



DUAL INDUCTION LOG

MIDWEST WIRELINE

Company American Warrior, Inc.
Well Hubin Unit #2-10
Field Lippoldt West
County Hodgeman
State Kansas

Company American Warrior, Inc.
Well Hubin Unit #2-10
Field Lippoldt West
County Hodgeman State Kansas

Location: API #: 15-083-22011-00-00

Other Services

SEC 10 TWP 23S RGE 23W
SW SW SE SW
302 FSL & 1344 FWL

CNL/CDL
MEL

Permanent Datum Ground Level Elevation 2324
Log Measured From Kelly Bushing
Drilling Measured From Kelly Bushing

Elevation
K.B. 2337
D.F.
G.L. 2324

Date 6/22/2022

Run Number	One		
Depth Driller	4700		
Depth Logger	4705		
Bottom Logged Interval	4704		
Top Log Interval	300		
Casing Driller	8.625 @ 314		
Casing Logger	313		
Bit Size	7.875		
Type Fluid in Hole	Chemical		
Salinity, ppm CL	6900		
Density / Viscosity	9.25 46		
pH / Fluid Loss	9.0 11.2		
Source of Sample	Flowline		
Rm @ Meas. Temp	0.8 @ 74		
Rmt @ Meas. Temp	0.6 @ 74		
Rmc @ Meas. Temp	1.08 @ 74		
Source of Rmt / Rmc	Charts		
Rm @ BHT	0.48 @ 123		
Operating Rig Time	2.5 Hours		
Max Rec. Temp. F	123		
Equipment Number	P-24		
Location	Hays		
Recorded By	T. Martin		
Witnessed By	Kevin Timson		

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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.

Jetmore, S to L Rd, 1 E to Rd 219,
S to K Rd, 2 E, N into

Log Measured From: Kelly Bushing

13 Ft. Above Permanent Datum

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

Your Midwest Wireline Crew

Engineer: T. Martin
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: Kevin Timson
Secondary Witness:
Secondary Witness:
Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\amwar_hubin unit #2-10.db
Dataset field/well/StkMI/pass3.1/_vars_

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 123	in 5.5	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 0	Off	ft 4705

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



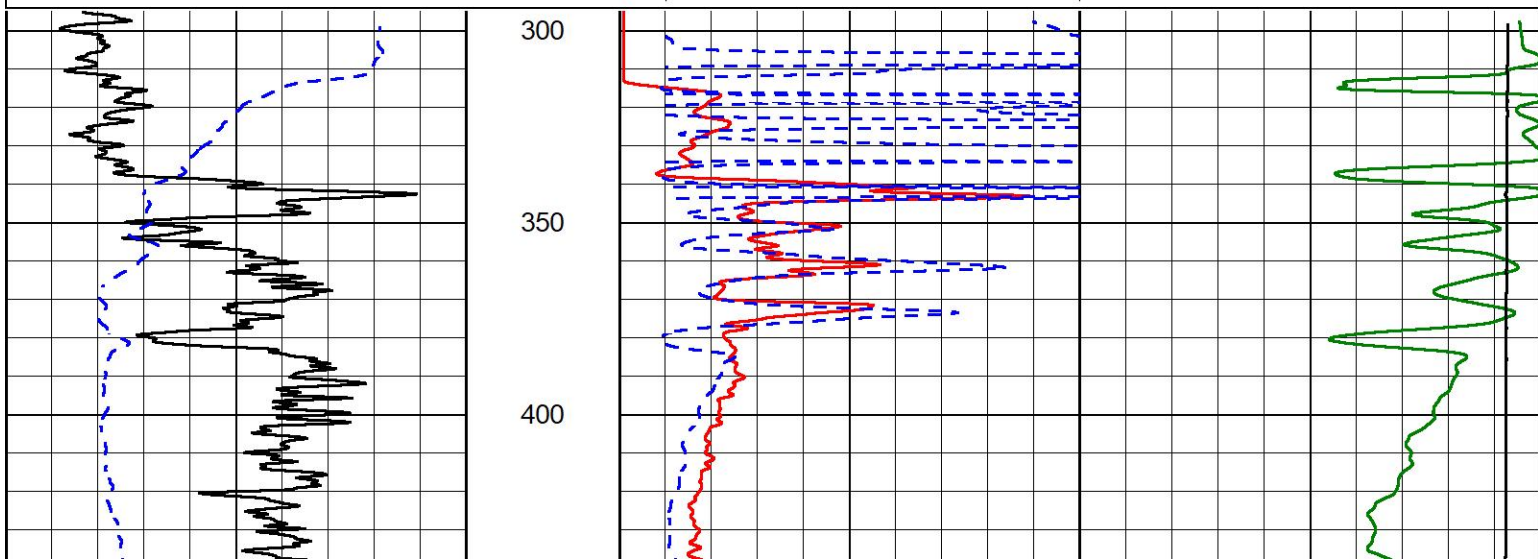
2" SCALE RESISTIVITY

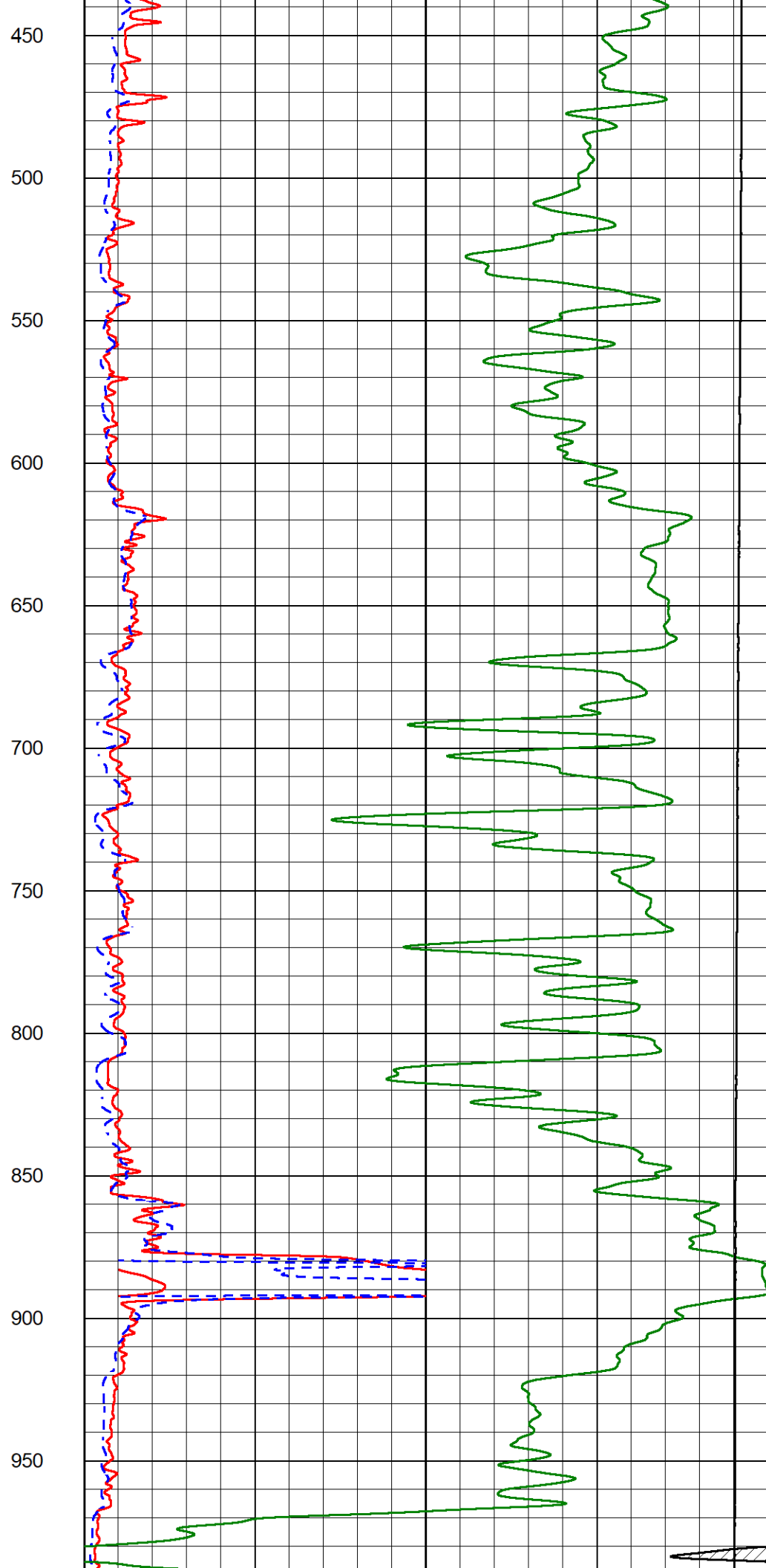
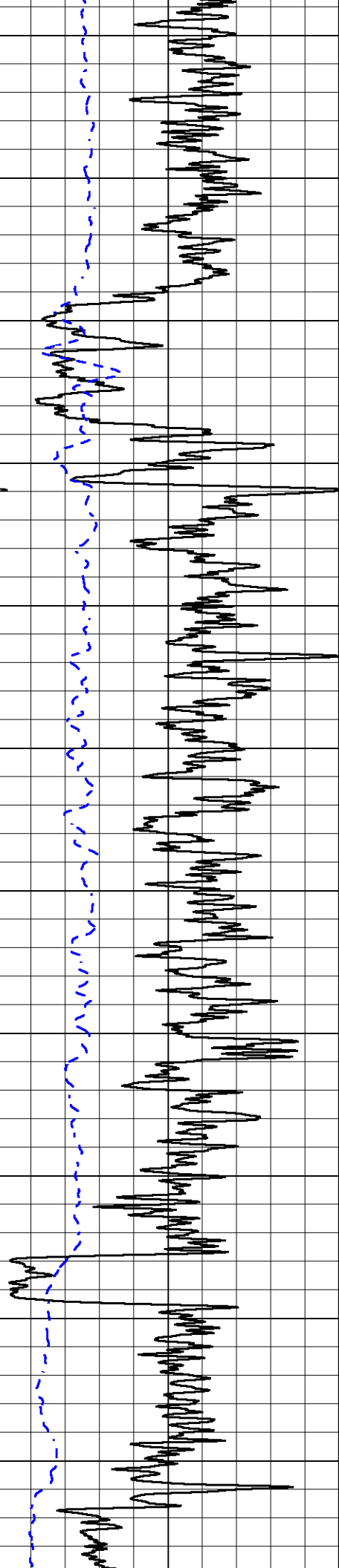
MAIN PASS

