



LWD MEMORY LOG

Azimuthal Gamma Ray

Scale:		Company: SRC Energy				
1:240 MD		Well: Boomerang 33C-6-M				
Depth Reference:		Field: Wattenburg				
Driller's Depth		County: Weld County				
State: Colorado		Country: United States				
Status:	Surface Location:		Other Services:			
Final Print		Latitude: 40°34'43.11"N				
API No: 051234539700		Longitude: 106°41'06.11"W				
Job ID: 8924717		SEC: 5	TWN: 5N RGE: 66W			
Permanent Datum (P.D.): Ground Level		Elevation: Above P.D.	Elev. KB: 4770.00 ft			
Log Measured From: Rig Floor			Elev. DF: 4790.00 ft			
			Elev. GL: 4770.00 ft			
Dates		Interval Logged				
Date From: 2018-01-25		Top: (ft) 1816.00	Azi Reference North: True			
Date To: 2018-01-29		Bottom: (ft) 15684.00	Total Magnetic Field Strength: (nT) 52614			
Spud Date: 2017-12-21			Mag to Reference North Correction: (deg) 7.54 E			
Borehole Record		Casing Record				
Hole Size (in)	From (ft)	To (ft)	Size (in)	Weight (lb/ft)	From (ft)	To (ft)
13.500	20.00	1816.00	9.625	36.00		20.00
8.500	1816.00	15684.00				
Mud Record		Deviation Record				
Type	From (ft)	To (ft)	Hole Size (in)	Interval (ft)	Inc Az (Start)	Inc Az (End)
Water Based Mud	4.00	1816.00	13.500	1816.00	0.00 0.00	7.30 85.66
Oil Based Mud	1816.00	15684.00	8.500	13868.00	7.30 85.66	89.91 272.29
Acquisition System		Software Version		Other		
Baker Hughes Cadence	RT4.1		Rig: Precision 462			
PlotStudio	4.1.7763.3		Contractor: Precision Drilling			
			District: RMD	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	
2	2	8.500	PDC	3.00	Rotary Steerable	1816.00	5416.00	1816.00	5429.00	2018-01-26 05:53	2018-01-26 18:25	10.54
3	3	8.500	PDC	3.00	Rotary Steerable	5416.00	15671.00	5429.00	15684.00	2018-01-27 03:21	2018-01-29 14:51	55.86

Crew

Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Matthew Leopold	2018-01-25	2018-01-29						

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+ (%)
2017-12-21 01:18	1	4.00	Water Based Mud	8.4	N/A	N/A	N/A	N/A	Active Pit	500	0.00
2018-01-26 04:52	2	1816.00	Oil Based Mud	9.7	16	N/A	28.2	80/20	Active Pit	35000	0.00
2018-01-26 15:00	2	4590.00	Oil Based Mud	9.6	14	N/A	26.4	77/23	Active Pit	38000	0.00
2018-01-26 22:48	3	5429.00	Oil Based Mud	9.6	14	N/A	26.4	77/23	Active Pit	38000	0.00
2018-01-27 04:00	3	5579.00	Oil Based Mud	9.7	12	N/A	27.6	80/20	Active Pit	38000	0.00
2018-01-27 16:00	3	7479.00	Oil Based Mud	9.5	10	N/A	27.8	82/18	Active Pit	41000	0.00
2018-01-28 04:00	3	9434.00	Oil Based Mud	9.6	15	N/A	26.6	79/21	Active Pit	40000	0.00
2018-01-28 16:00	3	11785.00	Oil Based Mud	9.7	17	N/A	25.2	75/25	Active Pit	37500	0.00
2018-01-29 04:00	3	13767.00	Oil Based Mud	9.8	17	N/A	26.0	76/24	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	Sensor Sub	ZAPS230925	Gamma (single)	8.52	58.70	8.000	3.250
1	Sensor Sub	ZAPS230925	VSS	9.93	60.11	8.000	3.250
1	Sensor Sub	ZAPS230925	Directional (mag)	9.93	60.11	8.000	3.250
1	Sensor Sub	ZAPS230925	Pressure	30.52	80.70	8.000	3.250
2	ATC_SU	14366806	Near Bit Inclination	5.93	6.84	7.000	4.330
2	ATC_SU	14366806	Near Bit VSS	5.93	6.84	7.000	4.330
2	ATC_MWD	14284442	Gamma (single)	2.77	13.01	7.000	3.250
2	ATC_MWD	14284442	Directional (mag)	12.29	22.53	7.000	3.250
3	ATC_SU	13867780	Near Bit Inclination	5.93	6.84	7.000	4.330
3	ATC_SU	13867780	Near Bit VSS	5.93	6.84	7.000	4.330
3	ATC_MWD	12398256	Gamma (single)	2.69	13.01	7.000	3.250
3	ATC_MWD	12398256	Directional (mag)	12.21	22.53	7.000	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
GAM	APS	APS EM Module
ATC_SU	ATC_SU	Auto Trak Curve Steering Unit
ATC_MWD	ATC_MWD	Auto Trak Curve MWD
ATC_LCPM	ATC_LCPM	Auto Trak Curve LCPM

Comments

1	Depth measurements 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	Baker Hughes LWD Run 1 utilized 8 inch NaviTrak service (Directional only) behind a 13 1/2 inch bit and steerable assembly from surface to 1816 feet MD (surface to 1805 feet TVD). No logging data was acquired during this run.
3	Gamma Ray Curves (GRAM-GRAUM-GRADM) are presented 0 to 300 API per customer request.
4	


Remarks

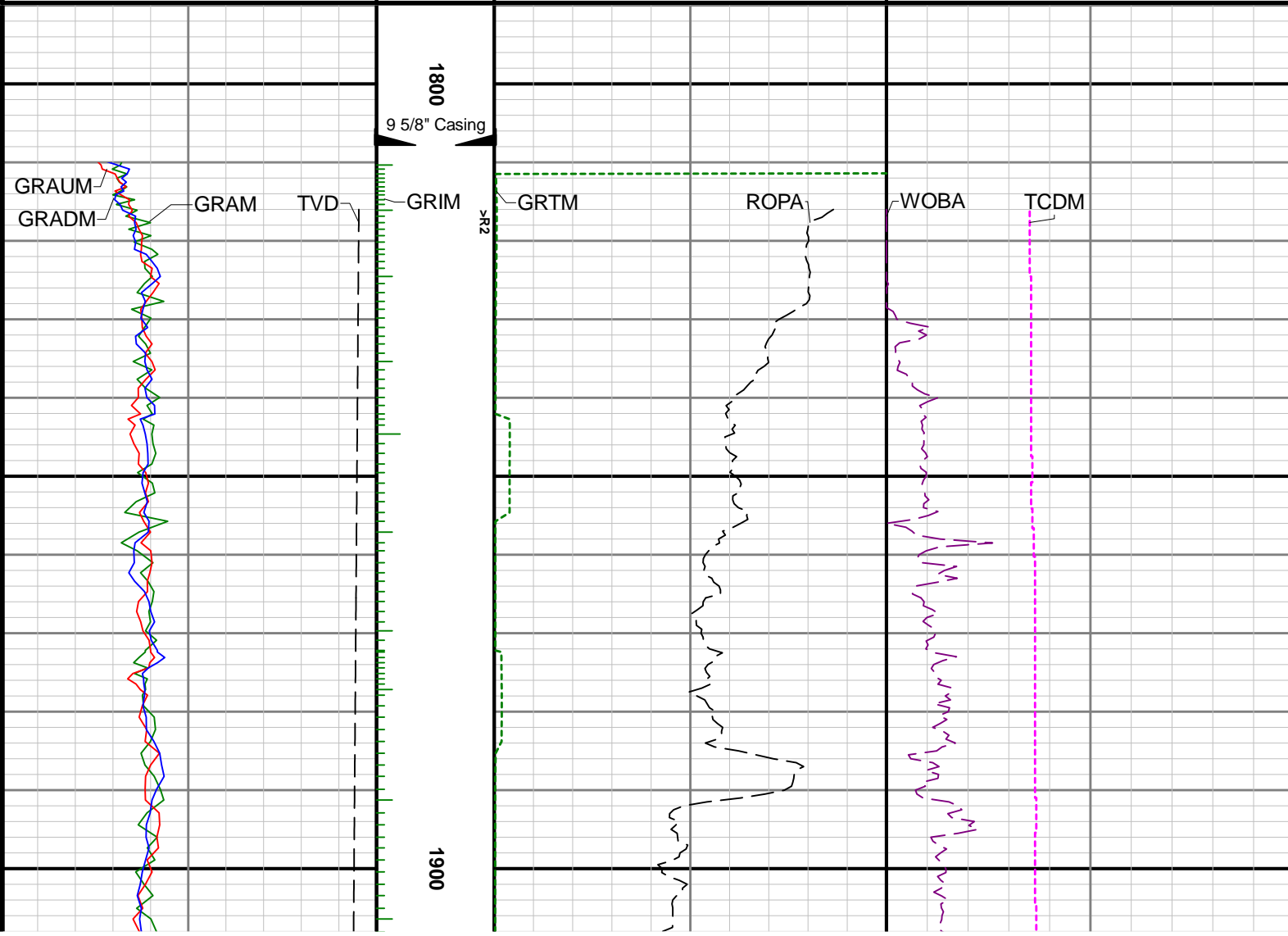
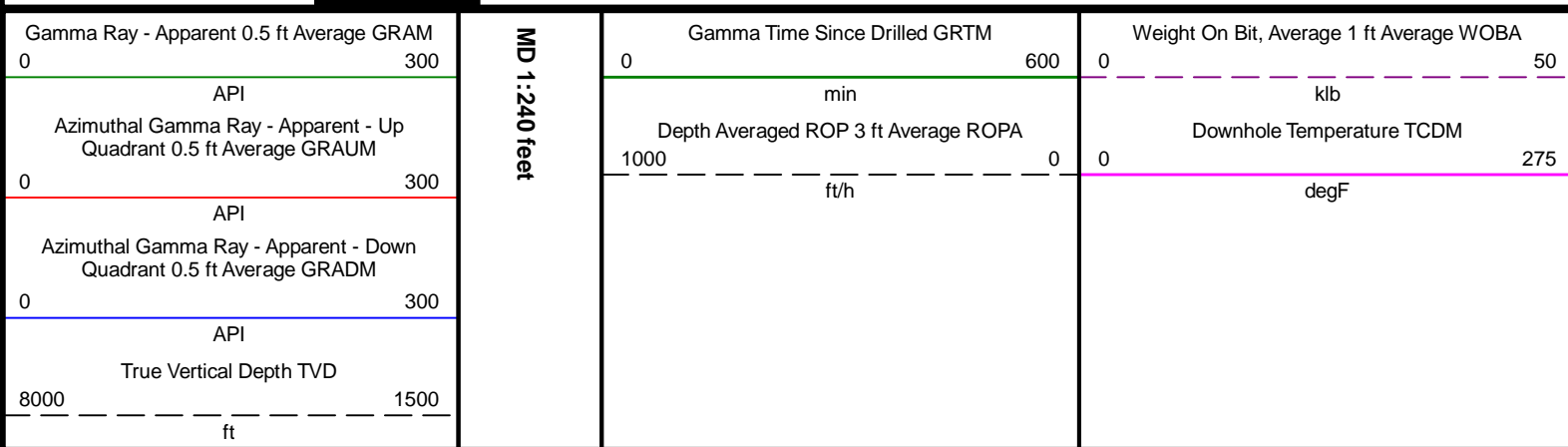
Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	15677.00	8.500	3	The interval from 15671 to 15684 feet MD (7091 feet TVD) was not logged due to sensor to bit offset at well TD.

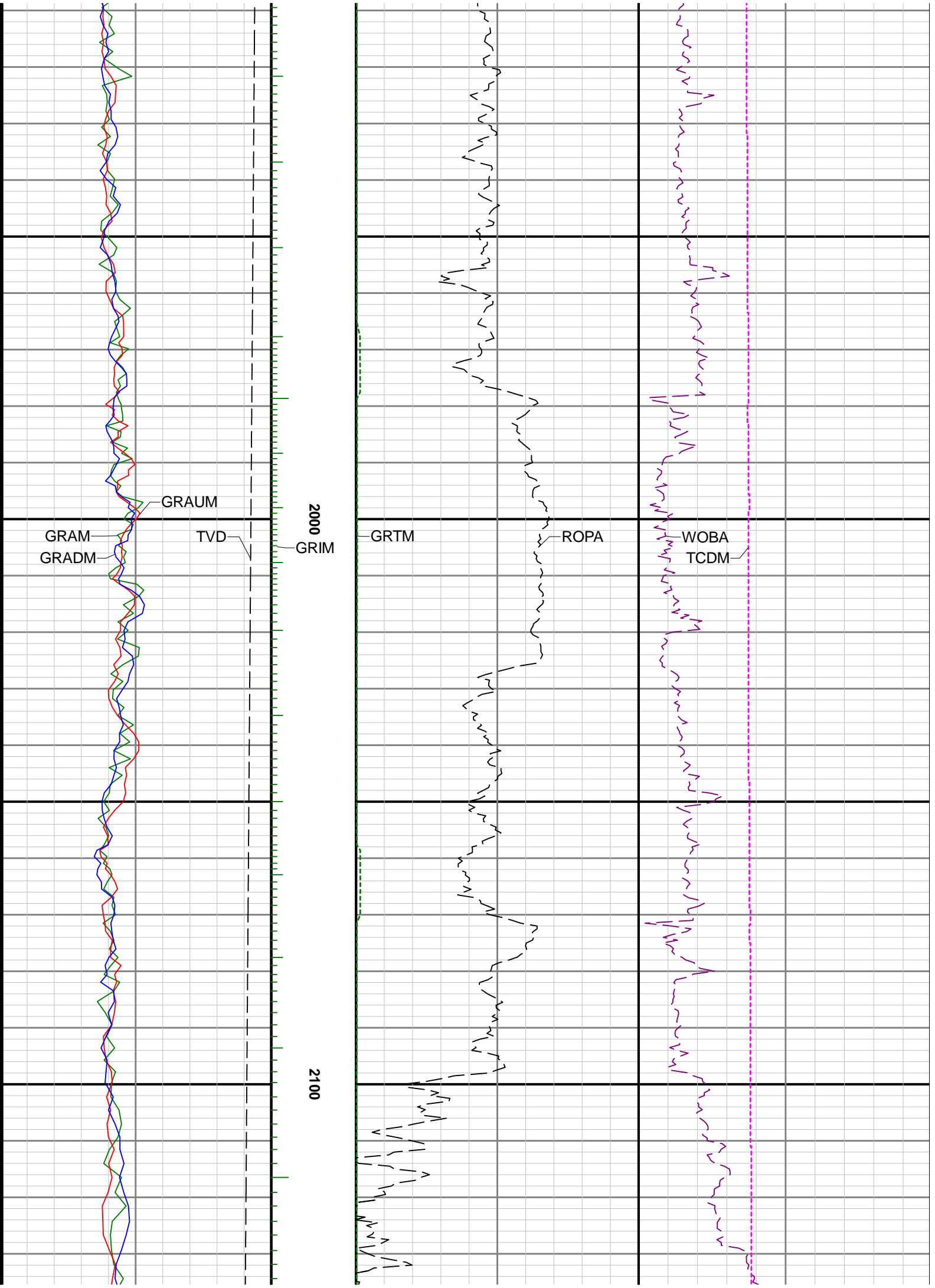
Curve Mnemonics

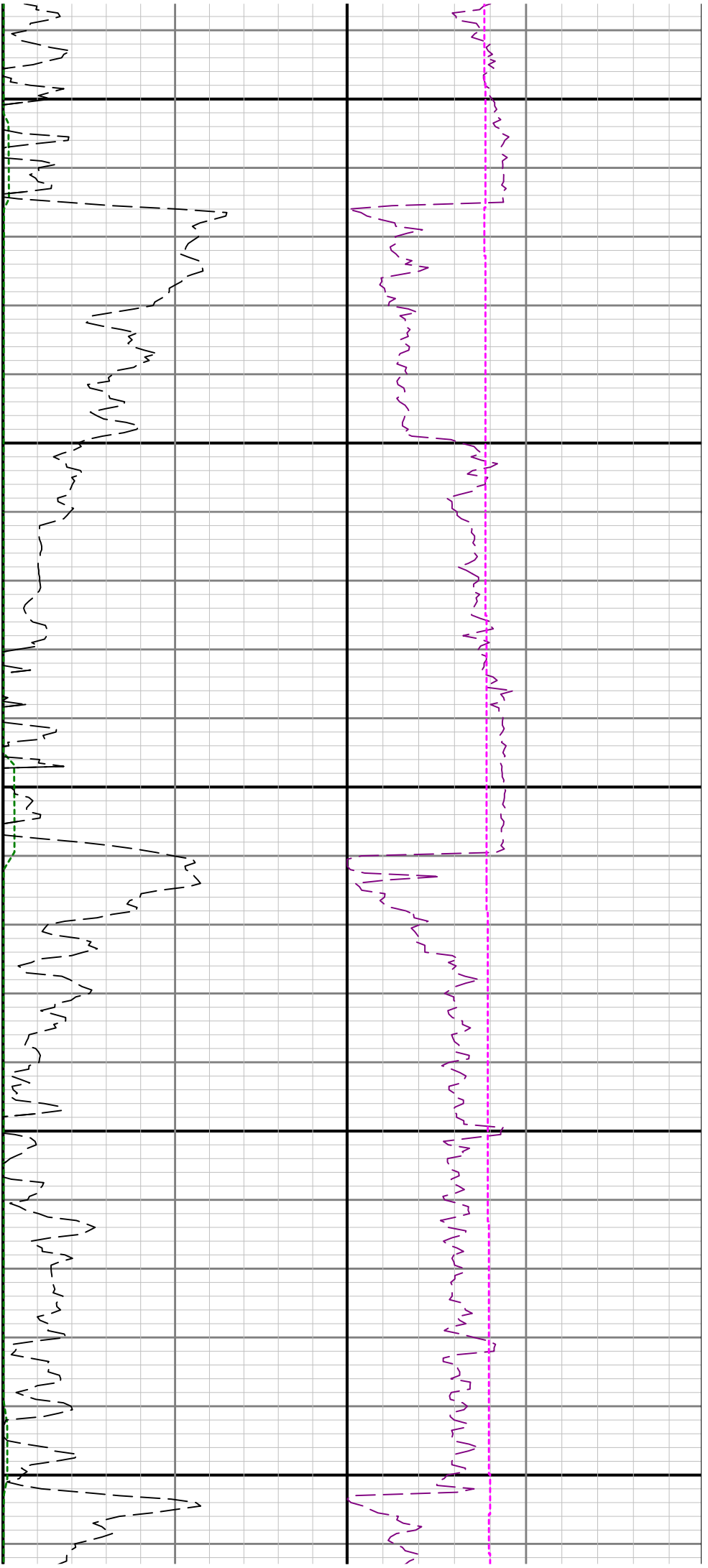
Presented Curves	Description	Units
ROPA	Depth Averaged ROP 3 ft Average	ft/h

TVD	True Vertical Depth	ft
WOBA	Weight On Bit, Average 1 ft Average	klb
GRAM	Gamma Ray - Apparent - Memory 0.5 ft Average	API
GRIM	Gamma Ray - Data Point Indicator - Memory	unitless
GRTM	Gamma Ray - Time Since Drilled - Memory	min
GRADM	Gamma Ray - Apparent - Down Quadrant - Memory 0.5 ft Average	API
GRAUM	Gamma Ray - Apparent - Up Quadrant - Memory 0.5 ft Average	API
TCDM	Downhole Temperature	degF

	Company	SRC Energy			
	Well	Boomerang 33C-6-M			
	Interval	Date From:	2018-01-25 22:53:06	Top:	1816.00
	Created	Date To:	2018-01-29 07:51:32	Bottom:	15684.00
			2018-01-31 01:10:55		

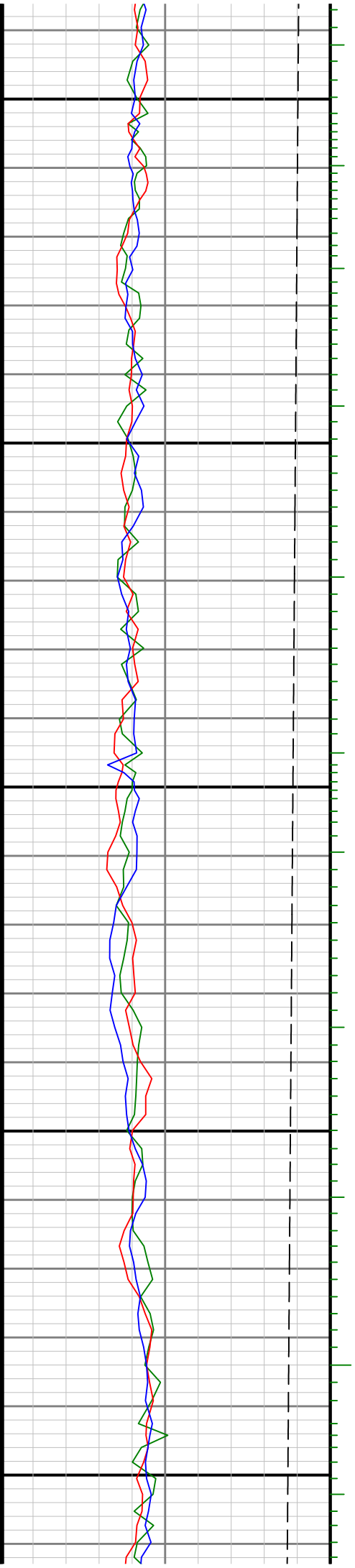


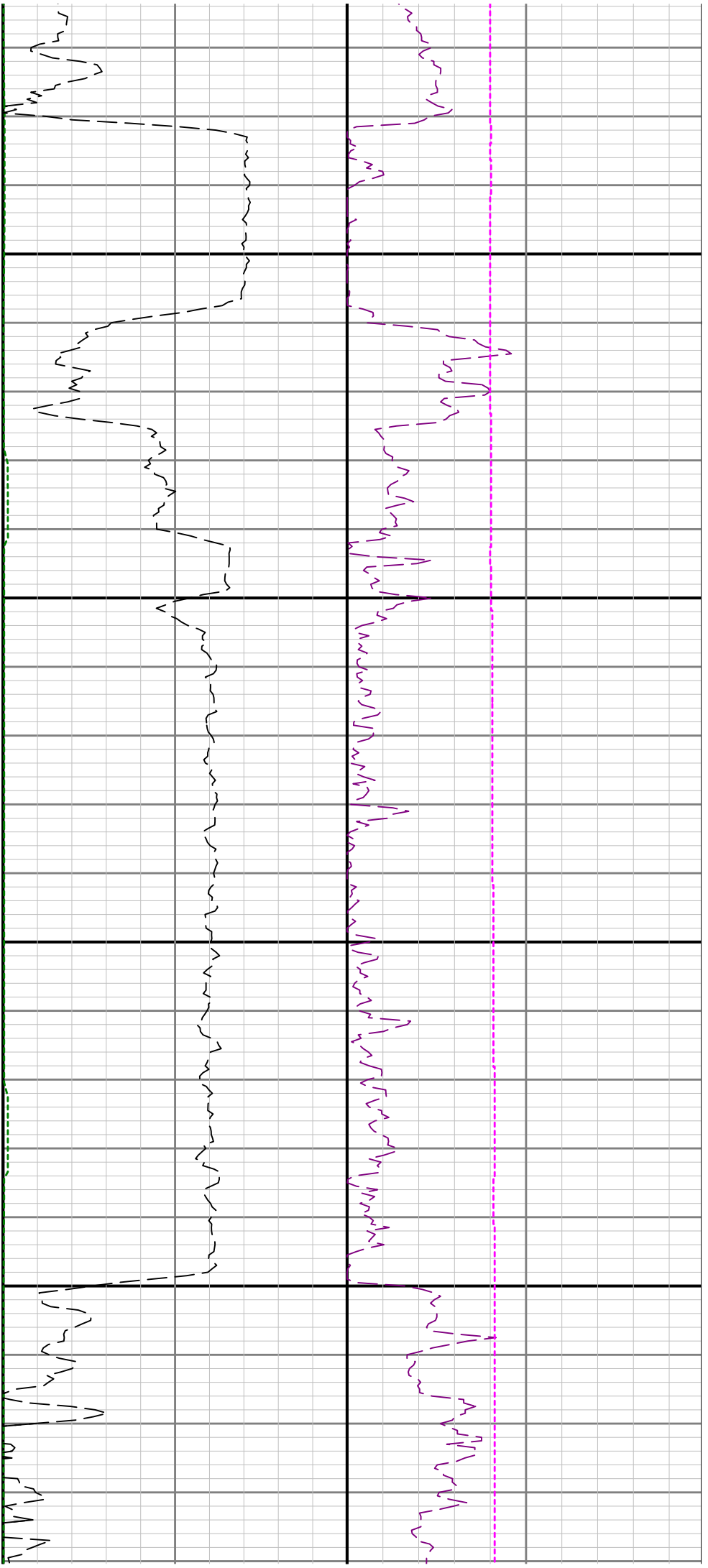




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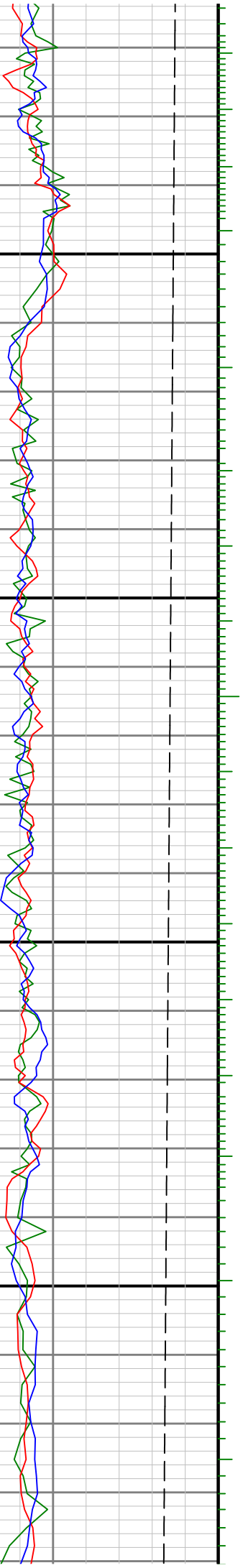
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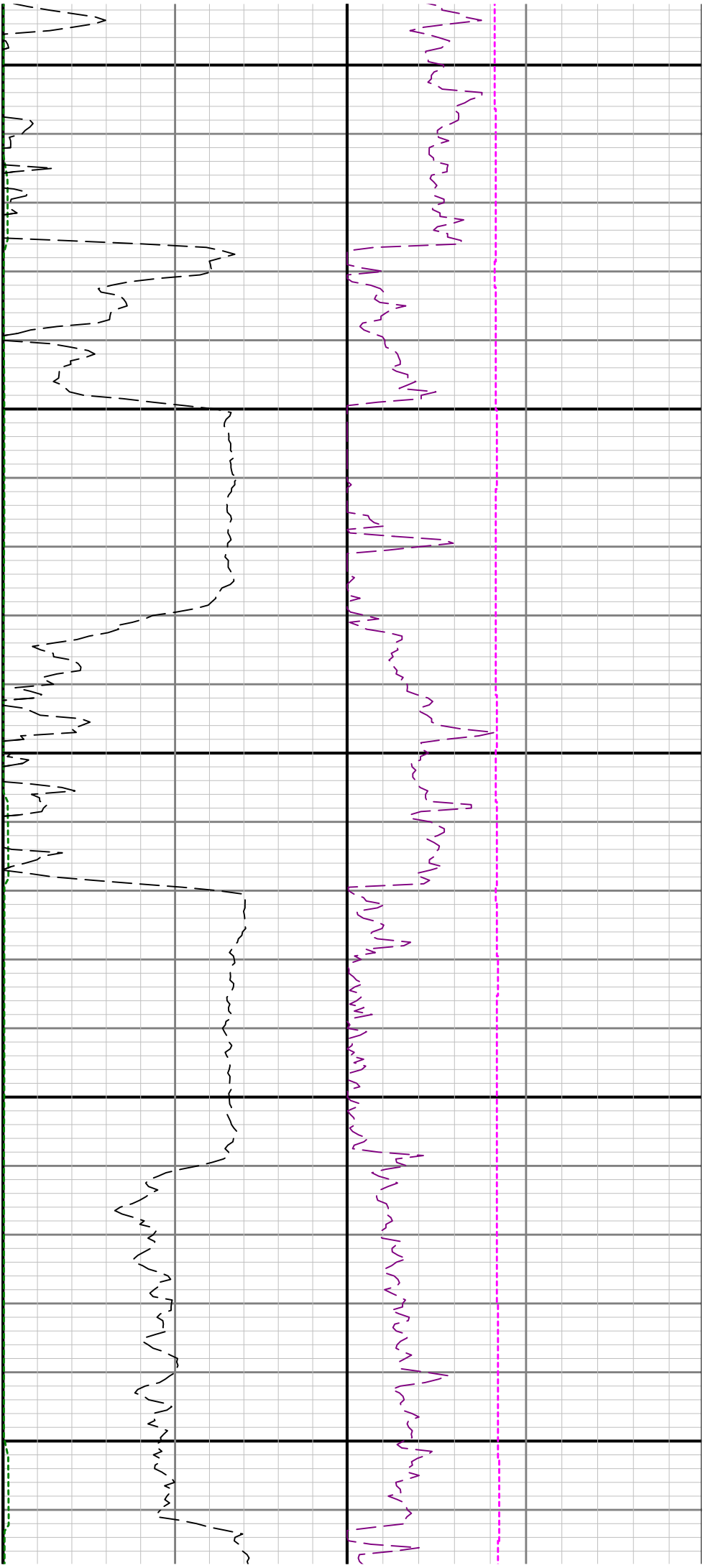




