



REALTIME LOG

Gamma Ray

Scale:	Company: Anadarko			
Measured Depth	1:240	Well: MAB 15-1HZ		
		Field: Weld County		
		County: Weld	Country: United States	
Depth Reference:	State: Colorado			
Driller's Depth				
Status:	Surface Location:		Other Services:	
Final Print	Latitude:	040° 02' 43.267" N		
	Longitude:	104° 45' 41.954" W		
API No:	051234925100	Directional		
Job ID:	109688780	SEC:	15 TWN:	1N RGE: 66W
Permanent Datum (P.D.):	Mean Sea Level	Elevation:	0.00 ft	Elev. KB: N/A
Log Measured From:	Rig Floor	Above P.D.:	5130.00 ft	Elev. DF: 5130.00 ft
				Elev. GL: 5113.00 ft

Dates		Interval		Magnetic Field Reference		
From:		Drilled (ft)	Logged (ft)	Azi Reference North:	True Dip Angle: (deg)	
2019-03-08						66.38
To:	2019-03-12	Top: 1862.00	Top: 1862.00	Total Magnetic Field Strength: (nT)		52376
Spud:	2019-03-08	Bottom: 18092.00	Bottom: 18044.00	Mag to Reference North Correction: (deg)		7.96

[illegible][illegible]

Acquisition System	Software Version	Other
Baker Hughes Cadence	RT 5.1	
Plot Studio	5.1.8355.1	
	Rig:	Akita 522
	Contractor:	Akita Drilling
	District:	RMA
		Unit: D&E

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Log Run Summary												
Run No	Bit Run No.	Bit Size (in)	Bit Type	Bit Gauge Length (in)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Hours (h)
						Top (ft)	Bottom (ft)	From (ft)	To (ft)	Start Logging	End Logging	
1	1	7.875	PDC	2.00	Steerable	1862.00	18044.00	1862.00	18092.00	2019-03-08 11:56	2019-03-12 02:45	68.86

Crew								
Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Austin Brattin	2019-03-08	2019-03-09	Teni Onafowokan	2019-03-08	2019-03-12	Steve Johnson	2019-03-09	2019-03-12

Mud Properties Record											
Date / Time	Run No.	Depth	Mud Type	Density	Viscosity	pH	Fluid Loss	Oil / Water	Source	Total Chlorides	K+
		(ft)		(ppg)	(cP)		(cm3)			(ppm)	(%)
2019-03-08 18:00	1	3764.00	Diesel-Oil Based Mud	9.3	12	N/A	N/A	75.6/24.4	Active Pit	35000	0.00
2019-03-09 19:53	1	8337.00	Diesel-Oil Based Mud	9.0	13	N/A	N/A	74.7/25.3	Active Pit	36000	0.00
2019-03-10 20:30	1	13402.00	Diesel-Oil Based Mud	9.0	14	N/A	N/A	74.7/25.3	Active Pit	37000	0.00
2019-03-11 18:00	1	16762.00	Diesel-Oil Based Mud	9.2	14	N/A	N/A	74.7/25.3	Active Pit	37000	0.00

Equipment and Service Data							
Run No.	Tool	Serial Number	Measurement	Sensor Offset (ft)	Bit Offset (ft)	Max O.D. (in)	Min I.D. (in)
1	EvoOne	G650-0258	Gamma (single)	8.21	46.96	6.630	2.750
1	EvoOne	G650-0258	Directional (mag)	9.40	48.15	6.630	2.750



Service and Tool Mnemonics		
Mnemonic	Name	Description
MWD	EvoOne - Dir Gamma	EvoOne

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 logging engineers, depth calibrations and measurements could not be independently verified.

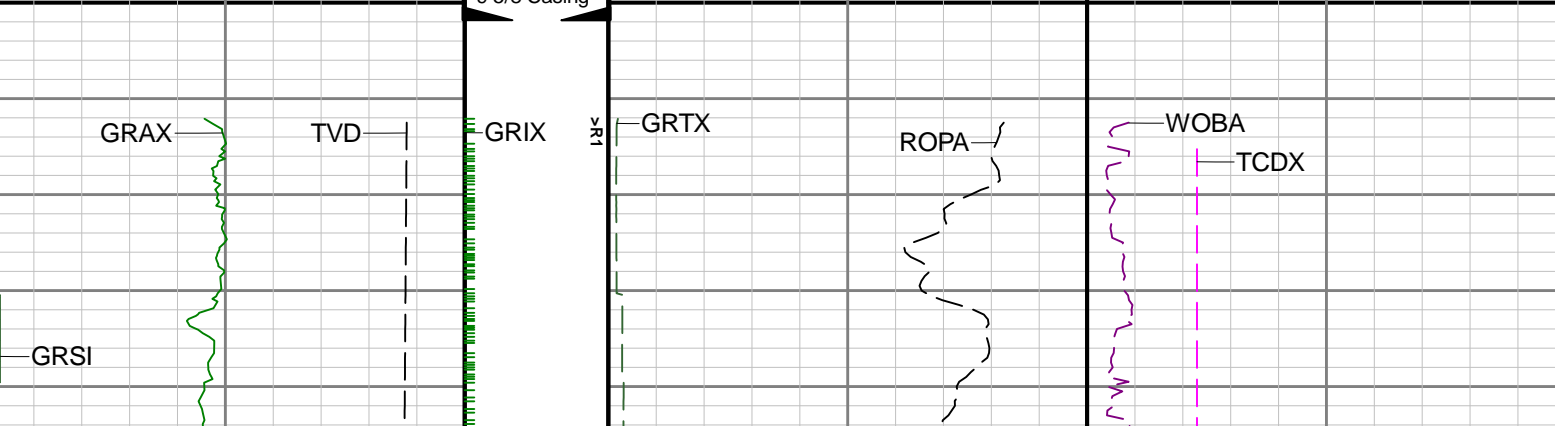
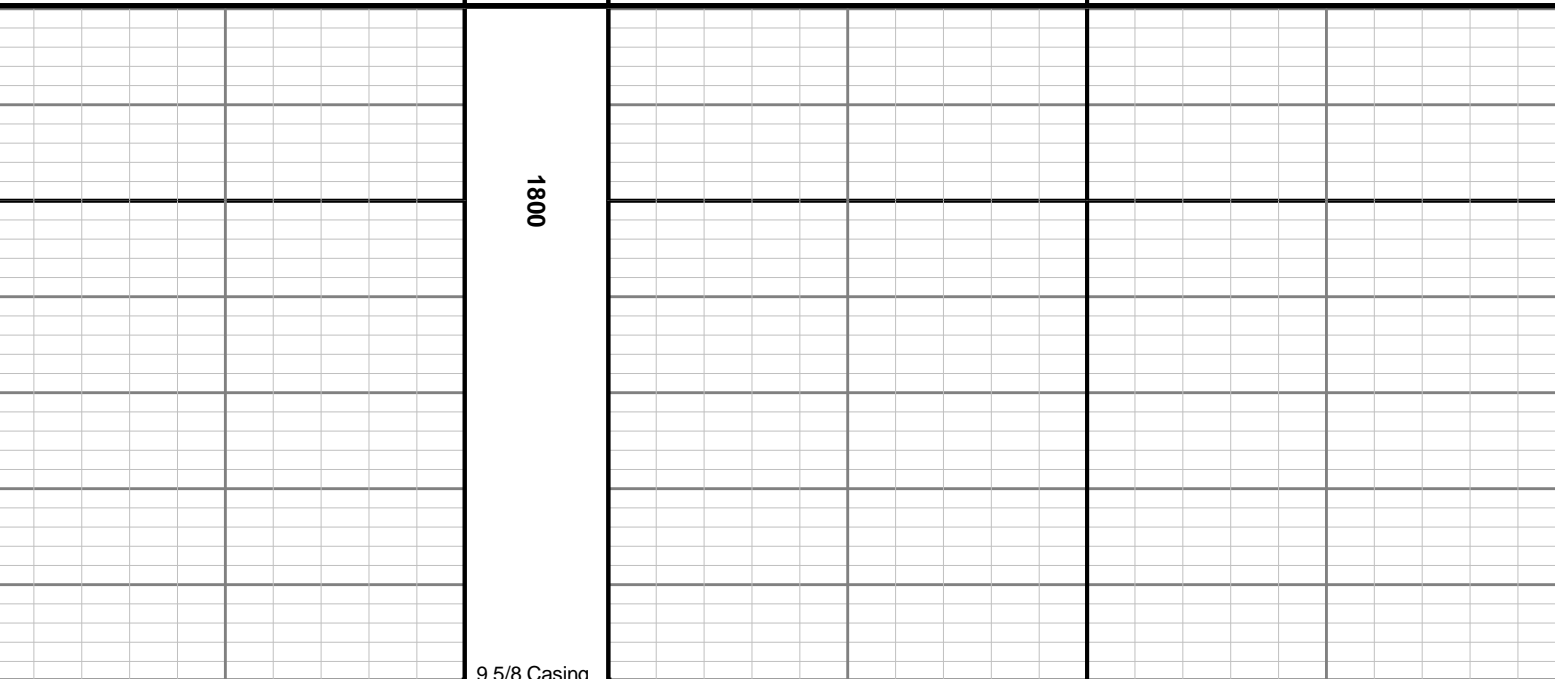
- engineers, depth calibrations and measurements could not be independently verified.
- 2 Baker Hughes run 1 utilized 6.50 inch Evo One services (Gamma Ray and Directional) behind a 7.875 inch bit and steerable assembly from 1862 to 18092 feet MD (1847 to 7477 feet TVD).
- 3 Gamma Ray (GRAX) scale is presented 0 to 200 API per customer request.
- 4 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.

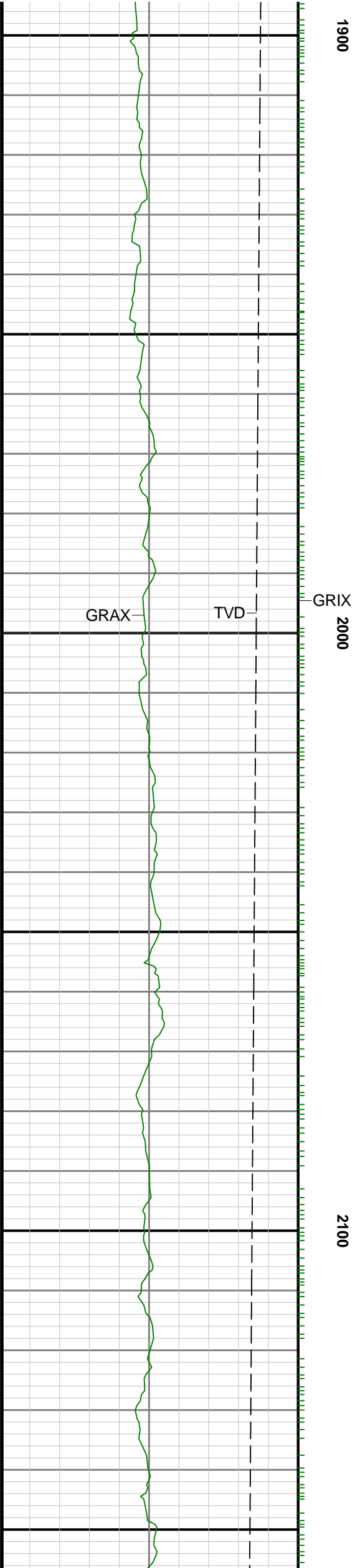
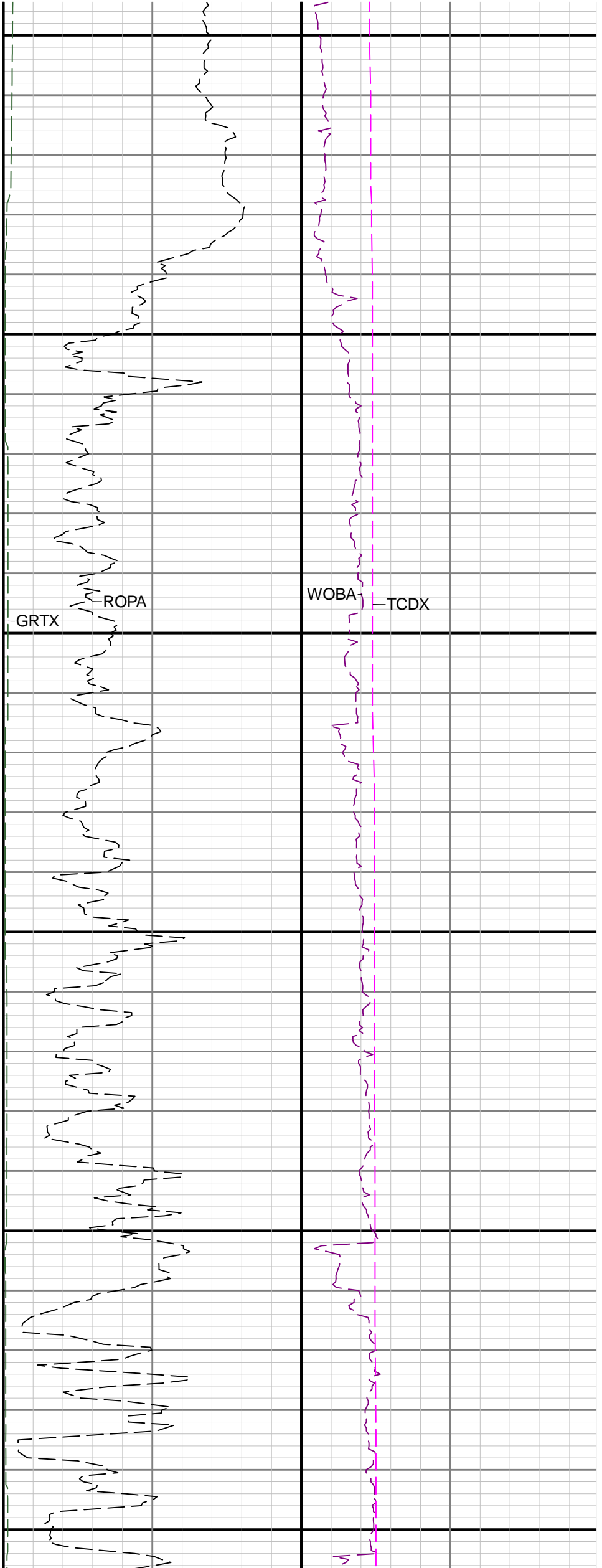
Remarks				
Number	Depth (ft)	Hole Section (in)	Run No.	Remark
1	2413.00	7.875	1	The interval from 2413 to 2452 feet MD (2391 to 2430 feet TVD) was not logged due to surface gear malfunction.
2	5232.00	7.875	1	The interval from 5232 to 5348 feet MD (5193 to 5309 feet TVD) was not logged due to surface gear malfunction.
3	8120.00	7.875	1	The interval from 8120 to 8206 feet MD (7473 to 7476 feet TVD) was not logged due to Pason malfunction.
4	8735.00	7.875	1	The interval from 8735 to 8818 feet MD (7476 to 7475 feet TVD) was not logged due to Pason malfunction.
5	9621.00	7.875	1	The interval from 9621 to 9637 feet MD (7492 to 7492 feet TVD) was not logged due to transmission interruptions in the MWD tool signal while drilling.
6	10135.00	7.875	1	The interval from 10135 to 10208 feet MD (7487 to 7487 feet TVD) was not logged due to Pason malfunction.
7	11459.00	7.875	1	The interval from 11459 to 11472 feet MD (7481 to 7481 feet TVD) was not logged due to transmission interruptions in the MWD tool signal while drilling.
8	11763.00	7.875	1	The interval from 11763 to 11797 feet MD (7481 to 7482 feet TVD) was not logged due to Pason malfunction.
9	13616.00	7.875	1	The interval from 13616 to 13688 feet MD (7478 to 7478 feet TVD) was not logged due to surface gear malfunction.
10	14474.00	7.875	1	The interval from 14474 to 14561 feet MD (7477 to 7477 feet TVD) was not logged due to surface gear malfunction.
11	18044.00	7.875	1	The interval from 18044 to 18092 feet MD (7480 to 7477 feet TVD) was not logged due to sensor to bit offset at well TD.

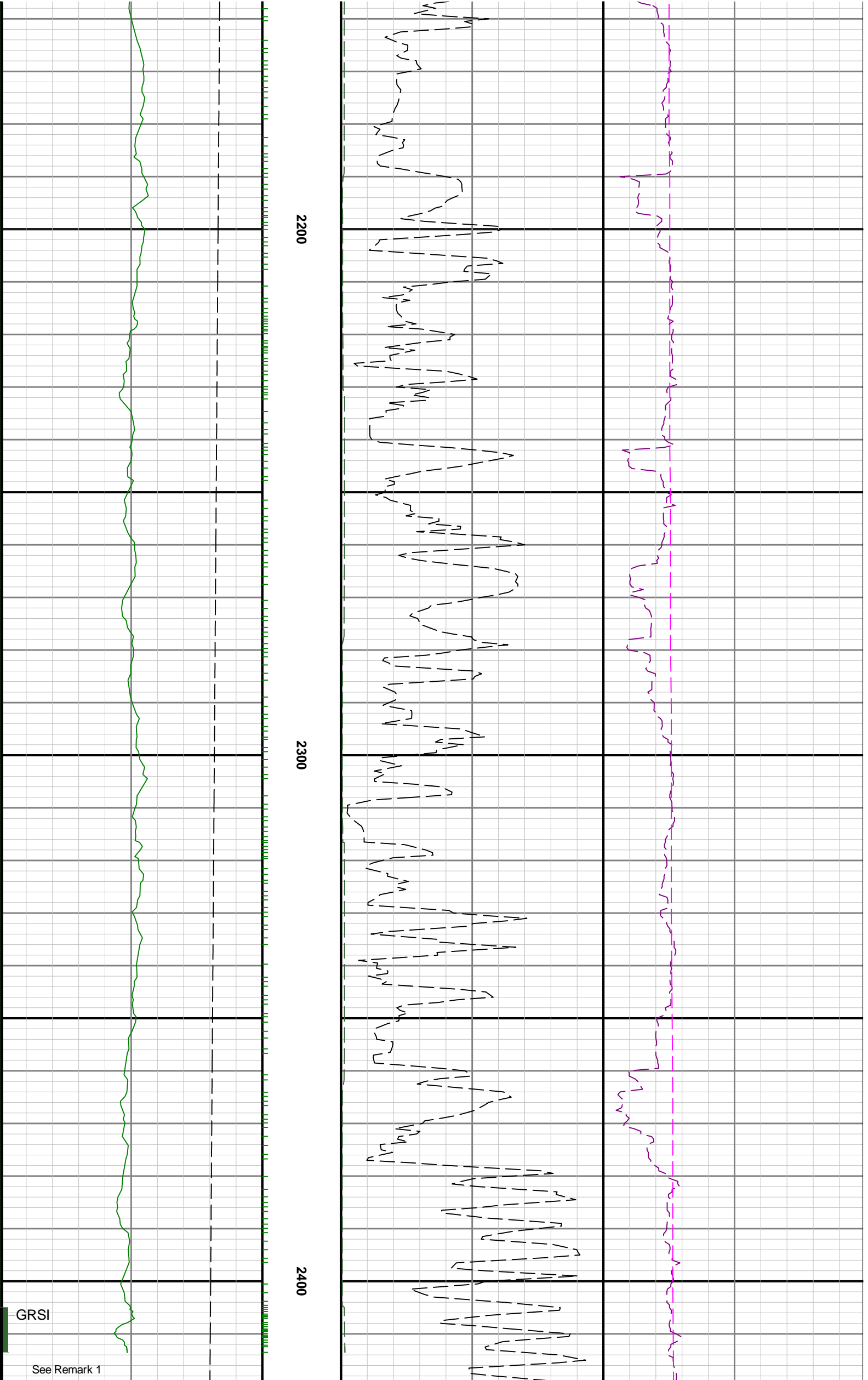
Curve Mnemonics		
Presented Curves	Description	Units
TCDX	Downhole Temperature	degF
ROPA	Depth Averaged ROP 3 ft Average	ft/h
TVD	True Vertical Depth	ft
WOBA	Weight On Bit, Average 1 ft Average	klb
GRAX	Gamma Ray - Apparent - Real-Time 0.5 ft Average	API
GRIX	Gamma Ray - Data Point Indicator - Real-Time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

 	Company	Anadarko			
	Well	MAB 15-1HZ			
	Interval	Date From:	2019-03-08 09:32	Interval Drilled: (ft)	1862.00 - 18092.00
		Date To:	2019-03-12 04:18	Interval Logged: (ft)	1862.00 - 18044.00
	Created	2019-03-12 04:02:13			

Gamma Ray - Apparent 0.5 ft Average [GRAX]		MD 1:240 feet	Gamma Time Since Drilled		Weight On Bit, Average 1 ft Average [WOBA]	
0	200		0	600	0	100
API			min		klb	
True Vertical Depth [TVD]			Depth Averaged ROP 3 ft Average [ROPA]		Downhole Temperature [TCDX]	
8000	1000		1000	0	0	300
ft			ft/h		degF	







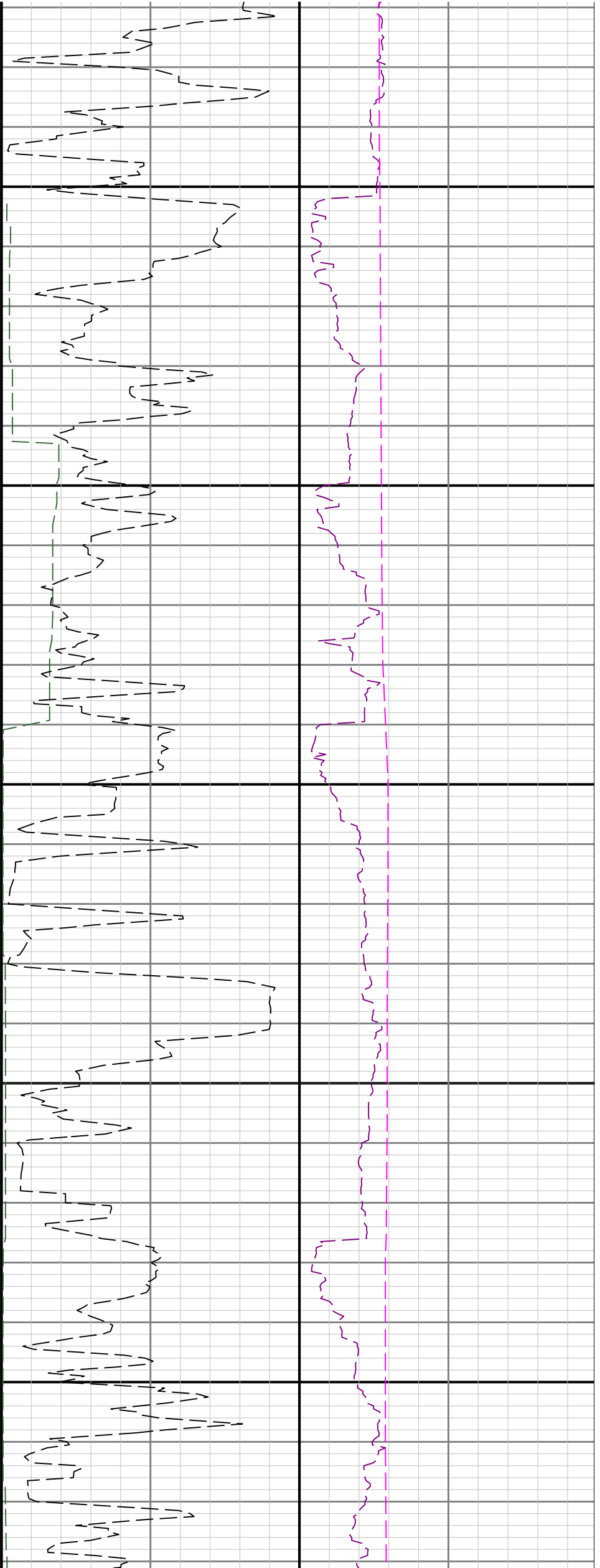
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2300

2400

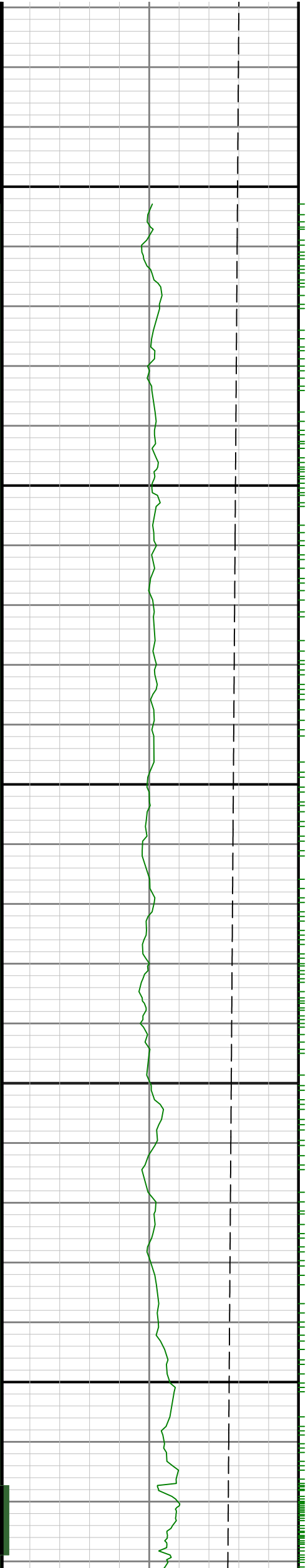
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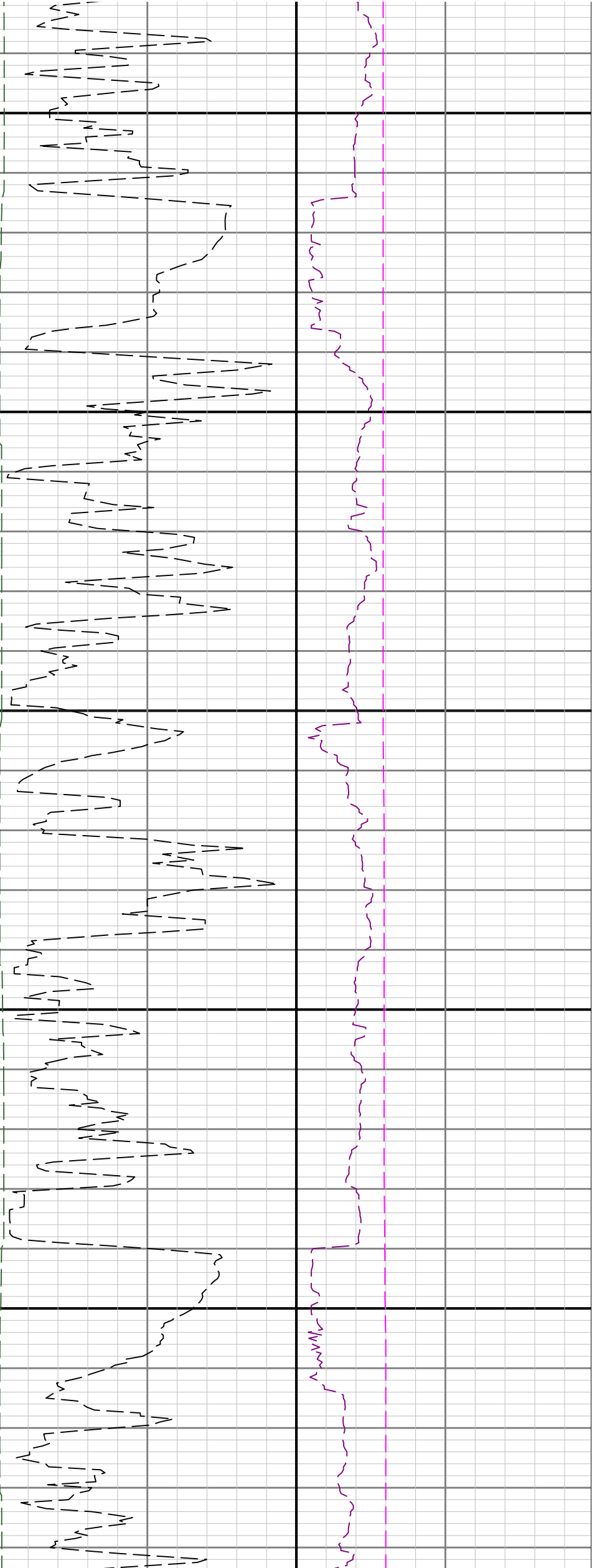
See Remark 1



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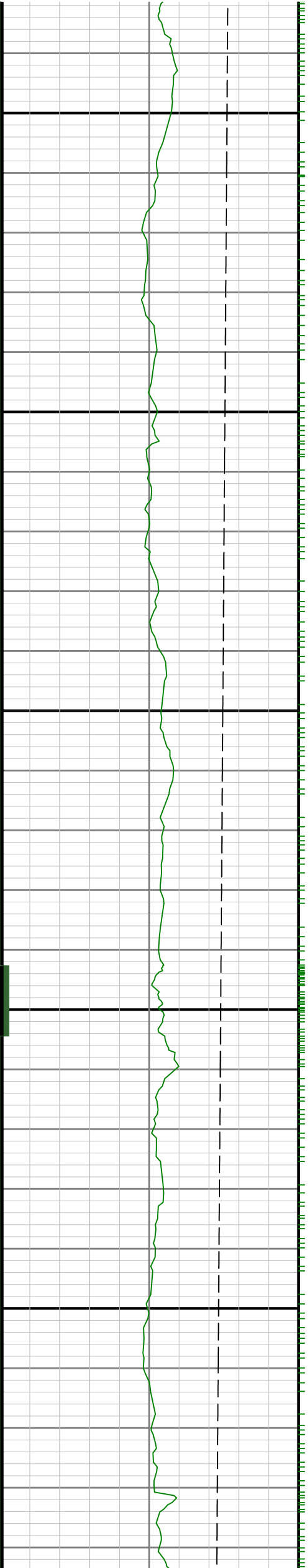


