



# MICRORESISTIVITY 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/BHCS**  
 Elevation  
 K.B. 1889'  
 D.F. N/A  
 G.L. 1881'

Date	8/24/2018
Run Number	ONE
Depth Driller	3650'
Depth Logger	3651'
Bottom Logged Interval	3650'
Top Log Interval	1700'
Casing Driller	8.625" @ 856'
Casing Logger	851'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	9400
Density / Viscosity	8.8 58
pH / Fluid Loss	11.0 8.0
Source of Sample	FLOWLINE
Rm @ Meas. Temp	0.40 @ 80
Rmt @ Meas. Temp	0.30 @ 80
Rmc @ Meas. Temp	0.54 @ 80
Source of Rmf / Rmc	CHARTS
Rm @ BHT	0.28 @ 113
Operating Rig Time	6 HOURS
Max Rec. Temp. F	113
Equipment Number	91
Location	HAYS
Recorded By	D. SCHMIDT
Witnessed By	RYAN GREENBAUM

<<< Fold Here >>>

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](http://www.pioneerenergy.com) 785-625-3858

### Your Pioneer Energy Services Crew

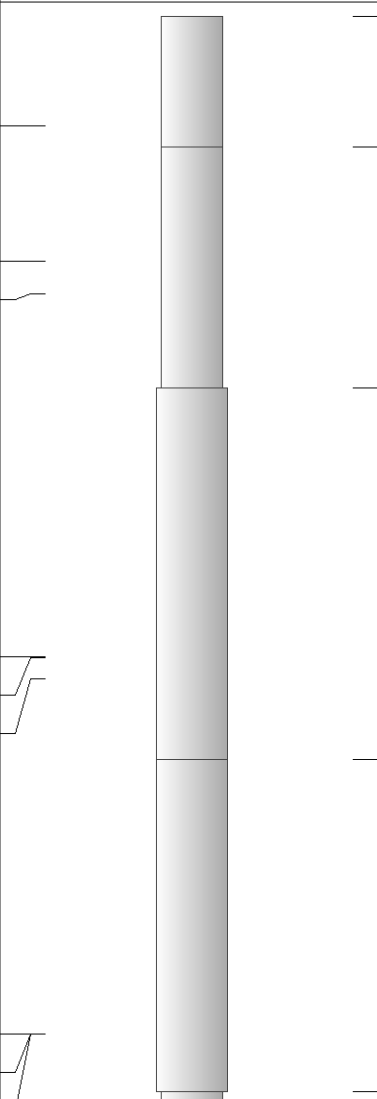
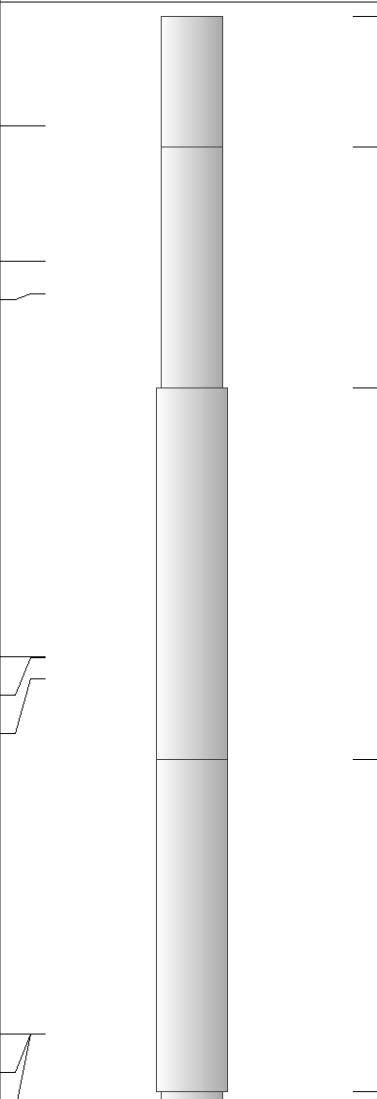
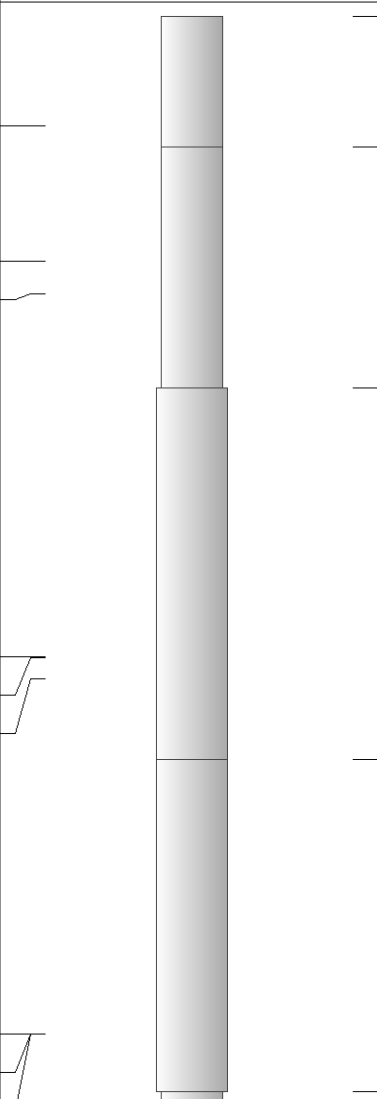
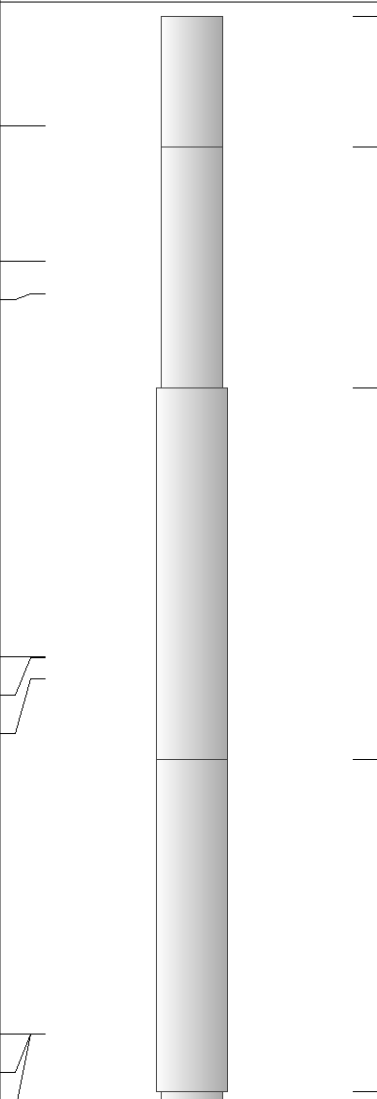
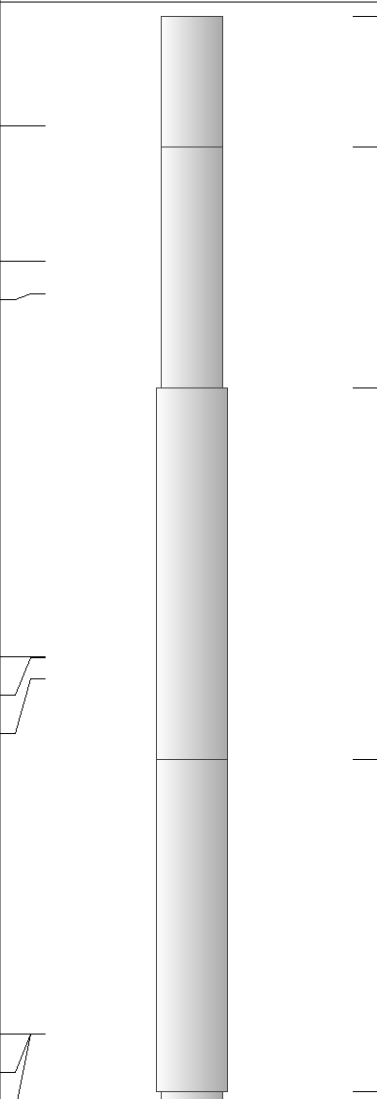
Engineer: **D. SCHMIDT**  
 Operator:  
 Operator:  
 Operator:

### This Log Record Was Witnessed By

Primary Witness: **RYAN GREENBAUM**  
 Secondary Witness:  
 Secondary Witness:  
 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)
GR	40.58		GR-M&W (89)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (207-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (817-947)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSIML (PSI-01) GO Micro log tools converted to Simplec electronics	7.58	4.00	65.00
RLL3F RLL3	15.80 15.80					

