



# DUAL INDUCTION LOG

**Company** RED OAK ENERGY, INC.  
**Well** RITA DOIDGE NO. 1-34  
**Field** WC  
**County** WALLACE  
**State** KANSAS

**Location:** 1124' FNL & 330' FWL  
 API #: 15-199-20437-00-00  
 SEC 34 TWP 14S RGE 41W  
**Permanent Datum** GROUND LEVEL Elevation 3793  
**Log Measured From** KELLY BUSHING 11' A.G.L.  
**Drilling Measured From** KELLY BUSHING  
**Other Services** CNL/CDL MEL  
**Elevation** K.B. 3804  
 D.F. 3802  
 G.L. 3793

Date	12/2/16	Run Number	ONE
Depth Driller	5235'	Depth Logger	5239'
Bottom Logged Interval	5237'	Top Log Interval	0
Casing Driller	456'	Casing Logger	454'
Bit Size	7 7/8	Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.4/61	PH / Fluid Loss	9.5/8.8
Source of Sample	FLOWLINE	Rm @ Meas. Temp	.70@87
Rm @ Meas. Temp	.52@87	Rmc @ Meas. Temp	.84@87
Source of Rmf / Rmc	MEASUREMENT	Rm @ BHT	.48@127
Time Circulation Stopped	2 HOURS	Time Logger on Bottom	127 DEG/F
Maximum Recorded Temperature	3802	Equipment Number	3802
Location	HAYS, KANSAS	Recorded By	JUSTIN HENRICKSON
Witnessed By	SEAN DEENIHAN		JASON CAPPULLUCCI

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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  
 SHARON SPRINGS KANSAS  
 8 SOUTH, 7 WEST, NORTH INTO

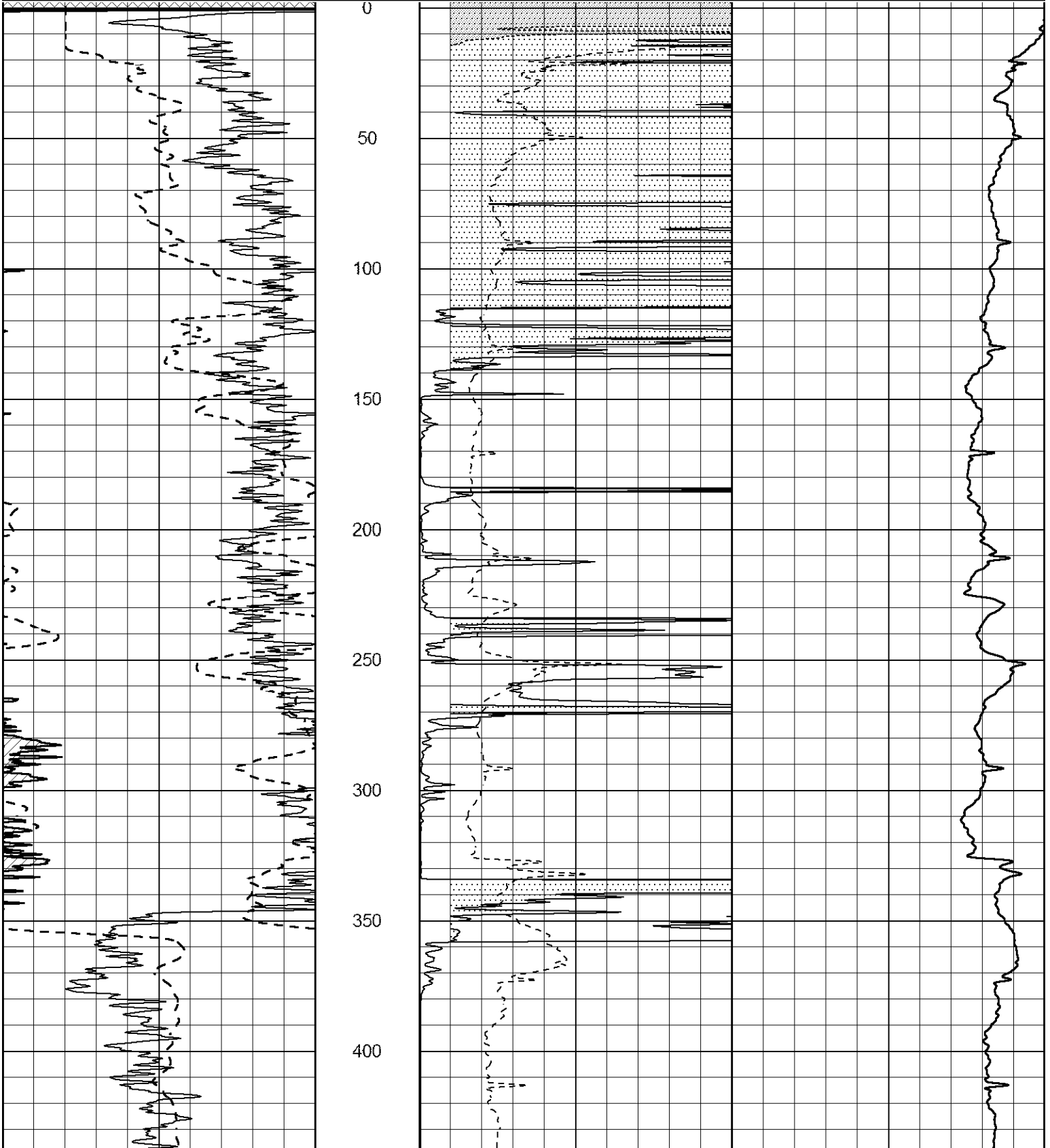


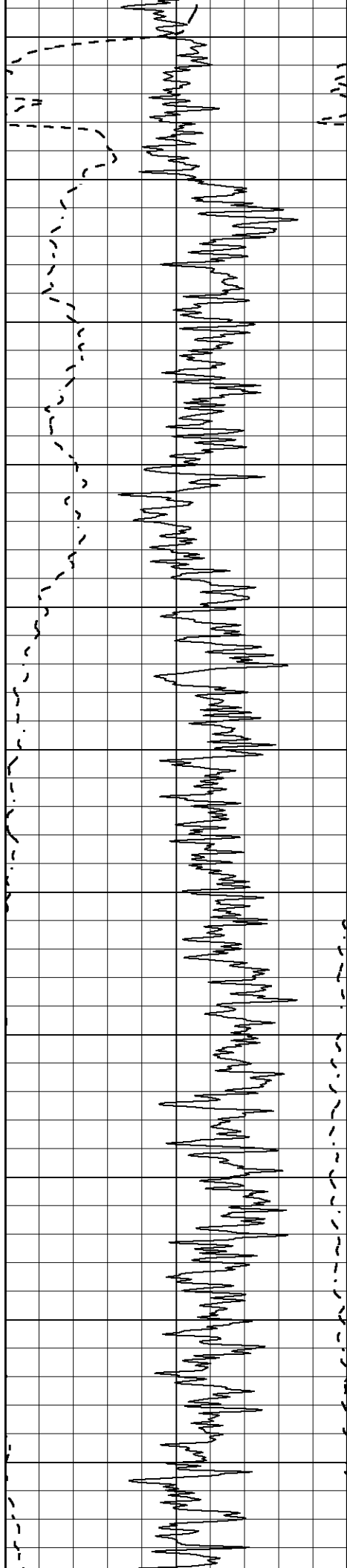
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 Dataset Pathname pass3.3  
 Presentation Format \_dil2  
 Dataset Creation Fri Dec 02 11:50:21 2016  
 Charted by Depth in Feet scaled 1:600

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

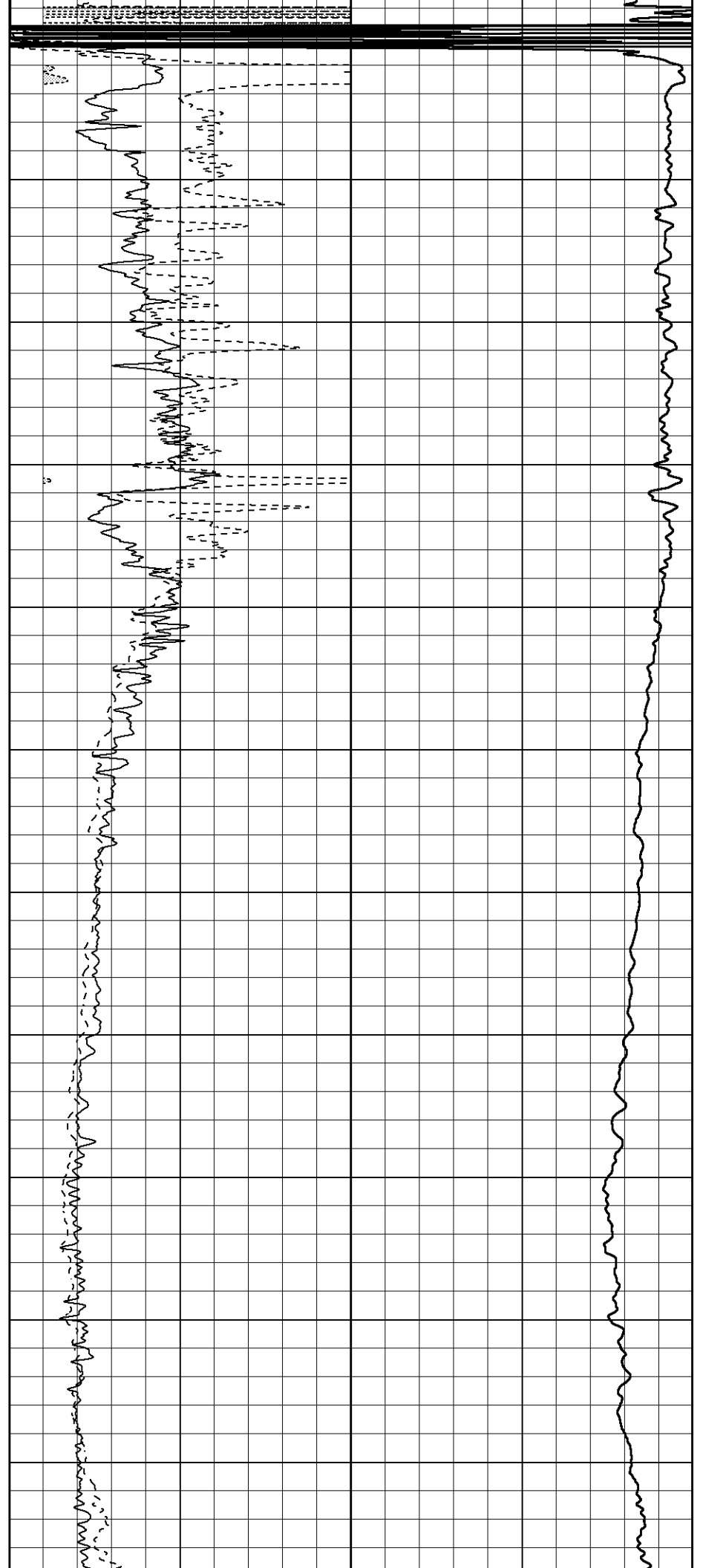
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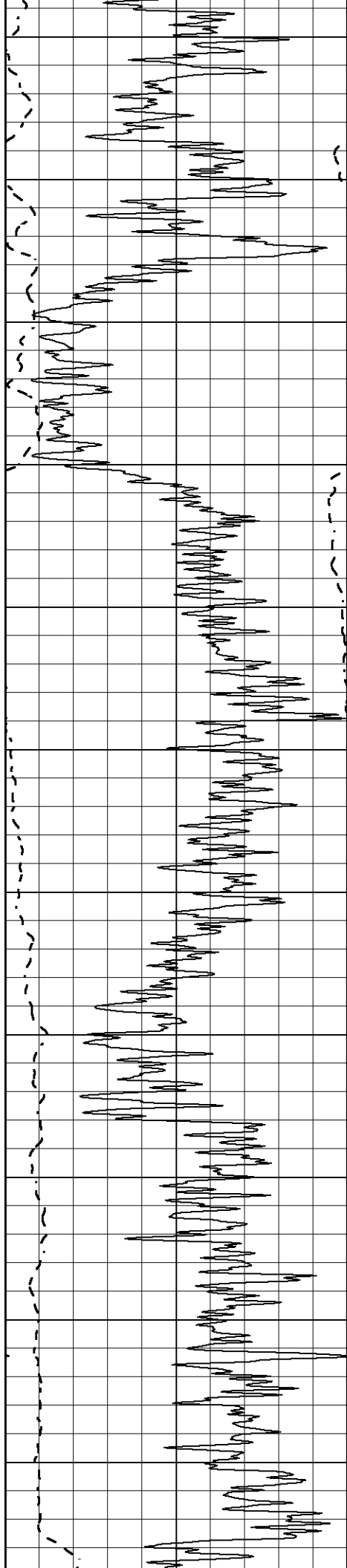
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850