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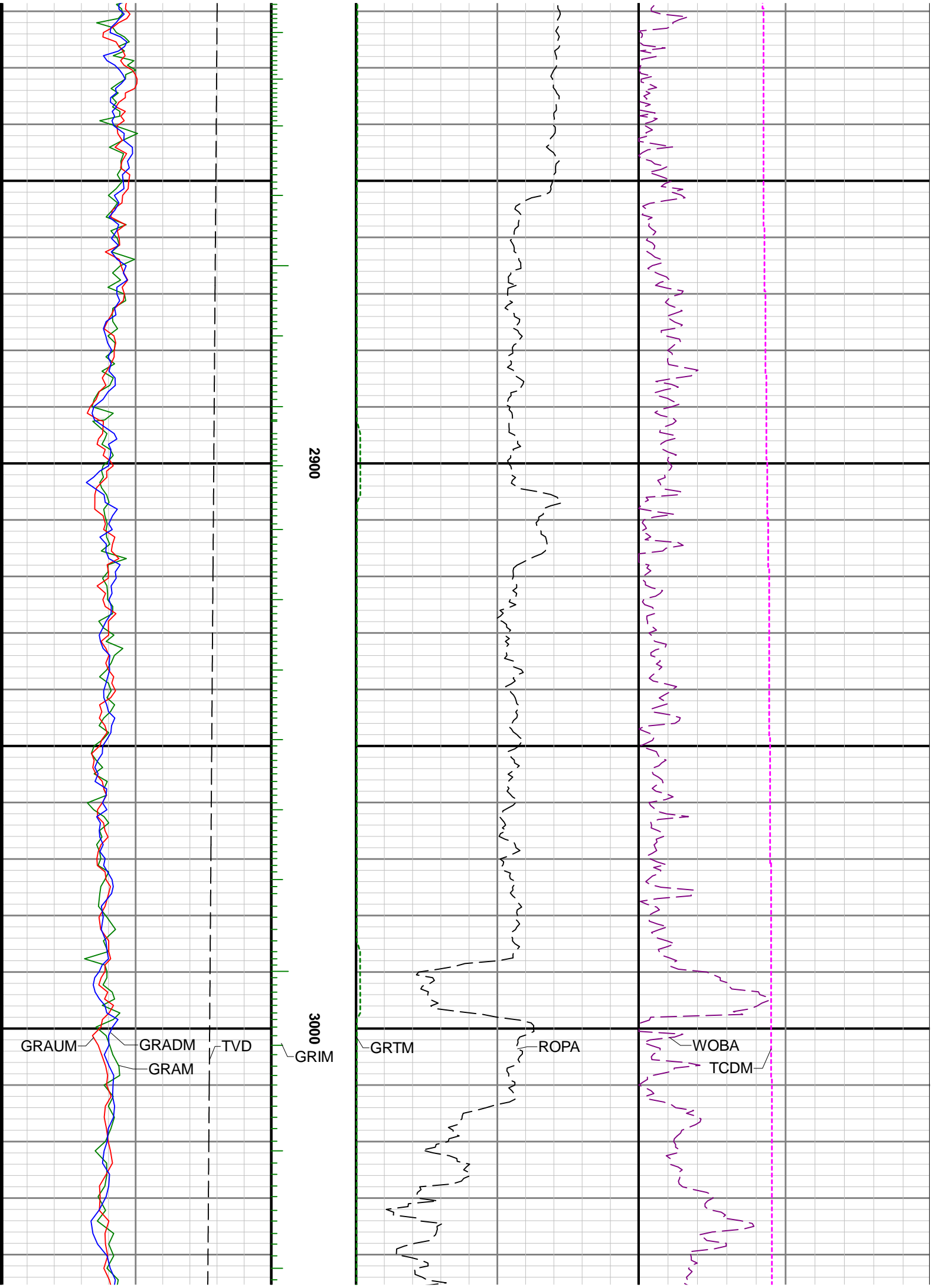


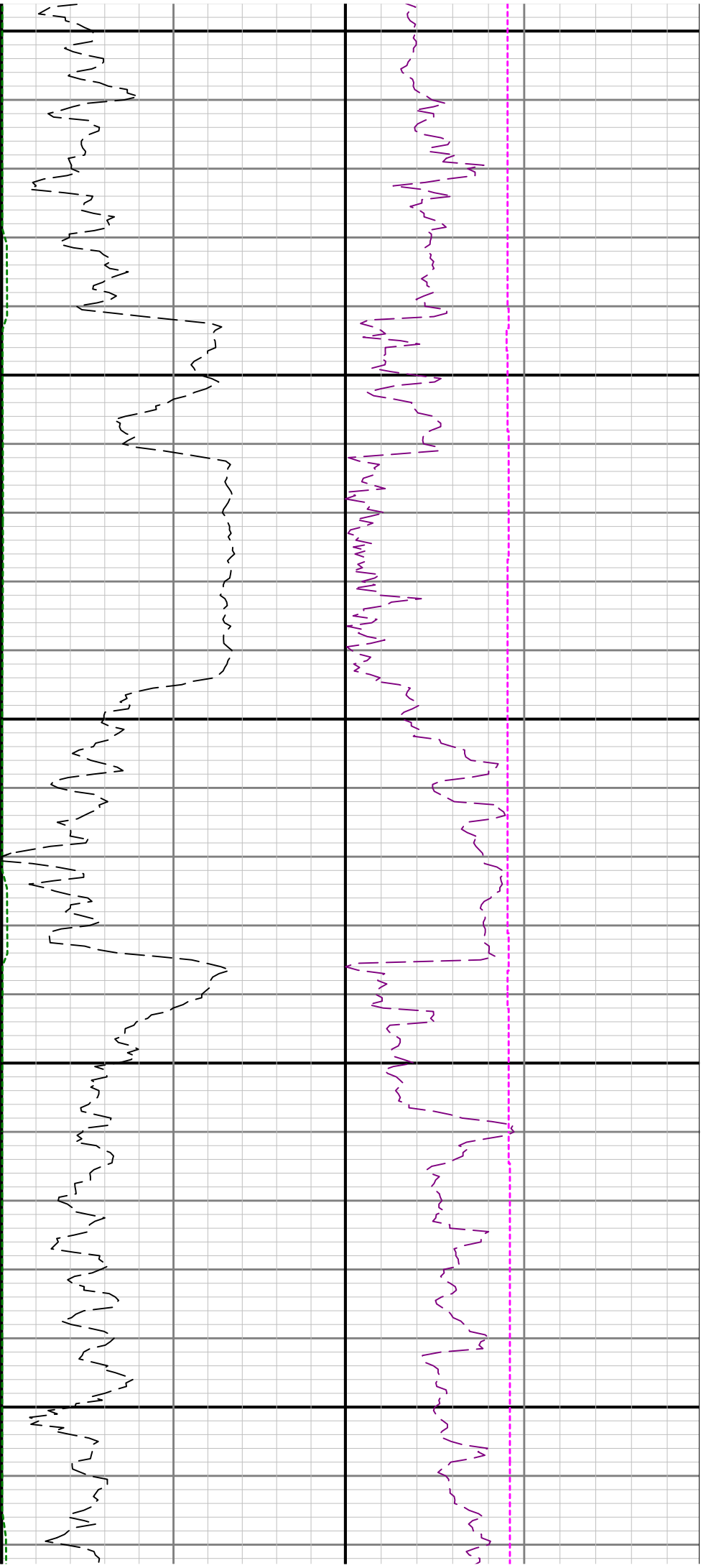


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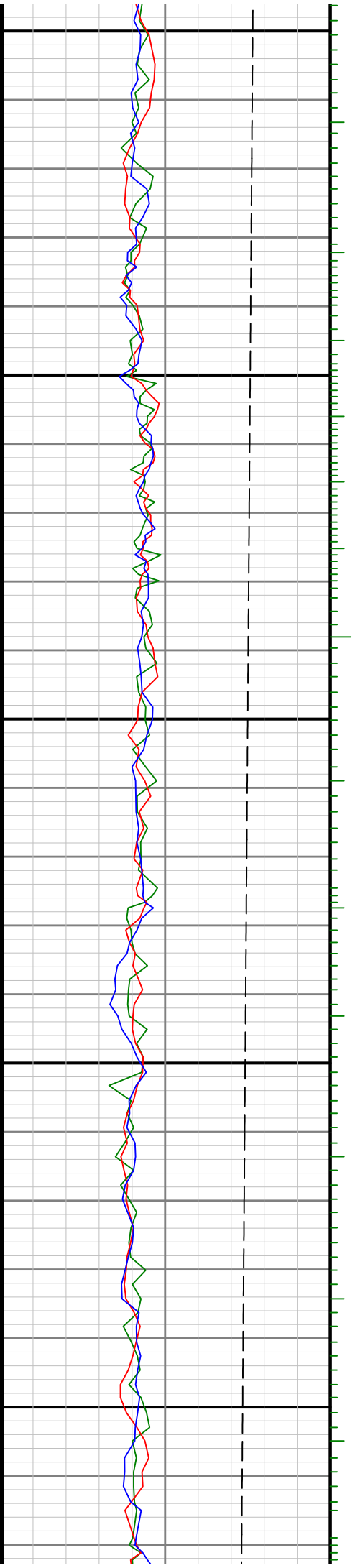
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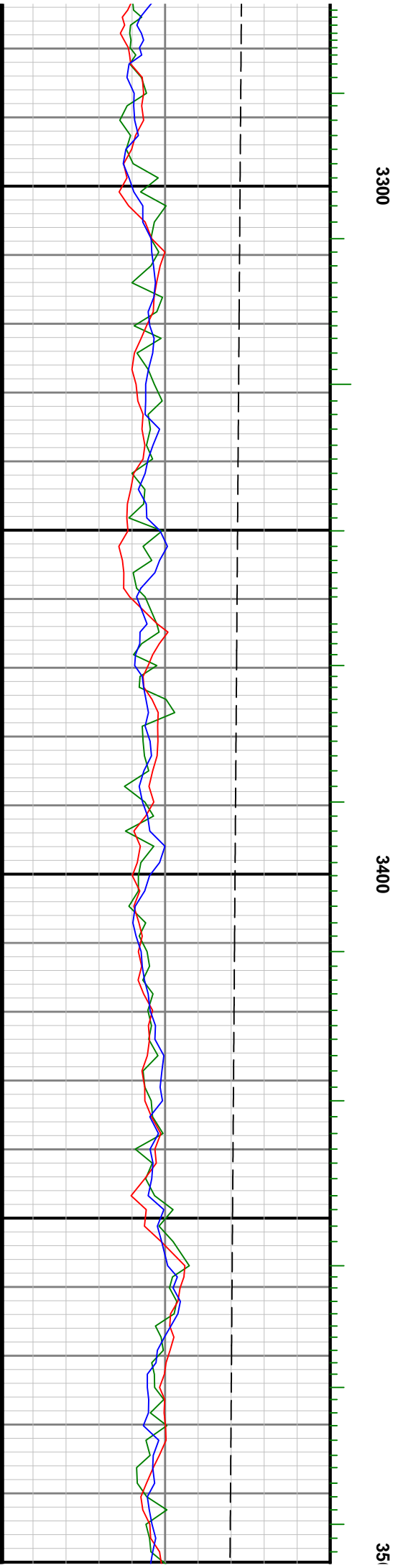
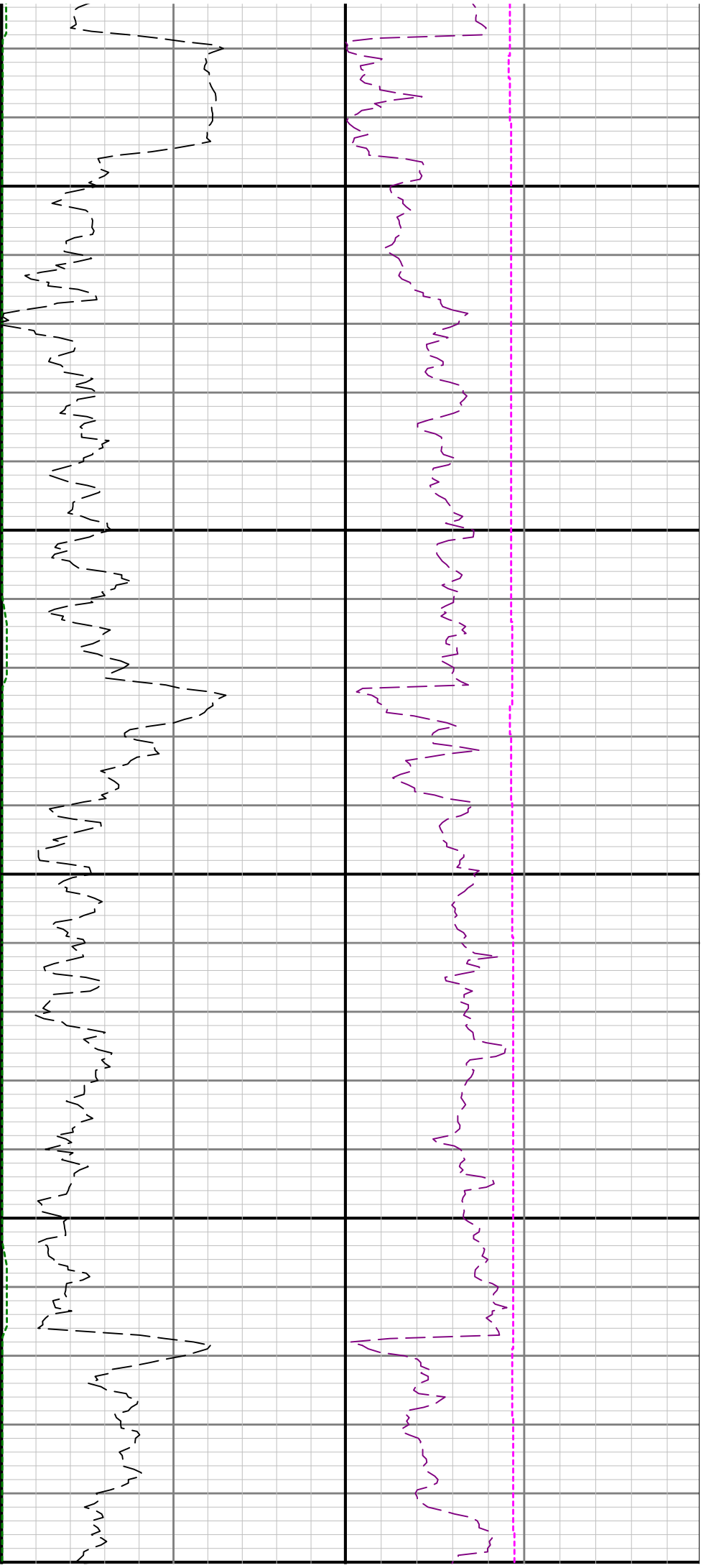


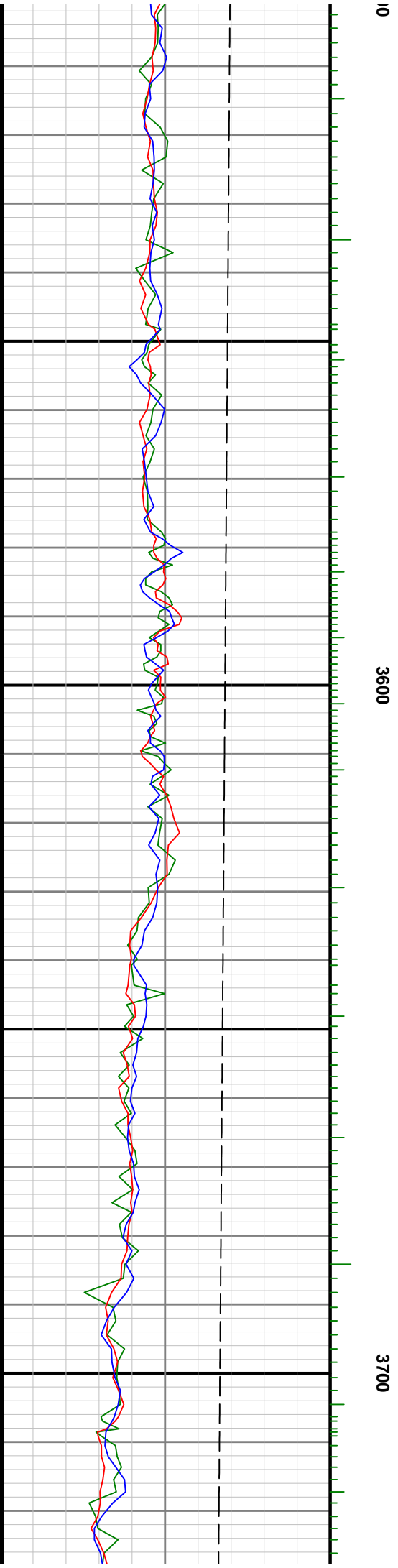
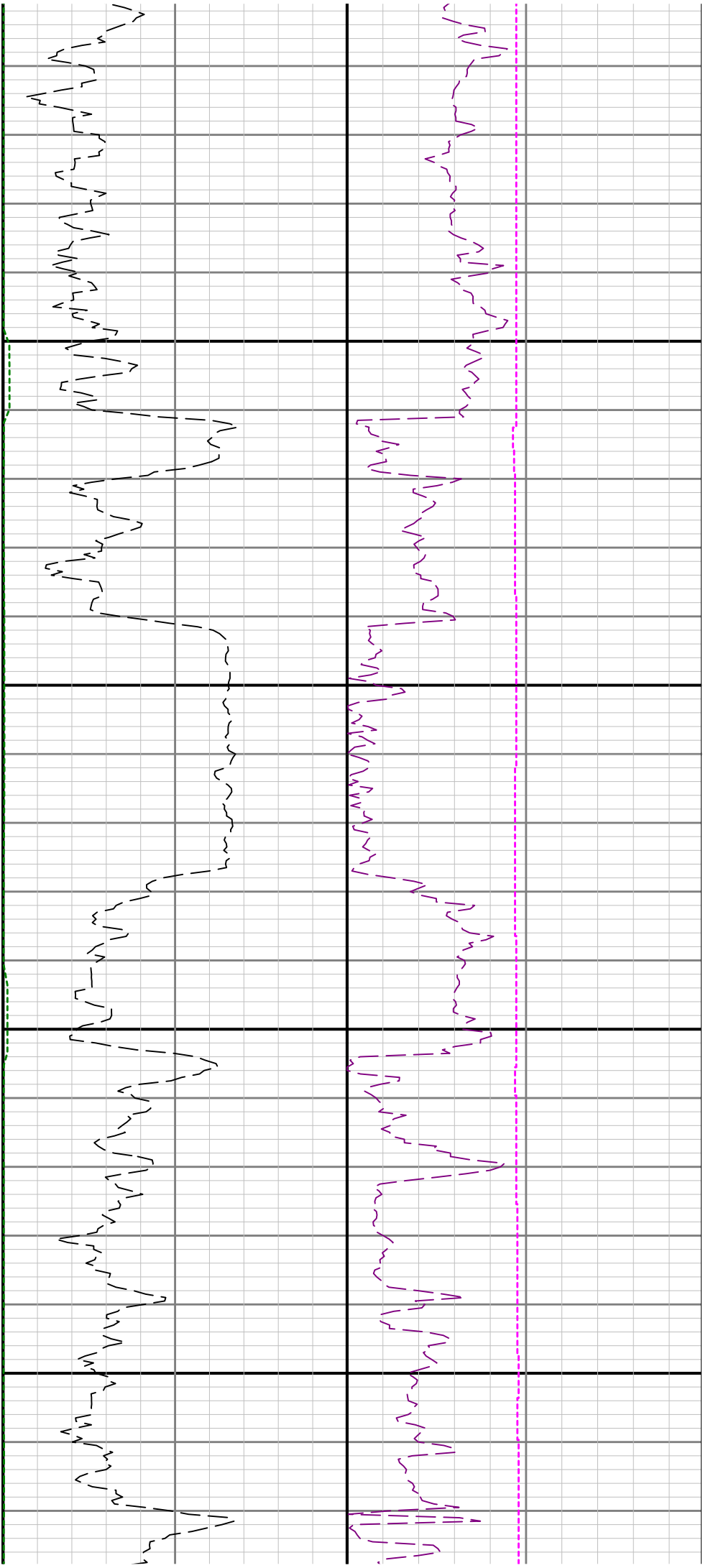


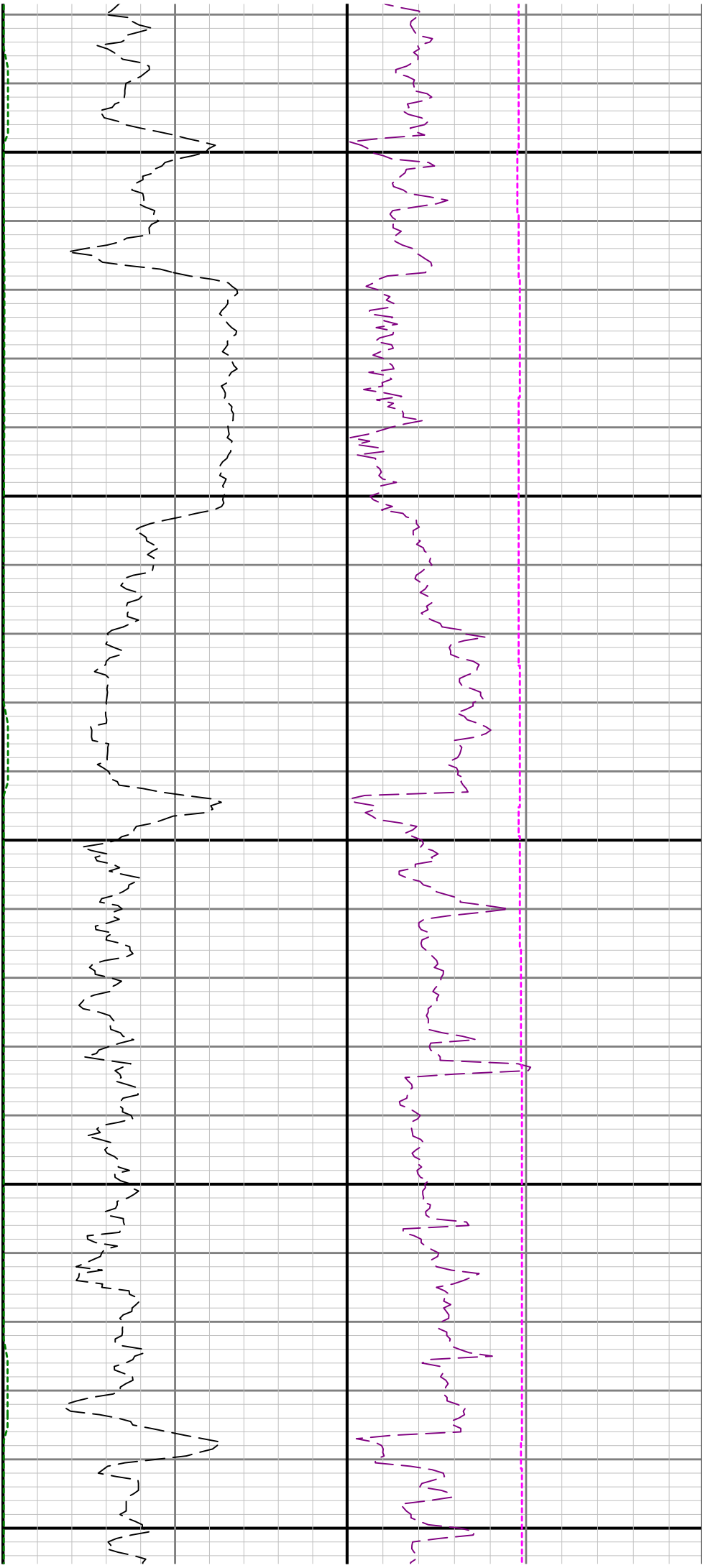
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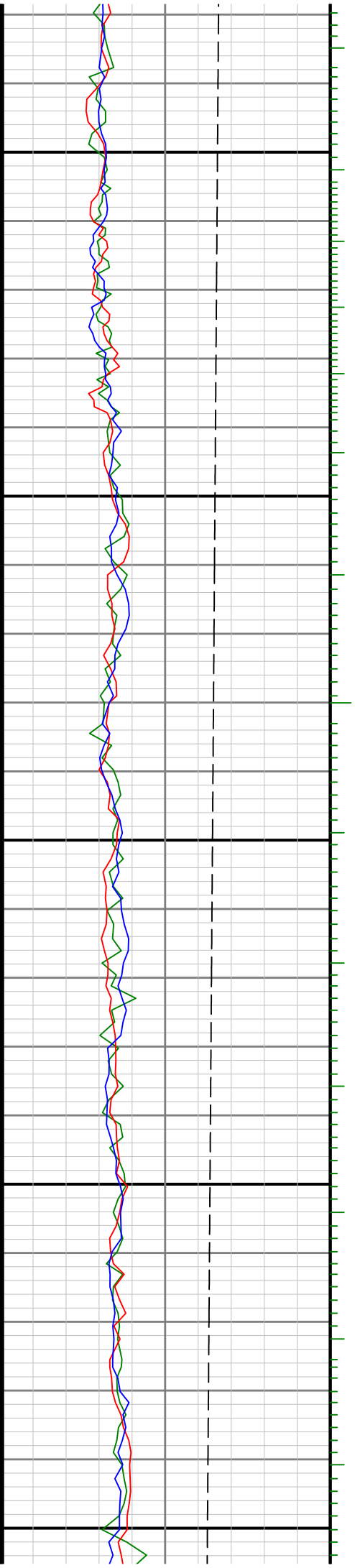


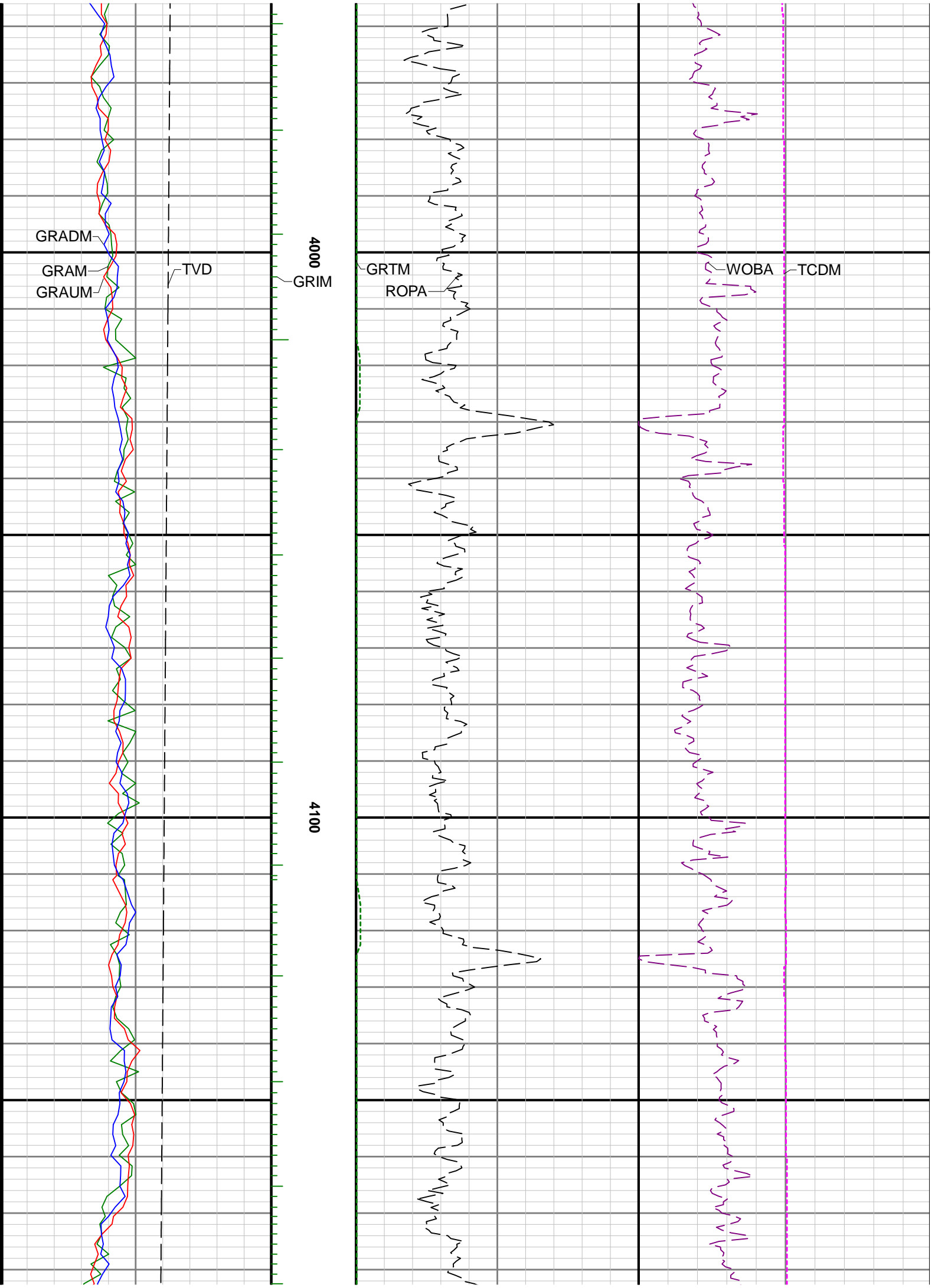


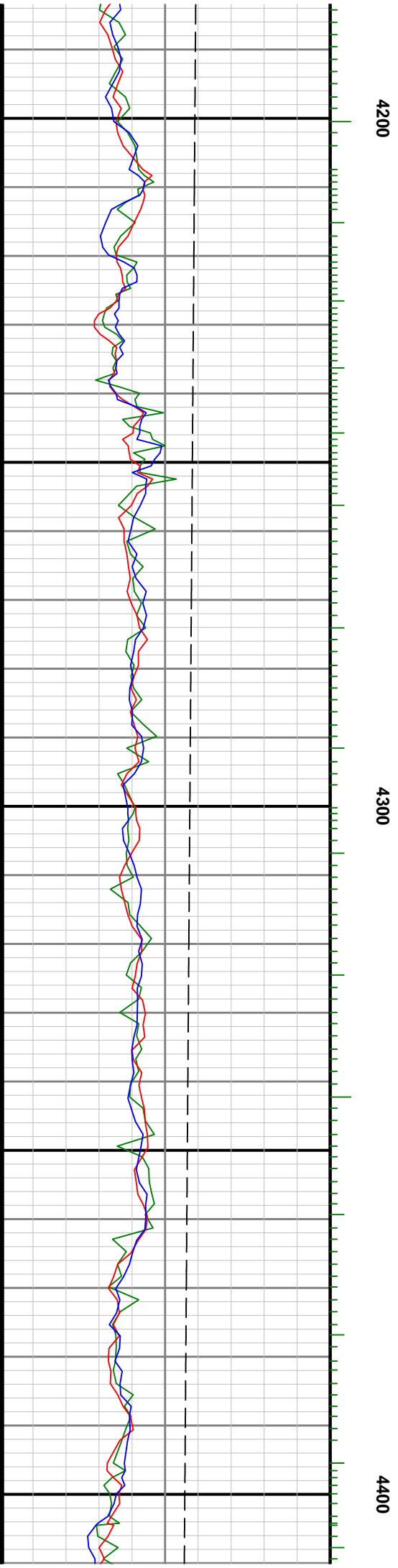
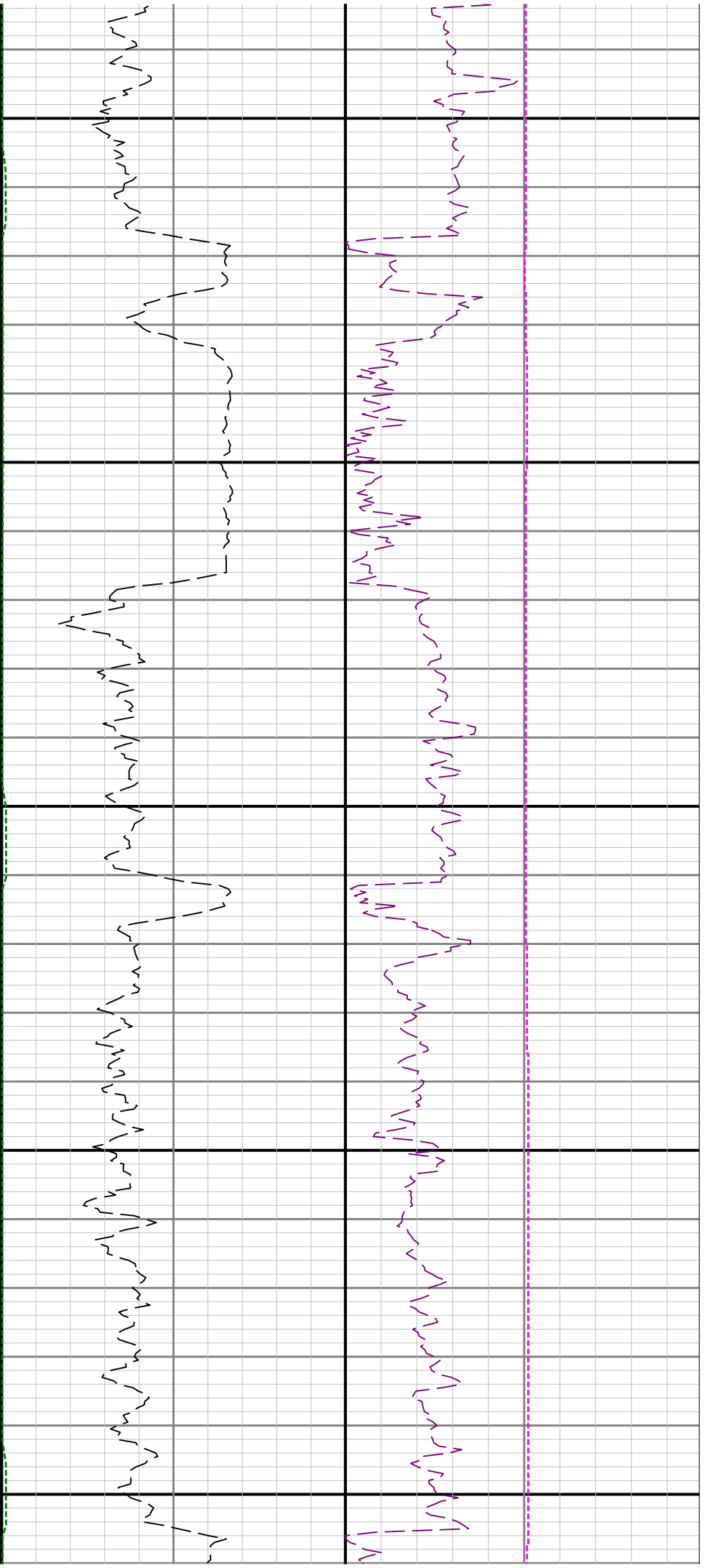


