				<div>MEMORY LOG</div>			
<div>Scale: 1:240 MD</div>				<div>Company: Noble Energy</div>			
<div>Depth Reference:</div>				<div>Well: HARPER LD21-668</div>			
<div>Driller's Depth</div>				<div>Field: Weld County</div>			
<div>Status: Final Print</div>				<div>County: Weld State: Colorado</div>			
<div>API No: 05-123-43291</div>				<div>Surface Location: Latitude: Longitude: Directional VSS</div>			
<div>Job ID: 8096757</div>				<div>SEC: 22 TWN: 9N RGE: 58W</div>			
<div>Permanent Datum (P.D.): Ground Level</div>				<div>Elevation: 4806.00 ft</div>			
<div>Log Measured From: Rig Floor</div>				<div>Above P.D. 30.00 ft</div>			
<div>Dates</div>				<div>Magnetic Field Reference</div>			
<div>Date From: 2016-09-07</div>				<div>Azi Reference North: Grid Dip Angle: (deg)</div>			
<div>Date To: 2016-09-09</div>				<div>Total Magnetic Field Strength: (nT)</div>			
<div>Spud Date: 2016-09-07</div>				<div>Mag to Reference North Correction: (deg)</div>			
<div>Borehole Record</div>				<div>Casing Record</div>			
<div>Hole Size (in)</div>				<div>Size (in) Weight (lb/ft)</div>			
<div>8.500</div>				<div>9.625 36.00</div>			

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
- 2
- Depth measurements obtained from a depth control system not supplied or operated by Baker Hughes. Due to lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified.

Remarks

Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	1940.00	8.500	1	The interval from 1937 to 1949 ft MD (1937 to 1949 ft TVD) has no ROPA, WOBA, and TCDM data due to the Gamma Ray sensor to bit offset.
2	10785.00	8.500	1	The interval from 10786 to 10798 ft MD (5755.64 to 5755.55 ft TVD) has no gamma data due to sensor to bit offset.

Curve Mnemonics

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



Company

Well

Interval

Created

Noble Energy

HARPER LD21-668

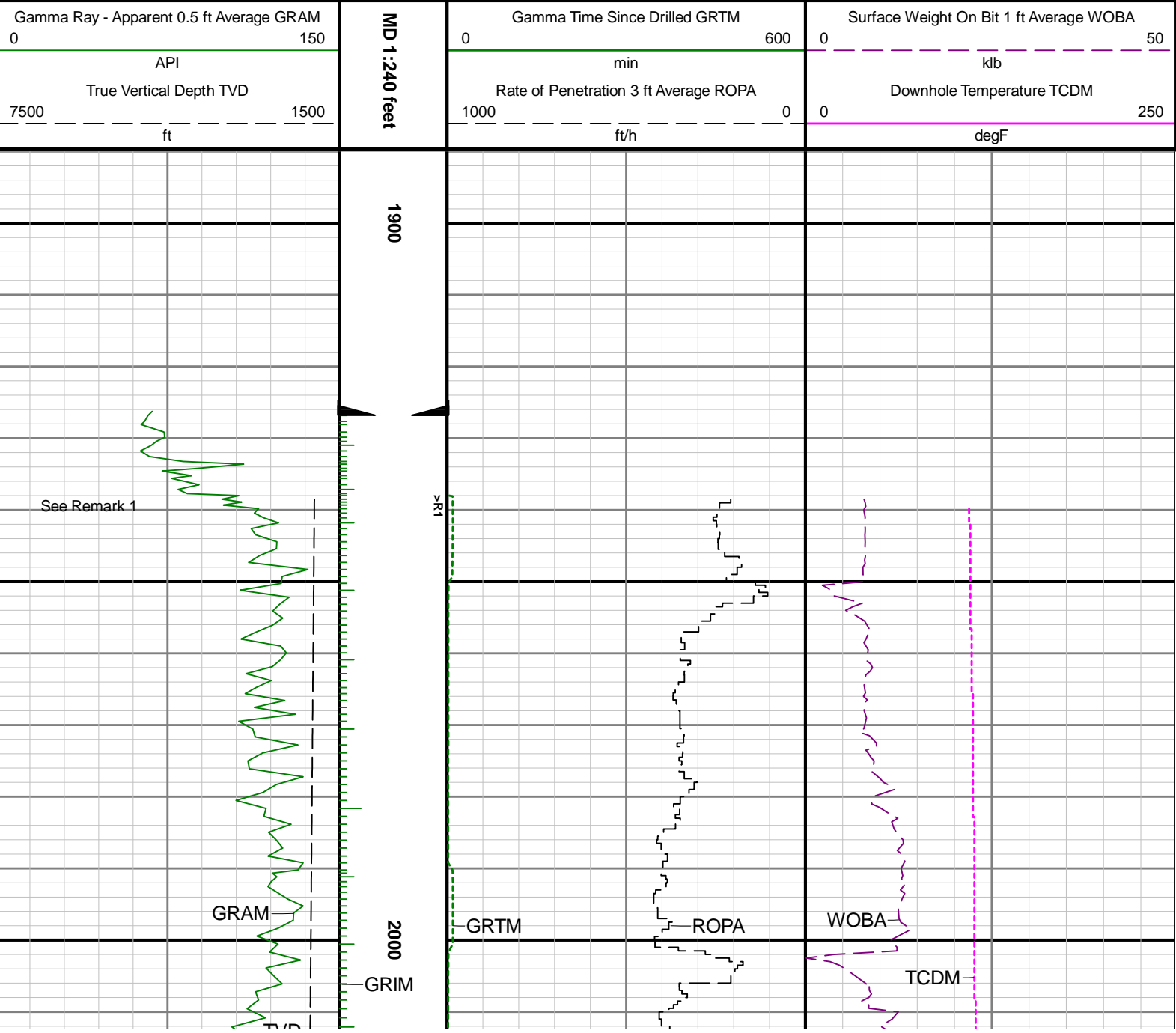
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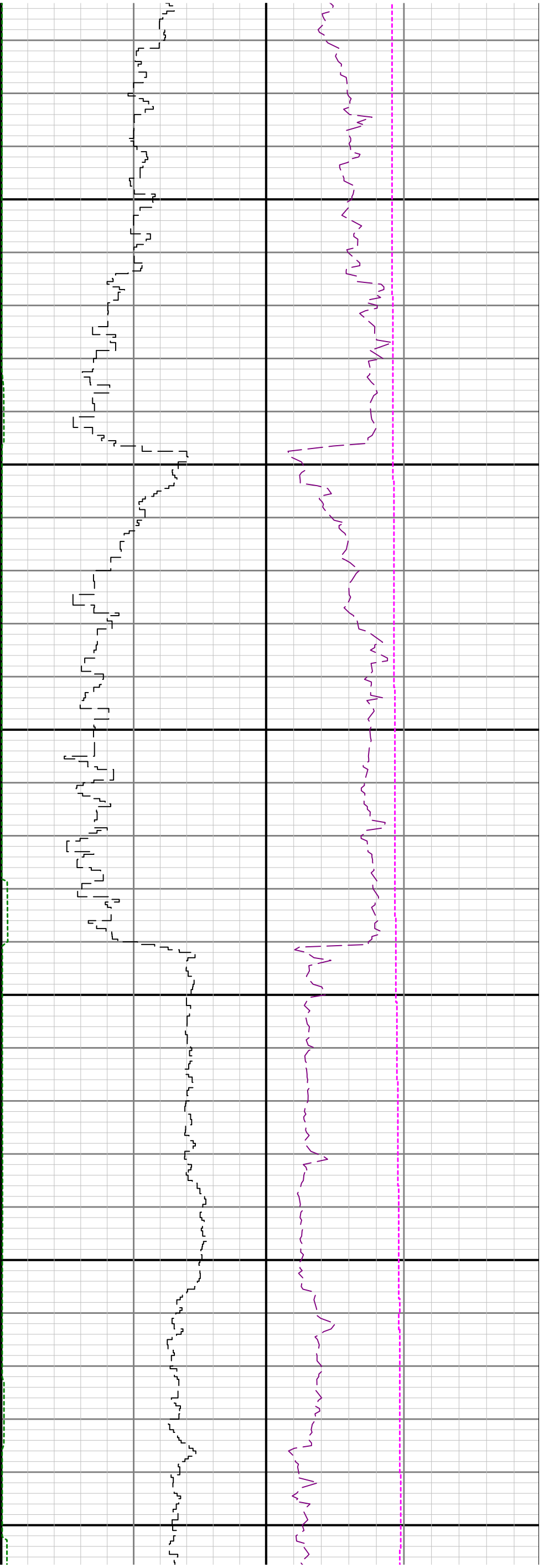
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2016-09-09 22:53

Top:1926.00

Bottom:10798.00

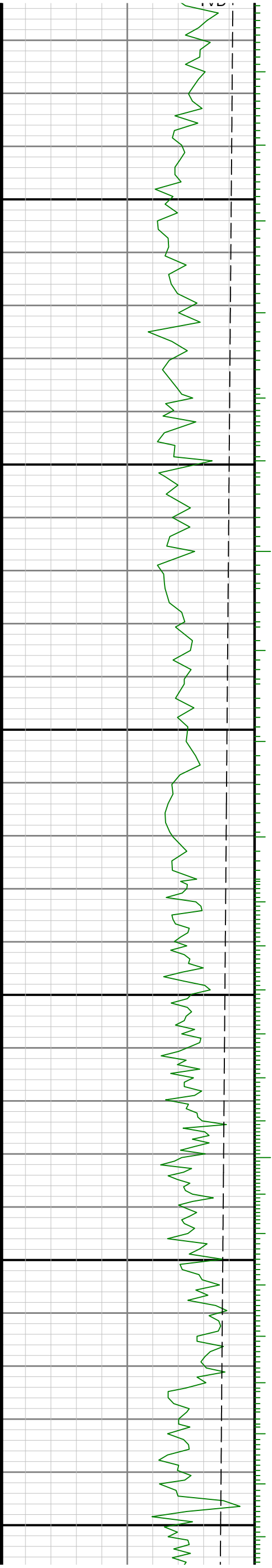


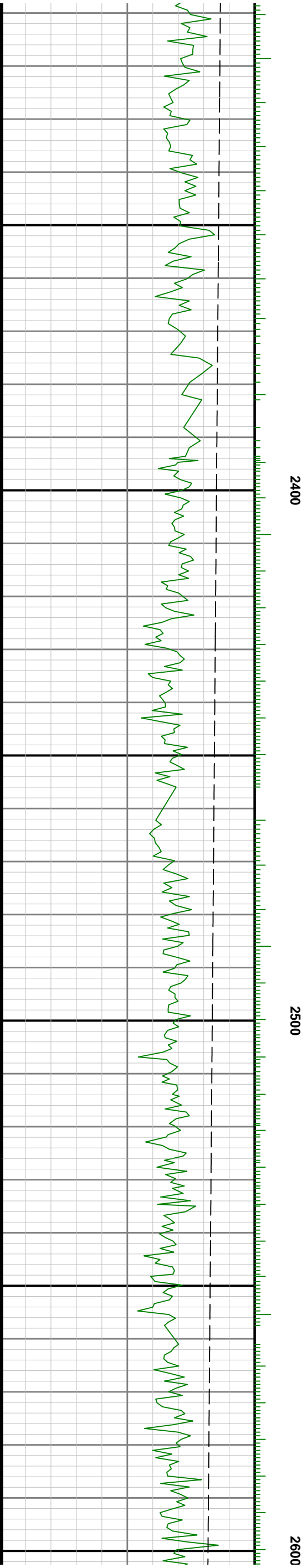
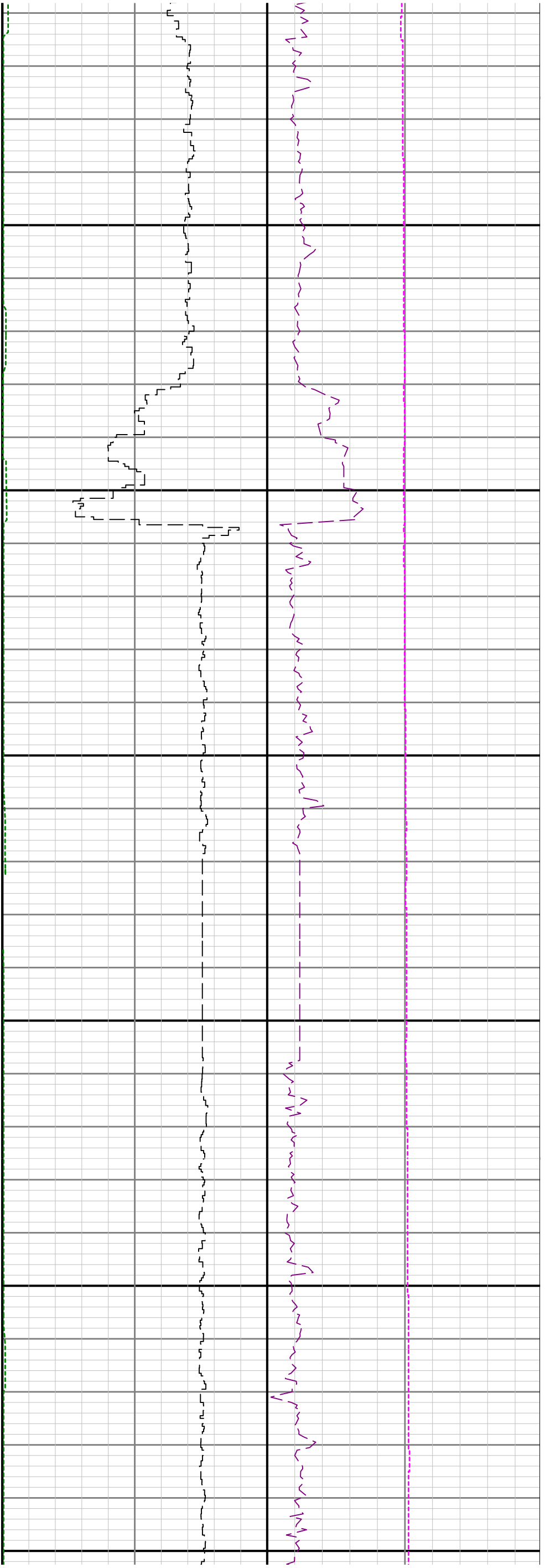


