

# RESERVOIR MONITOR TOOL - ELITE LOG

FIELD COPY

<<< Fold Here >>>	5
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	
LOG CORRELATED TO HALLIBURTON WAVE SONIC LOG DATED 22FEB15 RBT AND RMT RAN IN COMBO	
CREW: N.MILES, J. POOLE, T. THOMPSON, A. SALIDO, A. BUMANN	
**THANK YOU FOR USING HALLIBURTON ENERGY SERVICES GRAND JUNCTION, CO**	

Service Ticket No.	9021450136	API No.	050452246000	PGM Ver	WARRIOR 8.0
The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client					
EQUIPMENT DATA					
TELEMETRY		RESERVOIR MONITOR TOOL		RADIAL BOND TOOL	
Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	12159411	Serial No.	11680605	Serial No.	11333931
Model No.	TTTCU-002	Model No.	RMT-I	Model No.	RBT-004
Diameter	1 11/16"	Diameter	2 1/8"	Diameter	3 1/8"
LOGGING DATA					
General Data					
Pass	Depths		Well Head	Speed	Logging Run Comments
No	From	To	Pressure	Ft/Min	

No.	13539'	3500'	NONE	25				
	GAMMA RAY		NEAR BORE SI (SGBN)		RATIO (RNF)		SGIN	
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ONE	0	150	200	0	2	0.5	60	0
DIRECTIONAL INFORMATION								
Maximum Deviation			deg. @		KOP			

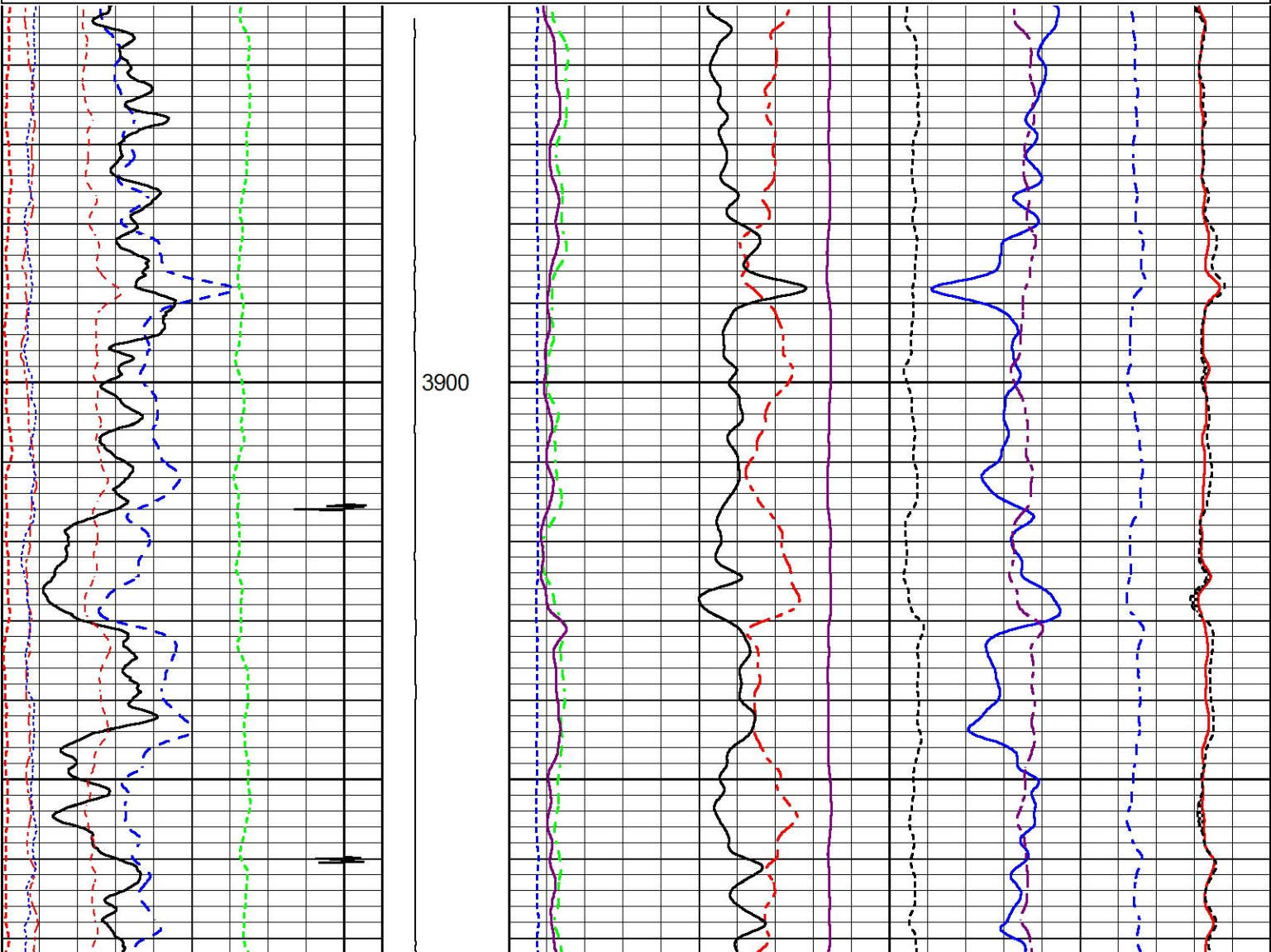
HALLIBURTON

MAIN LOG SECTION

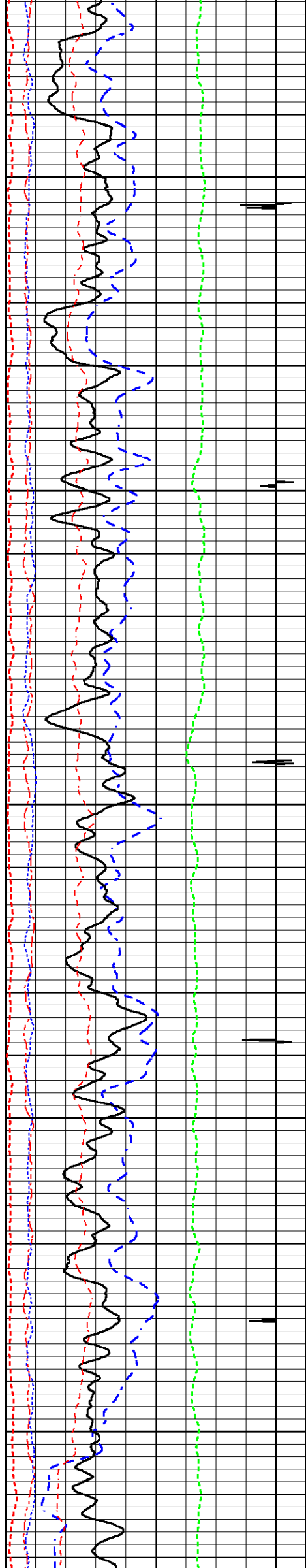
SCALE 5"=100'

Database File	fed_14_15_7_21.db
Dataset Pathname	02-23-15/RMT/MAIN2
Presentation Format	RMTE_M~1
Dataset Creation	Mon Feb 23 10:30:31 2015
Charted by	Depth in Feet scaled 1:240

200	Near Bore Si (SGBN)	0	TENSION	60	SGIN	0
0	OAI	100		2	RATIO (RNF)	0.5
10	FAR FIT ERR (SGFF)	40		0	RIN	15
0	GAMMA RAY (GAPI)	150		0	RICF	6
0	NEAR FIT ERR (SGFN)	100		0	H YIELD (YH2)	1
-5400	CCL	600		0	H YIELD (YH1)	1
0	IN FIT ERR (CFTR1) NEAR	1			INOX2	50000
0	IN FIT ERR (CFTR2) FAR	1			-1500	1500



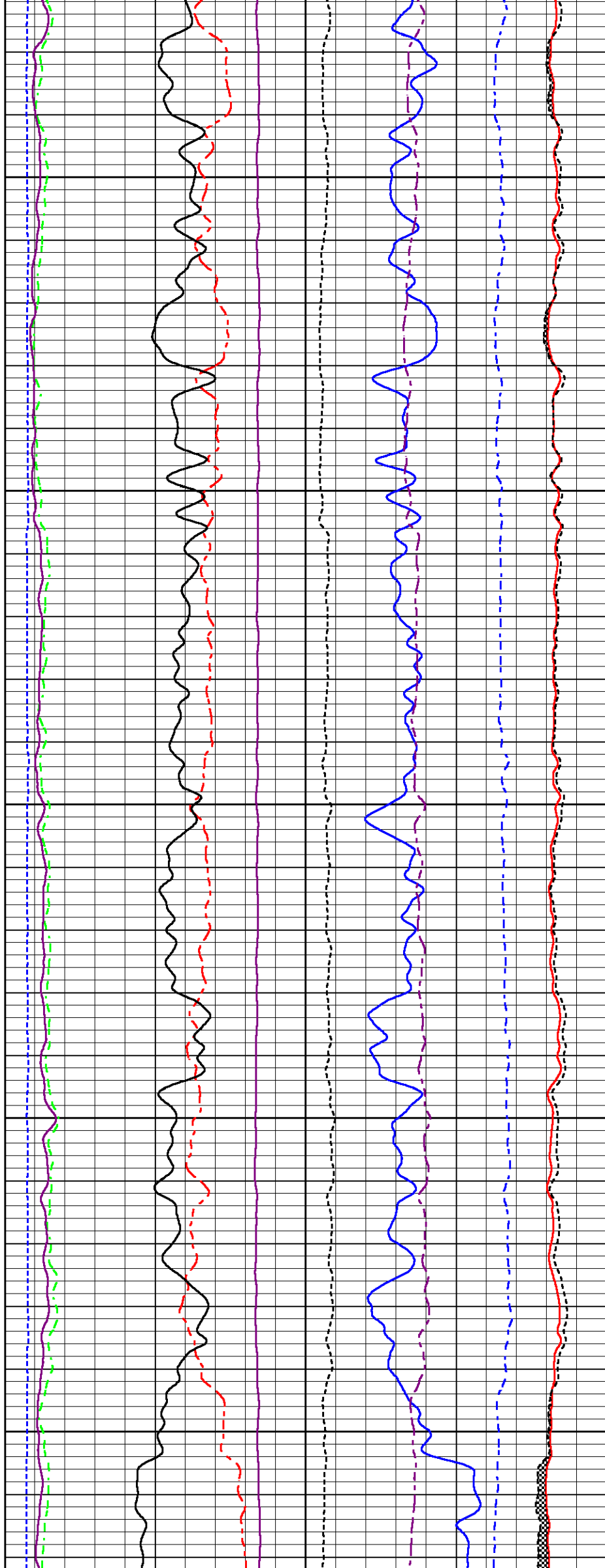


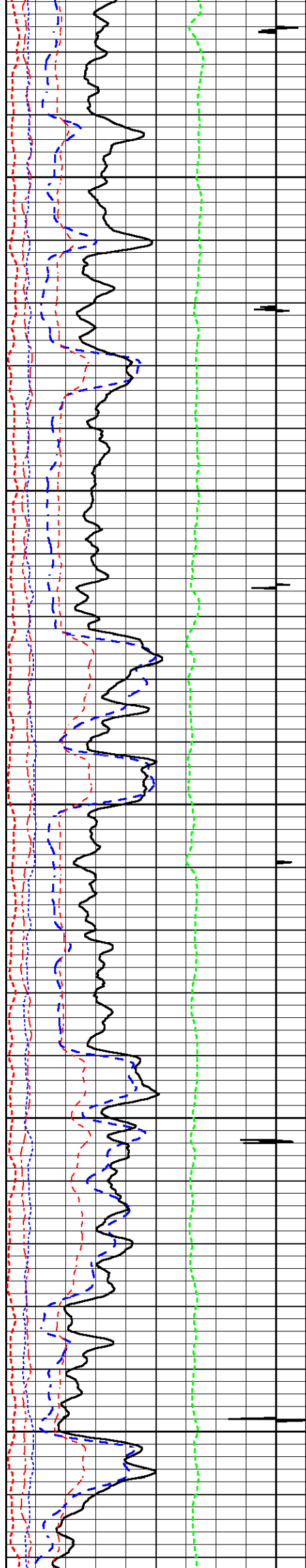


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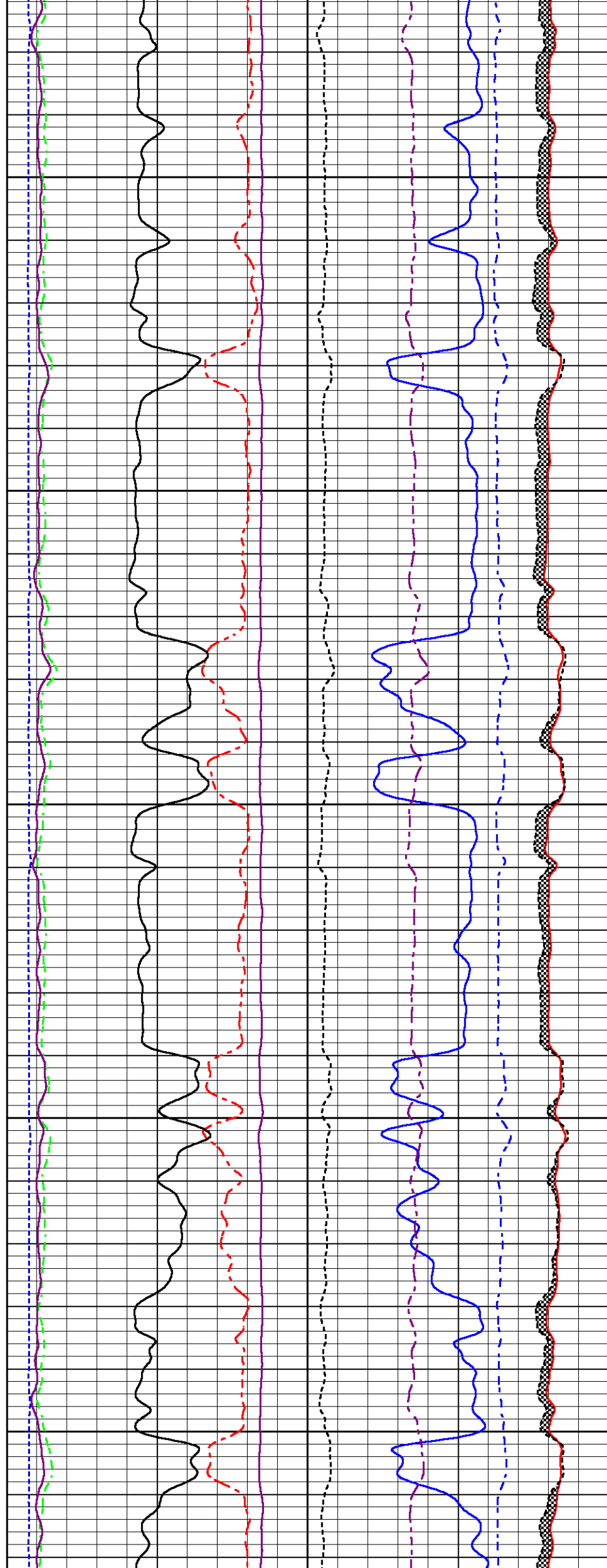
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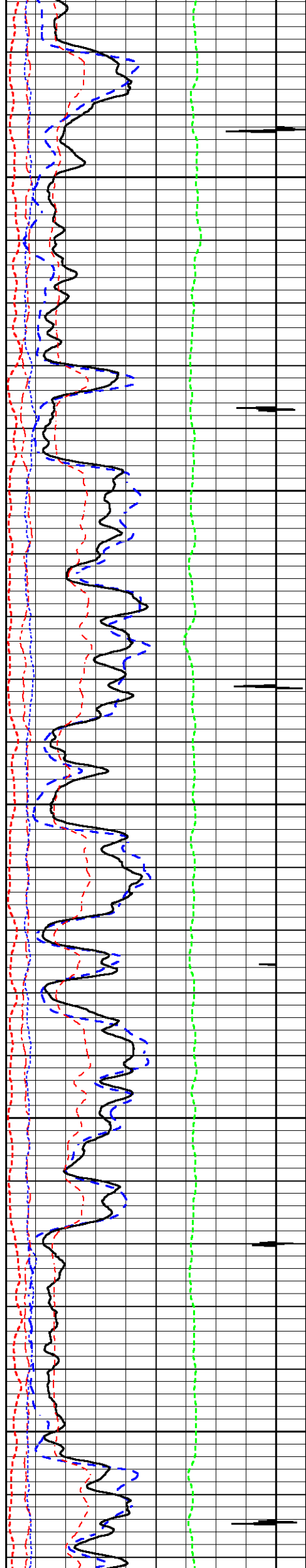




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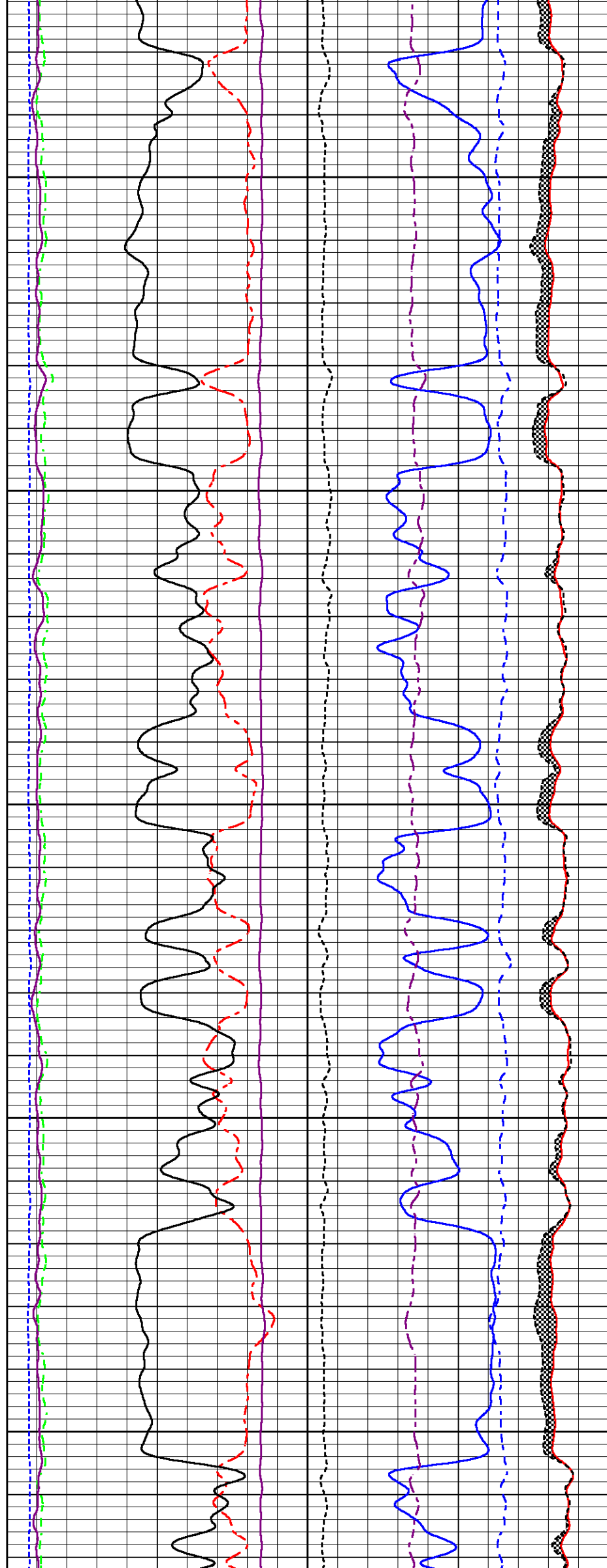


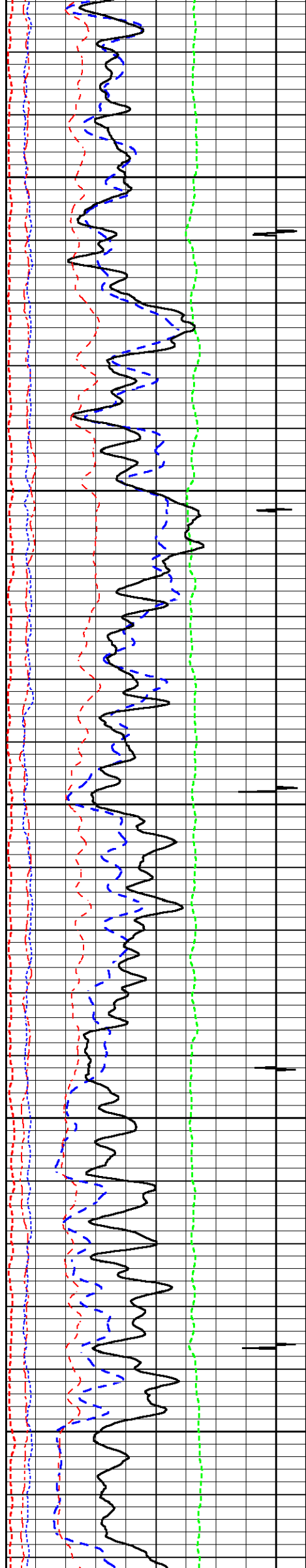


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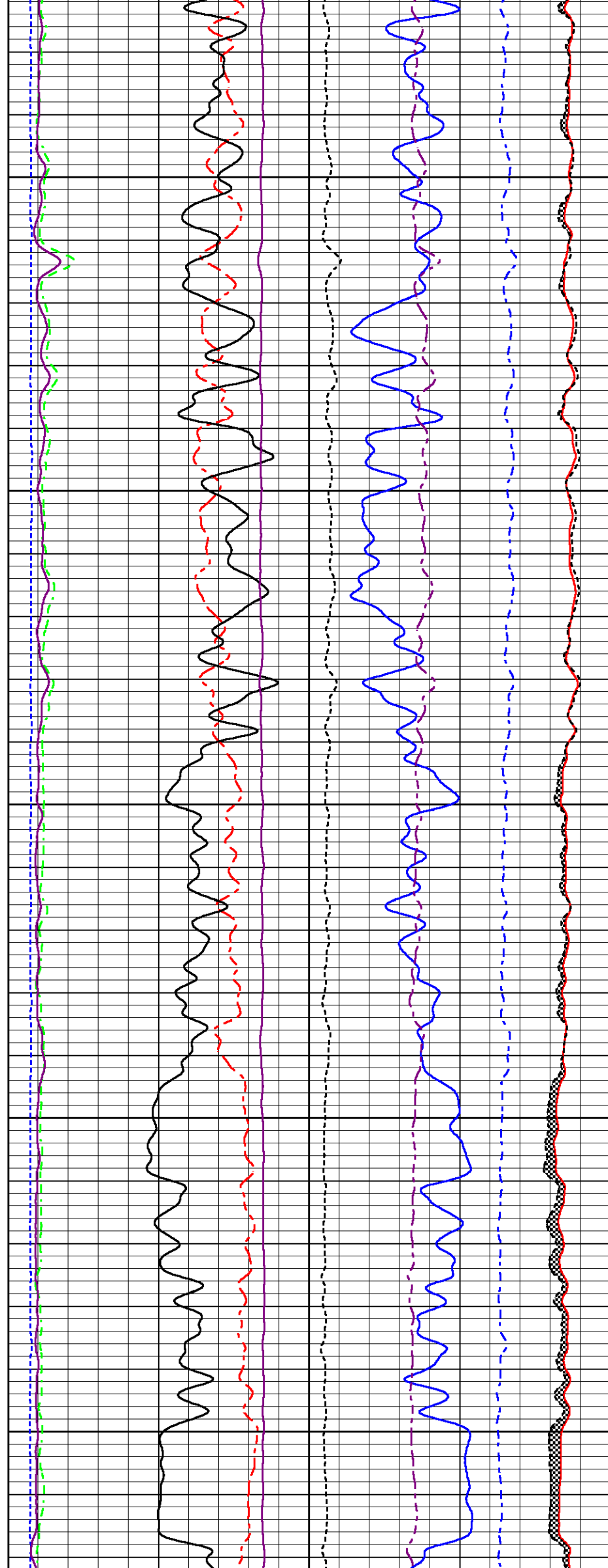
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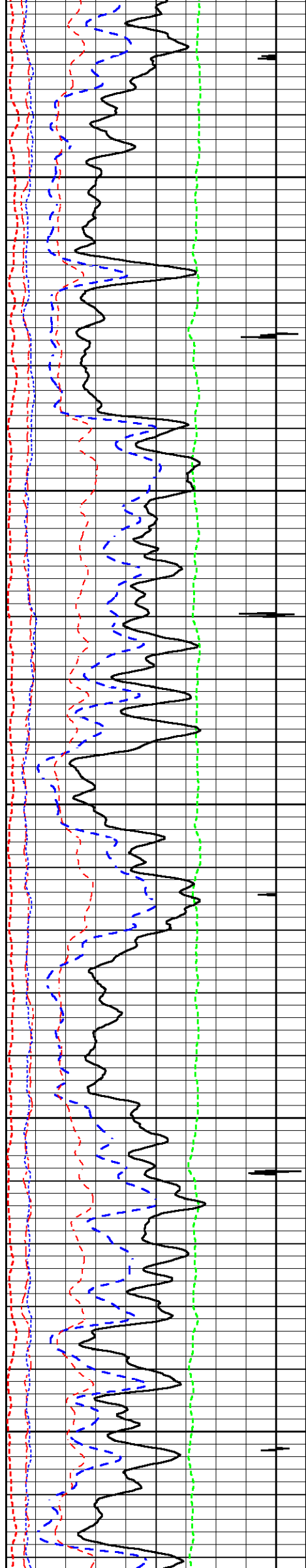




