



DUAL INDUCTION LOG

Company HERMAN LOEB, LLC.
 Well HBT #2-9
 Field FRALICK WEST EXT.
 County KIOWA State KANSAS

Location: API #: 15-097-21861-00-00
 2674 FNL & 357 FEL
 NW - NE - NE - SE
 SEC 9 TWP 28S RGE 20W
 Permanent Datum GROUND LEVEL Elevation 2309
 Log Measured From KELLY BUSHING 13' A.G.L.
 Drilling Measured From KELLY BUSHING
 Other Services CDL/CNL/PE MEL
 Elevation K.B. 2322
 D.F. 2320
 G.L. 2309

Date	5/27/22
Run Number	ONE
Depth Driller	5000
Depth Logger	4999
Bottom Logged Interval	4997
Top Log Interval	00
Casing Driller	8 5/8"@588'
Casing Logger	588
Bit Size	7 7/8
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.1/55
pH / Fluid Loss	8.5/11.6
Source of Sample	FLOWLINE
Rm @ Meas. Temp	0.90@75F
Rmt @ Meas. Temp	0.68@75F
Rmc @ Meas. Temp	1.08@75F
Source of Rmf / Rmc	MEASUREMENT
Rm @ BHT	.540@125F
Time Circulation Stopped	2.5 HOURS
Time Logger on Bottom	8:00 P.M.
Maximum Recorded Temperature	125F
Equipment Number	3802
Location	HAYS, KANSAS
Recorded By	COLE ROBBERN
Witnessed By	JON CHRISTENSEN
	TJ DREILING

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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
 MULLINVILLE, KS. NORTH ON 10TH STREET 1.5 MILES TO 1-5 RD,
 WEST 1.5 MILES TO 7TH STREET, 1 MILE NORTH, WEST INTO

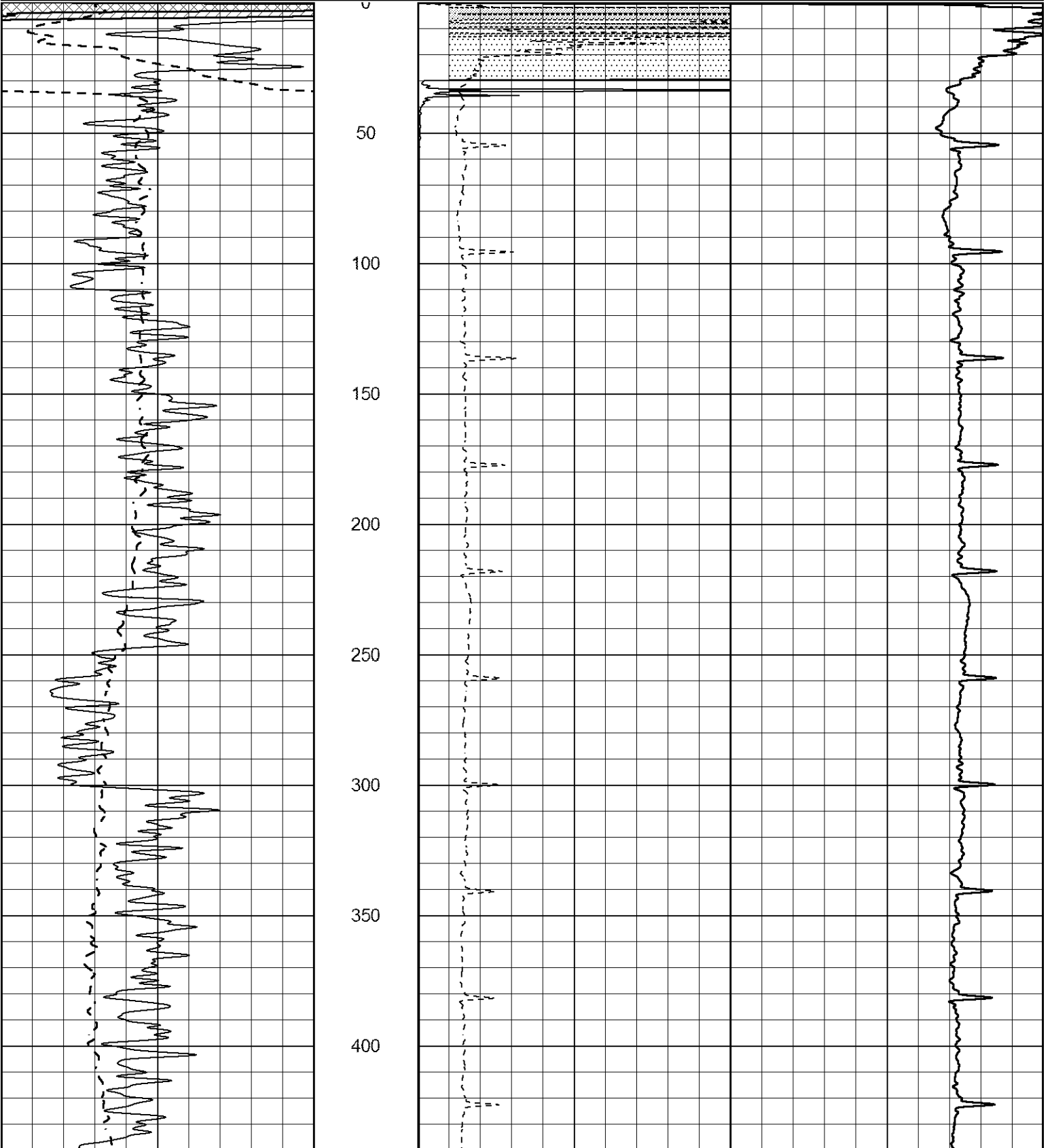


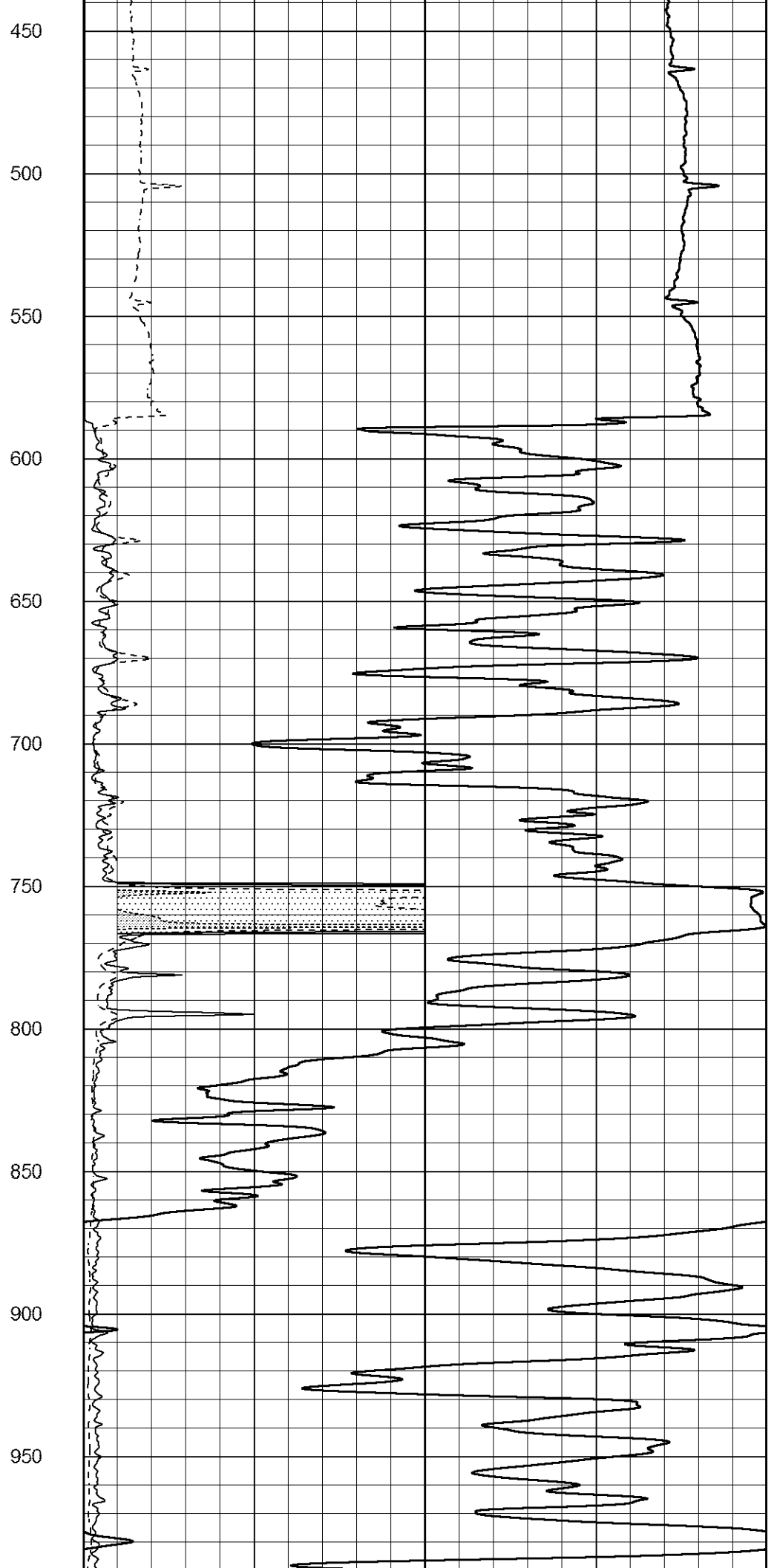
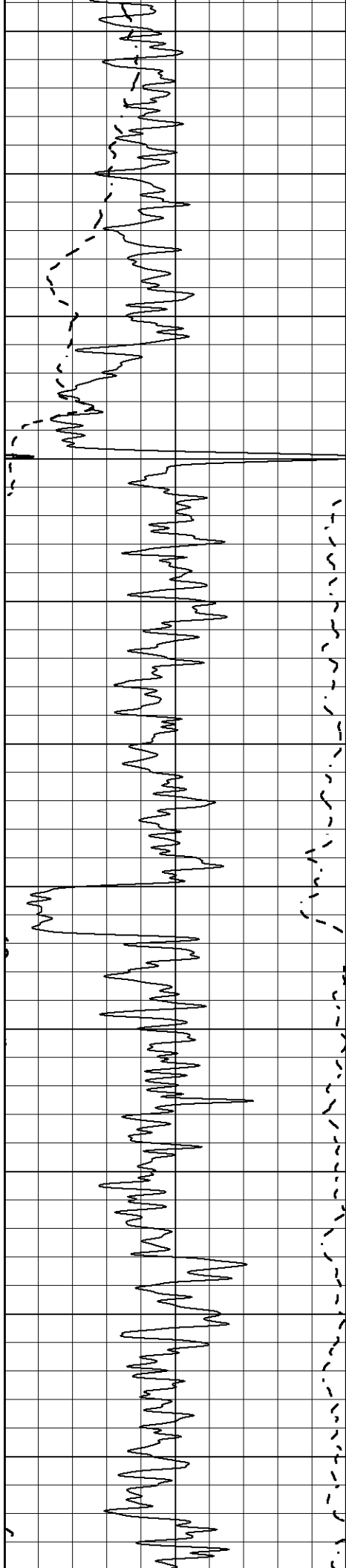
MAIN SECTION

