



DUAL INDUCTION LOG

Company VAL ENERGY, INC.
Well FRAHM UNIT # 1-16
Field WILDCAT
County THOMAS **State** KANSAS

Company VAL ENERGY, INC.
Well FRAHM UNIT # 1-16
Field WILDCAT
County THOMAS
State KANSAS

Location: API #: 15-193-21023-00-00
 872' FNL & 94' FWL
 SEC 16 TWP 8S RGE 35W
 Permanent Datum GROUND LEVEL Elevation 3328'
 Log Measured From KELLY BUSHING
 Drilling Measured From KELLY BUSHING
 Other Services
 CNL/CDL
 MEL
 Elevation
 K.B. 3333'
 D.F. N/A
 G.L. 3328'

Date	7/28/2018
Run Number	ONE
Depth Driller	4890'
Depth Logger	4890'
Bottom Logged Interval	4889'
Top Log Interval	250'
Casing Driller	8.625" @ 261'
Casing Logger	260'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	7000
Density / Viscosity	9.2 59
pH / Fluid Loss	10.5 9.6
Source of Sample	FLOWLINE
Rm @ Meas. Temp	0.30 @ 92
Rmt @ Meas. Temp	0.23 @ 92
Rmc @ Meas. Temp	0.41 @ 92
Source of Rmf / Rmc	CHARTS
Rm @ BHT	0.22 @ 125
Operating Rig Time	3 HOURS
Max Rec. Temp. F	125
Equipment Number	91
Location	HAYS
Recorded By	IAN MABB
Witnessed By	TIM PRIEST

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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



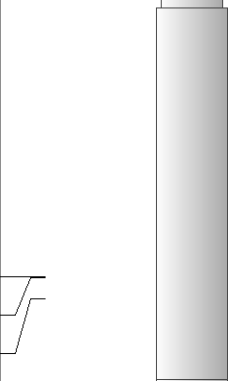


N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.
 LEVANT, KS.
 2 MILES WEST , SOUTH UNDER I-70 1/4 MILE - EAST INTO

Log Measured From: KELLY BUSHING Ft. Above Permanent Datum
 THANK YOU FOR USING PIONEER ENERGY SERVICES
 www.pioneerenergy.com 785-625-3858

Your Pioneer Energy Services Crew Engineer: IAN MABB Operator: Operator: Operator:	This Log Record Was Witnessed By Primary Witness: TIM PRIEST Secondary Witness: Secondary Witness: Secondary Witness:
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Top - Bottom

M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	-40	3
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
4	92	0	5.5	0	4890	125	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 (933 (HT))

18.50

3.50

220.00

Dataset: val_energy_frahm_unit_1_16.db: field/well/stackmel/pass3.1
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in



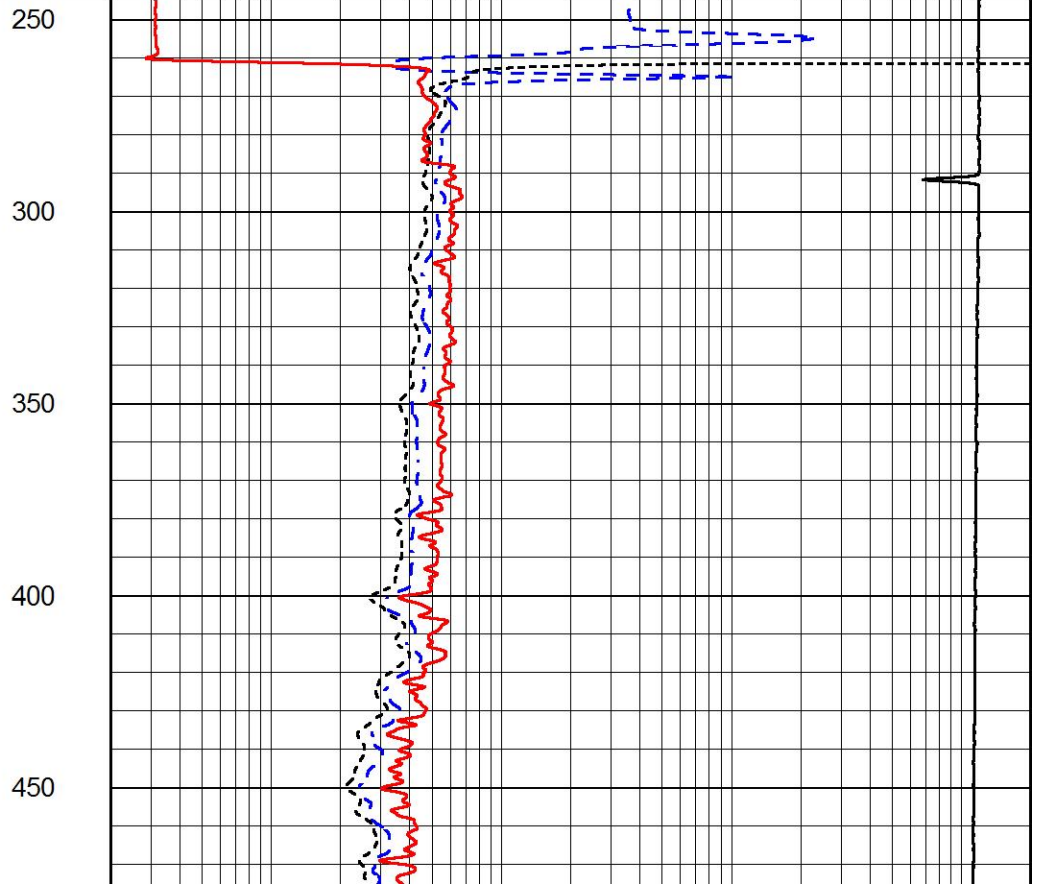
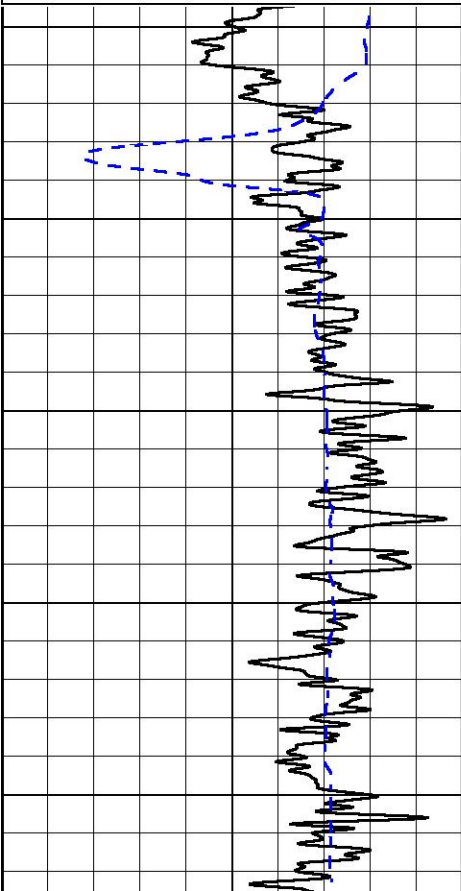
PIONEER
 Pioneer Energy Services

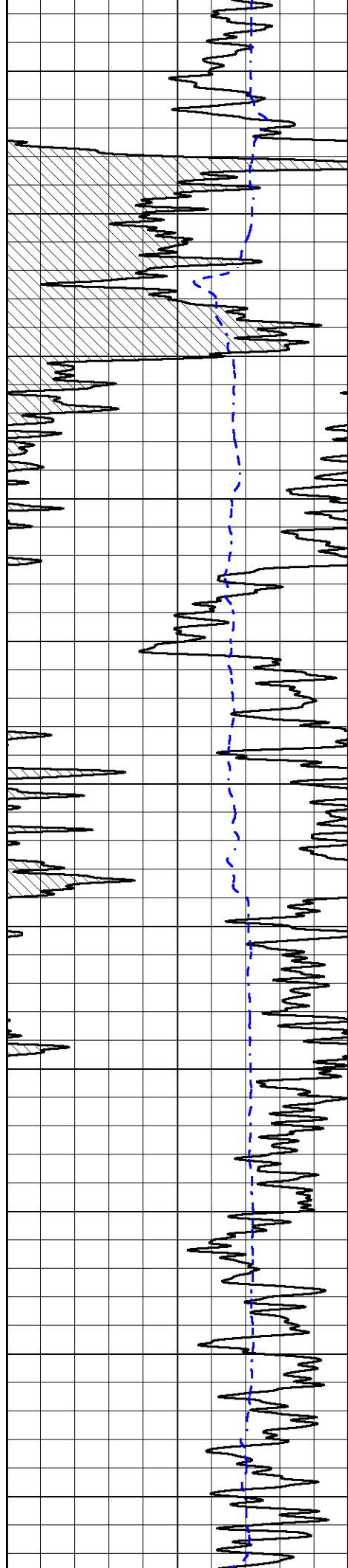
MAIN PASS

Database File val_energy_frahm_unit_1_16.db
 Dataset Pathname stackmel/pass4.1
 Presentation Format dil2in
 Dataset Creation Sat Jul 28 19:41:34 2018
 Charted by Depth in Feet scaled 1:600

0	GAMMA RAY (GAPI)	150
-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





500

550

600

650

700

750

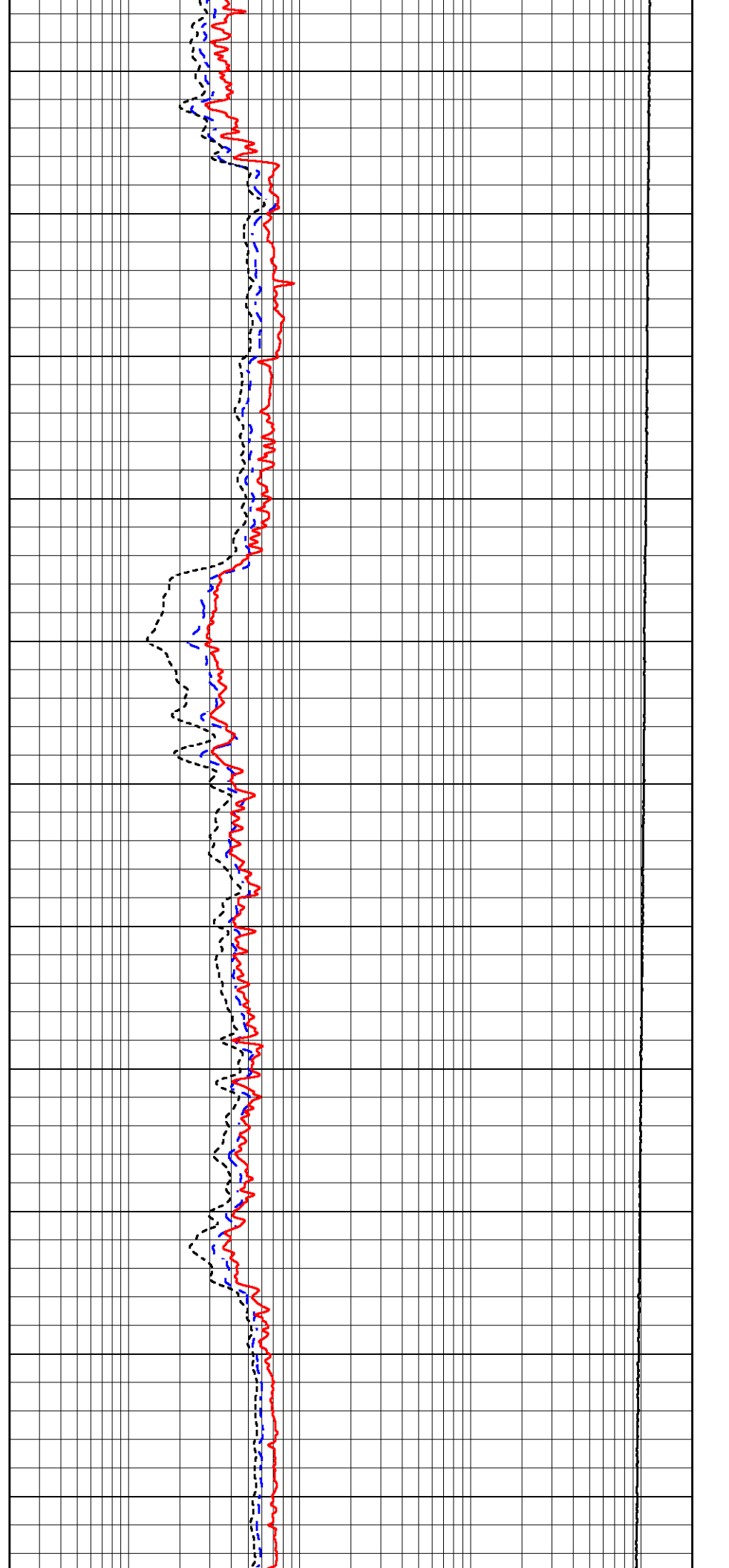
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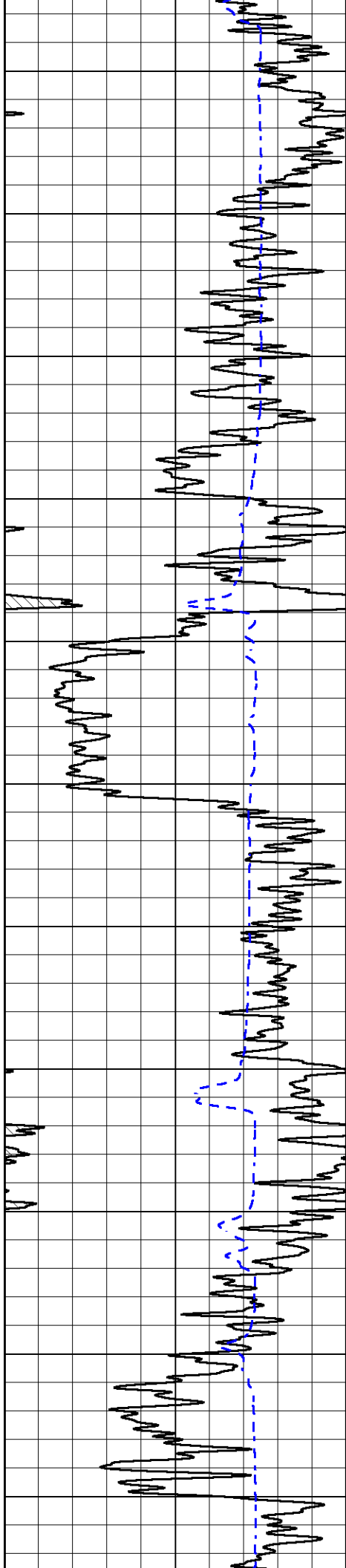
850