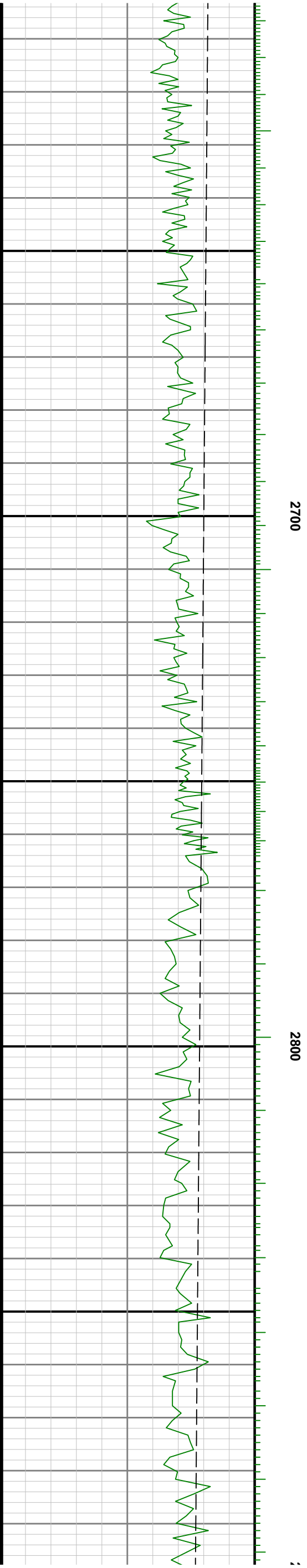
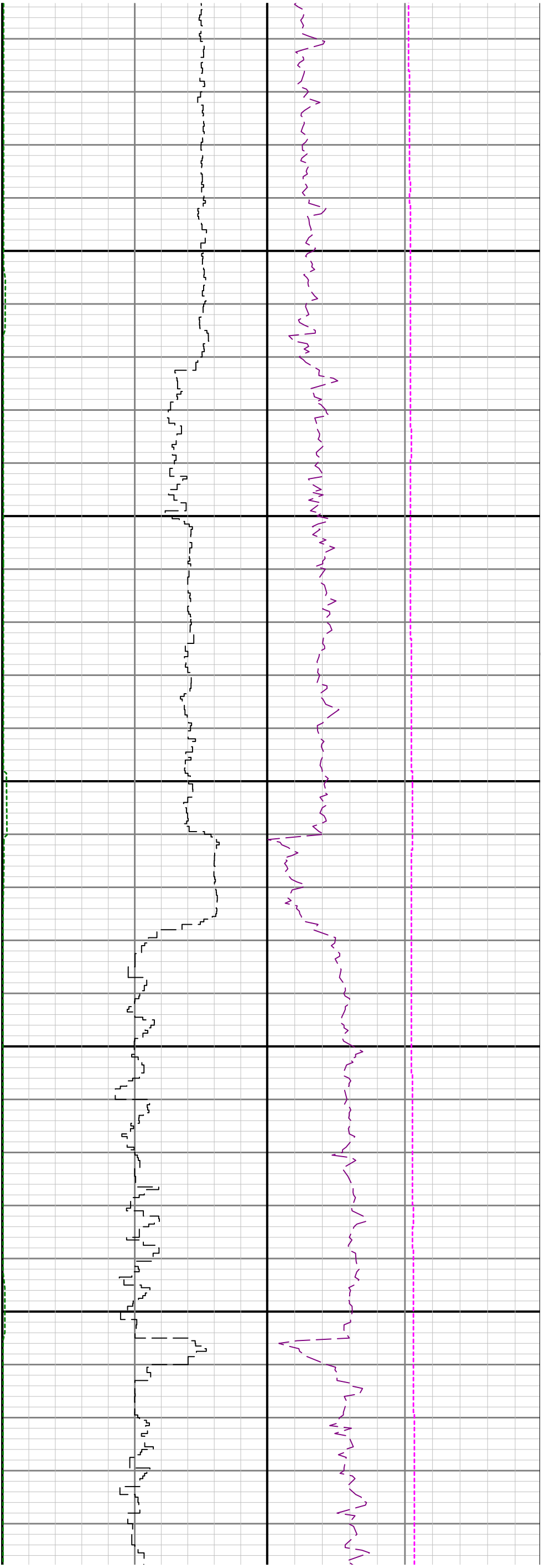
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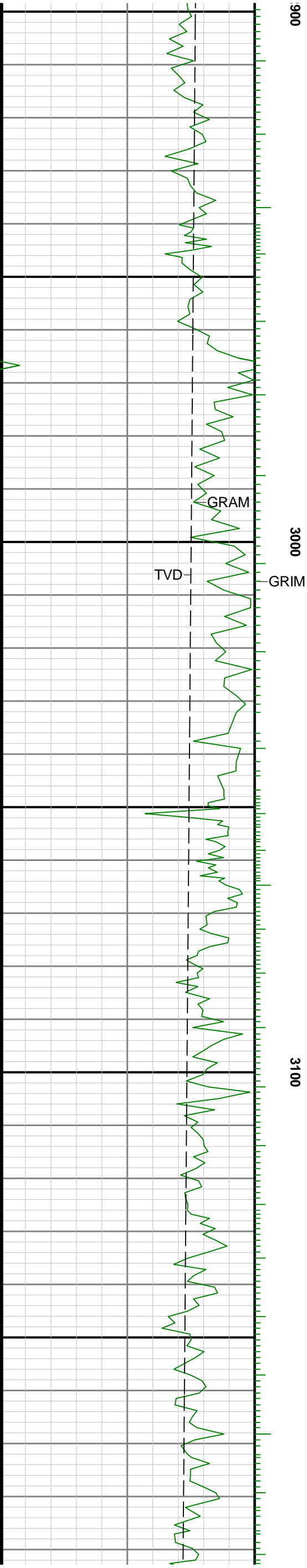
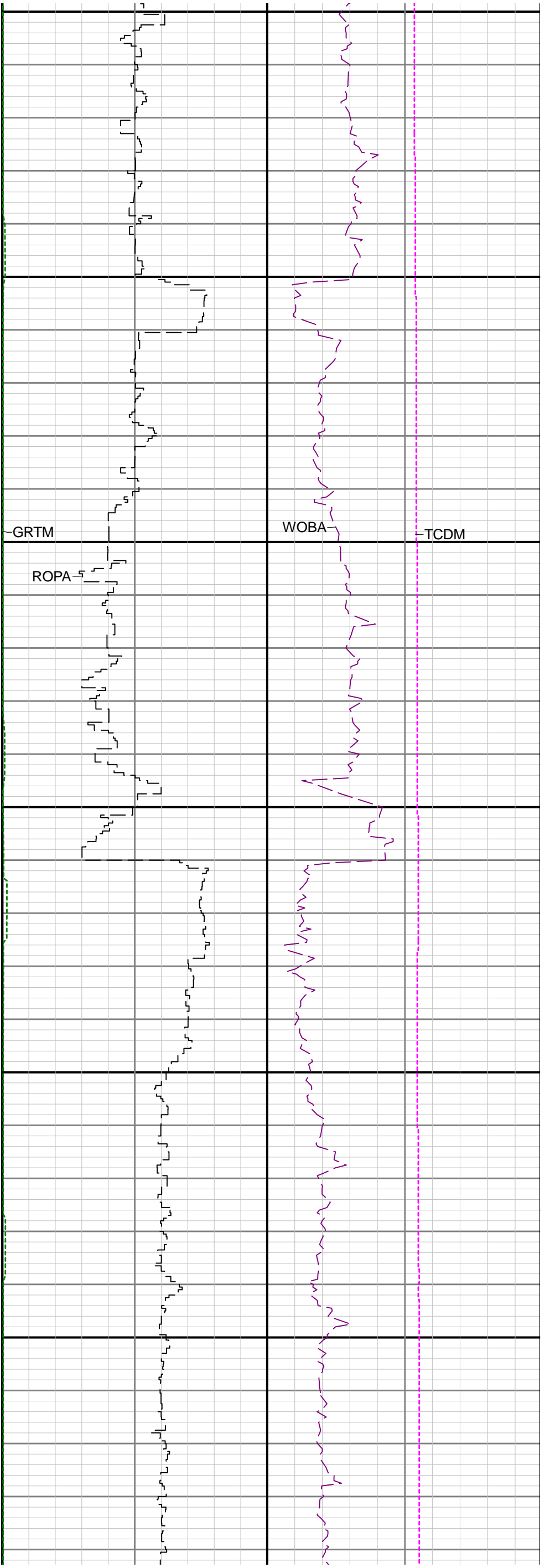
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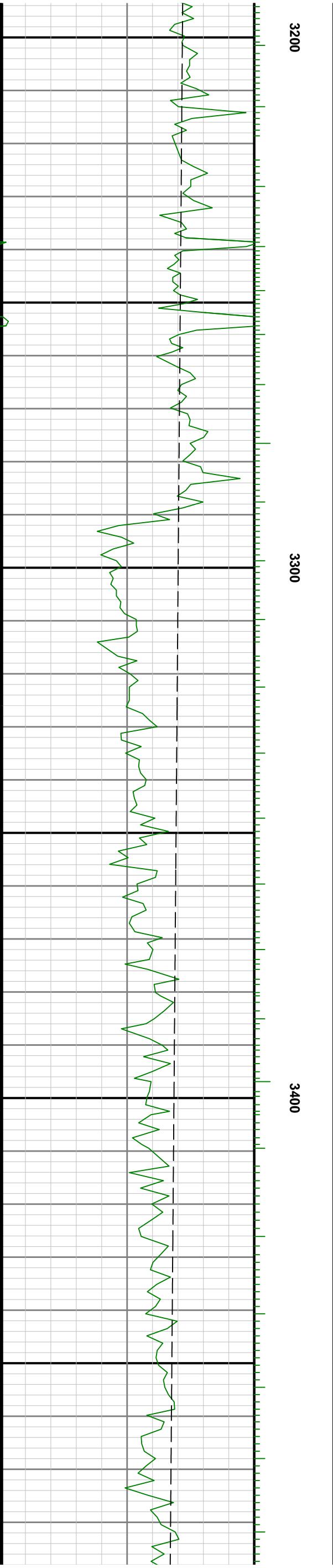
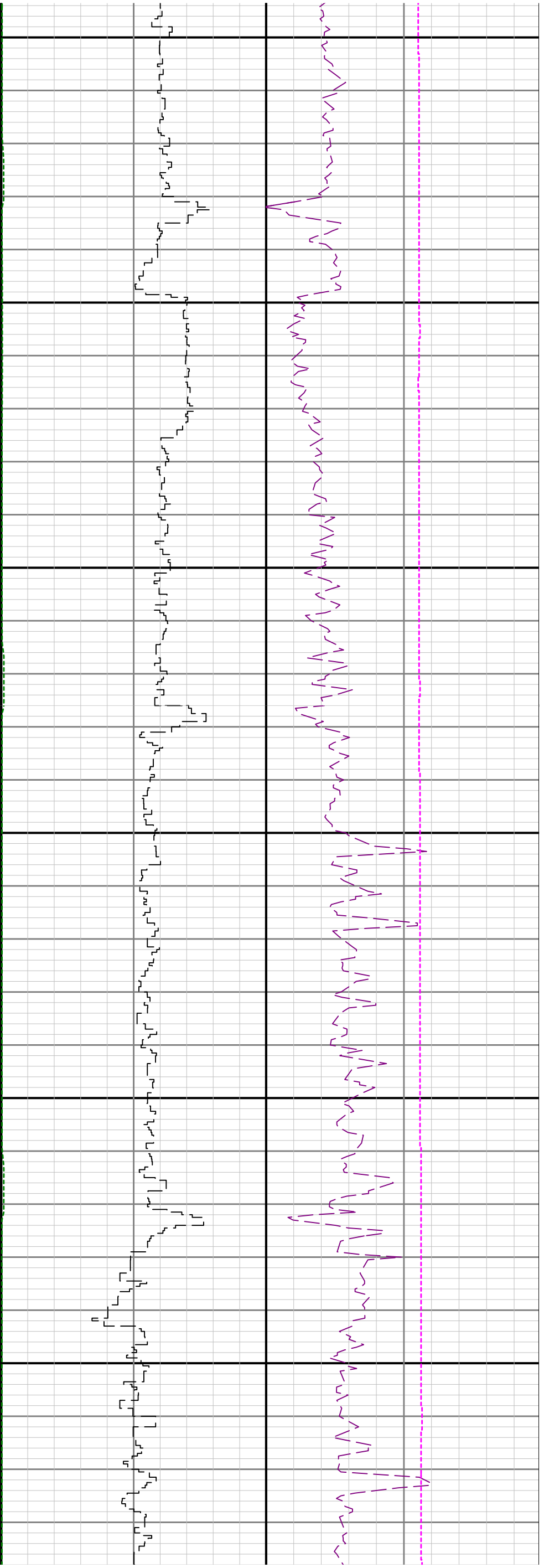
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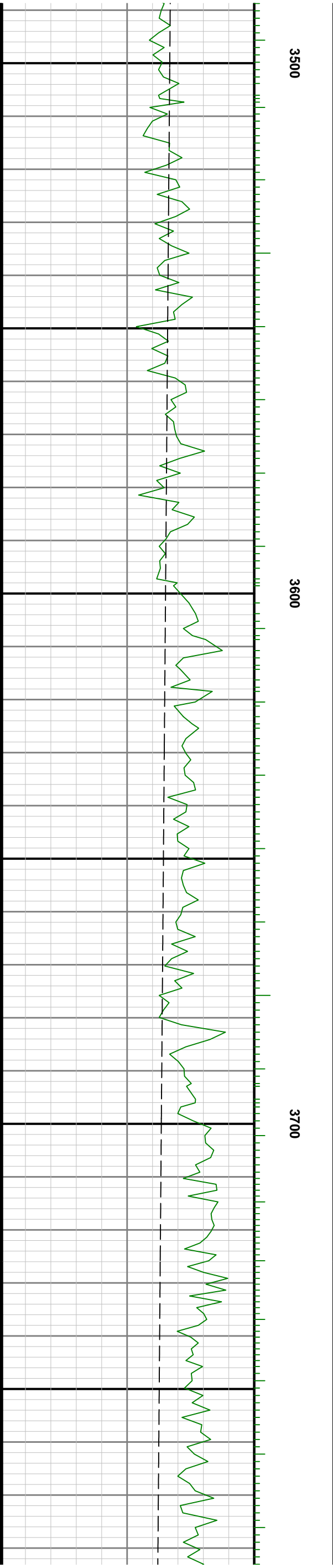
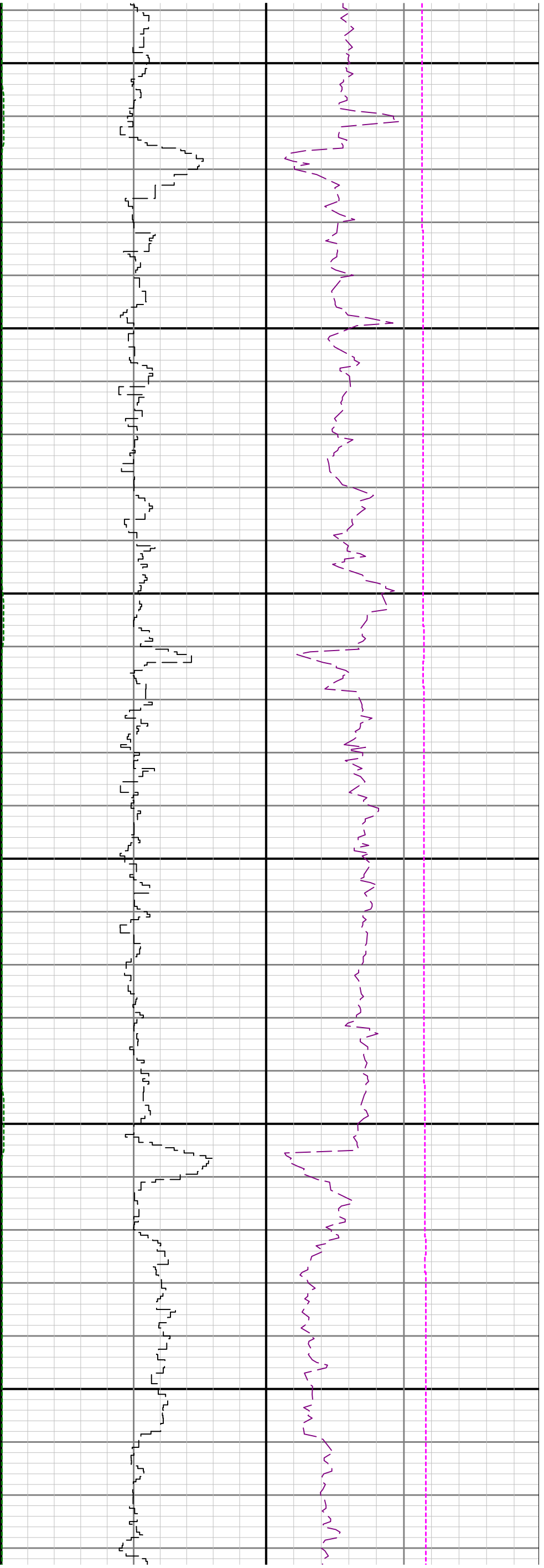


