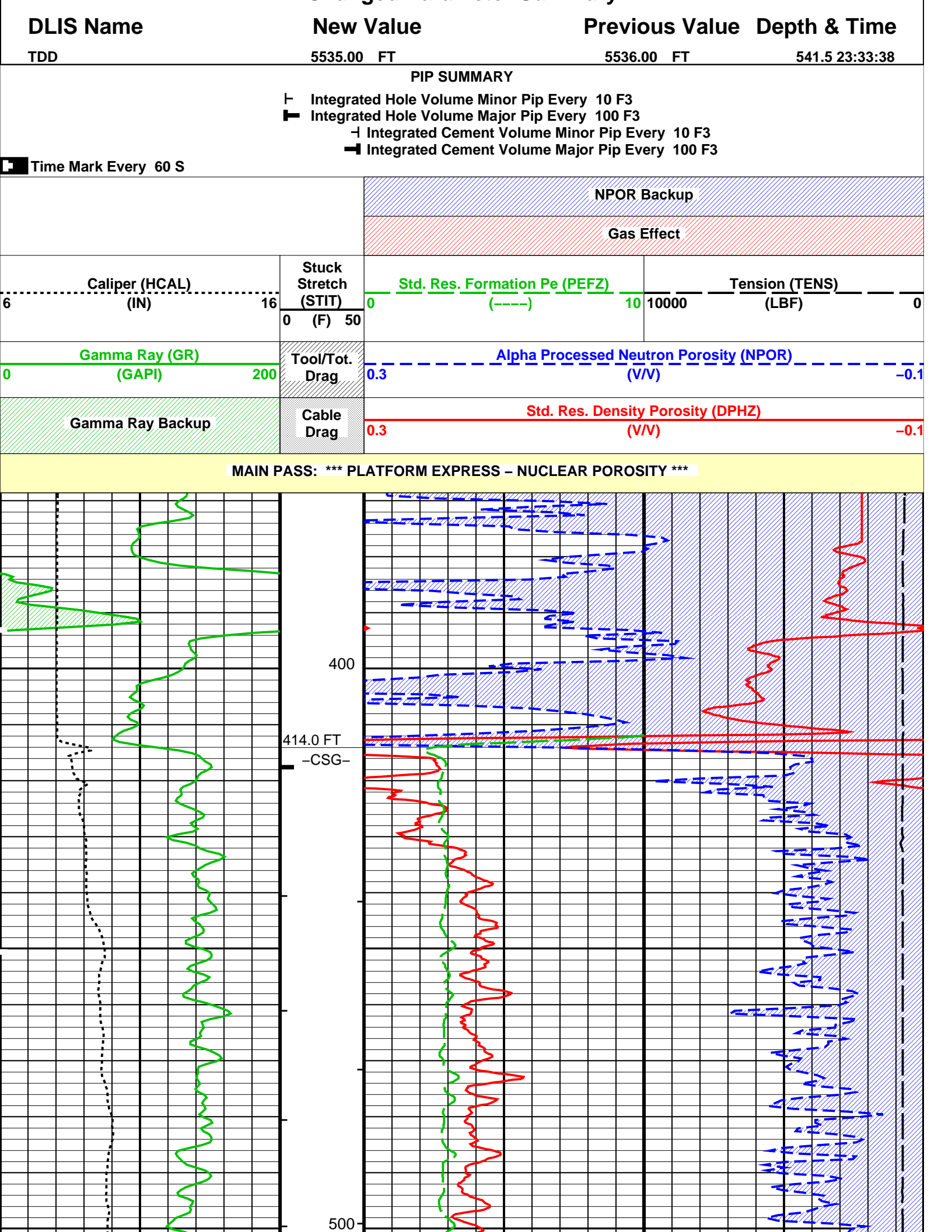
Integrated Hole/Cement Volume Summary

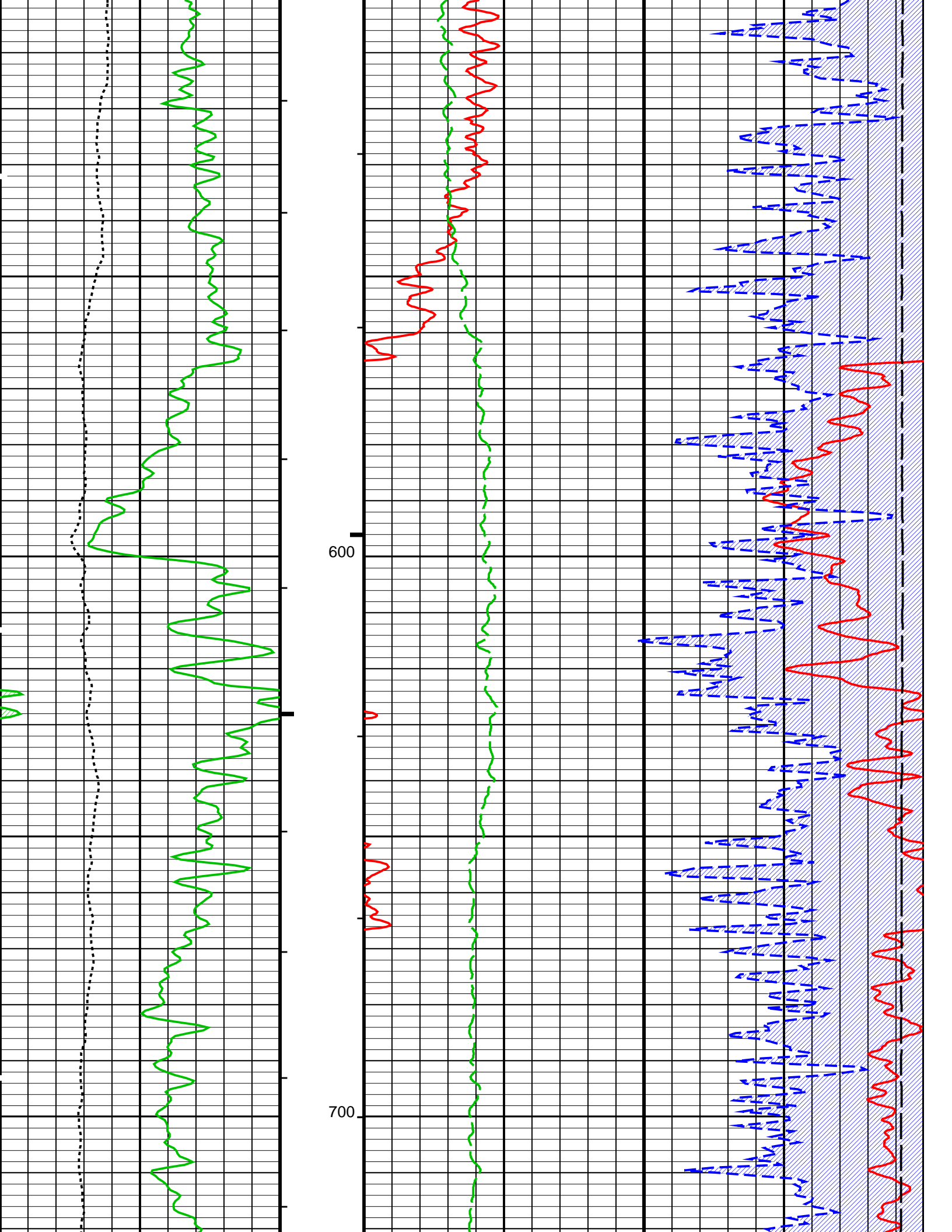
Hole Volume = 2001.65 F3
Cement Volume = 1157.52 F3 (assuming 5.50 IN casing O.D.)
Computed from 5530.0 FT to 414.0 FT using data channel(s) HCAL

