

HALLIBURTON

RESERVOIR
MONITORING TOOL
ELITE

Company		URSA OPERATING COMPANY LLC	
Well	MONUMENT RIDGE B 34D-08-7-95		
Field	PARACHUTE		
County	GARFIELD	State	CO
Company		URSA OPERATING COMPANY LLC	
Well	MONUMENT RIDGE B 34D-08-7-95		
Field	PARACHUTE		
County	GARFIELD	State	CO
API No.:	05045229590000	Serv. #:	903683273
Location:		SHL: 950' FSL & 144' FEL BHL: 57' FSL & 1977' FEL	
Sec: 8		Twp: 7S	Rge: 95W
GROUND LEVEL		Elevation	5702'
Log Measured From	KB, 17' Ft. above perm. datum		K.B. 5719' D.F. 5719' G.L. 5702'
Drilling Measured From	KB		FRESH WATER
Date @ Time Logged	29 NOV 2016 @ 14:45	Type Fluid in Hole	
Run No.	ONE	Density of Fluid	8.4 PPG
Depth - Driller	7578'	Fluid Level	SURFACE
Depth - Logger	7405'	Cement Top Est. Logged	1608'
Bottom - Logged Interval	7380'	Equipment / Location	11808537 / RS. WY
Top - Log Interval	3609'	Recorded by	B. RIDDEL
Max. Recorded Temp.	220 degF	Witnessed by	R. TOLLE
CEMENTING DATA		Protection	
	Surface	String	Liner
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	psi@ N/A hrs
Cement Volume	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
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
ONE	24"	SURFACE	60'
TWO	12.25"	60'	1791'
THREE	7.875"	1791'	7578'
		Size	Weight
		16"	75.5 #
		8.625"	32.0 #
		4.5"	11.6 #
		From	To
		SURFACE	60'
		SURFACE	1791'
		SURFACE	7570'

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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 : 1608'
GAMMA BLANKET : 408 GAPI
FREE PIPE CALIBRATION DEPTH : 434'

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

Service Ticket No.	903683273	API No.	05045229590000	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.	TTTC-U2	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	3920'	3750'	0 PSI	20	REPEAT			
TWO	7380'	3609'	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			