CILD	8.00	
CILM	4.70	
SP	0.20	

DIL-PSI HIGH TEMP (967 (HT))

18.50

3.50

220.00

Dataset: fg holl\_millard trust 2-31.db: field/well/STKML/pass5.3  
 Total length: 43.08 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in

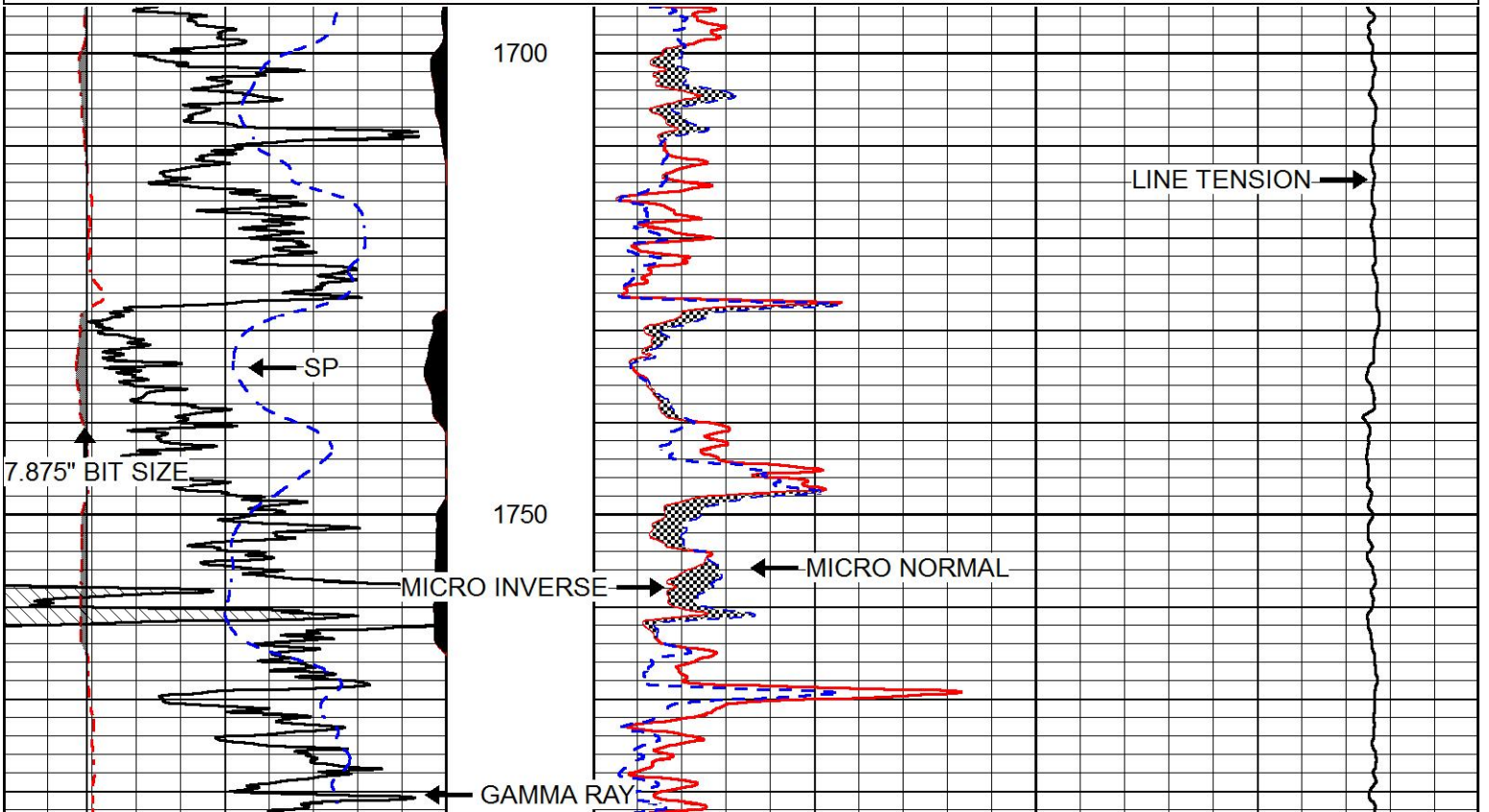


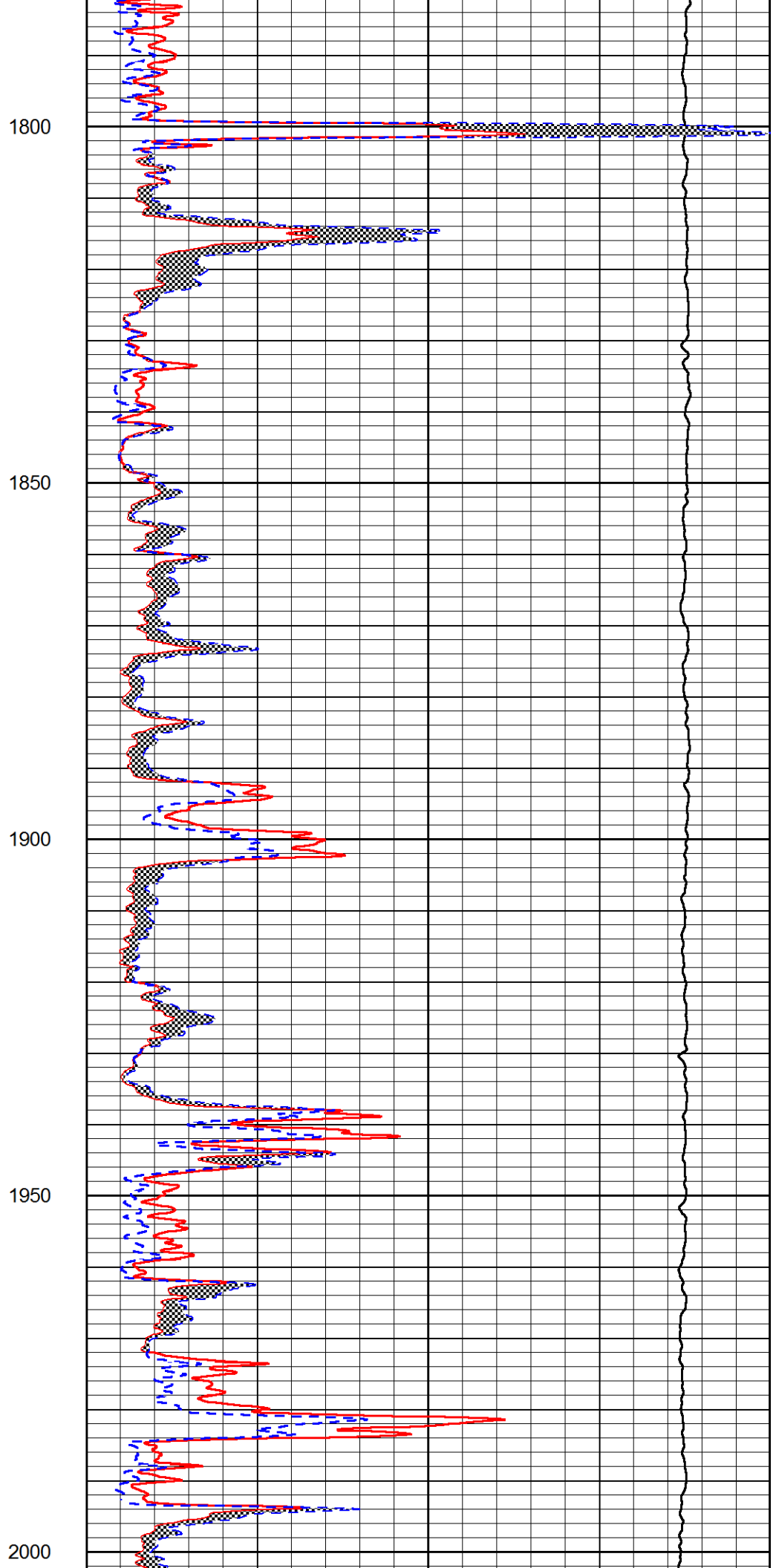
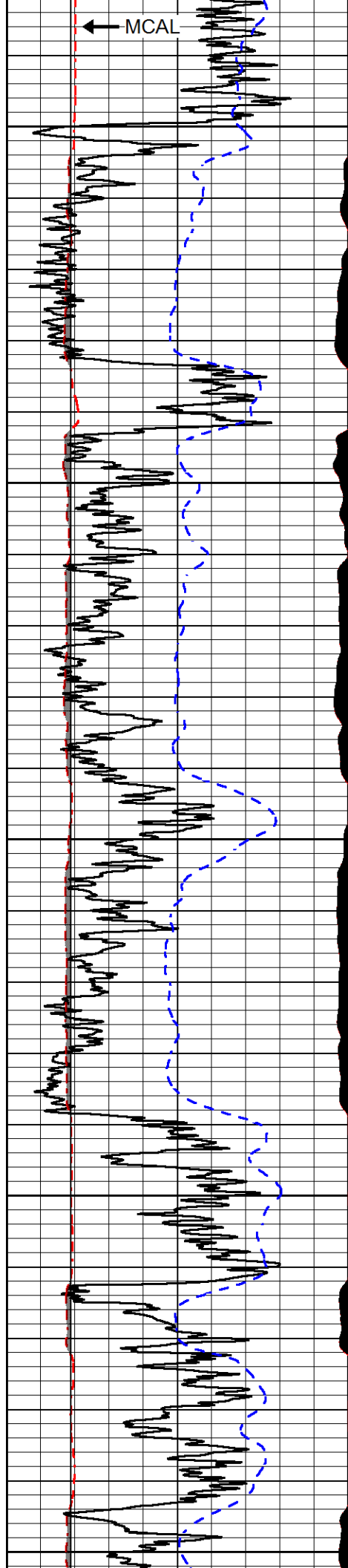
# MAIN PASS

