

HALLIBURTON

RESERVOIR
MONITORING TOOL
ELITE

Company

Well

Field

County

URSA OPERATING COMPANY LLC
MONUMENT RIDGE B 31C-17-7-95
PARACHUTE
GARFIELDStateCO

Company

Well

Field

County

URSA OPERATING COMPANY LLC
MONUMENT RIDGE B 31C-17-7-95
PARACHUTE
GARFIELDStateCO

API No.: 05045228970000
Location: SHL: 900' FSL & 144' FEL
BHL: 976' FNL & 1985' FEL

Serv #: 903682184

Other Services

Sec: 8 Twp: 7S Rge: 95W

CBL-M

Permanent Datum

Log Measured From

Drilling Measured From

GROUND LEVEL

KB

KB

Elevation 5702'

K.B. 5719'
D.F. 5719'
G.L. 5702'

Date @ Time Logged

Run No.

Depth - Driller

Depth - Logger

Bottom - Logged Interval

Top - Log Interval

Max. Recorded Temp.

1 DEC 2016 @ 22:00

ONE

7957'

7661'

7654'

3878'

225 degF

Type Fluid in Hole

Density of Fluid

Fluid Level

Cement Top Est. Logged

Equipment / Location

Recorded by

Witnessed by

FRESH WATER

8.4 PPG

SURFACE

1986'

11808537 / B. RIDDEL

RS. WY

R. TOLLE

CEMENTING DATA

Surface

String

Protection

String

Production

String

Liner

Primary / Squeeze

Date / Time Cemented

Expected

Compressive Strength

Cement Volume

Cement Type / Weight

Formulation

Mud Type / Mud Wgt.

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

Borehole Record

Casing & Tubing Record

Run Number

ONE

TWO

THREE

Bit

24"

12.25"

7.875"

From

SURFACE

60'

1829'

To

60'

1829'

7857'

Size

16"

8.625"

4.5"

Weight

75.5 #

32.0 #

11.6 #

From

SURFACE

SURFACE

SURFACE

To

60'

1829'

7750'

<<< Fold Here >>>

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

Comments

ESTIMATED TOP OF CEMENT : 1986'
GAMMA BLANKET : 408 GAPI
FREE PIPE CALIBRATION DEPTH : 340'

TENSION PULLED: 4795' & 4542'

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SVCS.
YOUR CREW TODAY: B. RIDDEL, D. FLINDERS, B. BURDERER

Service Ticket No.	903682184	API No.	05045228970000	PGM Ver	15.10.29001		
The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client							
EQUIPMENT DATA							
XHU		GAMMA		RMTI		CBL	
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	12146425	Serial No.	11224503	Serial No.	12095949	Serial No.	12091451
Model No.	XHU-3	Model No.	TTTCU-02	Model No.	RMTI	Model No.	CBLM
Diameter	1 11/16"	Diameter	1 11/16"	Diameter	2.25"	Diameter	2.75"
LOGGING DATA							
General Data							
Pass	Depths		Well Head	Speed	Logging Run Comments		
No	From	To	Pressure	Ft/Min			

ONE	4250'	3990'	0 PSI	20	REPEAT			
TWO	7661'	3878'	0 PSI	20	MAIN			
	GAMMA		SIGMA		AMPLITUDE			
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ONE	0	200	60	0	0	100		
TWO	0	200	60	0	0	100		
DIRECTIONAL INFORMATION								
Maximum Deviation			deg. @		KOP			

