

HALLIBURTON

RESERVOIR MONITOR
TOOL - ELITE

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

Company

URSA OPERATING CO., LLC.

Well

BAT 24A-18-07-95

Field

PARACHUTE

County

GARFIELD

State

CO

API No.:

05-045-20530-0000

Serv #:

902507863

Other Services

Location:

SURFACE HOLE LOCATION:
0266' FSL & 0824' FEL

BOTTOM HOLE LOCATION:
1151' FSL & 1949' FWL

CBL
GAUGE RING

Sec: 18

Twp: 07S

Rge: 95W

Permanent Datum

GROUND LEVEL

Elevation

5441'

Log Measured From

KB

17 Ft. above perm. datum

K.B. 5458'
D.F. 5457'
G.L. 5441'

Drilling Measured From

KB

Date @ Time Logged

20 JUNE 2015

Type Fluid in Hole

WATER

Run No.

ONE

Density of Fluid

8.4#

Depth - Driller

7237'

Fluid Level

FULL

Depth - Logger

7018'

Cement Top Est. Logged

SEE LOG

Bottom - Logged Interval

7018'

Equipment / Location

10971668 / G.J.

Top - Log Interval

3630'

Recorded by

D. SOLIS

Max. Recorded Temp.

227 DEG F

Witnessed by

UNATTENDED

CEMENTING DATA

Surface

Protection

String

Liner

Date / Time Cemented

N/A

String

N/A

Primary / Squeeze

Production

N/A

Expected Compressive Strength

psi@ hrs

psi@ hrs

psi@ hrs

Cement Volume

Cement Type / Weight

/

/

/

Formulation

Mud Type / Mud Wgt.

/

/

/

Borehole Record

From

To

Size

Weight

From

To

Run Number

ONE

12.25"

SURFACE

1894'

8.625"

32.0#

SURFACE

1894'

TWO

7.875"

894'

7237'

4.5"

11.6#

SURFACE

7237'

<<< 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: 20 JUNE 2015 IS THE PRIMARY DEPTH REFERENCE FOR THIS WELL.

GR-CBL-RMT RAN IN COMBINATION.

LOG INTERVALS PER CUSTOMER REQUEST.

SHORT JOINTS @: 3035' - 3045', 5608' - 5618', AND 6520' - 6530'.

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES.

Service Ticket No.	902507863	API No.	05-045-20530-0000	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.	11495480	Serial No.	11817843	Serial No.	12095949
Model No.	TTTC-U-002	Model No.	CBL-M	Model No.	RMTI-A
Diameter	1.688"	Diameter	2.75"	Diameter	2.125"
LOGGING DATA					
General Data					
Pass	Depths		Well Head	Speed	Logging Run Comments
No	From	To	Pressure	Ft/Min	

No.	7018'	3630'	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		

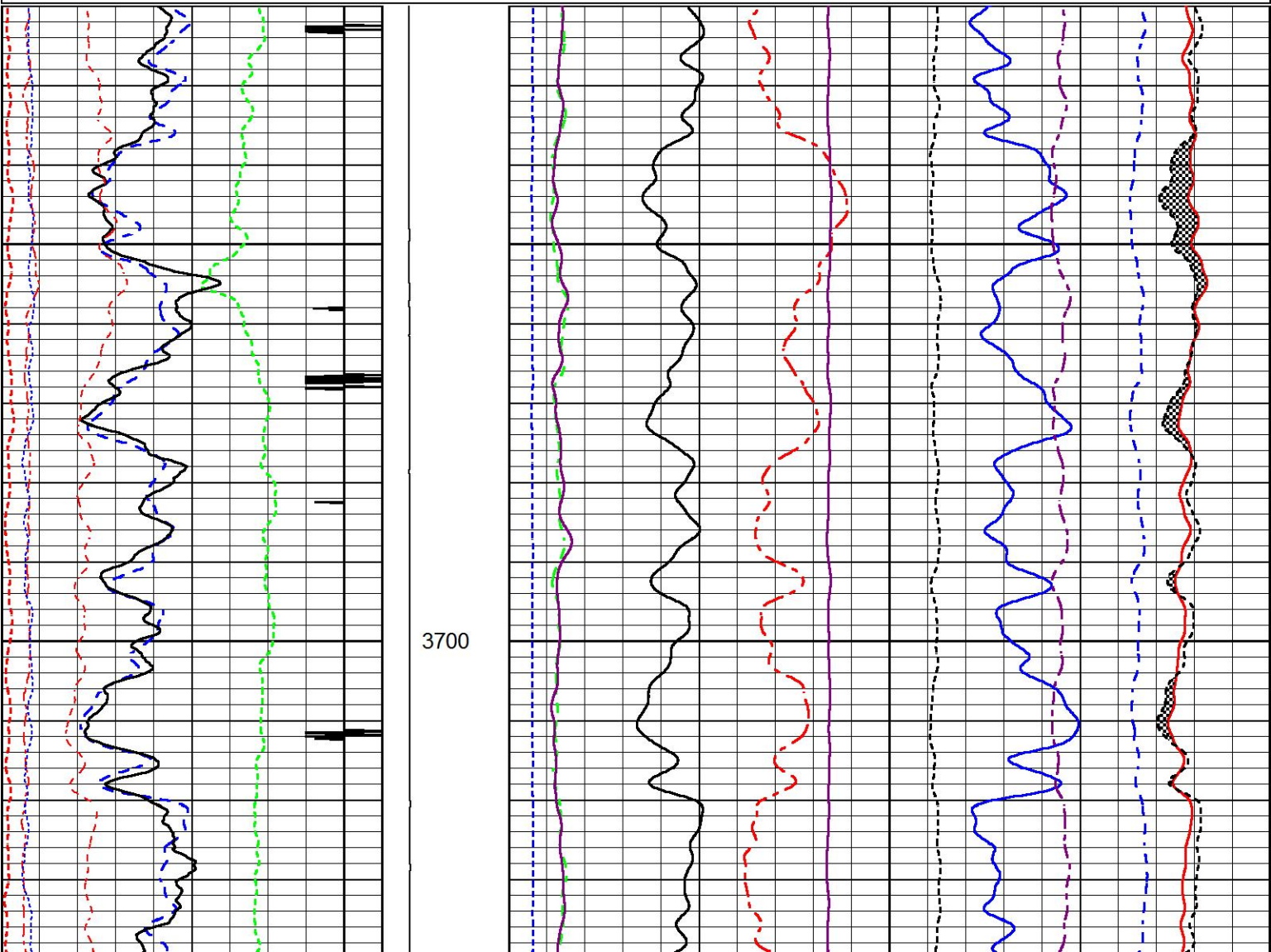
HALLIBURTON

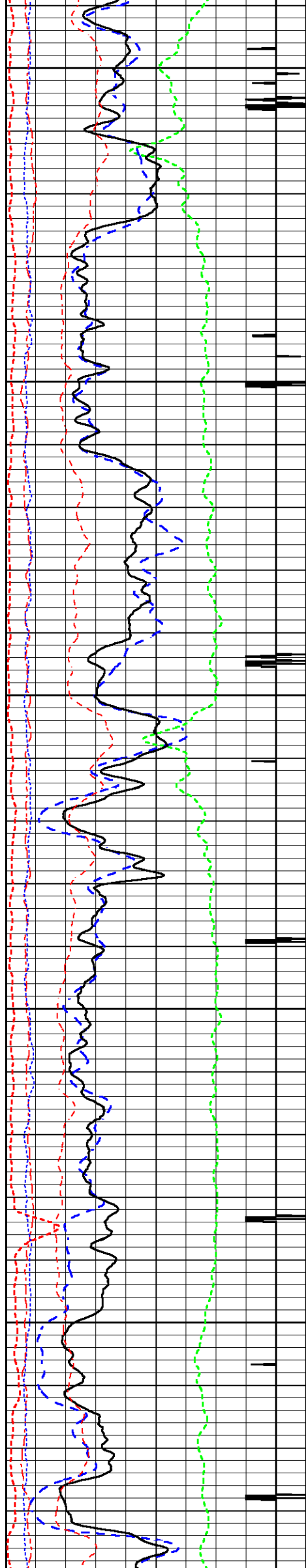
MAIN LOG SECTION

5" = 100'

Database File	bat_24a_cmb.db
Dataset Pathname	MAIN1
Presentation Format	RMTE_M~1
Dataset Creation	Sat Jun 20 12:07:34 2015
Charted by	Depth in Feet scaled 1:240

