



Weatherford

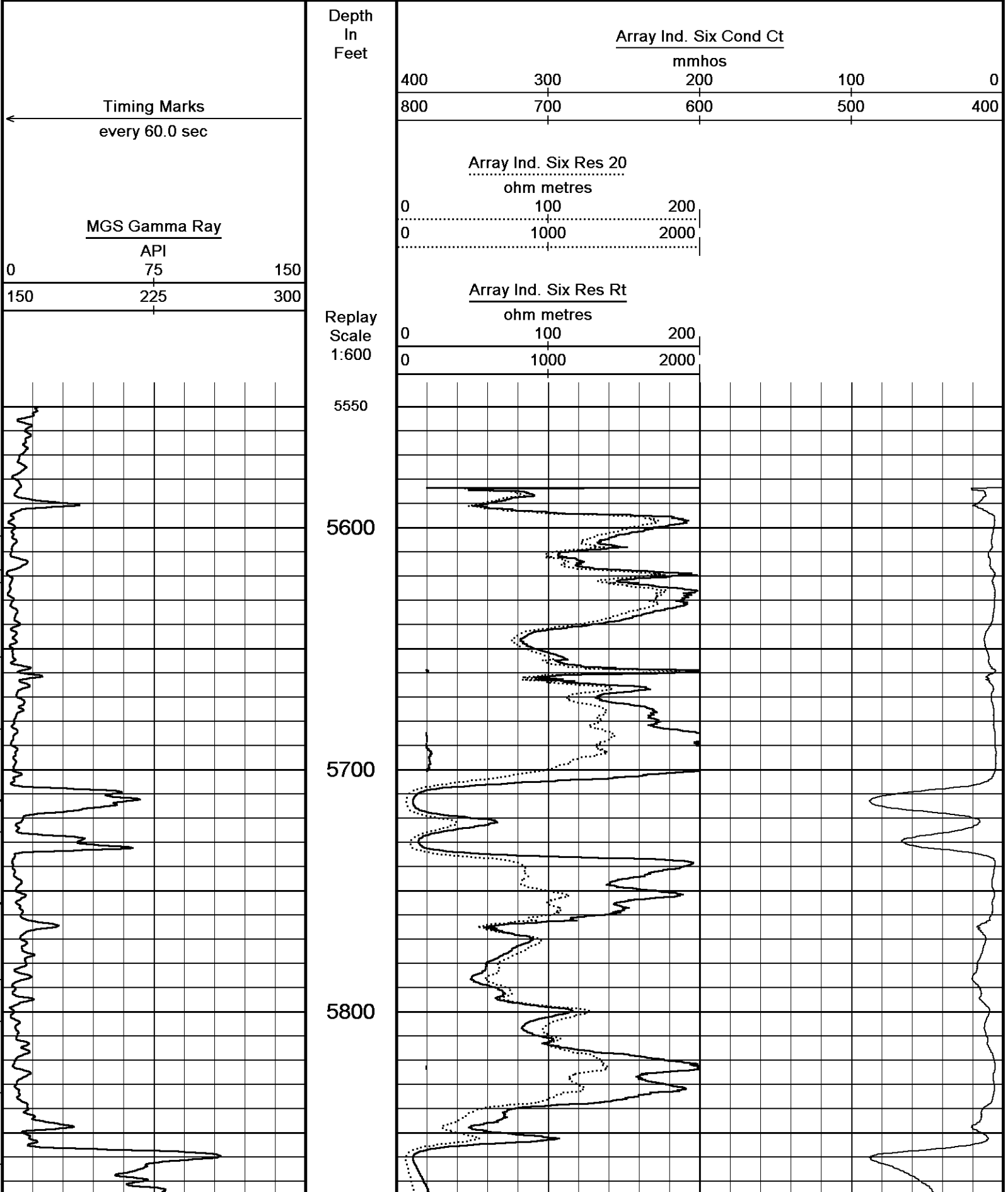
**CML IMPULSE SHUTTLE
COMPACT ARRAY INDUCTION
LOG**

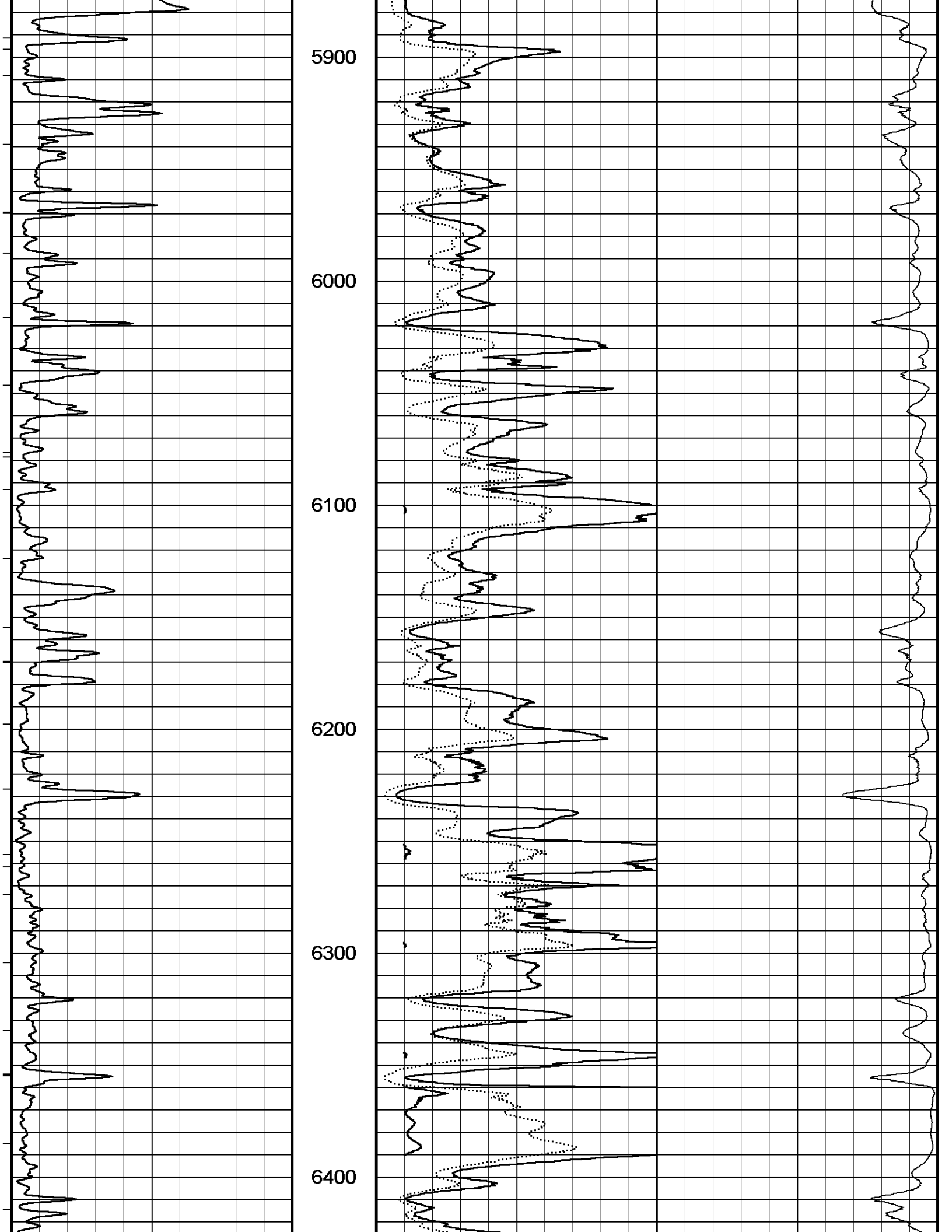
COMPANY				SANDRIDGE EXPLORATION & PRODUCTION			
WELL				SARAH 3317 2-34H			
FIELD				BEALS EAST			
PROVINCE/COUNTY				COMANCHE			
COUNTRY/STATE				USA / OKLAHOMA			
LOCATION				200' FNL & 1980' FEL N2 N2 NW NE			
SEC	TWP	RGE	Other Services				
34	33S	17W	MDN/MPD				
API Number		15-033-21666-01					
Permit Number							
Permanent Datum G.L., Elevation 1824 feet						Elevations:	
Log Measured From KB						KB	1844.00
Drilling Measured From K.B.						DF	1844.00
						GL	1824.00
Date	20-SEP-2012						
Run Number	ONE						
Depth Driller	9787.00					feet	
Depth Logger	9768.00					feet	
First Reading	9760.00					feet	
Last Reading	5587.00					feet	
Casing Driller	5587.00					feet	
Casing Logger	5587.00					feet	
Bit Size	6.125					inches	
Hole Fluid Type	WATER						
Density / Viscosity	8.40	g/cc	27.00	CP			
PH / Fluid Loss	8.50	60.00		ml/30Min			
Sample Source	FLOWLINE						
Rm @ Measured Temp	2.30 @ 79.0					ohm-m	
Rmf @ Measured Temp	1.84 @ 79.0					ohm-m	
Rmc @ Measured Temp	2.76 @ 79.0					ohm-m	
Source Rmf / Rmc	CALC	CALC					
Rm @ BHT	1.30 @139.0					ohm-m	
Time Since Circulation	1 HOUR						
Max Recorded Temp	139.00					deg F	
Equipment Name	COMPACT						
Equipment / Base	18064	OKC					
Recorded By	C. GRIFFIN						
Witnessed By	J. HILEMAN						
A/E	DC12338						

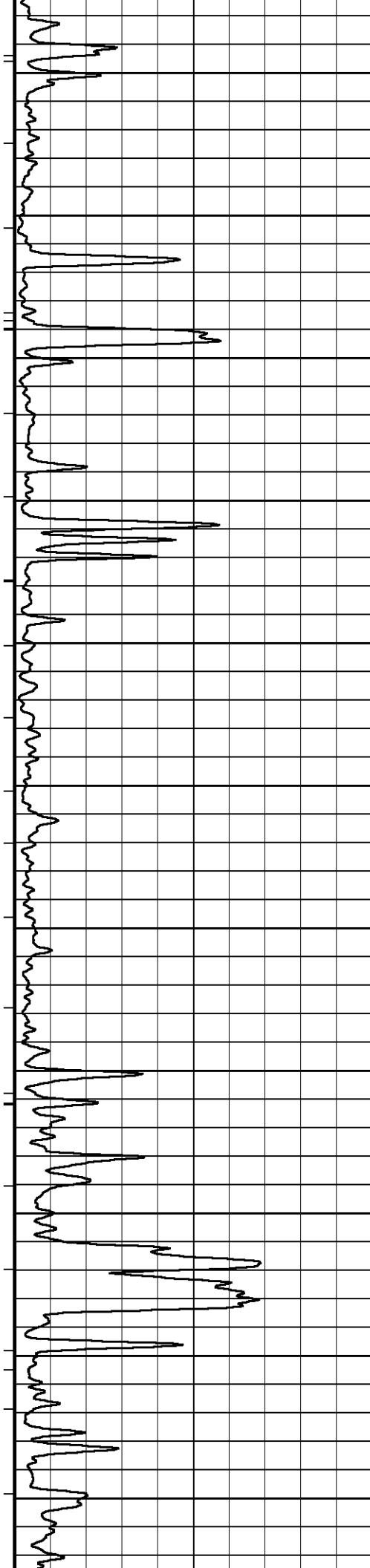
BOREHOLE RECORD				Last Edited: 21-SEP-2012 14:29
Bit Size inches		Depth From feet		Depth To feet
6.125		5587.00		9787.00
CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
INTERMED	7.000	0.00	5587.00	26.00

REMARKS
WLS SOFTWARE VERSION 13.02. USED. TOOLS RUN ON DRILLPIPE USING COMPACT WELL SHUTTLE DEPLOYMENT TECHNIQUE. DEPTH MEASURED USING ADVANTAGE RIG DEPTH CORRECTED TO PIPE TALLY. TOOLS DEPLOYED WITH MULE SHOE SITTING AT 9682 FT. AFTER DEPLOYMENT LOGGING TOOL WAS AT 9768 FT. 4.5 " PRODUCTION CASING USED TO CALCULATE ANNULAR HOLE VOLUMES. OPERATORS: D. TURNER, K. CHAFFIN RIG: LARIAT 38

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 interpretations, and we shall not, except in the case of gross or wilful 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 in our price schedule.







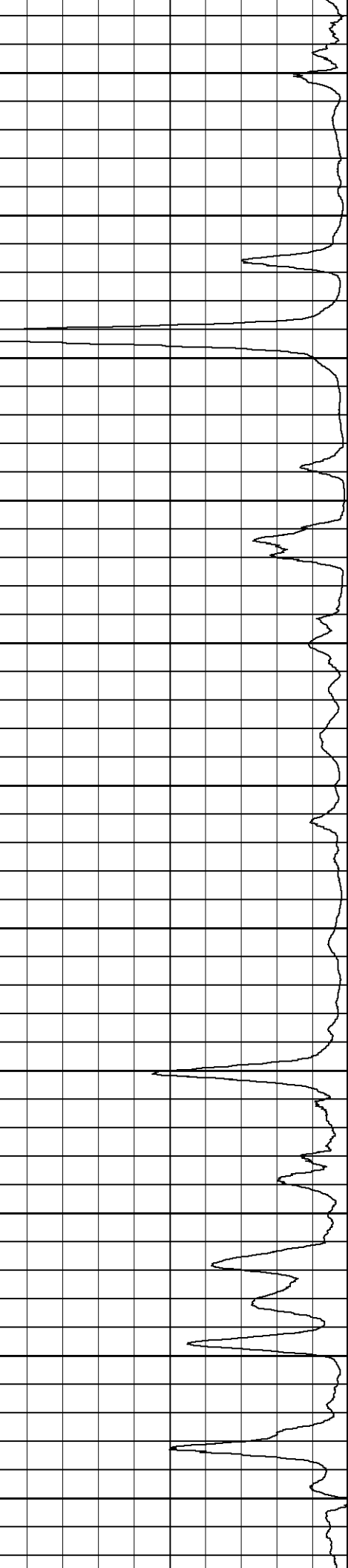
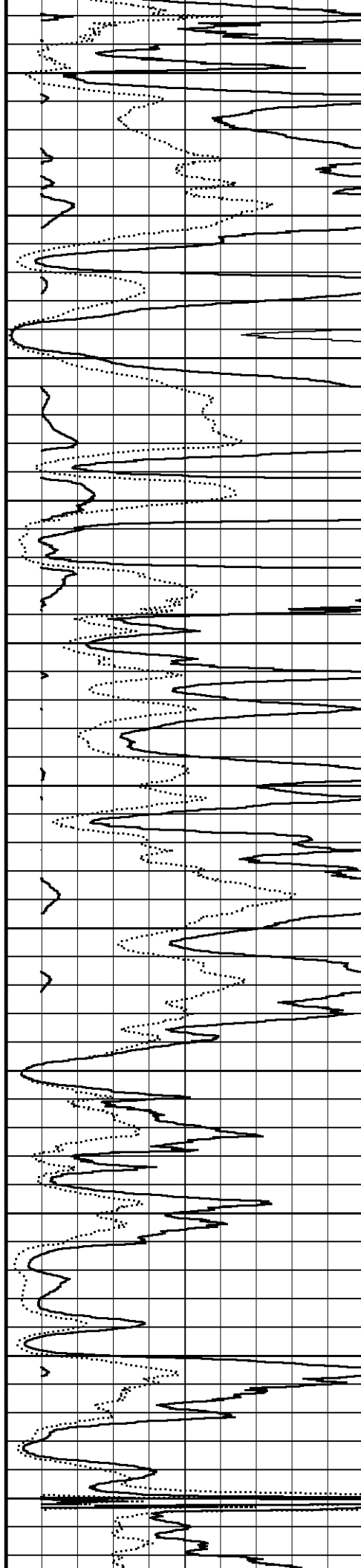
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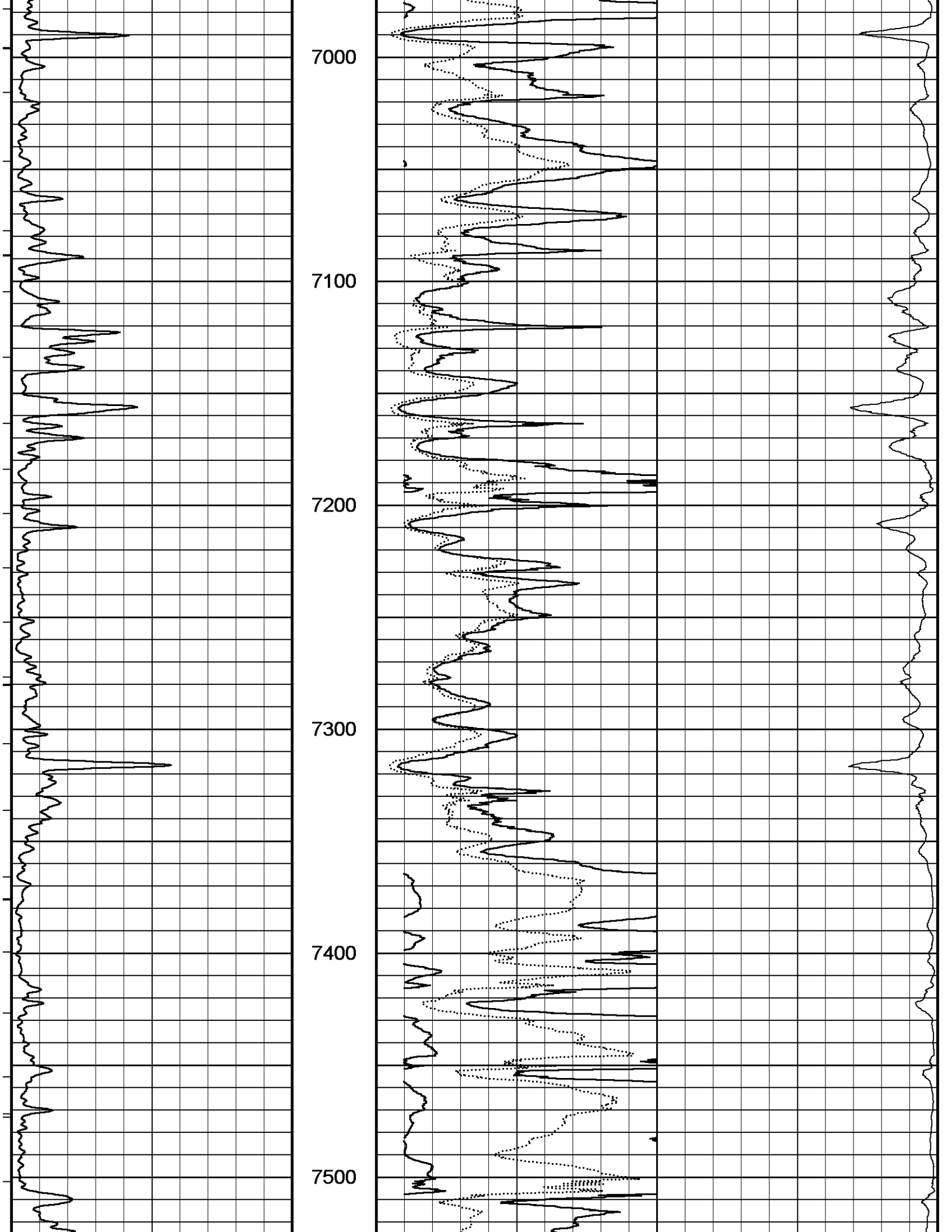
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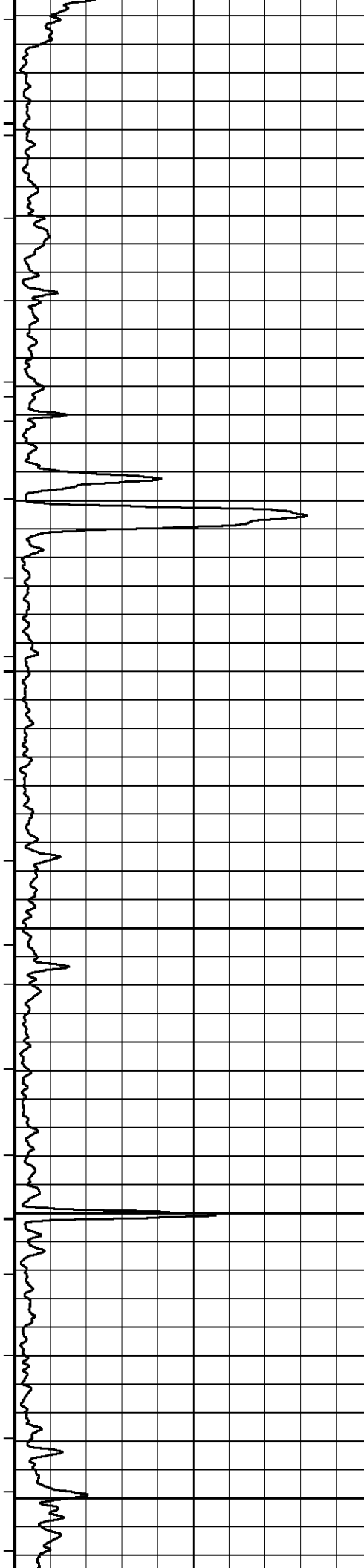
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6800