900

950





1000

1050

1100

1150

1200

1250

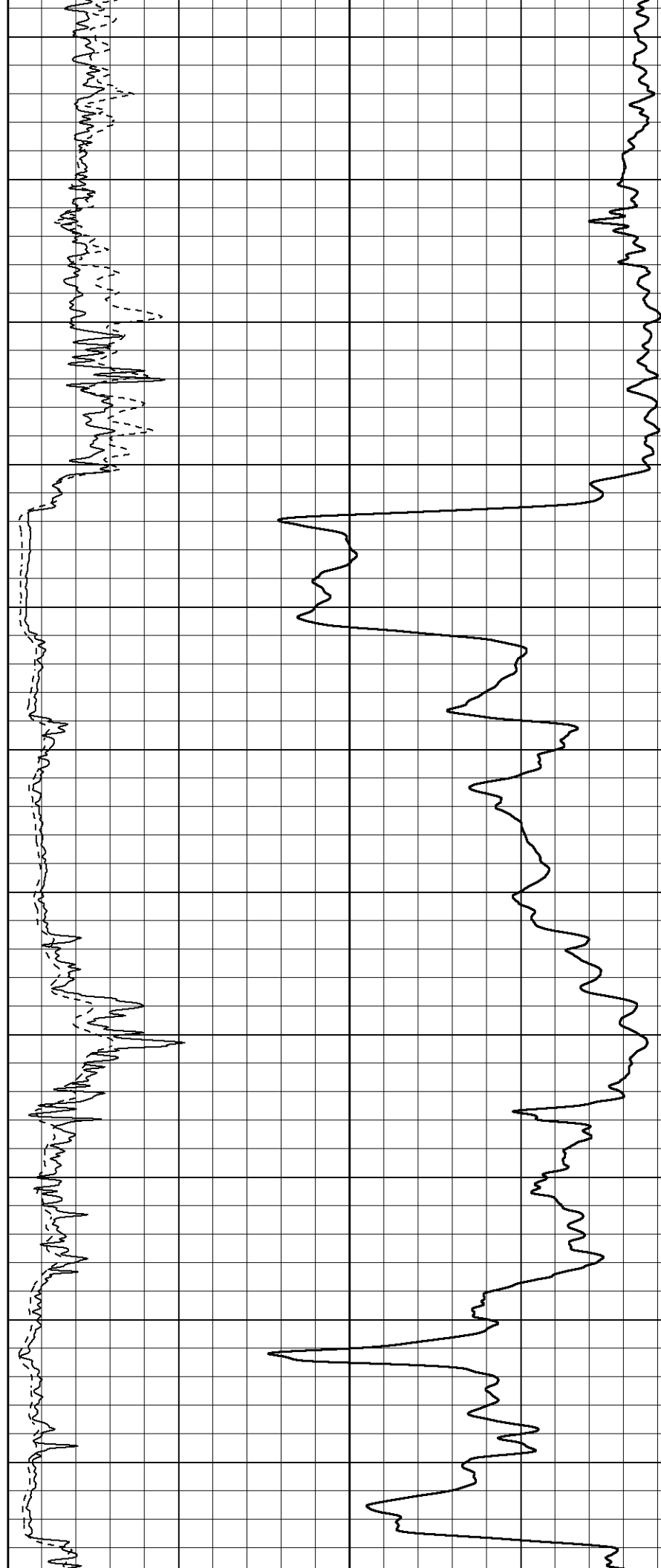
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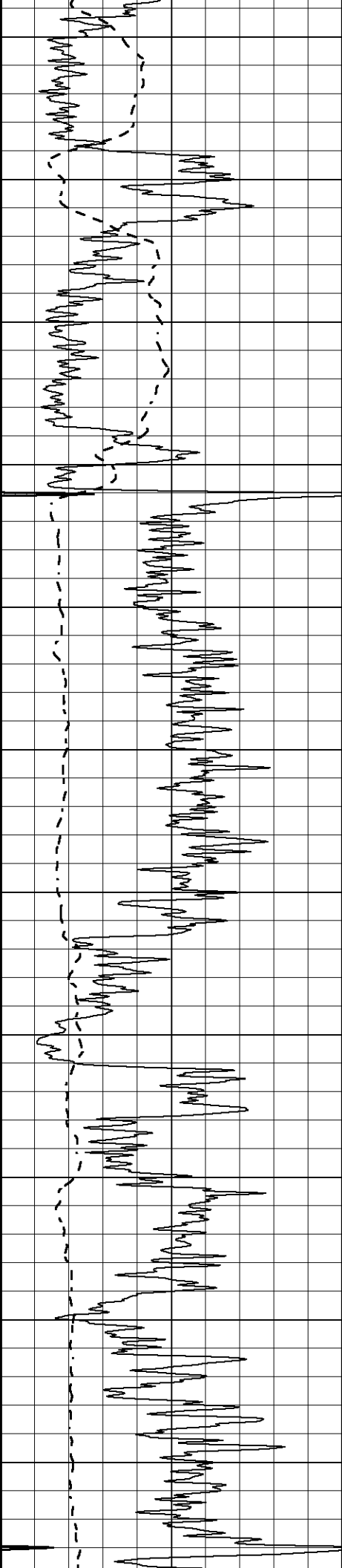
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1400

1450

1500





1550

1600

1650

1700

1750

1800

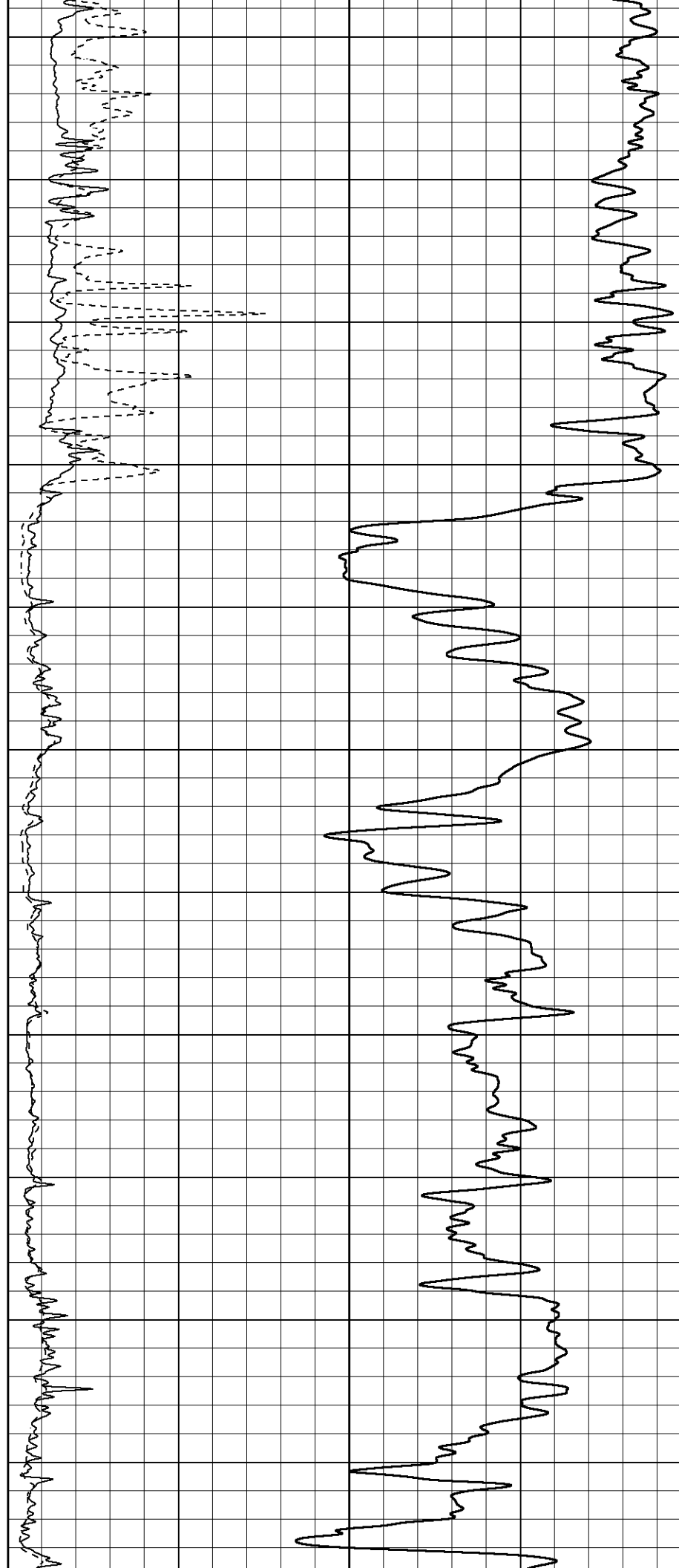
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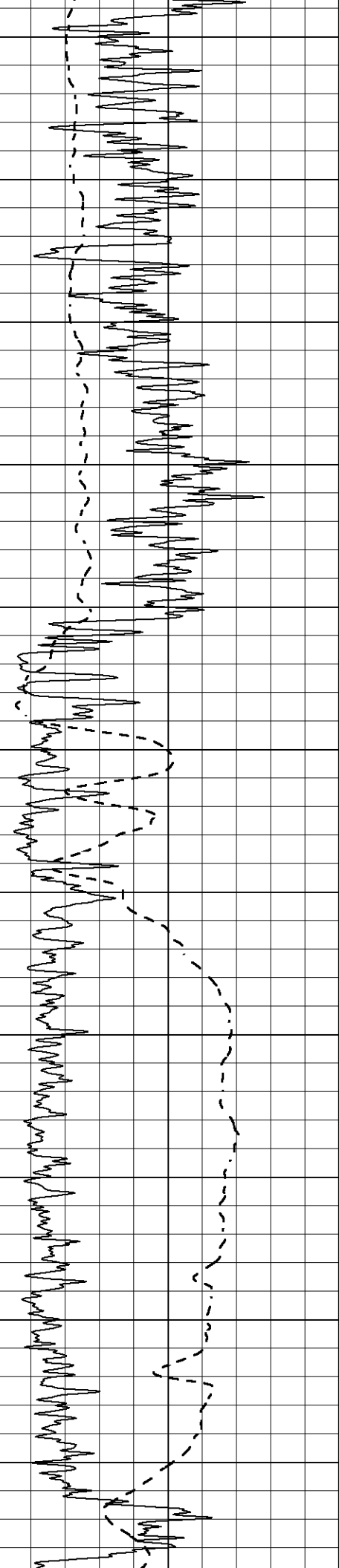
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1950

