


LWD MEMORY LOG														
<div><div>BAKER HUGHES</div></div>			Gamma Ray											
Scale:			Company: Noble Energy											
1:240 MD			Well: Waste Management Y23-768											
Depth Reference:			Field: Wattenberg											
Driller's Depth			County: Weld Country: United States											
State:			Colorado											
Status:			Surface Location:				Other Services:							
Final Print			Latitude:				Directional							
API No: 05-123-44845-00			Longitude:											
Job ID: 8797831			SEC: 11 TMN: 2N RGE: 64W											
Permanent Datum (P.D.): Ground Level			Elevation: 4950.00 ft				Elev. KB: N/A							
Log Measured From: Rig Floor			Above P.D. 30.00 ft				Elev. DF: 4980.00 ft							
							Elev. GL: 4950.00 ft							
Dates			Interval Logged				Magnetic Field Reference							
Date From: 2017-10-28			Top: (ft) 2056.00		Azi Reference North:		Grid		Dip Angle: (deg) 66.67					
Date To: 2017-11-01			Bottom: (ft) 19813.00		Total Magnetic Field Strength: (nT)				52265					
Spud Date: 2017-10-27					Mag to Reference North Correction: (deg)				7.45 E					
Borehole Record			Casing Record											
Hole Size (in)			From (ft)		To (ft)		Size (in)		Weight (lb/ft)		From (ft)		To (ft)	
13.500			30.00		2056.00		9.625		36.00		30.00		2046.00	
8.500			2056.00		19813.00									

	ATC_SU	11994999	Near Bit VSS	5.93	6.73	7.000	4.330
1	ATC_SU		Near Bit Inclination				
1	ATC_MWD	12271697	Gamma (single)	2.21	12.35	7.000	3.250
1	ATC_MWD	12271697	Directional (mag)	12.27	22.41	7.000	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
ATC_SU	ATC_SU	Auto Trak Curve Steering Unit
ATC_MWD	ATC_MWD	Auto Trak Curve MWD
ATC_LCPM	ATC_LCPM	Auto Trak Curve LCPM

Comments

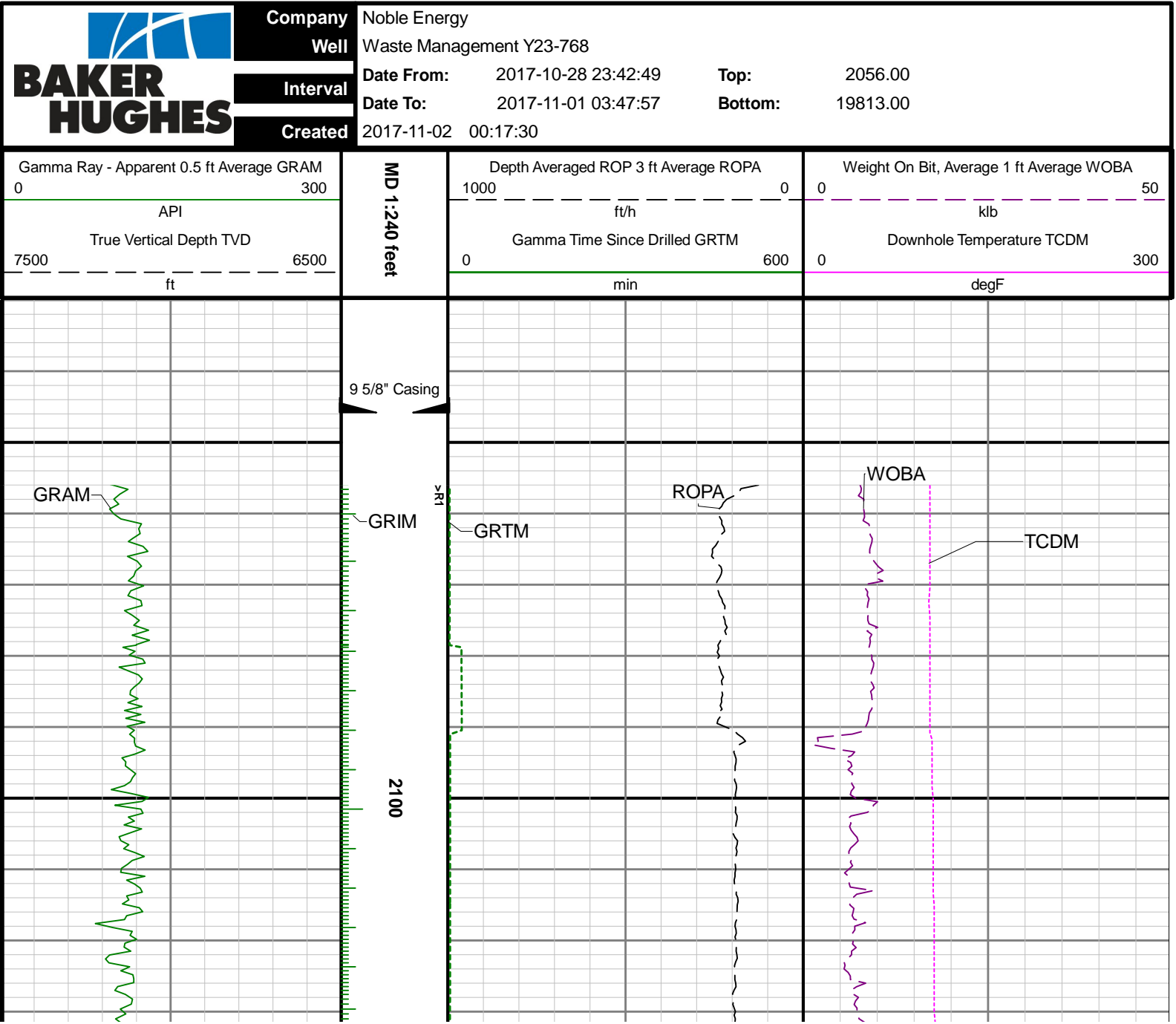
- 1
- Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to the lack of control by Baker Hughes, depth calibrations and measurements could not be independently verified.
- 2
- Baker Hughes LWD run 1 utilized a 6.75 inch NaviGamma service (Directional and Gamma Ray) behind a 8.5 inch bit and rotary steerable assembly from 2056 to 19813 feet MD (2056 to 6918 feet TVD).
- 3
- VOA { aUaA] a) aQUC DaaA} aAaA AaAUA} a@a} q { ^!qAA^~^•dA

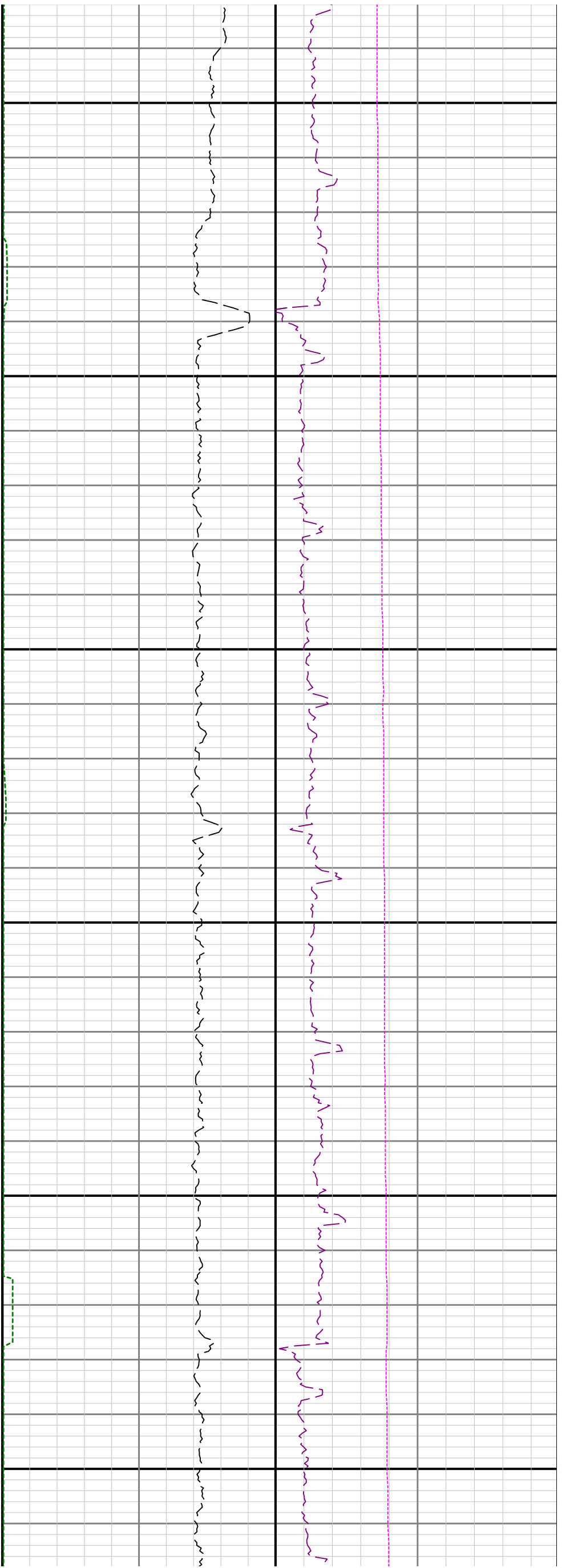
Remarks

Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	19801.00	8.500	1	The interval from 19801 to 19813 feet MD (6918 feet TVD) was not logged after being drilled due to sensor to bit offset at well TD.

Curve Mnemonics

Presented Curves	Description	Units
ROPA	Depth Averaged ROP 3 ft Average	ft/h
TVD	True Vertical Depth	ft
WOBA	Weight On Bit, Average 1 ft Average	klb
GRAM	OnTrak - Gamma Ray - Apparent - Memory 0.5 ft Average	API
GRIM	OnTrak - Gamma Ray - Data Point Indicator - Memory	unitless
GRTM	OnTrak - Gamma Ray - Time Since Drilled - Memory	min
TCDM	Downhole Temperature	degF

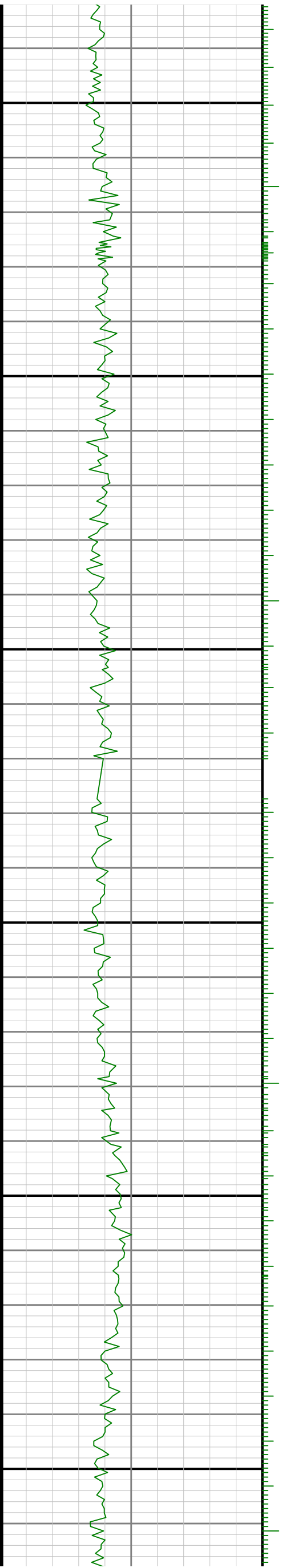




2200

2300

2400

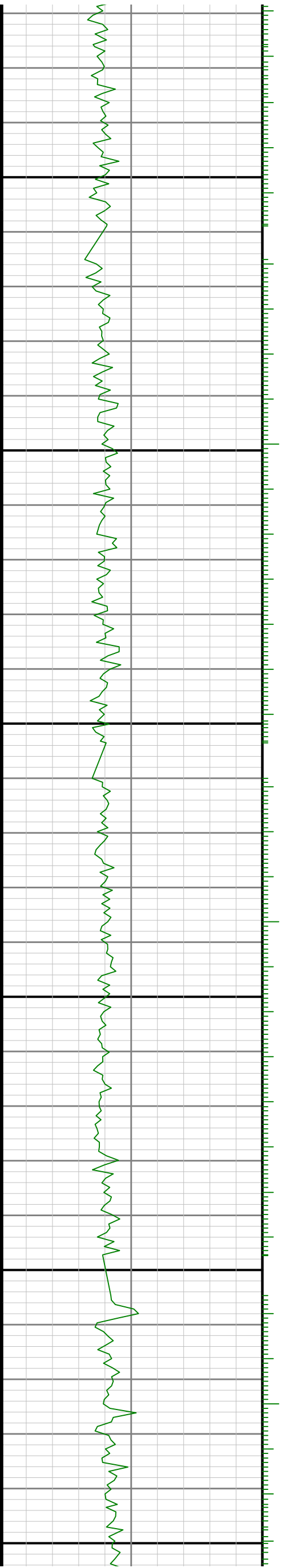


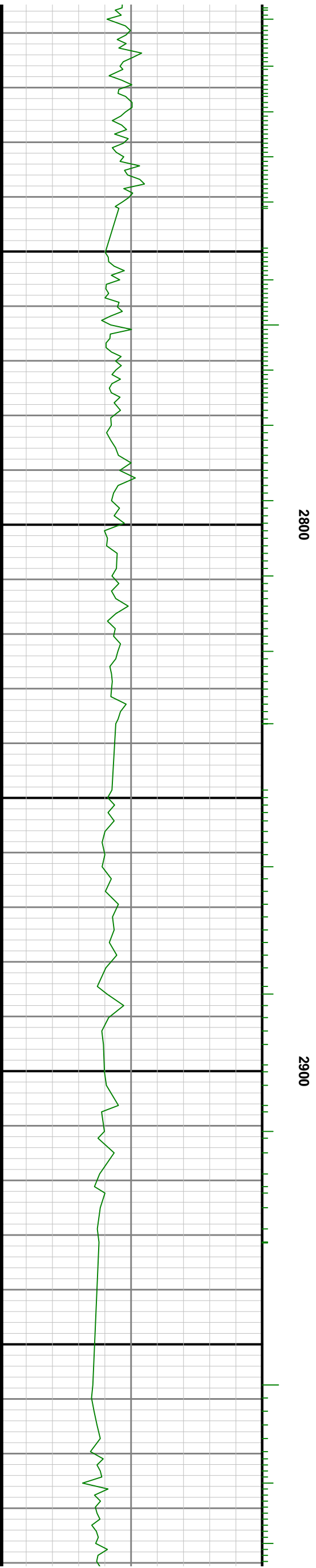
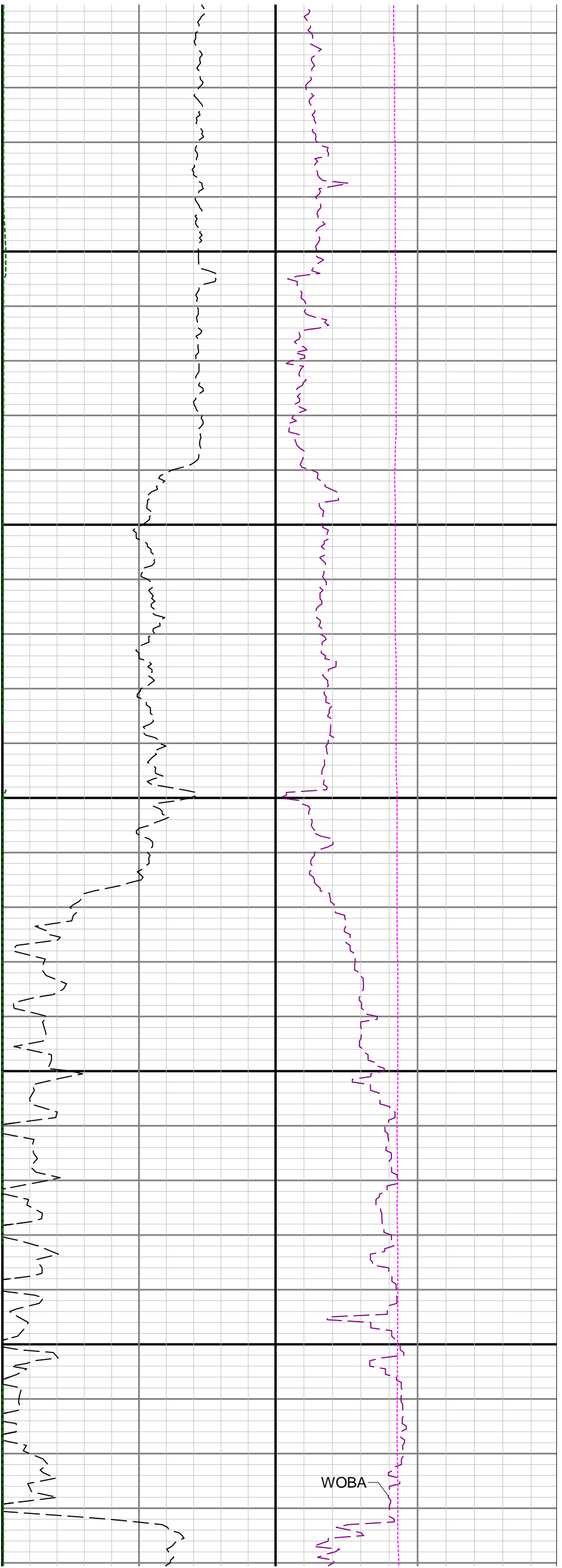


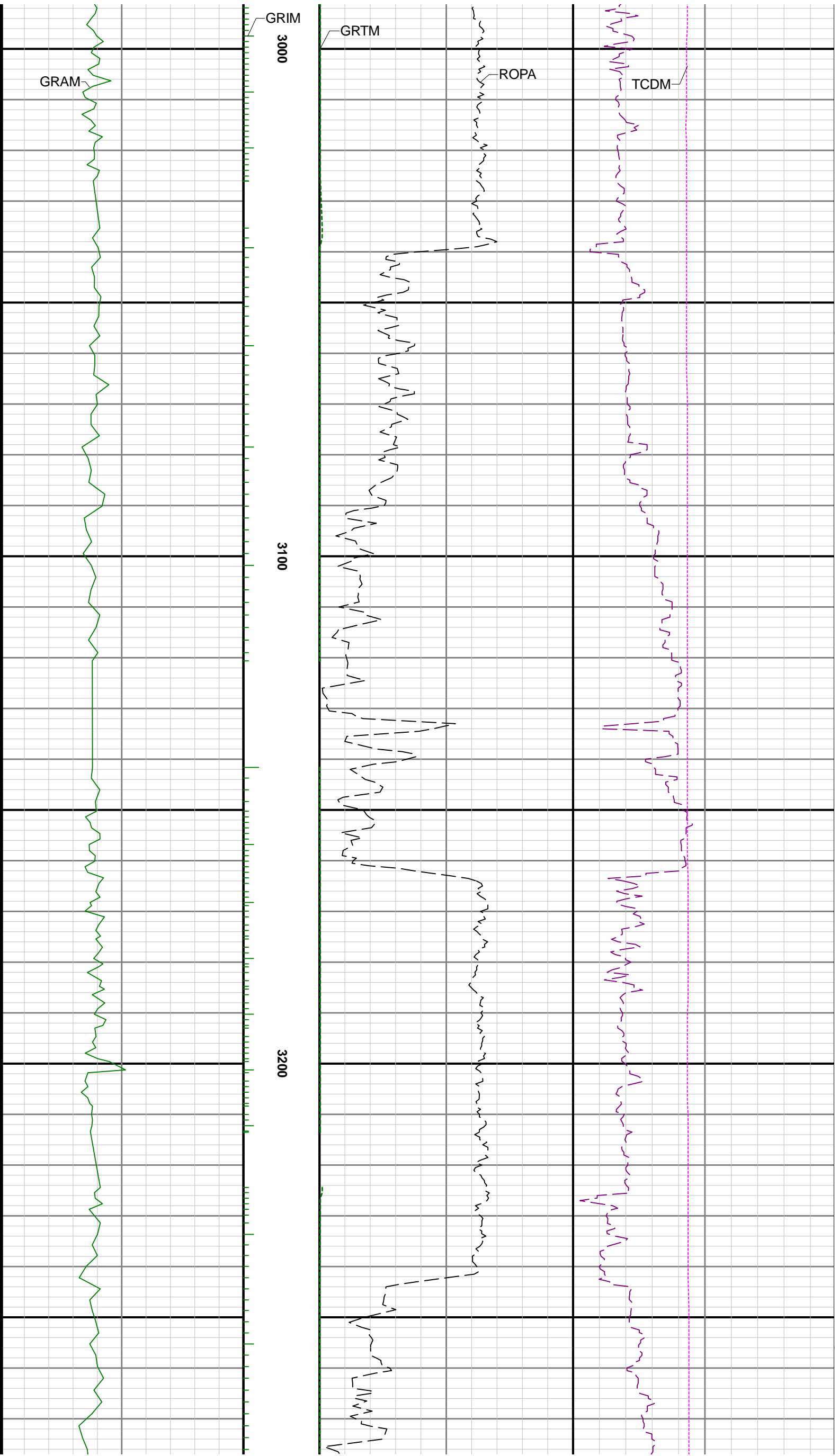
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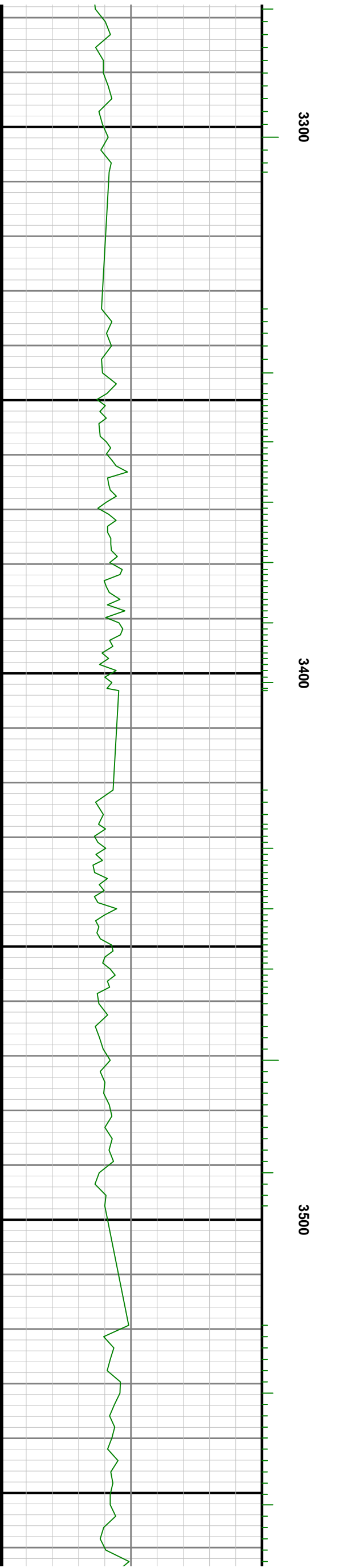
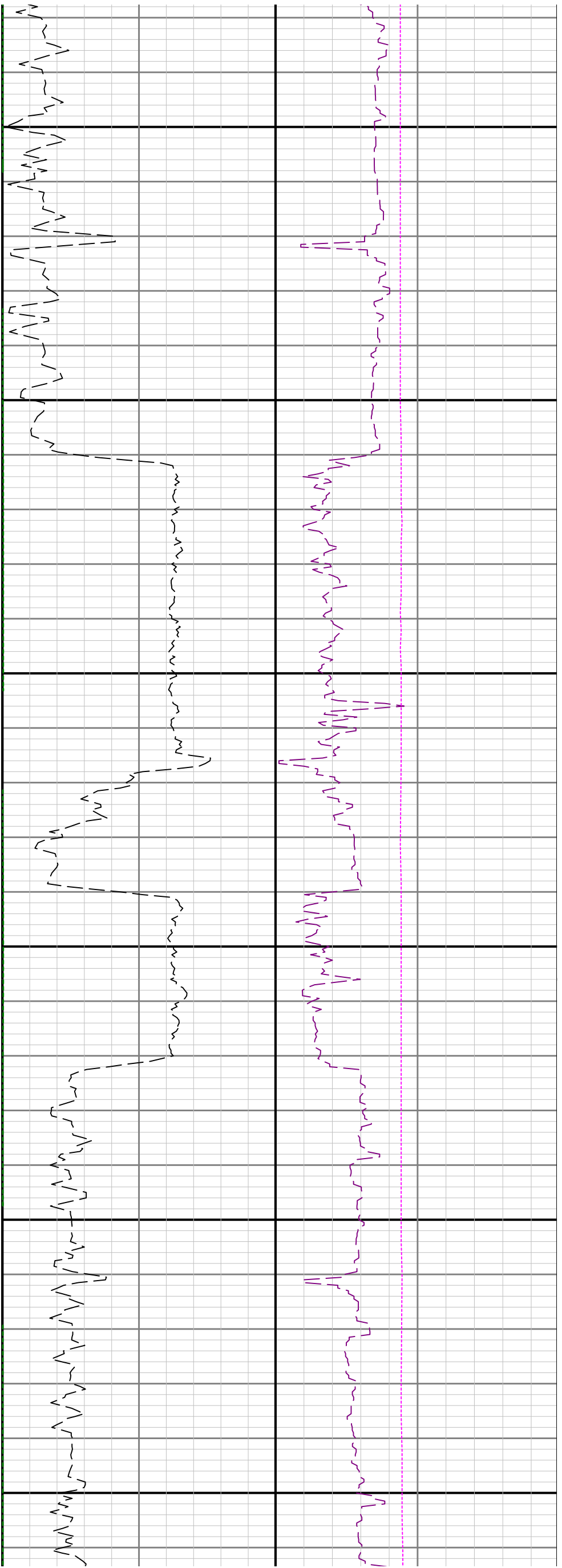
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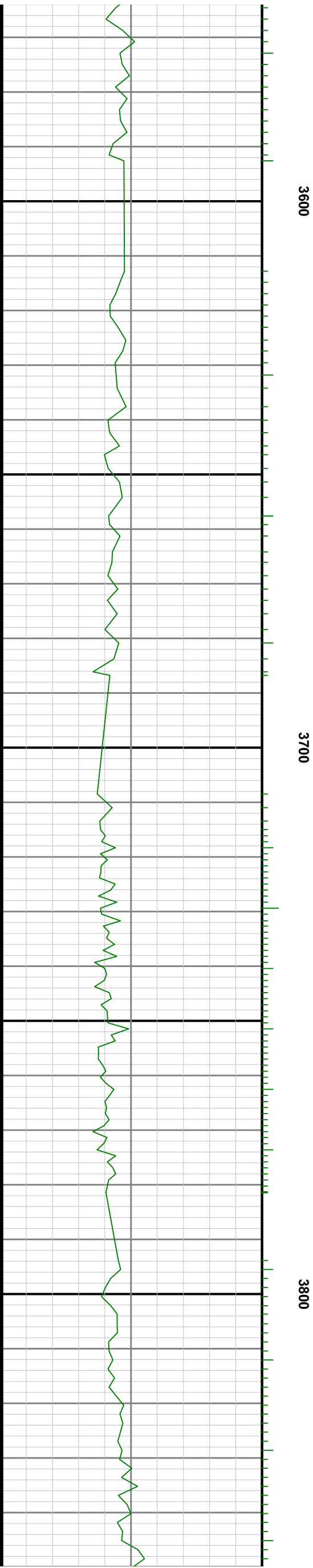
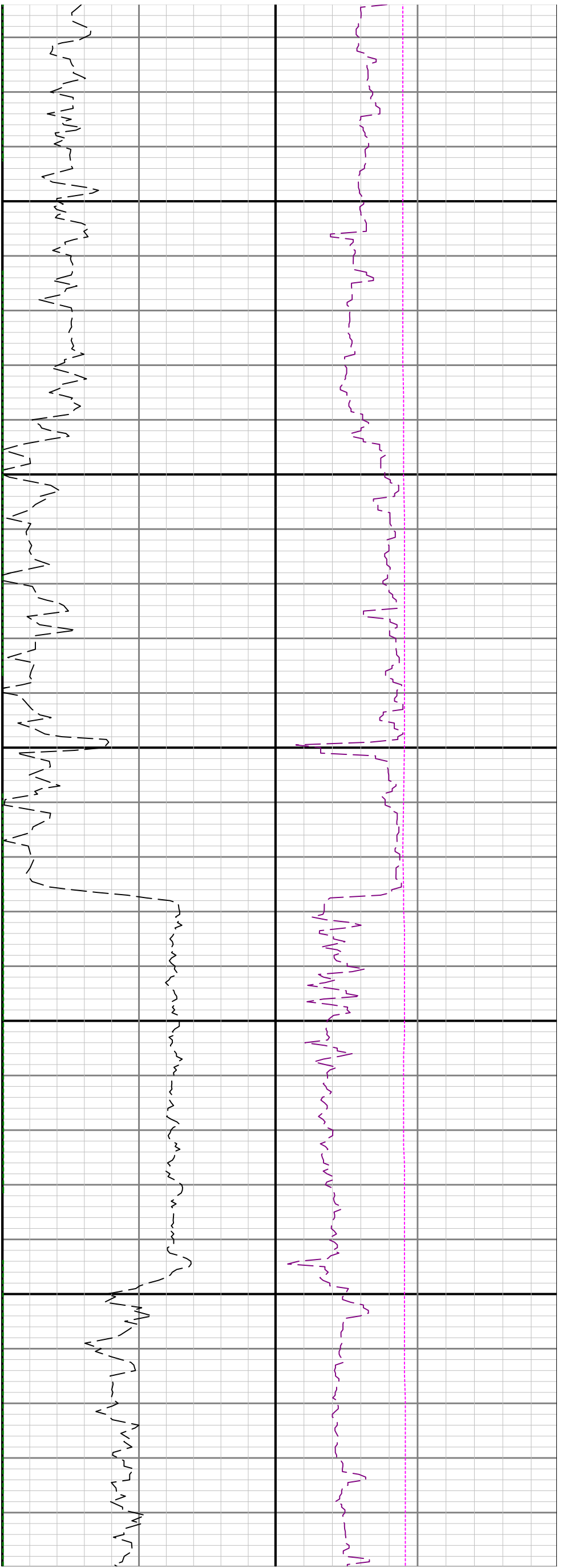
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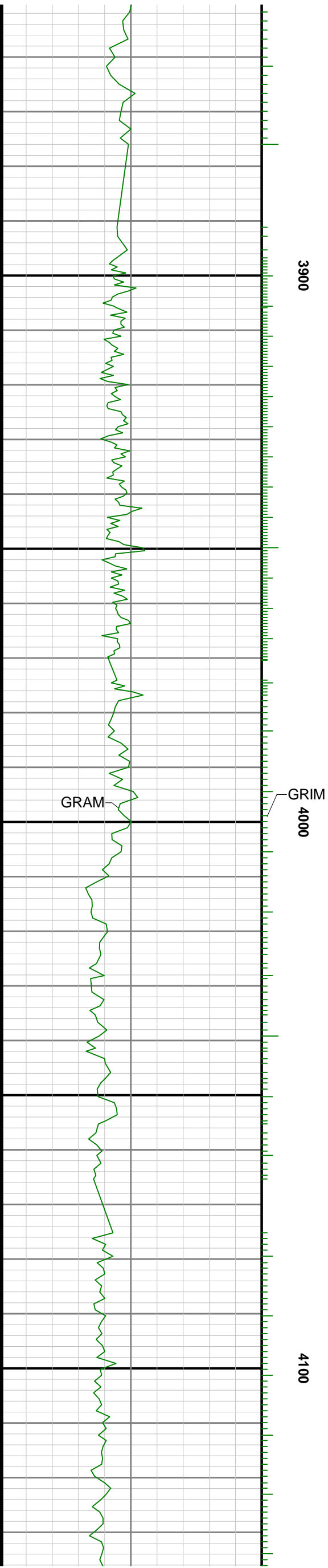
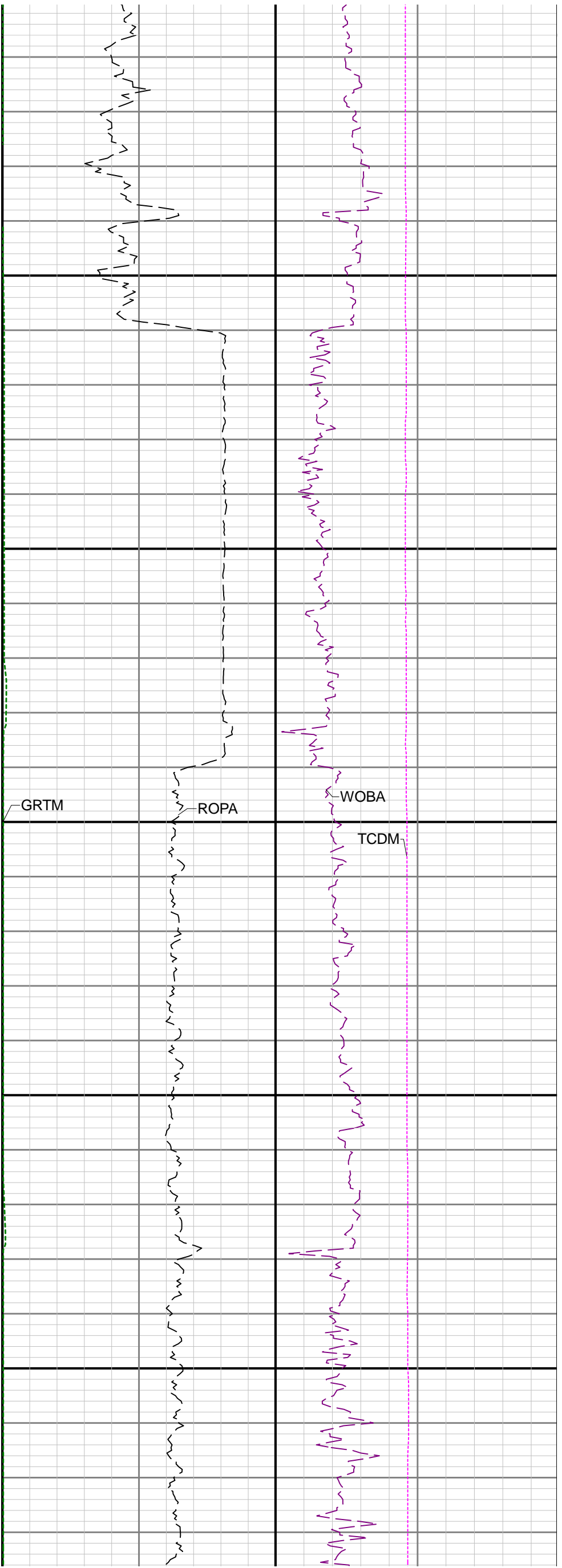