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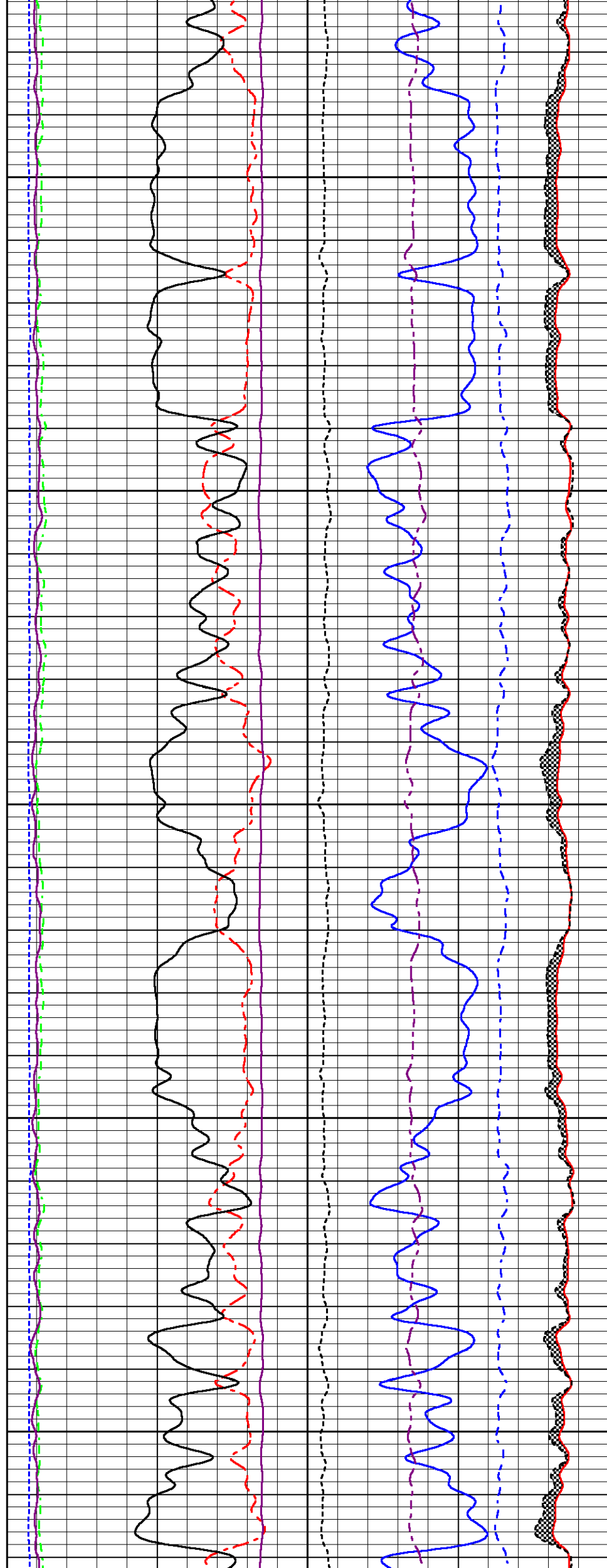


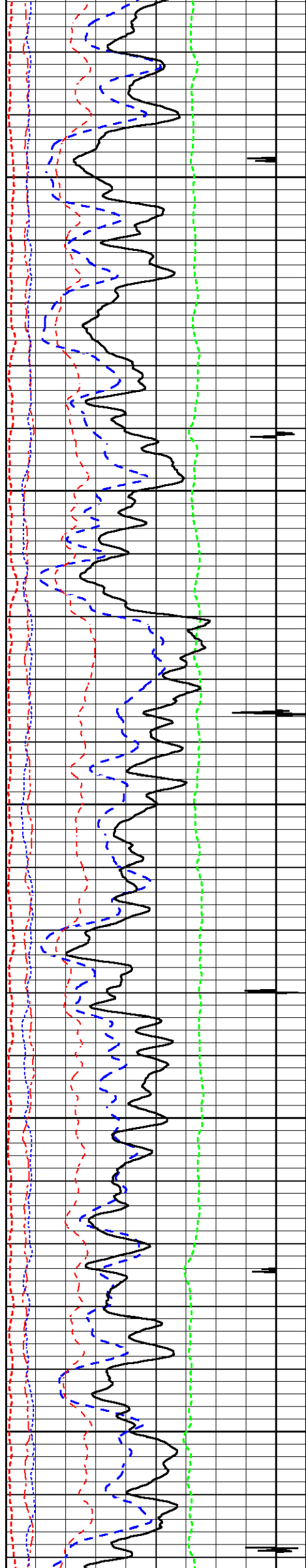


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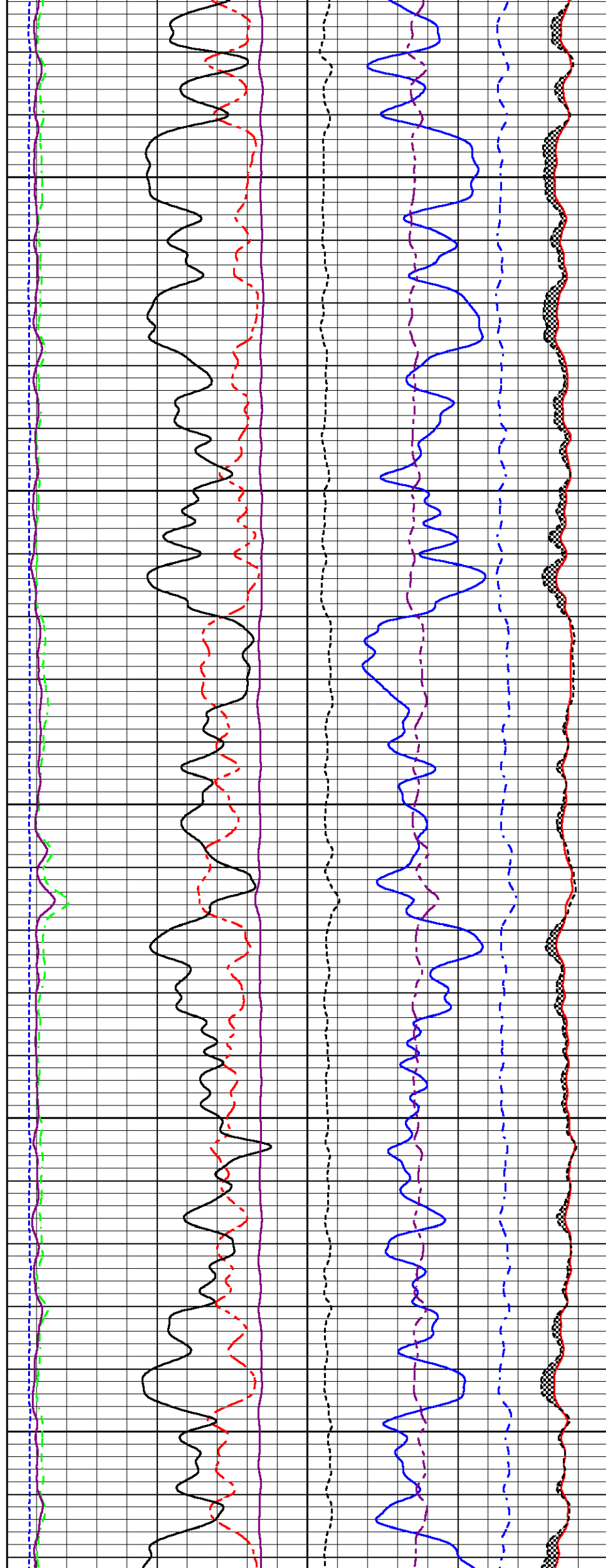
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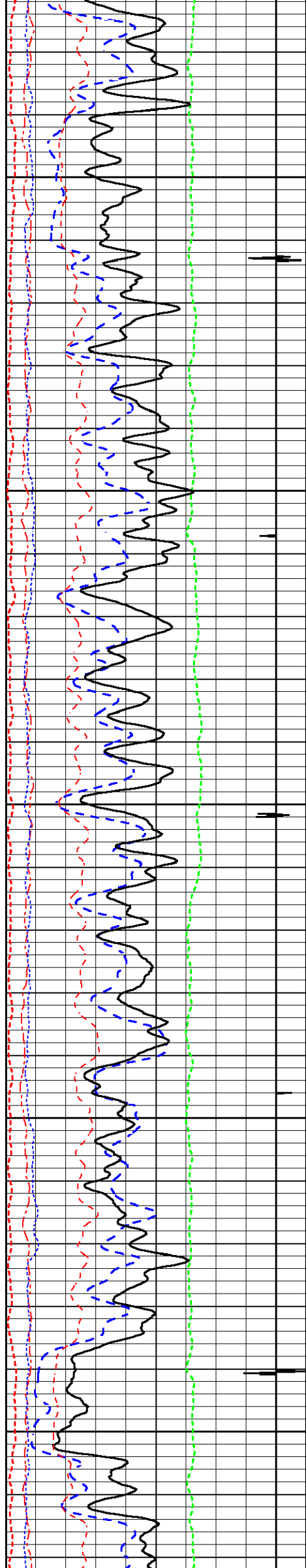


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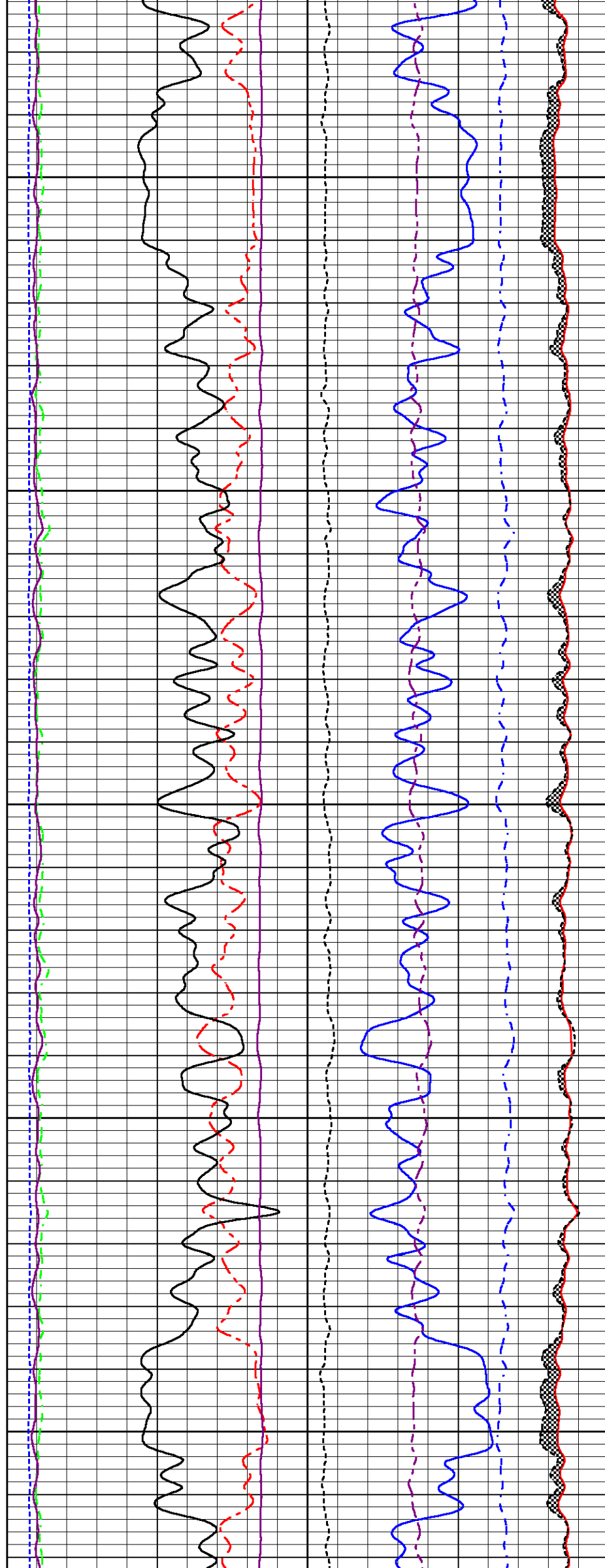


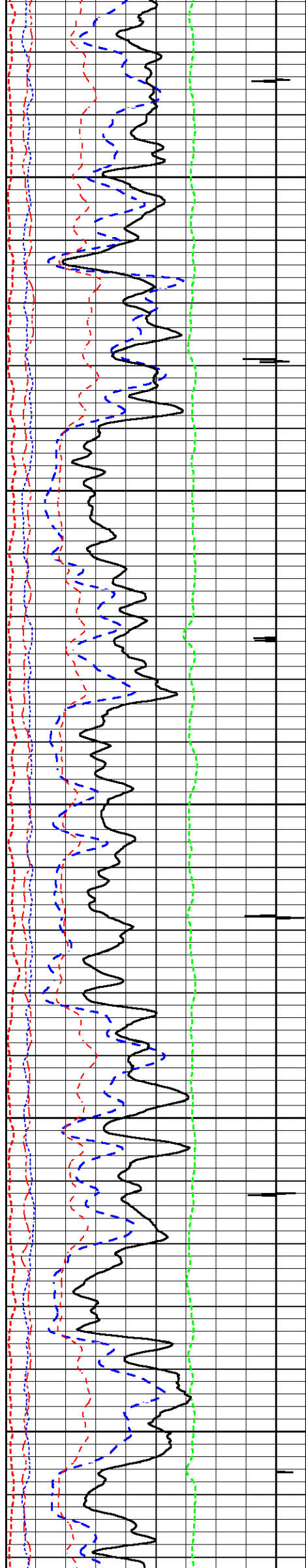


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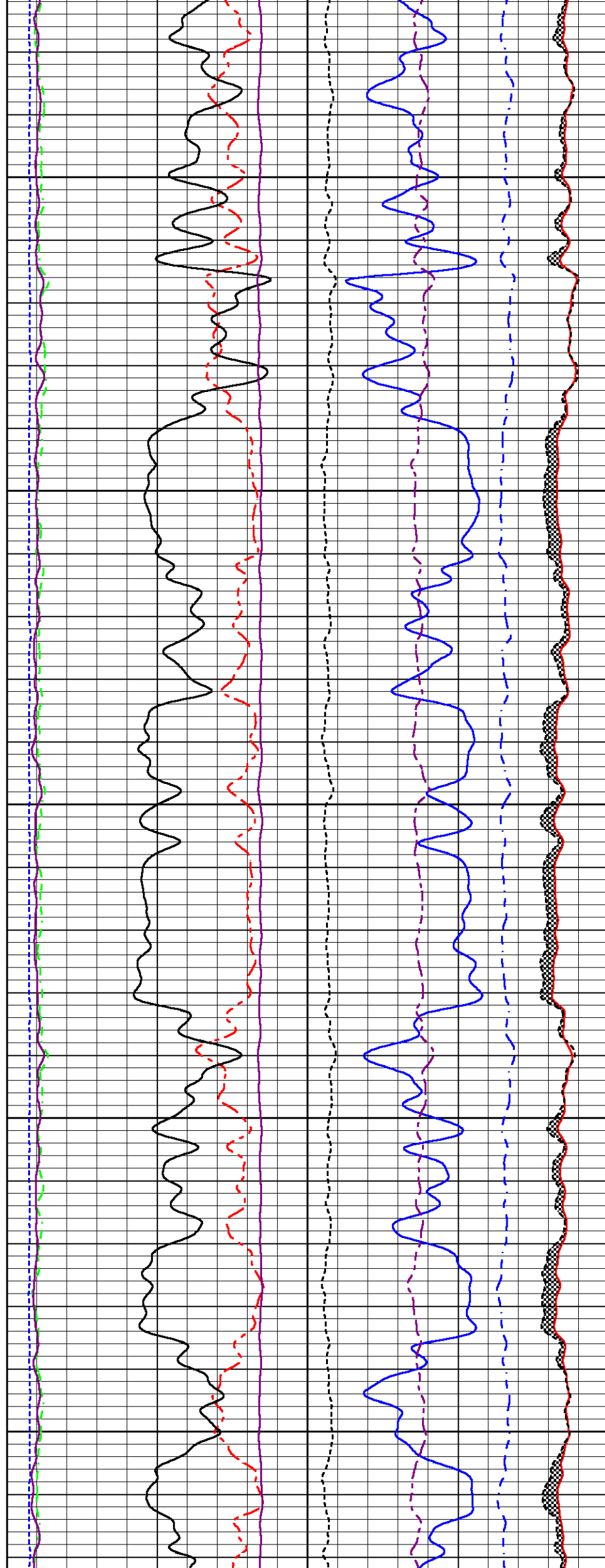
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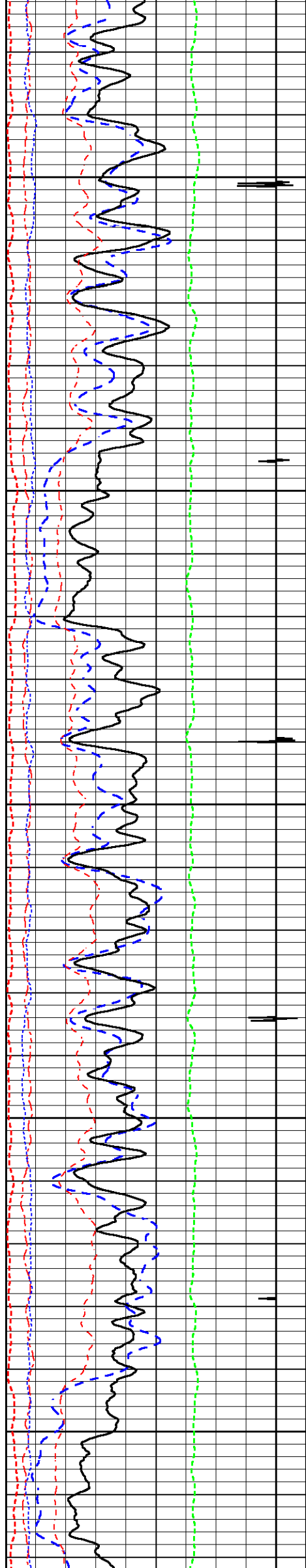




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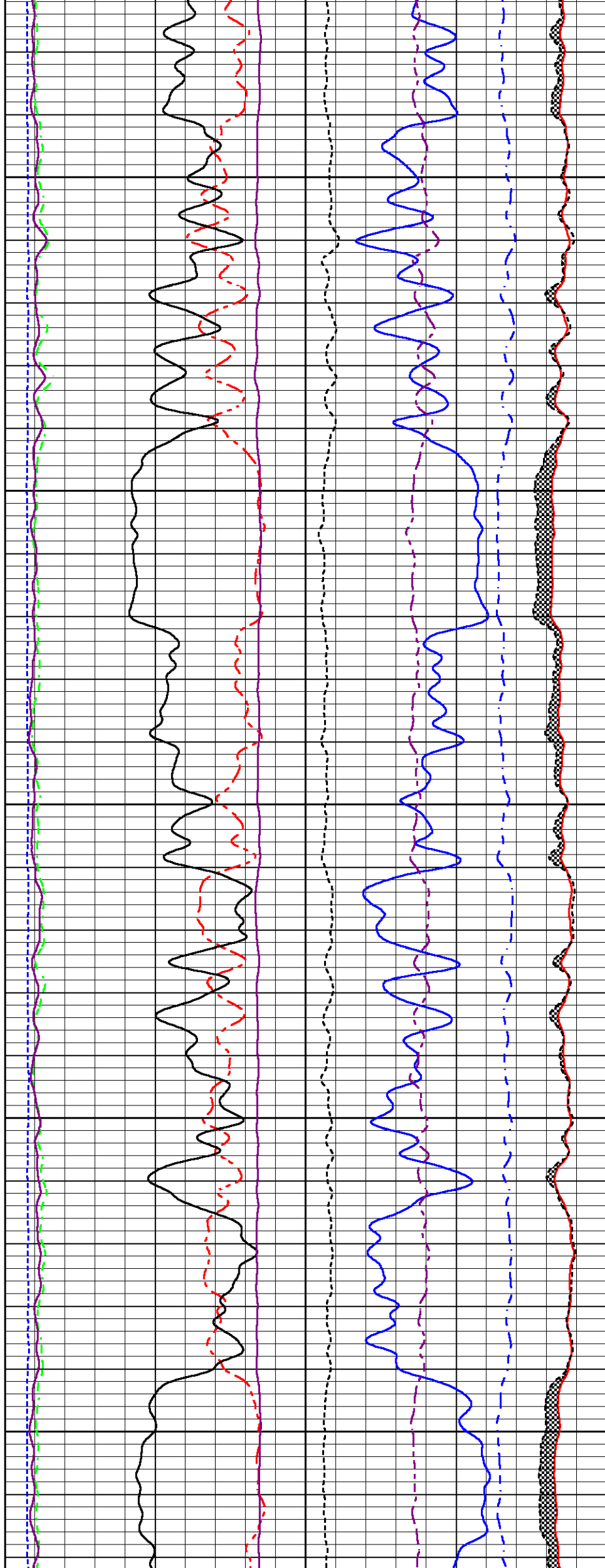