2000

2050





2100

2150

2200

2250

2300

2350

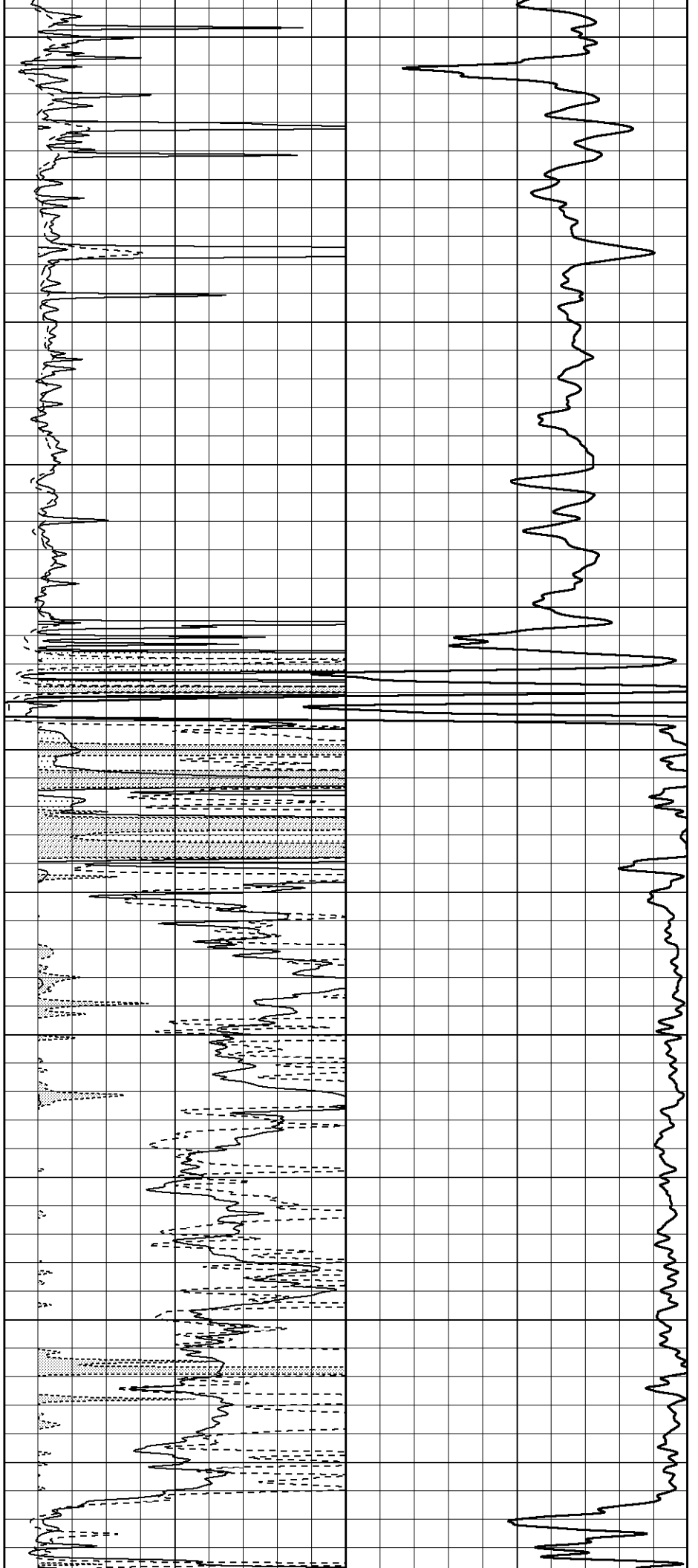
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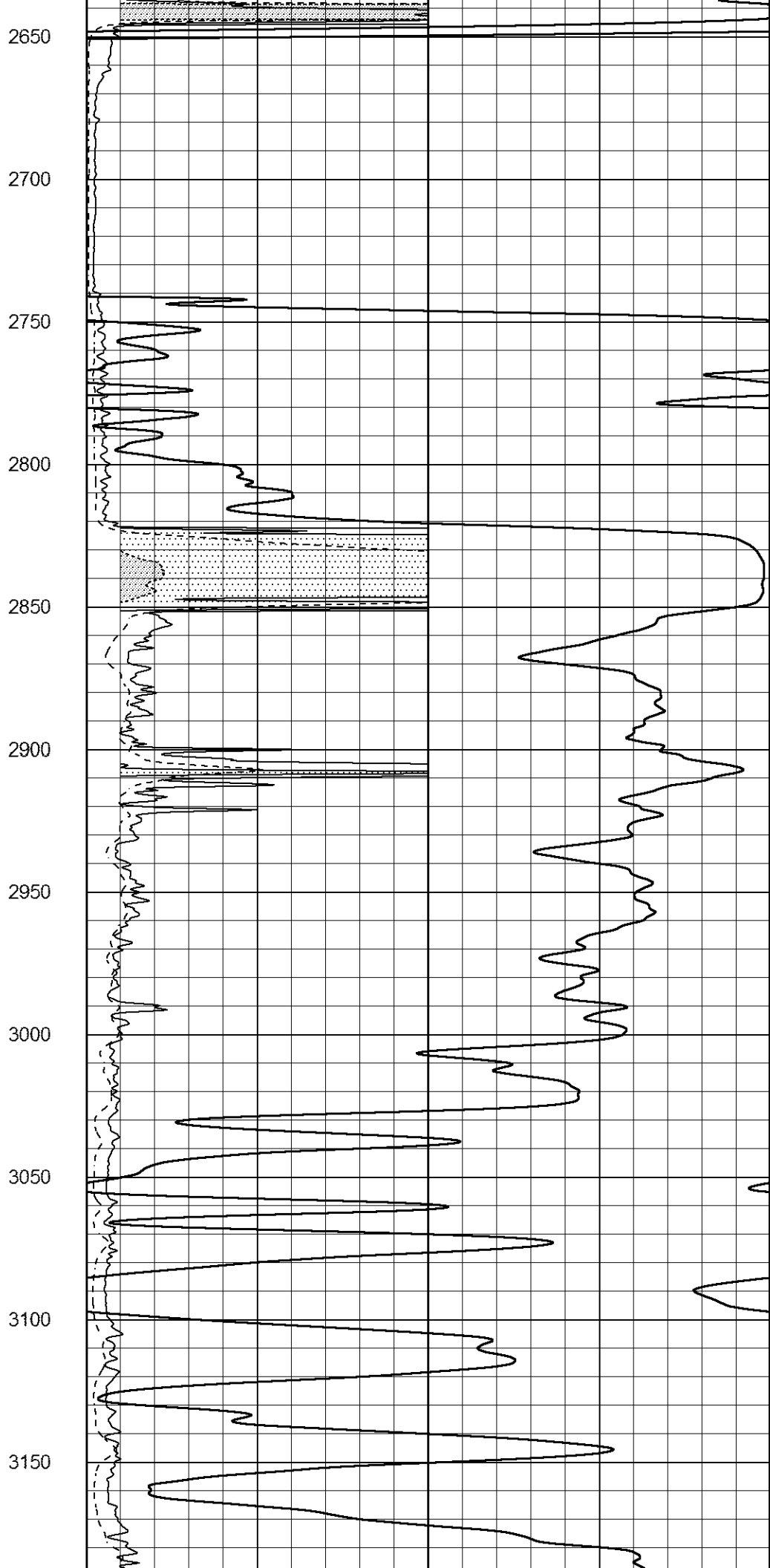
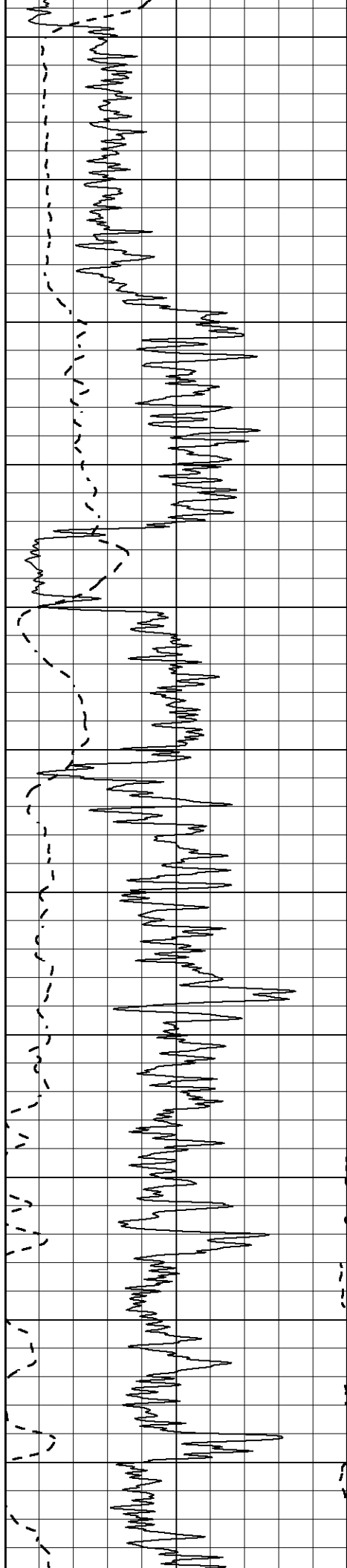
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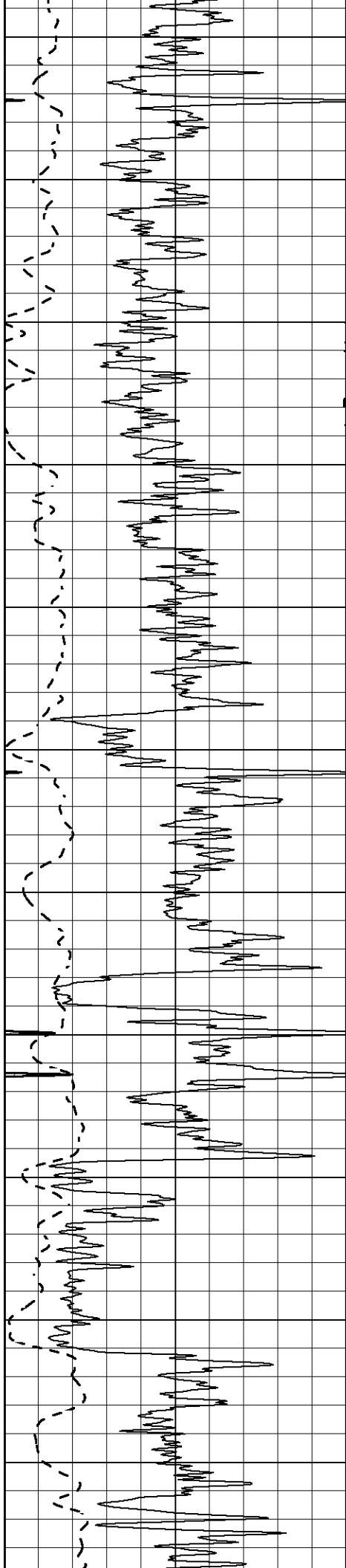
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2550

2600







3200

3250

3300

3350

3400

3450

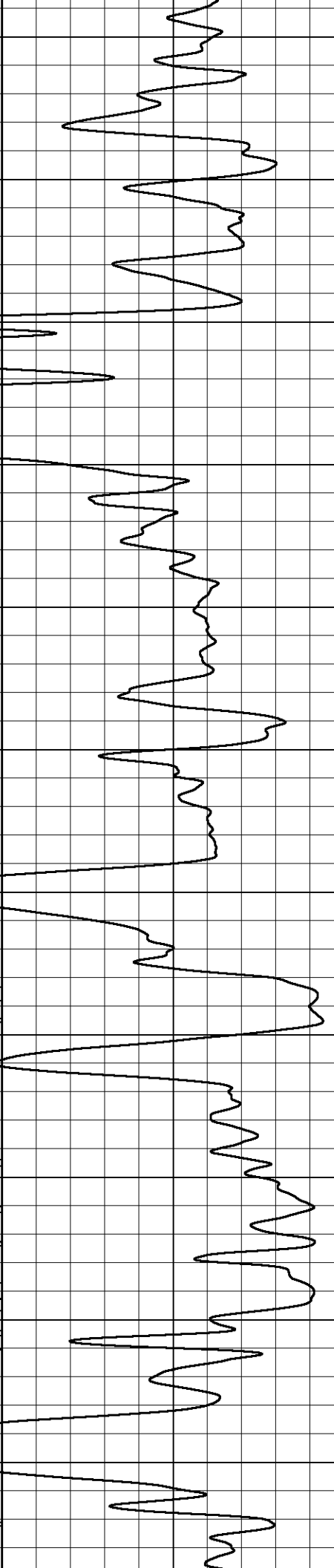
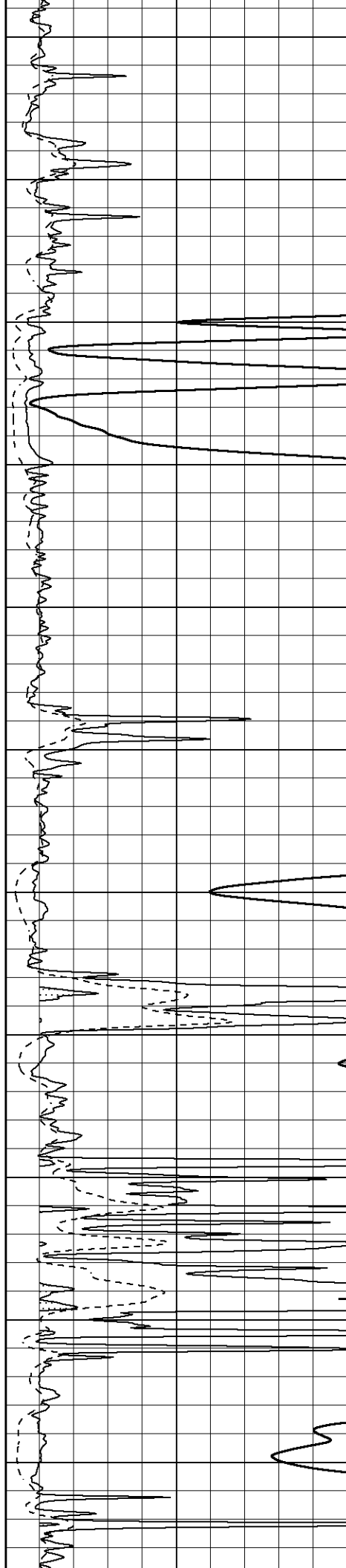
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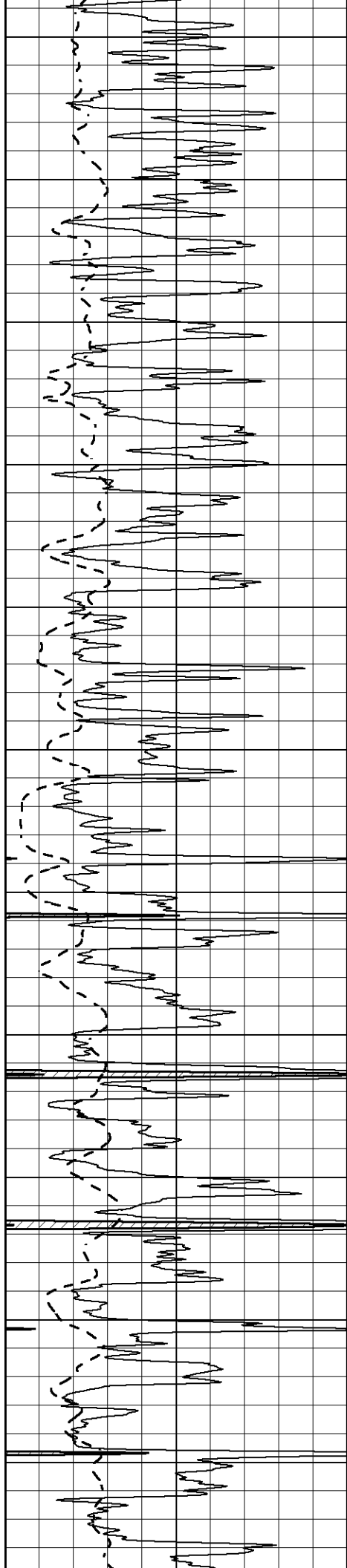
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3650

