



**BOREHOLE COMPENSATED
SONIC LOG**

Company FG HOLL COMPANY, LLC
Well MILLARD TRUST #2-31
Field WILDCAT
County BARTON **State** KANSAS

Company FG HOLL COMPANY, LLC
Well MILLARD TRUST #2-31
Field WILDCAT
County BARTON
State KANSAS

Location: API #: 15-009-26226-00-00
 180' E OF NE NE SE
 2310' FSL & 150' FEL
 SEC 31 TWP 18S RGE 13W
Permanent Datum GROUND LEVEL Elevation 1881'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING
Other Services CNL/CDL
 DIL/MEL
Elevation 1889'
K.B. N/A
D.F. N/A
G.L. 1881'

Date	8/24/2018						
Run Number	TWO						
Type Log	BHCS						
Depth Driller	3650'						
Depth Logger	3651'						
Bottom Logged Interval	3639'						
Top Logged Interval	850'						
Type Fluid In Hole	CHEMICAL						
Salinity, PPM CL	9400						
Density	8.8						
Level	FULL						
Max. Rec. Temp. F	113						
Operating Rig Time	6 HOURS						
Equipment -- Location	91 HAYS						
Recorded By	D. SCHMIDT						
Witnessed By	RYAN GREENBAUM						
Borehole Record			Casing Record				
Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0'	856'	8.625"	23#	0'	856'
TWO	7.875"	856'		TD			

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

**HOISINGTON,
SOUTH TO 50 RD, 1 WEST, 1/8 NORTH,
WEST INTO**

Log Measured From: KELLY BUSHING 8 Ft. Above Permanent Datum

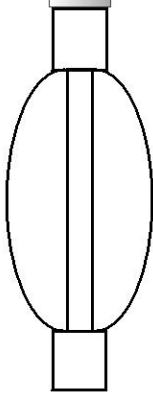
**THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneerenergy.com 785-625-3858**

Your Pioneer Energy Services Crew	This Log Record Was Witnessed By
Engineer: D. SCHMIDT	Primary Witness: RYAN GREENBAUM
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Top - Bottom

M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	615	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	80	0	5.5	0	3651	113	7.875

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			CENT-PENGO (3-PENGO)	5.50	3.00	70.00
WVF4 WVF1	13.50 13.50		SLT-PENGO (0001)	16.00	3.50	300.00
WVF3 WVF2	11.50 11.50					



CENT-PENGO (4-PENGO)

5.50

3.00

70.00

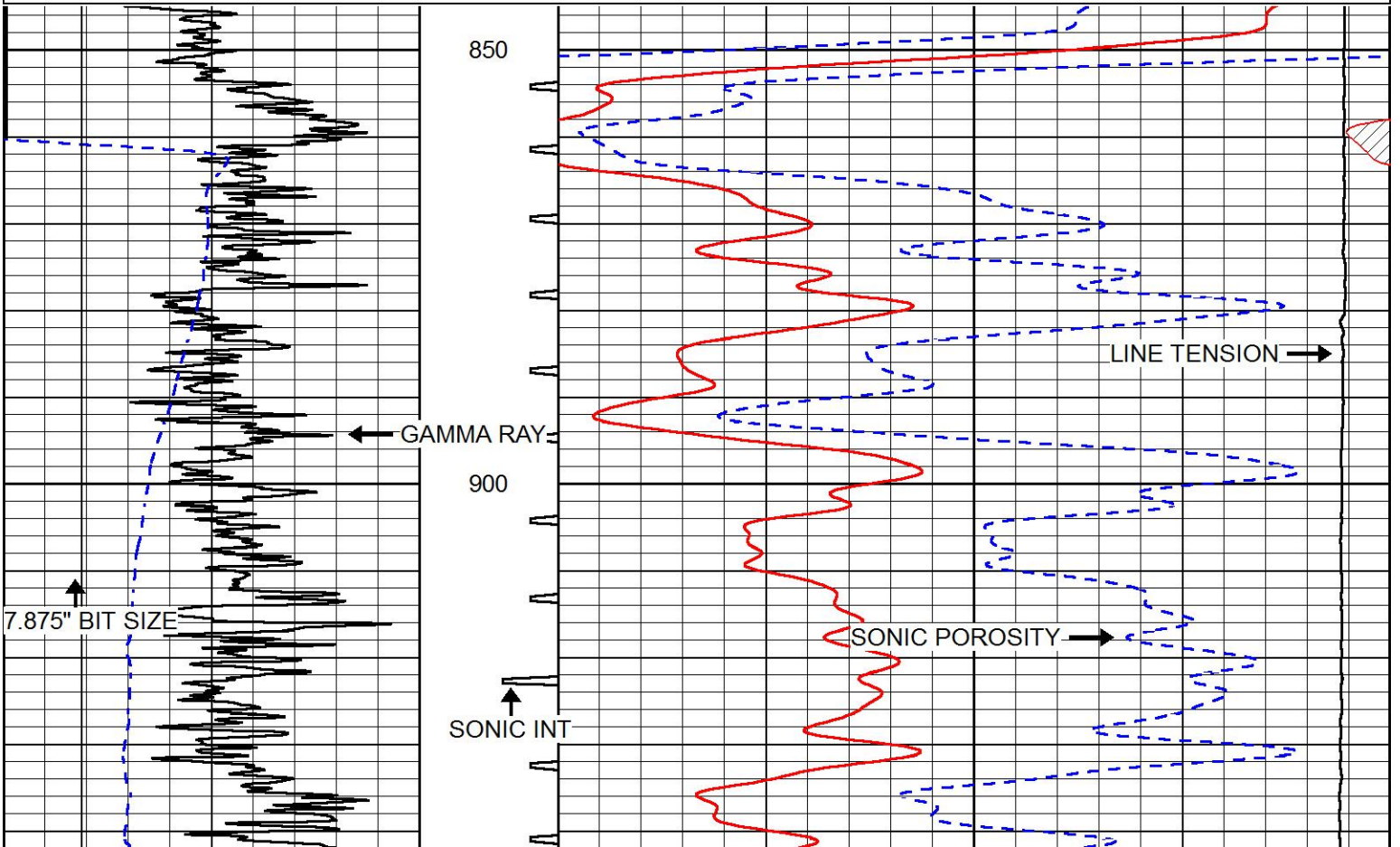
Dataset: fg holl_millard trust 2-31.db: field/well/SON/pass2
 Total length: 27.00 ft
 Total weight: 440.00 lb
 O.D.: 3.50 in

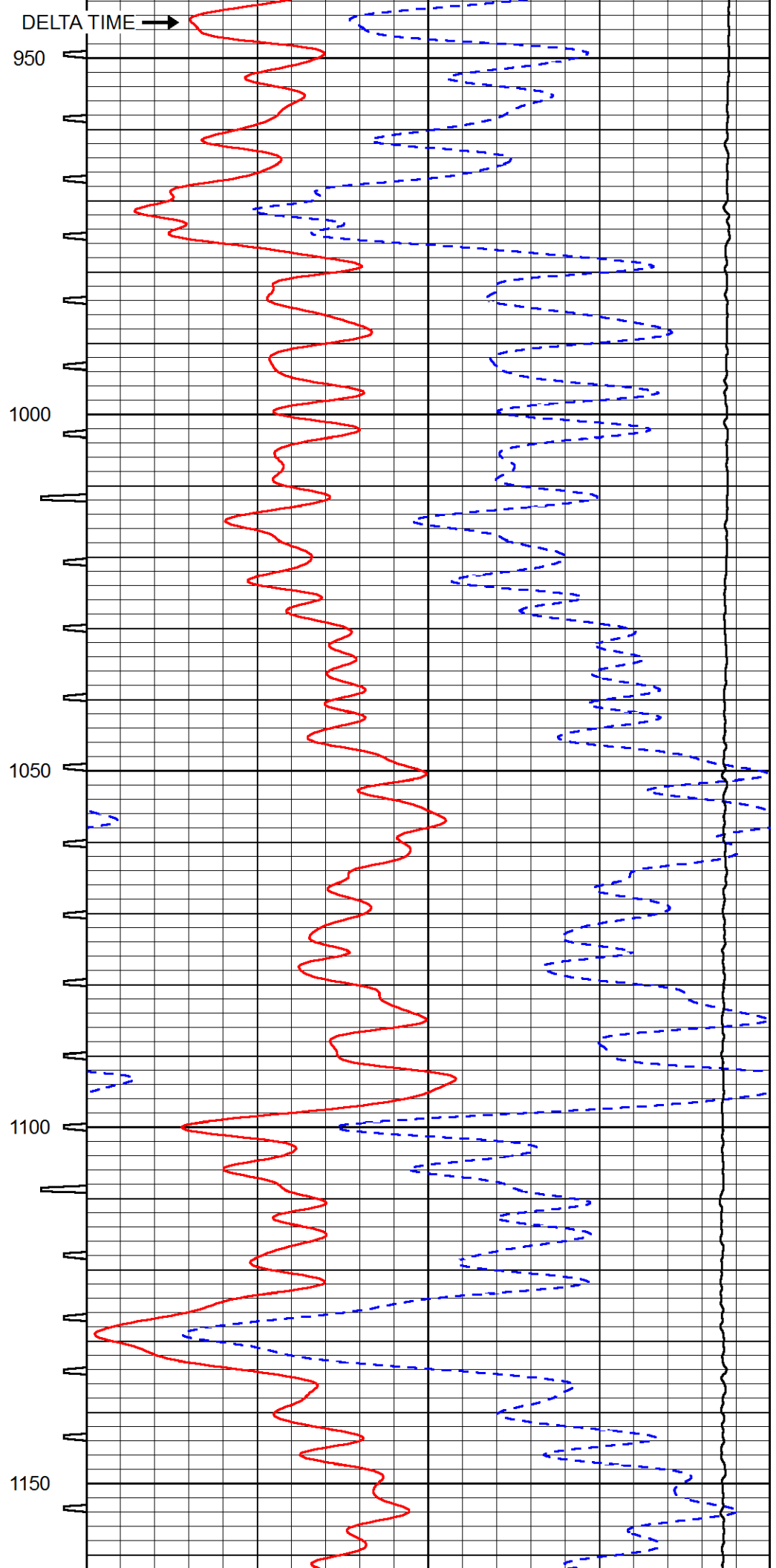
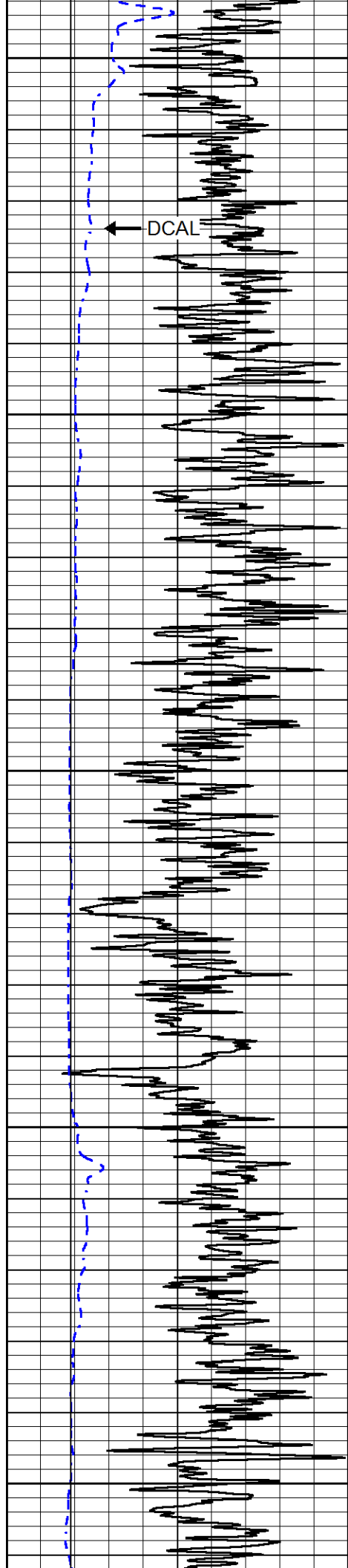