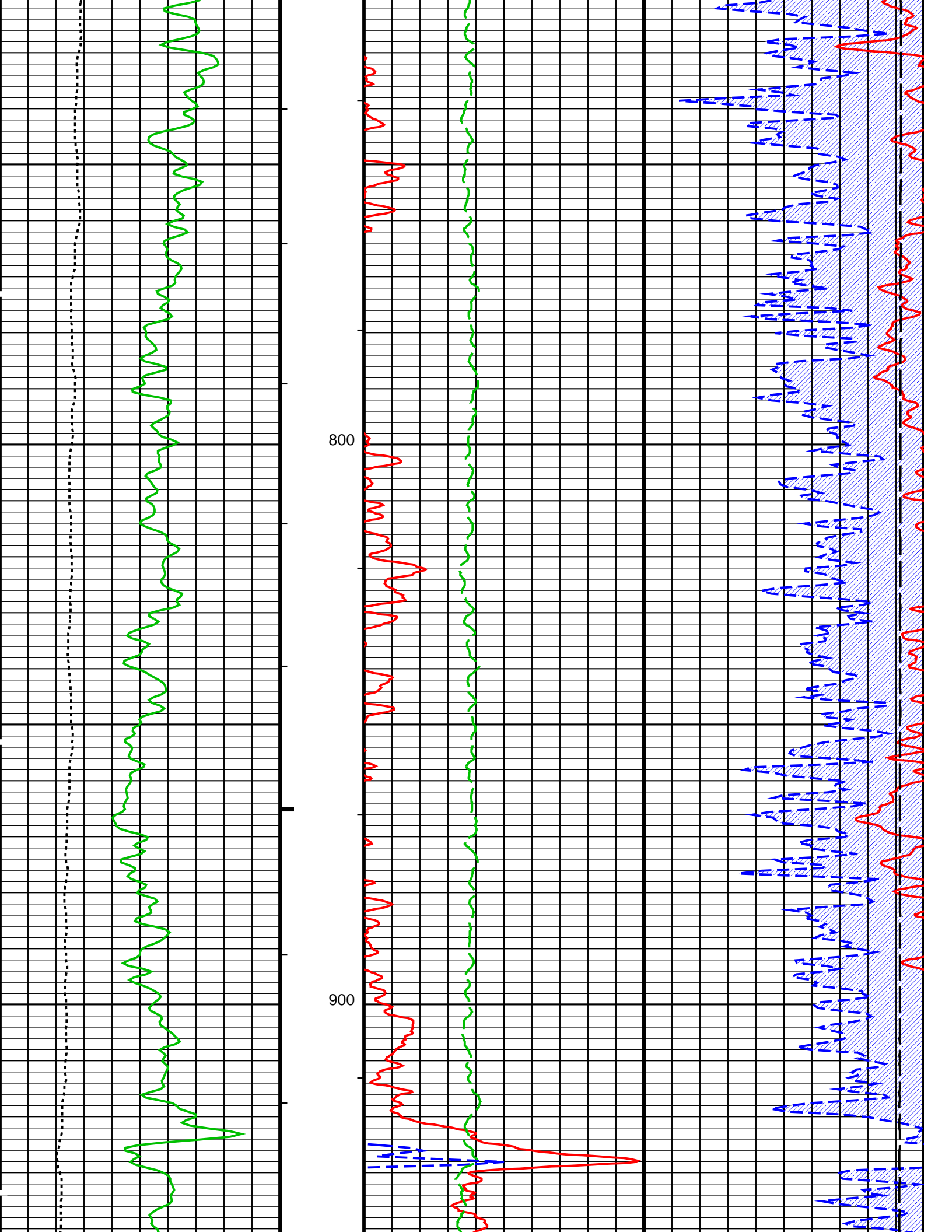
OP System Version: 18C0-147

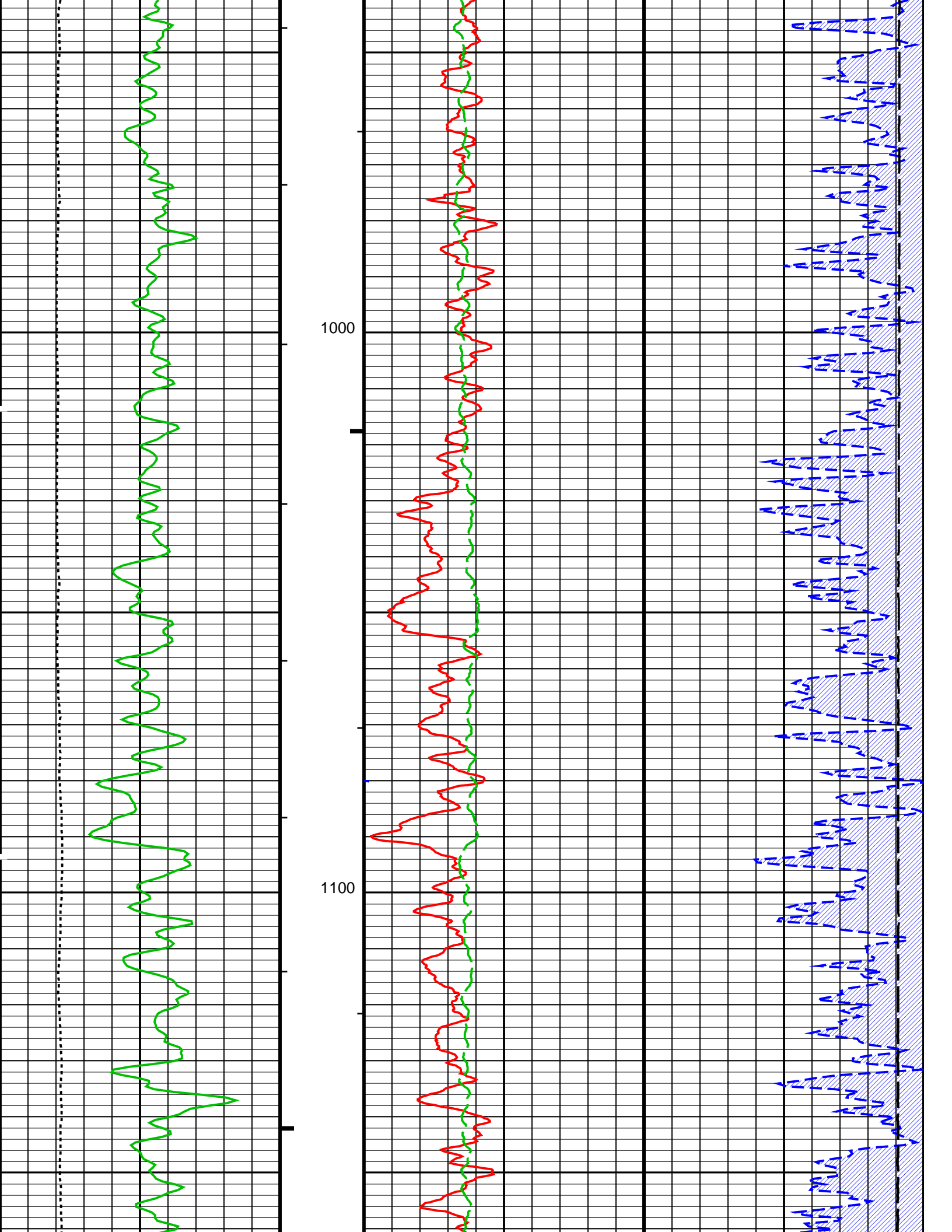
HILTB-CTS 18C0-147

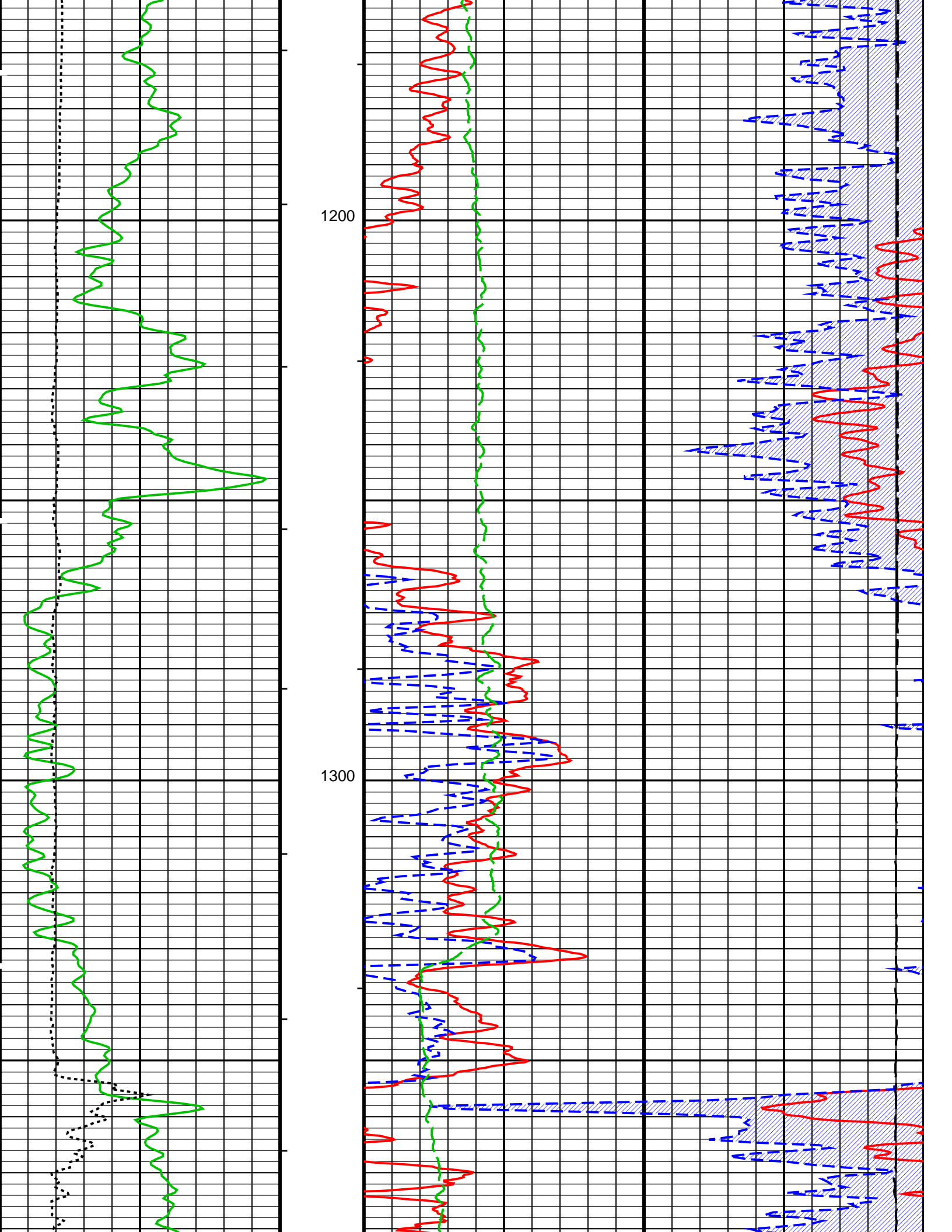
Changed Parameter Summary

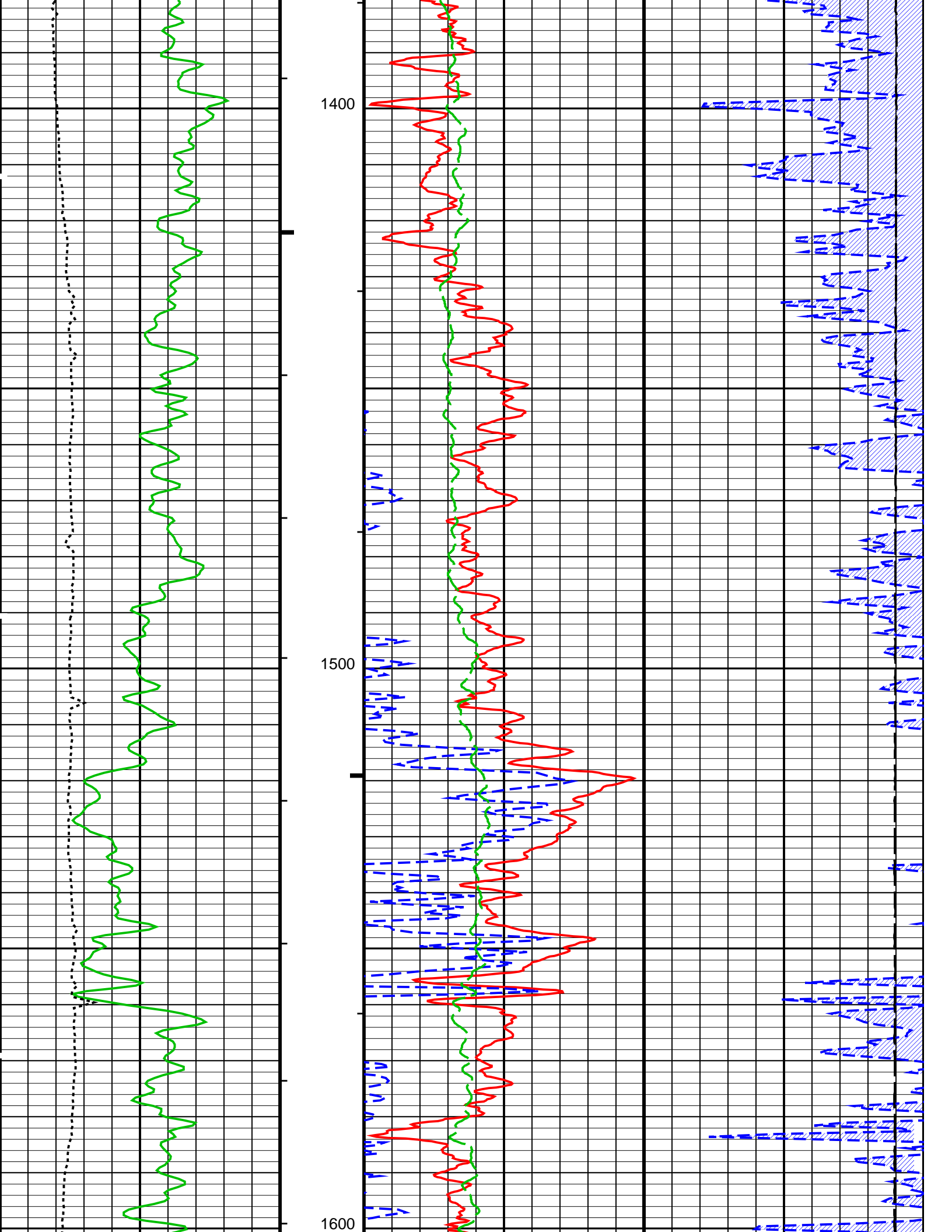


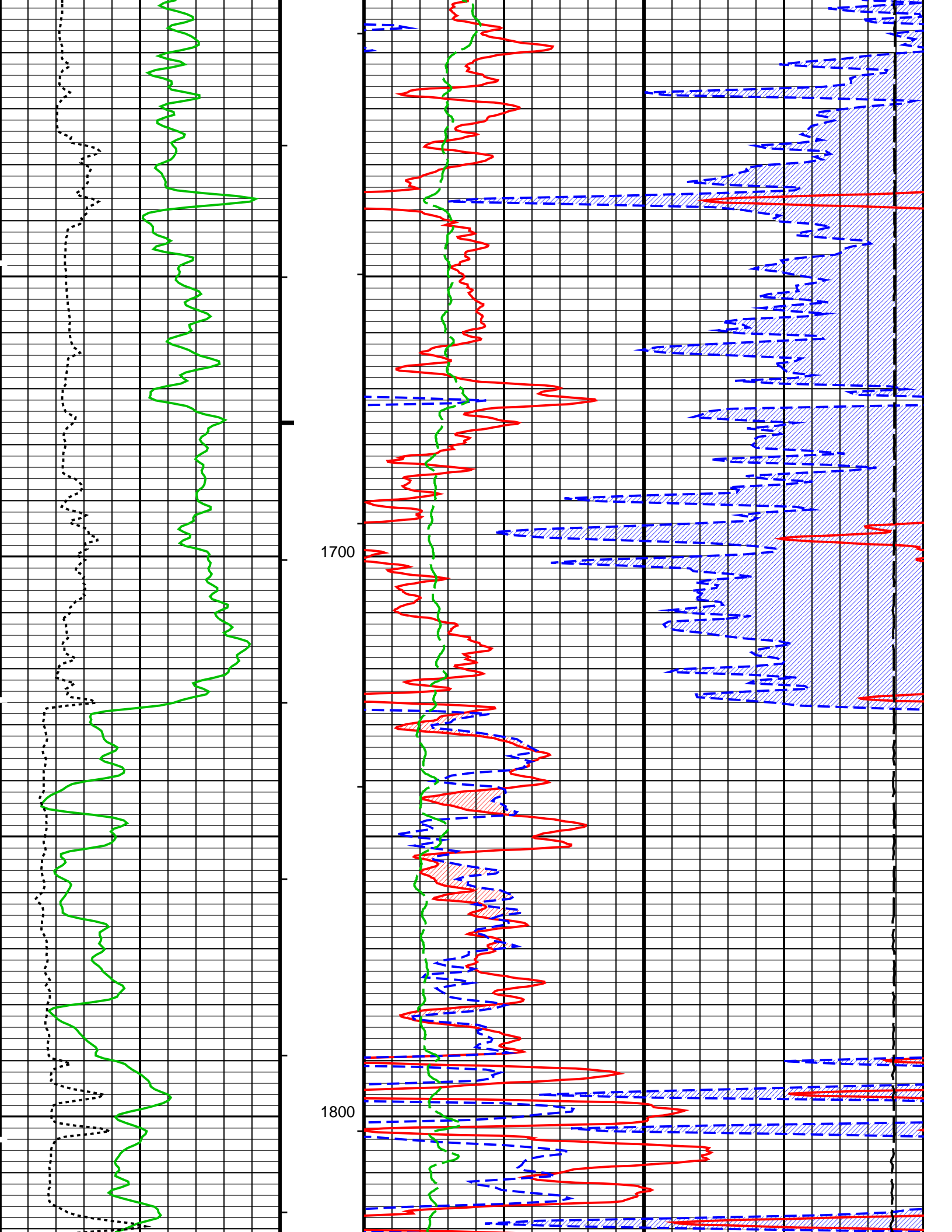


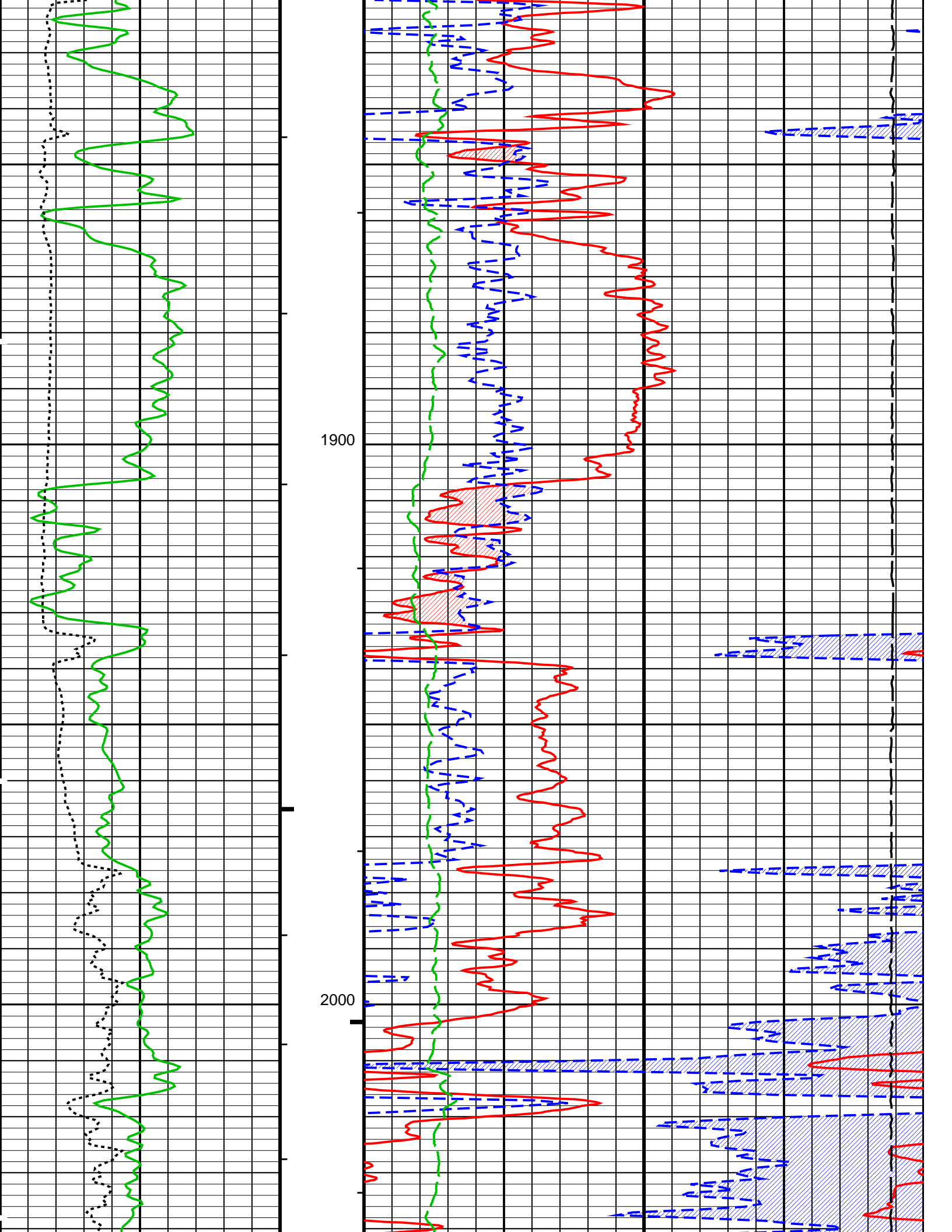


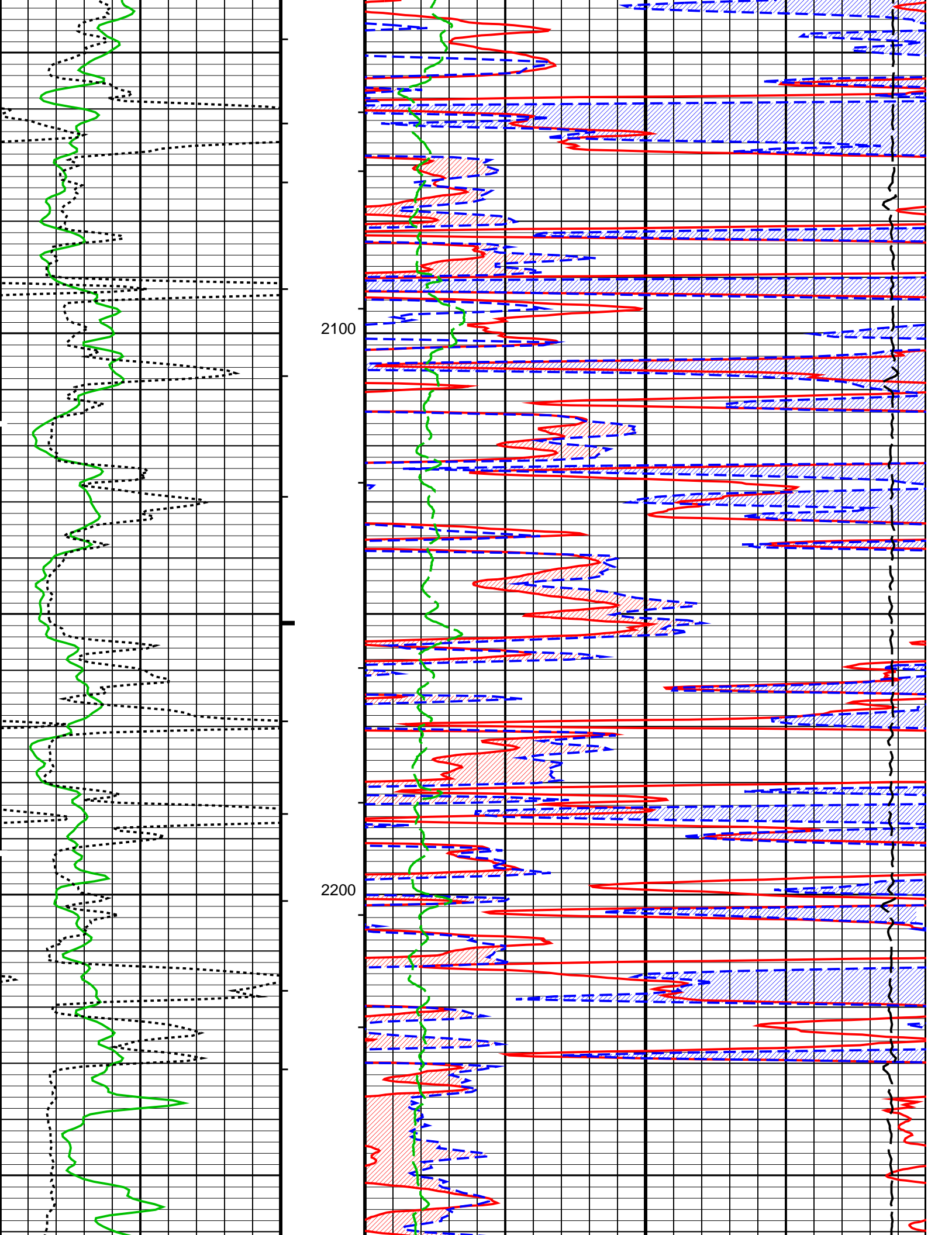


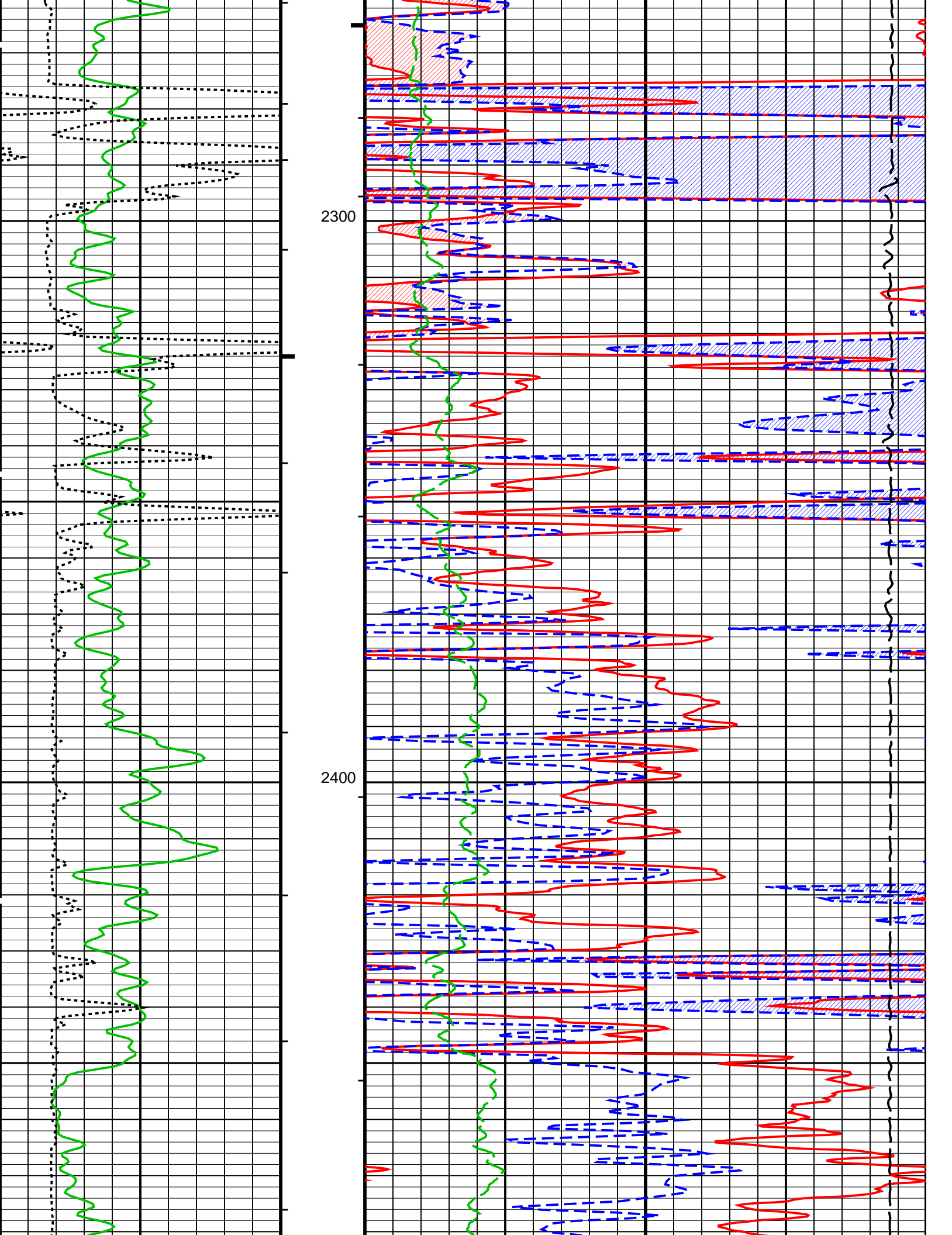


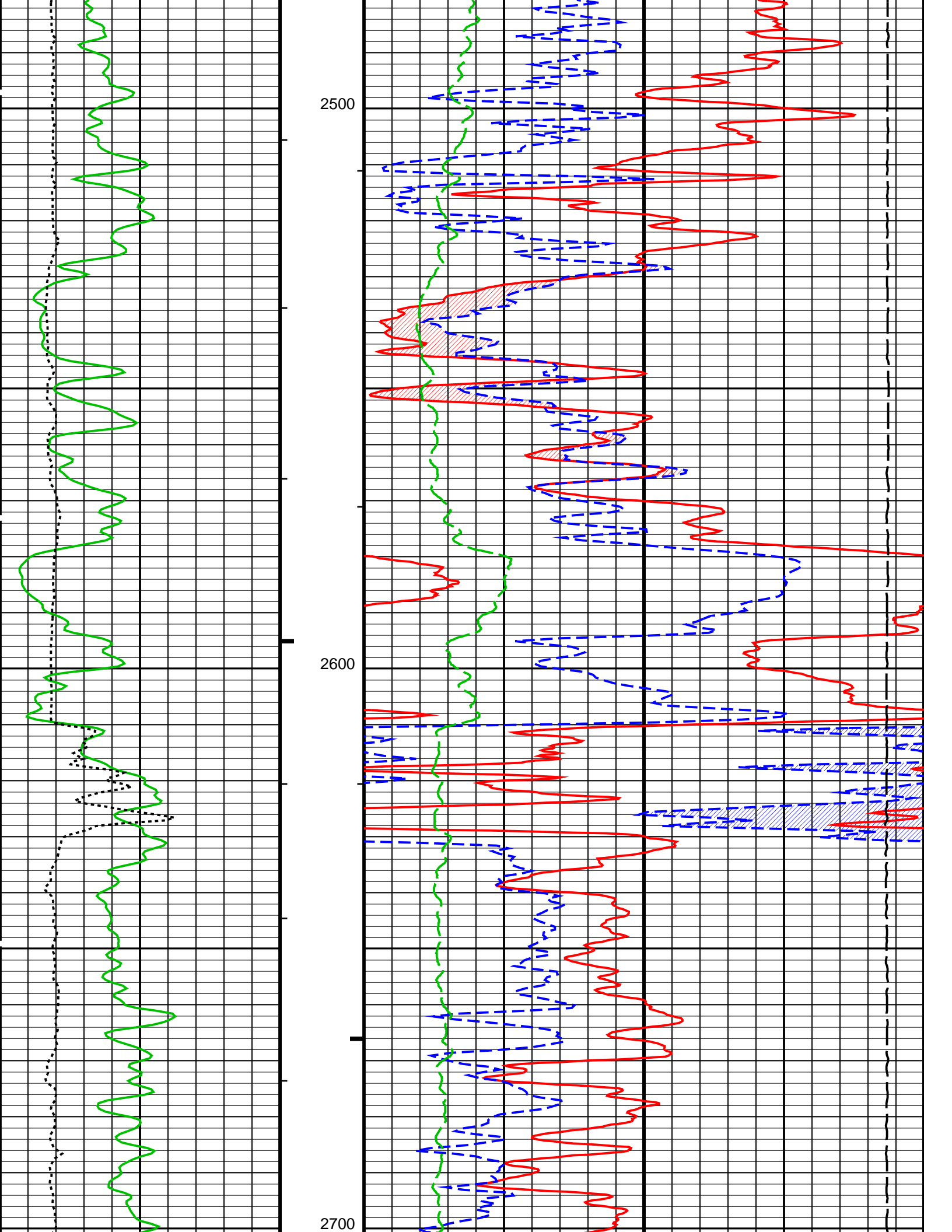


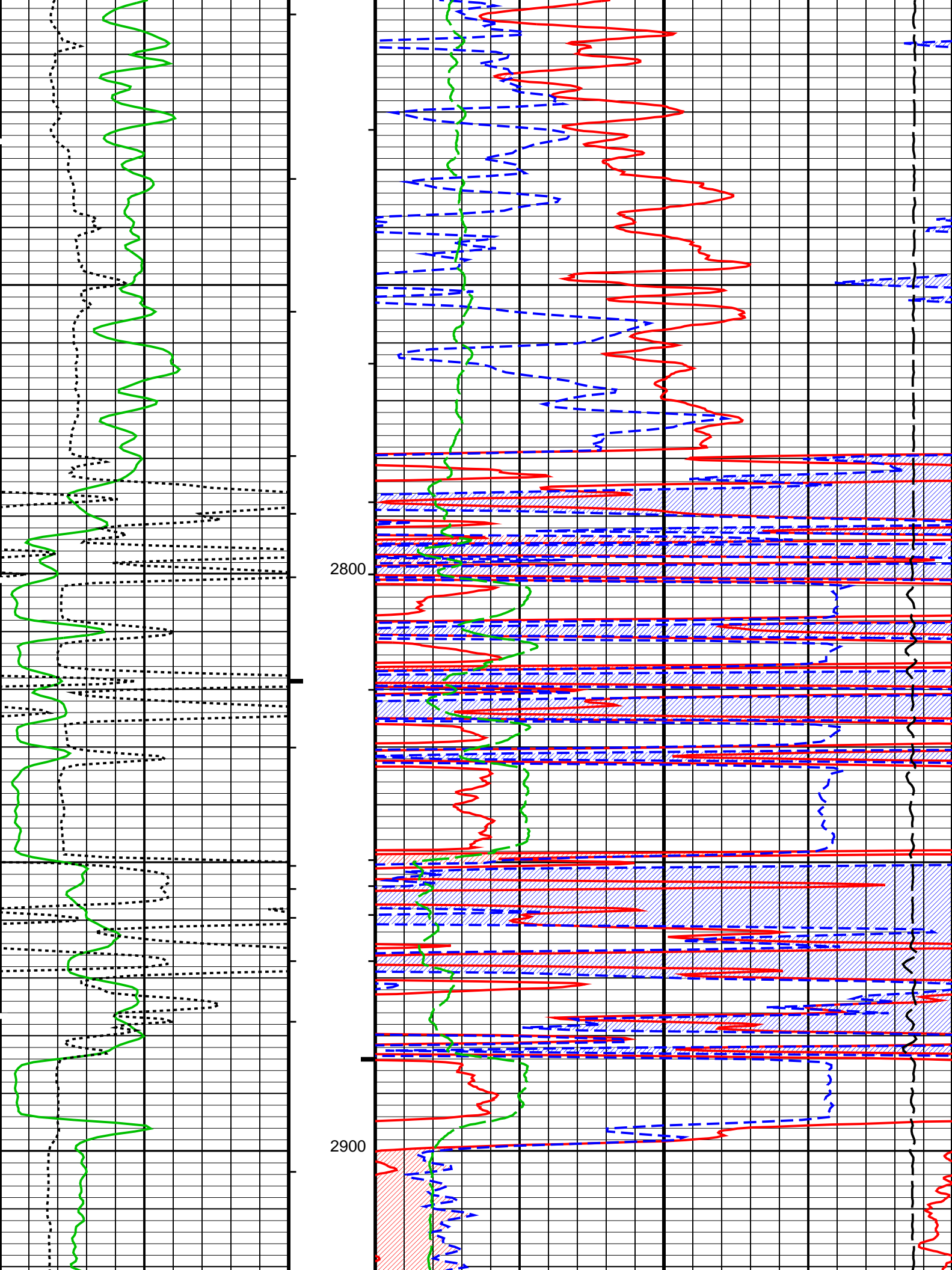


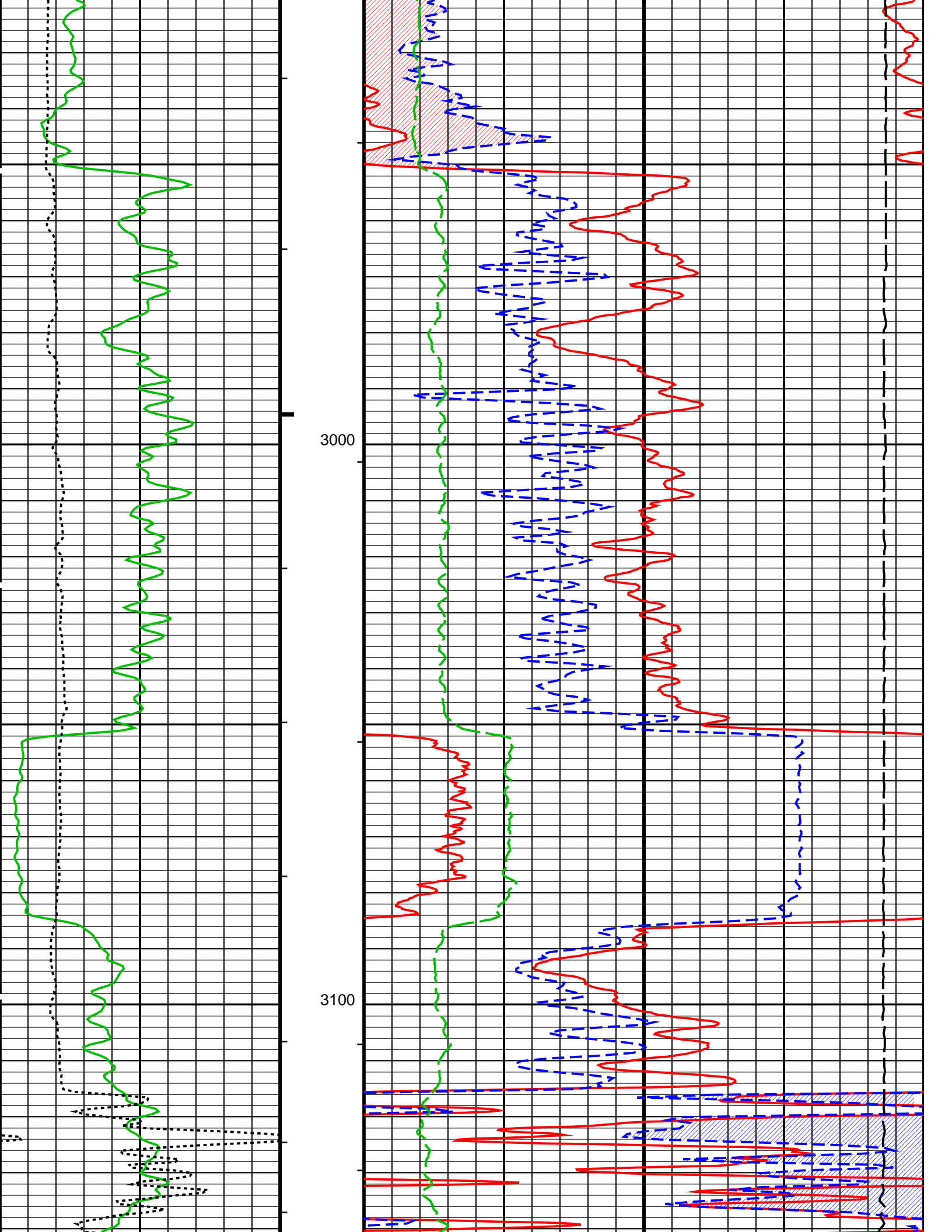


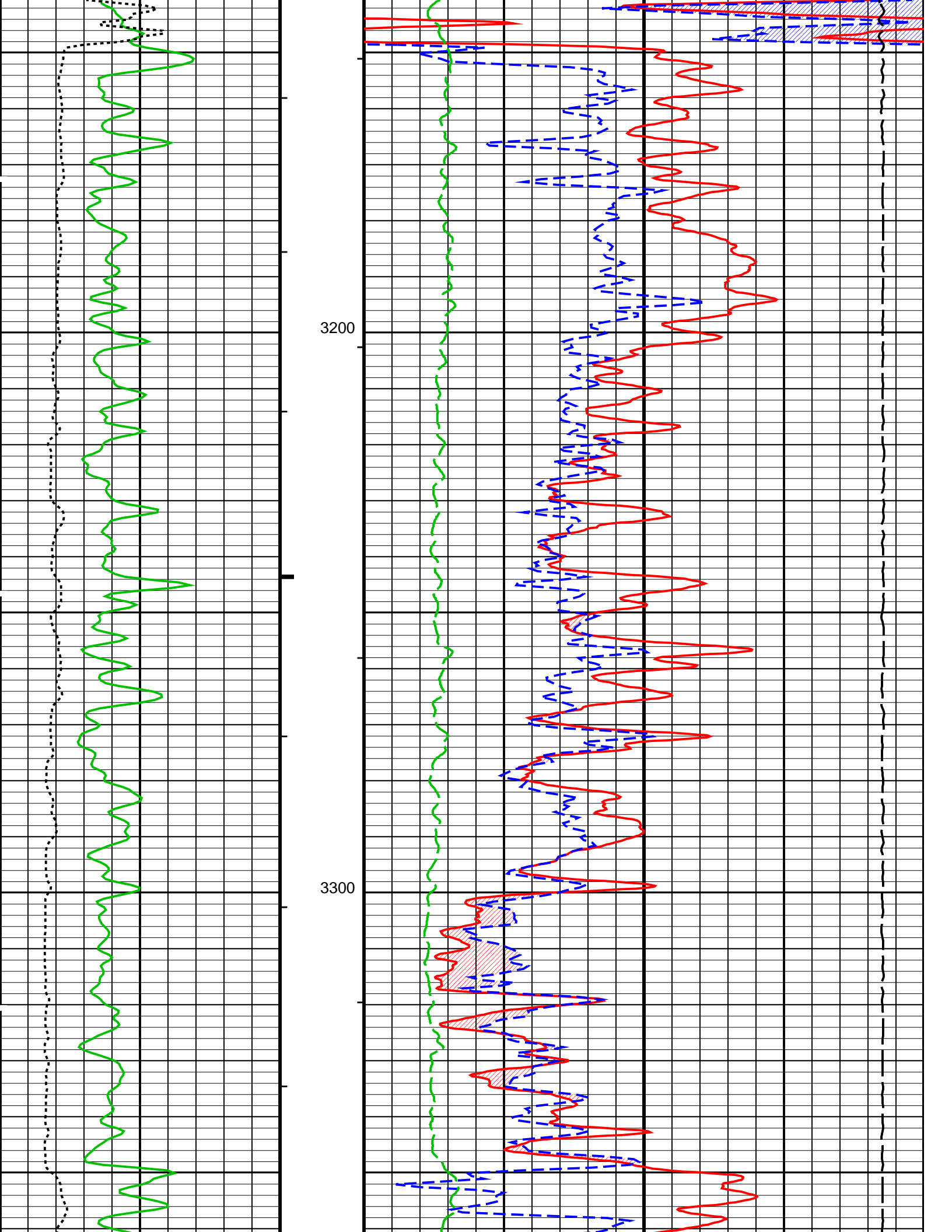


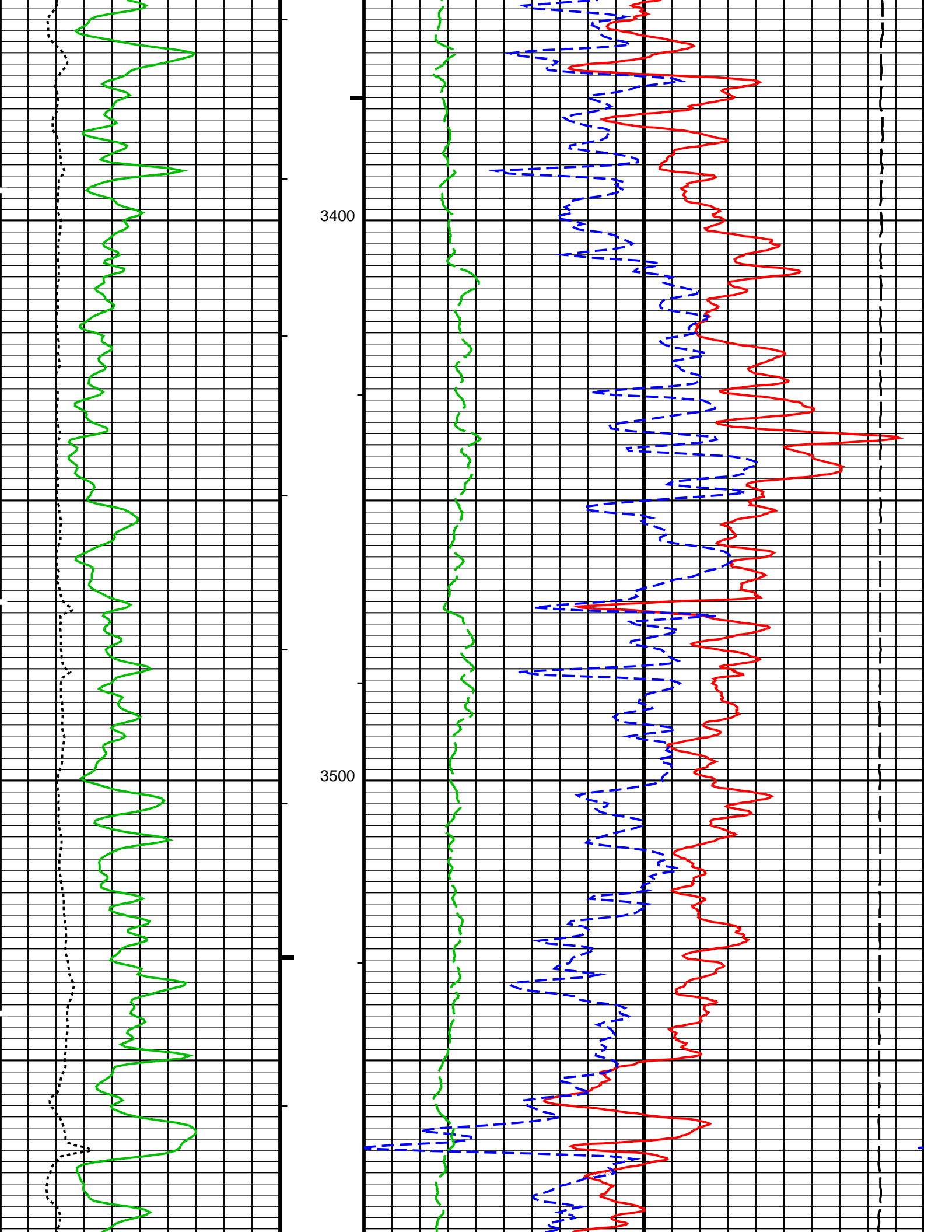


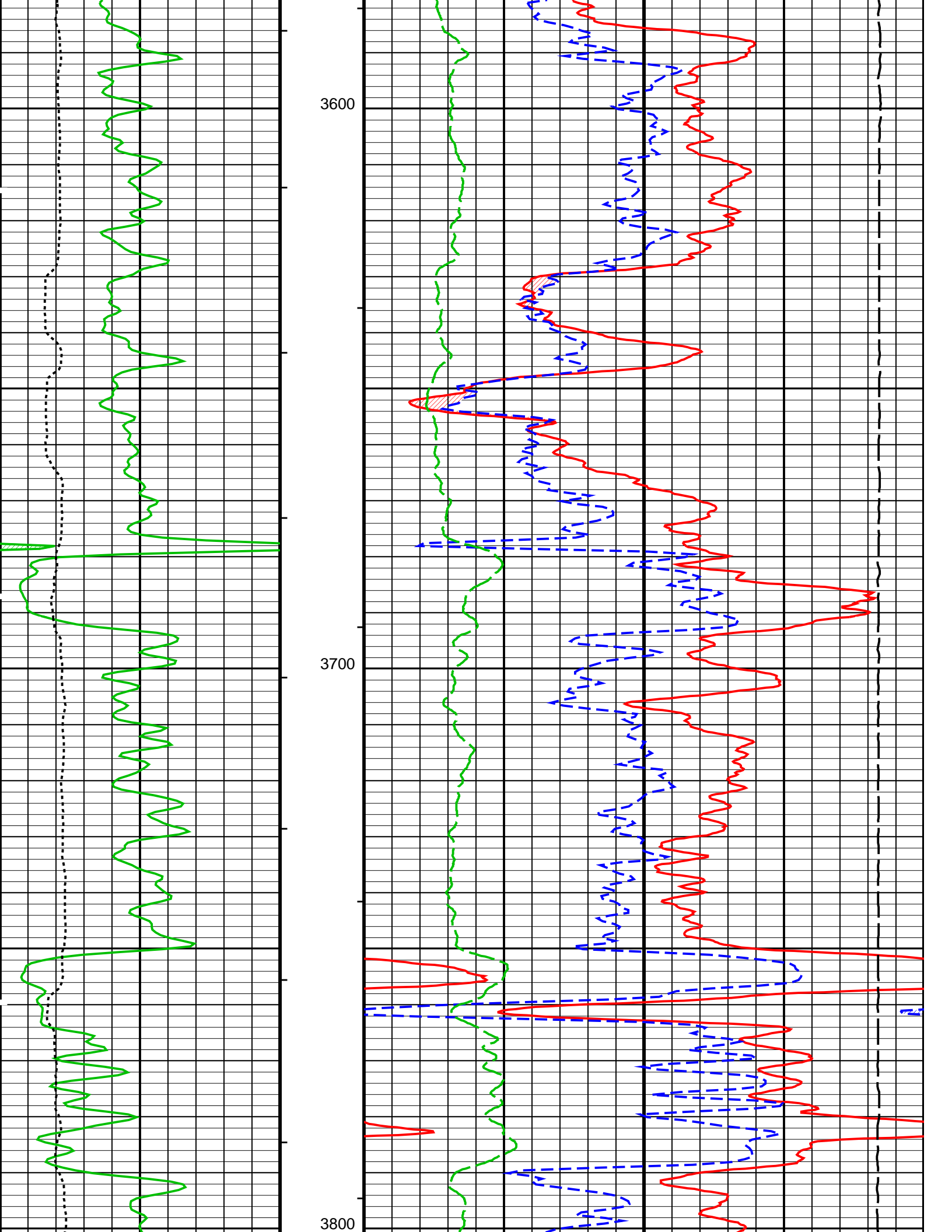


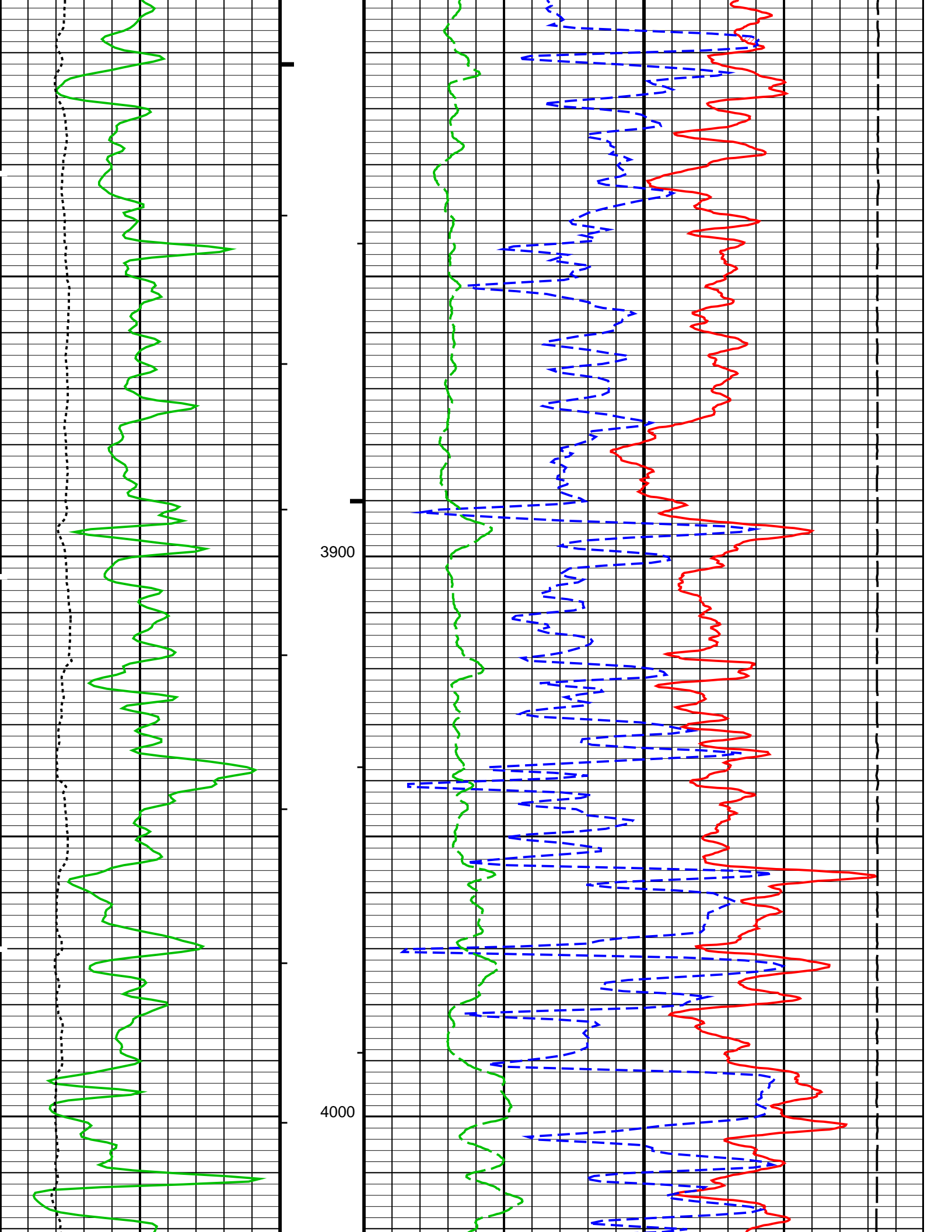


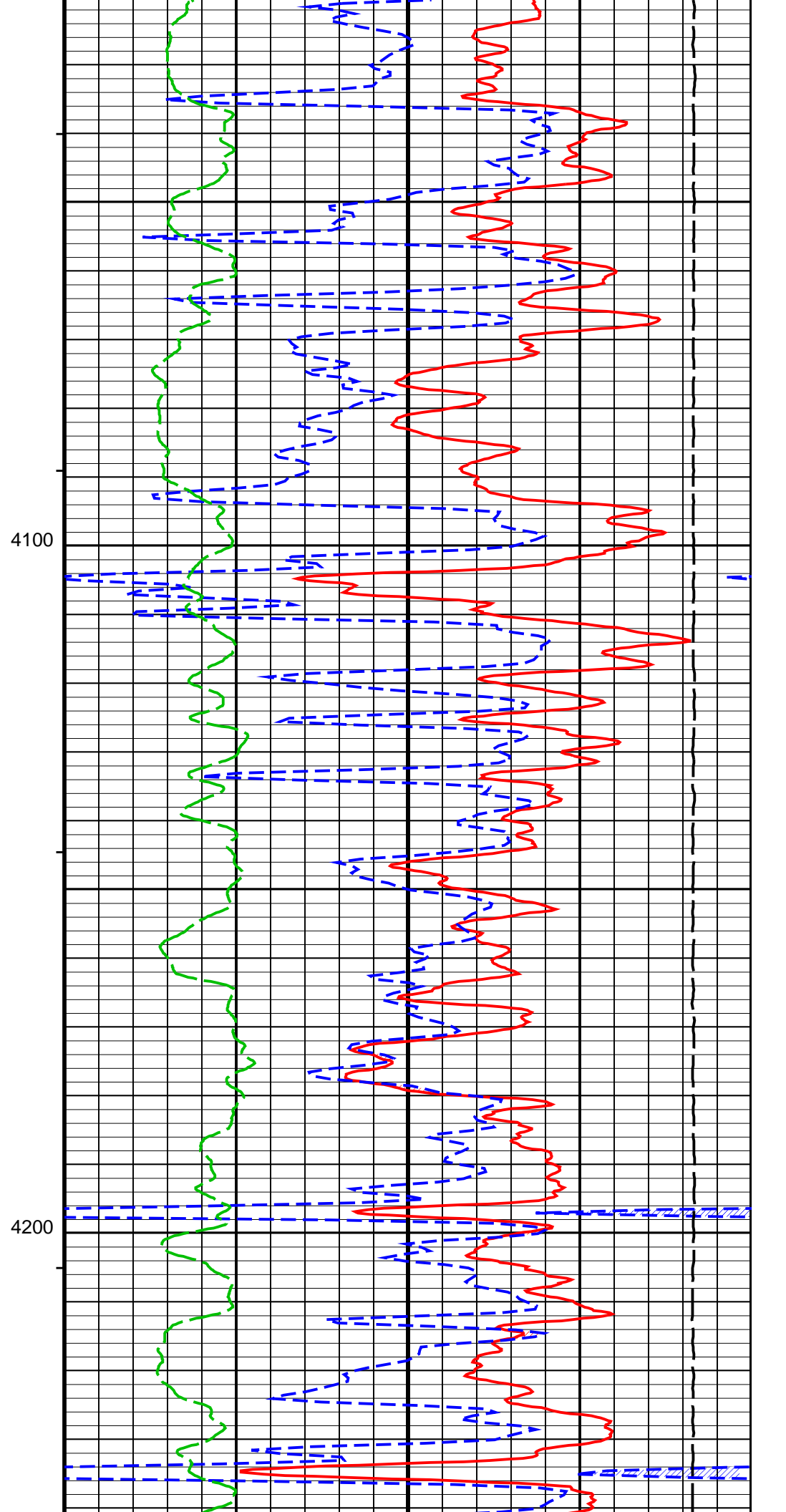
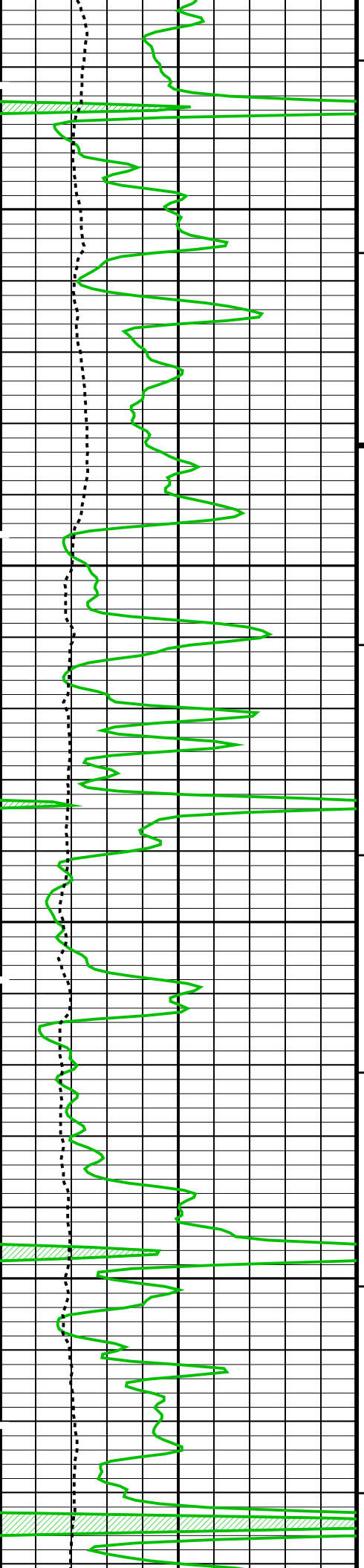


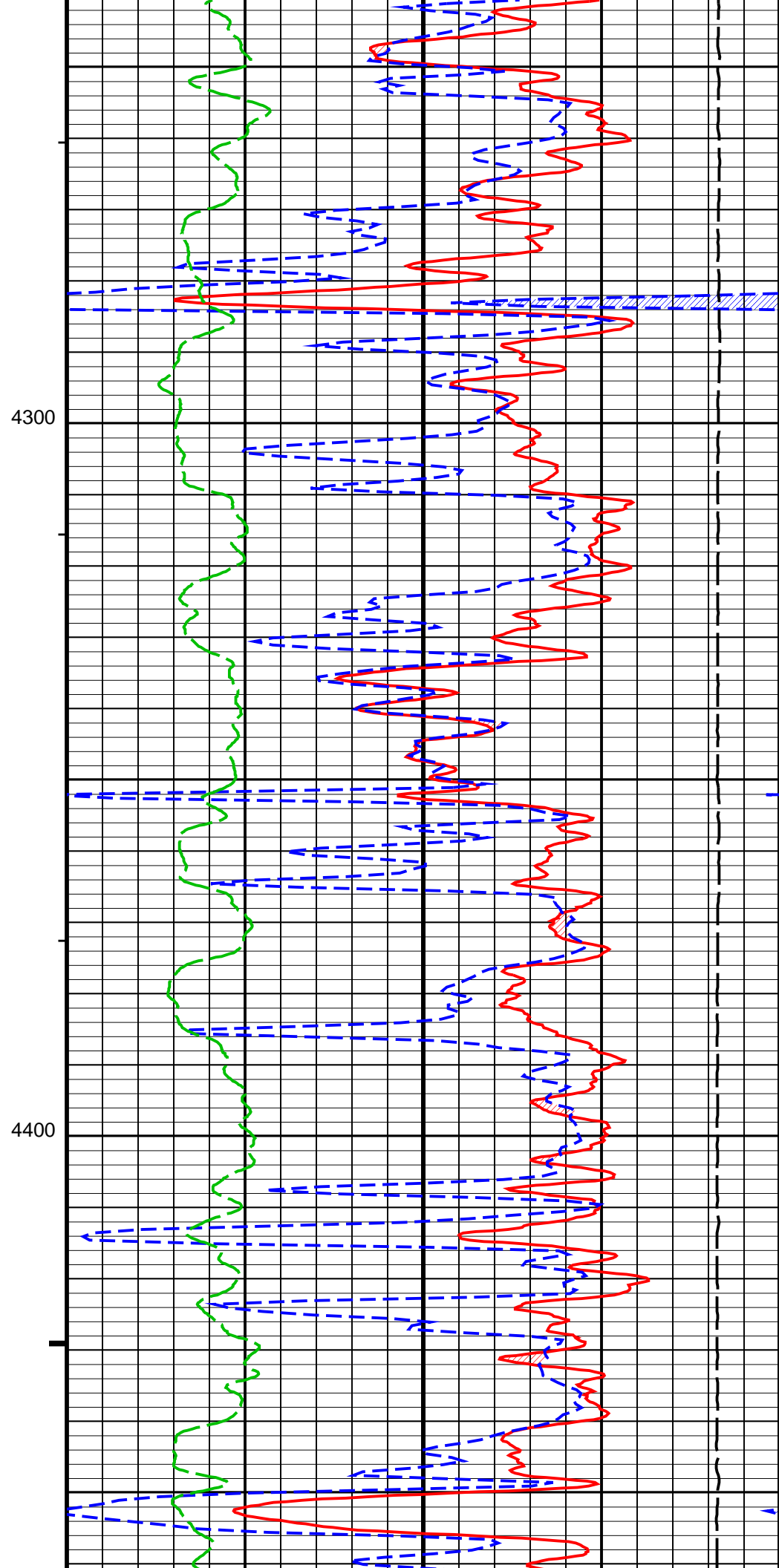
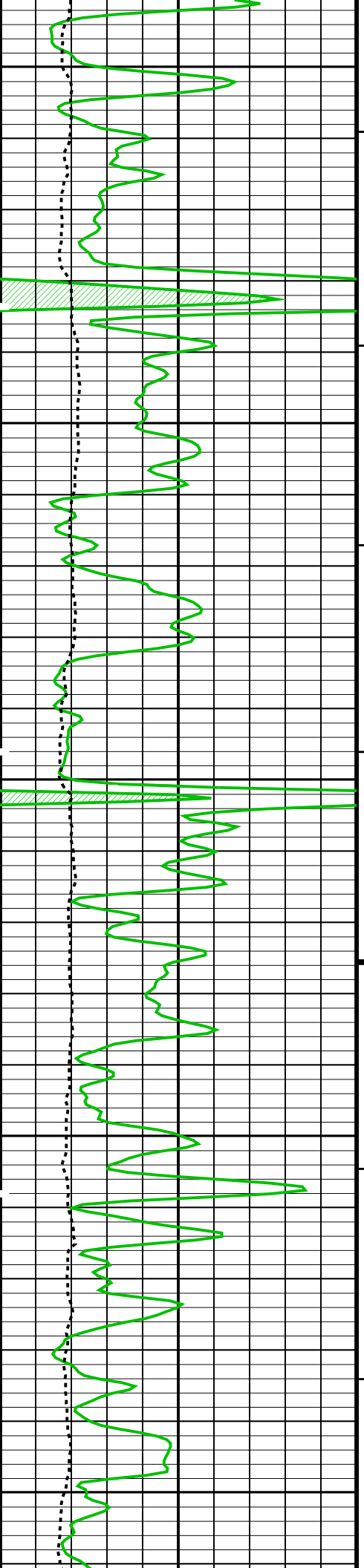


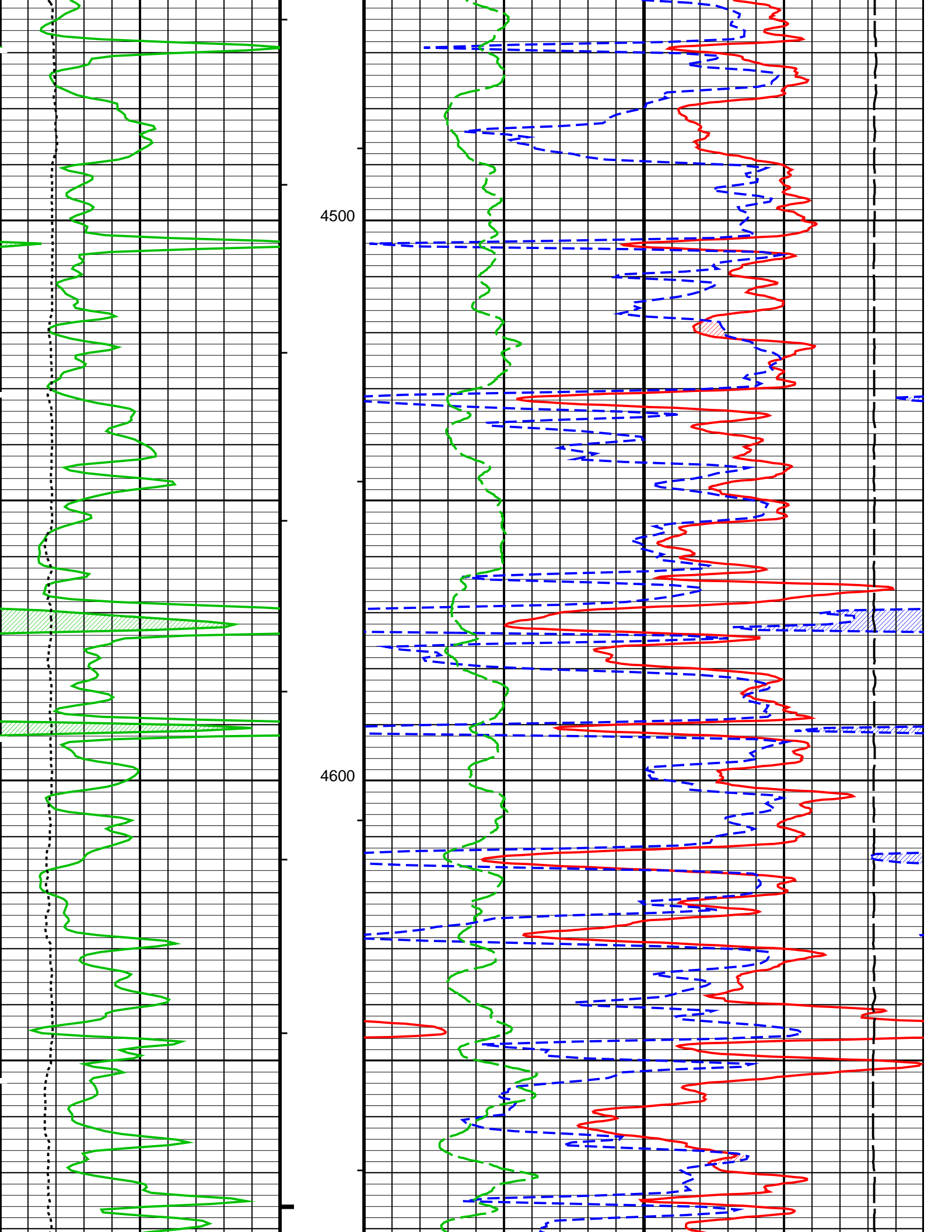


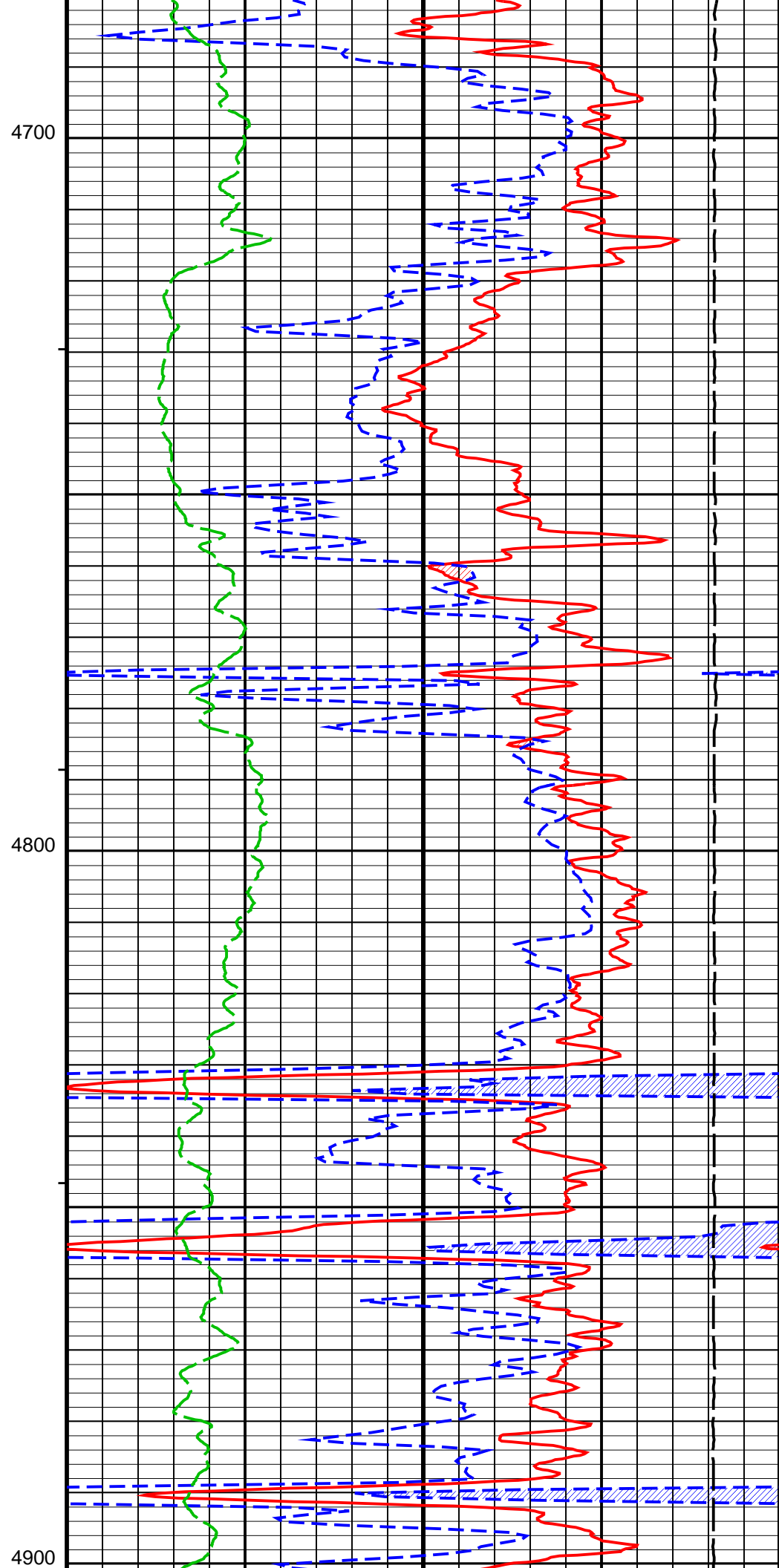
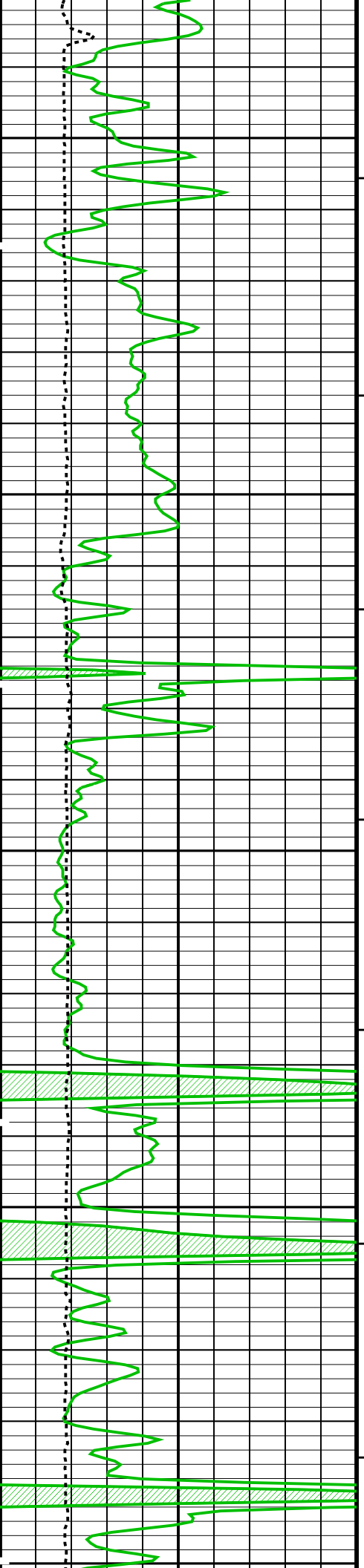


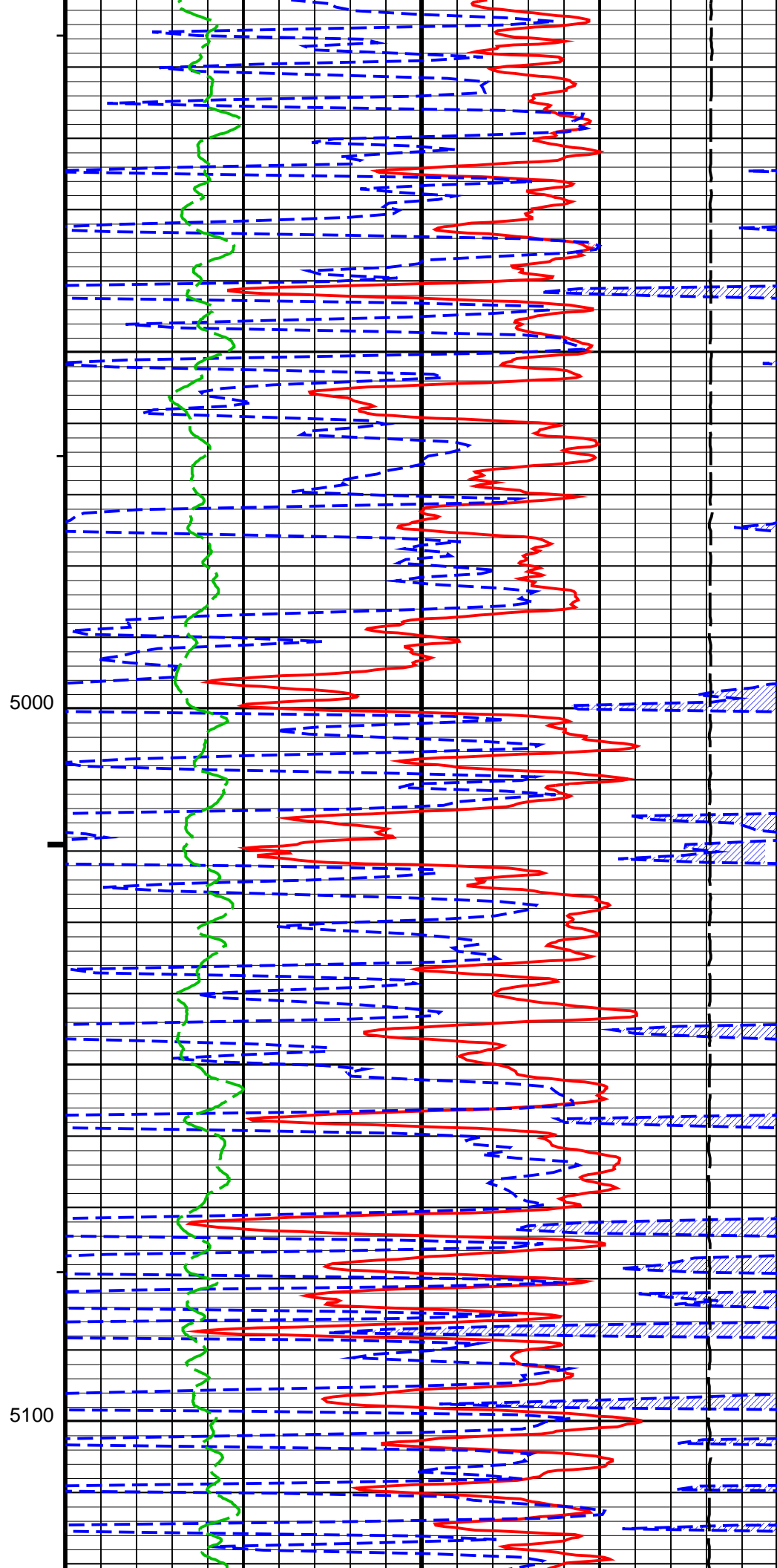
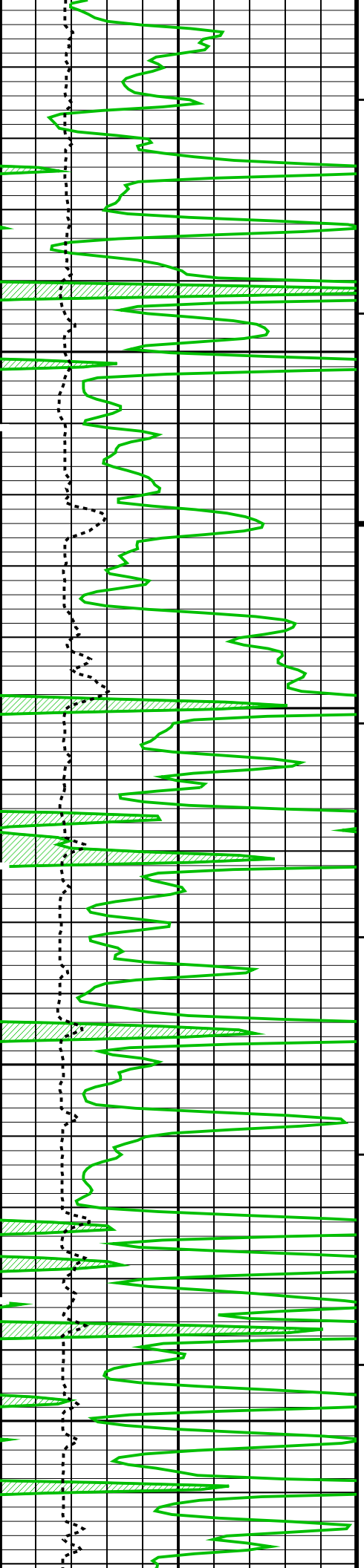


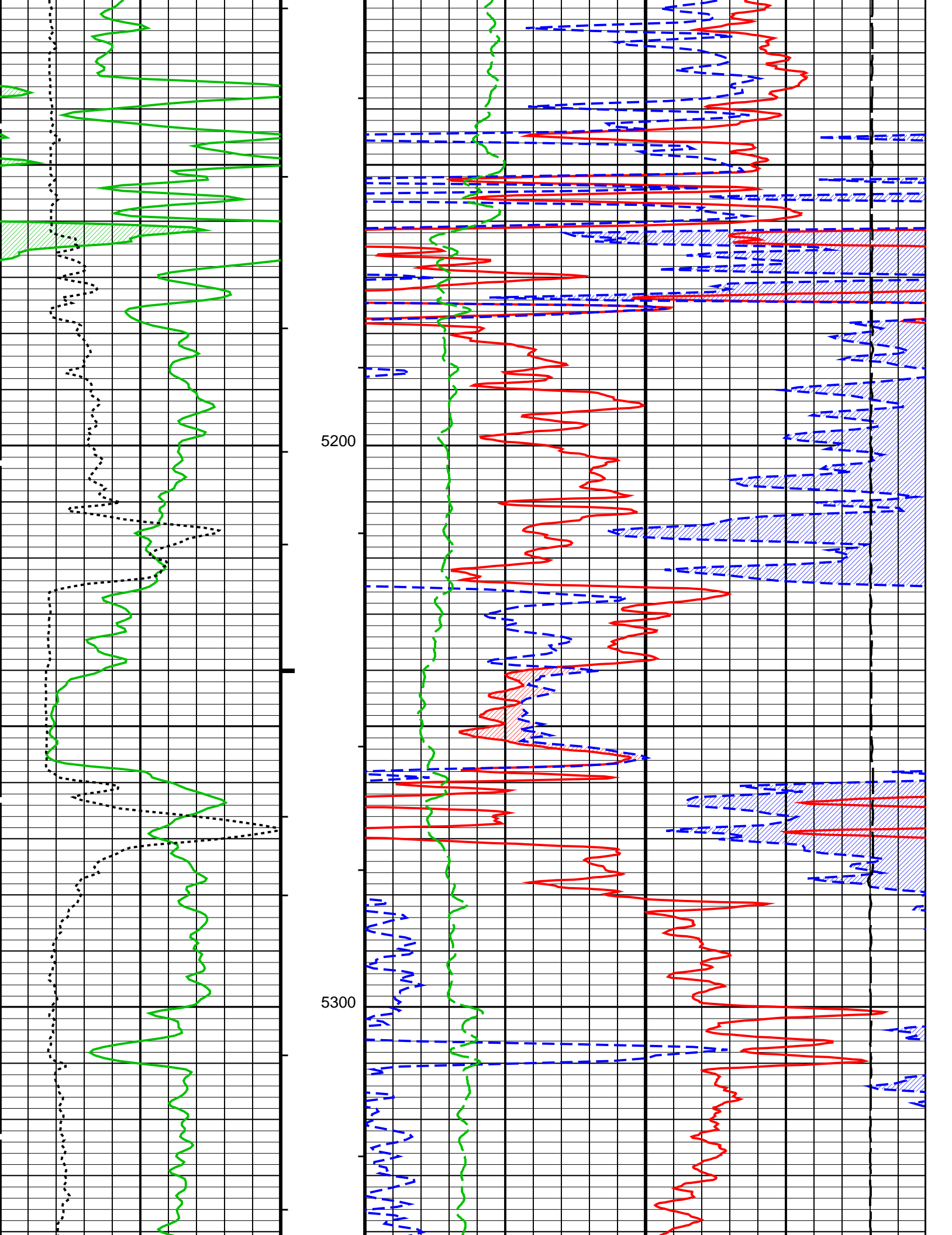


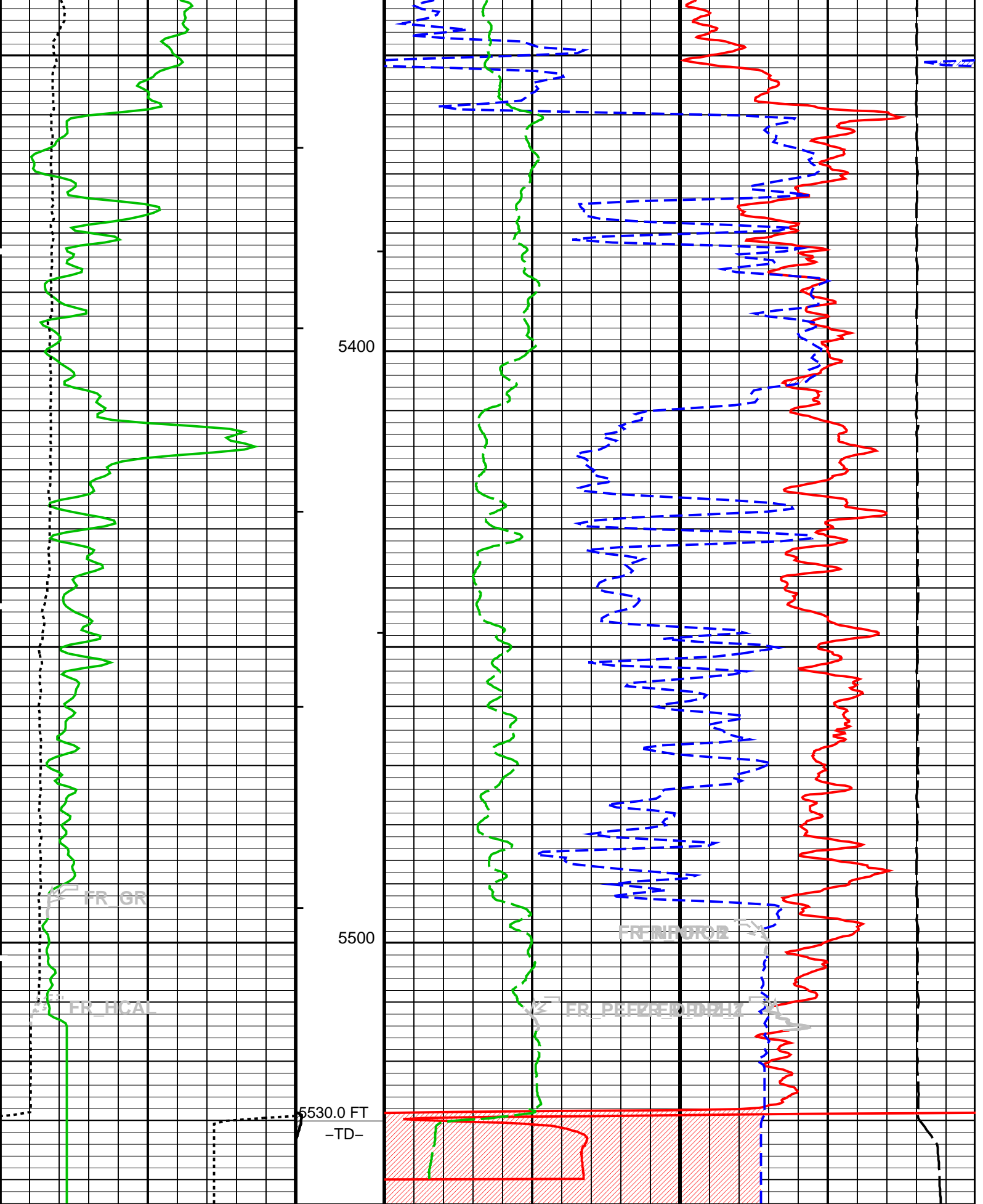












Gamma Ray Backup

Cable
Drag

0.3

Std. Res. Density Porosity (DPHZ)
(V/V)

-0.1

Gamma Ray (GR) (GAPI)		200	Tool/Tot. Drag	Alpha Processed Neutron Porosity (NPOR) (V/V)	
0				0.3	-0.1
Caliper (HCAL) (IN)		16	Stuck Stretch (STIT)	Std. Res. Formation Pe (PEFZ) (-----)	
6			0 (F) 50	10	Tension (TENS) (LBF)
			10000 0		
			Gas Effect		
			NPOR Backup		
PIP SUMMARY					
└ Integrated Hole Volume Minor Pip Every 10 F3					
┐ Integrated Hole Volume Major Pip Every 100 F3					
└ Integrated Cement Volume Minor Pip Every 10 F3					
┐ Integrated Cement Volume Major Pip Every 100 F3					
Time Mark Every 60 S					

Parameters			
DLIS Name	Description	Value	
HILTB-CTS: High resolution Integrated Logging Tool-CTS			
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal-like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HSCD	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.71	G/C3
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth - Driller	5536.00	FT
TDL	Total Depth - Logger	5530.00	FT
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
FCD	Future Casing (Outer) Diameter	5.5	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HVCS	Integrated Hole Volume Caliper Selection	AUTOMATIC	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
PERT: Preliminary Evaluation - Real Time			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
System and Miscellaneous			
BS	Bit Size	7.875	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	8.625	IN
CWEI	Casing Weight	24.00	LB/F
DFD	Drilling Fluid Density	9.20	LB/G

DORL	Depth Offset for Repeat Analysis	0.0	FT
MST	Mud Sample Temperature	80.13	DEGF
RMFS	Resistivity of Mud Filtrate Sample	0.7665	OHMM
TD	Total Depth	5530	FT

Format: PORO

Vertical Scale: 5" per 100'

Graphics File Created: 07-Jan-2011 22:18

OP System Version: 18C0-147

HILTB-CTS18C0-147

Output DLIS Files

DEFAULTAIT_TLD_MCFL_CNL_010LUPFN:9PRODUCER07-Jan-2011 22:18

Schlumberger

High Resolution Porosity

MAXIS Field Log

Input DLIS Files

DEFAULTAIT_TLD_MCFL_CNL_010LUPFN:9PRODUCER08-Jan-2011 01:205544.0 FT368.5 FT

Integrated Hole/Cement Volume Summary

Hole Volume = 532.24 ft3

Cement Volume = 278.91 ft3 (assuming 5.50 in casing O.D.)