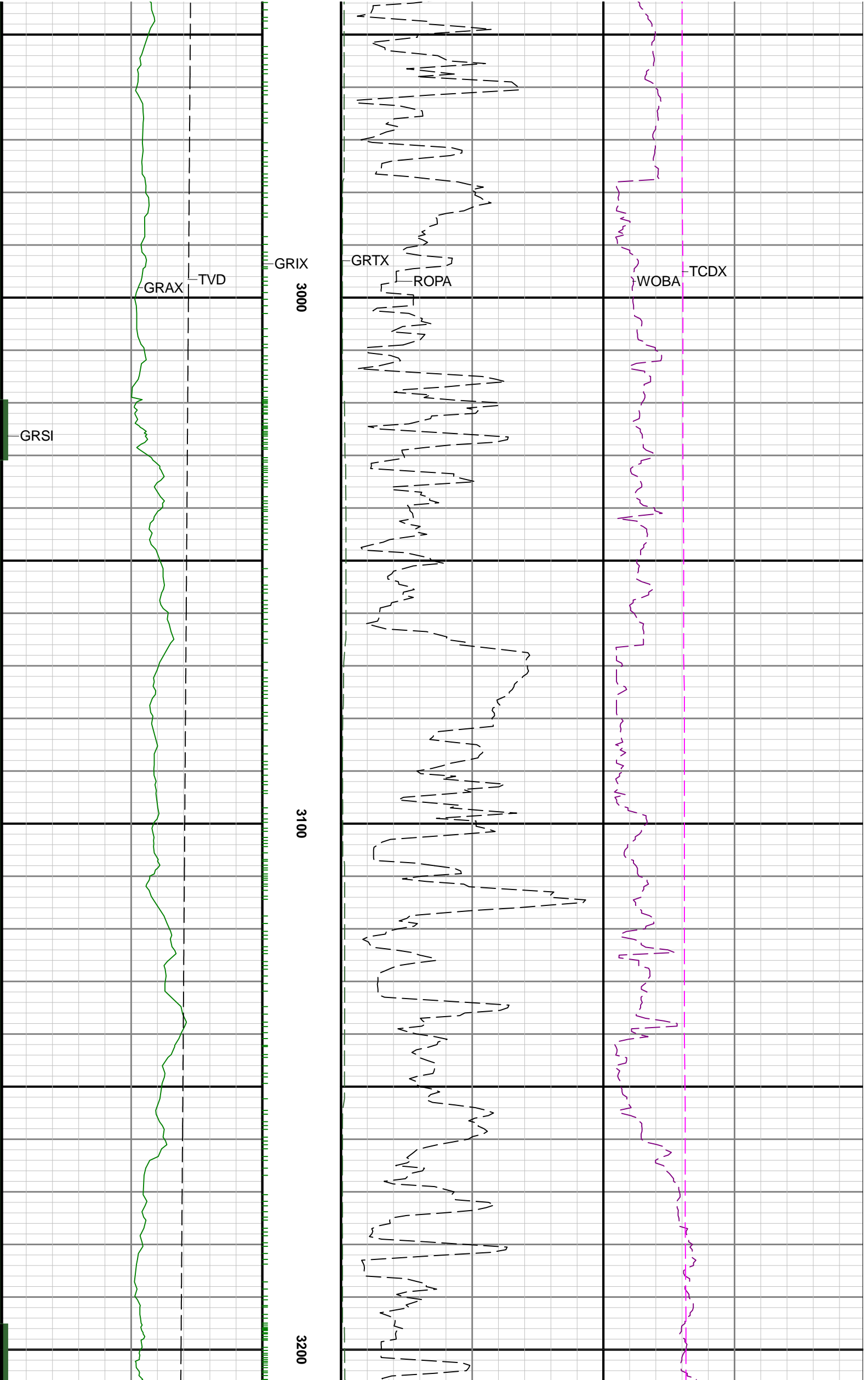


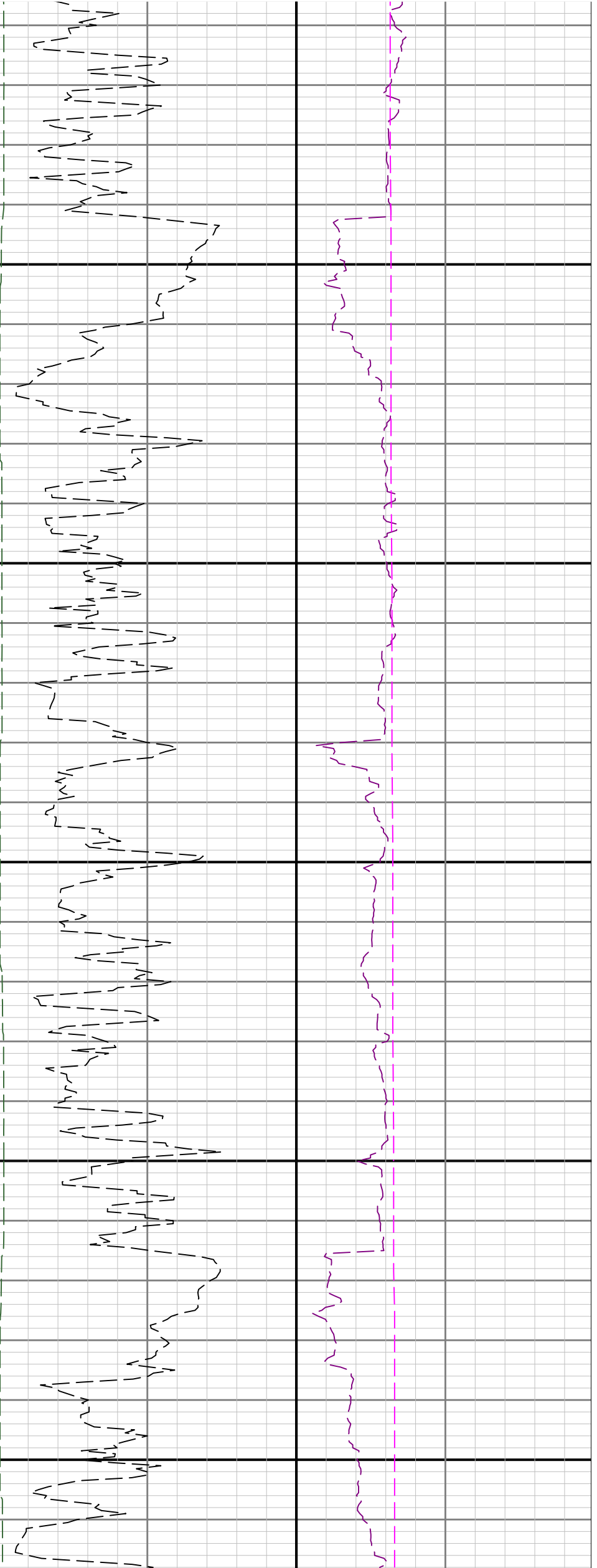
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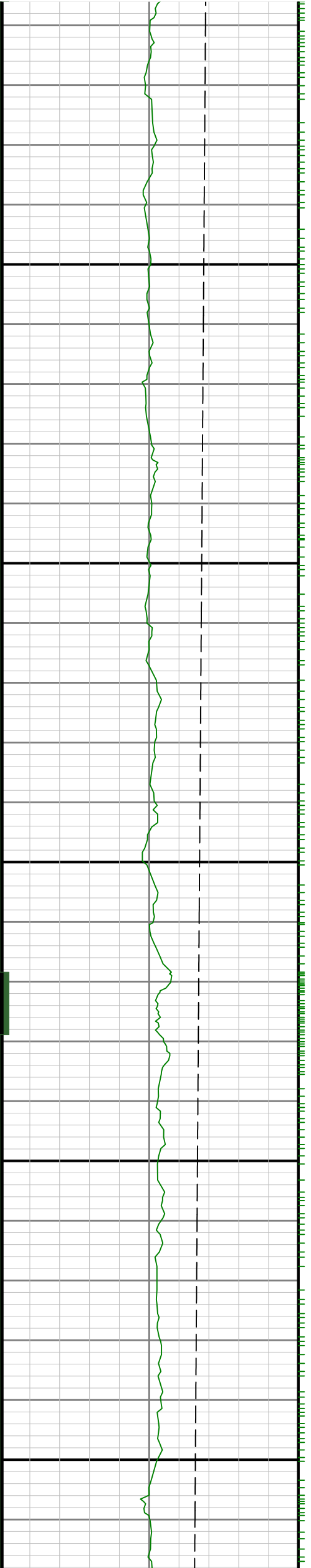


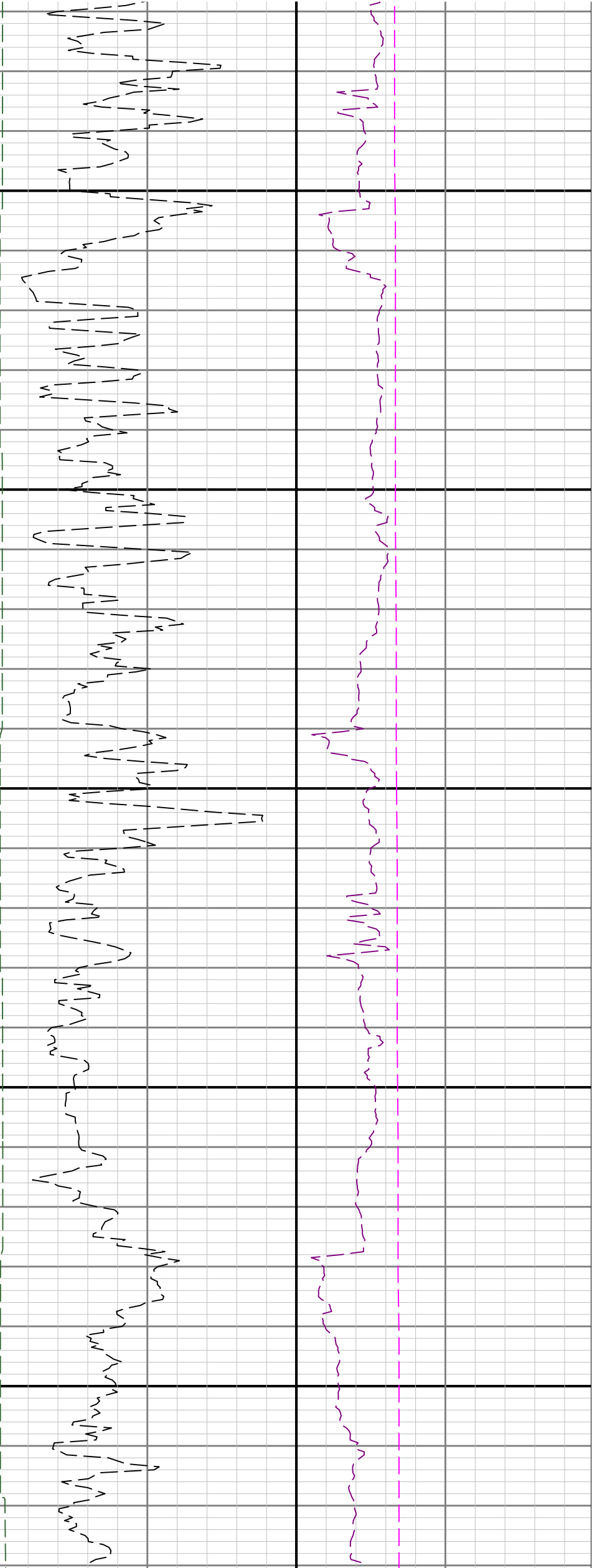




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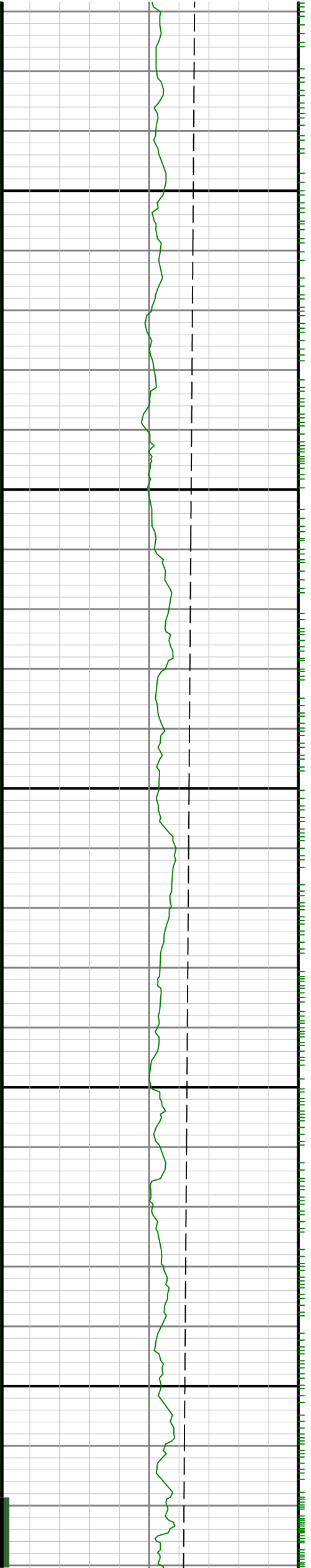


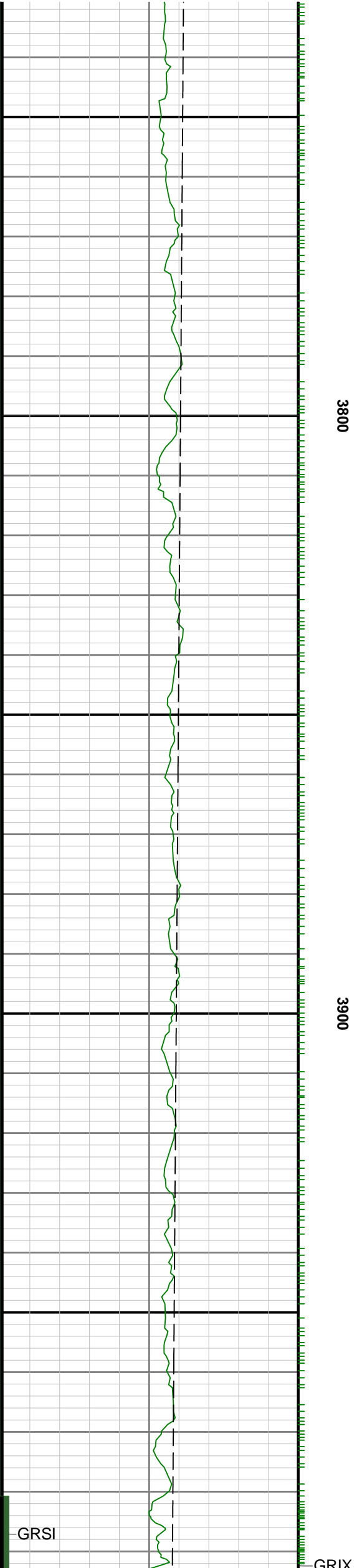
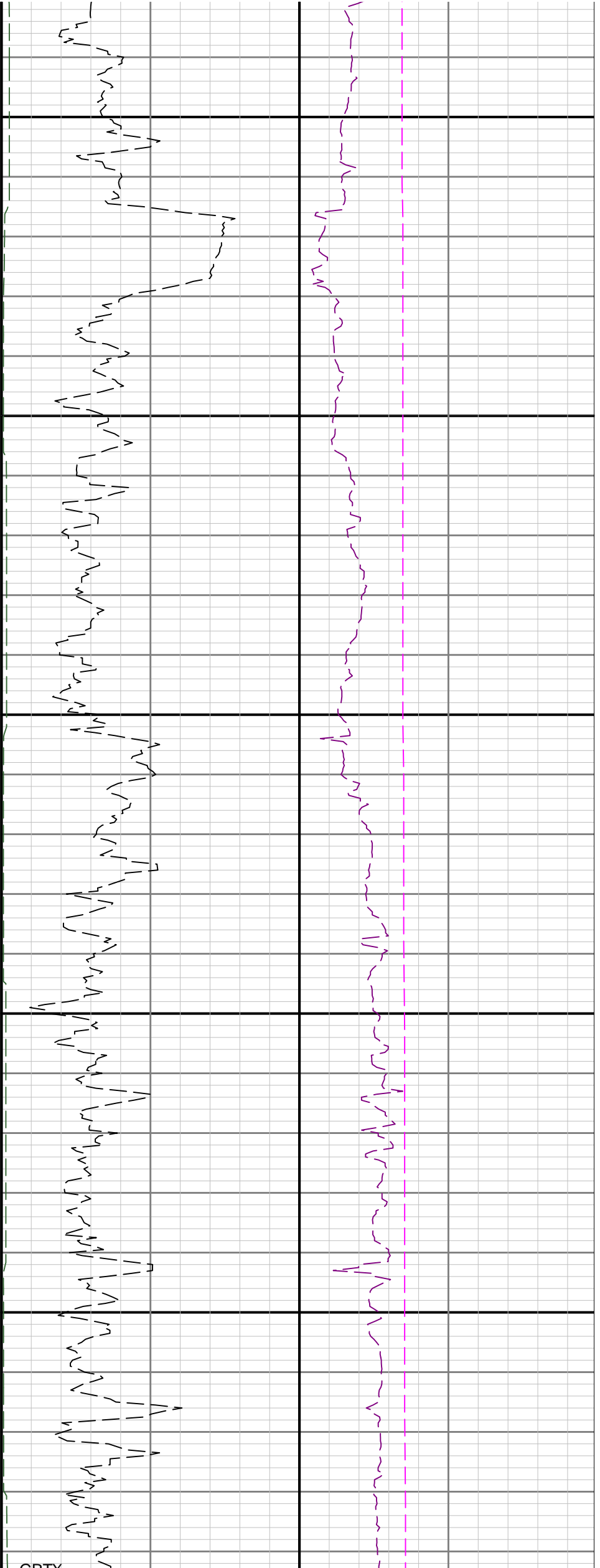


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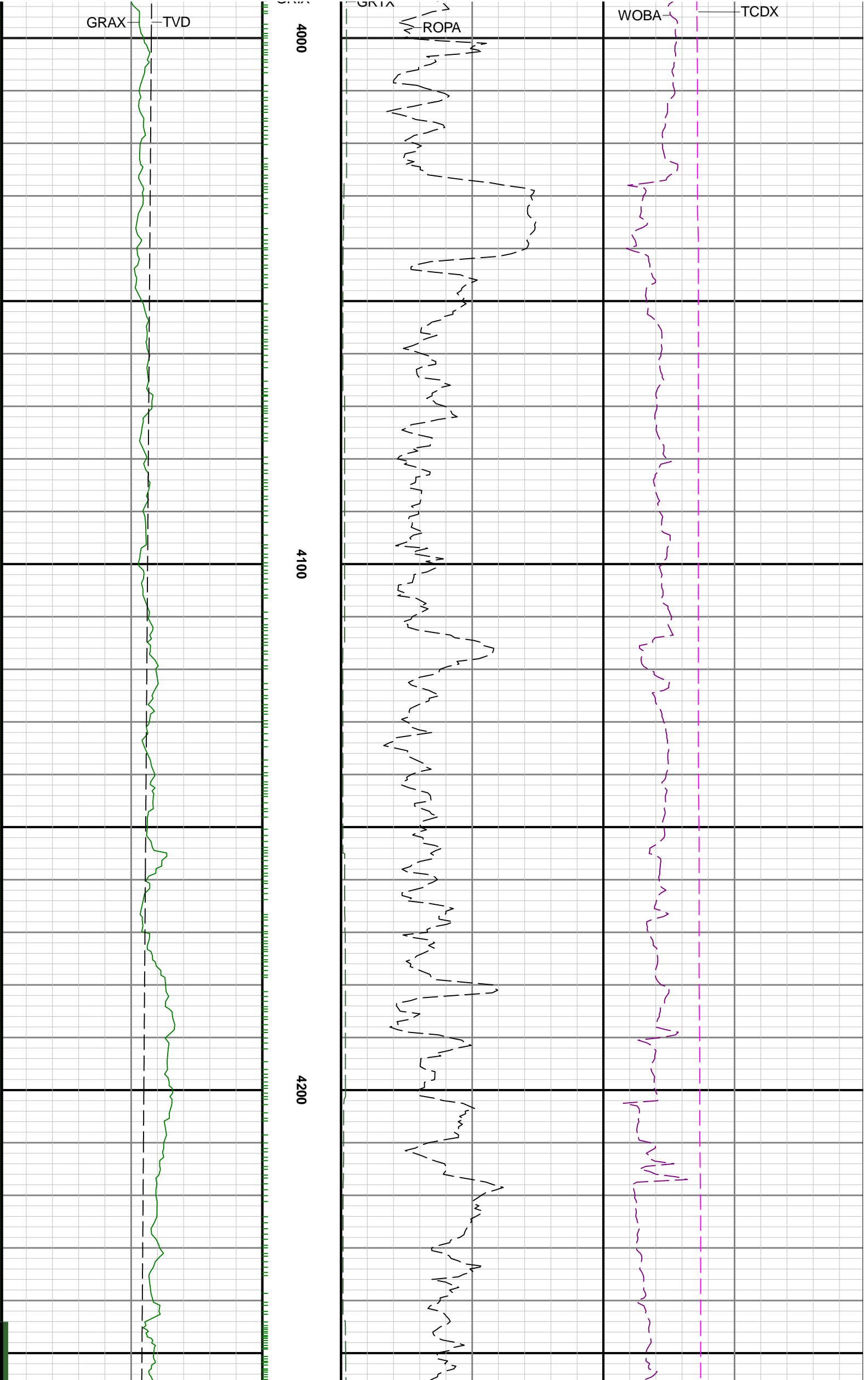


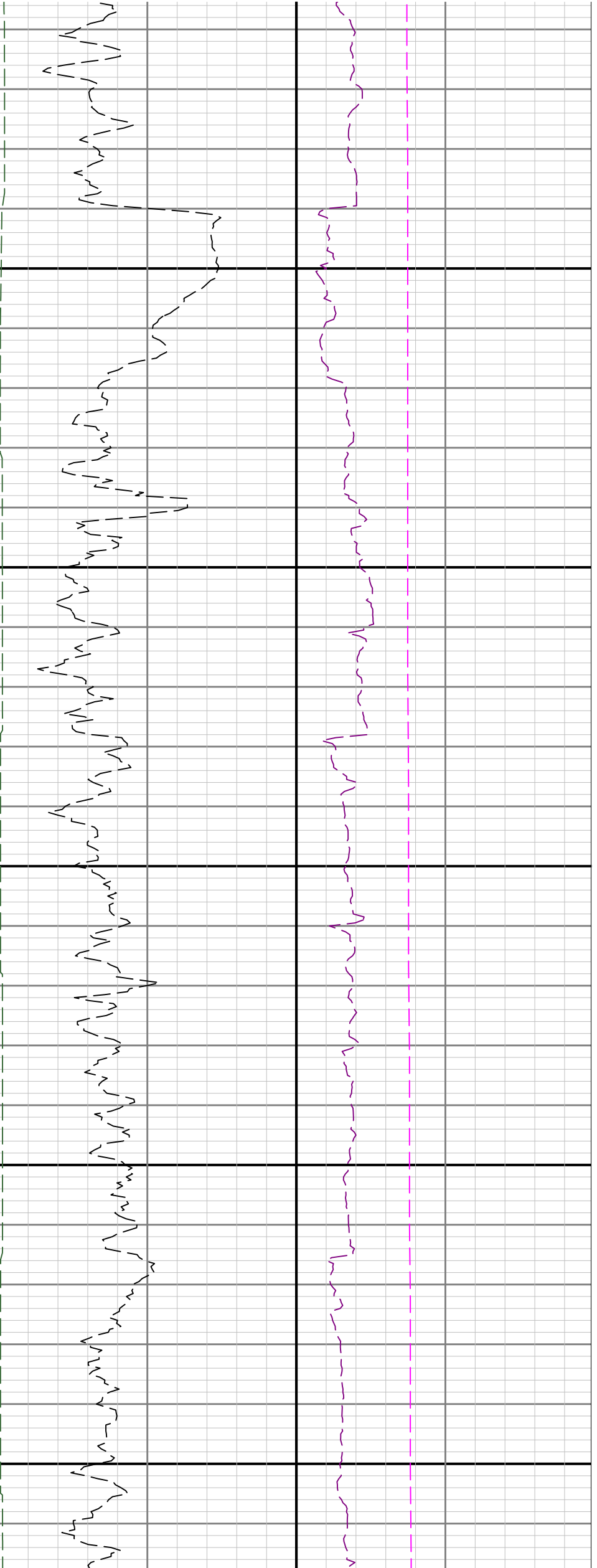


GRSI

GRIX

GRIX

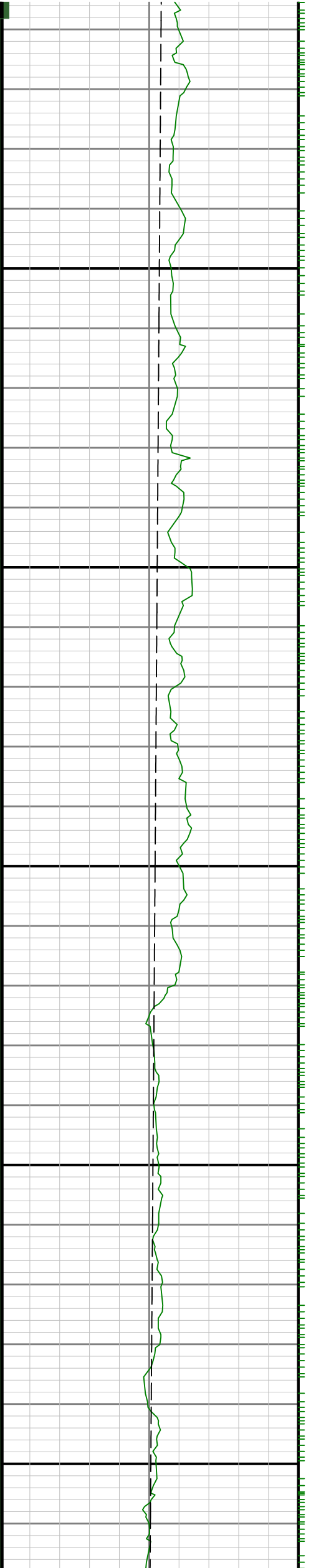


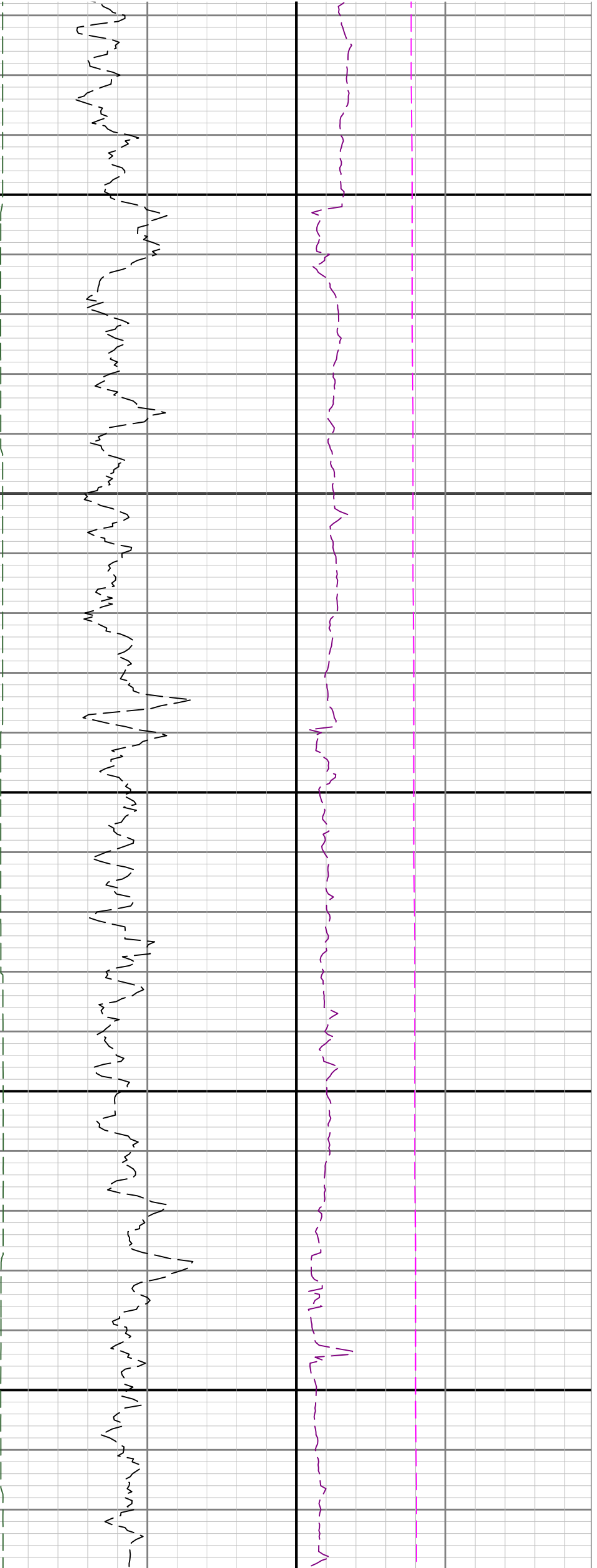


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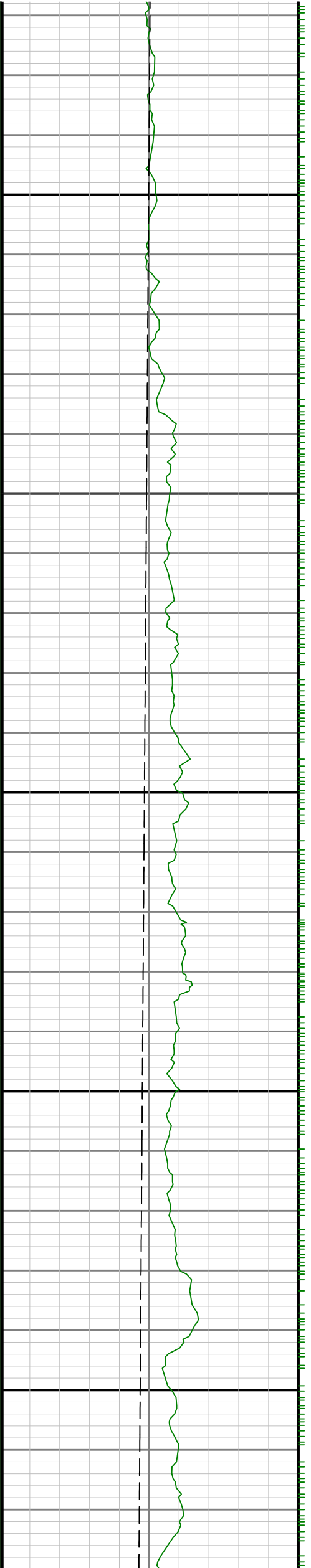
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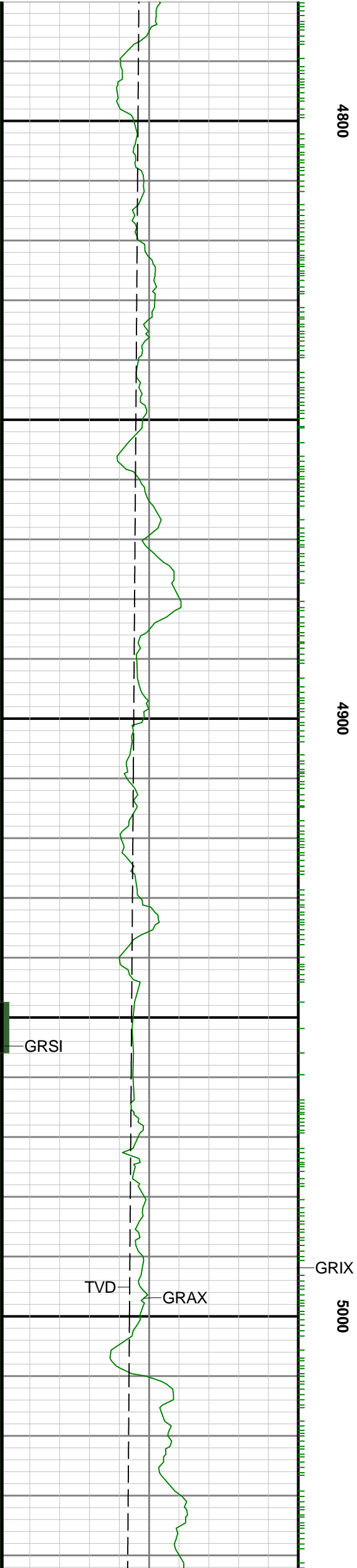
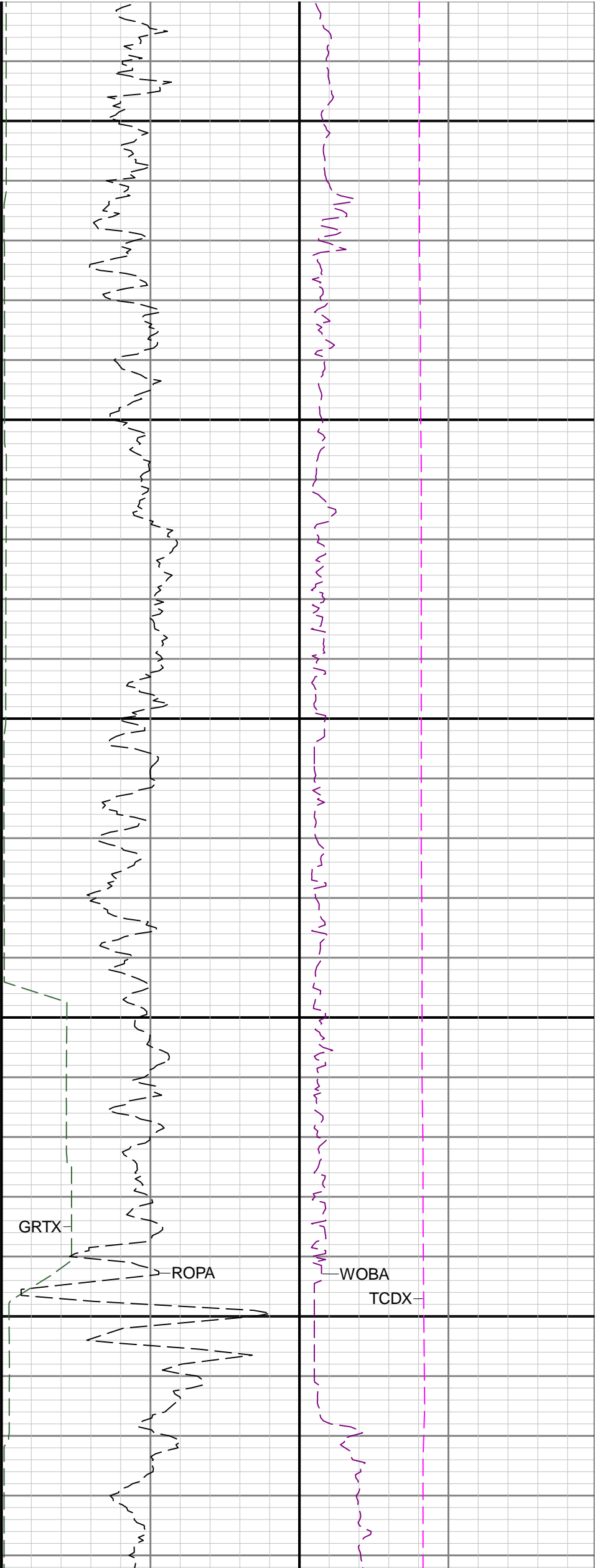


