



DUAL INDUCTION LOG

MIDWEST WIRELINE

Company Cobalt Energy LLC		Company Cobalt Energy LLC	
Well Heilman Trust #1-30		Well Heilman Trust #1-30	
Field Wildcat		Field Wildcat	
County Decatur		County Decatur	
State Kansas		State Kansas	
Location: API #: 15-039-21276-00-00		Other Services	
2085 FSL & 1604 FWL SW NW NE SW		CNL/CDL MEL	
Permanent Datum	Ground Level	Elevation	2590
Log Measured From	Kelly Bushing	K.B.	2595
Drilling Measured From	Kelly Bushing	D.F.	2590
		G.L.	2590
Date	1/28/2022		
Run Number	One		
Depth Driller	3830		
Depth Logger	3828		
Bottom Logged Interval	3827		
Top Log Interval	200		
Casing Driller	8.625 @ 248		
Casing Logger	243		
Bit Size	7.875		
Type Fluid in Hole	Chemical		
Salinity, ppm CL	3400		
Density / Viscosity	9.3 76		
pH / Fluid Loss	11.0 8.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.75 @ 74		
Rmt @ Meas. Temp	.56 @ 74		
Rmc @ Meas. Temp	1.01 @ 74		
Source of Rmt / Rmc	CHARTS		
Rm @ BHT	.49 @ 114		
Operating Rig Time	2 Hours		
Max Rec. Temp. F	114		
Equipment Number	P-108		
Location	HAYS		
Recorded By	J. Henrickson		
Witnessed By	Larry Nicholson		

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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.

39.761400775 100.286364585

Jennings Kansas

5 North, East 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

Engineer: J. Henrickson

Operator:

Operator:

Operator:

This Log Record Was Witnessed By

Primary Witness: Larry Nicholson

Secondary Witness:

Secondary Witness:

Secondary Witness:

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 114	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 780	degF 50	Off	ft 3828

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.33		GR-M&W (103)	3.00	3.50	50.00
CNLSC CNSSC	37.23 36.48		CNT-M&W (210)	5.00	3.50	100.00
LSD DCAL SSD	28.18 28.17 27.68		CDL-M&W (303-03)	8.50	4.00	250.00
ML-PSI STKBL ML (402)			ML-PSI STKBL ML (402)	7.58	4.00	65.00
MCAL MI MN	19.58 19.58 19.58					
RLL3F RLL3	15.50 15.50					
CILD	8.33		DIL-M&W (504 HT)	18.25	3.50	220.00

CILM	4.50								
SP	0.20								
Dataset: cobalt_heilman_trust_1_30.db: field/well/stackml/pass3.1 Total length: 42.33 ft Total weight: 685.00 lb O.D.: 4.00 in									



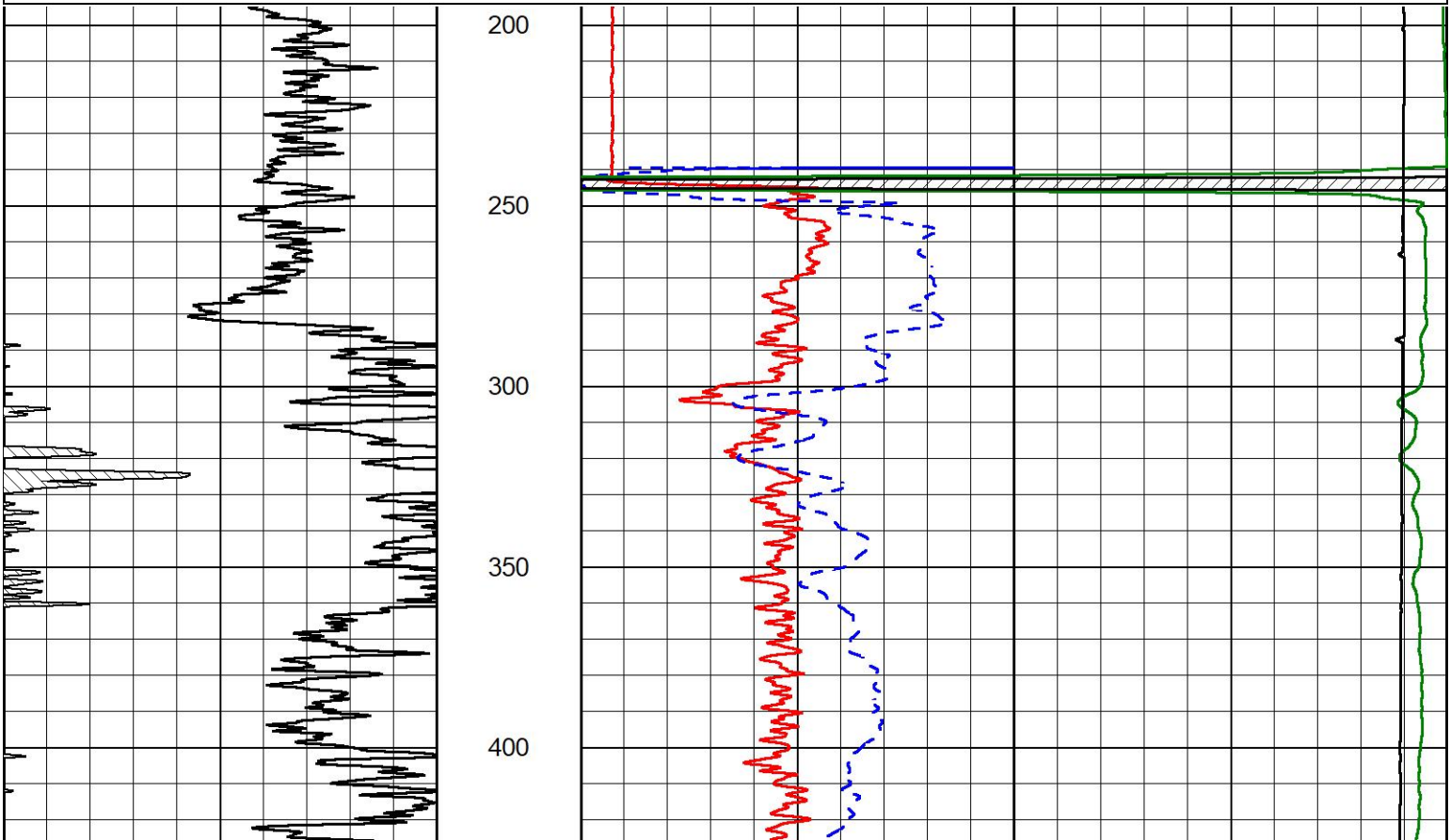
MIDWEST WIRELINE

2" SCALE RESISTIVITY

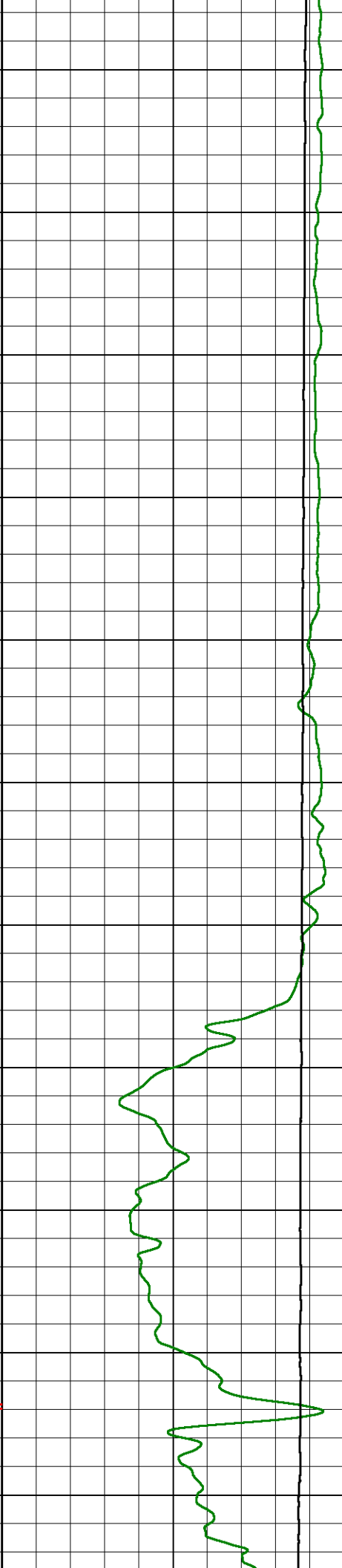
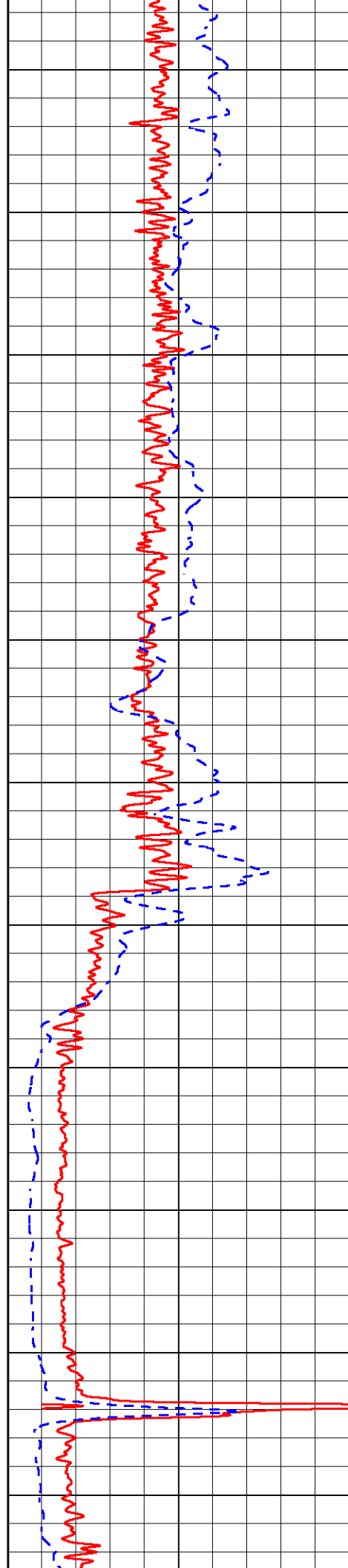
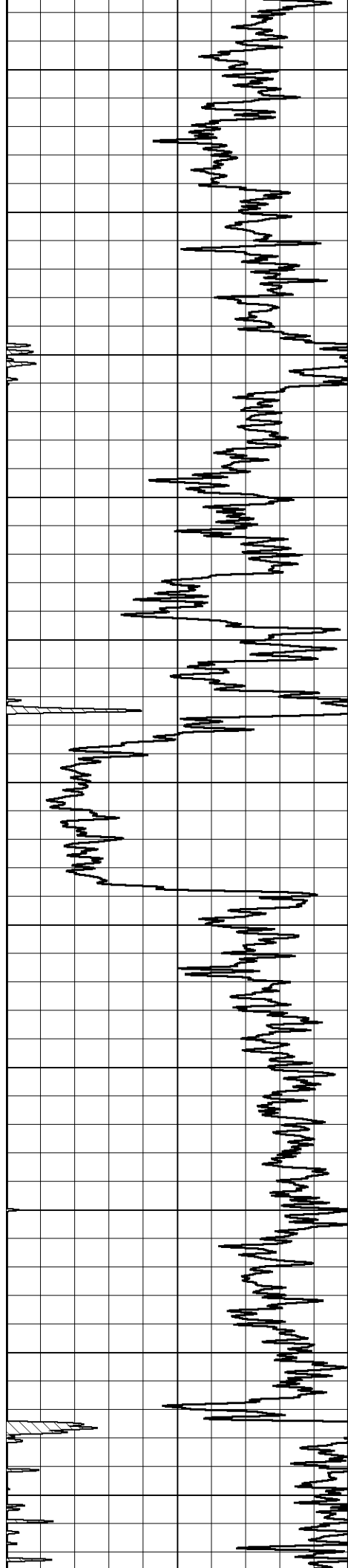
MAIN PASS