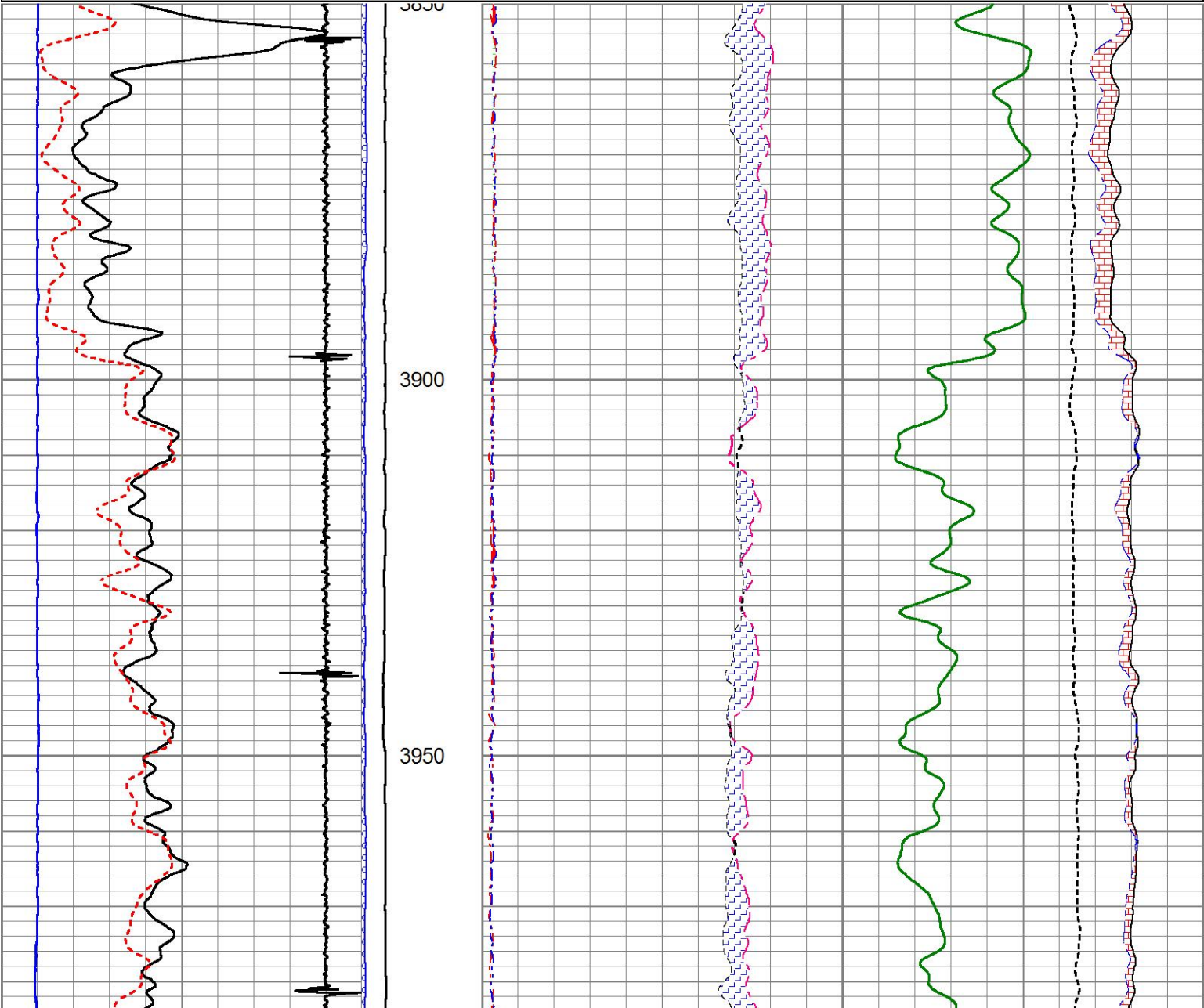
MAIN PASS

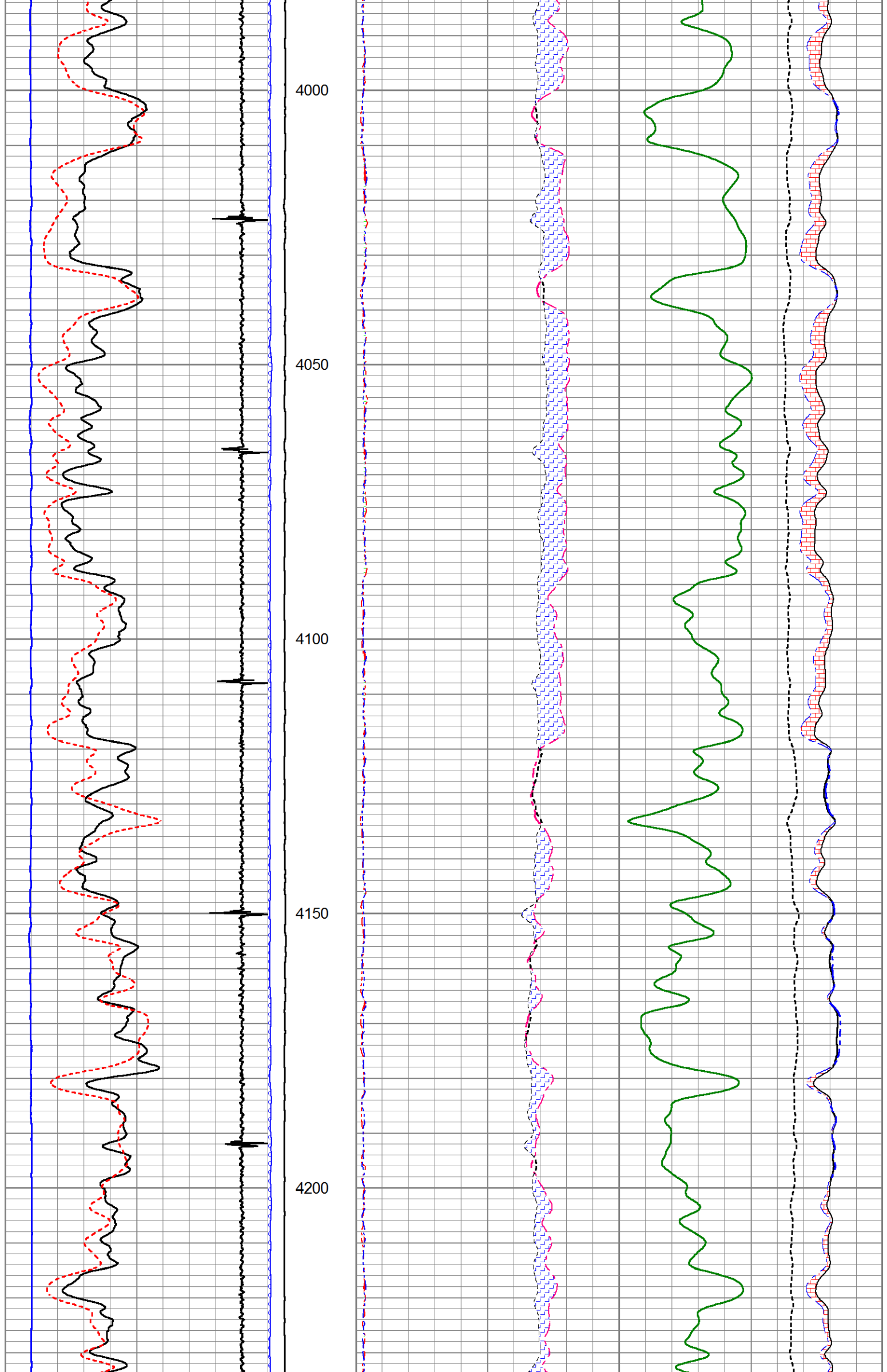
HALLIBURTON

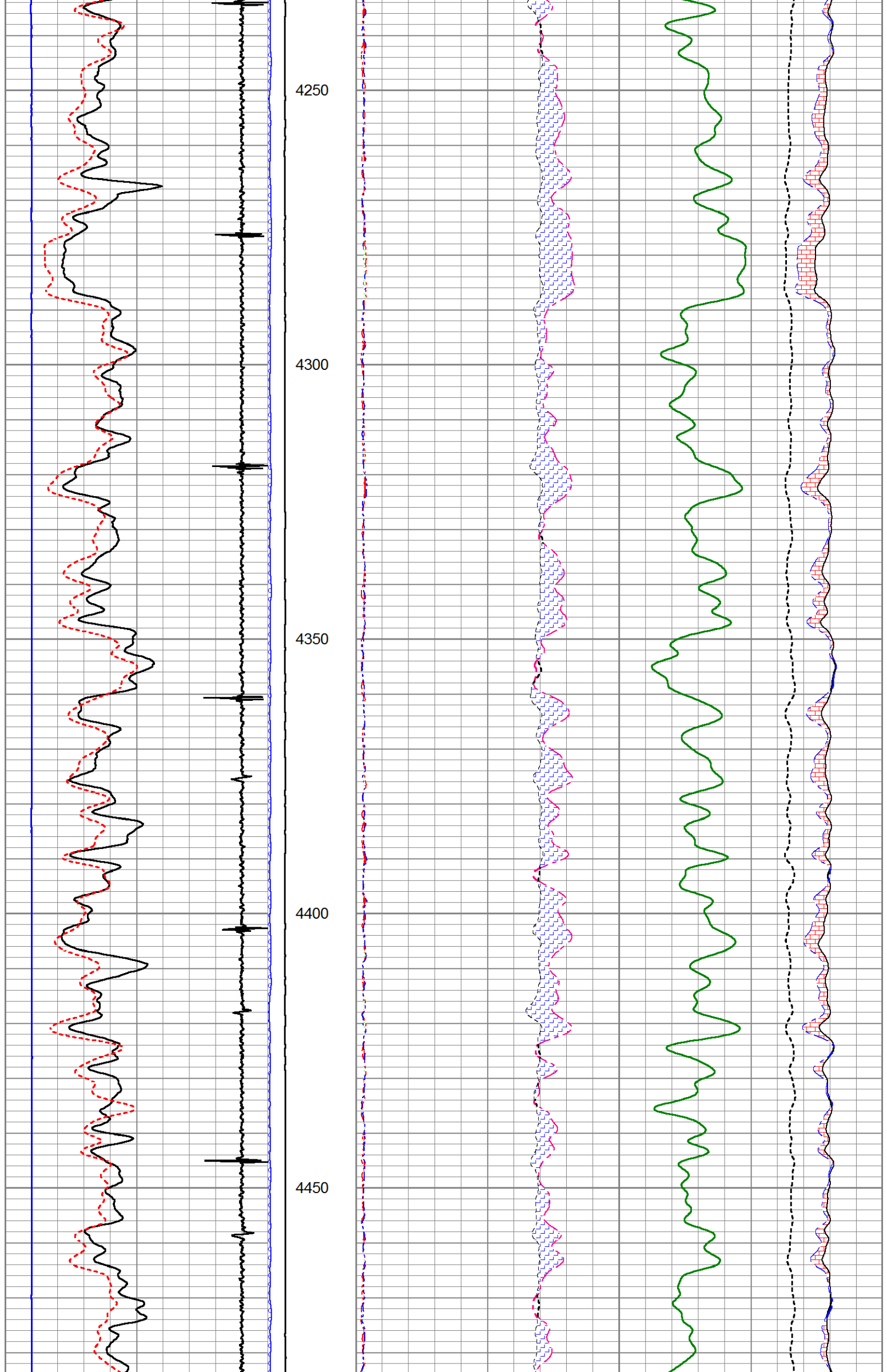
5" = 100'

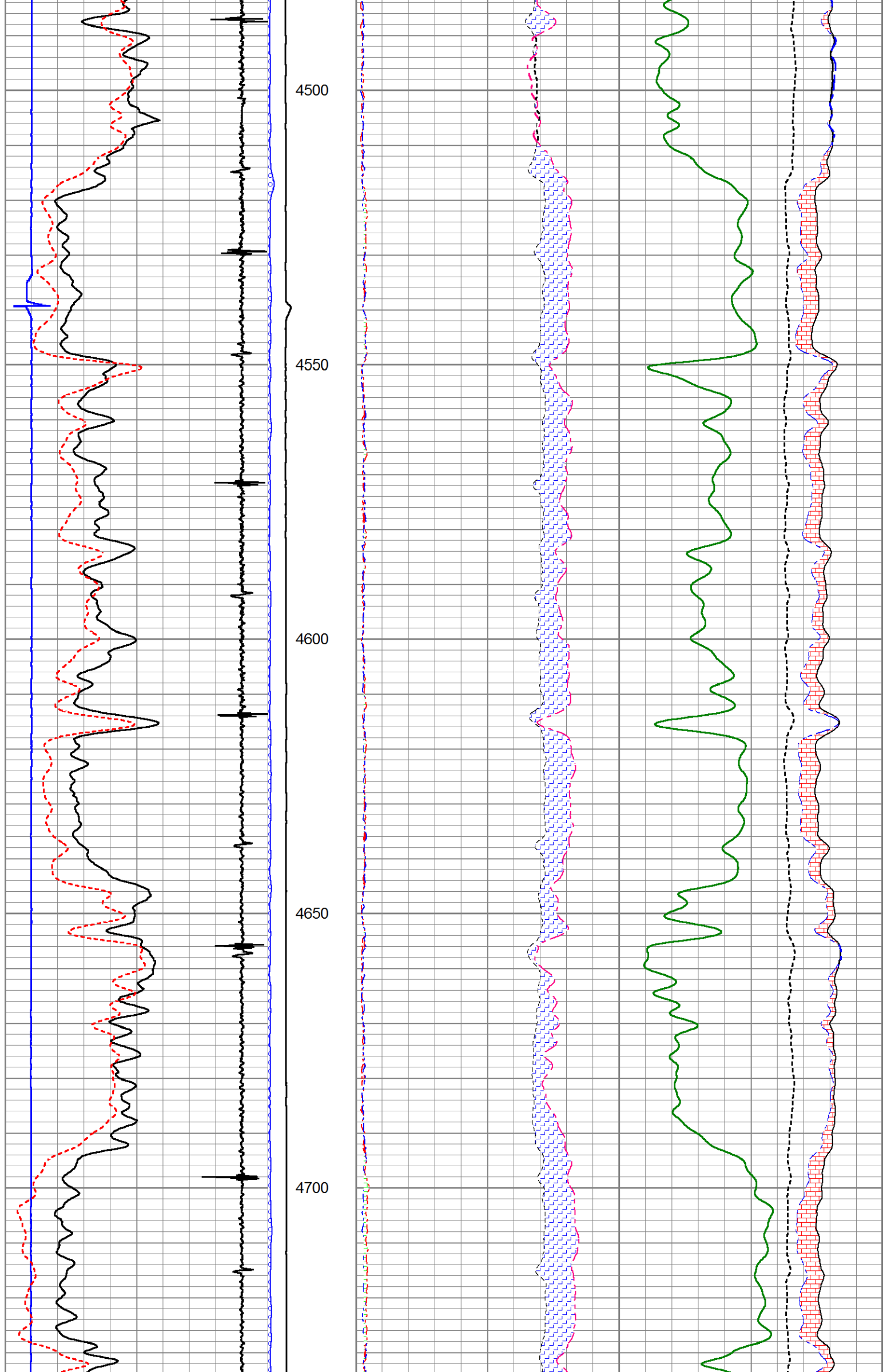
Database File c:\users\h180706\desktop\ursa\31c\31c_17_7_95.db
Dataset Pathname MAIN1
Presentation Format !1!!RM~1
Dataset Creation Thu Dec 01 22:44:44 2016
Charted by Depth in Feet scaled 1:240