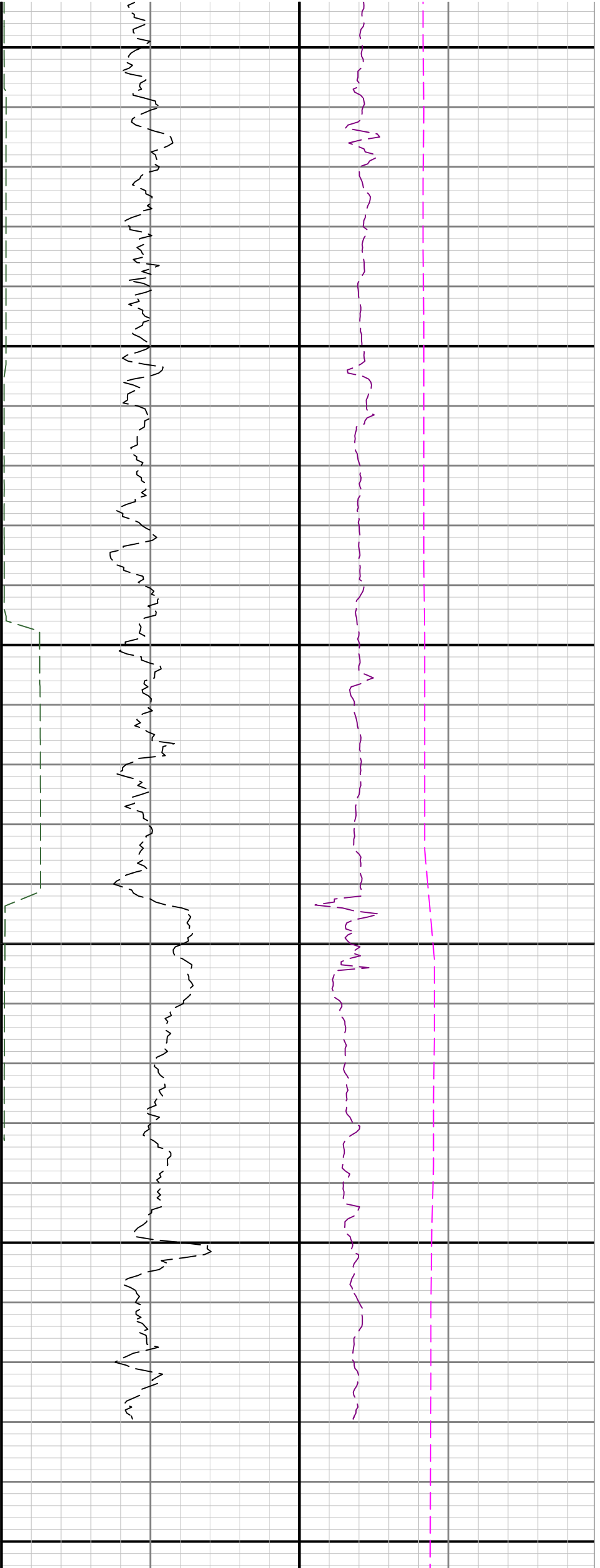


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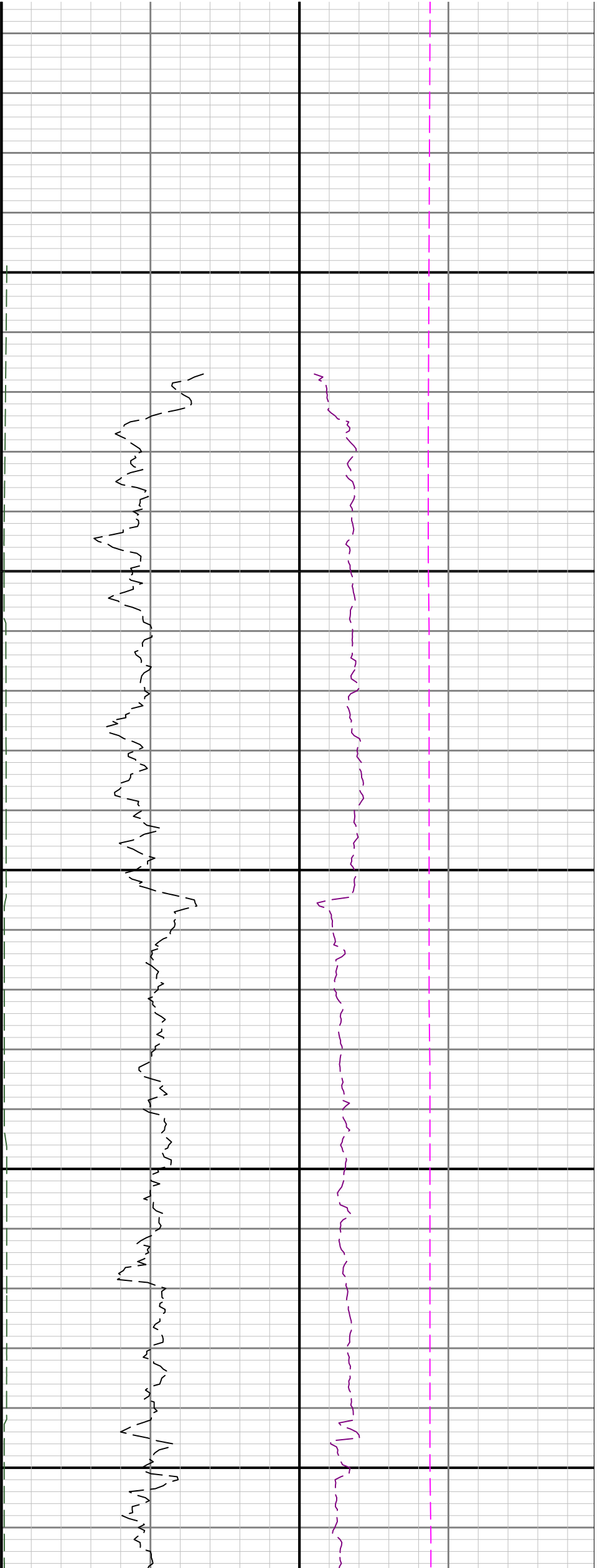


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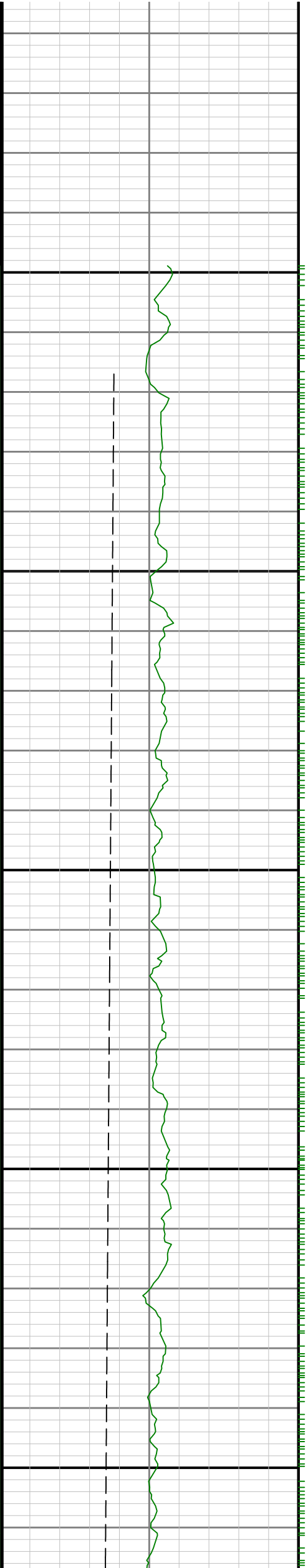
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See Remark 2



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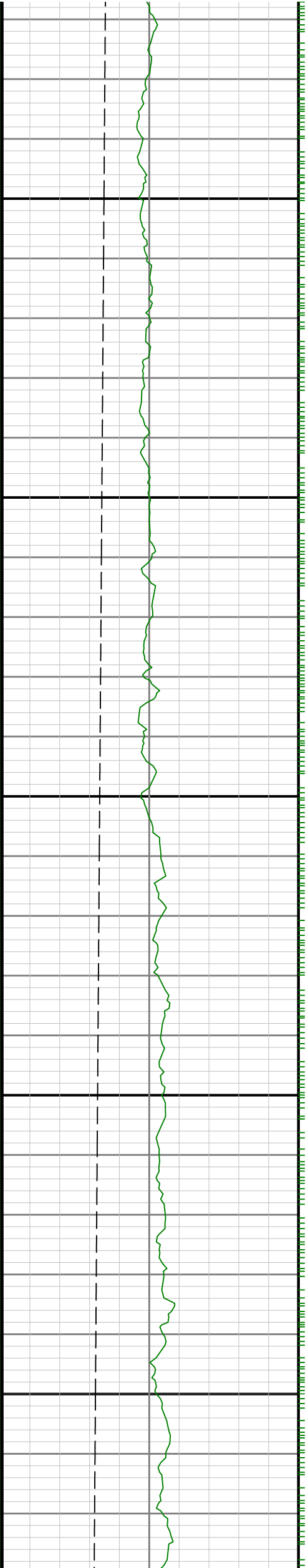


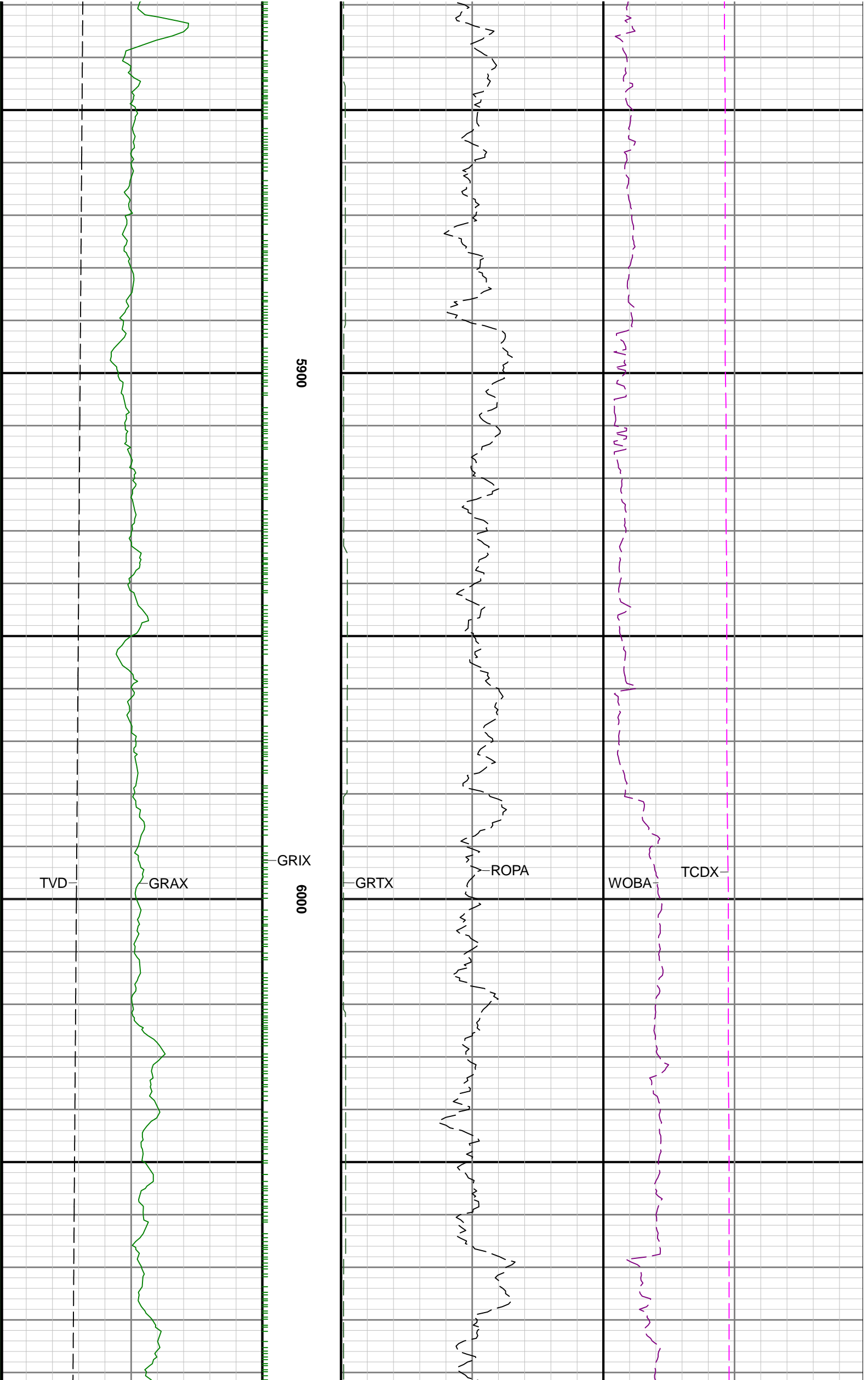


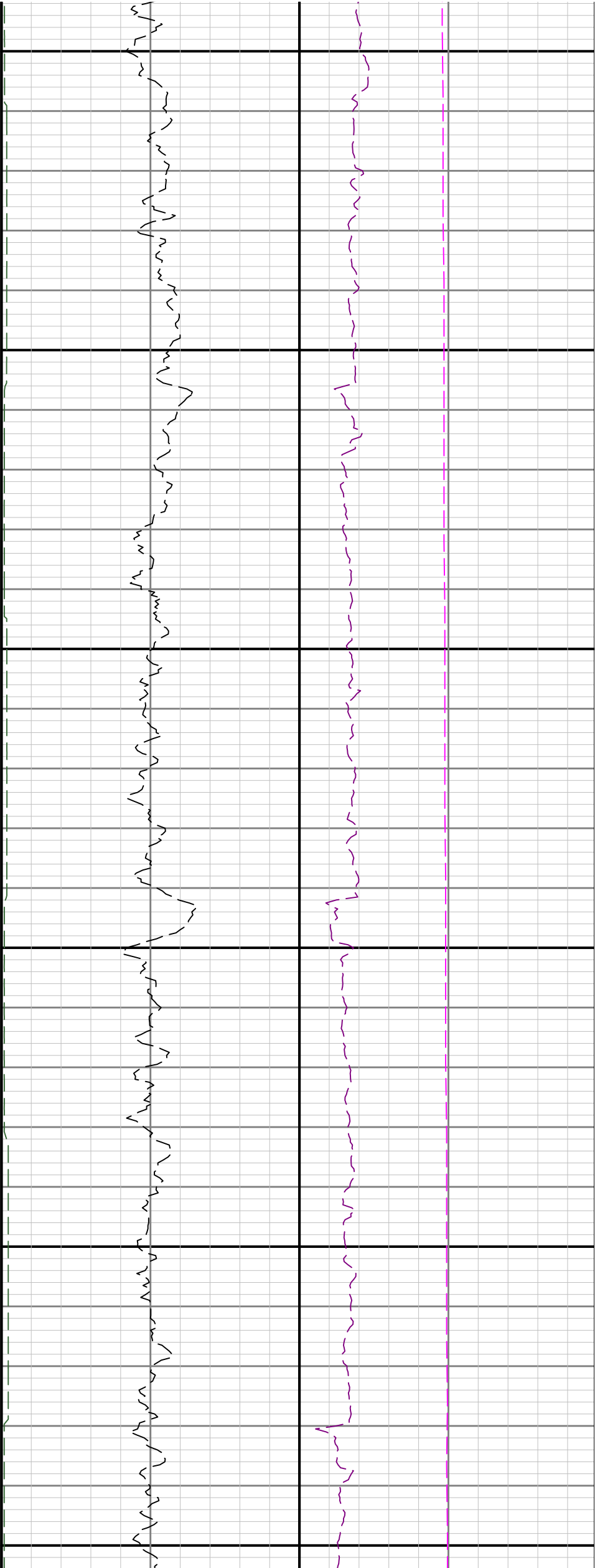
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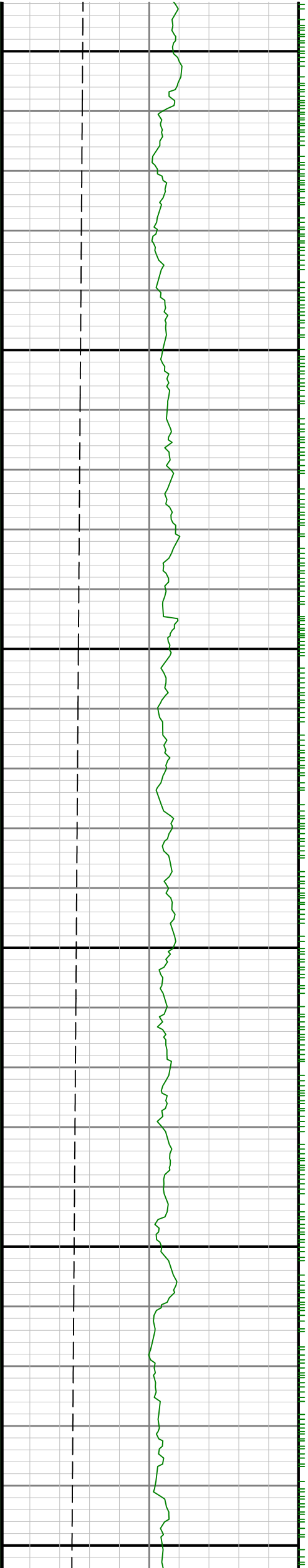


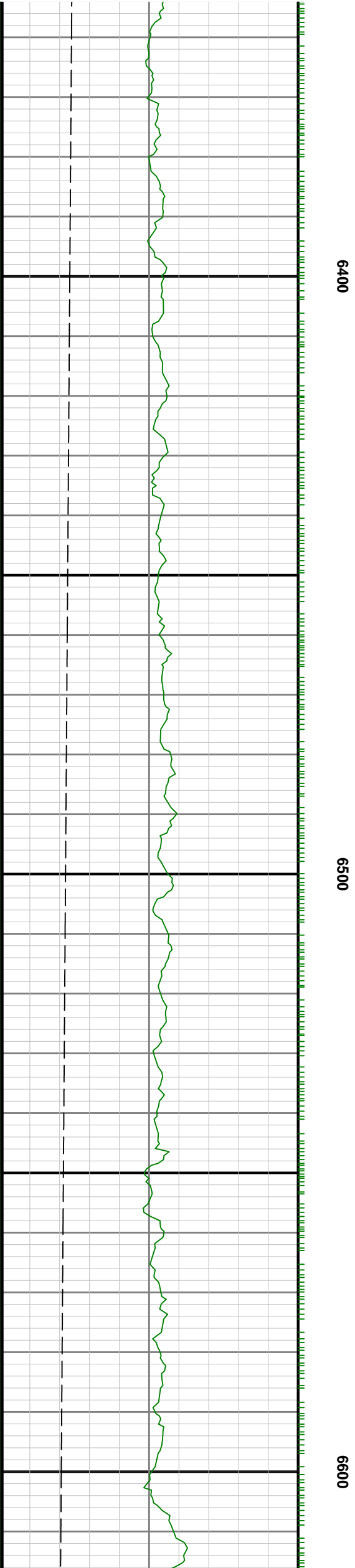
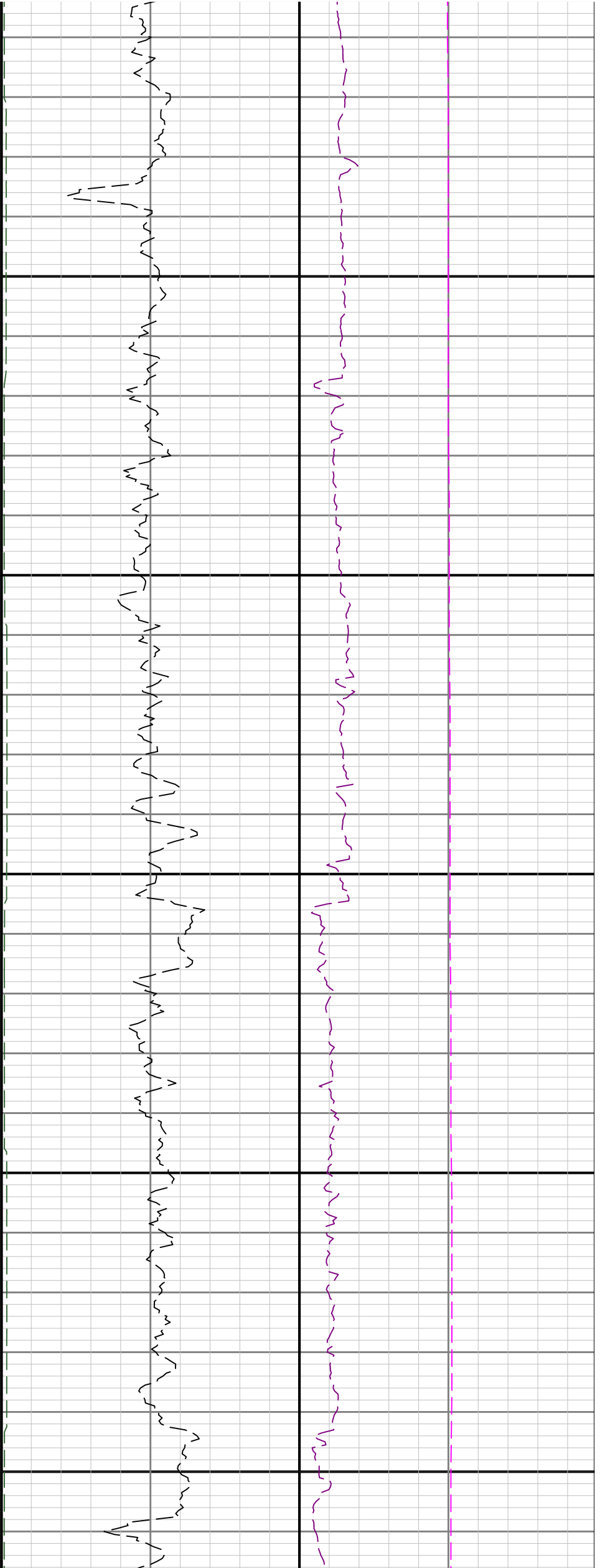


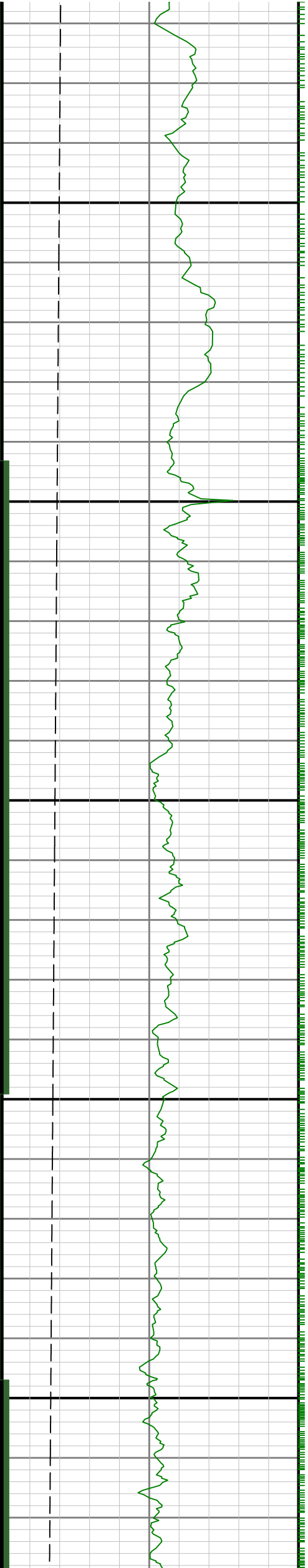
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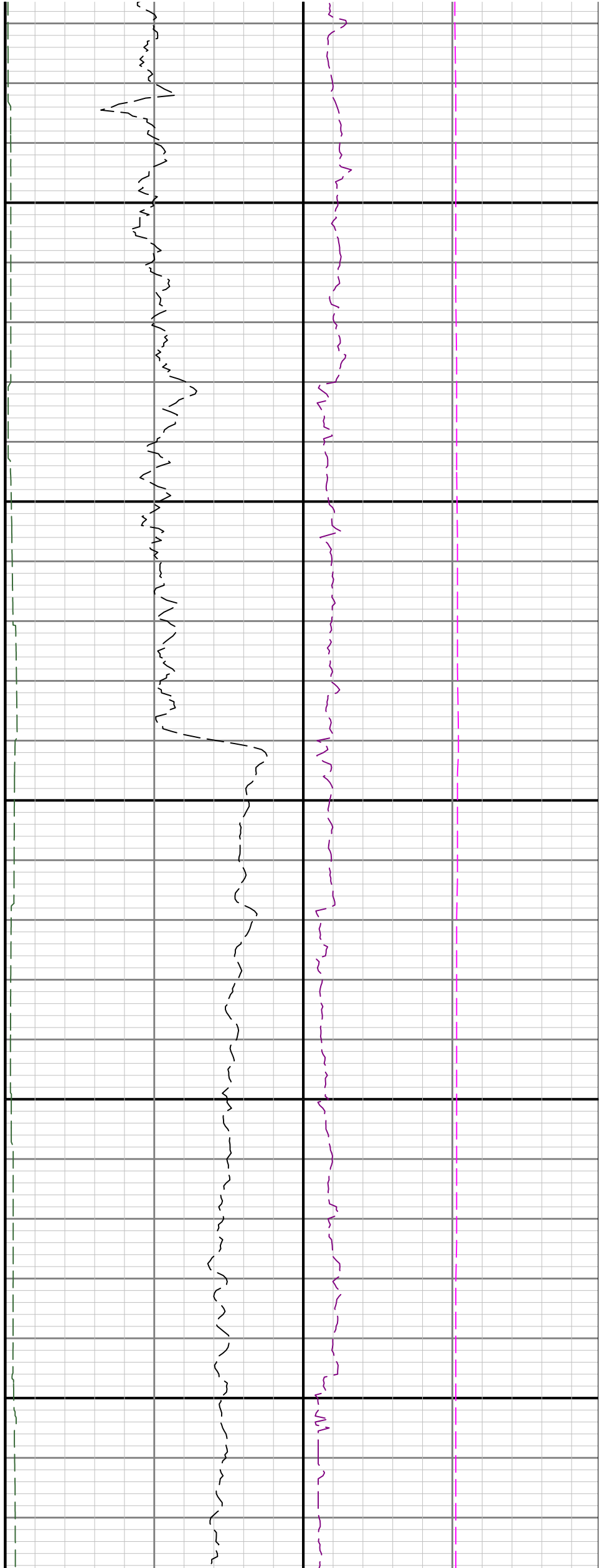


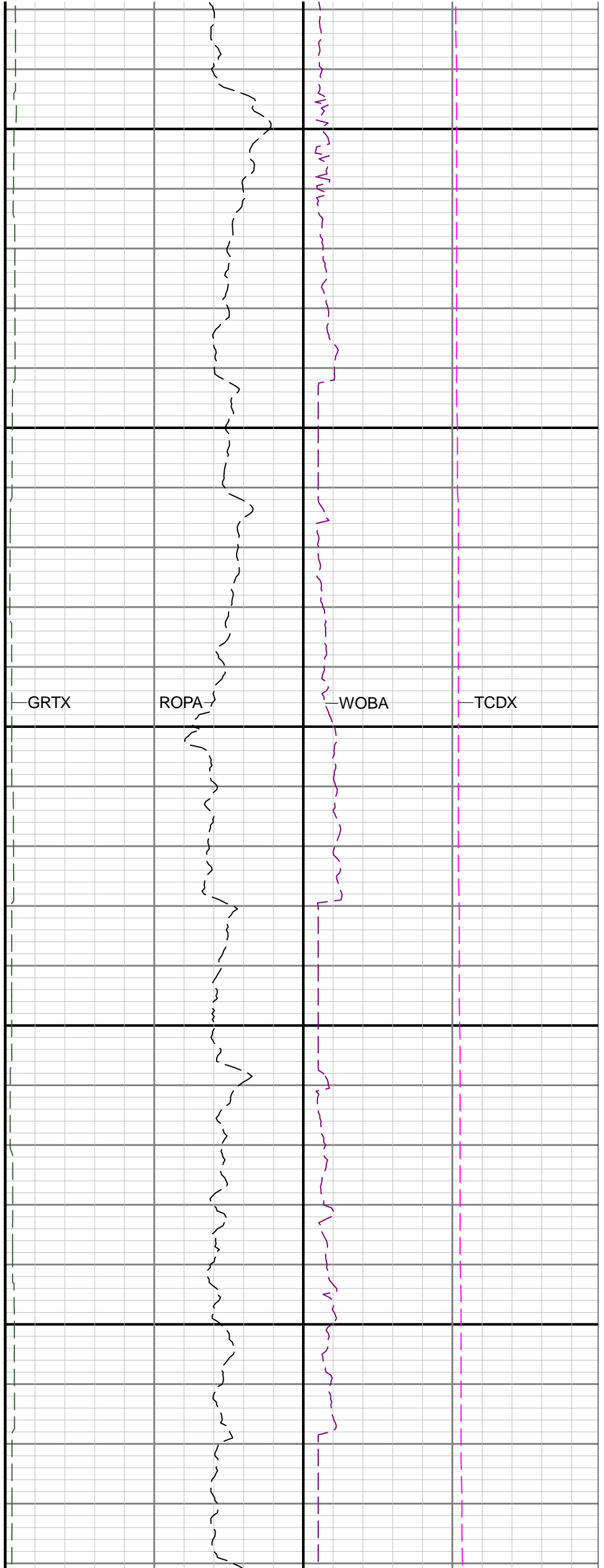
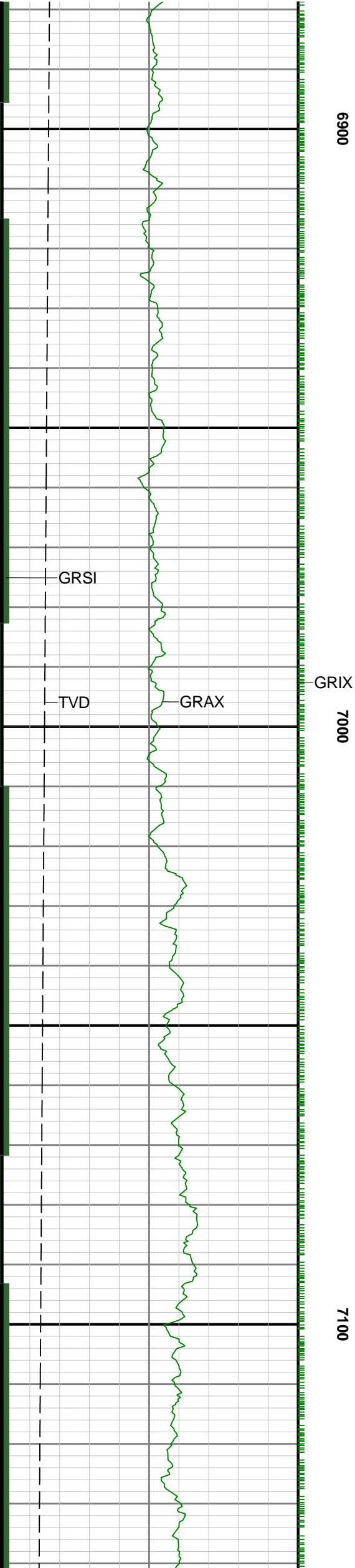