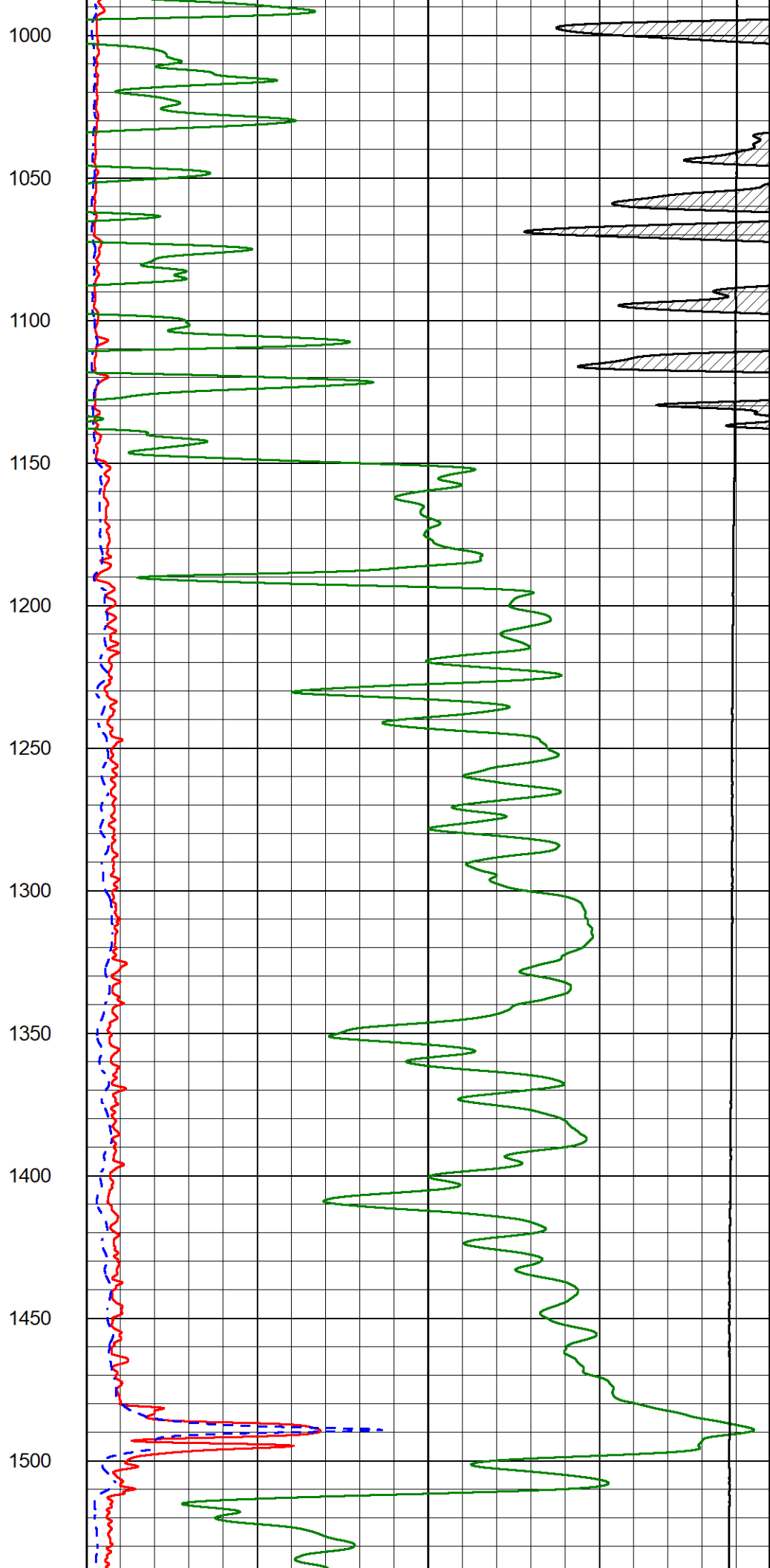
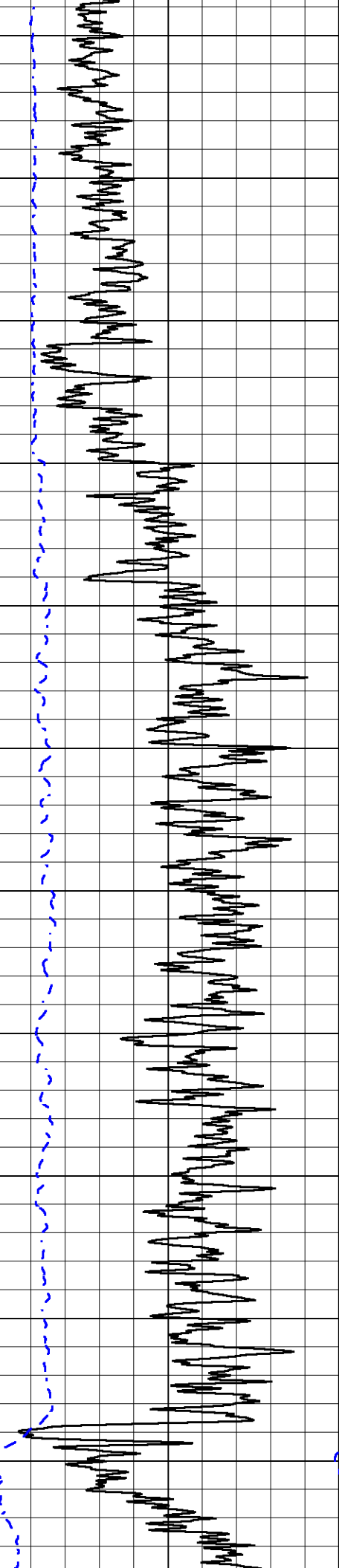
Database File amwar_hubin unit #2-10.db
Dataset Pathname StkMI/pass3.2
Presentation Format _dil2in
Dataset Creation Wed Jun 22 22:13:07 2022
Charted by Depth in Feet scaled 1:600

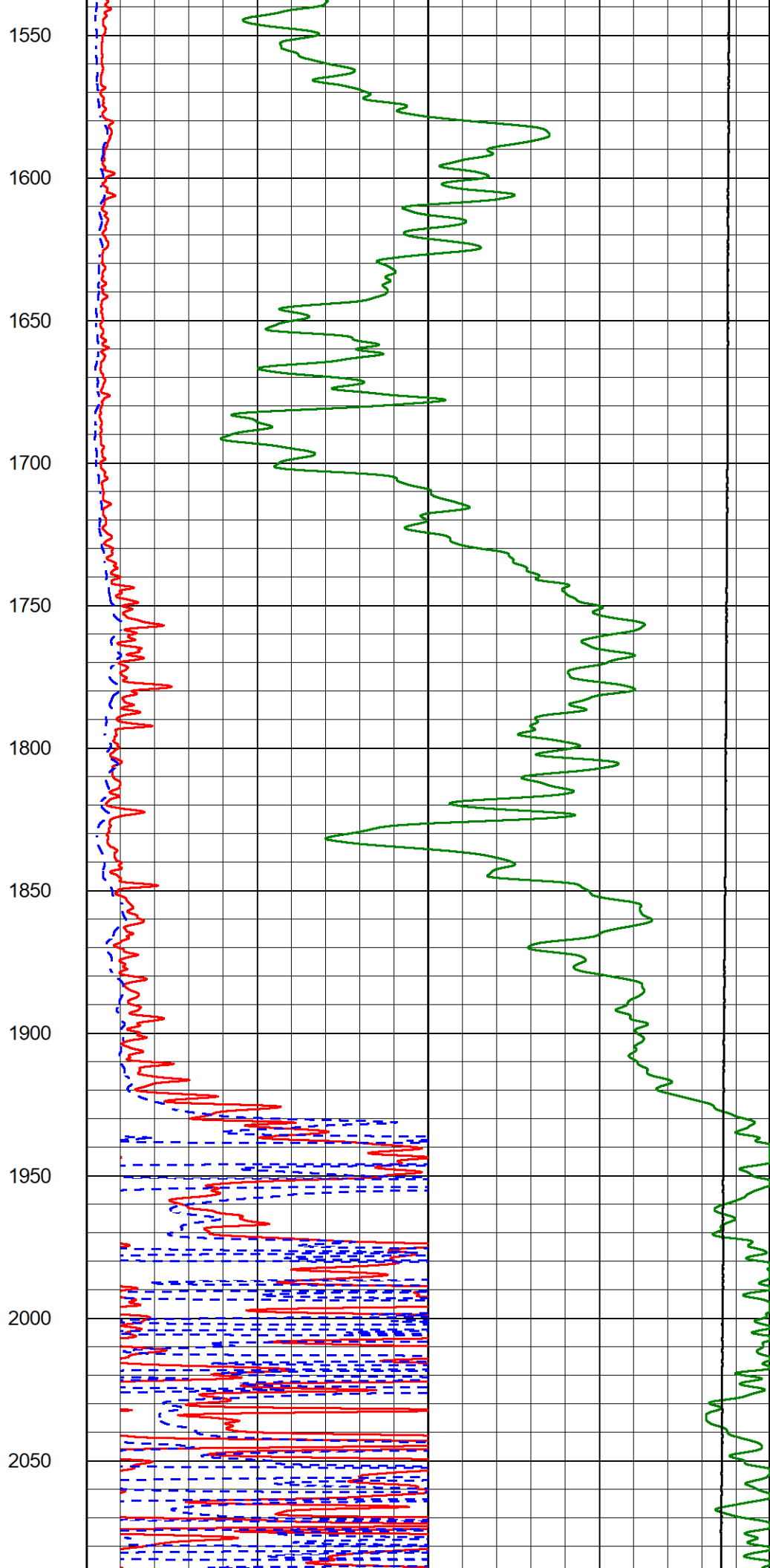
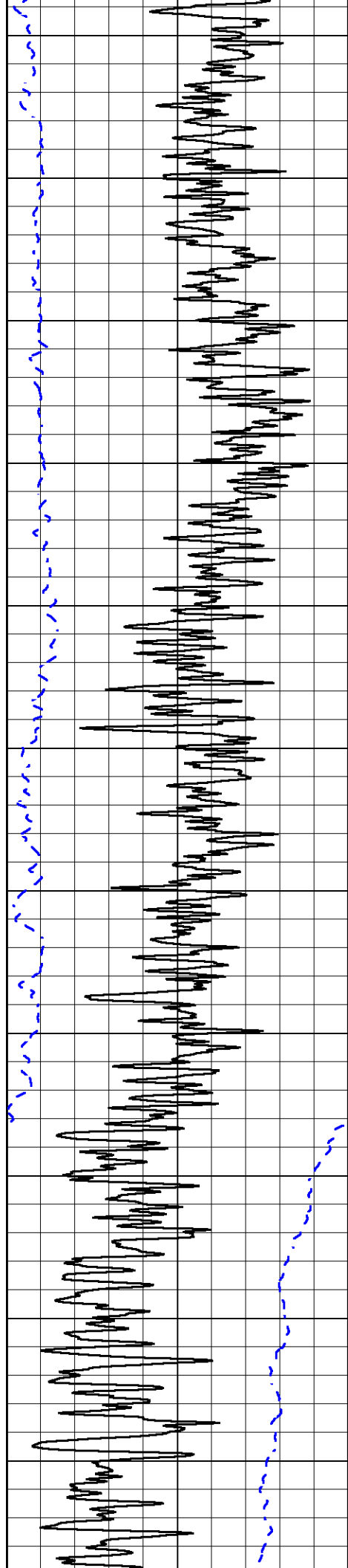
0	Gamma Ray (GAPI)	150
-200	SP (mV)	0