6900







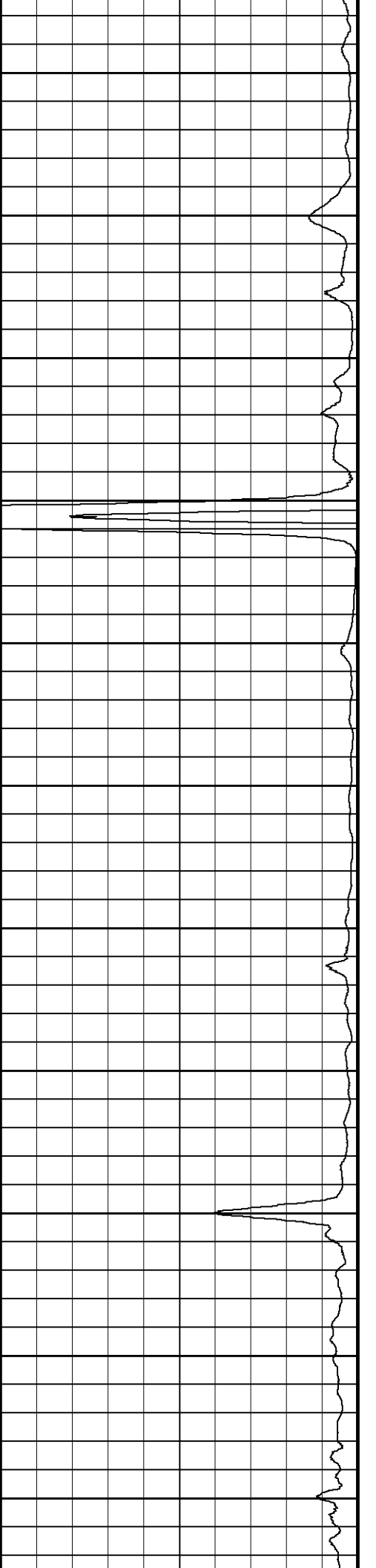
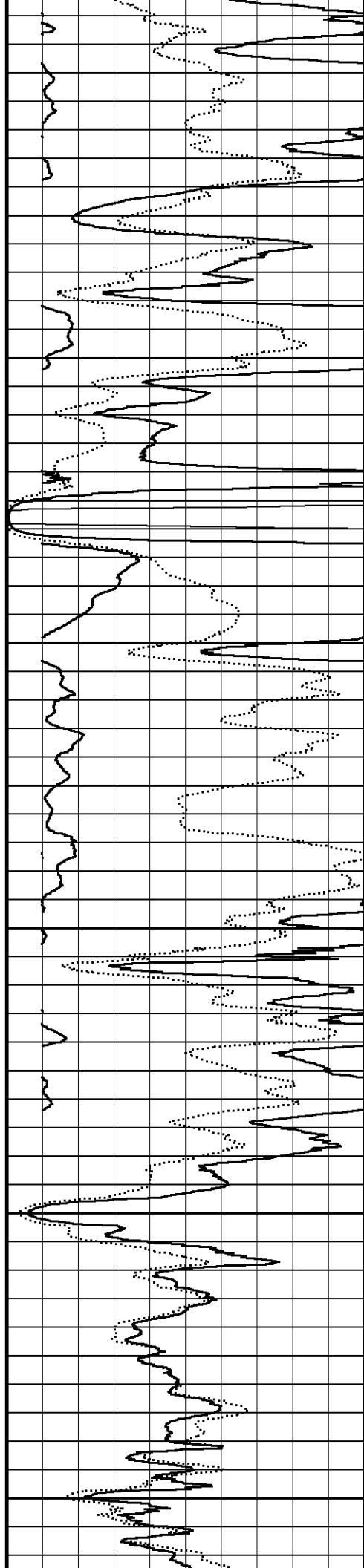
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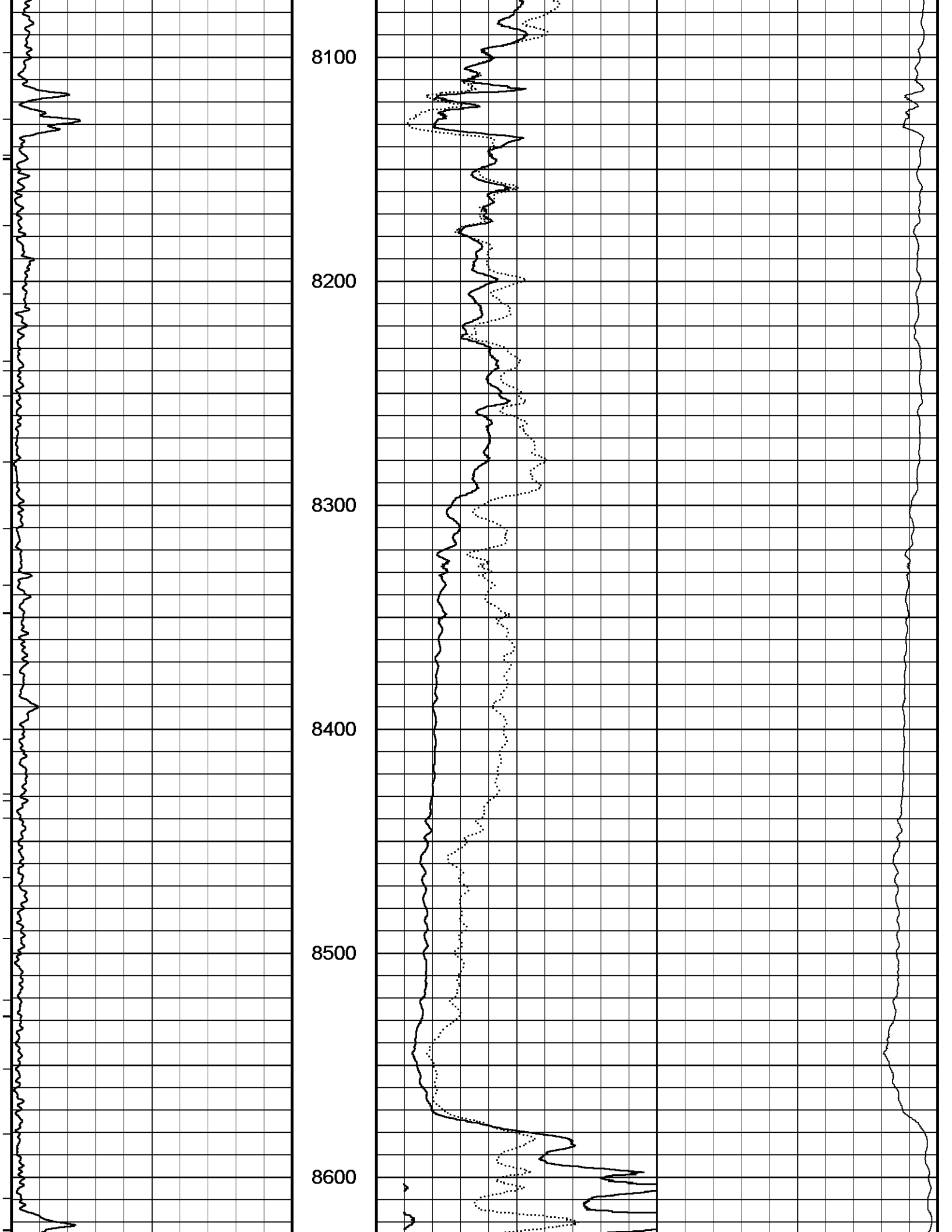
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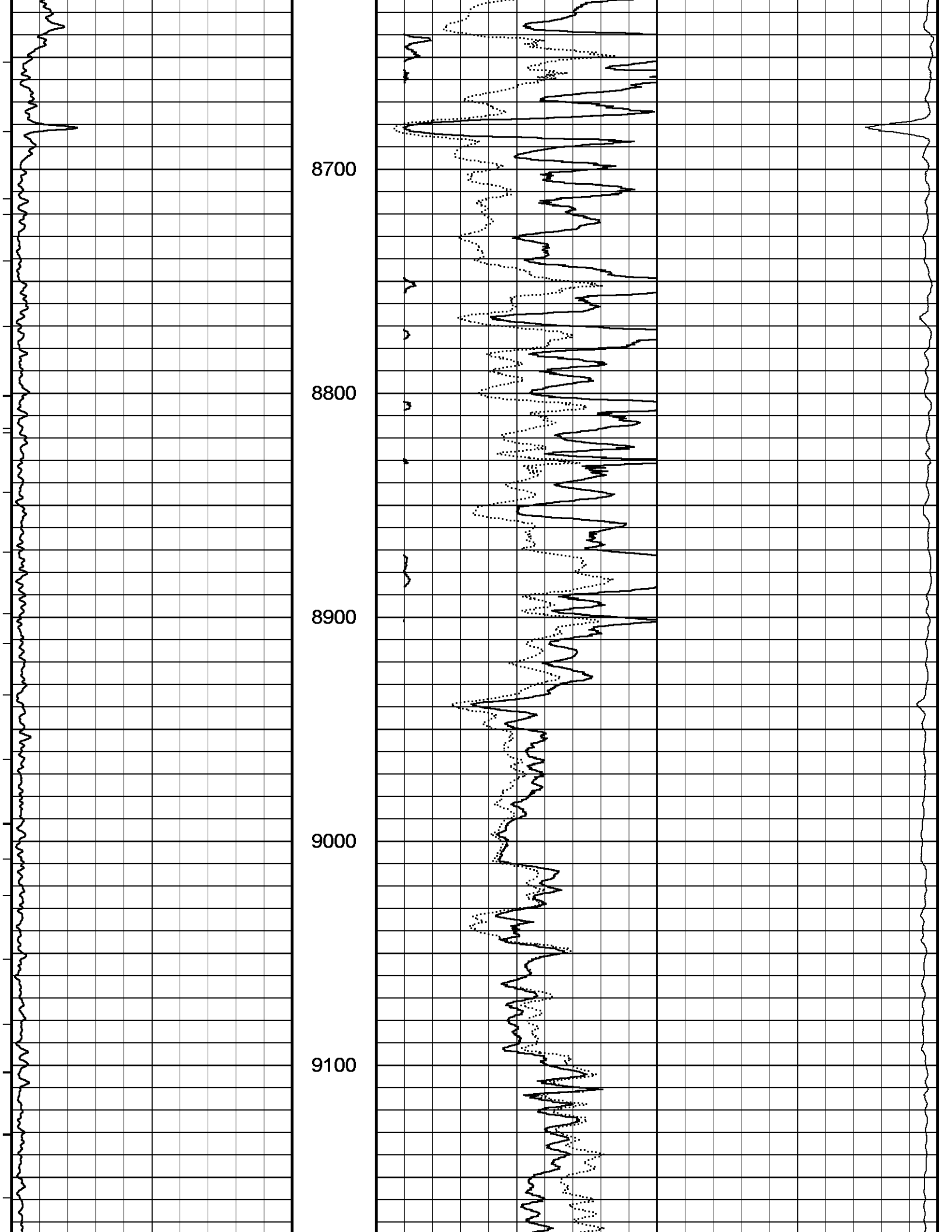
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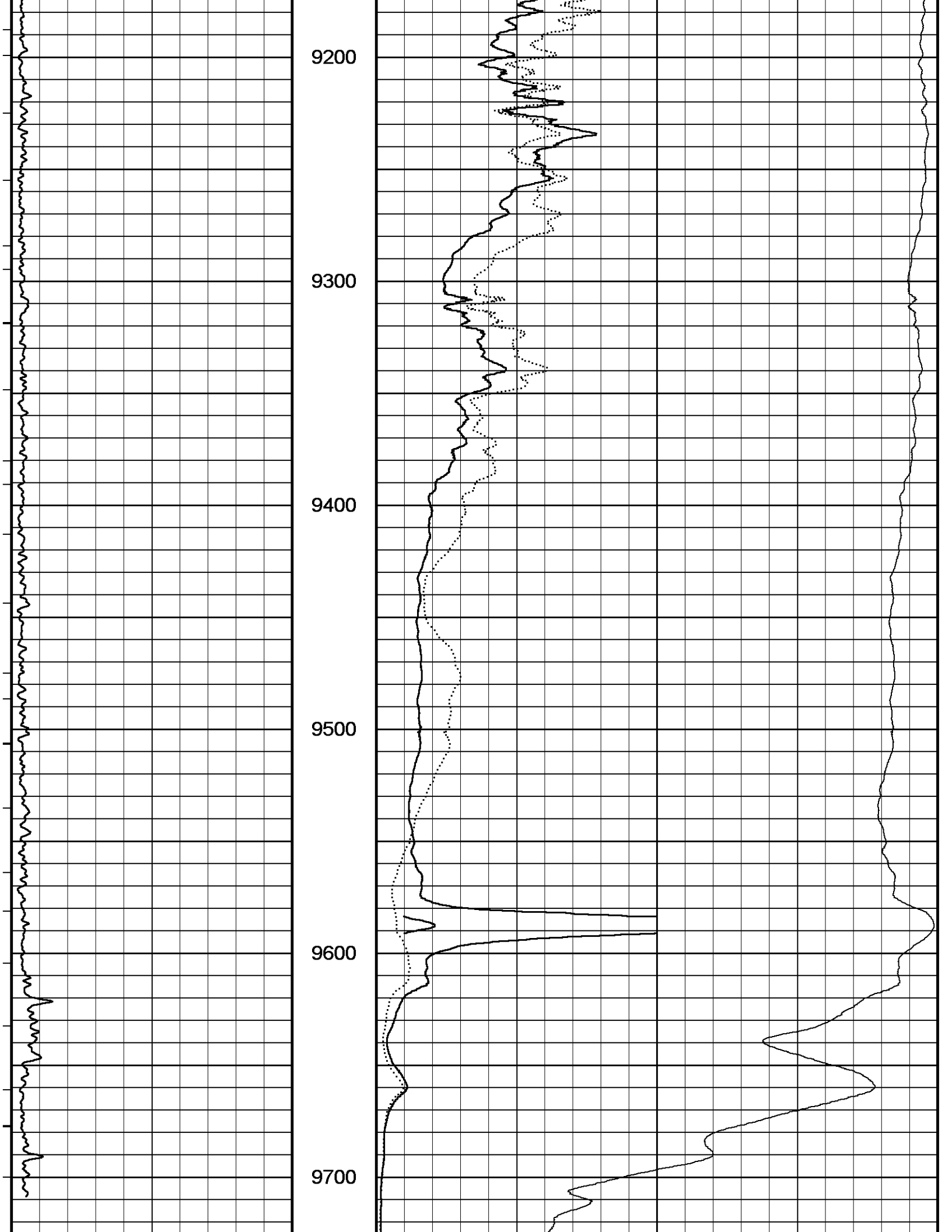
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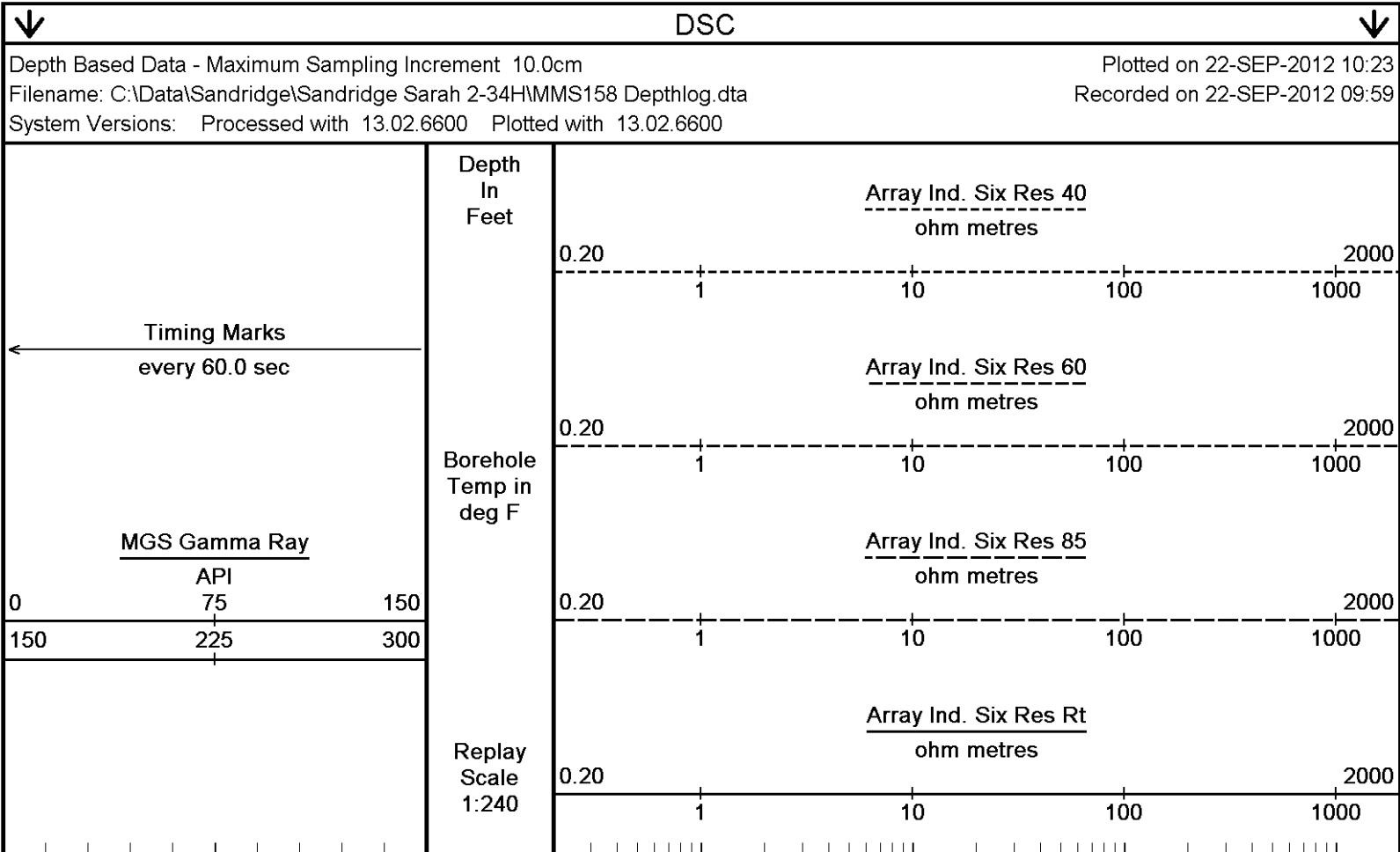
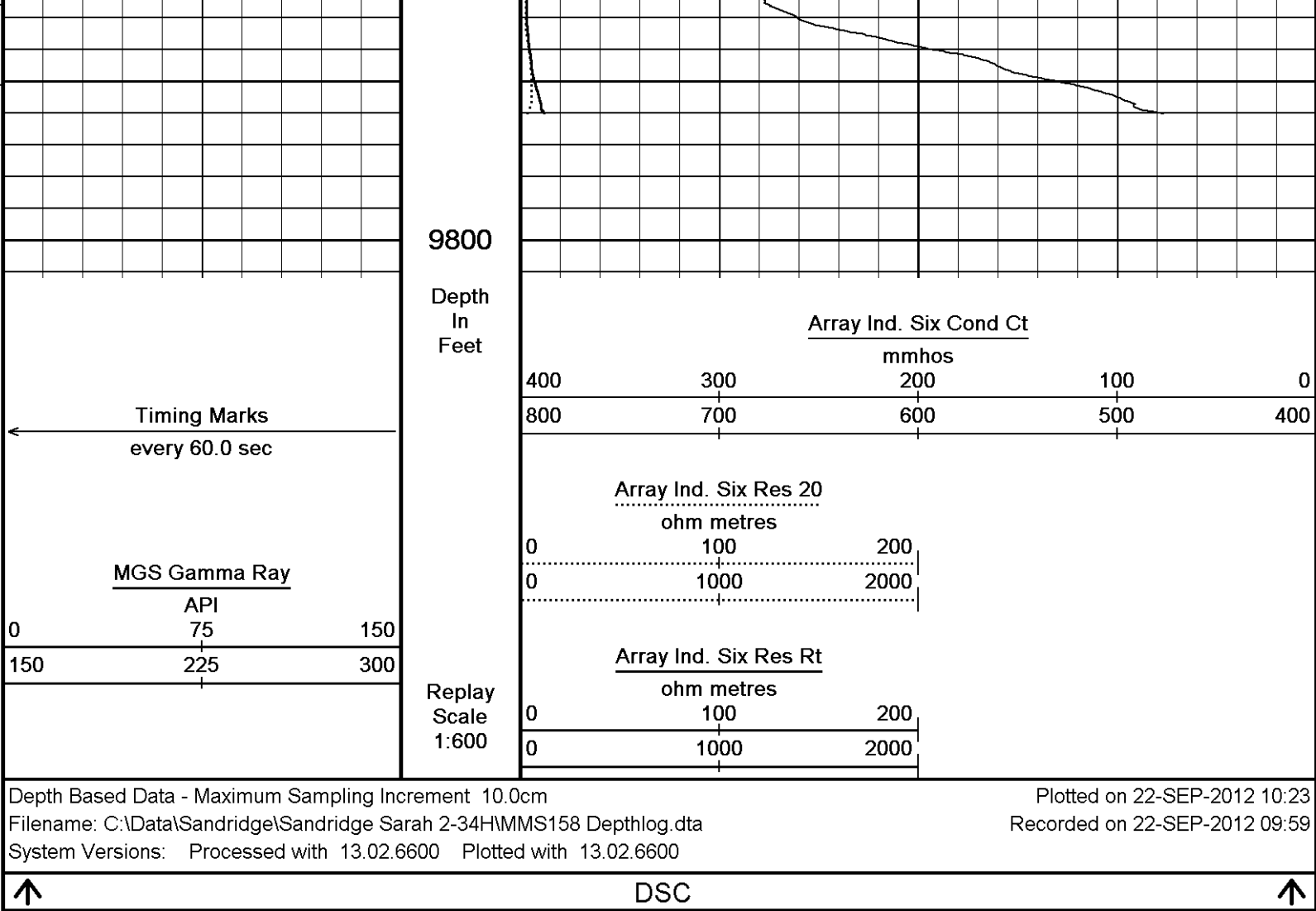
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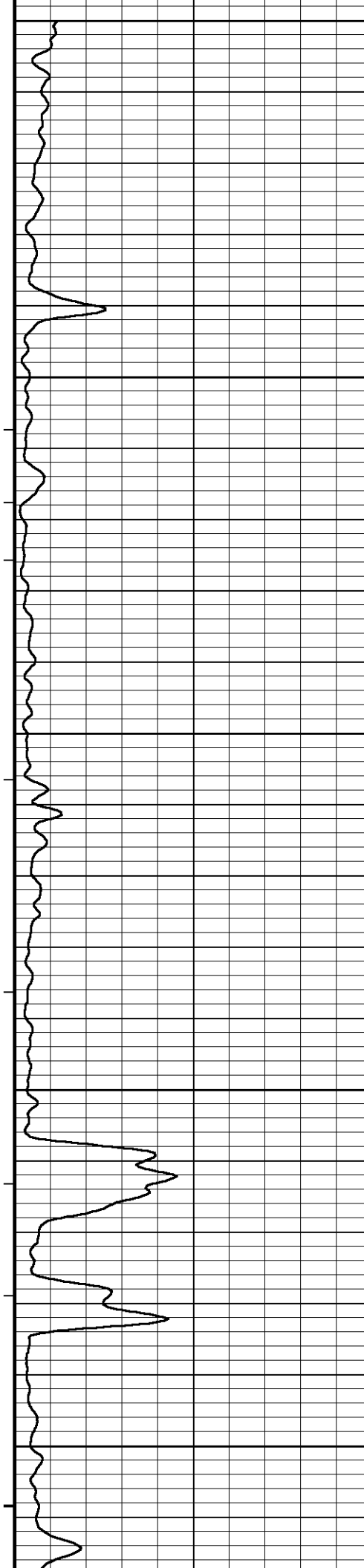