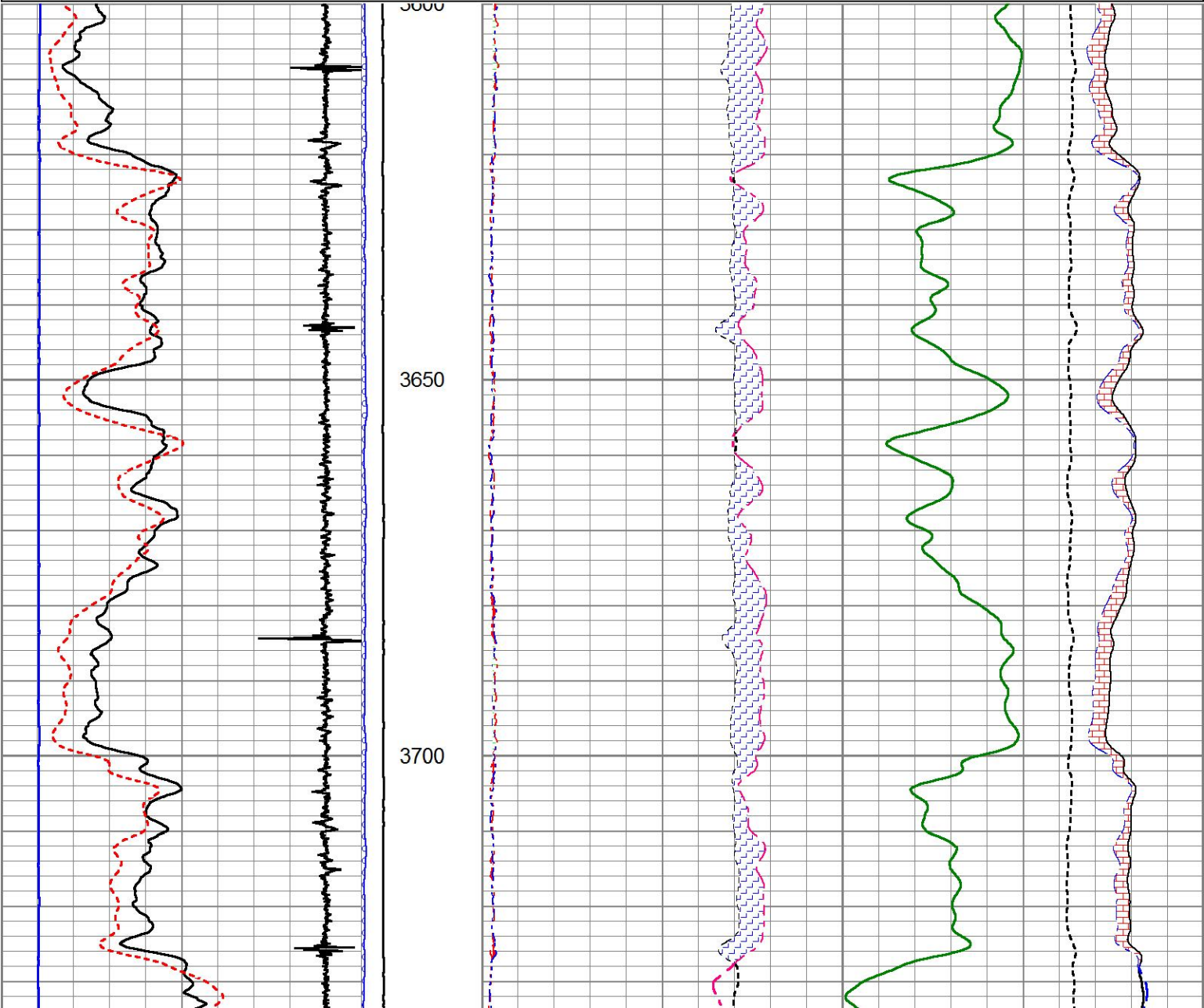
MAIN PASS

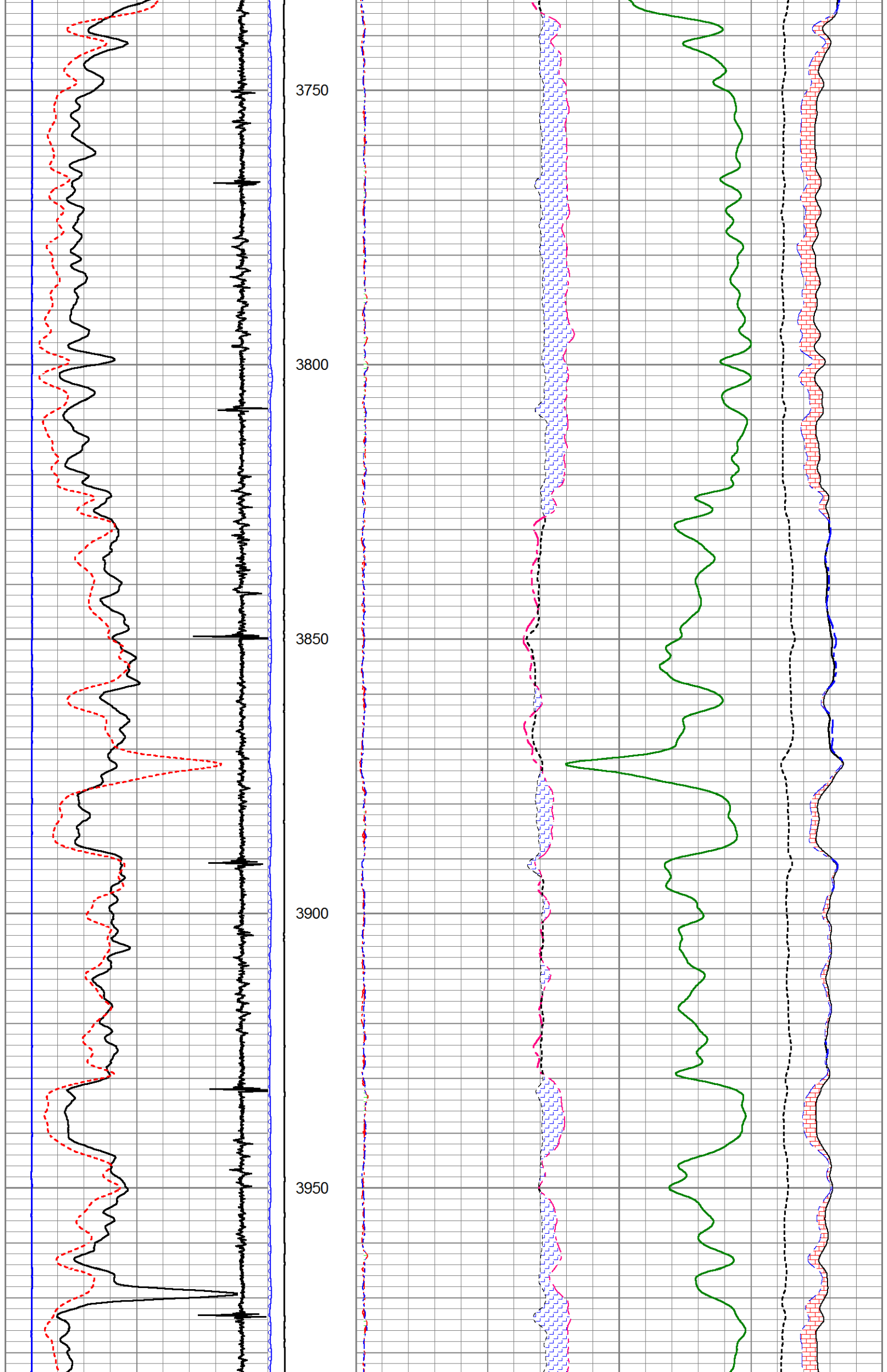
HALLIBURTON

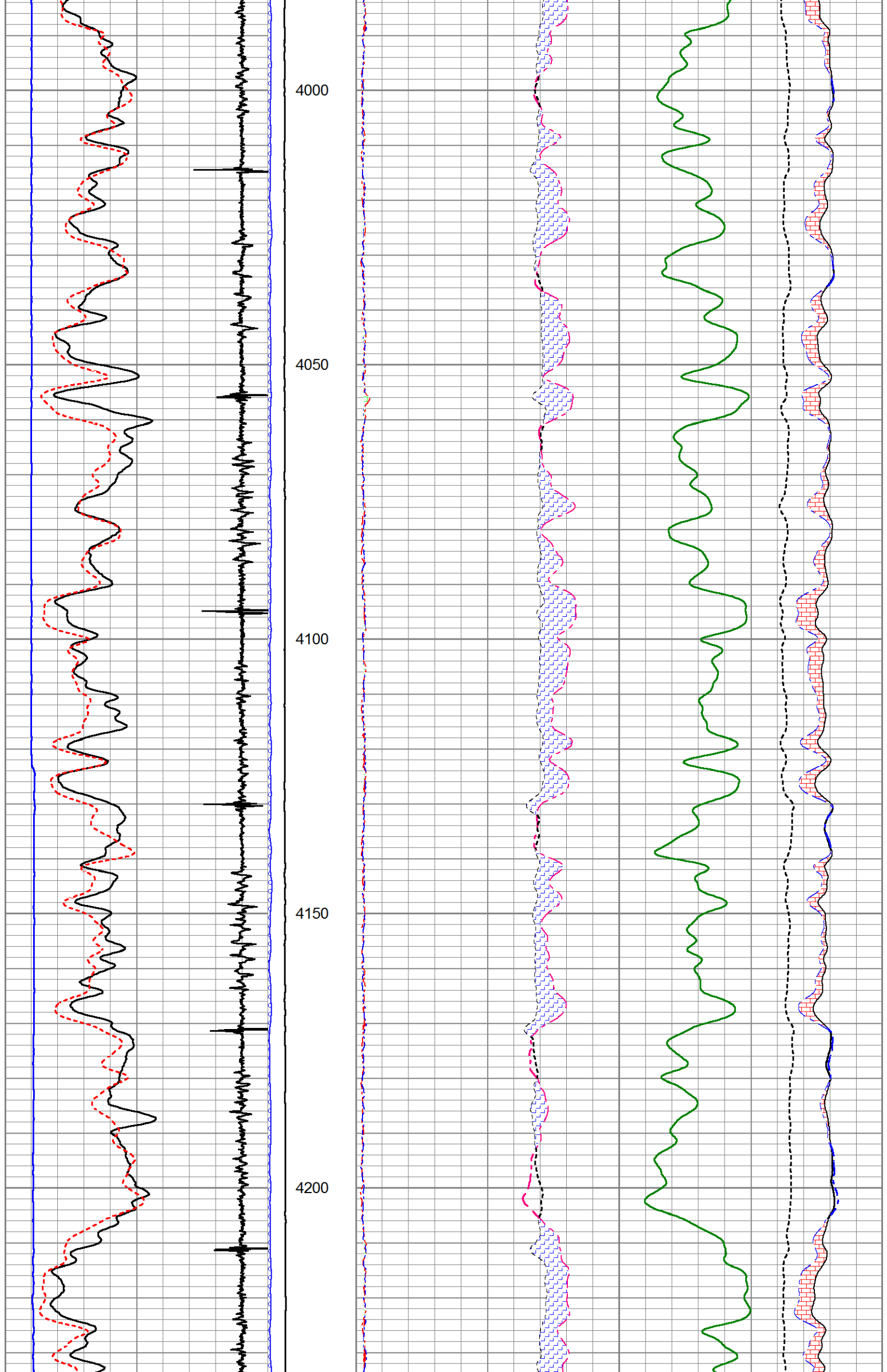
5" = 100'

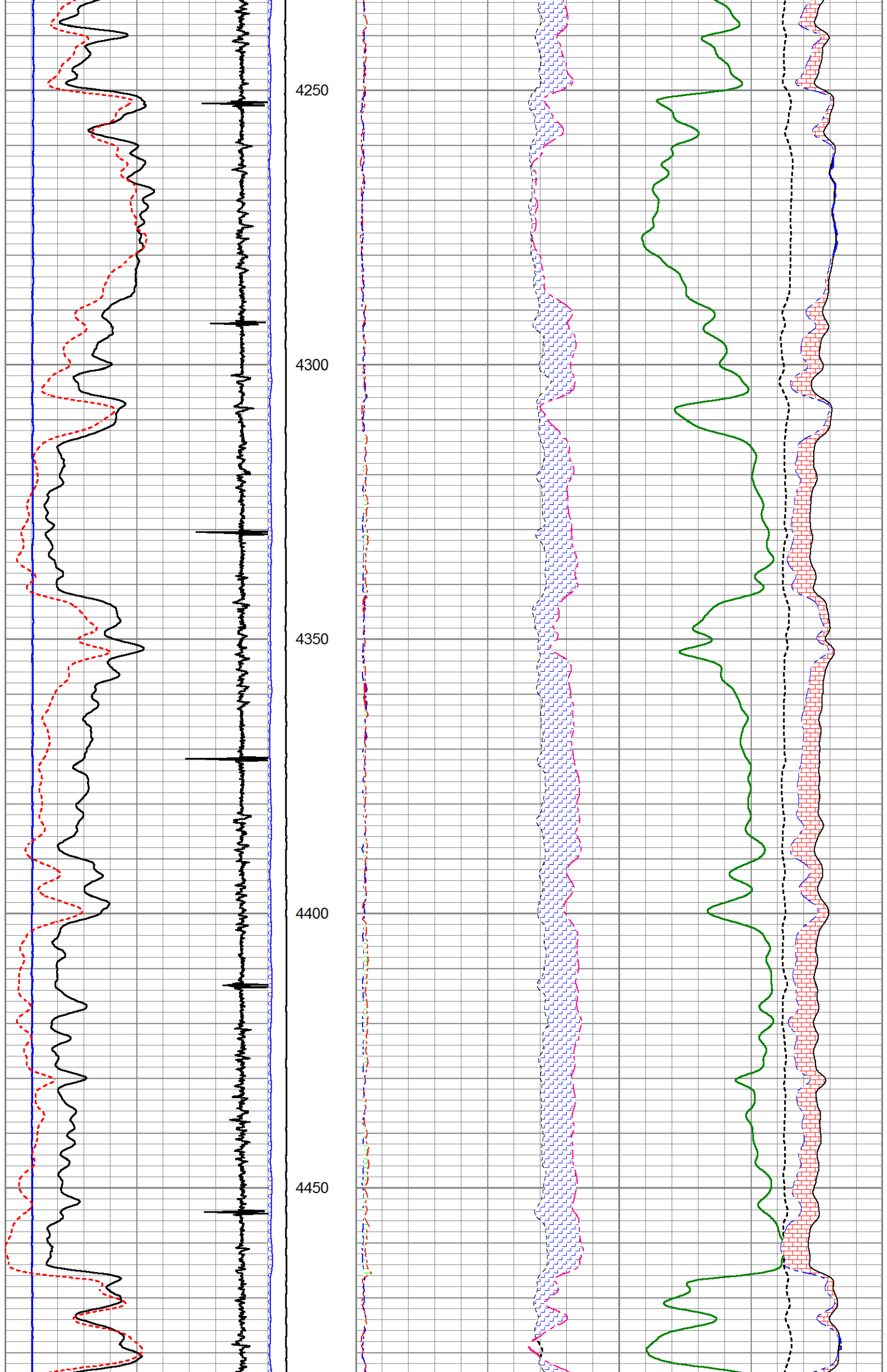
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Dataset Pathname MAIN1
Presentation Format !1!!RM~1
Dataset Creation Tue Nov 29 15:02:51 2016
Charted by Depth in Feet scaled 1:240

