



DUAL INDUCTION LOG

Company L. D. DRILLING, INC.

Well #1-20 SPORT

Field WILDCAT

County GOVE State KANSAS

Location: API #: 15-063-22379-0000

422' FNL & 2363' FEL

SEC 20 TWP 15S RGE 29W

Permanent Datum GROUND LEVEL Elevation 2492
Log Measured From KELLY BUSHING 5' A.G.L.
Drilling Measured From KELLY BUSHING

Other Services
CDL/CNL
MEL
Elevation
K.B. 2497
D.F. 2495
G.L. 2492

Date 12/13/20

Run Number ONE

Depth Driller 4300

Depth Logger 4308

Bottom Logged Interval 4306

Top Log Interval 00

Casing Driller 8 5/8" @ 262

Casing Logger 262

Bit Size 7 7/8

Type Fluid in Hole CHEMICAL MUD

Density / Viscosity 9.2/52

pH / Fluid Loss 10.5/8.0

Source of Sample FLOWLINE

Rm @ Meas. Temp .95 @ 72F

Rmf @ Meas. Temp .71 @ 72F

Rmc @ Meas. Temp 1.14 @ 72F

Source of Rmf / Rmc MEASUREMENT

Rm @ BHT .57 @ 118F

Time Circulation Stopped 2 HOURS

Time Logger on Bottom 1111

Maximum Recorded Temperature 118F

Equipment Number 3802

Location HAYS, KANSAS

Recorded By JASON CAPPELLUCCI

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.

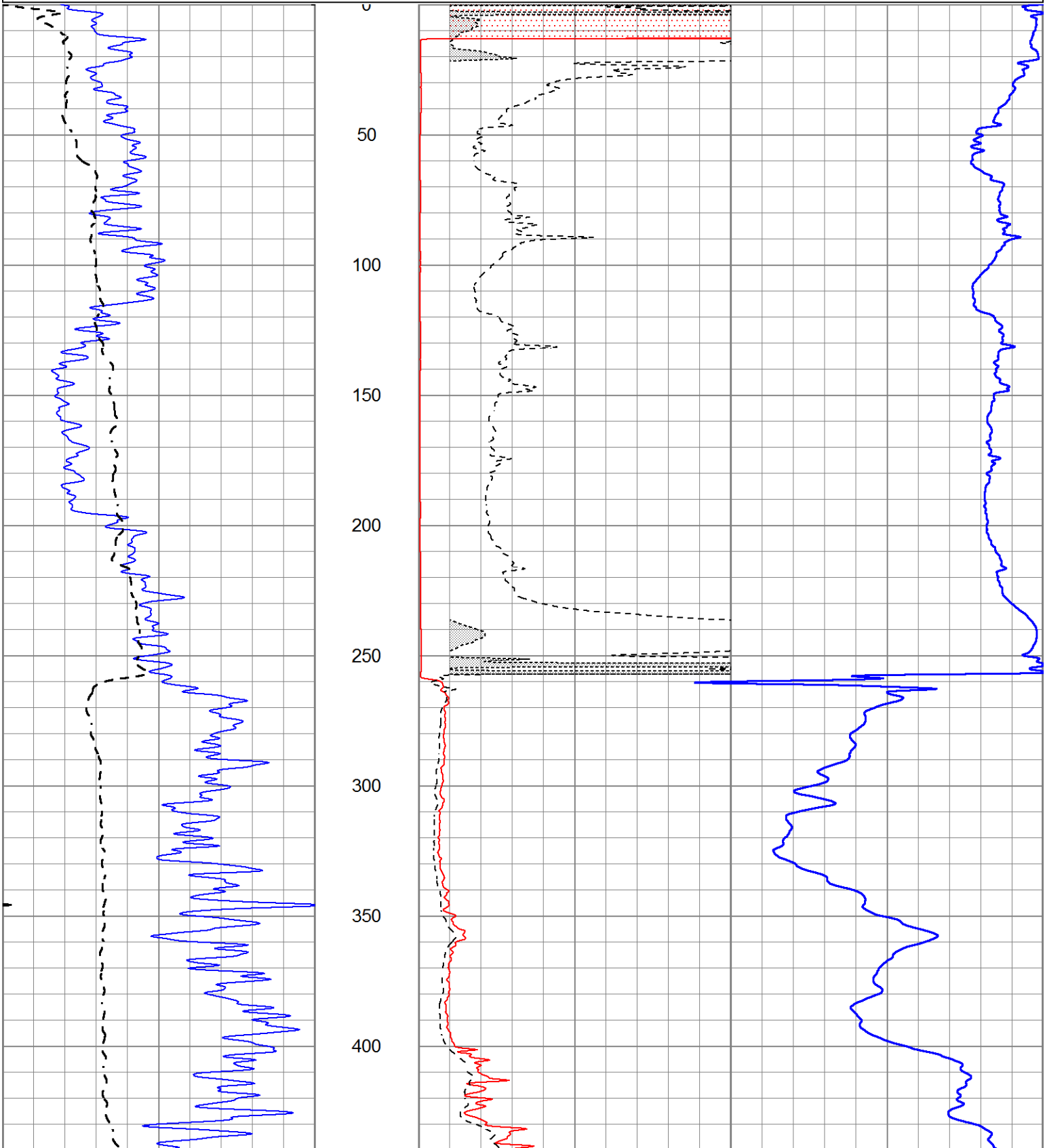
Comments

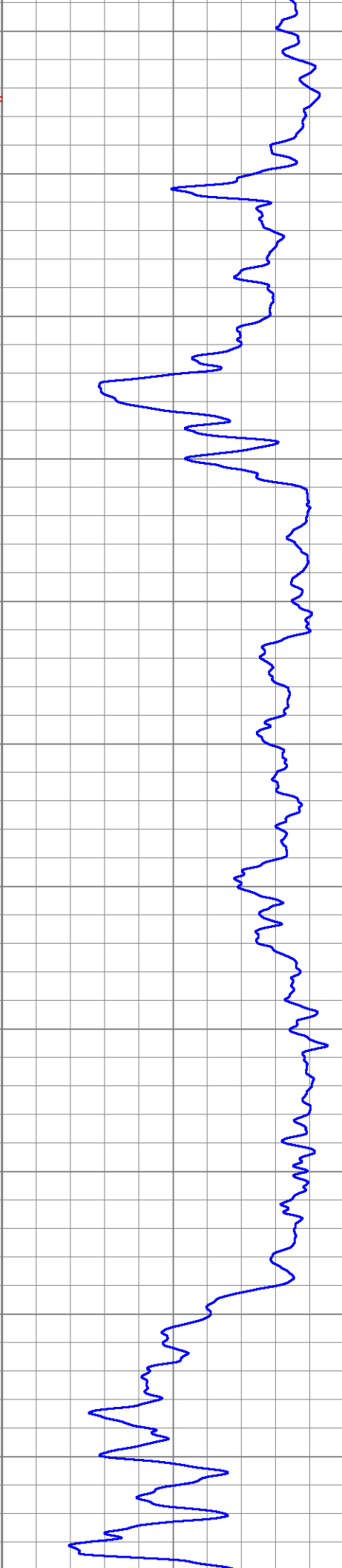
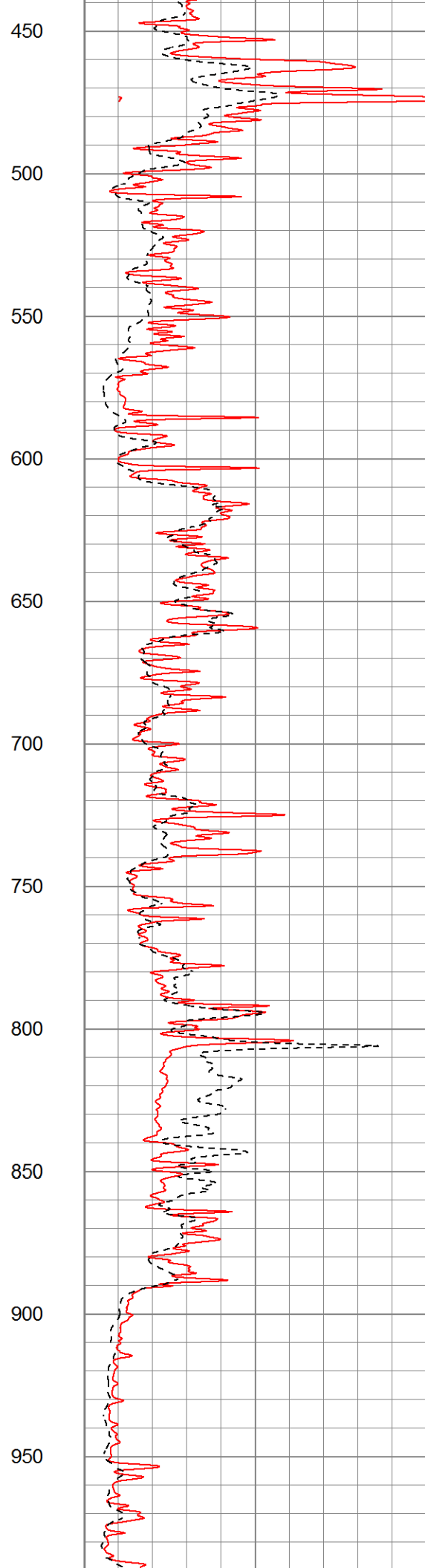
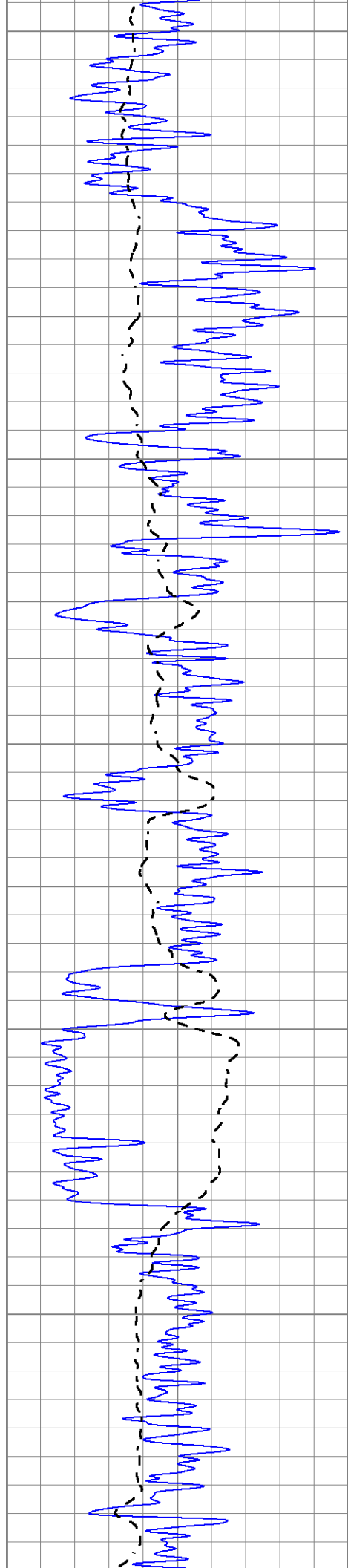
THANK YOU FOR USING ELI WIRELINE SERVICES, HAYS, KS. (785) 628-6395
DIRECTIONS
GOVE, KS. - SOUTH TO RD. C (2 MILES NORTH OF COUNTY LINE) - 3 1/4 WEST
NORTH INTO

