

BAKER HUGHES			LWD Composition Log									
			Natural Formation Evaluation Gamma Ray Rotary Steerable									
Scale:			Company: Noble Energy									
1:240 MD			Well: Reagan LD06-675									
Depth Reference:			Field: Weld County (Noble NAD 83 Grid)									
Driller's Depth			County: Weld State: Colorado									
Status:			Surface Location:					Other Services:				
Final Print			Latitude:					Directional VSS Rotary Steerable				
API No: 0512340819			Longitude:									
Job ID: 8096659			SEC: 5		TWN: 9N		RGE: 58W					
Permanent Datum (P.D.): Mean Sea Level			Elevation:		4786.00 ft		KB:		N/A			
Log Measured From: Rig Floor			Above P.D.		30.00 ft		DF:		4786.00 ft			
			GL:		4756.00 ft							
Dates			Interval Logged					Magnetic Field Reference				
Date From: 2016-08-19			Top: (ft)		2054.00		Azi Reference North:		Grid		Dip Angle: (deg)	
Date To: 2016-08-23			Bottom: (ft)		16038.00		Total Magnetic Field Strength: (nT)				52821	
Spud Date: 2016-08-18							Mag to Reference North Correction: (deg)				6.36 E	
Borehole Record			Casing Record									
Hole Size (in)			From (ft)		To (ft)		Size (in)		Weight (lb/ft)		From (ft)	
8.500			1904.00		16038.00		9.625		36.00		0.00	

"These interpretations and analyses ("Interpretations") are opinions provided by Baker Hughes Oilfield Operations, Inc ("Baker Hughes"), based upon industry practice, empirical relationships, assumptions and measurements, (many of which may be provided by the customer). The Interpretations are not infallible and may be subject to different opinions. Vjwu."Dcmgt"JwiJgu"fqgu"pqv"ycttcpv"vjgkt"ceewtce{."eqttgevpguu."qt"eqorngvgpguu."qt"vjcv"vjg"ewuvqogtøu"cpflqt"cp{"vjktf"rctv{øu"tgnkcpeg"qp"uwej"Kpvgtrtgvcvkqpu"yknn"ceeqornkuJ"cp{"rctvkewnct"tguwnvu0"Vjg"ewuvqogt"cuuwogu"hwnn"responsibility for the use of the Interpretations and for decisions based thereon and the customer agrees to release, defend and indemnify Baker Hughes, its parent, subsidiaries and affiliated or related entities, and subcontractors, together with its and their officers, directors, employees, agents and invitees against, any and all claims, losses, damages, or expenses sustained by the customer or any third party arising out of reliance upon or use of the Interpretations, without regard to the cause(s) thereof, including without limitation any form of negligence on the part of Baker Hughes. Unless other contract terms have been agreed to by the parties, each party's liabilities and qdnkicvkqpu"ujcnn"dg"iqxgtpgf"d{"Dcmgt"JwiJgu"Kpeqtrqtcvgføu"Yqtnfykfg"Vgtou"cpf"Eqpfkvkqpu0\$""

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	8.500	PDC	2.00	AutoTrak Curve	2037.94	16031.58	2060.00	16038.14	2016-08-19 18:55	2016-08-23 07:38	81.69

Crew

Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Alexander Osborne	2016-08-18	2016-08-24	Hans Cary	2016-08-18	2016-08-24	Lenn Bennett	2016-08-18	2016-08-24
Scott Sims	2016-08-18	2016-08-24						



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+ (%)
2016-08-19 10:11	1	1918.00	Oil Based Mud	9.4	33	0	0.0	0.22/0.78	Active Pit	38400	0.00
2016-08-20 04:00	1	5104.00	Oil Based Mud	9.6	56	0	20.8	0.64/0.36	Active Pit	32500	0.00
2016-08-20 16:45	1	6847.00	Oil Based Mud	9.5	48	0	17.6	0.64/0.36	Active Pit	32500	0.00
2016-08-21 04:00	1	9837.35	Oil Based Mud	9.9	50	0	17.2	0.66/0.34	Active Pit	32500	0.00
2016-08-21 17:24	1	12021.00	Oil Based Mud	9.9	49	0	0.0	0.63/0.37	Active Pit	32500	0.00
2016-08-22 04:00	1	13107.61	Oil Based Mud	10.2	49	0	21.2	0.65/0.35	Active Pit	32500	0.00
2016-08-22 14:00	1	14199.67	Oil Based Mud	10.2	50	0	20.0	0.62/0.38	Active Pit	32500	0.00
2016-08-23 04:00	1	15598.42	Oil Based Mud	10.3	53	0	19.2	0.62/0.38	Active Pit	30000	0.00

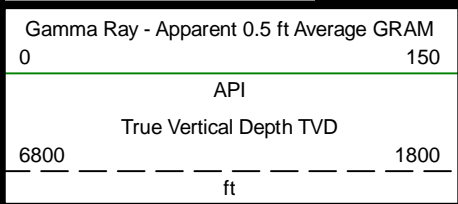
Equipment and Service Data							
Run No.	Tool	Serial Number	Measurement	Sensor Offset (ft)	Bit Offset (ft)	Max O.D. (in)	Min I.D. (in)
1	ATC_SU	12160767	Near Bit VSS	5.93	6.56	7.500	2.250
1	ATC_SU	12160767	Near Bit Inclination	5.93	6.56	7.500	2.250
1	ATC_MWD	12109322	Gamma (single)	12.10	22.06	7.000	3.250
1	ATC_MWD	12109322	Directional (mag)	12.29	22.25	7.000	3.250

Comments	
1	Baker Hughes Run 1 utilized a 6.75 inch AutoTrak Curve Rotary Steerable assembly a 8.50 inch bit from 1918 ft MD to 16038 ft MD (1917.98 ft TVD to 5785.01 ft TVD).
2	Depth measurements obtained from a depth control system not supplied or operated by Baker Hughes. Due to a lack of control by Baker Hughes logging engineers depth calibrations and measurements could not be independently verified.

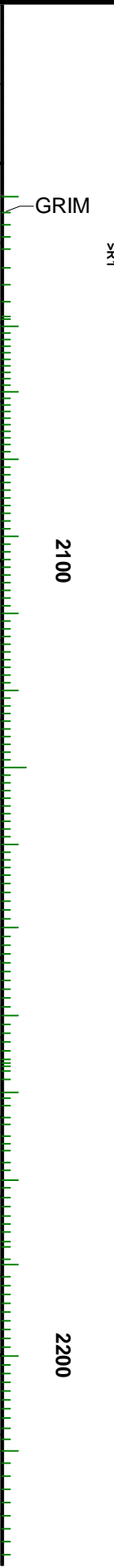
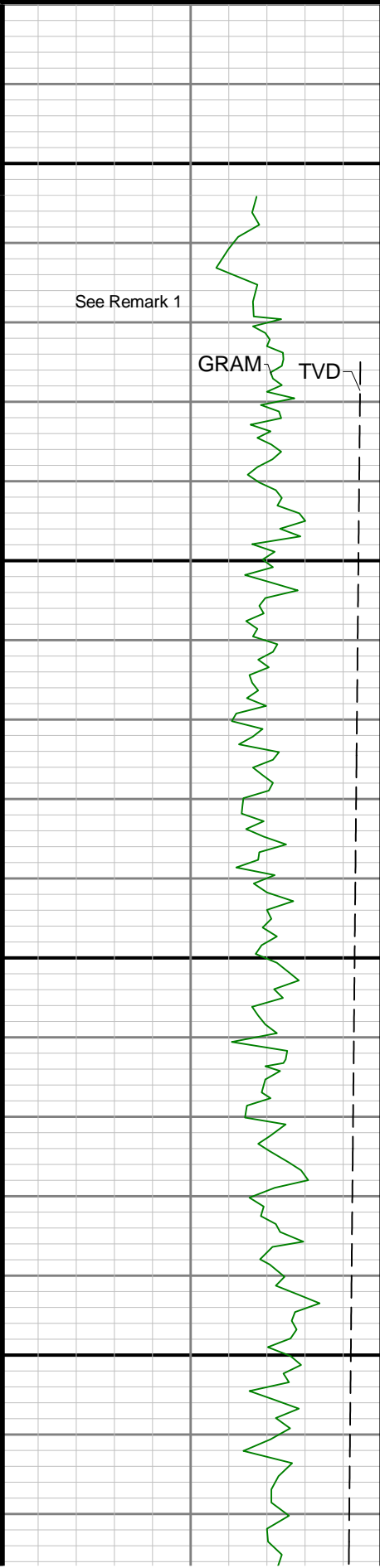
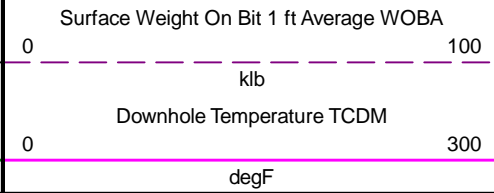
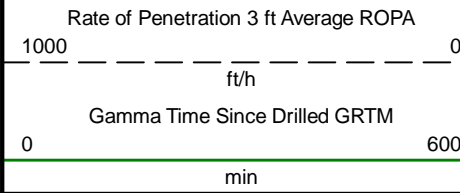
Remarks				
Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	2065.00	8.500	1	The interval from 2054 ft MD to 2075 ft MD (2053.98 ft TVD to 2074.98 ft TVD) has no surface data due to the Gamma Ray sensor to bit offset.
2	16025.00	8.500	1	The interval from 16016 ft MD to 16038 ft MD (5785.12 ft TVD to 5785.01 ft TVD) has no Gamma data due to Gamma Sensor to bit offset.

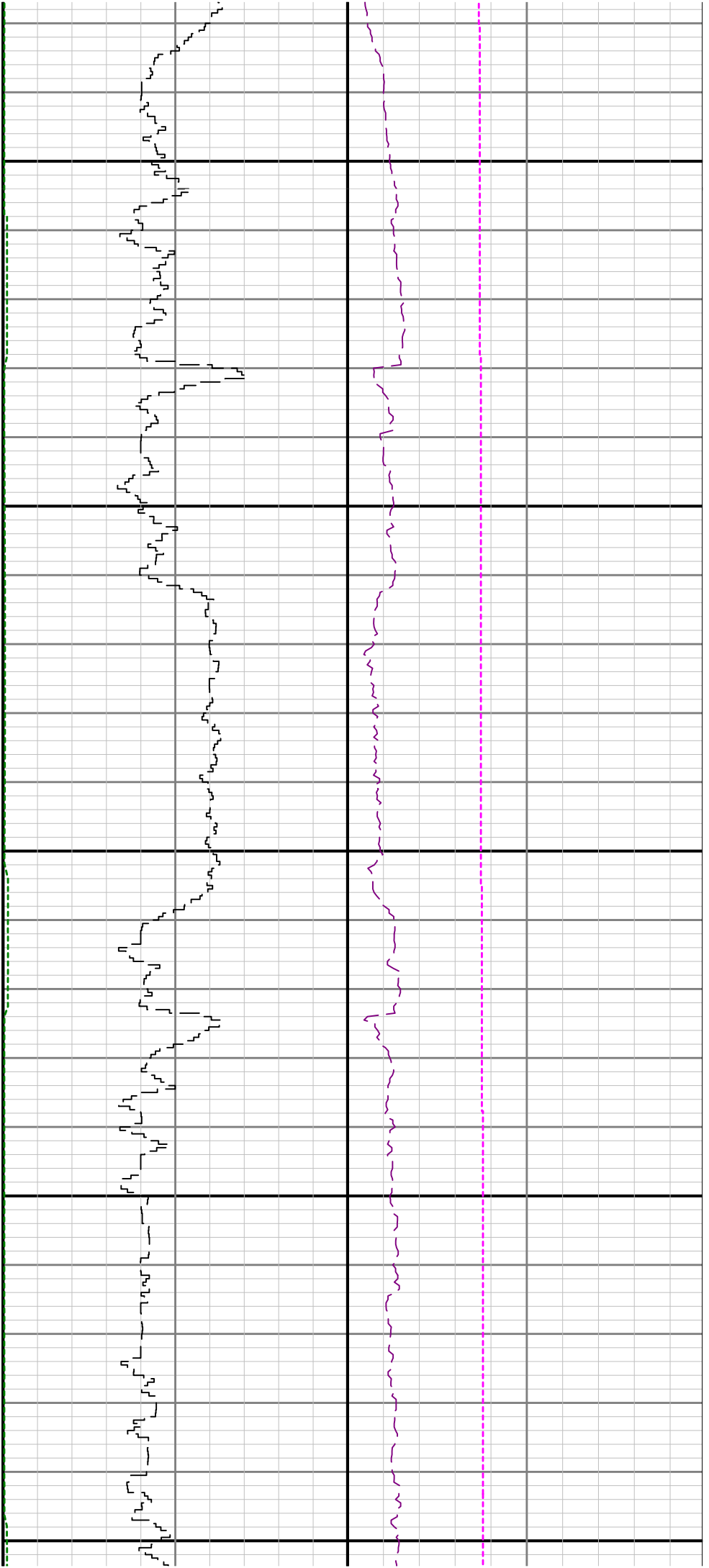
Curve Mnemonics		
Presented Curves	Description	Units
ROPA	Depth Averaged ROP 3 ft Average	ft/h
GRAM	Gamma Ray - Apparent 0.5 ft Average	API
GRIM	Gamma Ray Data Point Indicator	unitless
GRTM	Gamma Time Since Drilled	min
TCDM	Downhole Temperature	degF
TVD	True Vertical Depth	ft
WOBA	Weight On Bit, Average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

	Company	Noble Energy			
	Well	Reagan LD06-675			
	Interval	Date From:	2016-08-19 18:55:41	Top:	2054.00
		Date To:	2016-08-23 07:33:44	Bottom:	16038.00
	Created	2016-08-24 19:32			
	Company	Noble Energy			
	Well	Reagan LD06-675			
		Date From:	2016-08-19 18:55:41	Top:	2054.00



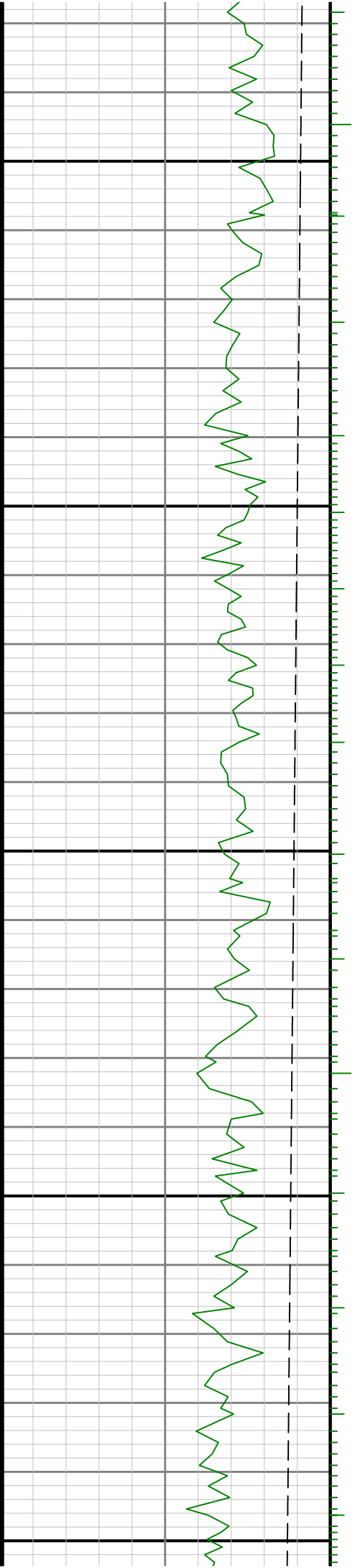
MD 1:240 feet

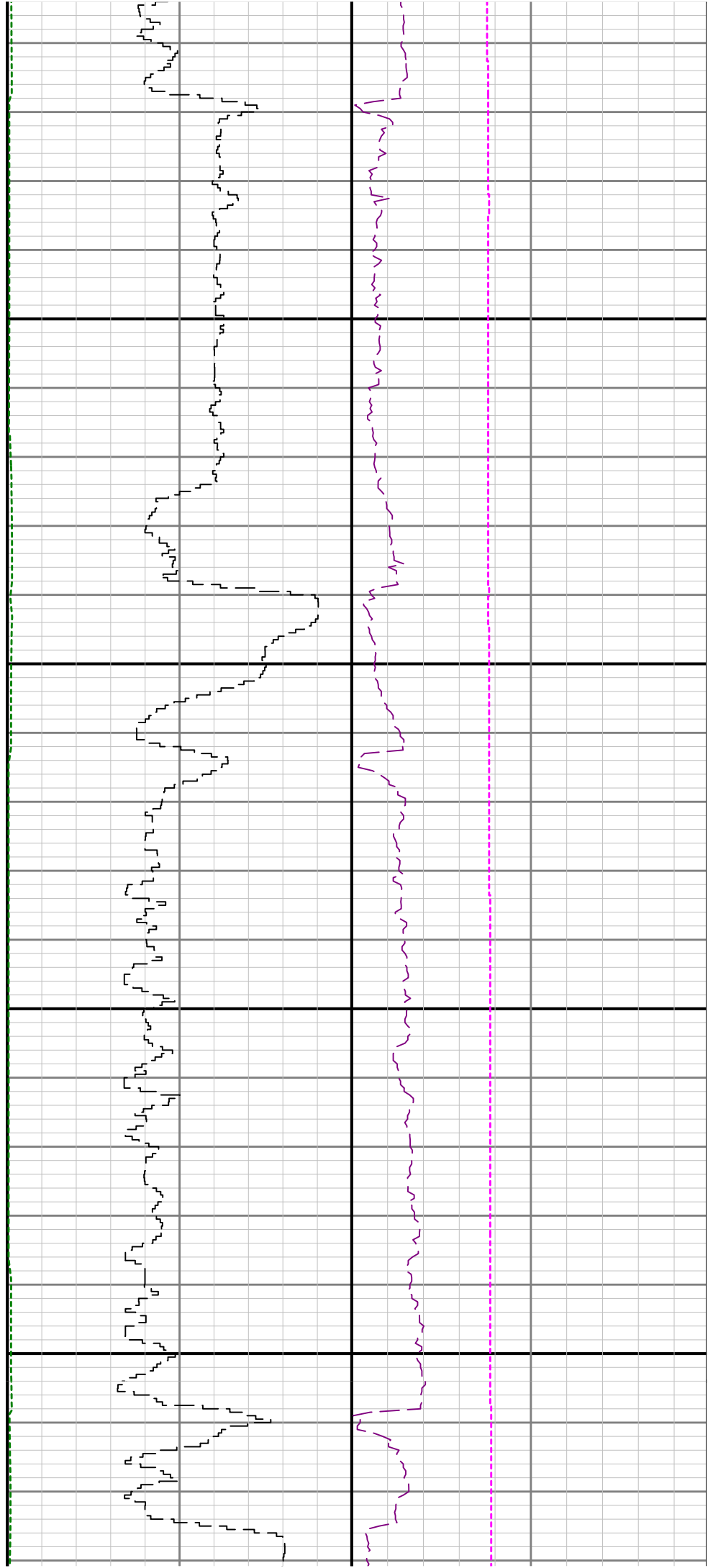




2300

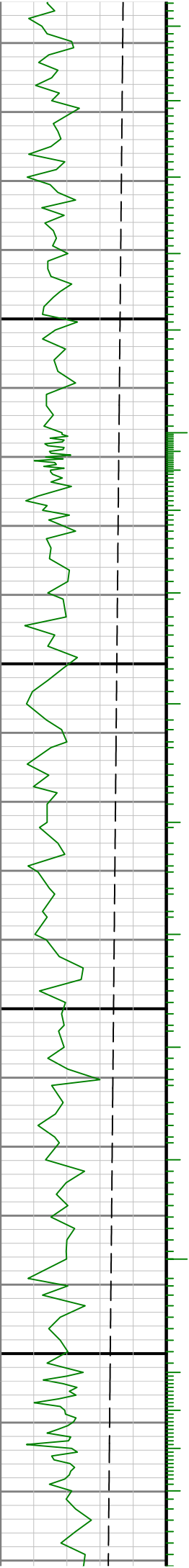
2400

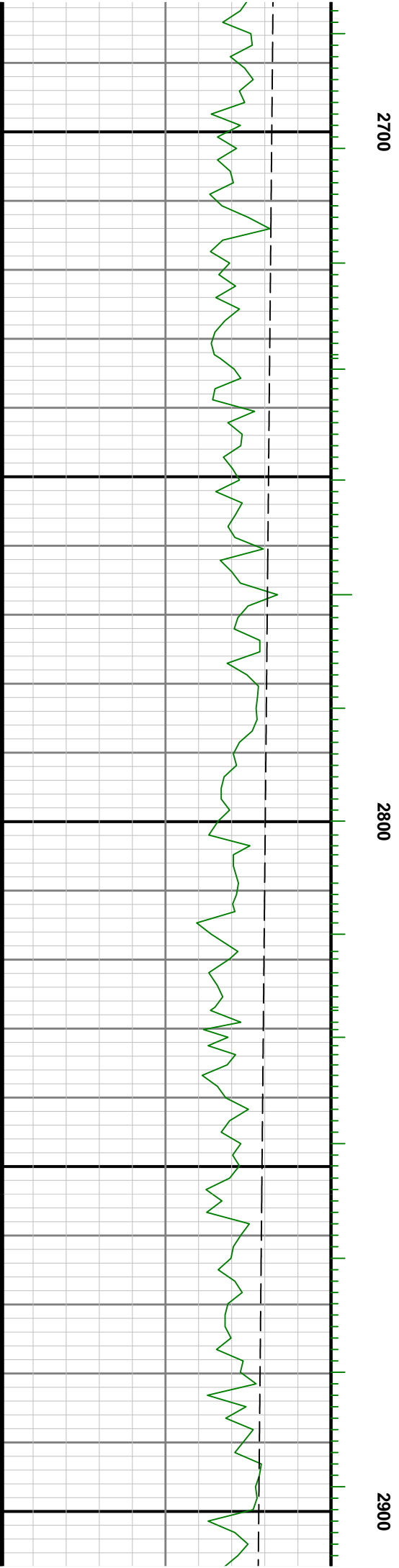
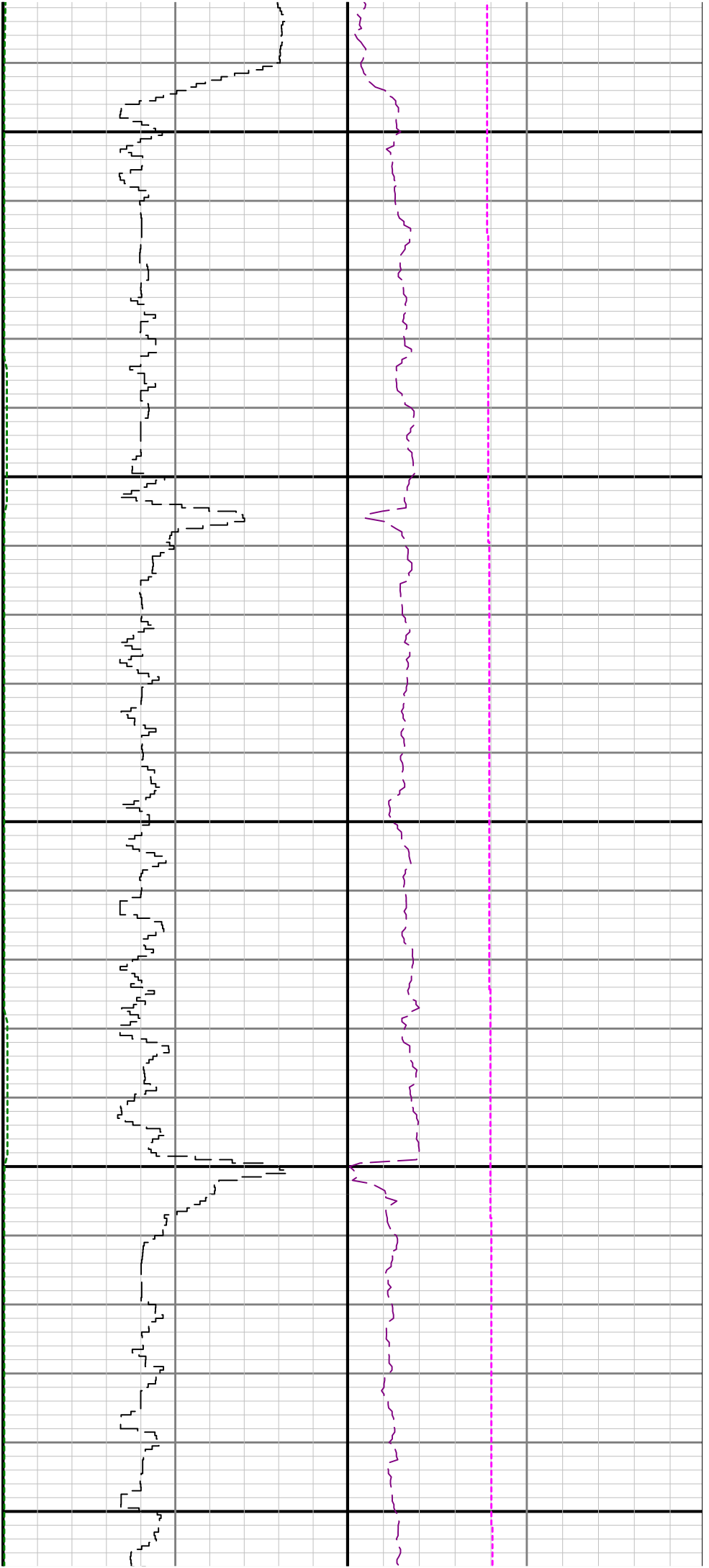


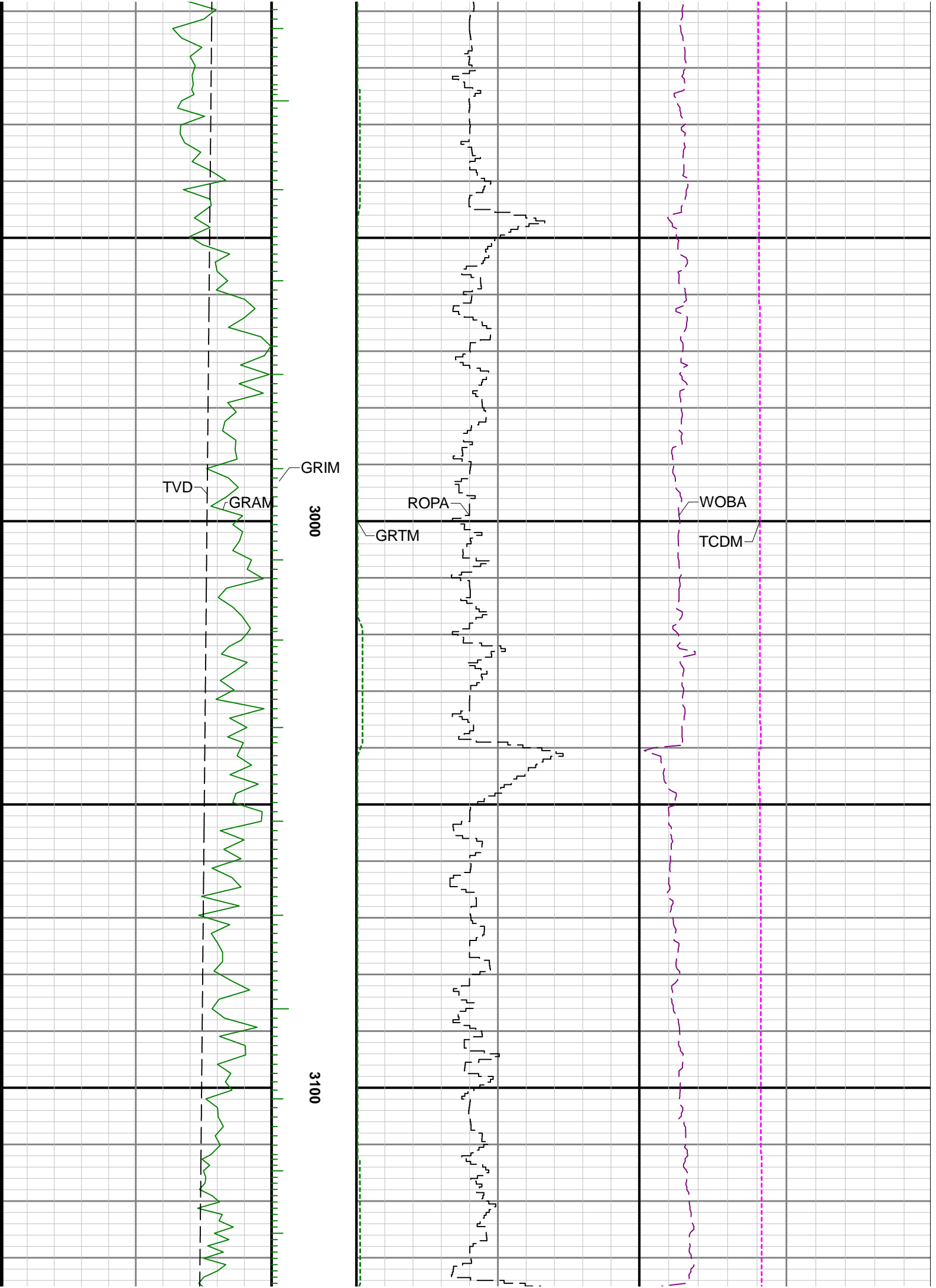


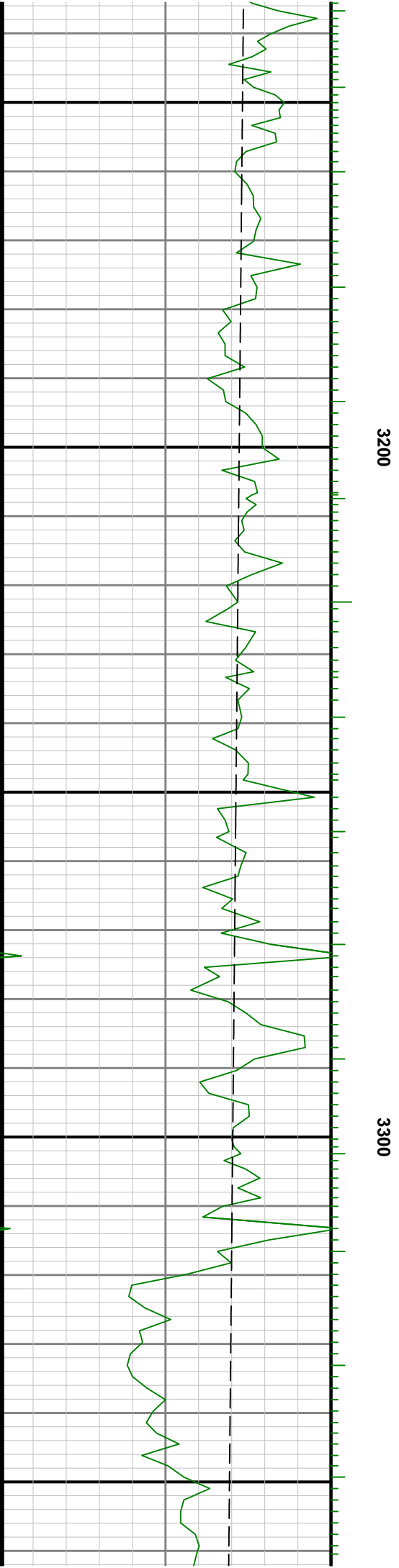
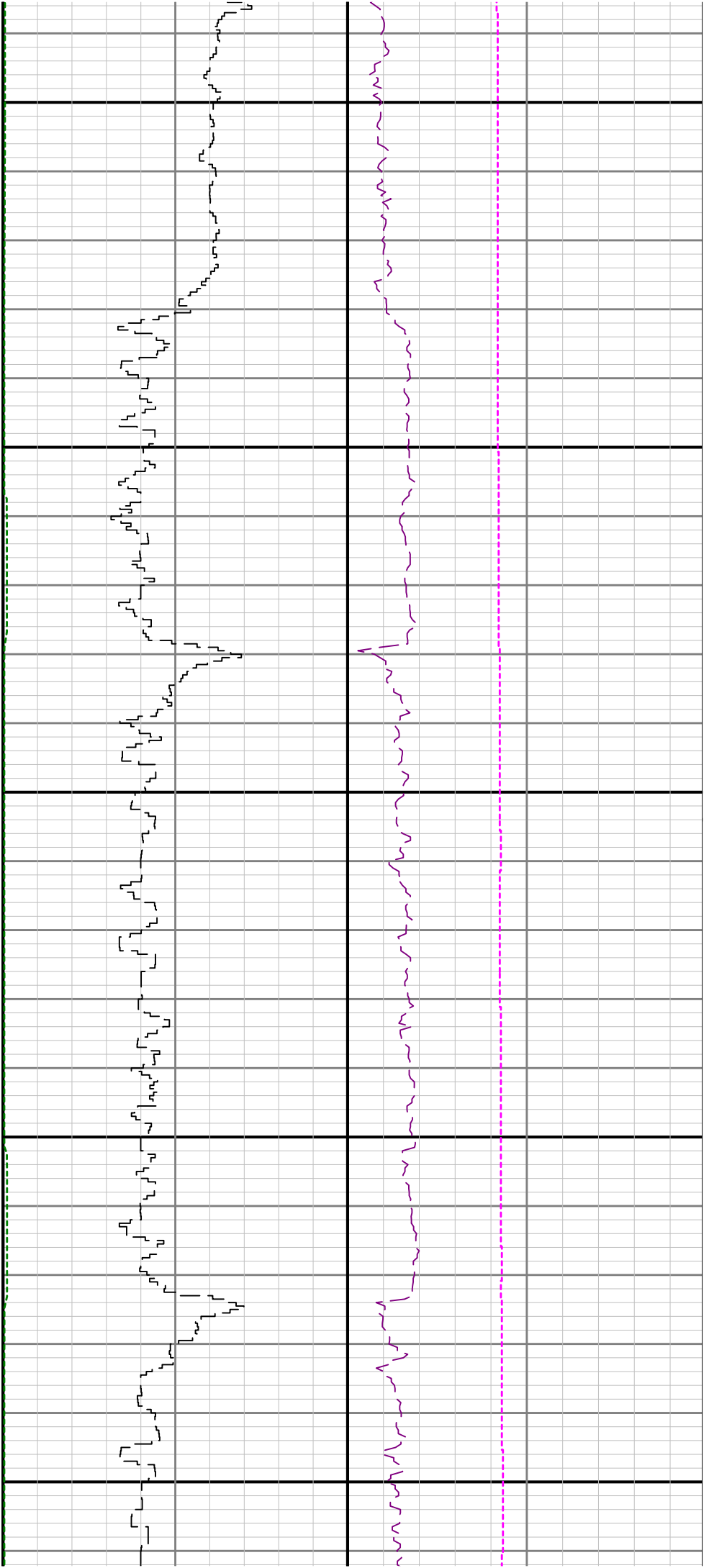
2500

