

RESERVOIR MONITOR TOOL - ELITE

****THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES****

Service Ticket No.	902452765	API No.	05-045-22801-0000	PGM Ver	14.11.12001
The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client					
EQUIPMENT DATA					
TELEMETRY		CEMENT BOND TOOL		RESERVOIR MONITOR TOOL	
Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	10000028	Serial No.	12082235	Serial No.	11680606
Model No.	TTTC-U-002	Model No.	RBT-004	Model No.	RMTI-A
Diameter	1.688"	Diameter	3.125"	Diameter	2.125"
LOGGING DATA					
General Data					
Pass	Depths		Well Head	Speed	Logging Run Comments
No	From	To	Pressure	Ft/Min	

No.	7310'	3308'	0	25	MAIN LOG SECTION			
	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	200	200	0	2	0.5	60	0
DIRECTIONAL INFORMATION								
Maximum Deviation			deg. @		KOP			

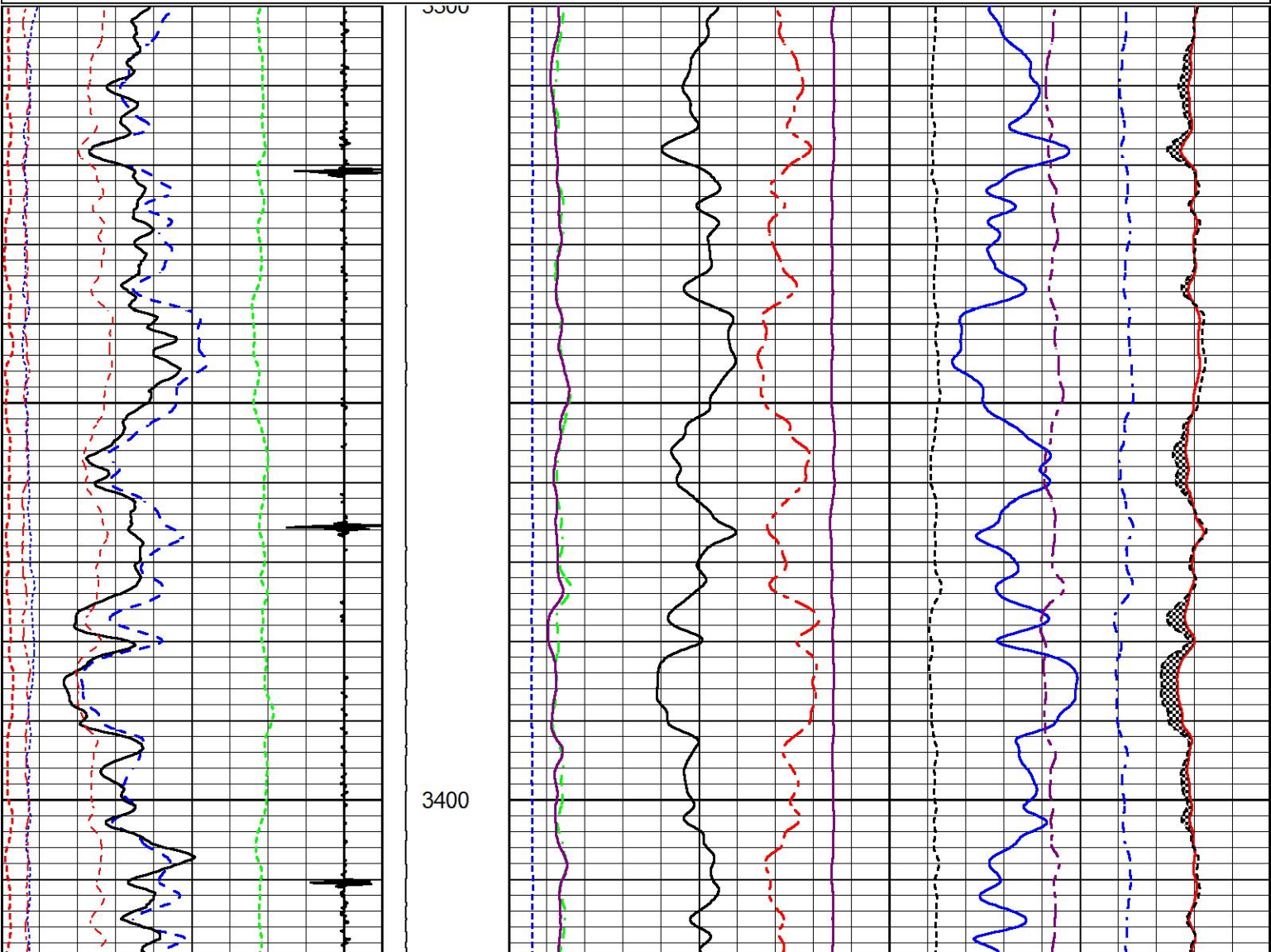
HALLIBURTON

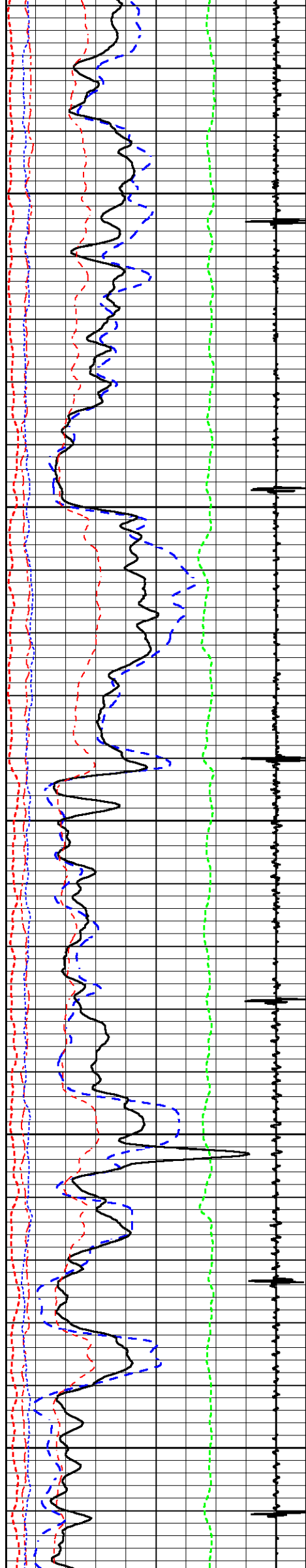
MAIN LOG SECTION

5" = 100'

Database File	watson_b_24awi_combo.db
Dataset Pathname	RMT_MAIN
Presentation Format	RMTE_M~1
Dataset Creation	Wed Jun 03 06:46:54 2015
Charted by	Depth in Feet scaled 1:240

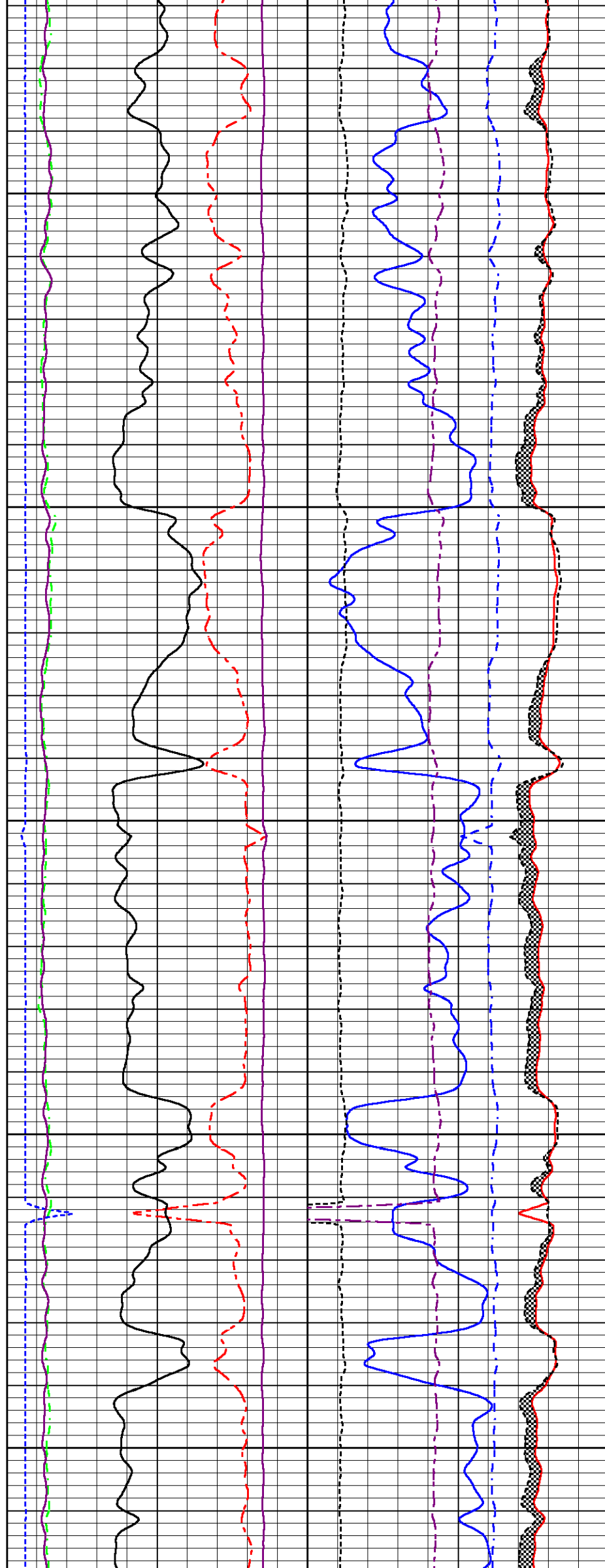
200	Near Bore Si (SGBN)	0	TENSION	60	SGIN	0
0	OAI	100		2	RATIO (RNF)	0.5
10	FAR FIT ERR (SGFF)	40		0	RIN	15
0	GAMMA RAY (GAPI)	200		0	RICF	6
0	NEAR FIT ERR (SGFN)	100		0	H YIELD (YH2)	1
-5400	CCL	600		0	H YIELD (YH1)	1
0	IN FIT ERR (CFTR1) NEAR	1			INOX2	50000
0	IN FIT ERR (CFTR2) FAR	1				-1000
				-1500	1500	