3700





3750

3800

3850

3900

3950

4000

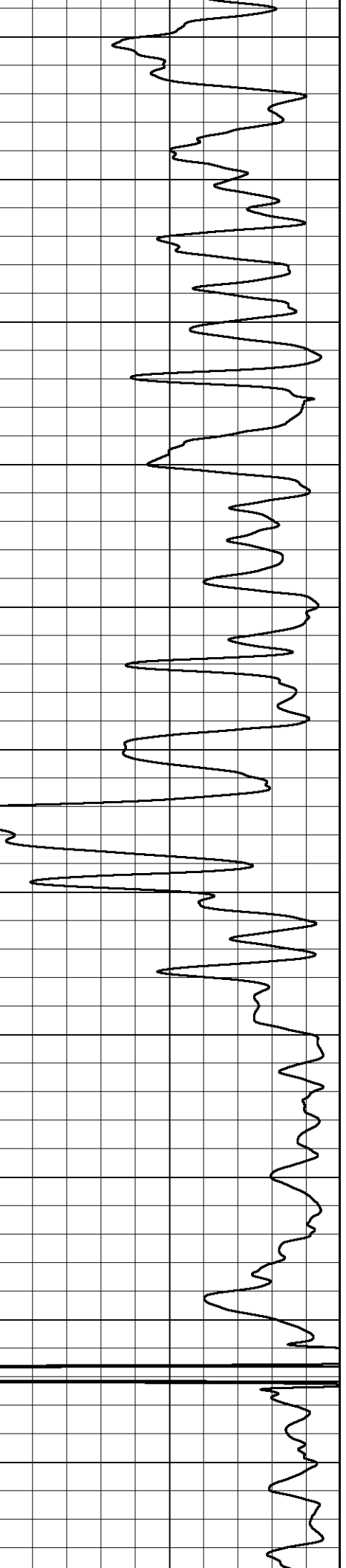
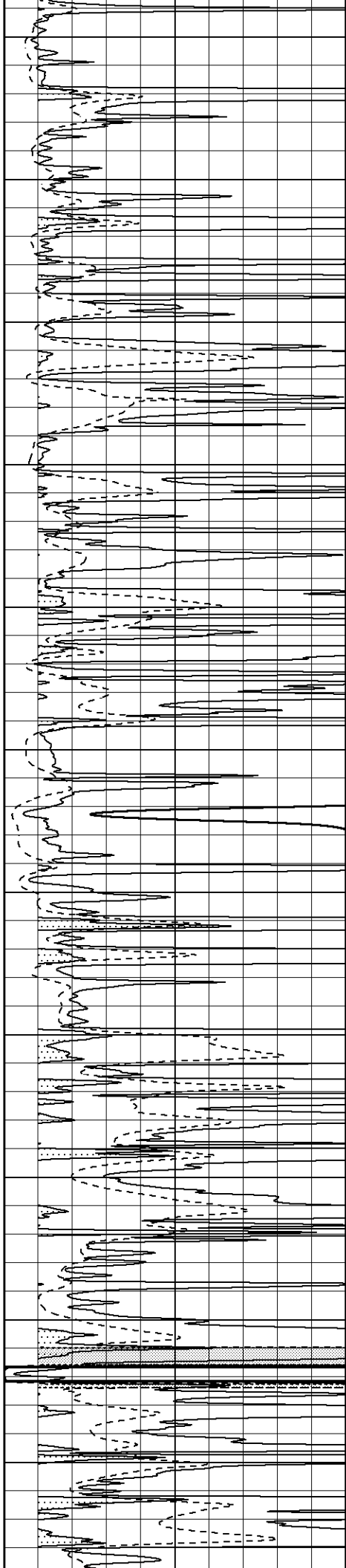
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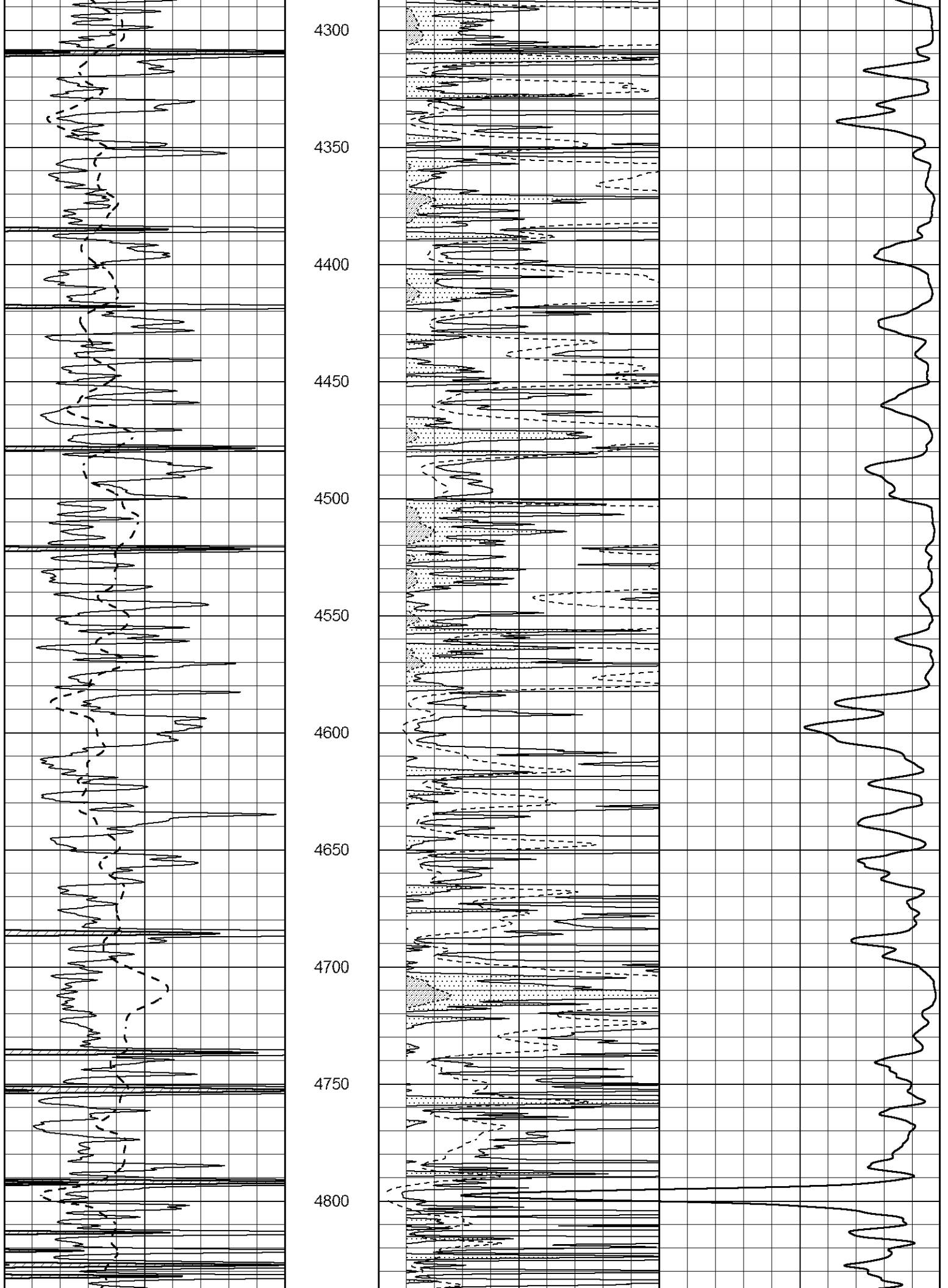
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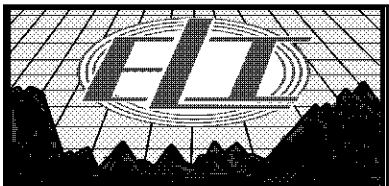
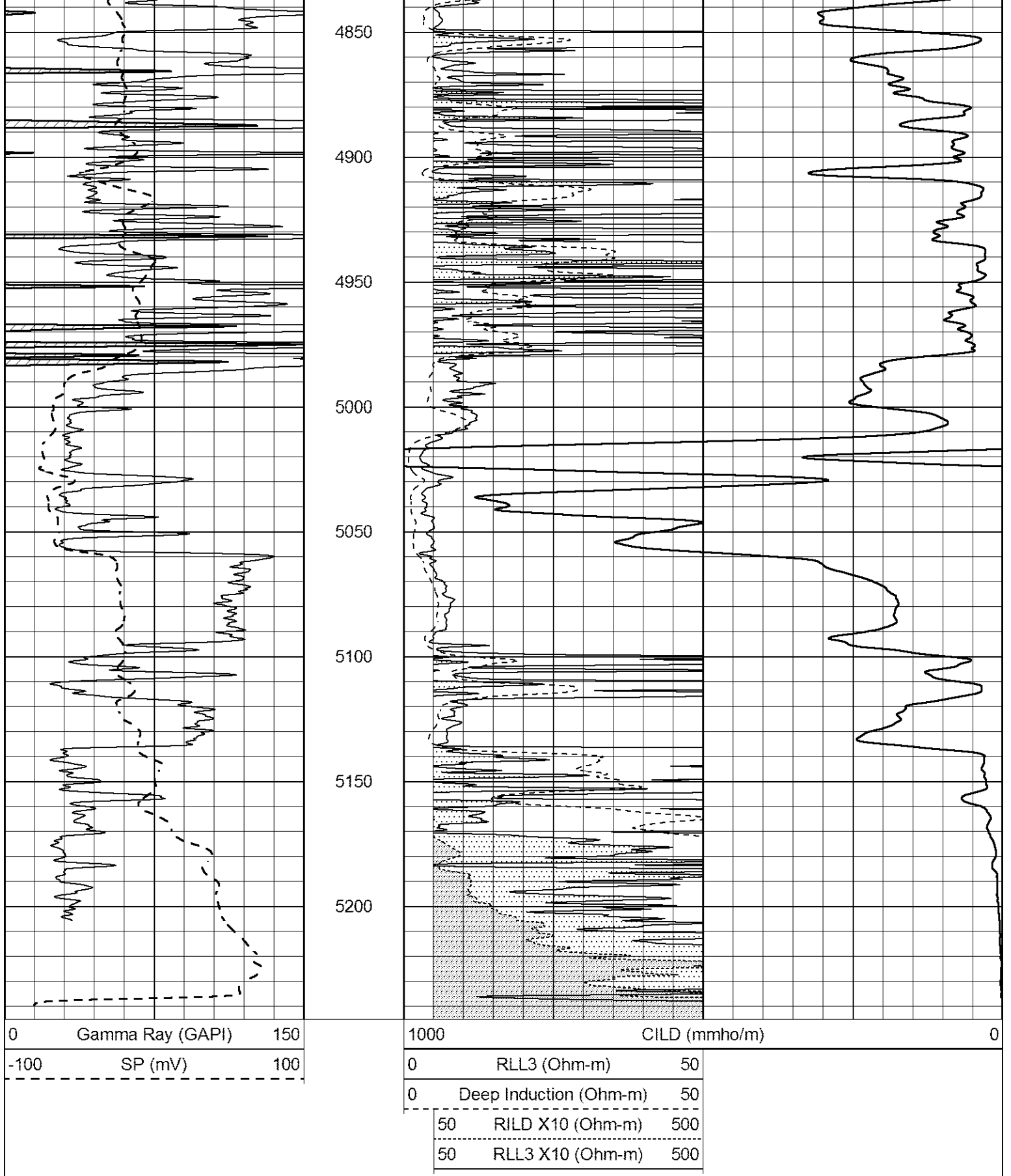
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4200

