



LWD REALTIME LOG

Gamma Ray

Scale:		Company: Anadarko				
1:240 MD		Well: Reese 21-7HZ				
Depth Reference:		Field: Wattenberg				
Driller's Depth		County: Weld				
State:		Colorado				
Block: 1		Country: United States				
Status:	Surface Location:		Other Services:			
Final Print		Latitude: 040° 07' 31.793" N				
API No: 05-123-47868-0000		Longitude: 104° 54' 13.550" W				
Job ID: 109623765	SEC: 21	TWN: 2N	RGE: 67W			
Permanent Datum (P.D.): Mean Sea Level	Elevation: 0.00 ft	Elev. KB: 5019.00 ft	N/A			
Log Measured From: Rig Floor	Above P.D. 5019.00 ft	Elev. DF: 4998.00 ft				
Dates	Interval Drilled		Magnetic Field Reference			
Date From: 2019-02-05	Top: (ft) 1885.00	Azi Reference North: True	Dip Angle: (deg) 66.65			
Date To: 2019-02-08	Bottom: (ft) 15889.00	Total Magnetic Field Strength: (nT)	52263			
Spud Date: 2019-02-05		Mag to Reference North Correction: (deg)	8.31			
Borehole Record		Casing Record				
Hole Size (in)	From (ft)	To (ft)	Size (in)	Weight (lb/ft)	From (ft)	To (ft)
13.000	21.00	1885.00	9.625	36.00	21.00	1875.00
7.875	1885.00	15889.00				
Mud Record						
Type	From (ft)	To (ft)	Hole Size (in)	Interval (ft)	Inc Az (Start)	Inc Az (End)
Oil Based Mud	0.00	15889.00	7.875	14004.00	19.76 117.19	90.95 0.05
Acquisition System						
Baker Hughes Cadence	RT 4.2		Rig: Precision Drilling 464		Unit: D&E	
DeliverableGen	1.0.8107.2		Contractor: Precision Drilling District: RMA			

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Log Run Summary

Run No	Bit Run No.	Bit Size	Bit Type	Bit Gauge Length	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Hours
						Top	Bottom	From	To	Start Logging	End Logging	
		(in)		(in)		(ft)	(ft)	(ft)	(ft)			
1	1	7.875	PDC	3.00	Steerable	1885.00	15838.00	1885.00	15889.00	2019-02-05 06:40	2019-02-08 00:30	55.52

Crew

Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Kaewan Gardi	2019-02-05	2019-02-08	Omar Davalos	2019-02-05	2019-02-08			

Mud Properties Record

Date / Time	Run No.	Measured Depth (ft)	Mud Type	Density (ppg)	Viscosity (cP)	pH	Fluid Loss (cm3)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
2019-02-05 07:00	1	1900.00	Oil Based Mud	9.2	22	N/A	4.0	78/22	Active Pit	36433	0.00
2019-02-06 17:53	1	8729.00	Oil Based Mud	9.4	20	N/A	3.5	77/23	Active Pit	36433	0.00
2019-02-08 00:58	1	14402.00	Oil Based Mud	9.4	20	N/A	3.0	79/21	Active Pit	36433	0.00

Equipment and Service Data

Run No.	Tool	Serial Number	Measurement	Sensor Offset	Bit Offset	Max O.D.	Min I.D.
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				(ft)	(ft)	(in)	(in)
1	Sensor Sub	G650-0300	Pressure	0.10	49.66	6.750	4.500
1	Sensor Sub	G650-0300	Gamma (single)	1.56	51.12	6.750	4.500
1	Sensor Sub	G650-0300	VSS	2.75	52.31	6.750	4.500
1	Sensor Sub	G650-0300	Directional (mag)	2.75	52.31	6.750	4.500

Service and Tool Mnemonics

Mnemonic	Name	Description
GAM	NaviTrak UT	EvoOne Electromagnetic and Mudpulse Module

Comments

1	Depth measurements were 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.
2	A sliding indicator is shown to the left edge of track 1 as a heavy line. The indicator has been depth shifted to the Gamma Ray sensor offset to correspond with Gamma Ray data acquired while sliding.
3	Baker Hughes run 1 utilized 6 1/2 inch NaviTrak UT services (Gamma Ray and Directional) behind a 7 7/8 inch bit and steerable assembly from 1885 to 15889 feet MD (1828 to 7569 feet TVD).
4	Gamma Ray (GRAX) scale is presented 0 to 200 API per customer request.

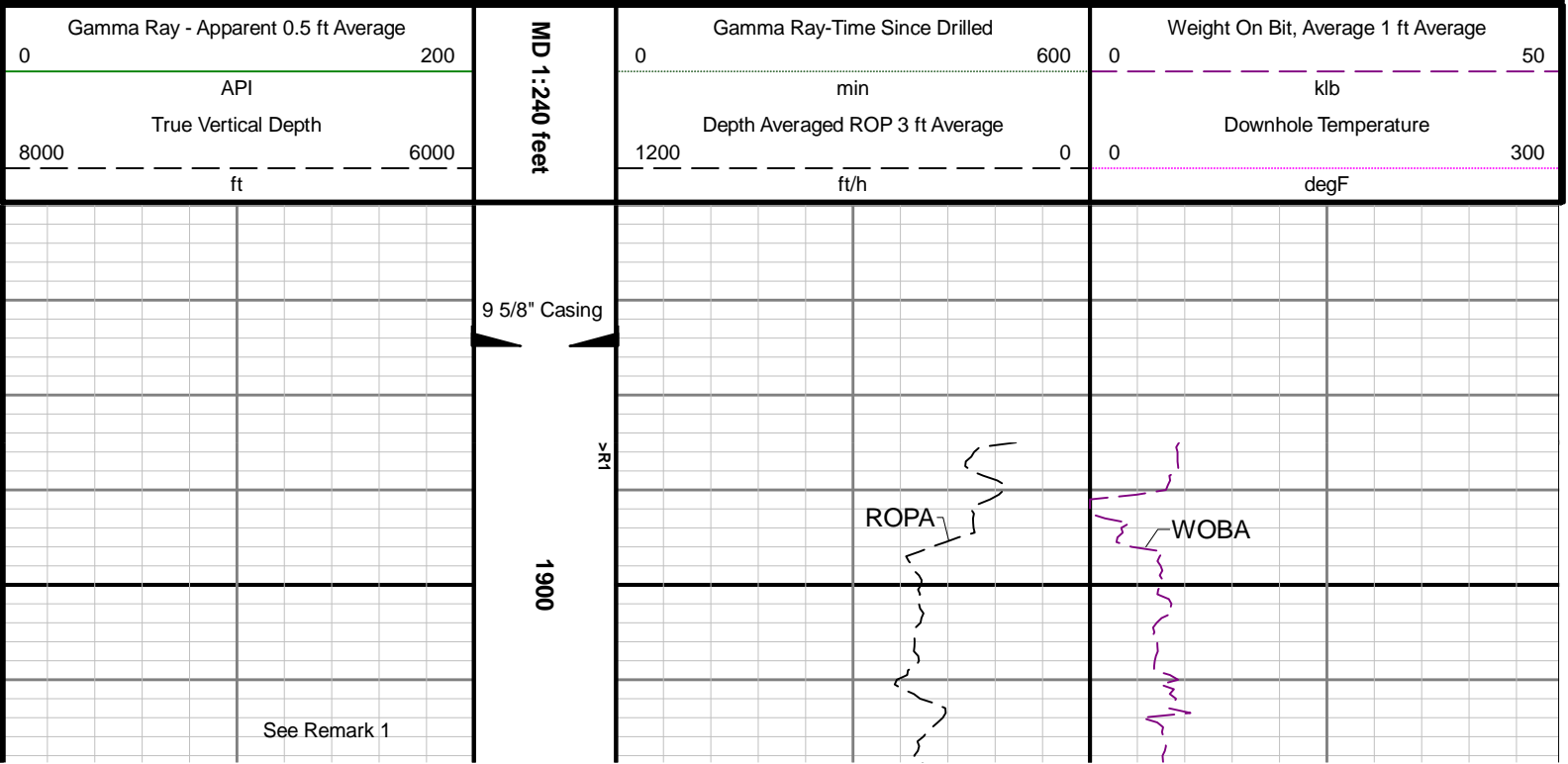
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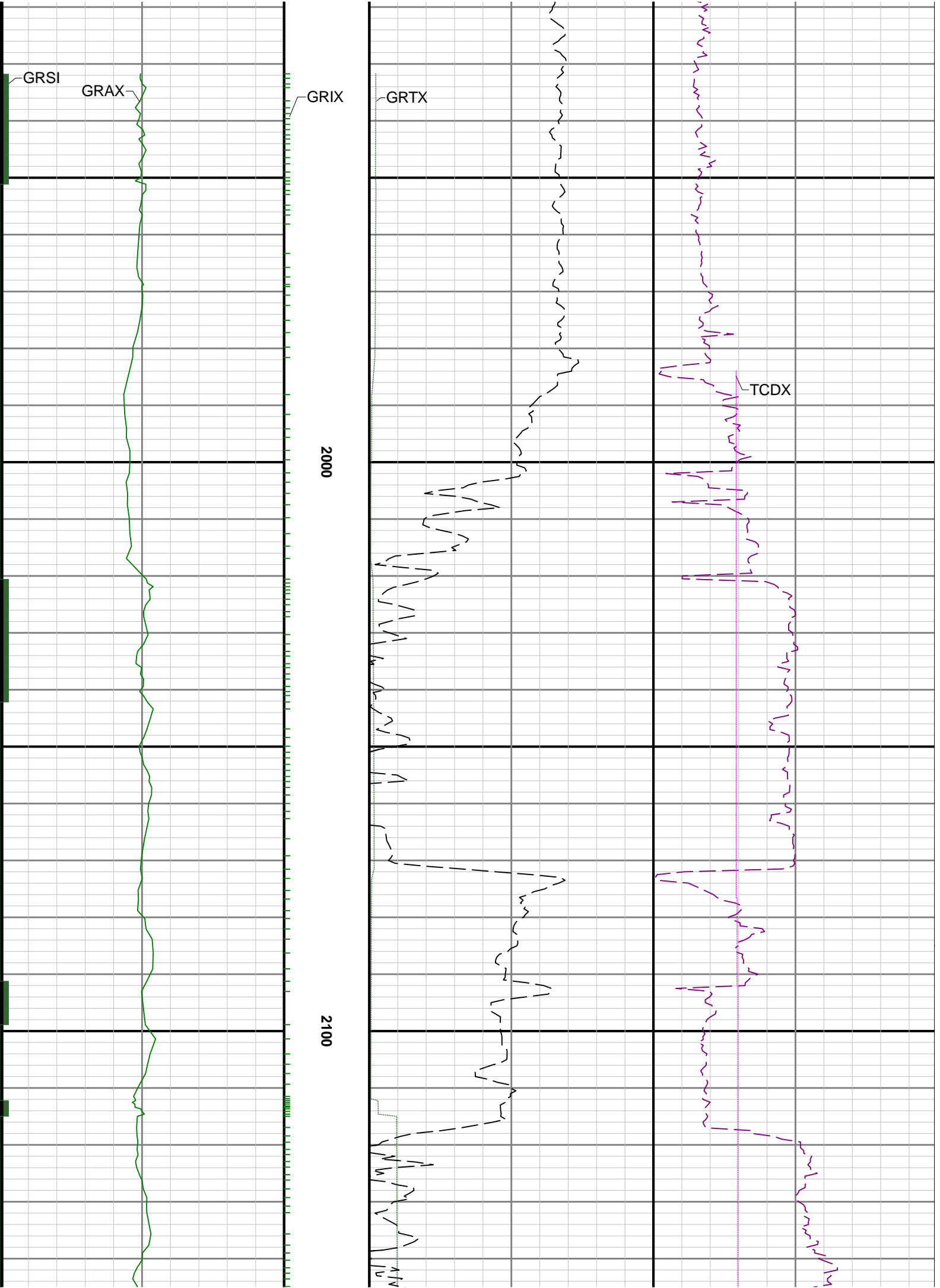
Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	1885.00	7.875	1	The interval from 1885 to 1932 feet MD (1828 to 1873 feet TVD) was not logged due to poor decoding.
2	10218.00	7.875	1	The interval from 10218 to 10232 feet MD (7596 feet TVD) was not logged due to poor decoding.
3	15314.00	7.875	1	The interval from 15314 to 15367 feet MD (7569 feet to 7570 feet TVD) was not logged due to poor decoding.
4	15384.00	7.875	1	The interval from 15384 to 15405 feet MD (7571 feet TVD) was not logged due to poor decoding.
5	15885.50	7.875	1	The interval from 15672 to 15685 feet MD (7573 feet to 7572 TVD) was not logged due to poor decoding.
6	15889.00	7.875	1	The interval from 15838 to 15889 feet MD (7570 to 7569 feet TVD) was not logged due to sensor to bit offset at TD.

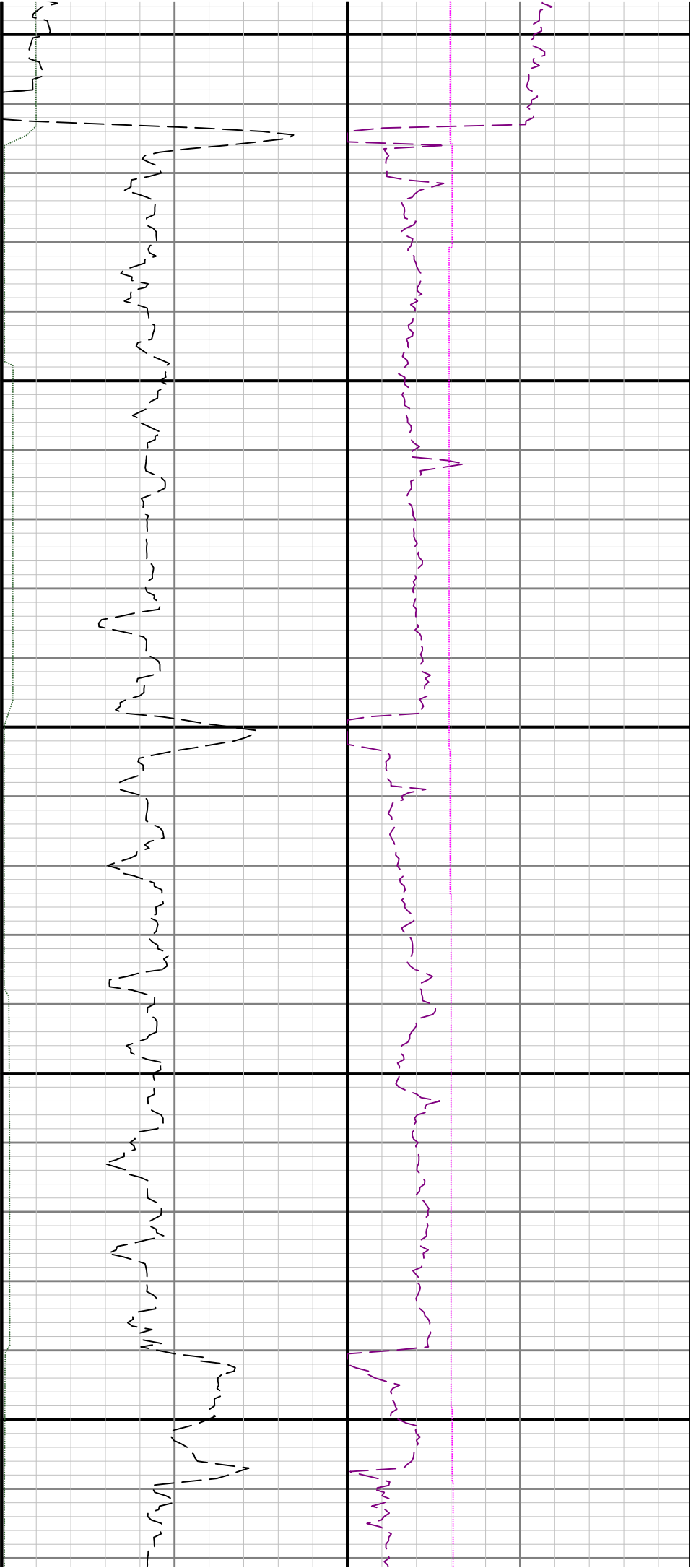
Curve Mnemonics

Presented Curves	Description	Units
TCDX	Downhole Temperature	degF
ROPA	Depth Averaged ROP 3 ft Average	ft/h
TVD	True Vertical Depth	ft
WOBA	Weight On Bit, Average 1 ft Average	klb
GRAX	Gamma Ray - Apparent - Real-Time 0.5 ft Average	API
GRIX	Gamma Ray - Data Point Indicator - Real-Time	unitless
GRTX	Gamma Ray - Time Since Drilled - Real-Time	min
GRSI	Sliding Indicator Flag	unitless

<div> <div>BAKER HUGHES</div> <div>a GE company</div> </div>	Company	Anadarko			
	Well	Reese 21-7HZ			
	Interval	Date From:	2019-02-05 04:58	Top:	1885.00 ft
	Created	Date To:	2019-02-08 02:48	Bottom:	15889.00 ft
		2019-02-08 06:45:27			

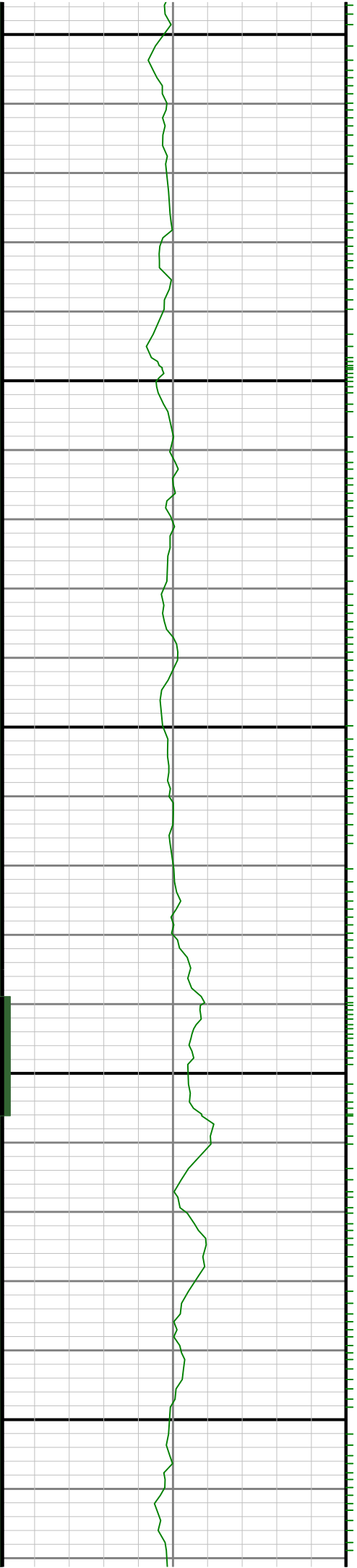


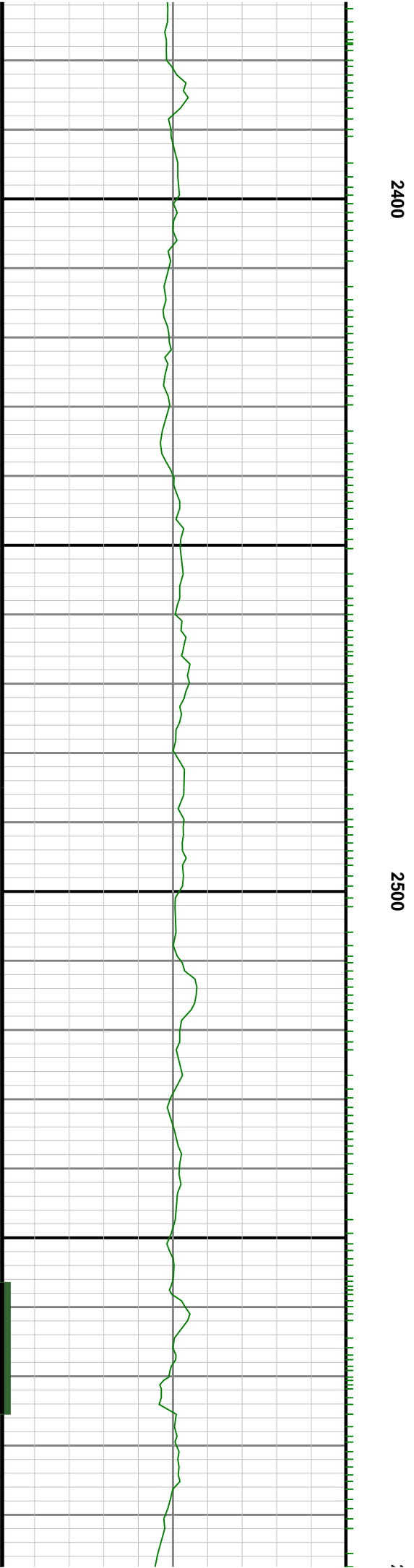
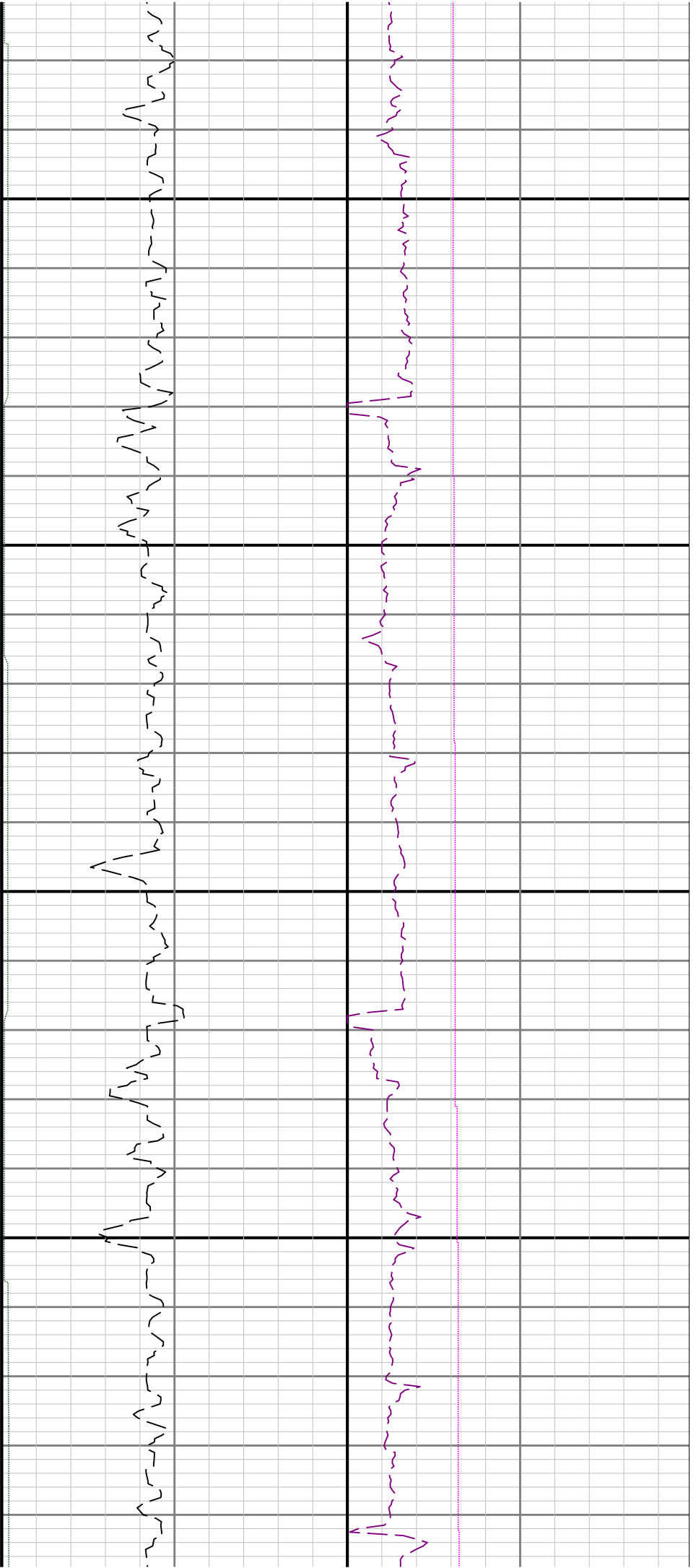


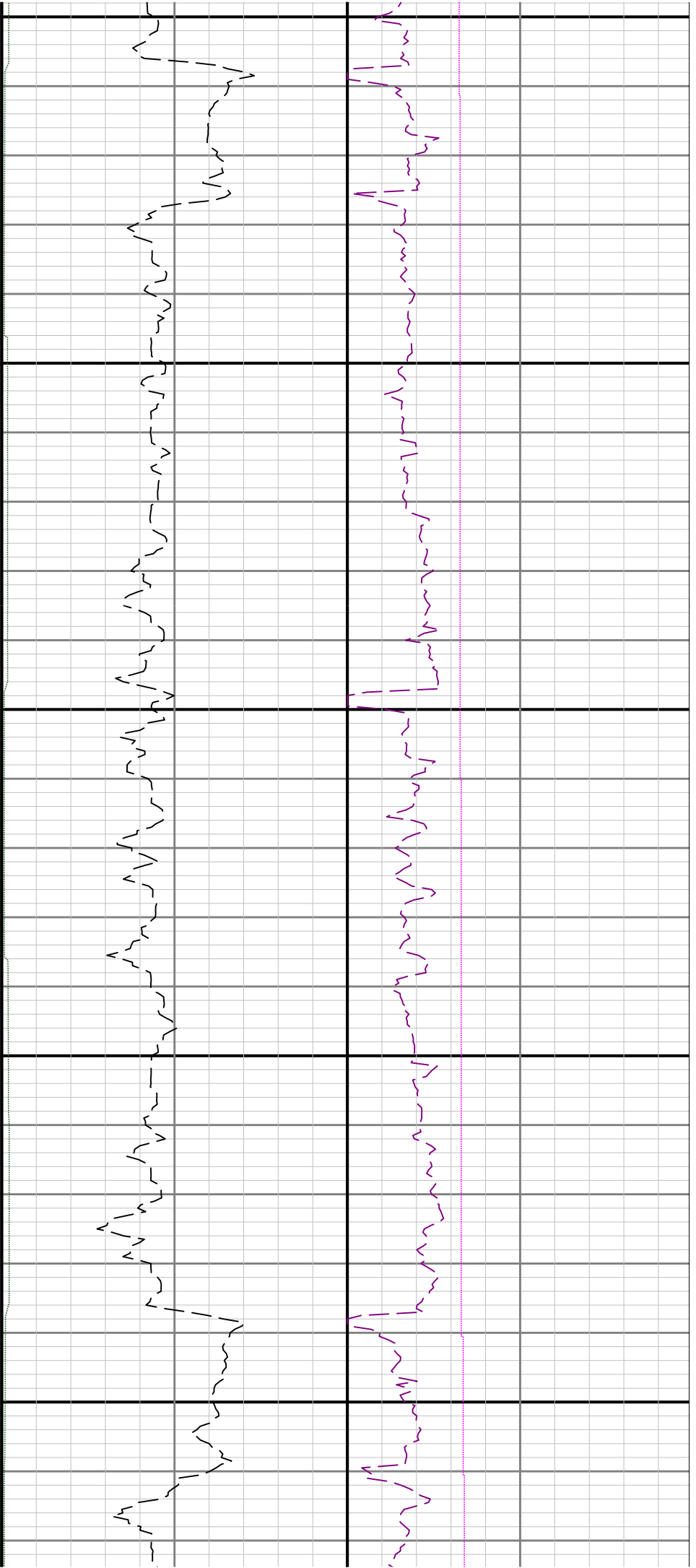


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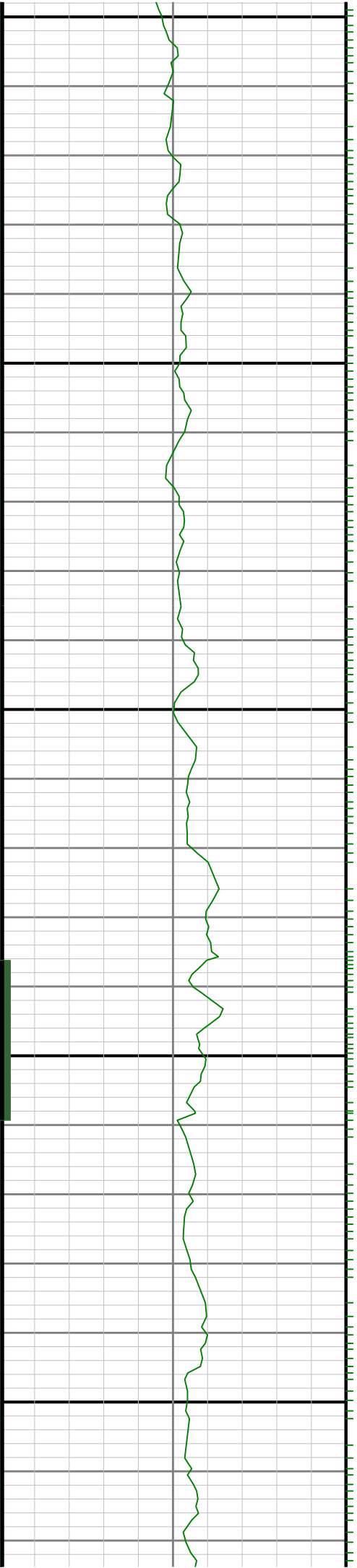


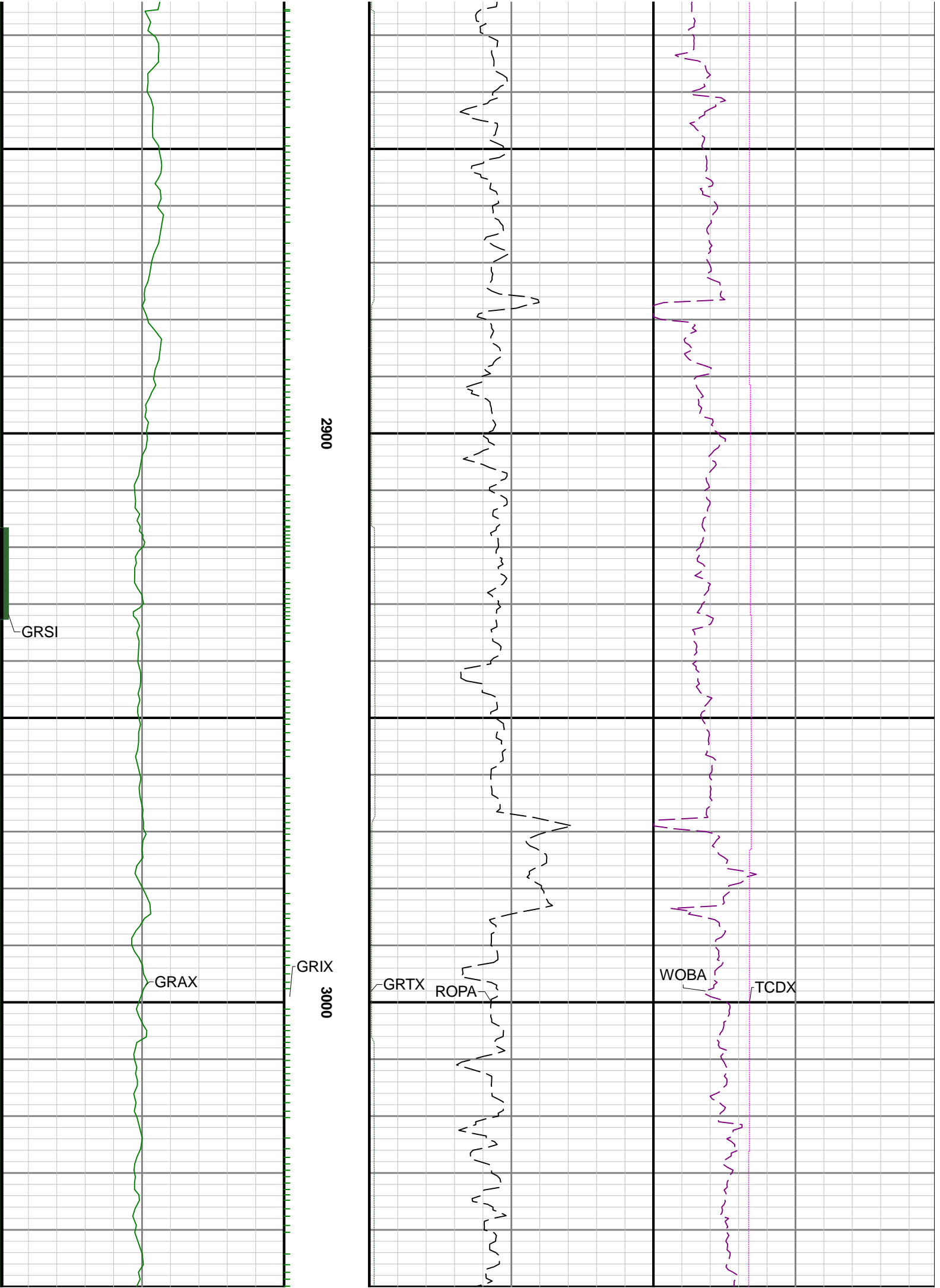


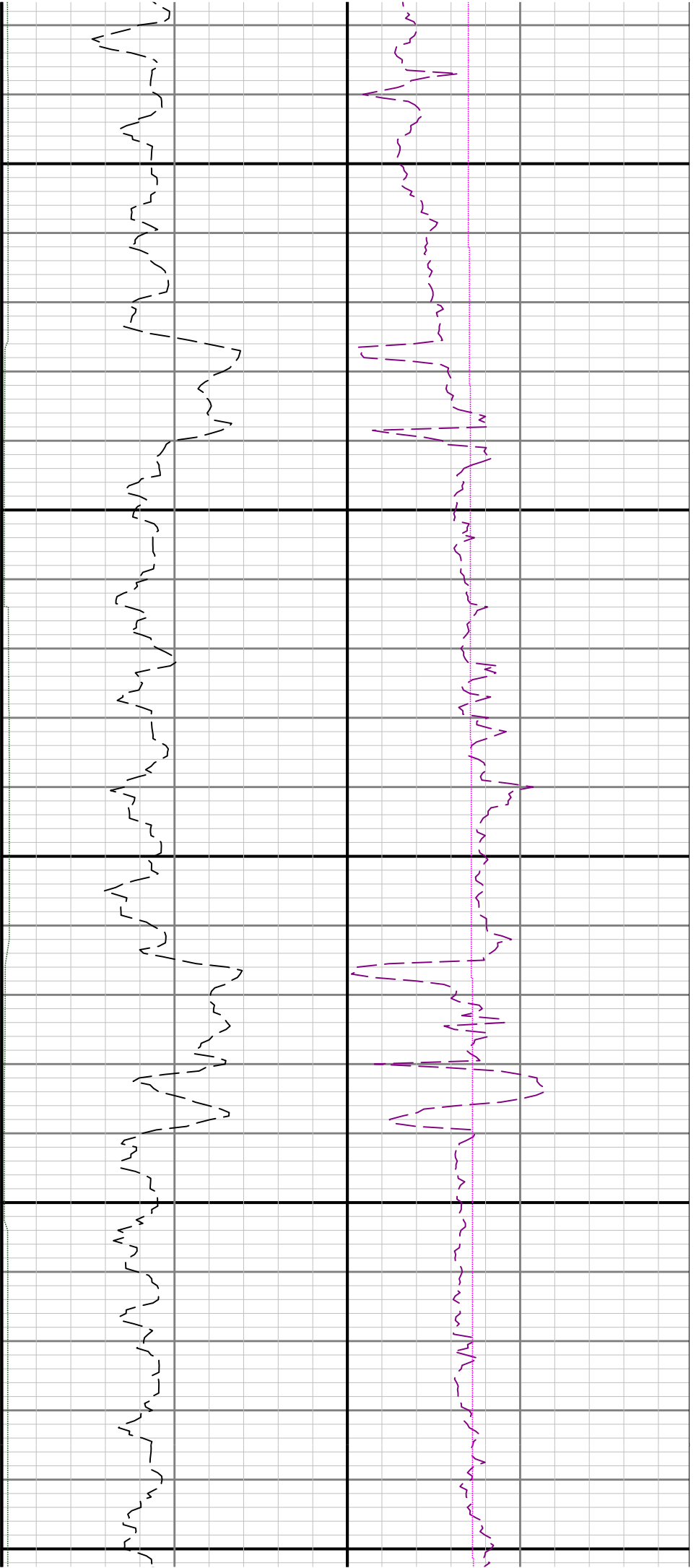
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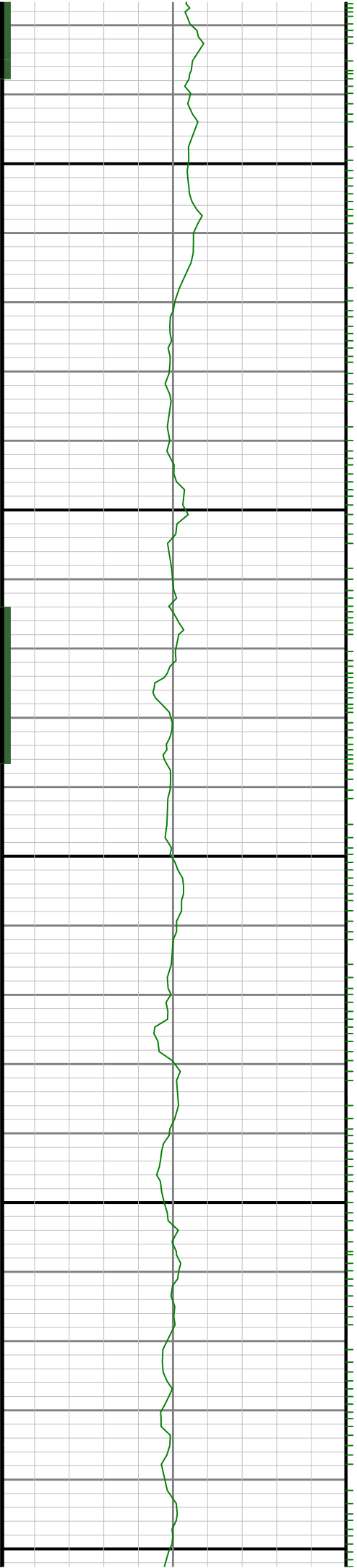


