



DUAL INDUCTION LOG

Company L.D. DRILLING, INC.
 Well VANDENBERG #1-8
 Field BROWNS GROVE
 County PAWNEE
 State KANSAS

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 Well VANDENBERG #1-8
 Field BROWNS GROVE
 County PAWNEE State KANSAS

Location: 1750' FSL & 2310' FWL
 API #: 15-145-21863-0000
 Permanent Datum GROUND LEVEL Elevation 2196
 Log Measured From KELLY BUSHING 5' A.G.L
 Drilling Measured From KELLY BUSHING
 SEC 8 TWP 20S RGE 20W
 Elevation
 K.B. 2201
 D.F. 2199
 G.L. 2196

Date	11/11/20
Run Number	ONE
Depth Driller	4359
Depth Logger	4359
Bottom Logged Interval	4358
Top Log Interval	00
Casing Driller	8 5/8" @ 476
Casing Logger	476
Bit Size	7 7/8
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.3/61
pH / Fluid Loss	10.0/12.0
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.65 @ 65F
Rmf @ Meas. Temp	.49 @ 65F
Rmc @ Meas. Temp	.78 @ 65F
Source of Rmf / Rmc	MEASUREMENT
Rm @ BHT	.35 @ 119F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	////
Maximum Recorded Temperature	119F
Equipment Number	3802
Location	HAYS, KANSAS
Recorded By	GUS PFANENSTIEL
Witnessed By	KIM SHOEMAKER

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, 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. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

THANK YOU FOR USING ELI WIRELINE SERVICES, HAYS, KS. (785) 628-6395
 DIRECTIONS
 ALEXANDER TO X RD. 1/2 EAST, NORTH INTO.

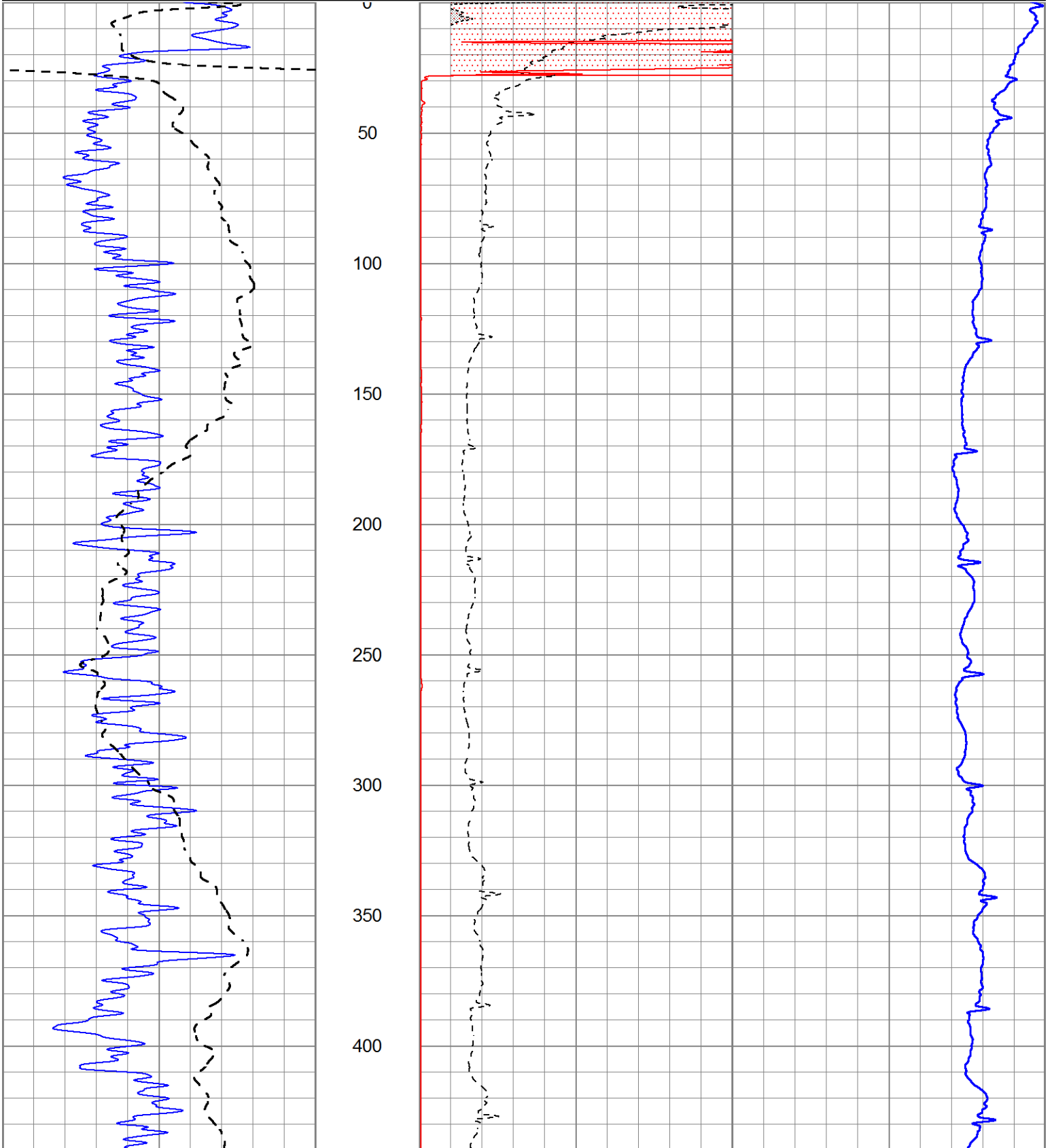


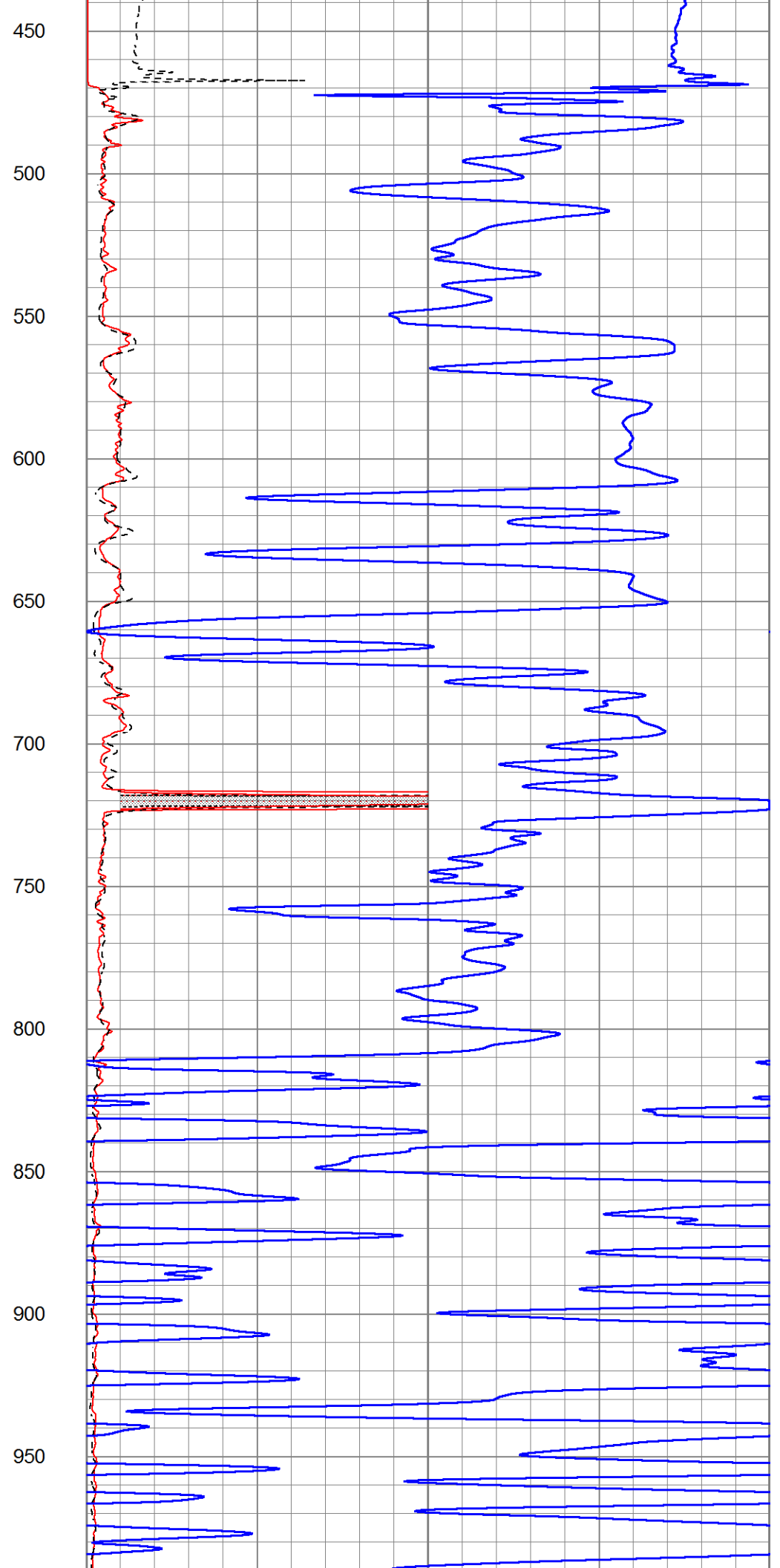
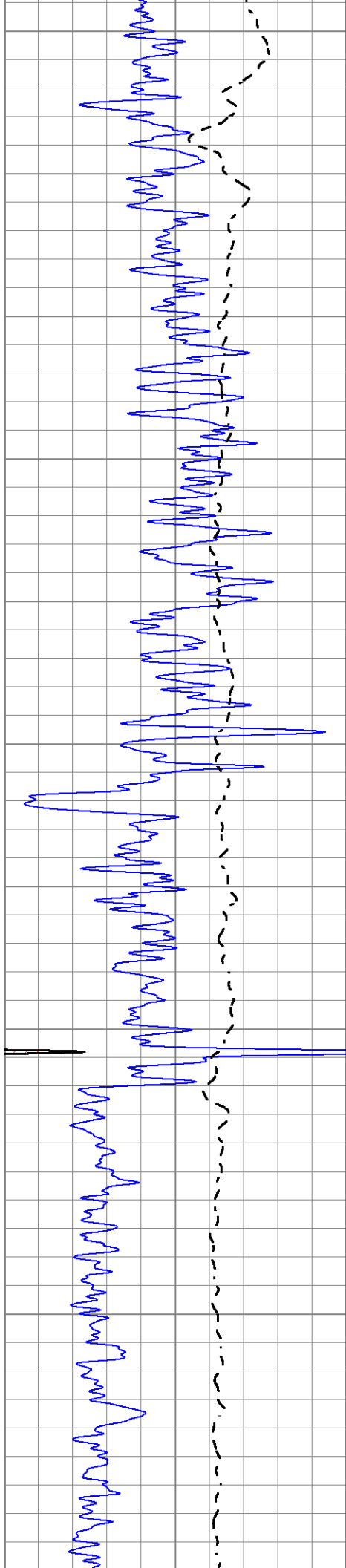
MAIN PASS