4250





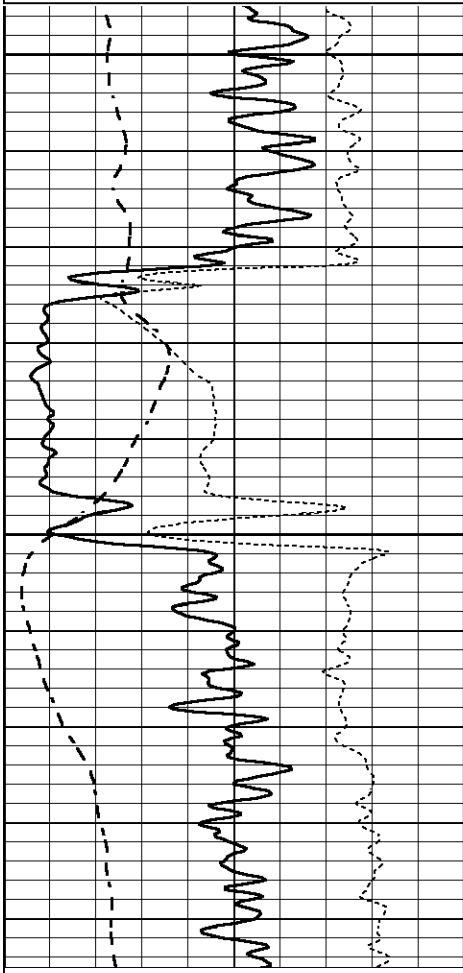


# ANHYDRITE

Dataset Pathname pass3.2  
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 Dataset Creation Fri Dec 02 11:32:59 2016  
 Charted by Depth in Feet scaled 1:240

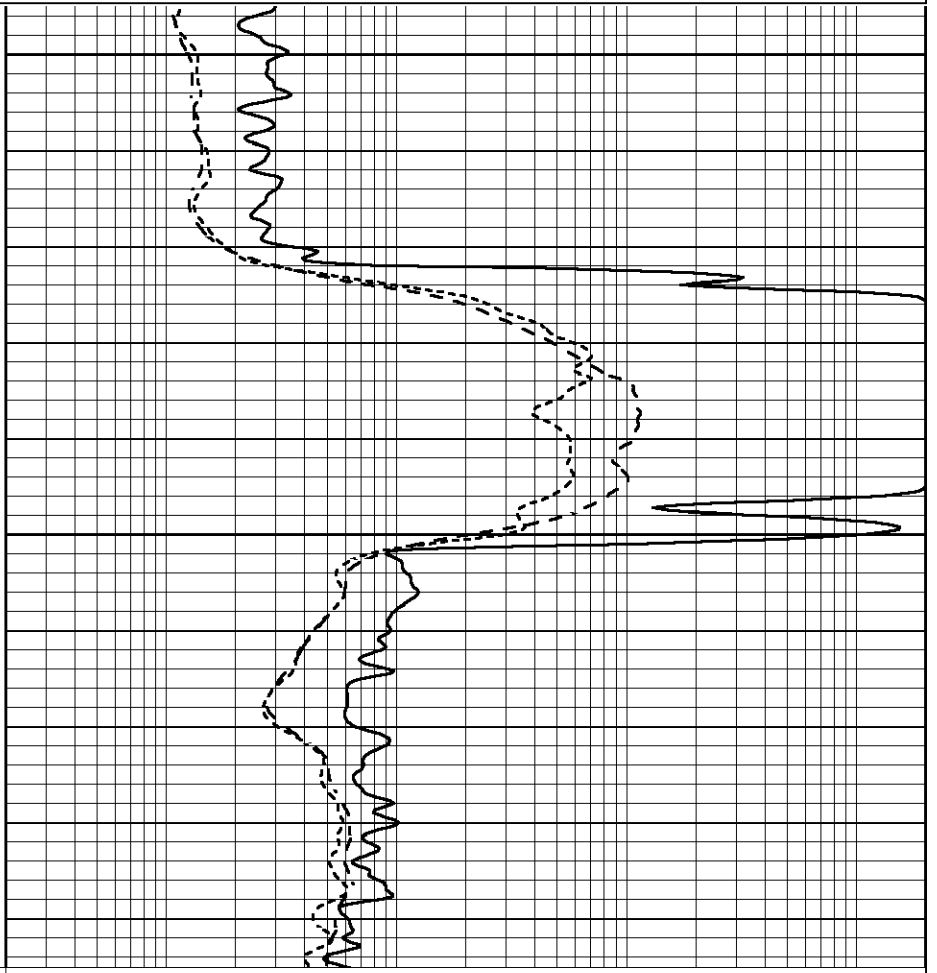
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

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



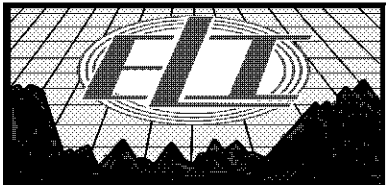
2800

2850



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

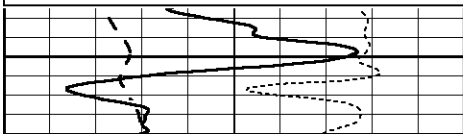


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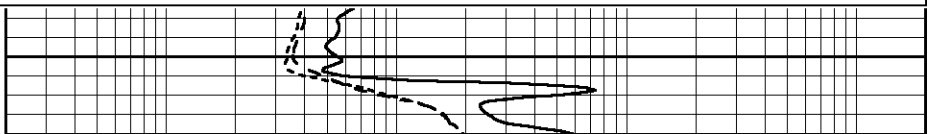
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 Presentation Format \_dil  
 Dataset Creation Fri Dec 02 11:11:04 2016  
 Charted by Depth in Feet scaled 1:240

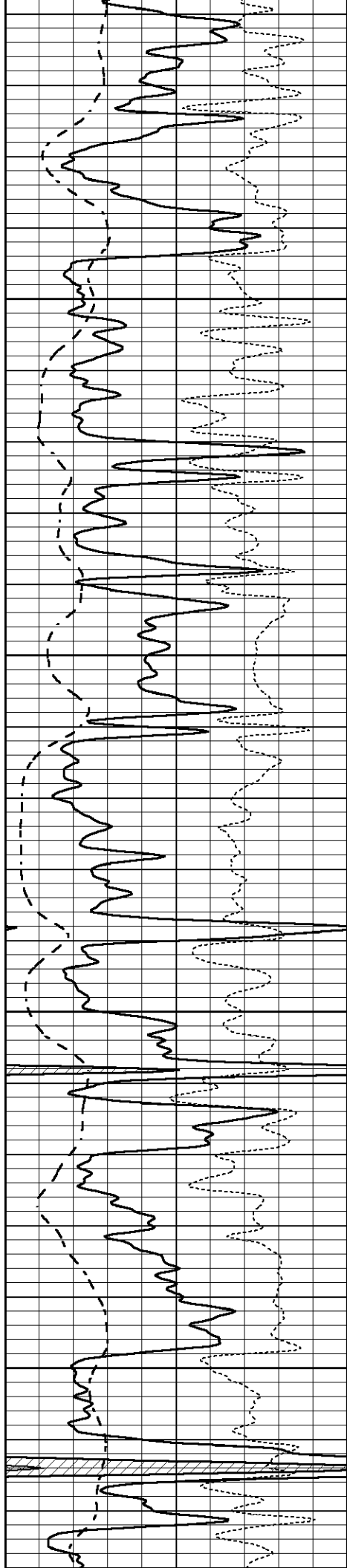
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

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



3900



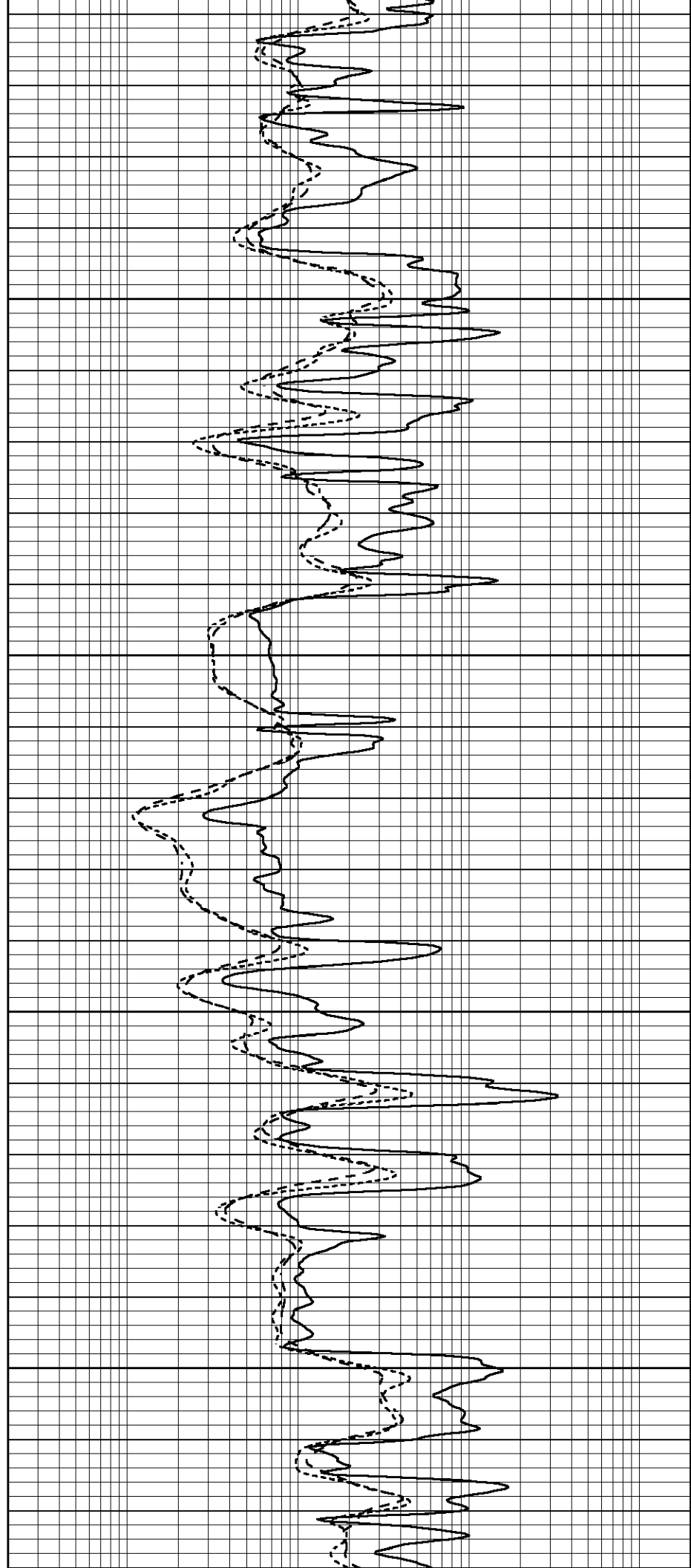


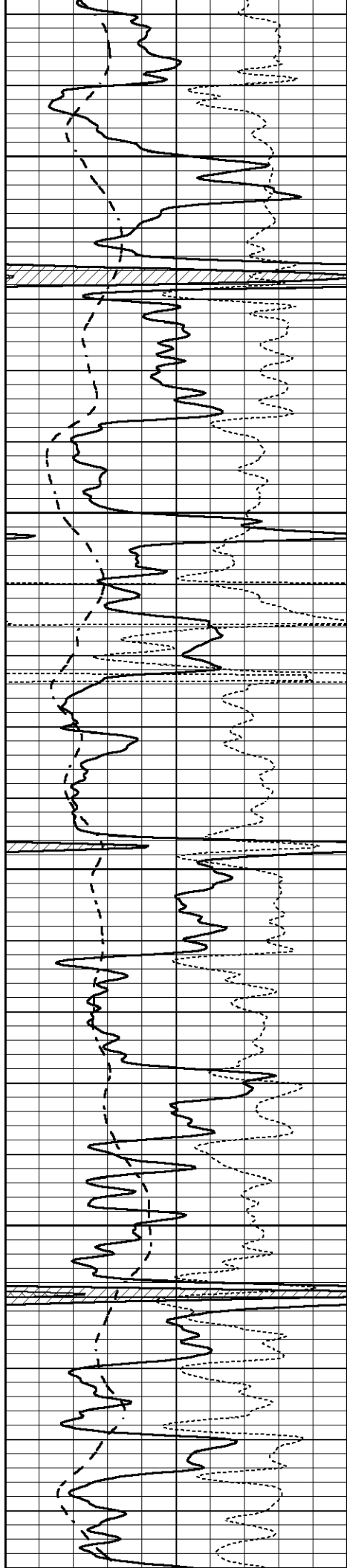
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4000