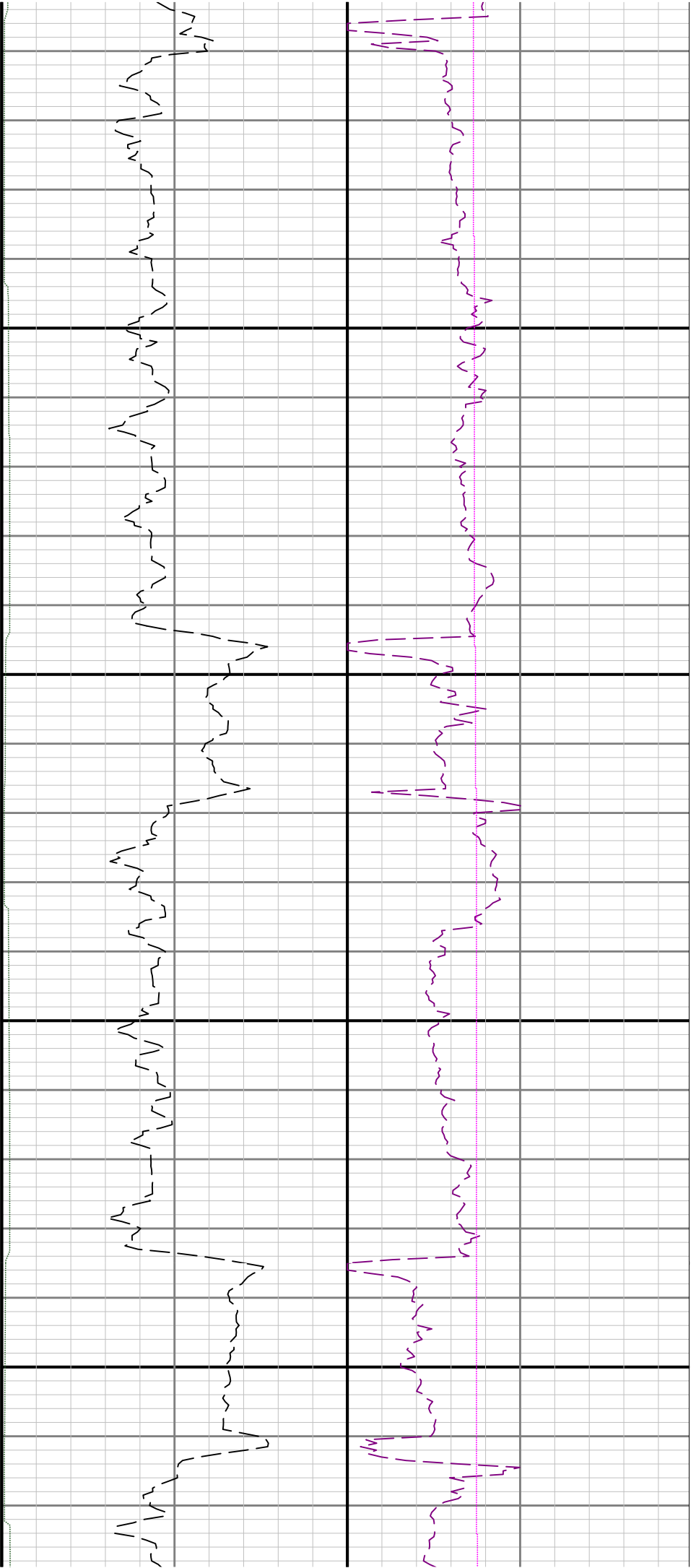


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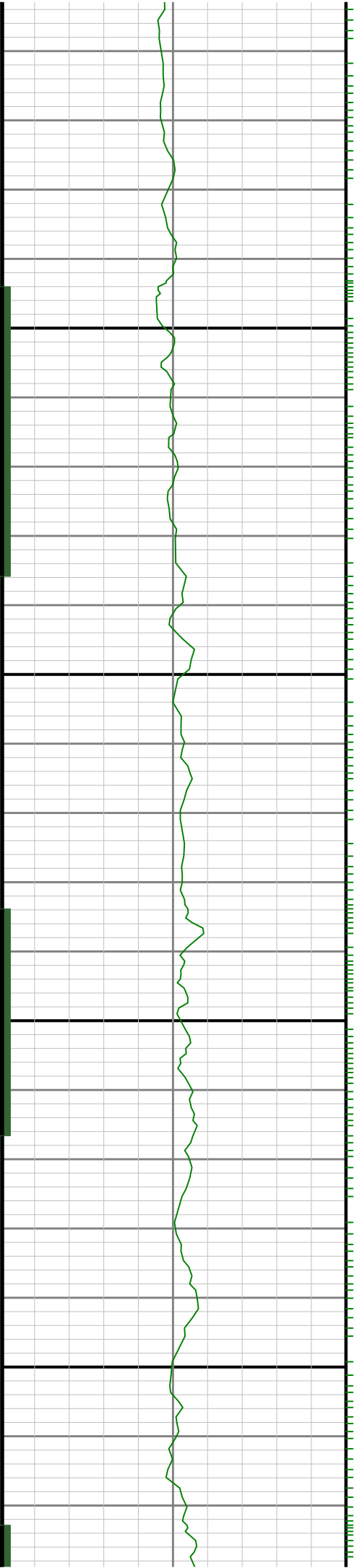
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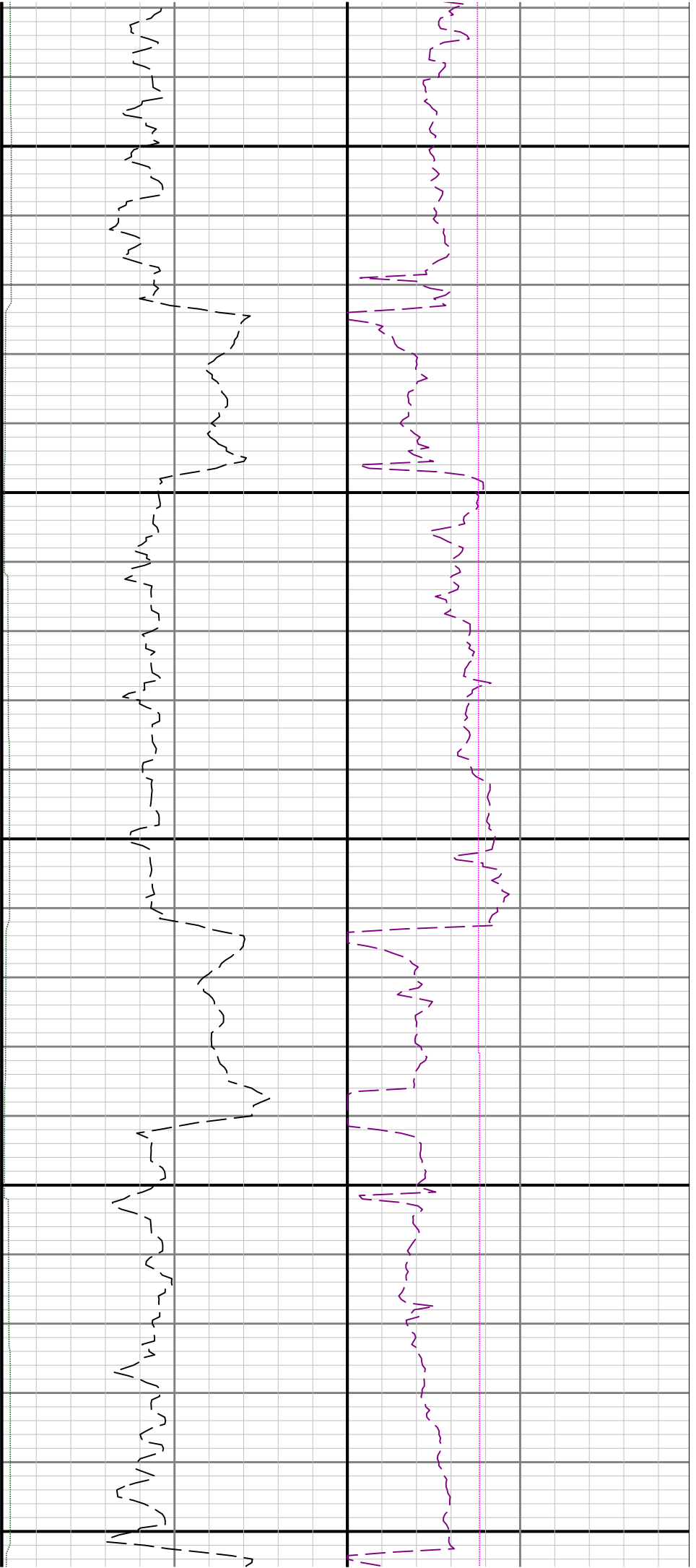




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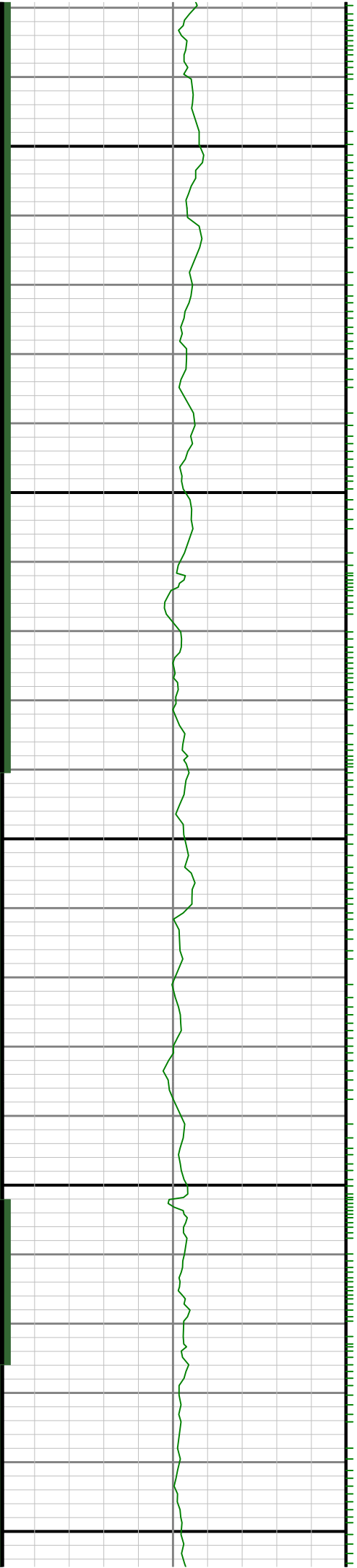
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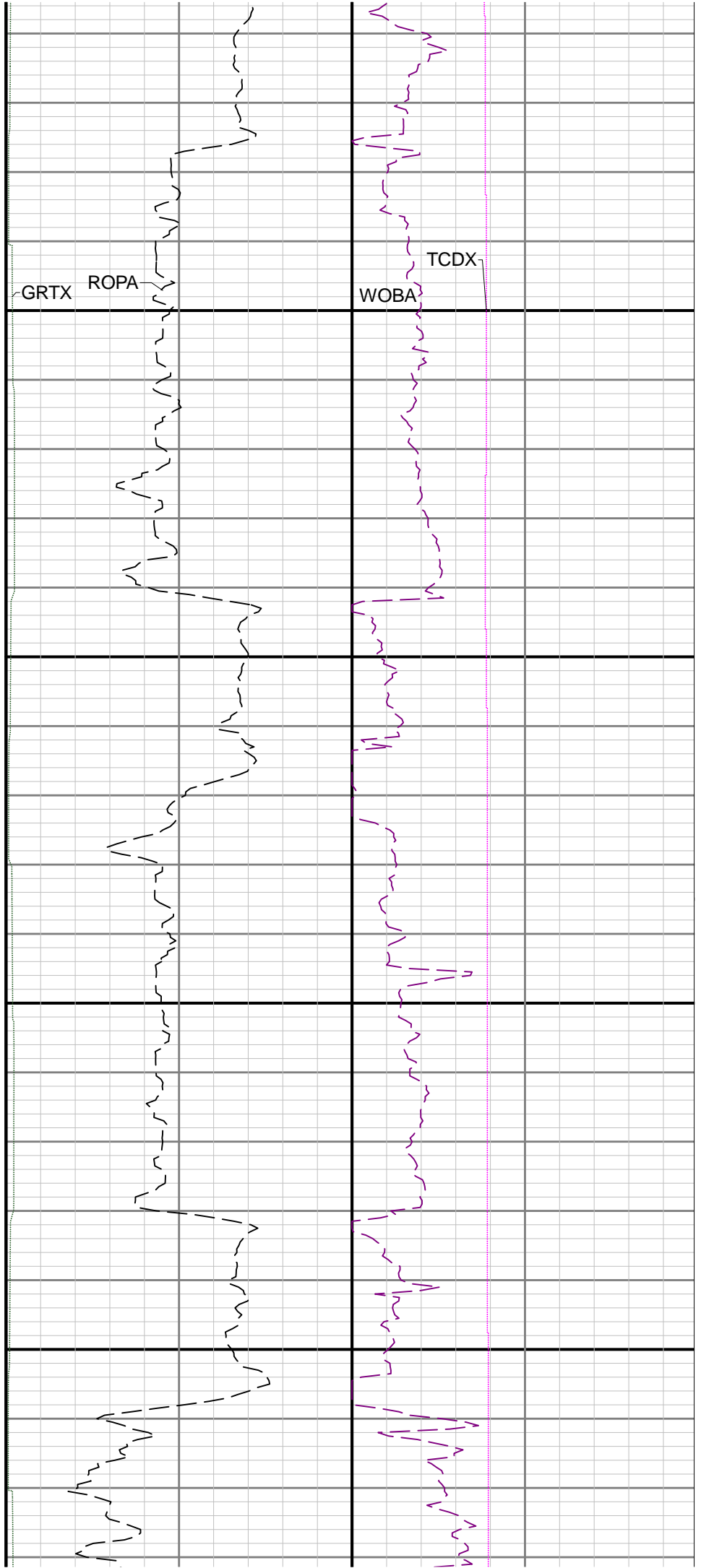
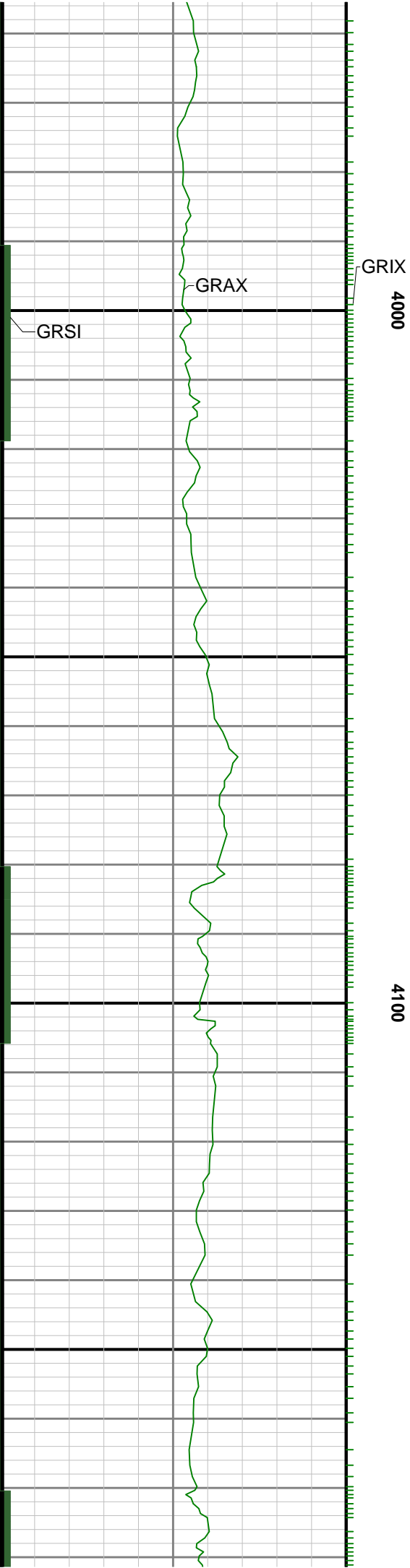


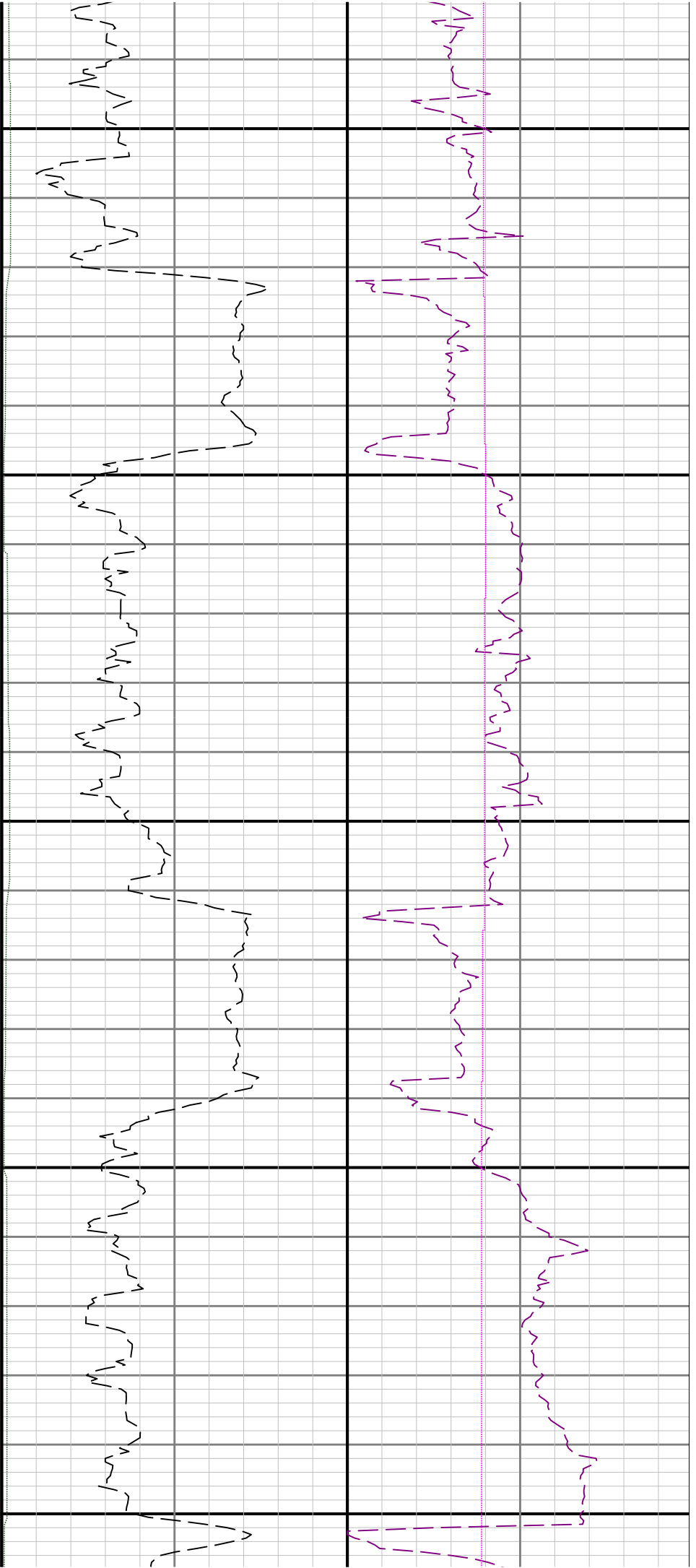


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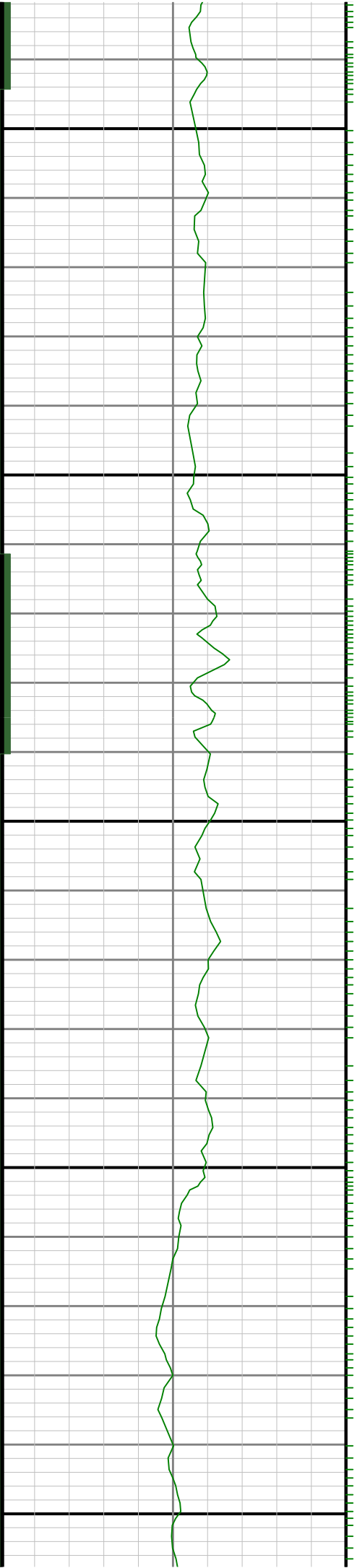


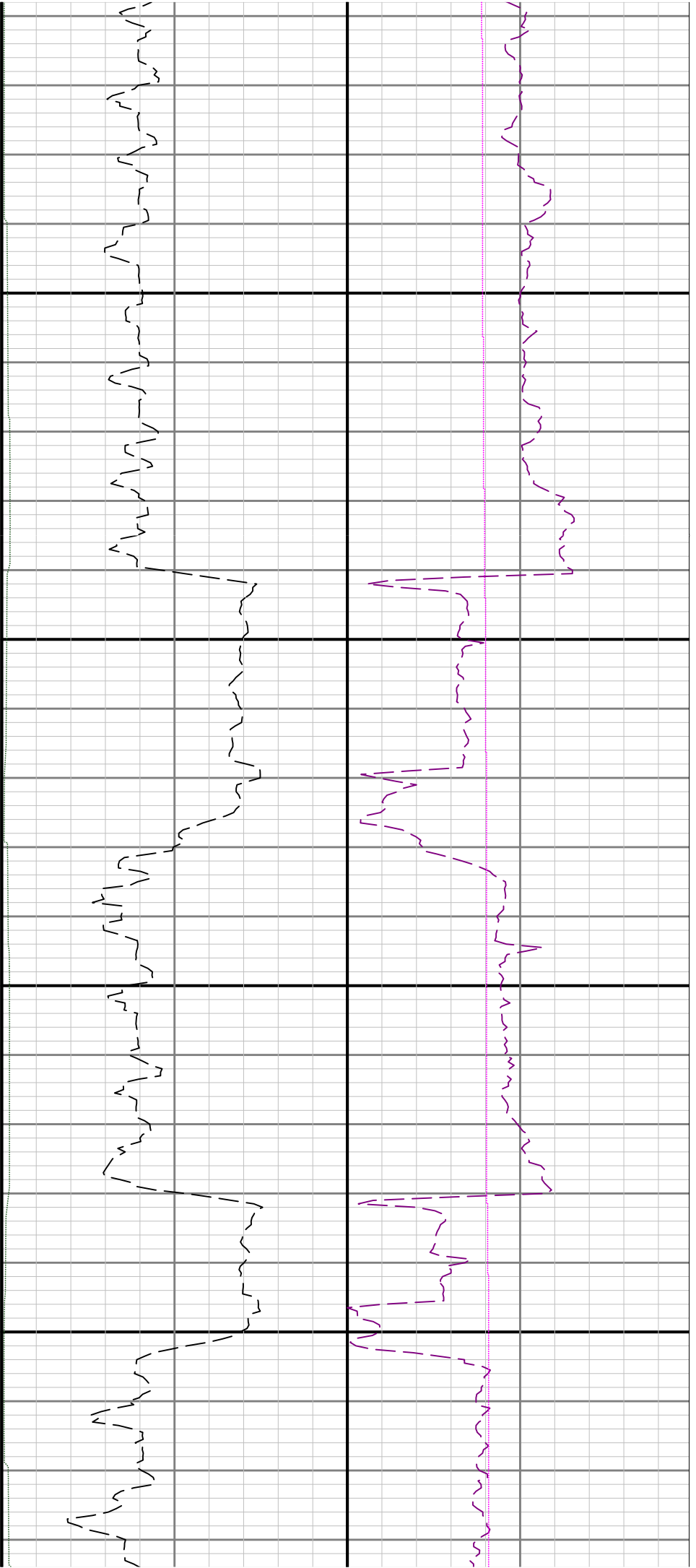


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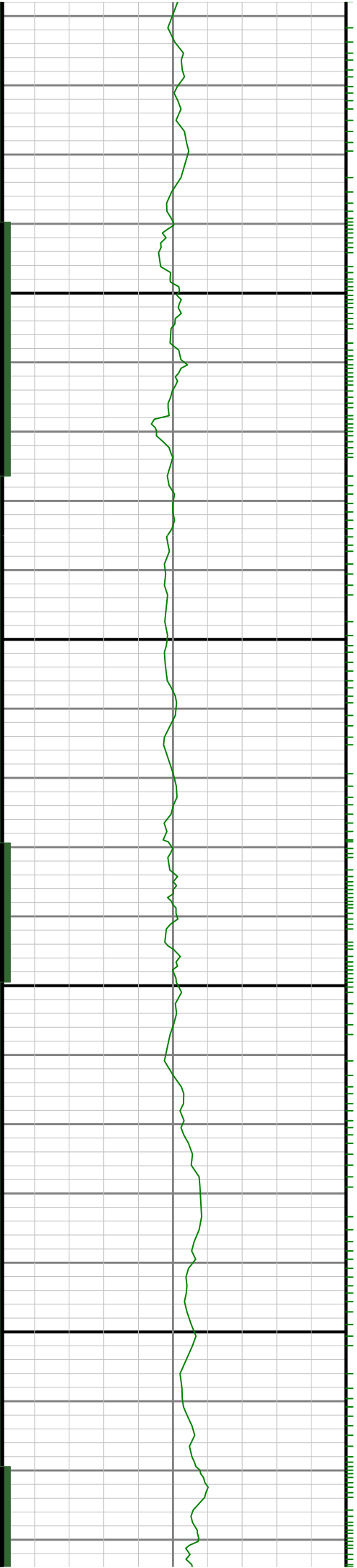
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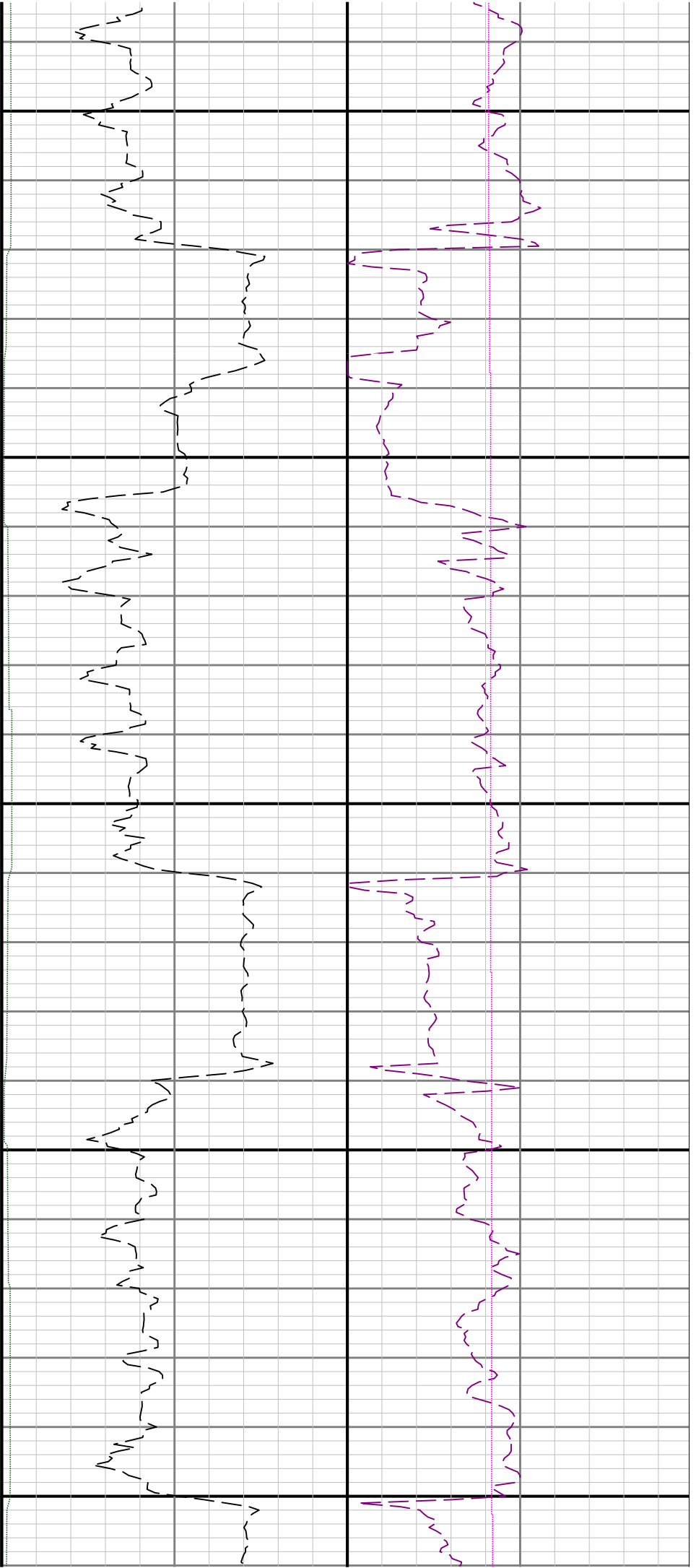




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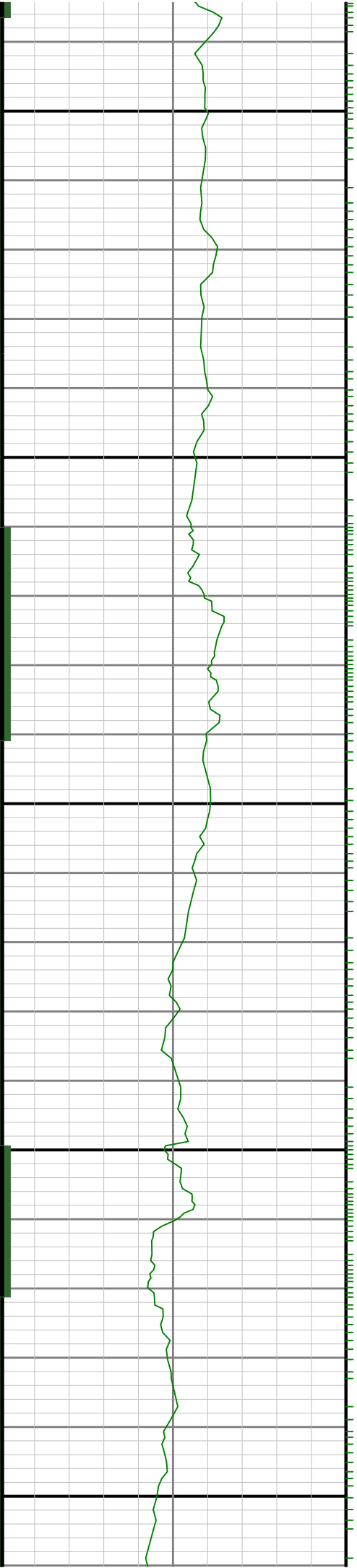
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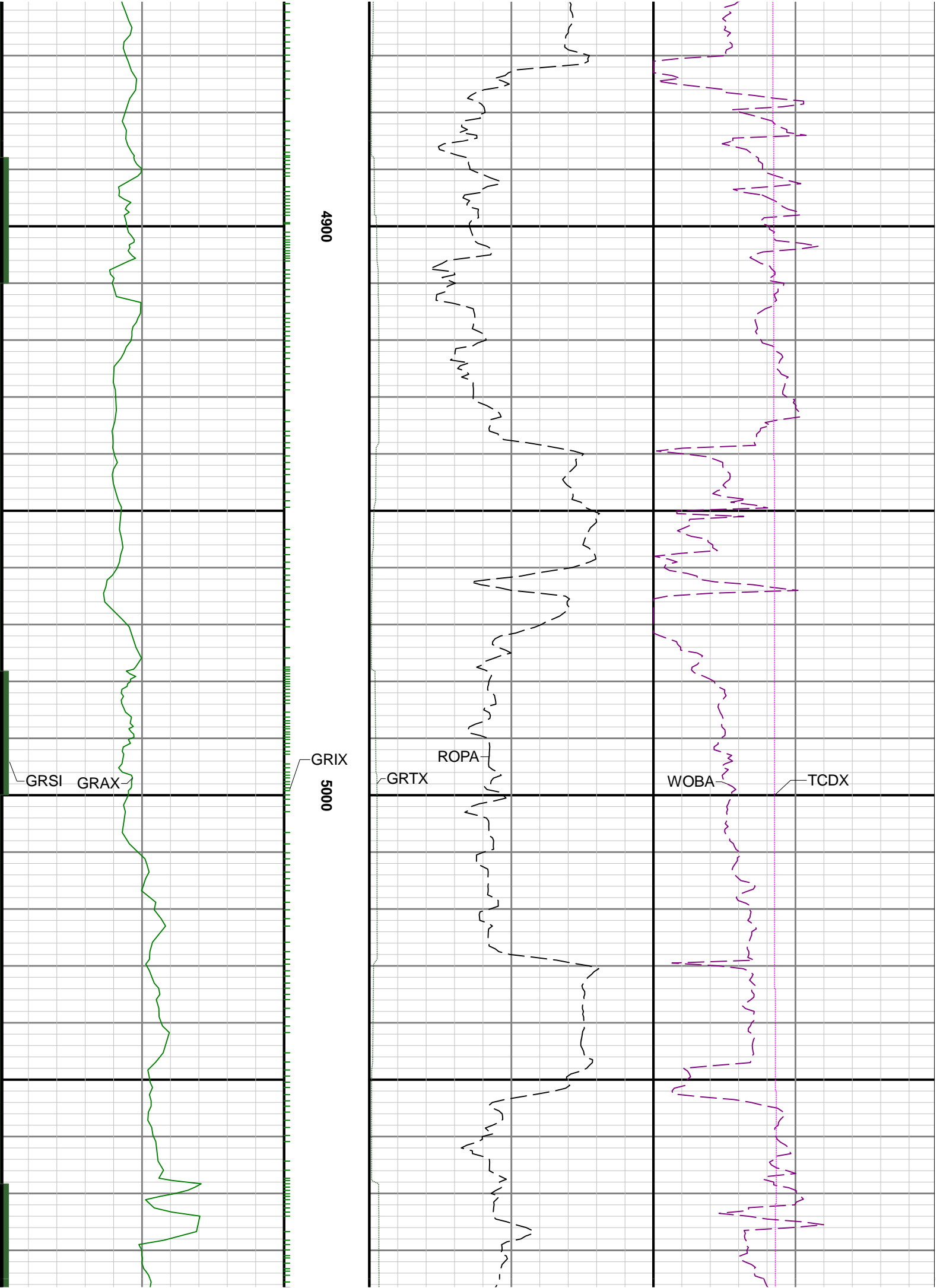


