



MIDWEST WIRELINE

DUAL INDUCTION
LOG

Company Castle Resources, Inc.		Company Castle Resources, Inc.	
Well	Werth #1	Well	Werth #1
Field		Field	
County	Ellis	County	Ellis
State	Kansas	State	Kansas
Location: API #: 15-051-27063-00-00		Other Services	
NE SW 1980 FSL & 1980 FWL SEC 3 TWP 13S RGE 18W		CNL/CDL MEL	
Permanent Datum	Ground Level	Elevation	2175
Log Measured From	Kelly Bushing	K.B.	2180
Drilling Measured From	Kelly Bushing	D.F.	
		G.L.	2175
Date	11/14/2022		
Run Number	One		
Depth Driller	3785		
Depth Logger	3784		
Bottom Logged Interval	3783		
Top Log Interval	200		
Casing Driller	8.625 @ 220		
Casing Logger	208		
Bit Size	7.875		
Type Fluid in Hole	Chemical		
Salinity, ppm CL	7000		
Density / Viscosity	8.9 50		
pH / Fluid Loss	11.3 8.38		
Source of Sample	Flowline		
Rm @ Meas. Temp	0.75 @ 68		
Rmf @ Meas. Temp	0.56 @ 68		
Rmc @ Meas. Temp	1.01 @ 68		
Source of Rmf / Rmc	Charts		
Rm @ BHT	0.45 @ 114		
Operating Rig Time	2.5 Hours		
Max Rec. Temp. F	114		
Equipment Number	P-24		
Location	Hays		
Recorded By	T. Martin		
Witnessed By	Jerry Green		

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All interpretations are opinions based on inferences from electrical or other measurements and Midwest Wireline LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Midwest Wireline 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.

Hays, KS, N to Feedlot Rd,
1/2 E, N into

Log Measured From: Kelly Bushing 5 Ft. Above Permanent Datum

THANK YOU FOR USING MIDWEST WIRELINE LLC
785-625-3858

Your Midwest Wireline Crew		This Log Record Was Witnessed By	
Engineer: T. Martin		Primary Witness: Jerry Green	
Operator:		Secondary Witness:	
Operator:		Secondary Witness:	
Operator:		Secondary Witness:	

Sensor	Offset (ft)	Schematic		Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.33			GR-M&W (106)	3.00	3.50	50.00
CNLSC CNSSC	37.23 36.48			CNT-M&W (207-MW)	5.00	3.50	100.00
LSD DCAL SSD	28.18			CDL-M&W (305-24)	8.50	4.00	250.00
	28.17			ML-PSIML (401)	7.58	4.00	65.00
	27.68						
MCAL MI MN	19.58						
	19.58			RLL3F RLL3	15.50	15.50	
	19.58						
RLL3F RLL3	15.50 15.50			DIL-M&W (502 HT)	18.25	3.50	220.00
CILD	8.33						
CILM	4.50						
SP	0.20						
Dataset: castle_werth #1.db: field/well/StkMI/pass3.1 Total length: 42.33 ft Total weight: 685.00 lb O.D.: 4.00 in							

Log Variables

DatabaseC:\ProgramData\Warrior\Data\castle_werth #1.db
Dataset field/well/StkMI/pass3.1/_vars_

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 114	in 4.5	in 0	g/cc 1	2	g/cc 2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m 0	mmho/m 0	mV 55	degF 40	Off	ft 3784

Variable Description

A : Cement Factor (a)
BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
FLUIDDEN : Fluid Density
M : Cement Exp (m)
MATRXDEN : Matrix Density

NPORSEL : Neutron Porosity Curve Select
PERFS : Perforation Flag
SNDERR : Deep Sonde Error Correction
SNDERRM : Medium Sonde Error Correction
SPSHIFT : S.P. Baseline Offset
SRFTEMP : Surface Temperature
SZCOR : CN Size Cor. ?
TDEPTH : Total Depth



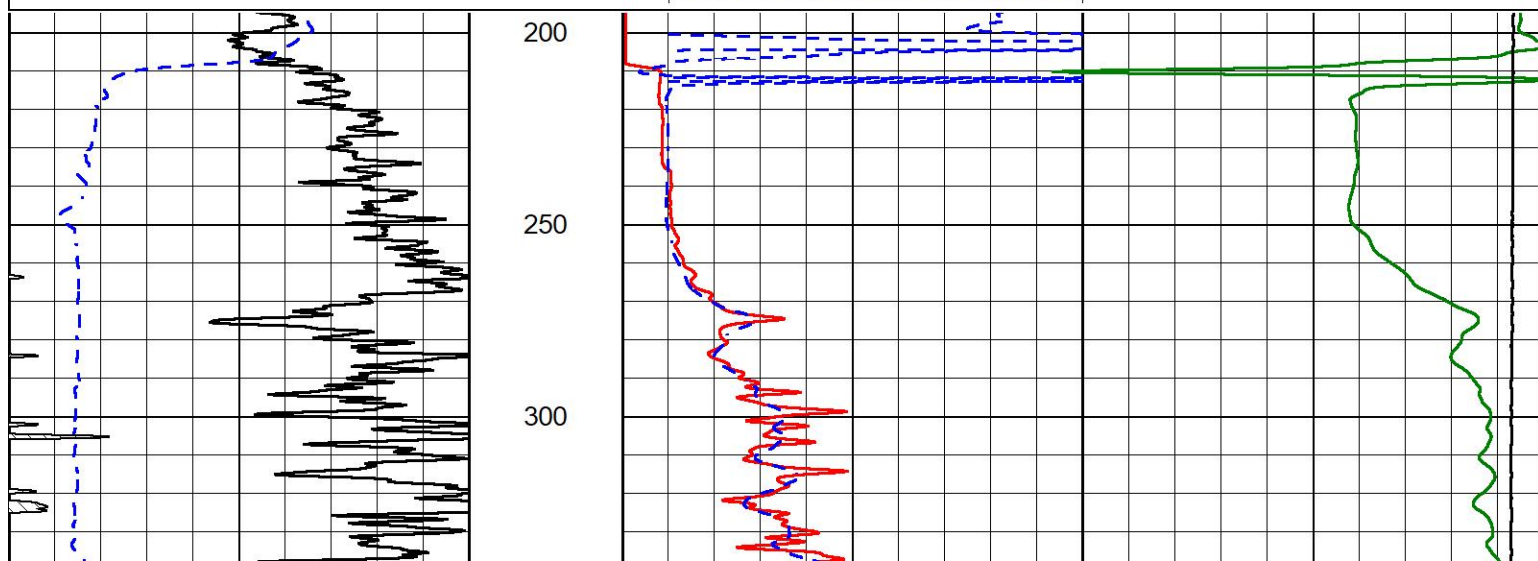
2" SCALE RESISTIVITY

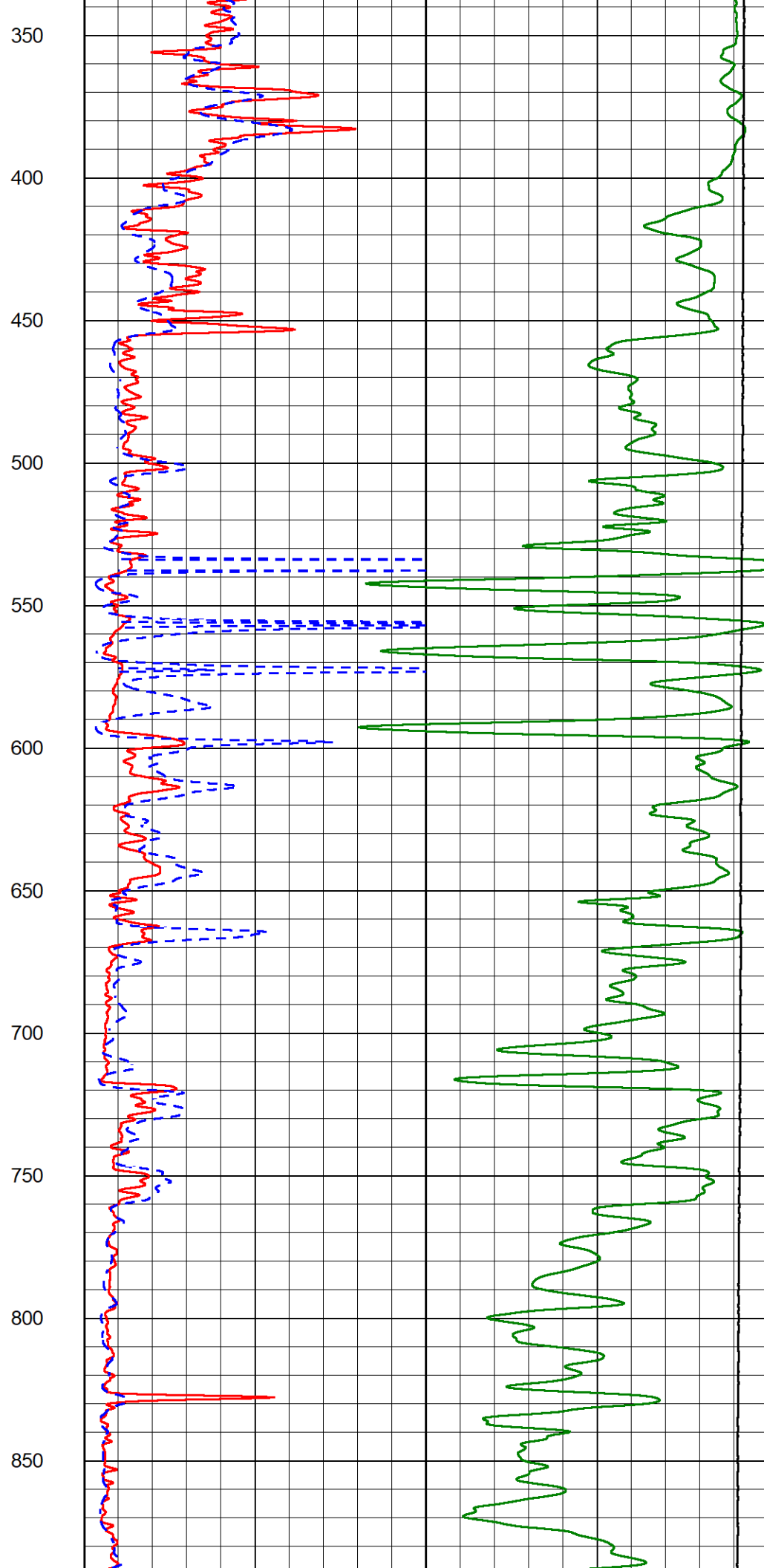
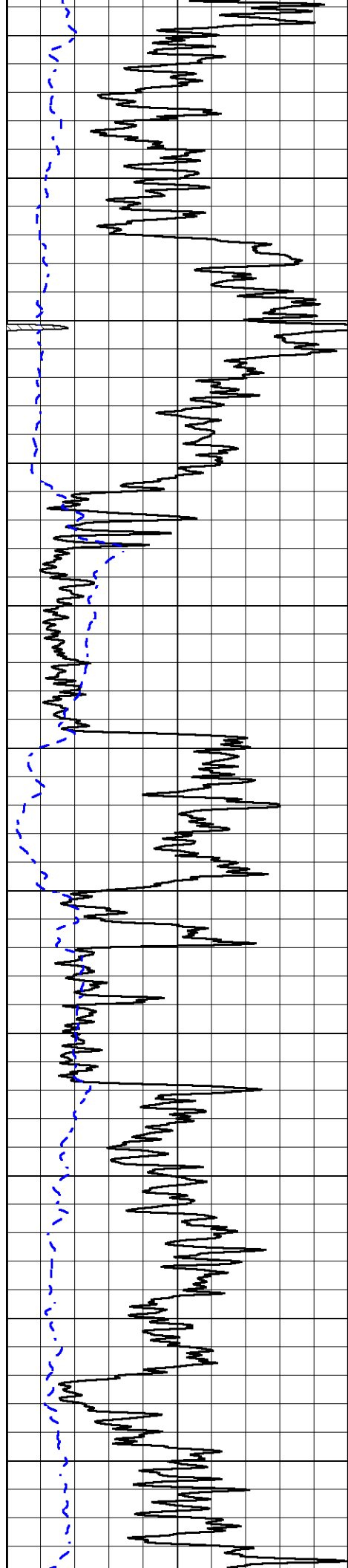
MAIN PASS