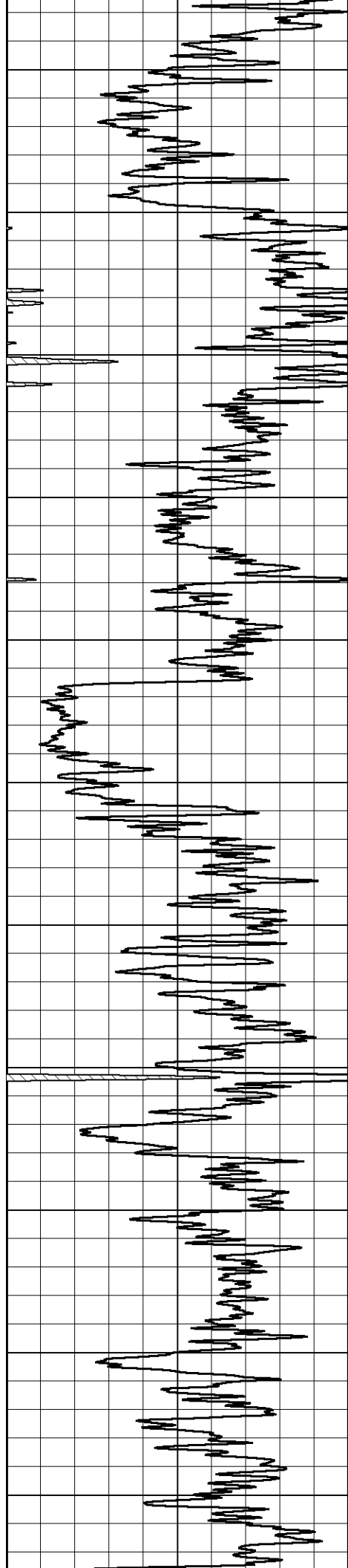
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Dataset Pathnamestackml/pass6.1
Presentation Format_dil2in
Dataset CreationFri Jan 28 18:06:04 2022
Charted byDepth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150
1000	Conductivity (mmho/m)	0
15000	Line Tension (lb)	0
0	Shallow Resistivity (Ohm-m)	50
0	Deep Resistivity (Ohm-m)	50
Shallow Resistivity		
50	(Ohm-m)	200
50	Deep Resistivity (Ohm-m)	200