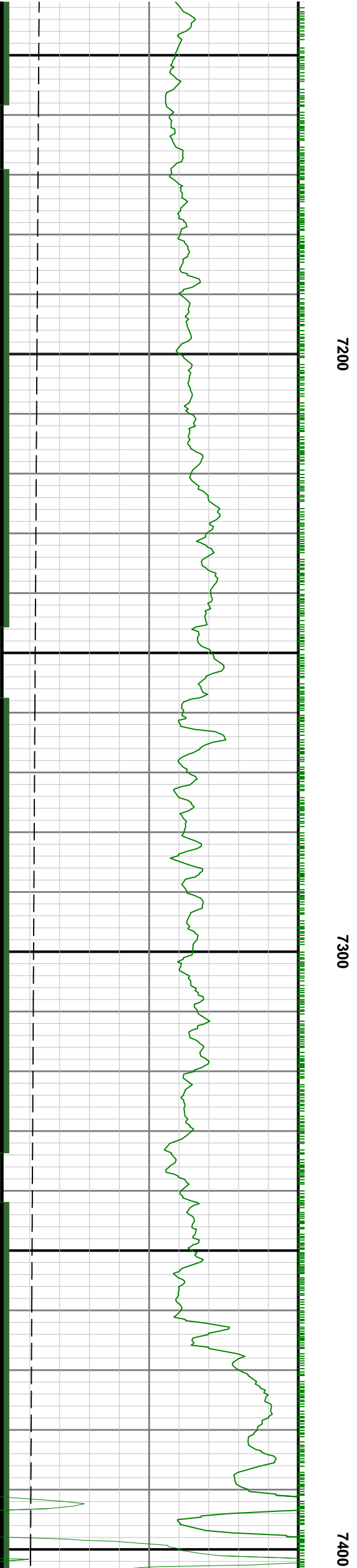
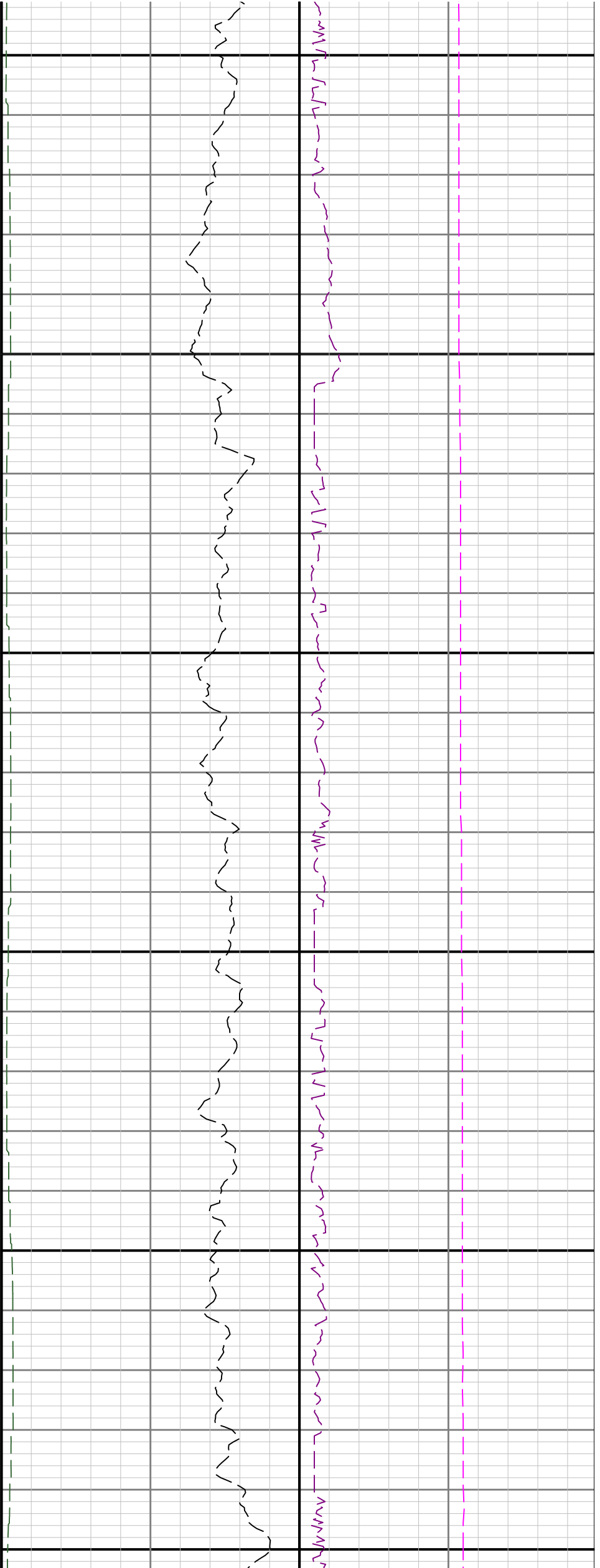


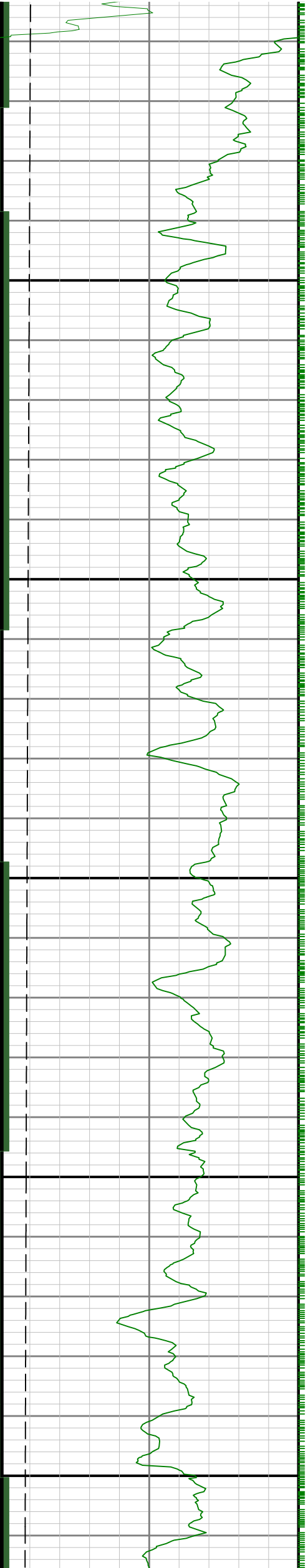
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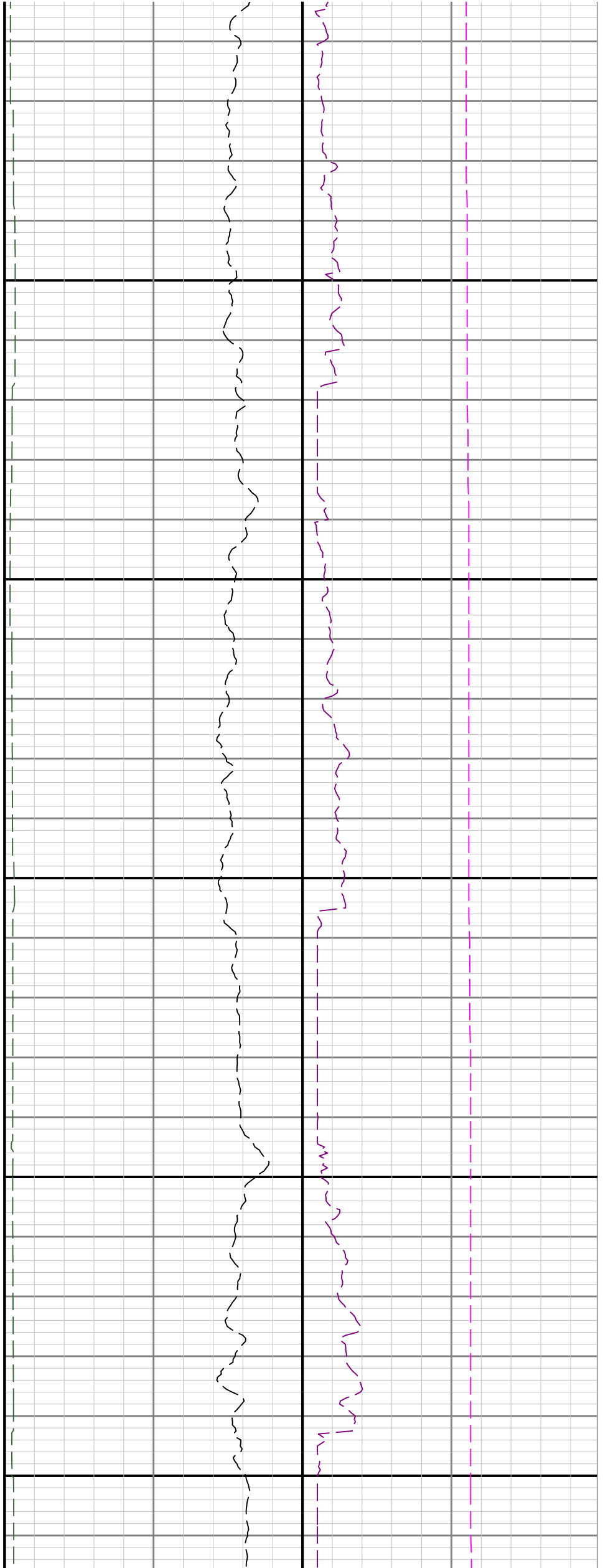


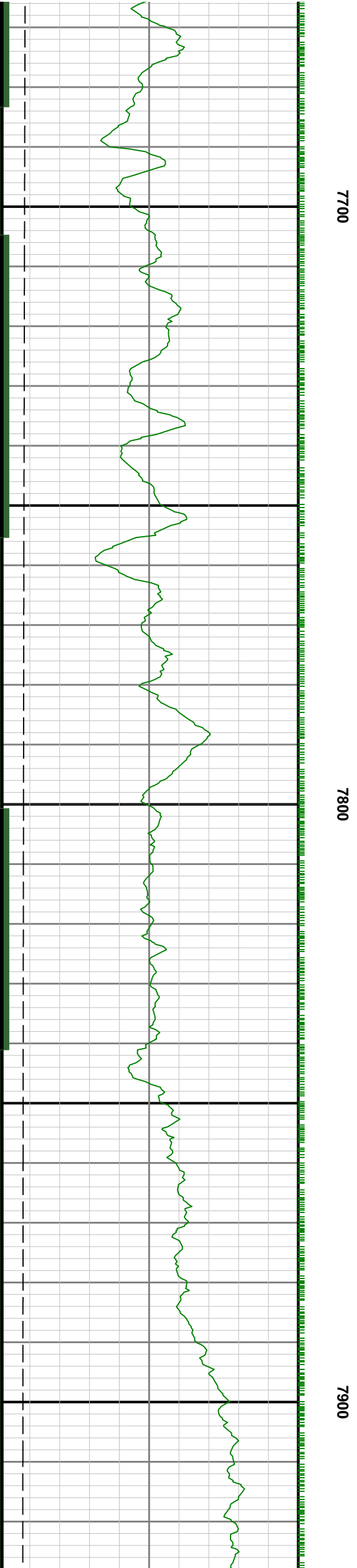
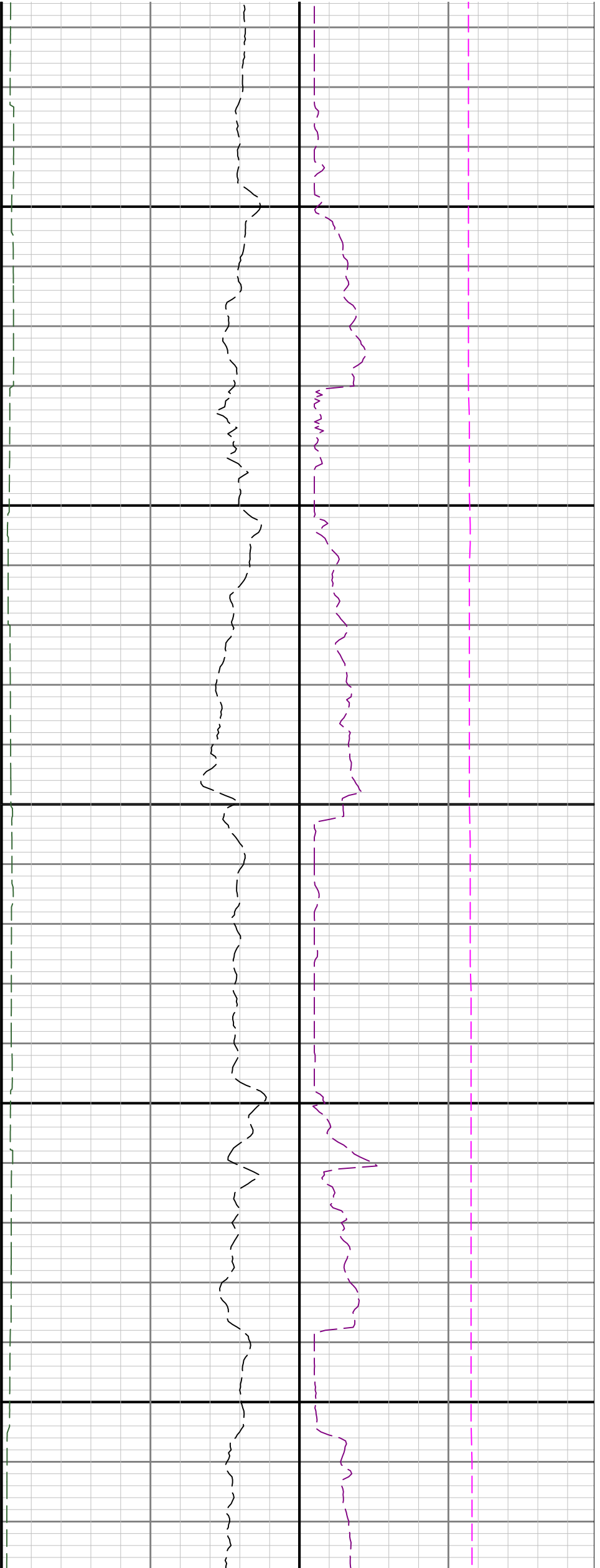


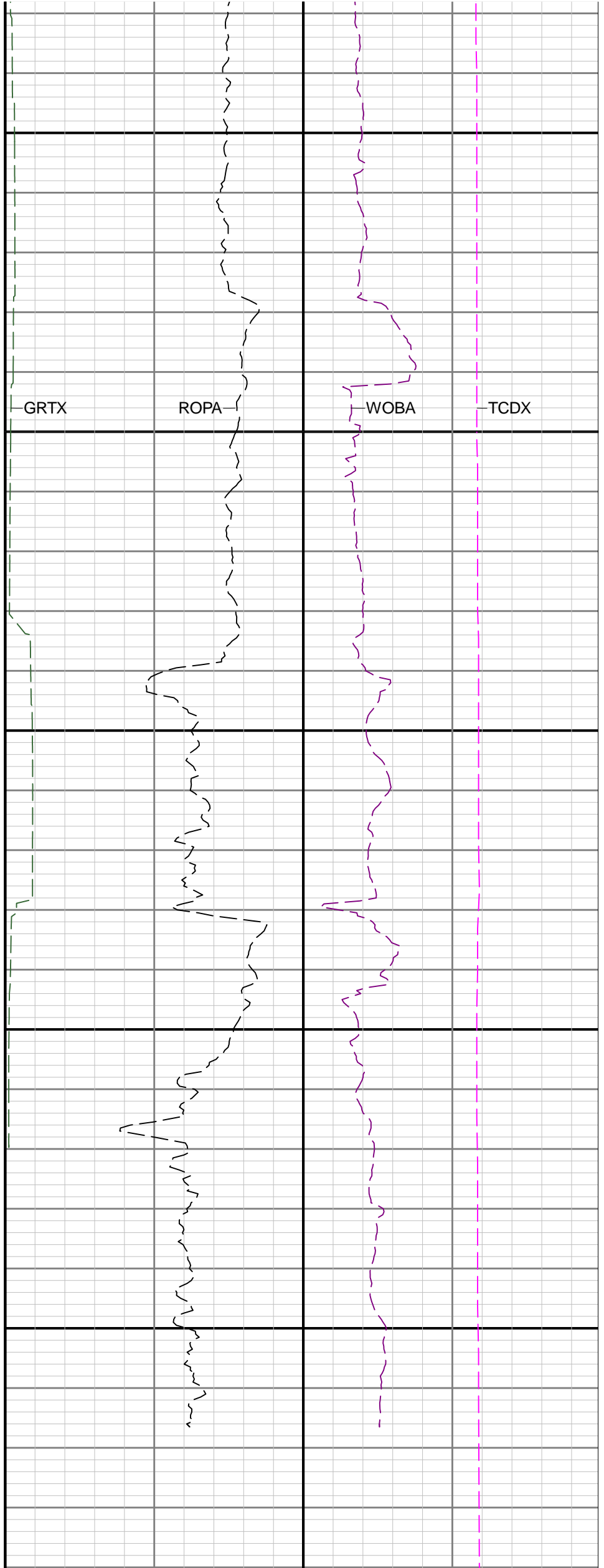
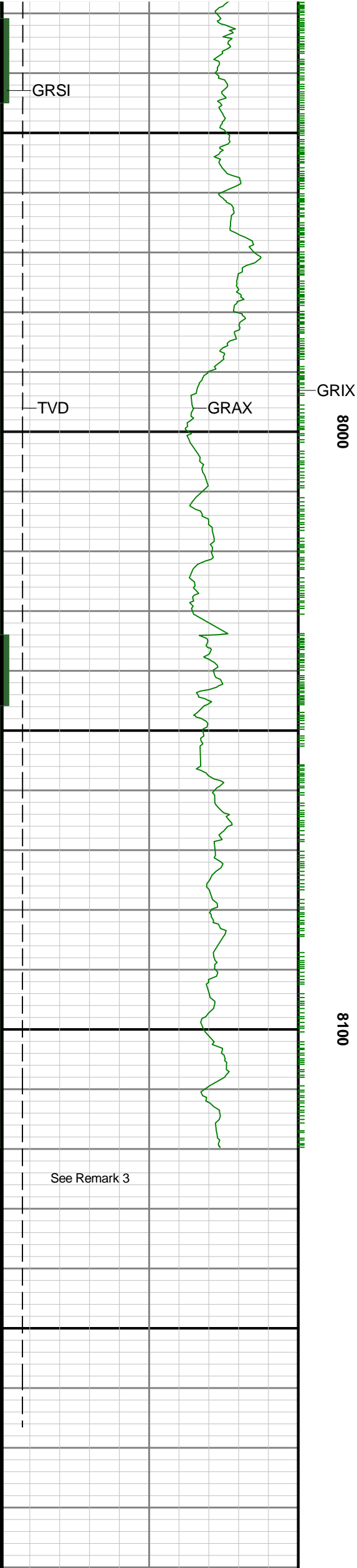


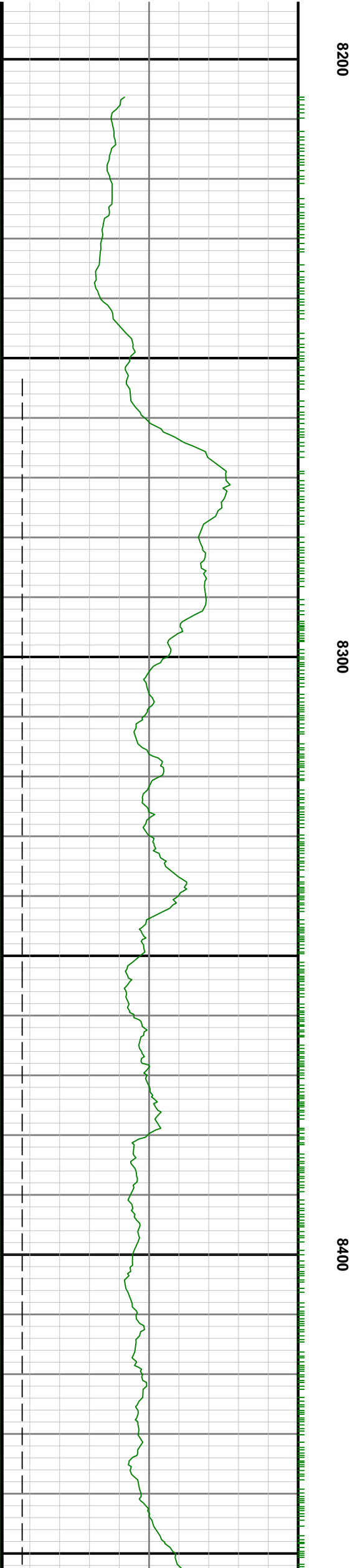
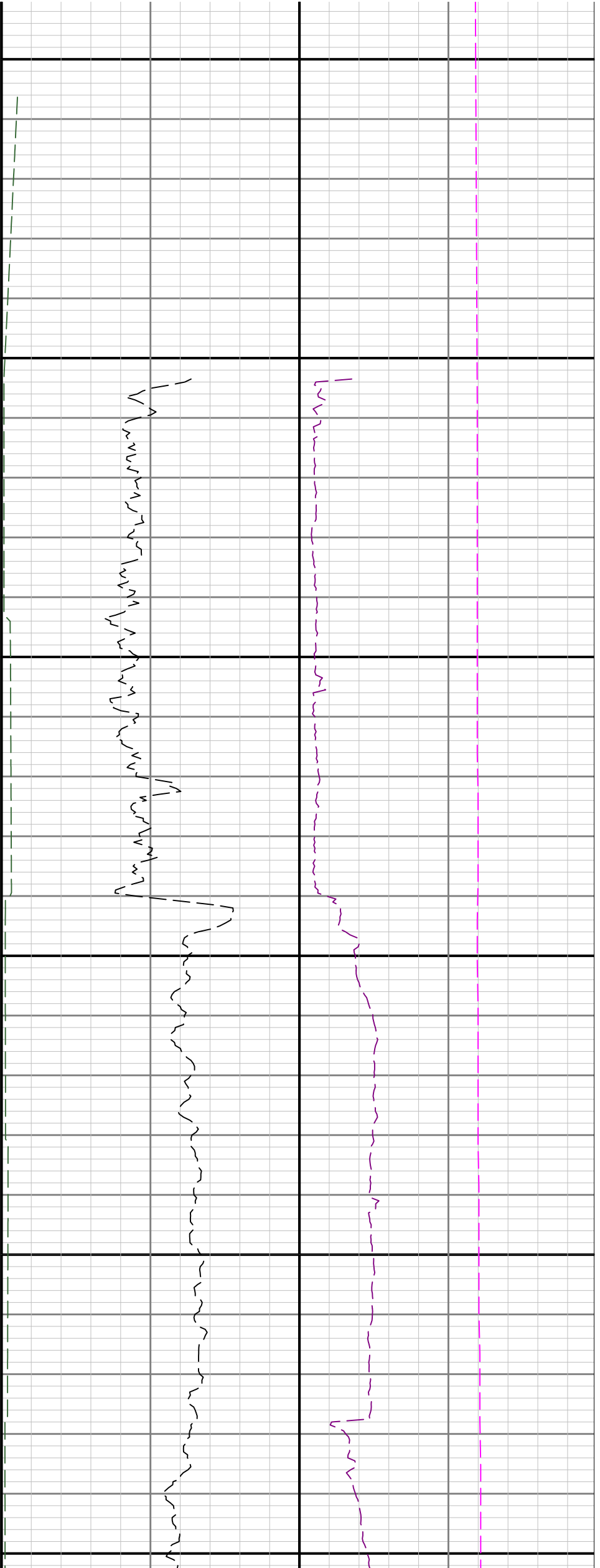
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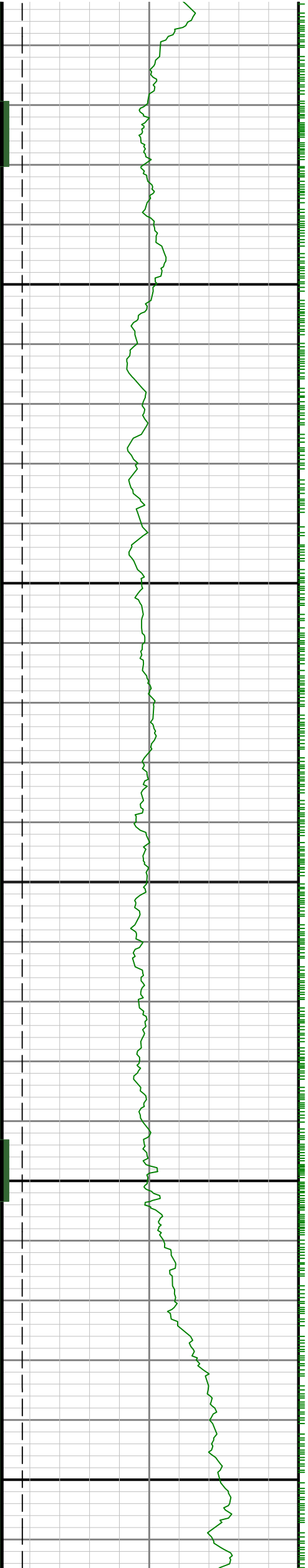
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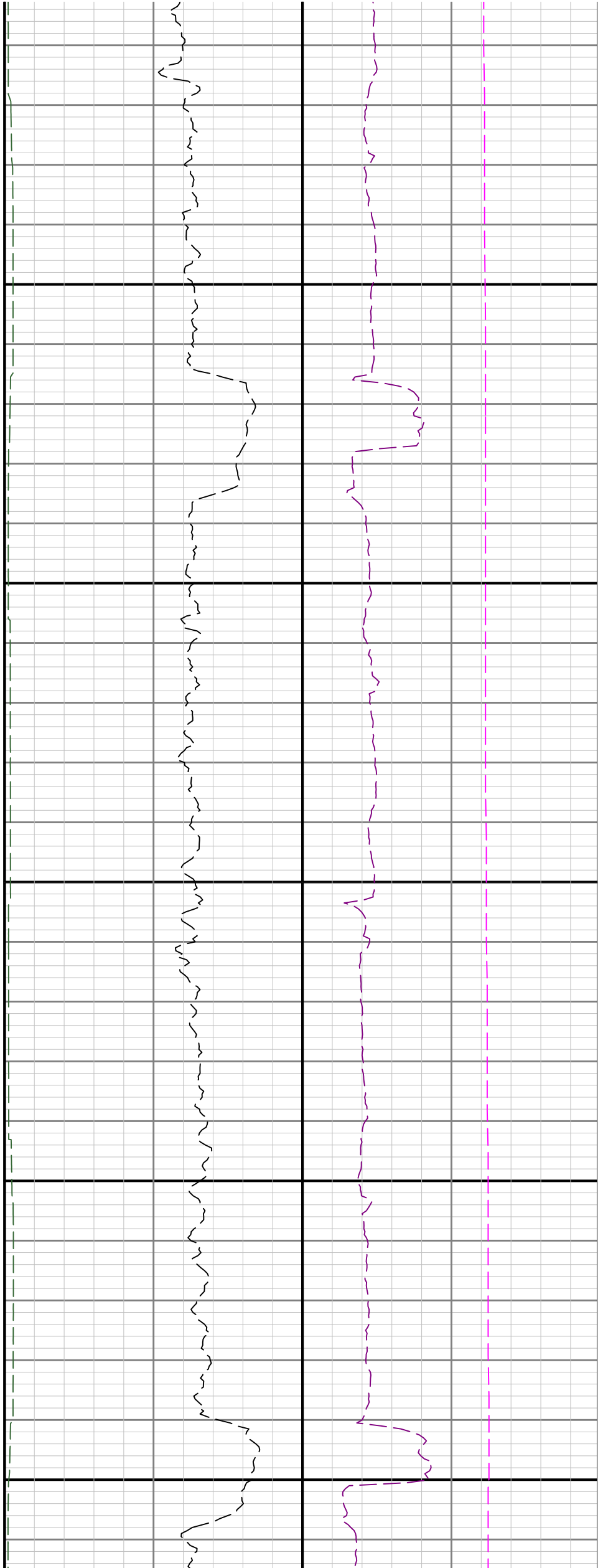


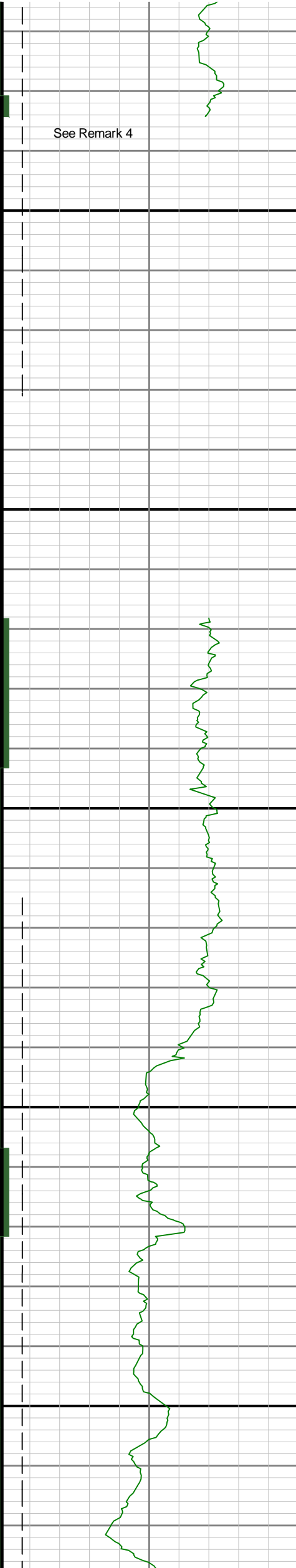


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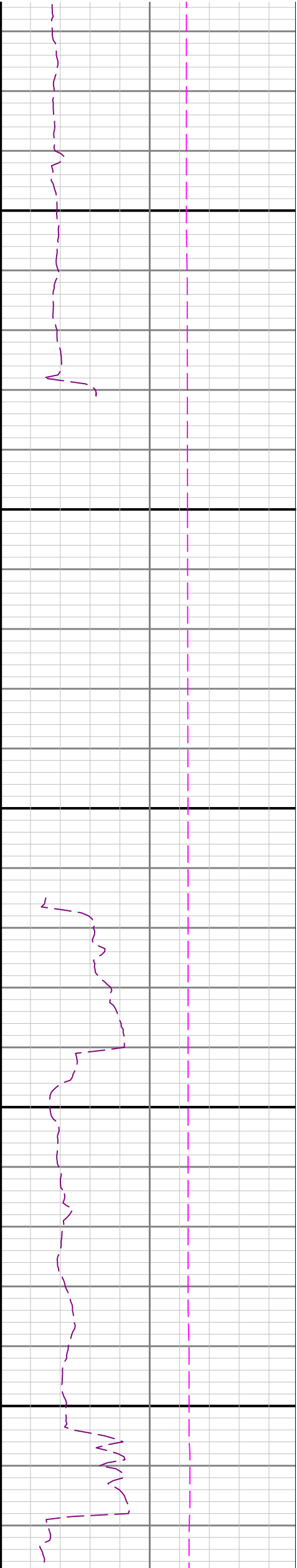
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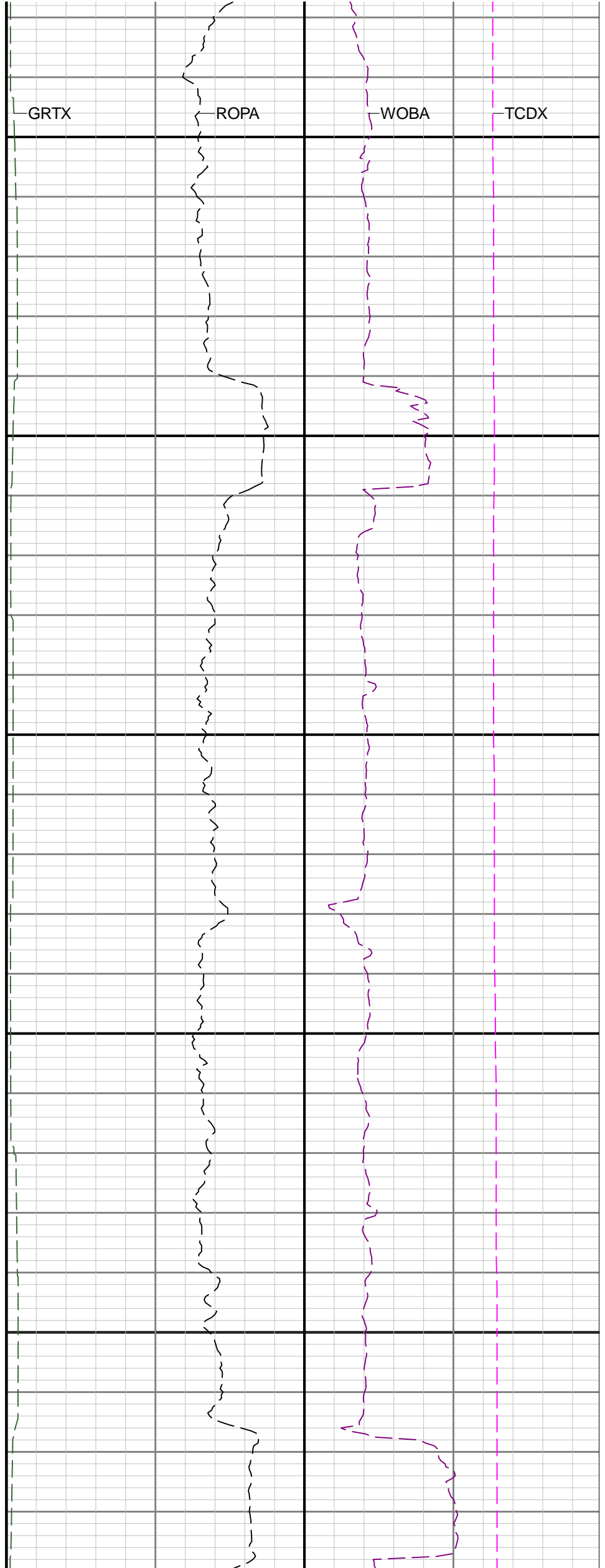
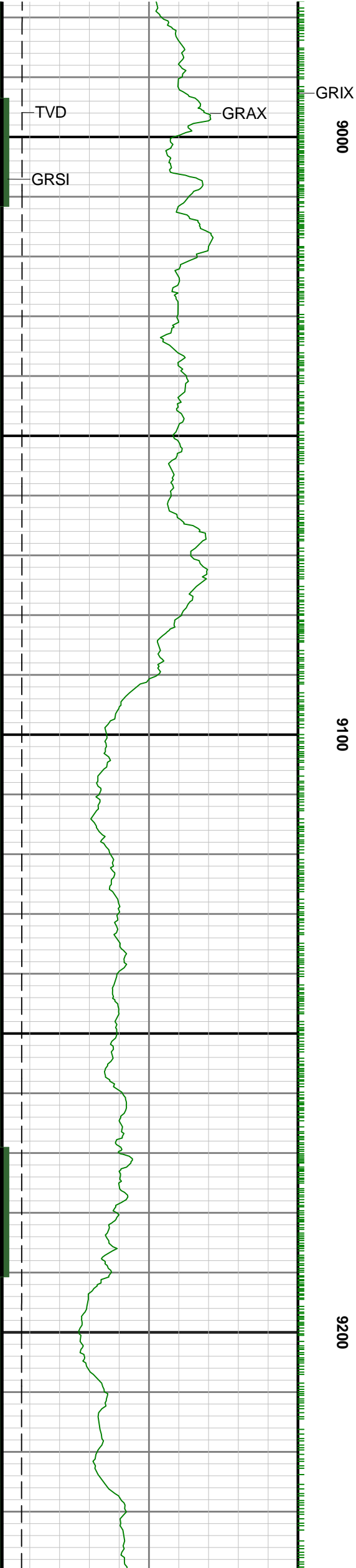


