

HALLIBURTON

RESERVOIR MONITOR
TOOL - ELITE

Company		URSA OPERATING CO., LLC.	
Well		BAT 24D-18-07-95	
Field		PARACHUTE	
County		GARFIELD	State CO

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Field		PARACHUTE	
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API No.:	05-045-22838-0000	Serv #:	902509004
Location:		SURFACE HOLE LOCATION: 0236' FSL & 0824' FEL	
Location:		BOTTOM HOLE LOCATION: 0215' FSL & 1952' FWL	
Other Services		CBL GAUGE RING	

Permanent Datum		GROUND LEVEL		Elevation	5441'
Log Measured From		KB		17 Ft. above perm. datum	
Drilling Measured From		KB		G.L. 5441'	

Date @ Time Logged	19 JUNE 2015	Type Fluid in Hole	WATER
Run No.	ONE	Density of Fluid	8.4#
Depth - Driller	7104'	Fluid Level	FULL
Depth - Logger	6866'	Cement Top Est. Logged	N/A
Bottom - Logged Interval	6866'	Equipment / Location	10971668 / G.J.
Top - Log Interval	3522'	Recorded by	D. SOLIS
Max. Recorded Temp.	226 DEG F	Witnessed by	UNATTENDED

CEMENTING DATA		Surface		Protection		Production		Liner	
		String		String		String			
		N/A		N/A		N/A		N/A	

Date / Time Cemented		N/A		N/A		N/A	
Primary / Squeeze							
Expected Compressive Strength		psi@ hrs		psi@ hrs		psi@ hrs	
Cement Volume							
Cement Type / Weight		/		/		/	
Formulation							
Mud Type / Mud Wgt.		/		/		/	

Borehole Record				Casing & Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
ONE	12.25"	SURFACE	1879'	8.625"	32.0#	SURFACE	1879'
TWO	7.8758"	1879'	7104'	4.5"	11.6#	SURFACE	7104'

<<< 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

HALLIBURTON CBL LOG DATED: 19 JUNE 2015 IS THE PRIMARY DEPTH REFERENCE FOR THIS WELL.

GR-CBL-RMT RAN IN COMBINATION.

LOG INTERVALS PER CUSTOMER REQUEST.

SHORT JOINTS @:2998' - 3008', 5489' - 5499', AND 6387' - 6397'.

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES.

Service Ticket No.	902509004	API No.	05-045-22838-0000	PGM Ver	14.11.12001
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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	Run No.	
Serial No.	11495480	Serial No.	11817843	Serial No.	12095949	Serial No.	
Model No.	TTTC-U-002	Model No.	CBL-M	Model No.	RMTI-A	Model No.	
Diameter	1.688"	Diameter	2.75"	Diameter	2.125"	Diameter	

LOGGING DATA

General Data							
Pass	Depths		Well Head	Speed	Logging Run Comments		
No	From	To	Pressure	Ft/Min			

No.	6866'	3522'	0	25	MAIN LOG SECTION			
ONE								
	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		N/A	deg. @	N/A	KOP	N/A		

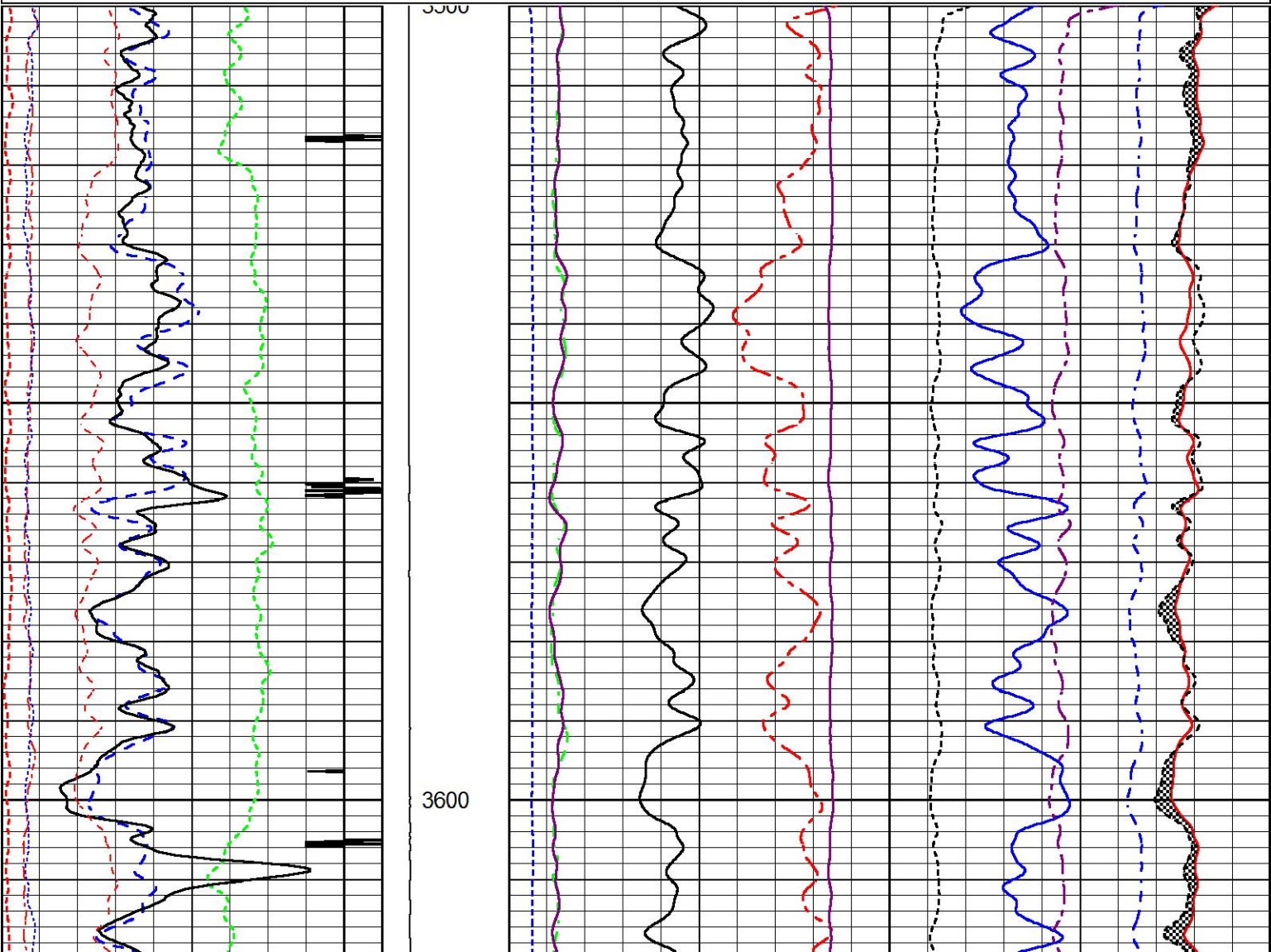
HALLIBURTON

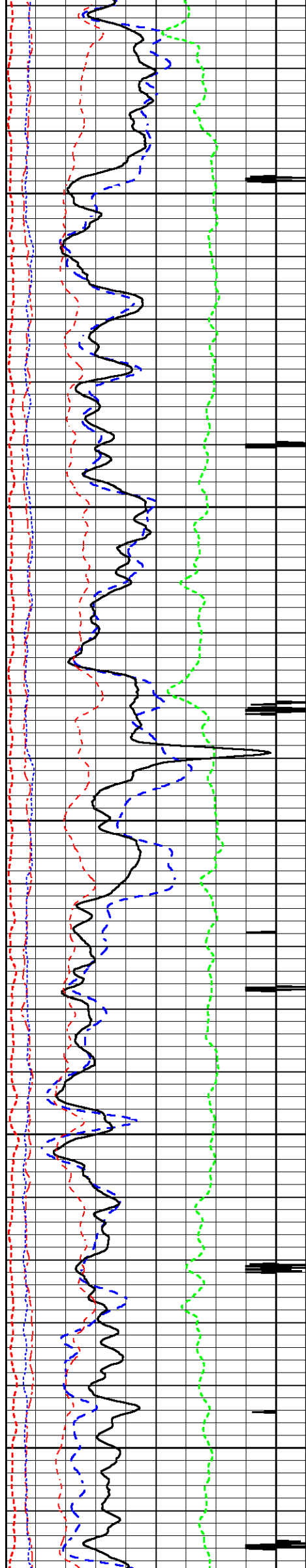
MAIN LOG SECTION

5" = 100'

Database File	bat_24d_cmb.db
Dataset Pathname	MAIN1
Presentation Format	RMTE_M~1
Dataset Creation	Fri Jun 19 10:33:43 2015
Charted by	Depth in Feet scaled 1:240