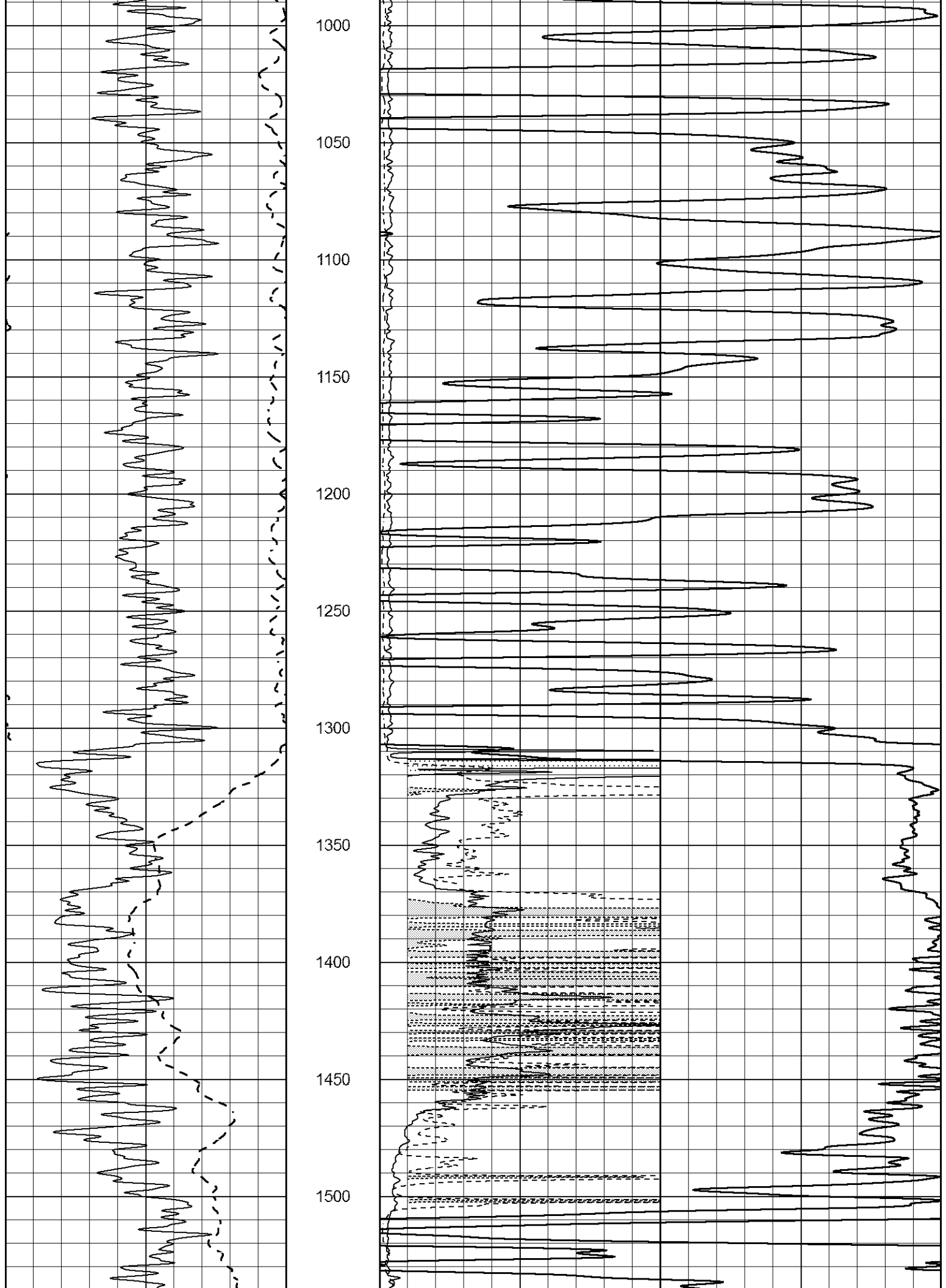
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 Dataset Pathname pass3.1M
 Presentation Format _dil2
 Dataset Creation Fri May 27 21:31:56 2022
 Charted by Depth in Feet scaled 1:600

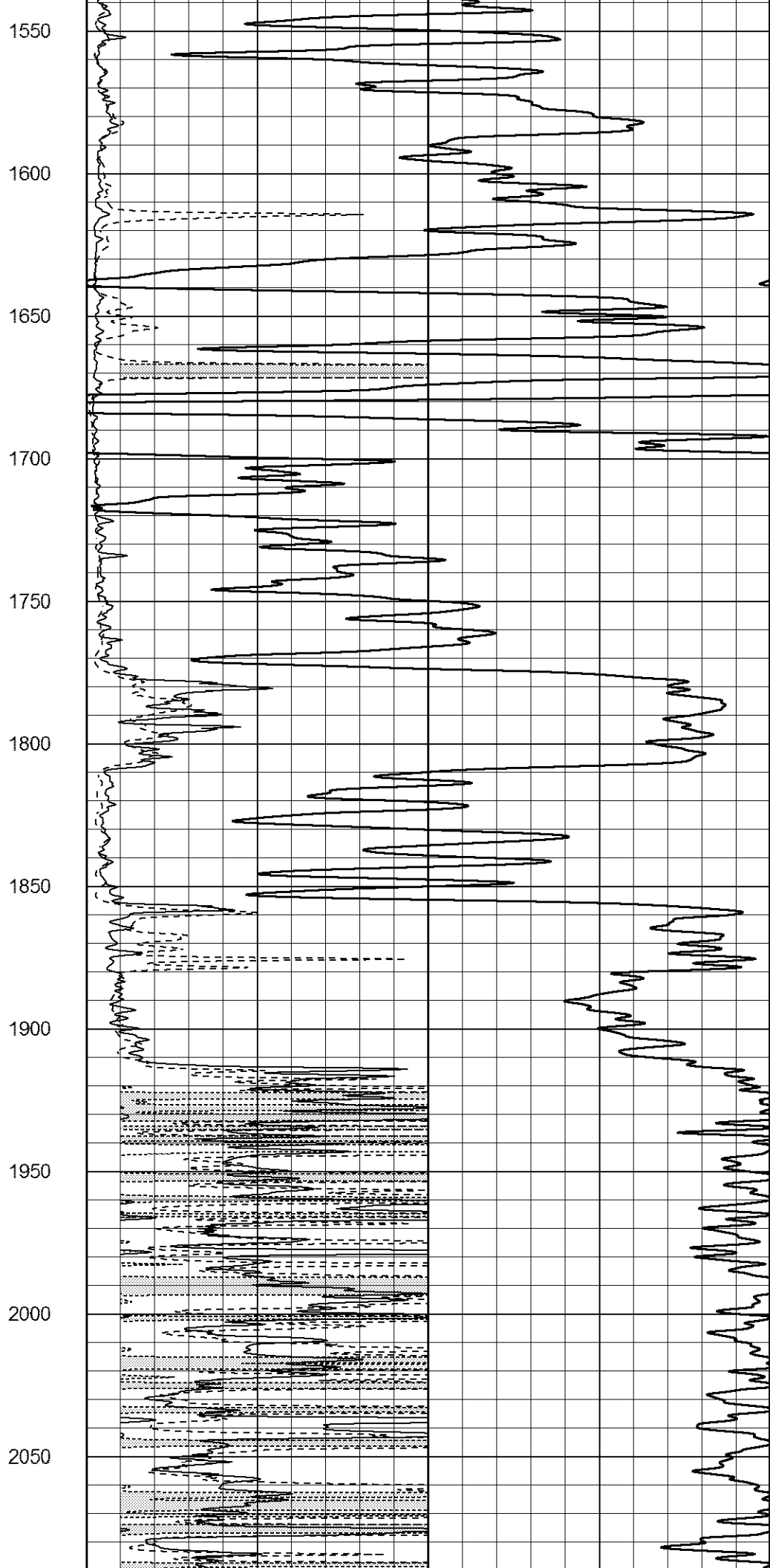
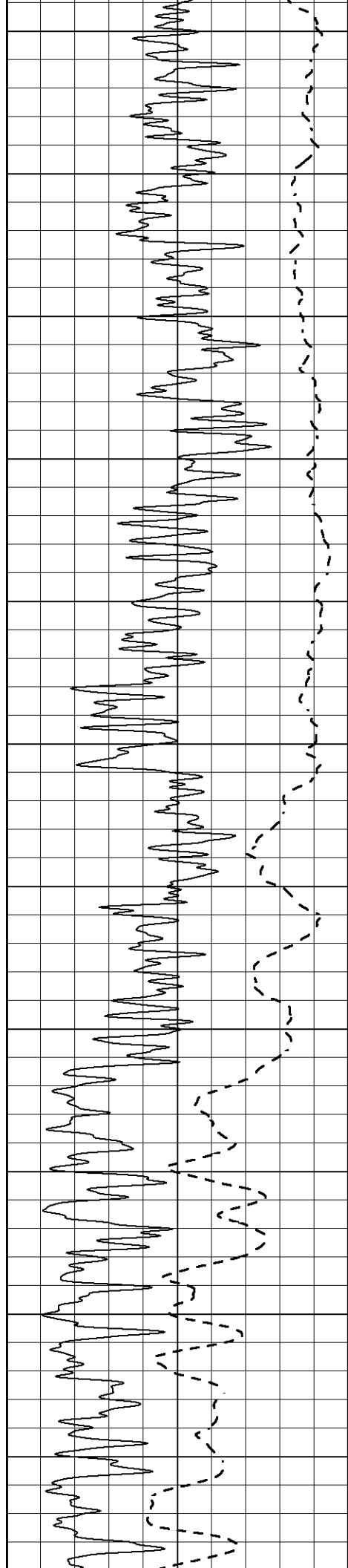
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 -100 SP (mV) 100

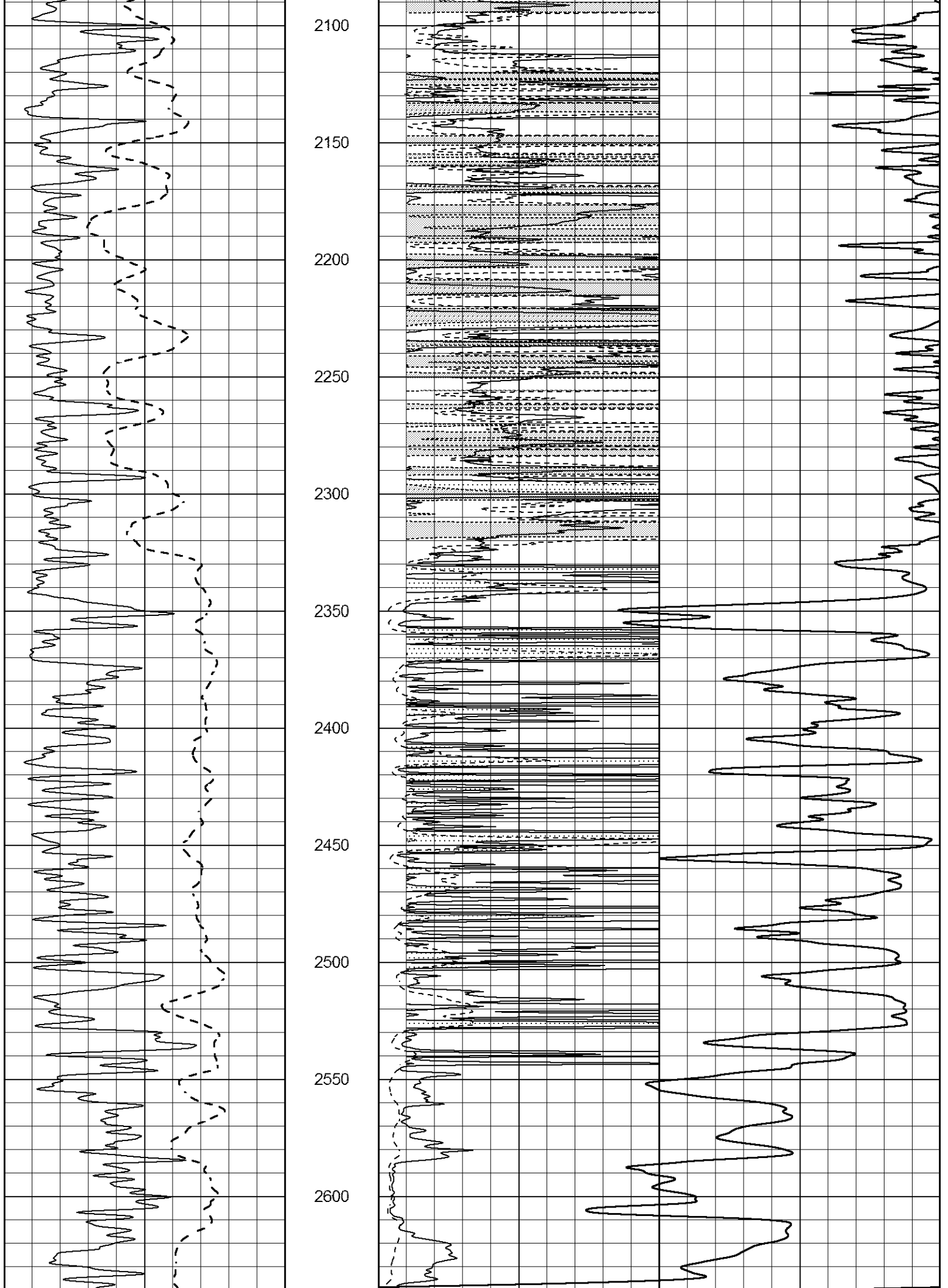
1000 CILD (mmho/m) 0
 0 RLL3 (Ohm-m) 50
 0 Deep Induction (Ohm-m) 50
 50 RILD X10 (Ohm-m) 500
 50 RLL3 X10 (Ohm-m) 500