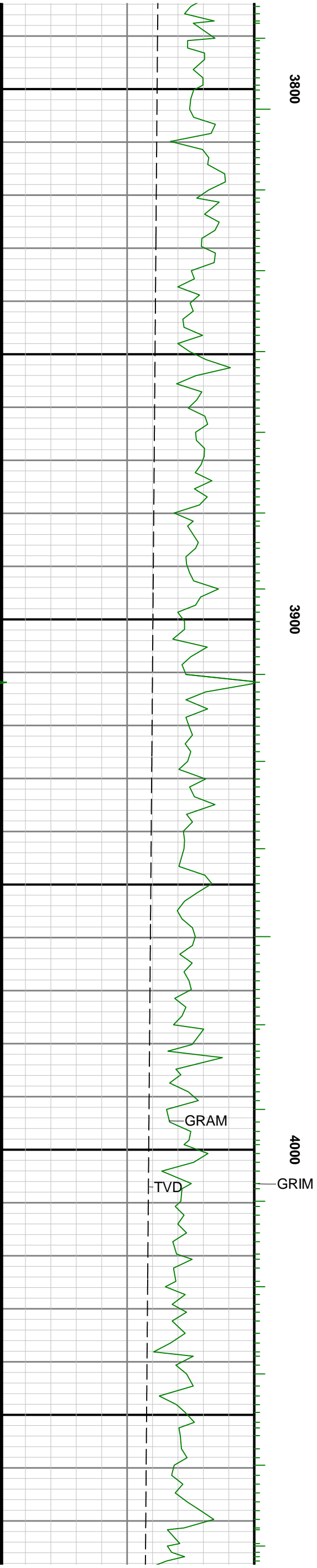
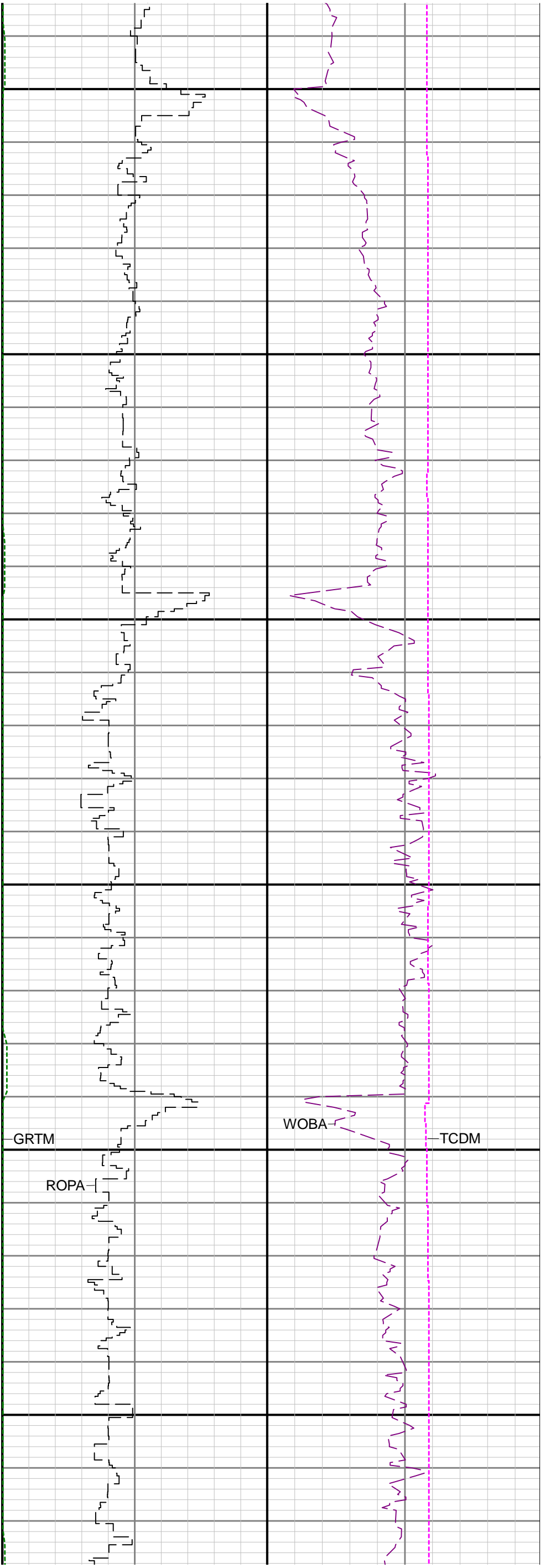


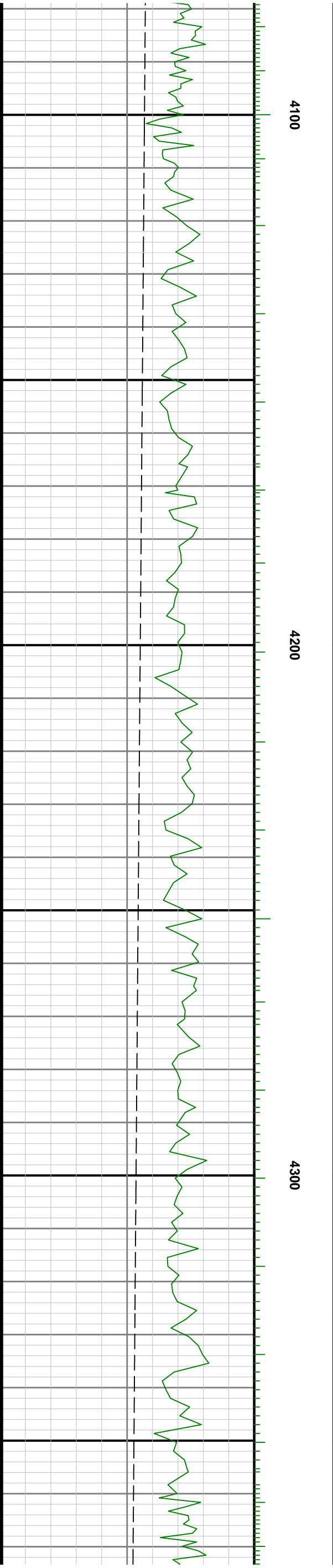
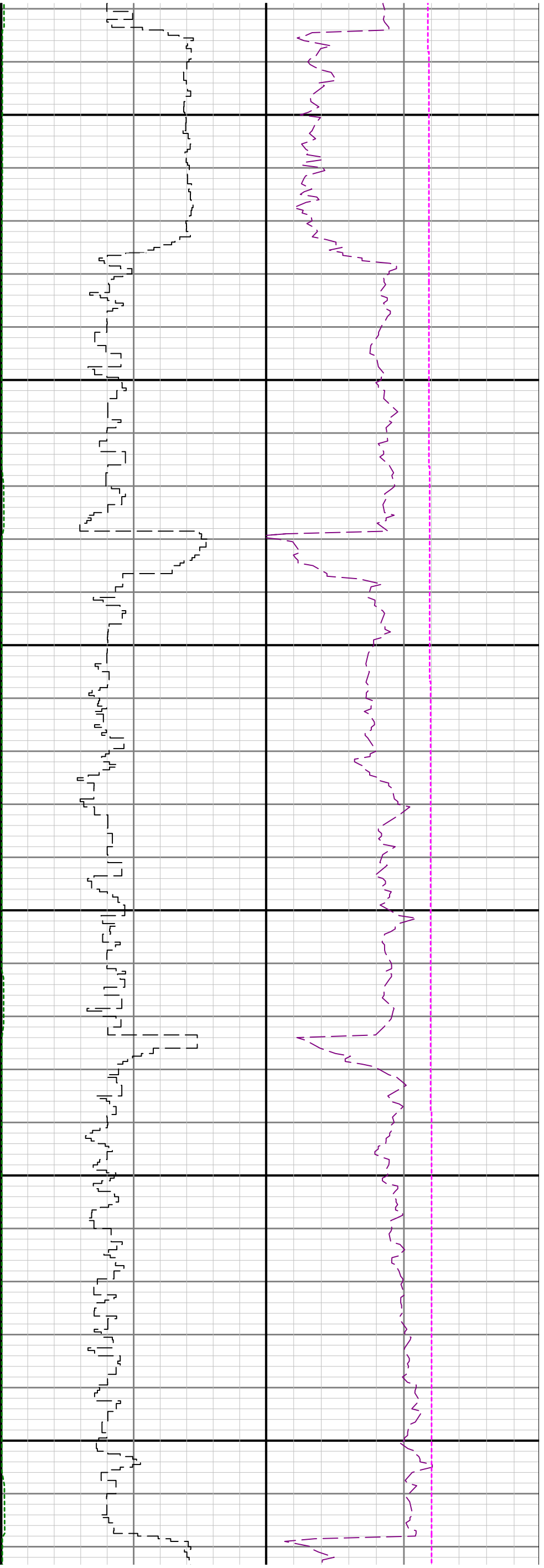


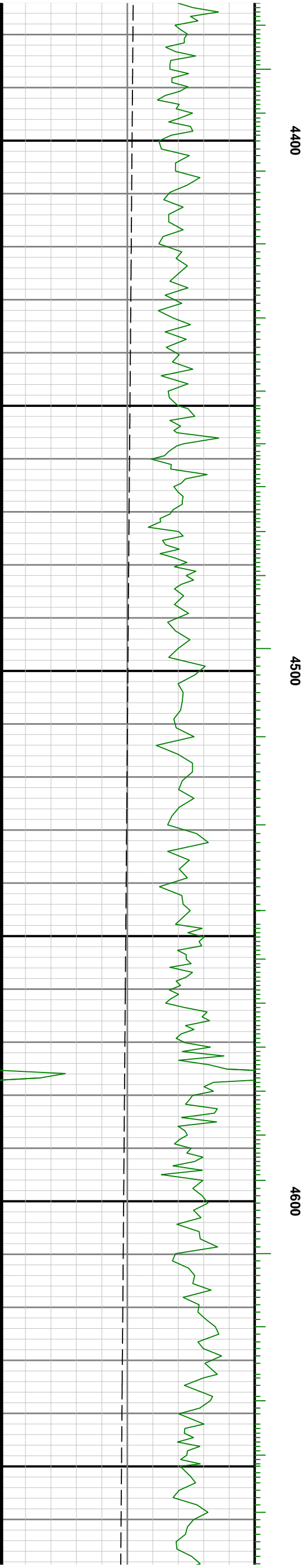
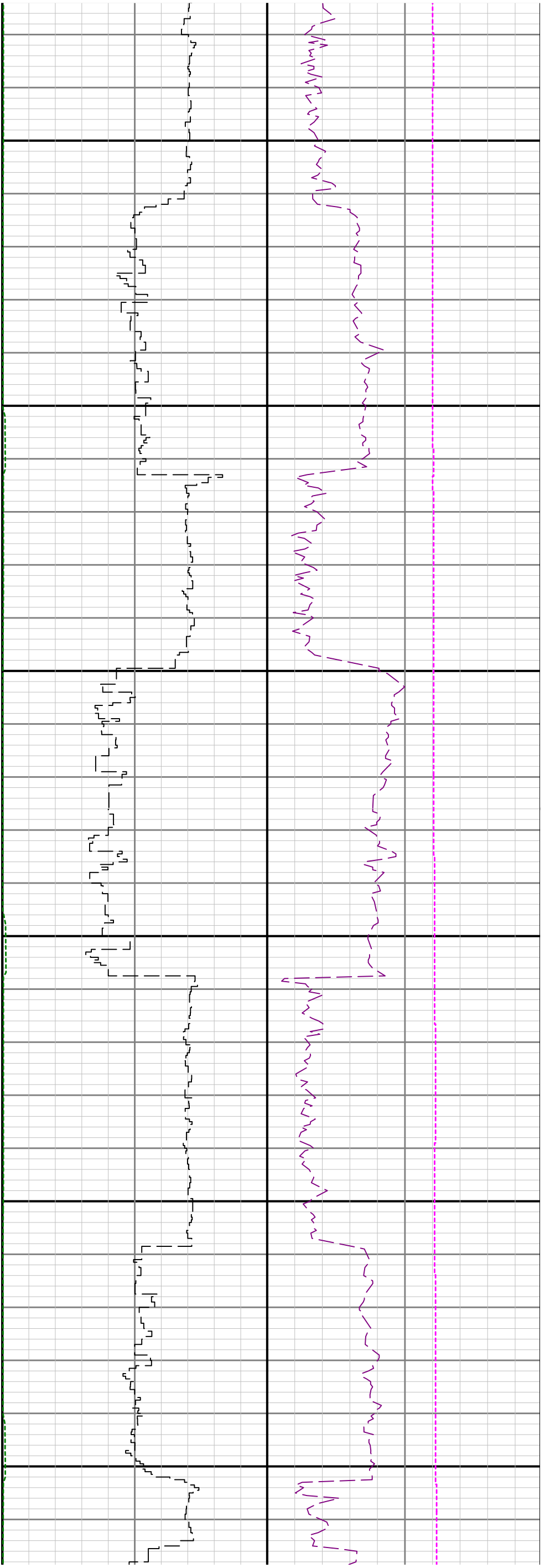


