

HALLIBURTON

RESERVOIR  
MONITORING TOOL  
ELITE

Company

URSA OPERATING COMPANY LLC

Well

TOMPKINS 32C-08-07-95

Field

PARACHUTE

County

GARFIELD

State

CO

Company

URSA OPERATING COMPANY LLC

Well

TOMPKINS 32C-08-07-95

Field

PARACHUTE

County

GARFIELD

State

CO

API No.: 05045224720000

Serv #: 903515776

Other Services

Location: SHL: 200' FSL & 572' FEL  
BHL: 2090' FNL & 1980' FEL

Sec: 11

Twp: 6S

Rge: 92W

CBL-M

Permanent Datum

GROUND LEVEL

Elevation

5532'

Elevation

Log Measured From

KB

17' Ft. above perm. datum

K.B. 5549'  
D.F. 5549'  
G.L. 5532'

Drilling Measured From

KB

Date @ Time Logged

07 SEPT 2016 @ 18:00

Type Fluid in Hole

FRESH WATER

Run No.

ONE

Density of Fluid

8.4 PPG

Depth - Driller

7774'

Fluid Level

SURFACE

Depth - Logger

7505'

Cement Top Est. Logged

1500'

Bottom - Logged Interval

7505'

Equipment / Location

11808537 / RS. WY

Top - Log Interval

3785'

Recorded by

S. BURGIE

Max. Recorded Temp.

200 degF

Witnessed by

N/A

CEMENTING DATA

Surface

Protection

Liner

String

String

Date / Time Cemented

N/A

N/A

N/A

Primary / Squeeze

N/A

N/A

N/A

Expected Compressive Strength

N/A

psi@ N/A hrs

N/A

psi@ N/A hrs

N/A

psi@ N/A hrs

Cement Volume

N/A

N/A

N/A

N/A

N/A

N/A

Cement Type / Weight

N/A

/ N/A

N/A

/ N/A

N/A

/ N/A

Formulation

N/A

N/A

N/A

N/A

N/A

N/A

Mud Type / Mud Wgt.

N/A

/ N/A

N/A

/ N/A

N/A

/ N/A

Borehole Record

Casing & Tubing Record

Run Number

Bit

From

To

Size

Weight

From

To

ONE

24"

SURFACE

60"

16"

75.5 #

SURFACE

60"

TWO

12.25"

60"

1842'

8.625"

32.0 #

SURFACE

1842'

THREE

7.875"

1842'

7698'

4.5"

11.6 #

SURFACE

7698'

<<< 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 : 1500'  
GAMMA BLANKET : 223 GAPI  
FREE PIPE CALIBRATION DEPTH : 215'

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SVCS.  
YOUR CREW TODAY : SONNY BURGIE, BLAKE RIDDEL, DANIEL FLINDERS, CHUCK SIMONS, BRAD BRUDERER

Service Ticket No.

903515776

API No.

05045224720000

PGM Ver

15.10.29001

The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client

EQUIPMENT DATA

XHU

Run No.

ONE

Serial No.

00000001

Model No.

XHU-3

Diameter

1 11/16"

GAMMA

Run No.

ONE

Serial No.

12105780

Model No.

TTTC-U2

Diameter

1 11/16"

RMTI

Run No.

ONE

Serial No.

11680597

Model No.

RMTI

Diameter

2.25"

CBL

Run No.

ONE

Serial No.

00000001

Model No.

CBLM

Diameter

2.75"

LOGGING DATA

General Data

Pass

No

Depths

From

To

Well Head

Pressure

Speed

Ft/Min

Logging Run Comments

ONE	3860'	4065'	0 PSI	20	REPEAT			
TWO	7505'	3785'	0 PSI	20	MAIN			
	GAMMA RAY		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			

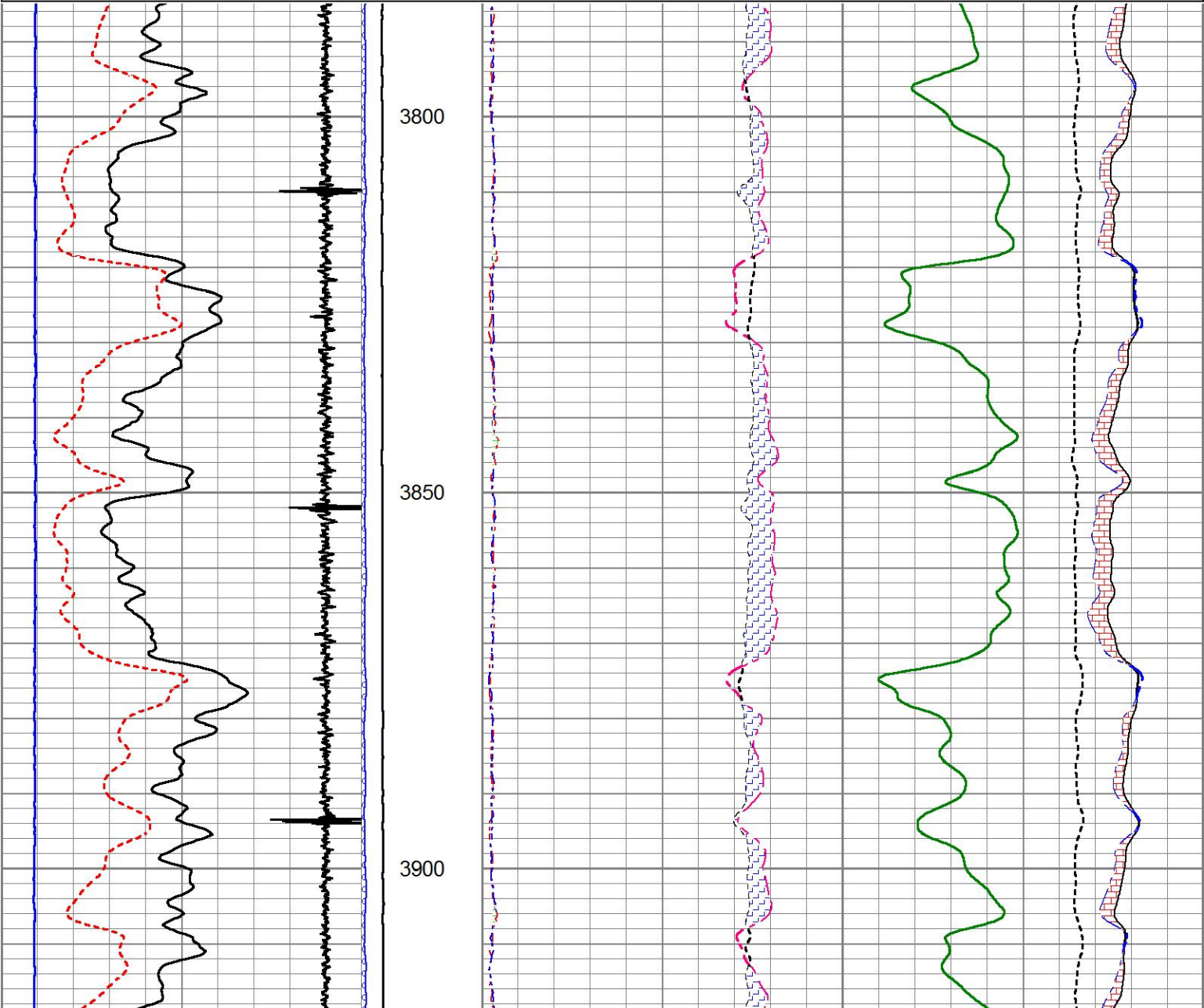
MAIN PASS

HALLIBURTON

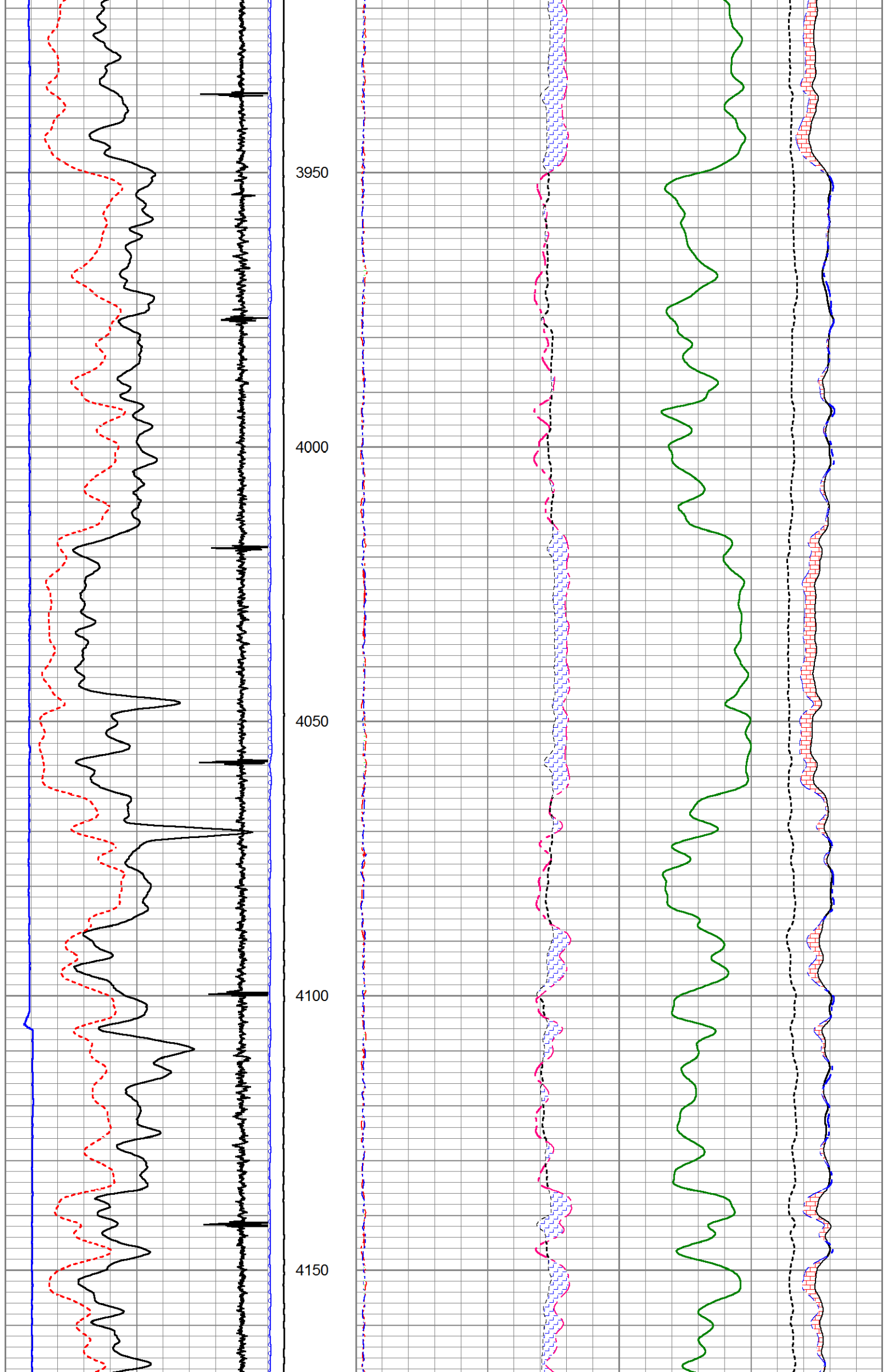
5" = 100'