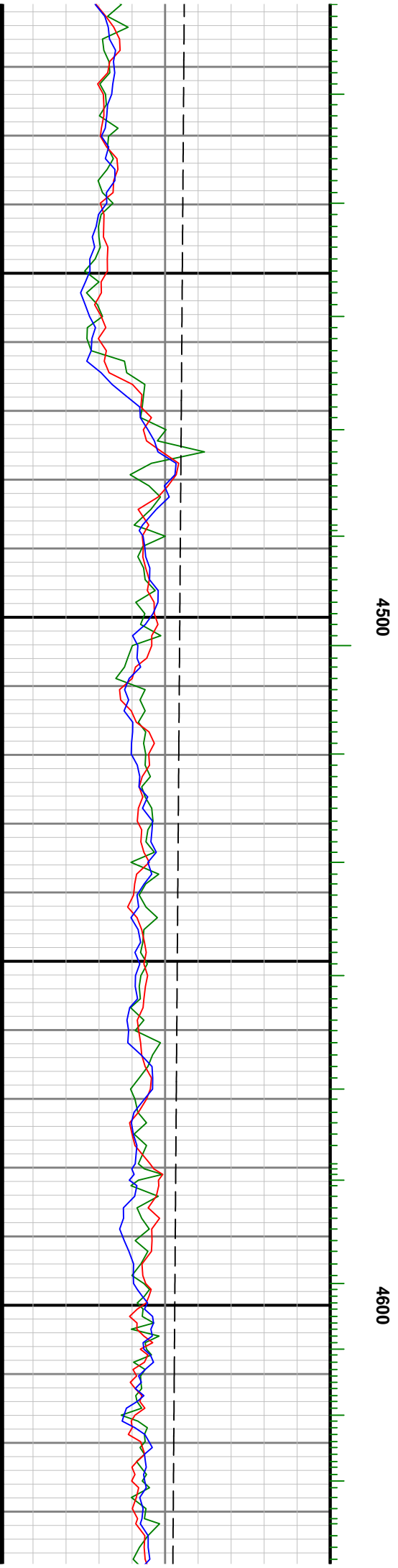
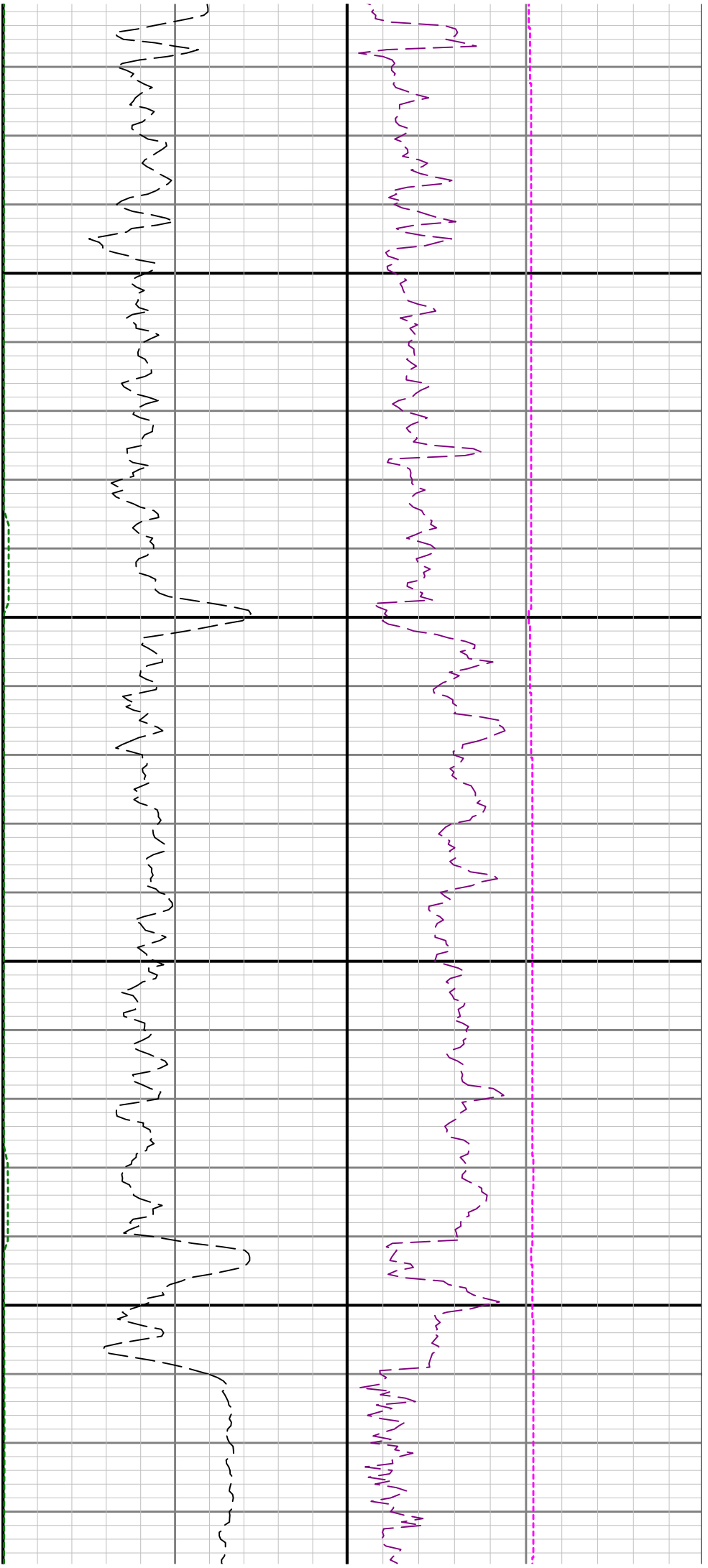
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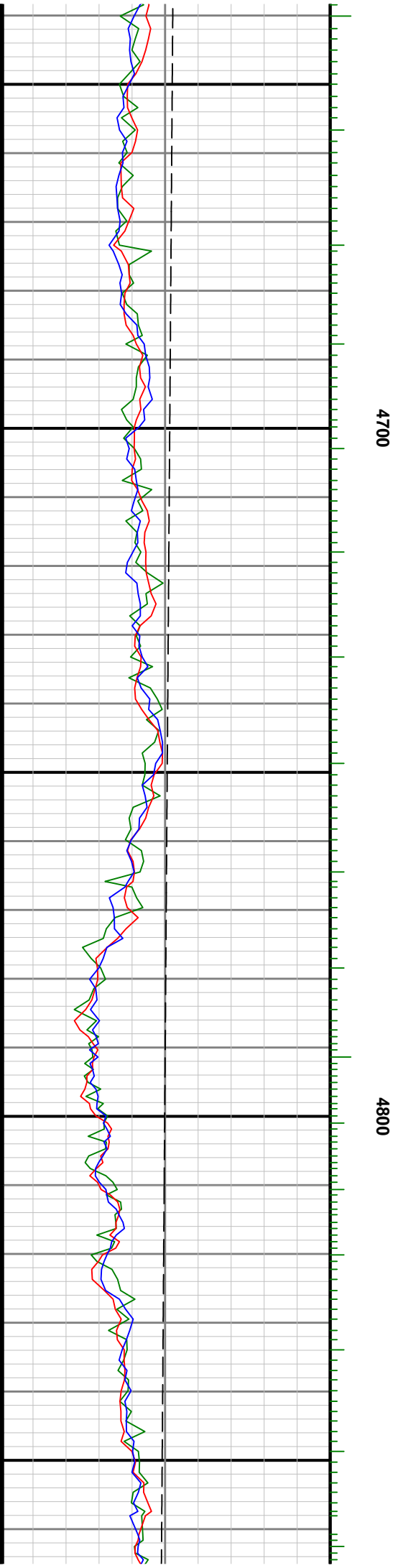
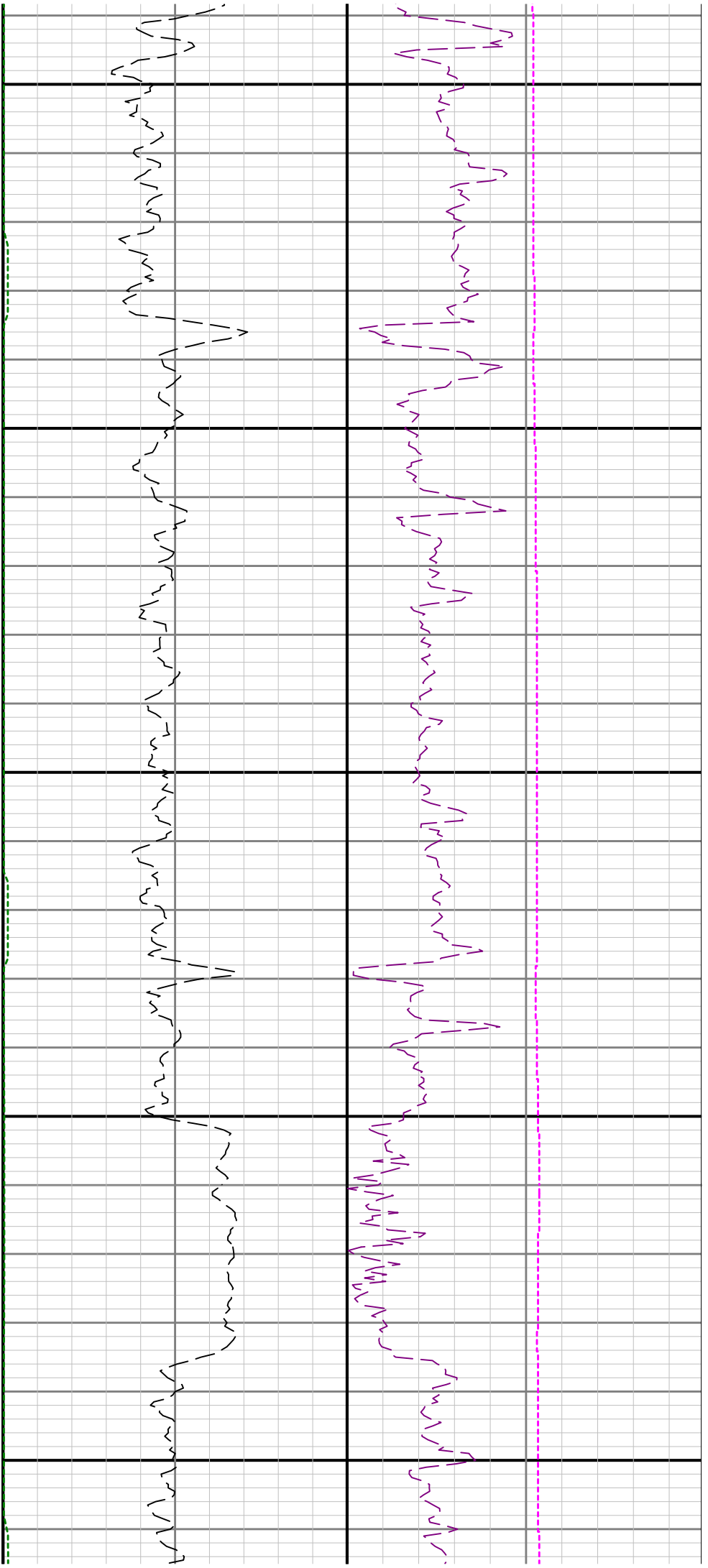
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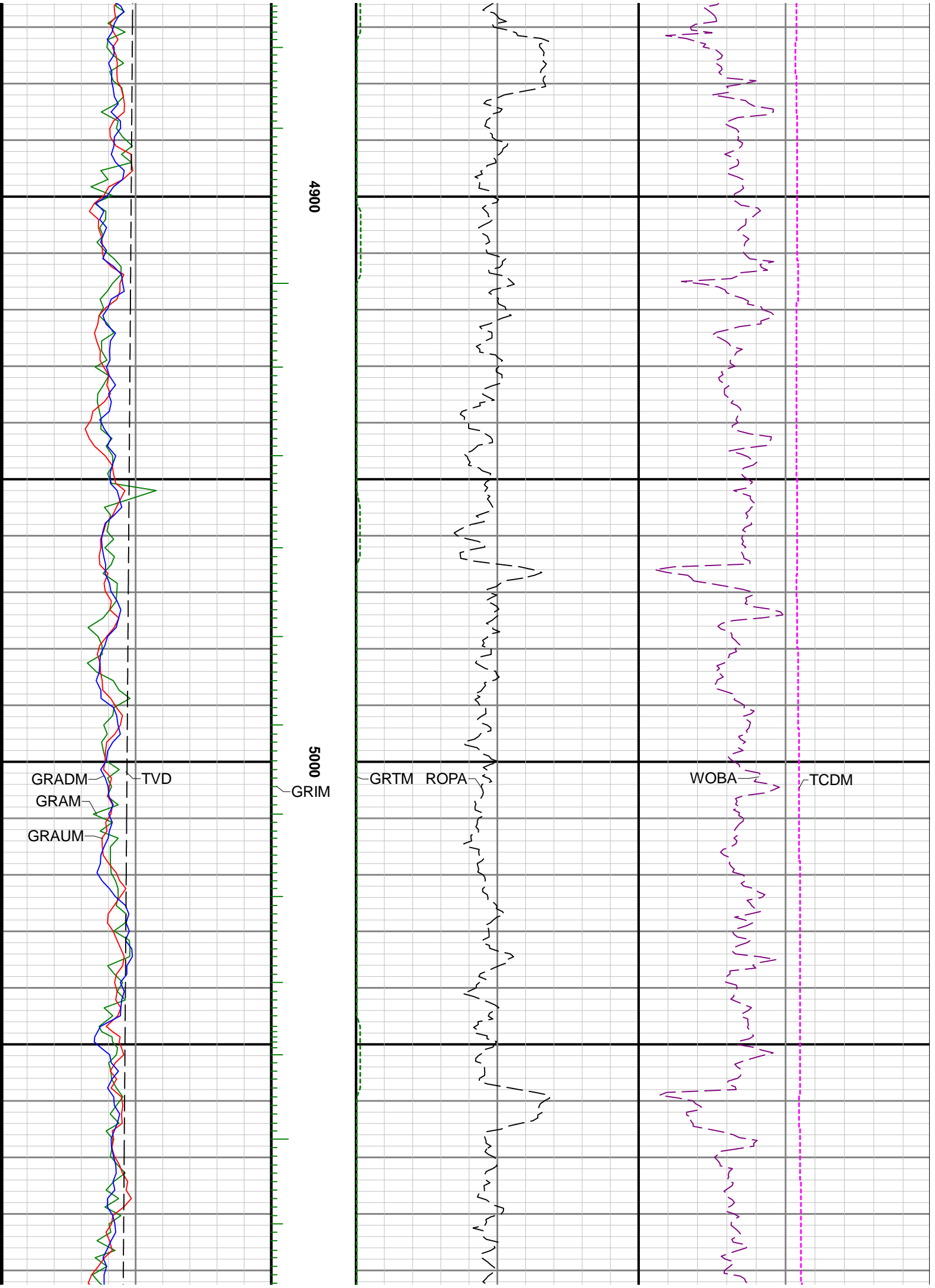


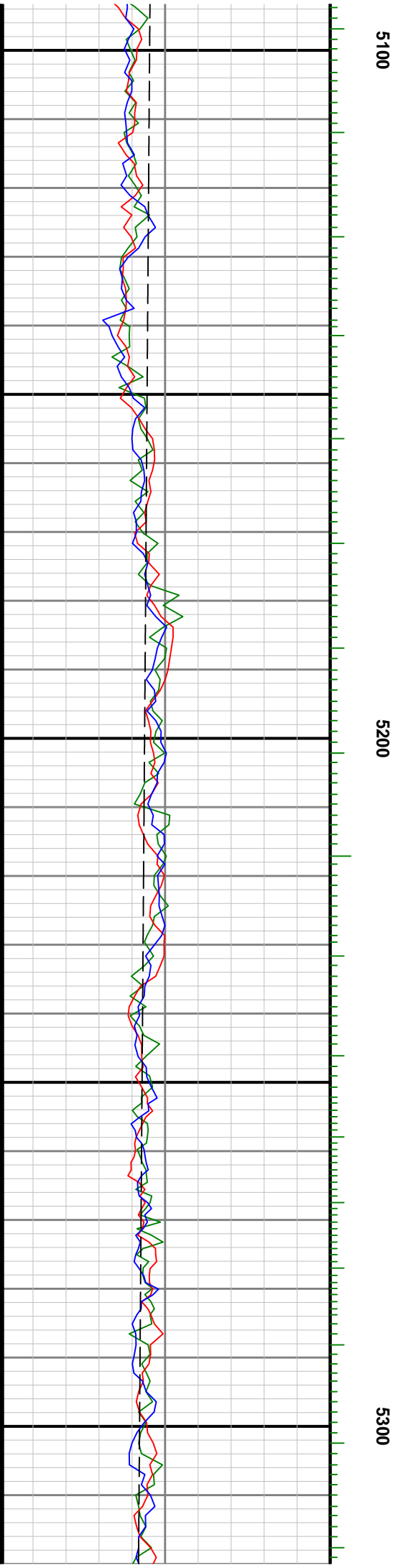
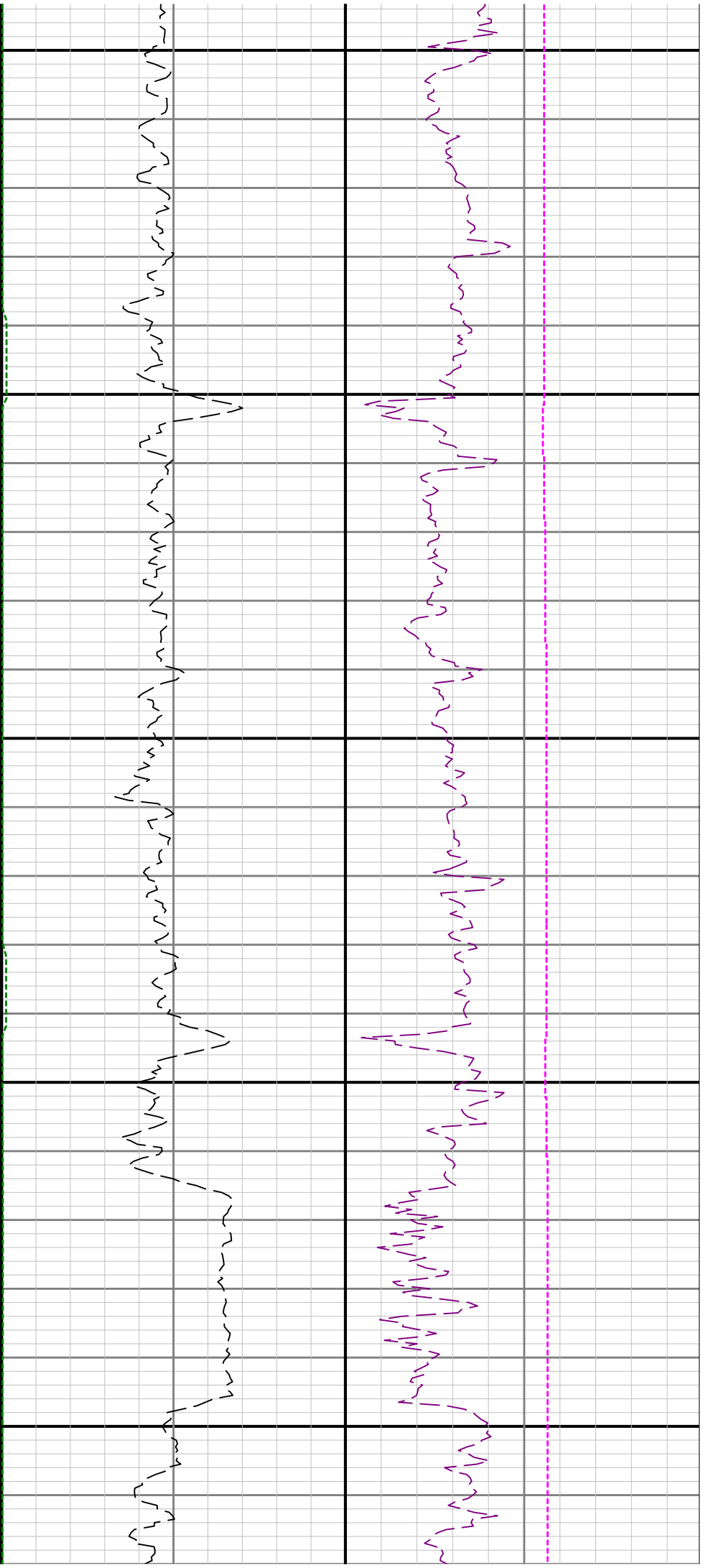


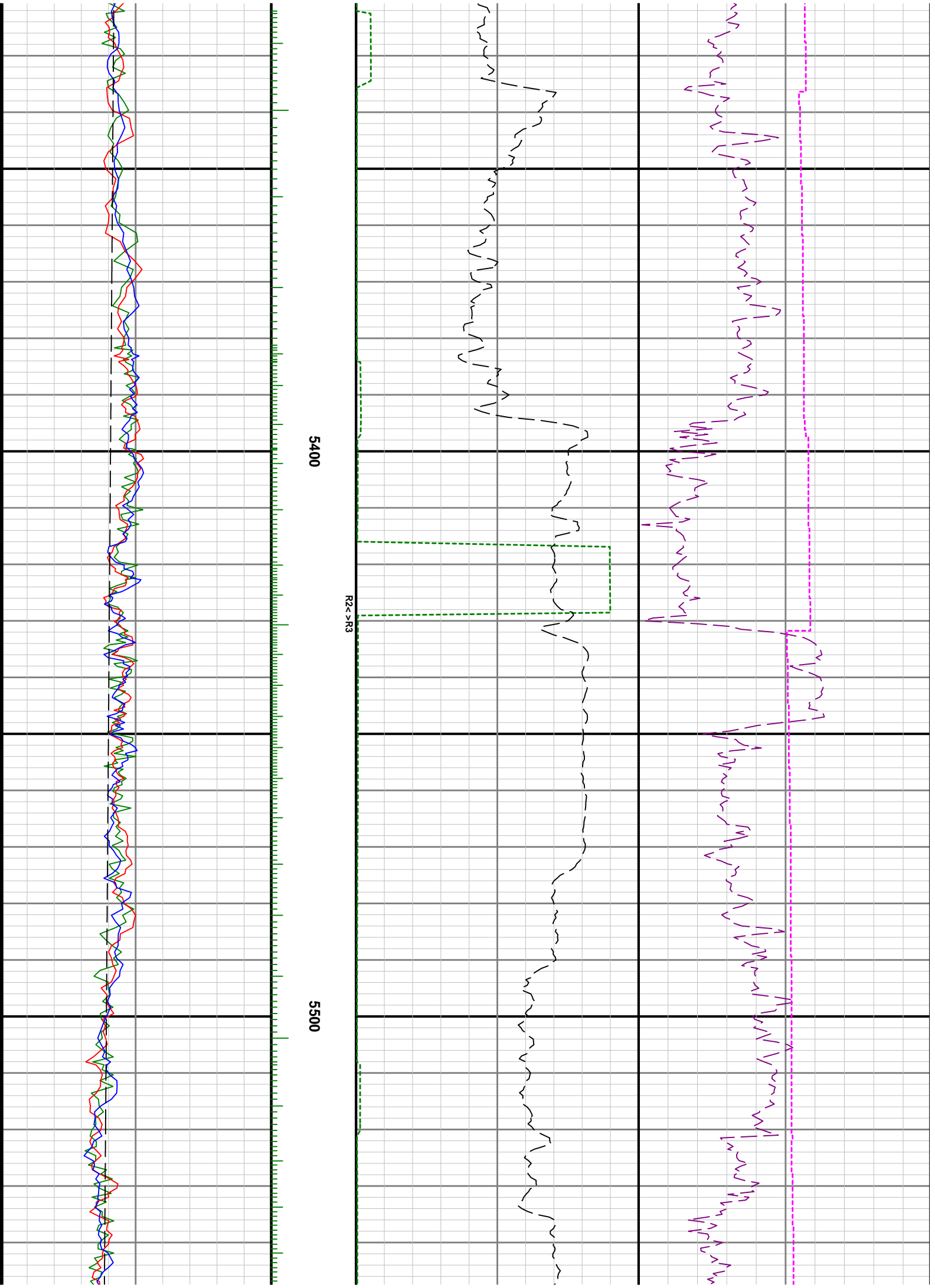


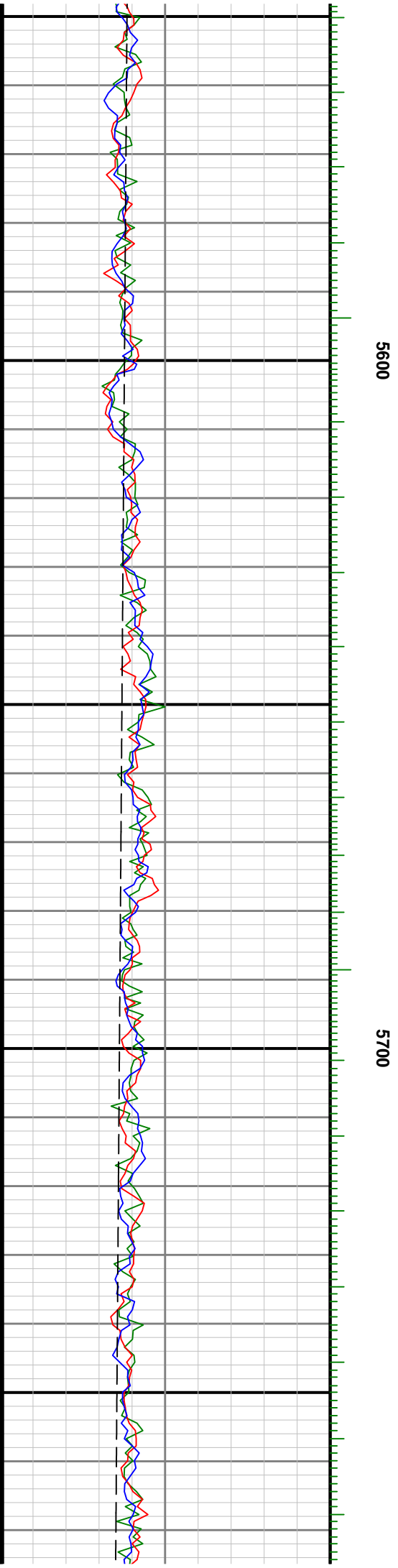
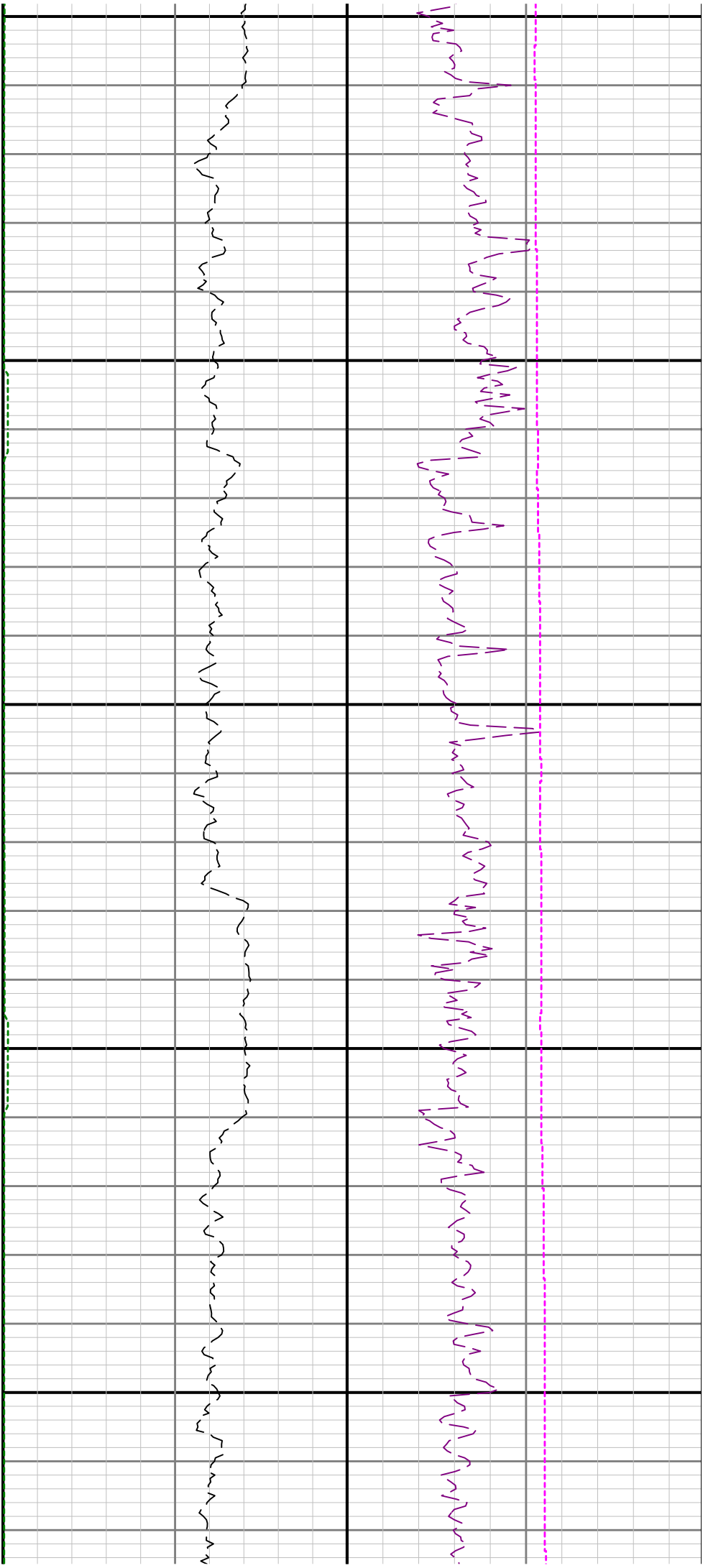