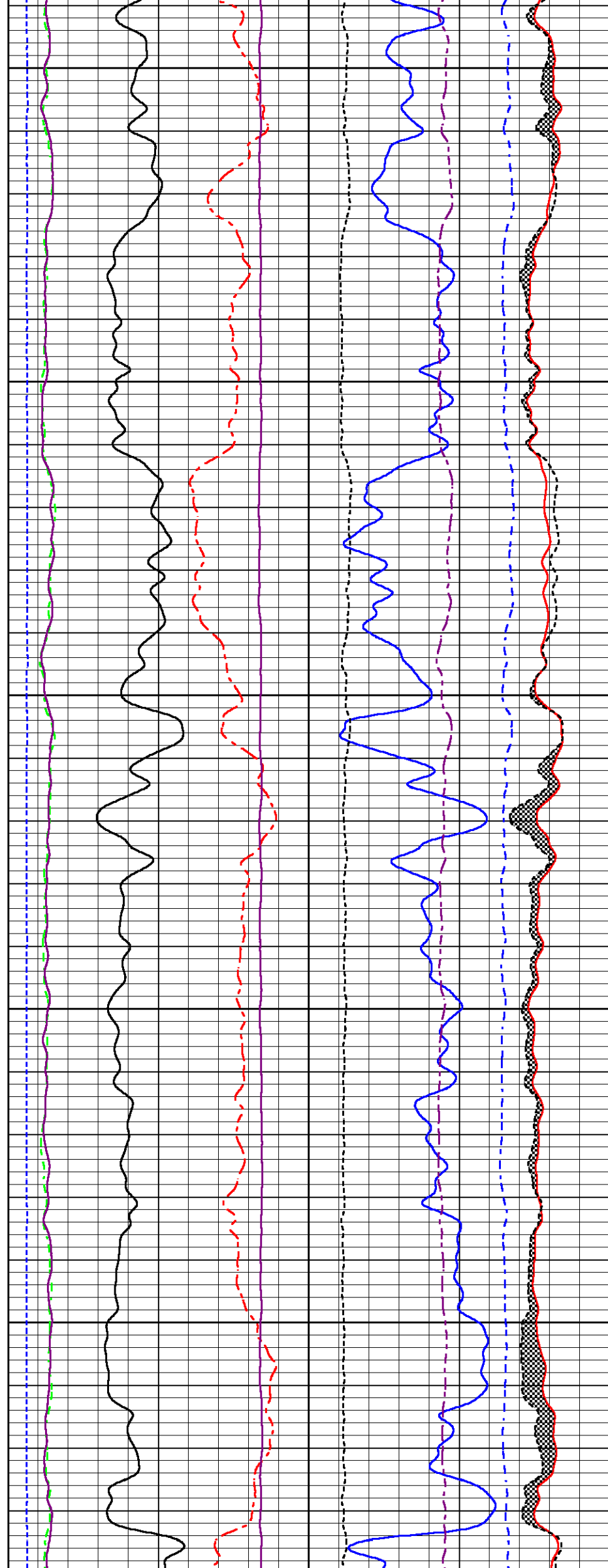
200	Near Bore Si (SGBN)	0	TENSION	60	SGIN	0
0	OAI	100		2	RATIO (RNF)	0.5
10	FAR FIT ERR (SGFF)	40		0	RIN	15
0	GAMMA RAY (GAPI)	200		0	RICF	6
0	NEAR FIT ERR (SGFN)	100		0	H YIELD (YH2)	1
-540	CCL	60		0	H YIELD (YH1)	1
0	IN FIT ERR (CFTR1) NEAR	1			INOX2	50000
0	IN FIT ERR (CFTR2) FAR	1			-1500	1500
	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