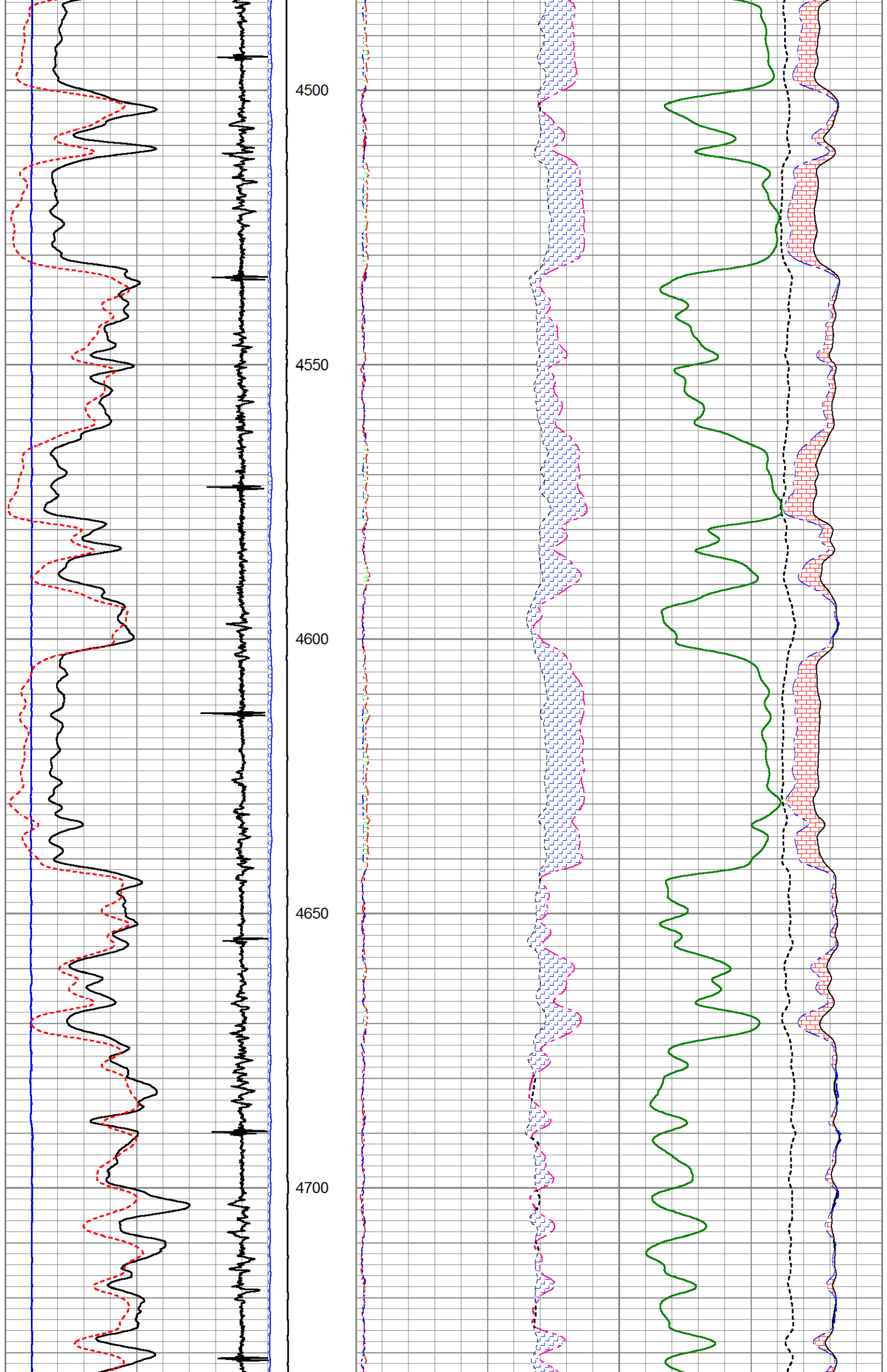
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2700	CCL	-300		0	(lb5000	2	RNF (Ratio Near/Far)	0.5	100000	FSIN
0	LSPD (ft/min)	200	0	OAI1100	1.65	RIN (Ratio Near/Far Incl)	0.65	60000	NCAP	0
10	SGINear	40			0	NFTR (Near Fit Error)	100	60000	FCAP	0
					0	FFTR (Far Fit Error)	100			