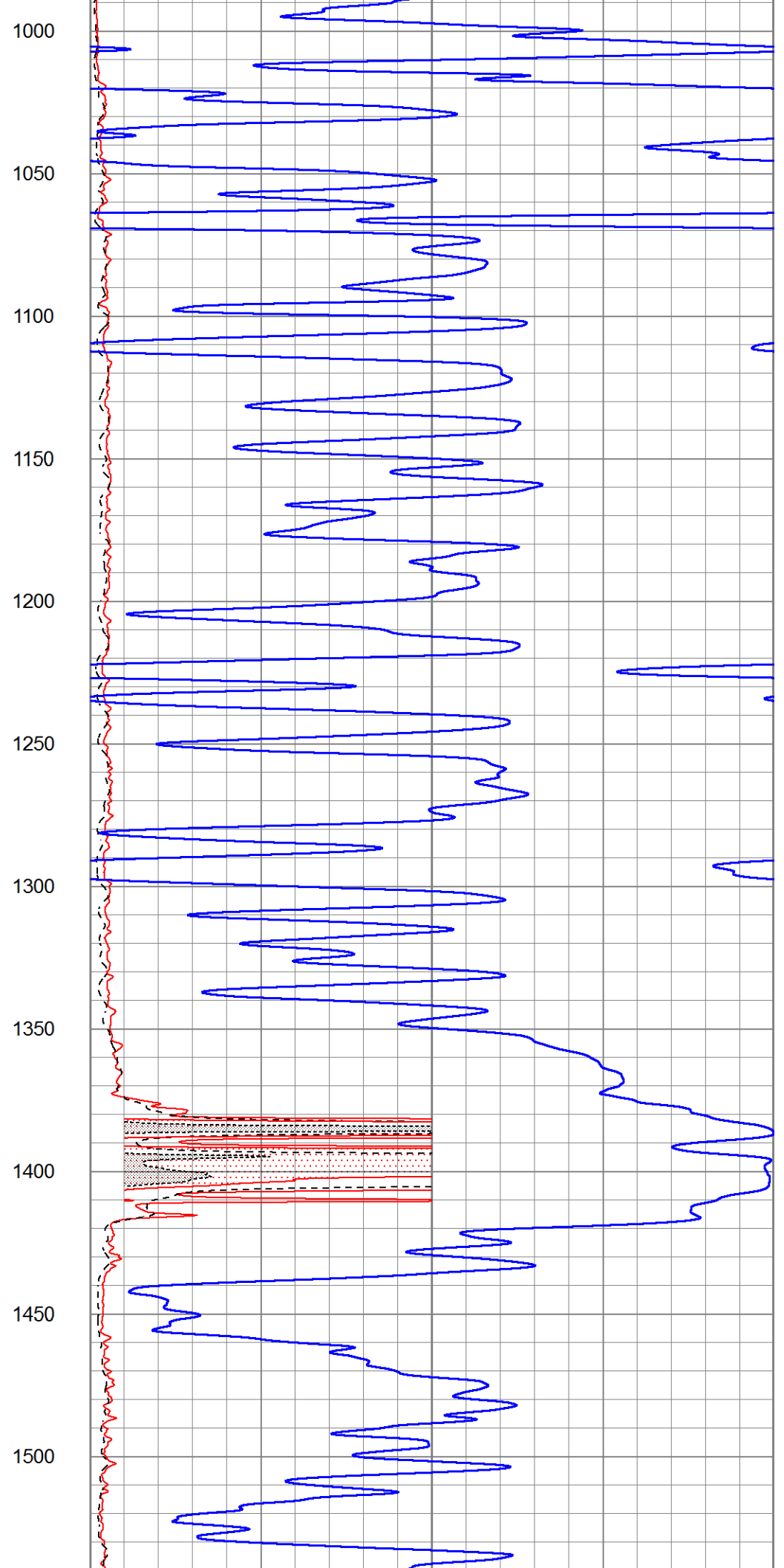
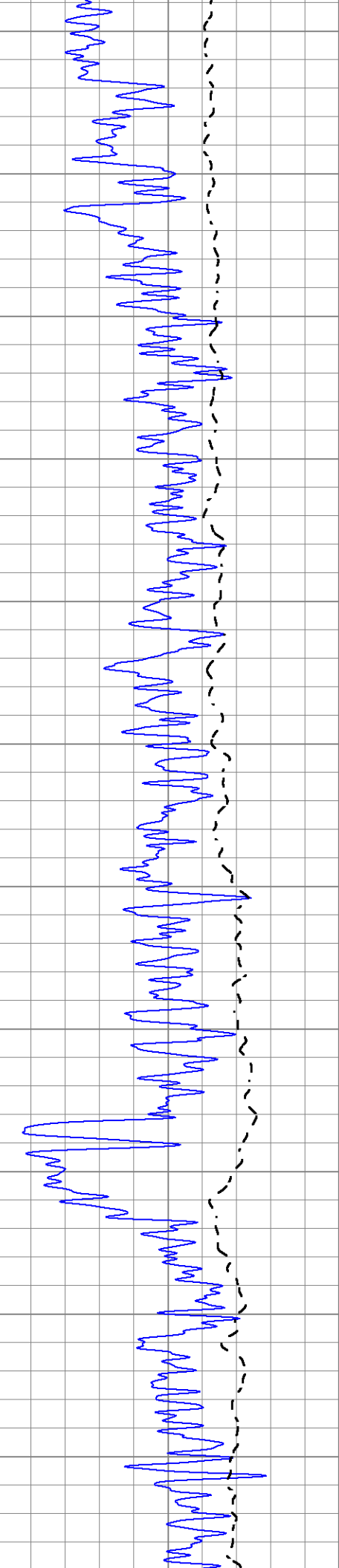
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 Presentation Format _dil2
 Dataset Creation Wed Nov 11 07:53:23 2020
 Charted by Depth in Feet scaled 1:600

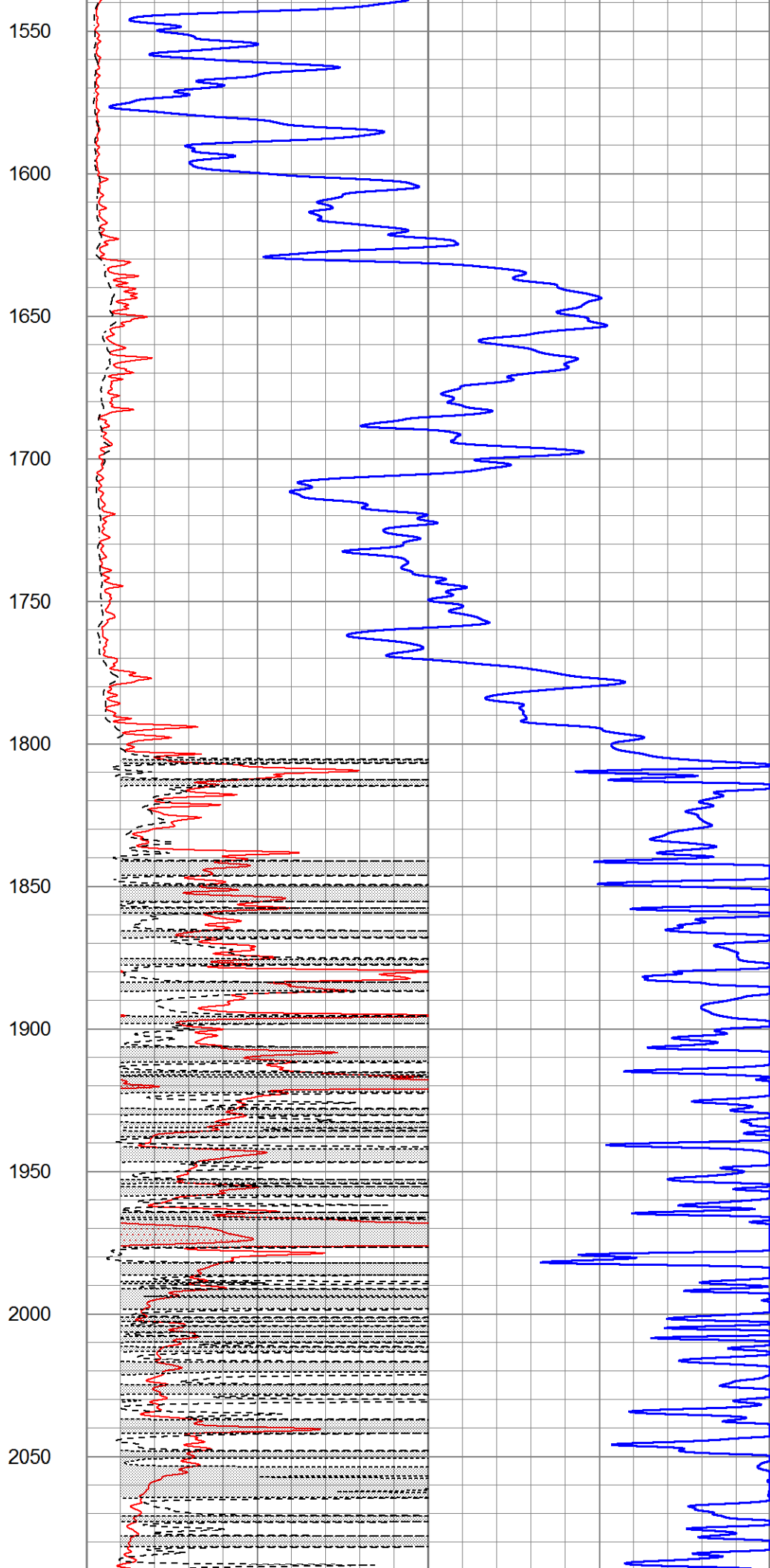
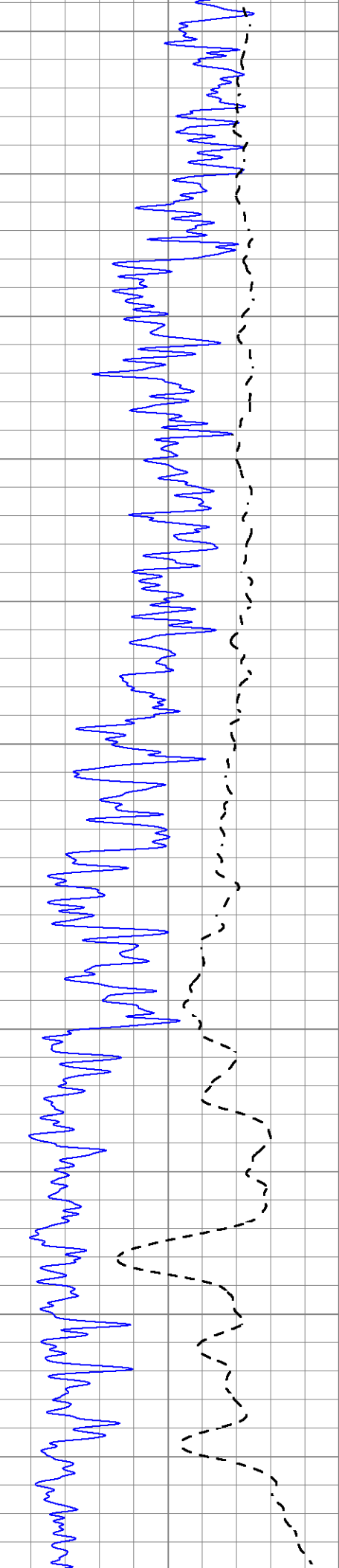
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-100	SP (mV)	100

