MIDWEST WIRELINE

DUAL INDUCTION

Company LB Exploration, Inc.
Well Prochaska/Rathbun Unit #1
Field Ellsworth
County Ellsworth State Kansas

Location: SW SE SE SE
153 FSL & 381 FEL
SEC 9 TWP 16S RGE 8W

API #: 15-053-21389-00-00

Other Services
CNL/CDL
MEL/BHCS

Elevation
K.B. 1623
D.F.
G.L. 1613

Permanent Datum Ground Level Elevation 1613
Log Measured From Kelly Bushing
Drilling Measured From Kelly Bushing

Date	8/24/2023		
Run Number	One		
Depth Driller	3060		
Depth Logger	3059		
Bottom Logged Interval	3058		
Top Log Interval	200		
Casing Driller	8.625 @ 223		
Casing Logger	220		
Bit Size	7.875		
Type Fluid in Hole	Chemical		
Salinity,ppm CL	5000		
Density / Viscosity	9.4 / 52		
pH / Fluid Loss	10.0 / 9.2		
Source of Sample	Flowline		
Rm @ Meas. Temp	0.7 @ 74		
Rmf @ Meas. Temp	0.53 @ 74		
Rmc @ Meas. Temp	0.95 @ 74		
Source of Rmf / Rmc	Charts		
Rm @ BHT	0.49 @ 107		
Operating Rig Time	4 Hours		
Max Rec. Temp. F	107		
Equipment Number	P-24		
Location	Hays		
Recorded By	T. Martin		
Witnessed By	Jim Musgrove		

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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.

Ellsworth, KS, S of town at 156/14 Junction,
3.5 S on 14 to Ave O, W & N into

Log Measured From: Kelly Bushing 10 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: Jim Musgrove
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
GR	40.75		GR-M&W (106)	3.00	3.50	50.00
CNLSC	37.65		CNT-M&W (207)	5.00	3.50	100.00
CNSSC	36.90					
			MWLith-STEP LITHO (704-10) Long Litho Mandrel	8.92	5.00	250.00
LCAL	28.21					
LLW8N	28.21					
LLW7N	28.21					
LLW6N	28.21					
LLW5N	28.21					
LLW4N	28.21					
LLW3N	28.21					
LLW2N	28.21		ML-PSIML (401)	7.58	4.00	65.00
LLW1N	28.21					
LSLOCK	27.96					
LLLOCK	27.96					
PELTMPR	27.96					
LSHVNG	27.96					
LLHVNG	27.96					
LSW8N	27.71					
LSW7N	27.71					
LSW6N	27.71					
LSW5N	27.71					
LSW4N	27.71					
LSW3N	27.71					
LSW2N	27.71					
LSW1N	27.71					
MCAL	19.58		DIL-M&W (507)	18.25	3.50	220.00
MI	19.58					
MN	19.58					
RLL3F	15.50					
RLL3	15.50					
CILD	8.33					
CILM	4.50					
SP	0.20					

Dataset: lb_prochaska-rathbun unit #1.db: field/well/StkMl/pass3.1
Total length: 42.75 ft
Total weight: 685.00 lb
O.D.: 5.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\lb_prochaska-rathbun unit #1.db
Dataset field/well/StkMI/pass3.1/_vars_

Top - Bottom

BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	MATRXDEN g/cc	NPORSEL	PERFS
7.875	107	5.5	0	1	2.71	Limestone	No

SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
0	0	-30	80	Off	3059

Variable Description

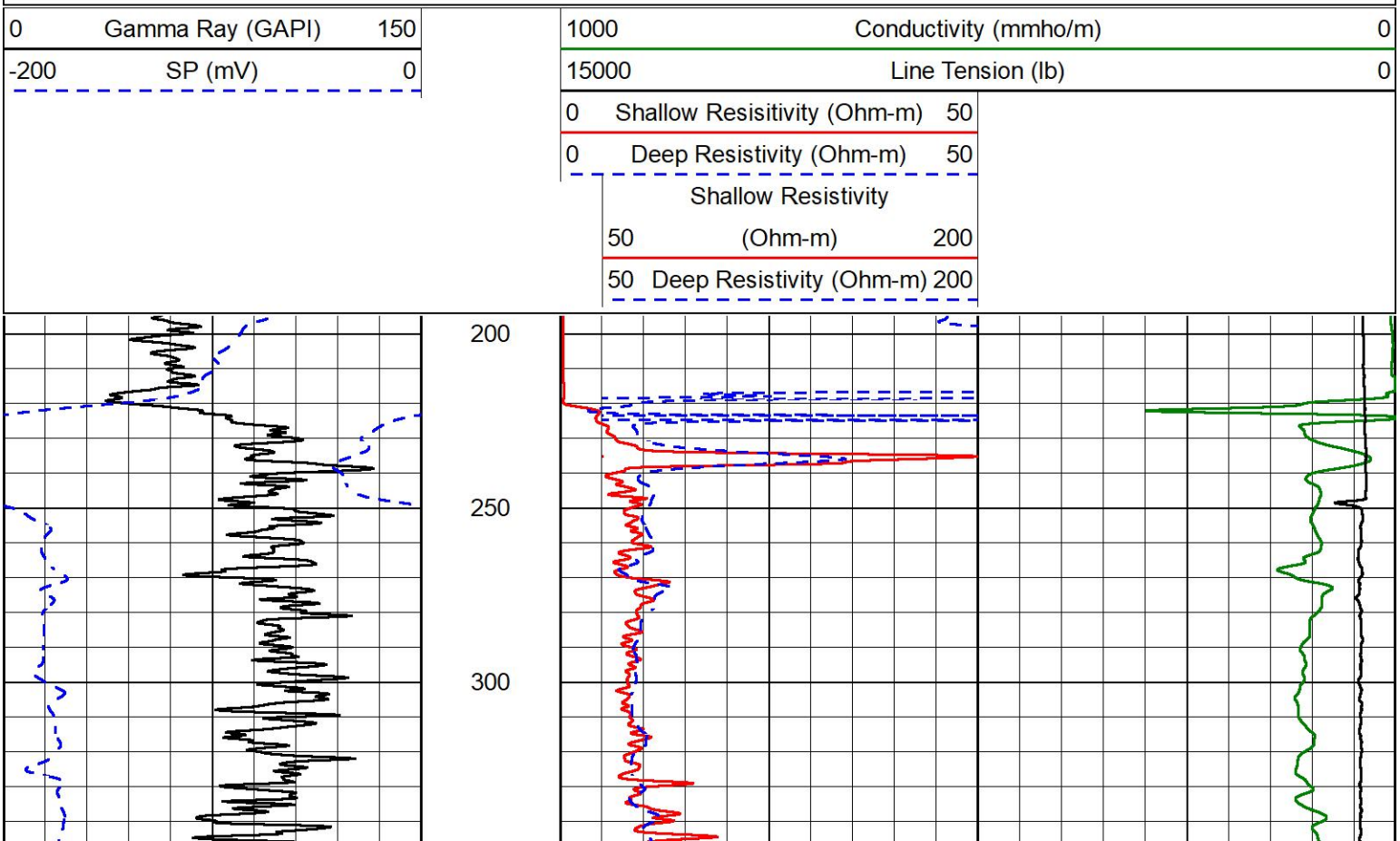
BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
FLUIDDEN : Fluid Density
MATRXDEN : Matrix Density
NPORSEL : Neutron Porosity Curve Select
PERFS : Perforation Flag
SNDERR : Deep Sonde Error Correction
SNDERRM : Medium Sonde Error Correction
SPSHIFT : S.P. Baseline Offset
SRFTEMP : Surface Temperature
SZCOR : CN Size Cor. ?
TDEPTH : Total Depth