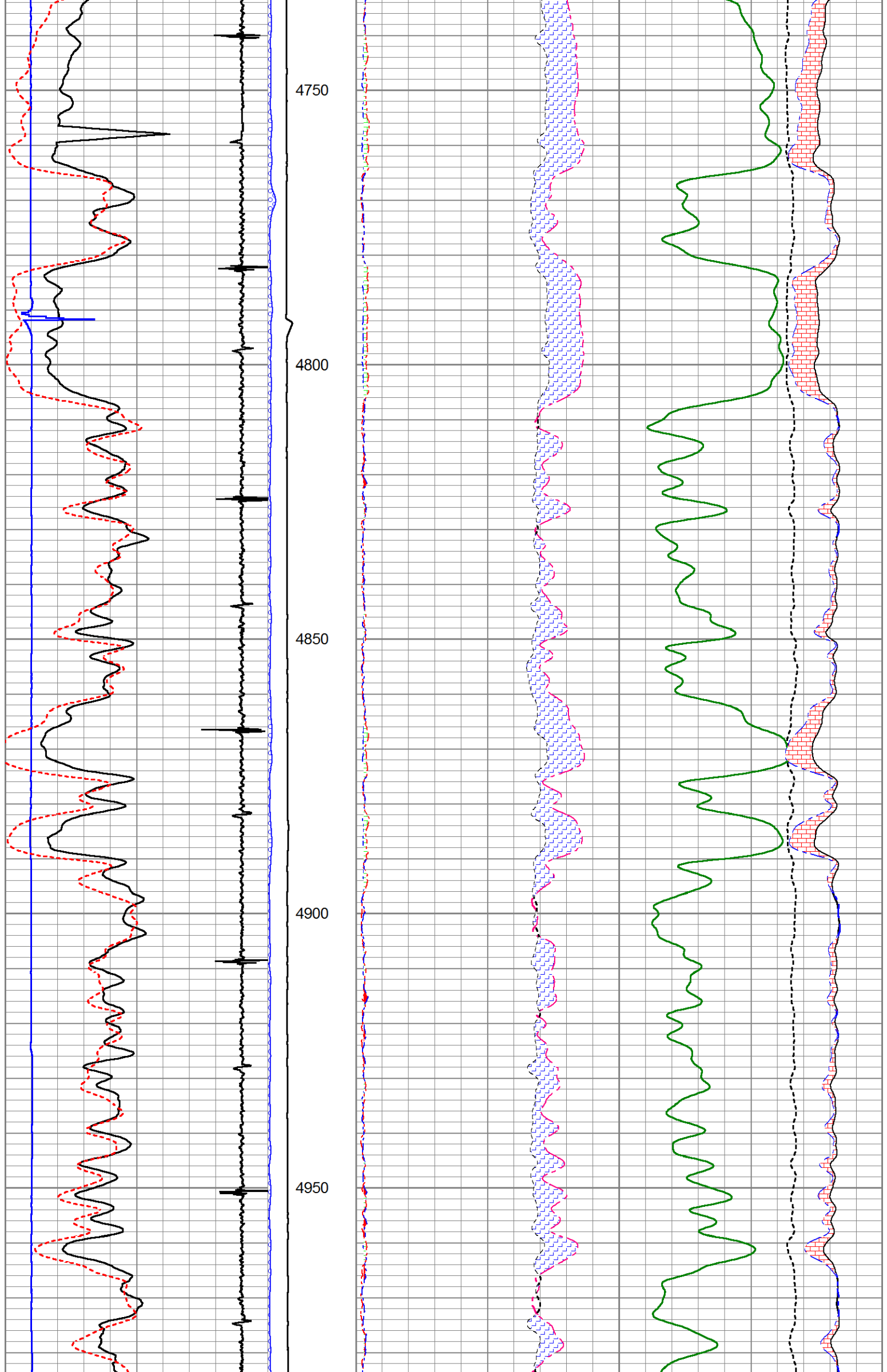
0	GR	200	LTEN	60	SGFF				0
2700	CCL	-300	0 (lb5000	2	RNF (Ratio Near/Far)	0.5	100000	FSIN	0
0	LSPD (ft/min)	200	0 OAI1100	1.65	RIN (Ratio Near/Far Incl)	0.65	60000	NCAP	0
10	SGINear	40		0	NFTR (Near Fit Error)	100	60000	FCAP	0
				0	FFTR (Far Fit Error)	100			

