

**DUAL  
INDUCTION  
LOG**

Company STEWART PRODUCERS, INC.  
Well VOGEL #1  
Field  
County NESS State KANSAS

Location: API #: 15-135-26033-0000  
335' FSL & 2305' FWL  
SEC 23 TWP 19S RGE 26W  
Permanent Datum GROUND LEVEL Elevation 2597  
Log Measured From KELLY BUSHING 5' A.G.L.  
Drilling Measured From KELLY BUSHING  
Other Services CDL/CNL/PE MEL  
Elevation K.B. 2602 D.F. 2600 G.L. 2597

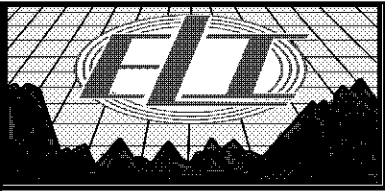
Date	12/13/18		
Run Number	ONE		
Depth Driller	4640		
Depth Logger	4643		
Bottom Logged Interval	4641		
Top Log Interval	00		
Casing Driller	8 5/8" @ 220		
Casing Logger	220		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 4100 PPM	
Density / Viscosity	9.5/56		
PH / Fluid Loss	9.5/8.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.80 @ 62F		
Rmt @ Meas. Temp	.60 @ 62F		
Rmc @ Meas. Temp	.96 @ 62F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.40 @ 122F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	////		
Maximum Recorded Temperature	122F		
Equipment Number	3802		
Location	HAYS, KANSAS		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	DAVE GOLDAK	ROBERT STEWART	

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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  
BEELER, KS. - 5 SOUTH TO RD. 80 - 1 1/2 EAST - NORTH INTO

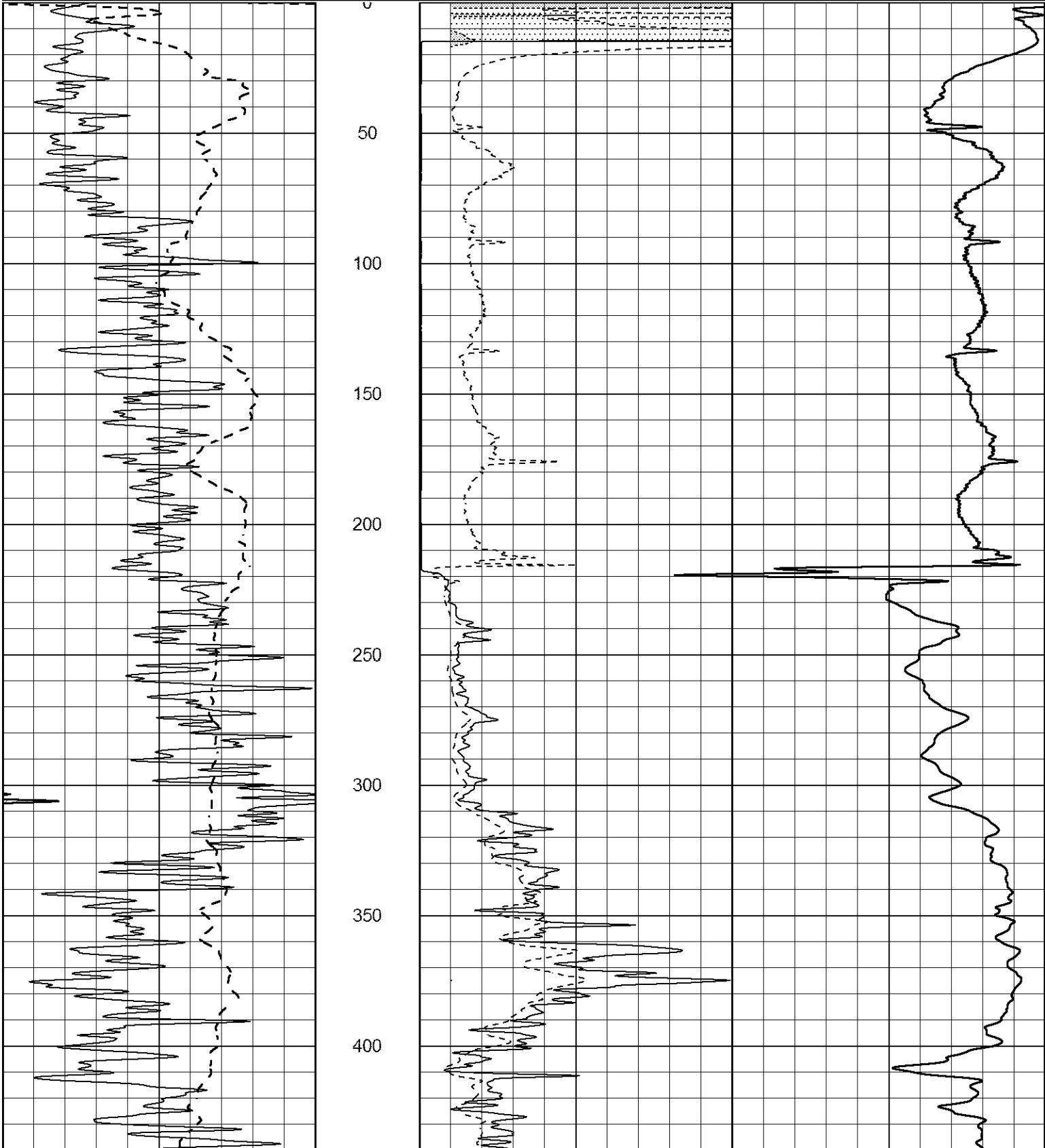


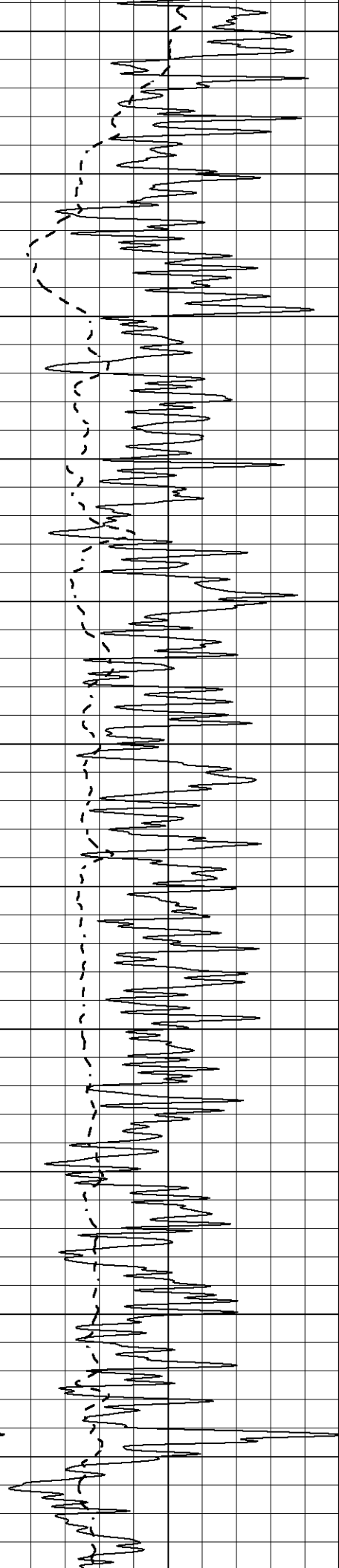
**MAIN SECTION**

Database File 3429pe8.db  
 Dataset Pathname pass3.3  
 Presentation Format \_dil2  
 Dataset Creation Thu Dec 13 22:22:50 2018  
 Charted by Depth in Feet scaled 1:600