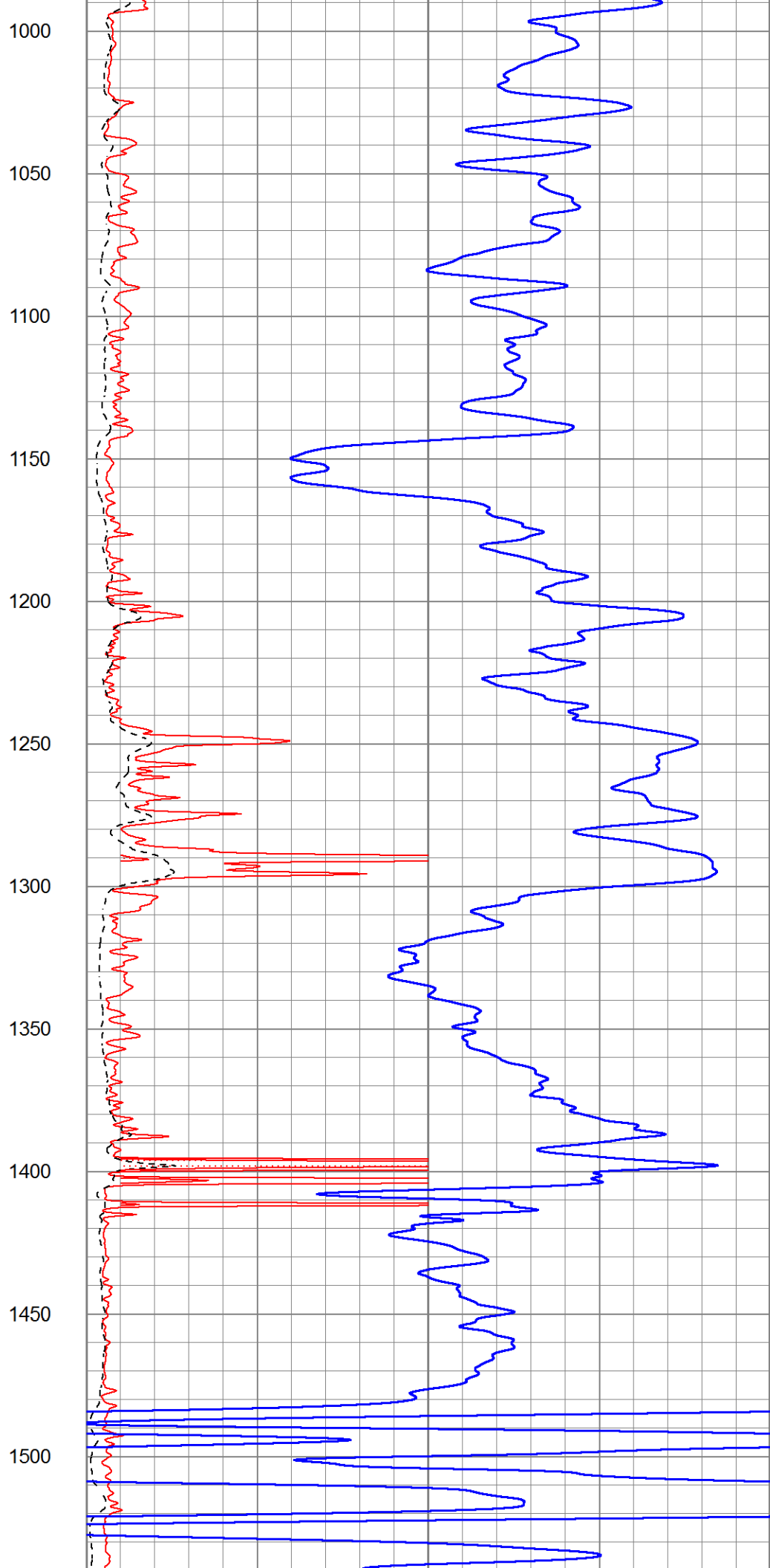
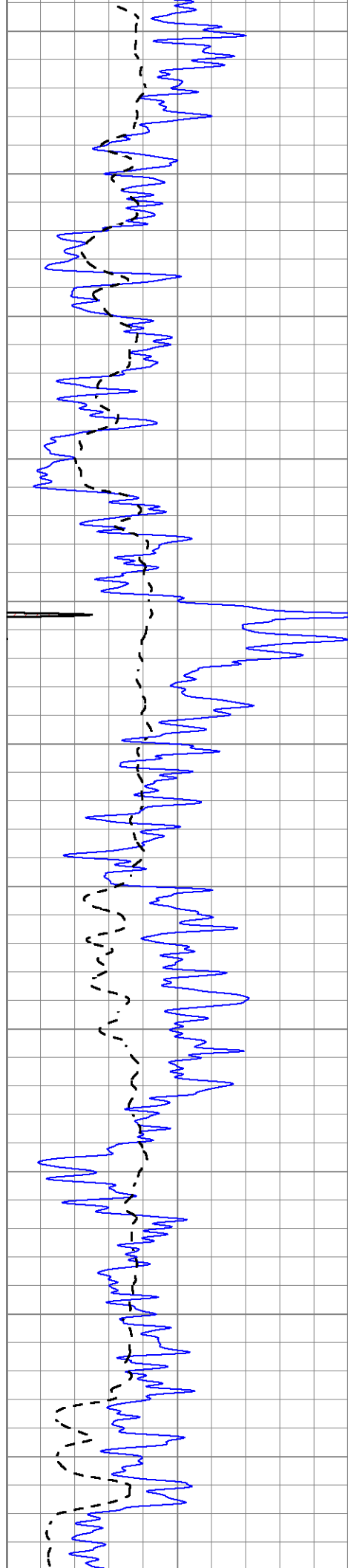


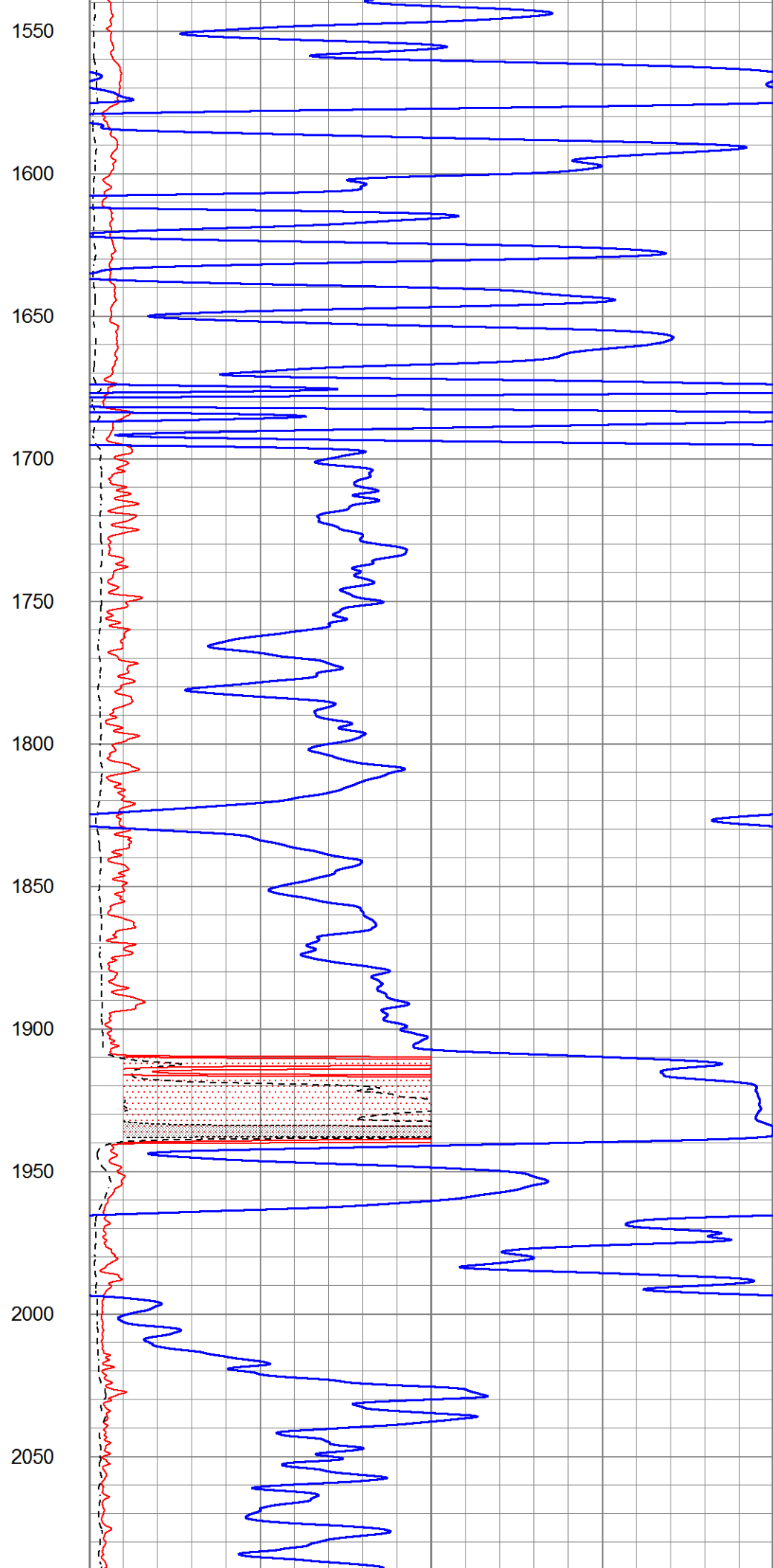
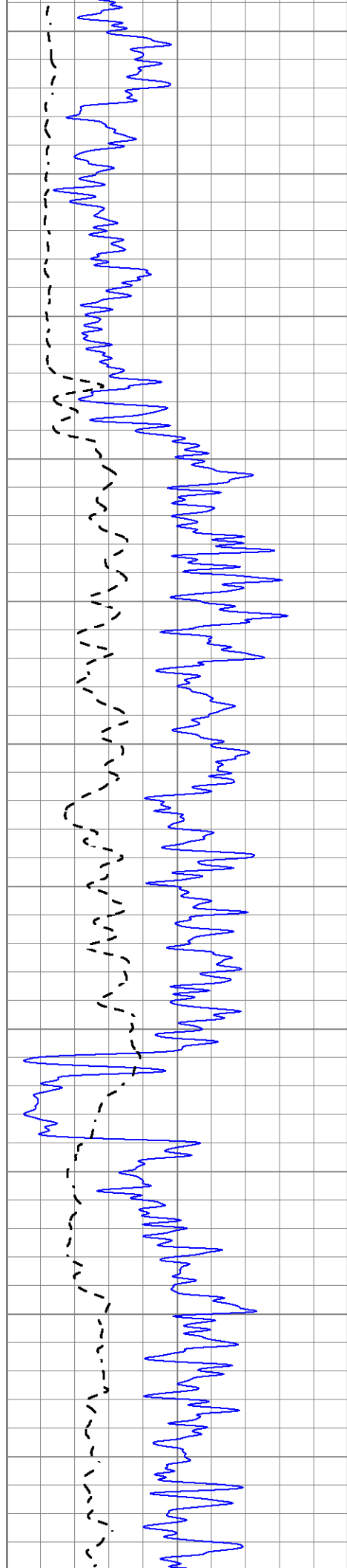
MAIN SECTION