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135°

5600

135°

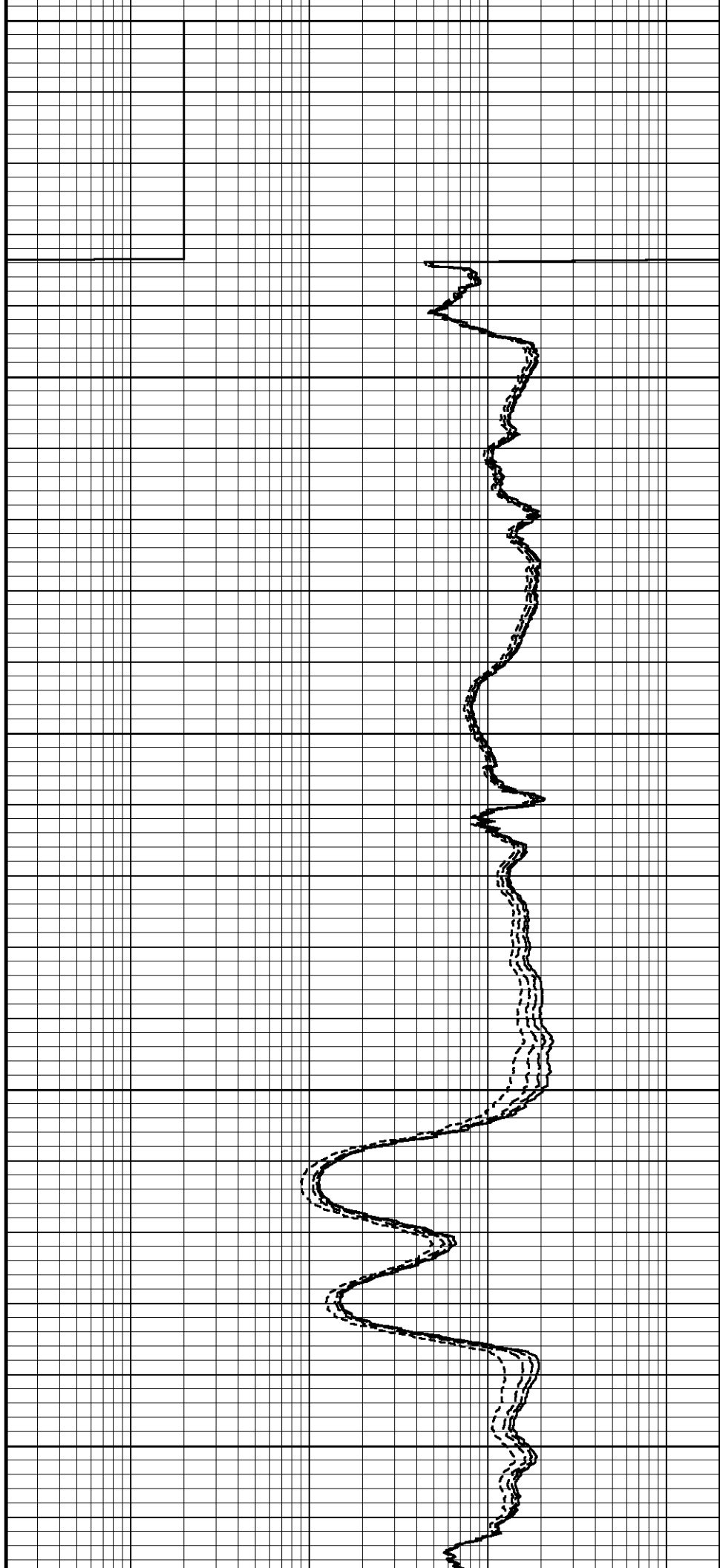
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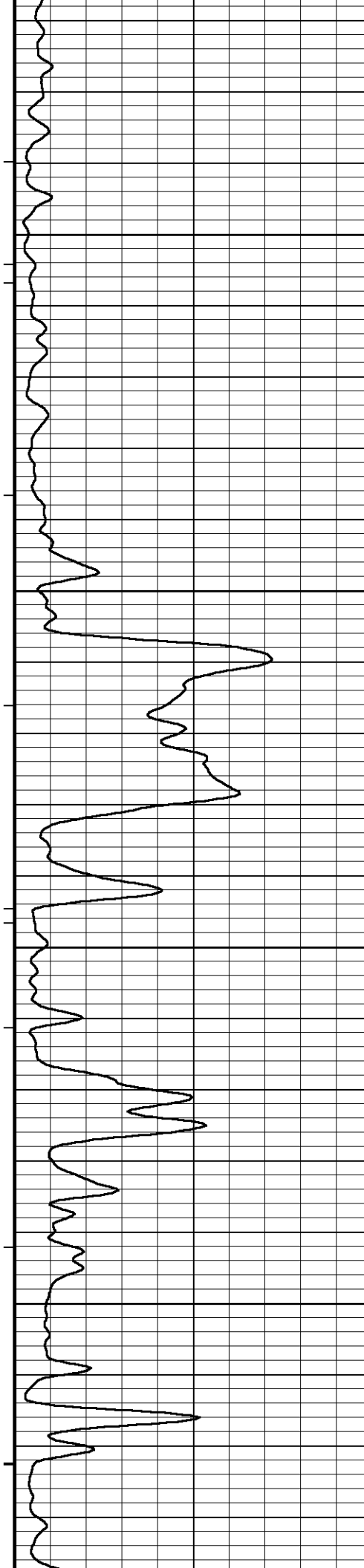
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5700

135°

5750





135°

5800

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5850

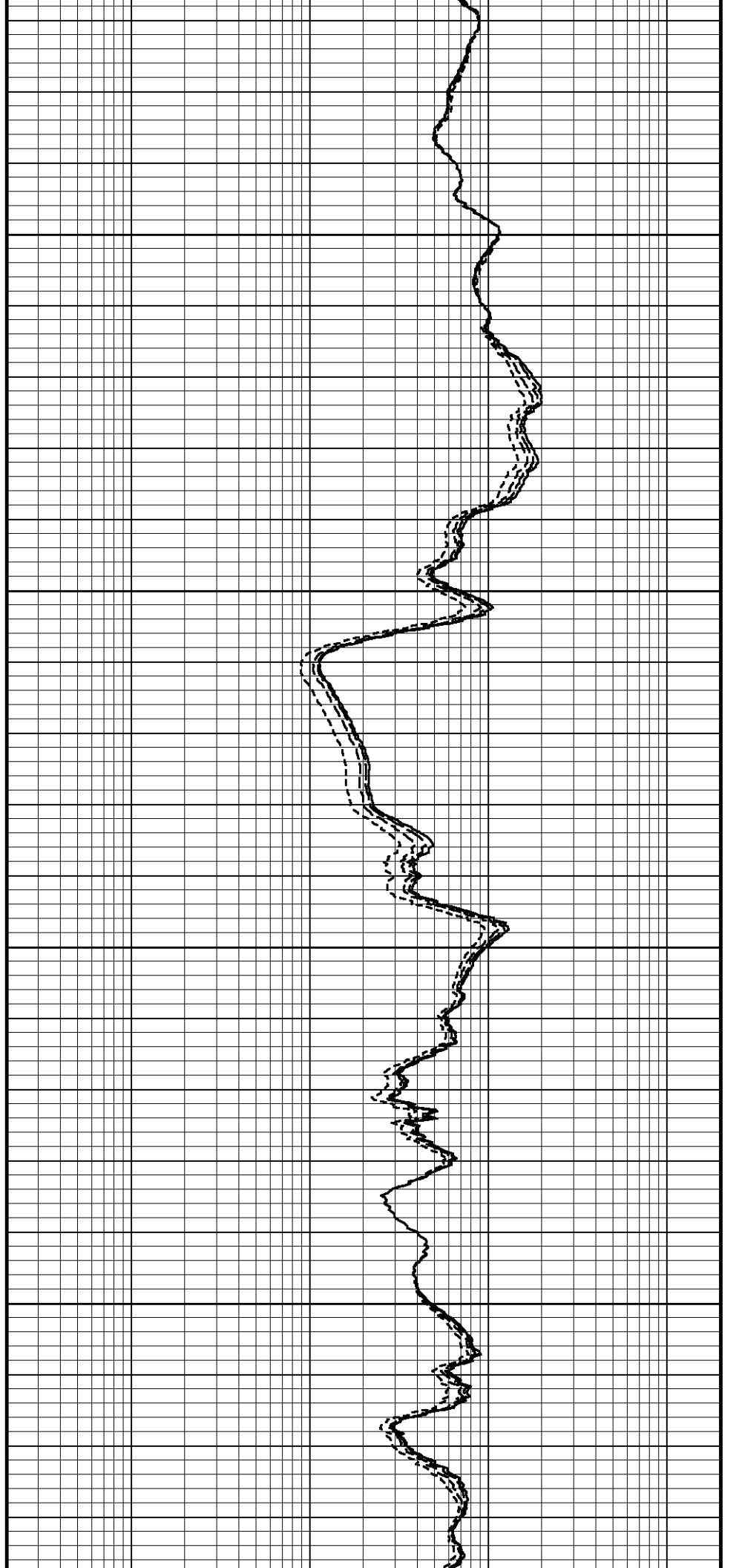
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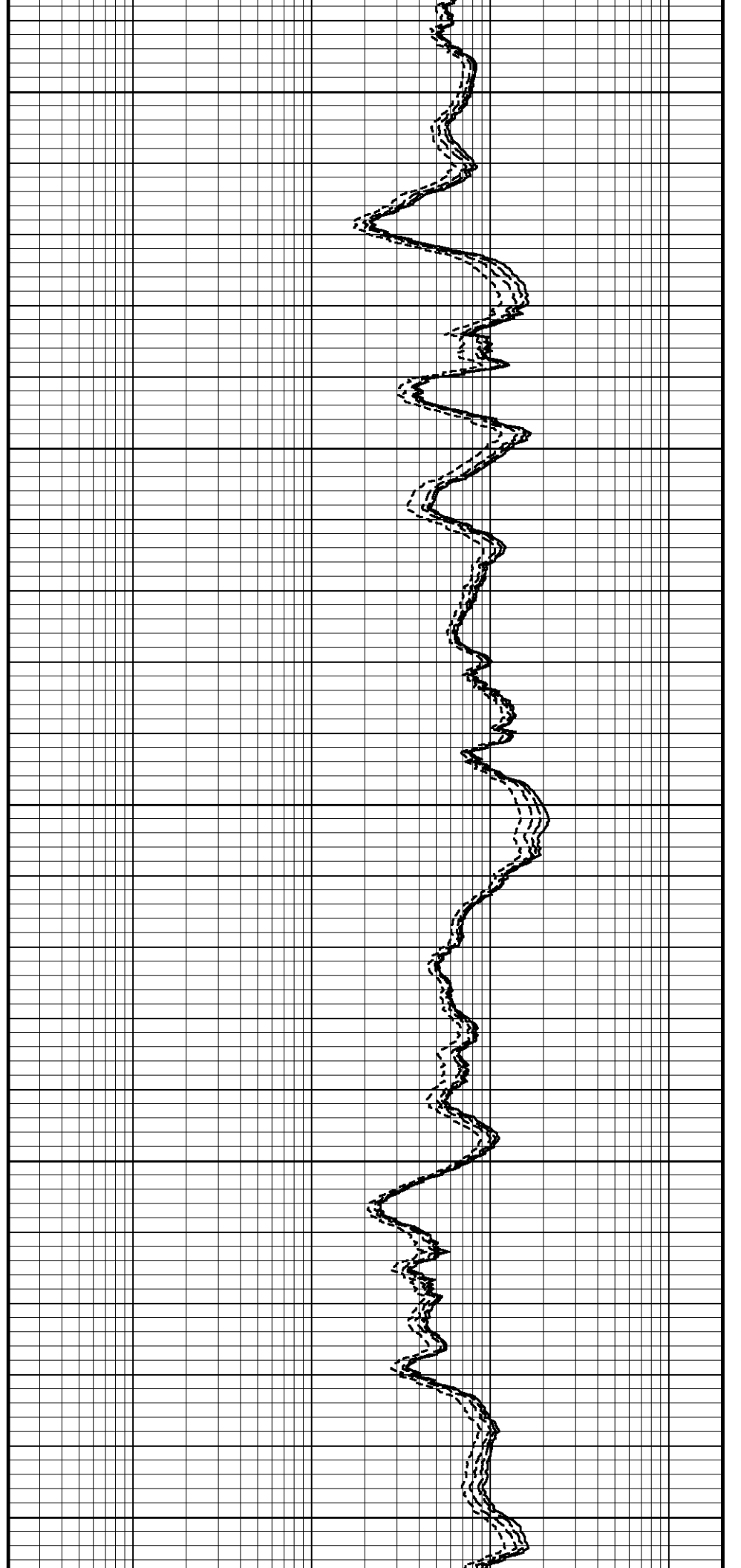
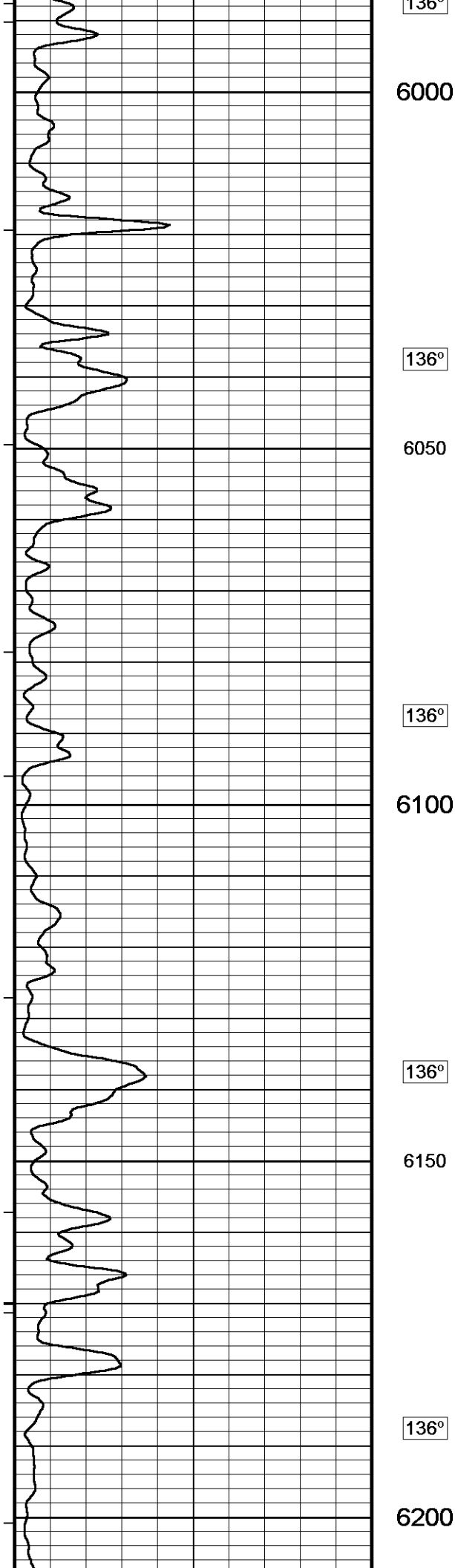
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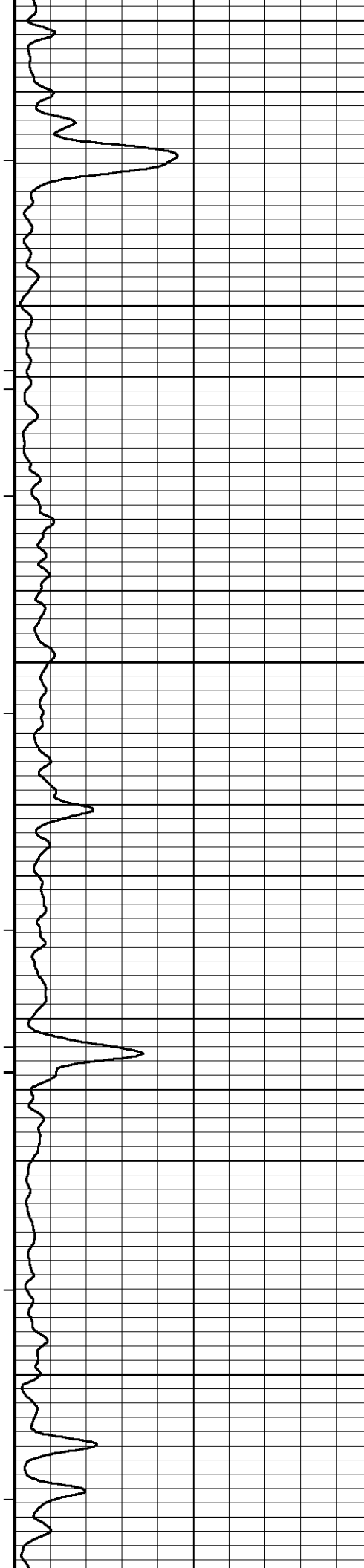
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135°