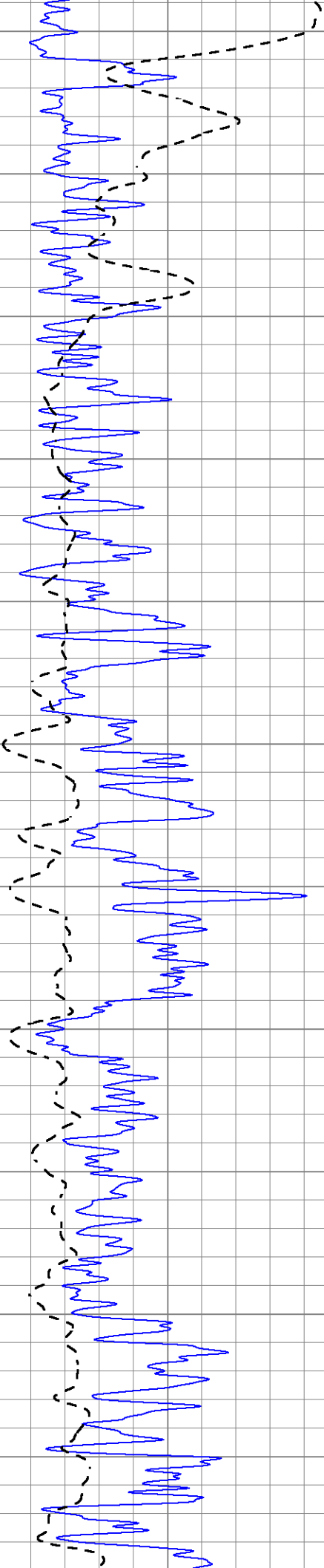
1000	CILD (mmho/m)	0
0	RLL3 (Ohm-m)	50
0	Deep Induction (Ohm-m)	50
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500



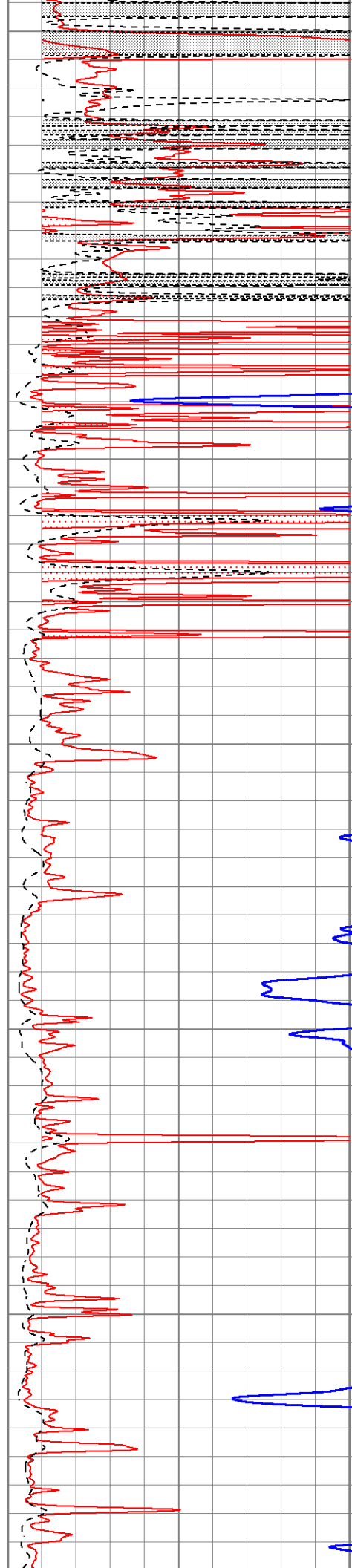


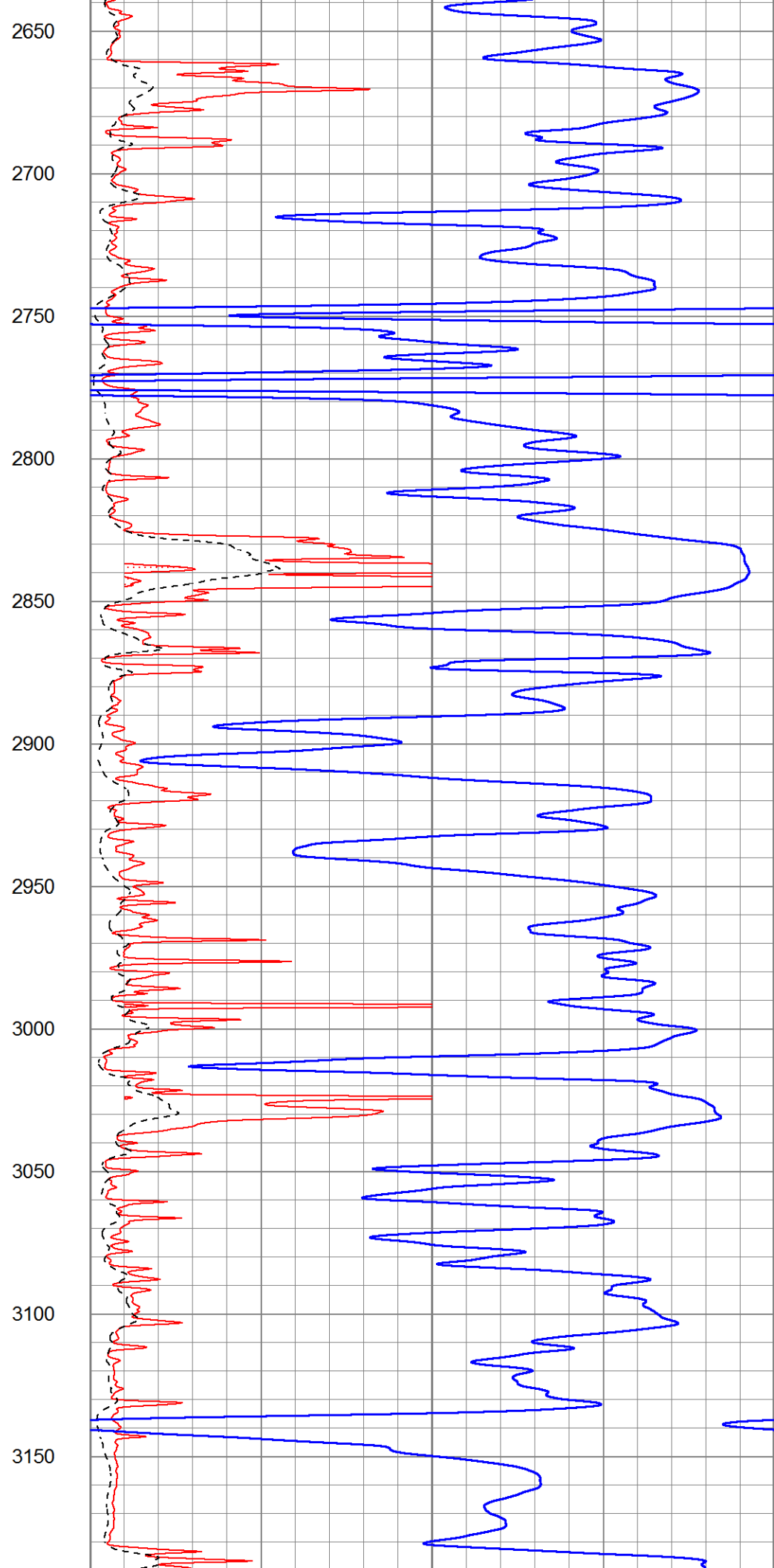
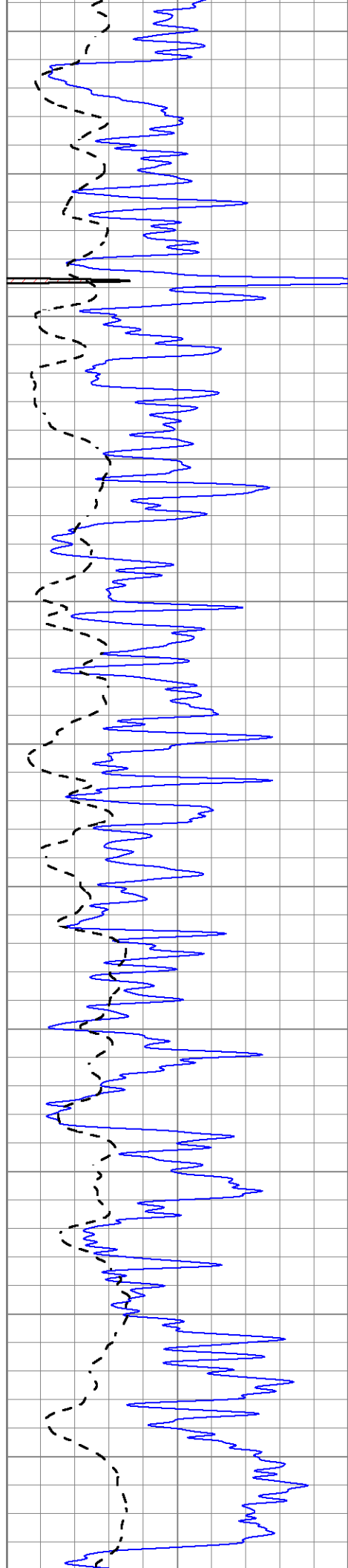