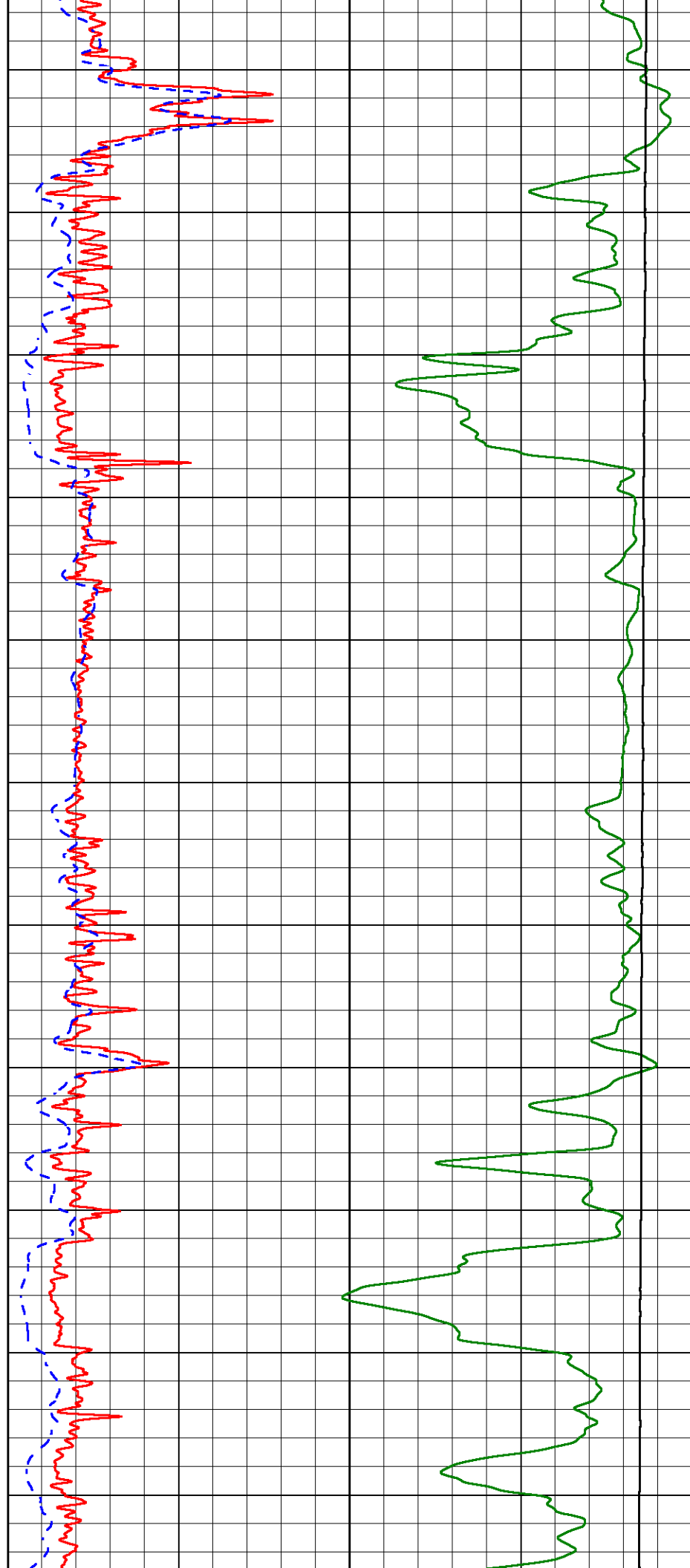


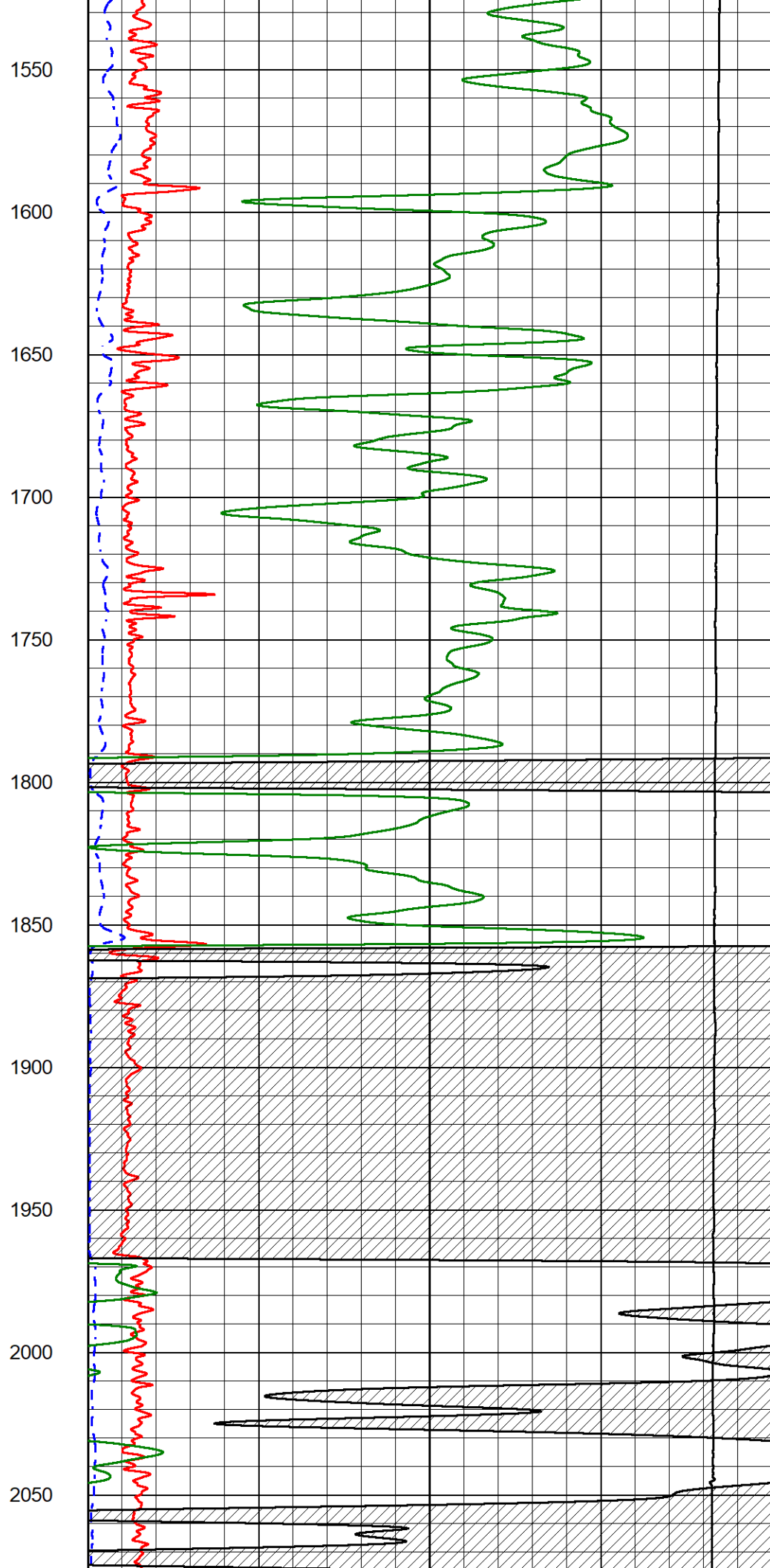
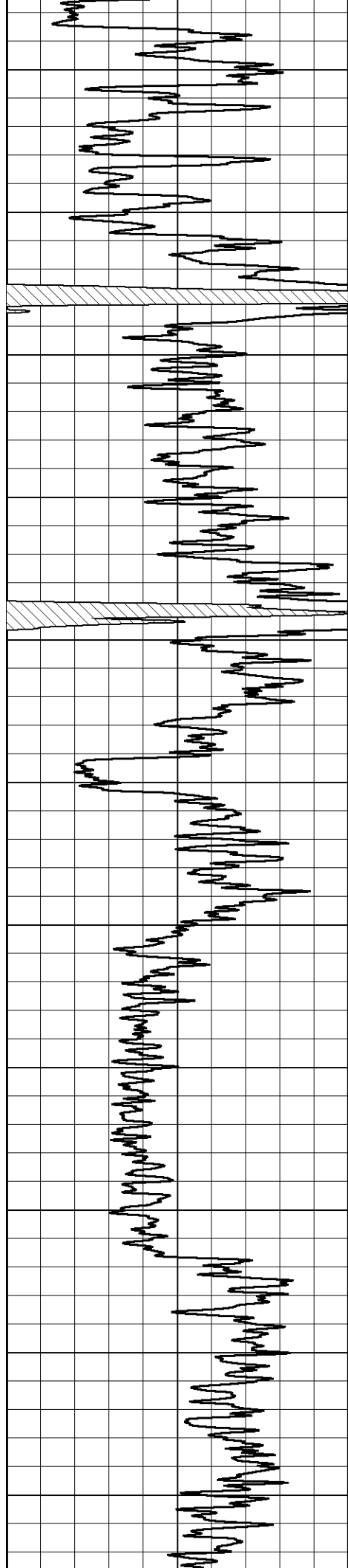
450 500 550 600 650 700 750 800 850 900 950