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





450

500

550

600

650

700

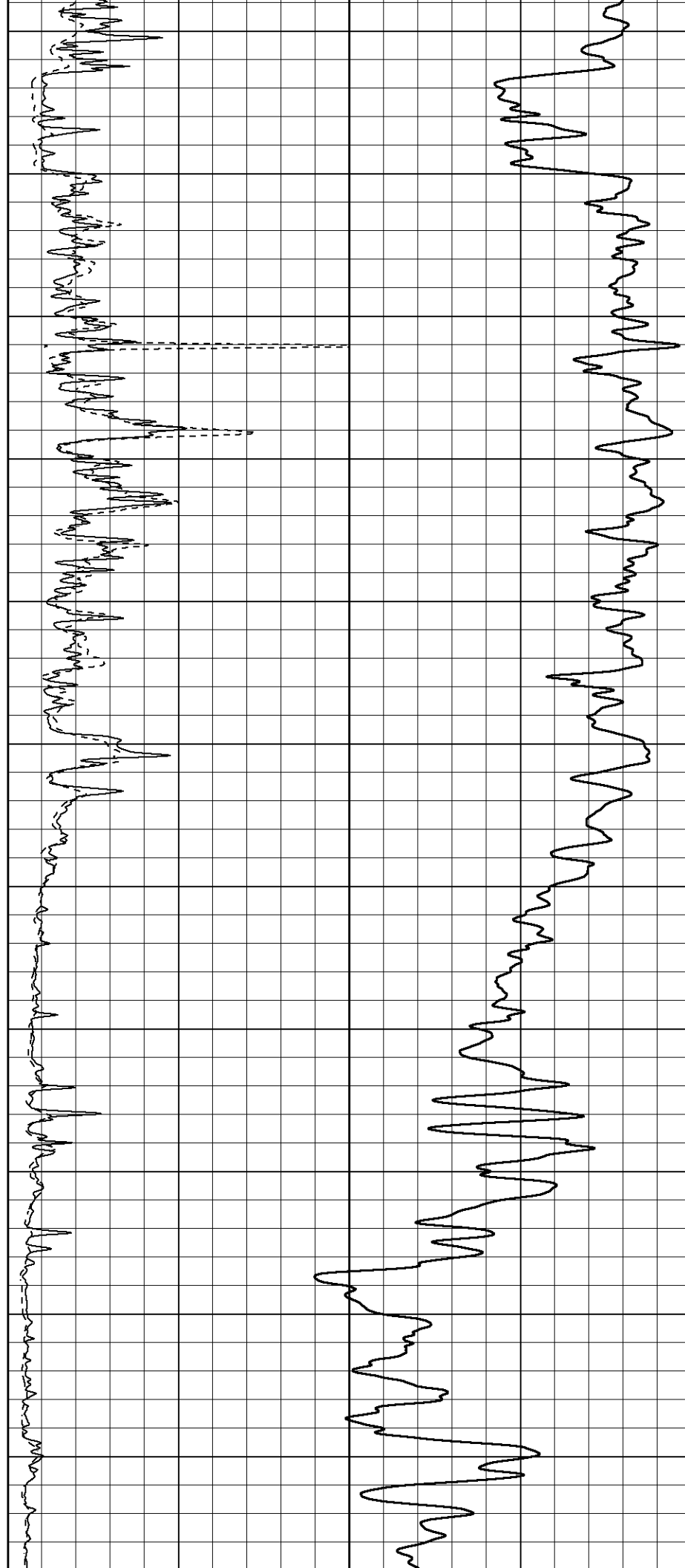
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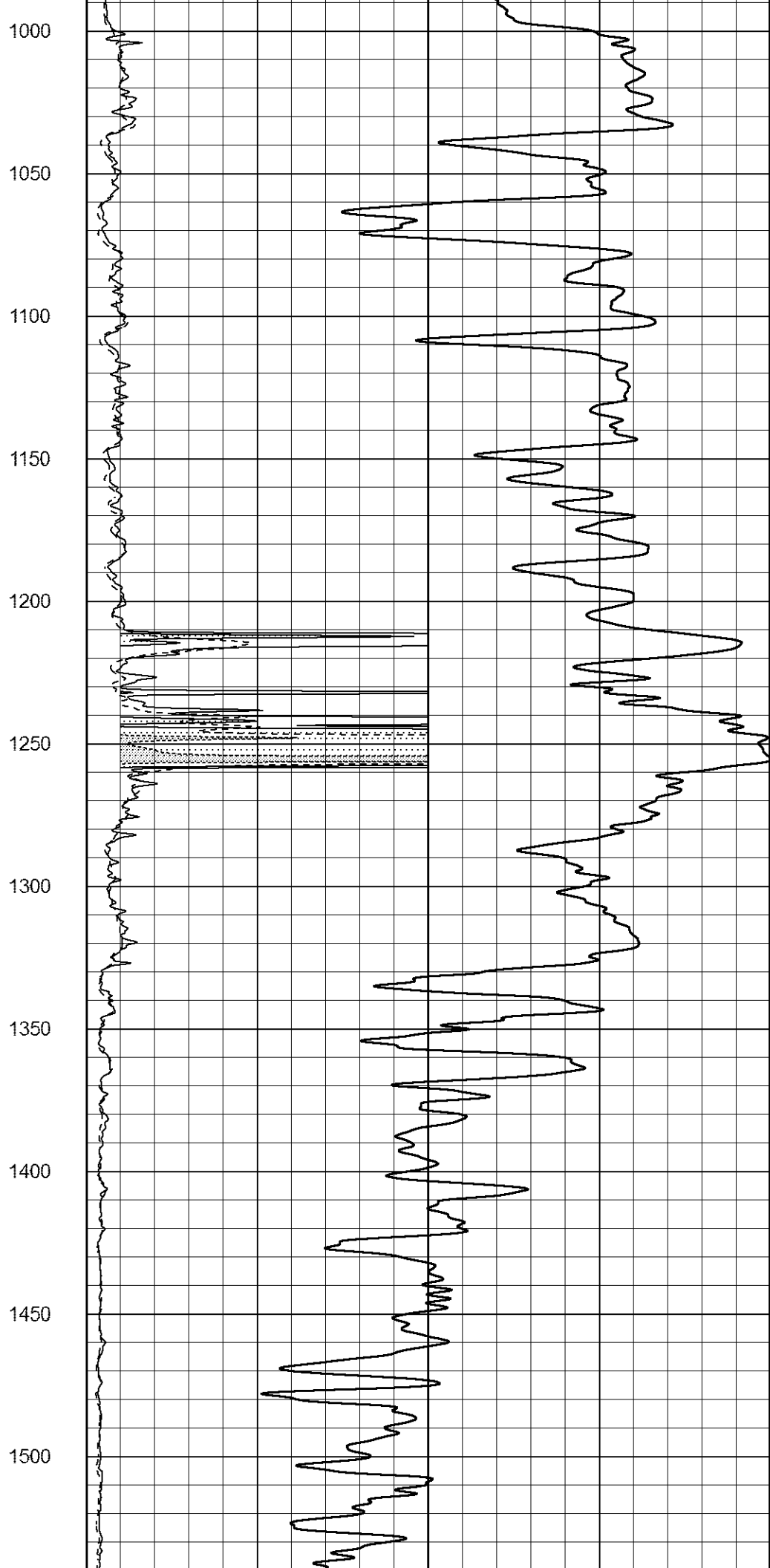
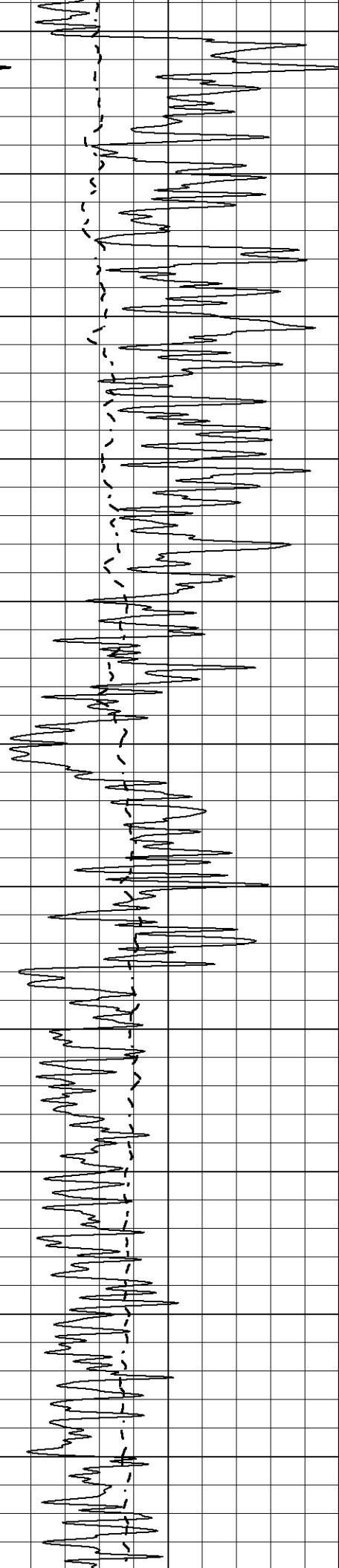
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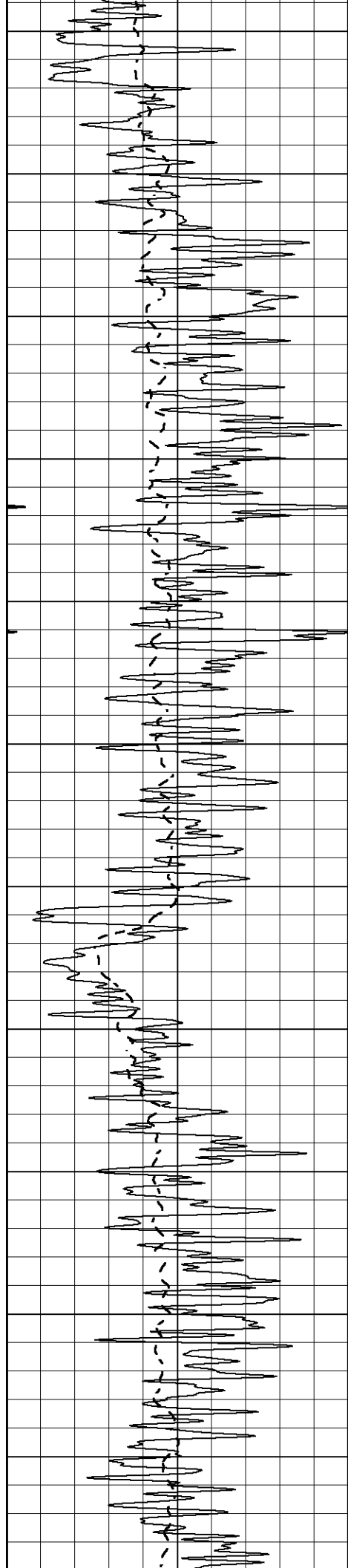
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900