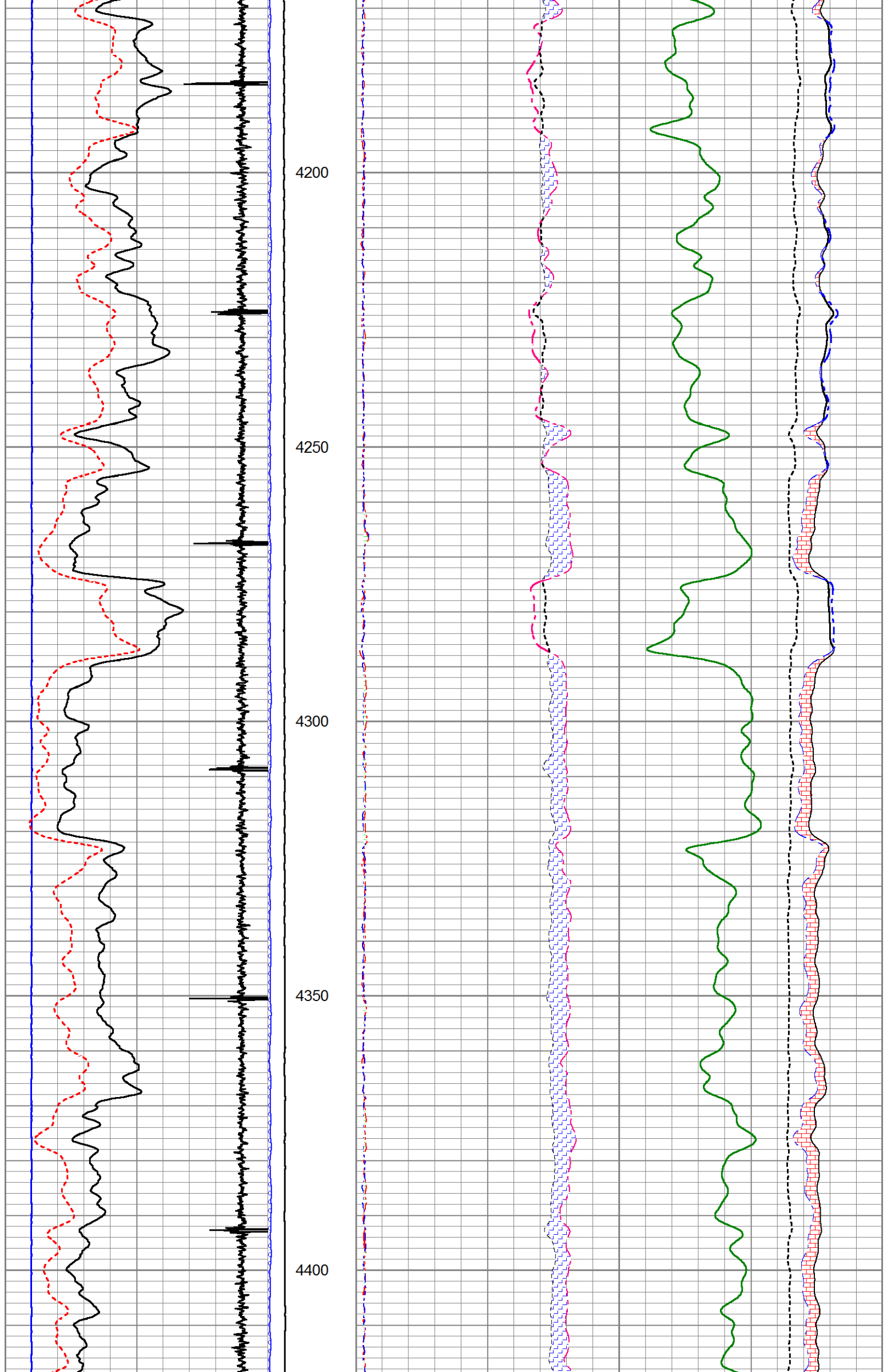
Database File        thompkins\_32c\_08\_07\_95.db  
Dataset Pathname    merge1  
Presentation Format   !1!!rmt\_rmti  
Dataset Creation     Thu Sep 08 01:19:26 2016  
Charted by           Depth in Feet scaled 1:240

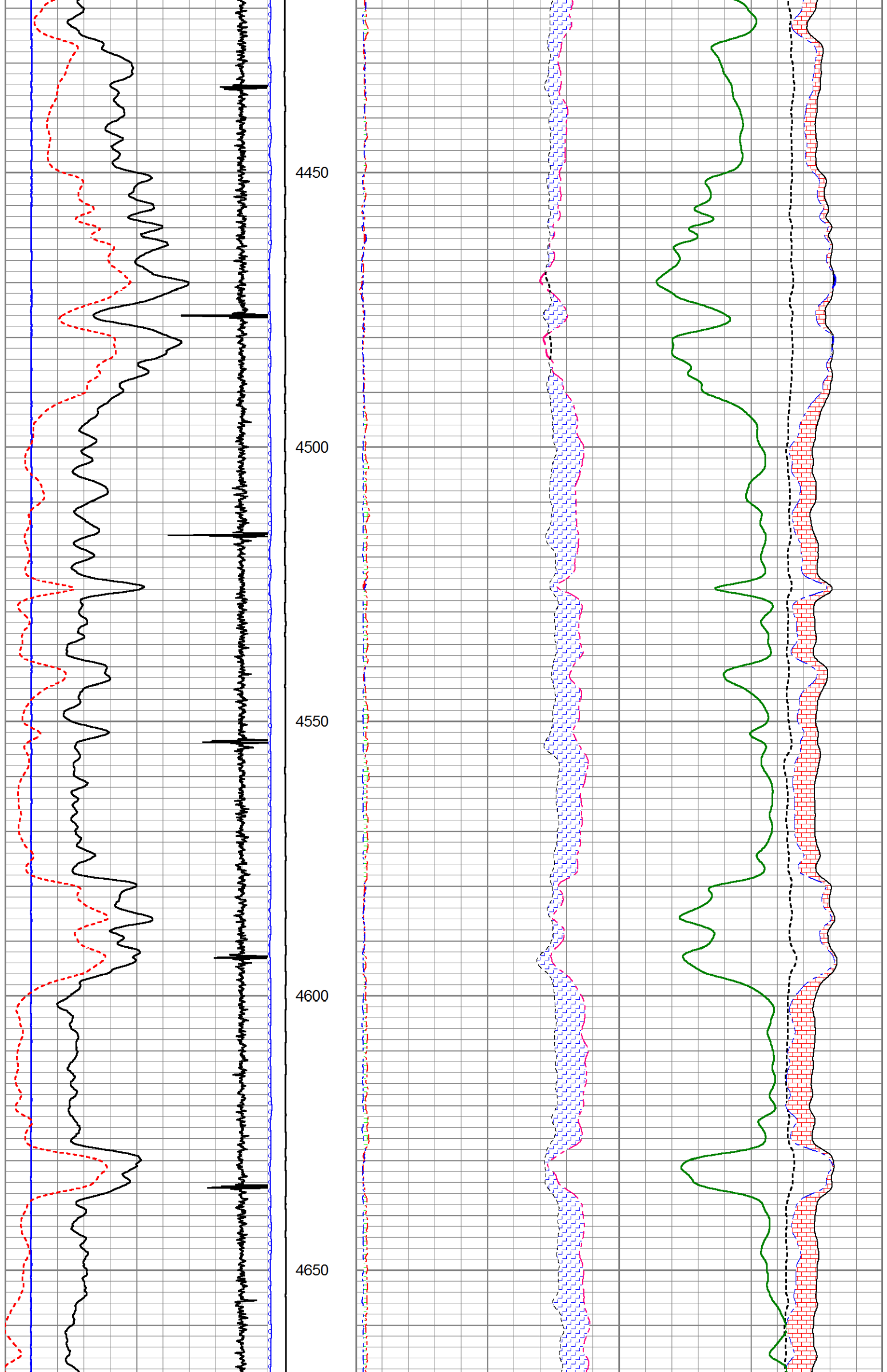
0	GR	200	LTEN	60	SGFF				0
2700	CCL	-300	0 (lb5000	2	RNF (Ratio Near/Far)	0.5	100000	FSIN	0
0	LSPD (ft/min)	200	0 OAI1100	1.65	RIN (Ratio Near/Far Incl)	0.65	60000	NCAP	0
10	SGINear	40		0	NFTR (Near Fit Error)	100	60000	FCAP	0
				0	FFTR (Far Fit Error)	100			