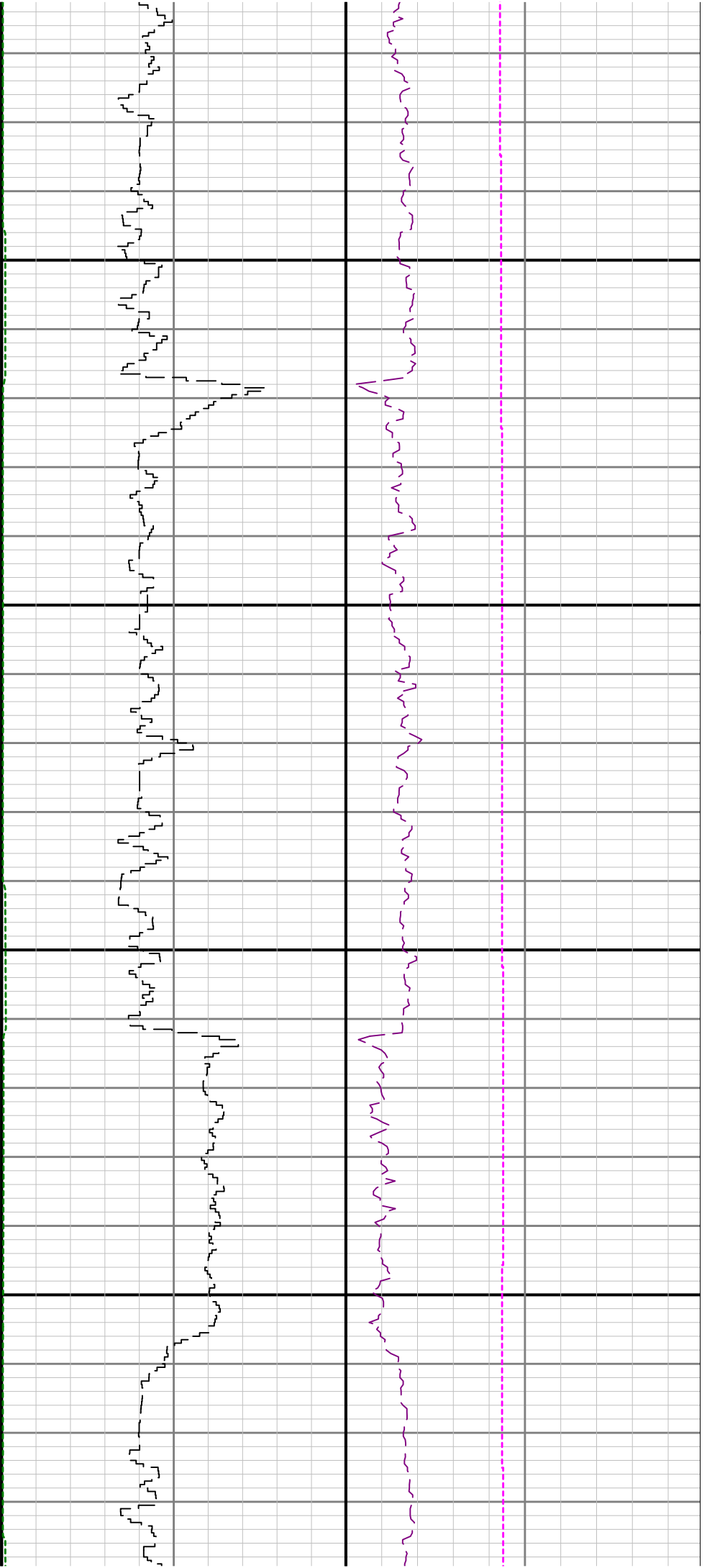
2600





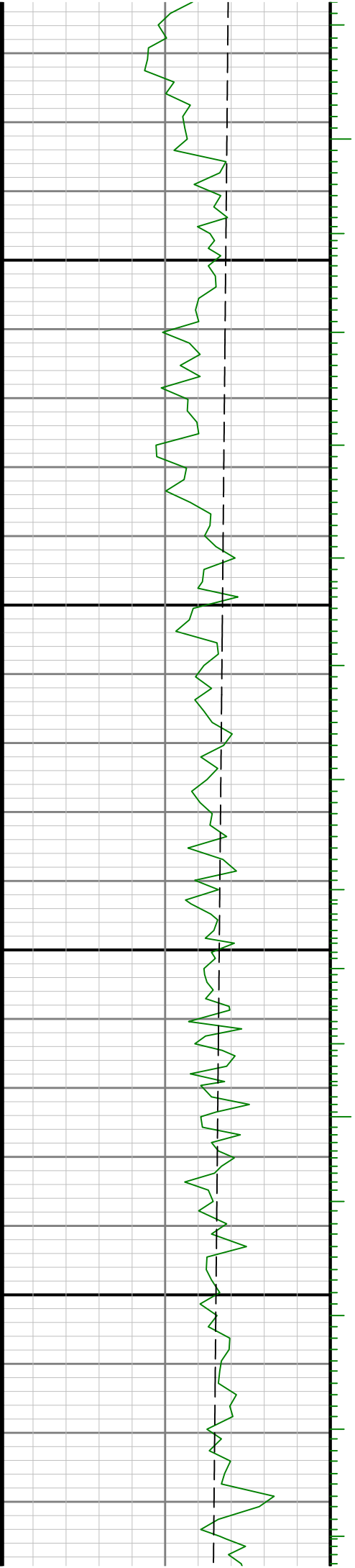


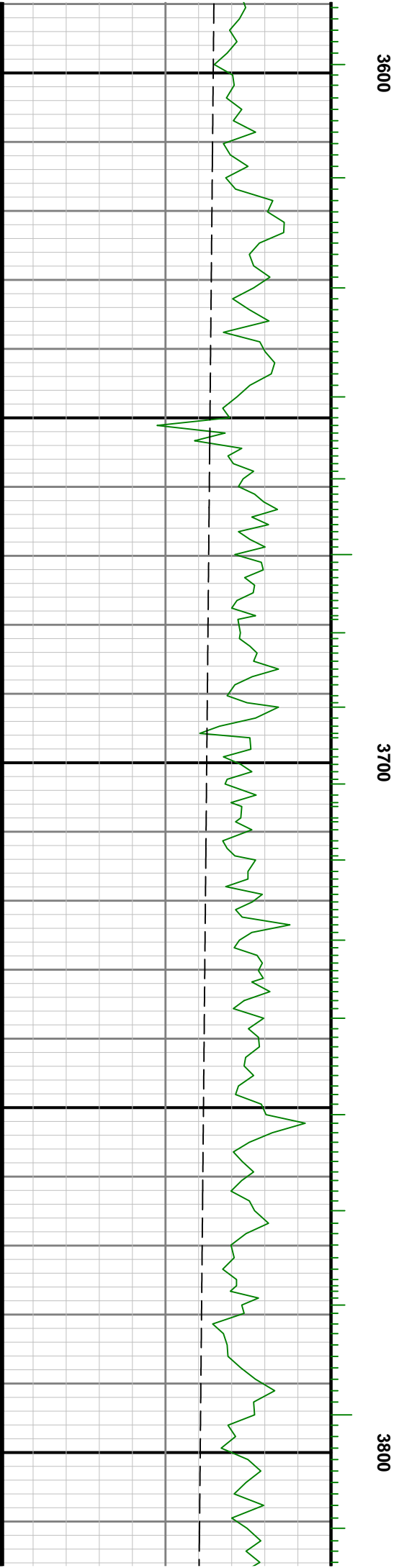


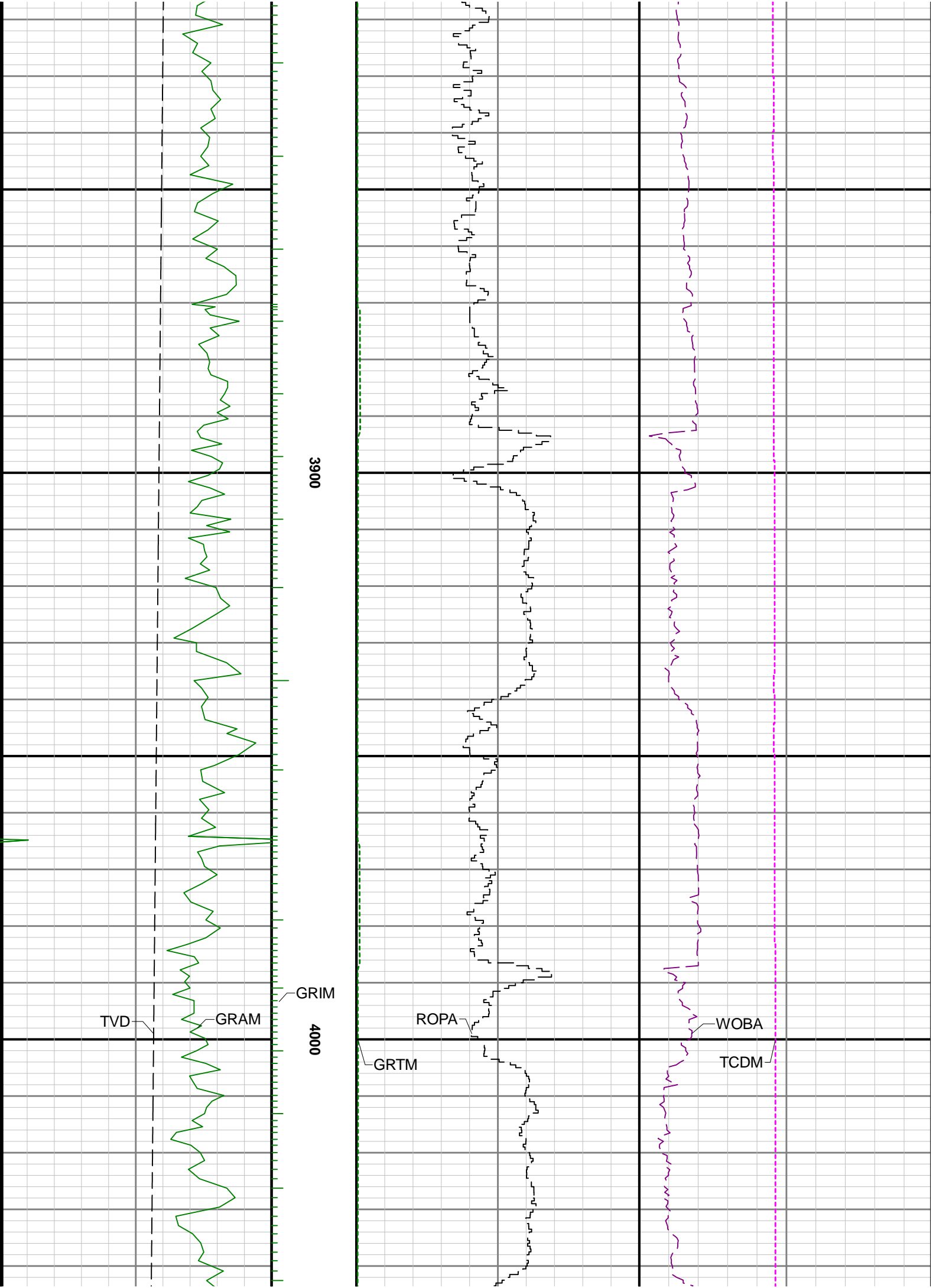


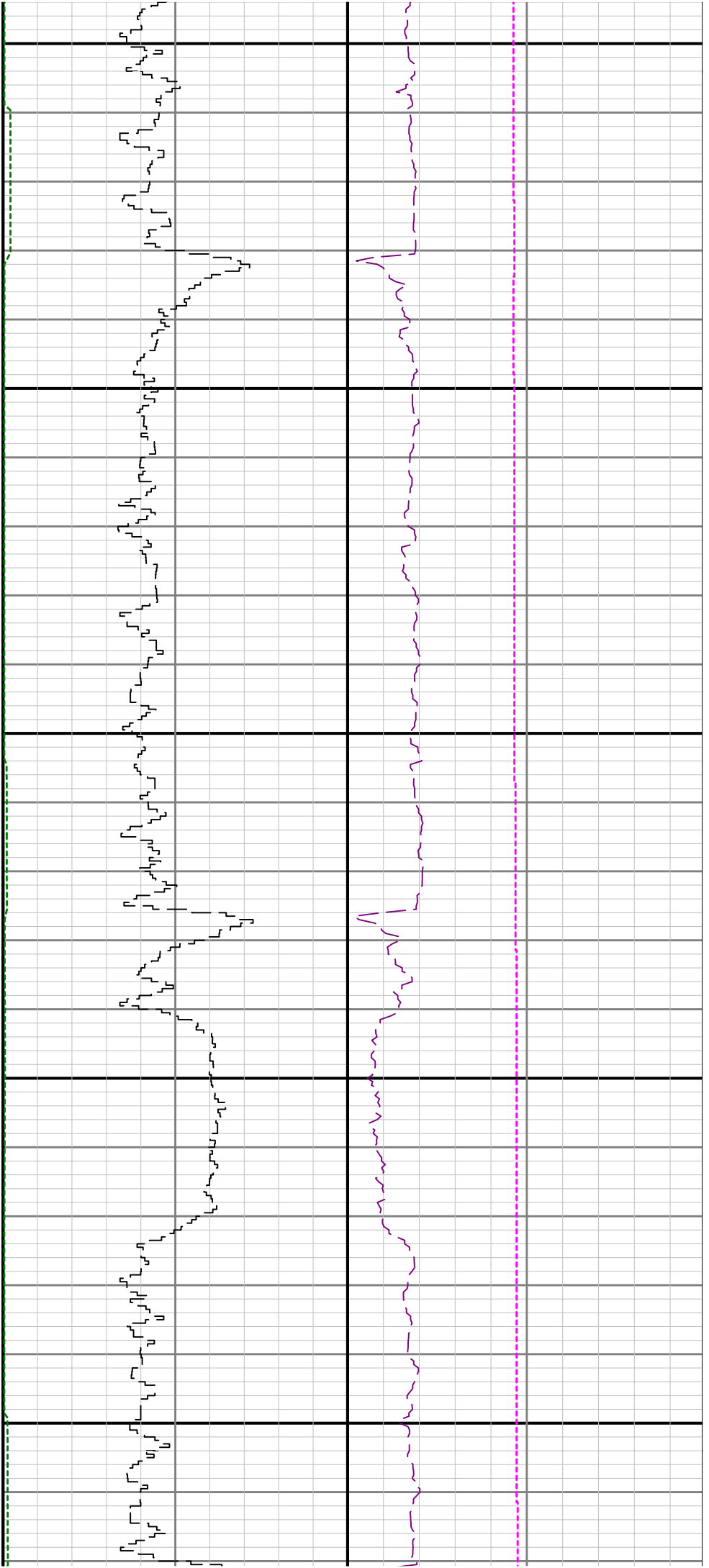
3400

3500



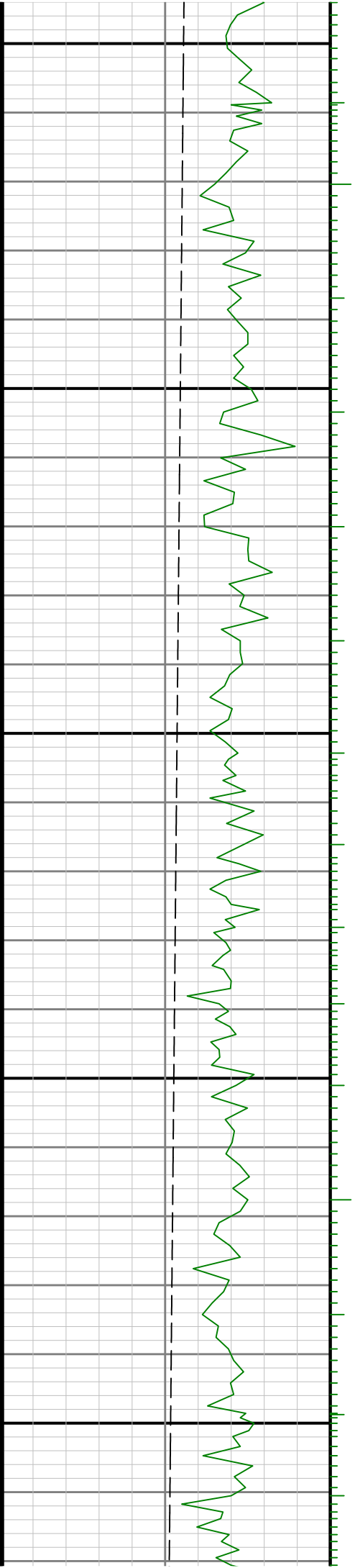


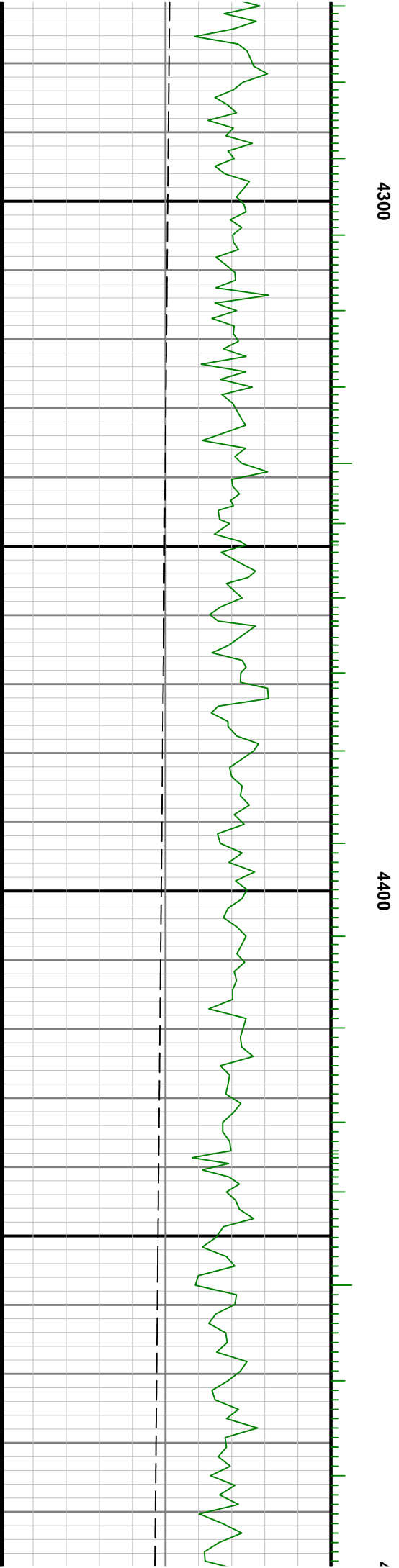


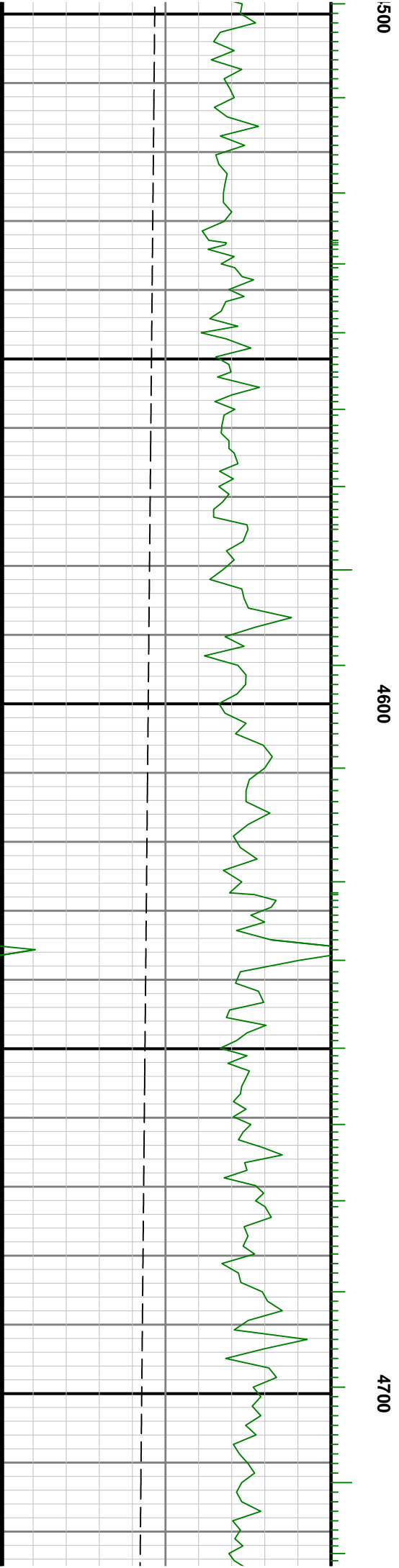


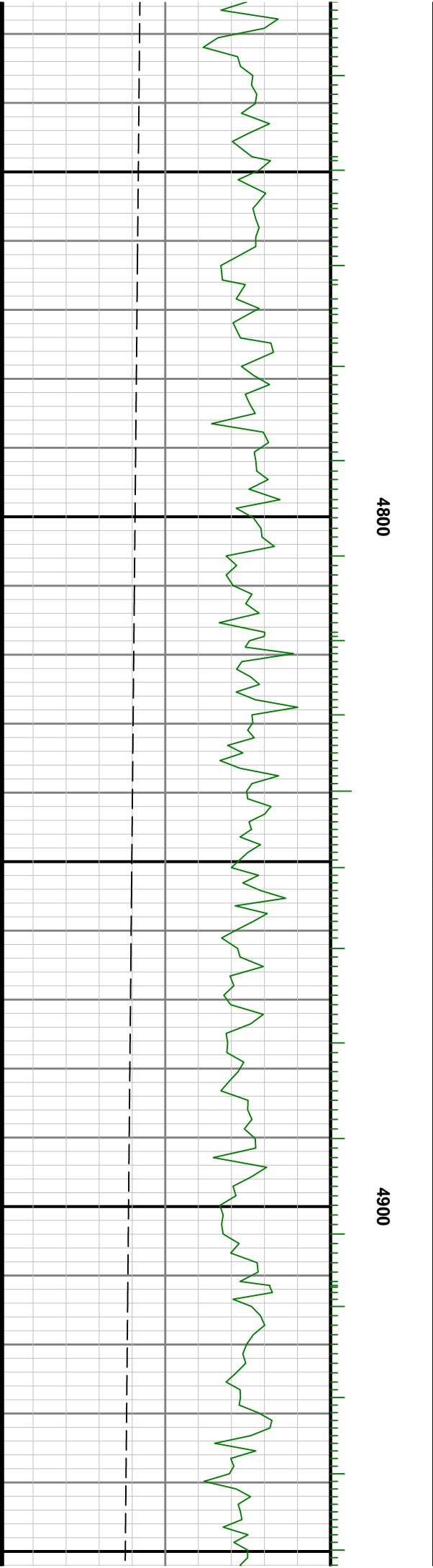
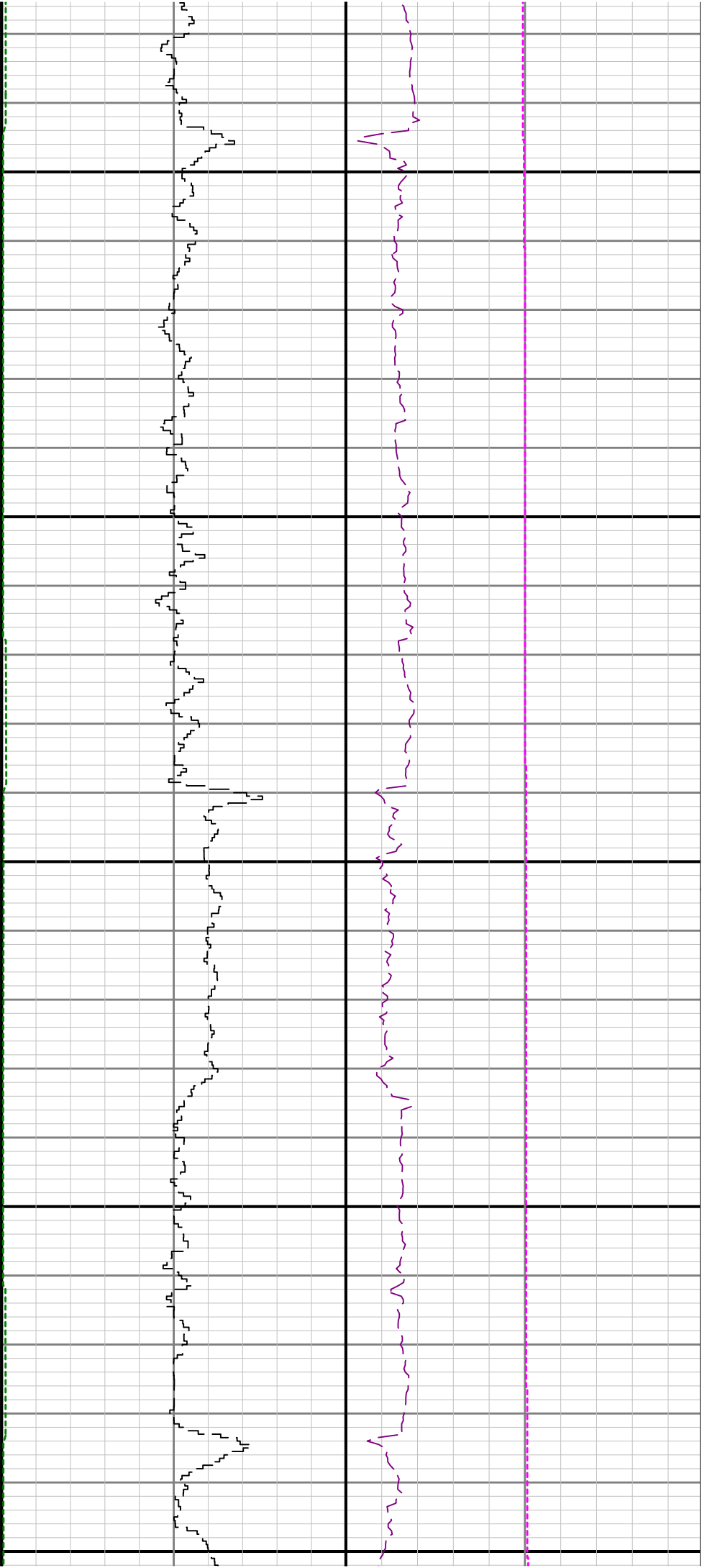
4100