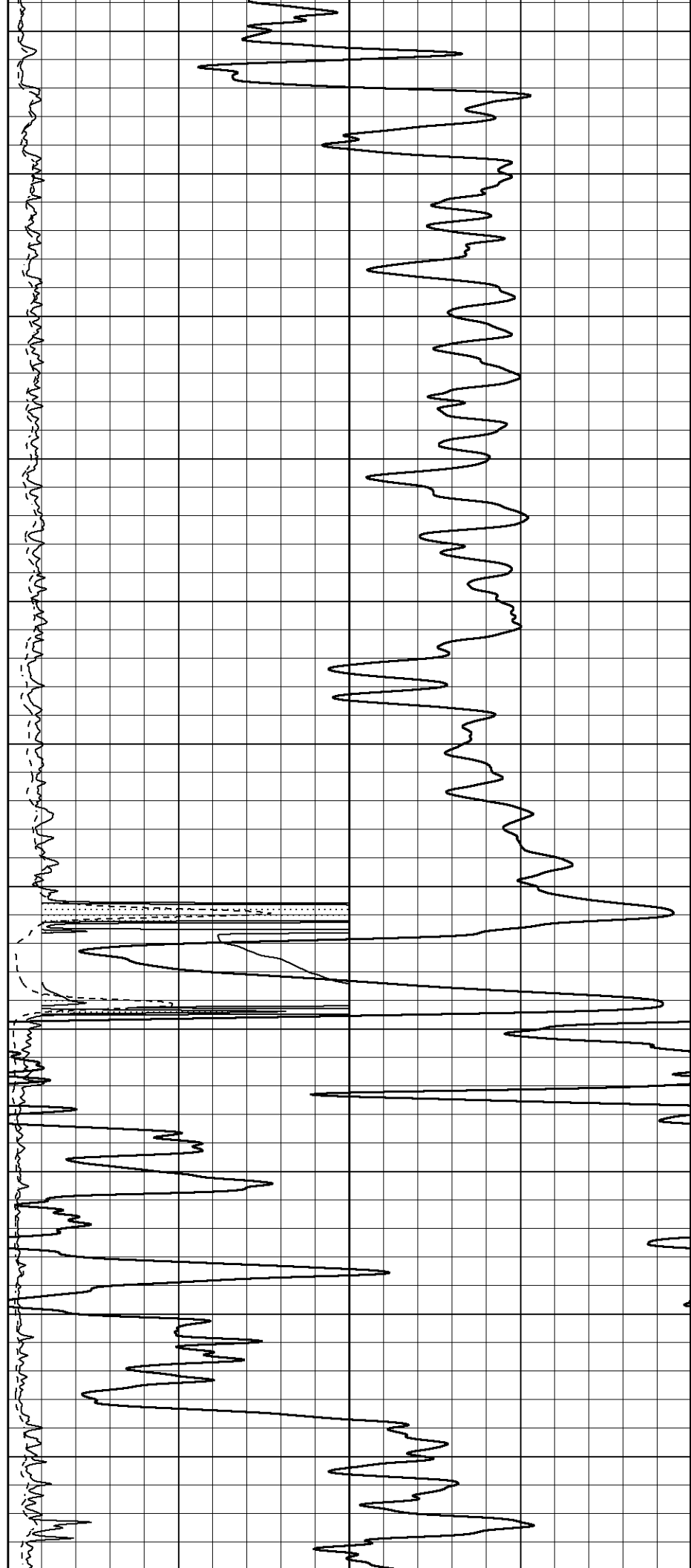
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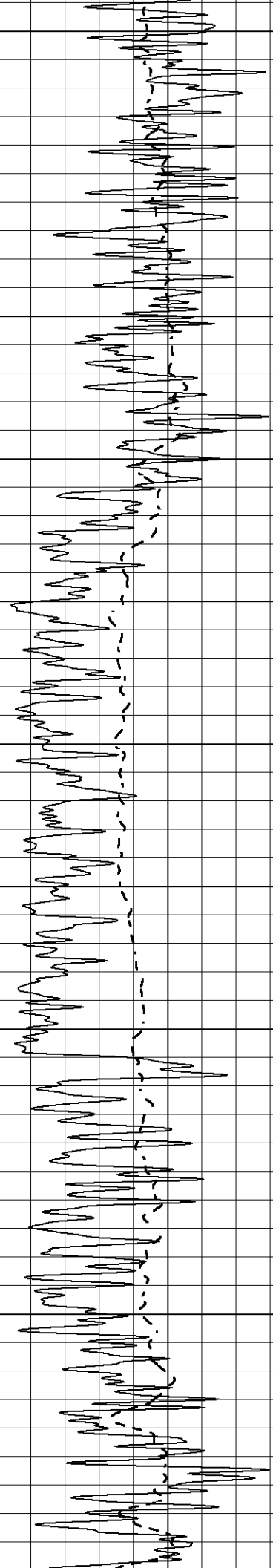




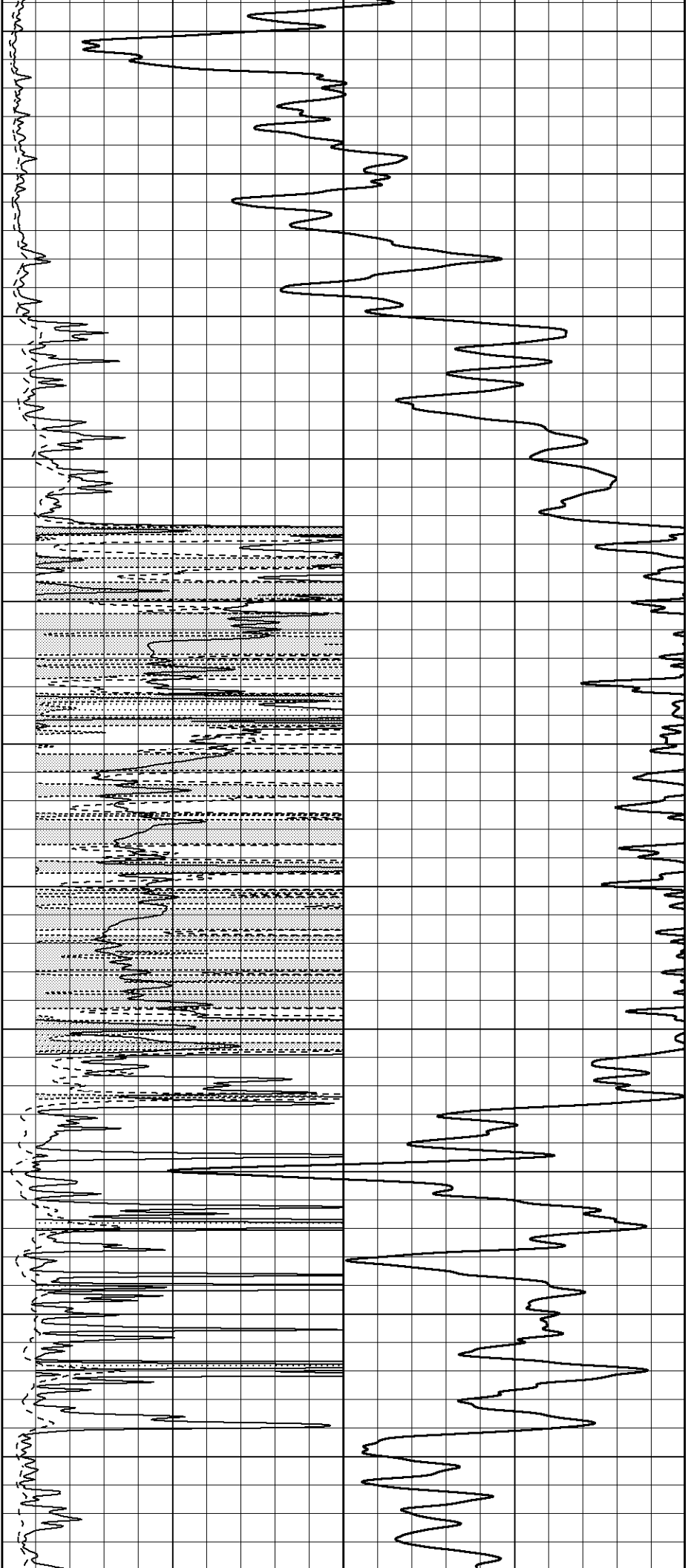


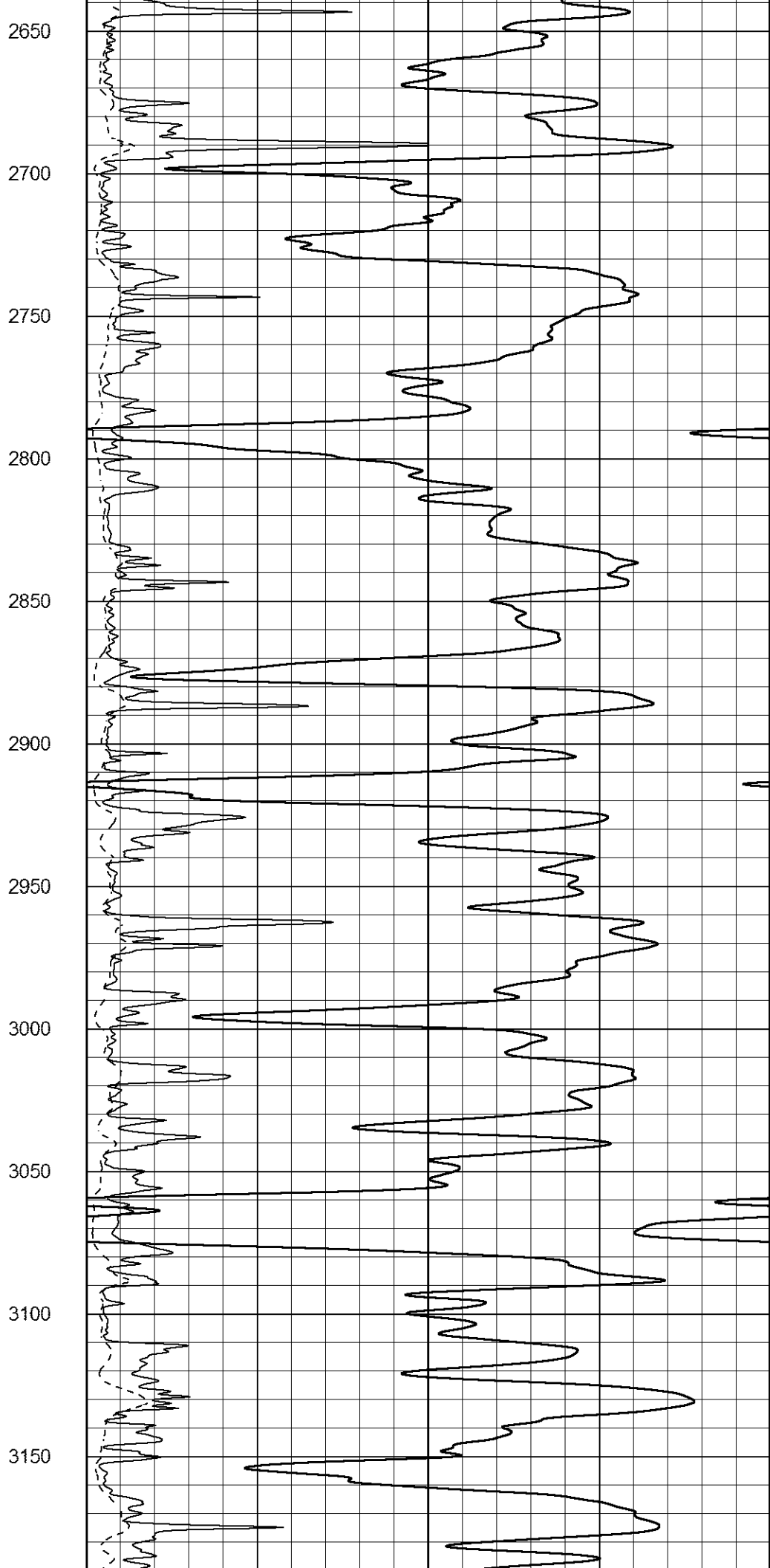
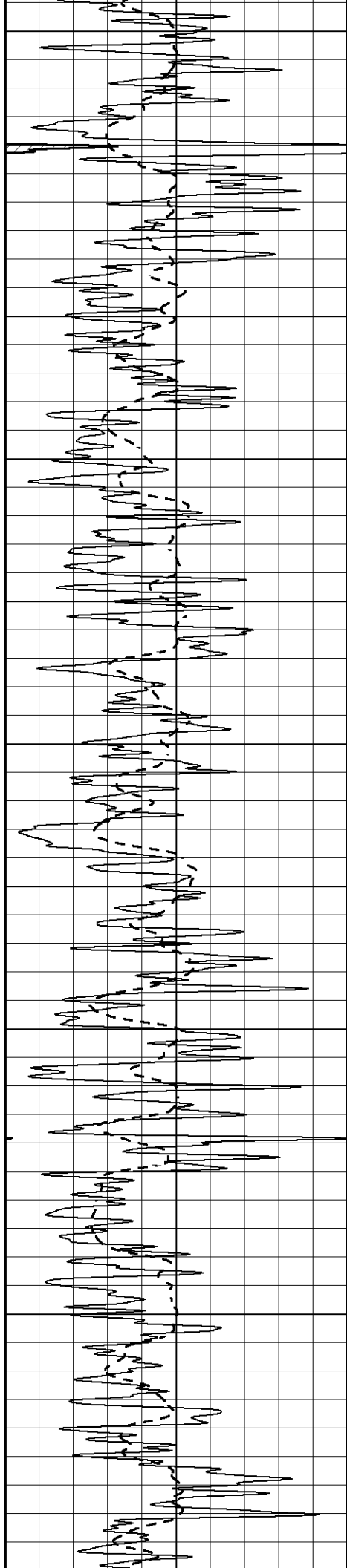
1550  
1600  
1650  
1700  
1750  
1800  
1850  
1900  
1950  
2000  
2050

