



PIONEER
Pioneer Energy Services

DUAL INDUCTION LOG

Company **MIKE KELSO OIL, INC.**
Well **HONAS A NO.2**
Field **WILDCAT**
County **TREGO** State **KANSAS**

Location: API #: 15-195-23028-00-00

Other Services

1330' FNL & 700' FEL
SEC 21 TWP 14S RGE 22W

Permanent Datum GROUND LEVEL Elevation 2221'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2228'
D.F. N/A
G.L. 2221'

Date 8/27/2017

Run Number ONE

Depth Driller 4225'

Depth Logger 4220'

Bottom Logged Interval 4219'

Top Log Interval 250'

Casing Driller 8.625" @ 250'

Casing Logger 248'

Bit Size 7.875"

Type Fluid in Hole CHEMICAL

Salinity, ppm CL 10,500

Density / Viscosity 9.7 56

pH / Fluid Loss 9.0 8.8

Source of Sample FLOWLINE

Rm @ Meas. Temp .35 @ 62

Rmt @ Meas. Temp .26 @ 62

Rmc @ Meas. Temp .47 @ 62

Source of Rmt / Rmc CHARTS

Rm @ BHT .18 @ 118

Operating Rig Time 2 1/2 HOURS

Max Rec. Temp. F 118 DEGF

Equipment Number 108

Location HAYS

Recorded By J. HENRICKSON

Witnessed By PAT DEENIHAN

MIKE KELSO

<<< Fold Here >>>

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.

OGALLAH EXIT I 70
SOUTH TO CURVE, 3 SOUTH, 1 WEST, SOUTH INTO
(ROAD TO COVE 1 AT CEDAR BLUFF)

Log Measured From: KELLY BUSHING 7 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneerenergy.com 785-625-3858

Your Pioneer Energy Services Crew

Engineer: J. HENRICKSON
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: PAT DEENIHAN
Secondary Witness: MIKE KELSO
Secondary Witness:
Secondary Witness:

DatabaseC:\ProgramData\Warrior\Data\kelso_honas_a_2.db
Dataset field/well/stackml/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	118	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	-90	61	Off	4220

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC	37.48		CNT-M&W (tk10-MW)	5.50	3.50	100.00
CNSSC	36.73					
LSD	28.43		CDL-M&W (168-986)	8.50	4.00	250.00
DCAL	28.42					
SSD	27.93					
MCAL	19.83		ML-PSI STKBL ML (PSI-02) Stackable Microlog Tools	7.58	4.00	65.00
MI	19.83					
MN	19.83					
RLL3	15.80		DIL-M&W (1987)	18.50	3.50	220.00
RLL3F	15.79					
CILD	8.00					

CILM

4.70

SP

0.20

Dataset: kelso_honas_a_2.db: field/well/stackml/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 kelso_honas_a_2.db
Dataset Pathname stackml/pass3.1
Presentation Format dil2in
Dataset Creation Sun Aug 27 05:56:23 2017
Charted by Depth in Feet scaled 1:600

0 GAMMA RAY (GAPI) 150

2000 CONDUCTIVITY (mmho/m) 0

0 RLL3 (Ohm-m) 50

0 DEEP RESISTIVITY (Ohm-m) 50

50 RLL3 (Ohm-m) 500

DEEP RESISTIVITY

50 (Ohm-m) 500

GAMMA RAY

250

300

350

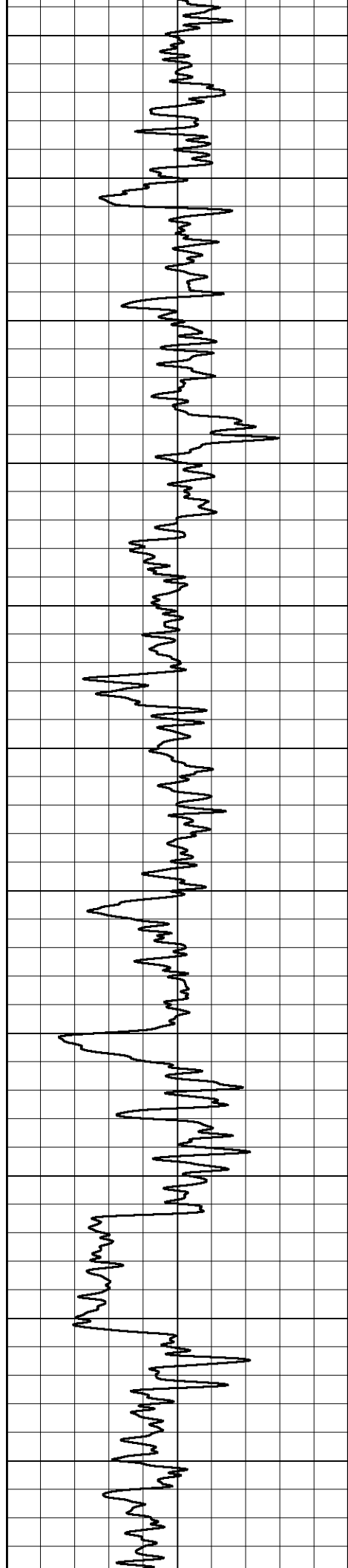
400

450

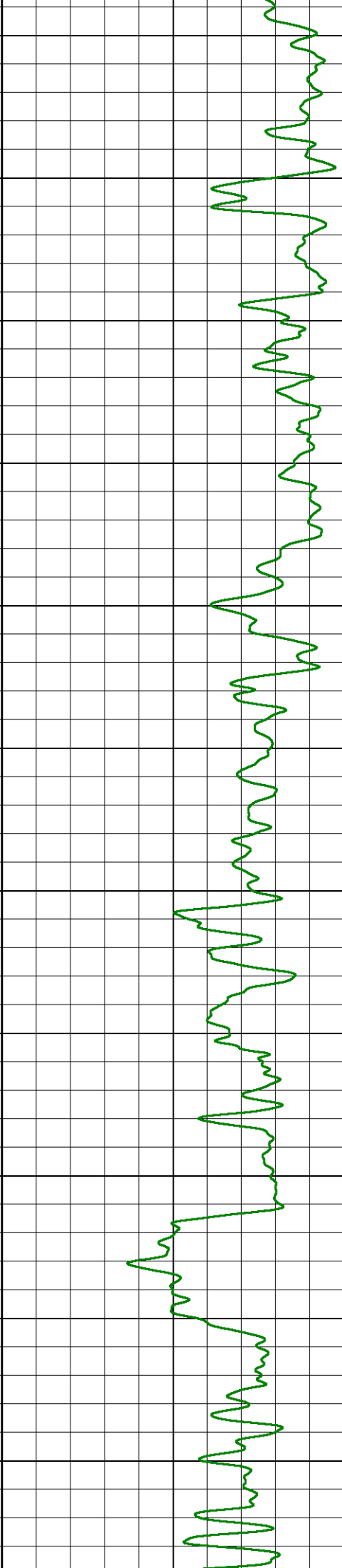
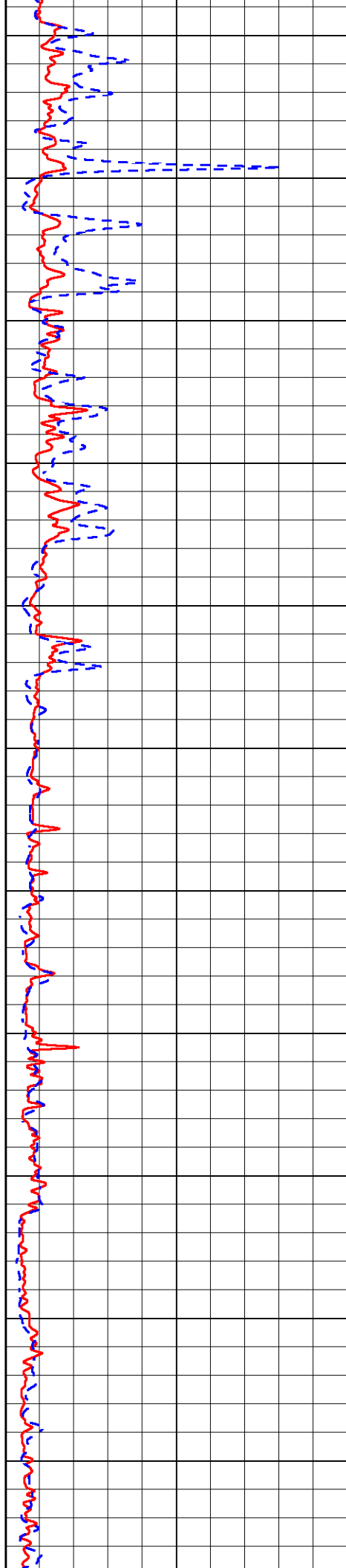
RLL3