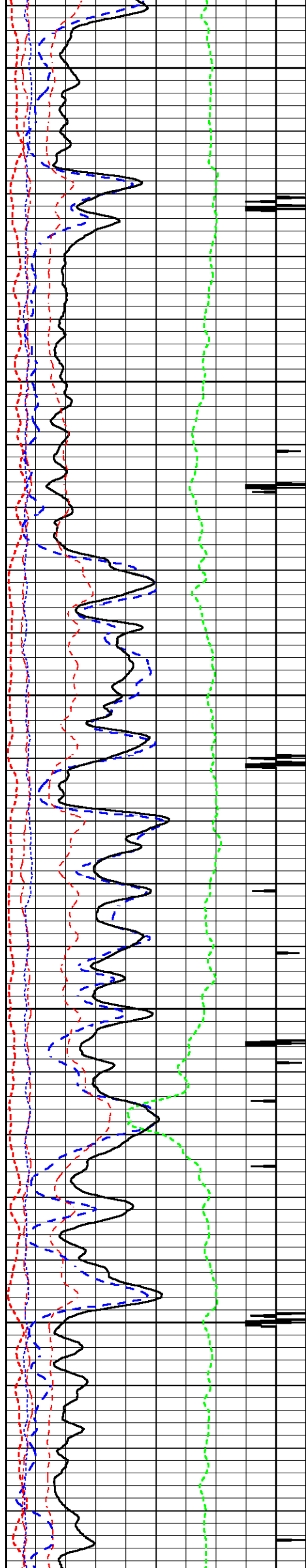




3800

3900

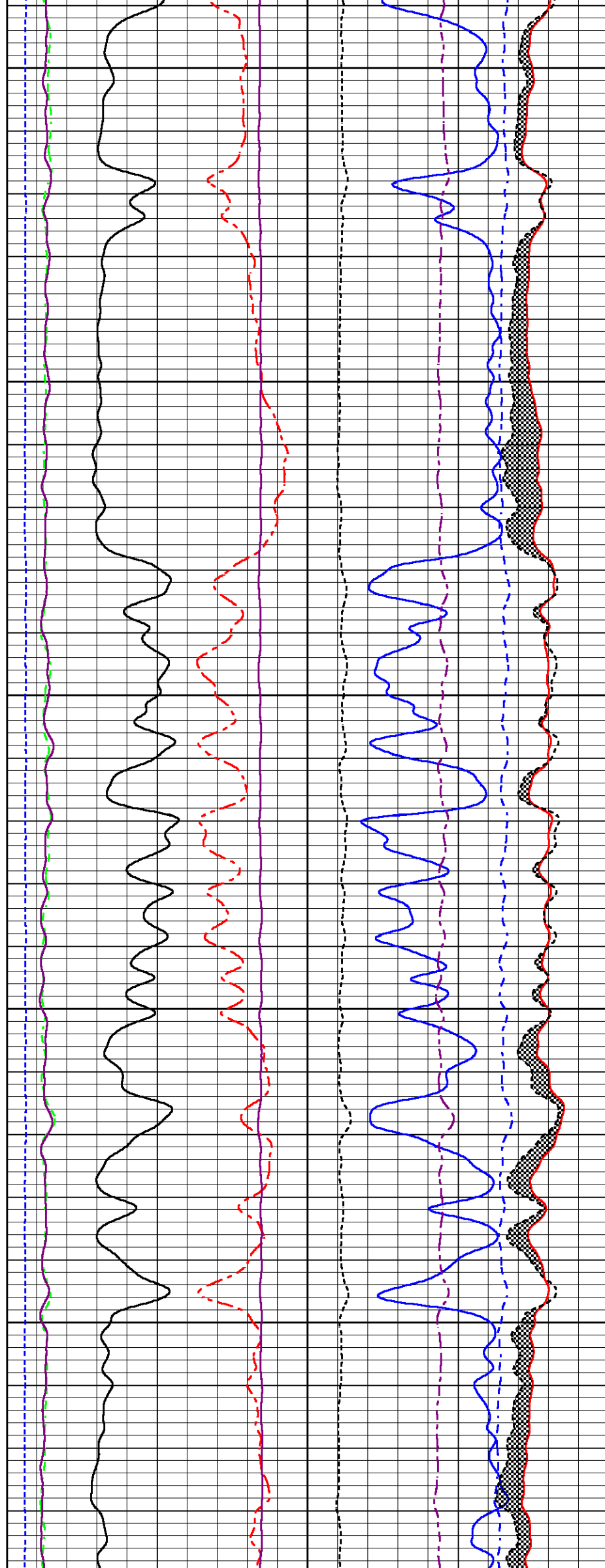


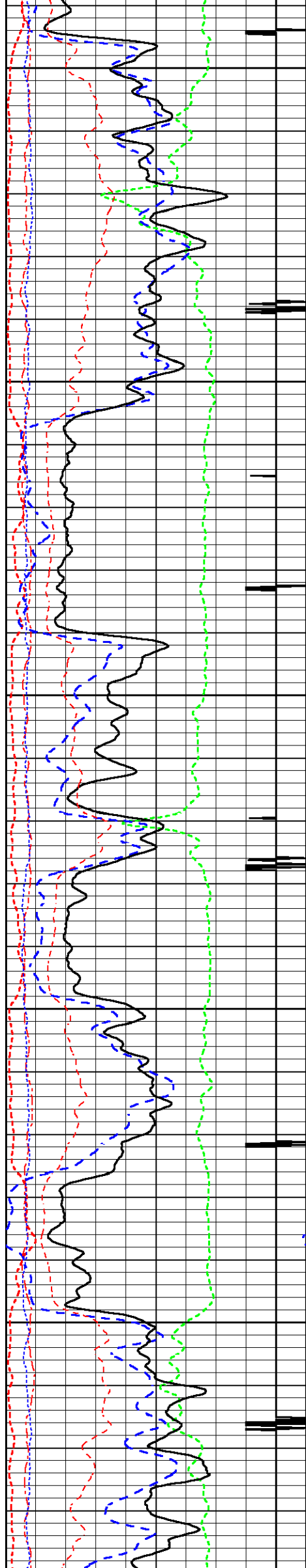


4000

4100

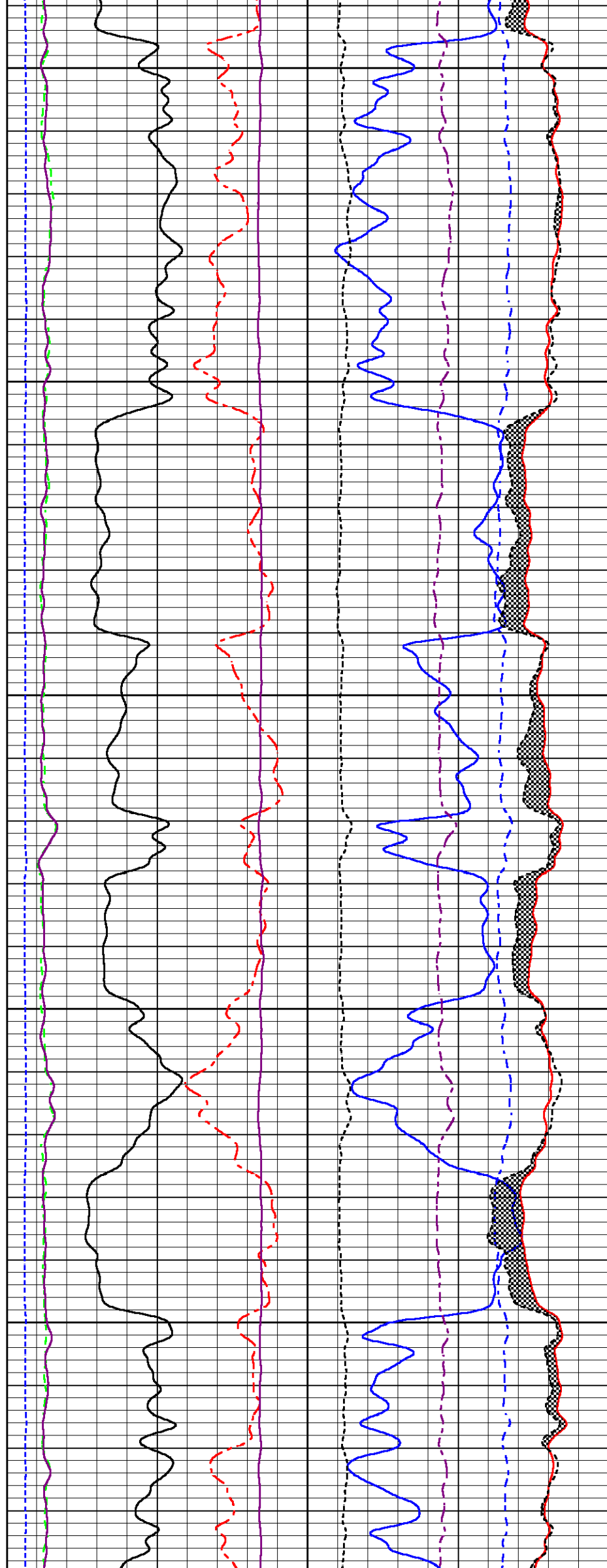
4200

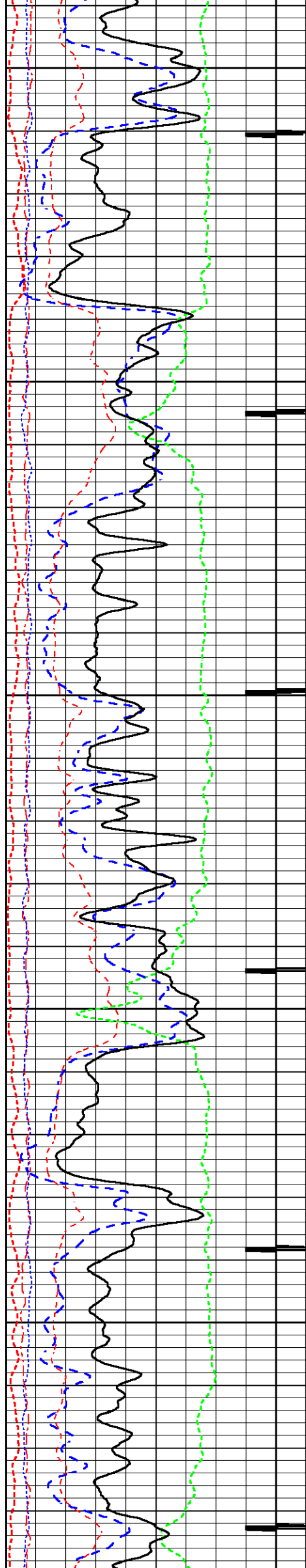




4300

4400