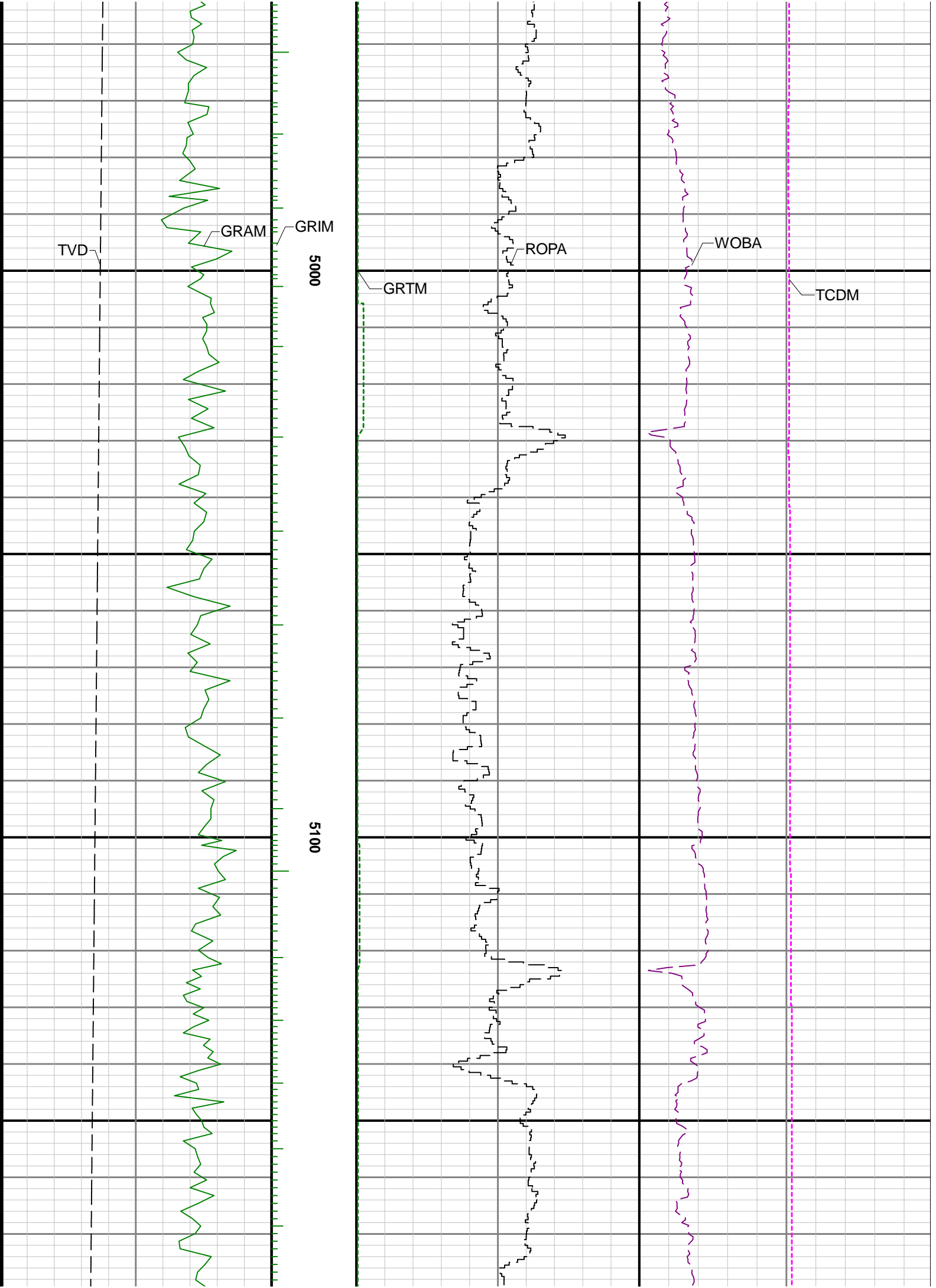
4200









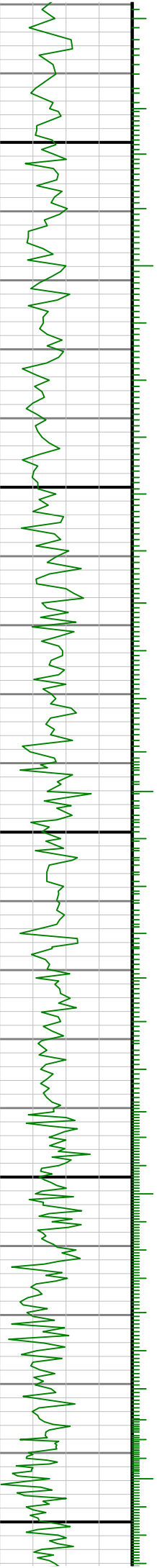


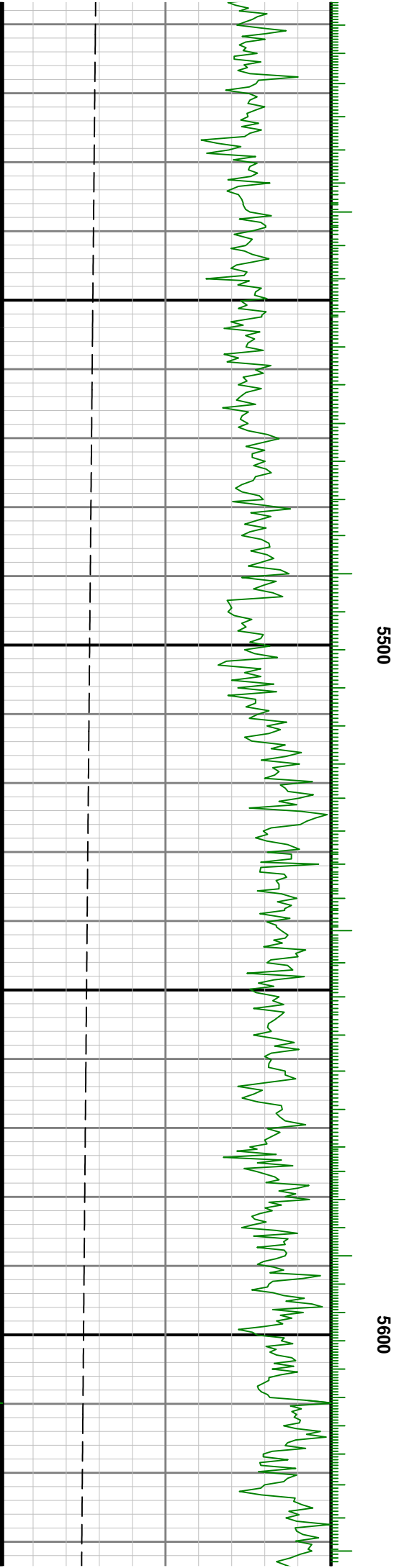


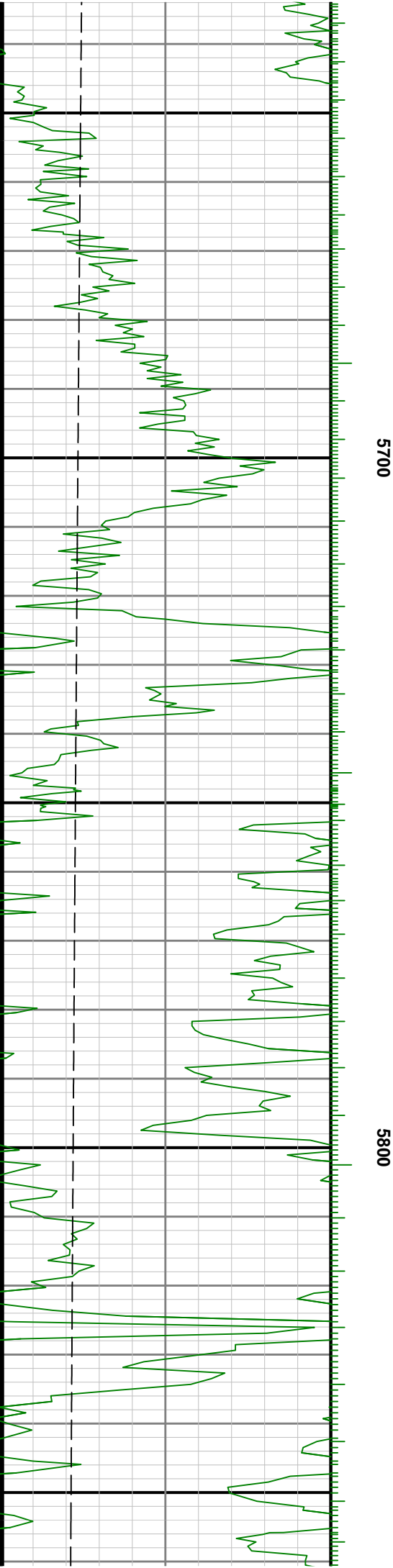
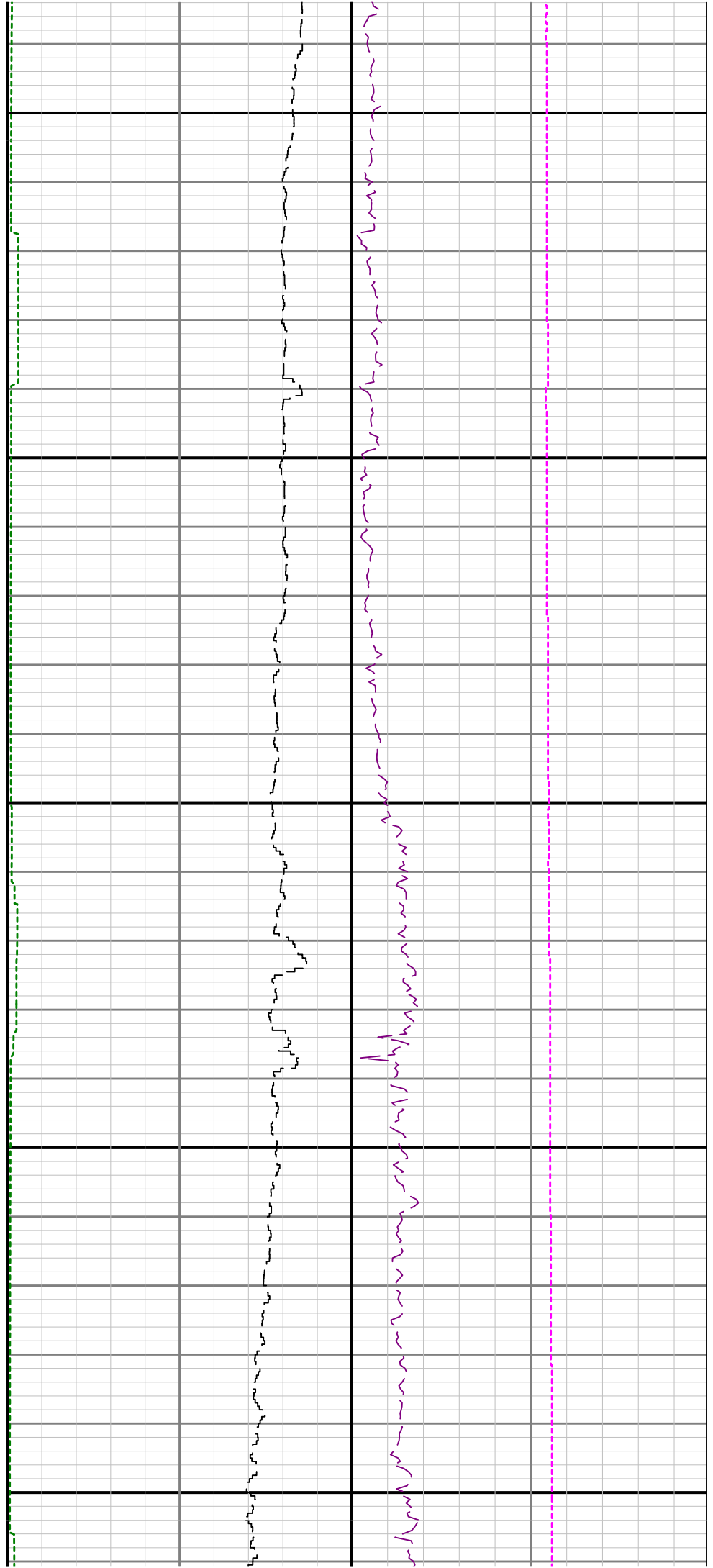
5200

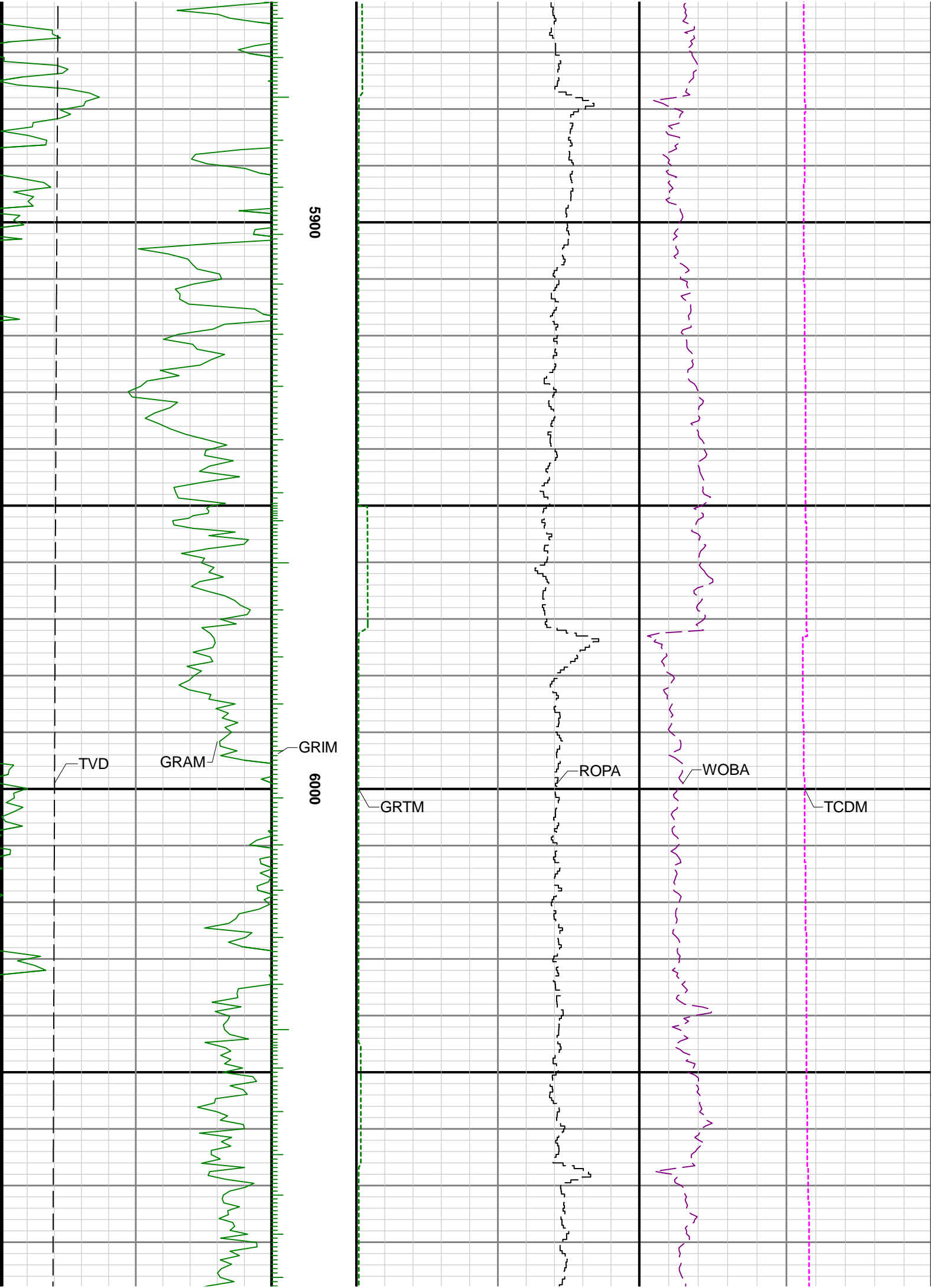
5300

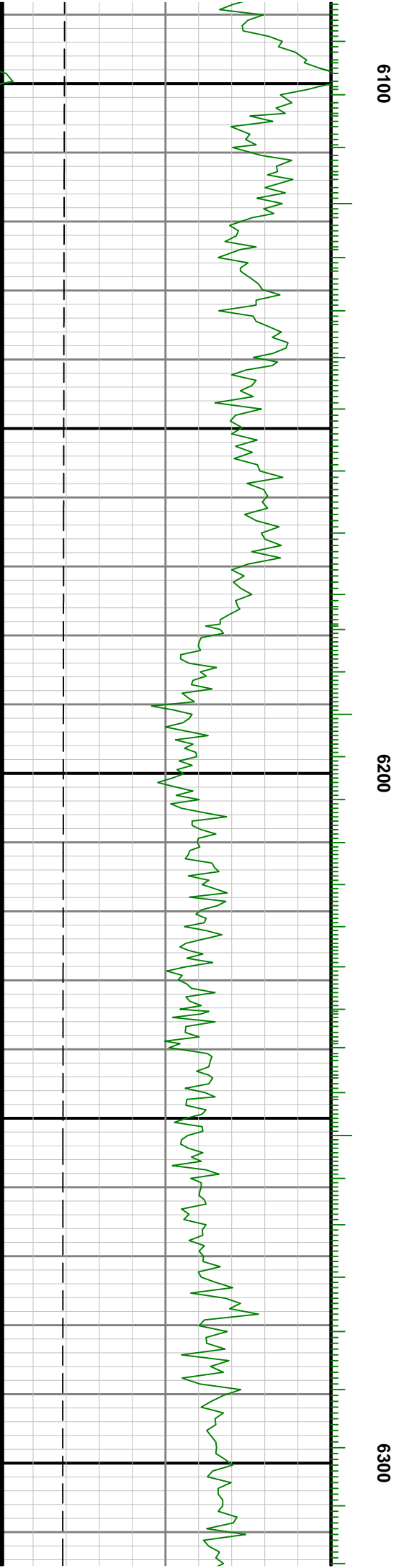
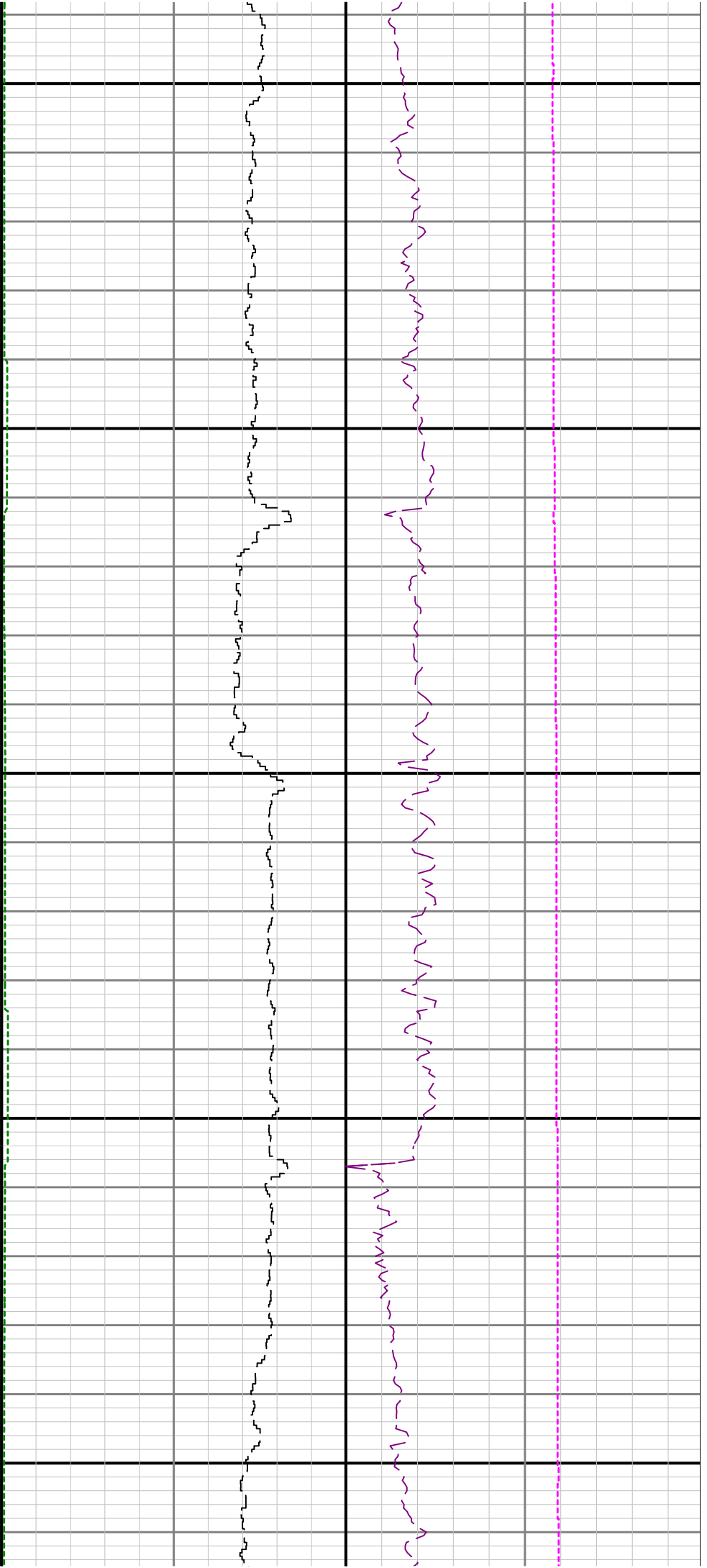
5400

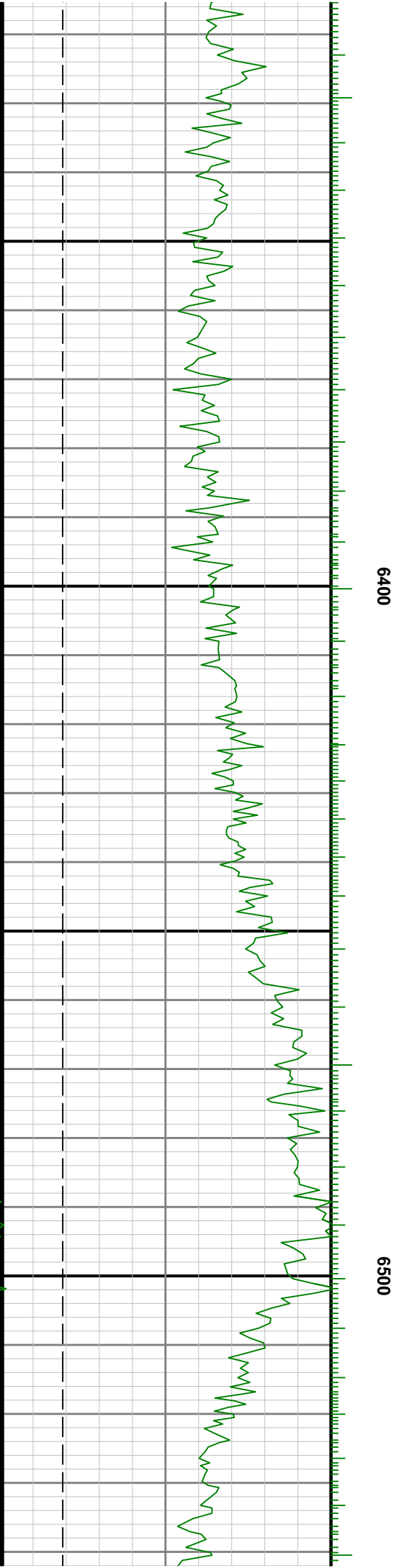
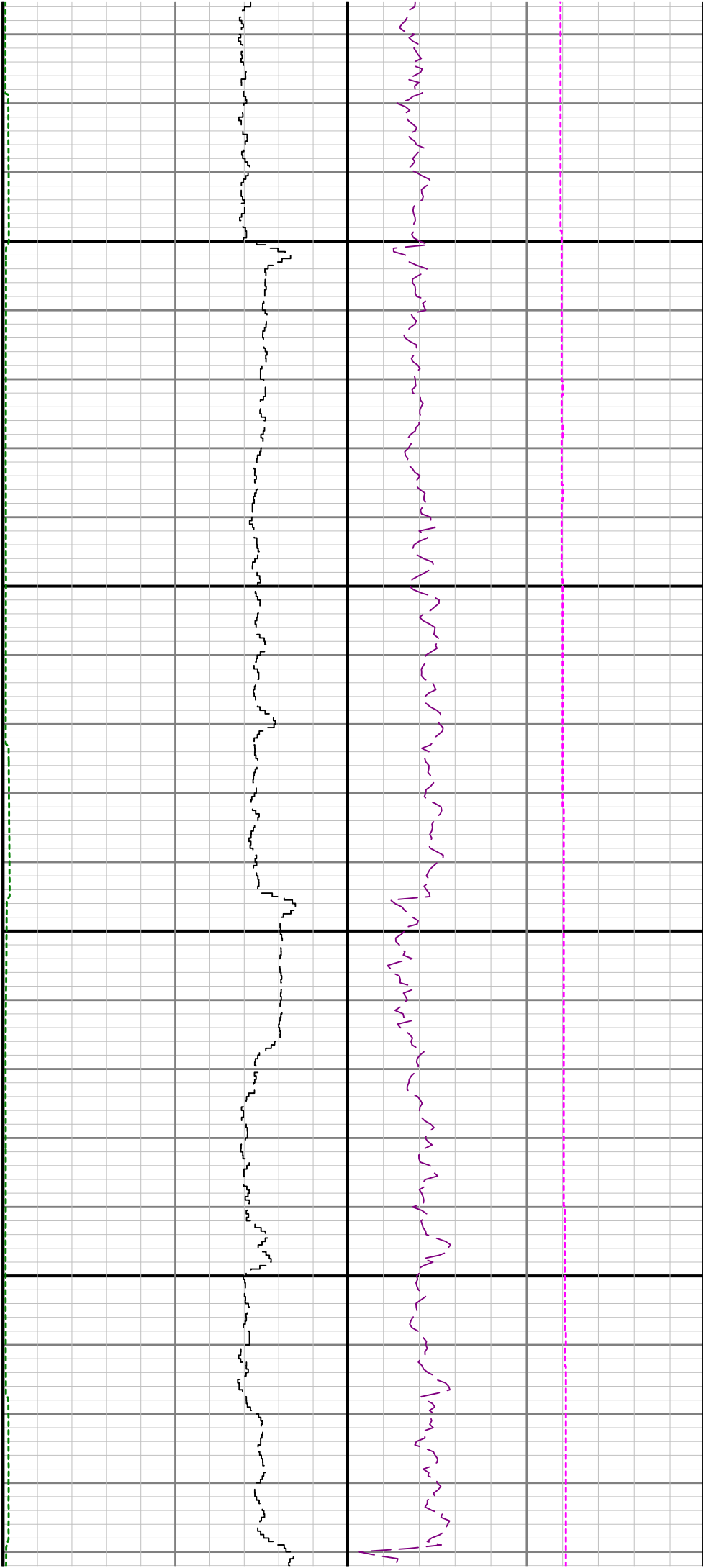


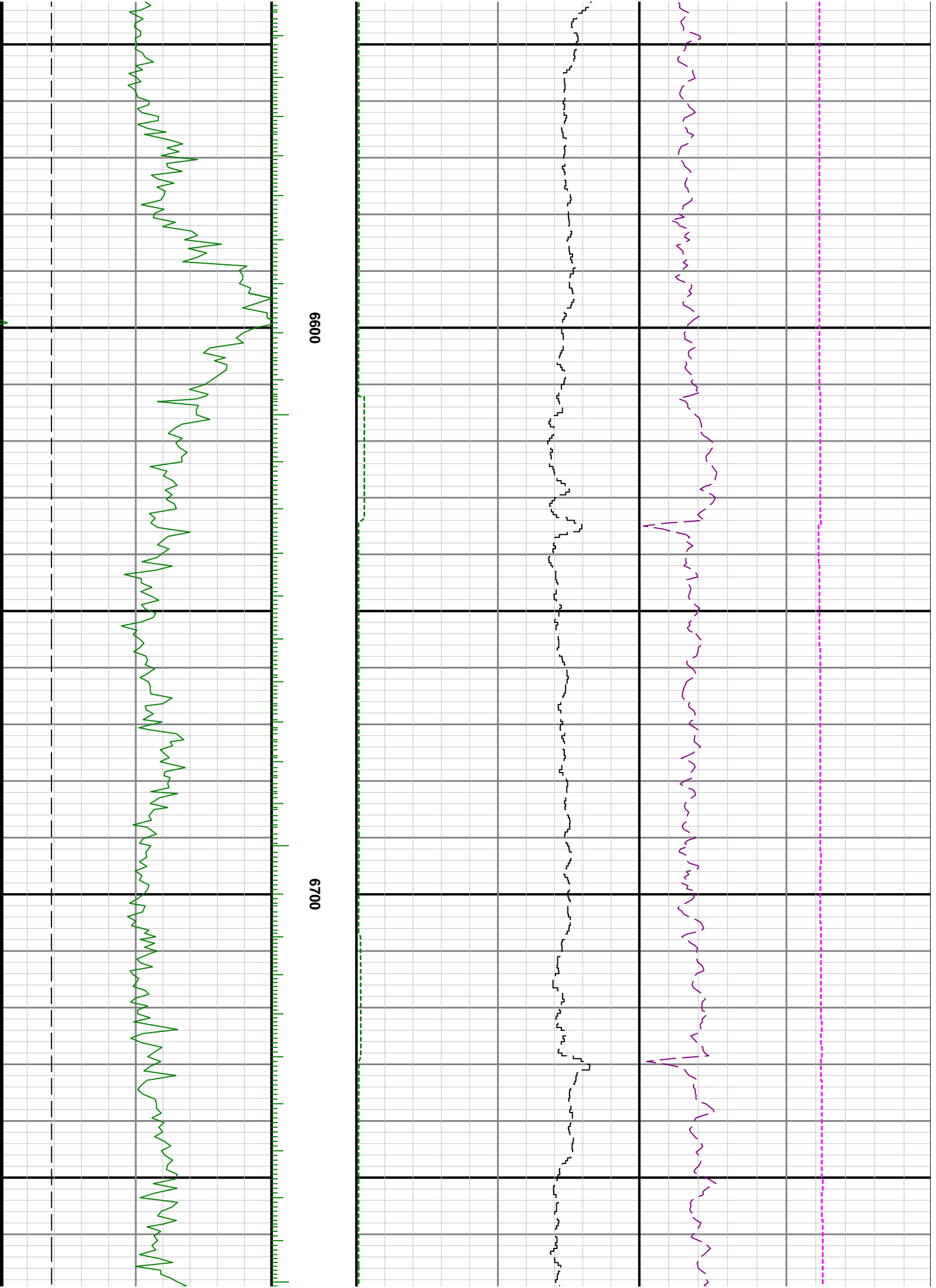


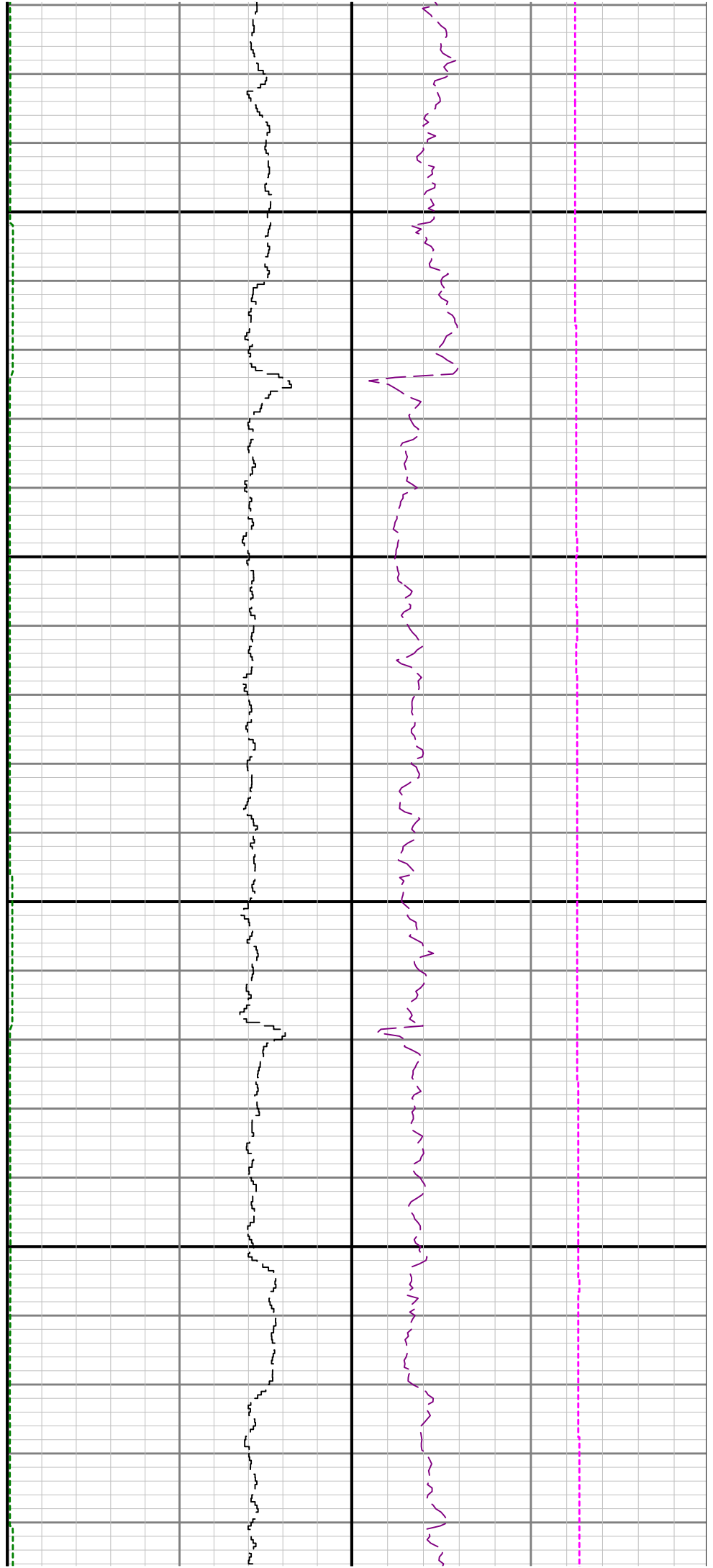
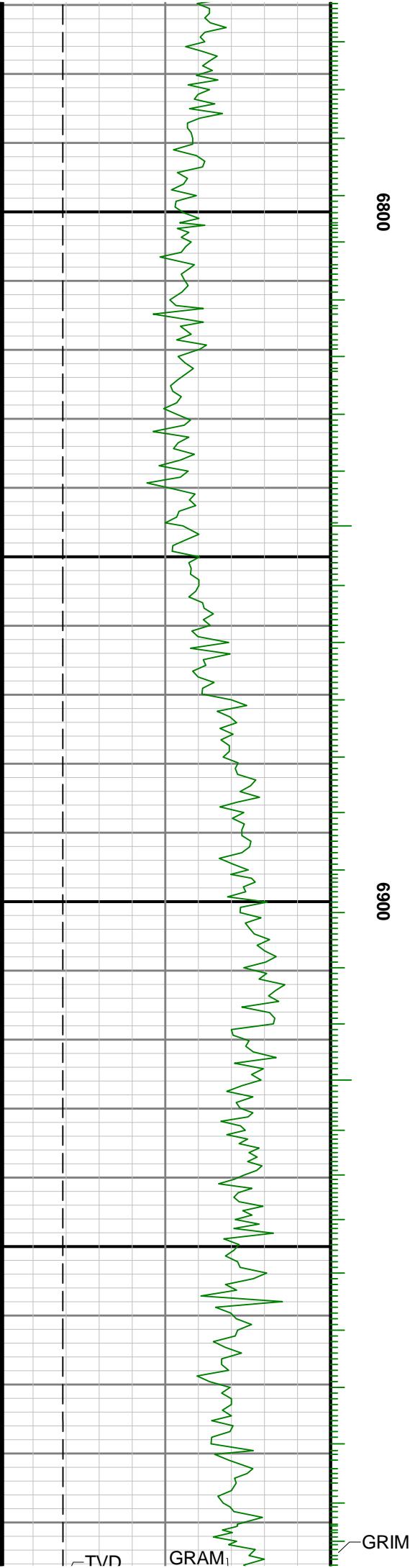