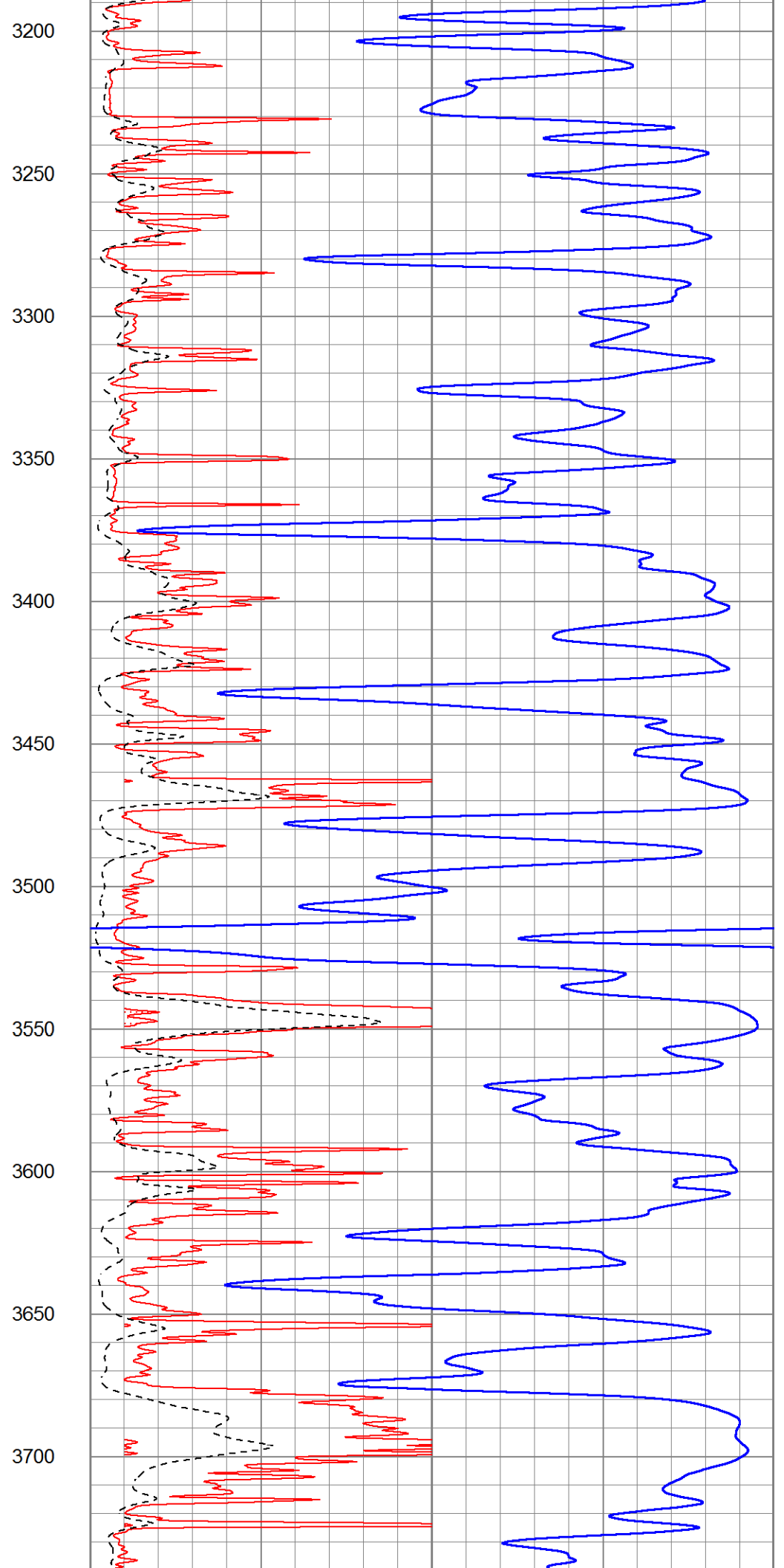
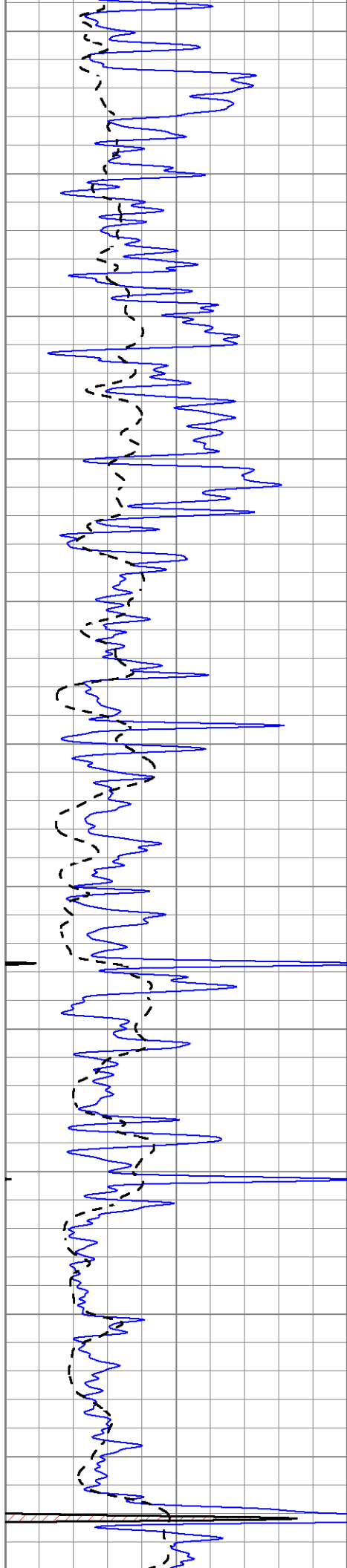


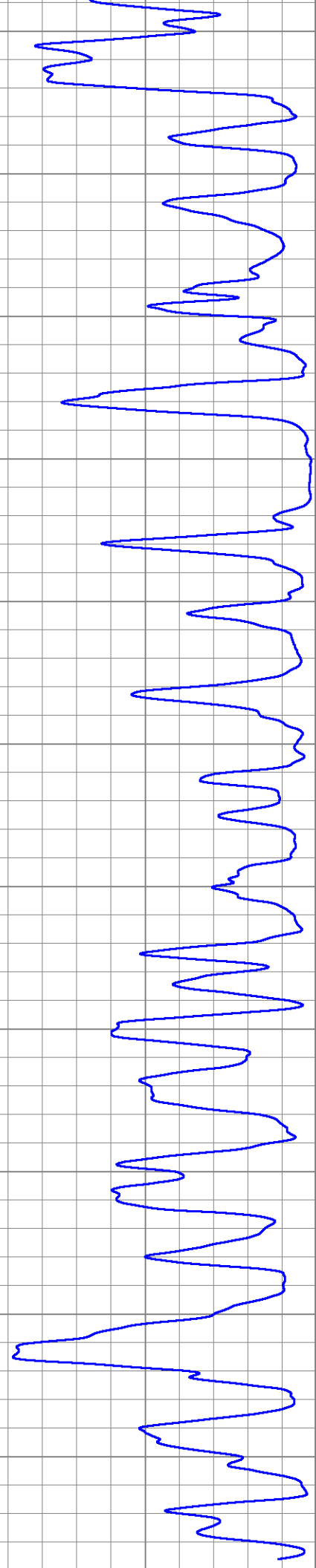
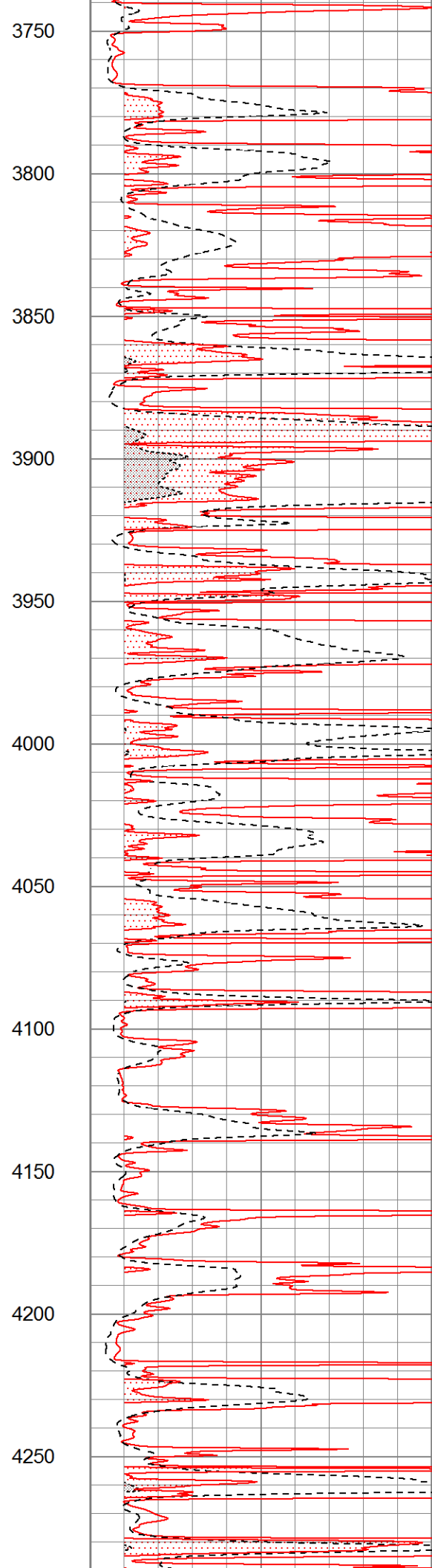
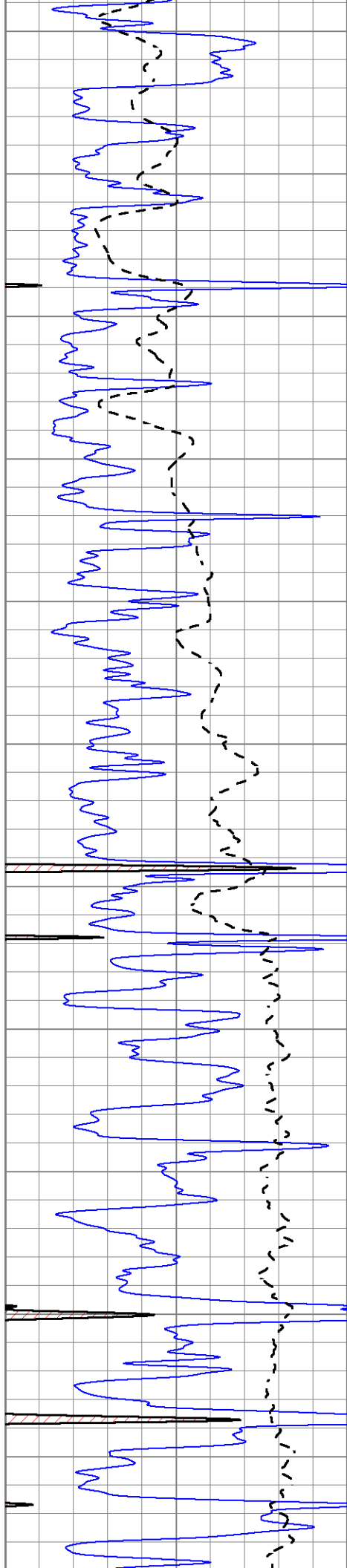