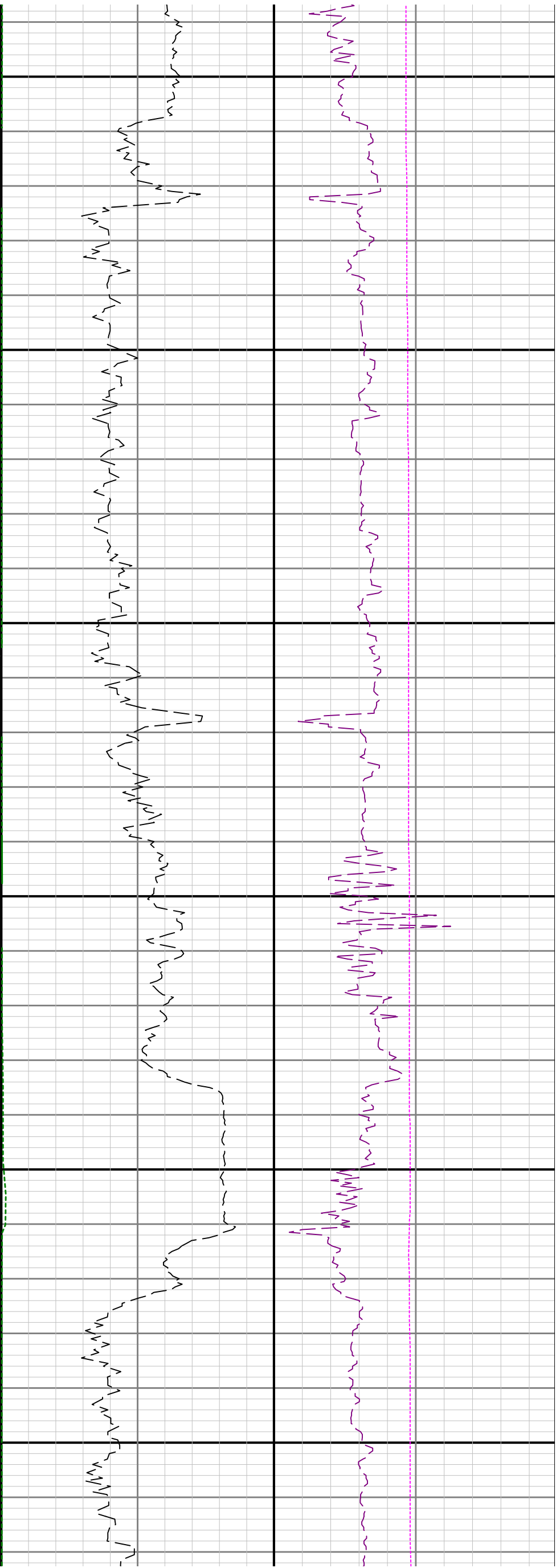


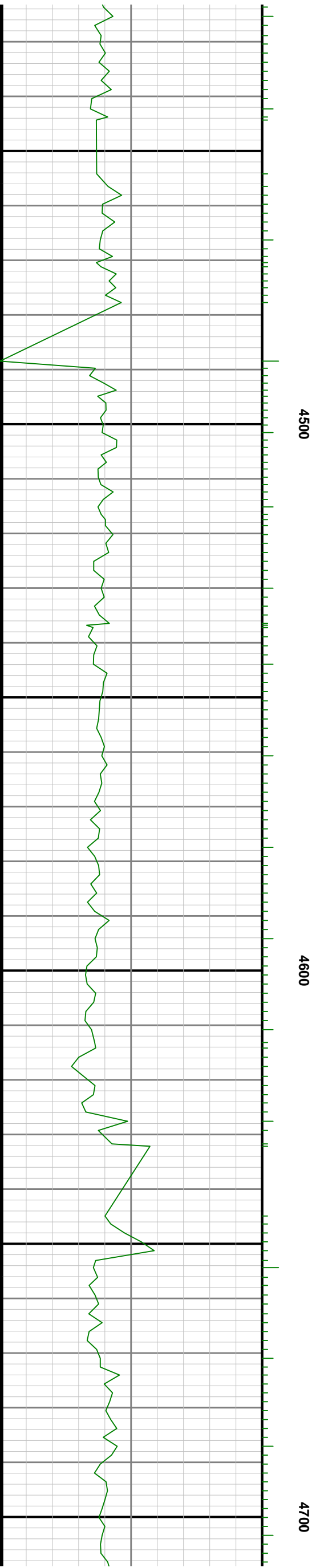
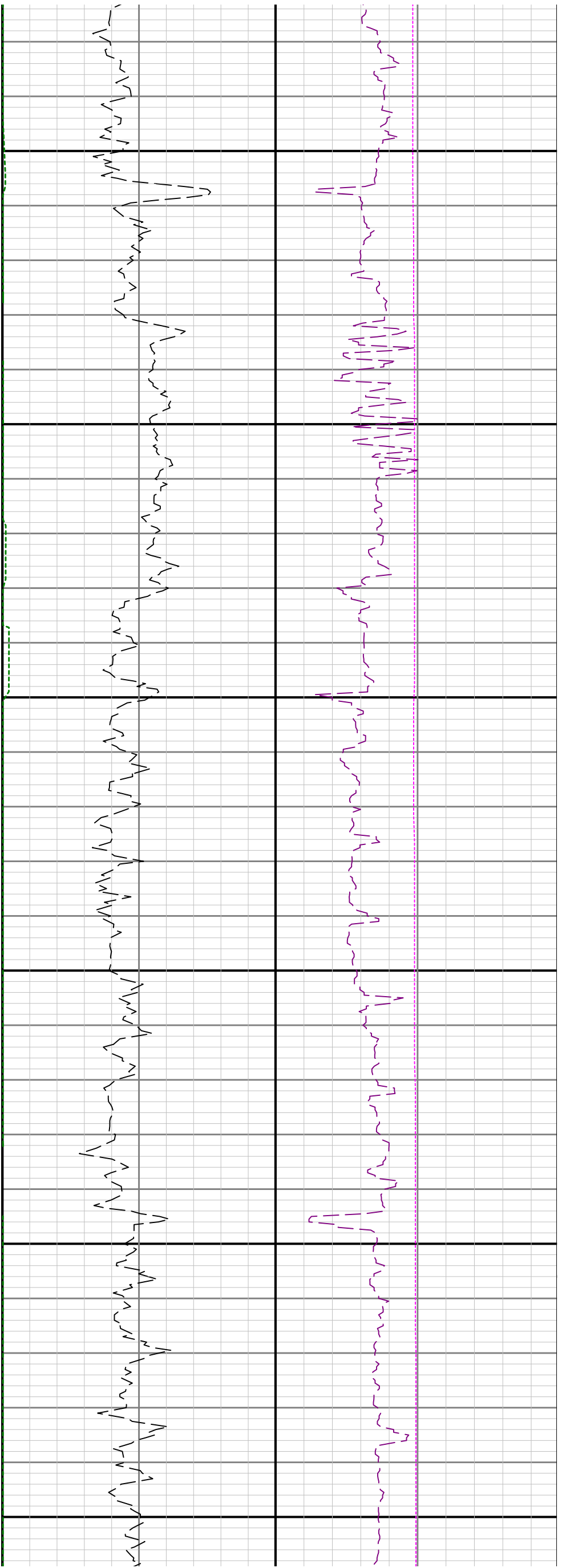


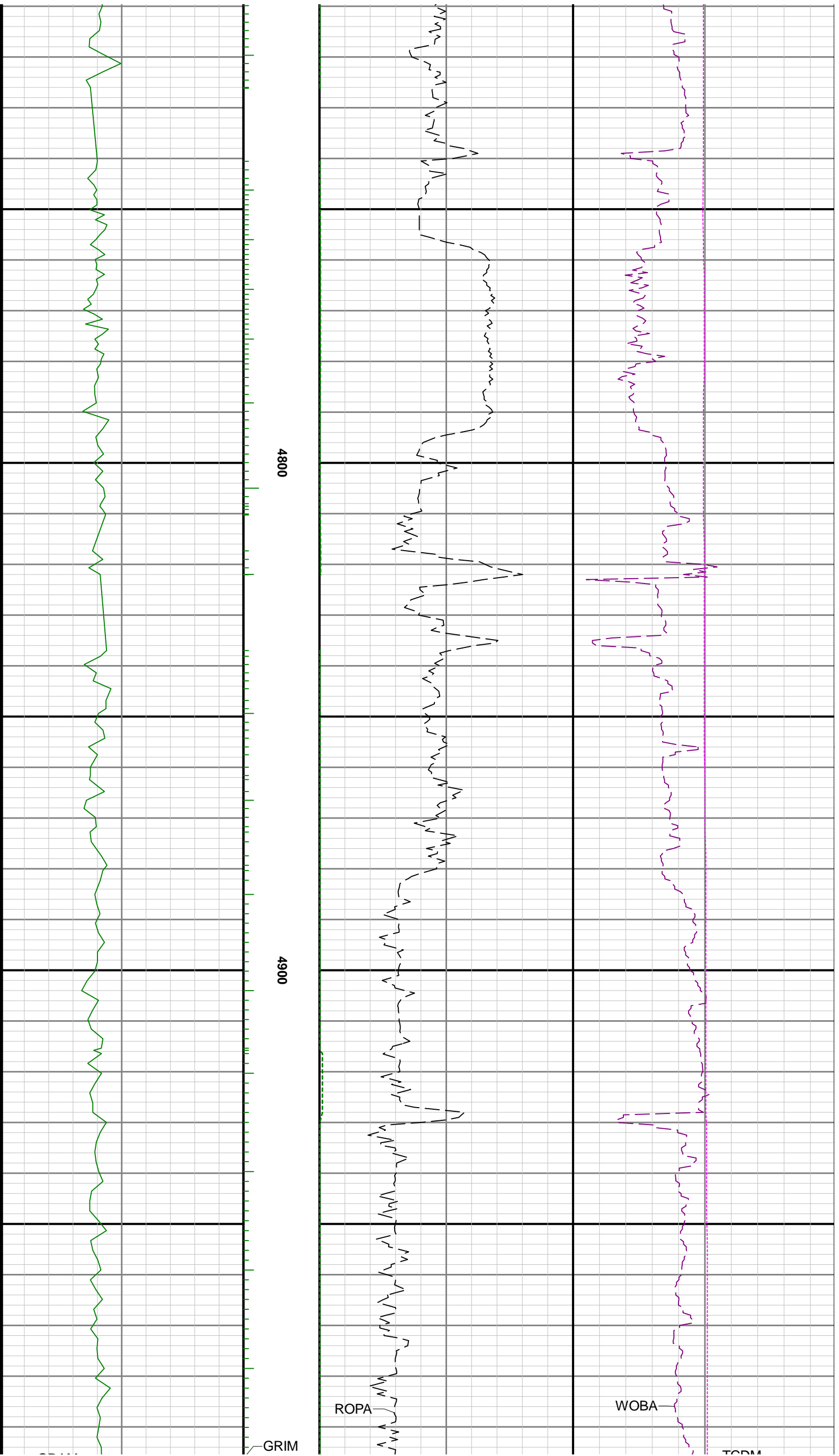


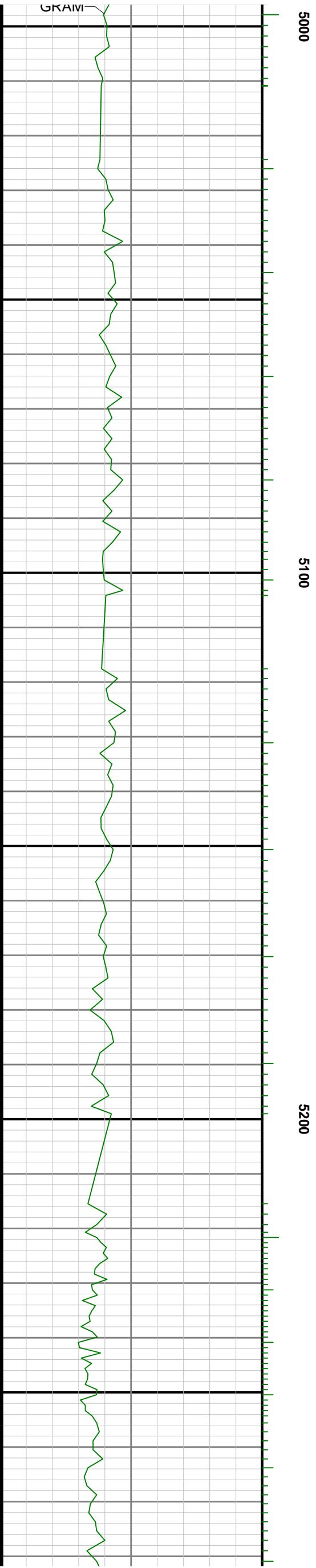
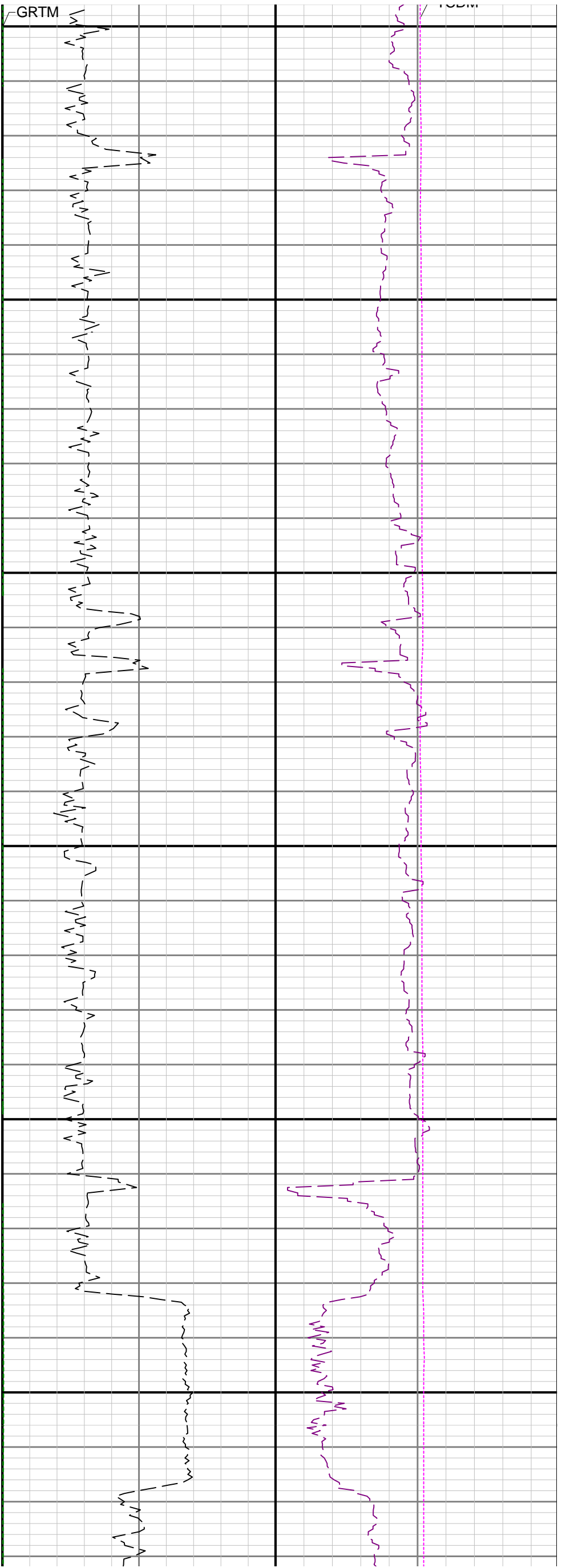


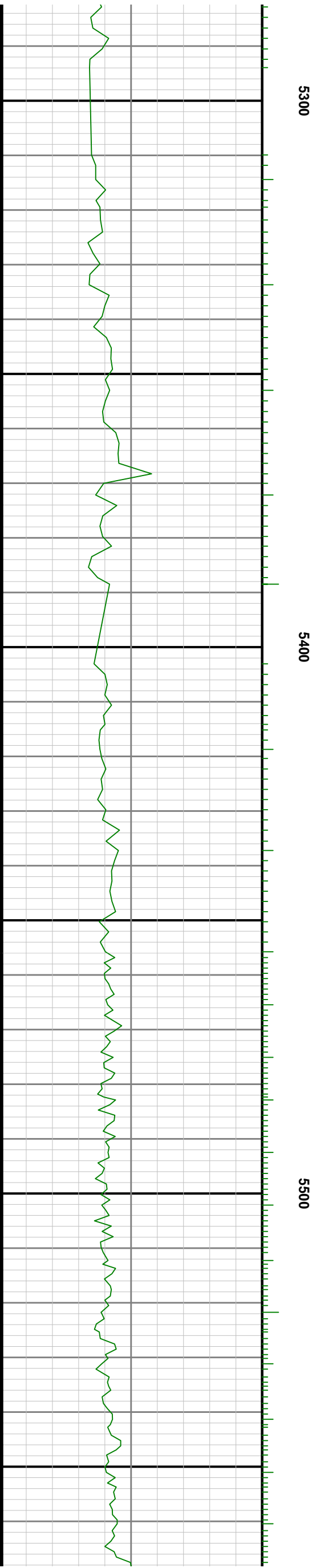
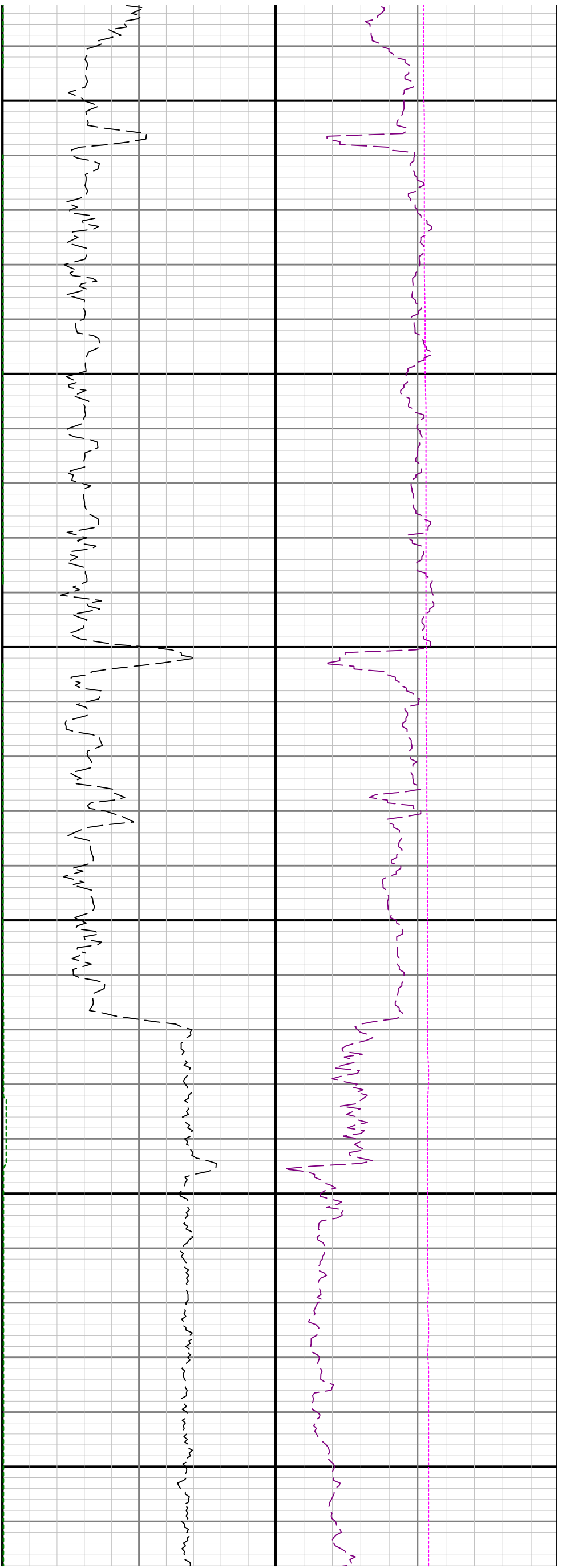