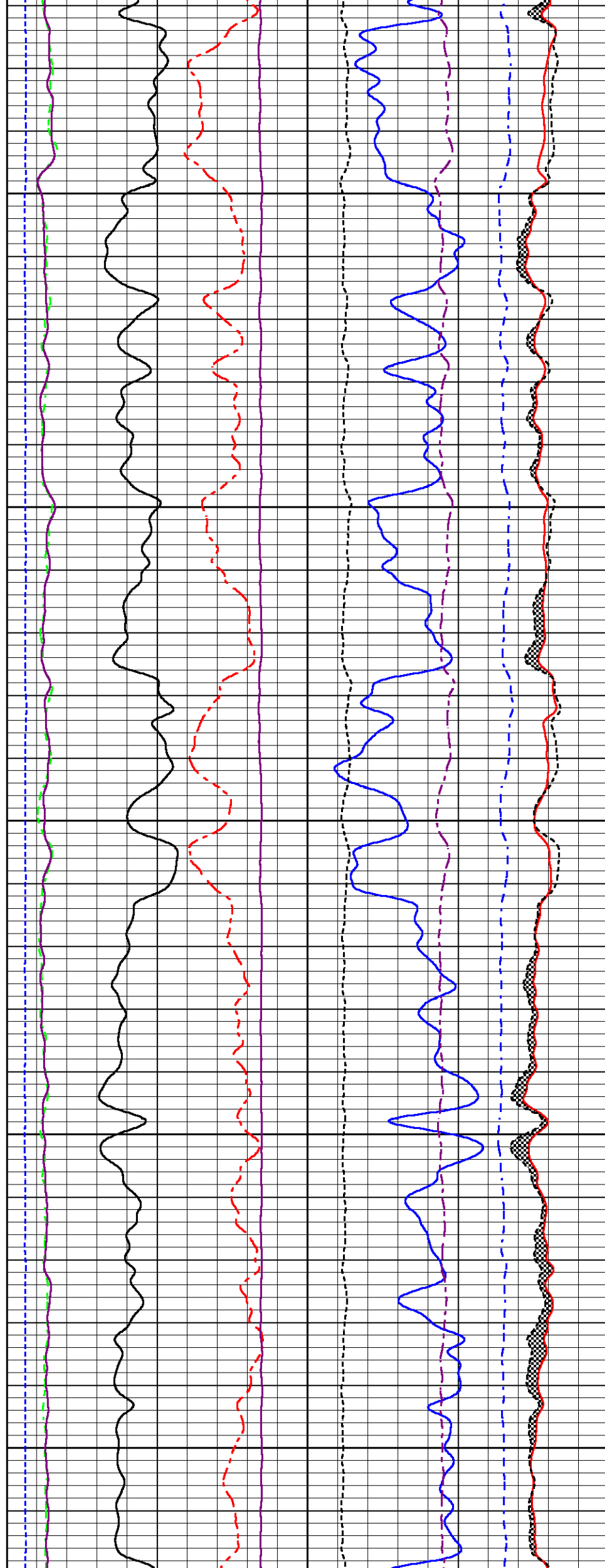
200	Near Bore Si (SGBN)	0	TENSION	60	SGIN	0
0	OAI	100		2	RATIO (RNF)	0.5
10	FAR FIT ERR (SGFF)	40		0	RIN	15
0	GAMMA RAY (GAPI)	200		0	RICF	6
0	NEAR FIT ERR (SGFN)	100		0	H YIELD (YH2)	1
-540	CCL	60		0	H YIELD (YH1)	1
0	IN FIT ERR (CFTR1) NEAR	1			INOX2	50000
0	IN FIT ERR (CFTR2) FAR	1				-1000
				-1500	1500	

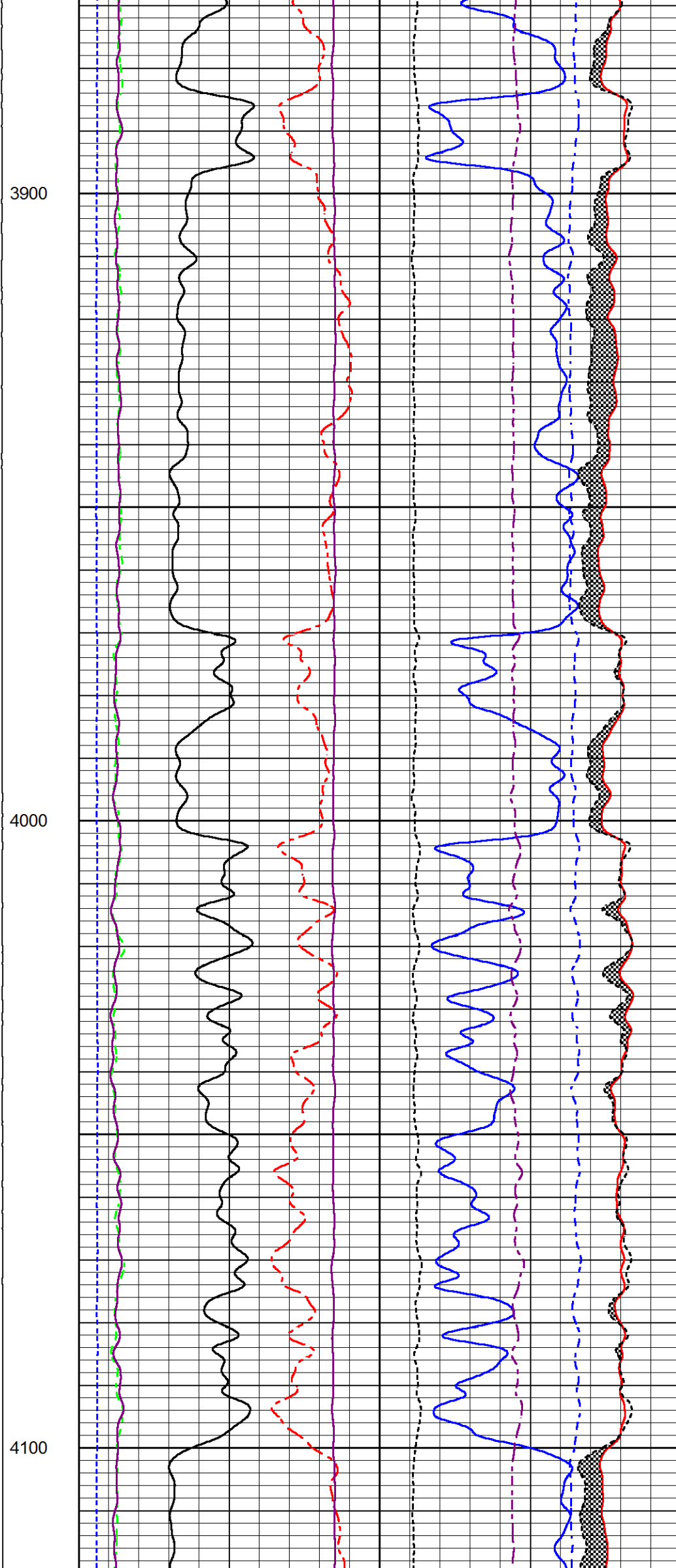
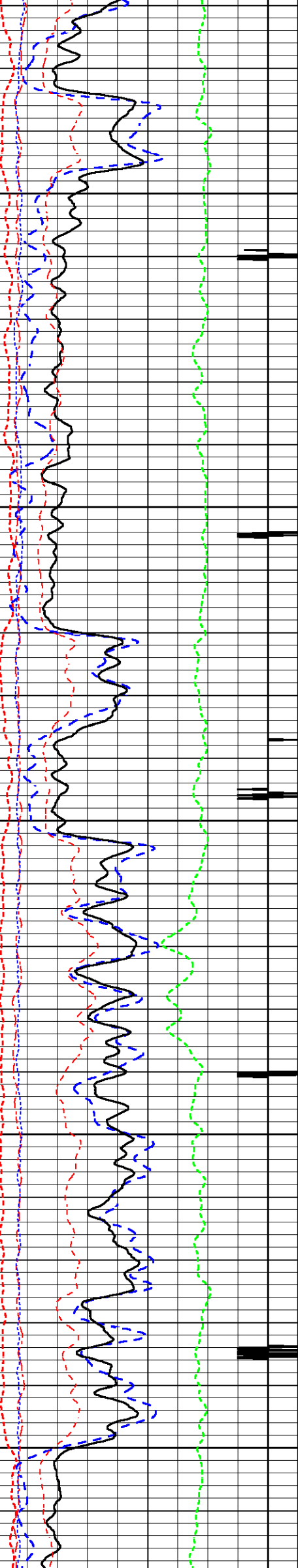