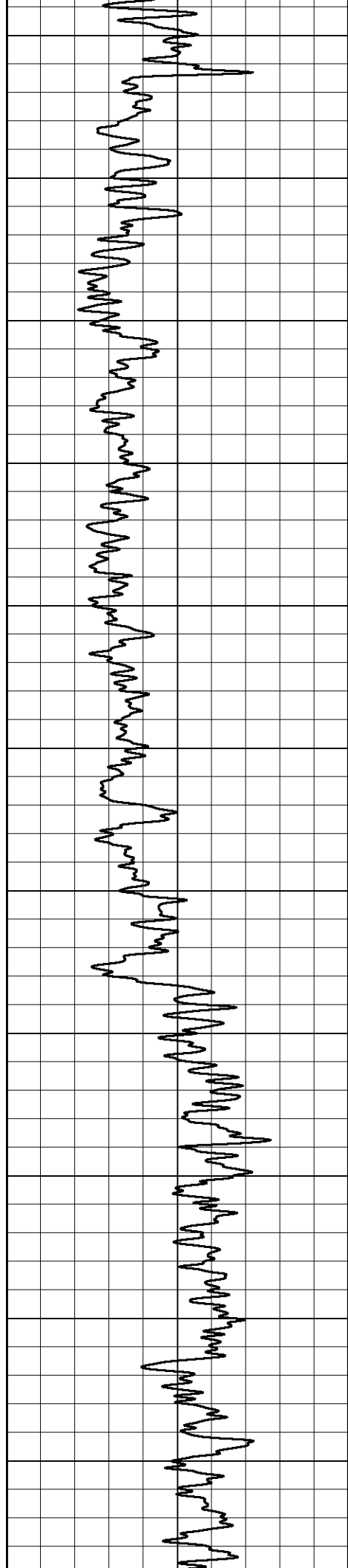
DEEP RESISTIVITY

CONDUCTIVITY

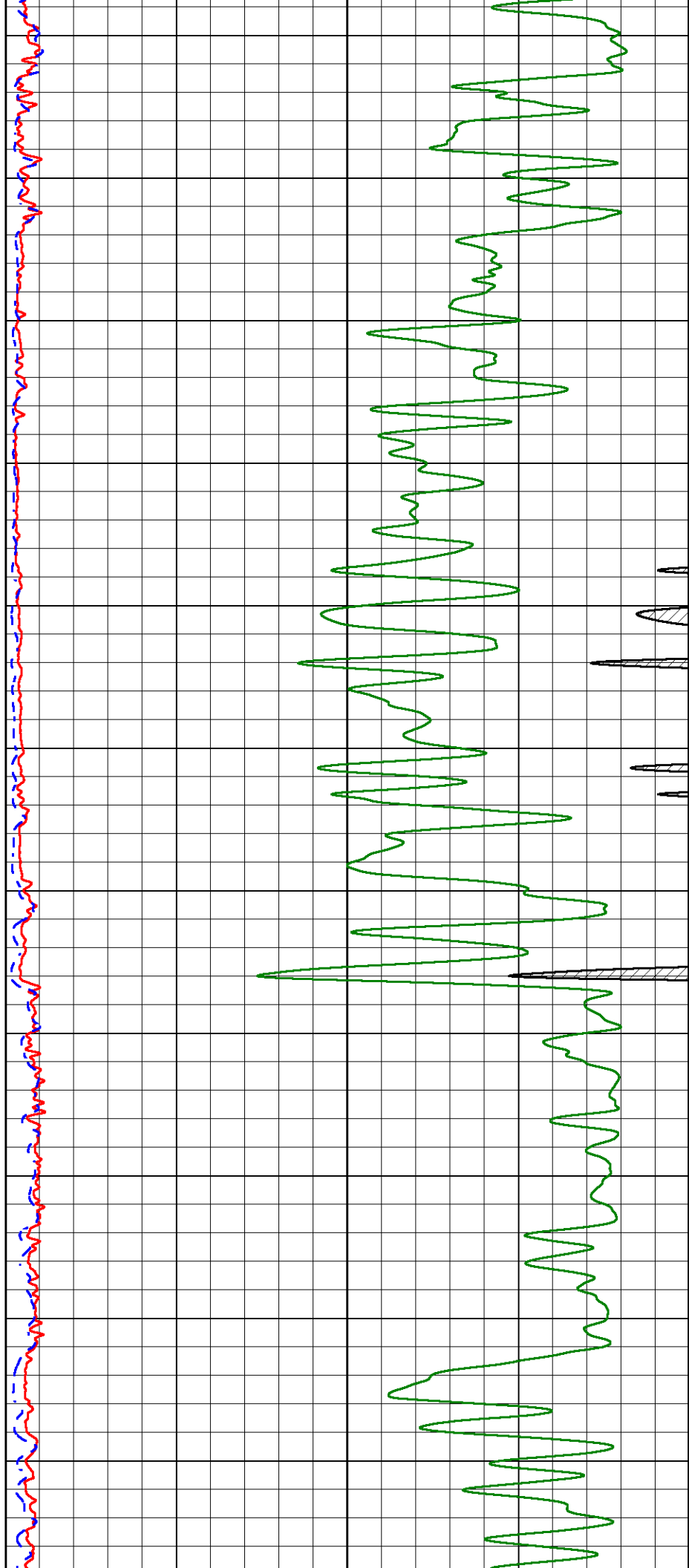


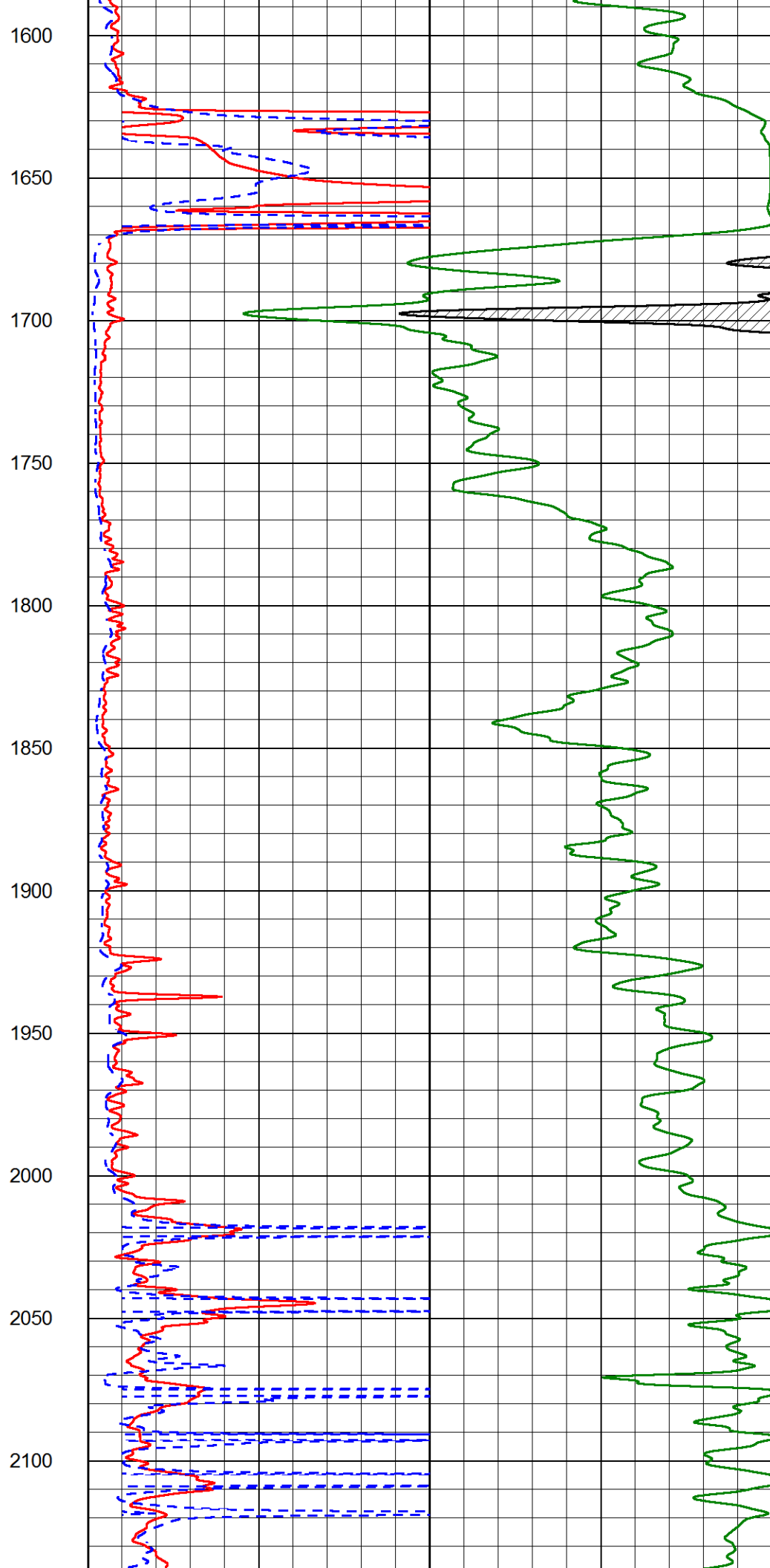
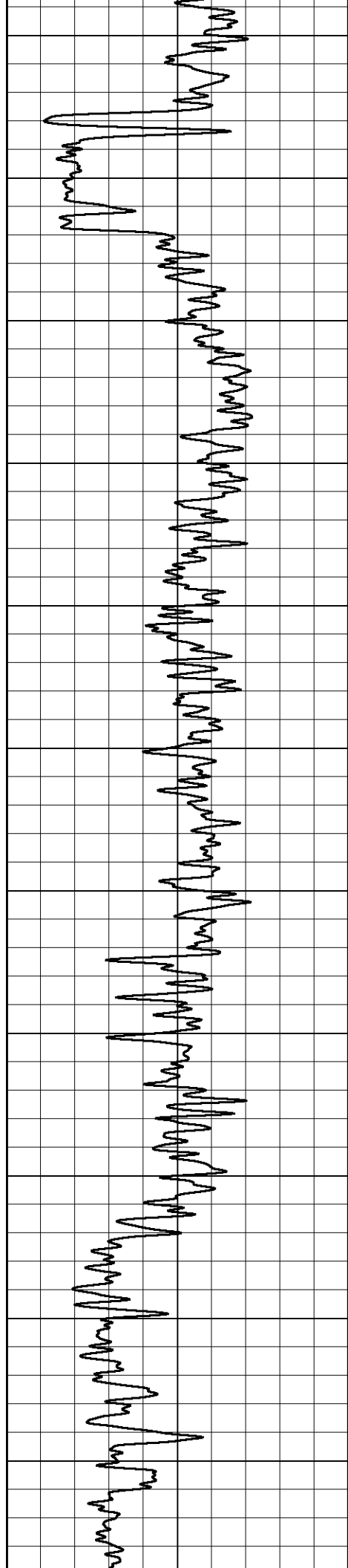
500
550
600
650
700
750
800
850
900
950
1000