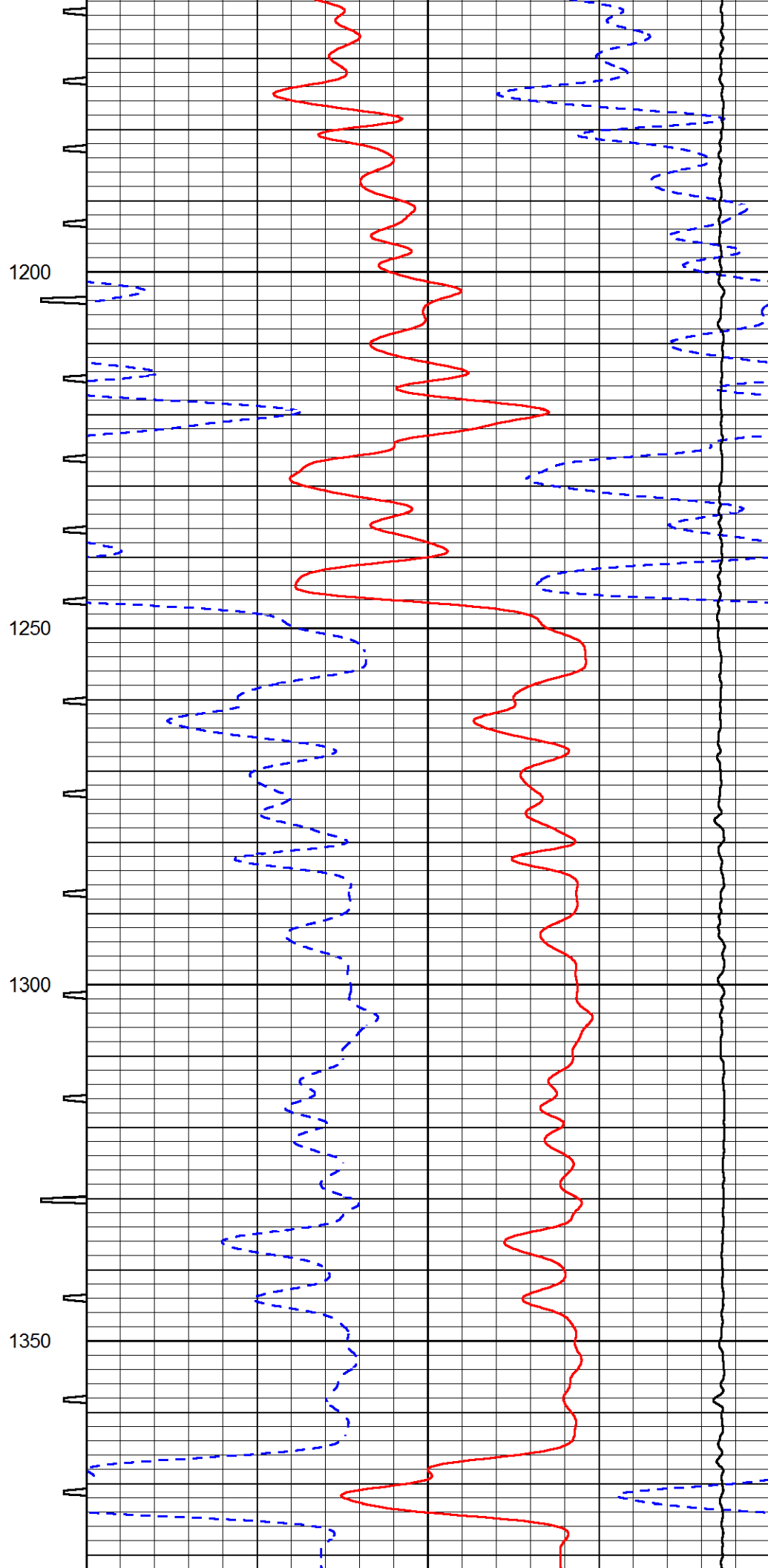
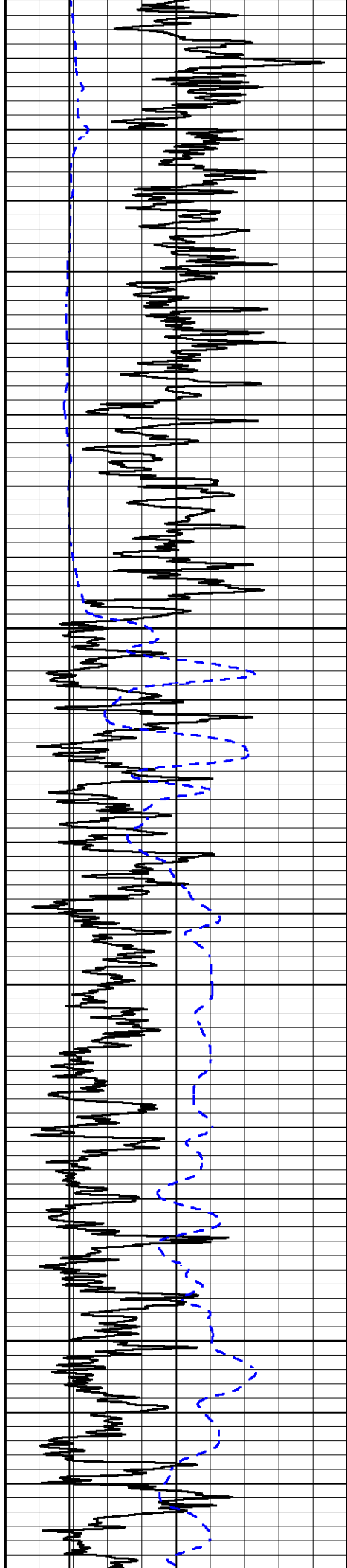
MAIN PASS

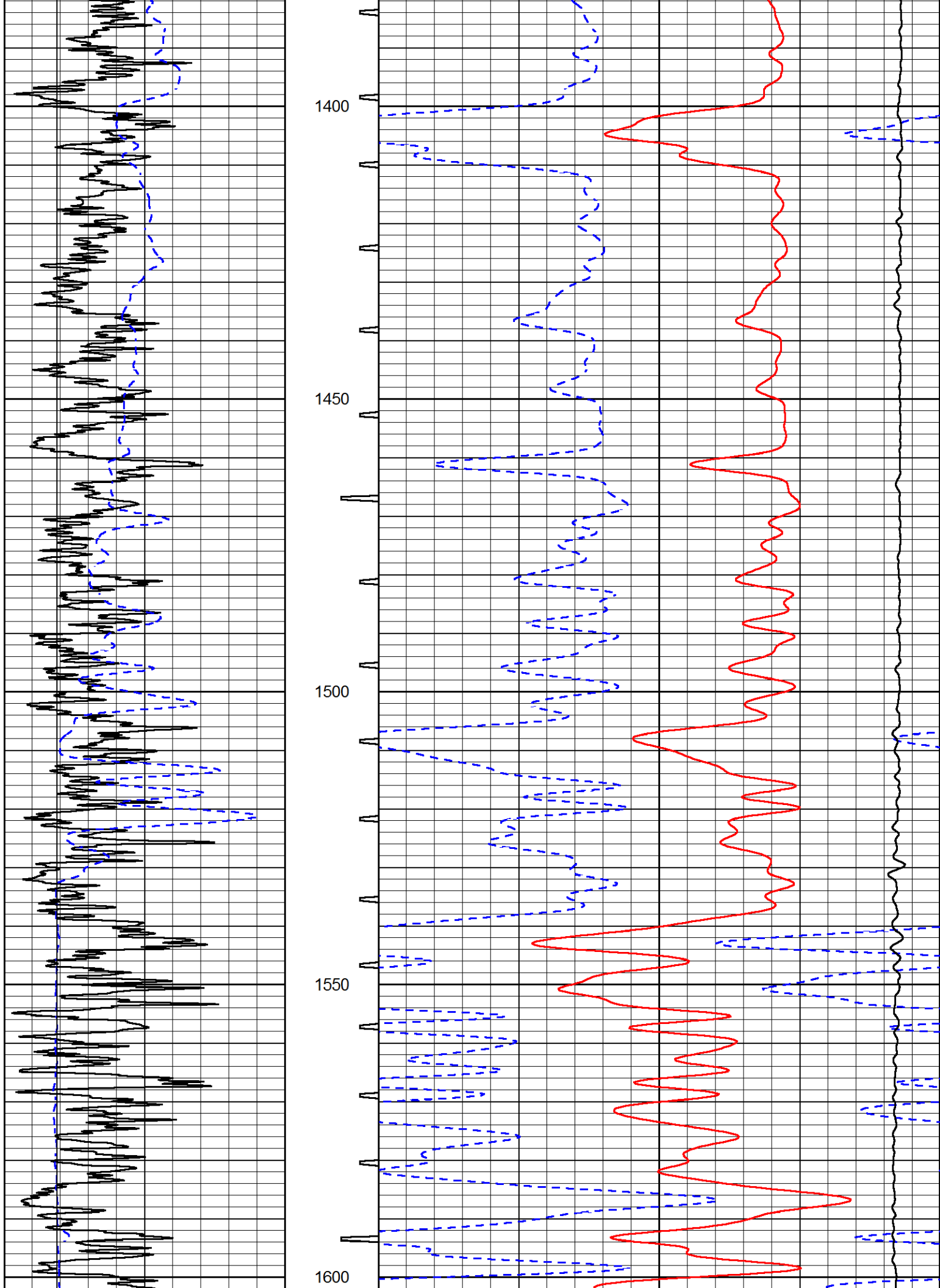
Database File fg holl_millard trust 2-31.db
 Dataset Pathname STKML/pass5.3
 Presentation Format sonic
 Dataset Creation Fri Aug 24 14:04:37 2018
 Charted by Depth in Feet scaled 1:240