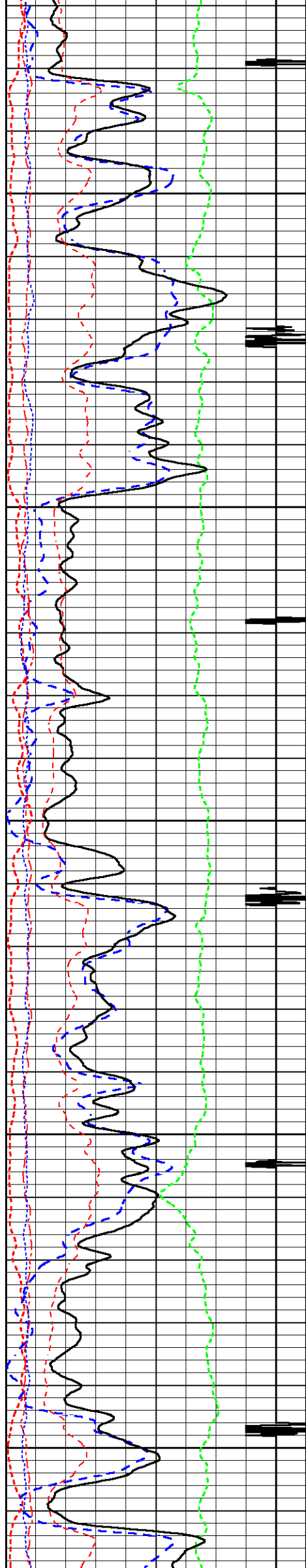


3700

3800

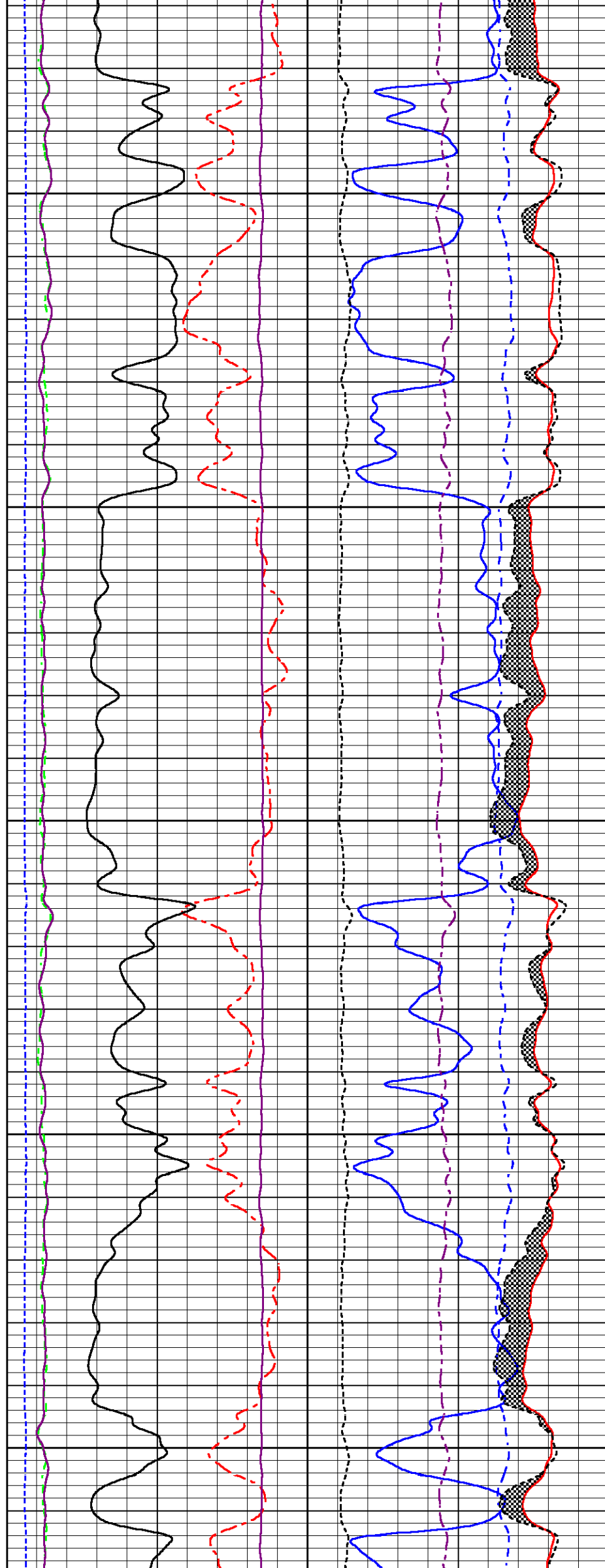


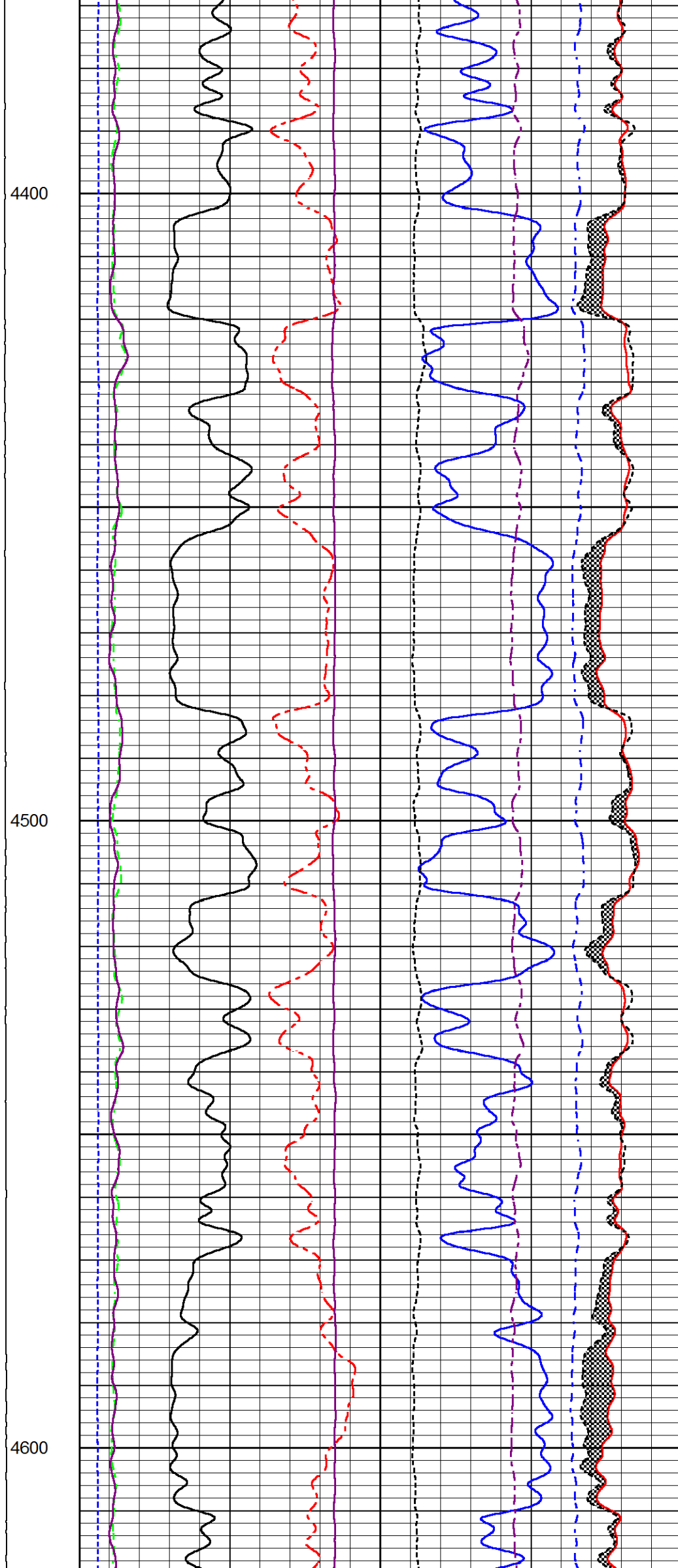
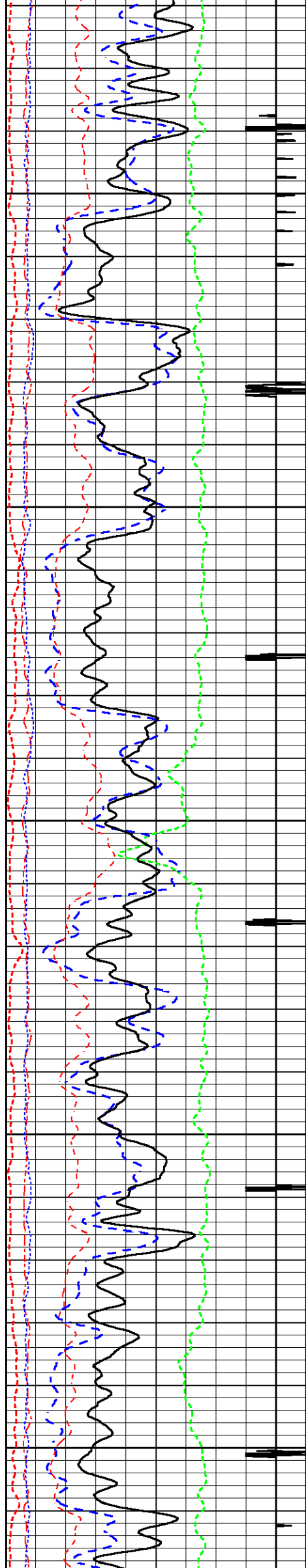