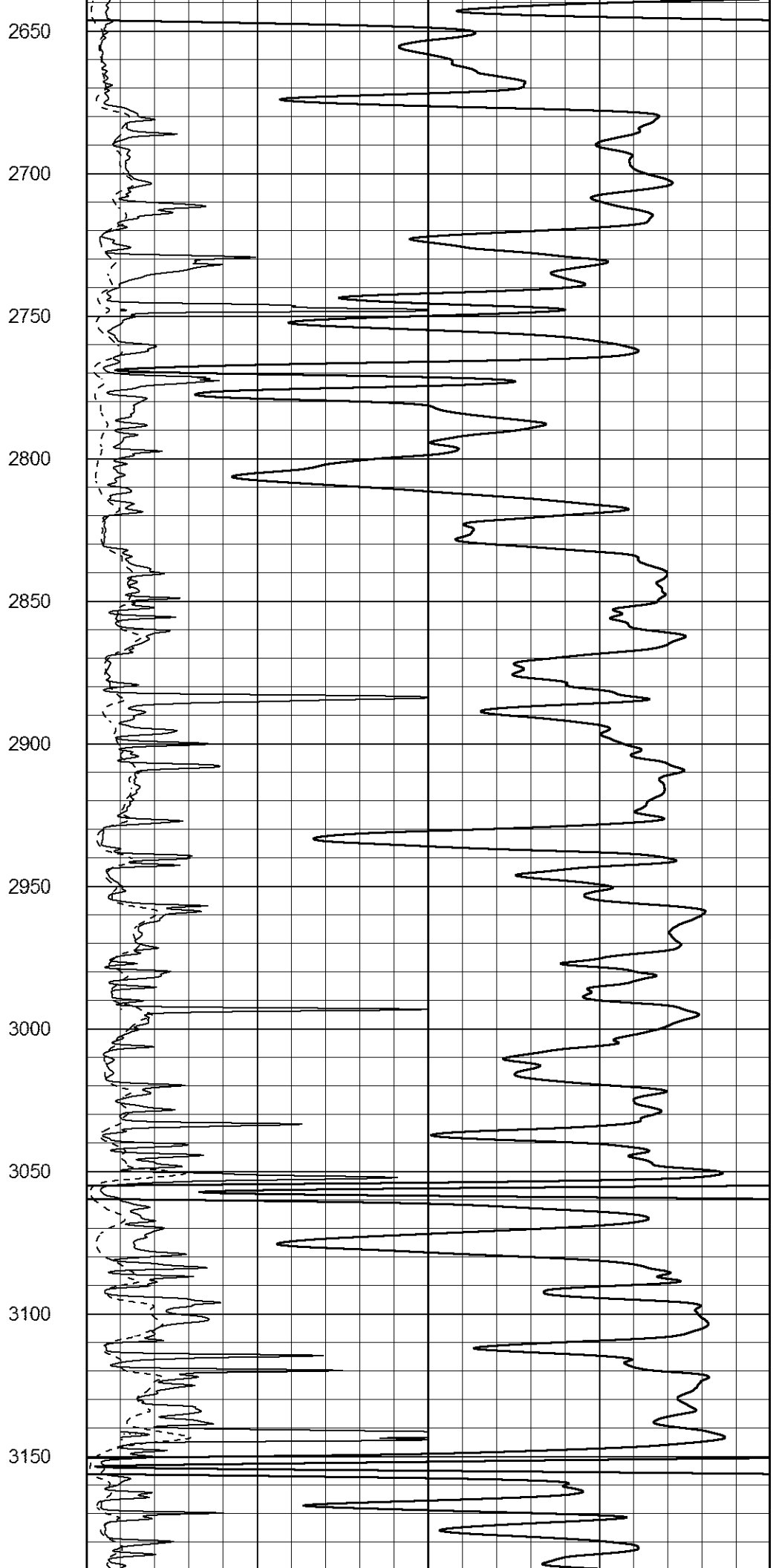
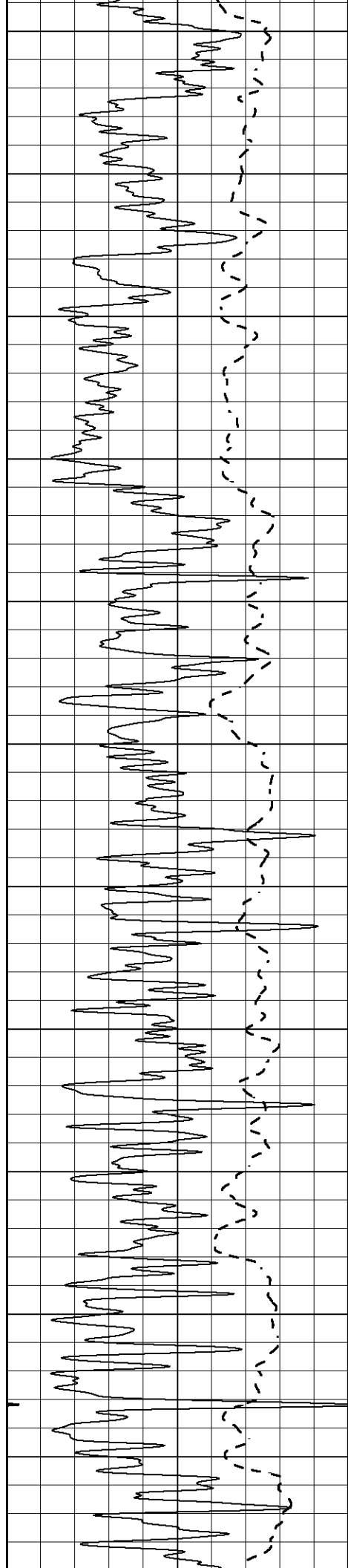




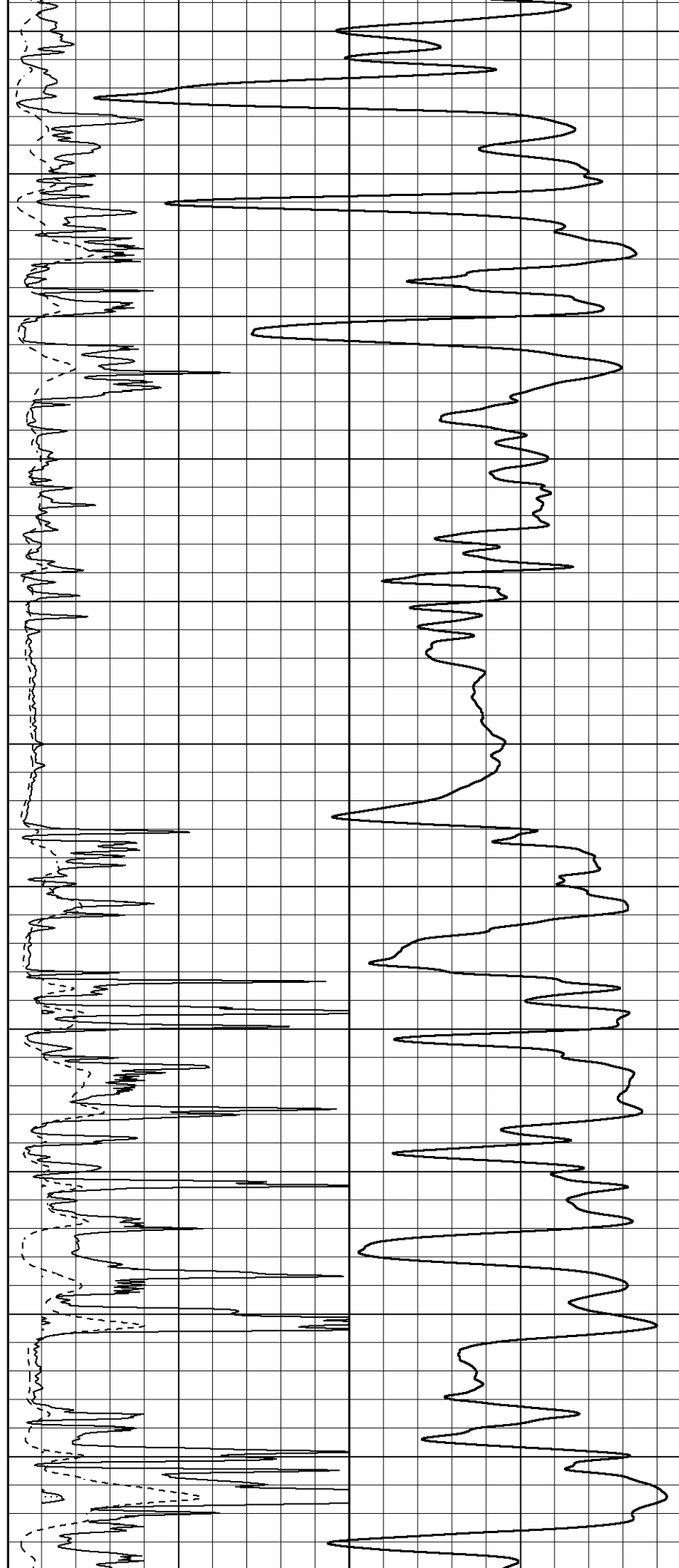
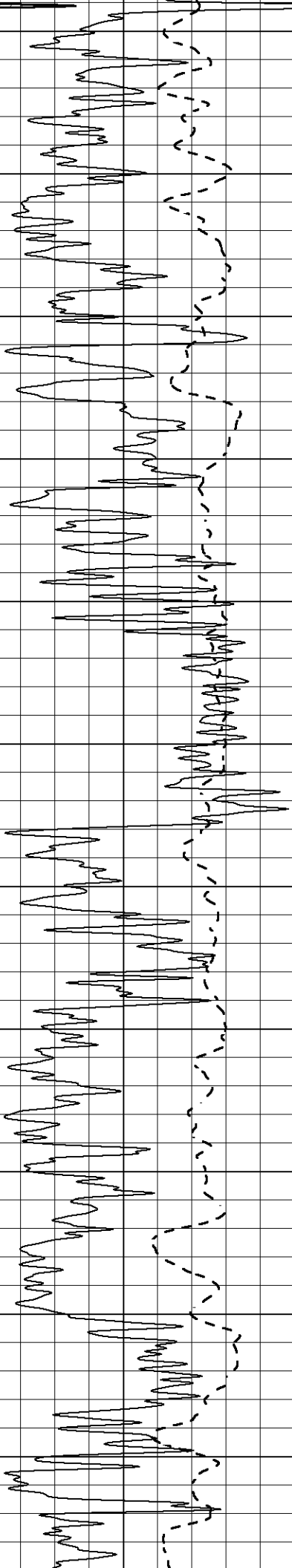