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6250

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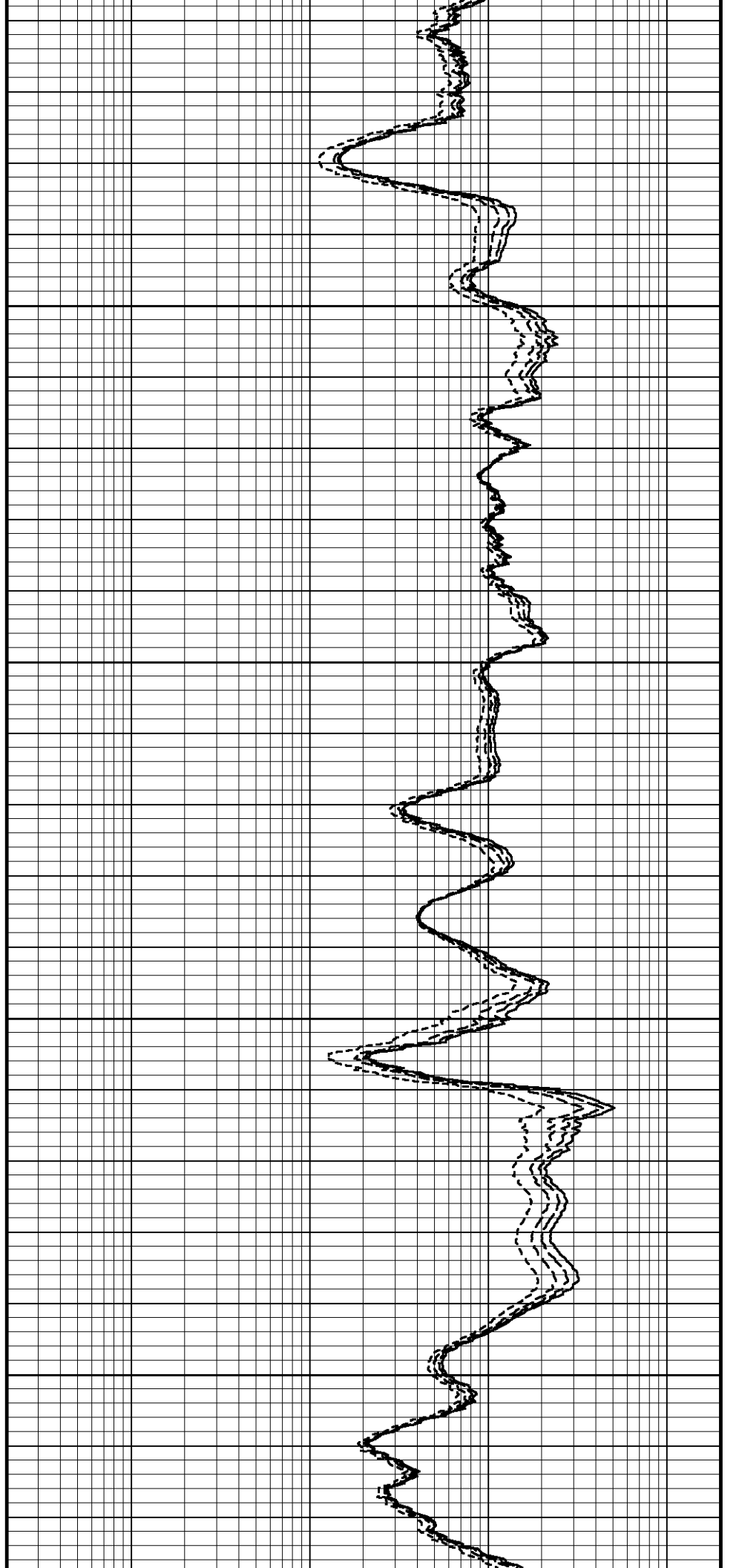
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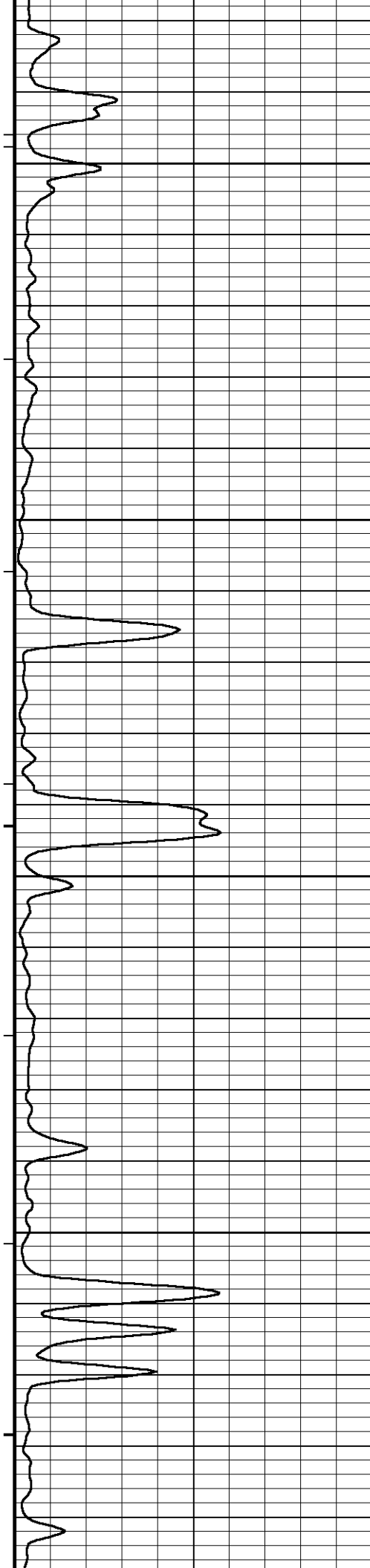
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136°

6400





136°

6450

136°

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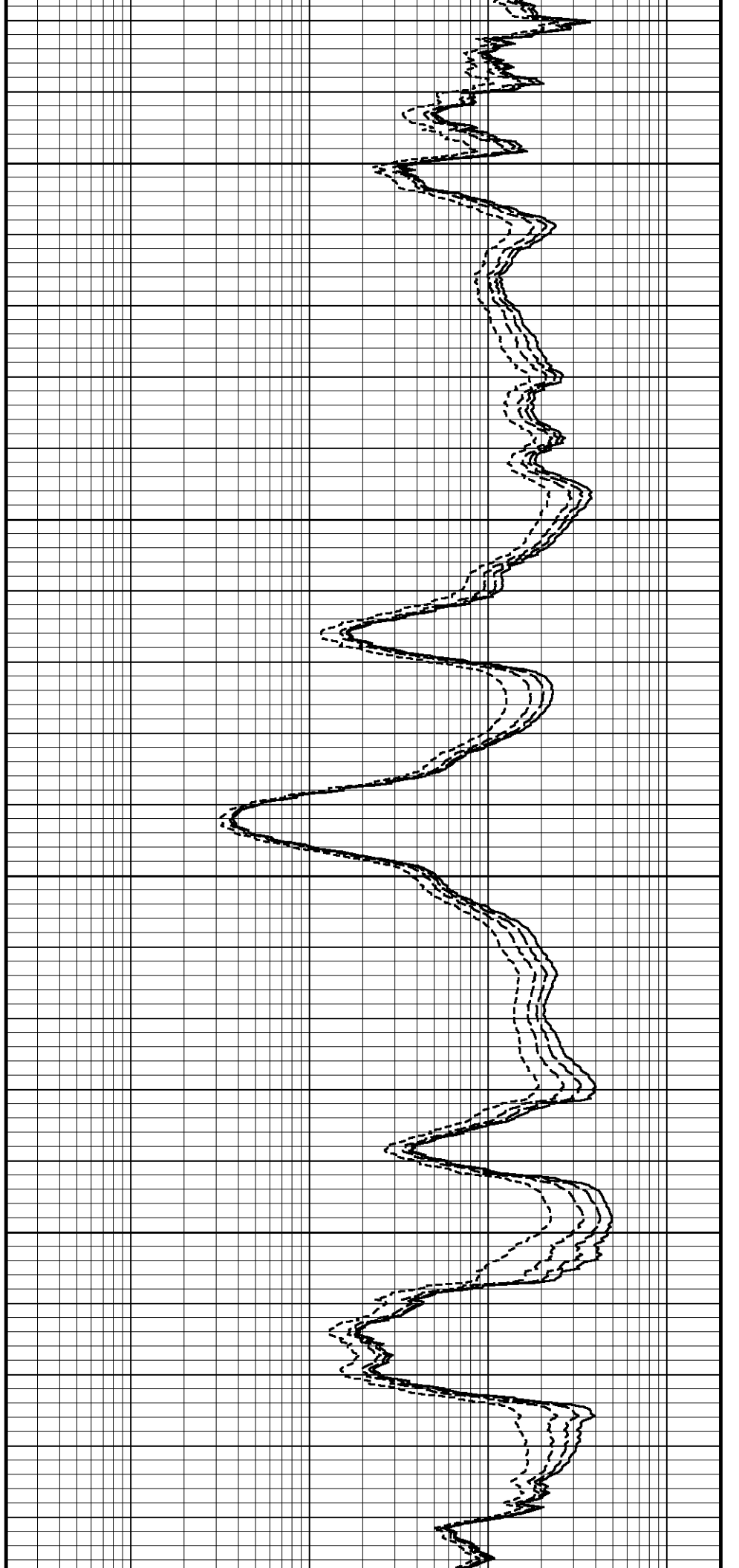
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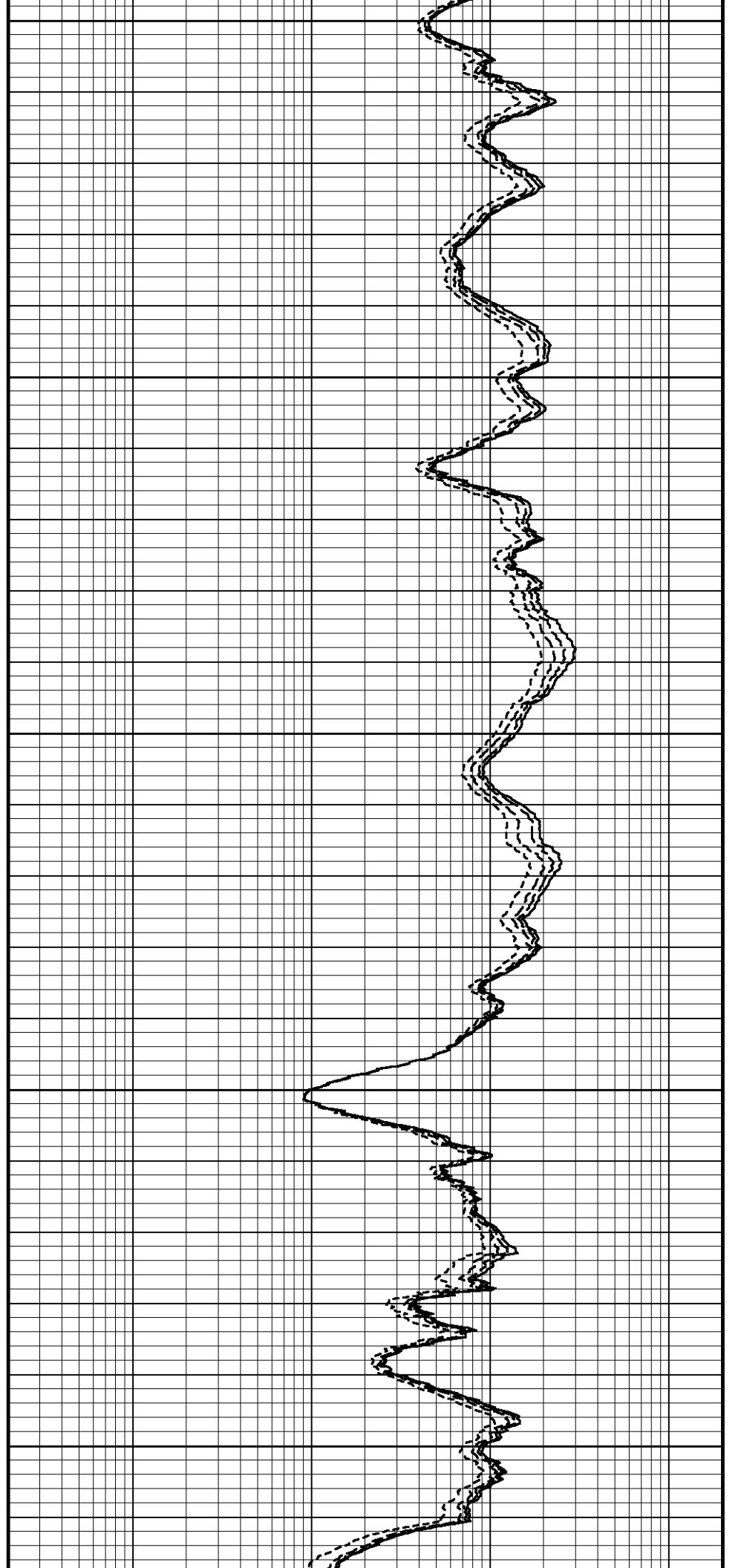
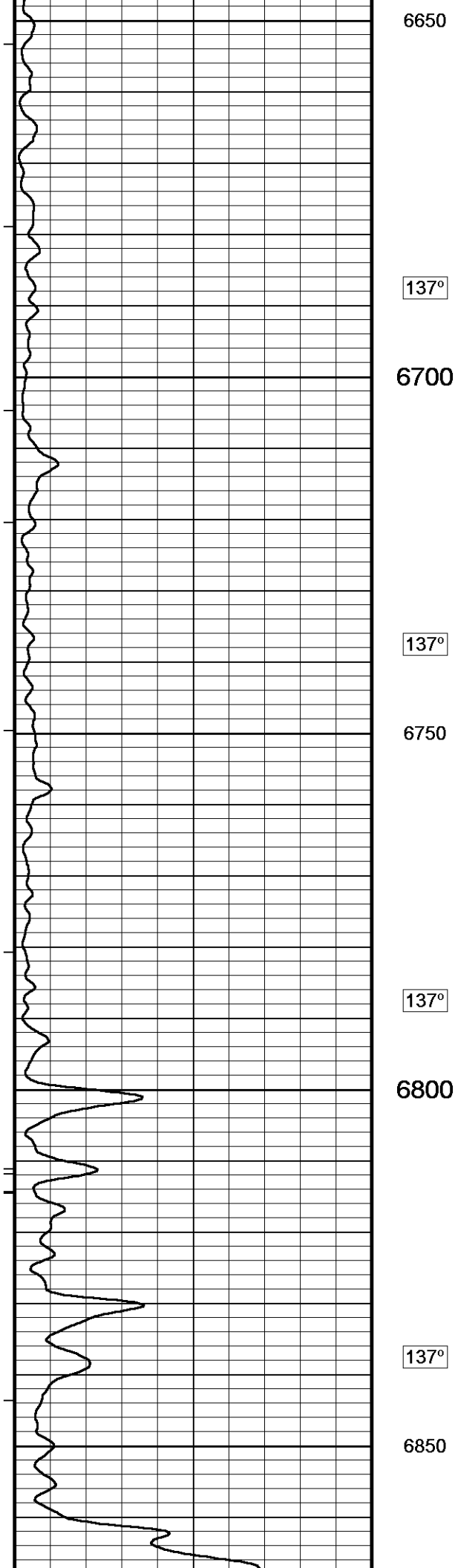
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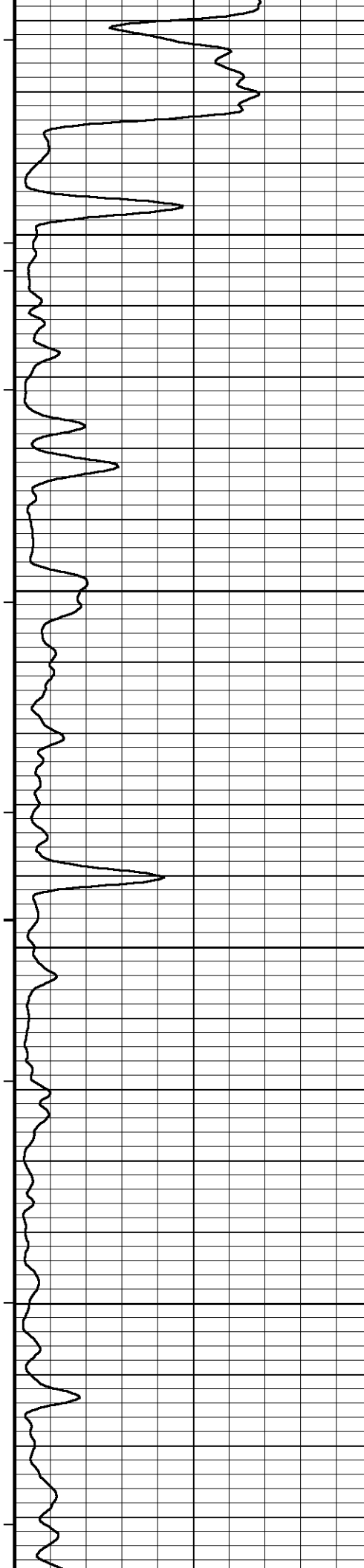
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6600