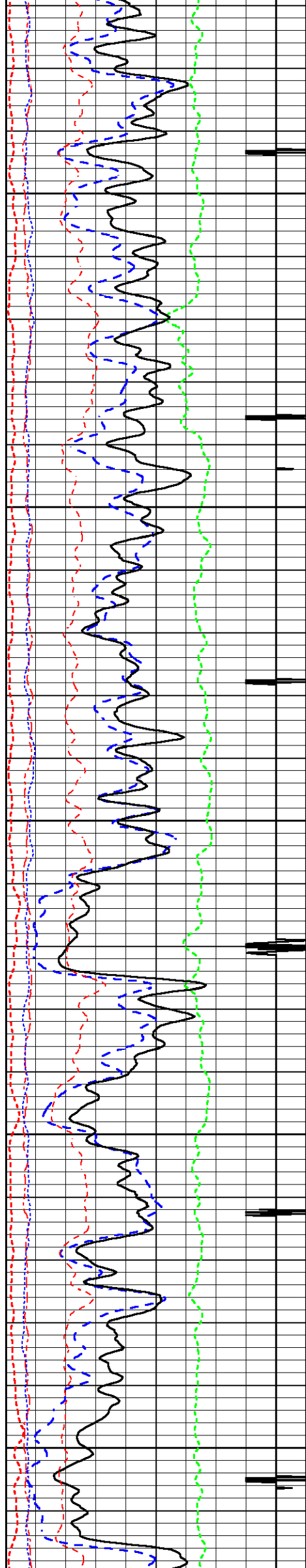


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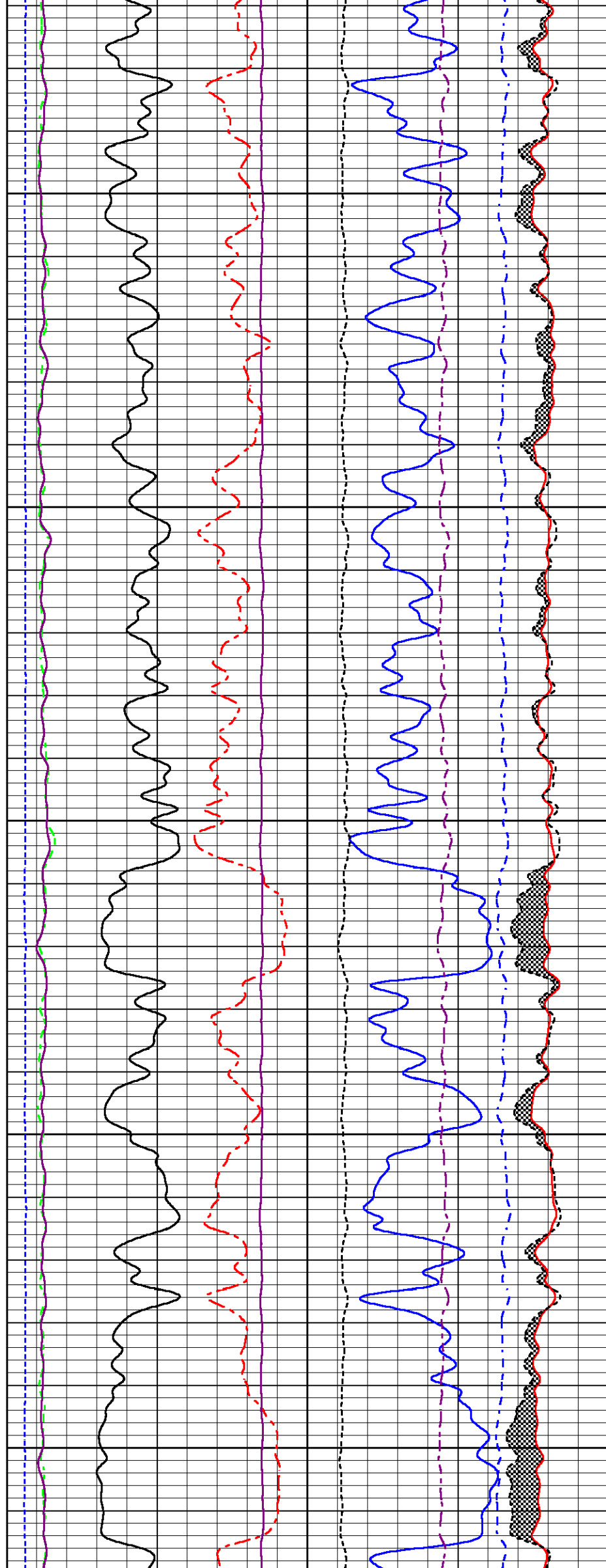


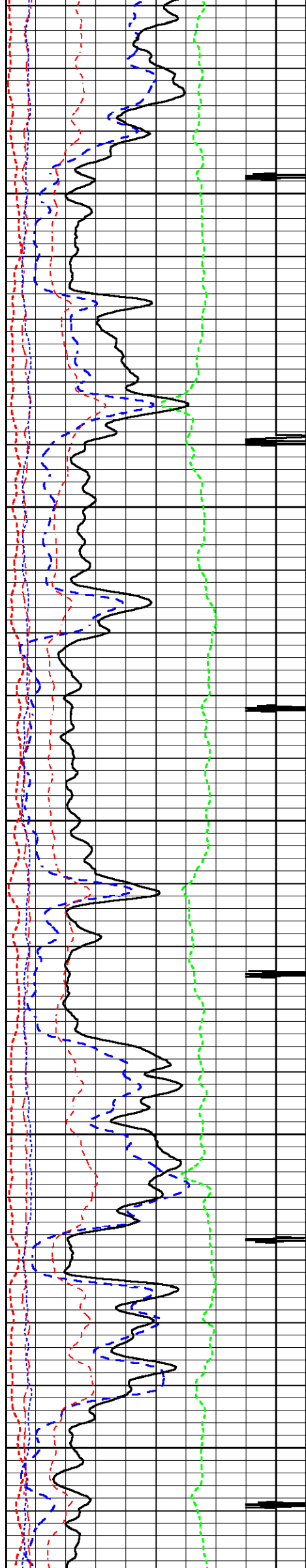




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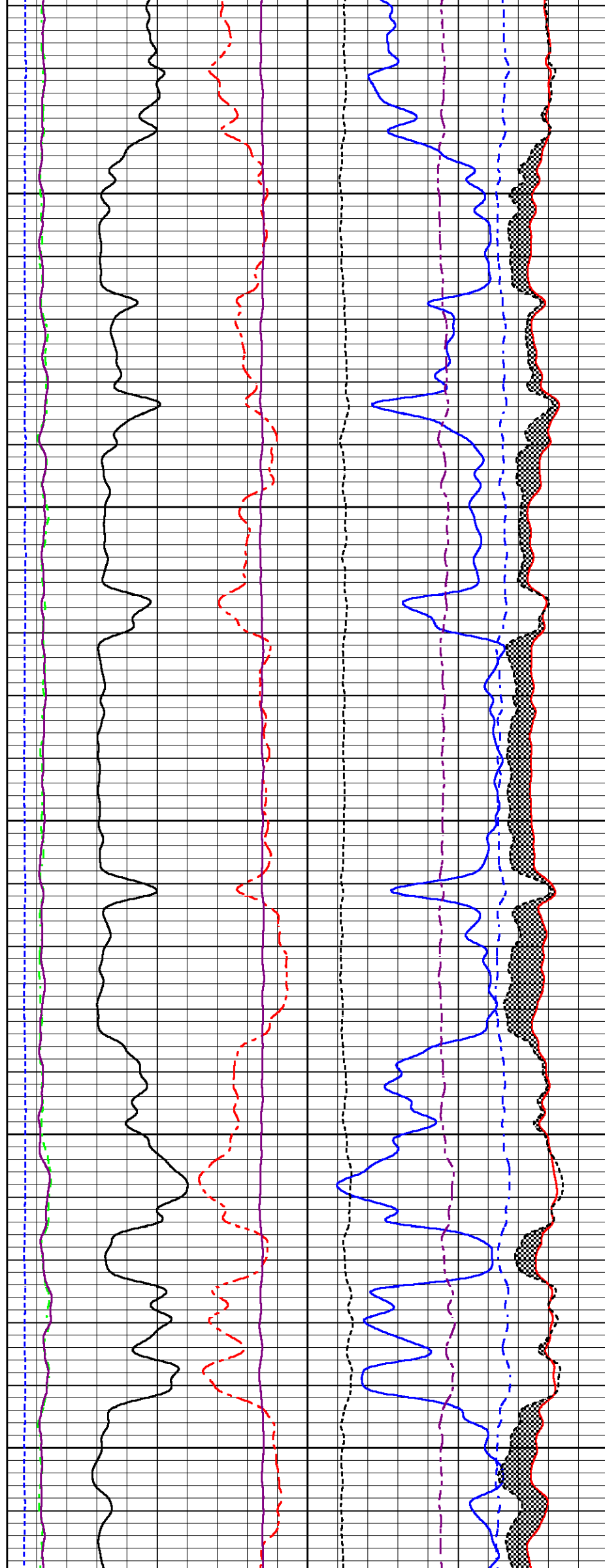