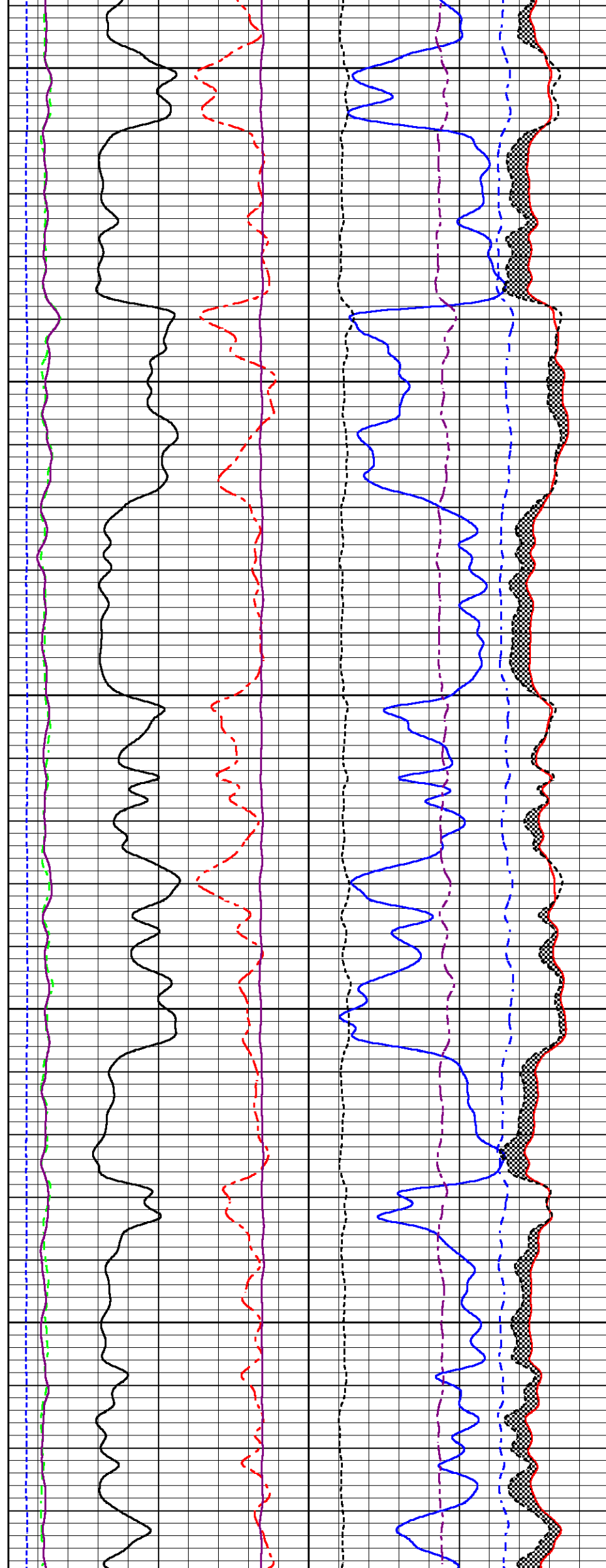


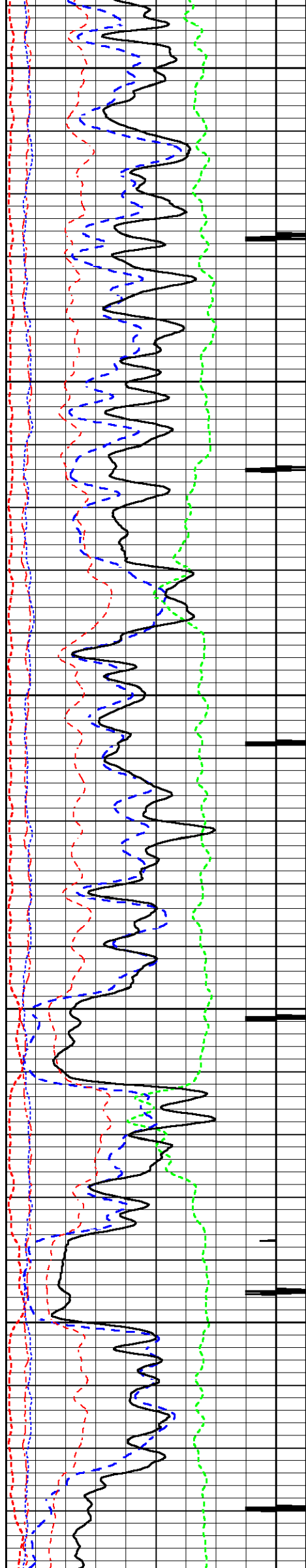


4500

4600

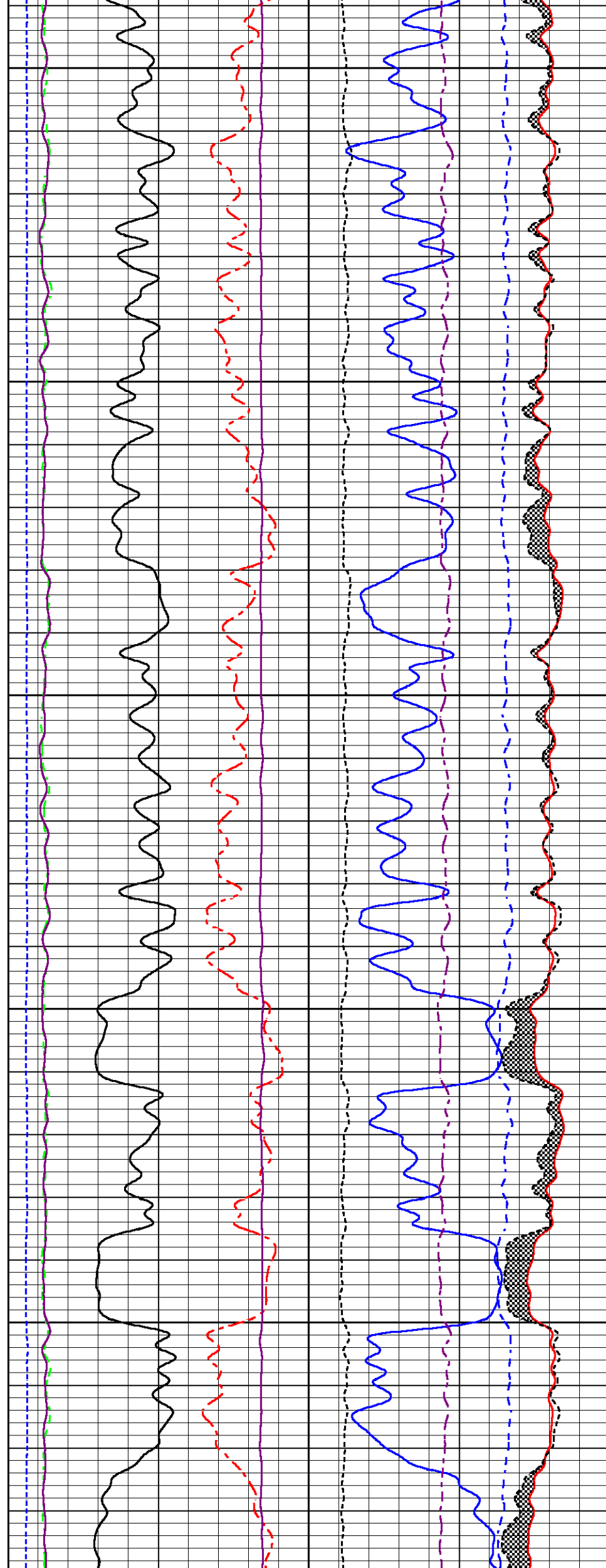
4700

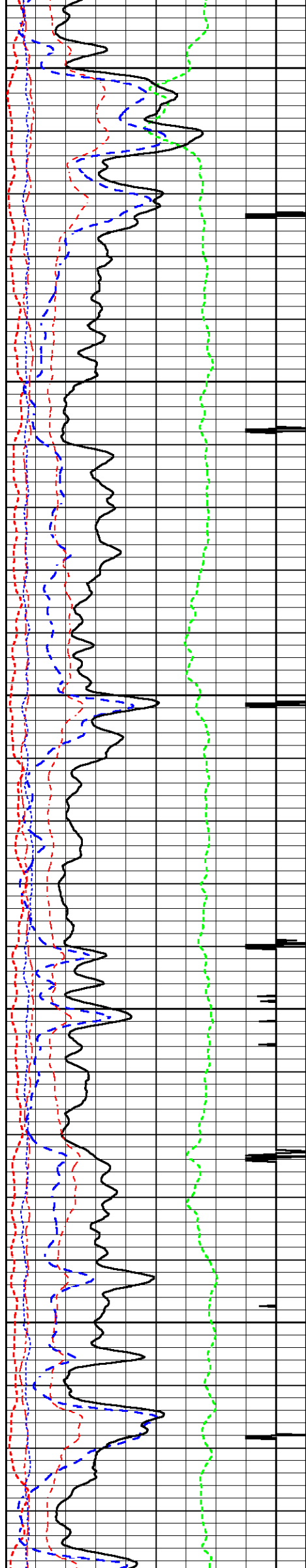




4800

4900

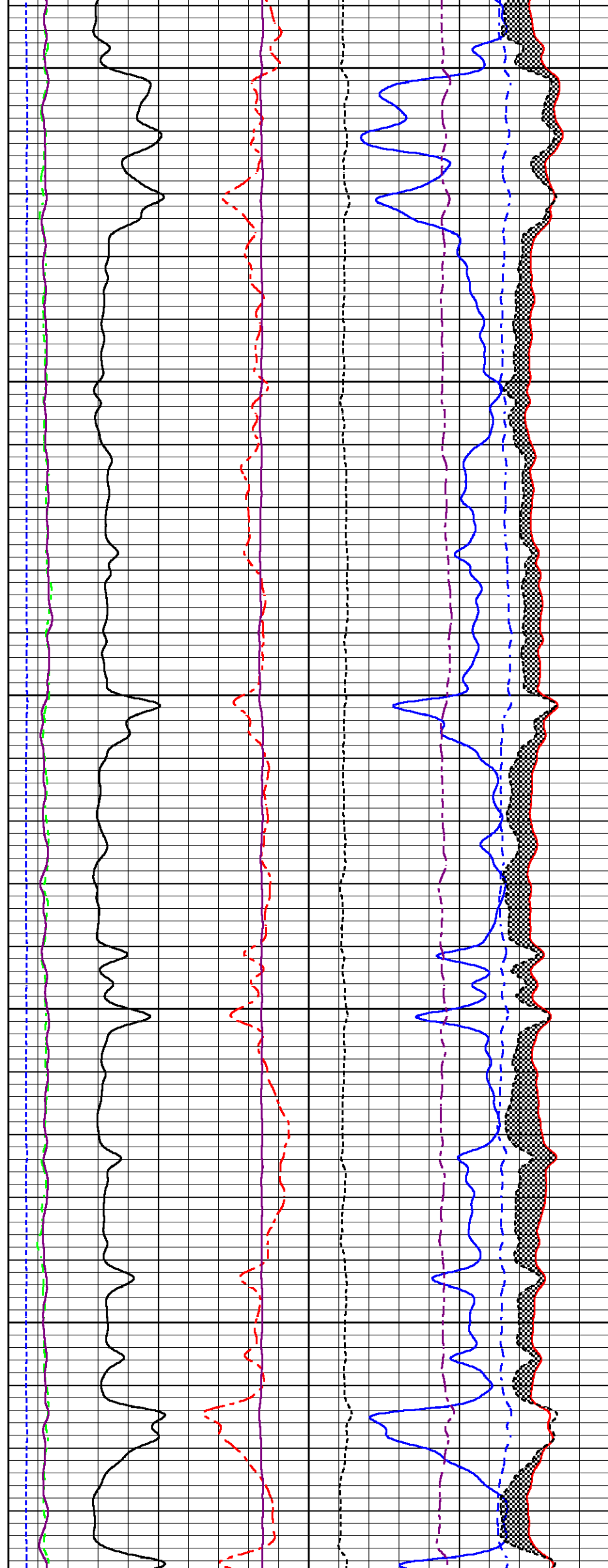


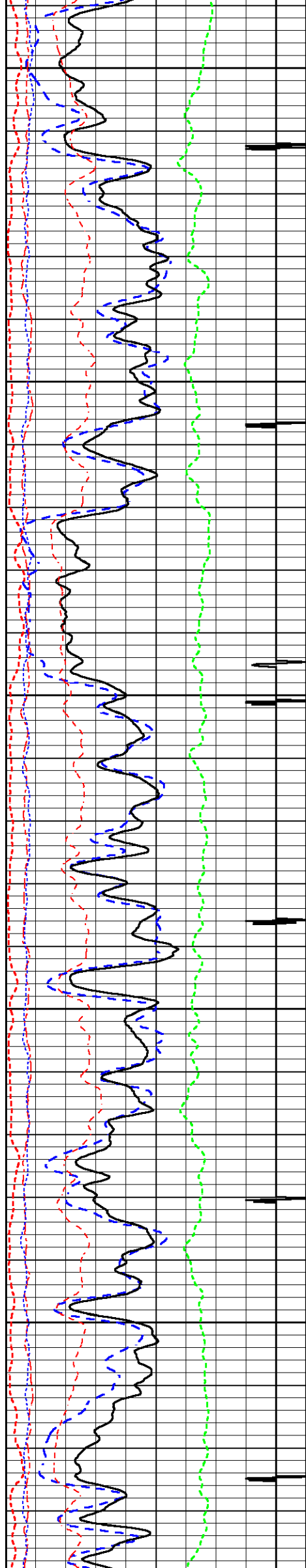