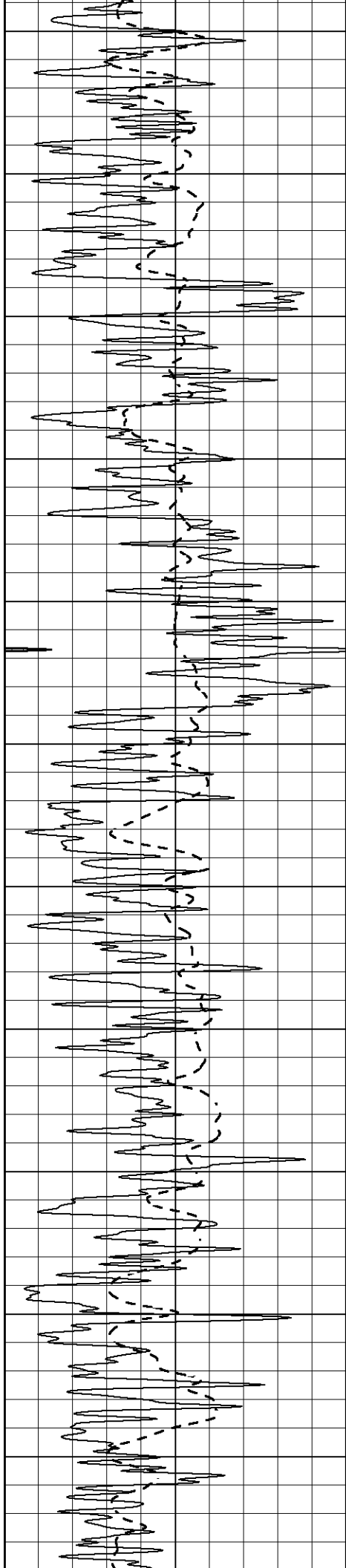




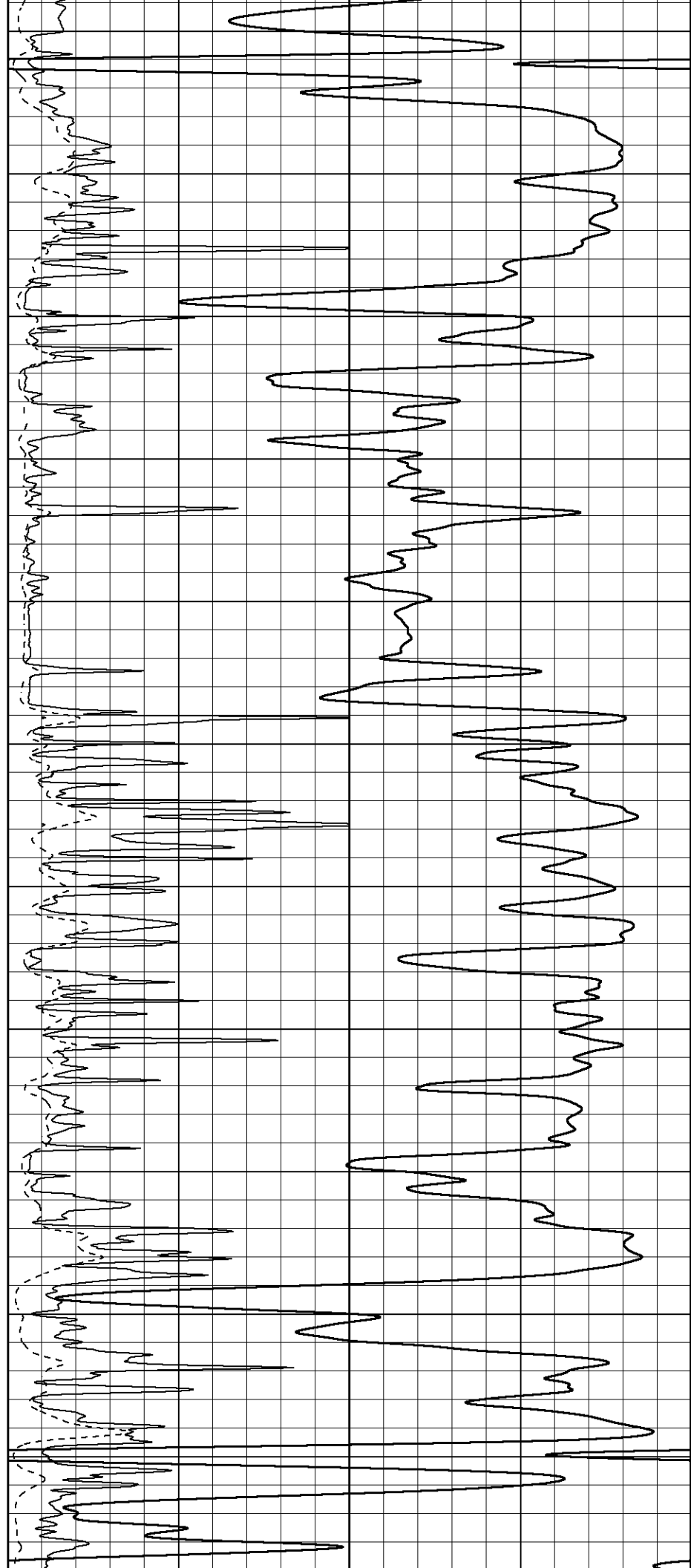
2100  
2150  
2200  
2250  
2300  
2350  
2400  
2450  
2500  
2550  
2600