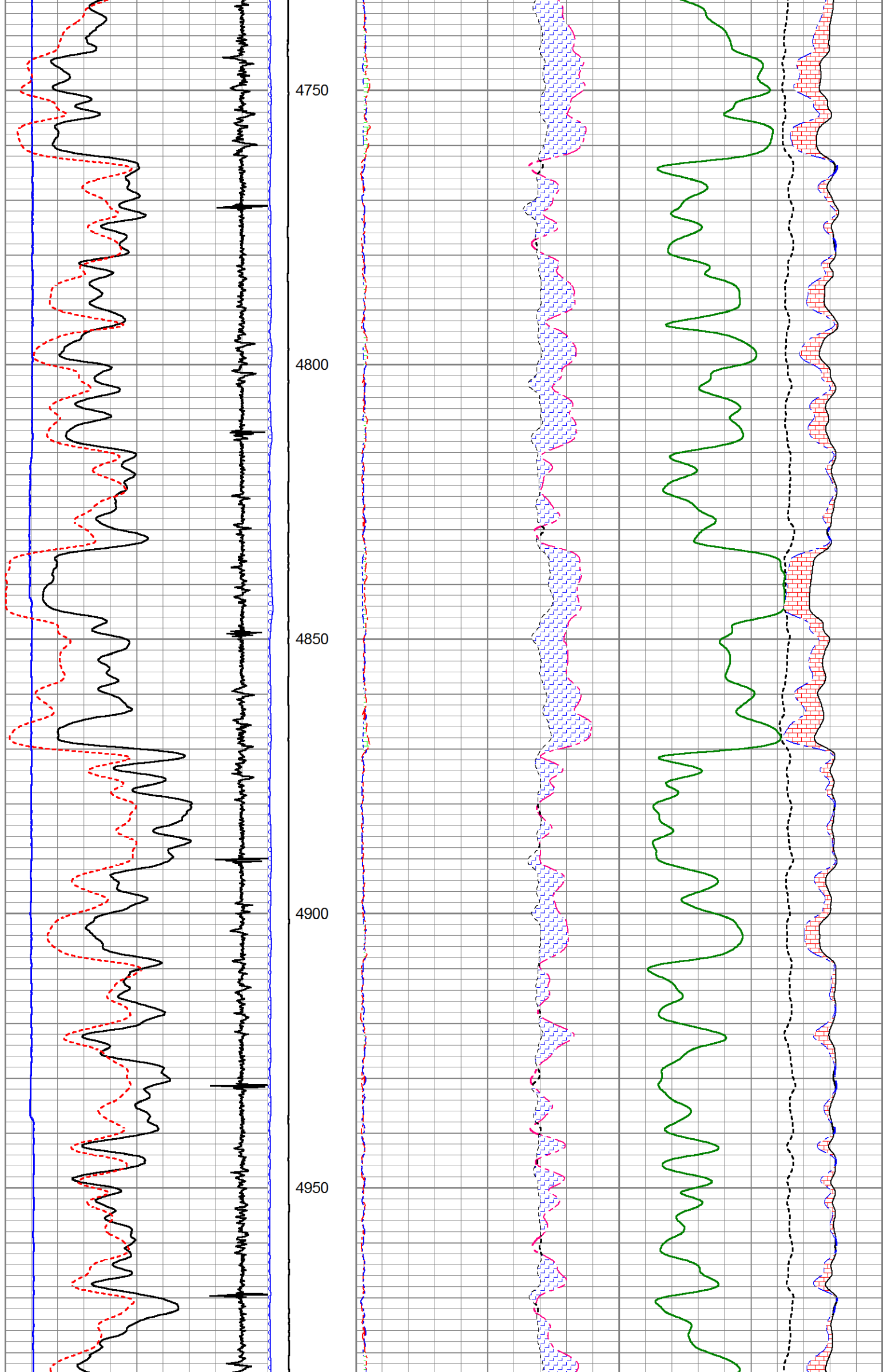


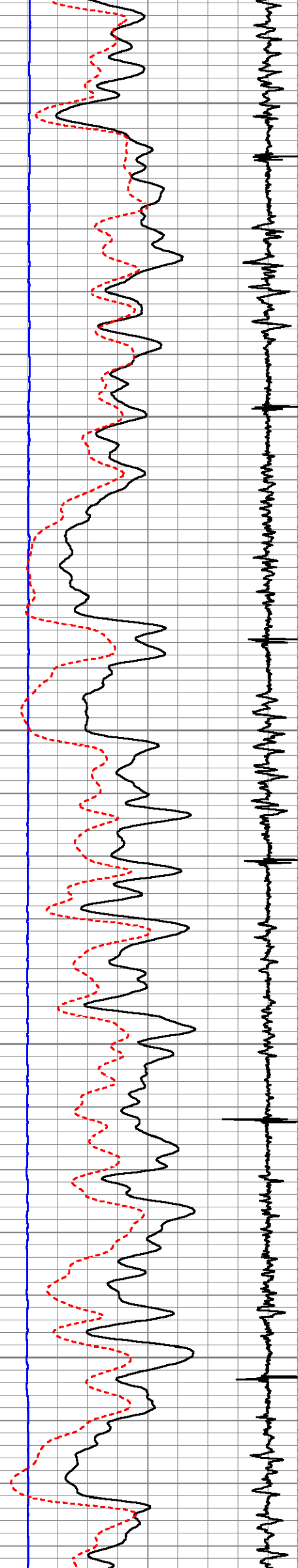












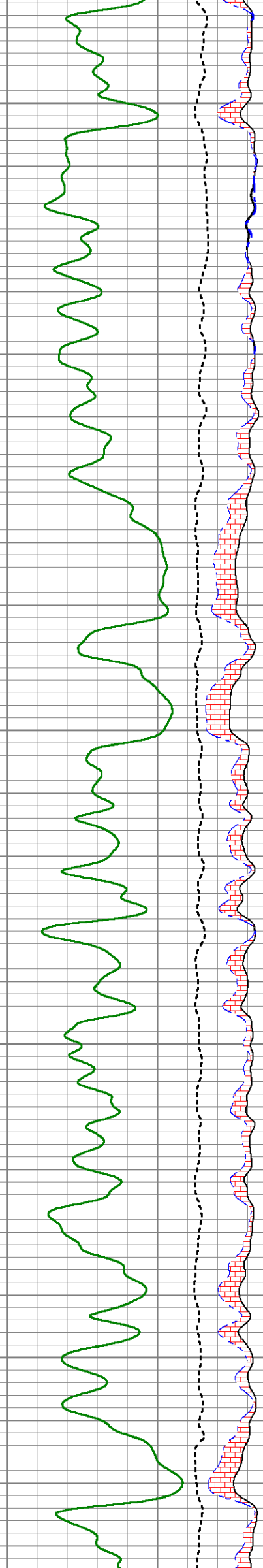
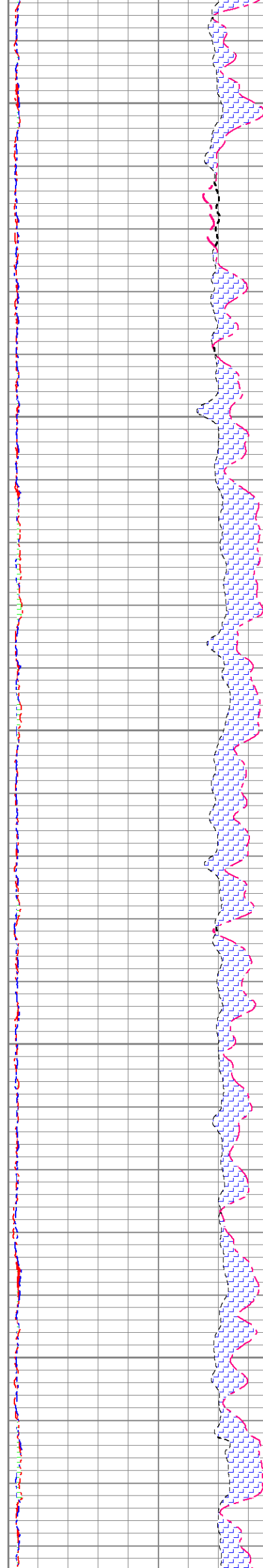
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