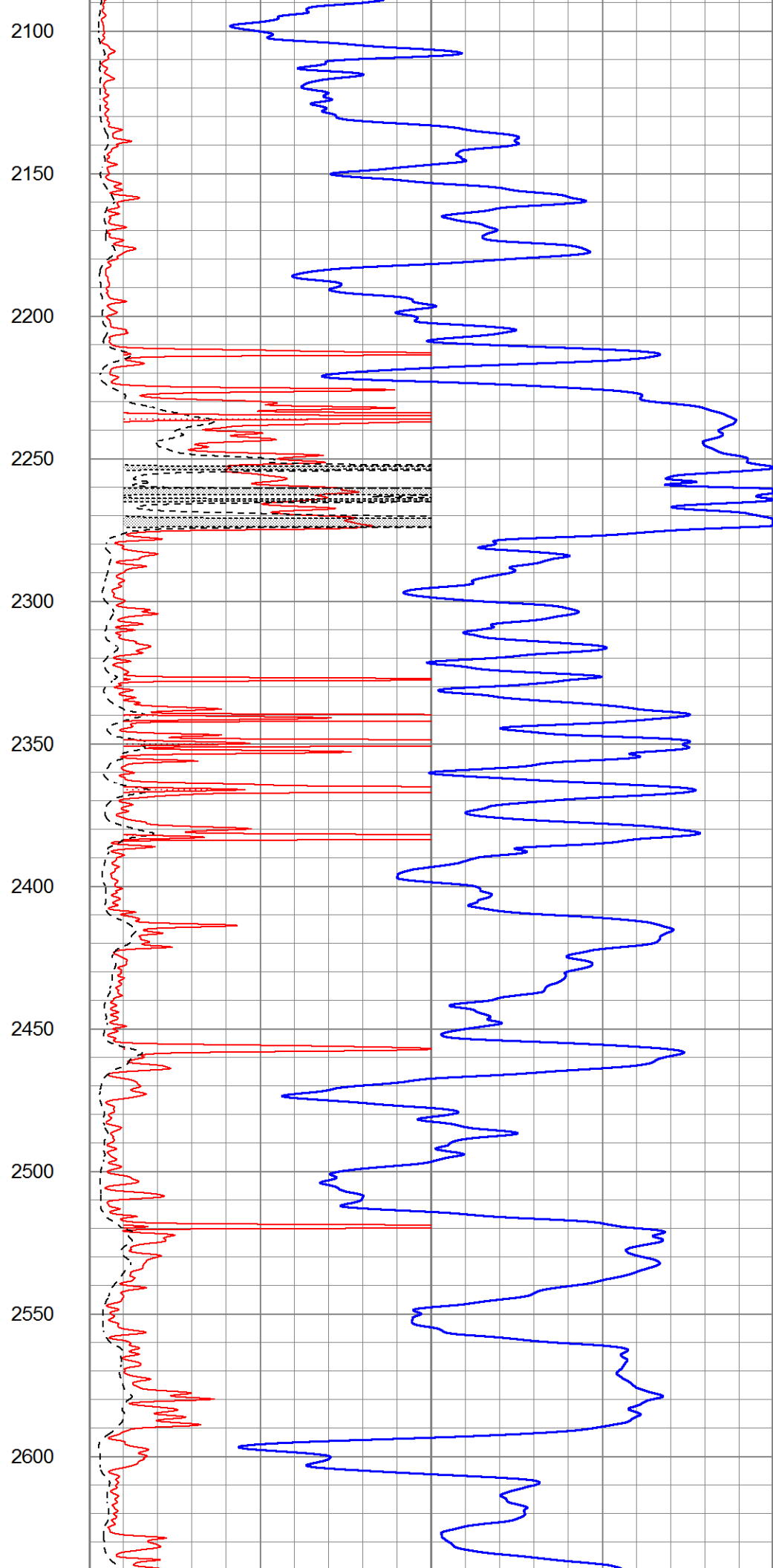
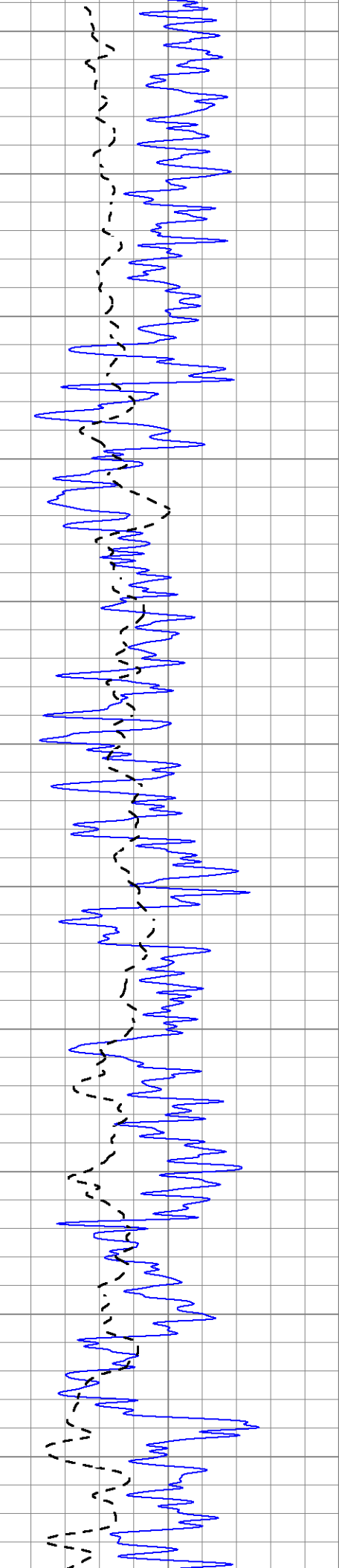
0	Gamma Ray (GAPI)	150	1000	CILD (mmho/m)	0
-100	SP (mV)	100	0	RLL3 (Ohm-m)	50
-----			0	Deep Induction (Ohm-m)	50
			50	RILD X10 (Ohm-m)	500
			50	RLL3 X10 (Ohm-m)	500

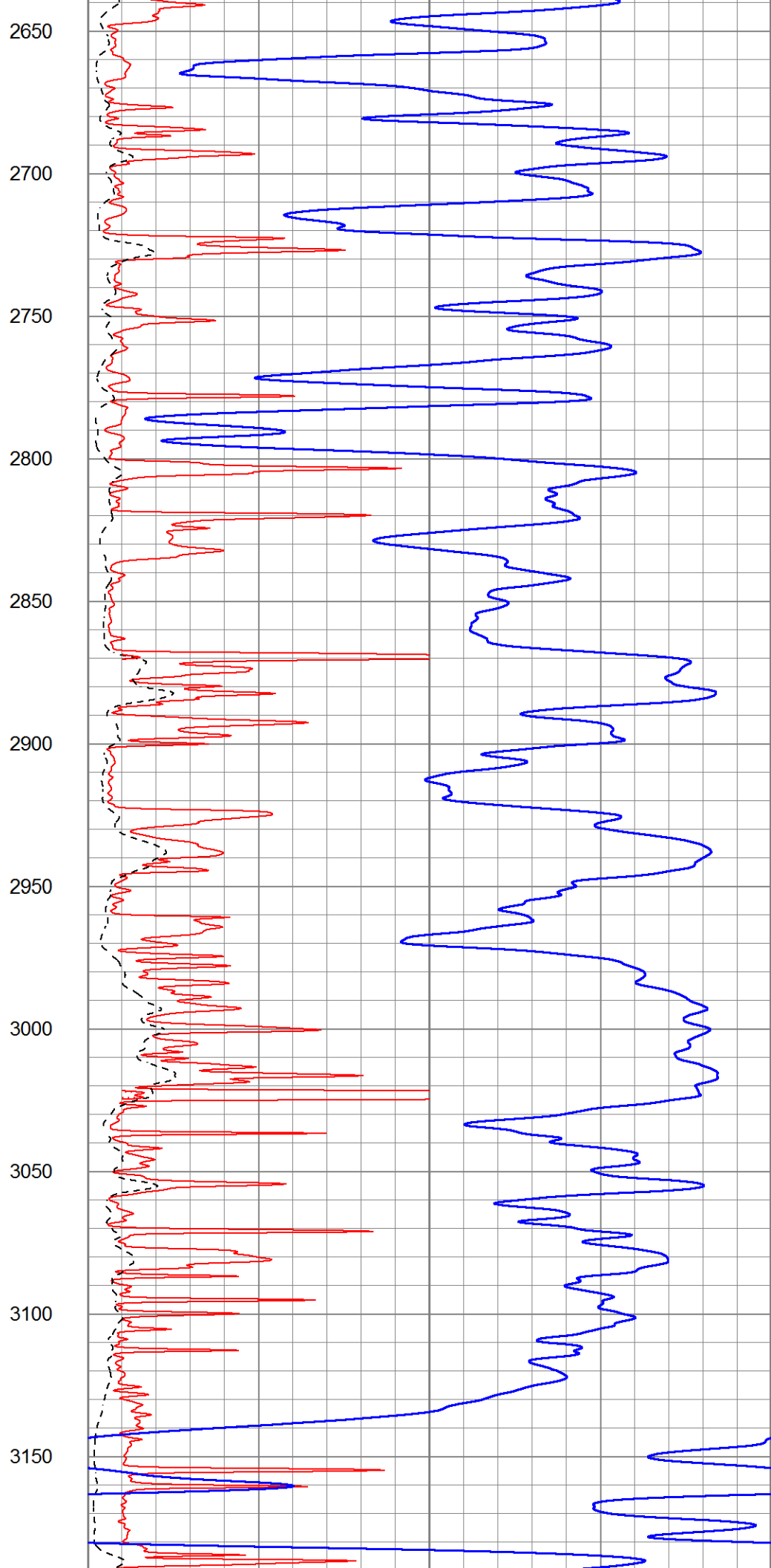
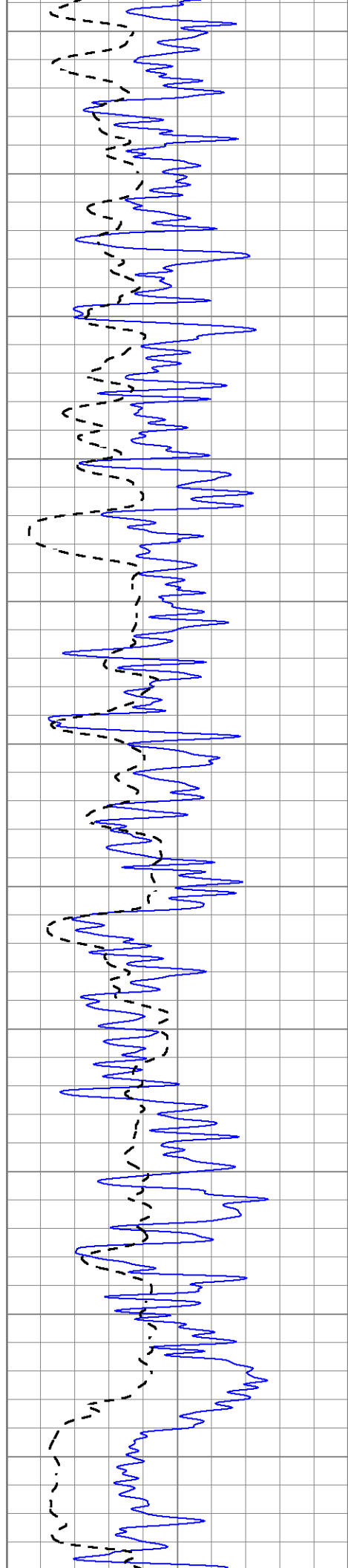