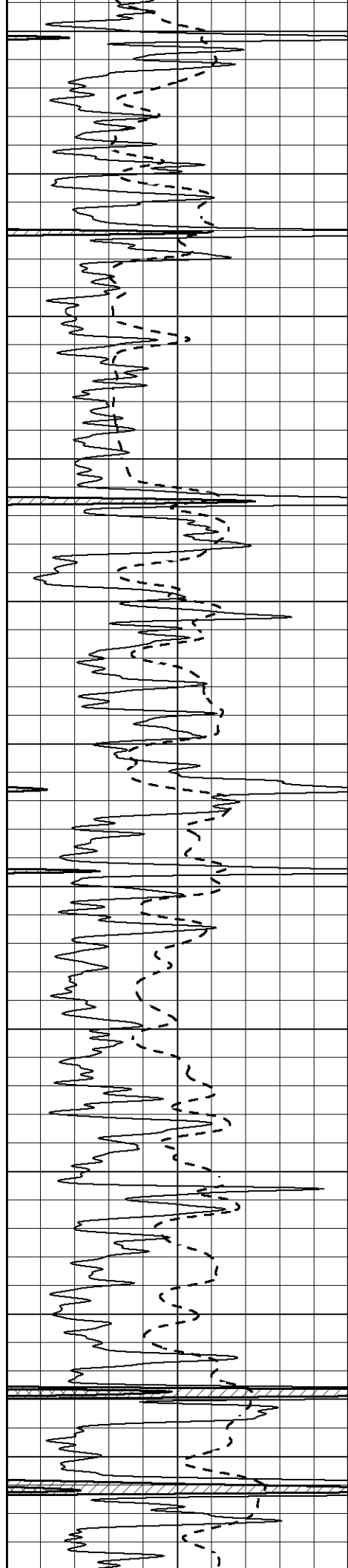




3200  
3250  
3300  
3350  
3400  
3450  
3500  
3550  
3600  
3650  
3700







3750

3800

3850

3900

3950

4000

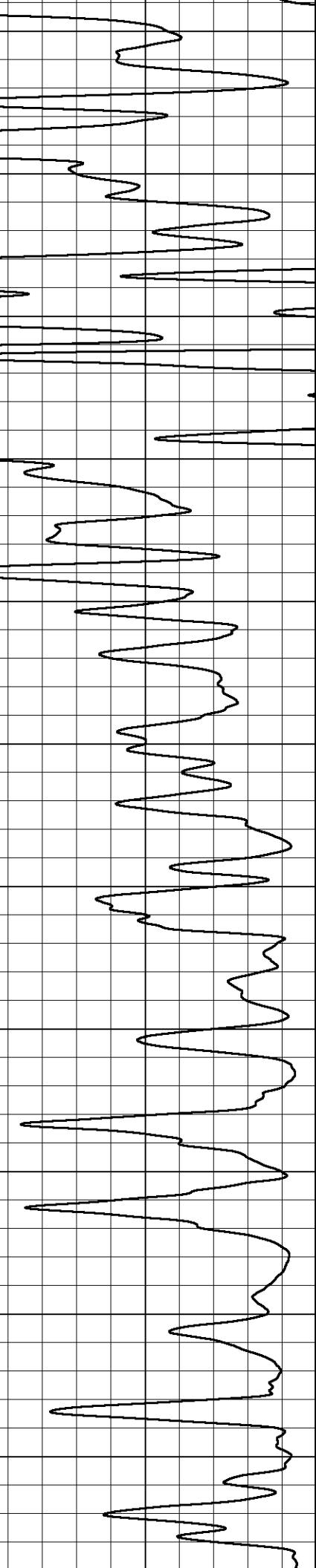
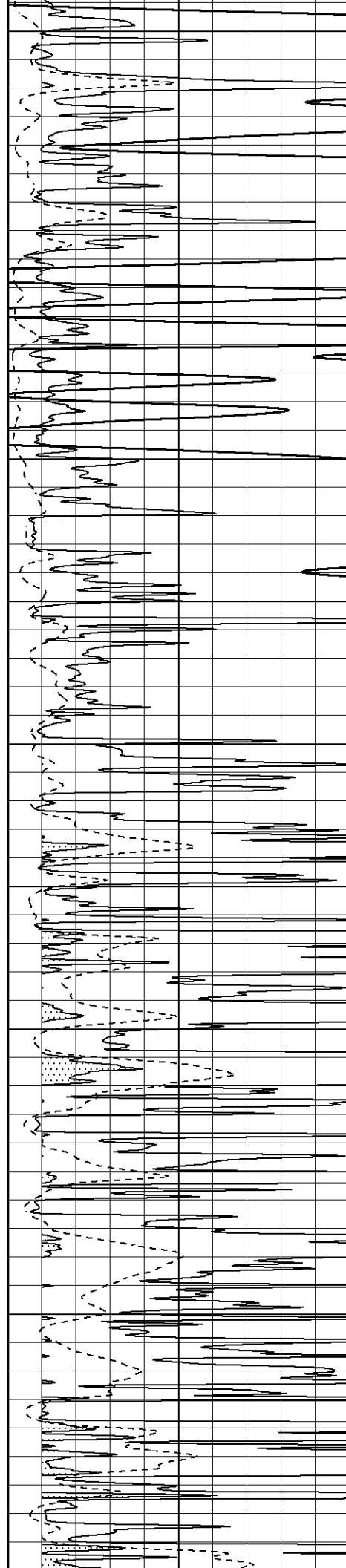
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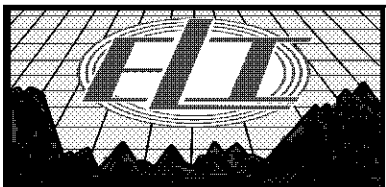
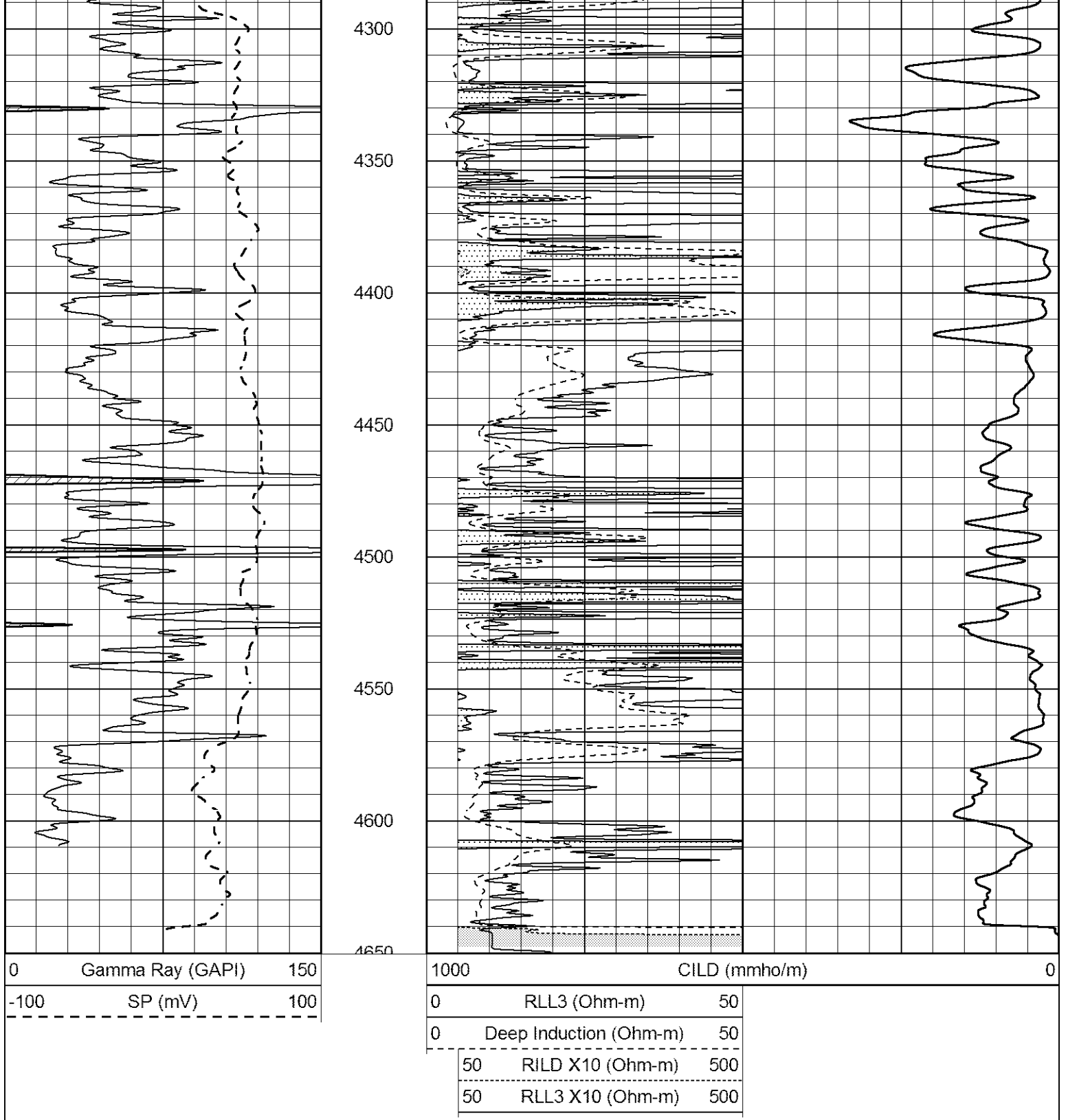
4100

4150

4200

4250





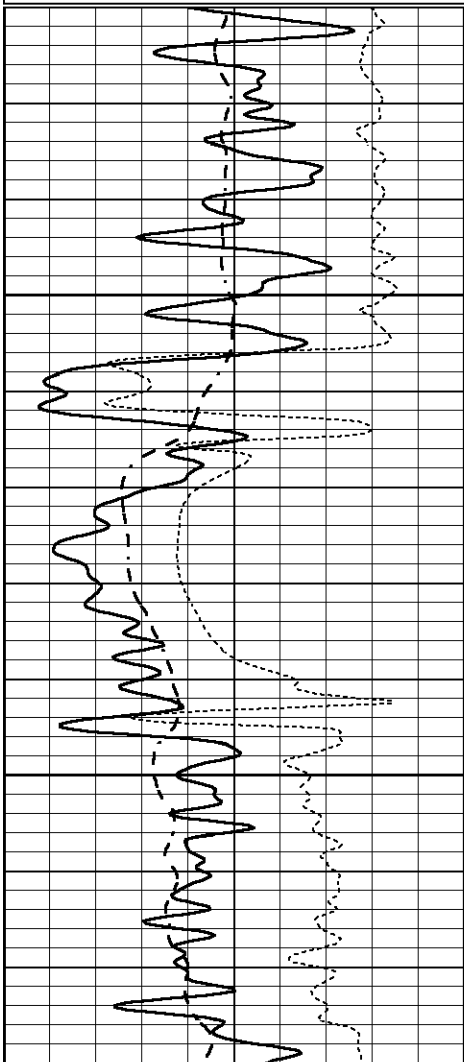
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Database File 3429pe8.db  
 Dataset Pathname pass3.2  
 Presentation Format \_dil  
 Dataset Creation Thu Dec 13 21:48:04 2018  
 Charted by Depth in Feet scaled 1:240