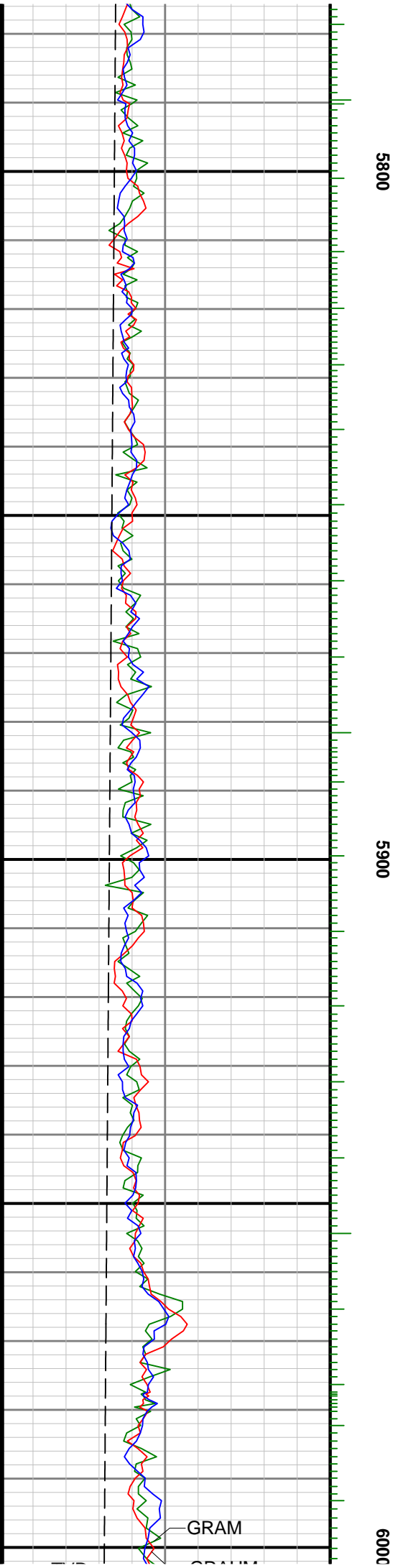
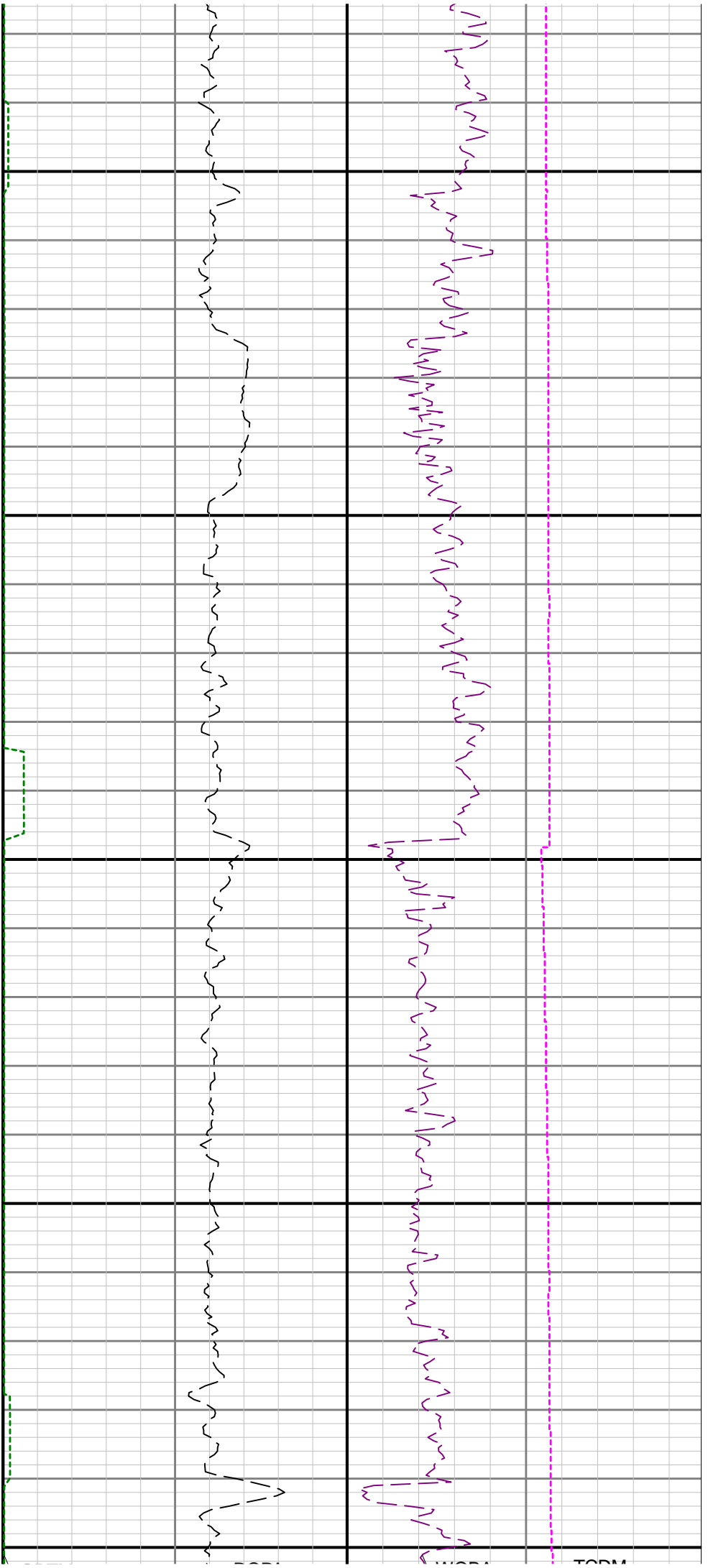


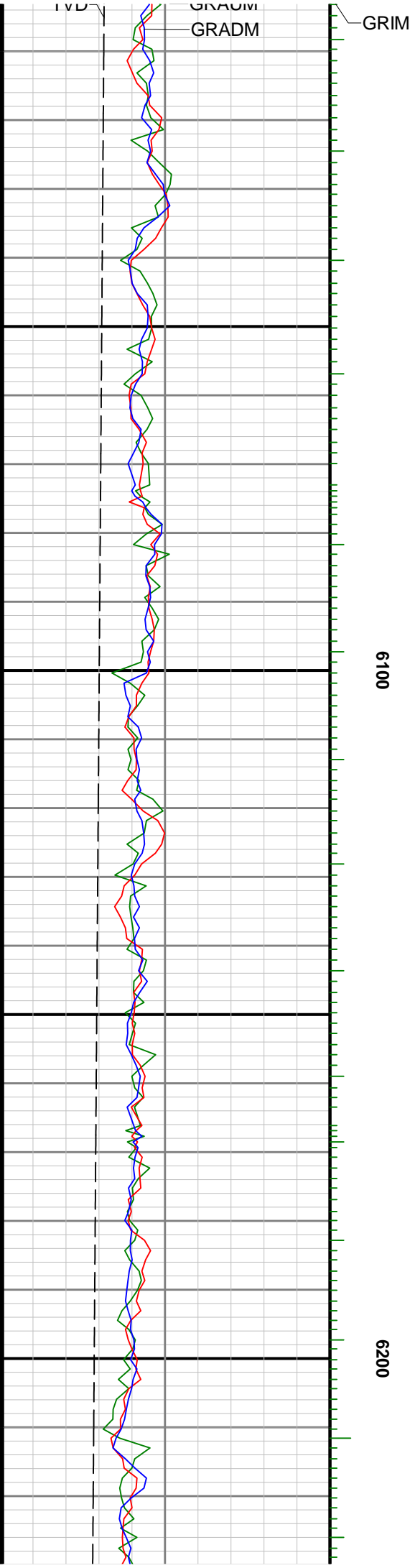
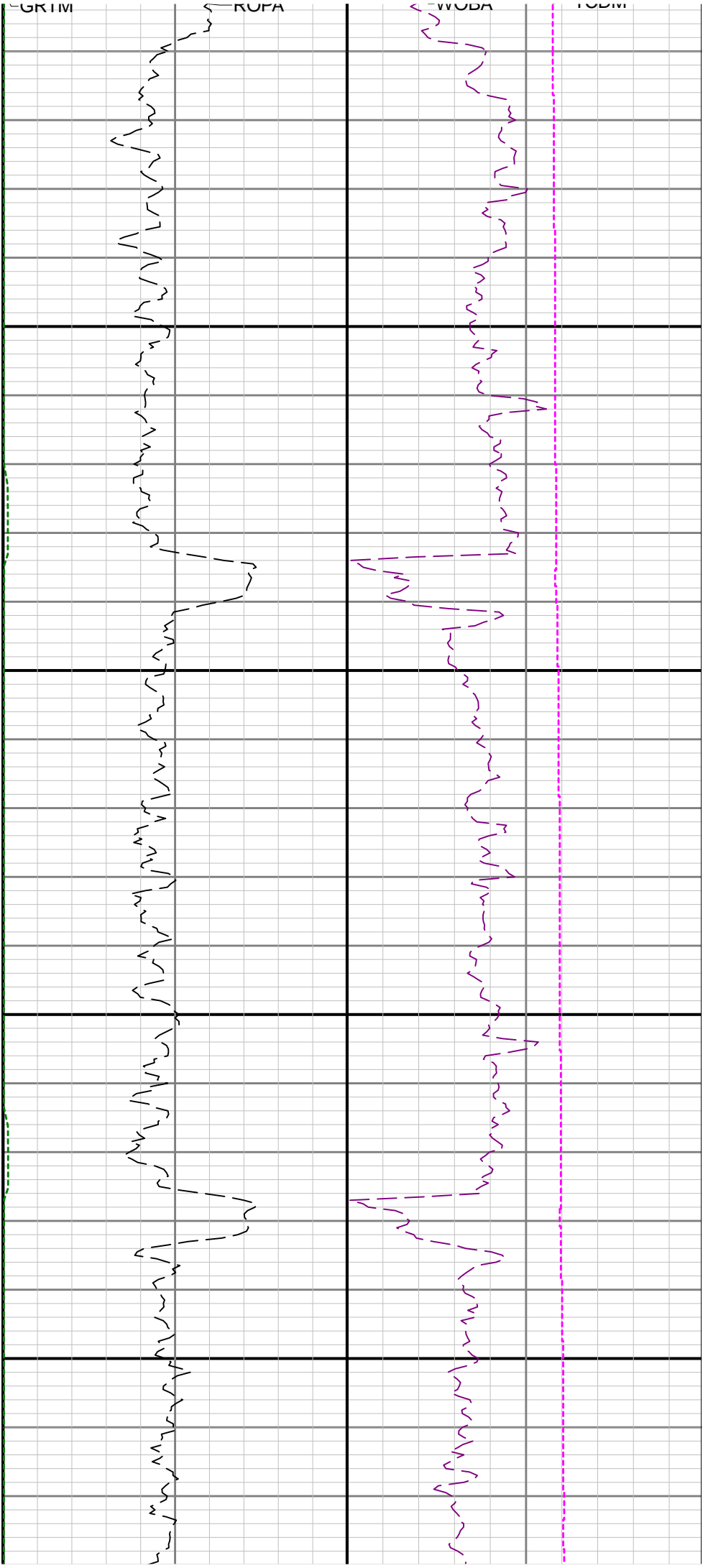


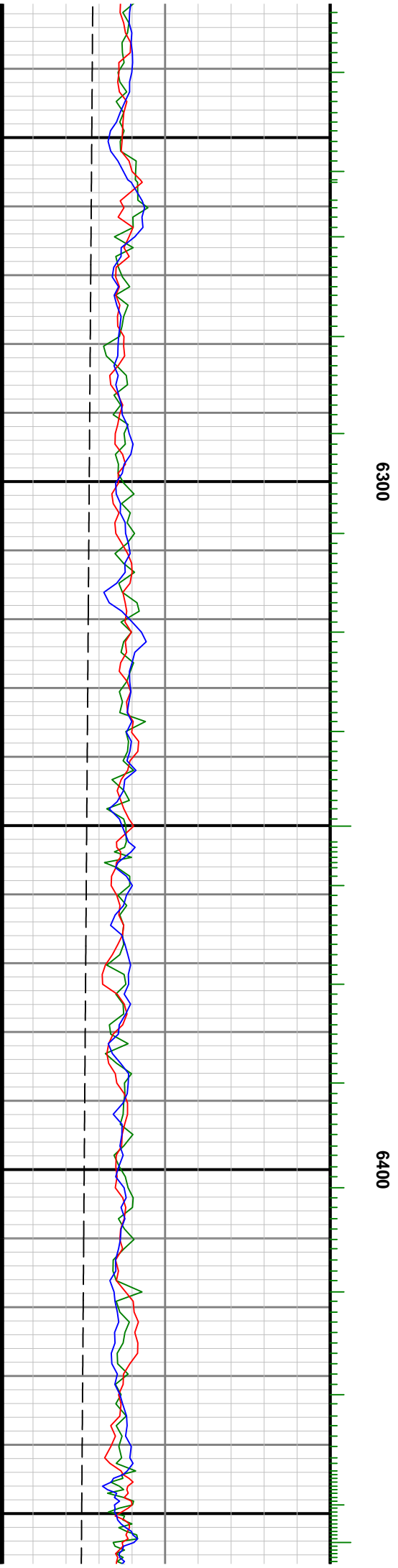
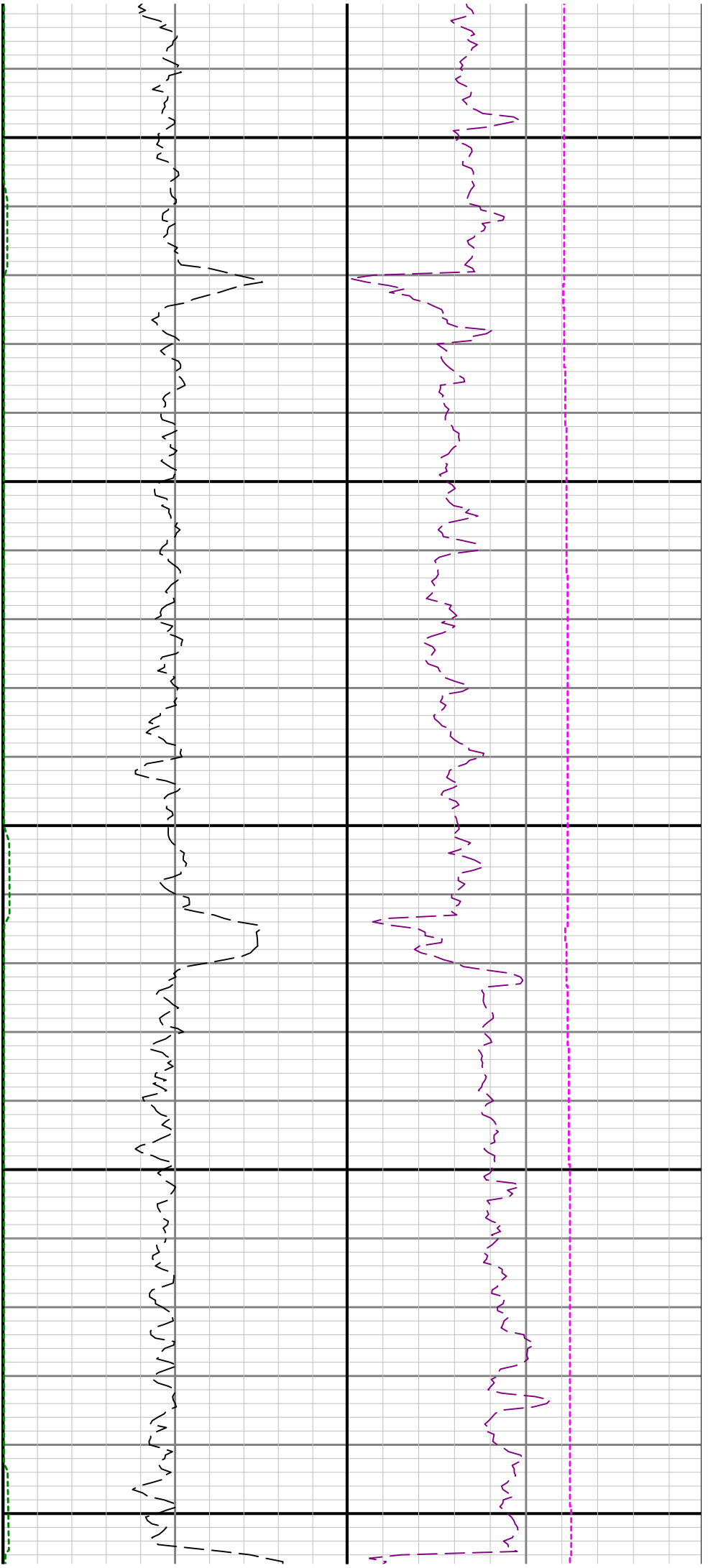