4050

4100



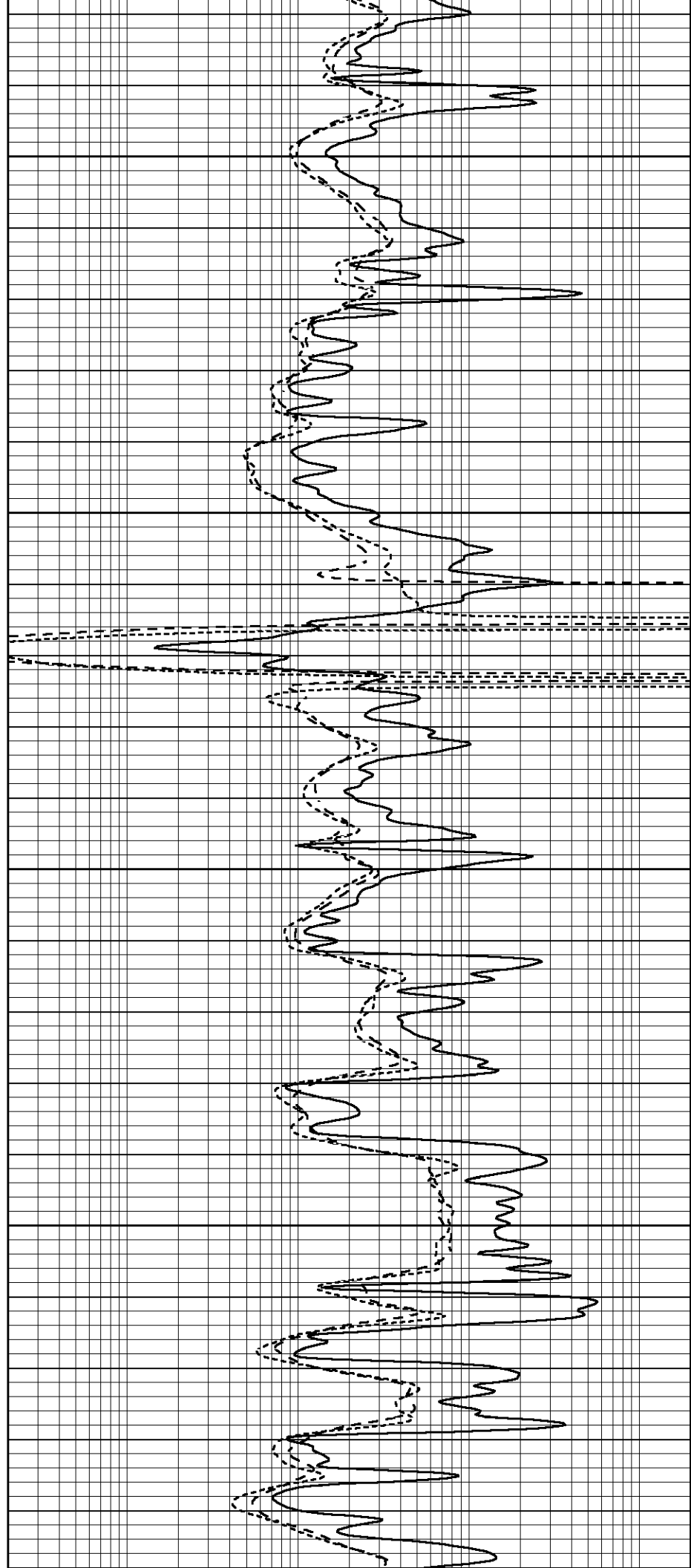


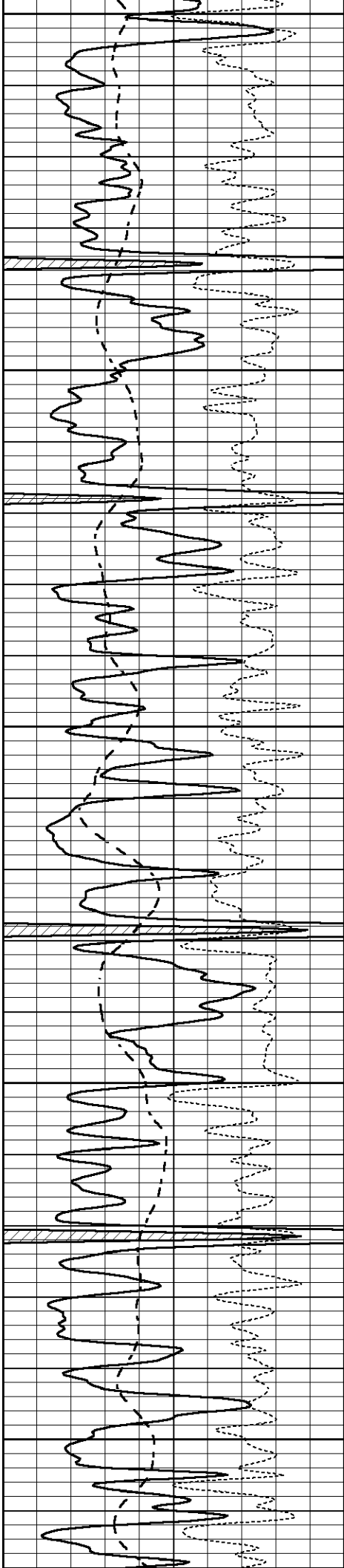
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4200

4250

4300





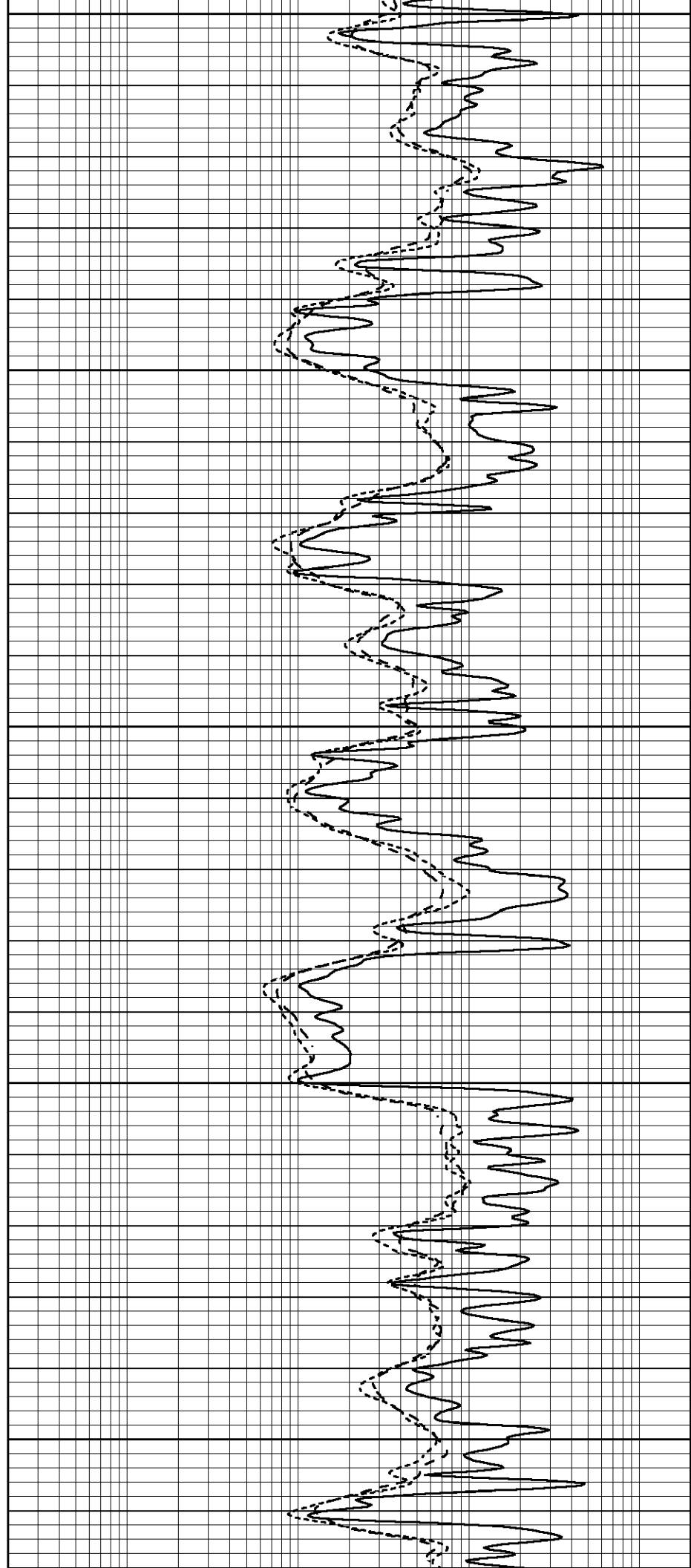
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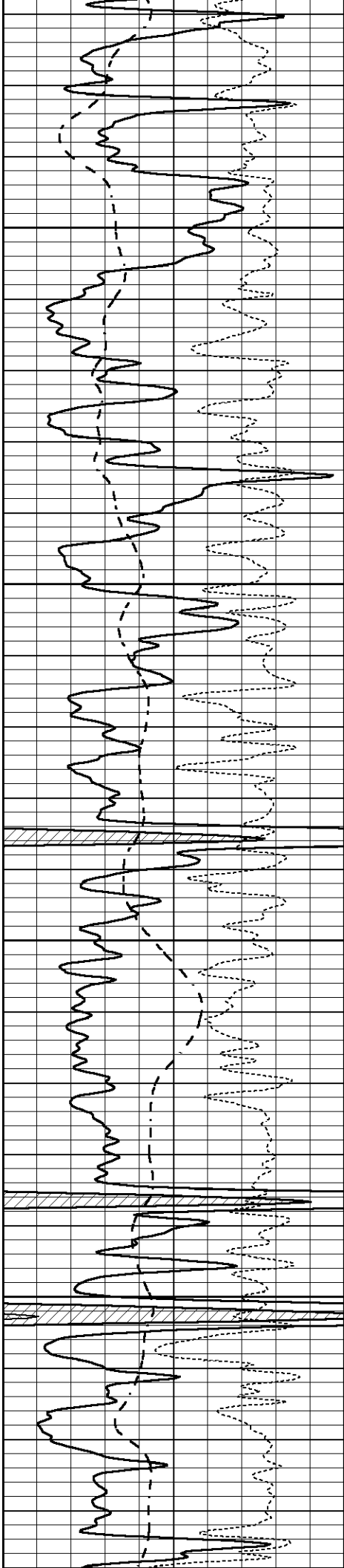
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4450