5000

5100

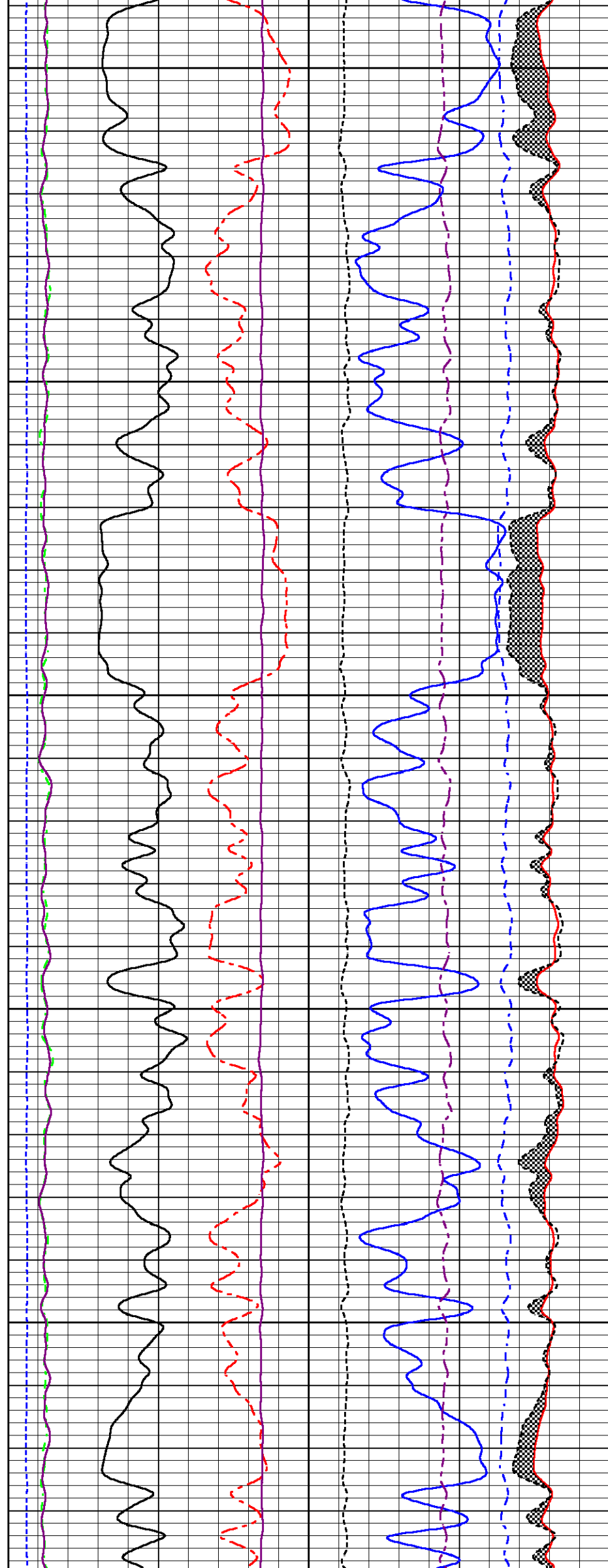
5200

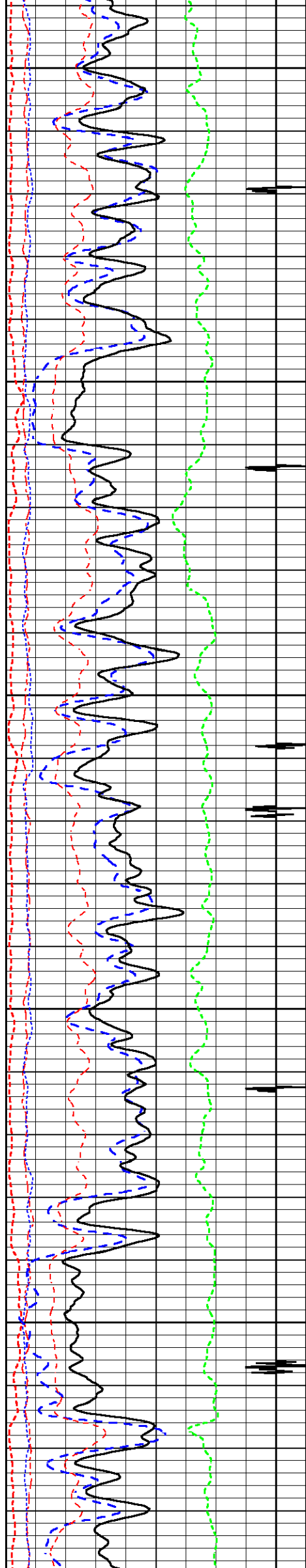




5300

5400

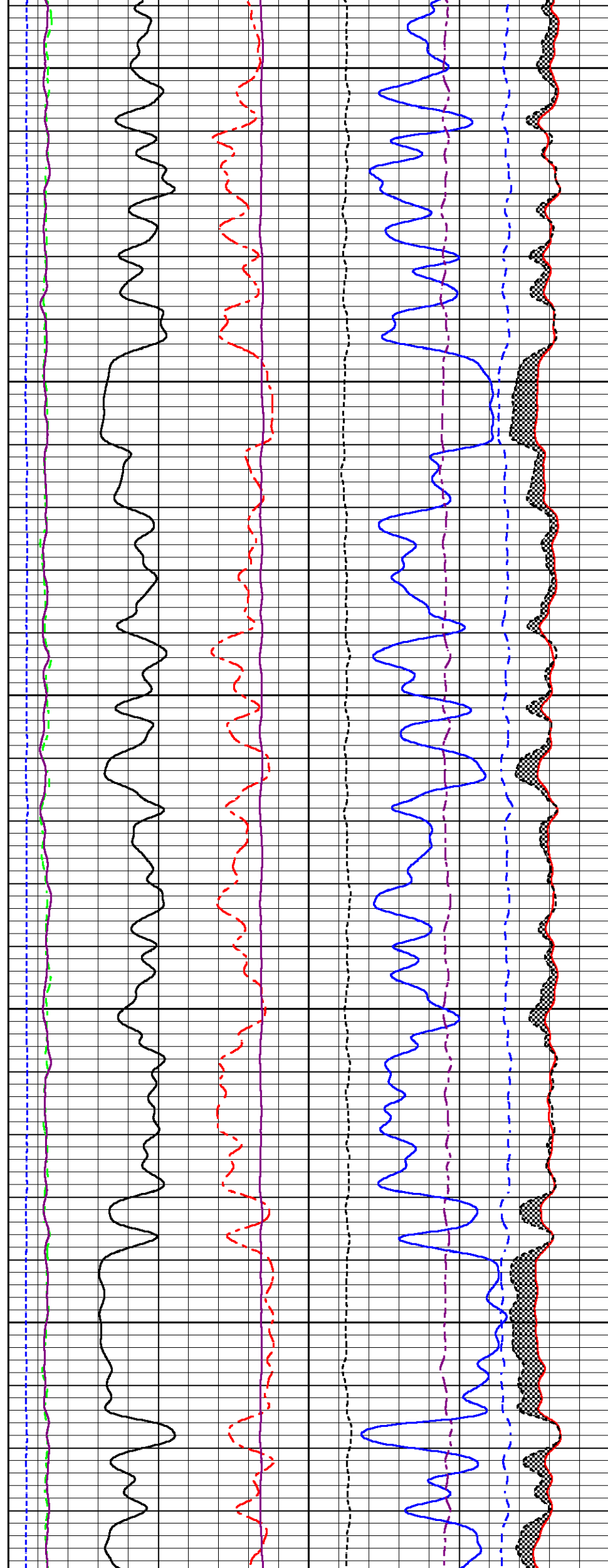


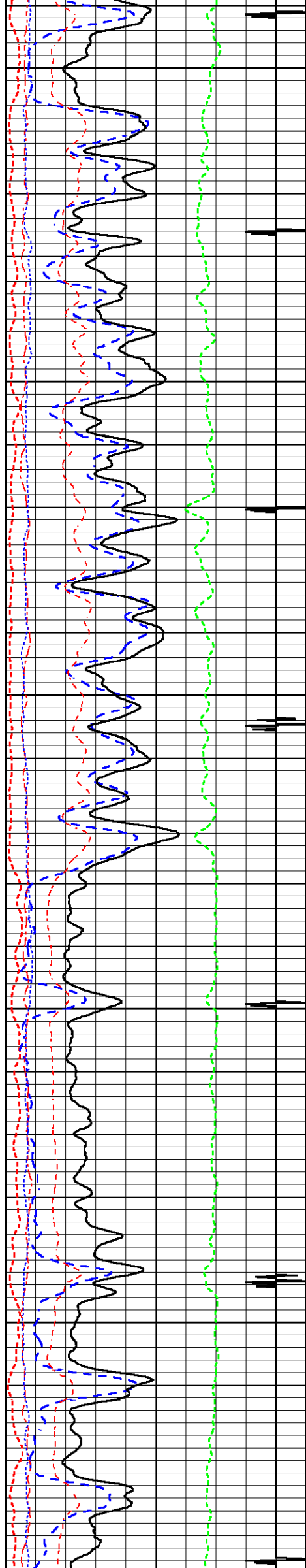


5500

5600

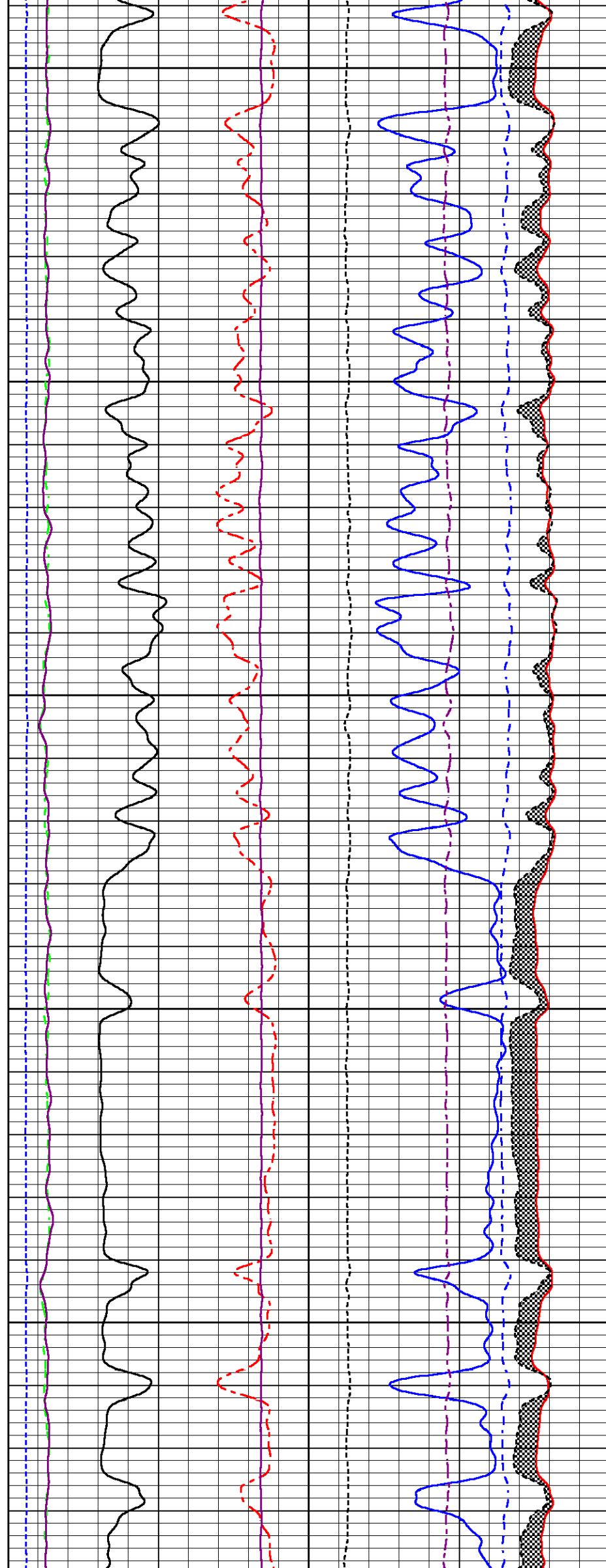
5700