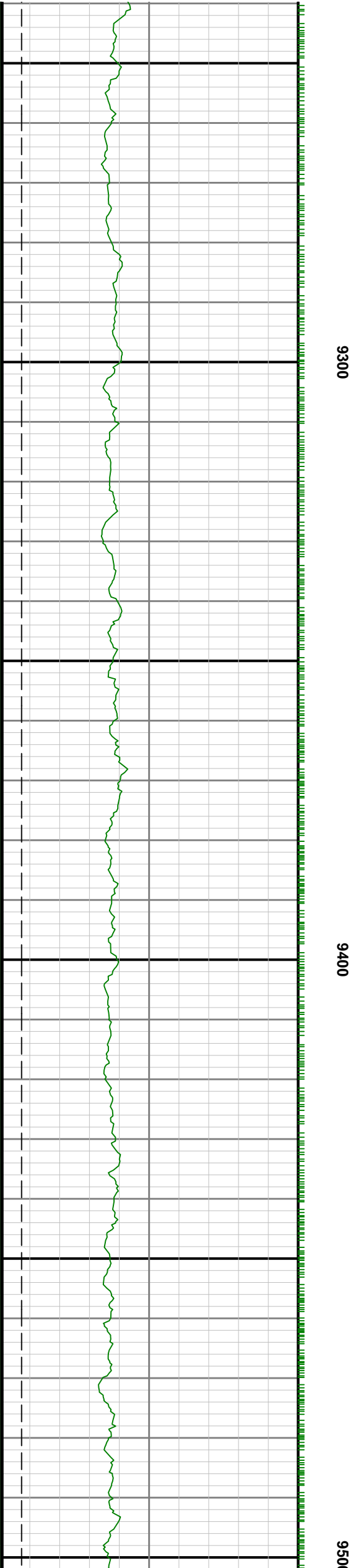
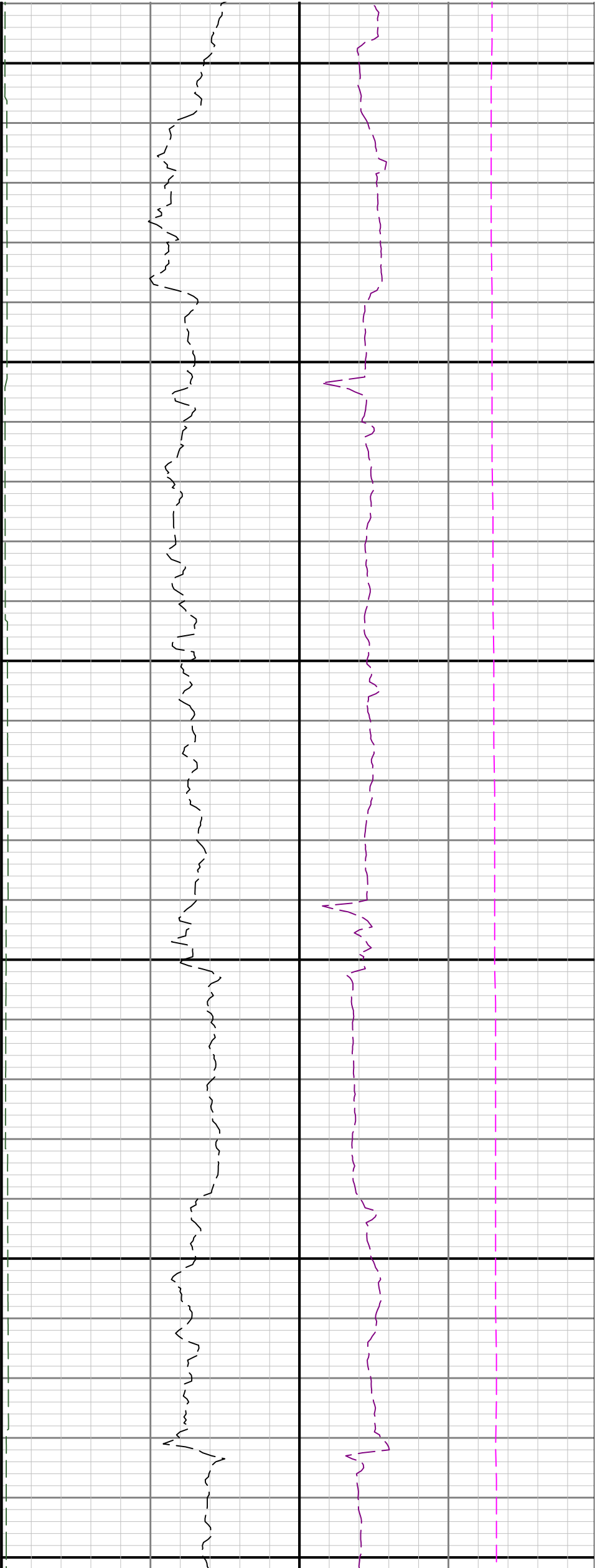


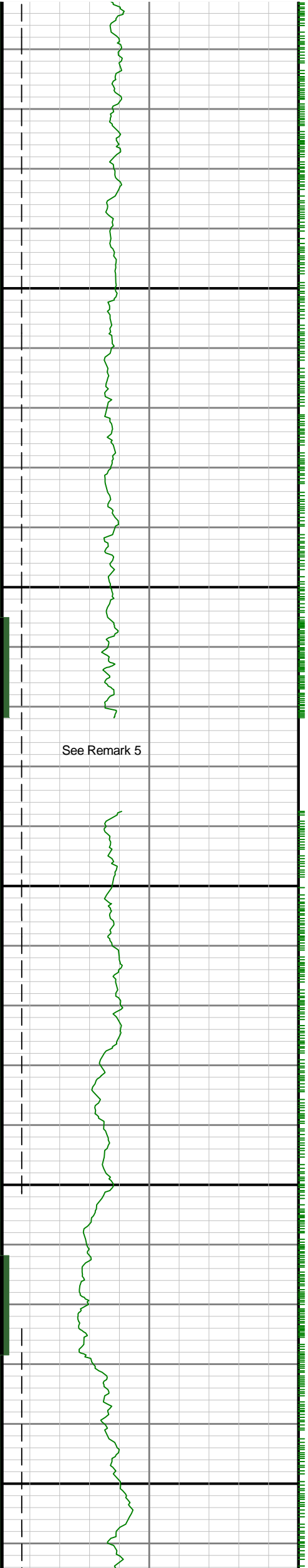
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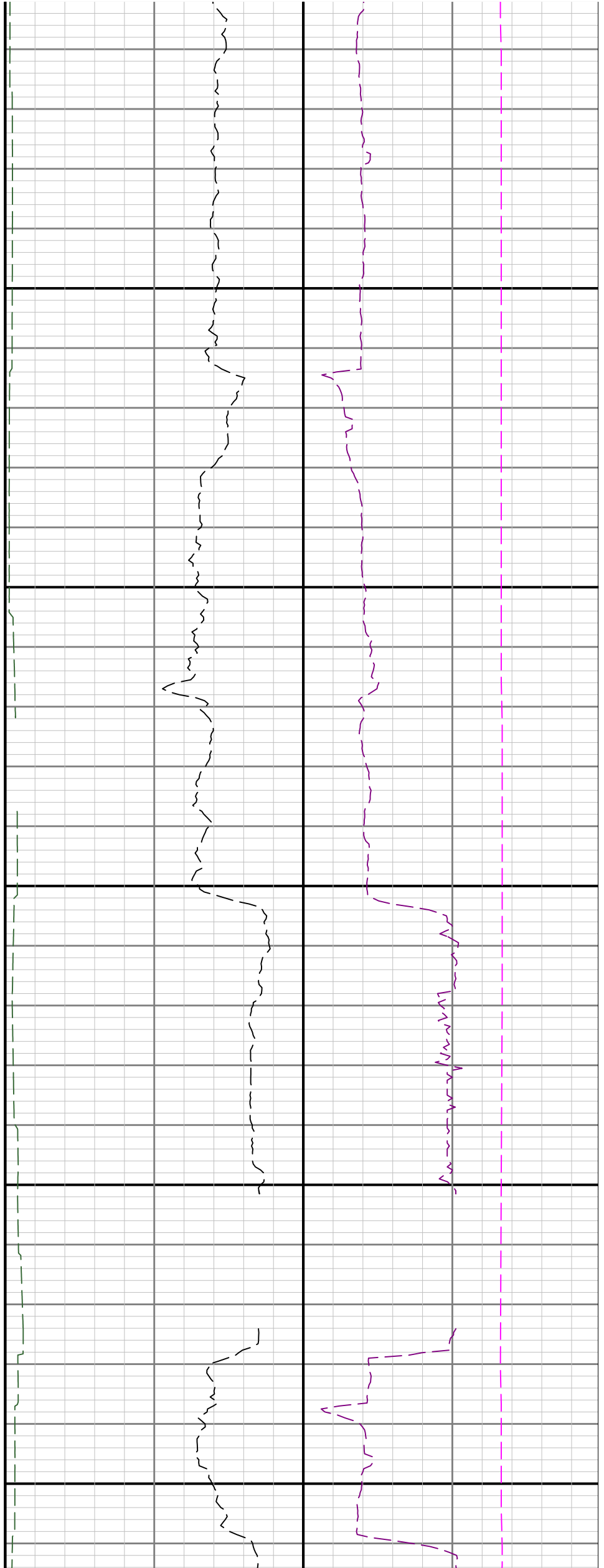




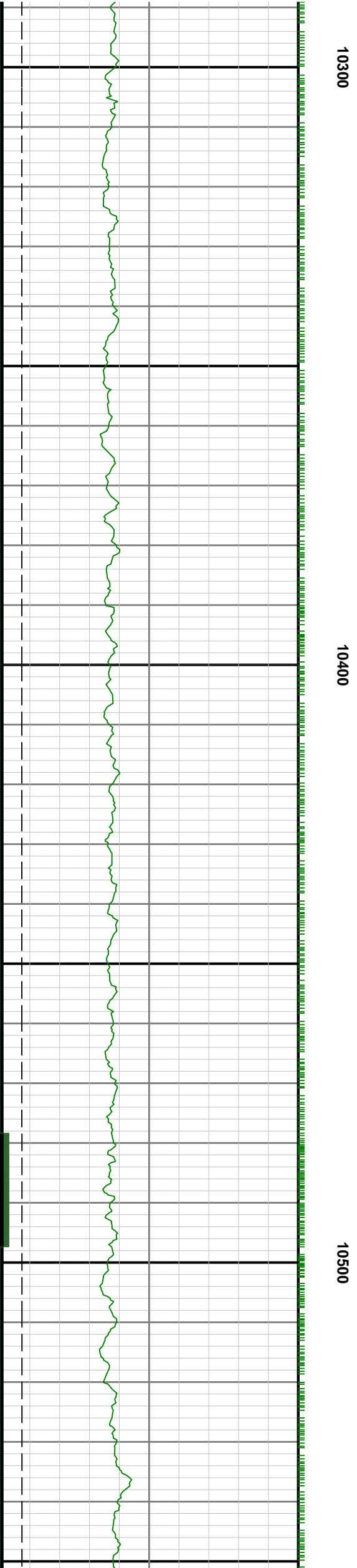
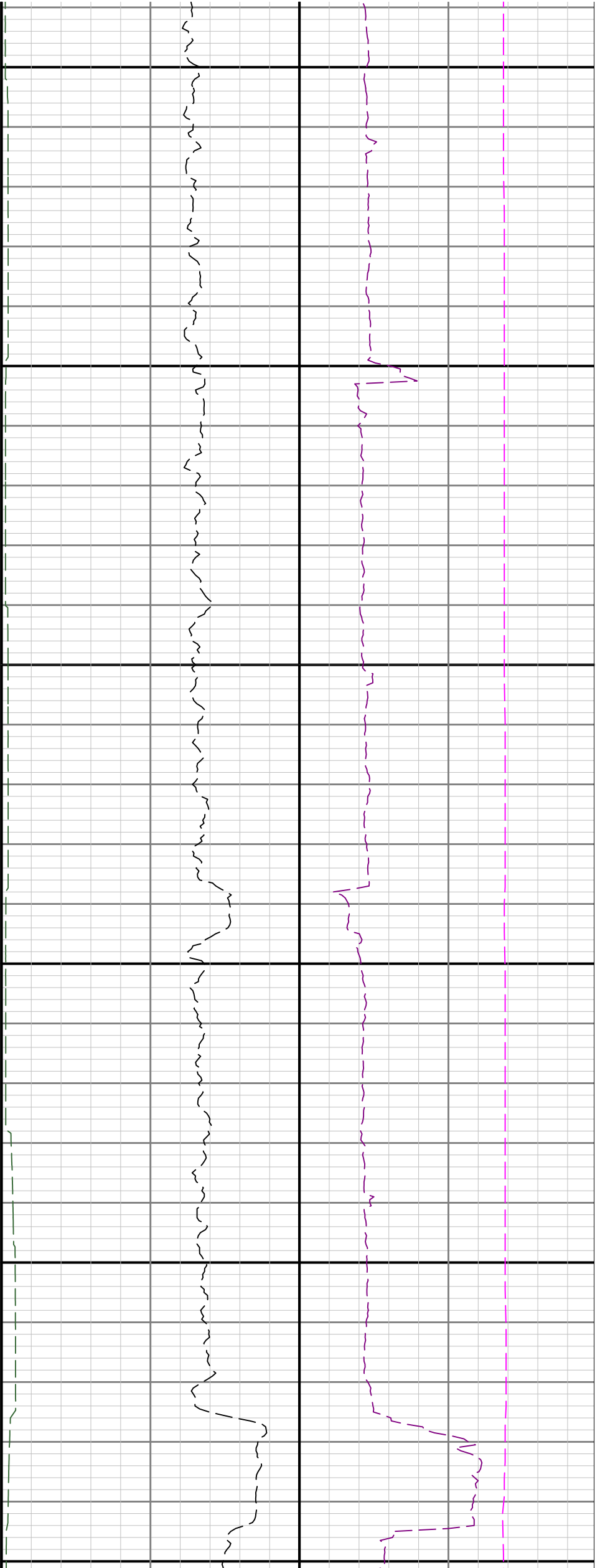


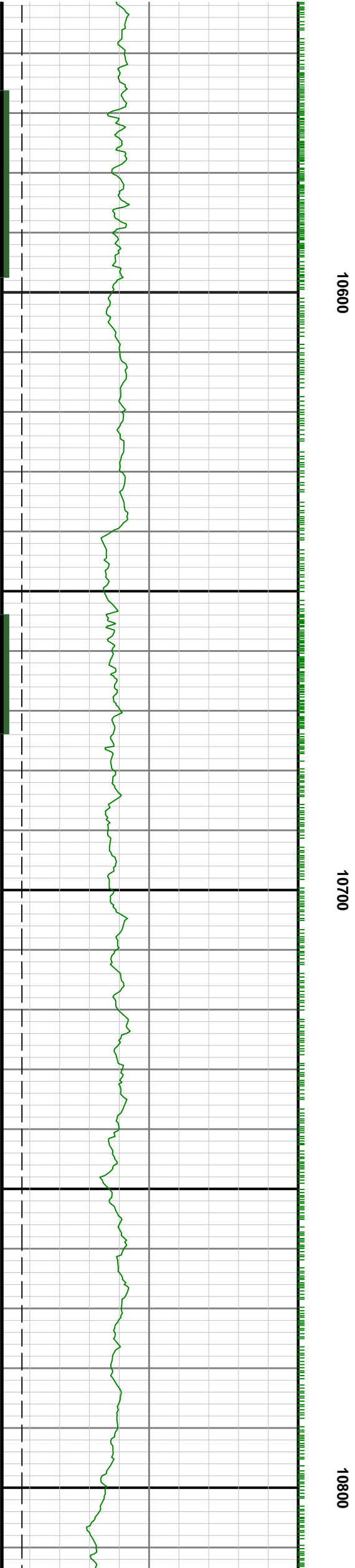
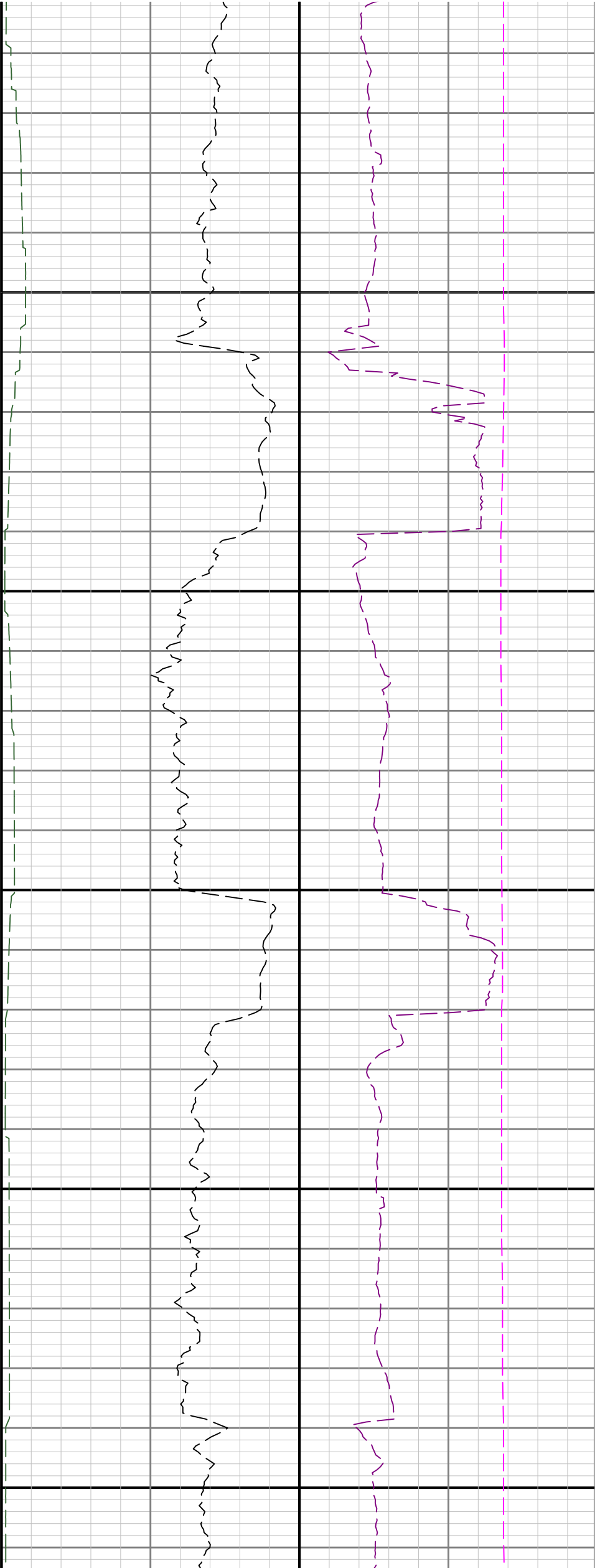
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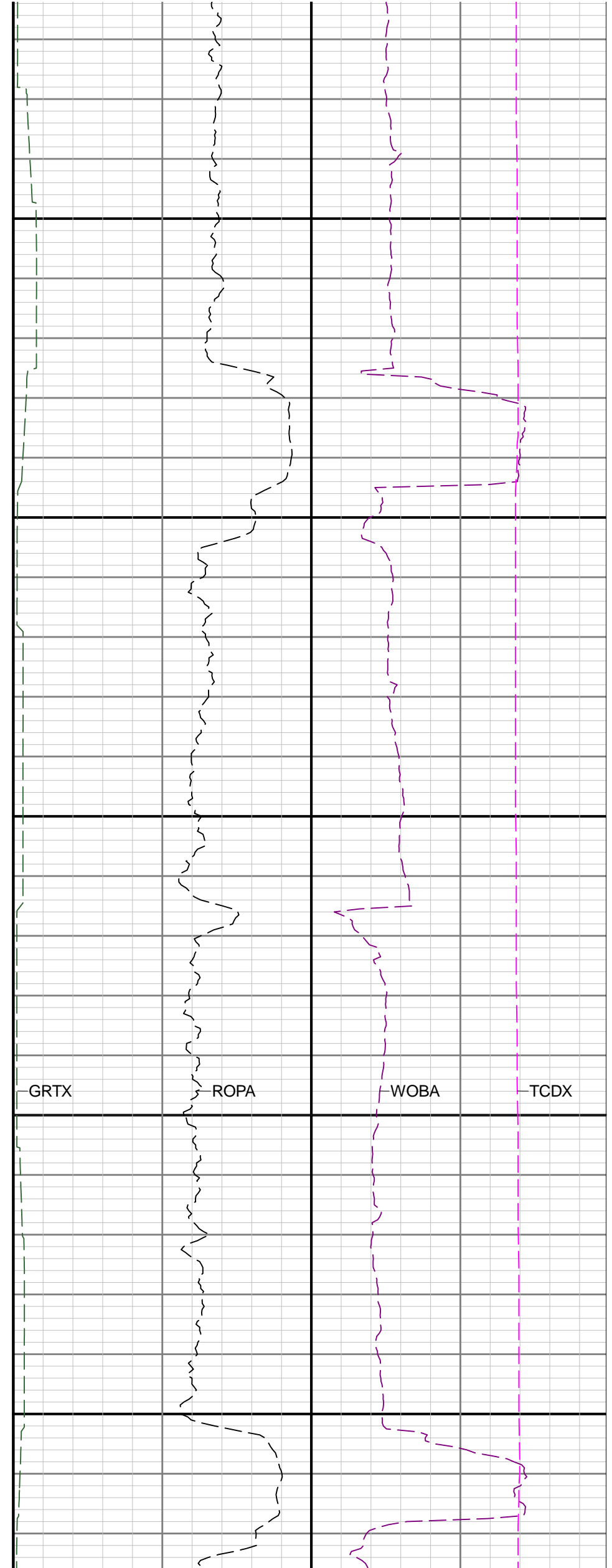
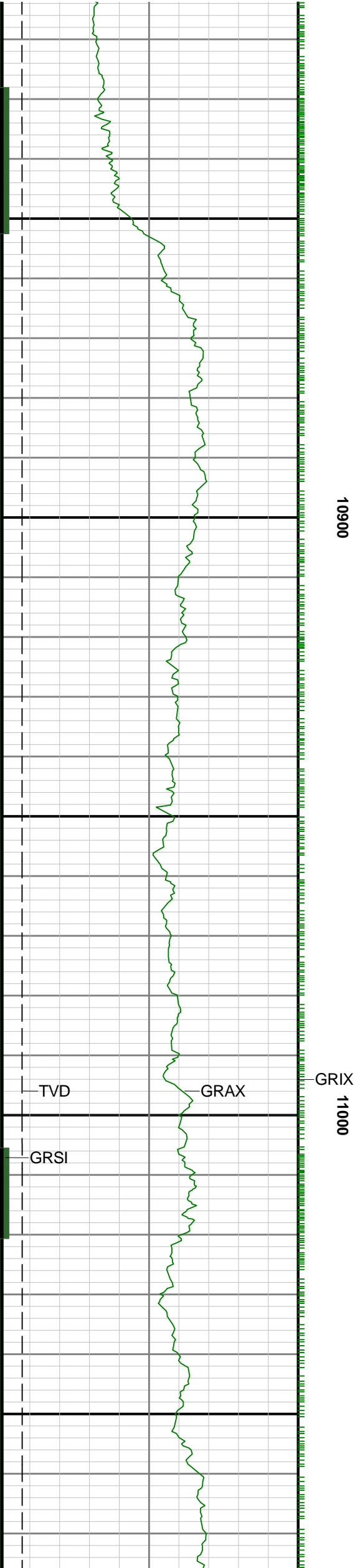
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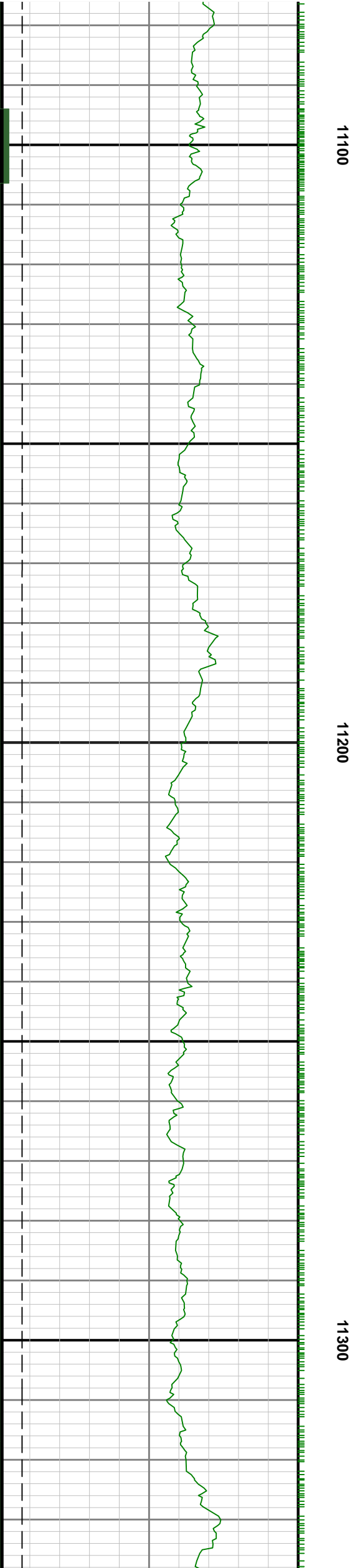


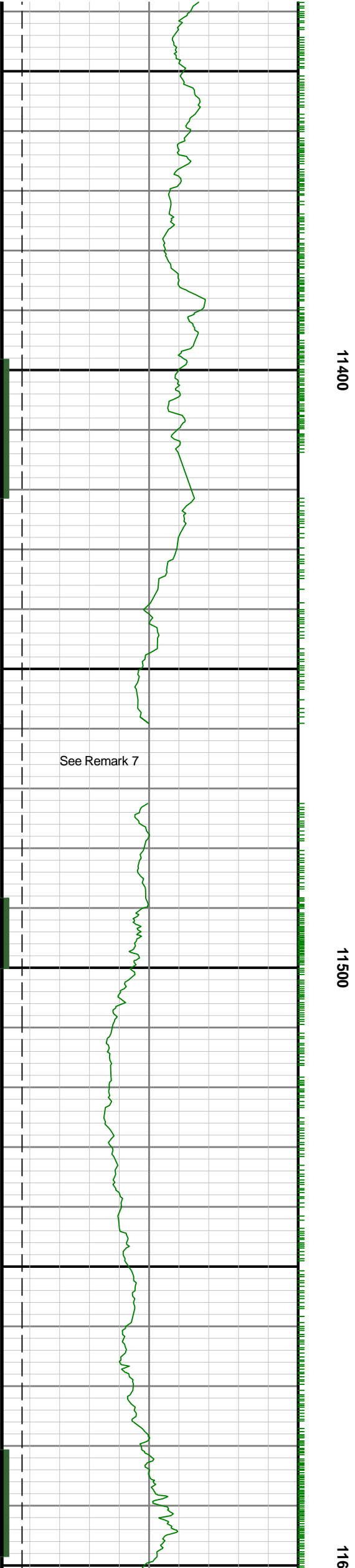
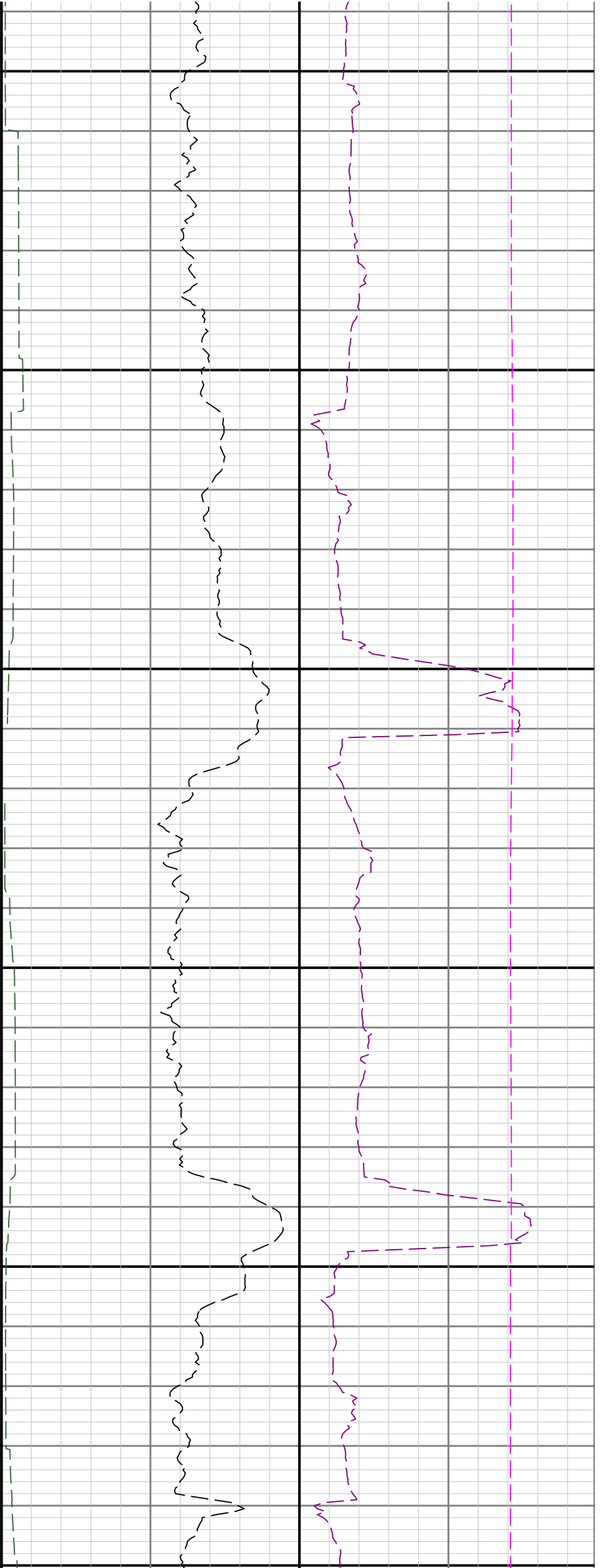