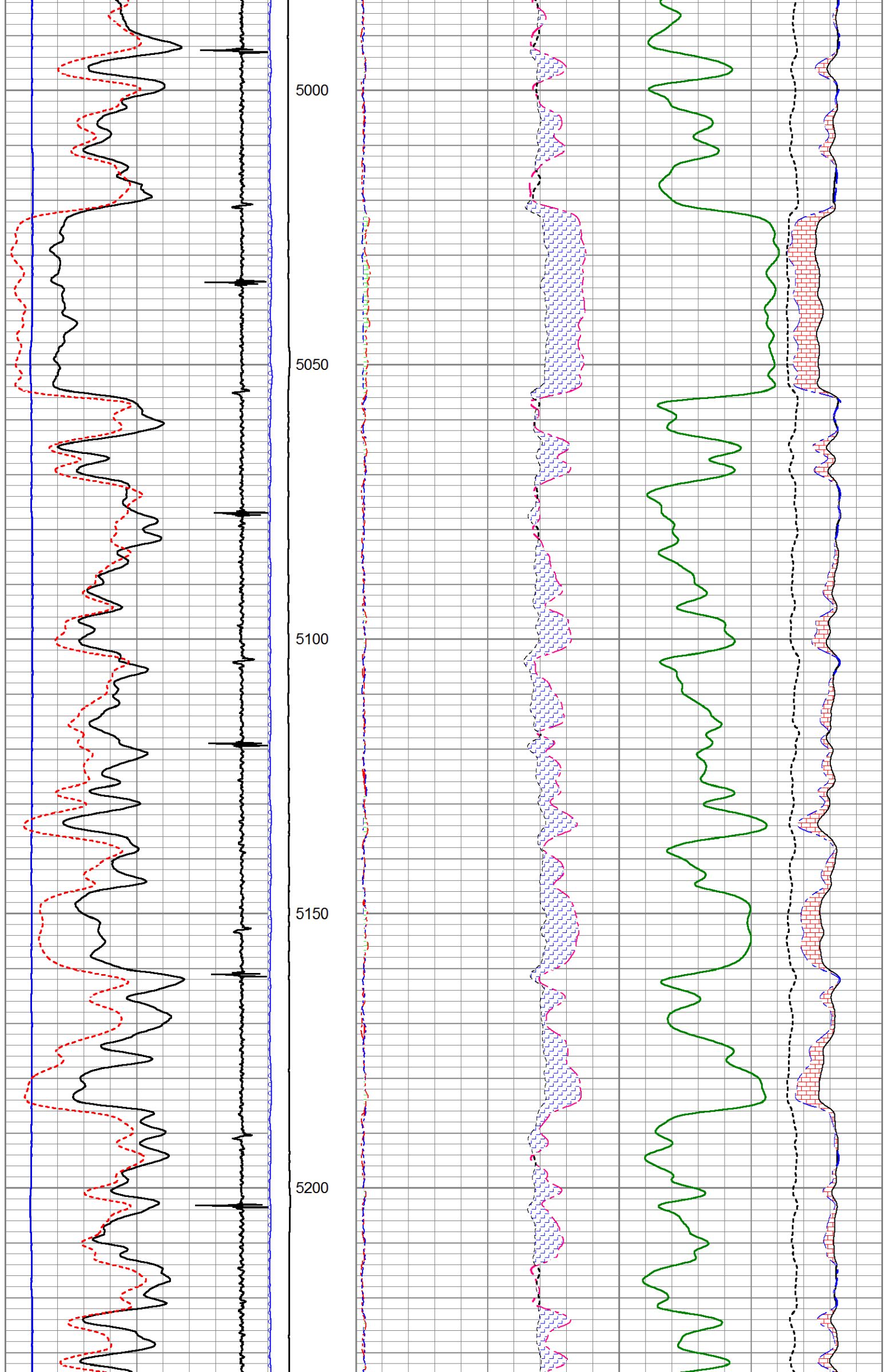


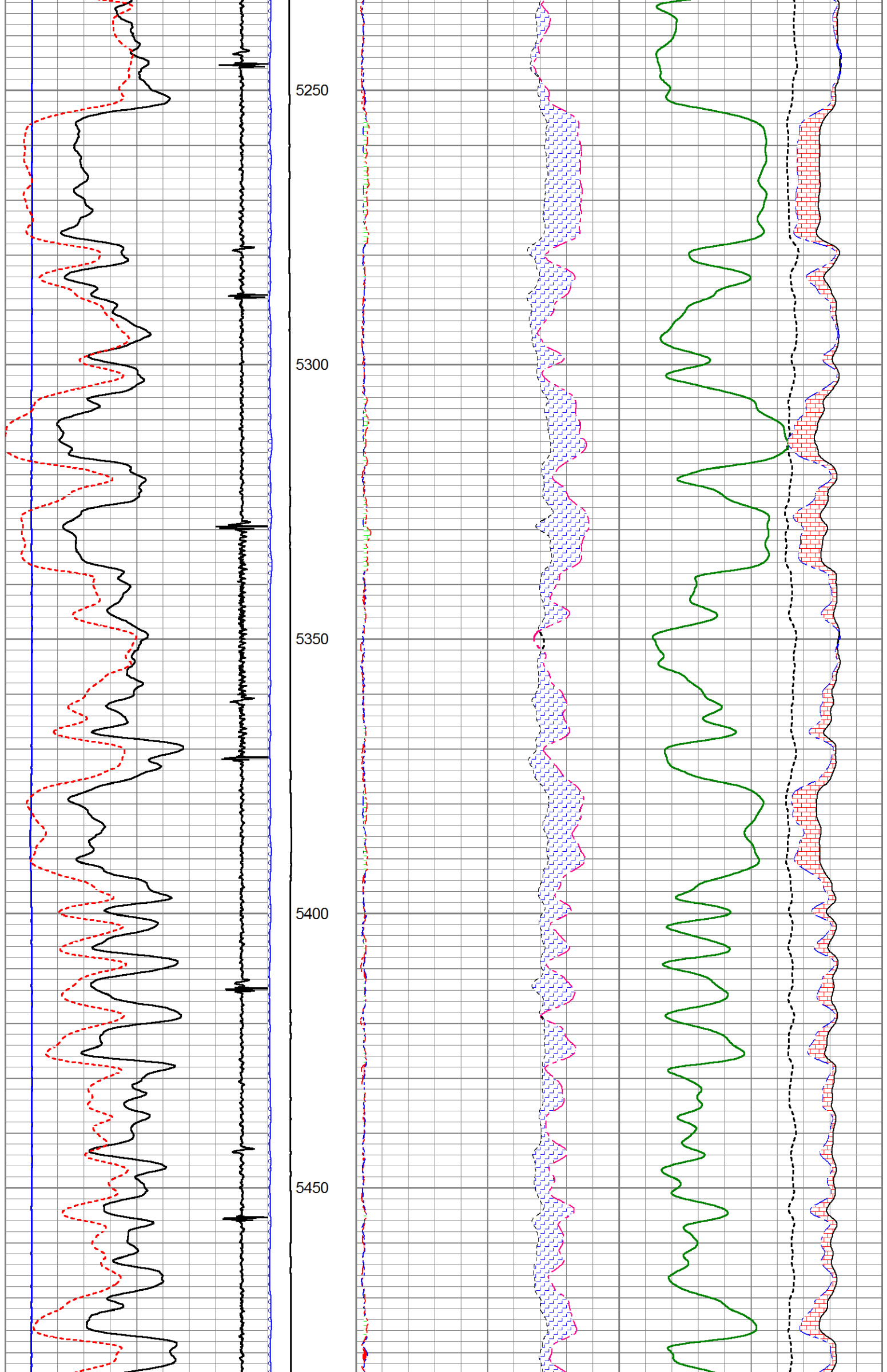


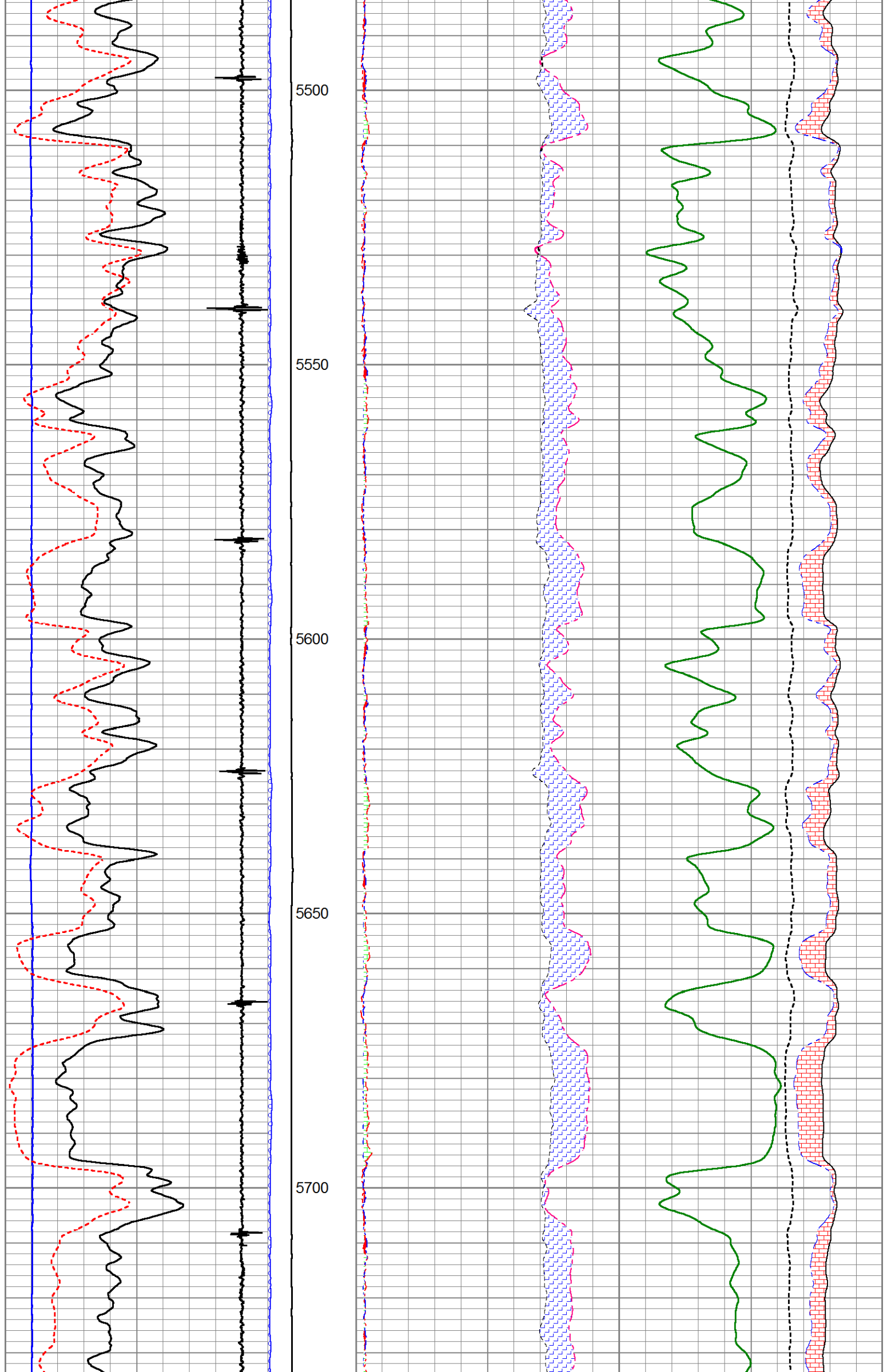