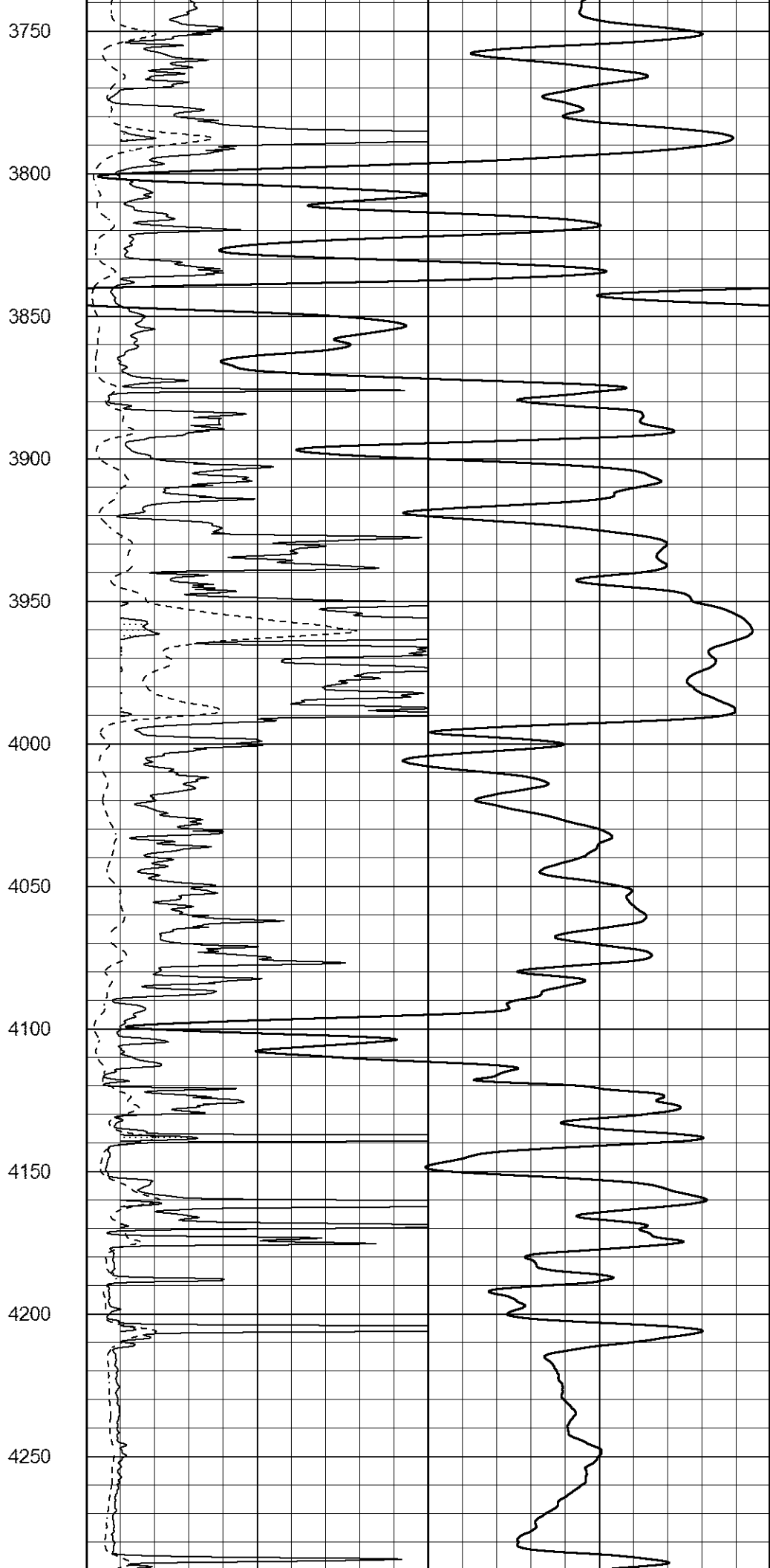
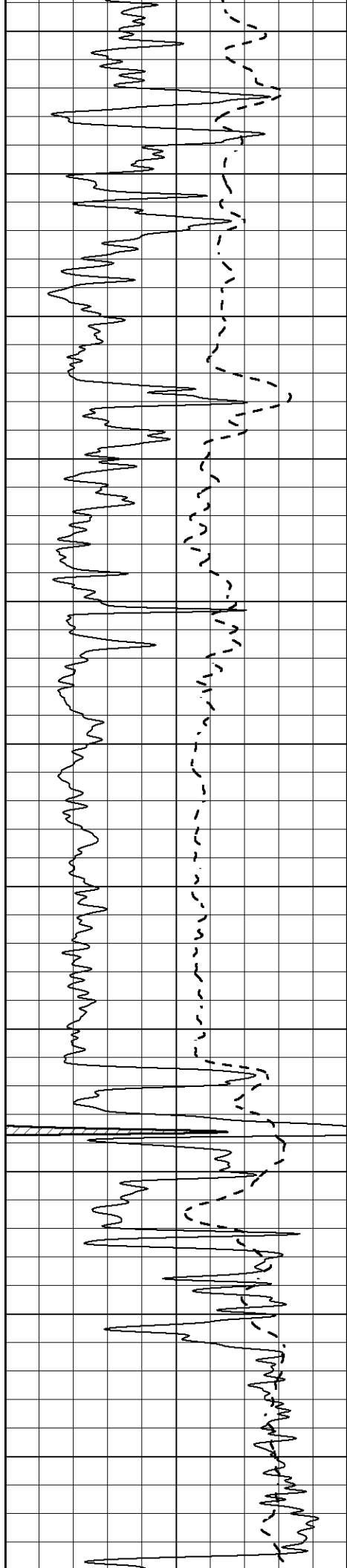


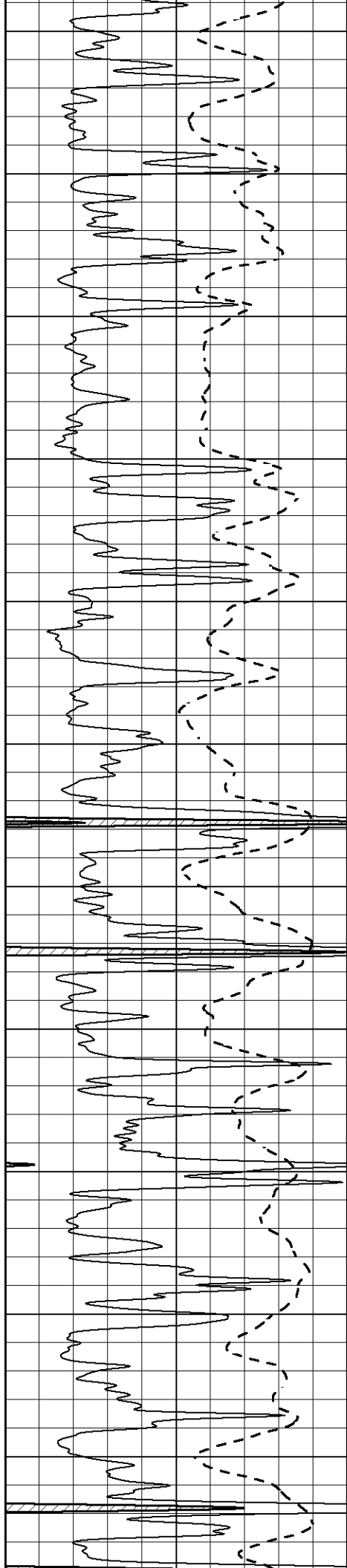




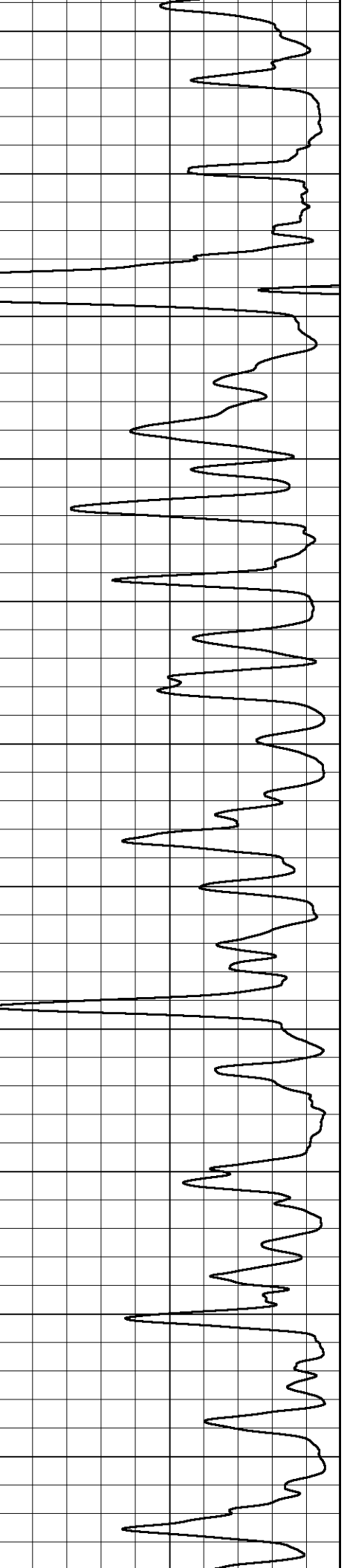
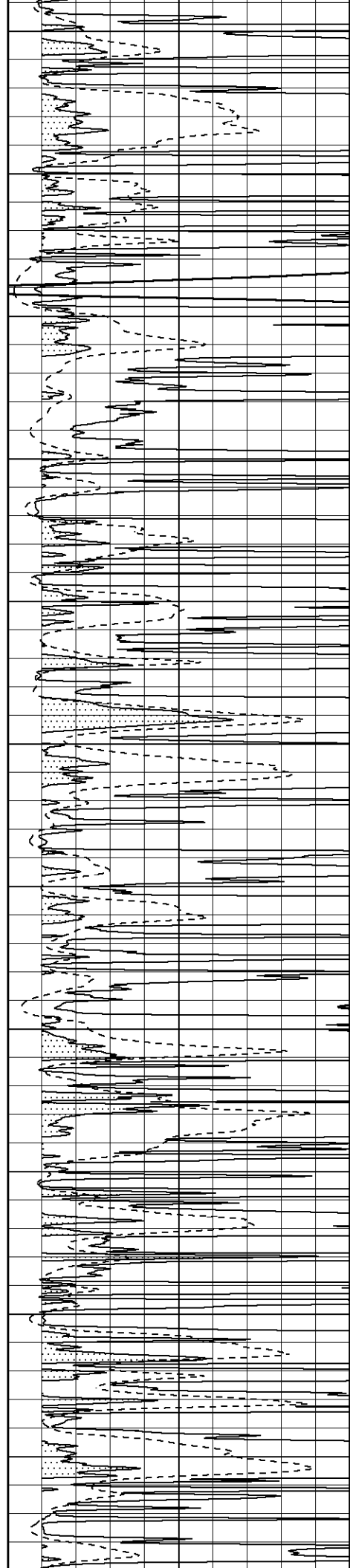
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3300
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3450
3500
3550
3600
3650
3700