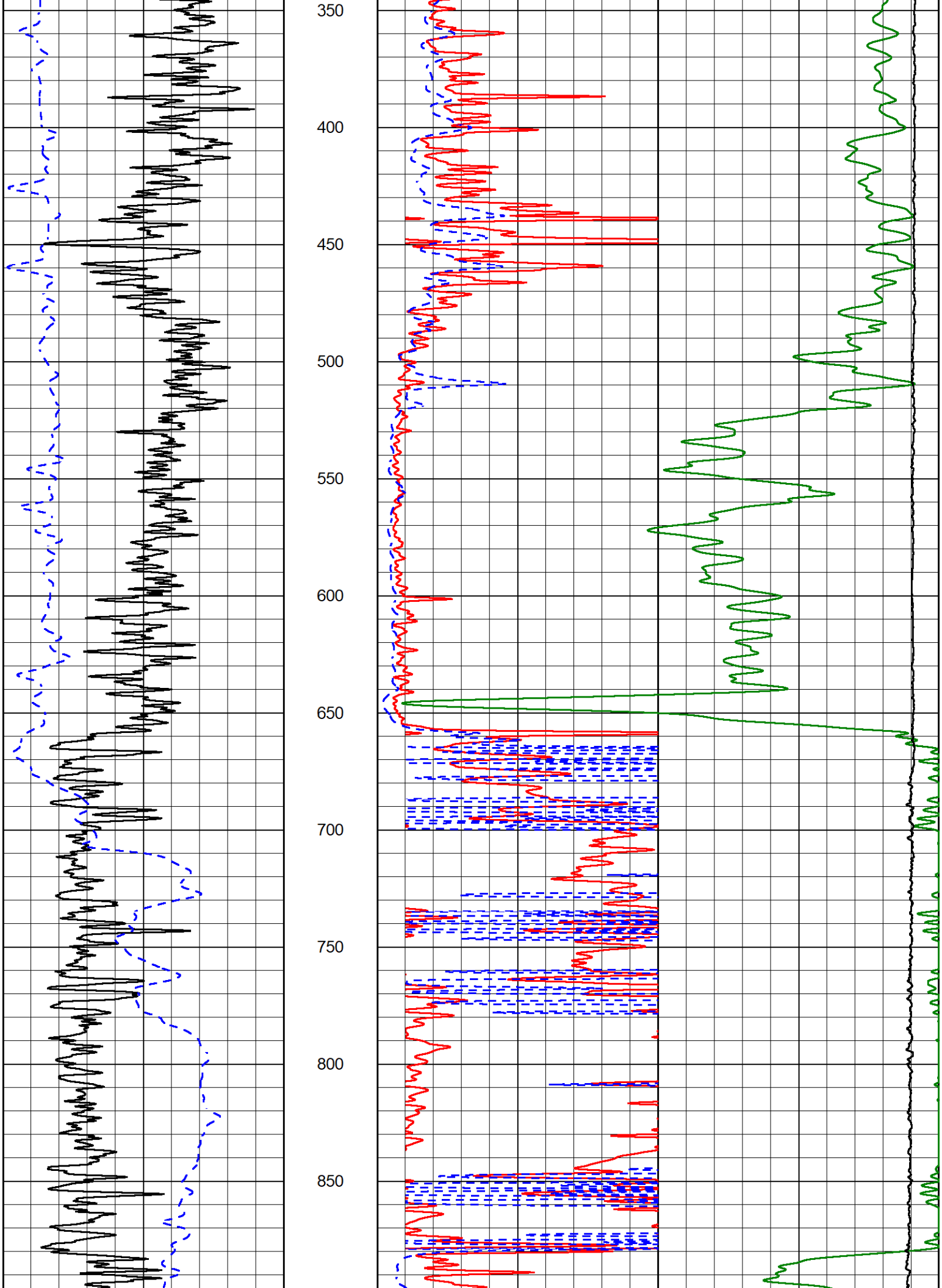
MIDWEST WIRELINE

2" SCALE RESISTIVITY

MAIN PASS

Database File	lb_prochaska-rathbun unit #1.db
Dataset Pathname	StkMI/pass3.2
Presentation Format	_dil2in
Dataset Creation	Thu Aug 24 09:53:12 2023
Charted by	Depth in Feet scaled 1:600