900

950

1000





1050

1100

1150

1200

1250

1300

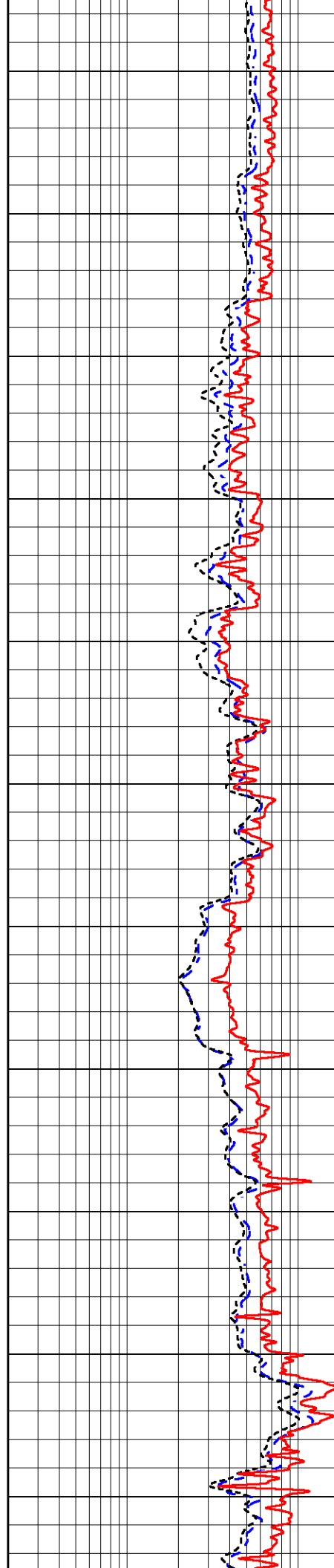
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1400

1450

1500

1550



1050

1100

1150

1200

1250

1300

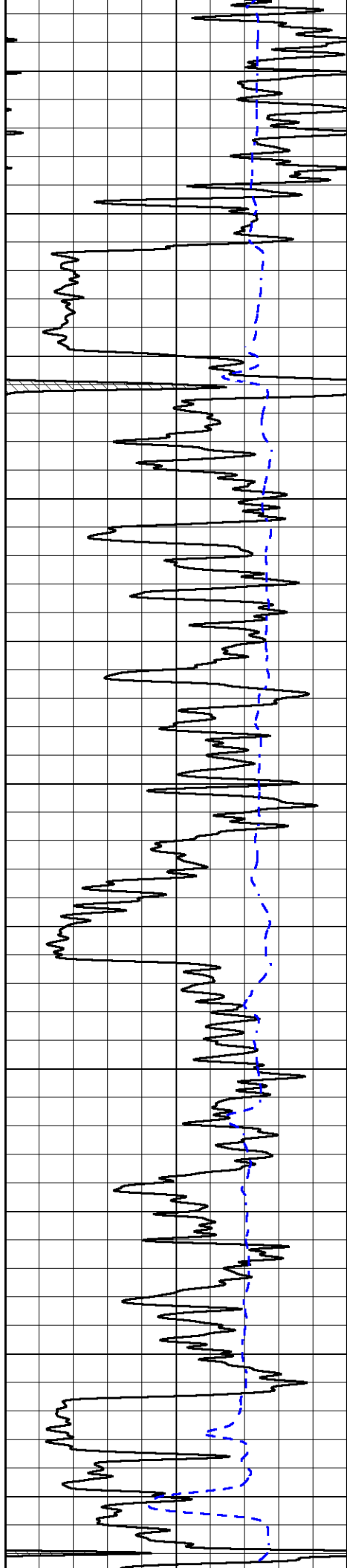
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1400

1450

1500

1550



1600

1650

1700

1750

1800

1850

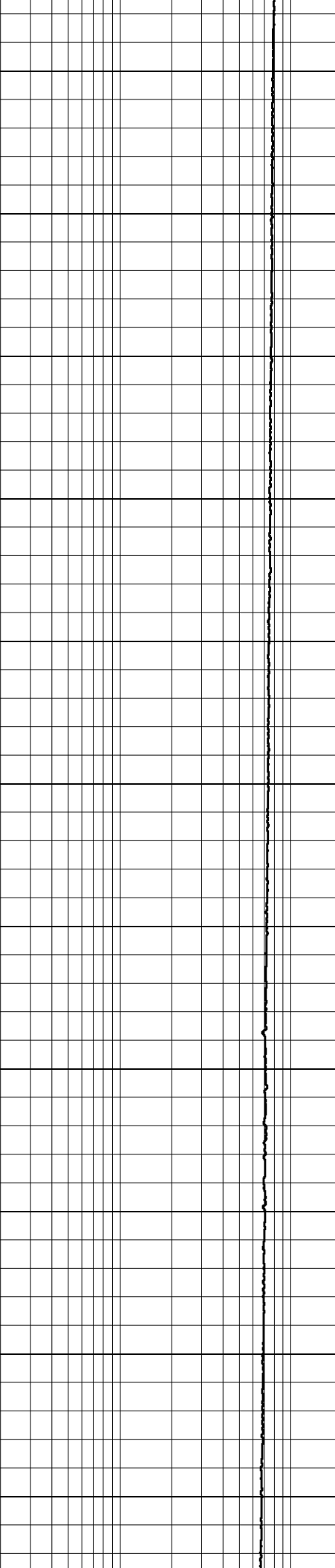
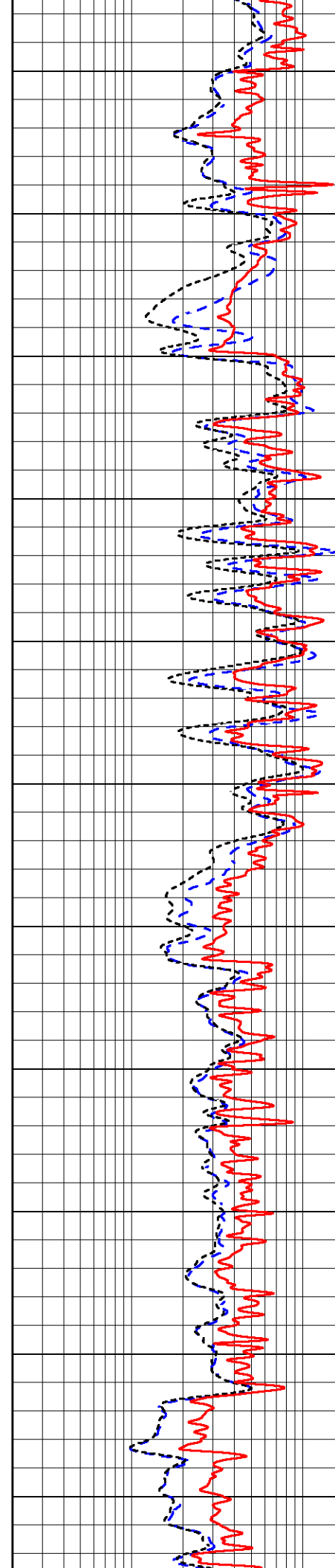
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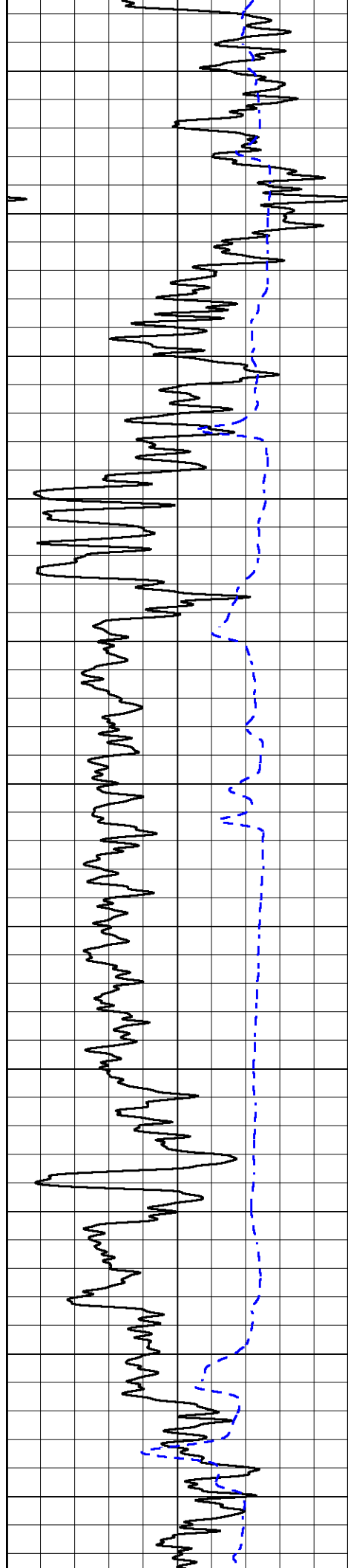
1950