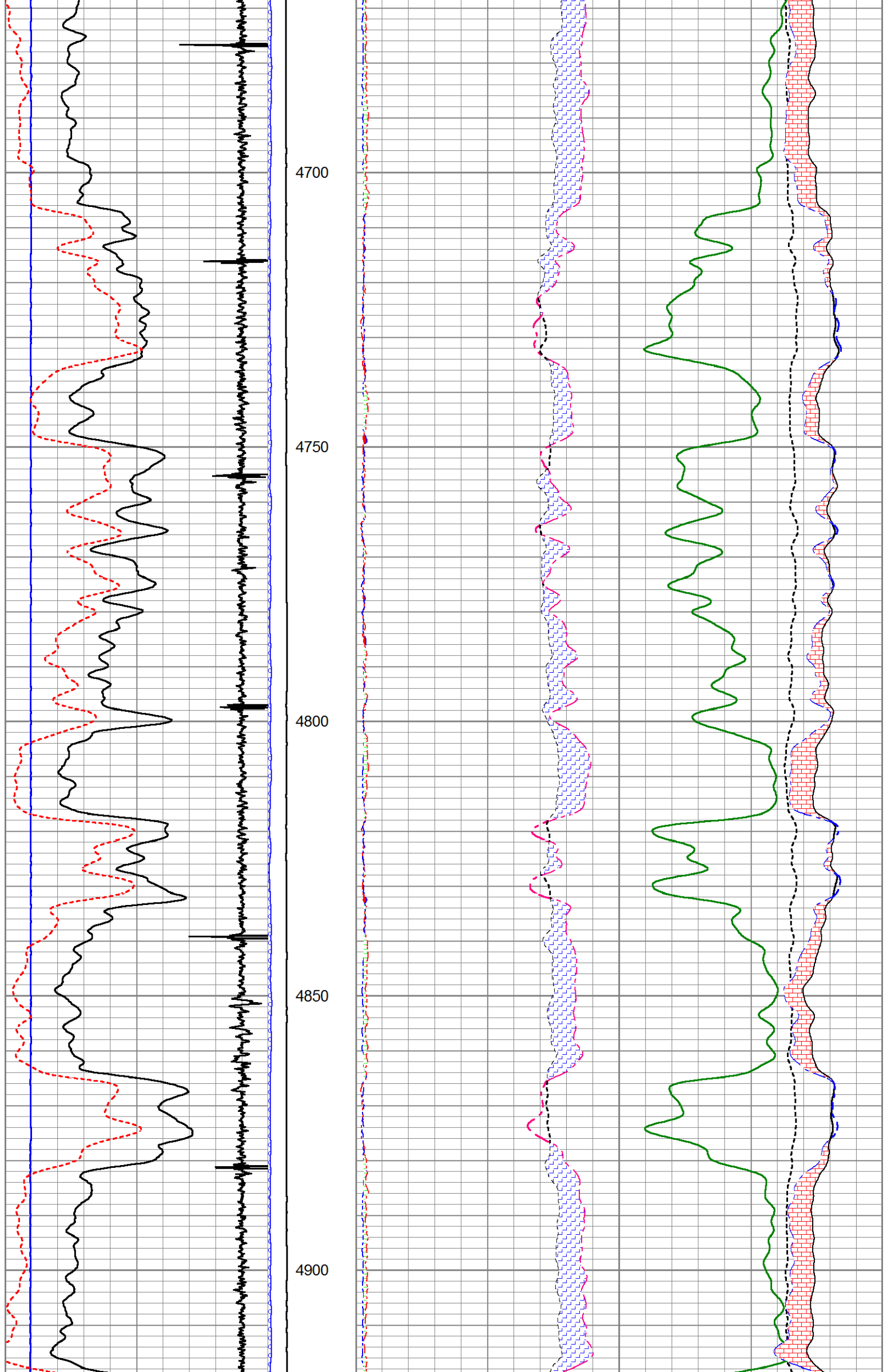


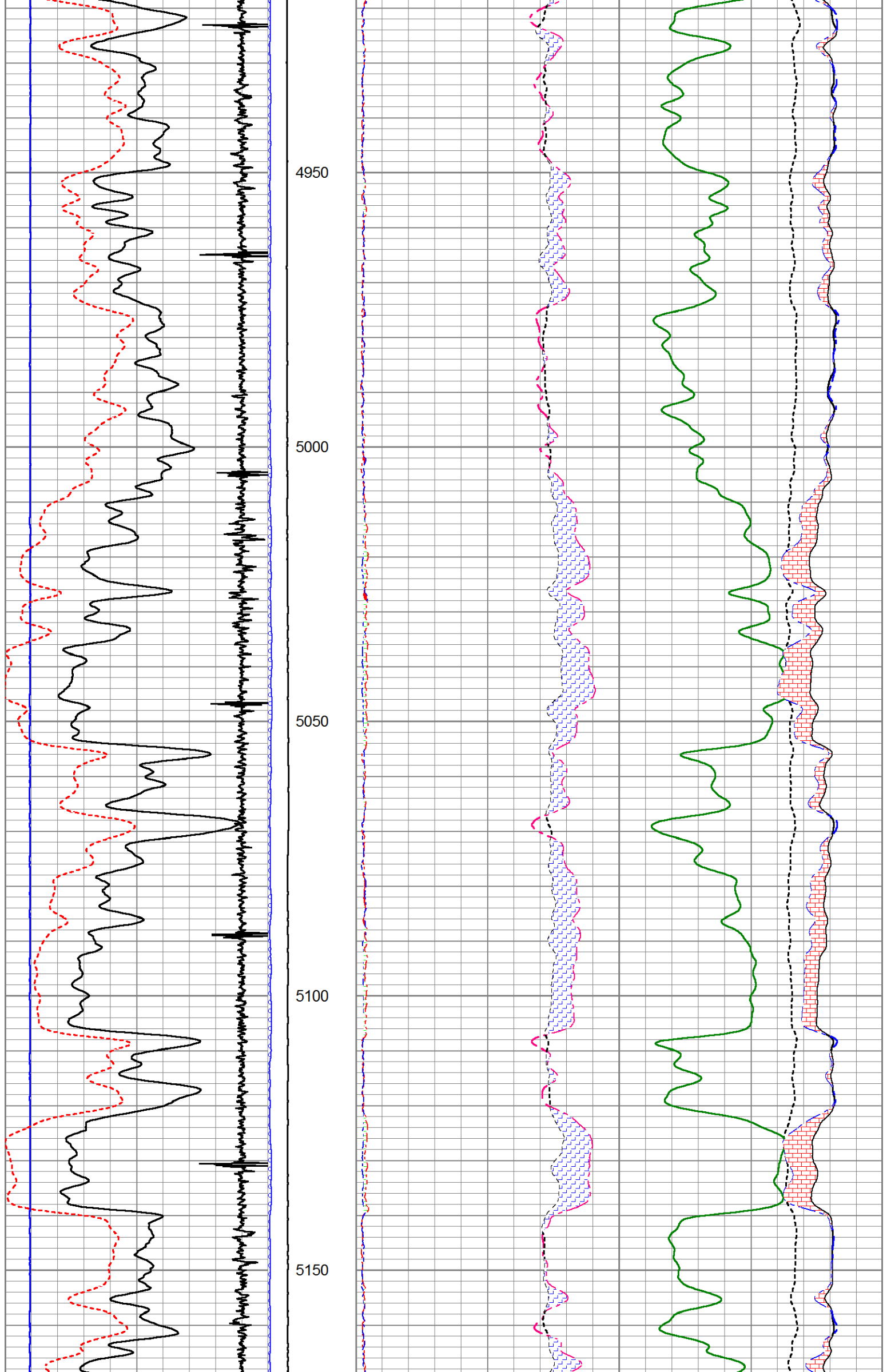


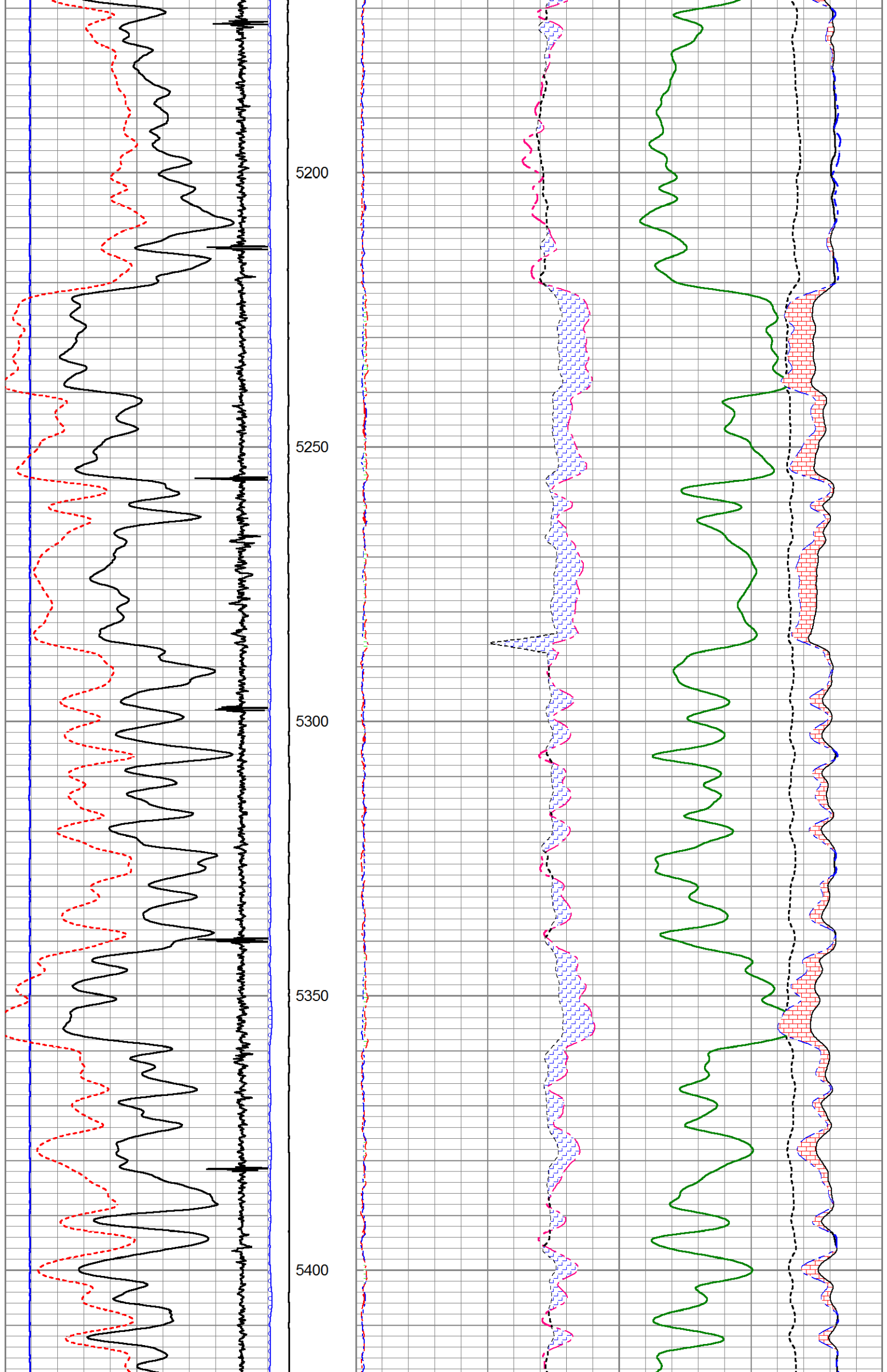