1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500





2100

2150

2200

2250

2300

2350

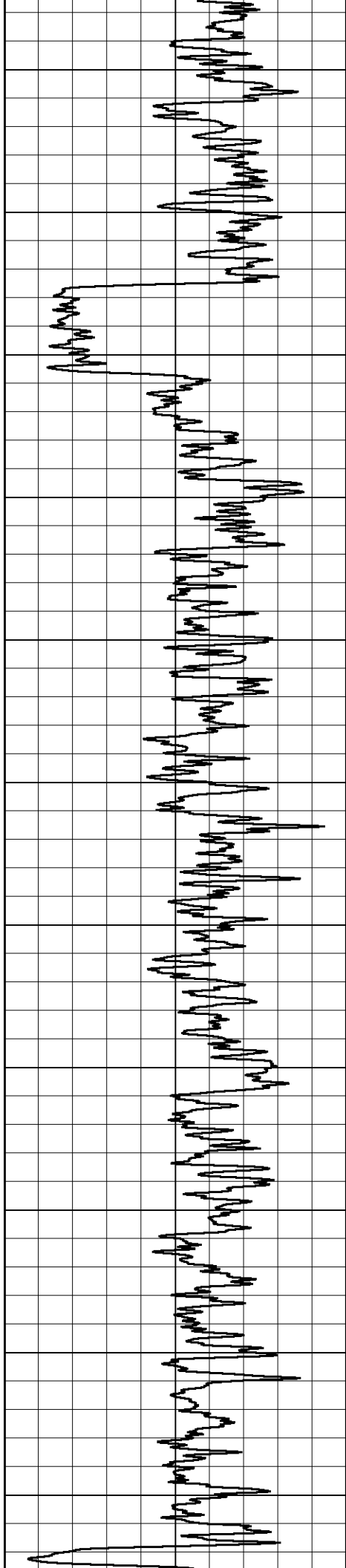
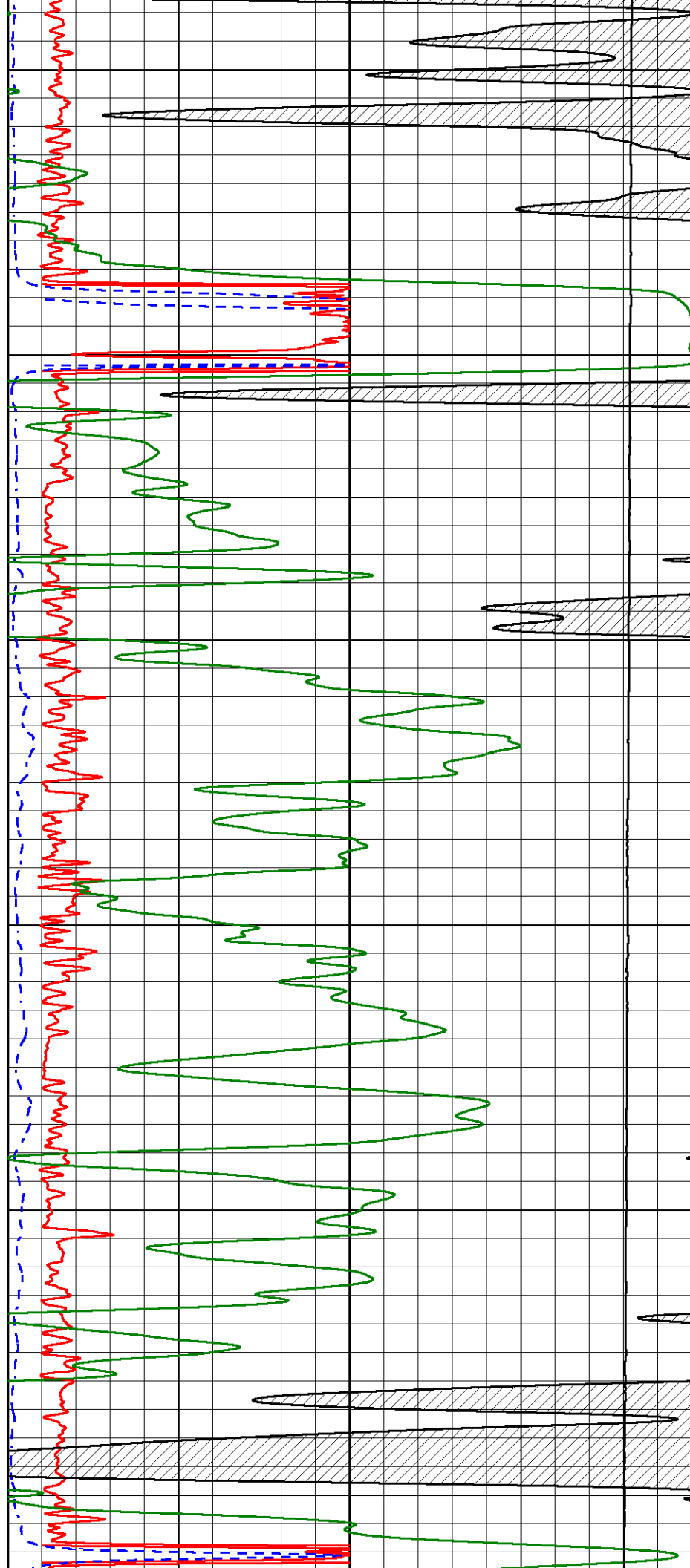
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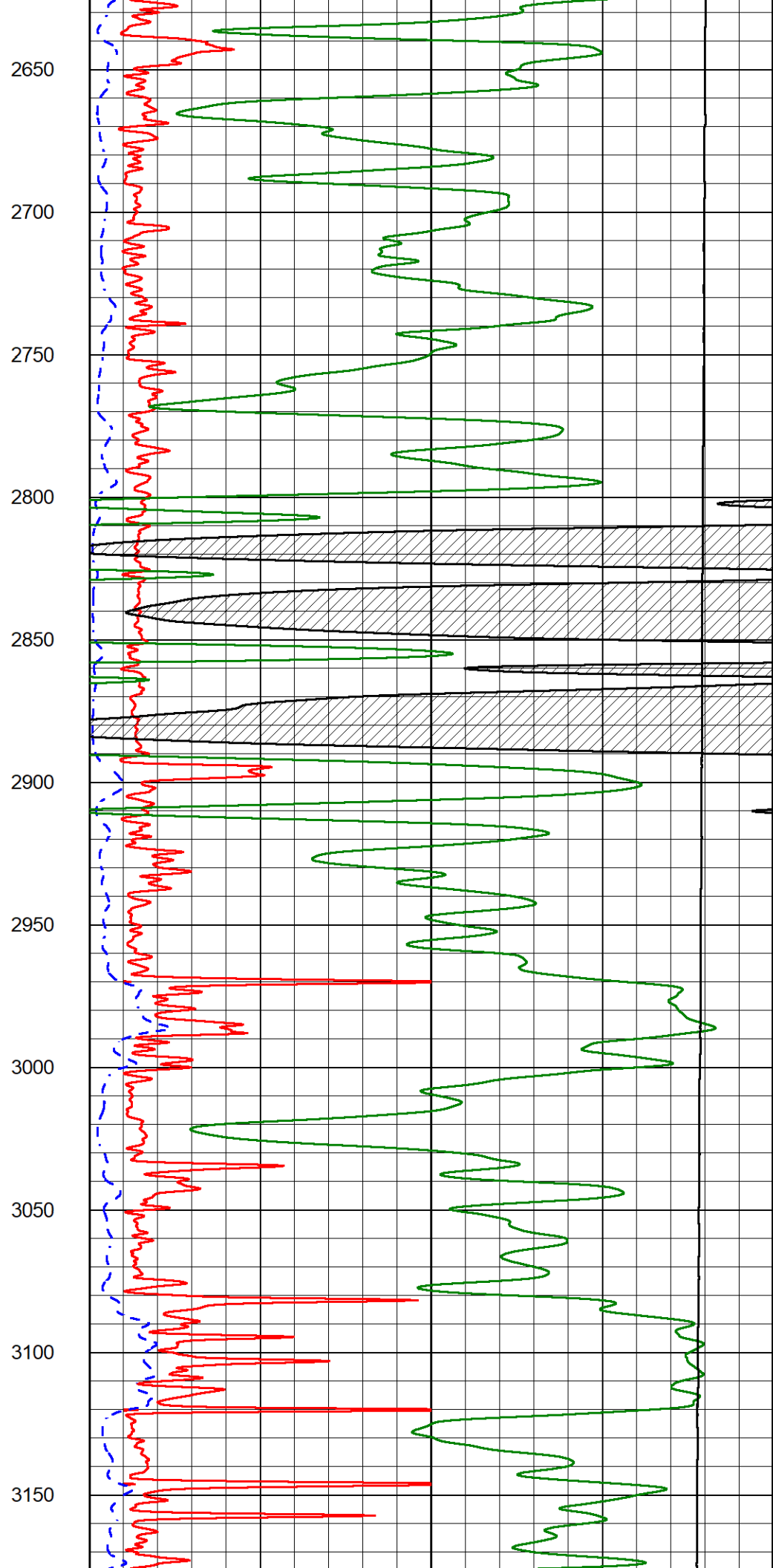
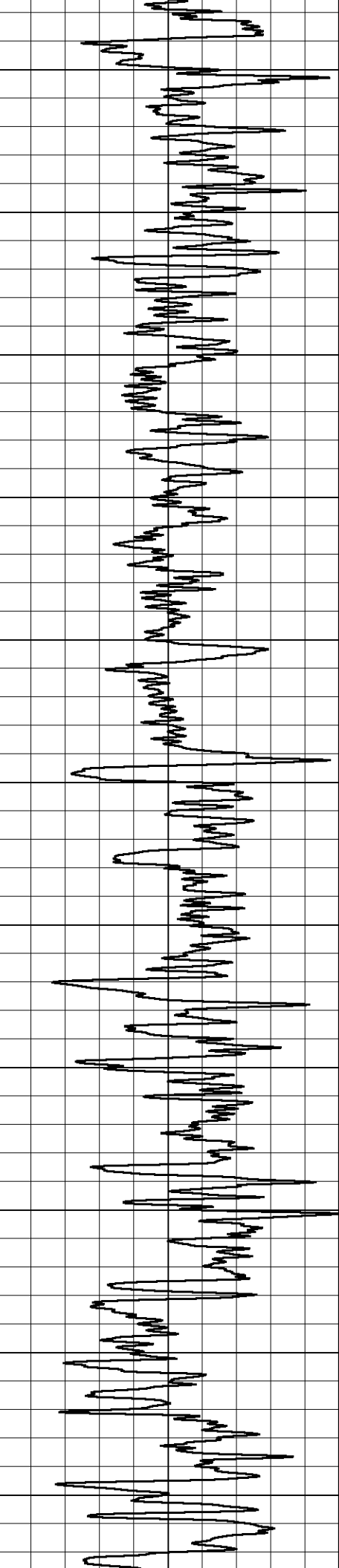