2000

2050

2100





2150

2200

2250

2300

2350

2400

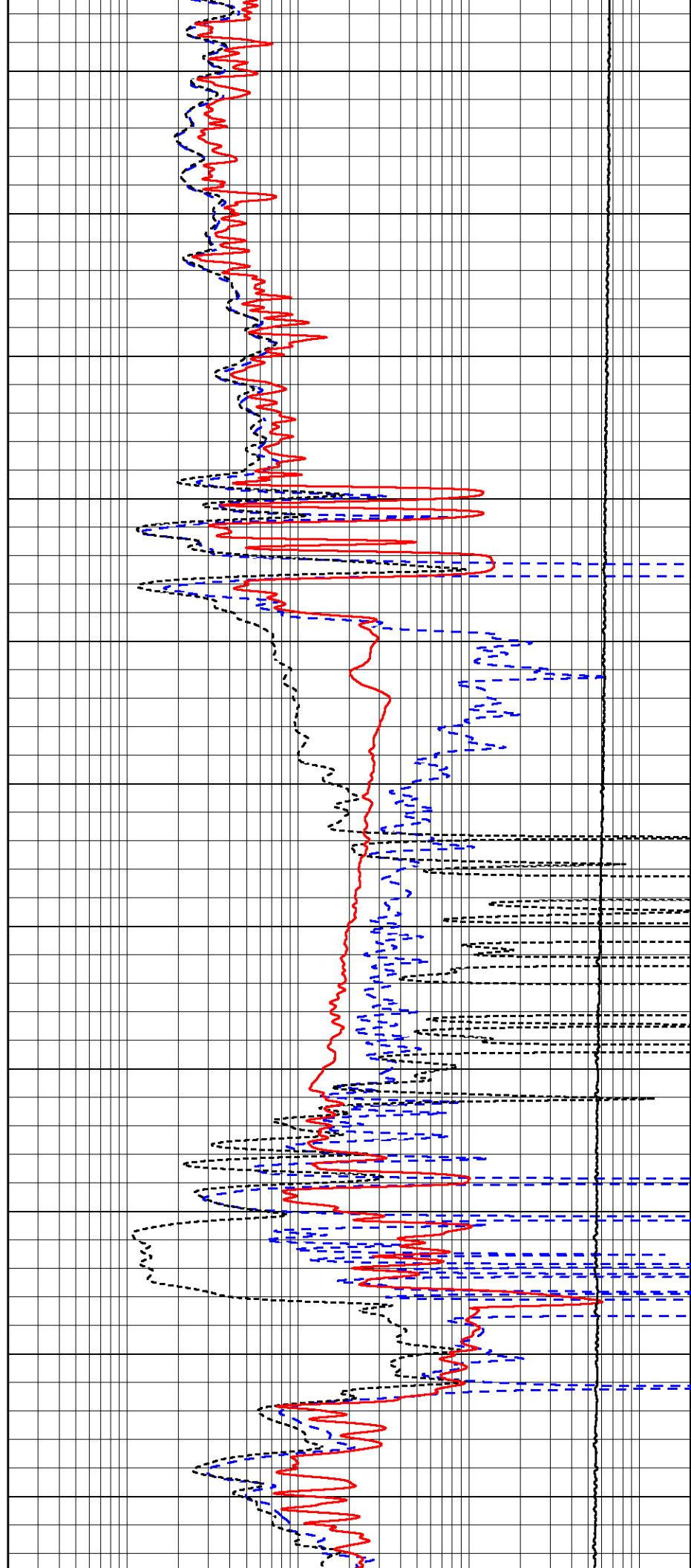
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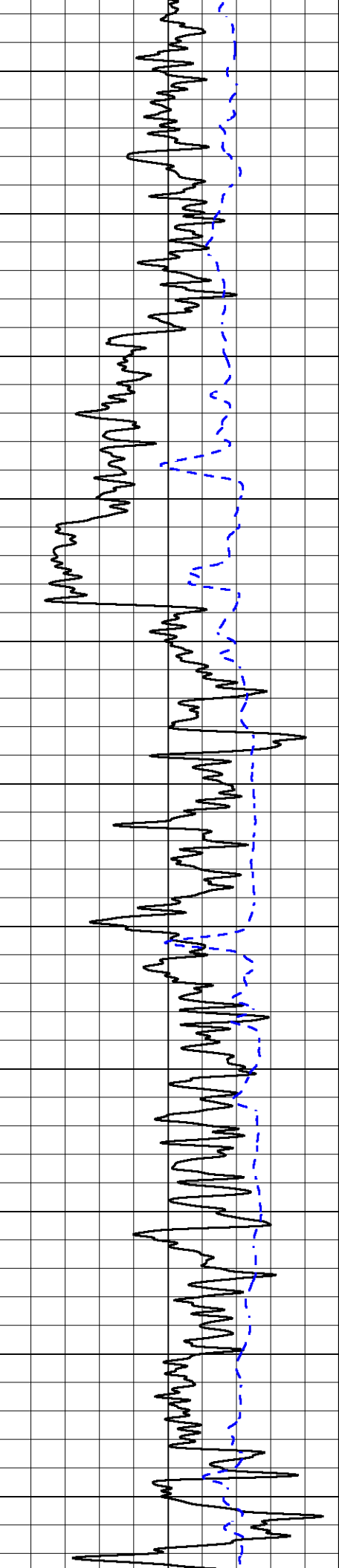
2500

2550

2600

2650





2700

2750

2800

2850

2900

2950

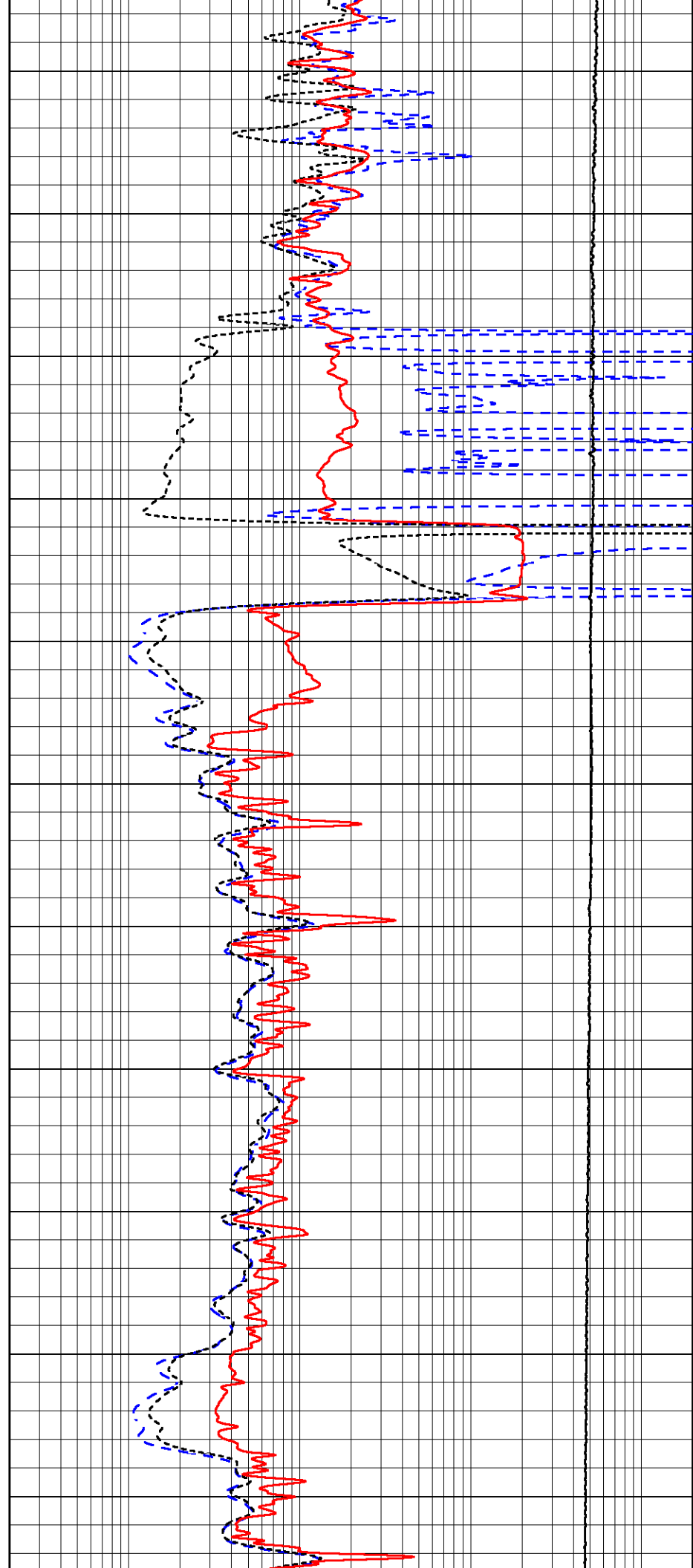
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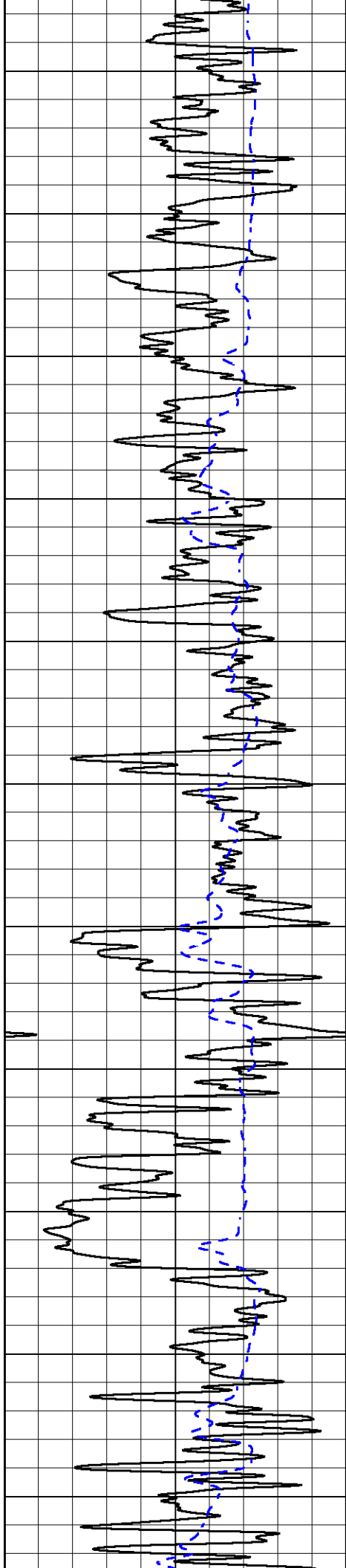
3050