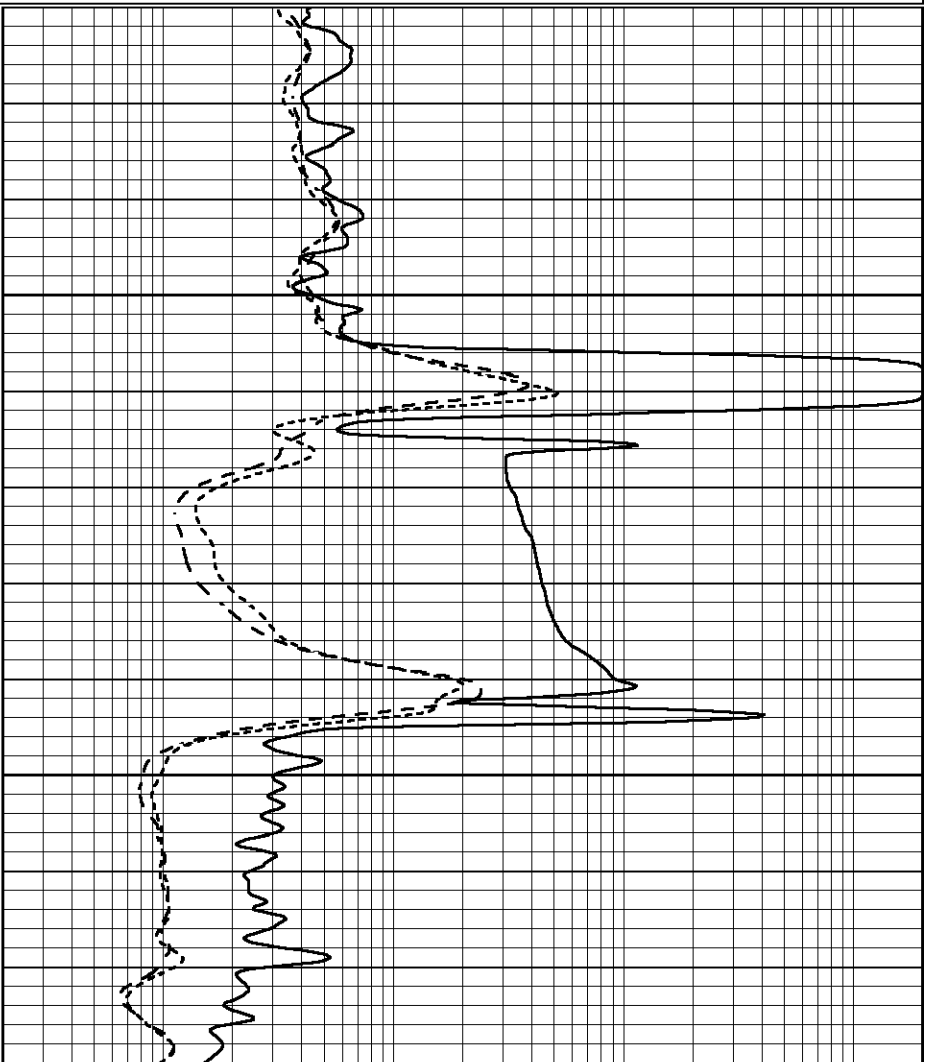
-100	SP (mV)	100
-250	Rxo/Rt	50

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



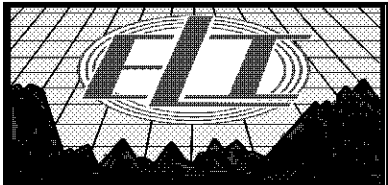
1850

1900



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

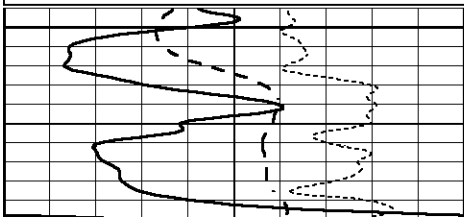


# MAIN SECTION

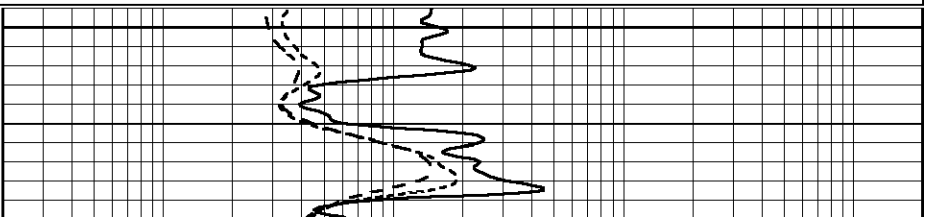
Database File 3429pe8.db  
 Dataset Pathname pass3.1  
 Presentation Format \_dil  
 Dataset Creation Thu Dec 13 21:30:33 2018  
 Charted by Depth in Feet scaled 1:240

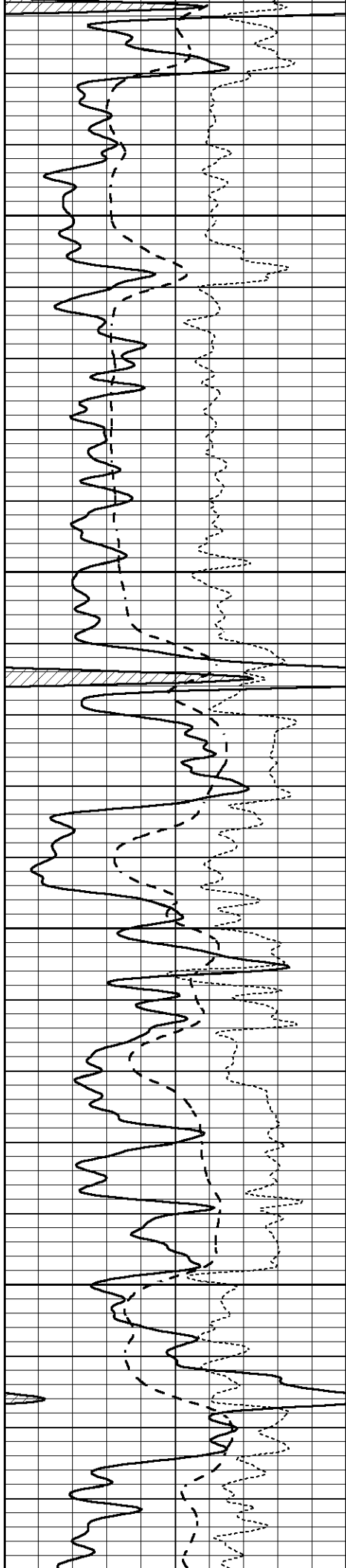
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

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



3800



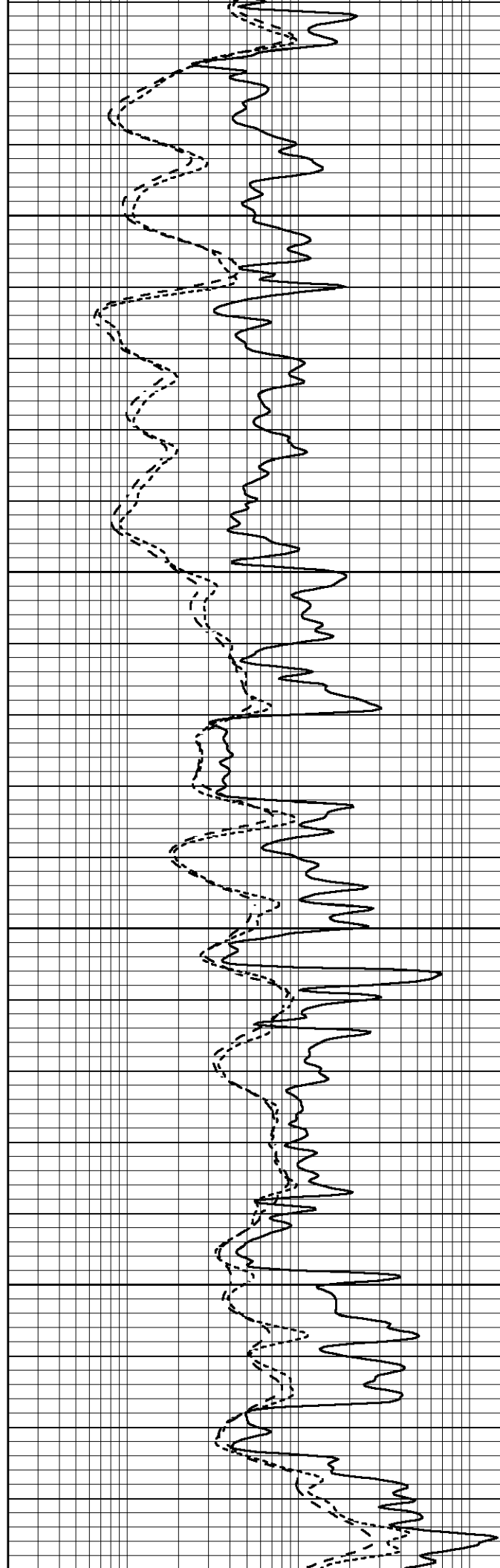


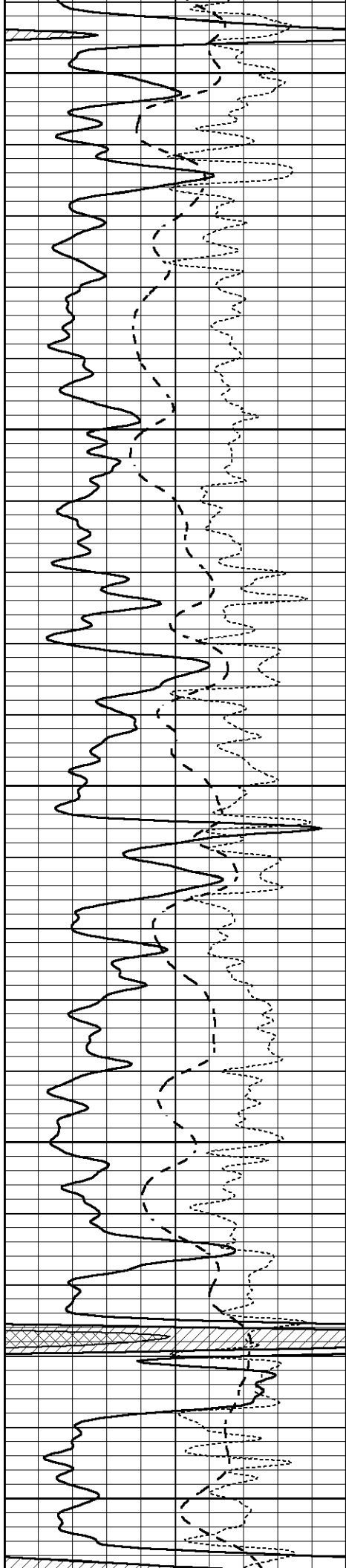
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3900