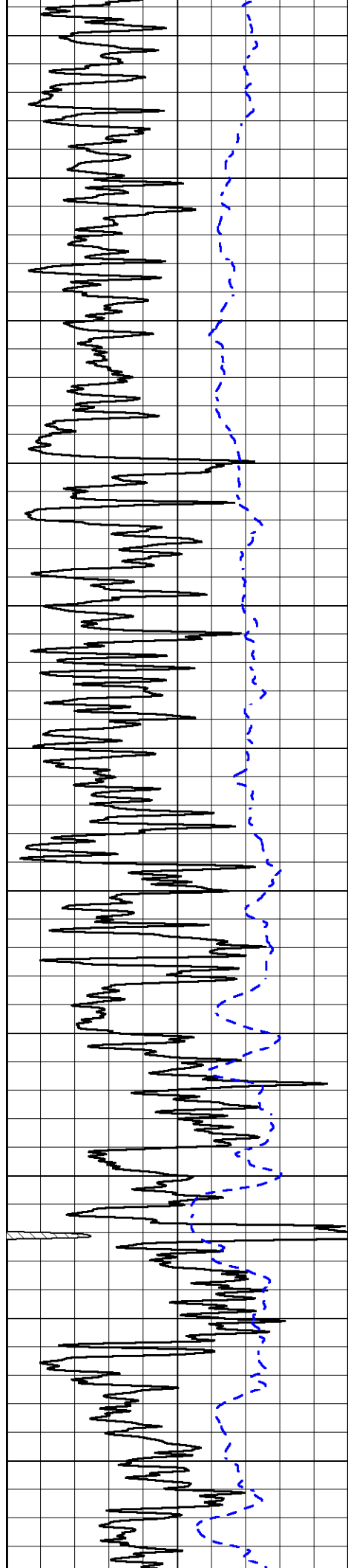
1000	Conductivity (mmho/m)	0
15000	Line Tension (lb)	0
0	Shallow Resistivity (Ohm-m)	50
0	Deep Resistivity (Ohm-m)	50
50	Shallow Resistivity (Ohm-m)	200
50	Deep Resistivity (Ohm-m)	200











2100

2150

2200

2250

2300

2350

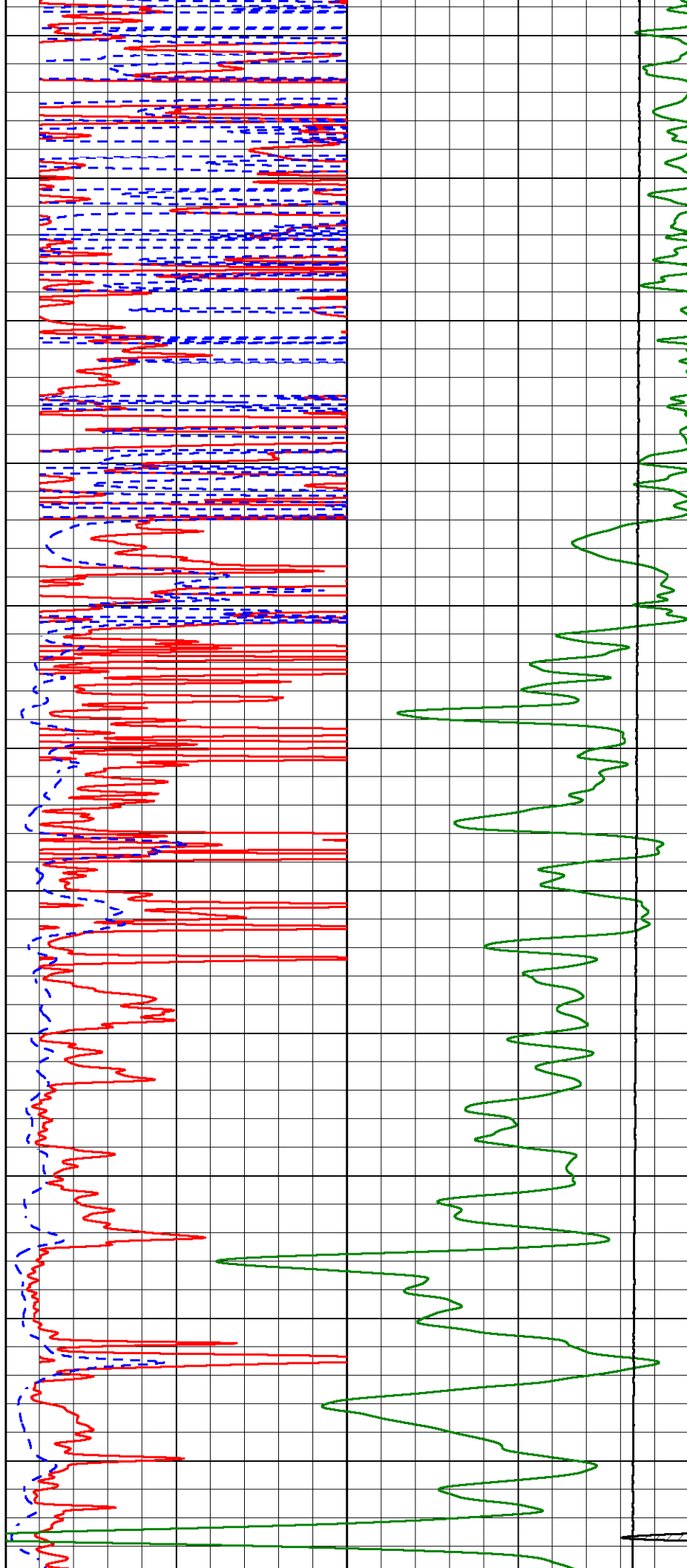
2400

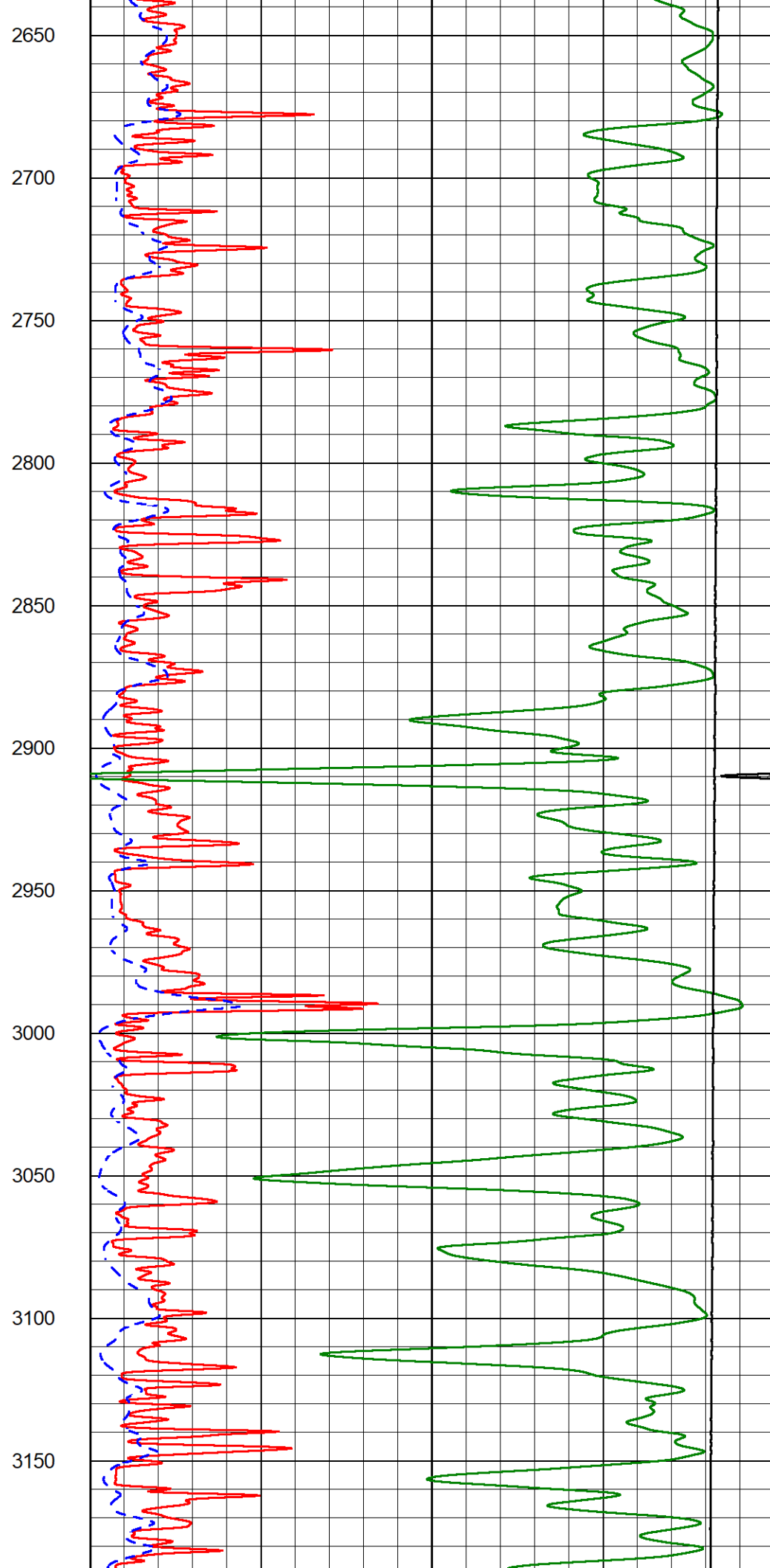
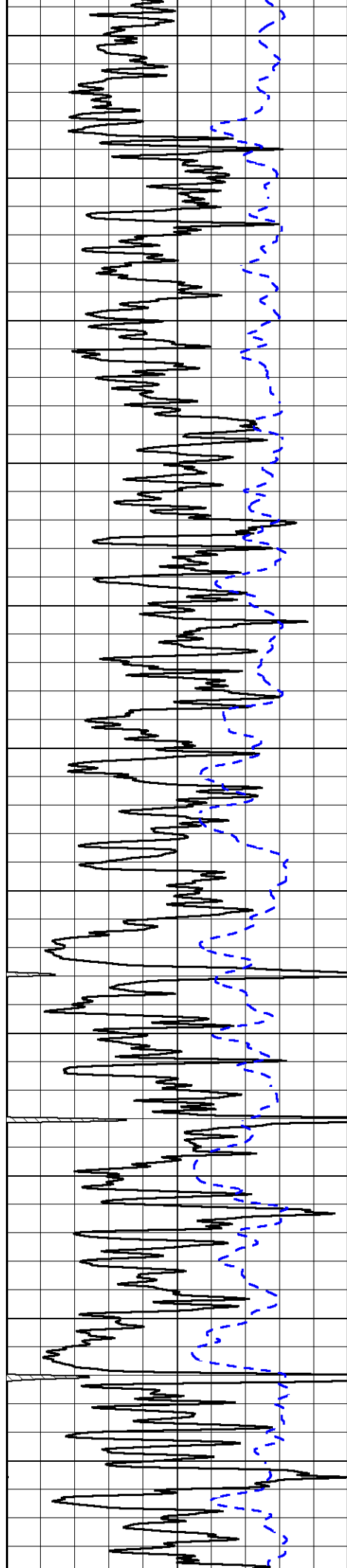
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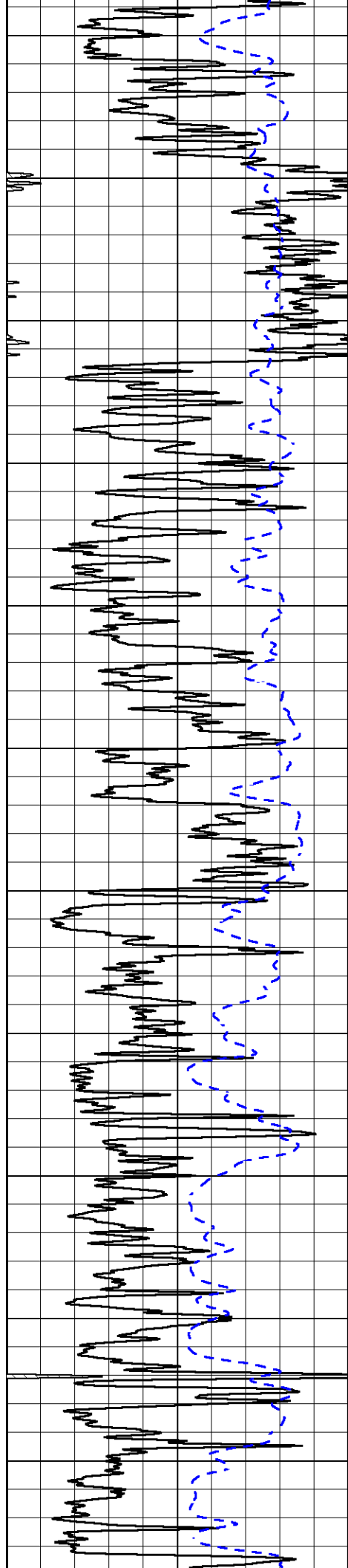
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2550