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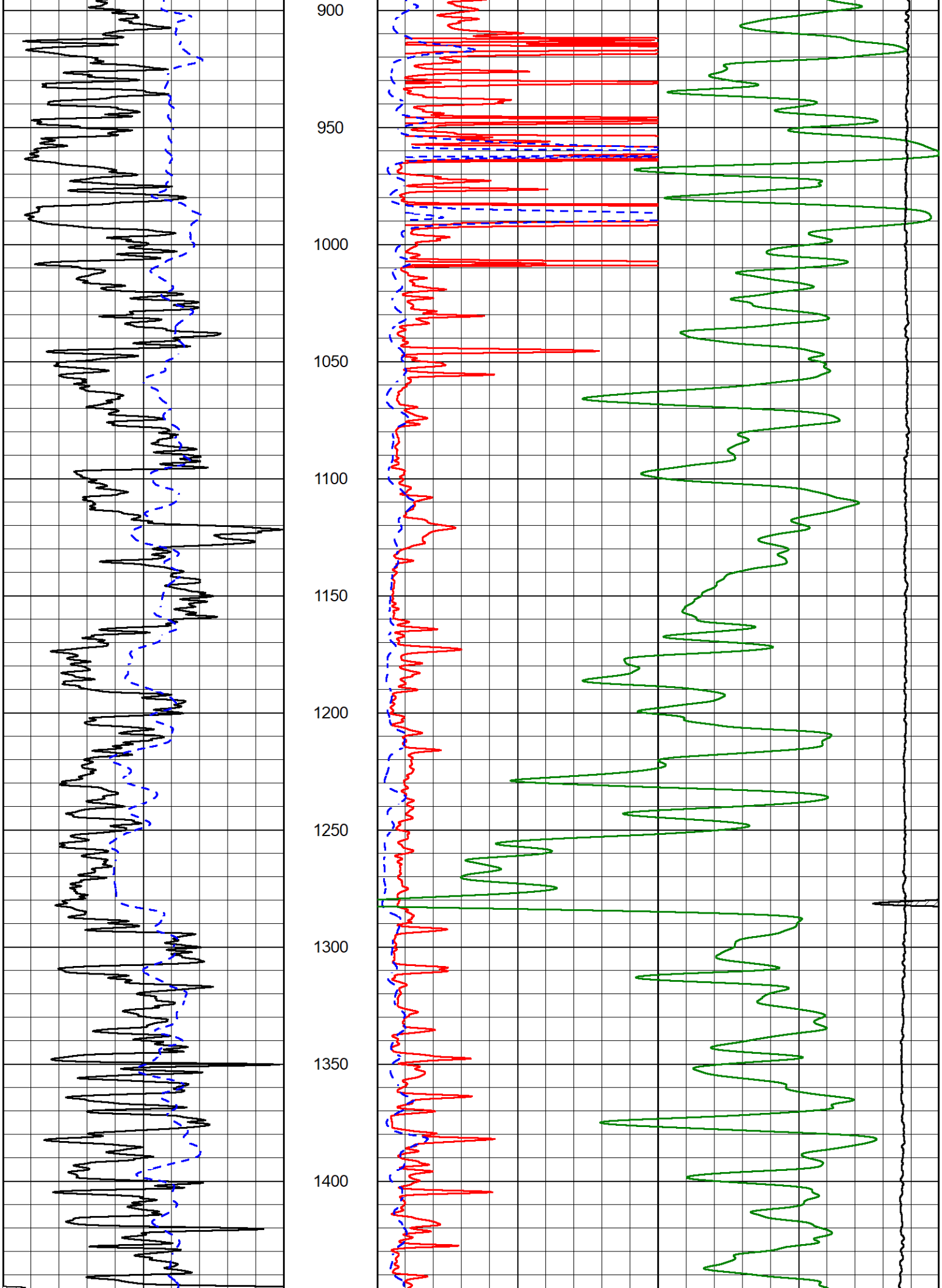
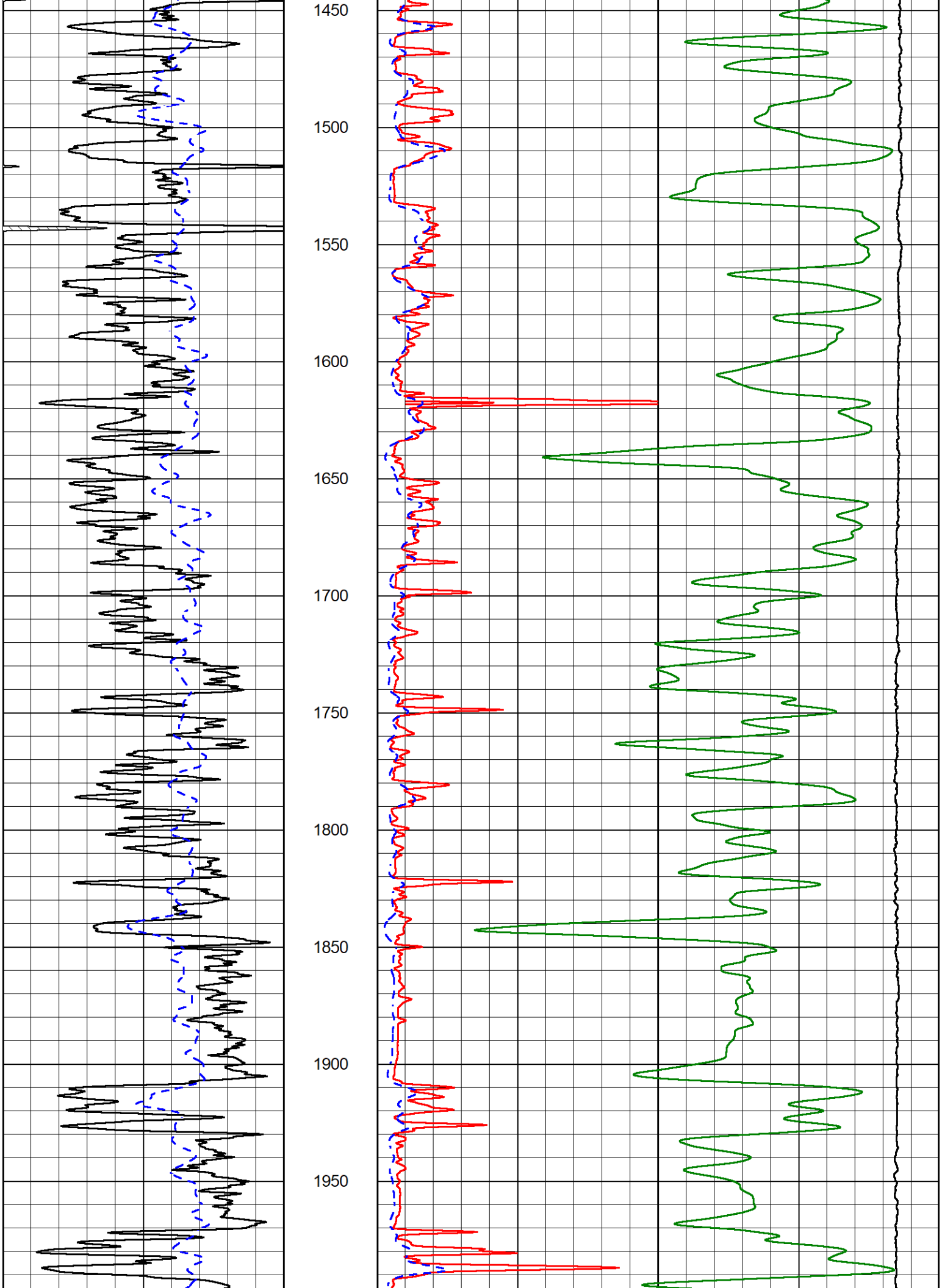
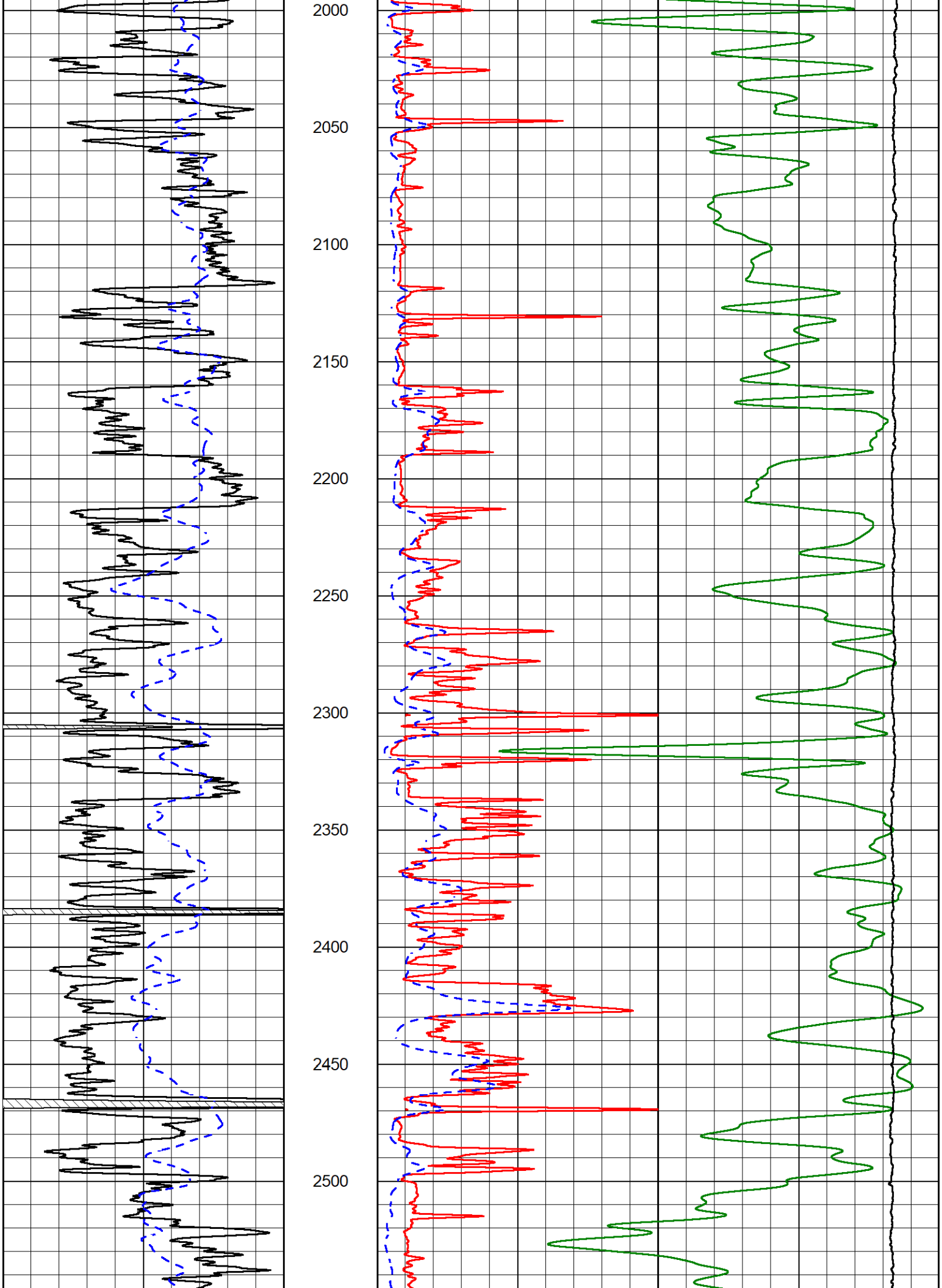
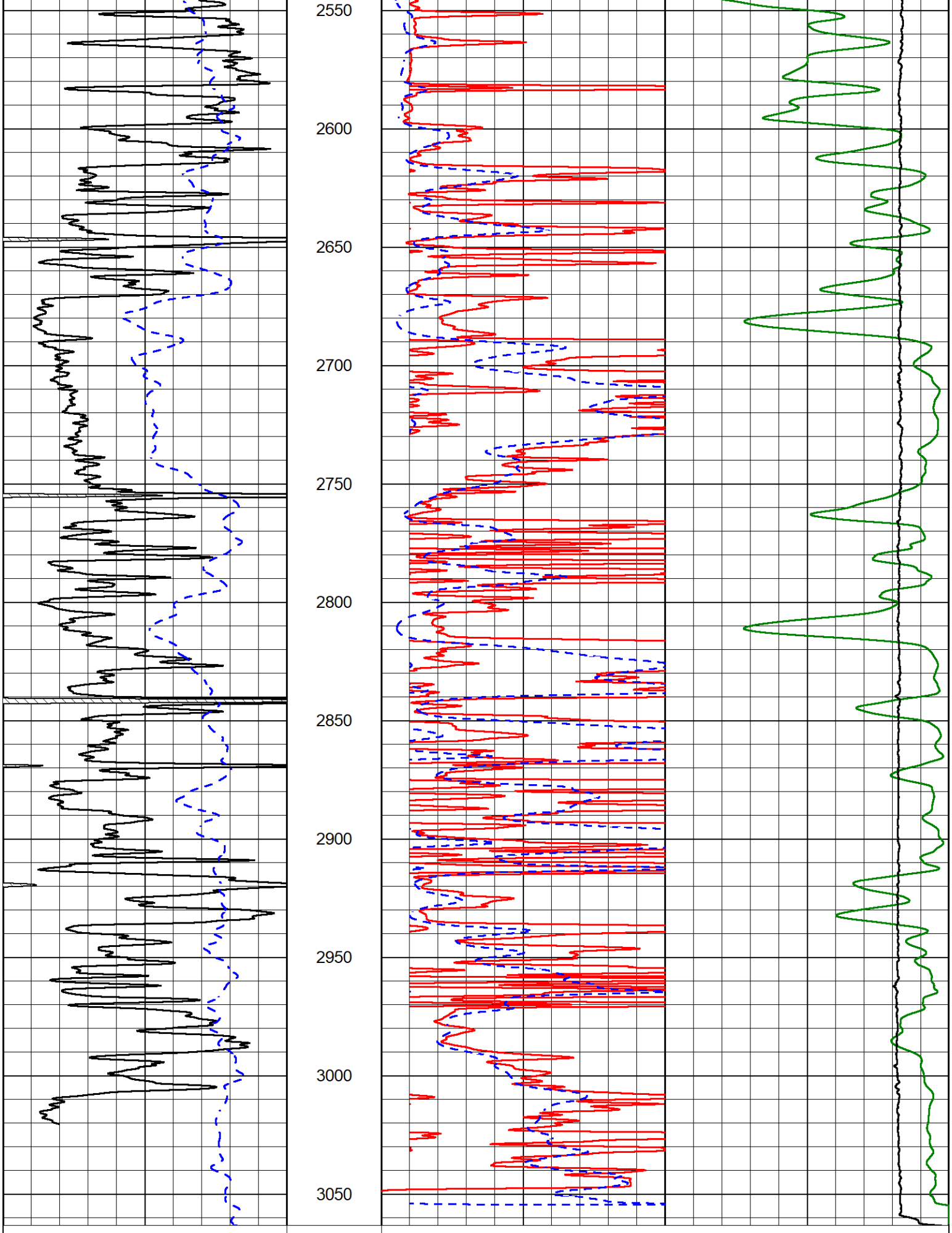
400
450
500
550
600
650
700
750
800
850


900
950
1000
1050
1100
1150
1200
1250
1300
1350
1400


1450
1500
1550
1600
1650
1700
1750
1800
1850
1900
1950


2000
2050
2100
2150
2200
2250
2300
2350
2400
2450
2500


2550
2600
2650
2700
2750
2800
2850
2900
2950
3000
3050
0
Gamma Ray (GAPI)
150
-200
SP (mV)
0
1000
Conductivity (mmho/m)
0
15000
Line Tension (lb)
0
0
Shallow Resisitivity (Ohm-m)
50