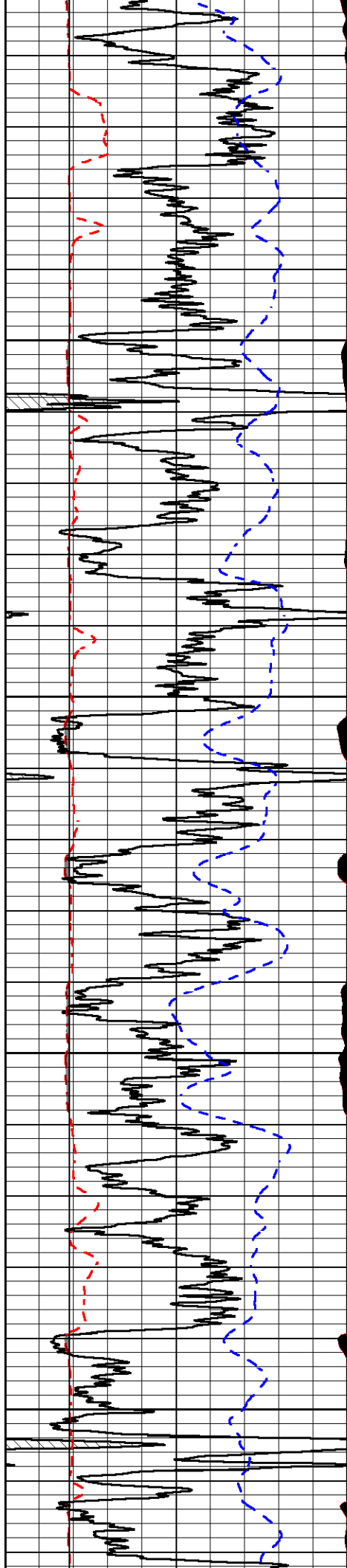
Database File fg holl\_millard trust 2-31.db  
 Dataset Pathname STKML/pass5.3  
 Presentation Format micro  
 Dataset Creation Fri Aug 24 14:04:37 2018  
 Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
6	MCAL (in)	16
2.875	mcals (in)	7.875
6	Bit Size (in)	16
-200	SP (mV)	0