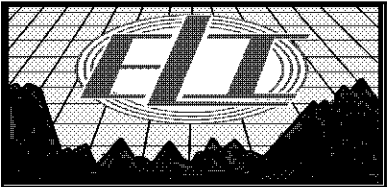
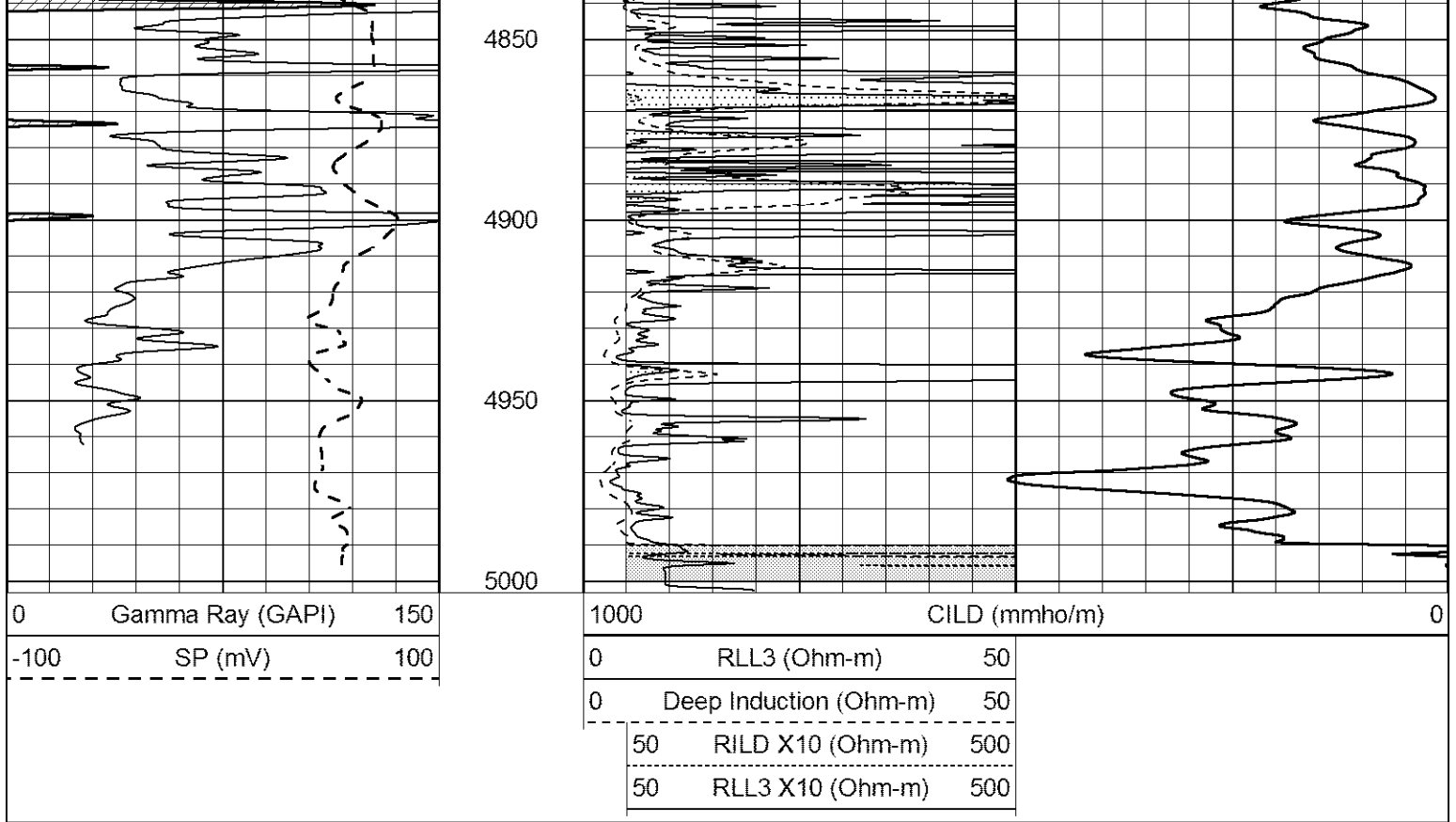






4300
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4400
4450
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4550
4600
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4700
4750
4800

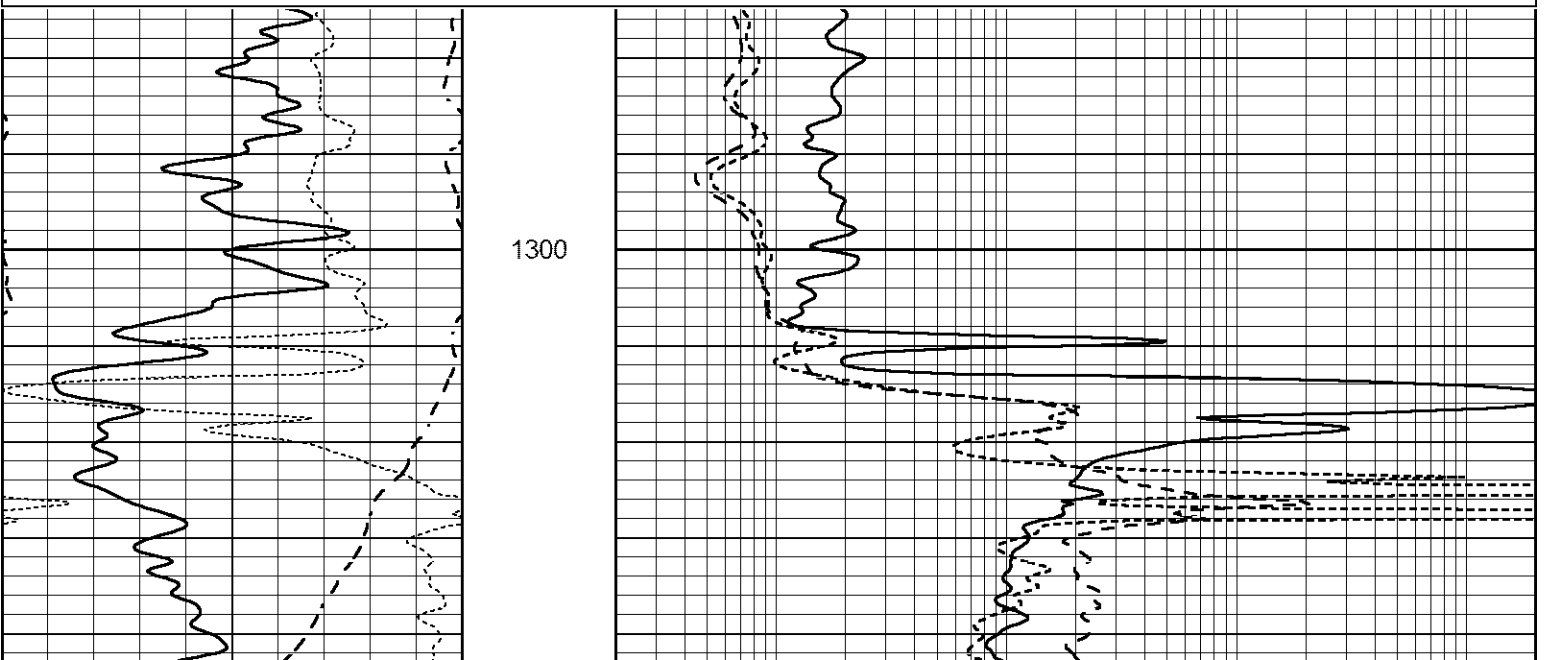


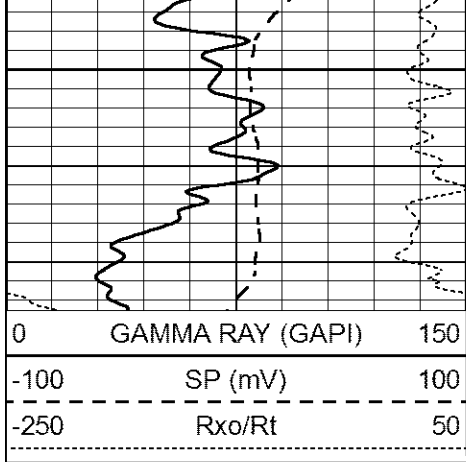


ANHYDRITE

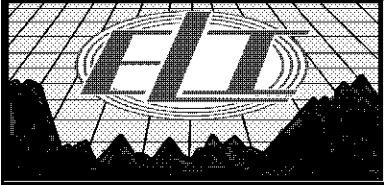
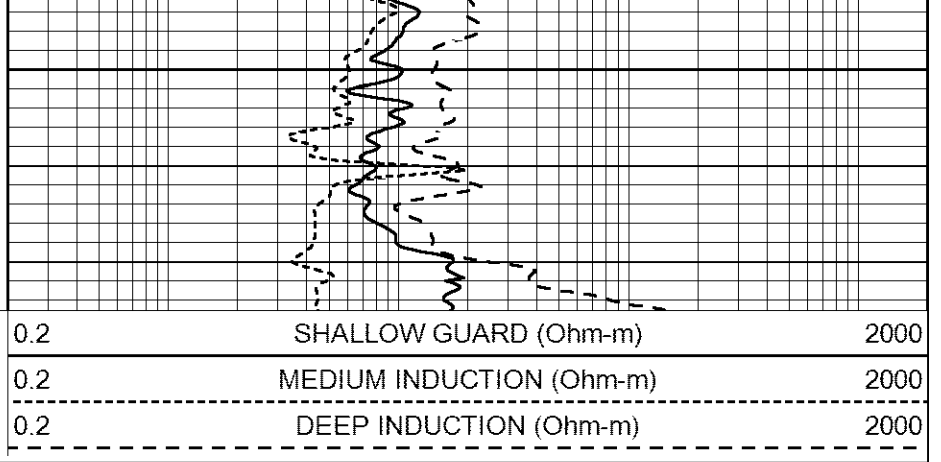
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 Presentation Format _dil
 Dataset Creation Fri May 27 21:39:34 2022
 Charted by Depth in Feet scaled 1:240

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



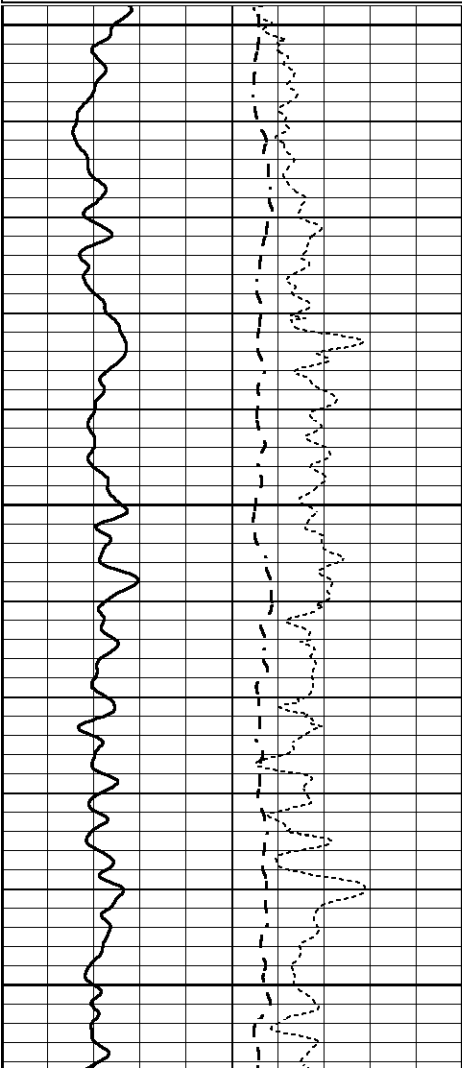
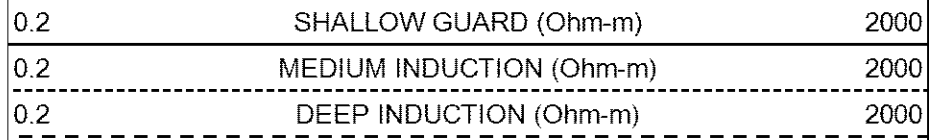
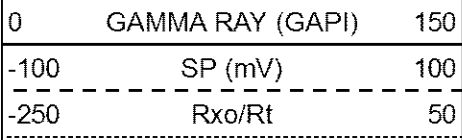