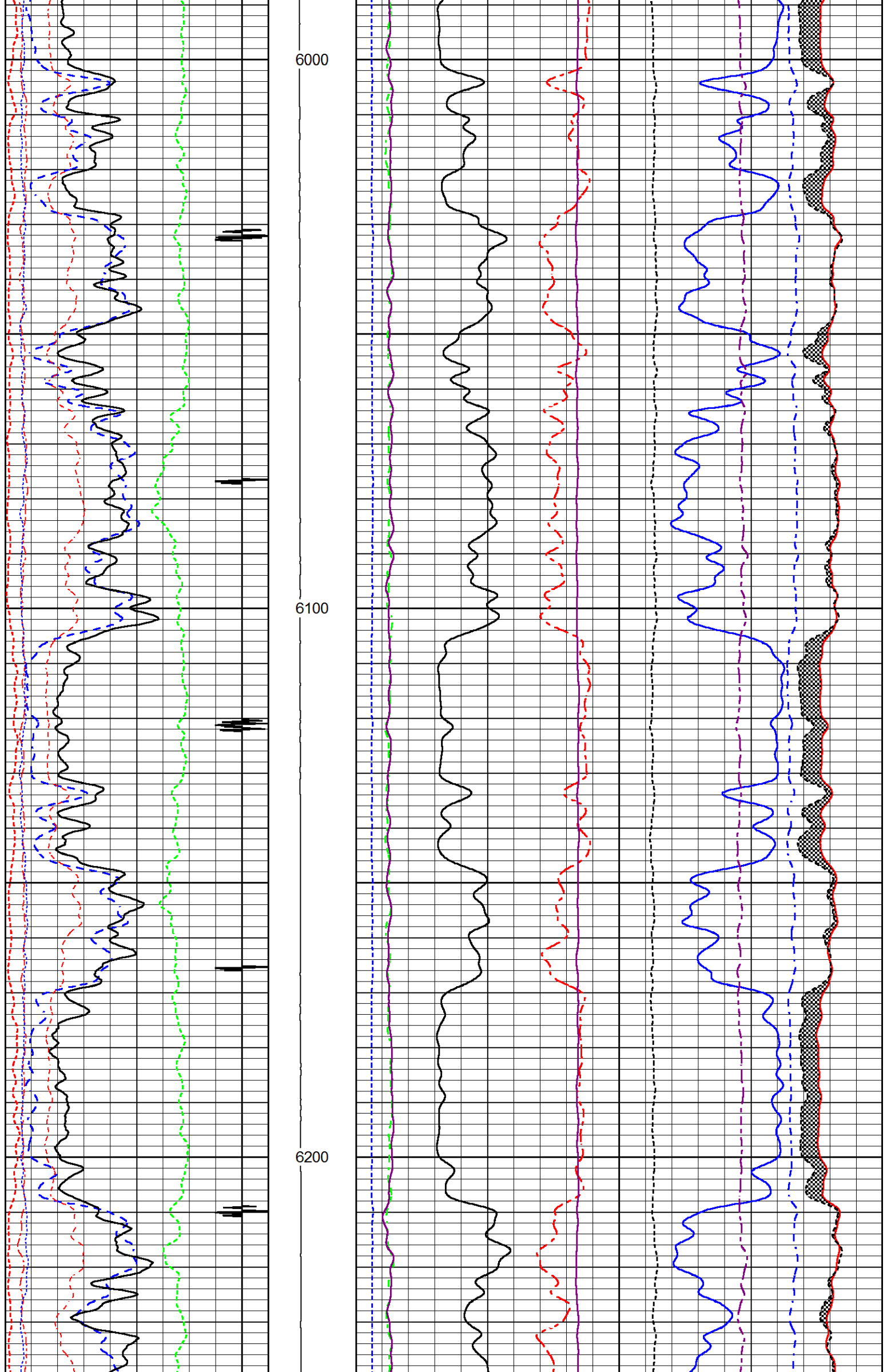


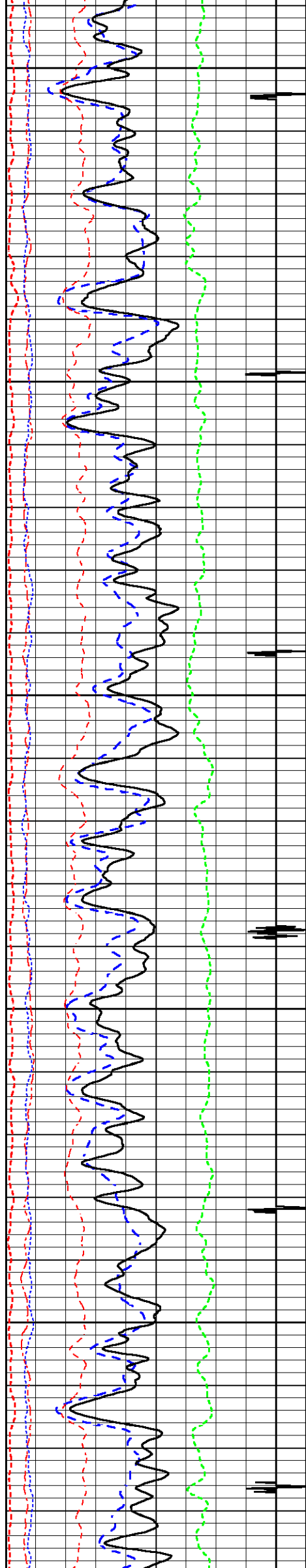


5800

5900

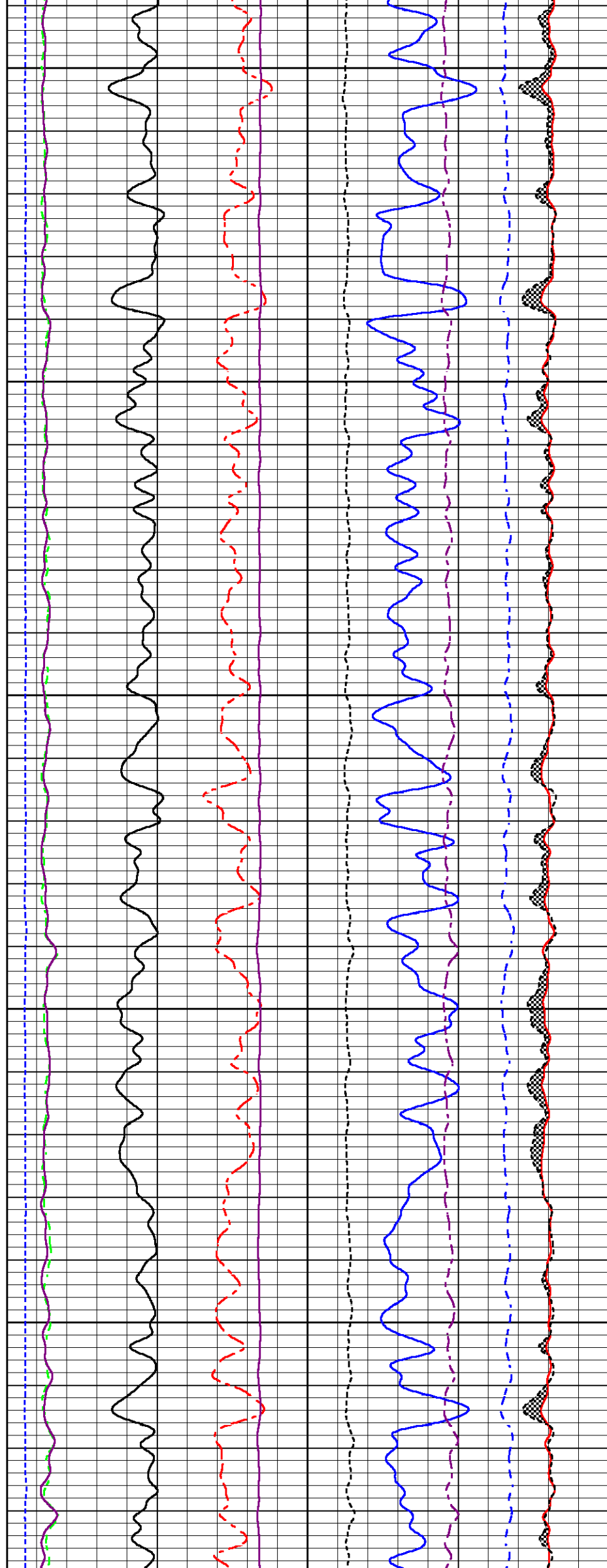


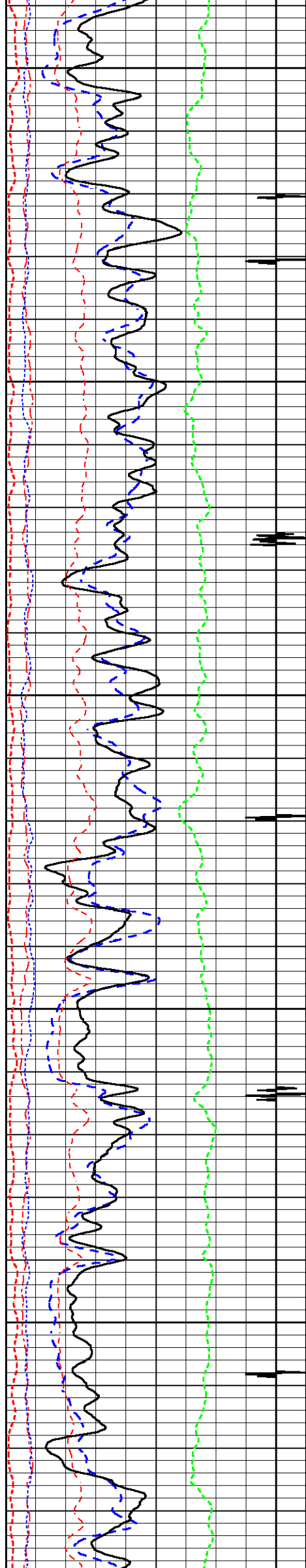




6300

6400

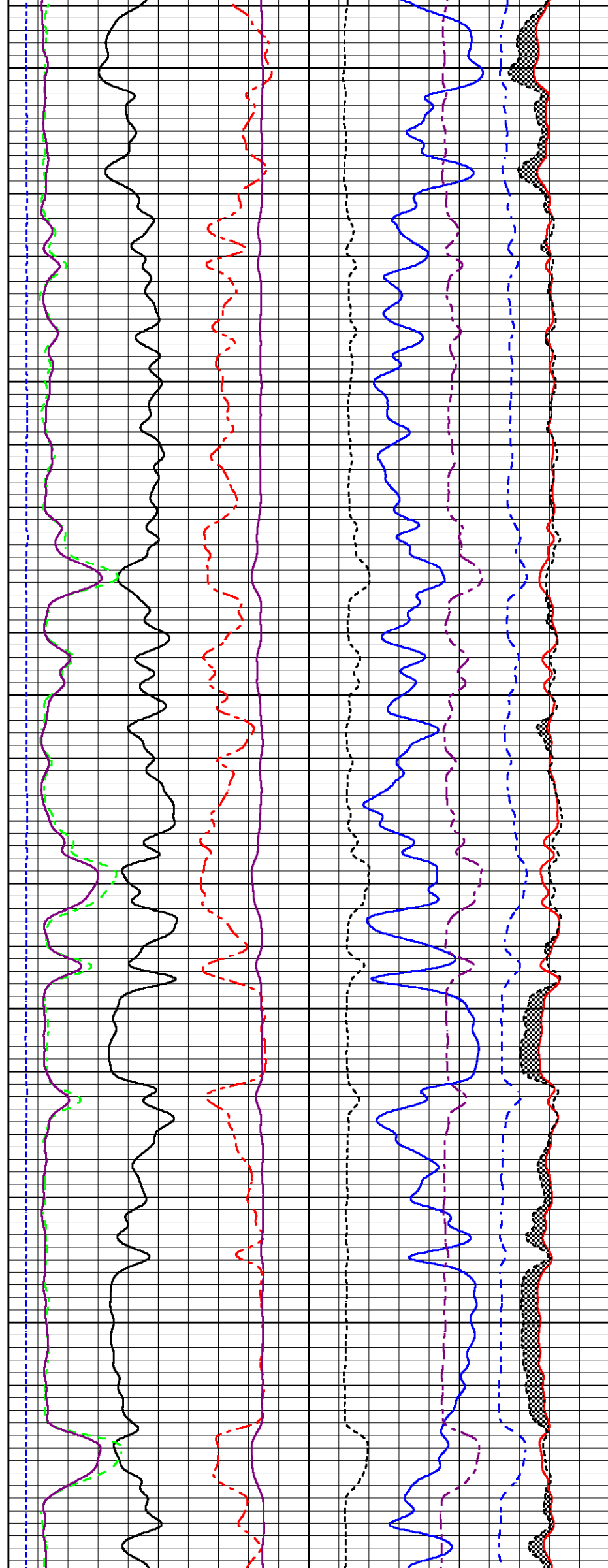


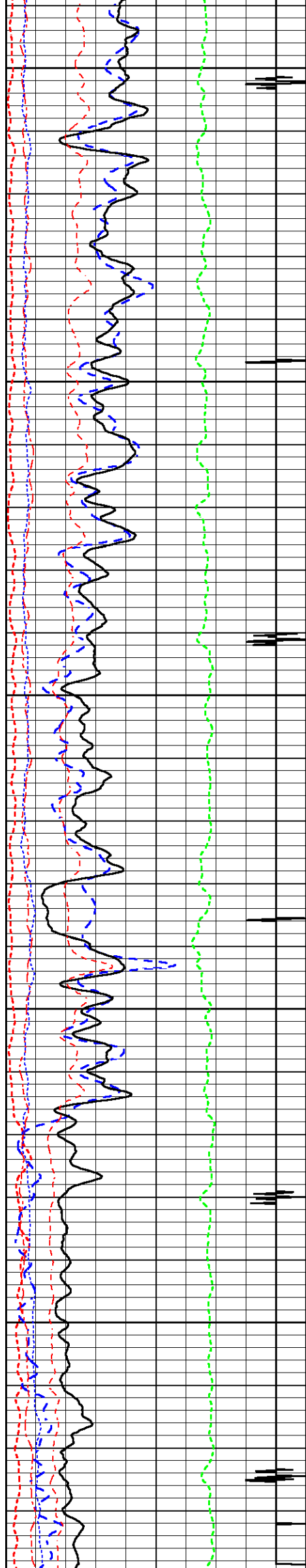