3100

3150

3200





3250

3300

3350

3400

3450

3500

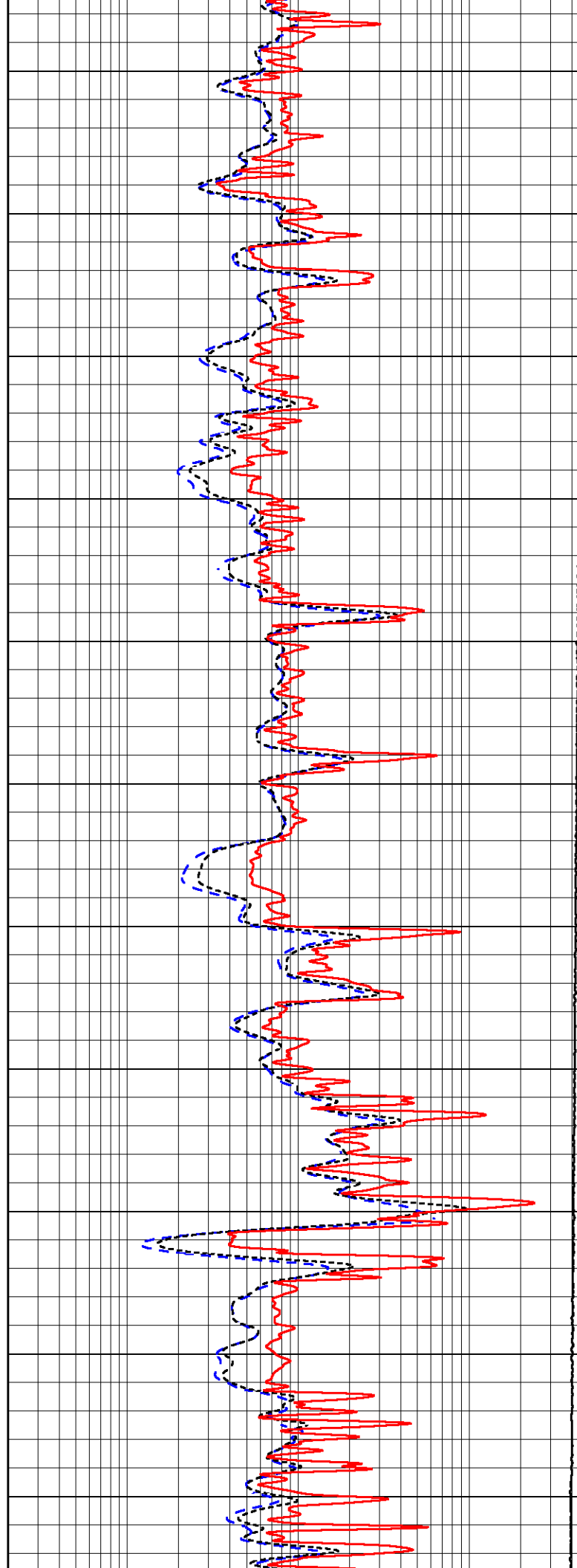
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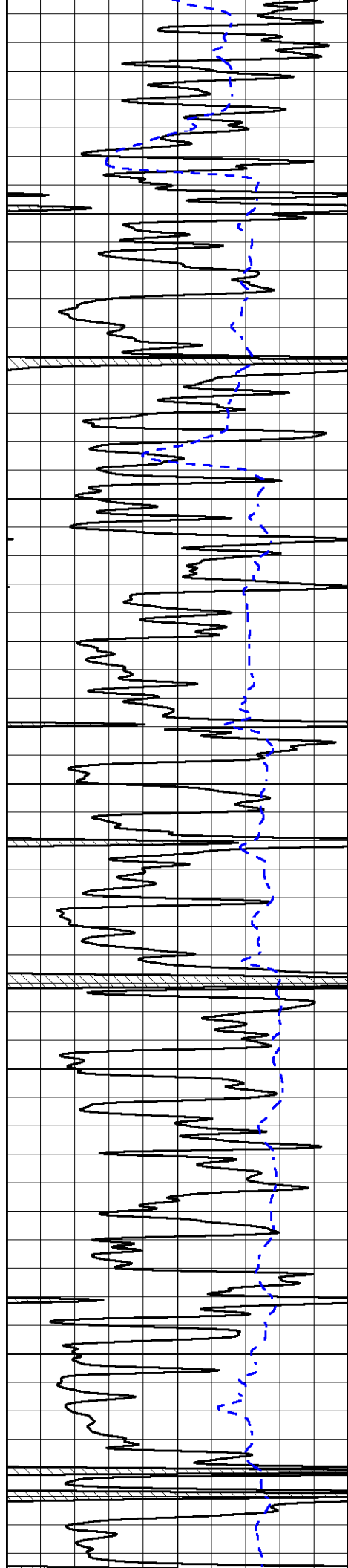
3600

3650

3700

3750





3800

3850

3900

3950

4000

4050

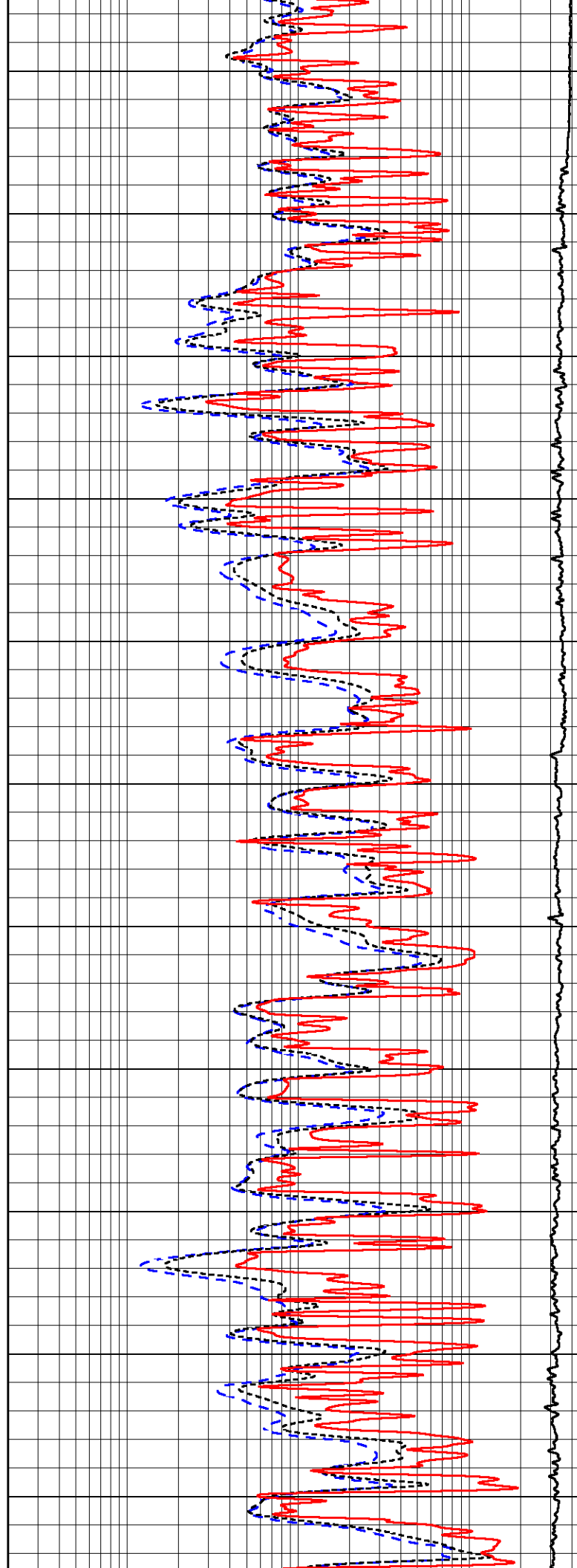
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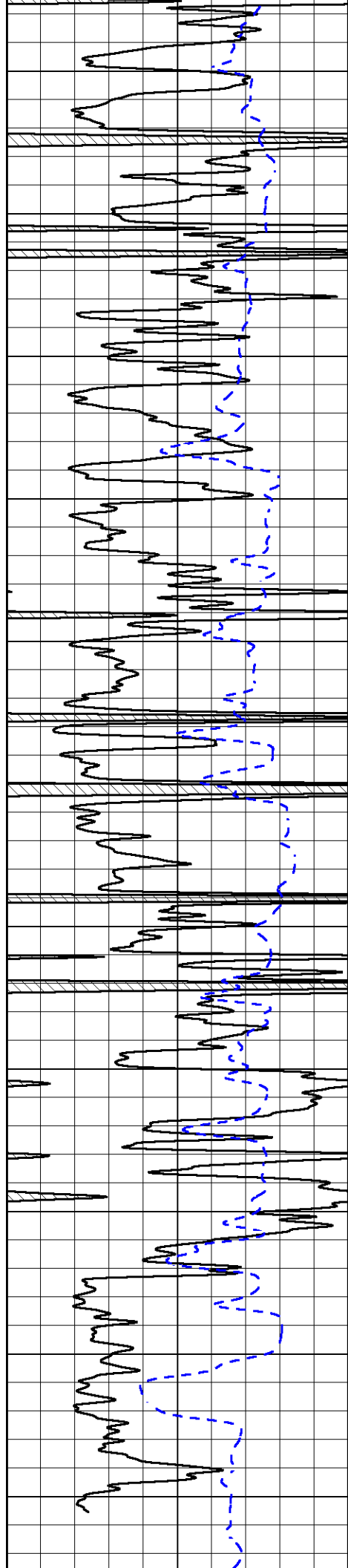
4150

4200

4250

4300





4350

4400

4450

4500

4550

4600

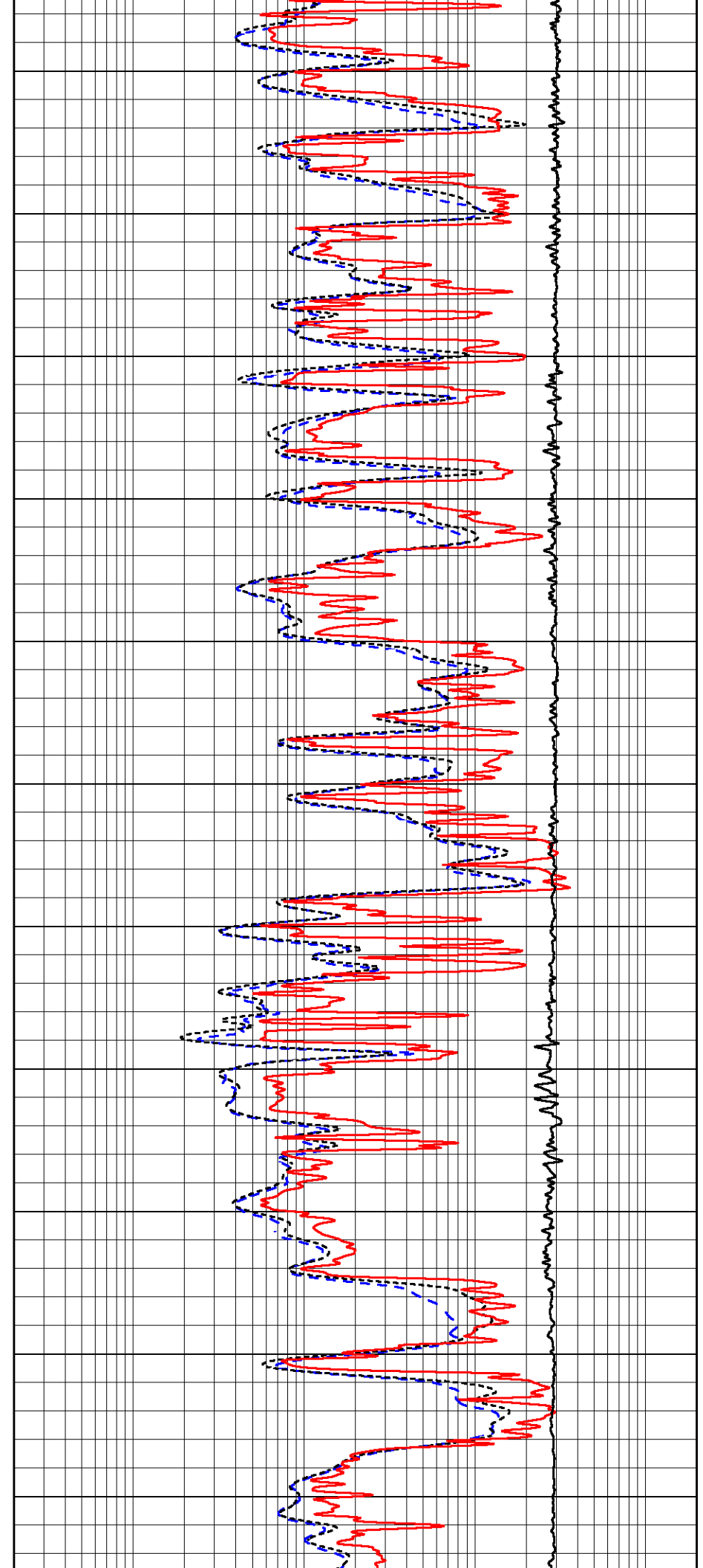
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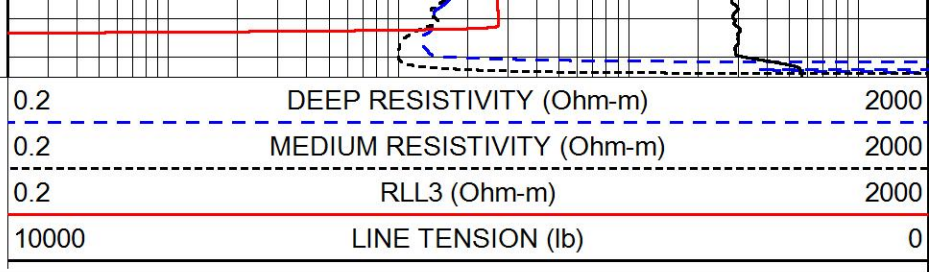
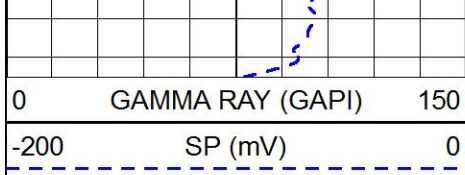
4700