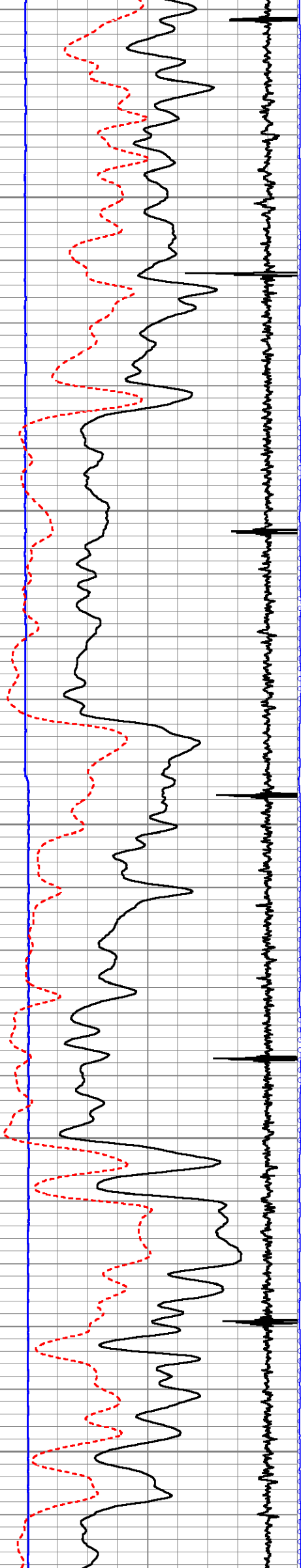












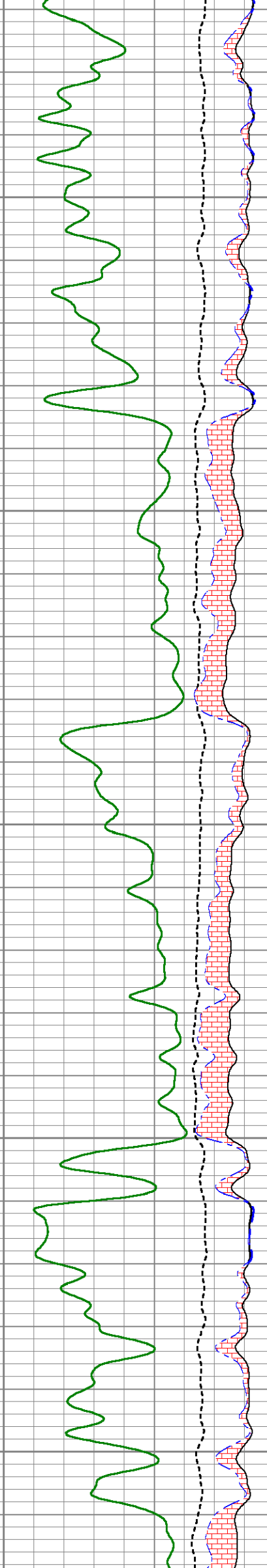
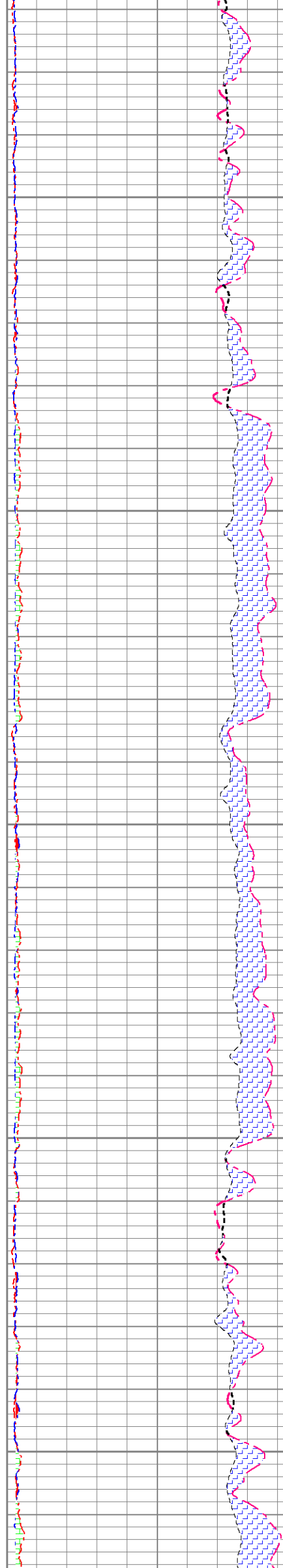
5450