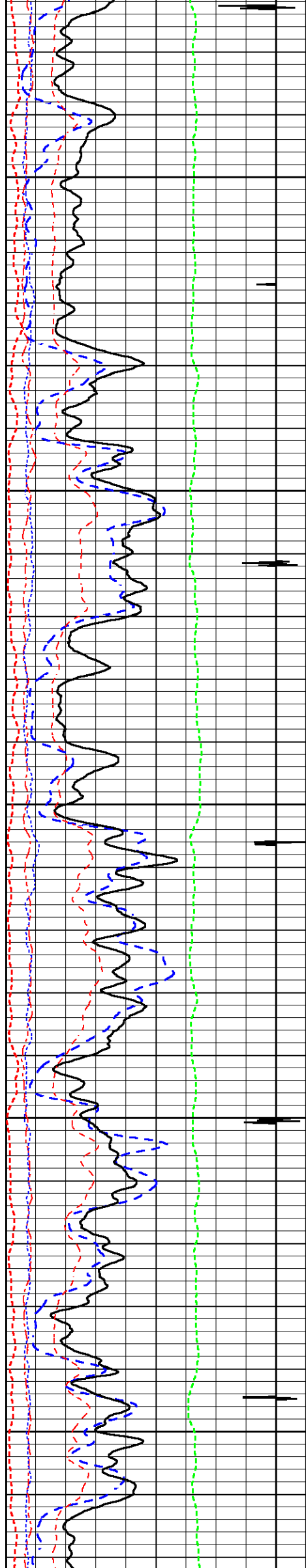


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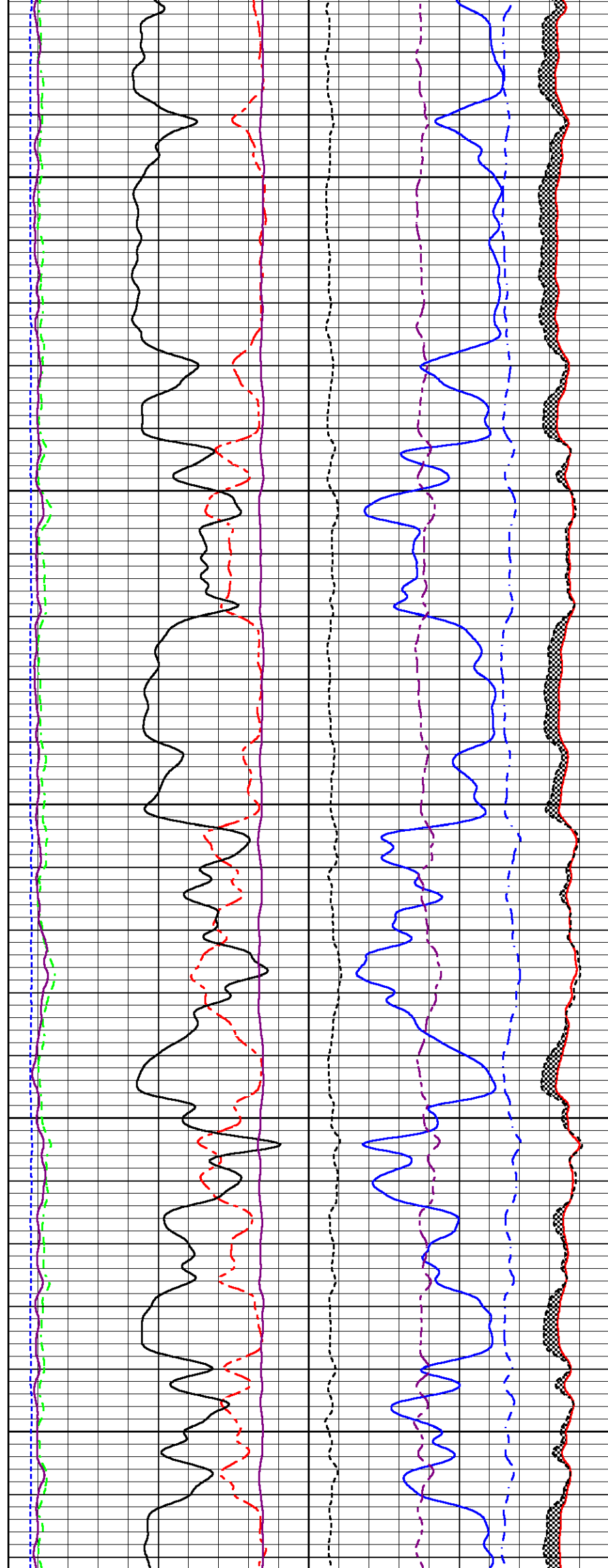
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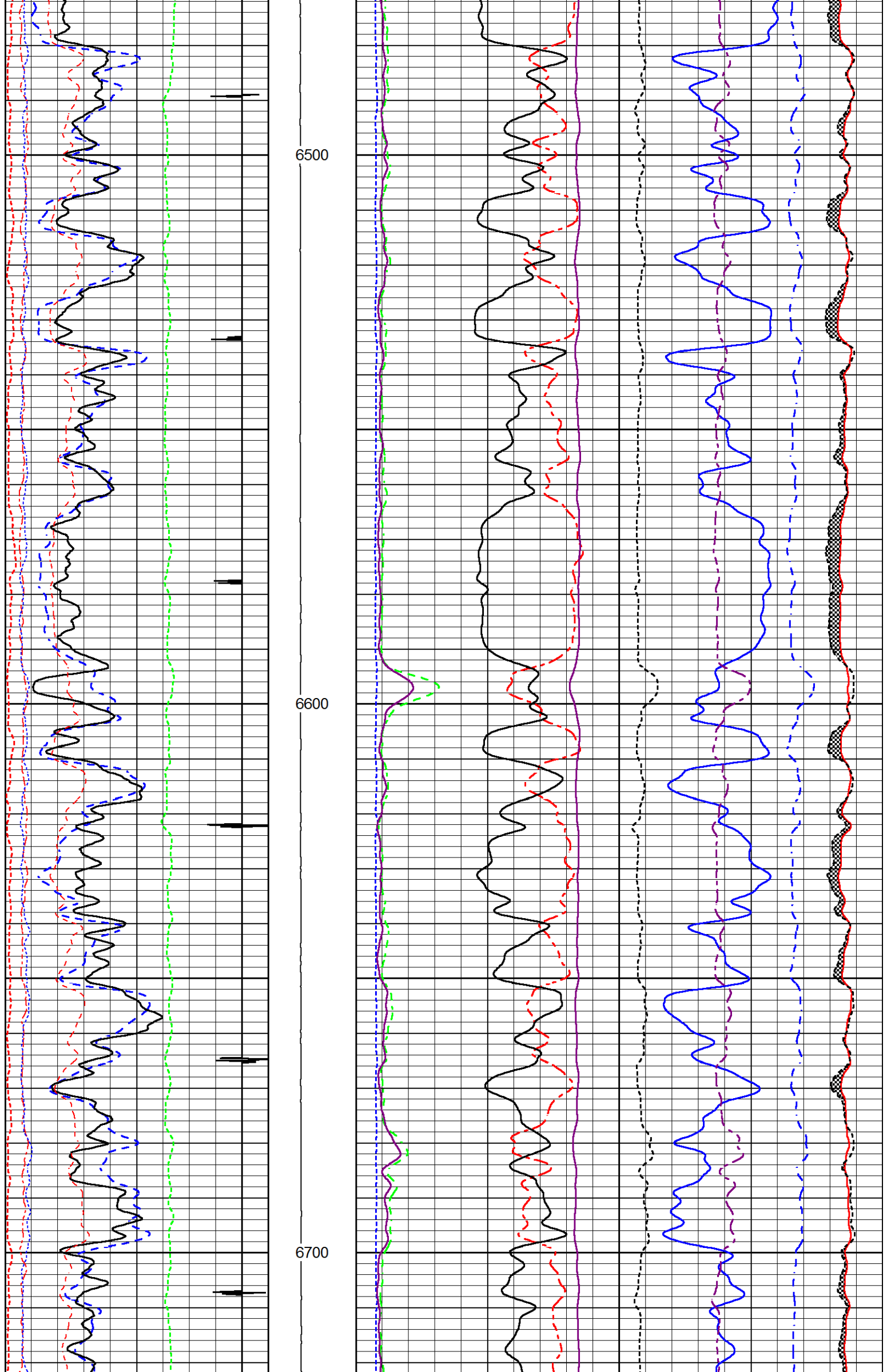


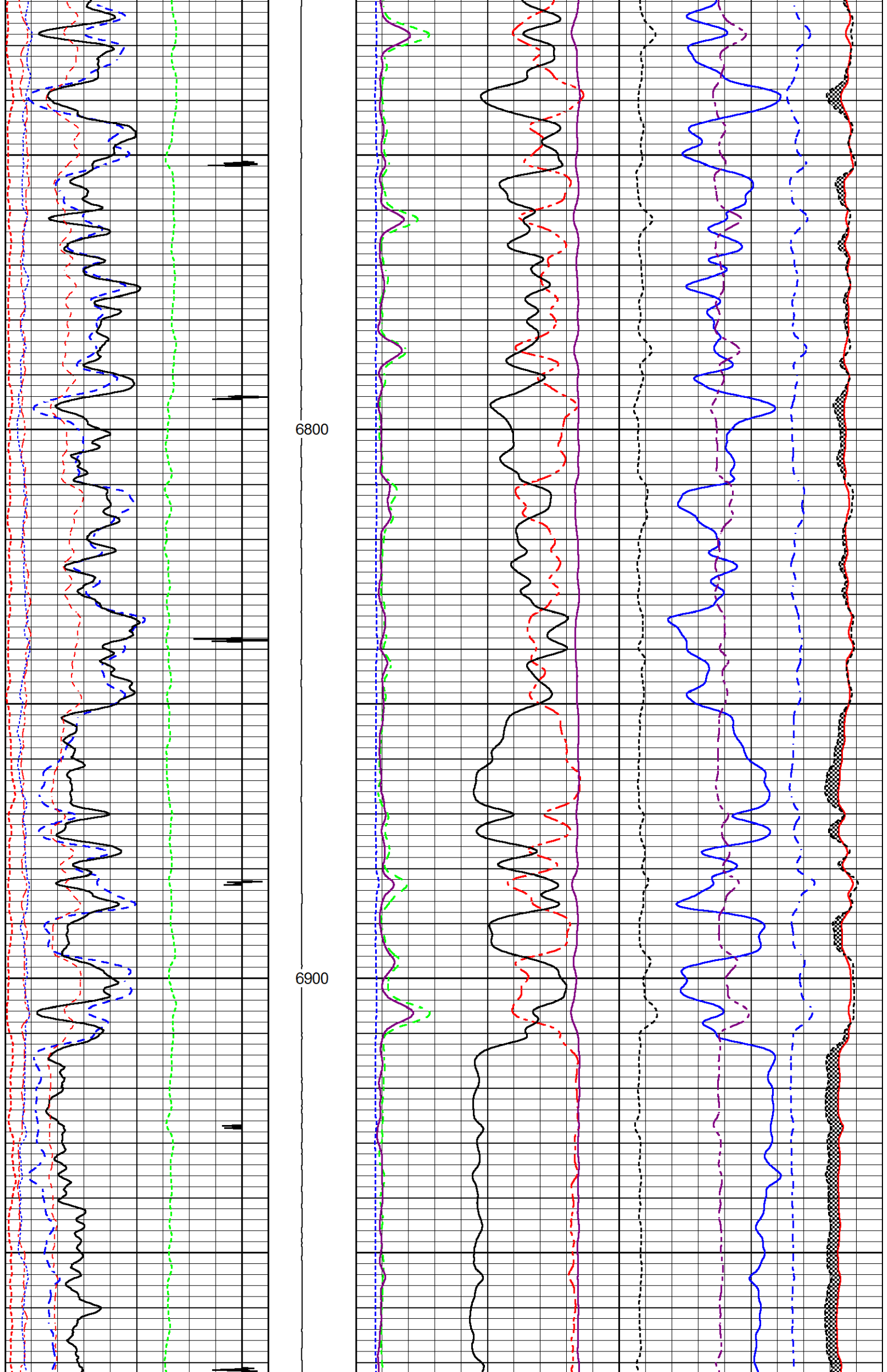
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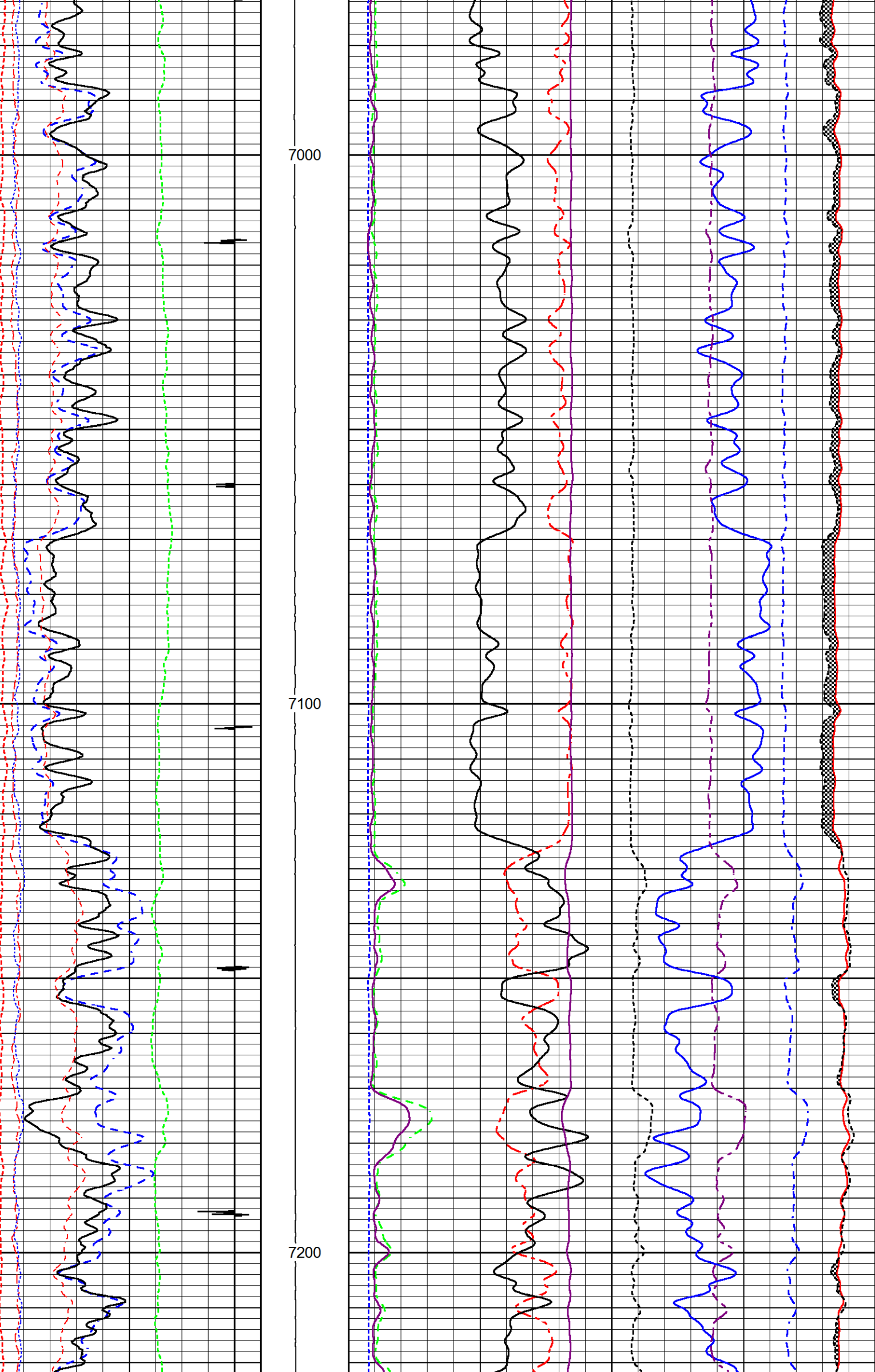
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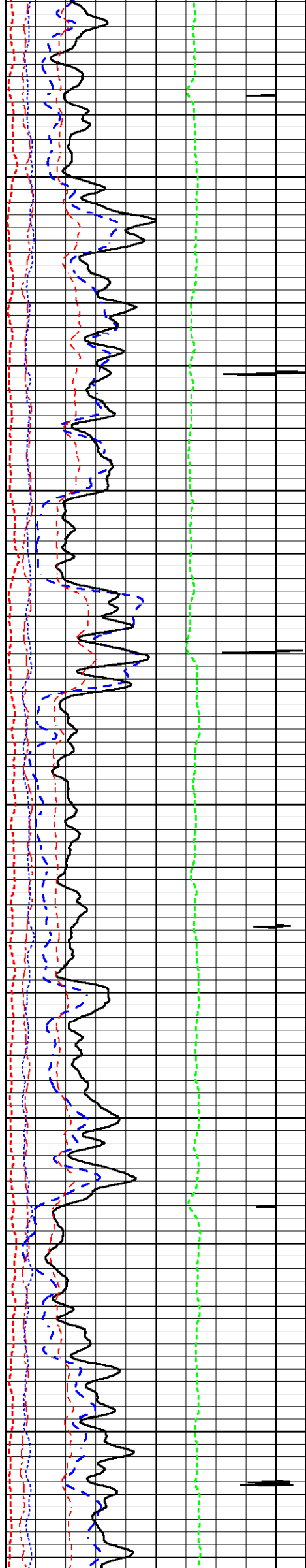






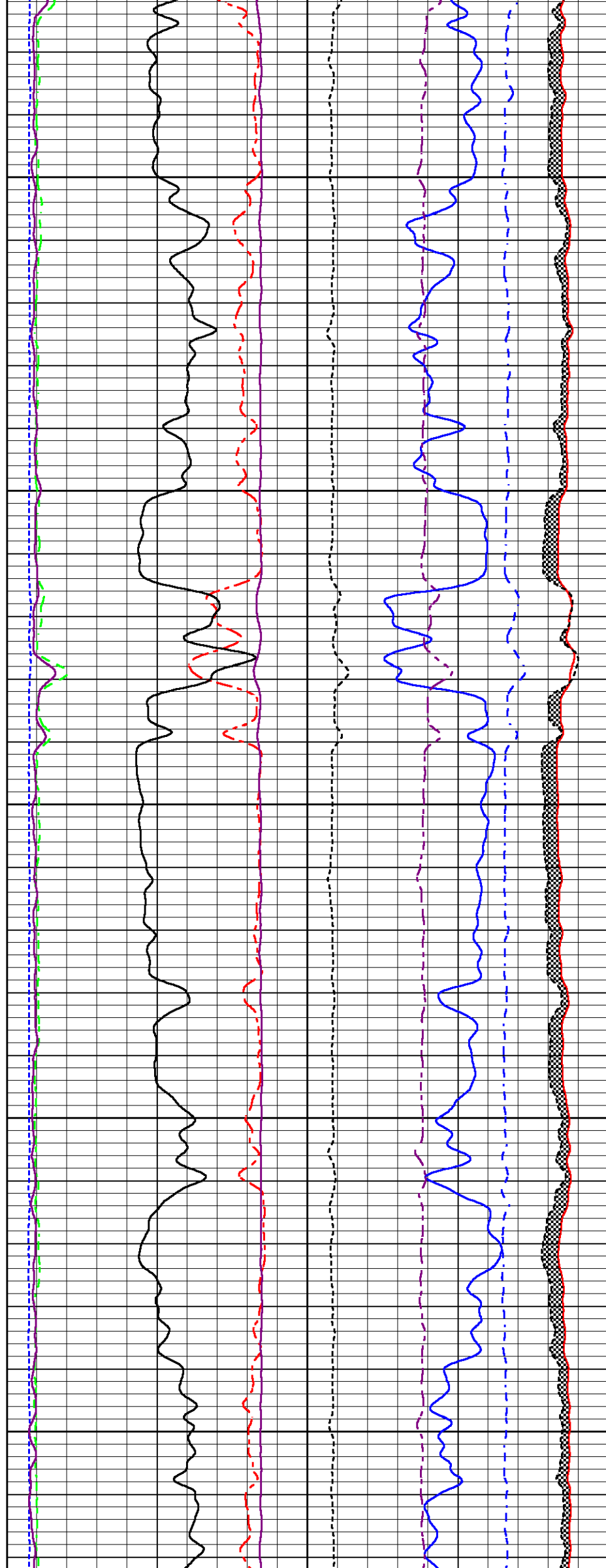




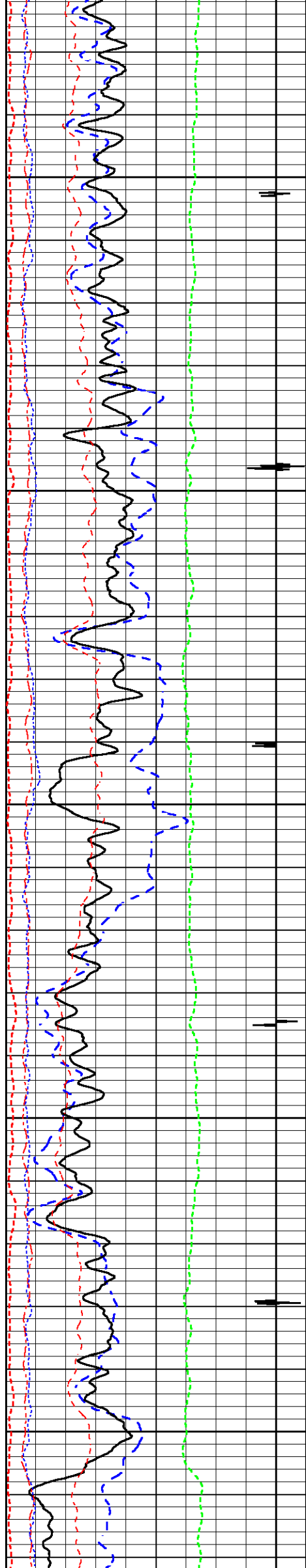


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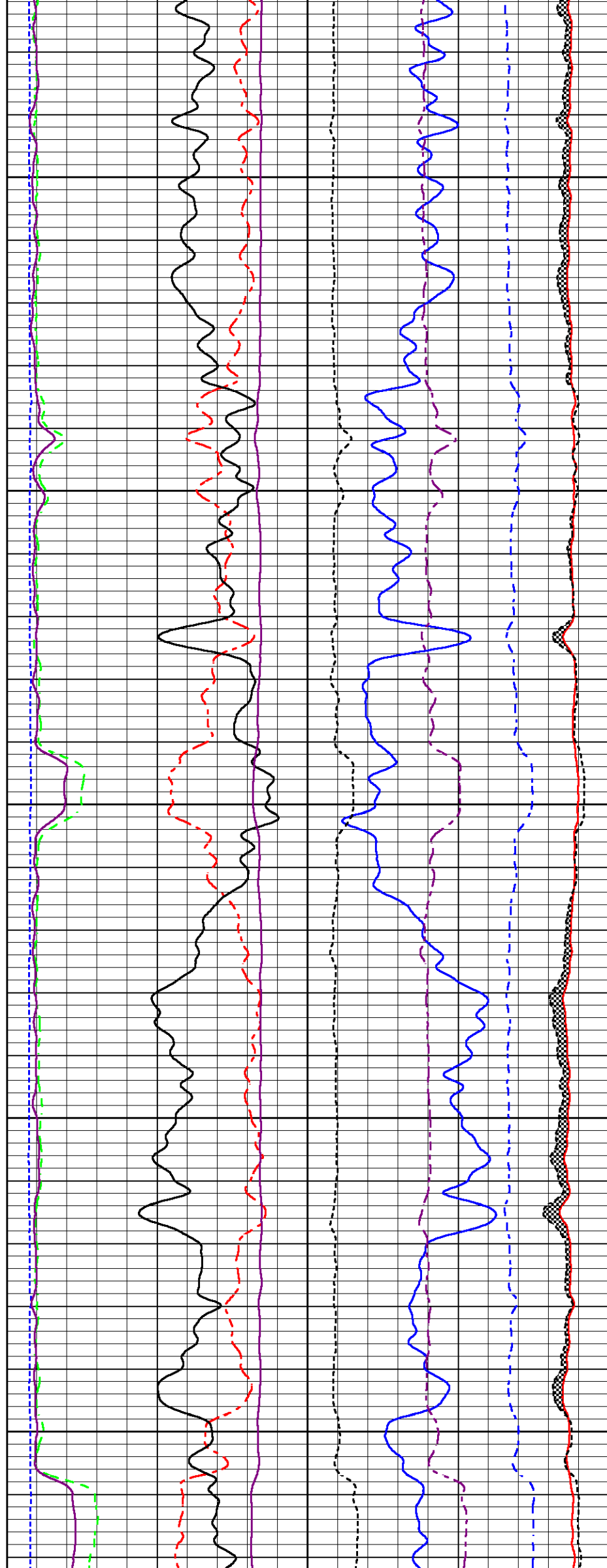