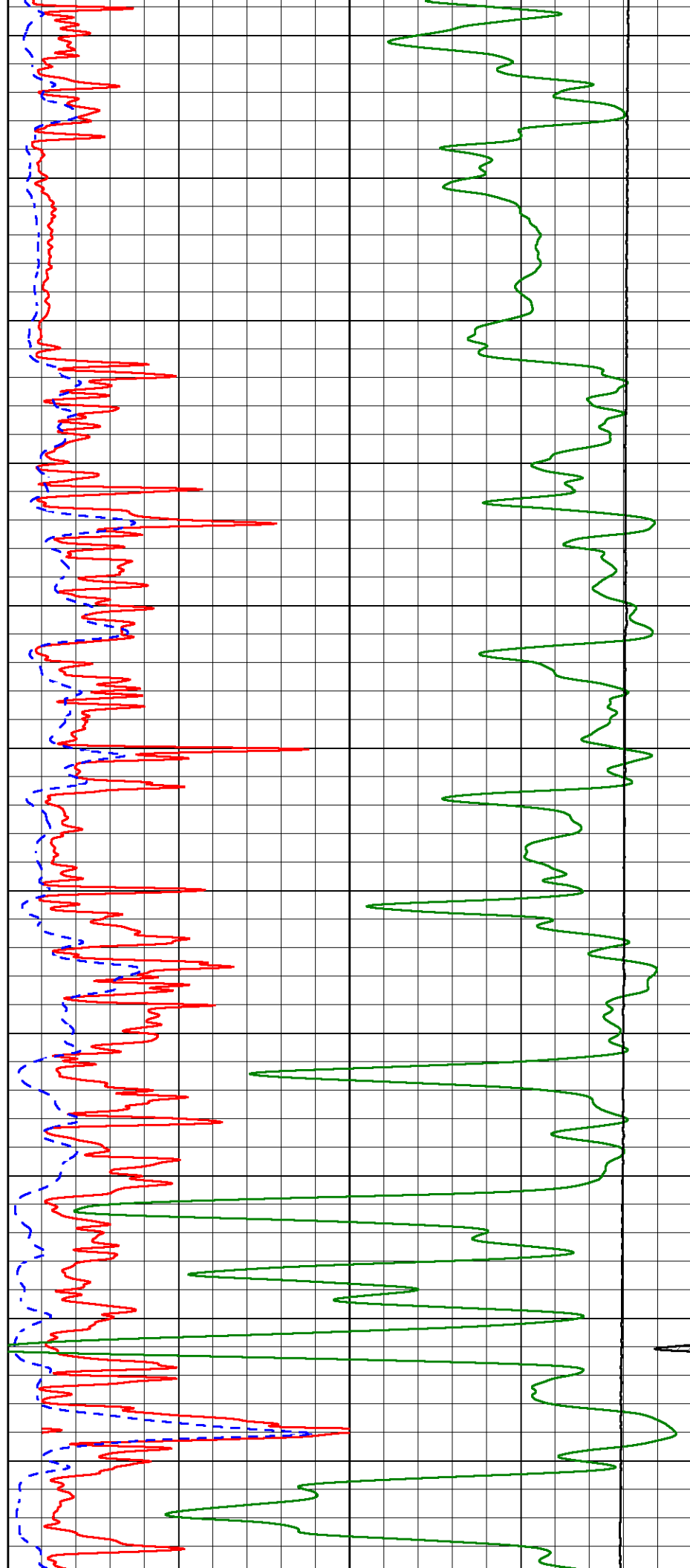
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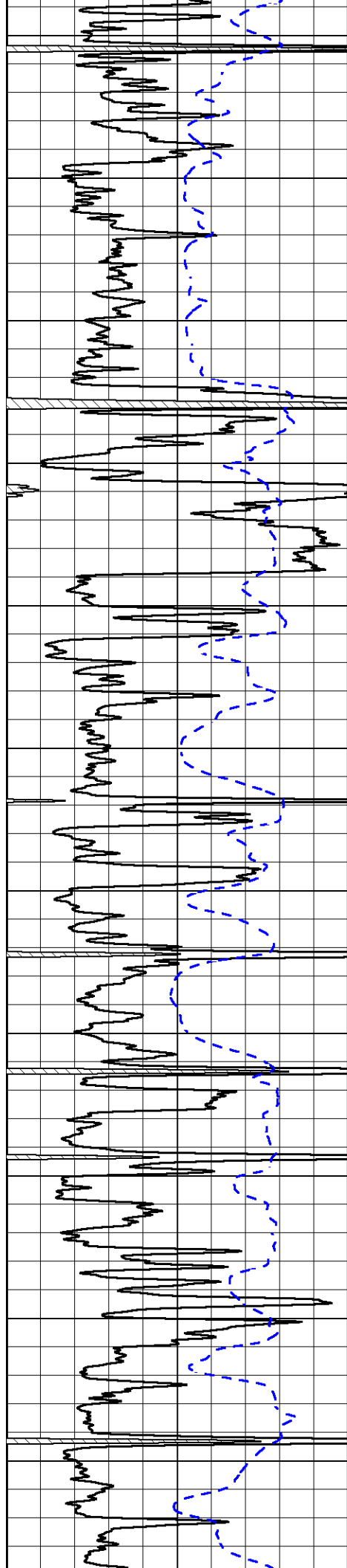