0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
10000	Line Weight (lb)	0





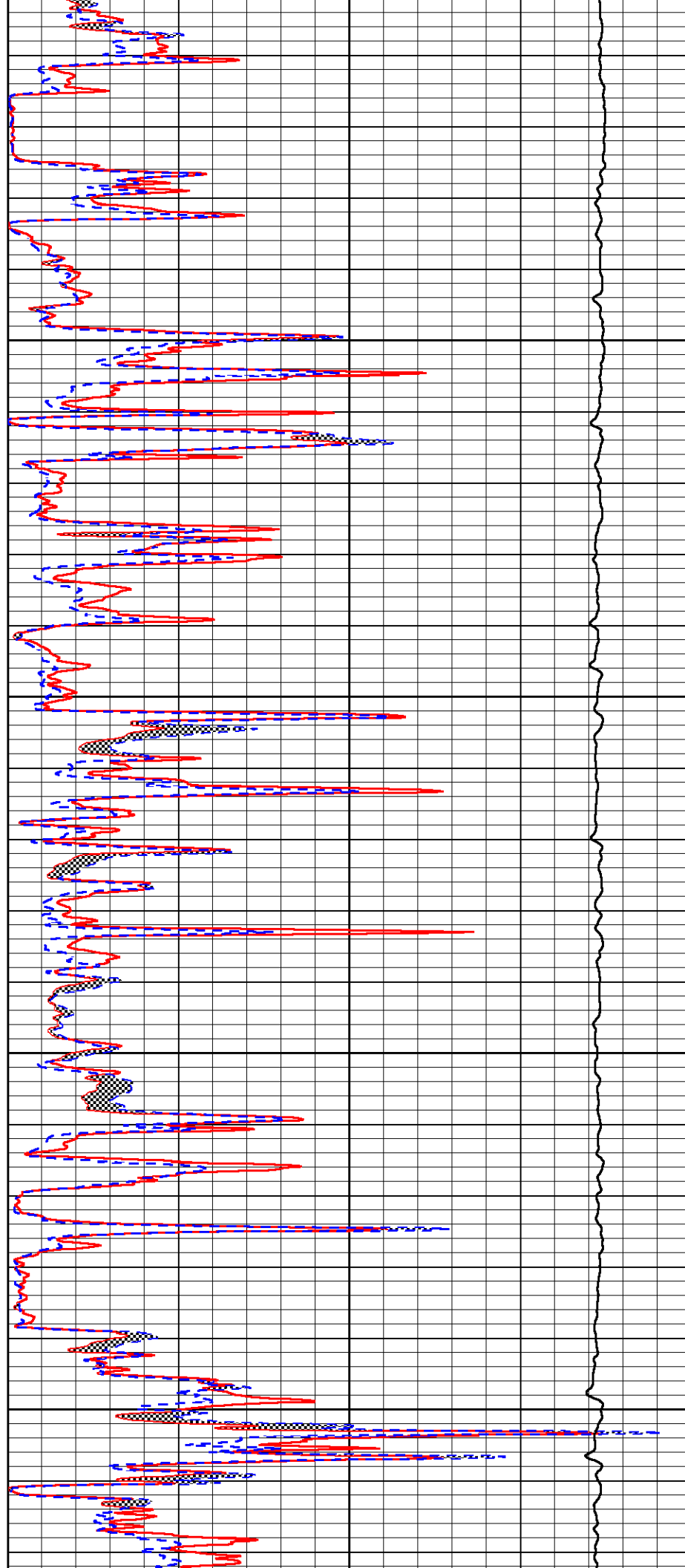


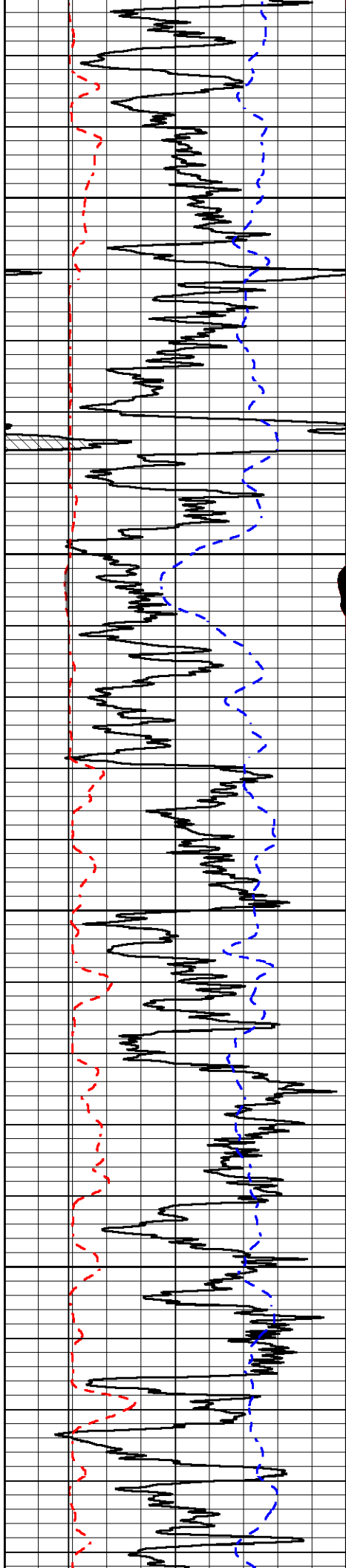
2050

2100

2150

2200



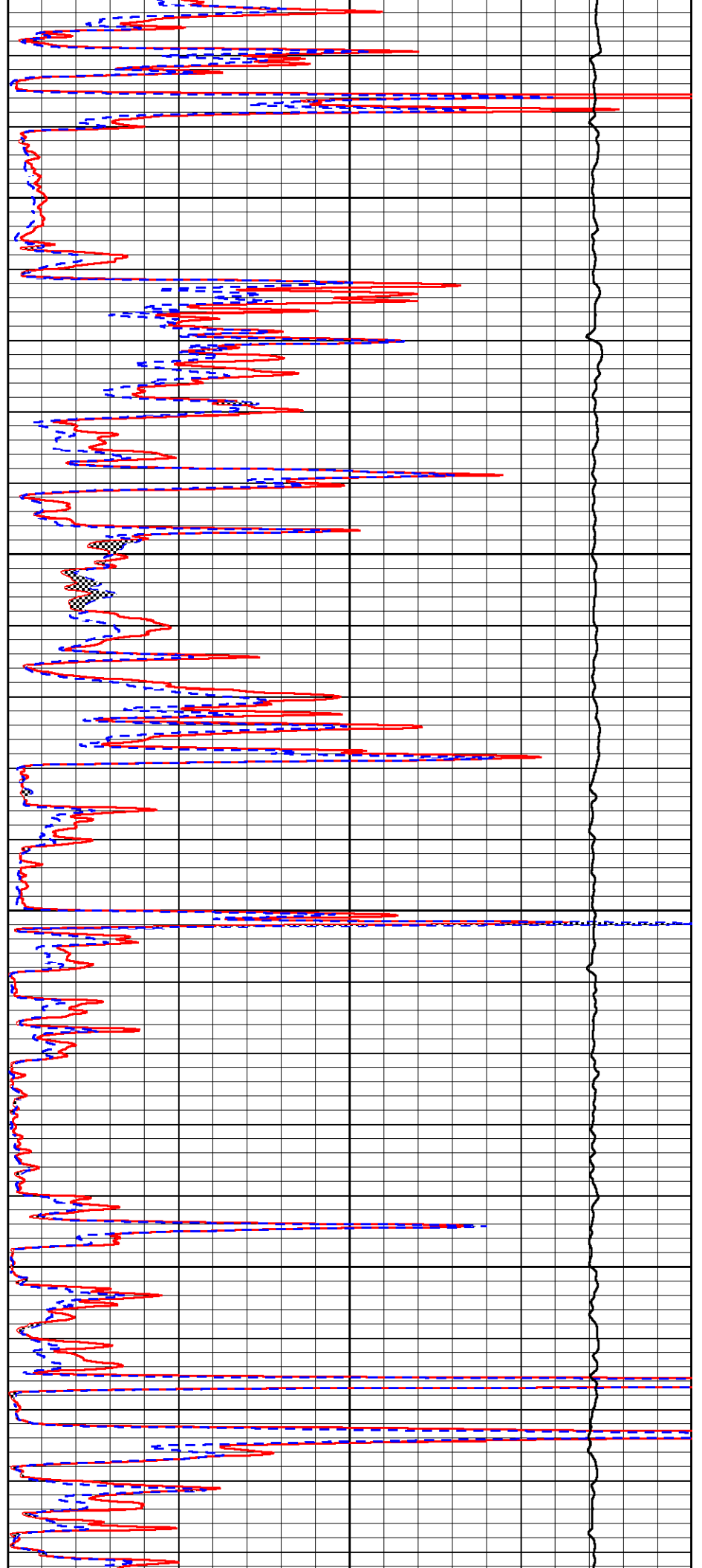


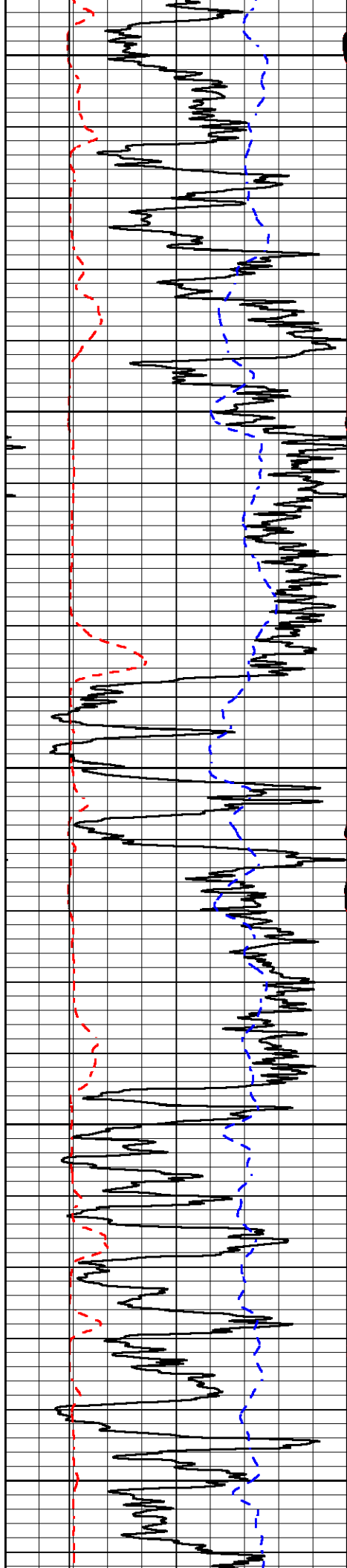
2250

2300