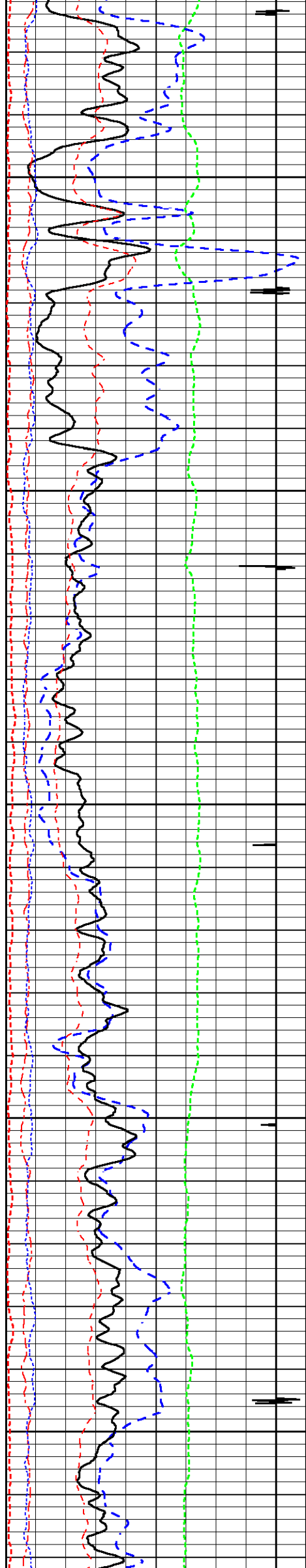


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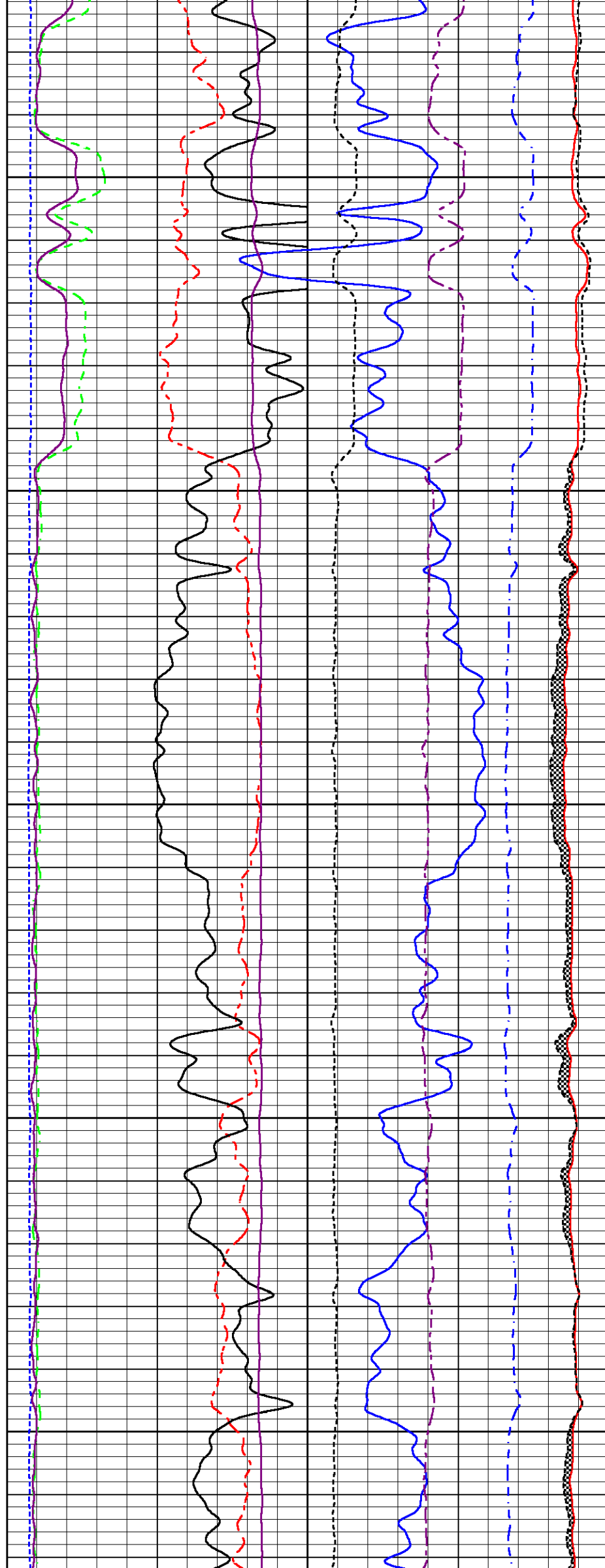
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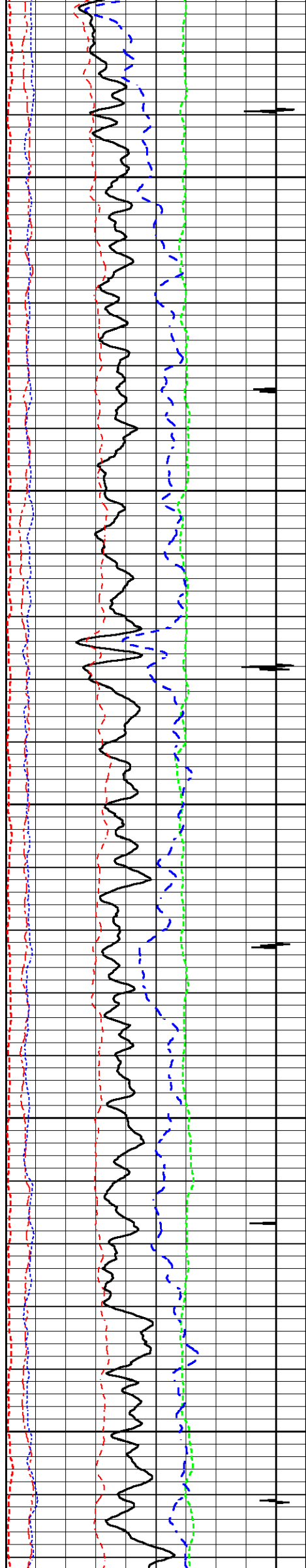




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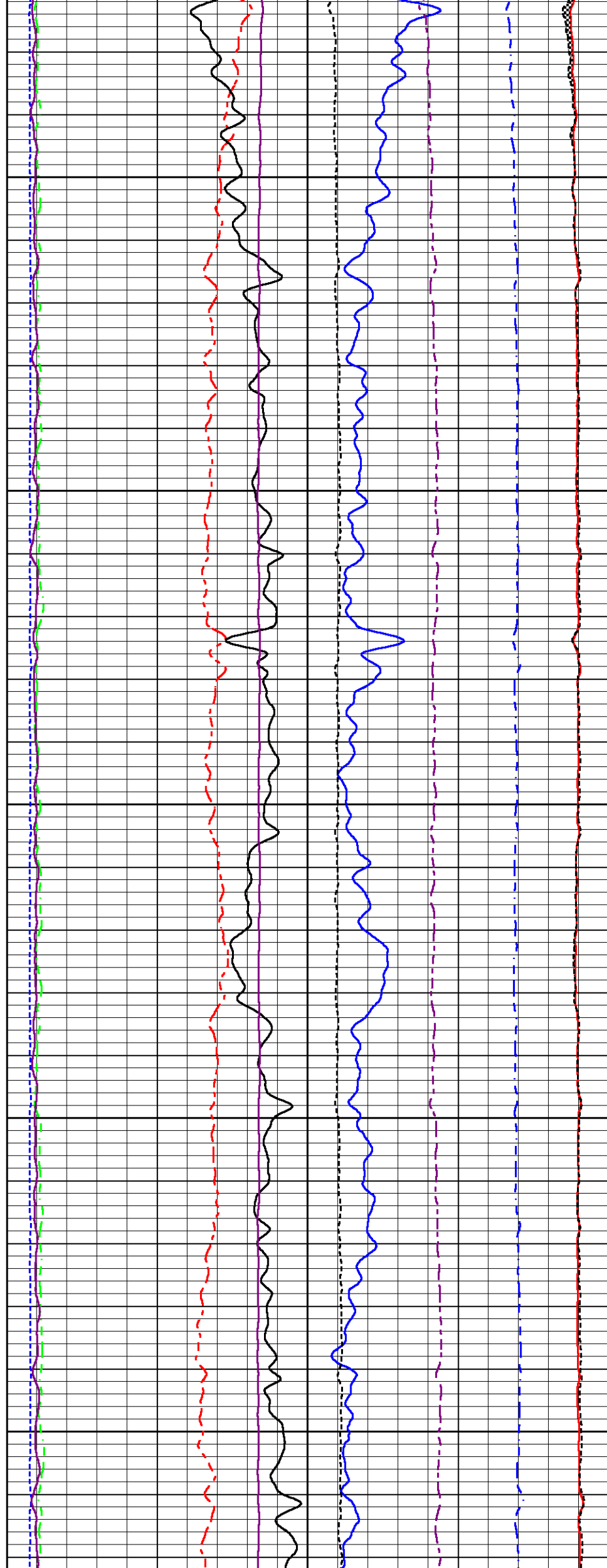


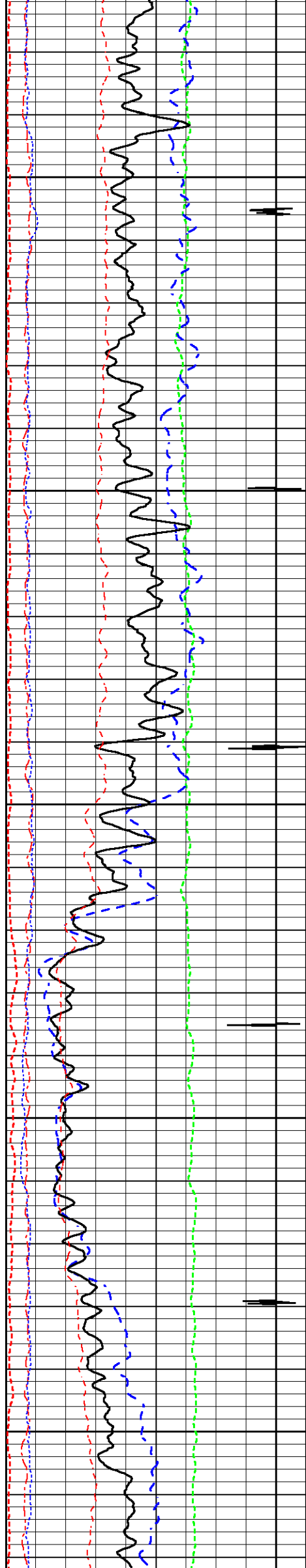


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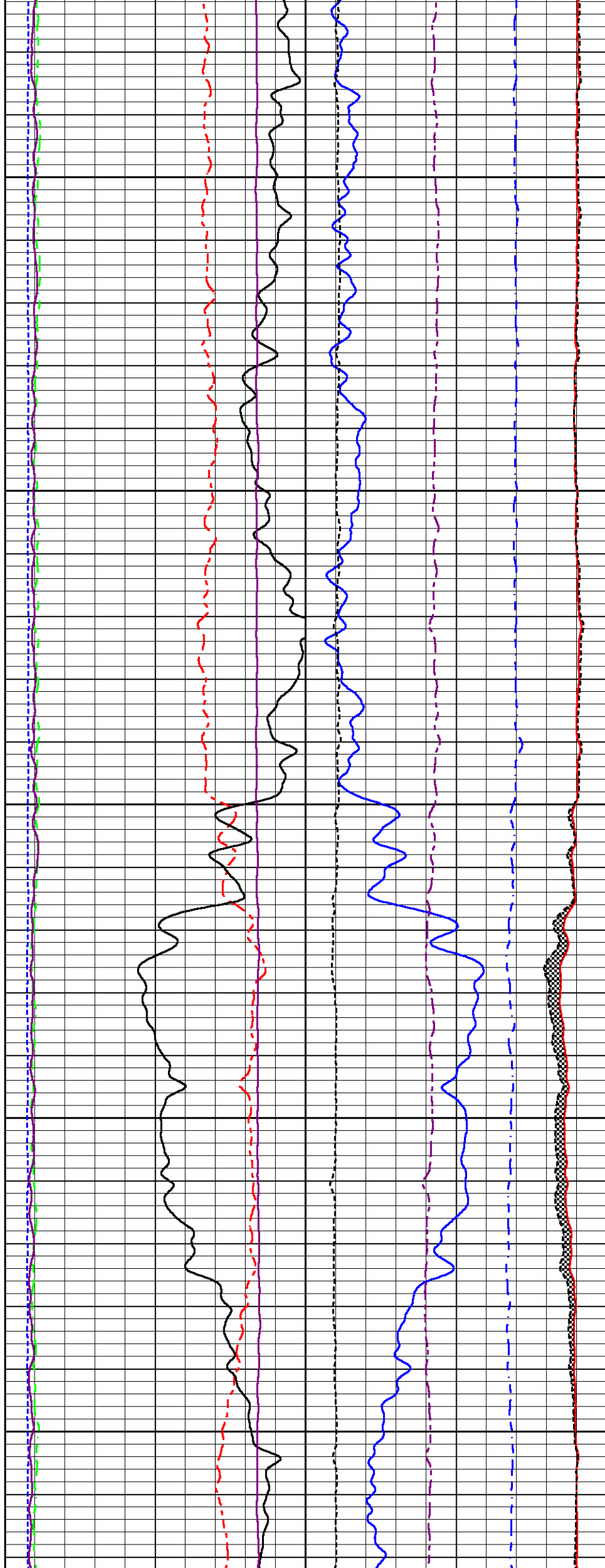
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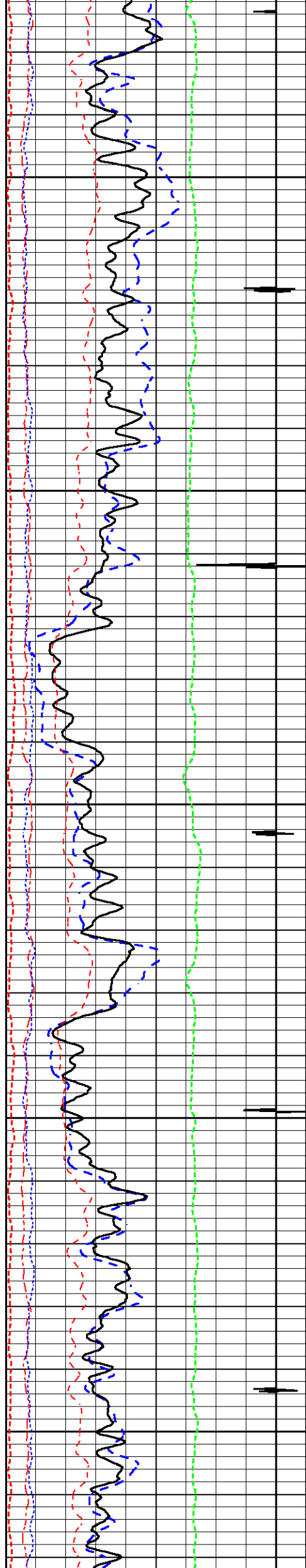


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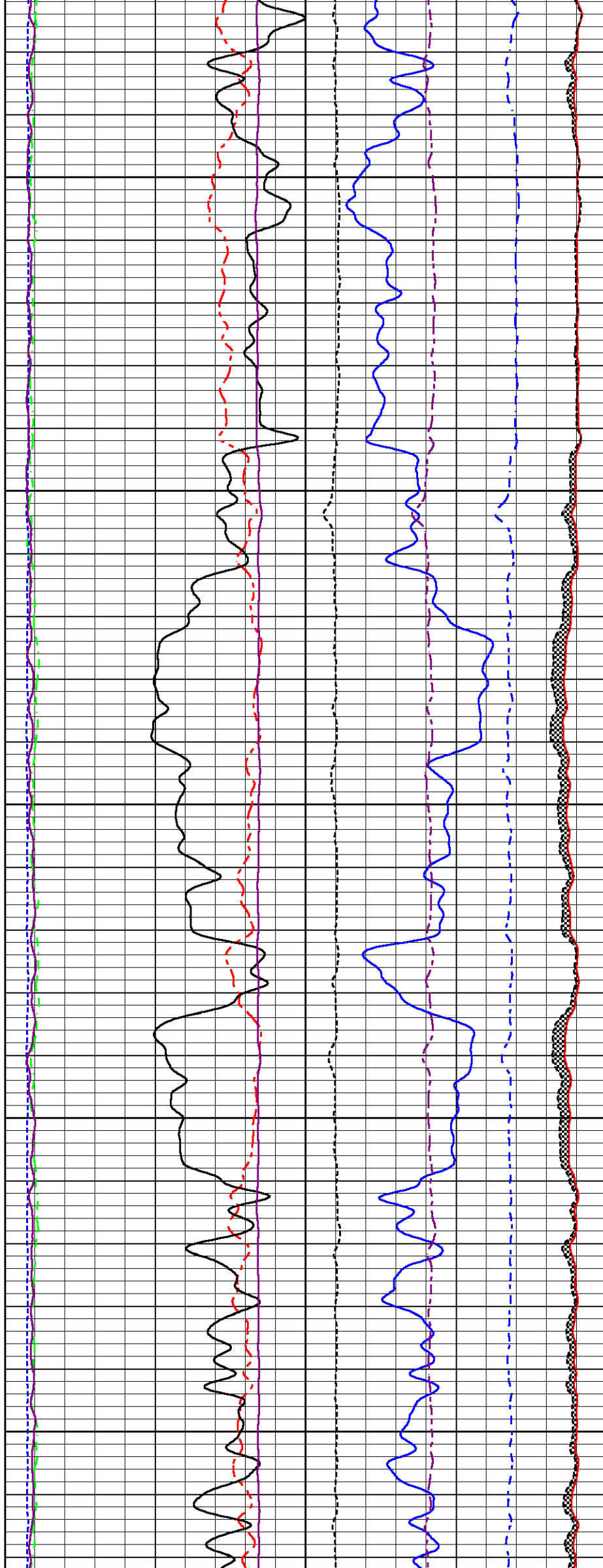


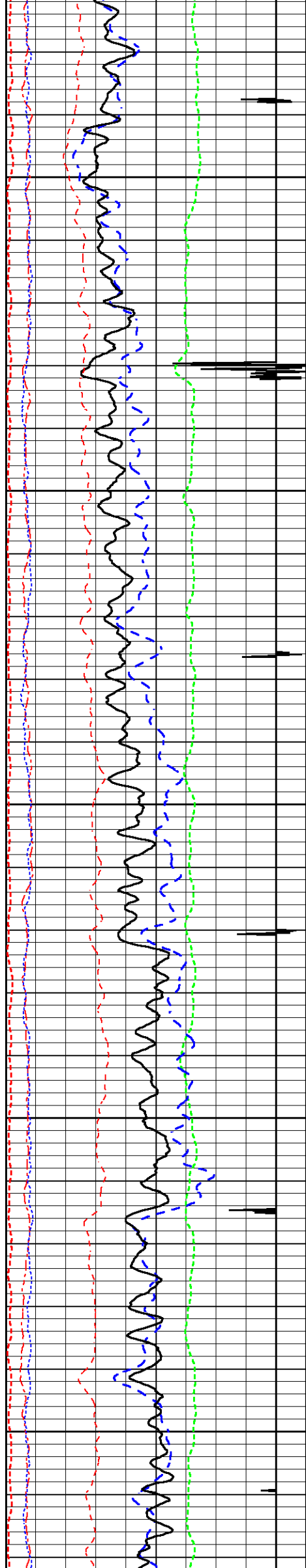


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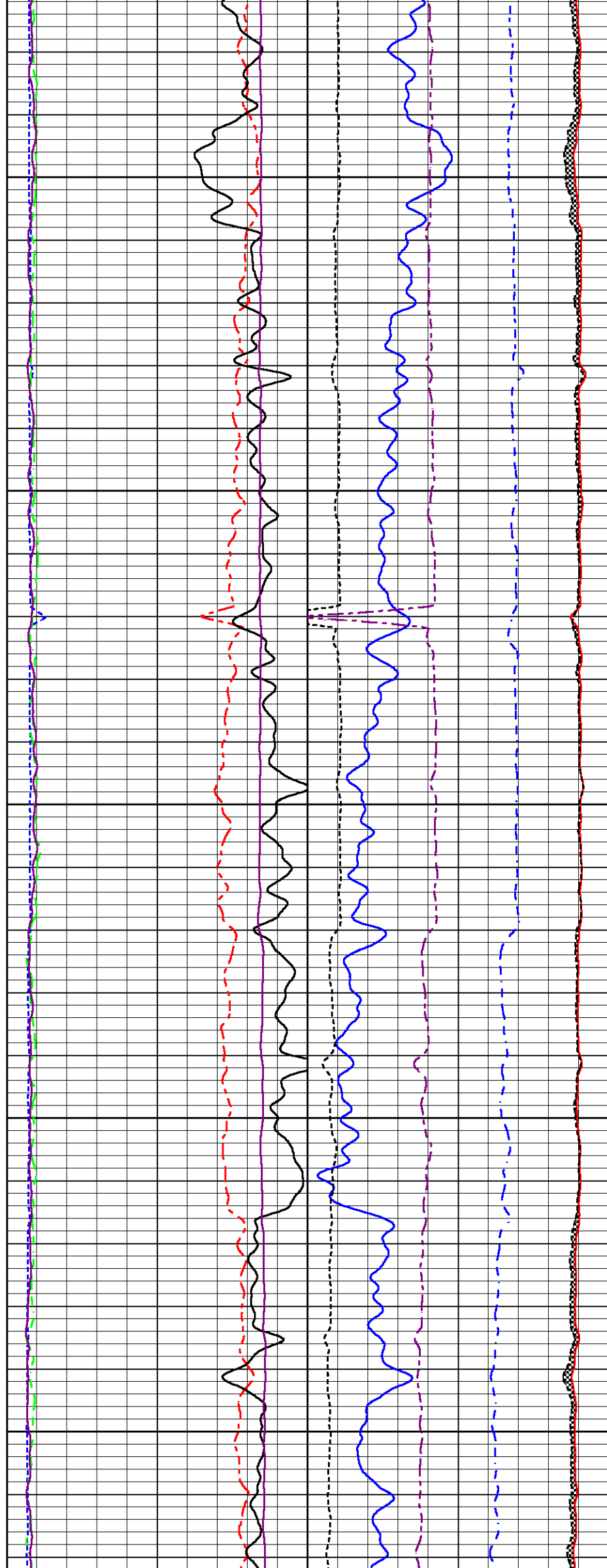
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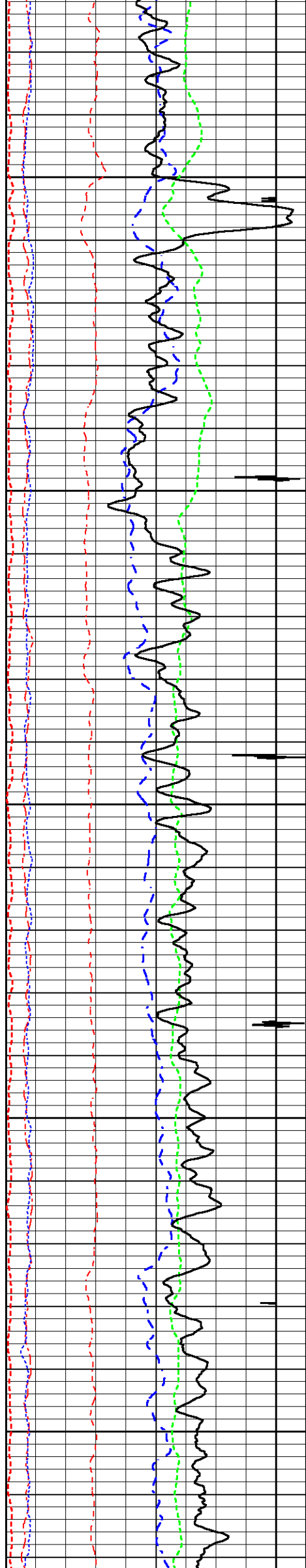