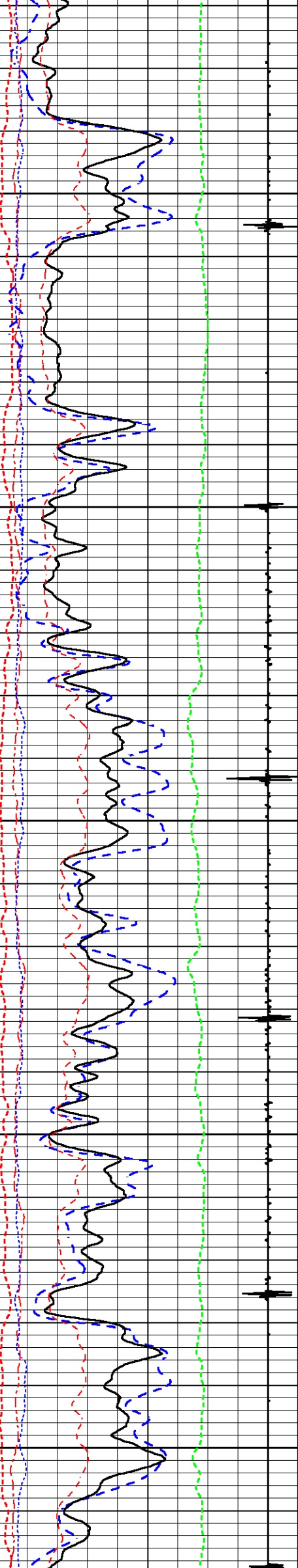




3500

3600

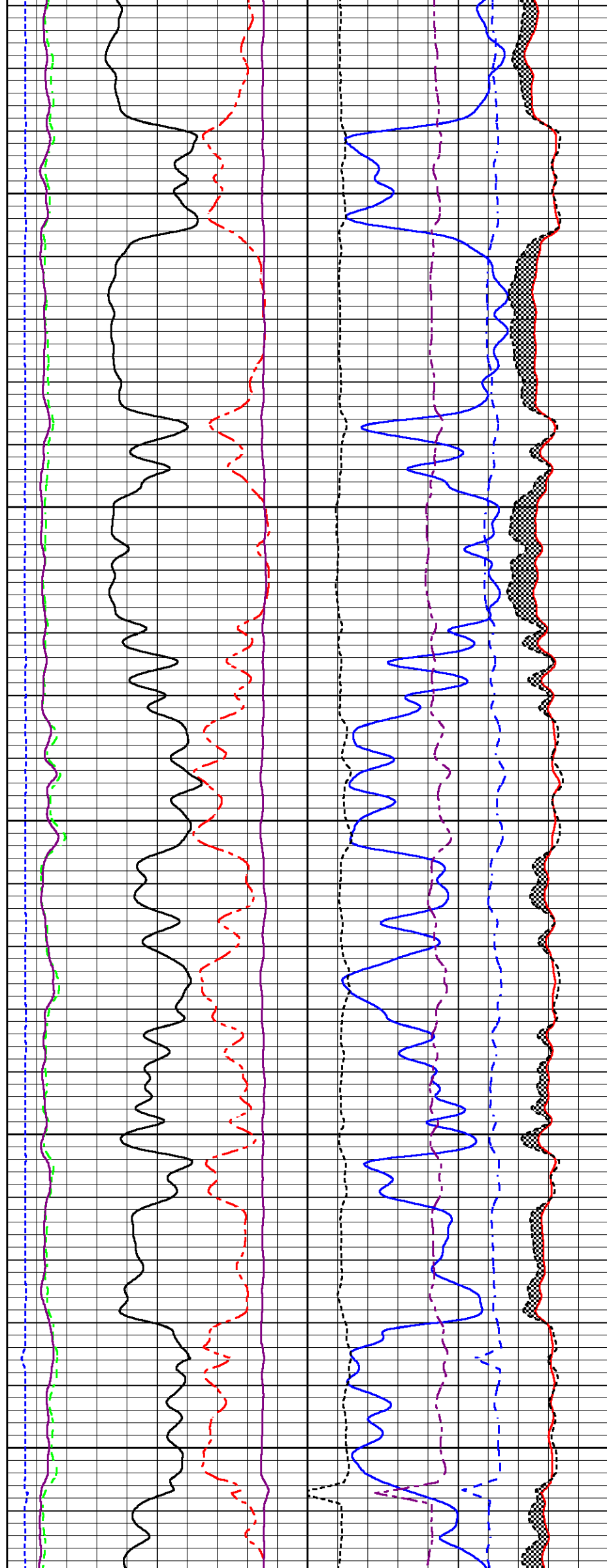


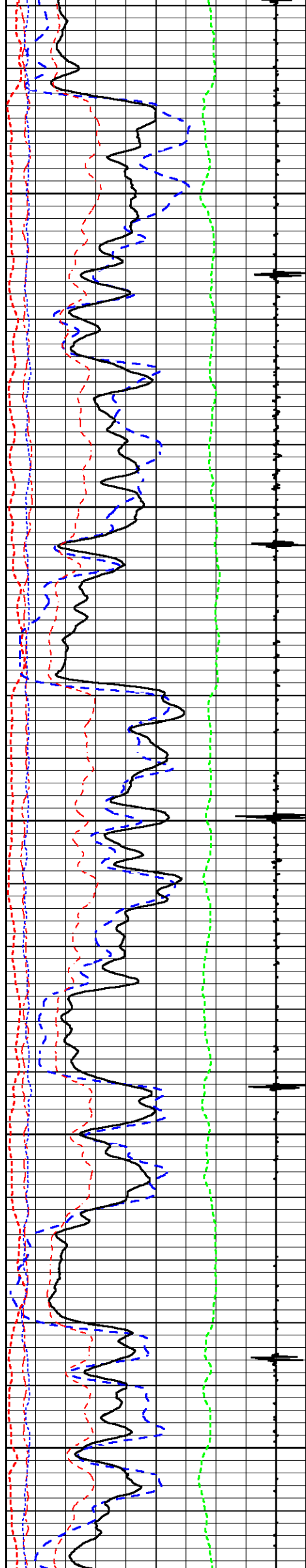


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3800

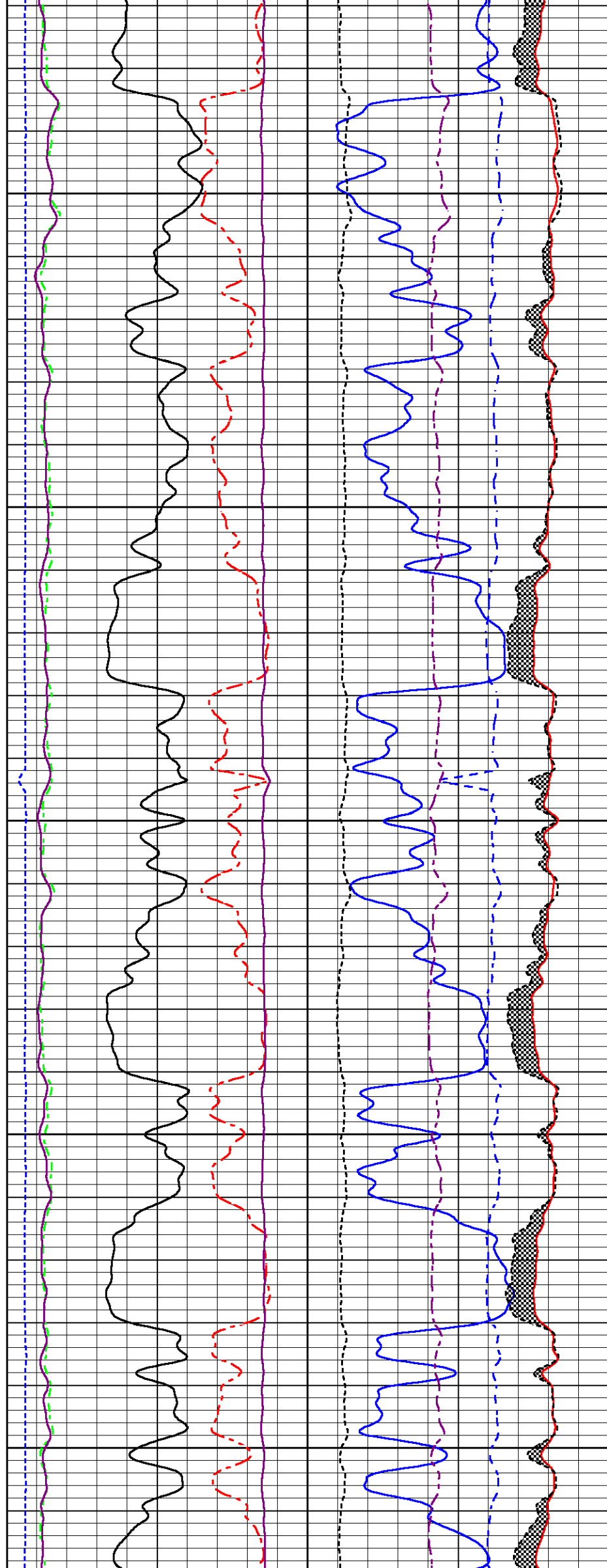
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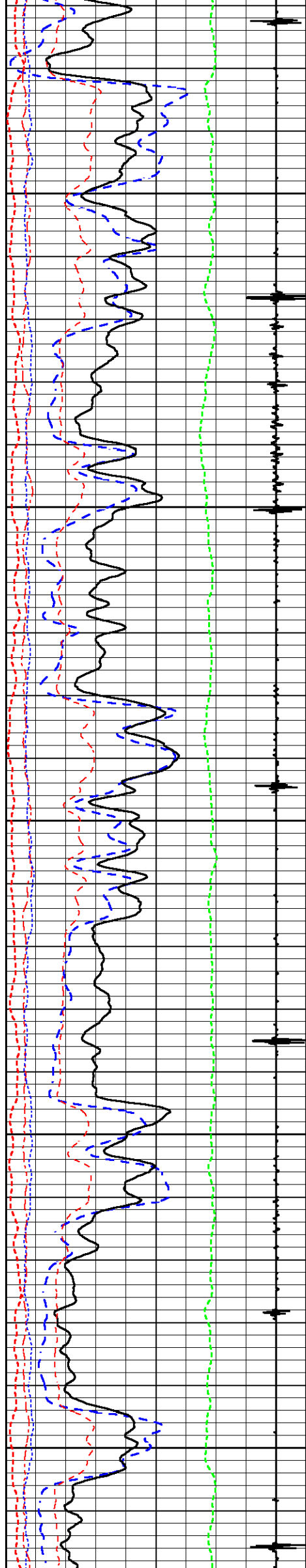