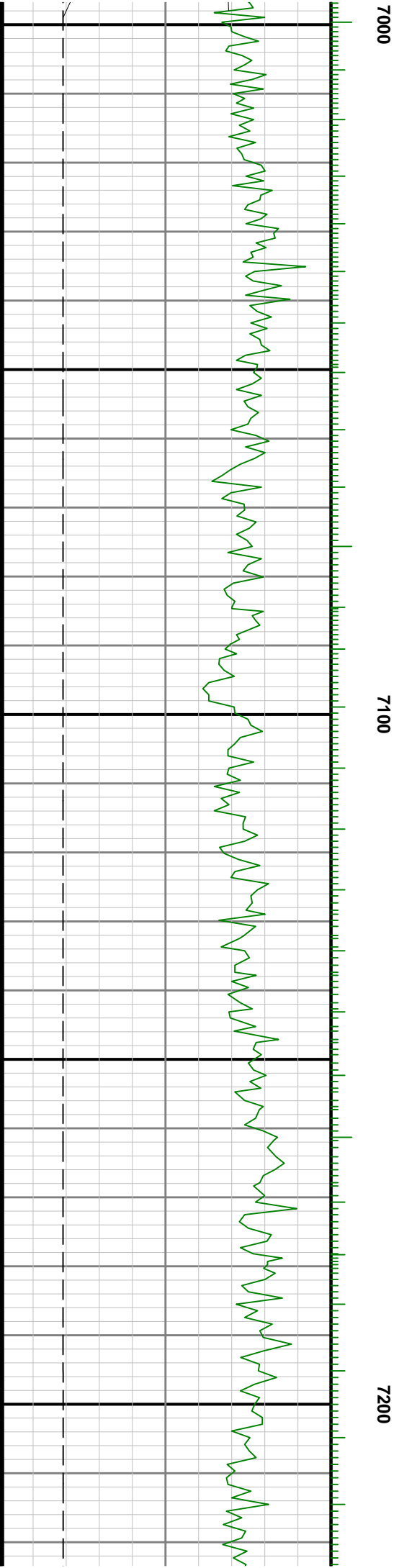
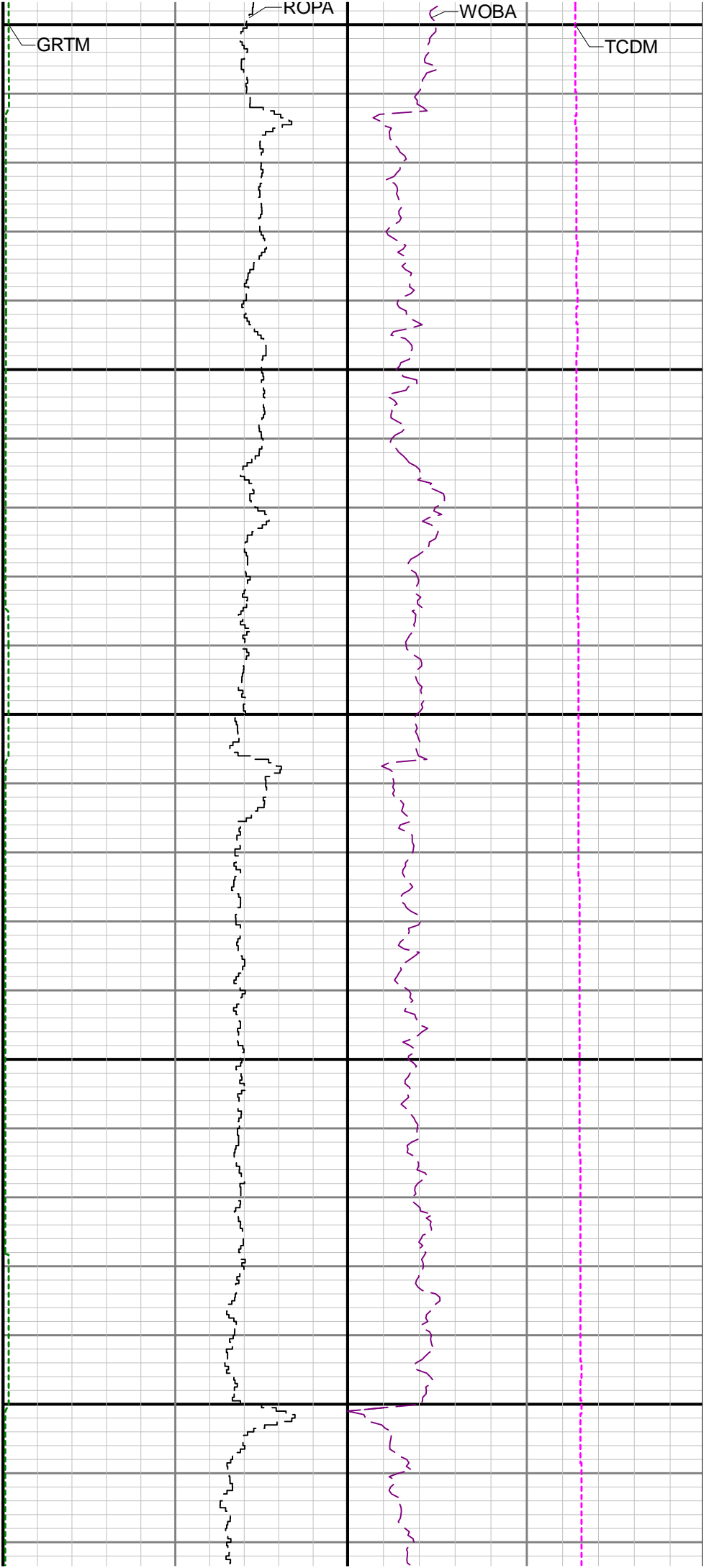


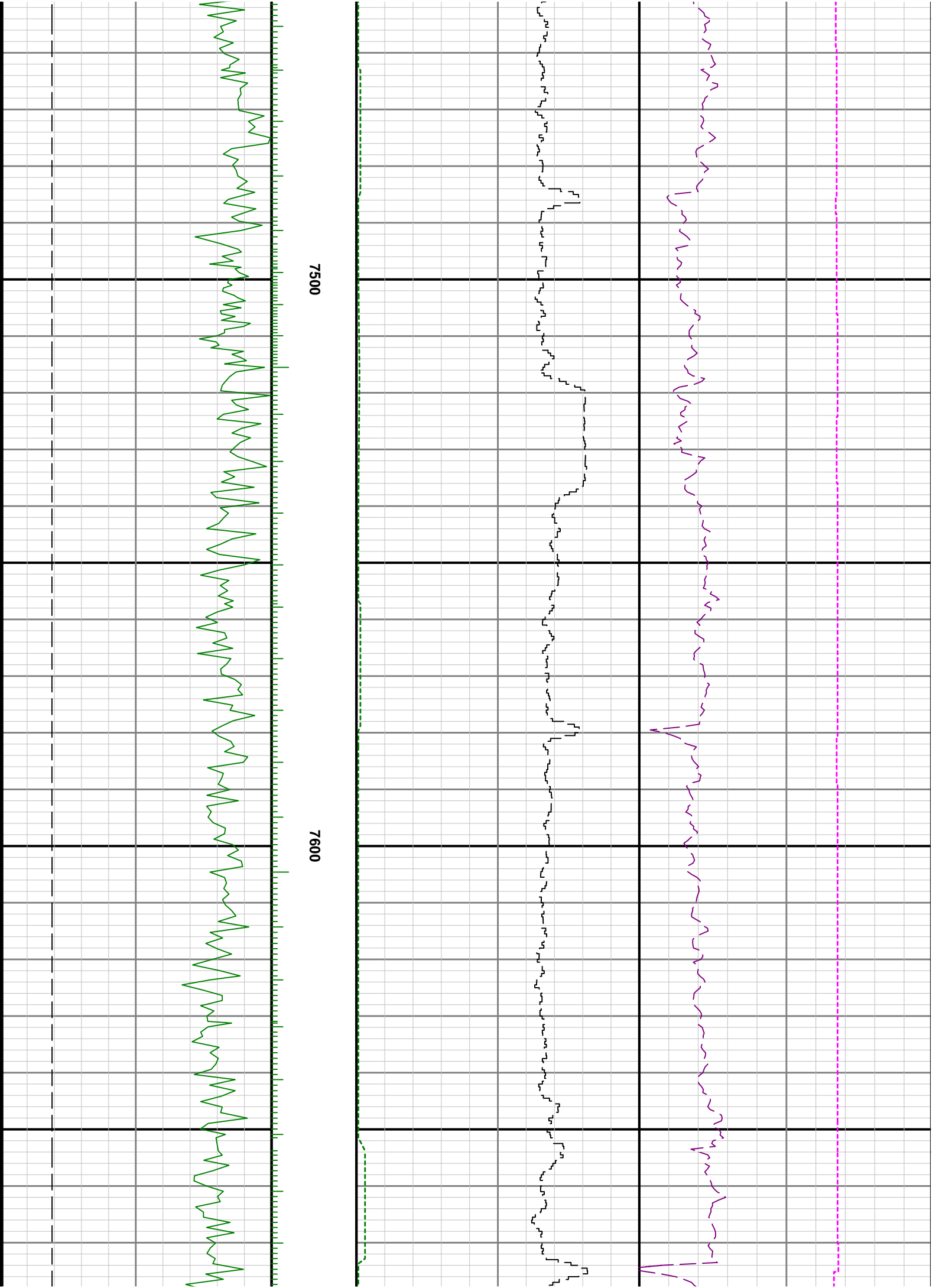


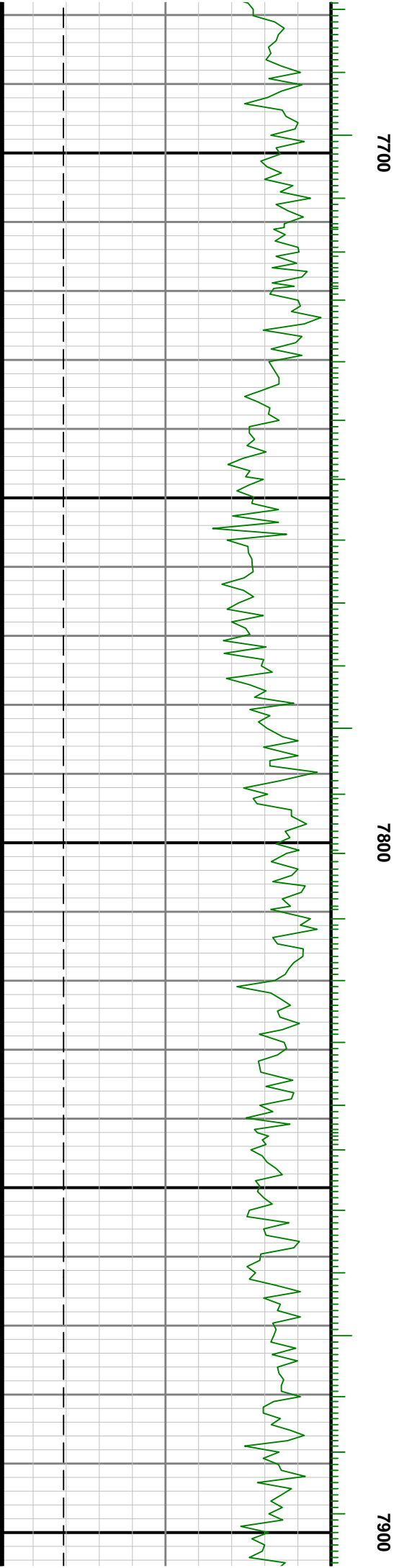
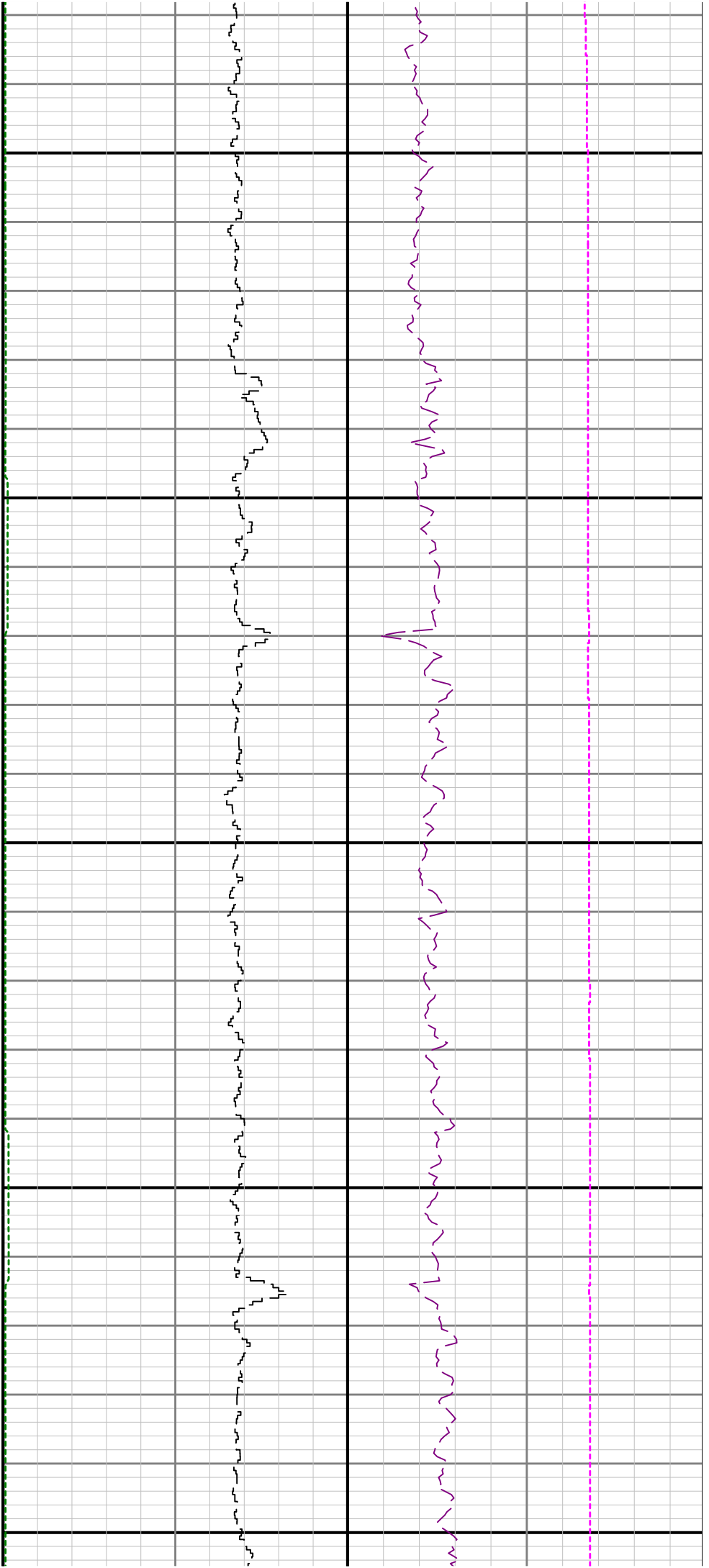