4750

4800

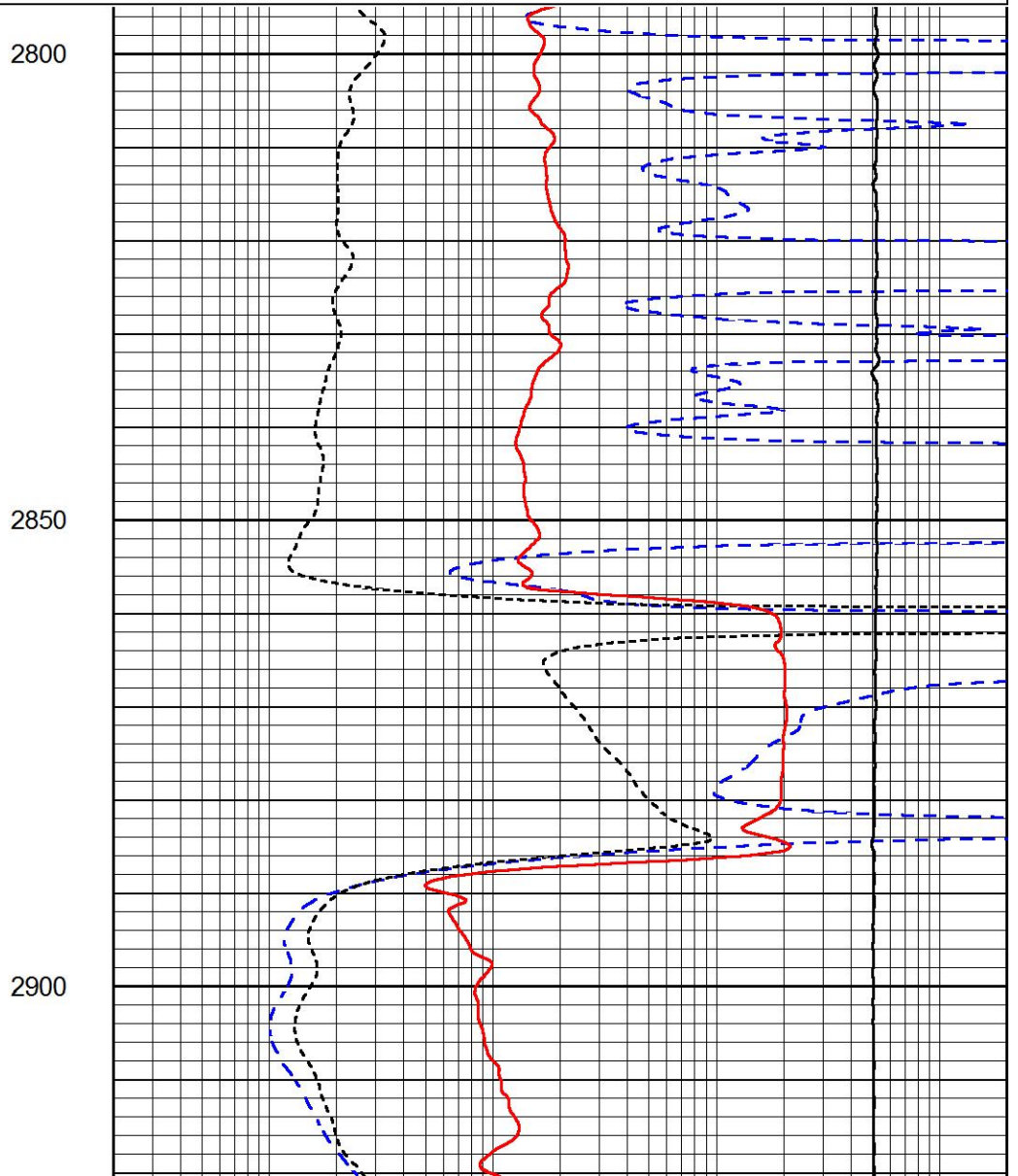
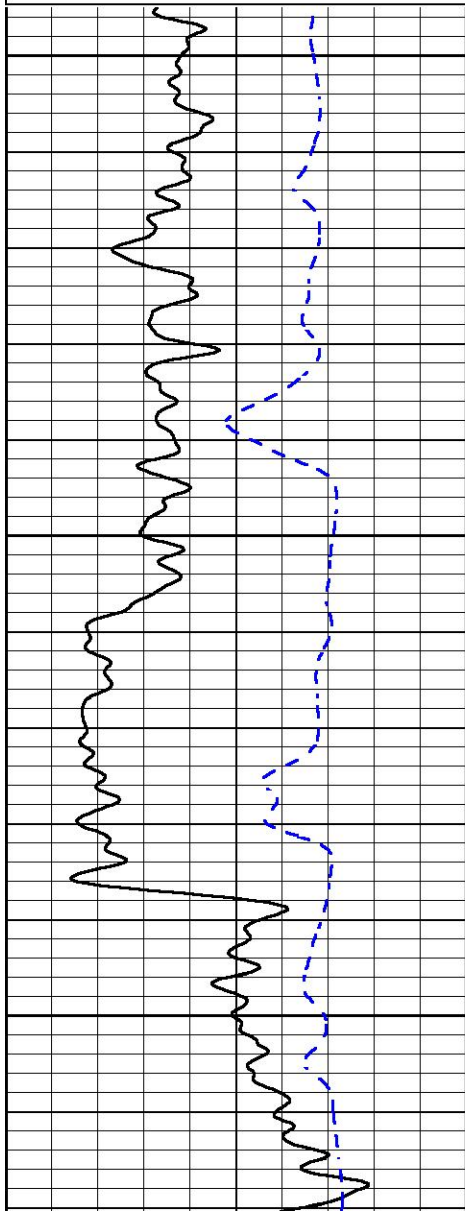
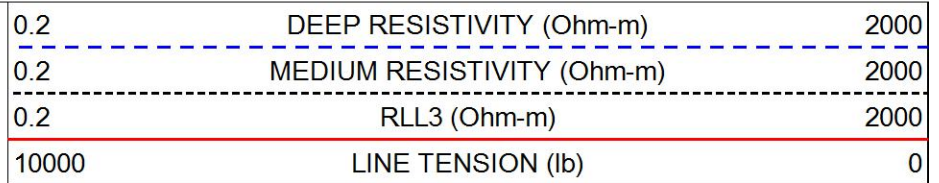
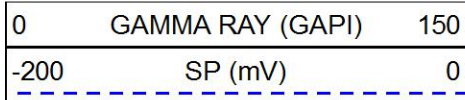
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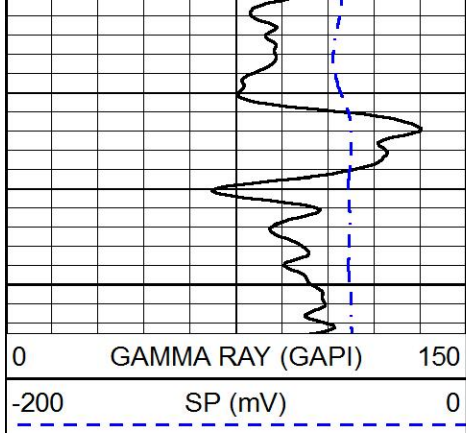




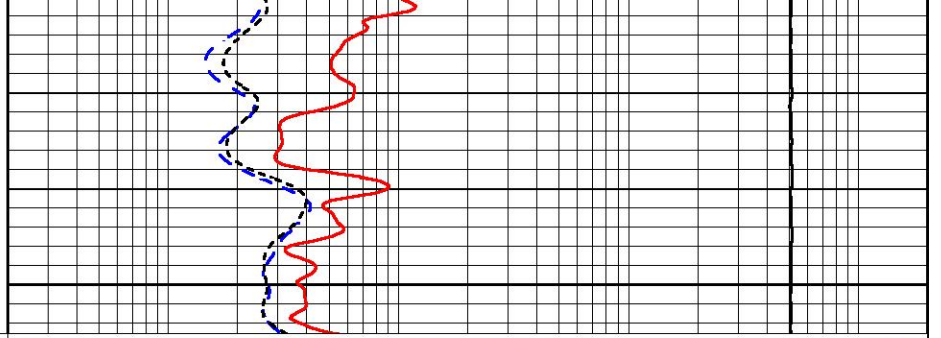
MAIN PASS

Database File val_energy_frahm_unit_1_16.db
 Dataset Pathname stackmel/pass4.1
 Presentation Format dil
 Dataset Creation Sat Jul 28 19:41:34 2018
 Charted by Depth in Feet scaled 1:240





2950



0 GAMMA RAY (GAPI) 150
-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

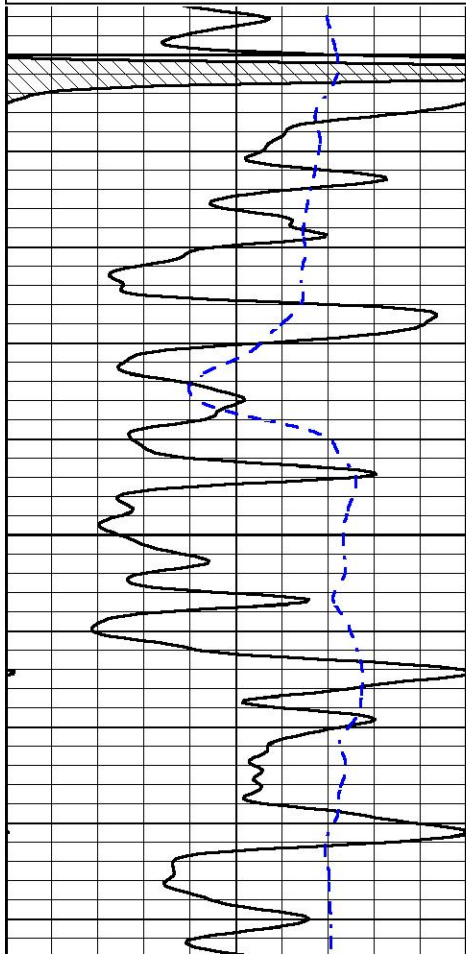


MAIN PASS

Database File val_energy_frahm_unit_1_16.db
 Dataset Pathname stackmel/pass3.1
 Presentation Format dil
 Dataset Creation Sat Jul 28 18:51:20 2018
 Charted by Depth in Feet scaled 1:240