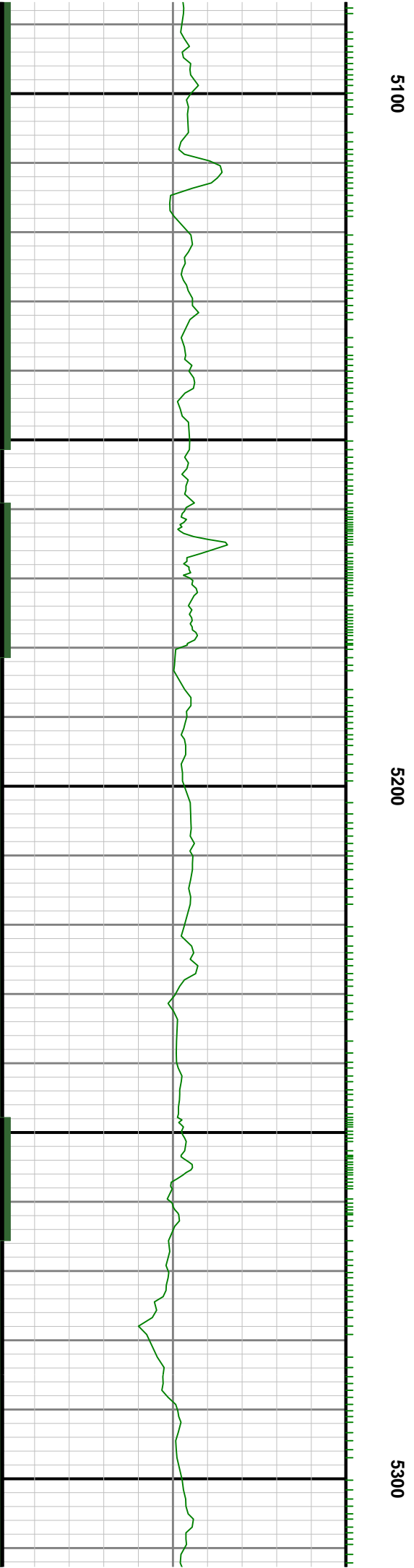
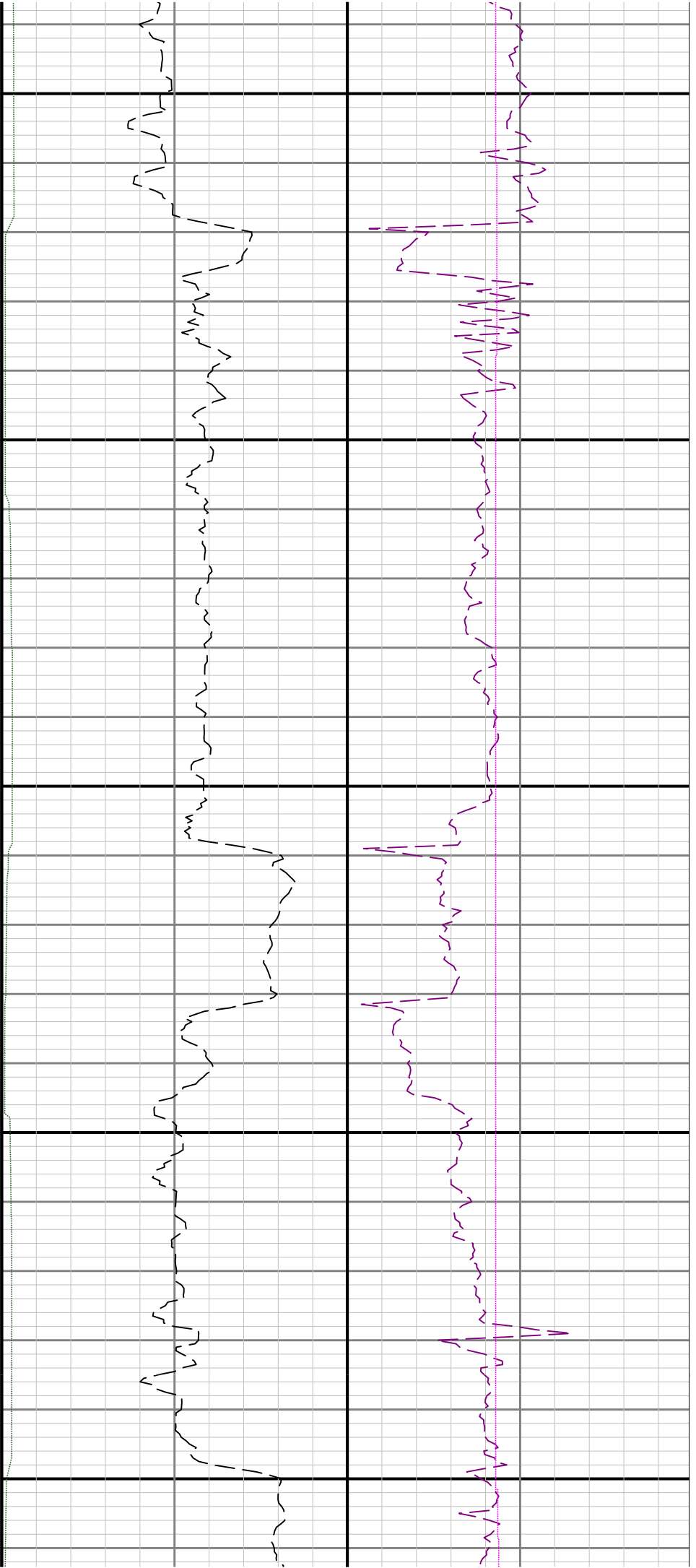


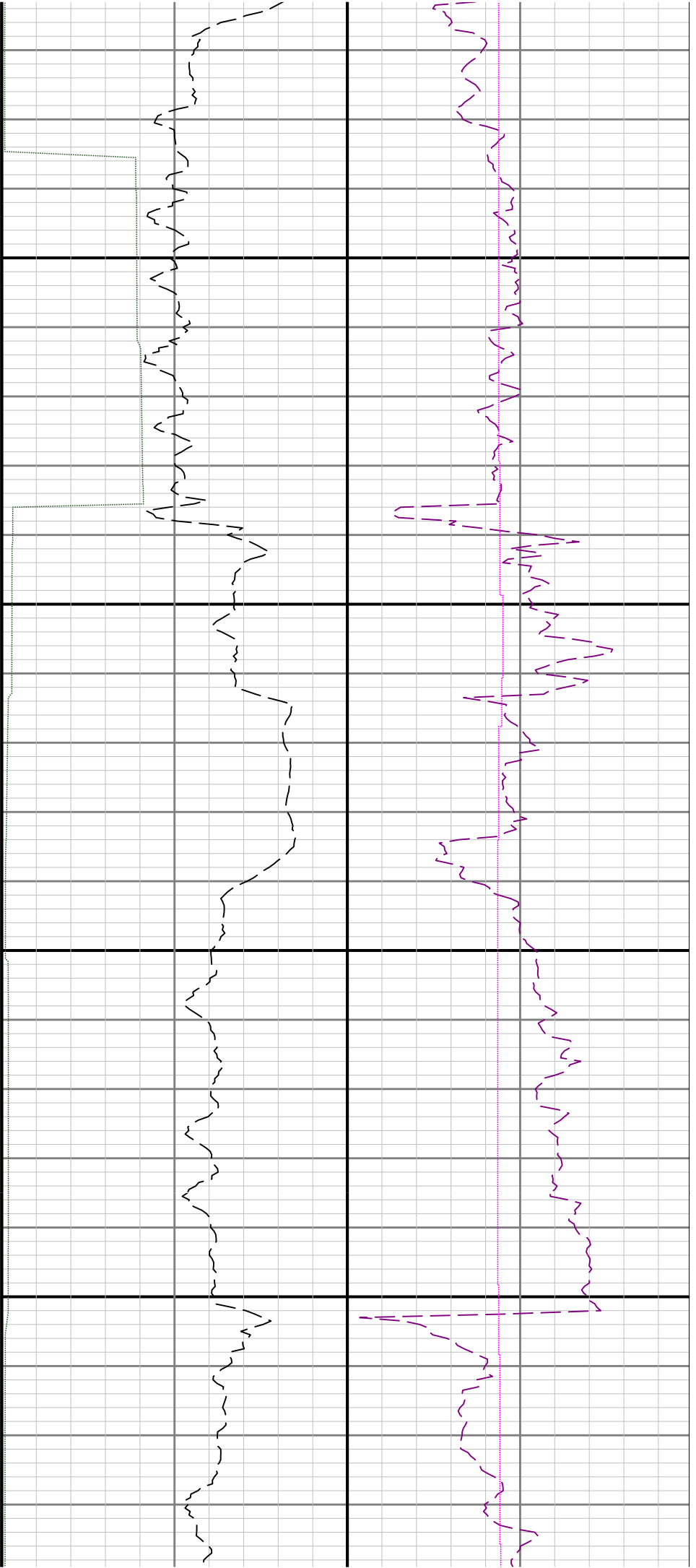
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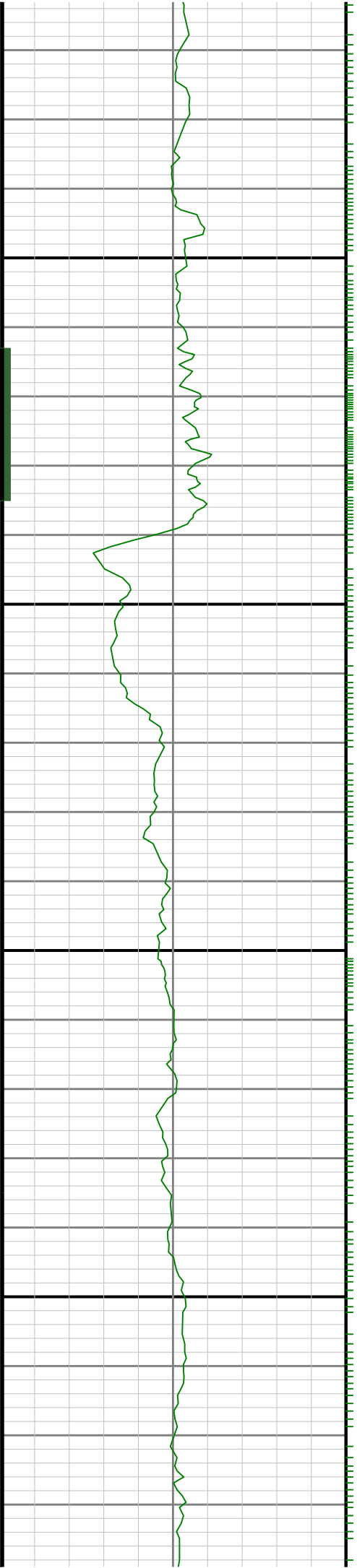


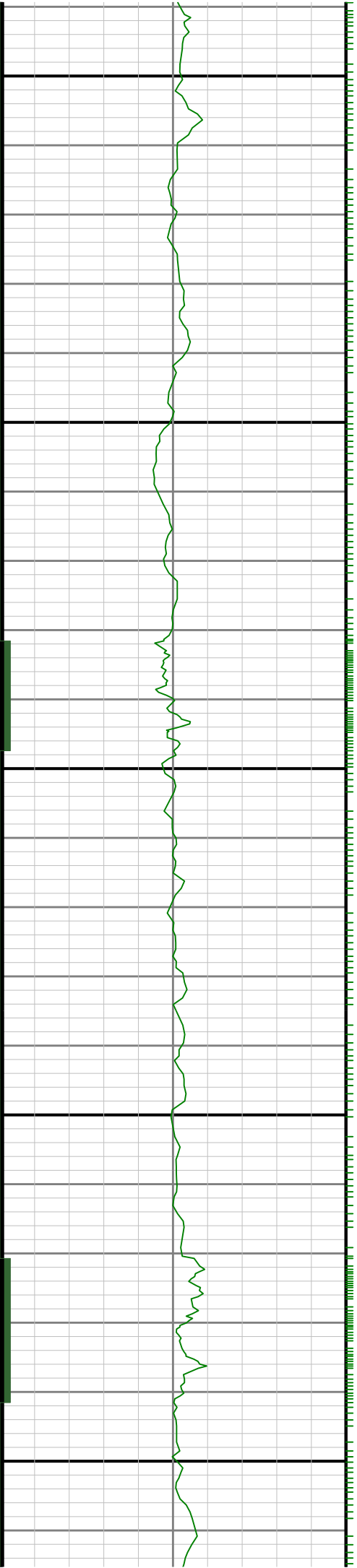
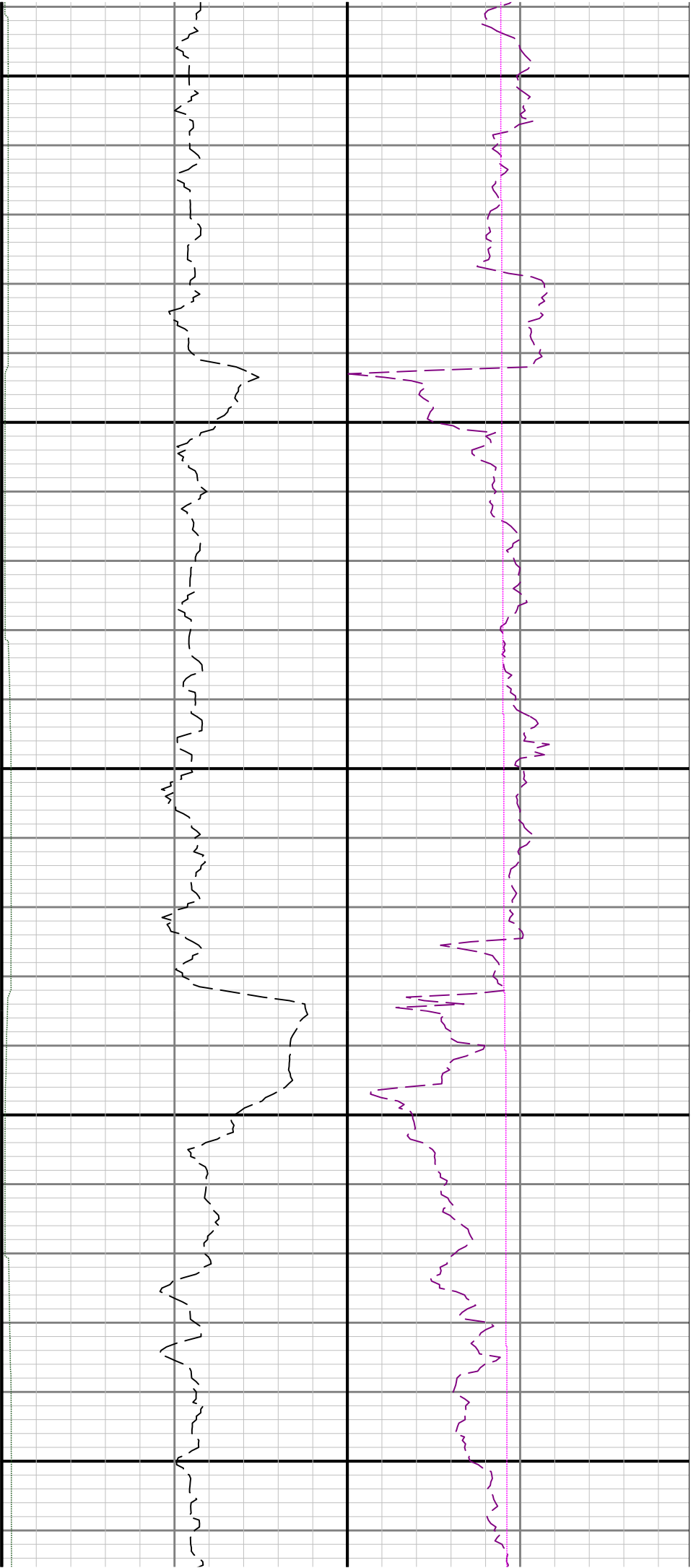


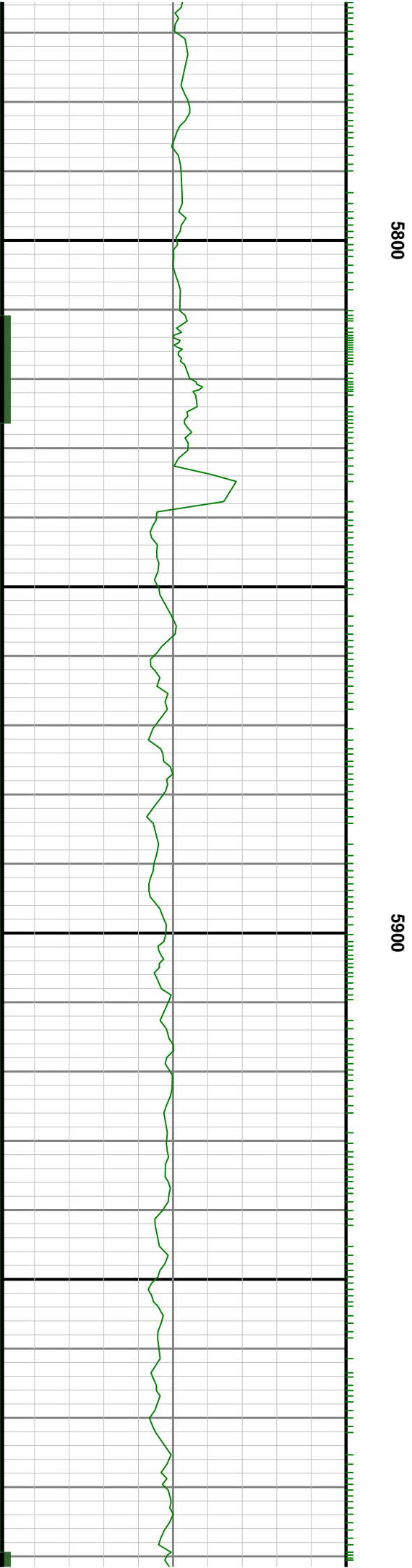
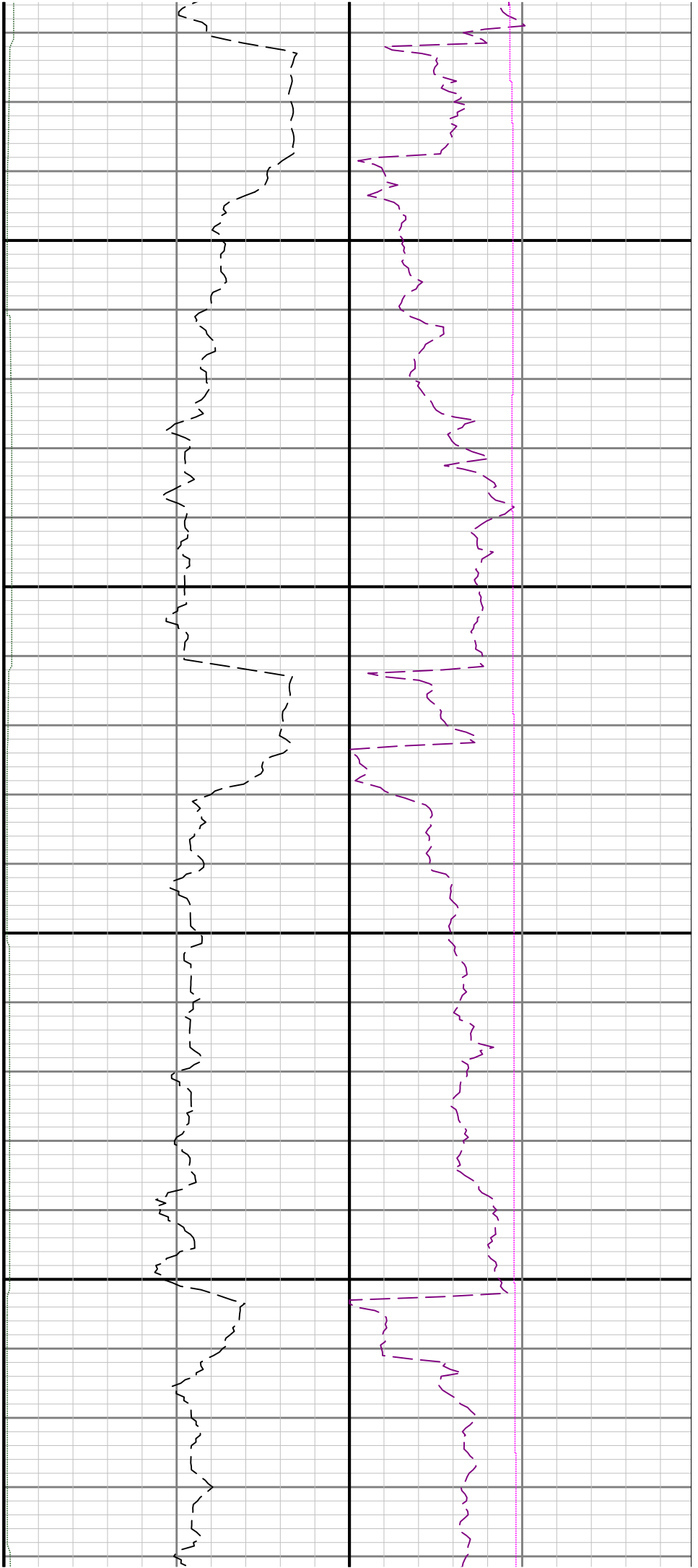


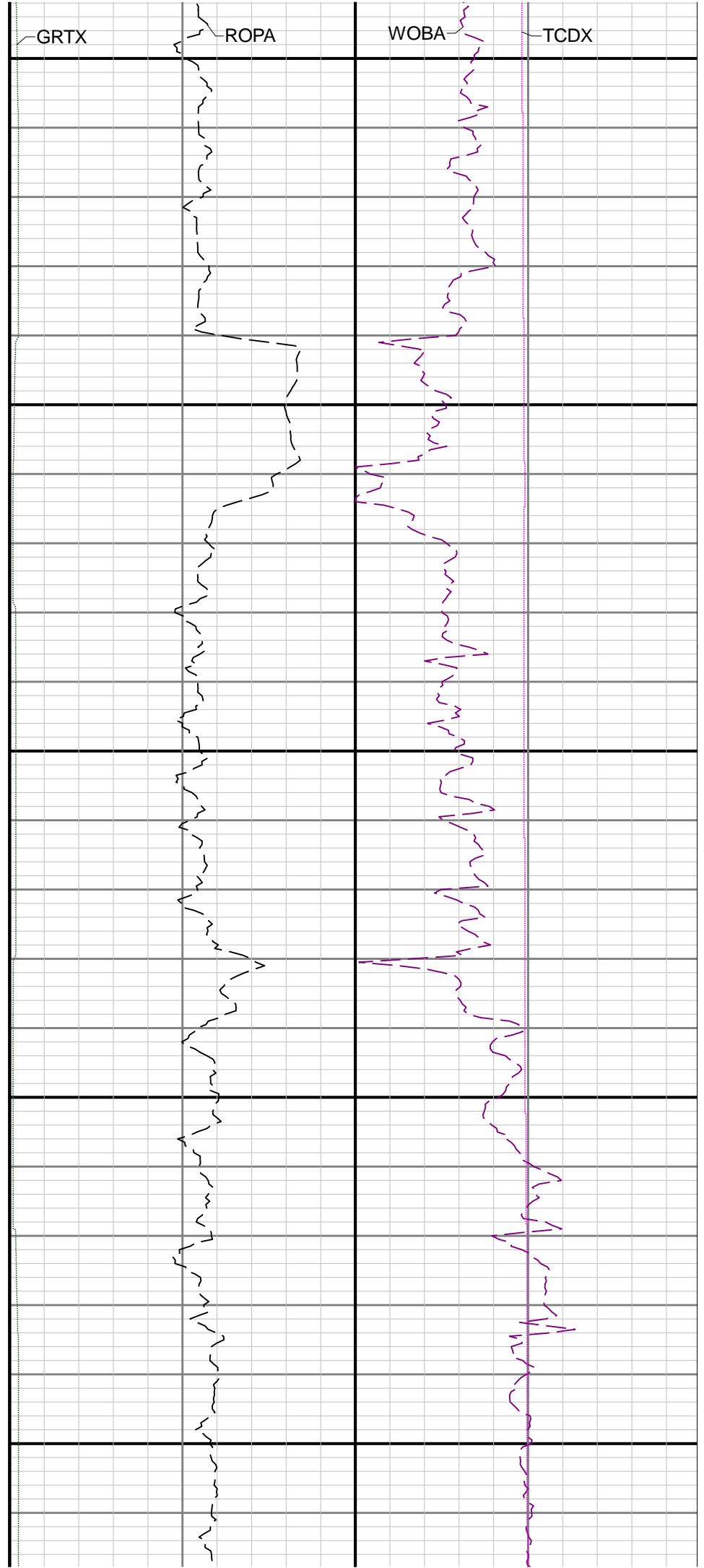
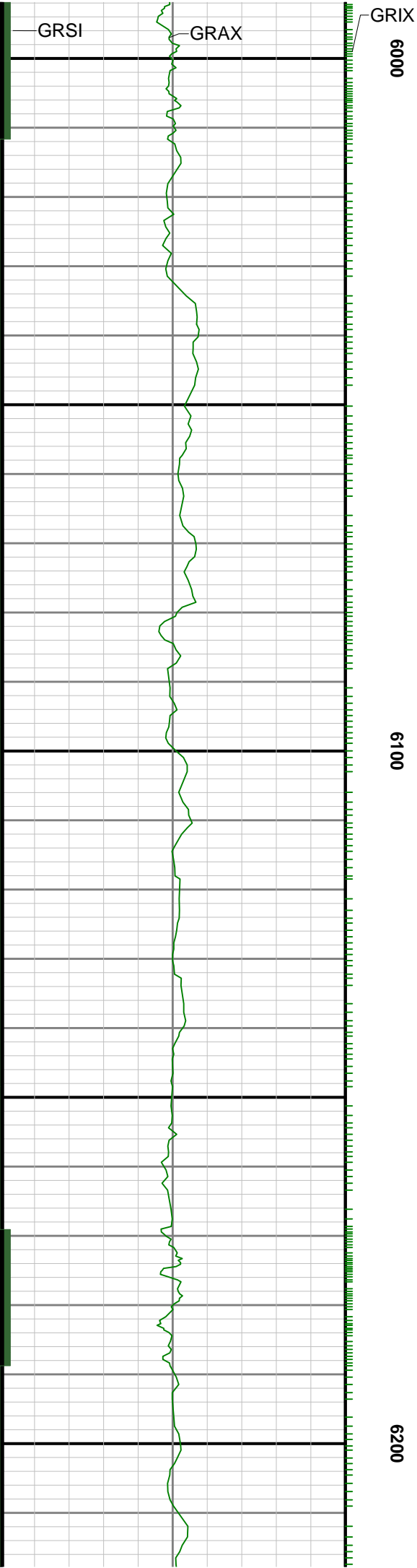
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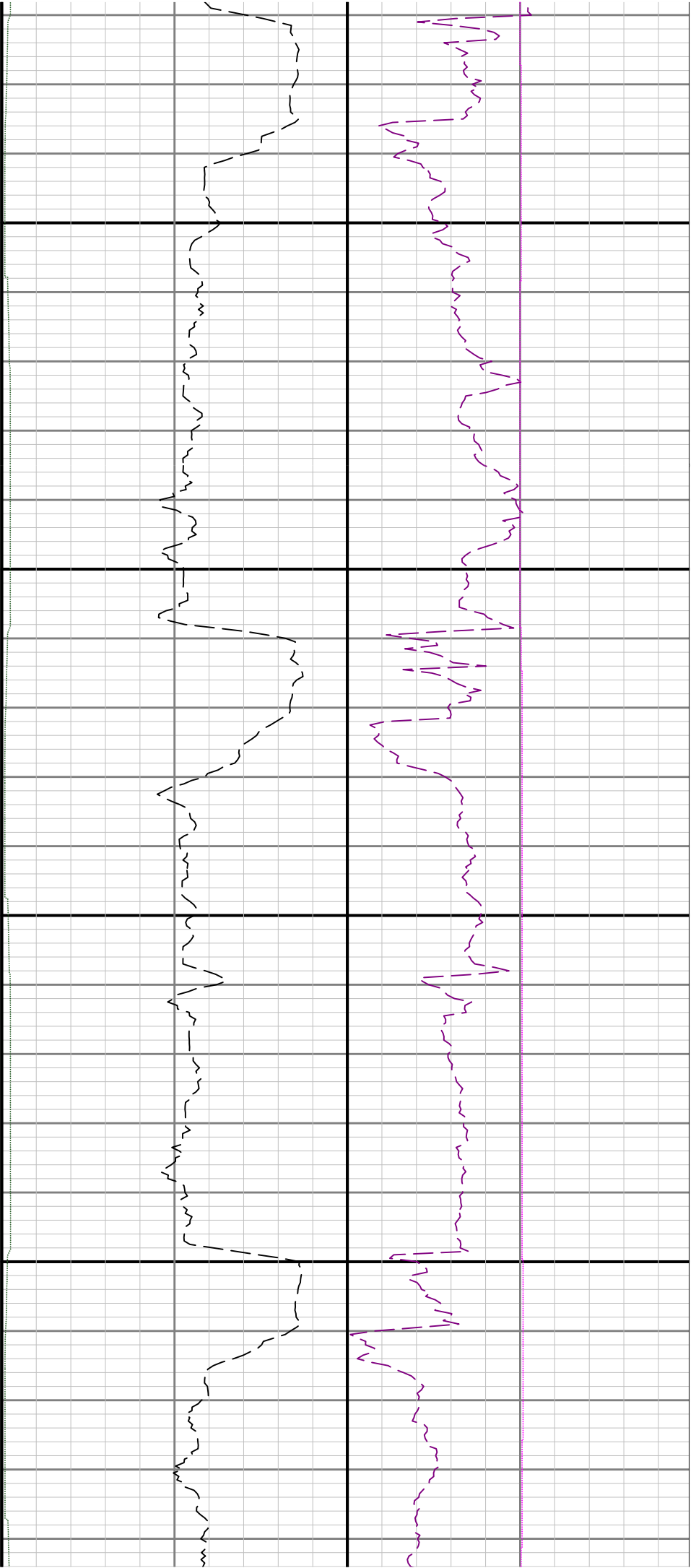
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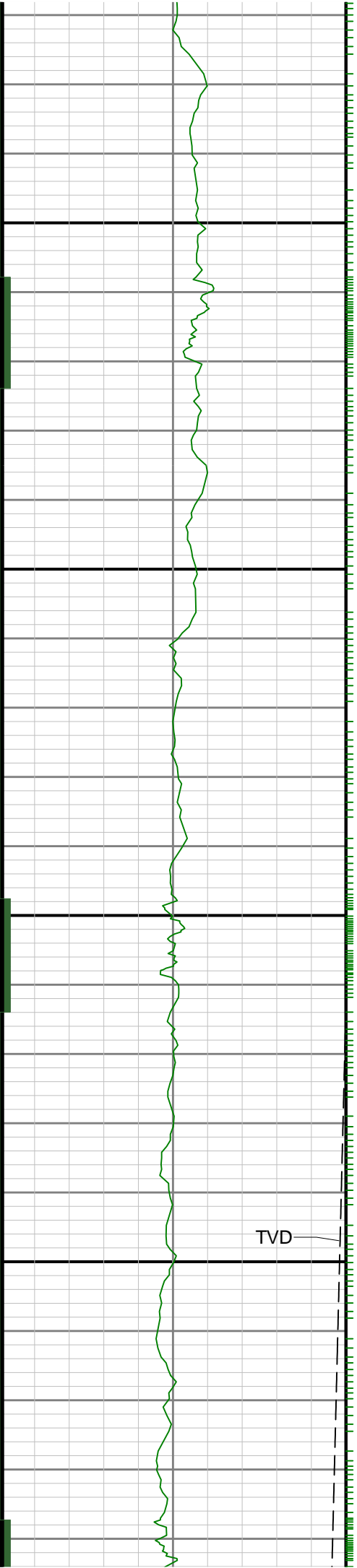