4500

4550



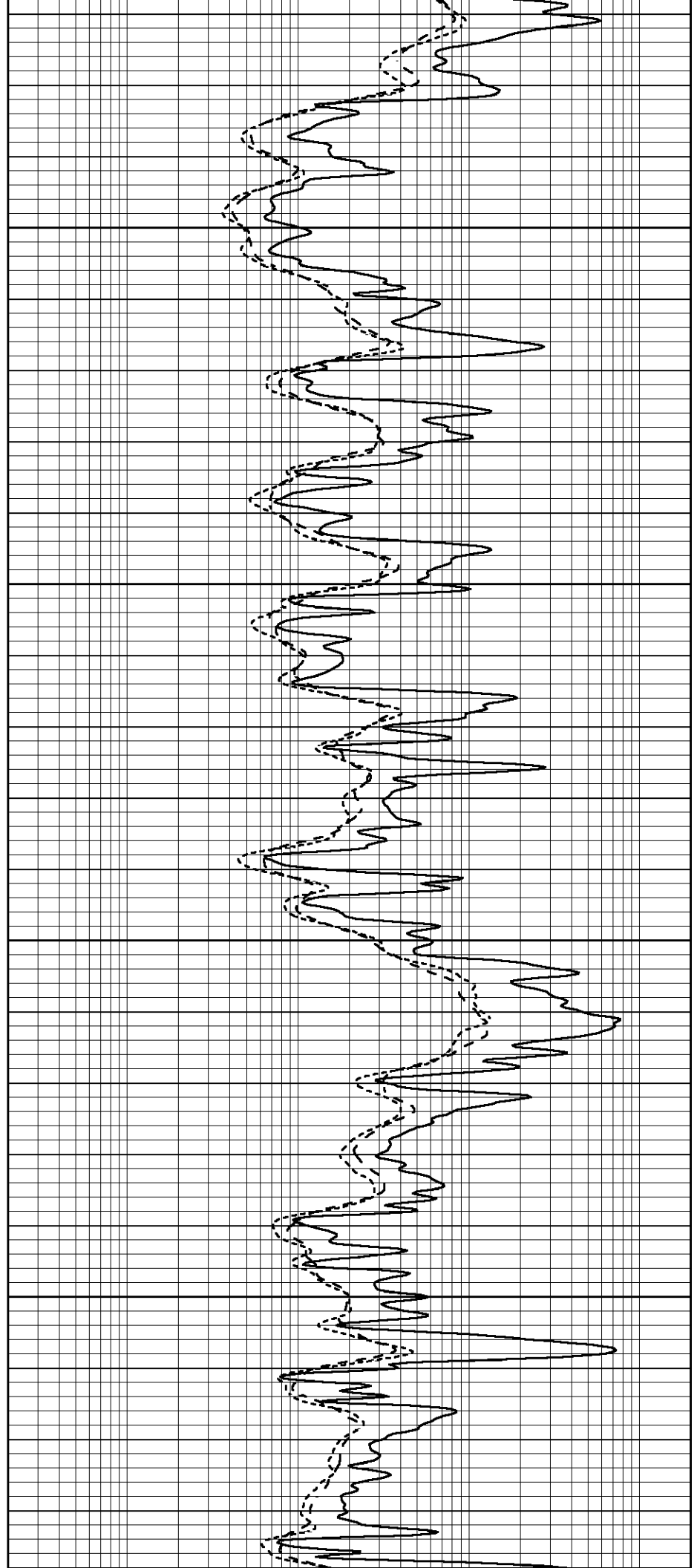


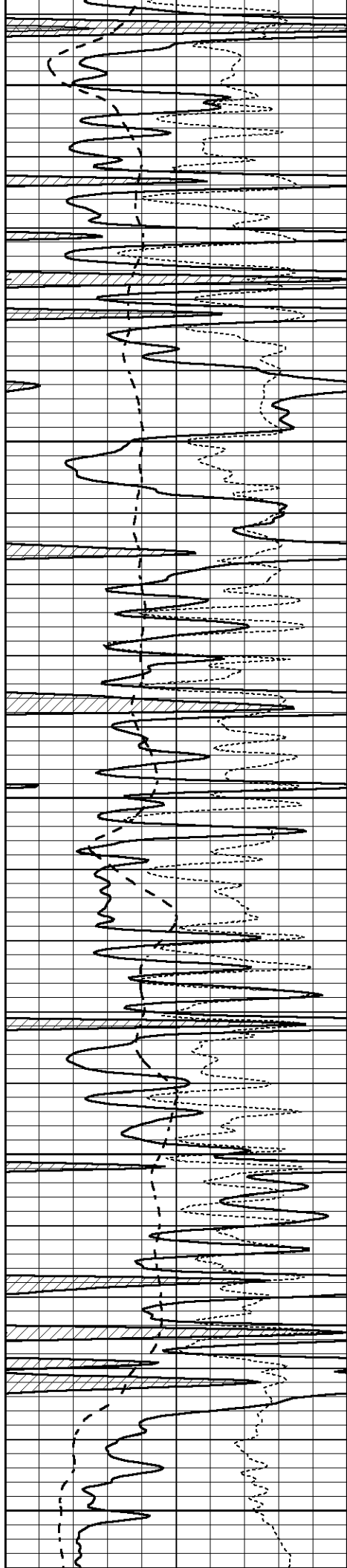
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4650

4700

4750





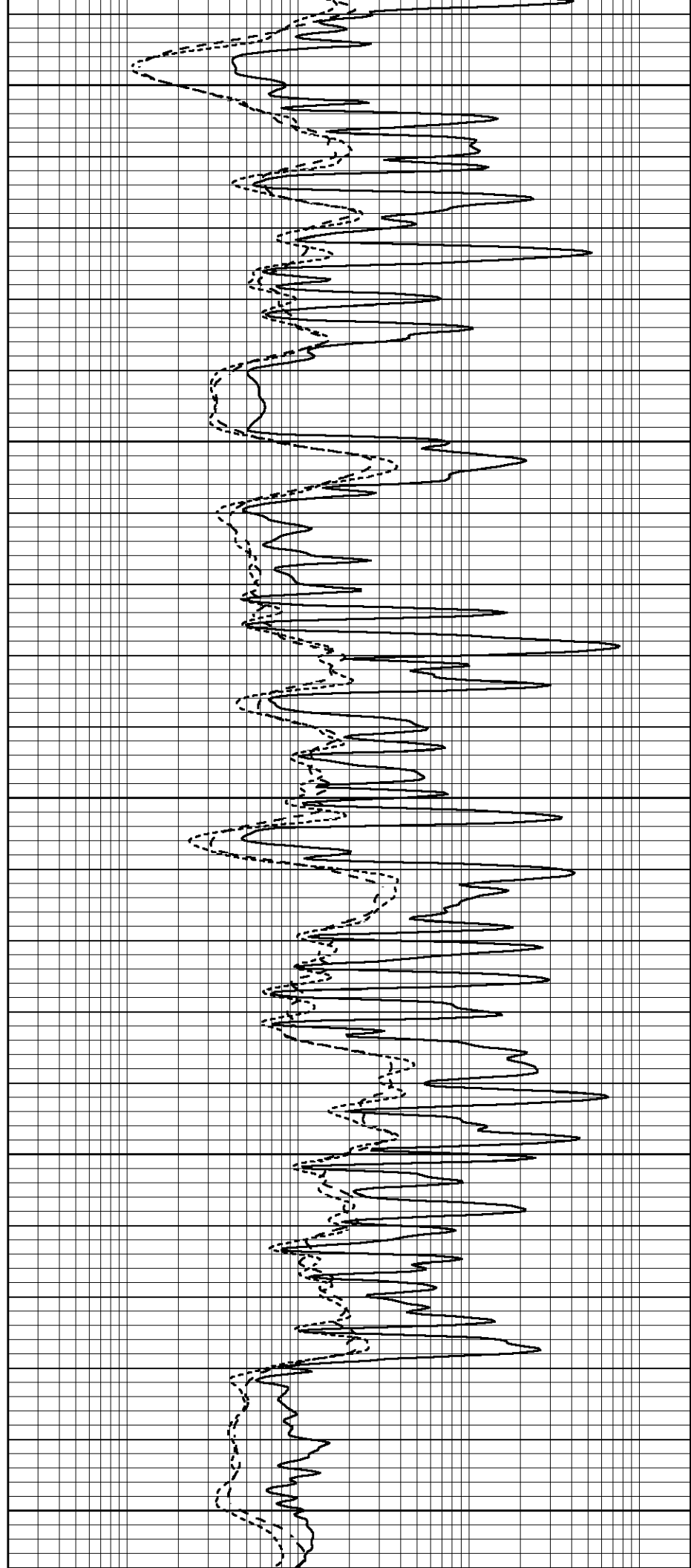
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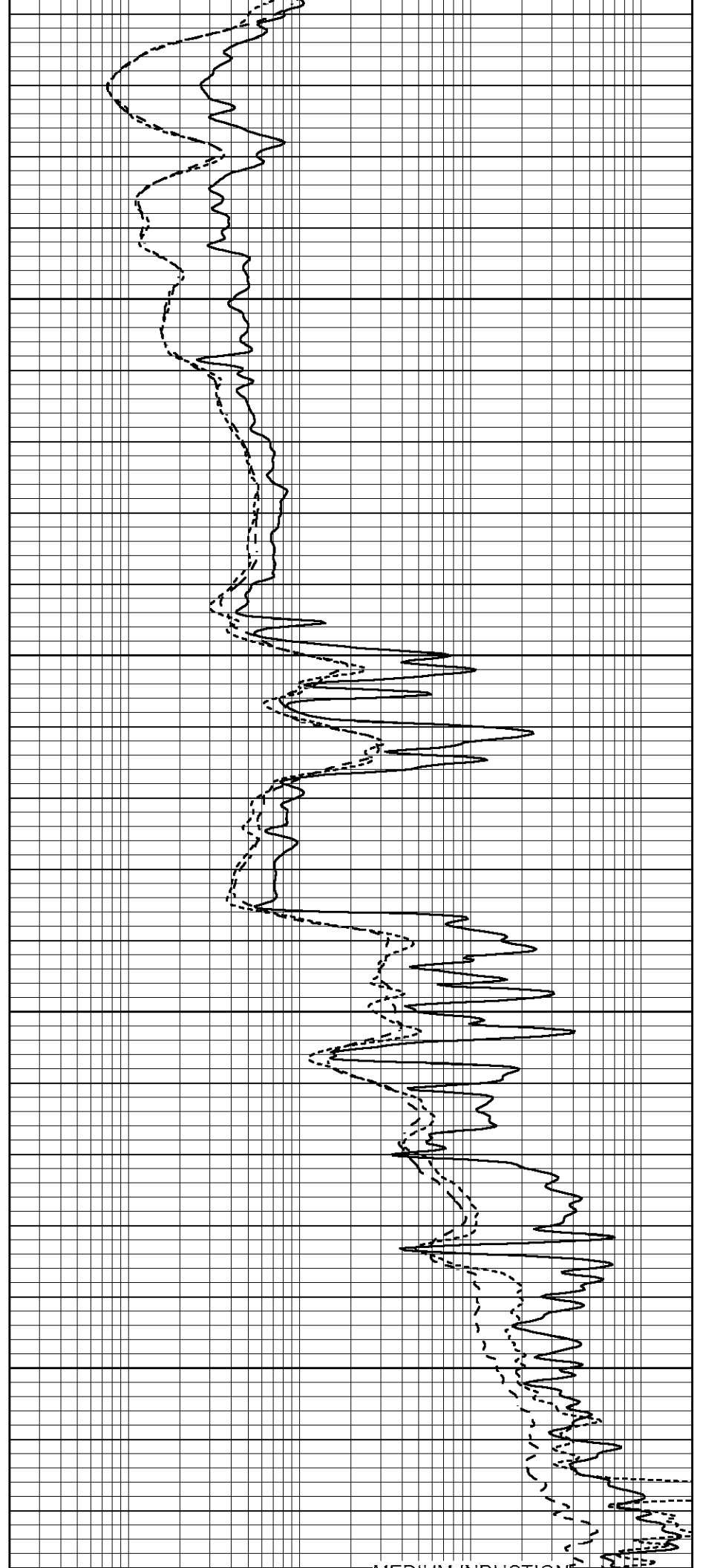
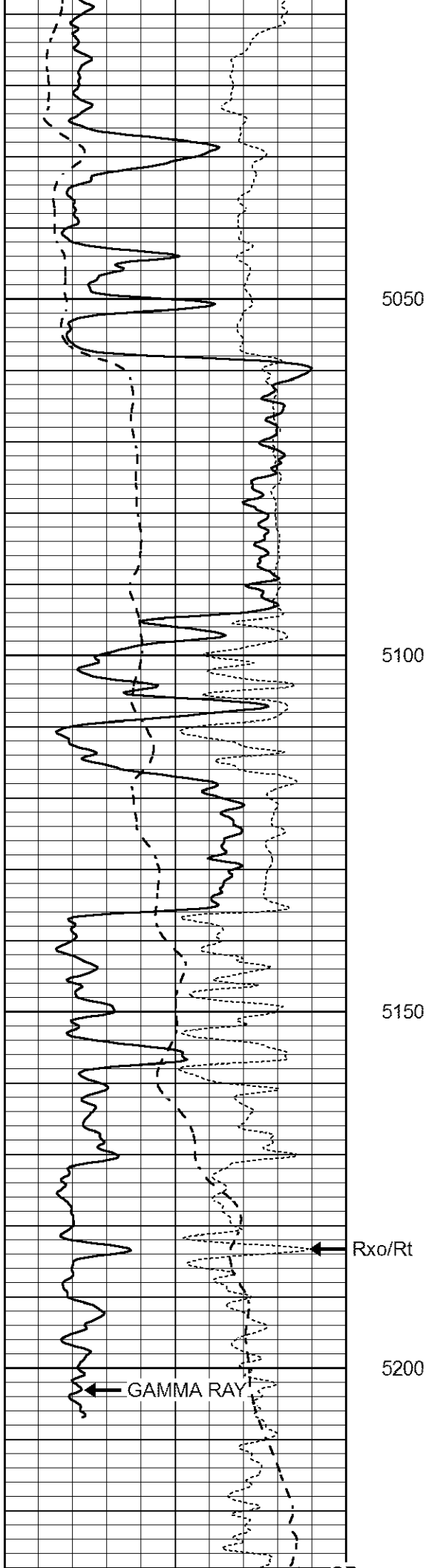
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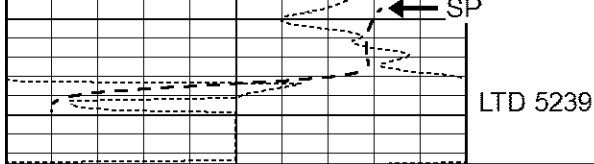
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4950