4000

4100

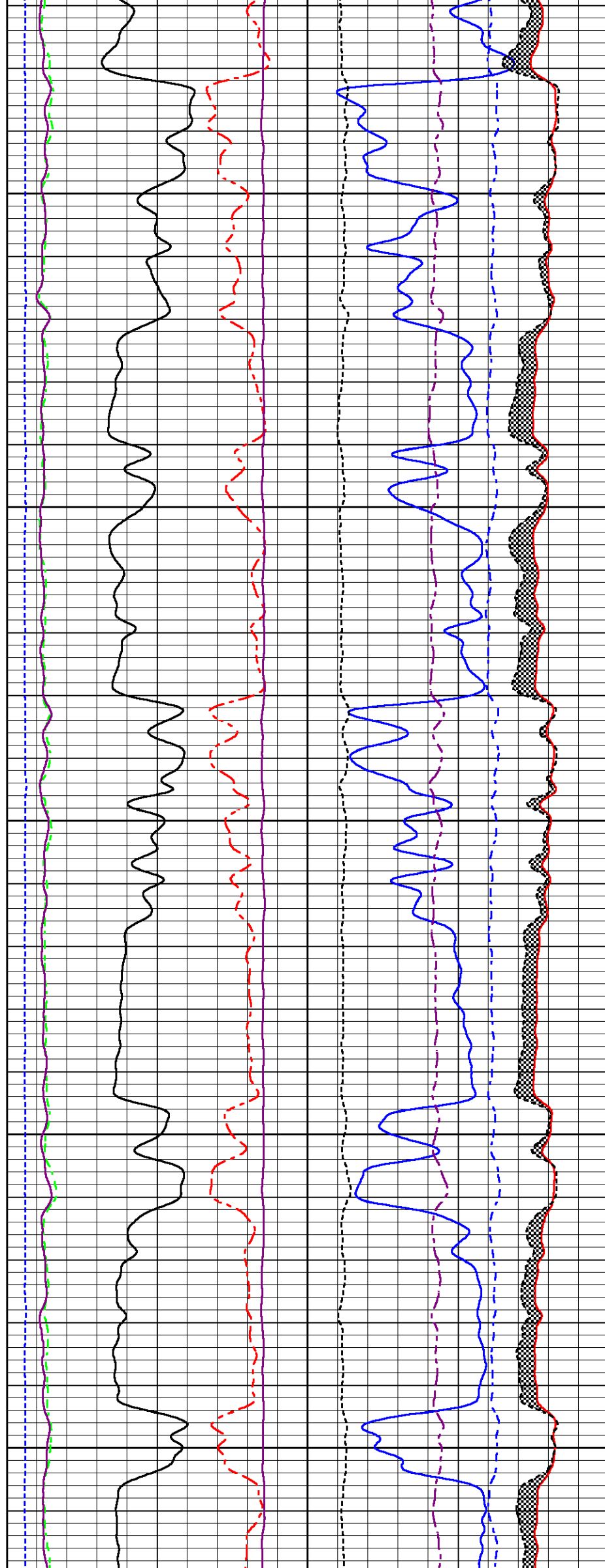


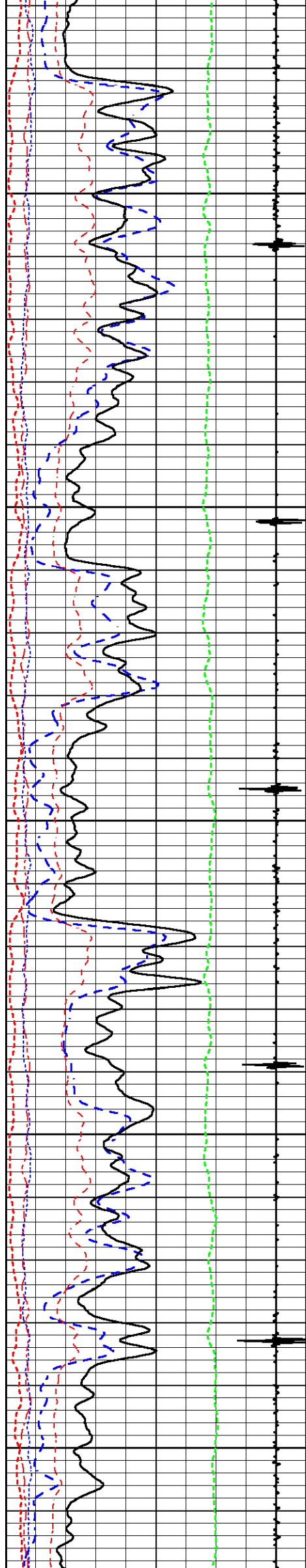


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4300

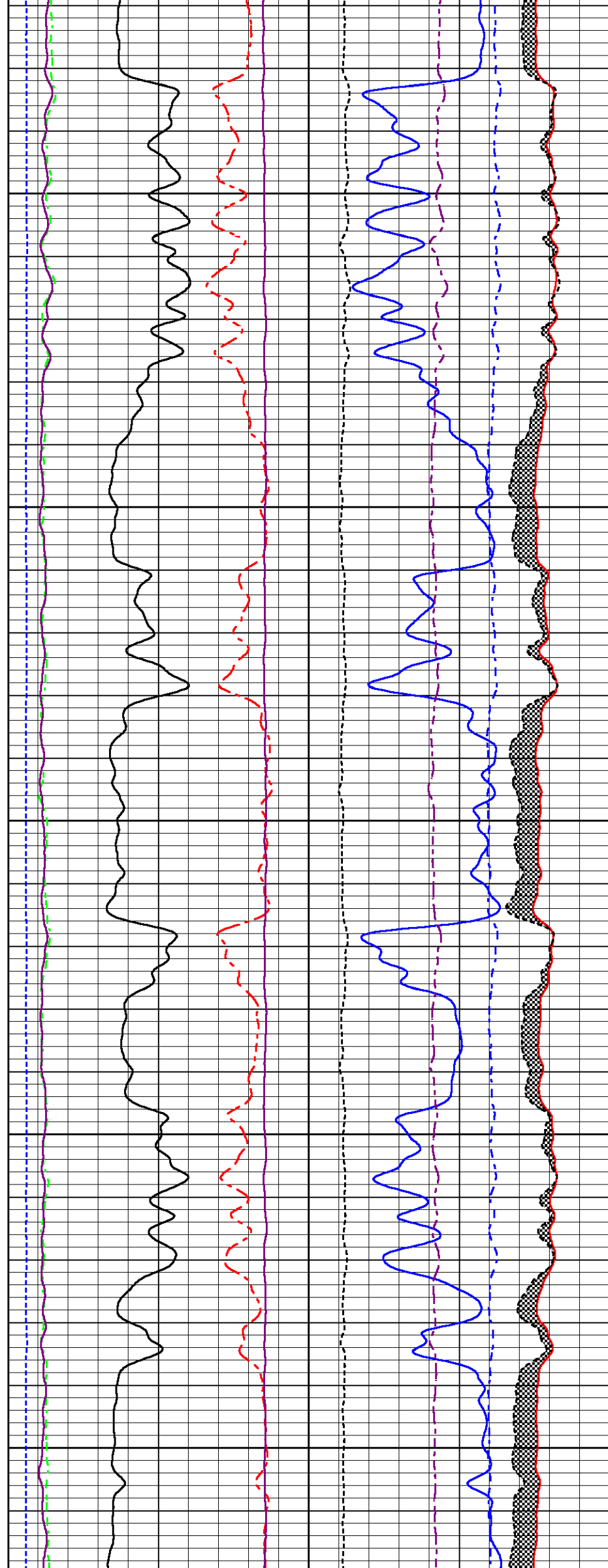
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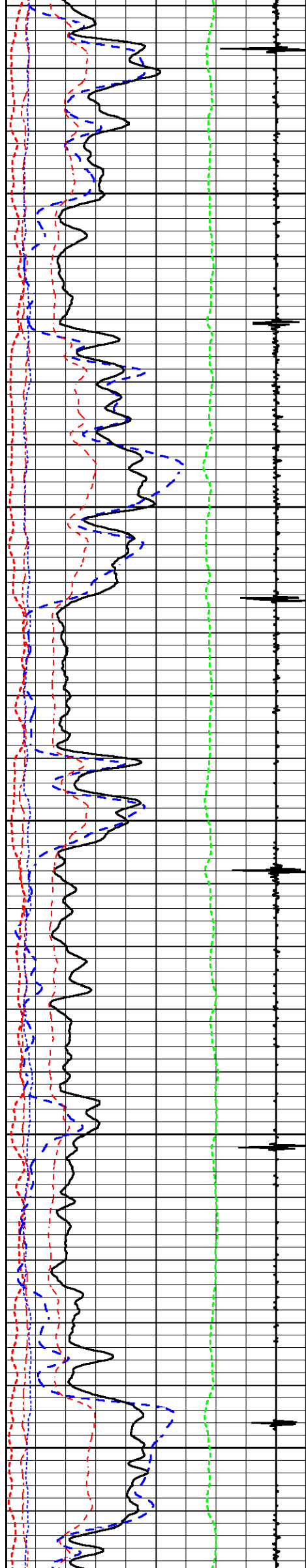




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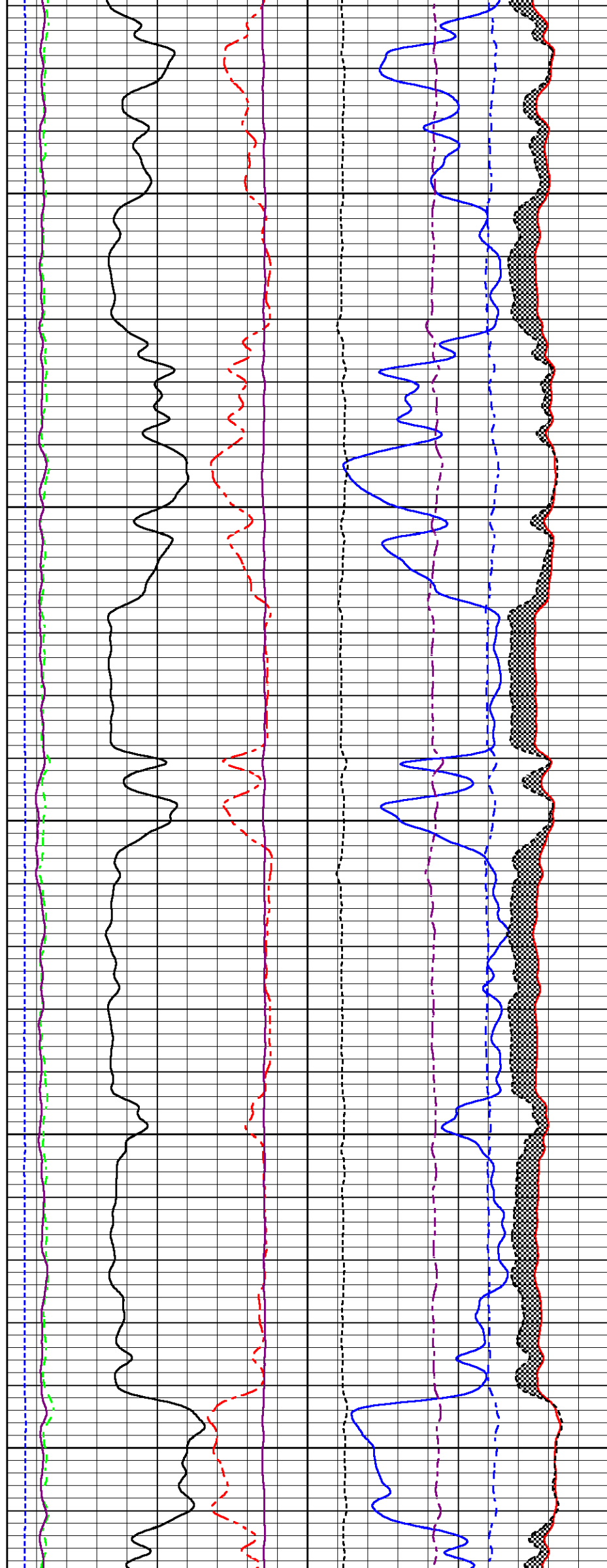