2350

2400





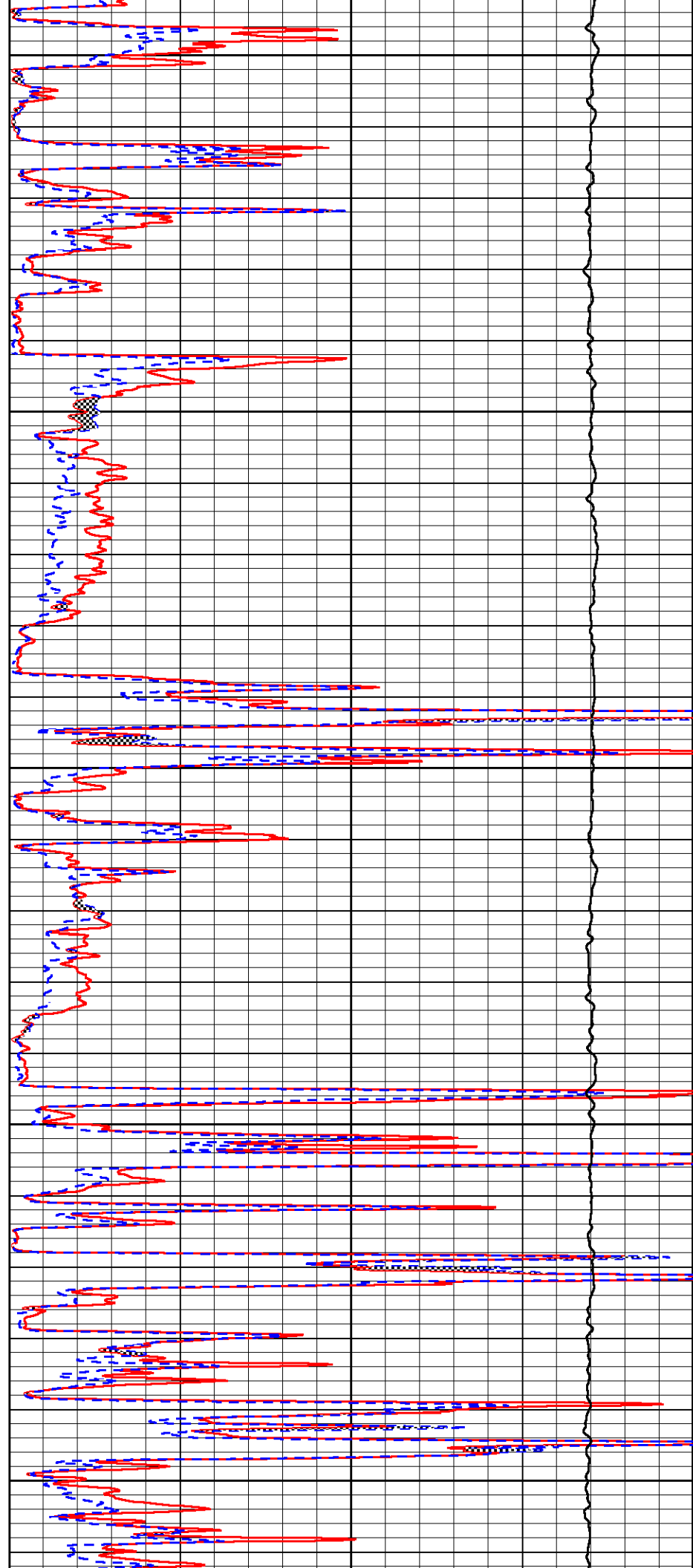
2450

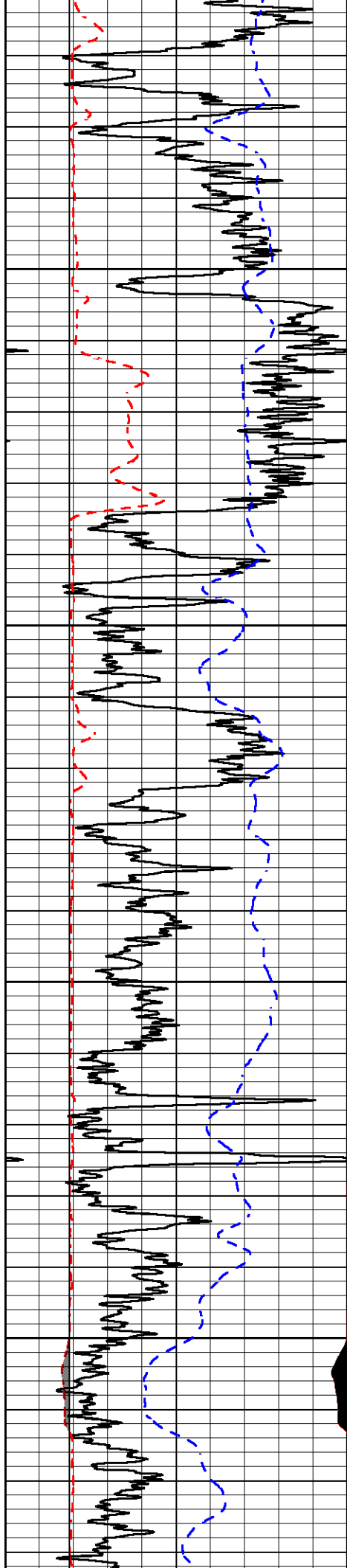
2500

2550

2600

2650



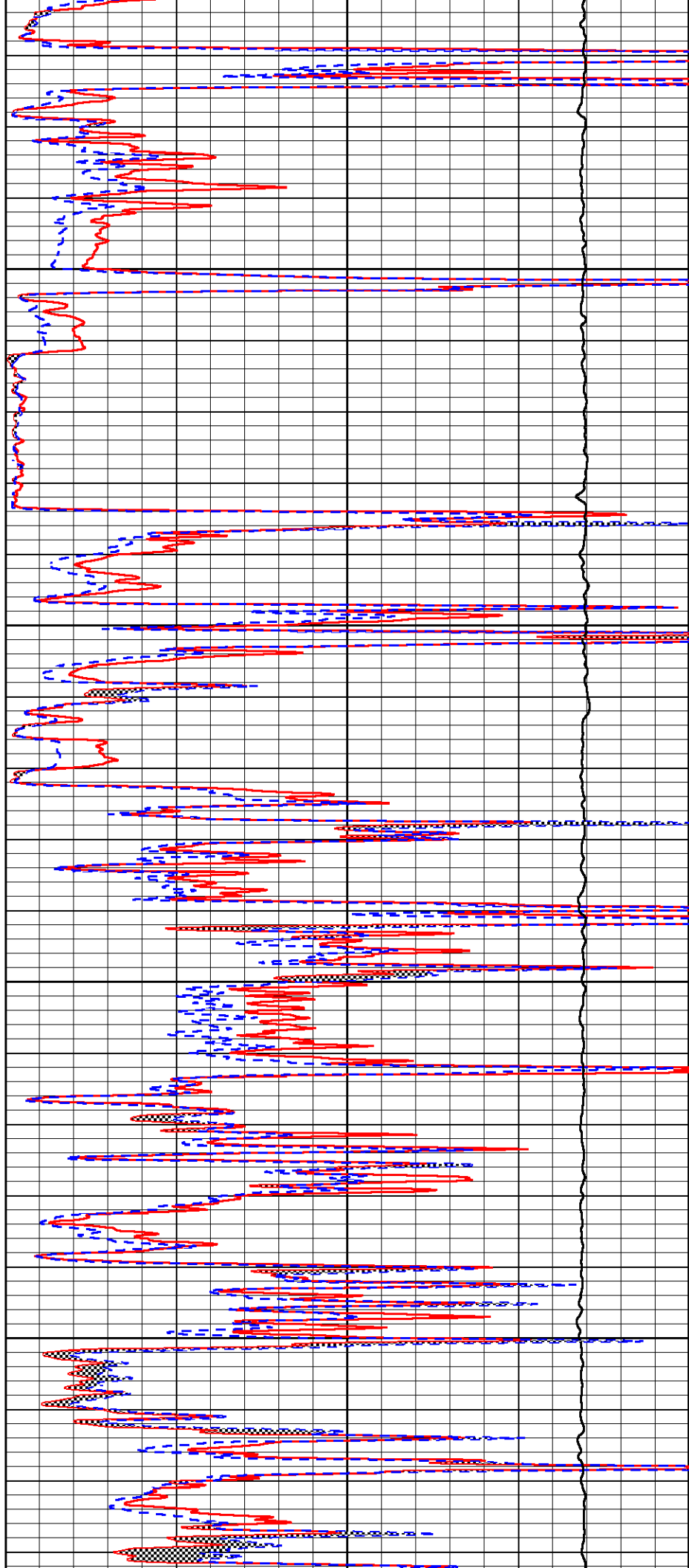


2700

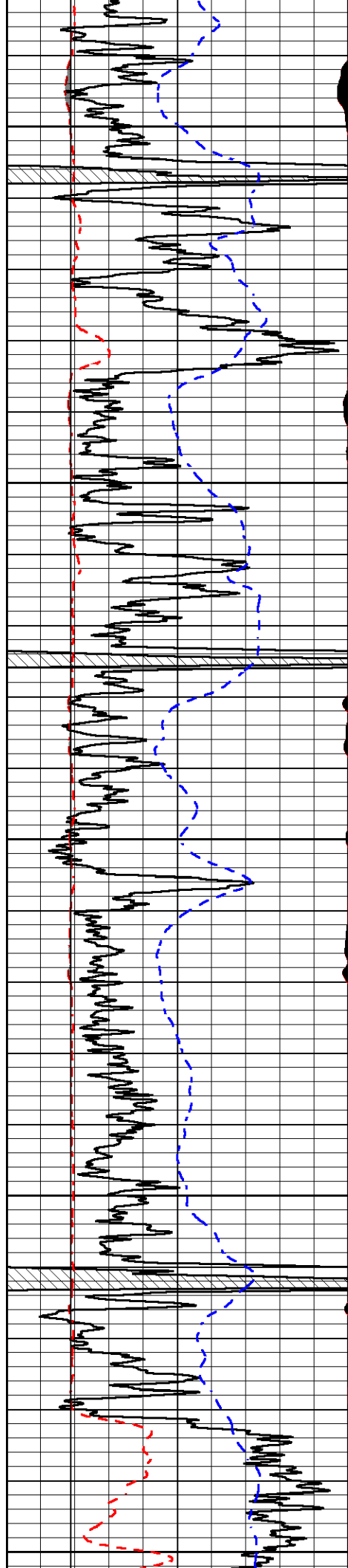
2750

2800

2850







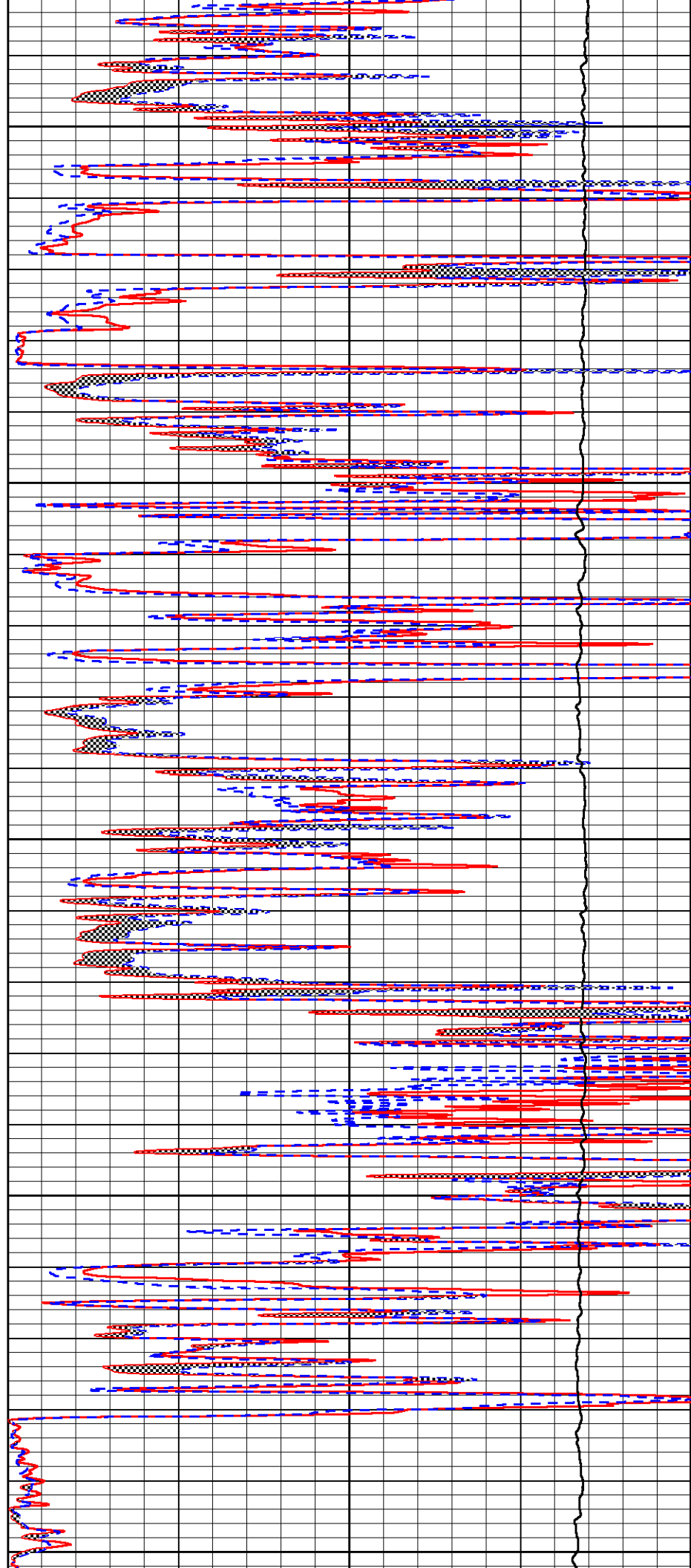
2900