1350



MAIN SECTION

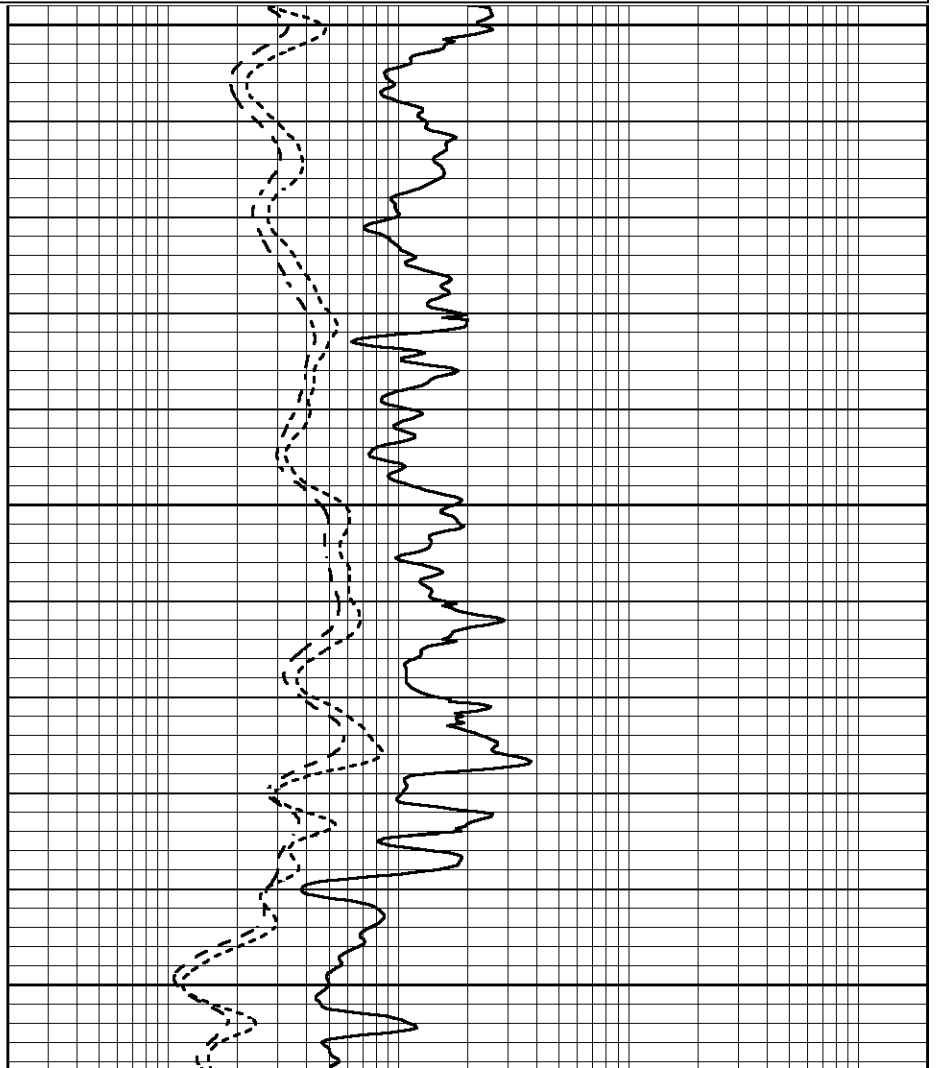
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 Dataset Pathname pass3.1M
 Presentation Format _dil
 Dataset Creation Fri May 27 21:31:56 2022
 Charted by Depth in Feet scaled 1:240

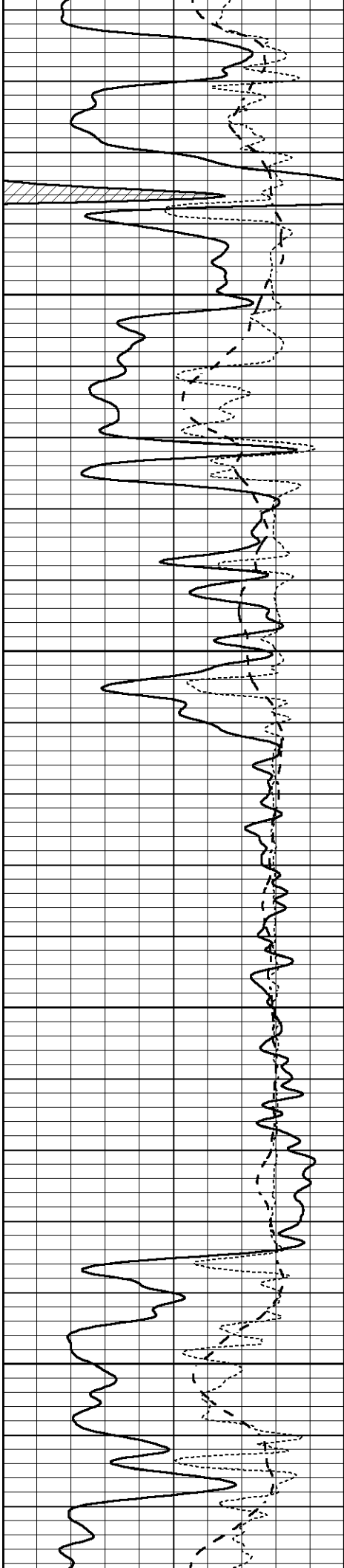


4000

4050

4100



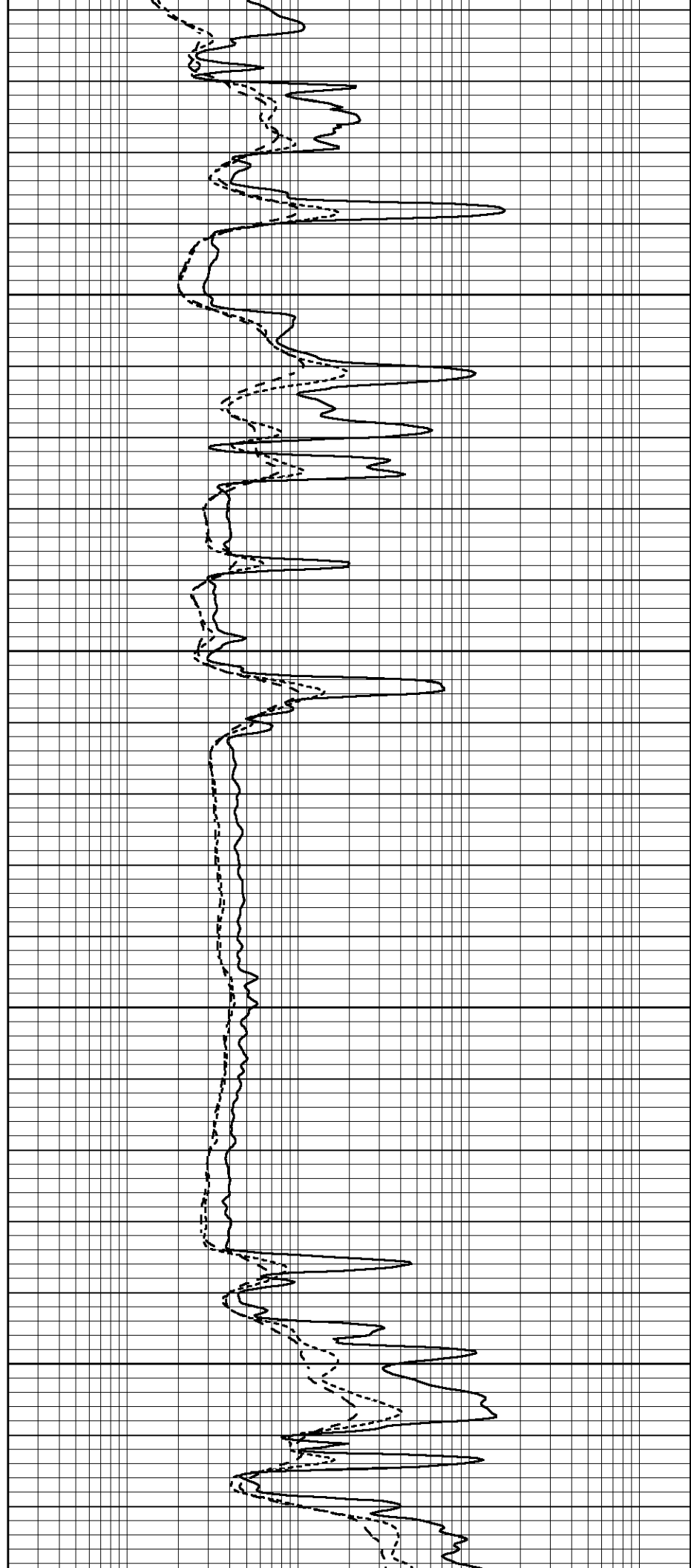


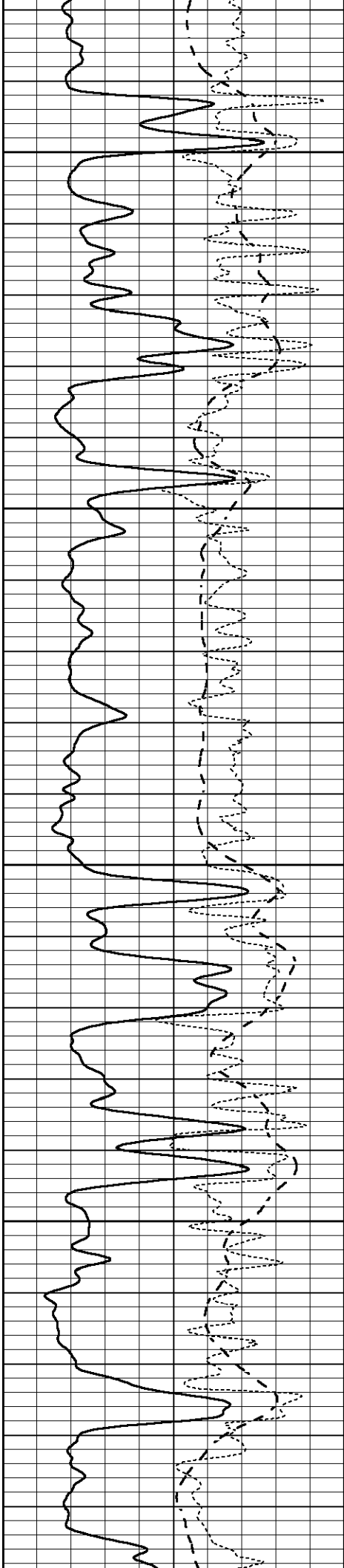
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4200