Computed from 5529.5 ft to 3994.5 ft

OP System Version: 18C0-147

HILTC18C0-147

PIP SUMMARY

└ Integrated Hole Volume Minor Pip Every 10 F3

└ Integrated Hole Volume Major Pip Every 100 F3

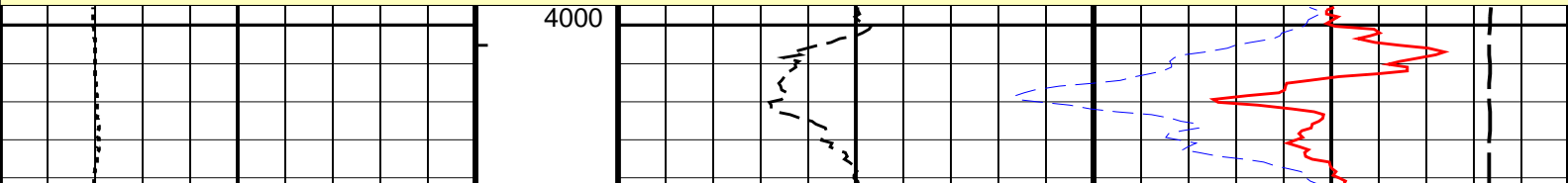
└ Integrated Cement Volume Minor Pip Every 10 F3

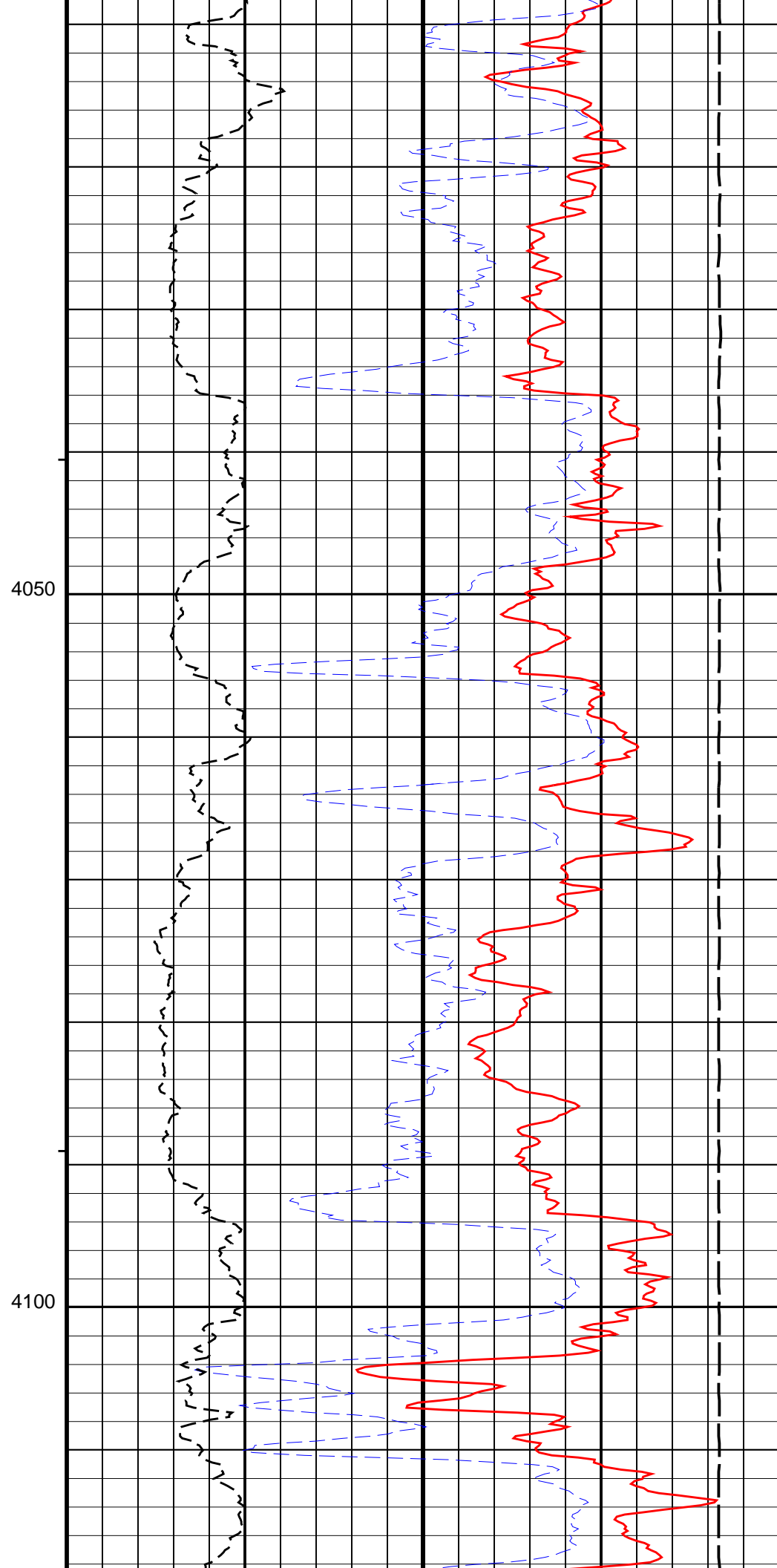
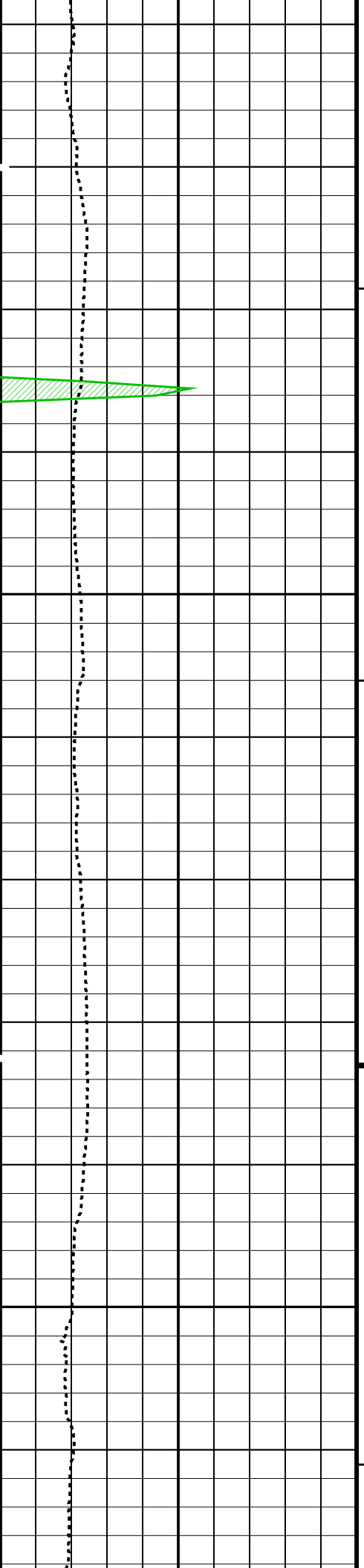
└ Integrated Cement Volume Major Pip Every 100 F3

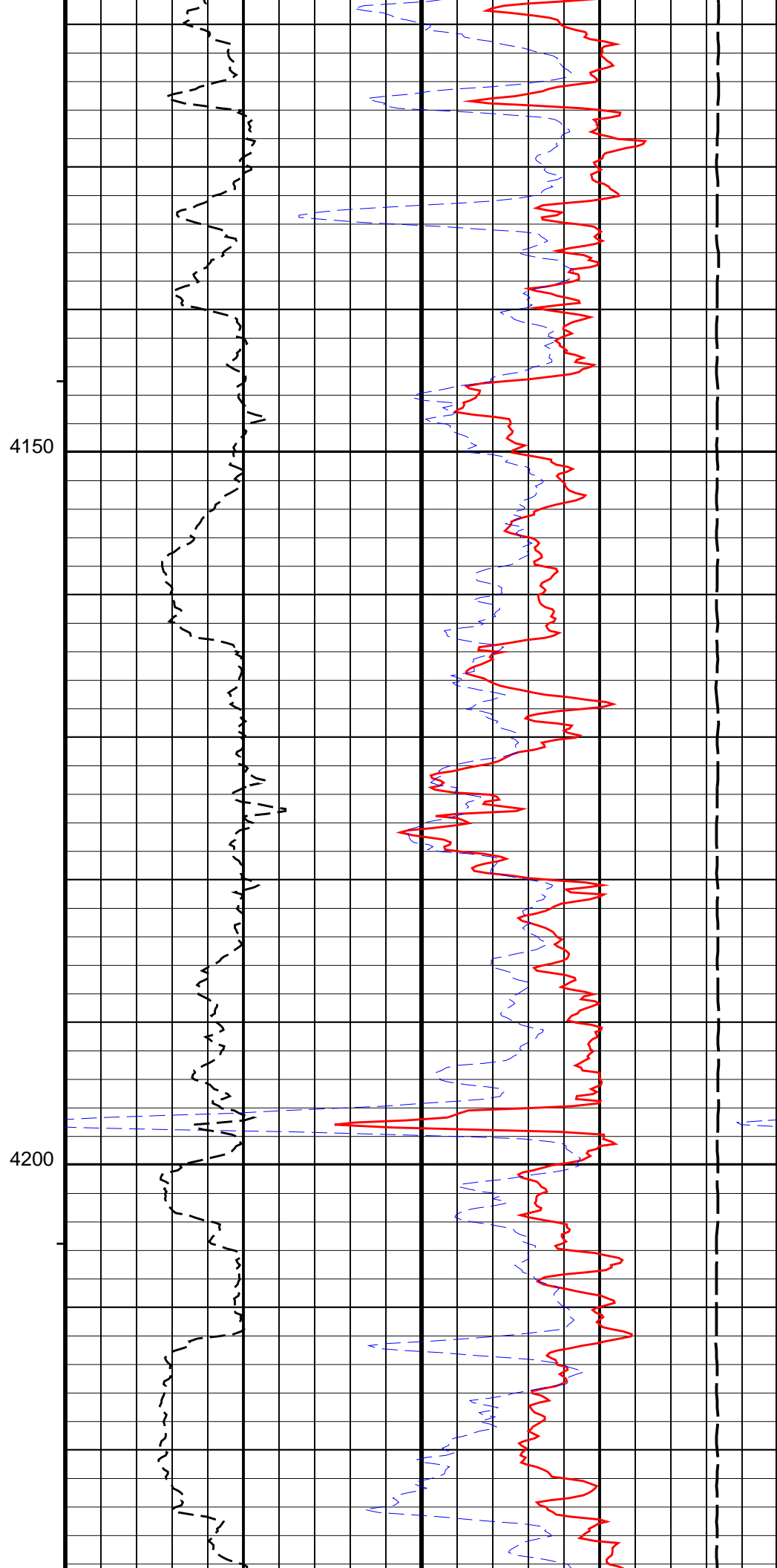
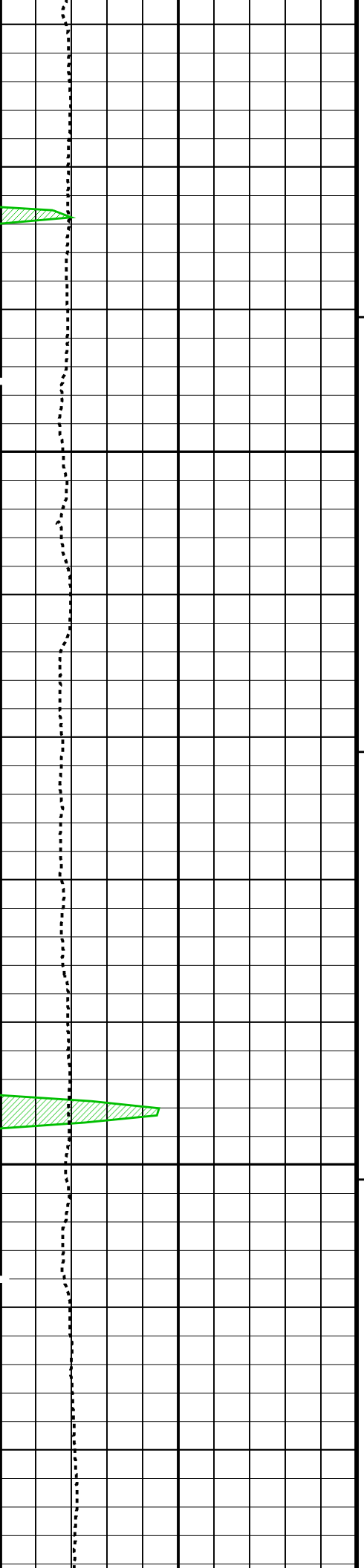
Time Mark Every 60 S

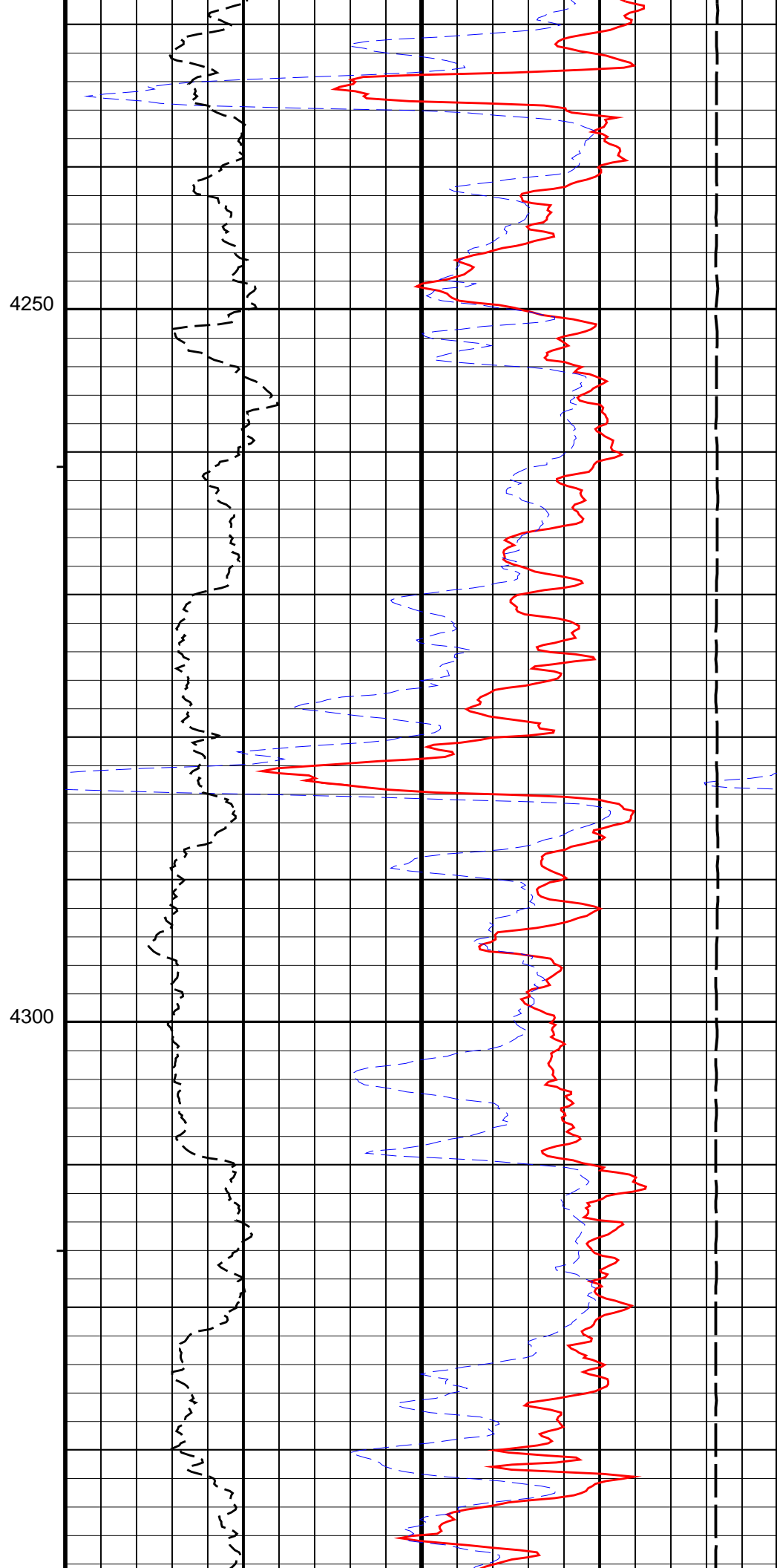
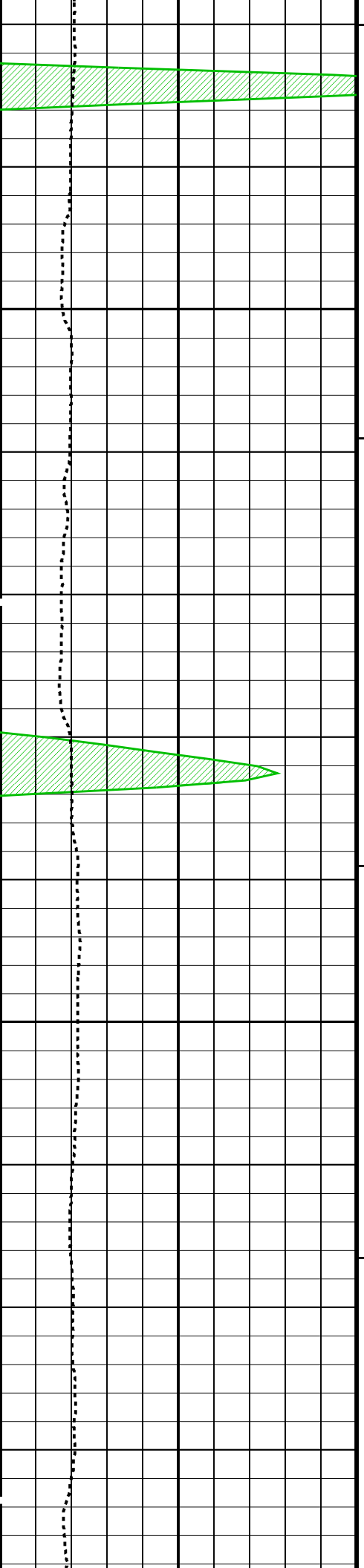
	Stuck Stretch (STIT)	H. Res. Formation Pe (PEF8)		Tension (TENS)	
		0	10	10000	0
	(F) 50	(-----)		(LBF)	
Caliper (HCAL)	Tool/Tot. Drag	HiRes NPOR (HNPO)			
(IN)		(V/V)			
		0.45		-0.15	
Gamma Ray Backup	Cable Drag	H. Res. Density Porosity (DPH8)			
		(V/V)			
		0.45		-0.15	

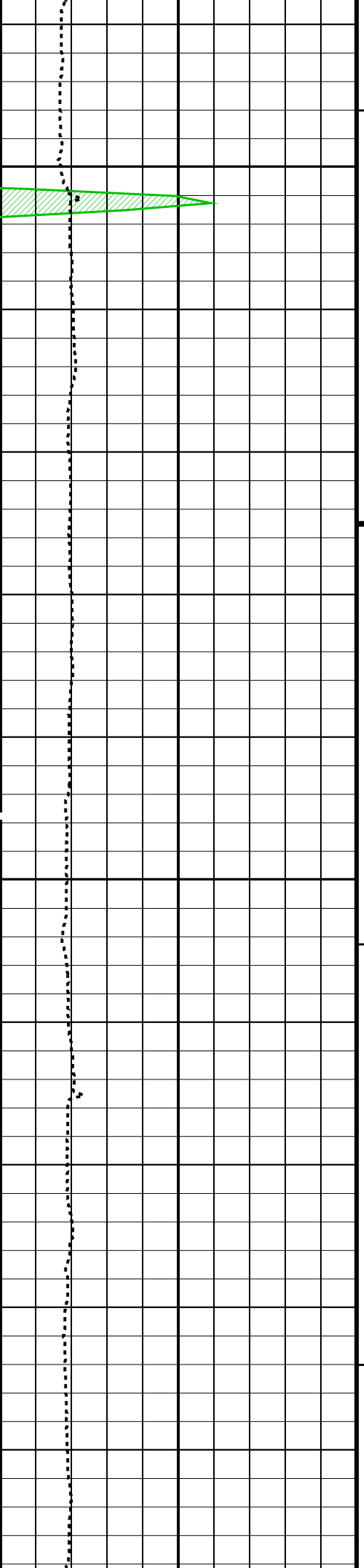
MAIN PASS: *** PLATFORM EXPRESS - NUCLEAR POROSITY ***





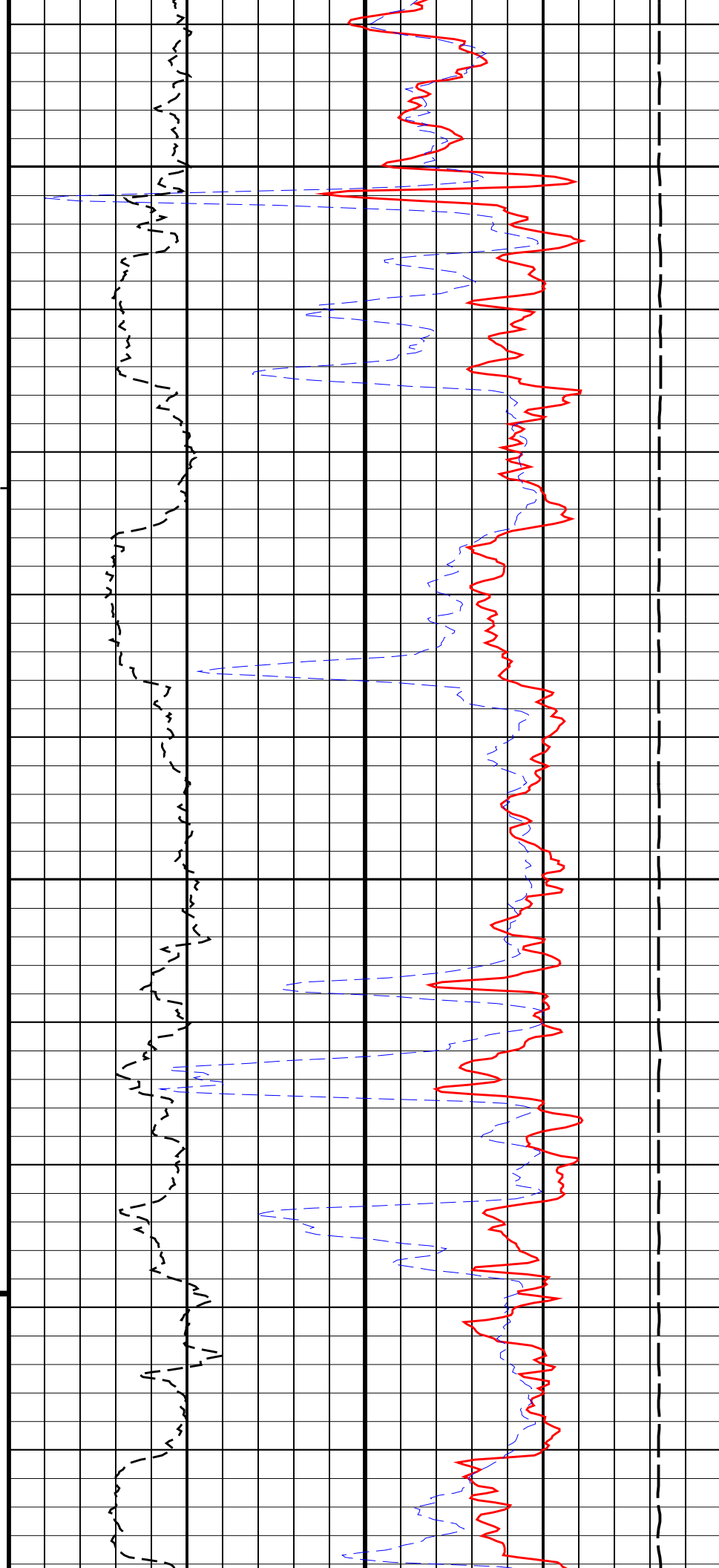


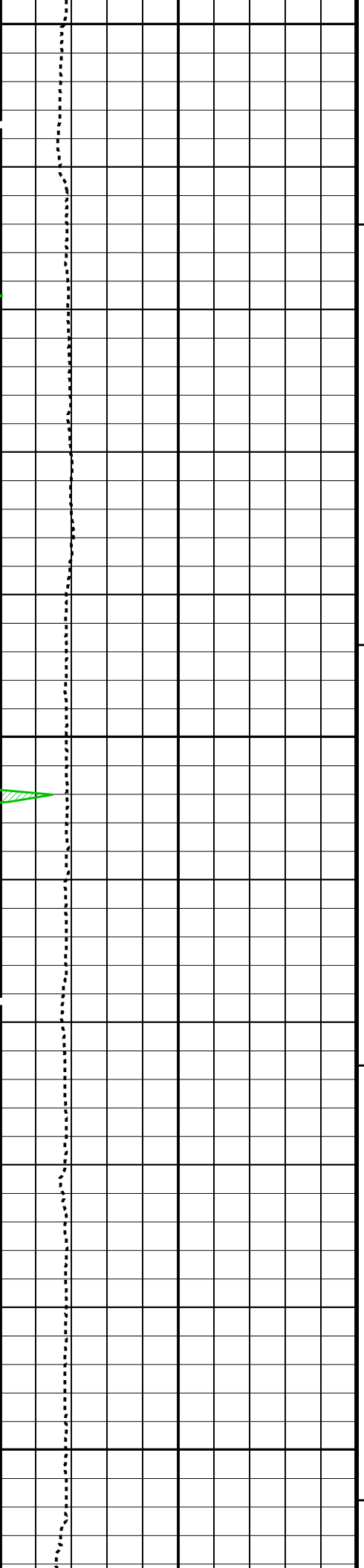




4350

4400

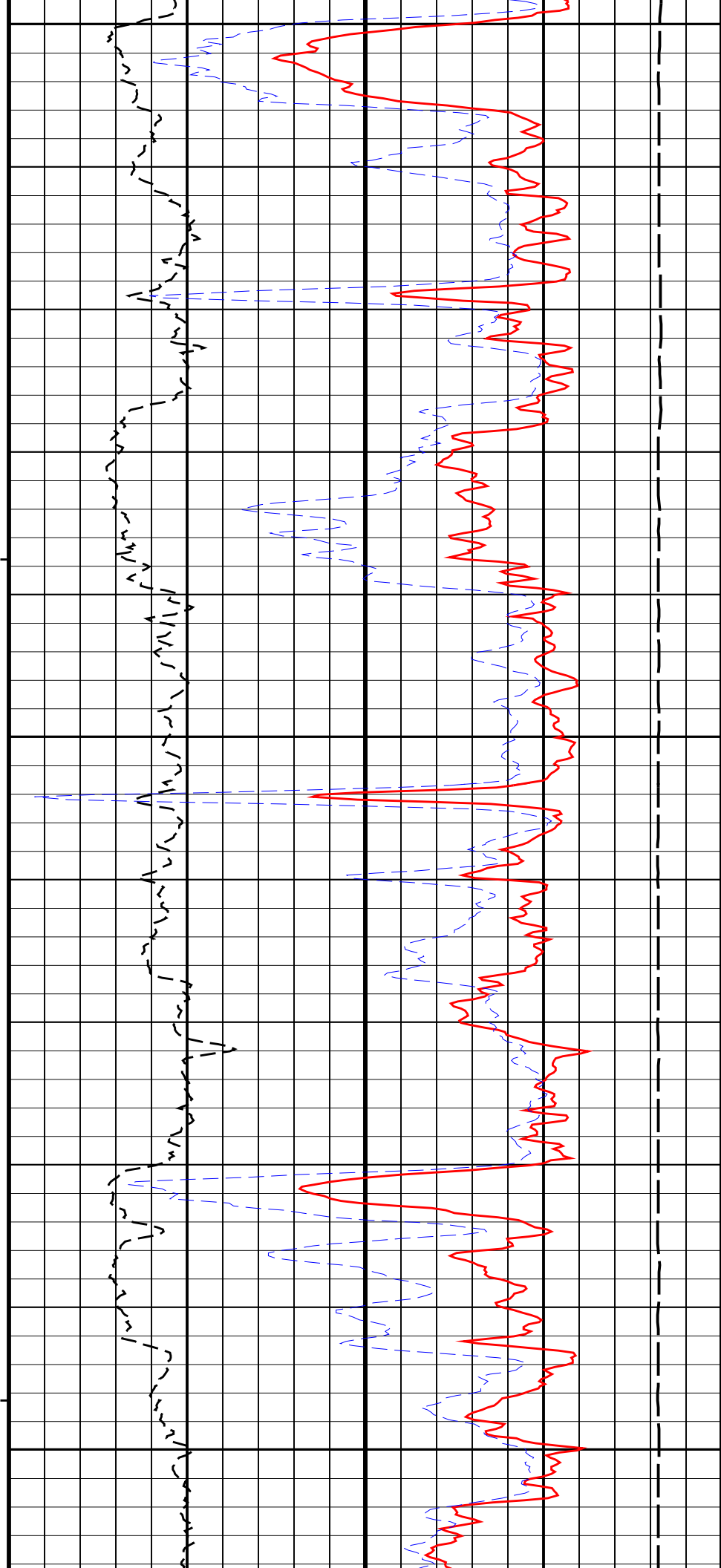


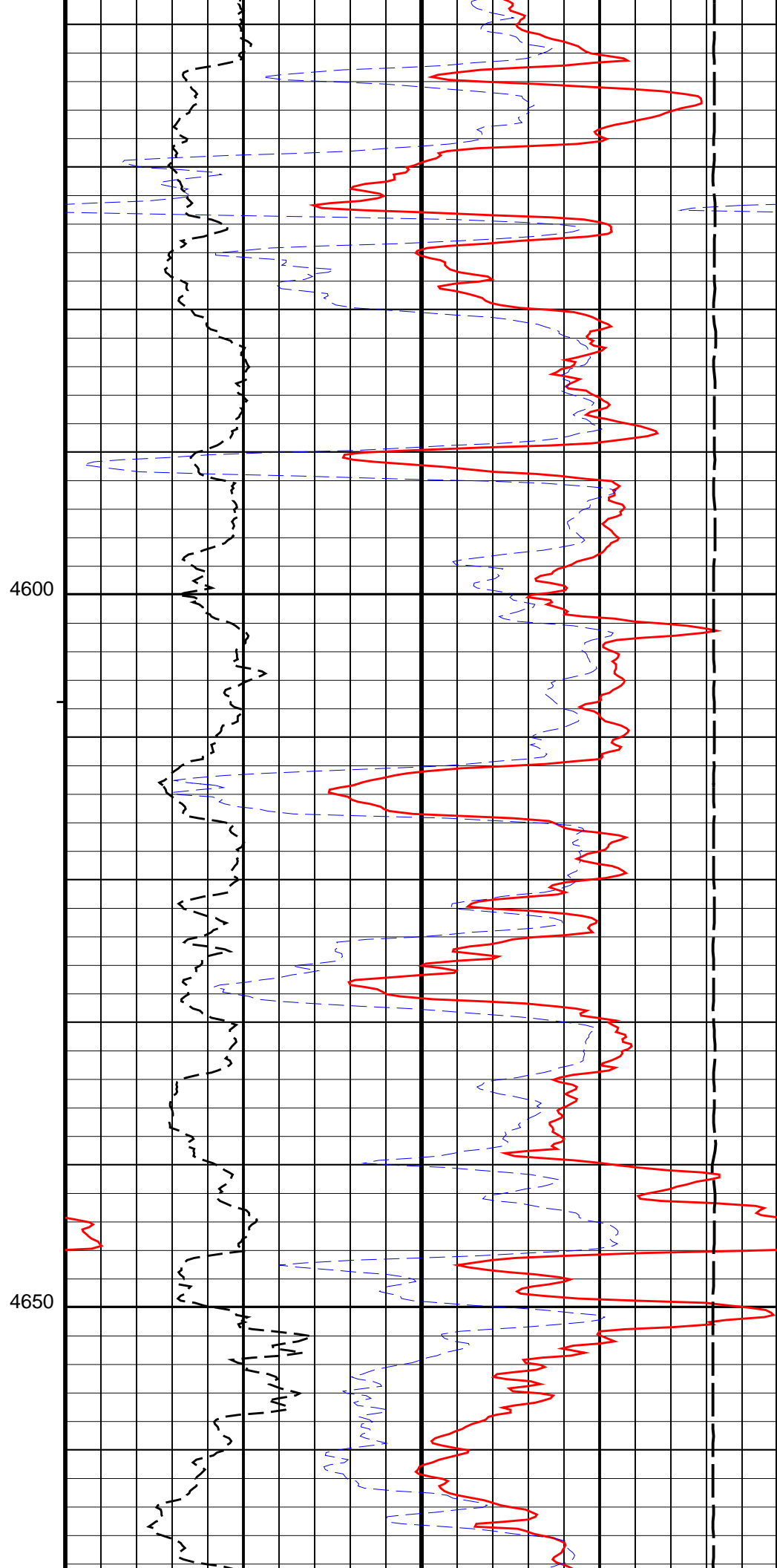
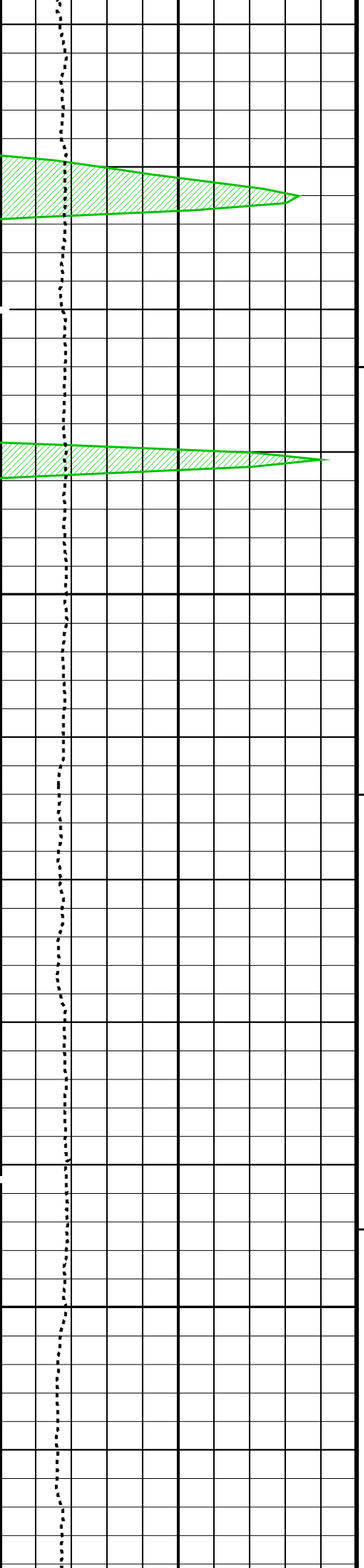