3950

4000





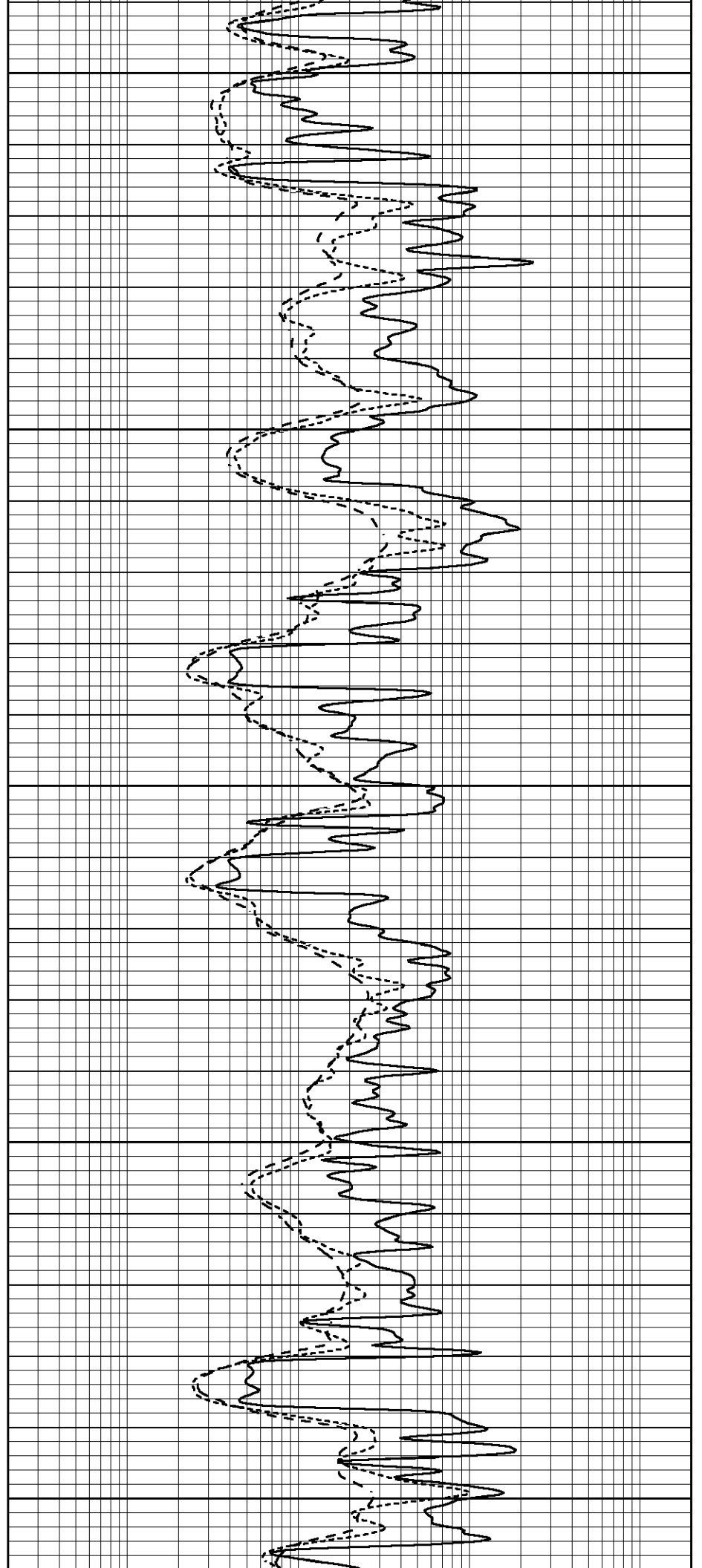
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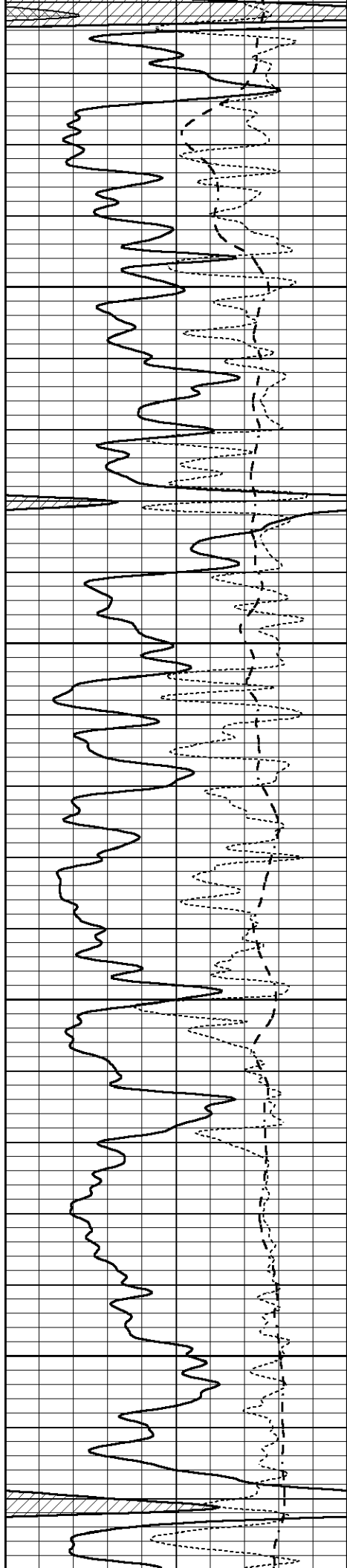
4100