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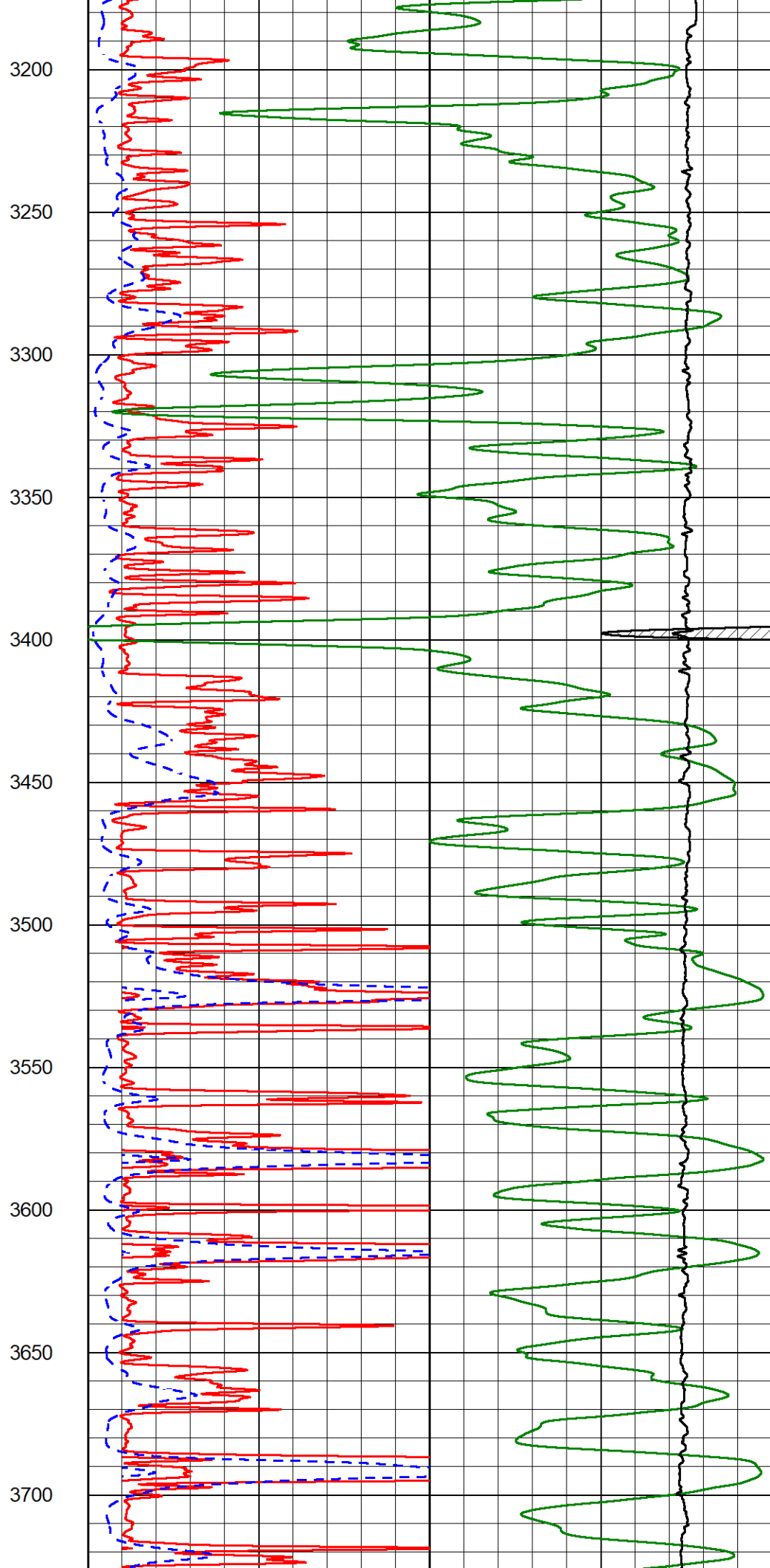
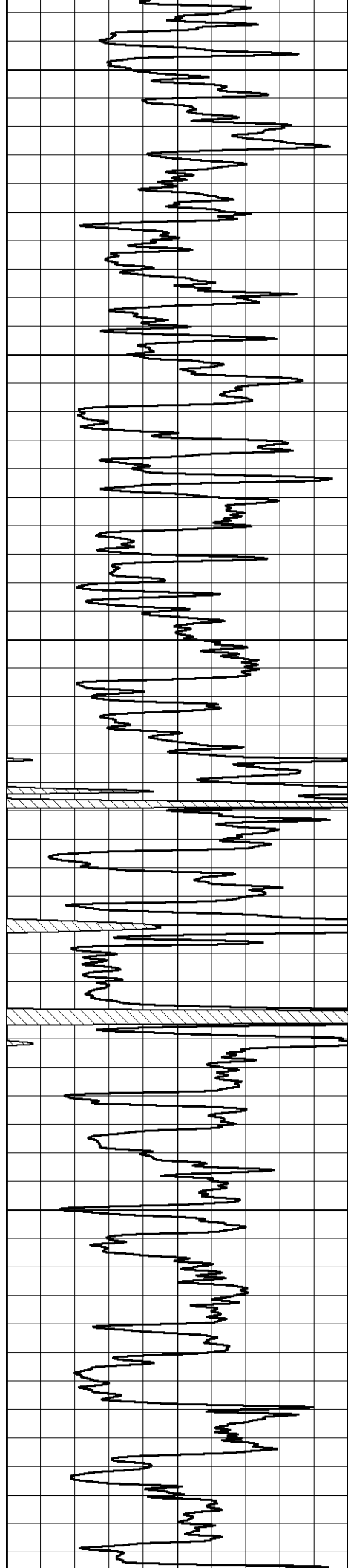
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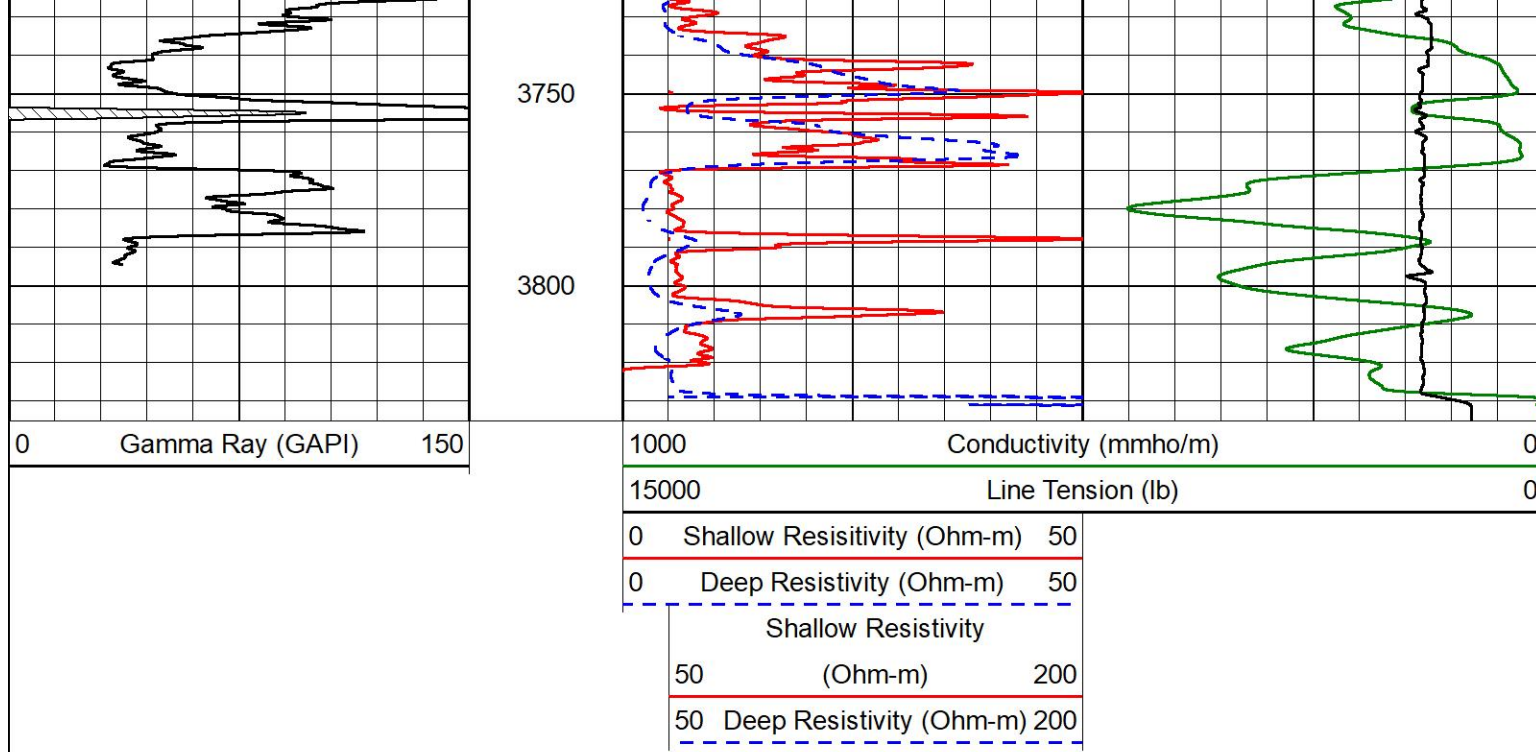
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2600