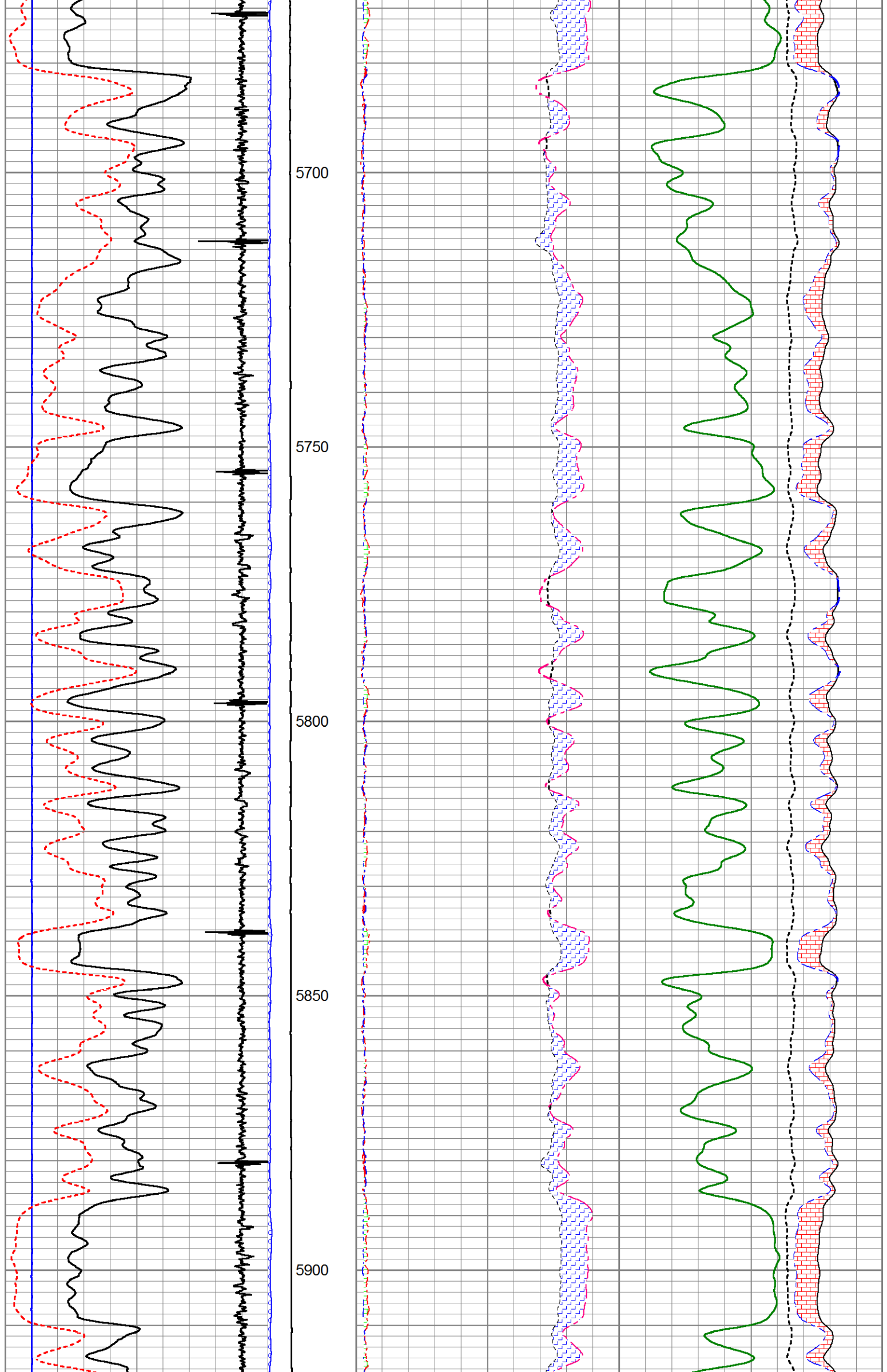
5500

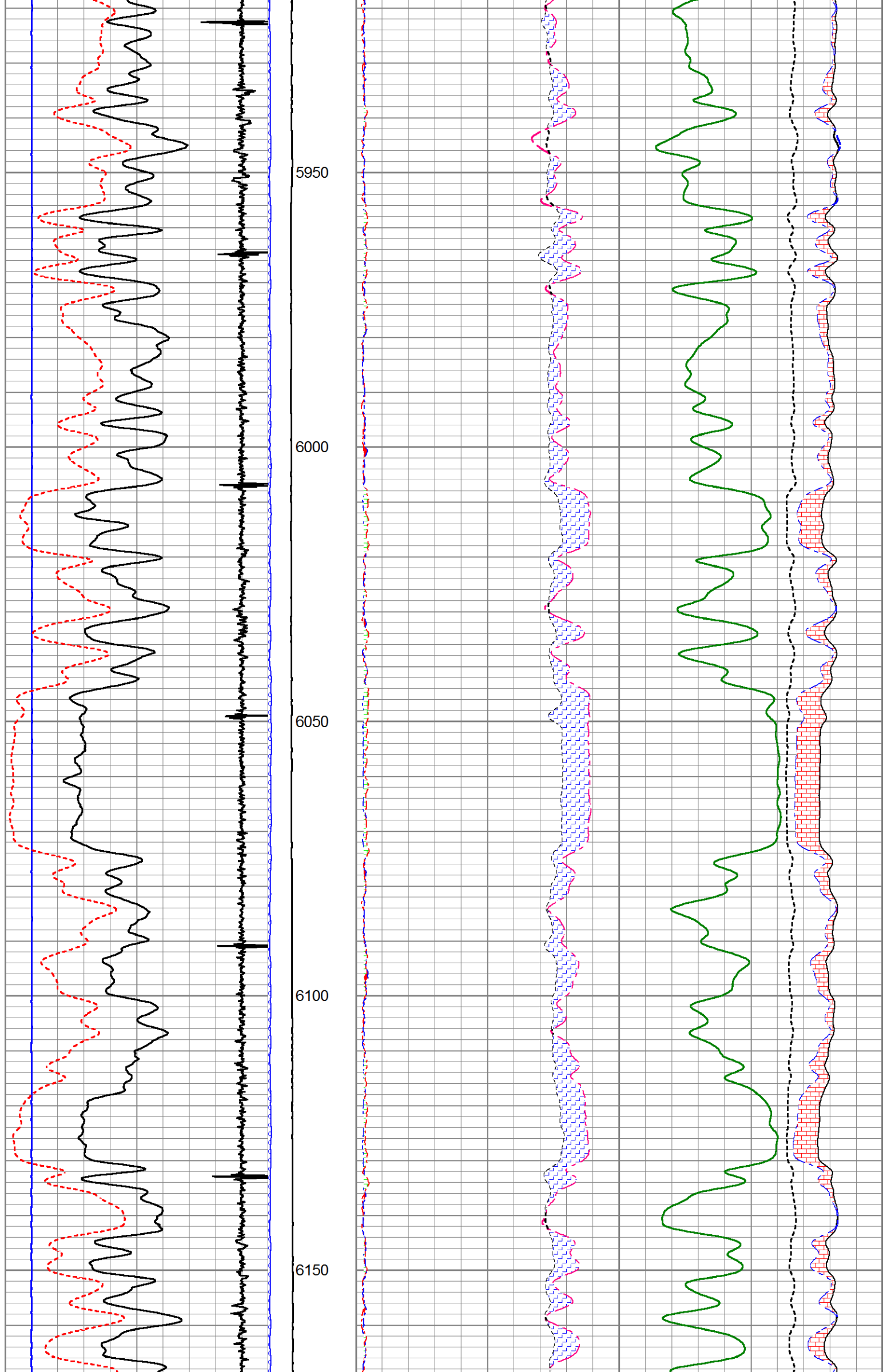
5550

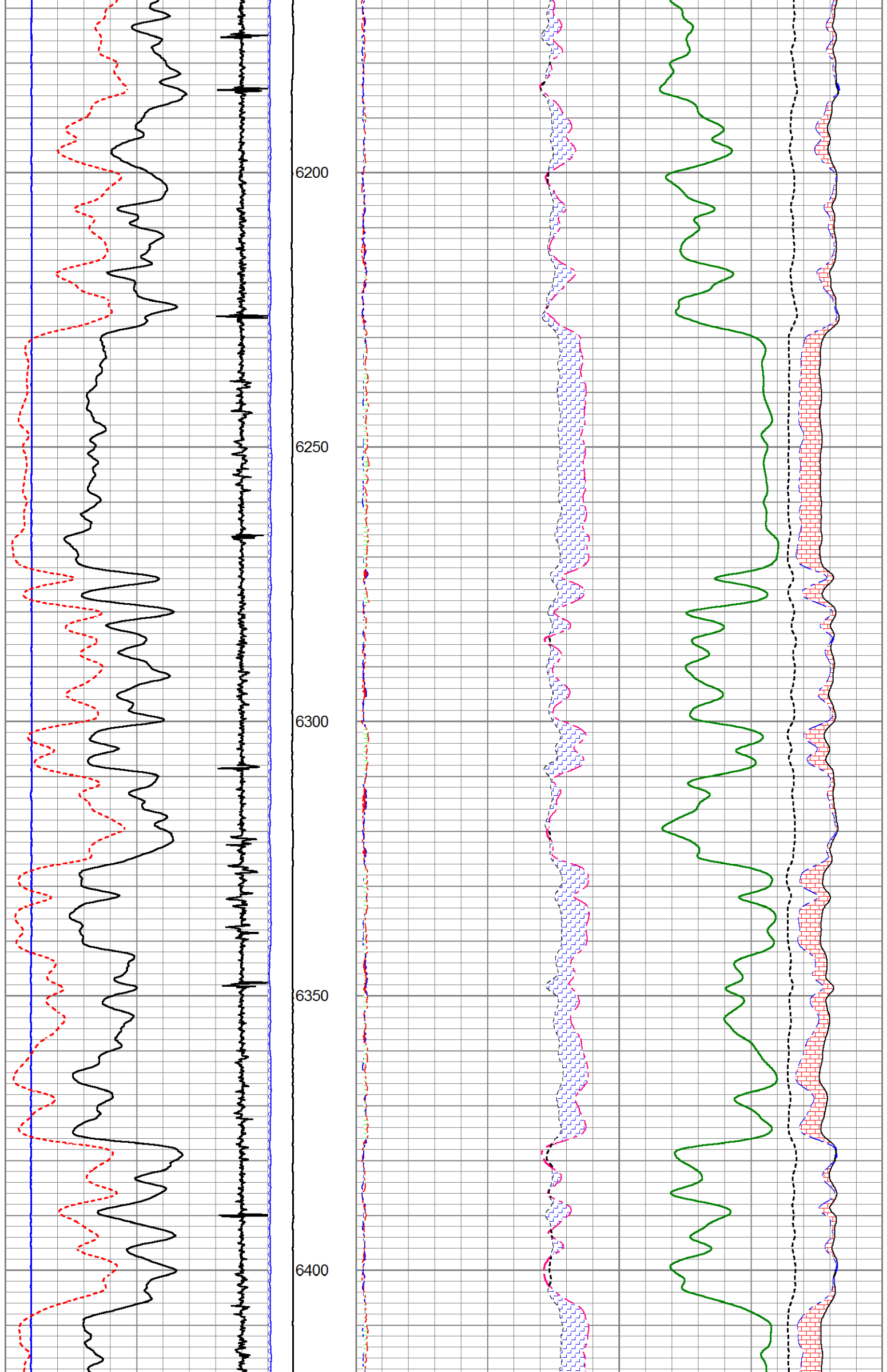