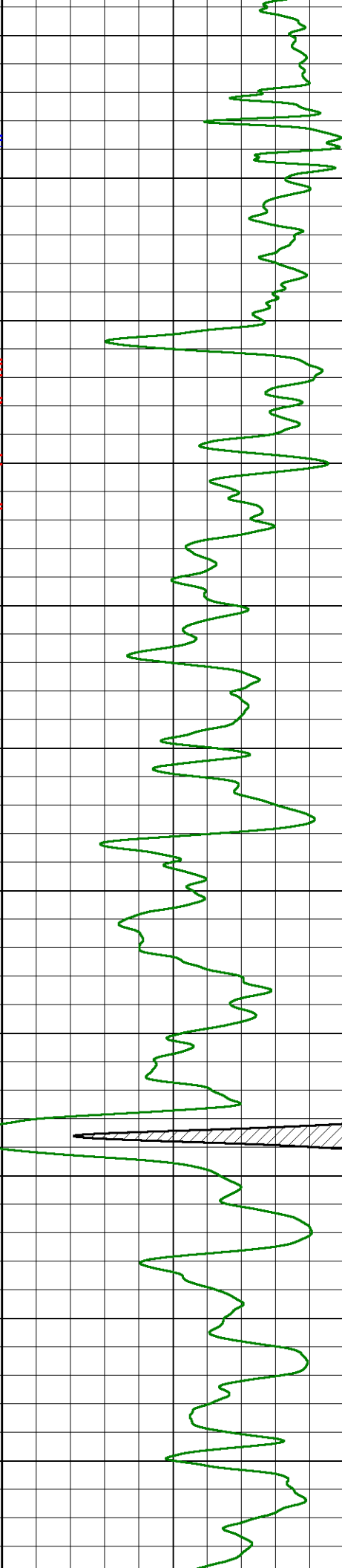
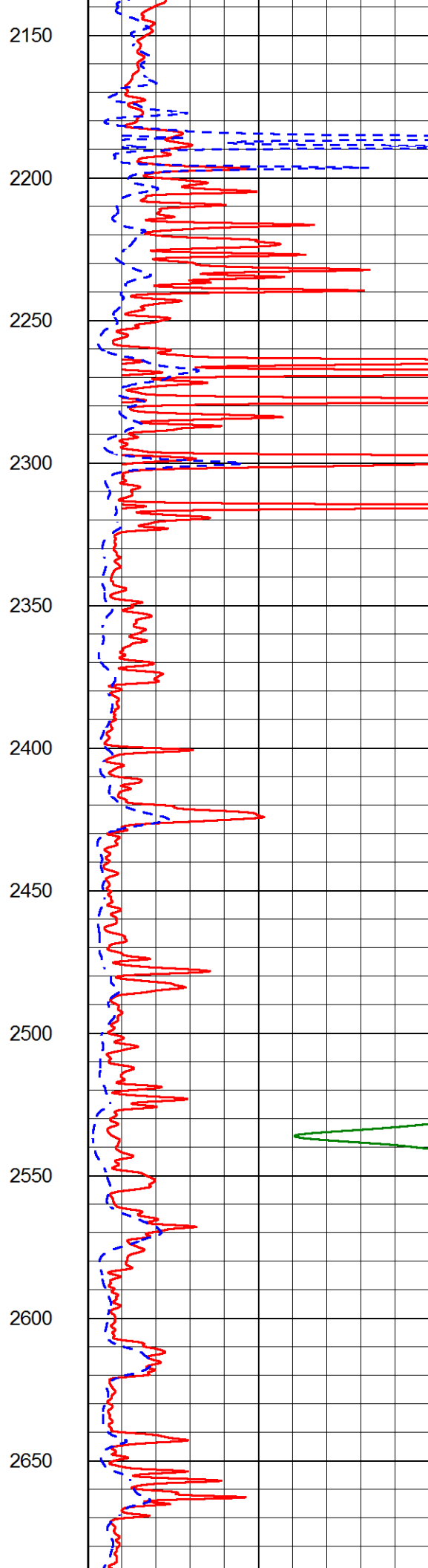
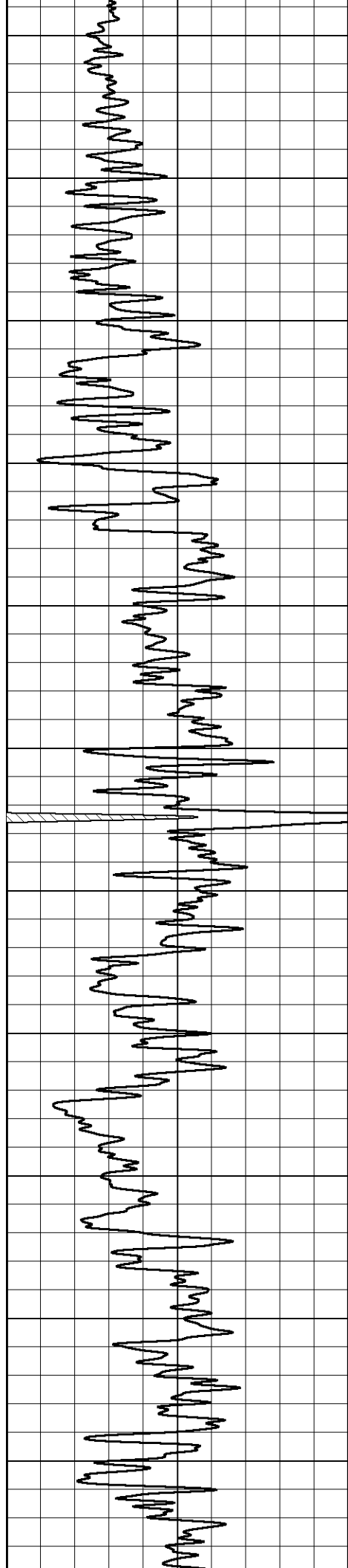


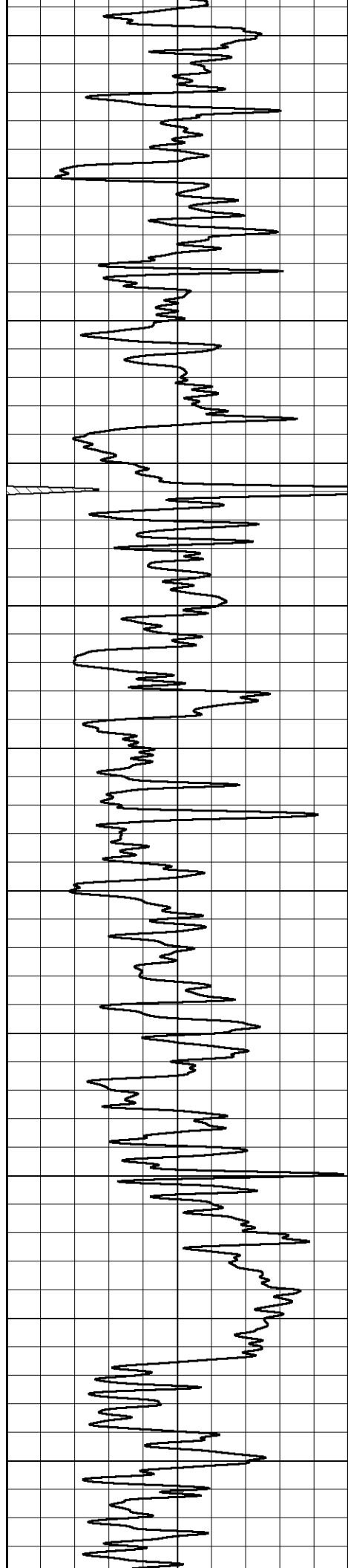


1050
1100
1150
1200
1250
1300
1350
1400
1450
1500
1550

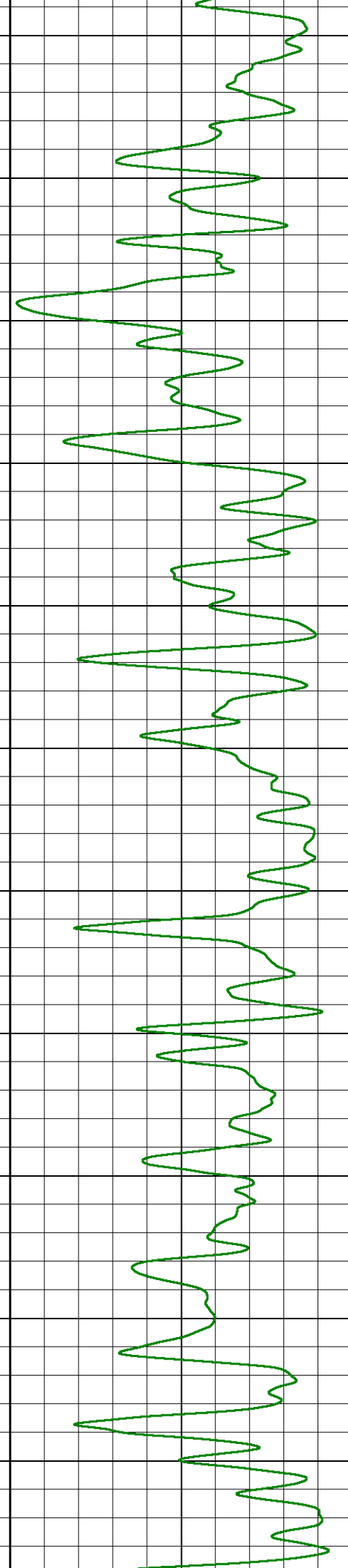
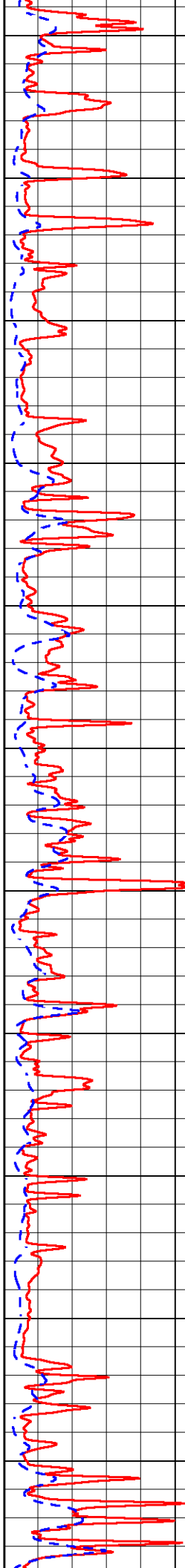