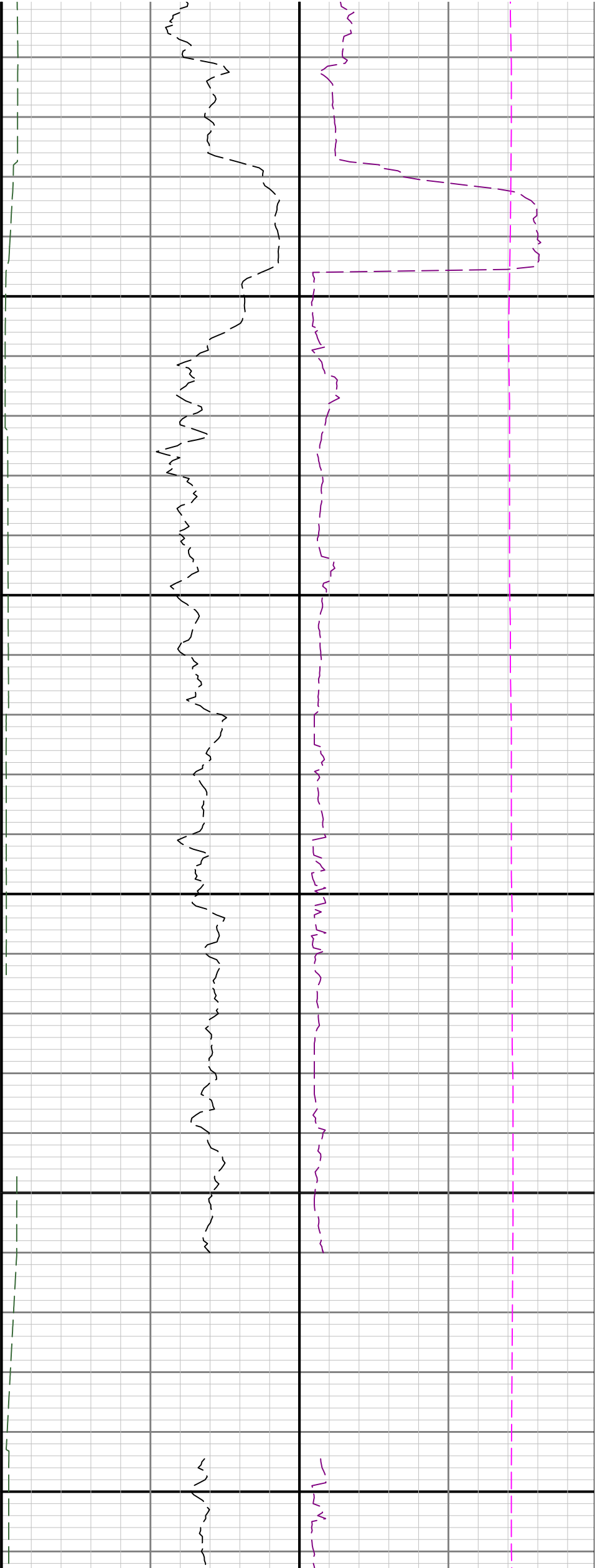




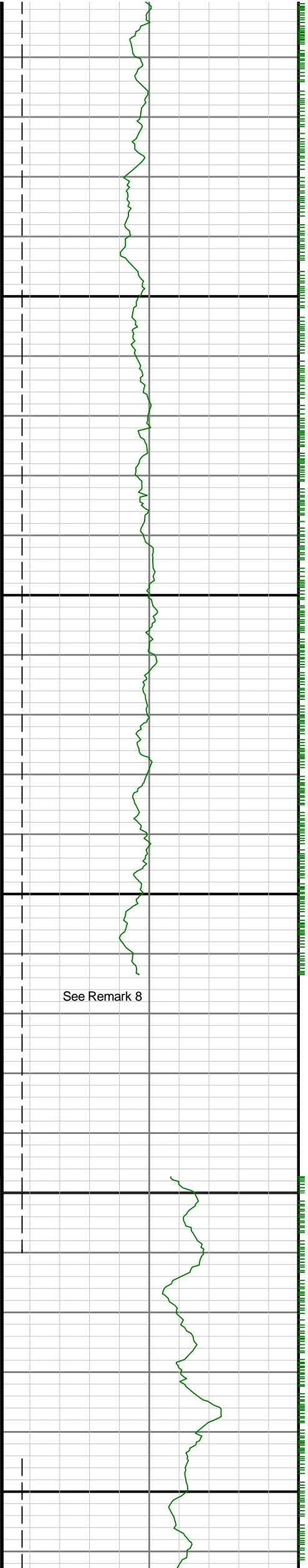




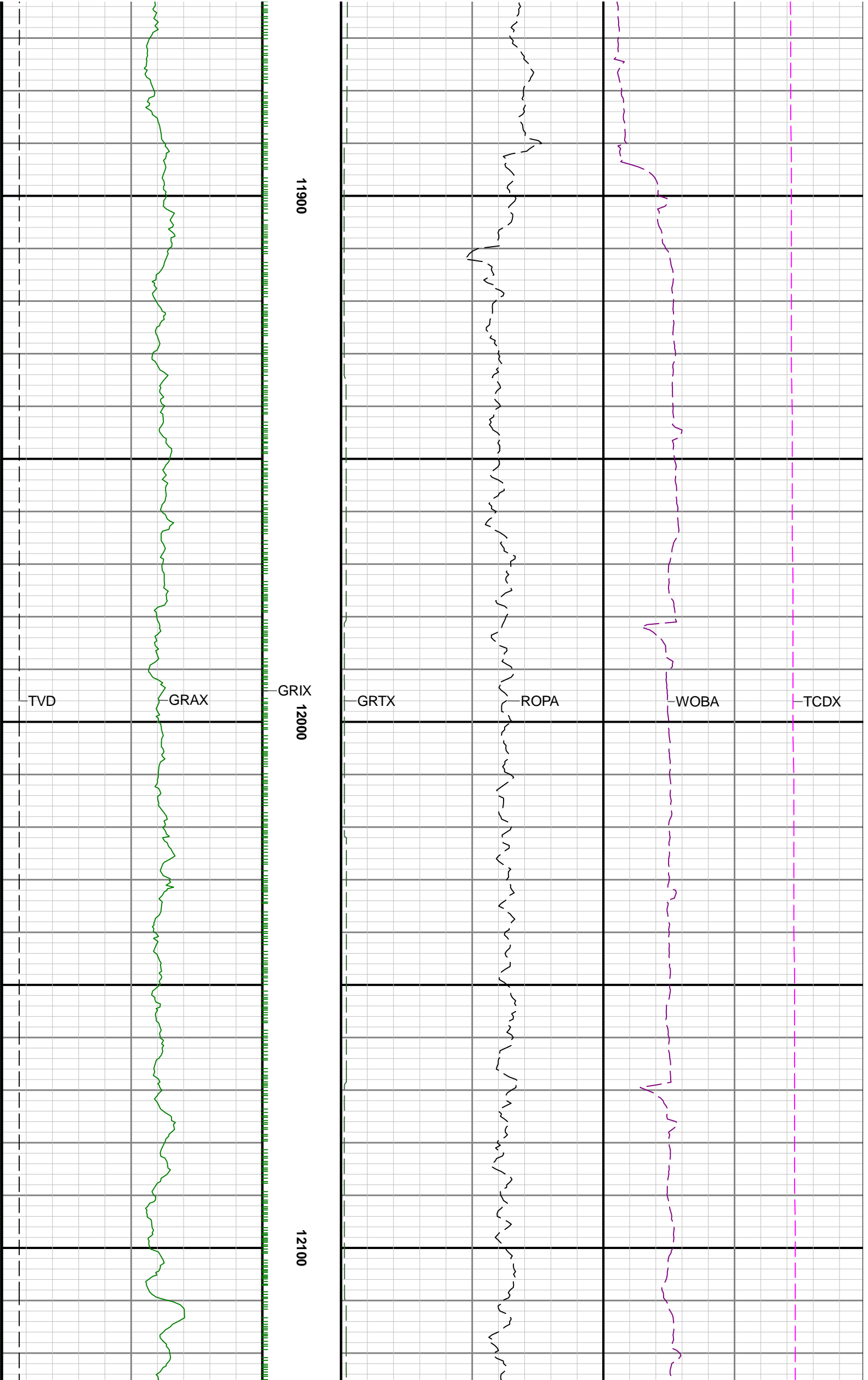


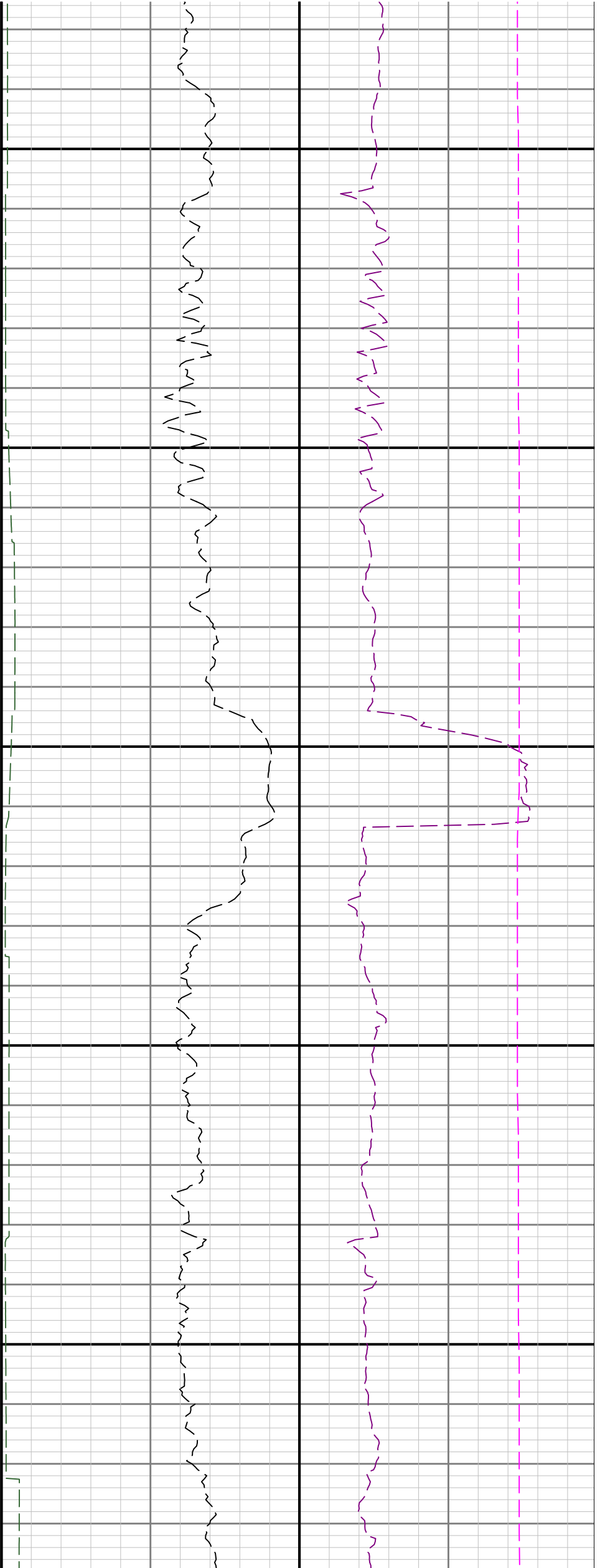


00 11700 11800



See Remark 8

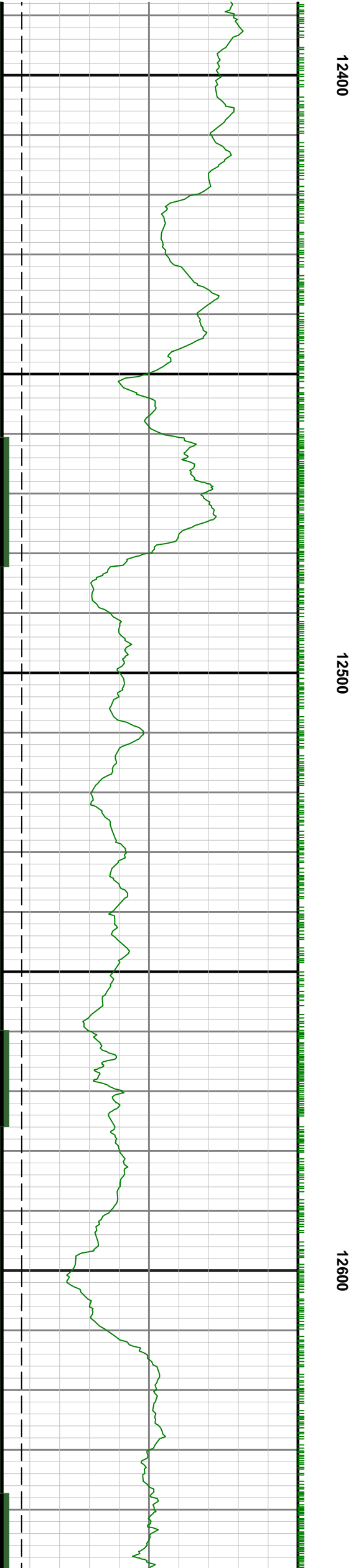
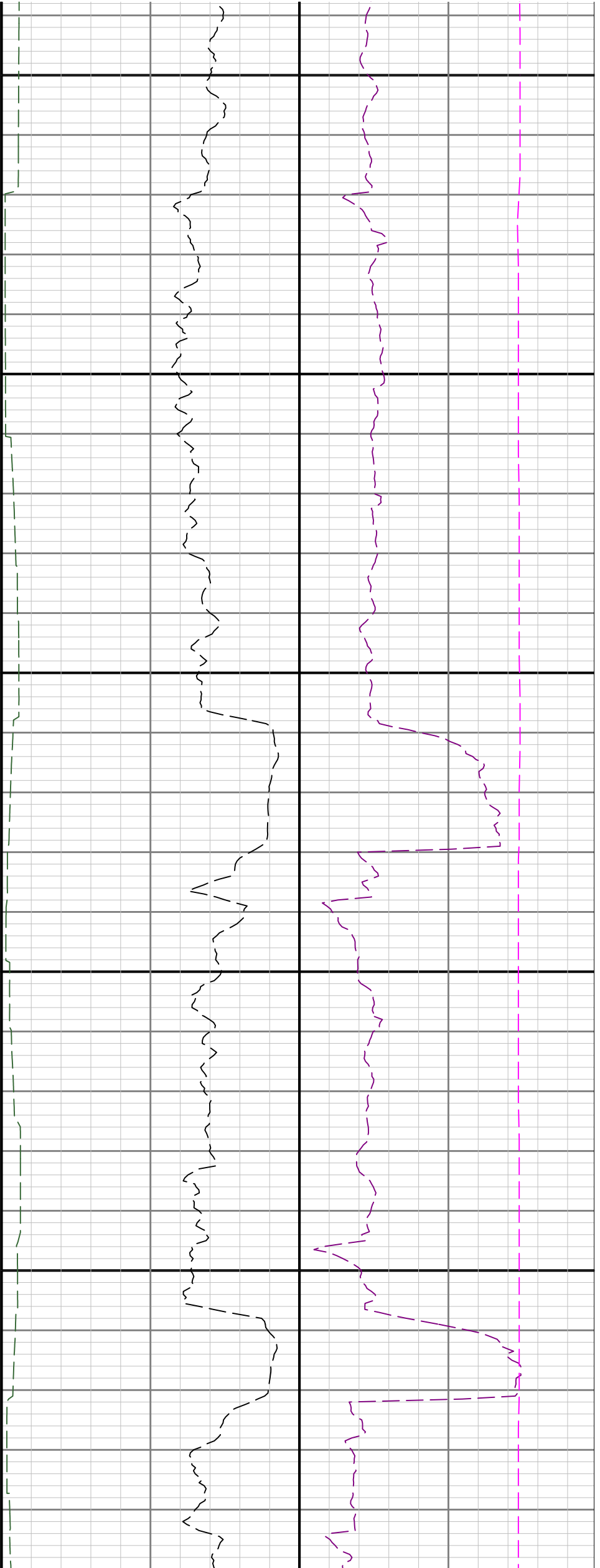


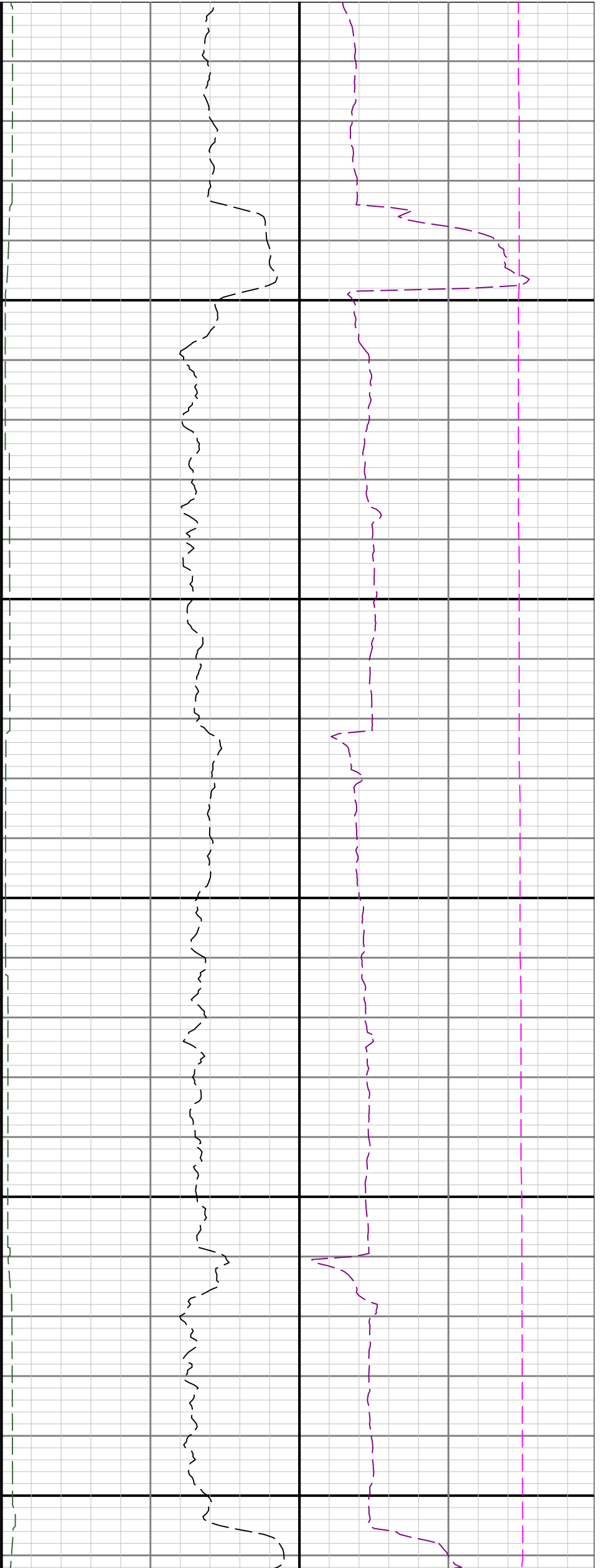


12200

12300

GRSI

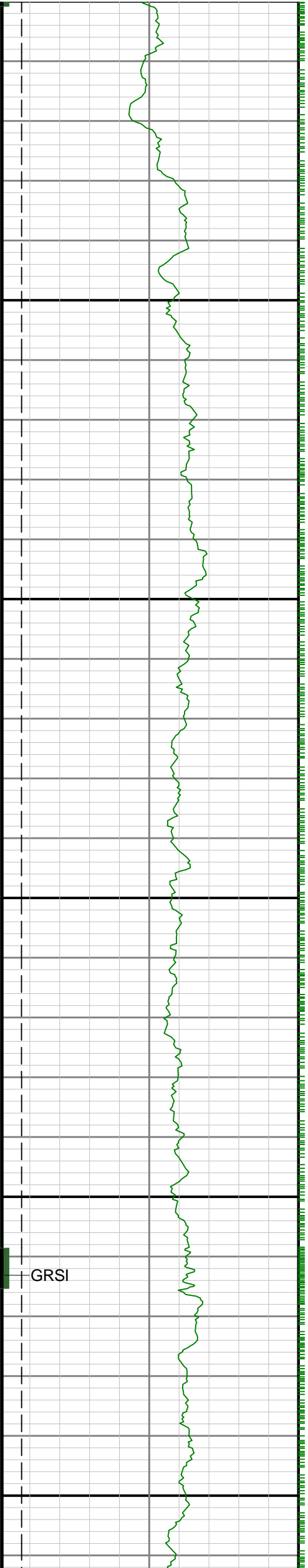




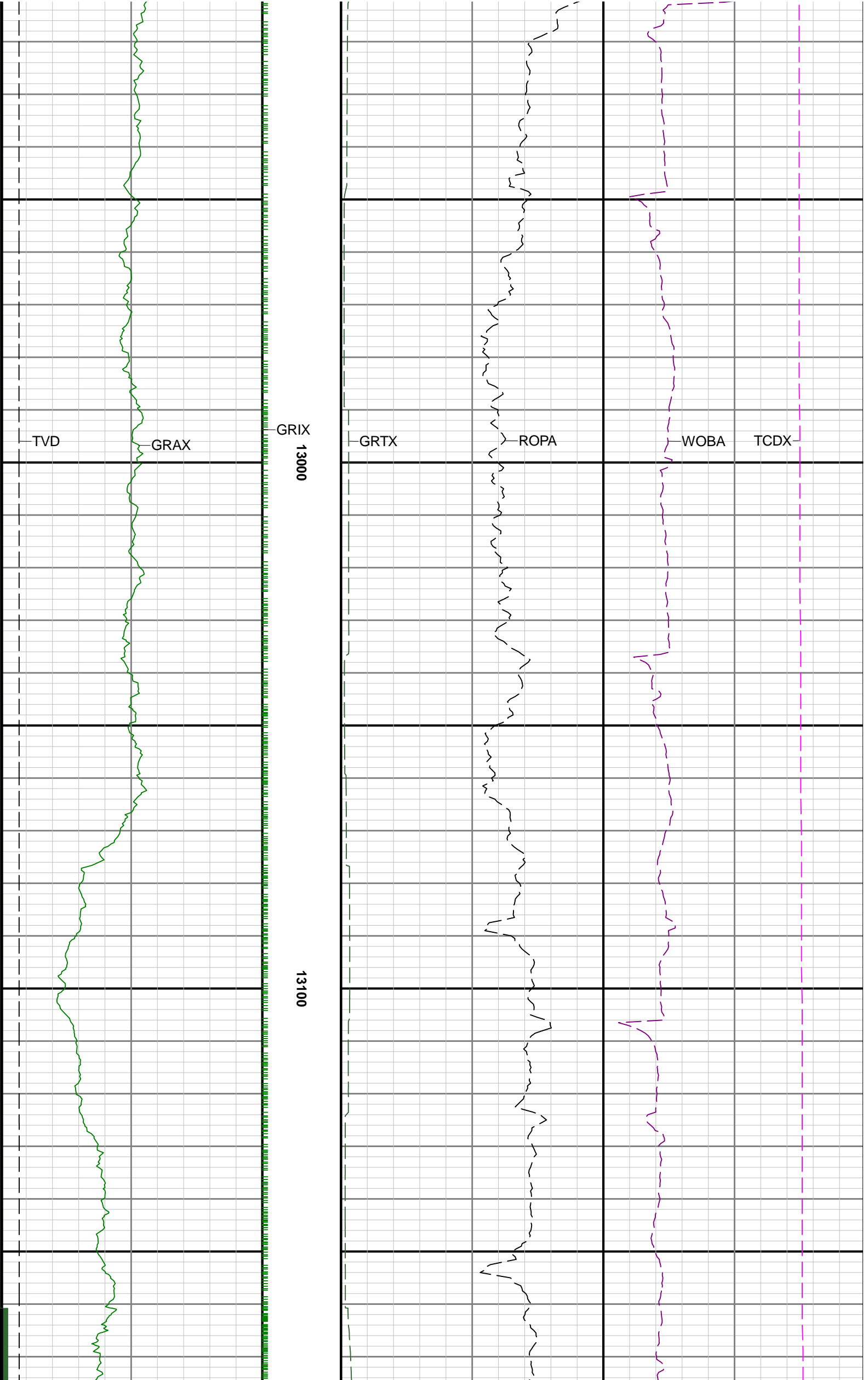
12700

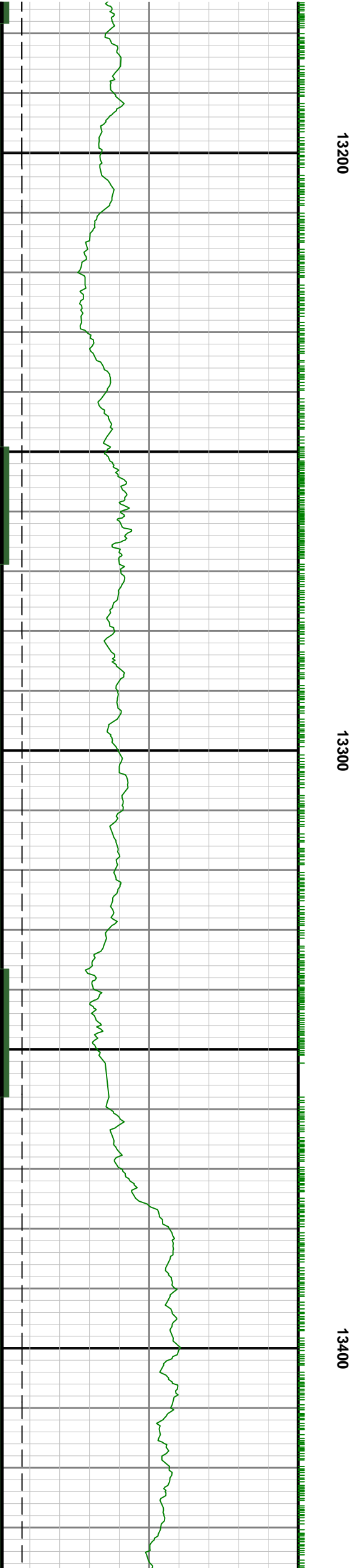
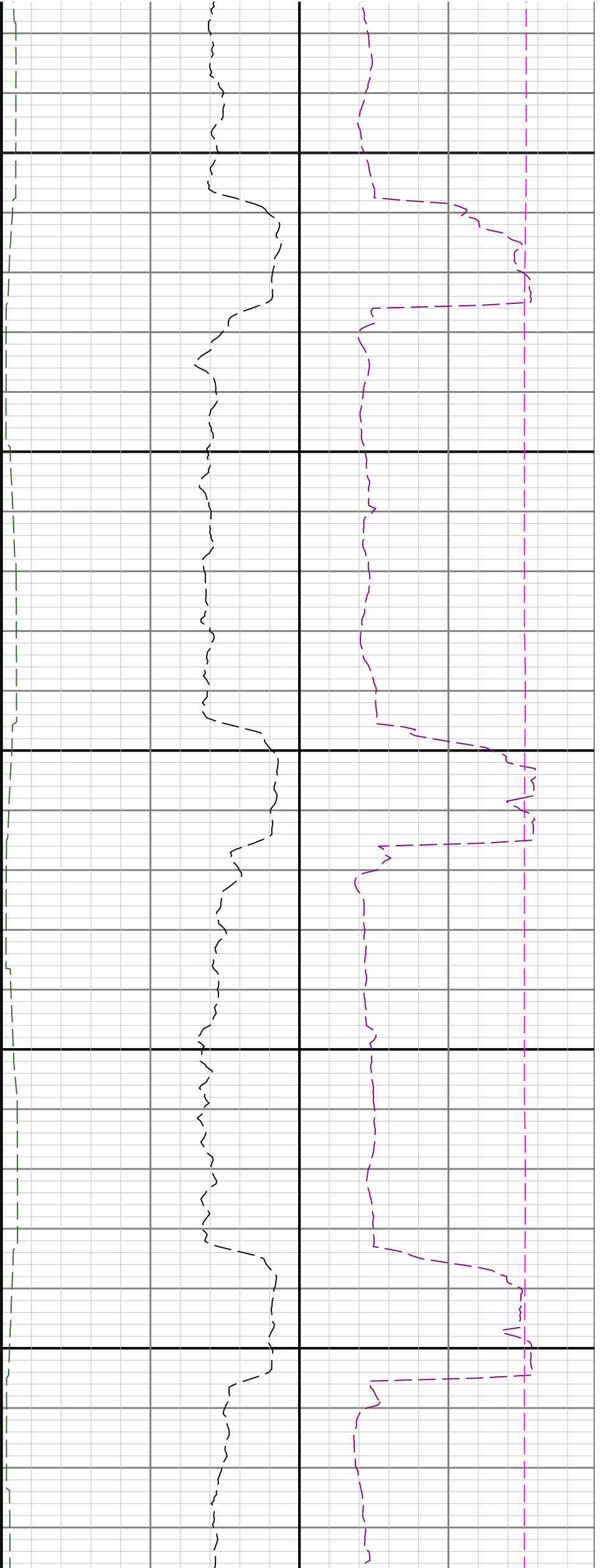
12800

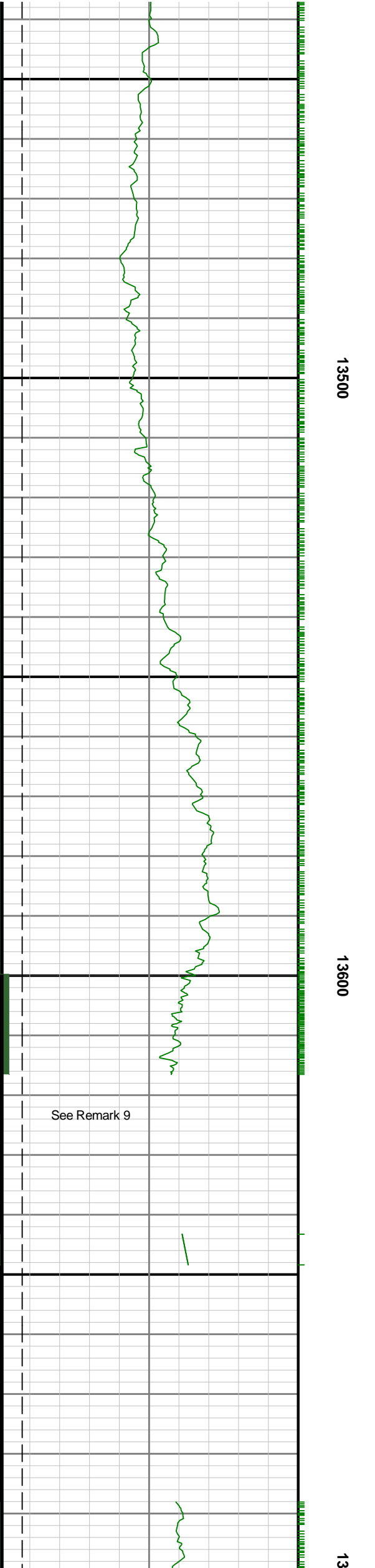
12900

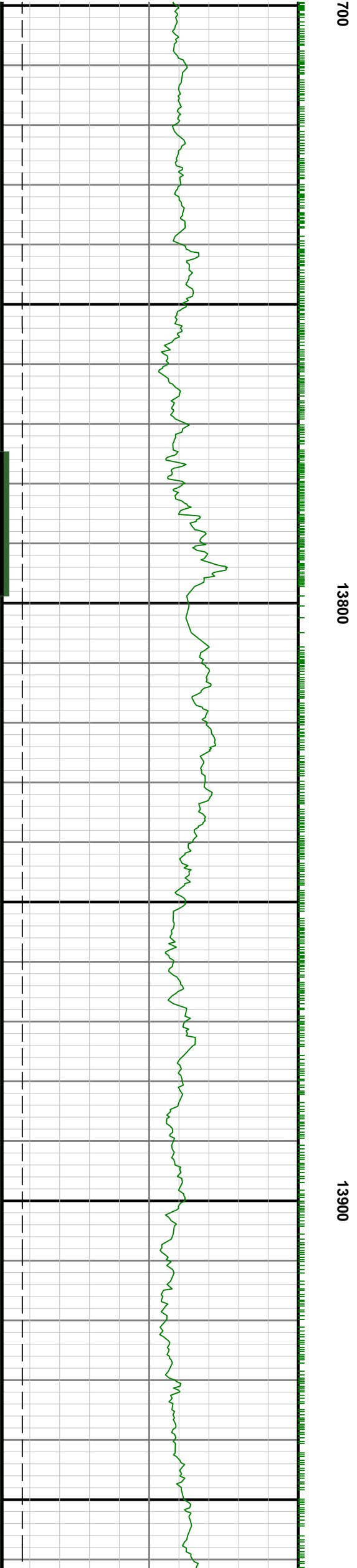
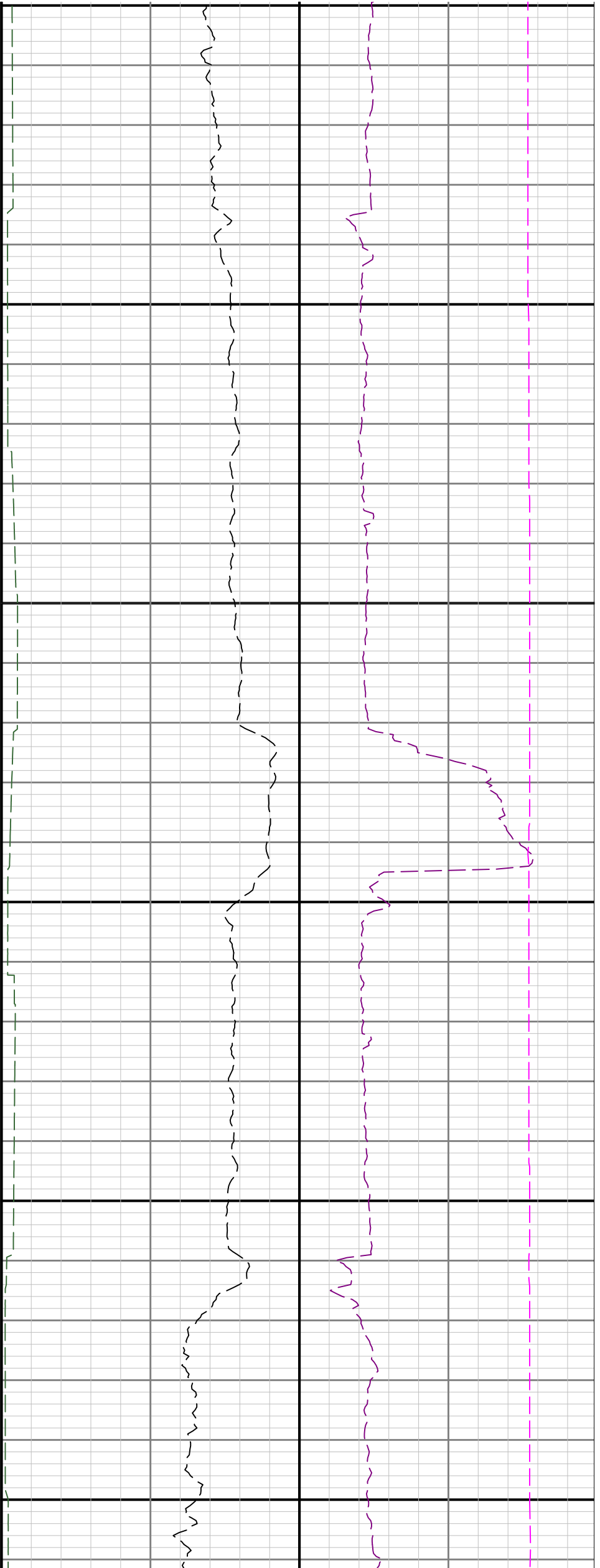