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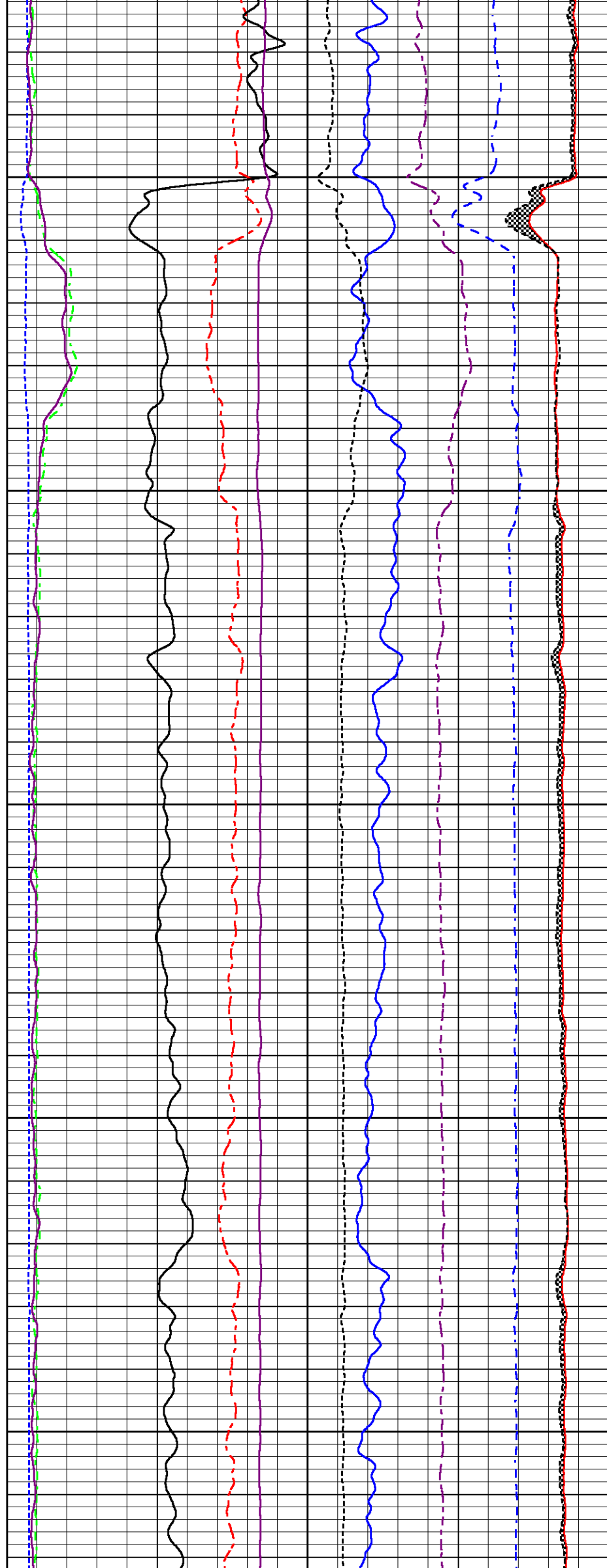


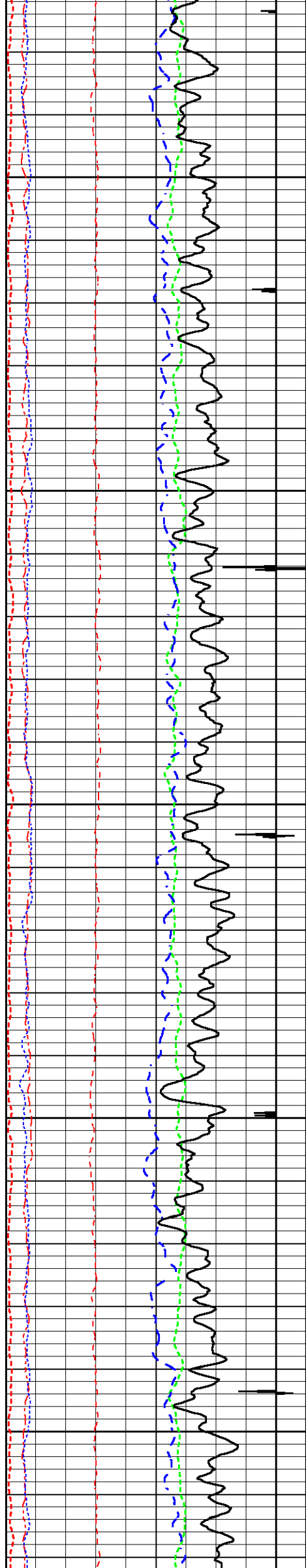


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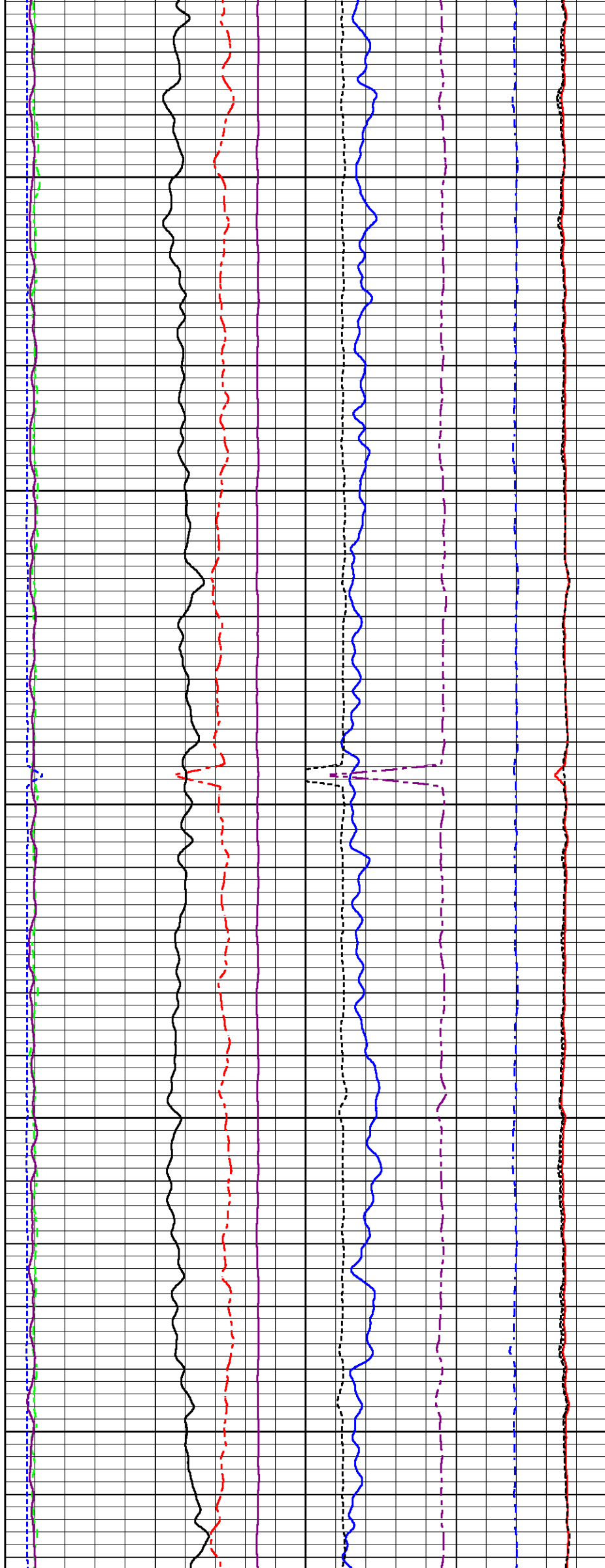
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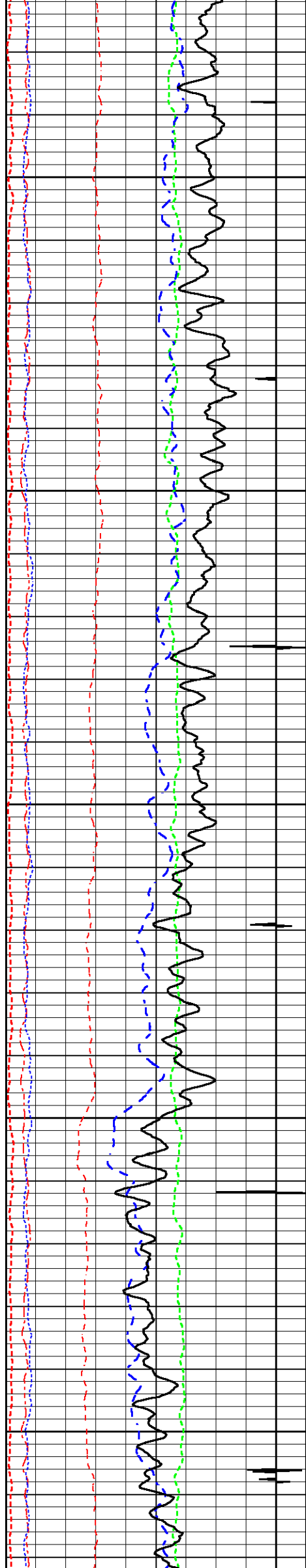


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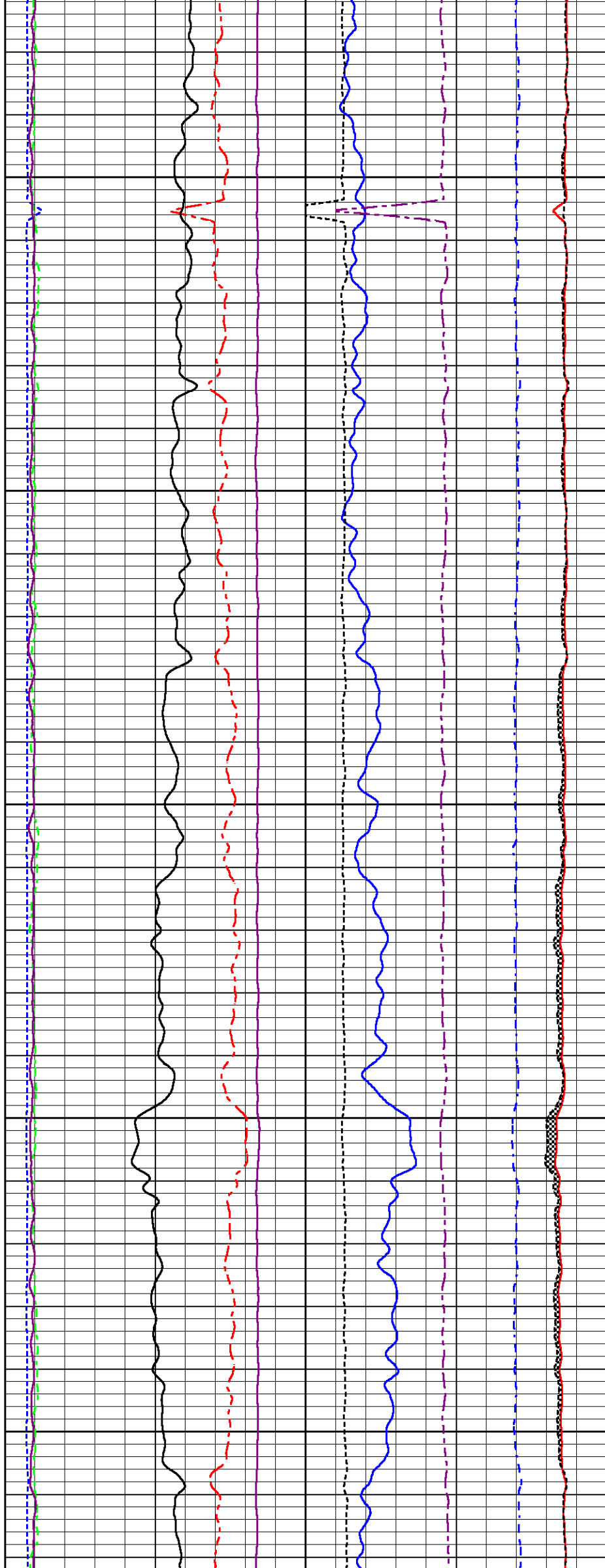


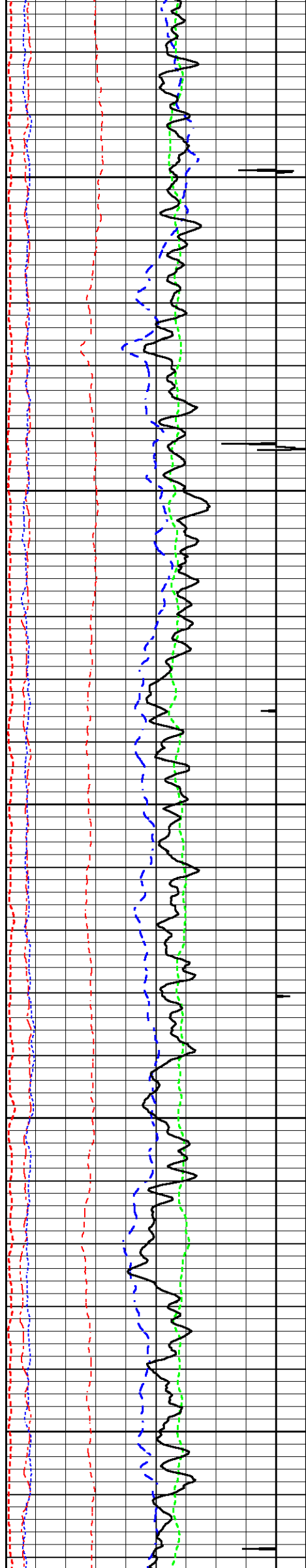


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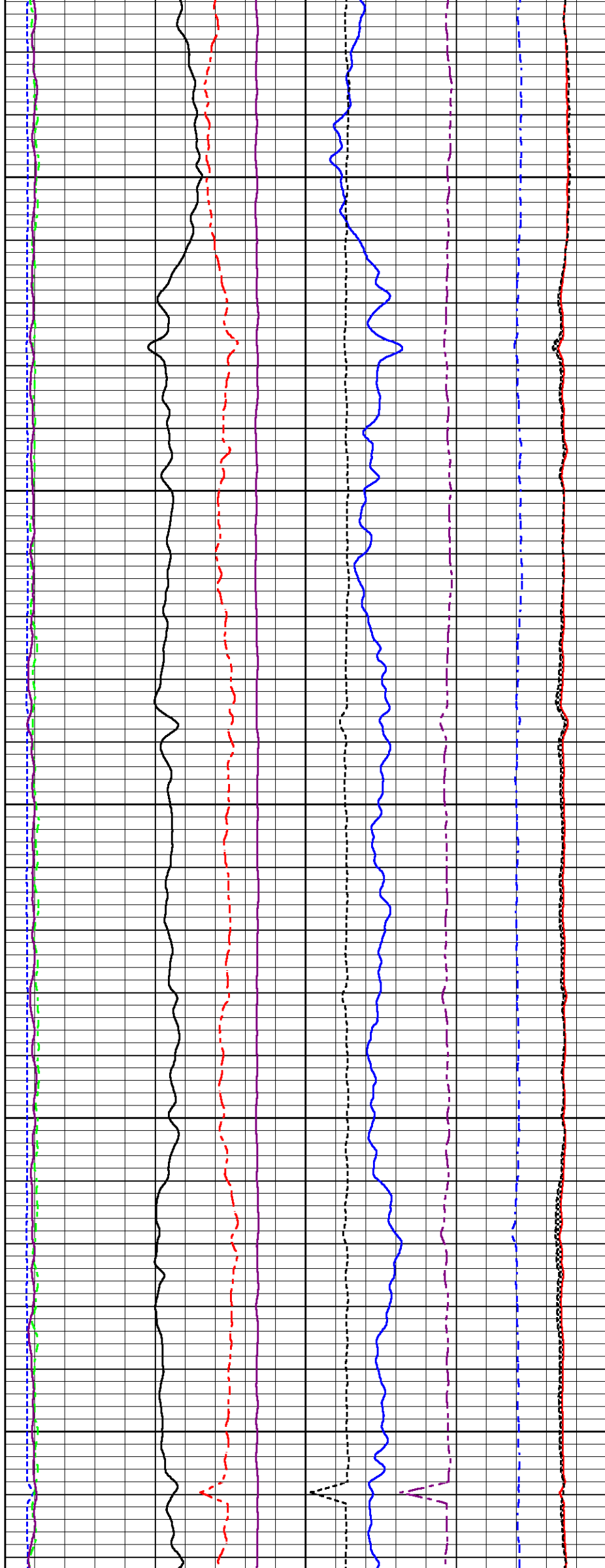
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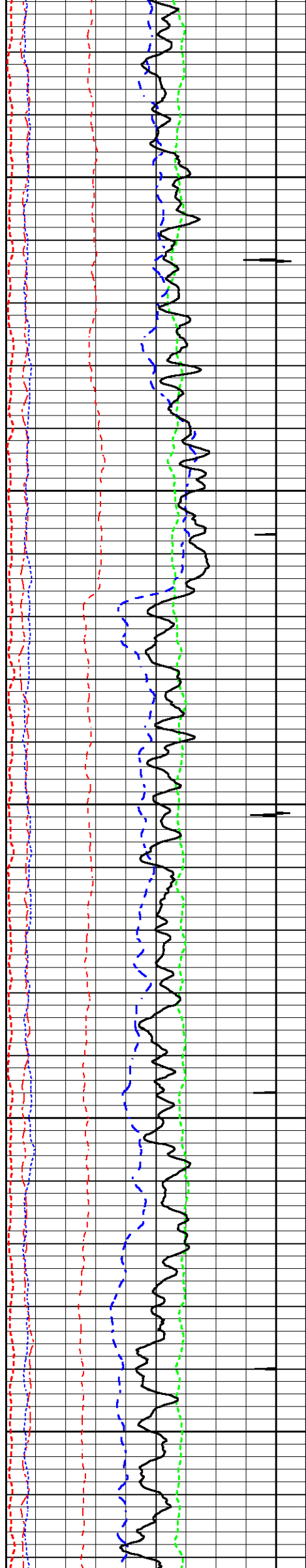




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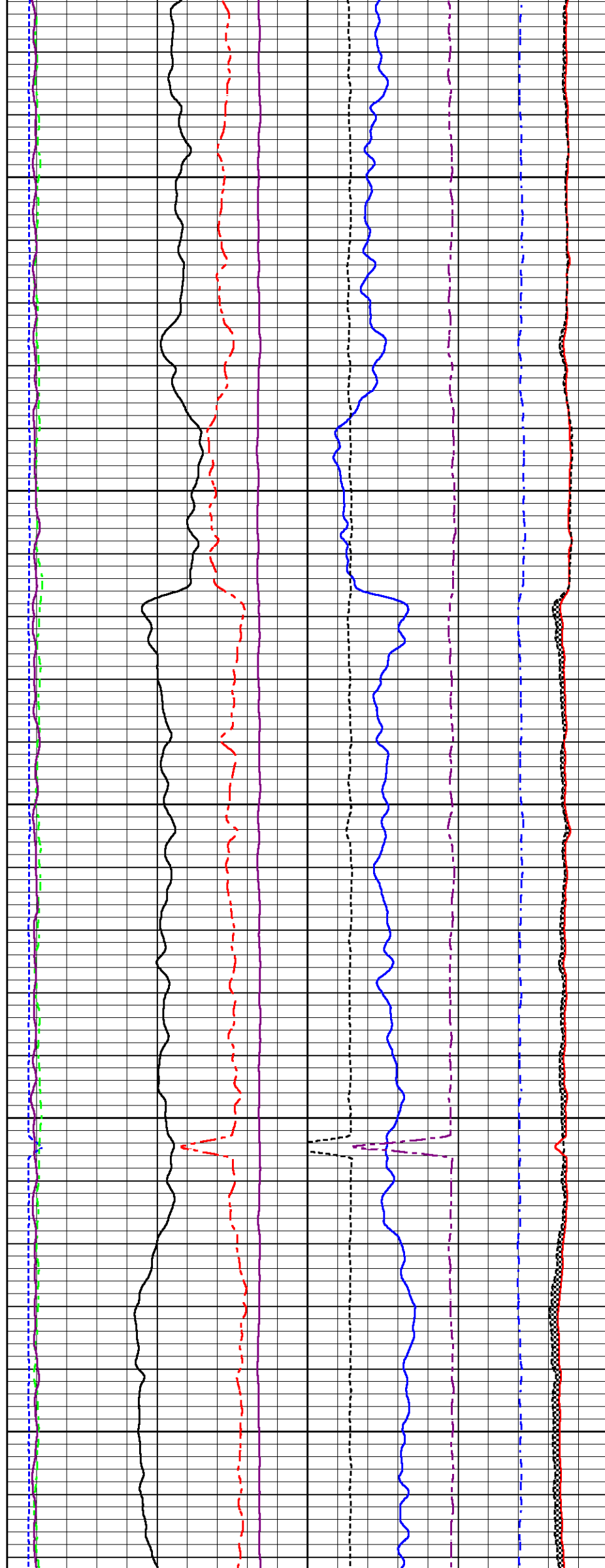


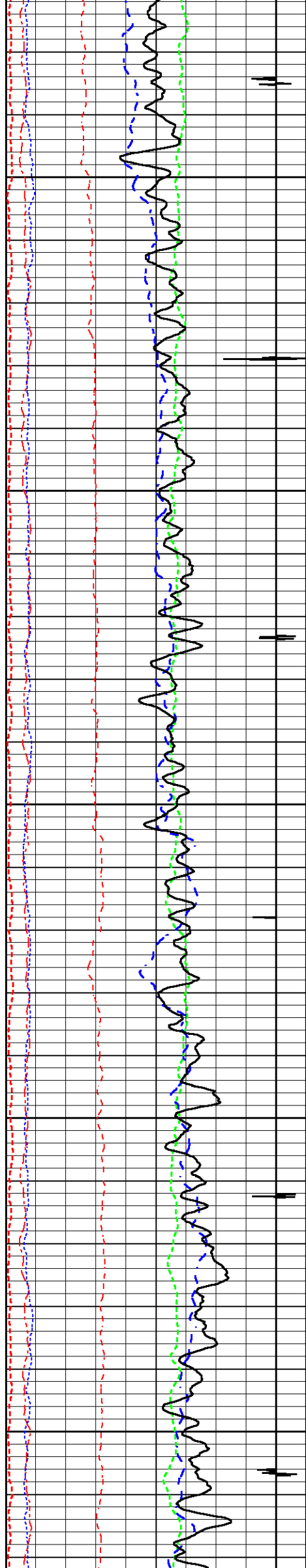


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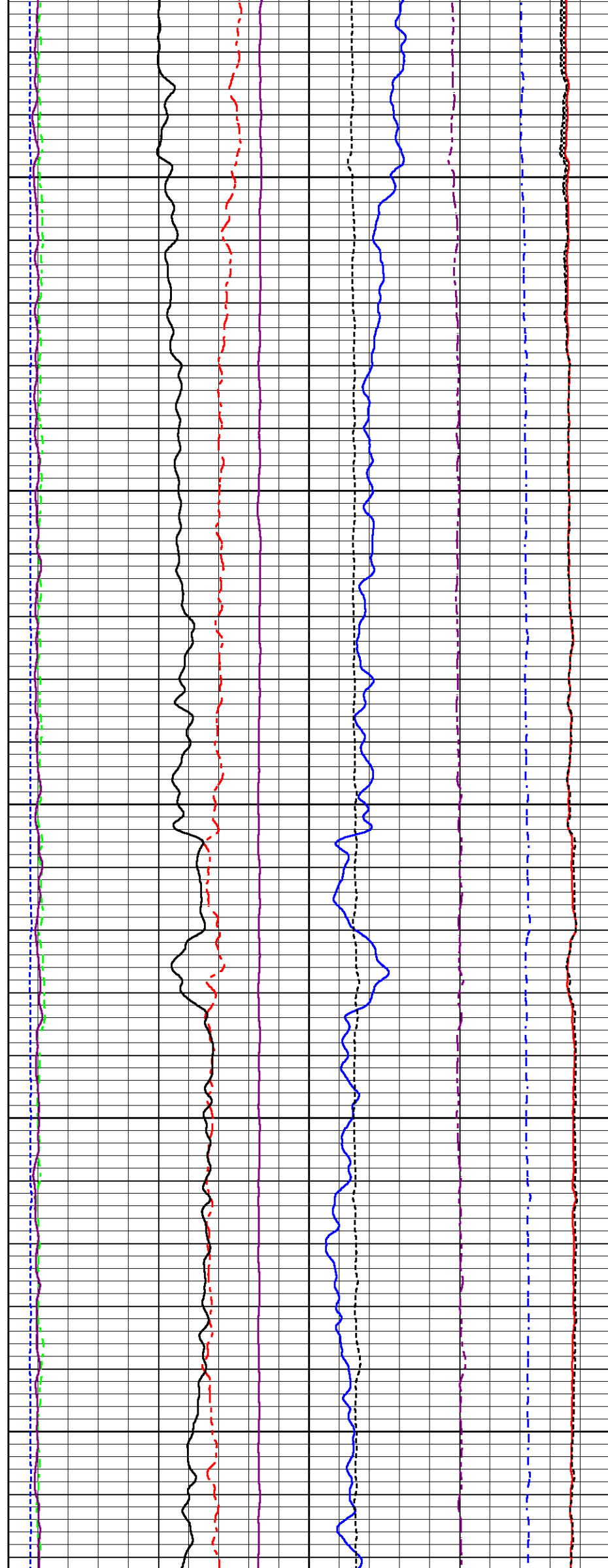
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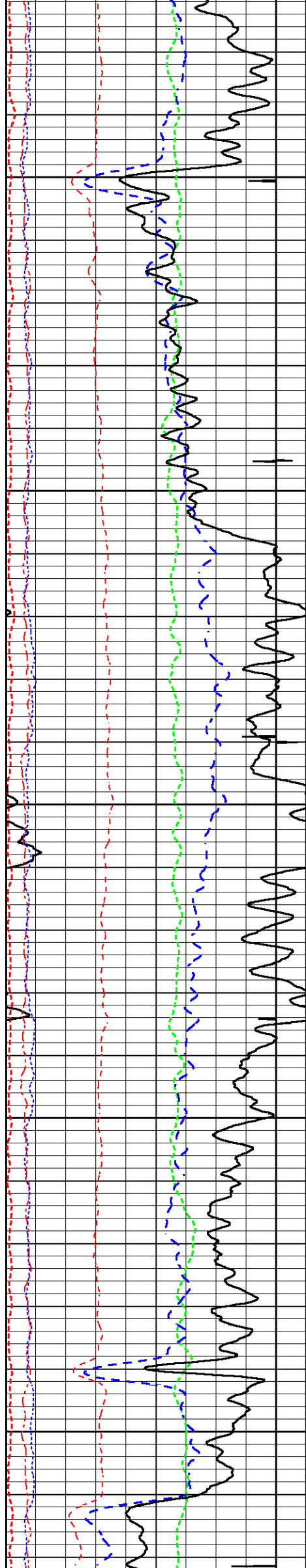