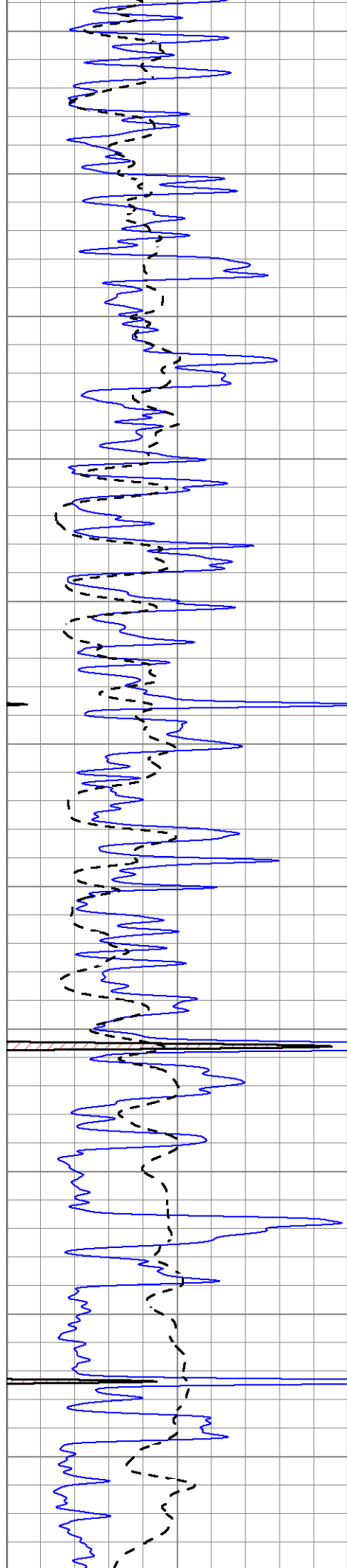












3200

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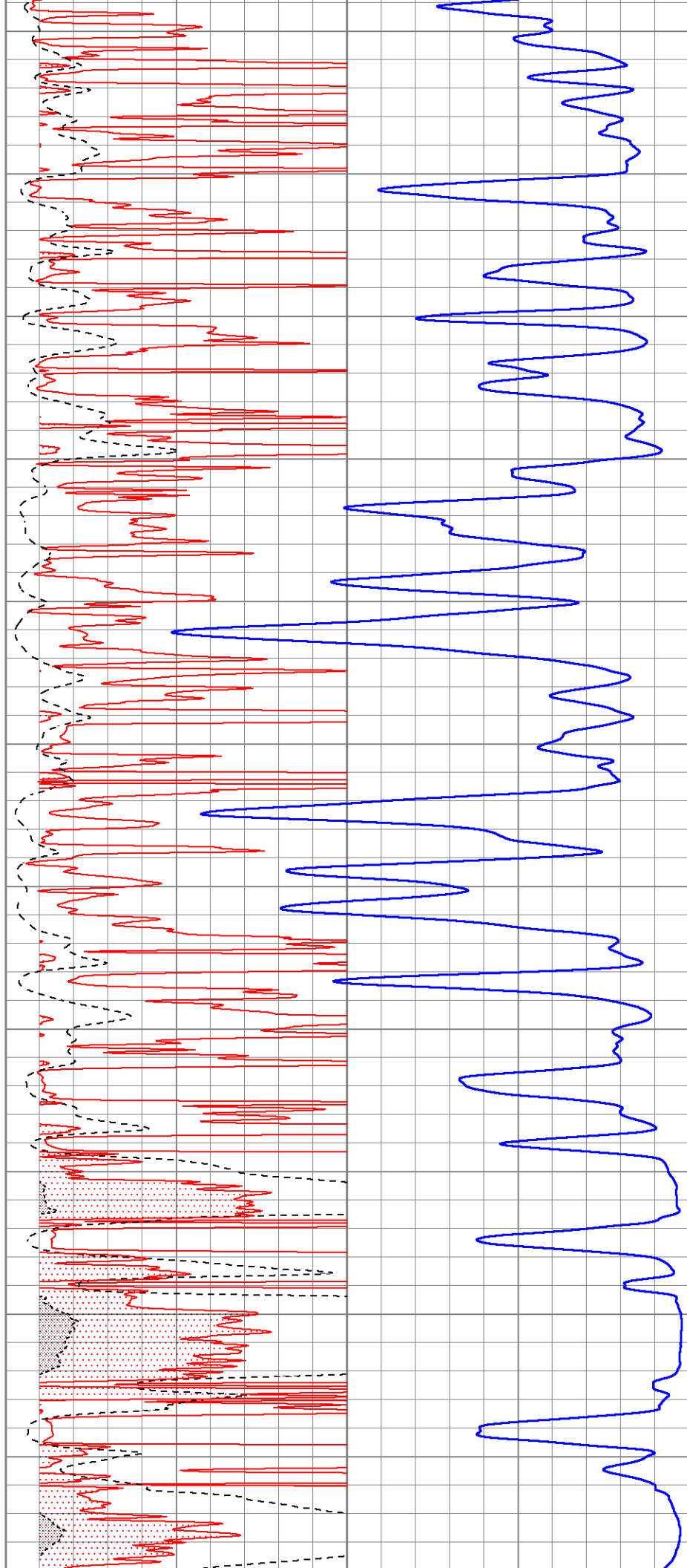
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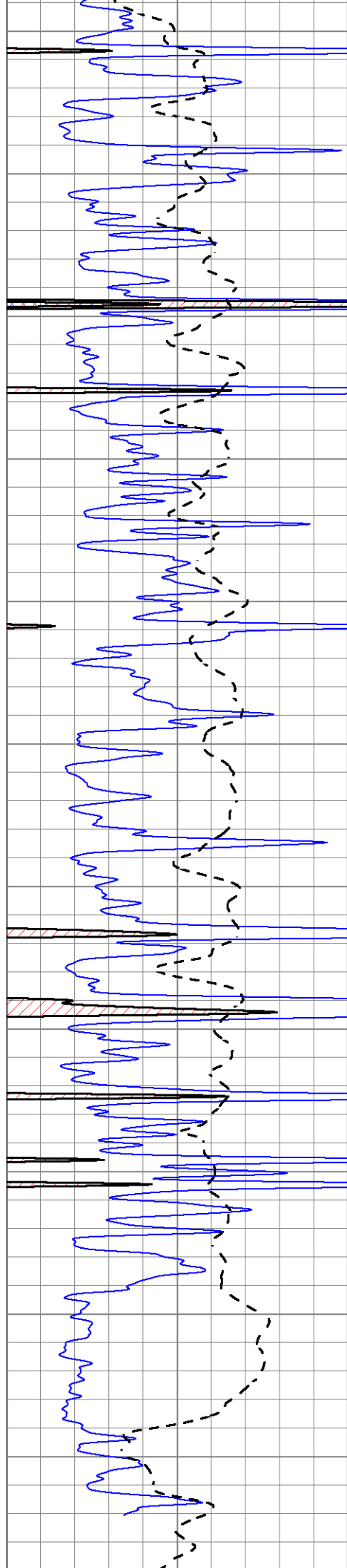
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4000

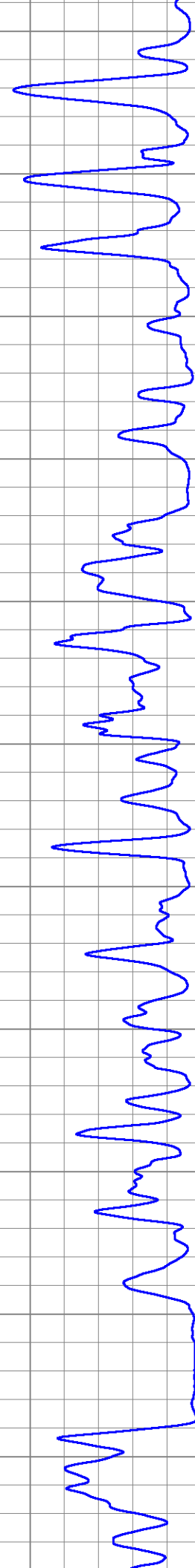
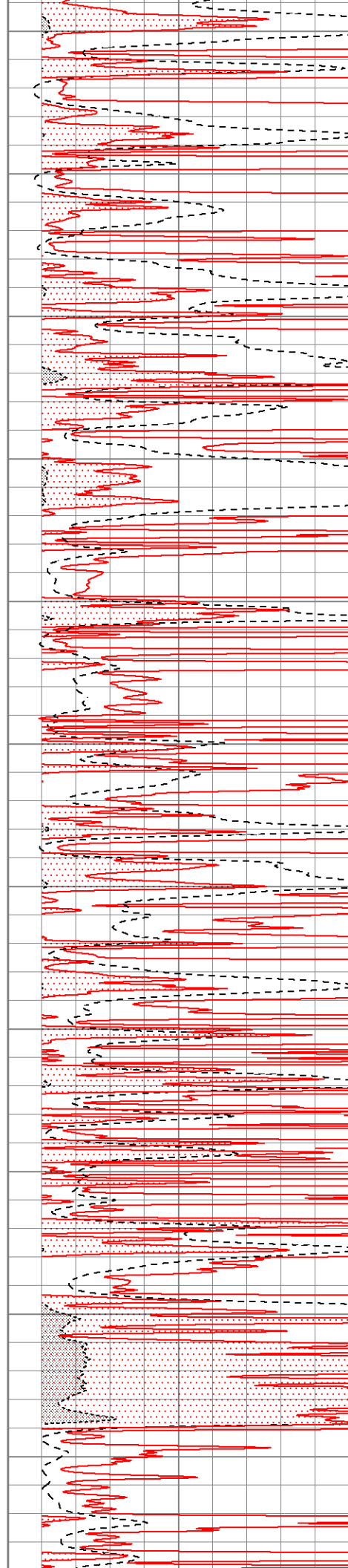
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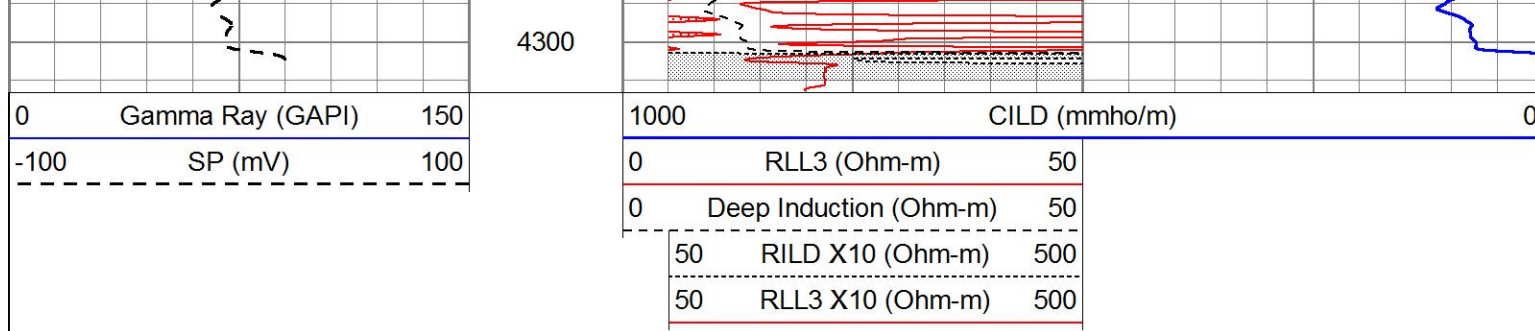
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4150