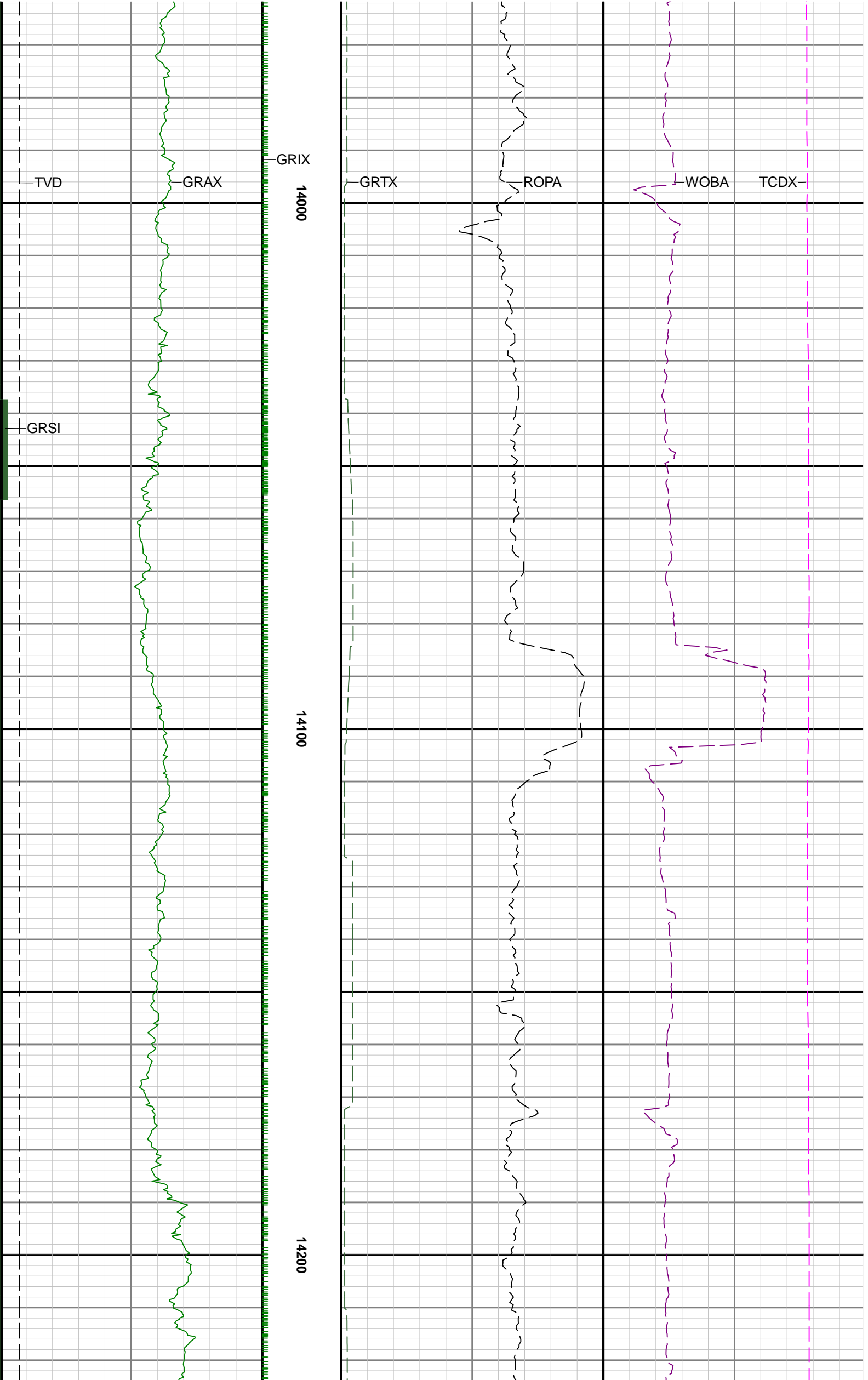
GRSI

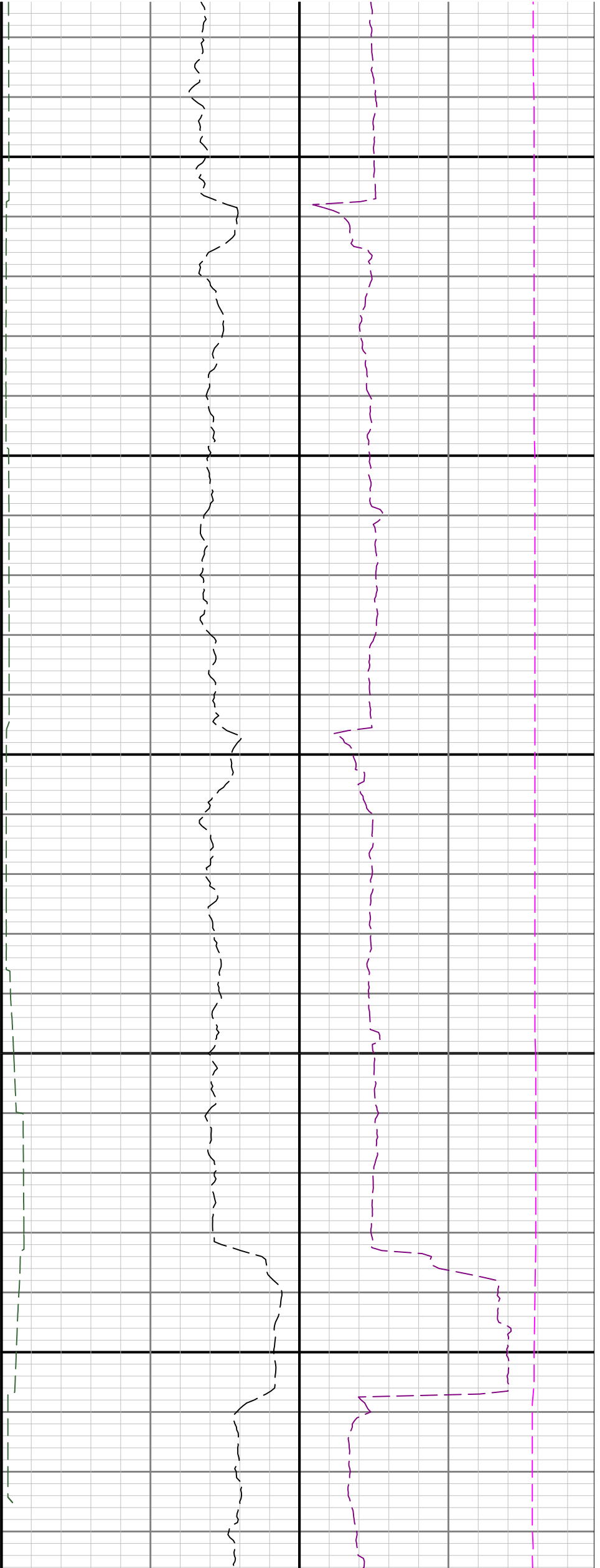








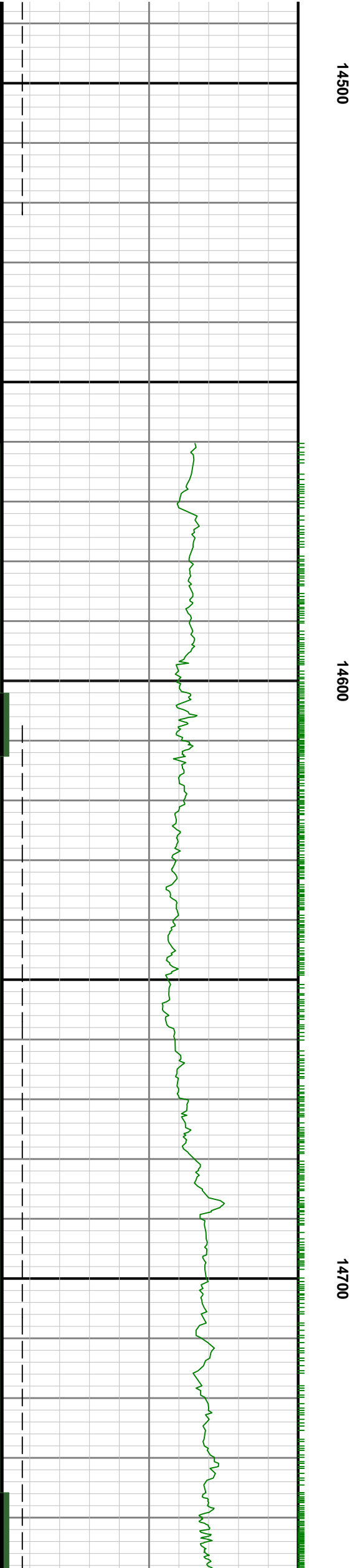
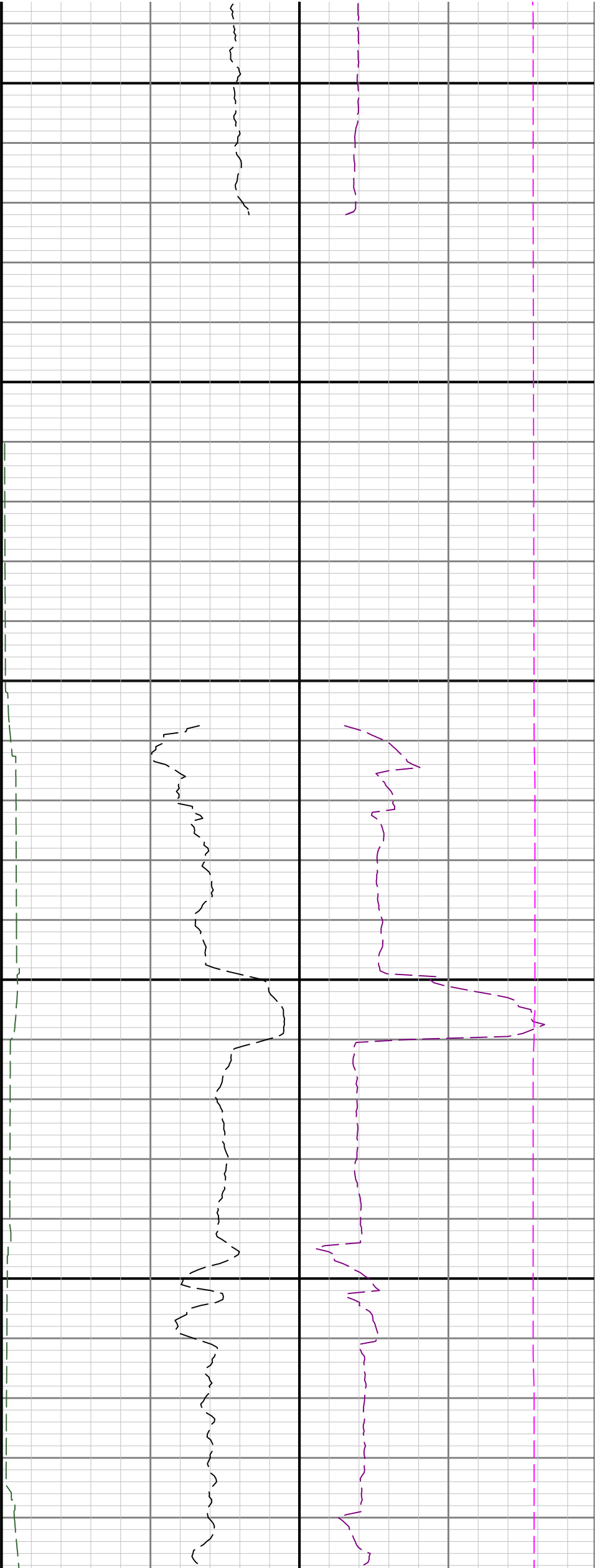


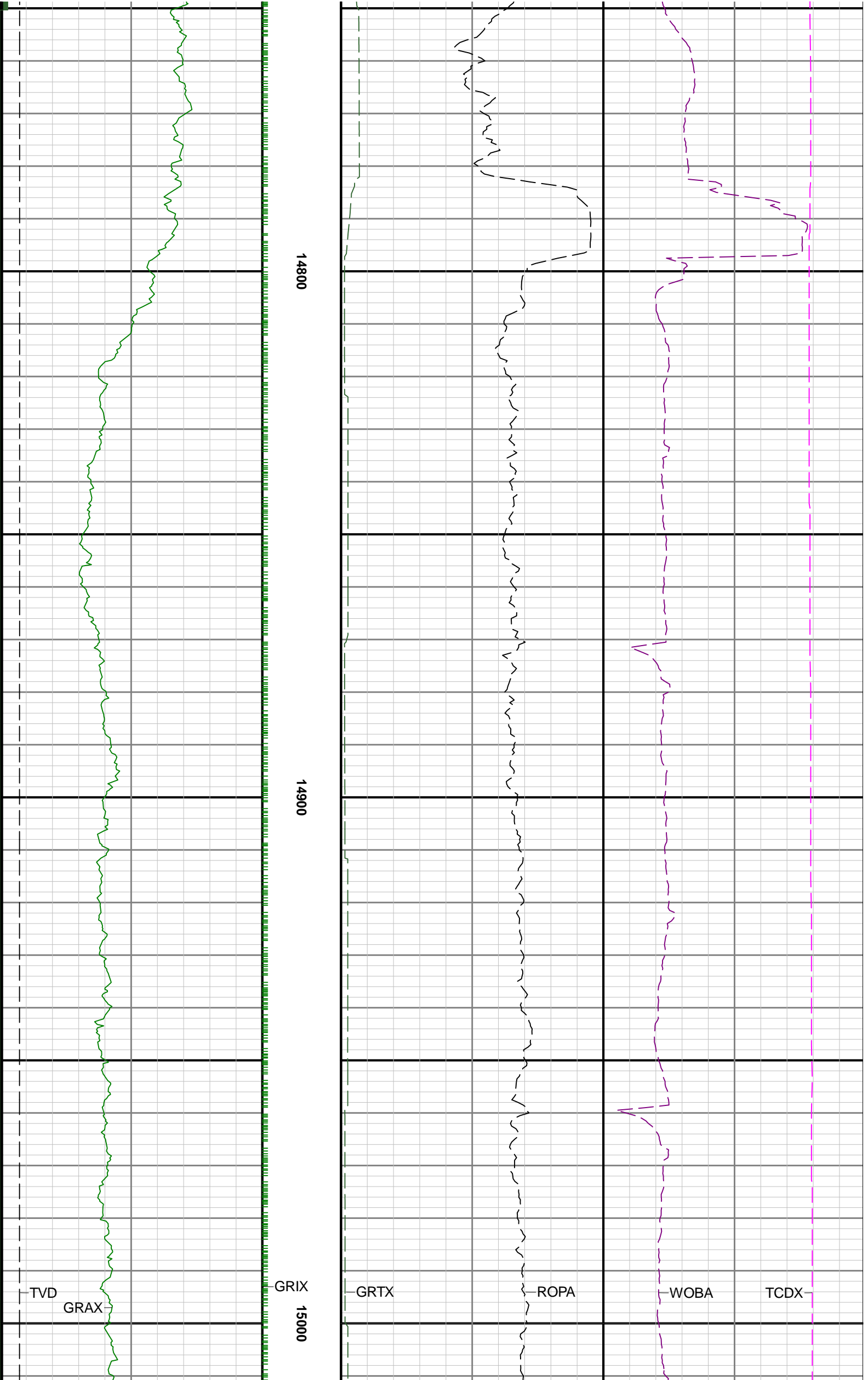


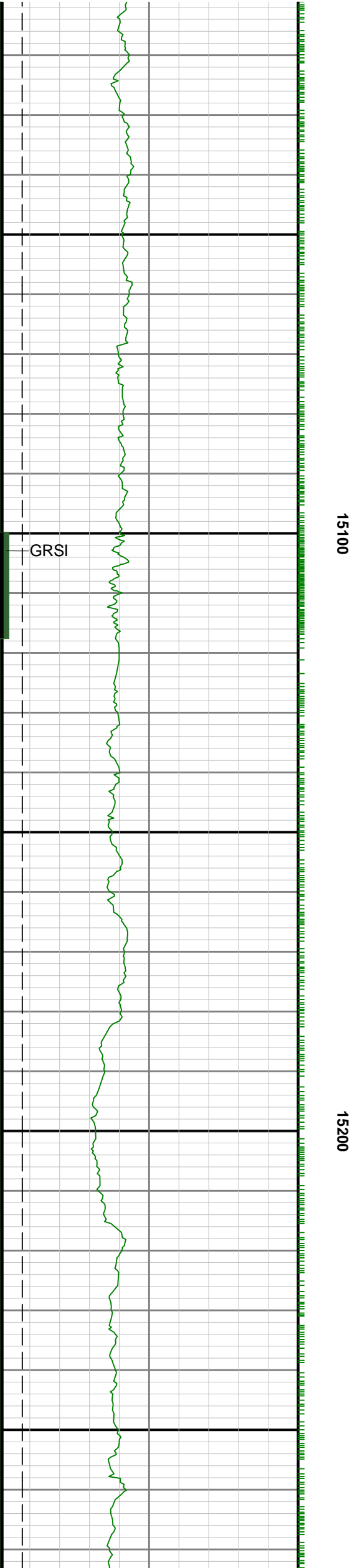
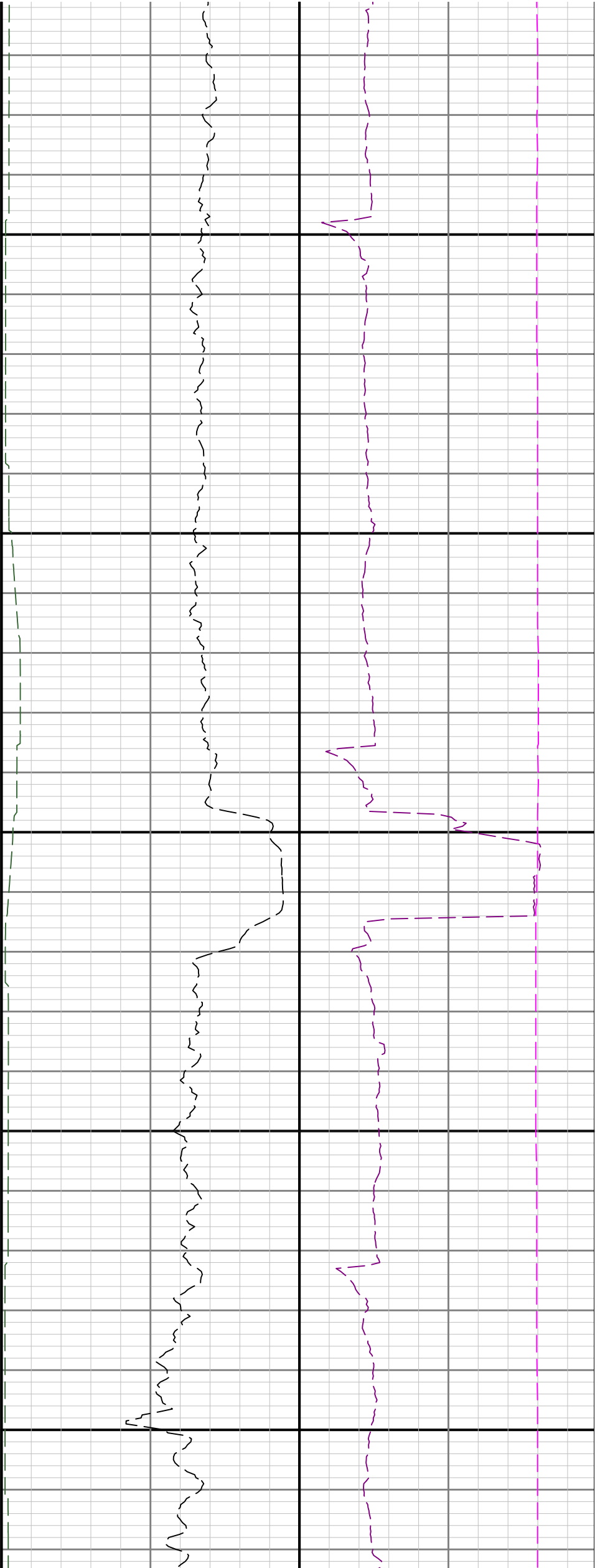
14300