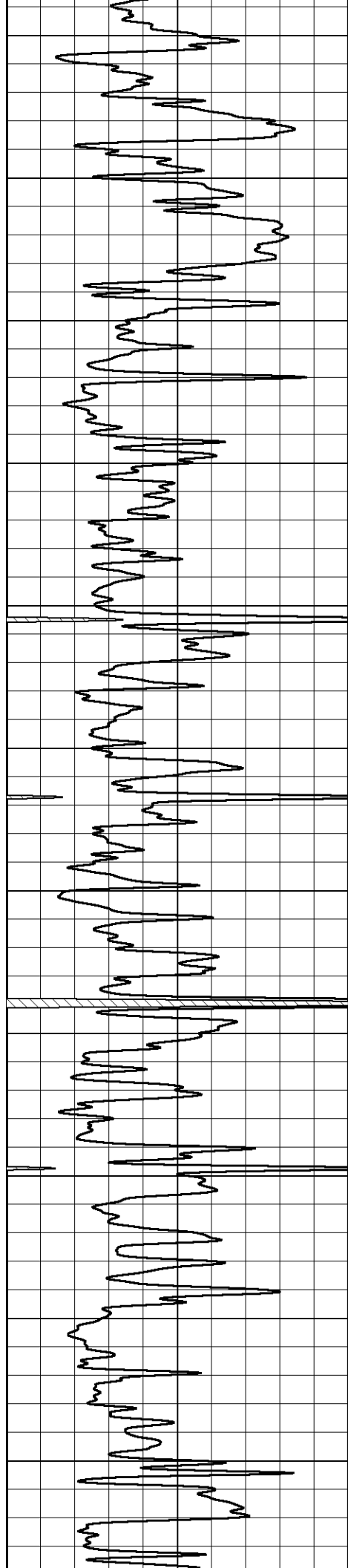






2700
2750
2800
2850
2900
2950
3000
3050
3100
3150
3200





3250

3300

3350

3400

3450

3500

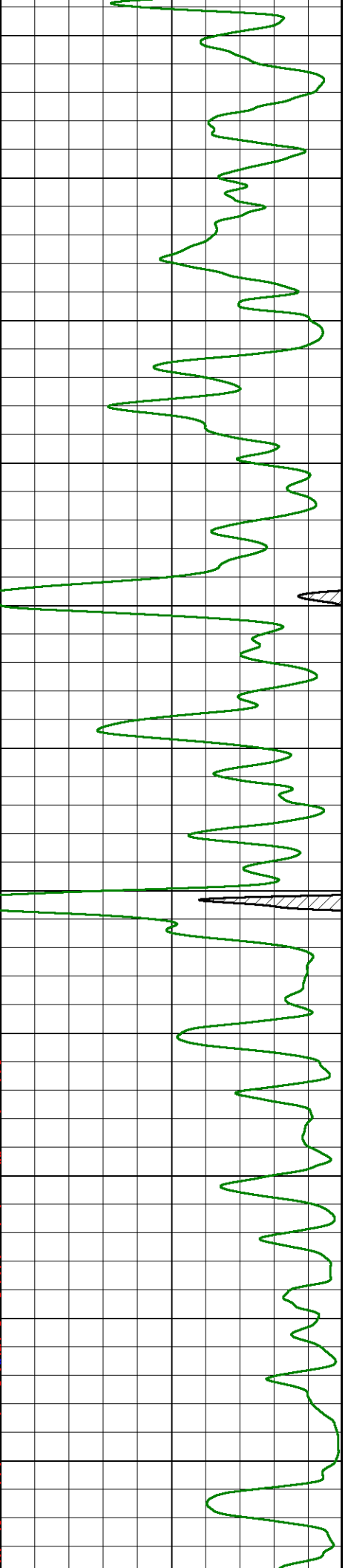
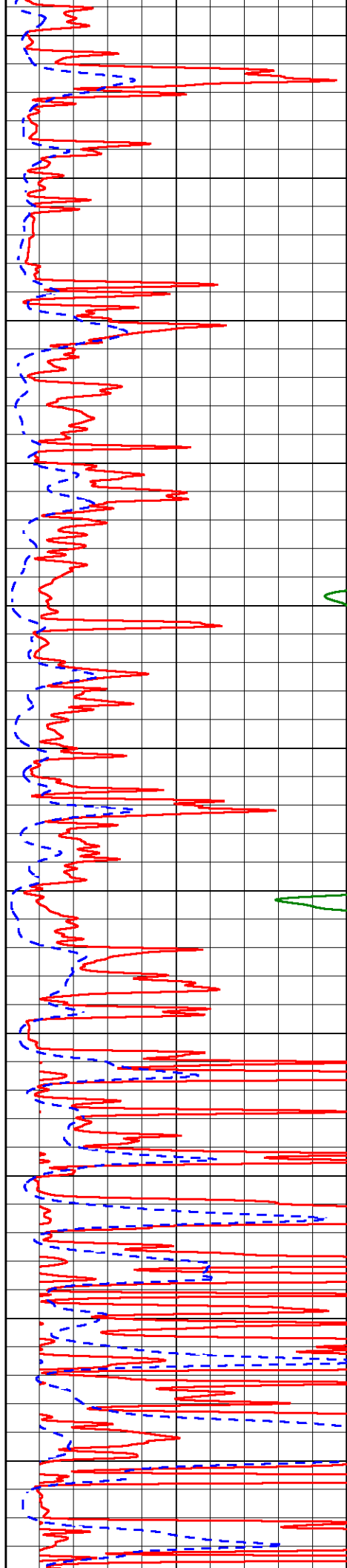
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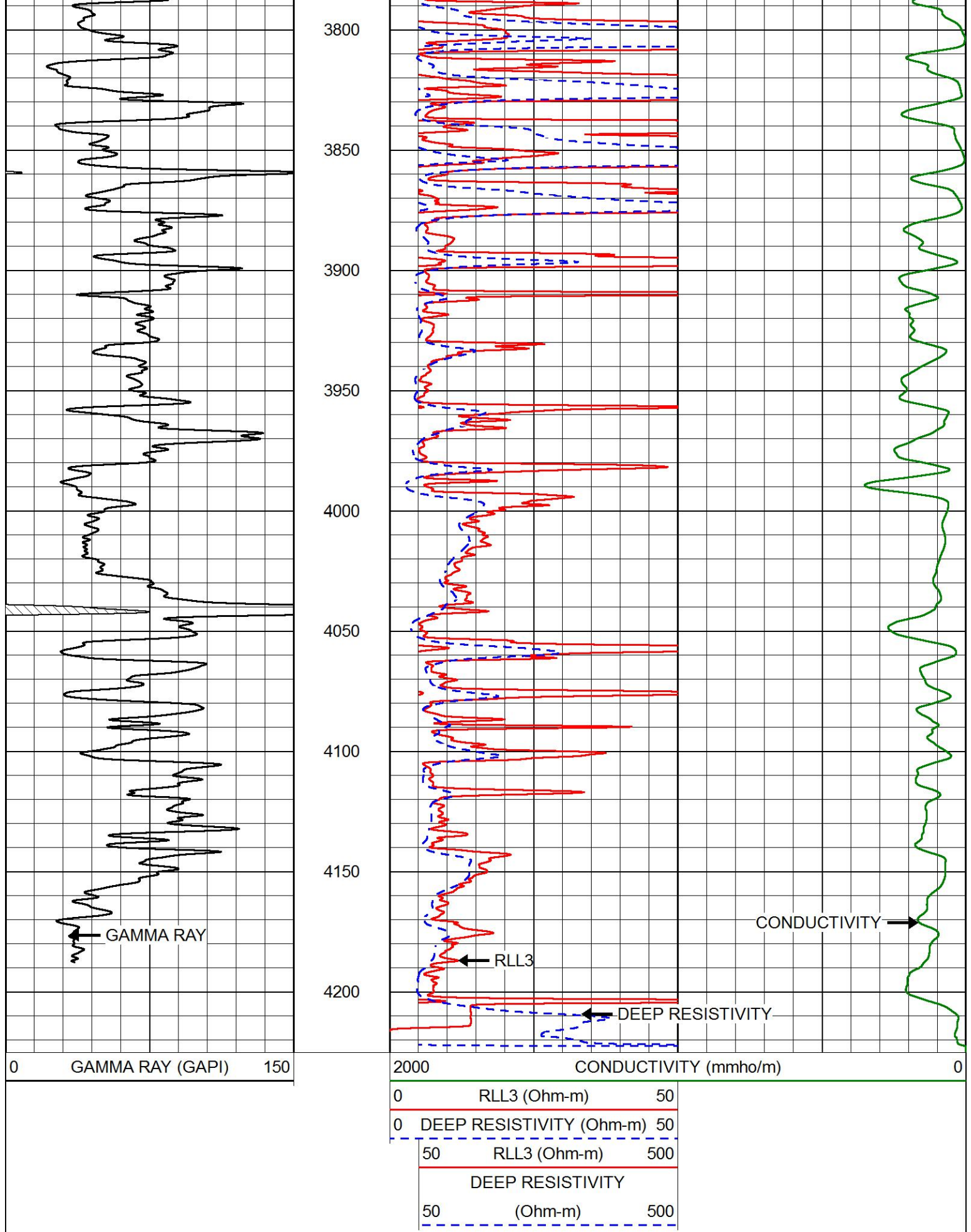
3600