4250

4300



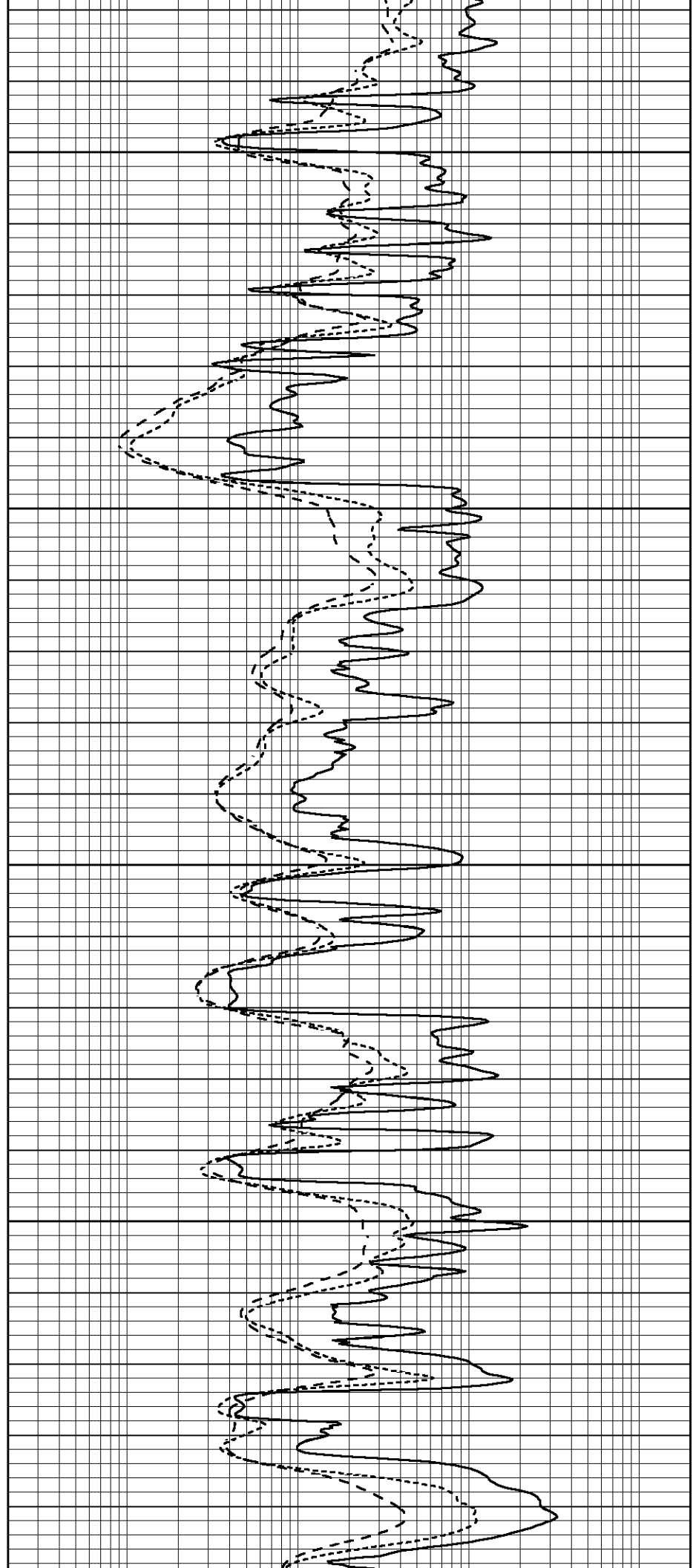


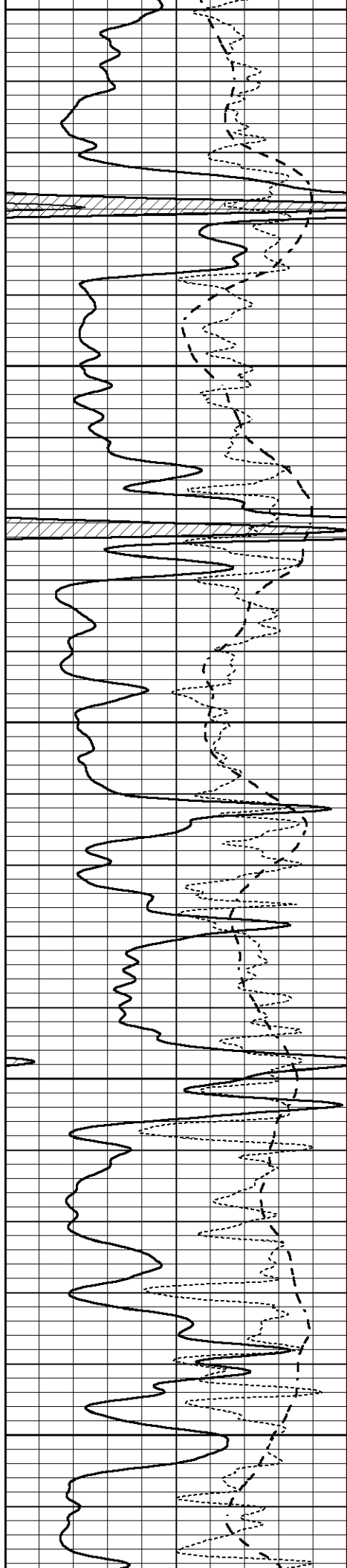
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4400

4450

4500





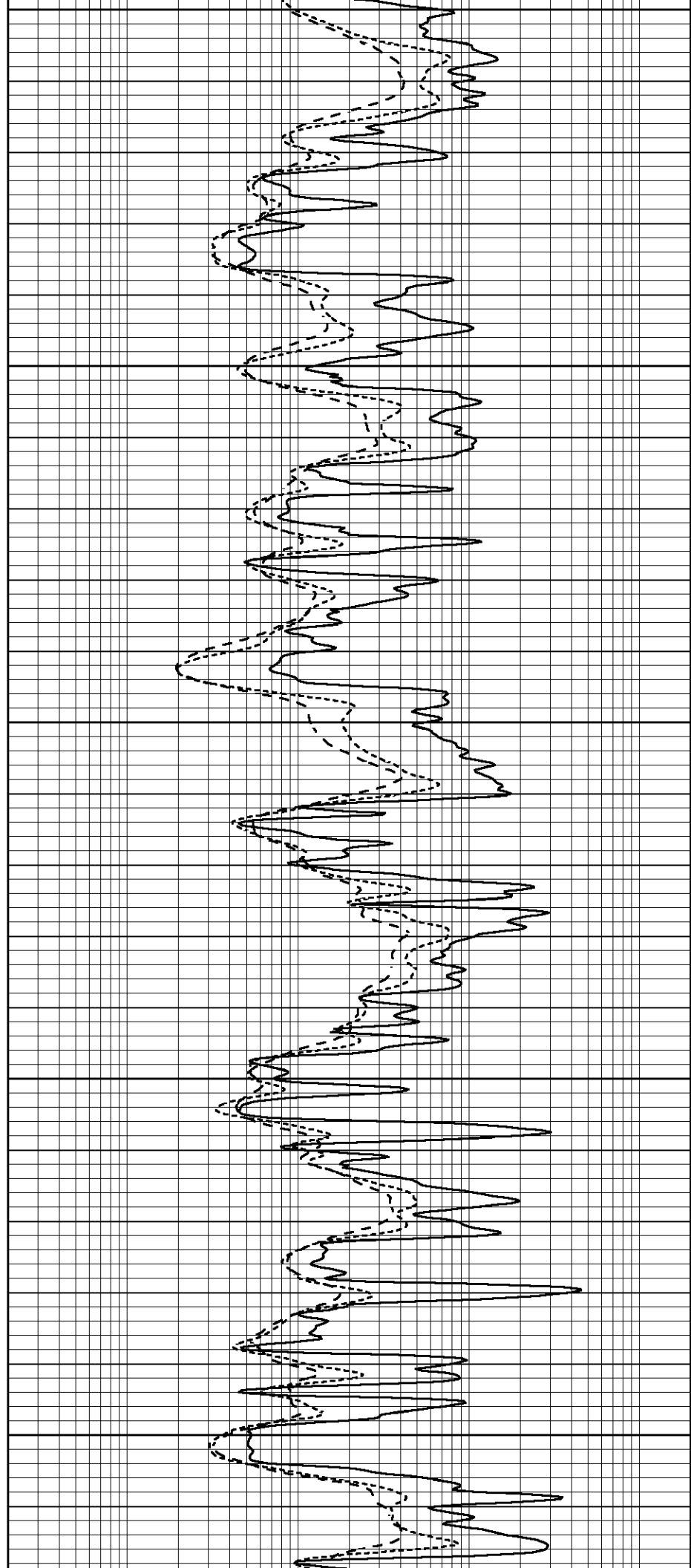
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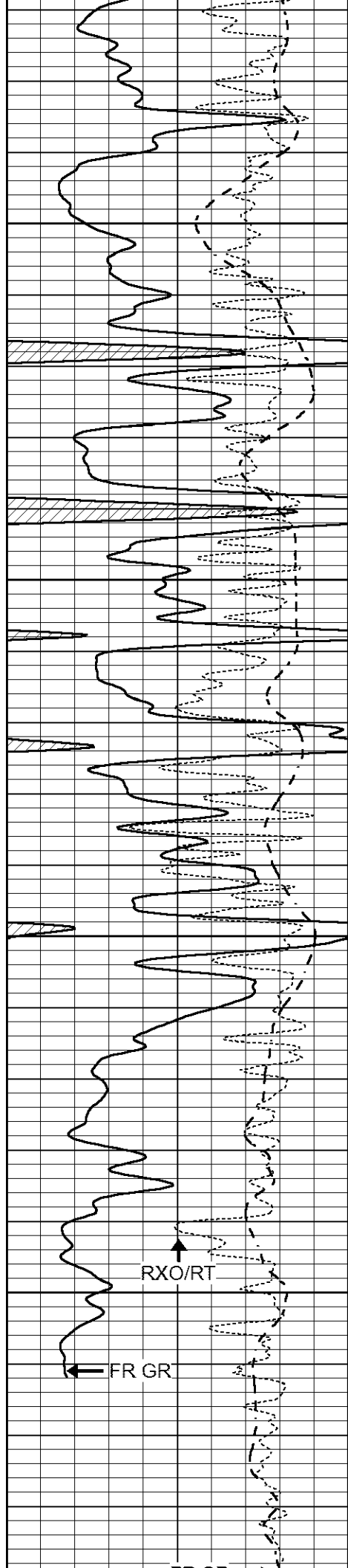
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4650

4700

4750





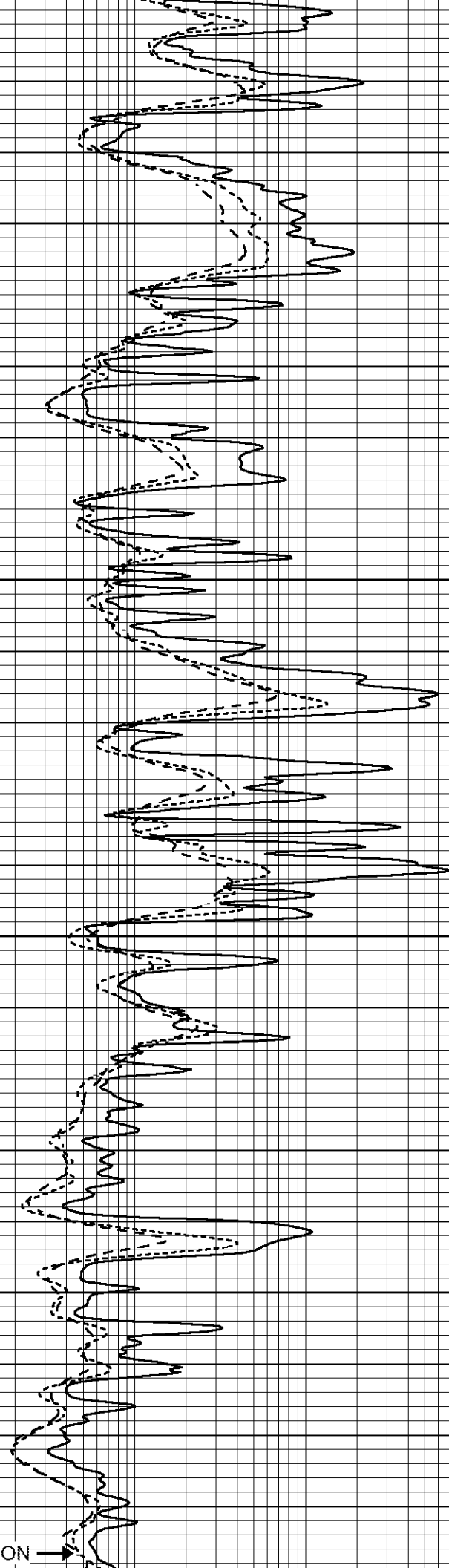
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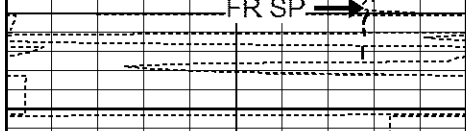
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4900