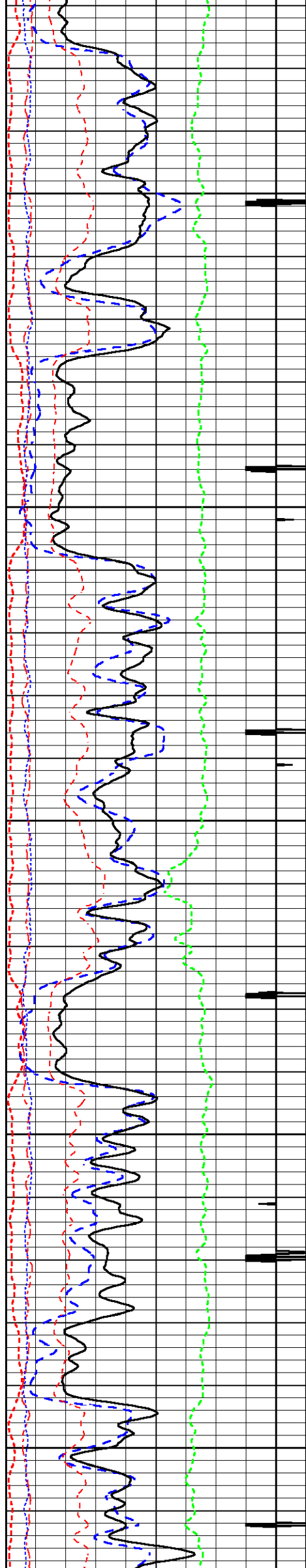


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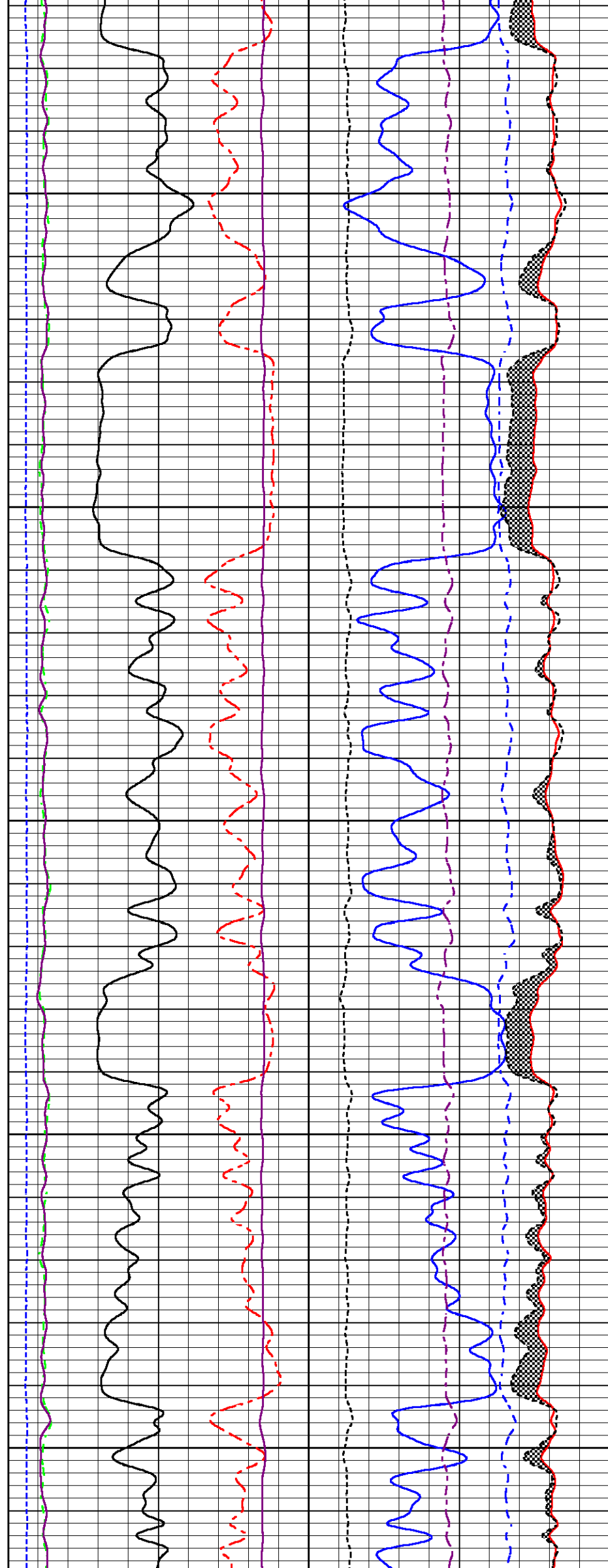
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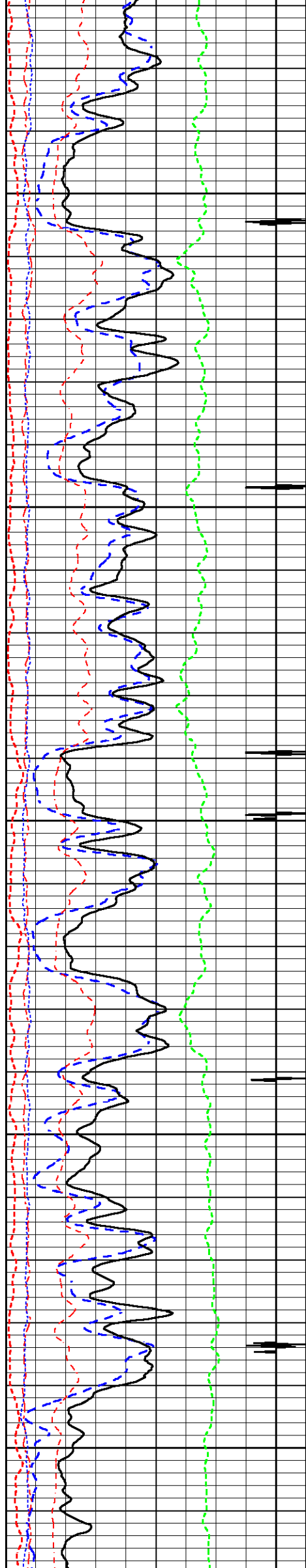




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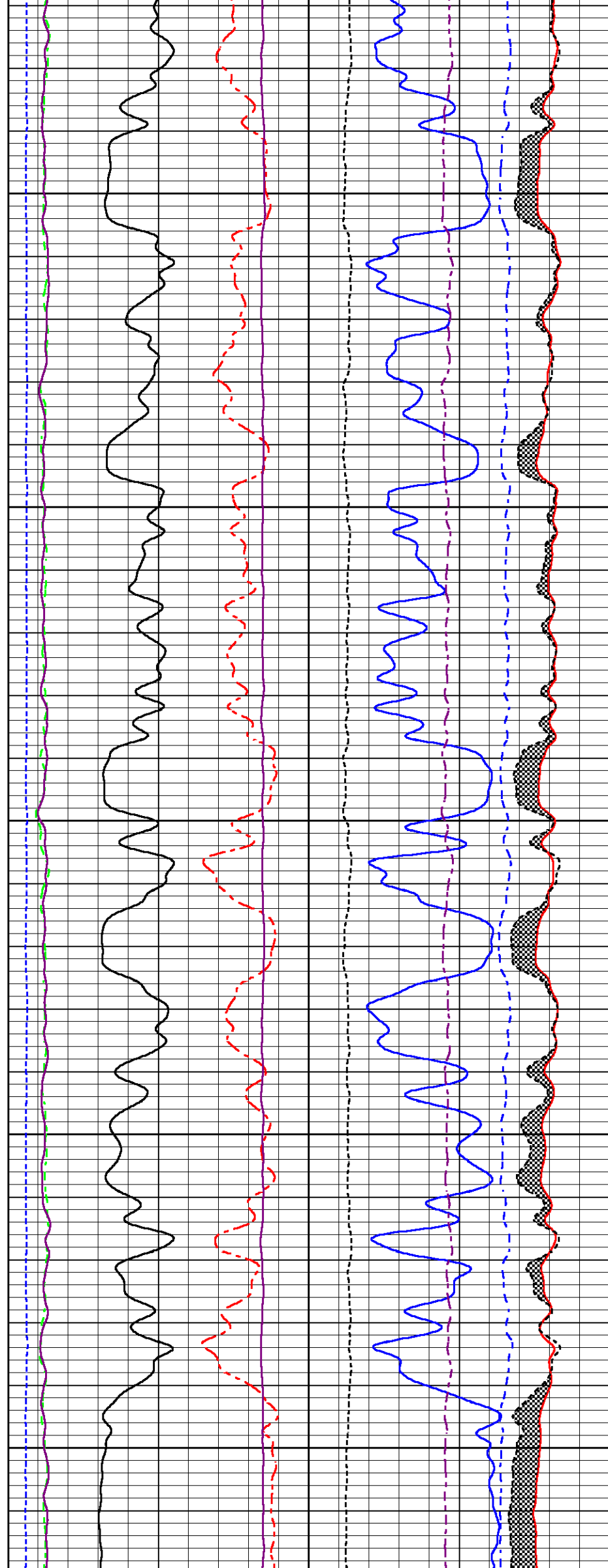