5600

5650

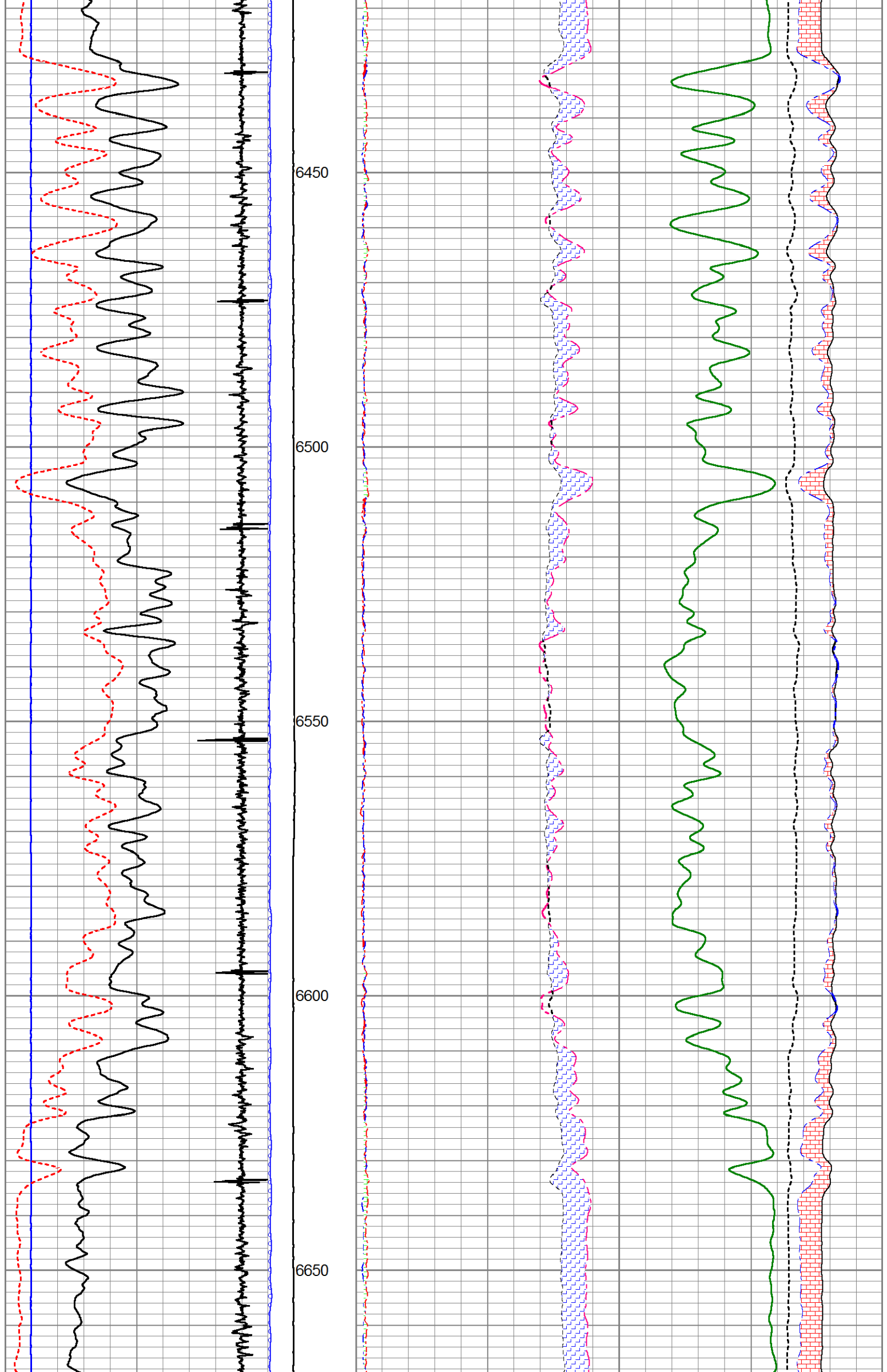


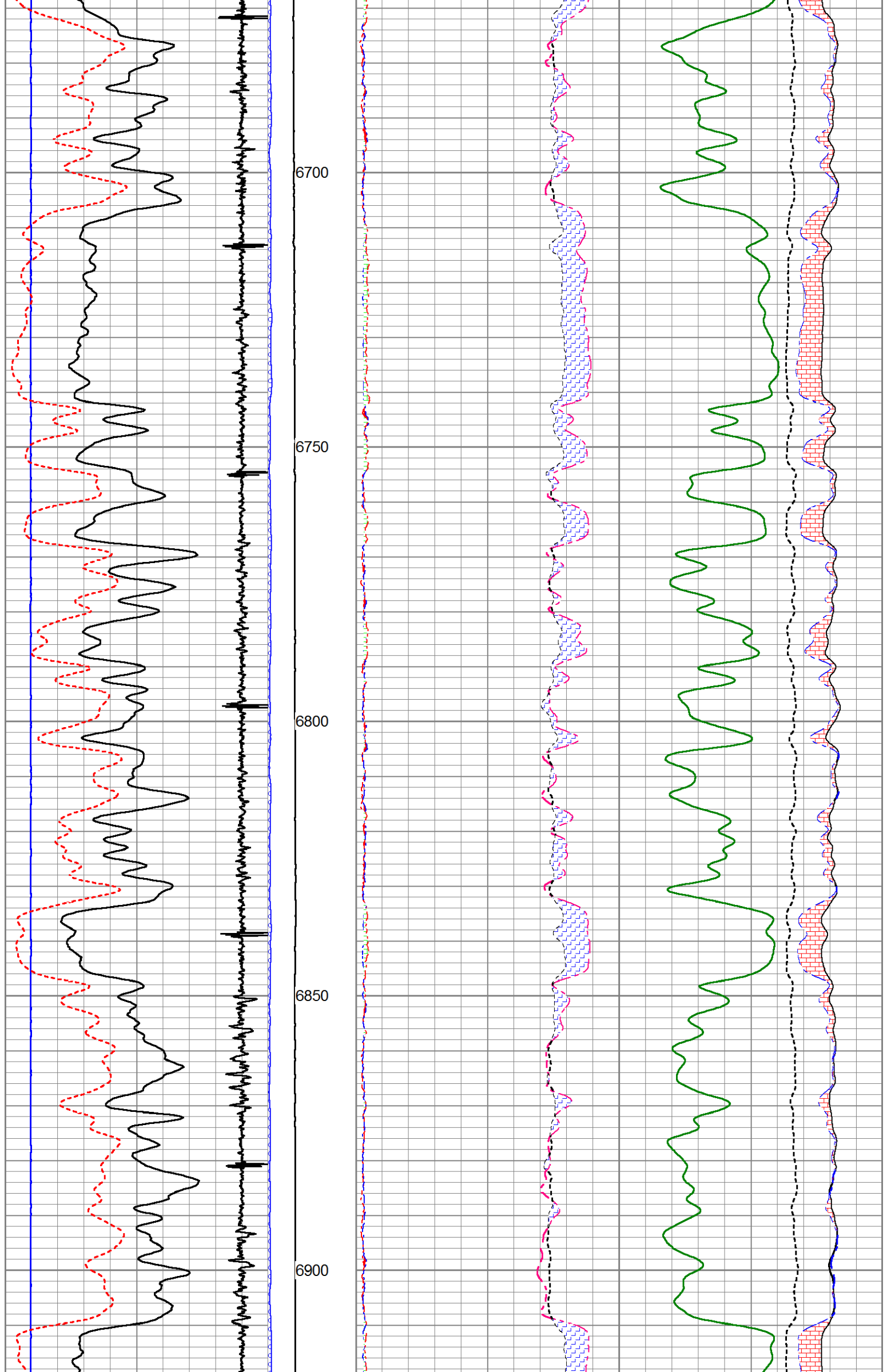


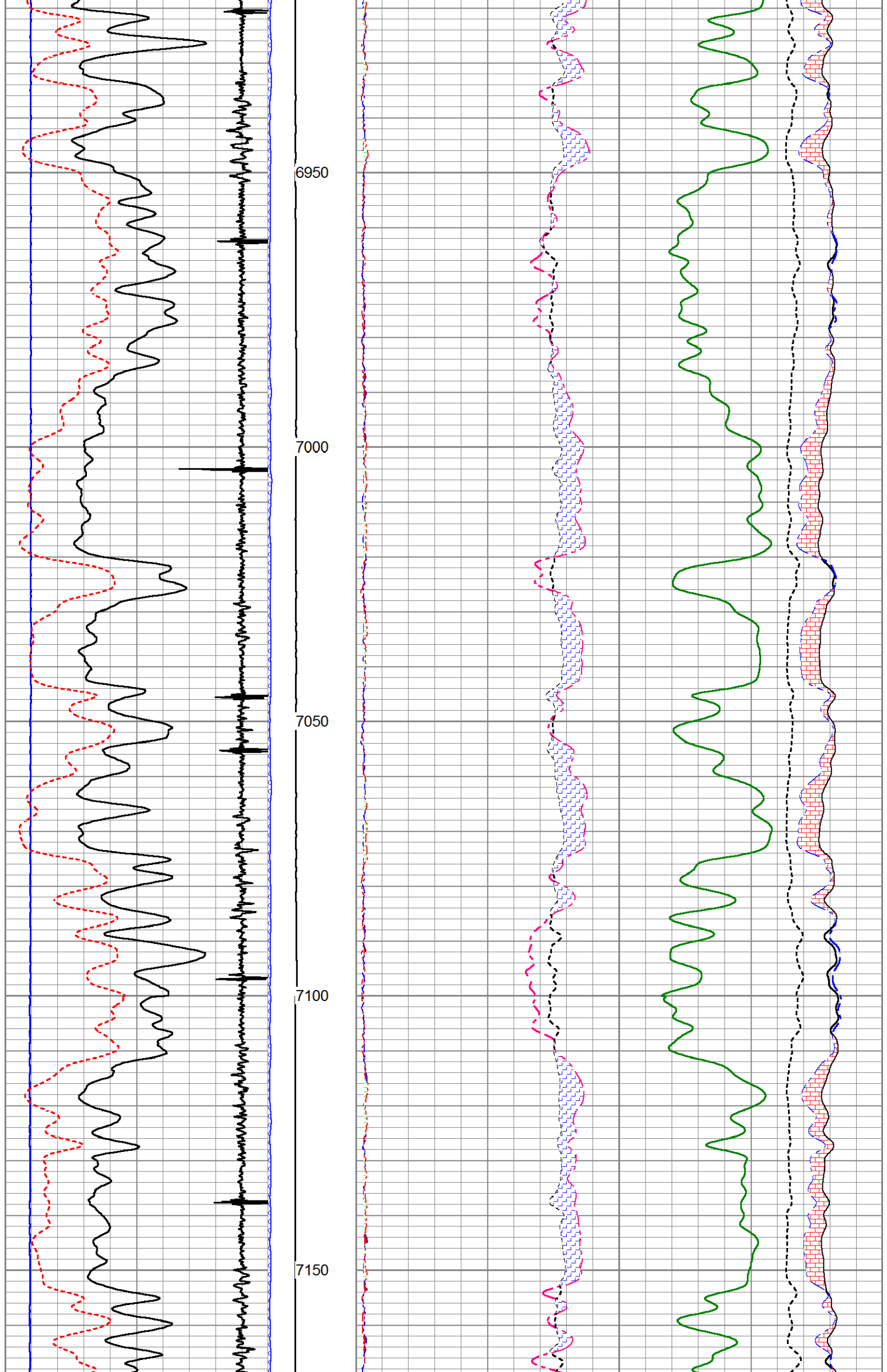