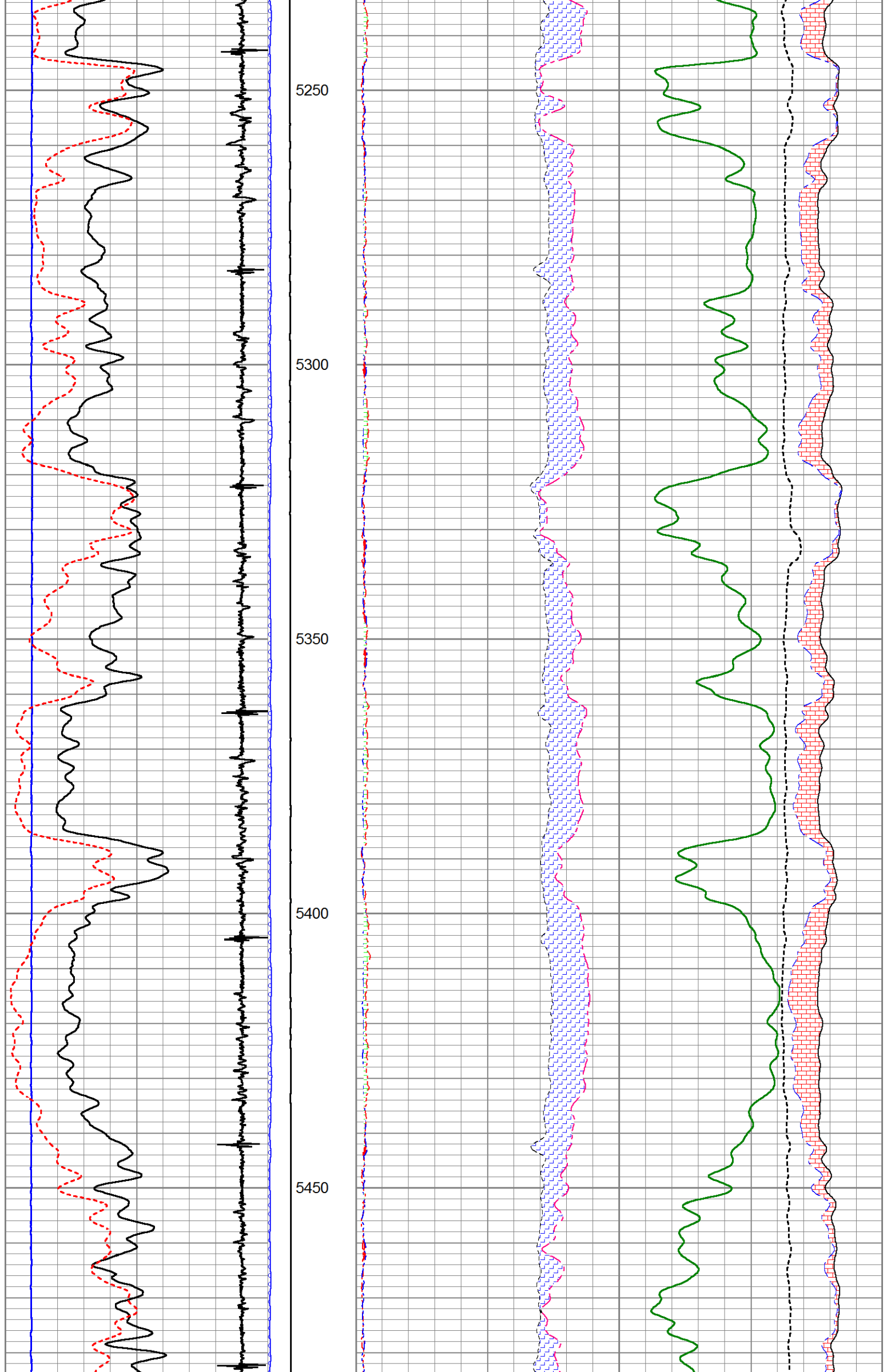
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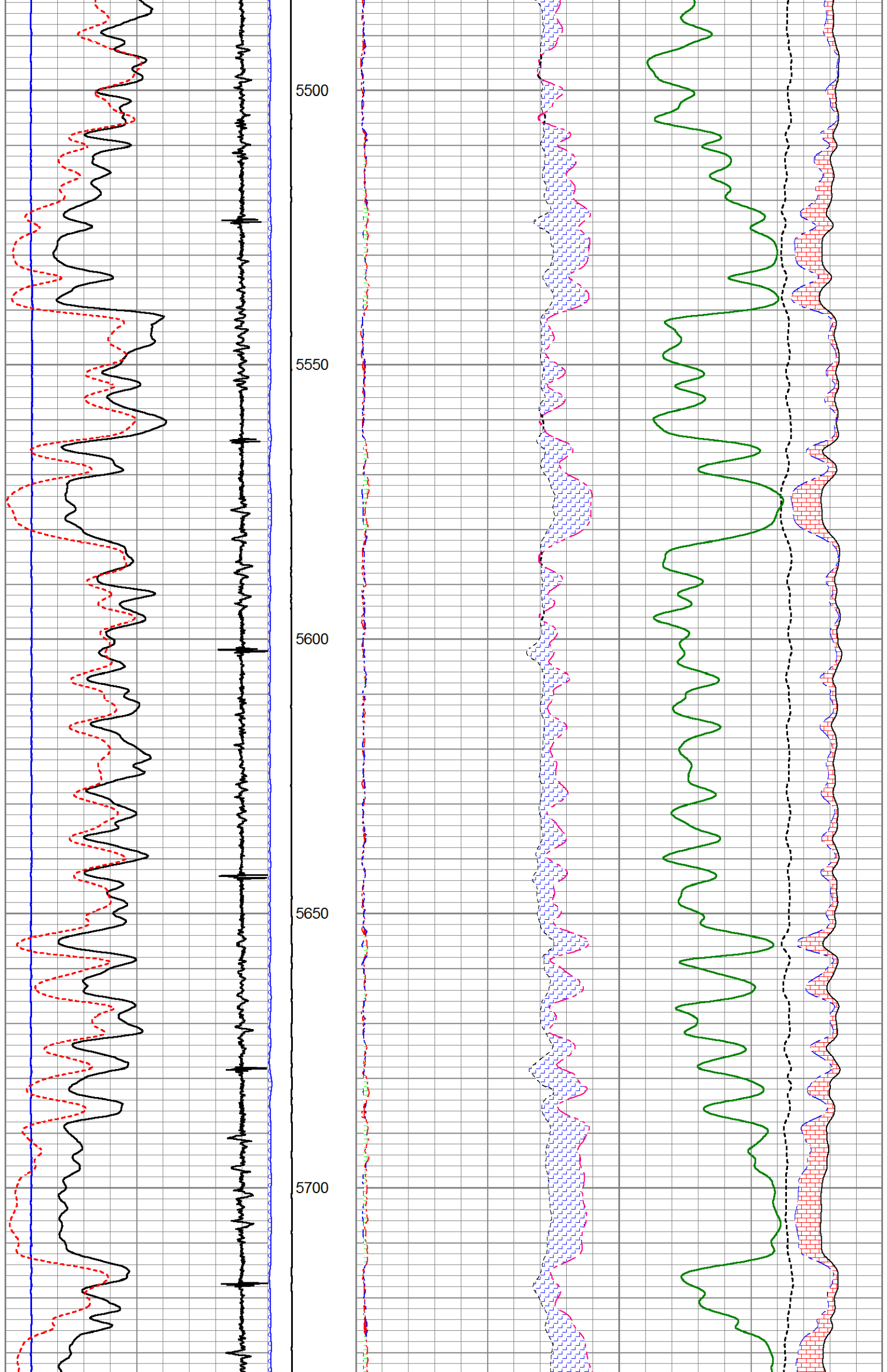
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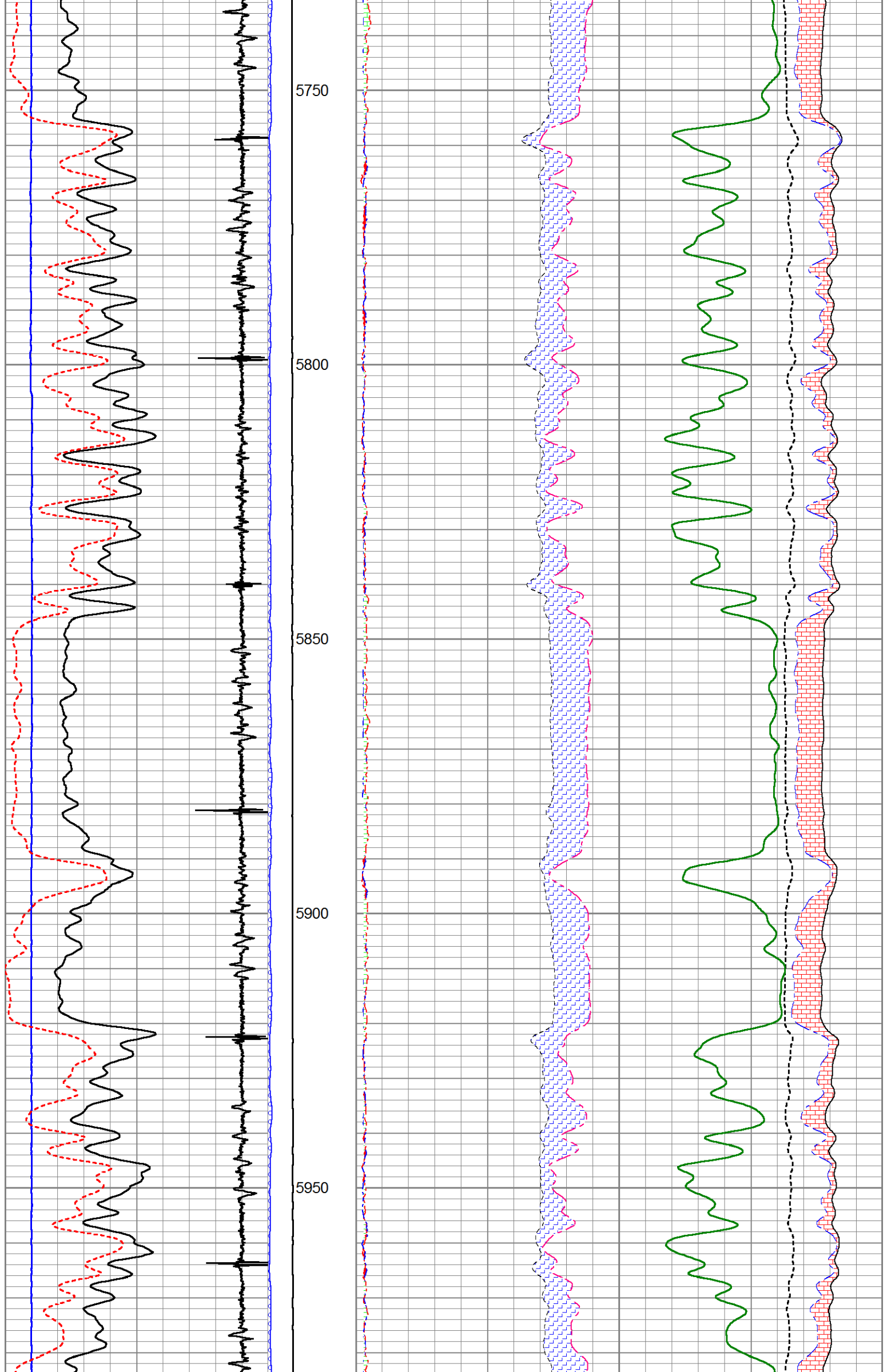