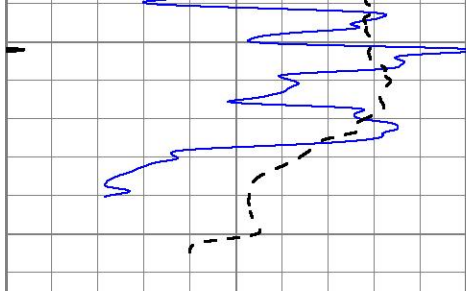
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2150
2200
2250
2300
2350
2400
2450
2500
2550
2600







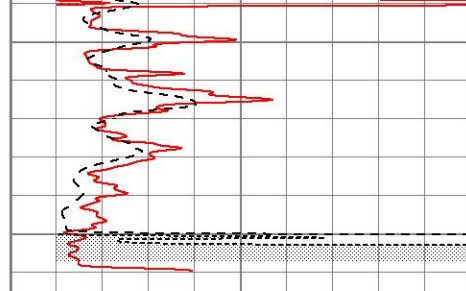




4300

4350

0	Gamma Ray (GAPI)	150
-100	SP (mV)	100



1000	CILD (mmho/m)	0
0	RLL3 (Ohm-m)	50

0	Deep Induction (Ohm-m)	50
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

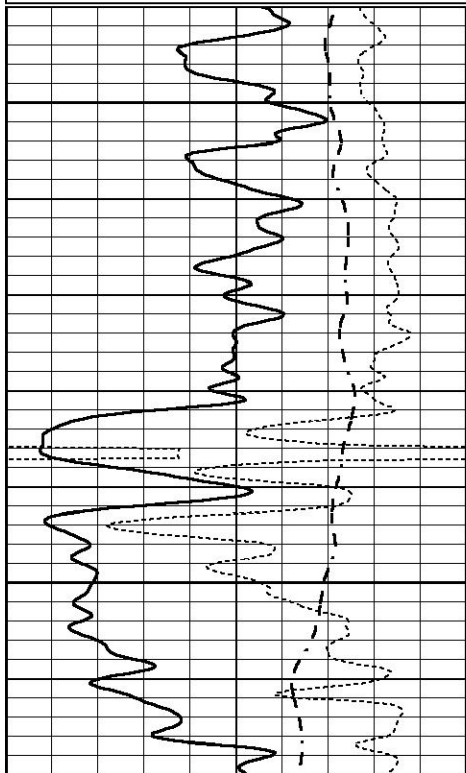


MAIN PASS

Database File 5237ddn.db
 Dataset Pathname pass3.1
 Presentation Format _dil
 Dataset Creation Wed Nov 11 07:53:23 2020
 Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

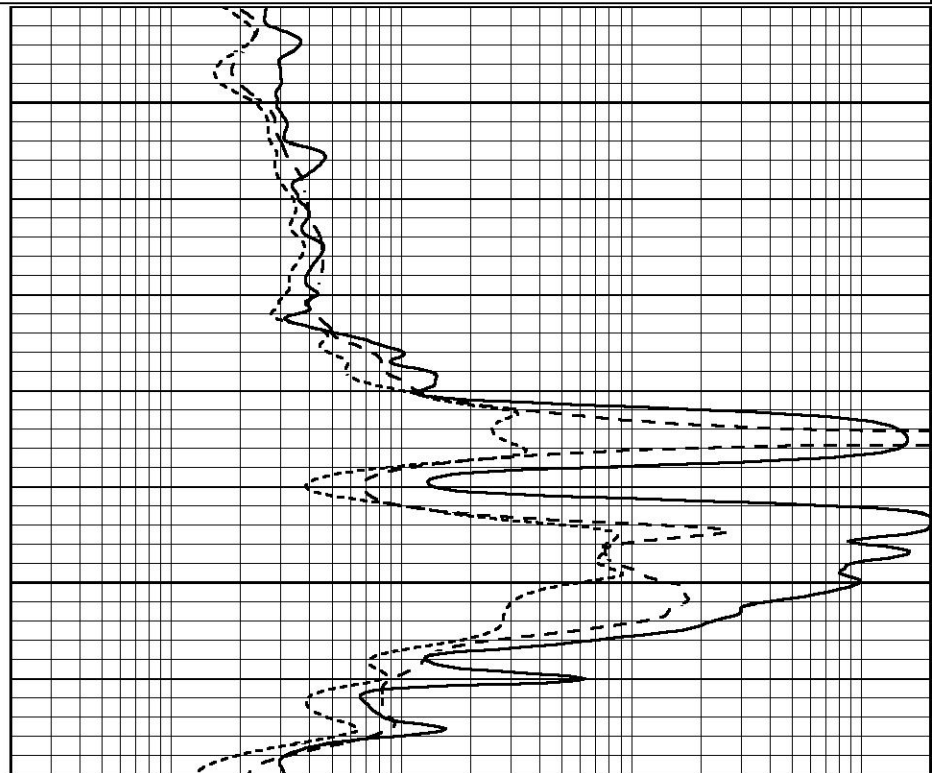
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000



1350

1400

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50



0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

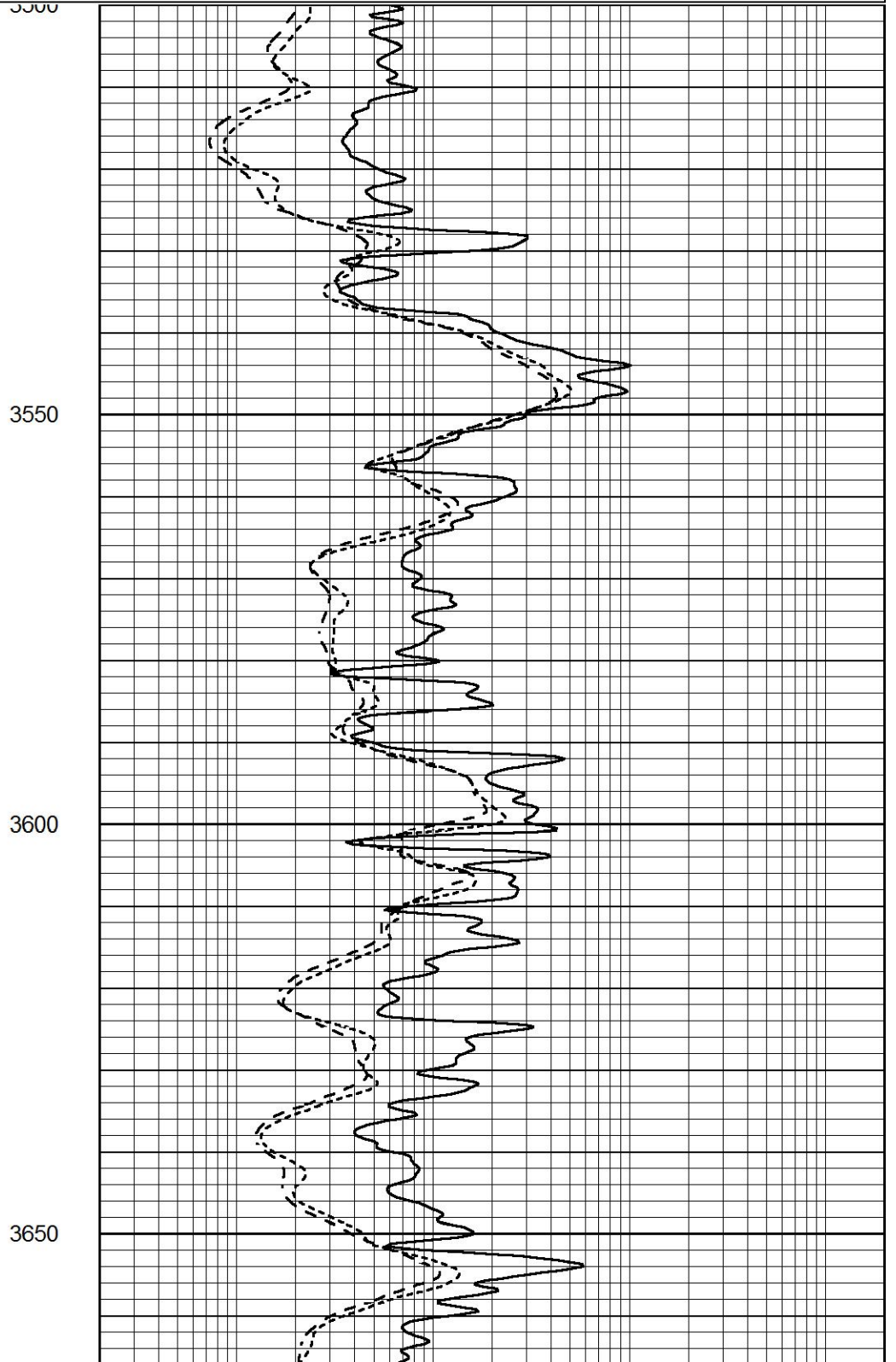
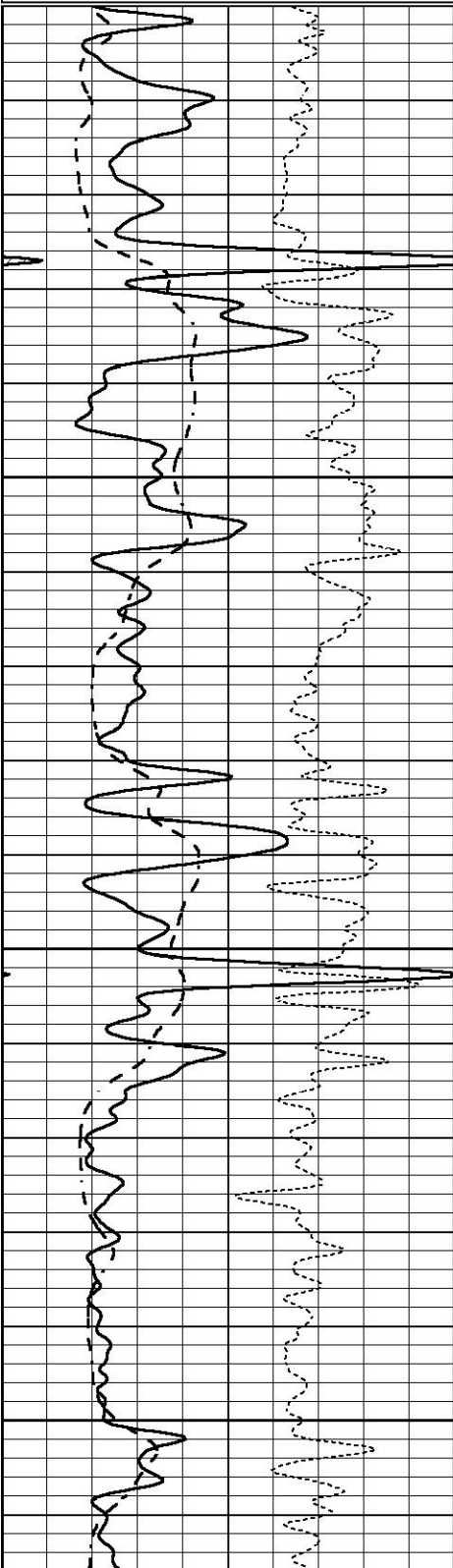