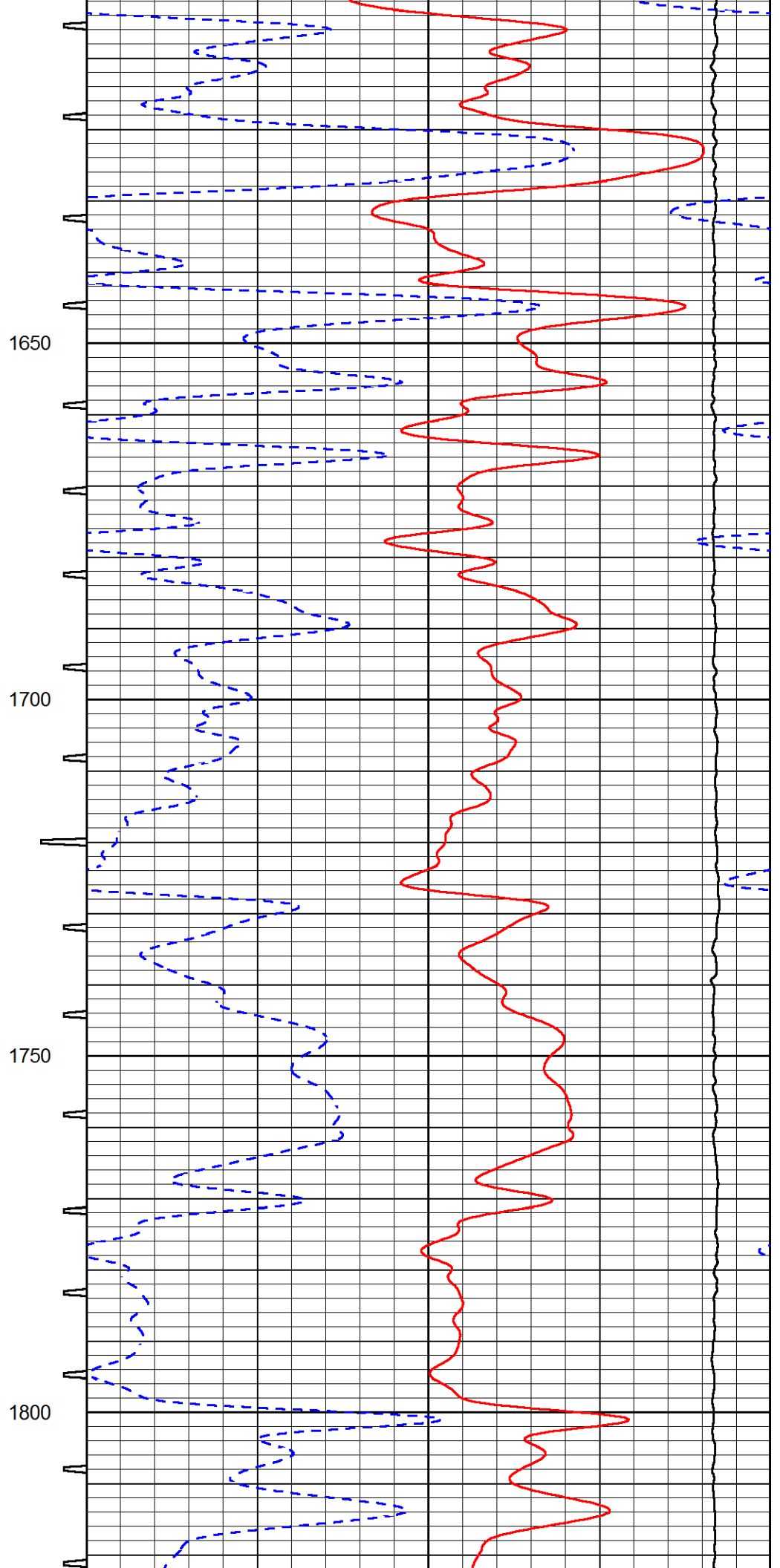
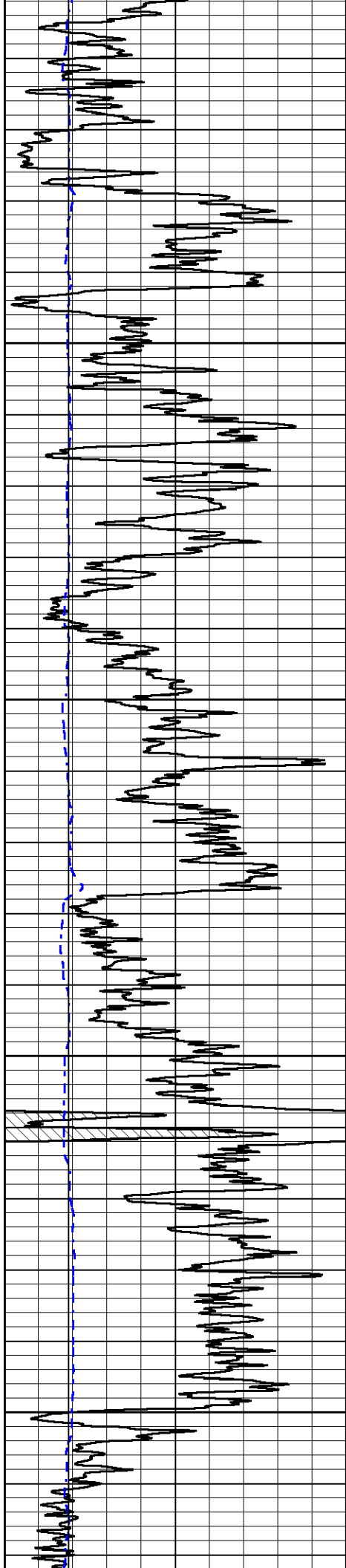
0	Gamma Ray (GAPI)	150	Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
150	GR (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu)	-10
6	DCAL (in)	16		15000	LTEN (lb) (lb)	0

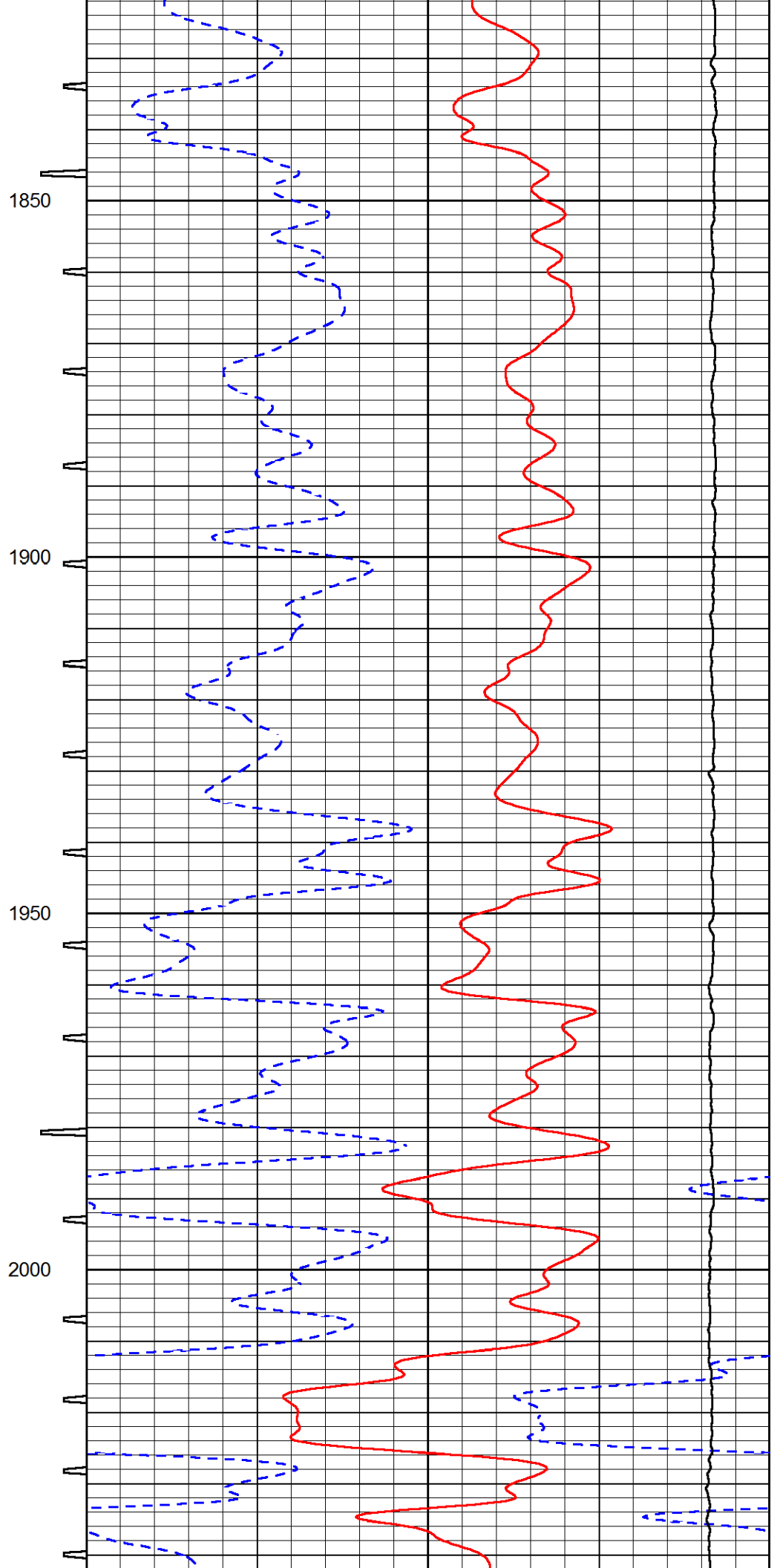
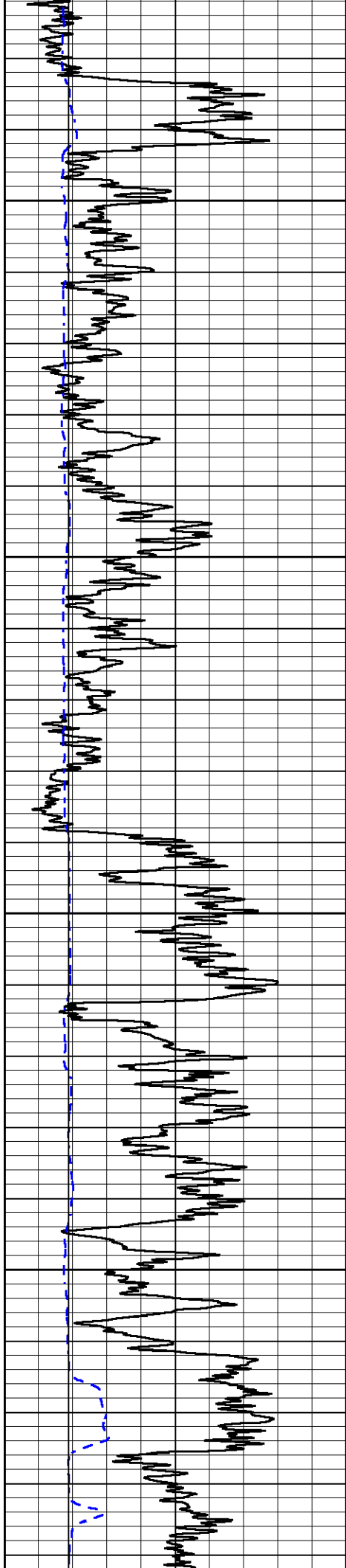