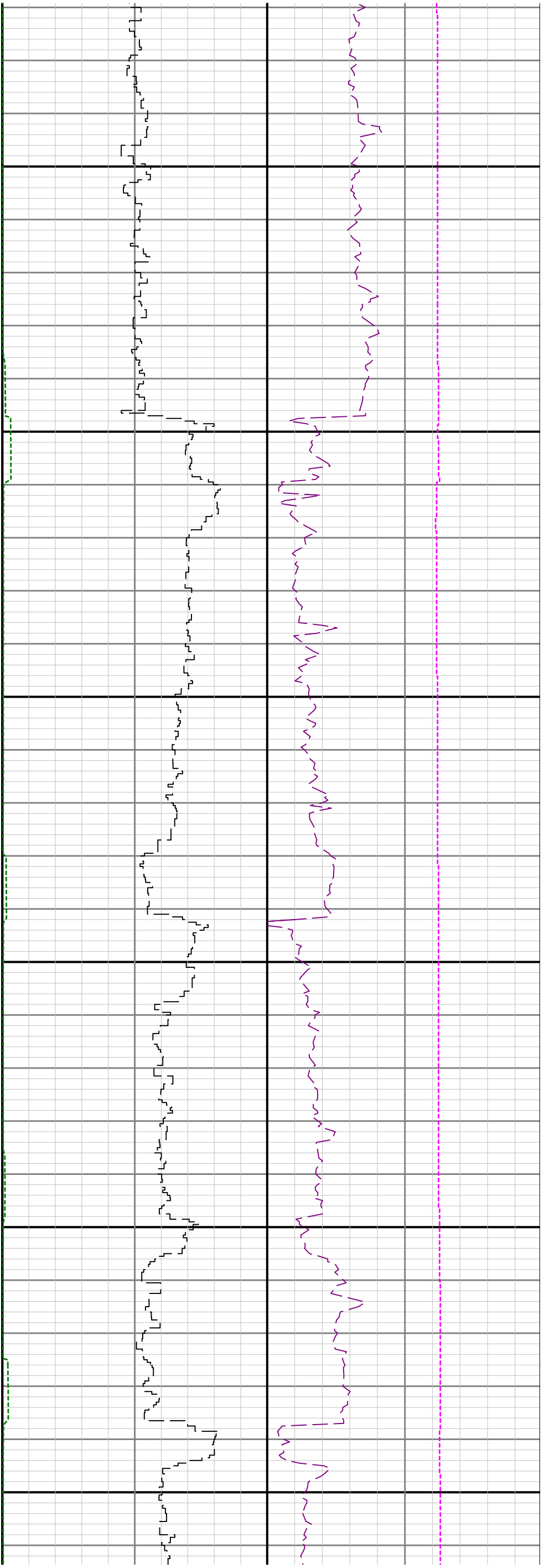








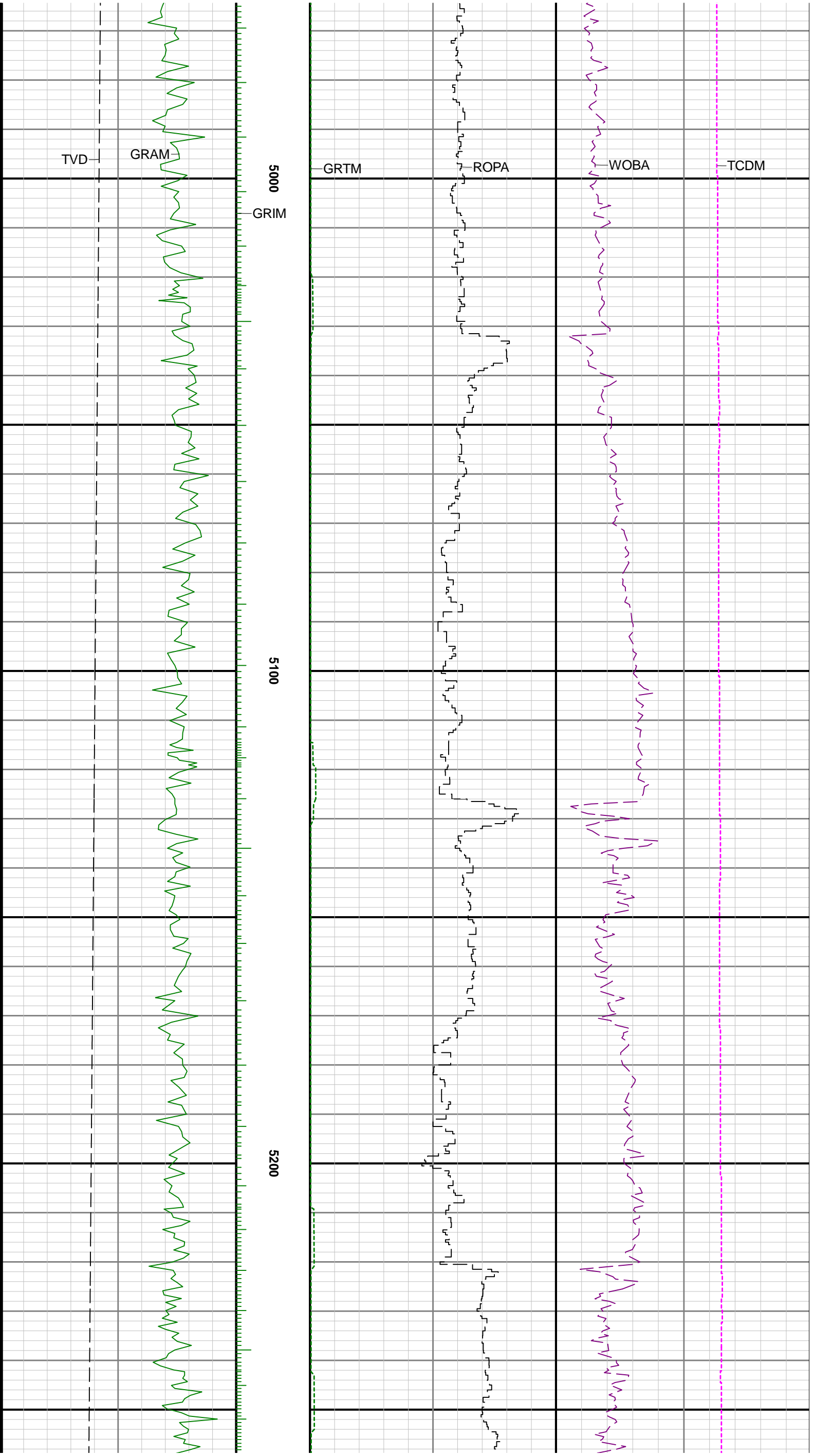


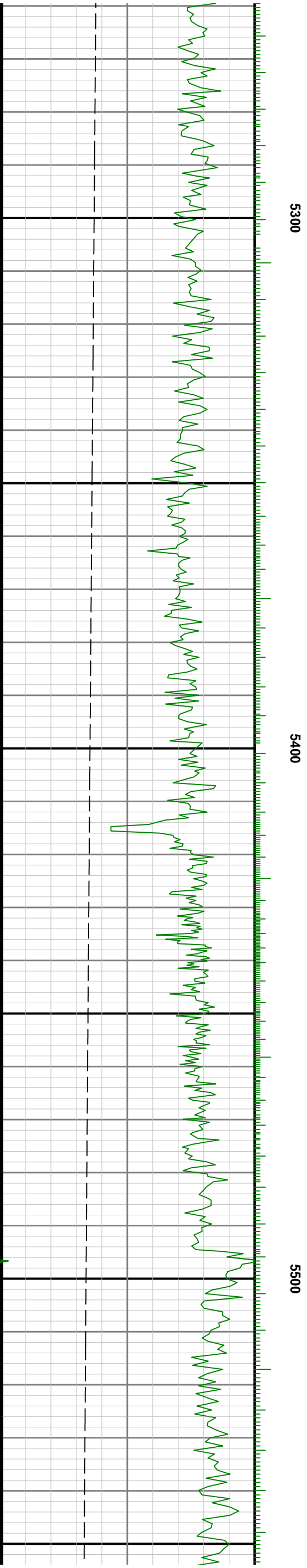
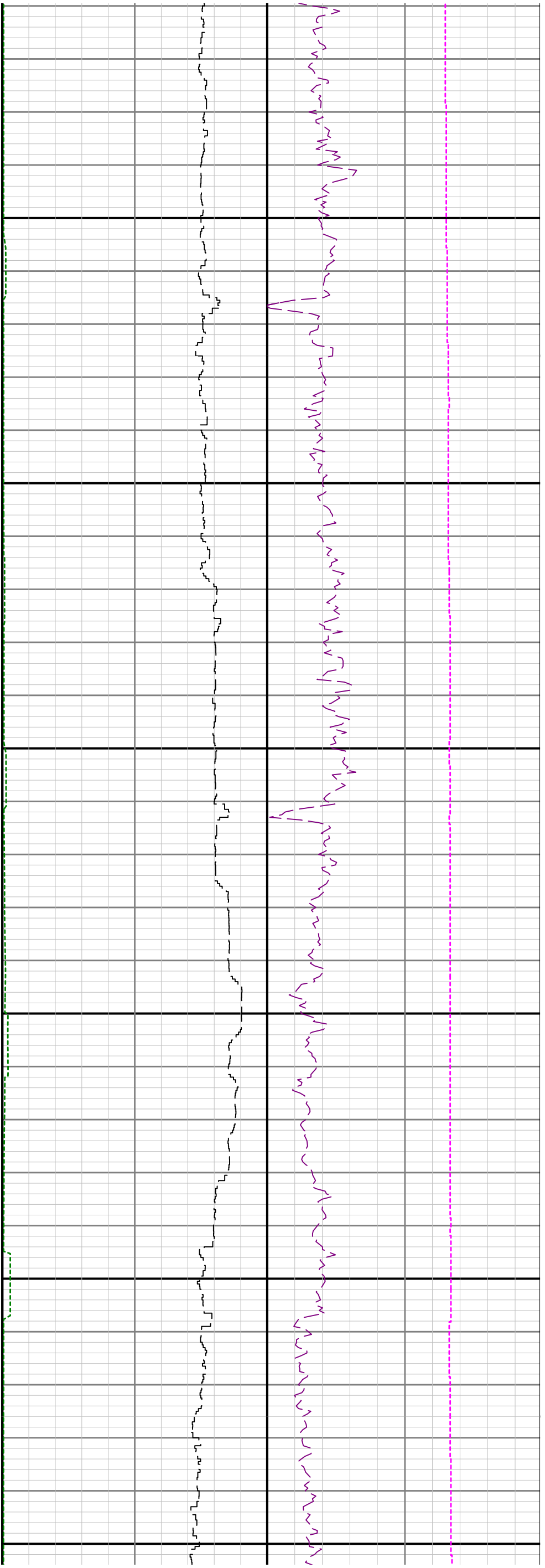