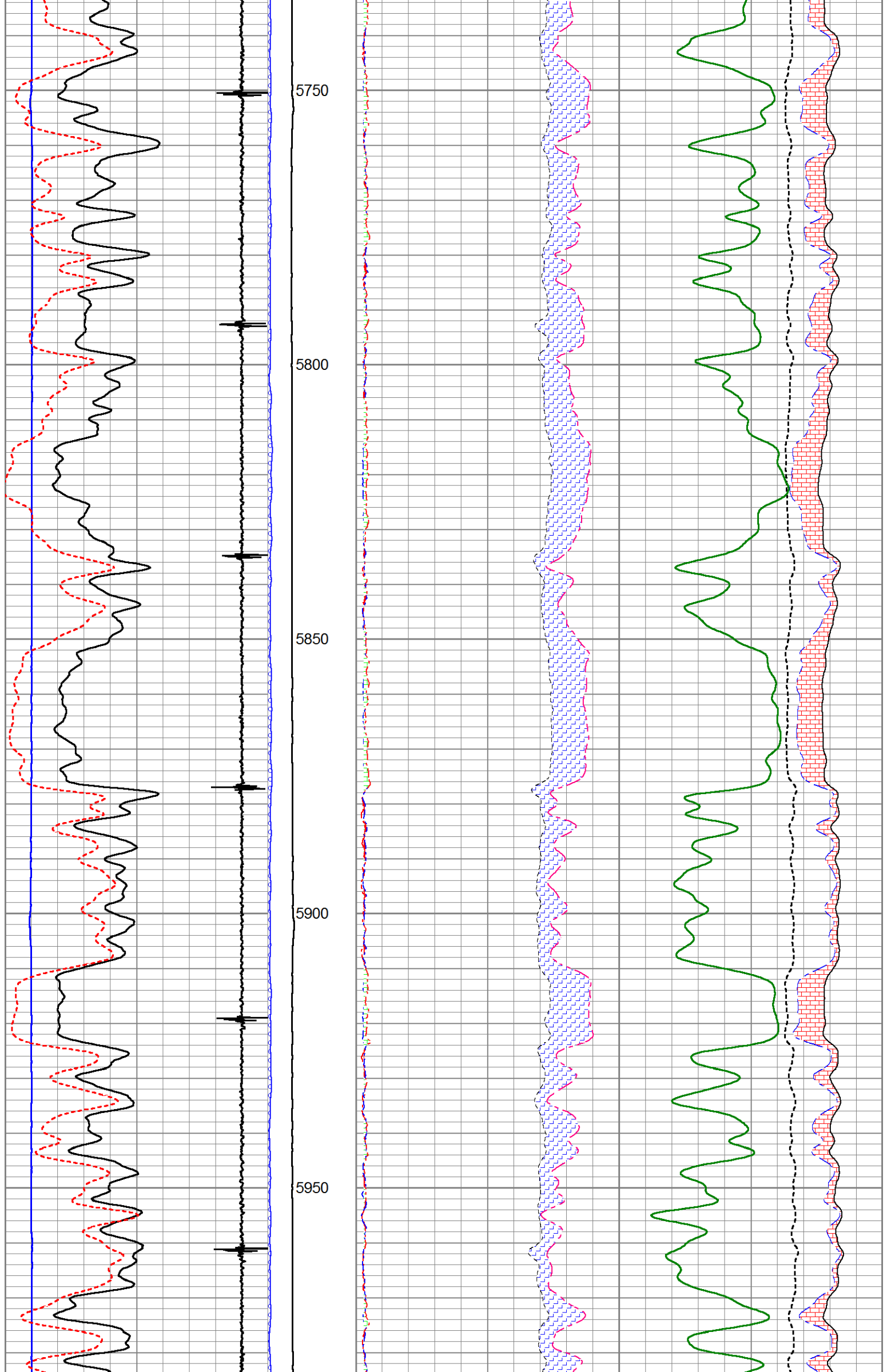


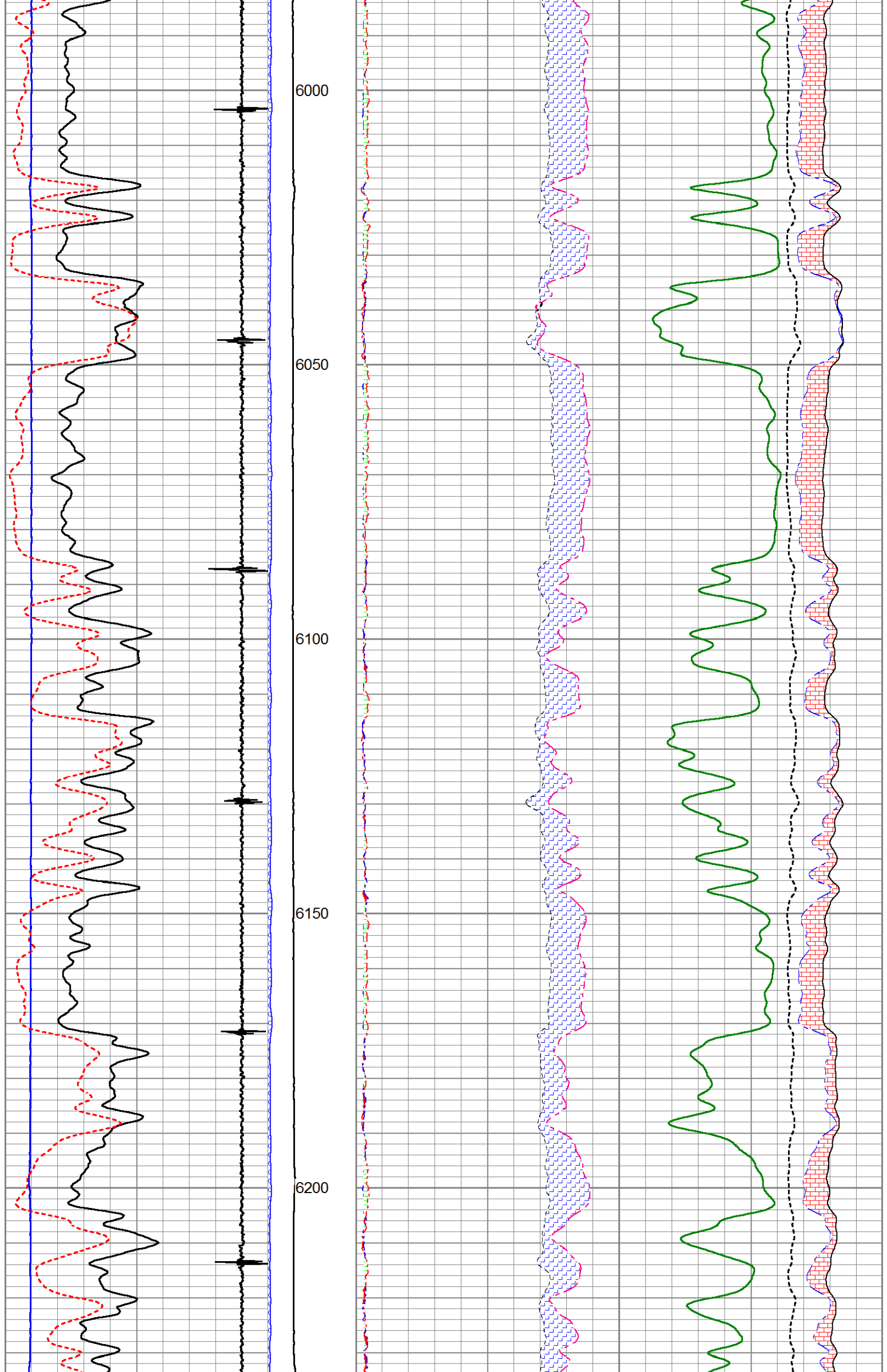


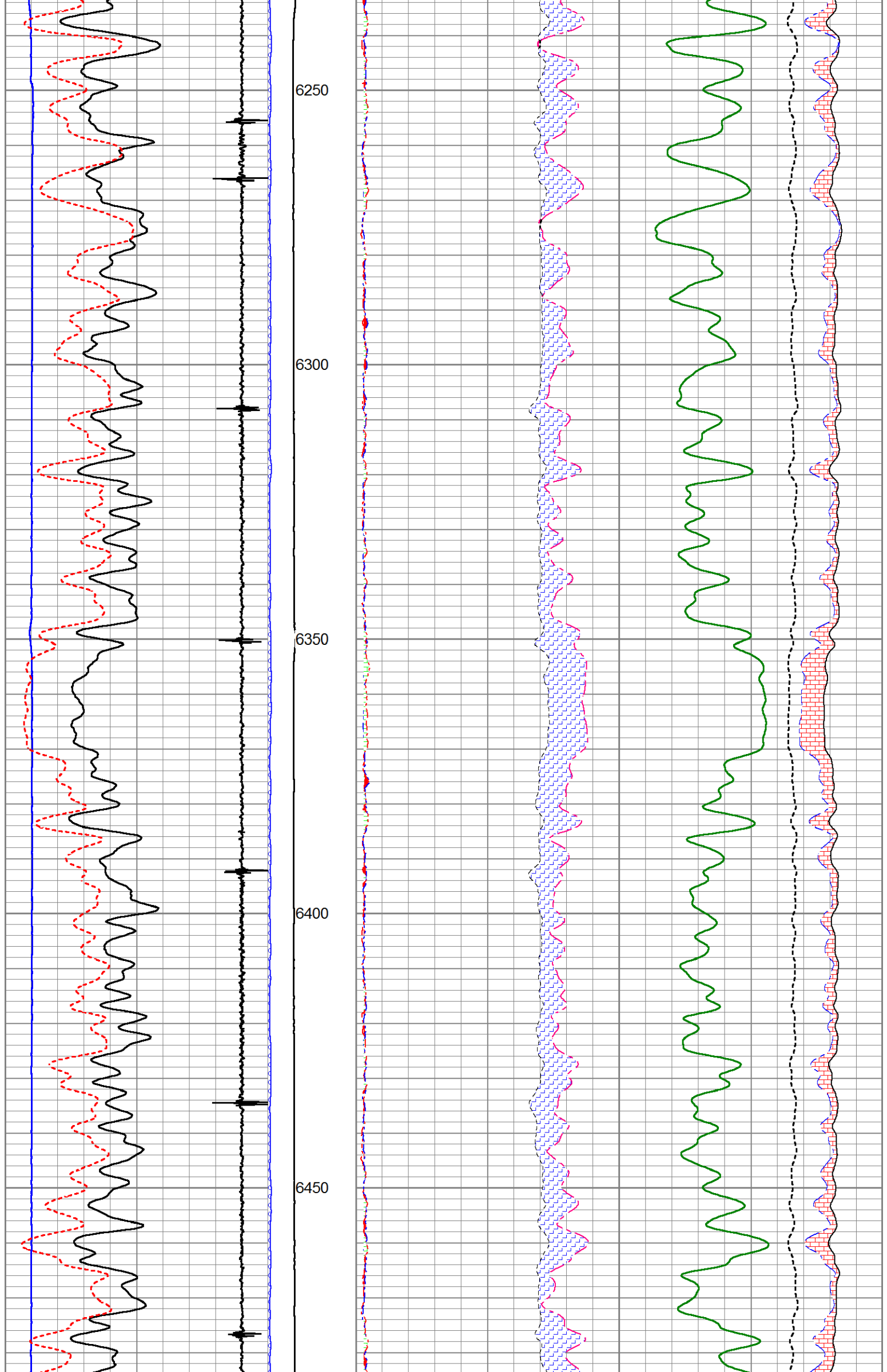


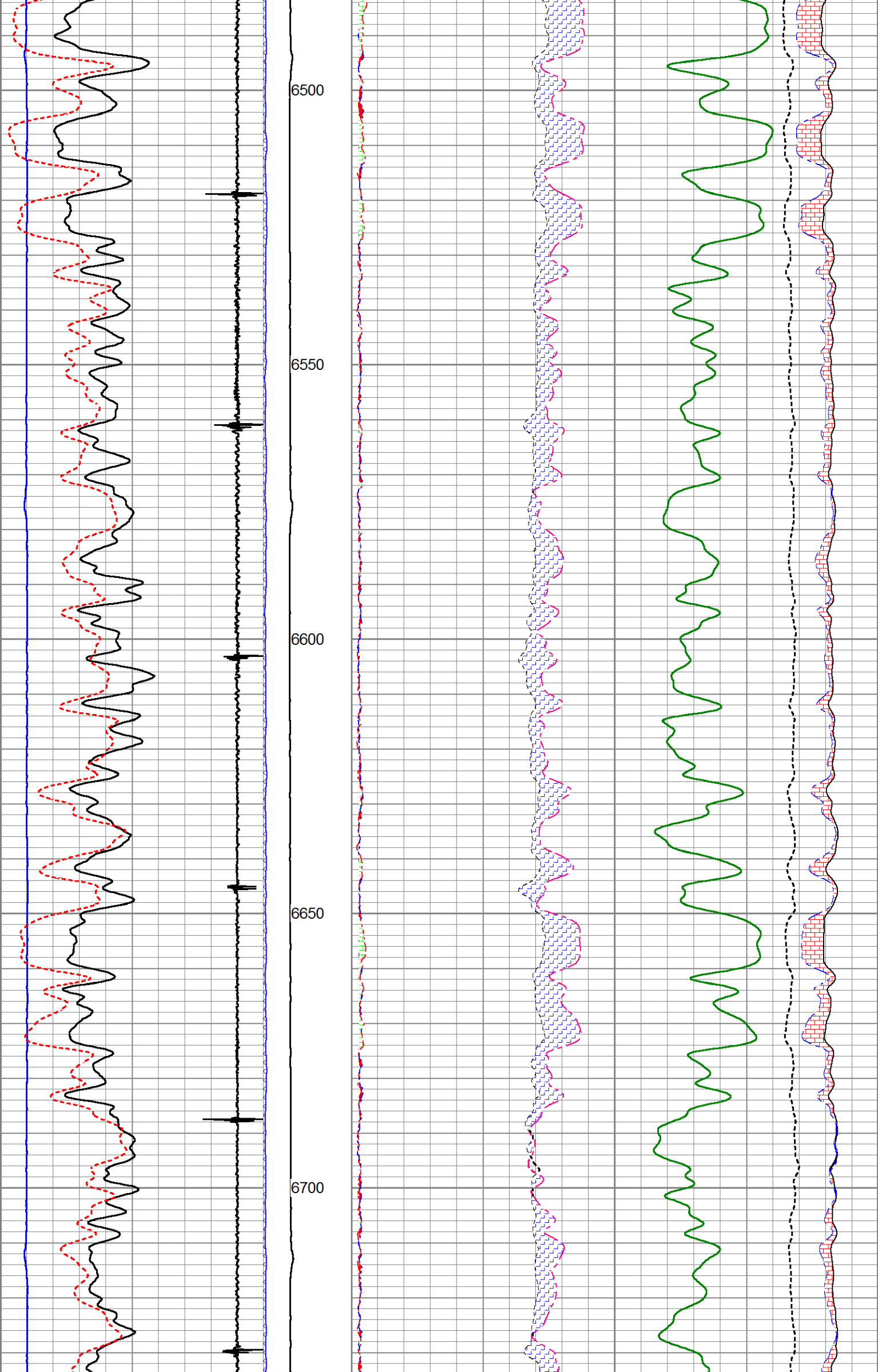