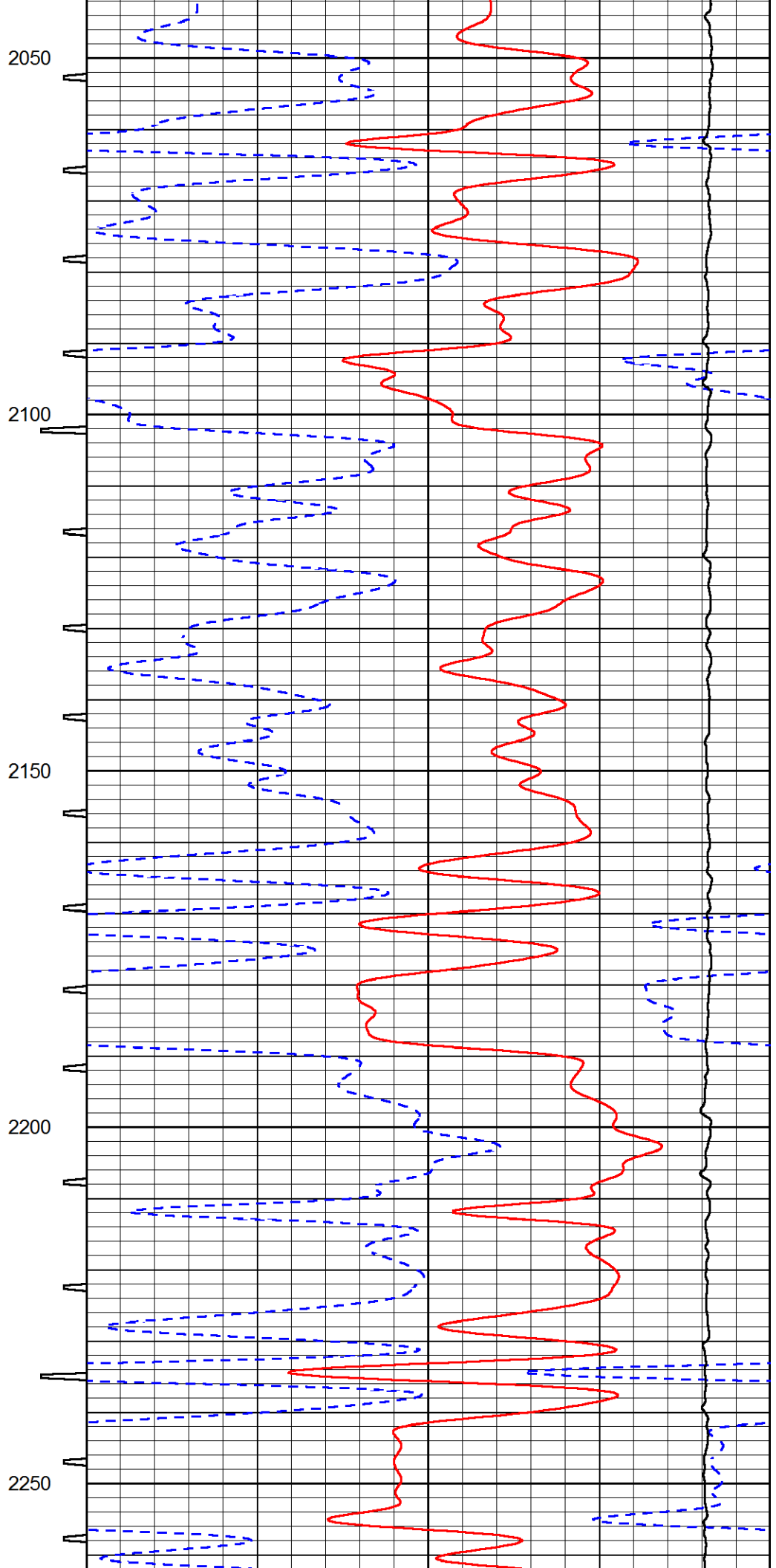
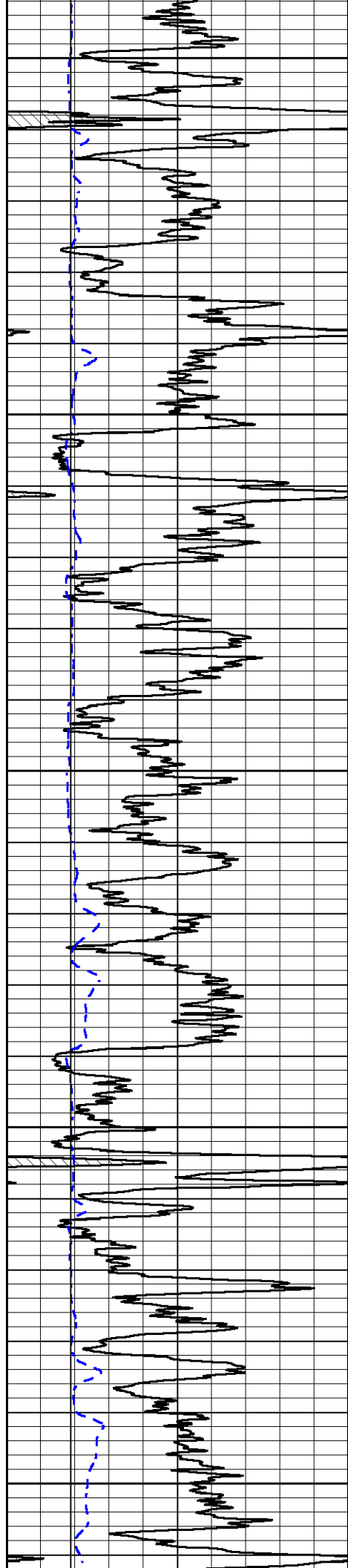


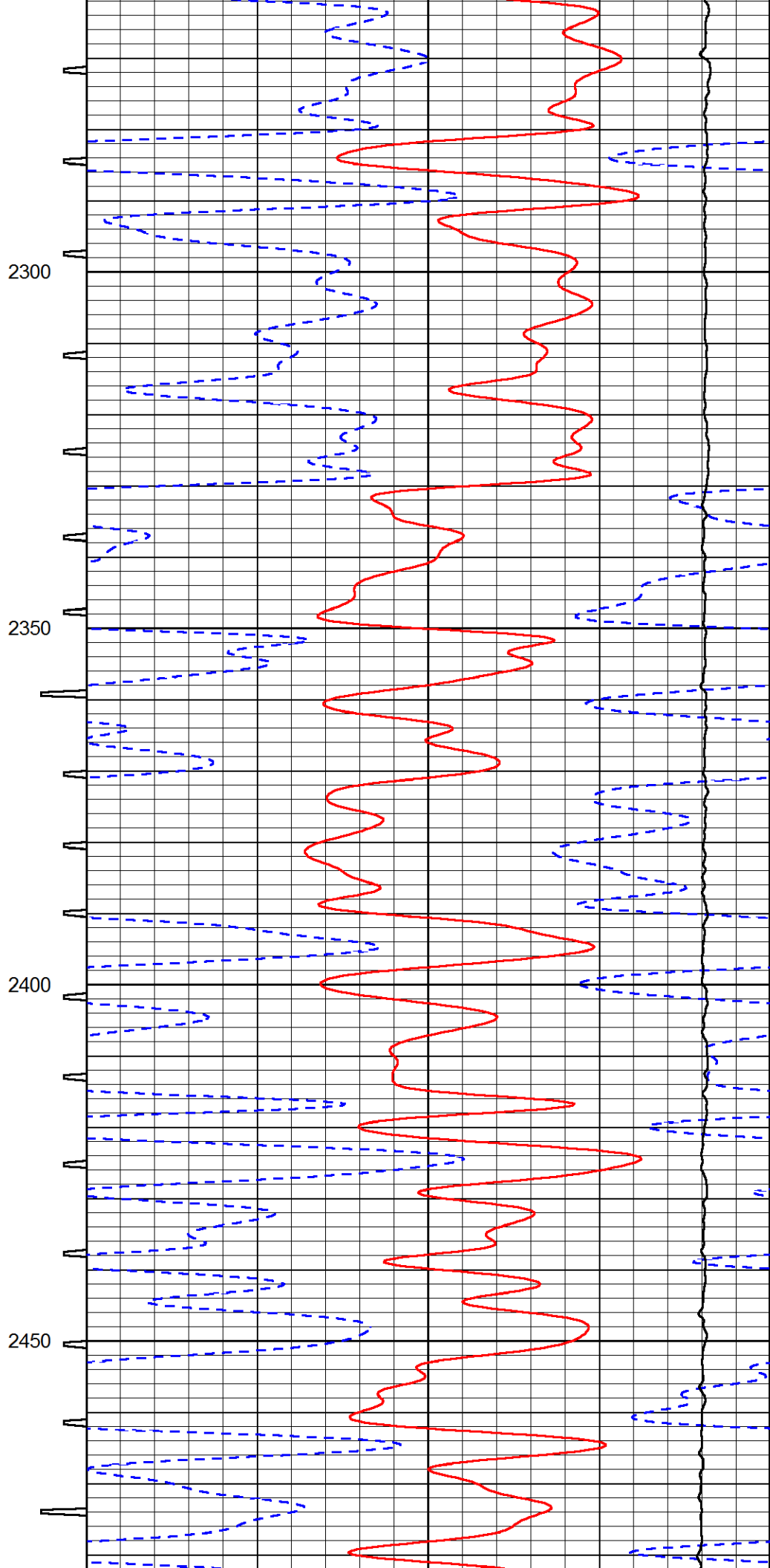
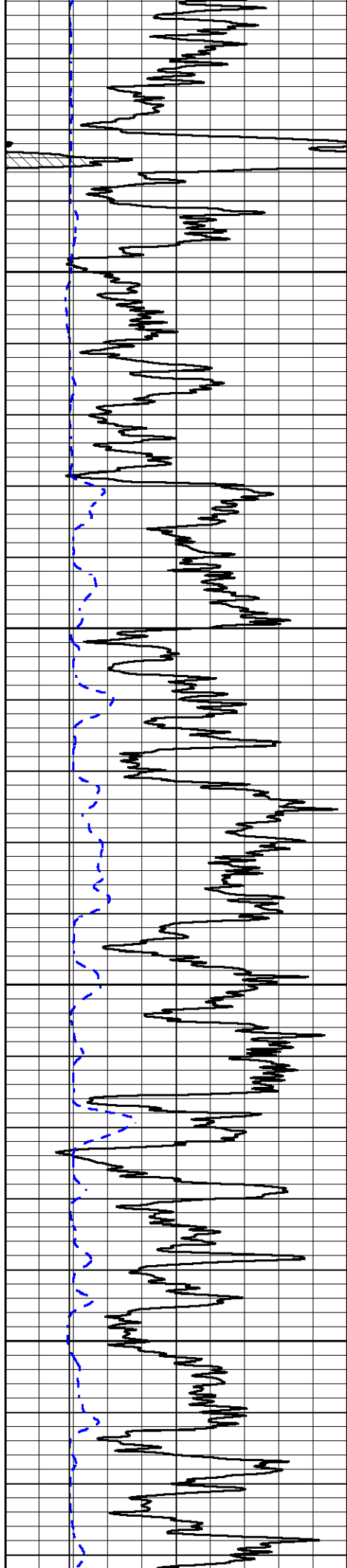