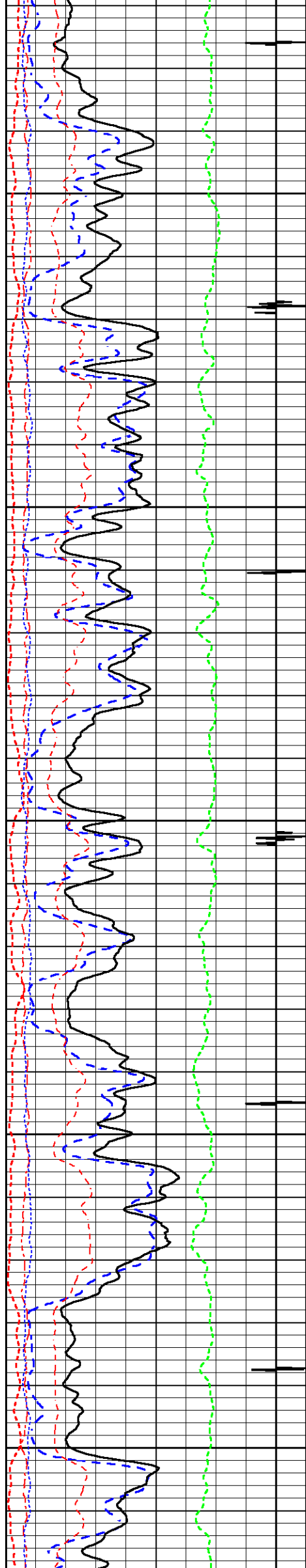


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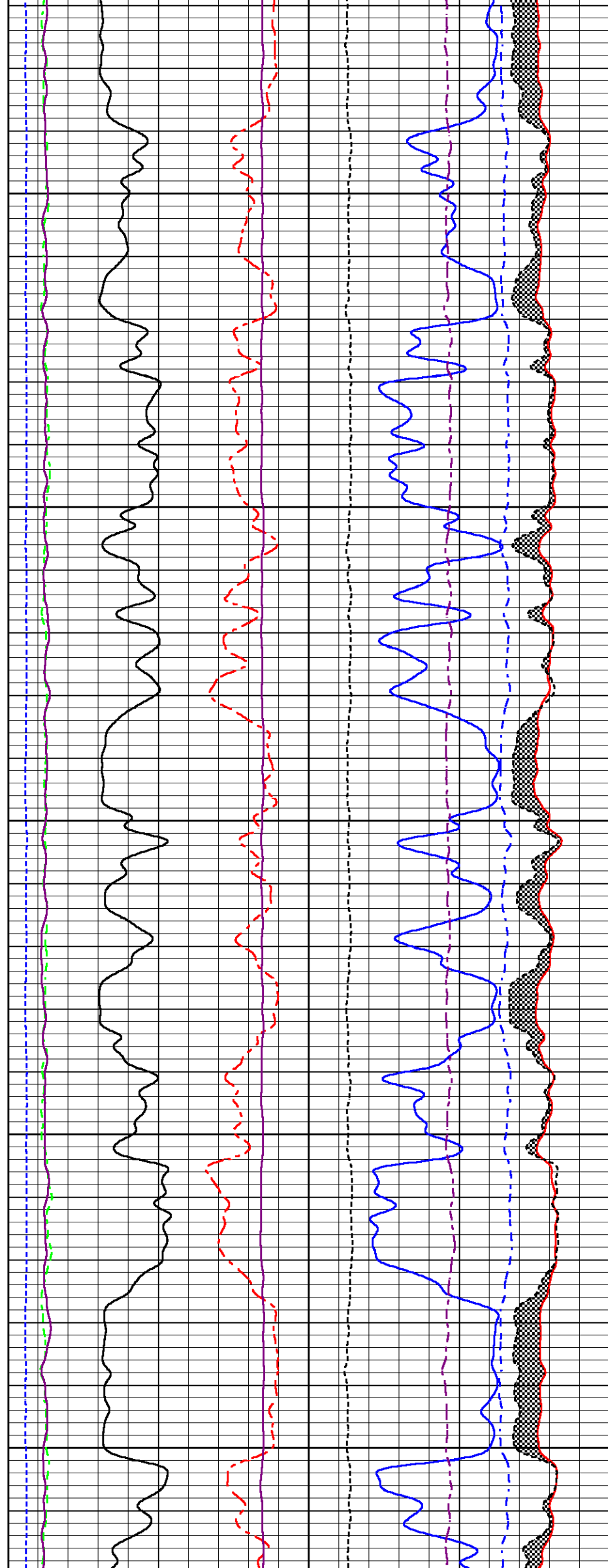
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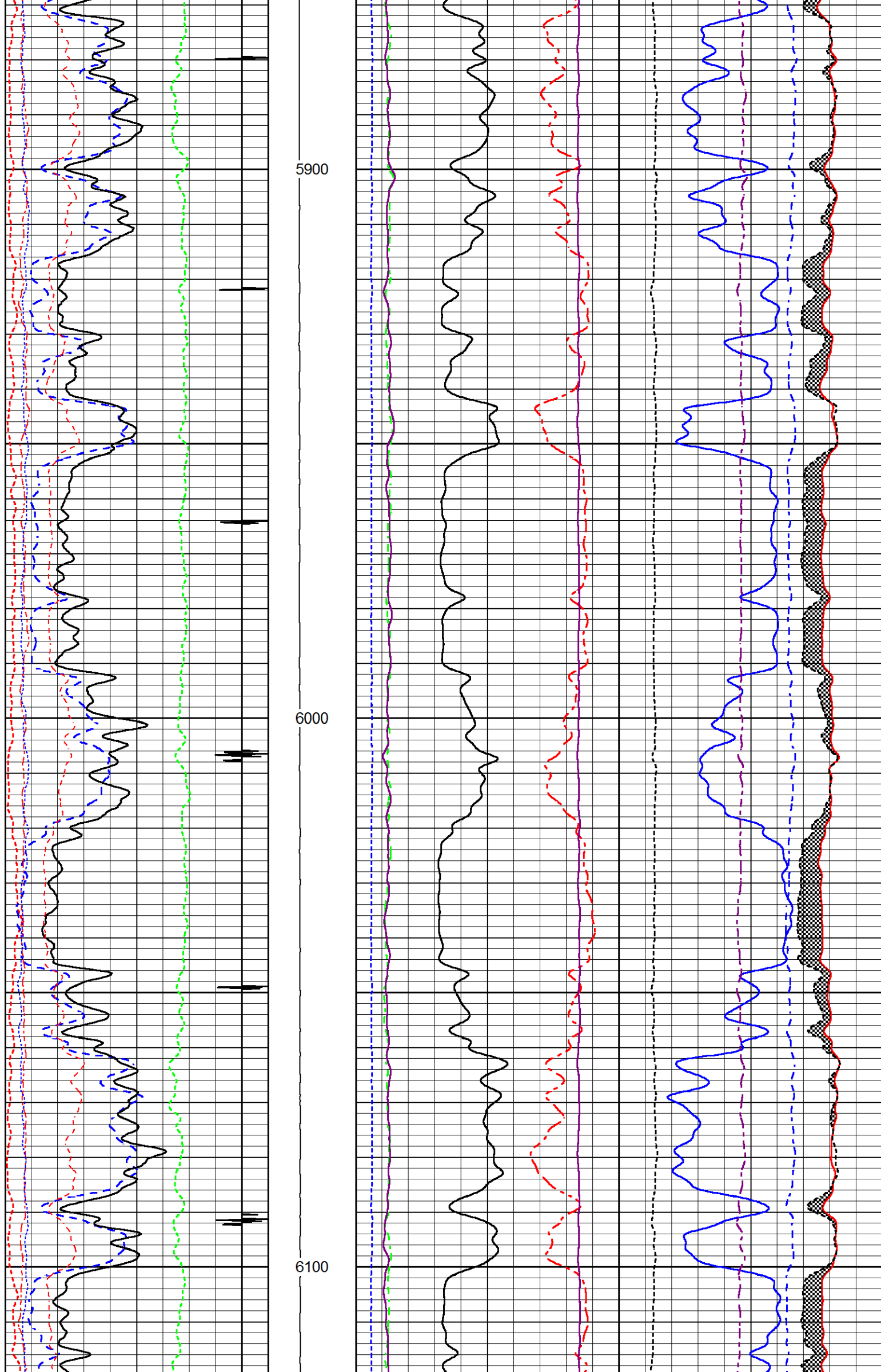