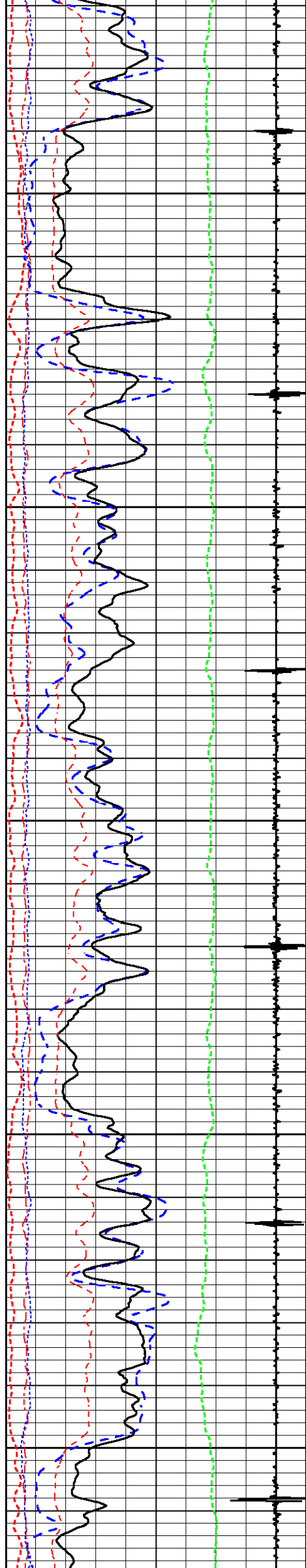


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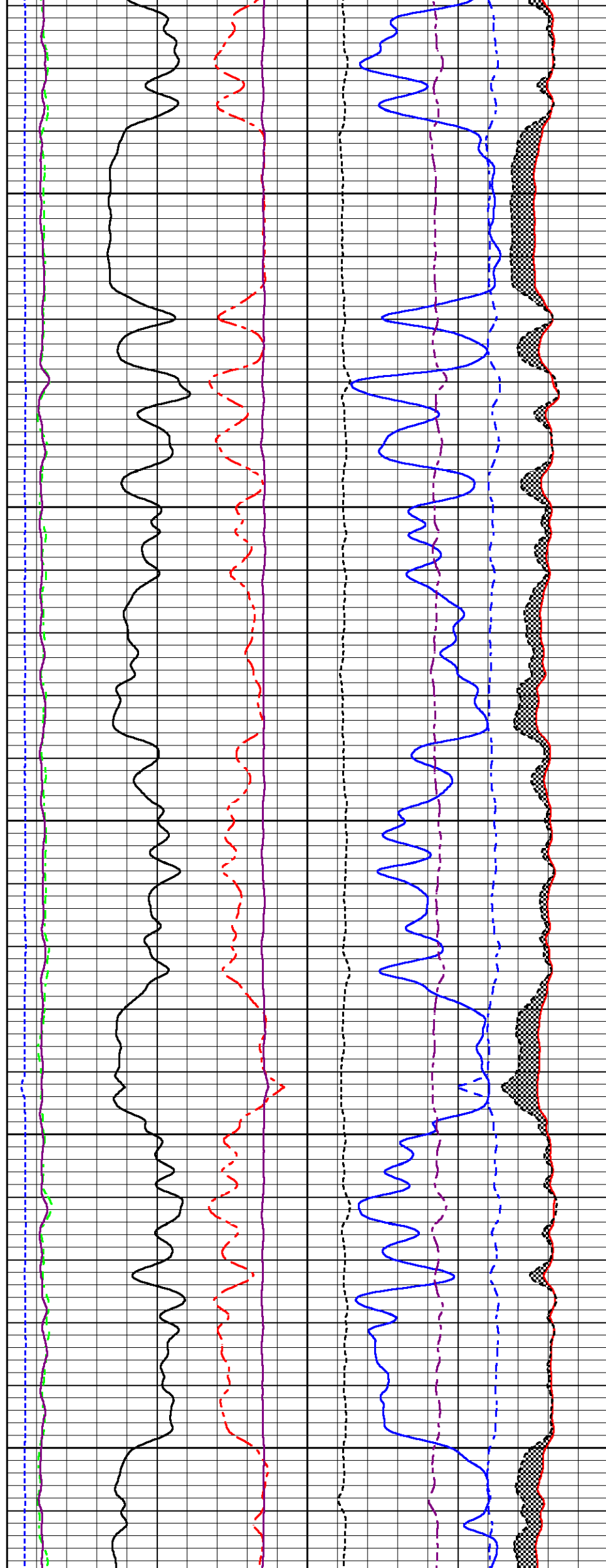
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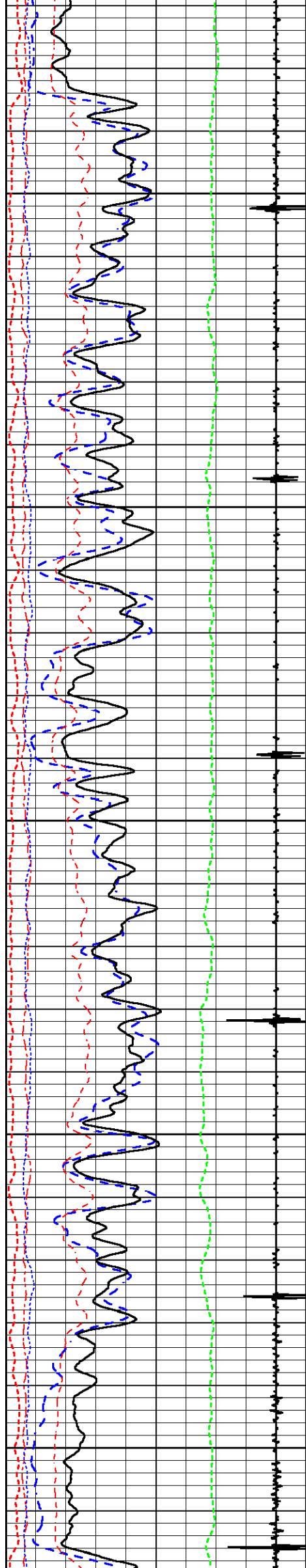




5000

5100

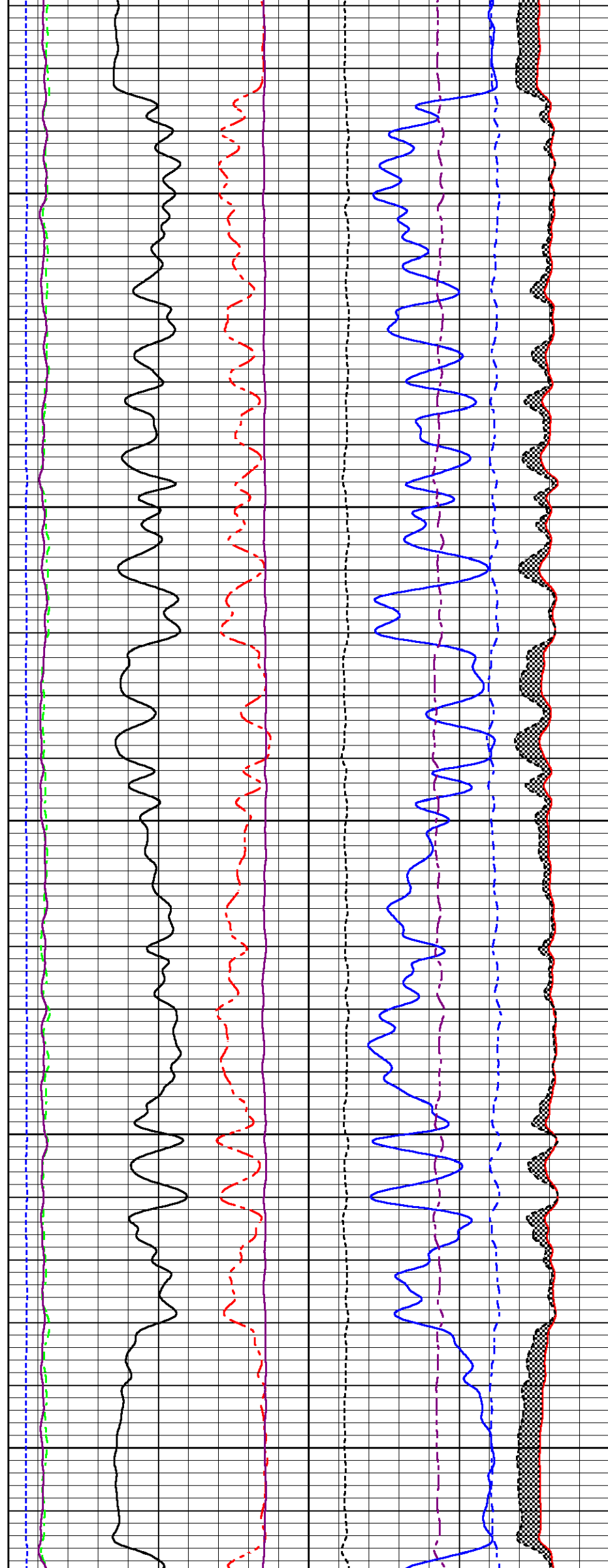


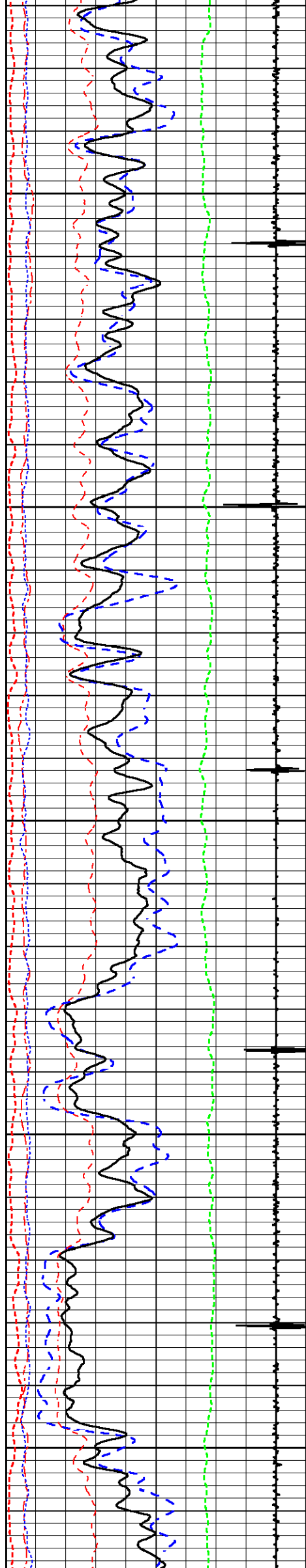


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5300

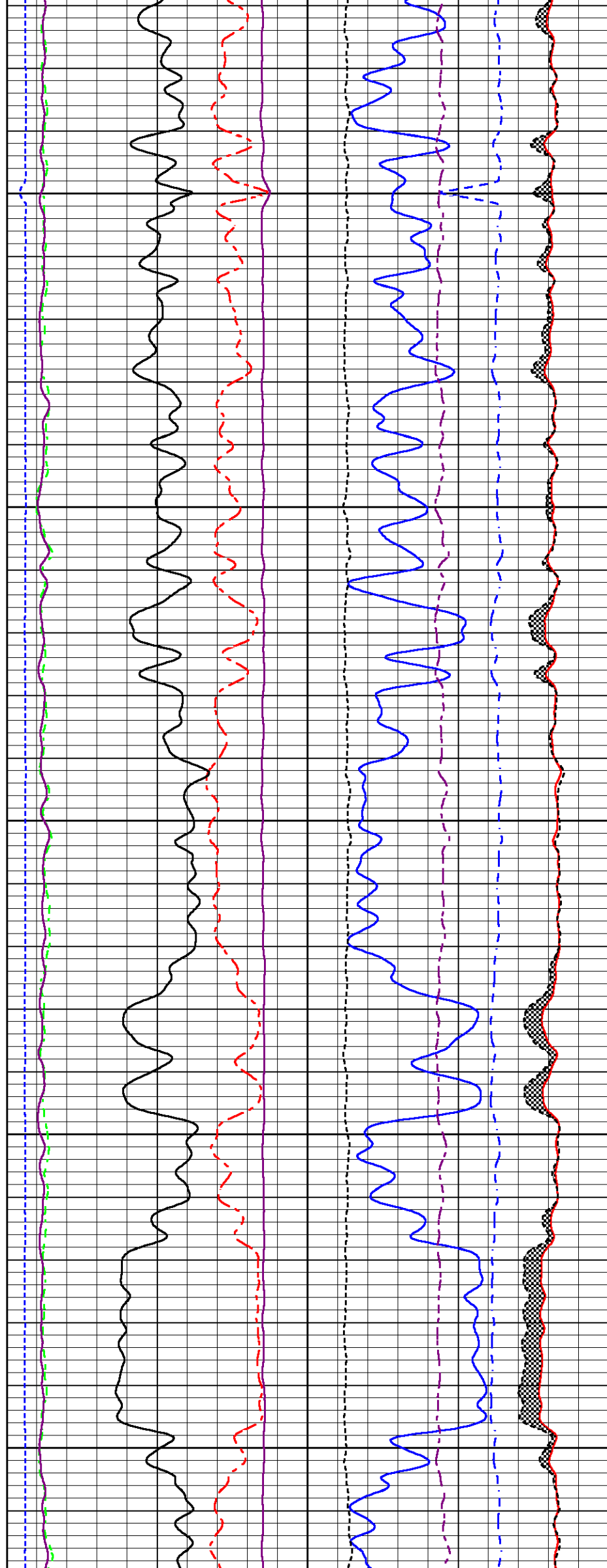
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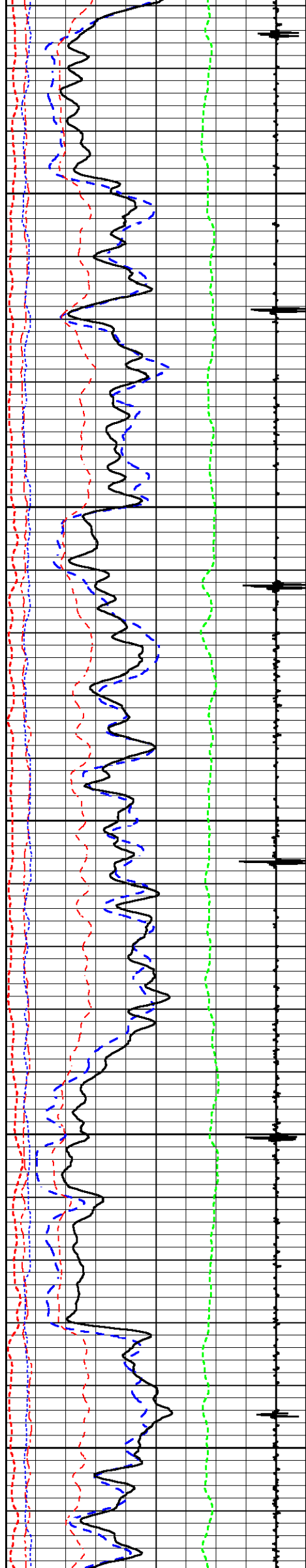