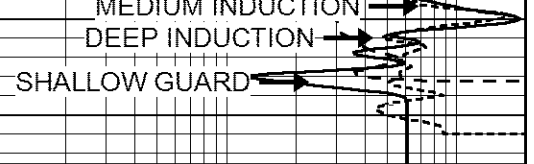
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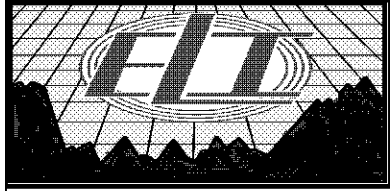


LTD 5239



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

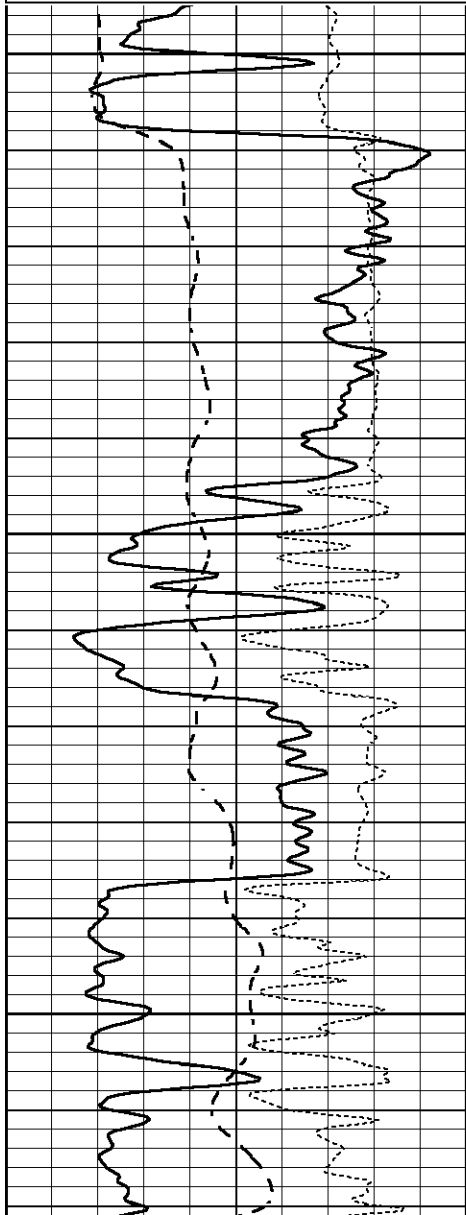


# REPEAT SECTION

Database File 1106ddn8.db  
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 Presentation Format \_dil  
 Dataset Creation Fri Dec 02 11:11:38 2016  
 Charted by Depth in Feet scaled 1:240

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

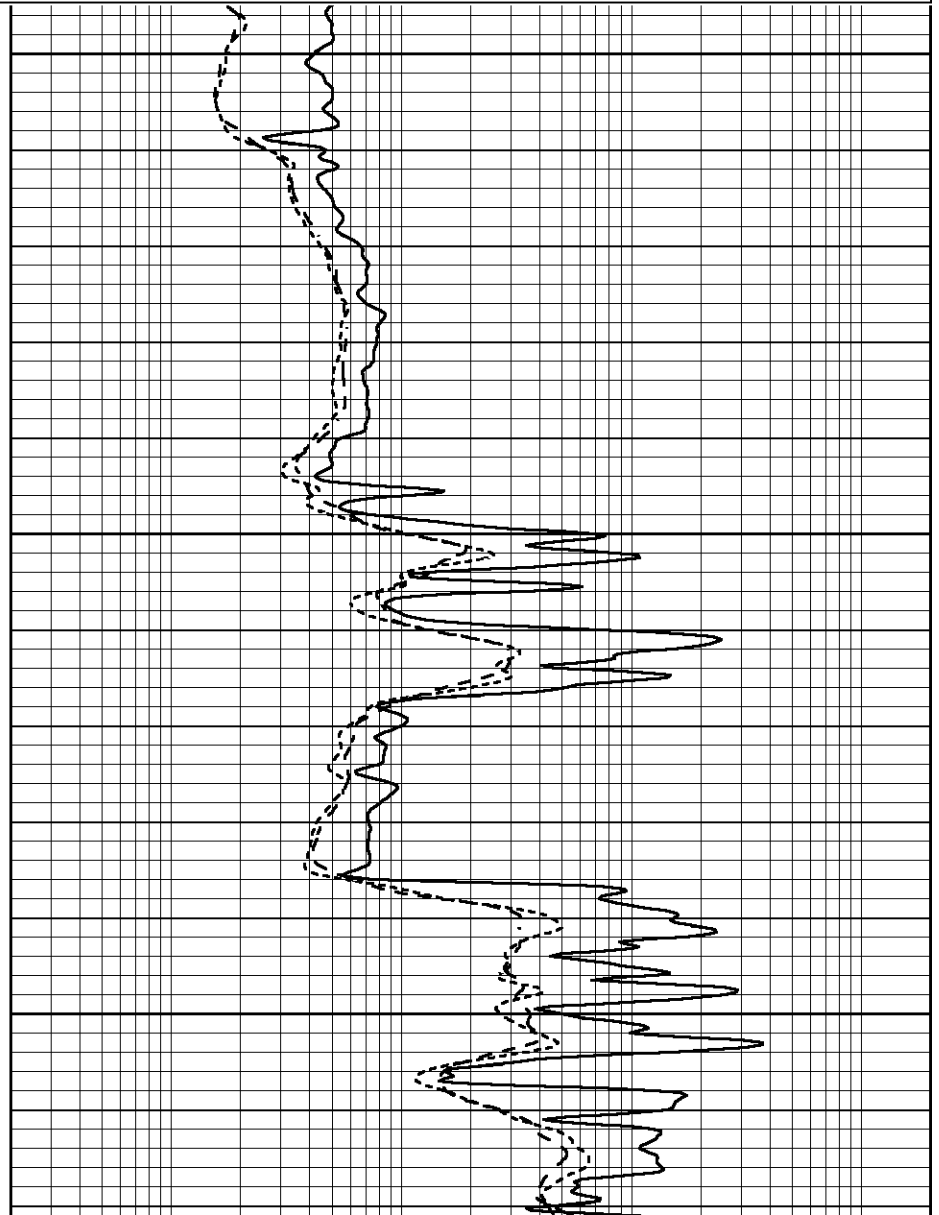
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

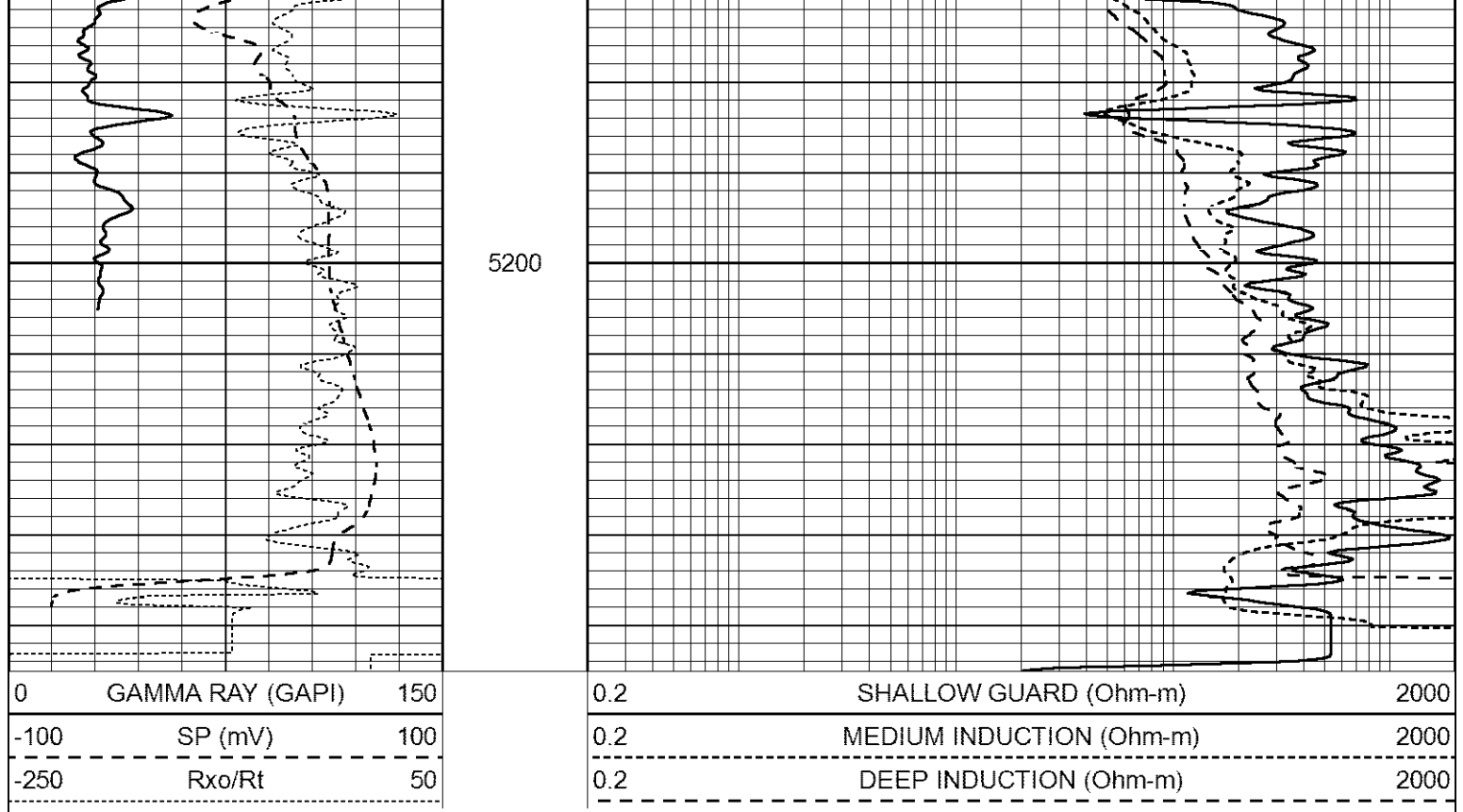


5050

5100

5150





### Calibration Report

Database File 1106ddn8.db  
 Dataset Pathname pass2.10  
 Dataset Creation Fri Dec 02 10:35:30 2016

### Dual Induction Calibration Report

Serial-Model: FW1410-55-Probe  
 Surface Cal Performed: Thu Mar 12 09:27:11 2015  
 Downhole Cal Performed: Thu Mar 12 09:29:20 2015  
 After Survey Verification Performed: Thu Mar 12 09:29:20 2015

#### 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	V	Zero	Cal	mmho/m	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	V	Zero	Cal	mmho/m	m'	b'
Deep	-0.824	395.917	V	-0.976	397.550	mmho/m	1.004	-0.149
Medium	3.565	471.327	V	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 Feb 11 16:57:09 2015

	Background	Aluminum	Magnesium		
Window 1	594.39	6349.98	29204.00	cps	
Window 2	47.14	1460.46	7334.94	cps	
Window 4	261.52	1478.45	6338.23	cps	
Window 5	633.19	10381.10	19565.80	cps	
Window 6	49.78	1758.01	3436.39	cps	
Window 8	302.39	3297.16	6093.06	cps	
Bulk Density	-	2.6020	1.6830	g/cc	
Pe	-	3.0000	2.5070	b/e	
LS Alpha:	: -1.8570	SS Alpha:	: -0.7600	LS CPE:	: 1.1652
LS Beta:	: 157430.0395	SS Beta:	: 22665.8398	SS CPE:	: 1.4739

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 Feb 11 16:57:09 2015

Results	Readings	References (in)		Gain	Offset
Low	High	Low	High		
5280.9	9455.1	8.6	14.0	0.0	1.2

Before Survey Caliper Verification

Performed:

	Reference	Reading
Caliper (in)	_____	_____

After Survey Caliper Verification

Performed:

Reference

Reading

Caliper (in)

Compensated Neutron Calibration Report

Serial Number:  
Tool Model:

080621PMC  
NABORS

PRE-SURVEY VERIFICATION

Detector

Readings

Measured

Target

Short Space  
Long Space

cps  
cps

pu

pu

POST-SURVEY VERIFICATION

Detector

Readings

Measured

Target

Short Space  
Long Space

cps  
cps

pu

pu

Gamma Ray Calibration Report

Serial Number:  
Tool Model:  
Performed:

070558  
Probe1  
Wed Jun 29 08:29:10 2016

Calibrator Value:

1.0

GAPI

Background Reading:

0.0

cps

Calibrator Reading:

1.0

cps

Sensitivity:

0.3000

GAPI/cps