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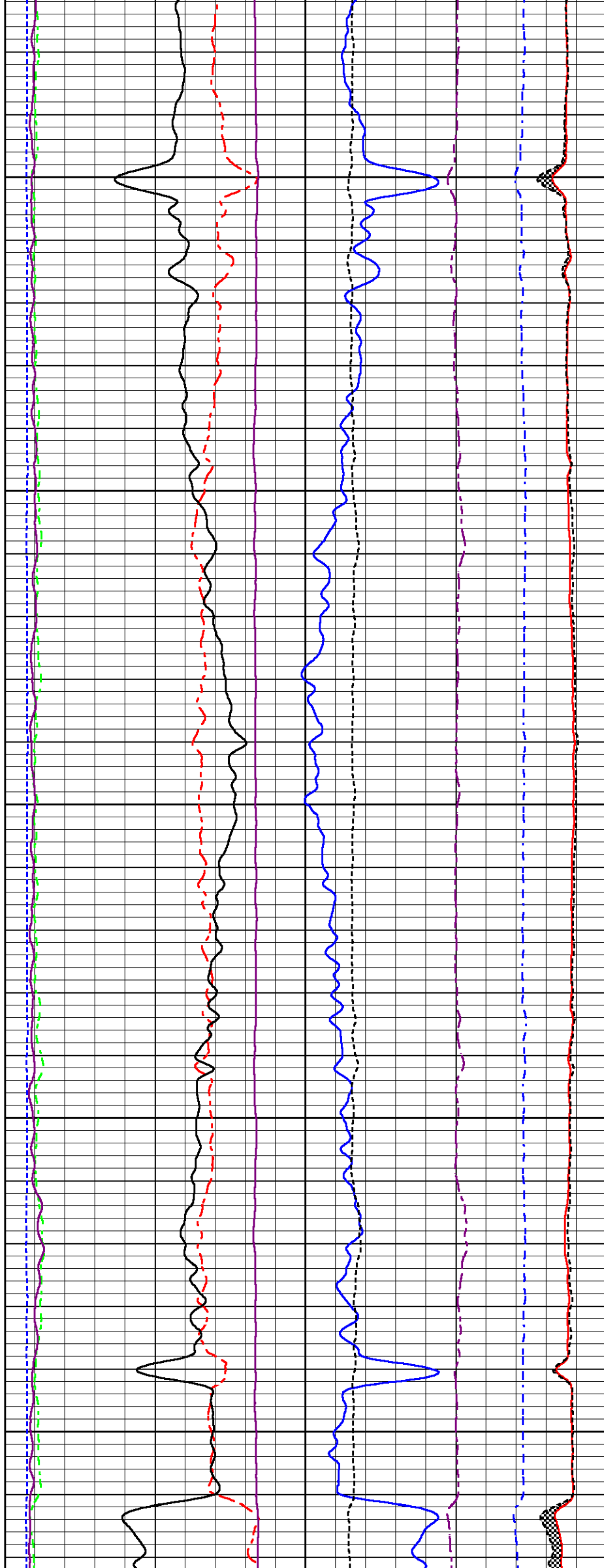


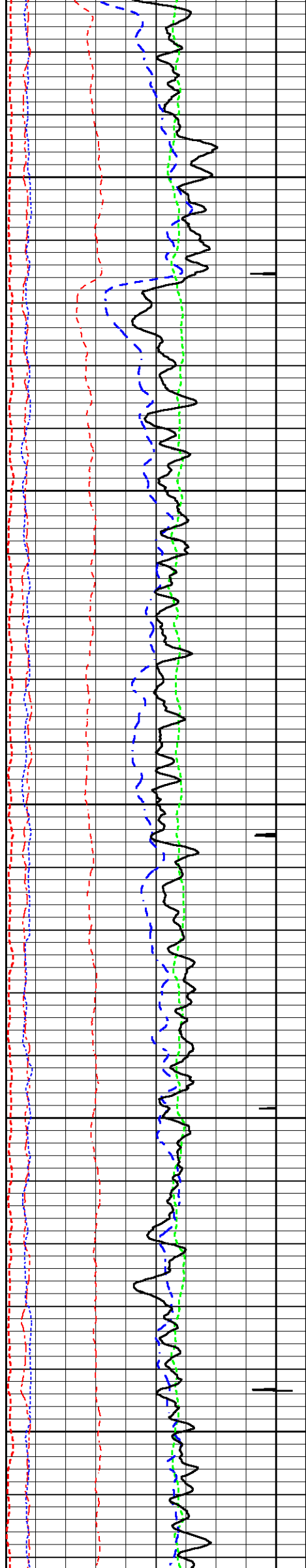


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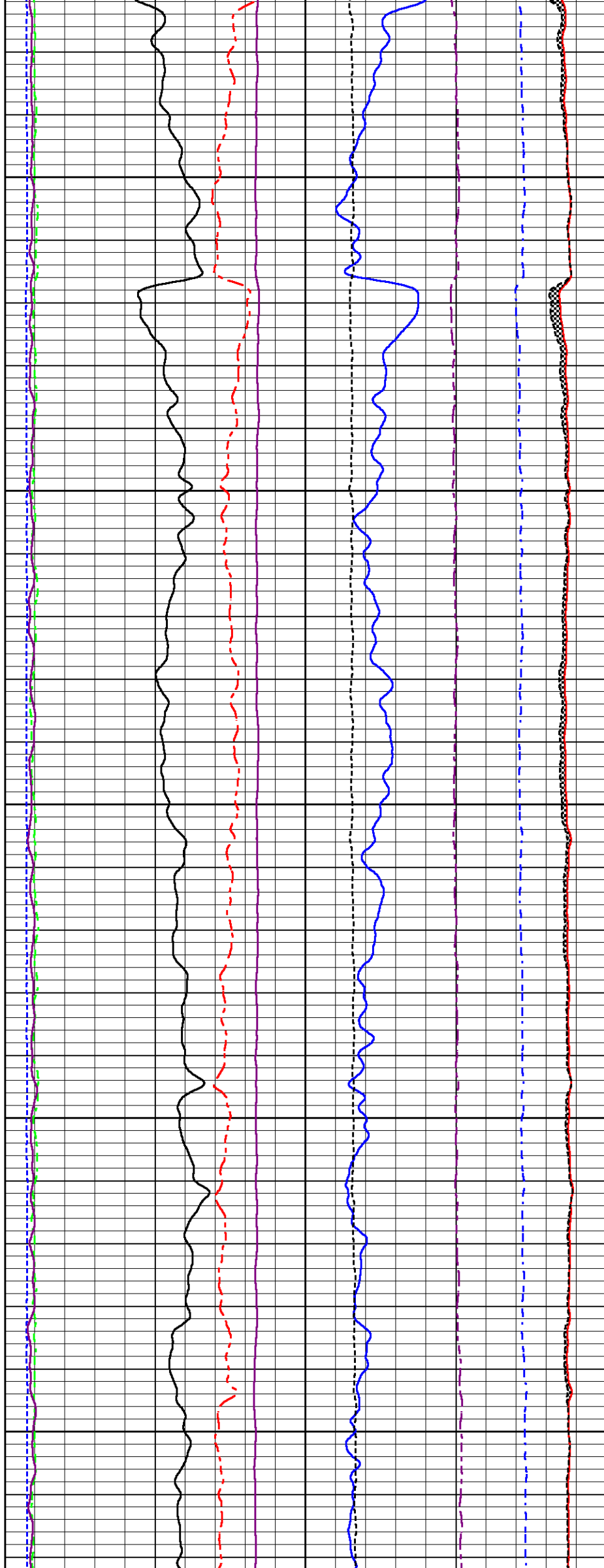
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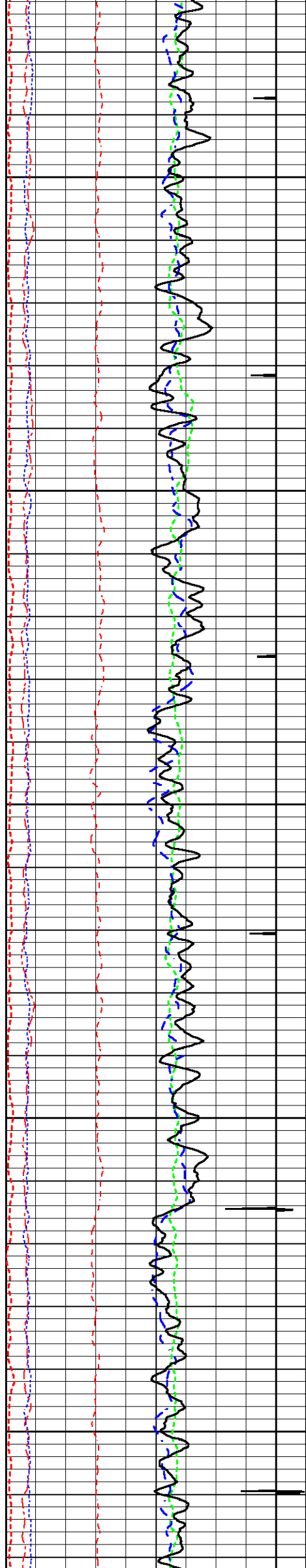


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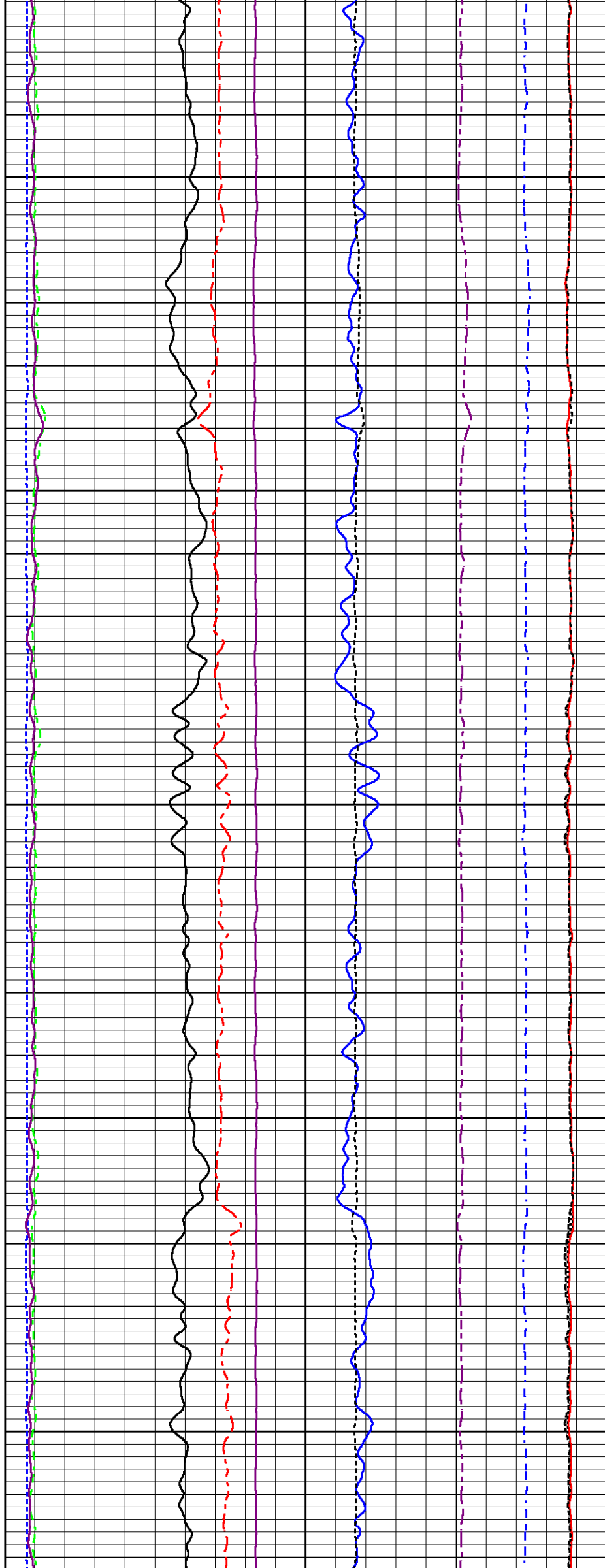


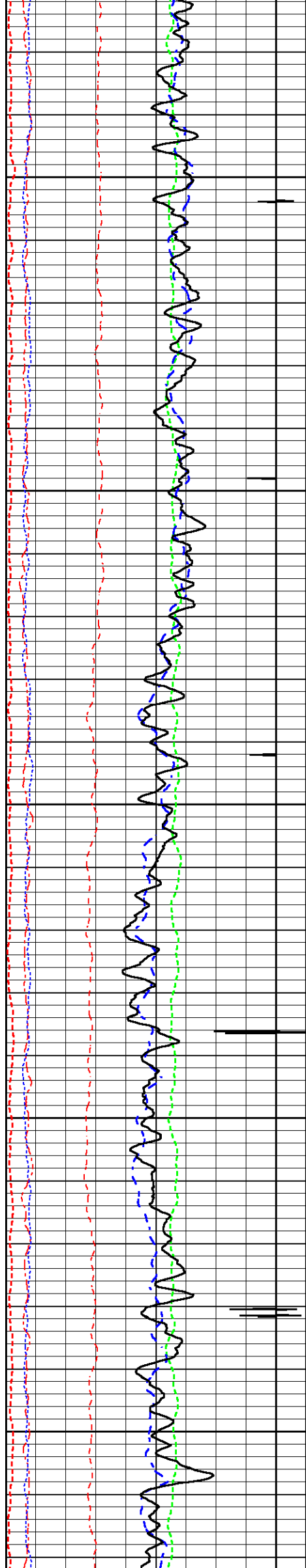


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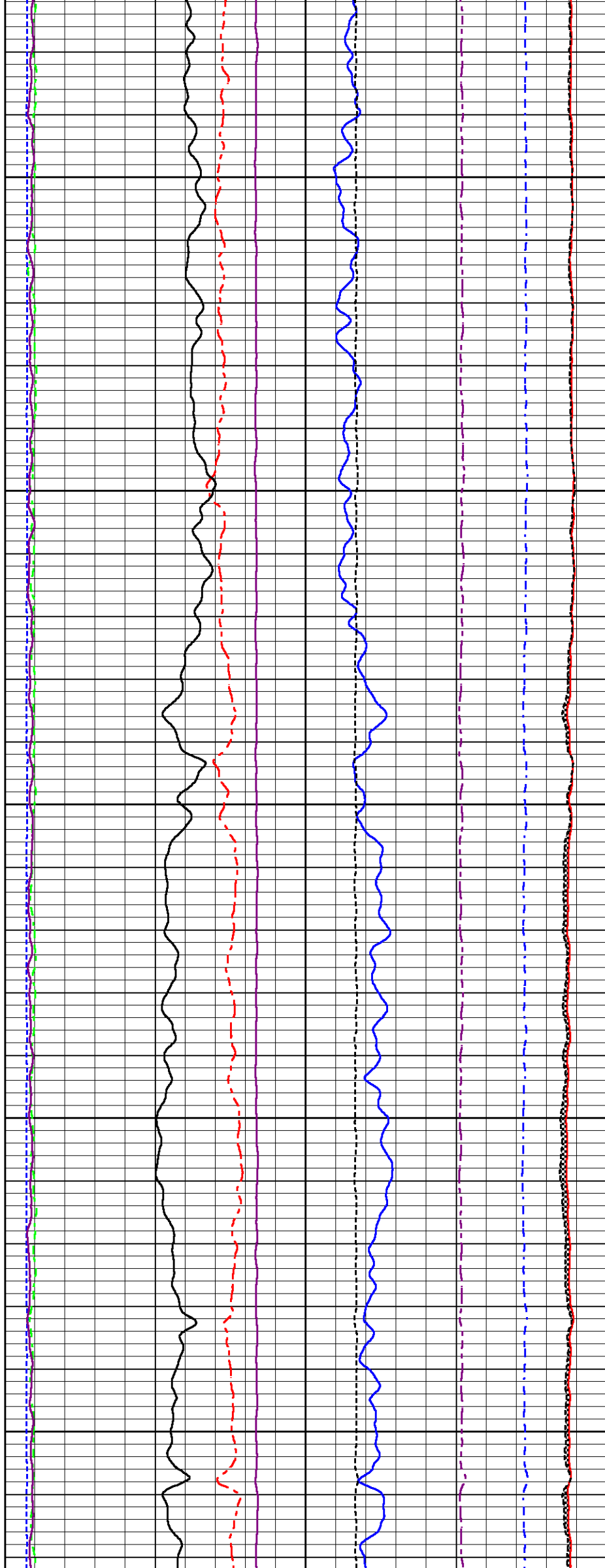
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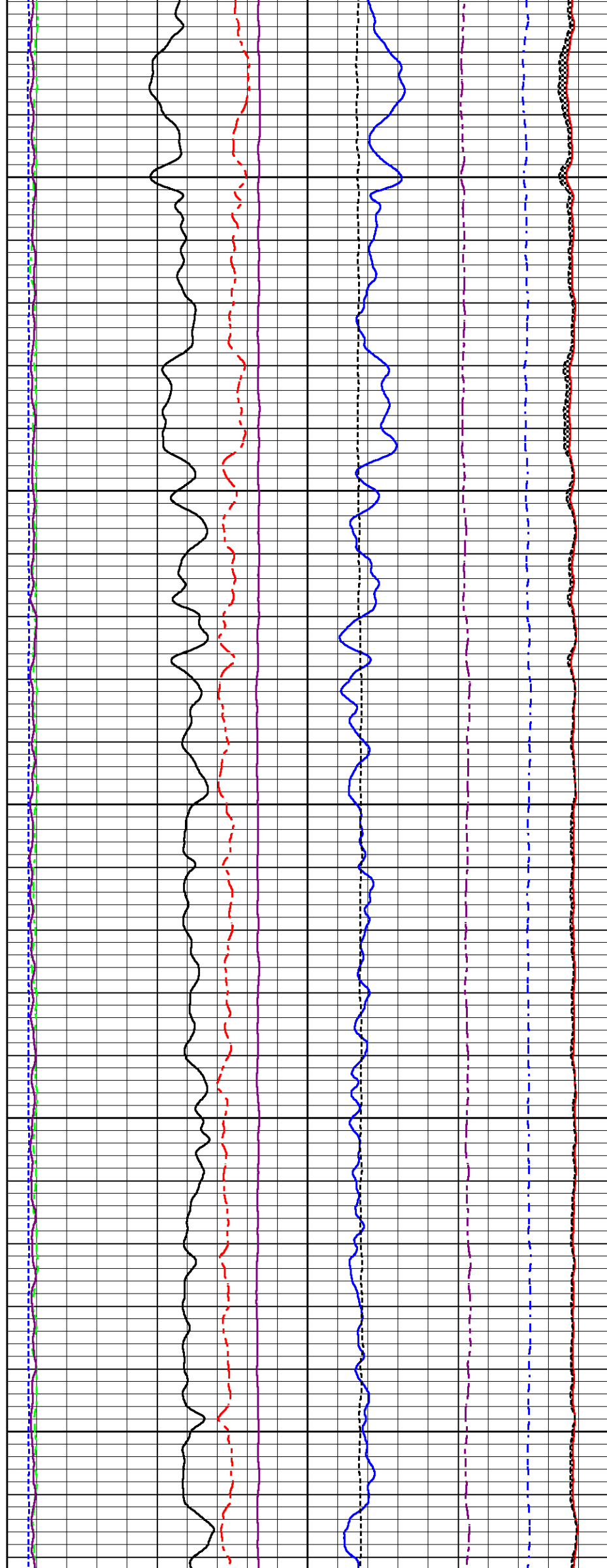
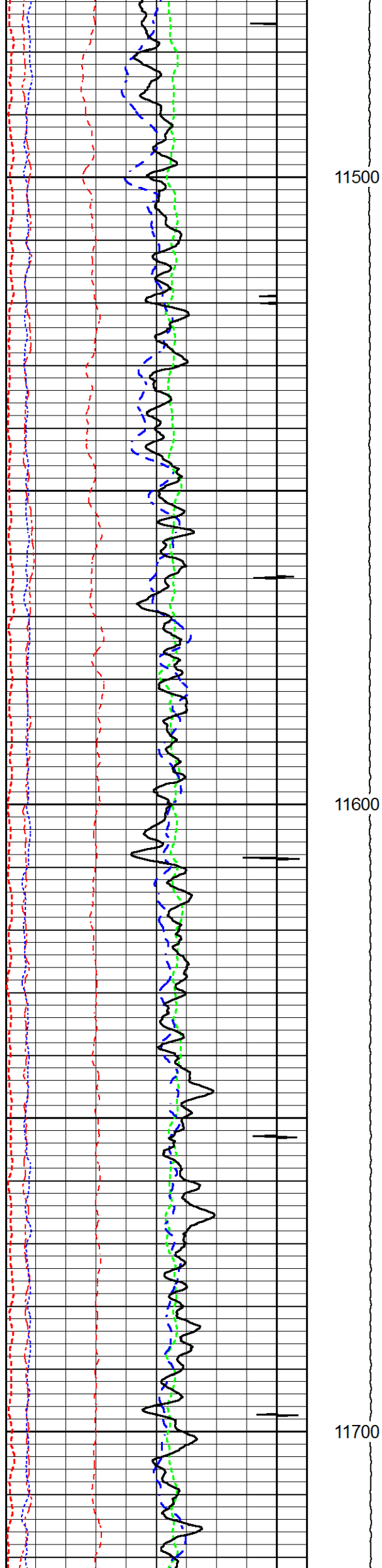