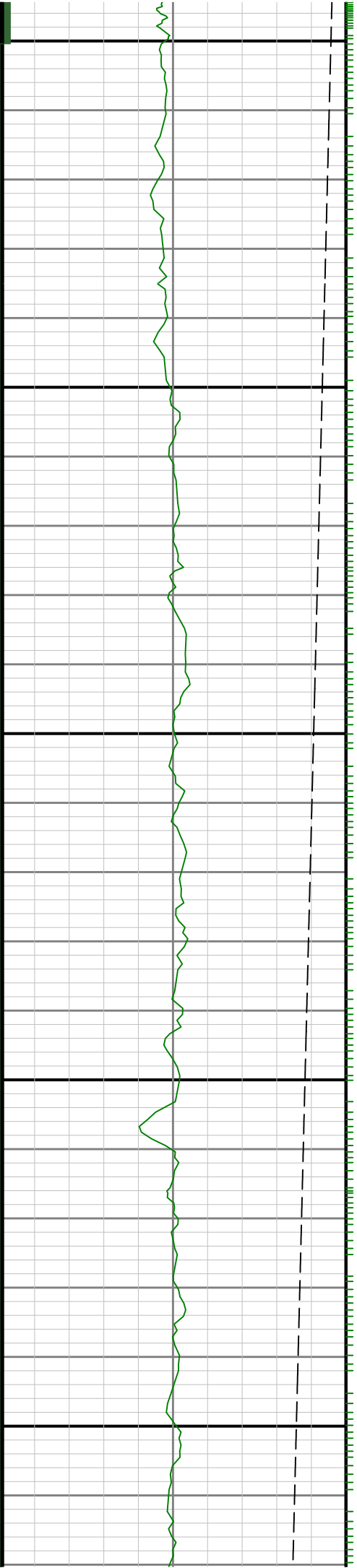


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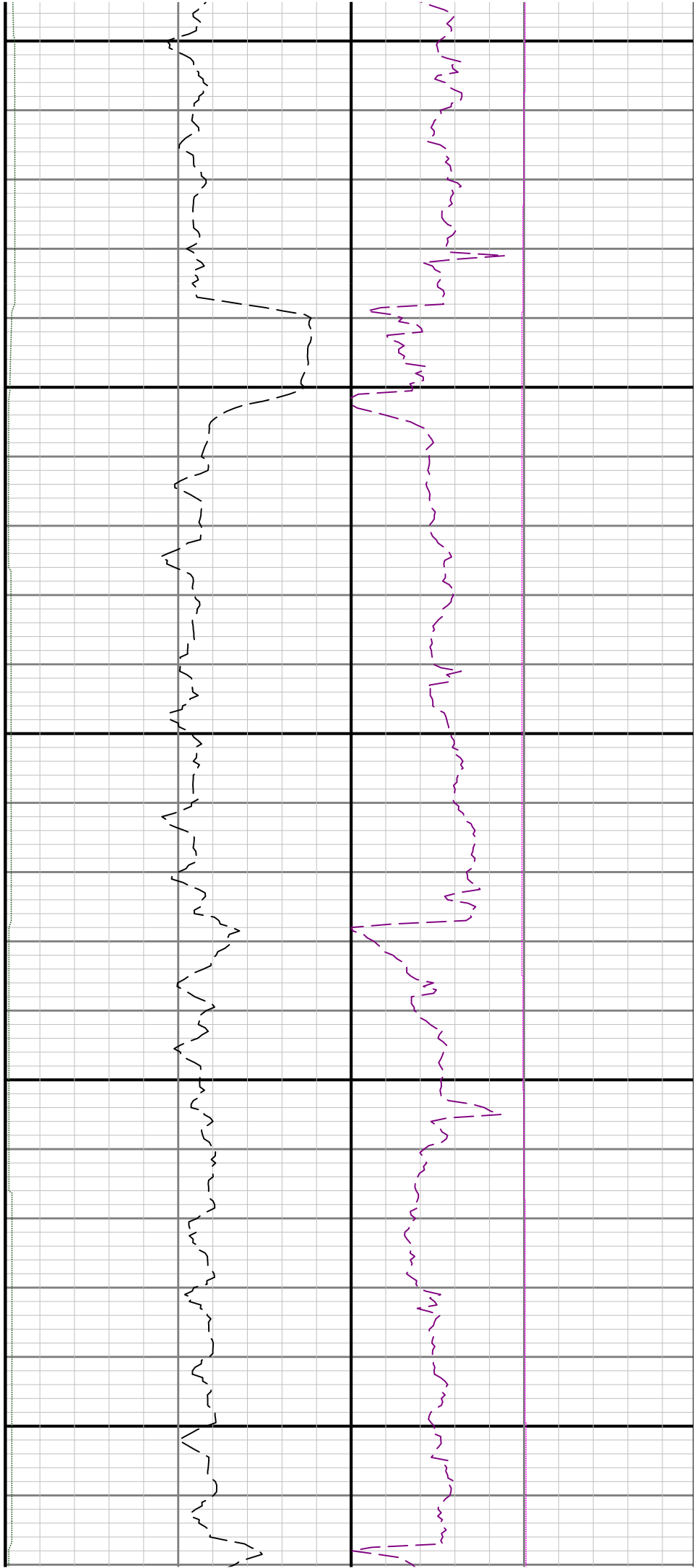
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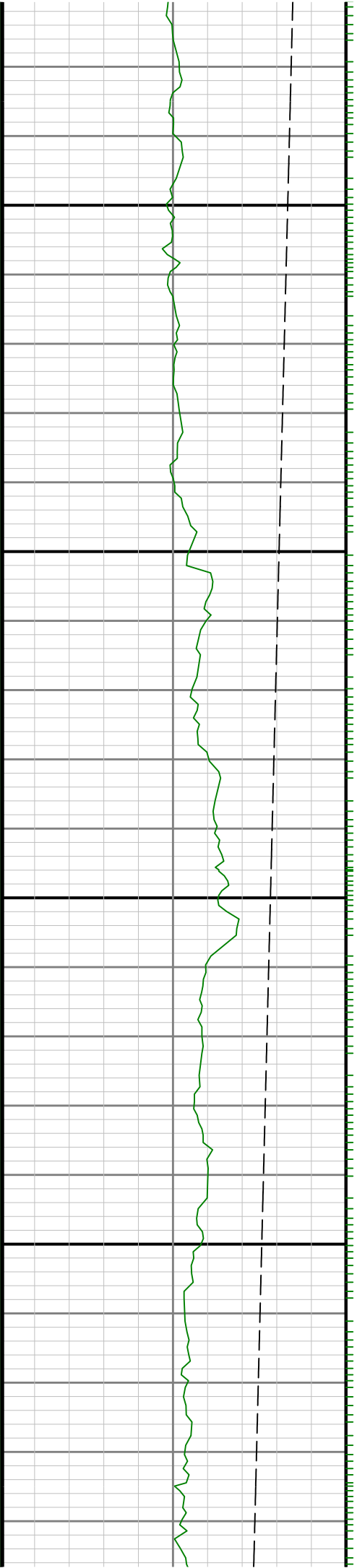




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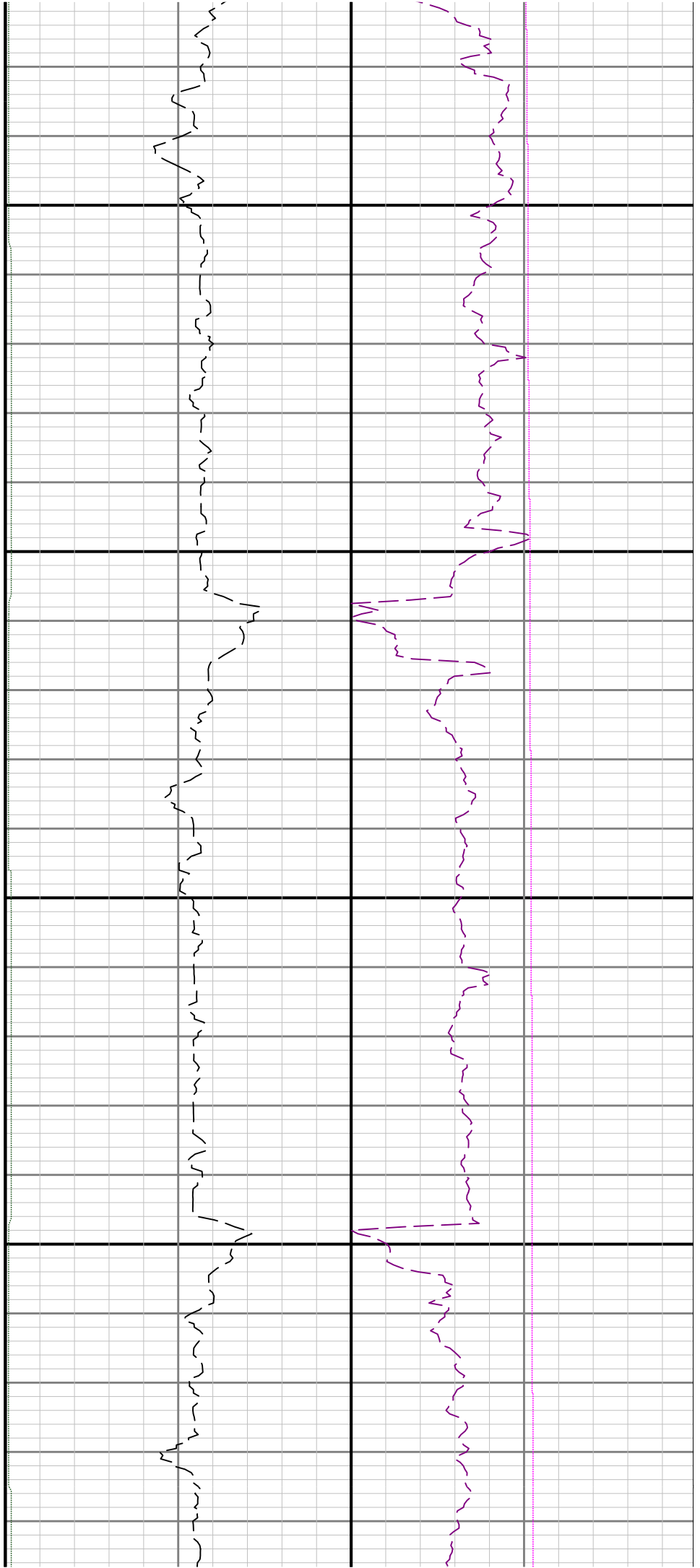
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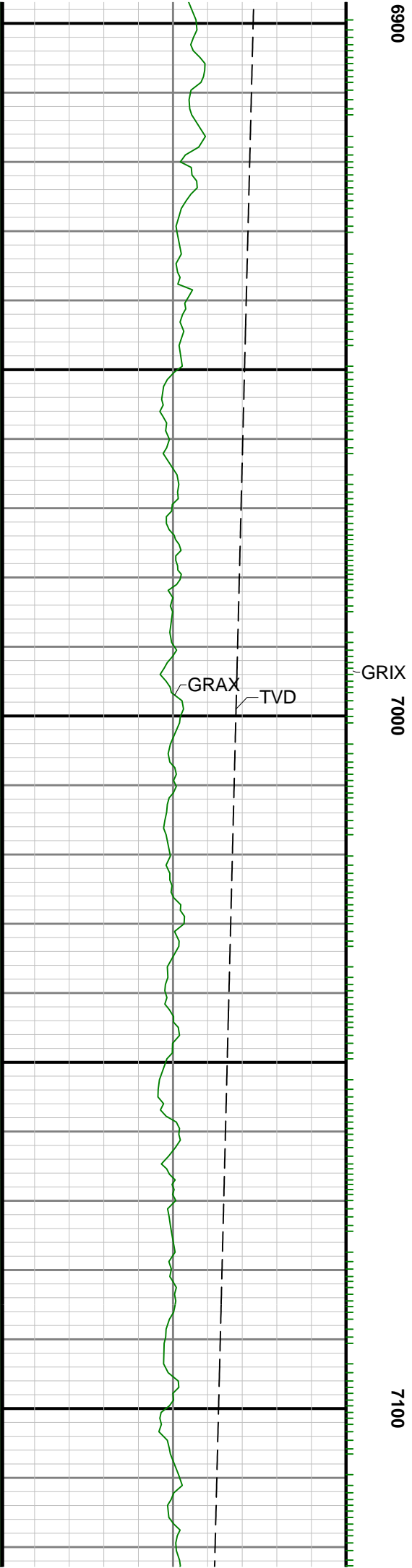
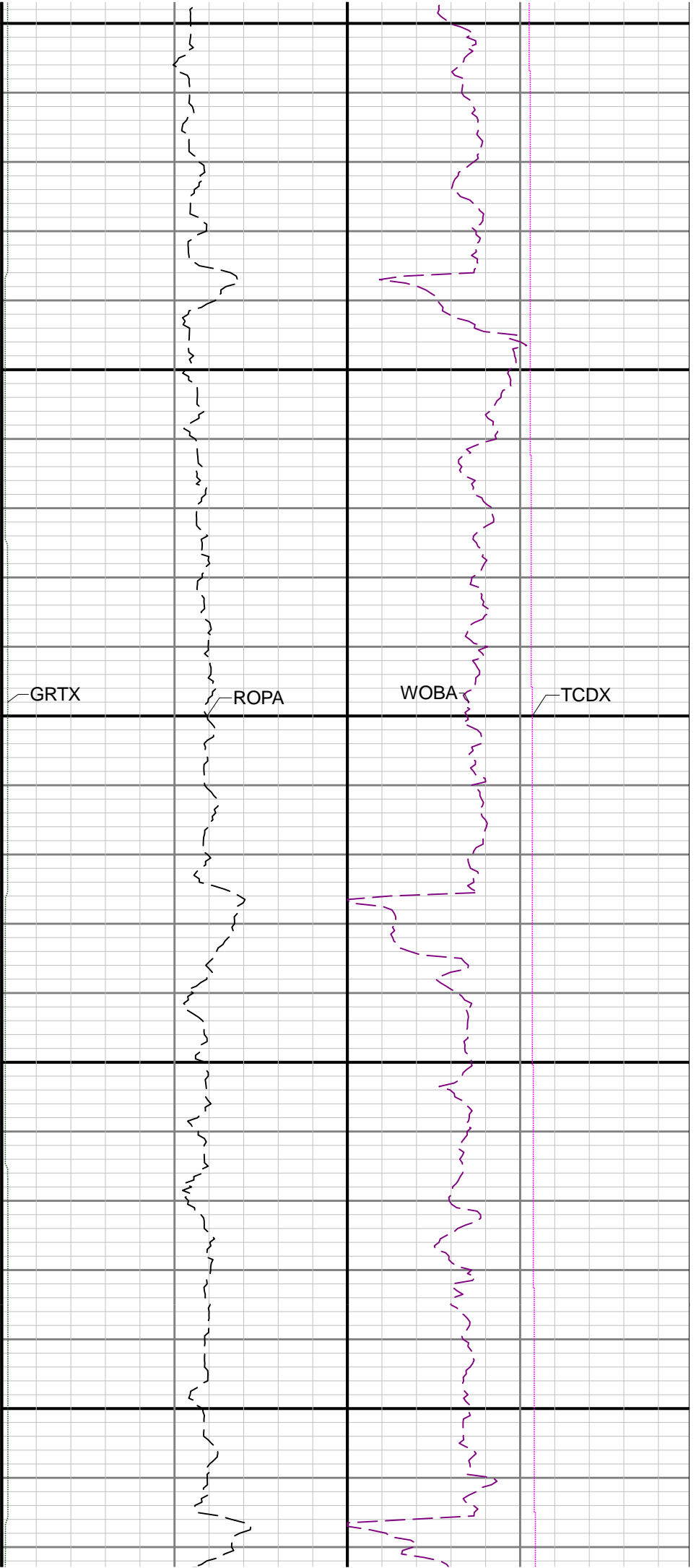


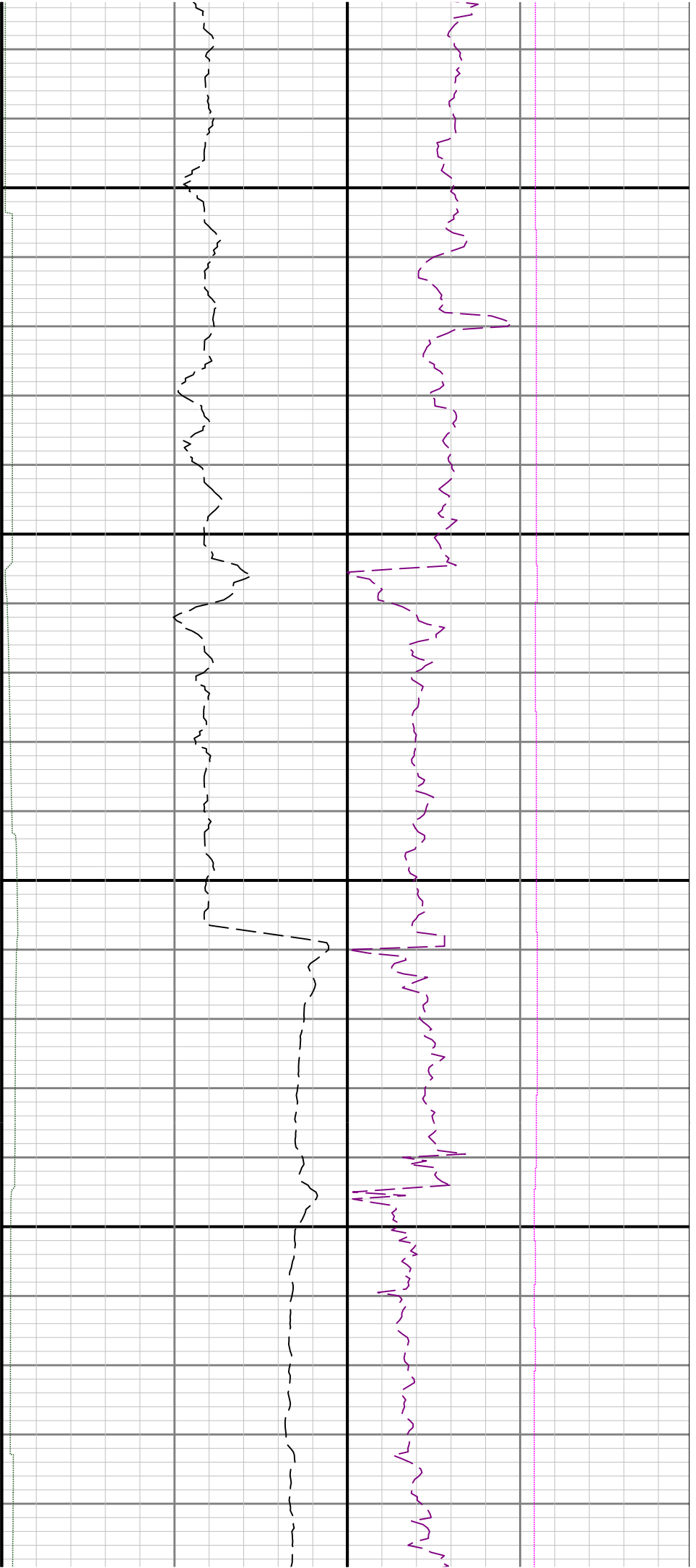


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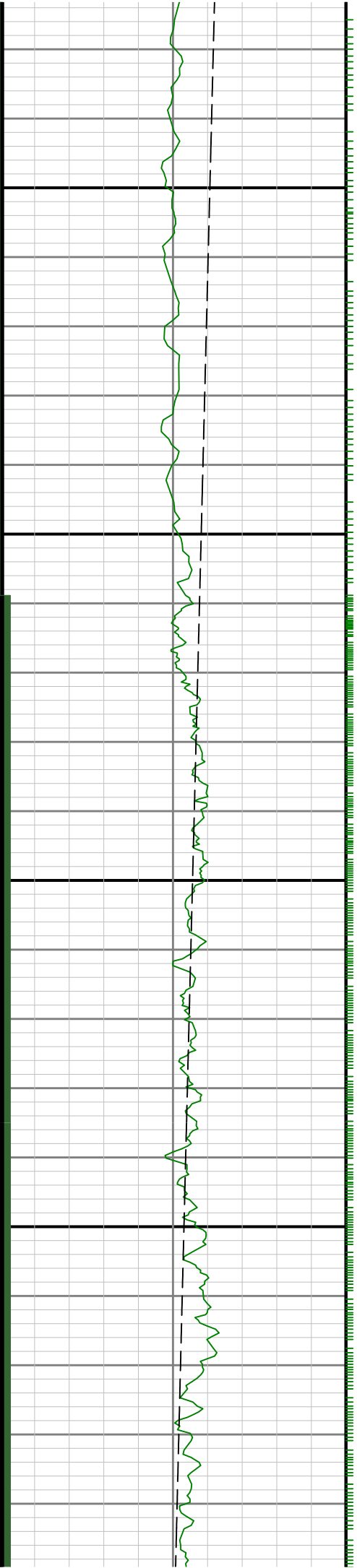






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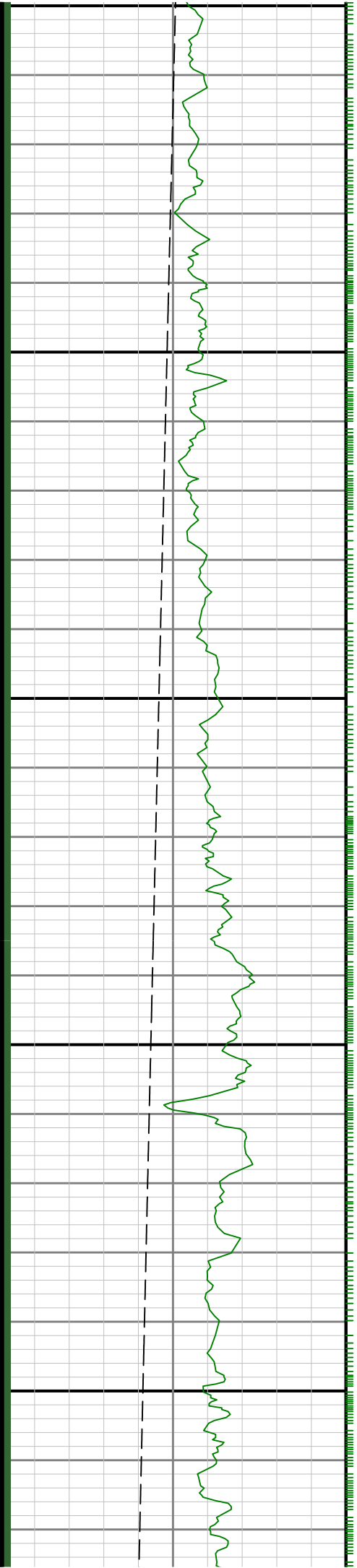
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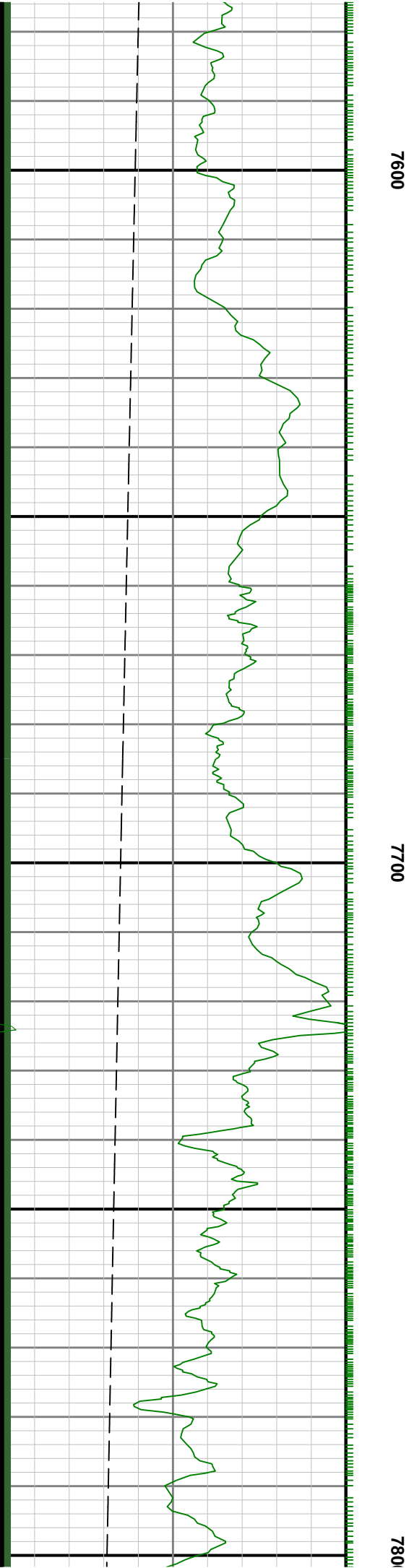


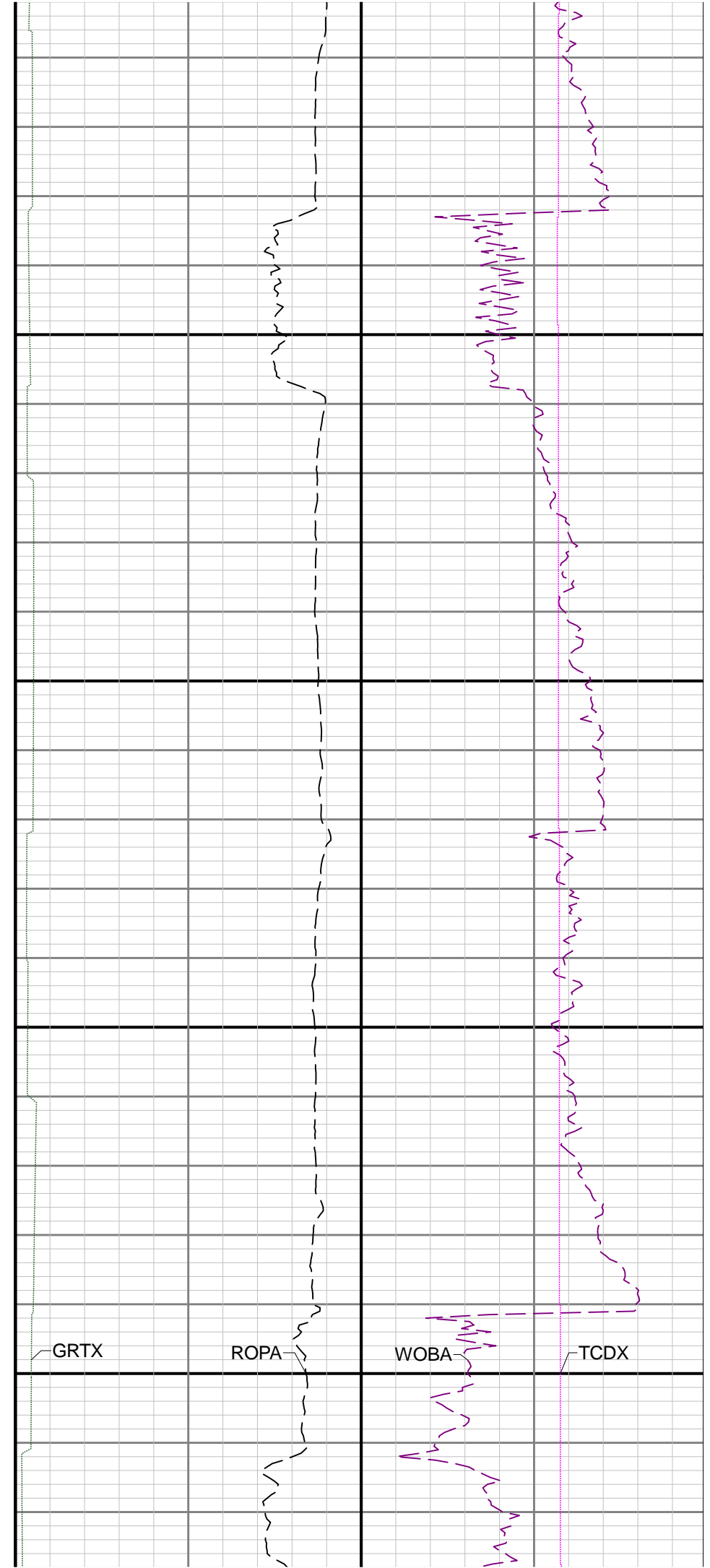
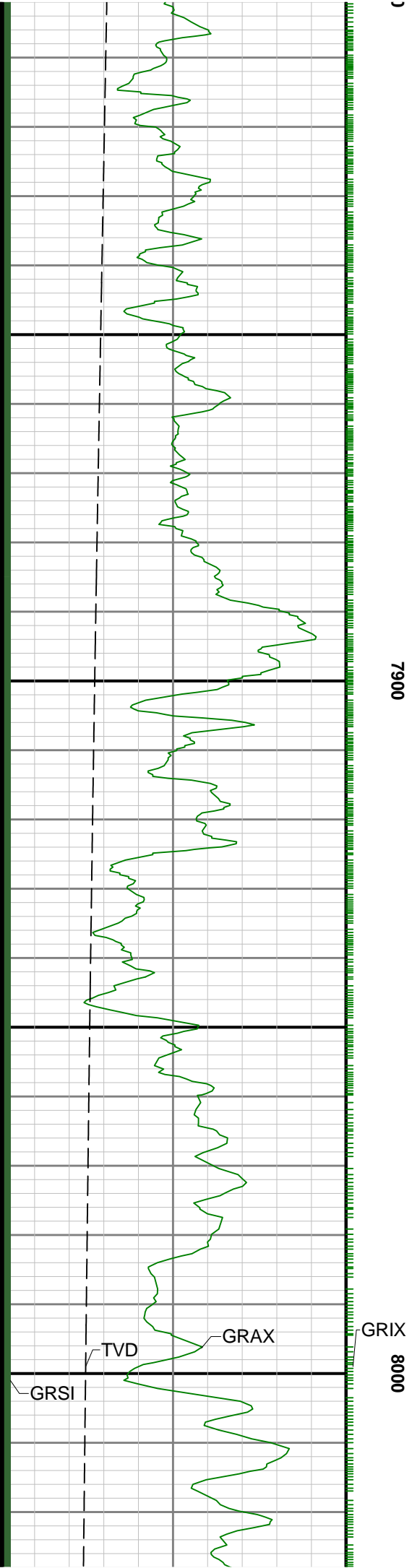


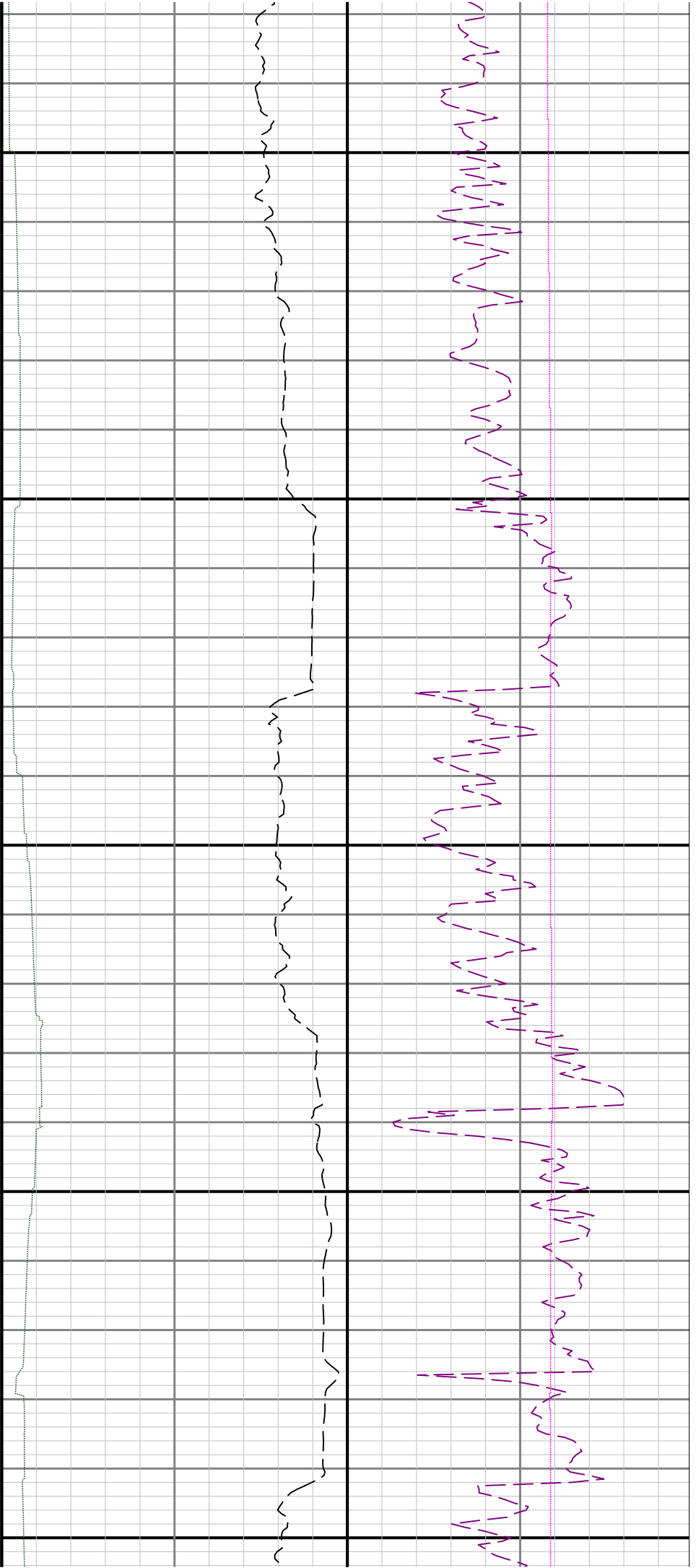
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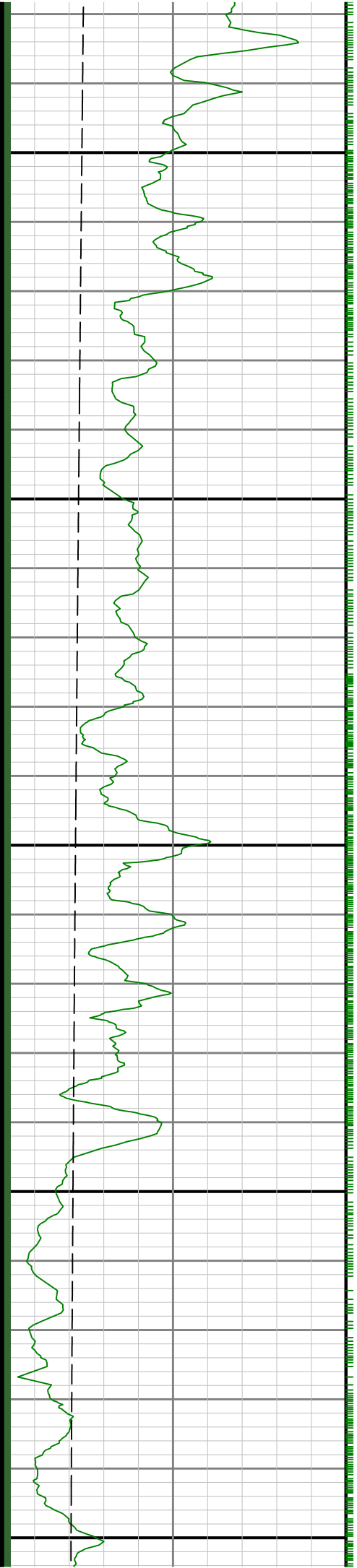