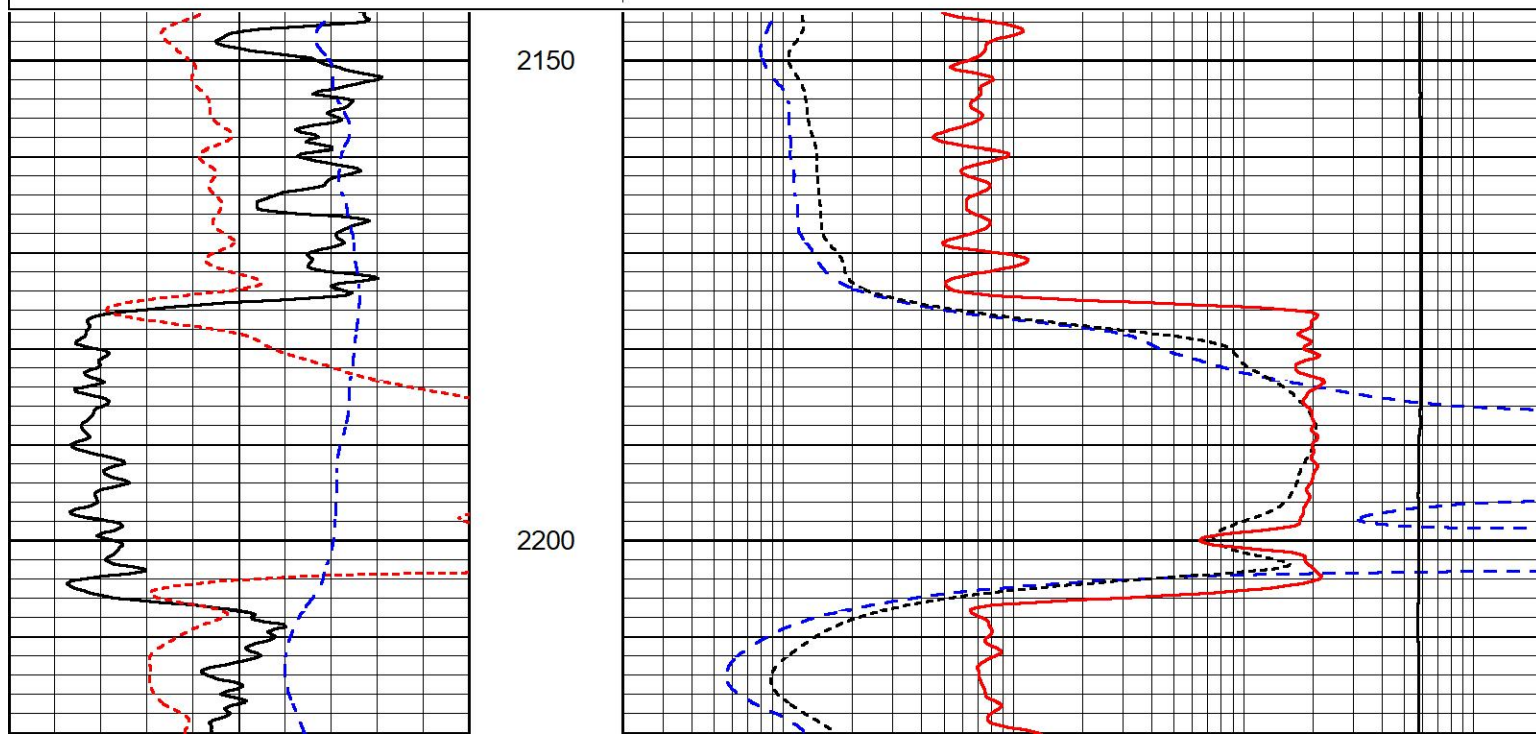
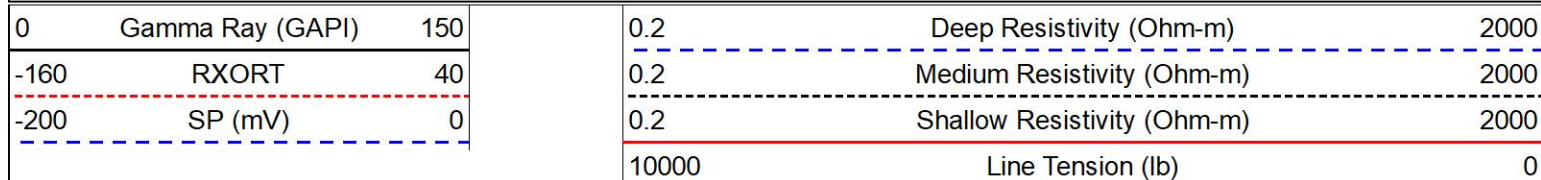


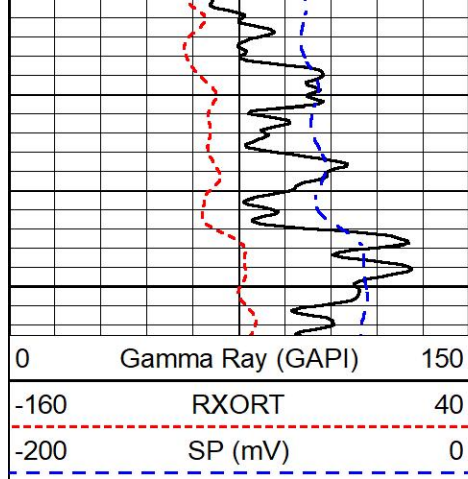
MIDWEST WIRELINE

ANHYDRITE SECTION

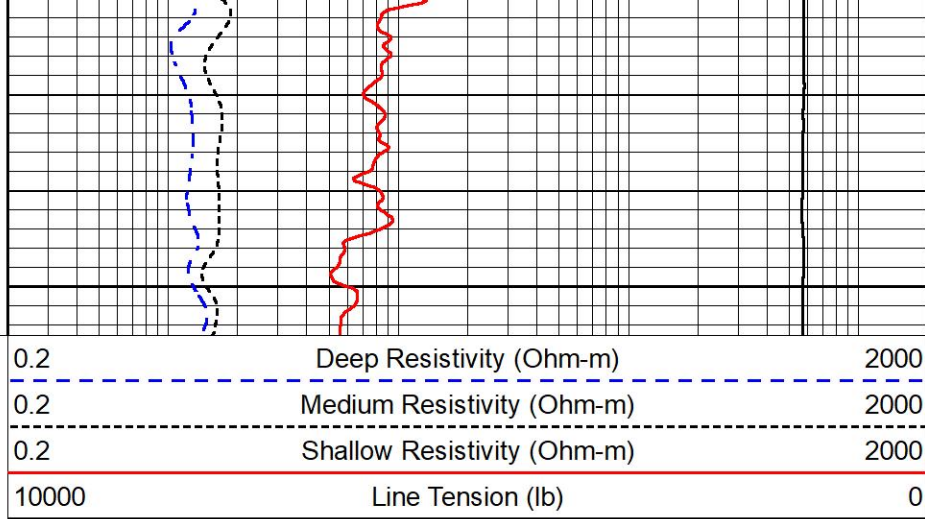
MAIN PASS

Database File cobalt_heilman_trust_1_30.db
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 Presentation Format _dil
 Dataset Creation Fri Jan 28 18:01:45 2022
 Charted by Depth in Feet scaled 1:240