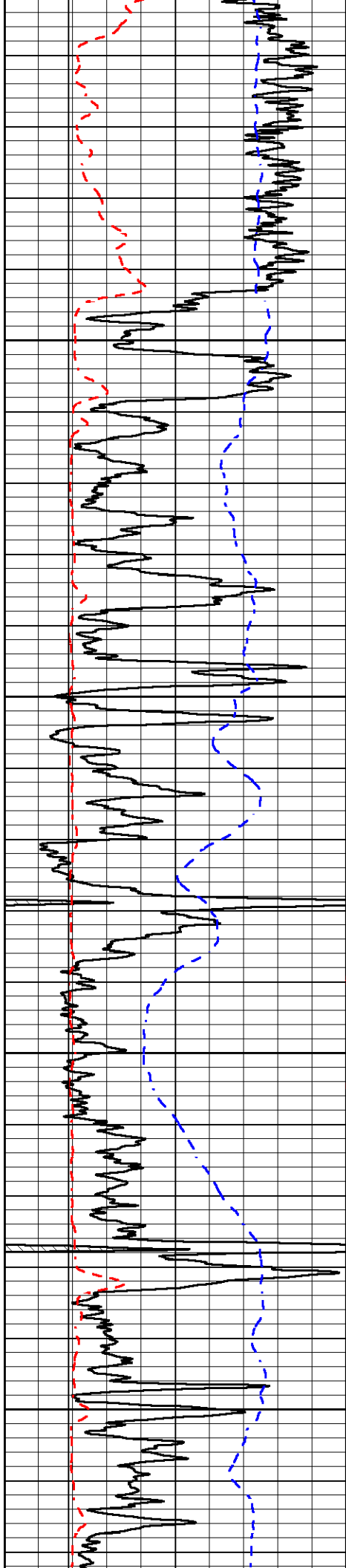
2950

3000

3050

3100



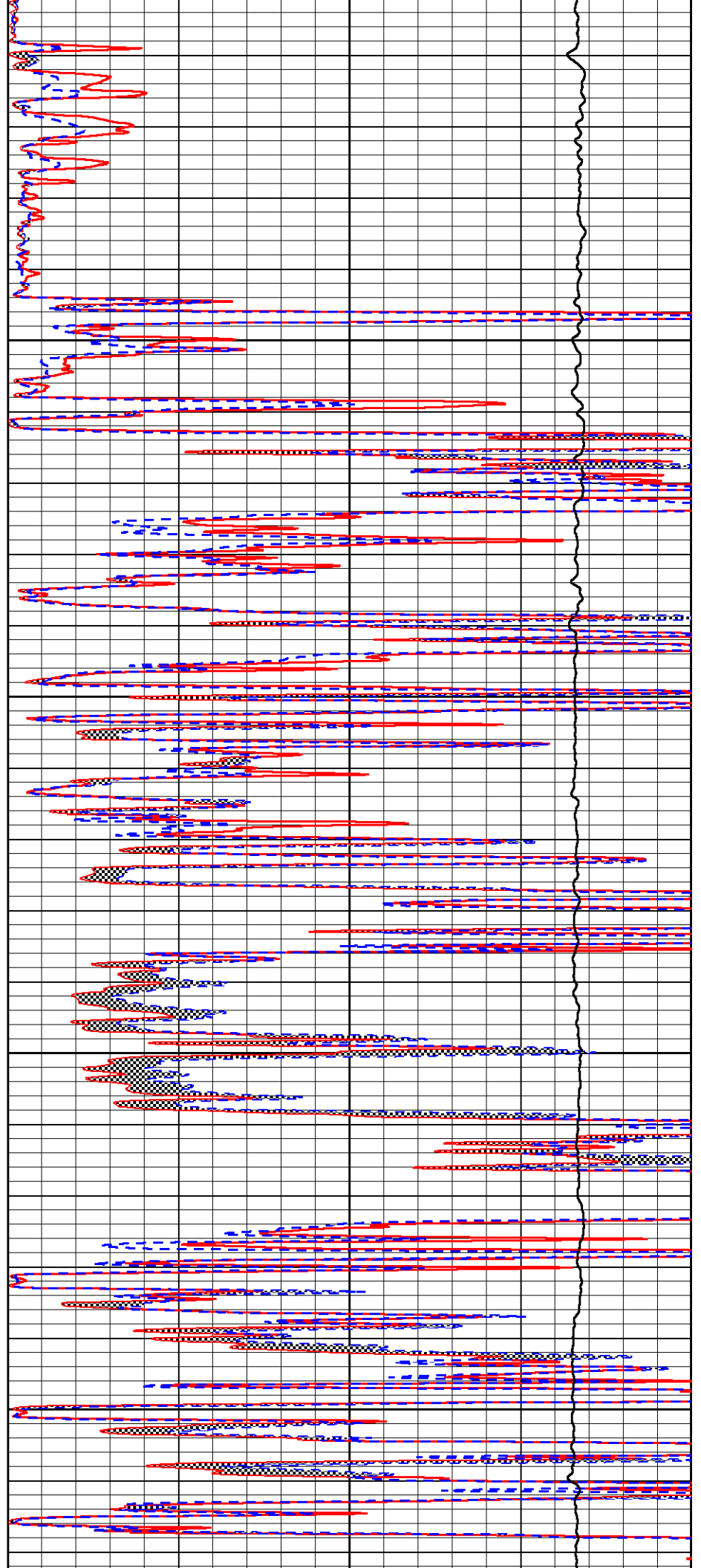


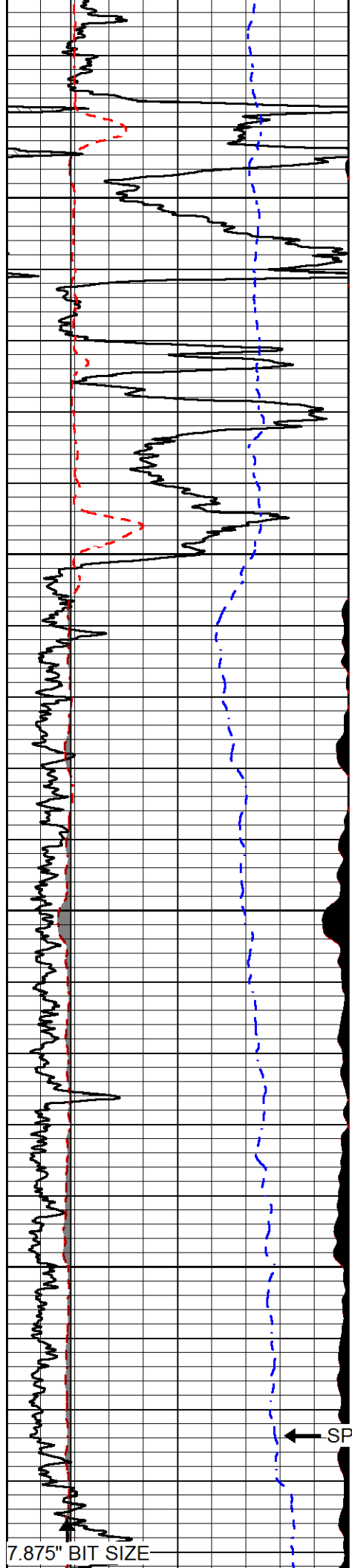
3150

3200

3250

3300



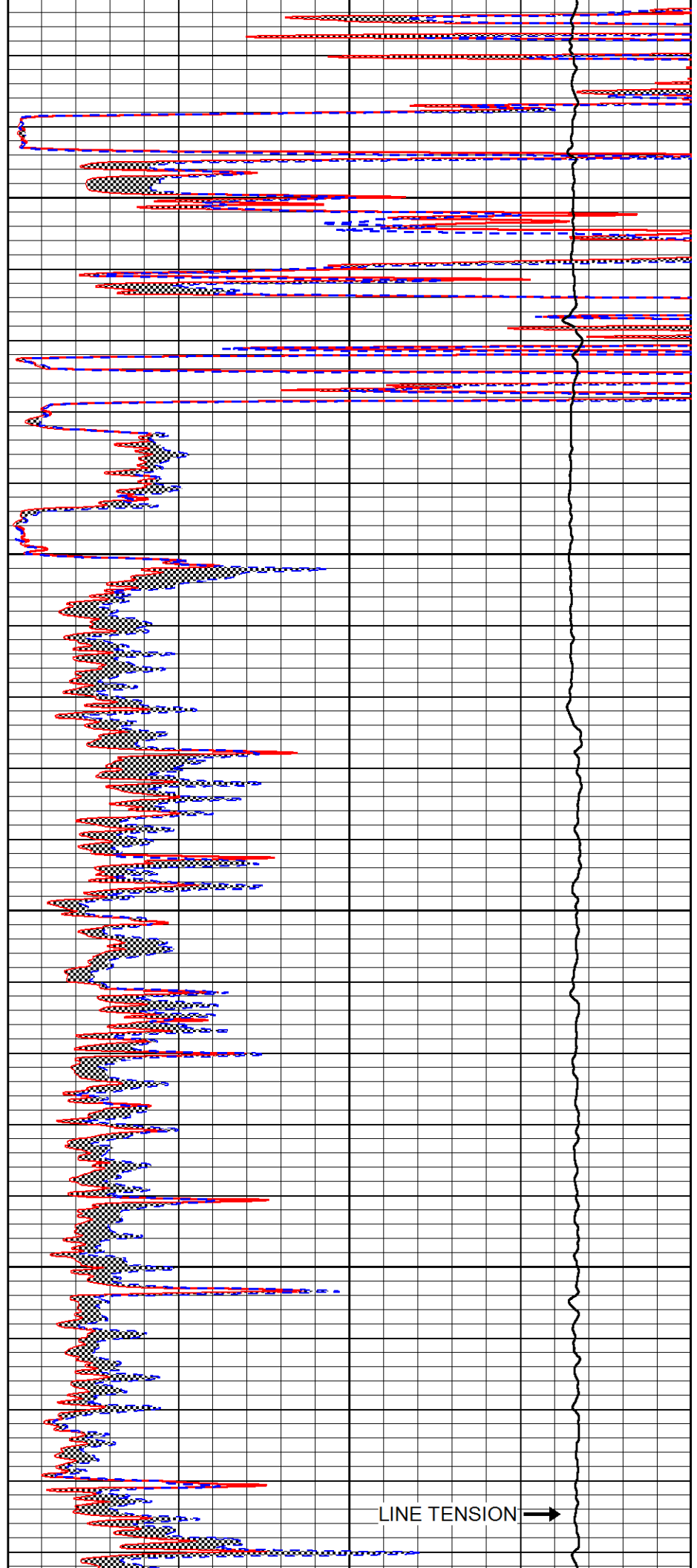


3350

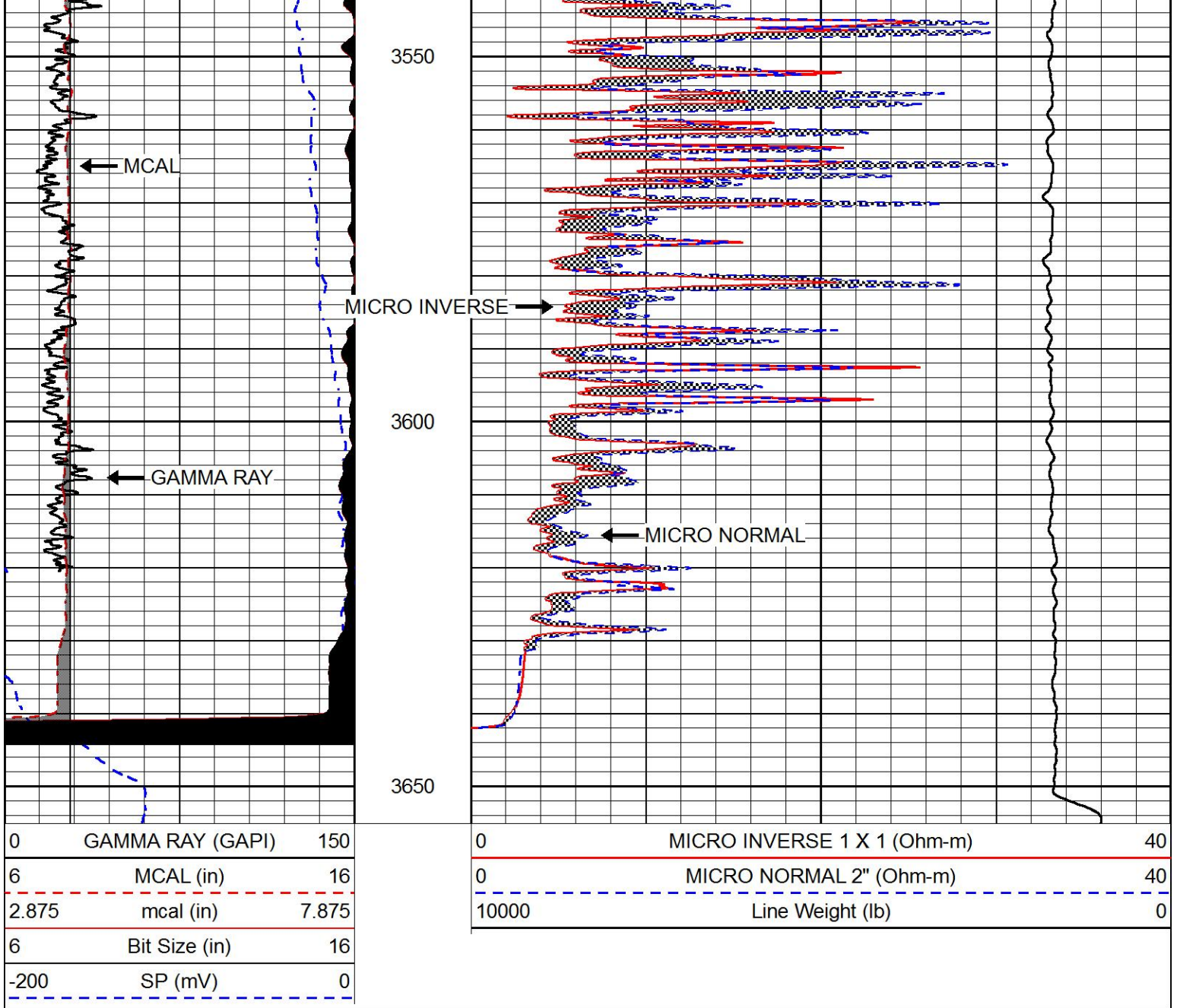
3400

3450

3500