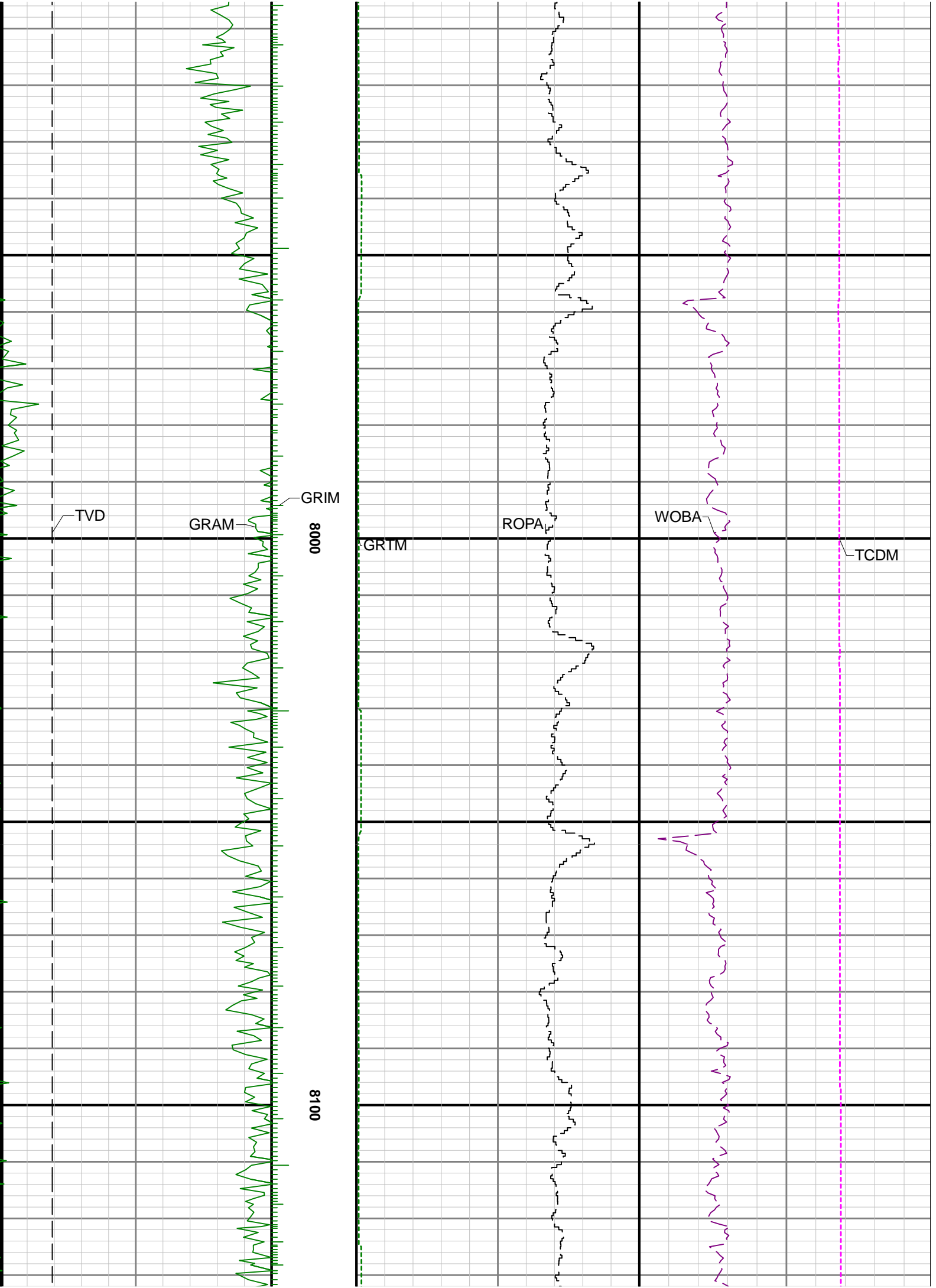


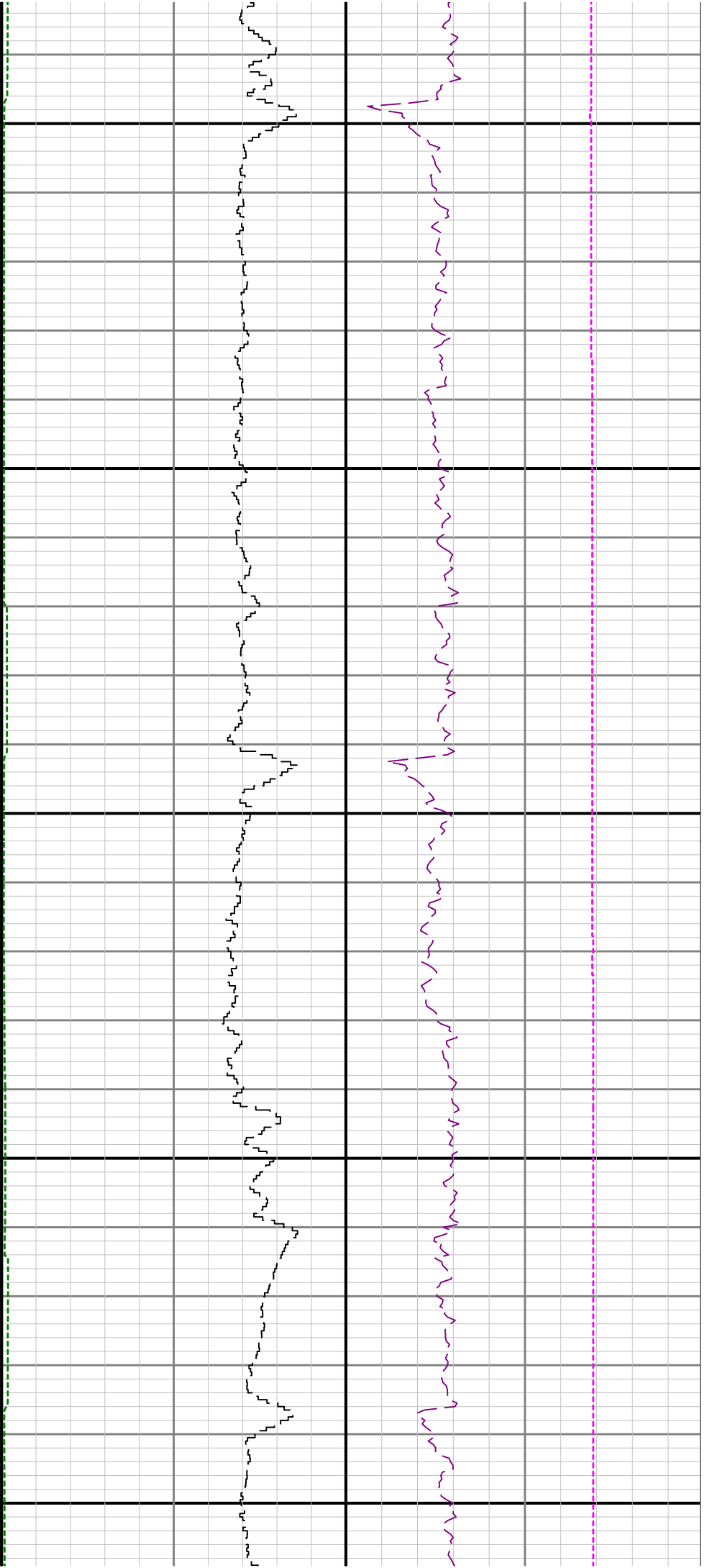






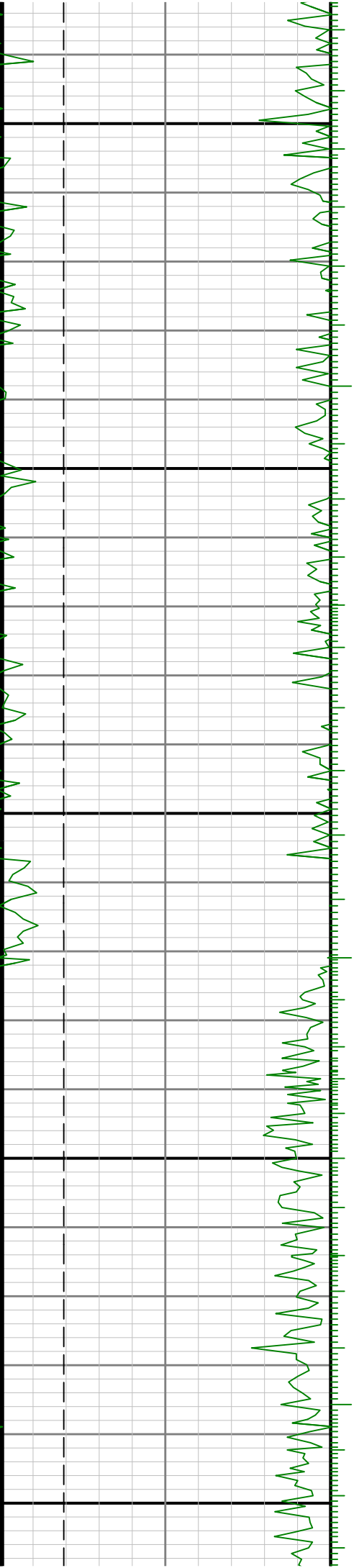


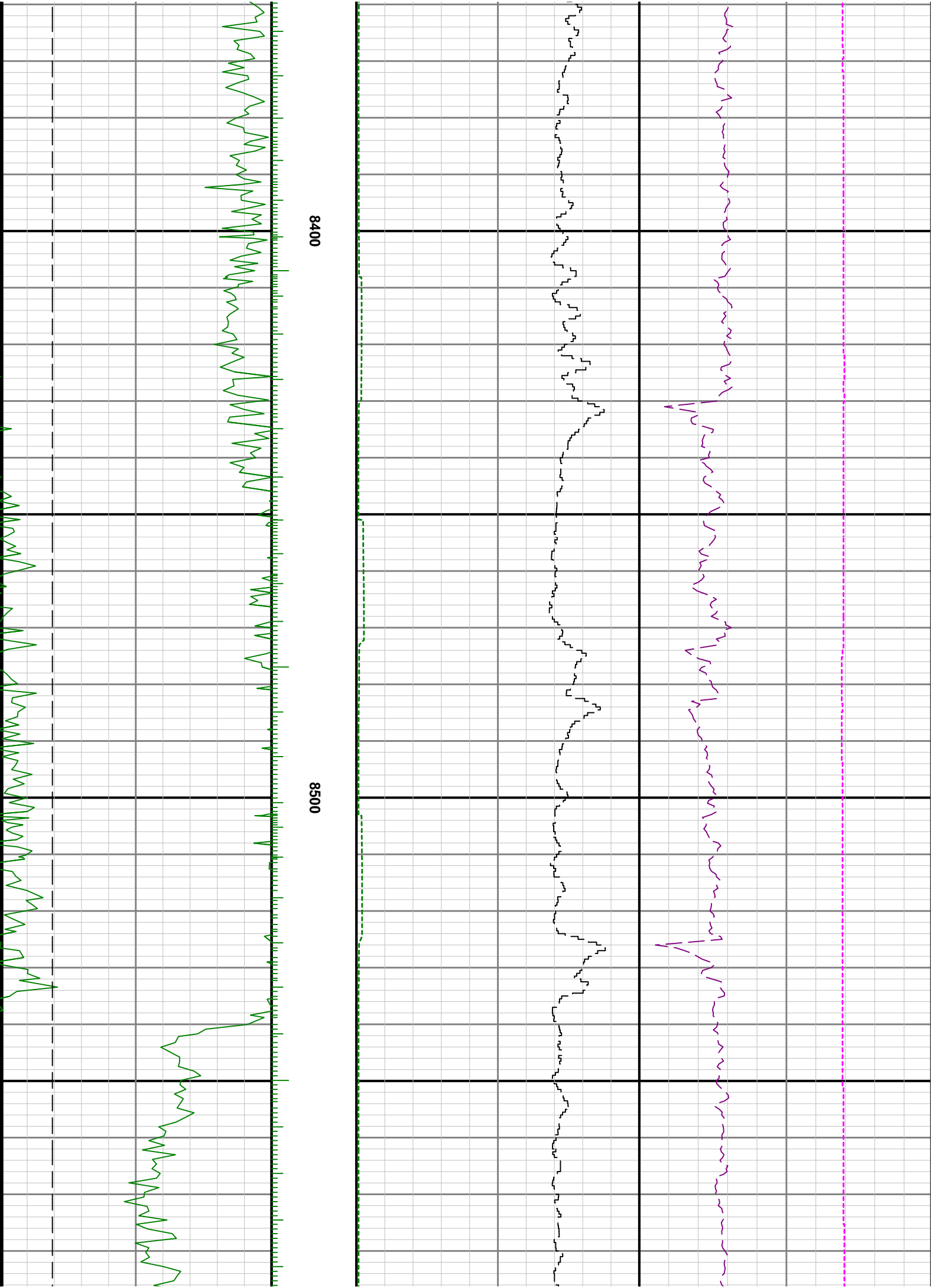


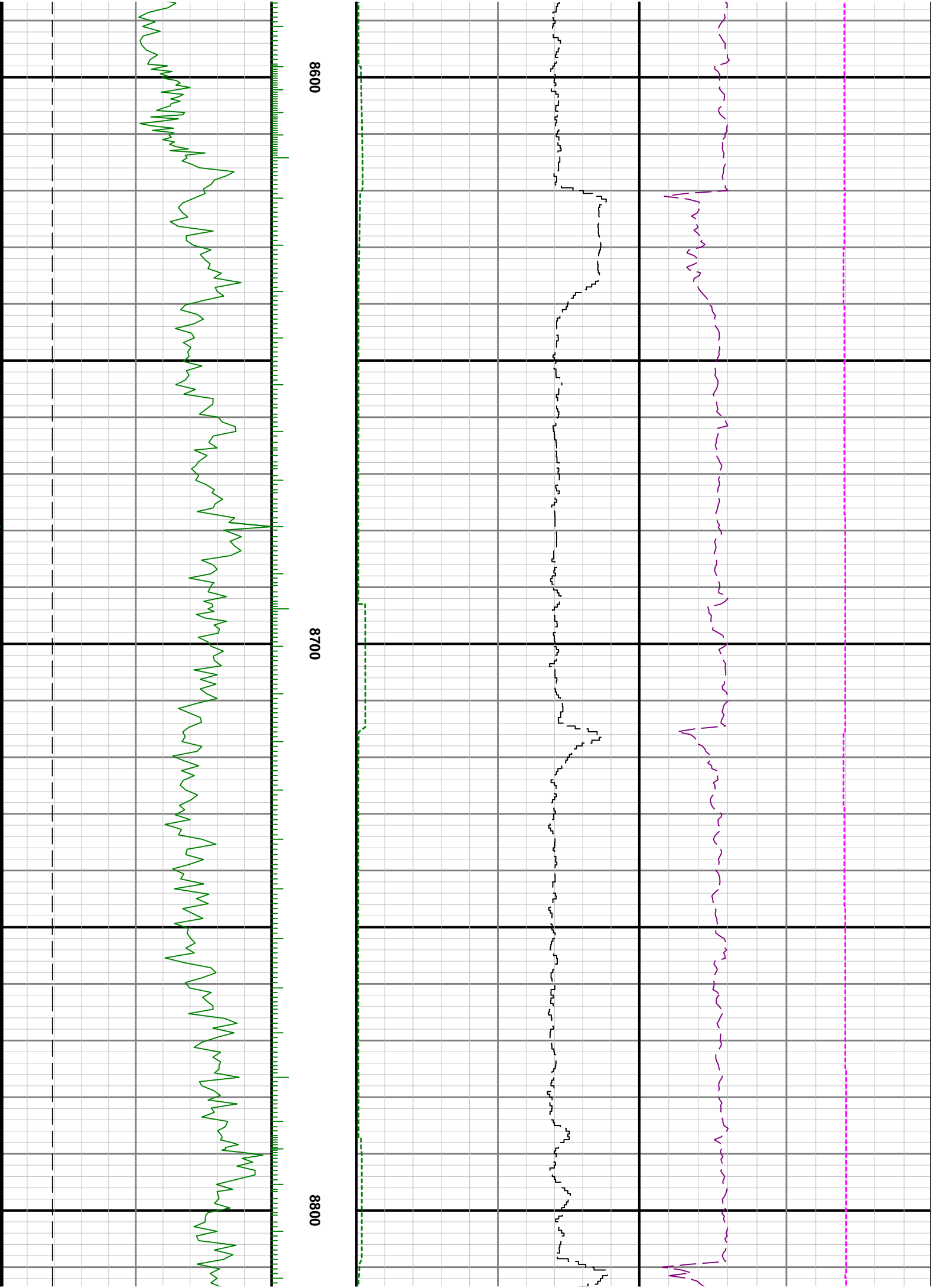


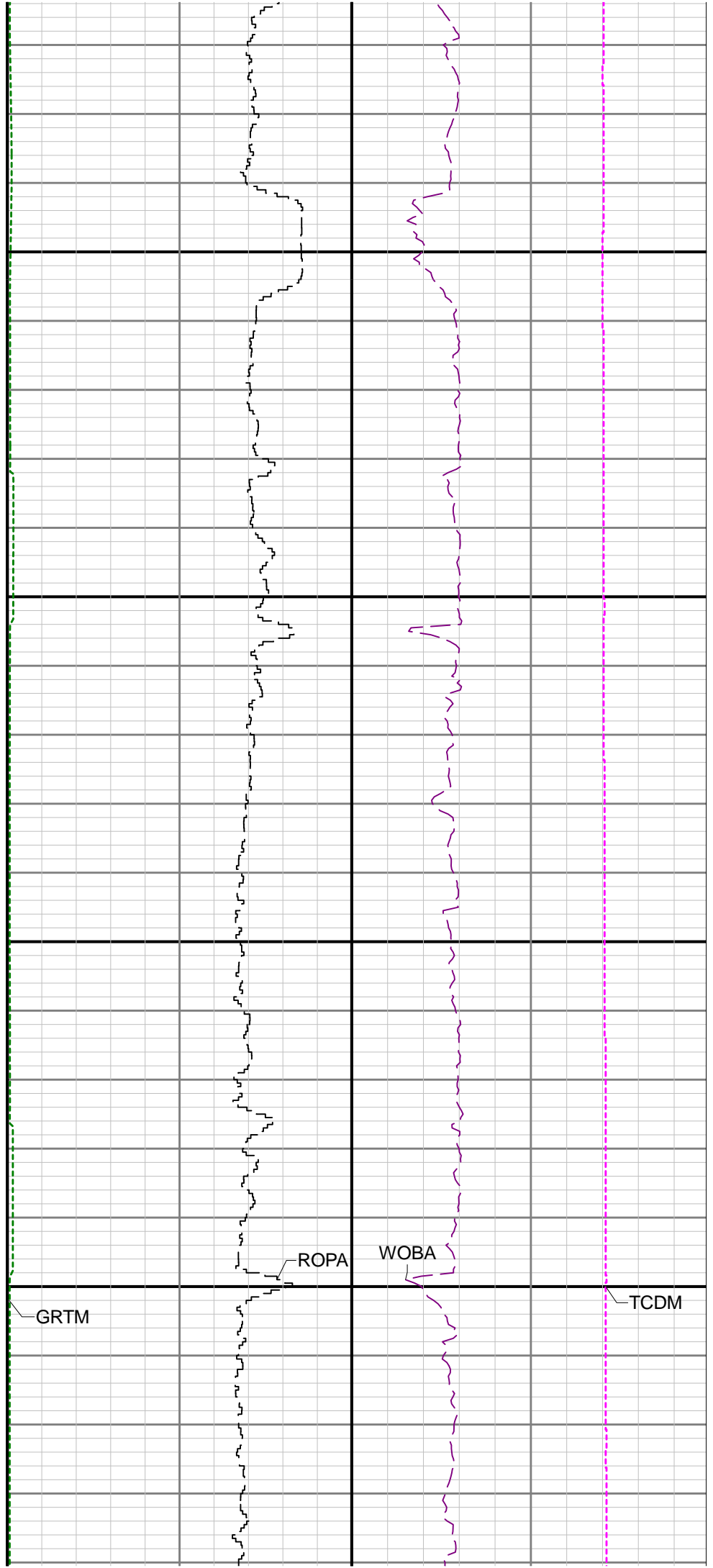
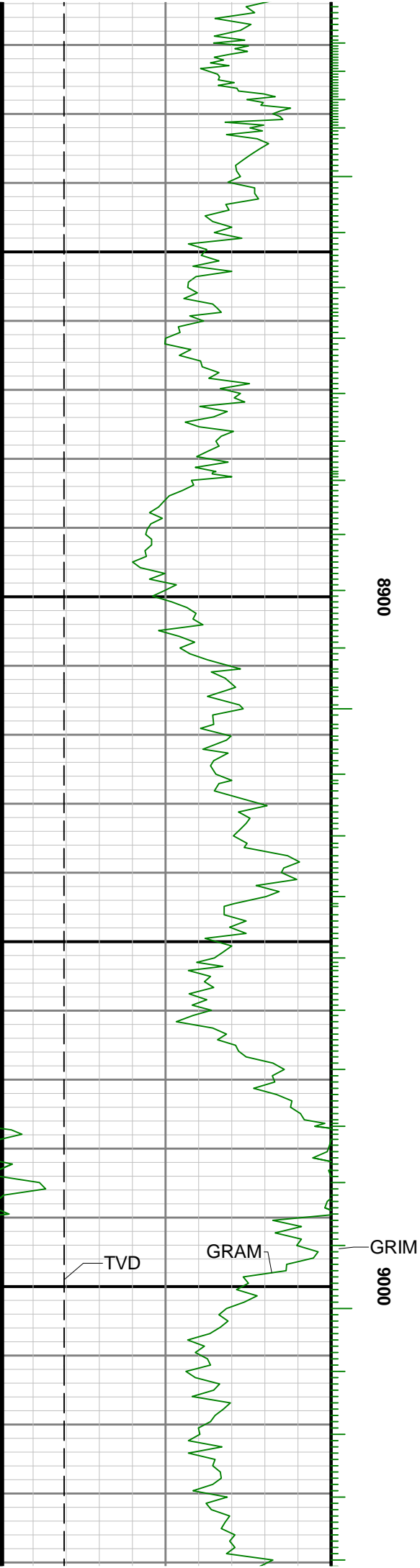
8200

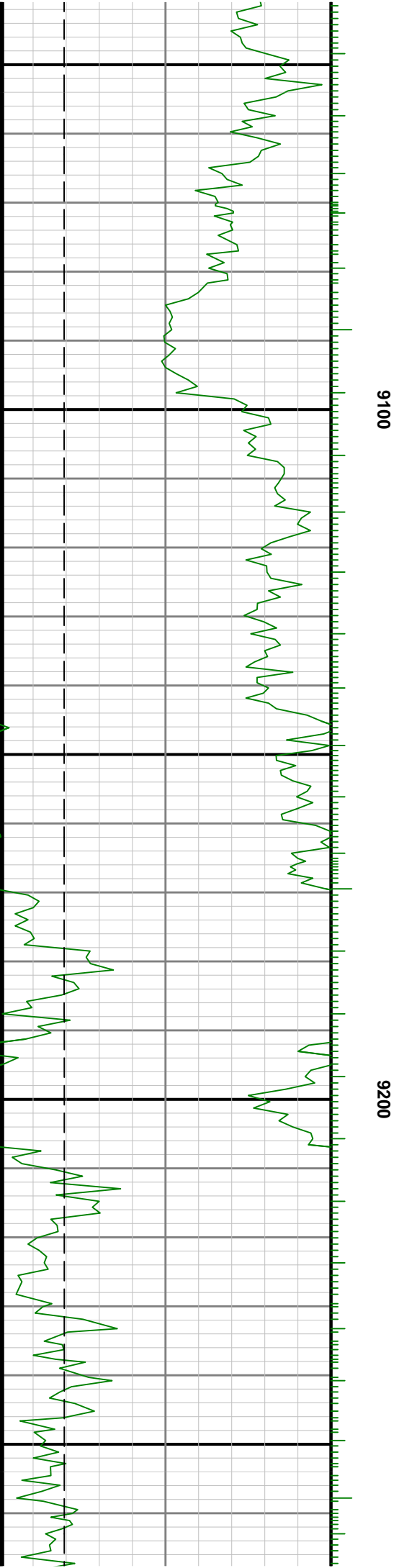
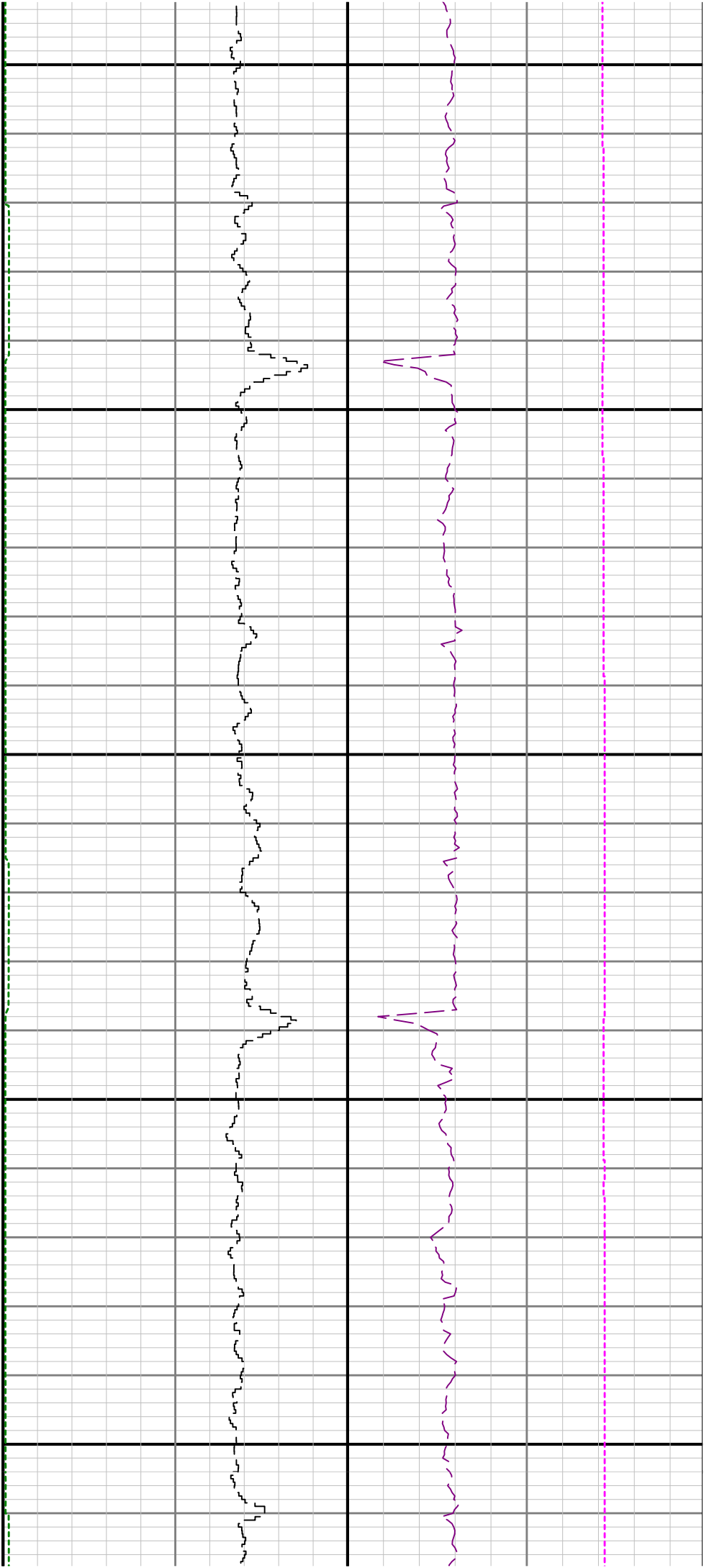
8300

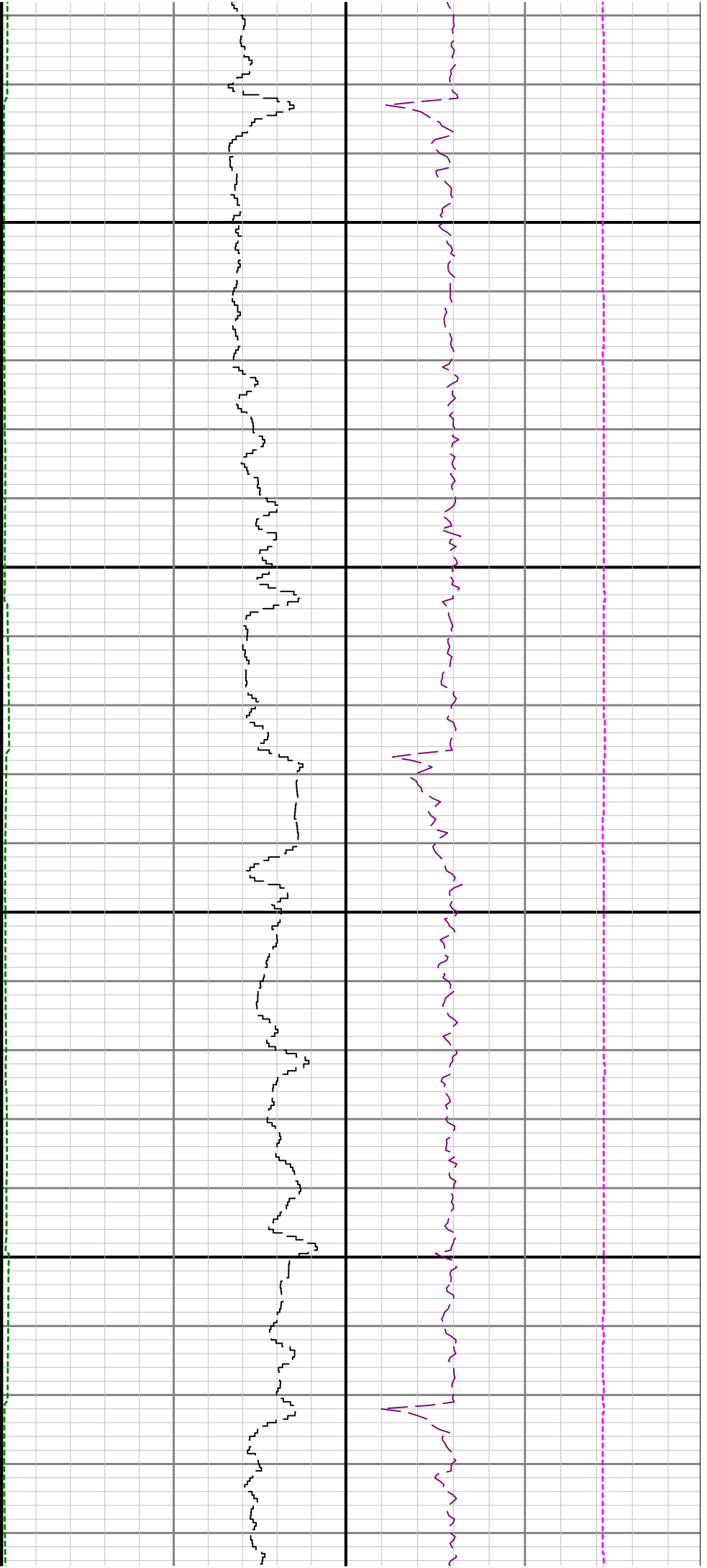






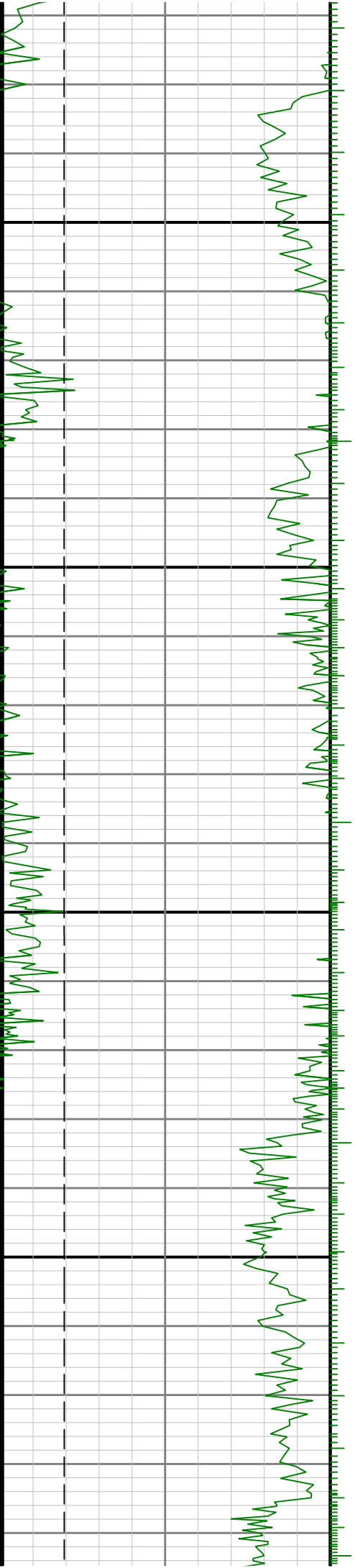


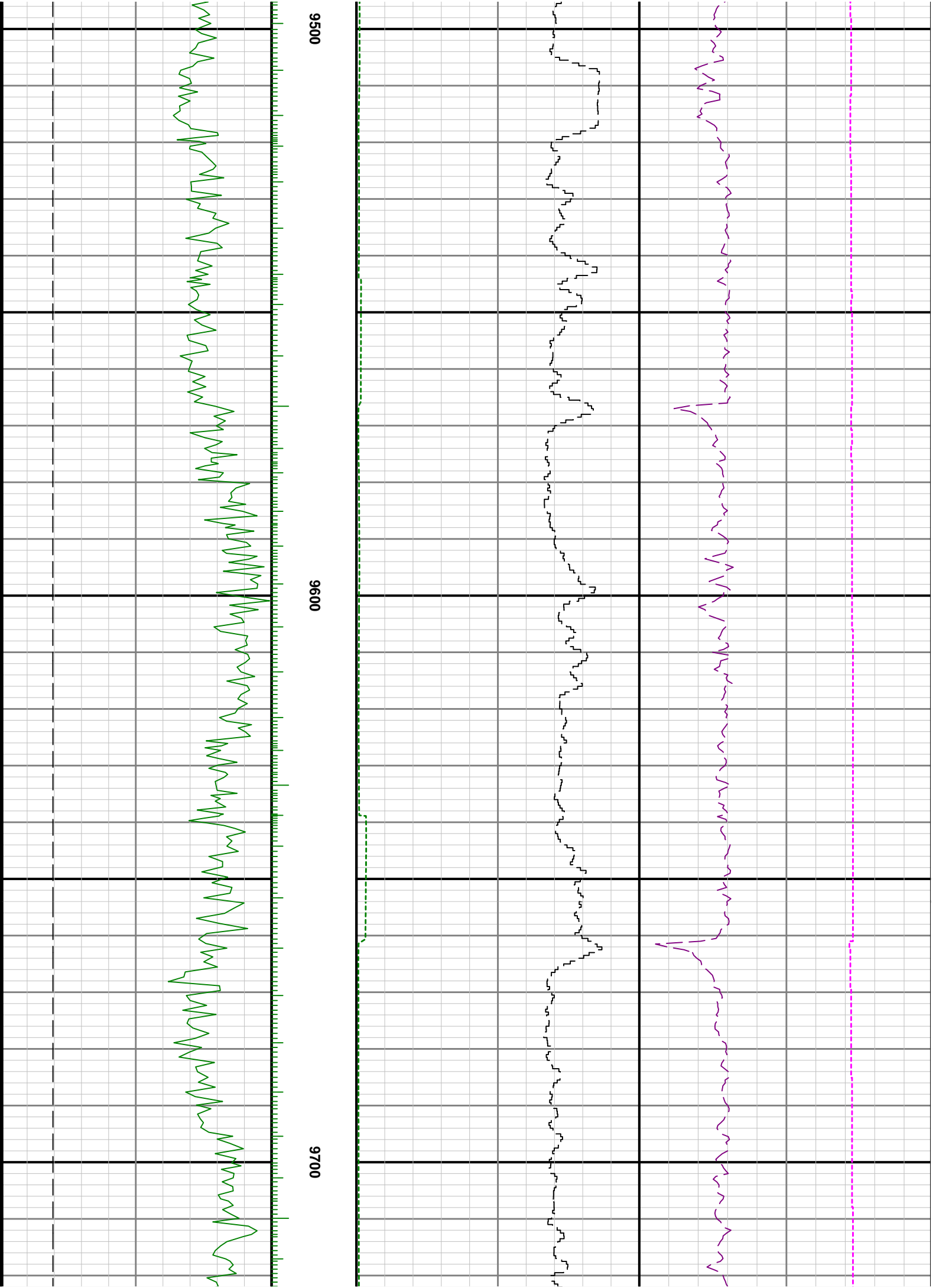


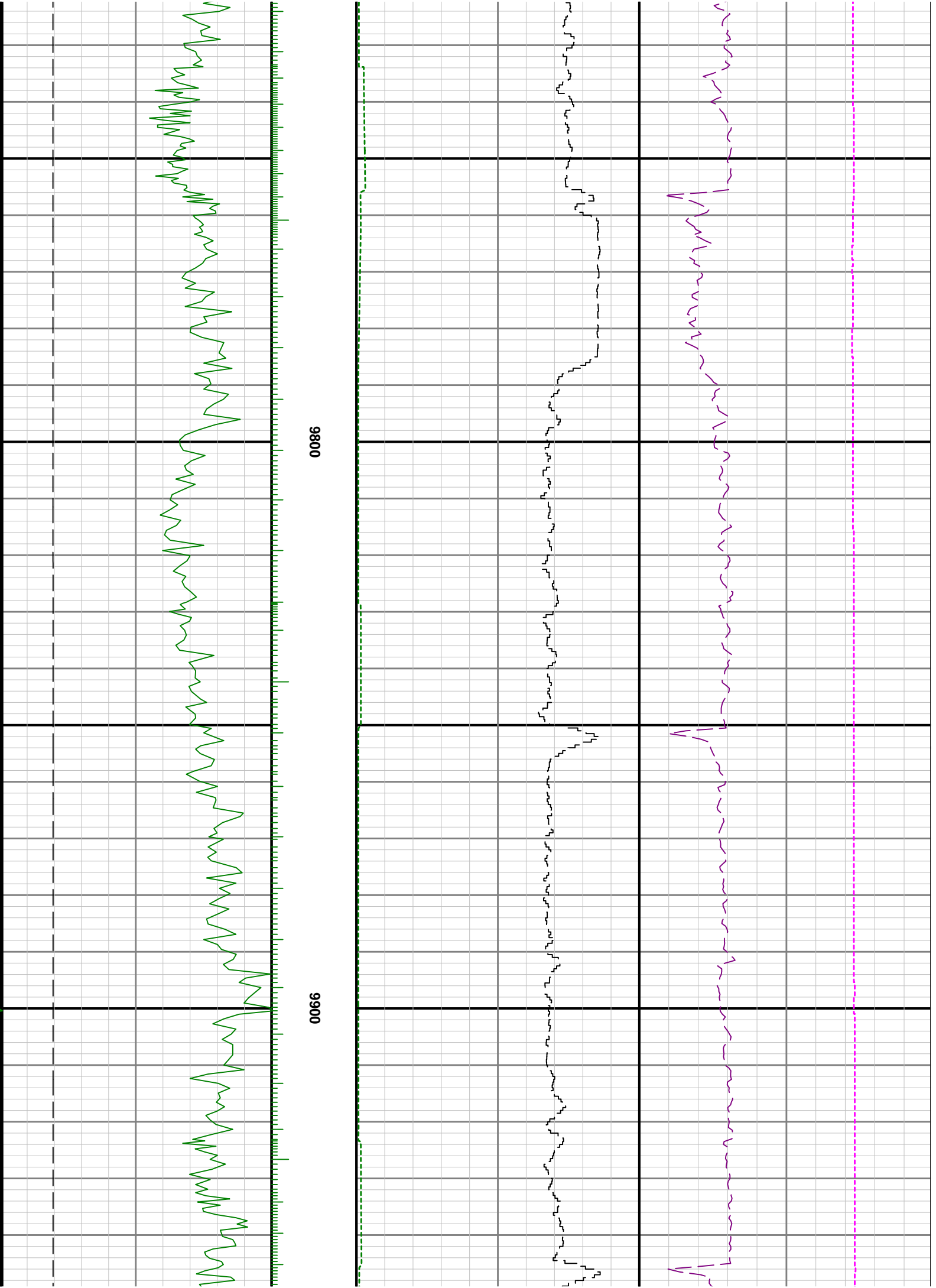


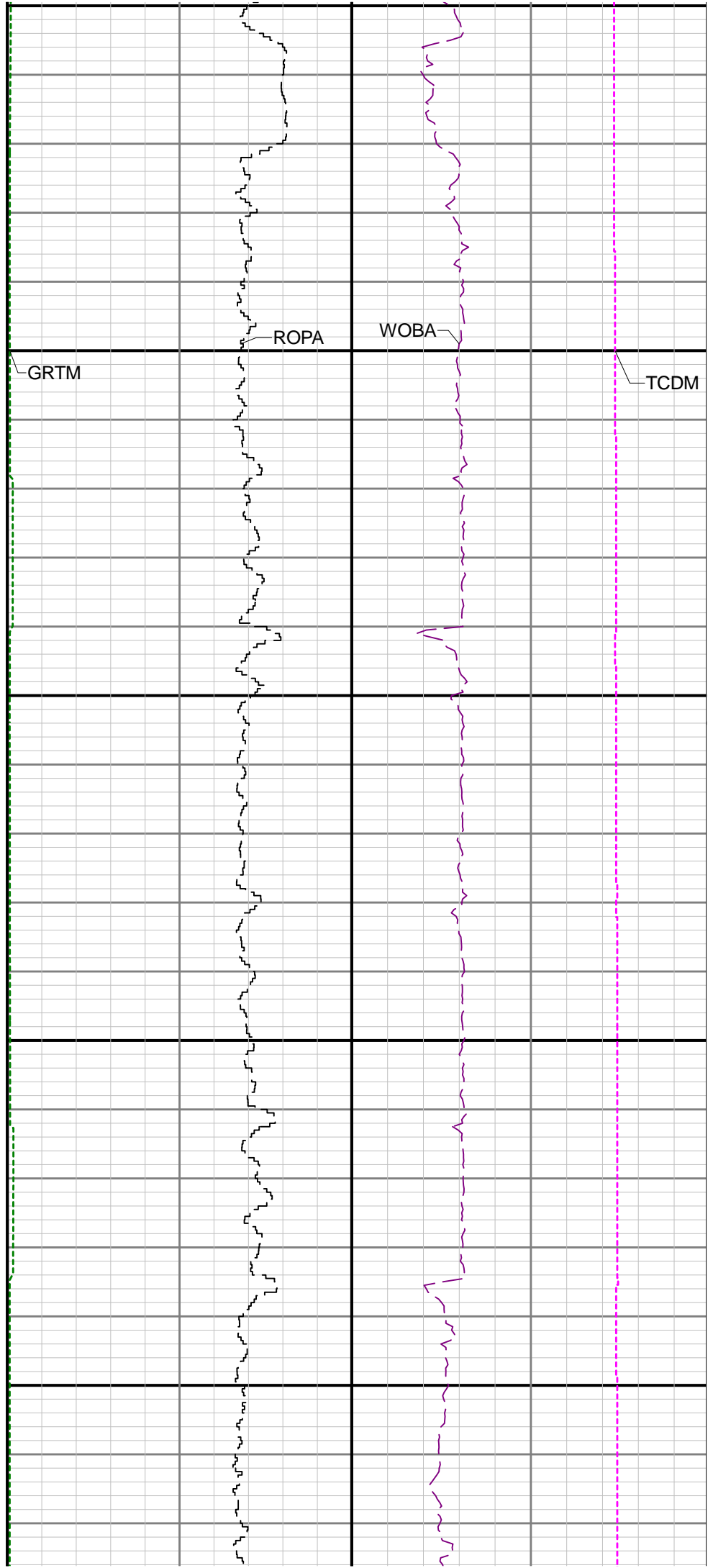
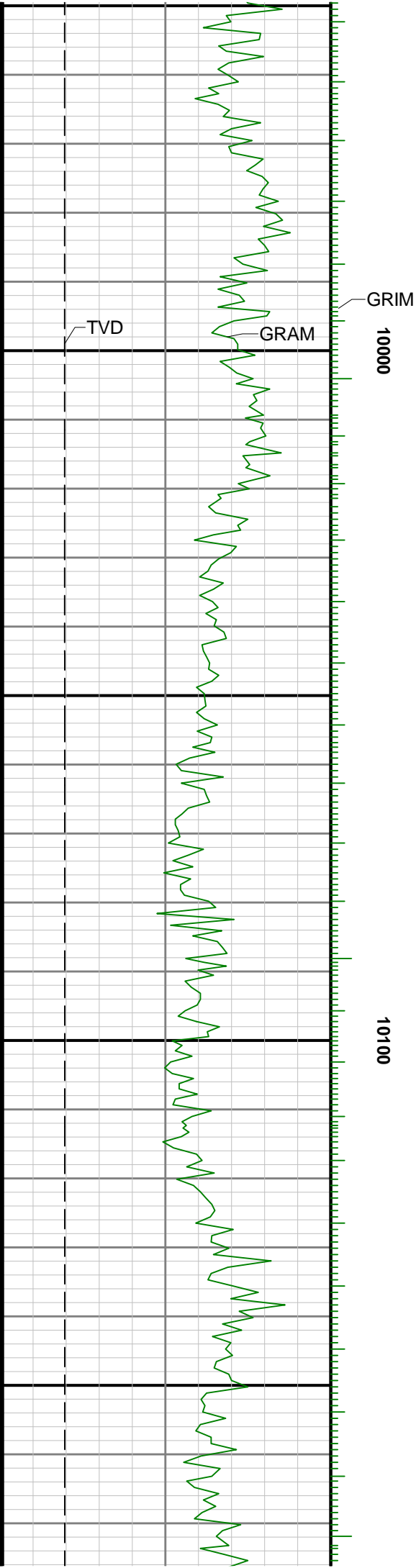
9300