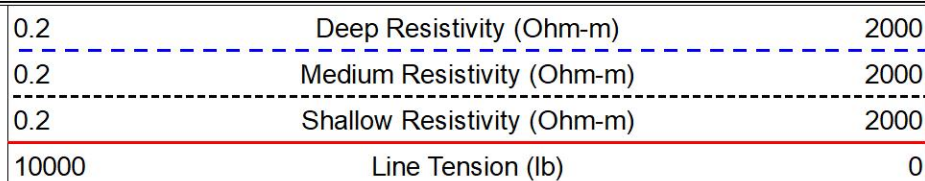
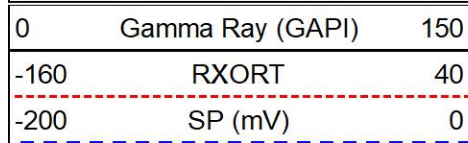
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DETAIL SECTION

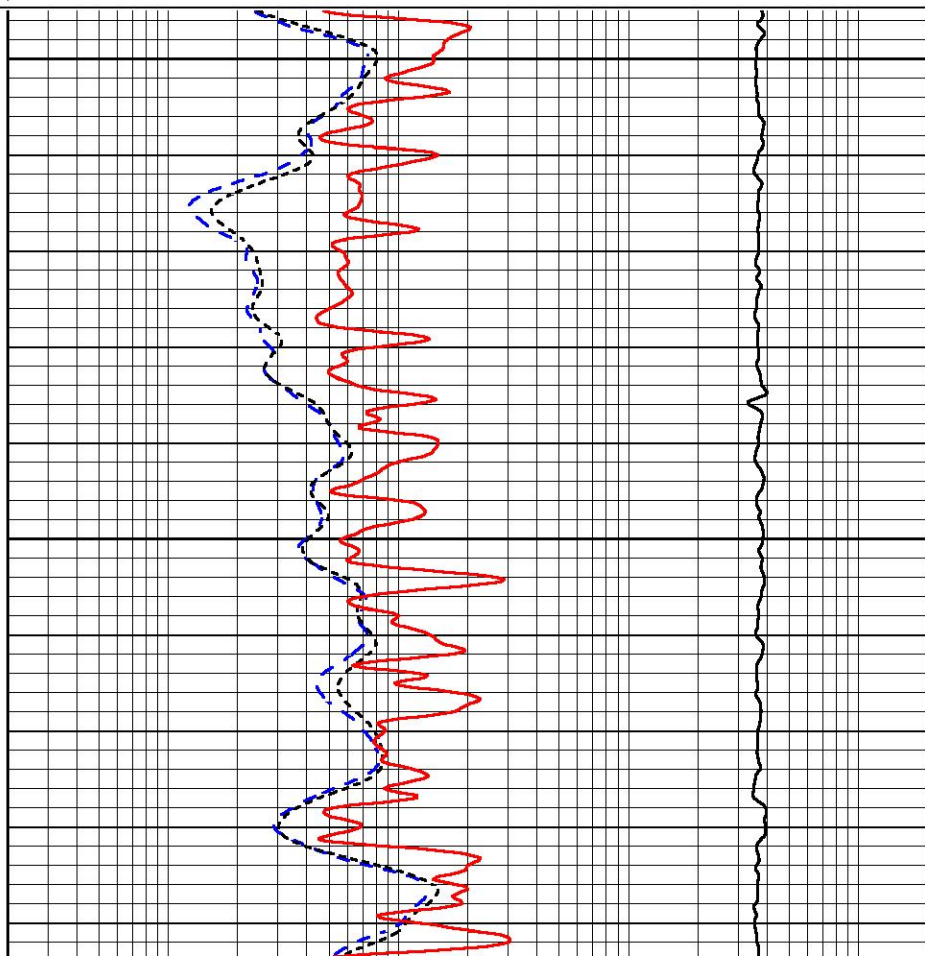
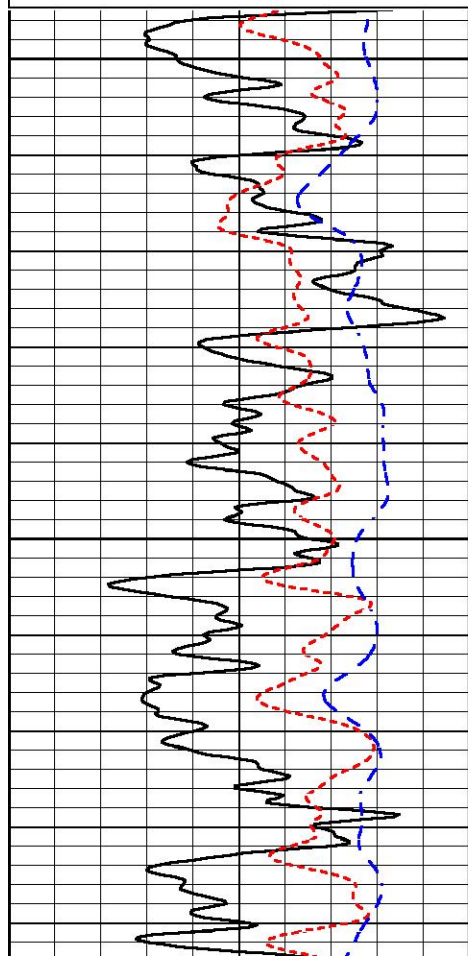
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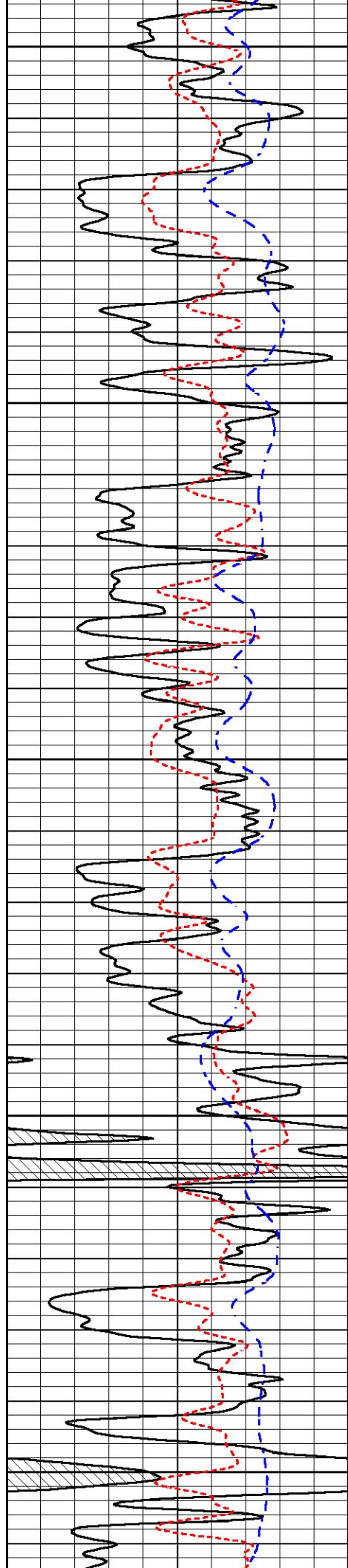
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 Dataset Pathname stackml/pass4.1
 Presentation Format _dil
 Dataset Creation Fri Jan 28 17:35:58 2022
 Charted by Depth in Feet scaled 1:240



3200

3250





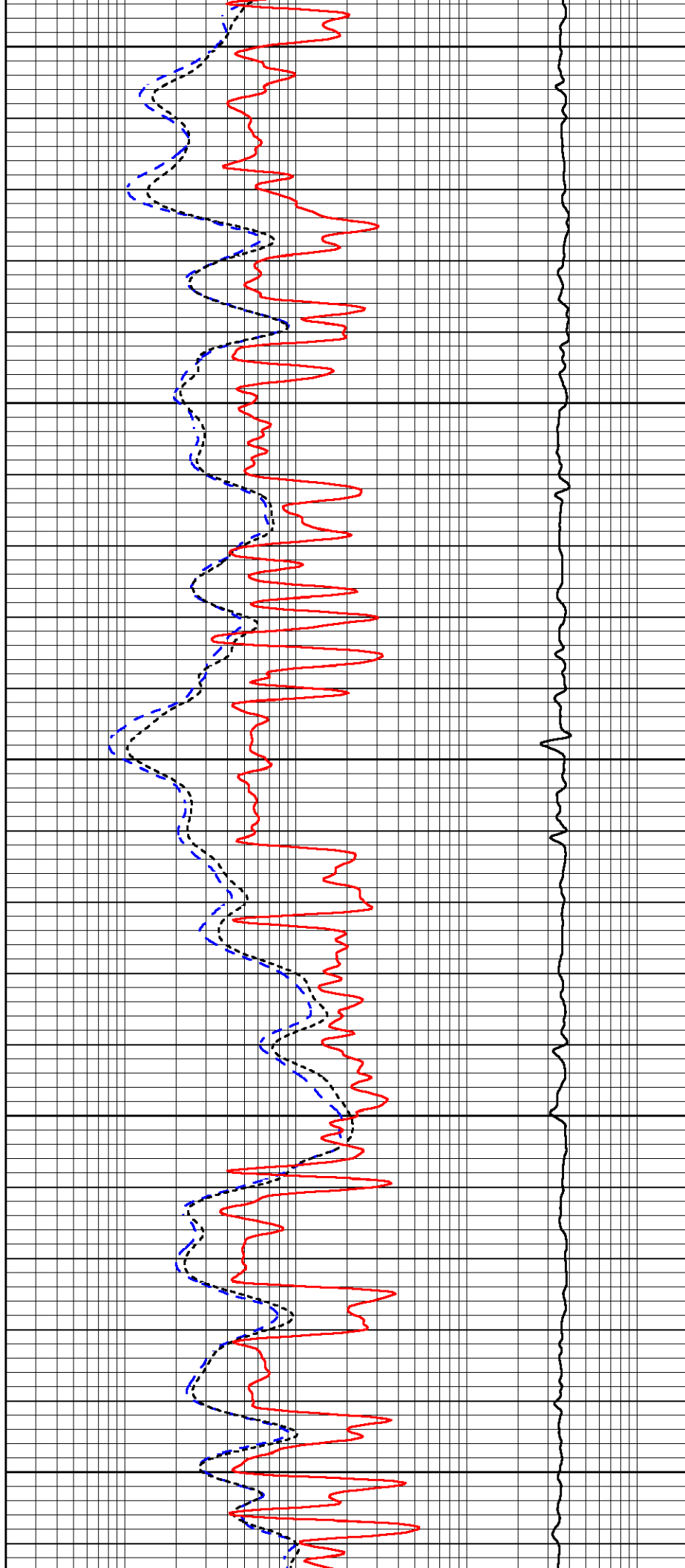
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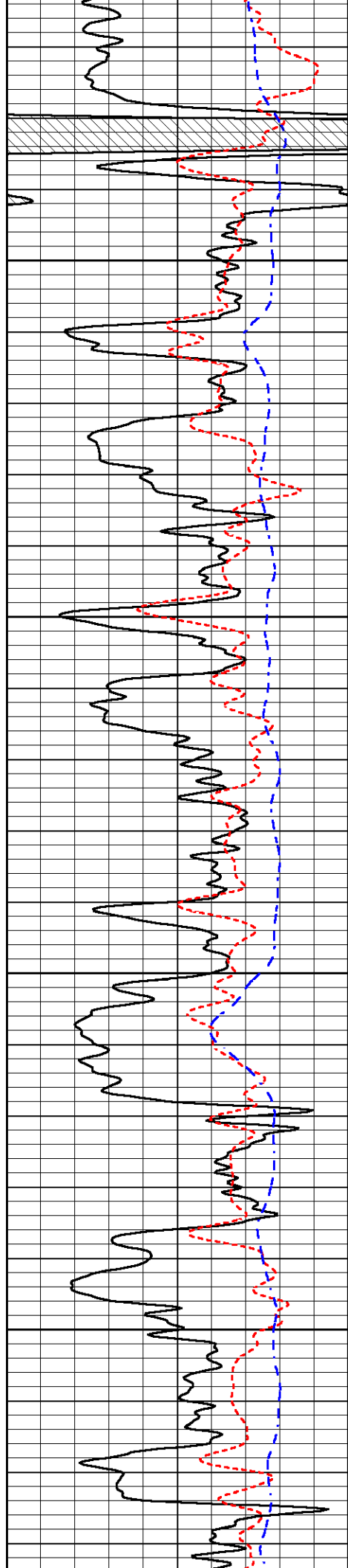
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3400