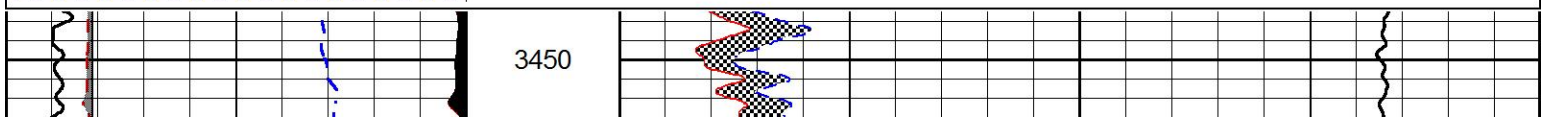
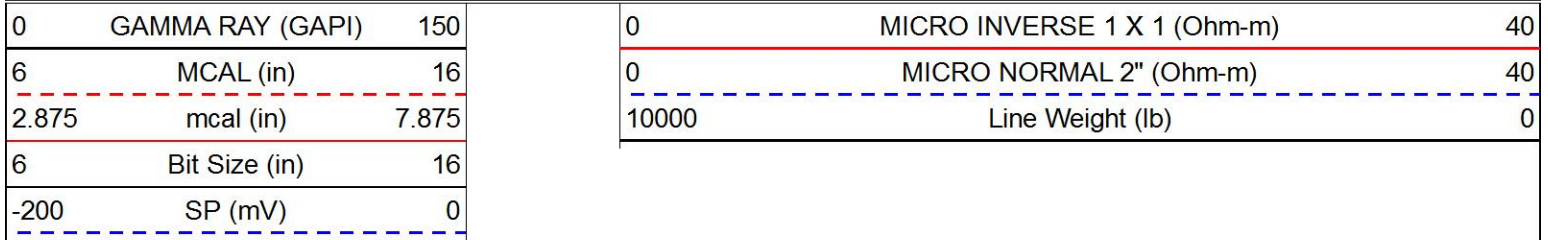


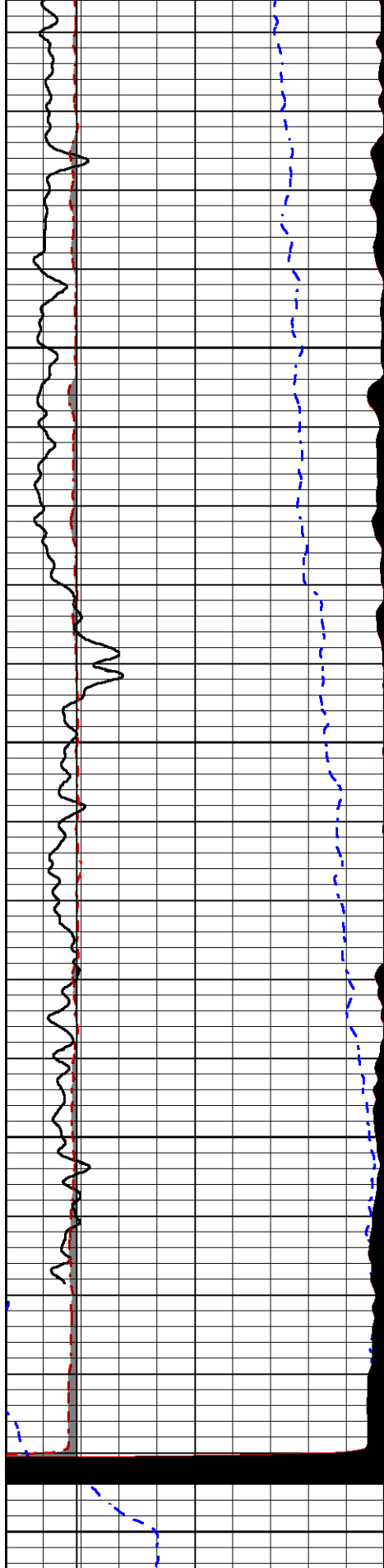
LINE TENSION



# REPEAT SECTION

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





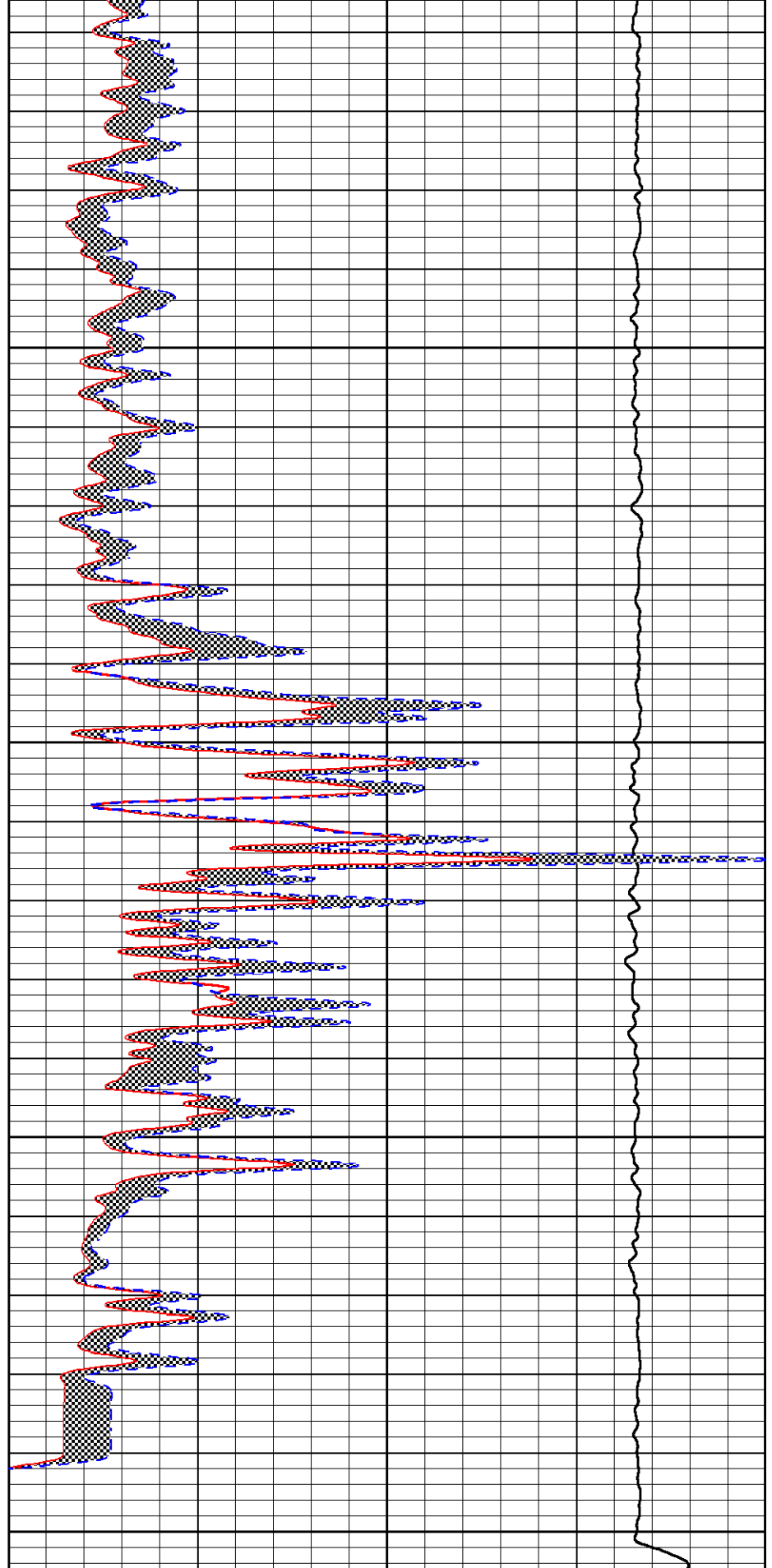
3500

3550

3600

3650

0	GAMMA RAY (GAPI)	150
6	MCAL (in)	16
2.875	mcal (in)	7.875
6	Bit Size (in)	16



0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
10000	Line Weight (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



**PIONEER**  
Pioneer Energy Services

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