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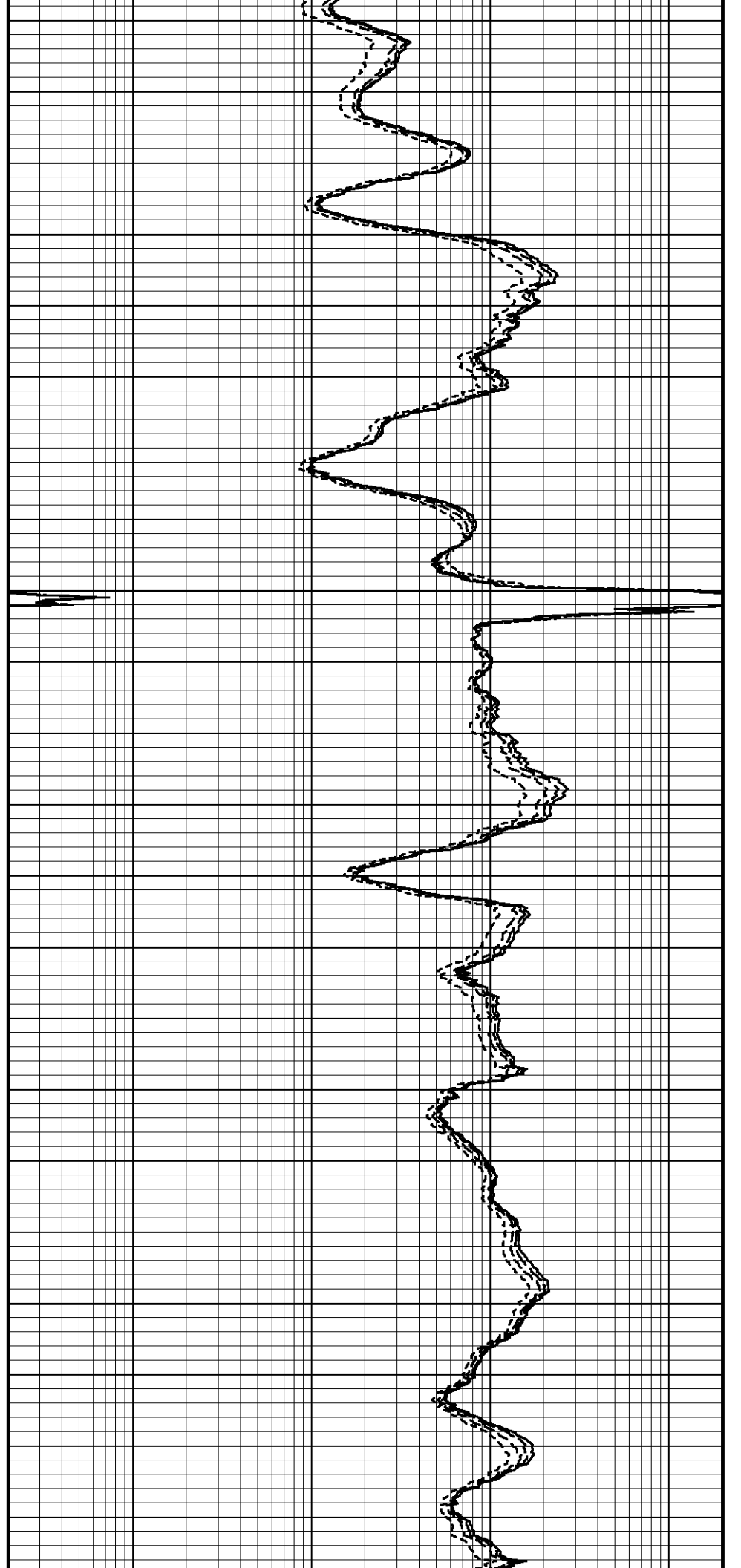
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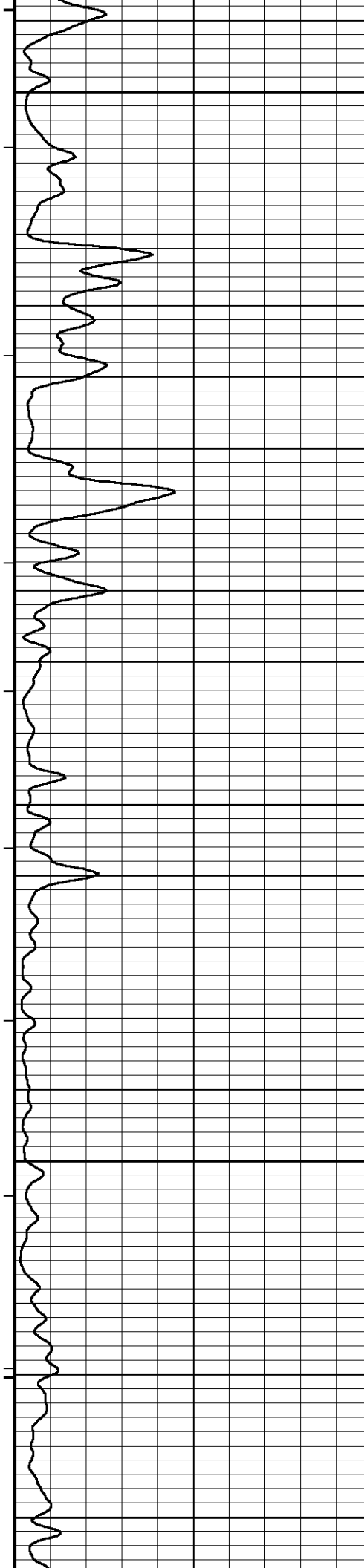
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137°

7050

137°





137°

7100

137°

7150

137°

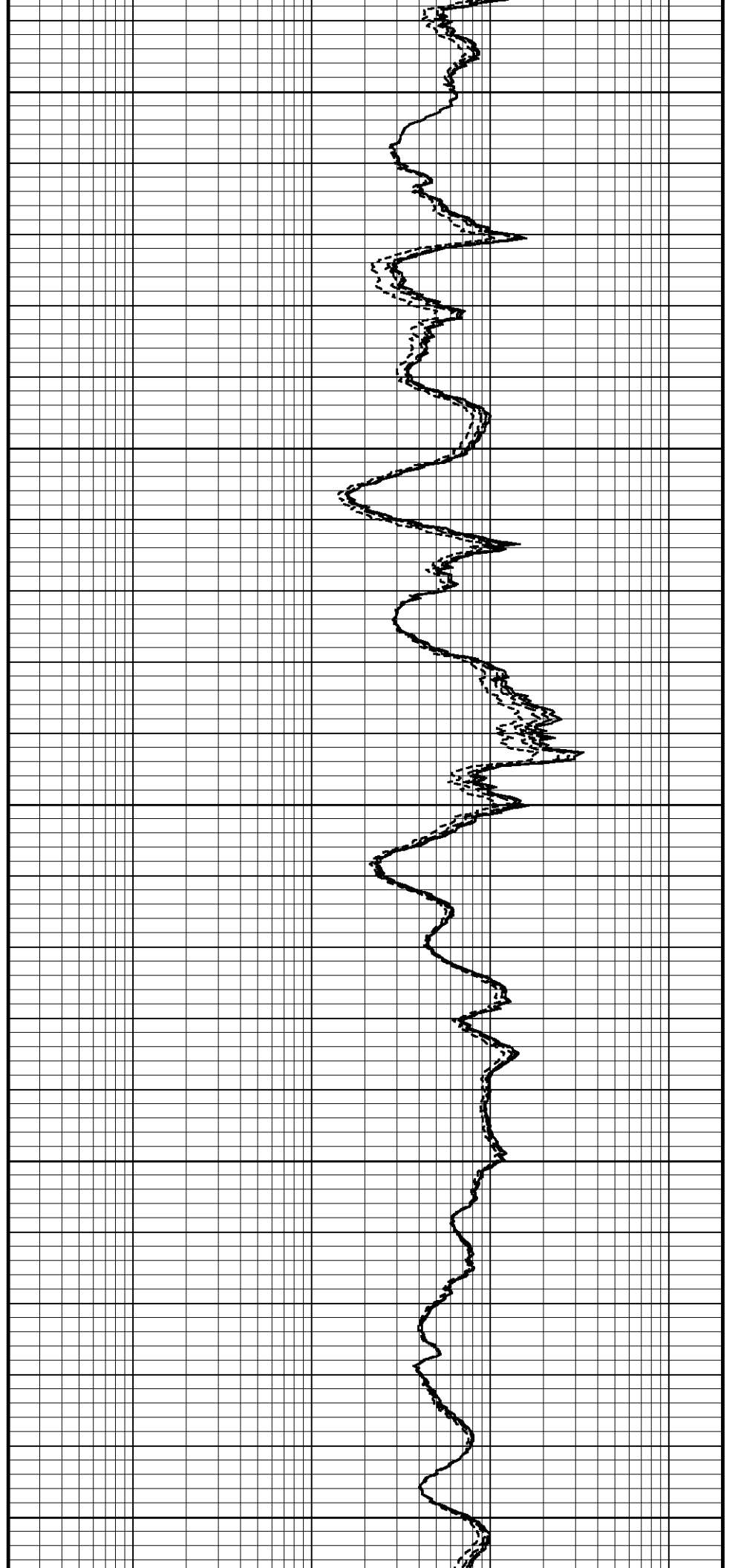
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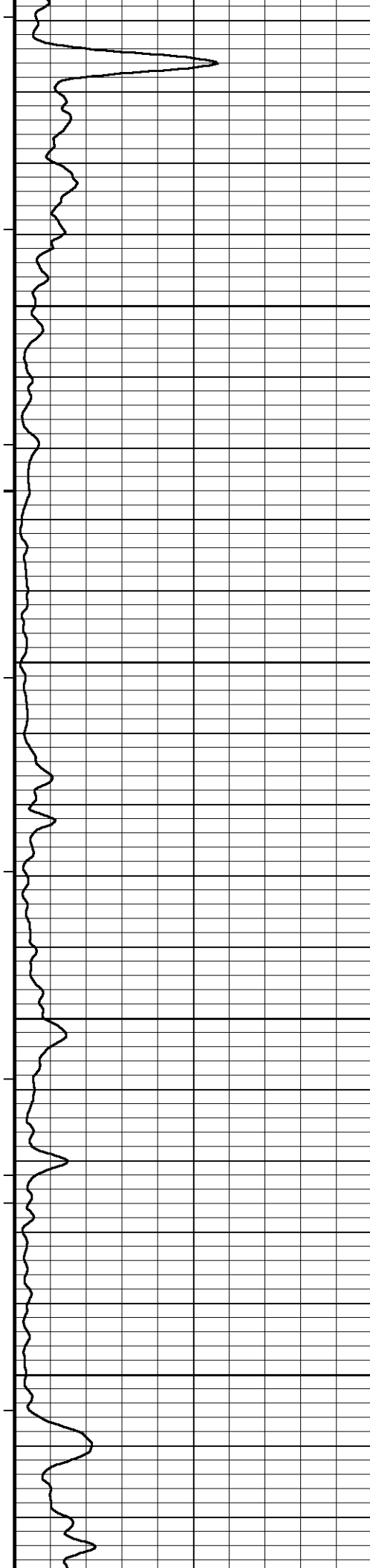
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7250

138°

7300





138°

7350

138°

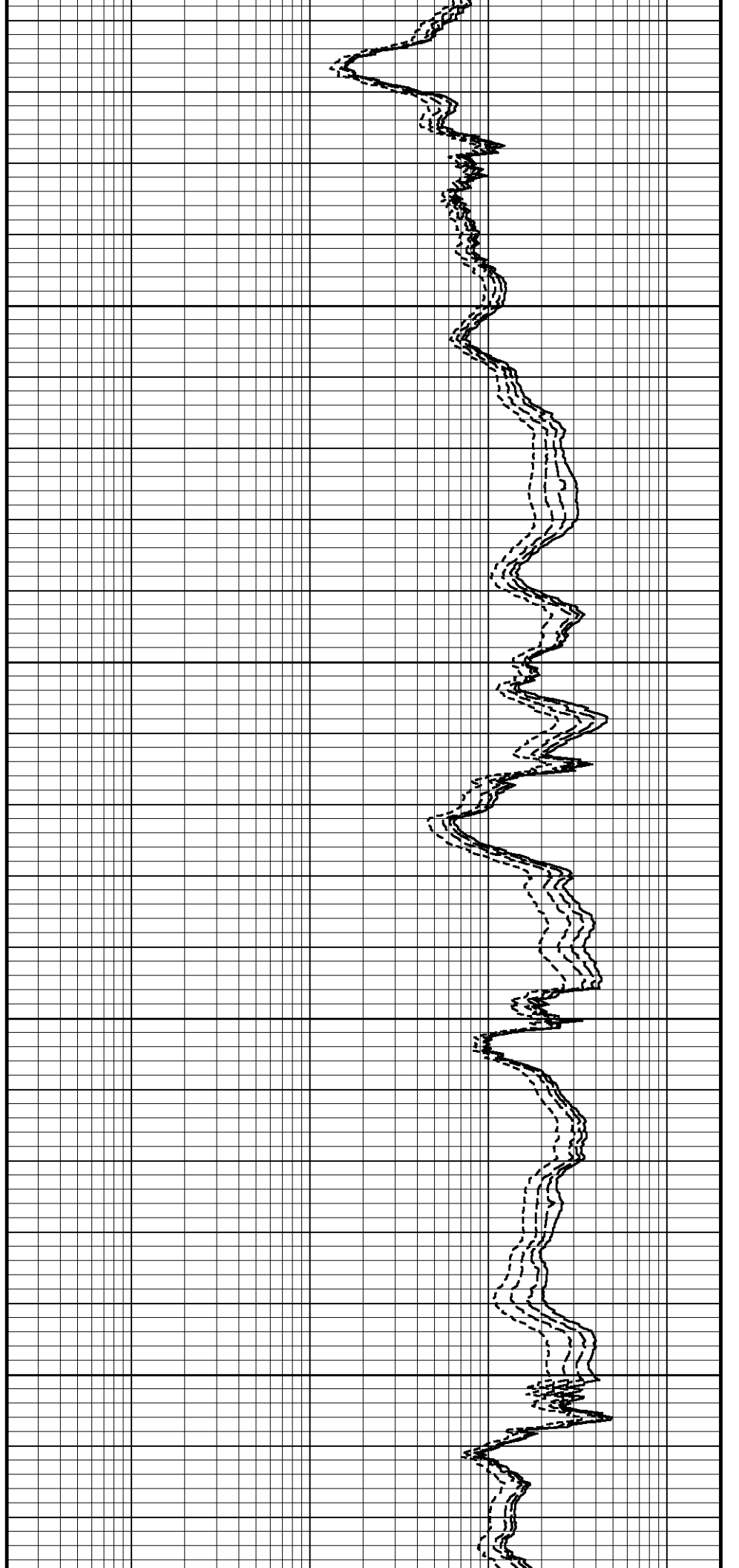
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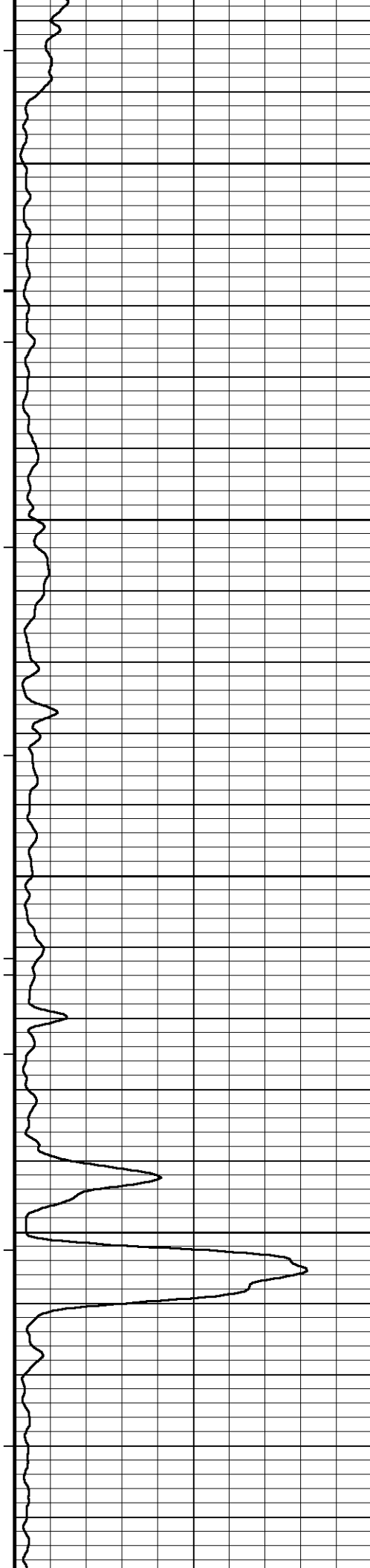
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7500