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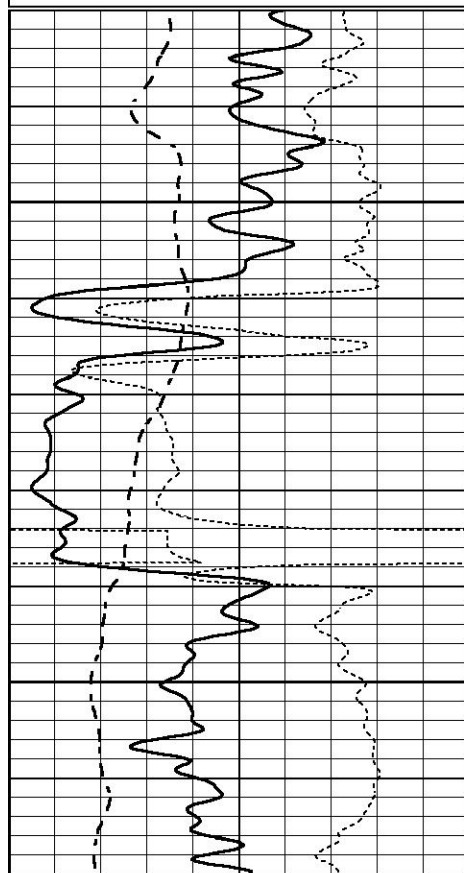




ANHYDRITE

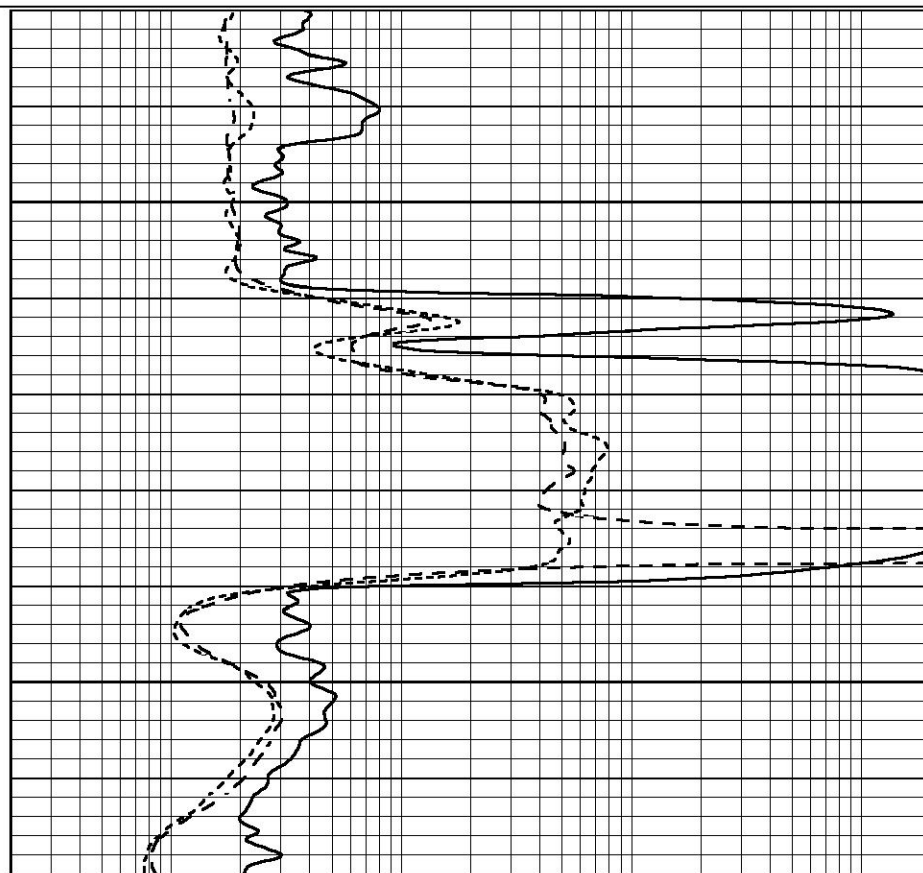
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 Dataset Pathname pass3.2
 Presentation Format _dil
 Dataset Creation Sun Dec 13 02:38:54 2020
 Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	DEEP INDUCTION (Ohm-m)	2000



1900

1950



0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	DEEP INDUCTION (Ohm-m)	2000



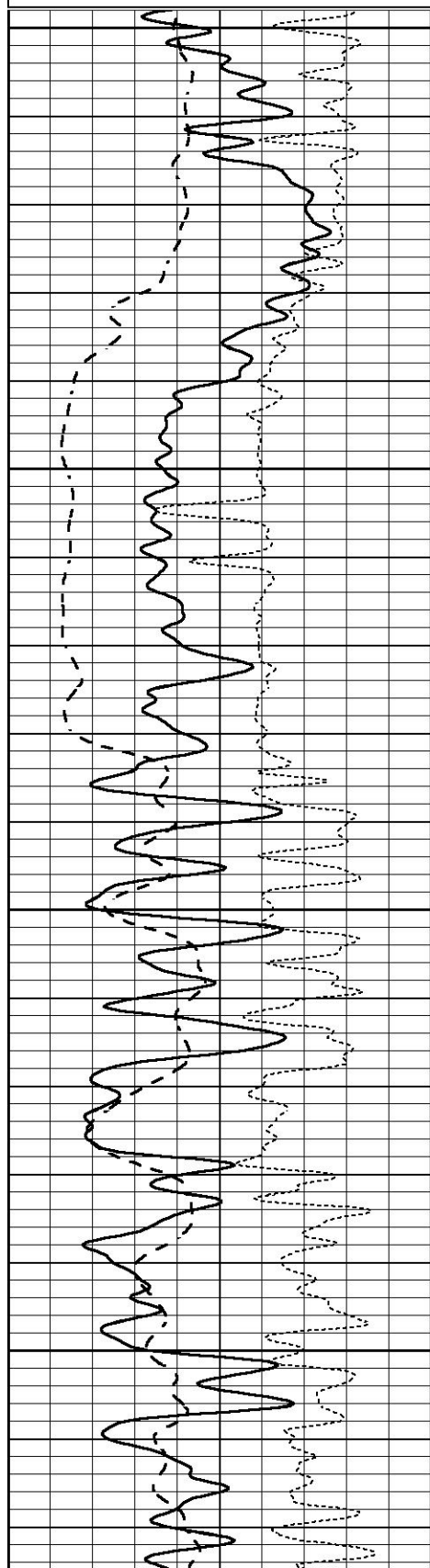
MAIN SECTION

WELL LOG SECTION

Database File 5246ddn.db
Dataset Pathname pass3.1
Presentation Format _dil
Dataset Creation Sun Dec 13 02:36:01 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

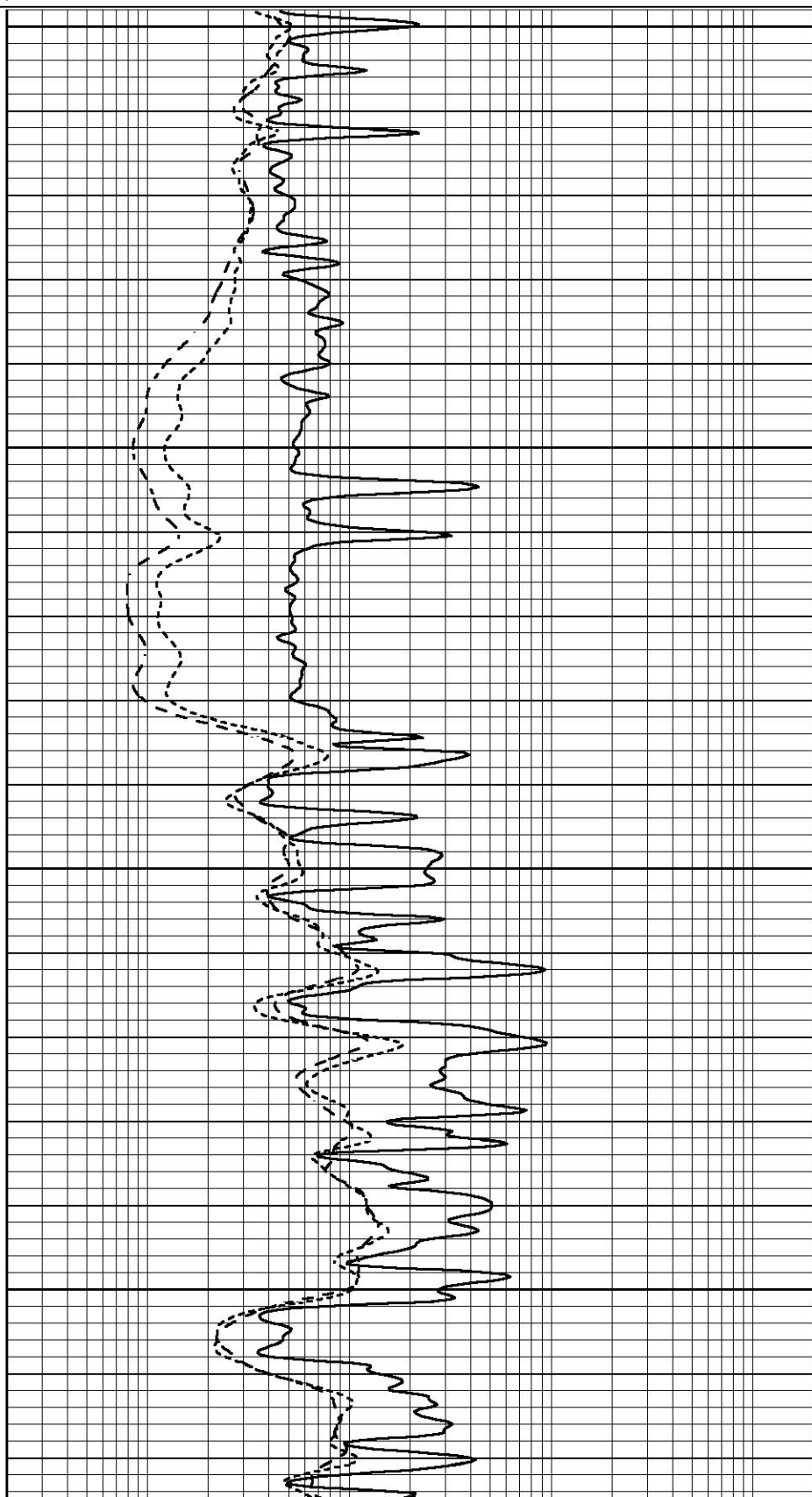


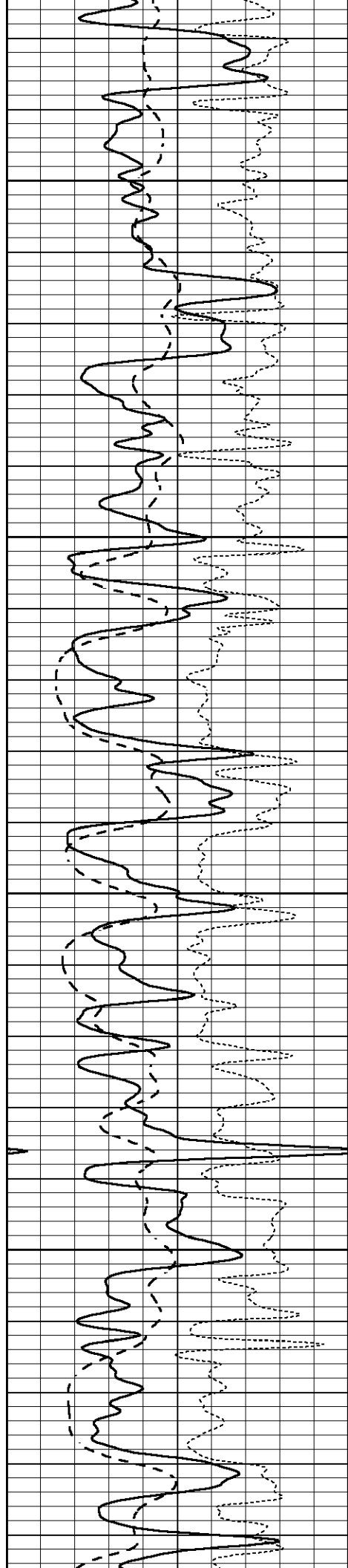
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3150