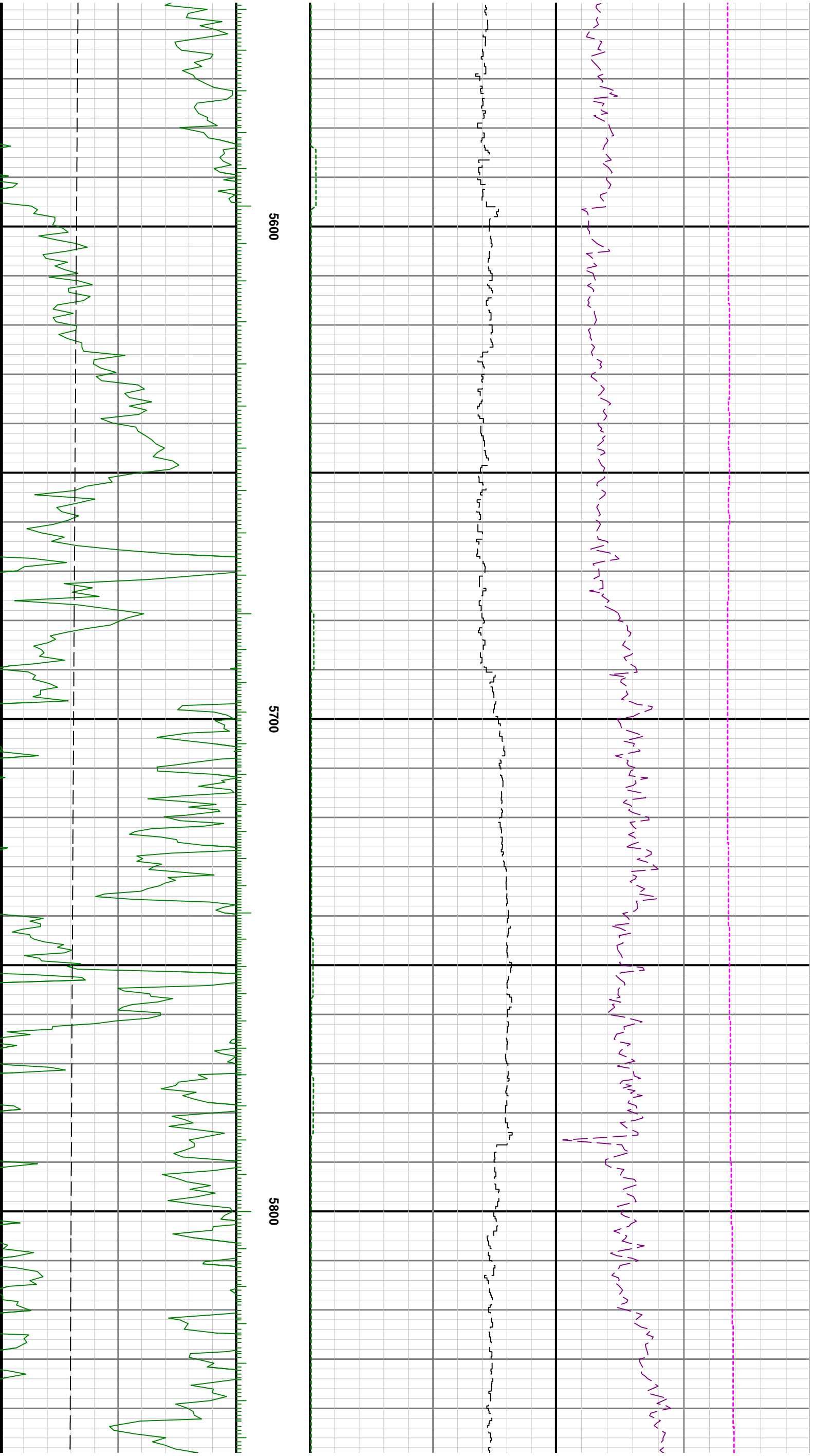
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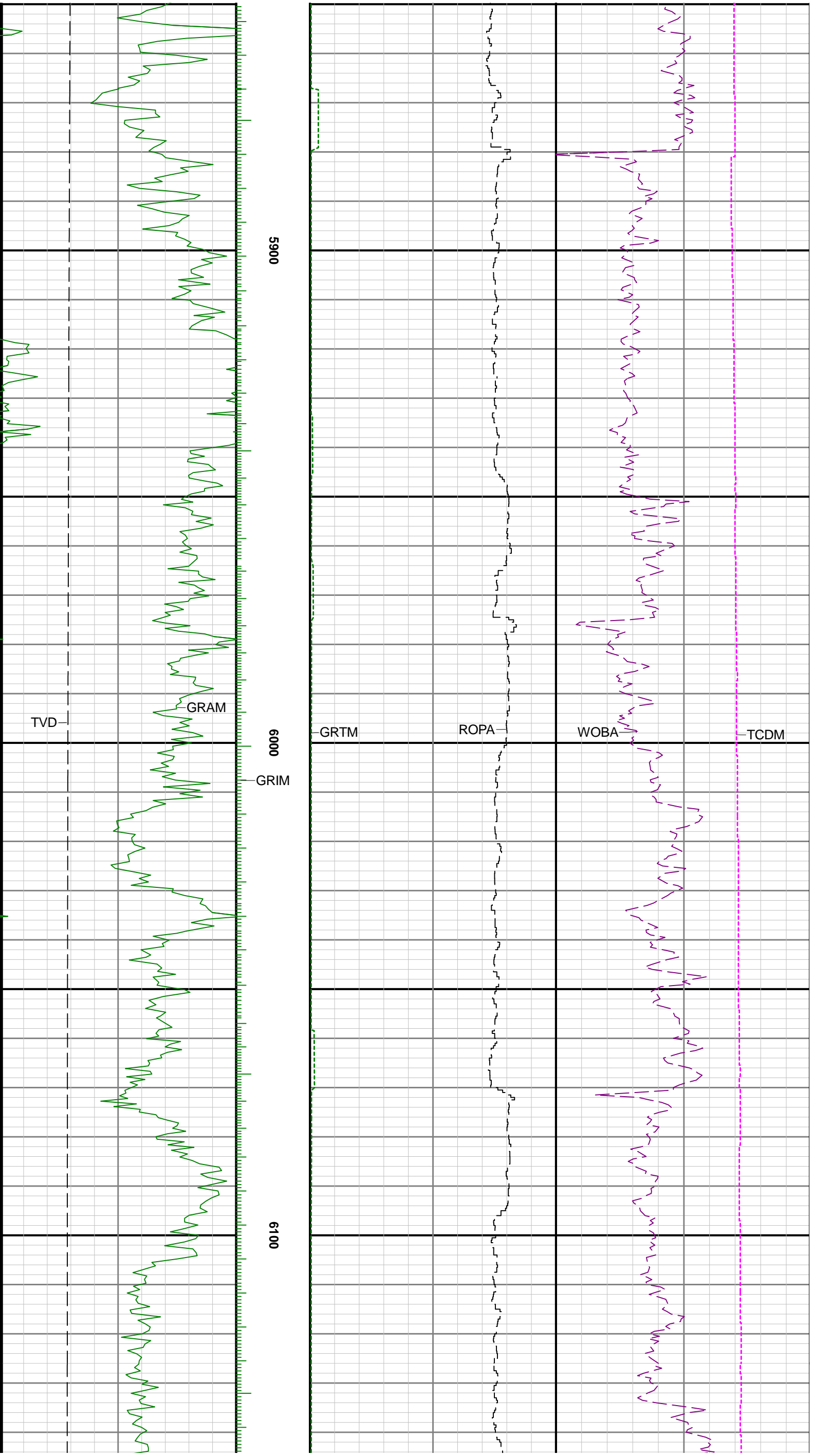
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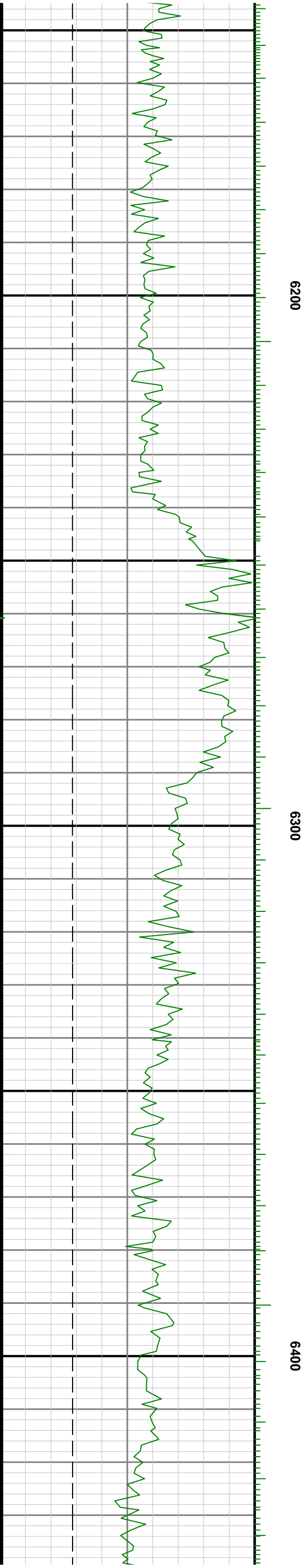
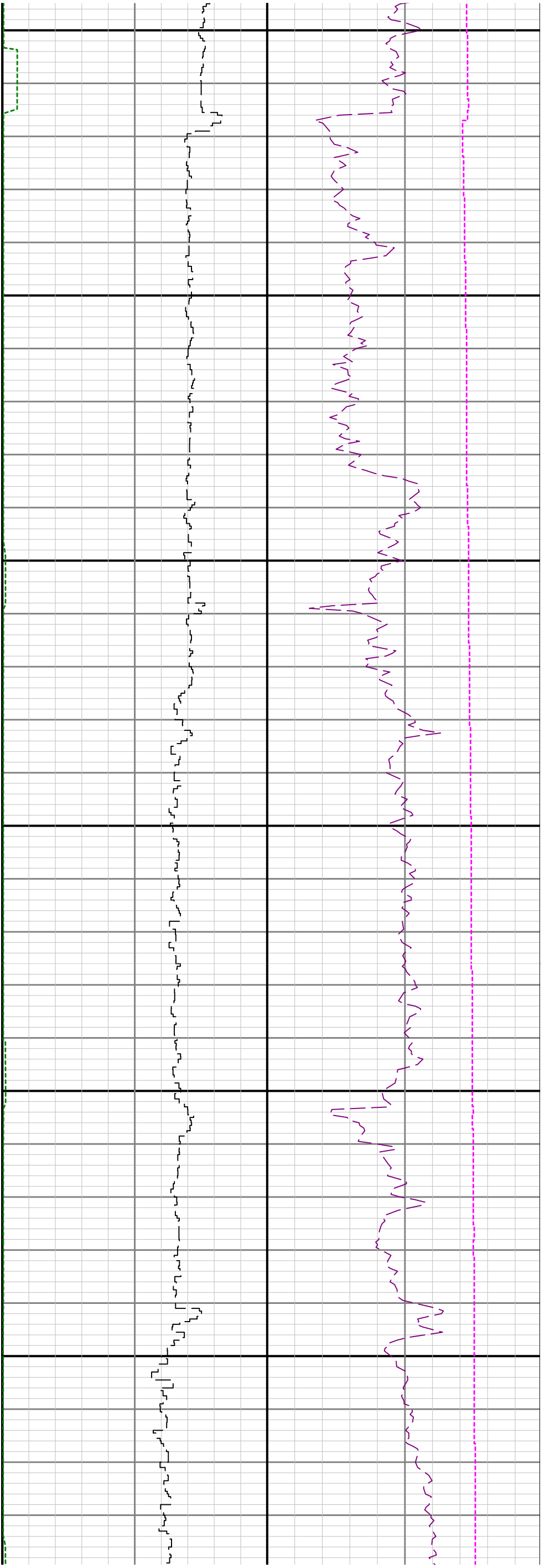
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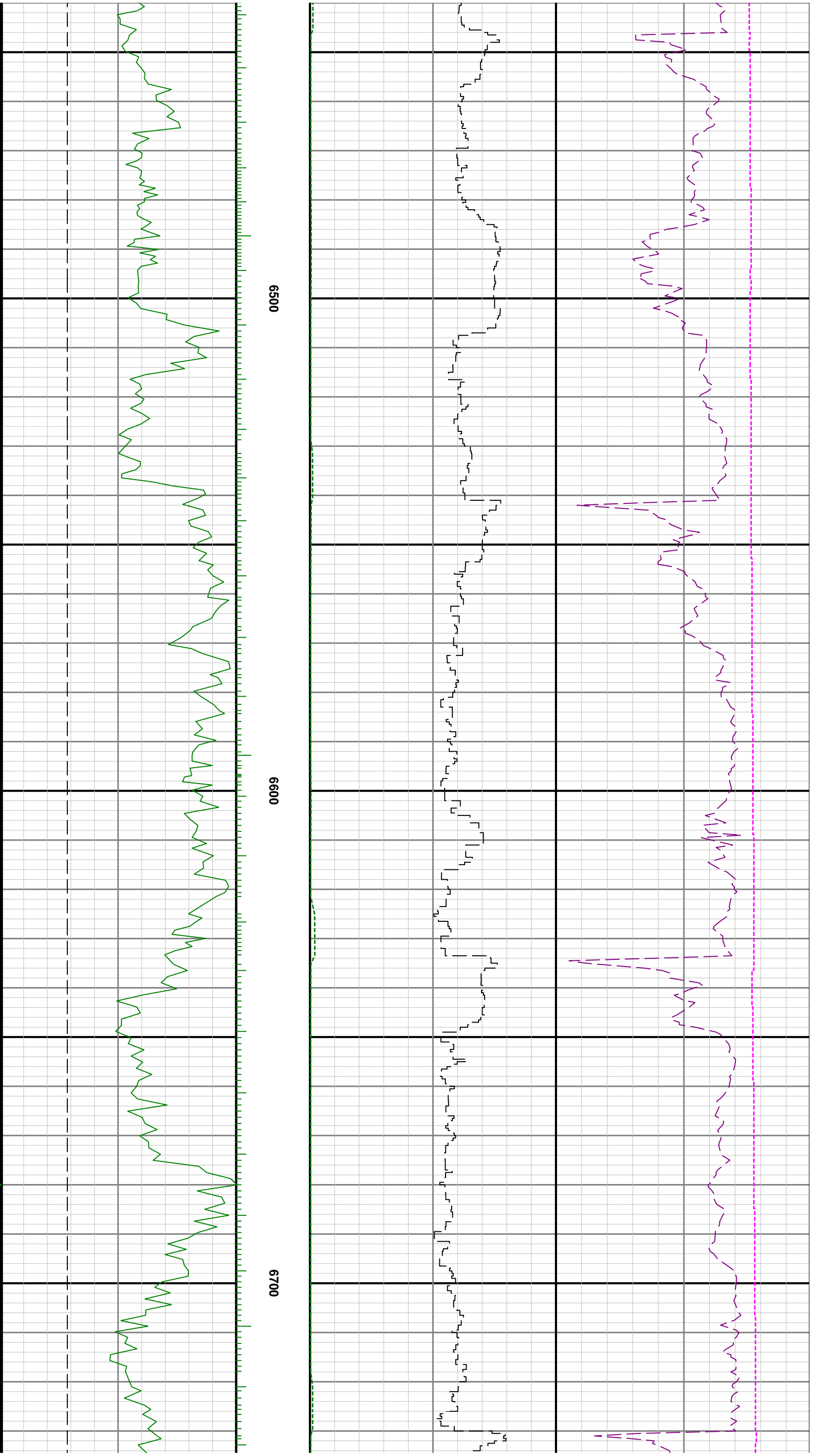