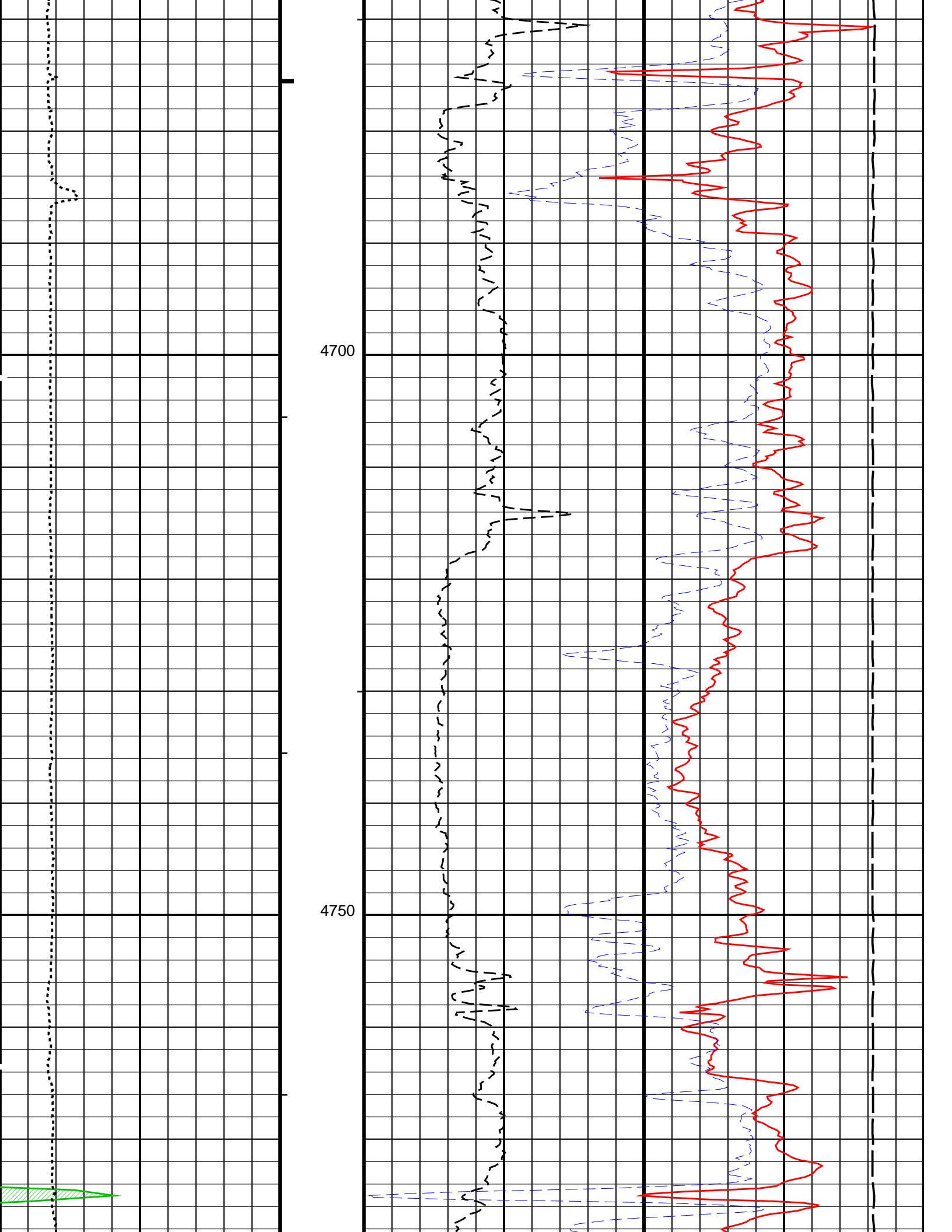
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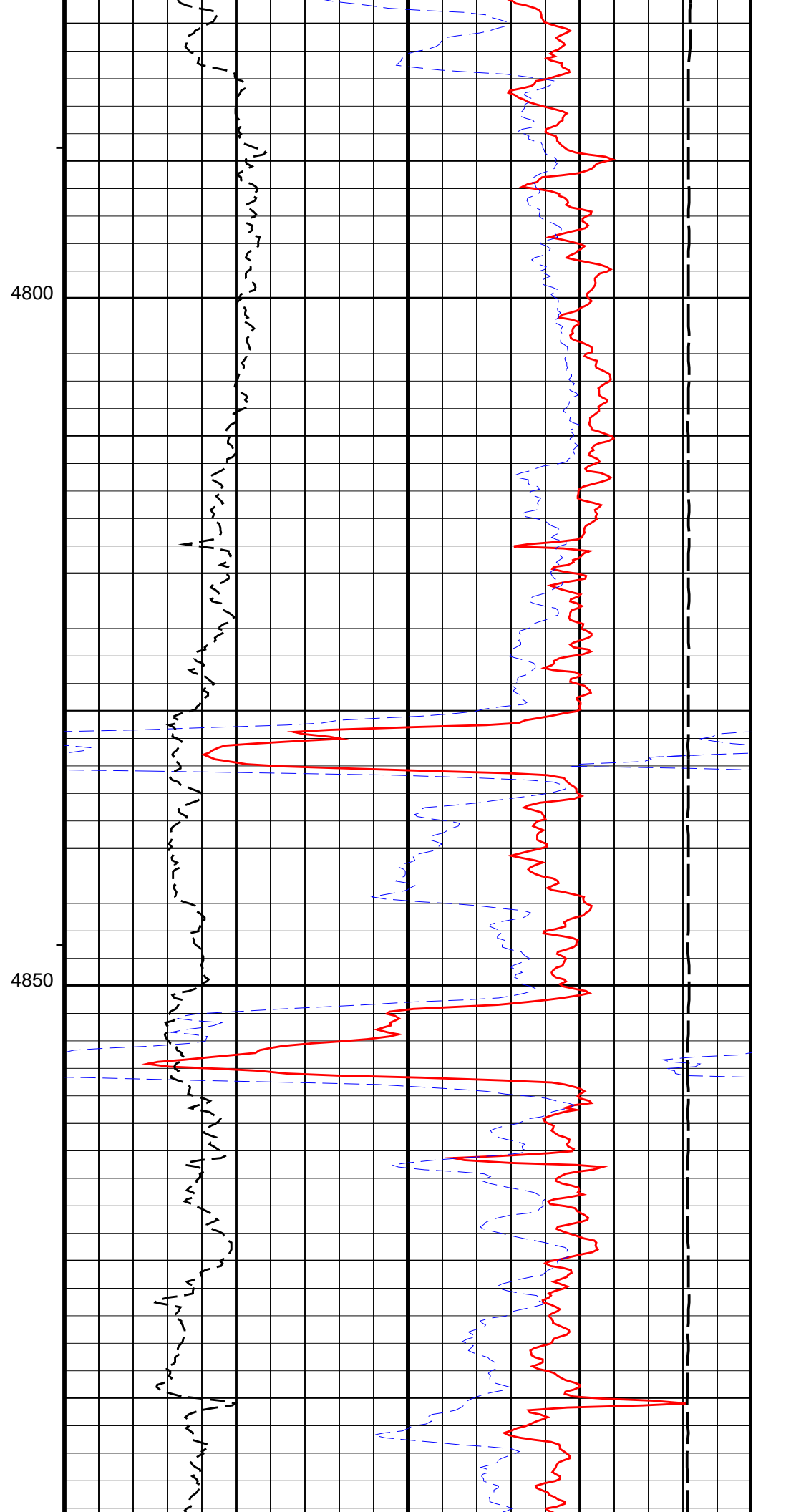
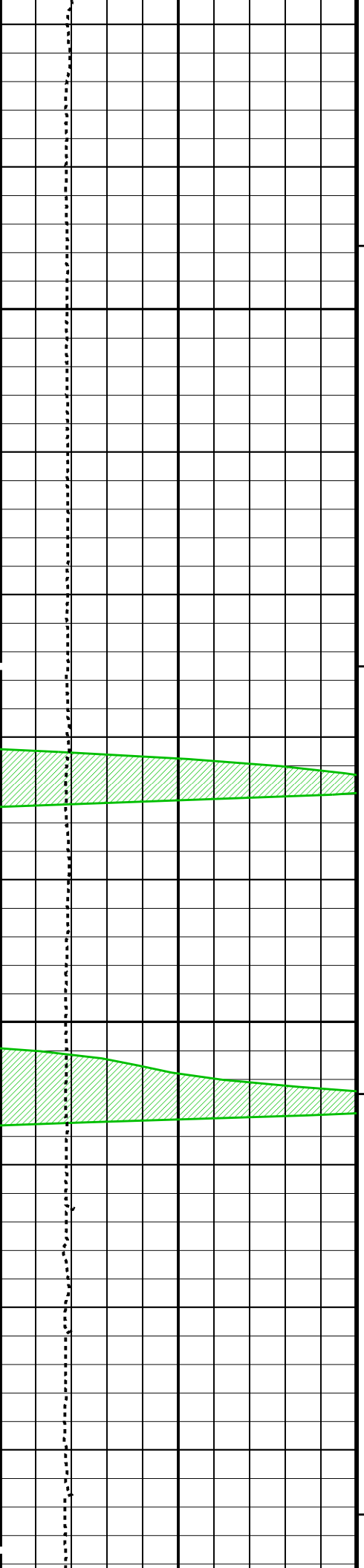
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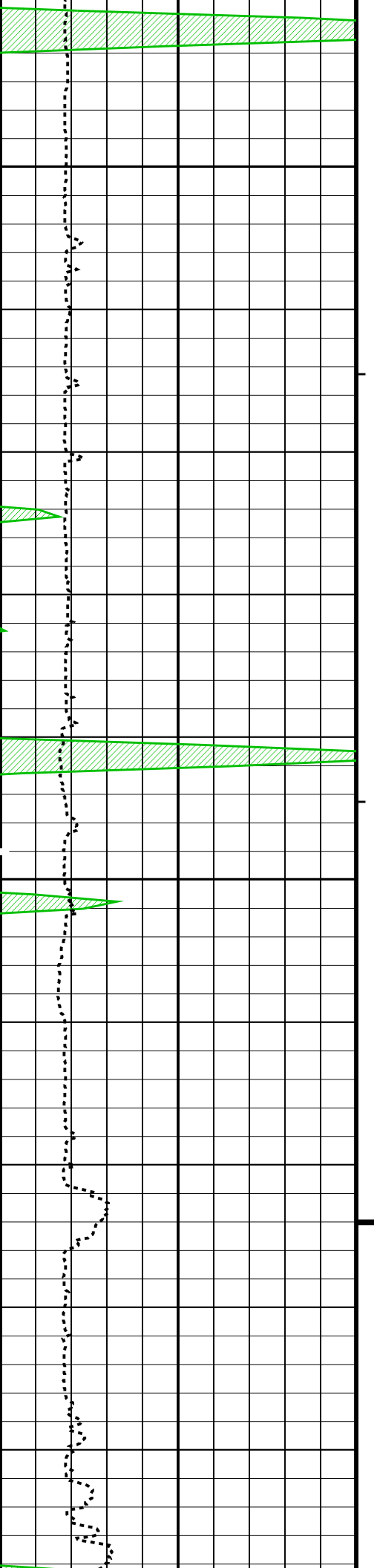
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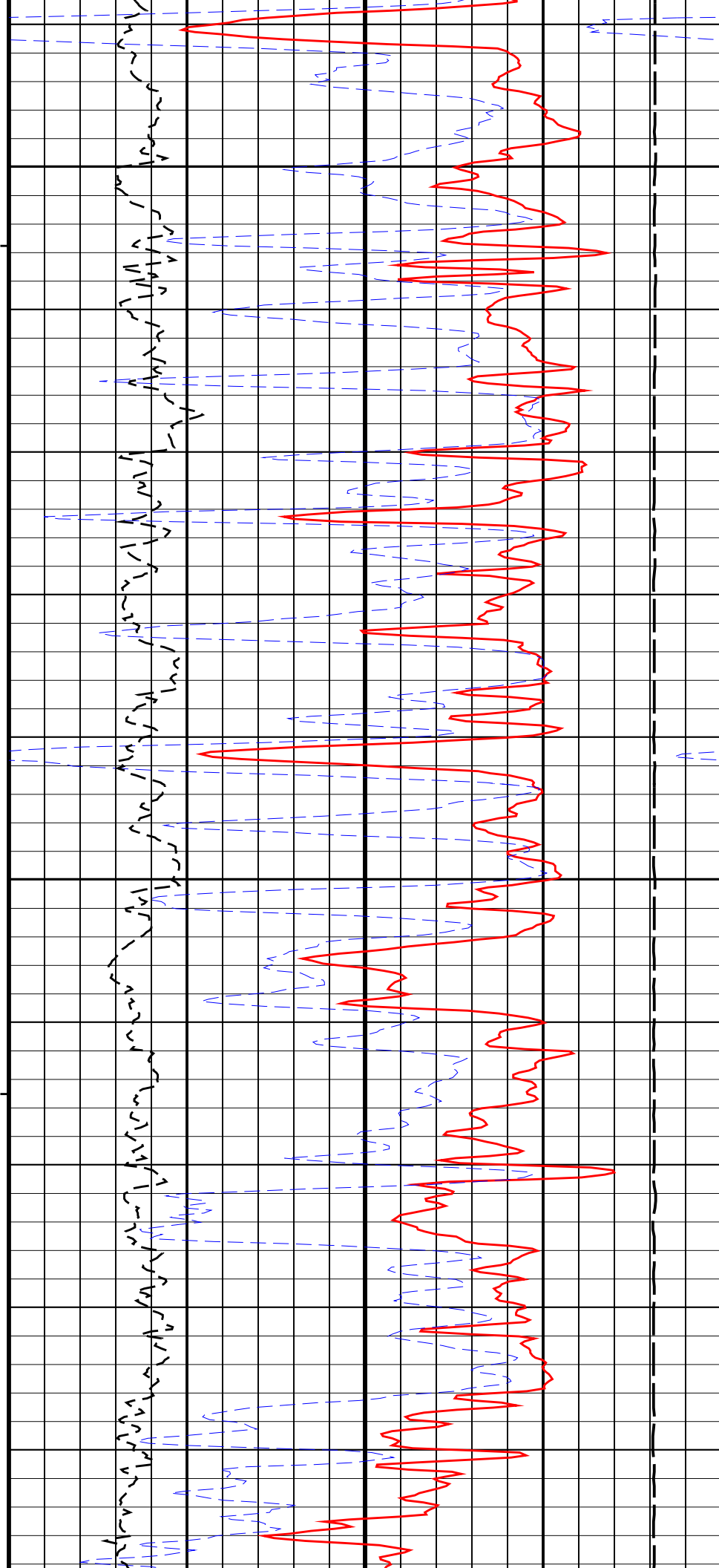


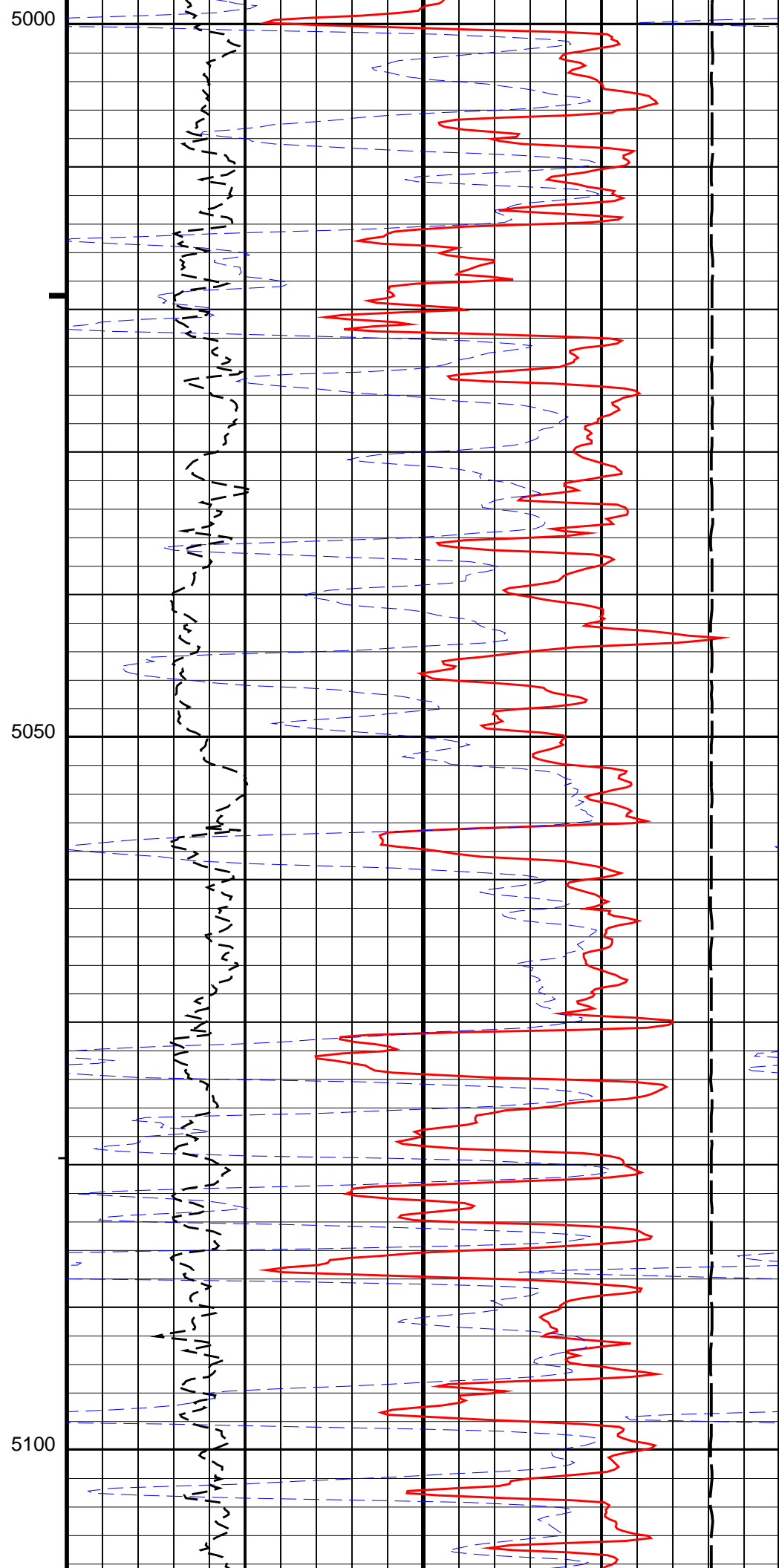
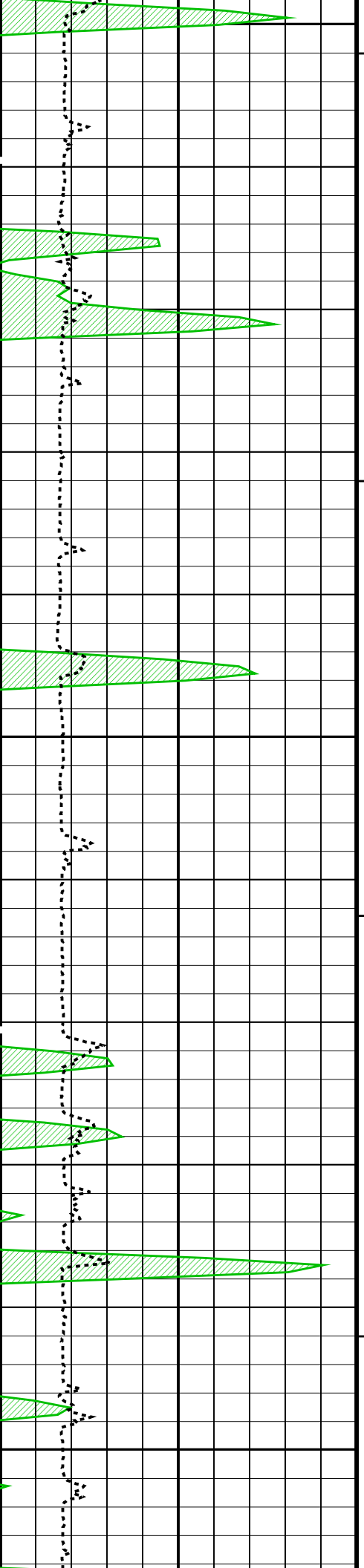


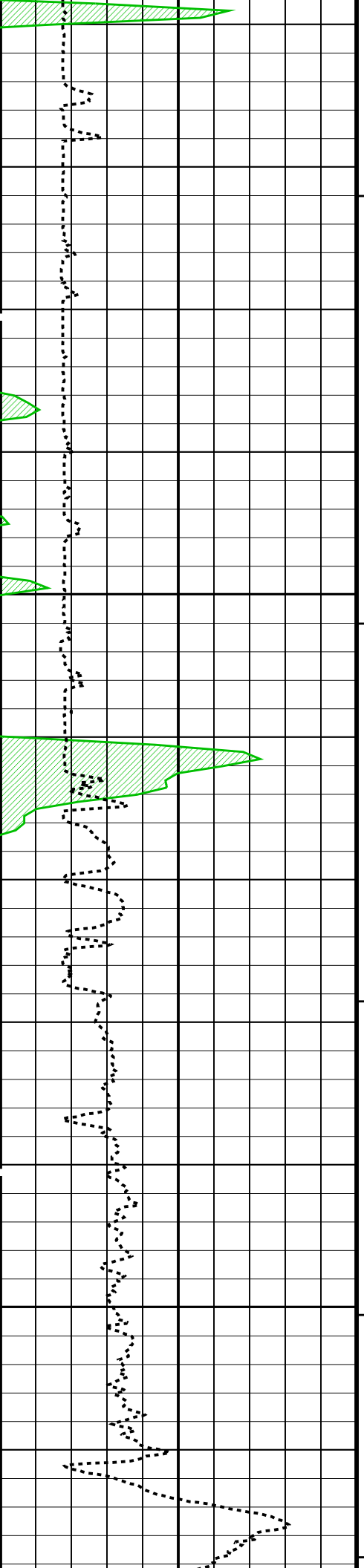


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4950

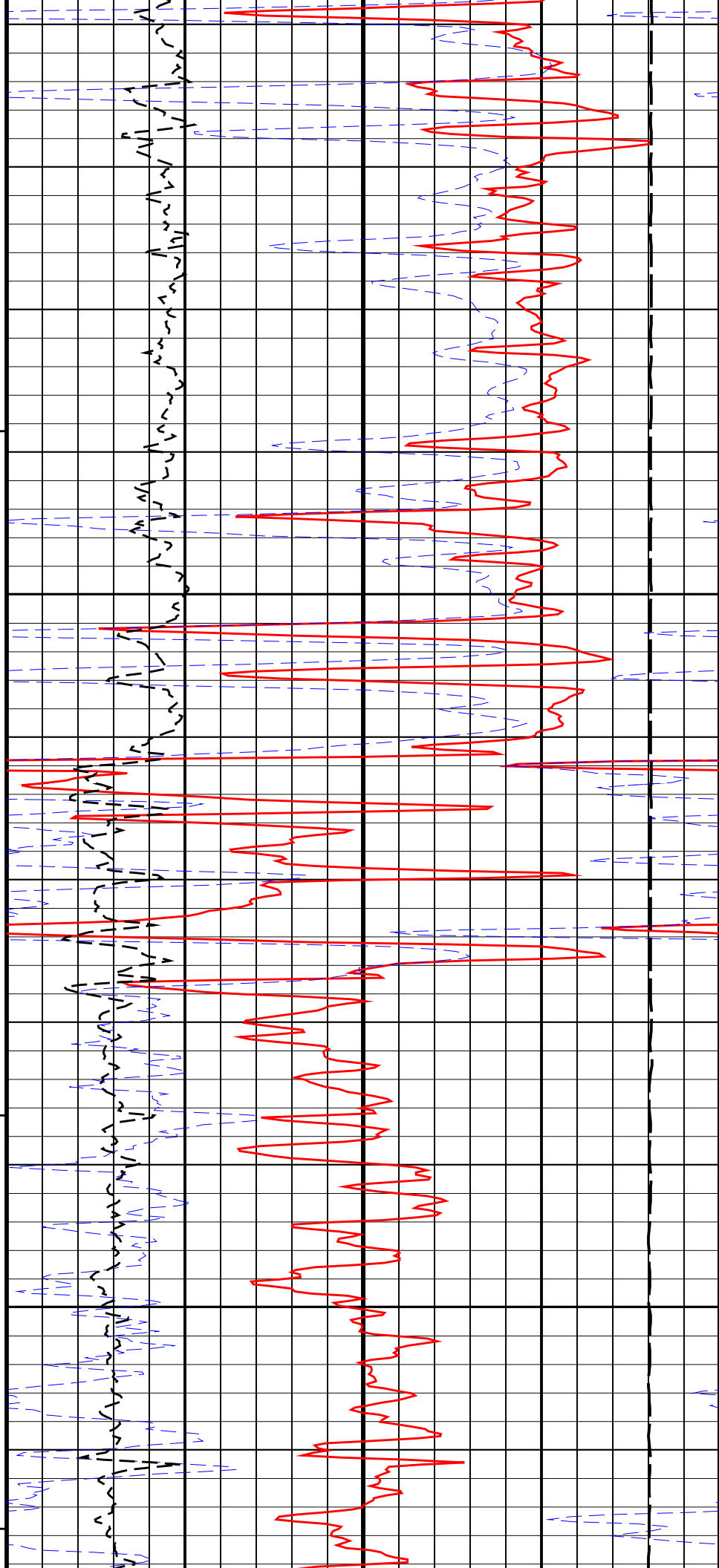


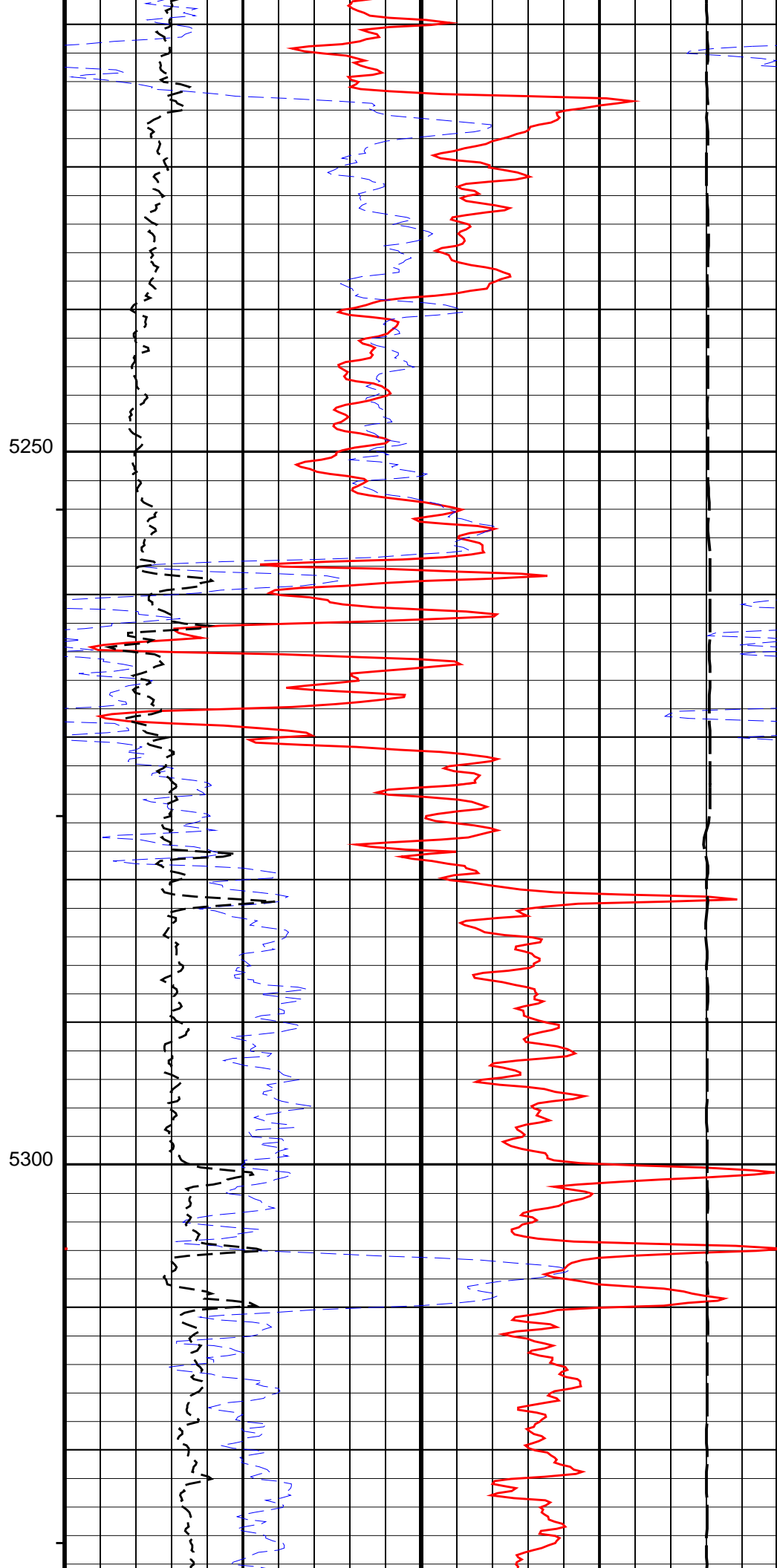
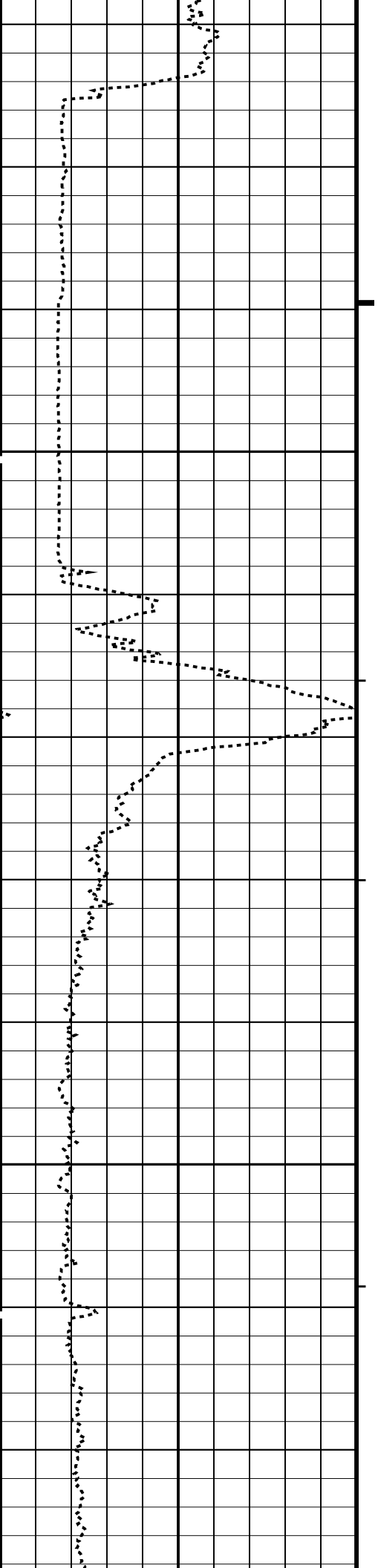


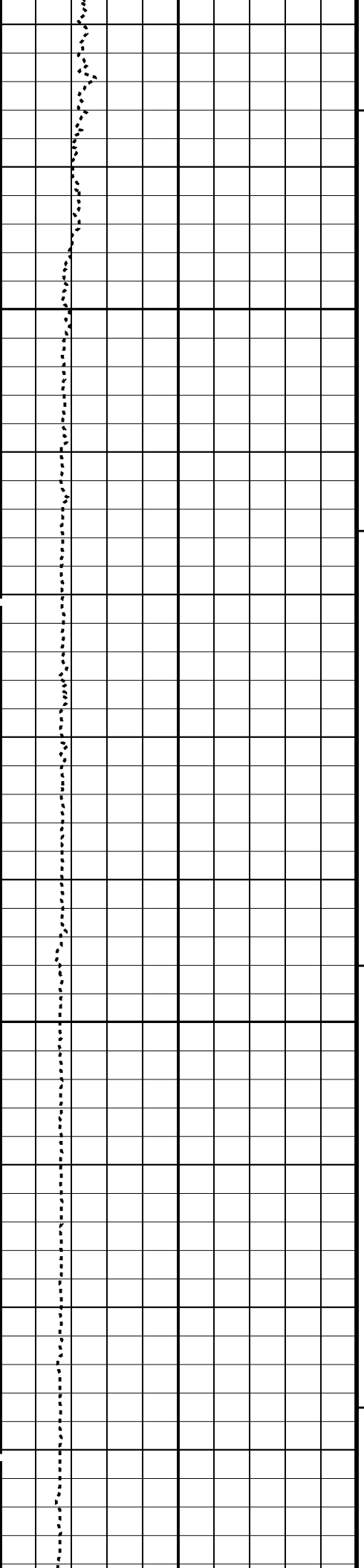


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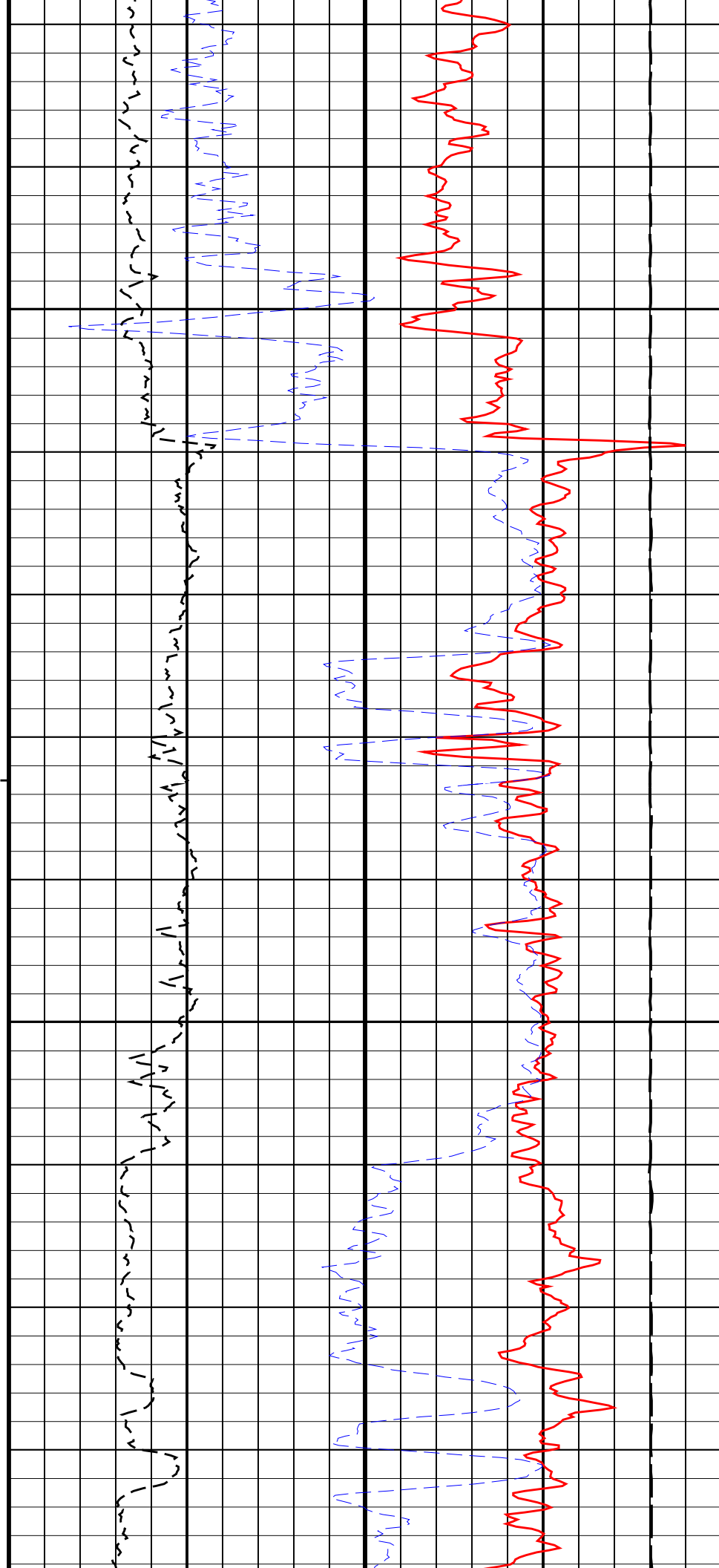


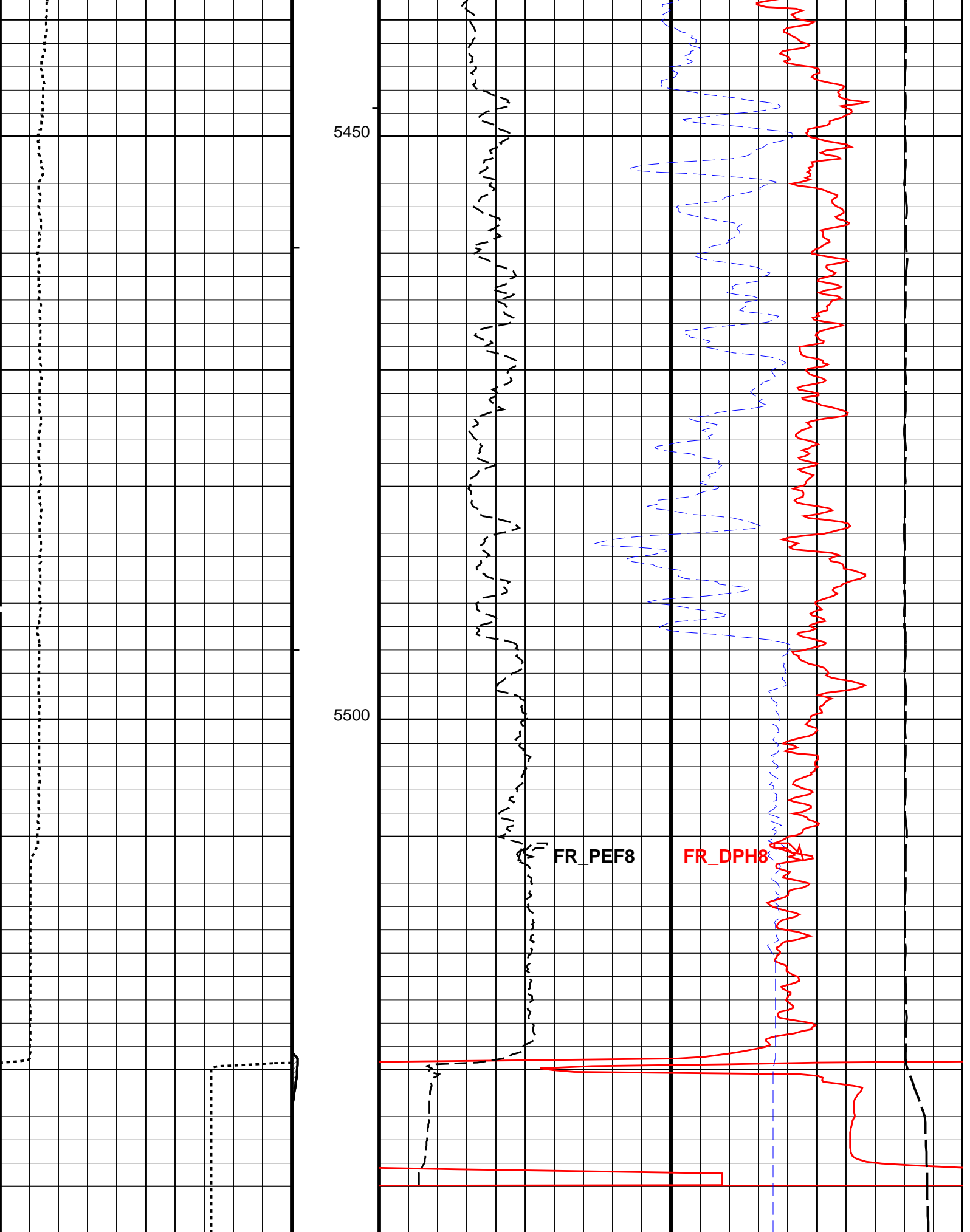




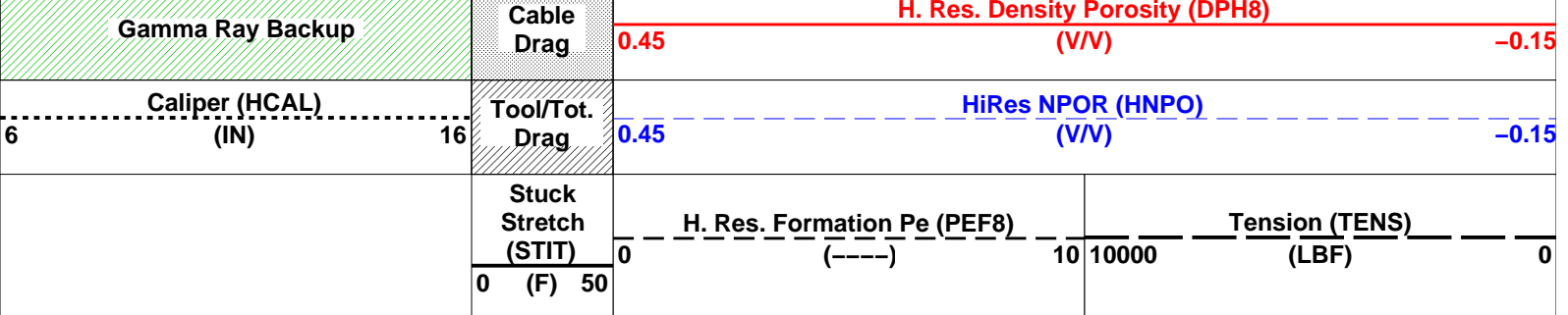
5350

5400





MAIN PASS: *** PLATFORM EXPRESS – NUCLEAR POROSITY ***



PIP SUMMARY

- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
 - └ Integrated Cement Volume Minor Pip Every 10 F3
 - └ Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HILTB-CTS: High resolution Integrated Logging Tool-CTS		
BHFL	Borehole Fluid Type	WATER
BHFL_TLD	HILT Nuclear Mud Base	WATER
BHS	Borehole Status	OPEN
BSCO	Borehole Salinity Correction Option	NO
CCCO	Casing & Cement Thickness Correction Option	NO
DHC	Density Hole Correction	BS
FD	Fluid Density	1.000 g/cm3
FSCO	Formation Salinity Correction Option	NO
GCLF	Germany Coal-like Formation Option	NO
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0.000 deg
GGRD	Geothermal Gradient	0.010 degF/ft
HSCO	Hole Size Correction Option	YES
MATR	Rock Matrix for Neutron Porosity Corrections	LIME
MCCO	Mud Cake Correction Option	NO
MCOR	Mud Correction	NATU
MDEN	Matrix Density	2.710 g/cm3
MWCO	Mud Weight Correction Option	NO
NAAC	HRDD APS Activation Correction	OFF
NMT	HILT Nuclear Mud Type	NOBARITE
NPRM	HRDD Processing Mode	HIRES
NSAR	HRDD Depth Sampling Rate	1.000 in
PTCO	Pressure/Temperature Correction Option	NO
SDAT	Standoff Data Source	SOCN
SHT	Surface Hole Temperature	68.000 degF
SOCN	Standoff Distance	0.125 in
SOCO	Standoff Correction Option	YES
STI: Stuck Tool Indicator		
STKT	STI Stuck Threshold	2.500 ft
TDD	Total Depth - Driller	5536.0 ft
TDL	Total Depth - Logger	5530.0 ft
HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0.000 deg
GGRD	Geothermal Gradient	0.010 degF/ft
MATR	Rock Matrix for Neutron Porosity Corrections	LIME
SHT	Surface Hole Temperature	68.000 degF
PERT: Preliminary Evaluation - Real Time		
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0.000 deg
GGRD	Geothermal Gradient	0.010 degF/ft
MATR	Rock Matrix for Neutron Porosity Corrections	LIME
SHT	Surface Hole Temperature	68.000 degF
System and Miscellaneous		
BS	Bit Size	7.875 in
BSAL	Borehole Salinity	
CSIZ	Current Casing Size	8.625 in
CWEI	Casing Weight	24.000 lbm/ft
DFD	Drilling Fluid Density	9.200 lbm/gal
FSAL	Formation Salinity	
MST	Mud Sample Temperature	80.125 degF
RMFS	Resistivity of Mud Filtrate Sample	0.766 ohm.m

HILTC 18C0-147

Input DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_010LUP FN:9 PRODUCER 08-Jan-2011 01:20 5544.0 FT 368.5 FT

Schlumberger

Repeat Analysis

MAXIS Field Log

Input DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_009PUP FN:8 PRODUCER 07-Jan-2011 22:15 5547.0 FT 4846.0 FT

Output DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_010LUP FN:9 PRODUCER 07-Jan-2011 22:18

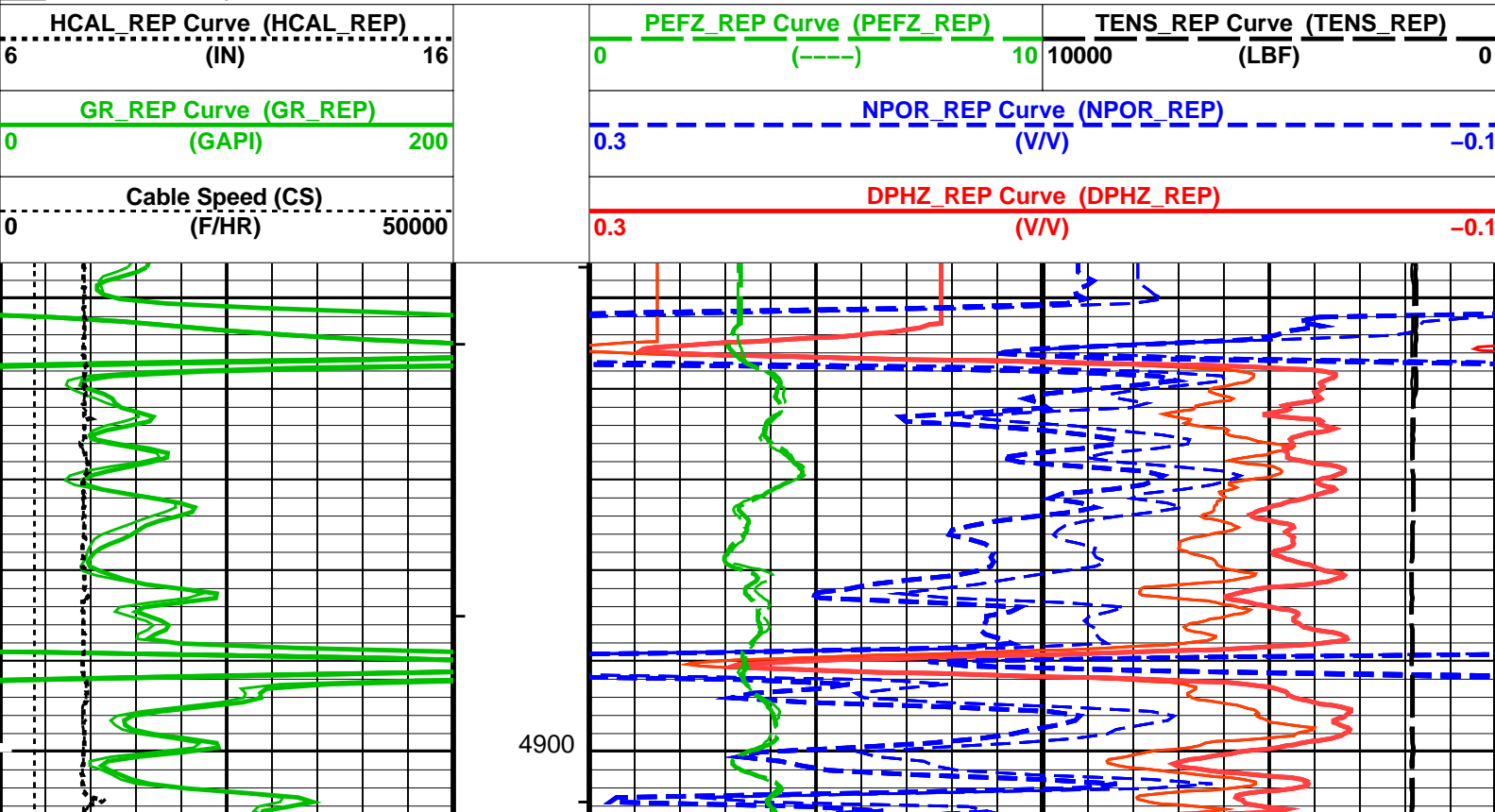
OP System Version: 18C0-147

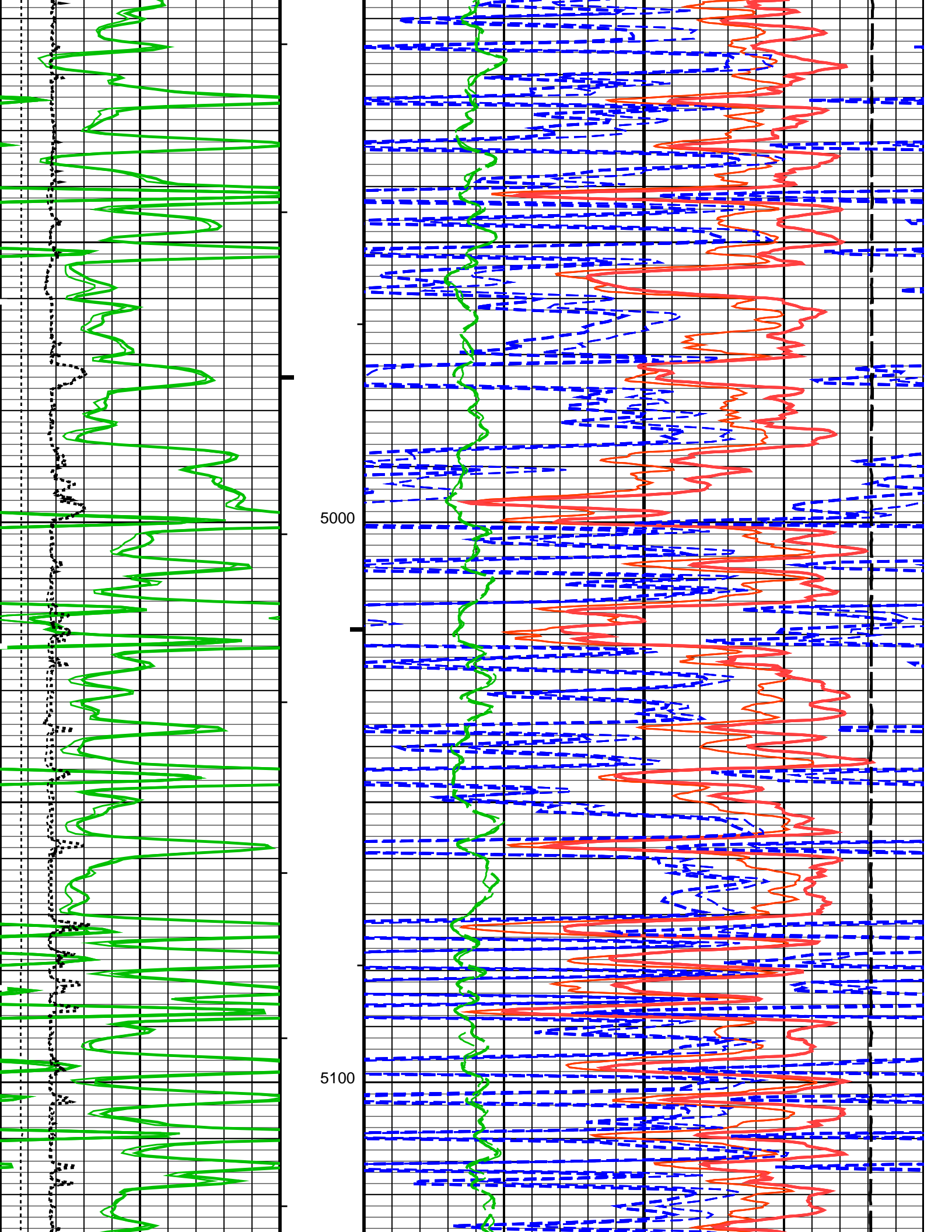
HILTB-CTS 18C0-147

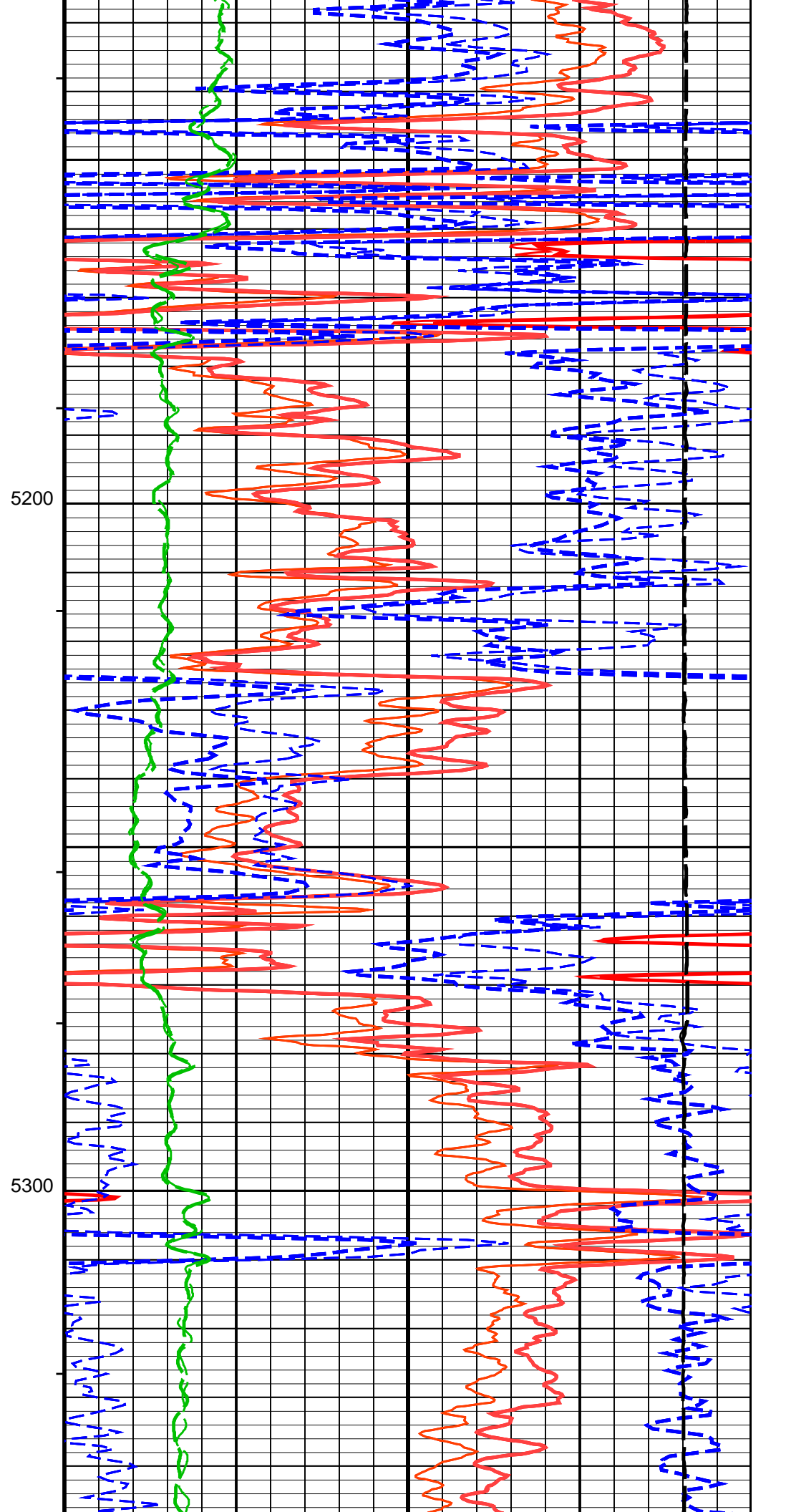
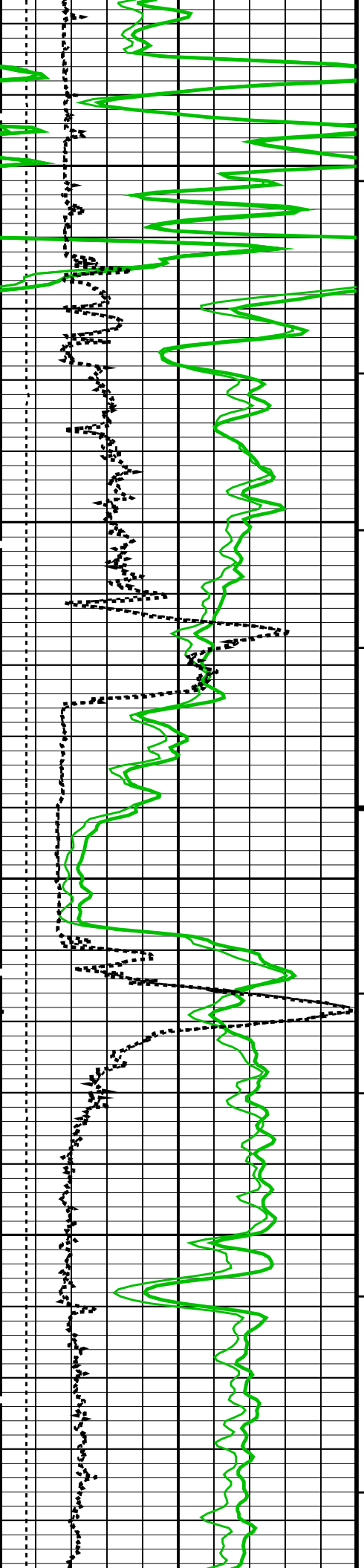
PIP SUMMARY