3200

3250



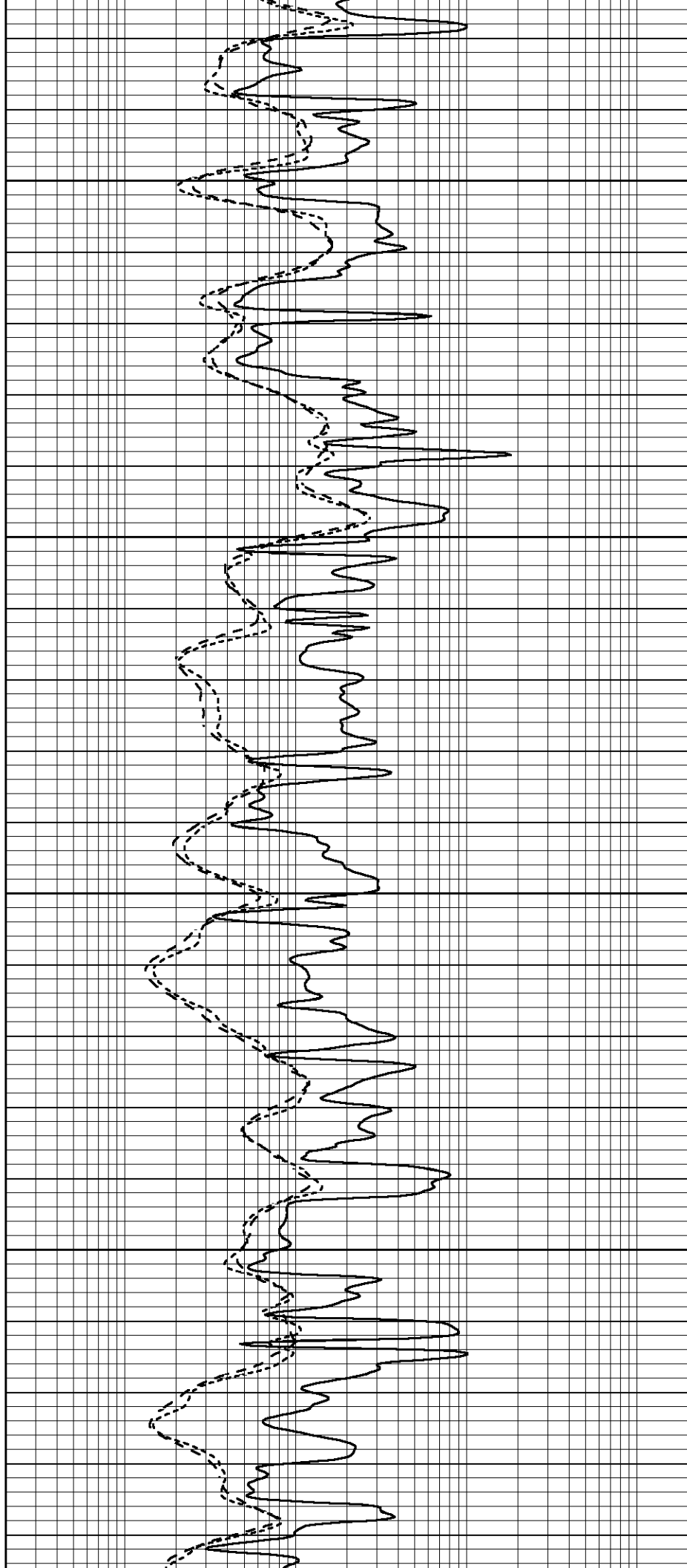


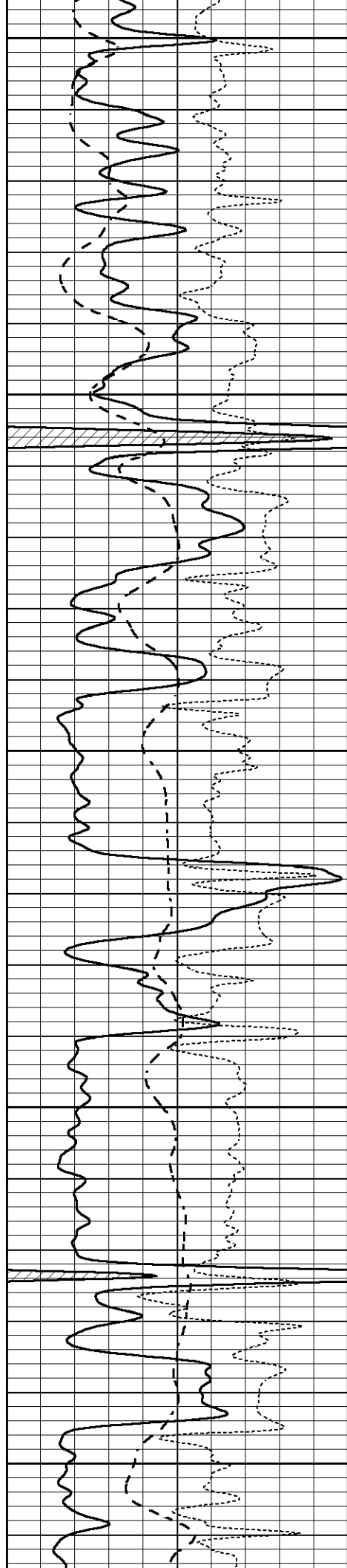
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3350

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3450





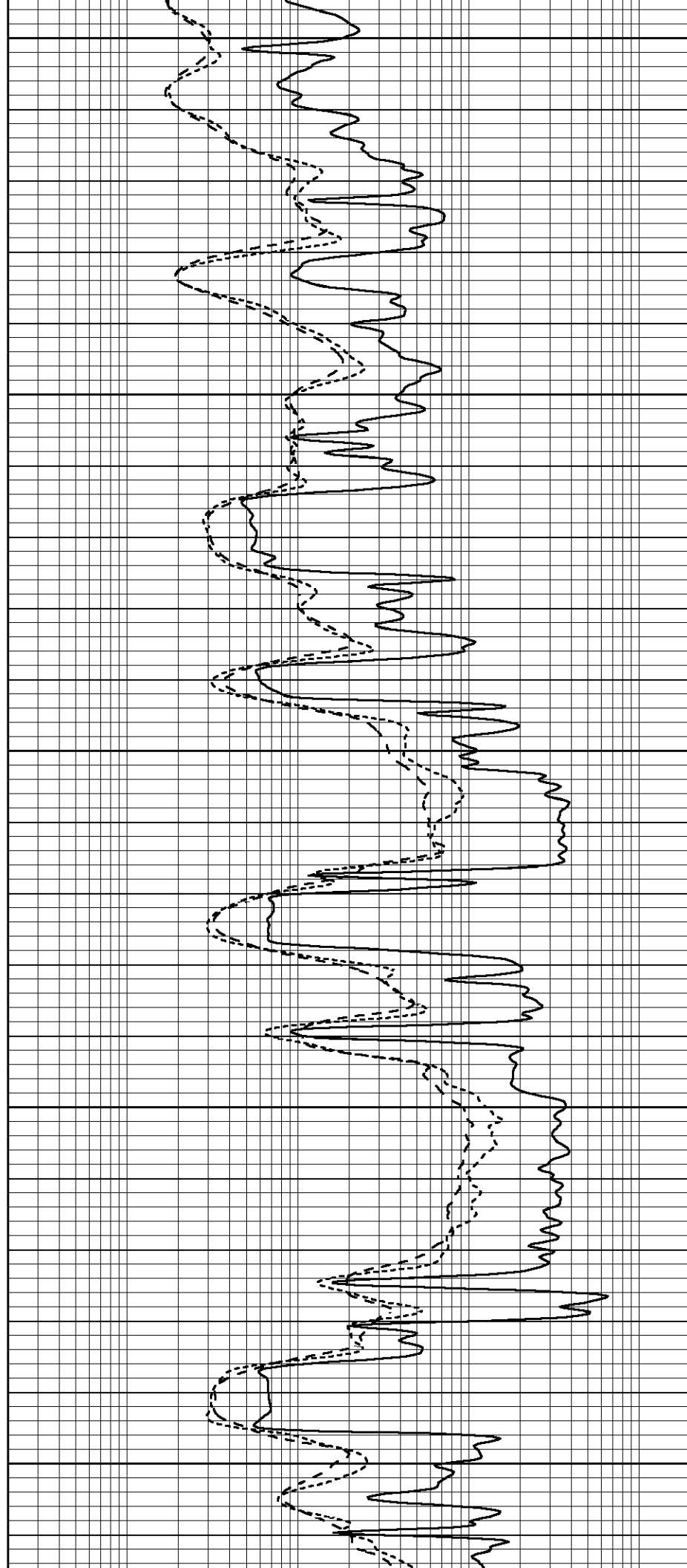
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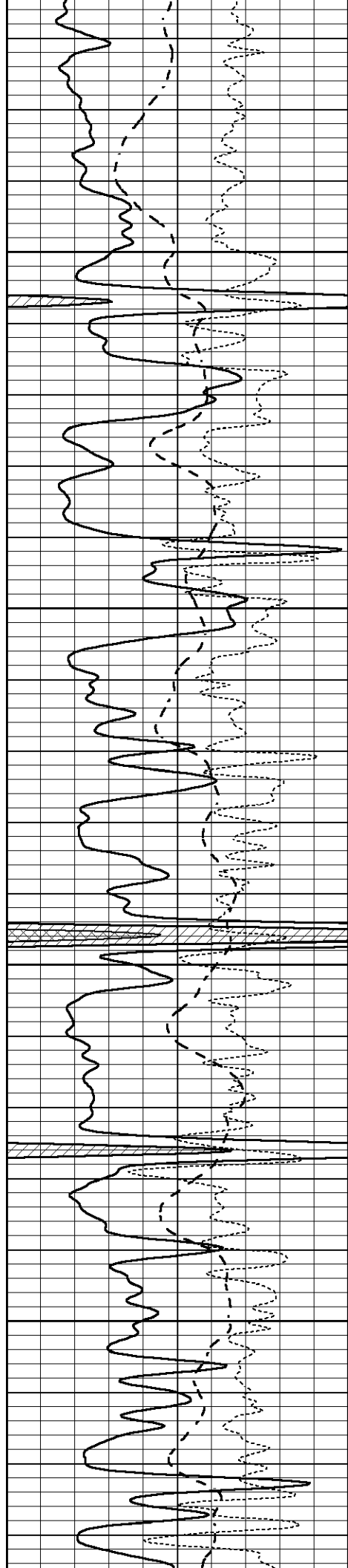
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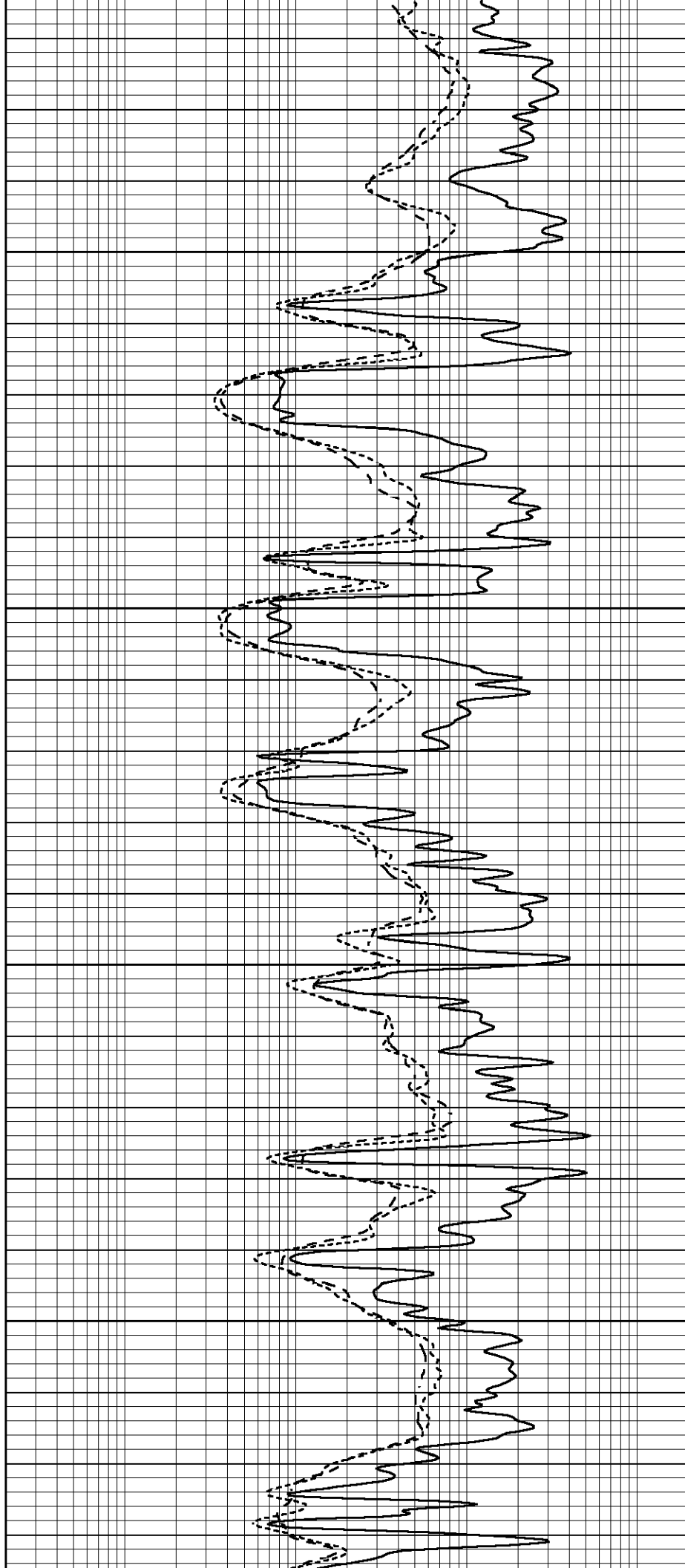