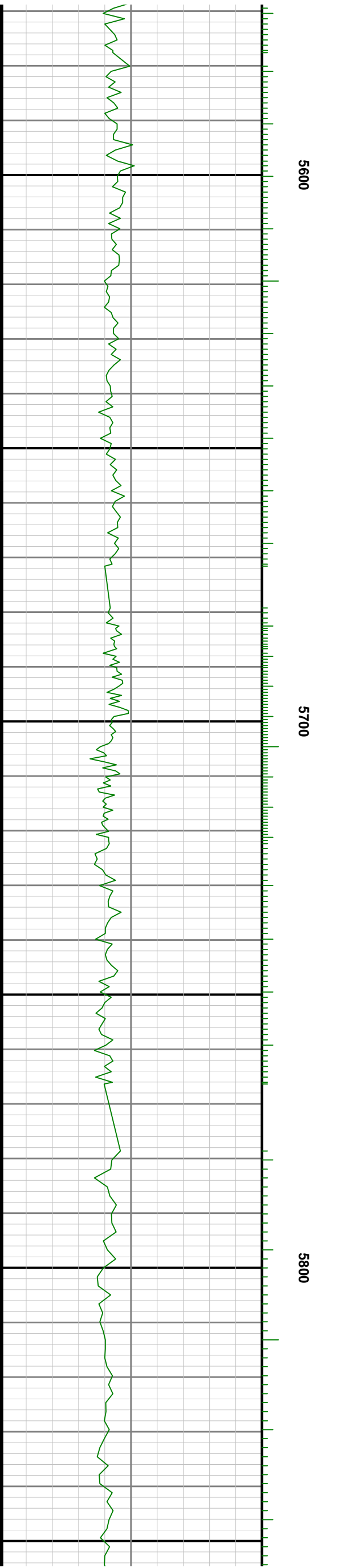
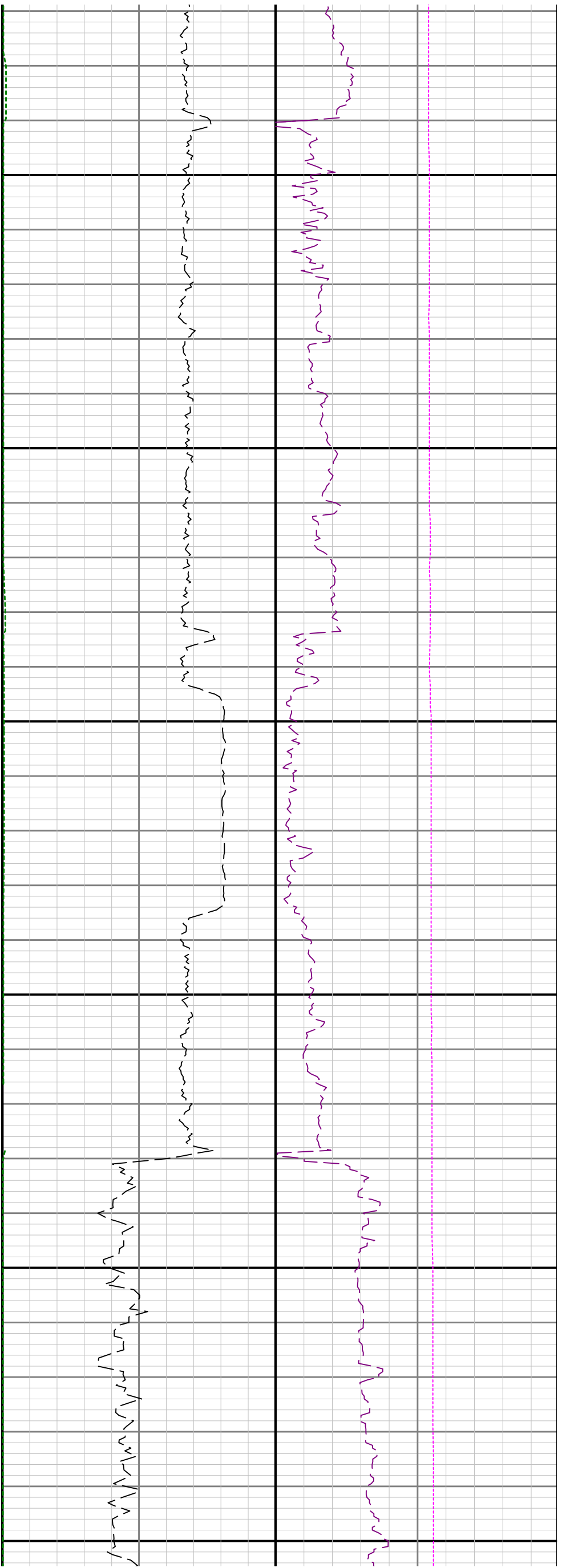


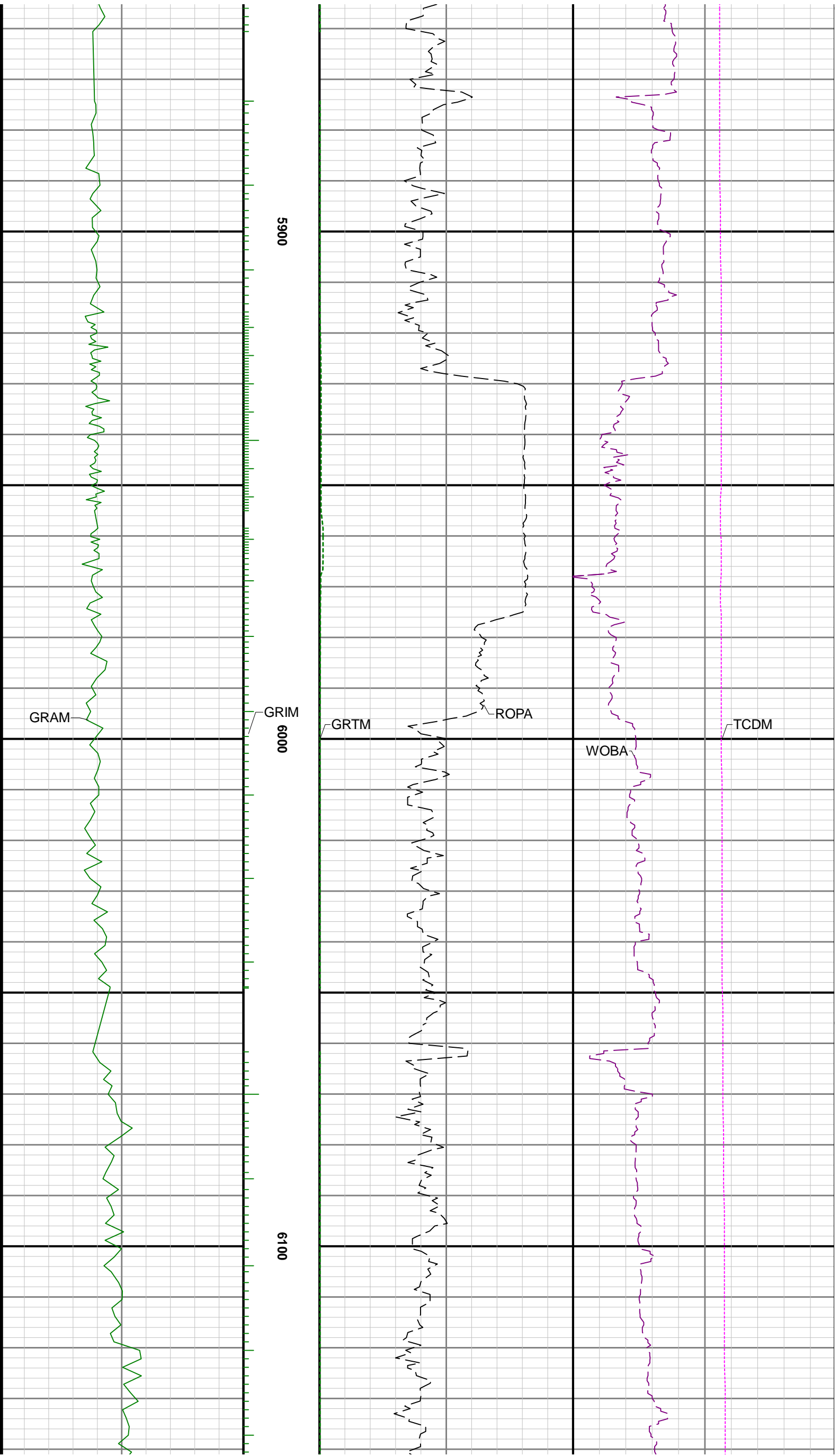




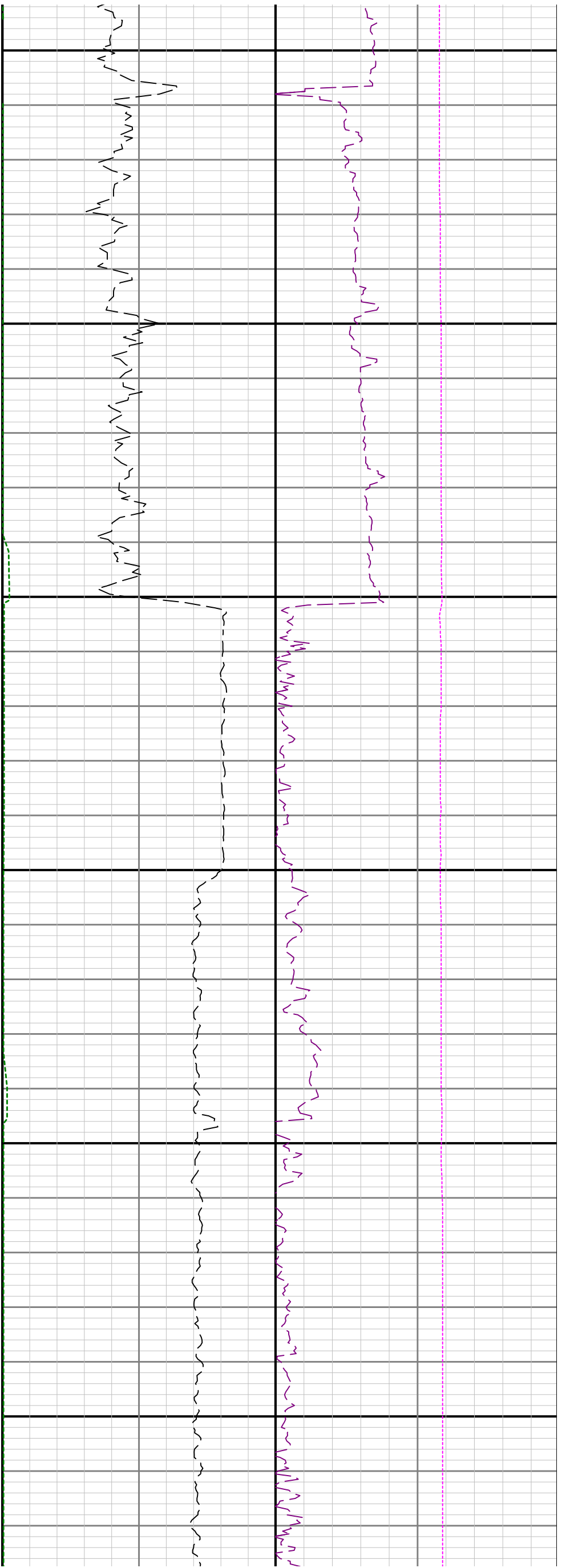








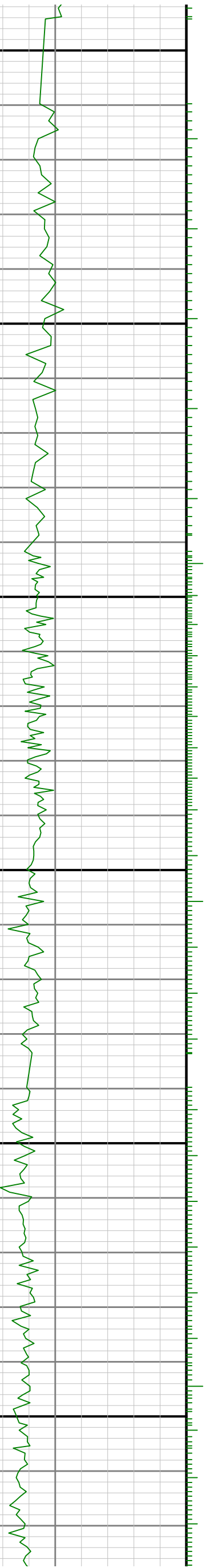


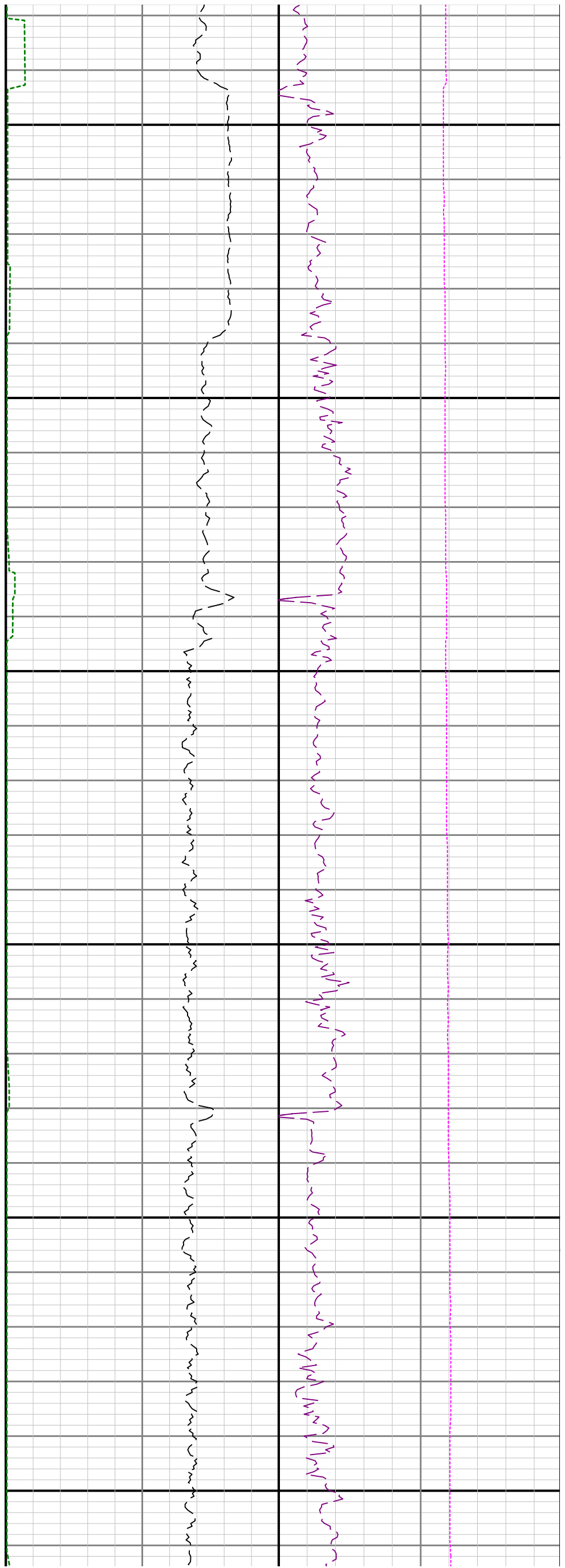


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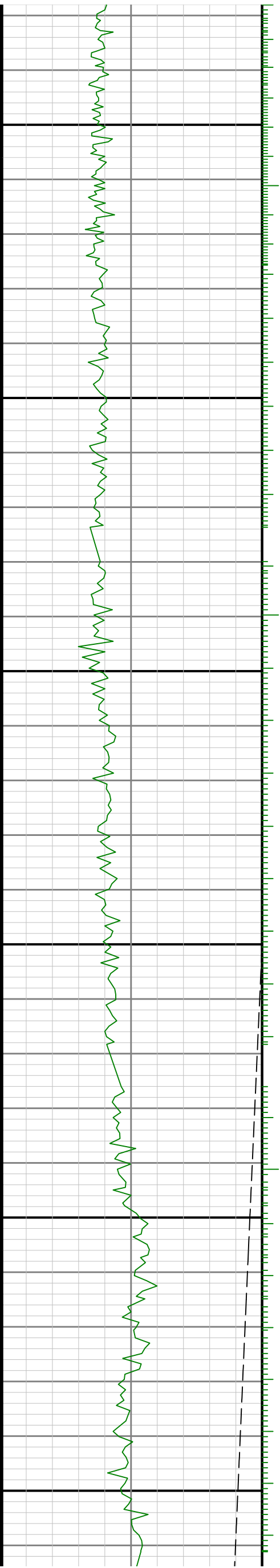