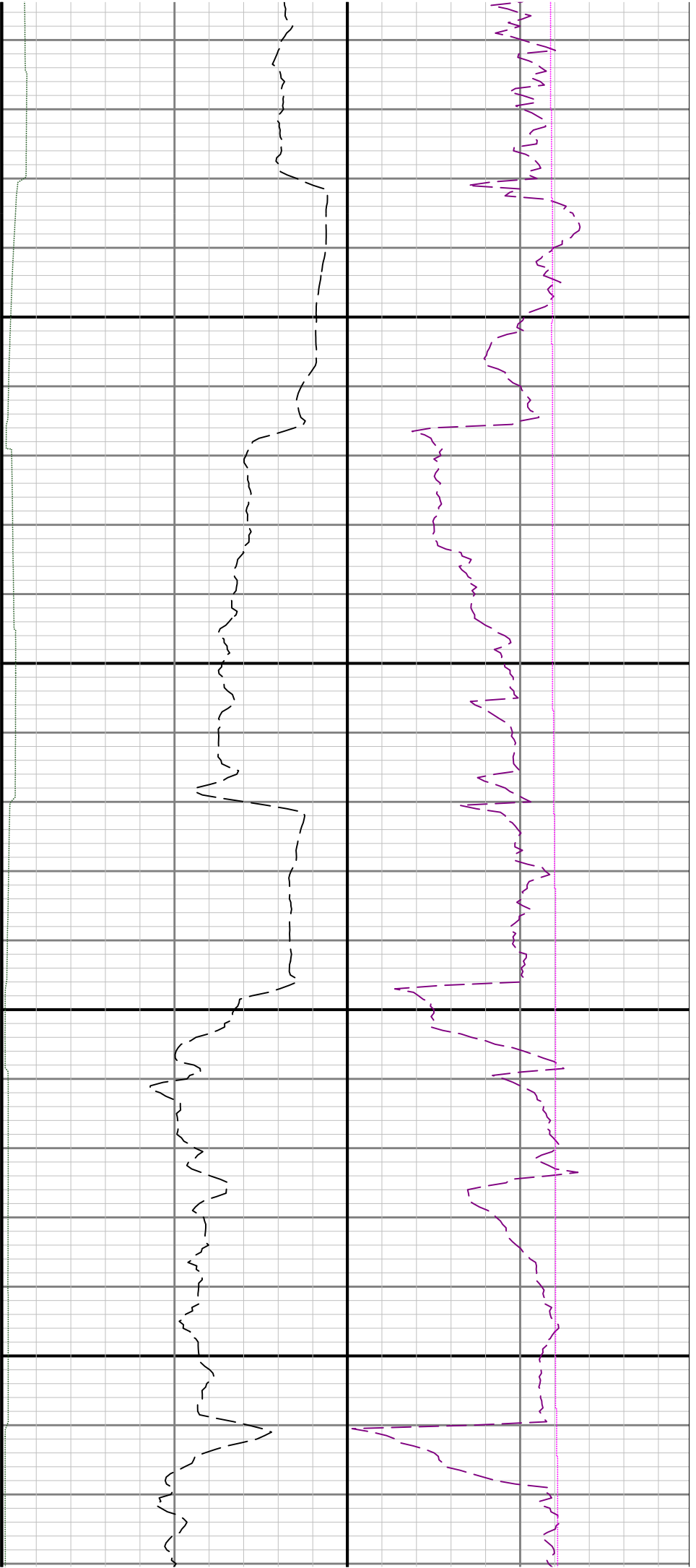




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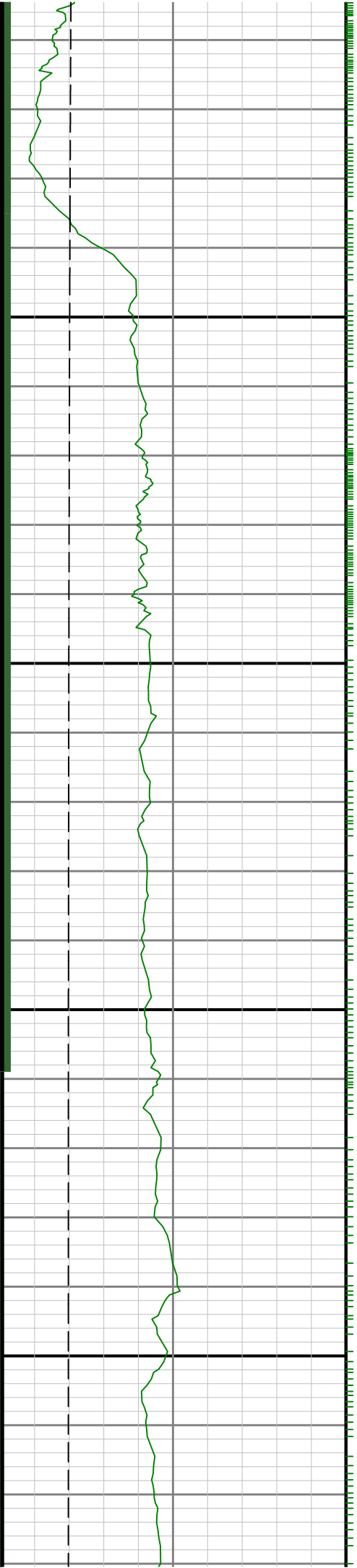
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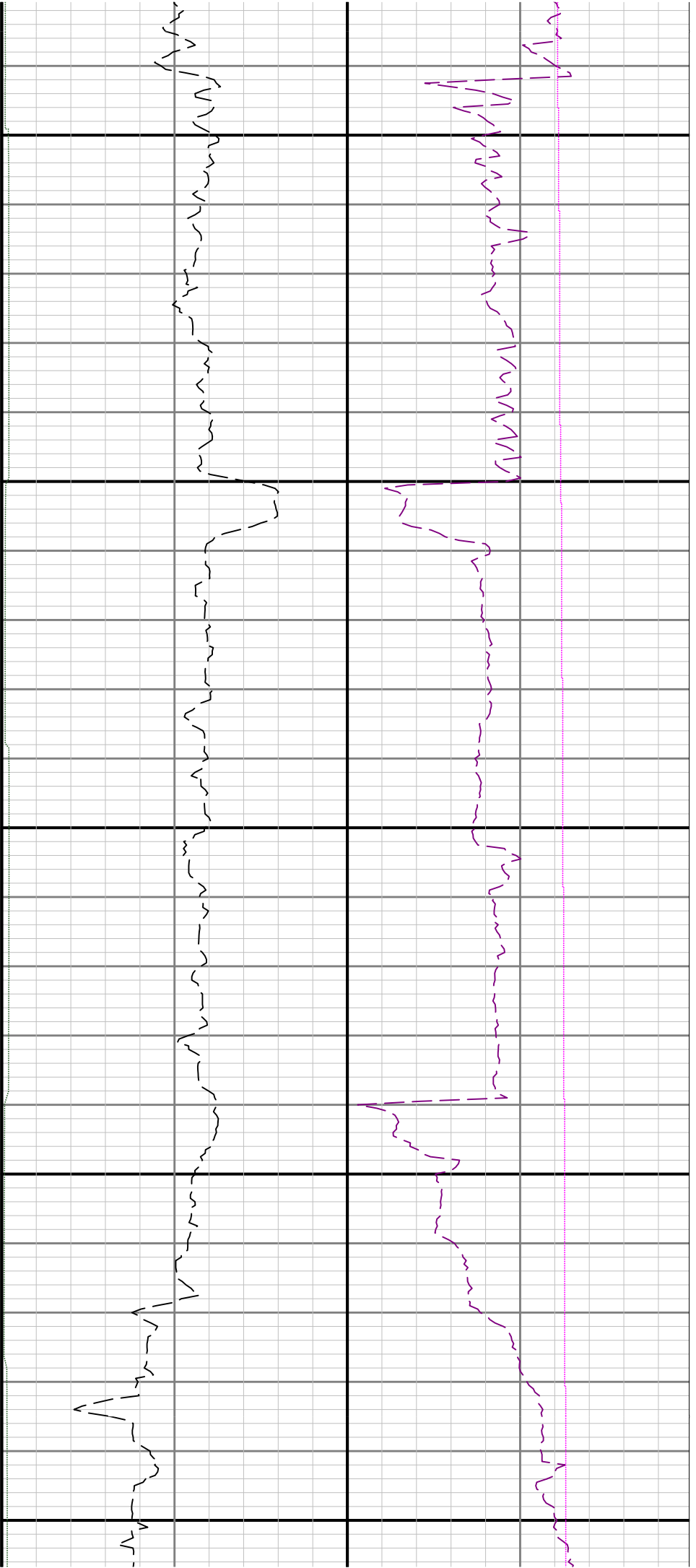




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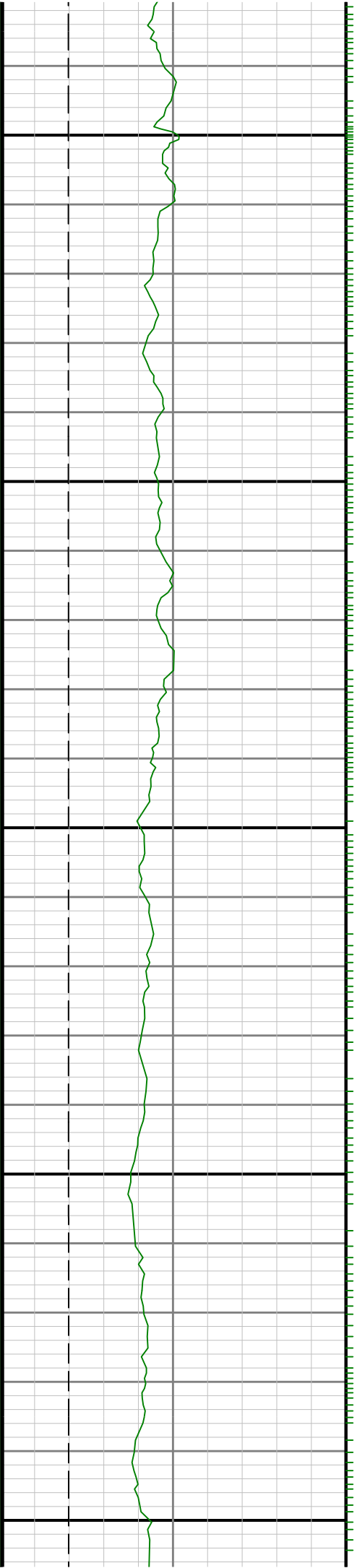


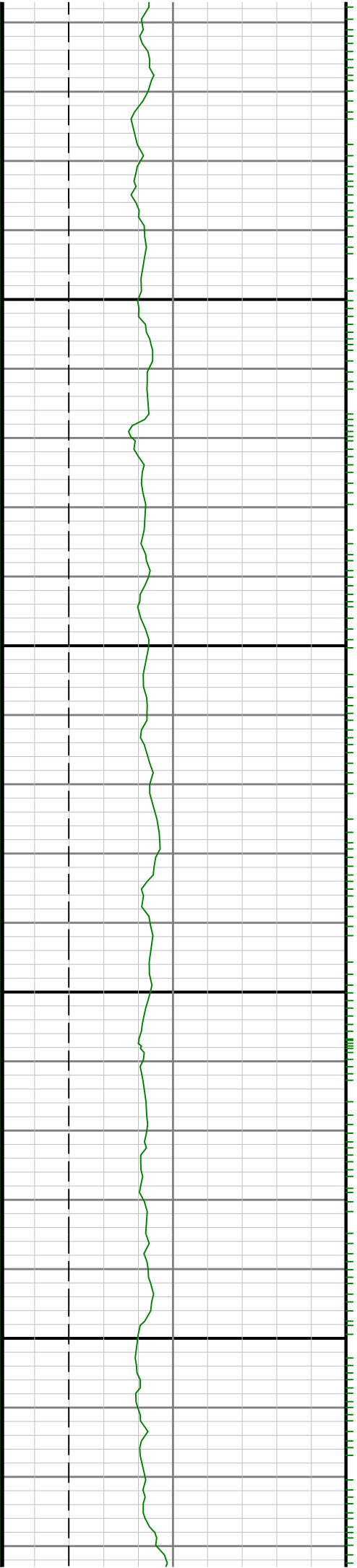


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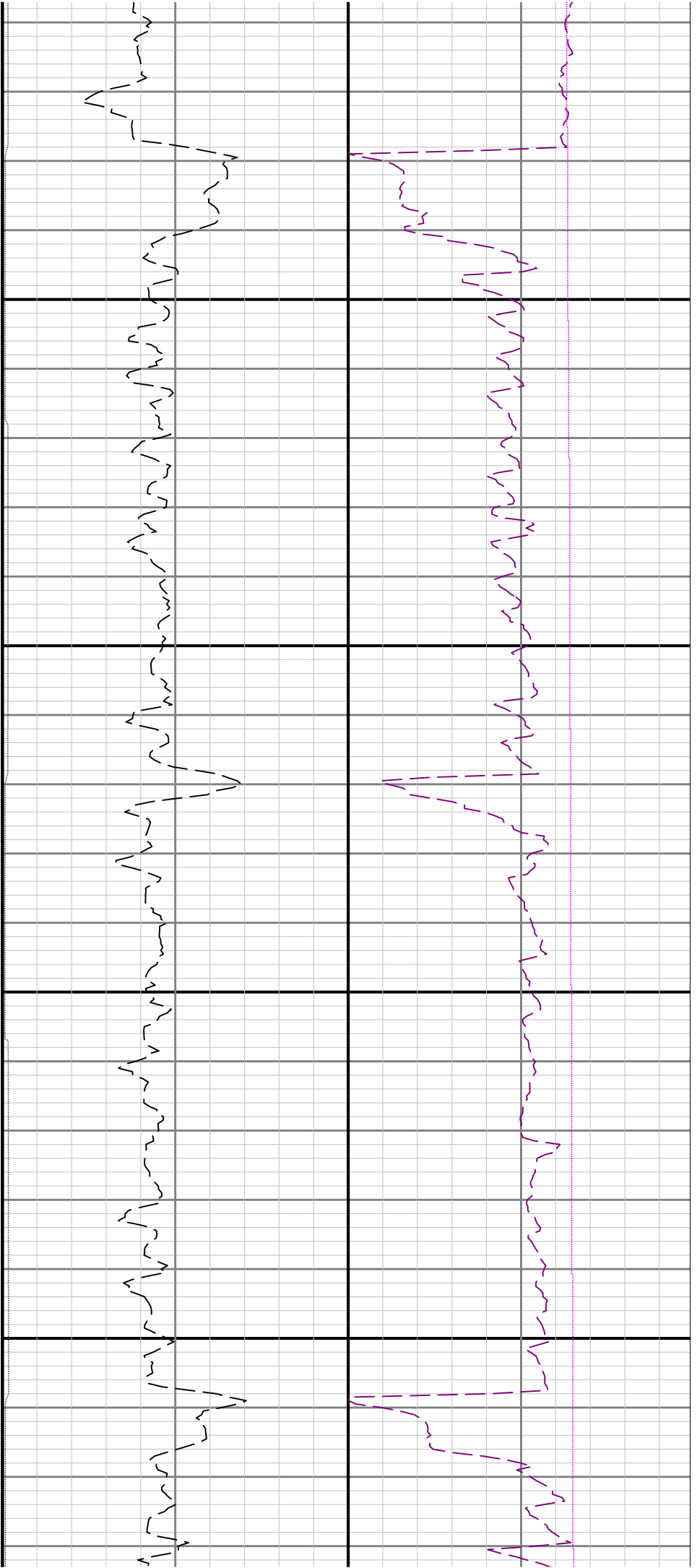
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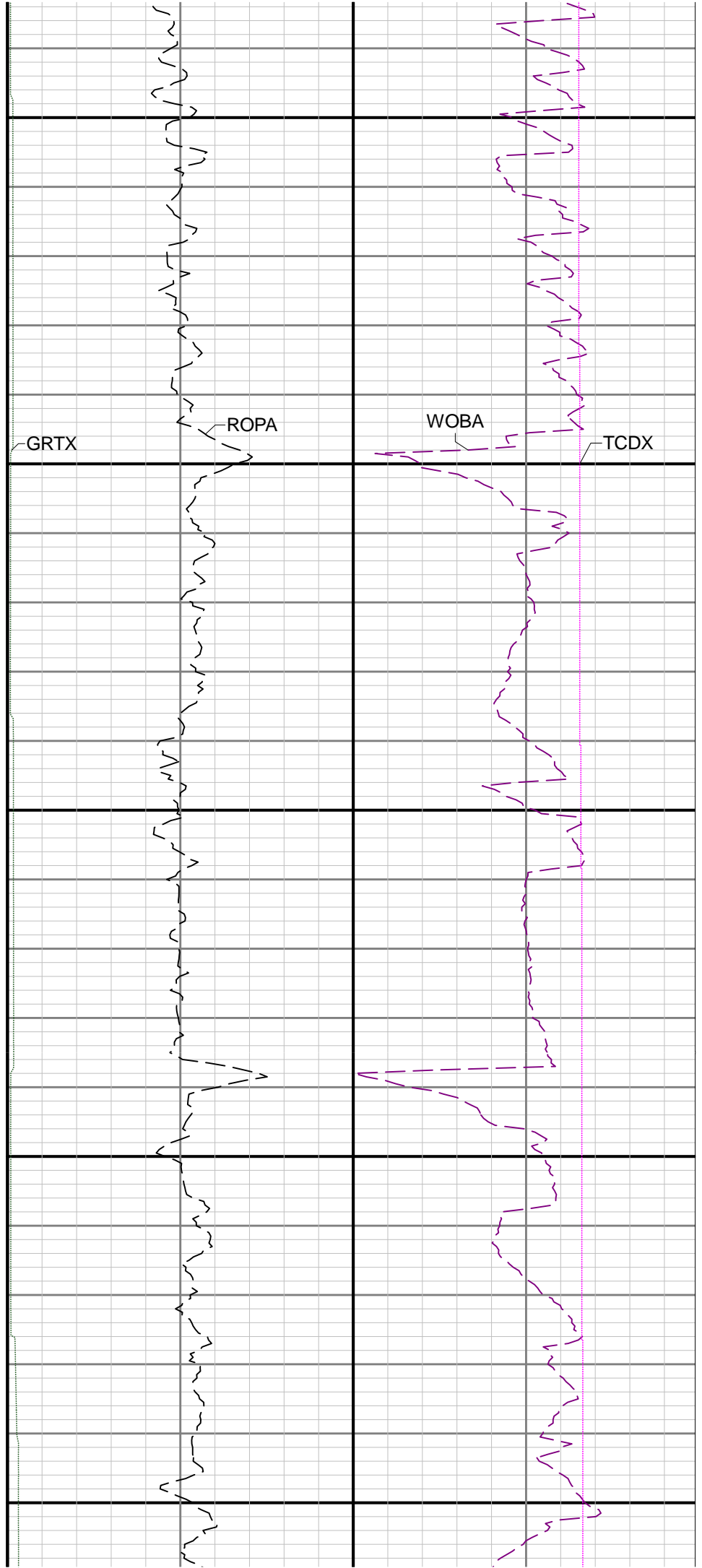
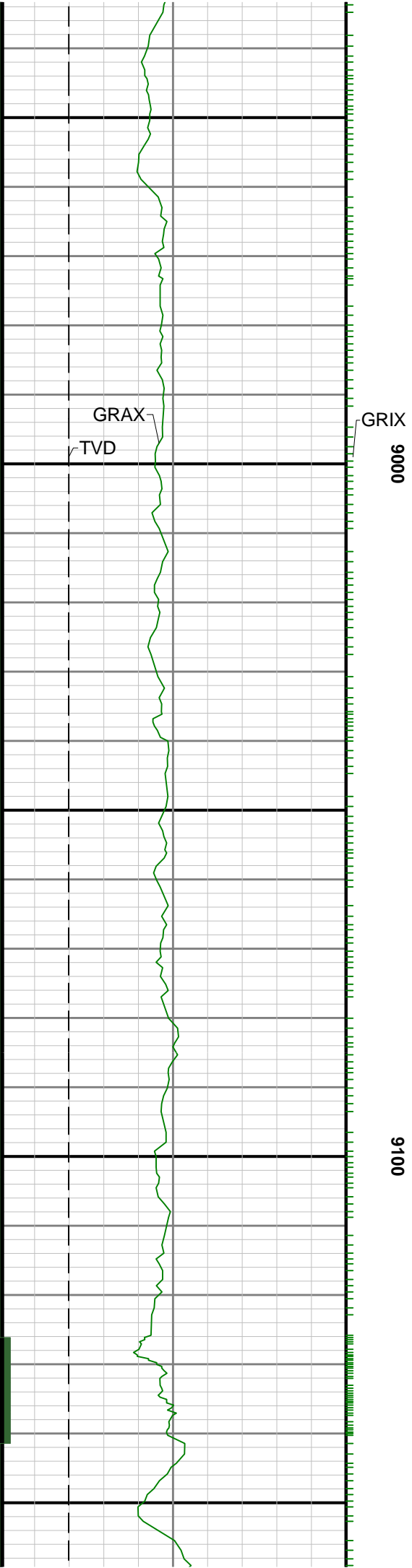


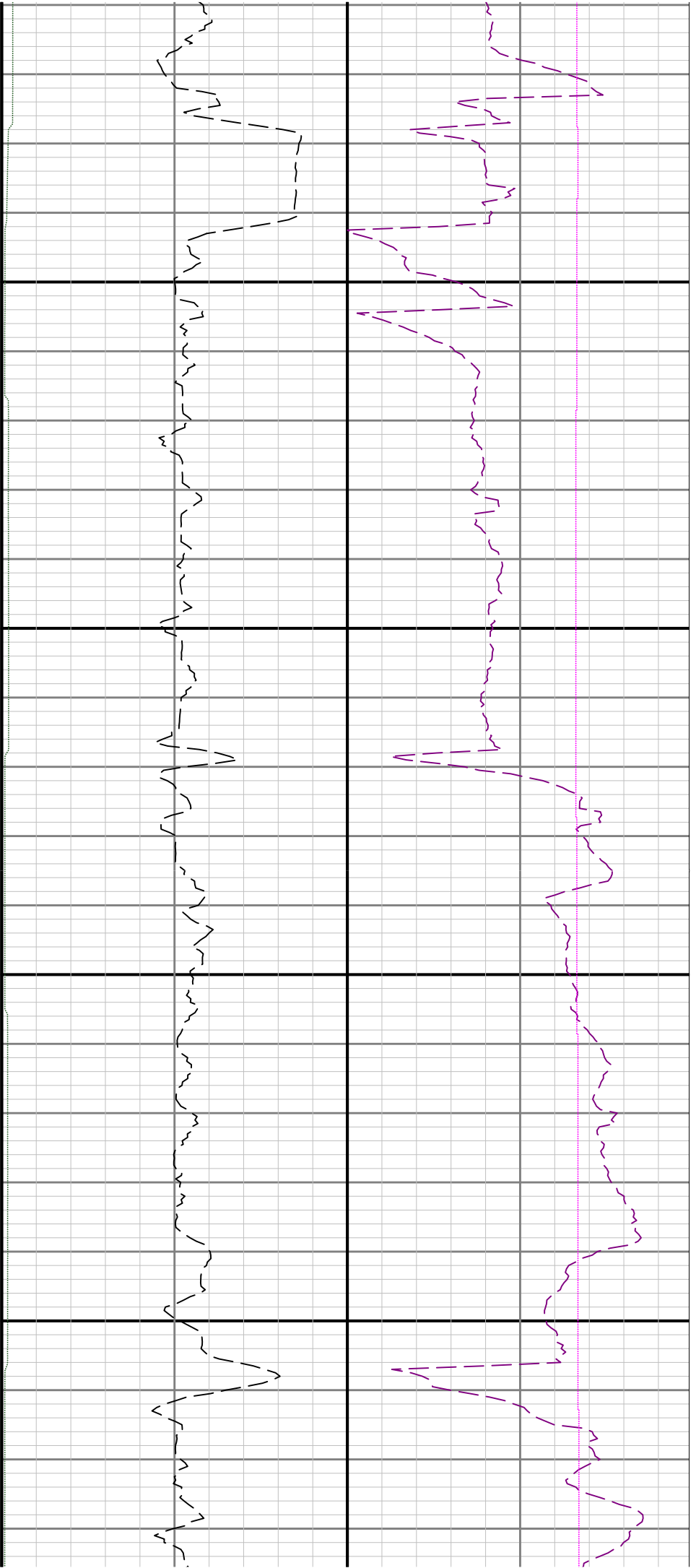


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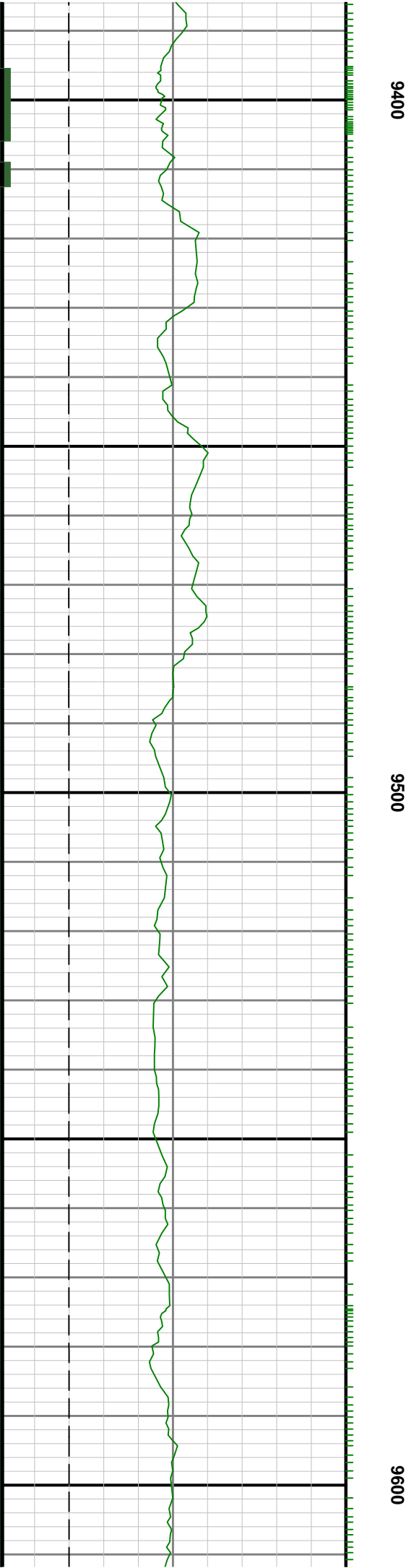
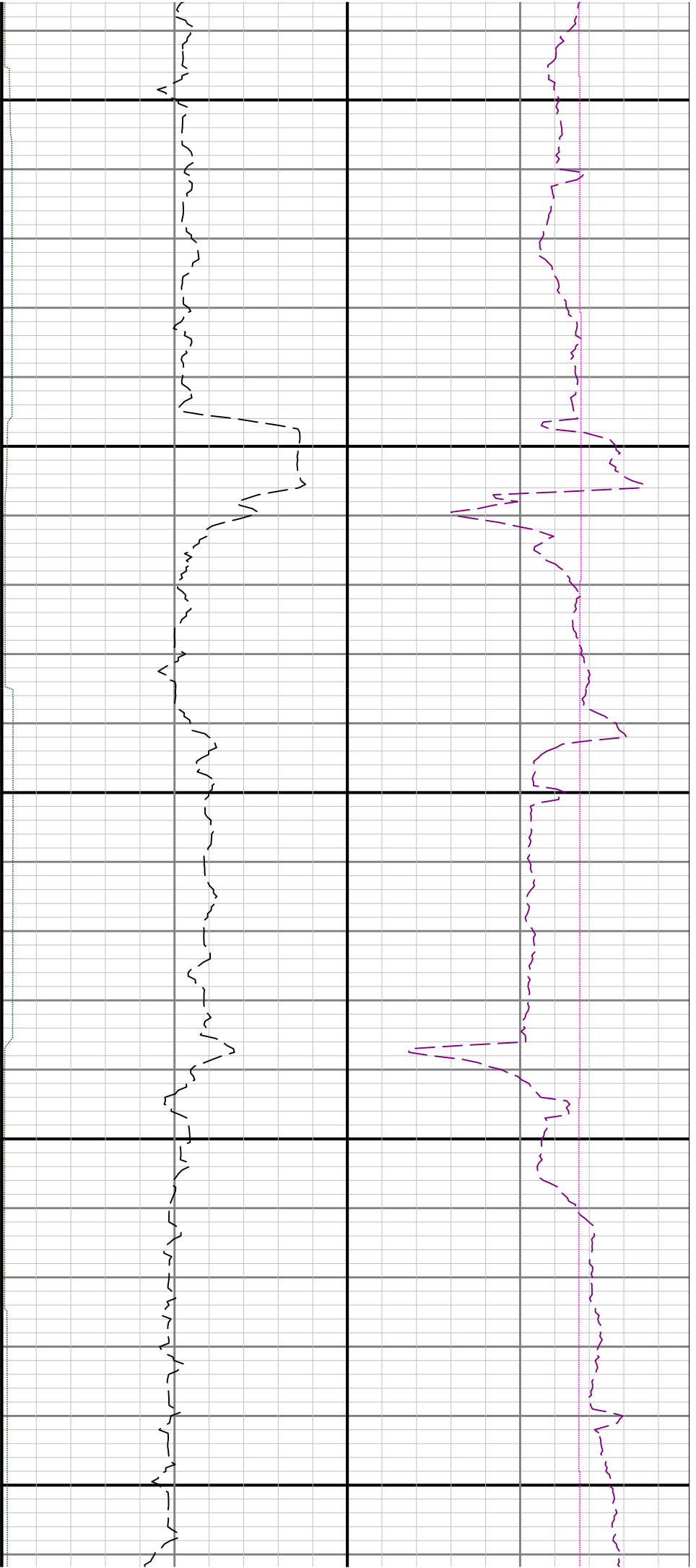


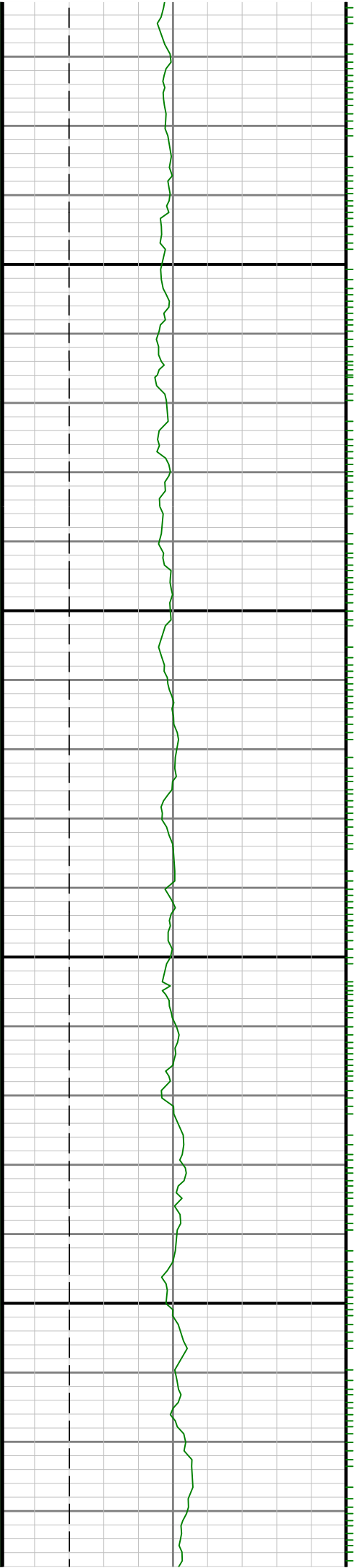




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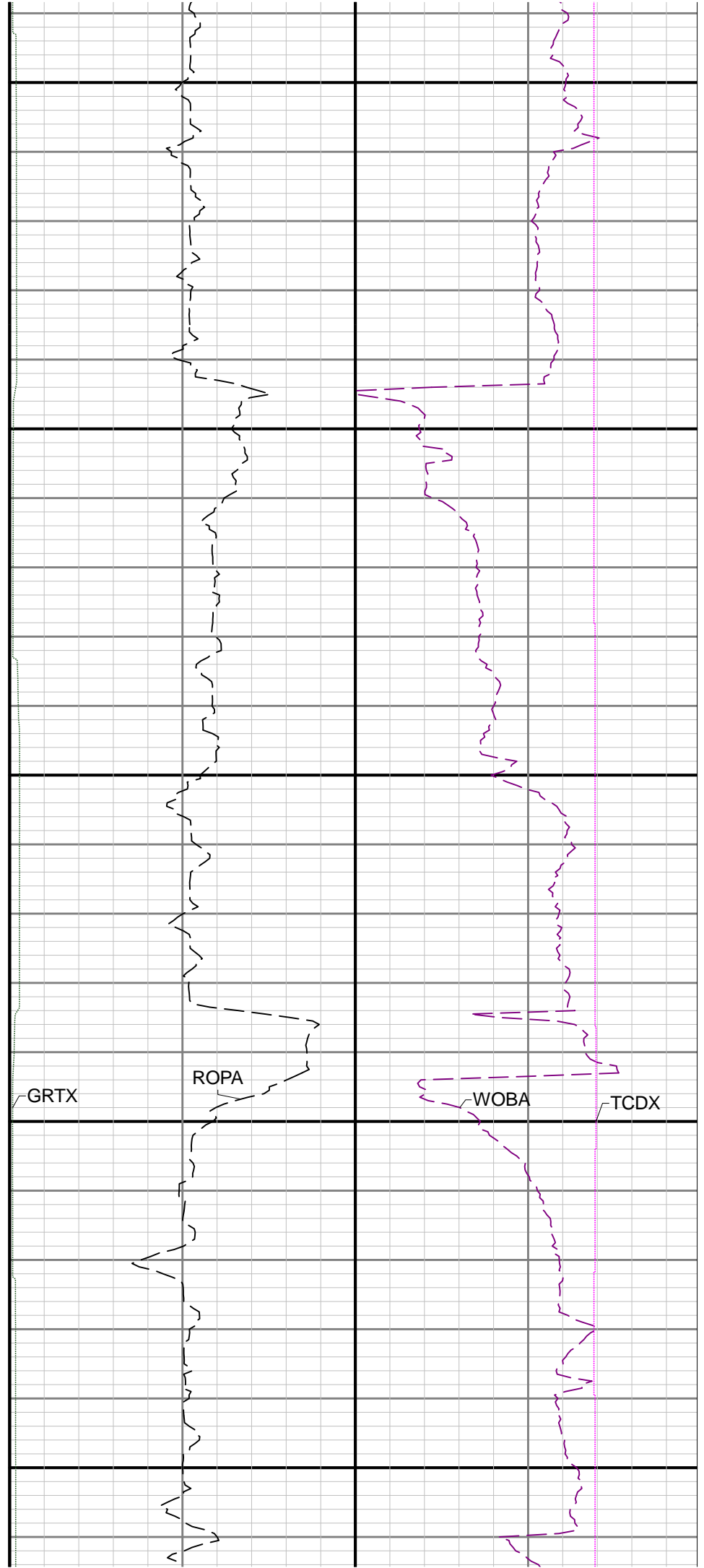
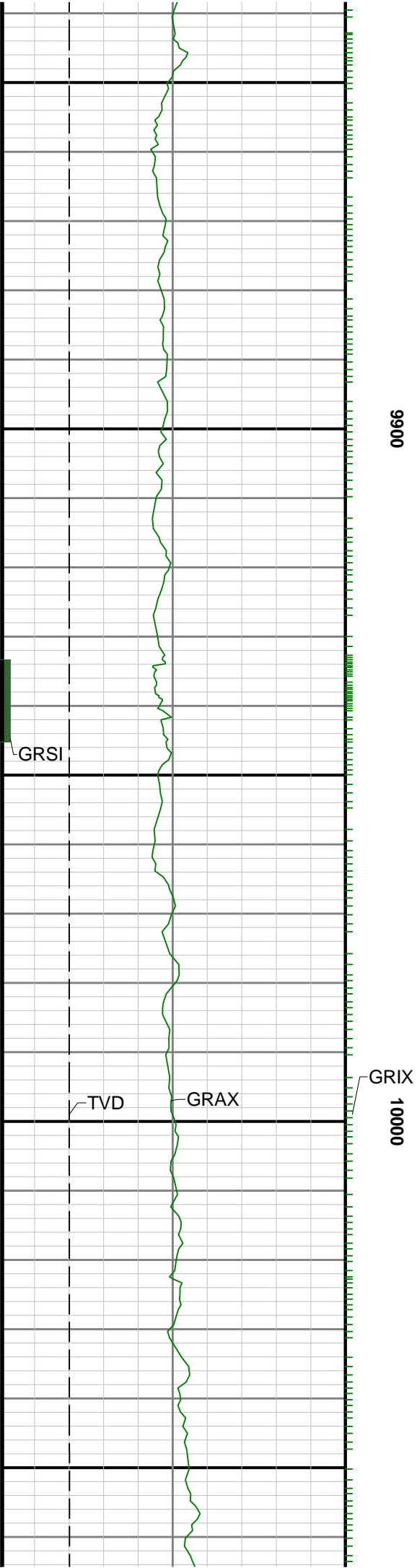