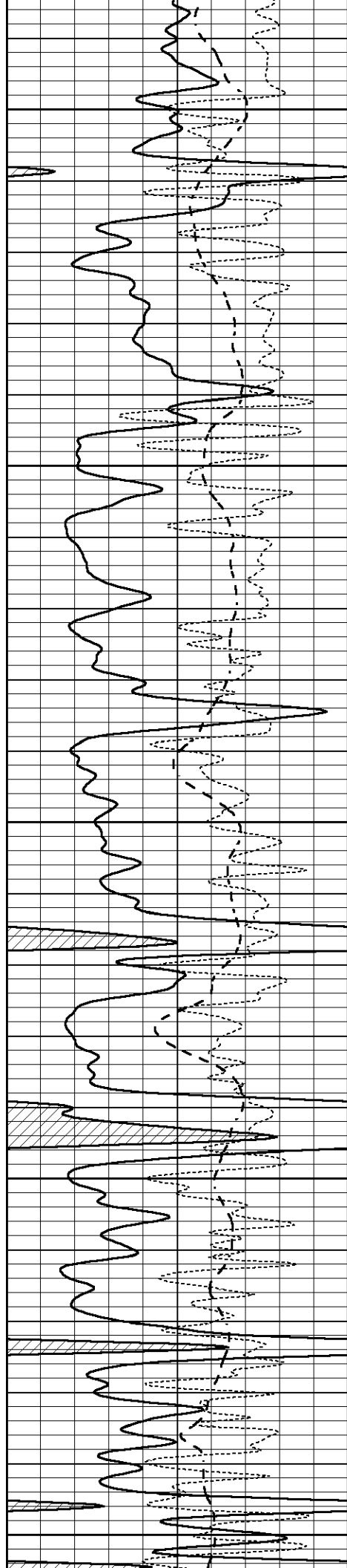
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3900





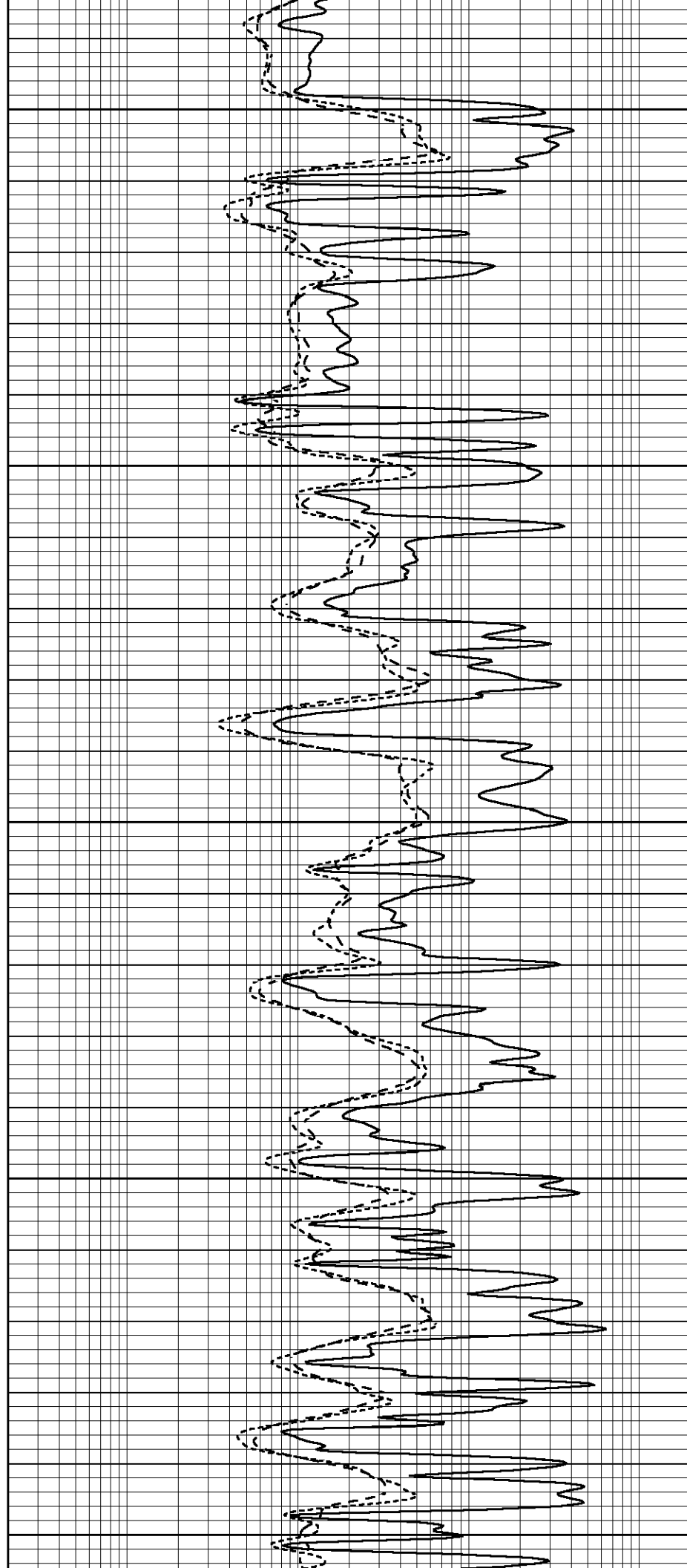
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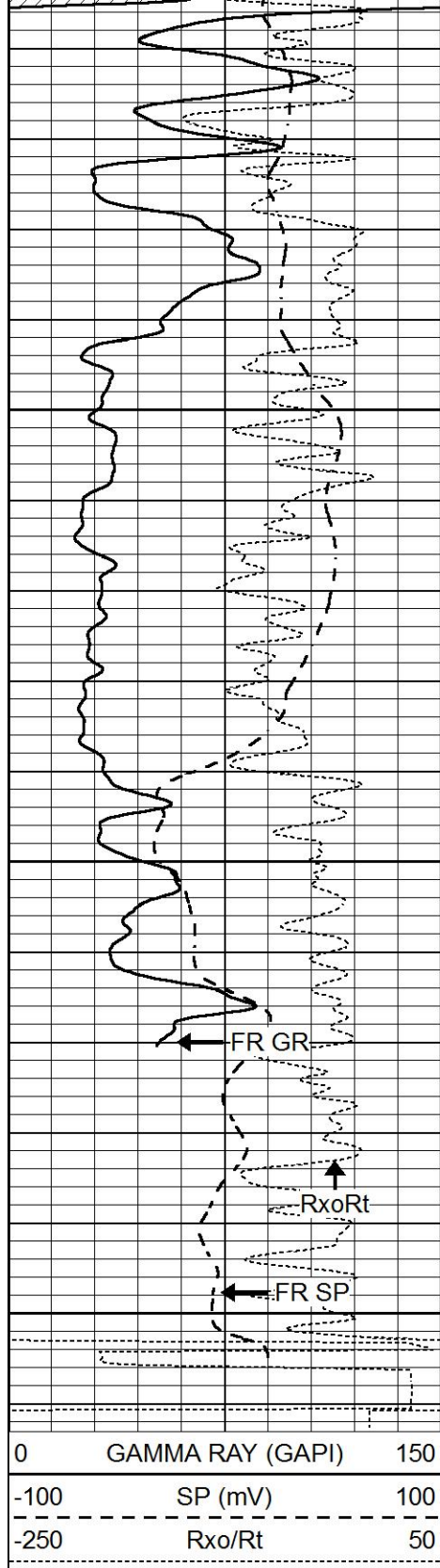
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4050