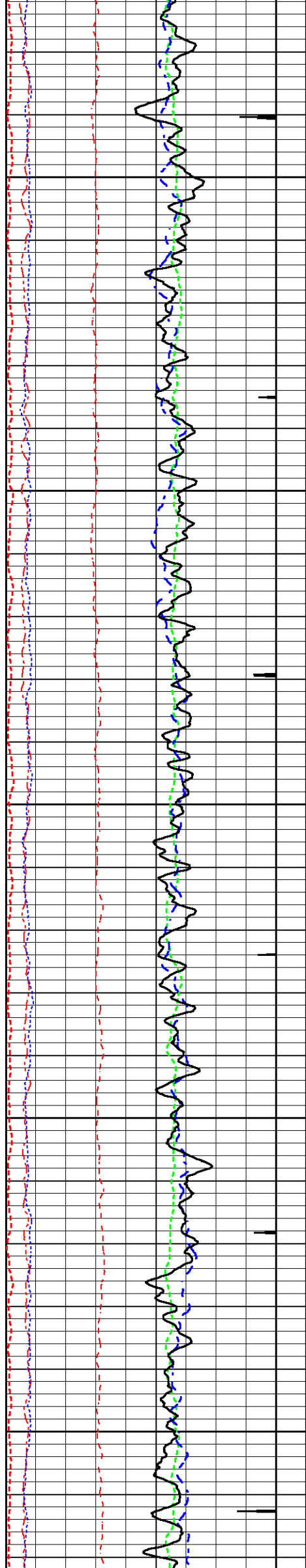


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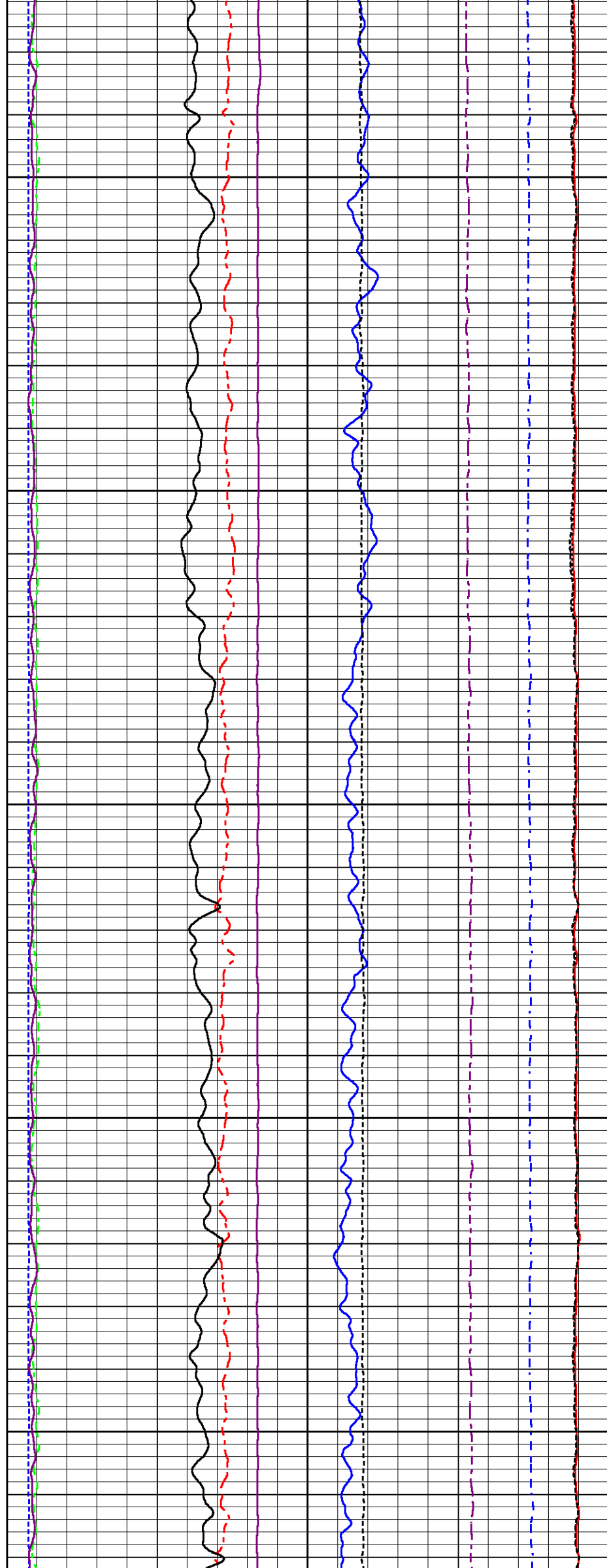


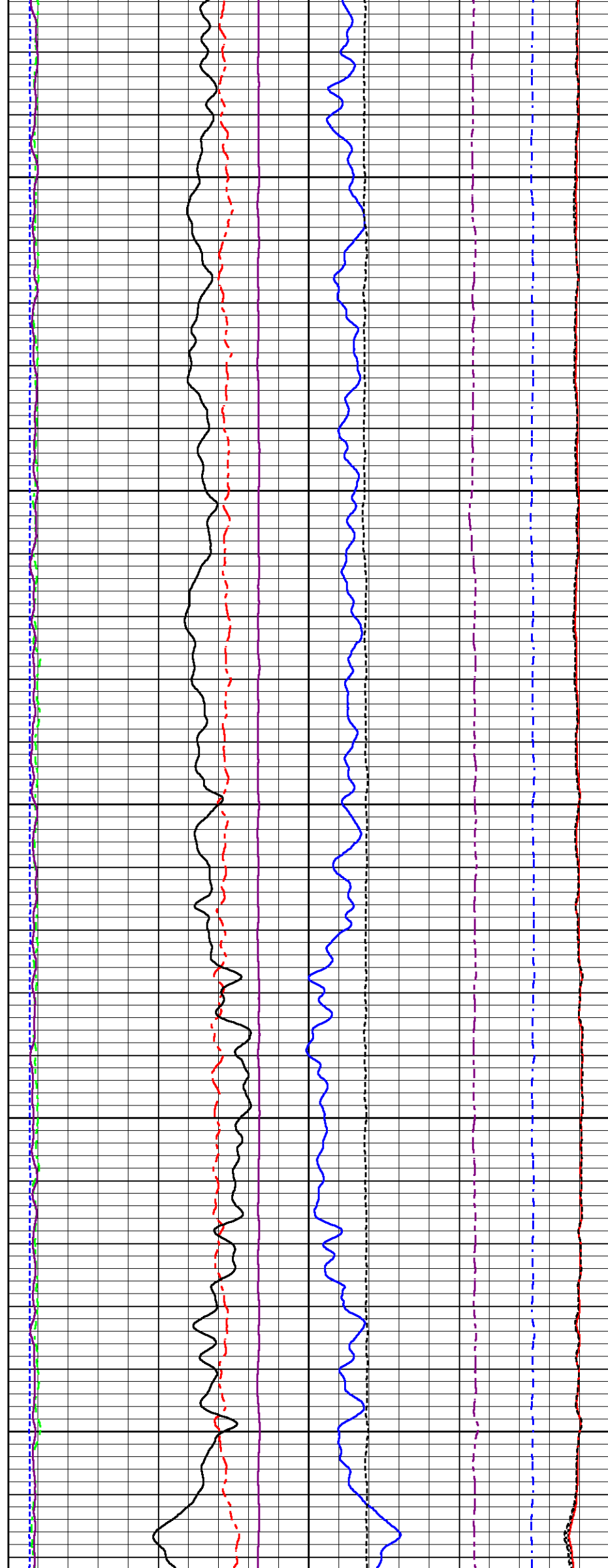
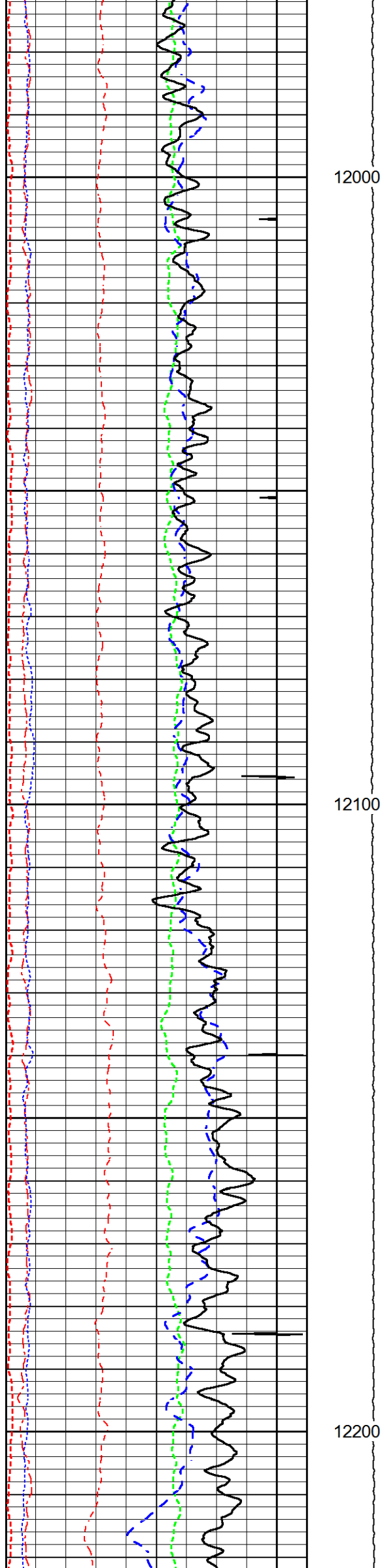


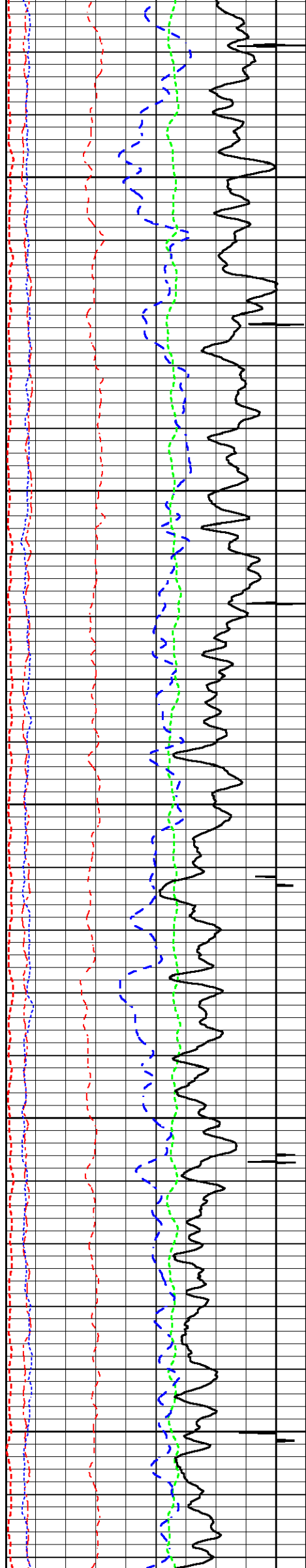


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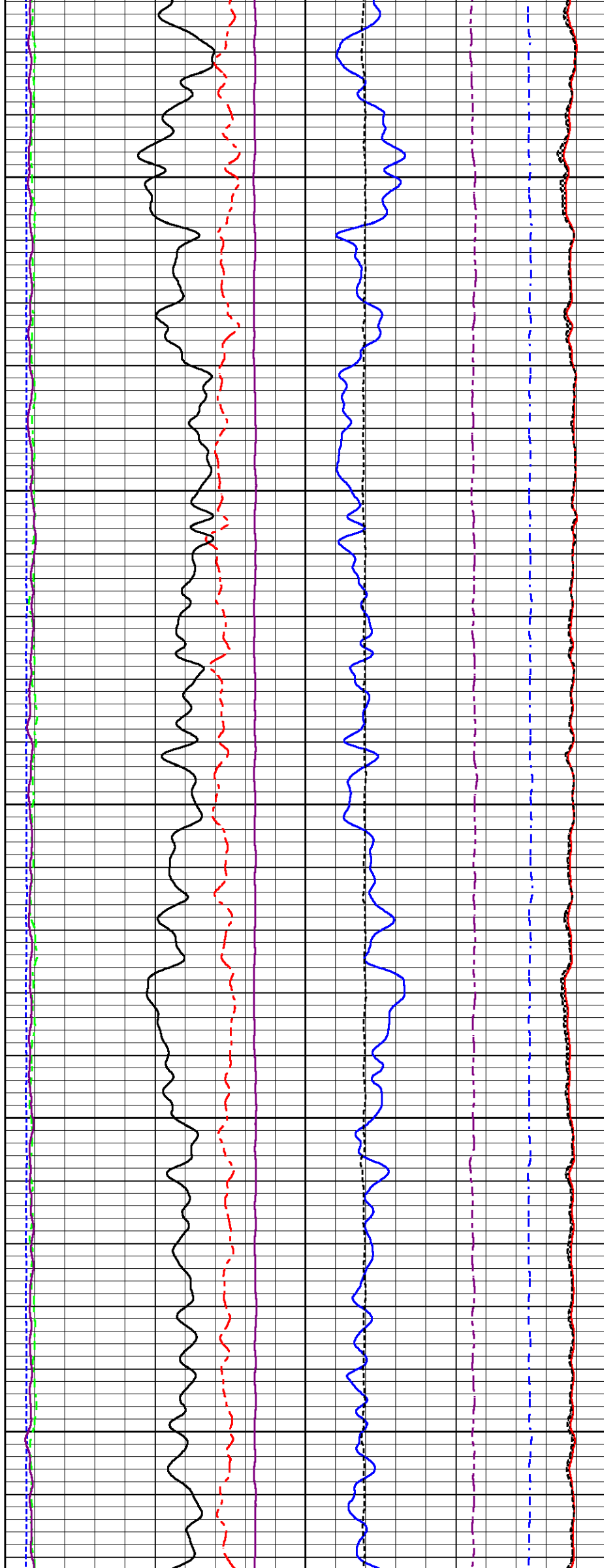




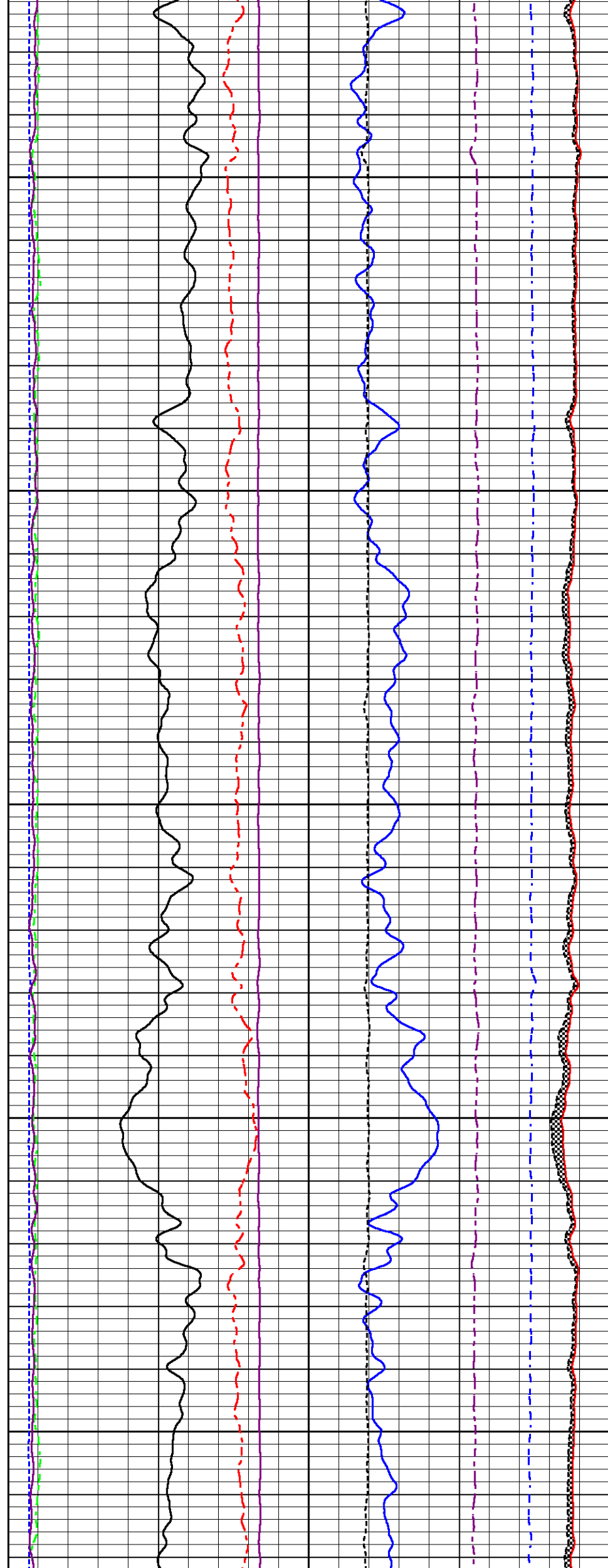
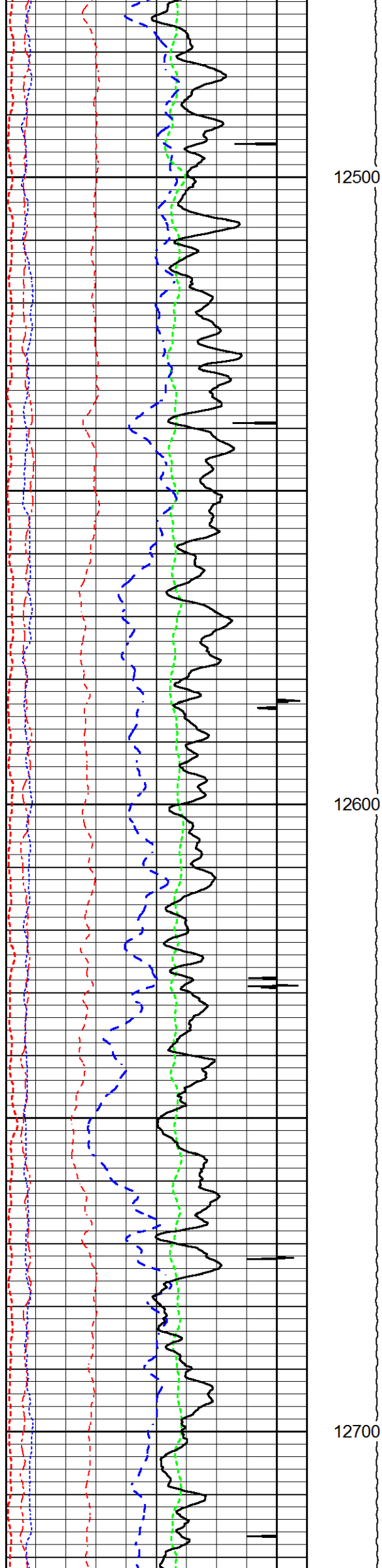


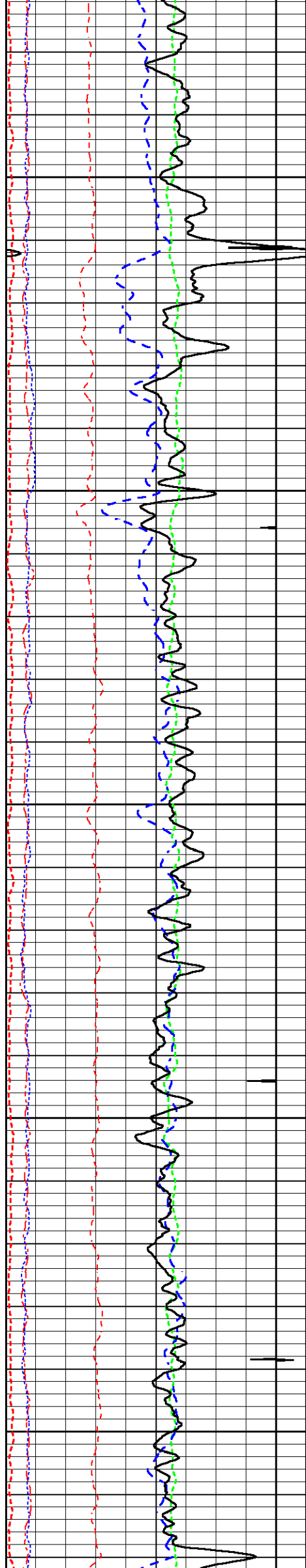
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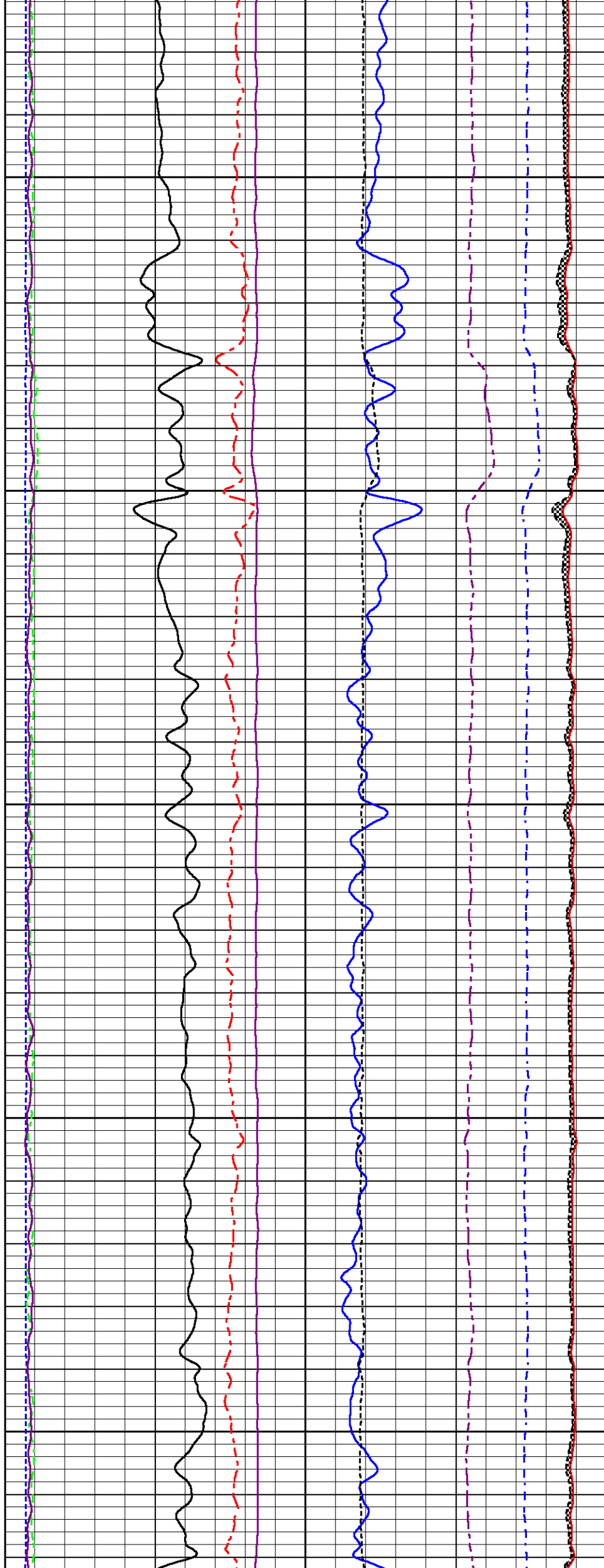


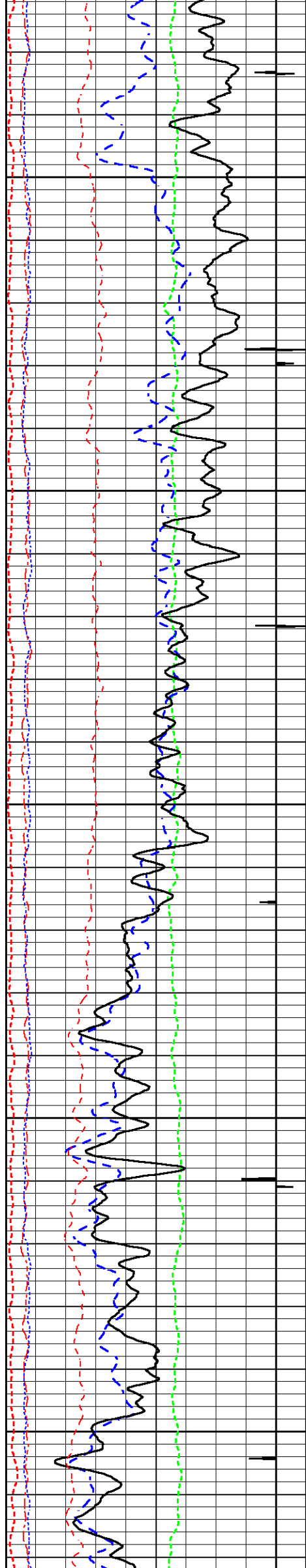




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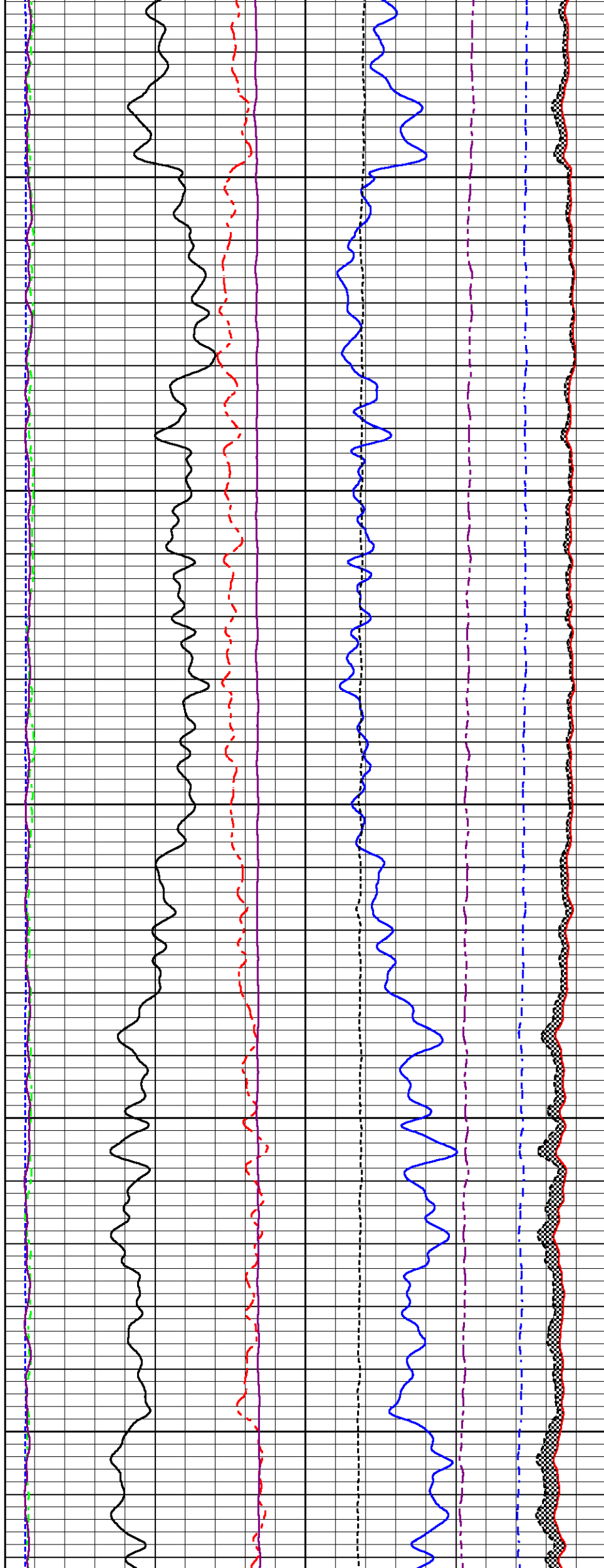