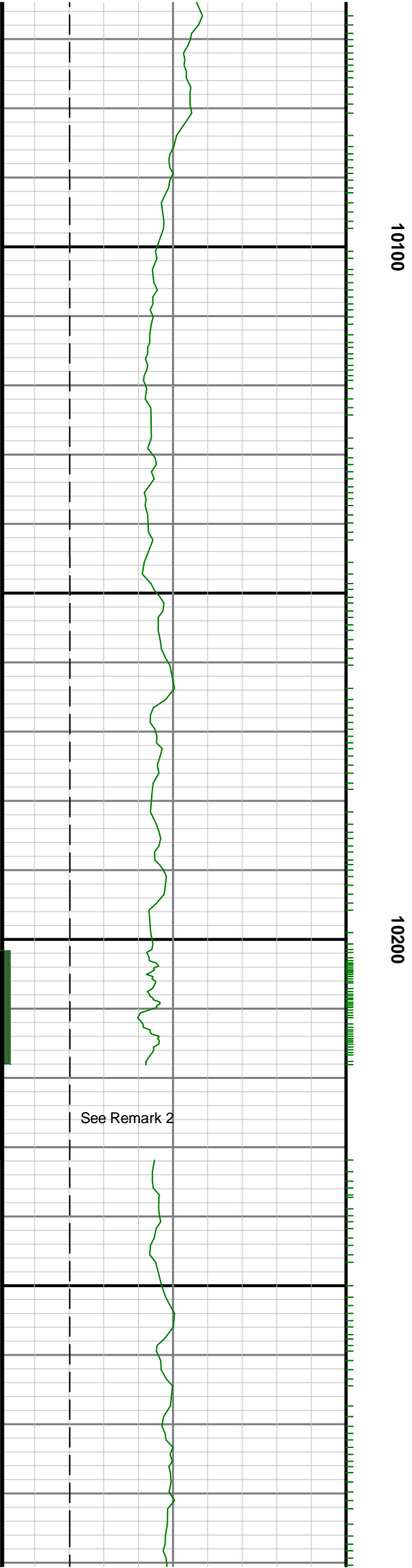


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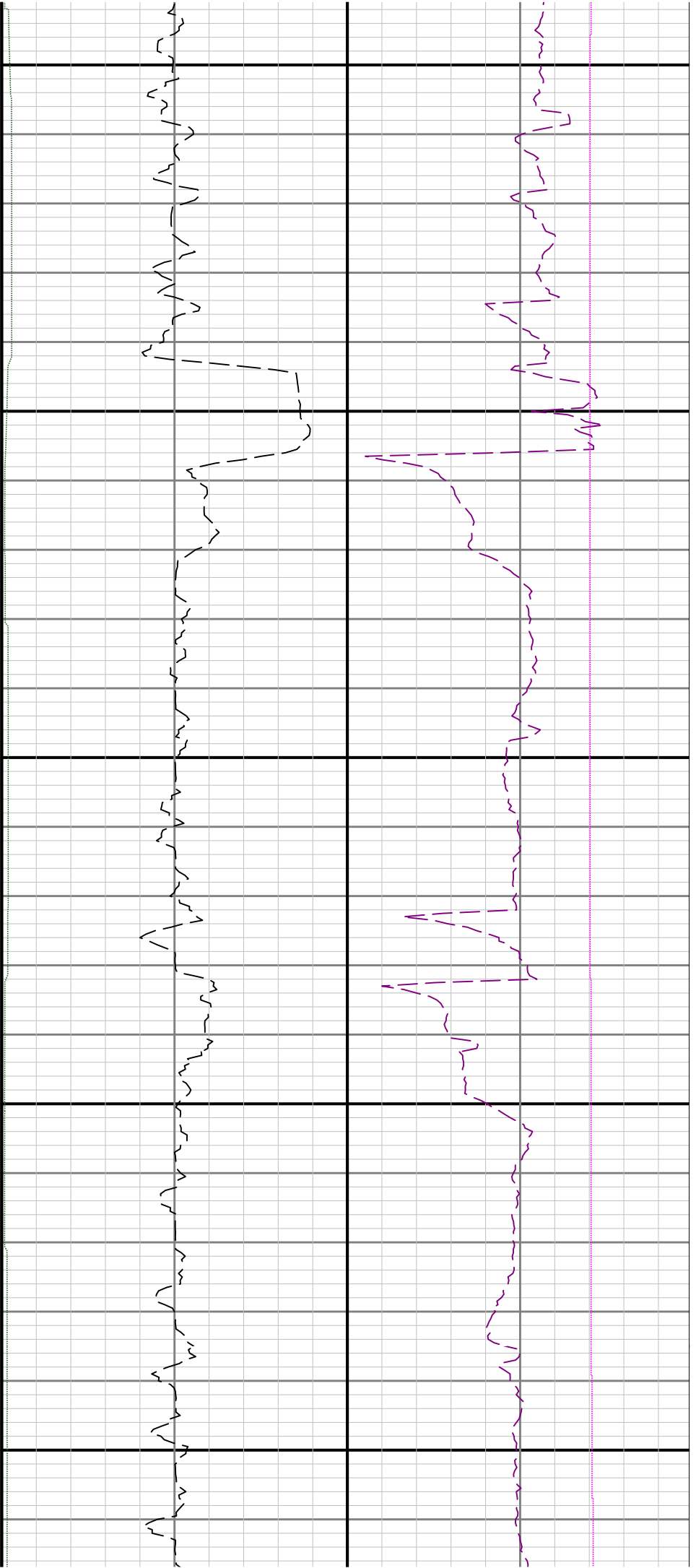
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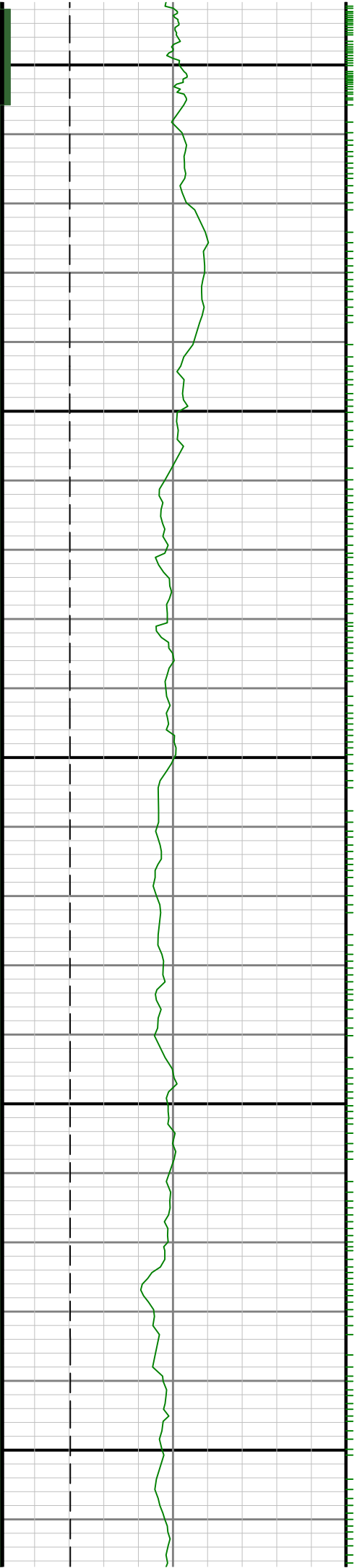
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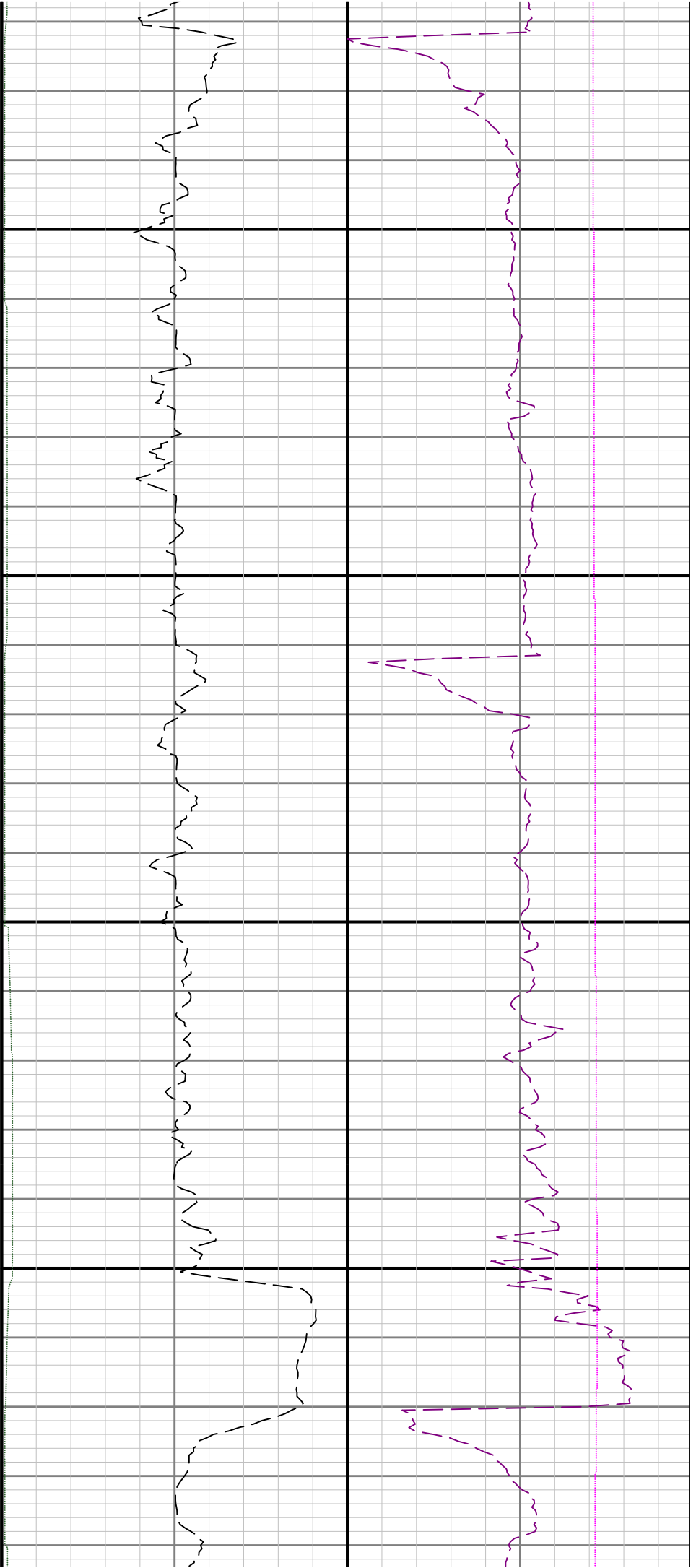


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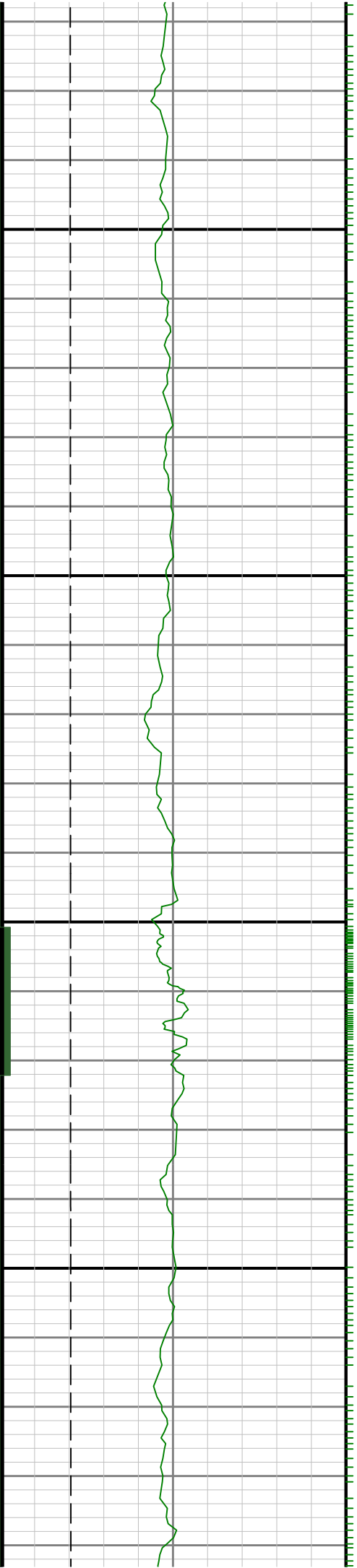
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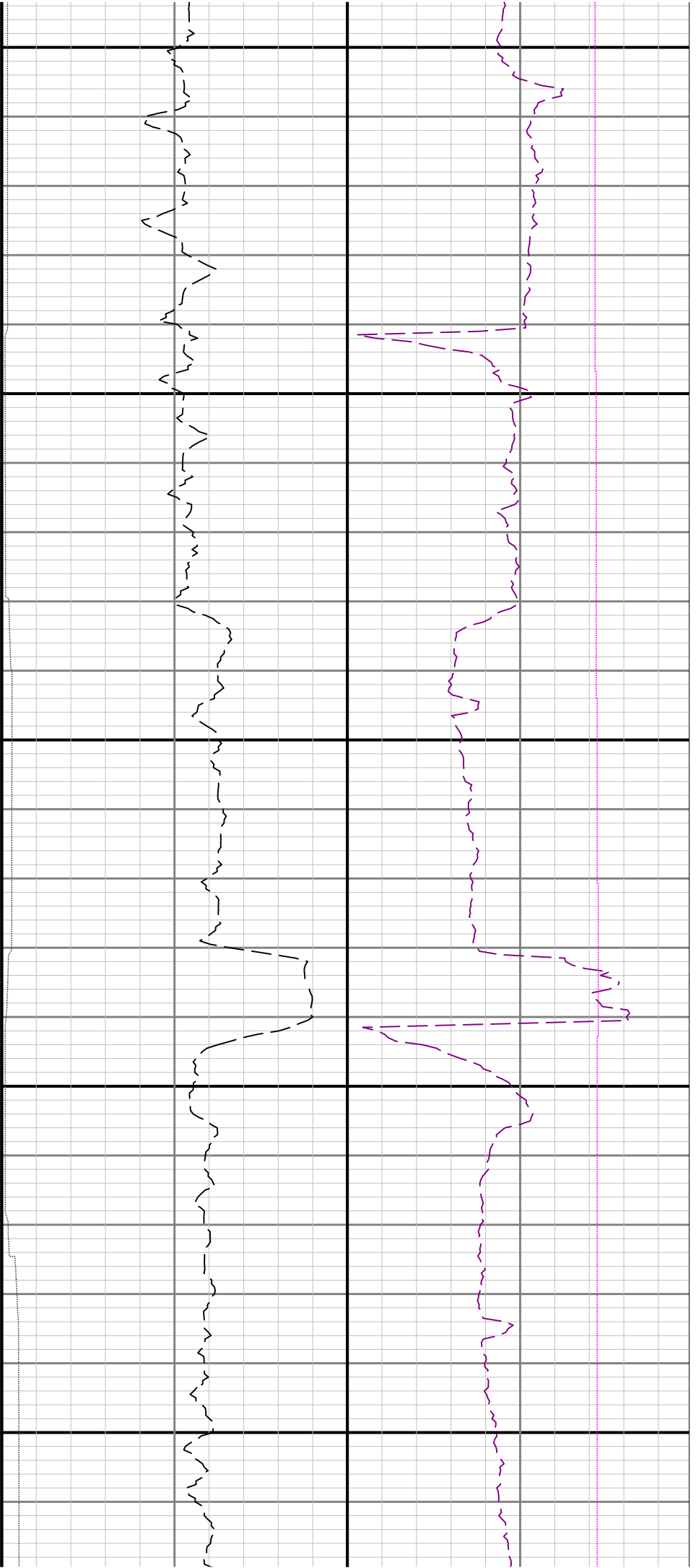




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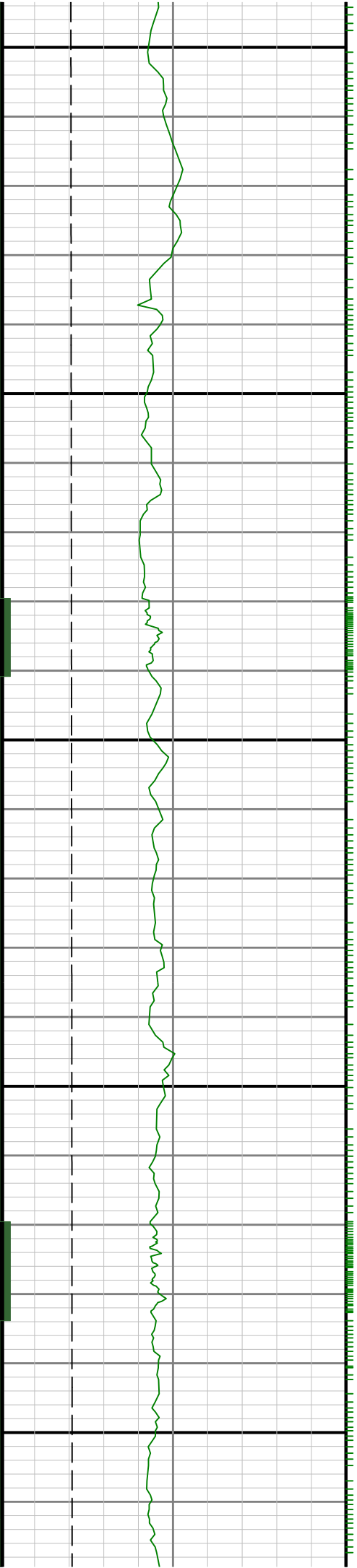
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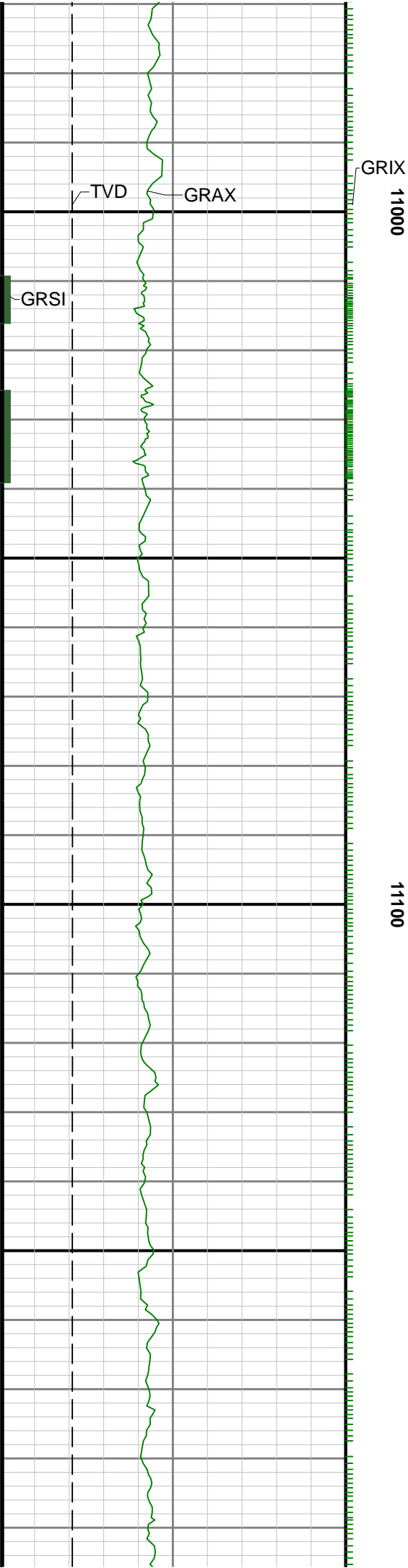


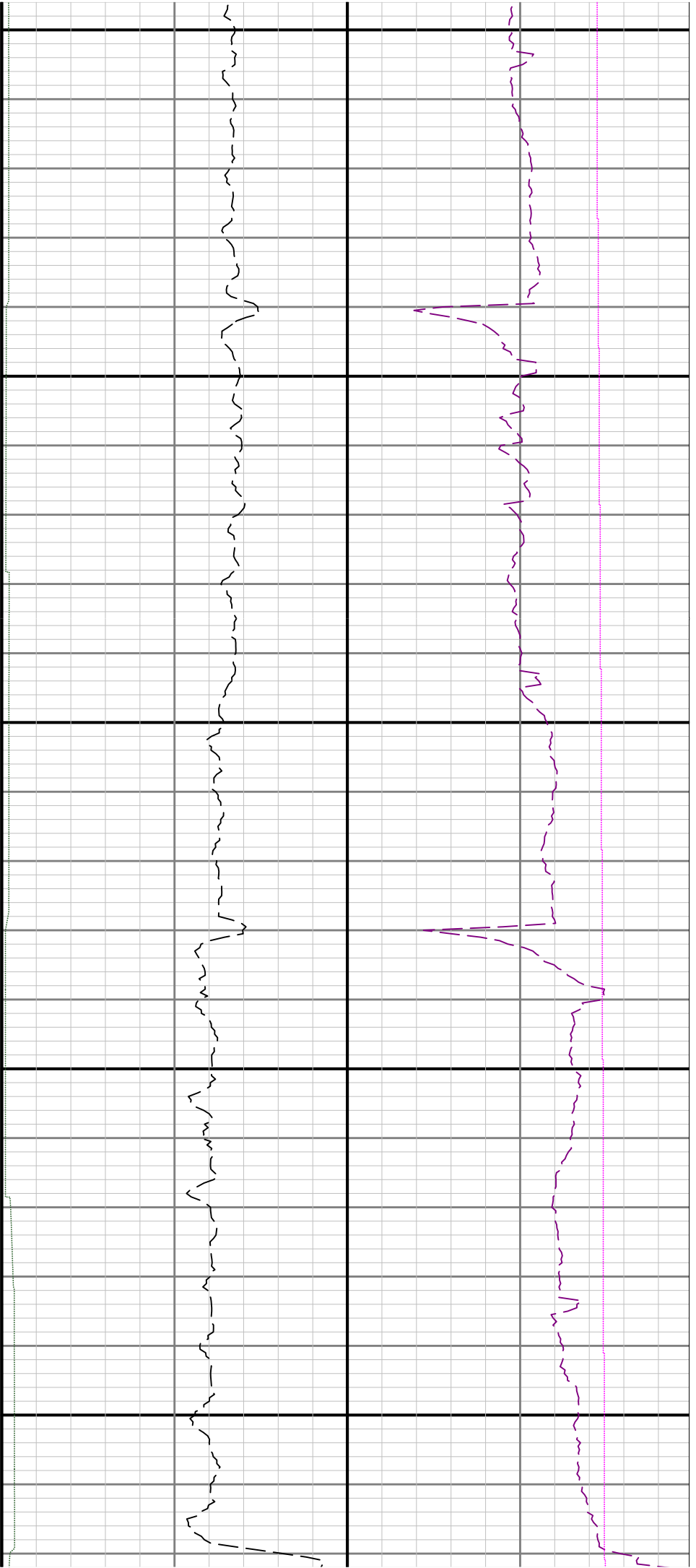


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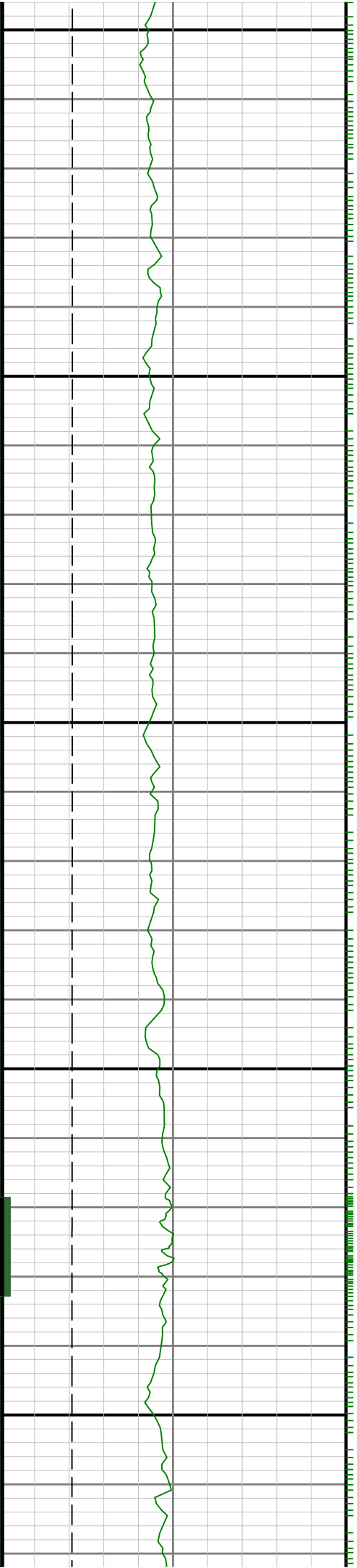


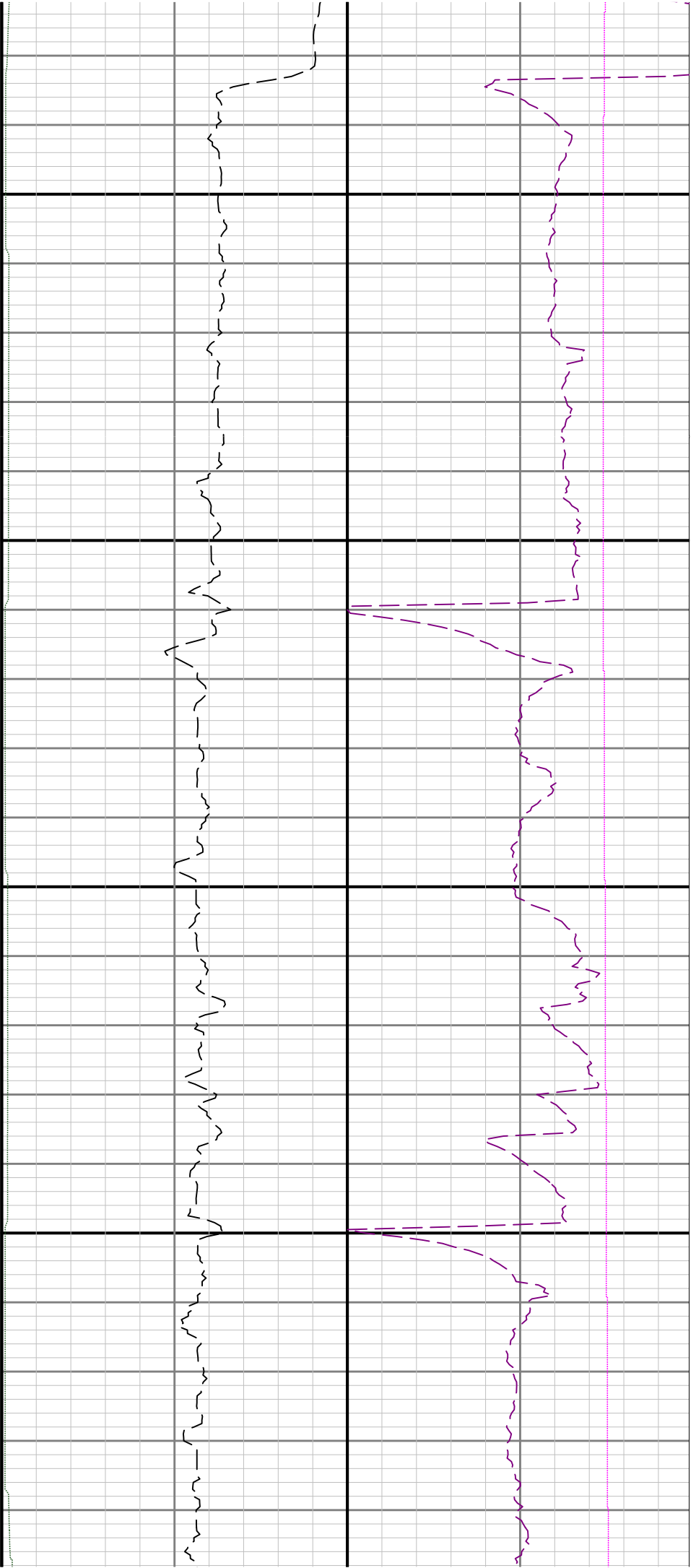


11200

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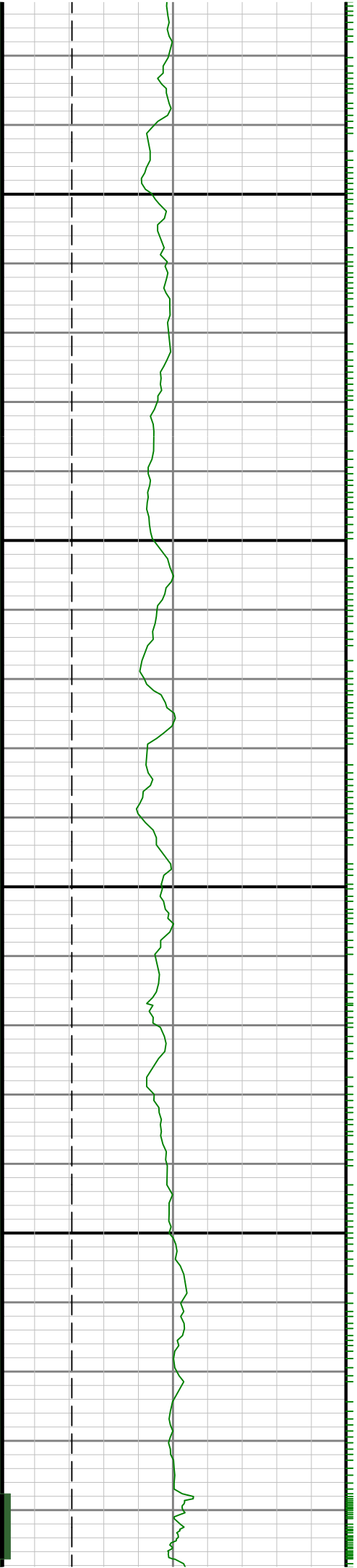
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11500

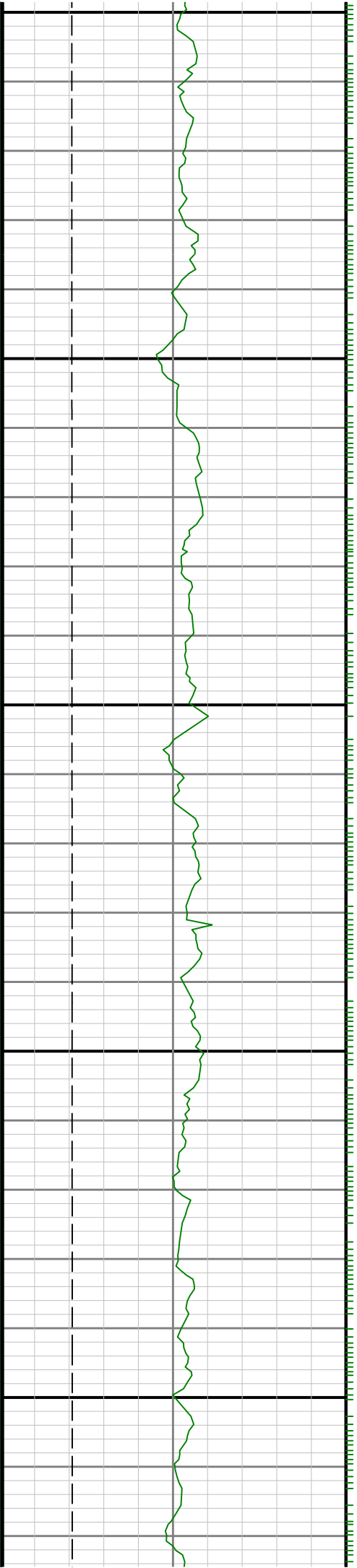
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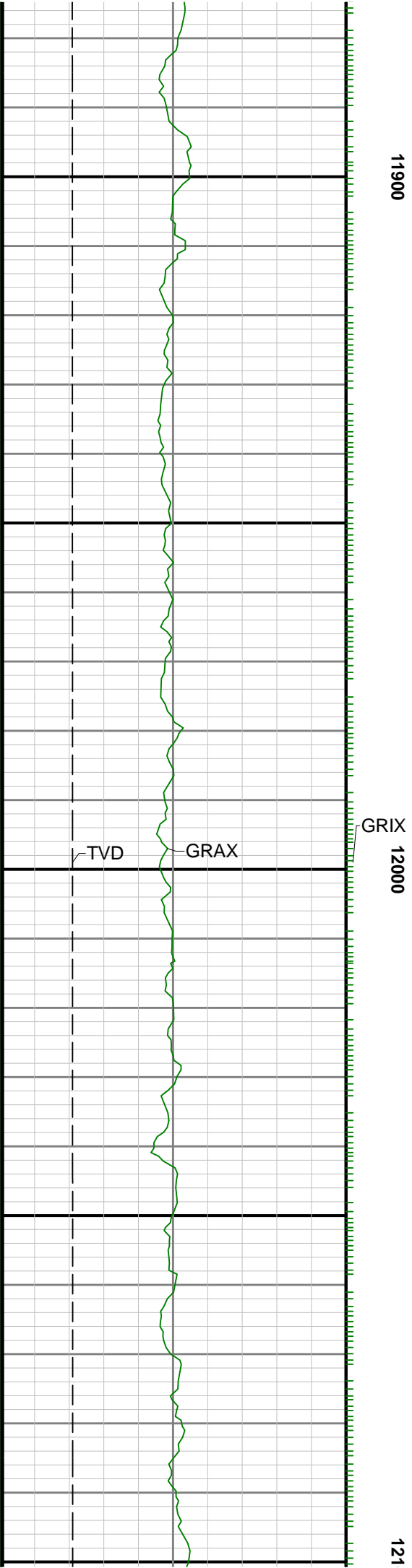
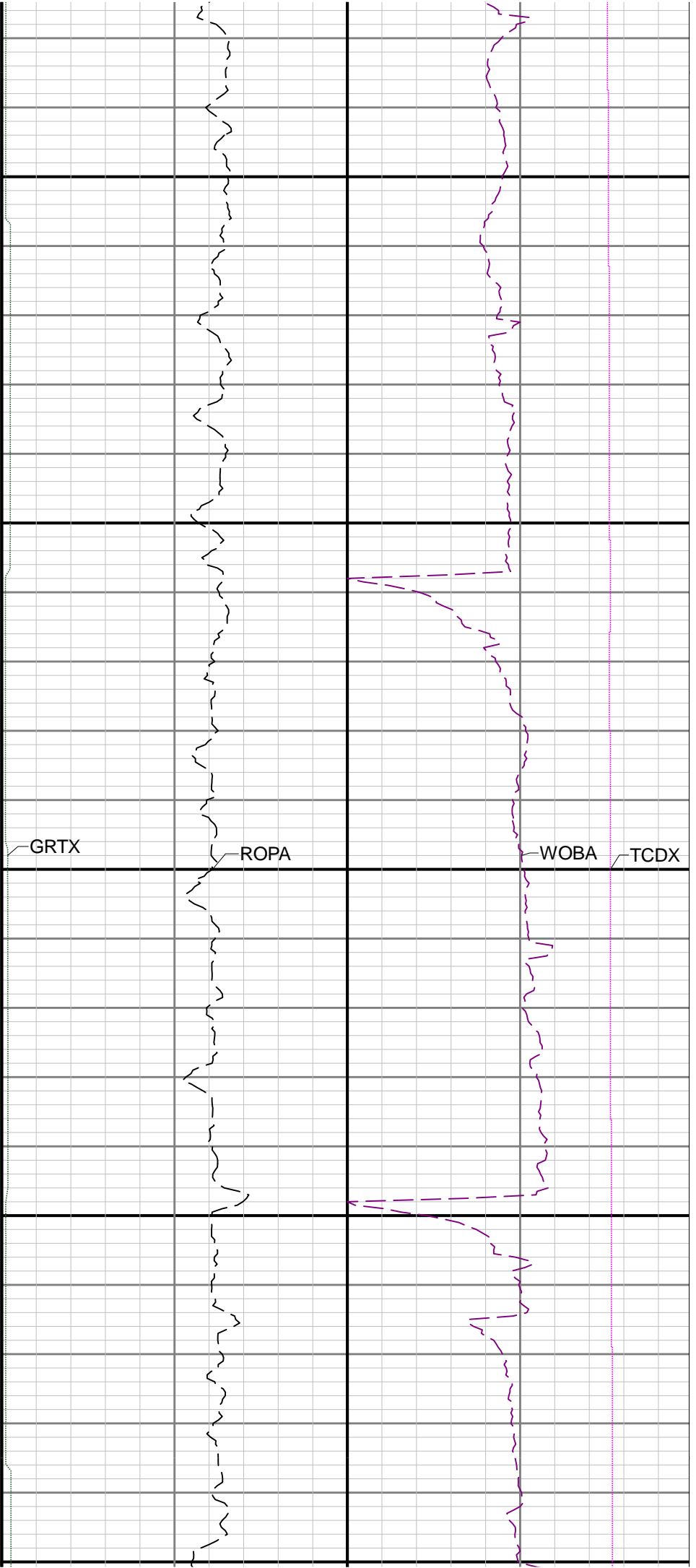