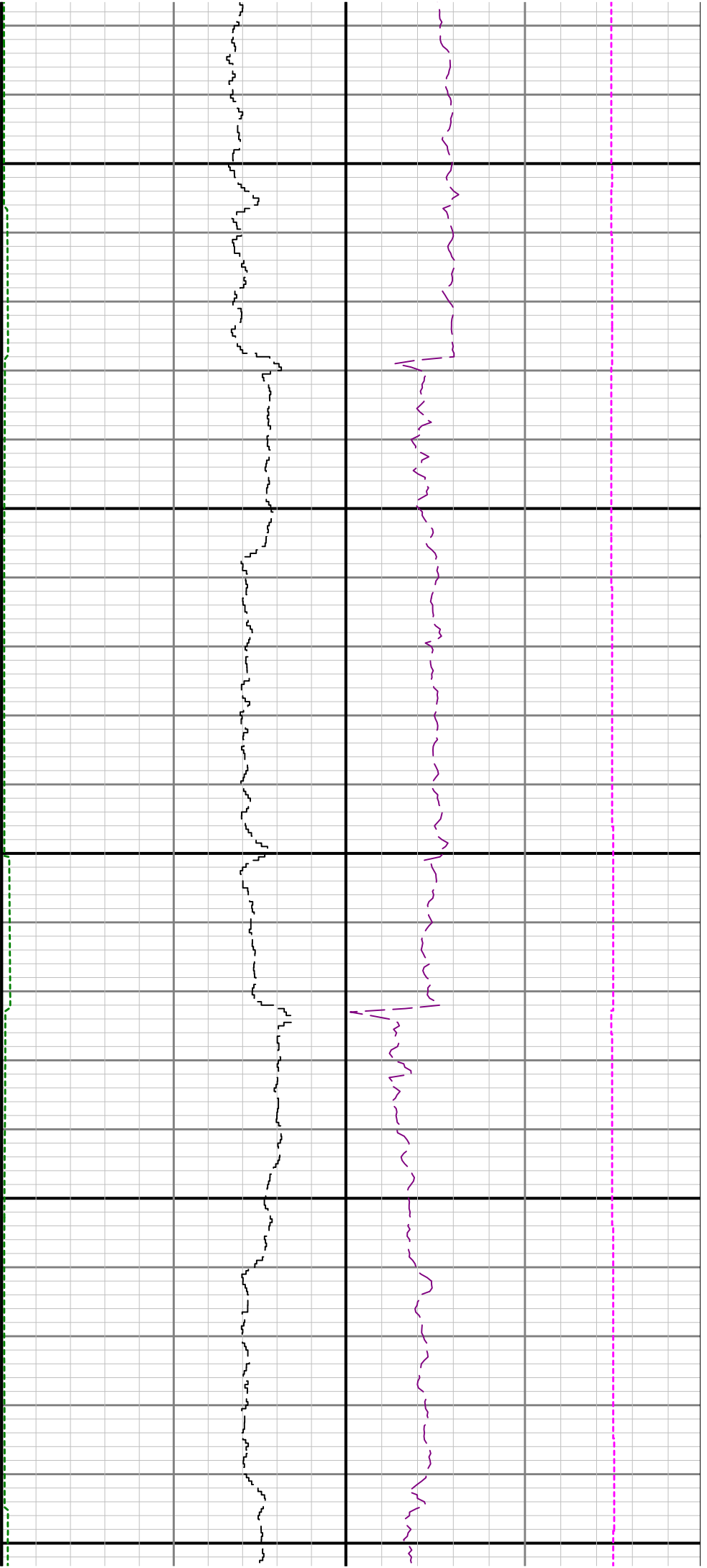
9400







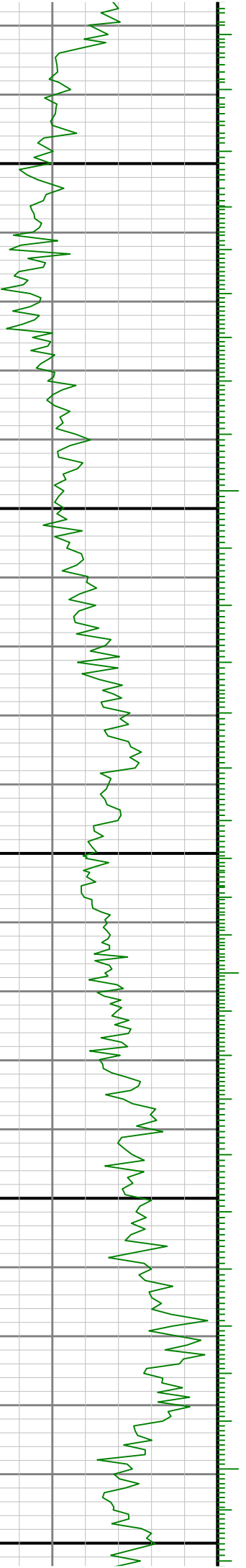


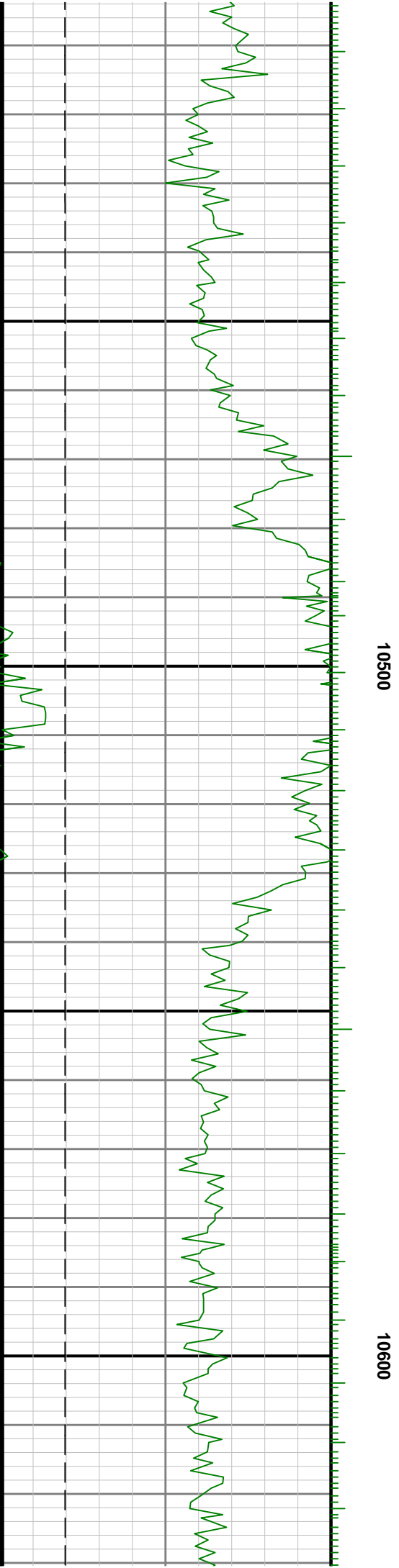
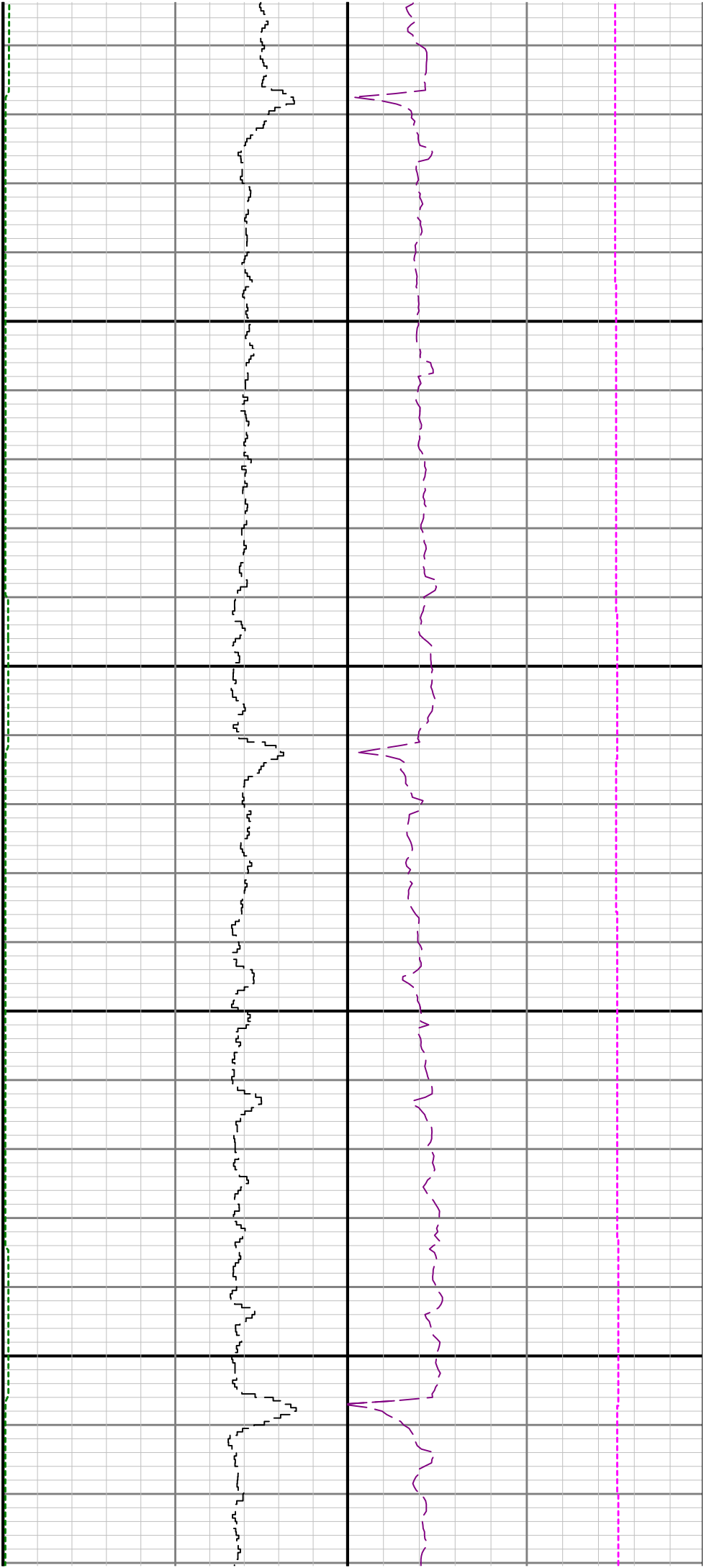


10200

10300

10400

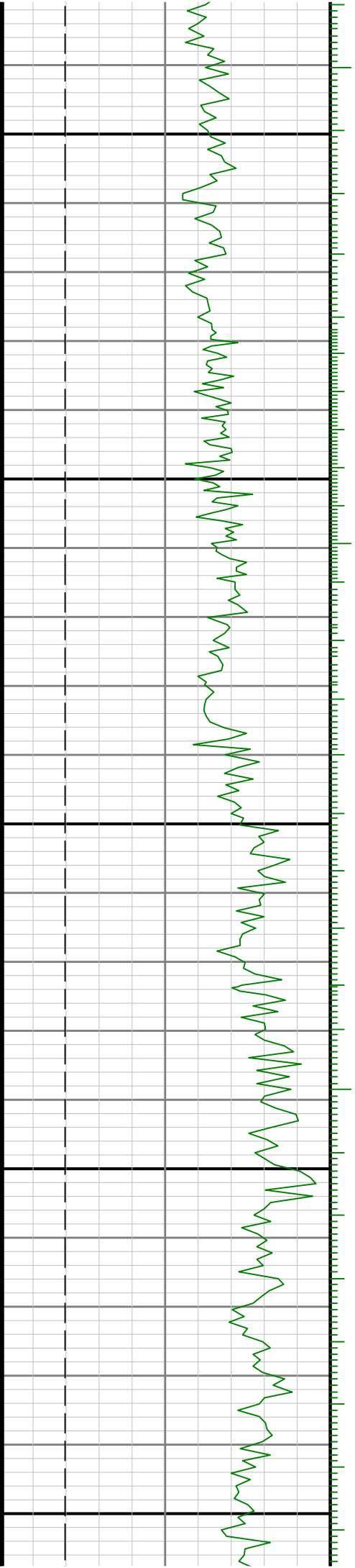


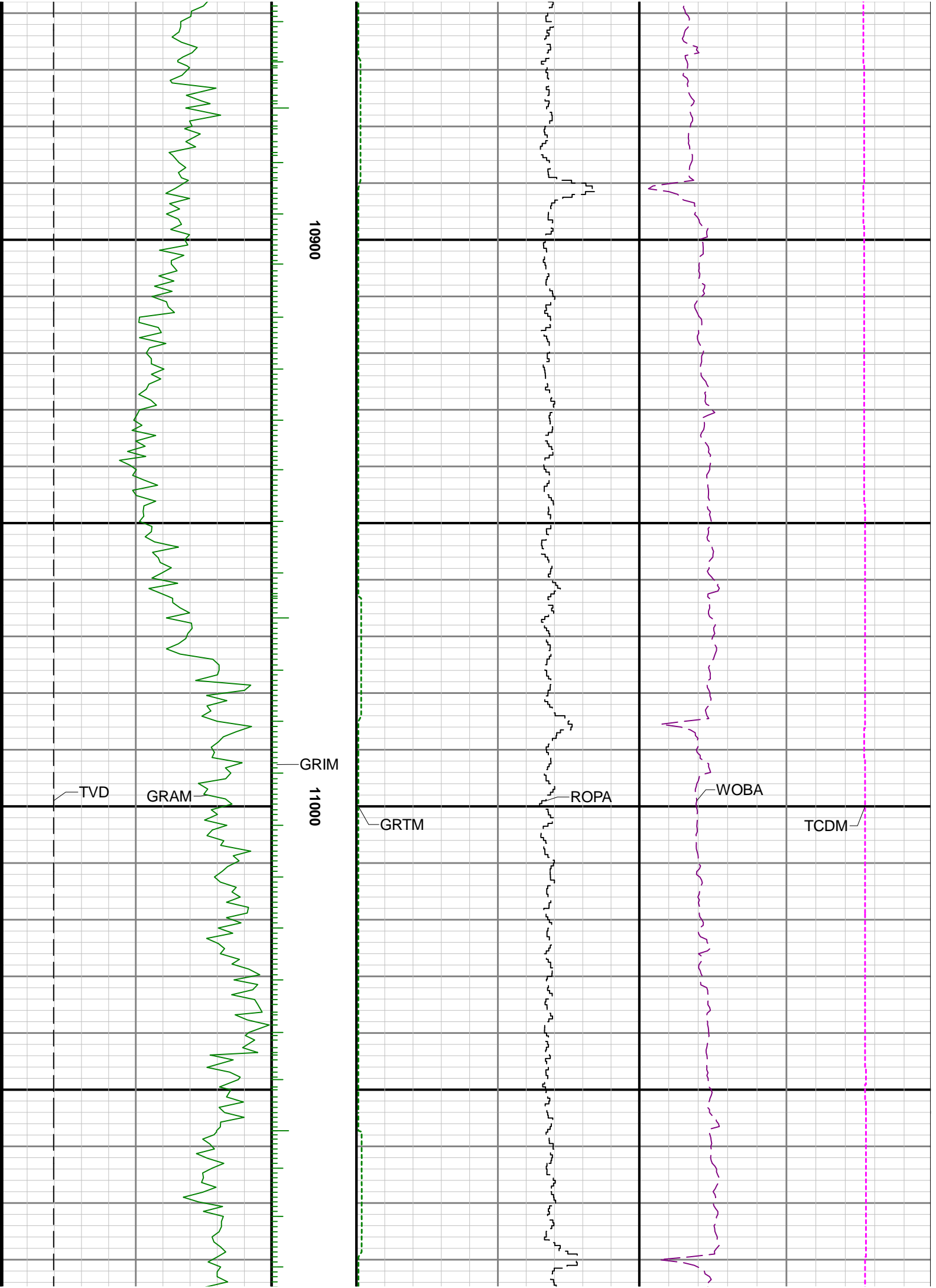




10700

10800



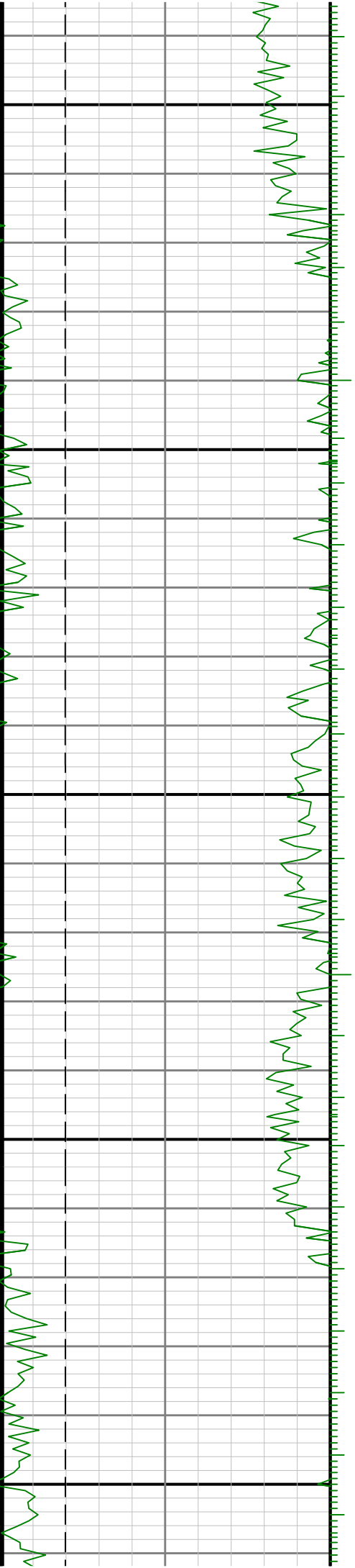


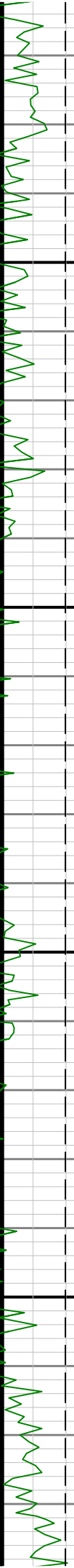
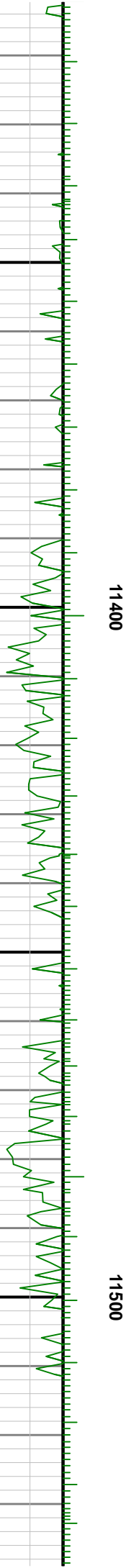
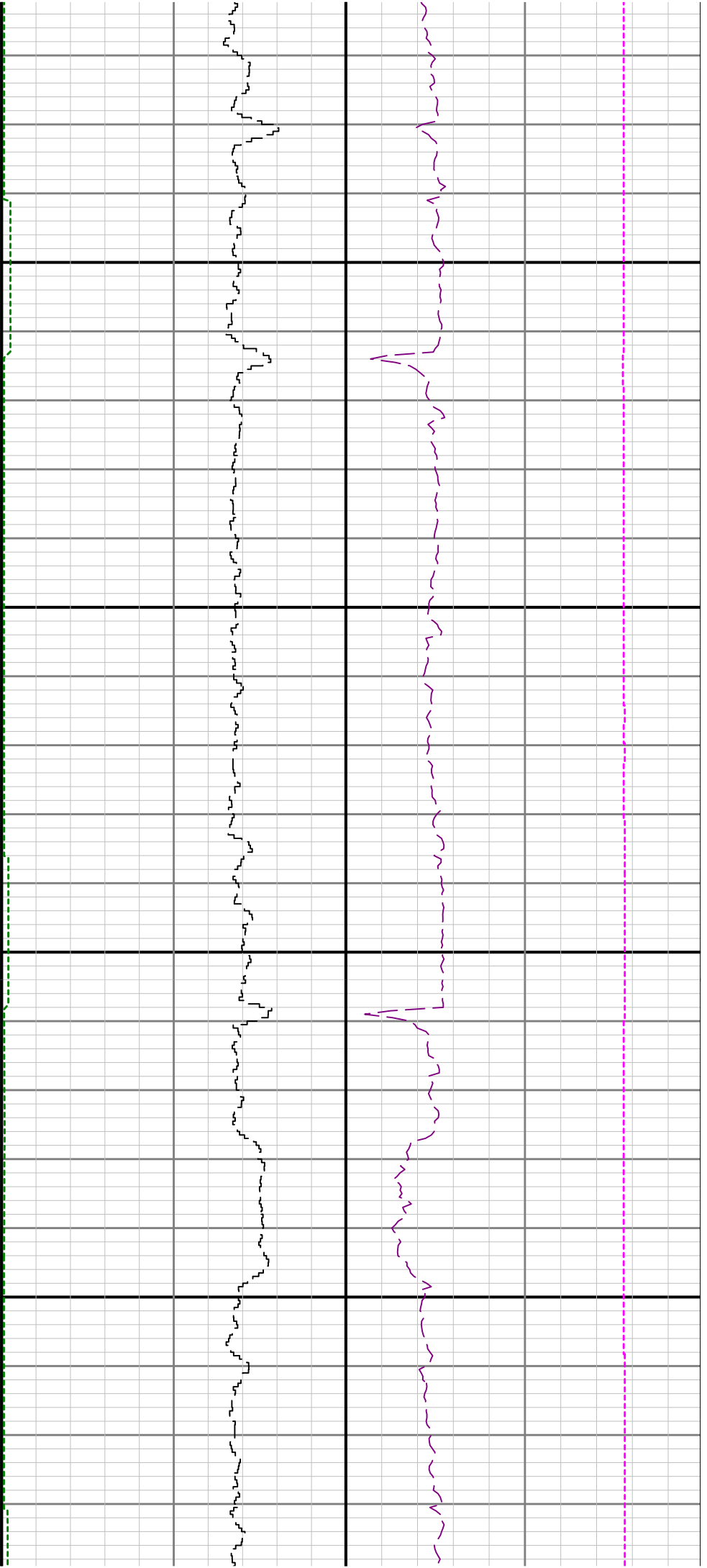