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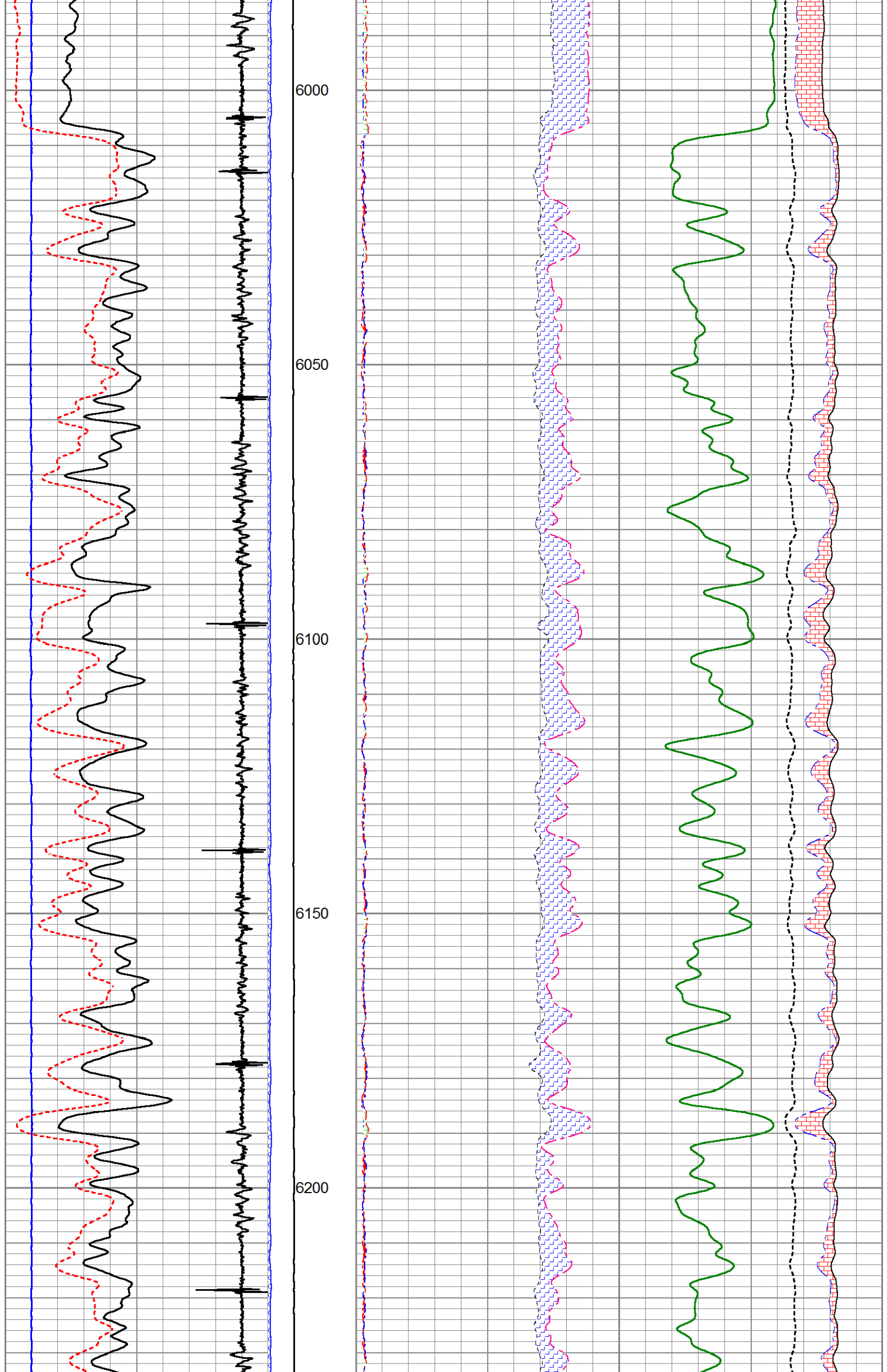
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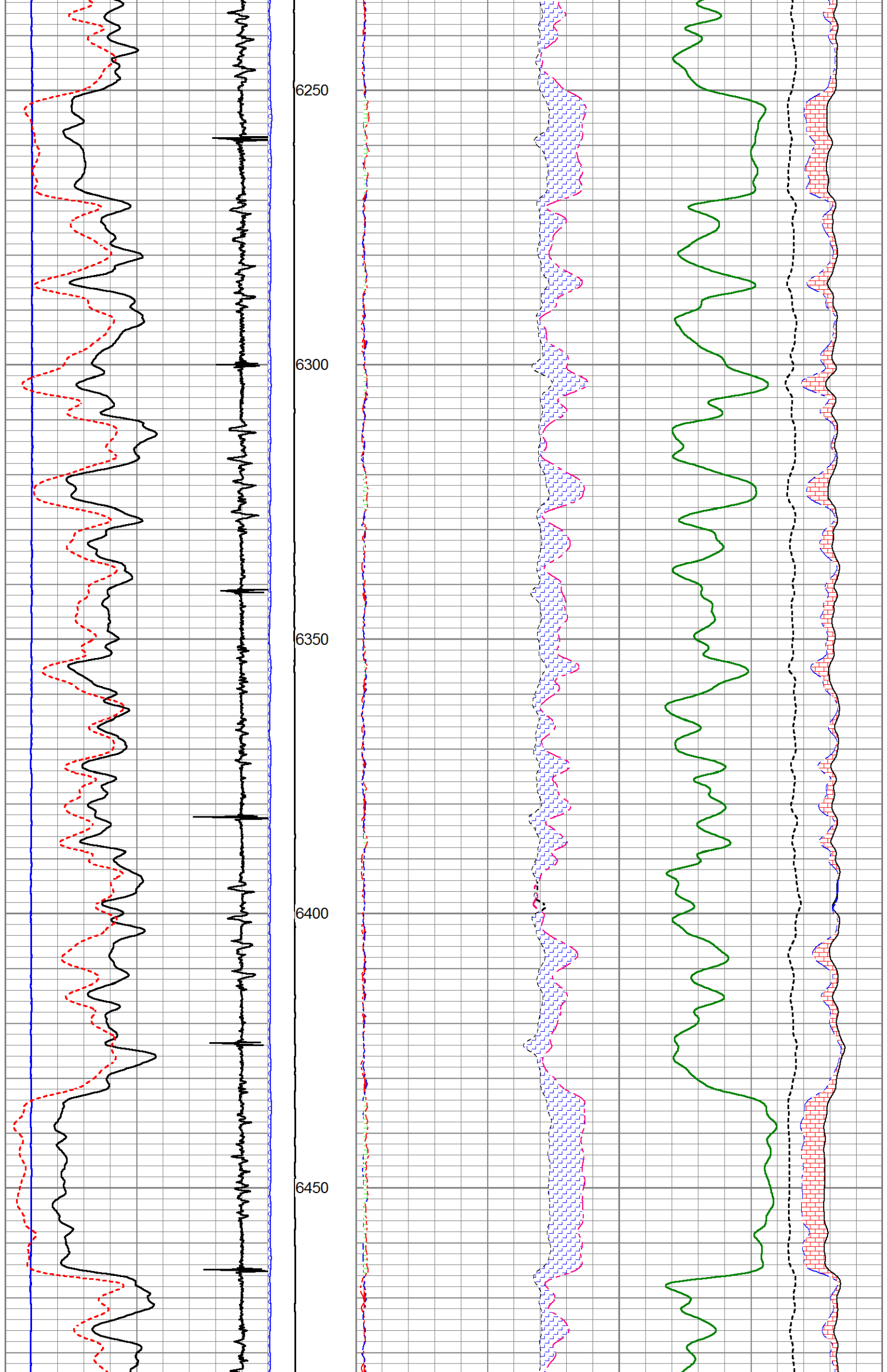