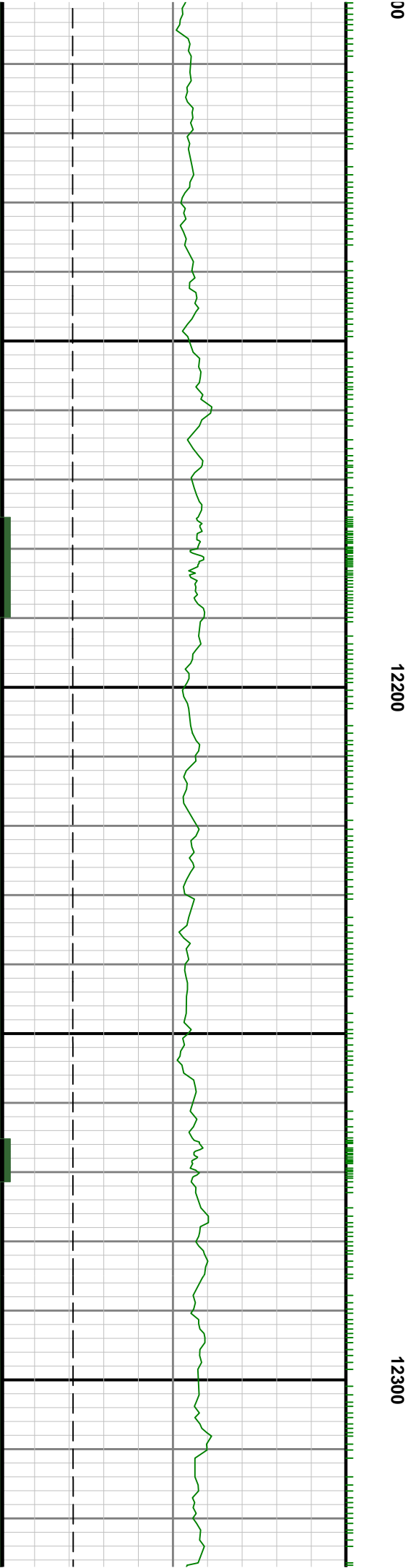
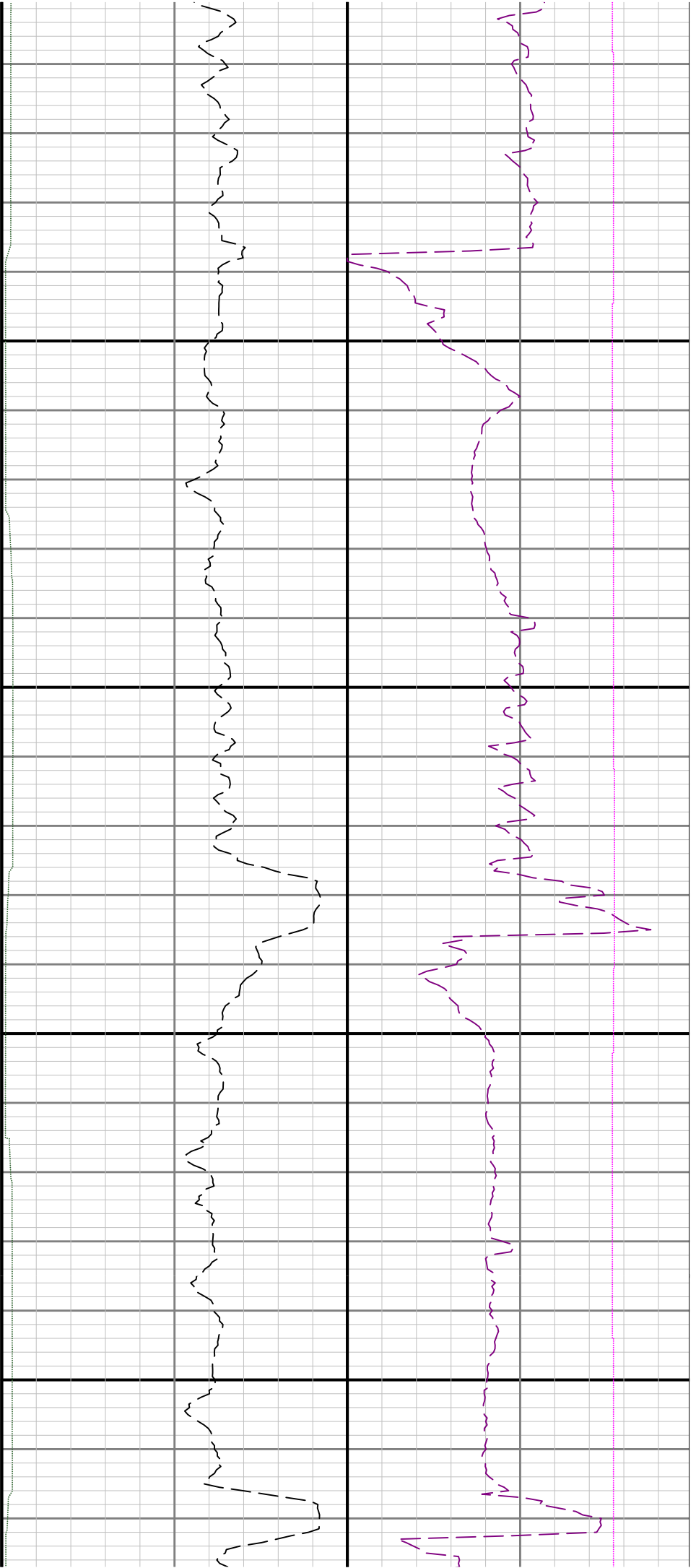


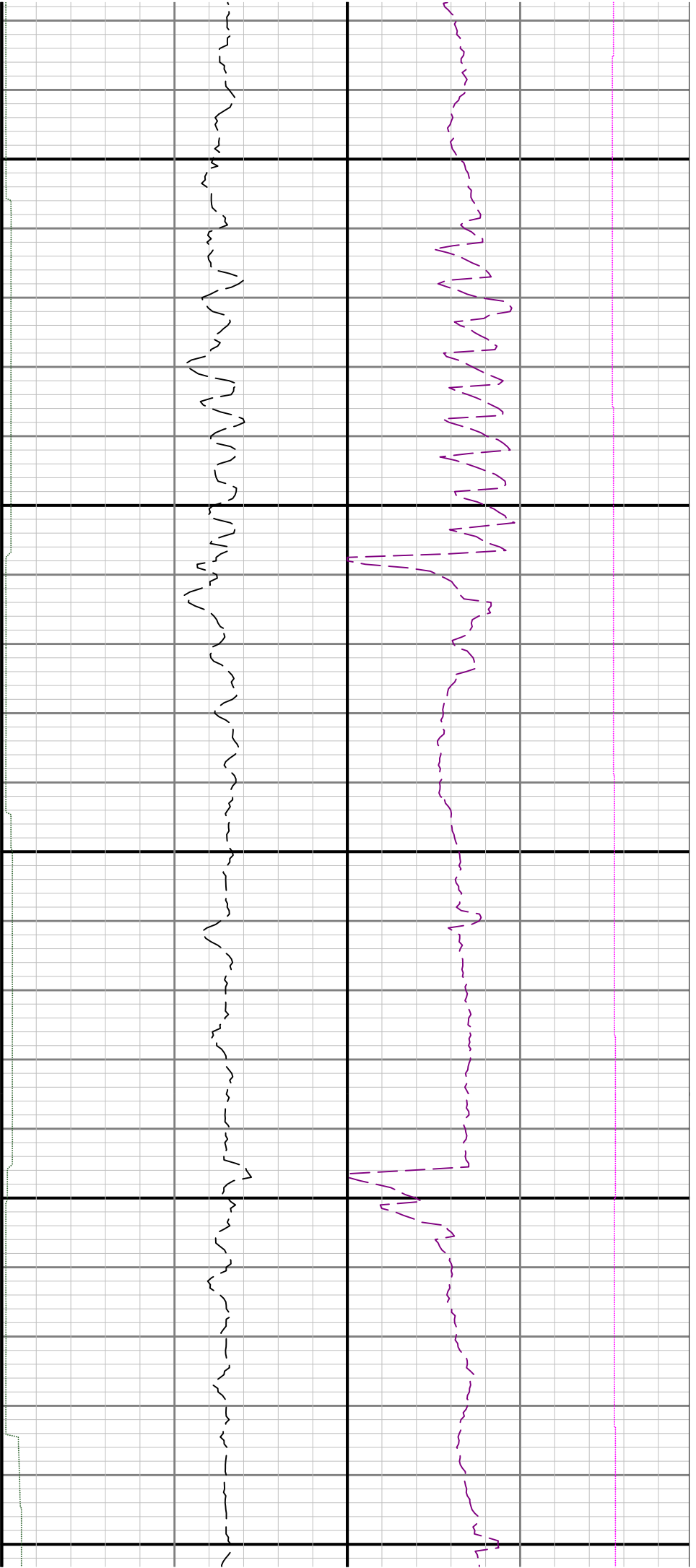
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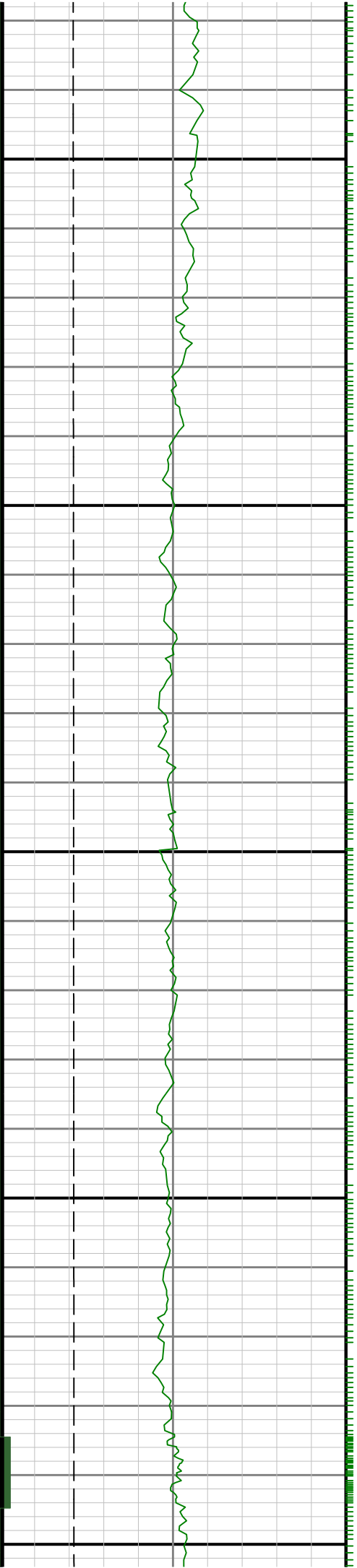


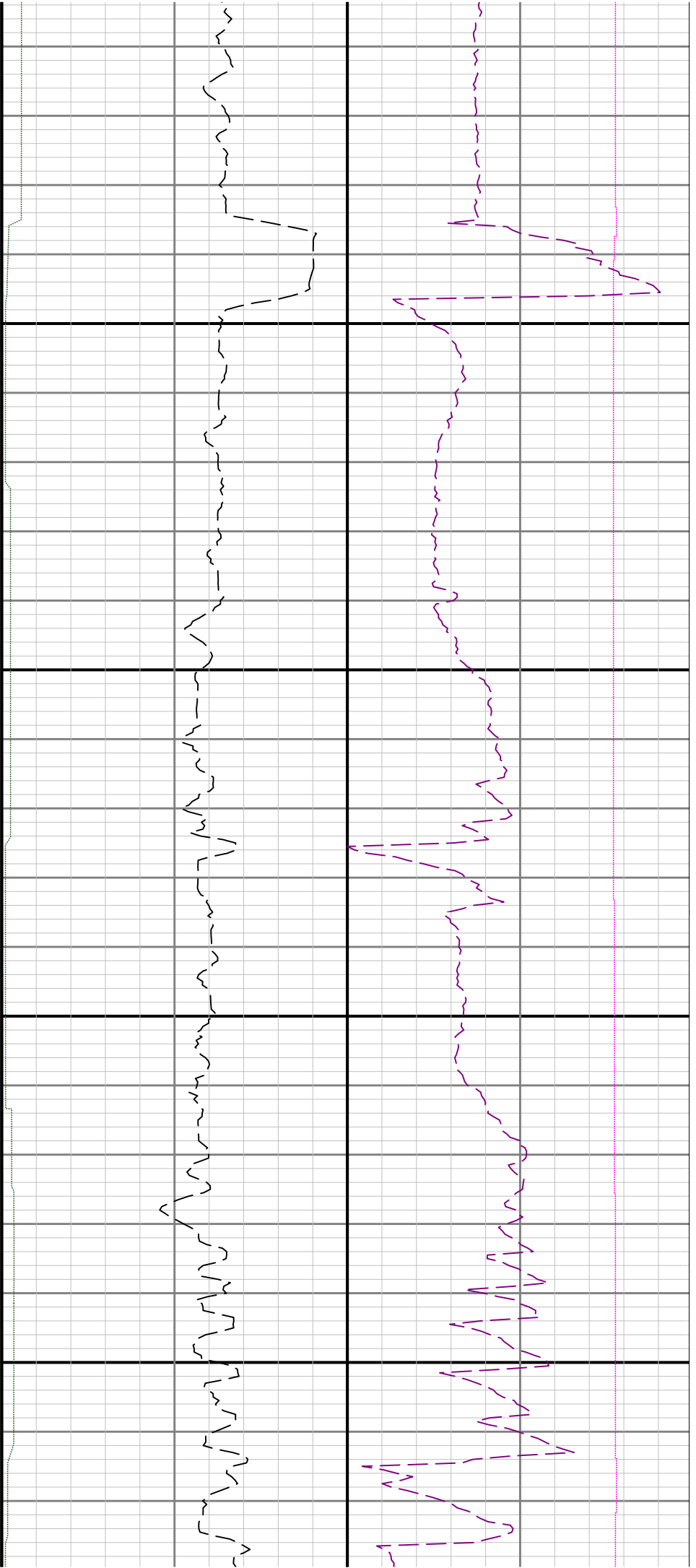




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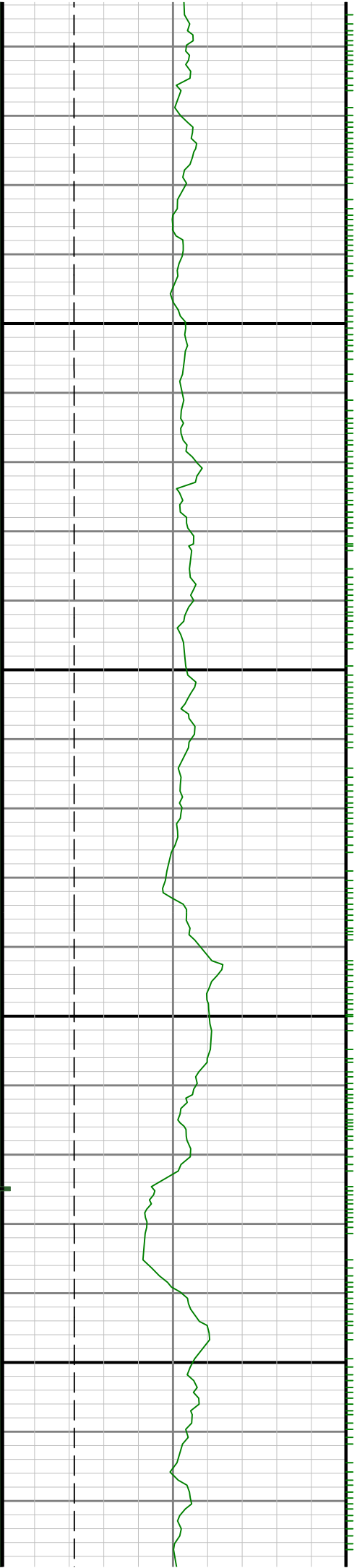
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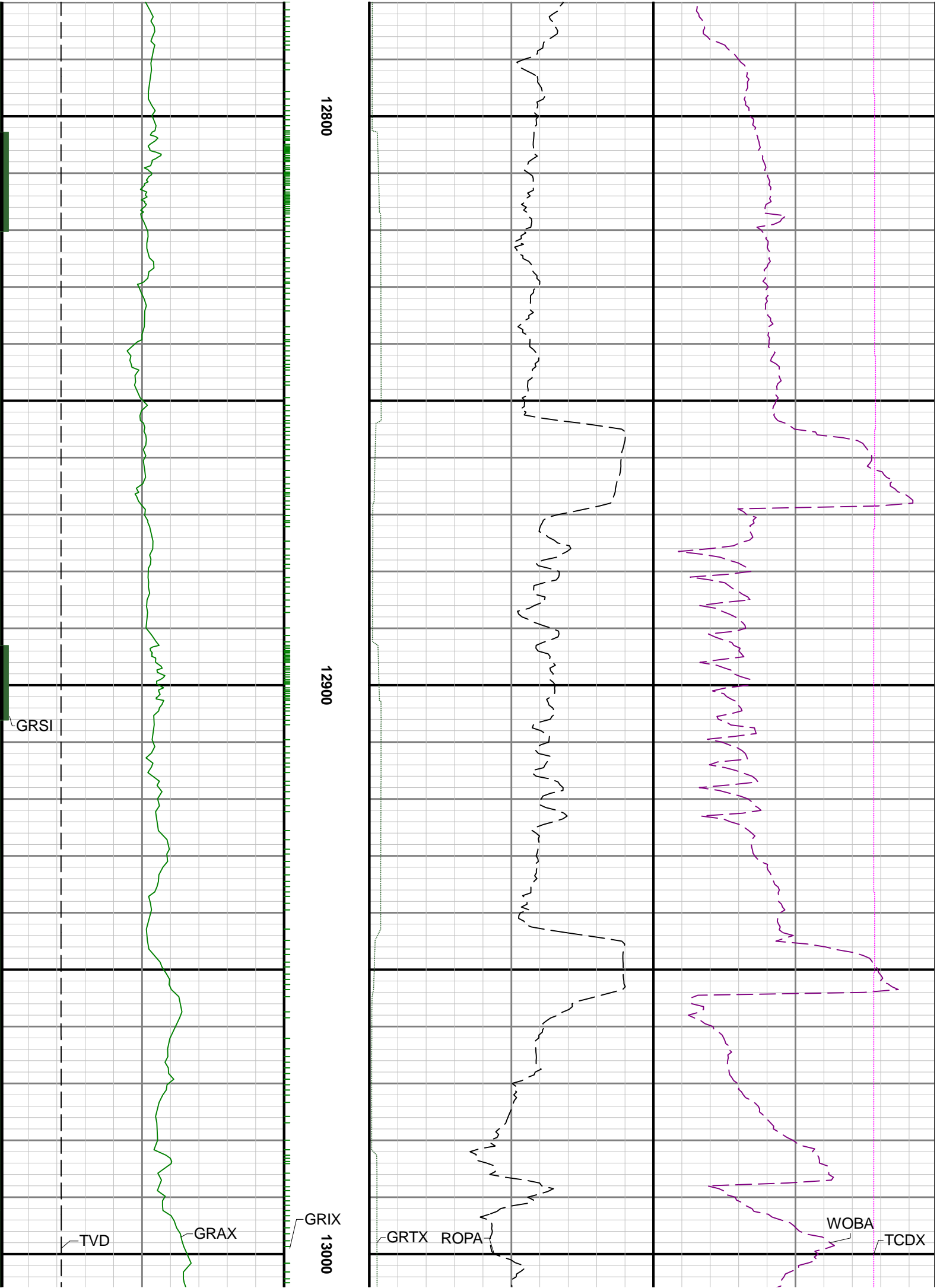




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12700

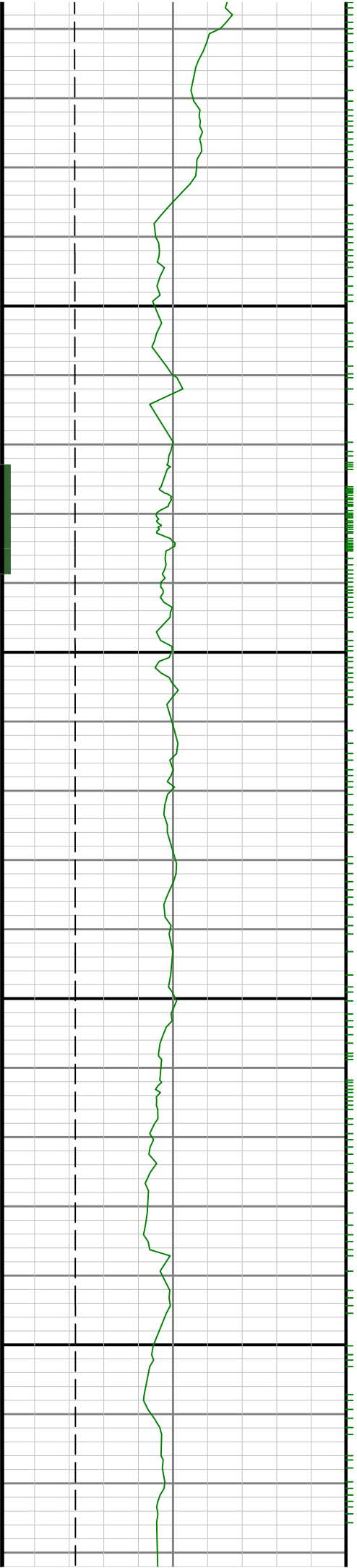


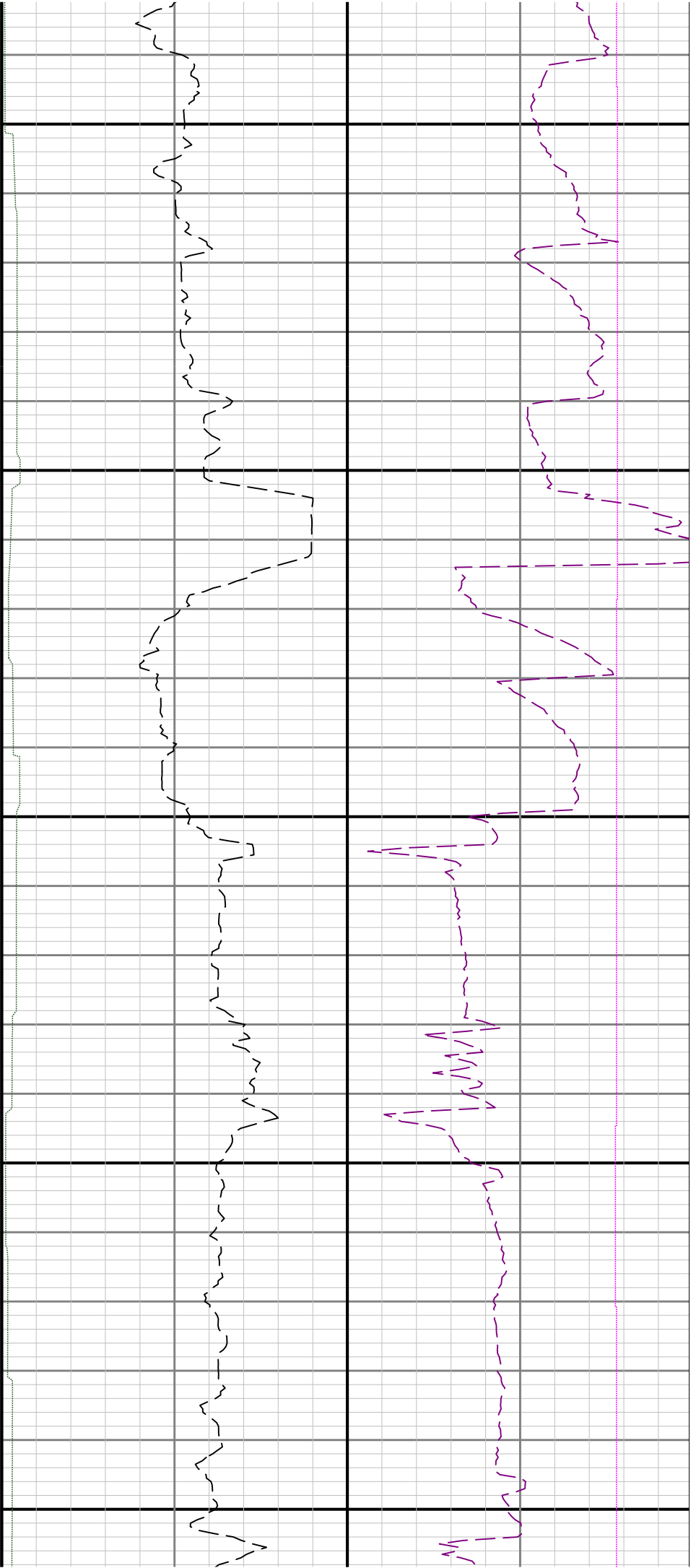




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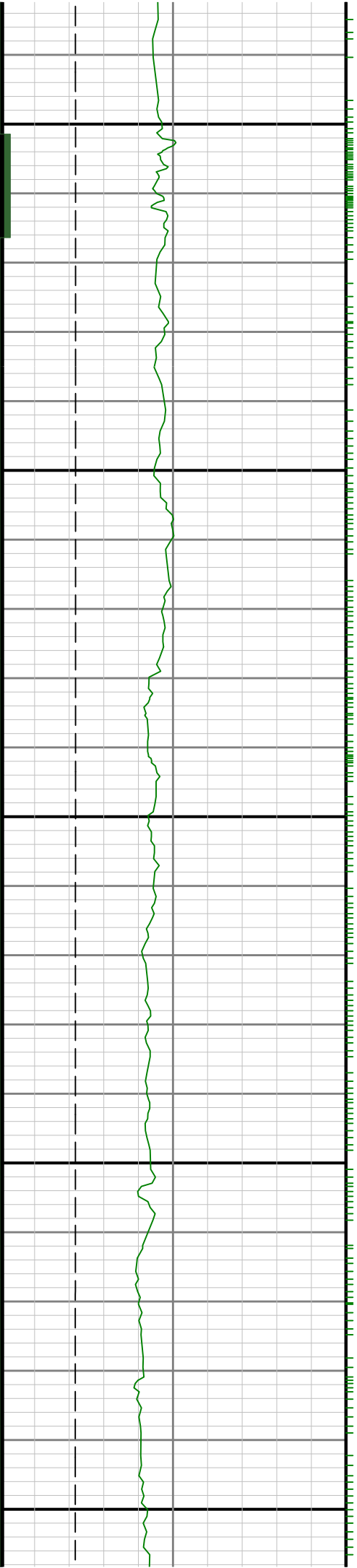
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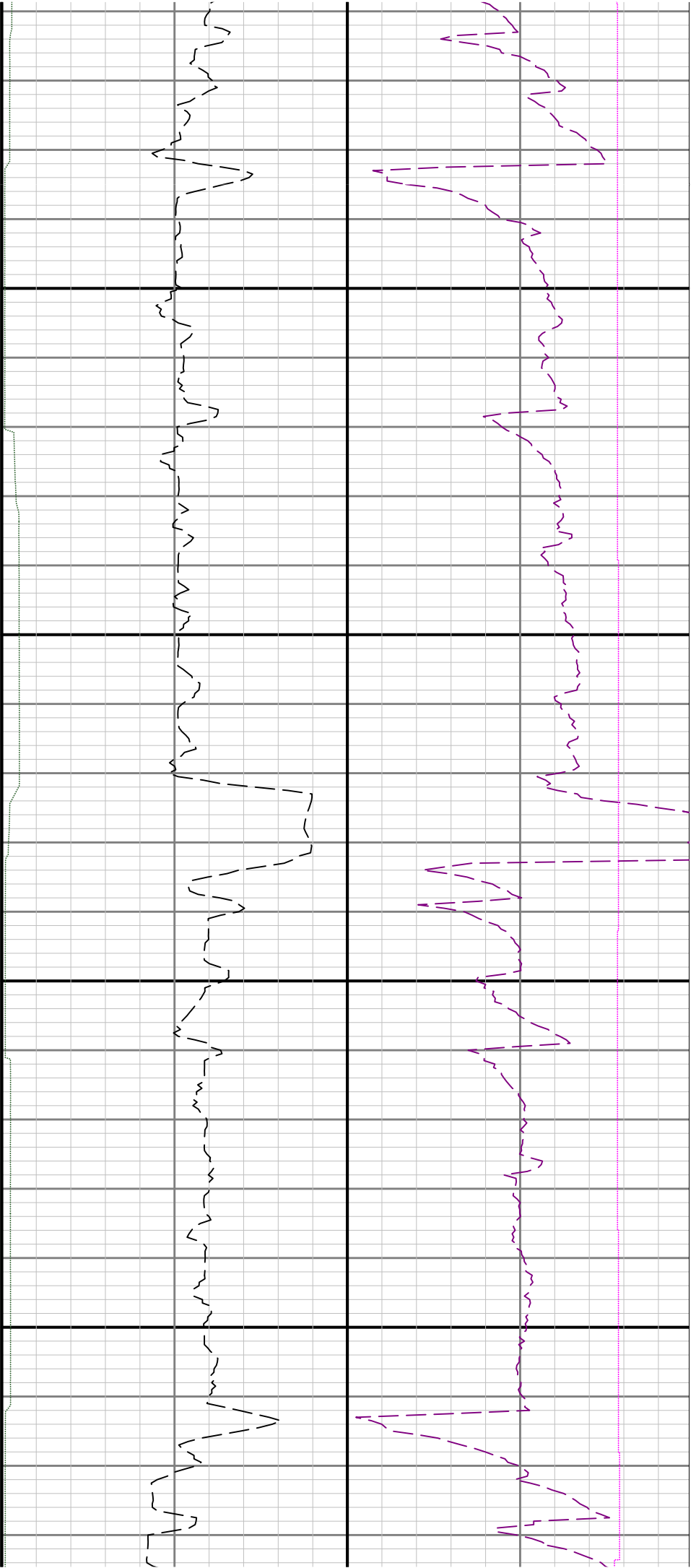




13300

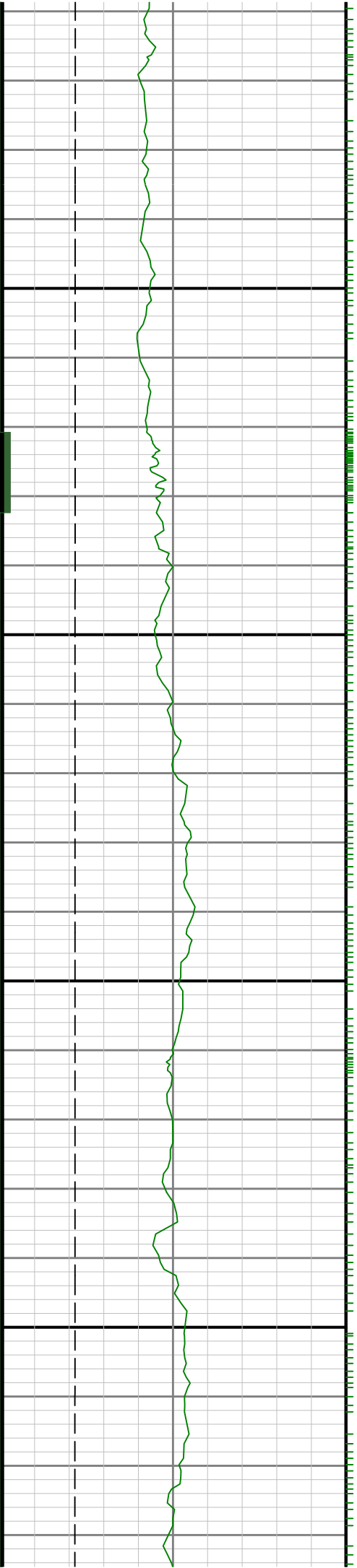
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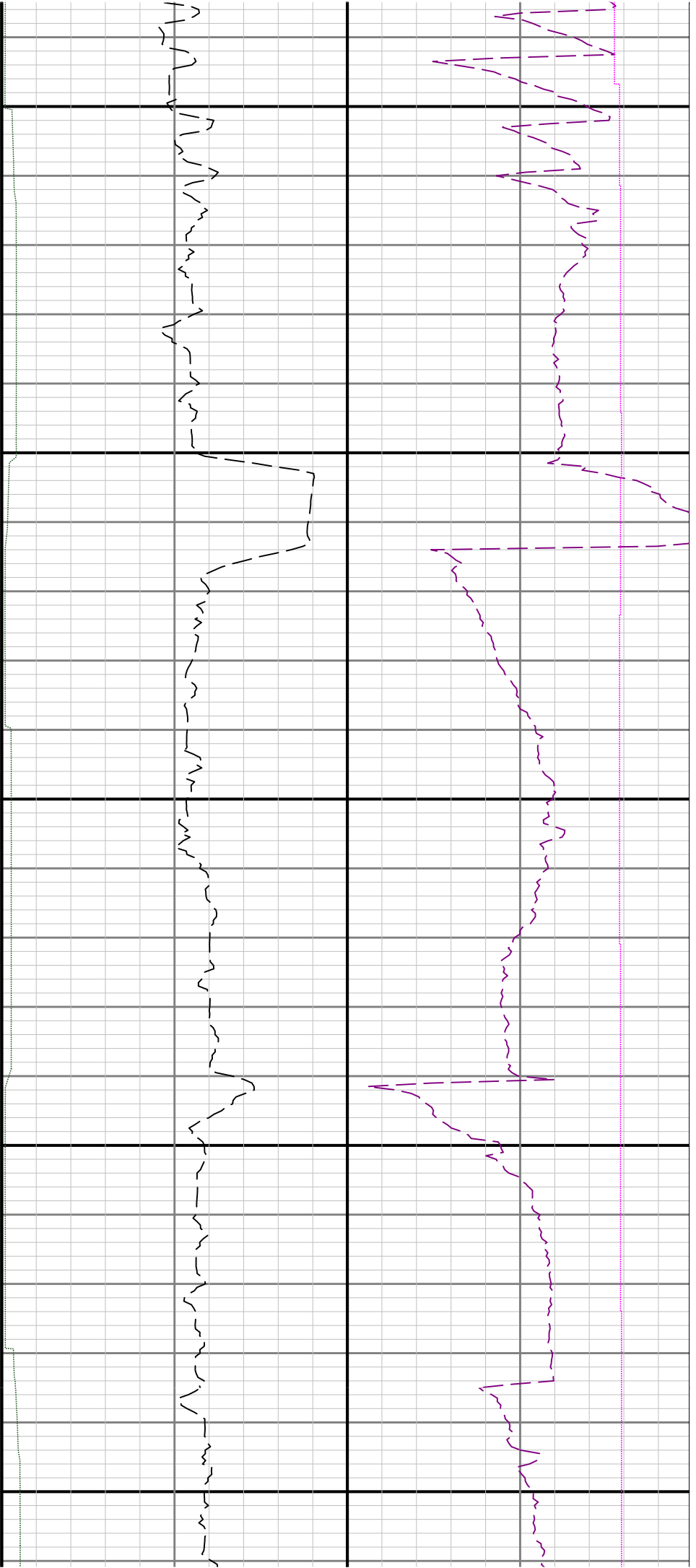