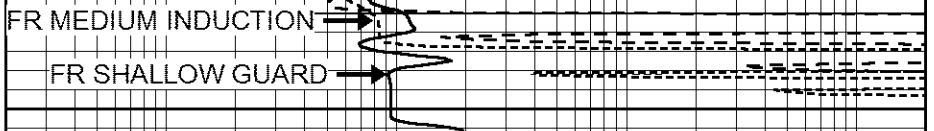
4950

FR DEEP INDUCTION →



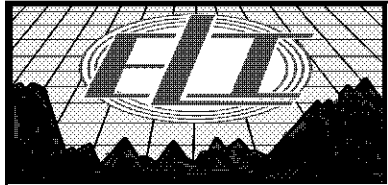


LTD 4999
5000



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

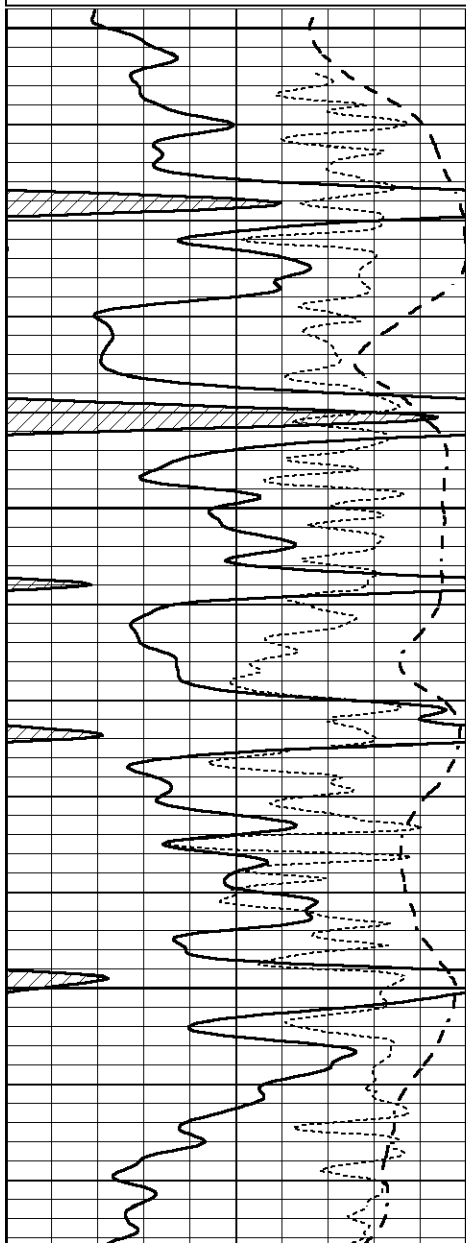


REPEAT SECTION

Database File 6535pe.db
 Dataset Pathname pass2.2R
 Presentation Format _dil
 Dataset Creation Fri May 27 21:19:24 2022
 Charted by Depth in Feet scaled 1:240

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

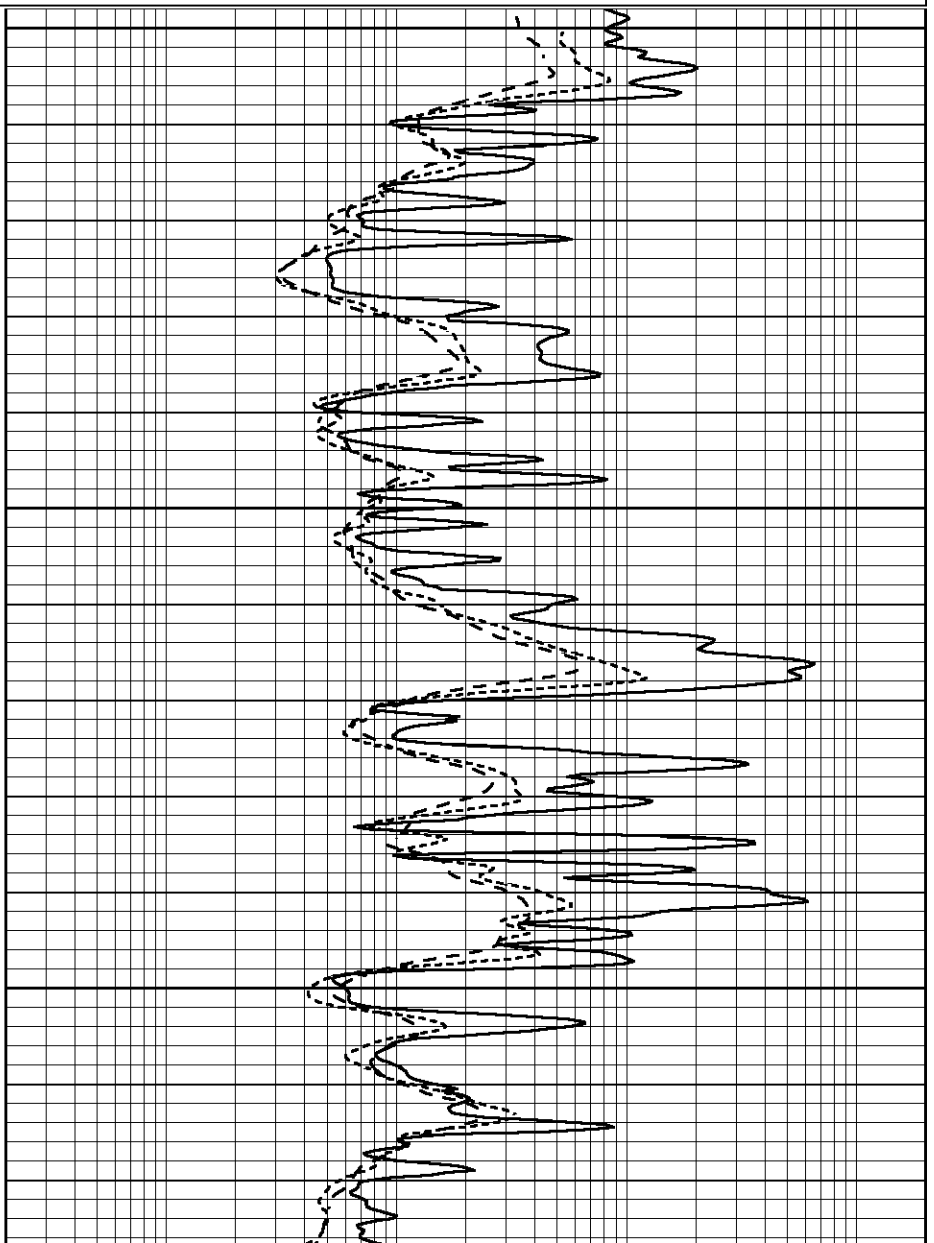
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

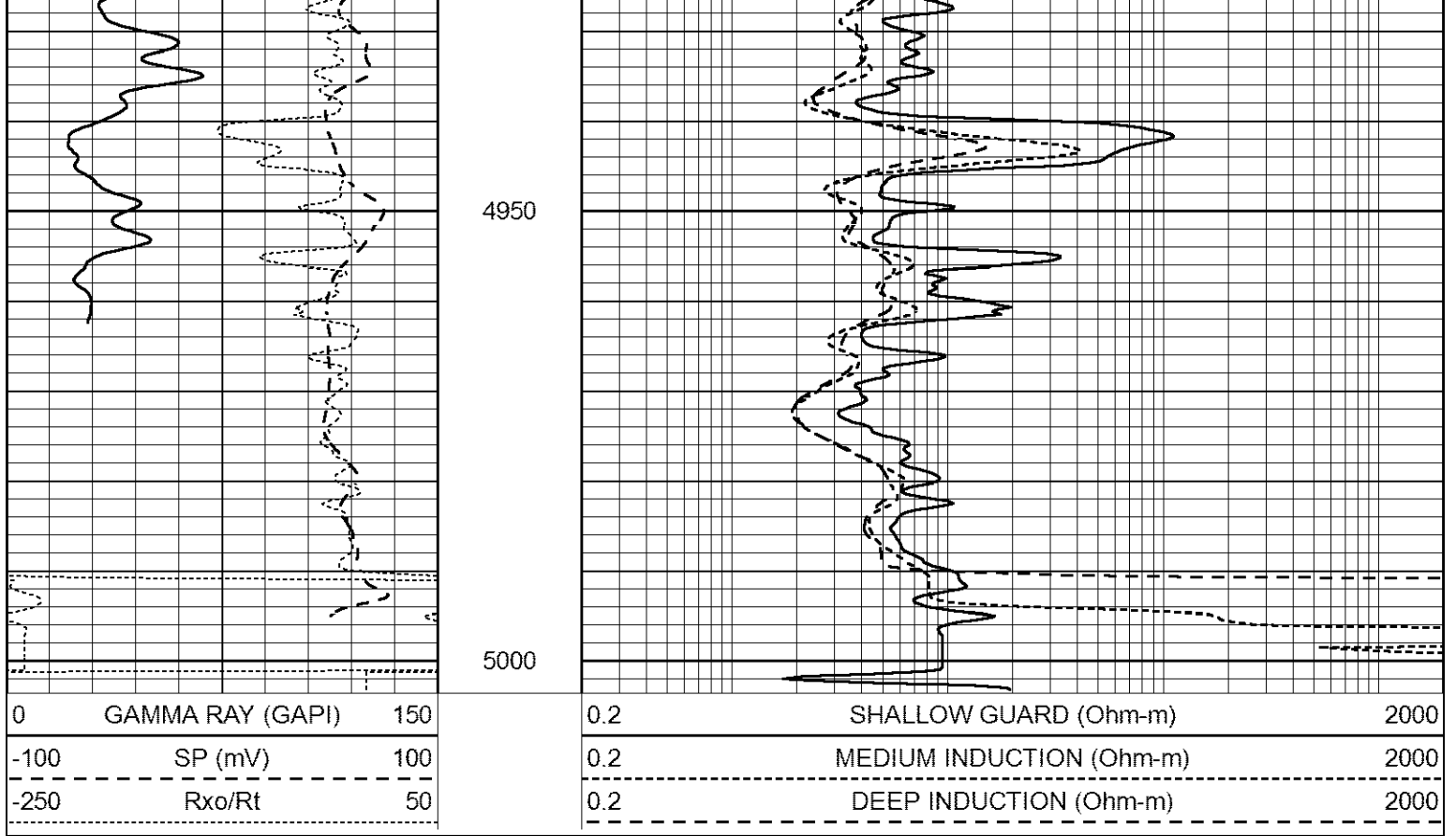


4800

4850

4900





Calibration Report

Database File 6535pe.db
 Dataset Pathname pass3.1M
 Dataset Creation Fri May 27 21:31:56 2022

Dual Induction Calibration Report

Serial-Model: FW1410-55-Probe
 Surface Cal Performed: Sun May 15 19:17:36 2022
 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			V	References			Results	
	Air	Loop			Air	Loop	mmho/m	m	b
Deep	0.011	0.656			1.000	400.000	mmho/m	650.000	-2.000
Medium	-0.000	0.731			1.000	464.000	mmho/m	632.856	-12.000
Internal:	Zero			V	Cal			Results	
									m
Deep	0.007	0.649			0.000	400.000	mmho/m	623.784	-4.595
Medium	0.004	0.743			0.000	464.000	mmho/m	627.284	-2.251

Downhole Calibration

	Readings			V	References			Results	
	Zero	Cal			Zero	Cal	mmho/m	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

	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: 140704
Model: V4_10P
Source Number: 74GBq-19

Master Calibration

Performed: Mon May 23 14:22:47 2022

	Background	Aluminum	Magnesium		
Window 1	511.07	5437.36	23664.68	cps	
Window 2	40.76	1220.39	5745.34	cps	
Window 4	223.73	1233.64	5301.27	cps	
Window 5	531.57	7878.13	15405.81	cps	
Window 6	48.52	1245.17	2497.97	cps	
Window 8	246.02	2578.14	4974.07	cps	
Bulk Density	-	2.6020	1.6830	g/cc	
Pe	-	3.0000	2.5070	b/e	
LS Alpha:	: -1.8413	SS Alpha:	: -0.8034	LS CPE:	: 1.1579
LS Beta:	: 124864.8423	SS Beta:	: 19537.1506	SS CPE:	: 1.6371

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: Mon May 23 14:22:47 2022

Results	Readings	References (in)		Gain	Offset
Low	High	Low	High		
8210.8	12139.3	7.0	14.0	0.0	-7.5

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:

Thu May 26 08:56:46 2022

Calibrator Value:

1.0

GAPI

Background Reading:

0.0

cps

Calibrator Reading:

1.0

cps

Sensitivity:

0.5500

GAPI/cps