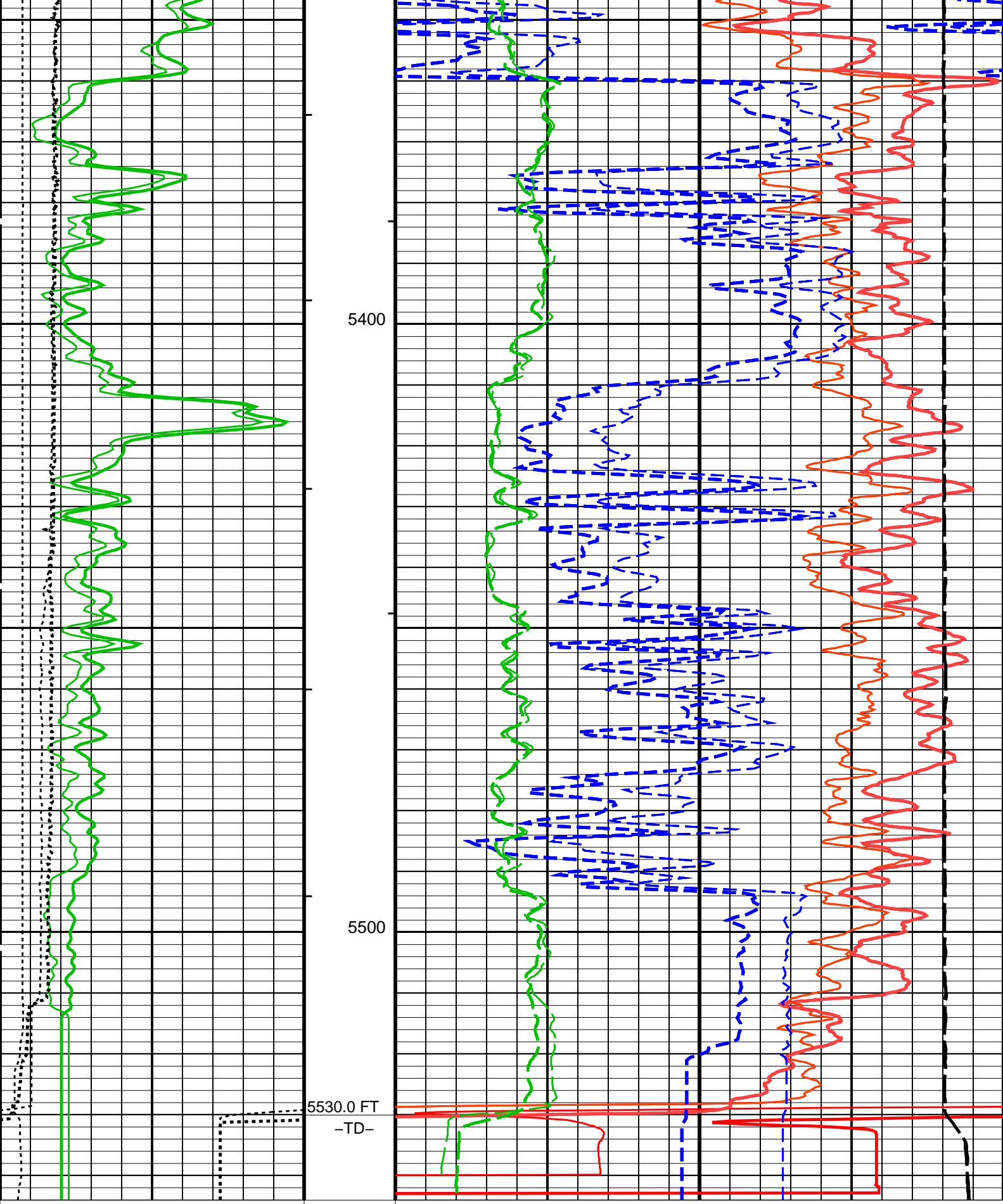
- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
- └ Integrated Cement Volume Minor Pip Every 10 F3
- └ Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S









Cable Speed (CS)
(F/HR) 0 50000

GR_REP Curve (GR_REP)
(GAPI) 0 200

HCAL_REP Curve (HCAL_REP)

DPHZ_REP Curve (DPHZ_REP)
(V/V) 0.3 -0.1

NPOR_REP Curve (NPOR_REP)
(V/V) 0.3 -0.1

PEFZ_REP Curve (PEFZ_REP)

TENS_REP Curve (TENS_REP)

Parameters			
DLIS Name	Description	Value	
HILTB-CTS: High resolution Integrated Logging Tool-CTS			
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal-like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.71	G/C3
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
STI: Stuck Tool Indicator			
TDL	Total Depth - Logger	5530.00	FT
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
FCD	Future Casing (Outer) Diameter	5.5	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HVCS	Integrated Hole Volume Caliper Selection	AUTOMATIC	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
PERT: Preliminary Evaluation - Real Time			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
System and Miscellaneous			
BS	Bit Size	7.875	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	8.625	IN
CWEI	Casing Weight	24.00	LB/F
DFD	Drilling Fluid Density	9.20	LB/G
DORL	Depth Offset for Repeat Analysis	0.0	FT
MST	Mud Sample Temperature	80.13	DEGF
RMFS	Resistivity of Mud Filtrate Sample	0.7665	OHMM
TD	Total Depth	5530	FT

Output DLIS Files

DEFAULT

AIT_TLD_MCFL_CNL_010LUP

FN:9

PRODUCER

07-Jan-2011 22:18

Schlumberger

Main Density Log 5" = 100'