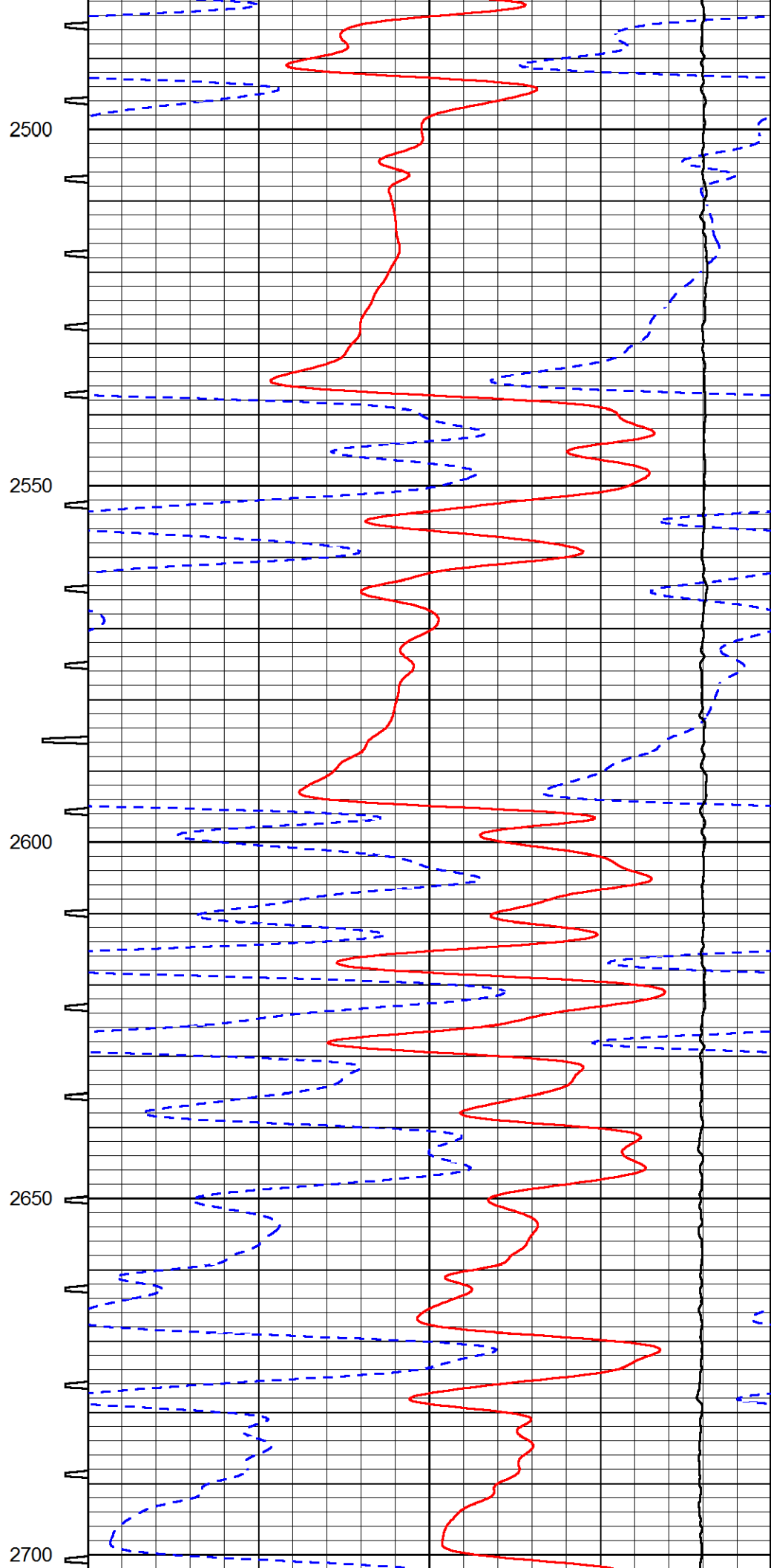
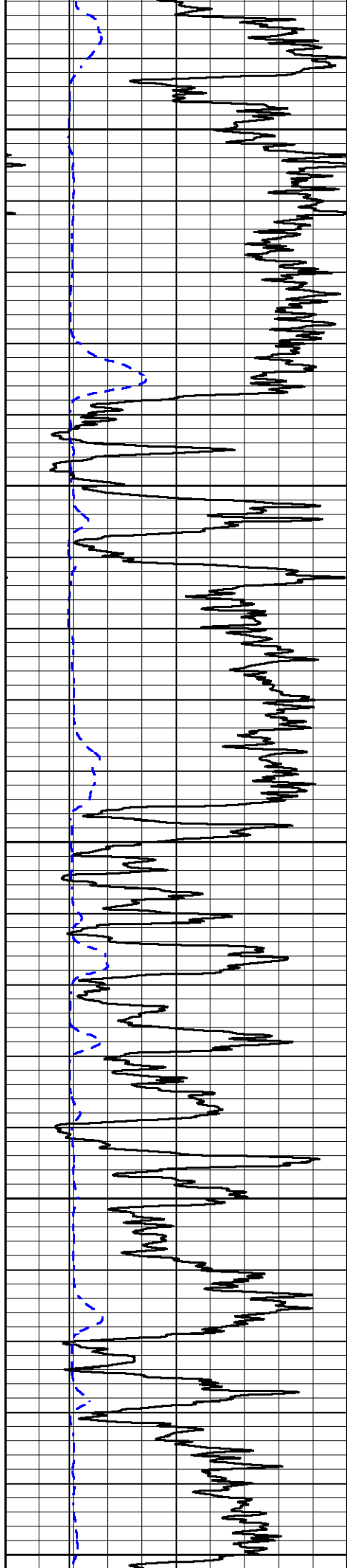


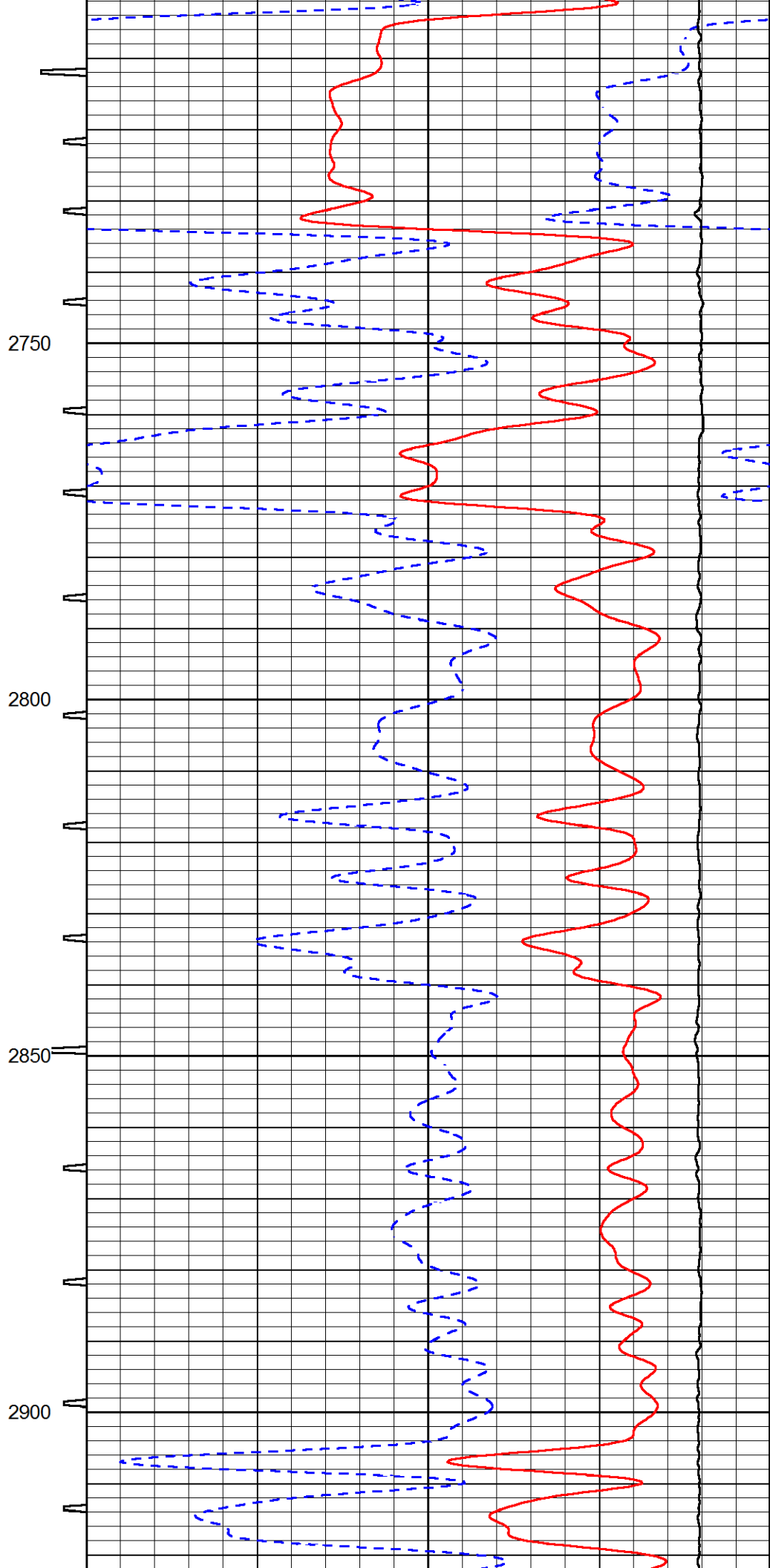
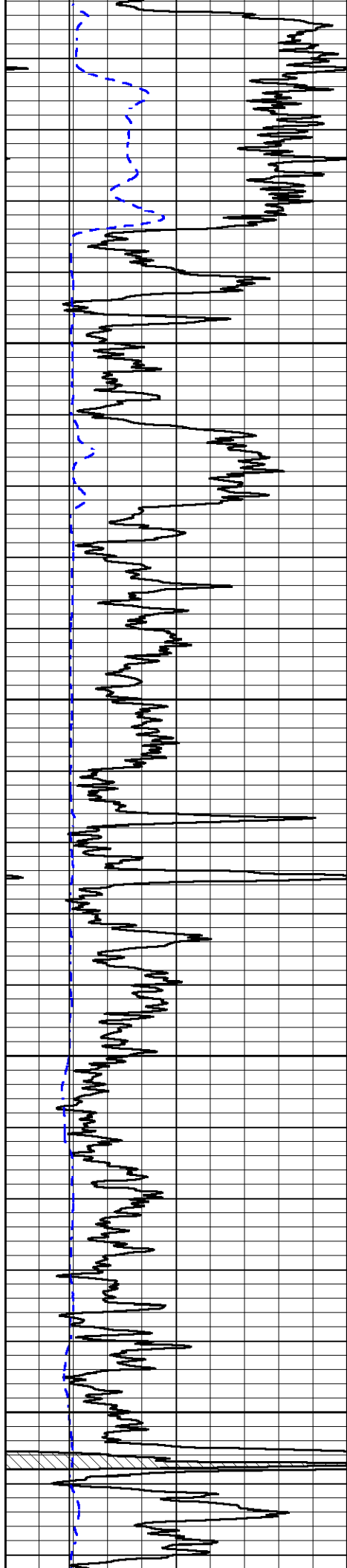