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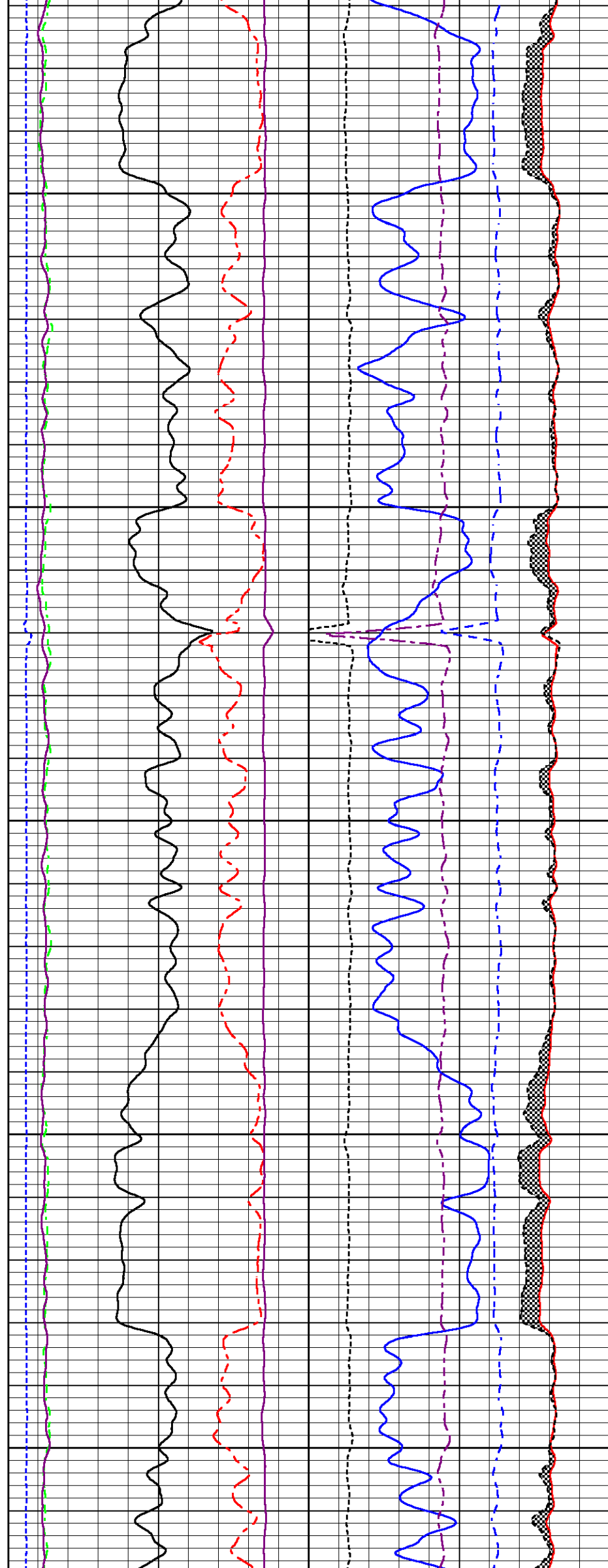


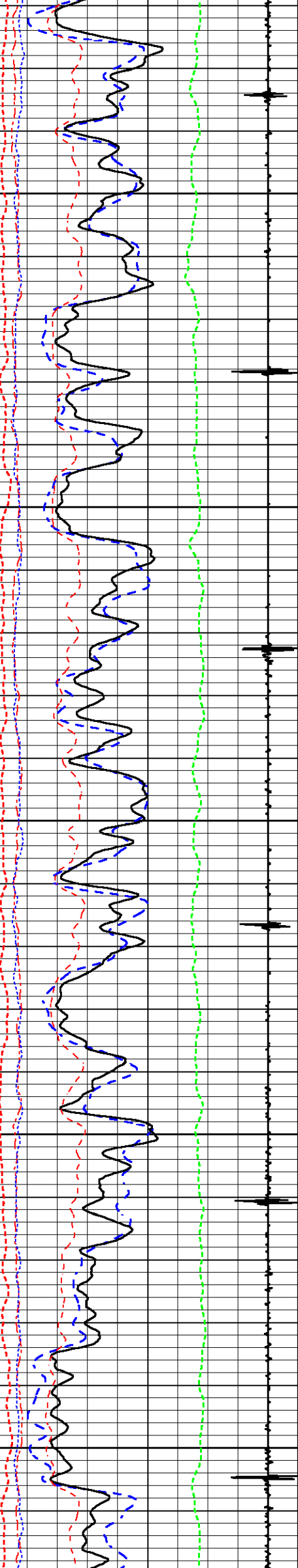


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5800

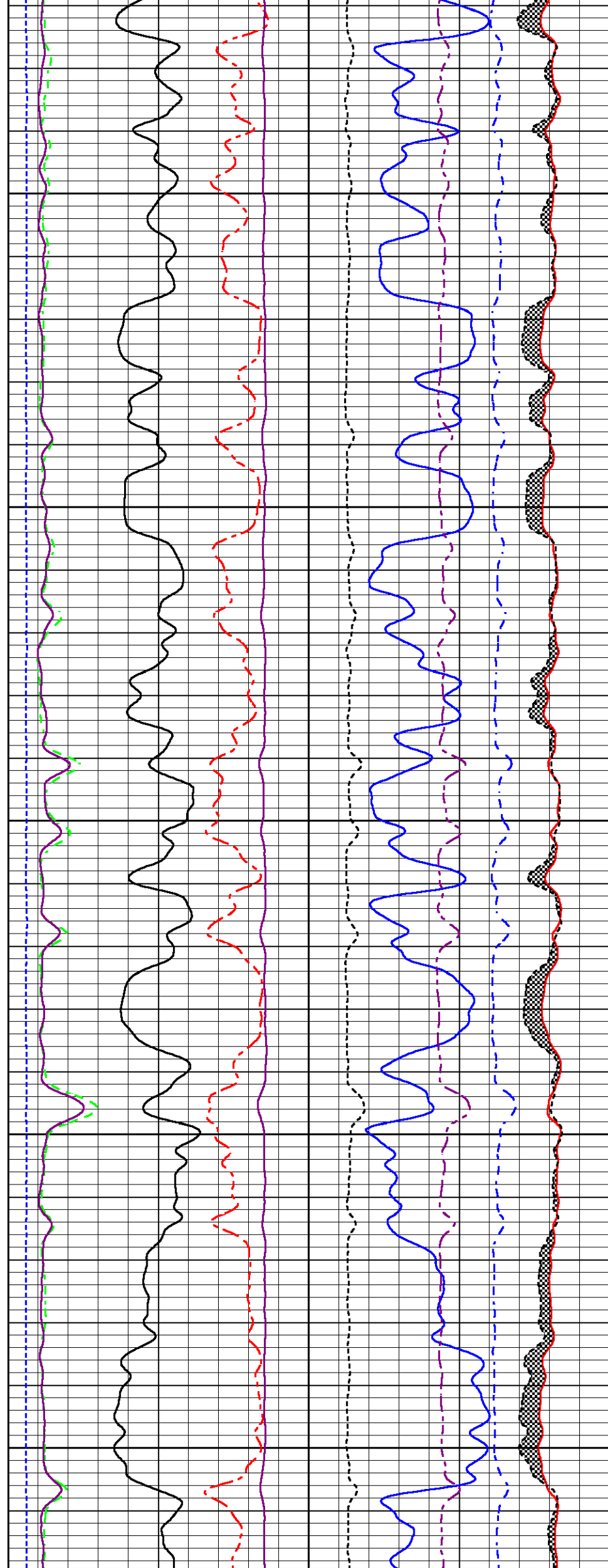
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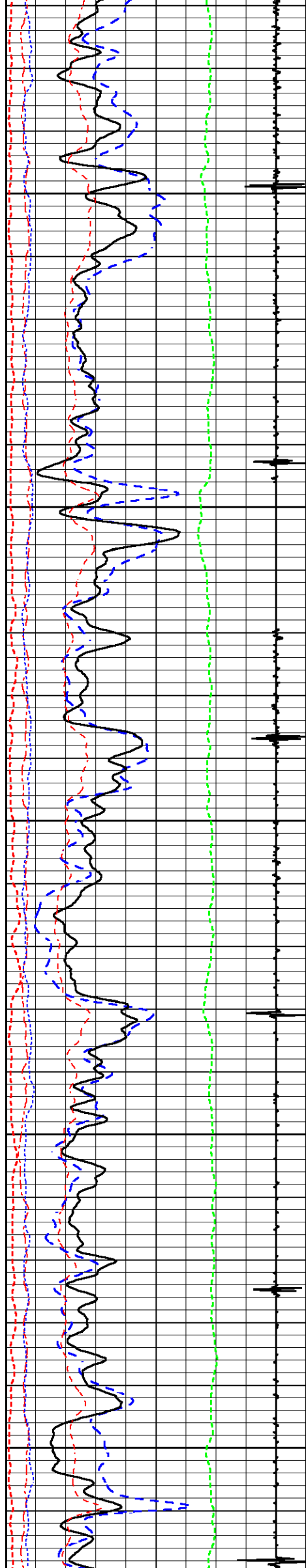