6500

6600

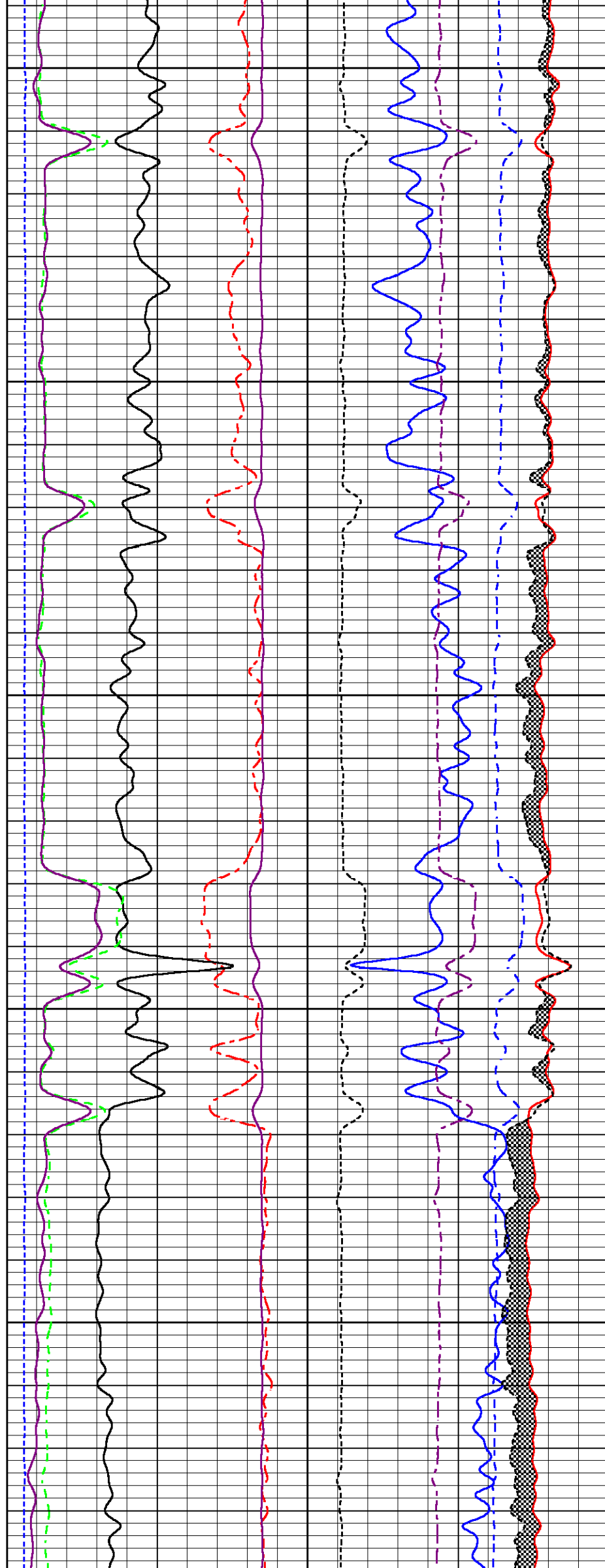
6700





6800

6900





200	Near Bore Si (SGBN)	0
0	OAI	100
10	FAR FIT ERR (SGFF)	40
0	GAMMA RAY (GAPI)	200
0	NEAR FIT ERR (SGFN)	100
-540	CCL	60
0	IN FIT ERR (CFTR1) NEAR	1
0	IN FIT ERR (CFTR2) FAR	1