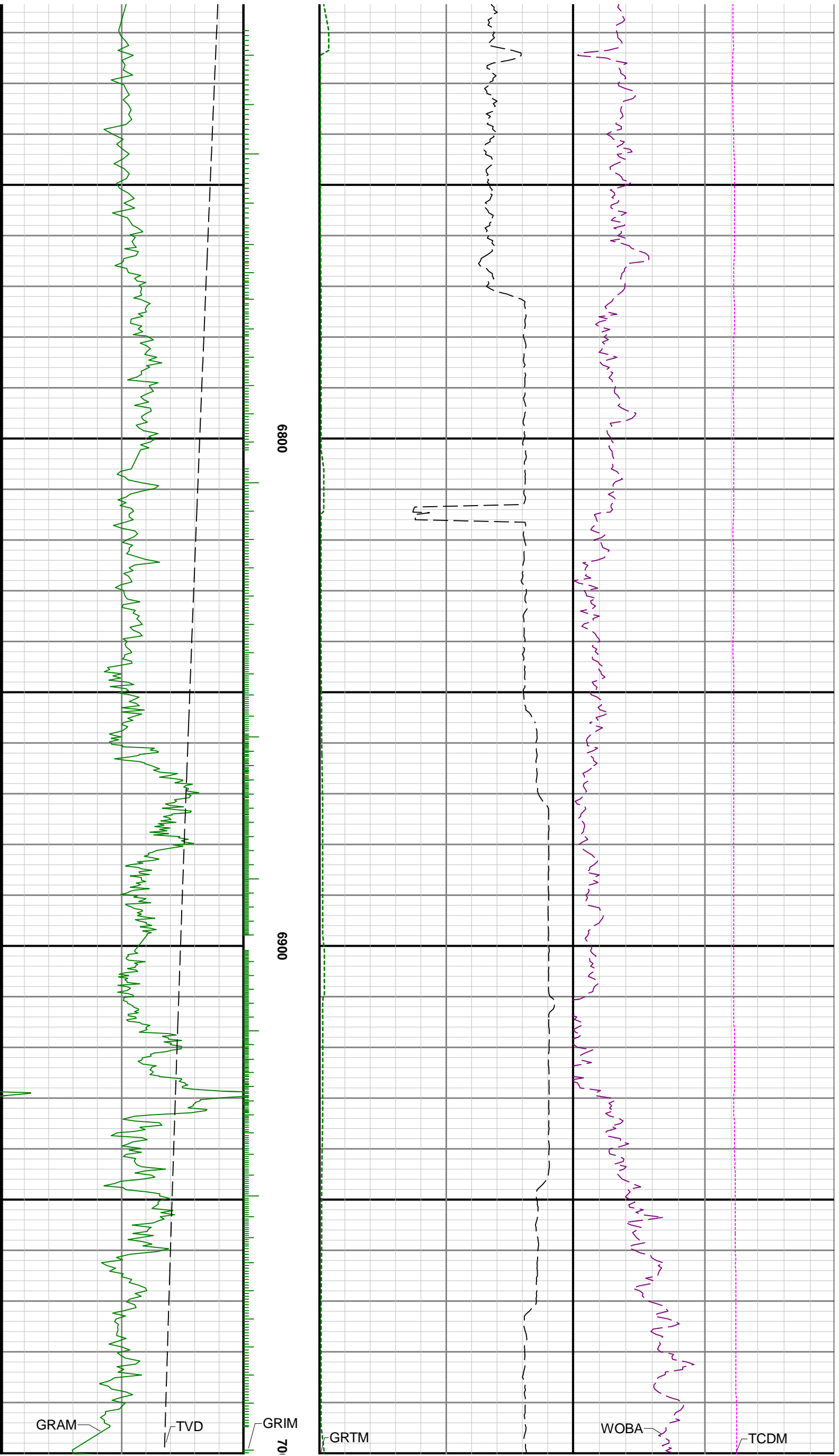


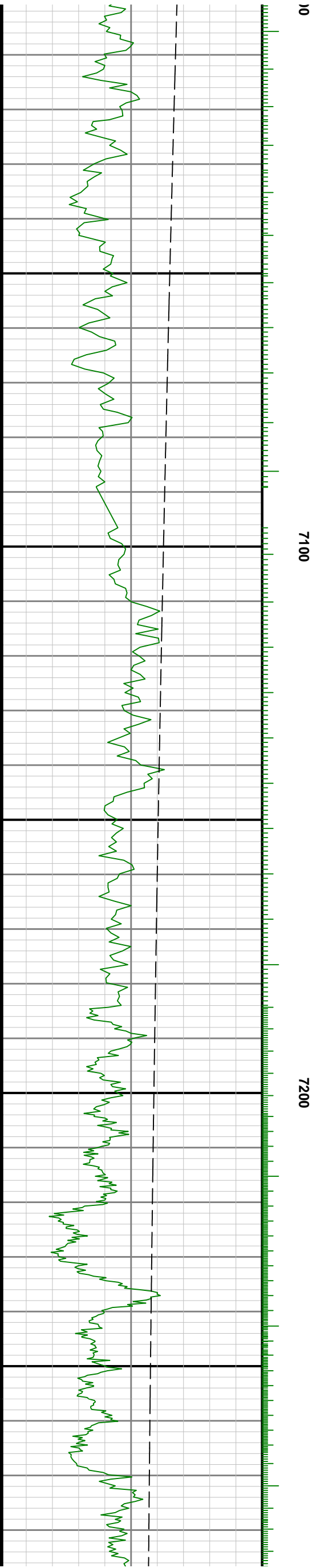
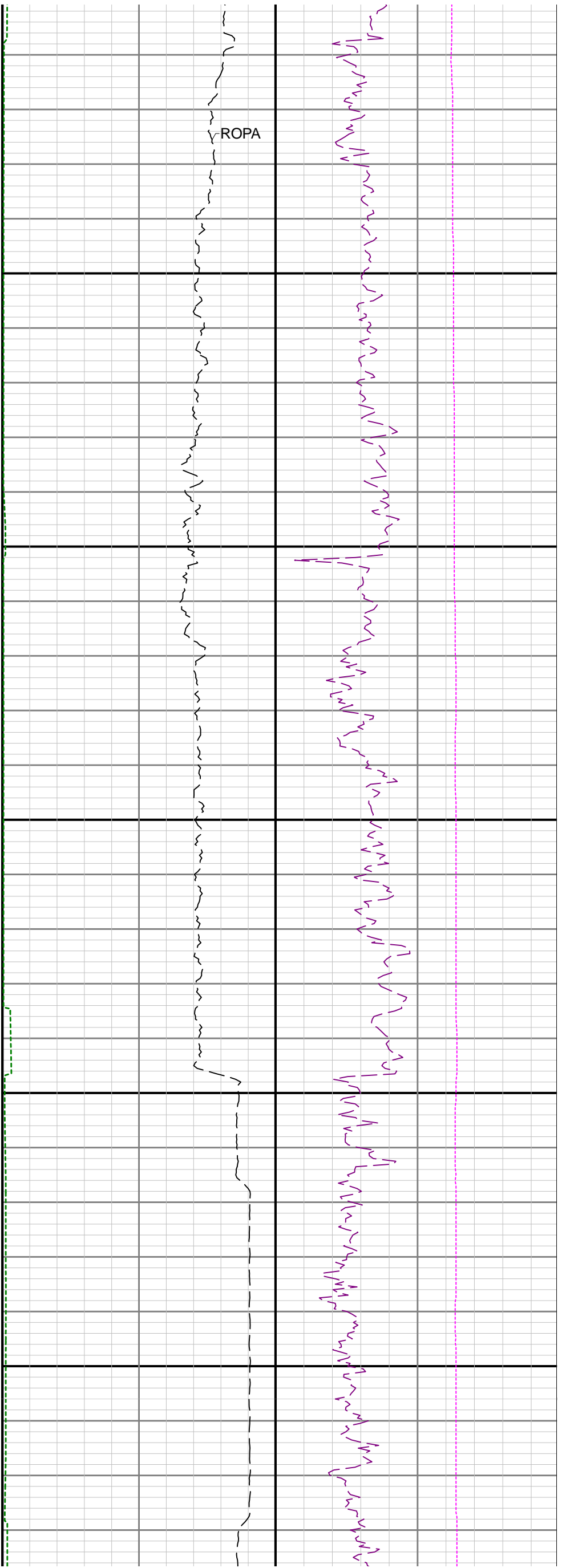
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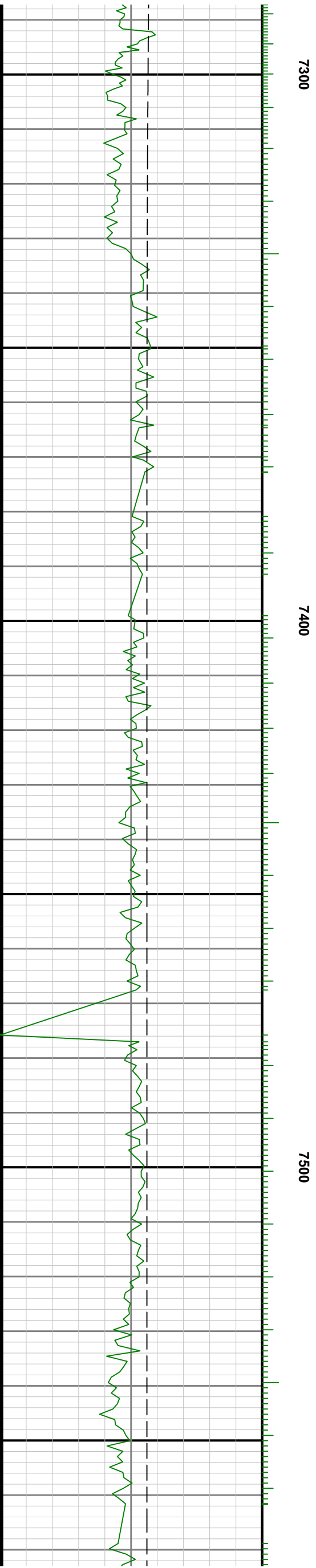
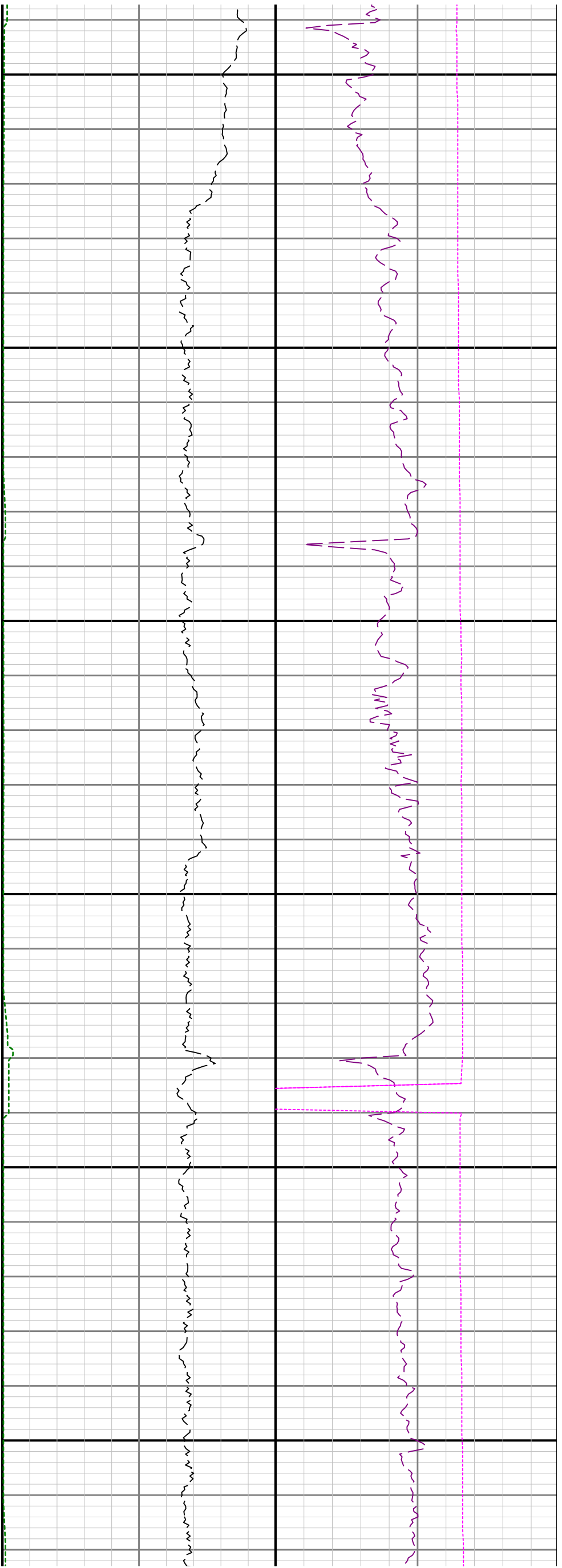
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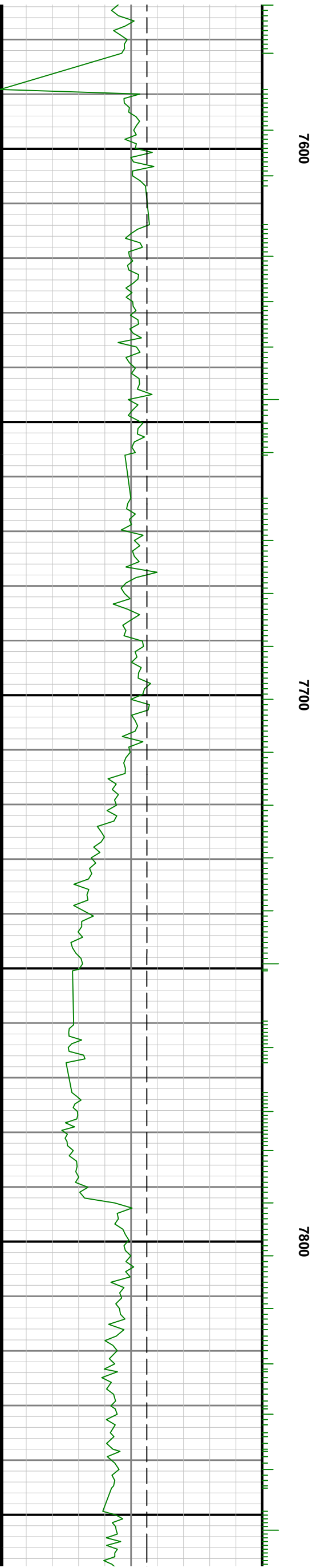
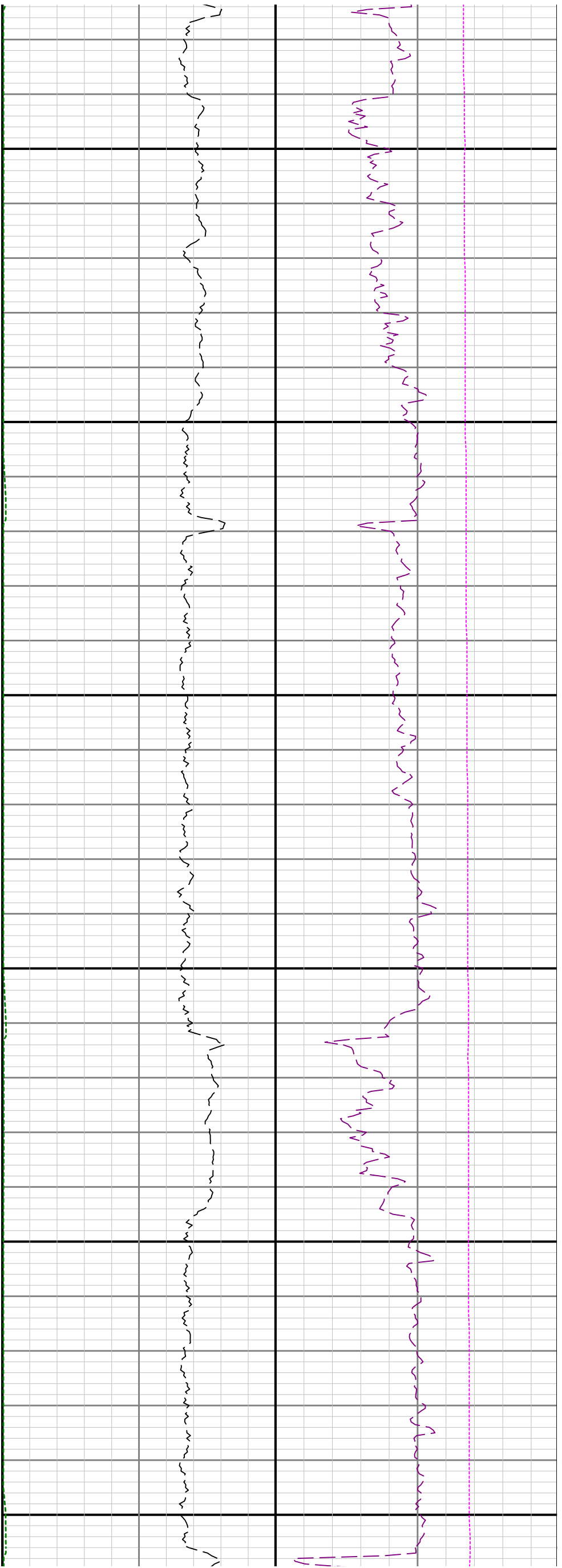
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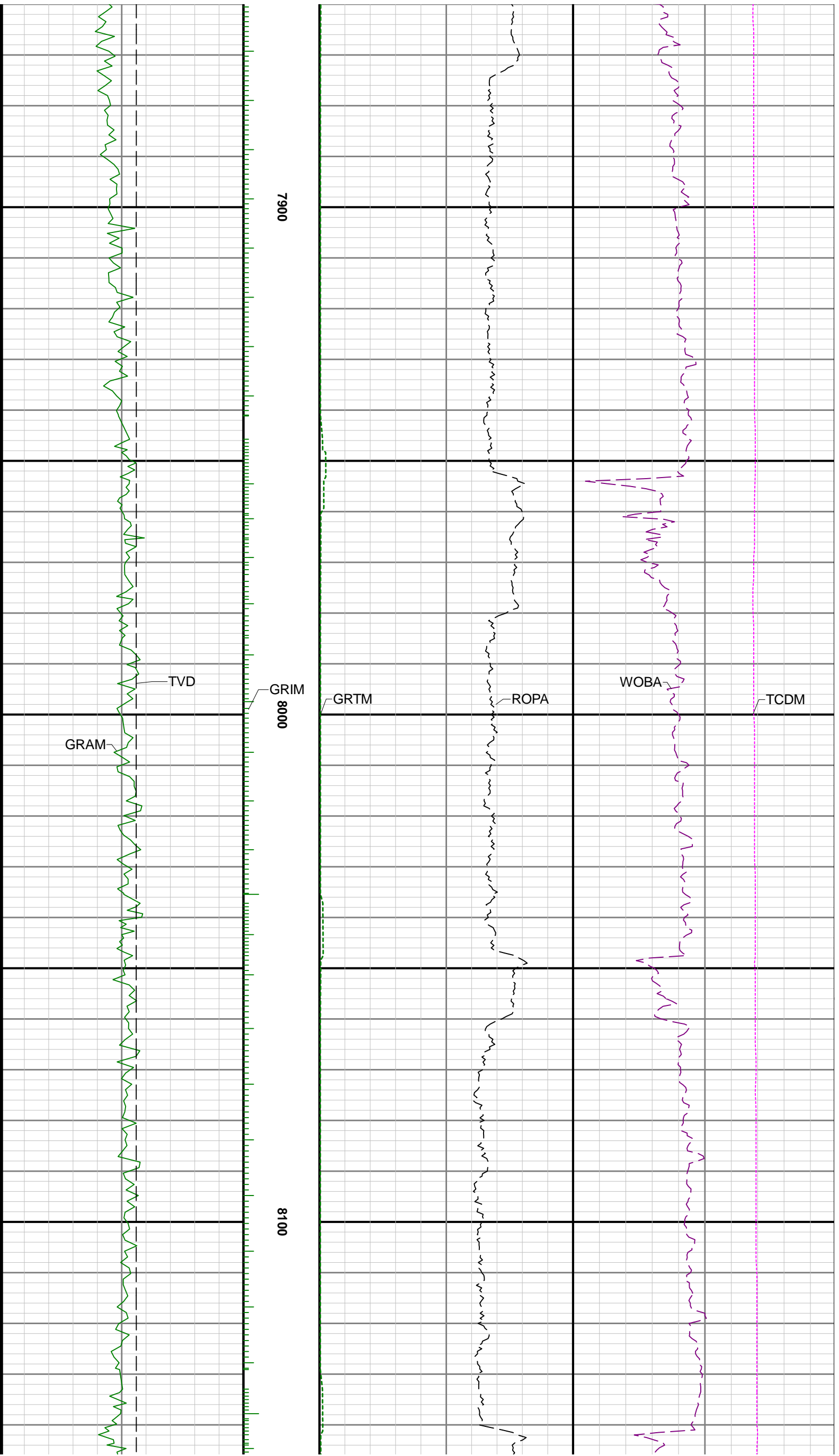


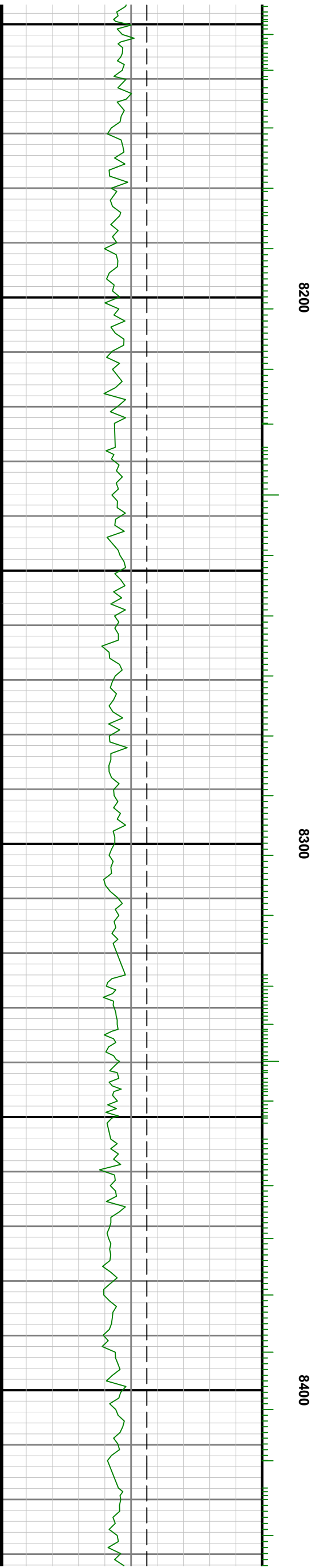
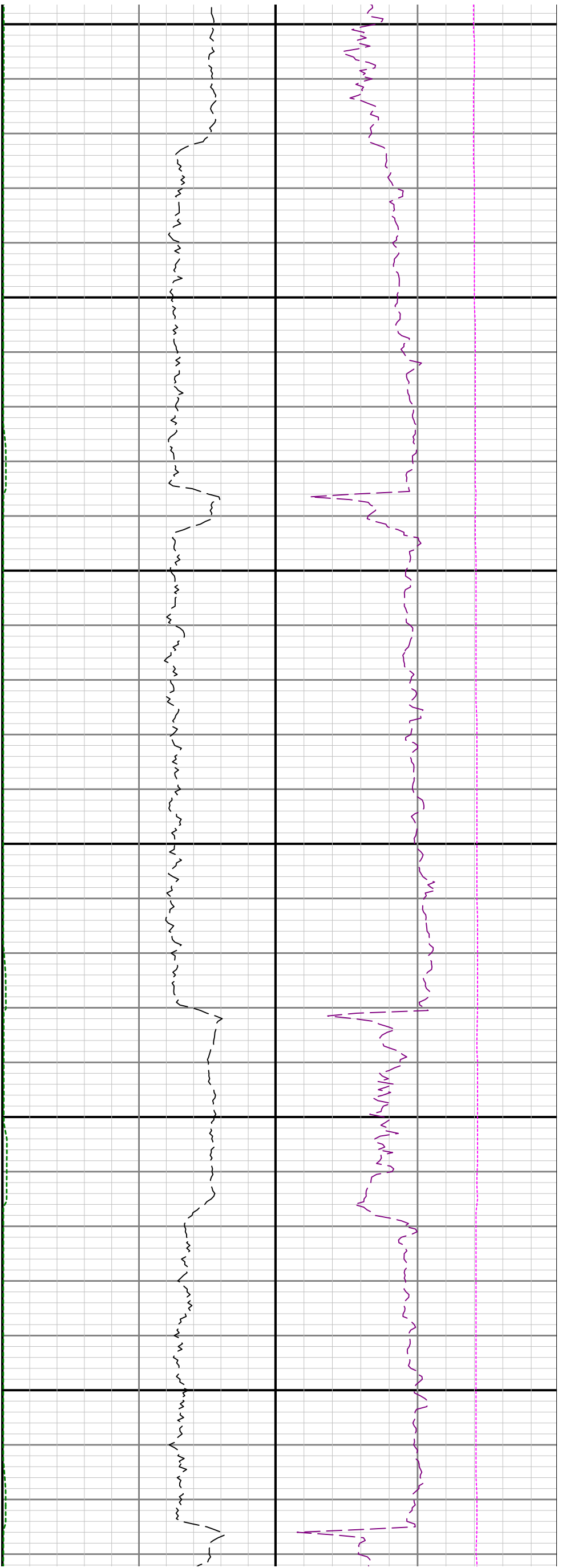