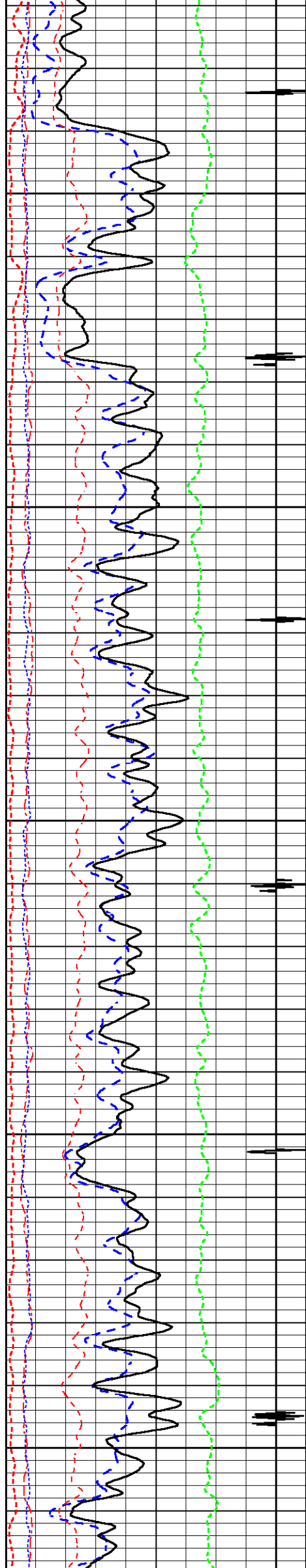


5700

5800

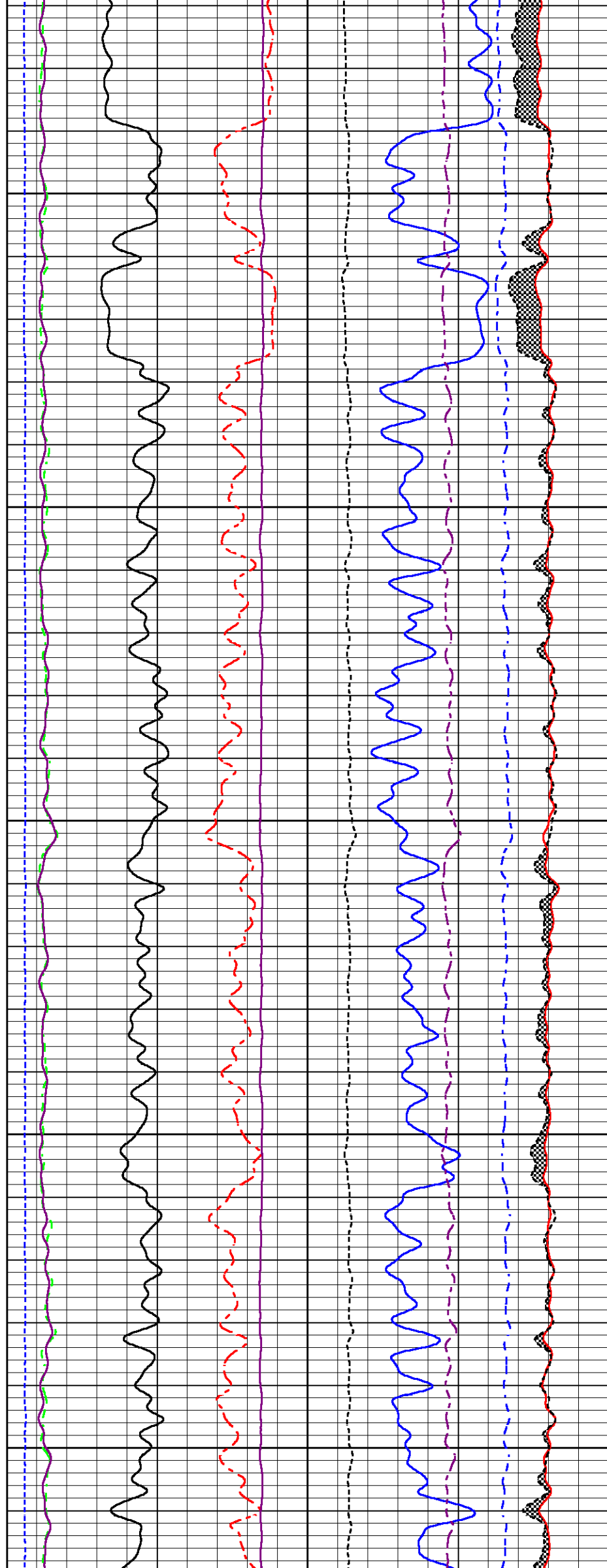


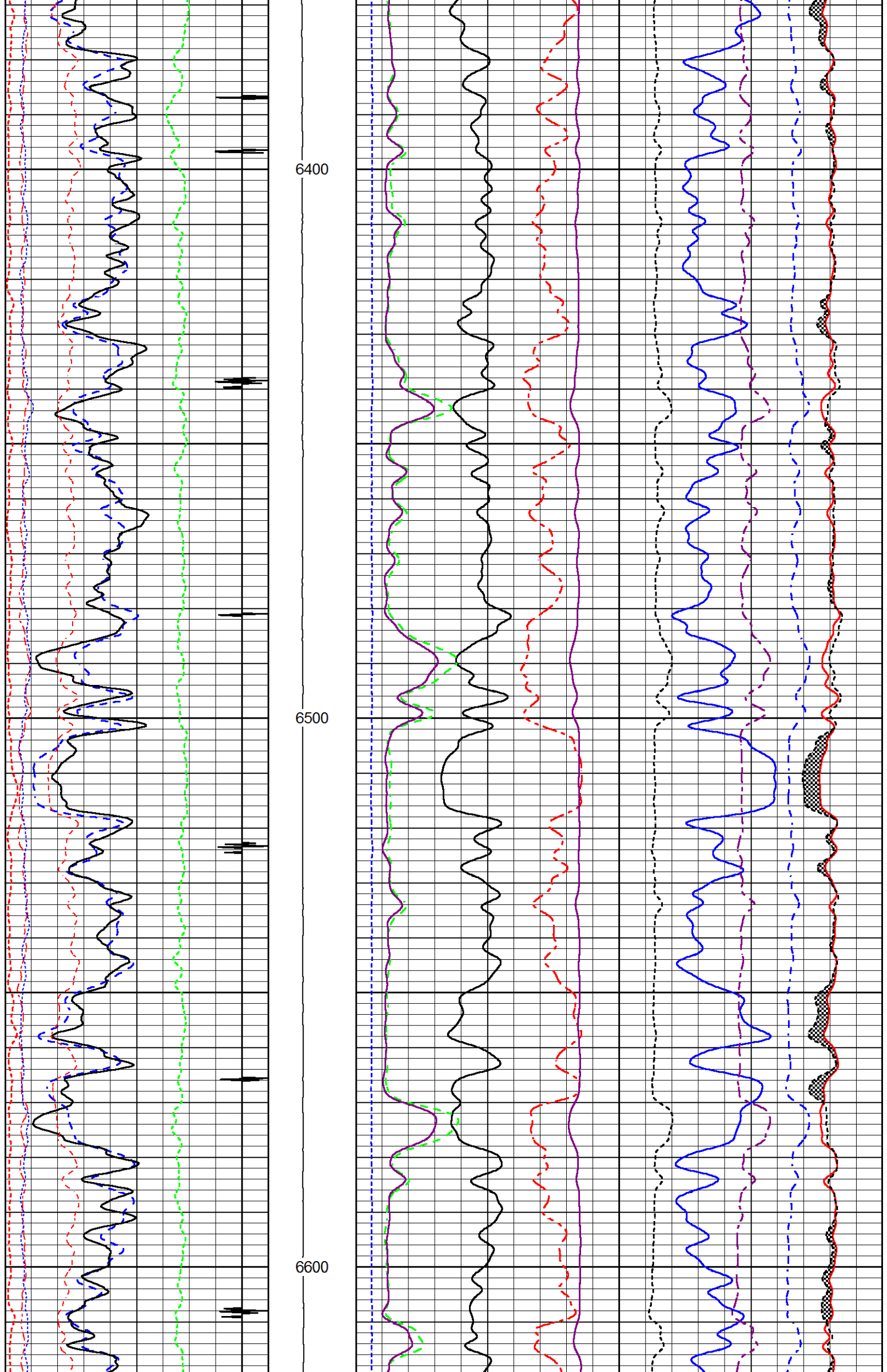


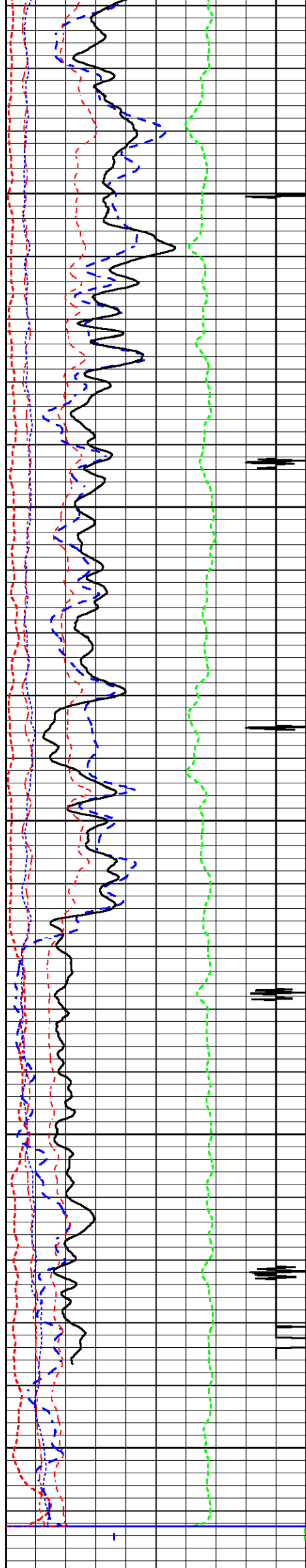


6200

6300

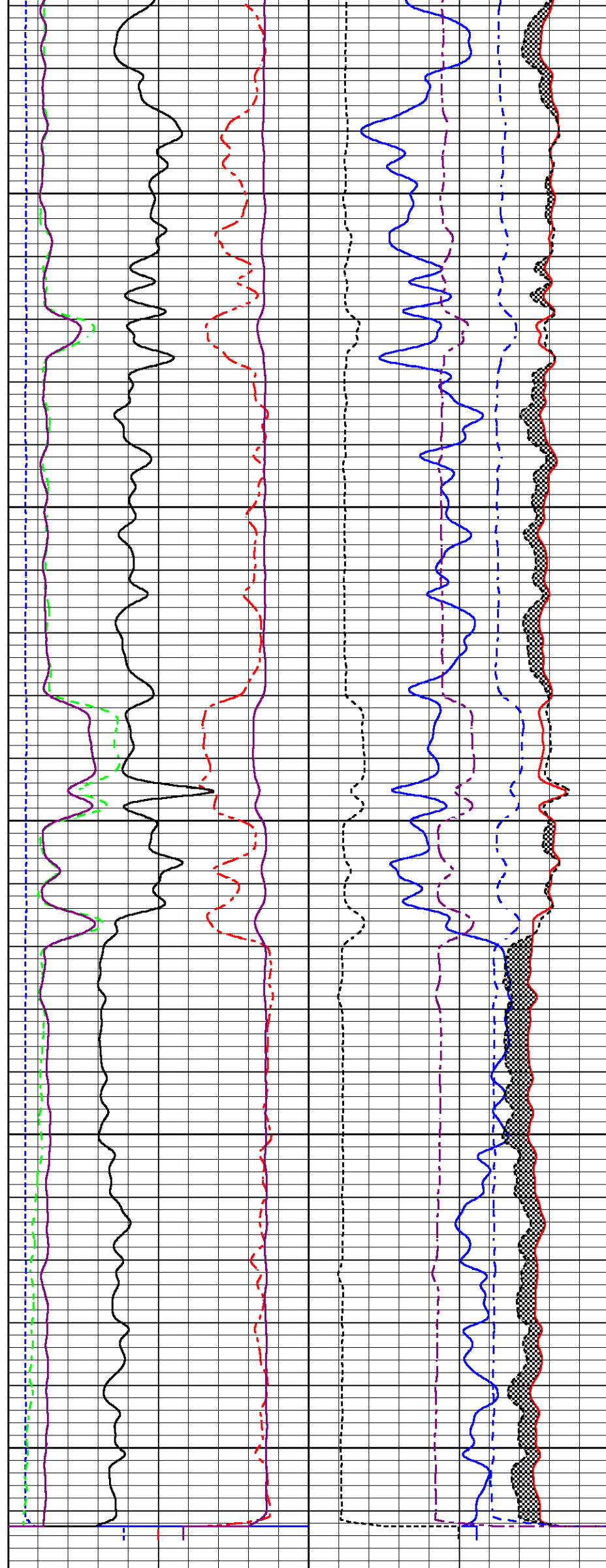






6700

6800



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
-540	CCL	60		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

5" = 100'

HALLIBURTON

REPEAT LOG SECTION

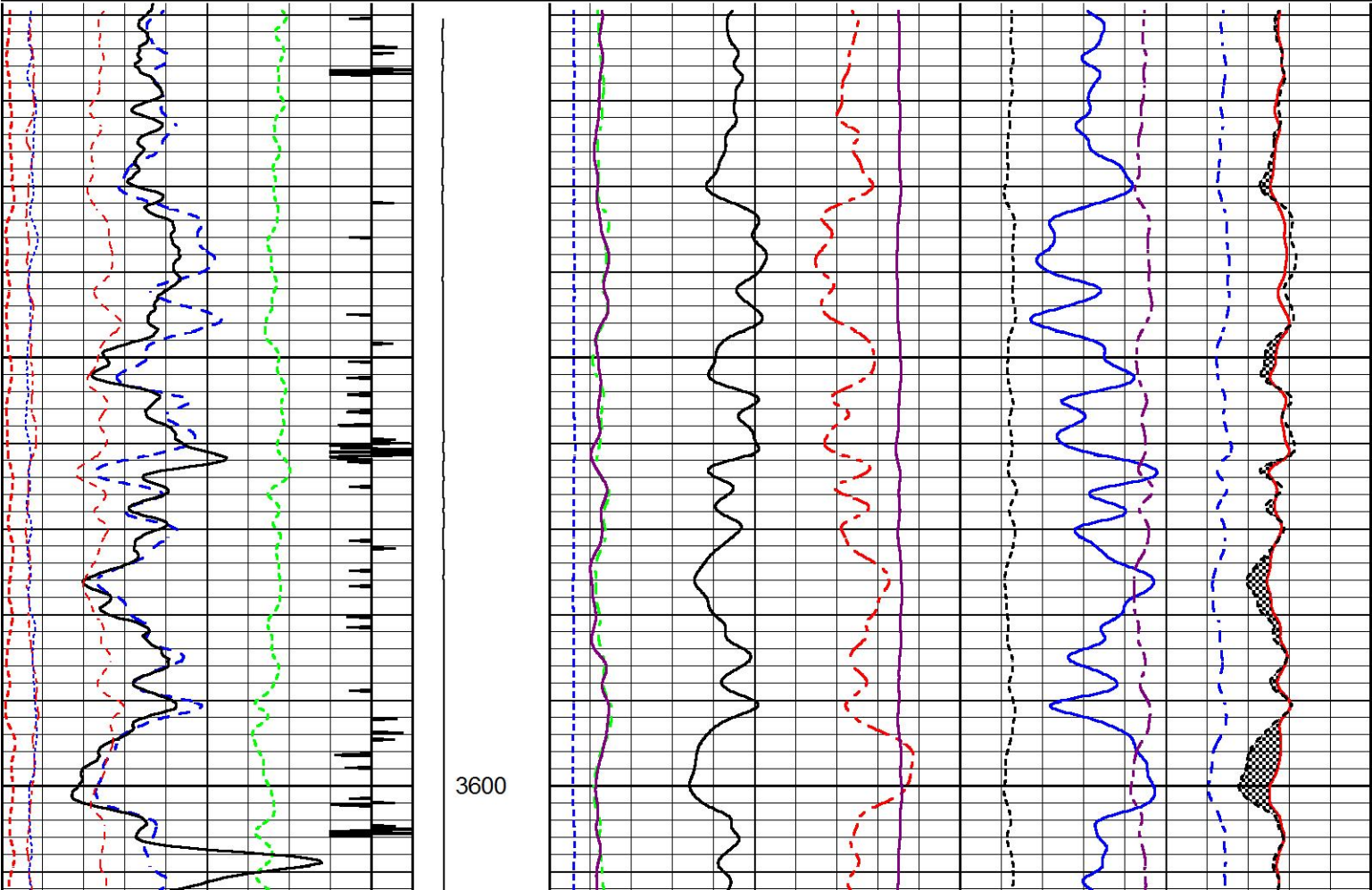
5" = 100'