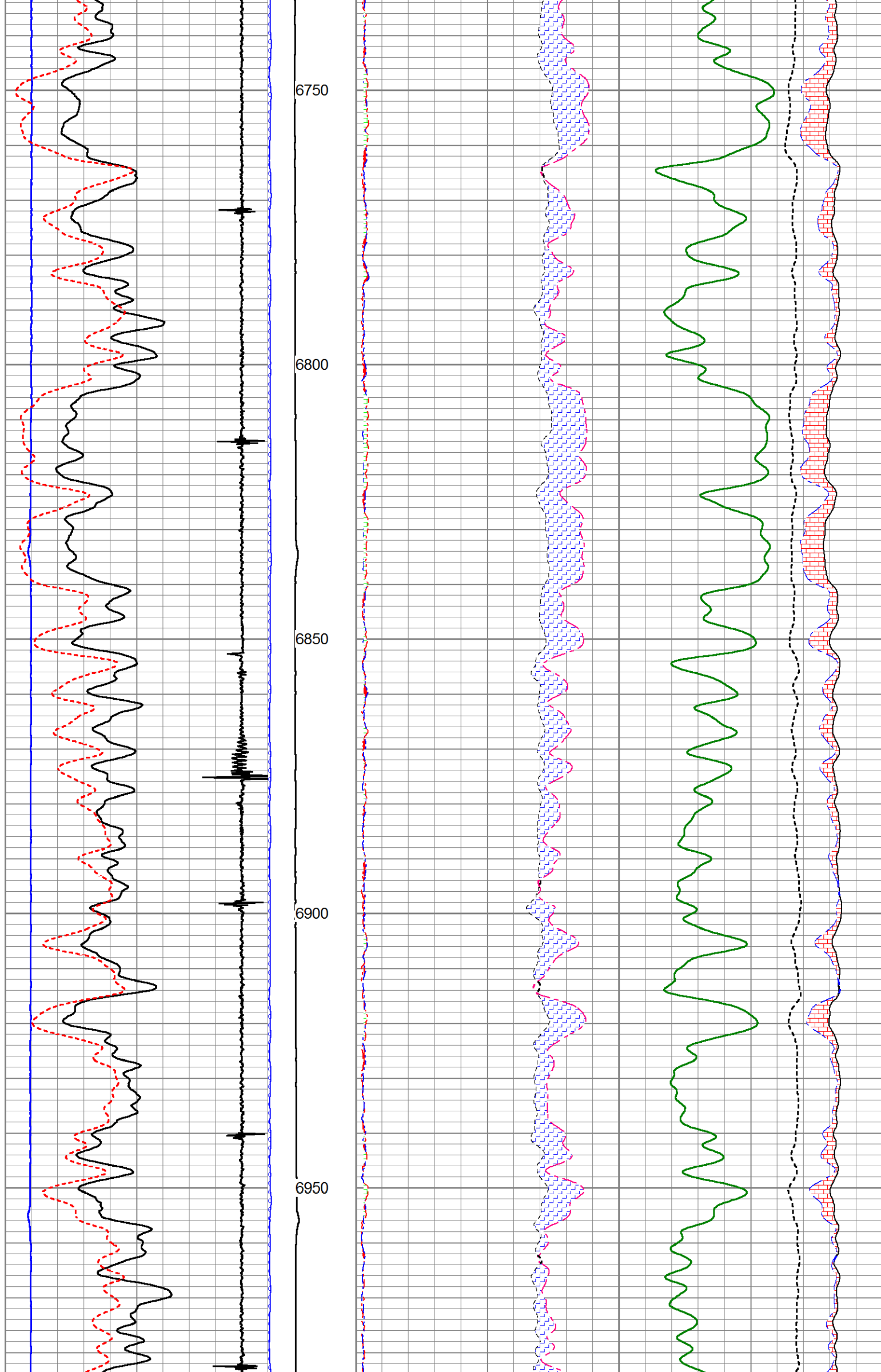


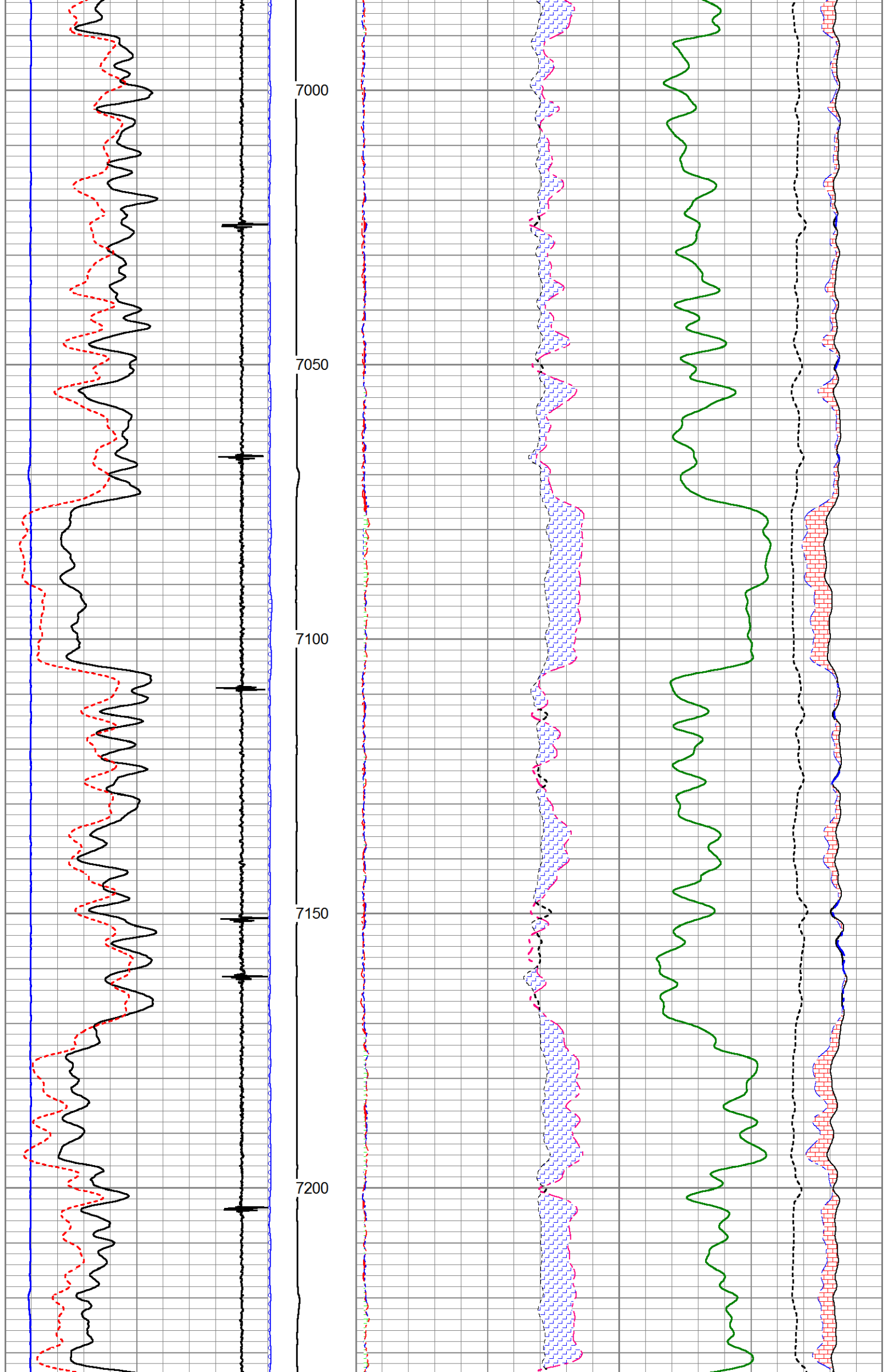


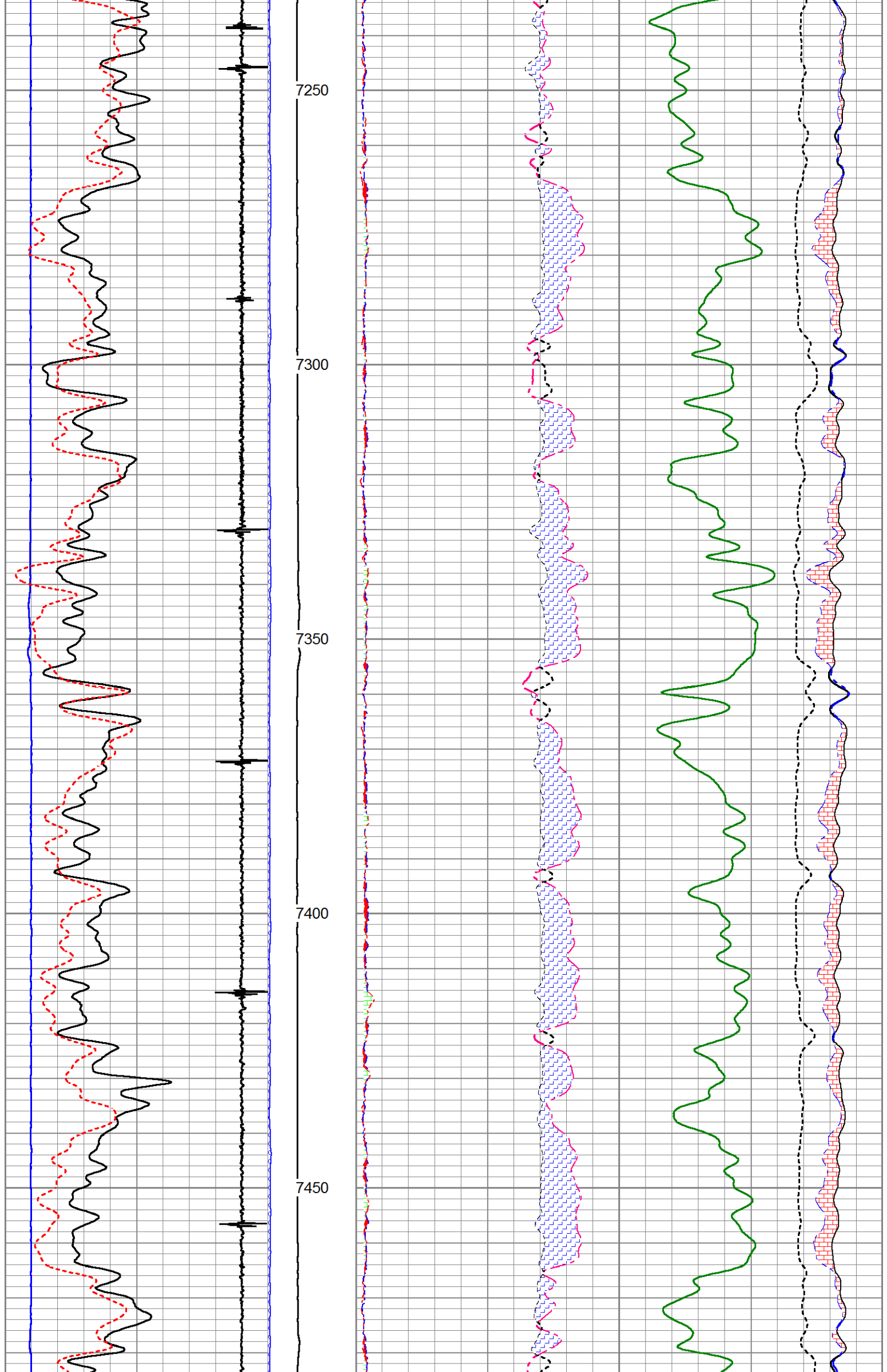