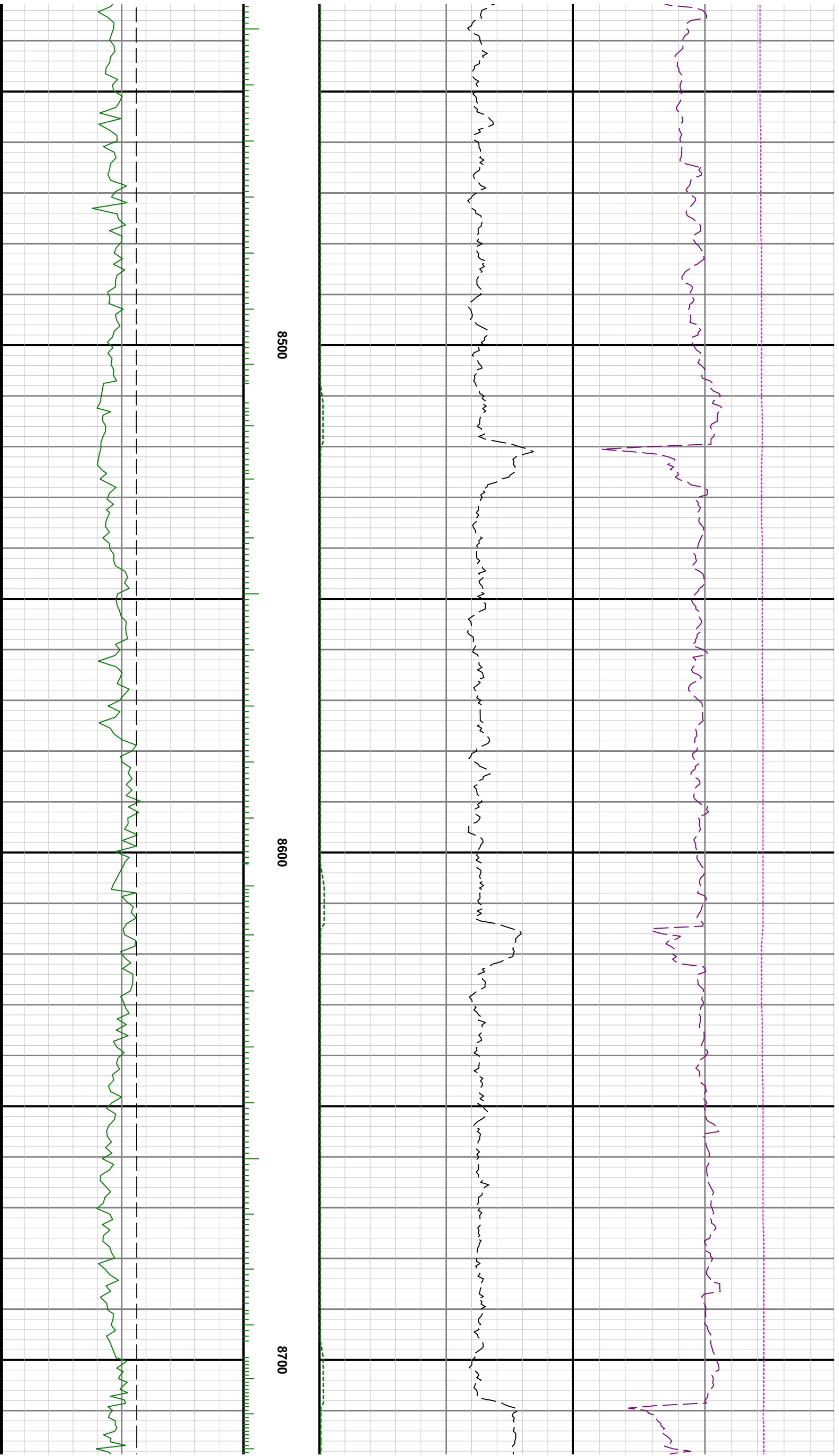


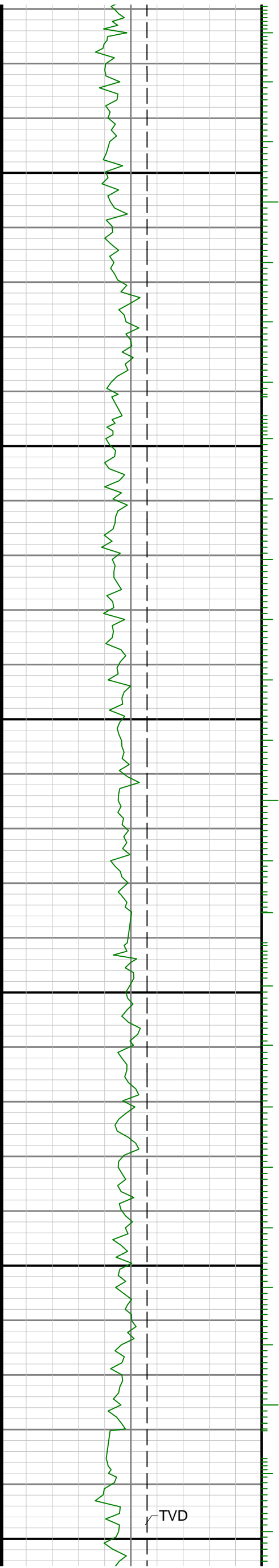








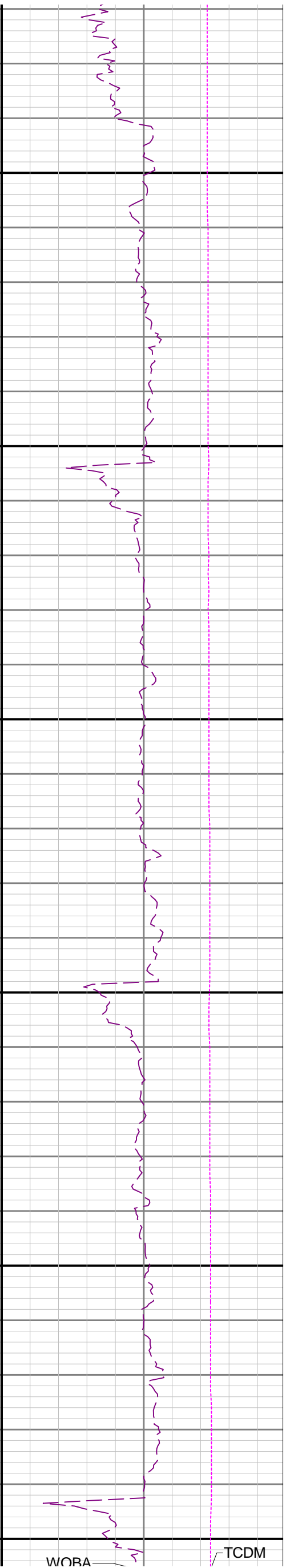


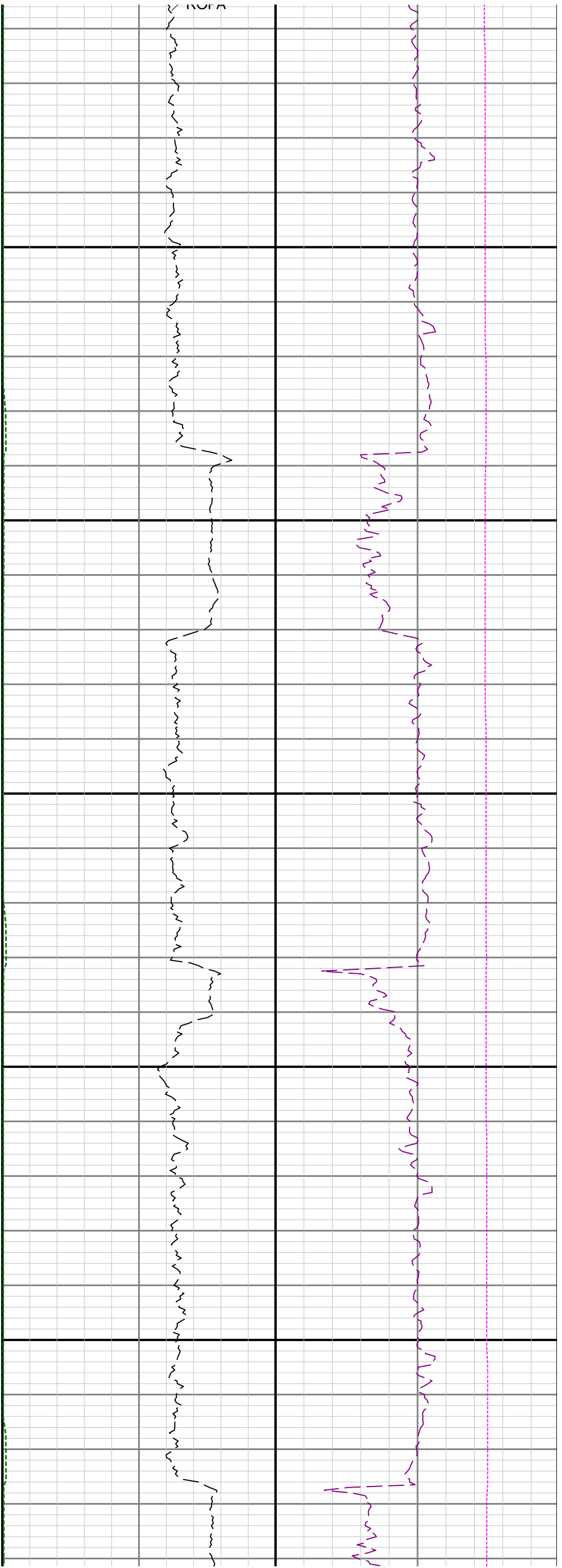


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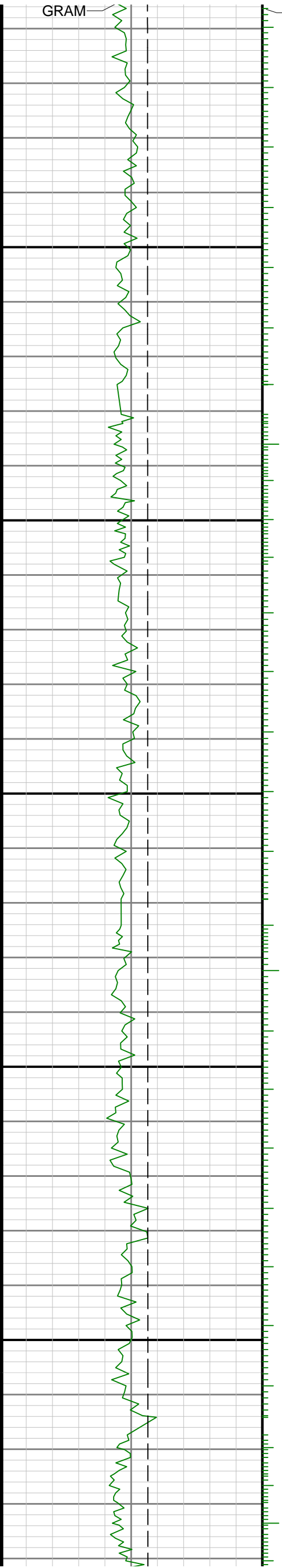
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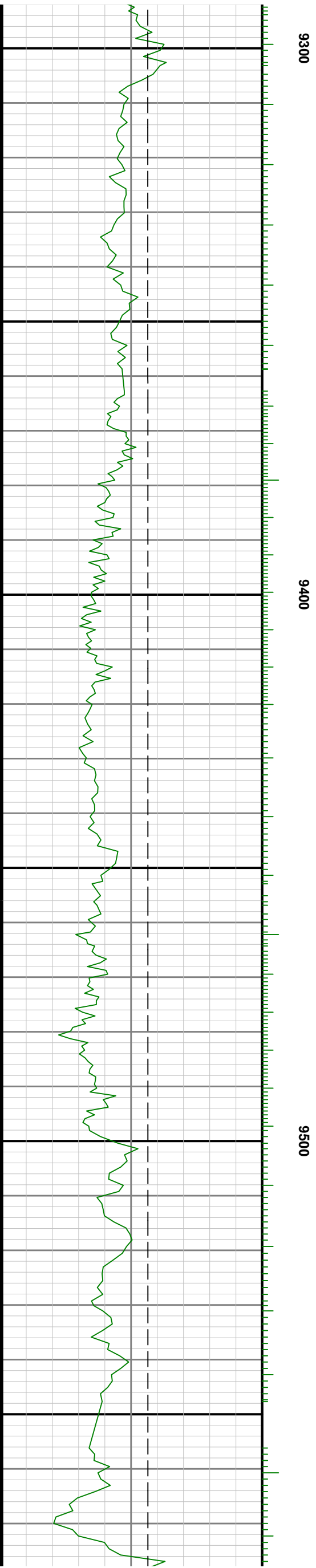
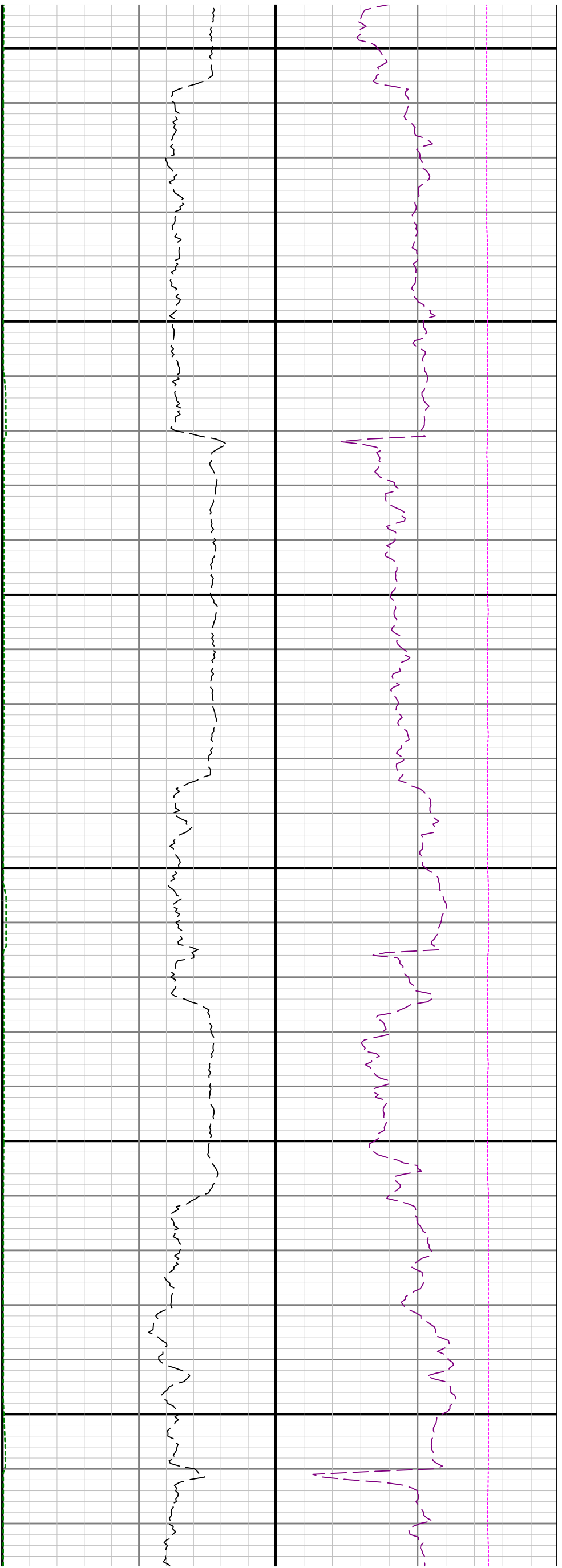
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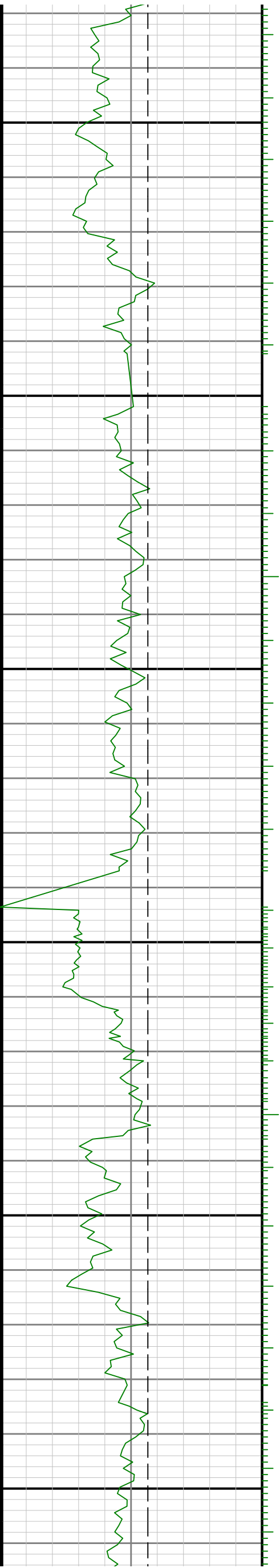
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GRAM

GRIM

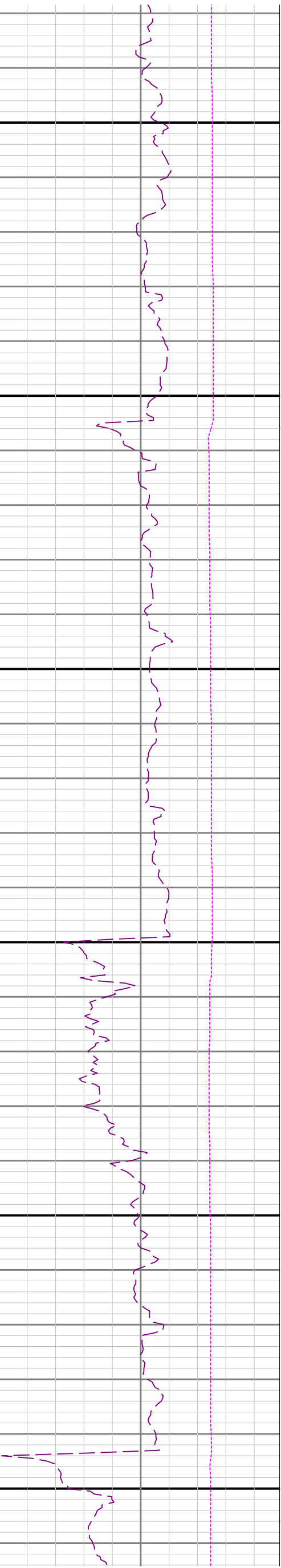
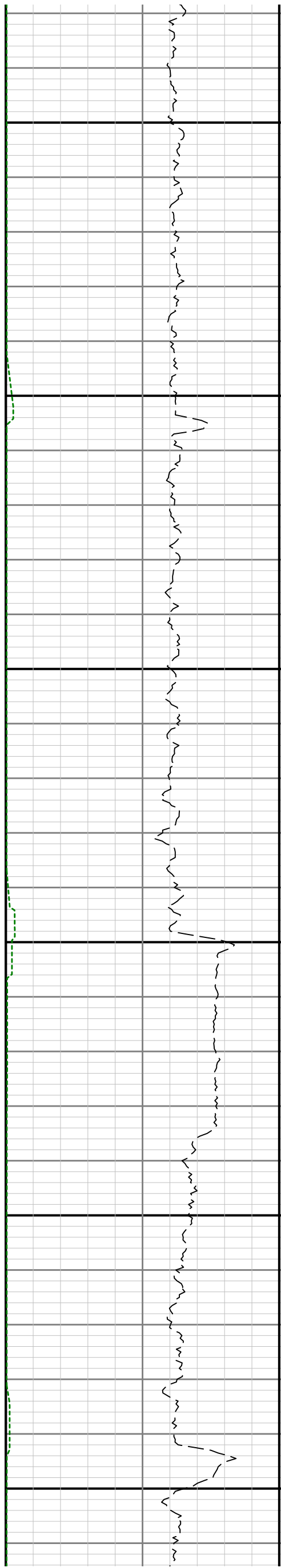


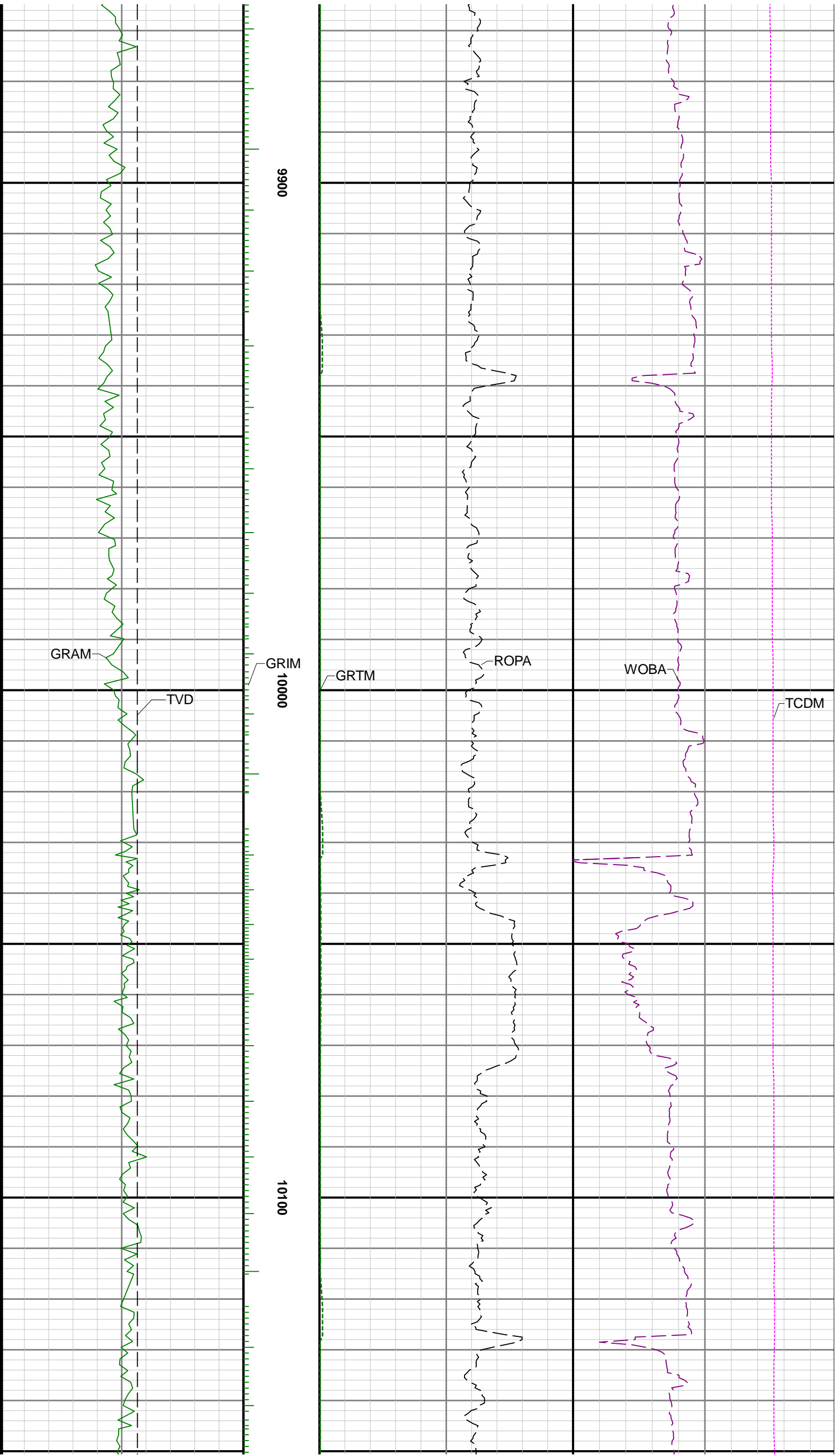


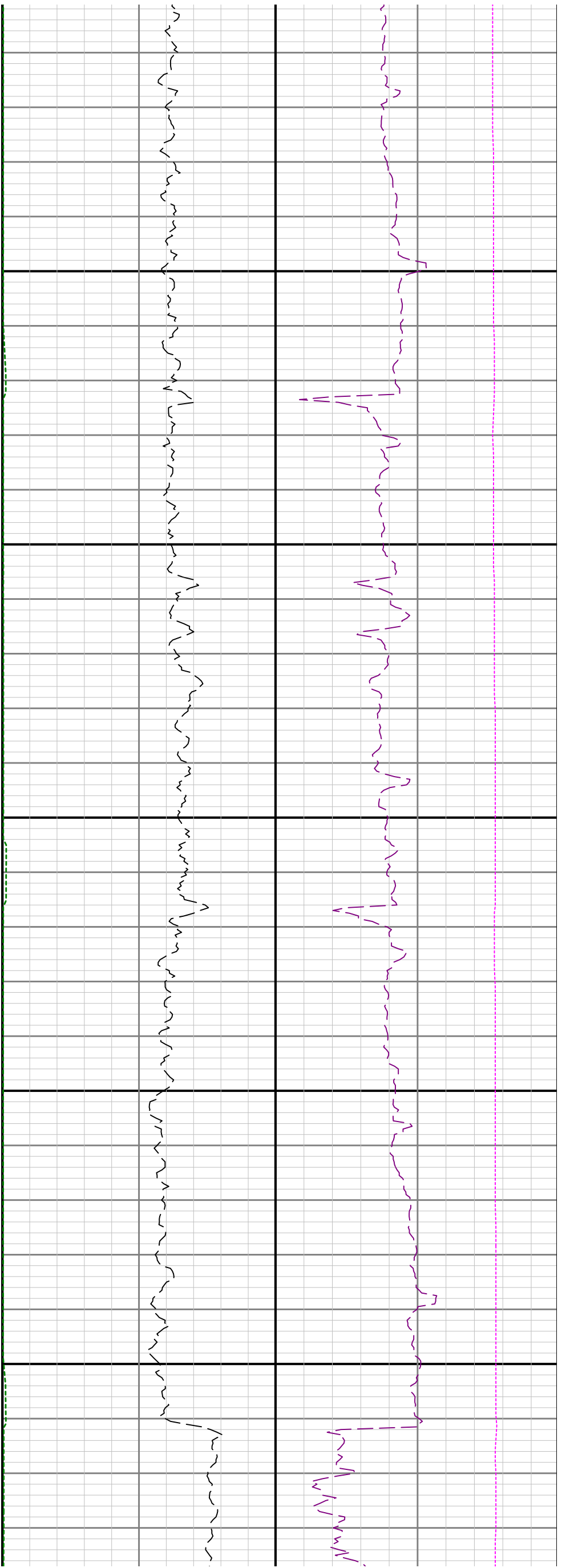
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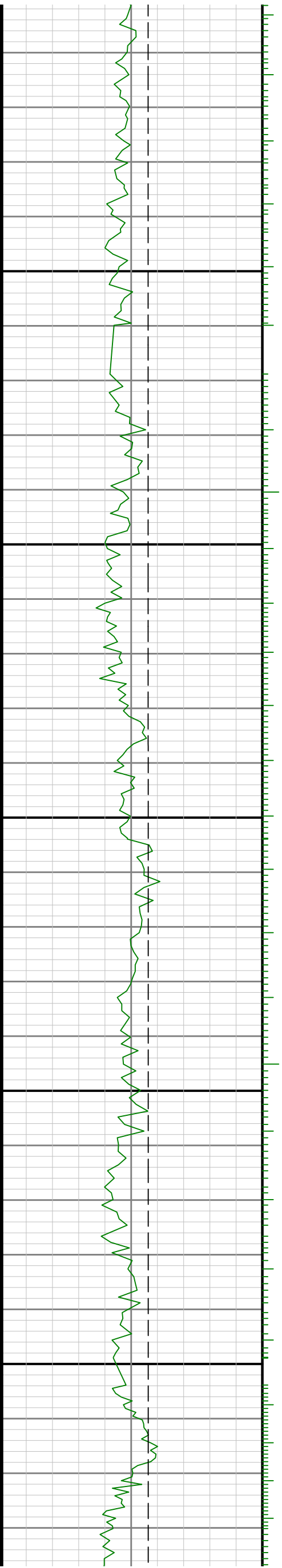


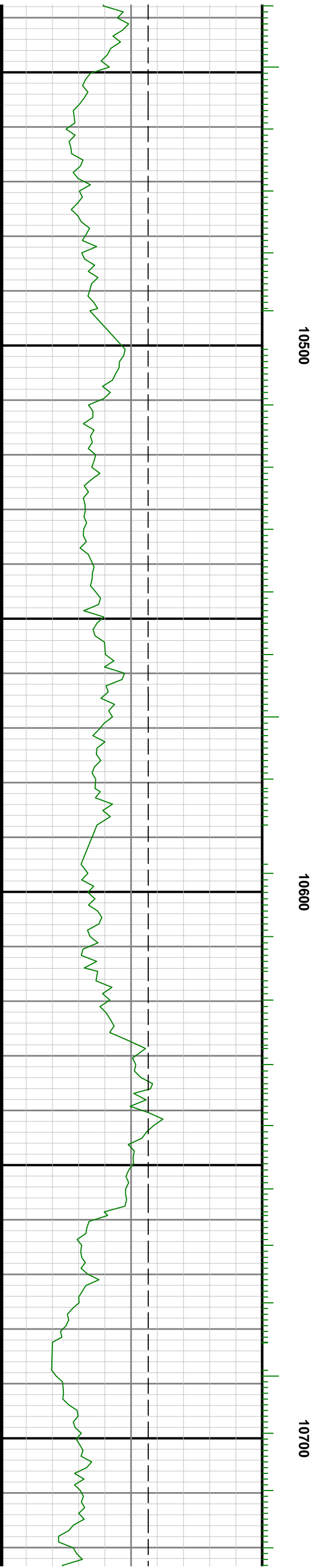
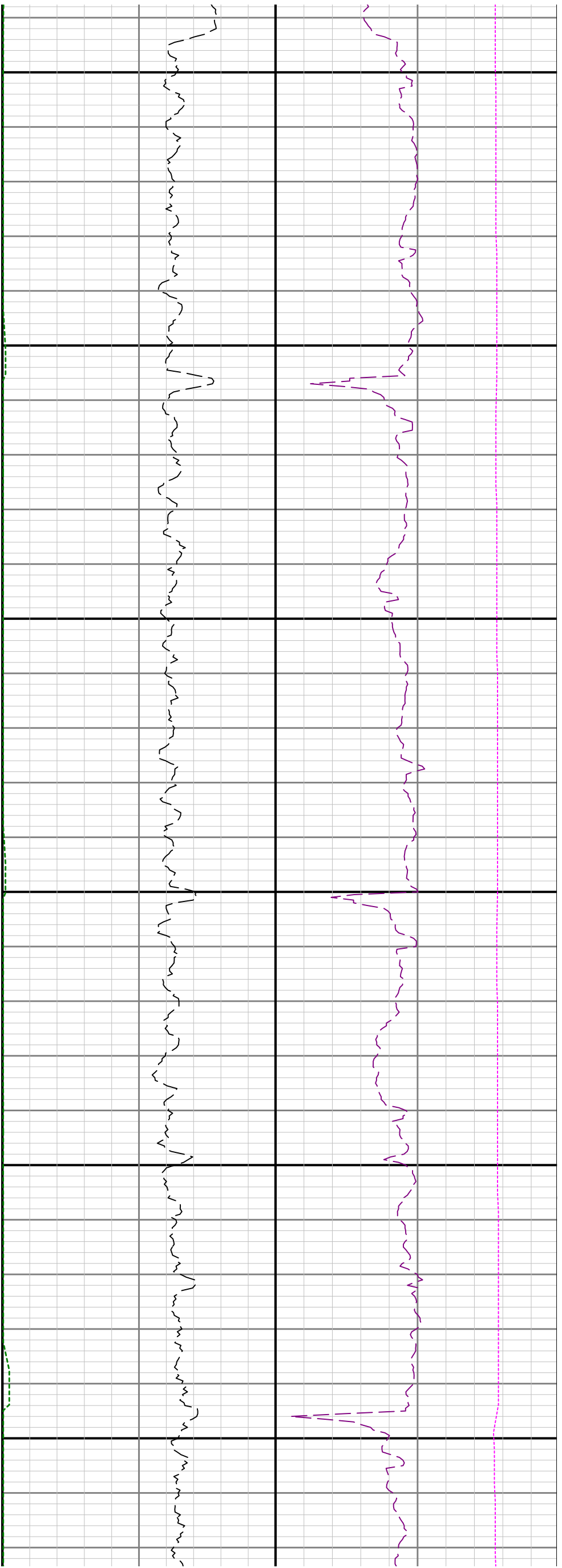


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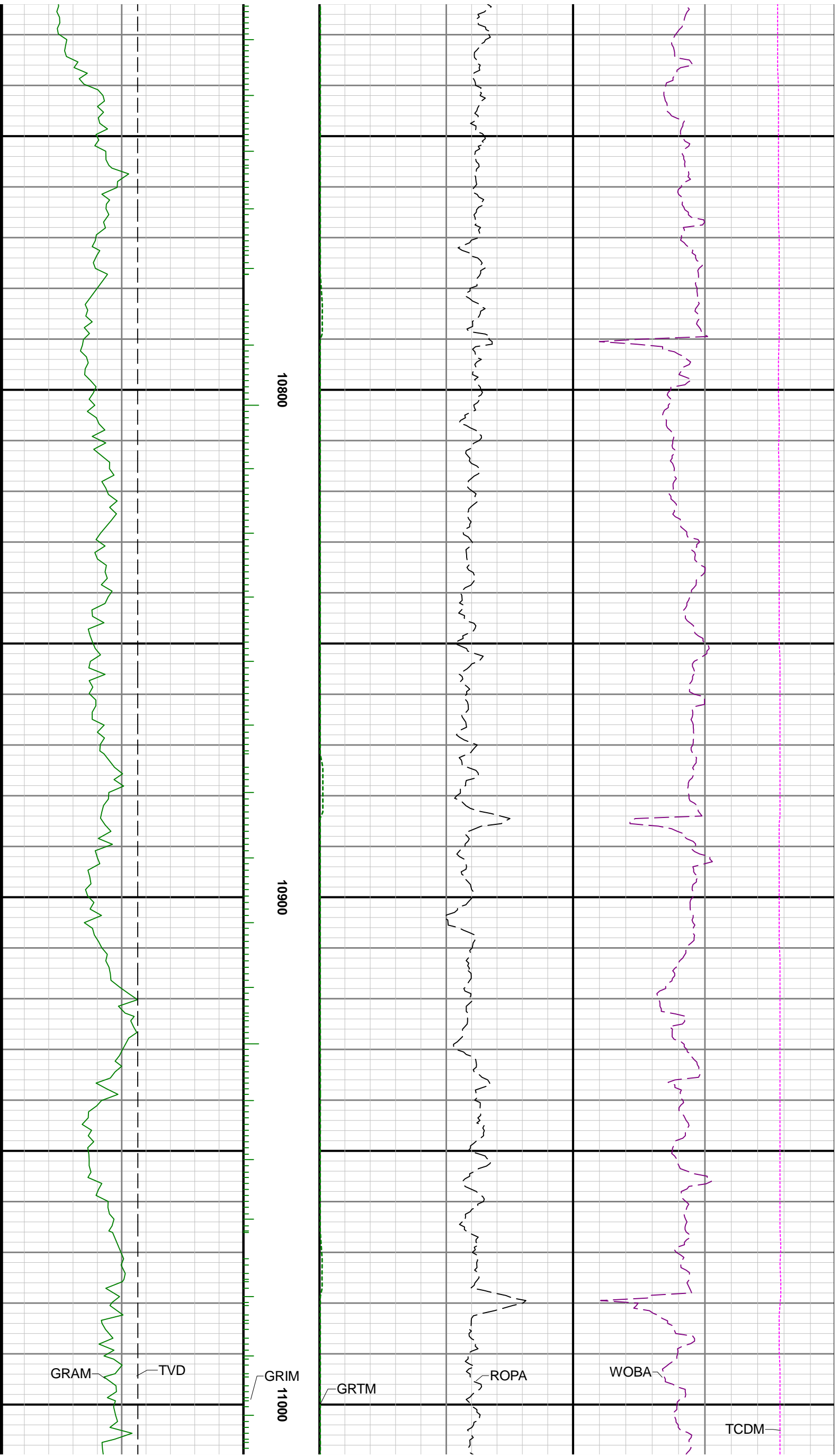
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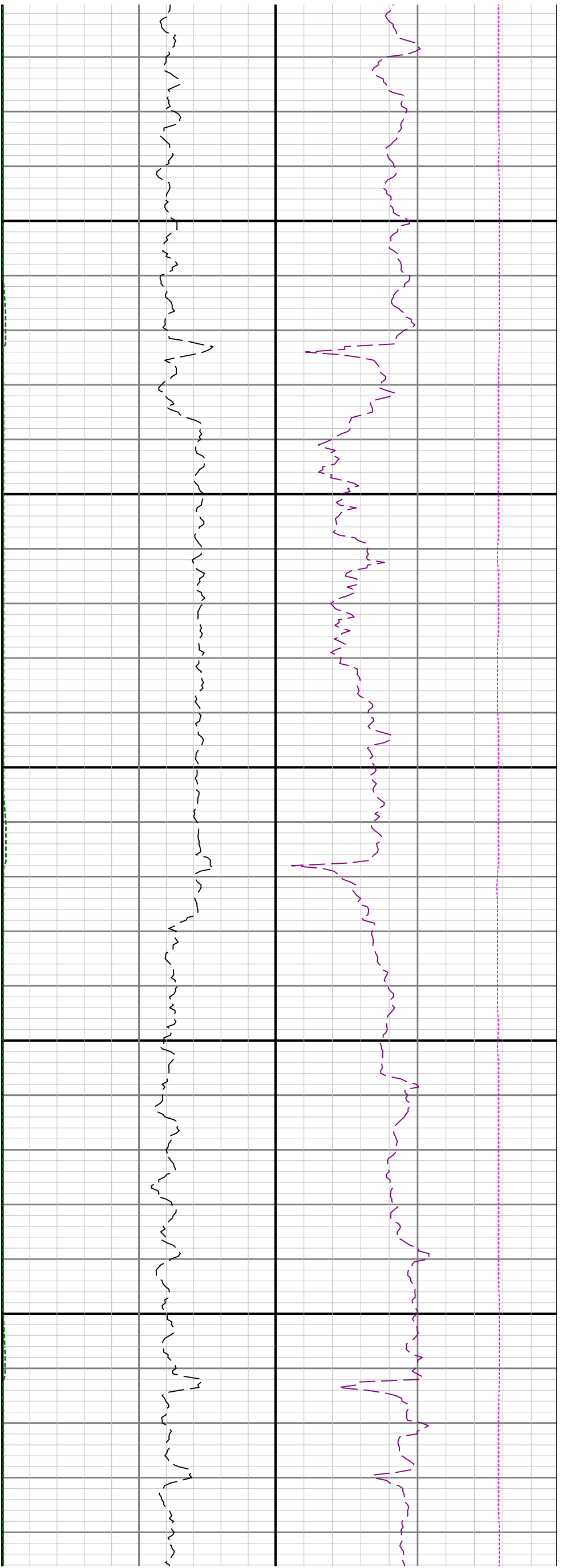
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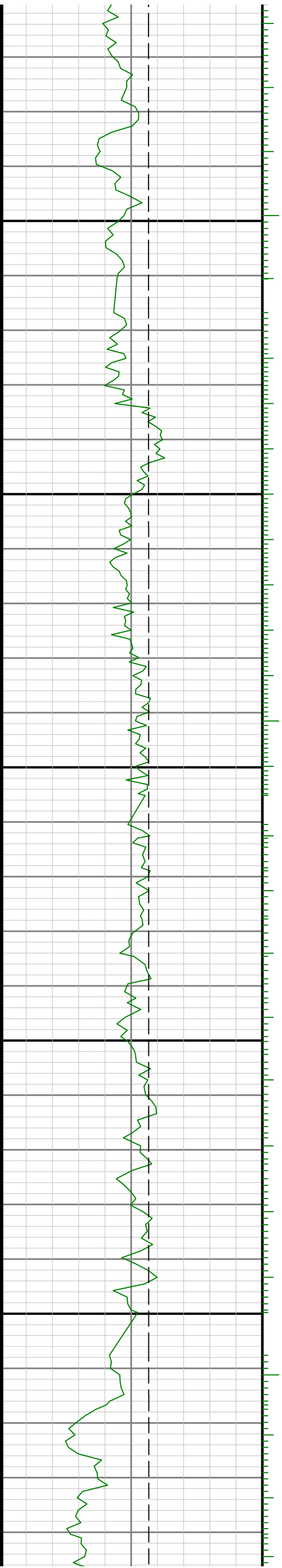