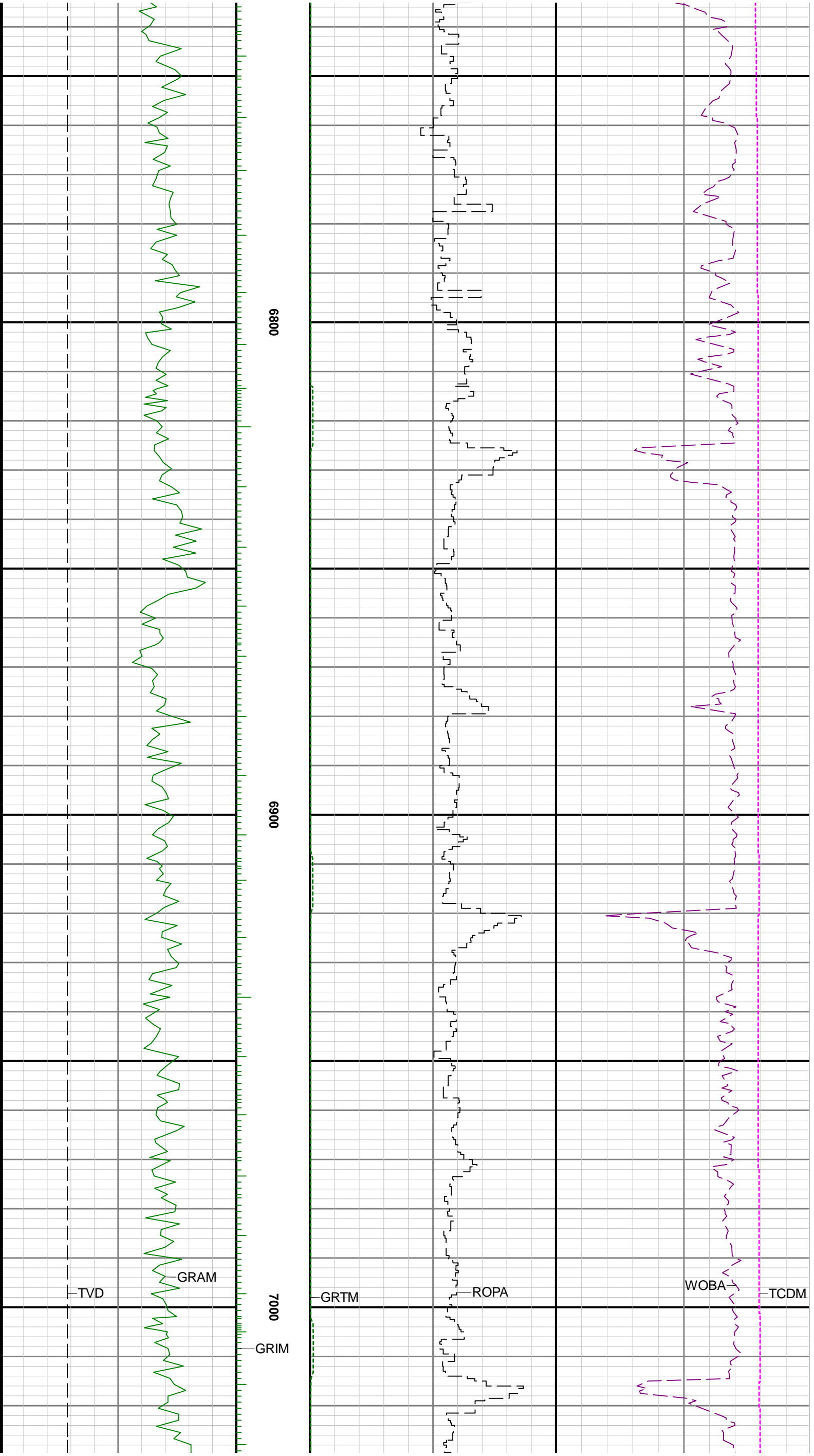


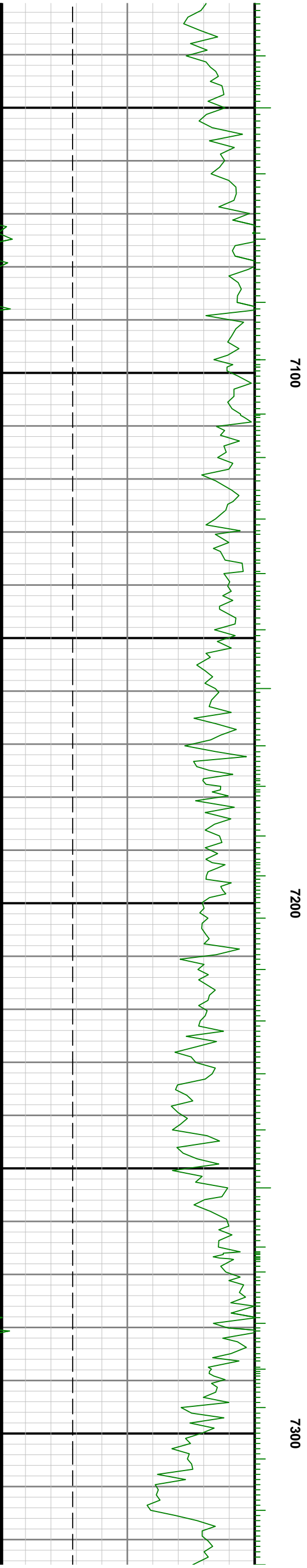
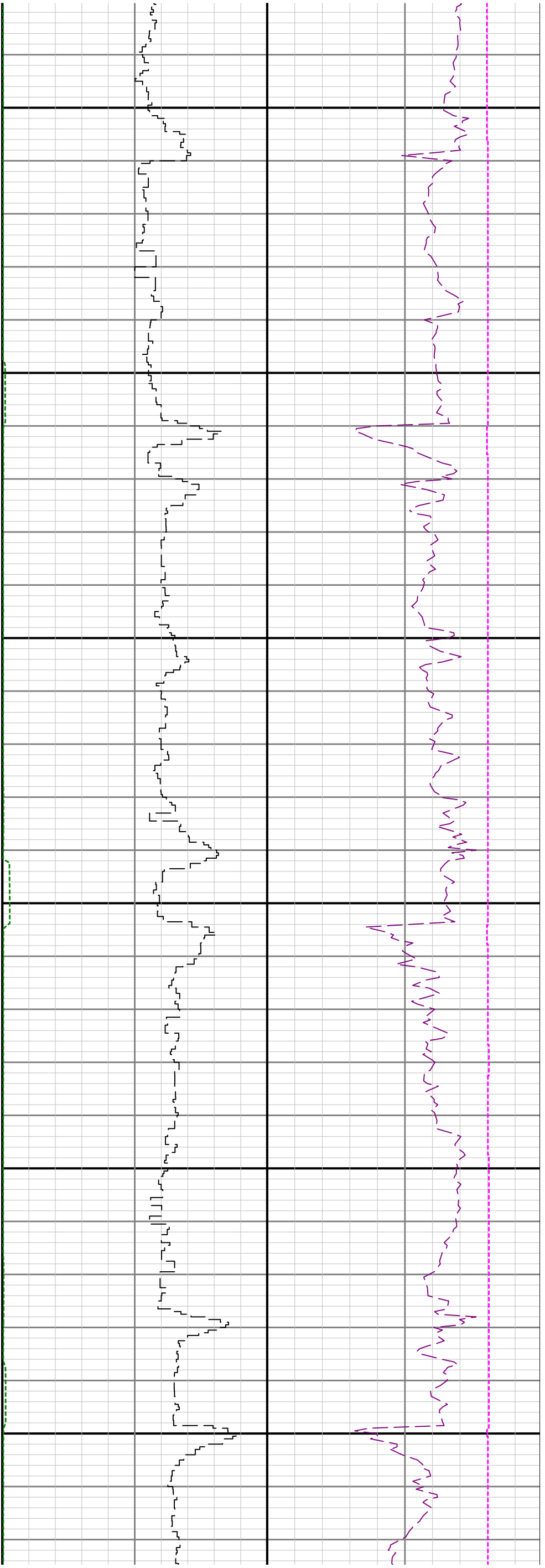


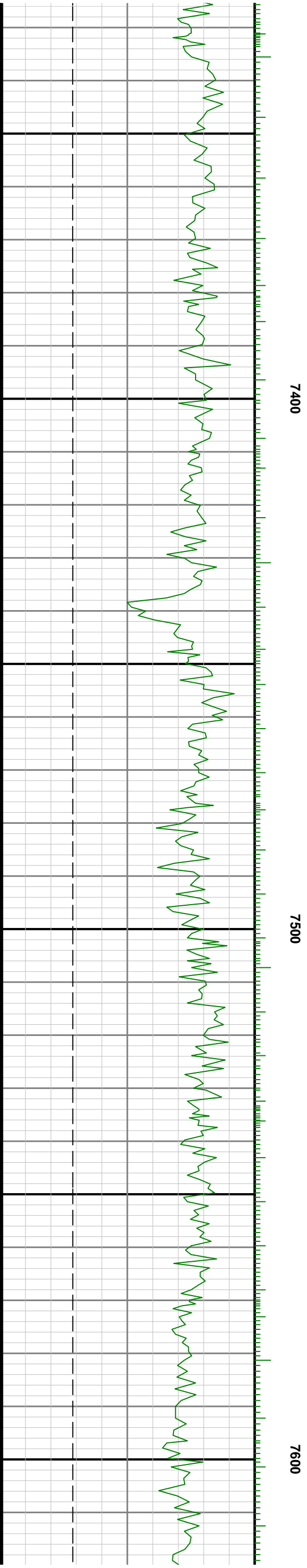
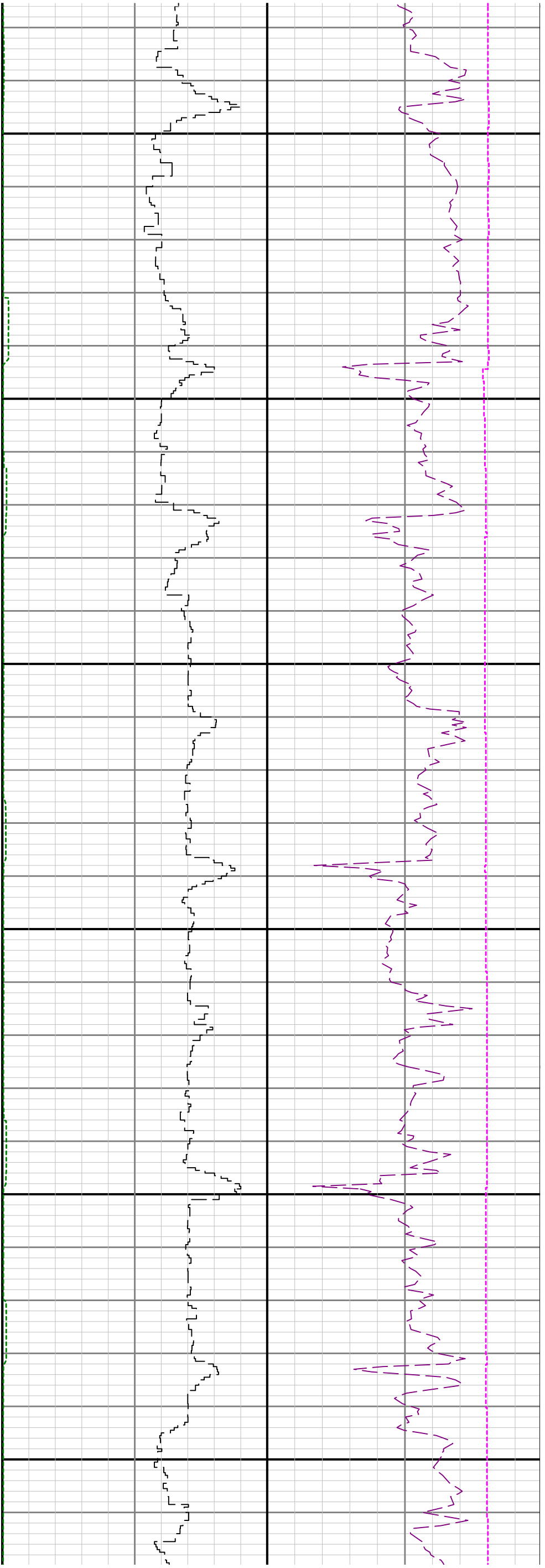


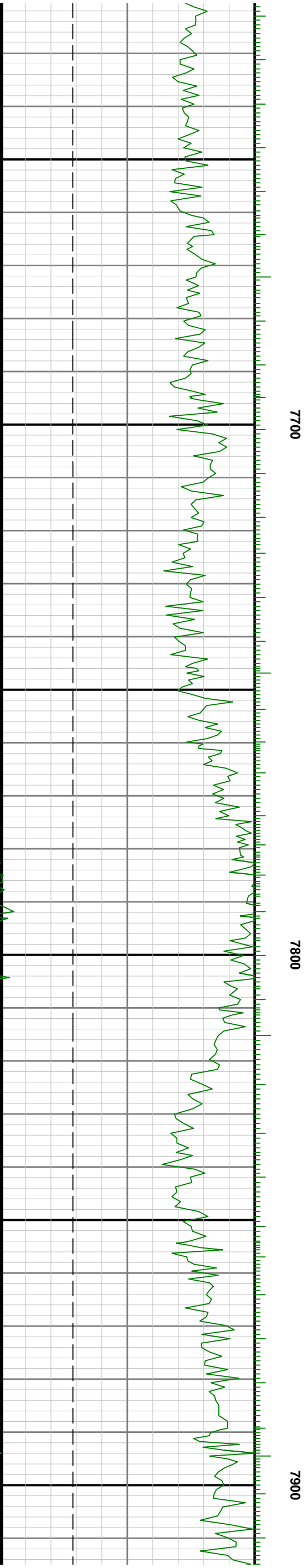
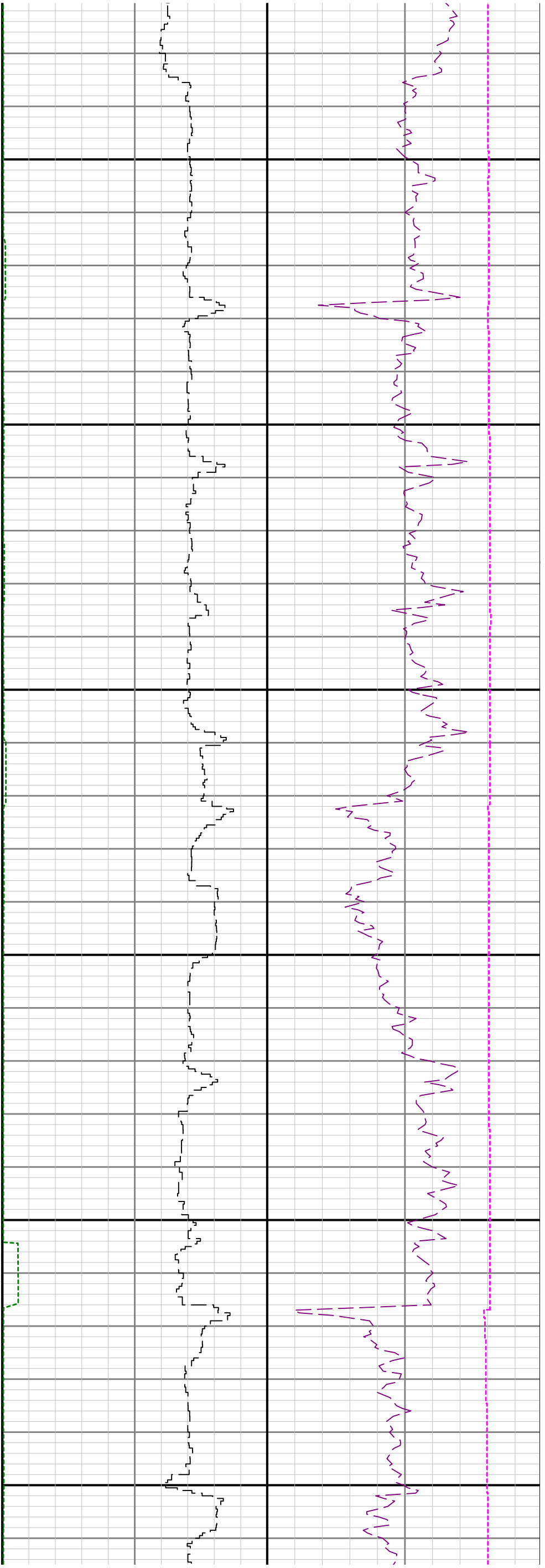