138°

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138°

7600

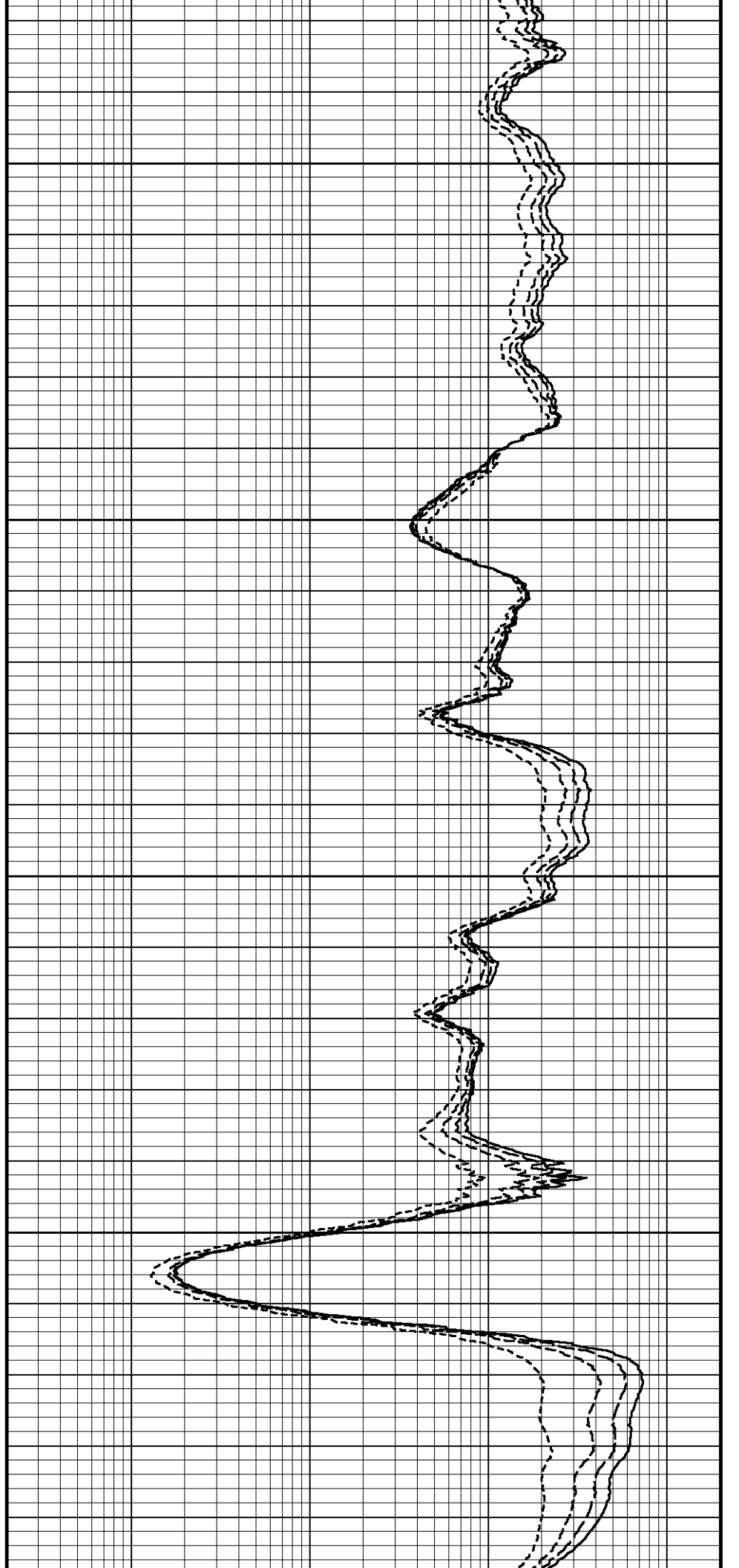
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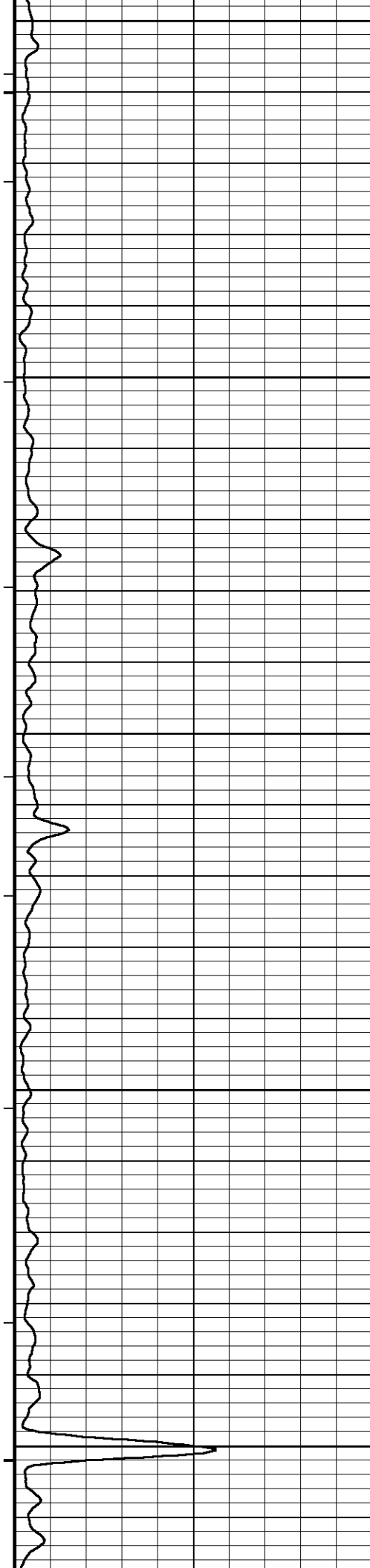
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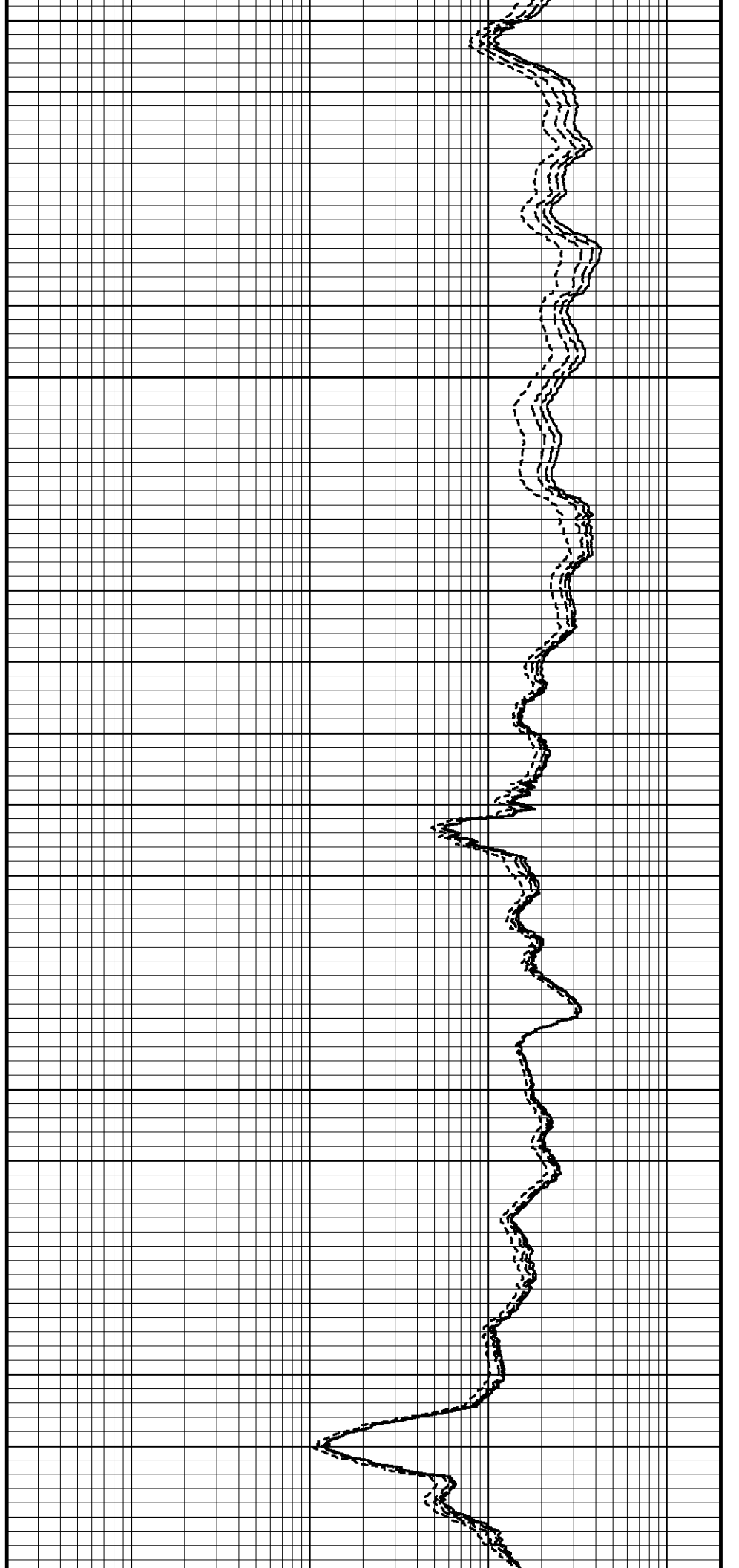
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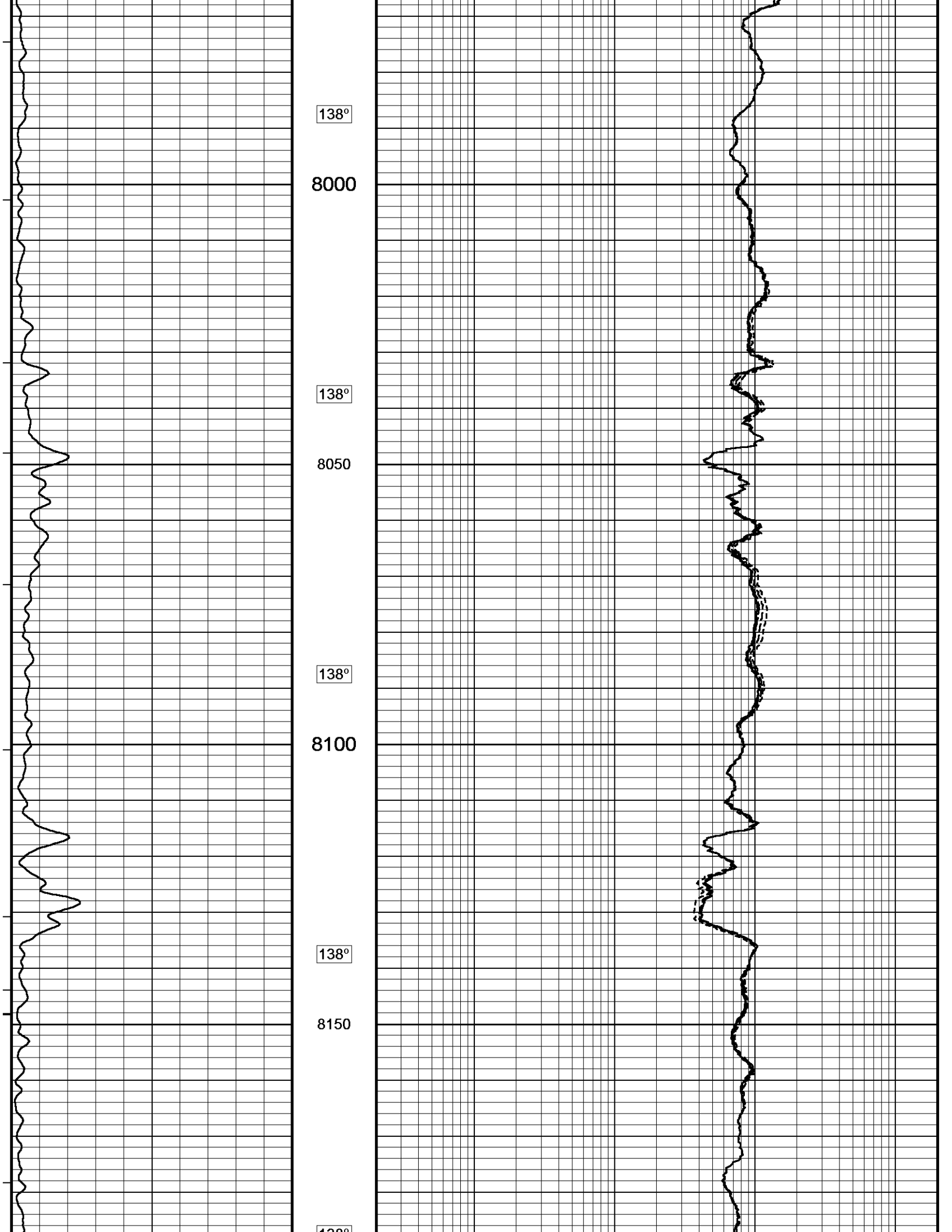
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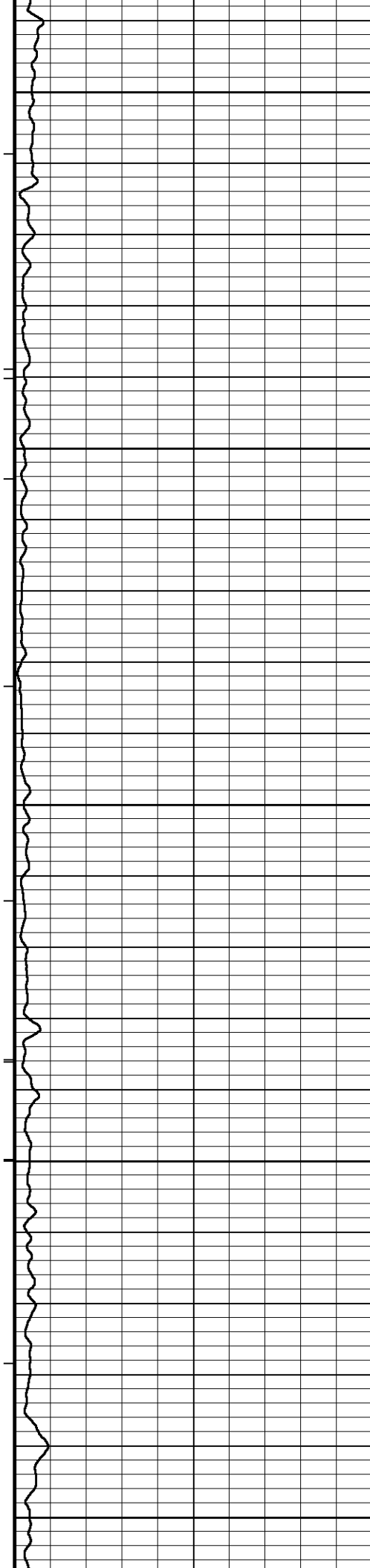
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138°

7950







138°

8200

138°

8250

138°

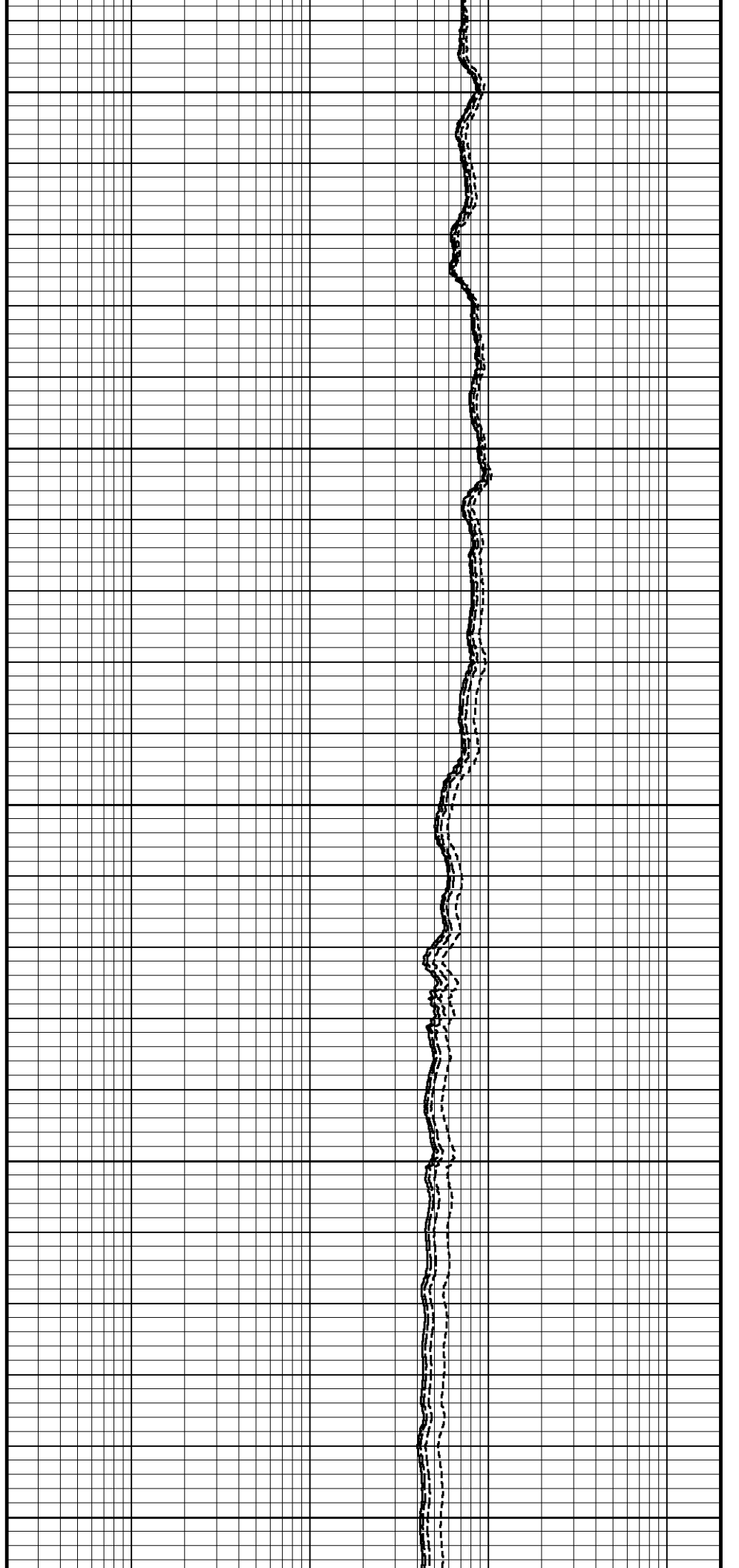
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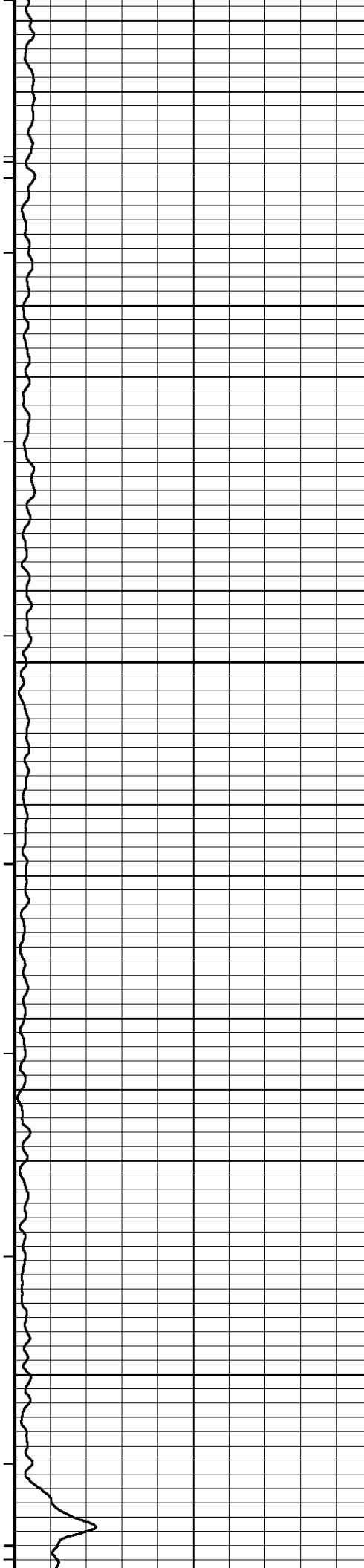
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8400





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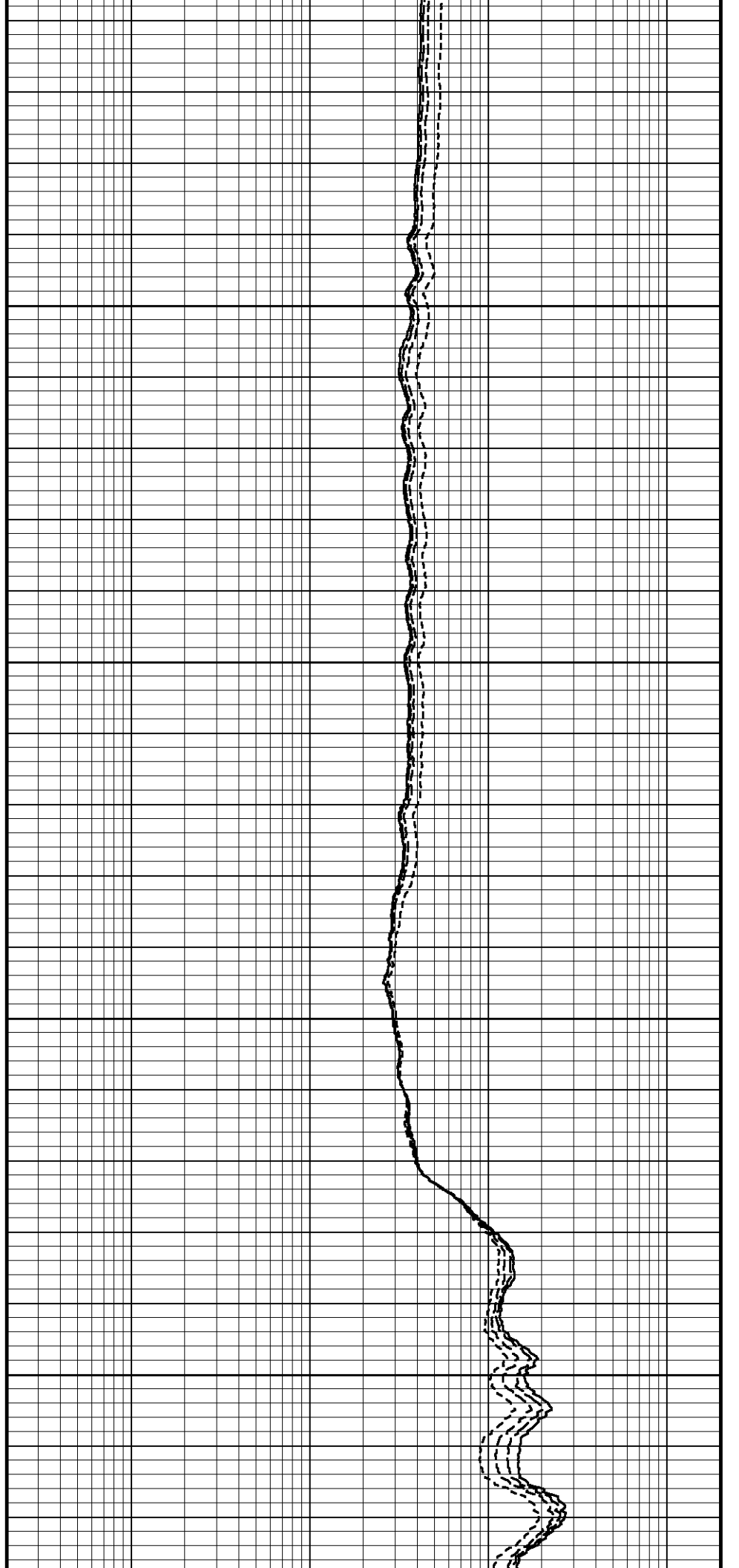
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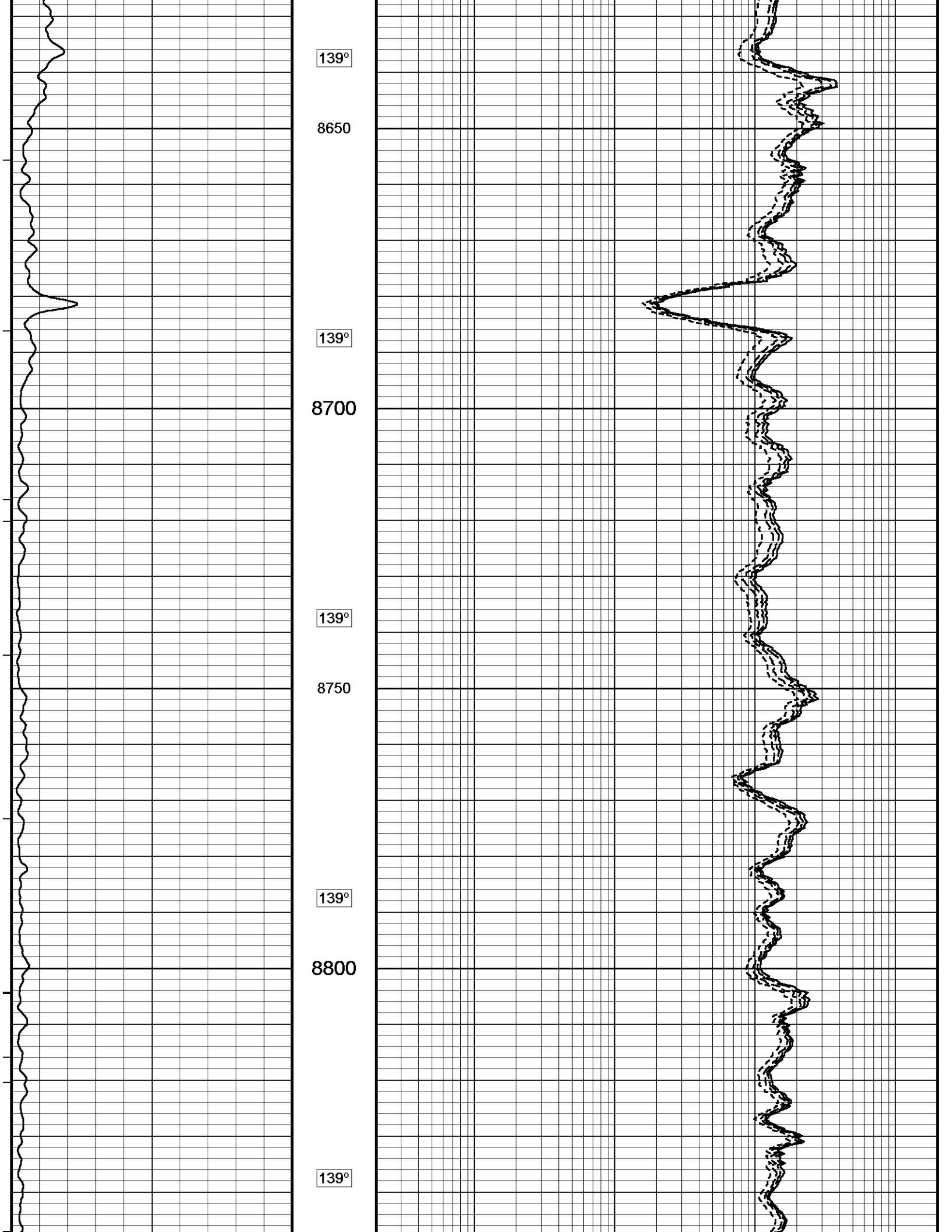
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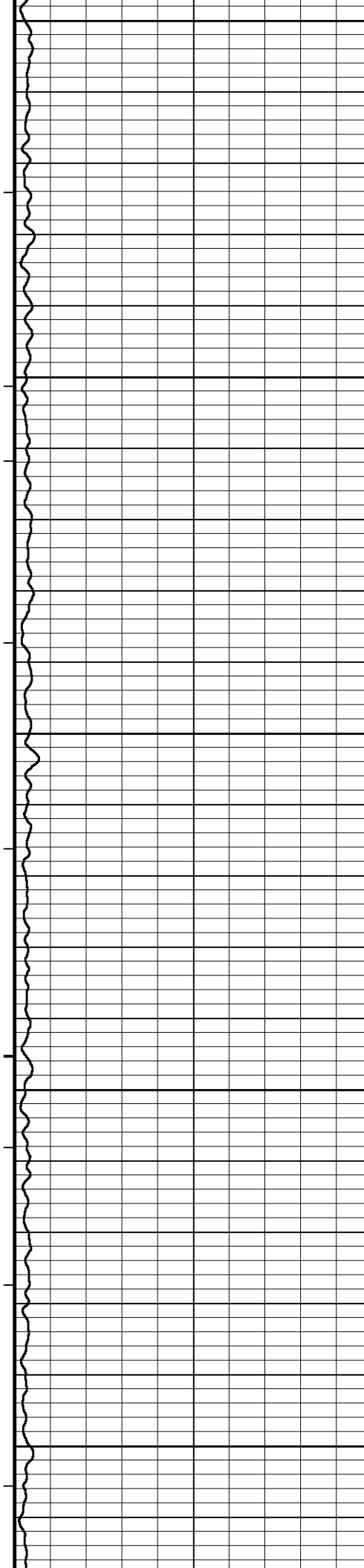
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8600