3200
3250
3300
3350
3400
3450
3500
3550
3600
3650
3700





3750

3800

3850

3900

3950

4000

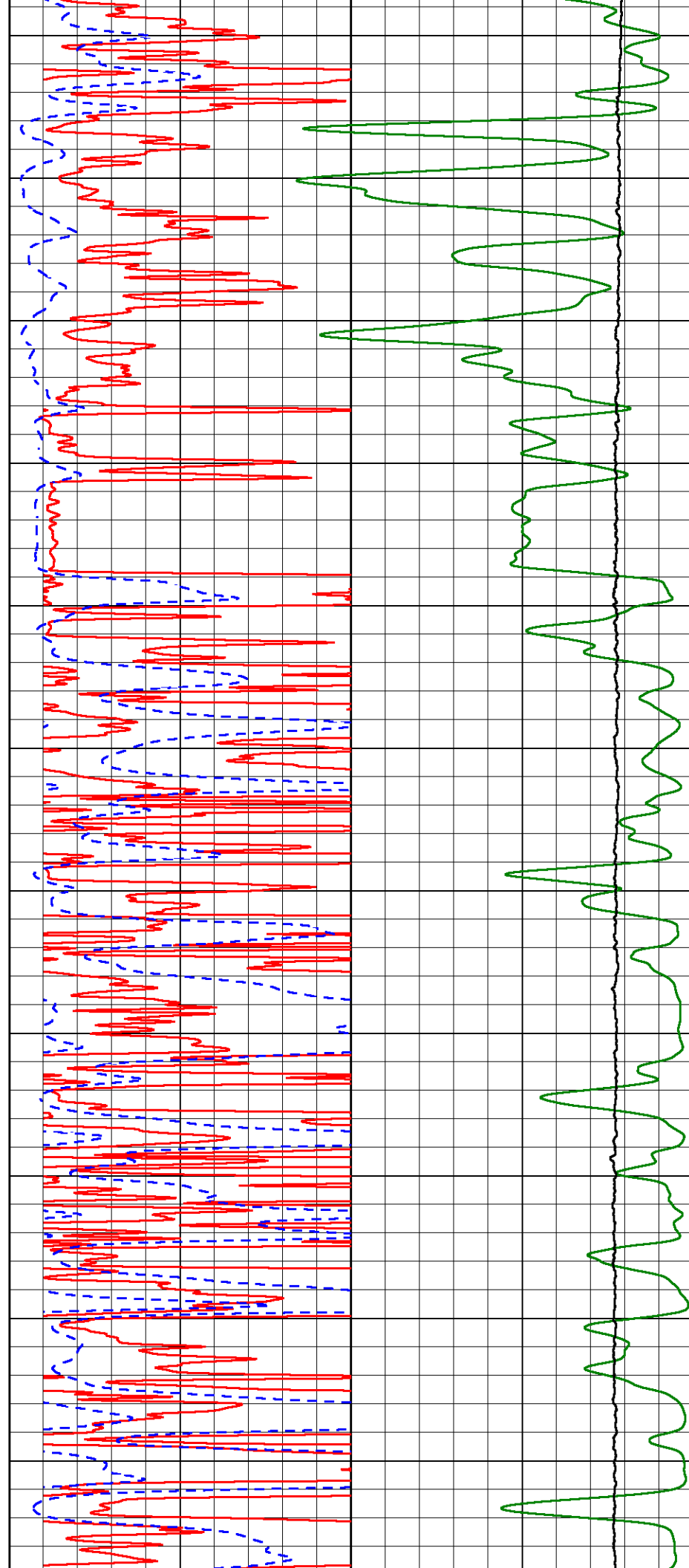
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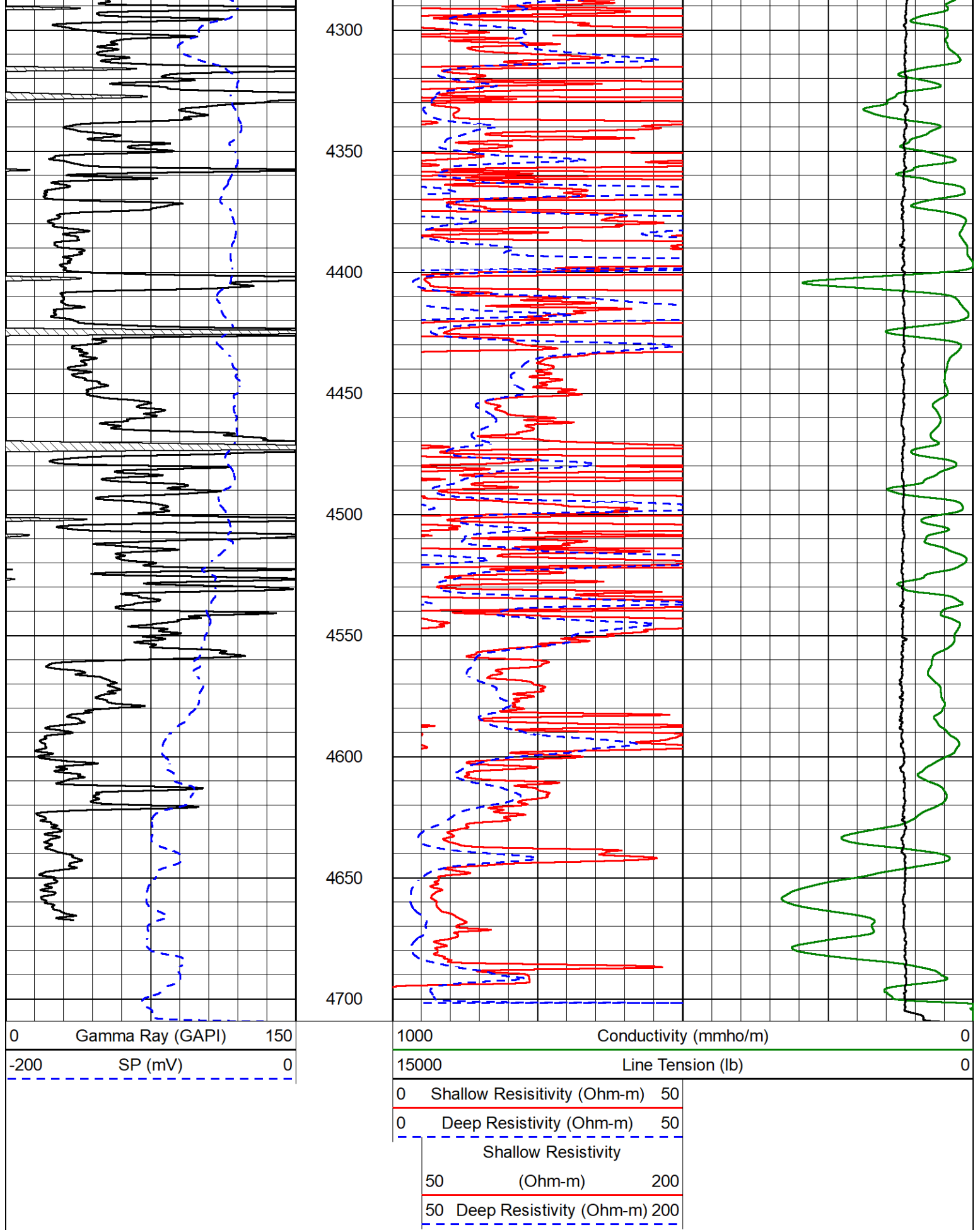
4100

4150

4200

4250





ANHYDRITE SECTION

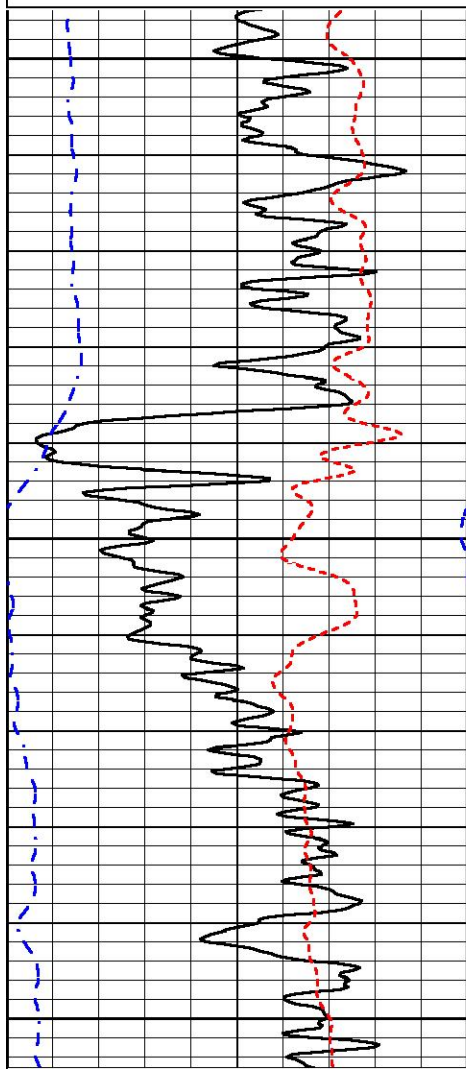


MAIN PASS

Database File amwar_hubin unit #2-10.db
Dataset Pathname StkMI/pass3.4
Presentation Format _dil
Dataset Creation Wed Jun 22 22:02:43 2022
Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
-160	RXORT	40
-200	SP (mV)	0