0	Deep Resistivity (Ohm-m)	50

	Shallow Resistivity	
50	(Ohm-m)	200
50	Deep Resistivity (Ohm-m)	200

MIDWEST WIRELINE

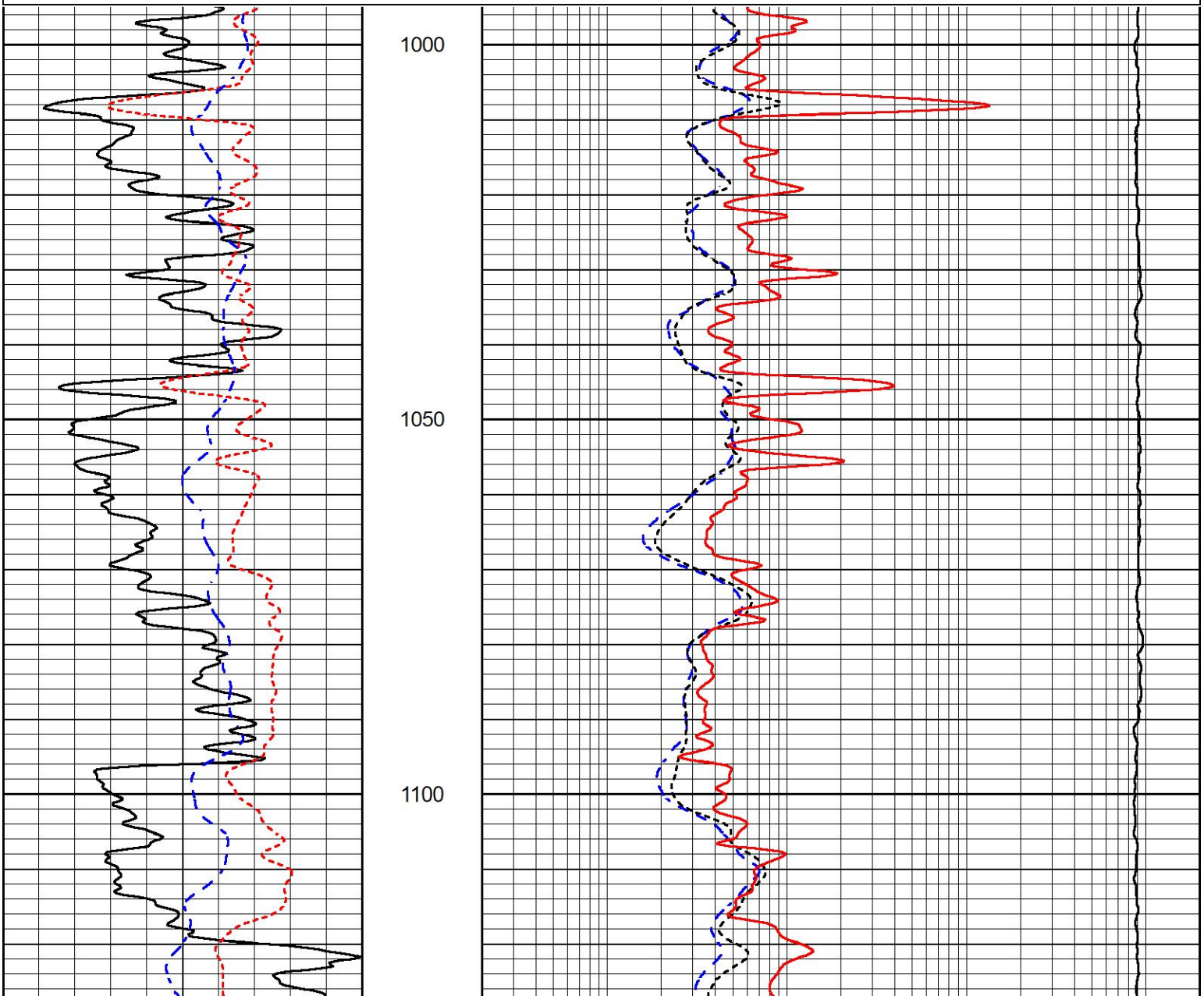
DETAIL SECTION

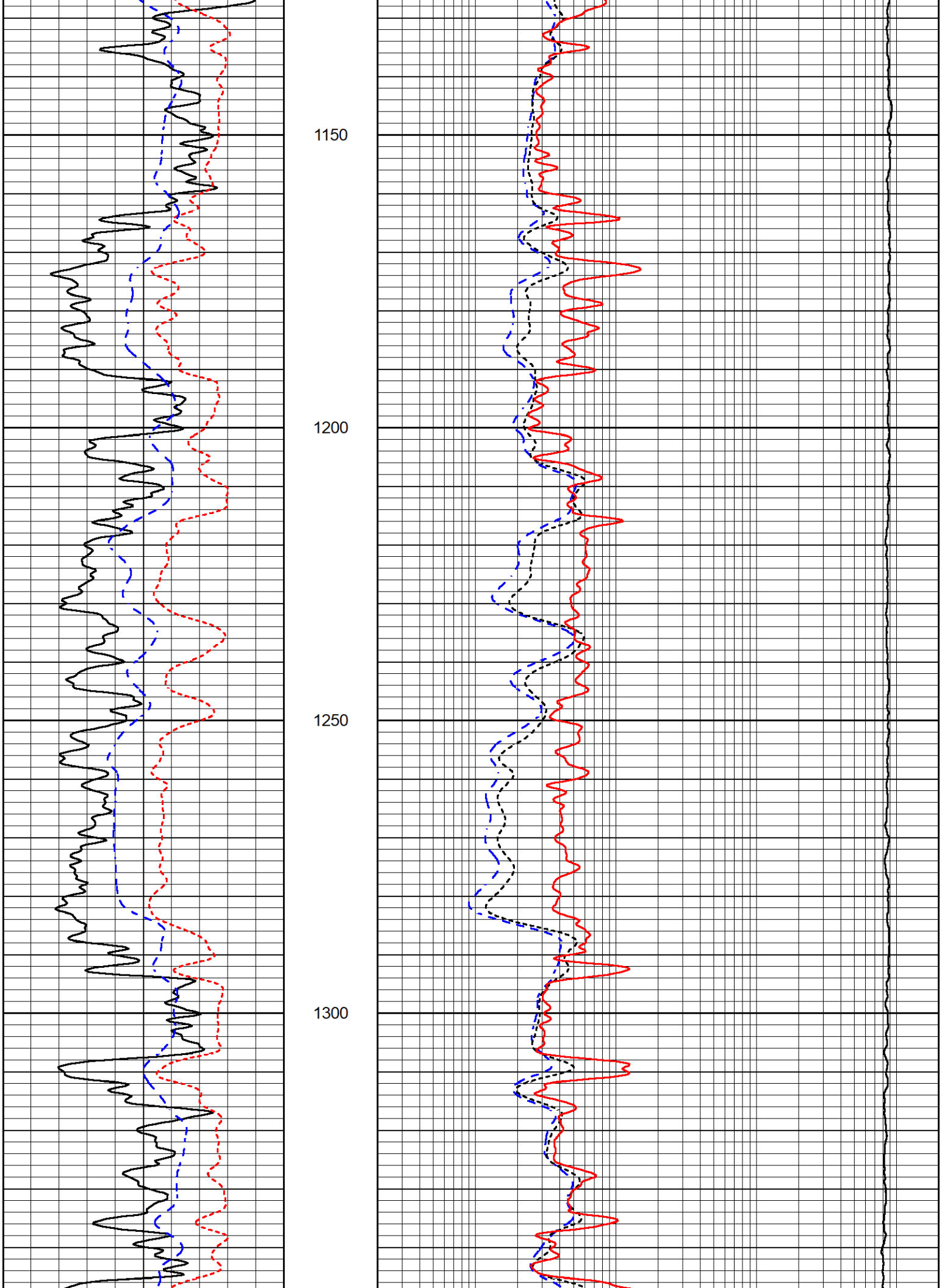
MAIN PASS

Database File	lb_prochaska-rathbun unit #1.db
Dataset Pathname	StkMI/pass3.1
Presentation Format	_dil
Dataset Creation	Thu Aug 24 09:53:52 2023
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