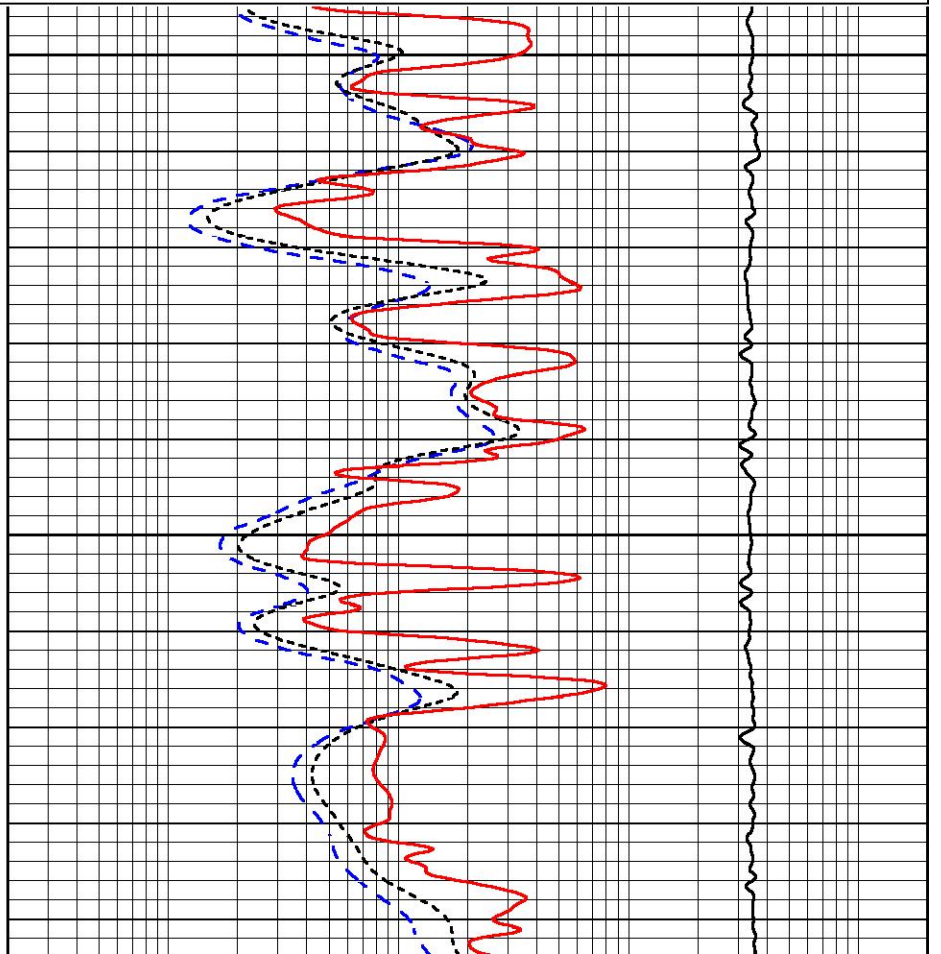
0 GAMMA RAY (GAPI) 150
-200 SP (mV) 0

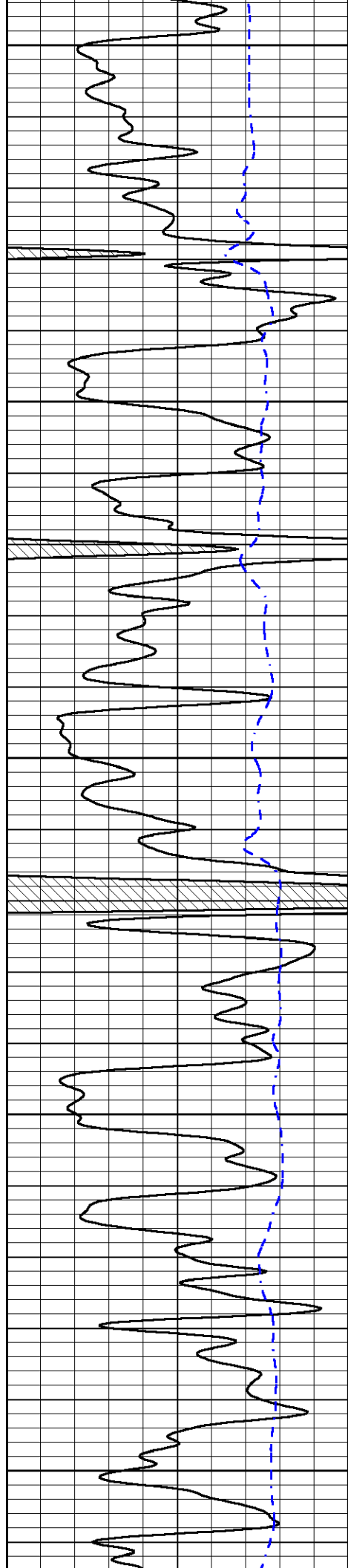
0.2 DEEP RESISTIVITY (Ohm-m) 2000
0.2 MEDIUM RESISTIVITY (Ohm-m) 2000
0.2 RLL3 (Ohm-m) 2000
10000 LINE TENSION (lb) 0