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0

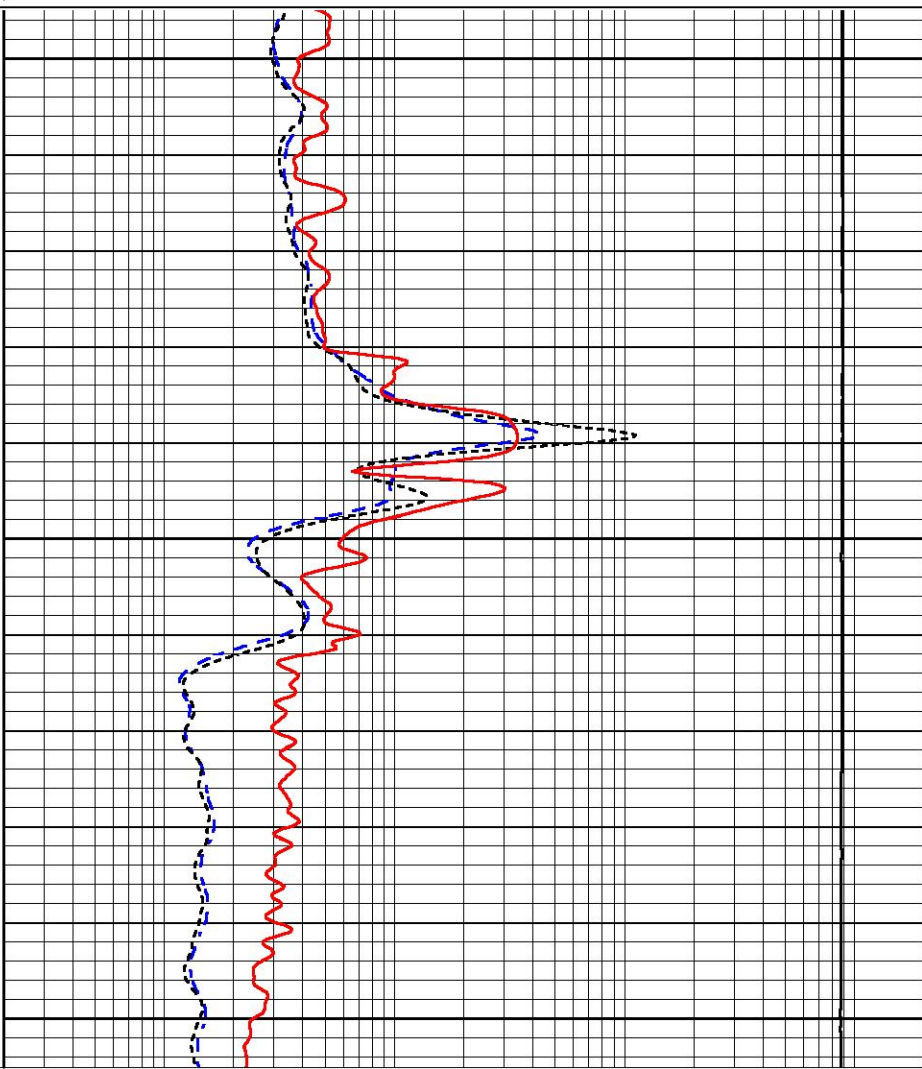


1450

1500

1550

0	Gamma Ray (GAPI)	150
-160	RXORT	40
-200	SP (mV)	0



0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0



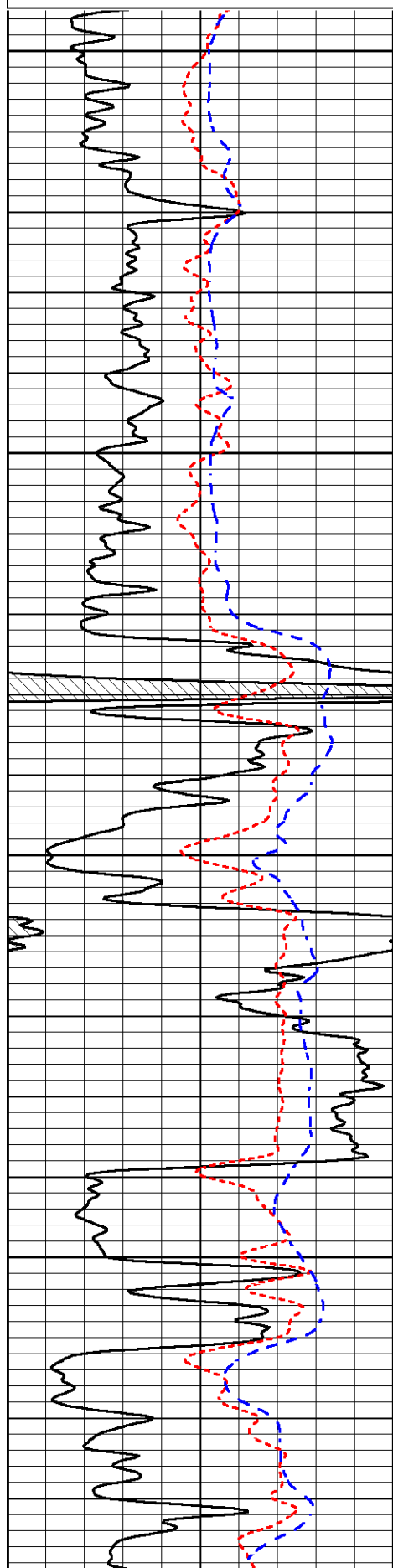
DETAIL SECTION

MAIN PASS

Database File amwar_hubin unit #2-10.db
Dataset Pathname StkMI/pass3.1
Presentation Format _dil
Dataset Creation Wed Jun 22 22:13:17 2022

0	Gamma Ray (GAPI)	150
-160	RXORT	40
-200	SP (mV)	0

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0

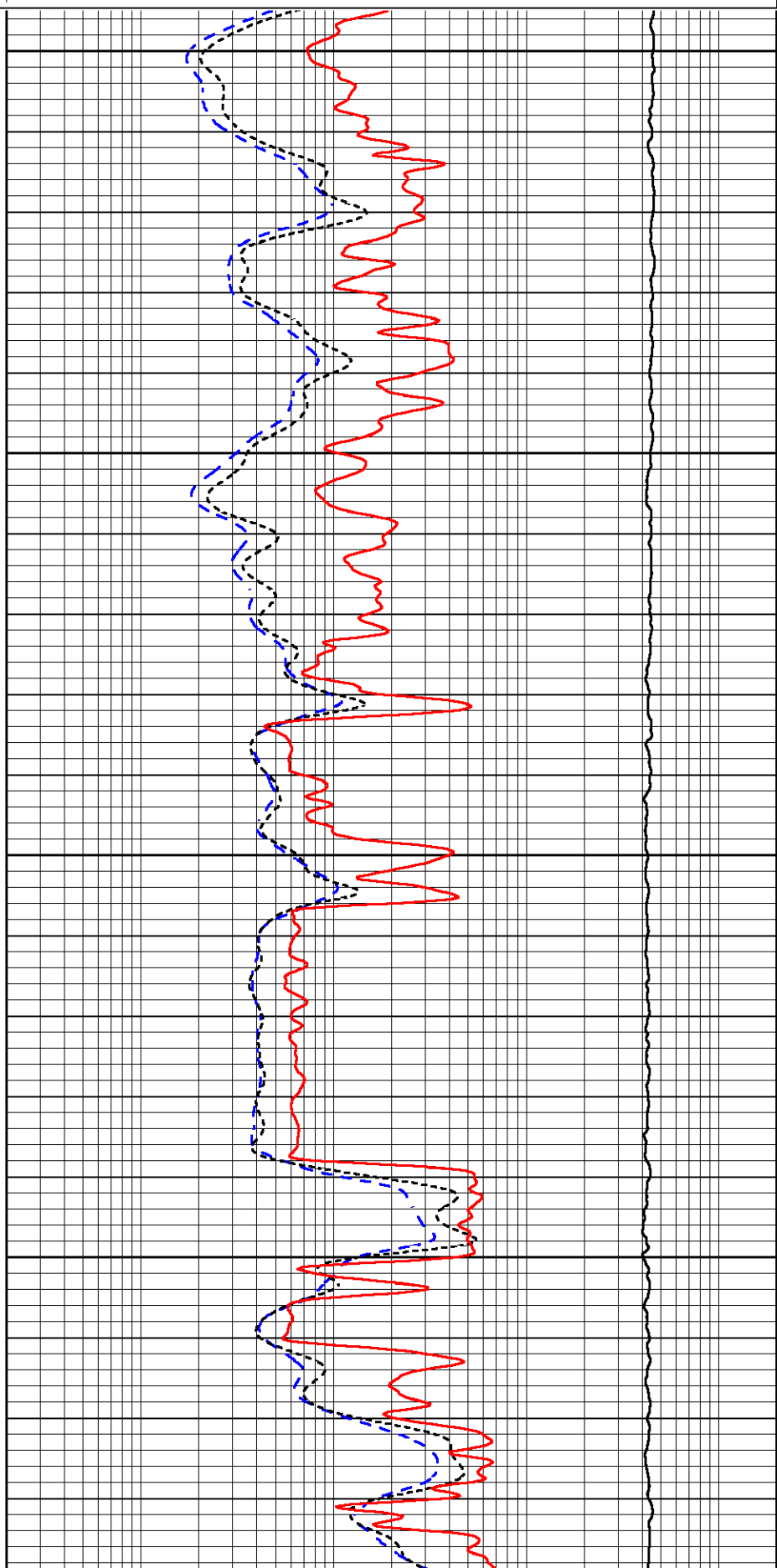


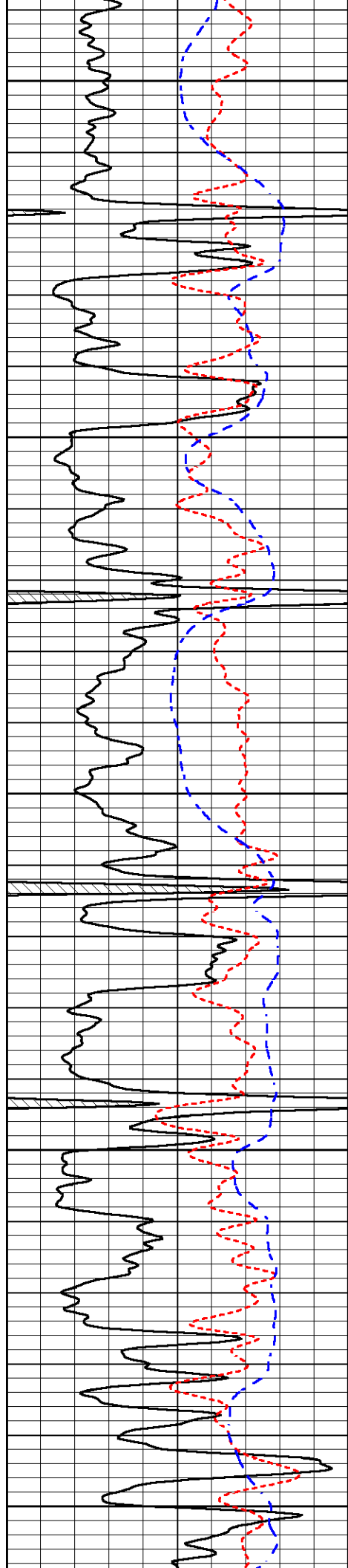
3800

3850

3900

3950





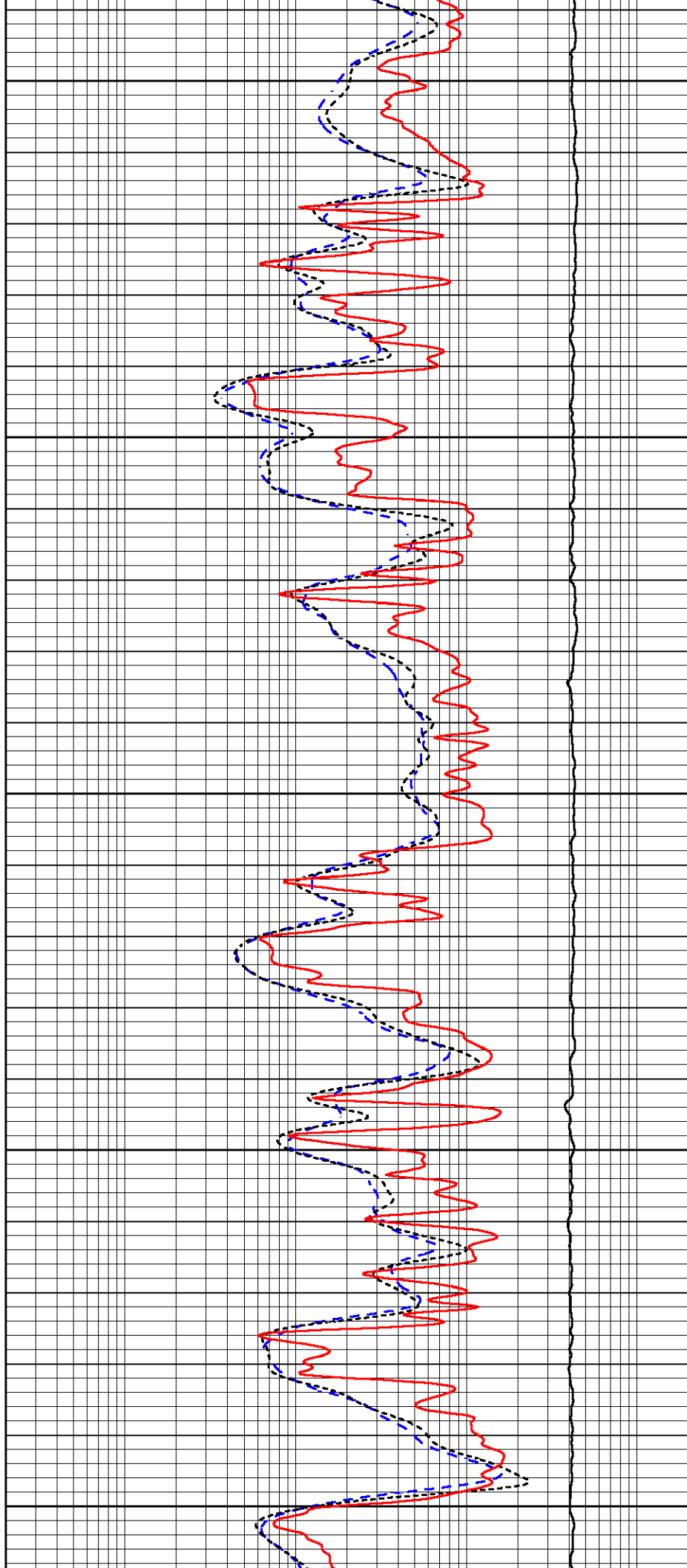
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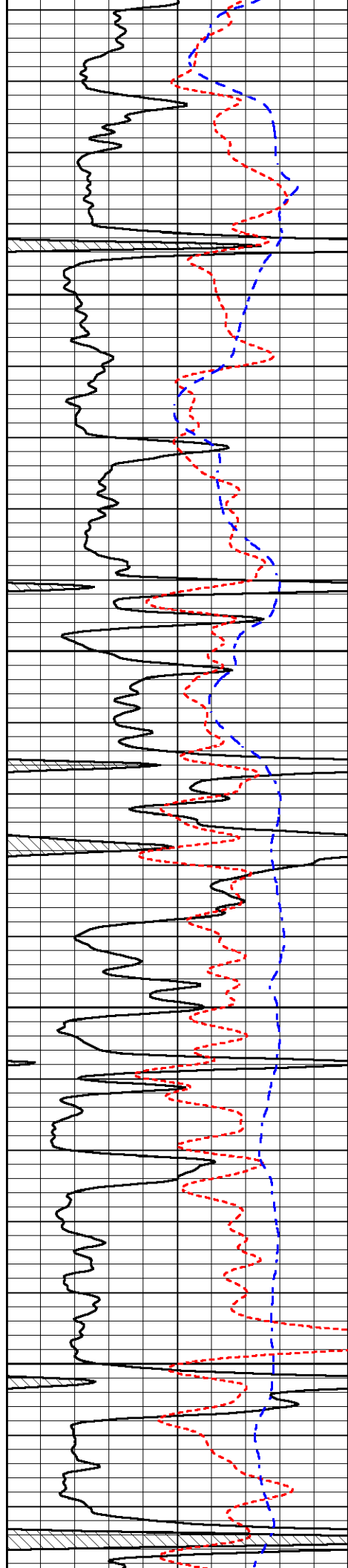
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4100