3650

3700

3750



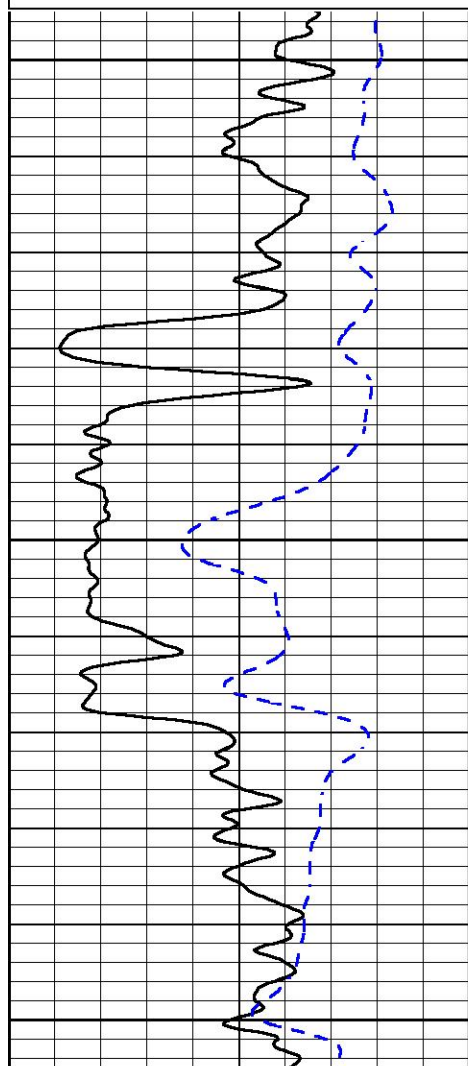


MAIN PASS

Database File kelso_honas_a_2.db
 Dataset Pathname stackml/pass3.1
 Presentation Format dil
 Dataset Creation Sun Aug 27 05:56:23 2017
 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
 15000 LINE TENSION (lb) 0