8850

139°

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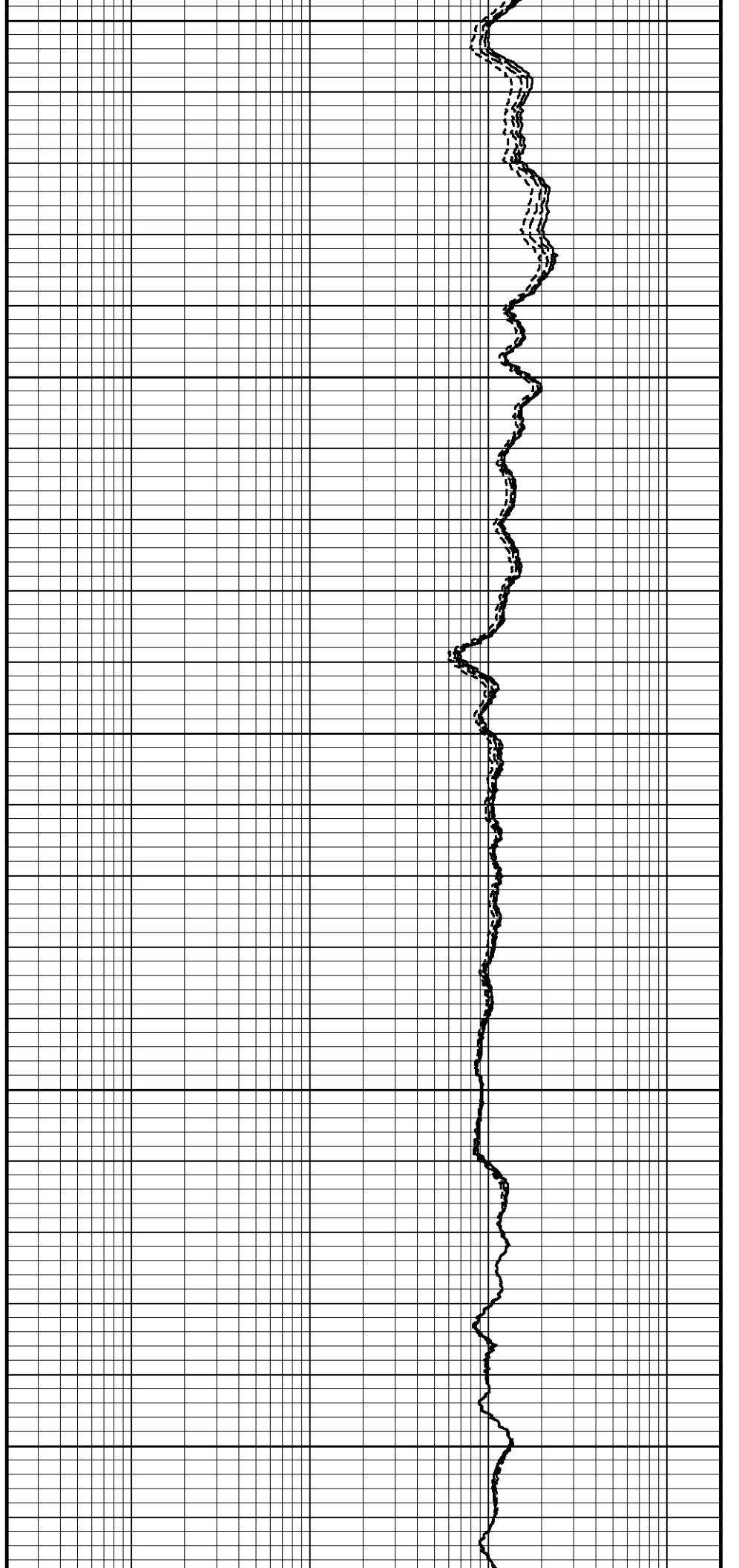
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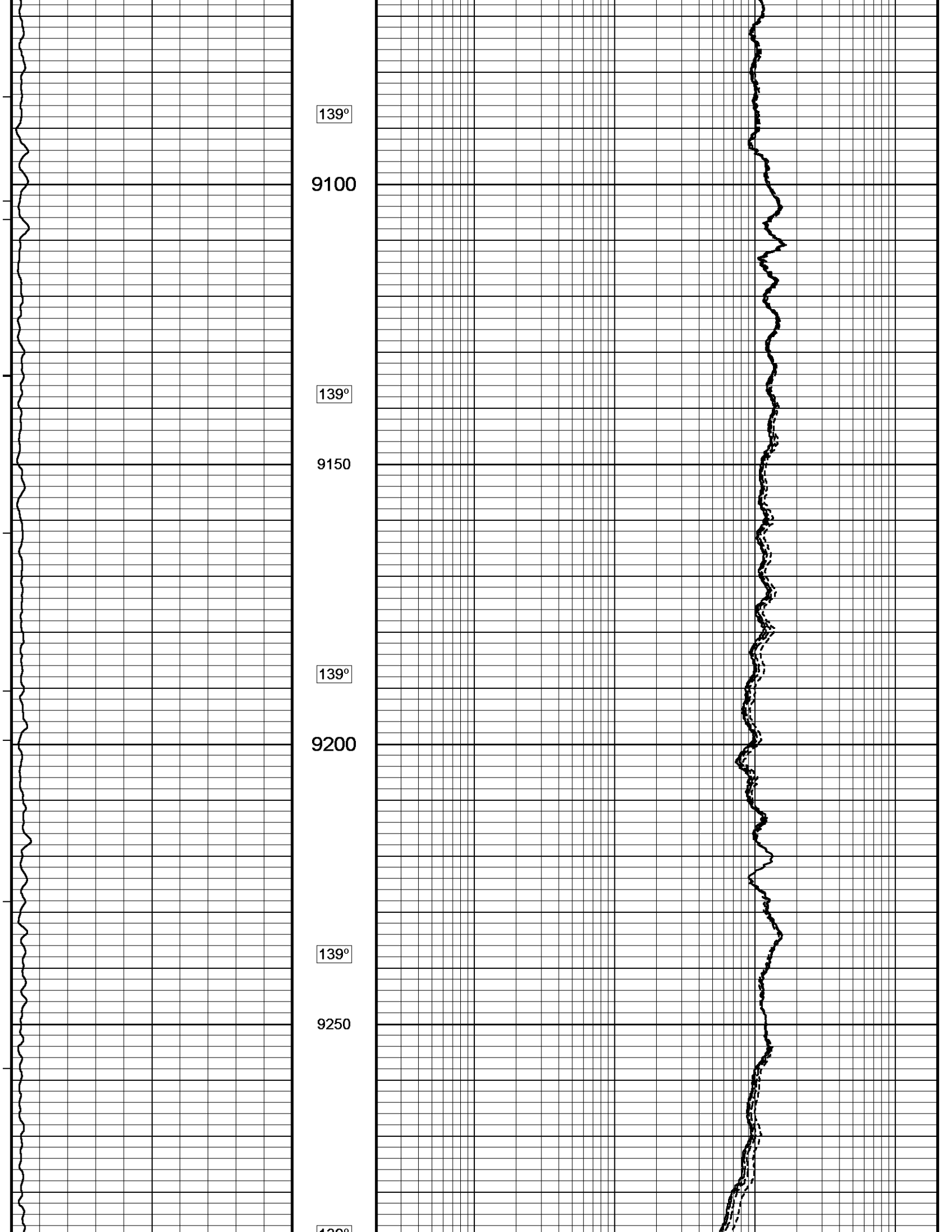
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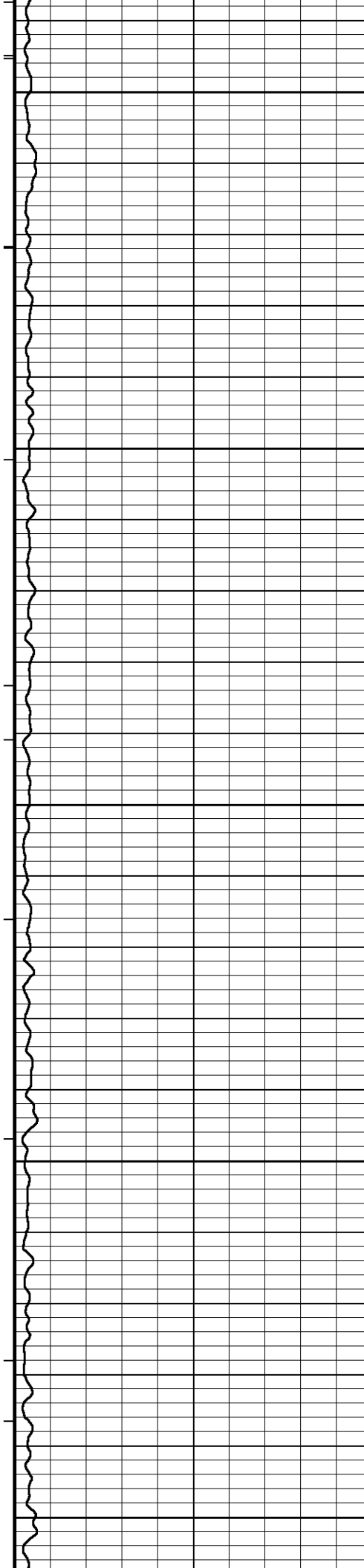
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139°

9050







139°

9300

139°

9350

139°

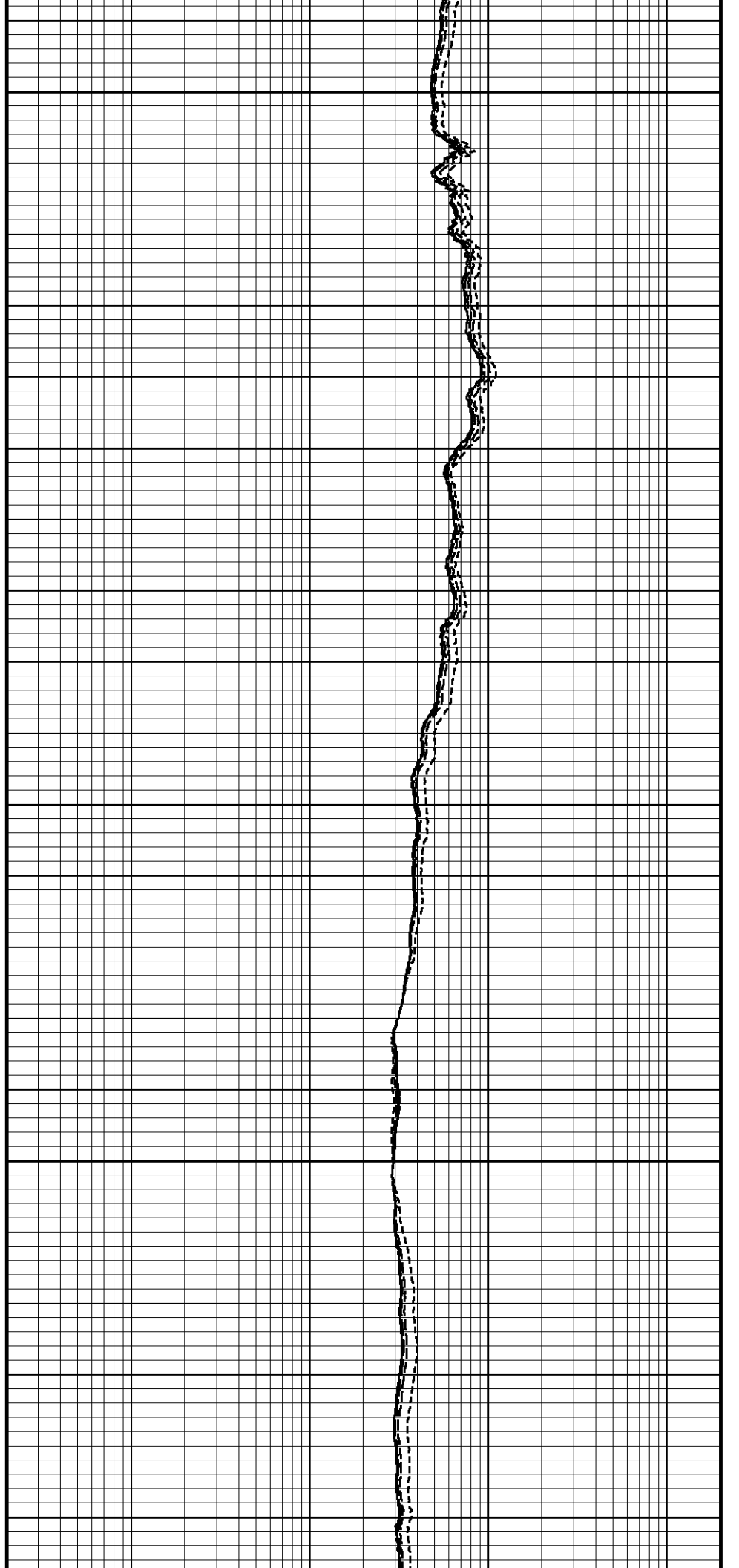
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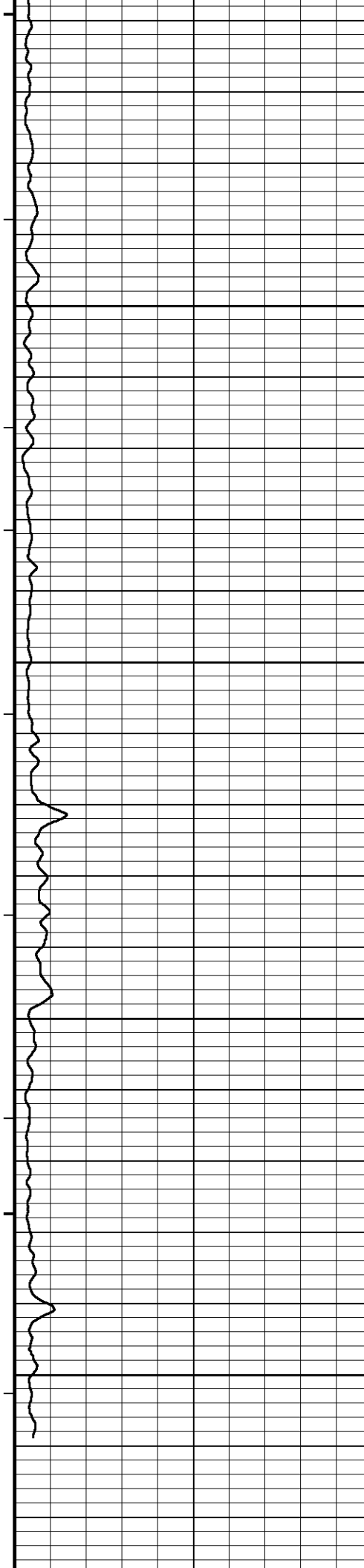
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9500