MAXIS Field Log

Input DLIS Files

DEFAULT

AIT_TLD_MCFL_CNL_010LUP

FN:9

PRODUCER

08-Jan-2011 01:20

5544.0 FT

368.5 FT

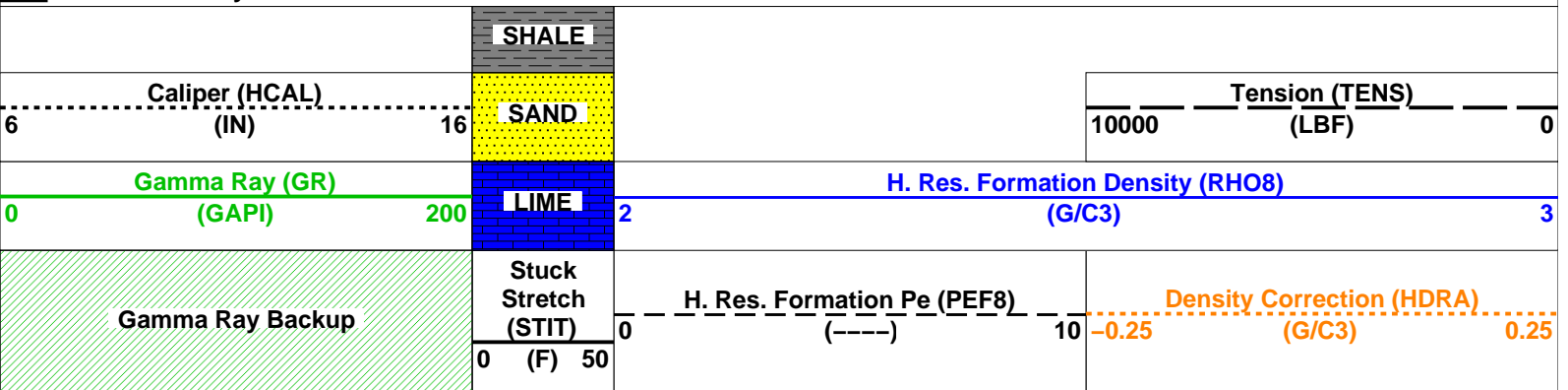
OP System Version: 18C0-147

HILTC

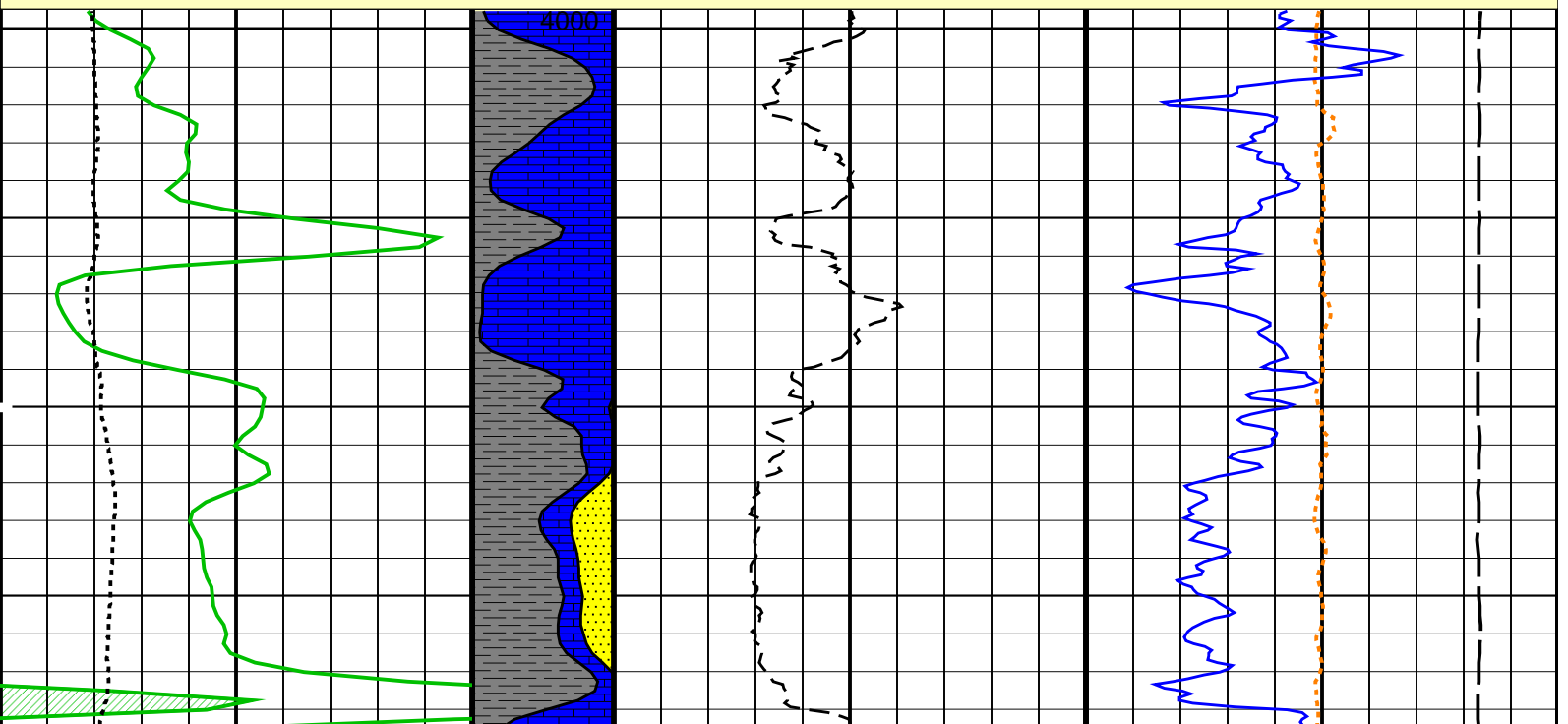
18C0-147

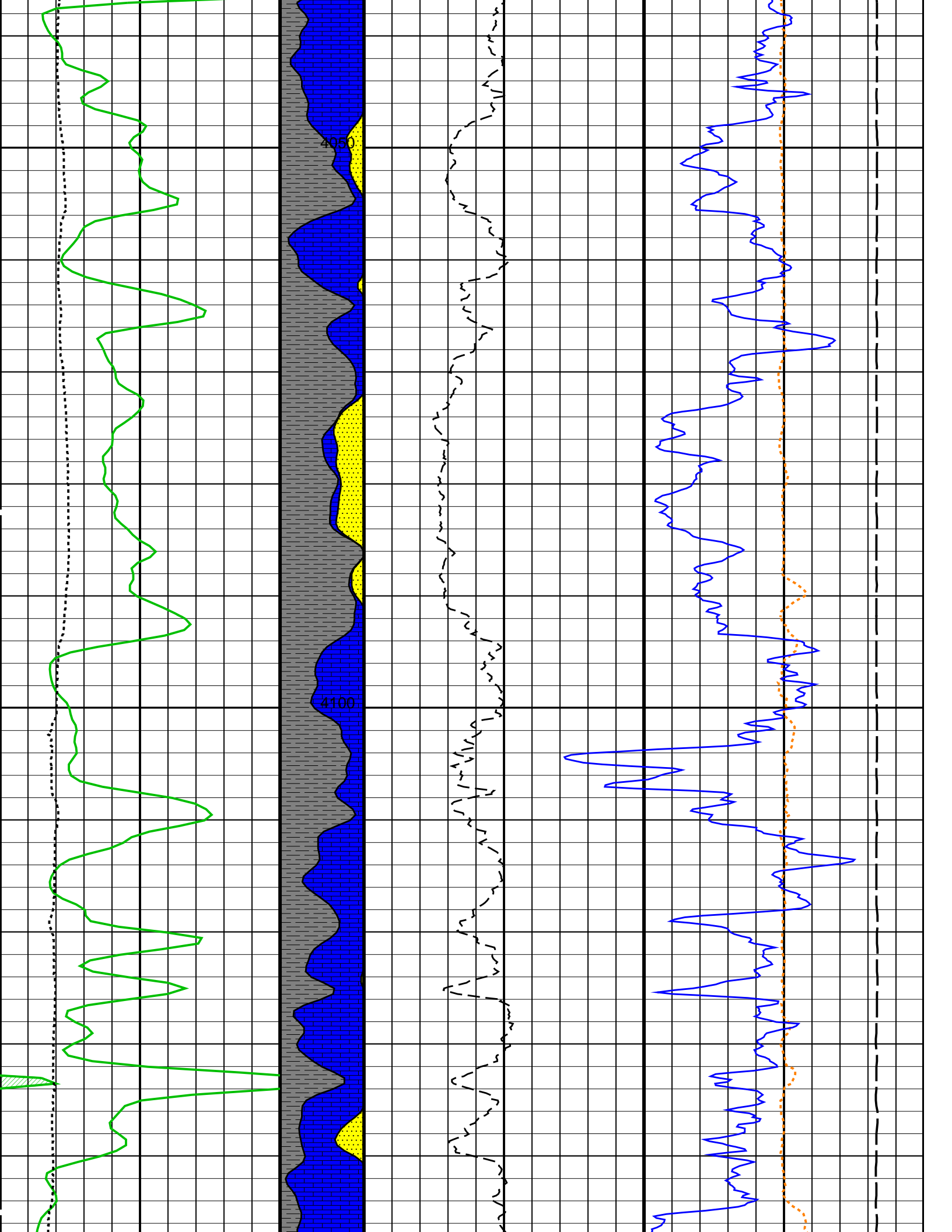
PIP SUMMARY

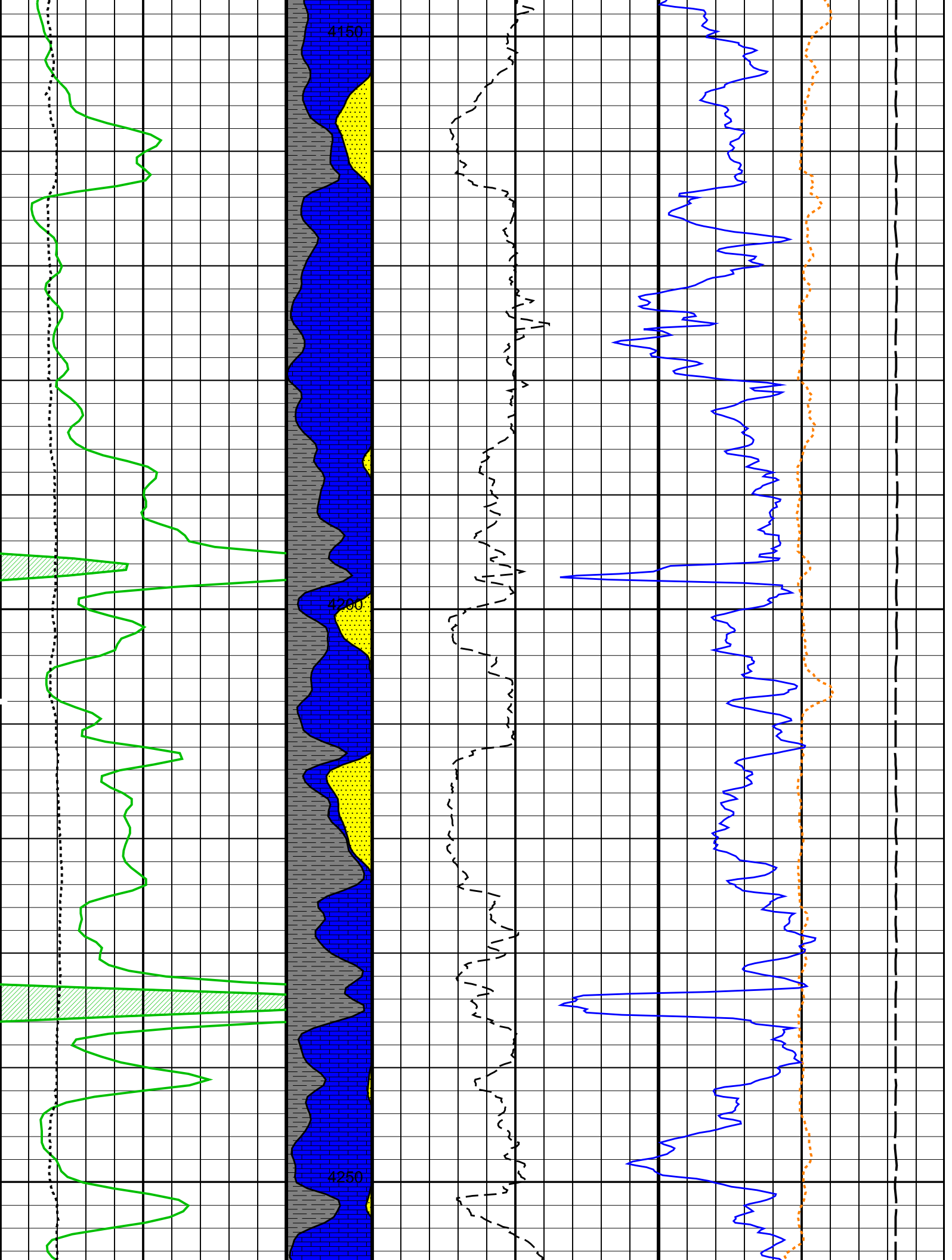
Time Mark Every 60 S

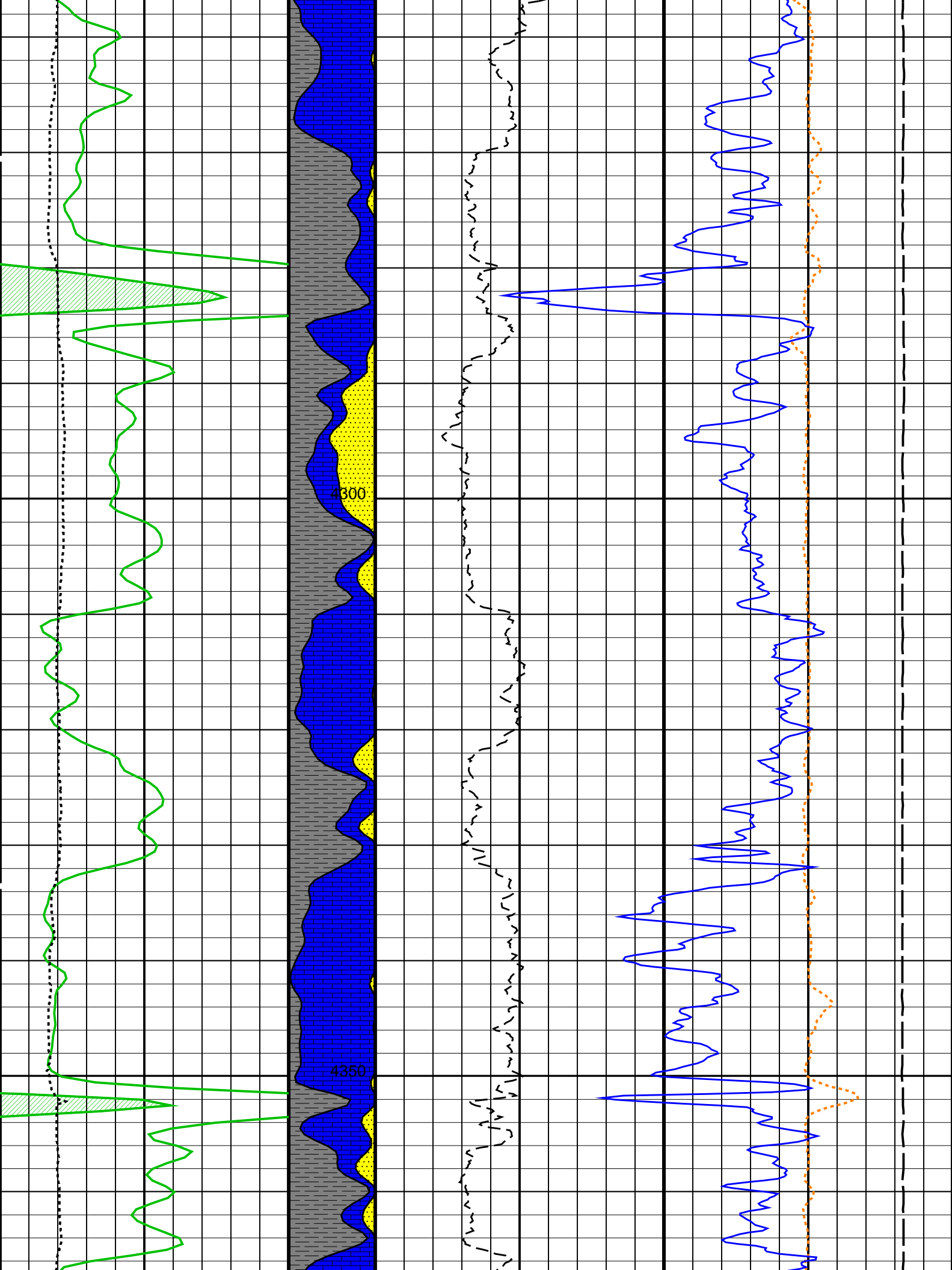


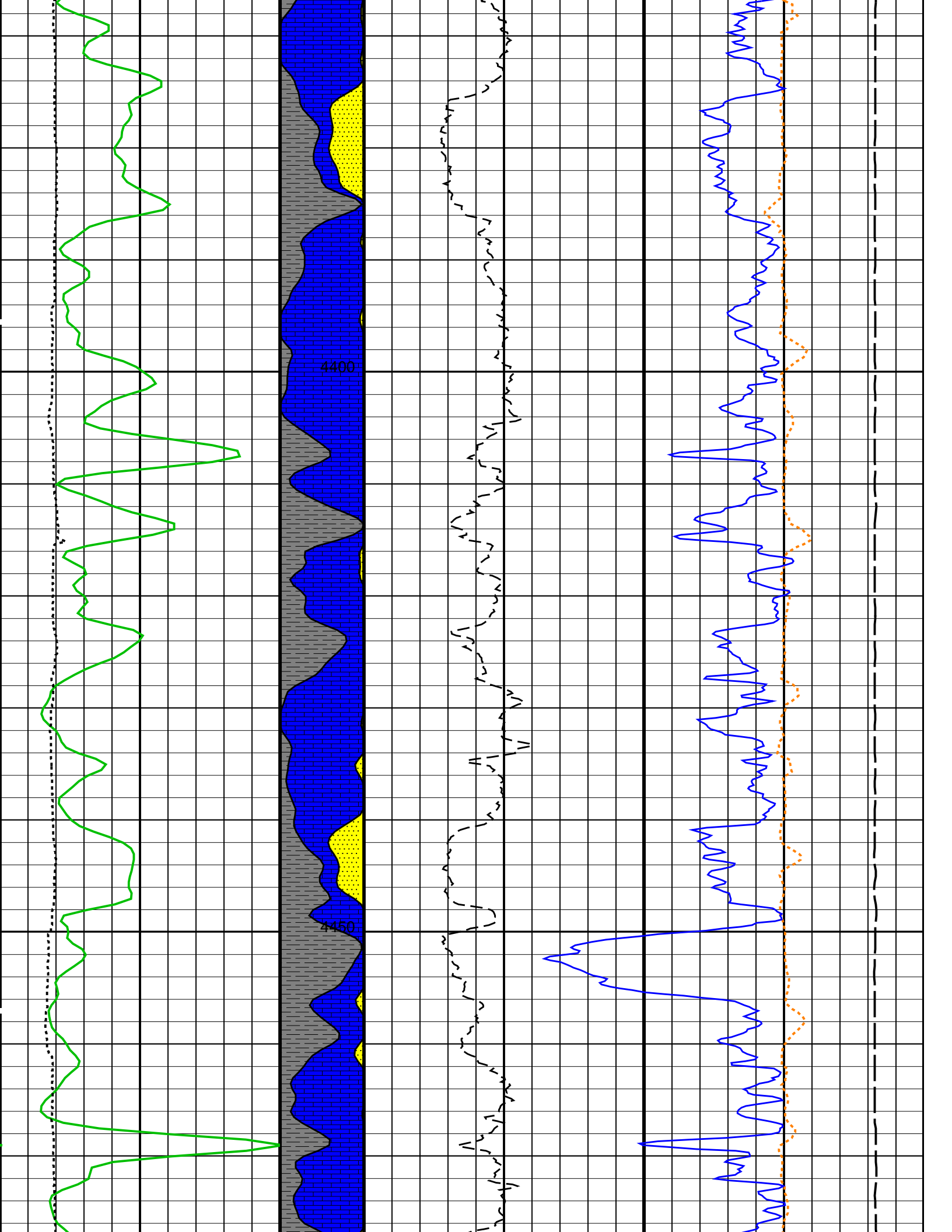
MAIN PASS: *** PLATFORM EXPRESS - LITHOLOGY DENSITY ***

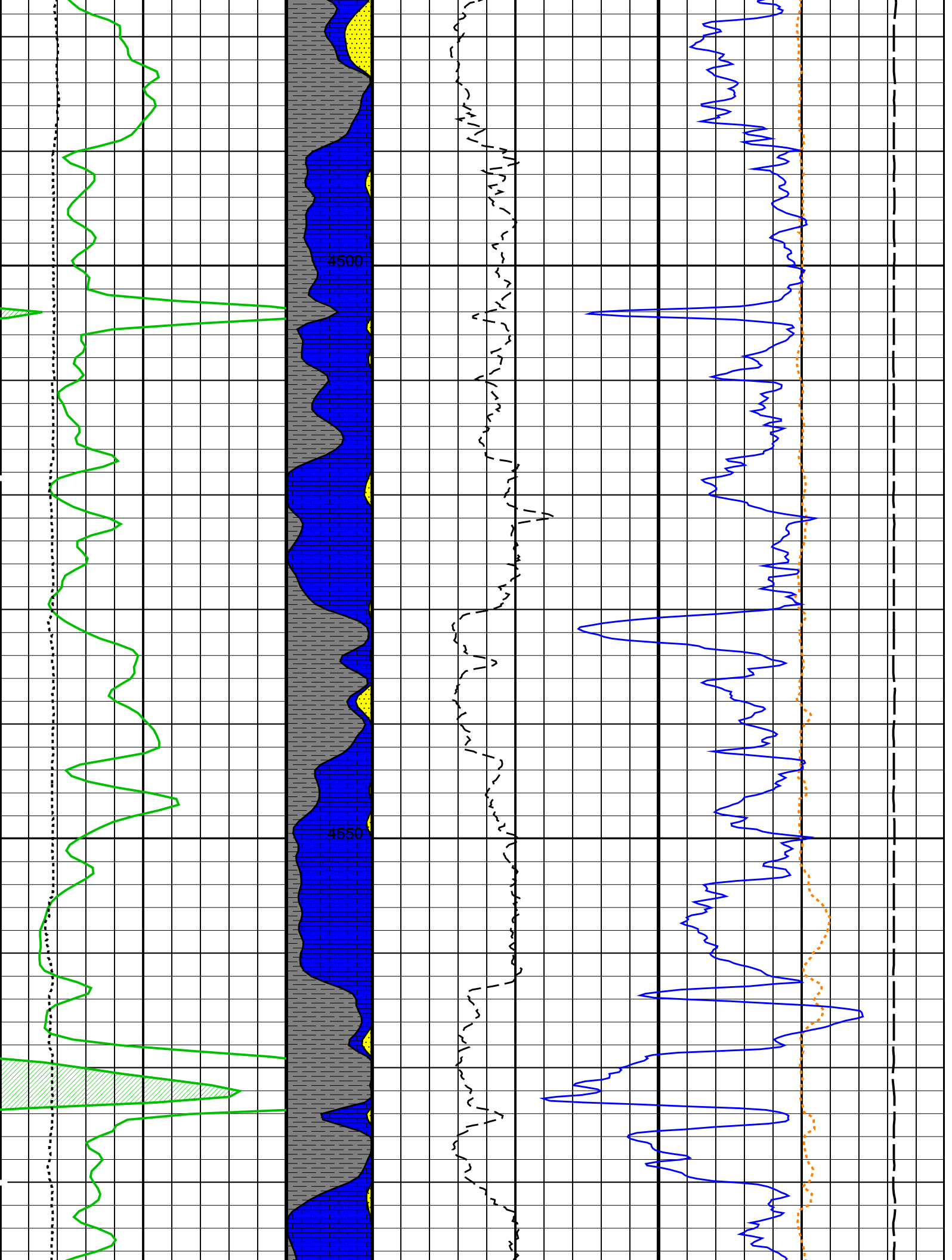


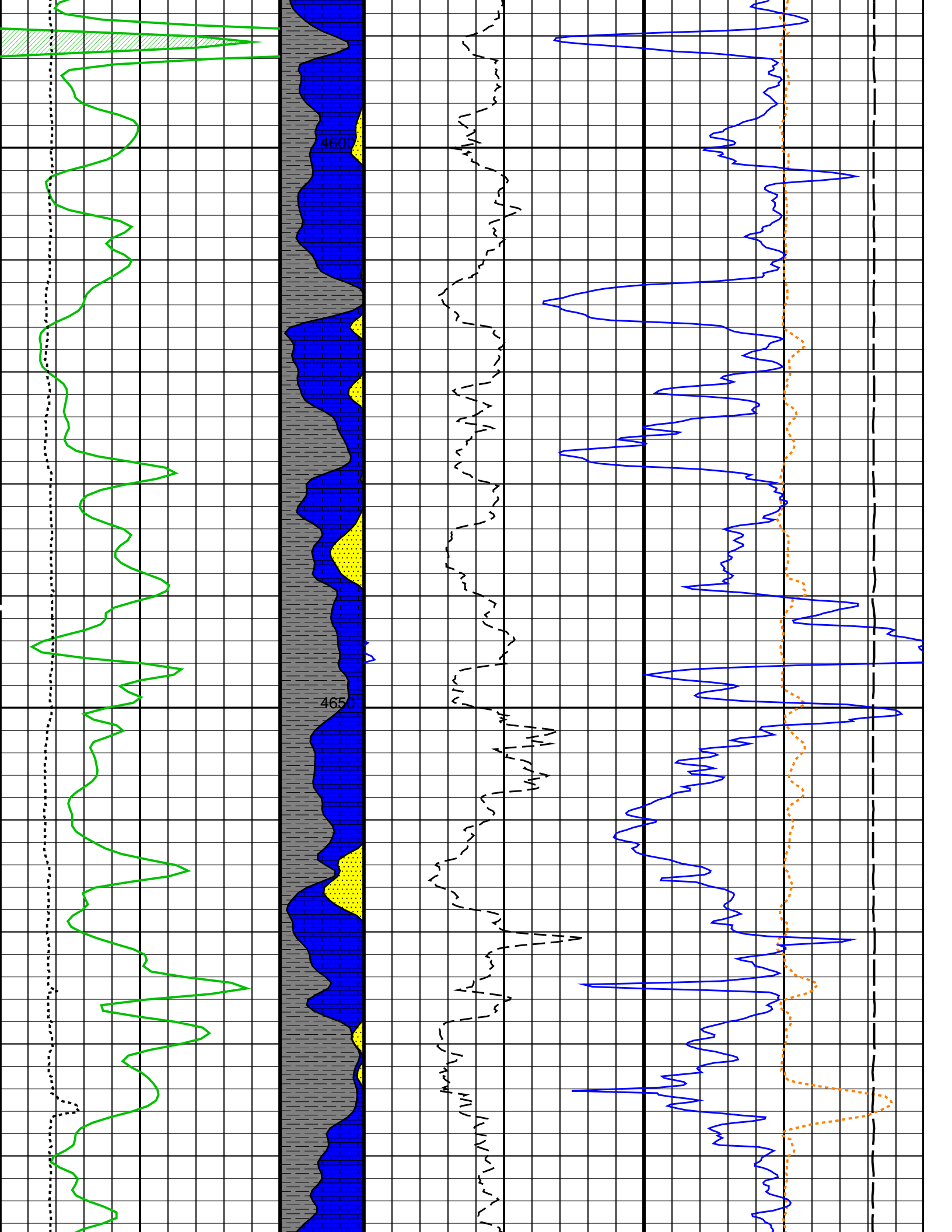


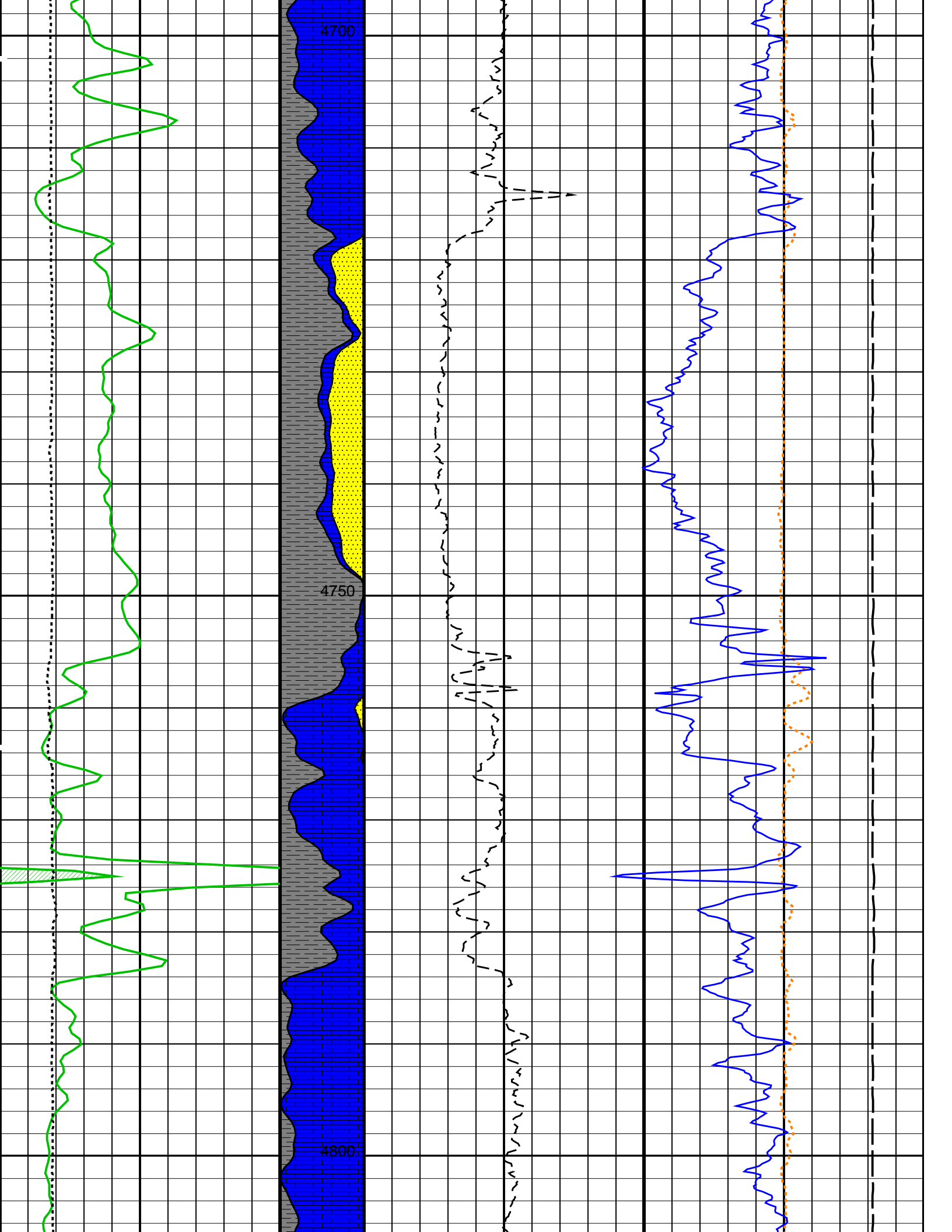


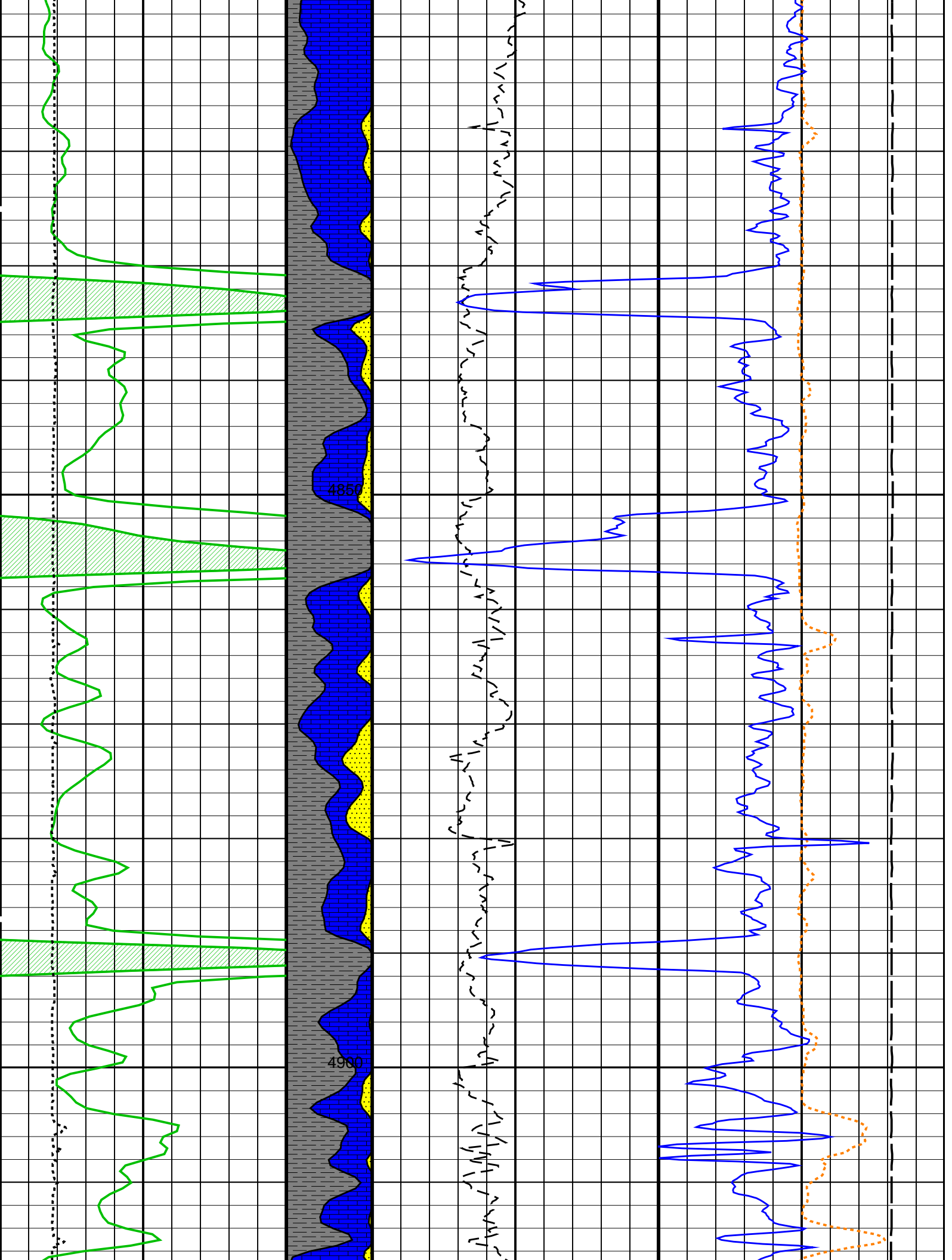


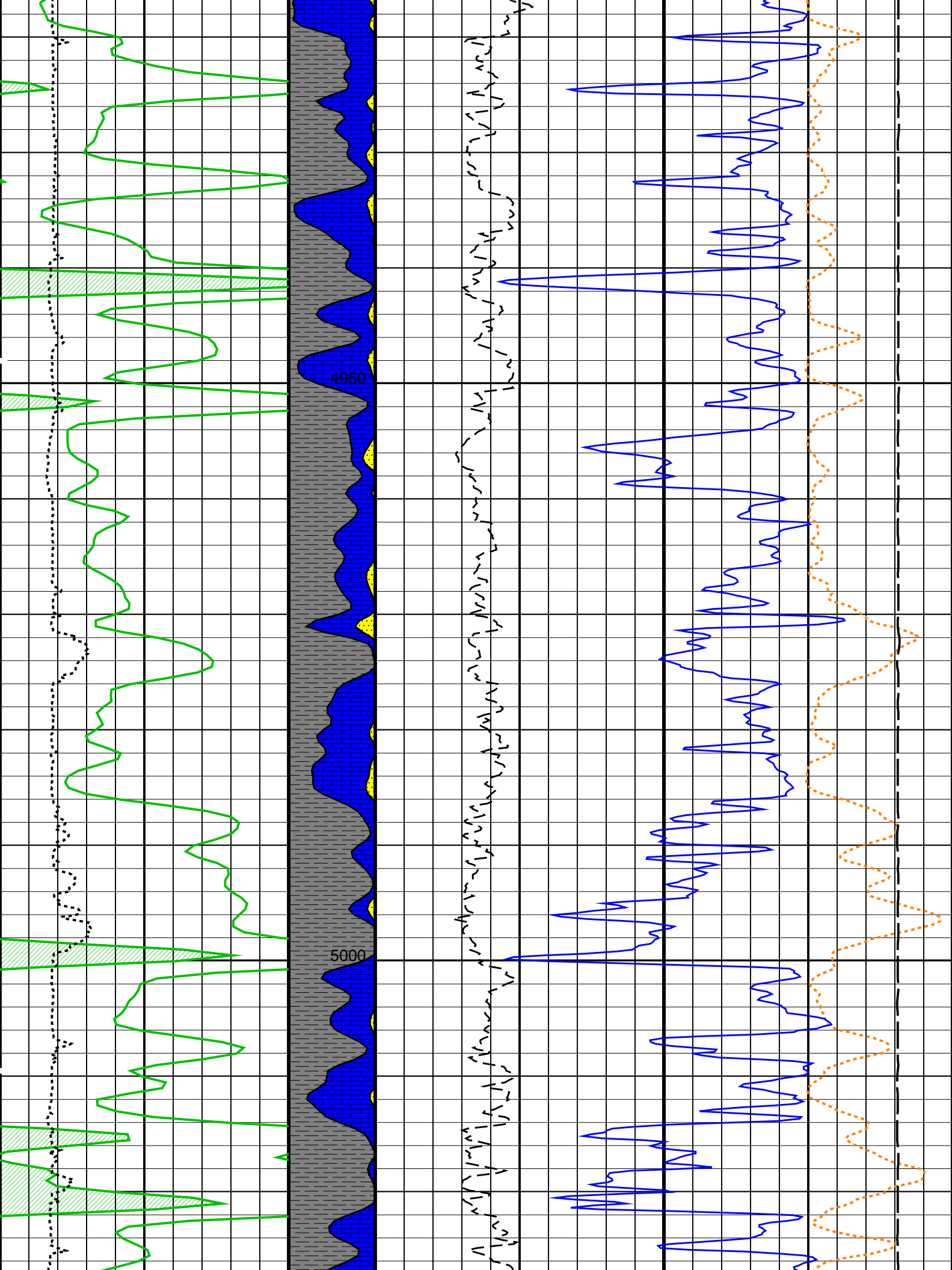


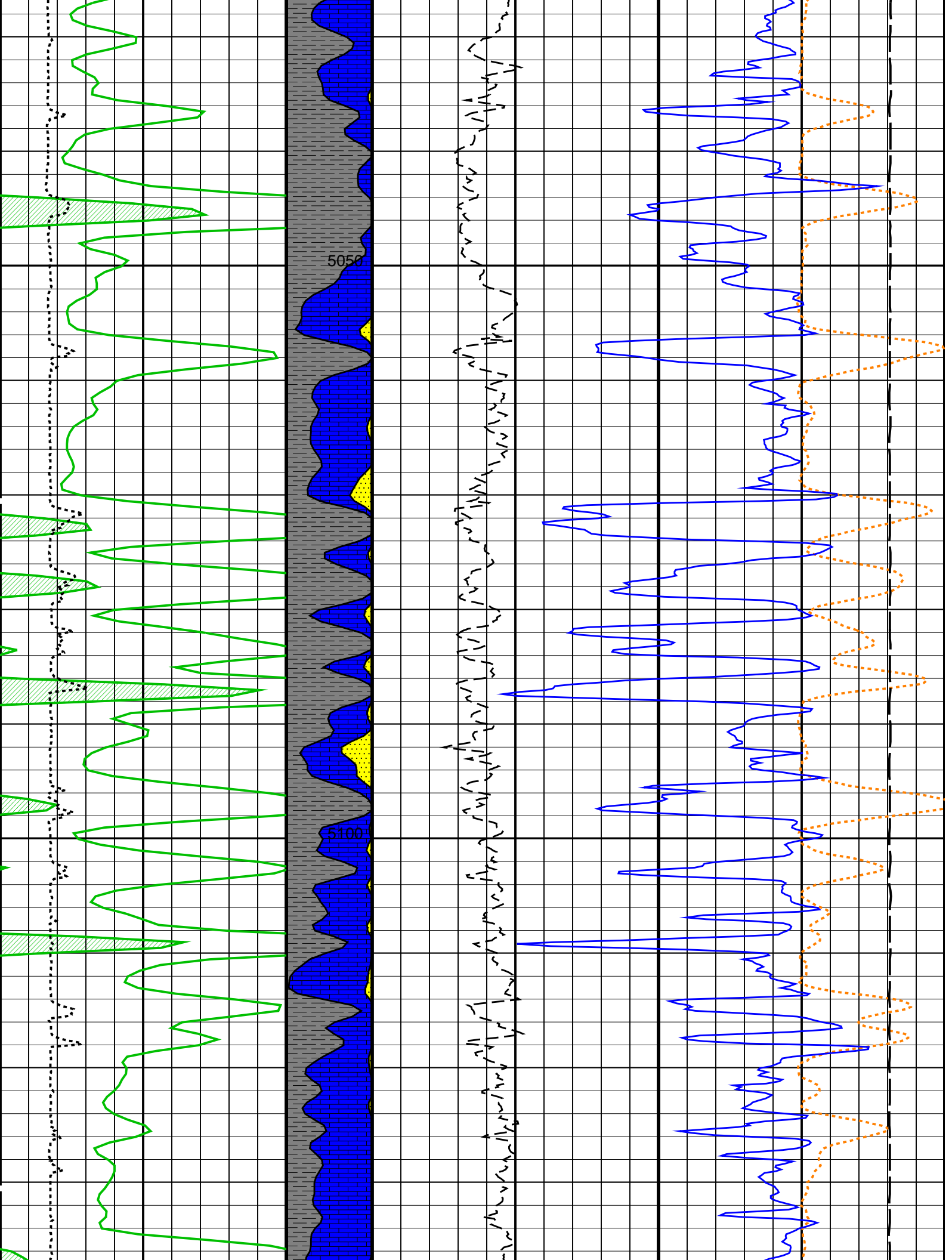


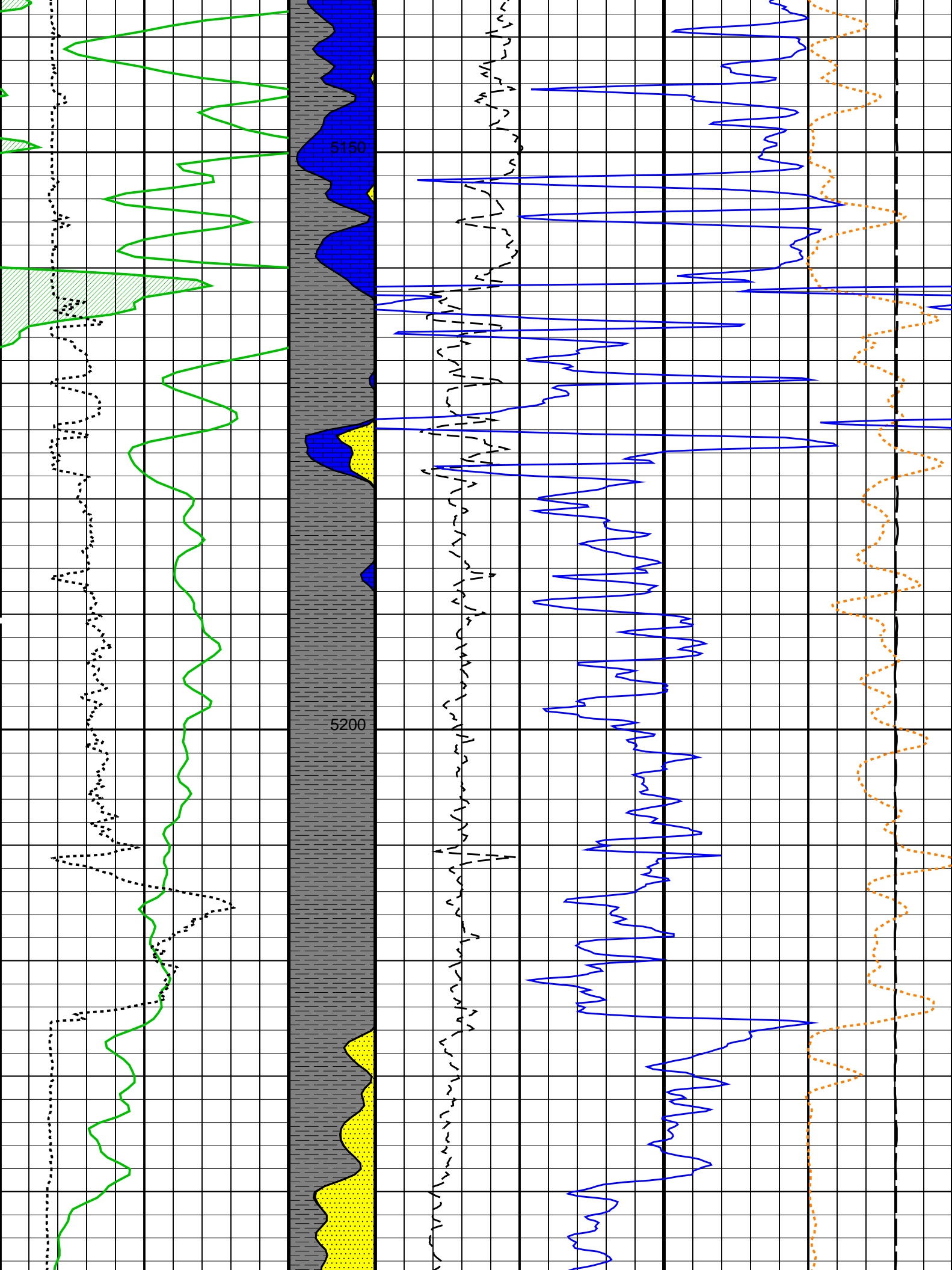


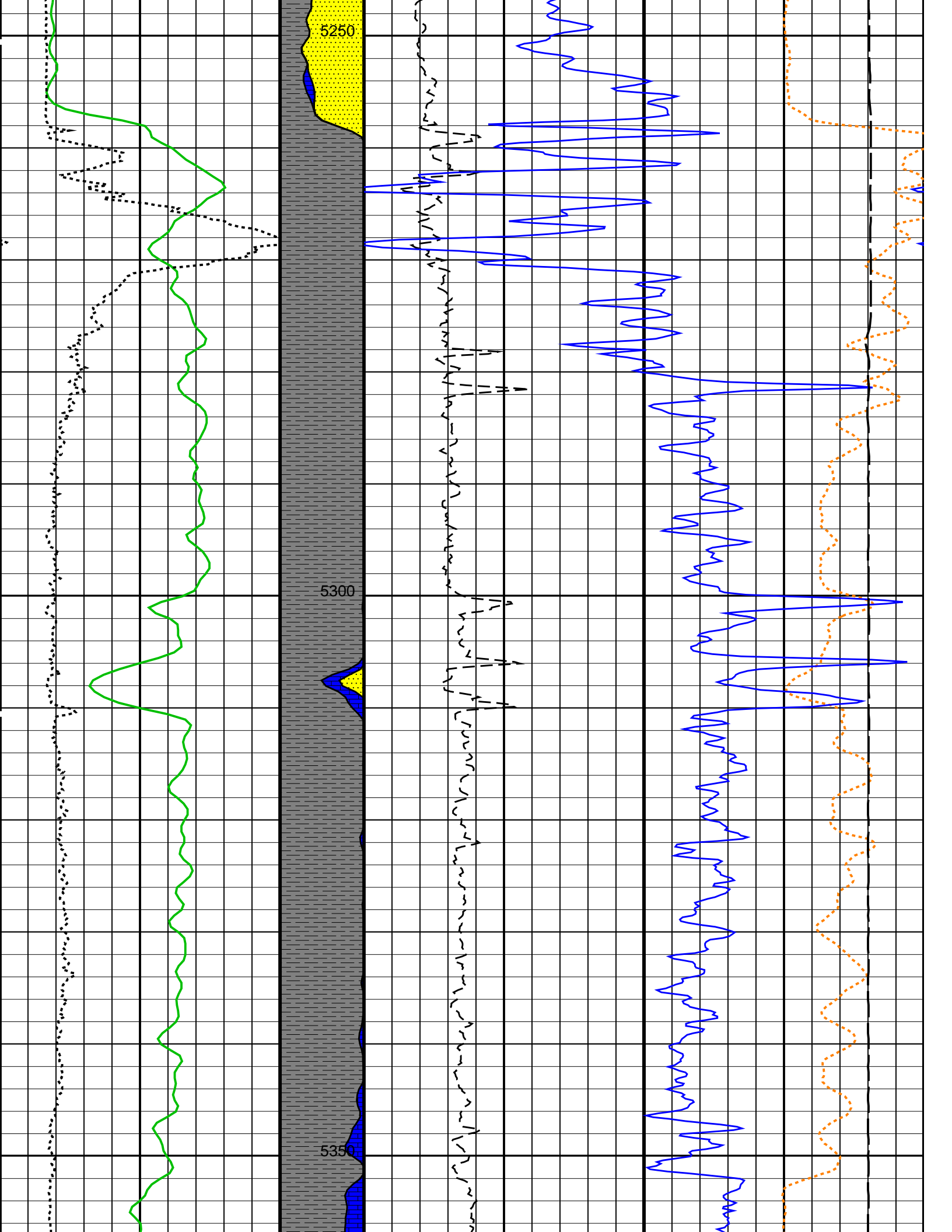


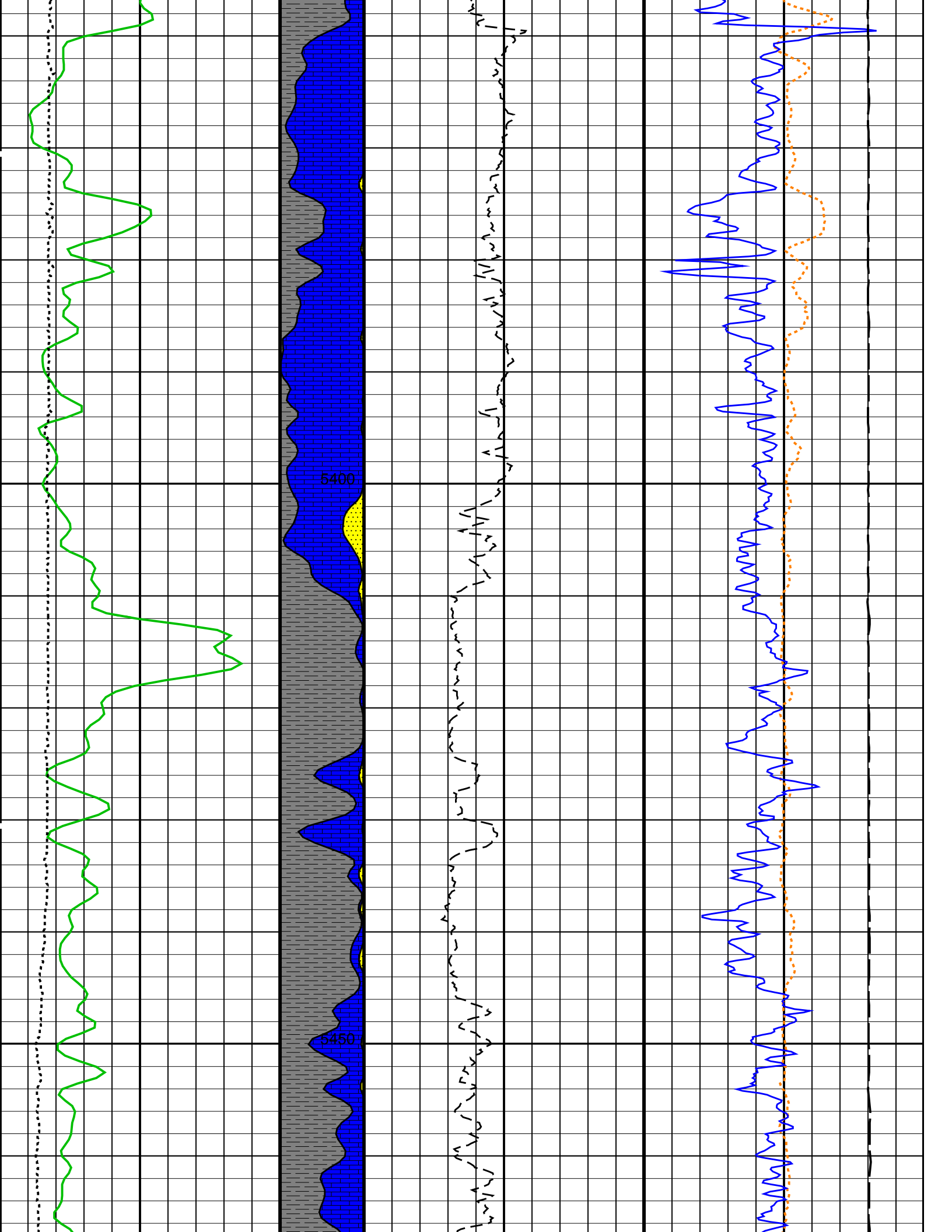


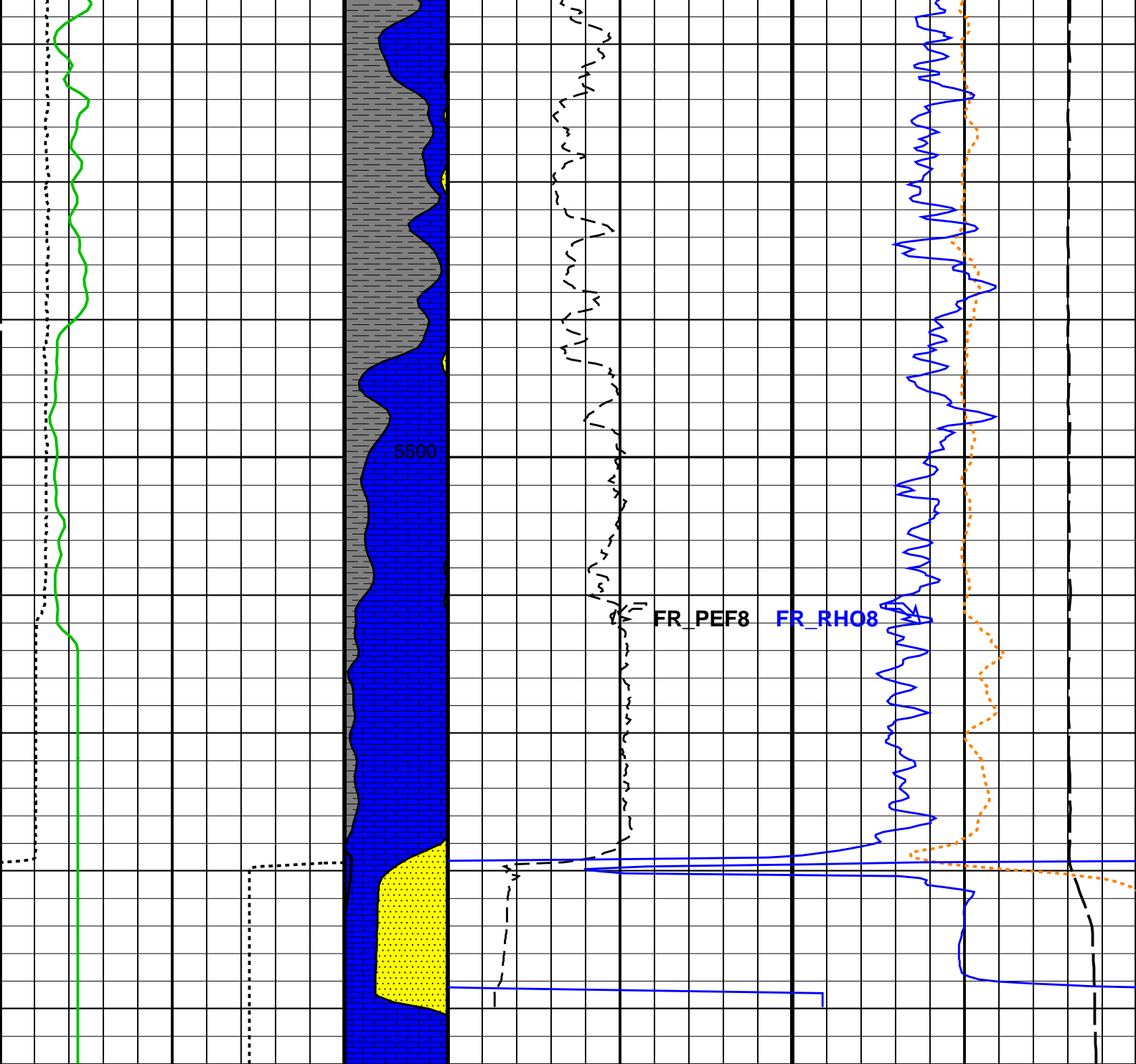












MAIN PASS: *** PLATFORM EXPRESS – LITHOLOGY DENSITY ***

Gamma Ray Backup	Stuck Stretch (STIT)	H. Res. Formation Pe (PEF8)		Density Correction (HDRA)	
	(F)	(-----)		(G/C3)	
Gamma Ray (GR) (GAPI)	LIME	H. Res. Formation Density (RHO8)		Tension (TENS)	
	SAND	(G/C3)		(LBF)	
Caliper (HCAL) (IN)	SHALE				

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HILTB-CTS: High resolution Integrated Logging Tool-CTS		
BHFL_TLD	HILT Nuclear Mud Base	WATER
DHC	Density Hole Correction	BS
GCLF	Germany Coal-like Formation Option	NO
NAAC	HRDD APS Activation Correction	OFF
NMT	HILT Nuclear Mud Type	NOBARITE
NPRM	HRDD Processing Mode	HIRES
NSAR	HRDD Depth Sampling Rate	1.000 in
STI: Stuck Tool Indicator		
STKT	STI Stuck Threshold	2.500 ft
TDD	Total Depth - Driller	5536.0 ft
TDL	Total Depth - Logger	5530.0 ft
System and Miscellaneous		
BS	Bit Size	7.875 in
DFD	Drilling Fluid Density	9.200 lbm/gal

Format: DENS_HIRES Vertical Scale: 10" per 100' Graphics File Created: 08-Jan-2011 05:05

OP System Version: 18C0-147

HILTC 18C0-147

Input DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_010LUP FN:9 PRODUCER 08-Jan-2011 01:20 5544.0 FT 368.5 FT

Schlumberger

**High Resolution
Density**

MAXIS Field Log

Output DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_010LUP FN:9 PRODUCER 07-Jan-2011 22:18 5544.0 FT 368.5 FT

OP System Version: 18C0-147

HILTB-CTS 18C0-147

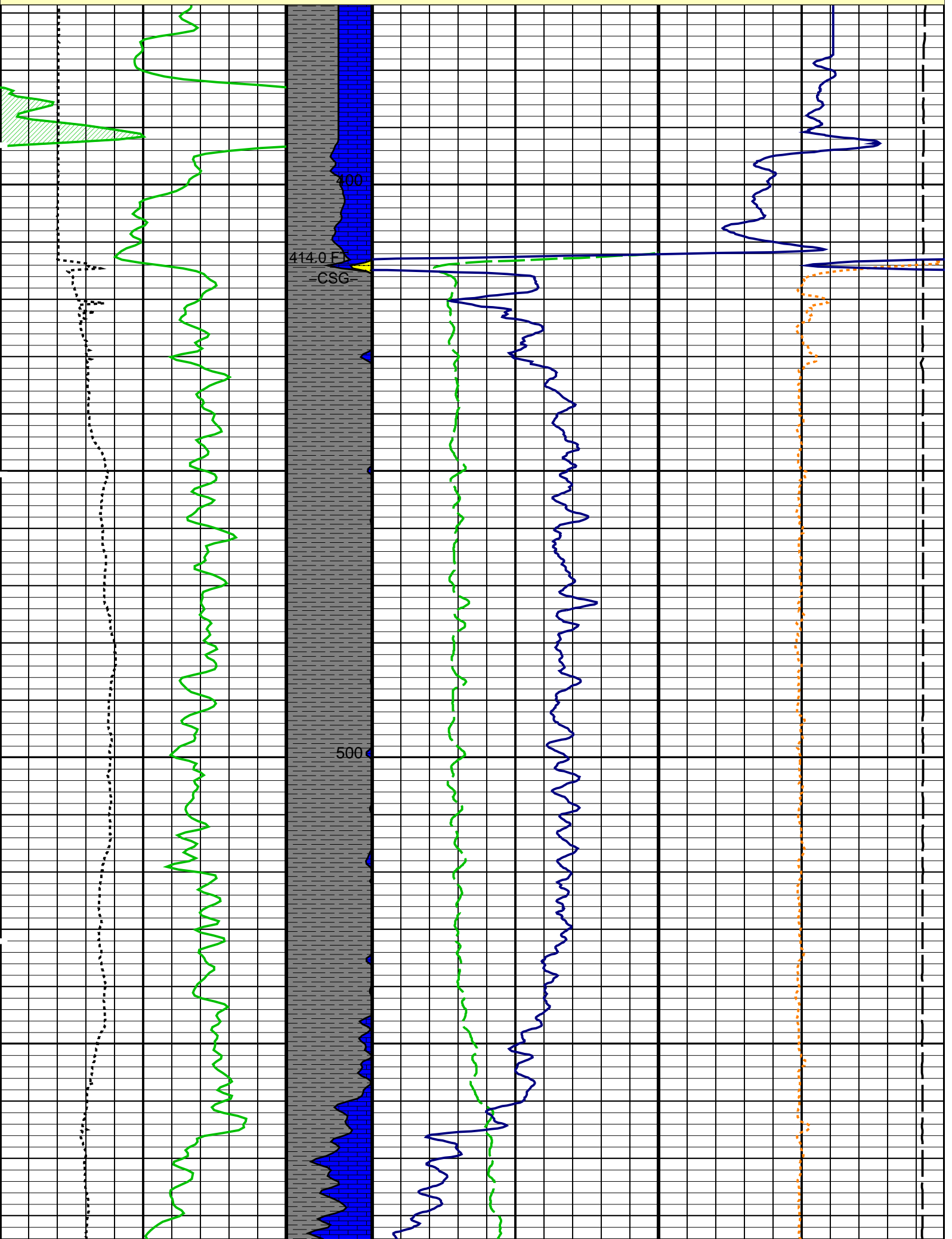
Changed Parameter Summary

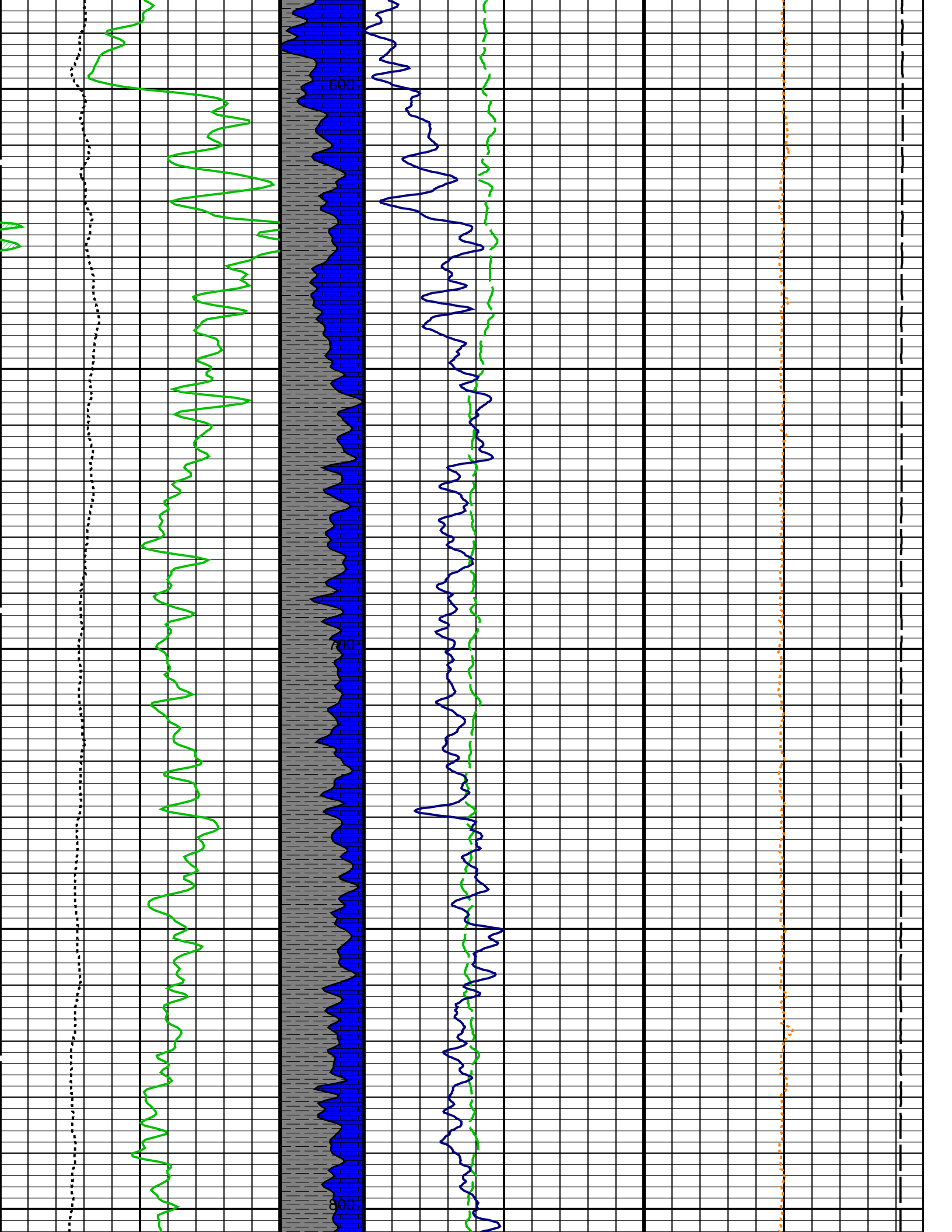
DLIS Name	New Value	Previous Value	Depth & Time
TDD	5535.00 FT	5536.00 FT	541.5 23:33:38

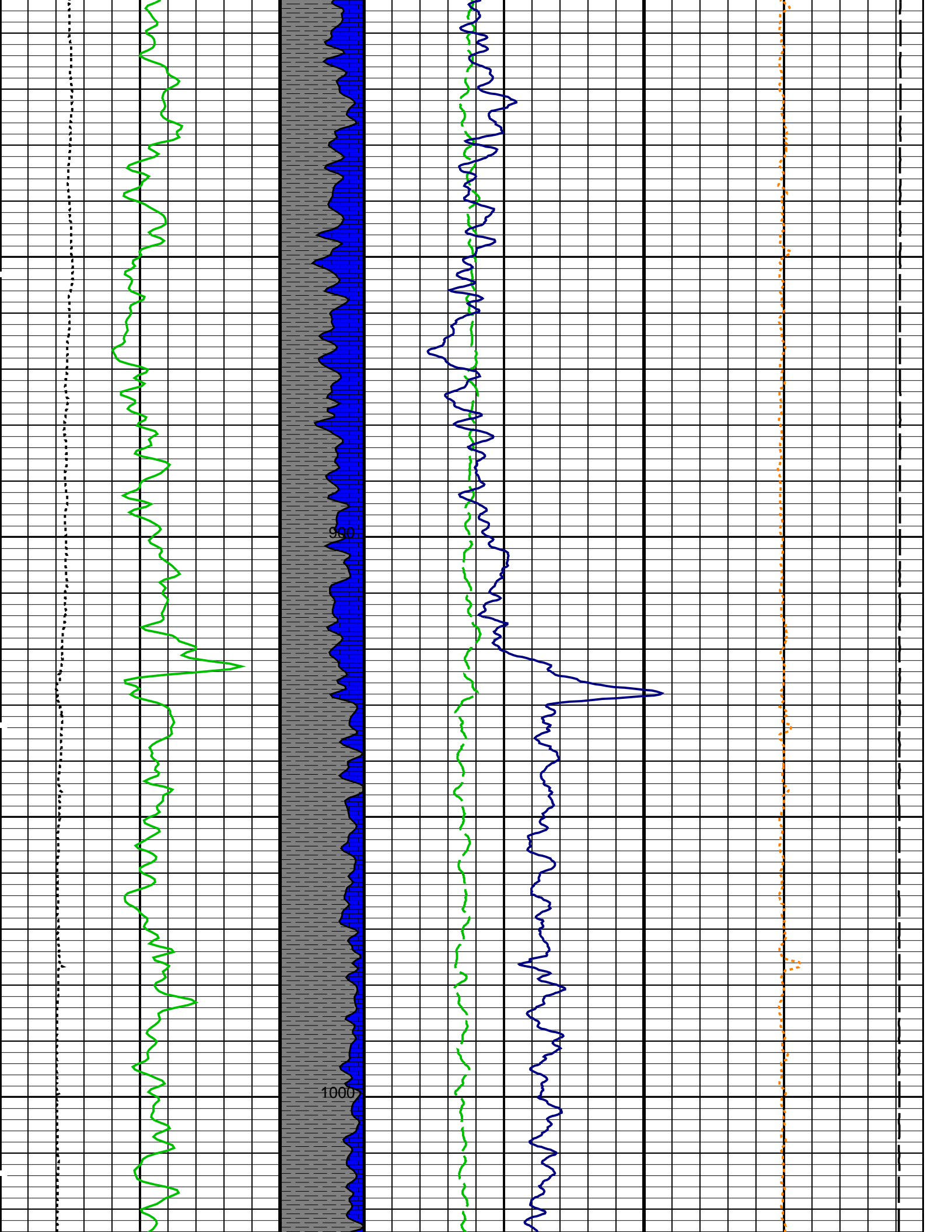
PIP SUMMARY

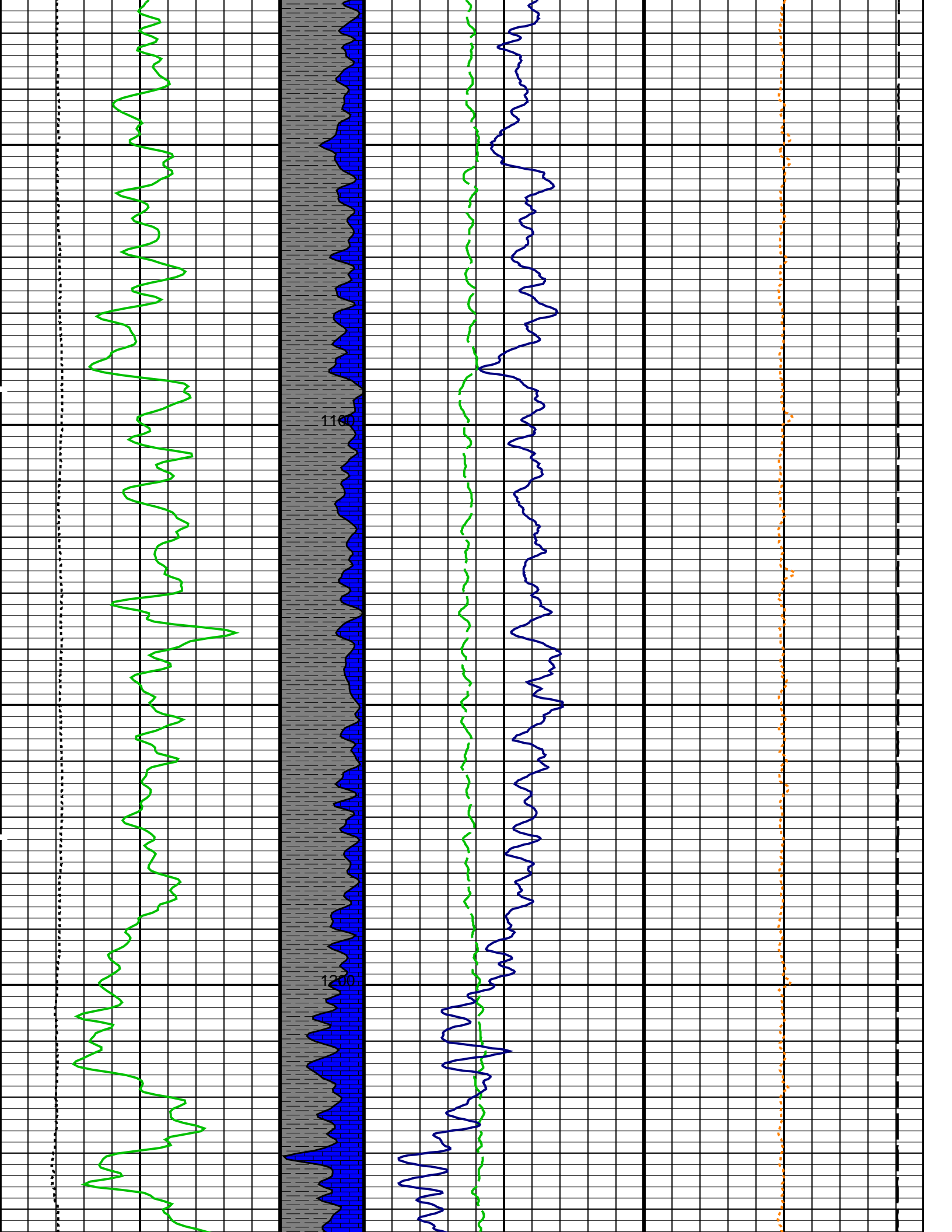
☒ Time Mark Every 60 S

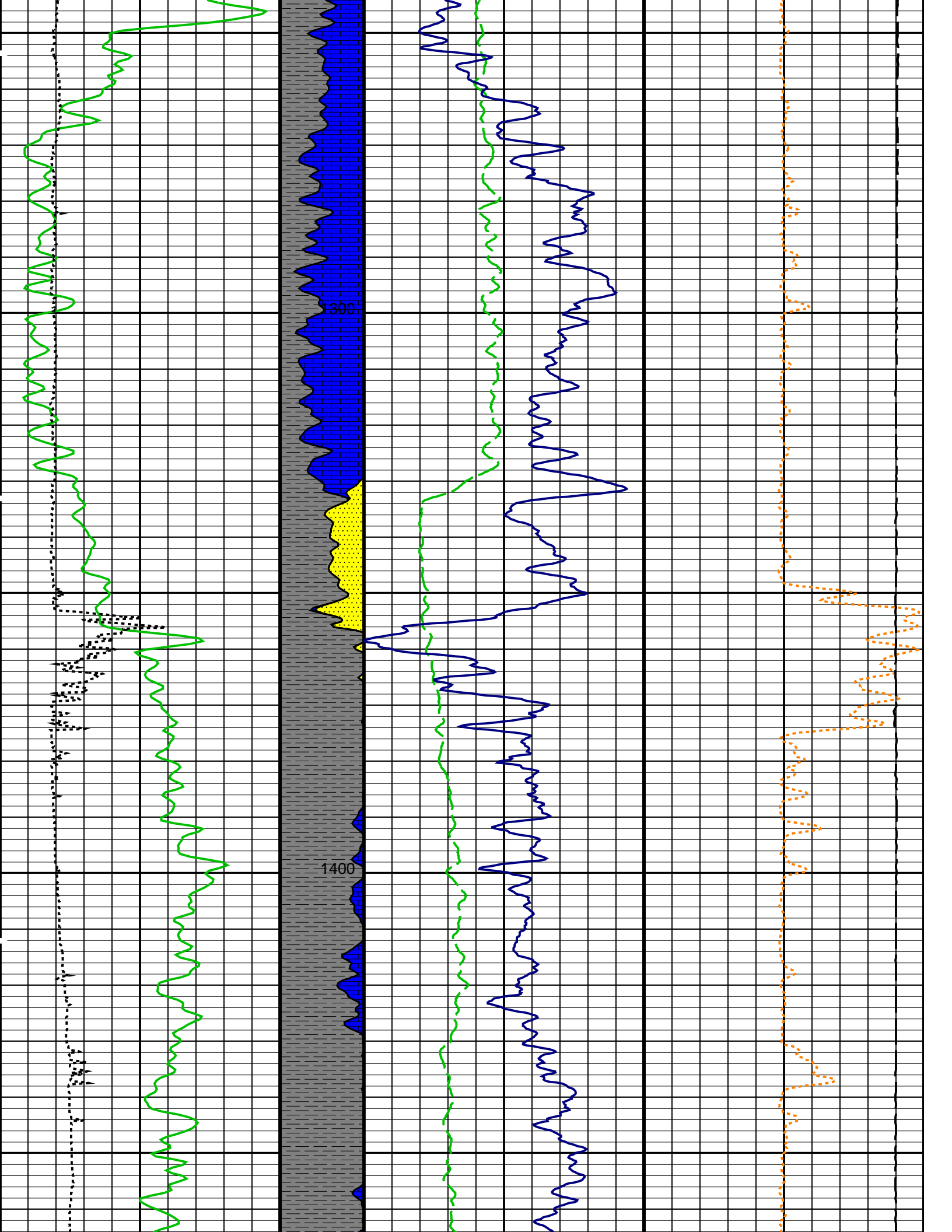
		SHALE		
Caliper (HCAL) (IN)		SAND	Tension (TENS) (LBF)	
6	16		10000	0
Gamma Ray (GR) (GAPI)		LIME	Std. Res. Formation Density (RHOZ) (G/C3)	
0	200	2		3
Gamma Ray Backup		Stuck Stretch (STIT)	Std. Res. Formation Pe (PEFZ) (-----)	Density Correction (HDRA) (G/C3)
	0 (F) 50	0	10	-0.25 0.25