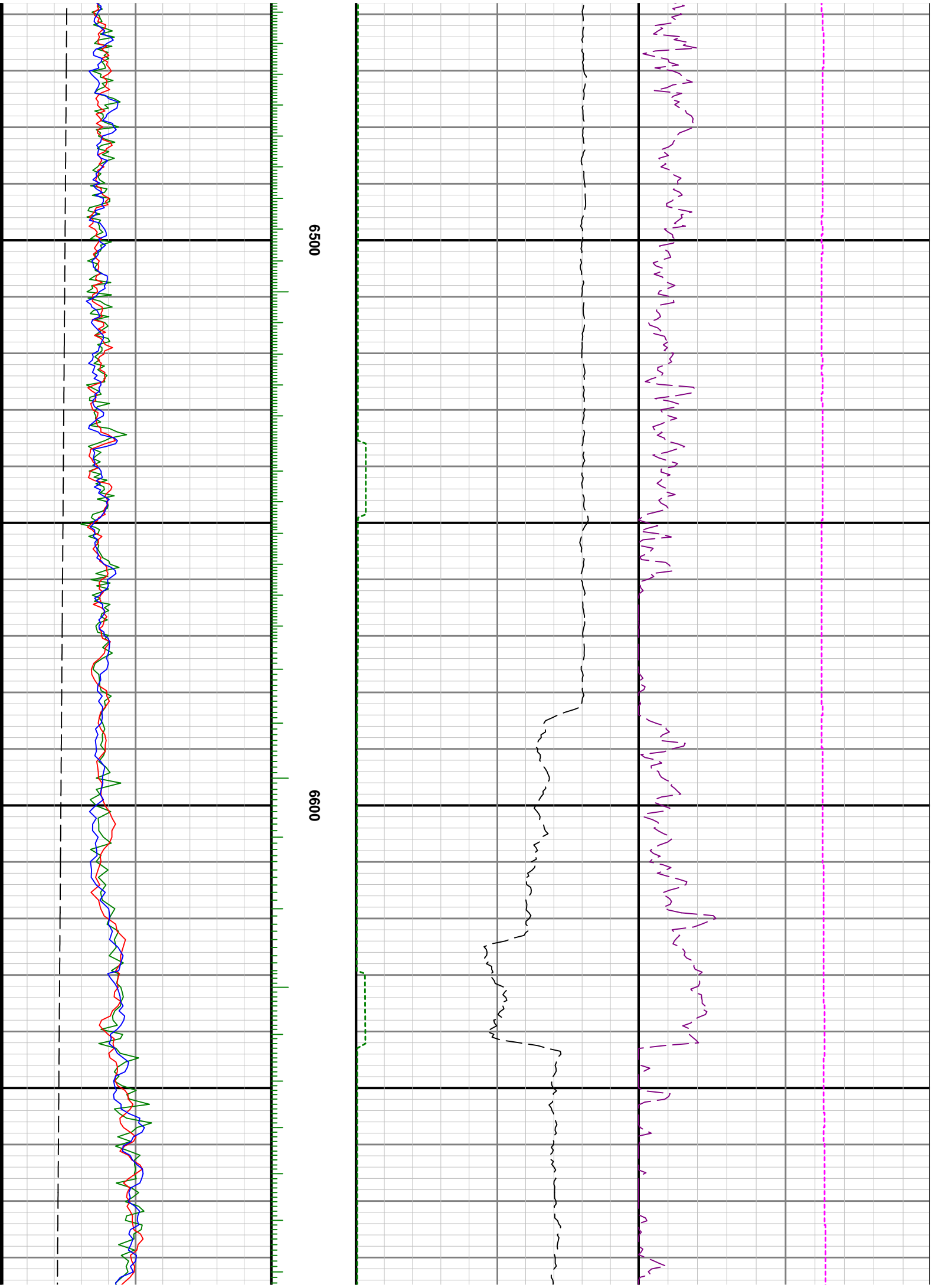


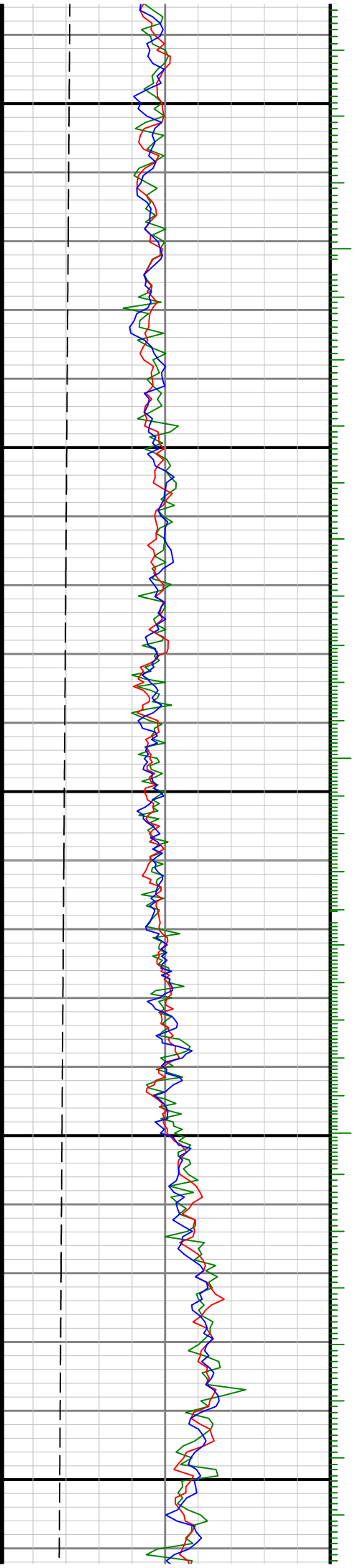








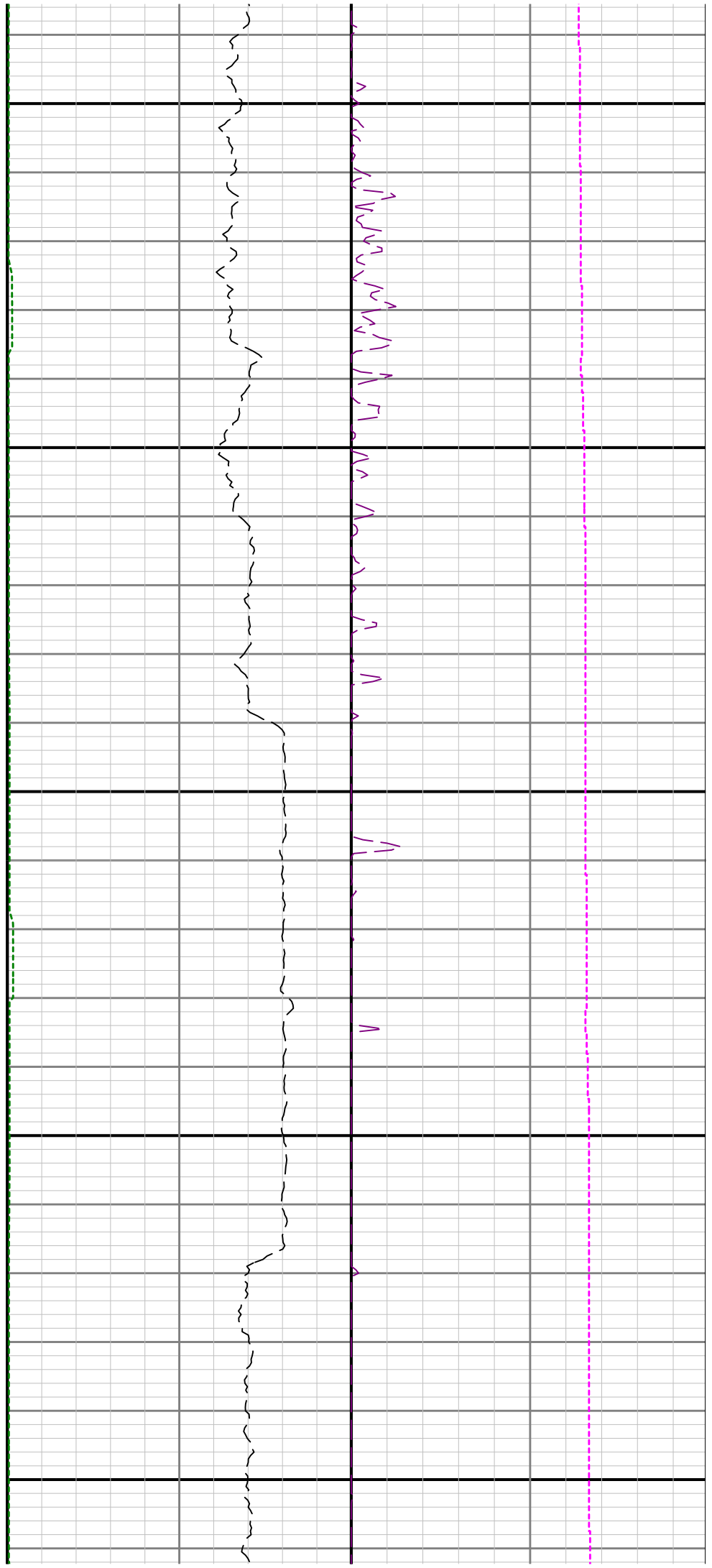


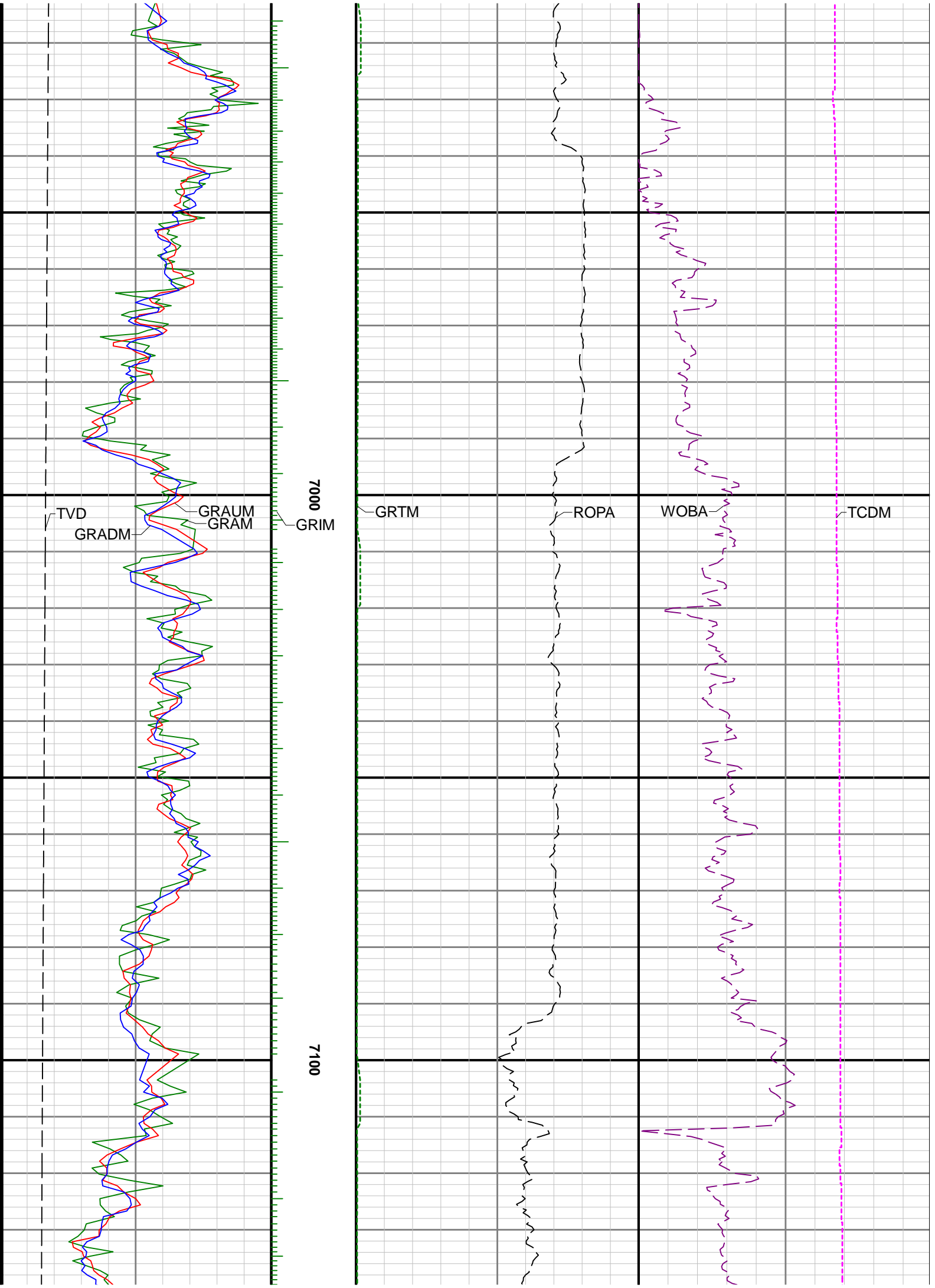


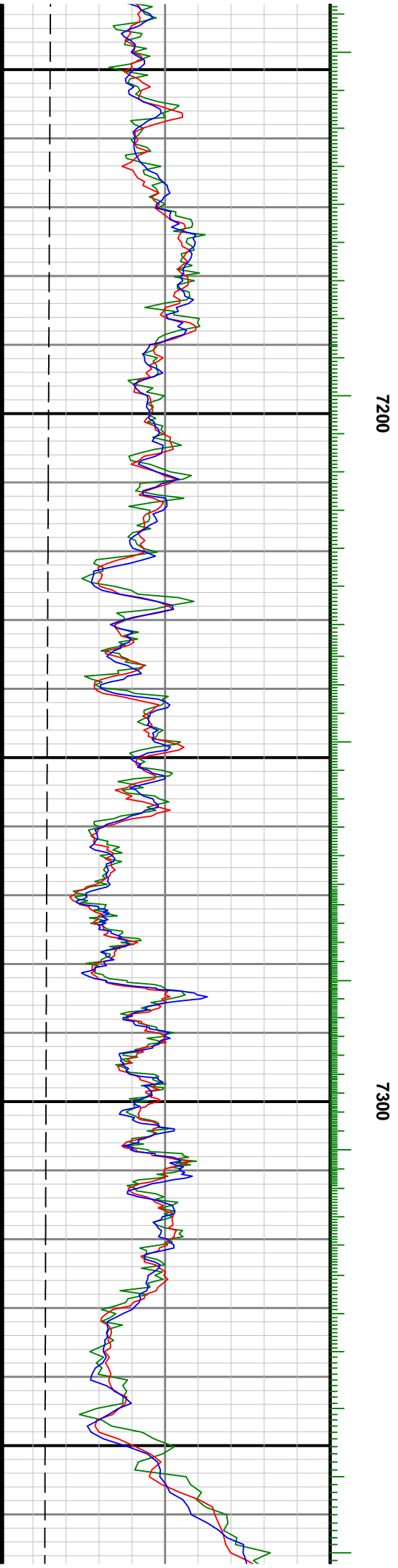
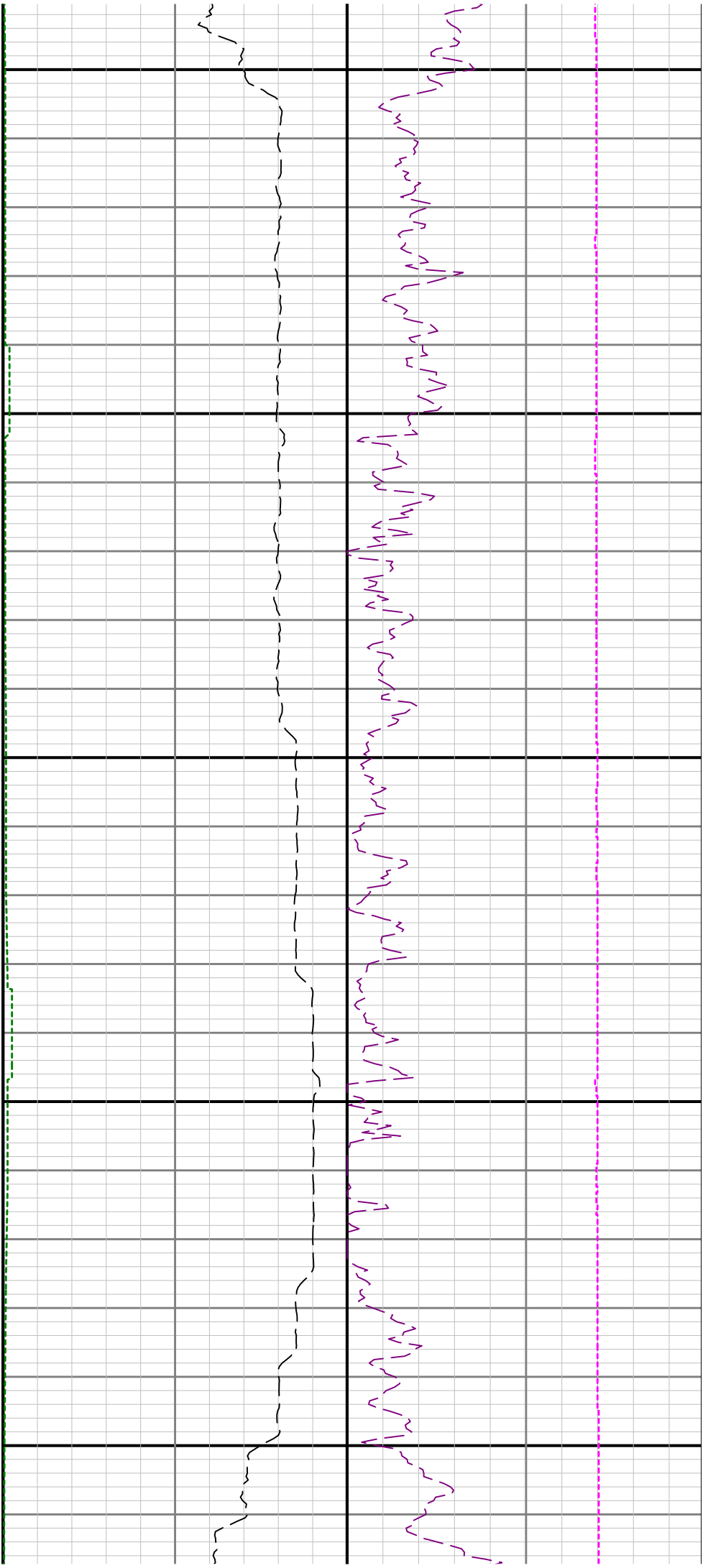
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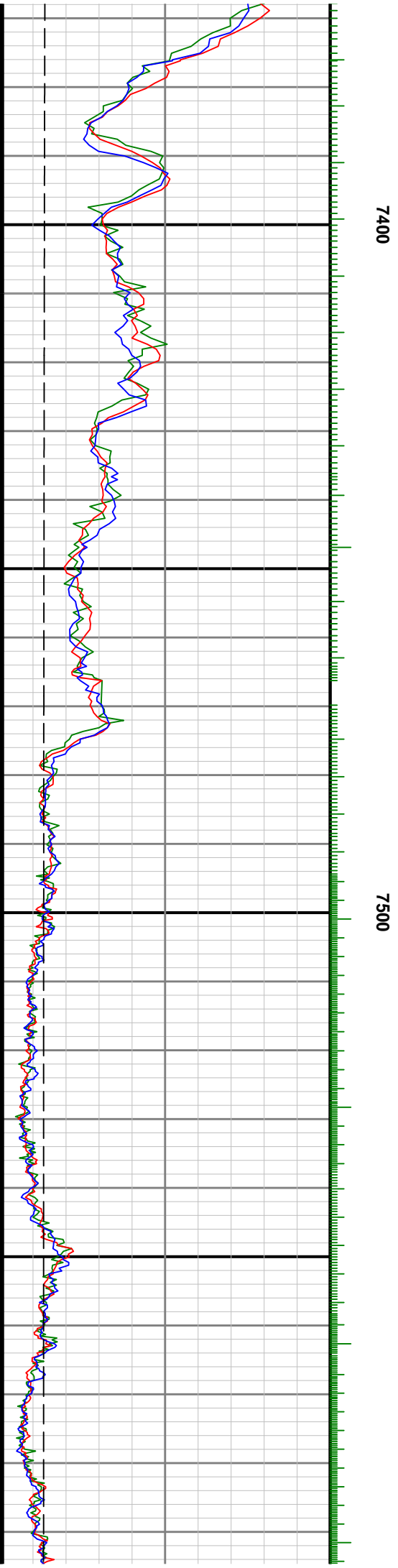
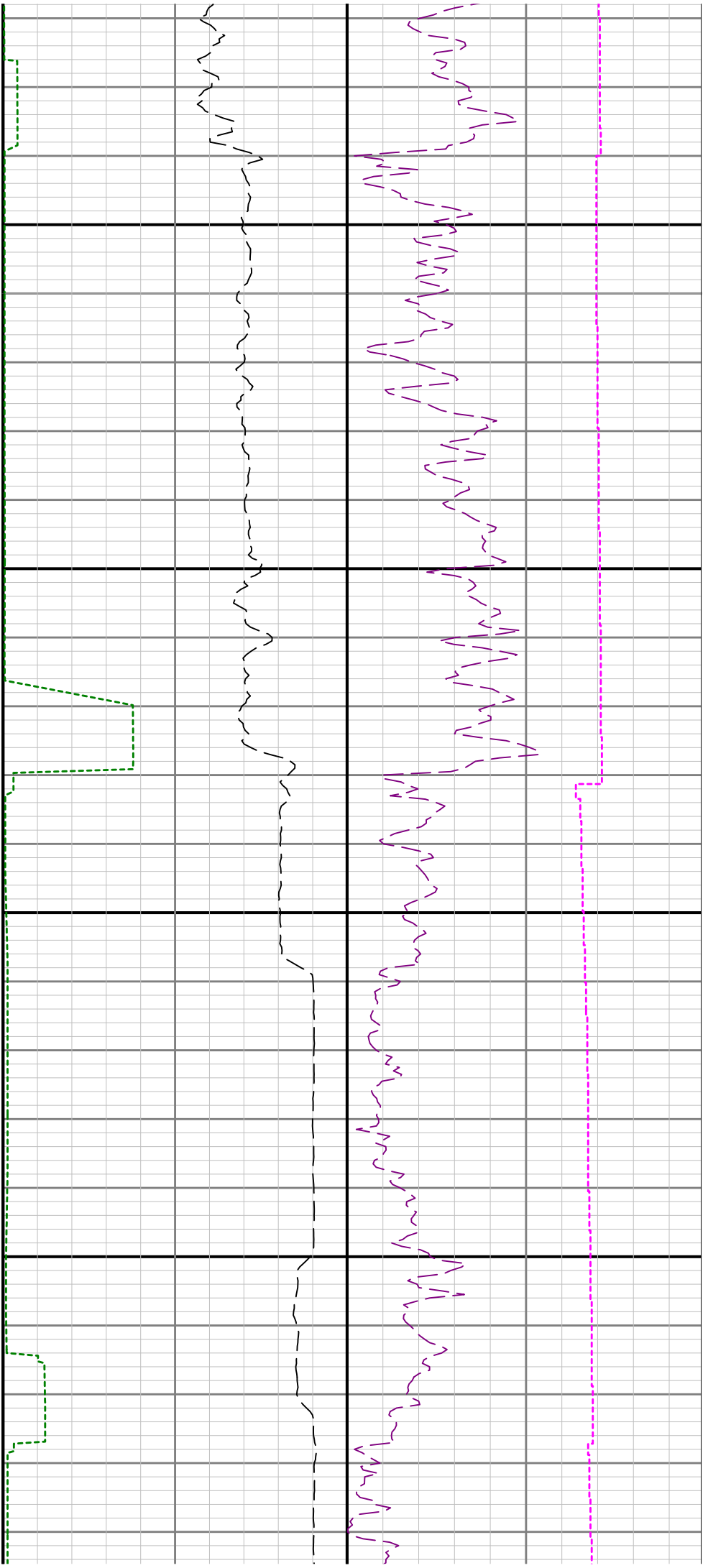
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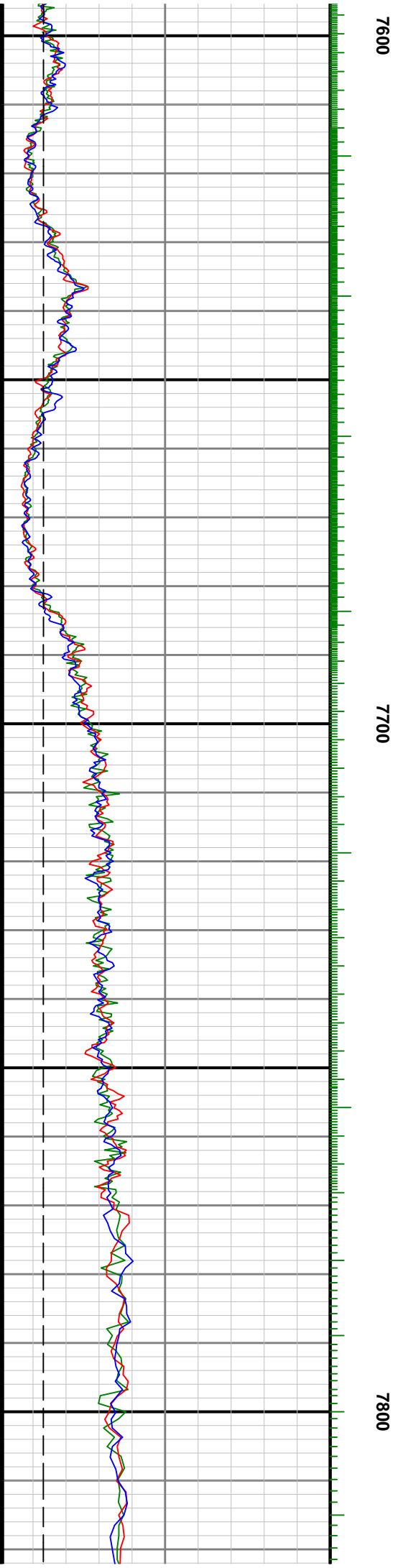
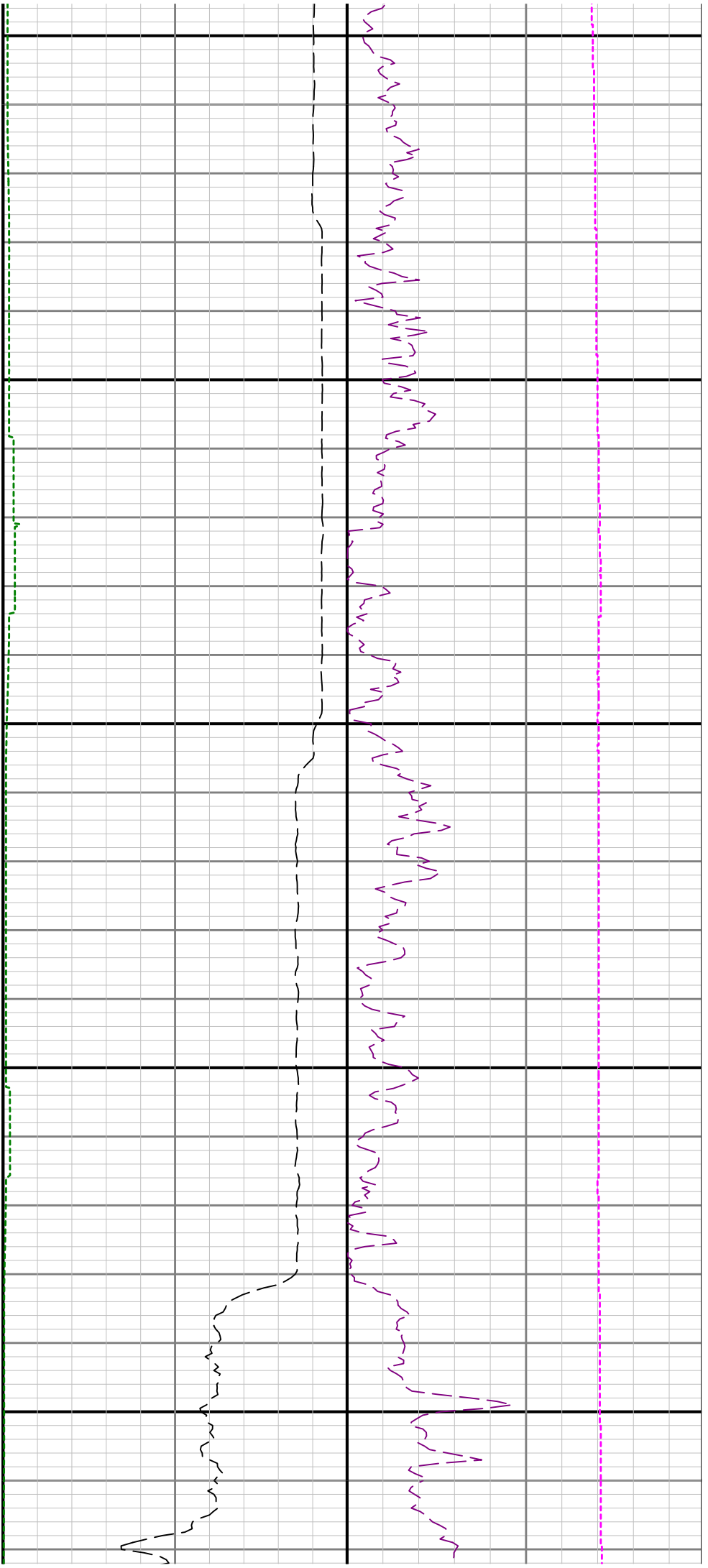
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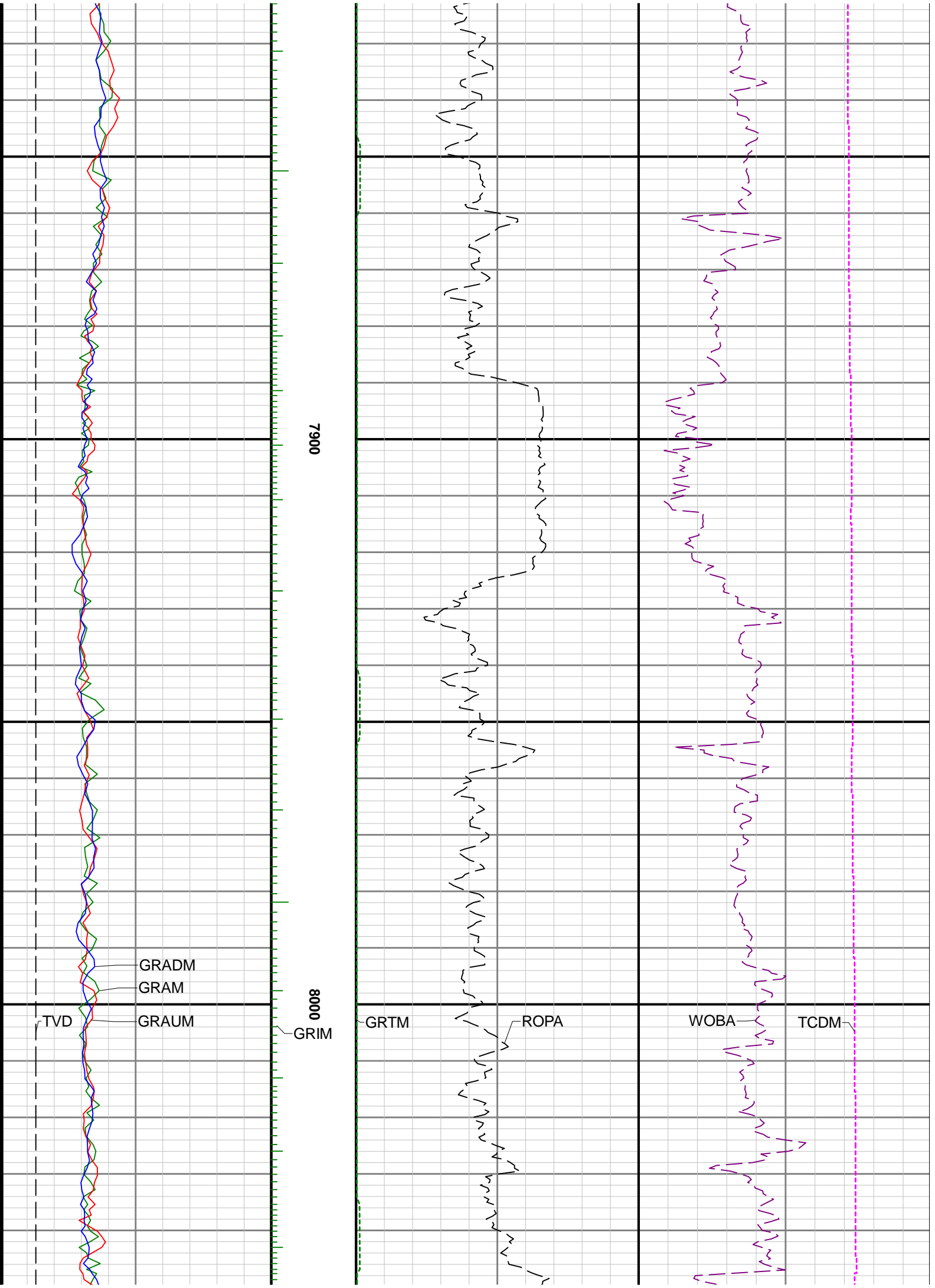


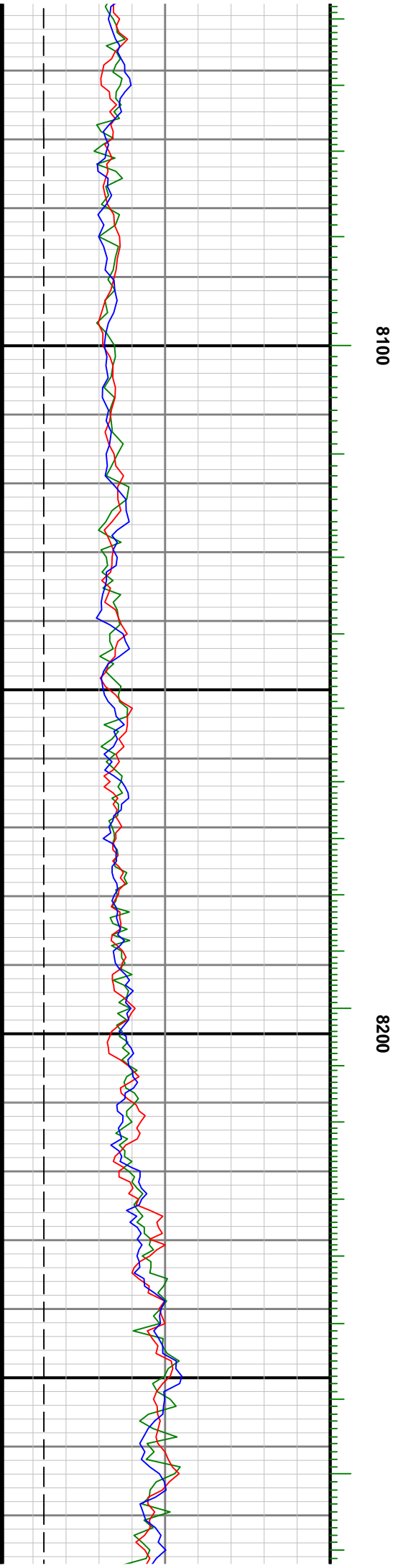
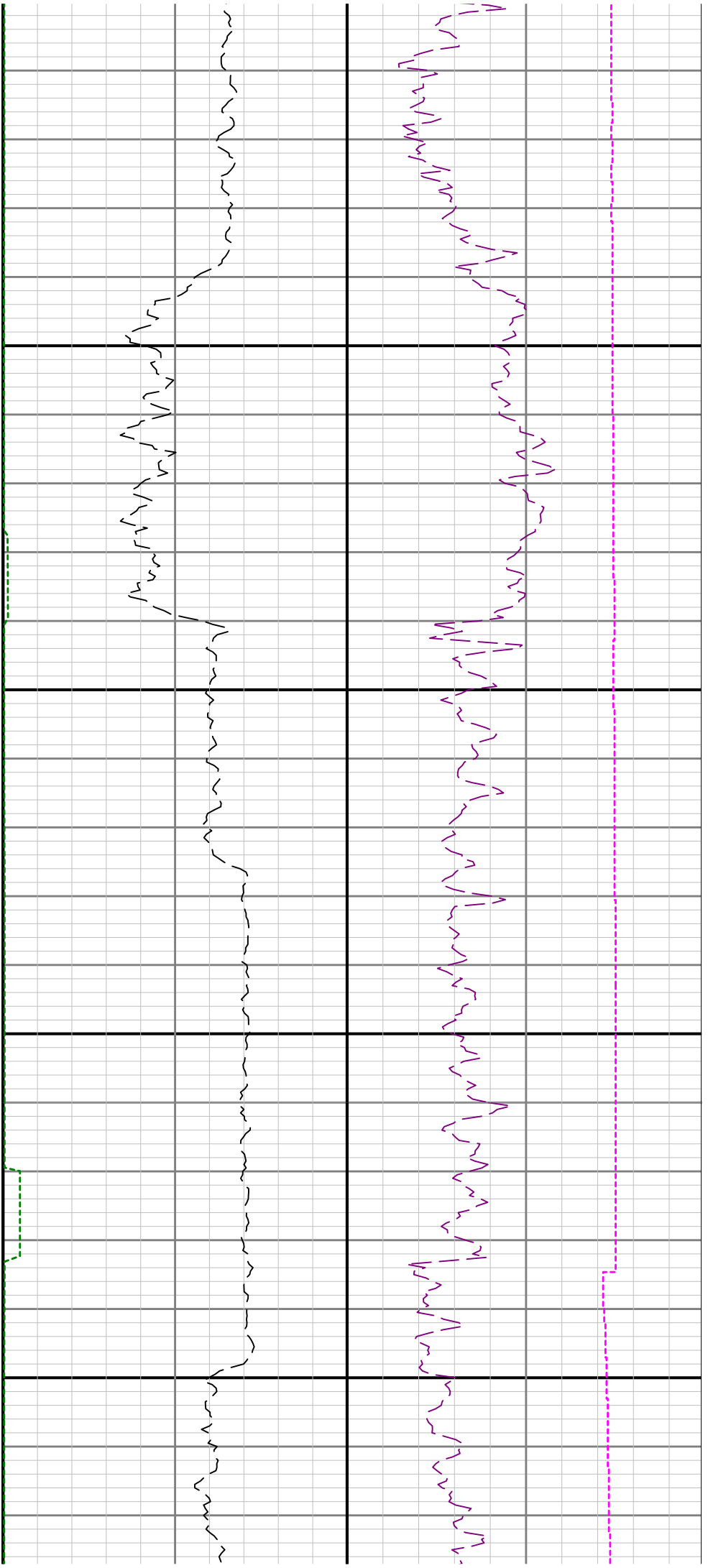