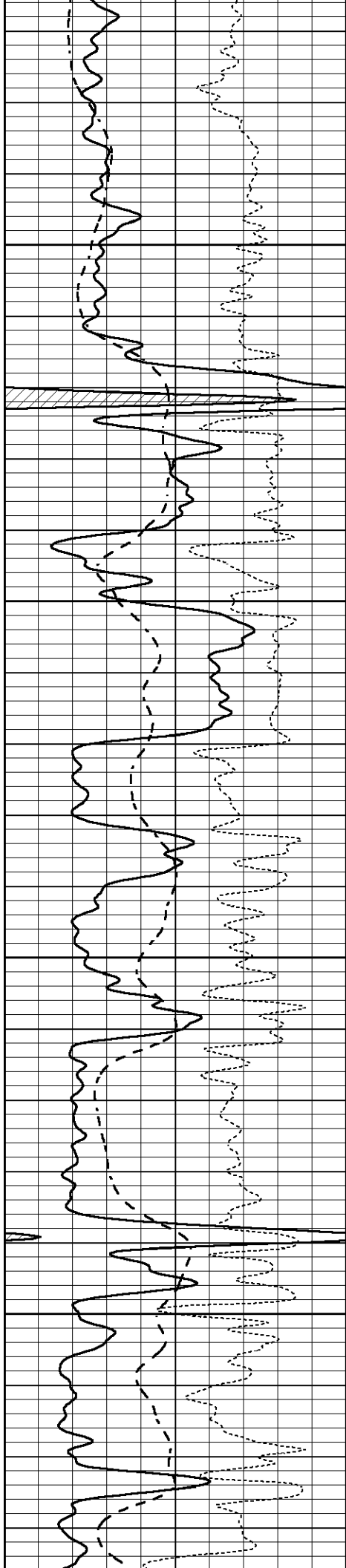
MAIN PASS

Database File 5237ddn.db
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Presentation Format _dil
Dataset Creation Wed Nov 11 07:53:23 2020
Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000