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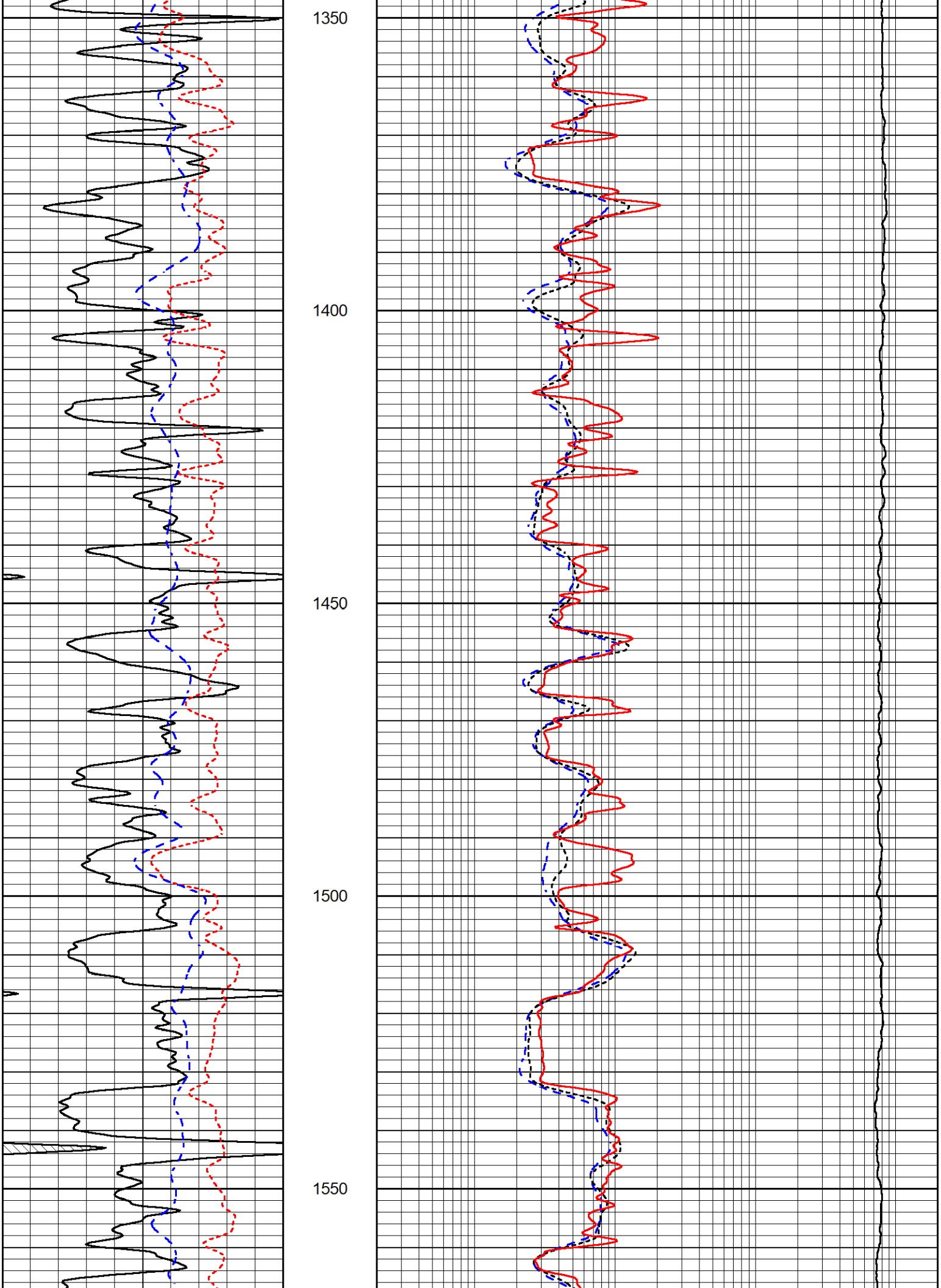
1200
1250
1300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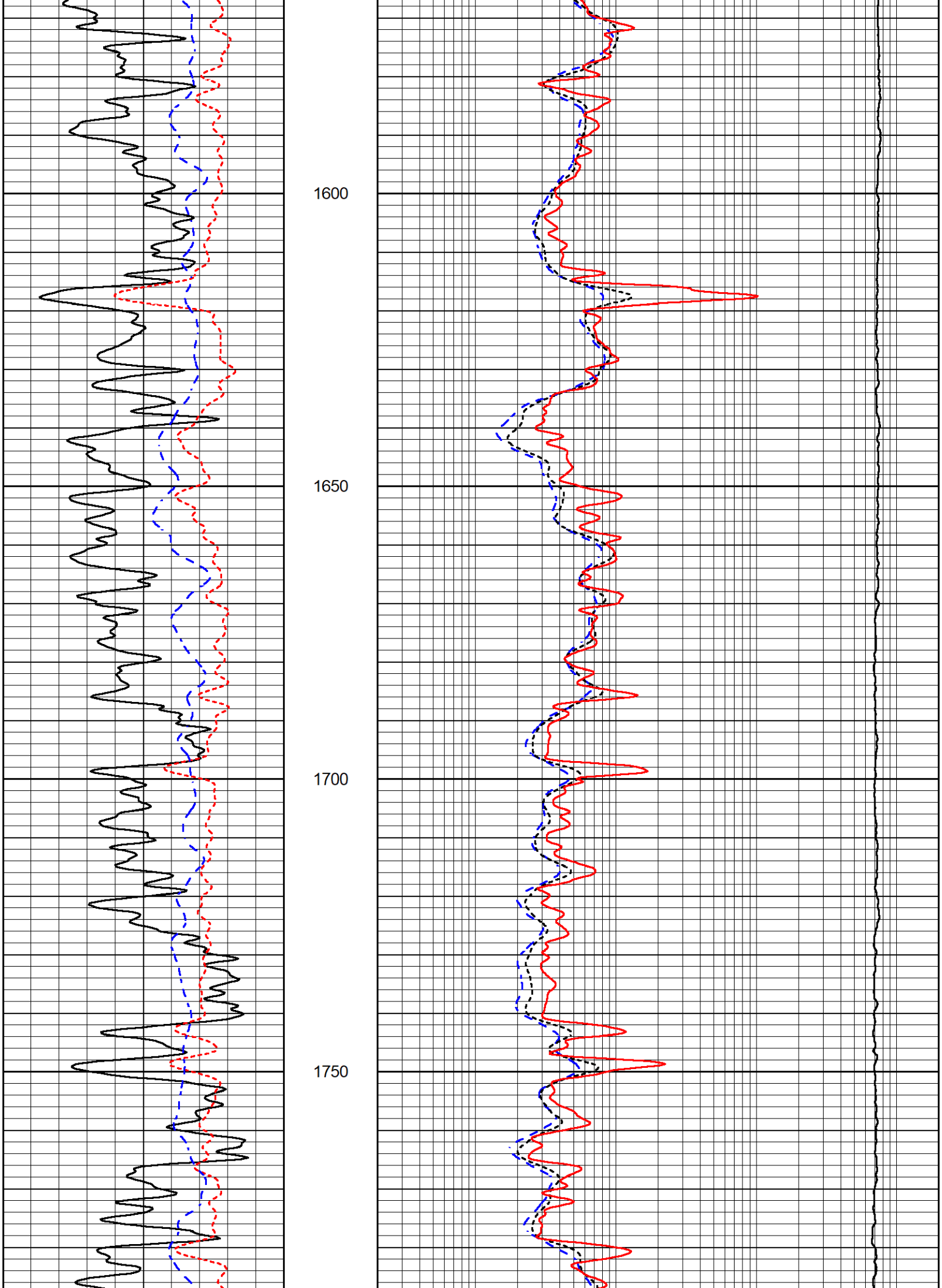
1400
1450
1500