4150

4200

4250



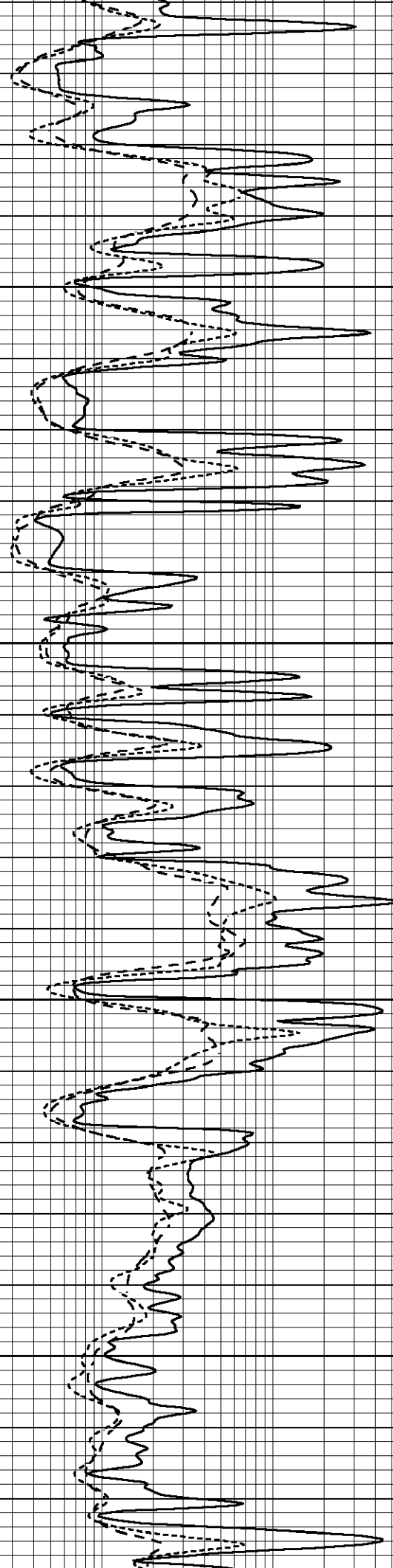


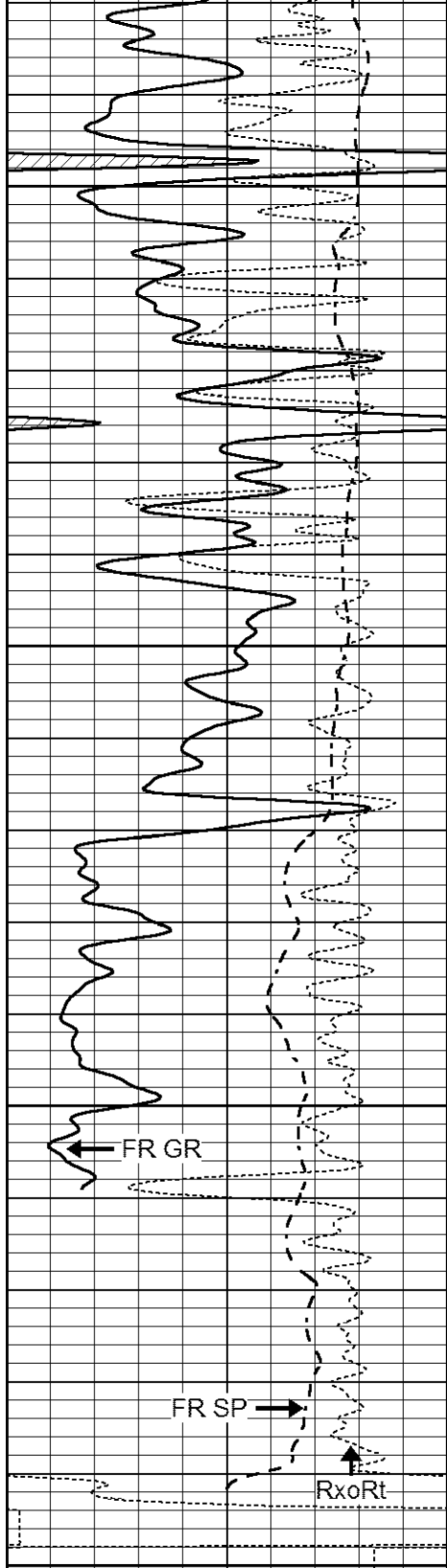
4300

4350

4400

4450





4500

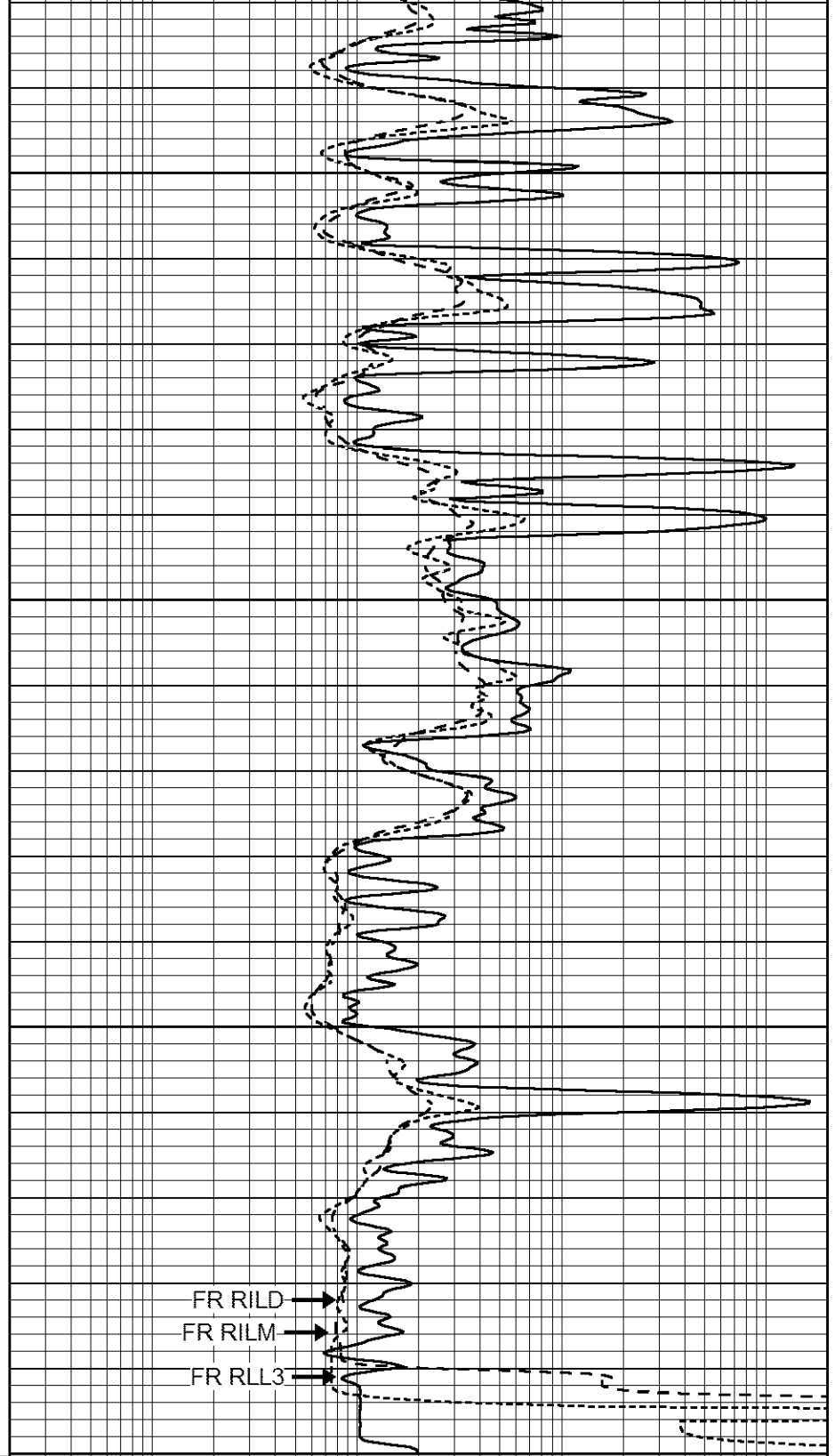
4550

4600

LTD 4643

4650

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



FR RILD  
FR RILM  
FR RLL3

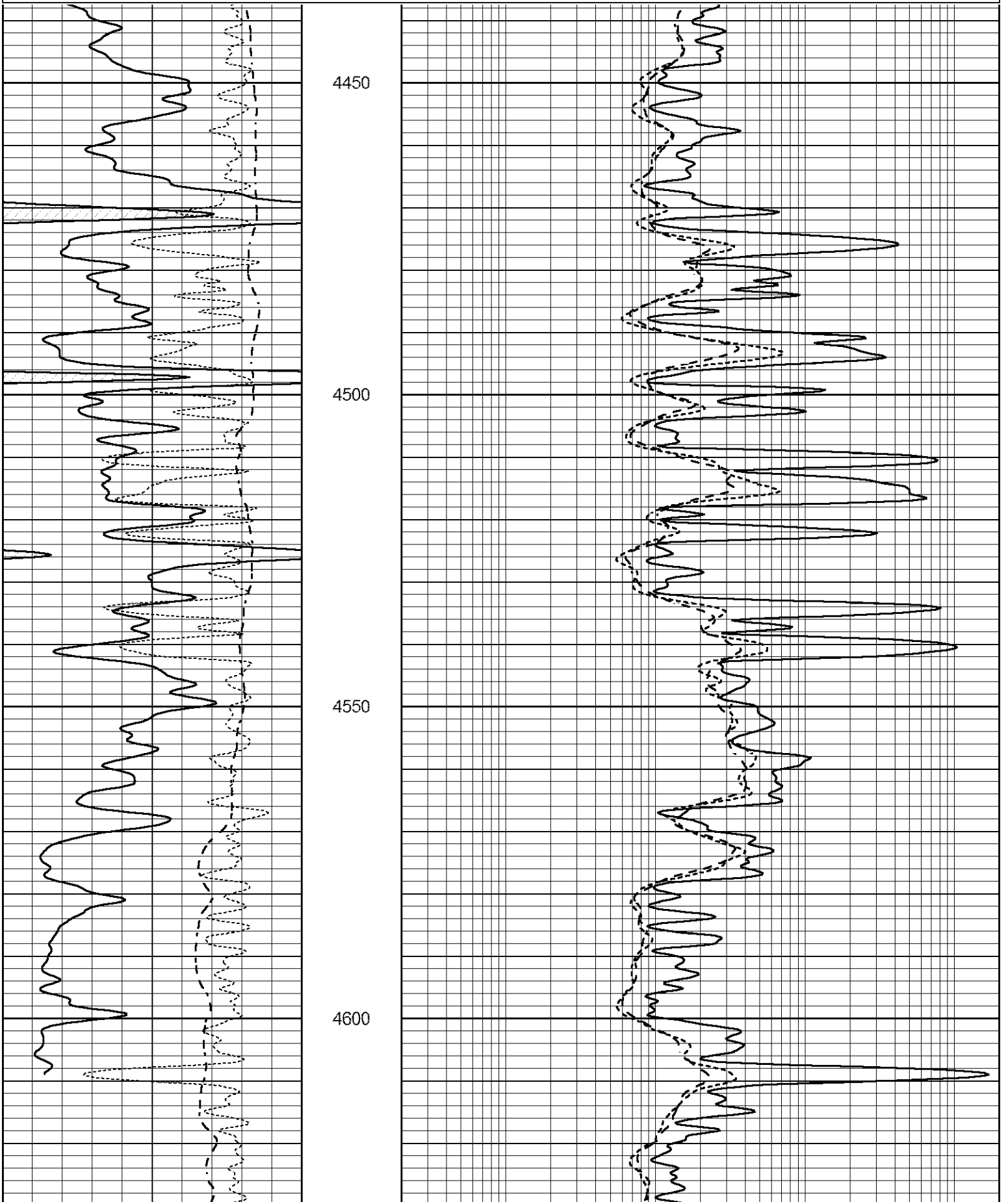
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000



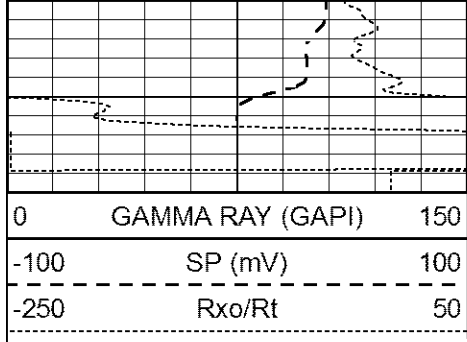
# REPEAT SECTION

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

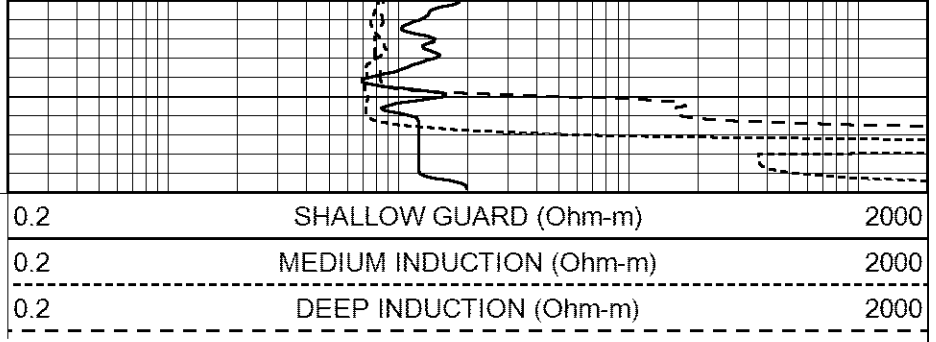
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000







1650



Calibration Report		
Database File	3429pe8.db	
Dataset Pathname	pass2.2	
Dataset Creation	Thu Dec 13 21:32:23 2018	

Dual Induction Calibration Report		
Serial-Model:	FW1410-55-Probe	
Surface Cal Performed:	Mon May 22 14:23:32 2017	
Downhole Cal Performed:	Thu Mar 12 09:29:20 2015	
After Survey Verification Performed:	Thu Mar 12 09:29:20 2015	

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			

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:	Wed Dec 05 01:26:33 2018		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.4300	GAPI/cps	