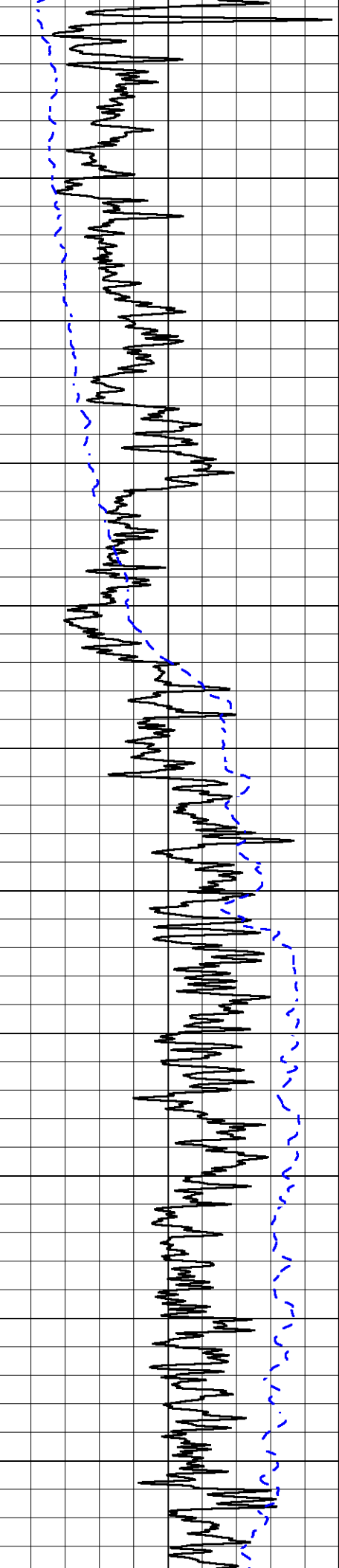
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Dataset Pathname StkMI/pass3.2
Presentation Format _dil2in
Dataset Creation Mon Nov 14 15:06:16 2022
Charted by Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150
-200	SP (mV)	0

1000	Conductivity (mmho/m)	0
15000	Line Tension (lb)	0
0	Shallow Resistivity (Ohm-m)	50
0	Deep Resistivity (Ohm-m)	50
50	Shallow Resistivity (Ohm-m)	200
50	Deep Resistivity (Ohm-m)	200