3900

3950





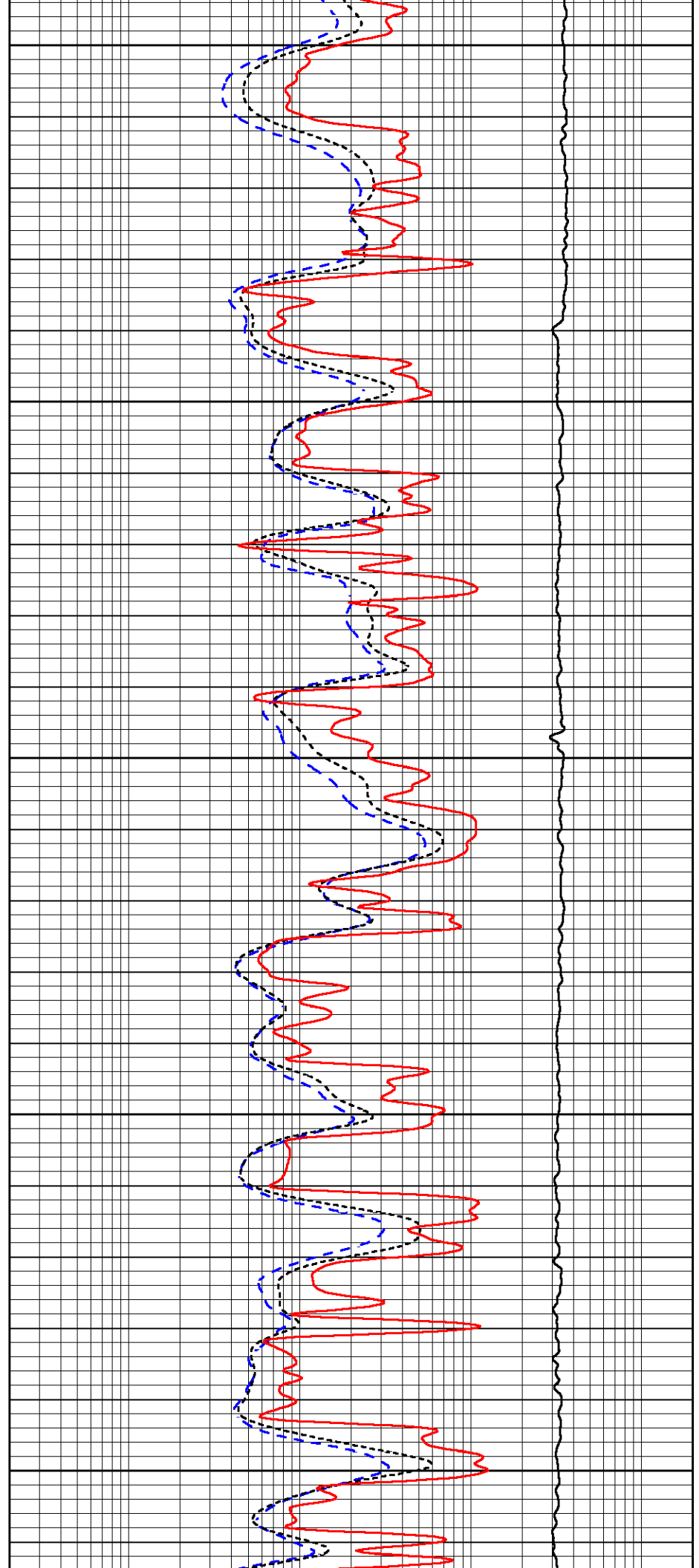
4000

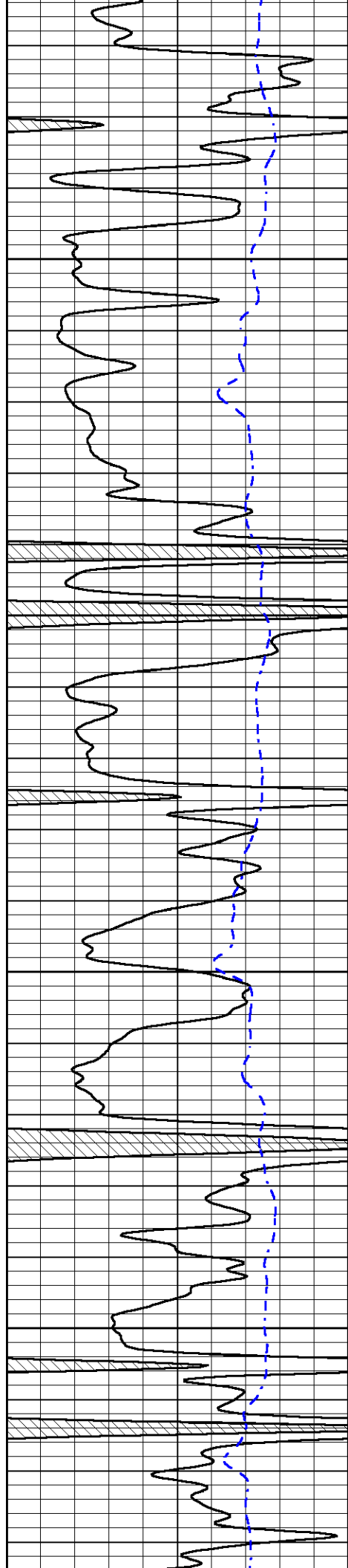
4050

4100

4150

4200



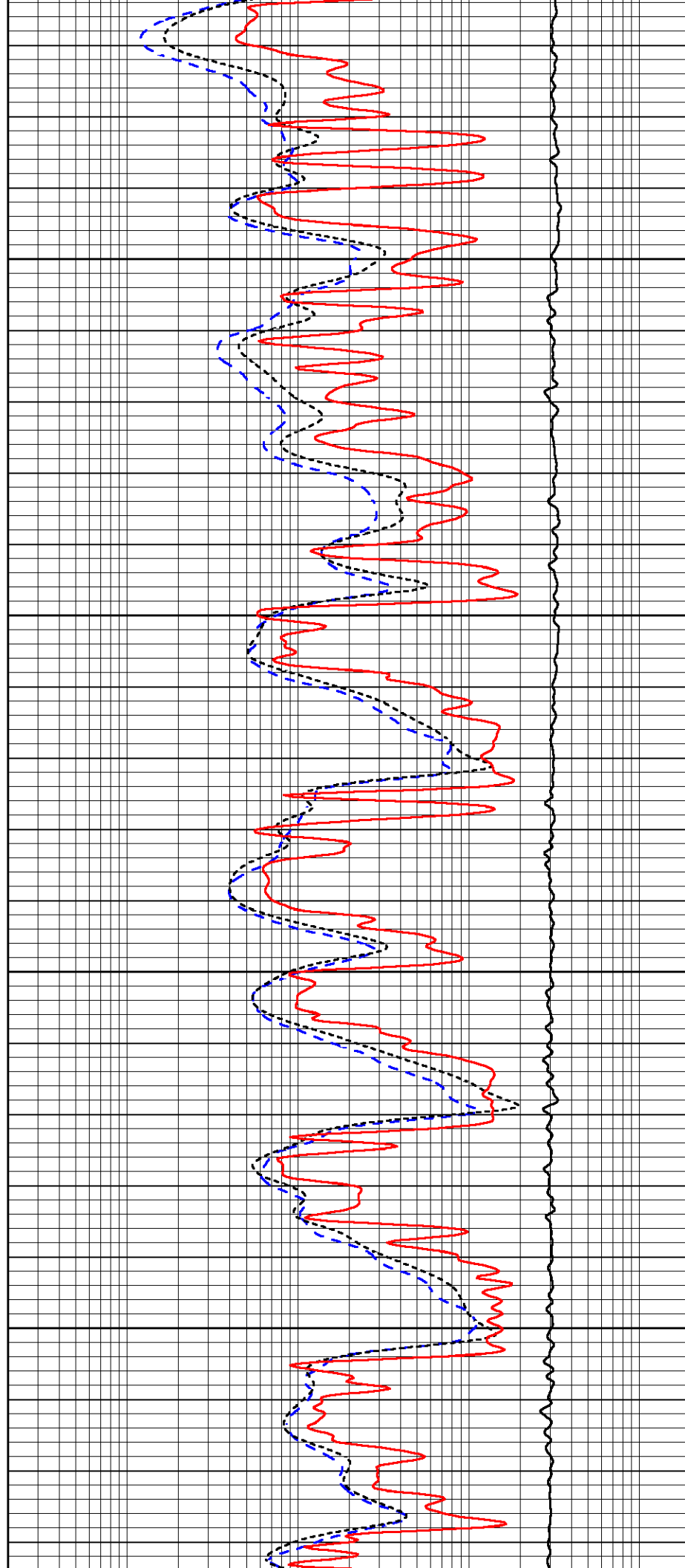


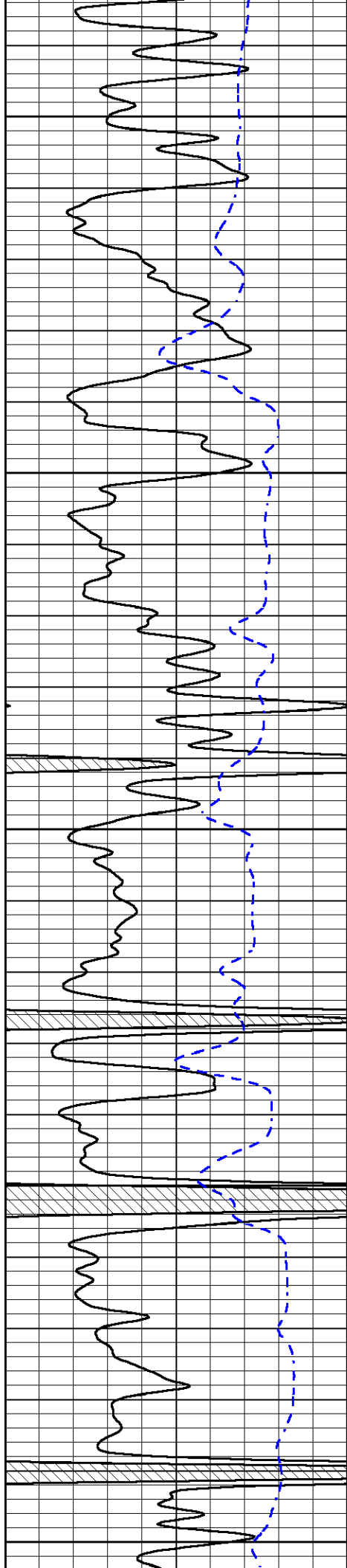
4250

4300

4350

4400





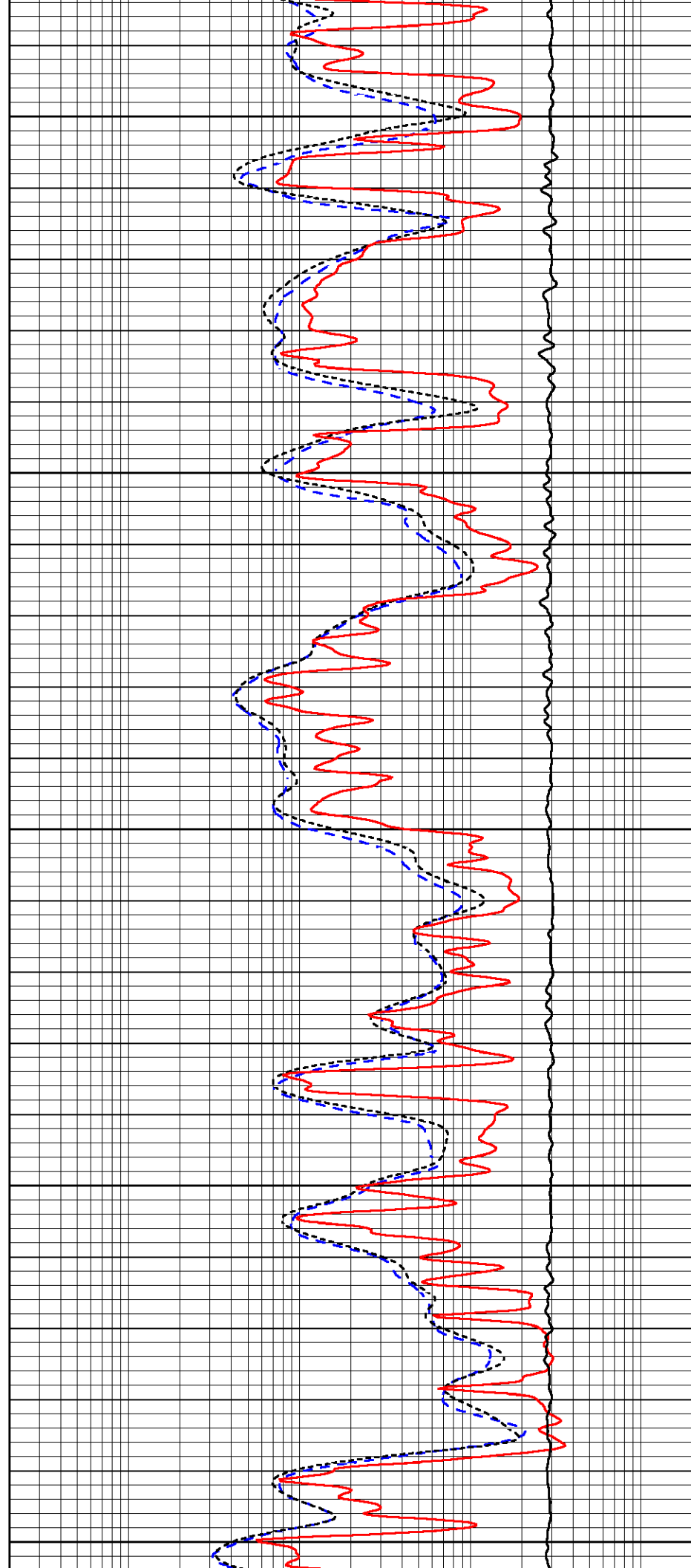
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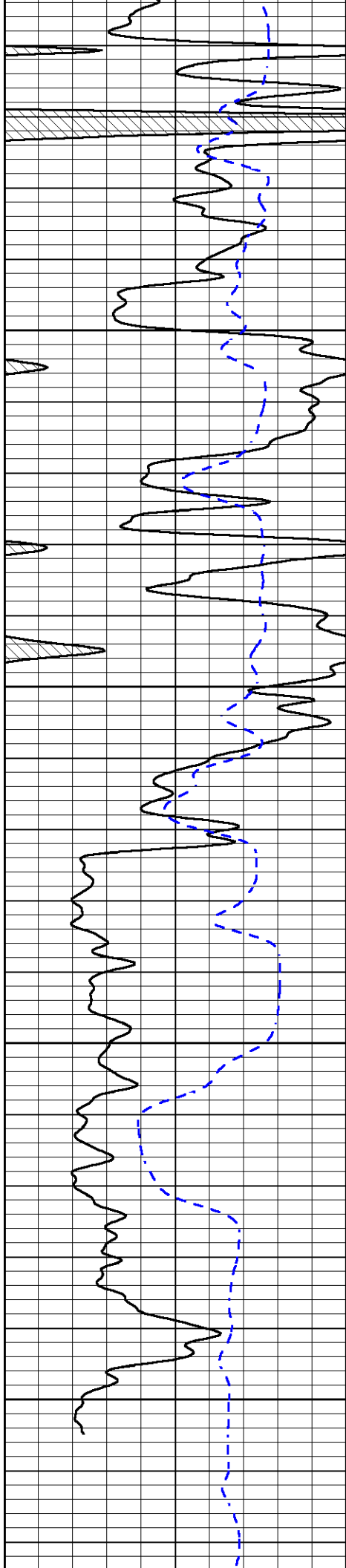
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4550

4600

4650



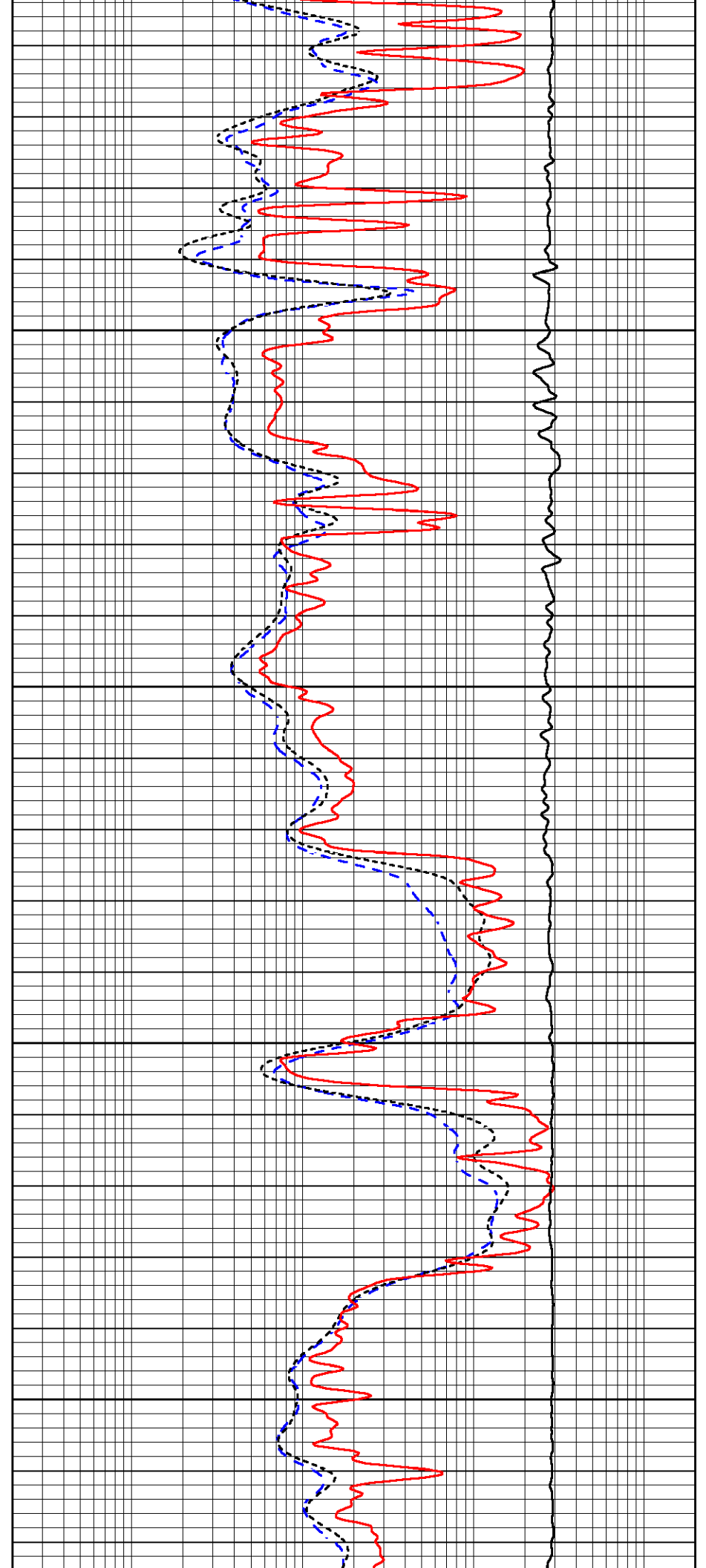


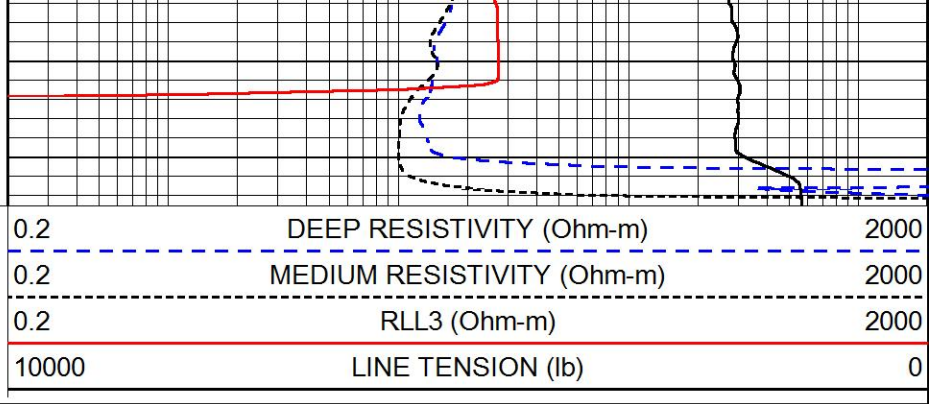
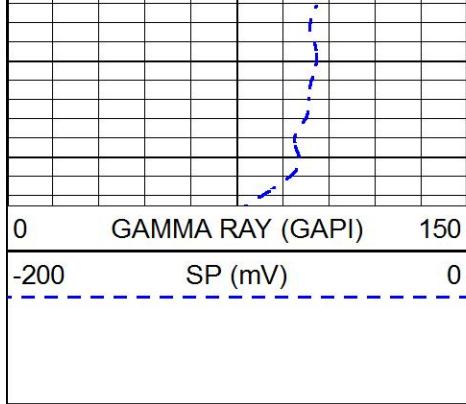
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4800