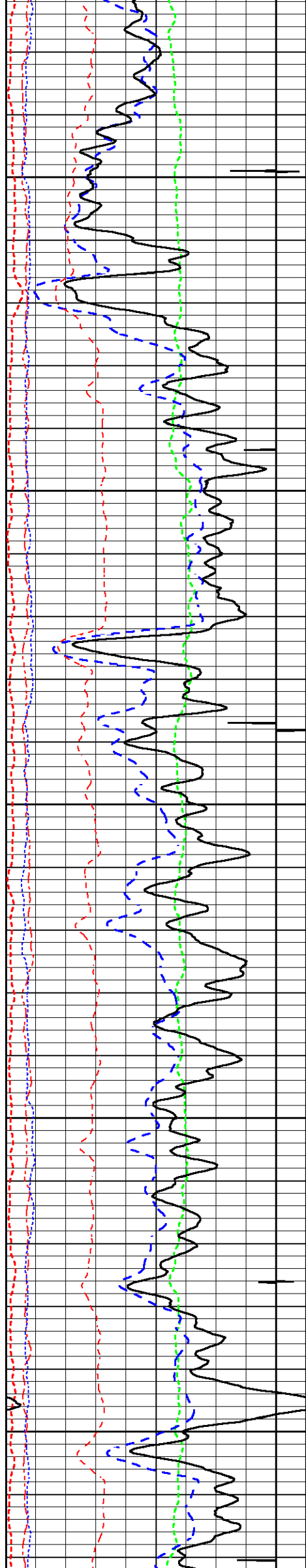


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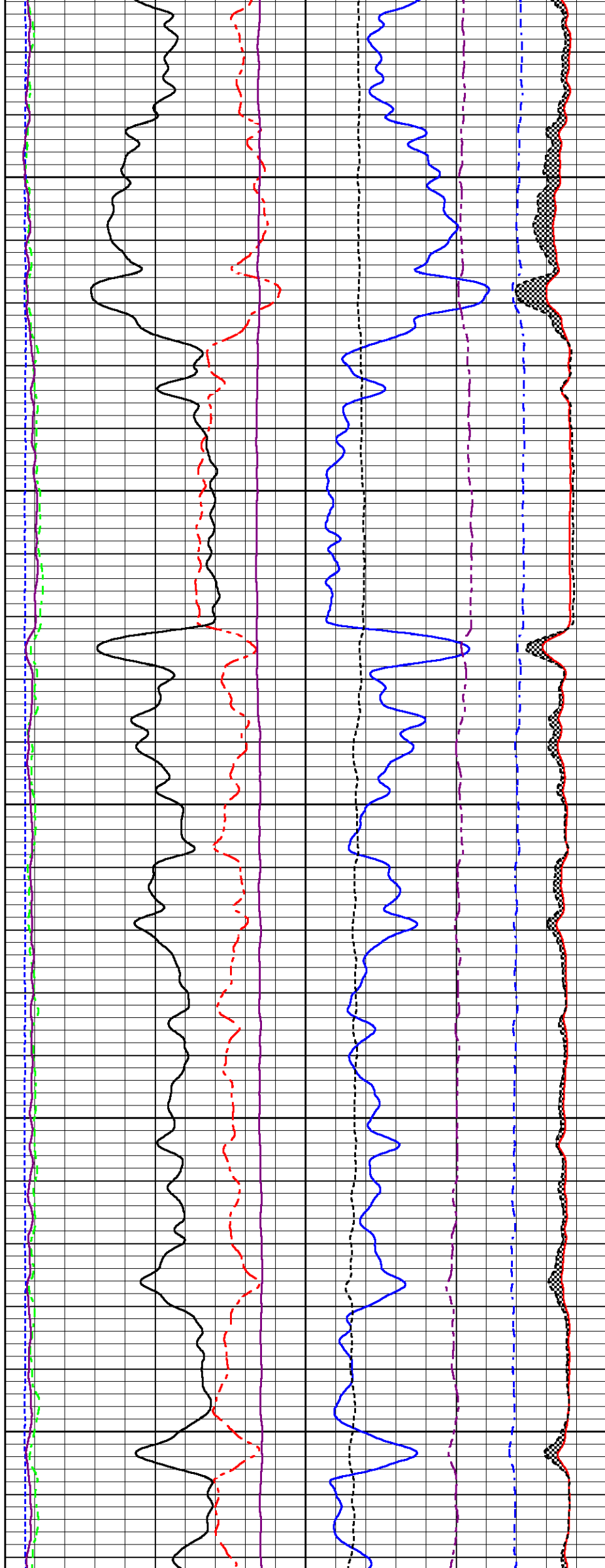
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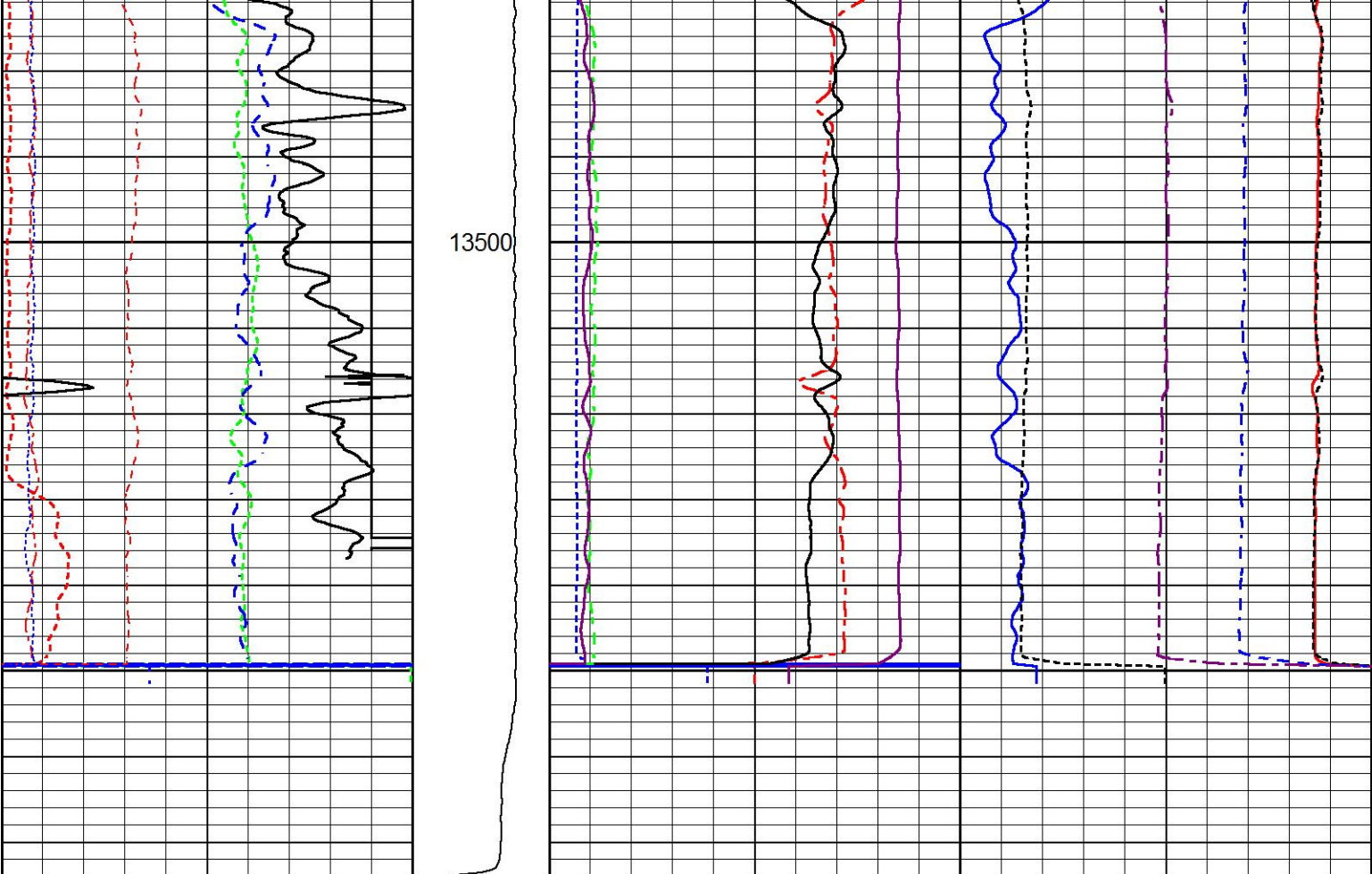




13300

13400





200	Near Bore Si (SGBN)	0	TENSION	60	SGIN	0
0	OAI	100		2	RATIO (RNF)	0.5
10	FAR FIT ERR (SGFF)	40		0	RIN	15
0	GAMMA RAY (GAPI)	150		0	RICF	6
0	NEAR FIT ERR (SGFN)	100		0	H YIELD (YH2)	1
-5400	CCL	600		0	H YIELD (YH1)	1
0	IN FIT ERR (CFTR1) NEAR	1			INOX2	50000
0	IN FIT ERR (CFTR2) FAR	1			-1500	1500

MAIN LOG SECTION

SCALE 5"=100'

HALLIBURTON

REPEAT LOG SECTION

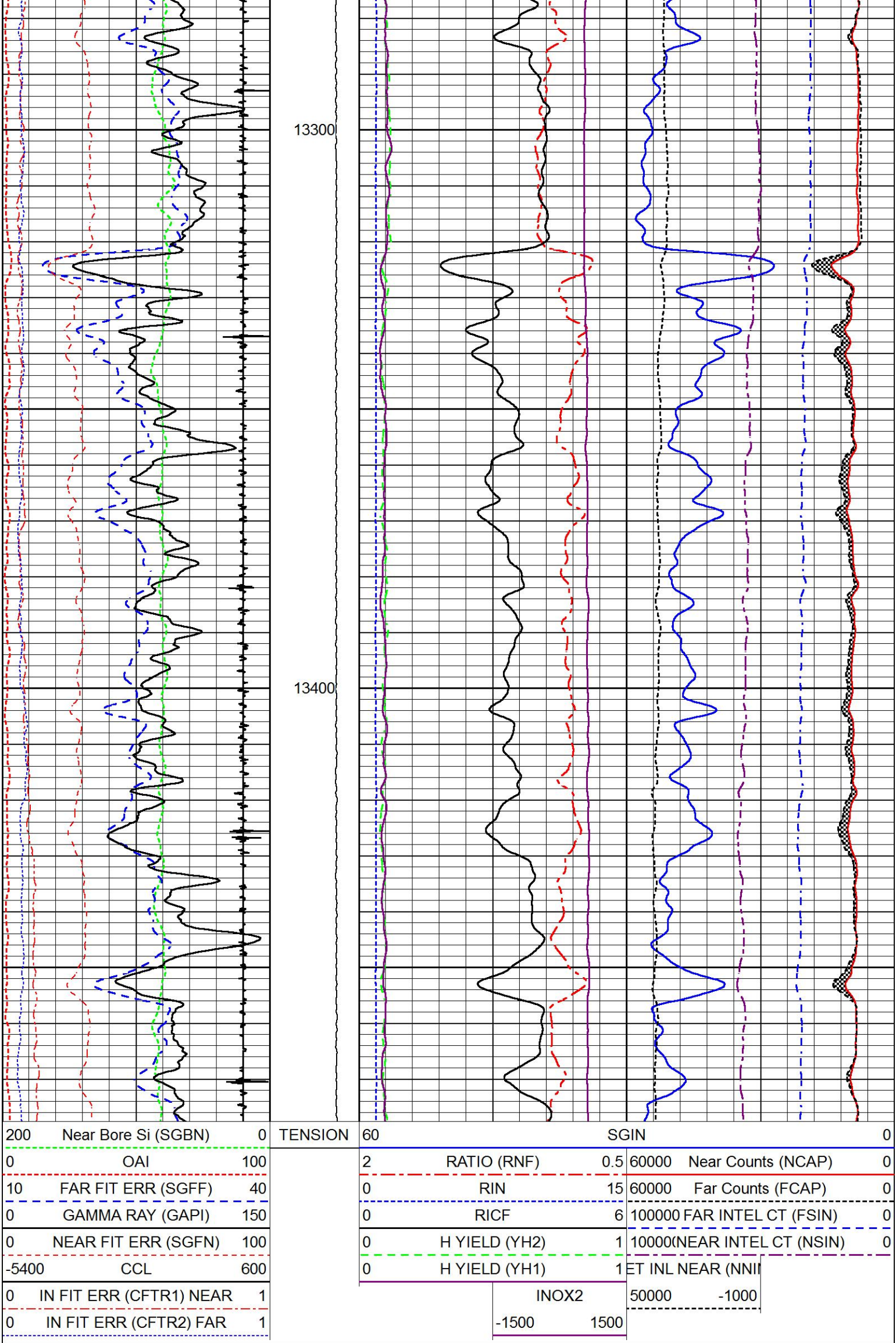
SCALE 5" = 100'

HALLIBURTON

Database File fed\_14\_15\_7\_21rmt.db  
Dataset Pathname MAIN  
Presentation Format RMTE\_M~1  
Dataset Creation Sun Feb 22 15:41:22 2015  
Charted by Depth in Feet scaled 1:240

200	Near Bore Si (SGBN)	0	TENSION	60	SGIN	0
0	OAI	100		2	RATIO (RNF)	0.5
10	FAR FIT ERR (SGFF)	40		0	RIN	15
0	GAMMA RAY (GAPI)	150		0	RICF	6
0	NEAR FIT ERR (SGFN)	100		0	H YIELD (YH2)	1
-5400	CCL	600		0	H YIELD (YH1)	1
0	IN FIT ERR (CFTR1) NEAR	1			INOX2	50000
0	IN FIT ERR (CFTR2) FAR	1			-1500	1500





REPEAT LOG SECTION



## Log Variables

DatabaseD:\Warrior\_data\fed\_14\_15\_7\_21.db  
Dataset field/02-23-15/RMT/MAIN2

## Top - Bottom

BHTEMP_Src	BHSAL2	BHSAL1	POROS2	POROS1	LTH	UHSGC	RHOFC
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SO in 0	BORSAL kppm 150	CASED? Yes	PPT usec 0	CASEWGHT lb/ft 13.5	MAXAMPL mV 62	MINAMPL mV 1	MINATTN db/ft 0.8
SRFTEMP degF 30	MudWgt lb/gal 8.33	CASETHCK in 0.5	CASEOD in 4.5	PERFS 0	TDEPTH ft 13680	BOTTEMP degF 340	BITSIZE in 10

## Calibration Report

Database File fed\_14\_15\_7\_21.db  
Dataset Pathname 02-23-15/RMT/MAIN2  
Dataset Creation Mon Feb 23 10:30:31 2015

## Segmented Cement Bond Log Calibration Report

Serial Number: 11333931  
Tool Model: 004  
Calibration Casing Diameter: 7.000 in  
Calibration Depth: 3802.348 ft

Master Calibration, performed Mon Feb 23 08:42:49 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.220	0.891	1.500	62.165	90.412	-18.363
5FT	0.230	0.764	1.500	62.165	113.598	-24.611
S1	0.215	0.854	0.000	100.000	156.518	-33.627
S2	0.215	0.913	0.000	100.000	143.132	-30.707
S3	0.216	0.827	0.000	100.000	163.670	-35.377
S4	0.214	0.833	0.000	100.000	161.642	-34.670
S5	0.216	0.847	0.000	100.000	158.499	-34.246
S6	0.216	0.887	0.000	100.000	149.005	-32.195
S7	0.214	0.957	0.000	100.000	134.523	-28.783
S8	0.212	0.876	0.000	100.000	150.589	-31.904

## Calibration Report

Serial Number: 11333931  
Tool Model: 004  
Performed:  
Reference (degF) Reading ()  
Low: 0.000 0.000  
High: 1.000 1.000  
Gain = 1.000 Offset = 0.000

## Reservoir Monitor Tool I Calibration Report

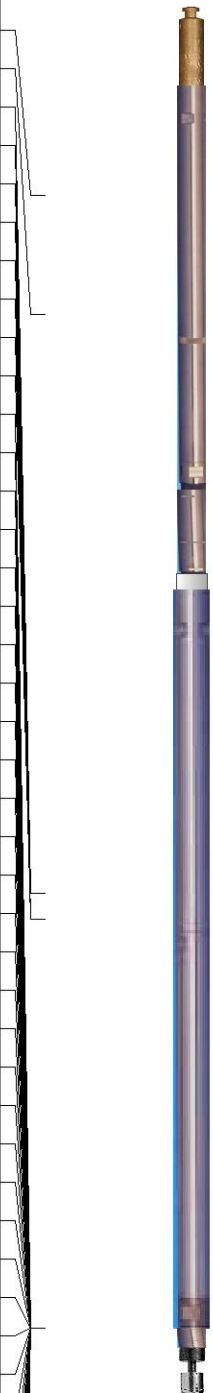
Serial-Model: 11680605-A  
Shop Calibration Performed: Sat Feb 21 11:55:26 2015

Carbon/Oxygen Mode					
Stabilization					
Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	92.00	80.00	12.00	+/-15.00	V
ITCR2	3215	3250	-35	+/-250	cps
Near Detector					
H	Channel	Expected Value	Amplitude	FWHM	Tol.
Fe	60	60 +/-2	0.0249	5.56	<6.00
NGAIN = 0.994	207	206 +/-2	0.0937	-----	-----
	NZOFF = 0.7				
Far Detector					
H	Channel	Expected Value	Amplitude	FWHM	Tol.
Fe	60	60 +/-2	0.0383	5.21	<6.50
FGAIN = 0.993	209	208 +/-2	0.0913	-----	-----
	FZOFF = 0.5				
Flask Temperature	63.6 degF				
Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.44	0.45	-0.01	+/-0.02	
LIRI2	1.64	1.64	0.00	+/-0.05	
TCCR2	5127	5000	127	+/-1000	cps
ITCR2	3112	3200	-88	+/-250	cps

Sigma Mode					
Stabilization					
Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	92.00	80.00	12.00	+/-15.00	V
FCAP	10333	10000	333	+/-500	cps
Horizontal Water Tank					
Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.95	0.95	-0.00		
N/F Inel Norm	0.62	0.61	0.01		
RNF	1.06	1.07	-0.01	+/-0.12	
RINC	1.62	1.64	-0.02	+/-0.18	
SGFN	24.13	24.00	0.13	+/-0.50	cu
SGFF	22.94	22.85	0.09	+/-0.50	cu
FSIN	24718	24000	718	+/-2000	cps
FCAP	10450	10000	450	+/-1000	cps
NFTR	0.80			<5.00	
FFTR	0.89			<5.00	
NBKG	131			<500	cps
FBKG	102			<500	cps
RTN	0.43	0.40	0.03	+/-0.10	usec
RTF	0.45	0.40	0.05	+/-0.10	usec

Calibration Software Modules	
HRMTI Module	2013.11.14.0
RMTI Module	2014.5.9.1
Log Data Acquisition Software Modules	
HRMTI Module	2013.11.14.0
RMTI Module	2014.5.9.1

Gamma Ray Calibration Report						
Type / Serial:		002 / 12159411				
SHOP CALIBRATION		Sat Feb 21 10:27:04 2015				
	Counts/Sec.	Gain	Offset	Jig	Units	
Background	33.6				cps	
Calibrator	286.4				cps	
		1.6139			GAPI/cps	
PRIMARY VERIFICATION						
Background	53.4				cps	
Calibrator	458.0				cps	
Difference				404.6	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 GR	37.63 35.37		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
RmtTFGT	24.41					
RmtFBACK	24.41					
RmtFCAPT	24.41					
RmtFINEL	24.41					
RmtTNGT	23.91					
RmtNBACK	23.91		TTTCU-002 (12159411) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
RmtNCAPT	23.91					
RmtNINEL	23.91					
TLINICNT	16.16					
RImpBTEST	16.16					
RImpBCYC	16.16					
RImpBRGW	16.16		XHU-003 (000001) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
RImpBRGO	16.16					
RImpState	16.16		X-OVER-SondexxGo Sondex Box x Go Pin Cross Over	0.31	1.69	1.00
RImpPhase	16.16					
RImpCyc	16.16					
RmtGenClamp	16.16					
RmtFTemp	16.16					
RmtFP5V	16.16					
RmtFPMHV	16.16					
RmtFPMI	16.16					
RmtFPrgSt1	16.16					
RmtFDetStat	16.16		RMTI-A (11680605) Halliburton RMTI Tool	14.00	2.13	77.00
RmtNTemp	16.16					
RmtNPMHV	16.16					
RmtNPMI	16.16					
RmtNPrgSt1	16.16					
RmtNDetStat	16.16					
RmtGenIonI	16.16					
RmtGen15BusV	16.16					
RmtGenLvdsV	16.16					
RmtGenSyncV	16.16					
RmtGenClamp	16.16					
RmtGenP5V	16.16		AUH-001 (000001) Adaptor Ultrawire/Halliburton	0.38	1.69	3.00

RmtGenP33V	16.16				
RmtGen200V	16.16				
RmtGenP15VI	16.16				
RmtGenTemp	16.16				
RmtGenP5VI	16.16				
RmtGenI	16.16				
RmtGenPv	16.16				
RmtGenCmd	16.16				
RmtGenIspl	16.16				
RmtGenIsPv	16.16				
RmtGenIsPcmc	16.16				
RmtGenRepPv	16.16				
RmtGenRepV	16.16				
RmtGenRepSv	16.16				
RmtGenContSt	16.16				
RmtCommFWa	16.16				
RmtCommFlask	16.16				
CBLROT	8.44				
CBLTEMP	8.44				
WVFS8	8.44				
WVFS7	8.44				
WVFS6	8.44				
WVFS5	8.44				
WVFS4	8.44				
WVFS3	8.44				
		Dataset:	fed_14_15_7_21.db: field/02-23-15/RMT/MAIN2		
		Total length:	41.20 ft		
		Total weight:	339.32 lb		
		O.D.:	3.13 in		

Company	COACHMAN ENERGY OPERATING, LLC.			
Well	FEDERAL 14-15-7-21			
Field	KOKOPELLI			
County	GARFIELD		State	CO
HALLIBURTON	RESERVOIR MONITOR TOOL - ELITE			