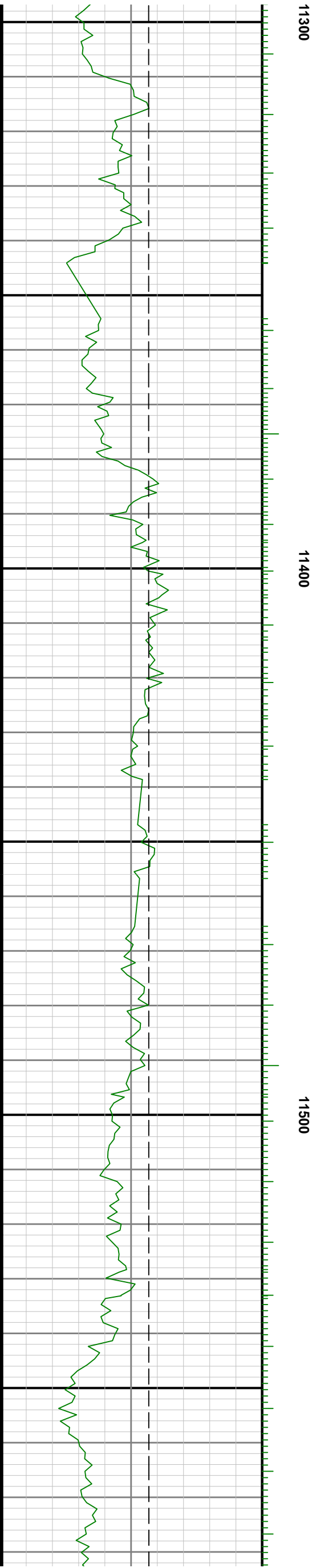
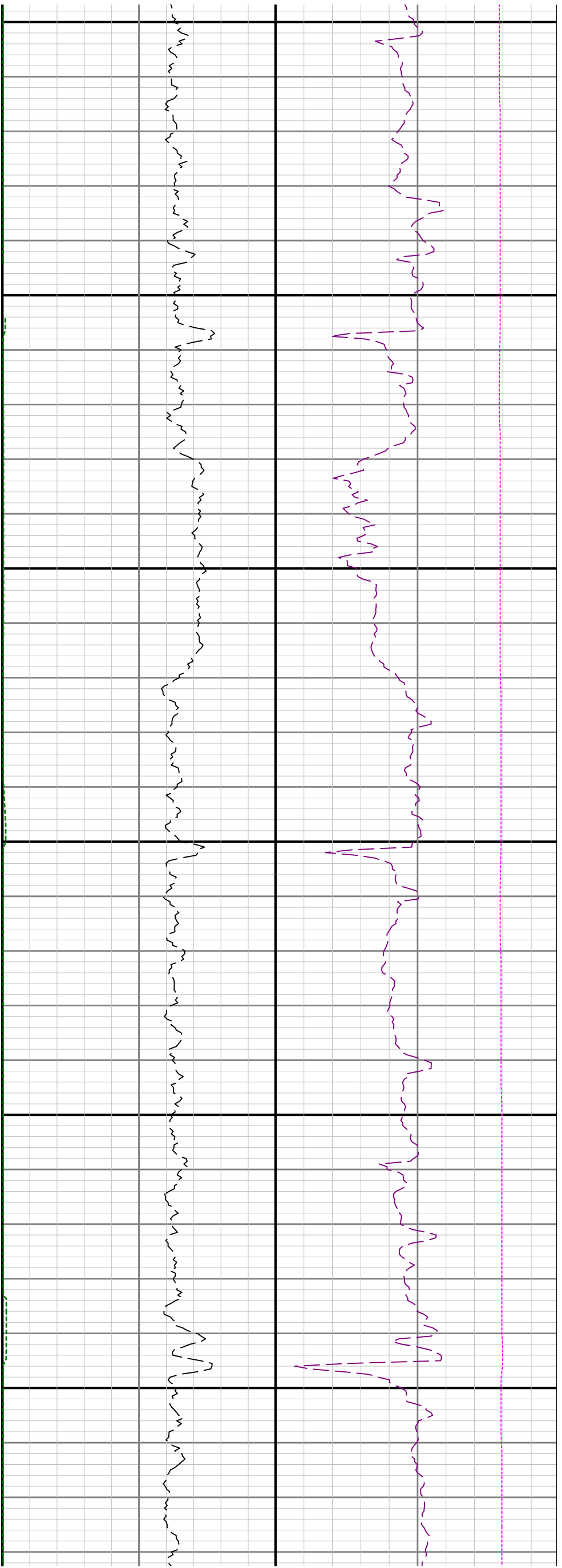


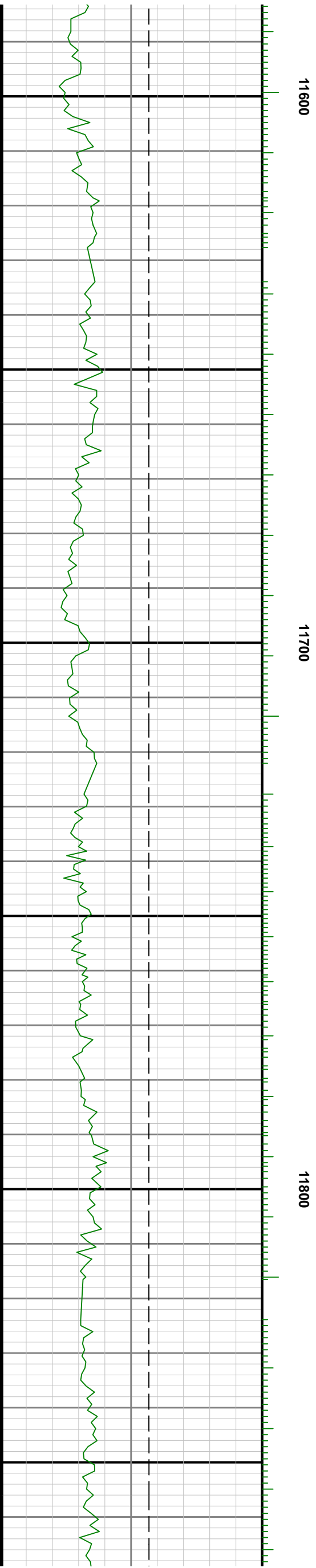
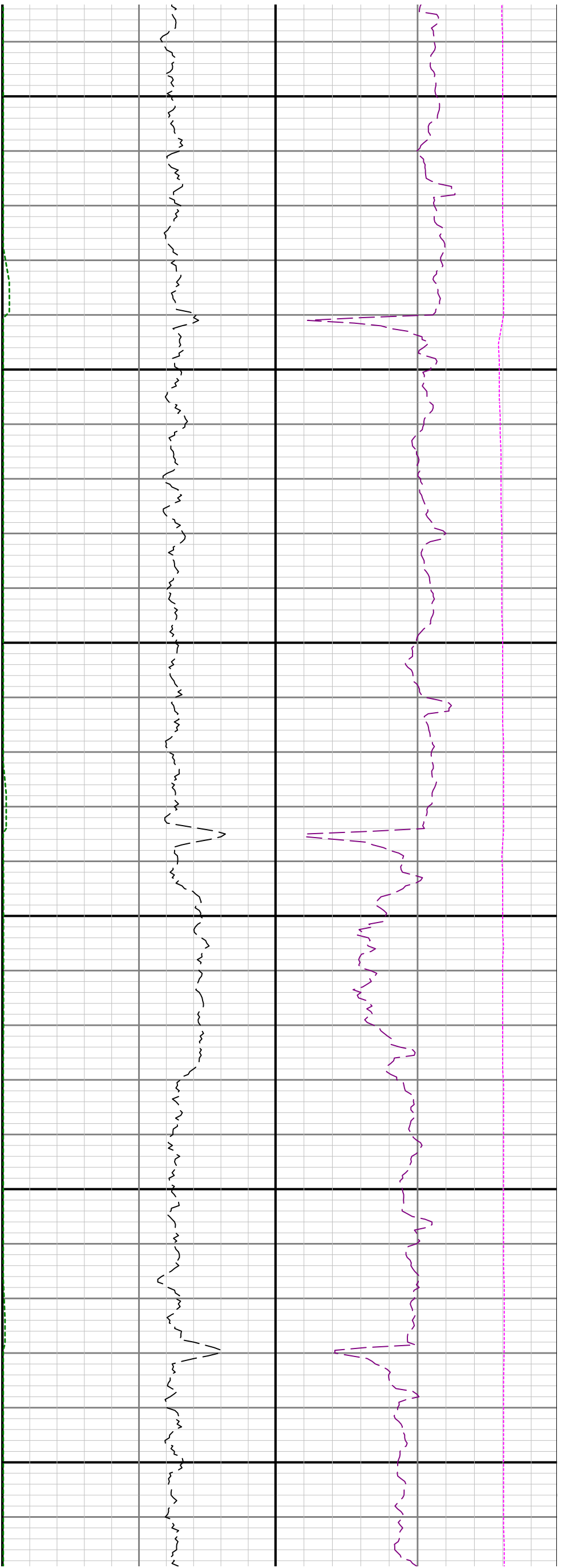


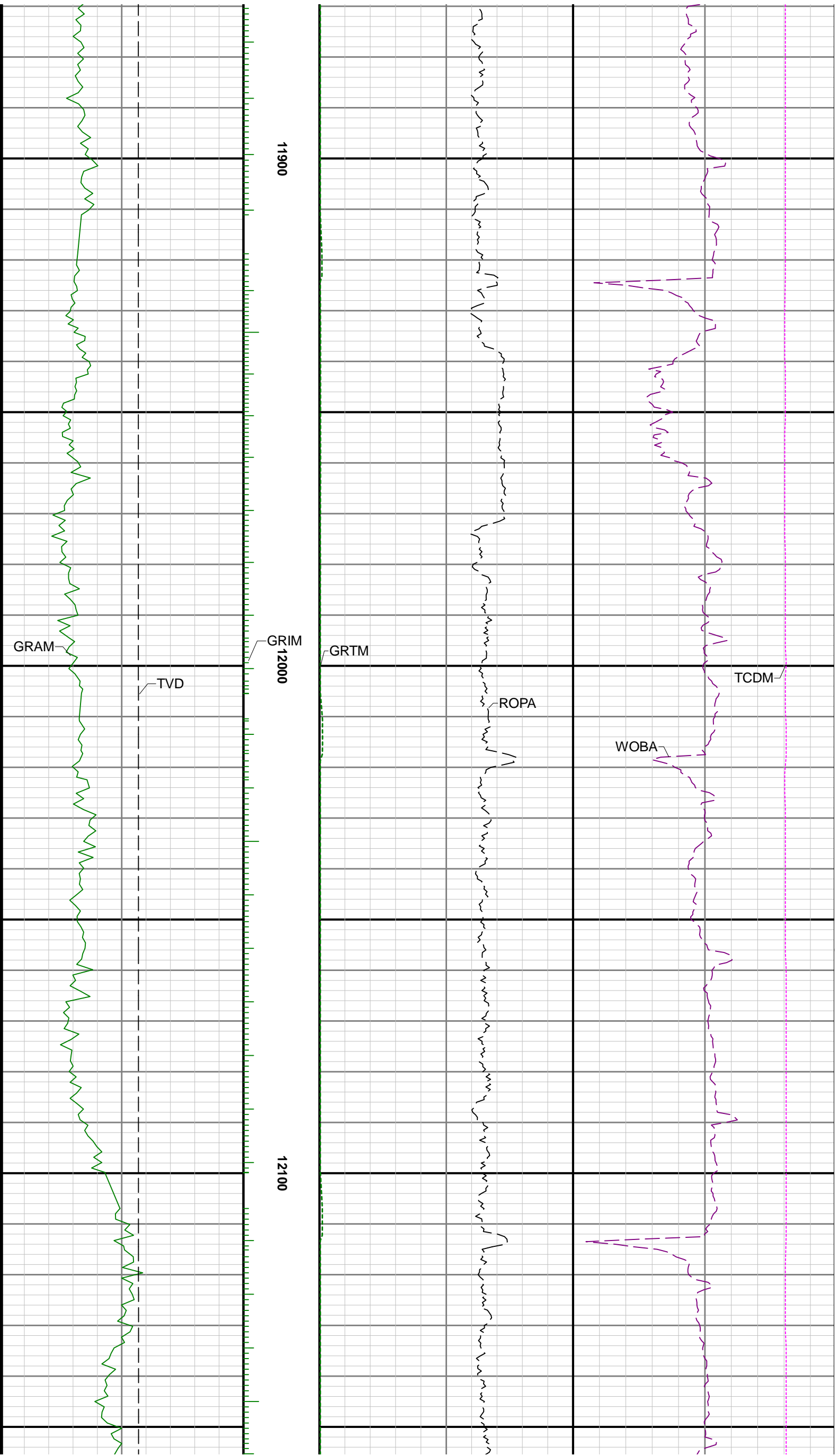
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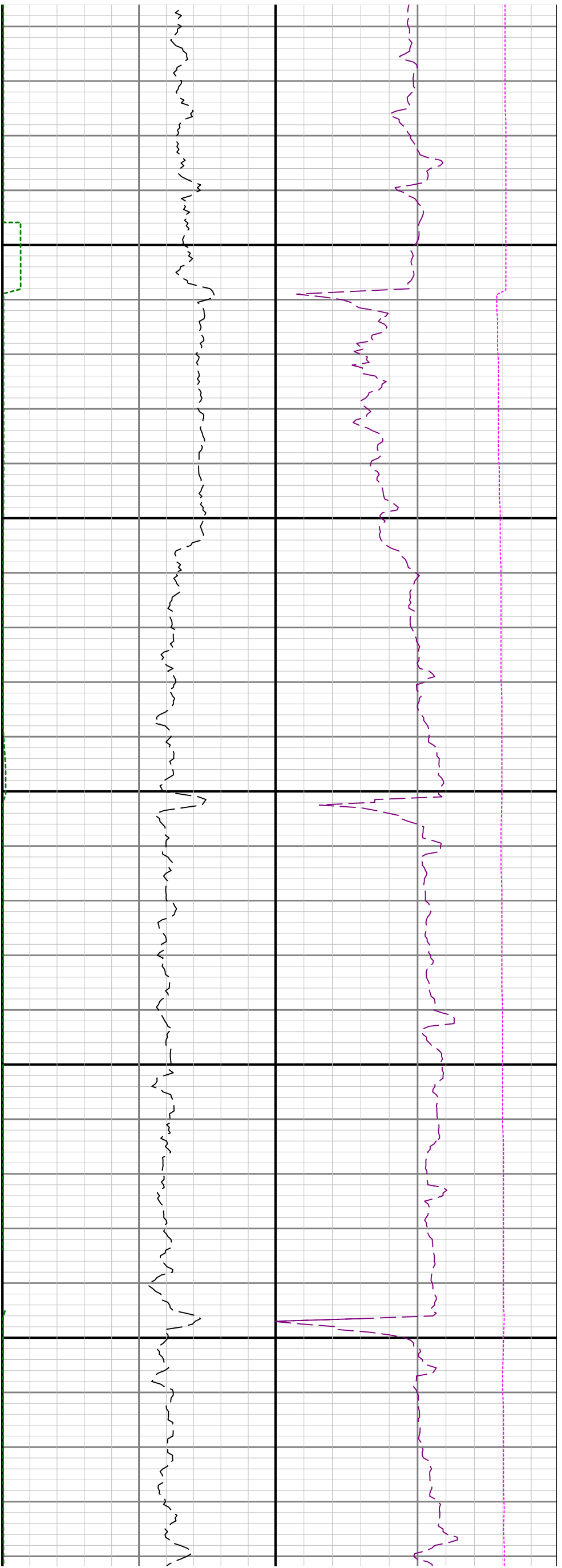
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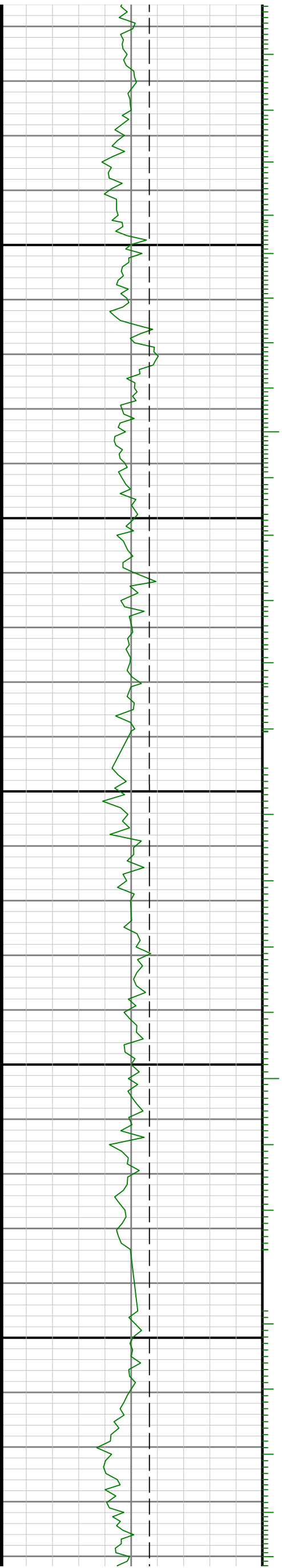


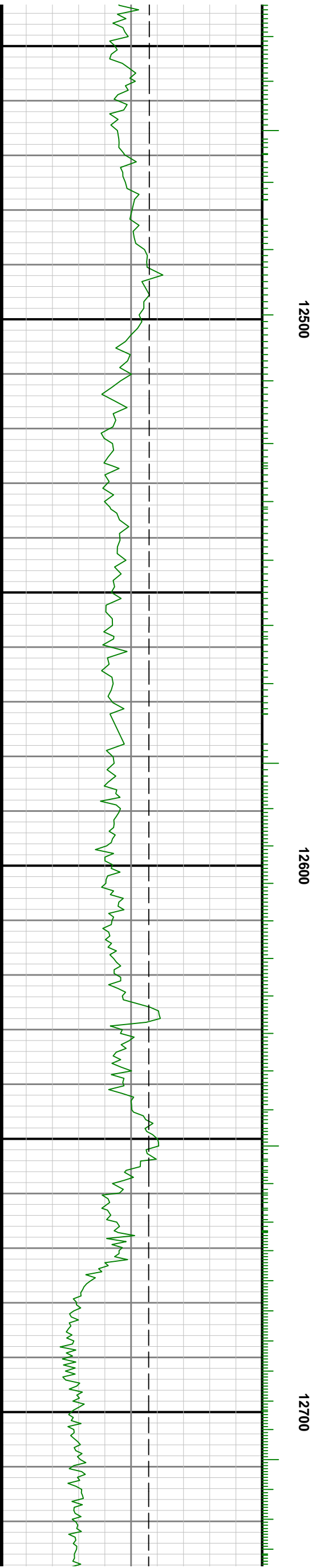
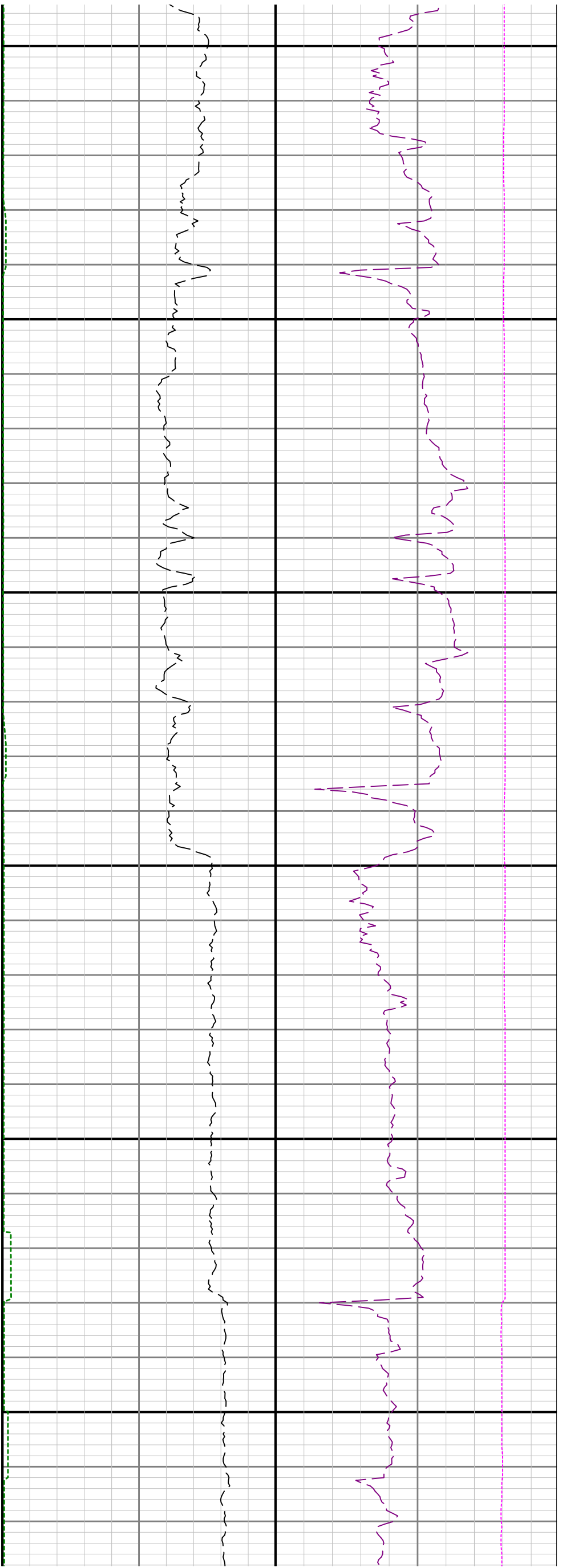