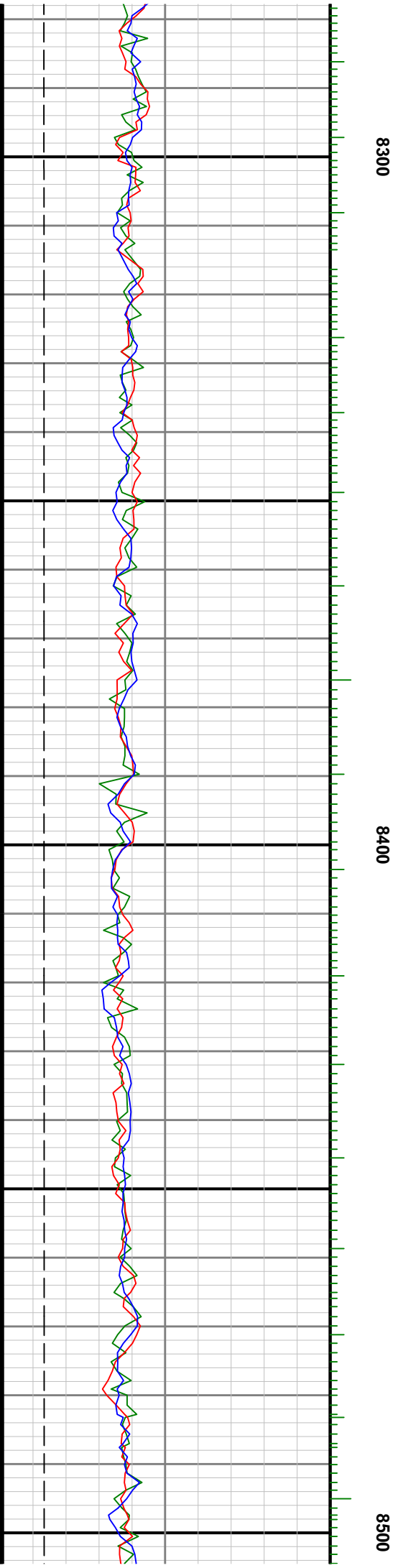
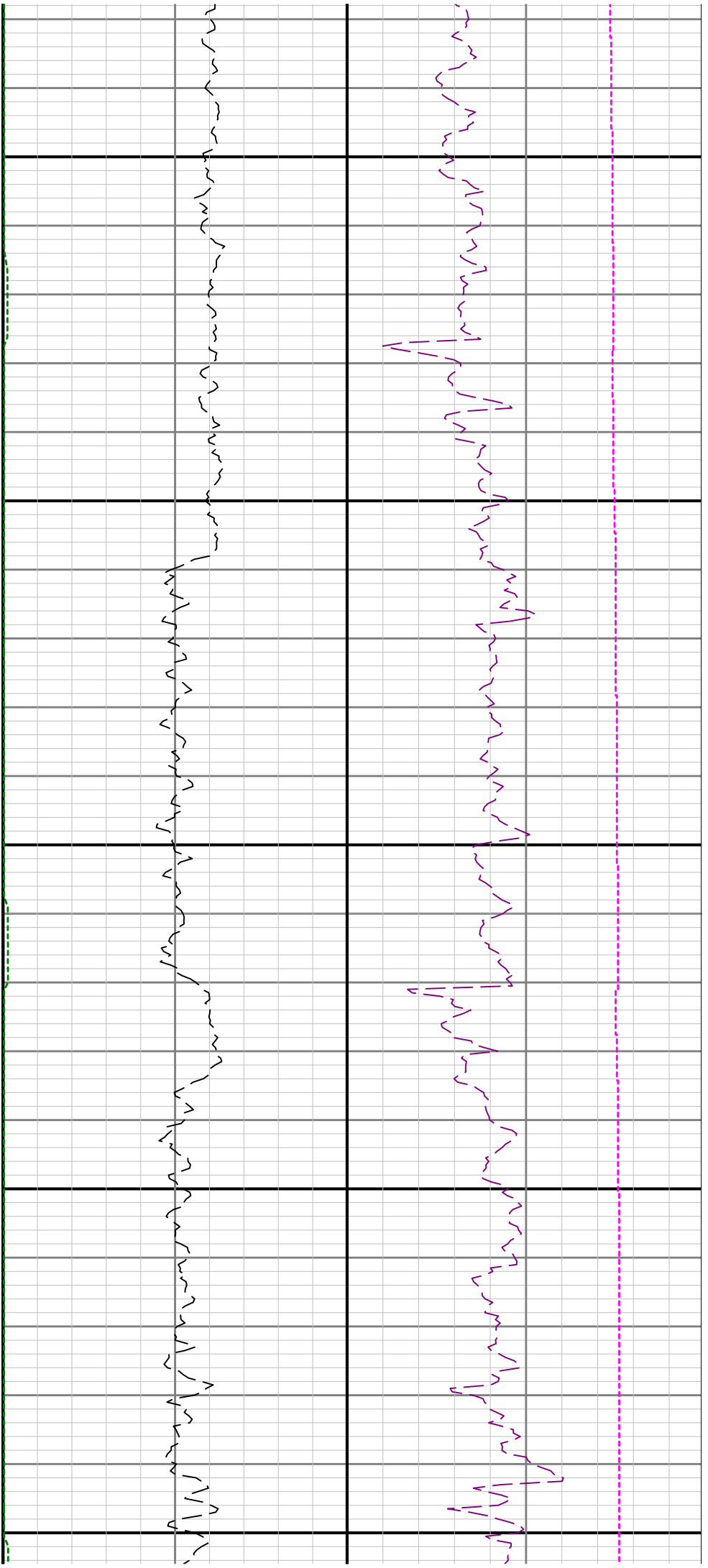


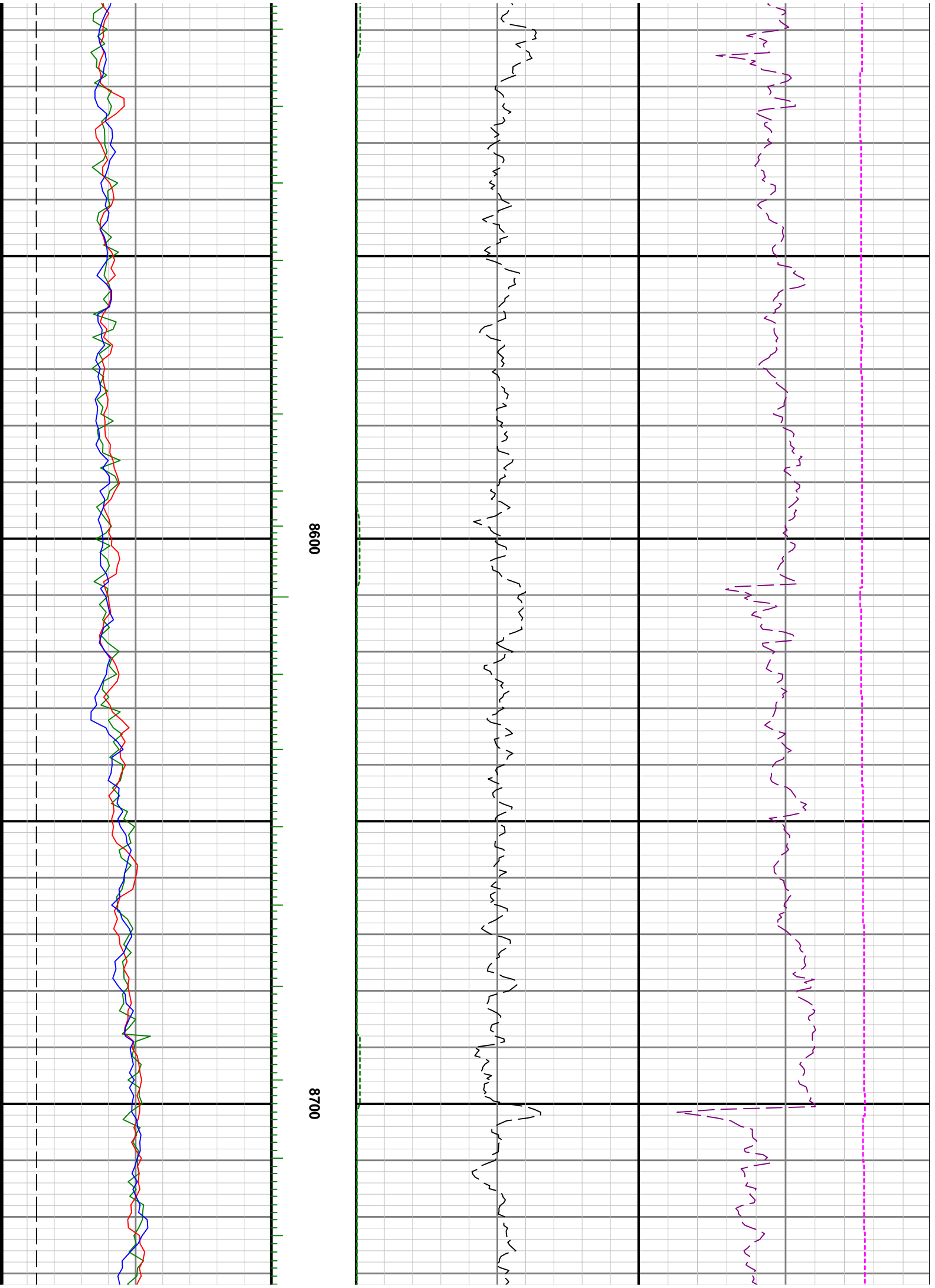


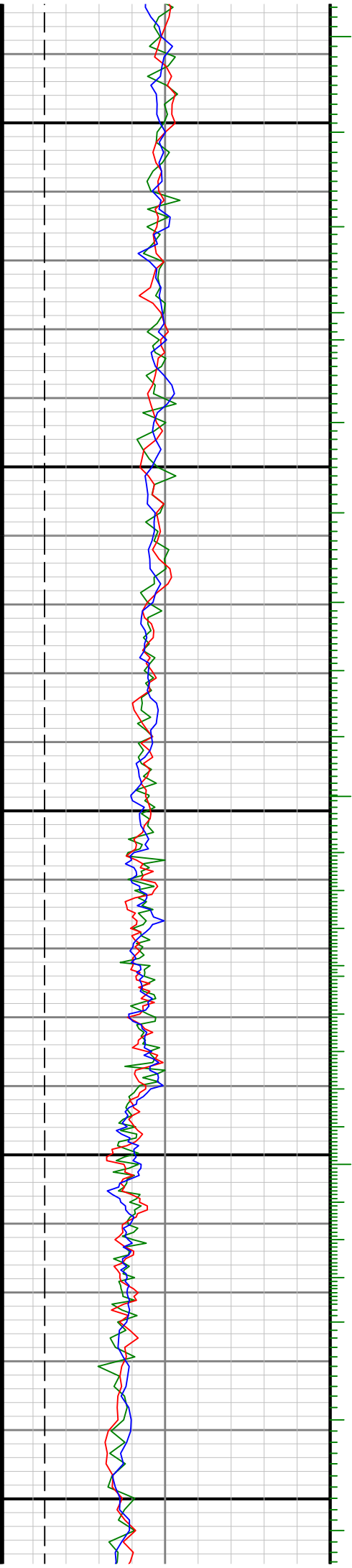






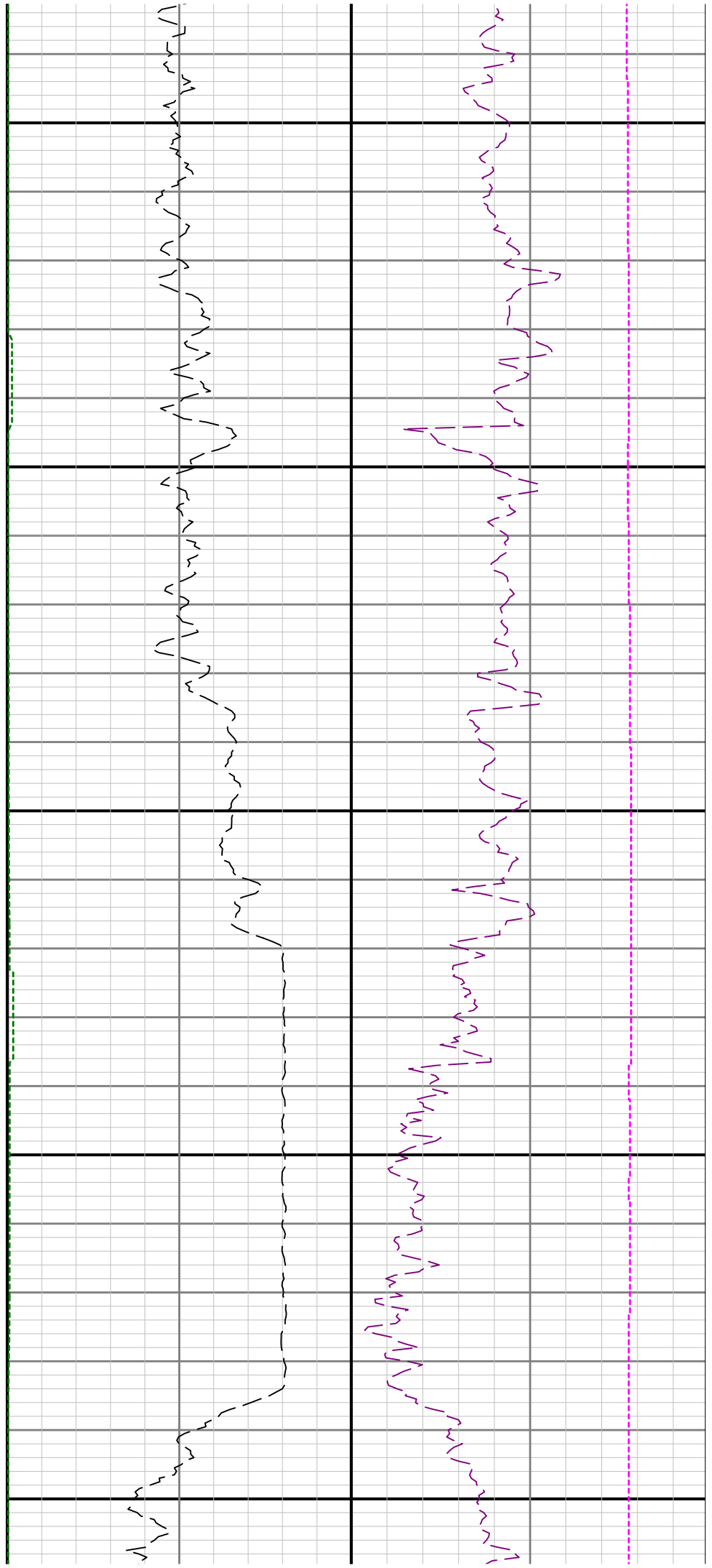


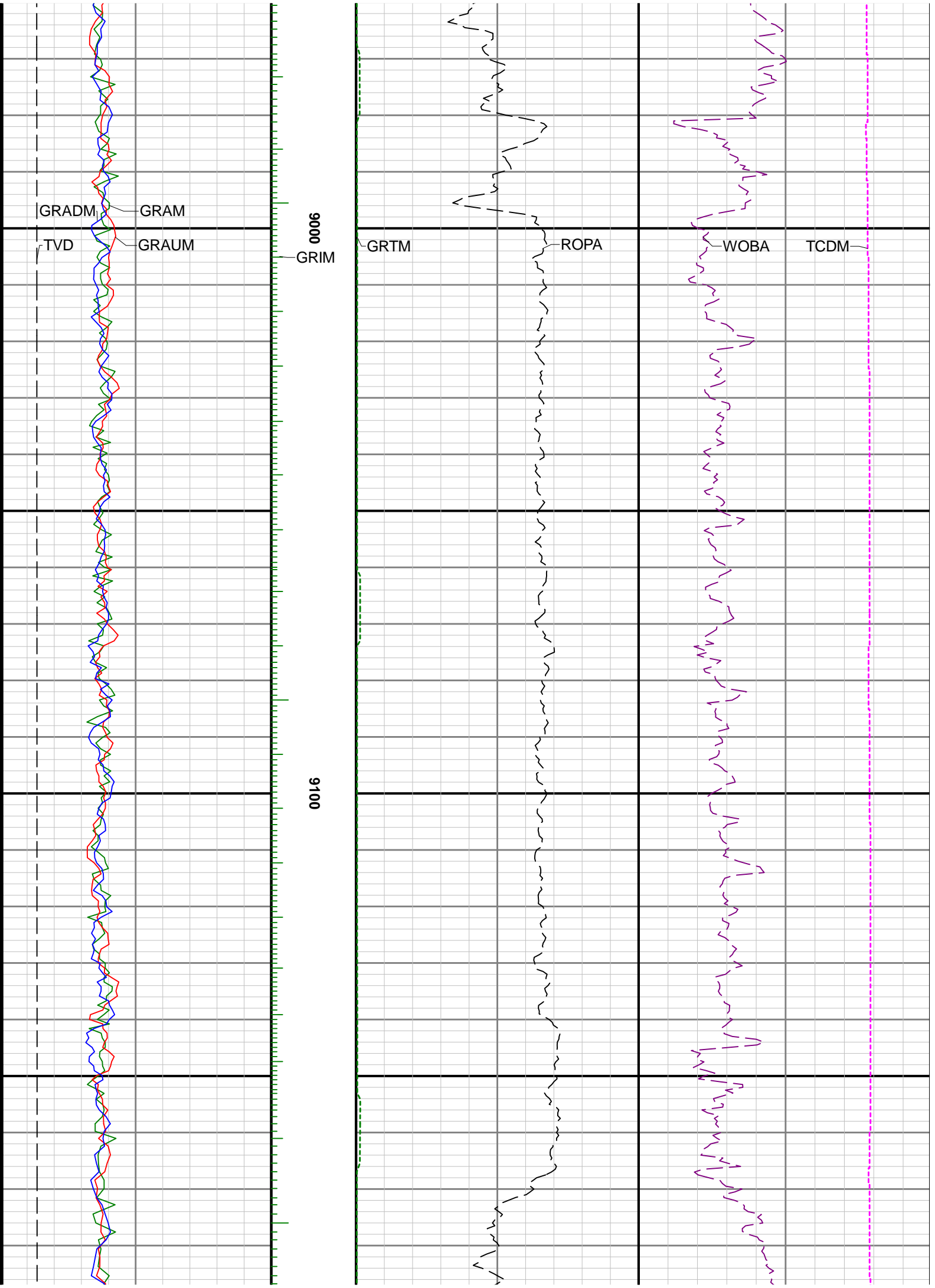


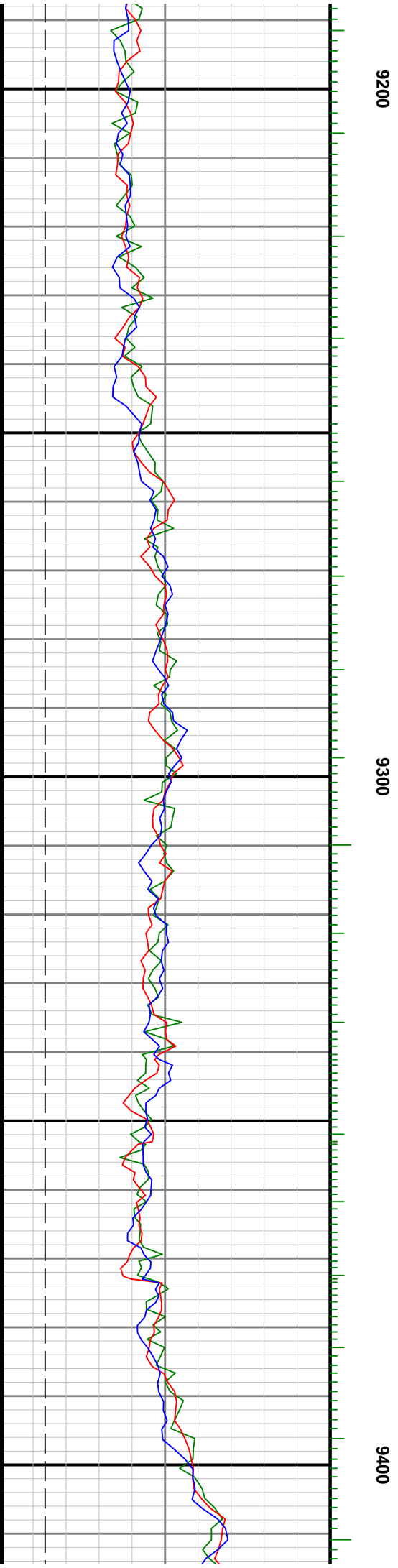
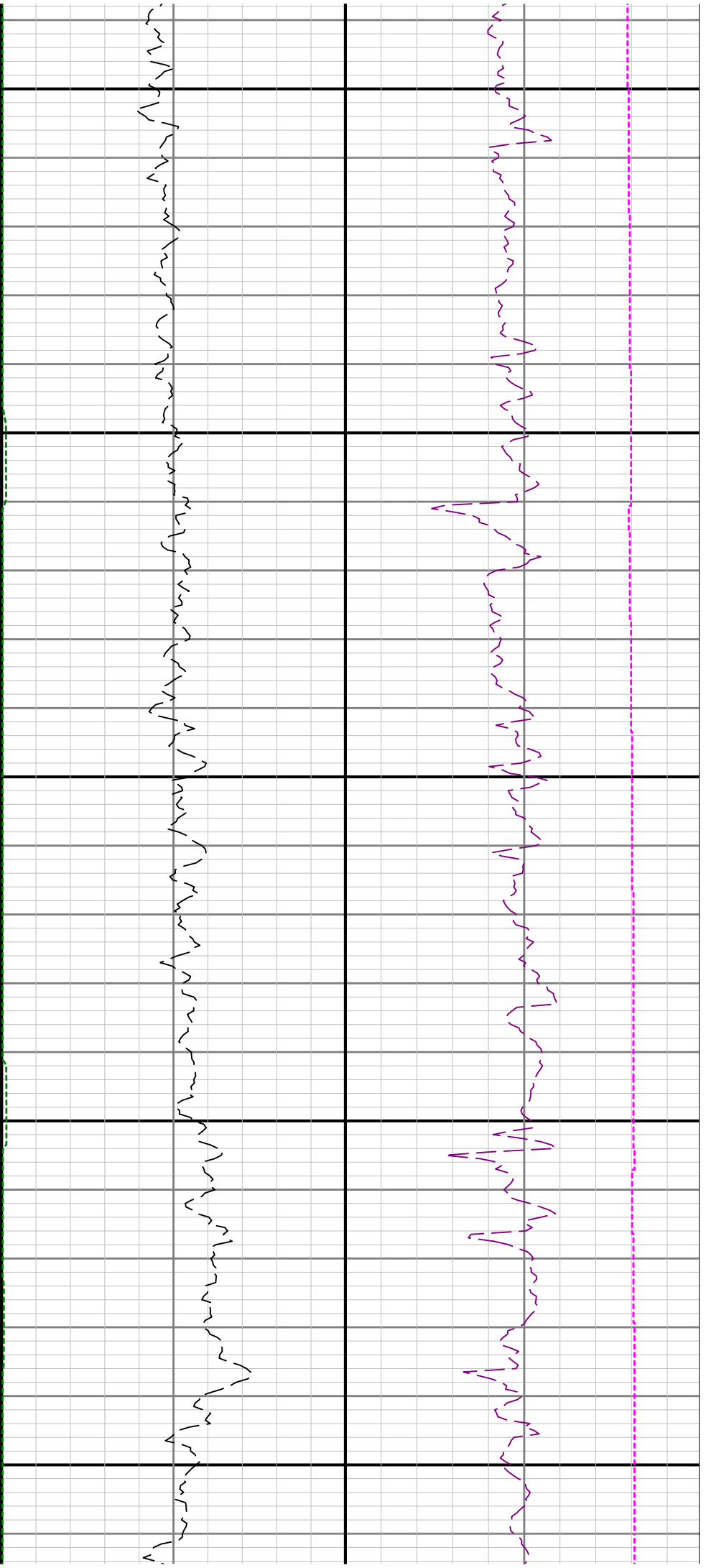


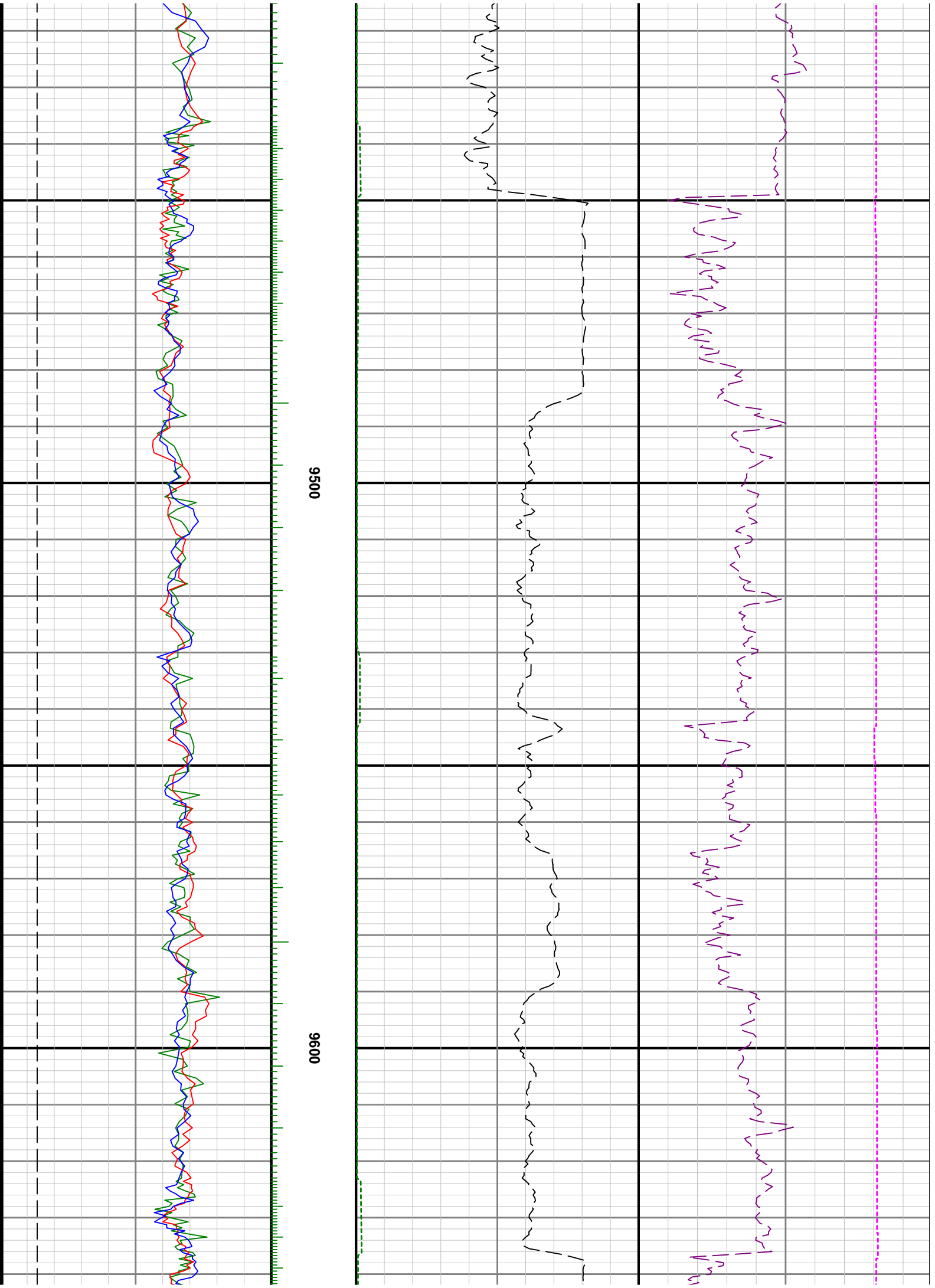
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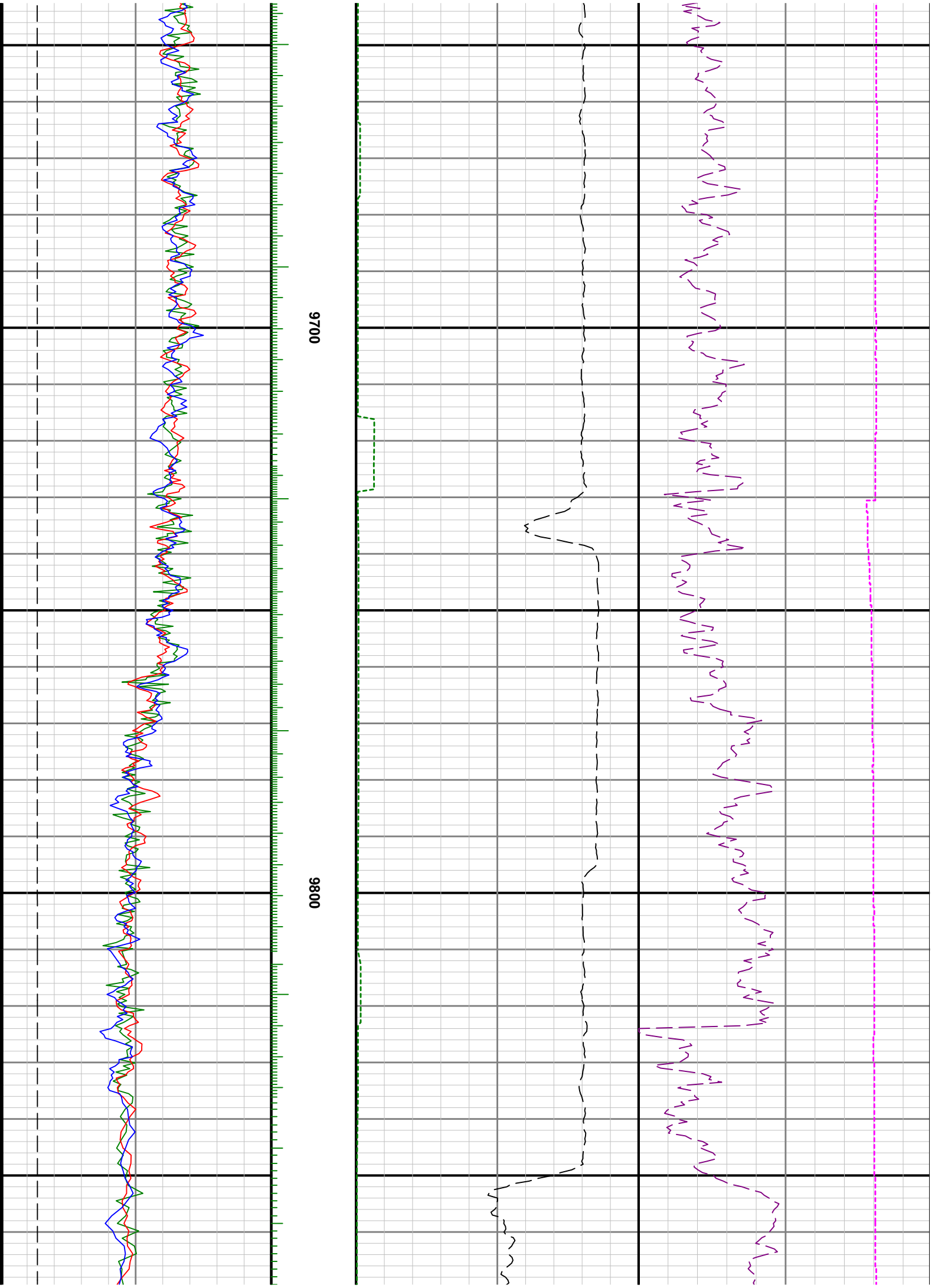
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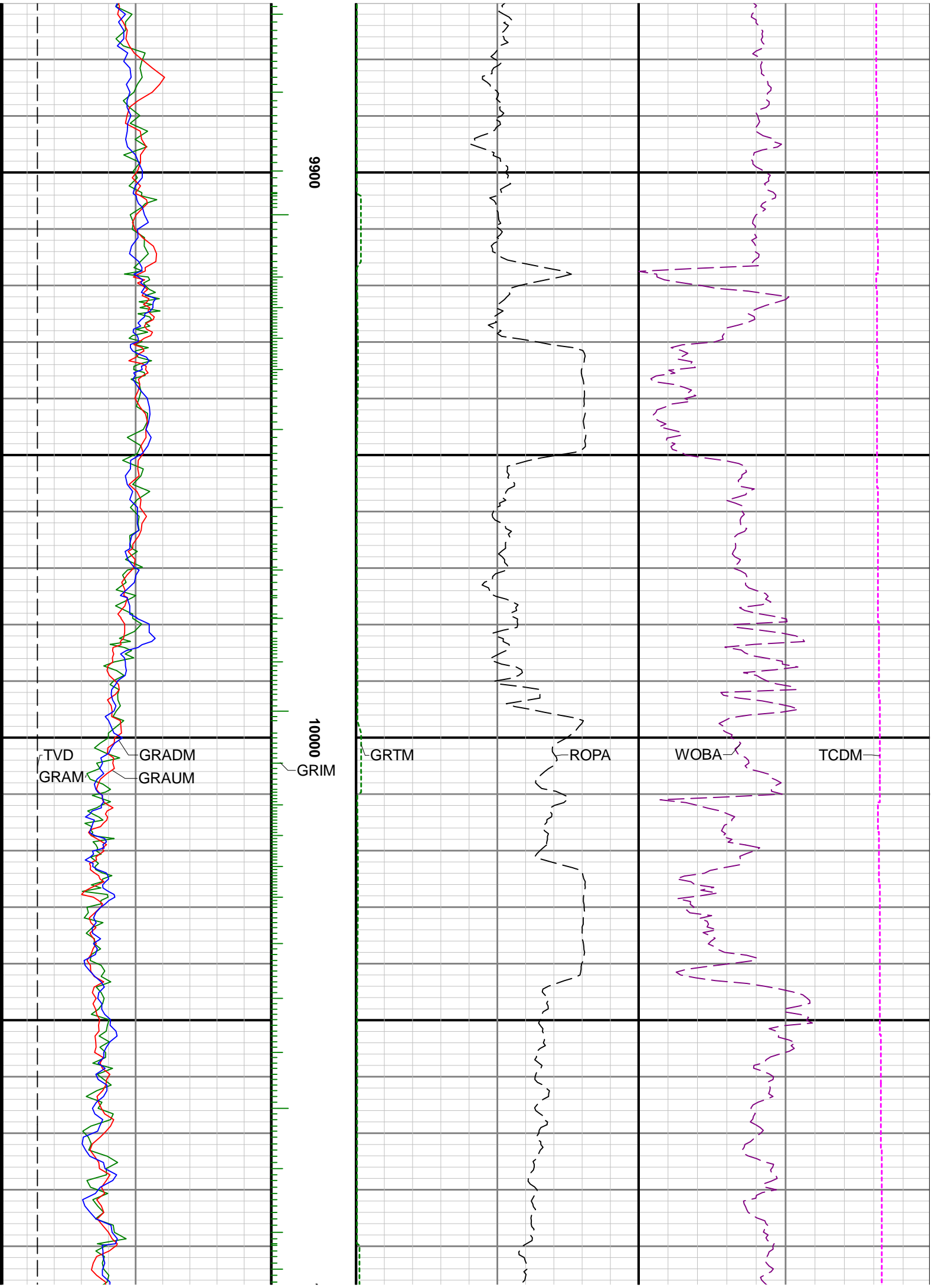