4150

4200



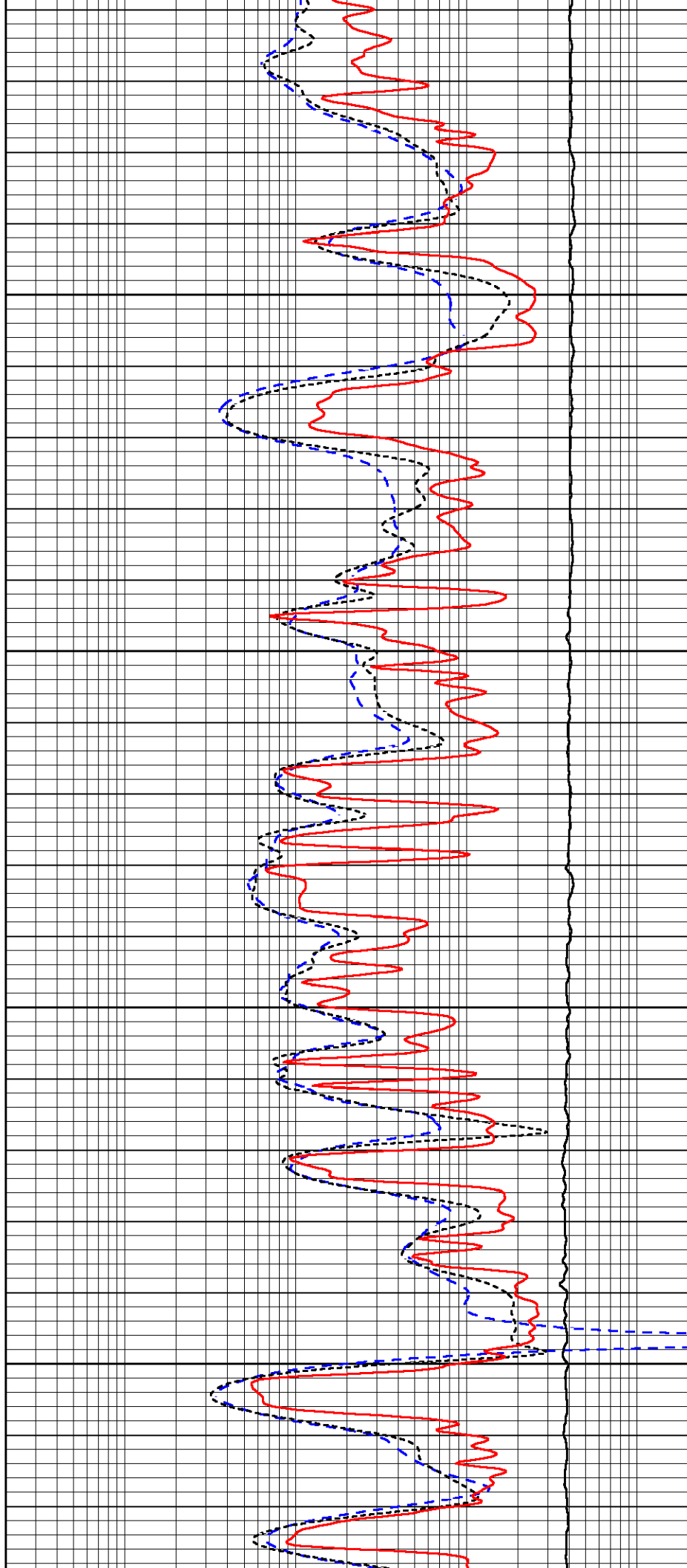


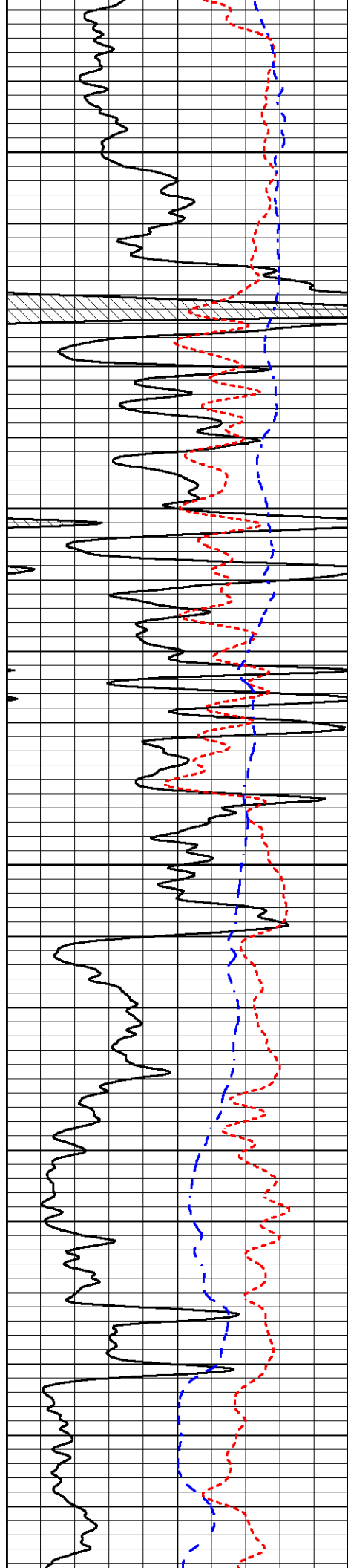
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4300