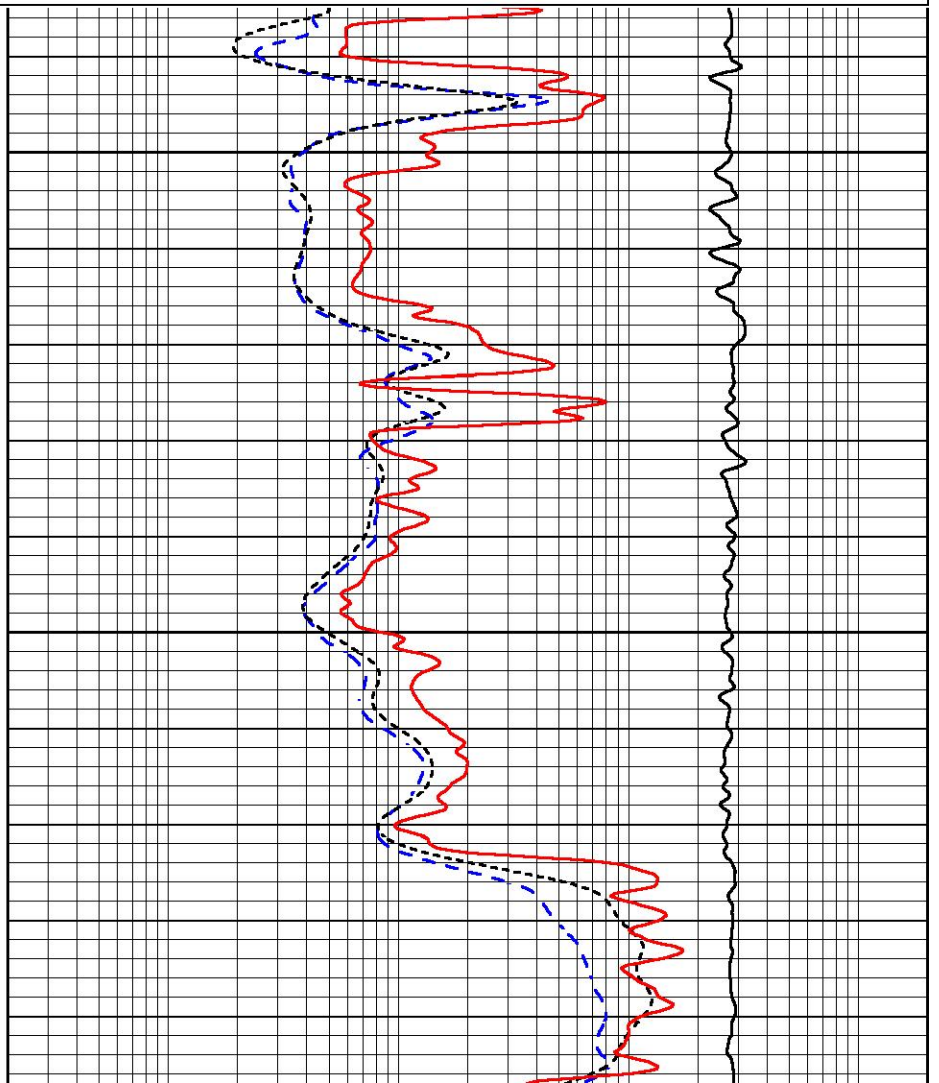
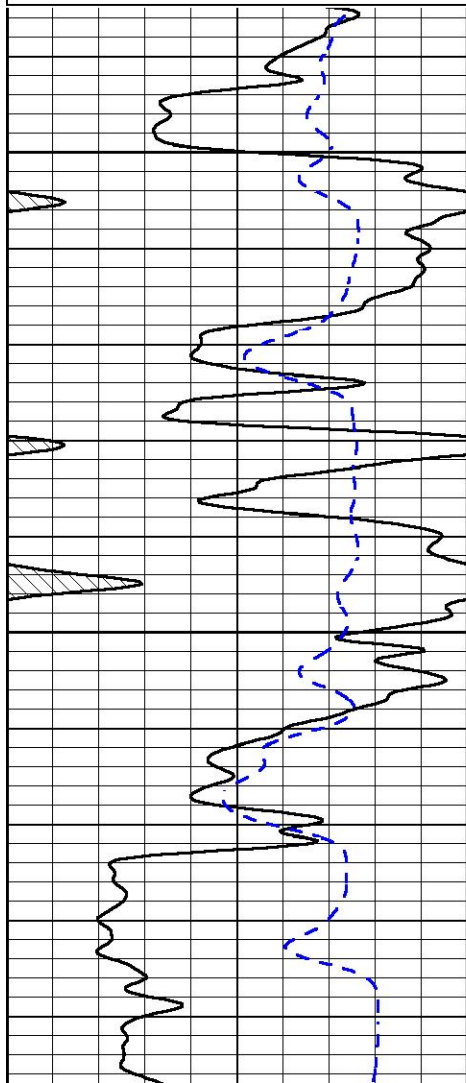
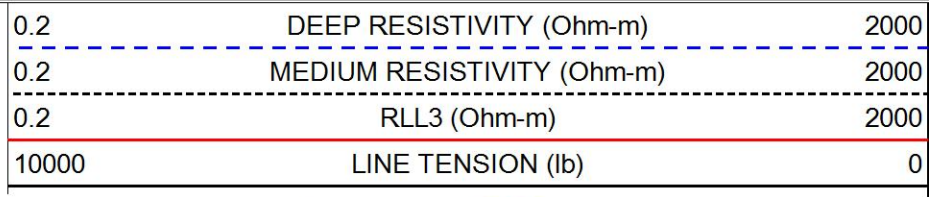
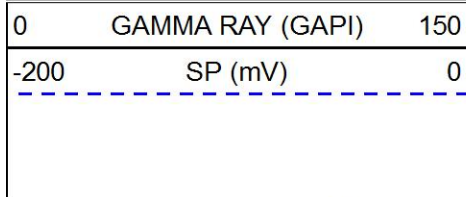
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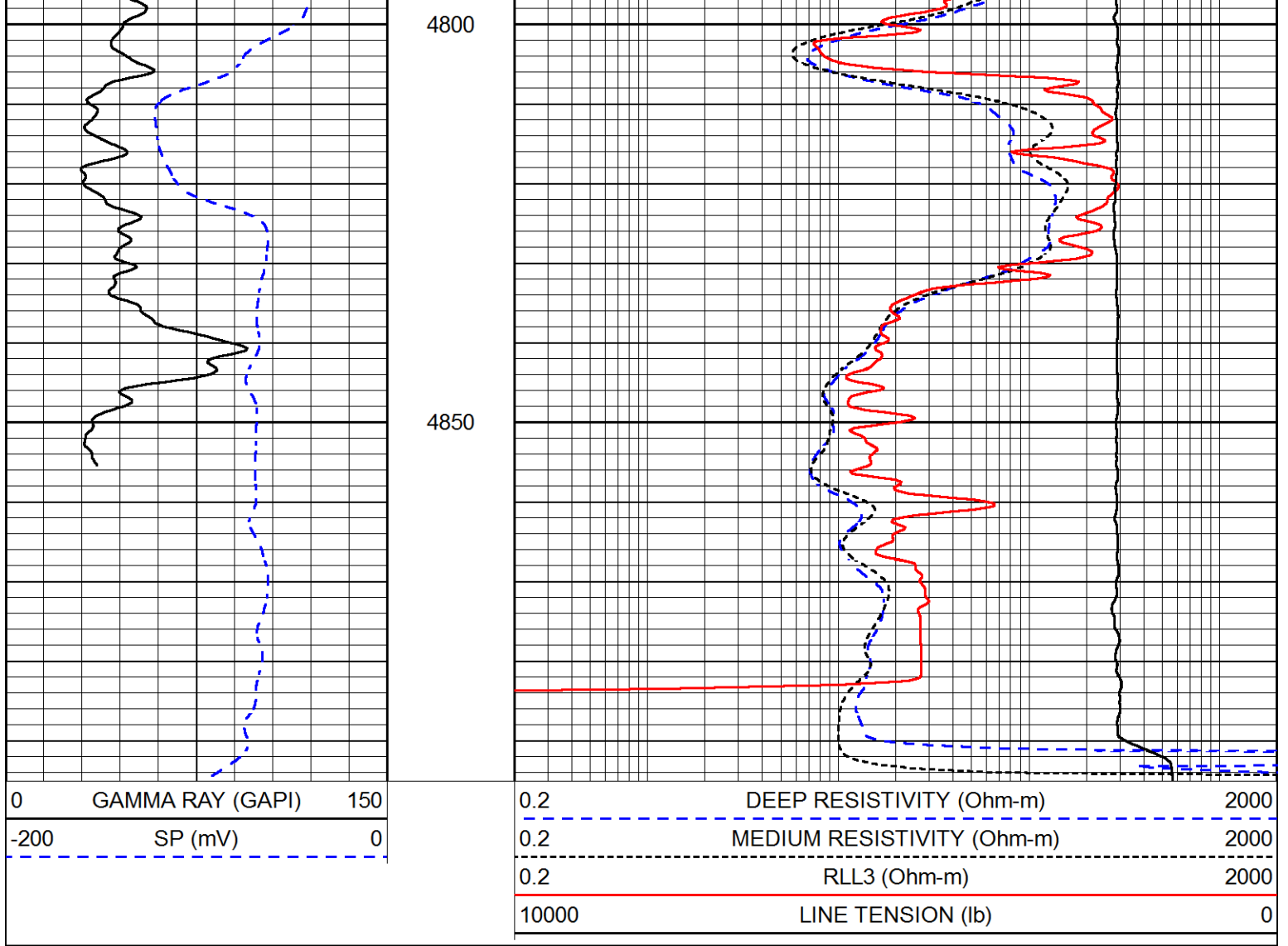




REPEAT SECTION

Database File val_energy_frahm_unit_1_16.db
 Dataset Pathname stackmel/pass2.1
 Presentation Format dil
 Dataset Creation Sat Jul 28 18:47:02 2018
 Charted by Depth in Feet scaled 1:240





Calibration Report

Database File val_energy_frahm_unit_1_16.db
 Dataset Pathname stackmel/pass3.1
 Dataset Creation Sat Jul 28 18:51:20 2018

Dual Induction Calibration Report

Serial-Model: 933 (HT)-PSI HIGH TEMP
 Calibration Performed: Sun Jul 15 05:36:29 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop	mmho/m	Gain	Offset
Deep	167.000	835.000	0.000	255.000	mmho/m	0.700	-17.000
Medium	142.000	1349.000	0.000	255.000	mmho/m	0.565	-60.500

Microlog Calibration Report

Serial-Model: PSI-01-PSIML
 Performed: Sun Jul 15 07:40:28 2018

	Readings		References			Results	
	Zero	Cal	Zero	Cal	Ohm-m	m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	27000.0000	-0.5000

Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	30000.0000	-0.3000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-65.8500

Compensated Density Calibration Report

Serial-Model:	817-947-M&W
Source / Verifier:	16955B / 2ci
Master Calibration Performed:	Sun Jul 15 05:36:52 2018

Master Calibration

	<u>Density</u>		<u>Far Detector</u>	<u>Near Detector</u>	
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		
	<u>Size</u>		<u>Reading</u>		
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:	SUN JUL 15 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:	Sun Jul 15 05:37:08 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	VAL ENERGY, INC.
Well	FRAHM UNIT # 1-16
Field	WILDCAT
County	THOMAS
State	KANSAS