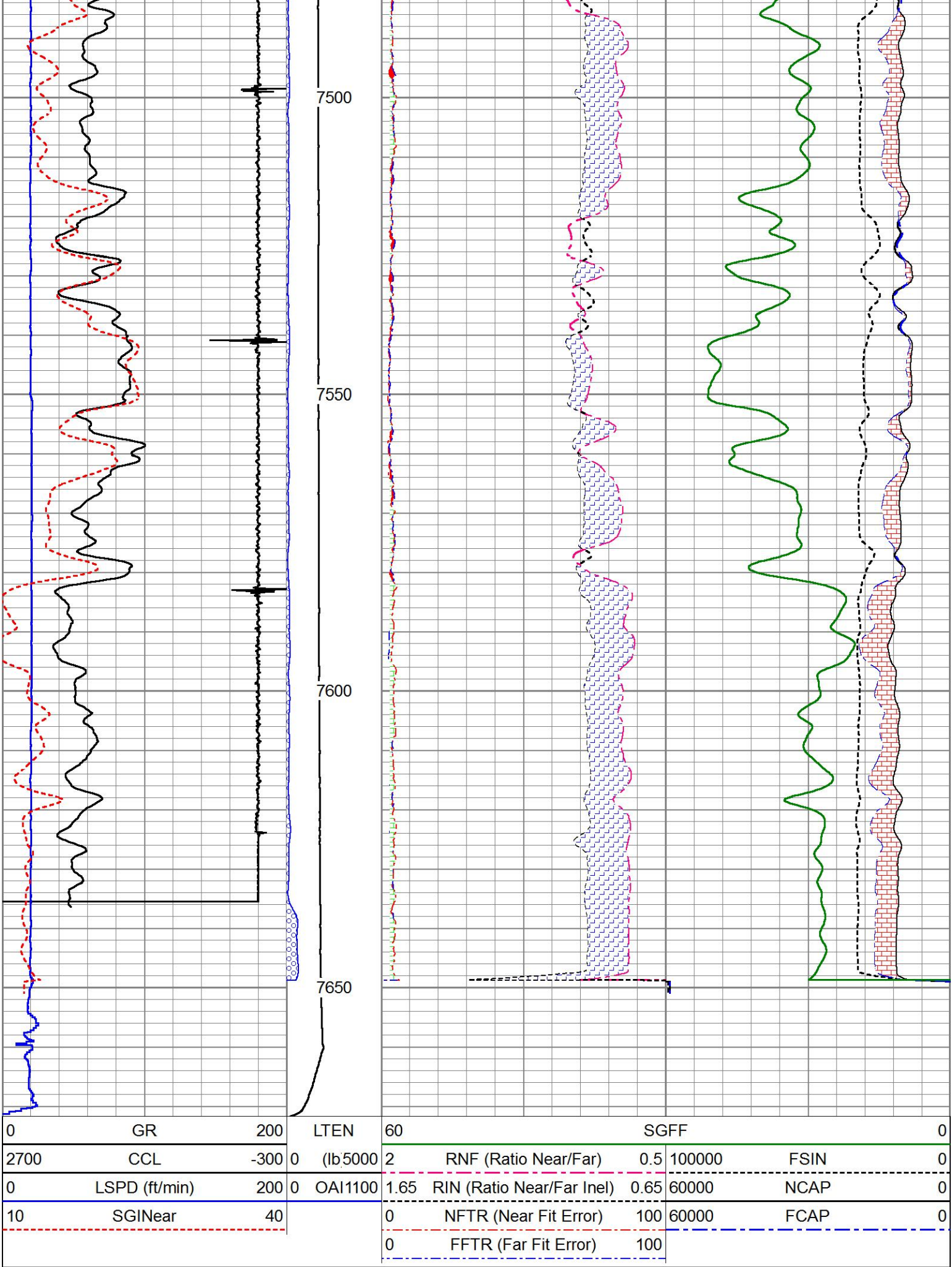












MAIN PASS

HALLIBURTON

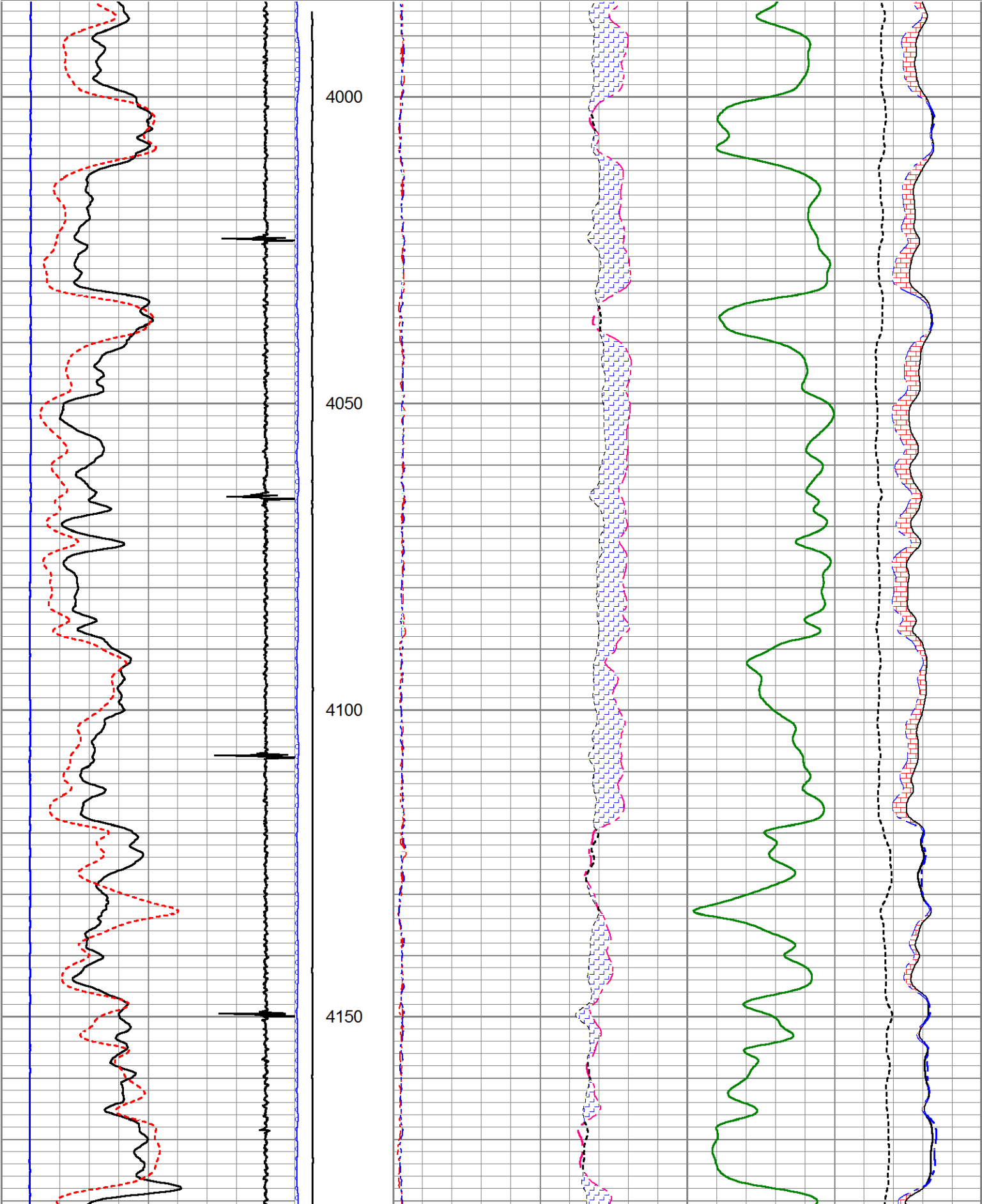
5" = 100'