6000

6100

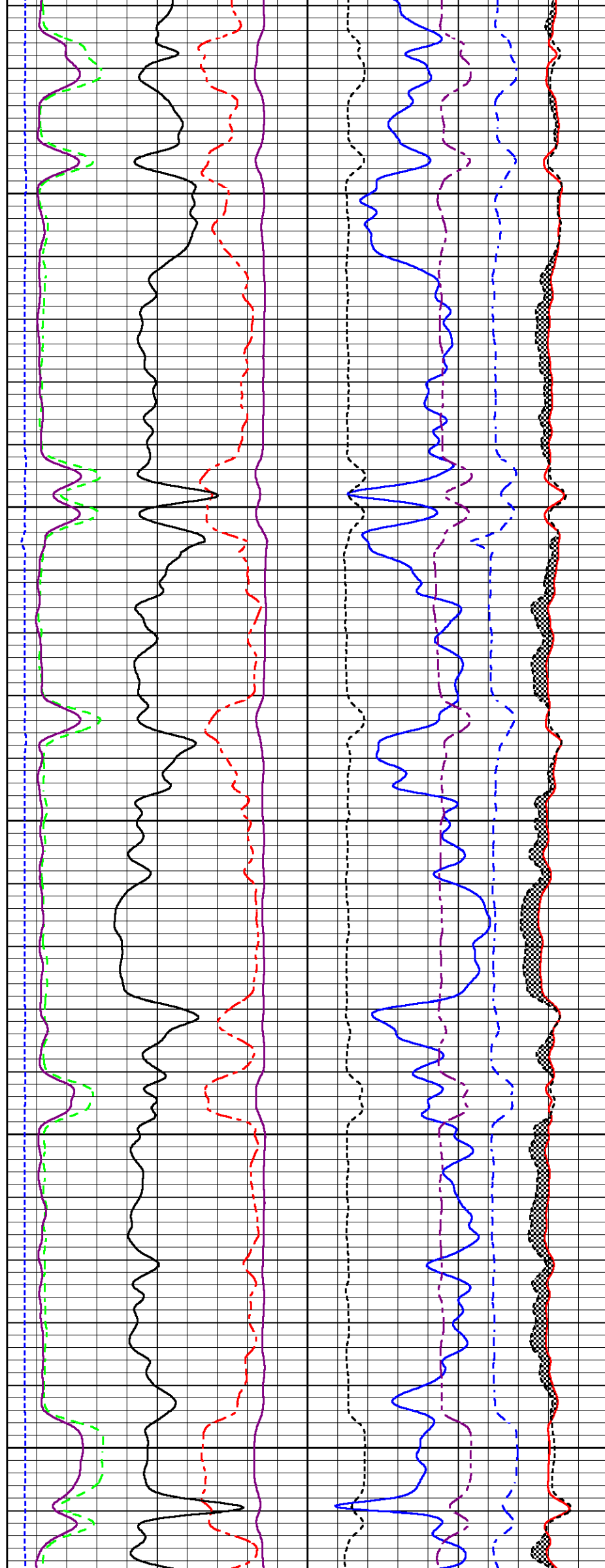


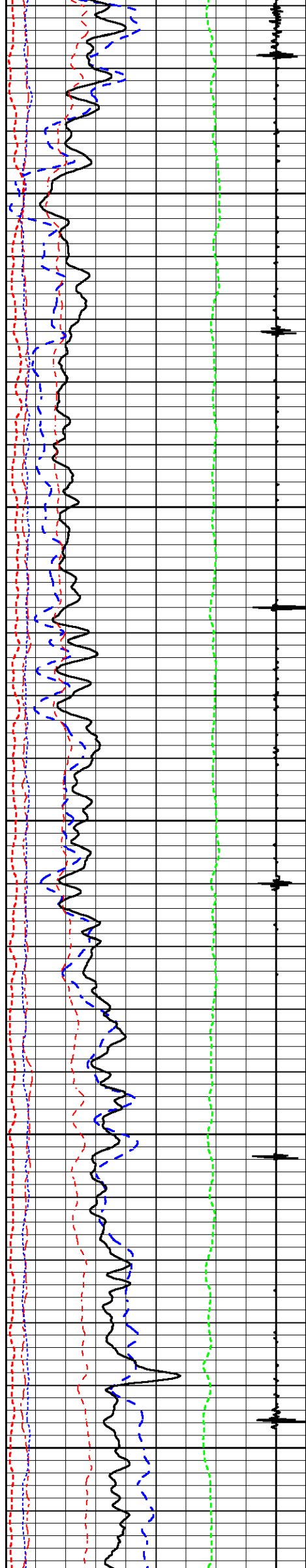


6200

6300

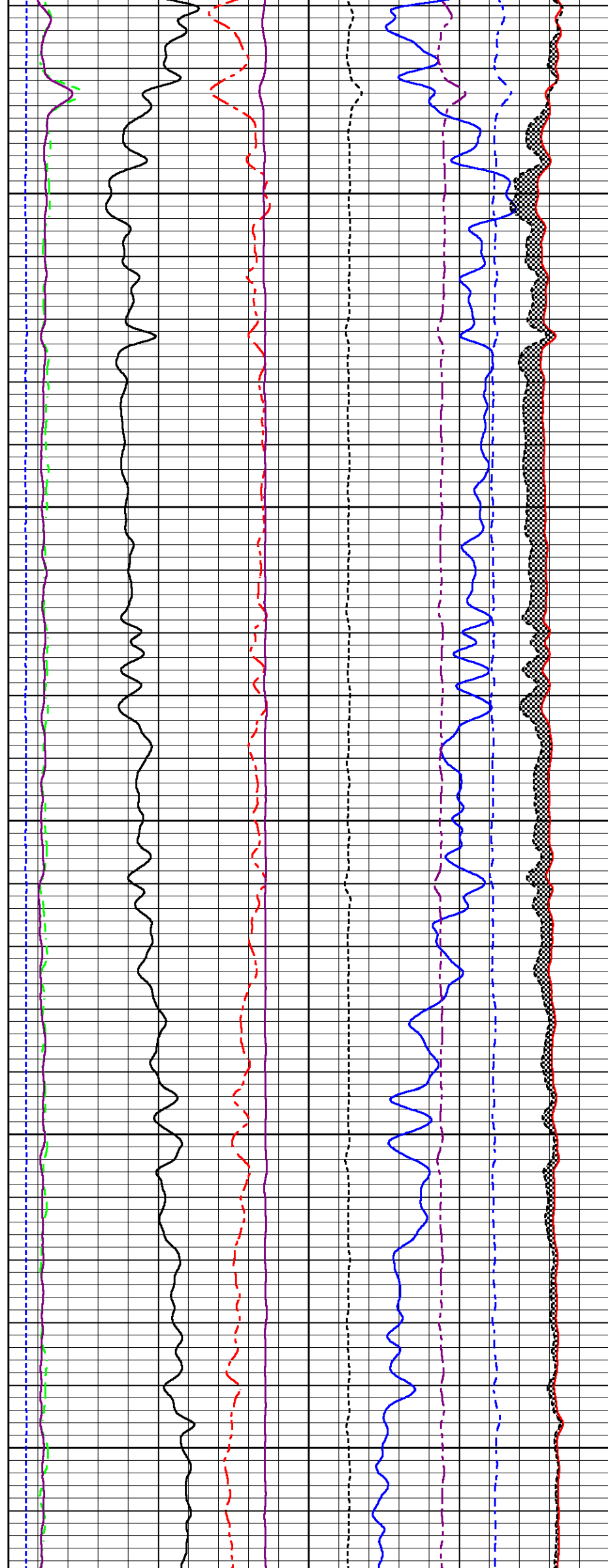
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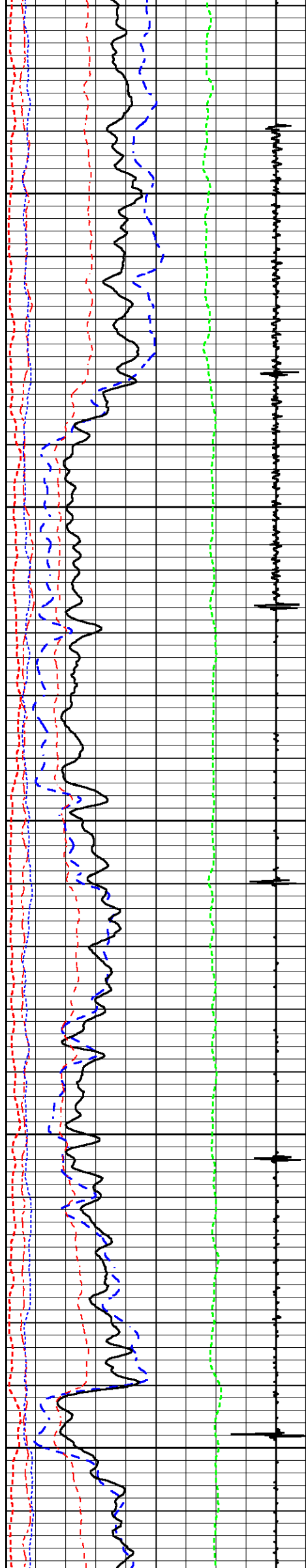