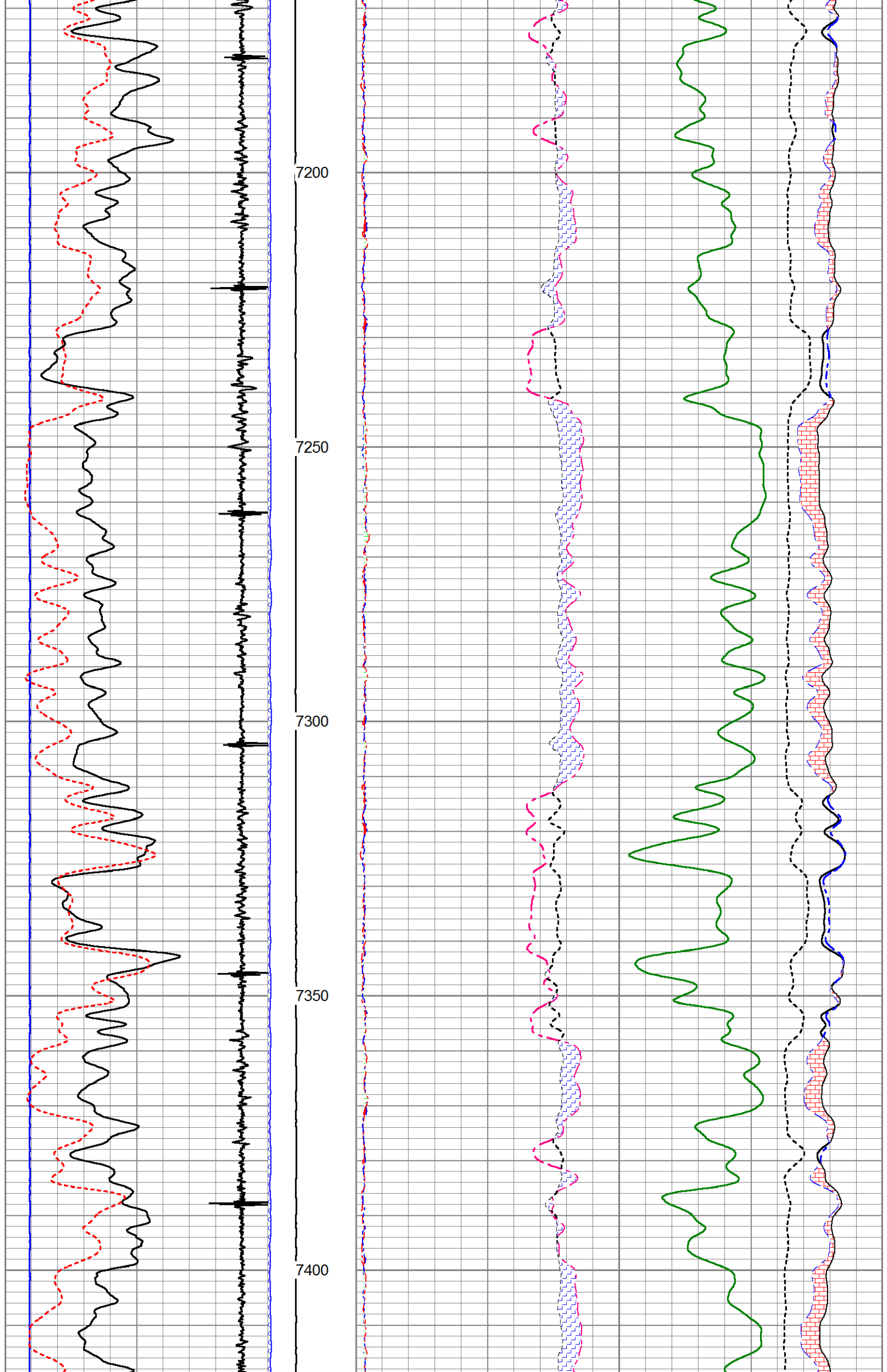




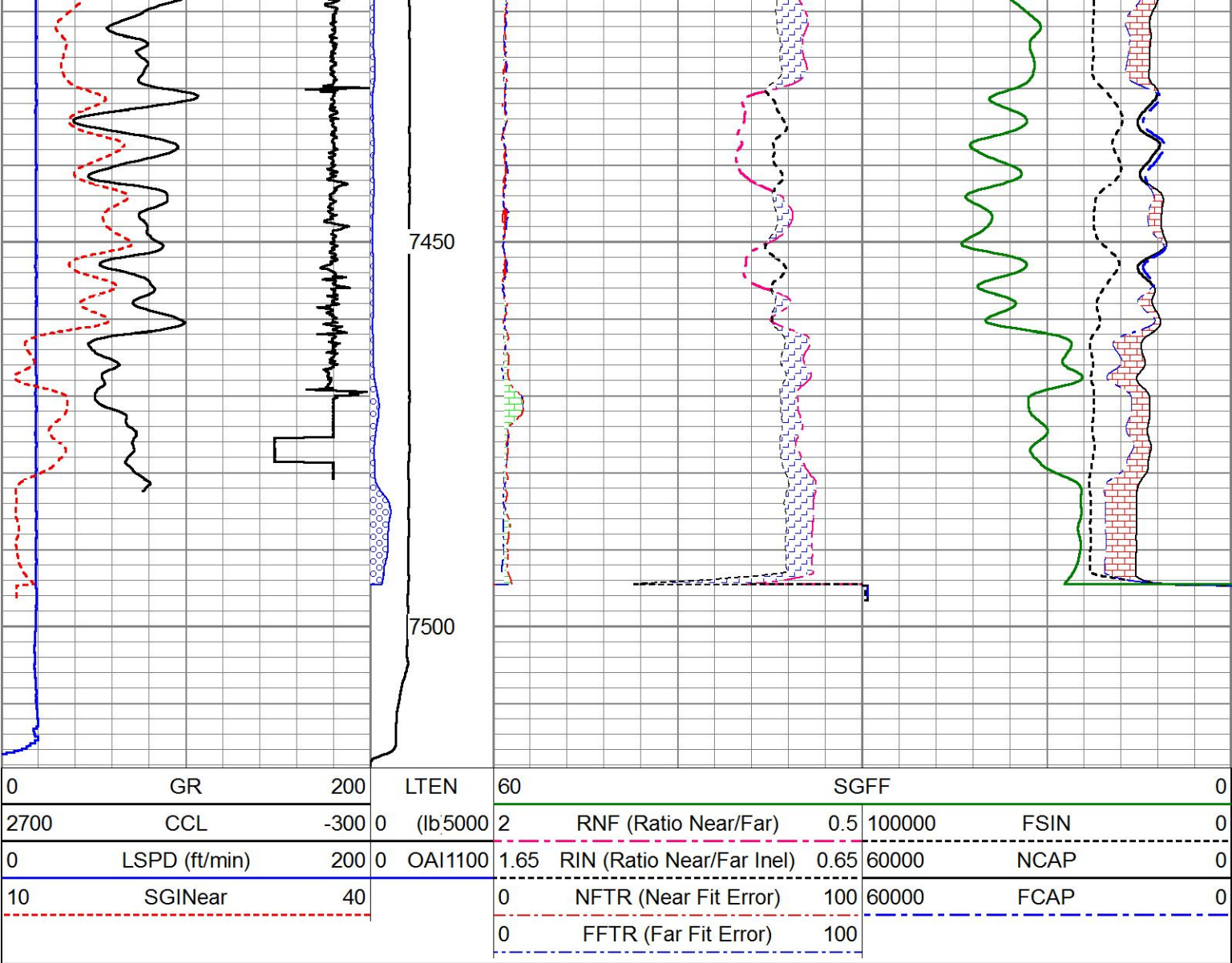












MAIN PASS

HALLIBURTON

5" = 100'