900

950

1000

1050

1100

1150

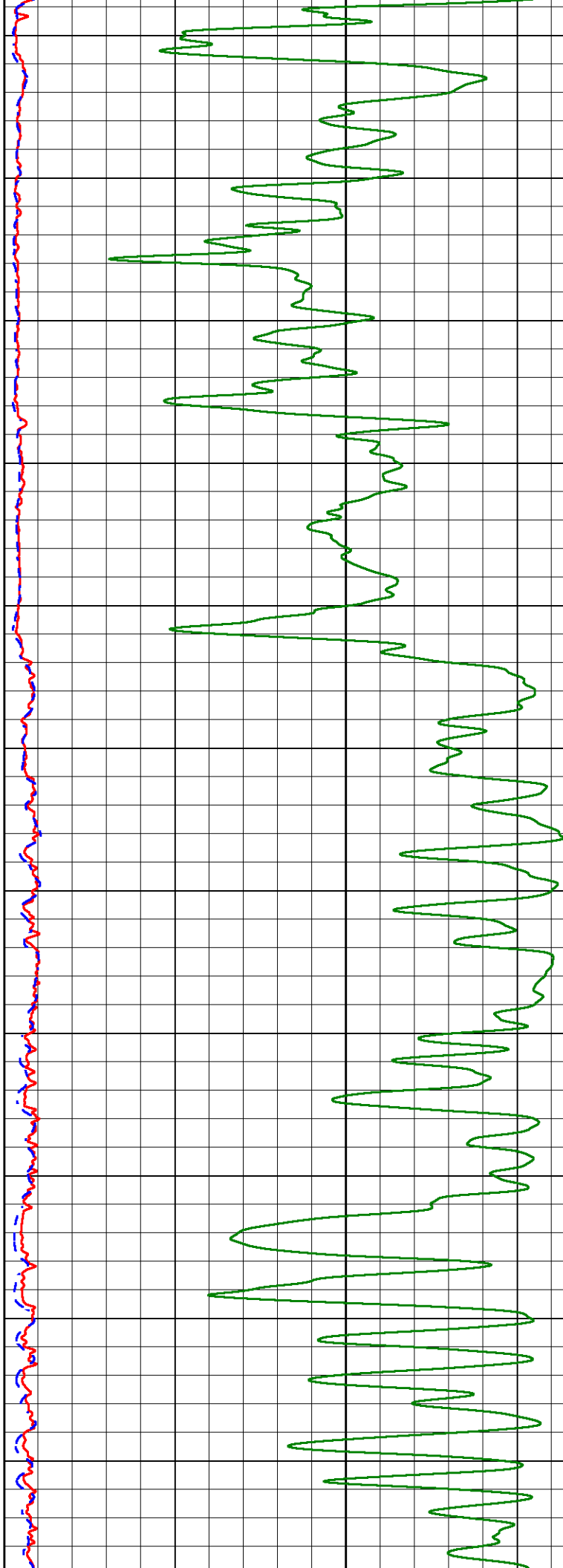
1200

1250

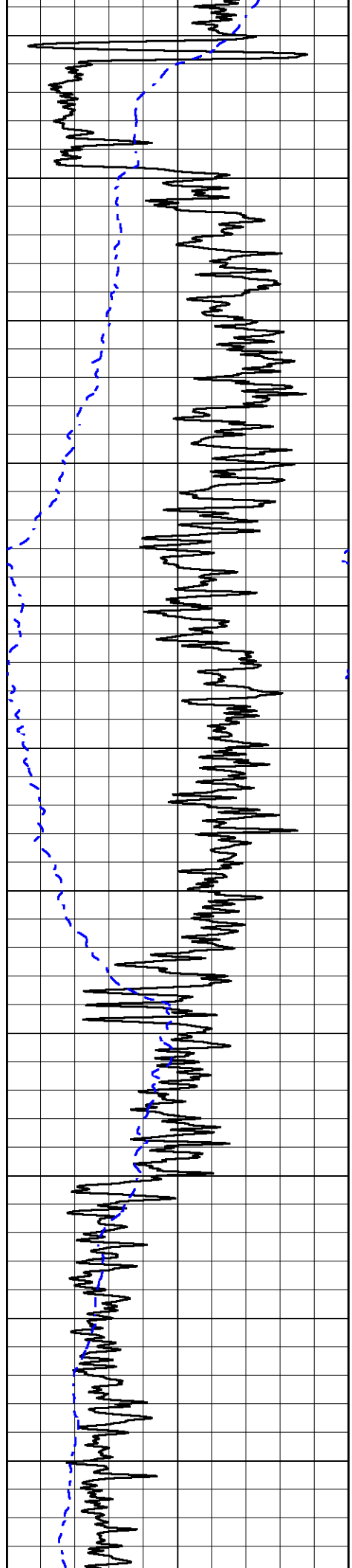
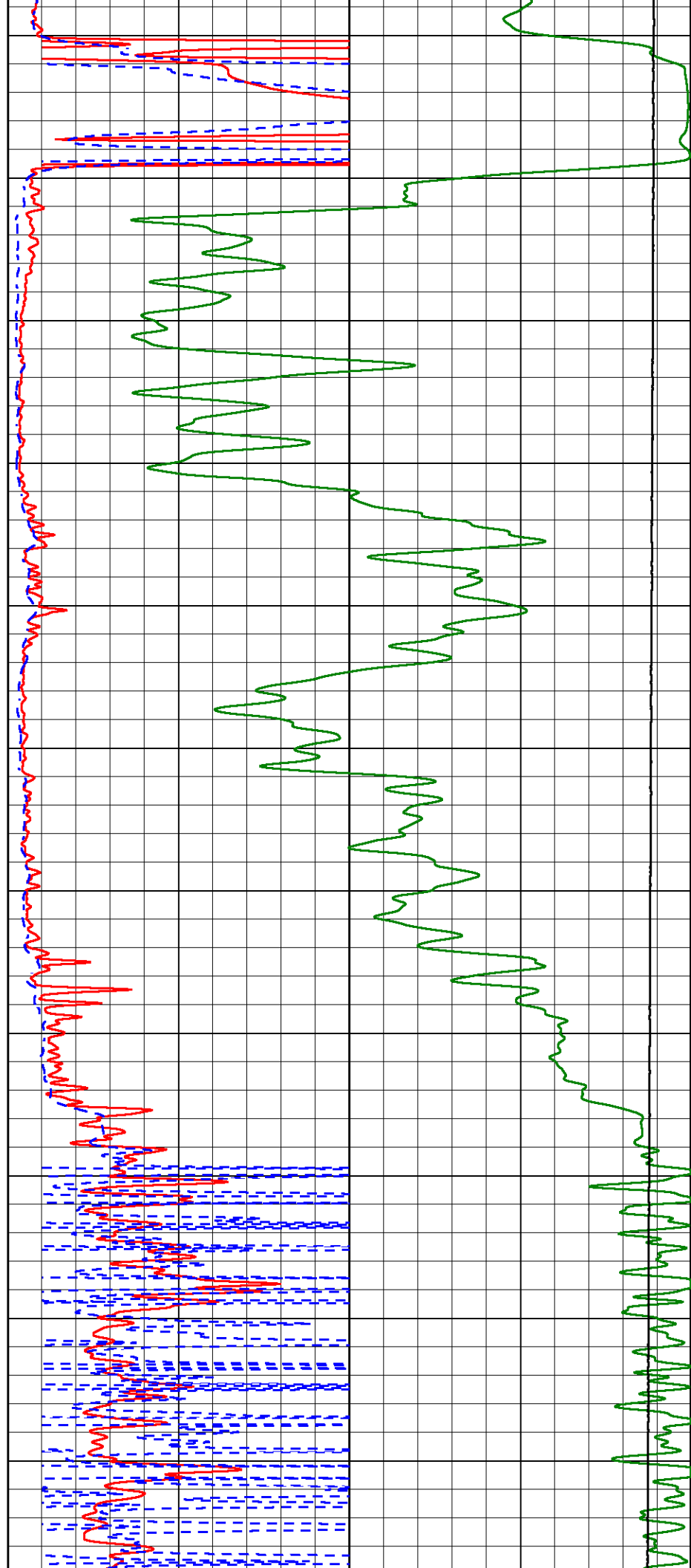
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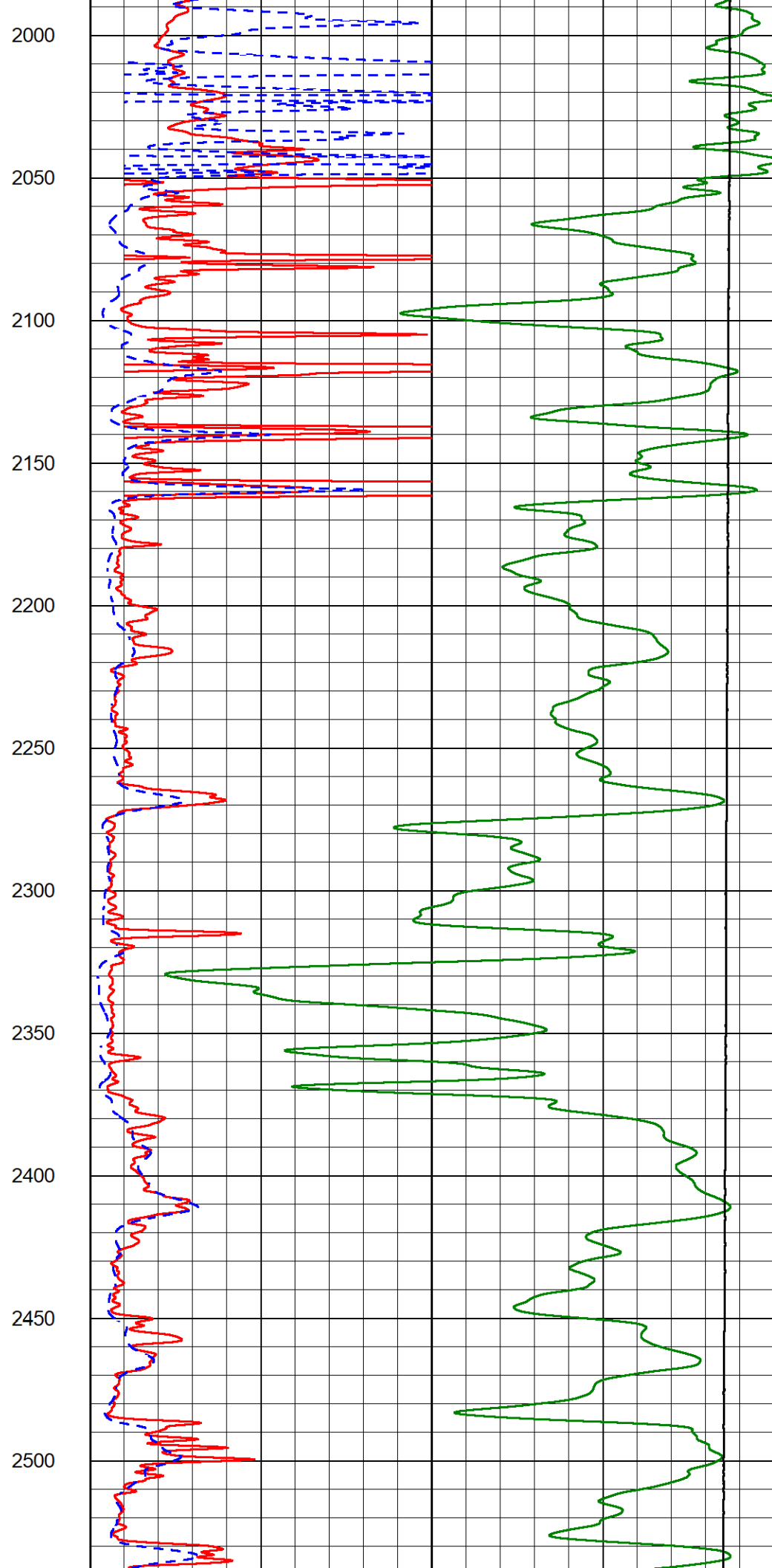
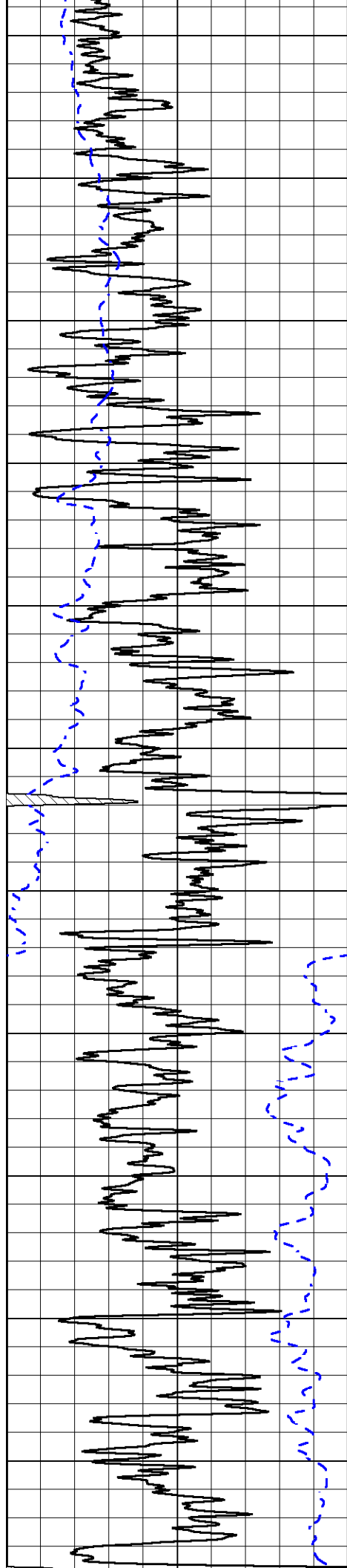
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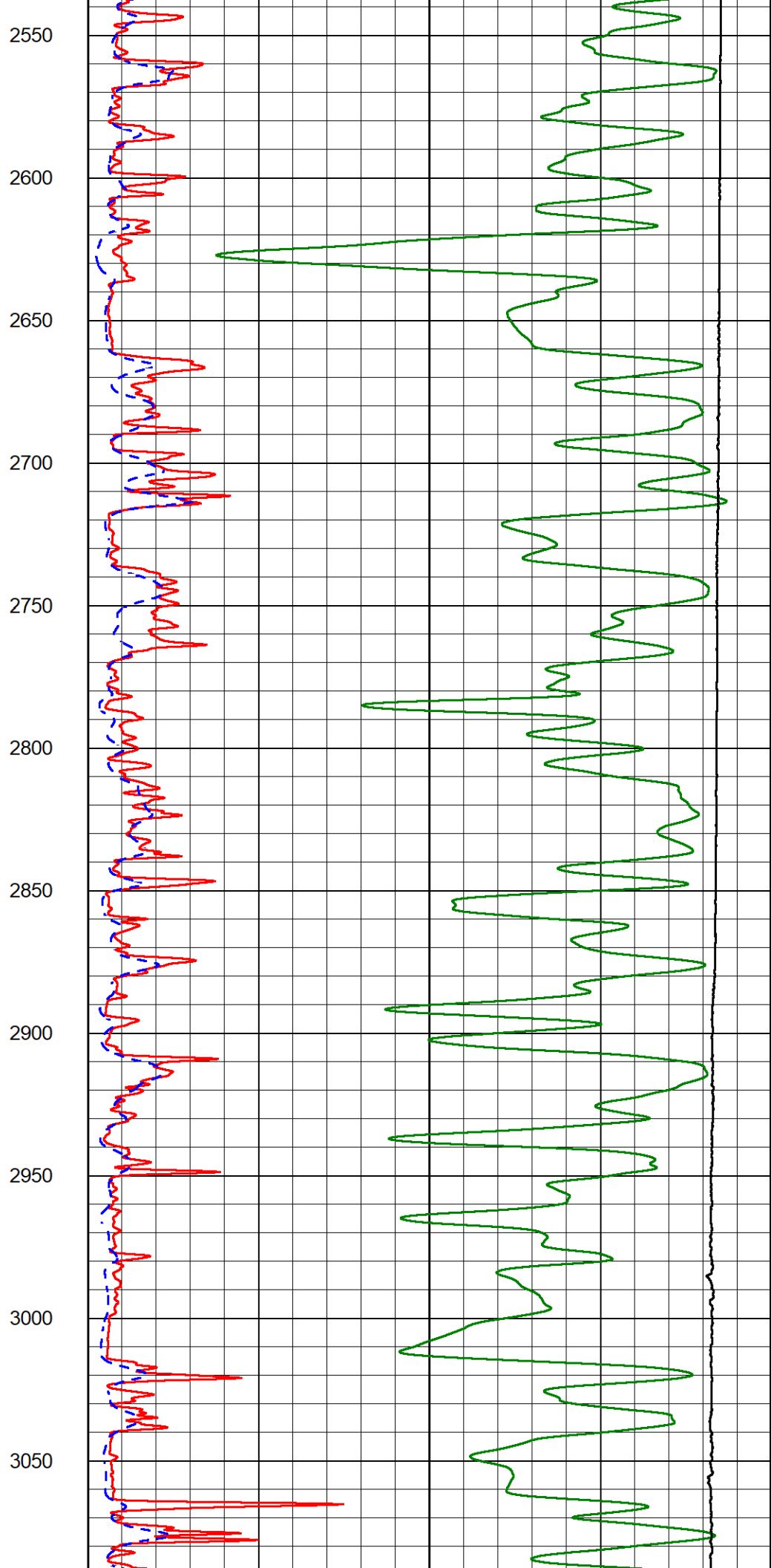
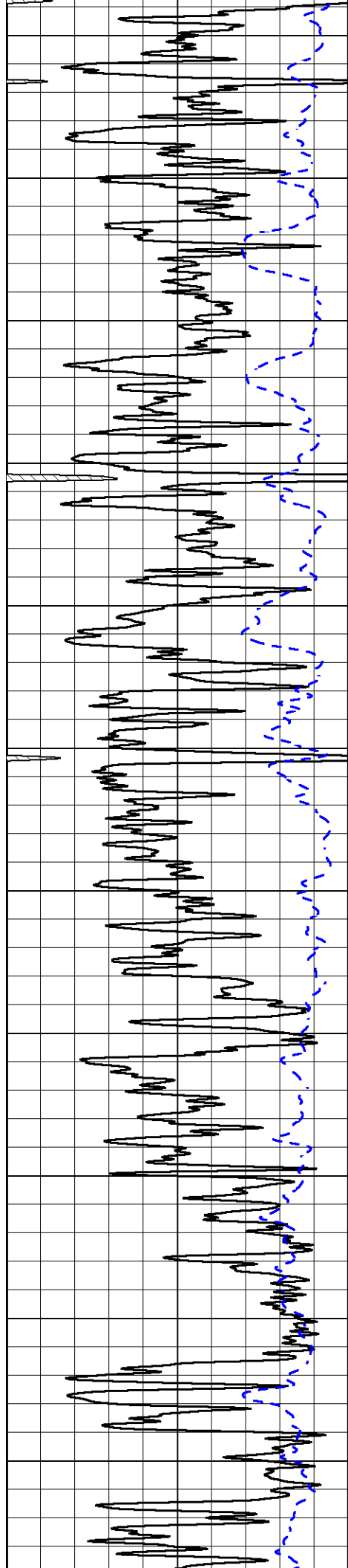
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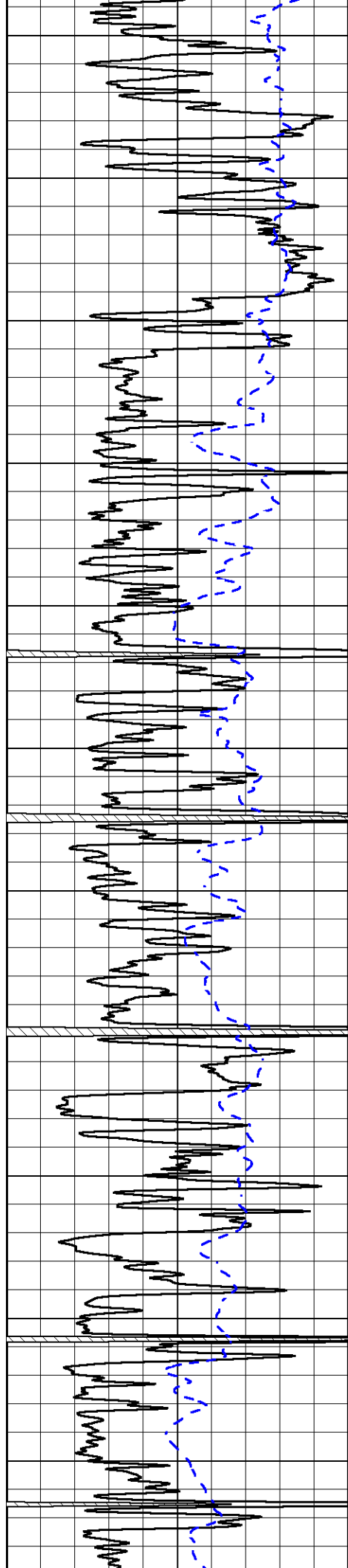