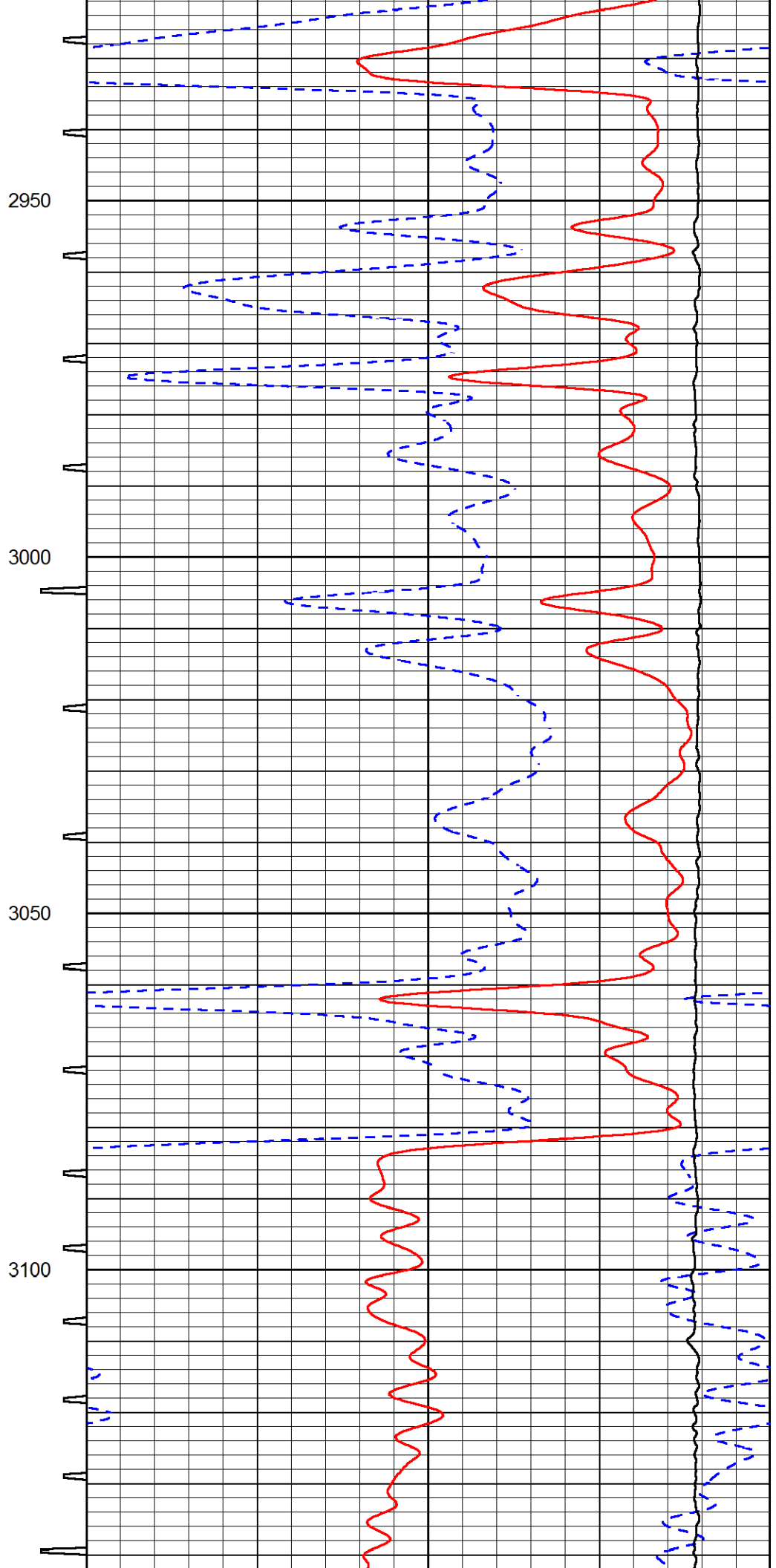
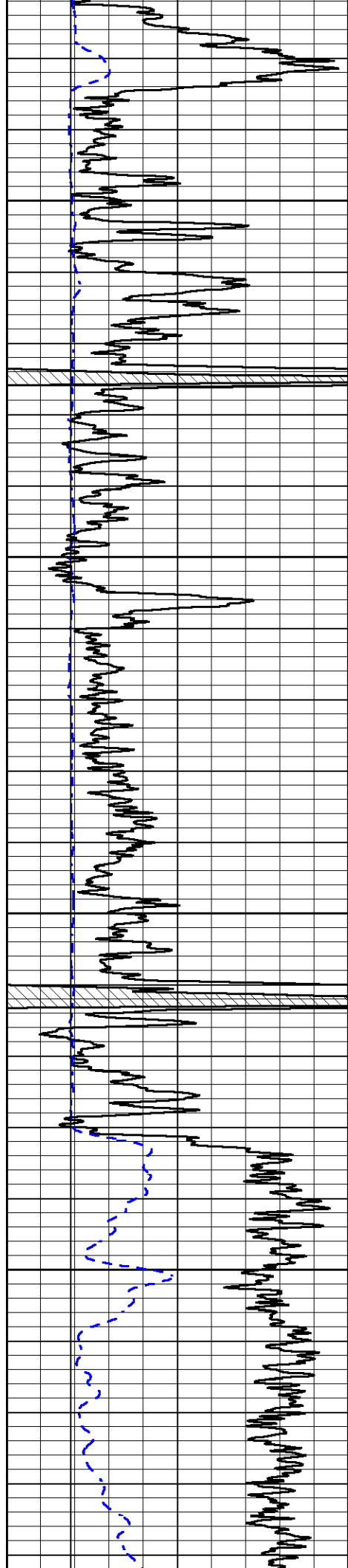


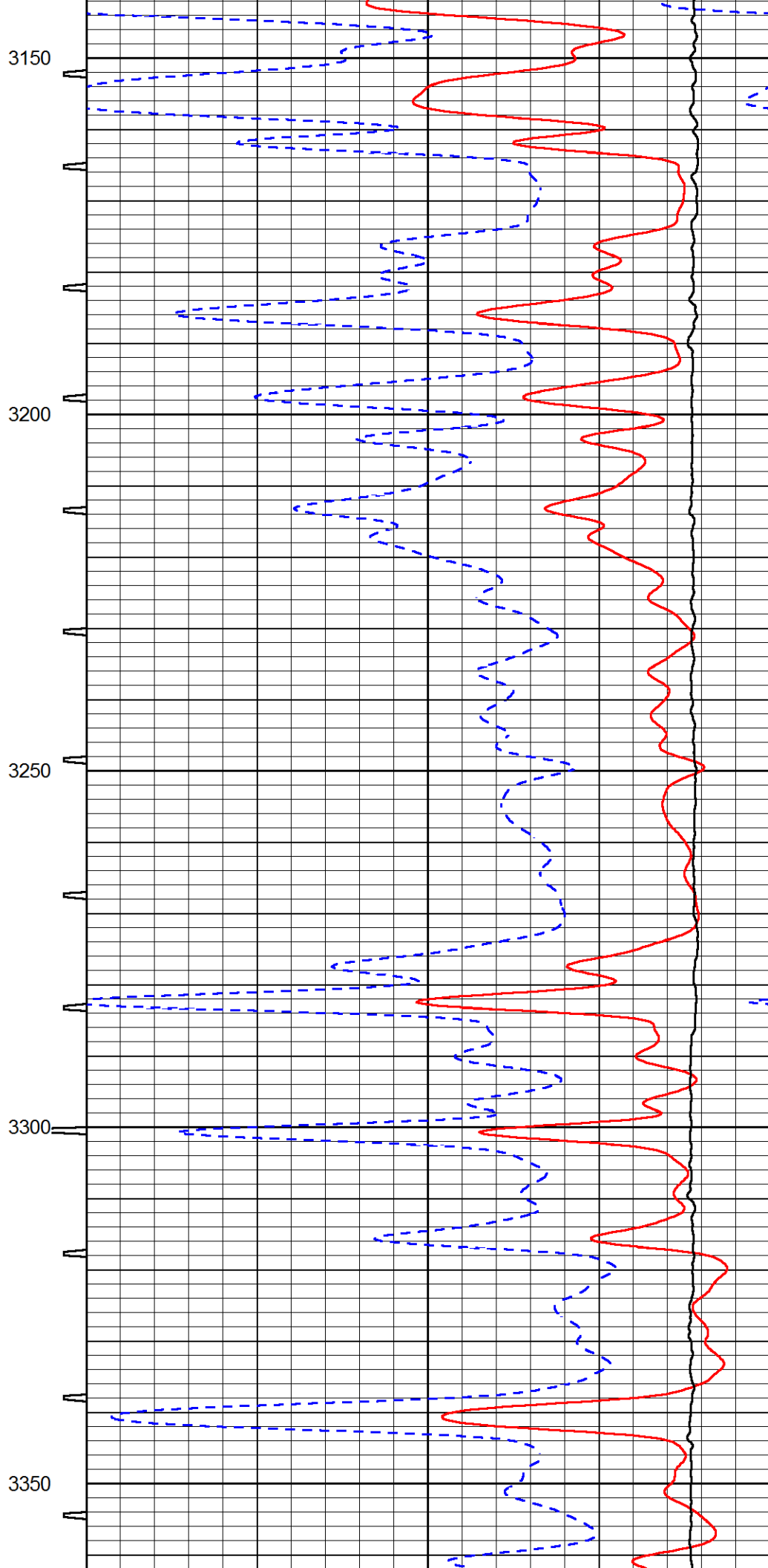
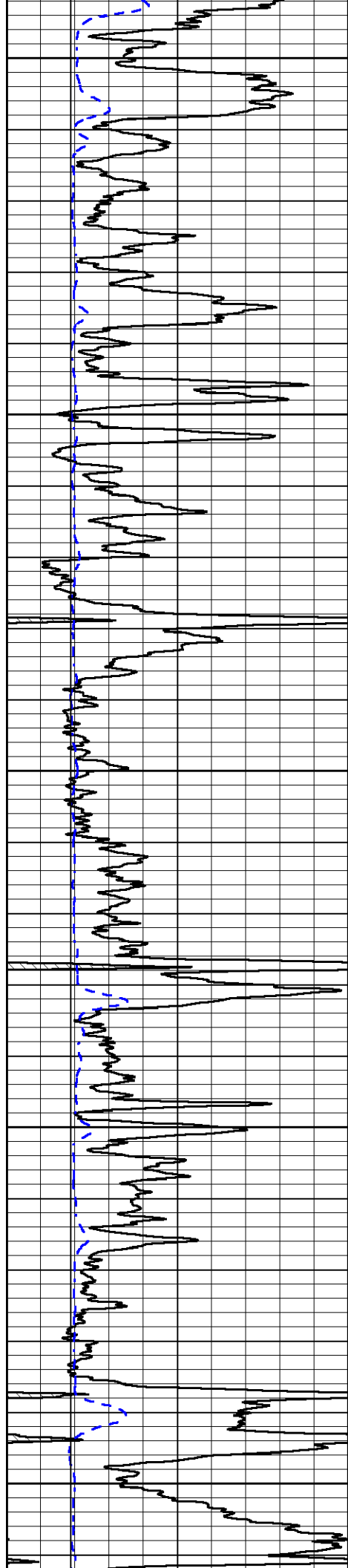