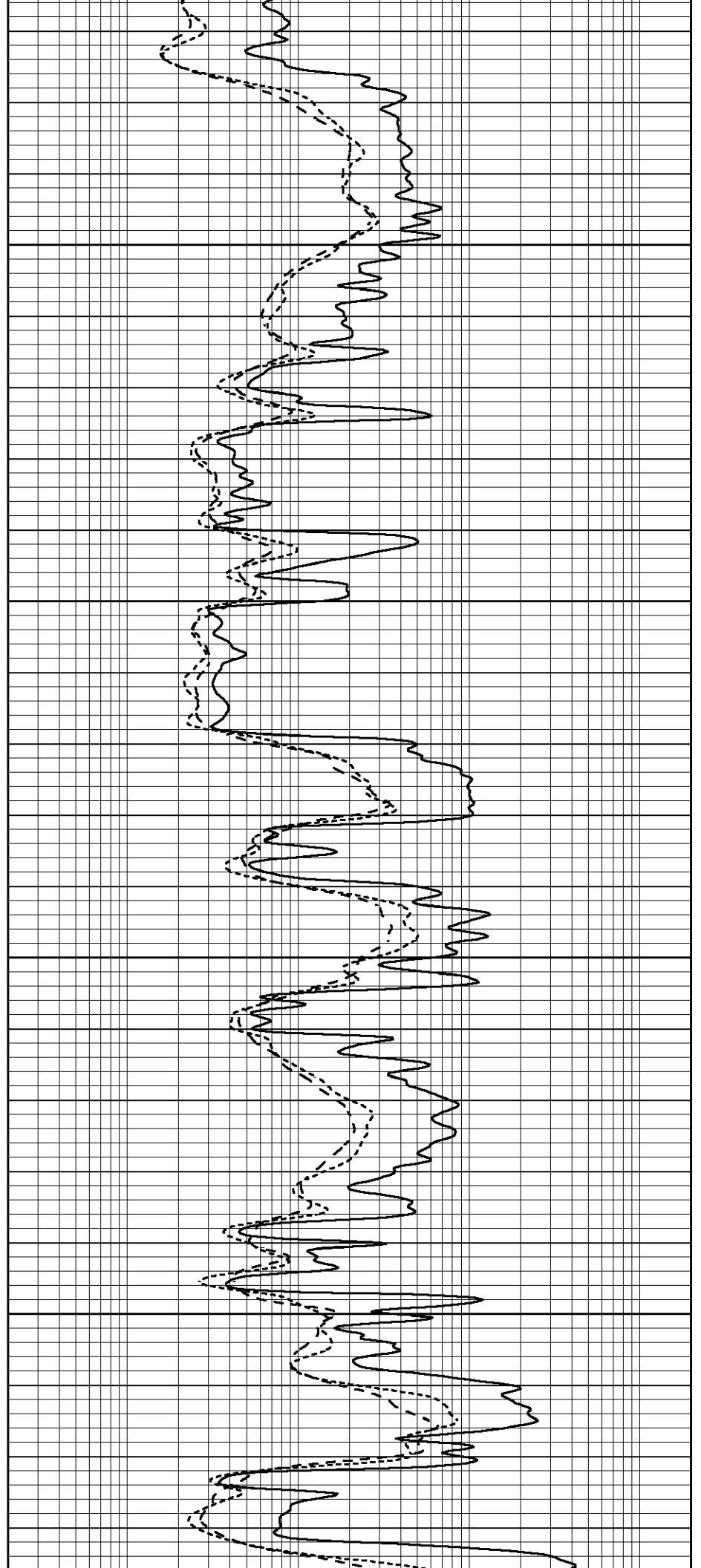


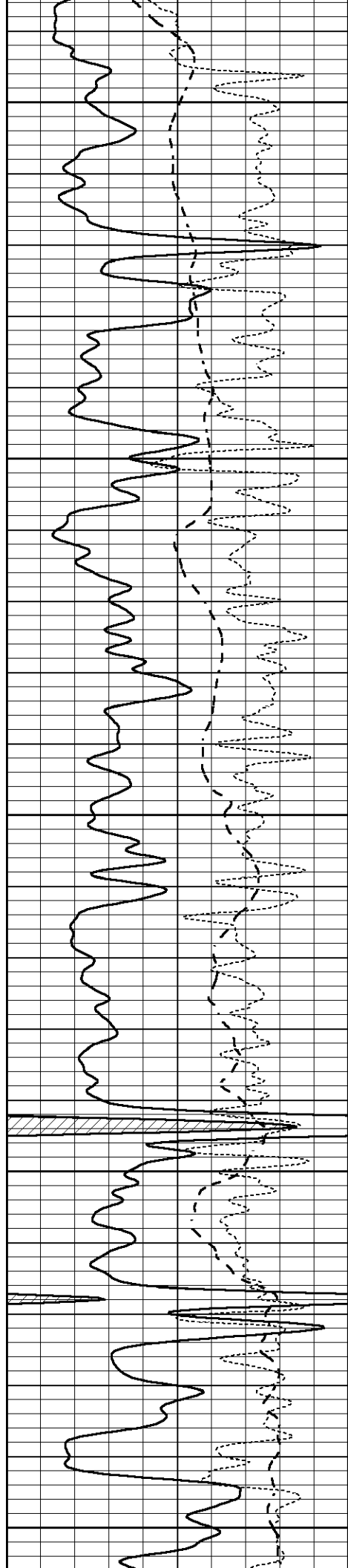
3700

3750

3800

3850





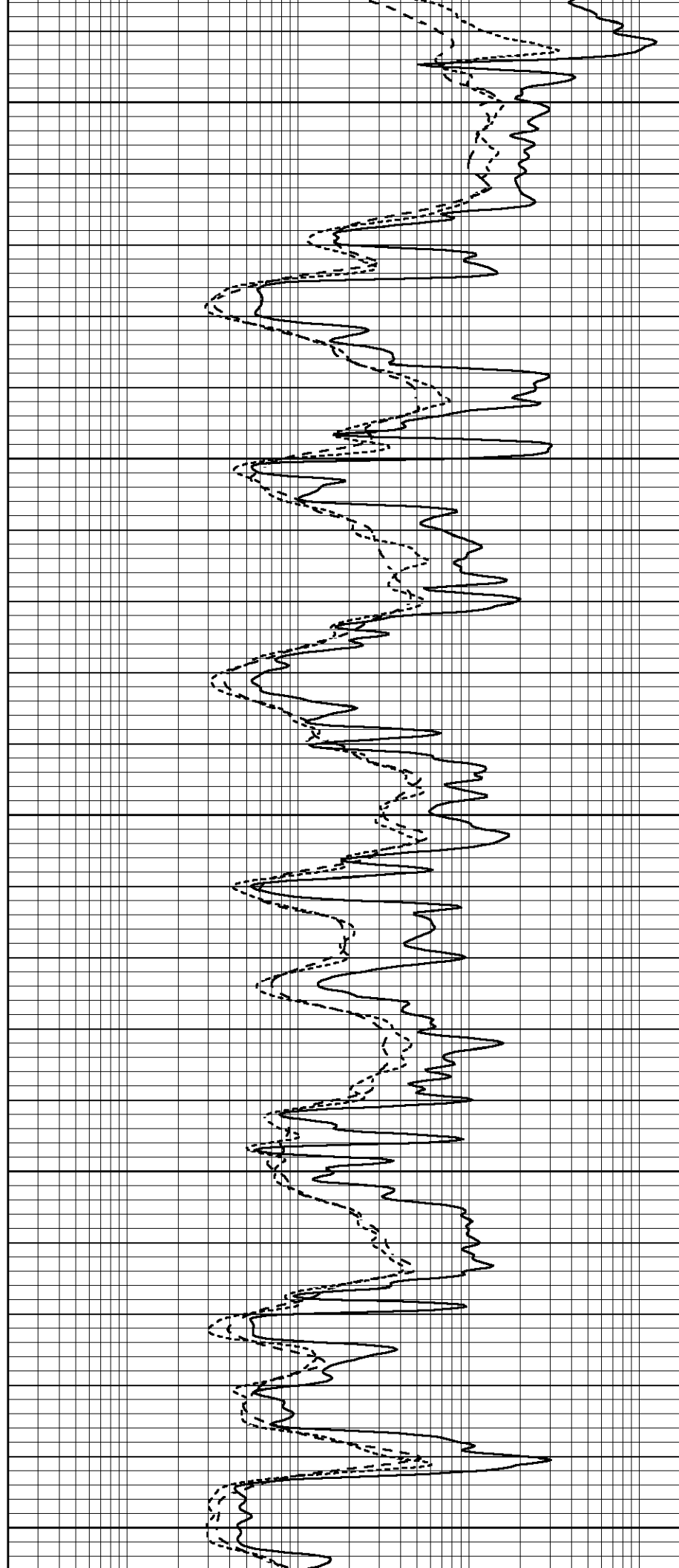
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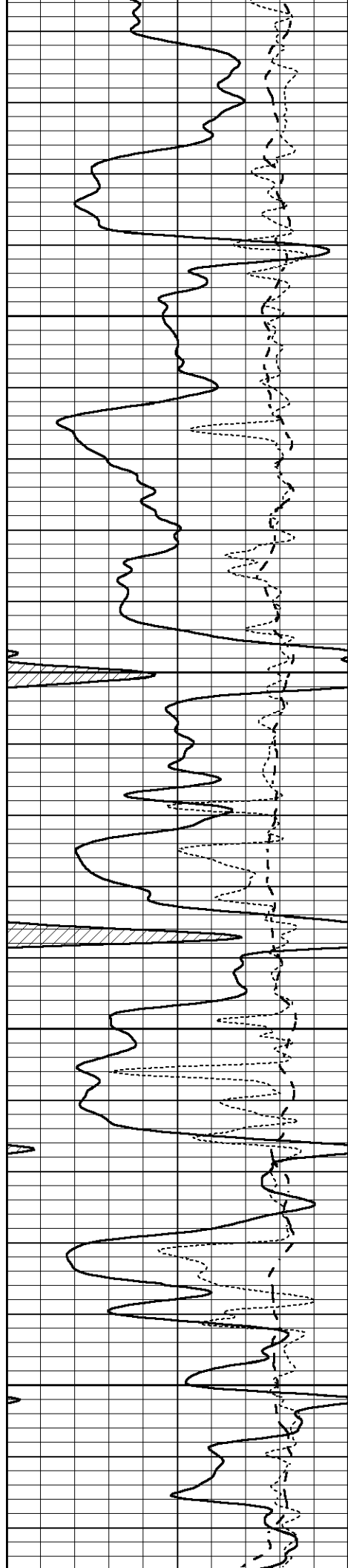
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4000

4050

4100



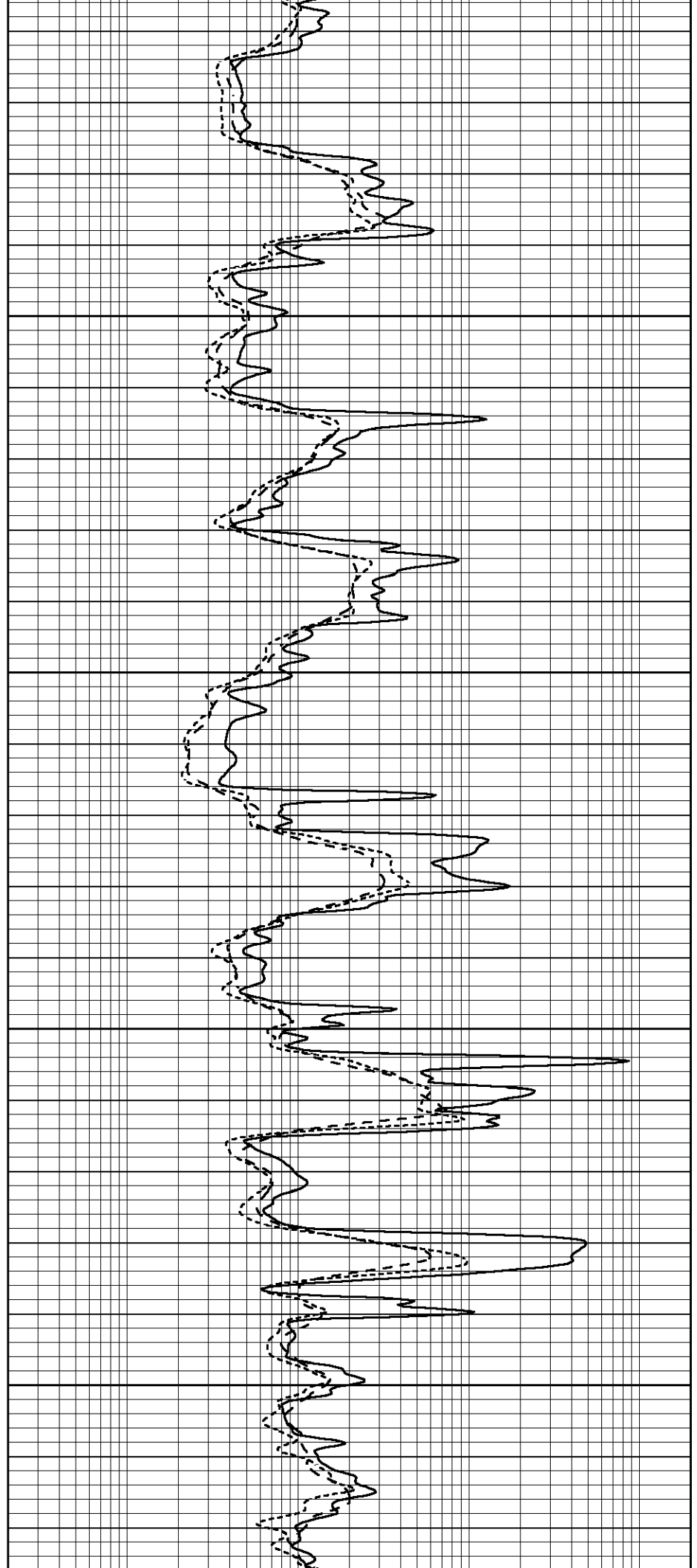


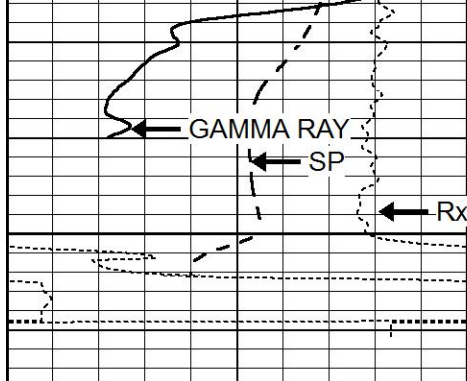
4150

4200

4250

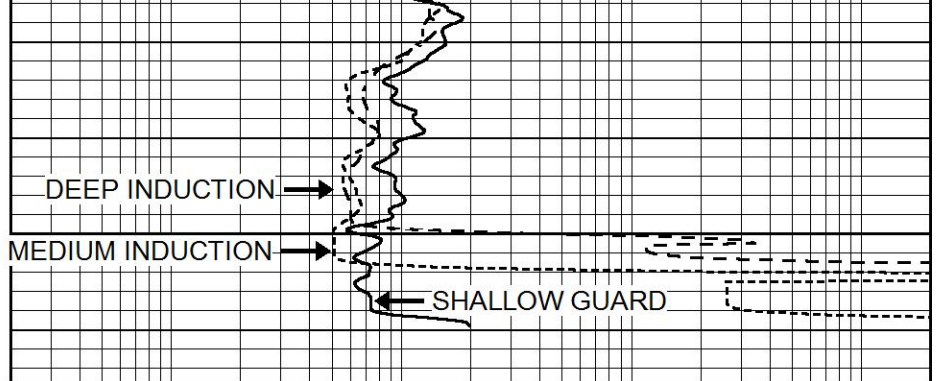
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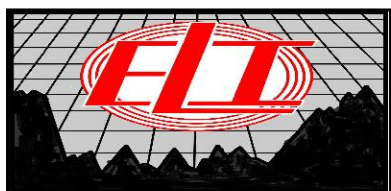