11100

11200

11300

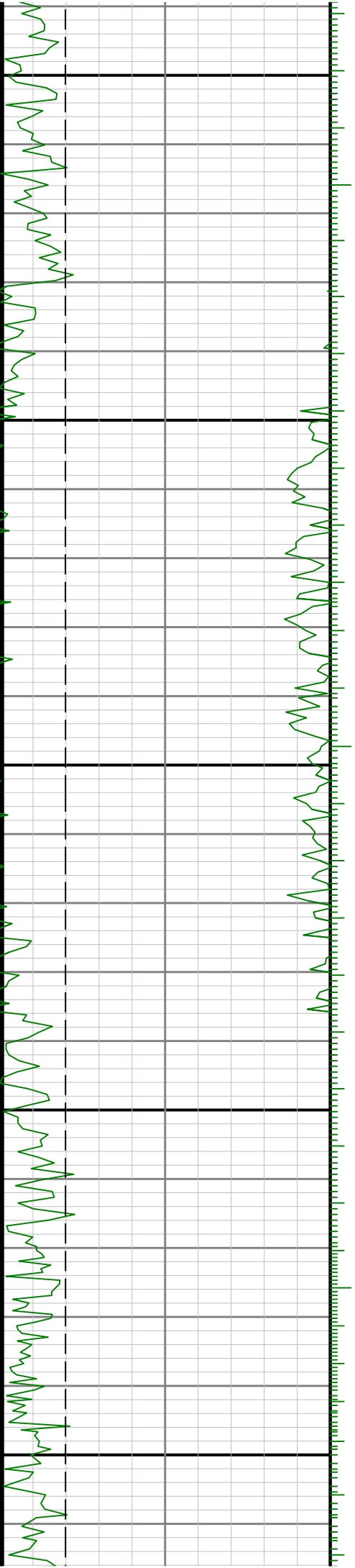


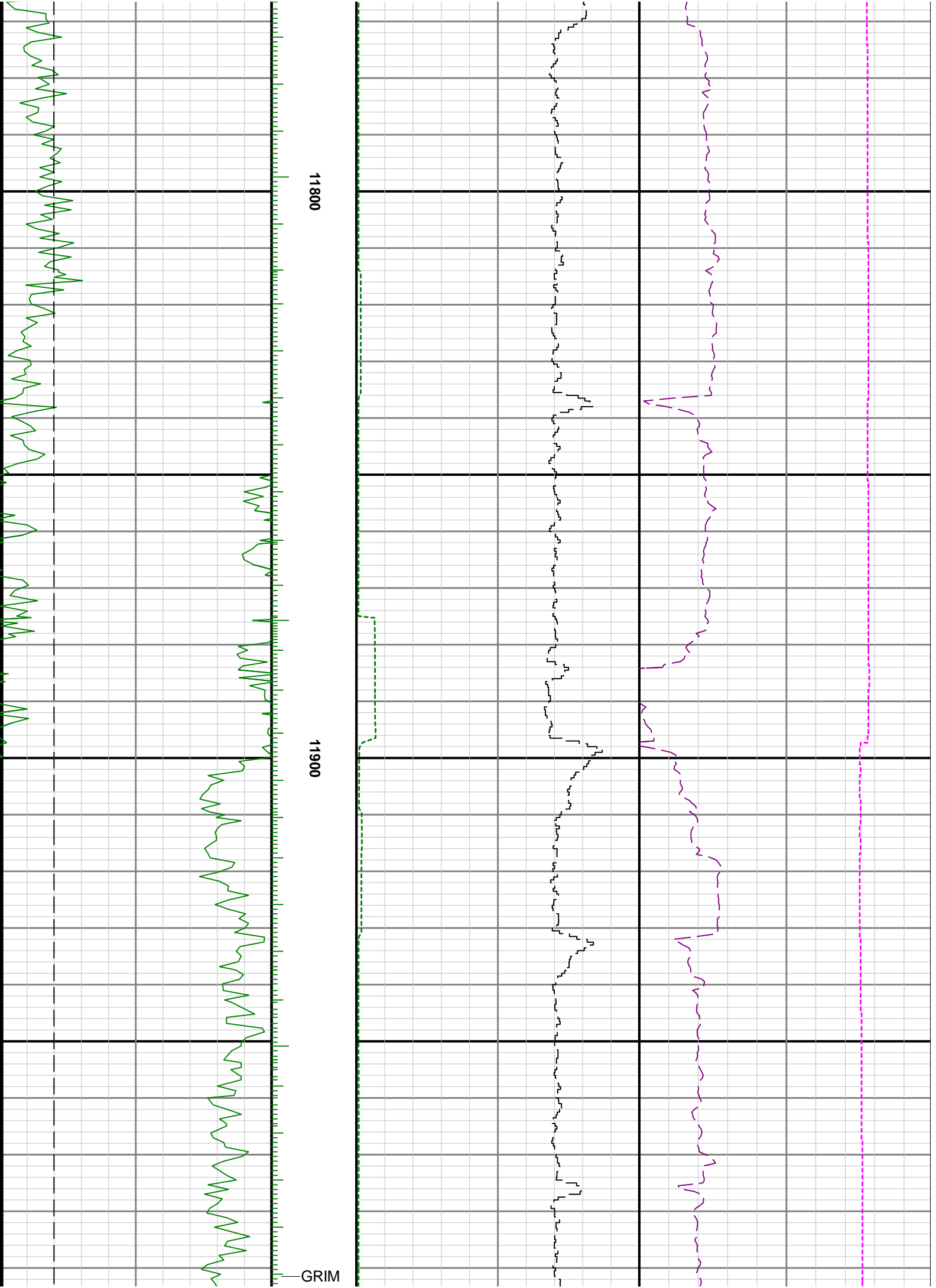


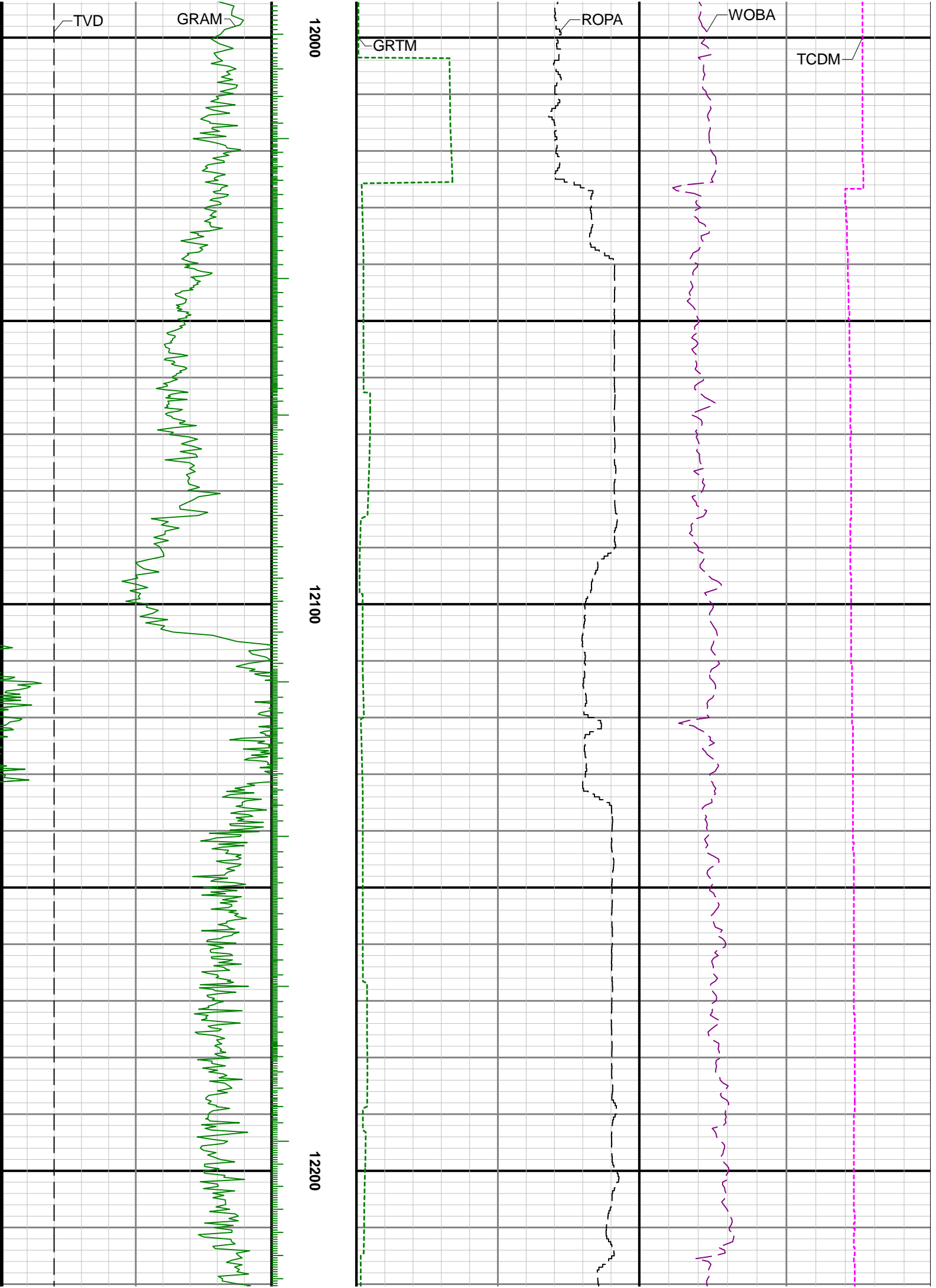


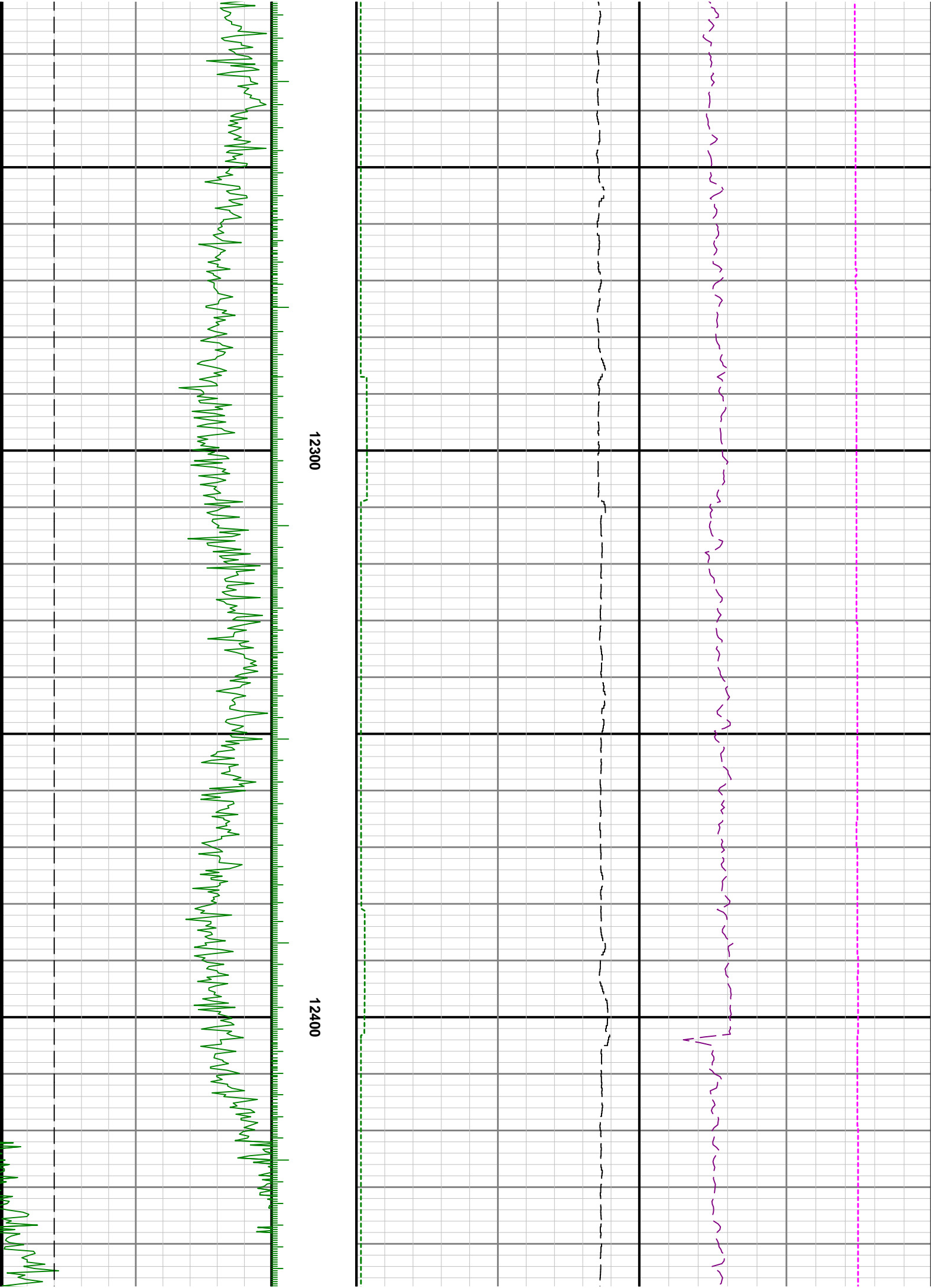
11600

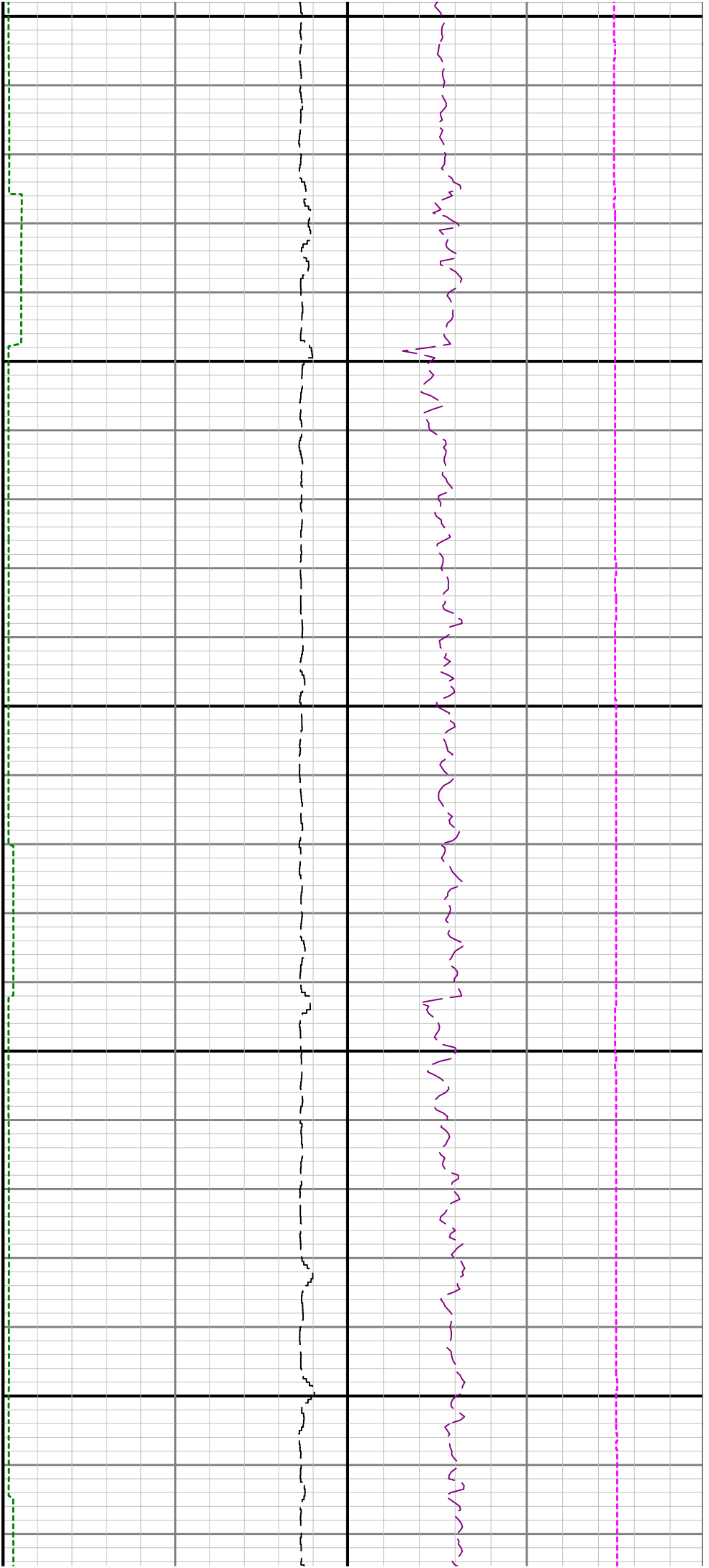
11700





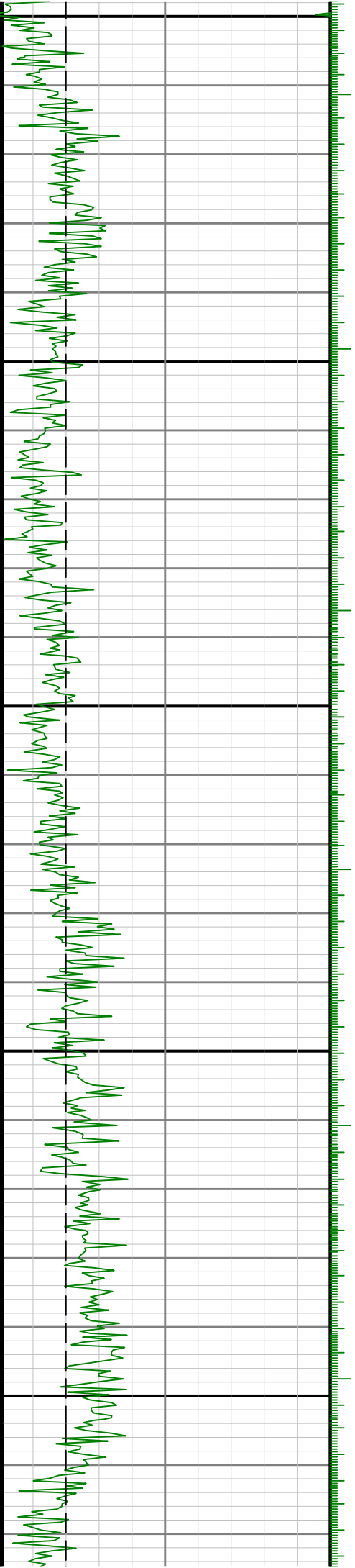


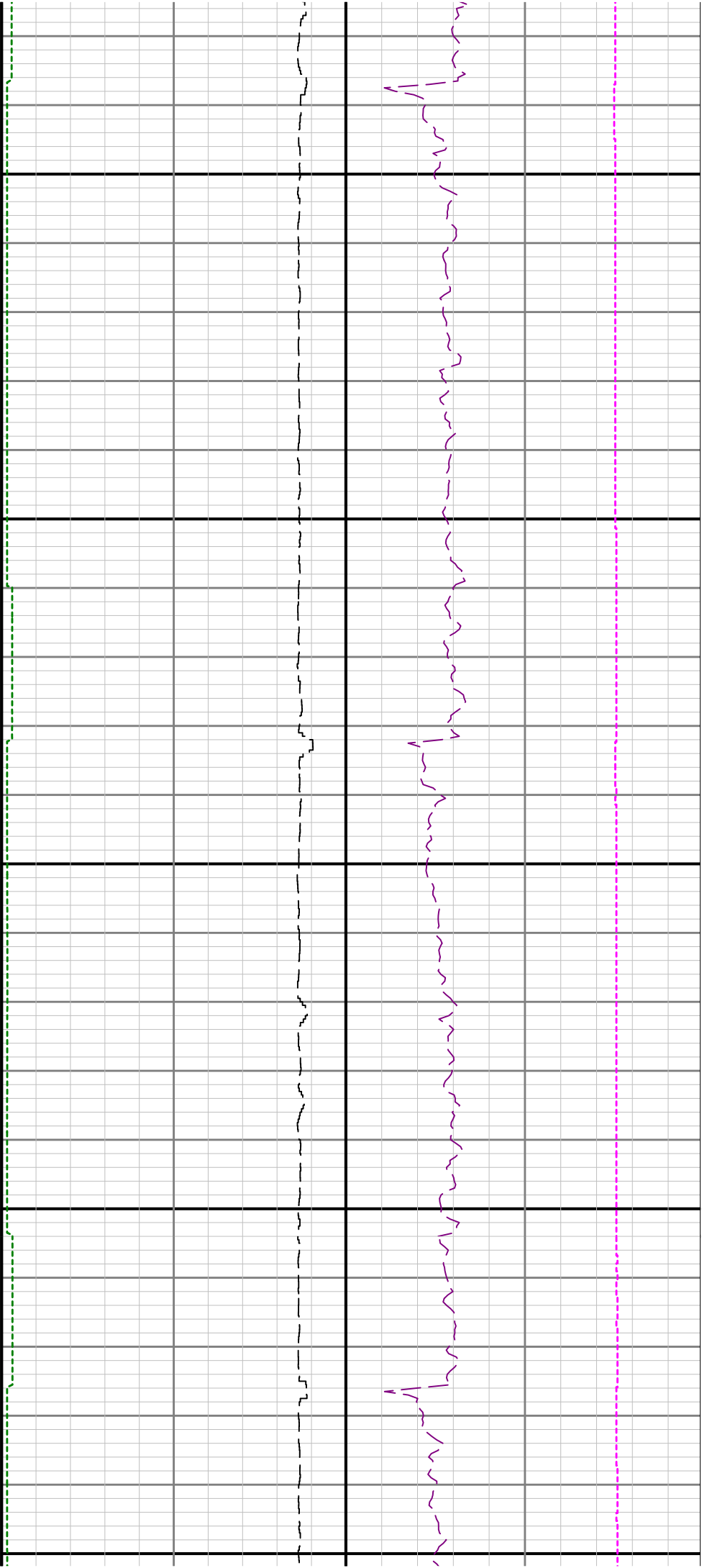




12500

12600

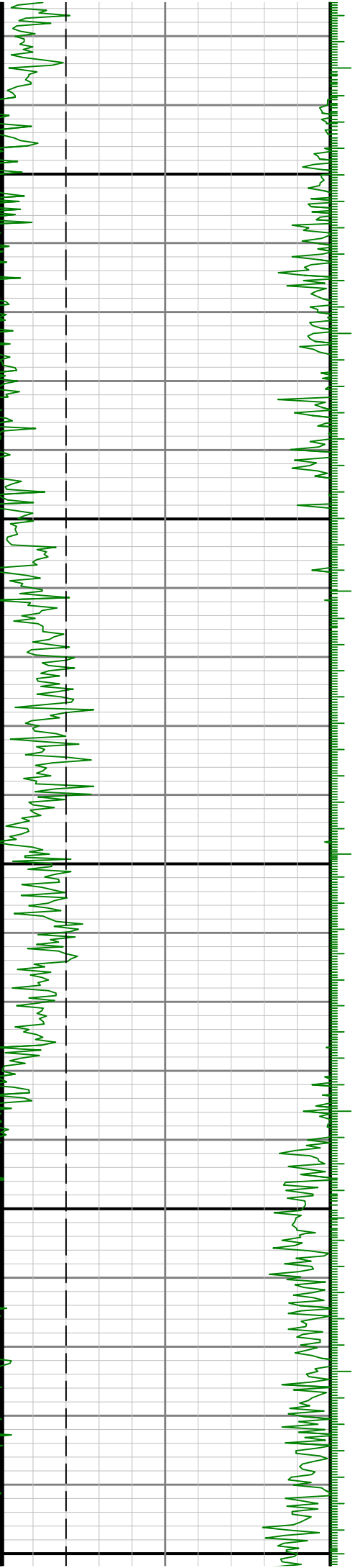


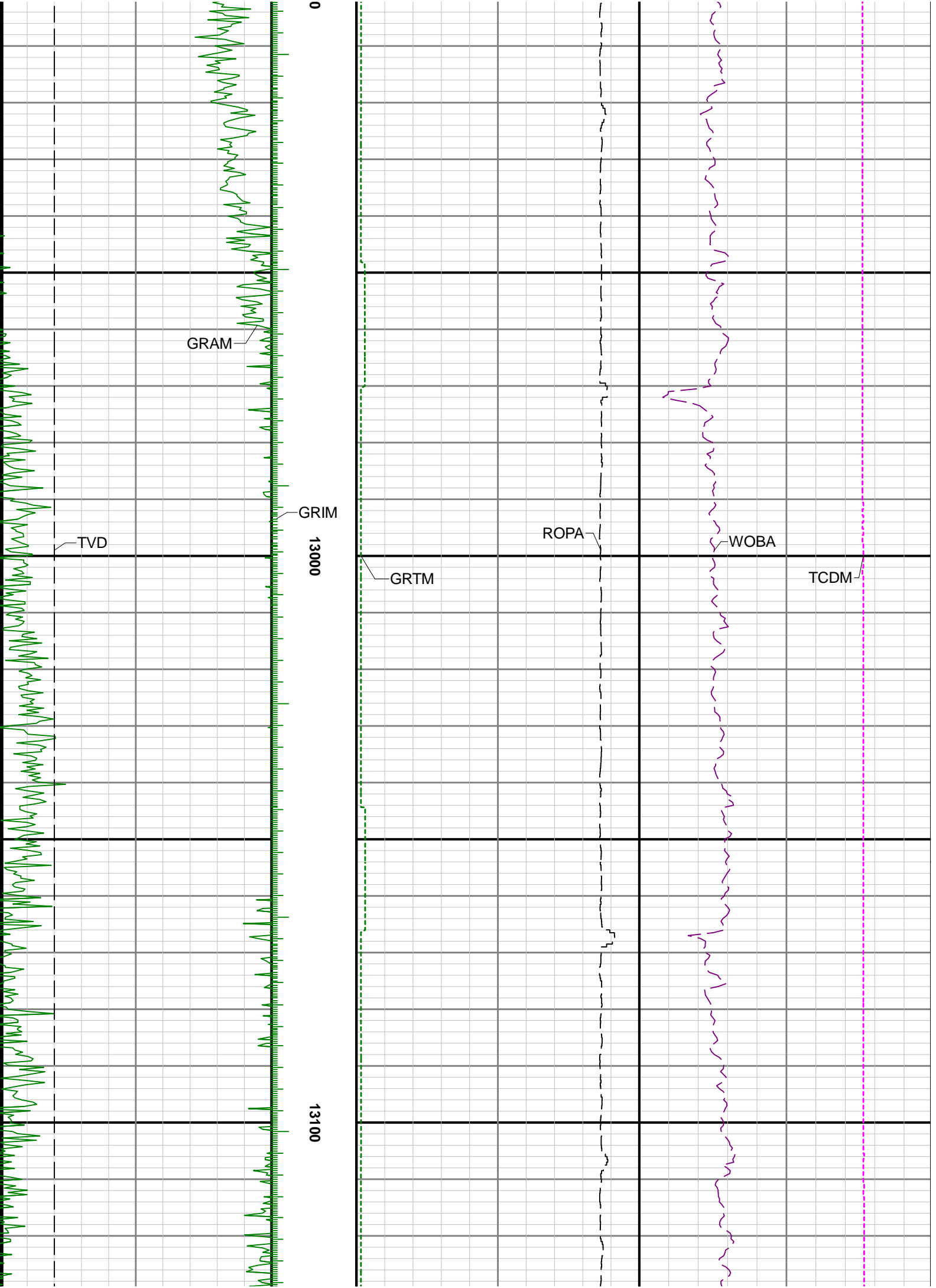


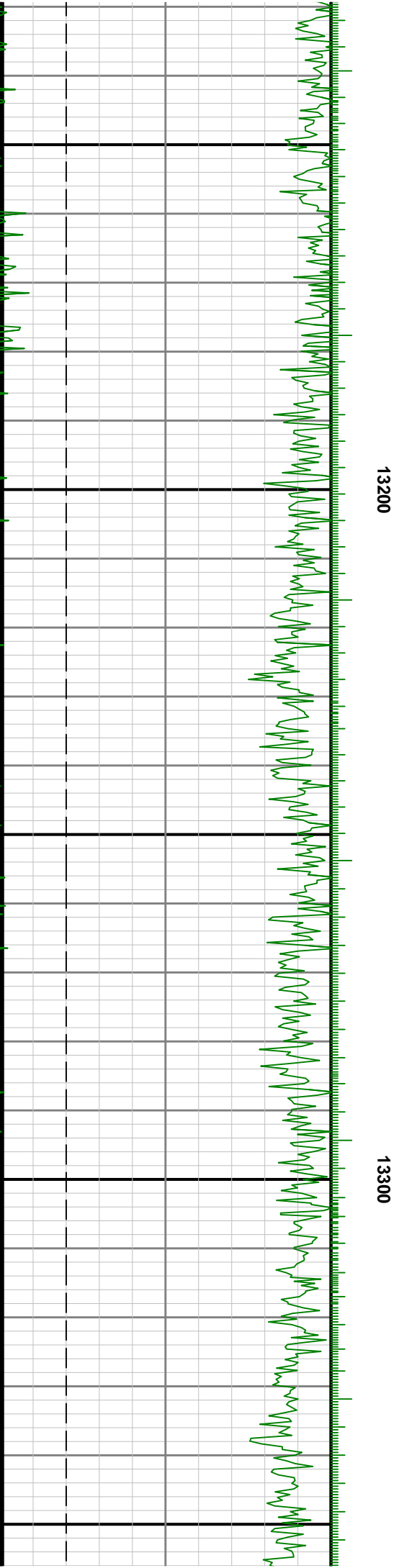
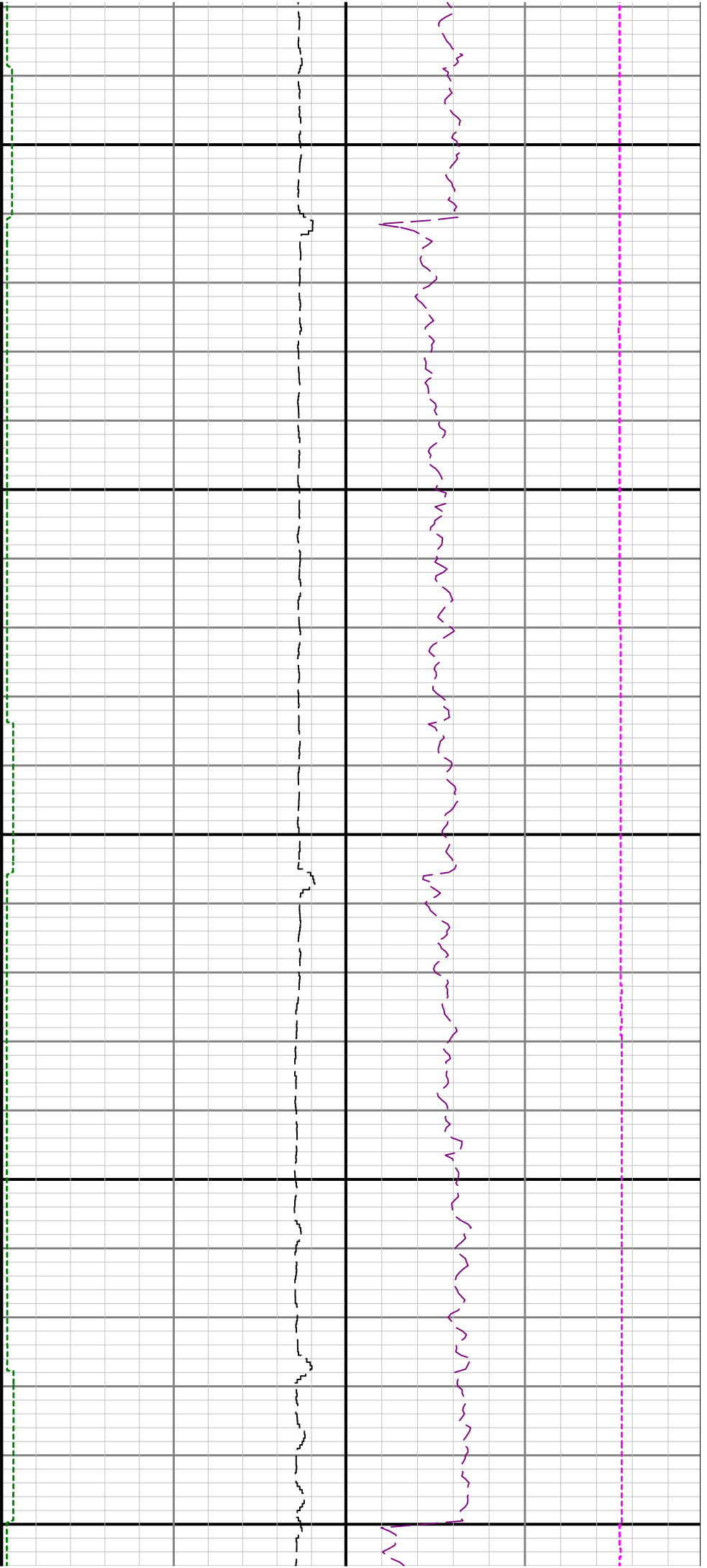
12700