139°

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139°

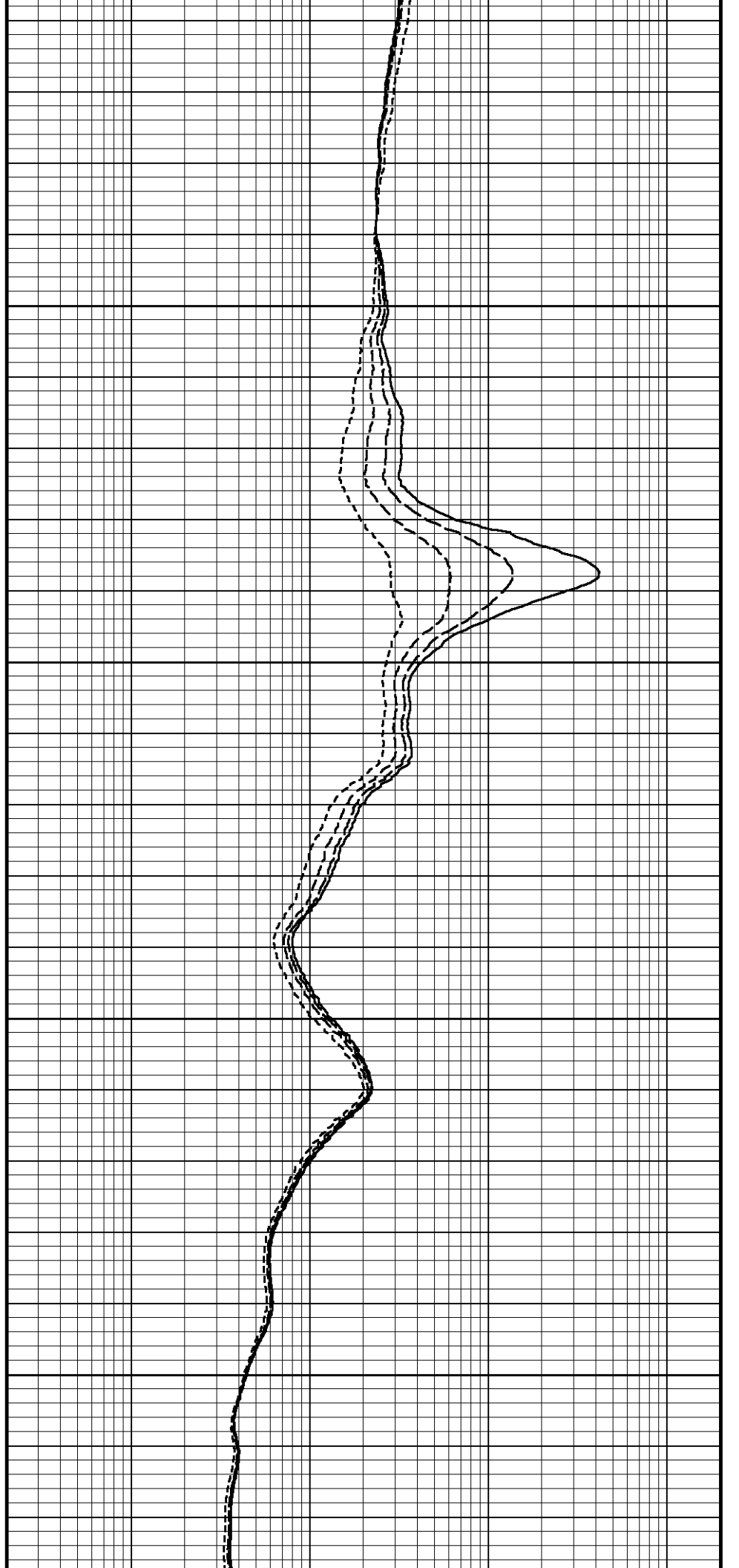
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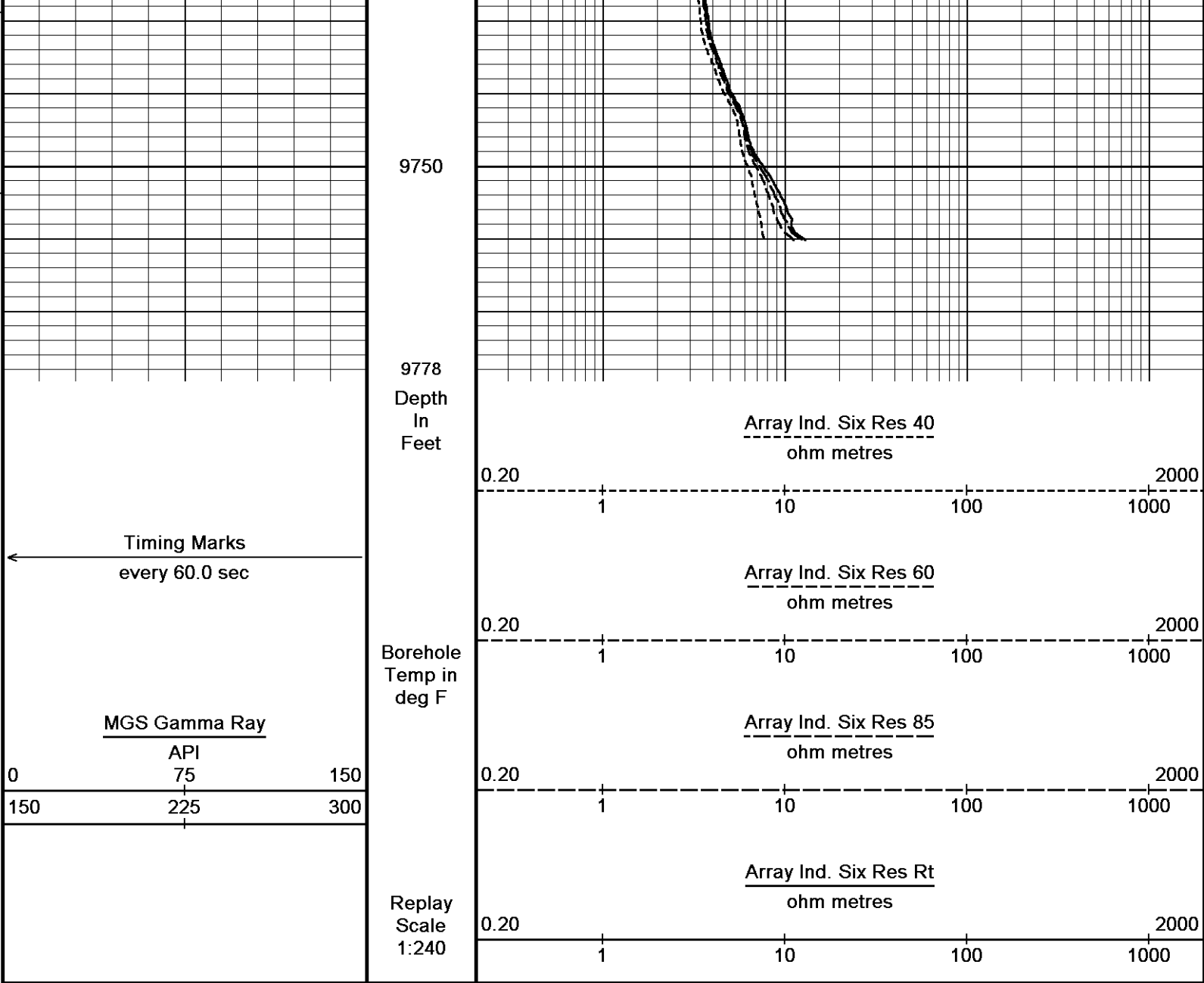
139°

9650

138°

9700





Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Data\Sandridge\Sandridge Sarah 2-34H\MMS158 Depthlog.dta
System Versions: Processed with 13.02.6600 Plotted with 13.02.6600

↑ DSC ↑

BEFORE SURVEY CALIBRATION
C:\Data\Sandridge\Sandridge Sarah 2-34H\MMS158 Depthlog.dta

General Constants All 000 Last Edited on 22-SEP-2012,10:02

General Parameters		
Mud Resistivity	2.300	ohm-metres
Mud Resistivity Temperature	79.000	degrees F
Water Level	0.000	feet
Density/Neutron Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	4.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	

Porosity used	Base Density	Porosity
Resistivity used	Deep Induction	
RWA Constant A	0.610	
RWA Constant M	2.150	

Down-hole Tension Calibration SMS 0			Field Calibration on 27-APR-2009 11:57
Reading No	Measured		0
1	15257.84		0.00
2	16706.18		410.00

Strain Gauge Constants SER-B.A 189			Last Edited on	
Atmospheric Pressure	14.70	psi		
Serial Number	0			
Calibration Date	000000000000			
Base Check Date				
Dead Weight Serial Number	0			
Dead Weight Gravitational Correction	1.0			
Temperature	75.0	150.0	250.0	350.0 degrees F
Pressure psia	Inc.	Dec.	Inc.	Dec.
0.0	0.000	0.000	0.000	0.000
2000.0	0.000	0.000	0.000	0.000
4000.0	0.000	0.000	0.000	0.000
6000.0	0.000	0.000	0.000	0.000
8000.0	0.000	0.000	0.000	0.000
10000.0	0.000	0.000	0.000	0.000

Strain Gauge Constants MMS-E.B 158			Last Edited on	
Atmospheric Pressure	14.70	psi		
Serial Number	0			
Calibration Date	000000000000			
Base Check Date				
Dead Weight Serial Number	0			
Dead Weight Gravitational Correction	1.0			
Temperature	75.0	150.0	250.0	350.0 degrees F
Pressure psia	Inc.	Dec.	Inc.	Dec.
0.0	0.000	0.000	0.000	0.000
2000.0	0.000	0.000	0.000	0.000
4000.0	0.000	0.000	0.000	0.000
6000.0	0.000	0.000	0.000	0.000
8000.0	0.000	0.000	0.000	0.000
10000.0	0.000	0.000	0.000	0.000

High Resolution Temperature Constants MGS-C.J 133			Last Edited on	
Pre-filter Length	11			

Gamma Calibration MGS-C.J 133			Field Calibration on 20-SEP-2012,08:11
	Measured	Calibrated (API)	
Background	38	26	
Calibrator (Gross)	1048	722	
Calibrator (Net)	1010	696	

Gamma Constants MGS-C.J 133			Last Edited on 20-SEP-2012,22:03	
Gamma Calibrator Number				
Mud Density	0.99	gm/cc		
Caliper Source for Processing	Density Caliper			
Tool Position	Centred			
Concentration of KCl	0.00	kppm		

Neutron Calibration MDN-C.A 423			Base Calibration on 03-JUN-2012 17:50
			Field Check on 20-SEP-2012,08:11
Base Calibration			
	Measured	Calibrated (cps)	
	Near Far	Near Far	
	3350 100	3714 110	
Ratio	33.500	33.764	
Field Calibrator at Base		Calibrated (cps)	

Ratio	1130	1749
	0.646	
Field Check	Calibrated (cps)	
	1130	1755
Ratio	0.644	

Neutron Constants MDN-C.A 423			Last Edited on 15-SEP-2012,09:31		
Neutron Source Id					
Neutron Jig Number					
Epithermal Neutron	No				
Caliper Source for Processing	Density Caliper				
Stand-off	0.00	inches			
Mud Density	1.00	gm/cc			
Limestone Sigma	7.10	cu			
Sandstone Sigma	4.26	cu			
Dolomite Sigma	4.70	cu			
Formation Pressure Source	Constant Value				
Formation Pressure	1.80	kpsi			
Temperature Source	Constant Value				
Temperature	20.00	degrees F			
Mud Salinity	0.00	kppm			
Salinity Correction	Not Applied				
Formation Fluid Salinity Source	Constant Value				
Formation Fluid Salinity	140.00	kppm			
Barite Mud Correction	Not Applied				

FE Calibration MFE-B.J 328			Base Calibration on 31-AUG-2012 14:11 Field Check on 31-AUG-2012 14:16		
Base Calibration					
	Measured	Calibrated (ohm-m)			
Reference 1	0.0	0.0			
Reference 2	965.1	126.8			
Base Check		278.8			
Field Check		278.8			

FE Constants MFE-B.J 328			Last Edited on		
Running Mode	No Sleeve				
MFE K Factor	0.1268				
Caliper Source for FE correction	Bit Size				
Caliper Value for FE correction	2.25	inches			
Rm Source for FE correction	Constant Value				
Temp. for Rm Corr.	MCG External Temperature				
Stand-off	Centred	inches			

High Resolution Temperature Calibration MAI-B.J 394			Field Calibration on 08-MAR-2012 12:02		
	Measured	Calibrated(Deg F)			
Lower	10.00	50.00			
Upper	100.00	212.00			

High Resolution Temperature Constants MAI-B.J 394			Last Edited on		
Pre-filter Length	11				

Induction Calibration MAI-B.J 394			Base Calibration on 08-MAR-2012 11:57 Field Check on 21-SEP-2012 13:53		
Base Calibration					
Test Loop Calibration	Measured	Calibrated (mmho/m)			
Channel	Low	High	Low	High	
1	16.7	473.5	9.3	966.2	
2	5.6	368.9	7.6	821.4	
3	3.3	256.4	5.2	566.0	
4	1.8	133.4	2.6	279.2	
Array Temperature	71.8	Deg F			
Channel	Base Check (mmho/m)	Field Check (mmho/m)			
	Low	High	Low	High	

1	0.0	0.0	14.8	3830.9
2	0.0	0.0	32.4	3652.3
3	0.0	0.0	29.3	3086.2
4	0.0	0.0	19.7	2070.4
Deep	0.0	0.0	16.5	1914.5
Medium	0.0	0.0	43.5	4148.1
Shallow	0.0	0.0	50.5	5538.1
Array Temperature		0.0	85.1	Deg F

Induction Constants MAI-B.J 394

Last Edited on 22-SEP-2012,10:02

Induction Model		RtAP-WBM	
Caliper for Borehole Corr.		Bit Size	
Hole Size for Borehole Correction		N/A	inches
Tool Centred		No	
Stand-off Type		Fins	
Stand-off		0.50	inches
Number of Fins on Stand-off		6.0000	
Stand-off Fin Angle		60.00	degrees
Stand-off Fin Width		0.5000	inches
Borehole Corr. Rm Source		Temperature Corr	
Temp. for Rm Corr.	MGS External Temperature		
Squasher Start		0.0030	mhos/metre
Squasher Offset		N/A	mhos/metre
Borehole Normalisation			
DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000
Calibration Site Corrections			
Channel 1		0.00	mmhos/metre
Channel 2		0.00	mmhos/metre
Channel 3		0.00	mmhos/metre
Channel 4		0.00	mmhos/metre
Apparent Porosity and Water Saturation Constants			
Archie Constant (A)		1.00	
Cementation Exponent (M)		2.00	
Saturation Exponent (N)		2.00	
Saturation of Water for Apor		100.00	percent
Resistivity of Water for Apor and Sw		0.05	ohm-m
Resistivity of Mud Filtrate for Sw		0.00	ohm-m
Source for Rt		0.00	
Source for Rxo		0.00	

Caliper Calibration MPD-C.J 396

Base Calibration on 31-AUG-2012 09:46

Field Calibration on 31-AUG-2012 09:48

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	14944	3.99
2	24448	5.97
3	34480	7.99
4	43924	9.86
5	55244	11.93
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	5.97	5.97

Photo Density Calibration MPD-C.J 396

Base Calibration on 31-AUG-2012 09:22

Field Check on 21-SEP-2012 13:56

Density Calibration				
Base Calibration		Measured	Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	52842	29050	60364	31945
Reference 2	22125	2621	25070	2517

Field Check at Base

1145.4 1322.9

Field Check

1149.0 1320.2

PE Calibration

Base Calibration

Measured

Calibrated

WS

WH

Ratio

Ratio

Background

214

1034

Reference 1

22369

52670

0.429

0.399

Reference 2

6301

22014

0.290

0.273

Field Check at Base

213.8

1033.8

Field Check

213.8

1040.7

Density Constants MPD-C.J 396

Last Edited on 20-SEP-2012,22:03

Density Source Id

246

Nylon Calibrator Number

DNCE603

Aluminium Calibrator Number

DACA509

Density Shoe Profile

4 inch

Caliper Source for Processing

Density Caliper

PE Correction to Density

Not Applied

Mud Density

0.99

gm/cc

Mud Density Z/A Multiplier

1.11

Mud Filtrate Density

1.00

gm/cc

Dry Hole Mud Filtrate Density

1.00

gm/cc

DNCT

0.00

gm/cc

CRCT

0.00

gm/cc

Density Z/A Correction

Hybrid

Matrix Density (gm/cc)

Depth (ft)

2.71

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

DOWNHOLE EQUIPMENT

C:\Data\Sandridge\Sandridge Sarah 2-34HMMMS158 Depthlog.dta

Shuttle Mechanical Release (SMR A)

SMR-A 155 LG: 8.53 ft WT: 77.2 lb OD: 2.52 in

Shuttle Electrical Release

SER-B.A 189 LG: 6.90 ft WT: 50.7 lb OD: 2.24 in

MBS-F.A 200v Compact Battery Sub

MBS-F.A 151 LG: 10.22 ft WT: 66.1 lb OD: 2.24 in

Compact Memory Sub E.B

MMS-E.B 158 LG: 5.20 ft WT: 37.5 lb OD: 2.24 in

Compact Tool Isolator sub.

MTI-B.A 63 LG: 1.54 ft WT: 13.2 lb OD: 2.24 in

Compact Short Gamma

MGS-C.J 133 LG: 3.41 ft WT: 24.3 lb OD: 2.24 in



SKJ-E.B Compact Knuckle Joint
SKJ-E.B 471 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

SHA-J.A Compact Swivel Head Adaptor
SHA-J.A 450 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

MIS-D.A Compact Inline Bowspring sub
MIS-D.A 310 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

Compact Neutron
MDN-C.A 423 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-C.J 396 LG: 9.59 ft WT: 90.4 lb OD: 2.24 in

MIS-D.A Compact Inline Bowspring sub
MIS-D.A 609 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

SHA-J.A Compact Swivel Head Adaptor
SHA-J.A 454 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

SKJ-E.B Compact Knuckle Joint
SKJ-E.B 456 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

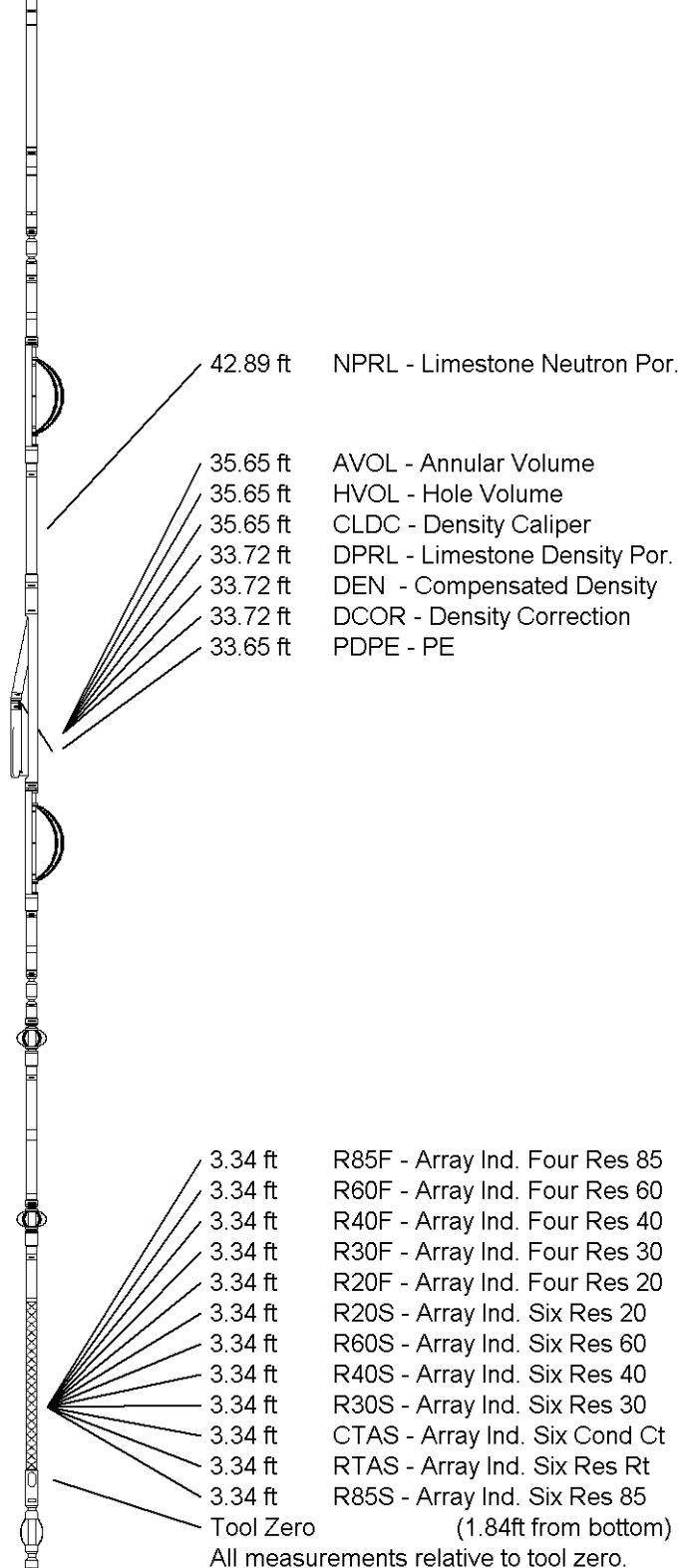
MIS-E.B Compact Inline Standoff sub
MIS-E.B 576 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Focussed Electric
MFE-B.J 328 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

MIS-E.B Compact Inline Standoff sub
MIS-E.B 574 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Induction
MAI-B.J 394 LG: 12.52 ft WT: 48.5 lb OD: 2.24 in

Total Length: 93.61 ft Weight: 696.7 lb



COMPANY	SANDRIDGE EXPLORATION & PRODUCTION		
WELL	SARAH 3317 2-34H		
FIELD	BEALS EAST		
PROVINCE/COUNTY	COMANCHE		
COUNTRY/STATE	USA / OKLAHOMA		

Elevation Kelly Bushing	1844.00	feet	First Reading	9760.00	feet
Elevation Drill Floor	1844.00	feet	Depth Driller	9787.00	feet
Elevation Ground Level	1824.00	feet	Depth Logger	9768.00	feet



CML IMPULSE SHUTTLE