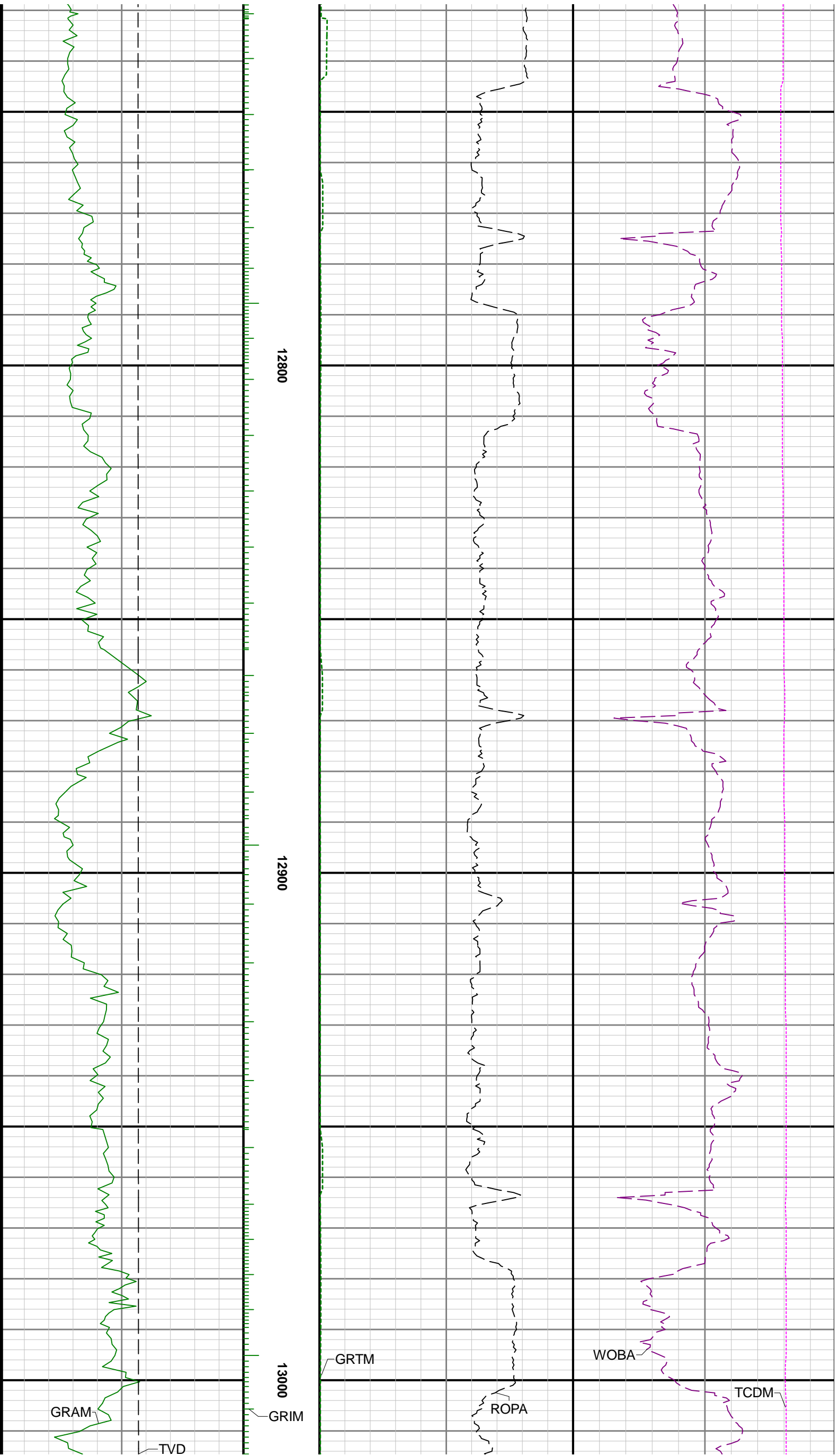
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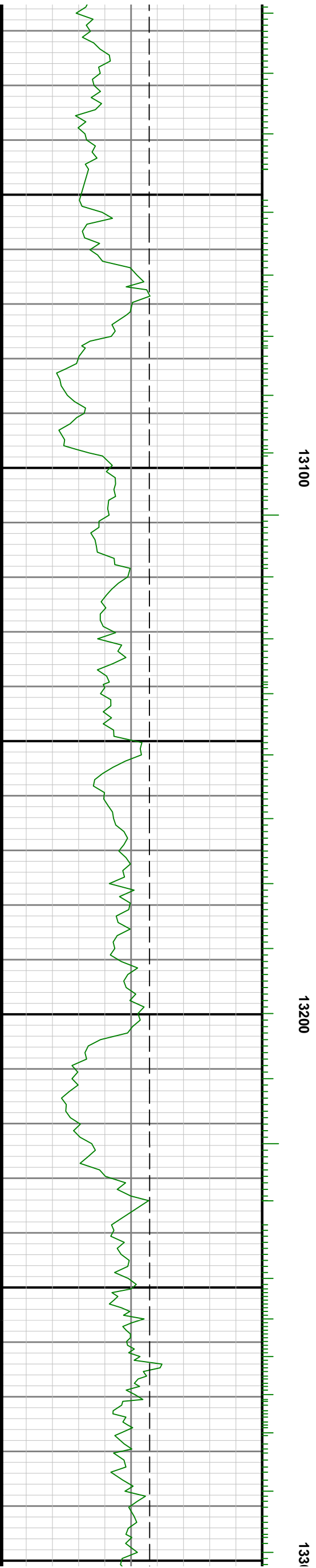
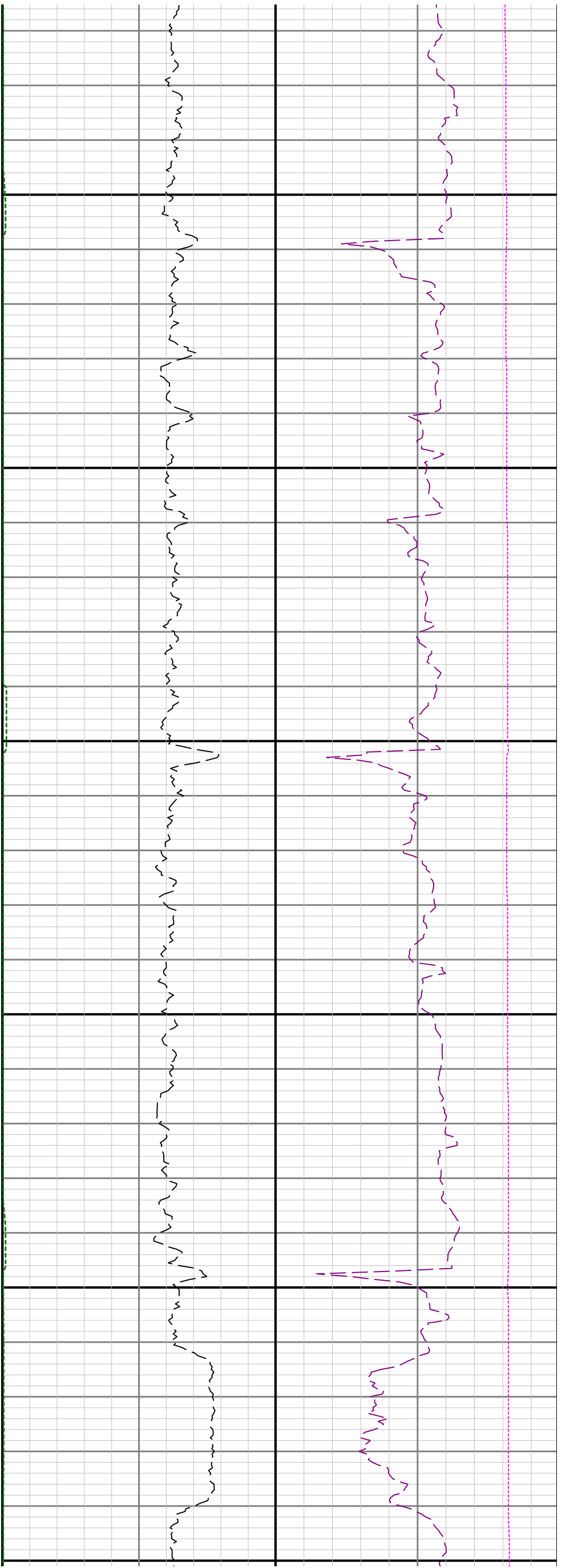
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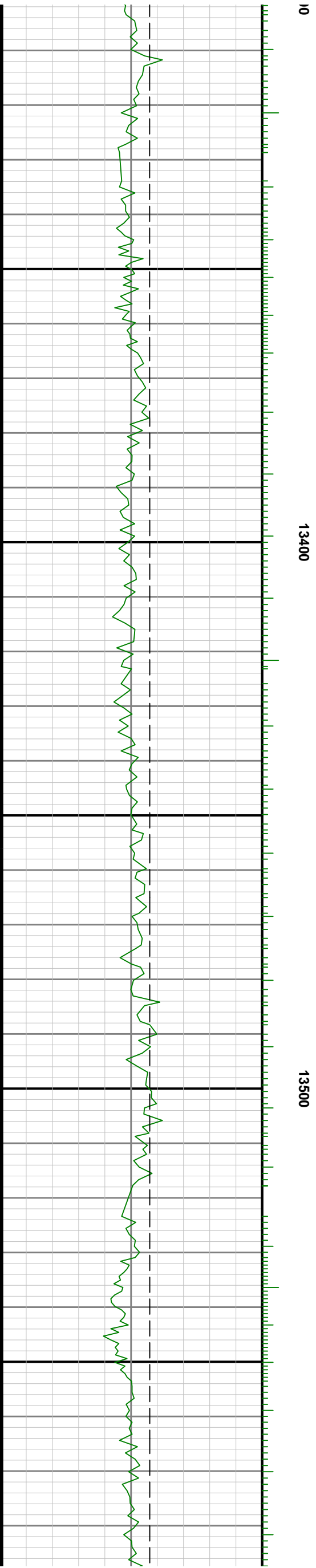
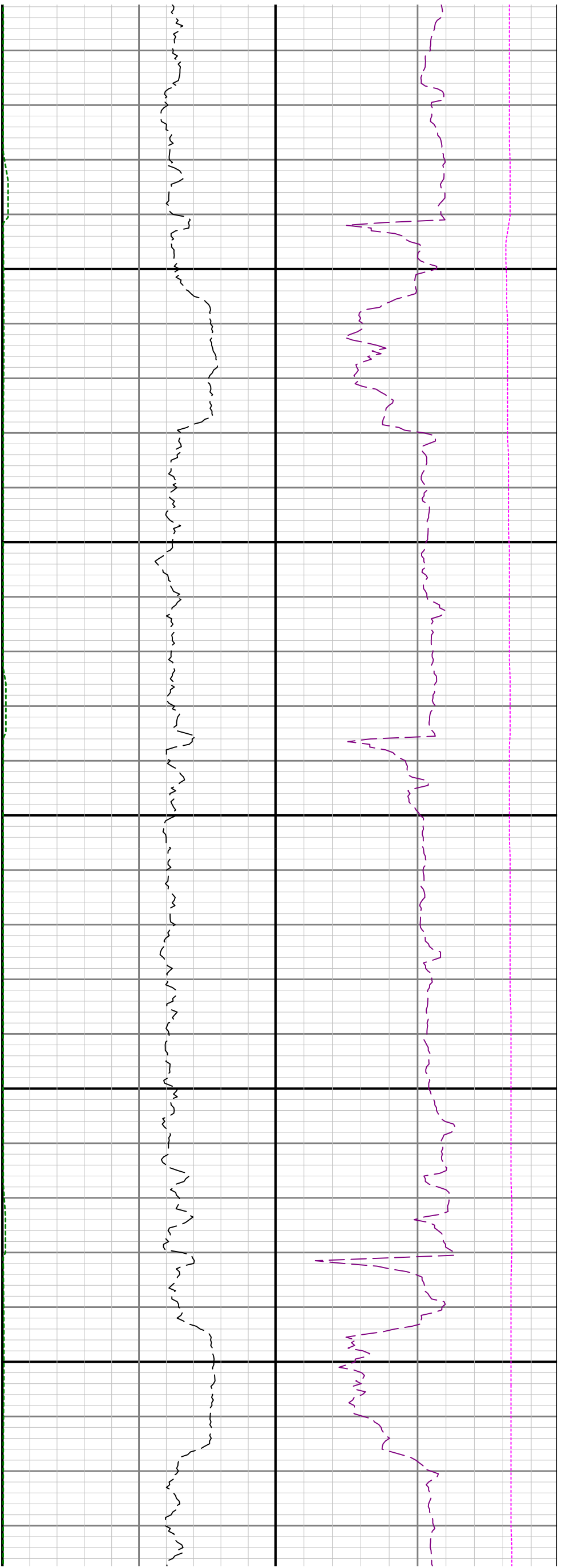


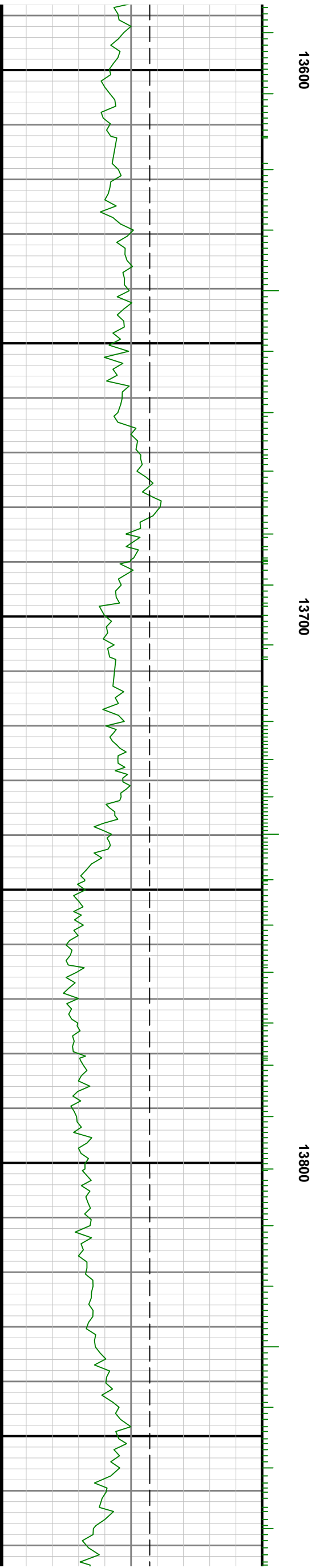
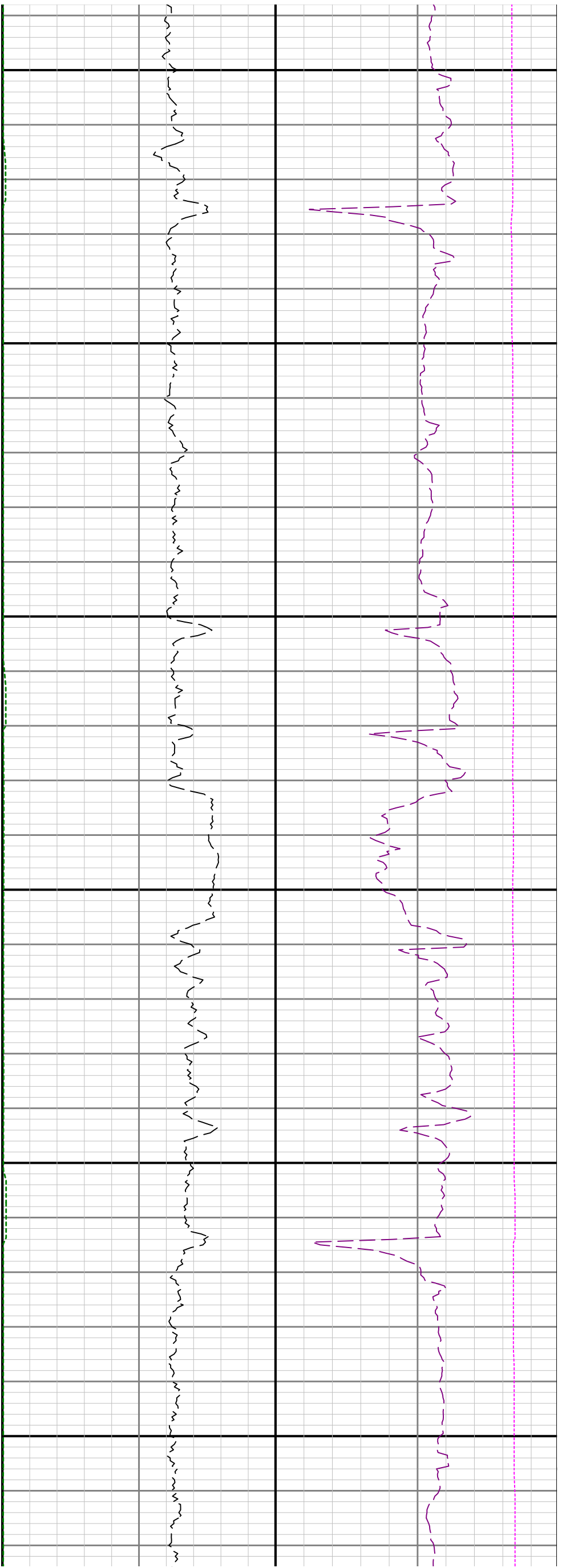


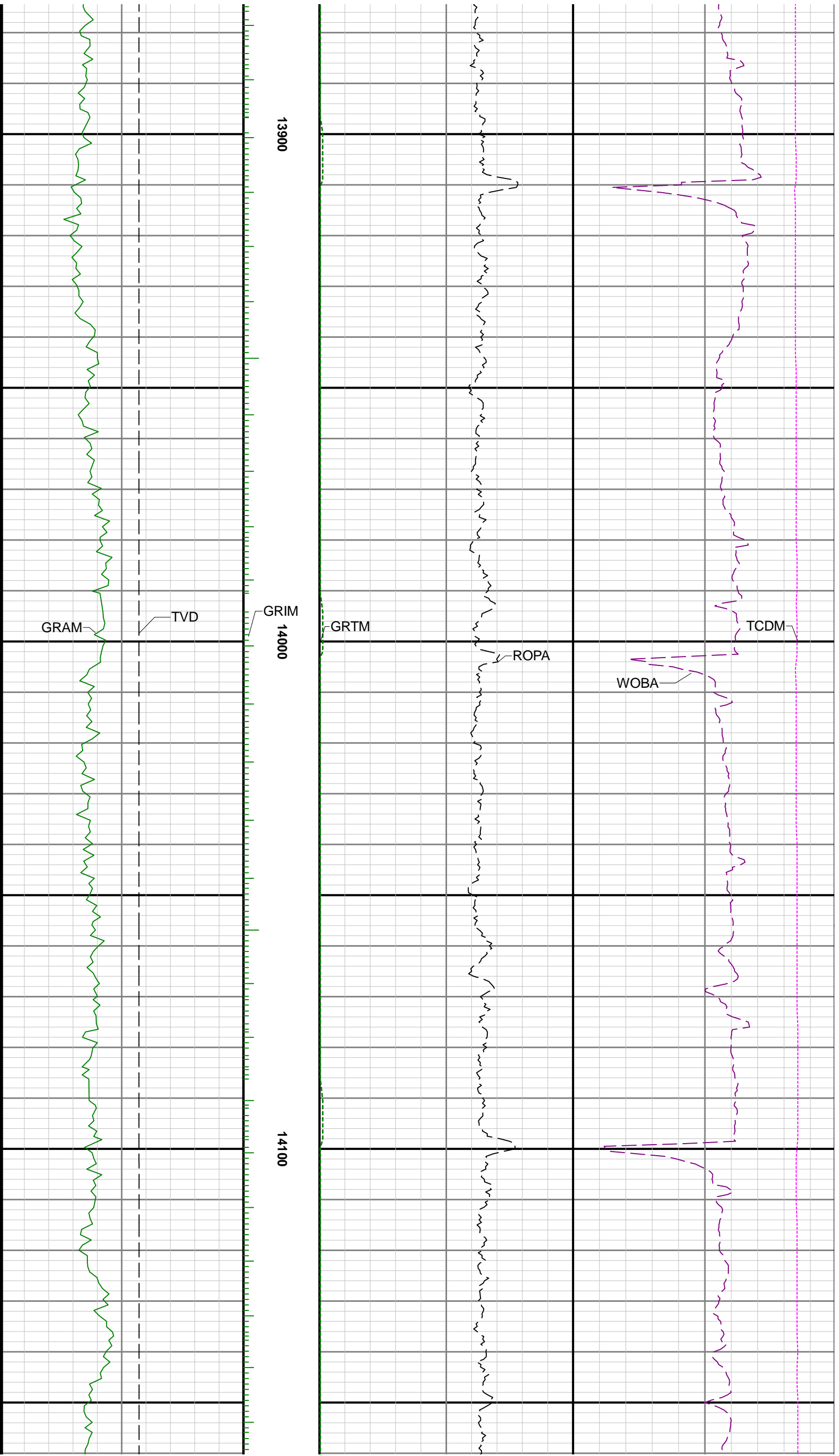


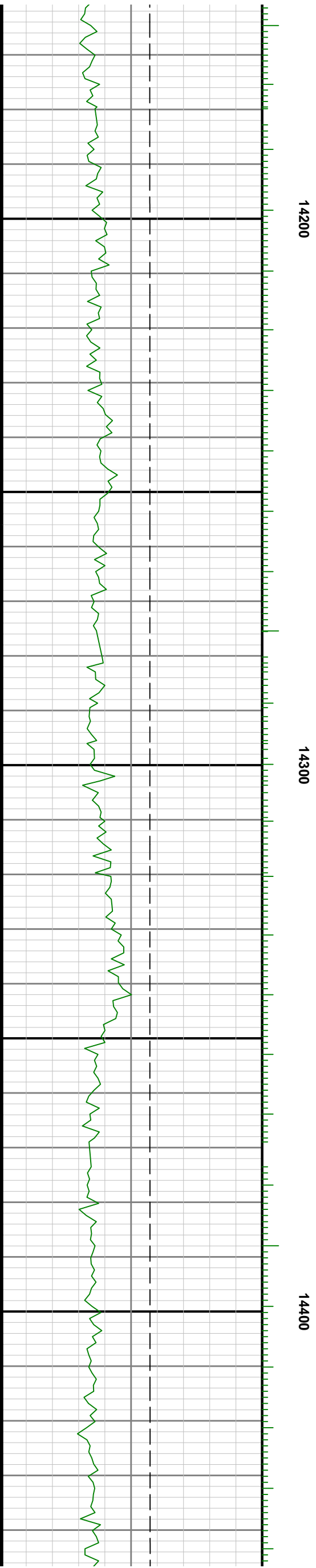
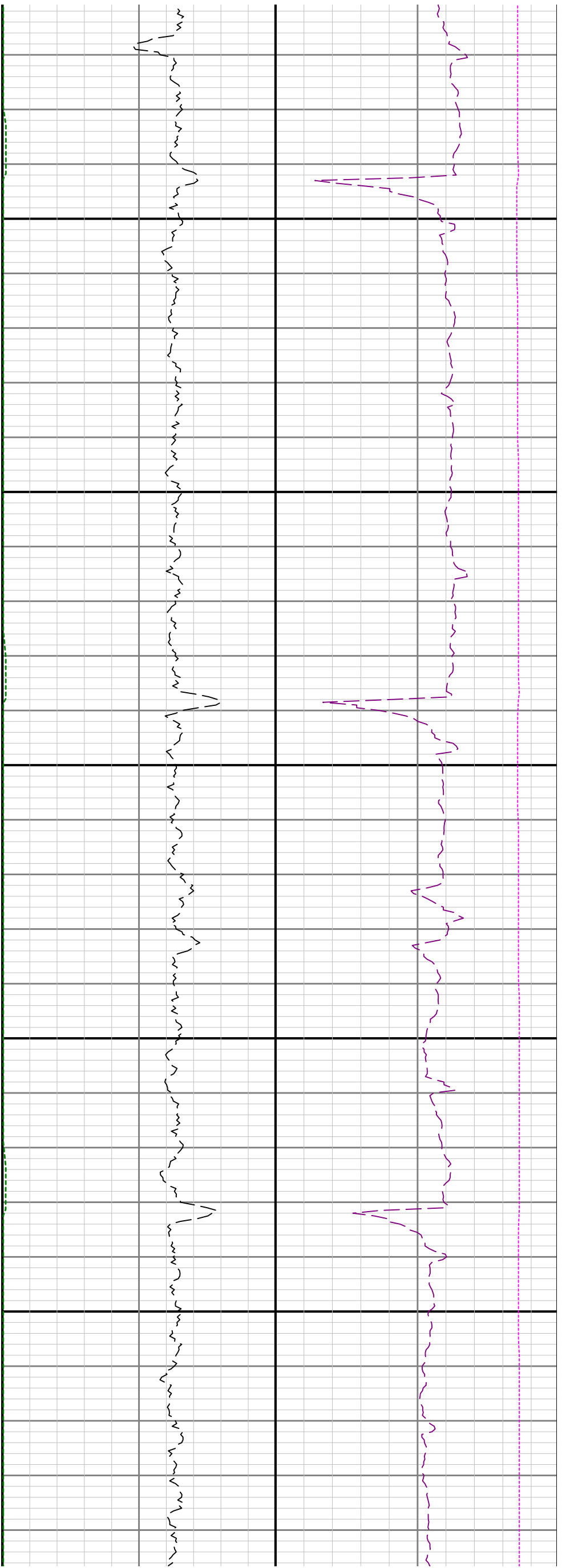