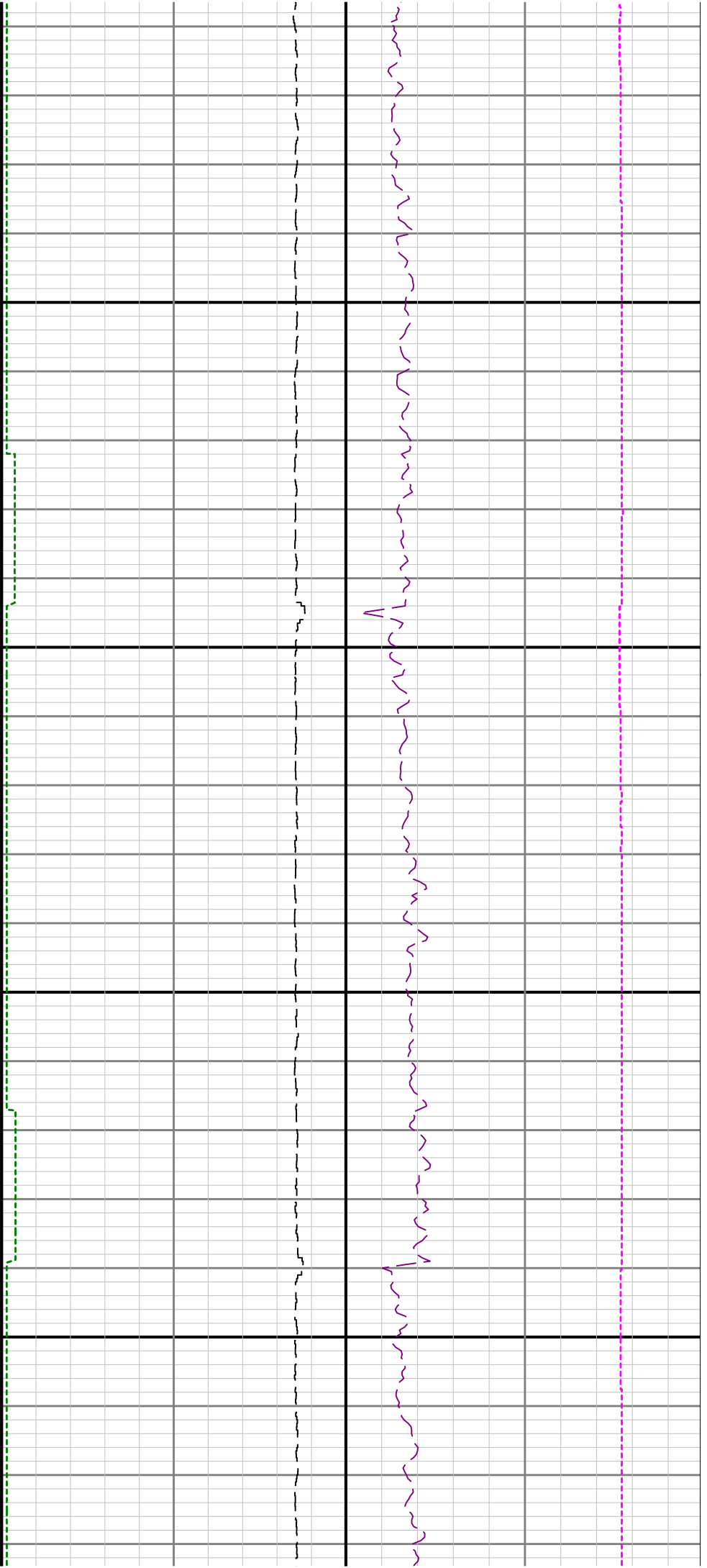
12800

12900



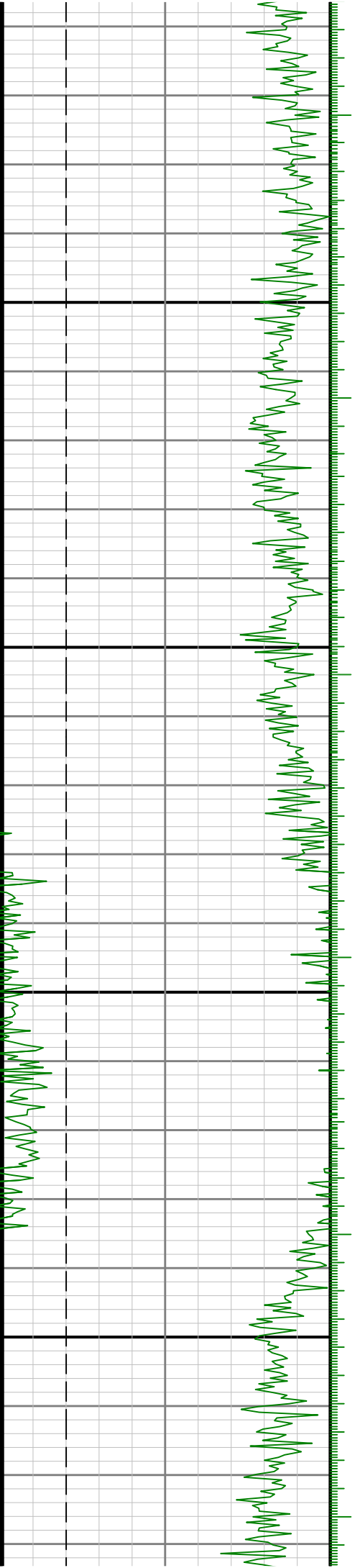


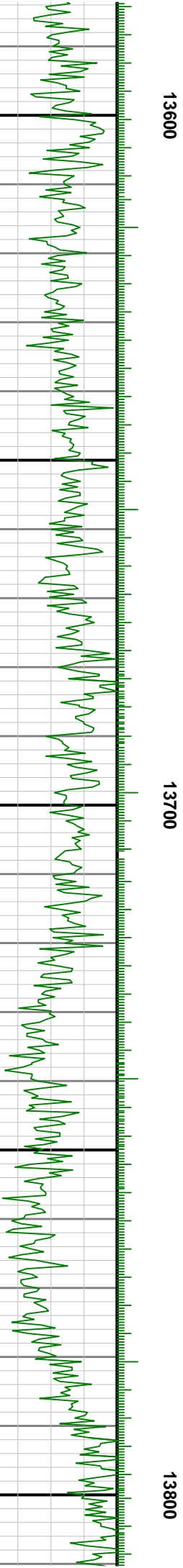


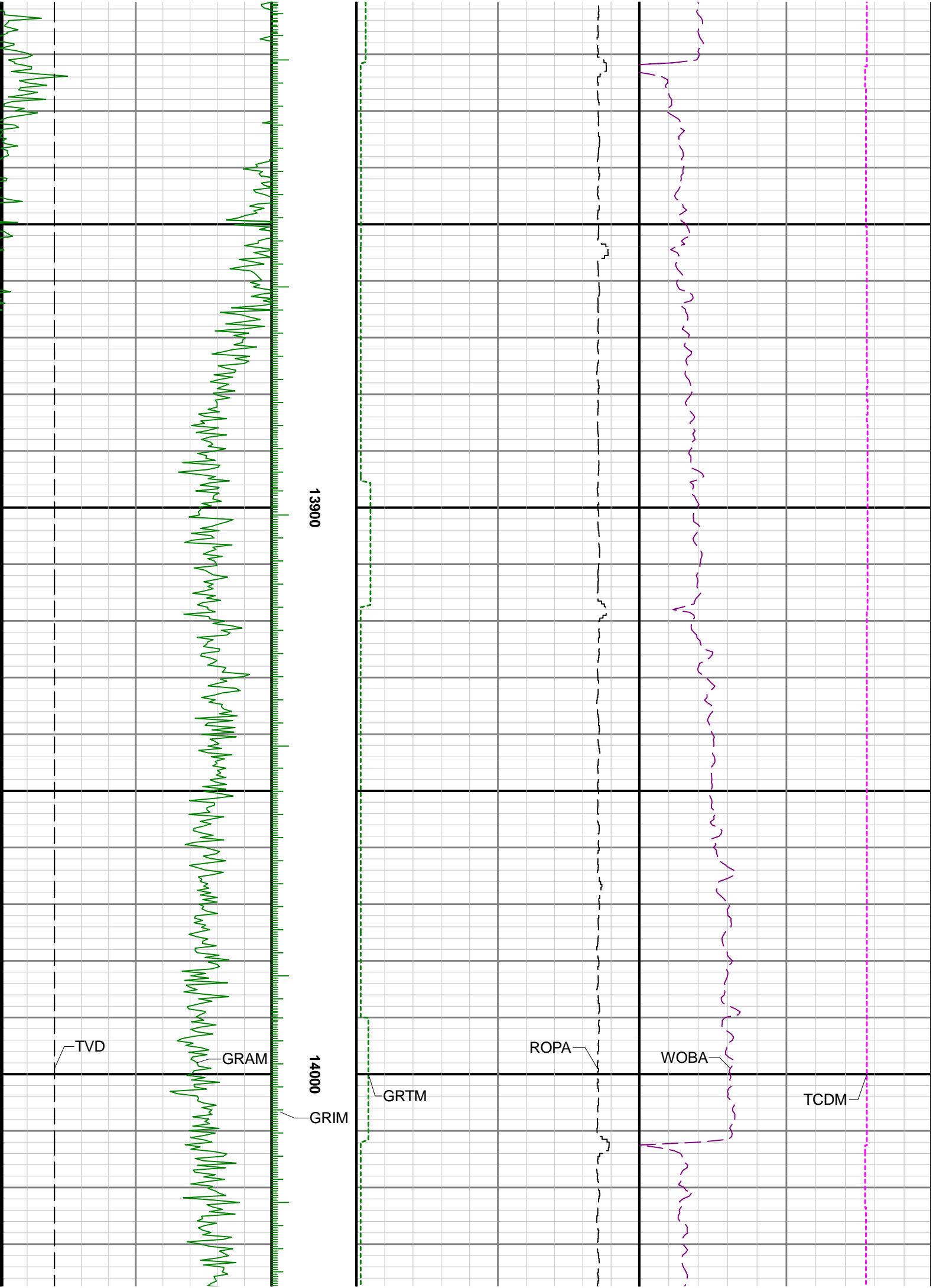


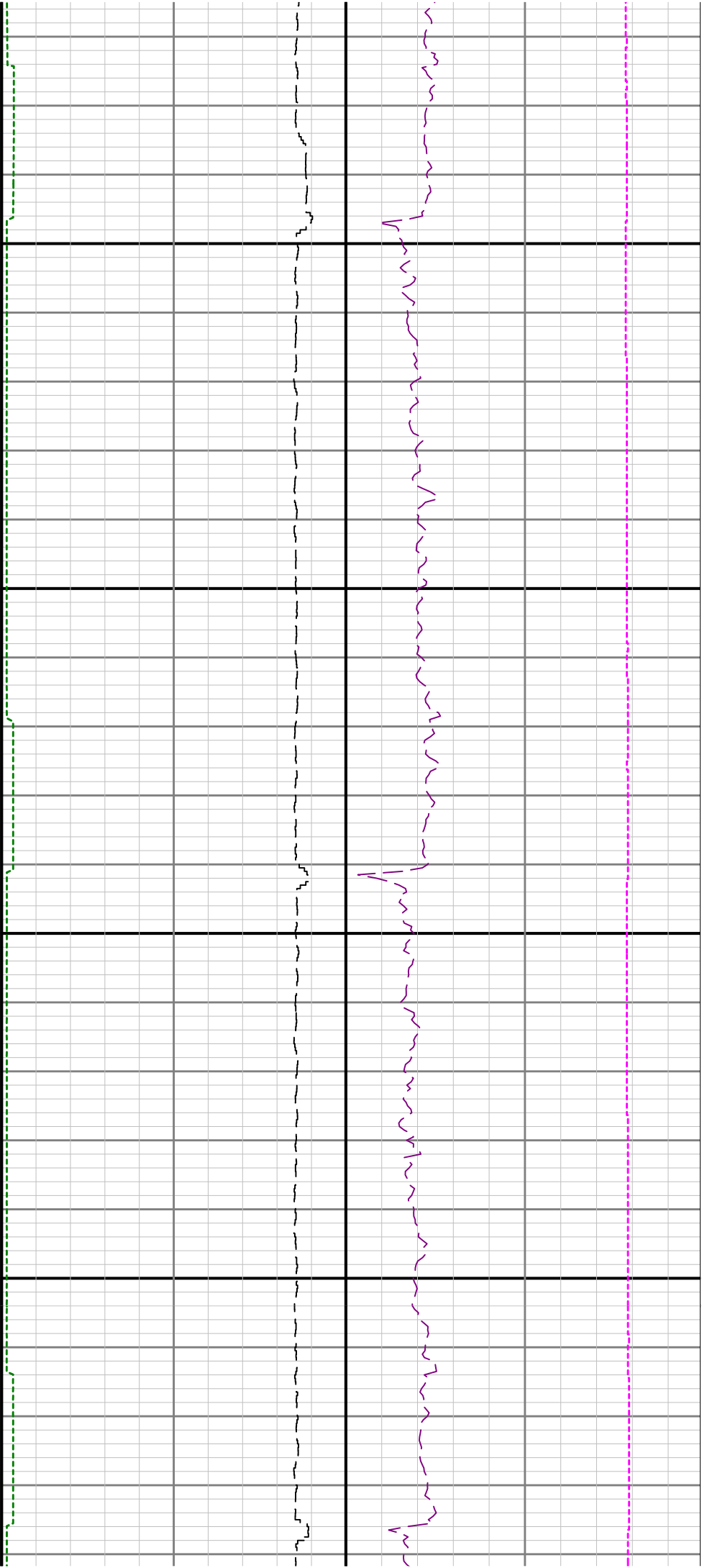
13400

13500



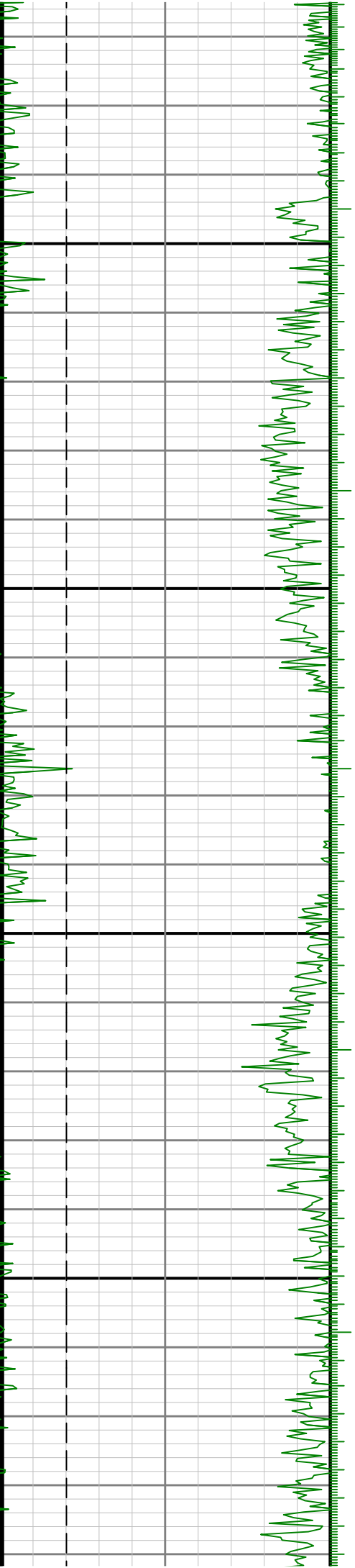


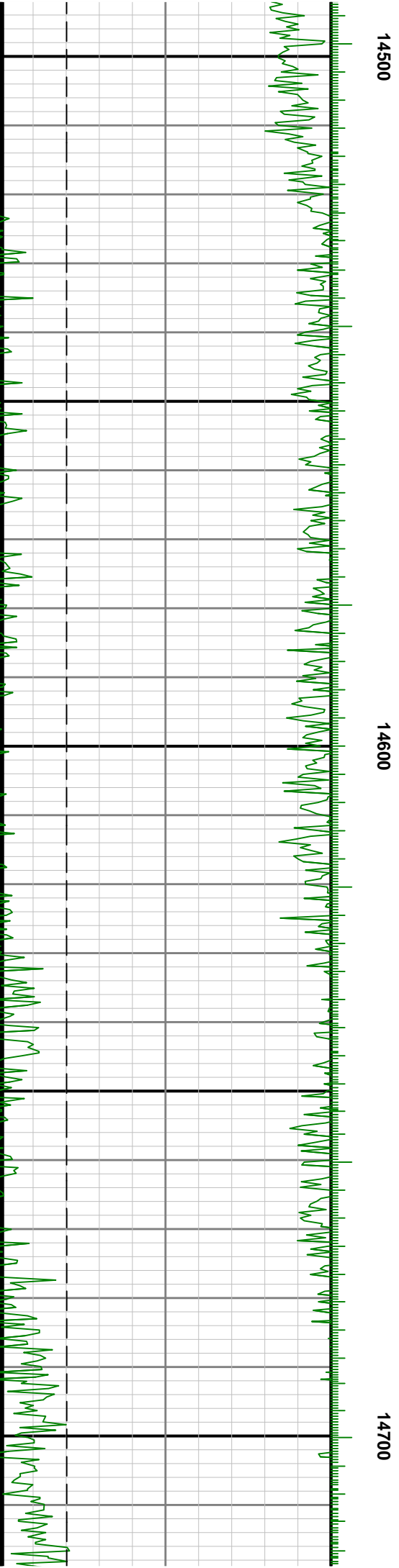
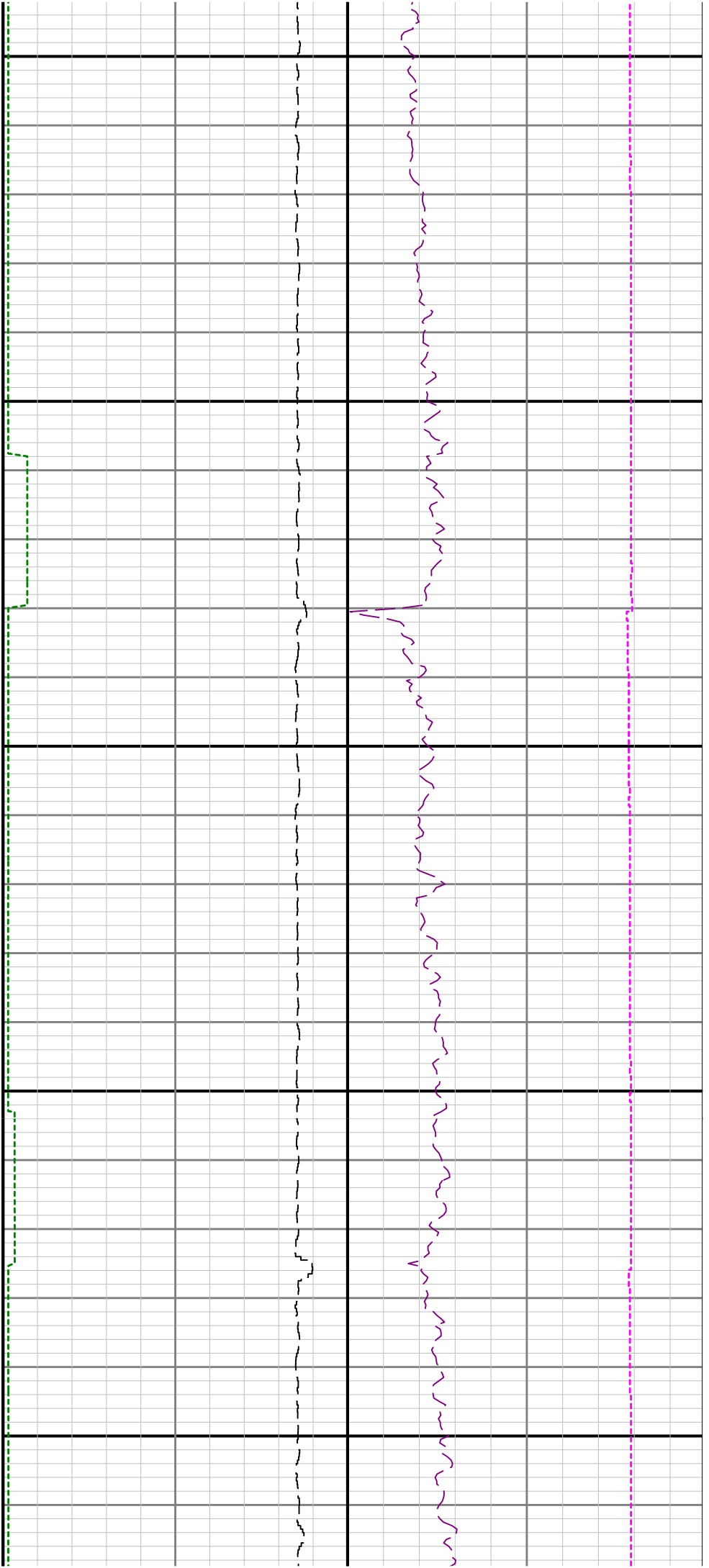


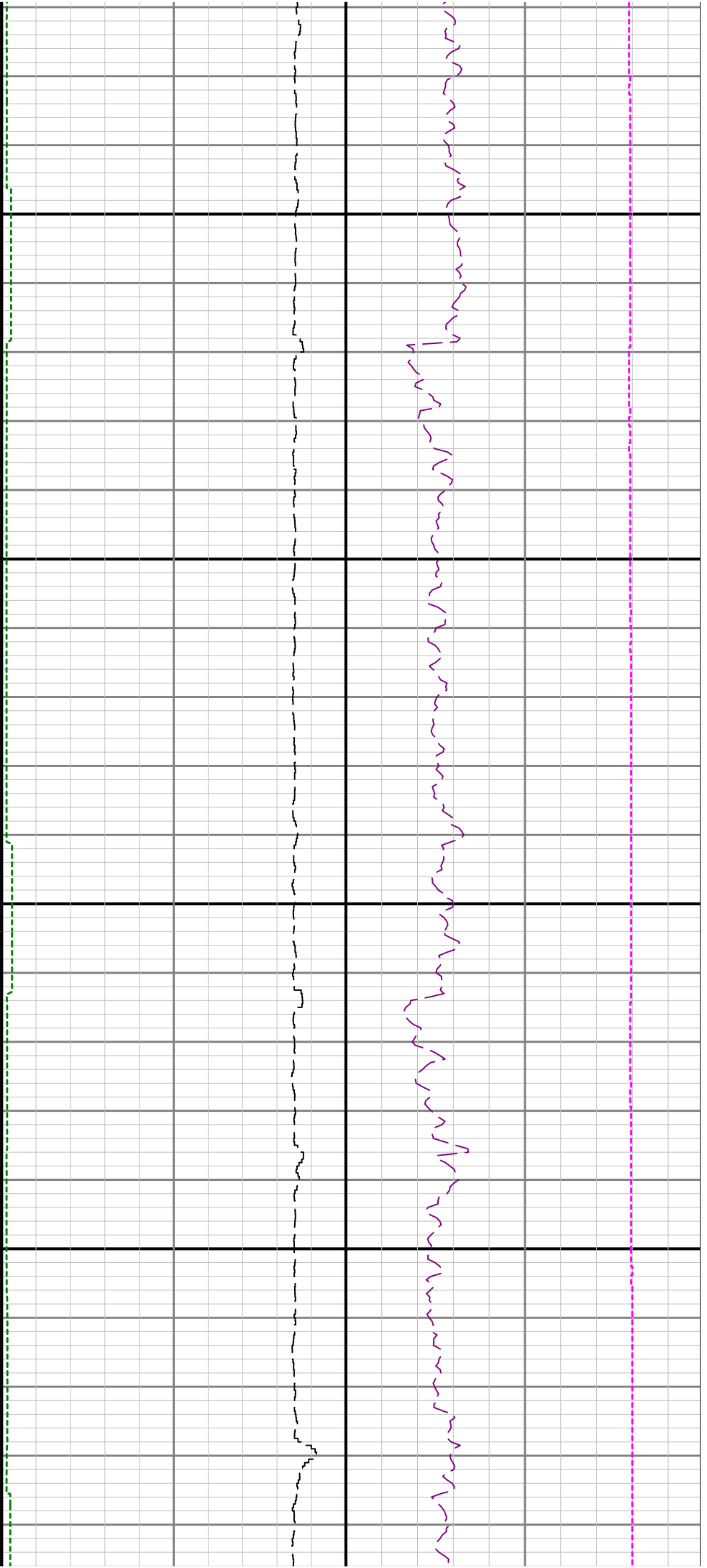


14300

14400

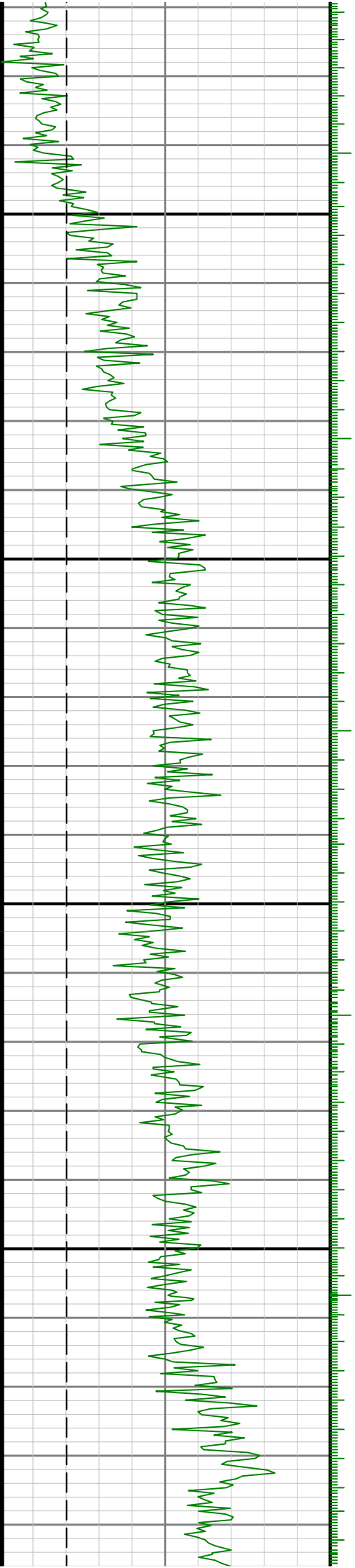


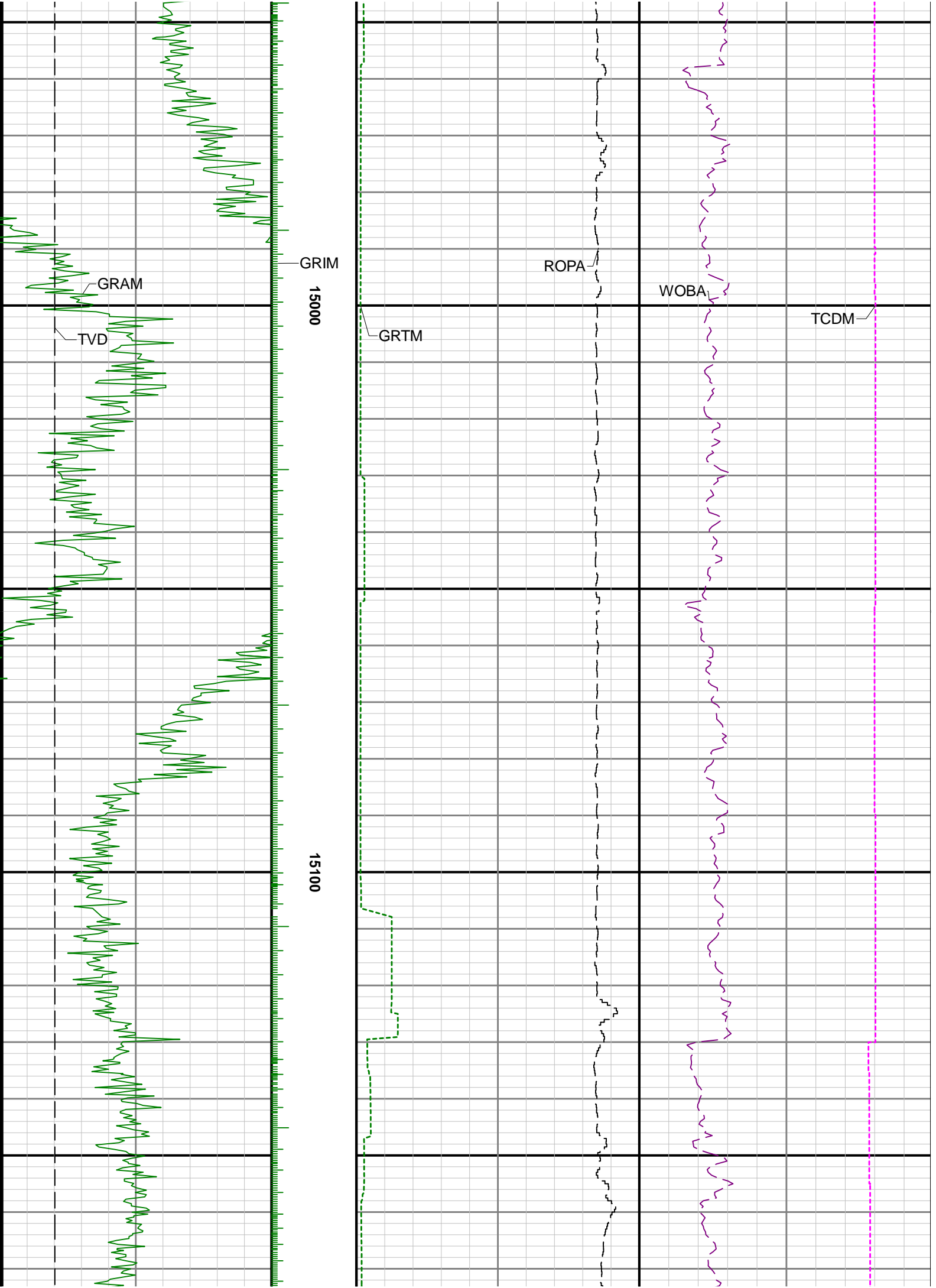


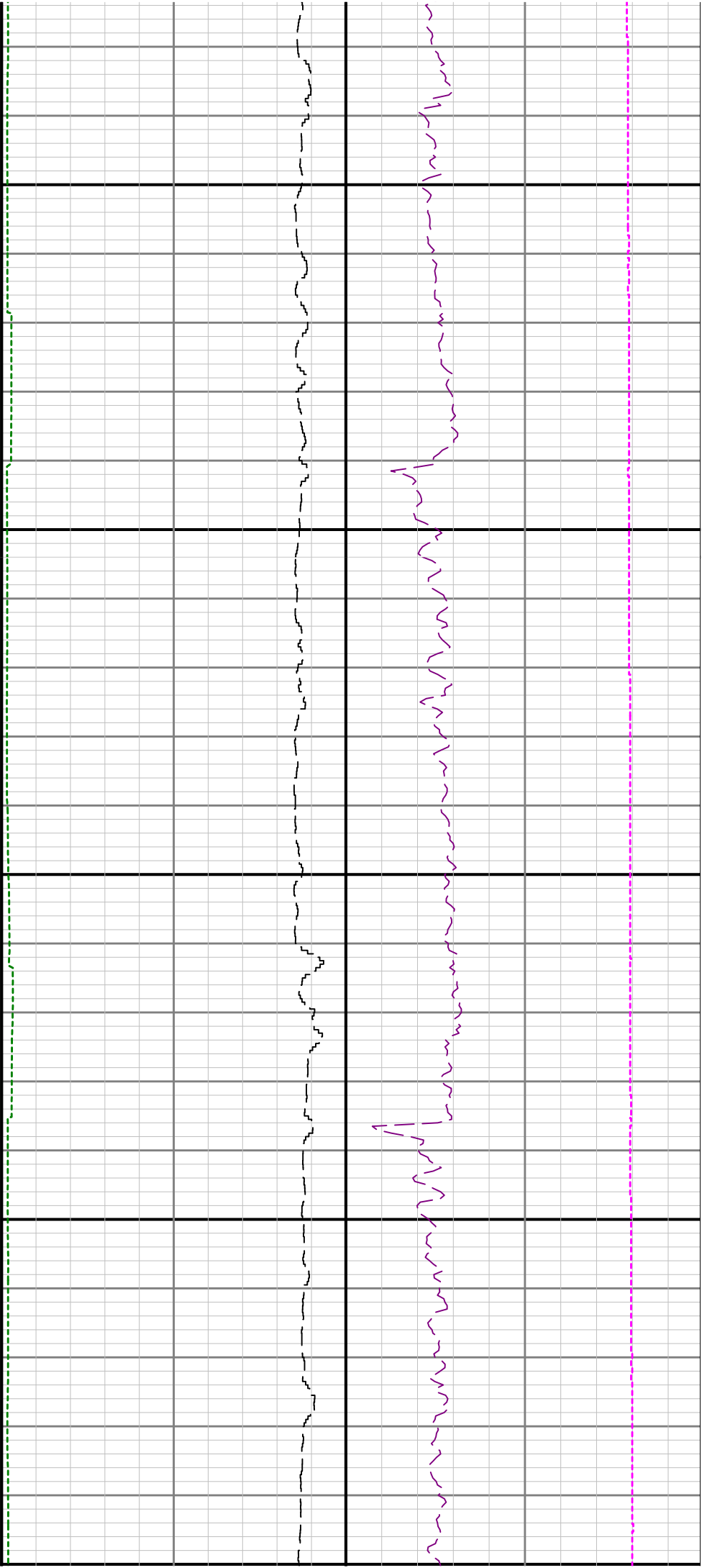


14800

14900



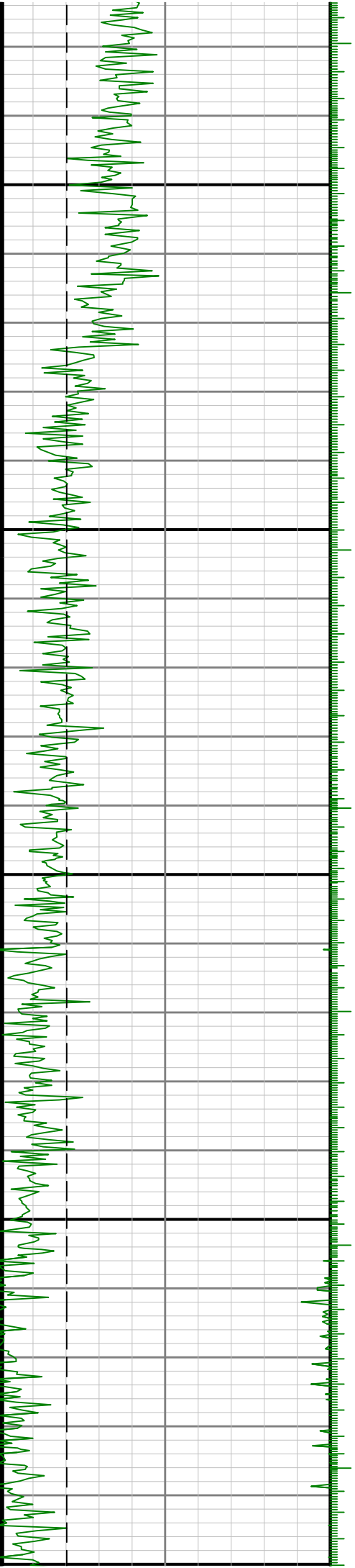


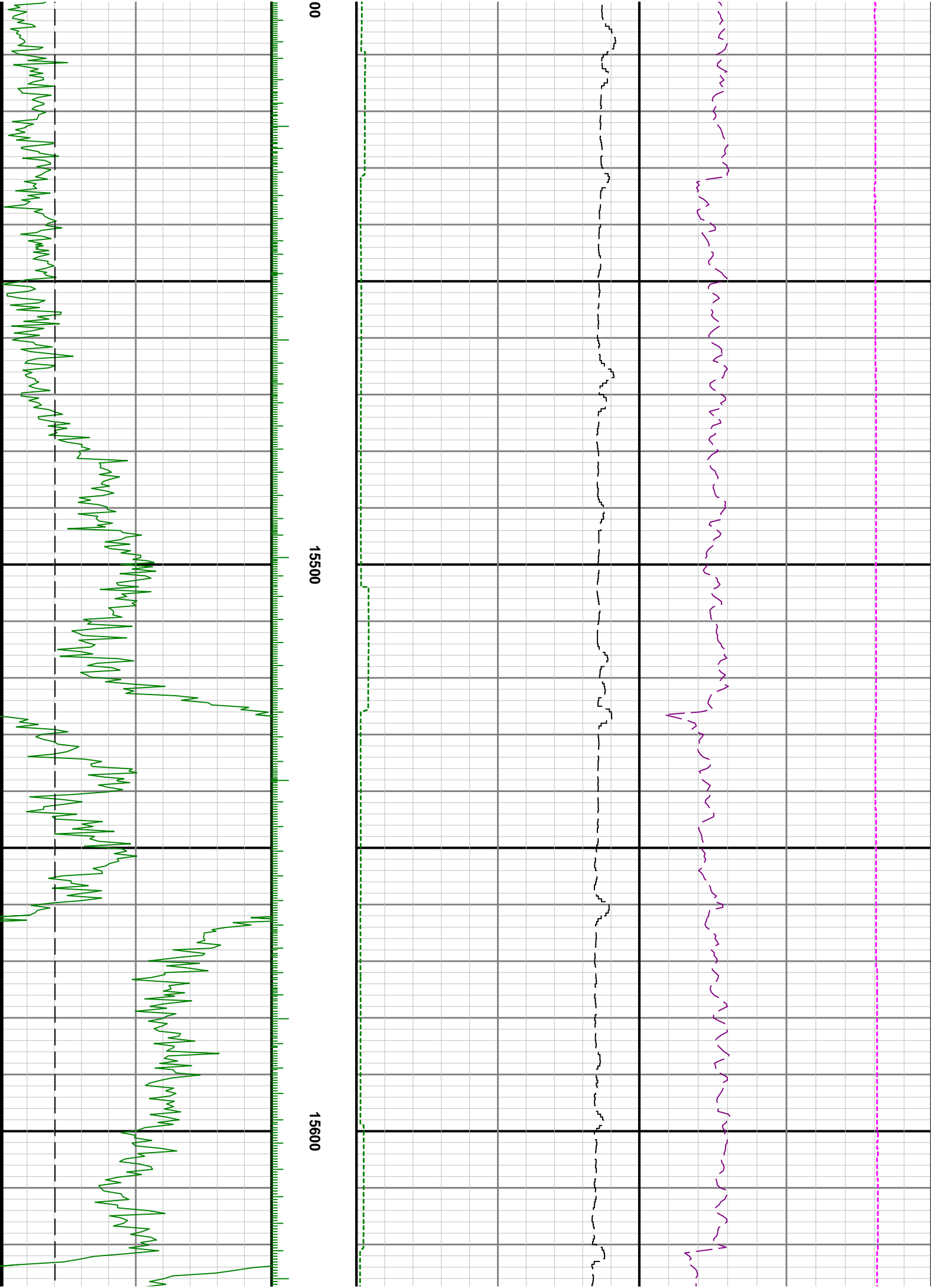


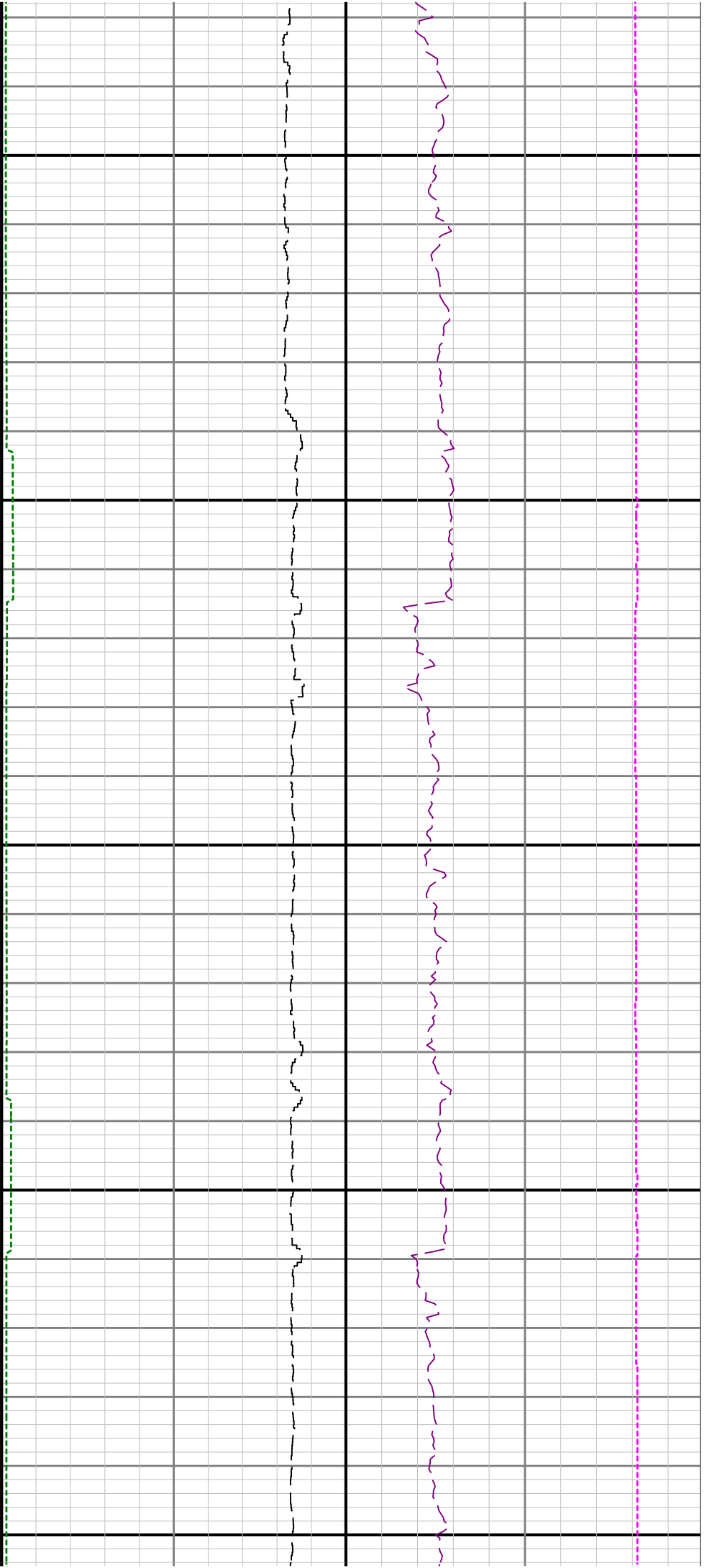
15200

15300

154







15700

15800