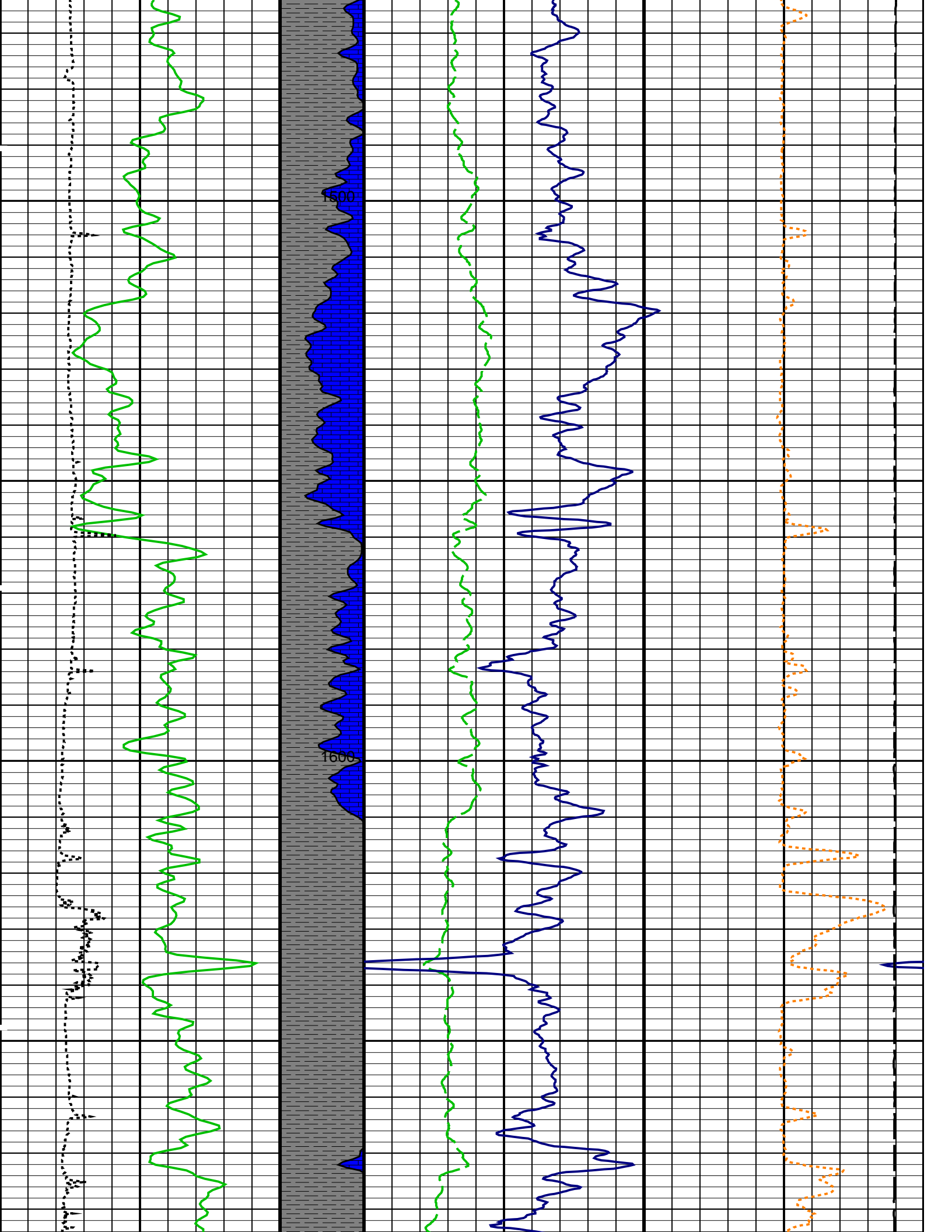


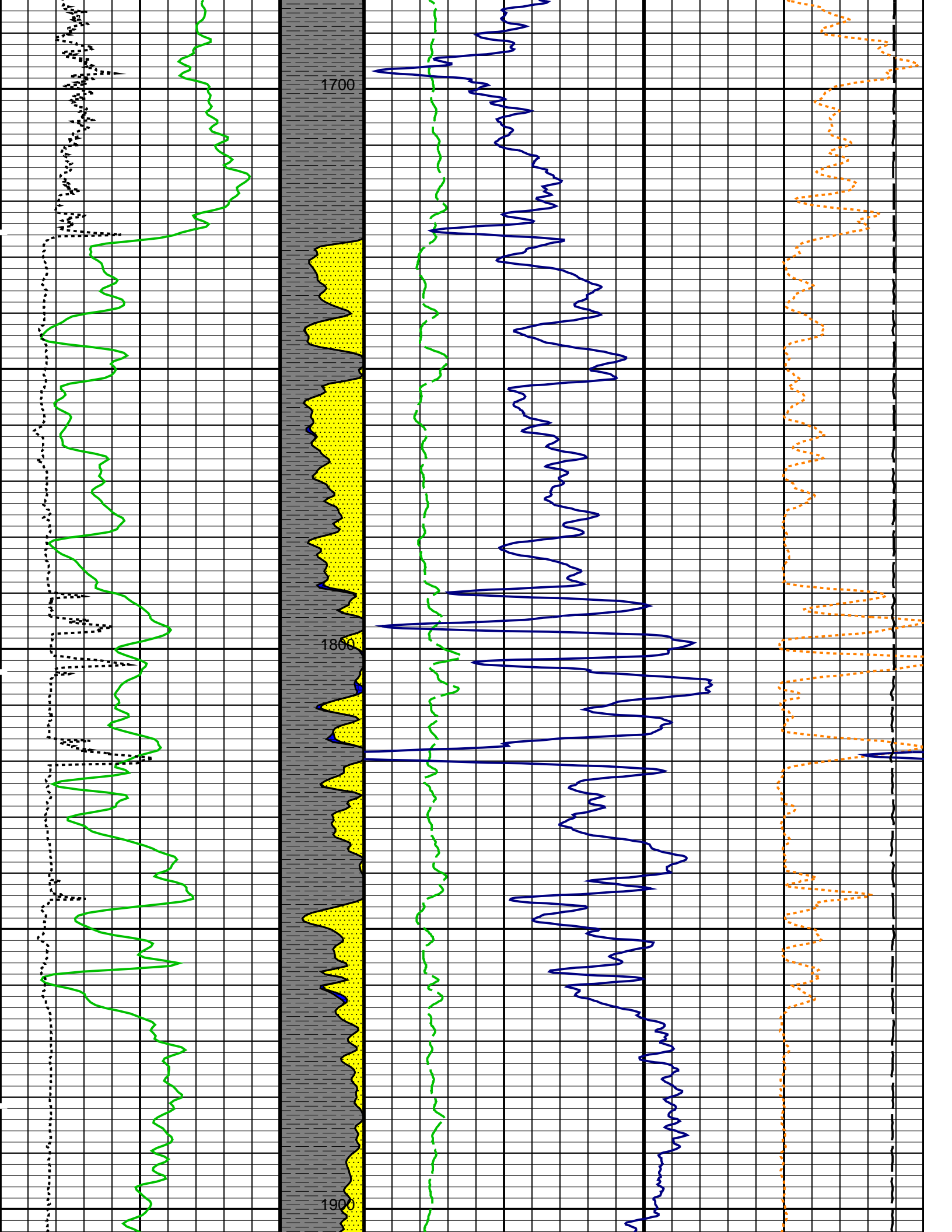


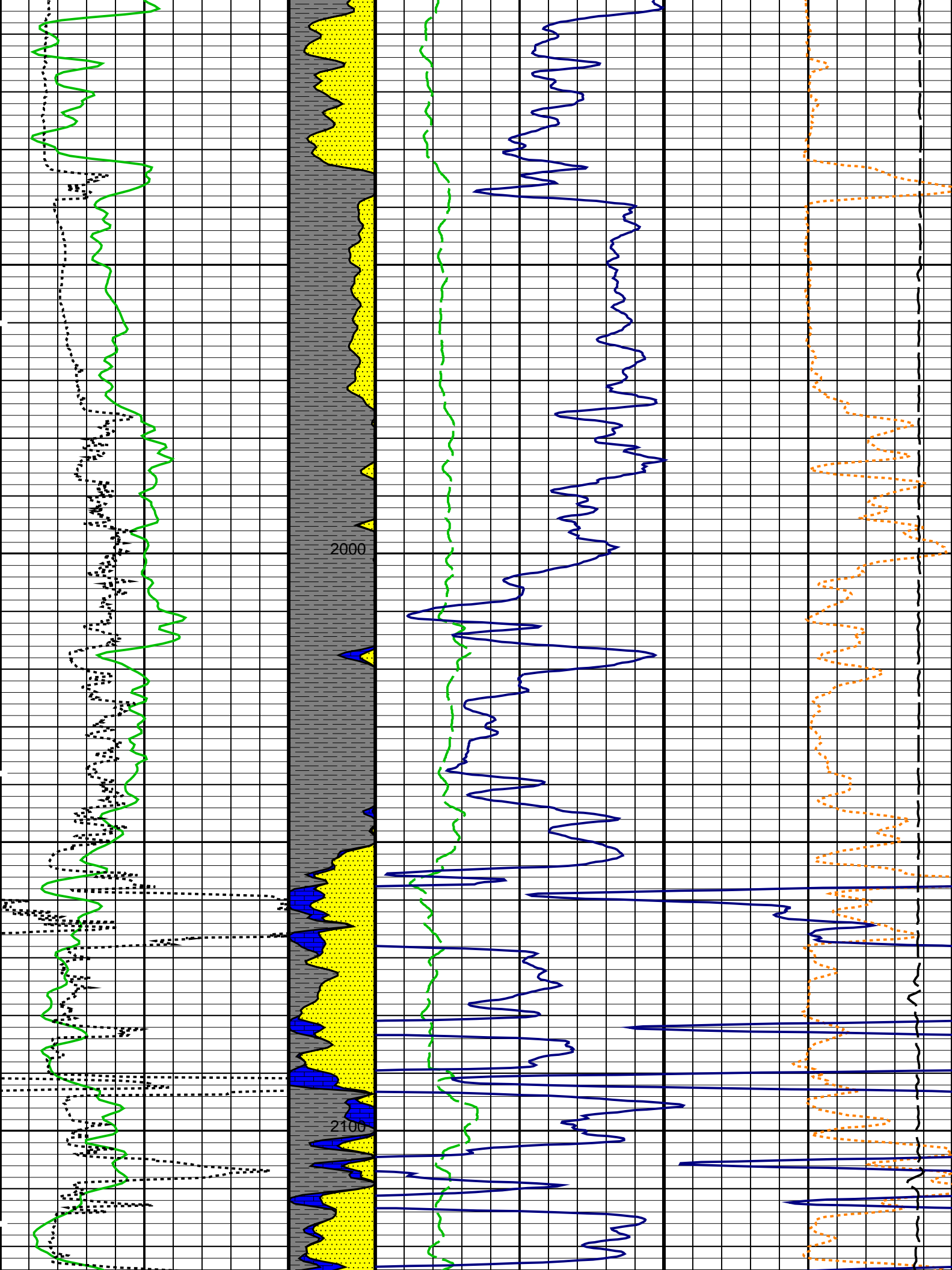


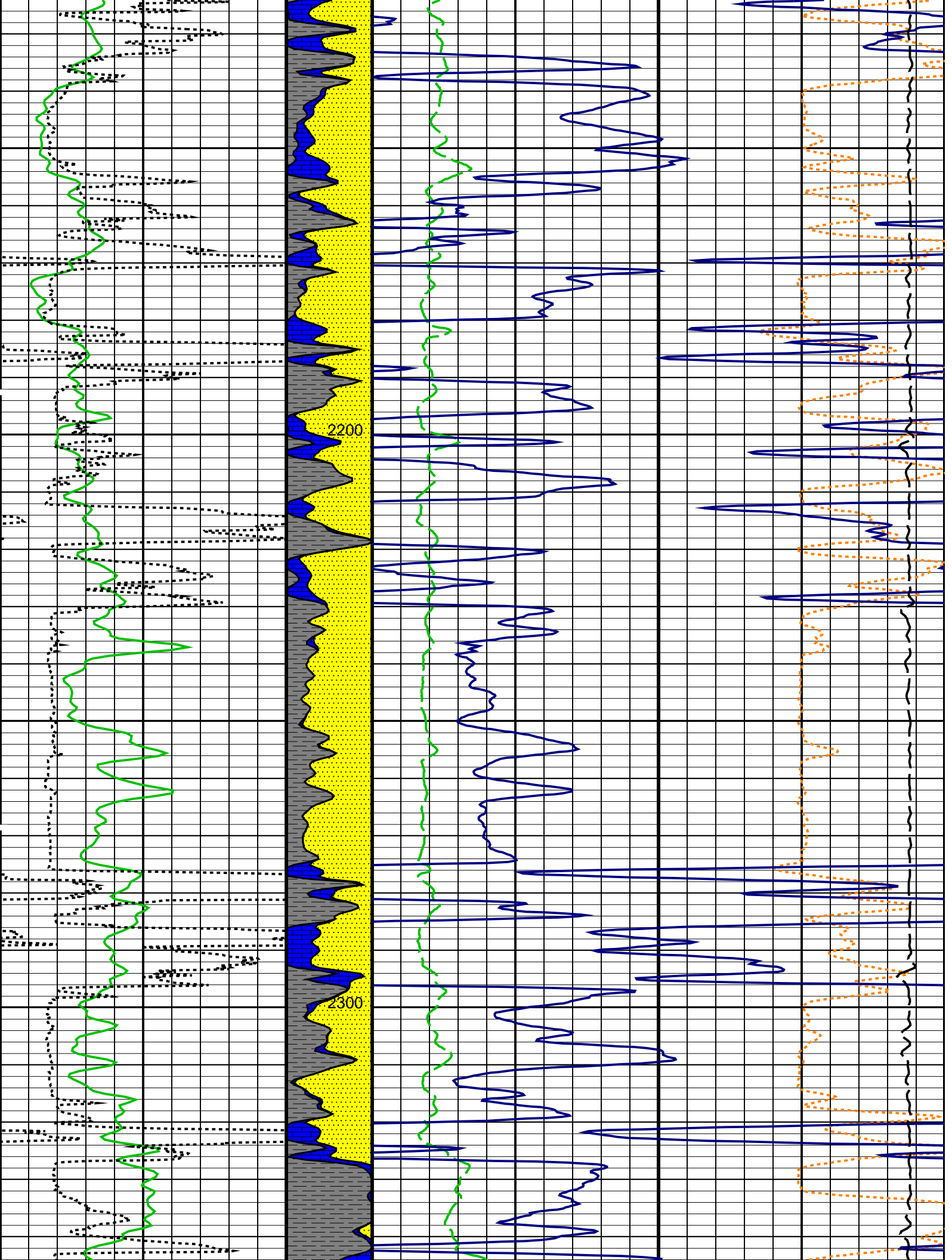


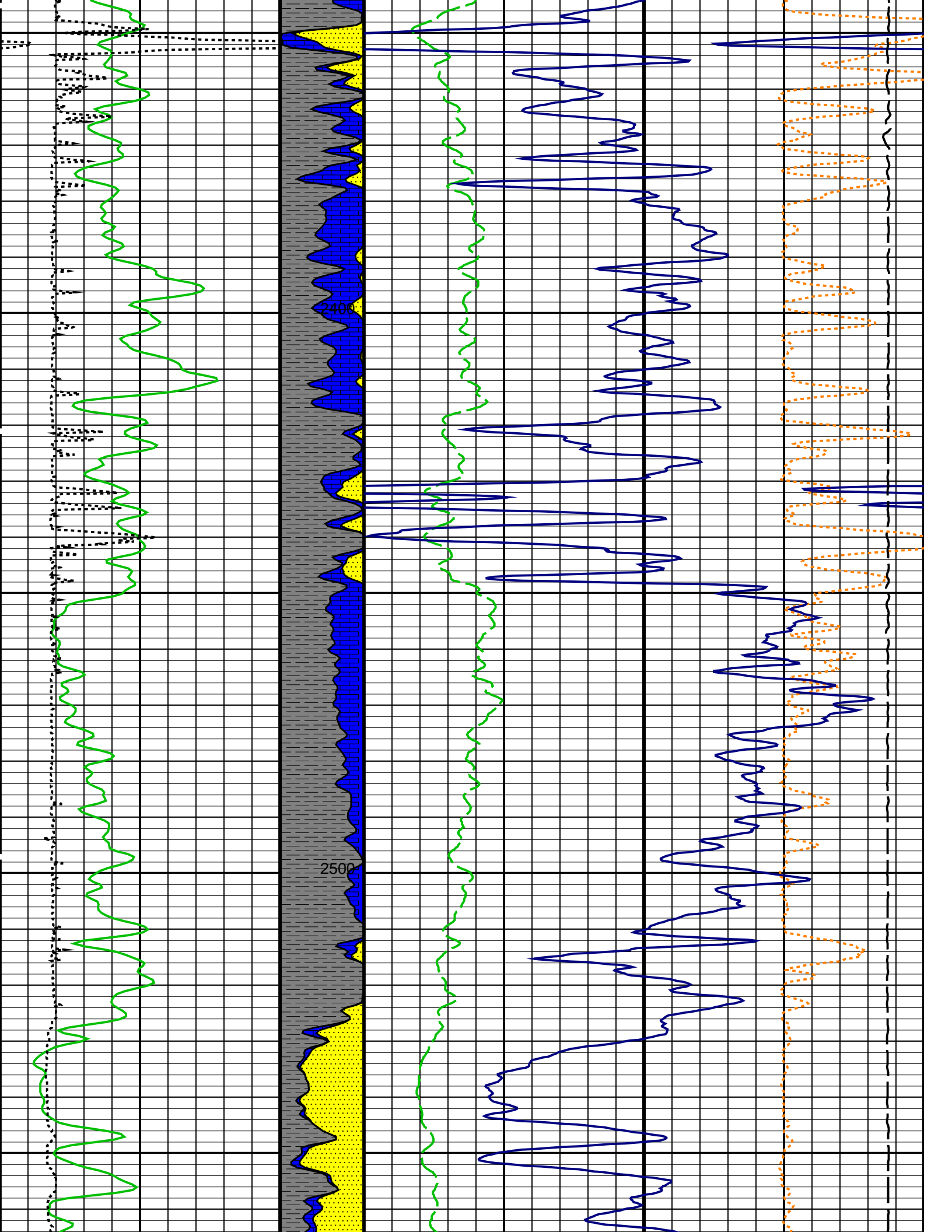


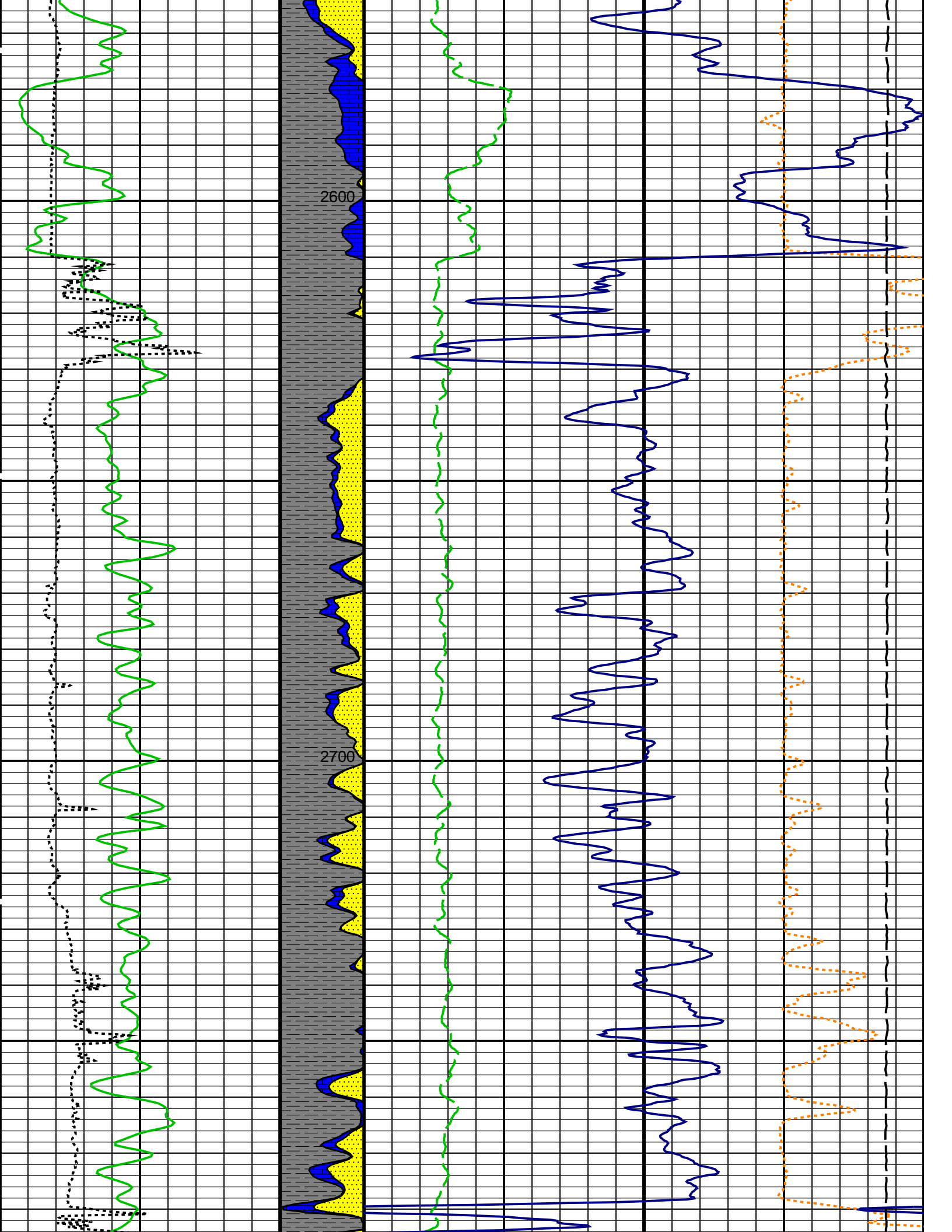


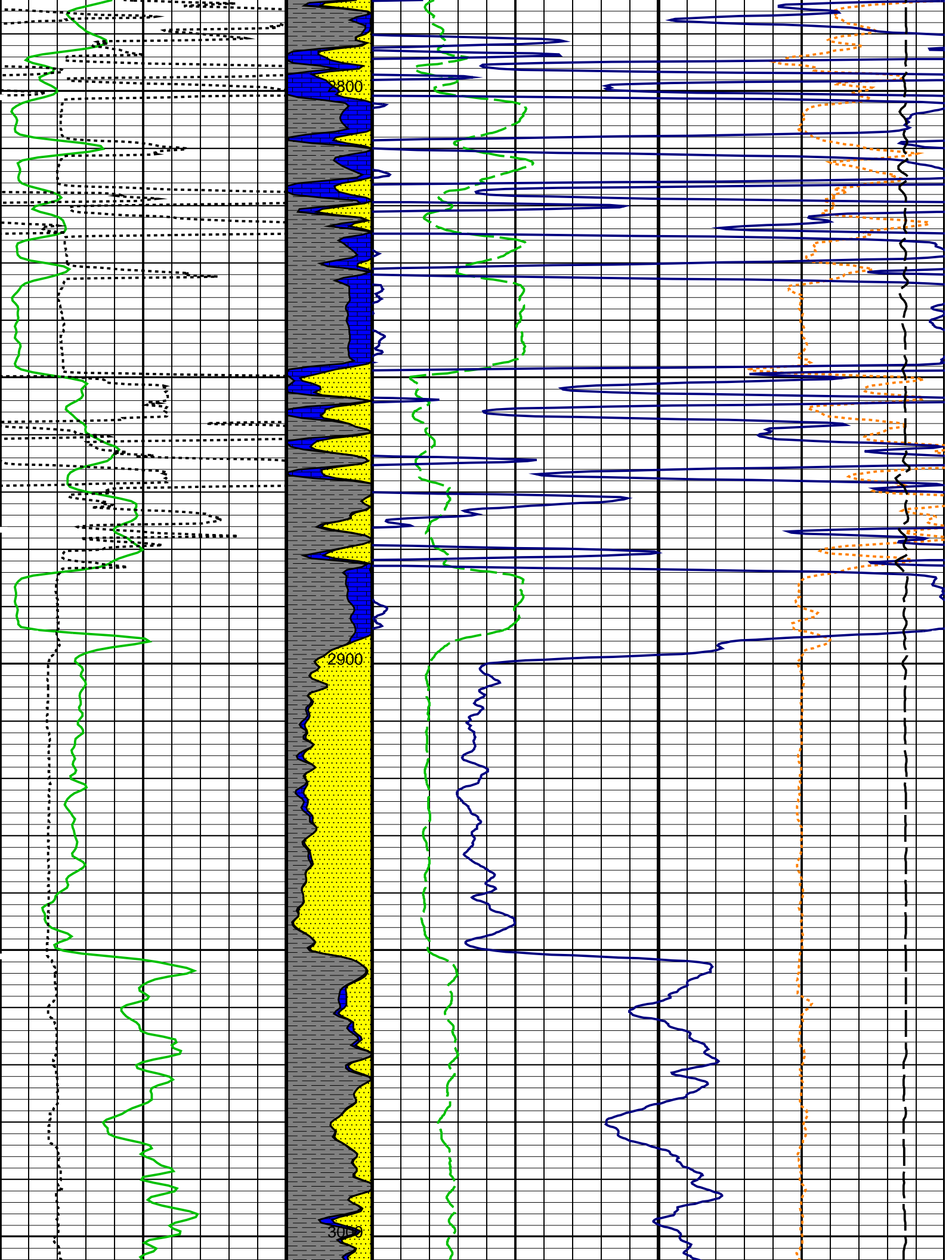


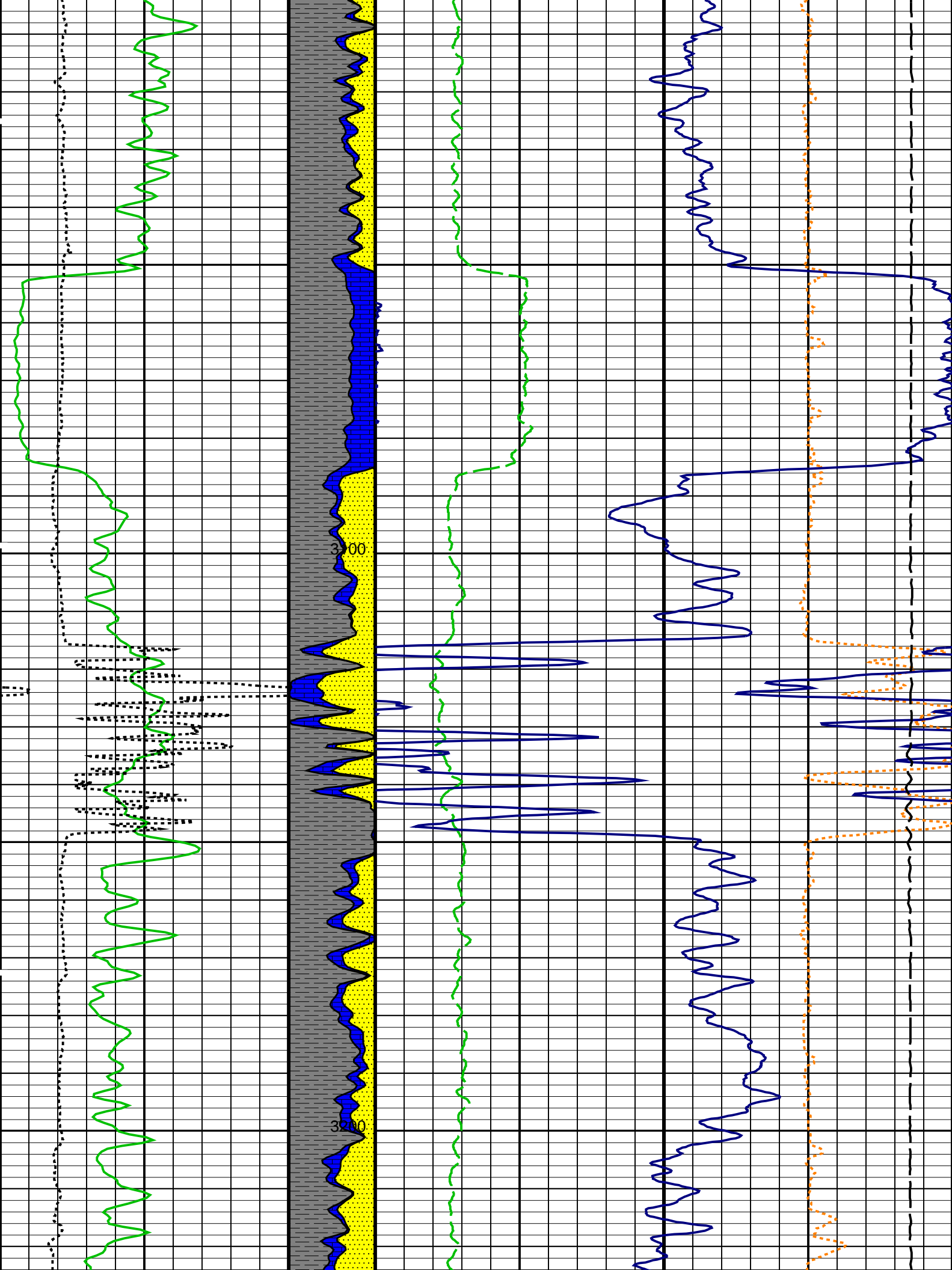


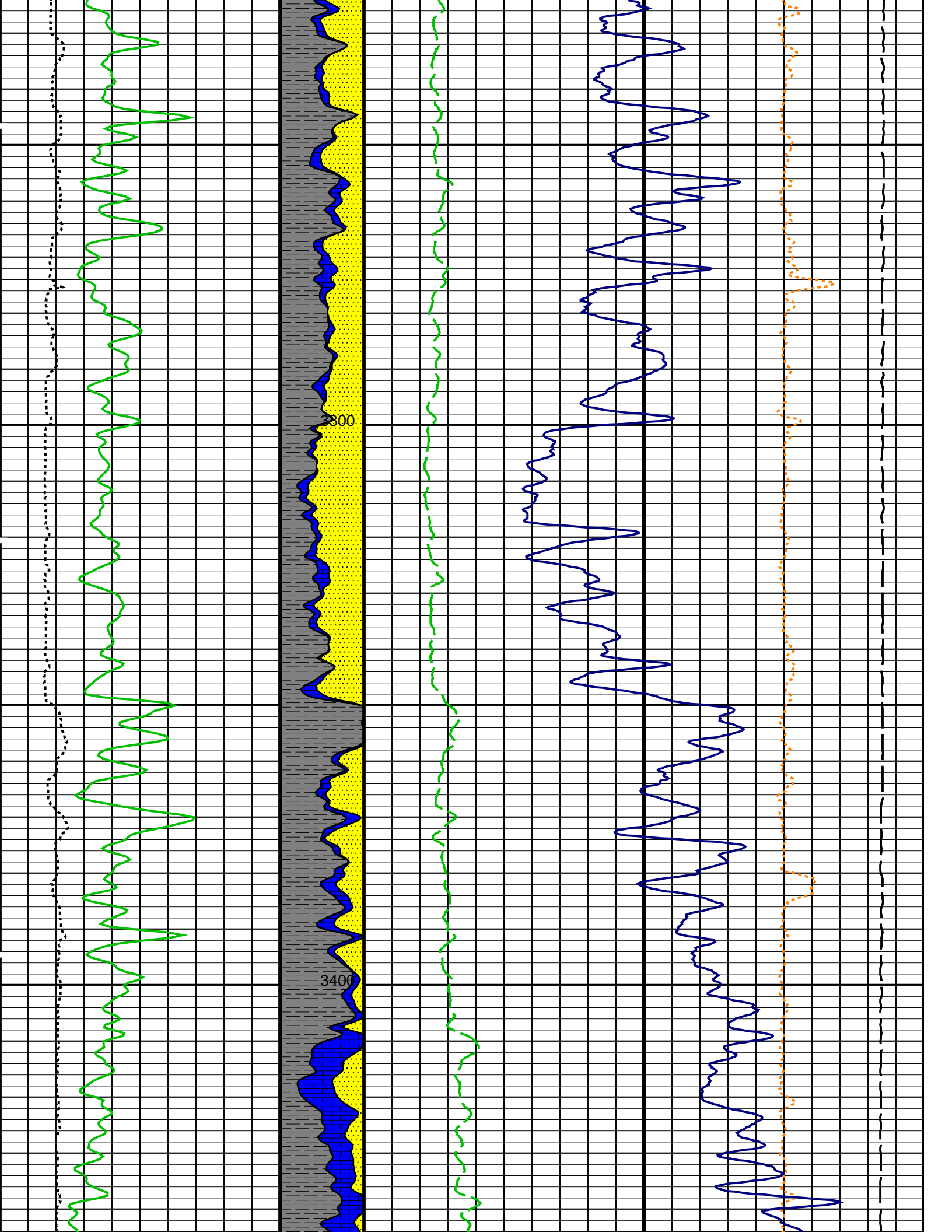


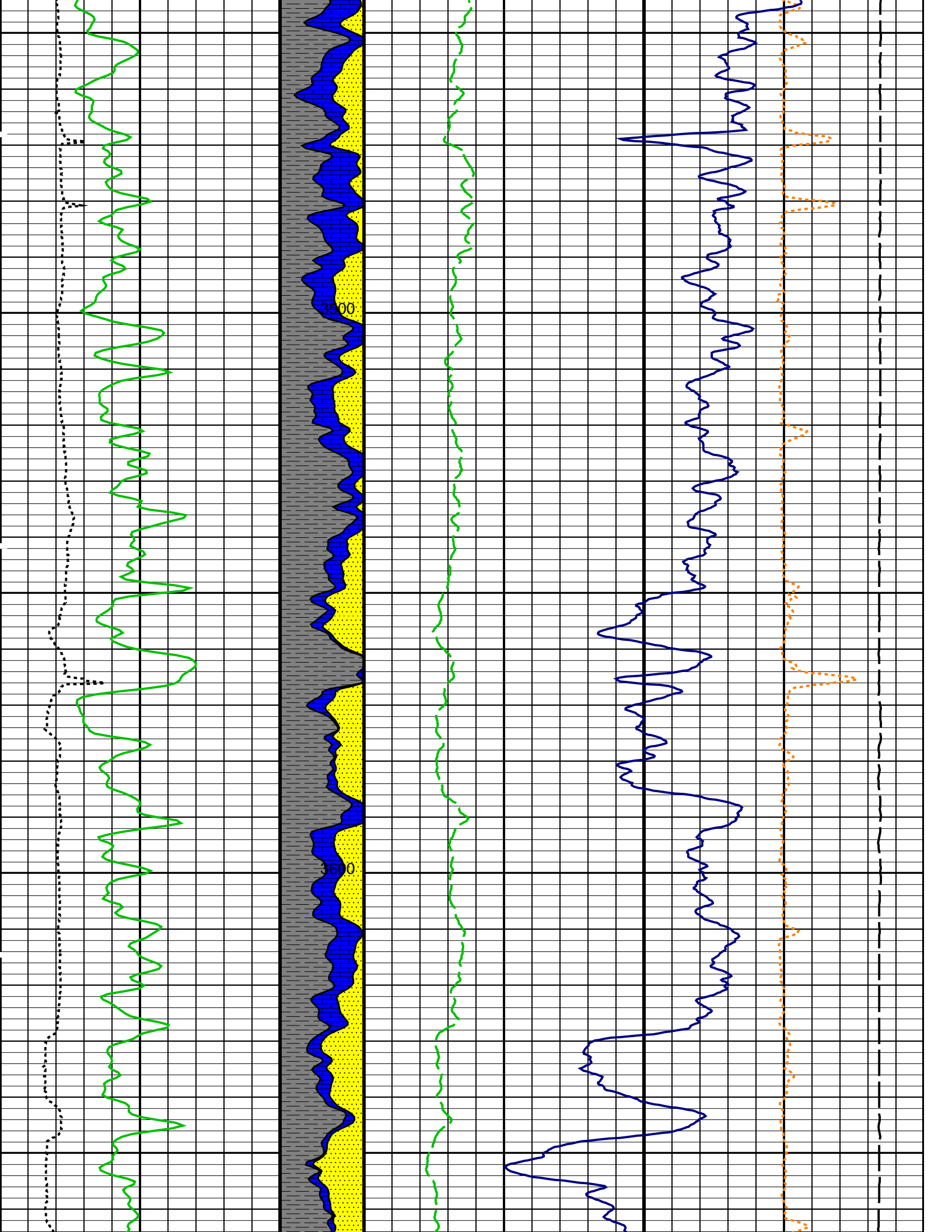


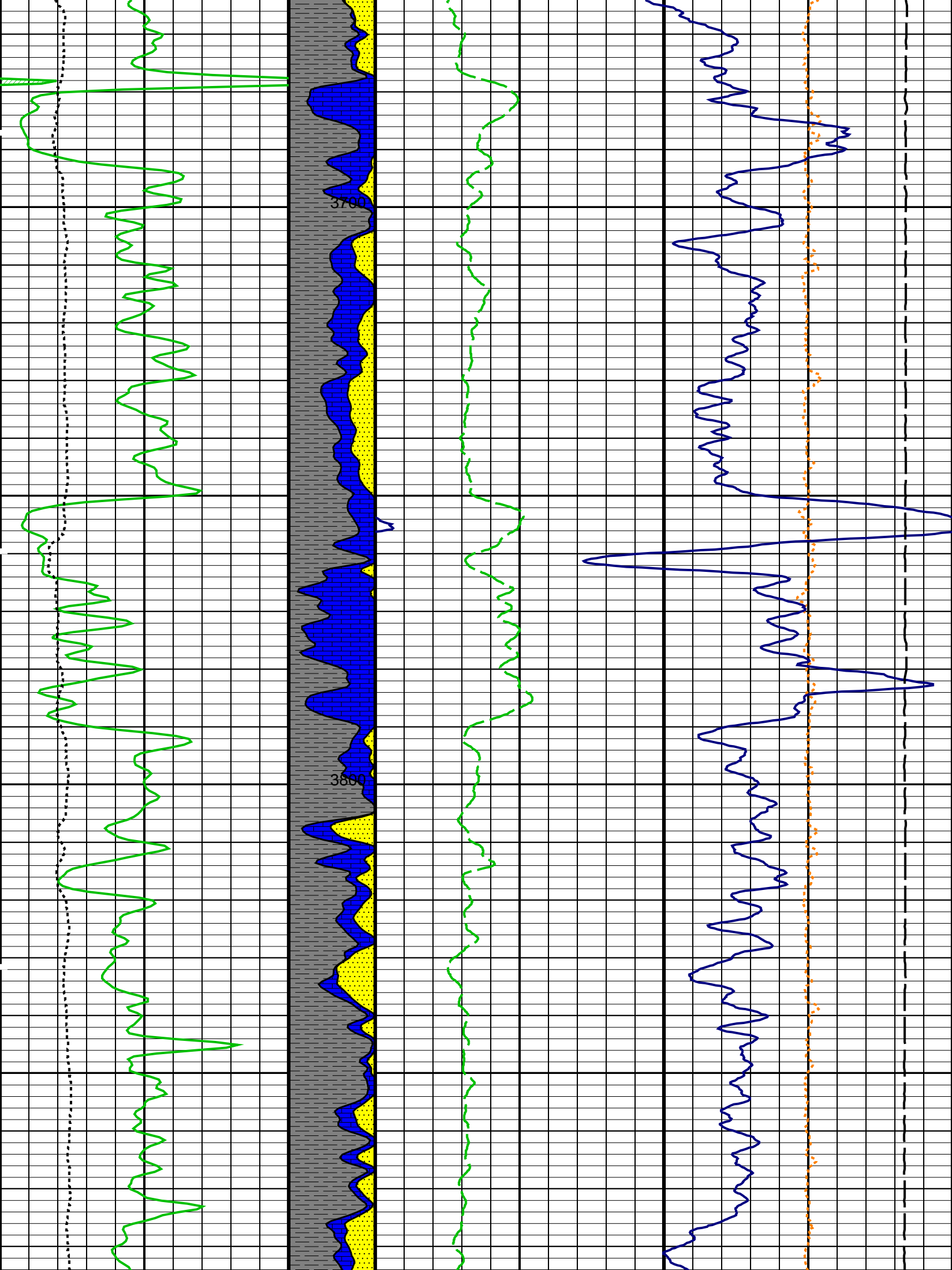


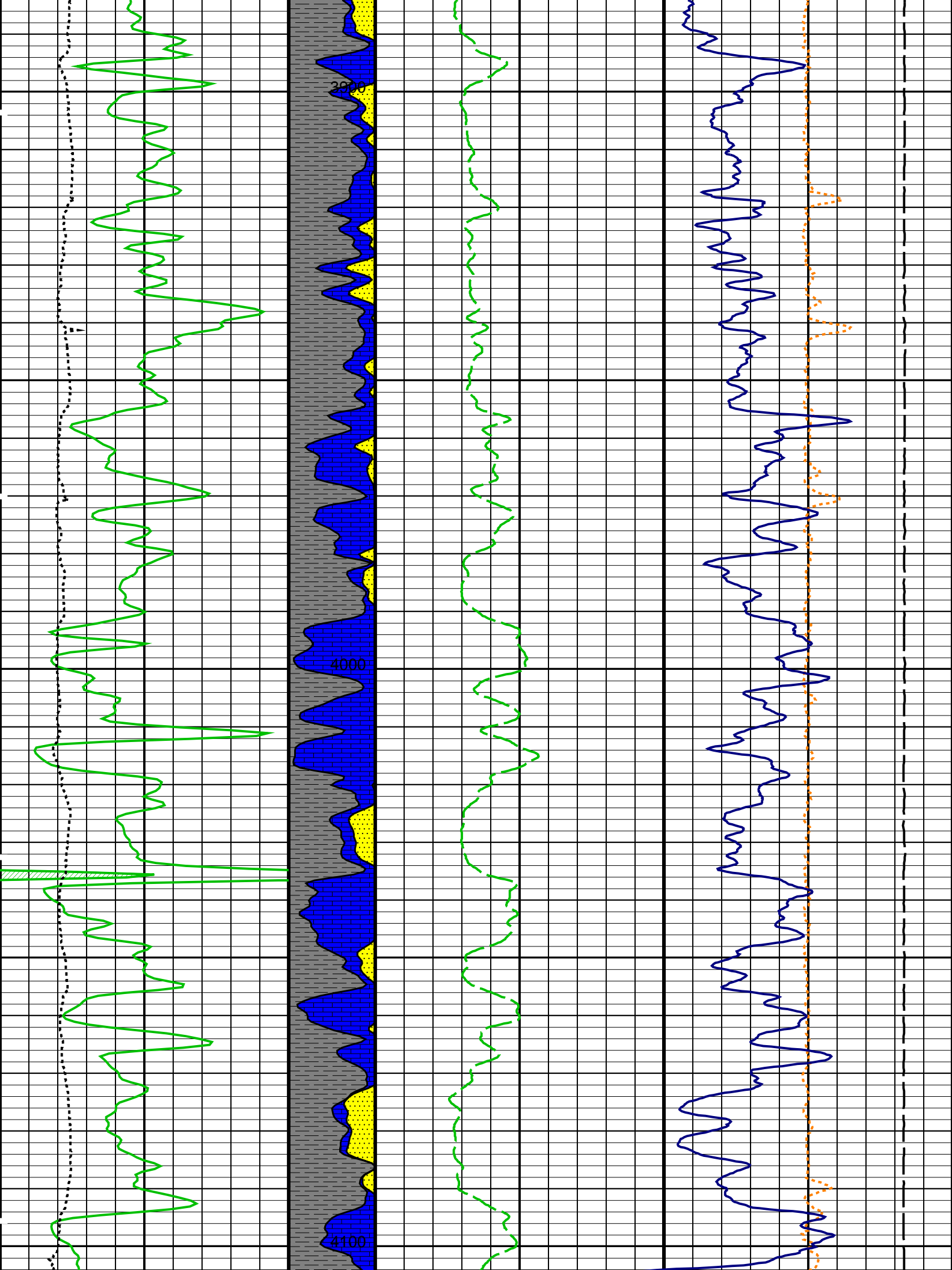


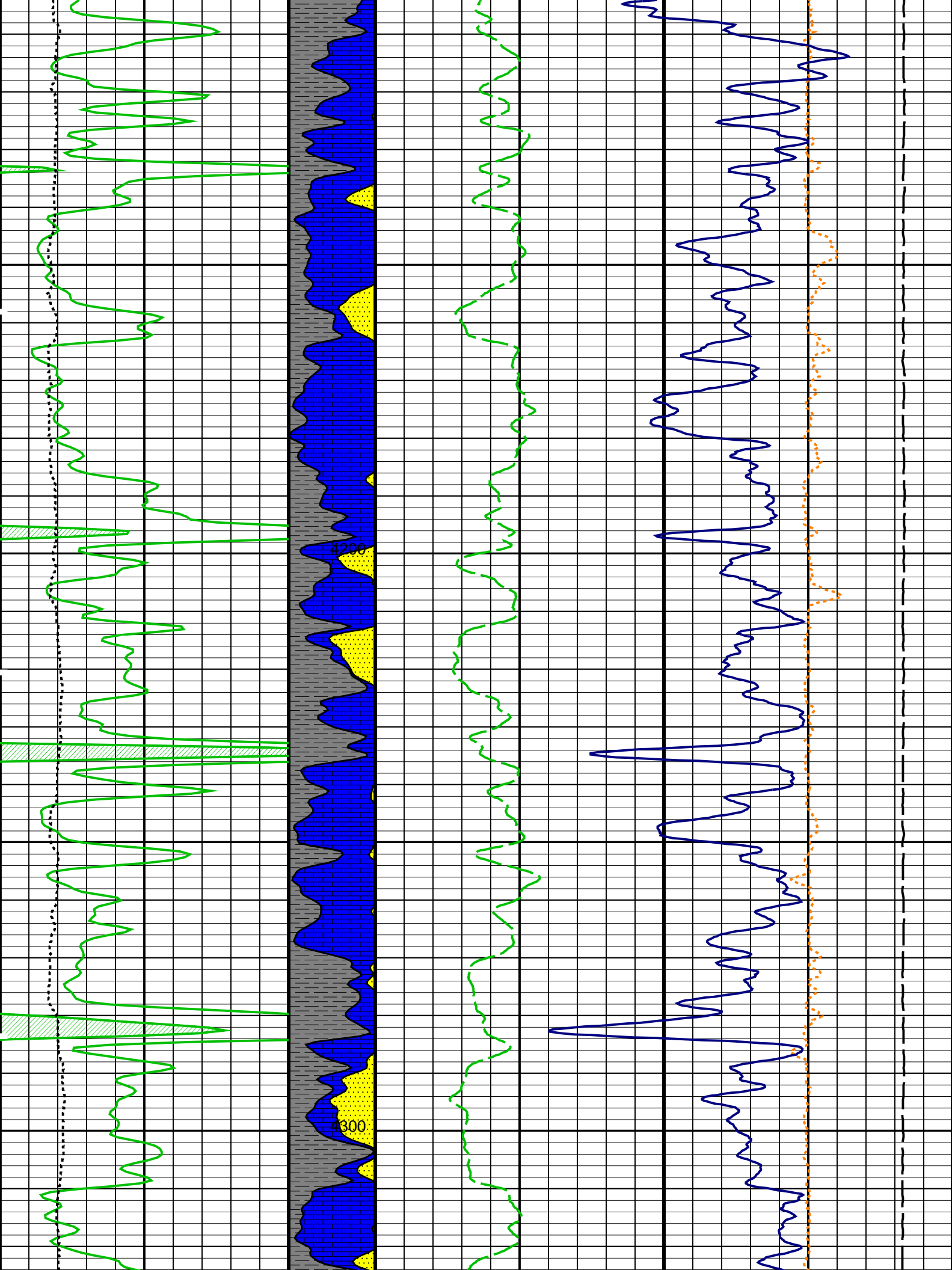


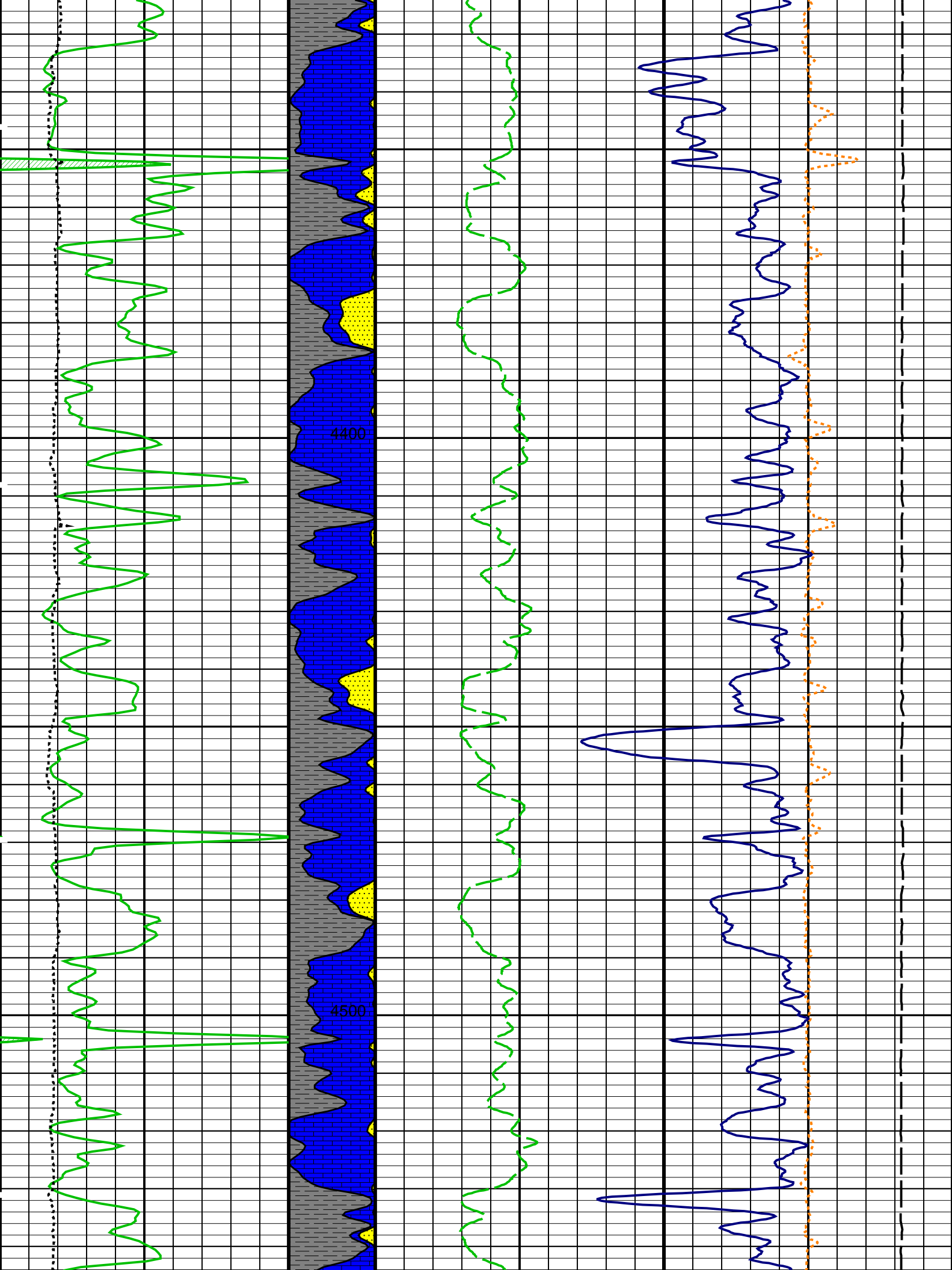


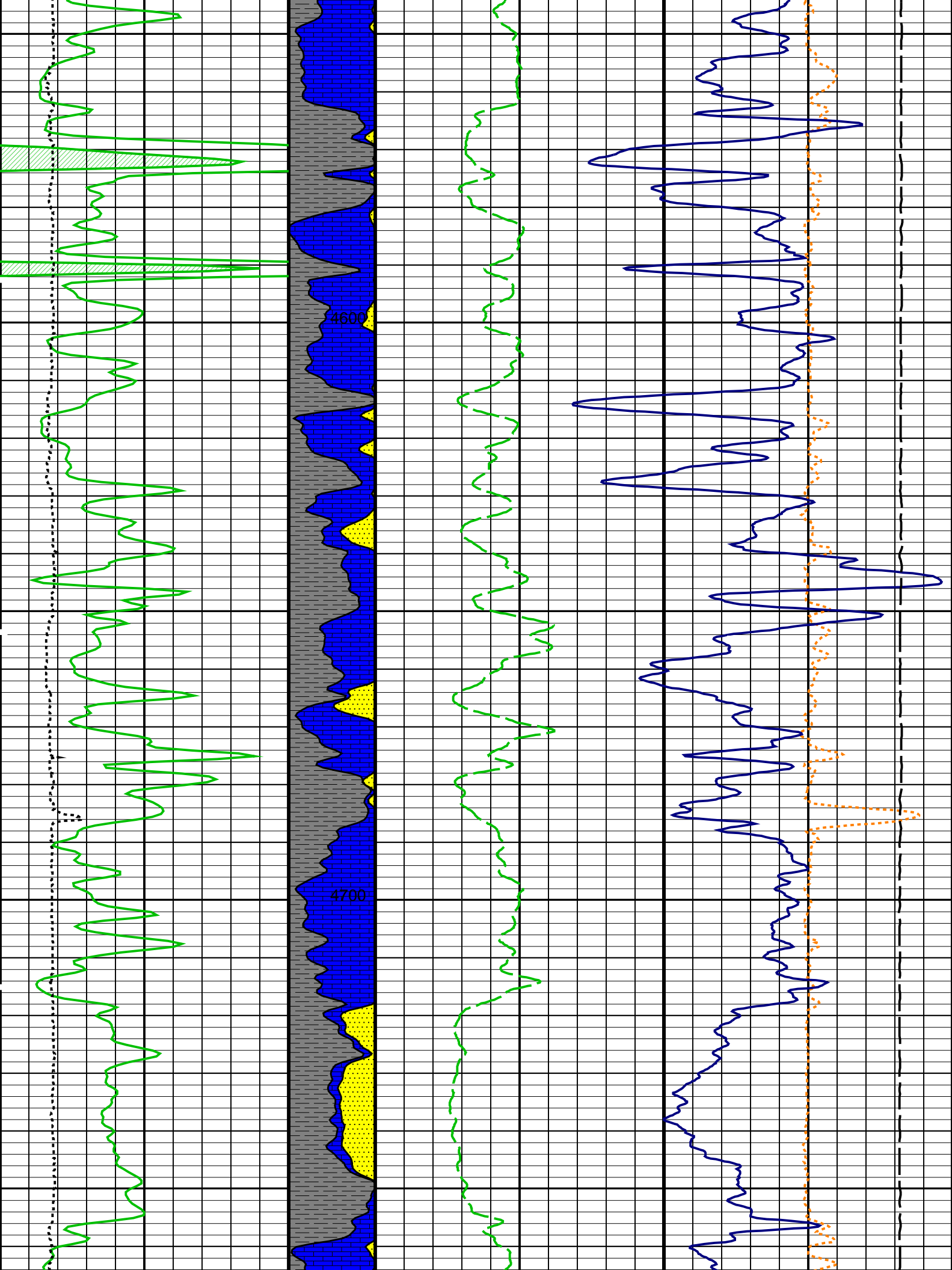


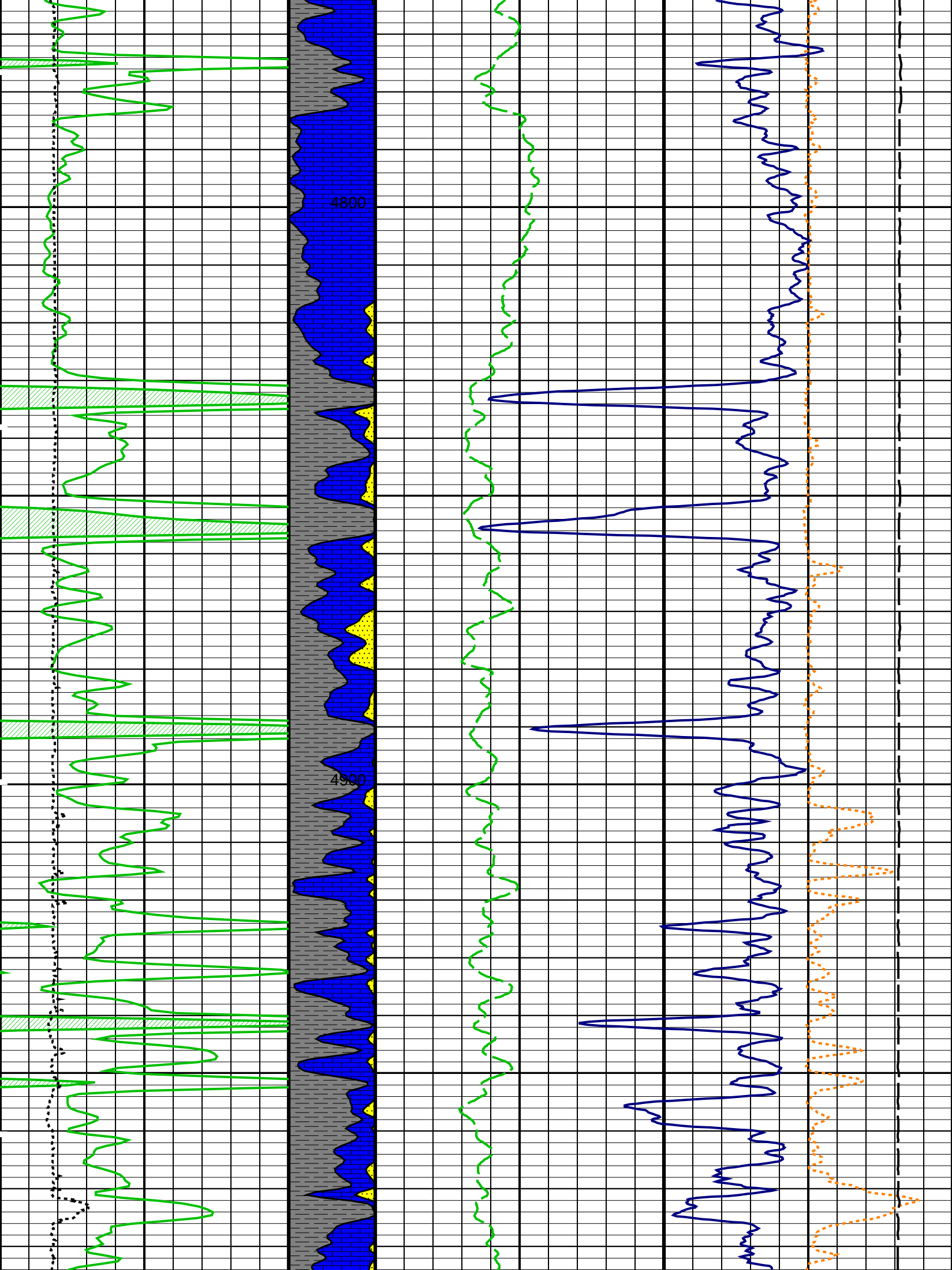


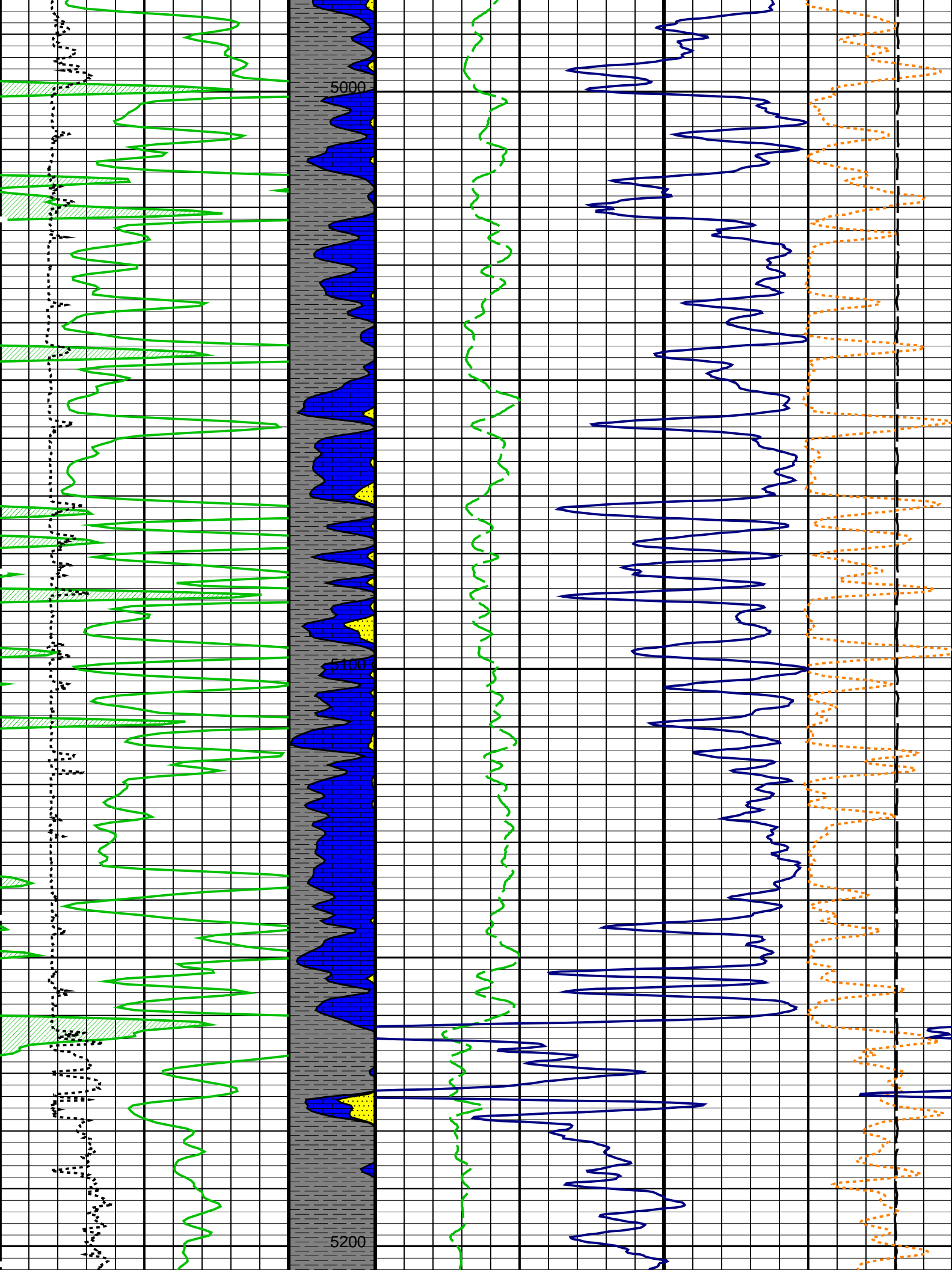


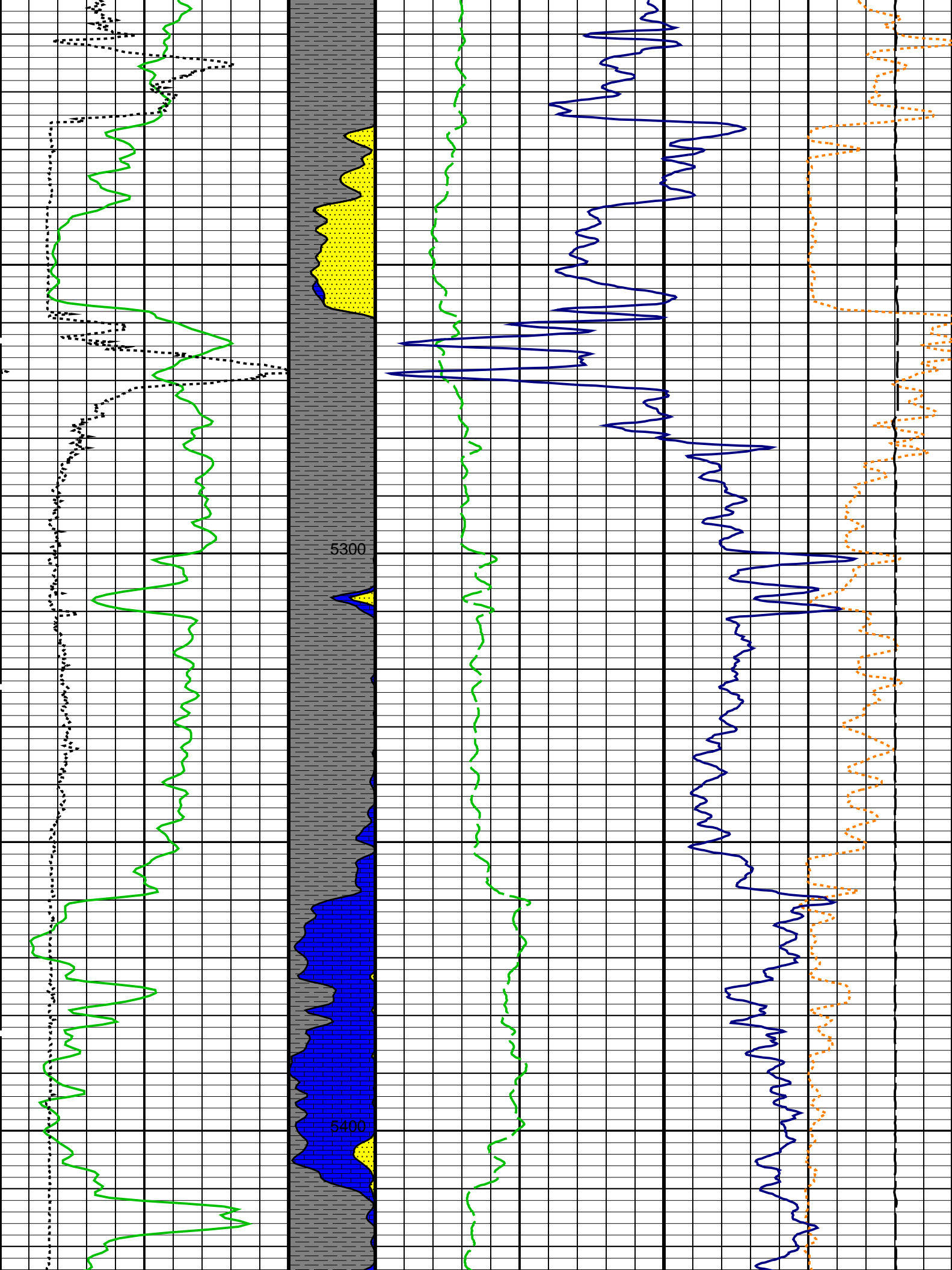


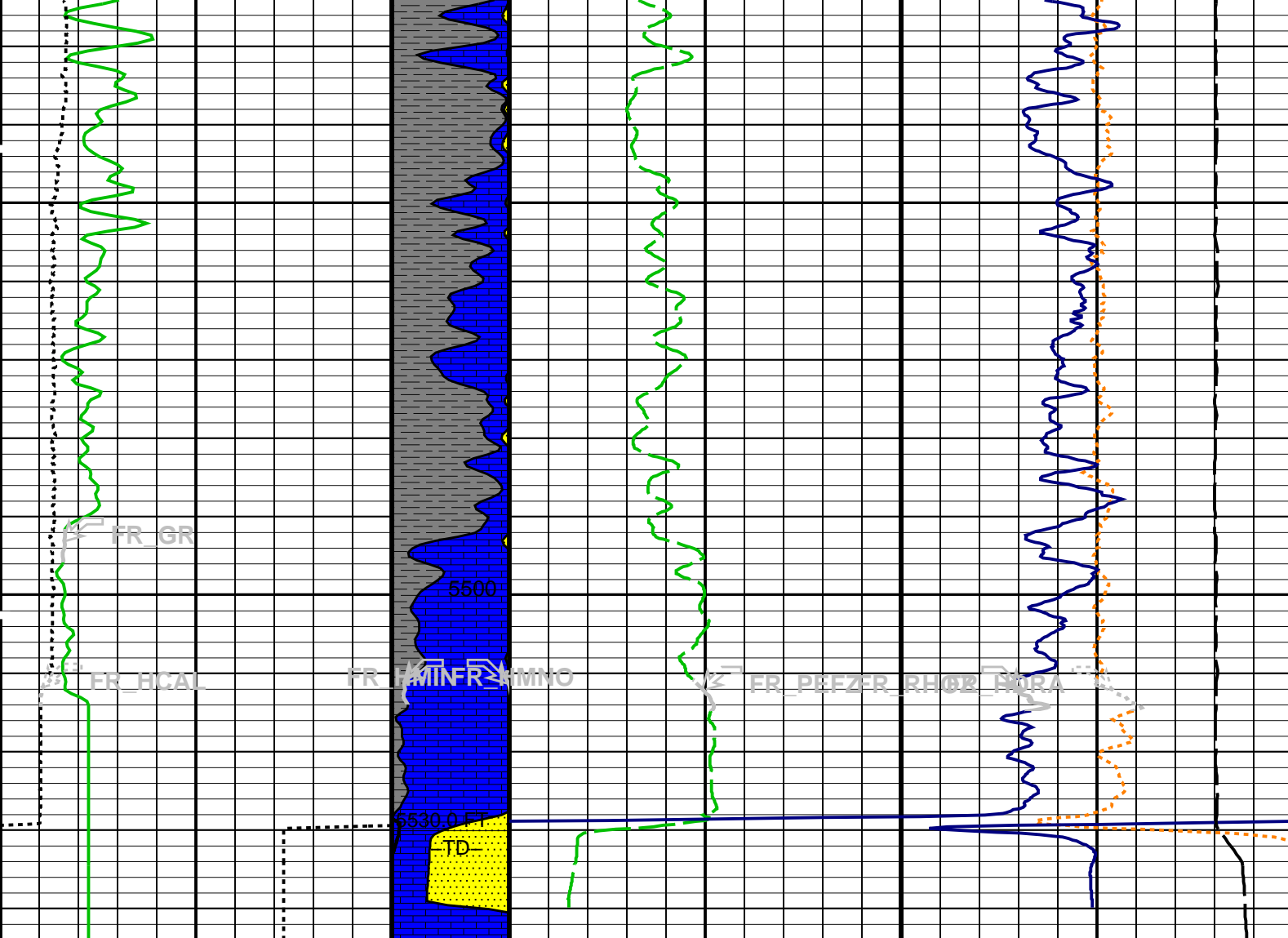












MAIN PASS: *** PLATFORM EXPRESS - LITHOLOGY DENSITY ***

Gamma Ray Backup	Stuck Stretch (STIT)	0	Std. Res. Formation Pe (PEFZ)	10	Density Correction (HDRA)	0.25
	(F)	50	(-----)		(G/C3)	
Gamma Ray (GR)	LIME	2	Std. Res. Formation Density (RHOZ)	3		
(GAPI)			(G/C3)			
Caliper (HCAL)	SAND				Tension (TENS)	
(IN)					(LBF)	
	SHALE					

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HILTB-CTS: High resolution Integrated Logging Tool-CTS		
BHFL_TLD	HILT Nuclear Mud Base	WATER
BHT	Bottom Hole Temperature (used in calculations)	180.64 DEGF
DHC	Density Hole Correction	BS
FD	Fluid Density	1 G/C3
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
GCLF	Germany Coal-like Formation Option	NO
GGRD	Geothermal Gradient	0.01 DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE

NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
SHT	Surface Hole Temperature	68	DEGF
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth – Driller	5536.00	FT
TDL	Total Depth – Logger	5530.00	FT
HOLEV: Integrated Hole/Cement Volume			
BHT	Bottom Hole Temperature (used in calculations)	180.64	DEGF
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
FEQL: Formation Evaluation Quick Look			
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
PERT: Preliminary Evaluation – Real Time			
BDPS	Bulk Density Processing Selector	Standard	
BHT	Bottom Hole Temperature (used in calculations)	180.64	DEGF
CLIM	Caliper Limit for Bad Hole	999	IN
CNPS	Corrected Neutron Porosity Selector	NPHI	
DRUL	DRHO Upper Limit	999	G/C3
FCAL	Caliper Presence Flag	PRESENT	
FCGR	CGR Presence Flag	PRESENT	
FEXP	Form Factor Exponent	2	
FLDT	Bulk Density Presence Flag	PRESENT	
FNUM	Form Factor Numerator	1	
FSON	Sonic Presence Flag	ABSENT	
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PMAX	PHI Maximum	0.5	CFCF
POUT	Porosity Output Lithology	LIMESTONE	
RG21	RHO Grain (2–Mineral Model, Min–1)	2.71	G/C3
RG22	RHO Grain (2–Mineral Model, Min–2)	2.644	G/C3
RG23	RHO Grain (2–Mineral Model, Min–3)	2.877	G/C3
RG31	RHO Grain (3–Mineral Model, Min–1)	2.71	G/C3
RG32	RHO Grain (3–Mineral Model, Min–2)	2.644	G/C3
RG33	RHO Grain (3–Mineral Model, Min–3)	2.877	G/C3
RTLF	RT Limit Flag	NO_LIMIT	
RWF	Resistivity of Free Water	0.02	OHMM
SHT	Surface Hole Temperature	68	DEGF
UF	U Fluid	0.398	
UM21	U Matrix (2–Mineral Model, Min–1)	13.77	
UM22	U Matrix (2–Mineral Model, Min–2)	4.779	
UM23	U Matrix (2–Mineral Model, Min–3)	8.997	
UM31	U Matrix (3–Mineral Model, Min–1)	13.77	
UM32	U Matrix (3–Mineral Model, Min–2)	4.779	
UM33	U Matrix (3–Mineral Model, Min–3)	8.997	
System and Miscellaneous			
BS	Bit Size	7.875	IN
DFD	Drilling Fluid Density	9.20	LB/G
DORL	Depth Offset for Repeat Analysis	0.0	FT
RMFS	Resistivity of Mud Filtrate Sample	0.7665	OHMM
TD	Total Depth	5530	FT
TWS	Temperature of Connate Water Sample	100.00	DEGF

Format: DENS Vertical Scale: 5" per 100' Graphics File Created: 07–Jan–2011 22:18

OP System Version: 18C0–147

HILTB–CTS 18C0–147

Output DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_010LUP FN:9 PRODUCER 07–Jan–2011 22:18

Schlumberger

Calibrations

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
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High resolution Integrated Logging Tool-CTS Wellsite Calibration – Electronics Calibration Check – Thru Cal Mag. & Phase

Master: 15-Oct-2010 18:37 Before: 7-Jan-2011 9:20

Thru Cal Magnitude – 0	0	0.6273	0.6271	N/A	N/A	N/A	V
Thru Cal Magnitude – 1	0	1.286	1.285	N/A	N/A	N/A	V
Thru Cal Magnitude – 2	0	0.6373	0.6369	N/A	N/A	N/A	V
Thru Cal Magnitude – 3	0	0.7236	0.7235	N/A	N/A	N/A	V
Thru Cal Magnitude – 4	0	1.349	1.349	N/A	N/A	N/A	V
Thru Cal Magnitude – 5	0	1.948	1.948	N/A	N/A	N/A	V
Thru Cal Magnitude – 6	0	1.944	1.944	N/A	N/A	N/A	V
Thru Cal Magnitude – 7	0	1.380	1.383	N/A	N/A	N/A	V
Phase – 0	0	74.27	74.90	N/A	N/A	N/A	DEG
Phase – 1	0	73.26	73.89	N/A	N/A	N/A	DEG
Phase – 2	0	69.06	69.72	N/A	N/A	N/A	DEG
Phase – 3	0	68.16	68.82	N/A	N/A	N/A	DEG
Phase – 4	0	61.18	61.87	N/A	N/A	N/A	DEG
Phase – 5	0	59.00	59.73	N/A	N/A	N/A	DEG
Phase – 6	0	59.07	59.79	N/A	N/A	N/A	DEG
Phase – 7	0	53.37	54.34	N/A	N/A	N/A	DEG

High resolution Integrated Logging Tool-CTS Wellsite Calibration – Electronics Calibration Check – Auxilliary

Master: 15-Oct-2010 18:37 Before: 7-Jan-2011 9:20

Array Induction SPA Plus	990.5	992.7	993.6	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	-0.03691	-0.08047	N/A	N/A	N/A	MV
Array Induction Temperature PI	0.9150	0.9196	0.9204	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	-0.00004114	-0.00007260	N/A	N/A	N/A	V

High resolution Integrated Logging Tool-CTS Wellsite Calibration – Test Loop Gain Correction

Master: 15-Oct-2010 18:37

Test Loop Gain Magnitude – 0	0	1.022	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 1	0	1.035	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 2	0	1.021	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 3	0	1.020	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 4	0	1.000	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 5	0	0.9901	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 6	0	0.9987	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 7	0	1.016	N/A	N/A	N/A	N/A	V
Phase – 0	0	0.4239	N/A	N/A	N/A	N/A	DEG
Phase – 1	0	0.5409	N/A	N/A	N/A	N/A	DEG
Phase – 2	0	-0.06263	N/A	N/A	N/A	N/A	DEG
Phase – 3	0	0.03454	N/A	N/A	N/A	N/A	DEG
Phase – 4	0	-0.1758	N/A	N/A	N/A	N/A	DEG
Phase – 5	0	-0.1320	N/A	N/A	N/A	N/A	DEG
Phase – 6	0	0.1953	N/A	N/A	N/A	N/A	DEG
Phase – 7	0	-0.2054	N/A	N/A	N/A	N/A	DEG

High resolution Integrated Logging Tool-CTS Wellsite Calibration – Sonde Error Correction

Master: 15-Oct-2010 18:37

R Sonde Error Correction – 0	0	-84.06	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 1	0	173.5	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 2	0	115.0	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 3	0	60.64	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 4	0	24.06	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 5	0	15.52	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 6	0	12.66	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 7	0	-3.102	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 0	0	52.00	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 1	0	170.3	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 2	0	39.80	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 3	0	45.14	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 4	0	-10.30	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 5	0	3.750	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 6	0	7.097	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 7	0	3.539	N/A	N/A	N/A	N/A	MM/M

High resolution Integrated Logging Tool-CTS Wellsite Calibration – Mud Gain Correction

Master: 15-Oct-2010 18:37

Coarse – Mag, Real, Imag – 0	0	0.9207	N/A	N/A	N/A	N/A	
Coarse – Mag, Real, Imag – 1	0	0.9208	N/A	N/A	N/A	N/A	
Coarse – Mag, Real, Imag – 2	0	0.9208	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 0	0	0.9207	N/A	N/A	N/A	N/A	

Fine – Mag, Real, Imag – 0	0	0.9207	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 1	0	0.9207	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 2	0	0.9207	N/A	N/A	N/A	N/A

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Stab Measurement Summary

Before: 7–Jan–2011 9:35							
BS Window Ratio	0.7136	N/A	0.7128	N/A	N/A	N/A	
BS Window Sum	8411	N/A	8415	N/A	N/A	N/A	CPS
SS Window Ratio	0.4935	N/A	0.4907	N/A	N/A	N/A	
SS Window Sum	9506	N/A	9508	N/A	N/A	N/A	CPS
LS Window Ratio	0.2934	N/A	0.2928	N/A	N/A	N/A	
LS Window Sum	998.6	N/A	994.9	N/A	N/A	N/A	CPS

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Photo–multiplier High Voltages Calibrations

Before: 7–Jan–2011 9:35							
BS PM High Voltage (Command)	1511	N/A	1510	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1731	N/A	1725	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1489	N/A	1491	N/A	N/A	N/A	V

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Crystal Quality Resolutions Calibration

Before: 7–Jan–2011 9:35							
BS Crystal Resolution	10.34	N/A	10.41	N/A	N/A	N/A	%
SS Crystal Resolution	10.04	N/A	9.975	N/A	N/A	N/A	%
LS Crystal Resolution	10.26	N/A	10.13	N/A	N/A	N/A	%

High resolution Integrated Logging Tool–CTS Wellsite Calibration – MCFL Calibration

Before: 7–Jan–2011 9:36							
Raw B0 Resistivity	3875	N/A	3854	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3794	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3793	N/A	N/A	N/A	OHMM

High resolution Integrated Logging Tool–CTS Wellsite Calibration – HILT Caliper Calibration

Before: 7–Jan–2011 9:19							
HILT Caliper Zero Measurement	8.000	N/A	8.080	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	12.23	N/A	N/A	N/A	IN

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Detector Calibration

Before: 7–Jan–2011 9:19							
Gamma Ray Background	30.00	N/A	78.81	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkgd)	165.0	N/A	177.7	N/A	N/A	15.00	GAPI

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Zero Measurement

Master: 27–Dec–2010 15:55 Before: 7–Jan–2011 9:20							
CNTC Background	26.75	26.75	27.83	N/A	N/A	4.013	CPS
CFTC Background	26.84	26.84	26.39	N/A	N/A	4.026	CPS

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Ratio Measurement

Master: 27–Dec–2010 15:55							
Thermal Near Corr. (Tank)	5800	5587	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	2310	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.419	N/A	N/A	N/A	N/A	

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Accelerometer Calibration

Before: 7–Jan–2011 21:31							
Z–Axis Acceleration	32.19	N/A	31.81	N/A	N/A	N/A	F/S2

High resolution Integrated Logging Tool–CTS Master Calibration – Inversion results

Master: 3–Jan–2011 12:29							
Rho Aluminum	2.596	2.601	--	--	--	--	G/C3
Rho Magnesium	1.686	1.688	--	--	--	--	G/C3
Pe Aluminum	2.570	2.549	--	--	--	--	
Pe Magnesium	2.650	2.625	--	--	--	--	

High resolution Integrated Logging Tool–CTS Master Calibration – Deviation Summary

Master: 3–Jan–2011 12:29							
BS Average Deviation	0	0.4353	--	--	--	--	%
BS Max Deviation	0	0.8132	--	--	--	--	%
SS Average Deviation	0	0.3792	--	--	--	--	%
SS Max Deviation	0	1.774	--	--	--	--	%
LS Average Deviation	0	0.6869	--	--	--	--	%
LS Max Deviation	0	1.567	--	--	--	--	%

The GLS–VJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT–B Water Temperature 48.7 DEGF.
Thermal Housing Size 3.362 IN.
NSR_F serial number 5068

































High resolution Integrated Logging Tool-CTS / Equipment Identification

Primary Equipment:

Array Induction Tool – H
 Rm/SP Bottom Nose
 Array Induction Sonde
 HILT high-Resolution Mechanical Sonde
 HILT Rxo Gamma-ray Device
 HILT Micro Cylindrically Focused Log Dev
 GR Logging Source
 HILT High Res. Control Cartridge









AIT – H
 AHRM – A
 AHIS – BA 398
 HRMS – B
 HRGD – B
 MCFL –
 GLS – VJ 5416
 HRCC – B

Auxiliary Equipment:

High resolution Integrated Logging Tool-CTS Wellsite Calibration							
Electronics Calibration Check – Thru Cal Mag. & Phase							
Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6273		0.6050	74.27		71.00
	Before	0.6271			74.90		
1	Master	1.286		1.270	73.26		70.00
	Before	1.285			73.89		
2	Master	0.6373		0.6230	69.06		66.00
	Before	0.6369			69.72		
3	Master	0.7236		0.7040	68.16		65.00
	Before	0.7235			68.82		
4	Master	1.349		1.337	61.18		59.00
	Before	1.349			61.87		
5	Master	1.948		1.955	59.00		57.00
	Before	1.948			59.73		
6	Master	1.944		1.955	59.07		57.00
	Before	1.944			59.79		
7	Master	1.380		1.415	53.37		53.00
	Before	1.383			54.34		
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)



Master: 15-Oct-2010 18:37

Before: 7-Jan-2011 9:20

High resolution Integrated Logging Tool-CTS Wellsite Calibration					
Electronics Calibration Check – Auxilliary					