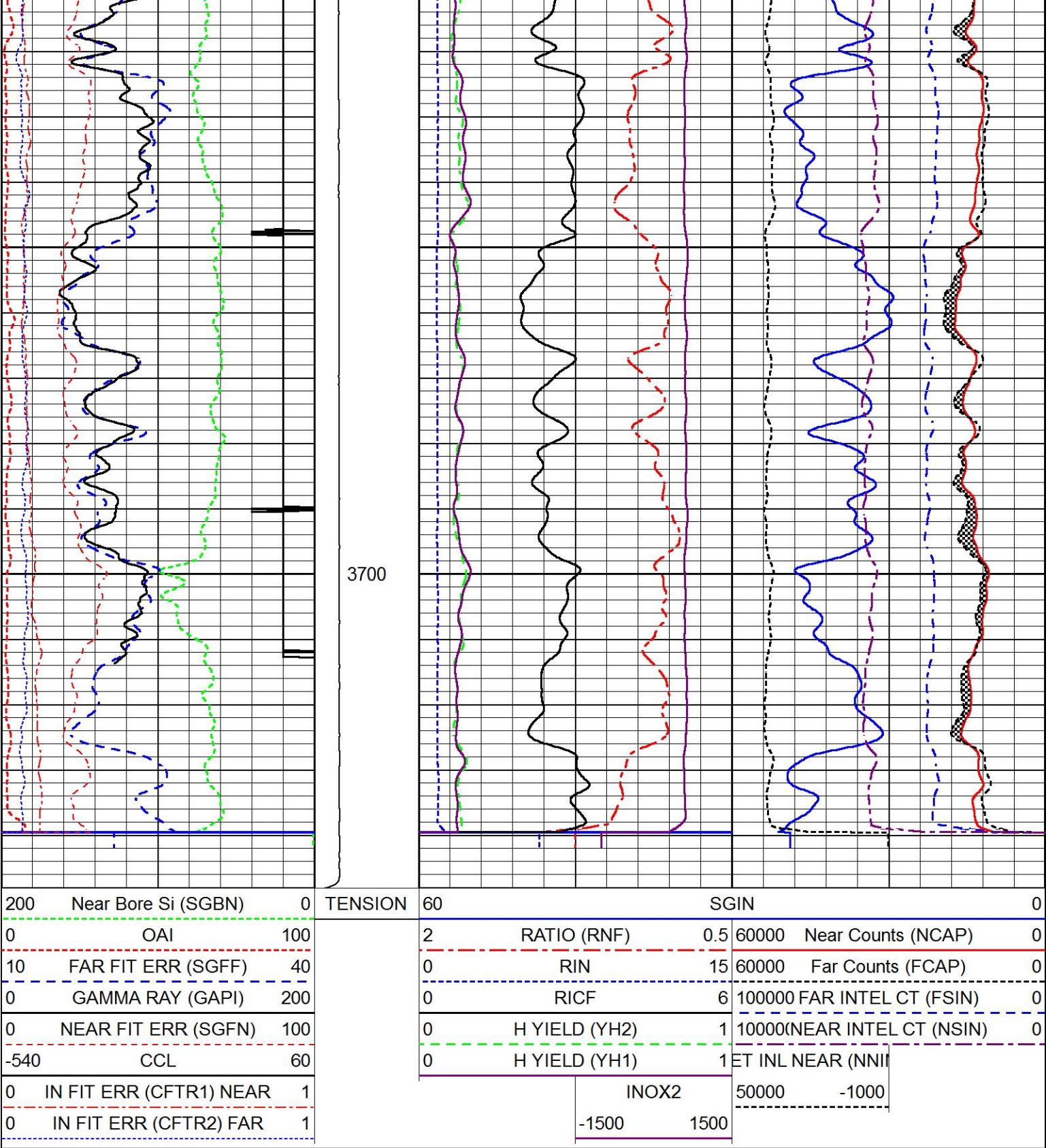
HALLIBURTON

Database File
Dataset Pathname
Presentation Format
Dataset Creation
Charted by

bat_24d_cmb.db
RMTRPT1
RMTE_M~1
Fri Jun 19 09:58:18 2015
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
-540	CCL	60		0	H YIELD (YH1)	1
0	IN FIT ERR (CFTR1) NEAR	1			INOX2	50000
0	IN FIT ERR (CFTR2) FAR	1			-1500	1500
						-1000





REPEAT LOG SECTION

HALLIBURTON

5" = 100'

Log Variables

DatabaseD:\Warrior_data\bat_24d_cmb.db
Dataset field/well/run1/MAIN1/_vars_

Top - Bottom

BHTEMP_Src	BHSAL2	BHSAL1	POROS2	POROS1	LTH	UHSGC	RHO CF
TEMP	0	1	0	1	Sandstone	NONE	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	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BITSIZE in	


lb/gal	in	in		ft	degF	in
804	0.25	4.5	0	0	100	7.875


Calibration Report	
Database File	bat_24d_cmb.db
Dataset Pathname	MAIN1
Dataset Creation	Fri Jun 19 10:33:43 2015
Reservoir Monitor Tool I Calibration Report	
Serial-Model:	12095949-A
Shop Calibration Performed:	Wed May 27 10:12:02 2015

Carbon/Oxygen Mode					
Stabilization					
Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	82.00	80.00	2.00	+/-15.00	V
ITCR2	3281	3250	31	+/-250	cps
Near Detector					
H	Channel	Expected Value	Amplitude	FWHM	Tol.
Fe	60	60 +/-2	0.0270	5.32	<6.00
NGAIN = 0.993	207	206 +/-2	0.0961	-----	-----
NZOFF = 0.7					
Far Detector					
H	Channel	Expected Value	Amplitude	FWHM	Tol.
Fe	60	60 +/-2	0.0360	5.72	<6.50
FGAIN = 0.991	209	208 +/-2	0.0918	-----	-----
FZOFF = 0.5					
Flask Temperature	63.5 degF				
Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.45	0.45	-0.00	+/-0.02	
LIRI2	1.65	1.64	0.01	+/-0.05	
TCCR2	5061	5000	61	+/-1000	cps
ITCR2	3240	3200	40	+/-250	cps

Sigma Mode					
Stabilization					
Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	82.00	80.00	2.00	+/-15.00	V
FCAP	10080	10000	80	+/-500	cps
Horizontal Water Tank					
Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.91	0.95	-0.04		
N/F Inel Norm	0.58	0.61	-0.03		
RNF	1.10	1.07	0.03	+/-0.12	
RINC	1.71	1.64	0.07	+/-0.18	
SGFN	24.09	24.00	0.09	+/-0.50	cu
SGFF	22.90	22.85	0.05	+/-0.50	cu
FSIN	24192	24000	192	+/-2000	cps
FCAP	10177	10000	177	+/-1000	cps
NFTR	0.84			<5.00	
FFTR	0.88			<5.00	
NRKG	179			<500	cps

FBKG	93	0.40	0.40	0.00	+/-0.10	cps
RTN						usec
RTF	0.43	0.40		0.03	+/-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					
Cement Bond Log Shop Calibration Report						
Serial-Model:		11817843-A				
Calibration Performed:		Wed Jun 17 01:49:39 2015				
Free Pipe Calibration						
TT	Measured	Units				
	246.9	usec				
Amplitude	574.2	mV				
Log Base Line	-7.6	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					
Gamma Ray Calibration Report						
Type / Serial:		002 / 11495480				
SHOP CALIBRATION		Fri Jun 19 09:22:14 2015				
	Counts/Sec.	Gain	Offset	Jig	Units	
Background	38.3				cps	
Calibrator	331.7				cps	
		1.3904			GAPI/cps	
PRIMARY VERIFICATION		Fri Jun 19 09:24:24 2015				
Background	51.8				cps	
Calibrator	462.0				cps	
Difference				410.2	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)
			STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
CCL	35.09					

GR	32.83		TTTCU-002 (11495480) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
			XHU-003 (12461939) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
			CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
Temp	23.11					
TT3FT AMP3FT	20.86		HCBLM-A (11817843) Halliburton HCBLM Tool	9.38	2.75	116.00
	20.86					
			CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
RmtTFGT RmtTNGT	8.47 7.97		RMTI-A (12095949) Halliburton RMTI Tool	14.00	2.13	77.00
RmtFP5V RmtCommFWar	0.22 0.22		BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20
LOCTIM	0.00					
UTCTIM	0.00					
LLMTEN	0.00					
Dataset: bat_24d_cmb.db: field/well/run1/MAIN1						
Total length: 38.66 ft						
Total weight: 352.20 lb						
O.D.: 3.13 in						

Company	URSA OPERATING CO., LLC.					
Well	BAT 24D-18-07-95					
Field	PARACHUTE					
County	GARFIELD		State	CO		

County	GARFIELD	State	CO
HALLIBURTON	RESERVOIR MONITOR TOOL - ELITE		