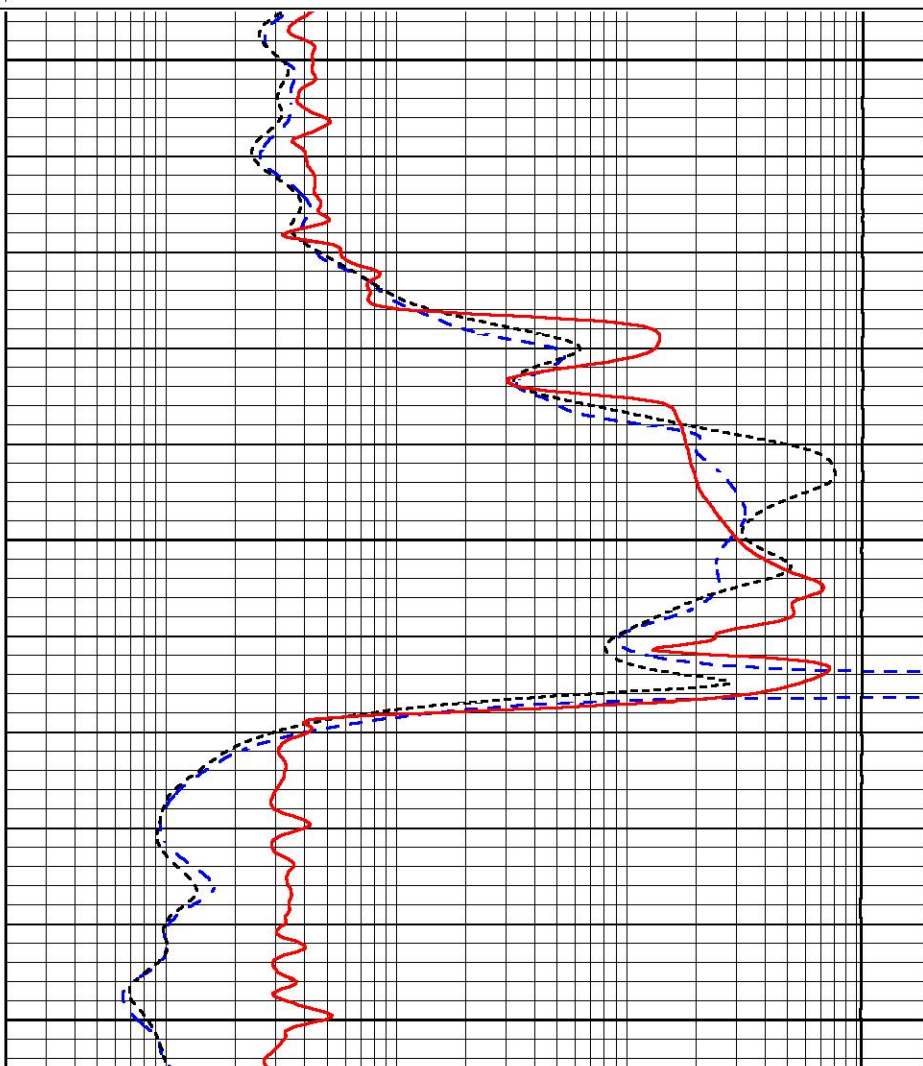


1600

1650

1700

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

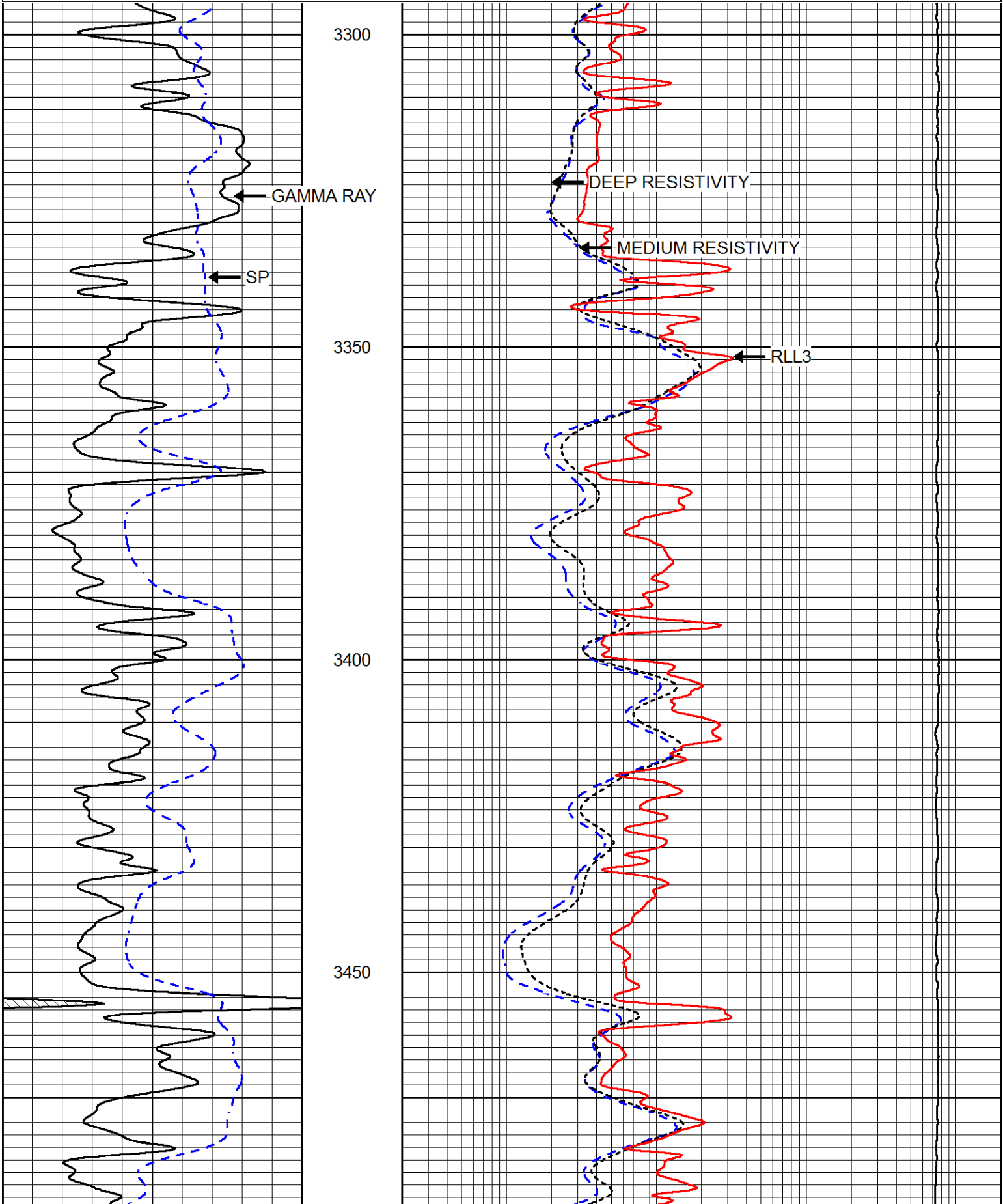


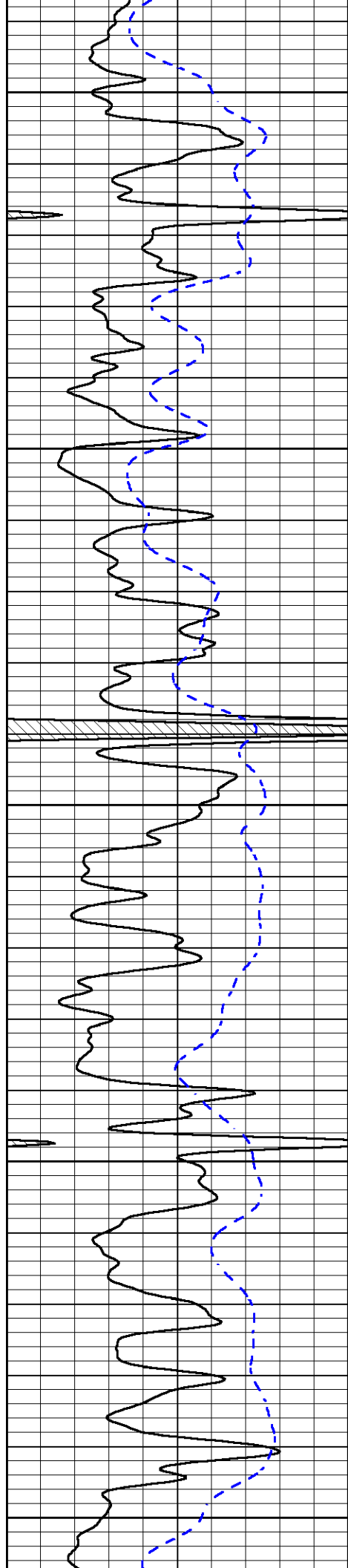
0.2 DEEP RESISTIVITY (Ohm-m) 2000
 0.2 MEDIUM RESISTIVITY (Ohm-m) 2000
 0.2 RLL3 (Ohm-m) 2000
 15000 LINE TENSION (lb) 0

Database File kelso_honas_a_2.db
 Dataset Pathname stackml/pass3.1
 Presentation Format dil
 Dataset Creation Sun Aug 27 05:56:23 2017

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
15000	LINE TENSION (lb)	0





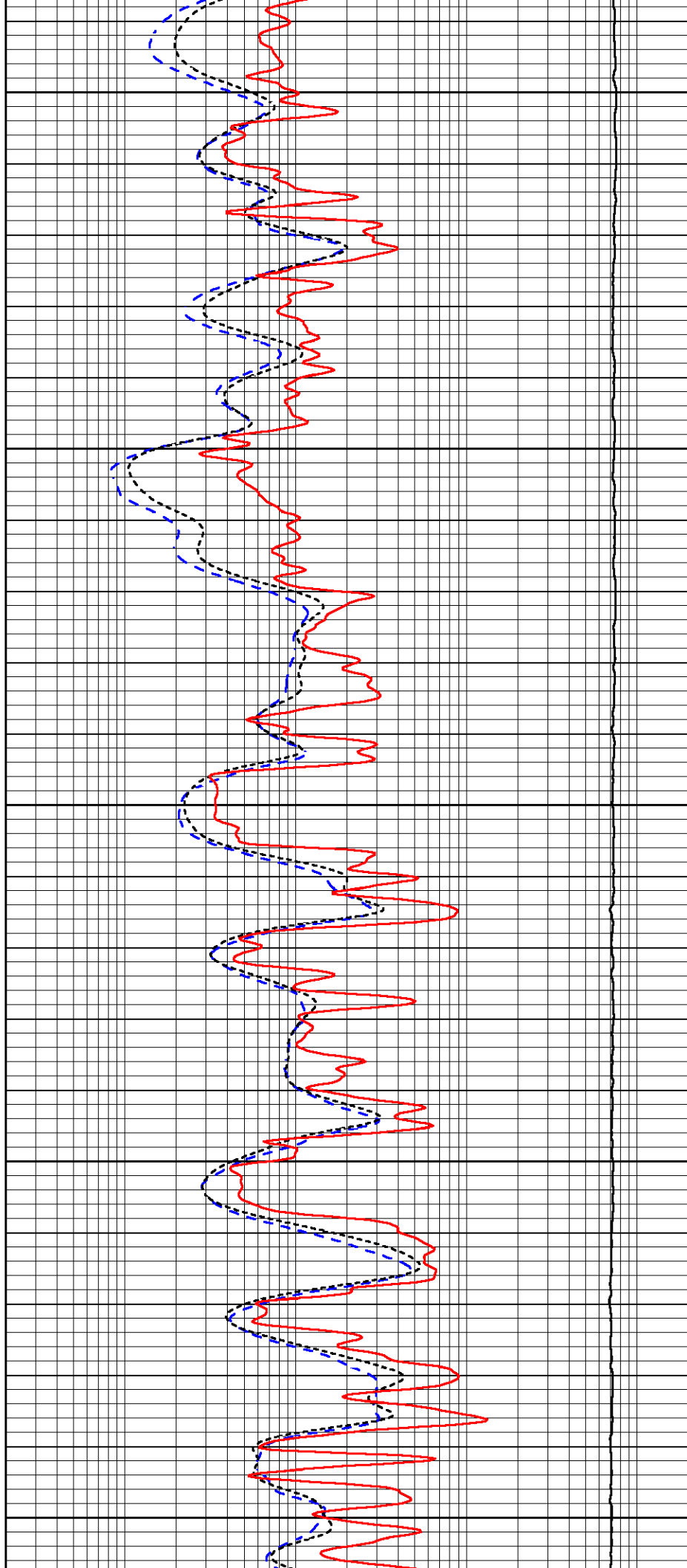
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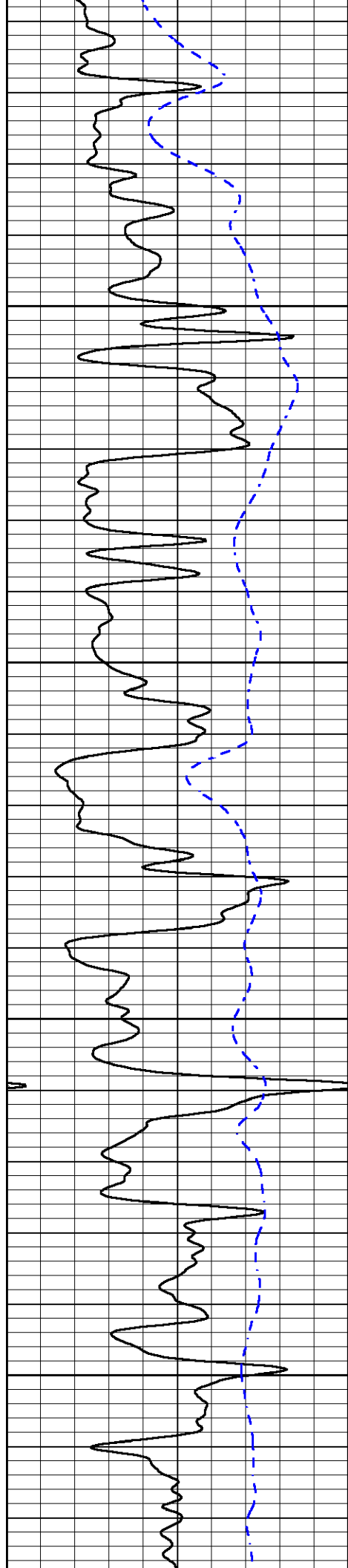
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3600