13500

13600

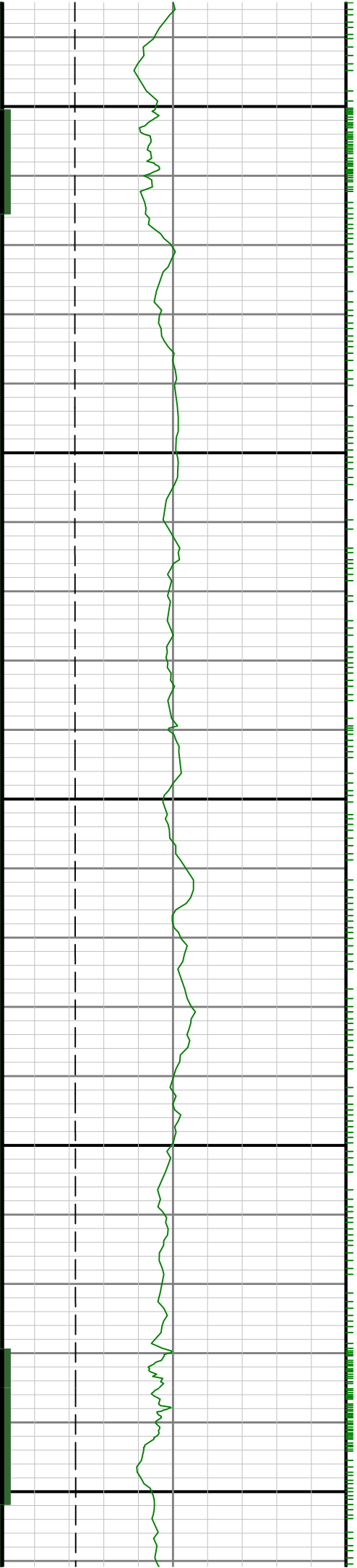


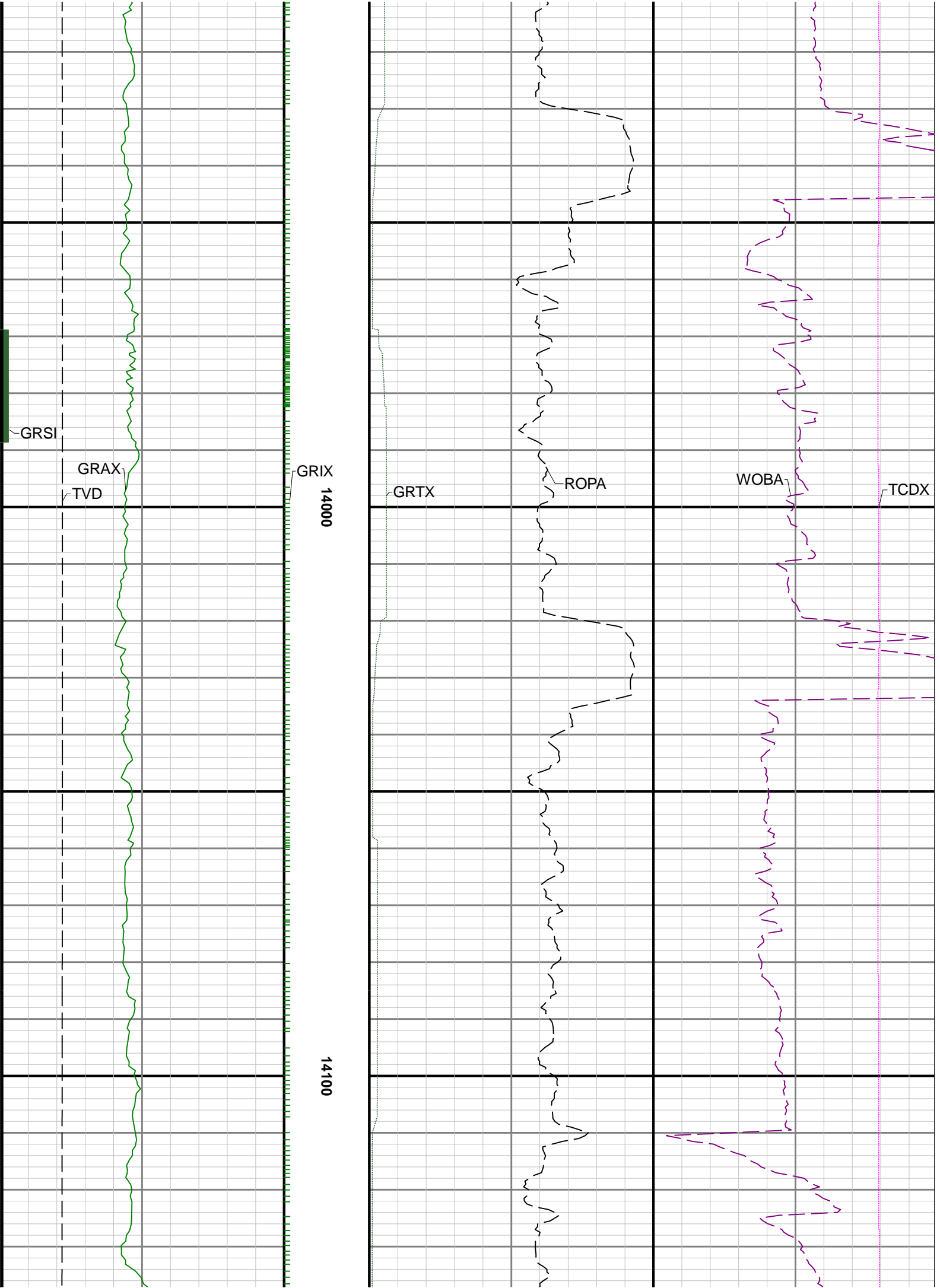


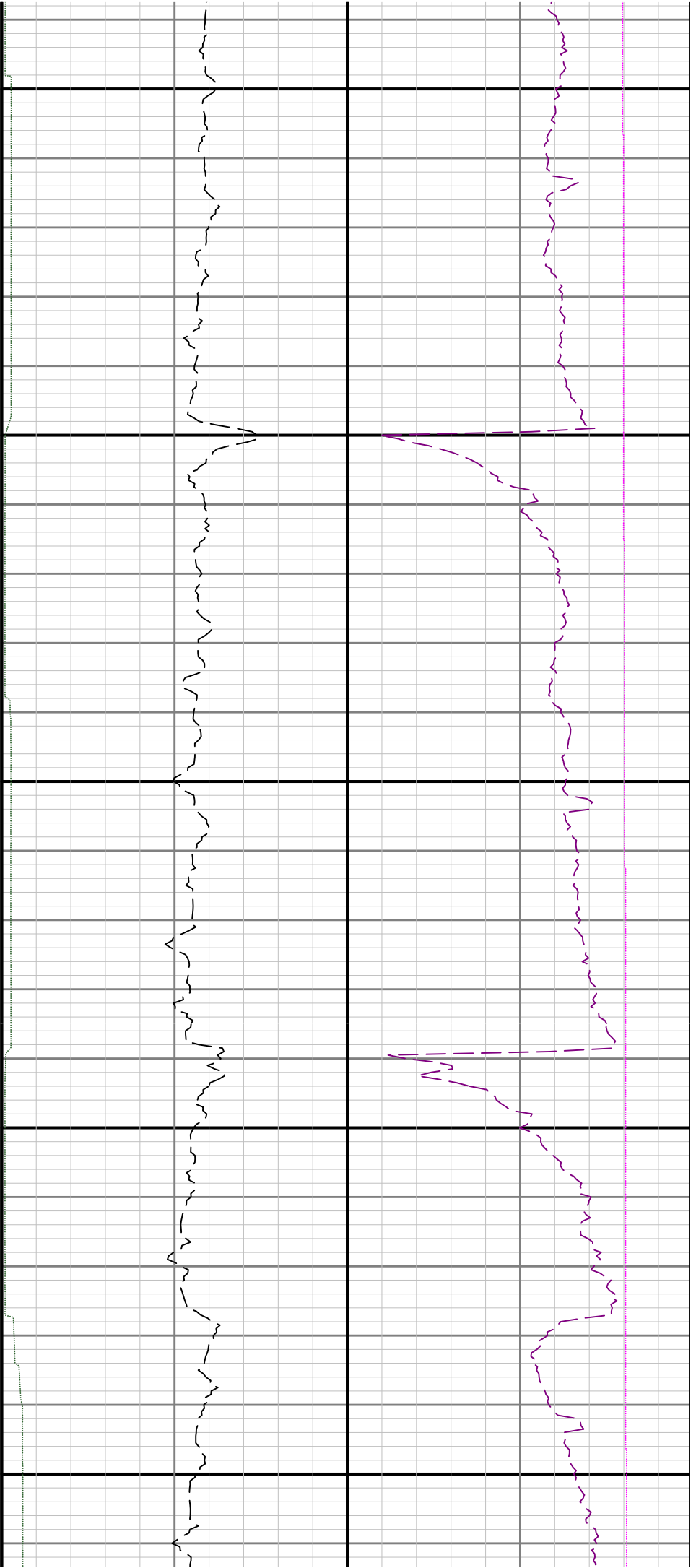
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13800

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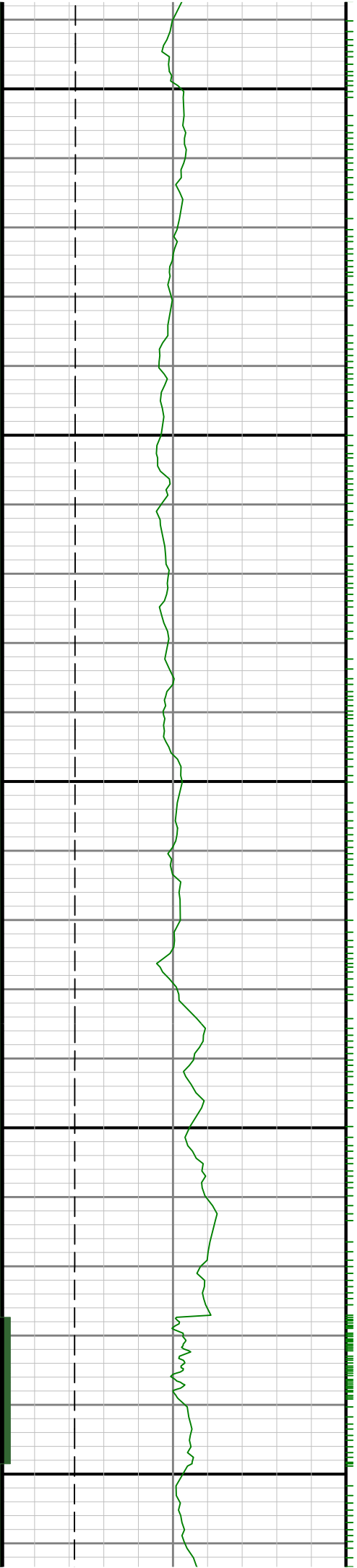


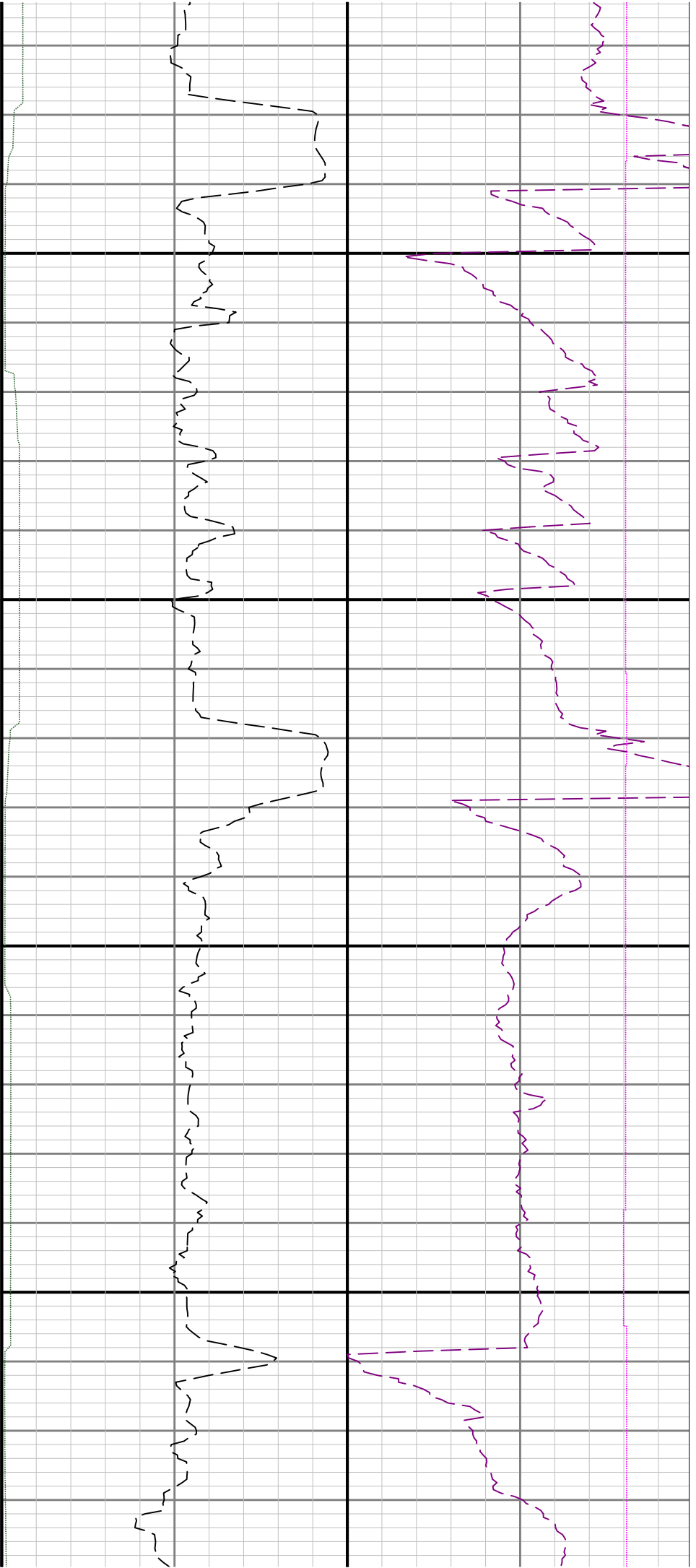




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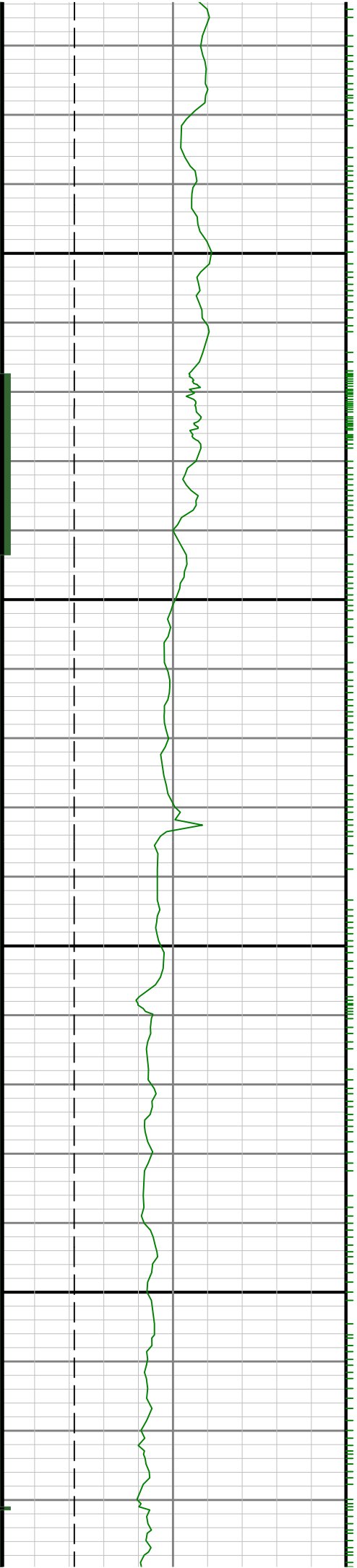
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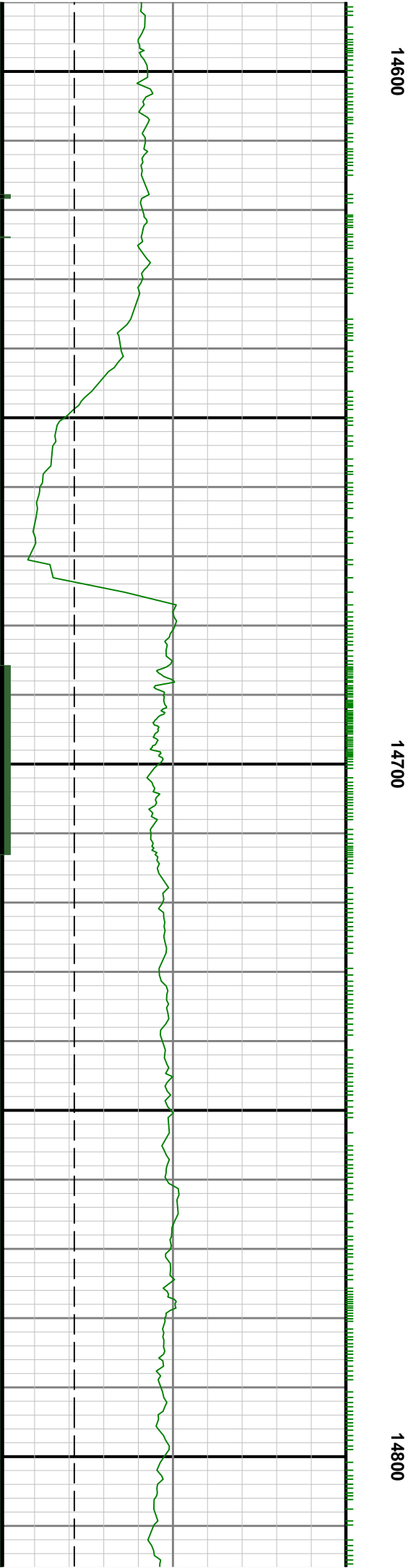
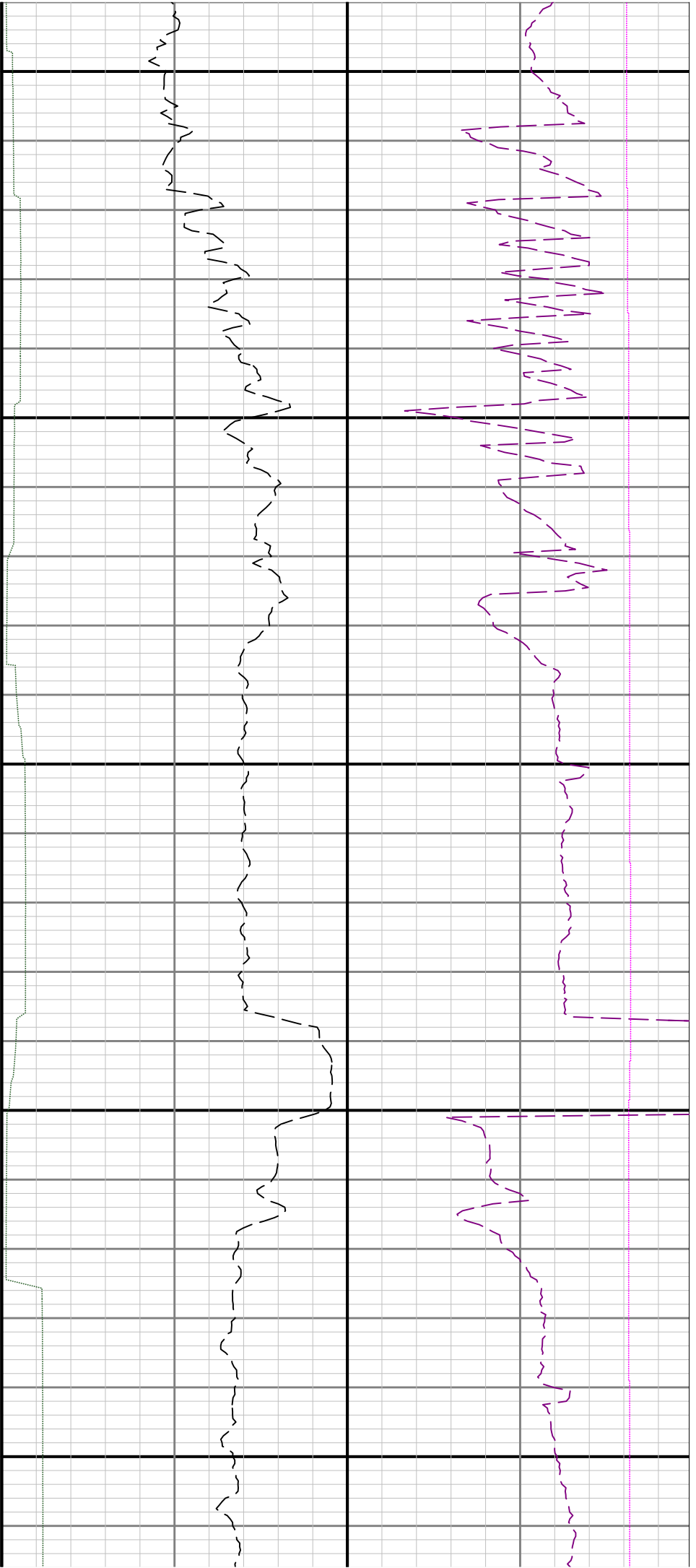


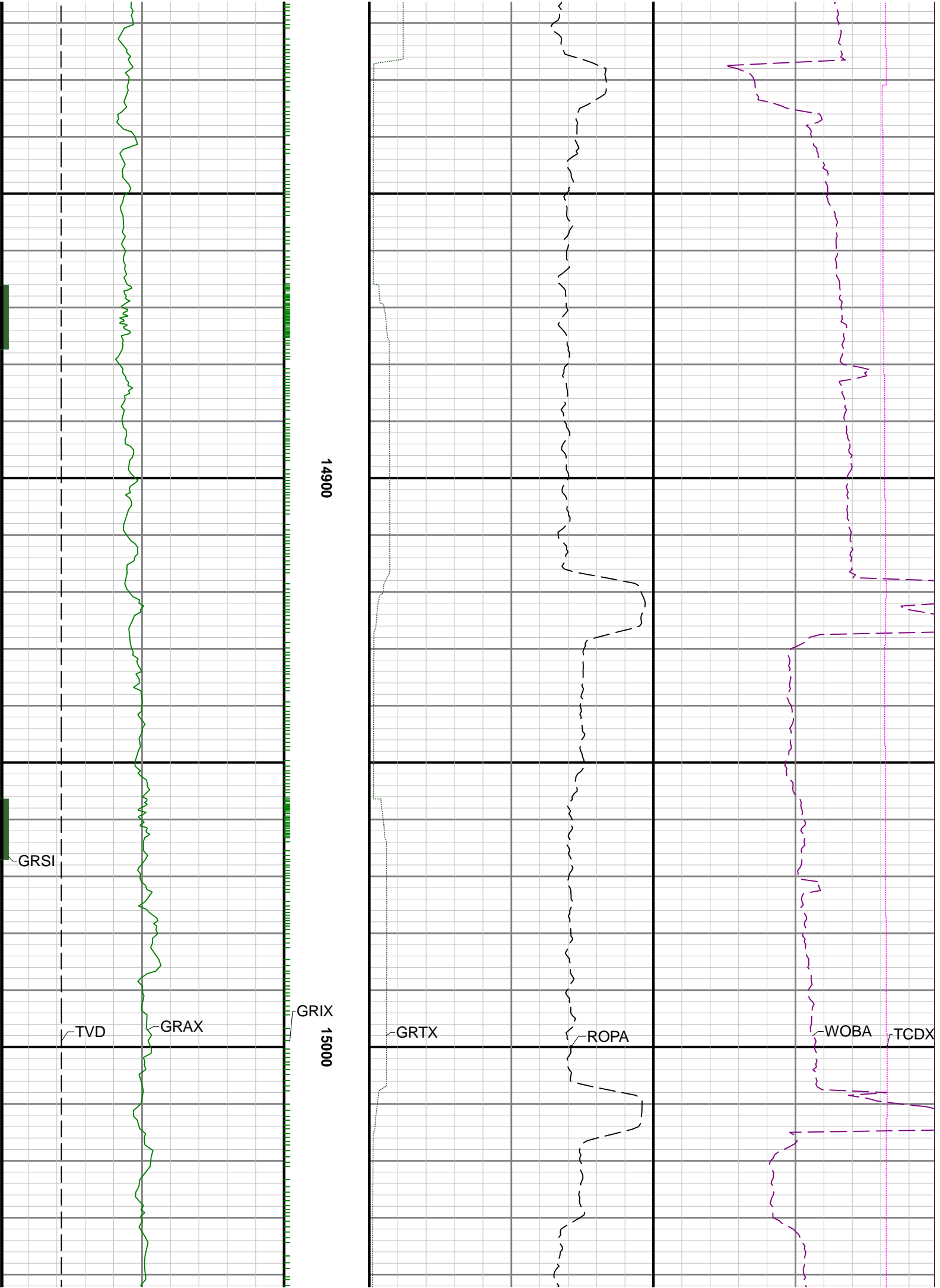


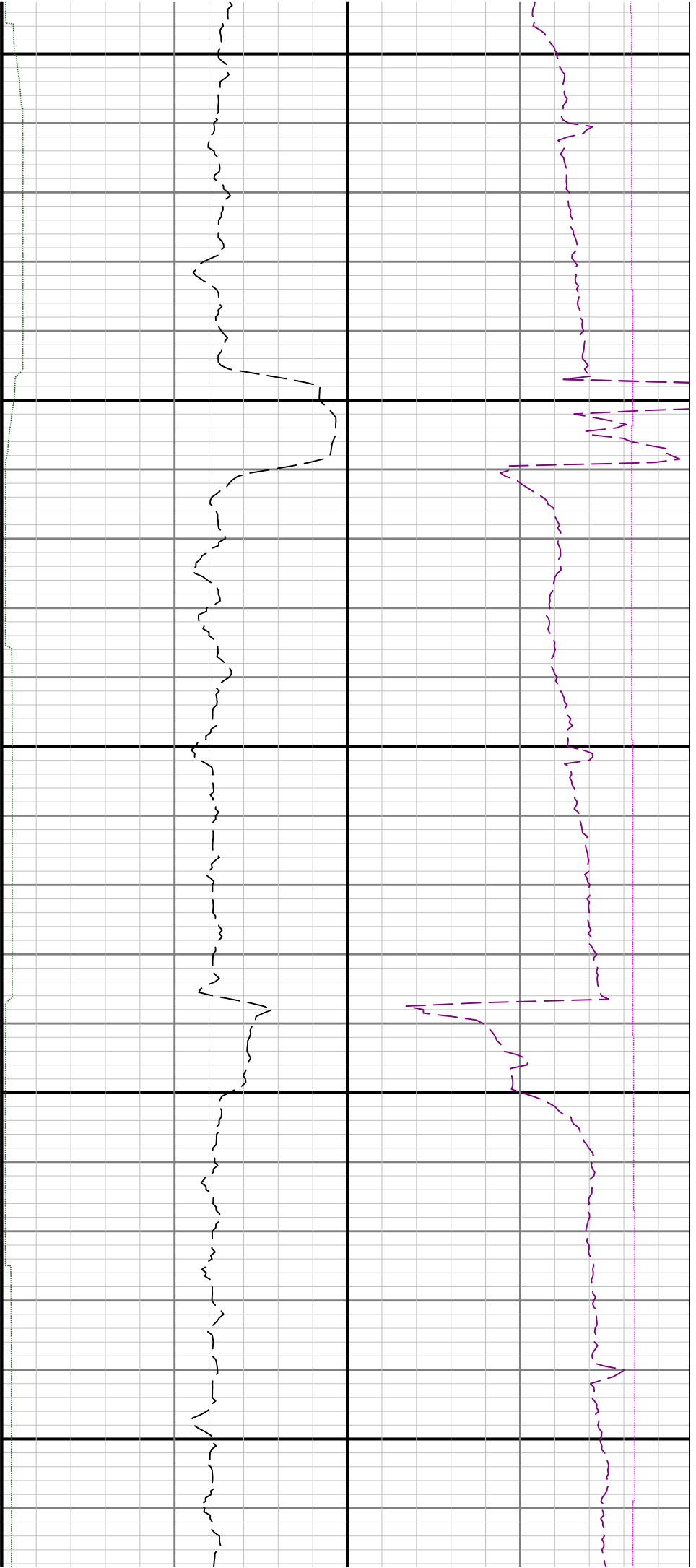
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14500



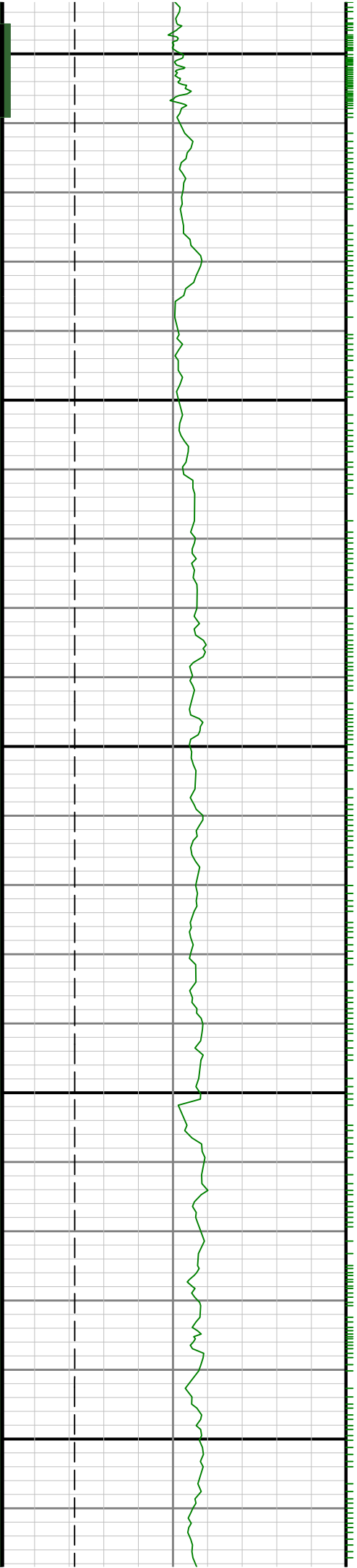






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15200



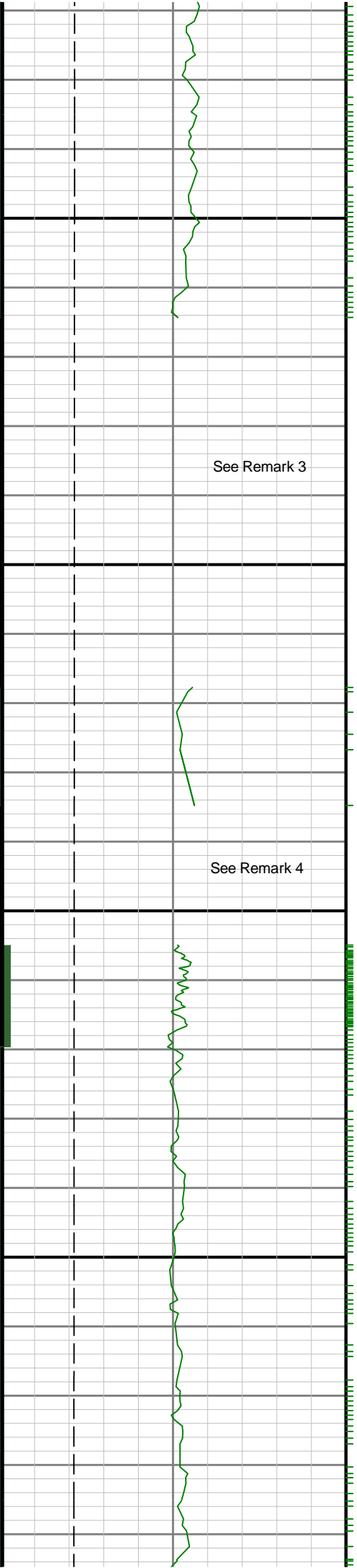


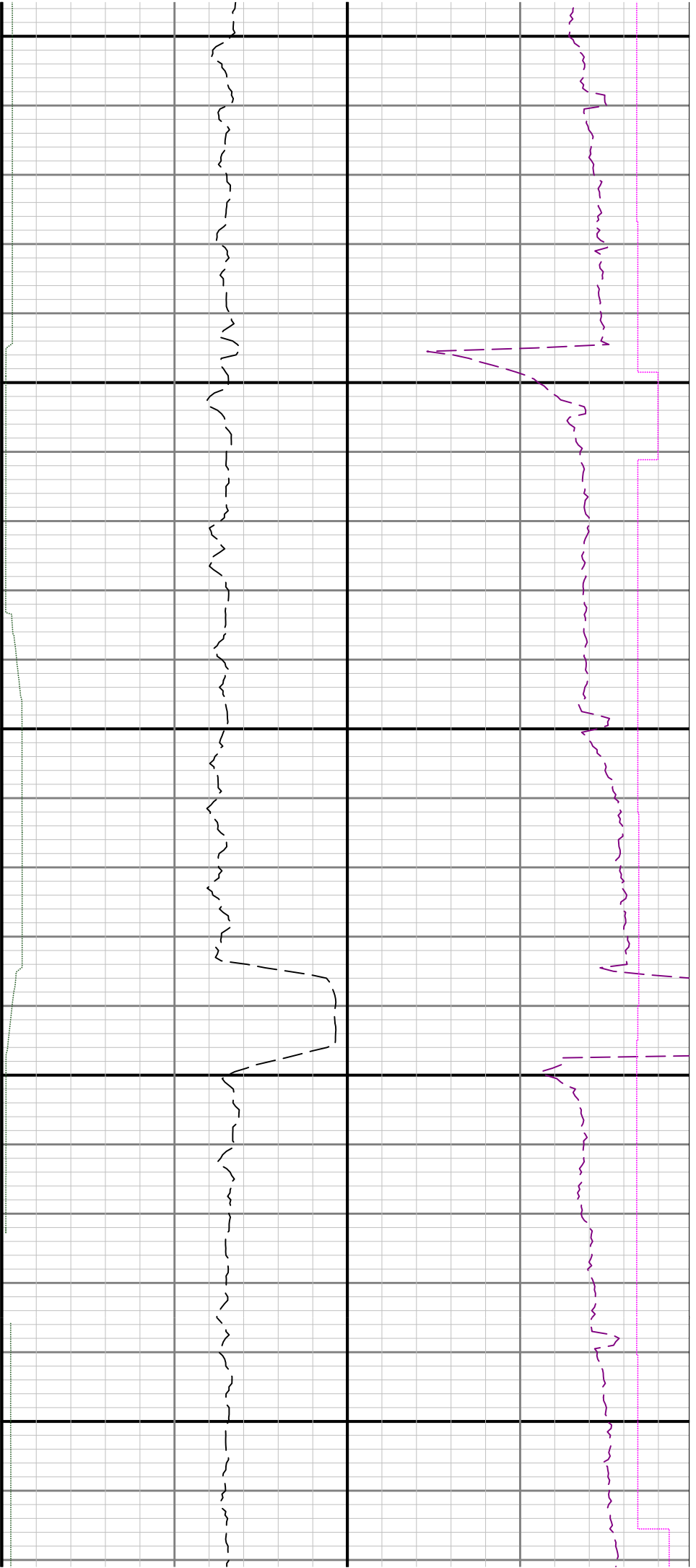
15300

15400

See Remark 3

See Remark 4





15500

15600

15700

See Remark 5