Phase	Array Induction SPA Plus MV	Value	Phase	Array Induction SPA Zero MV	Value
Master		992.7	Master		-0.03691
Before		993.6	Before		-0.08047
941.0 (Minimum)		990.5 (Nominal)	1040 (Maximum)	-50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)	
Phase	Array Induction Temperature Plus V	Value	Phase	Array Induction Temperature Zero V	Value
Master		0.9196	Master		-4.114E-00
Before		0.9204	Before		-7.260E-00
0.8700 (Minimum)		0.9150 (Nominal)	0.9600 (Maximum)	-0.05000 (Minimum) 0 (Nominal) 0.05000 (Maximum)	

Master: 15-Oct-2010 18:37

















Before: 7-Jan-2011 9:20

High resolution Integrated Logging Tool-CTS Wellsite Calibration				
Test Loop Gain Correction				
Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG
				

0	1.022		0.4239			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
1	1.035		0.5409			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
2	1.021		-0.06263			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
3	1.020		0.03454			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	1.000		-0.1758			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	0.9901		-0.1320			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	0.9987		0.1953			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	1.016		-0.2054			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)




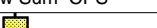
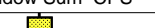

Master: 15-Oct-2010 18:37




Master: 15-Oct-2010 18:37




High resolution Integrated Logging Tool-CTS Wellsite Calibration							
Sonde Error Correction							
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M	
0	-84.06				52.00		
		-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-2250 (Minimum)	0 (Nominal) 2250 (Maximum)
1	173.5				170.3		
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal) 625.0 (Maximum)
2	115.0				39.80		
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal) 350.0 (Maximum)
3	60.64				45.14		
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		-250.0 (Minimum)	0 (Nominal) 250.0 (Maximum)
4	24.06				-10.30		
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal) 63.00 (Maximum)
5	15.52				3.750		
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal) 50.00 (Maximum)
6	12.66				7.097		
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal) 30.00 (Maximum)
7	-3.102				3.539		
		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal) 30.00 (Maximum)
Master: 15-Oct-2010 18:37							




Master: 15-Oct-2010 18:37



High resolution Integrated Logging Tool–CTS Wellsite Calibration							
Mud Gain Correction							
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag	
0	0.9207				0.9207		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
1	0.9208				0.9207		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
2	0.9208				0.9207		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)



High resolution Integrated Logging Tool—CTS Wellsite Calibration														
Stab Measurement Summary														
Phase	BS Window Ratio			Value	Phase	SS Window Ratio			Value	Phase	LS Window Ratio			Value
Before				0.7128	Before				0.4907	Before				0.2928
	0.6779 (Minimum)	0.7136 (Nominal)	0.7492 (Maximum)			0.4689 (Minimum)	0.4935 (Nominal)	0.5182 (Maximum)			0.2787 (Minimum)	0.2934 (Nominal)	0.3081 (Maximum)	
Phase	BS Window Sum CPS			Value	Phase	SS Window Sum CPS			Value	Phase	LS Window Sum CPS			Value
Before				8415	Before				9508	Before				994.9
	7991 (Minimum)	8411 (Nominal)	8832 (Maximum)			9030 (Minimum)	9506 (Nominal)	9981 (Maximum)			948.7 (Minimum)	998.6 (Nominal)	1049 (Maximum)	
Before: 7-Jan-2011 9:35														





High resolution Integrated Logging Tool-CTS Wellsite Calibration											
Photo-multiplier High Voltages Calibrations											
Phase	BS PM High Voltage (Command) V		Value	Phase	SS PM High Voltage (Command) V		Value	Phase	LS PM High Voltage (Command) V		Value
Before			1510	Before			1725	Before			1491
	1411 (Minimum)	1511 (Nominal)	1611 (Maximum)		1631 (Minimum)	1731 (Nominal)	1831 (Maximum)		1389 (Minimum)	1489 (Nominal)	1589 (Maximum)
Before: 7-Jan-2011 9:35											

High resolution Integrated Logging Tool-CTS Wellsite Calibration														
Crystal Quality Resolutions Calibration														
Phase	BS Crystal Resolution %			Value	Phase	SS Crystal Resolution %			Value	Phase	LS Crystal Resolution %			Value
Before				10.41	Before				9.975	Before				10.13
	9.344 (Minimum)	10.34 (Nominal)	11.34 (Maximum)		9.038 (Minimum)	10.04 (Nominal)	11.04 (Maximum)			9.264 (Minimum)	10.26 (Nominal)	11.26 (Maximum)		
Before: 7-Jan-2011 9:35														


High resolution Integrated Logging Tool—CTS Wellsite Calibration														
MCFL Calibration														
Phase	Raw B0 Resistivity OHMM			Value	Phase	Raw B1 Resistivity OHMM			Value	Phase	Raw B2 Resistivity OHMM			Value
Before				3854	Before				3794	Before				3793
	3565 (Minimum)	3875 (Nominal)	4185 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)			
Before: 7-Jan-2011 9:36														

High resolution Integrated Logging Tool—CTS Wellsite Calibration					
HILT Caliper Calibration					
Phase	HILT Caliper Zero Measurement IN	Value	Phase	HILT Caliper Plus Measurement IN	Value
Before		8.080	Before		12.23
	6.000 (Minimum)	8.000 (Nominal)		9.000 (Minimum)	12.00 (Nominal)
		10.00 (Maximum)			15.00 (Maximum)





High resolution Integrated Logging Tool—CTS Wellsite Calibration									
Detector Calibration									
Phase	Gamma Ray Background GAPI			Value	Phase	Gamma Ray (Jig – Bkgd) GAPI			Value
Before				78.81	Before				177.7
0 (Minimum)		30.00 (Nominal)		120.0 (Maximum)	157.1 (Minimum)		165.0 (Nominal)		206.3 (Maximum)
Before: 7-Jan-2011 9:19									













High resolution Integrated Logging Tool–CTS Wellsite Calibration									
Zero Measurement									
Phase	CNTC Background CPS			Value	Phase	CFTC Background CPS			Value
Master				26.75	Master				26.84
Before				27.83	Before				26.39
5.000 (Minimum)				26.75 (Nominal)	40.00 (Maximum)				
5.000 (Minimum)				26.84 (Nominal)	40.00 (Maximum)				
Master: 27–Dec–2010 15:55					Before: 7–Jan–2011 9:20				

High resolution Integrated Logging Tool-CTS Master Calibration														
Ratio Measurement														
Phase	Thermal Near Corr. (Tank) CPS			Value	Phase	Thermal Far Corr. (Tank) CPS			Value	Phase	CNTC/CFTC (Tank)			Value
Master				5587	Master				2310	Master				2.419
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)		1900 (Minimum)	2400 (Nominal)	2900 (Maximum)			2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)		
Master: 27-Dec-2010 15:55														

High resolution Integrated Logging Tool-CTS		
Wellsite Calibration		
Accelerometer Calibration		
Phase	Z-Axis Acceleration F/S2	Value
Before		31.81
	31.53 (Minimum)	32.19 (Nominal)
		32.84 (Maximum)
Before: 7-Jan-2011 21:31		

High resolution Integrated Logging Tool-CTS Master Calibration							
Electronics Calibration Check – Thru Cal Mag. & Phase							
Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6273		0.6050	74.27		71.00
1	Master	1.286		1.270	73.26		70.00
2	Master	0.6373		0.6230	69.06		66.00
3	Master	0.7236		0.7040	68.16		65.00
4	Master	1.349		1.337	61.18		59.00
5	Master	1.948		1.955	59.00		57.00
6	Master	1.944		1.955	59.07		57.00
7	Master	1.380		1.415	53.37		53.00
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)
Master: 15-Oct-2010 18:37							

High resolution Integrated Logging Tool-CTS Master Calibration							
Electronics Calibration Check – Auxilliary							
Phase	Array Induction SPA Plus MV		Value	Phase	Array Induction SPA Zero MV		Value
Master			992.7	Master			-0.03691
	941.0 (Minimum)	990.5 (Nominal)	1040 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
Phase	Array Induction Temperature Plus V		Value	Phase	Array Induction Temperature Zero V		Value
Master			0.9196	Master			-4.114E-00
	0.8700 (Minimum)	0.9150 (Nominal)	0.9600 (Maximum)		-0.05000 (Minimum)	0 (Nominal)	0.05000 (Maximum)
Master: 15-Oct-2010 18:37							

High resolution Integrated Logging Tool-CTS Master Calibration							
Test Loop Gain Correction							
Idx	Value	Test Loop Gain Magnitude V			Value	Phase DEG	
0	1.022				0.4239		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
1	1.035				0.5409		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
2	1.021				-0.06263		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
3	1.020				0.03454		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	1.000				-0.1758		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	0.9901				0.1220		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

	0.9901	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-0.1320	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	0.9987				0.1953			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	1.016				-0.2054			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

Master: 15-Oct-2010 18:37

High resolution Integrated Logging Tool-CTS Master Calibration								
Sonde Error Correction								
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	-84.06				52.00			
		-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	173.5				170.3			
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	115.0				39.80			
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	60.64				45.14			
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	24.06				-10.30			
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	15.52				3.750			
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	12.66				7.097			
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-3.102				3.539			
		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

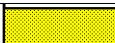
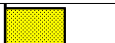
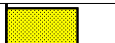
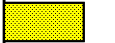
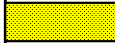
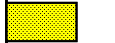
Master: 15-Oct-2010 18:37

High resolution Integrated Logging Tool-CTS Master Calibration								
Mud Gain Correction								
Idx	Value	Coarse - Mag, Real, Imag			Value	Fine - Mag, Real, Imag		
0	0.9207				0.9207			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	0.9208				0.9207			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	0.9208				0.9207			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)



Master: 15-Oct-2010 18:37

High resolution Integrated Logging Tool-CTS Master Calibration								
Inversion results								
Phase	Rho Aluminum G/C3			Value	Phase	Rho Magnesium G/C3		
Master				2.601	Master			1.688
	2.586 (Minimum)	2.596 (Nominal)	2.606 (Maximum)			1.676 (Minimum)	1.686 (Nominal)	1.696 (Maximum)
Phase	Pe Aluminum			Value	Phase	Pe Magnesium		
Master				2.549	Master			2.625
	2.470 (Minimum)	2.570 (Nominal)	2.670 (Maximum)			2.550 (Minimum)	2.650 (Nominal)	2.750 (Maximum)




Master: 3-Jan-2011 12:29

Deviation Summary																	
Phase	BS Average Deviation %			Value	Phase	SS Average Deviation %			Value	Phase	LS Average Deviation %			Value			
Master				0.4353	Master				0.3792	Master				0.6869			
-0.6000 (Minimum)				0 (Nominal)	0.6000 (Maximum)				-1.000 (Minimum)				0 (Nominal)	1.000 (Maximum)			
-1.500 (Minimum)				0 (Nominal)	1.500 (Maximum)												
Phase	BS Max Deviation %			Value	Phase	SS Max Deviation %			Value	Phase	LS Max Deviation %			Value			
Master				0.8132	Master				1.774	Master				1.567			
-1.600 (Minimum)				0 (Nominal)	1.600 (Maximum)				-2.500 (Minimum)				0 (Nominal)	2.500 (Maximum)			
-3.500 (Minimum)				0 (Nominal)	3.500 (Maximum)												
Master: 3-Jan-2011 12:29																	

Master: 3-Jan-2011 12:29

High resolution Integrated Logging Tool-CTS Master Calibration											
Zero Measurement											
Phase	CNTC Background CPS			Value	Phase	CFTC Background CPS			Value		
Master				26.75	Master				26.84		
5.000 (Minimum)				26.75 (Nominal)	5.000 (Minimum)				26.84 (Nominal)	40.00 (Maximum)	
Master: 27-Dec-2010 15:55											

Master: 27-Dec-2010 15:55

High resolution Integrated Logging Tool-CTS Master Calibration														
Tank Measurement														
Phase	Thermal Near Corr. (Tank) CPS			Value	Phase	Thermal Far Corr. (Tank) CPS			Value	Phase	CNTC/CFTC (Tank)			Value
Master				5587	Master				2310	Master				2.419
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)	1900 (Minimum)		2400 (Nominal)	2900 (Maximum)	2.120 (Minimum)	2.159 (Nominal)		2.540 (Maximum)			
Master: 27-Dec-2010 15:55														

Master: 27-Dec-2010 15:55

Company: **Vecta Oil & Gas LTD****Schlumberger**Well: **Torreys 44-33**Field: **Wildcat**County: **Cheyenne**State: **Colorado**

Platform Express
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