1450
1500
1550
1600
1650
1700
1750
1800
1850
1900
1950









3100

3150

3200

3250

3300

3350

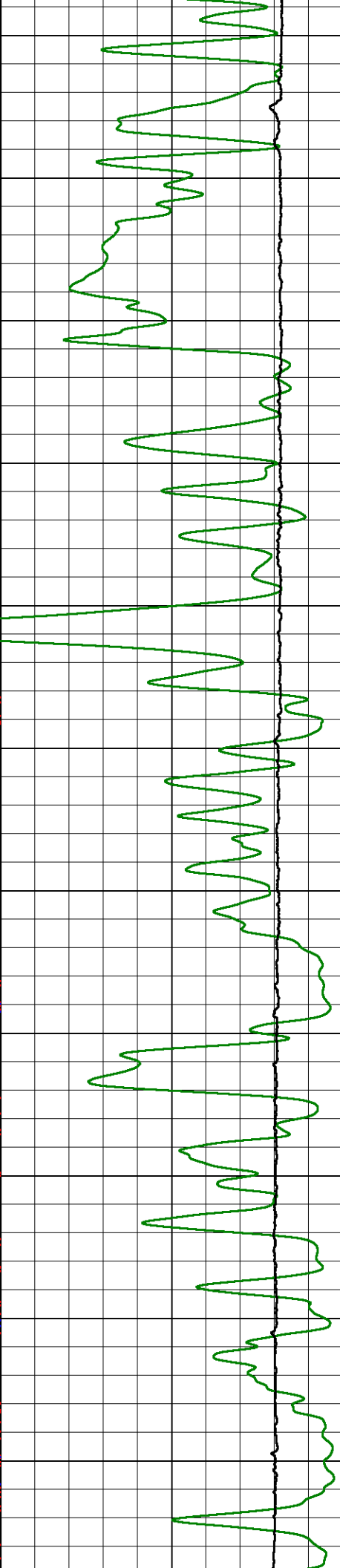
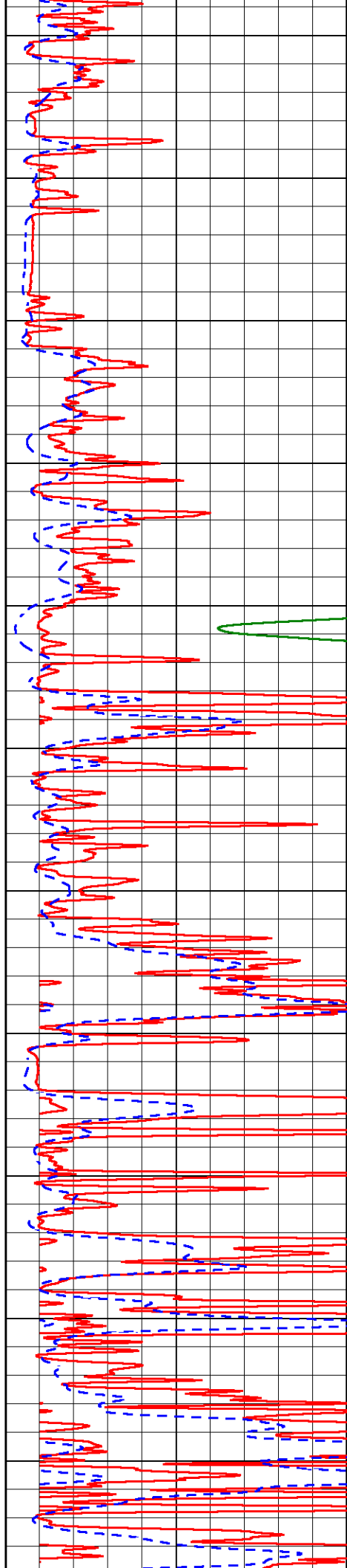
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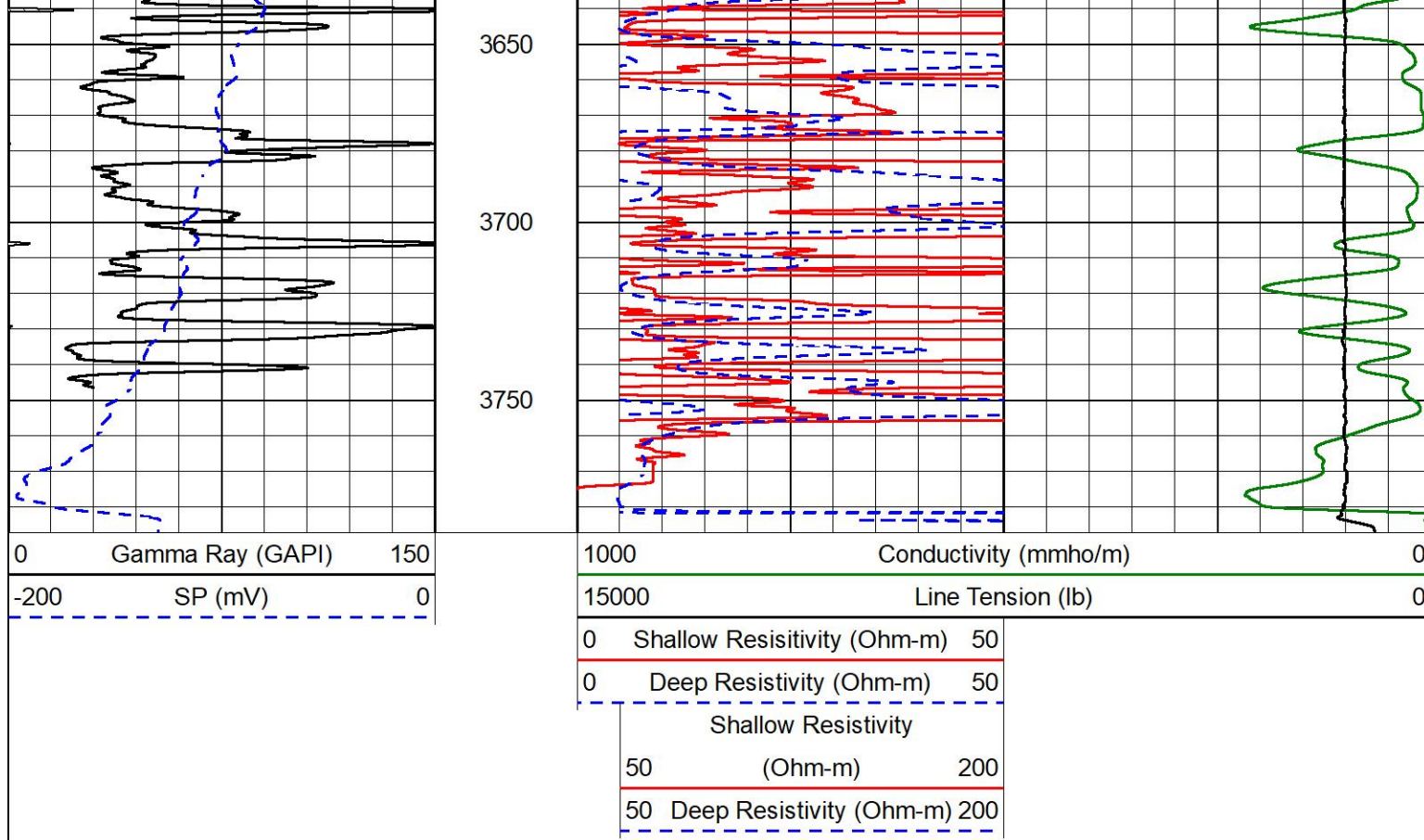
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3500