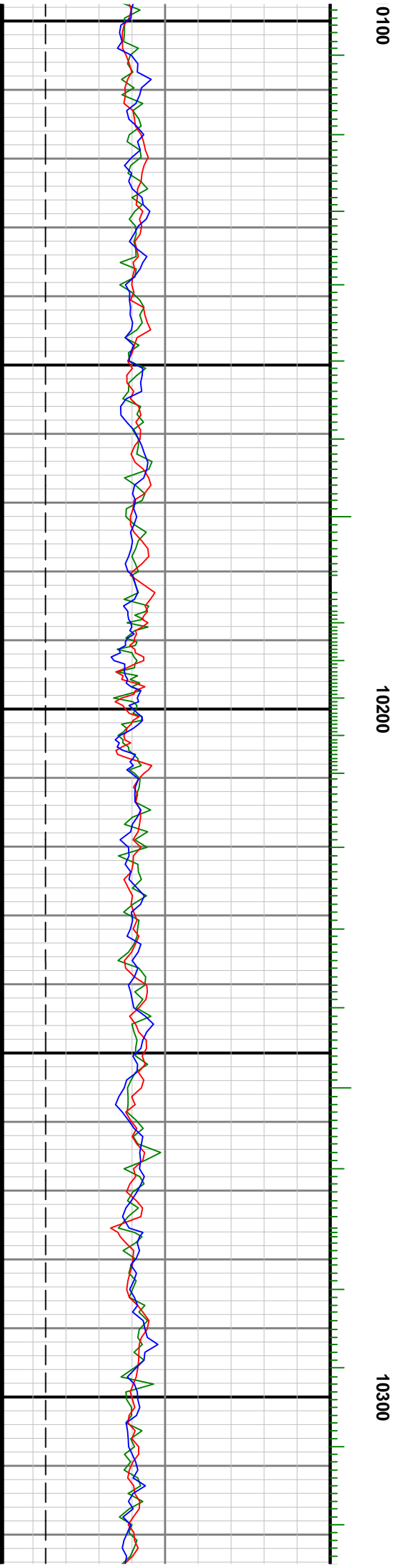
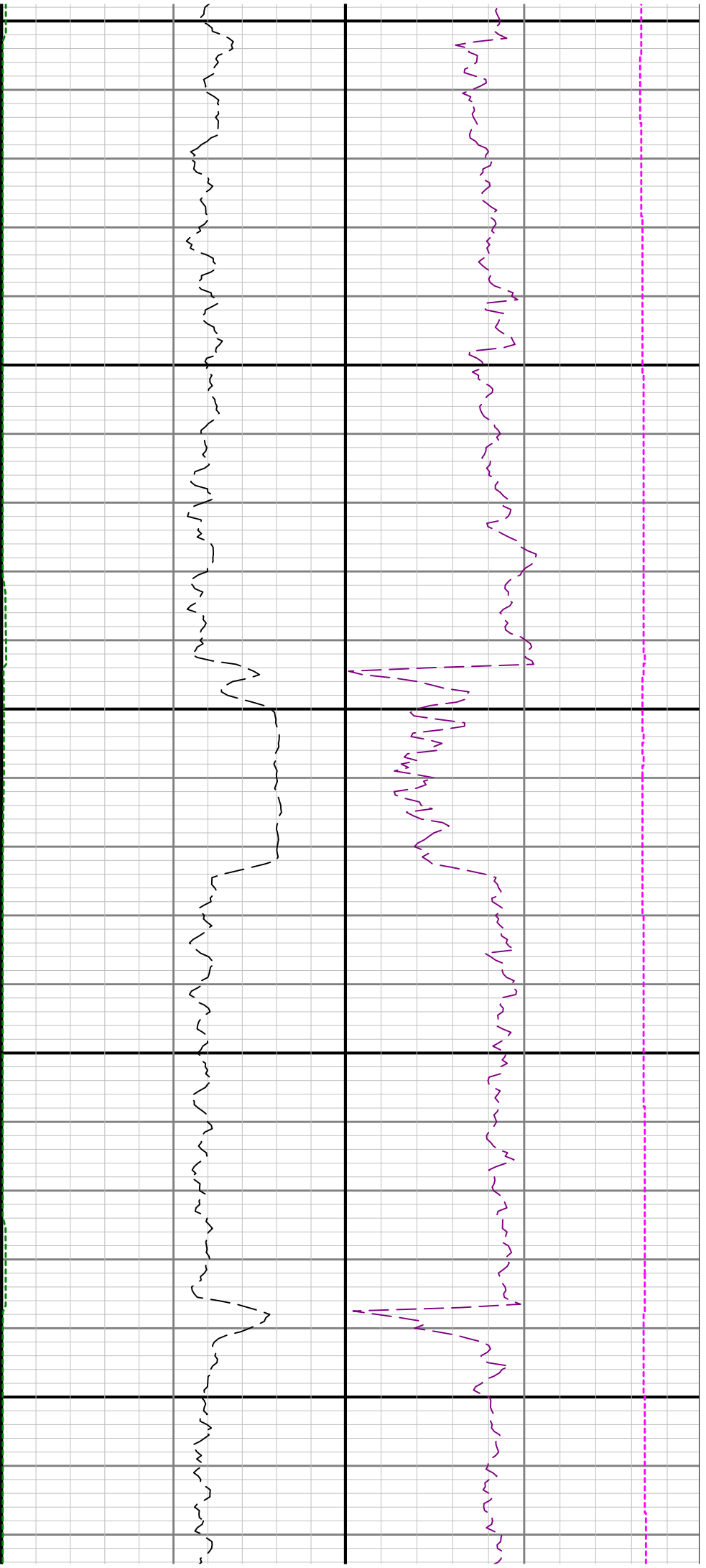


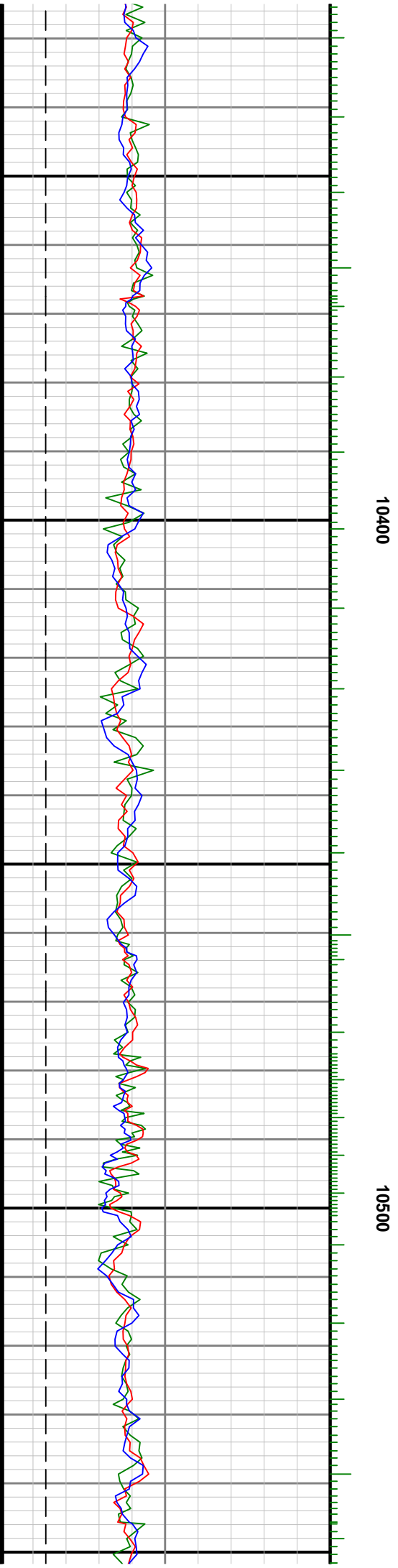
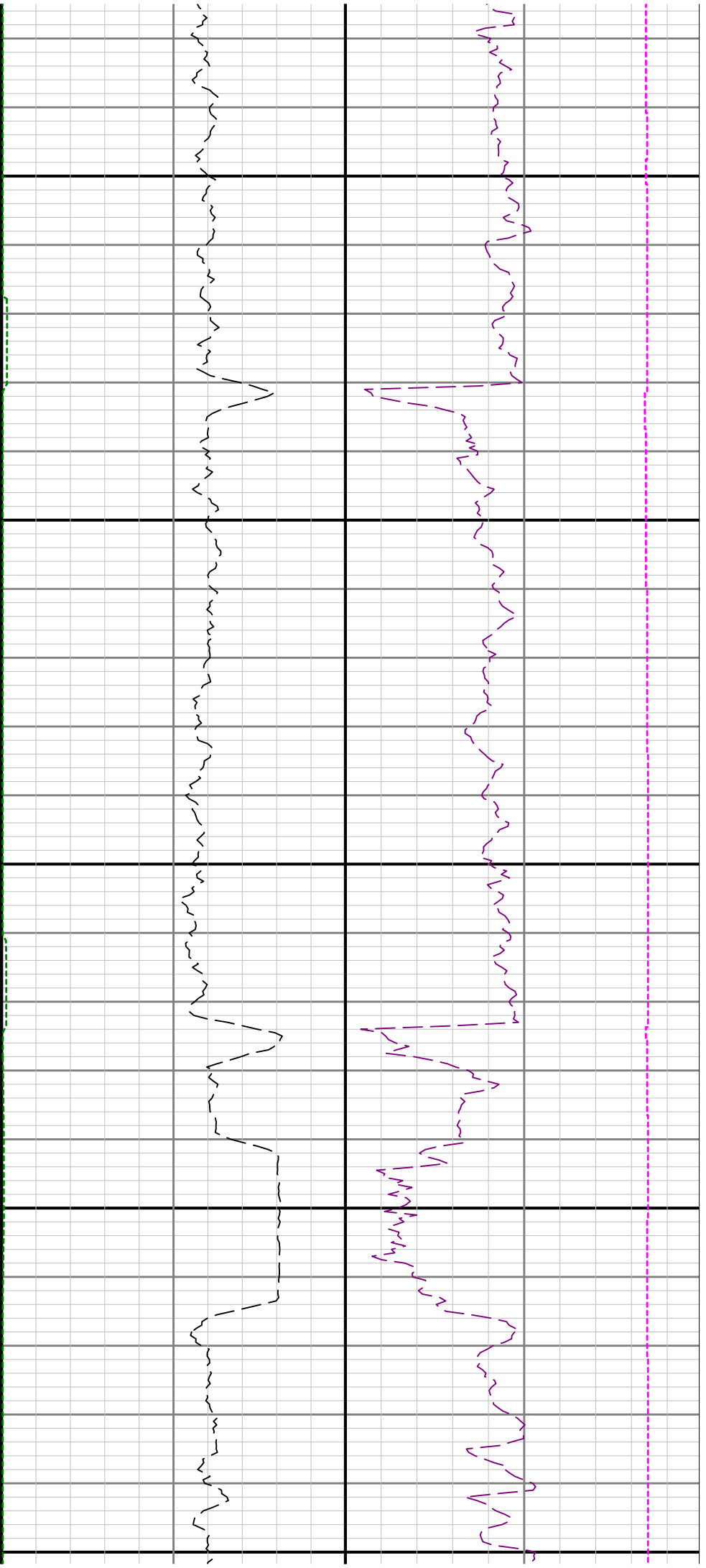


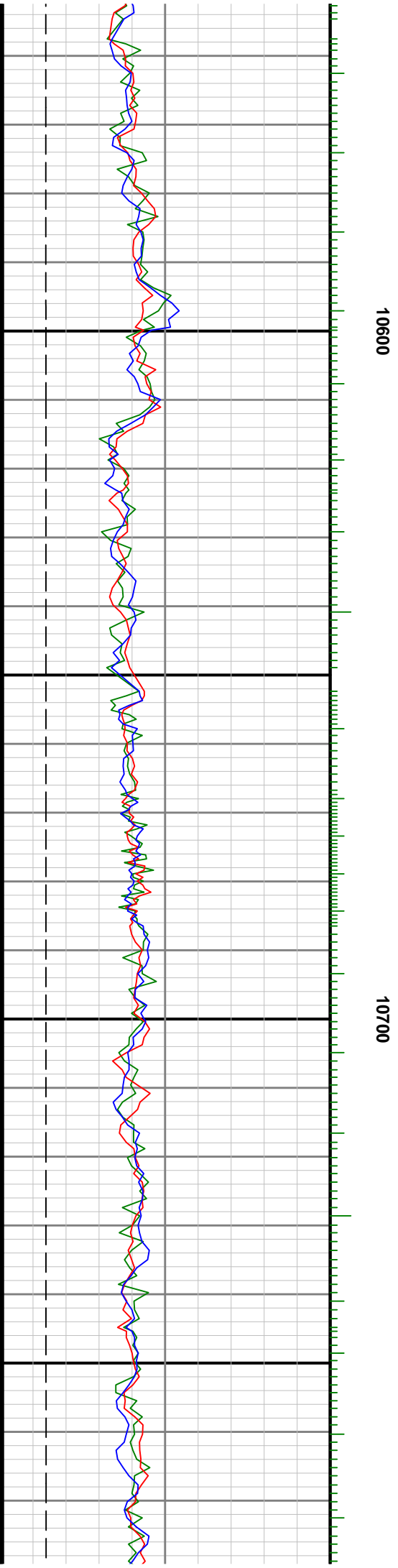
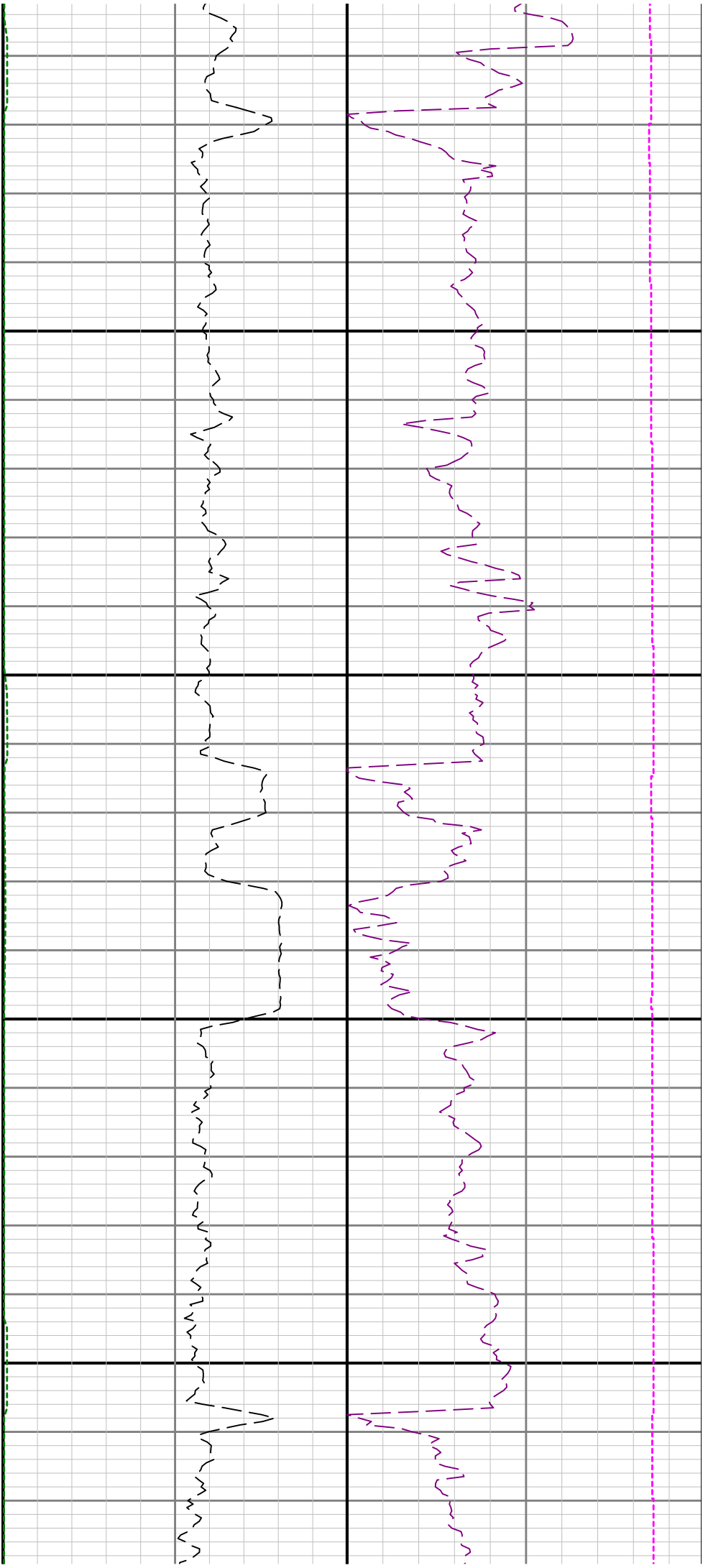