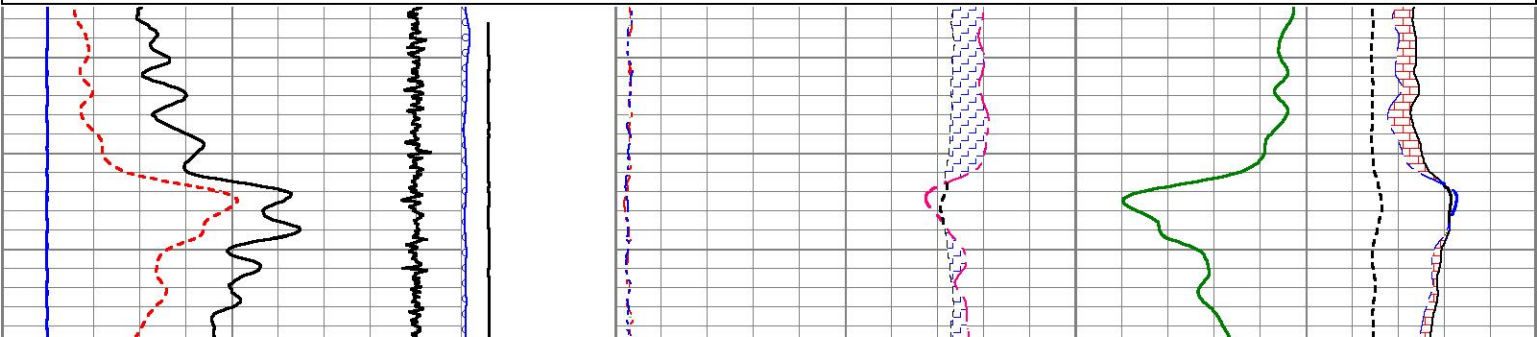
REPEAT PASS

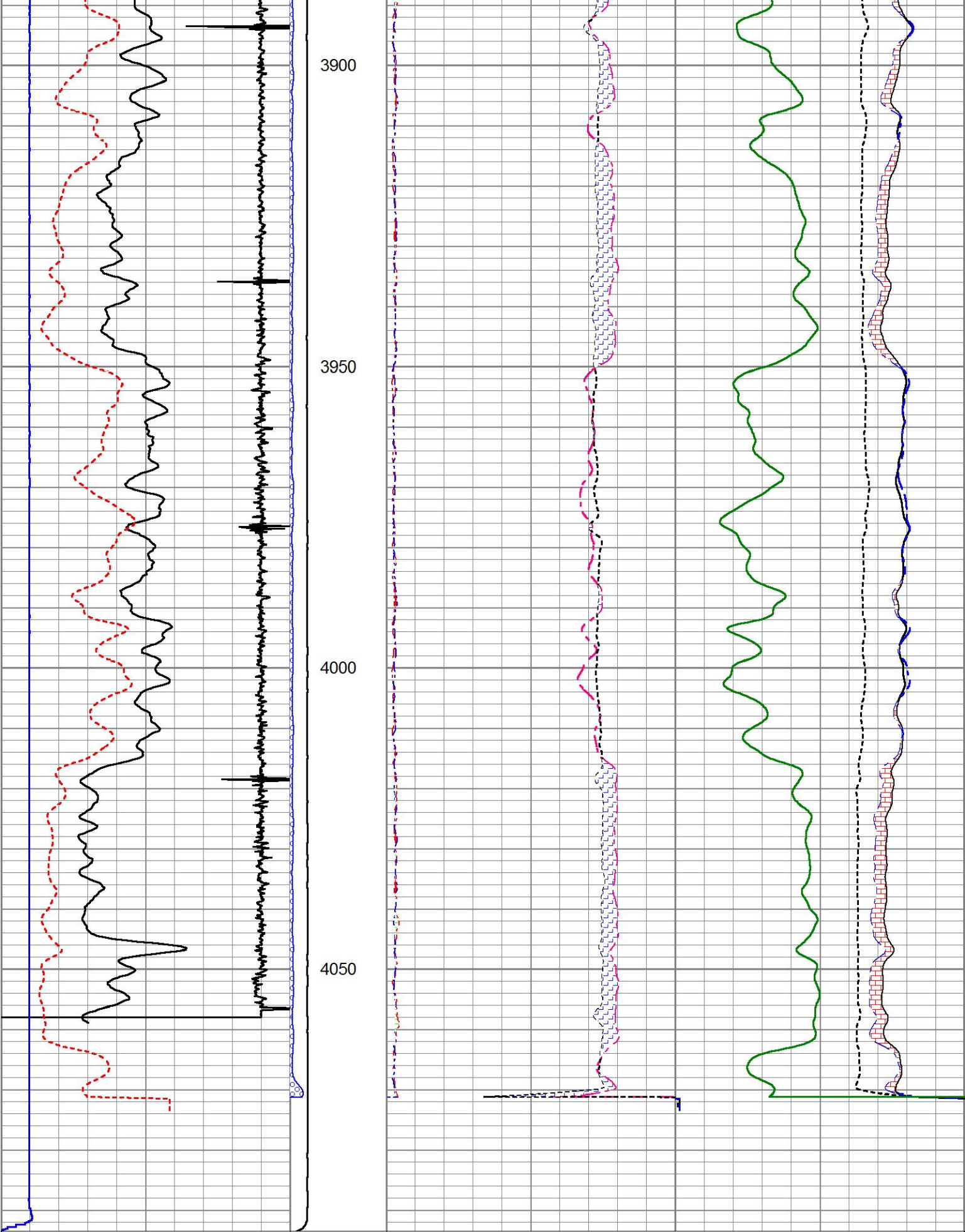
HALLIBURTON

5" = 100'

Database File	thompkins_32c_08_07_95.db
Dataset Pathname	pass2
Presentation Format	!1!!RM~1
Dataset Creation	Wed Sep 07 14:00:03 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 Inel) 0.65	60000 NCAP 0
10	SGINear	40		0	NFTR (Near Fit Error) 100	60000 FCAP 0
				0	FFTR (Far Fit Error) 100	





0	GR	200	LTEN	60	SGFF				0	
2700	CCL	-300		0	(lb)5000	2	RNF (Ratio Near/Far)	0.5	100000	FSIN
0	LSPD (ft/min)	200	0	OAI1100	1.65	RIN (Ratio Near/Far Inel)	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'

Top - Bottom

BHSAL1	BHSAL2	BHTEMP_Src	BITSIZE in	BORSAL kppm	BOTTEMP degF	CASED?	CASEOD in
1	0	TEMP	10	150	100	Yes	4.5
CASETHCK in	CASEWGHT lb/ft	LTH	MSGGN	MudWgt lb/gal	PERFS	POROS1	POROS2
0	11.6	Sandstone	1	8.4	0	1	0
RHOCF	SO in	SRFTEMP degF	TDEPTH ft	UHSGC	USERFTT usec/ft	ZREF MRayl	
0.25	0	0	7698	NONE	0	1.7	

Calibration Report

Database File thompkins\_32c\_08\_07\_95.db  
Dataset Pathname pass4  
Dataset Creation Wed Sep 07 14:27:54 2016

Cement Bond Log Shop Calibration Report

Serial-Model: 1-A  
Calibration Performed: Wed Sep 07 13:35:44 2016

Free Pipe Calibration

	Measured	Units
TT	245.3	usec
Amplitude	585.8	mV
Log Base Line	7.8	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	0.140	

Reservoir Monitor Tool I Calibration Report

Serial-Model: 11680597-A  
Shop Calibration Performed: Sat Aug 27 18:21:57 2016

Carbon/Oxygen Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	84.00	80.00	4.00	+/-15.00	V
ITCR2	3130	3250	-120	+/-250	cps

Near Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0278	5.69	<6.00
Fe	207	206 +/-2	0.0967	-----	-----
NGAIN = 0.992	NZOFF = 0.8				

Far Detector

Channel	Expected Value	Amplitude	FWHM	Tol.
---------	----------------	-----------	------	------

H	60	60 +/-2	0.0382	5.90	<6.50
Fe	209	208 +/-2	0.0926	-----	-----
FGAIN = 0.992	FZOFF = 0.8				
Flask Temperature	57.6 degF				
Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.44	0.45	-0.01	+/-0.02	
LIRI2	1.37	1.36	0.01	+/-0.05	
TCCR2	3766	4000	-234	+/-1000	cps
ITCR2	3102	3200	-98	+/-250	cps

Sigma Mode					
Stabilization					
Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	84.00	80.00	4.00	+/-15.00	V
FCAP	9744	10000	-256	+/-500	cps
Horizontal Water Tank					
Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.92	0.95	-0.03		
N/F Inel Norm	0.60	0.61	-0.01		
RNF	1.09	1.07	0.02	+/-0.12	
RINC	1.68	1.64	0.04	+/-0.18	
SGFN	24.13	24.00	0.13	+/-0.50	cu
SGFF	22.93	22.85	0.08	+/-0.50	cu
FSIN	23037	24000	-963	+/-2000	cps
FCAP	9704	10000	-296	+/-1000	cps
NFTR	0.80			<5.00	
FFTR	0.91			<5.00	
NBKG	216			<500	cps
FBKG	105			<500	cps
RTN	0.37	0.40	-0.03	+/-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 / 12105780
----------------	----------------

SHOP CALIBRATION		Mon Sep 05 10:59:30 2016			
	Counts/Sec.	Gain	Offset	Jig	Units
Background	28.5				cps
Calibrator	160.5				cps
		1.6899			GAPI/cps
PRIMARY VERIFICATION					
Background	46.0				cps
Calibrator	265.1				cps
Difference				219.0	GAPI
BEFORE SURVEY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI




## AFTER SURVEY VERIFICATION

Background	0.0
Calibrator	0.0
Difference	

0.0

cps  
cps  
GAPI

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
CCL	35.14					
GR	32.88		TTTCU-002 (12105780) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
			XHU-003 (000001) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
RmtTFGT RmtTNGT	22.23 21.73		RMTI-A (11680597) Halliburton RMTI Tool	14.00	2.13	77.00
RmtFP5V RmtNFwvMcsPI RmtCommFWa	13.98 13.98 13.98		X-OVER-GoxSondex Go Box x Sondex Pin CrossOver	0.27	1.69	1.00
			CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
Temp	8.89					
TT3FT AMP3FT WVF5FT	6.64 6.64 5.68		HCBLM-A (1) Halliburton HCBLM Tool	9.38	2.75	116.00
WVF3FT	2.16					

LLMTEN	0.00		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
Dataset: thompkins_32c_08_07_95.db: field/well/run1/pass6 Total length: 38.71 ft Total weight: 352.00 lb O.D.: 3.13 in						

Company	URSA OPERATING COMPANY LLC				
Well	TOMPKINS 32C-08-07-95				
Field	PARACHUTE				
County	GARFIELD		State	CO	
HALLIBURTON	RESERVOIR MONITORING TOOL ELITE				