TENSION	60	SGIN			0	
	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			

MAIN LOG SECTION

HALLIBURTON

5" = 100'

REPEAT LOG SECTION

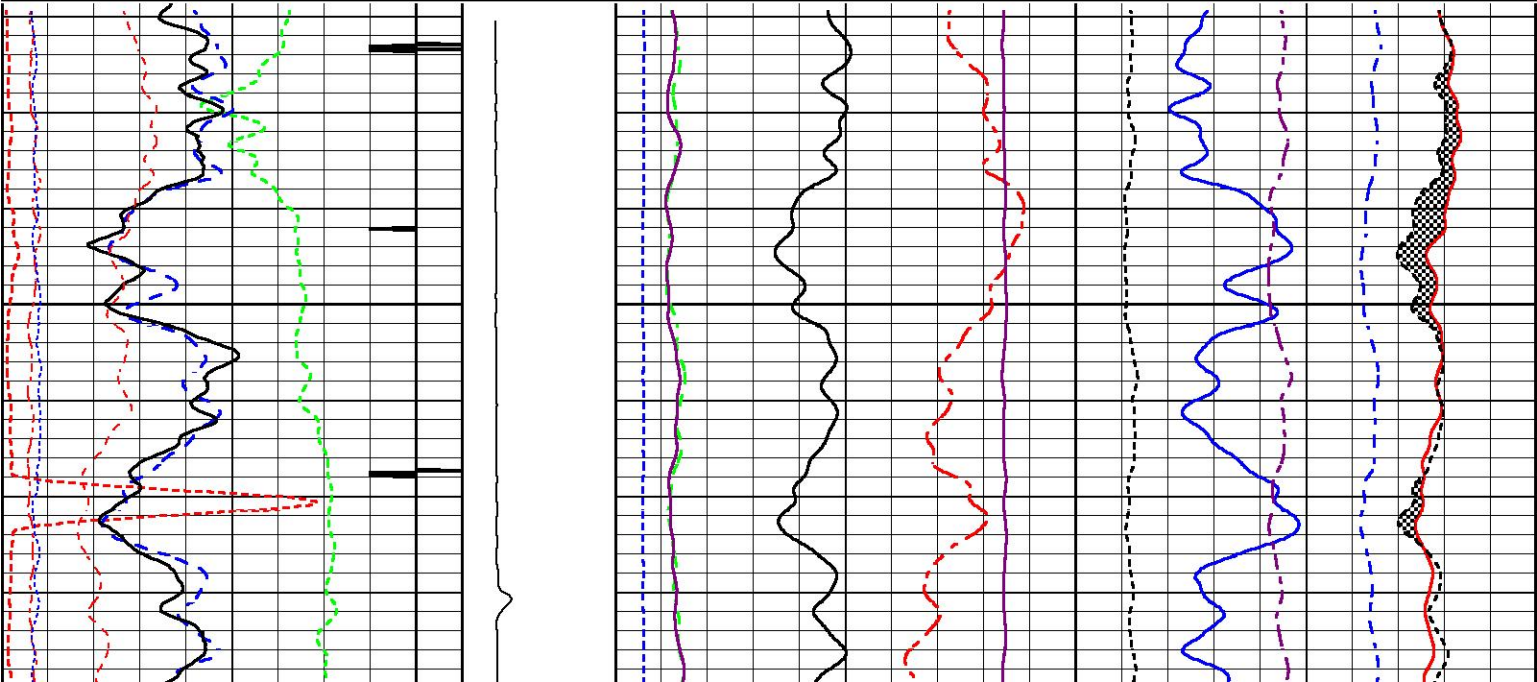
HALLIBURTON

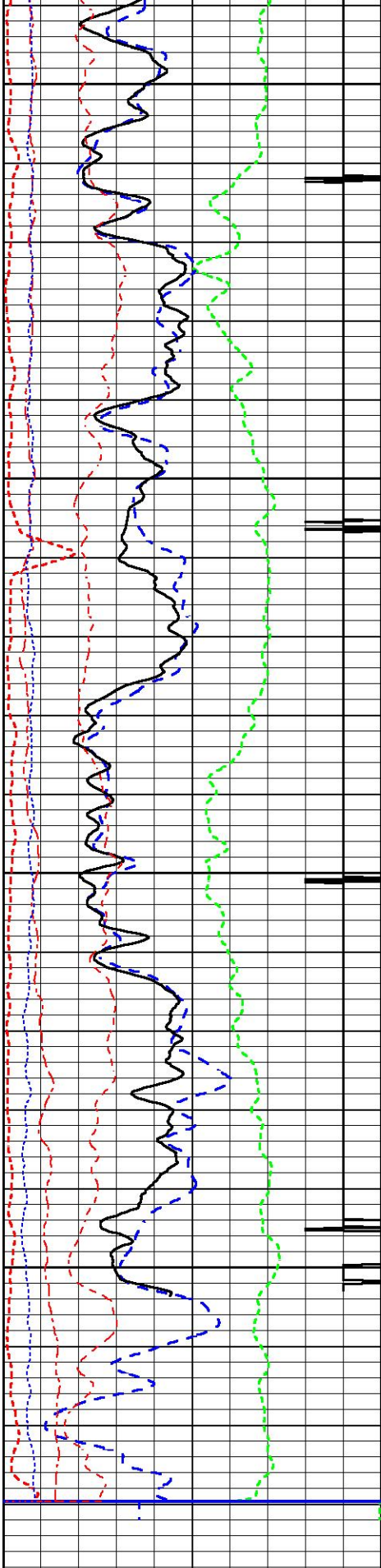
5" = 100'

Database File bat_24a_cmb.db
Dataset Pathname RMTRPT1
Presentation Format RMTE_M~1
Dataset Creation Sat Jun 20 11:26:42 2015
Charted by Depth in Feet scaled 1:240

200	Near Bore Si (SGBN)	0
0	OAI	100
10	FAR FIT ERR (SGFF)	40
0	GAMMA RAY (GAPI)	200
0	NEAR FIT ERR (SGFN)	100
-540	CCL	60
0	IN FIT ERR (CFTR1) NEAR	1
0	IN FIT ERR (CFTR2) FAR	1

TENSION	60		SGIN		0	
	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			





3700

3800

200	Near Bore Si (SGBN)	0
0	OAI	100
10	FAR FIT ERR (SGFF)	40
0	GAMMA RAY (GAPI)	200
0	NEAR FIT ERR (SGFN)	100
-540	CCL	60
0	IN FIT ERR (CFTR1) NEAR	1
0	IN FIT ERR (CFTR2) FAR	1

TENSION	60	SGIN				0
	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			

Log Variables

DatabaseD:\Warrior_data\bat_24a_cmb.db
Dataset field/well/run1/MAIN1/_vars_

Top - Bottom

BHTEMP_Src	BHSAL2	BHSAL1	POROS2	POROS1	LTH	UHSGC	RHO�F
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 804	CASETHCK in 0.25	CASEOD in 4.5	PERFS 0	TDEPTH ft 0	BOTTEMP degF 100	BITSIZE in 7.875	

Calibration Report

Database File bat_24a_cmb.db
Dataset Pathname MAIN1
Dataset Creation Sat Jun 20 12:07:34 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

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0270	5.32	<6.00
Fe	207	206 +/-2	0.0961	-----	-----
NGAIN = 0.993		NZOFF = 0.7			

Far Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0360	5.72	<6.50
Fe	209	208 +/-2	0.0918	-----	-----
FGAIN = 0.991		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	
NBKG	179			<500	cps
FBKG	93			<500	cps
RTN	0.40	0.40	0.00	+/-0.10	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		
	Measured	Units
TT	246.9	usec
Amplitude	574.2	mV
Log Base Line	-7.6	mV



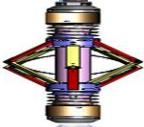

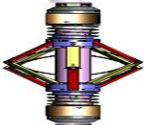

Calibration References and Gain


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		Sat Jun 20 07:02:20 2015			
	Counts/Sec.	Gain	Offset	Jig	Units
Background	43.9				cps
Calibrator	341.5				cps
		1.3711			GAPI/cps
PRIMARY VERIFICATION		Sat Jun 20 07:04:41 2015			
Background	58.7				cps
Calibrator	472.4				cps
Difference				413.8	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	35.09		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
GR	32.83		TTTCU-002 (11495480) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
Temp	23.11		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
TT3FT	20.86		HCBLM-A (11817843) Halliburton HCBLM Tool	9.38	2.75	116.00
AMP3FT	20.86					
RmtTFGT	8.47		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
RmtTNGT	7.97					
RmtEP5V	0.22		RMTI-A (12095949) Halliburton RMTI Tool	14.00	2.13	77.00

RmtCommFWar	0.22				
LOCTIM	0.00				
UTCTIM	0.00				
LLMTEN	0.00				
		BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20
Dataset: bat_24a_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 24A-18-07-95				
Field	PARACHUTE				
County	GARFIELD		State	CO	
HALLIBURTON	RESERVOIR MONITOR TOOL - ELITE				