3550

3600

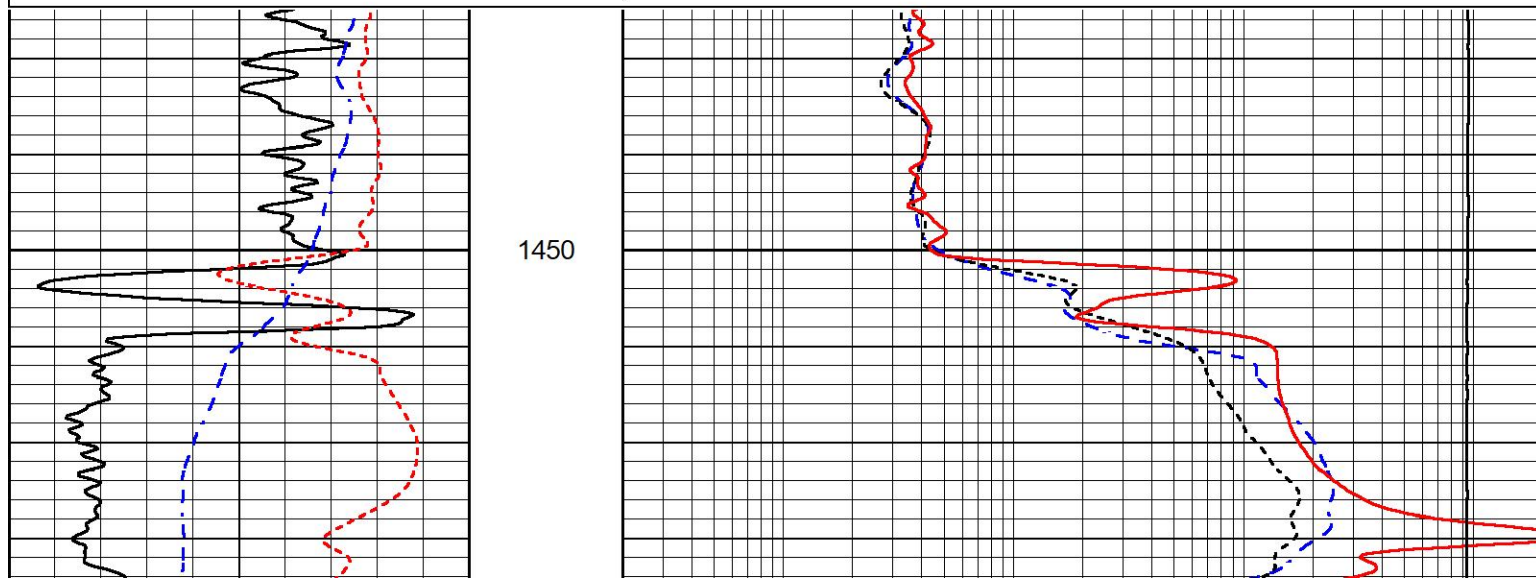


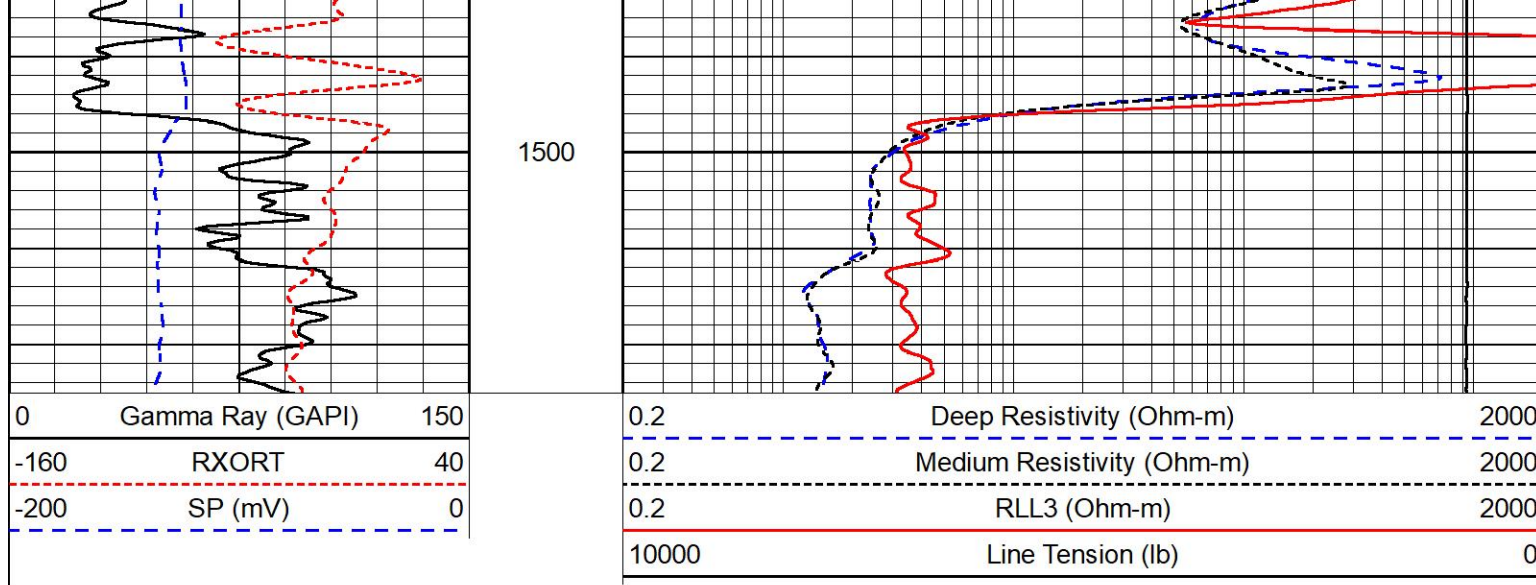


ANHYDRITE SECTION

MAIN PASS

Database File castle_werth #1.db
 Dataset Pathname StkMI/pass3.4
 Presentation Format _dil
 Dataset Creation Mon Nov 14 14:50:22 2022
 Charted by Depth in Feet scaled 1:240



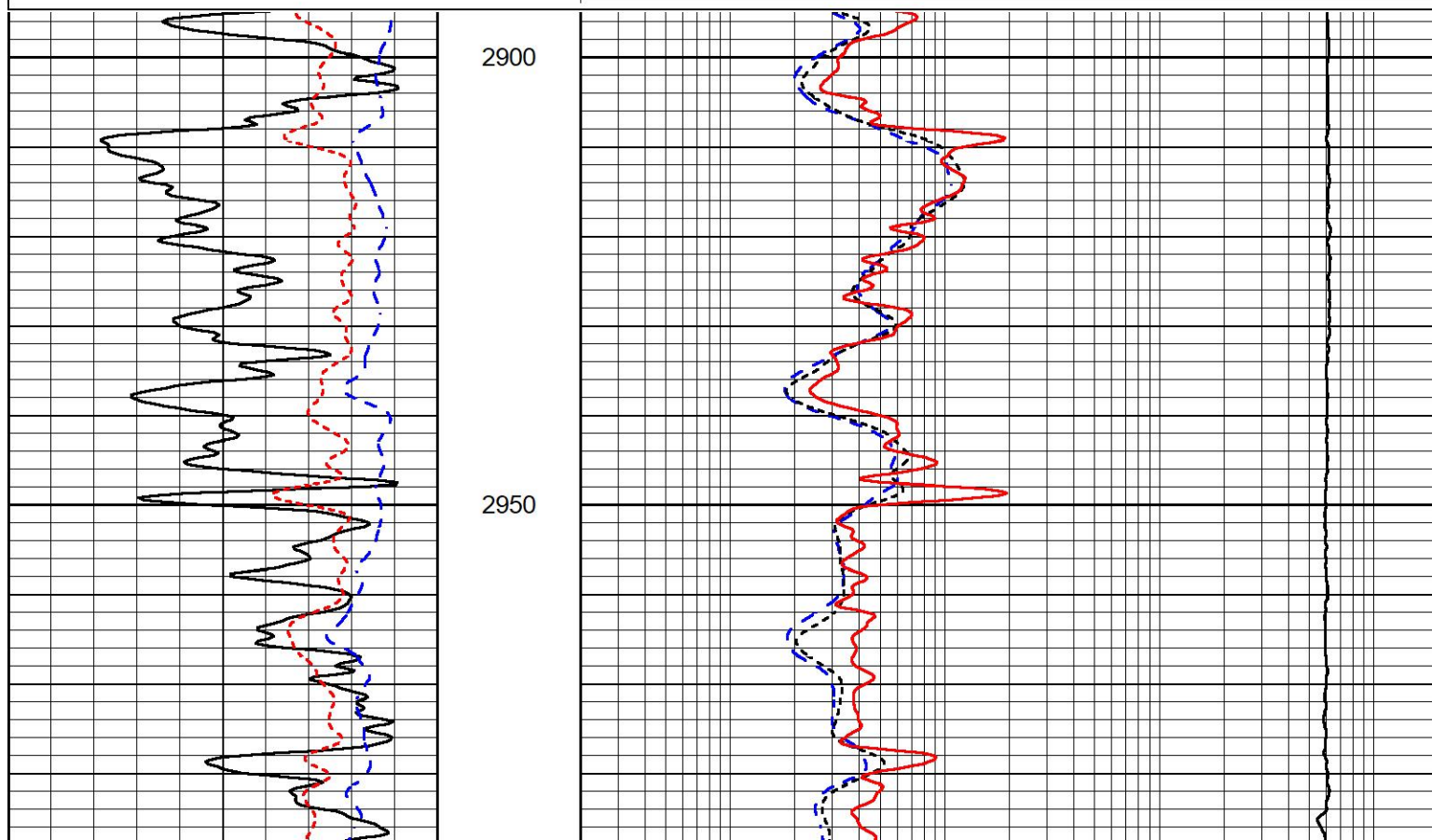
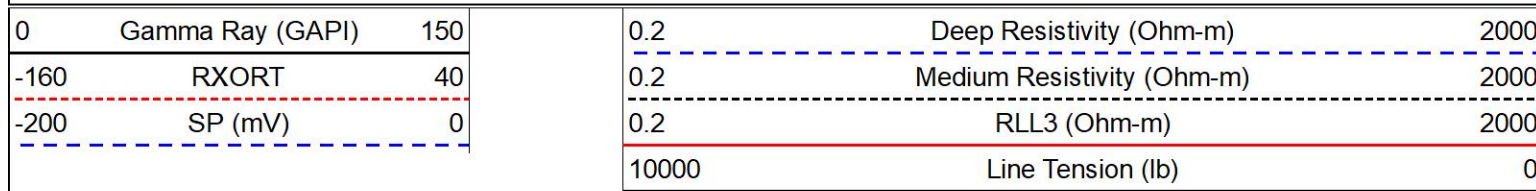