1550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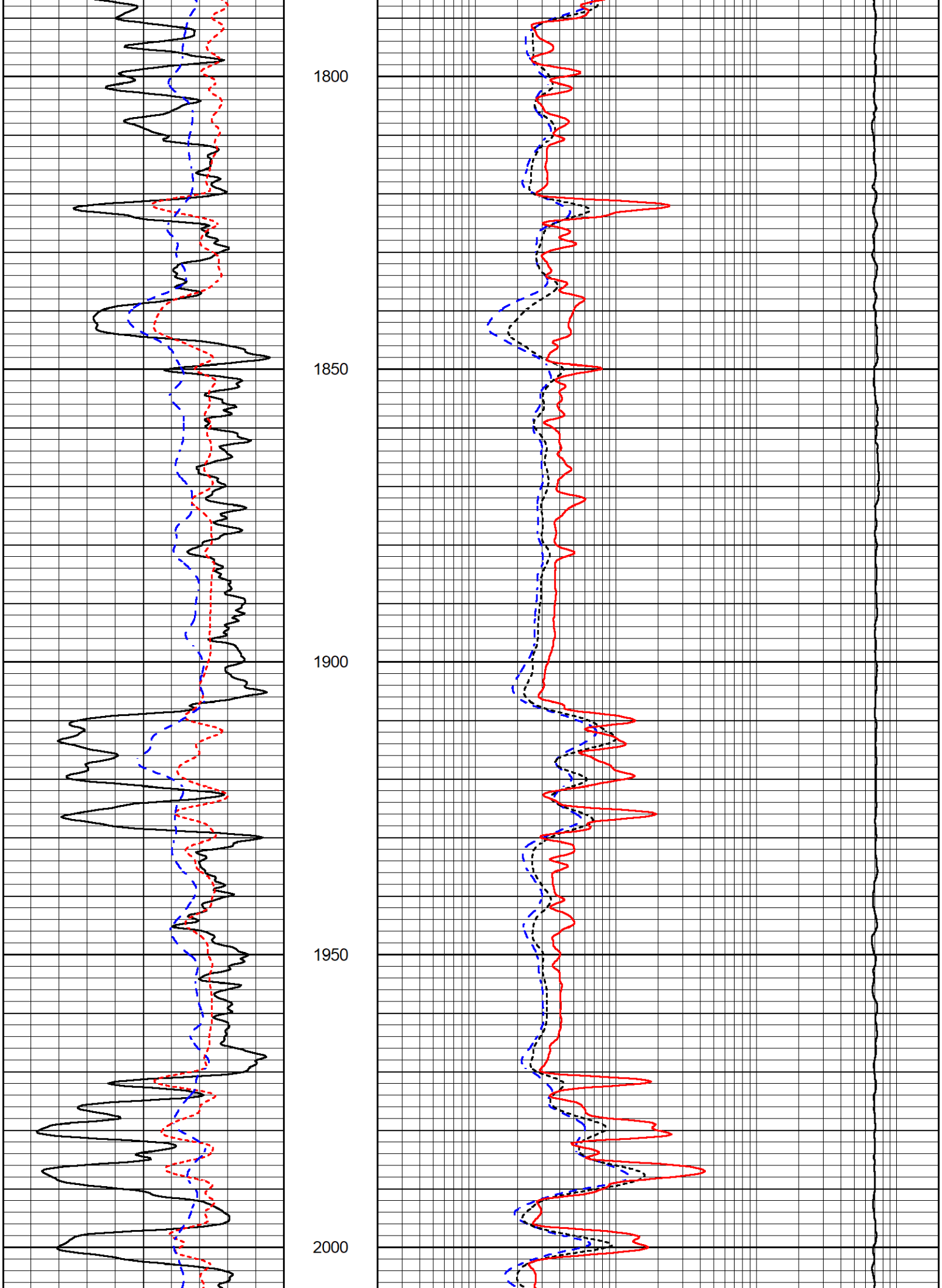
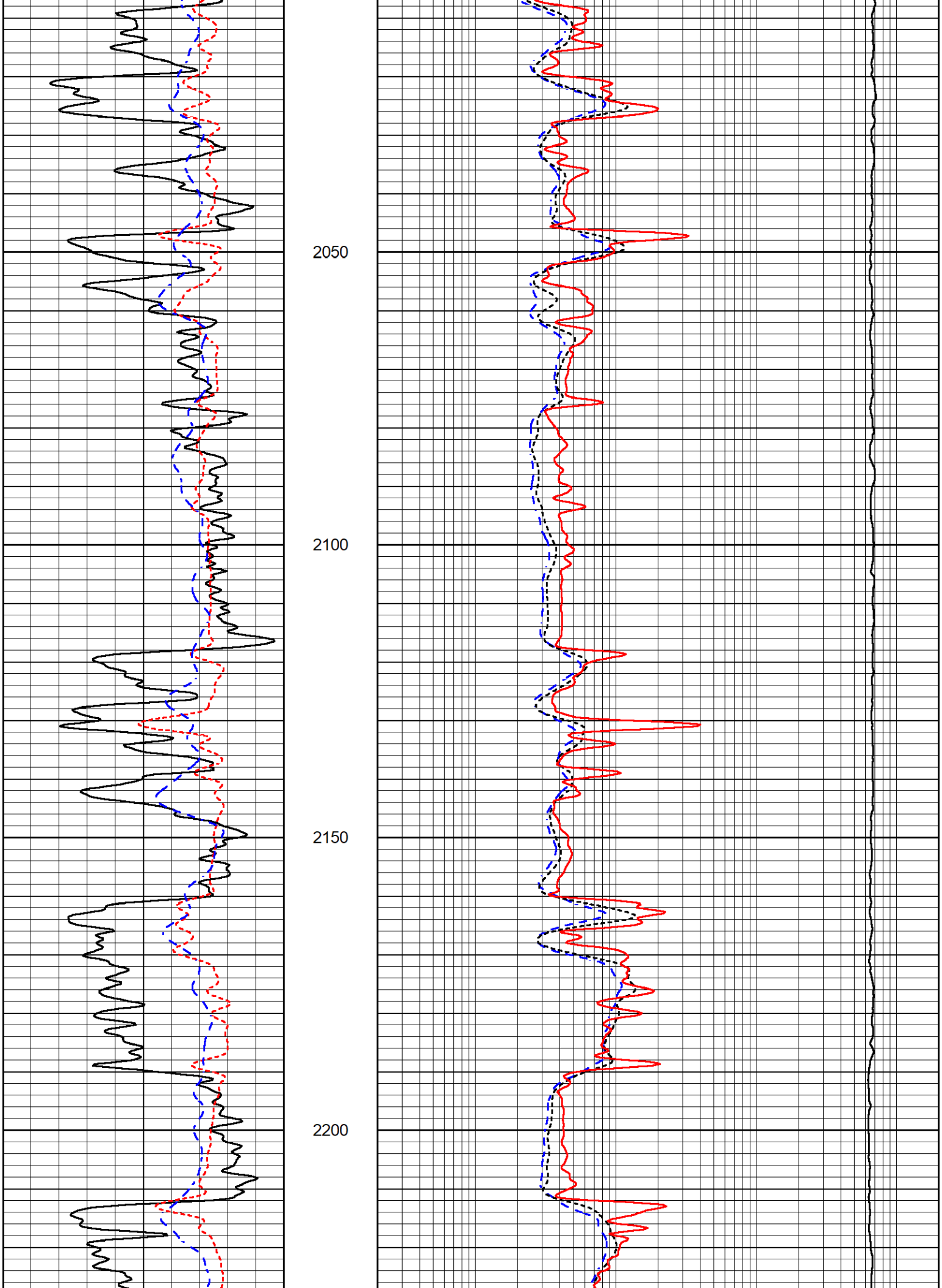
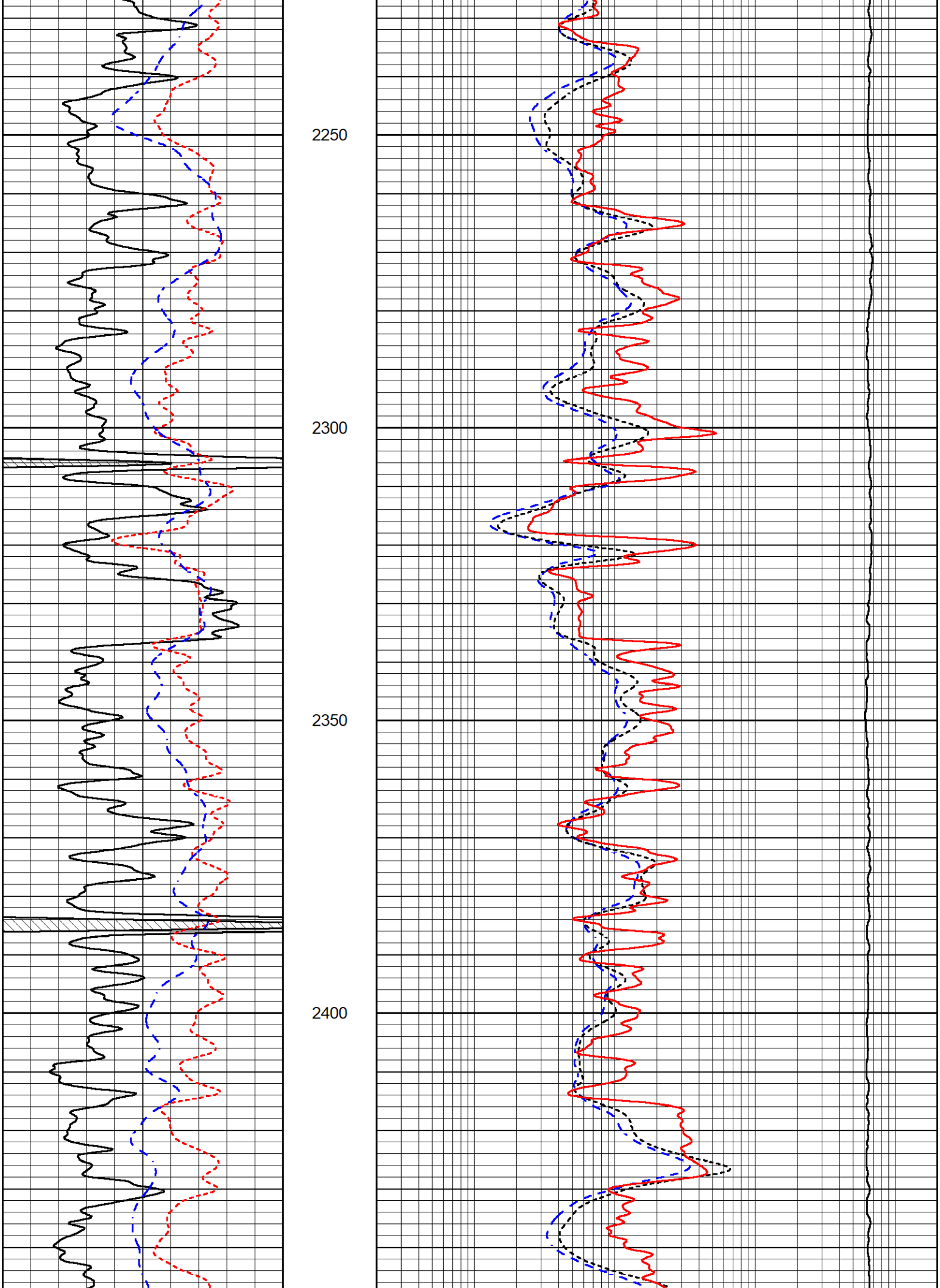
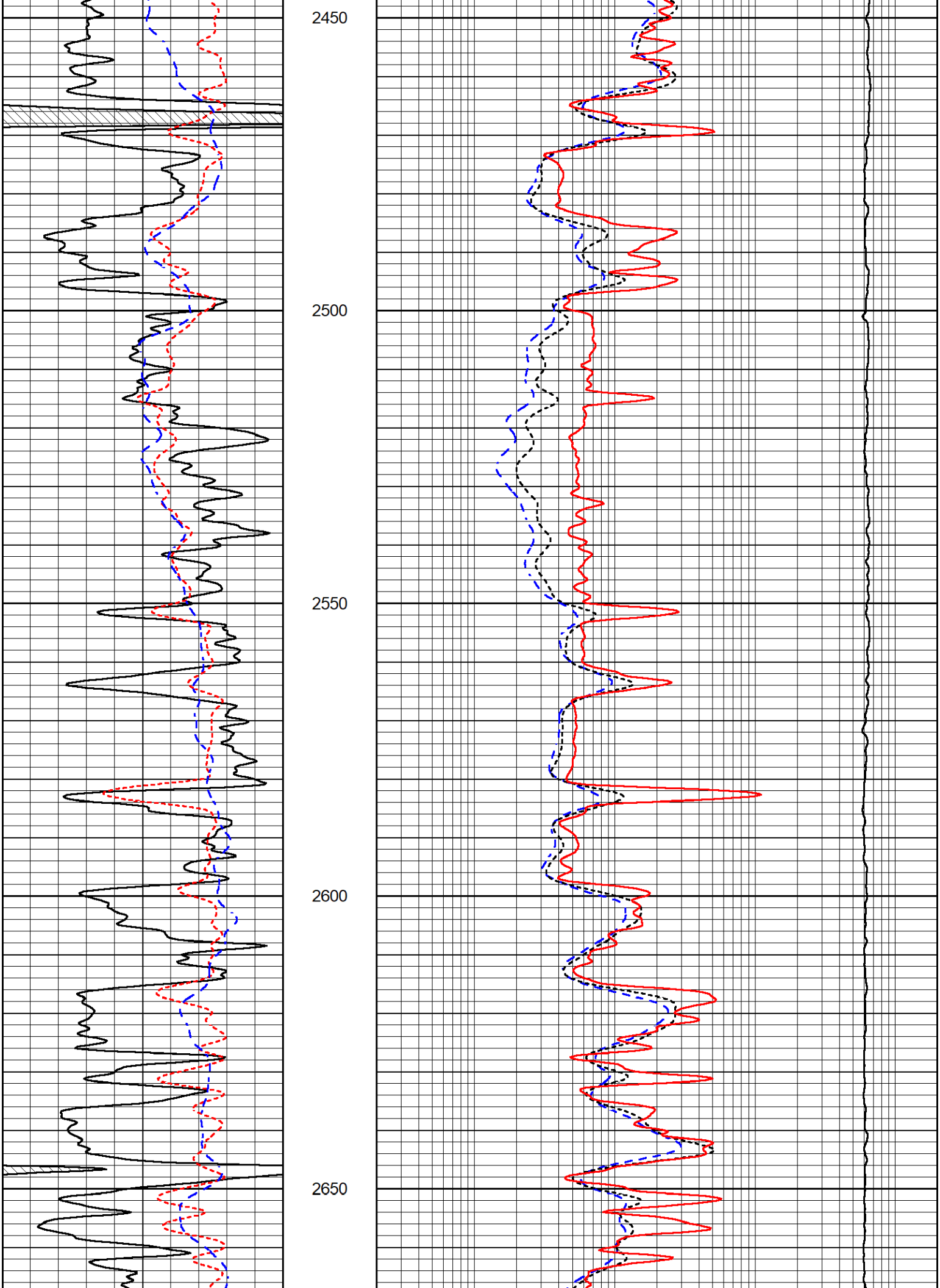
1650
1700
1750