3650

3700



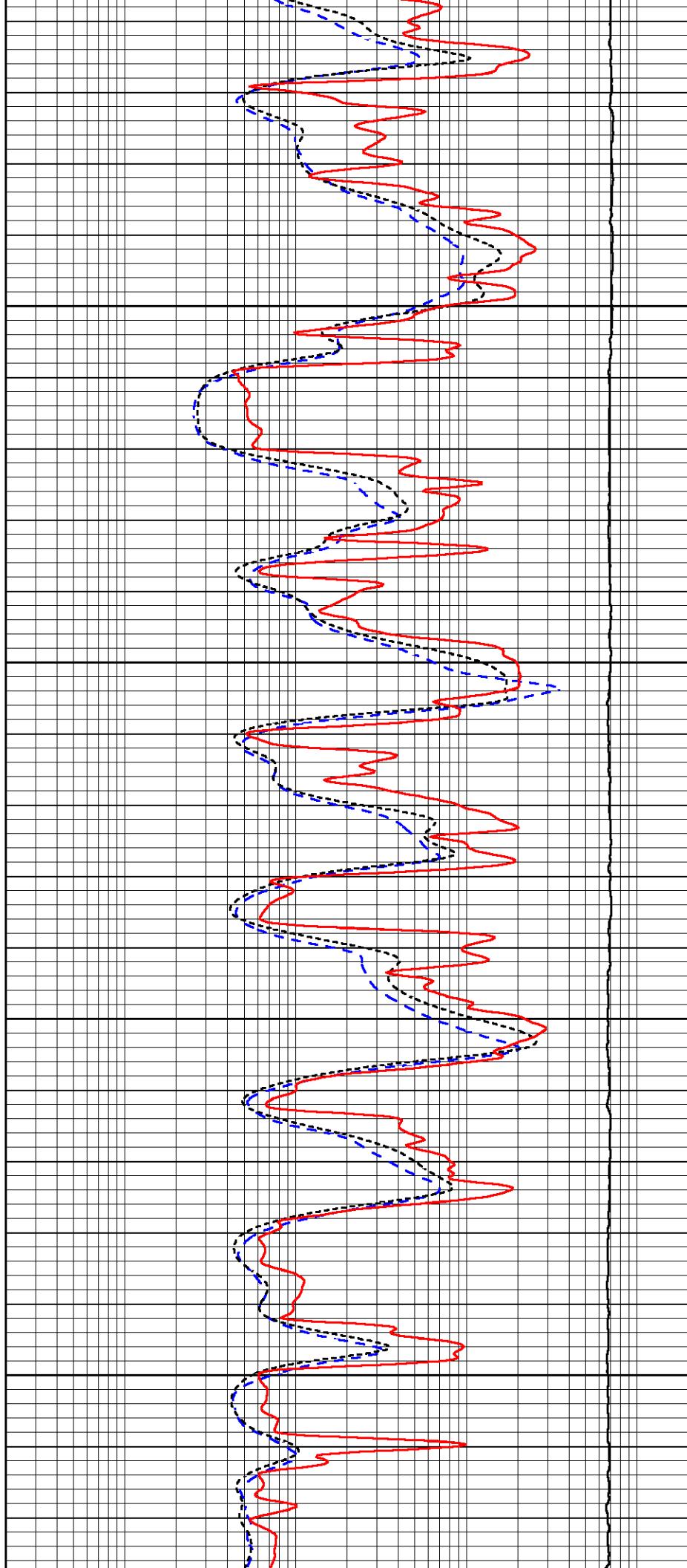


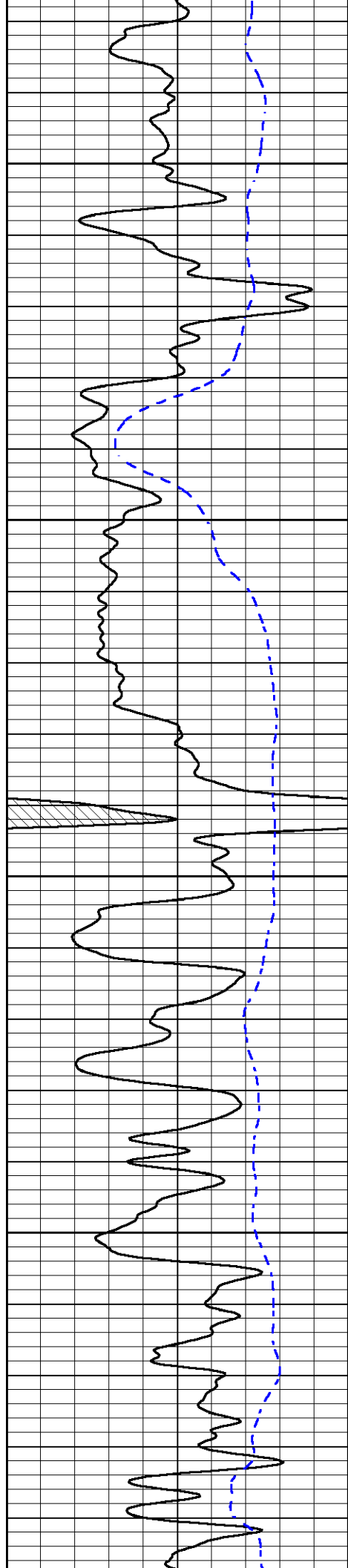
3750

3800

3850

3900



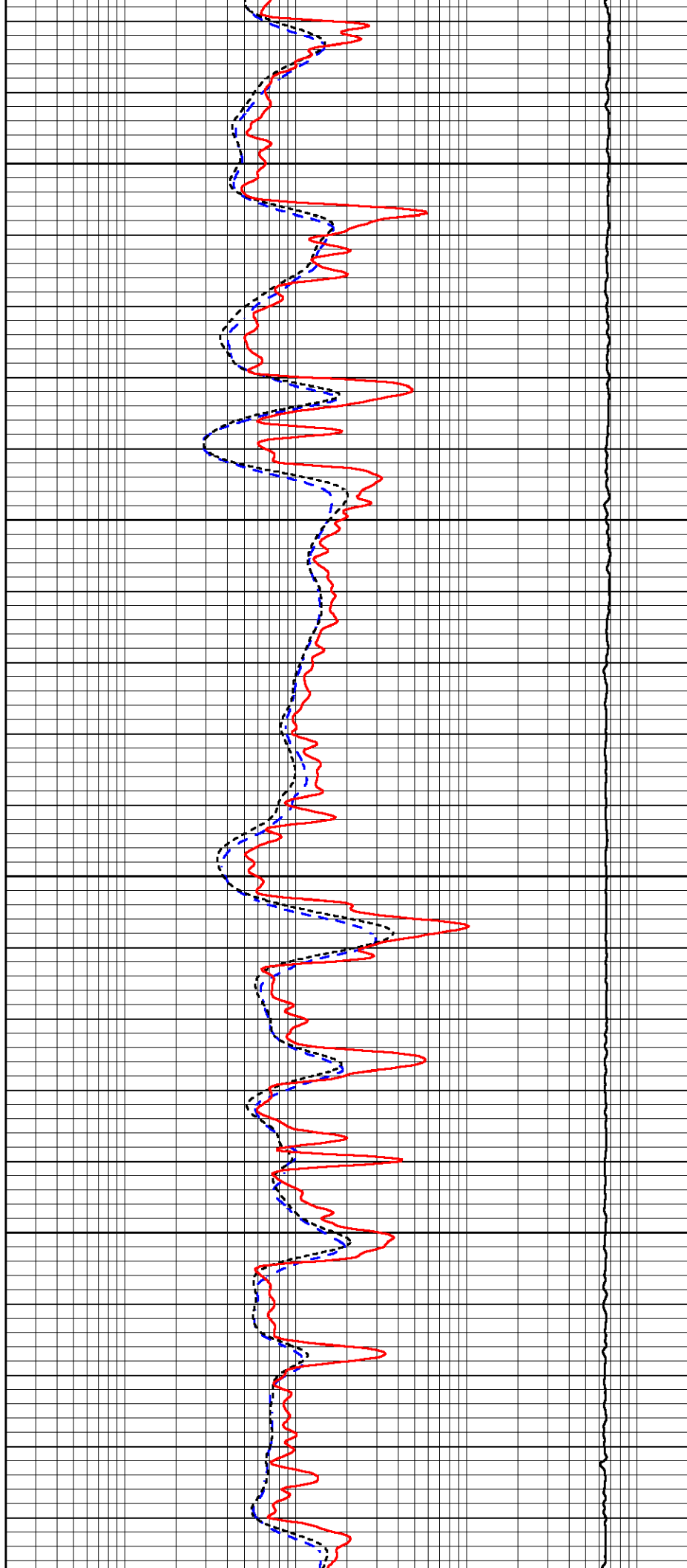


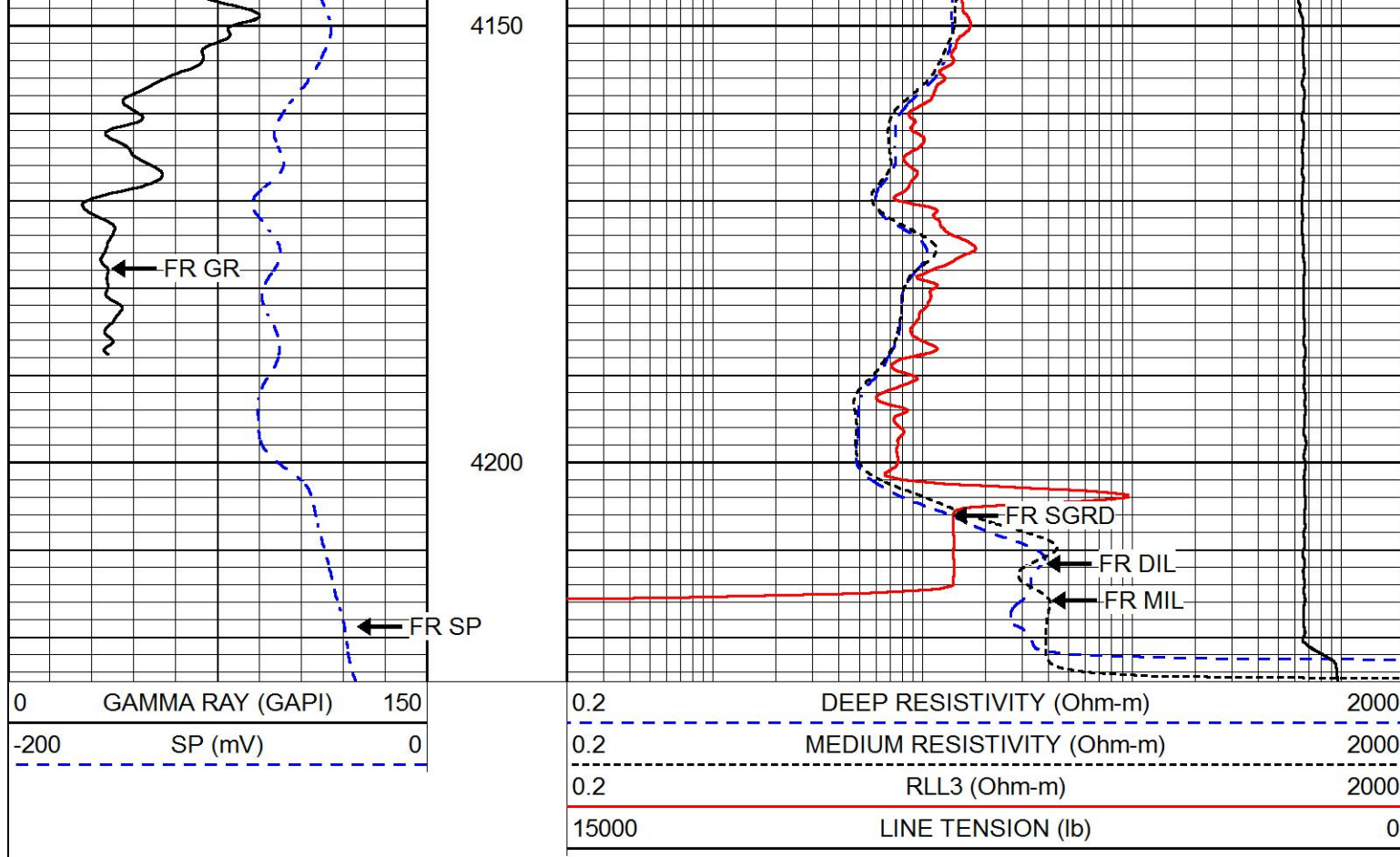
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4050