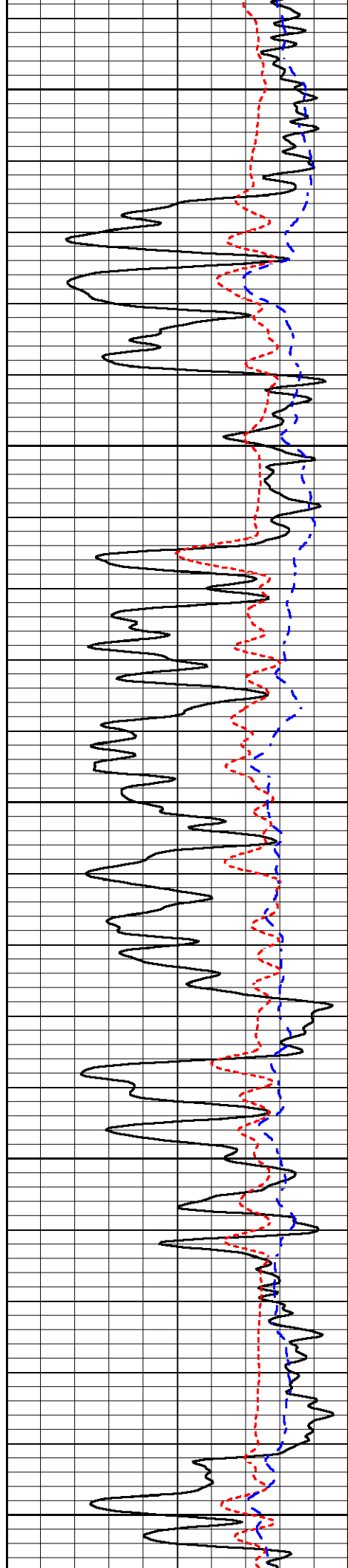
MIDWEST WIRELINE

2" SCALE BULK DENSITY

MAIN PASS

Database File castle_werth #1.db
 Dataset Pathname StkMI/pass3.3
 Presentation Format _dil
 Dataset Creation Mon Nov 14 14:30:59 2022
 Charted by Depth in Feet scaled 1:240





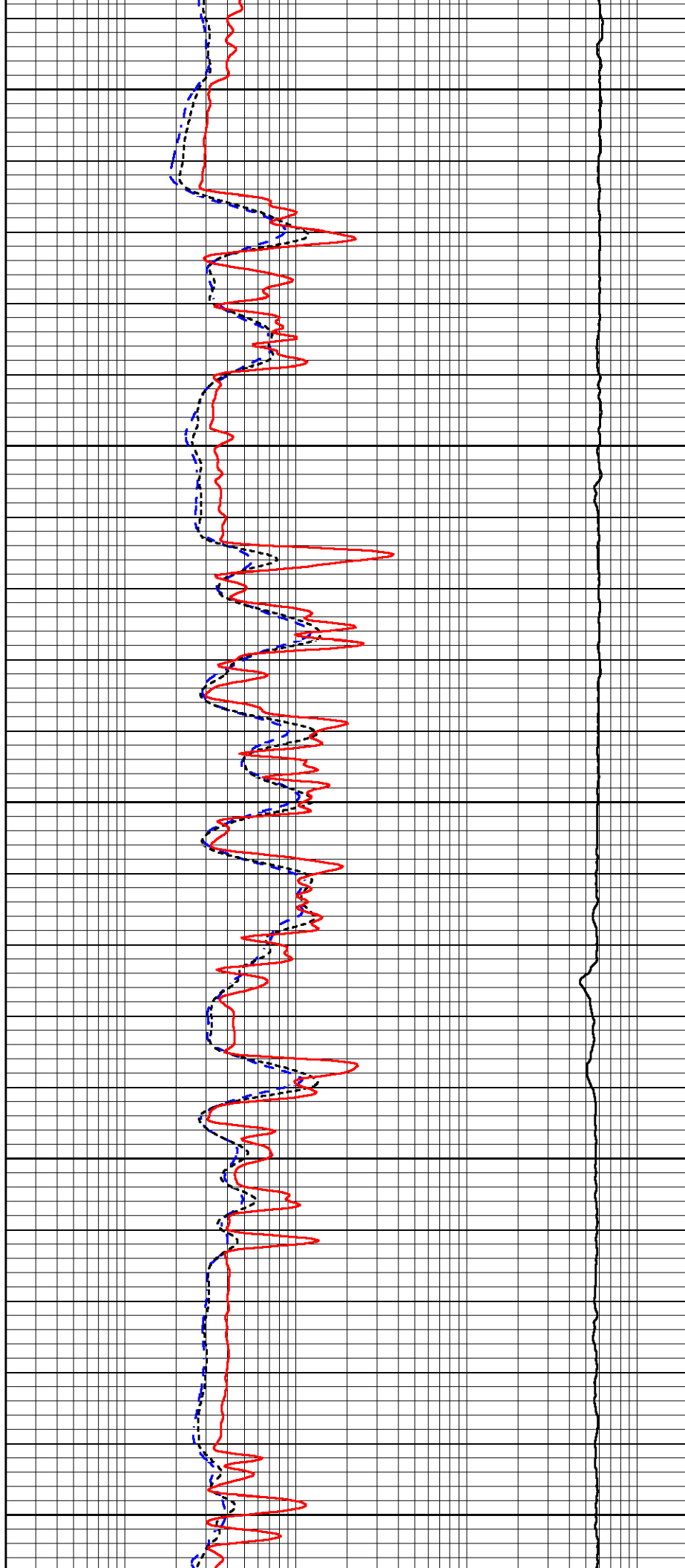
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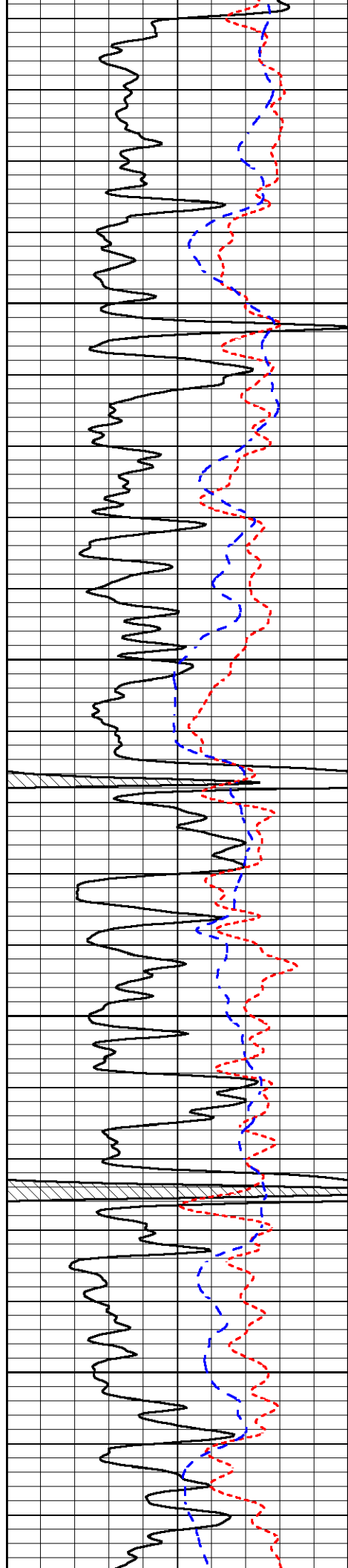
3050