4100

4150



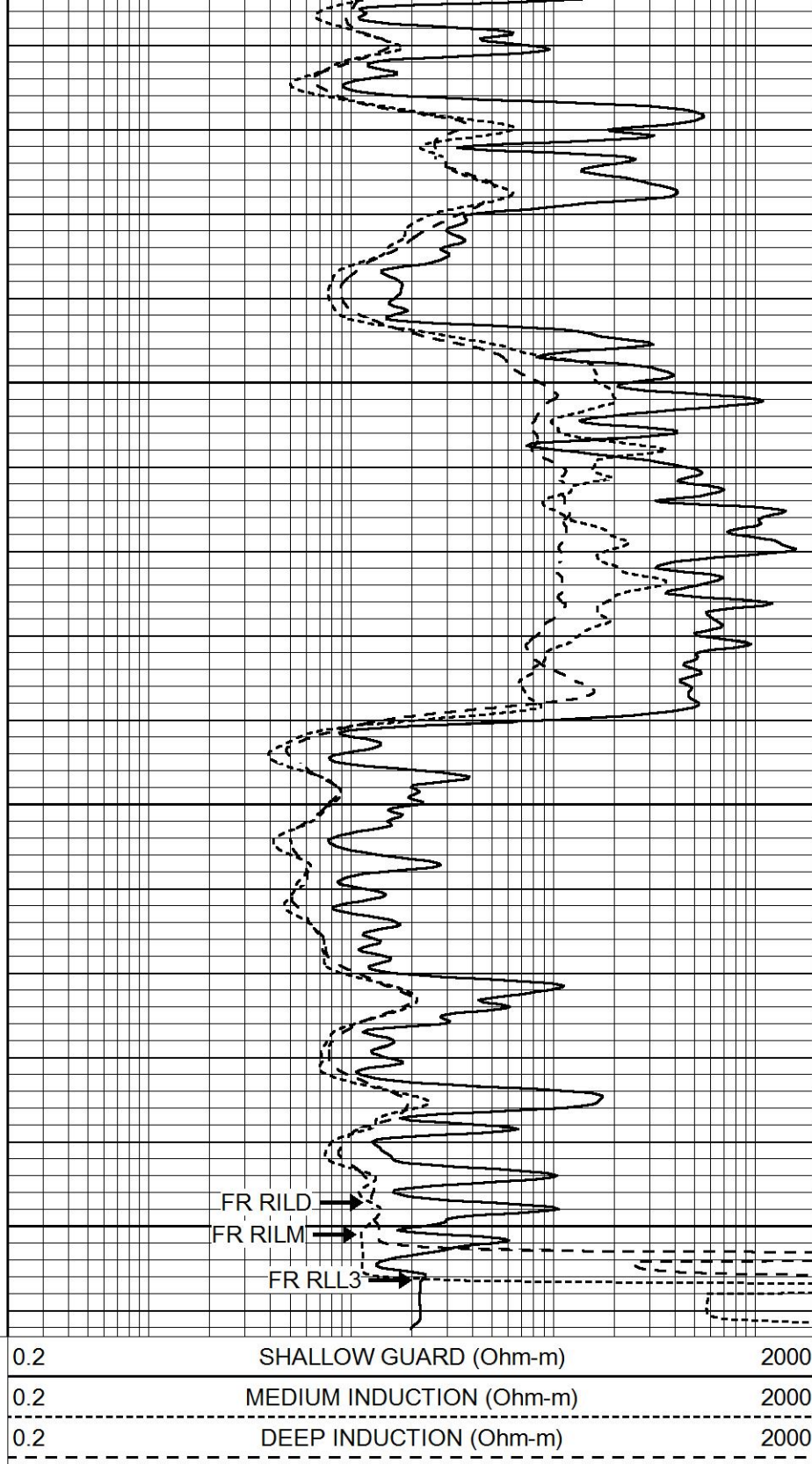


4200

4250

4300

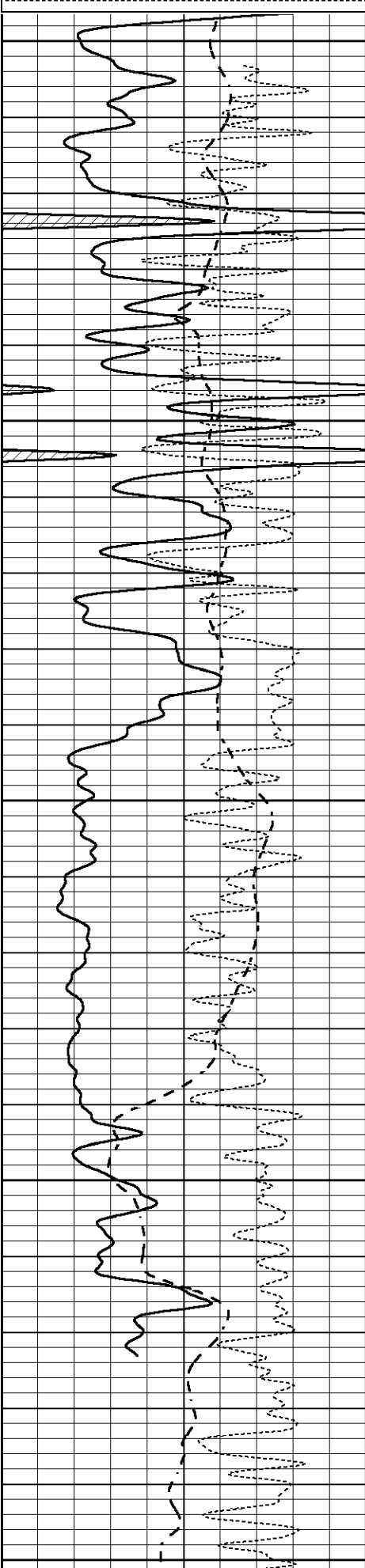
LTD 4308



REPEAT SECTION

Database File 5246ddn.db
 Dataset Pathname pass2.1
 Presentation Format _dil
 Dataset Creation Sun Dec 13 02:34:58 2020
 Charted by Depth in Feet scaled 1:240

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



4100

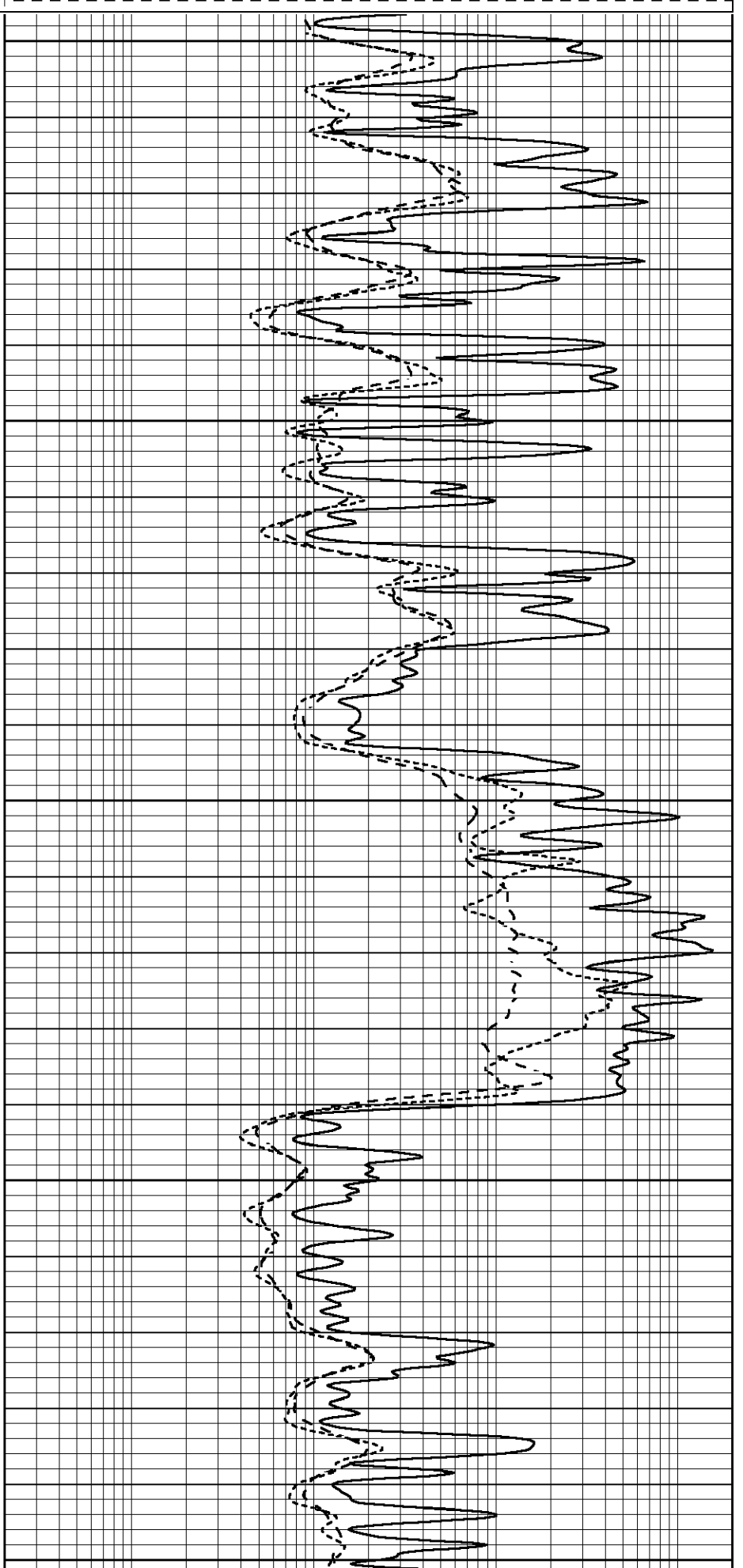
4150

4200

4250

4300

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



0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	DEEP INDUCTION (Ohm-m)	2000

Calibration Report									
Database File	5246ddn.db								
Dataset Pathname	pass2.1								
Dataset Creation	Sun Dec 13 02:34:58 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									
		Readings			References			Results	
Loop:	Air	Loop		Air	Loop		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'	
Deep	-0.824	395.917	mmho/m	-0.976	397.550	mmho/m	1.004	-0.149	
Medium	3.565	471.327	mmho/m	3.468	471.590	mmho/m	1.001	-0.099	
LL3		7.503	V		1500.000	Ohm-m			
		0.001	V		20.000	Ohm-m			
		-7.481	V		3745.000	mmho-m			
After Survey Verification									
		Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'	
Deep	0.000	0.000	mmho/m	-0.824	395.917	mmho/m	1.000	0.000	
Medium	0.000	0.000	mmho/m	3.565	471.327	mmho/m	1.000	0.000	
LL3		0.000	Ohm-m		1500.000	Ohm-m			
		0.000	Ohm-m		20.000	Ohm-m			
		0.000	mmho-m		3745.000	mmho-m			
Litho Density Calibration Report									
Serial: 140703									
Model: V4_10P									
Source Number: 74GBq-19									
Master Calibration					Performed: Wed Dec 02 12:04:44 2020				
	Background		Aluminum		Magnesium				
Window 1	595.38		5386.50		23898.92		cps		

Window 2	52.78	1248.21	5993.75	cps	
Window 4	251.36	1200.30	5155.55	cps	
Window 5	545.15	9066.30	17240.12	cps	
Window 6	43.35	1491.73	2929.24	cps	
Window 8	258.76	2917.82	5450.26	cps	
Bulk Density	-	2.6020	1.6830	g/cc	
Pe	-	3.0000	2.5070	b/e	
LS Alpha:	: -1.8726	SS Alpha:	: -0.7656	LS CPE:	: 1.0742
LS Beta:	: 127345.0723	SS Beta:	: 20293.3834	SS CPE:	: 1.5427

Before Survey Background Counts Verification			Performed: Wed Dec 31 18:00:00 1969	
Window 1	0.00	cps		
Window 2	0.00	cps		
Window 4	0.00	cps		
Window 5	0.00	cps		
Window 6	0.00	cps		
Window 8	0.00	cps		

After Survey Background Counts Verification			Performed: Wed Dec 31 18:00:00 1969	
Window 1	0.00	cps		
Window 2	0.00	cps		
Window 4	0.00	cps		
Window 5	0.00	cps		
Window 6	0.00	cps		
Window 8	0.00	cps		

Lithodensity Caliper Calibration			Performed: Wed Dec 02 12:04:44 2020		
Results	Readings		References (in)		
Low	High		Low	High	
8003.0	11159.9		8.0	14.0	
					Gain
					Offset
					0.0
					-7.2

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

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

Compensated Neutron Calibration Report					
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		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	