3450

3500



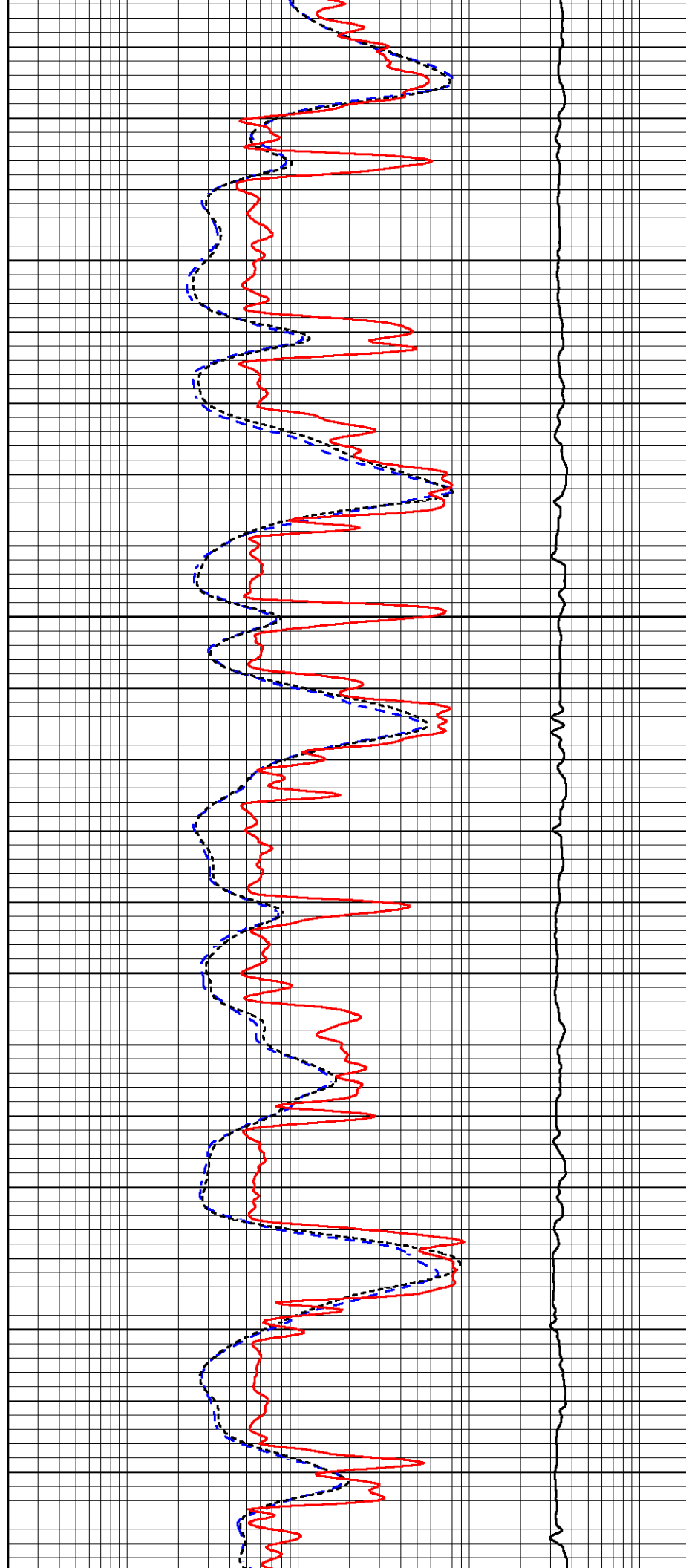


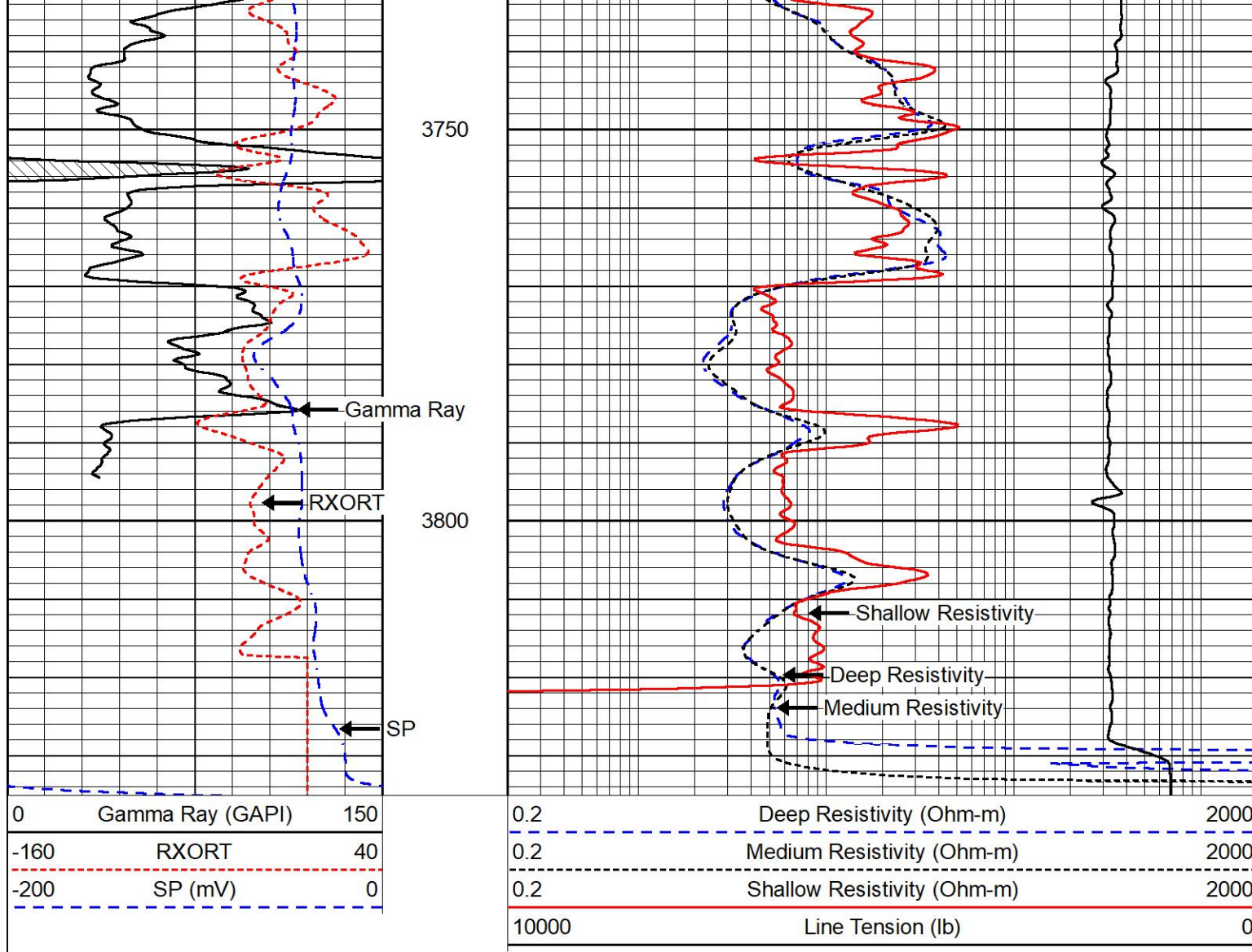
3550

3600

3650

3700

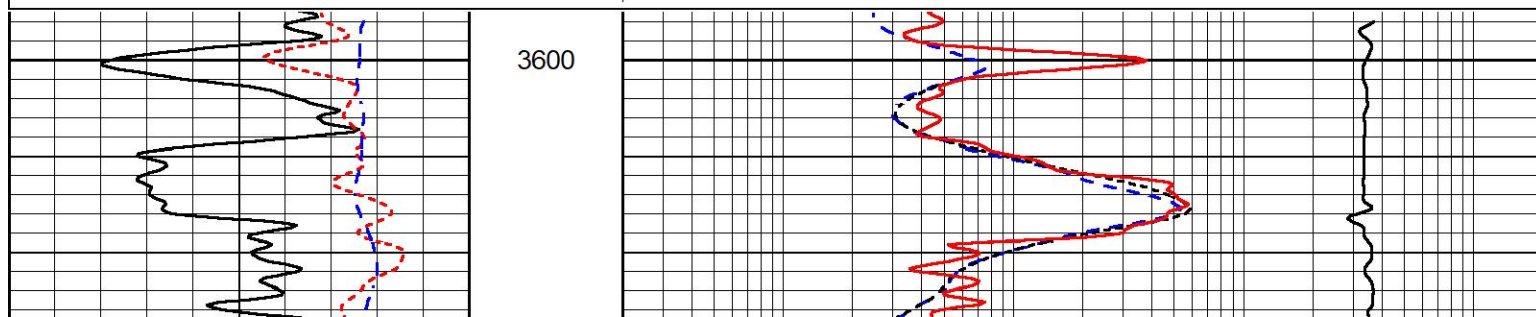
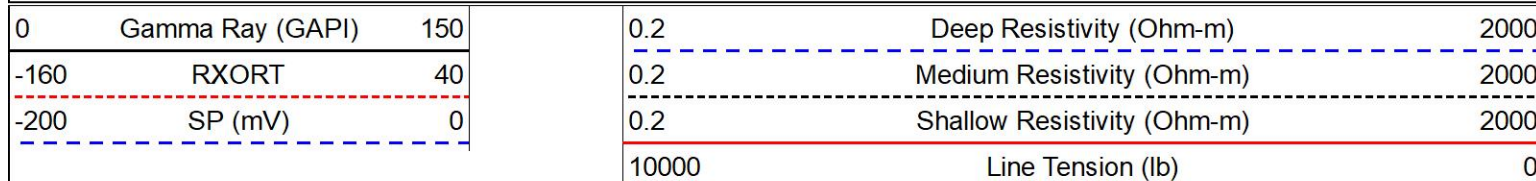


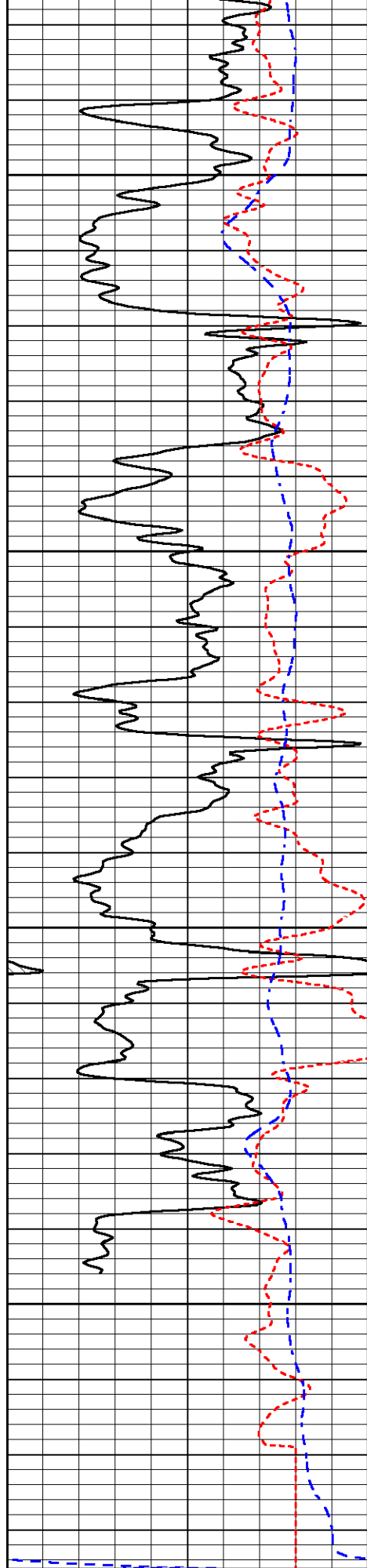


REPEAT SECTION

REPEAT PASS

Database File cobalt_heilman_trust_1_30.db
 Dataset Pathname stackml/pass2.1
 Presentation Format _dil
 Dataset Creation Fri Jan 28 17:35:12 2022
 Charted by Depth in Feet scaled 1:240





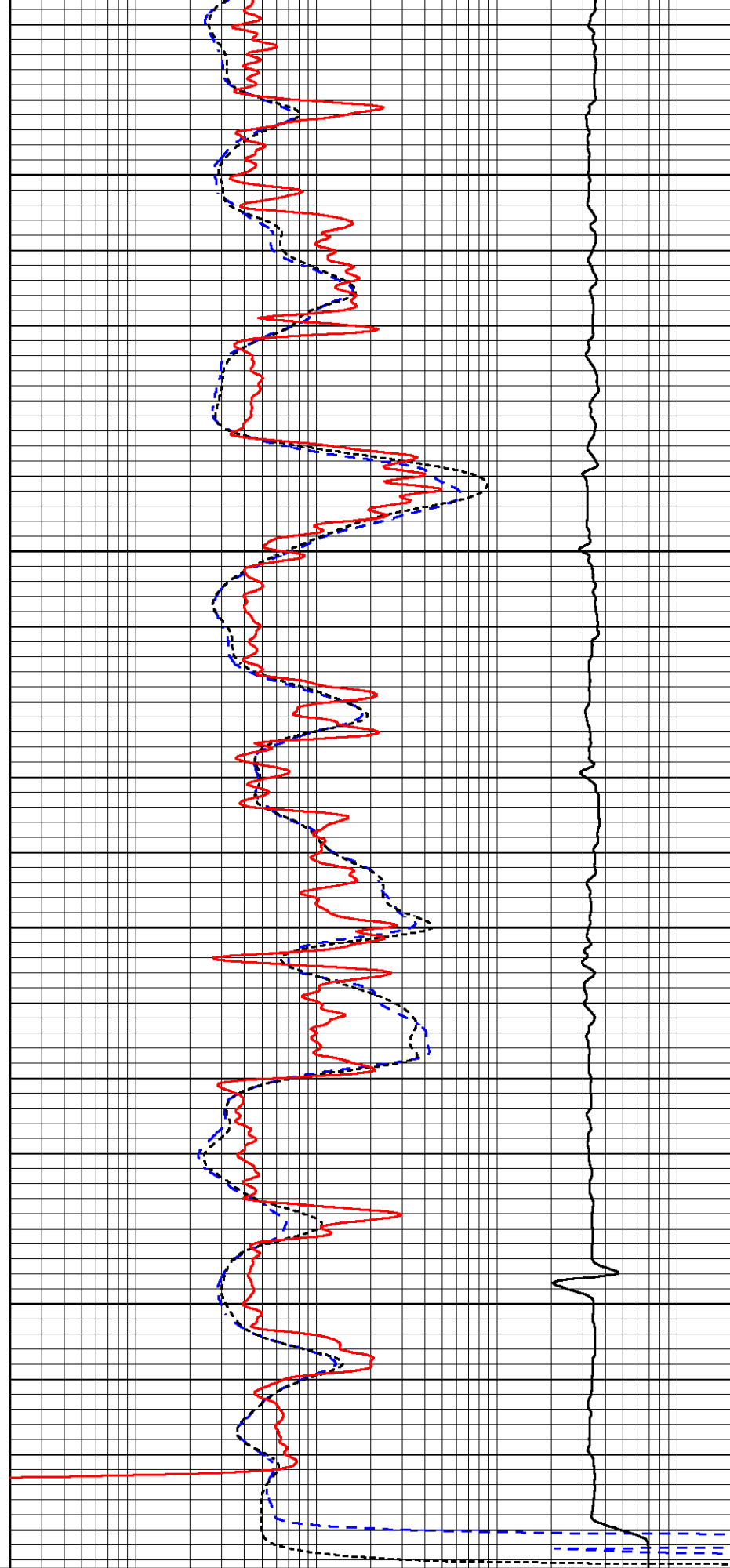
0	Gamma Ray (GAPI)	150
-160	RXORT	40
200	SP (mV)	0

3650

3700

3750

3800



0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	Shallow Resistivity (Ohm-m)	2000

200	SP (mV)	0	0.2	Shallow Resistivity (Ohm-m)	2000
			10000	Line Tension (lb)	0

Calibration Report	
Database File	cobalt_heilman_trust_1_30.db
Dataset Pathname	stackml/pass4.1
Dataset Creation	Fri Jan 28 17:35:58 2022

Dual Induction Calibration Report

Serial-Model:	504 HT-M&W
Surface Cal Performed:	Thu Dec 16 22:32:49 2021

		Readings		References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	178.615	710.235		0.000	255.800	mmho/m	0.650	-19.000
Medium	161.982	1441.110		0.000	255.800	mmho/m	0.450	-45.500

Microlog Calibration Report

Serial-Model:	402-PSI STKBL ML
Performed:	Thu Dec 16 22:29:48 2021

		Readings		References			Results	
	Zero	Cal		Zero	Cal		m	b
Normal	0.0037	0.0043		0.0000	10.0000	Ohm-m	12000.0000	-1.0000
Inverse	0.1208	0.0013		0.0000	10.0000	Ohm-m	10000.0000	0.0000
Caliper	1.0020	1.0834		5.5000	16.5000	in	135.1520	-131.4000

Compensated Density Calibration Report
--

Serial-Model:	303-03-M&W
Source #:	21170B
Master Calibration Performed:	Thu Dec 16 23:28:34 2021

Master Calibration						
		Density		Far Detector	Near Detector	
Magnesium		1.755	g/cc	3841.78	5151.73	cps
Aluminum		2.670	g/cc	700.98	3068.49	cps
			Spine Angle = 73.06	Density/Spine Ratio = 0.515		
		Size		Reading		
Small Ring		4.00	in	1.17		
Large Ring		14.00	in	1.05		

Compensated Neutron Calibration Report
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Serial-Model:	210-M&W
Source #:	N-1238
Master Calibration Performed:	Fri Dec 3 09:16:24 2021

Master Calibration			
Detector	Readings	Tonnage	Normalization

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:	103				
Tool Model:	M&W				
Performed:	Fri Dec 3 12:13:24 2021				
Calibrator Value:	500.0		GAPI		
Background Reading:	28.0		cps		
Calibrator Reading:	986.0		cps		
Sensitivity:	0.5700		GAPI/cps		

	Company	Cobalt Energy LLC
	Well	Heilman Trust #1-30
	Field	Wildcat
	County	Decatur
	State	Kansas