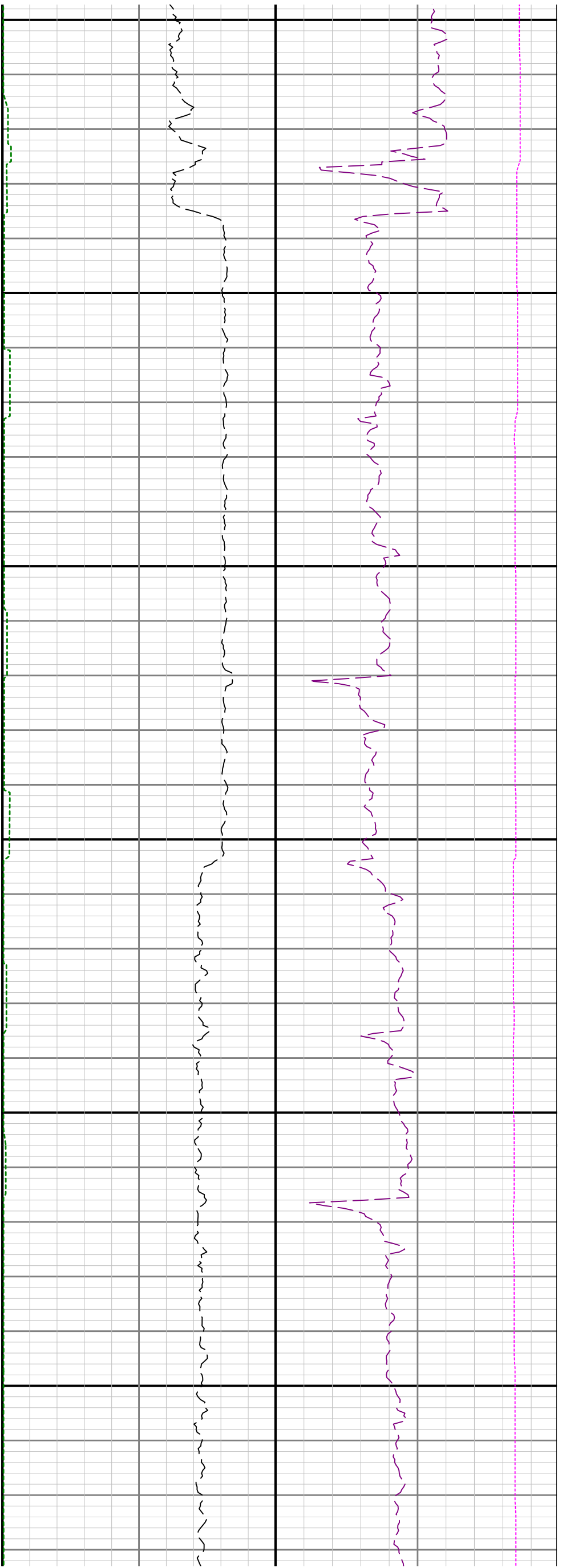








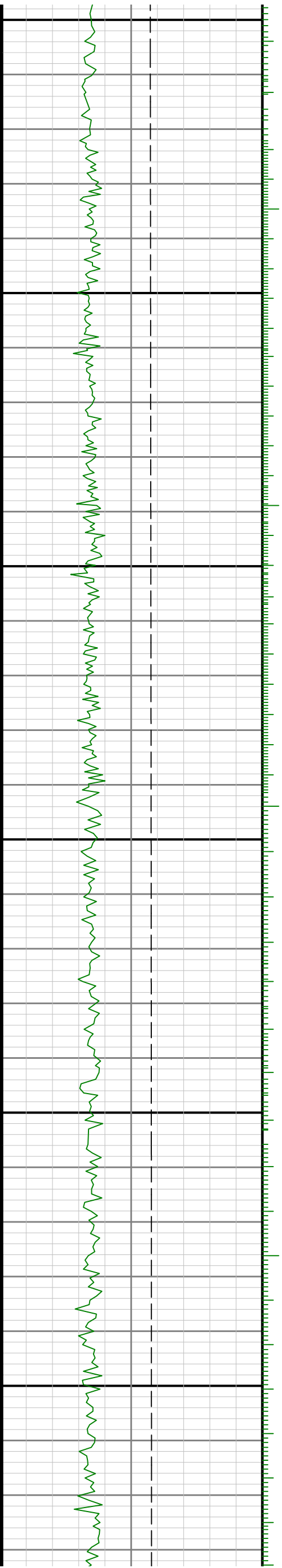


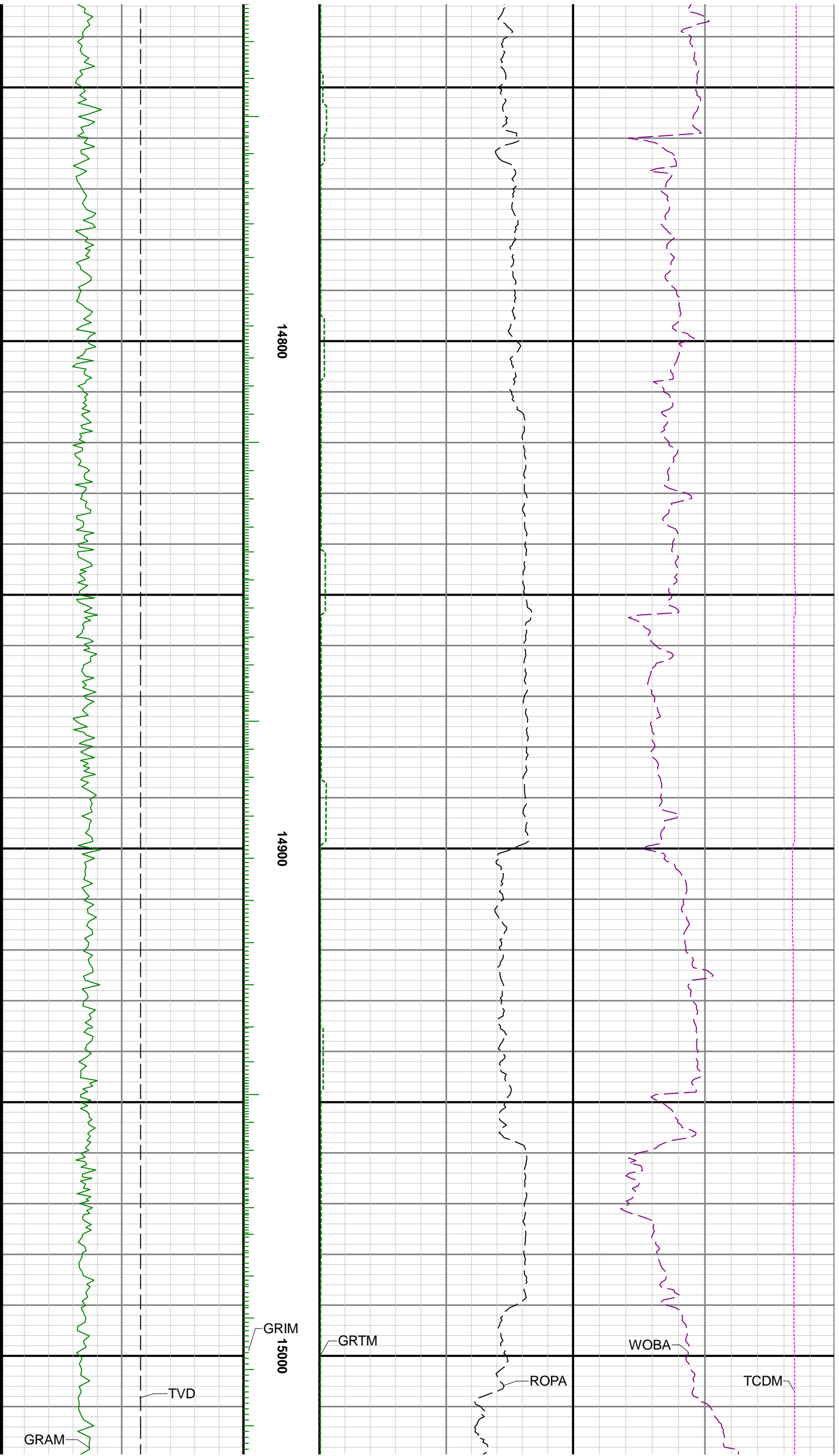


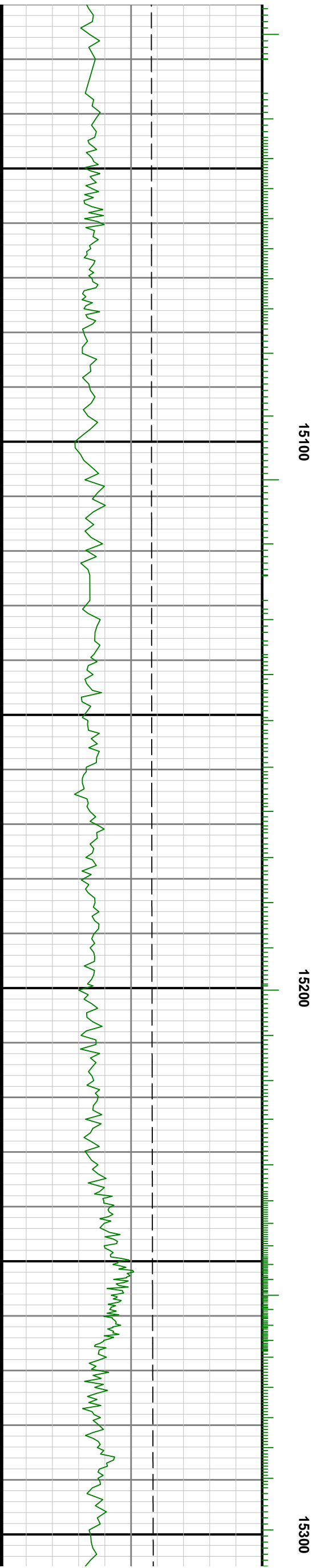
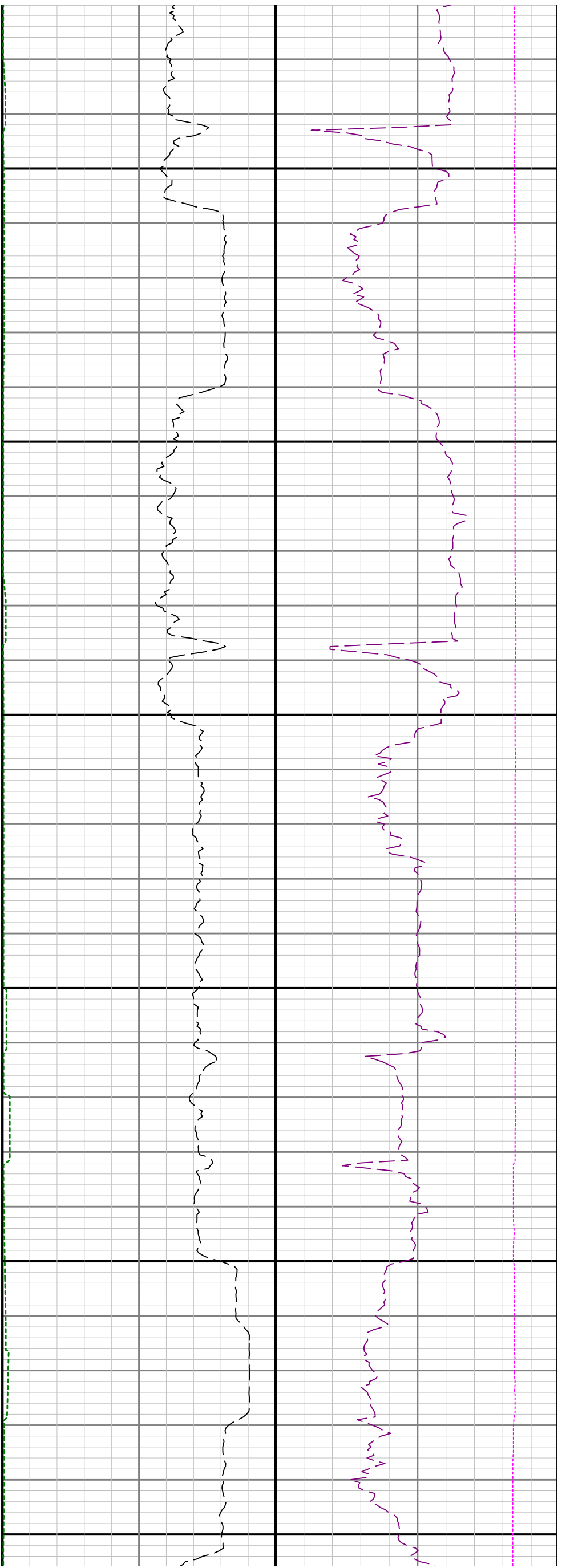
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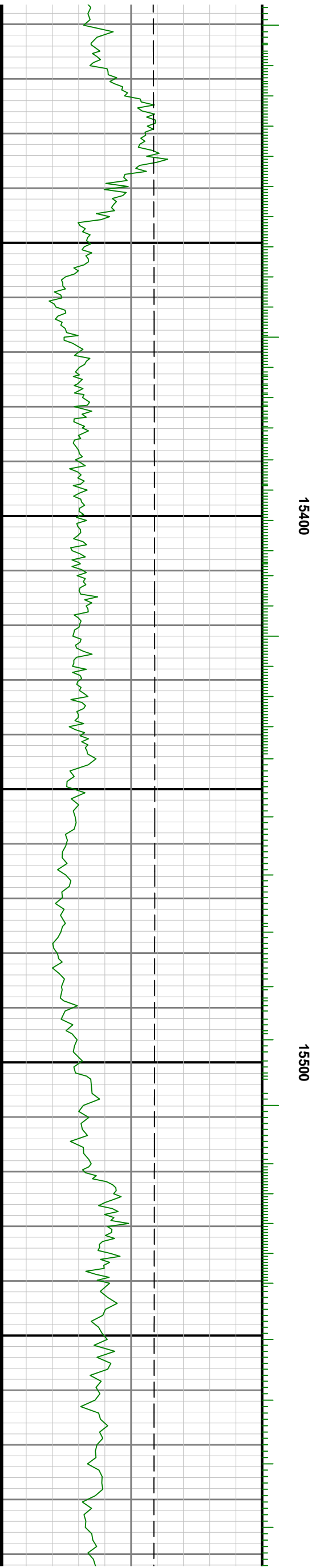
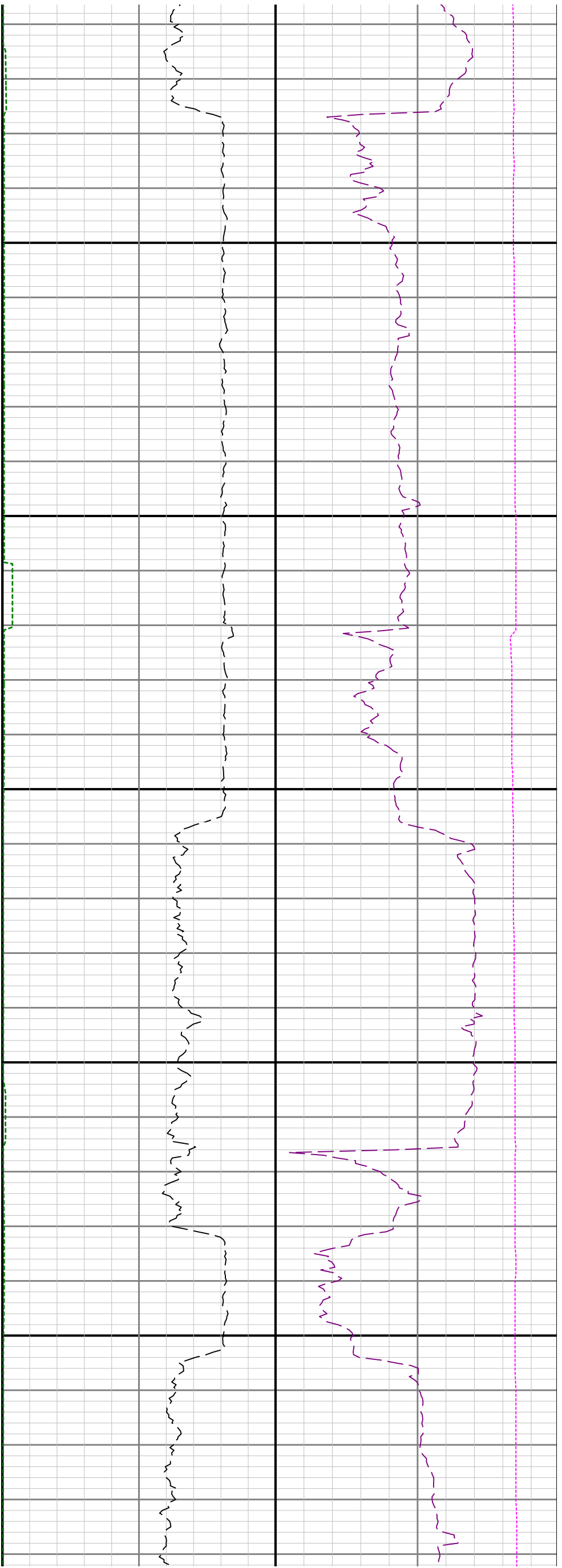
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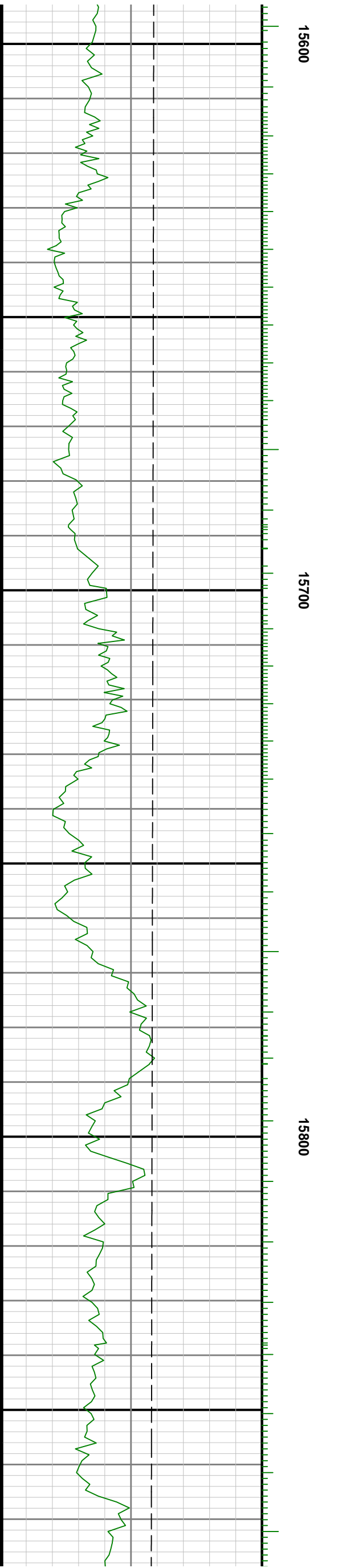
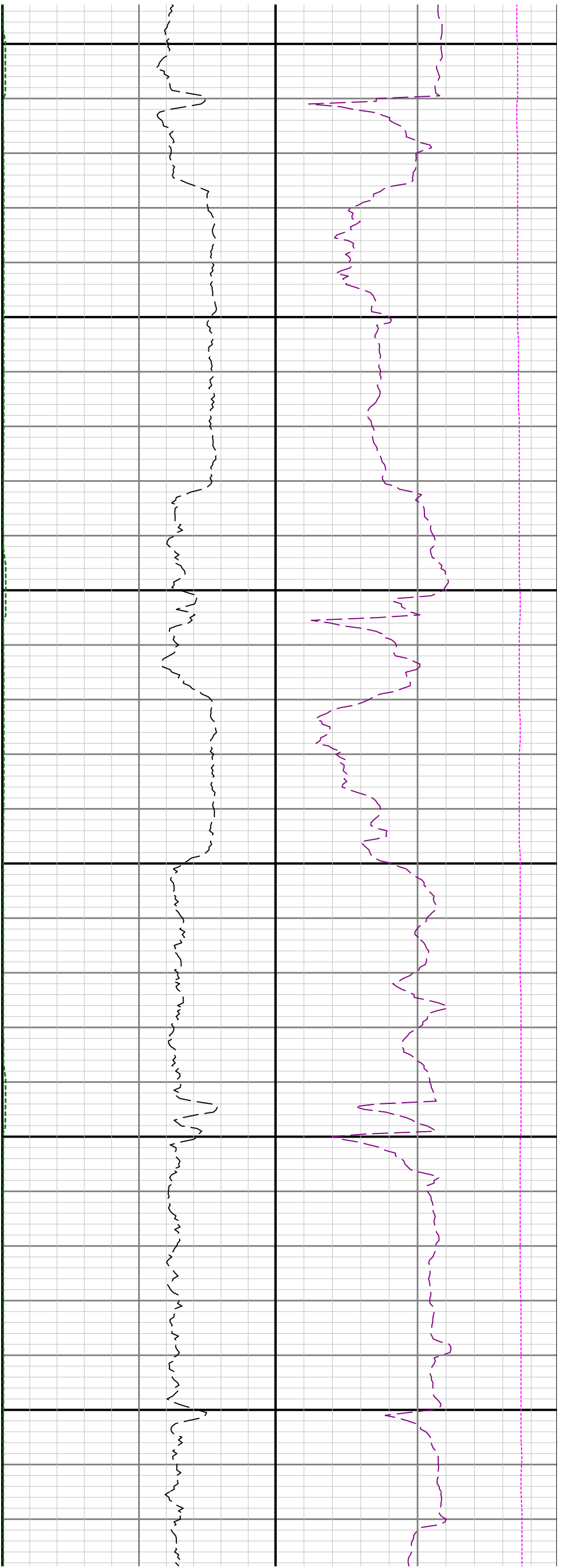


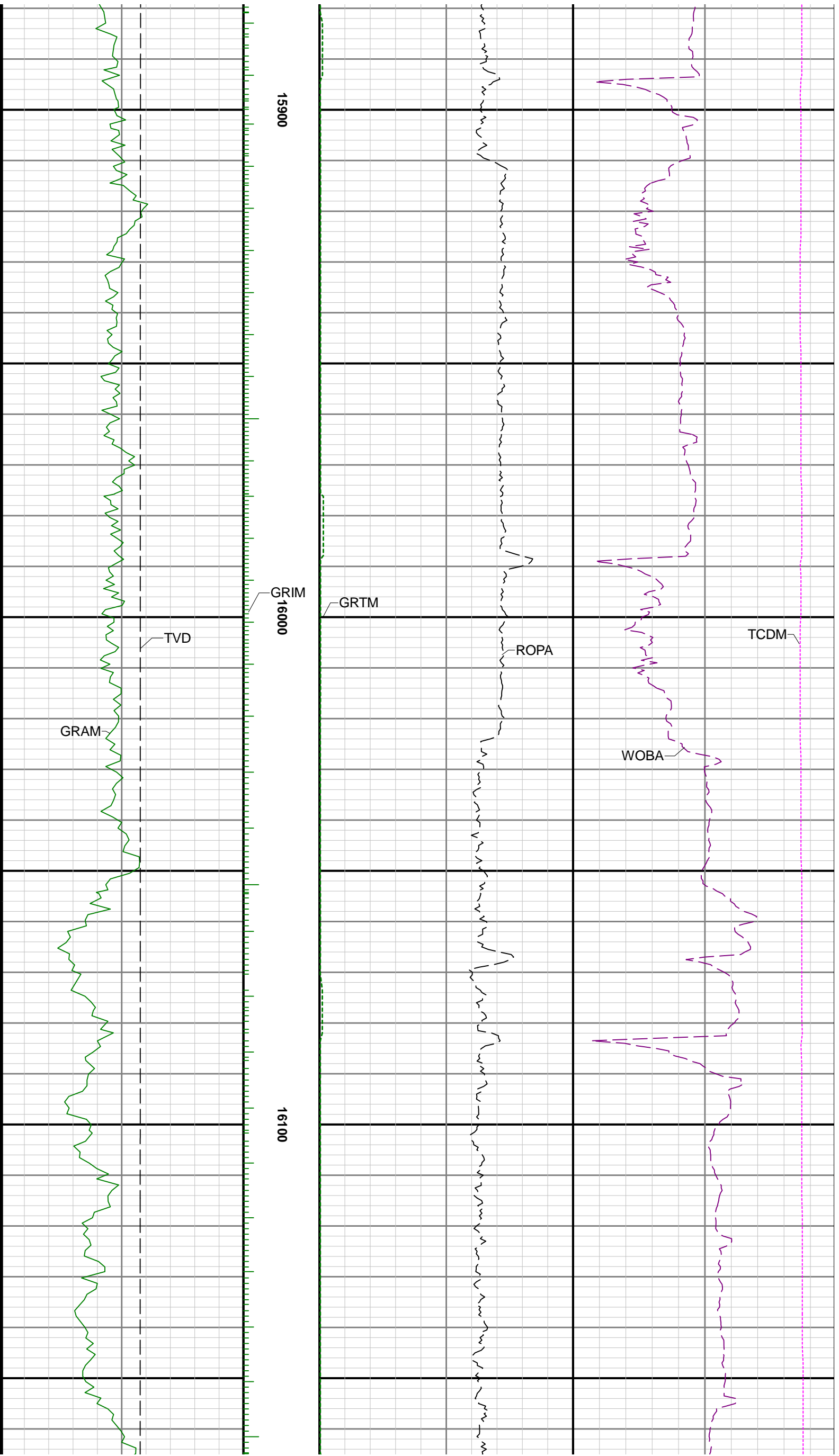


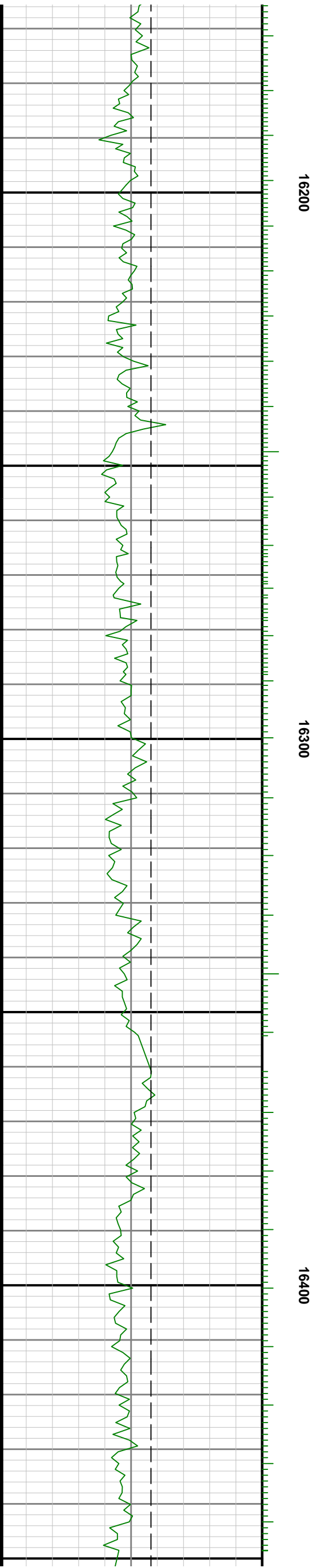
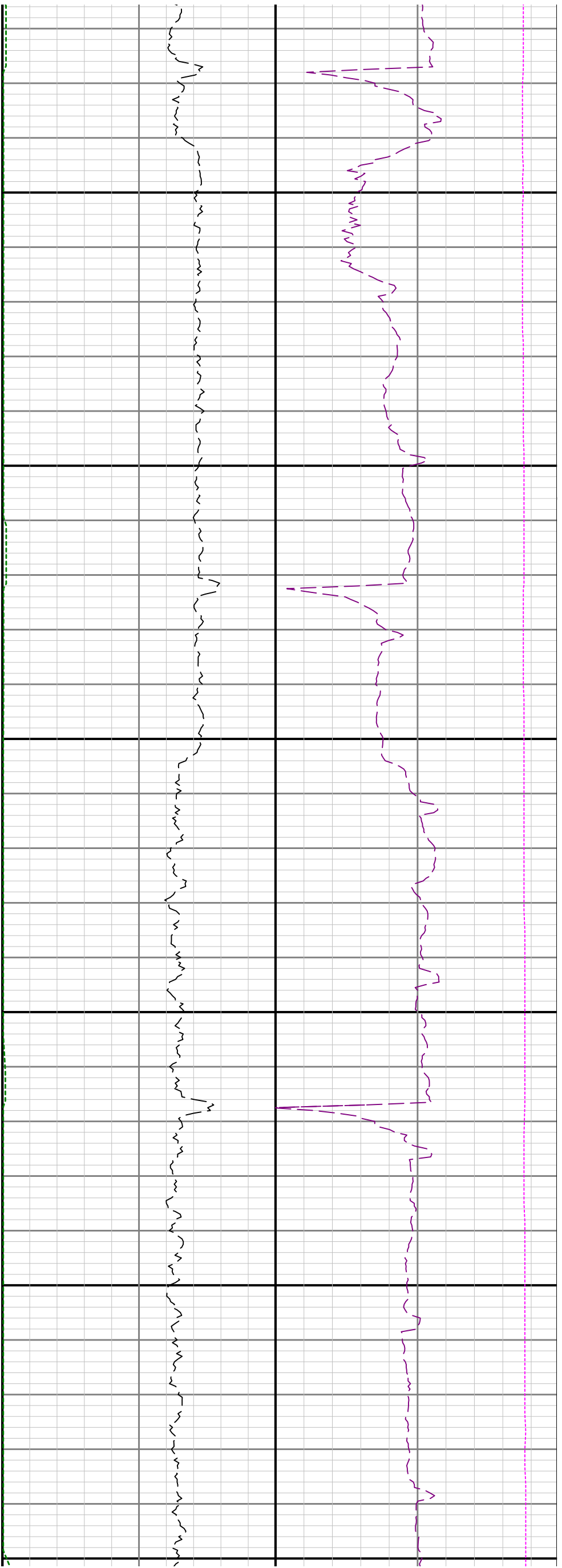


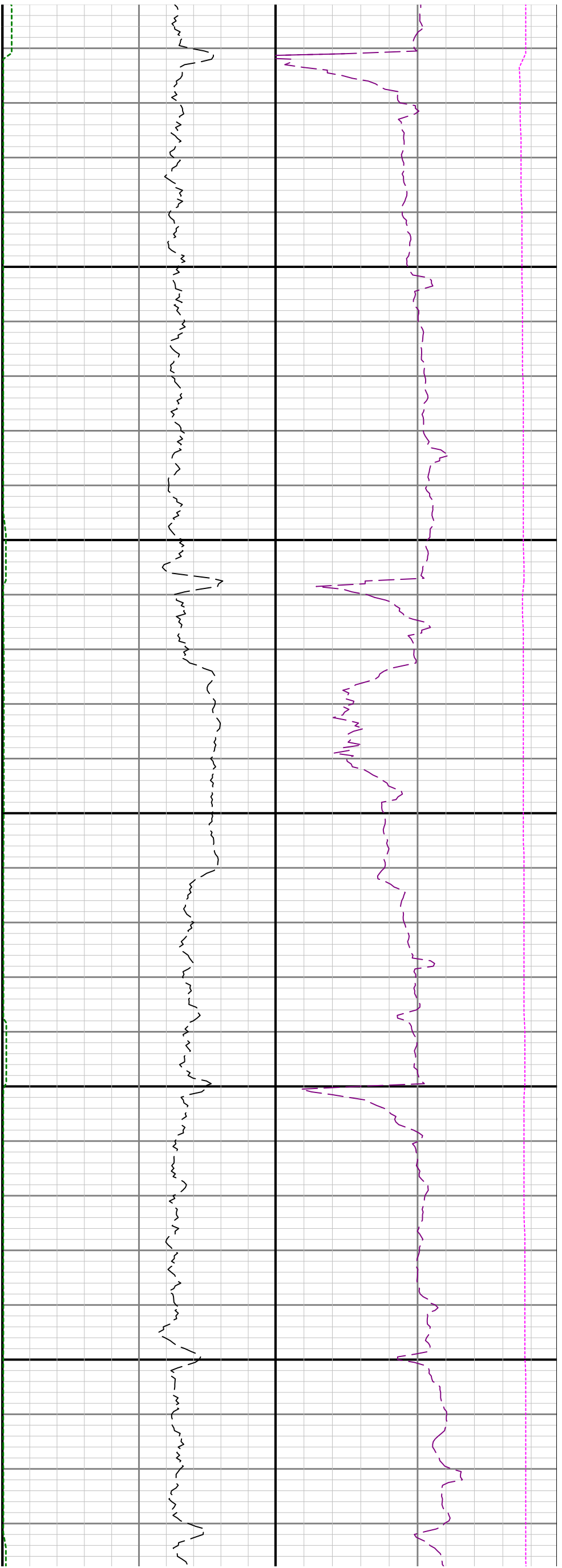












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