1800
1850
1900
1950
2000


2050
2100
2150
2200


2250
2300
2350
2400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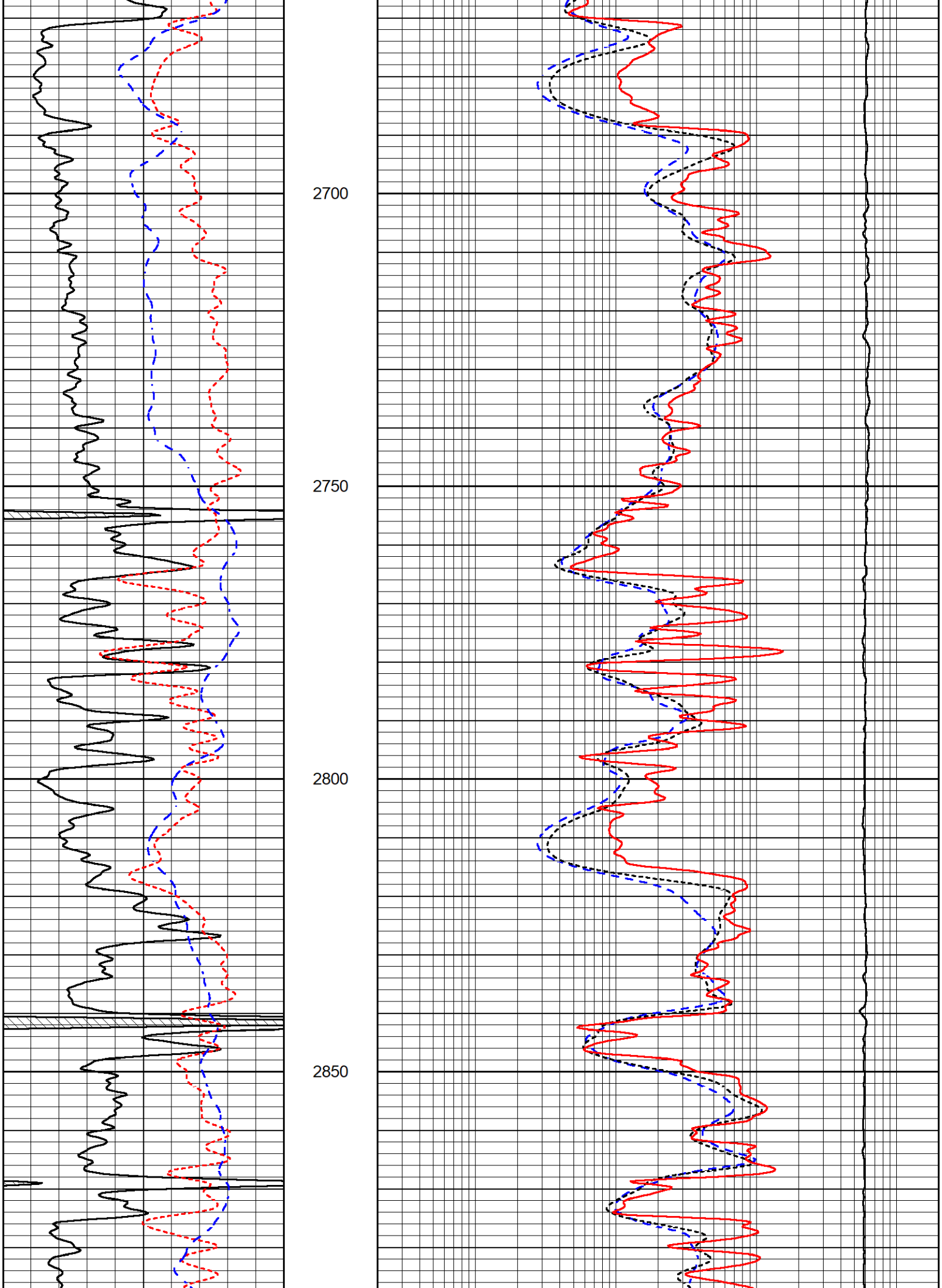
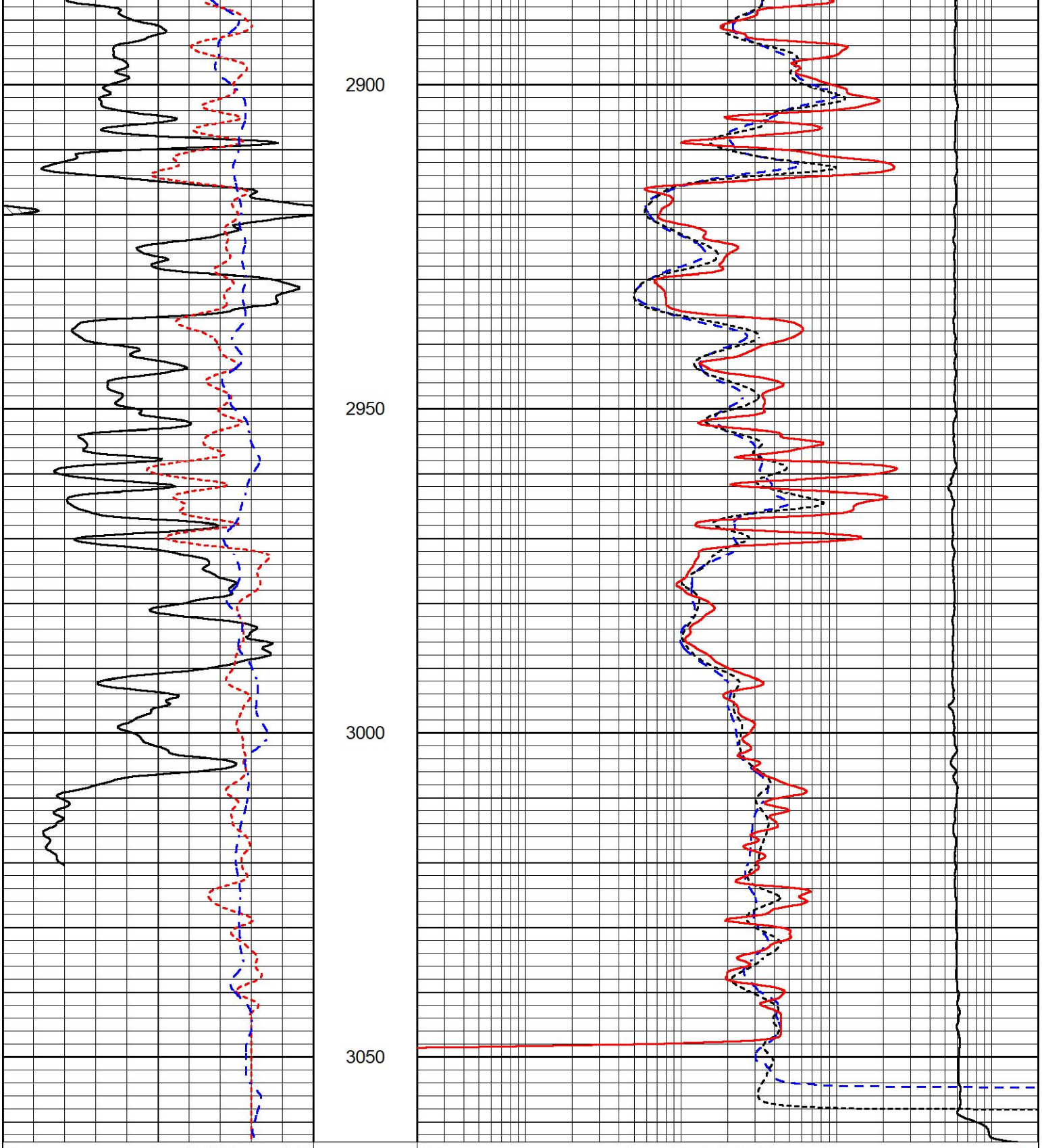
2500
2550
2600
2650