Rxo/Rt 4350
LTD 4359

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50



0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

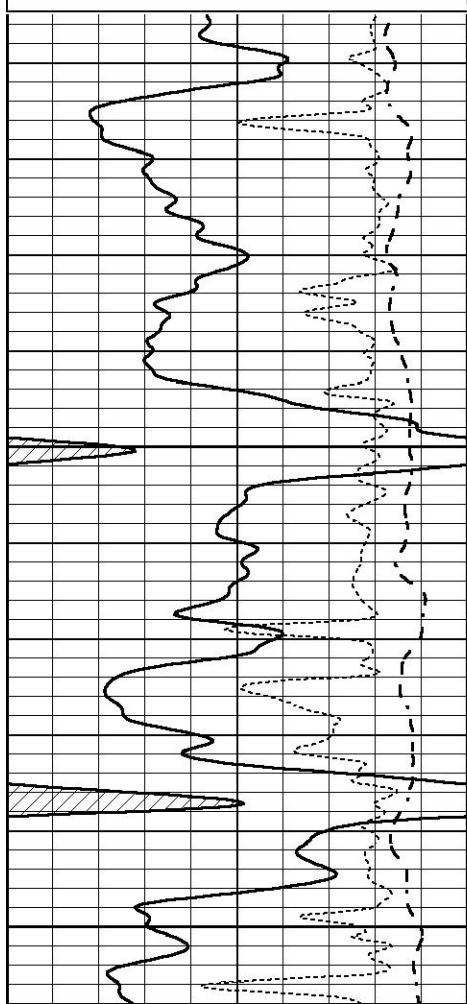


REPEAT SECTION

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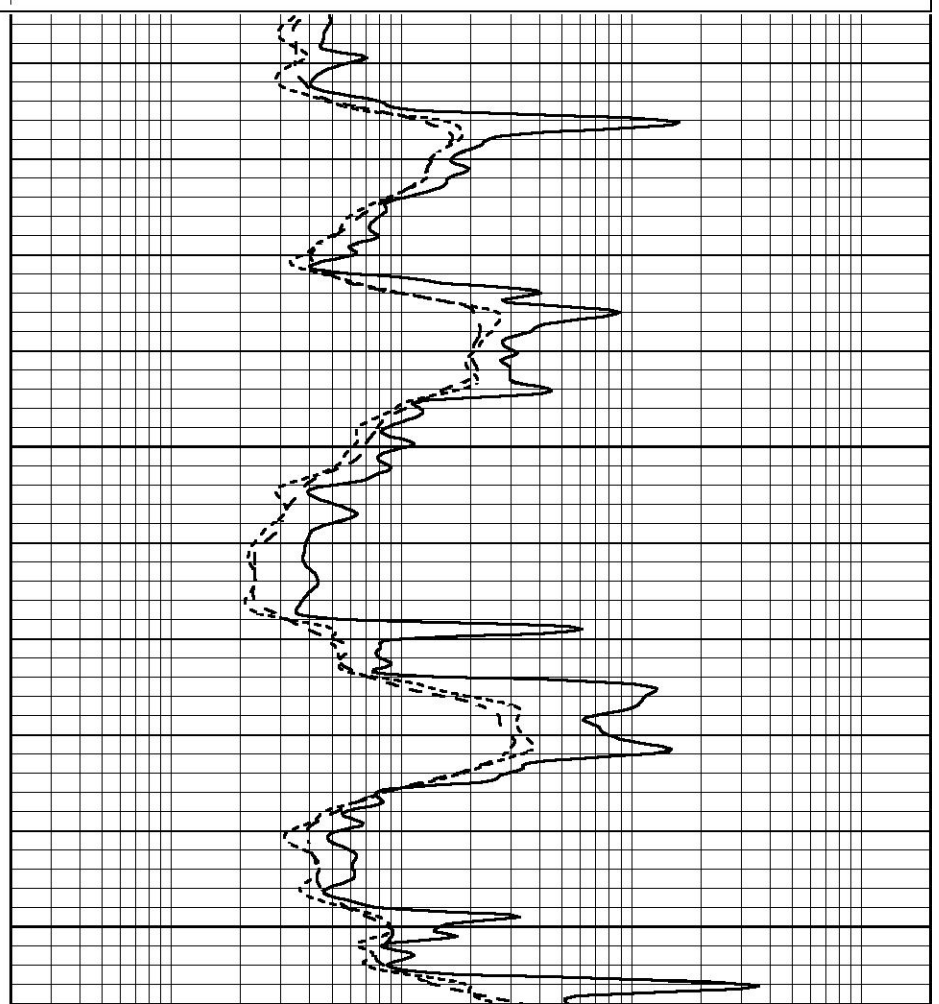
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

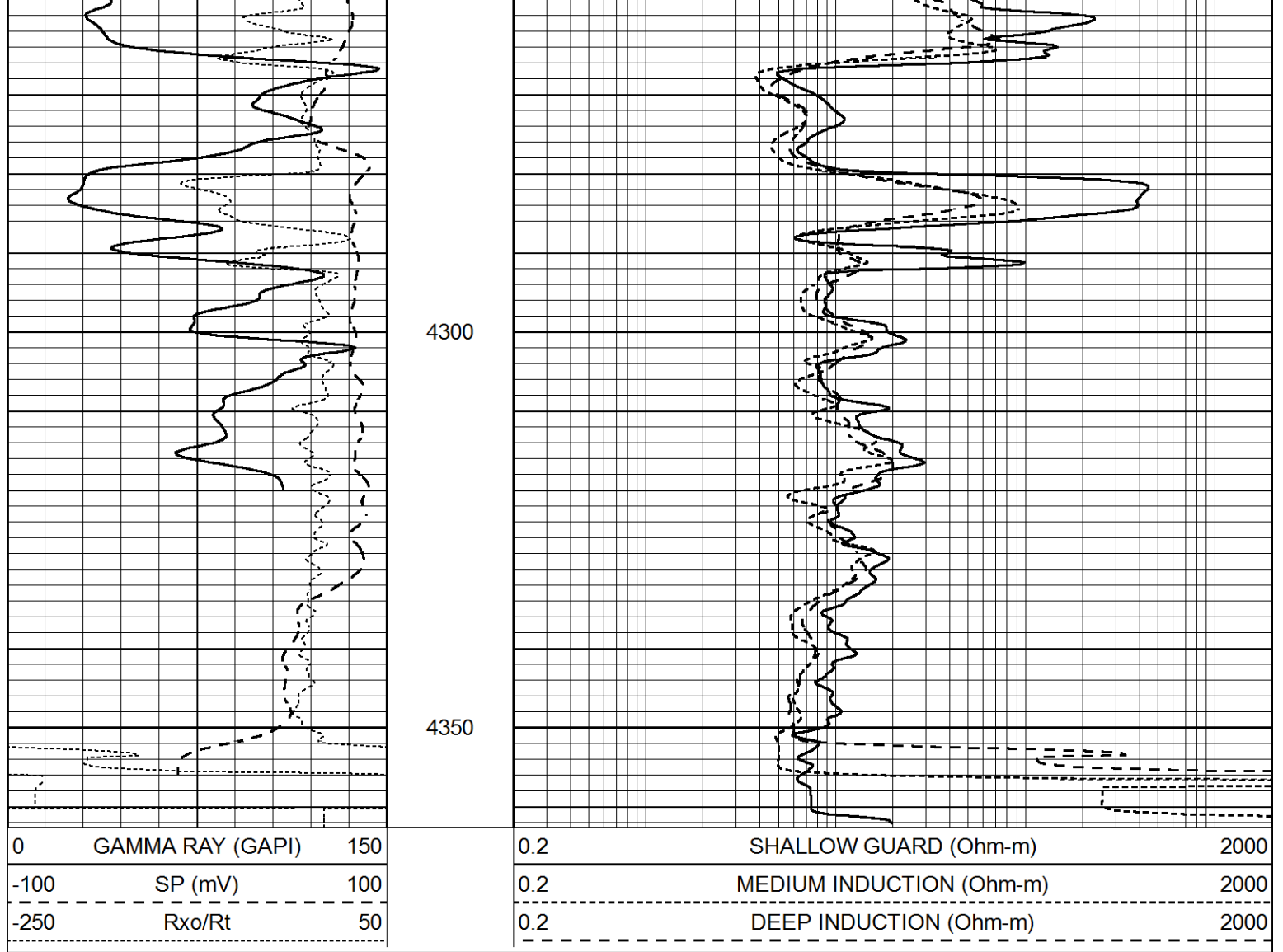
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000



4200

4250





Calibration Report

Database File 5237ddn.db
 Dataset Pathname pass2.1
 Dataset Creation Wed Nov 11 07:59:03 2020

Dual Induction Calibration Report

Serial-Model: FW1410-55-Probe
 Surface Cal Performed: Tue Feb 19 11:44:18 2019
 Downhole Cal Performed: Tue Feb 19 11:44:24 2019
 After Survey Verification Performed: Tue Feb 19 11:44:27 2019

Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop	V	Air	Loop	mmho/m	m	b
Deep	0.011	0.656	V	1.000	400.000	mmho/m	618.595	-5.524
Medium	-0.000	0.731	V	1.000	464.000	mmho/m	632.856	1.197
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.007	0.649	V	0.000	400.000	mmho/m	623.784	-4.595
Medium	0.004	0.743	V	0.000	464.000	mmho/m	627.284	-2.251

Downhole Calibration

Readings		References		Results	
Zero	Cal	Zero	Cal	m'	b'

4564.4	7712.2	8.0	14.0	0.0	-0.9
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Before Survey Caliper Verification		Performed:			
	Reference	Reading			
Caliper (in)	_____	_____			

After Survey Caliper Verification		Performed:			
	Reference	Reading			
Caliper (in)	_____	_____			

Compensated Neutron Calibration Report

Serial Number:	080621PMC
Tool Model:	NABORS

PRE-SURVEY VERIFICATION				
Detector	Readings	Measured	Target	
Short Space	cps			
Long Space	cps	pu	pu	

POST-SURVEY VERIFICATION				
Detector	Readings	Measured	Target	
Short Space	cps			
Long Space	cps	pu	pu	

Gamma Ray Calibration Report

Serial Number:	7			
Tool Model:	Probe1			
Performed:	Tue Dec 10 10:02:55 2019			
Calibrator Value:	1.0	GAPI		
Background Reading:	0.0	cps		
Calibrator Reading:	1.0	cps		
Sensitivity:	0.4800	GAPI/cps		