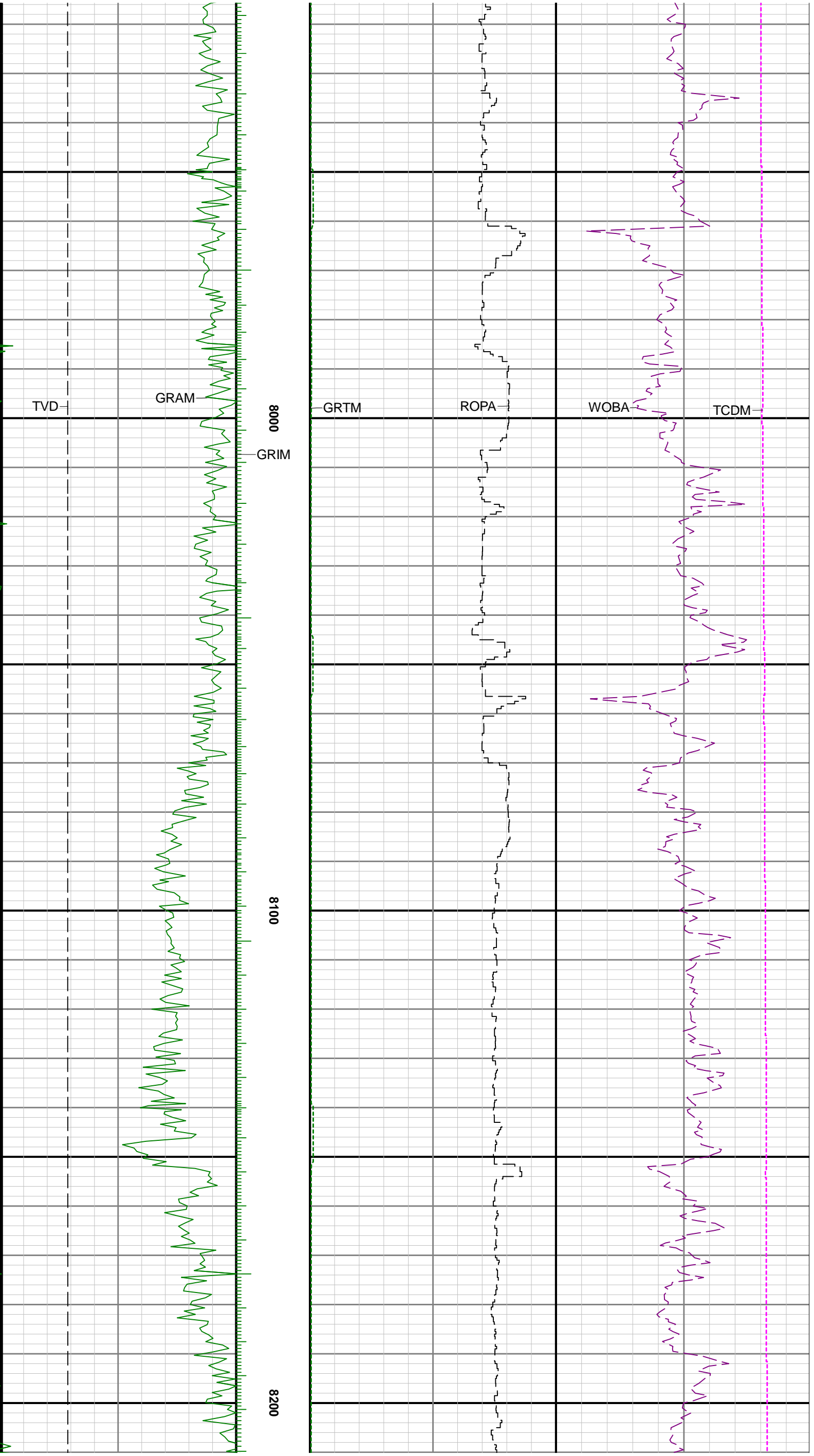


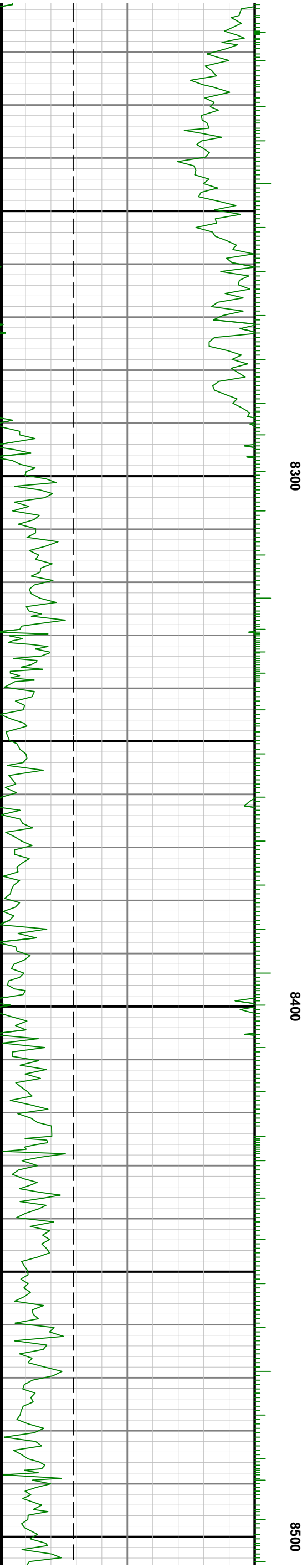
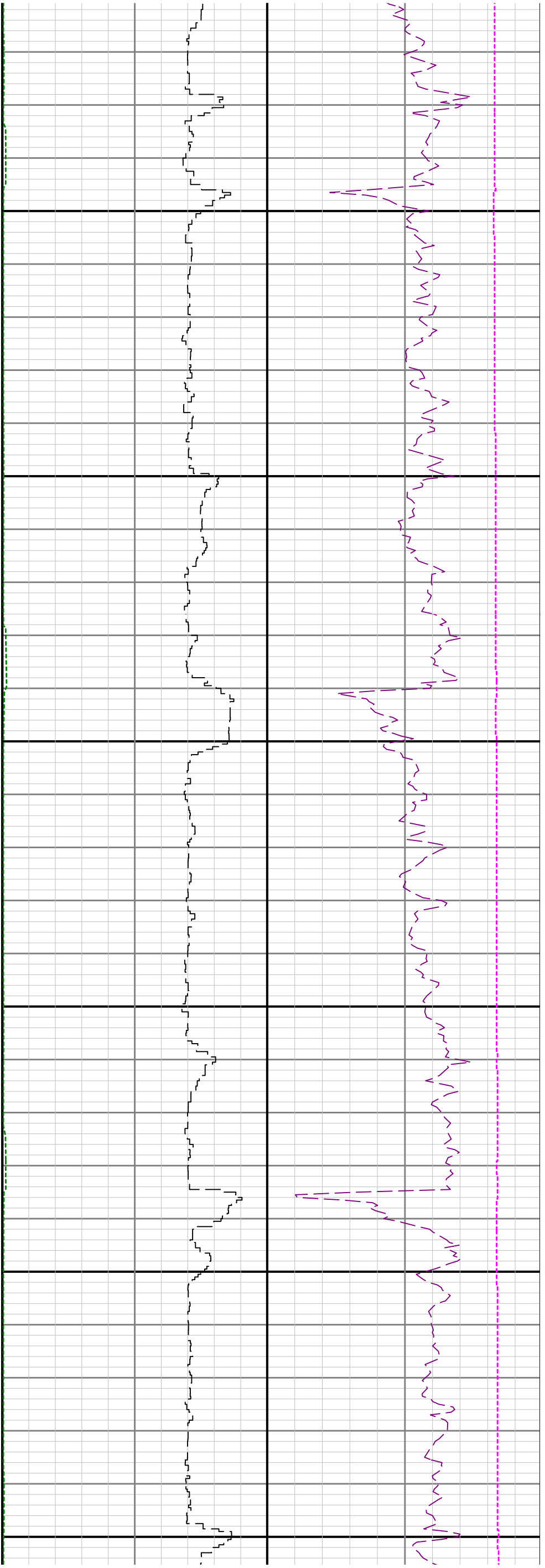


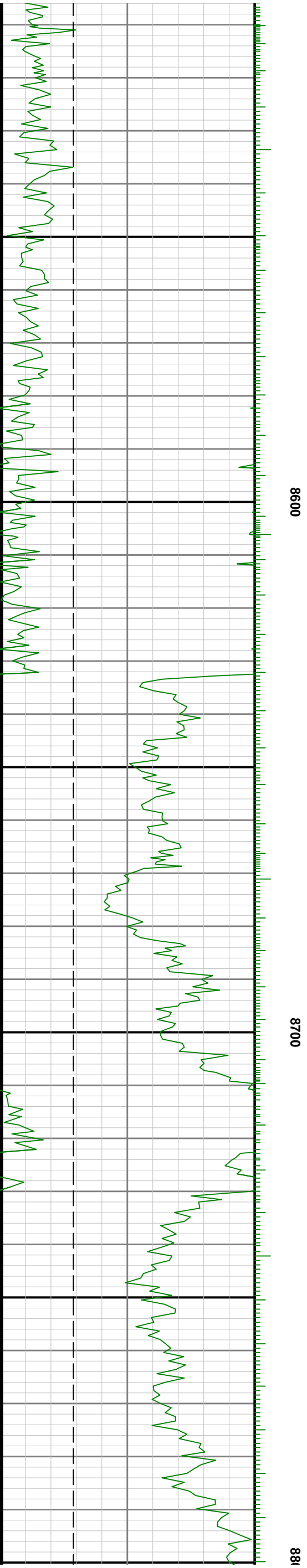
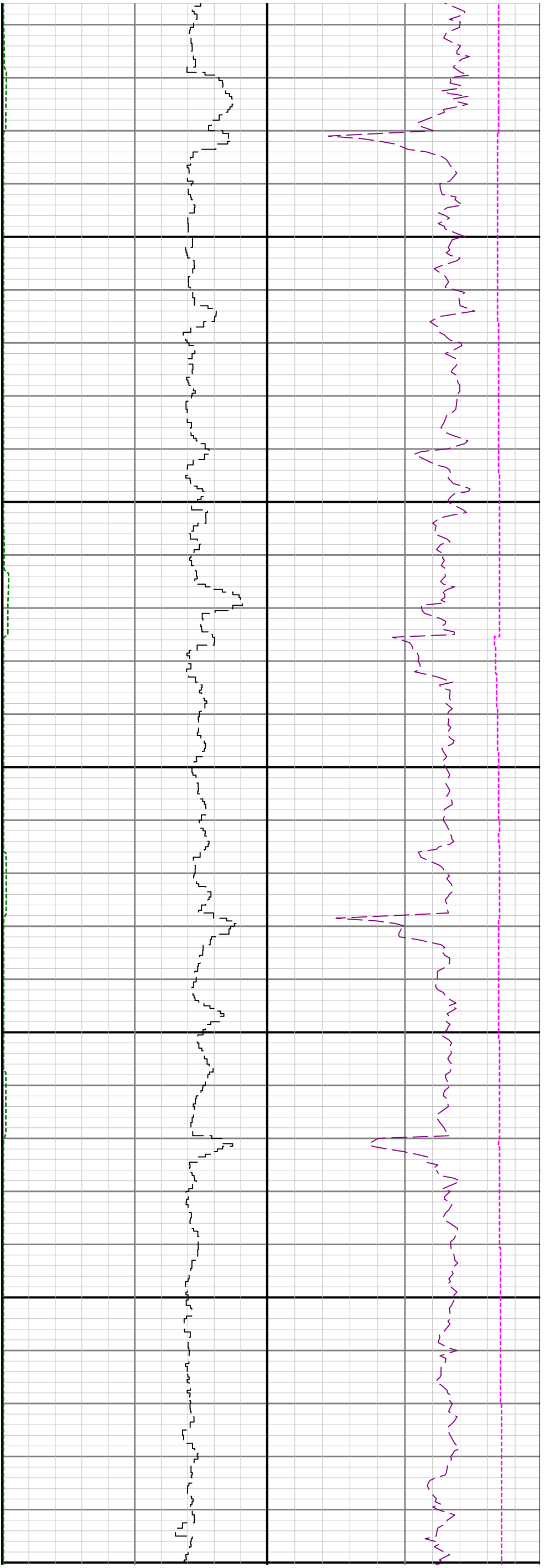