3100

3150

3200



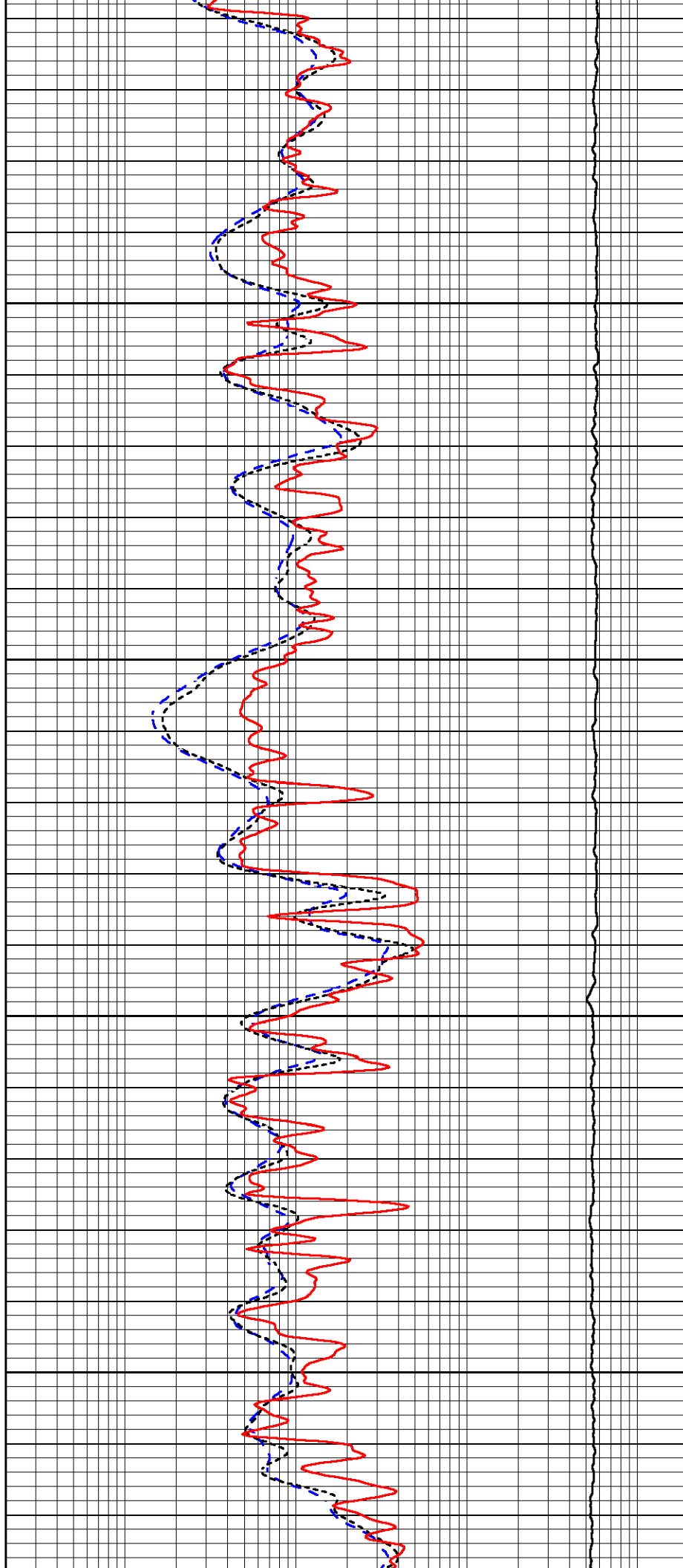


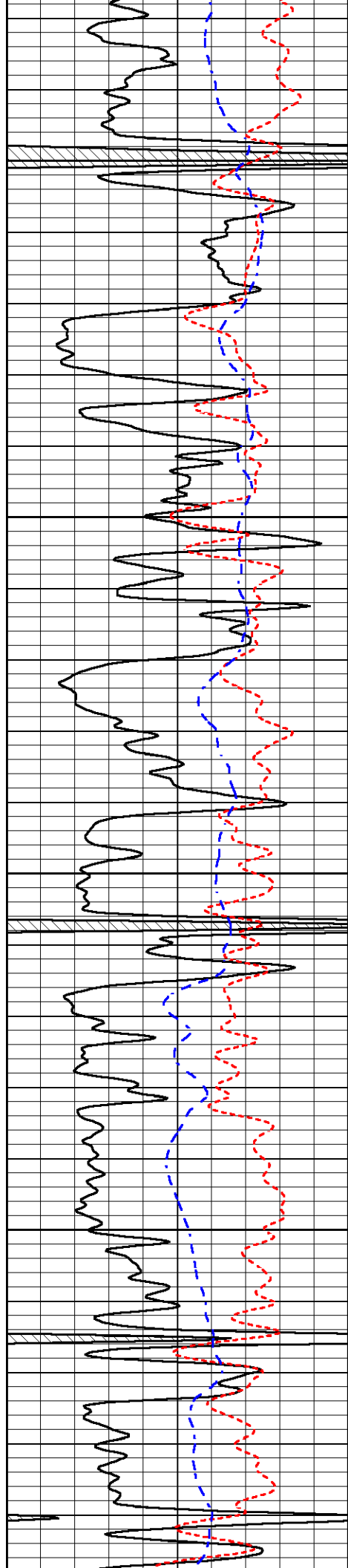
3250

3300

3350

3400



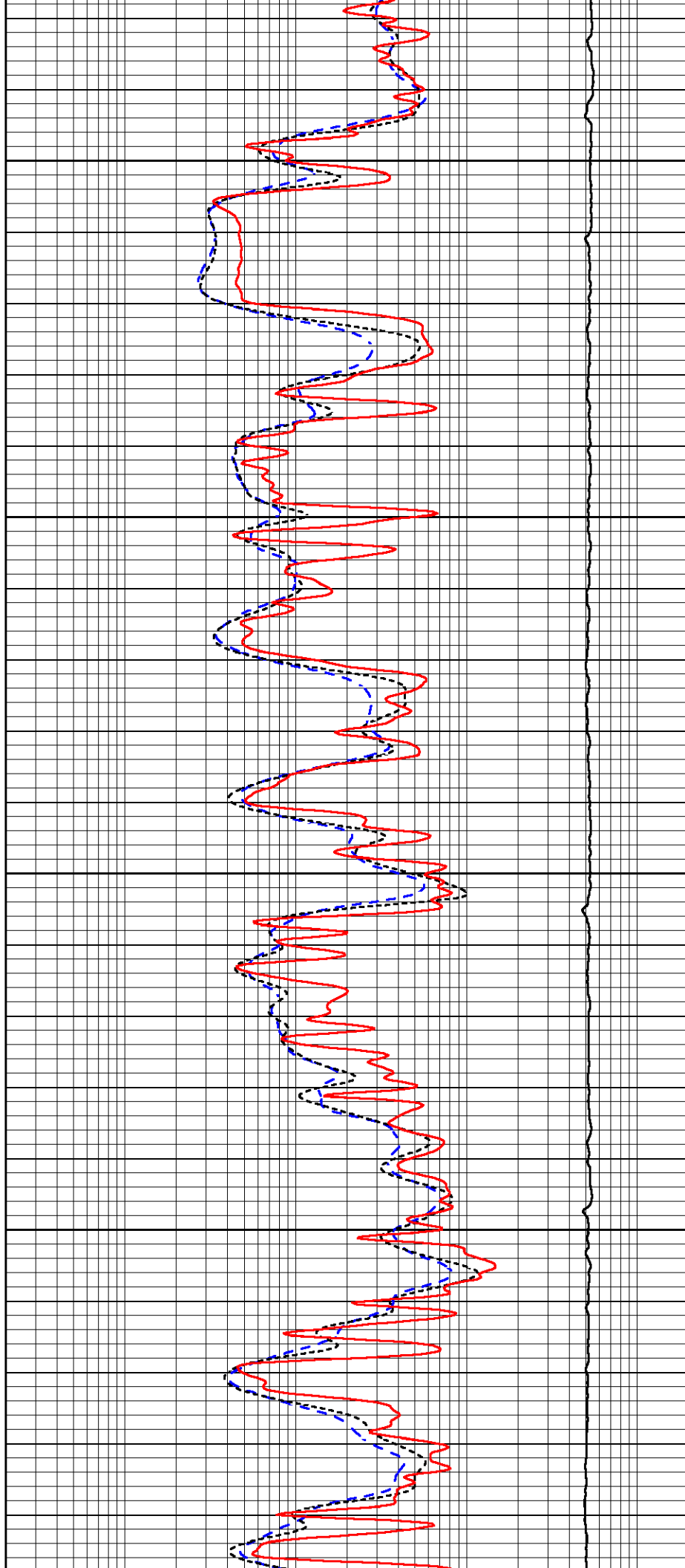


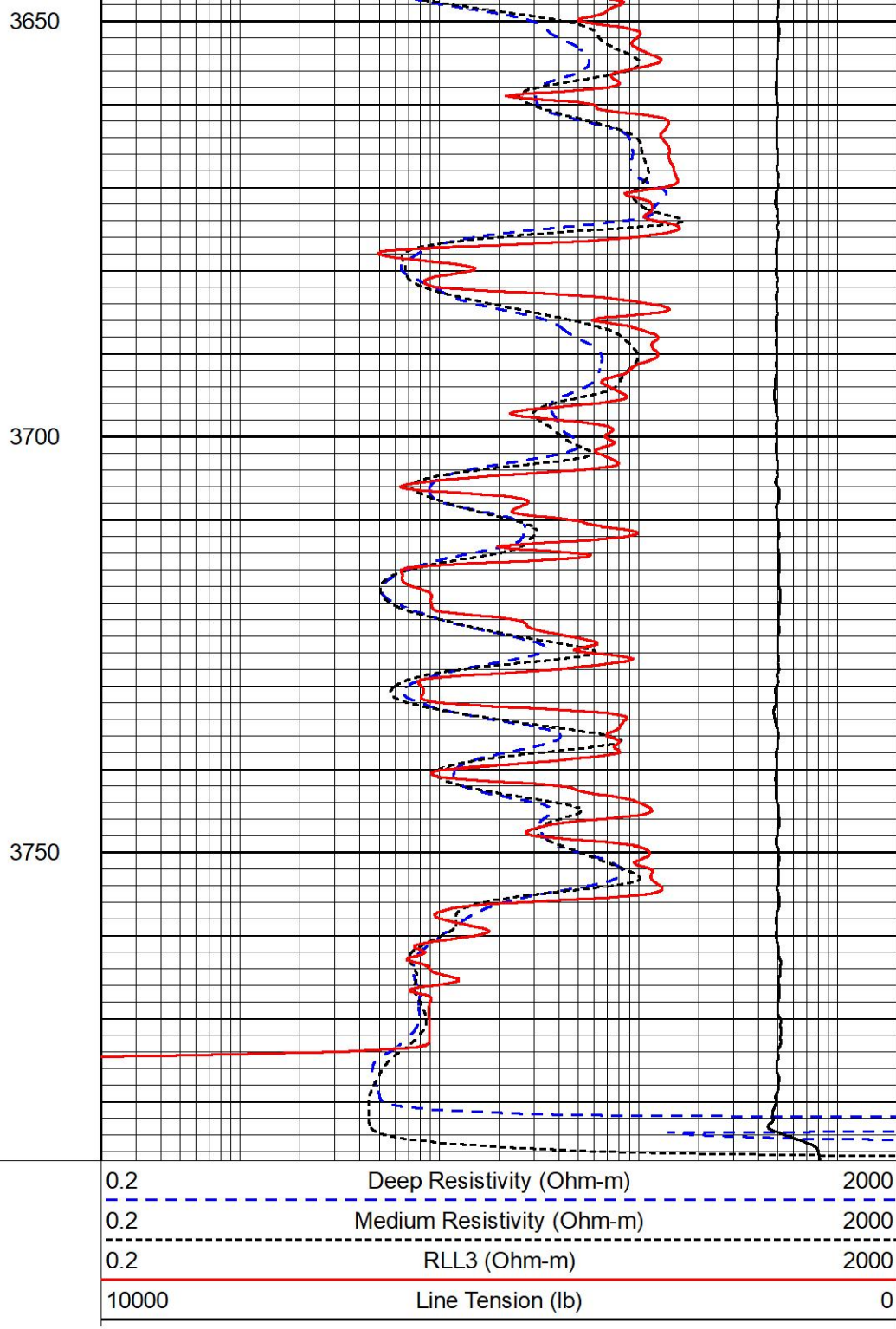
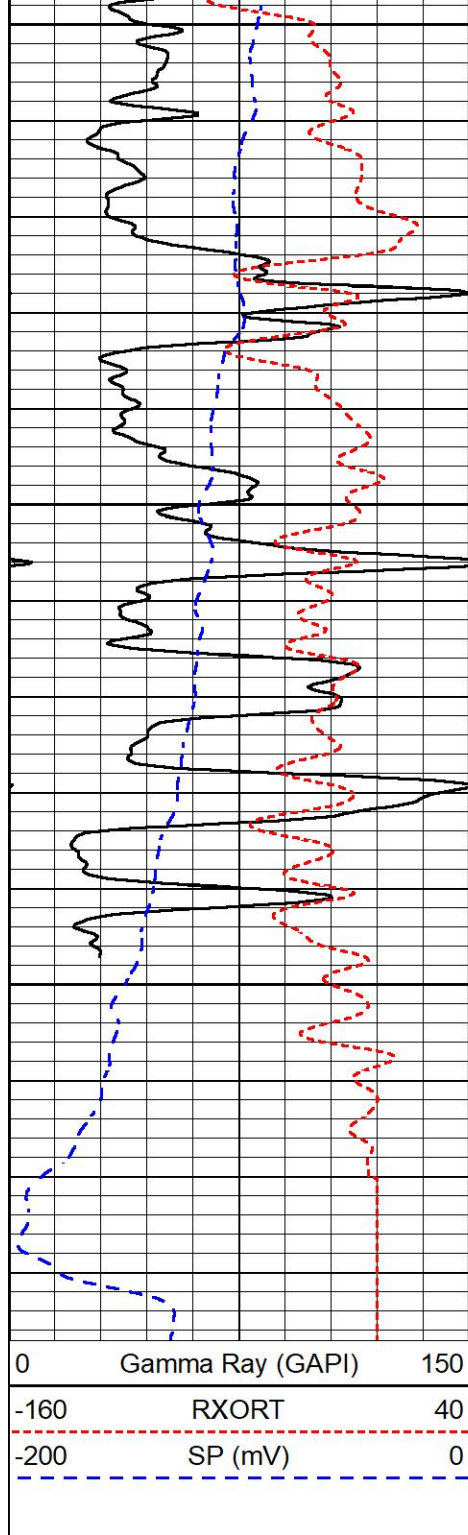
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3600