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6600

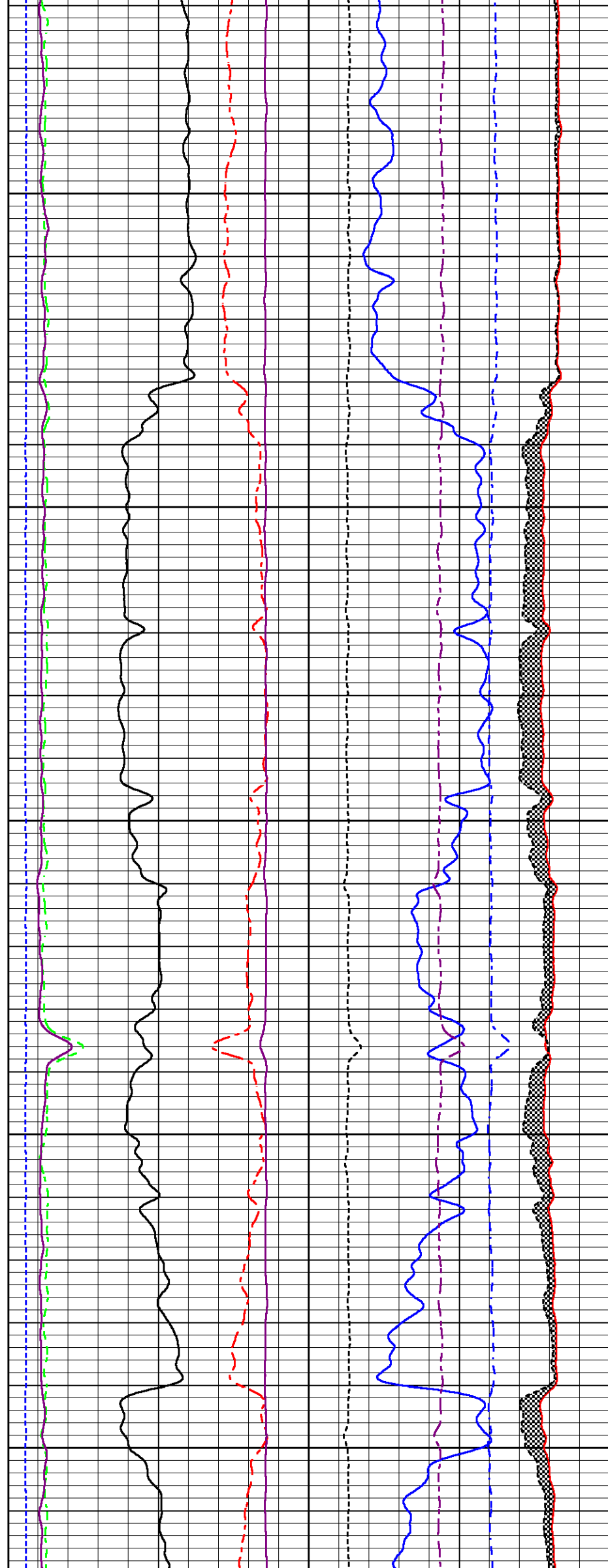


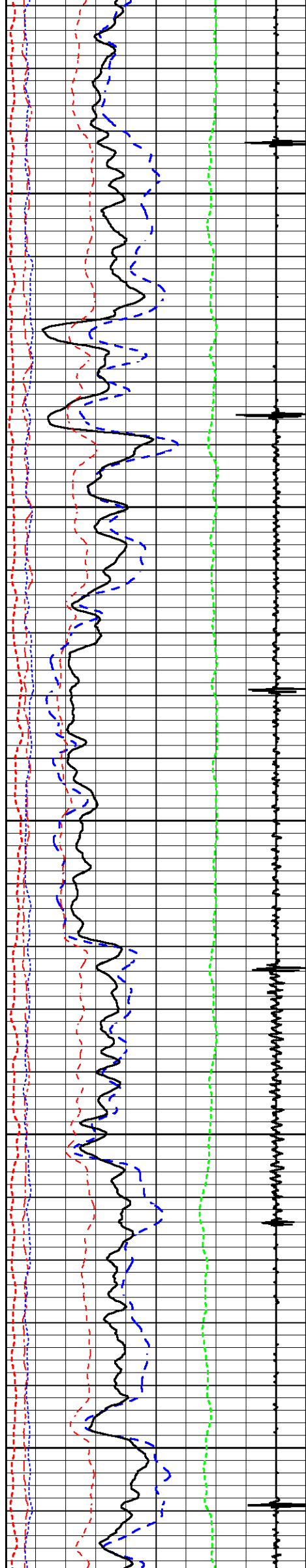


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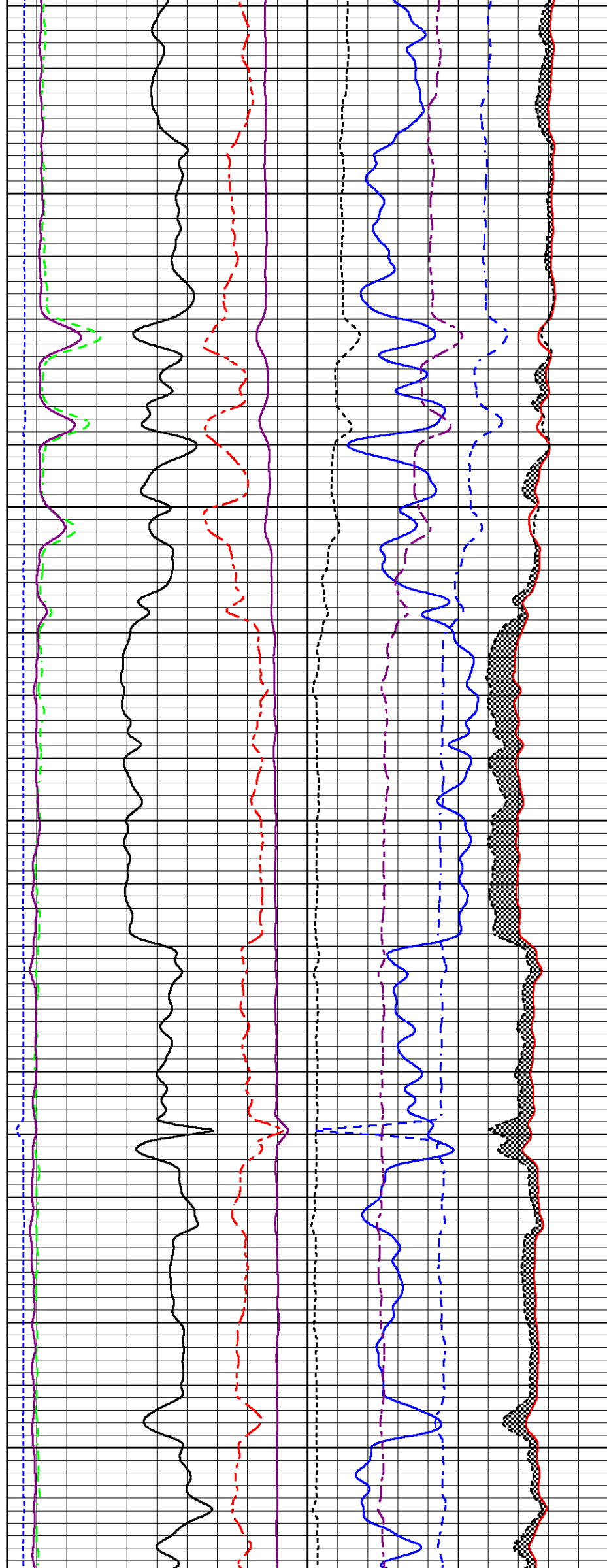
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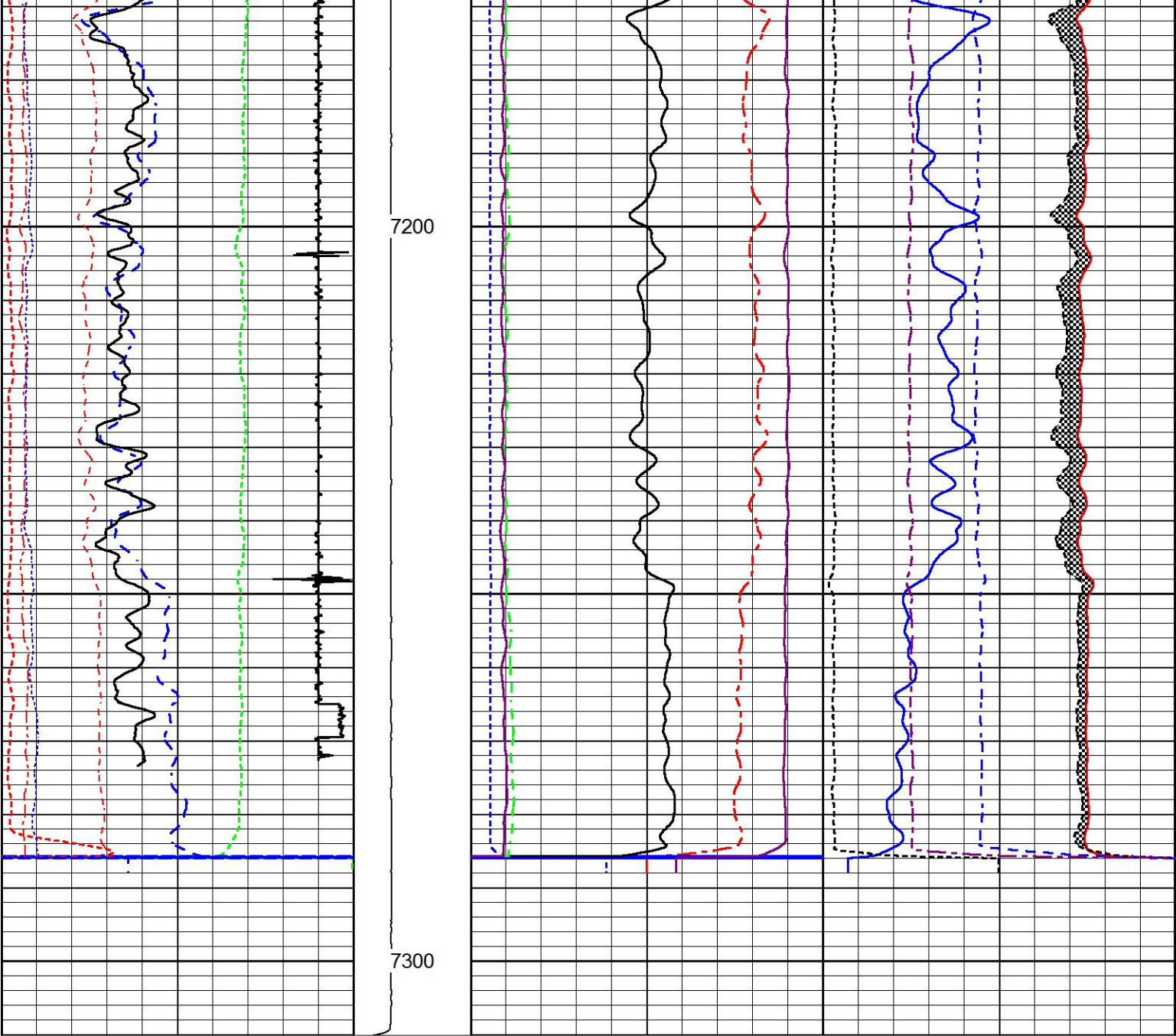




7000

7100





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)	200		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
						-1000

MAIN LOG SECTION

HALLIBURTON

5" = 100'

REPEAT LOG SECTION

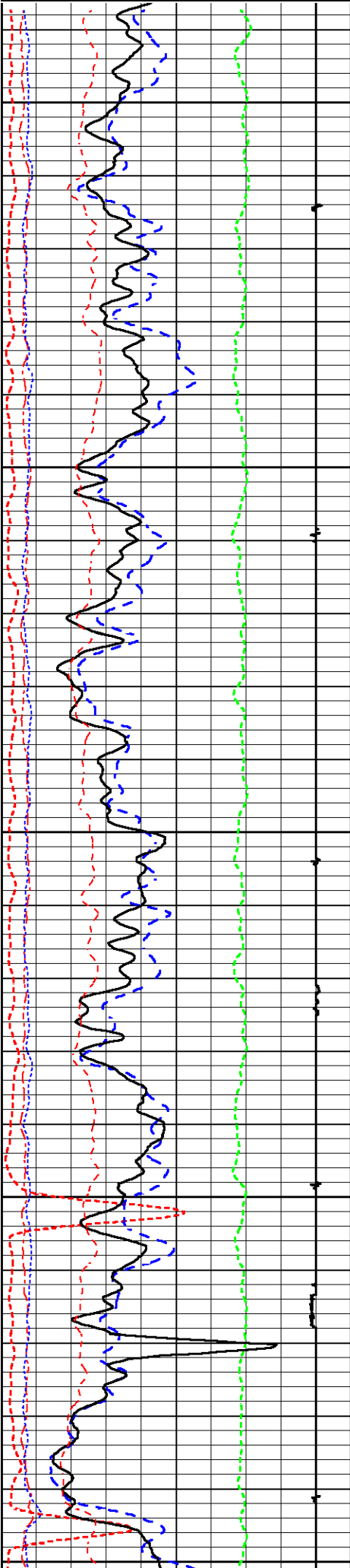
HALLIBURTON

5" = 100'

Database File	watson_b_24awi_combo.db
Dataset Pathname	RMT_RPT1
Presentation Format	RMTE_M~1
Dataset Creation	Wed Jun 03 03:56:47 2015
Charted by	Depth in Feet scaled 1:240

200	Near Bore Si (SGBN)	0	TENSION	60	SGIN	0
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0	OAI	100
10	FAR FIT ERR (SGFF)	40
0	GAMMA RAY (GAPI)	200
0	NEAR FIT ERR (SGFN)	100
-5400	CCL	600
0	IN FIT ERR (CFTR1) NEAR	1
0	IN FIT ERR (CFTR2) FAR	1