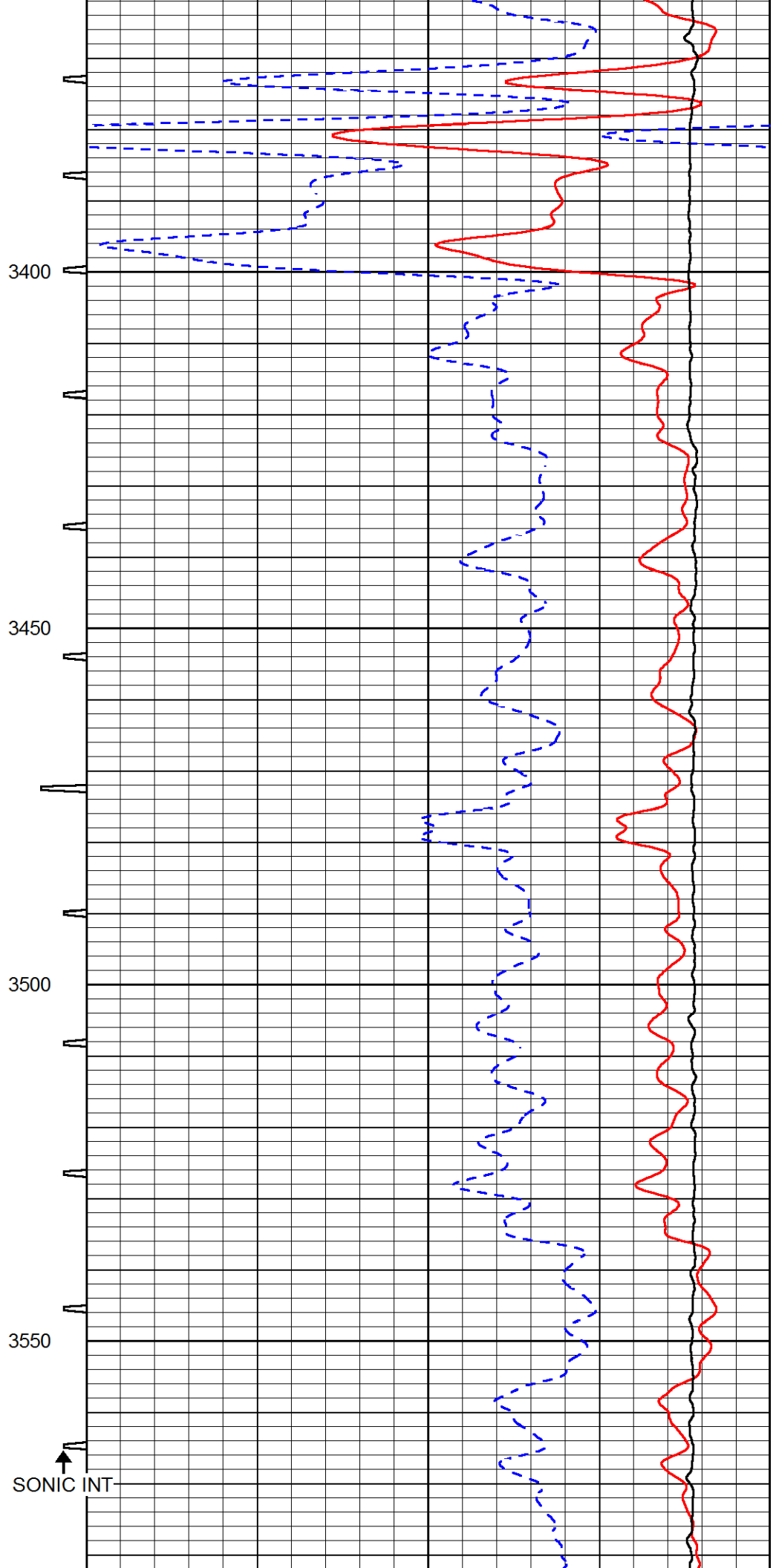
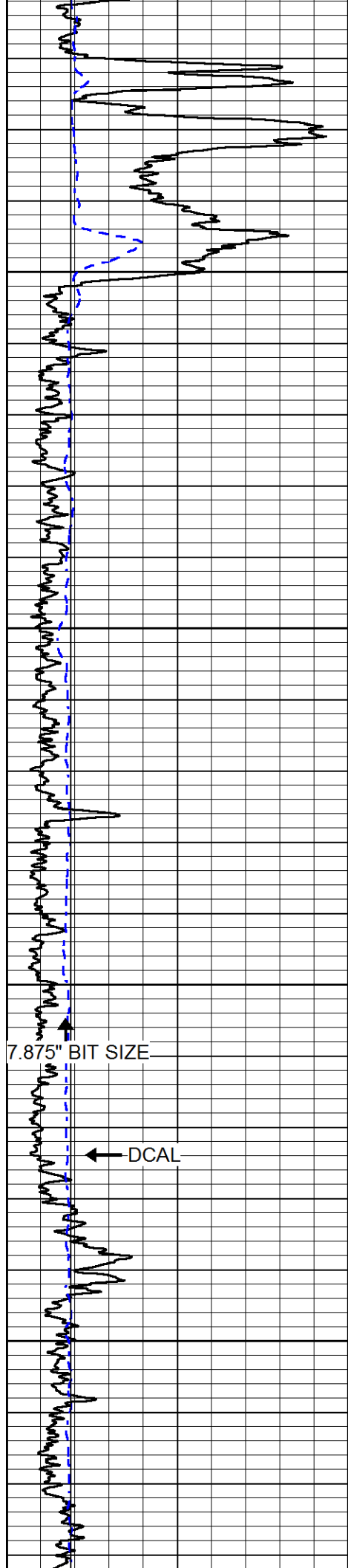