4350

4400



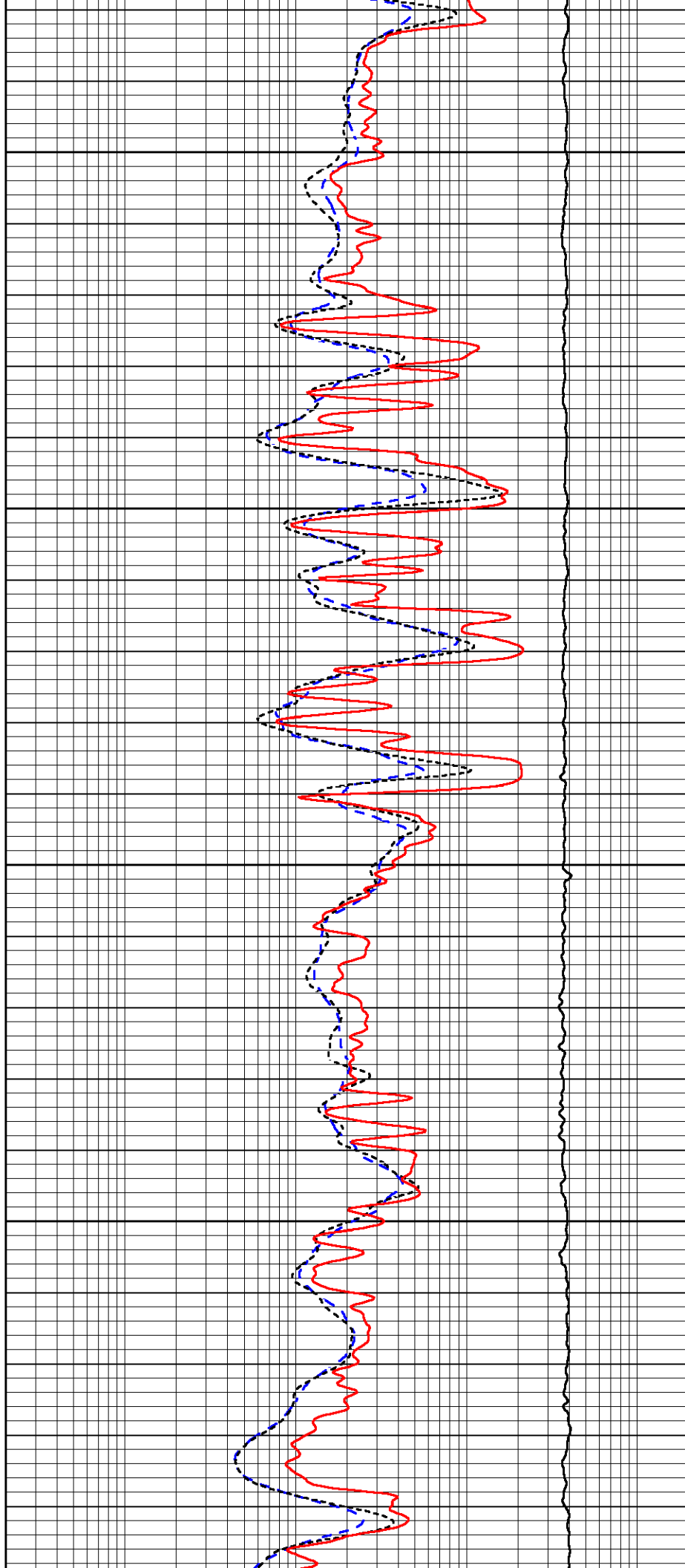


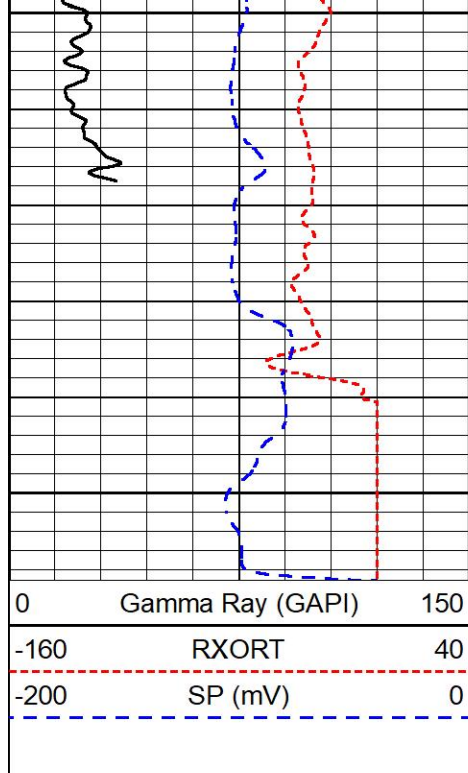
4450

4500

4550

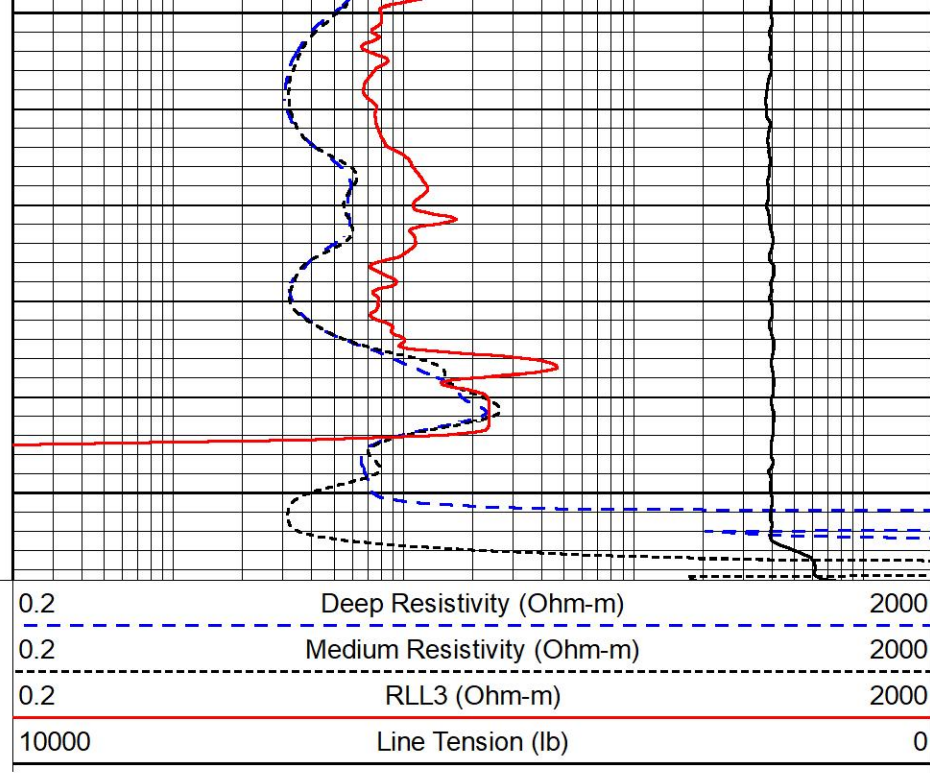
4600





4650

4700

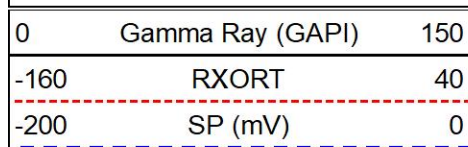


MIDWEST WIRELINE

REPEAT SECTION

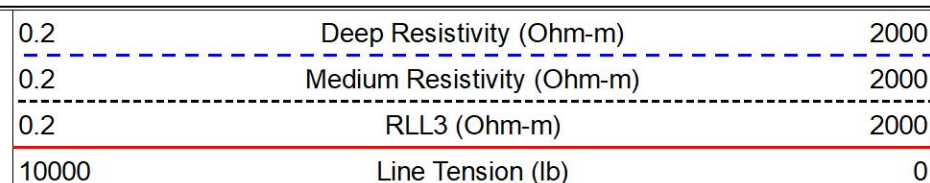
REPEAT PASS

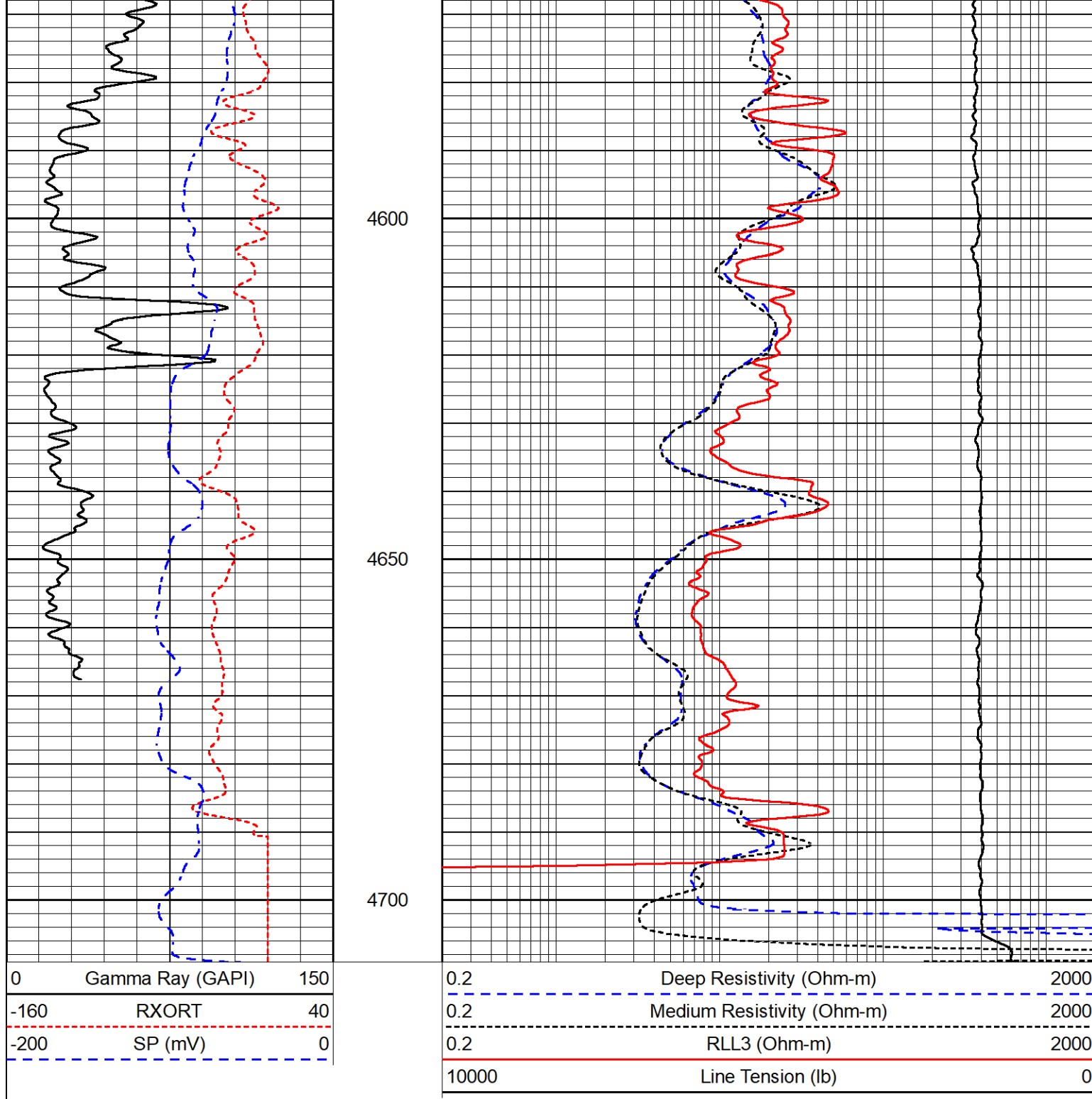
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 Dataset Pathname StkMI/pass2.1
 Presentation Format _dil
 Dataset Creation Wed Jun 22 21:36:51 2022
 Charted by Depth in Feet scaled 1:240



4500

4550





Calibration Report							
Database File	amwar_hubin unit #2-10.db						
Dataset Pathname	StkMI/pass3.1						
Dataset Creation	Wed Jun 22 22:13:17 2022						
Dual Induction Calibration Report							
Serial-Model:		502 HT-M&W					
Surface Cal Performed:		Wed Jun 22 04:33:34 2022					
		Readings		References		Results	
Loop:	Air	Loop	Air	Loop	mmho/m	m	b
Deep	83.639	487.104	0.000	183.000	mmho/m	0.454	-32.000

Medium	113.335	1585.690	0.000	442.000	mmho/m	0.350	-9.000
Microlog Calibration Report							
Serial-Model: Performed:			401-PSIML Wed Jun 22 01:19:38 2022				
Readings			References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	22500.0000	-1.8000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	14000.0000	0.0000
Caliper	1.0052	1.0858	5.0000	16.5000	in	142.7190	-138.8000
Compensated Density Calibration Report							
Serial-Model: Source #: Master Calibration Performed:			302-02-M&W 20762B Wed Jun 22 01:19:51 2022				
Master Calibration							
	Density		Far Detector		Near Detector		
Magnesium	1.755	g/cc	4422.04	6163.44	cps		
Aluminum	2.665	g/cc	835.14	3912.91	cps		
	Spine Angle = 74.75		Density/Spine Ratio = 0.527				
	Size		Reading				
Small Ring	8.00	in	0.53				
Large Ring	16.00	in	0.60				
Compensated Neutron Calibration Report							
Serial Number: Tool Model:			207-MW 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				

1)	Short Space Long Space	cps cps	pu pu
2)	Short Space Long Space	cps cps	pu pu
3)	Short Space Long Space	cps cps	pu pu

Gamma Ray Calibration Report			
Serial Number:	101		
Tool Model:	M&W		
Performed:	Mon Jan 24 19:14:46 2022		
Calibrator Value:	500.0	GAPI	
Background Reading:	24.0	cps	
Calibrator Reading:	637.0	cps	
Sensitivity:	0.5500	GAPI/cps	

	Company	American Warrior, Inc.
	Well	Hubin Unit #2-10
	Field	Lippoldt West
	County	Hodgeman
	State	Kansas