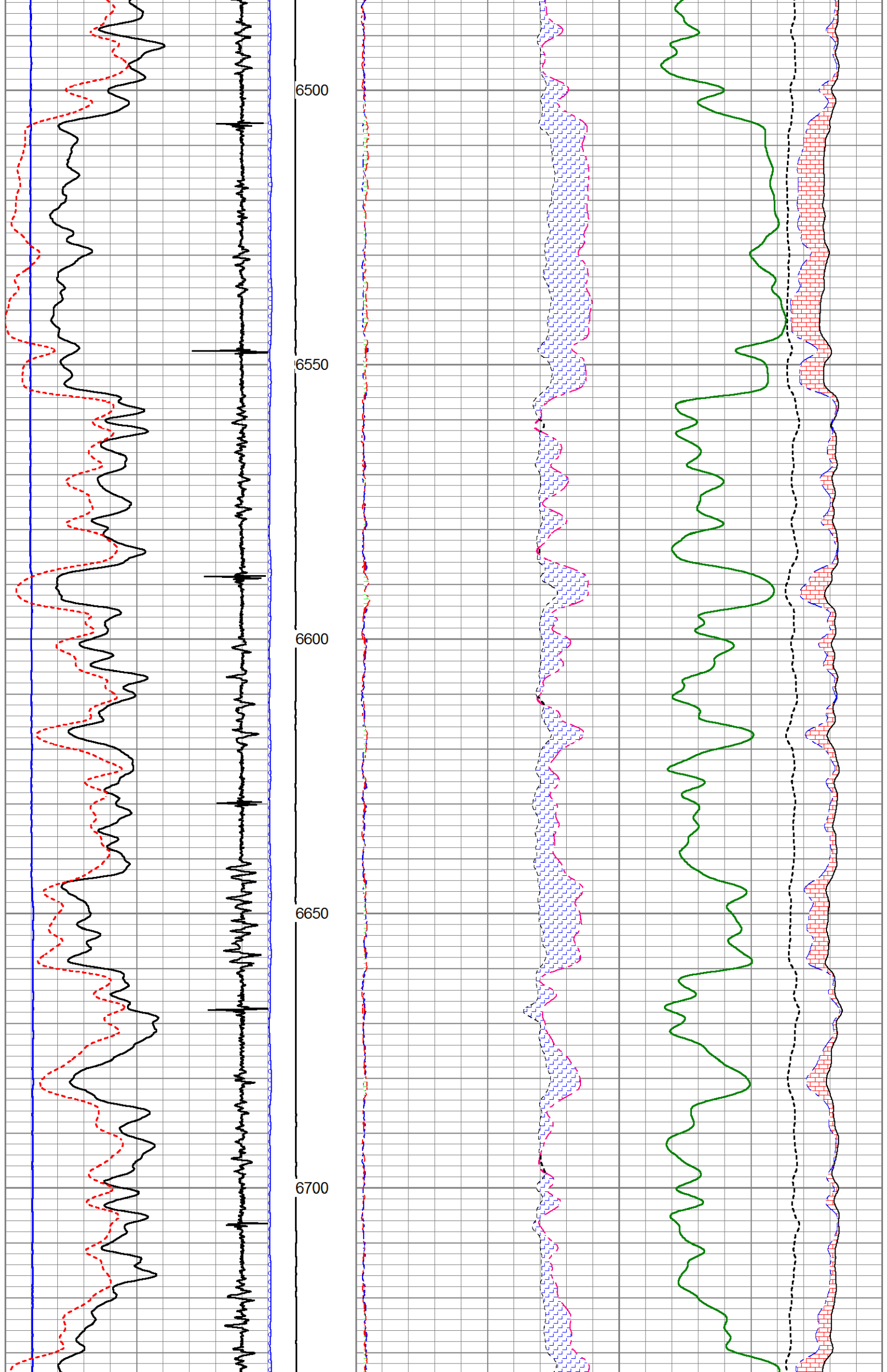


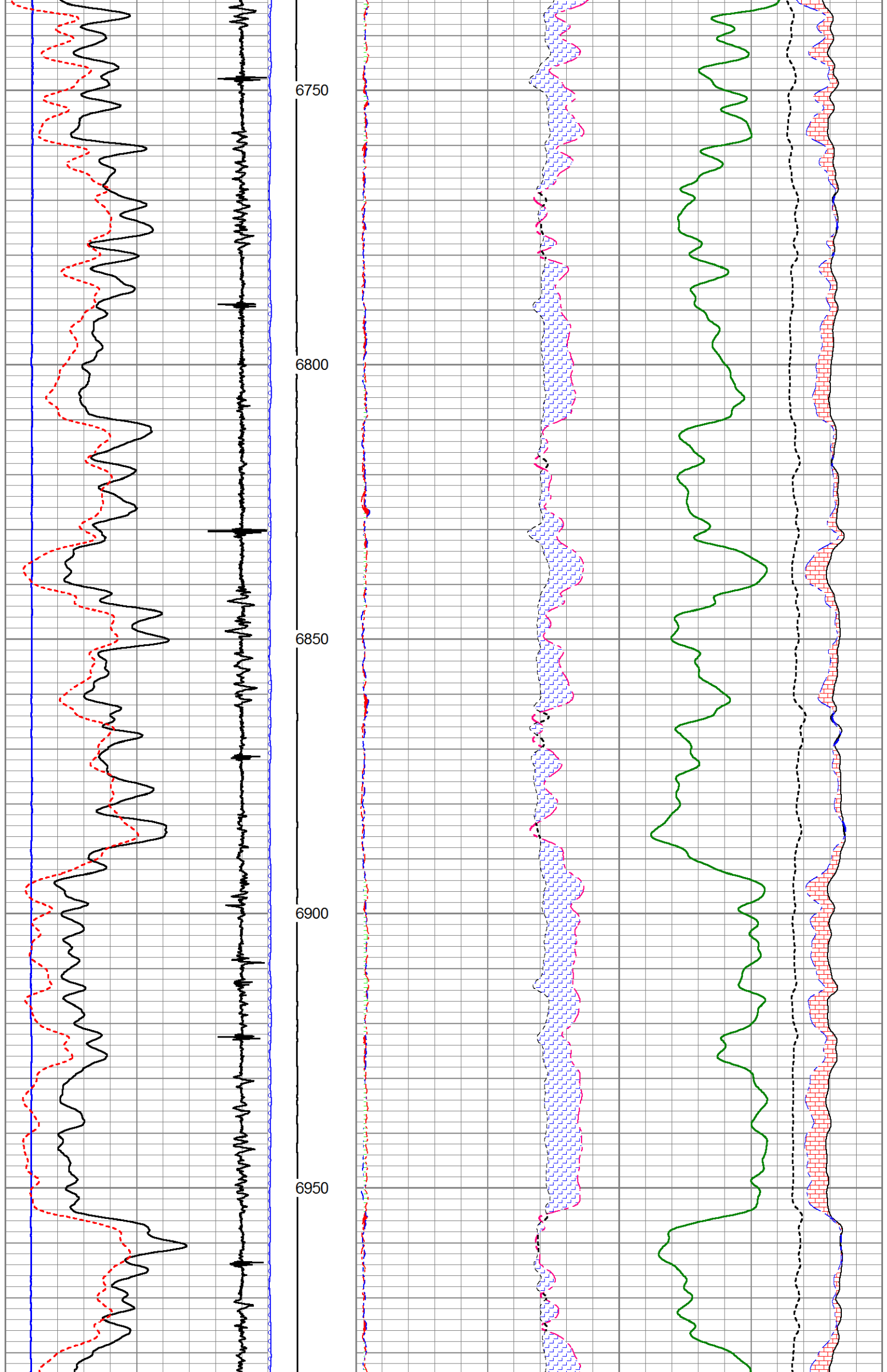


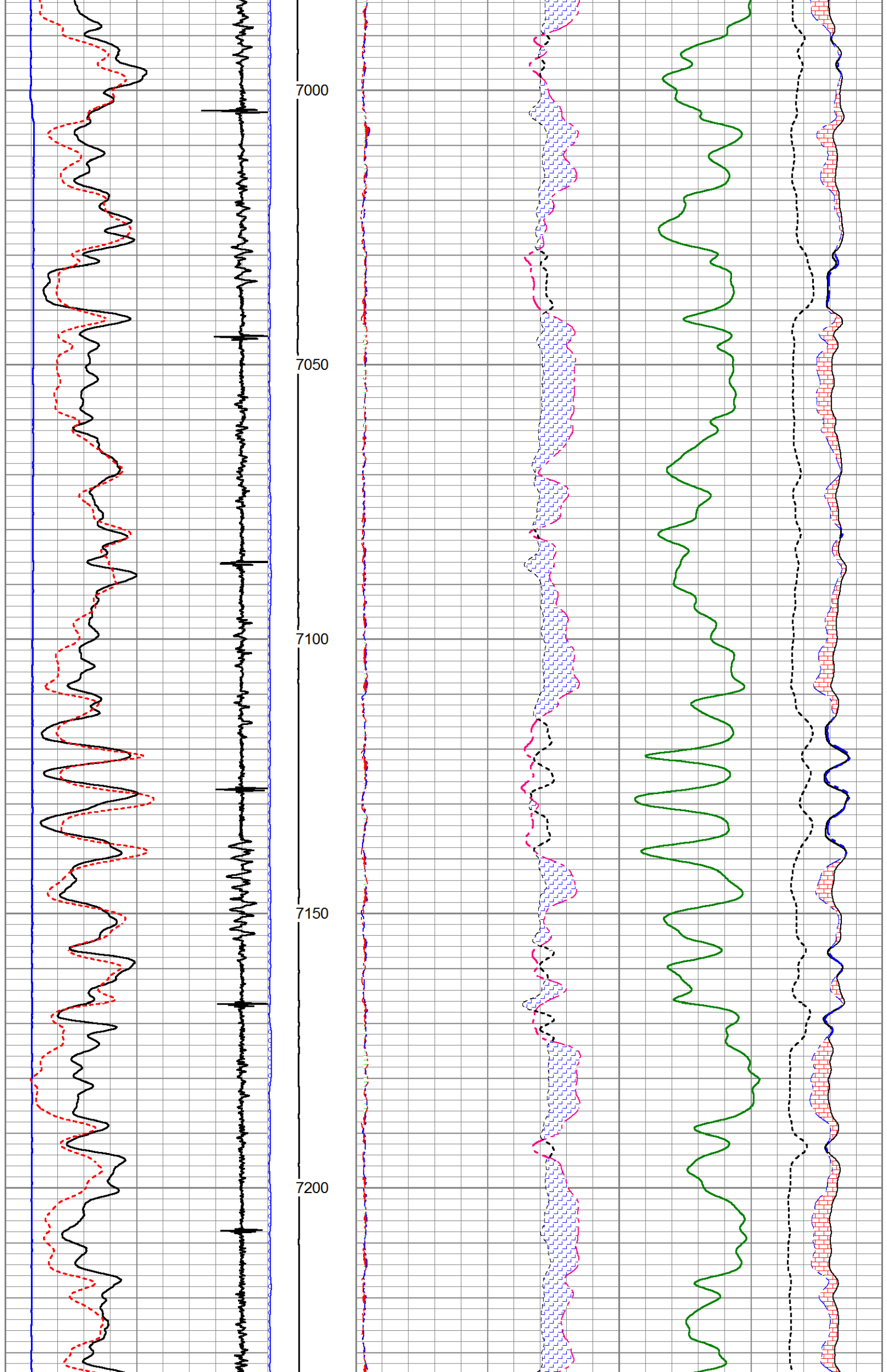






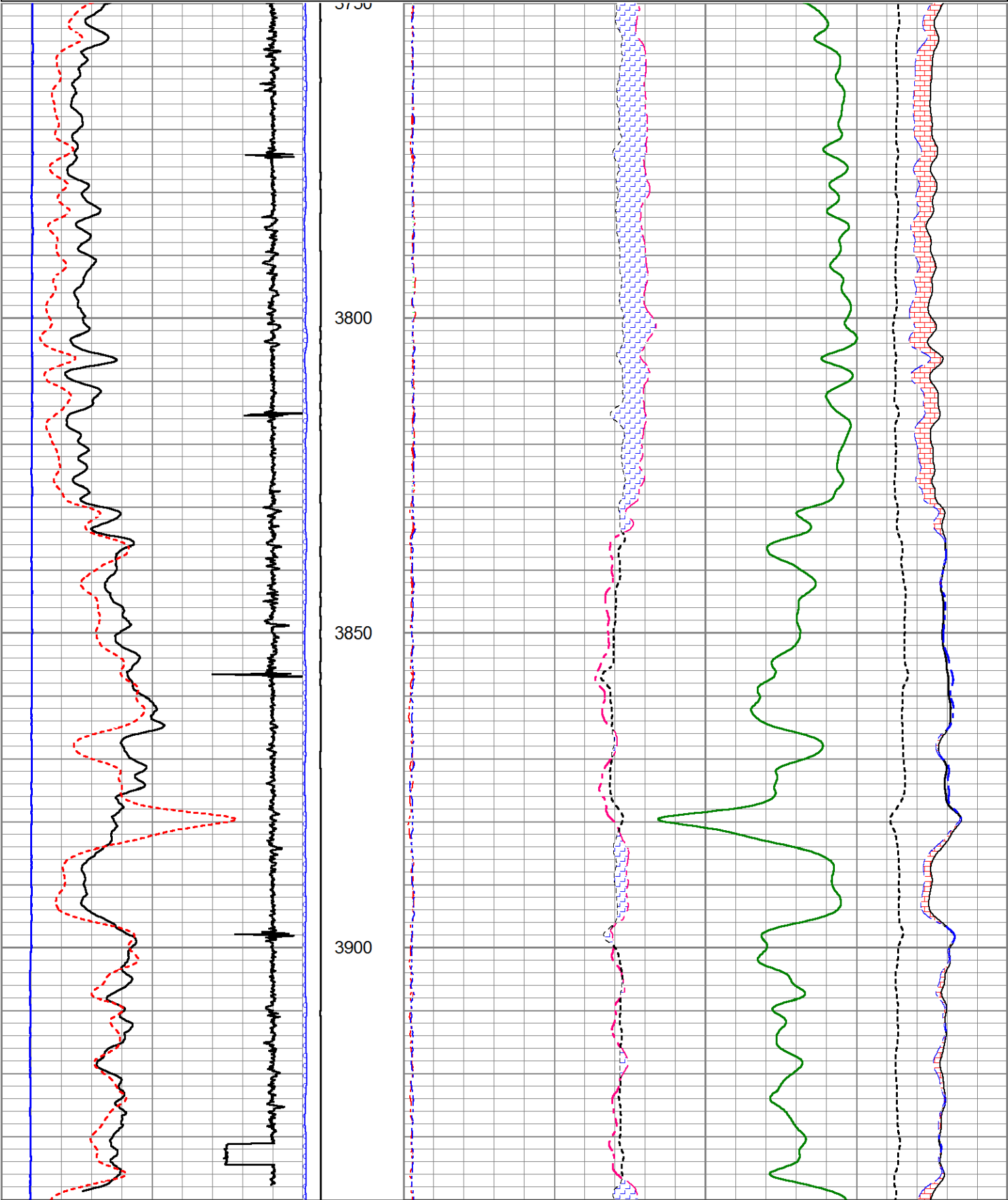






Database File		mr_b_34d_08_7_95.db	
Dataset Pathname		REPEAT	
Presentation Format		I1!!RM~1	
Dataset Creation		Tue Nov 29 14:18:49 2016	
Charted by		Depth in Feet scaled 1:240	

0	GR	200	LTEN	60	SGFF				0
2700	CCL	-300		0 (lb/5000)	2	RNF (Ratio Near/Far)	0.5	100000	FSIN
0	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			



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 Incl)	0.65	60000	NCAP	0
10	SGINear	40		0	NFTR (Near Fit Error)	100	60000	FCAP	0
				0	FFTR (Far Fit Error)	100			

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'

Log Variables

DatabaseC:\ProgramData\Warrior\Data\mr_b_34d_08_7_95.db
Dataset field/well/run1/MAIN1/_vars_

Top - Bottom

BHSAL1	BHSAL2	BHTEMP_Src	BITSIZE in	BORSAL kppm	BOTTEMP degF	CASED?	CASEOD in
1	0	TEMP	7.875	150	215	Yes	4.5
CASETHCK in	CASEWGHT lb/ft	LTH	MSGGN	MudWgt lb/gal	PERFS	POROS1	POROS2
0.25	11.6	Sandstone	1	8.4	0	1	0
RHO�F	SO in	SRFTEMP degF	TDEPTH ft	UHSGC	USERFTT usec/ft	ZREF MRayl	
0.25	0	0	7200	NONE	0	1.7	

Calibration Report

Database File mr_b_34d_08_7_95.db
Dataset Pathname MAIN1
Dataset Creation Tue Nov 29 15:02:51 2016

Cement Bond Log Shop Calibration Report

Serial-Model: 12091451-A
Calibration Performed: Tue Nov 29 13:50:34 2016

Free Pipe Calibration

TT	Measured	Units
Amplitude	244.8	usec
Log Base Line	560.2	mV
	6.4	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	0.147	