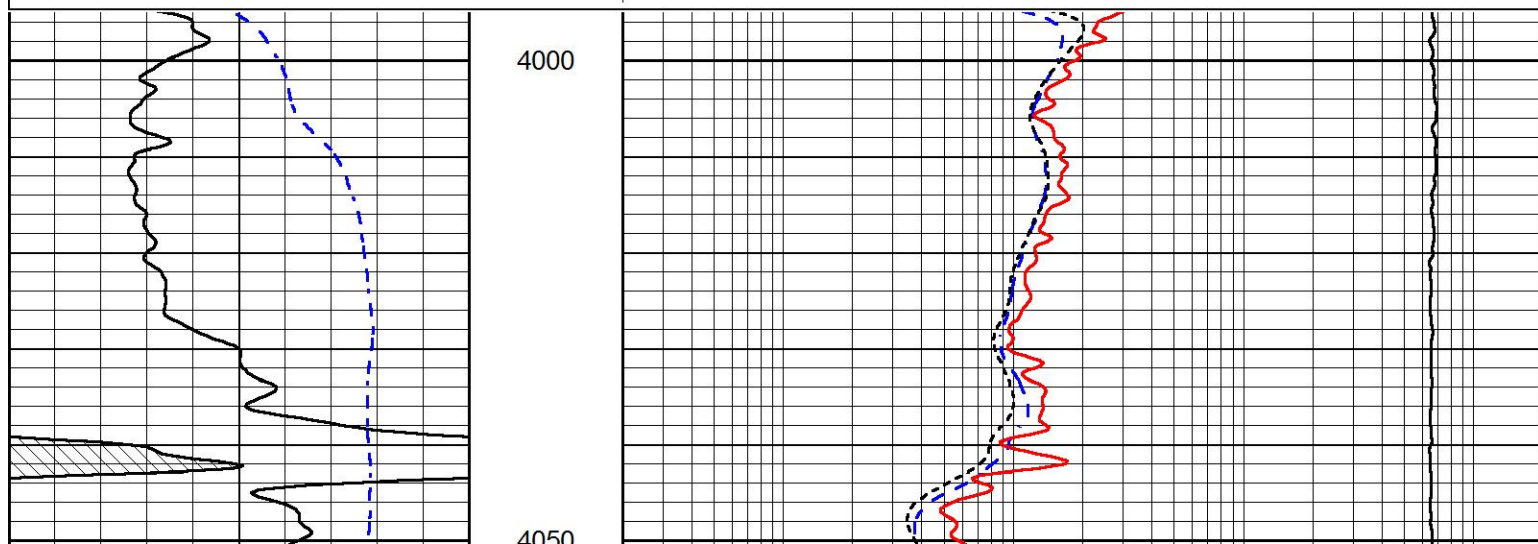
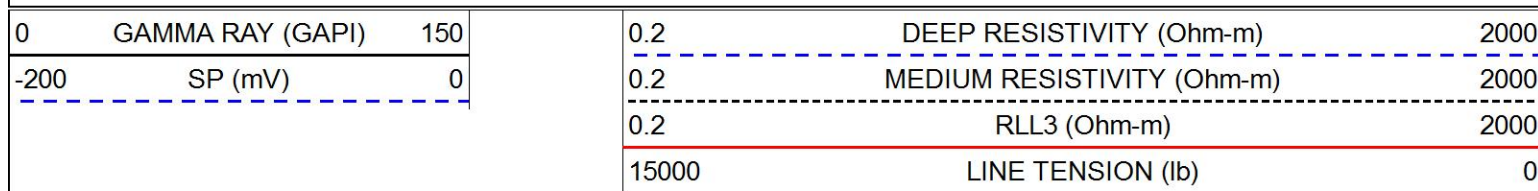
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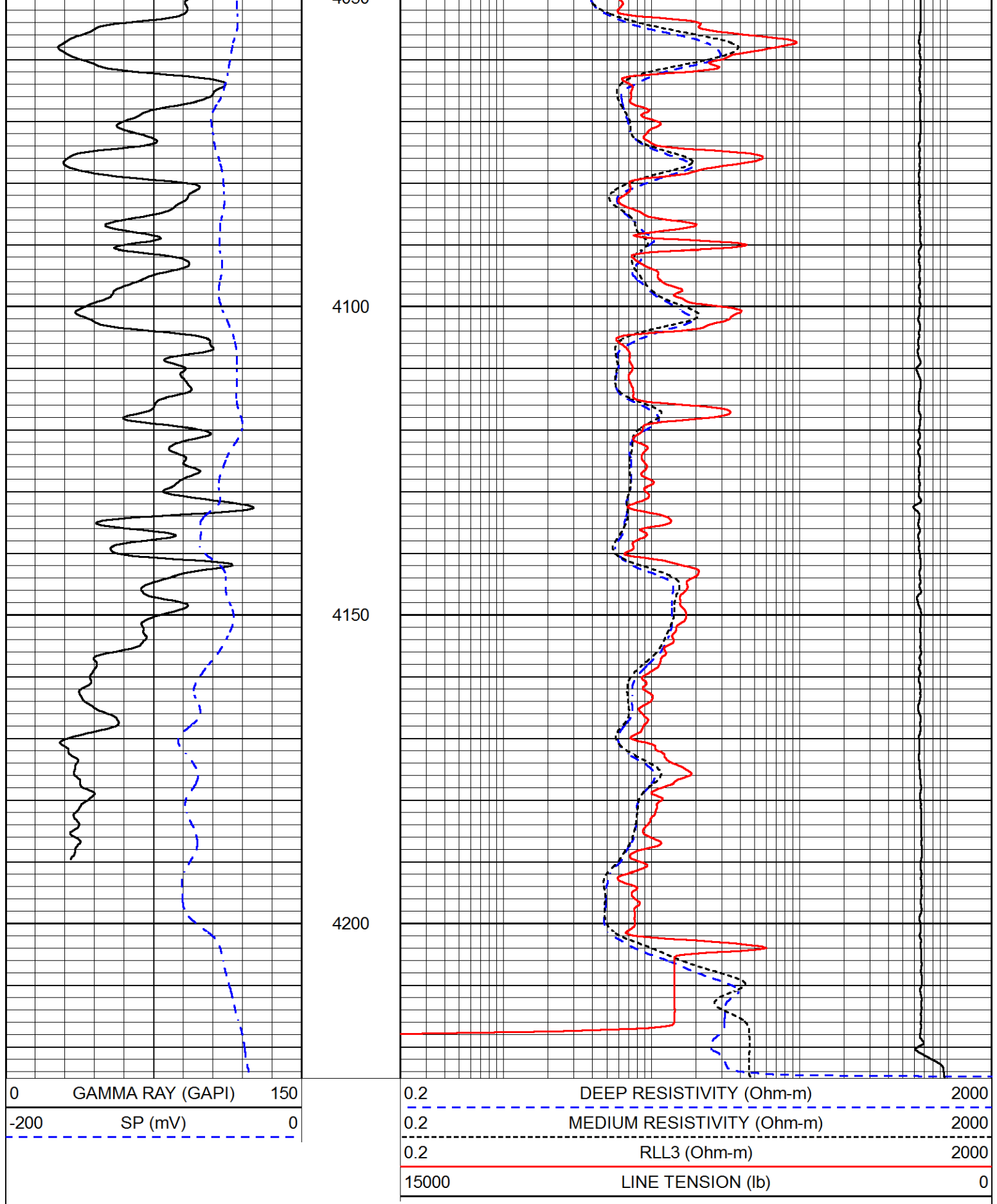




REPEAT SECTION

Database File kelso_honas_a_2.db
 Dataset Pathname stackml/pass2.1
 Presentation Format dil
 Dataset Creation Sun Aug 27 05:57:24 2017
 Charted by Depth in Feet scaled 1:240





Calibration Report

Database File kelso_honas_a_2.db
Dataset Pathname stackml/pass3.1
Dataset Creation Sun Aug 27 05:56:23 2017

Dual Induction Calibration Report

Serial-Model:
Calibration Performed:1987-M&W
Tue Apr 11 16:07:38 2017

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.530	-36.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-110.500

Microlog Calibration Report

Serial-Model:
Performed:PSI-02-PSI STKBL ML
Fri Jun 23 00:25:19 2017

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	18000.0000	0.0000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	20000.0000	0.0000
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-131.4500

Compensated Density Calibration Report

Serial-Model:
Source / Verifier:
Master Calibration Performed:168-986-M&W
/
Tue Apr 11 16:07:47 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.675	g/cc	859.57	3020.22	cps
Spine Angle = 74.61			Density/Spine Ratio = 0.523		
	Size		Reading		
Small Ring	4.00	in	1.03		
Large Ring	14.00	in	1.23		

Compensated Neutron Calibration Report

Serial Number: tk10-MW
Tool Model: M&W
Calibration Performed: Wed Nov 16 11:21:36 2016

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-M&W
Tool Model: M&W
Calibration Performed: Tue Apr 11 16:08:01 2017

Calibrator Value:	1000.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	6.2	cps
Sensitivity:	0.5200	GAPI/cps



Company	MIKE KELSO OIL, INC.
Well	HONAS A NO.2
Field	WILDCAT
County	TREGO
State	KANSAS