14400

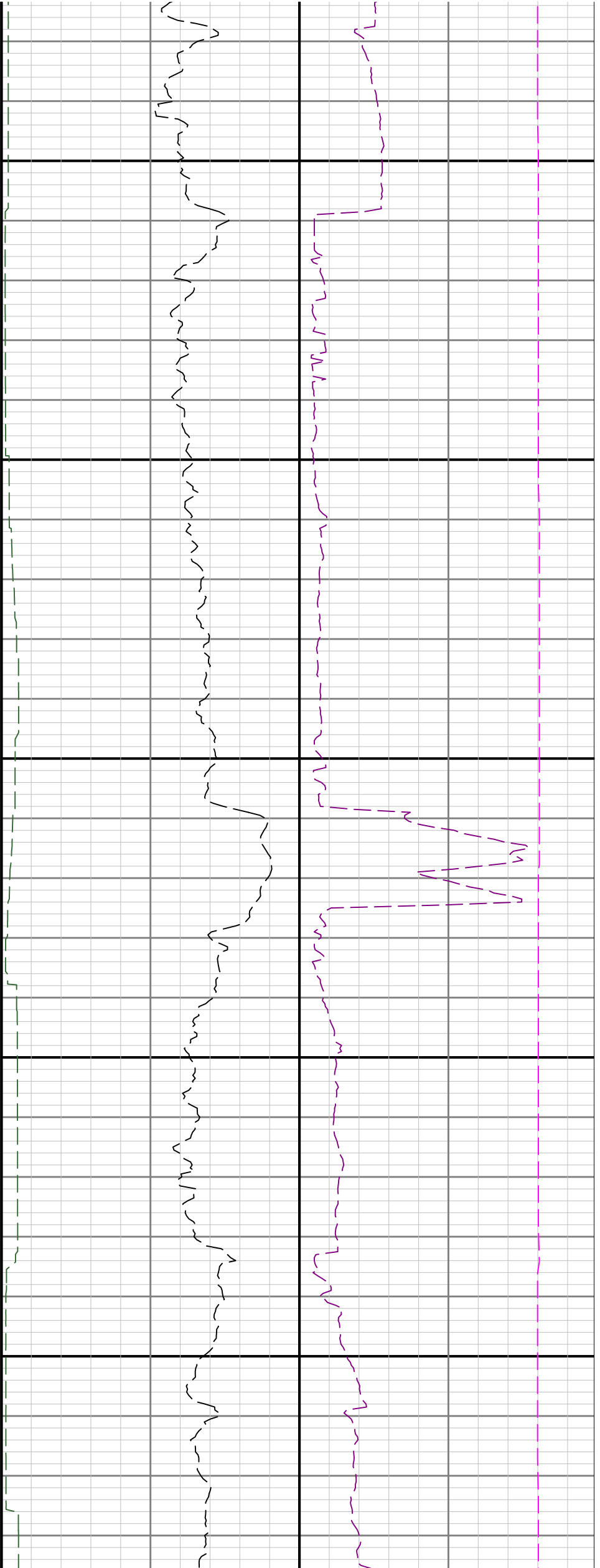
See Remark 10







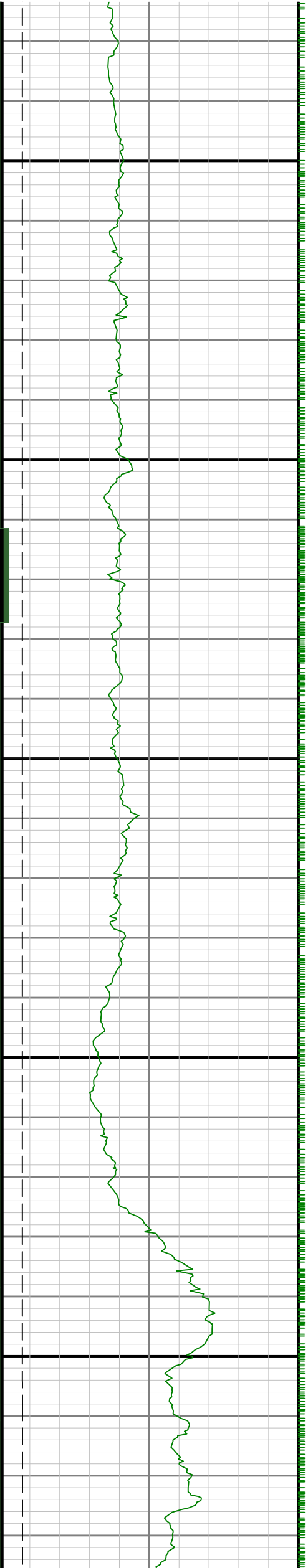
GRSI

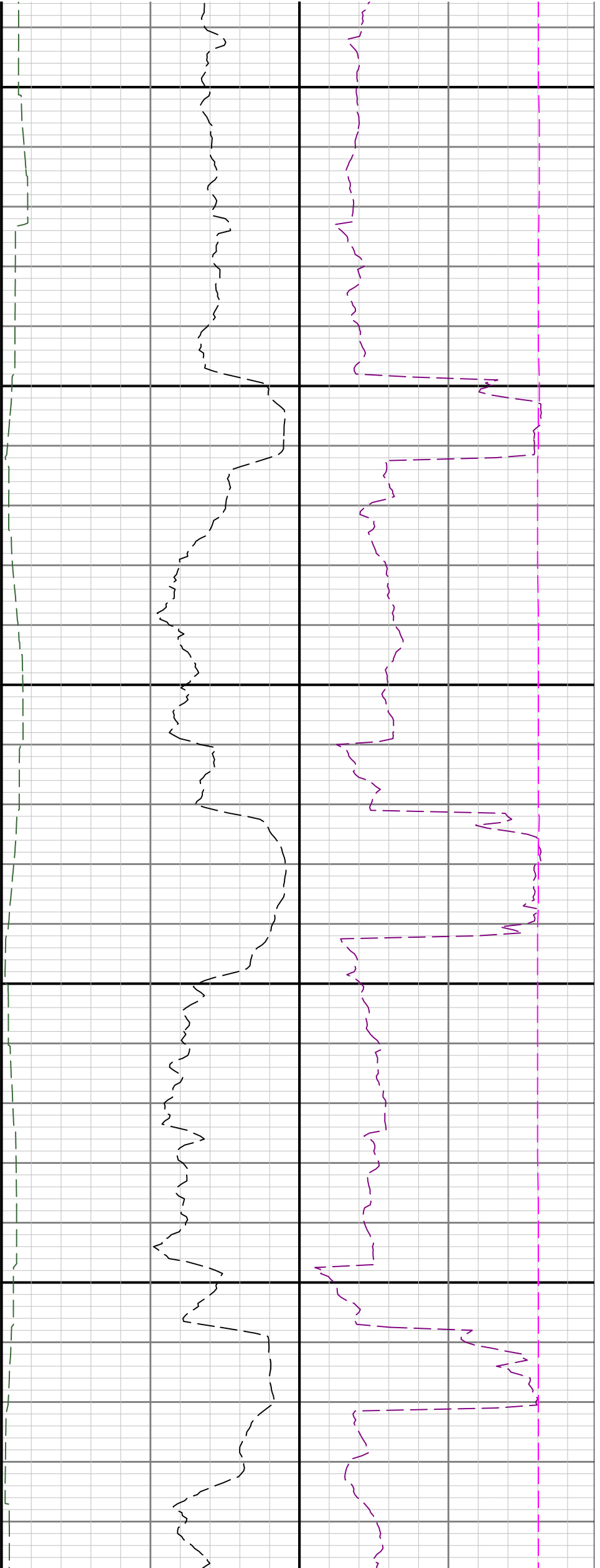


15300

15400

15500

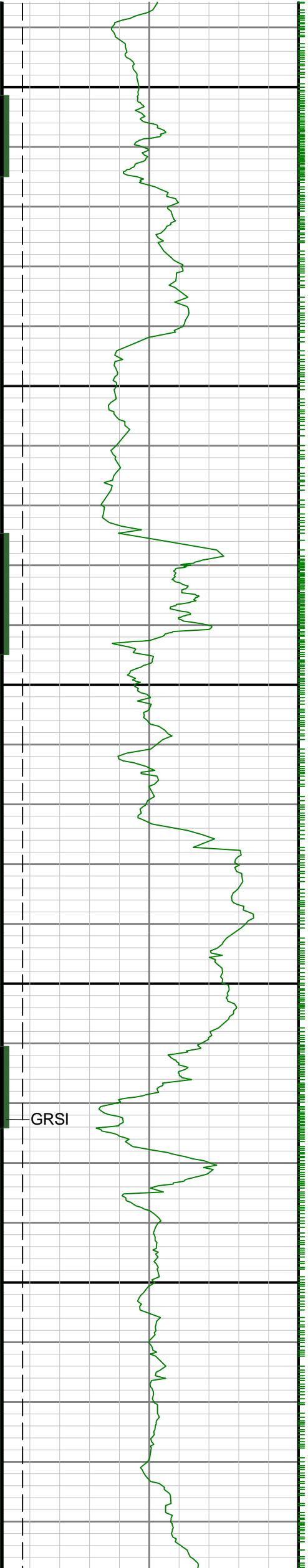




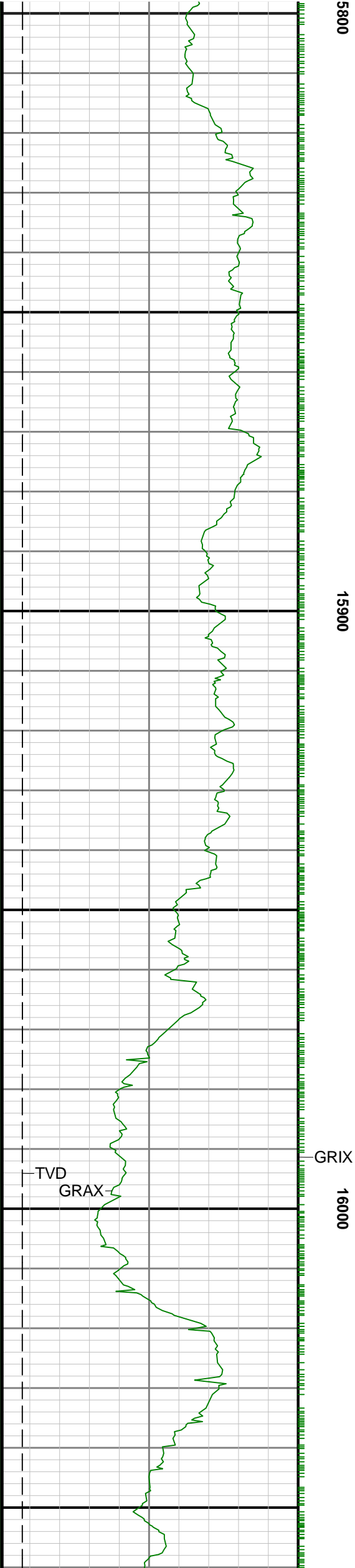
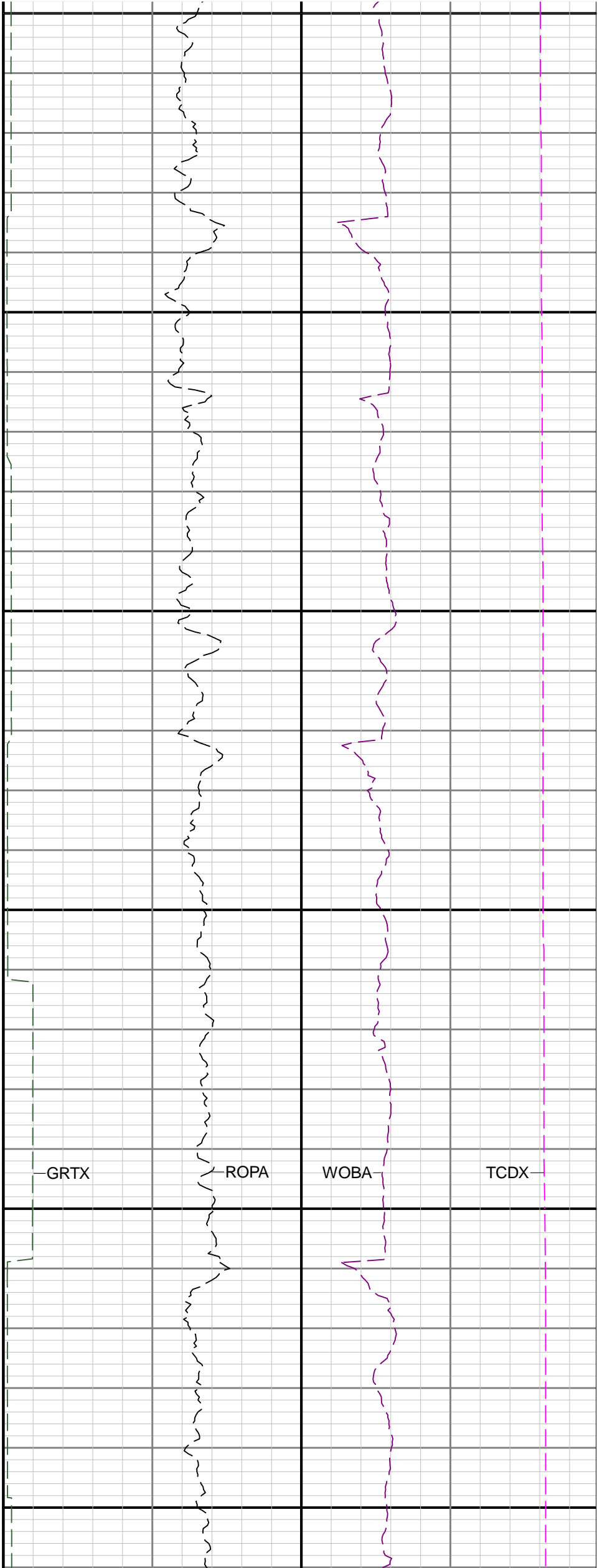
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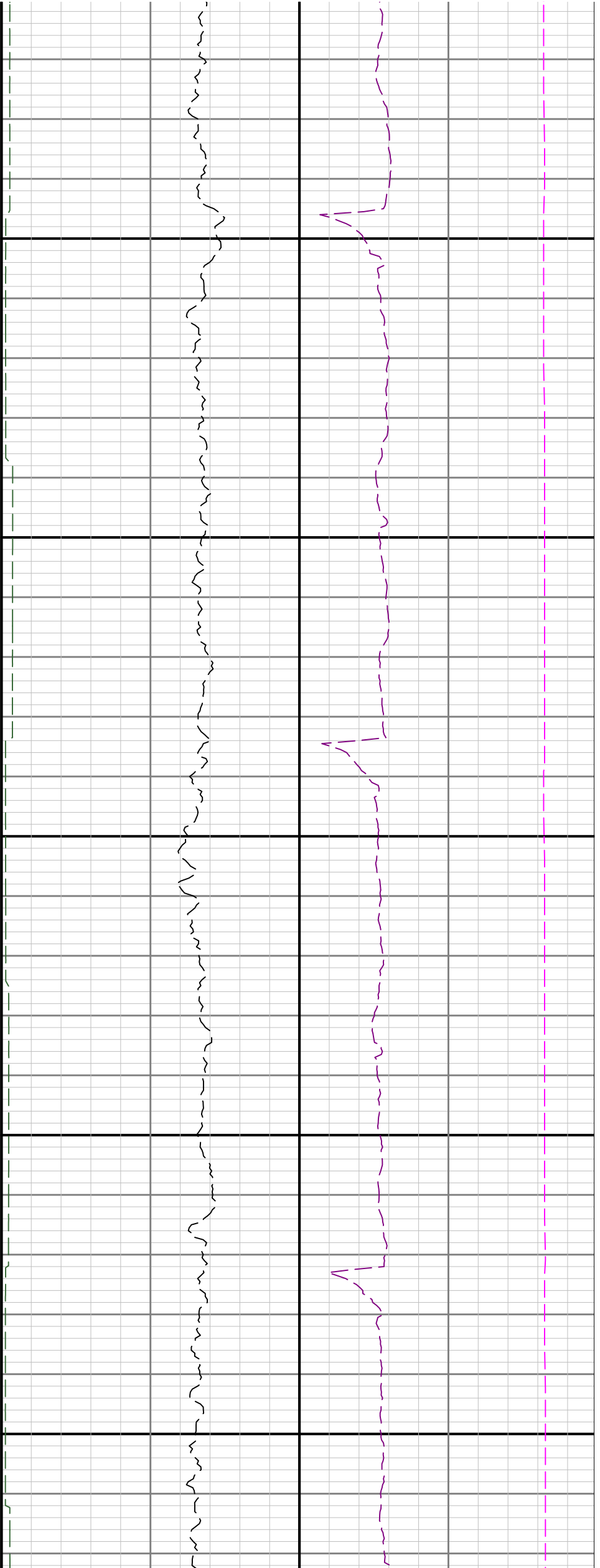
15700

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GRSI

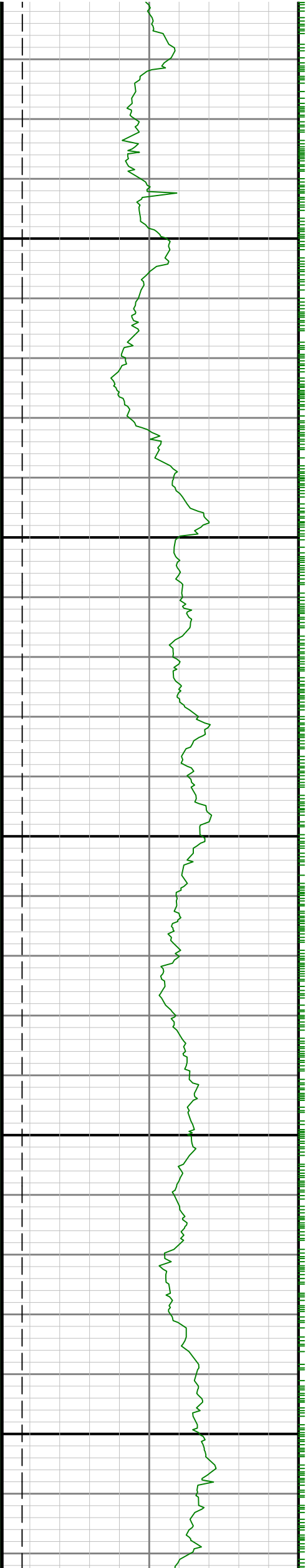


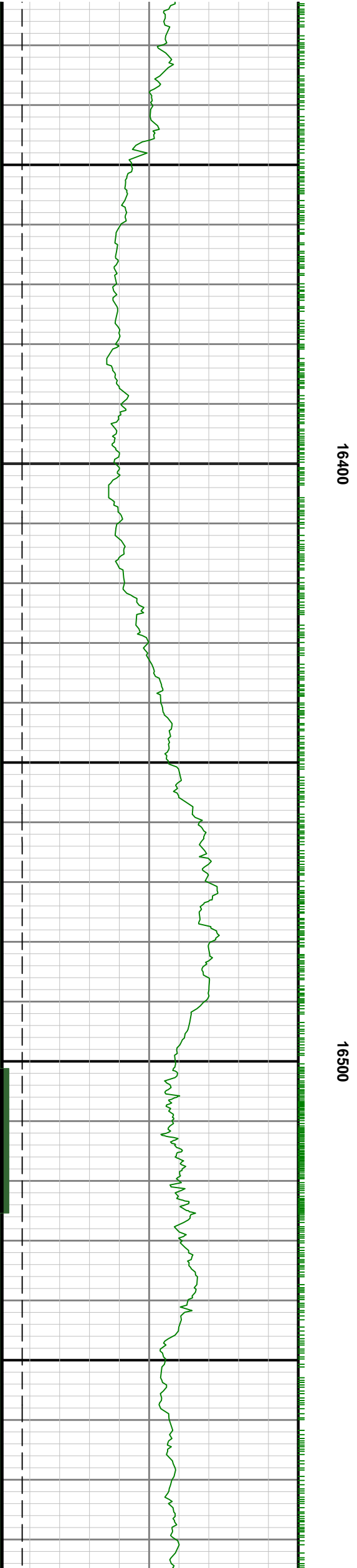
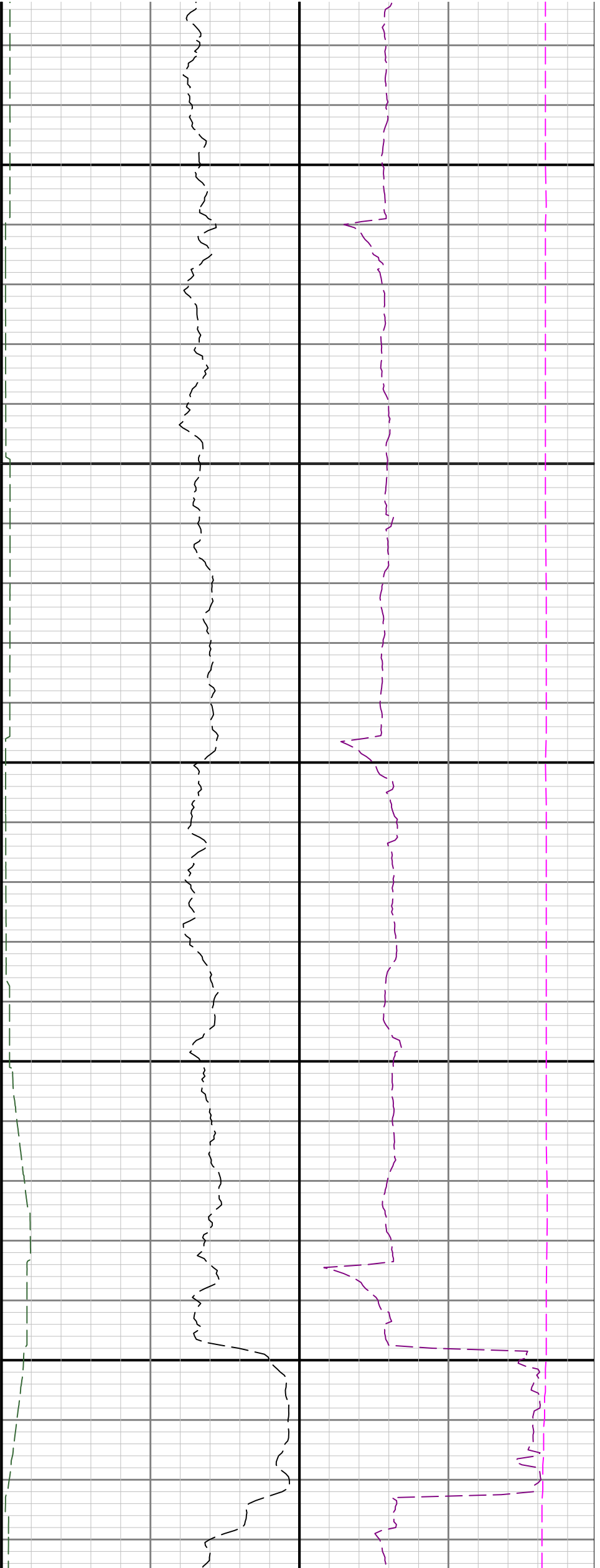


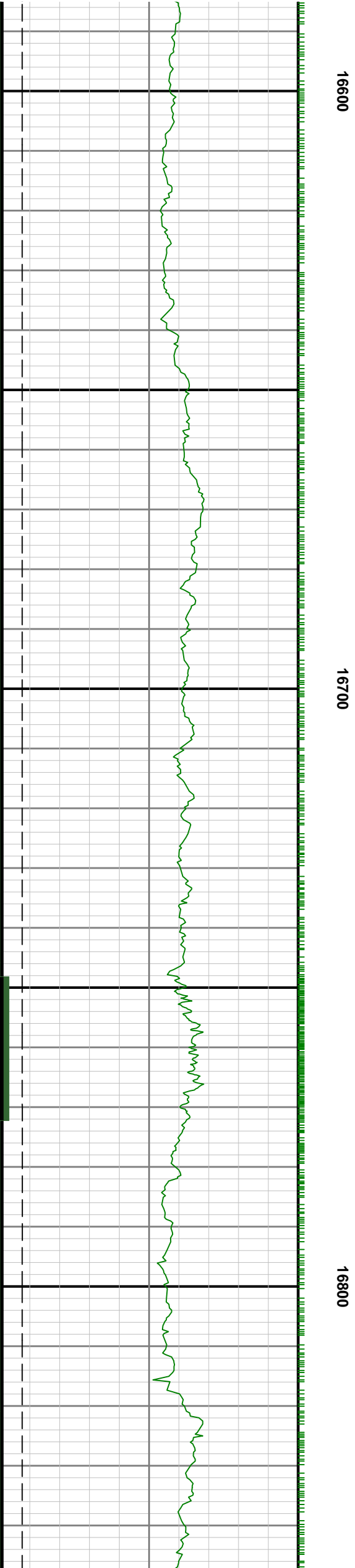
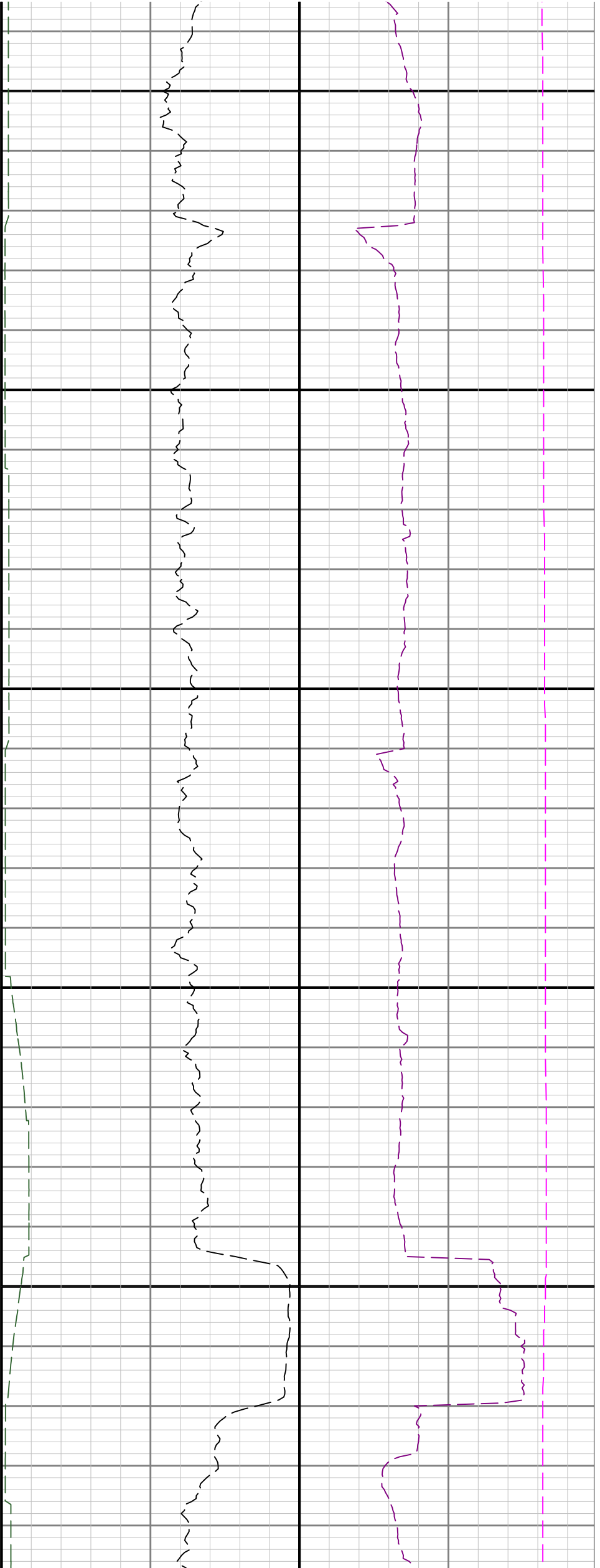
16100

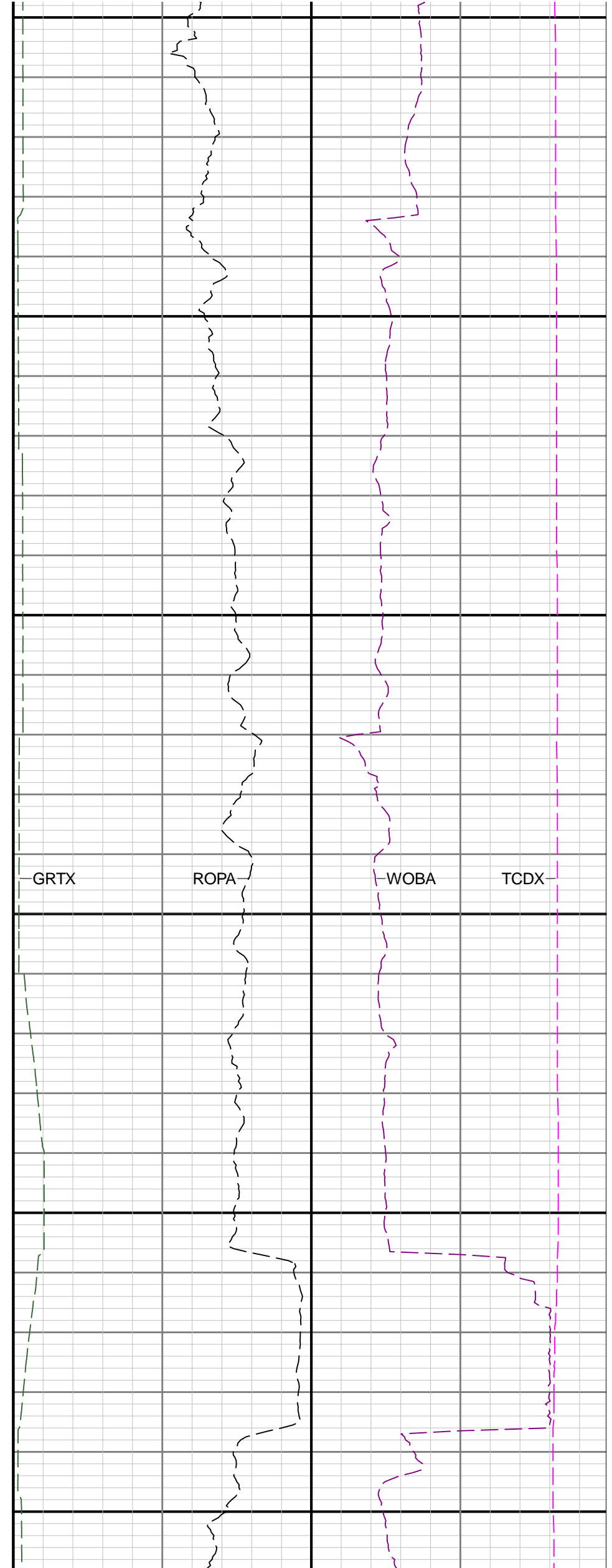
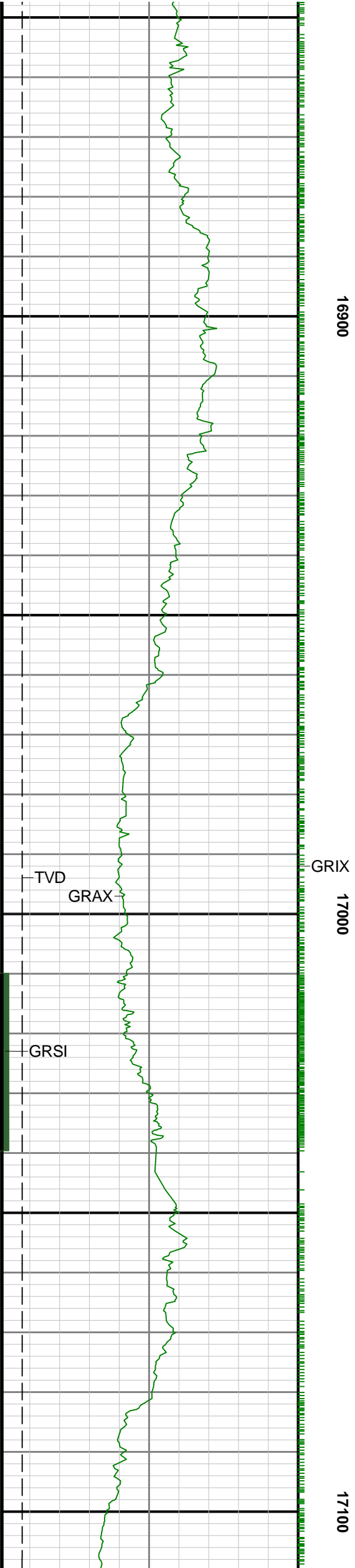
16200

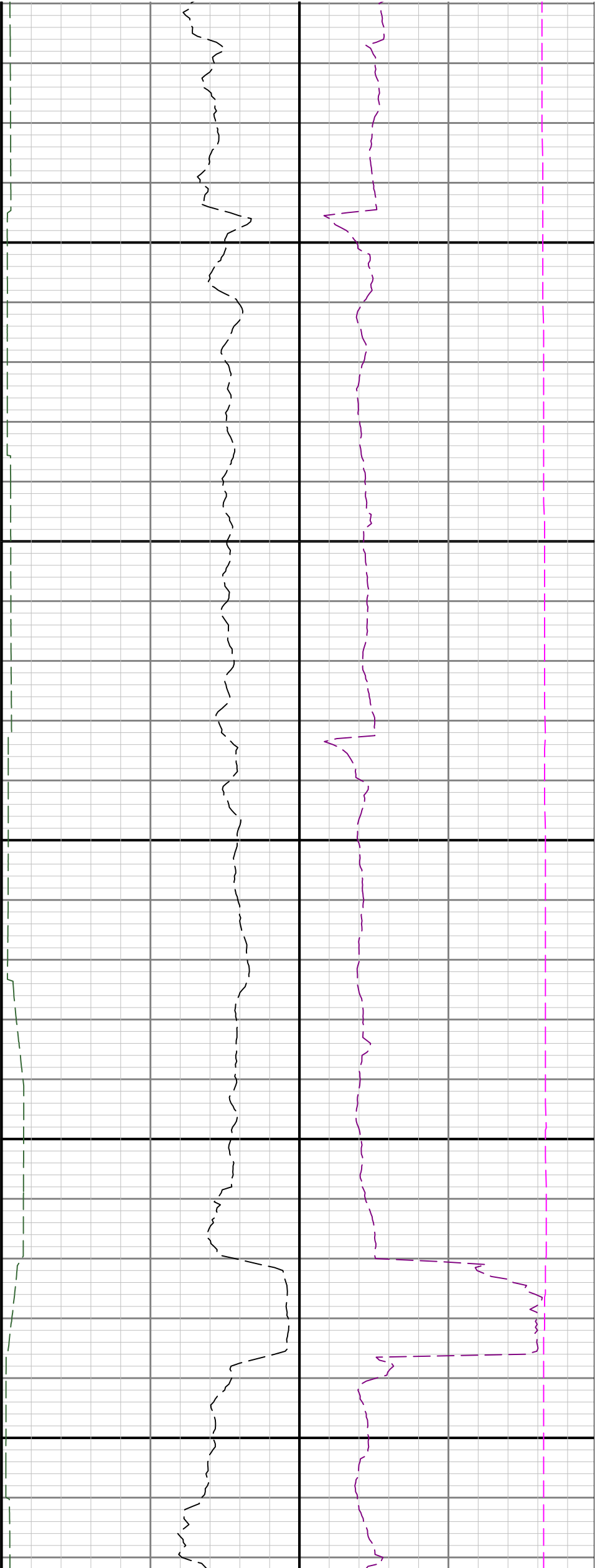
16300







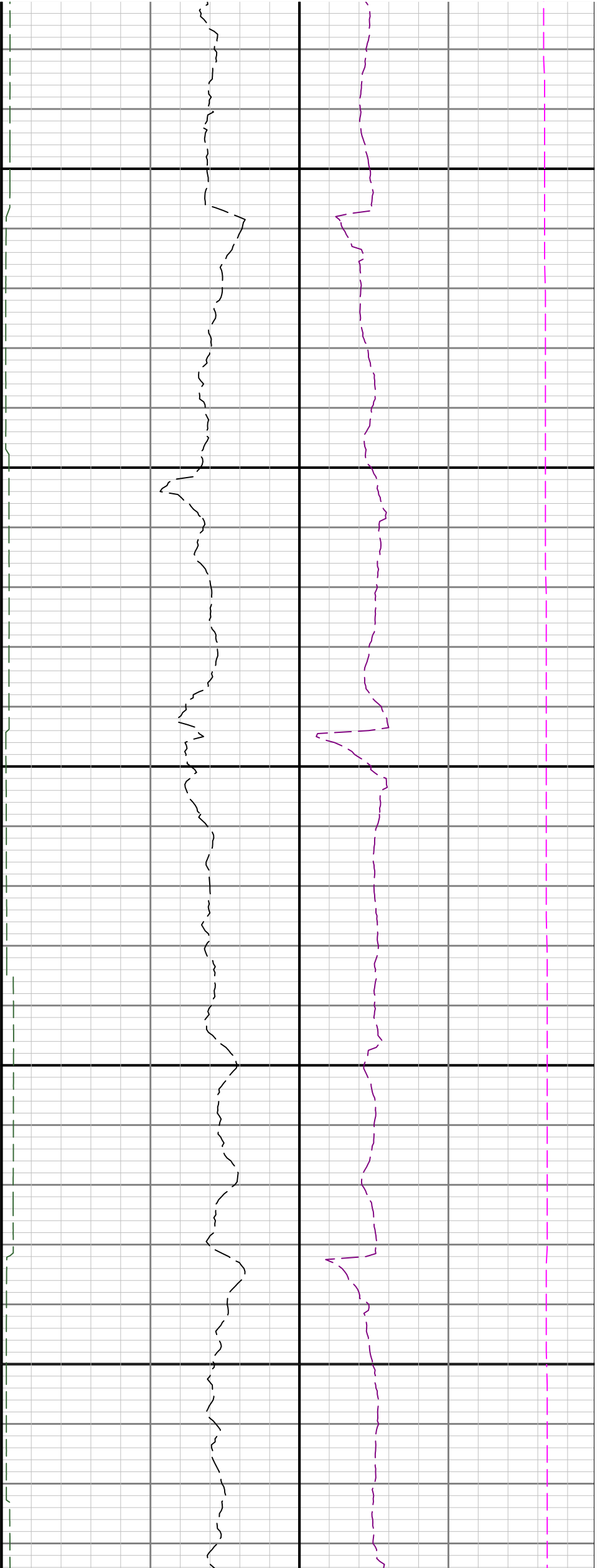




17200

17300

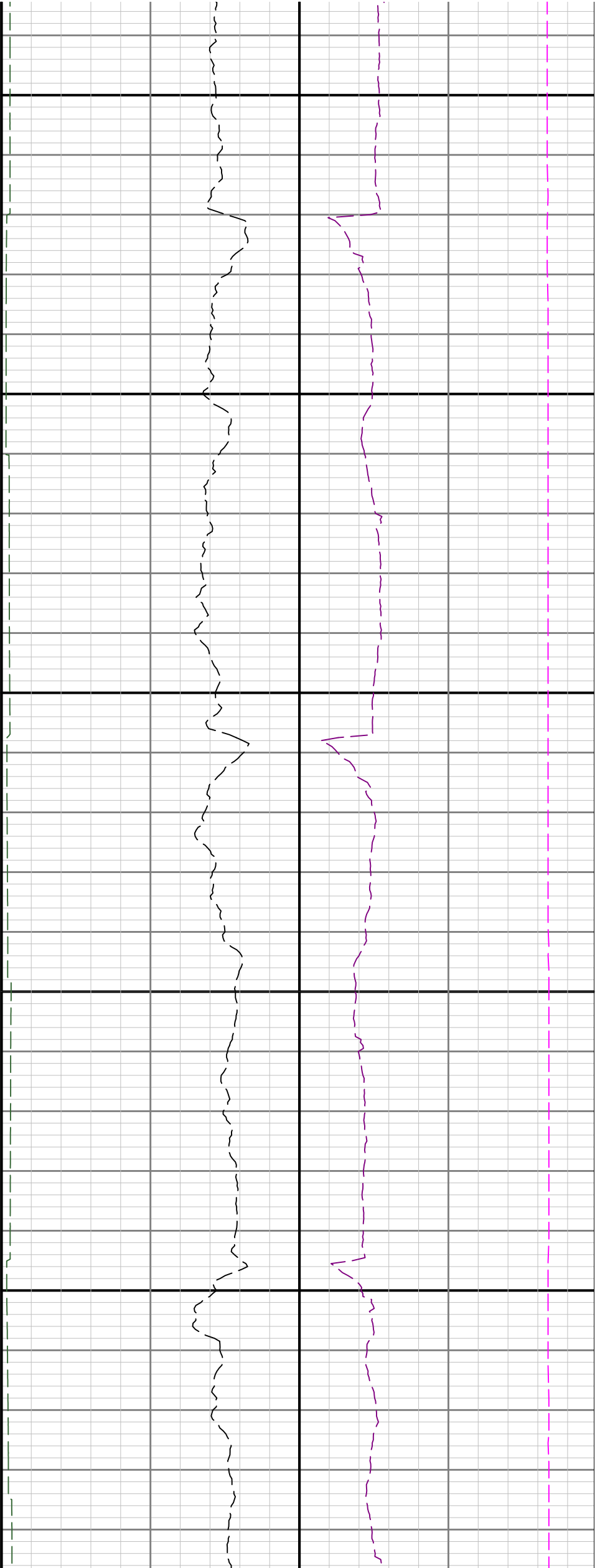
GRSI



17400

17500

17600



17700

17800