2700
2750
2800
2850



REPEAT SECTION

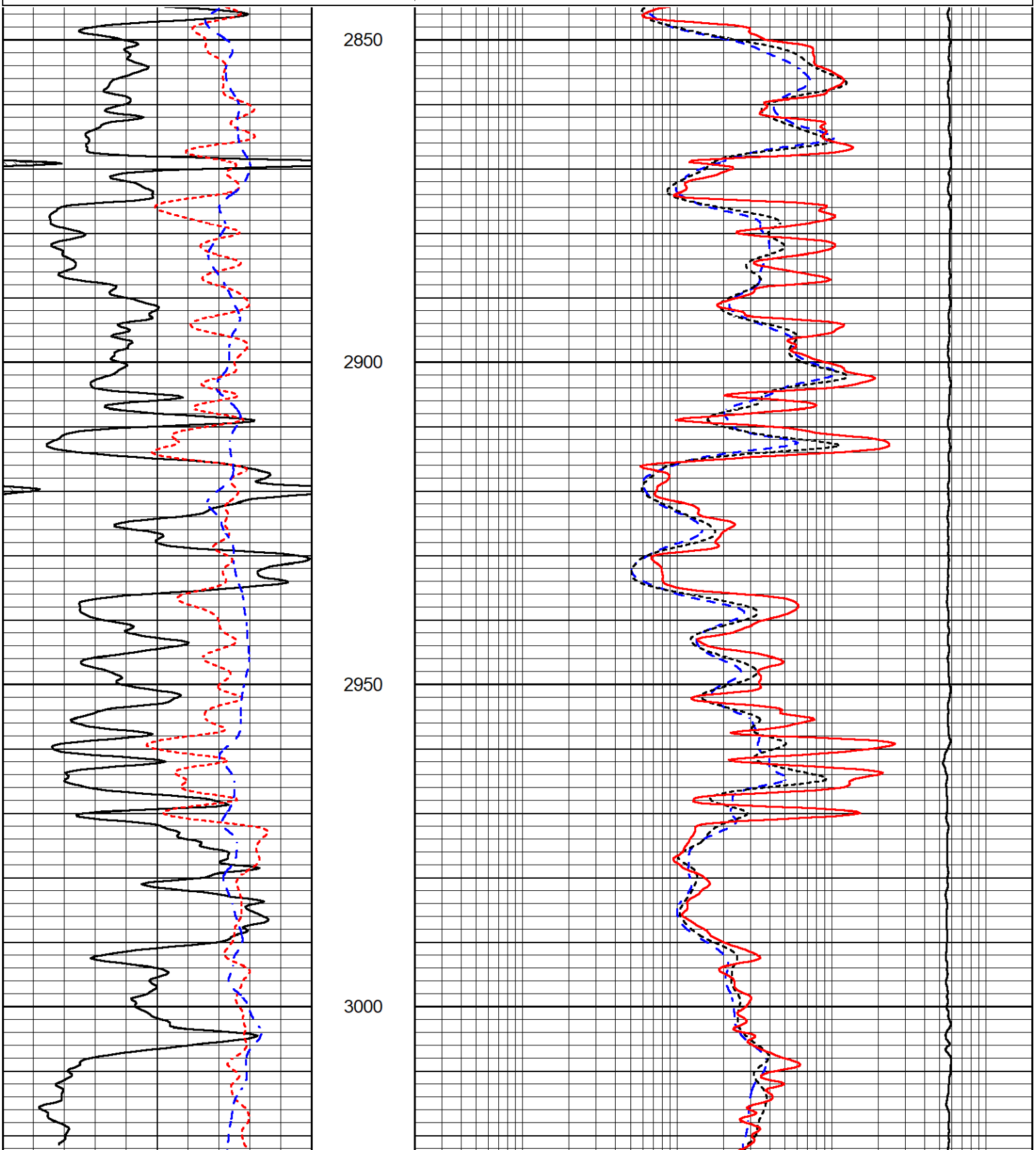
REPEAT PASS

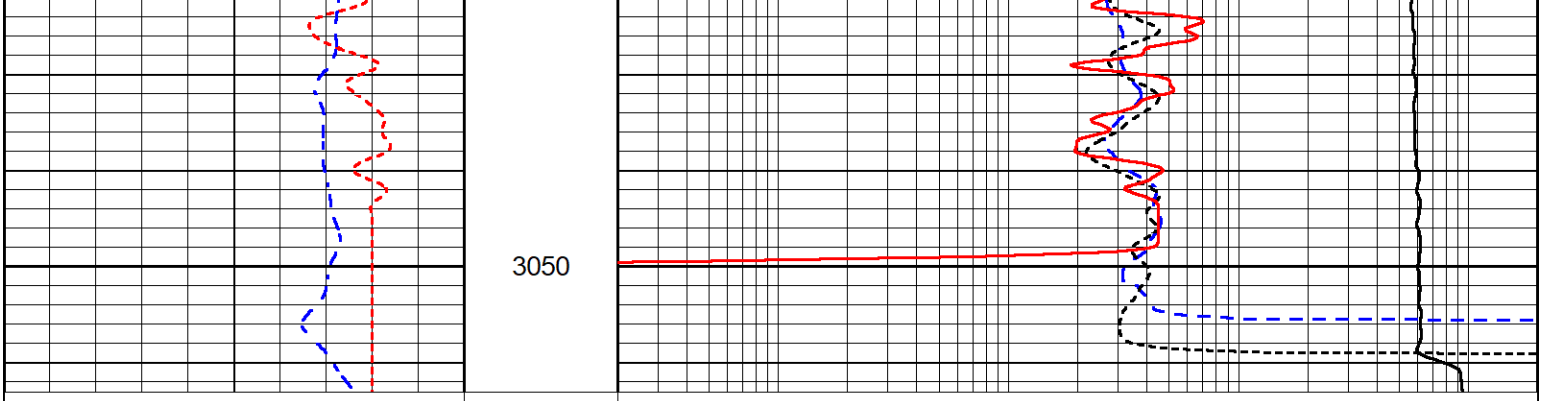
MIDWEST WIRELINE

Database File	lb_prochaska-rathbun unit #1.db
Dataset Pathname	StkMI/pass2.1
Presentation Format	_dil
Dataset Creation	Thu Aug 24 09:10:04 2023
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





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

Calibration Report

Database File lb_prochaska-rathbun unit #1.db
Dataset Pathname StkMl/pass3.1
Dataset Creation Thu Aug 24 09:53:52 2023

Dual Induction Calibration Report

Serial-Model: 507-M&W
Surface Cal Performed:

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		m	b
Deep	68.570	638.100	0.000	255.800	mmho/m	0.500	-37.000
Medium	184.288	716.191	0.000	255.800	mmho/m	0.430	-75.000

Microlog Calibration Report

Serial-Model: 401-PSIML
Performed: Mon Jun 5 16:37:07 2023

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	20000.0000	-0.4000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	21000.0000	-0.7500
Caliper	1.0052	1.0858	5.0000	16.5000	in	142.7190	-138.7800

LITHODENSITY Calibration Report

Serial Number: 704-10
Tool Model: STEP LITHO
Performed: Fri Jun 23 15:26:01 2023

Source:

	Win1	Win2	Win3	Win4	Win5	Win6	Win7	Win8	
Background:									
SS:	51	54	202	252	21	70	42	1	cps
LS:	85	96	363	462	53	147	97	3	cps
Aluminum:									
SS:	870	1018	2321	2004	37	71	43	2	cps

LS:	1057	1828	3315	1570	61	147	91	5	cps
Magnesium:									
SS:	1459	1669	3829	2914	42	70	46	3	cps
LS:	4526	7550	13047	4982	98	135	93	13	cps
Aluminum+Iron:									
SS:	553	719	1939	1750	37	72	45	2	cps
LS:	613	1297	2812	1404	60	146	96	4	cps

	Density Actual	Calibrated		PE Actual	Calibrated	Quality
Background:						
SS:						0.245
LS:						0.205
Aluminum:						
SS:	2.6000	2.6000	g/cc			0.240
LS:	2.6000	2.6000	g/cc			0.236
Magnesium:						
SS:	1.6800	1.6800	g/cc	2.5700	2.5700	0.210
LS:	1.6800	1.6800	g/cc	2.5700	2.5700	0.184
Aluminum+Iron:						
SS:					6.1800	0.228
LS:					6.1800	0.206

Before Survey Performed:		Wed Feb 9 13:15:42 2022							
SS:	0	0	0	0	0	0	0	0	cps
LS:	1370	1580	3705	3037	48	80	50	4	cps
After Survey Performed:		Wed Feb 9 13:16:02 2022							
SS:	0	0	0	0	0	0	0	0	cps
LS:	1400	1600	3800	3100	60	100	70	6	cps

Caliper:	Reference:		Reading:
Small Ring:	6.0	in	0.2
Large Ring:	15.0	in	0.8
Gain:	16.161		
Offset:	1.100		

Compensated Neutron Calibration Report

Serial Number: 207
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:	Tue Aug 22 07:35:27 2023	
Calibrator Value:	500.0	GAPI
Background Reading:	24.0	cps
Calibrator Reading:	637.0	cps
Sensitivity:	0.5500	GAPI/cps

MIDWEST WIRELINE

Company	LB Exploration, Inc.
Well	Prochaska/Rathbun Unit #1
Field	Ellsworth
County	Ellsworth
State	Kansas