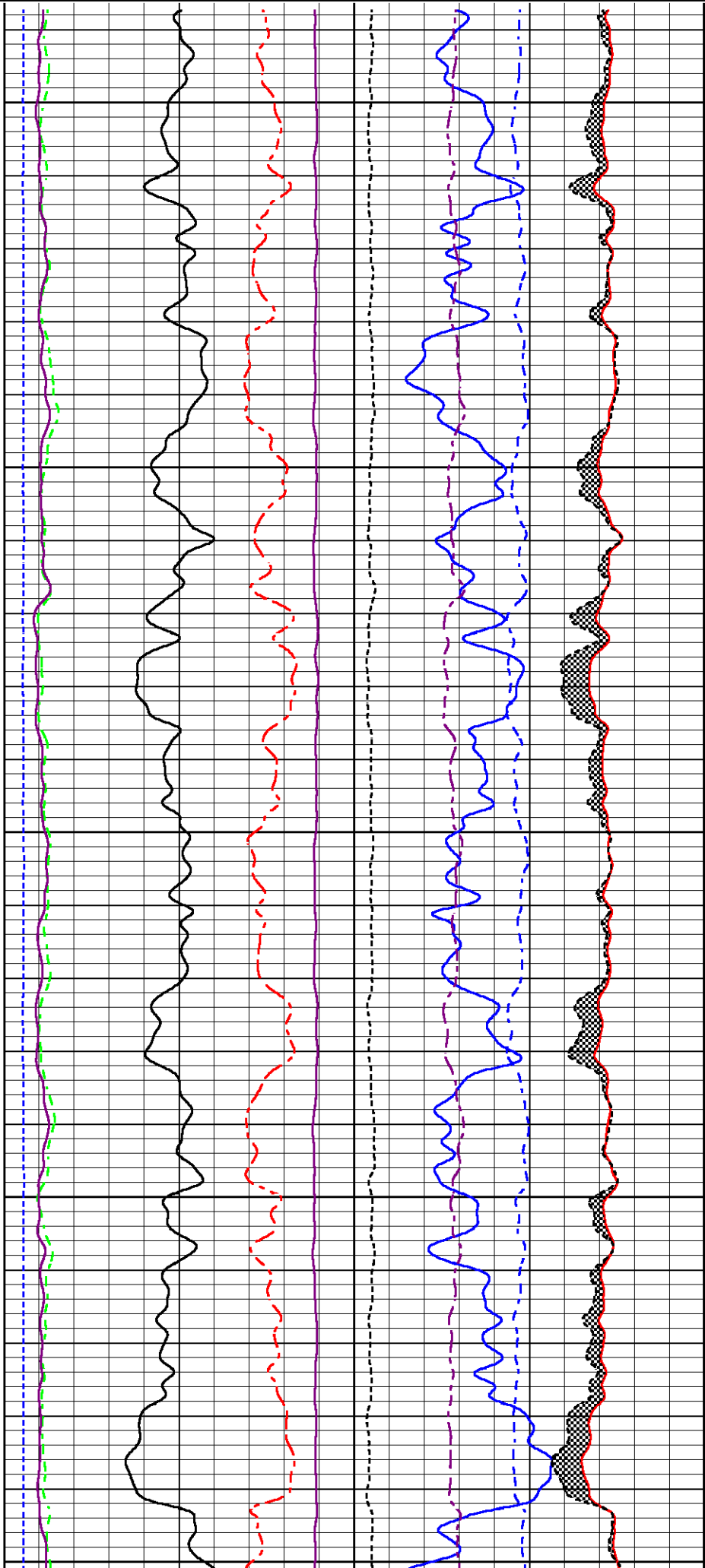


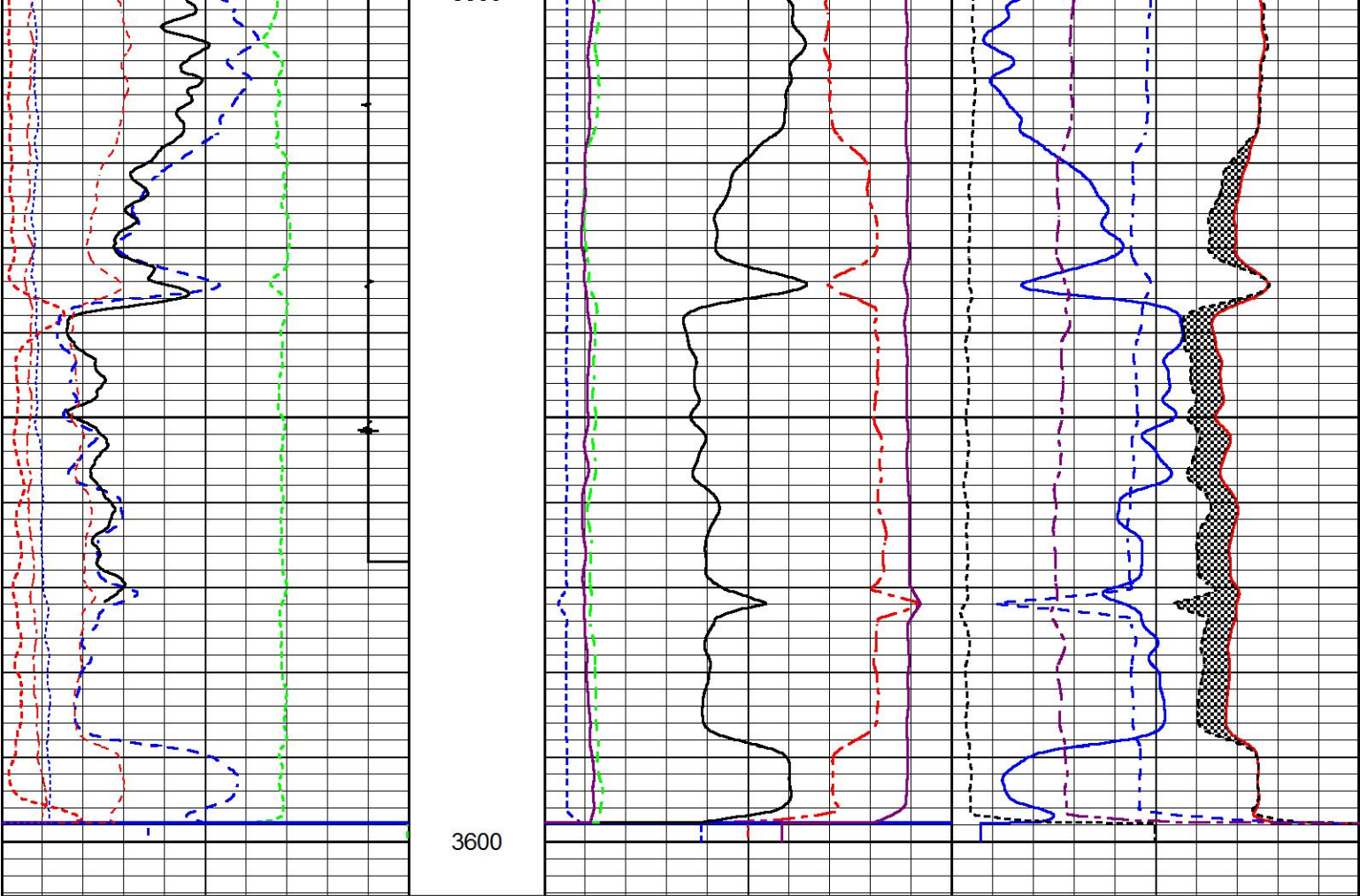
3300

3400

3500

2	RATIO (RNF)	0.5	60000	Near Counts (NCAP)	0
0	RIN	15	60000	Far Counts (FCAP)	0
0	RICF	6	100000	FAR INTEL CT (FSIN)	0
0	H YIELD (YH2)	1	10000	(NEAR INTEL CT (NSIN)	0
0	H YIELD (YH1)	1	ET INL NEAR (NNII		
	INOX2		50000	-1000	
	-1500	1500			





200	Near Bore Si (SGBN)	0	TENSION	60	SGIN	0
0	OAI	100		2	RATIO (RNF)	0.5 60000 Near Counts (NCAP)
10	FAR FIT ERR (SGFF)	40		0	RIN	15 60000 Far Counts (FCAP)
0	GAMMA RAY (GAPI)	200		0	RICF	6 100000 FAR INTEL CT (FSIN)
0	NEAR FIT ERR (SGFN)	100		0	H YIELD (YH2)	1 10000(NEAR INTEL CT (NSIN)
-5400	CCL	600		0	H YIELD (YH1)	1 ET INL NEAR (NNI
0	IN FIT ERR (CFTR1) NEAR	1			INOX2	50000 -1000
0	IN FIT ERR (CFTR2) FAR	1			-1500 1500	

REPEAT LOG SECTION

HALLIBURTON

5" = 100'

Log Variables

DatabaseD:\Warrior_data\watson_b_24awi_combo.db
Dataset field/well/run1/RMT_MAIN/_vars_

Top - Bottom

PPT usec 0	MAXAMPL mV 0	MINAMPL mV 1	MINATTN db/ft 0.8	BHTEMP_Src ITEMPX	BHSAL2 0	BHSAL1 1	POROS2 0
POROS1 1	LTH Sandstone	UHSGC NONE	RHO�F 0.25	SO in 0	BORSAL kppm 150	CASED? Yes	MSGGN 1
USERFTT usec/ft 0	ZREF MRayl 1.7	CASEWGHT lb/ft 11.6	SRFTEMP degF 0	MudWgt lb/gal 8.4	CASETHCK in 0.25	CASEOD in 4.5	PERFS 0
TDEPTH ft 0	BOTTEMP degF 100	BITSIZE in 7.875					

Database File		watson_b_24awi_combo.db		Calibration Report		
Dataset Pathname		RMT_MAIN				
Dataset Creation		Wed Jun 03 06:46:54 2015				
Segmented Cement Bond Log Calibration Report						
		Serial Number:		12082235		
		Tool Model:		004		
		Calibration Casing Diameter:		4.500	in	
		Calibration Depth:		229.967	ft	
Master Calibration, performed Wed Jun 03 05:55:02 2015:						
		Raw (v)		Calibrated (mv)		Results
		Zero	Cal	Zero	Cal	Gain Offset
3FT	-0.013	0.709	0.000	82.500	114.126	1.532
5FT	-0.015	0.698	0.000	82.500	115.772	1.713
S1	-0.007	0.733	0.000	100.000	135.171	0.967
S2	0.001	0.717	0.000	100.000	139.591	-0.075
S3	0.003	0.687	0.000	100.000	146.179	-0.430
S4	-0.000	0.652	0.000	100.000	153.403	0.039
S5	0.001	0.671	0.000	100.000	149.367	-0.215
S6	0.002	0.675	0.000	100.000	148.616	-0.303
S7	0.005	0.702	0.000	100.000	143.405	-0.691
S8	0.003	0.720	0.000	100.000	139.420	-0.385
Calibration Report						
		Serial Number:		12082235		
		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:		11680606-A				
Shop Calibration Performed:		Mon Jun 01 14:01:58 2015				
Carbon/Oxygen Mode						
Stabilization						
Result	Logged	Expected Value	Diff.	Tol.	Units	
GENV	75.00	80.00	-5.00	+/-15.00	V	
ITCR2	3230	3250	-20	+/-250	cps	
Near Detector						
	Channel	Expected Value	Amplitude	FWHM	Tol.	
H	60	60 +/-2	0.0244	5.81	<6.00	
Fe	206	206 +/-2	0.0944	-----	-----	
NGAIN = 0.998		NZOFF = 0.2				
Far Detector						
	Channel	Expected Value	Amplitude	FWHM	Tol.	
H	60	60 +/-2	0.0365	5.60	<6.50	
Fe	209	208 +/-2	0.0910	-----	-----	
FGAIN = 0.994		FZOFF = 0.2				
Flask Temperature	65.6 degF					

Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.45	0.45	-0.00	+/-0.02	
LIRI2	1.64	1.64	-0.00	+/-0.05	
TCCR2	5062	5000	62	+/-1000	cps
ITCR2	3213	3200	13	+/-250	cps

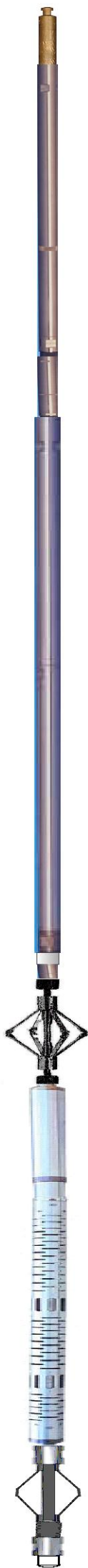
Sigma Mode					
Stabilization					
Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	76.00	80.00	-4.00	+/-15.00	V
FCAP	10334	10000	334	+/-500	cps
Horizontal Water Tank					
Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.94	0.95	-0.01		
N/F Inel Norm	0.61	0.61	0.00		
RNF	1.07	1.07	-0.00	+/-0.12	
RINC	1.63	1.64	-0.01	+/-0.18	
SGFN	24.06	24.00	0.06	+/-0.50	cu
SGFF	22.87	22.85	0.02	+/-0.50	cu
FSIN	25058	24000	1058	+/-2000	cps
FCAP	10528	10000	528	+/-1000	cps
NFTR	0.86			<5.00	
FFTR	0.91			<5.00	
NBKG	133			<500	cps
FBKG	102			<500	cps
RTN	0.44	0.40	0.04	+/-0.10	usec
RTF	0.47	0.40	0.07	+/-0.10	usec

Calibration Software Modules	
HRMTI Module	2013.11.14.0
RMTI Module	2014.8.28.1
Log Data Acquisition Software Modules	
HRMTI Module	2013.11.14.0
RMTI Module	2014.8.28.1

Gamma Ray Calibration Report

Type / Serial: 002 / 10000028

SHOP CALIBRATION		Wed Jun 03 00:21:49 2015			
Background Calibrator	Counts/Sec.	Gain	Offset	Jig	Units
	39.9				cps
	330.3	1.4048			cps GAPI/cps
PRIMARY VERIFICATION					
Background Calibrator Difference	55.8				cps
	458.8				cps
				403.0	GAPI
BEFORE SURVEY VERIFICATION					
Background Calibrator Difference	0.0				cps
	0.0				cps
				0.0	GAPI
AFTER SURVEY VERIFICATION					
Background Calibrator Difference	0.0				cps
	0.0				cps
				0.0	GAPI

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
CCL	37.26		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
			TTTCU-002 (10000028) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
XHU-003 (12218041) Crossover Halliburton 1553 to Ultrawire	1.58		1.69	7.00		
RmtTFGT RmtTNGT	24.35 23.85		RMTI-A (11680606) Halliburton RMTI Tool	14.00	2.13	77.00
RmtFP5V RmtCommFWa	16.10 16.10		X-OVER-SondexxGo Sondex Box x Go Pin Cross Over	0.31	1.69	1.00
CBLTEMP	8.31		AUH-001 (000001) Adaptor Ultrawire/Halliburton	0.38	1.69	3.00
			CENT-CSSMid3.00Roller CSS 3.00" MIDDLE ROLLER CENTRALIZER	2.75	3.00	36.00
			RBT-004 (12082235) Radial Bond Tool (UW 3 1/8) 20K Rated	9.48	3.13	140.00
LLMTEN	0.00		CENT-Probe_275 Probe 2 3/4 Centralizer	2.88	2.75	20.00
			BUL-001 (000001) Bullnose	0.30	1.69	1.50

Company	URSA OPERATING CO, LLC		
Well	WATSON RANCH B 24AWI-17-07-95		
Field	PARACHUTE		
County	GARFIELD	State	CO
HALLIBURTON		RESERVOIR MONITOR TOOL - ELITE	