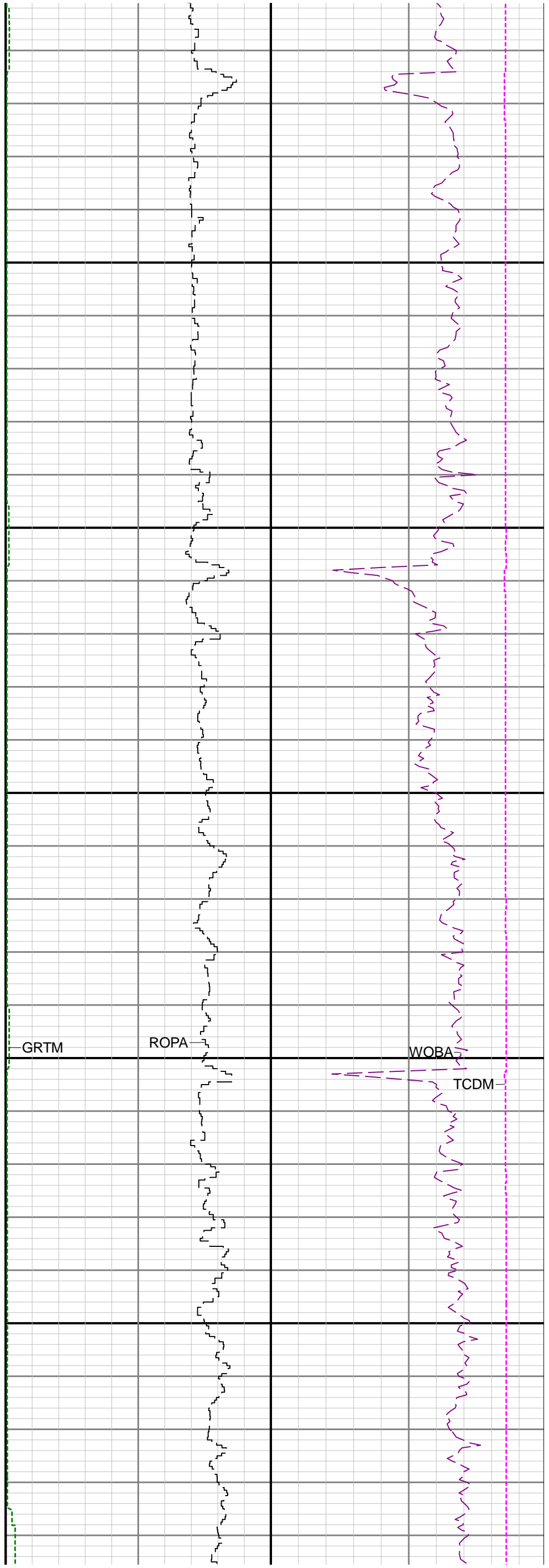
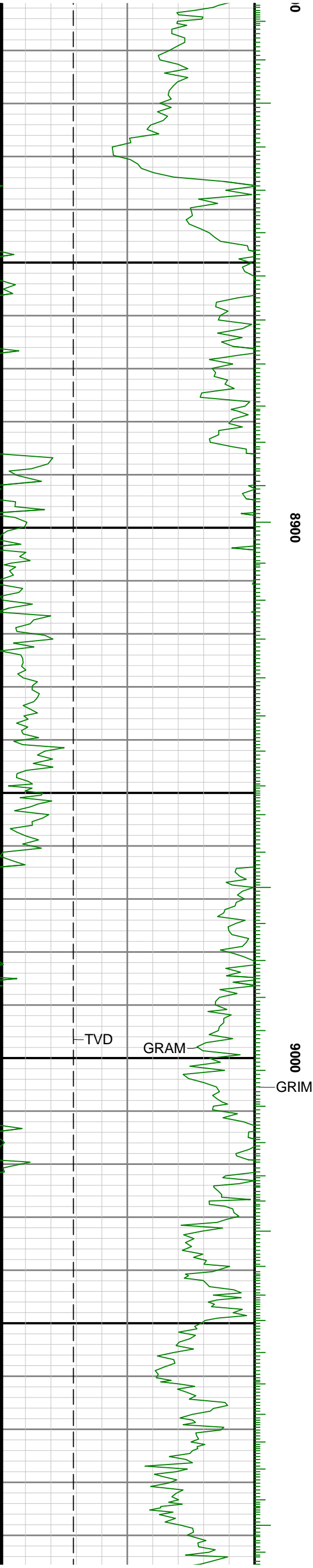


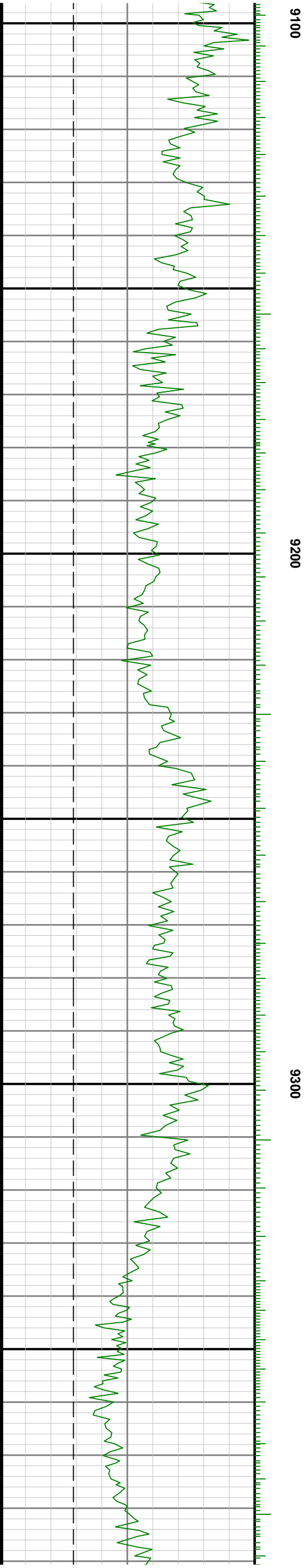
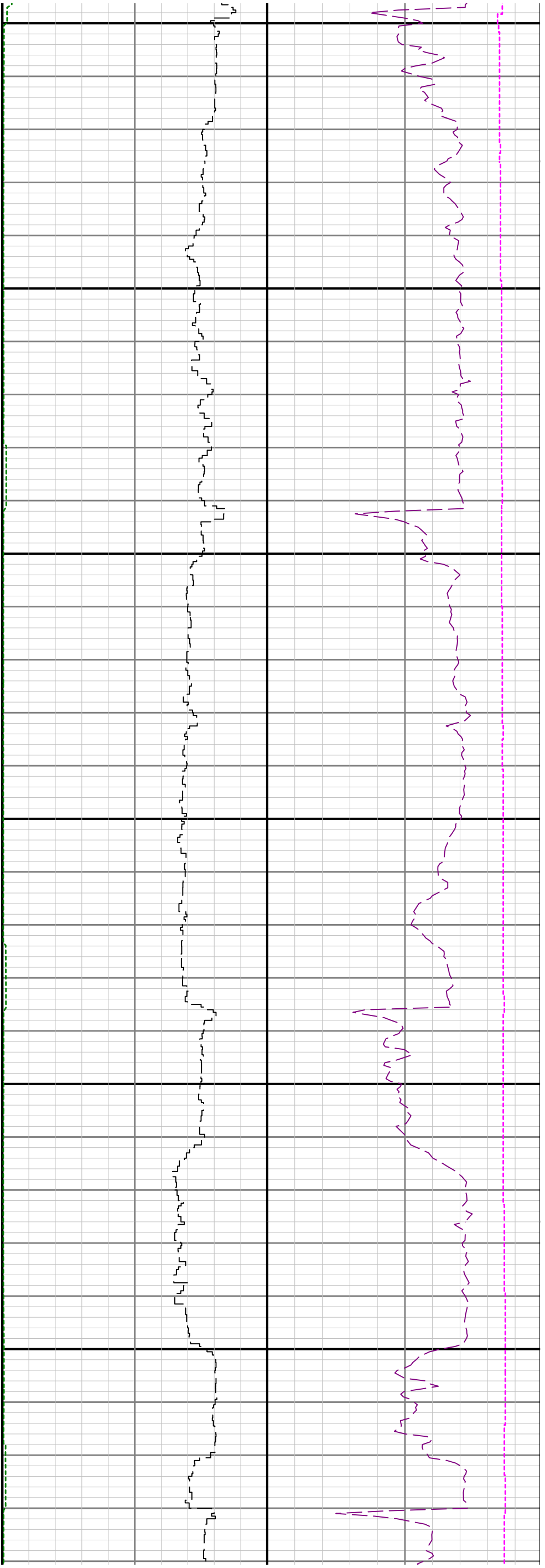


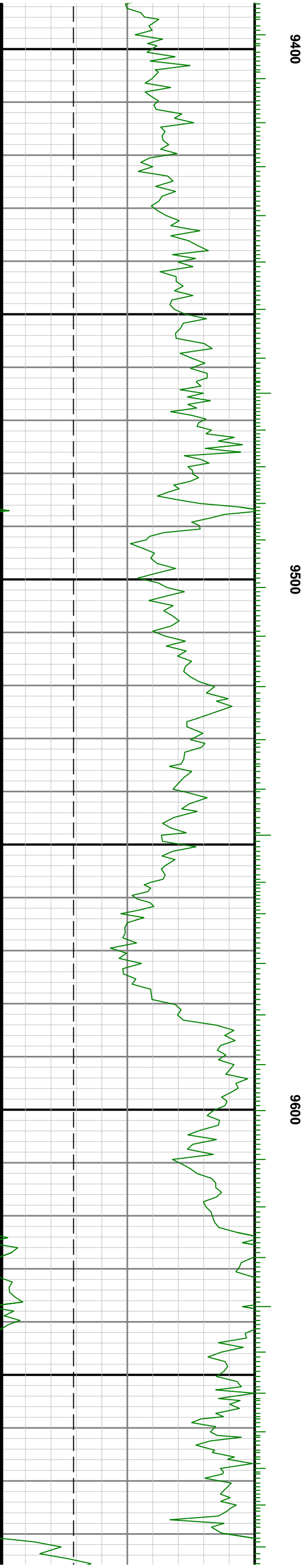
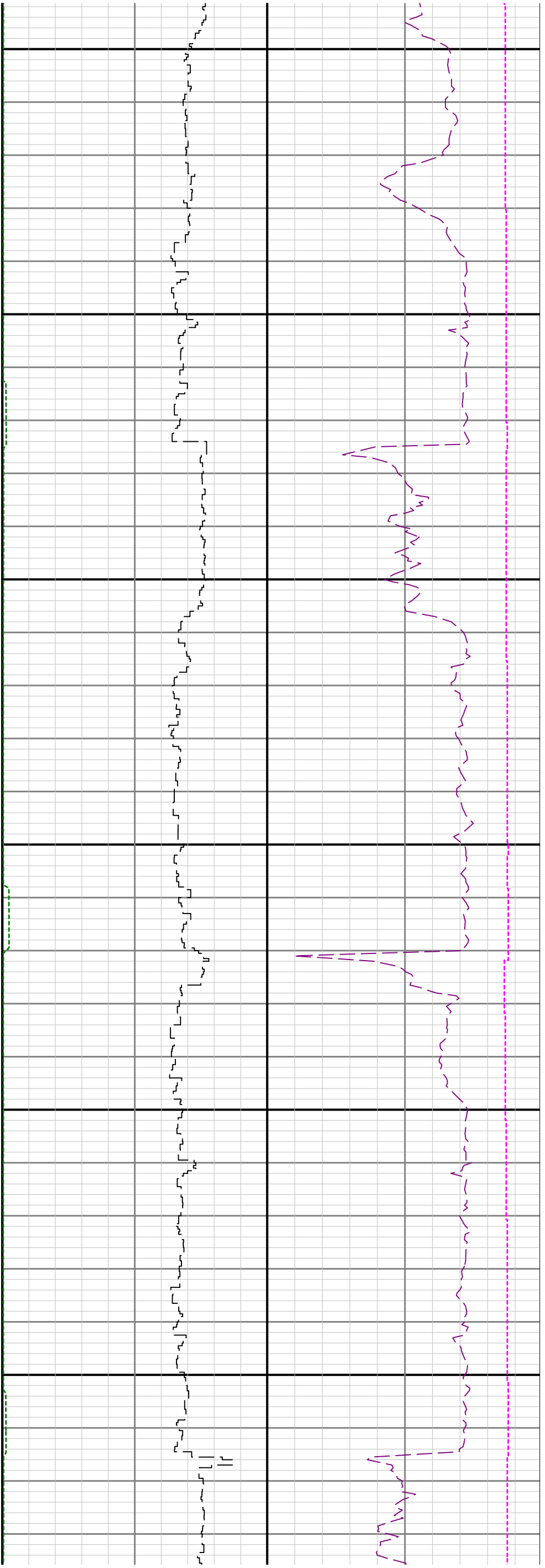


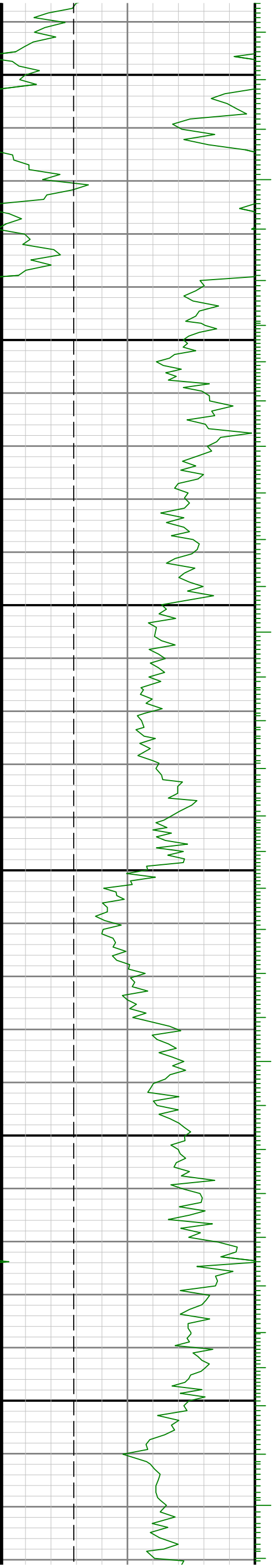












9700

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