Reservoir Monitor Tool I Calibration Report

Serial-Model: 12095949-A
Shop Calibration Performed: Thu Nov 24 11:32:44 2016

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					
H	Channel	Expected Value	Amplitude	FWHM	Tol.
Fe	60	60 +/-2	0.0259	5.51	<6.00
NGAIN = 0.996	206	206 +/-2	0.0966	-----	-----
	NZOFF = 0.5				
Far Detector					
H	Channel	Expected Value	Amplitude	FWHM	Tol.
Fe	60	60 +/-2	0.0356	5.76	<6.50
FGAIN = 0.990	210	208 +/-2	0.0903	-----	-----
	FZOFF = 0.5				
Flask Temperature	50.0	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
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			
Background Calibrator	Counts/Sec.	Gain	Offset	Jig	Units
	34.1				cps
	297.9	1.3950			cps 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	
			RMTI-A (12095949) Halliburton RMTI Tool	14.00	2.13	77.00	
RmtTFGT	22.91						
RmtTNGT	22.41						
RmtFP5V	14.66						
			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	9.57						
TT05T	7.00			HCRI M-A (12091451)	9.38	2.75	116.00

TT3FT	7.32		Halliburton HCBLM Tool	0.33	2.13	110.00
AMP3FT	7.32					
WVF5FT	6.36					
WVF3FT	2.84		CENT-CSTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
LLMTEN	0.00		AUH-001 (11072111) Adaptor Ultrawire/Halliburton	0.38	1.69	3.00
			BUL-001 (000001) Bullnose	0.30	1.69	1.50
Dataset: mr_b_34d_08_7_95.db: field/well/run1/MAIN1 Total length: 39.39 ft Total weight: 356.50 lb O.D.: 3.13 in						

Company	URSA OPERATING COMPANY LLC				
Well	MONUMENT RIDGE B 34D-08-7-95				
Field	PARACHUTE				
County	GARFIELD		State	CO	
HALLIBURTON	RESERVOIR				
	MONITORING TOOL				
	ELITE				