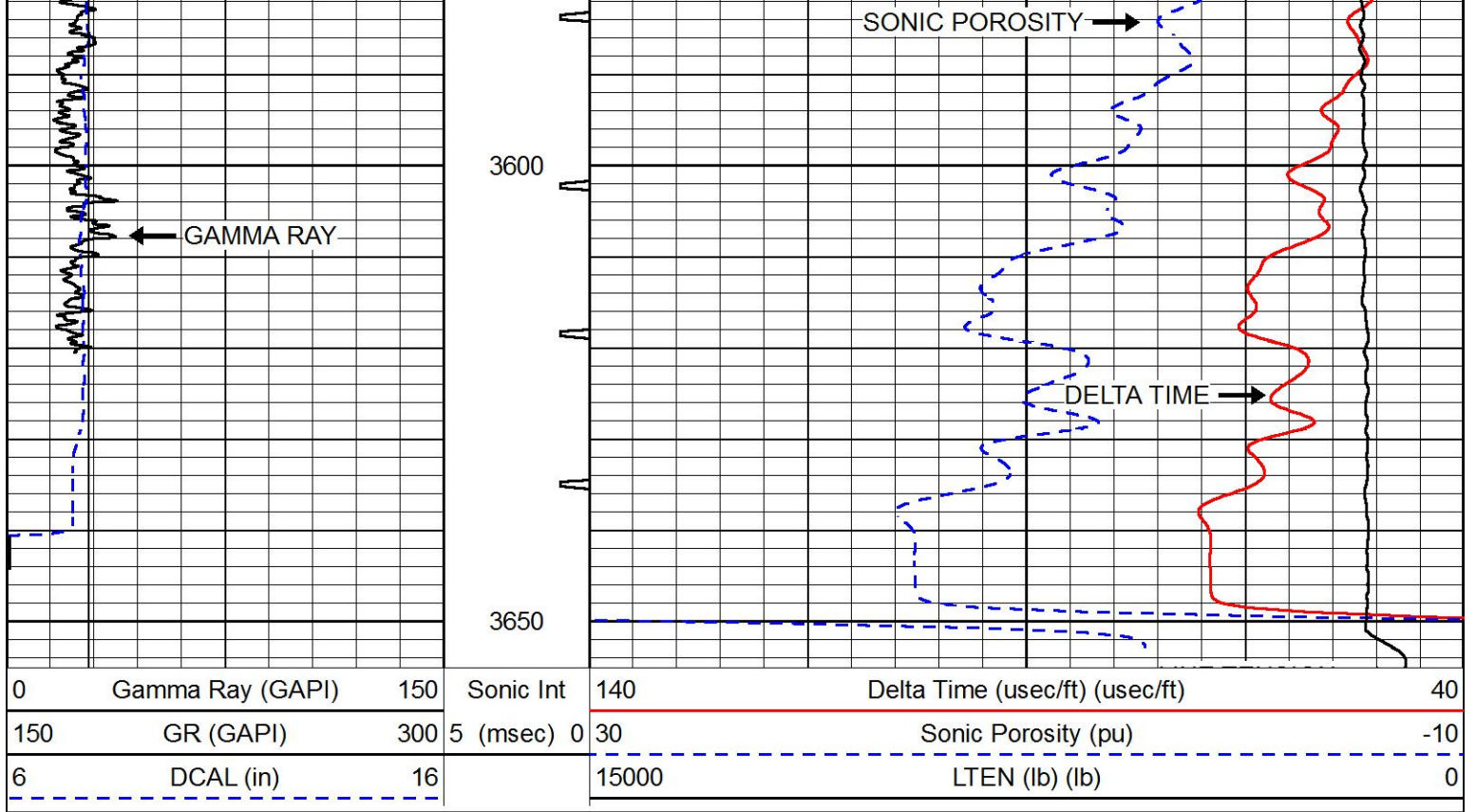








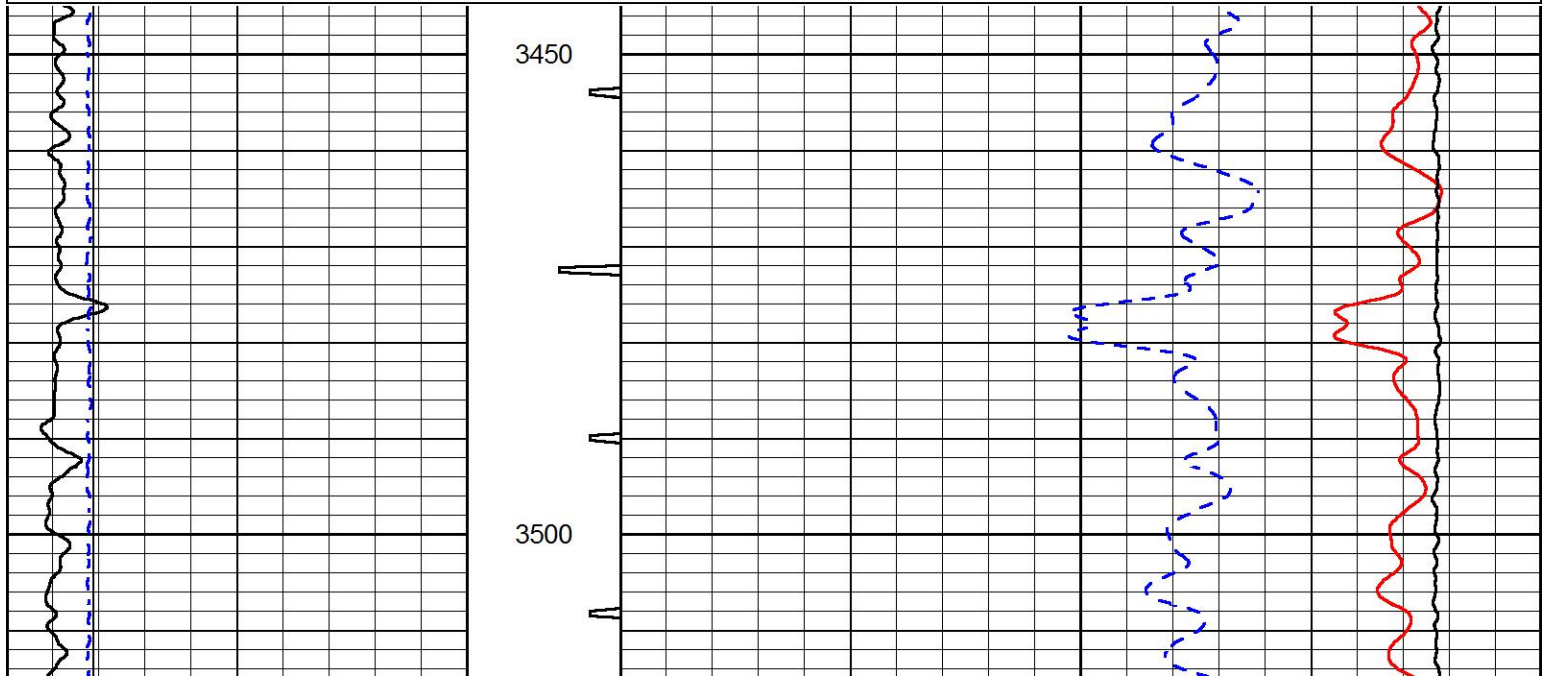


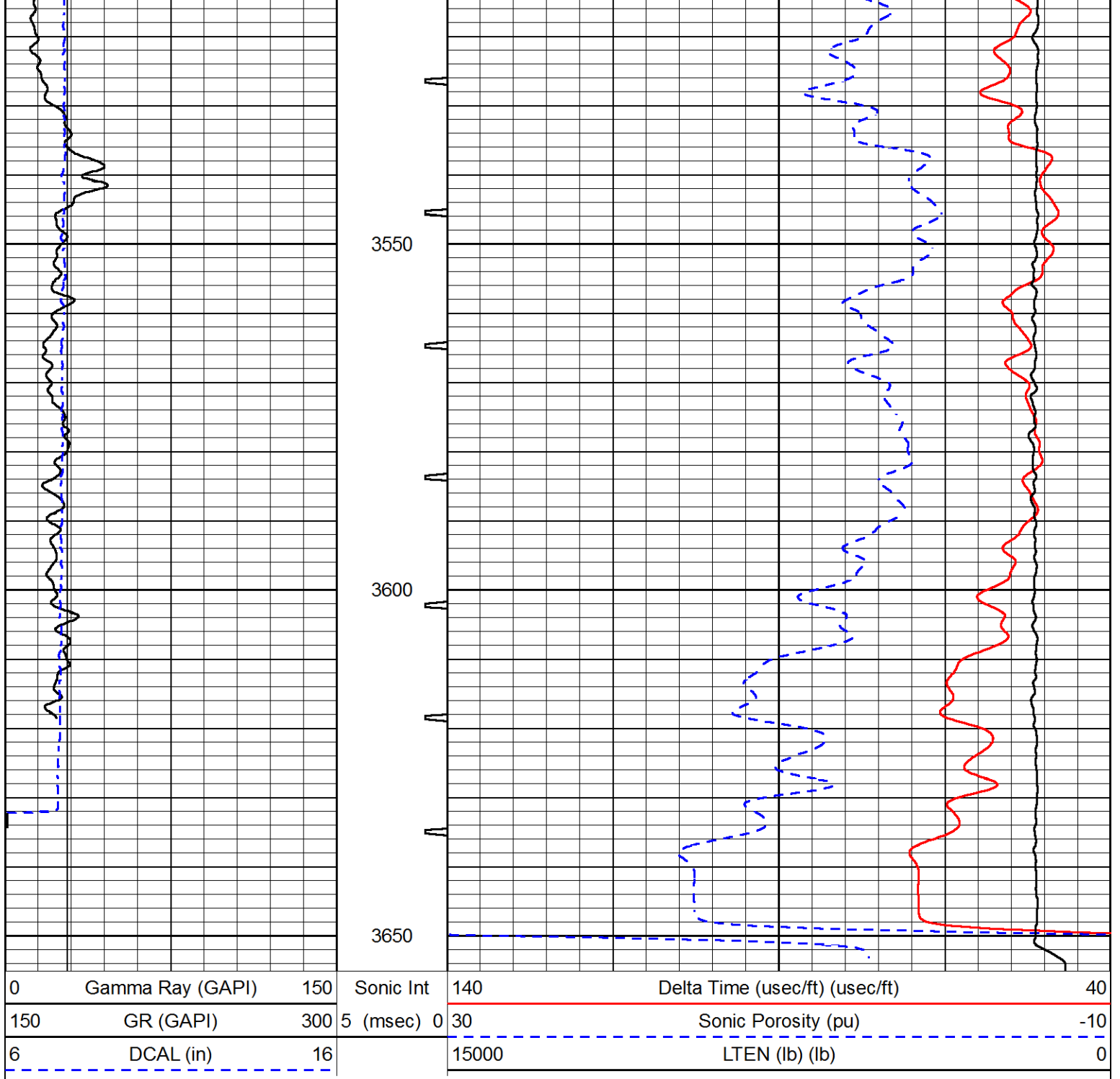


REPEAT SECTION

Database File fg holl_millard trust 2-31.db
 Dataset Pathname STKML/pass2.1
 Presentation Format sonic
 Dataset Creation Fri Aug 24 13:24:20 2018
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150	Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
150	GR (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu)	-10
6	DCAL (in)	16		15000	LTEN (lb) (lb)	0





Calibration Report

Database File fg holl_millard trust 2-31.db
 Dataset Pathname STKML/pass5.3
 Dataset Creation Fri Aug 24 14:04:37 2018

Dual Induction Calibration Report

Serial-Model: 967 (HT)-PSI HIGH TEMP
 Calibration Performed: Fri Aug 24 11:15:17 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.800	mmho/m	0.565	-23.000
Medium	0.000	1348.000	142.000	255.800	mmho/m	0.390	-39.000

Microlog Calibration Report

Serial-Model: PSI-01-PSIML
 Performed: Fri Aug 24 11:15:30 2018

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	25000.0000	-0.8000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	30000.0000	-0.6000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-66.0000

Compensated Density Calibration Report

Serial-Model: 817-947-M&W
 Source / Verifier: 16955B / 2ci
 Master Calibration Performed: Fri Aug 24 11:16:00 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	6127.15	5922.31	cps
Aluminum	2.670	g/cc	1141.85	3762.09	cps
Spine Angle = 74.89		Density/Spine Ratio = 0.526			
	Size		Reading		
Small Ring	4.50	in	1.02		
Large Ring	15.00	in	1.15		

Compensated Neutron Calibration Report

Serial Number: 207-MW
 Tool Model: M&W
 Calibration Performed: FRI AUG 24 10:30:30 2018

Detector	Readings	Target	Normalization
Short Space	6240.00 cps	1000.00 cps	1.6025
Long Space	460.00 cps	1000.00 cps	1.9500

Gamma Ray Calibration Report

Serial Number: 89
 Tool Model: M&W
 Calibration Performed: Fri Aug 24 11:16:10 2018

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 0.6000 GAPI/cps



Company: FG HOLL COMPANY, LLC
 Well: MILLARD TRUST #2-31

PIONEER

Pioneer Energy Services

Field	WILDCAT
County	BARTON
State	KANSAS