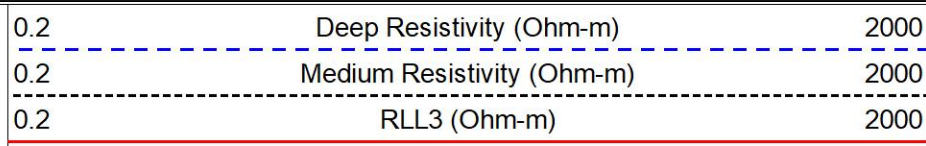
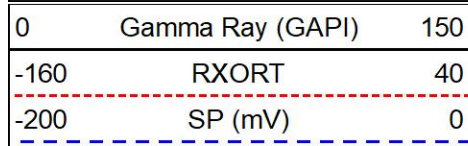


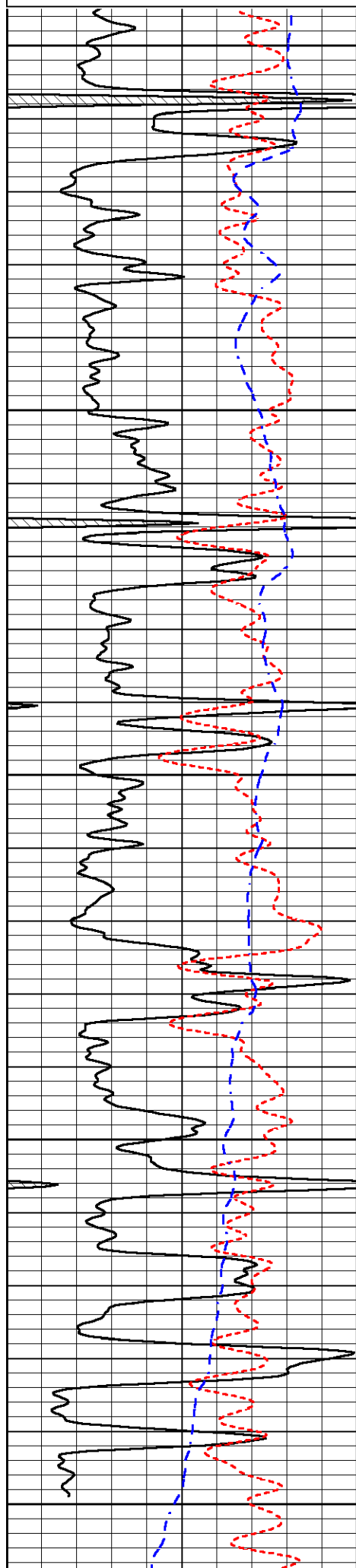
MIDWEST WIRELINE

REPEAT SECTION

REPEAT PASS

Database File castle_werth #1.db
 Dataset Pathname StkMI/pass2.1
 Presentation Format _dil
 Dataset Creation Mon Nov 14 14:20:39 2022
 Charted by Depth in Feet scaled 1:240





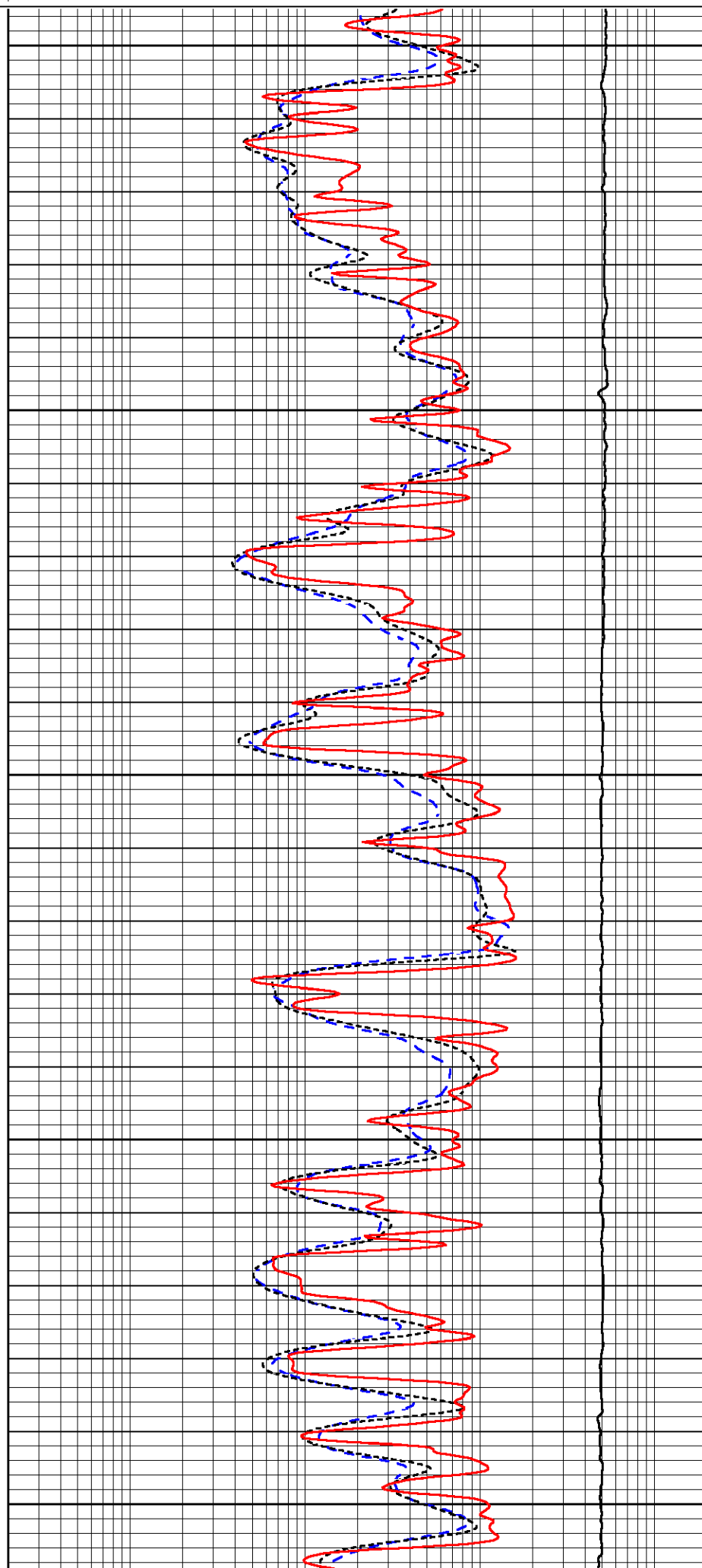
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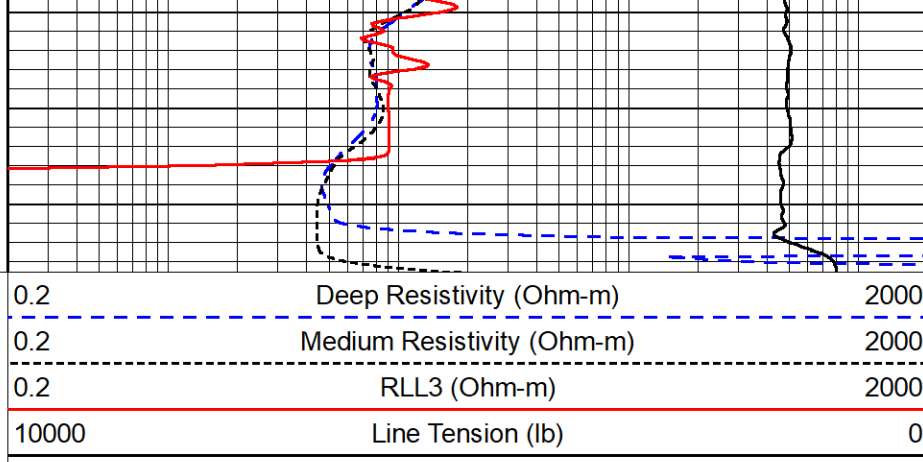
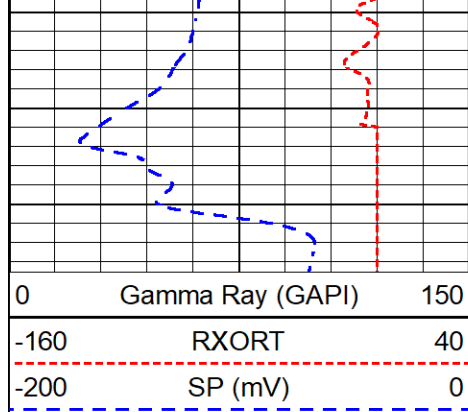
3600

3650

3700

3750





Calibration Report	
Database File	castle_werth #1.db
Dataset Pathname	StkMI/pass3.1
Dataset Creation	Mon Nov 14 15:06:25 2022

Dual Induction Calibration Report

Serial-Model:	502 HT-M&W
Surface Cal Performed:	Mon Nov 7 15:53:48 2022

Readings		References			Results	
Loop:	Air	Loop	Air	Loop	m	b
Deep	83.639	487.104	0.000	255.800 mmho/m	0.454	-30.000
Medium	113.335	1585.690	0.000	255.800 mmho/m	0.350	-10.500

Microlog Calibration Report

Serial-Model:	401-PSIML
Performed:	Mon Nov 7 15:53:59 2022

Readings		References			Results	
	Zero	Cal	Zero	Cal	m	b
Normal	0.0000	1.0000	0.0000	1.0000 Ohm-m	21500.0000	0.0000
Inverse	0.0000	1.0000	0.0000	1.0000 Ohm-m	19500.0000	0.0000
Caliper	1.0052	1.0858	5.0000	16.5000 in	98.0000	-93.1500

Compensated Density Calibration Report
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Serial-Model:	305-24-M&W
Source #:	20762B
Master Calibration Performed:	Mon Jun 20 16:54:11 2022

Master Calibration					
	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4771.35	5494.27	cps
Aluminum	2.650	g/cc	908.54	3539.54	cps
Spine Angle = 75.15			Density/Spine Ratio = 0.522		
	Size		Reading		

Small Ring	4.00	in	1.74
Large Ring	14.00	in	1.38

Compensated Neutron Calibration Report

Serial Number:	207-MW
Tool Model:	M&W

CALIBRATION

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

PRE-SURVEY VERIFICATION

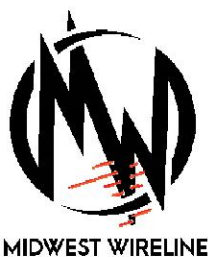
	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	
3)	Short Space	cps		
	Long Space	cps	pu	

POST-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	pu
3)	Short Space	cps		
	Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number:	106	
Tool Model:	M&W	
Performed:	Fri Dec 3 15:10:46 2021	
Calibrator Value:	500.0	GAPI
Background Reading:	24.0	cps
Calibrator Reading:	637.0	cps
Sensitivity:	0.5500	GAPI/cps



Company	Castle Resources, Inc.
Well	Werth #1
Field	
County	Ellis
State	Kansas