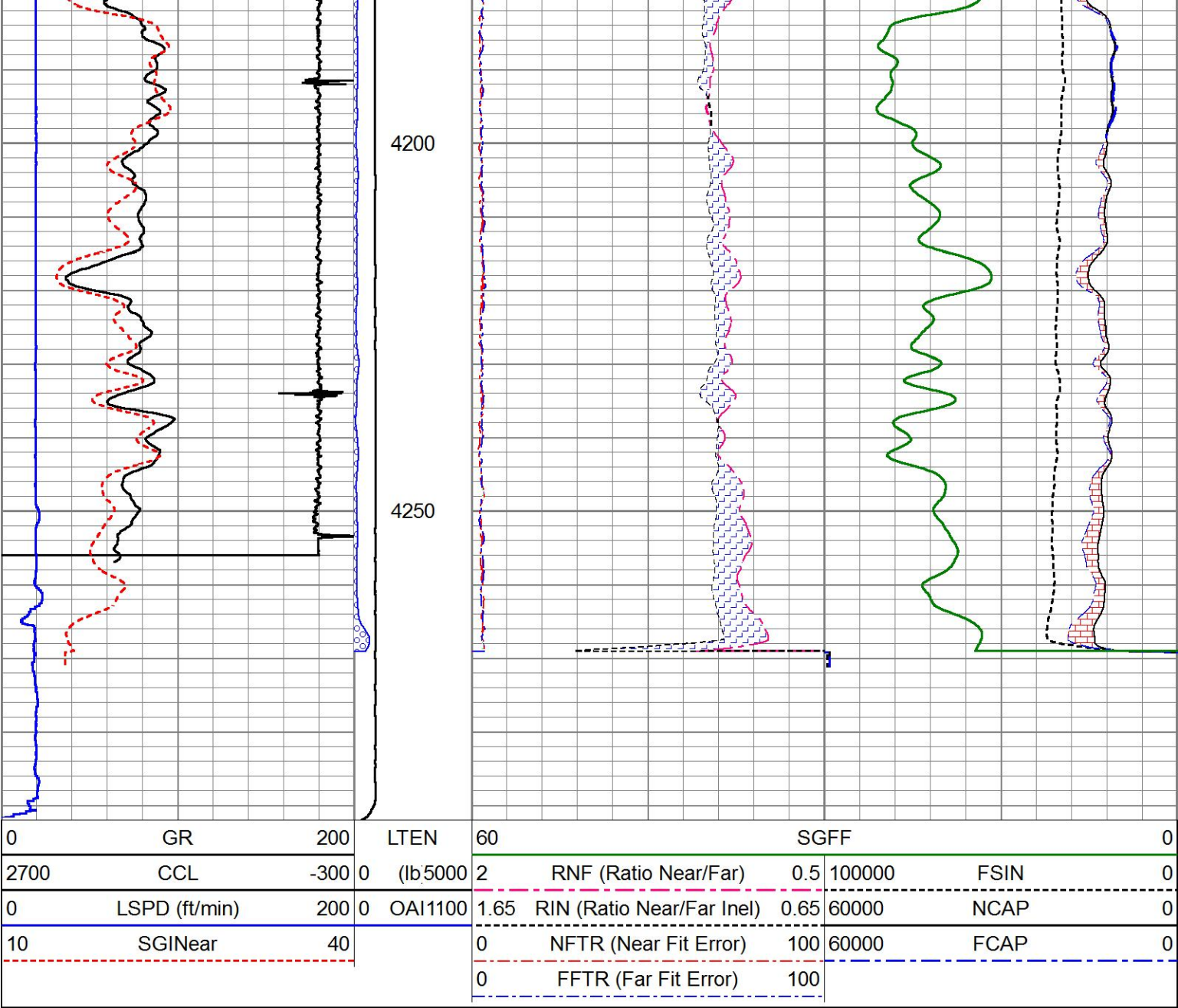
REPEAT PASS

HALLIBURTON

Database File c:\users\h180706\desktop\ursa\31c\31c_17_7_95.db
Dataset Pathname REPEAT
Presentation Format !1!!rmt_rmti
Dataset Creation Thu Dec 01 21:23:06 2016
Charted by Depth in Feet scaled 1:240

0	GR	200	LTEN	60	SGFF				0
2700	CCL	-300	0 (lb/5000	2	RNF (Ratio Near/Far)	0.5	100000	FSIN	0
0	LSPD (ft/min)	200	0 OAI1100	1.65	RIN (Ratio Near/Far Incl)	0.65	60000	NCAP	0
10	SGINear	40		0	NFTR (Near Fit Error)	100	60000	FCAP	0
				0	FFTR (Far Fit Error)	100			





REPEAT PASS

HALLIBURTON

5" = 100'

Log Variables

Database:c:\users\h180706\desktop\ursa\31c\31c_17_7_95.db
Dataset field/well/run1/MAIN1/_vars_

Top - Bottom

BHSAL1	BHSAL2	BHTEMP_Src	BITSIZE	BORSAL	BOTTEMP	CASED?	CASEOD
1	0	TEMP	in 7.875	kppm 150	degF 220	Yes	in 4.5
CASETHCK	CASEWGHT	LTH	MSGGN	MudWgt	PERFS	POROS1	POROS2
in 0.25	lb/ft 11.6	Sandstone	1	lb/gal 8.4	0	1	0
RHOFCF	SO	SRFTEMP	TDEPTH	UHSGC	USERFTT	ZREF	
0.25	in 0	degF 20	ft 7400	NONE	usec/ft 0	MRayl 1.7	

Calibration Report

Database File c:\users\h180706\desktop\ursa\31c\31c_17_7_95.db
Dataset Pathname MAIN1
Dataset Creation Thu Dec 01 22:44:44 2016

Free Pipe Calibration

TT	Measured	Units
	244.6	usec
Amplitude	552.0	mV
Log Base Line	5.9	mV

Calibration References and Gain

Name	Value	Units
Pipe O.D.	4.500	in
Pipe Weight	11.6	lb/ft
Pipe Ref. Amp.	81.2	mV
Amp. Gain	0.149	

Reservoir Monitor Tool I Calibration Report

Carbon/Oxygen Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	90.00	80.00	10.00	+/-15.00	V
ITCR2	3153	3250	-97	+/-250	cps

Near Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0259	5.51	<6.00
Fe	206	206 +/-2	0.0966	-----	-----
NGAIN = 0.996	NZOFF = 0.5				

Far Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0356	5.76	<6.50
Fe	210	208 +/-2	0.0903	-----	-----
FGAIN = 0.990	FZOFF = 0.5				

Flask Temperature50.0 degF

Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.45	0.45	-0.00	+/-0.02	
LIRI2	1.36	1.36	0.00	+/-0.05	
TCCR2	5059	5000	59	+/-1000	cps
ITCR2	3123	3200	-77	+/-250	cps

Sigma Mode


Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	90.00	80.00	10.00	+/-15.00	V
FCAP	9856	10000	-144	+/-500	cps

Horizontal Water Tank

Result	Logged	Expected Value	Diff.	Tol.	Units
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N/F Normalizer	0.96	0.95	0.01		
N/F Inel Norm	0.62	0.61	0.01		
RNF	1.04	1.07	-0.03	+/-0.12	
RINC	1.61	1.64	-0.03	+/-0.18	
SGFN	24.07	24.00	0.07	+/-0.50	cu
SGFF	22.92	22.85	0.07	+/-0.50	cu
FSIN	23621	24000	-379	+/-2000	cps
FCAP	9956	10000	-44	+/-1000	cps
NFTR	0.82			<5.00	
FFTR	0.92			<5.00	
NBKG	190			<500	cps
FBKG	97			<500	cps
RTN	0.40	0.40	-0.00	+/-0.10	usec
RTF	0.42	0.40	0.02	+/-0.10	usec
Calibration Software Modules					
HRMTI Module	2015.5.4.0				
RMTI Module	2015.10.16.1				
Log Data Acquisition Software Modules					
HRMTI Module	2015.5.4.0				
RMTI Module	2015.10.16.1				
Gamma Ray Calibration Report					
Type / Serial: 002 / 11214503					
SHOP CALIBRATION Wed Nov 09 16:25:32 2016					
	Counts/Sec.	Gain	Offset	Jig	Units
Background	34.1				cps
Calibrator	297.9				cps
		1.3950			GAPI/cps
PRIMARY VERIFICATION					
Background	42.3				cps
Calibrator	413.8				cps
Difference				371.5	GAPI
BEFORE SURVEY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI
AFTER SURVEY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
CCL	35.82		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
			TTTCU-002 (11214503) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
GR	33.56		XHU-003 (000001) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00

[illegible]