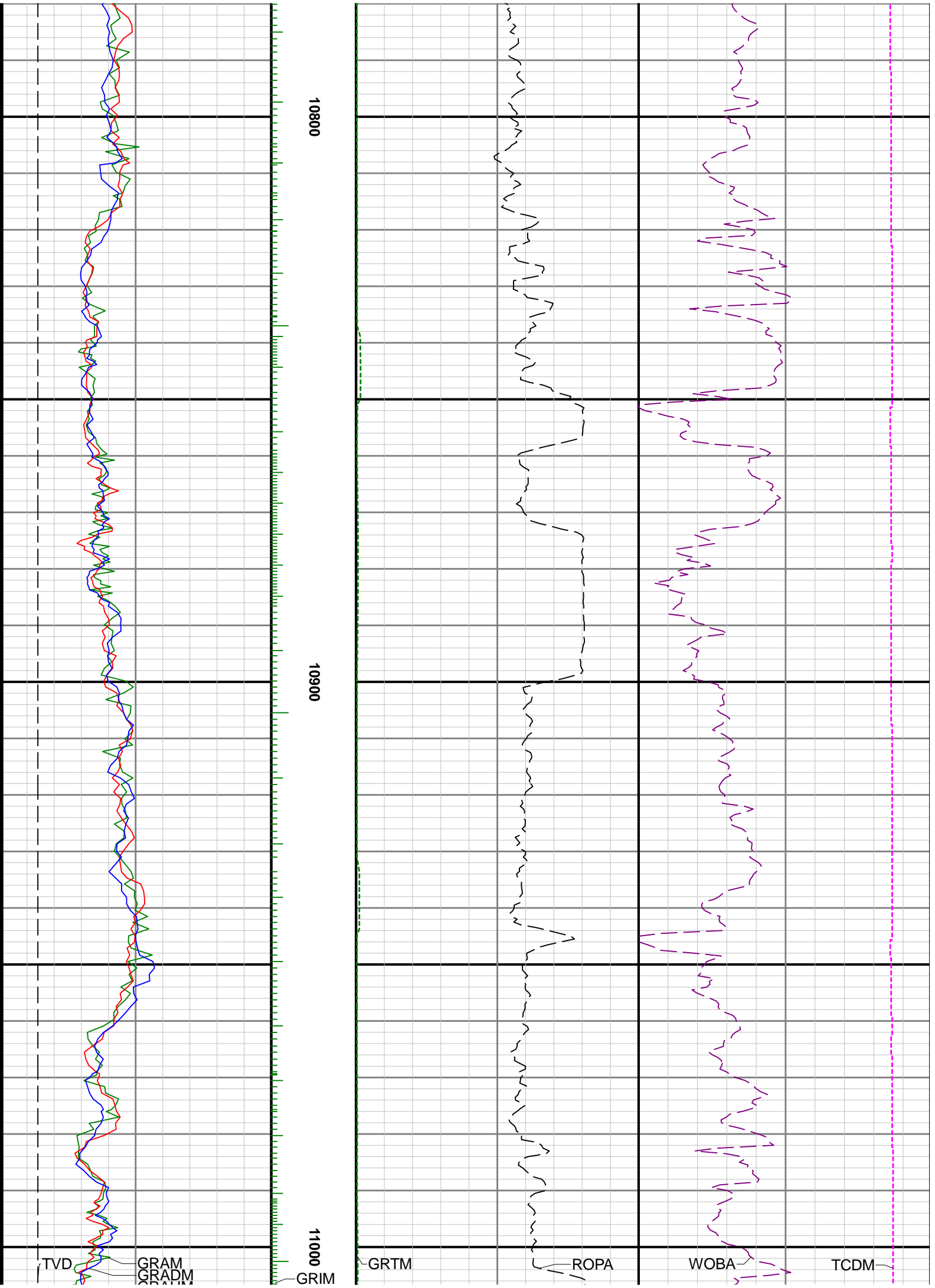


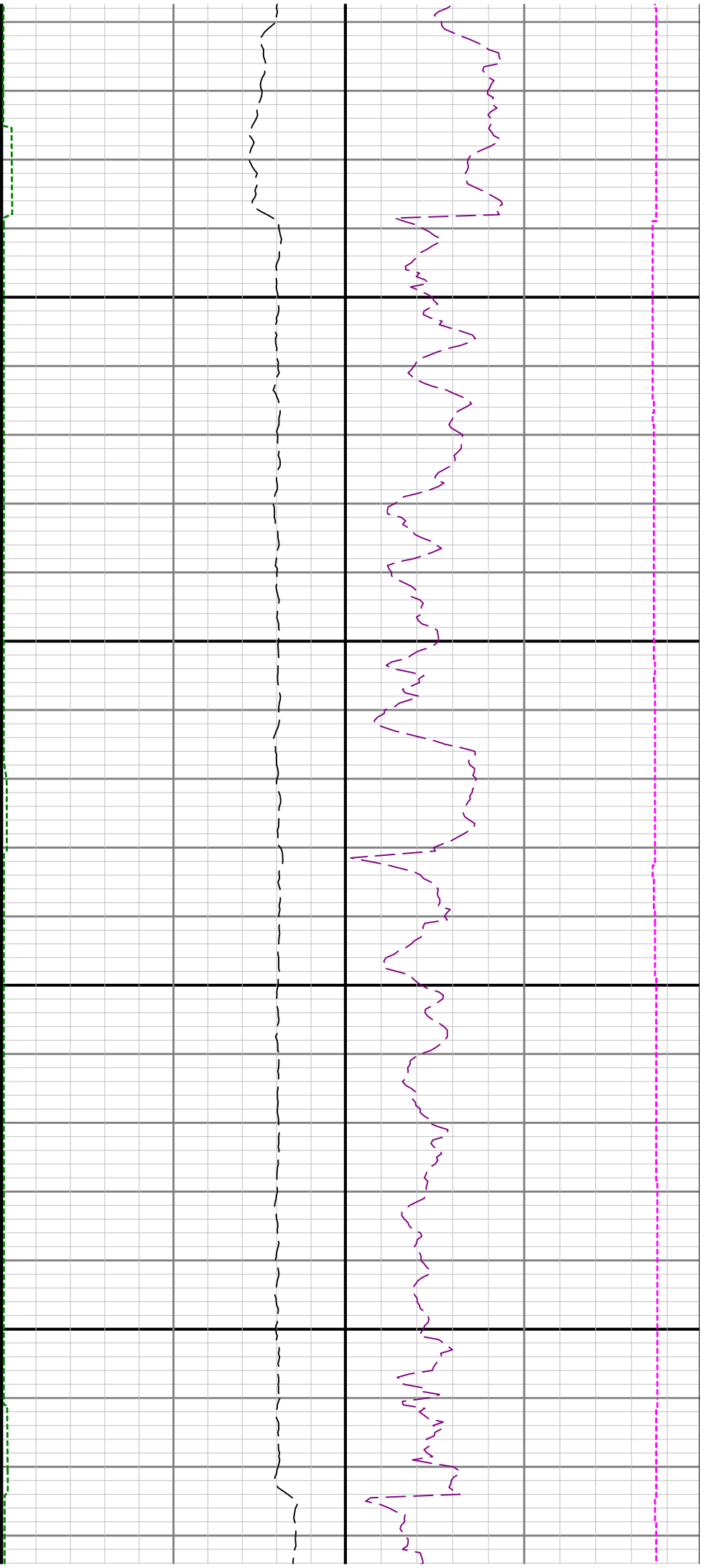






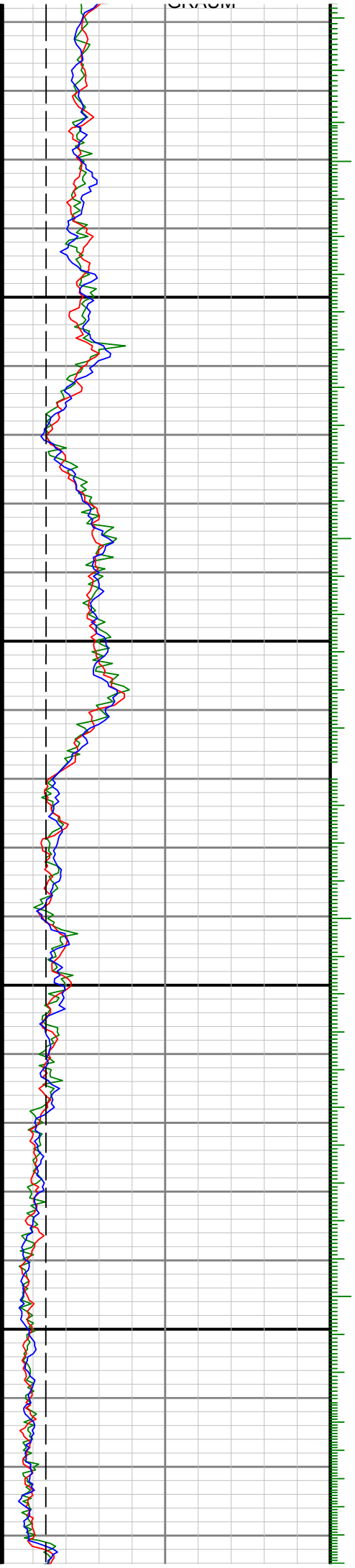


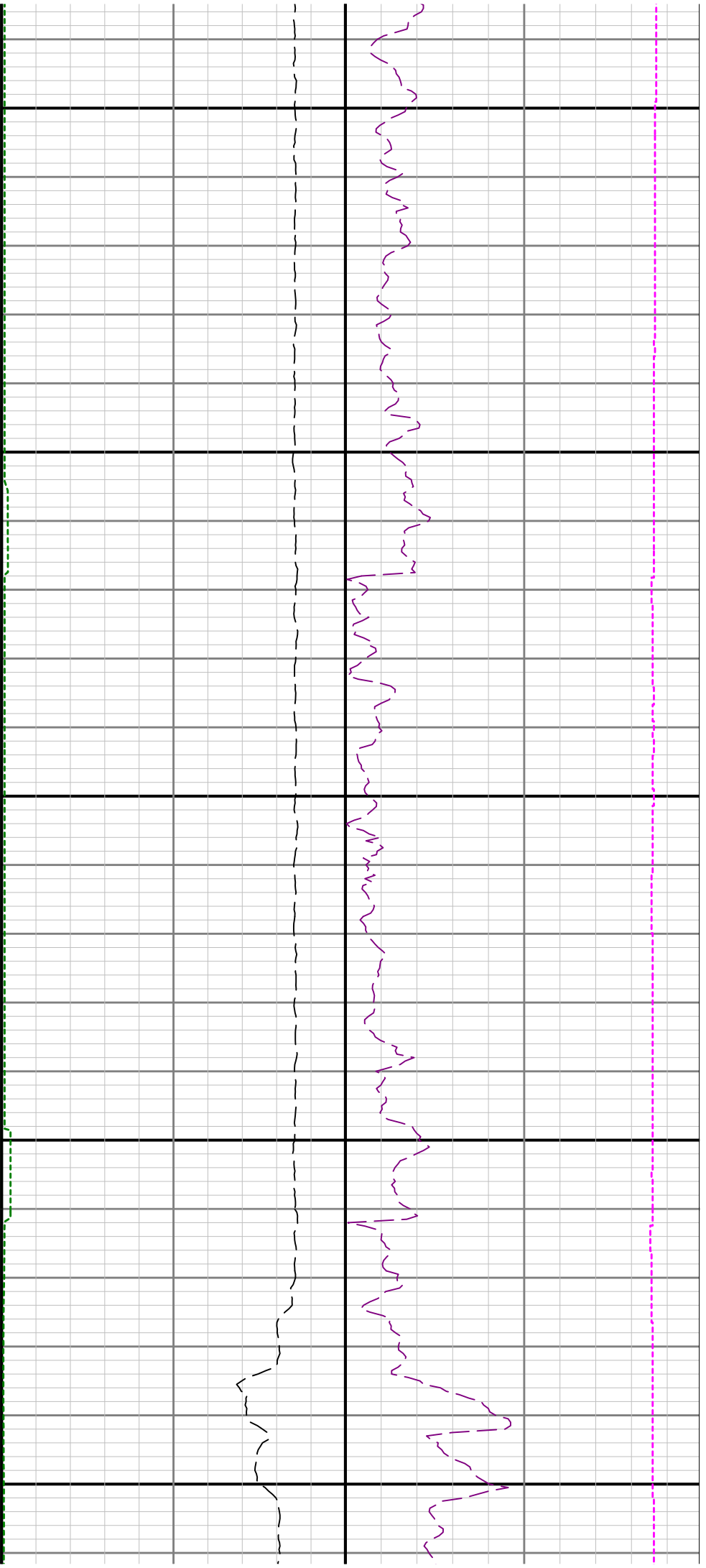




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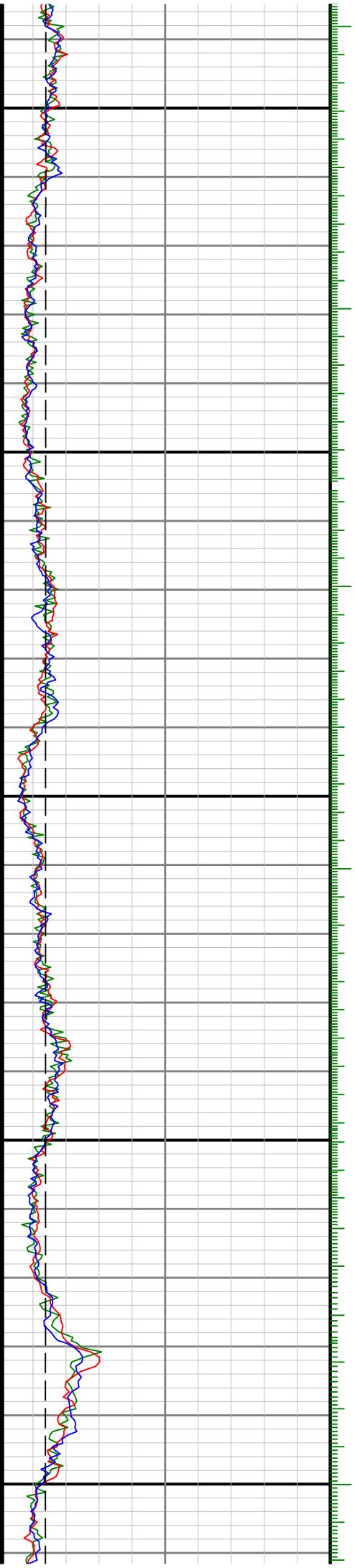
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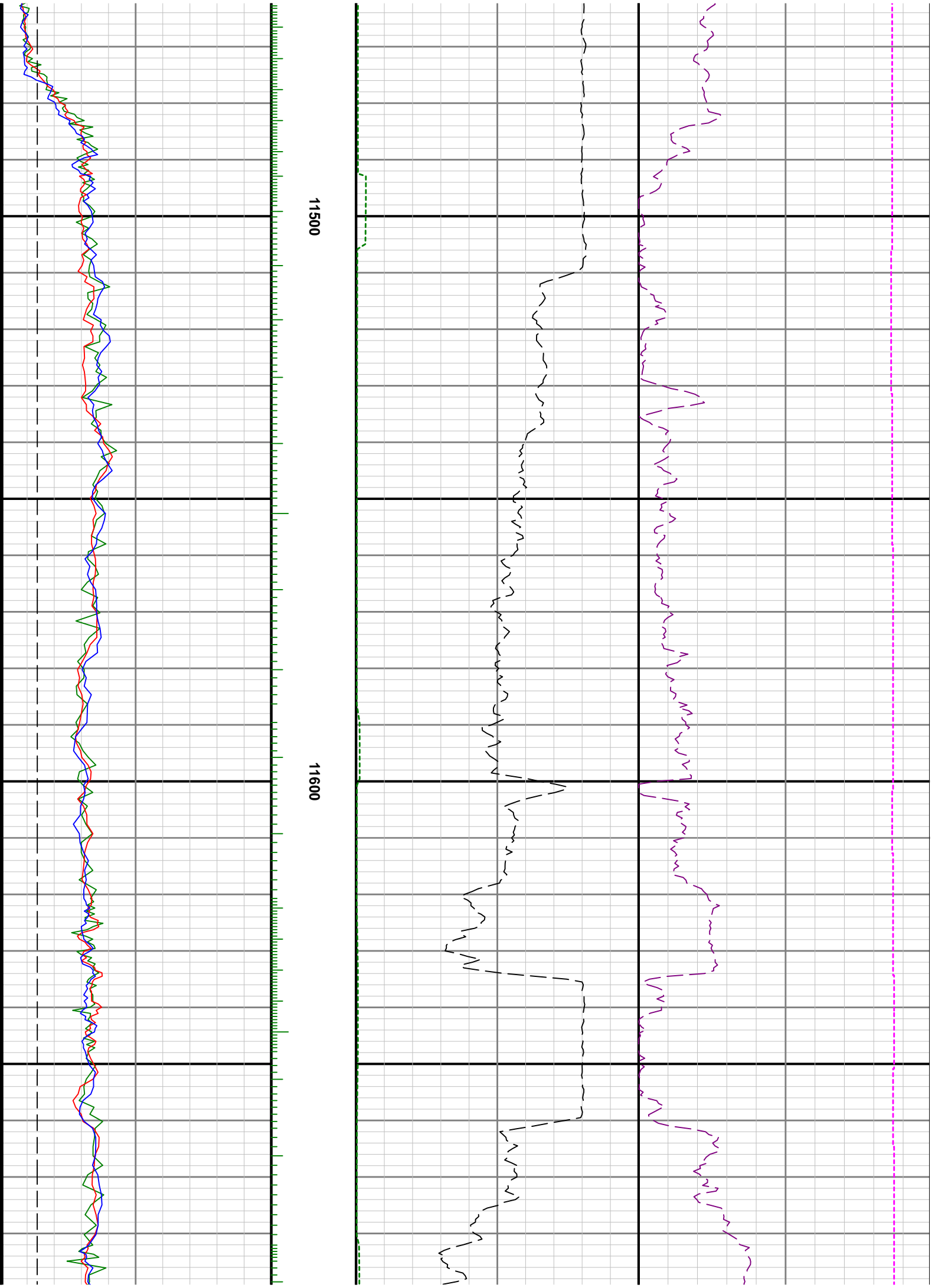


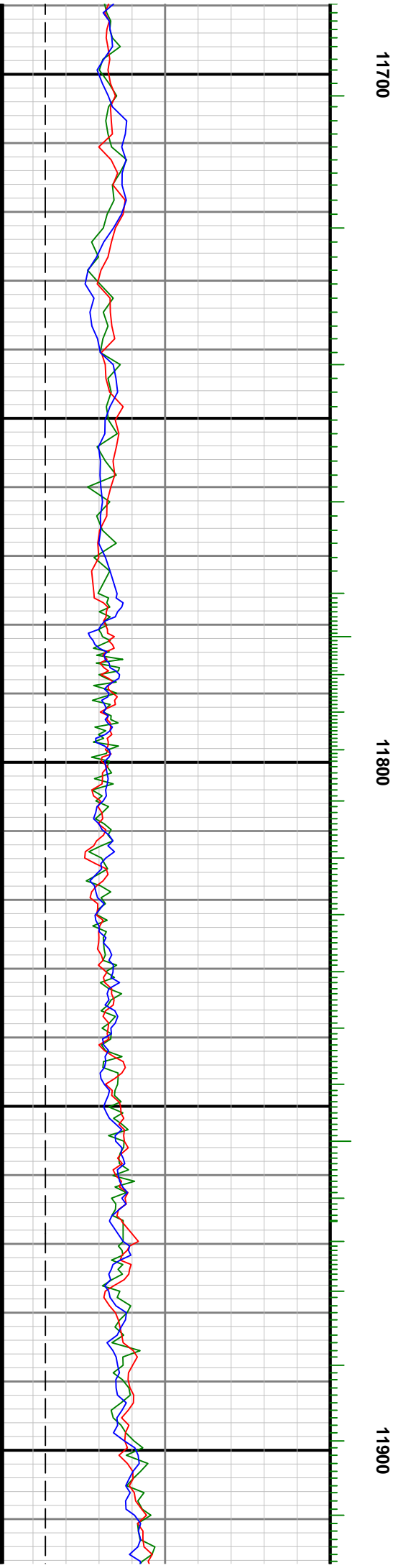
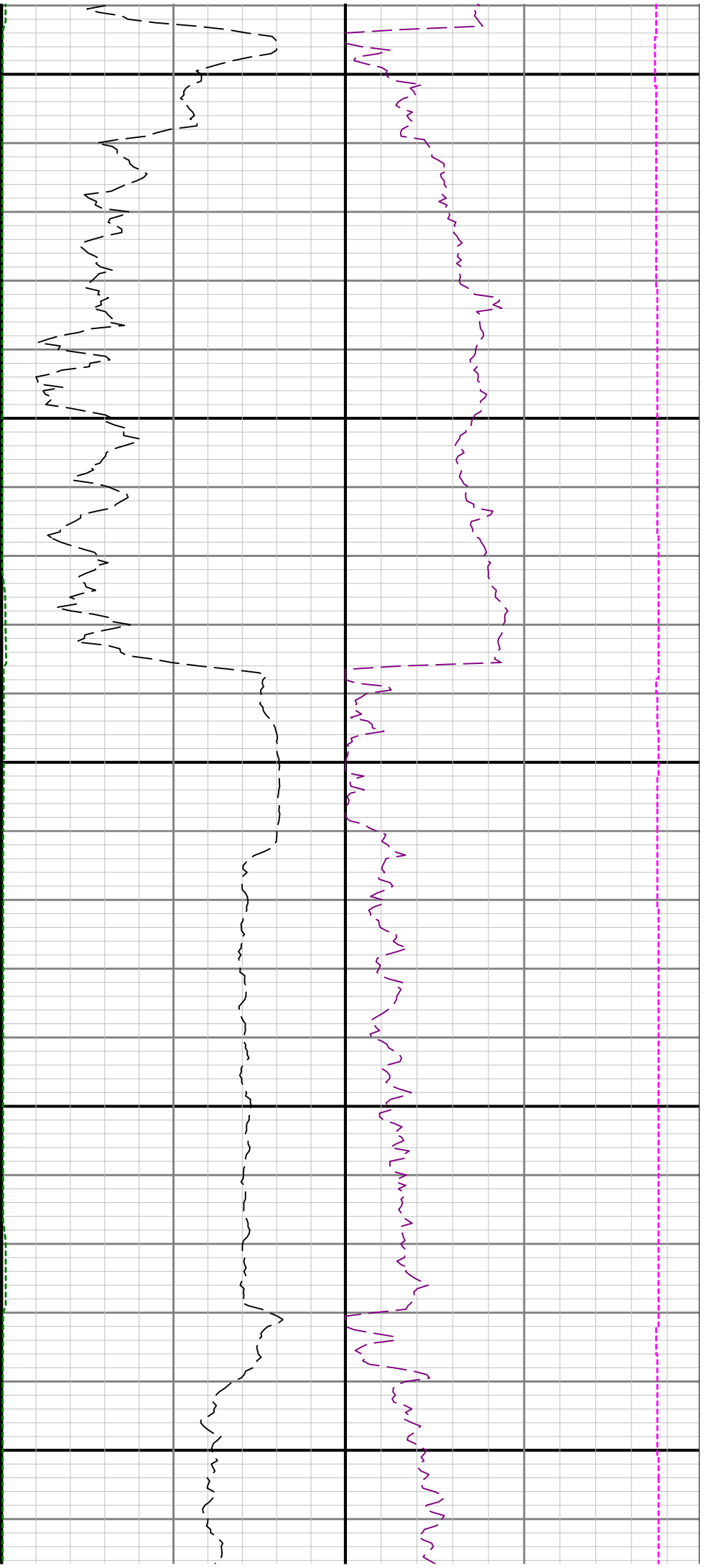


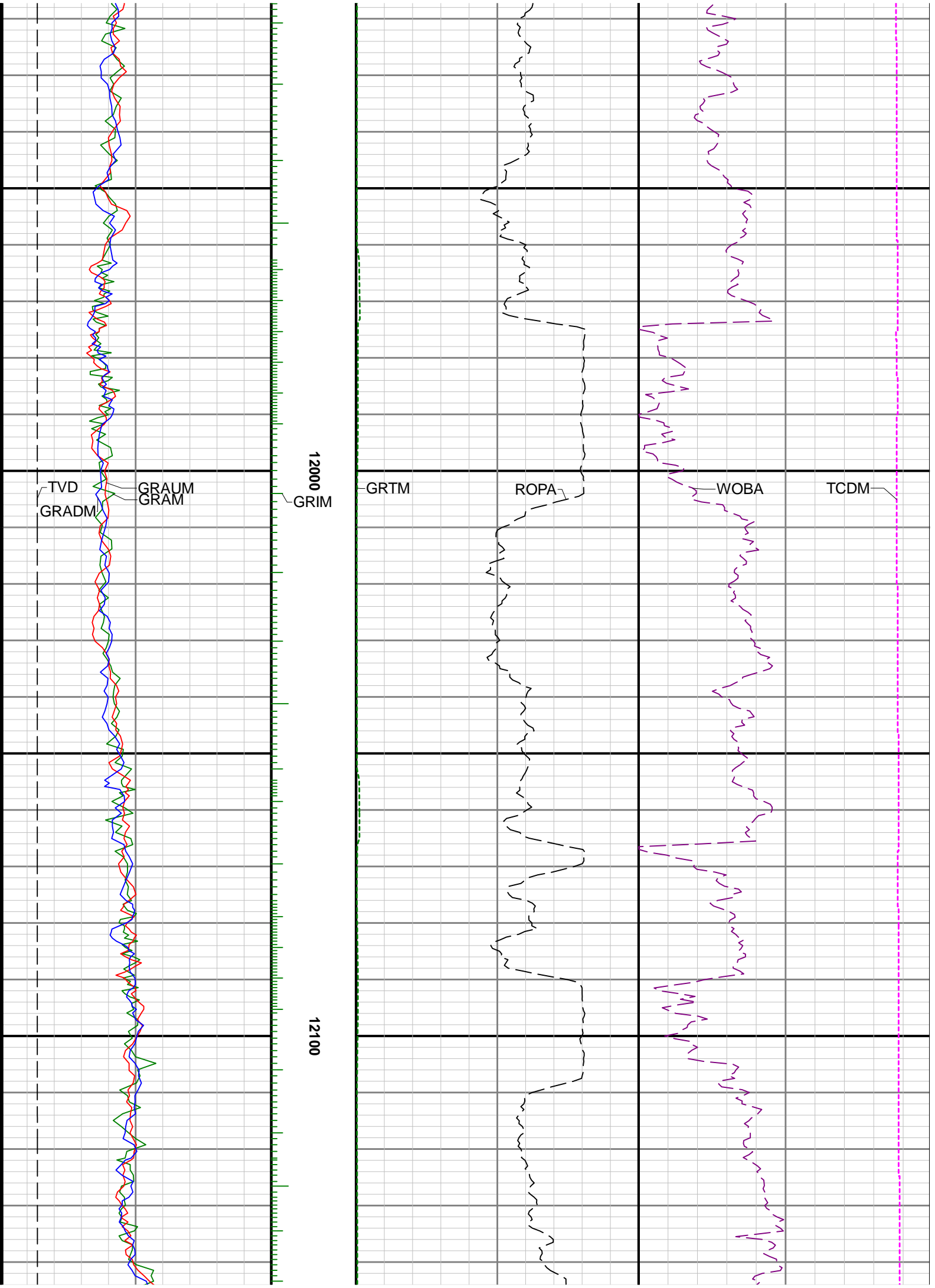
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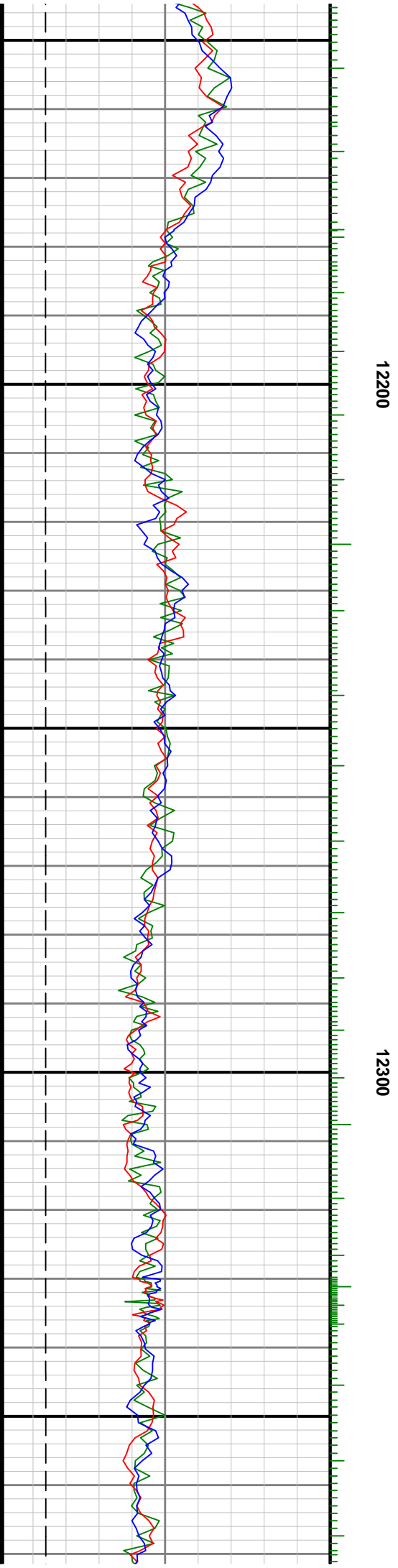
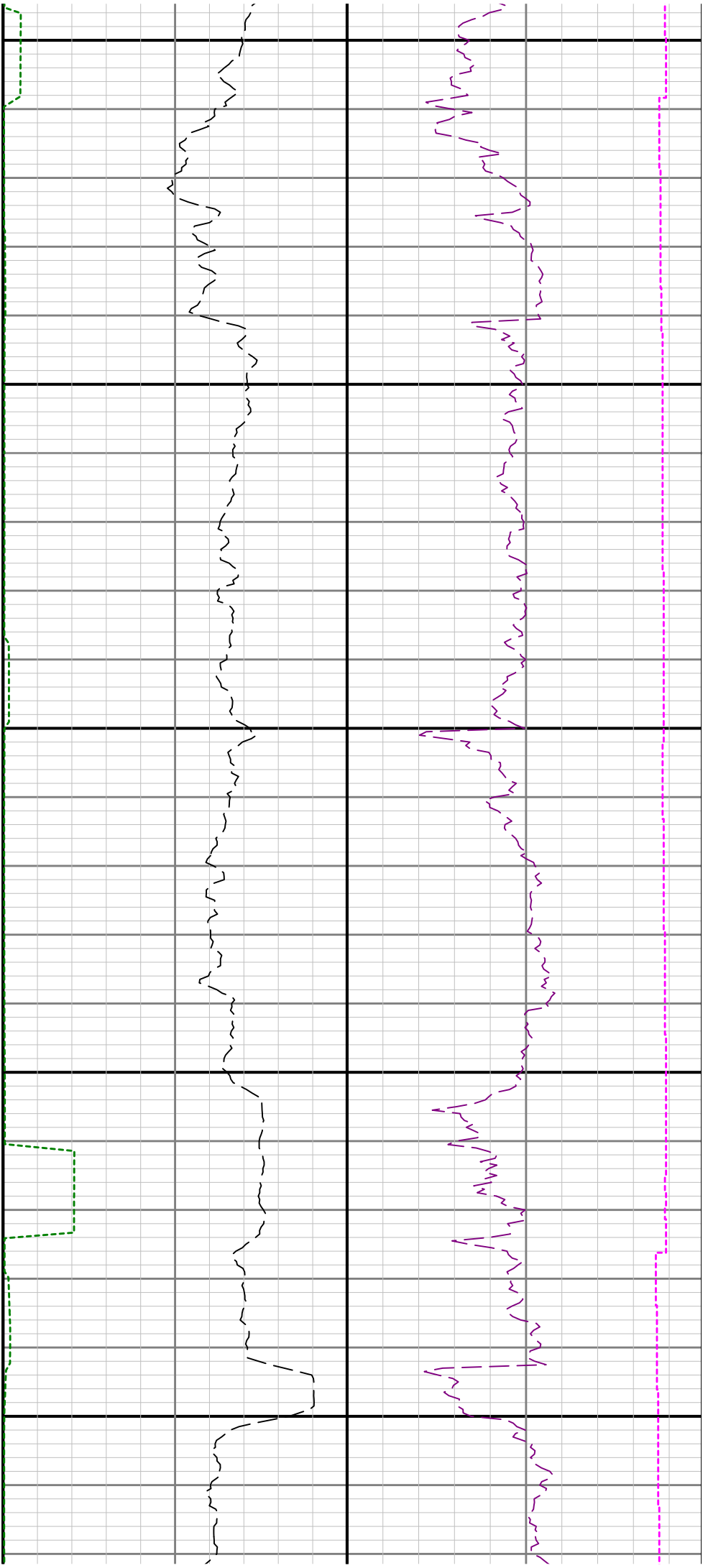
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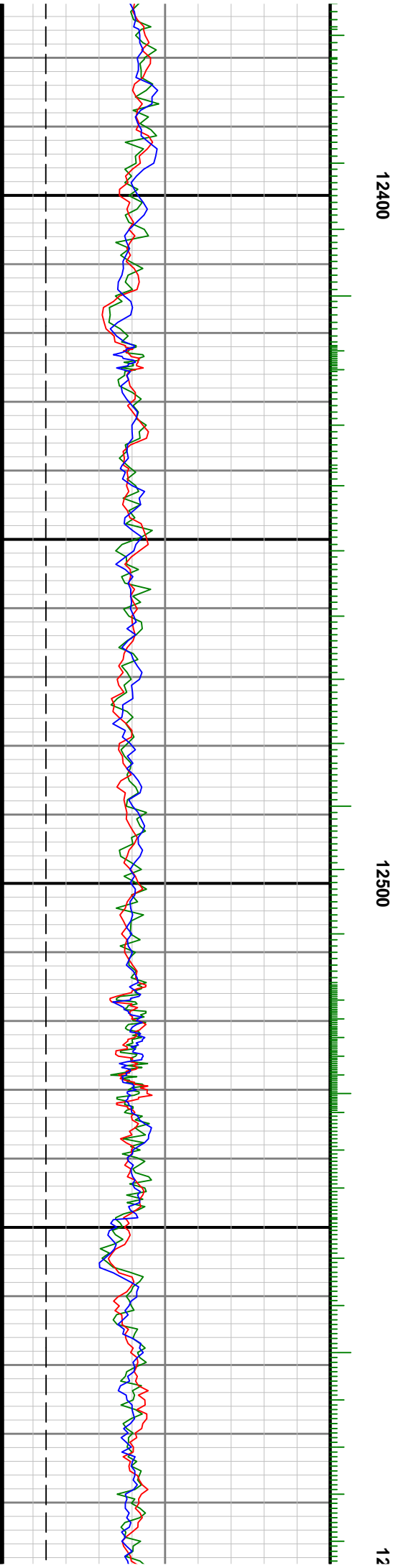
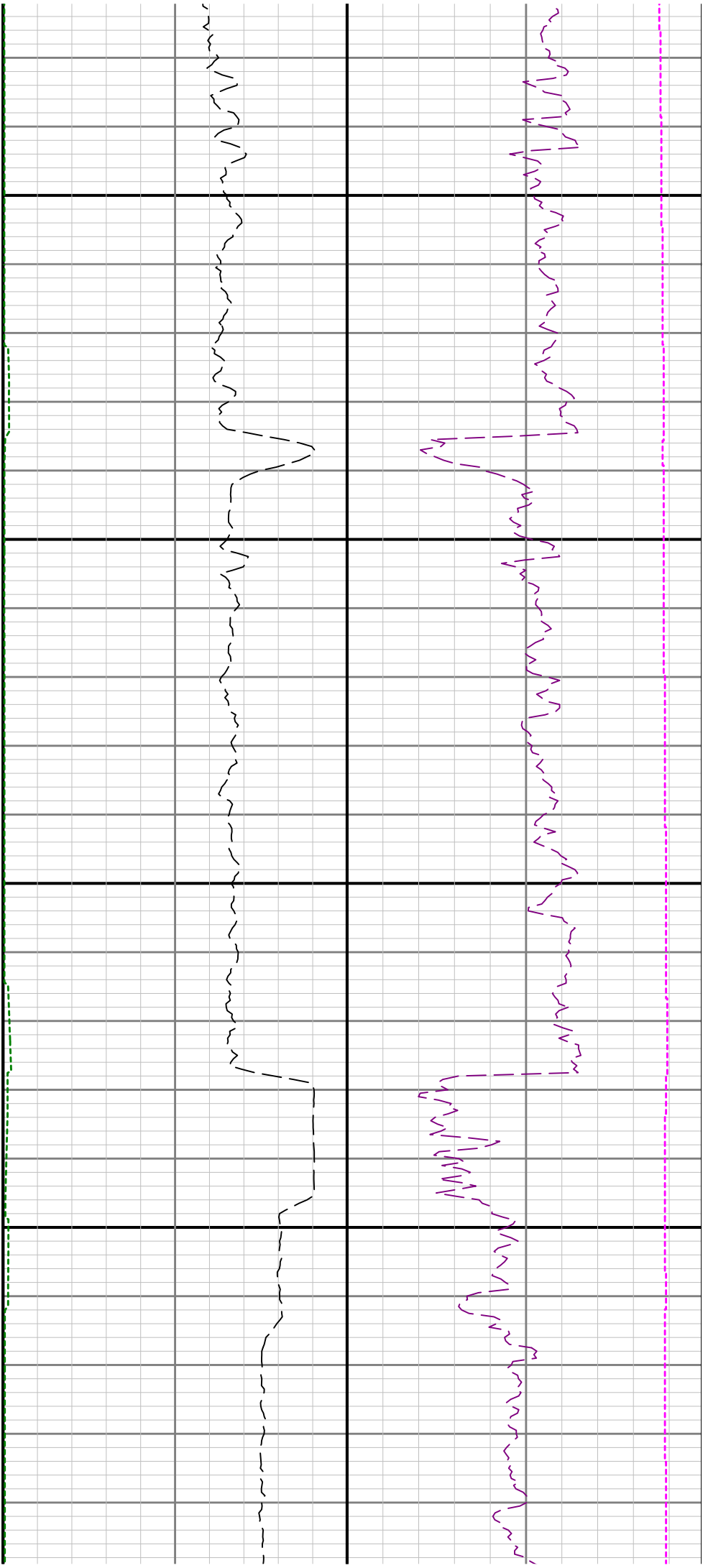


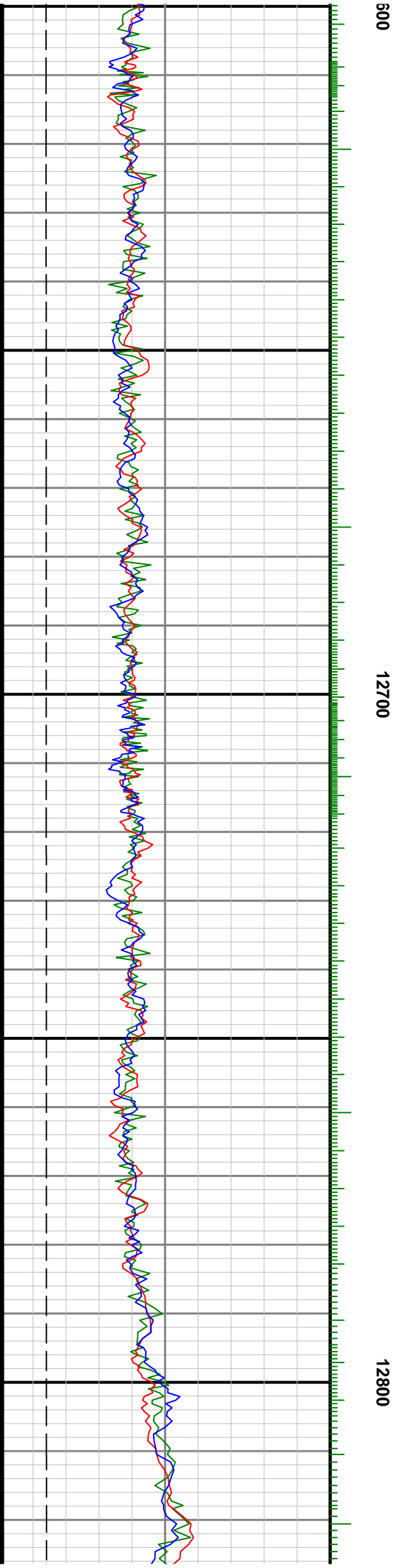
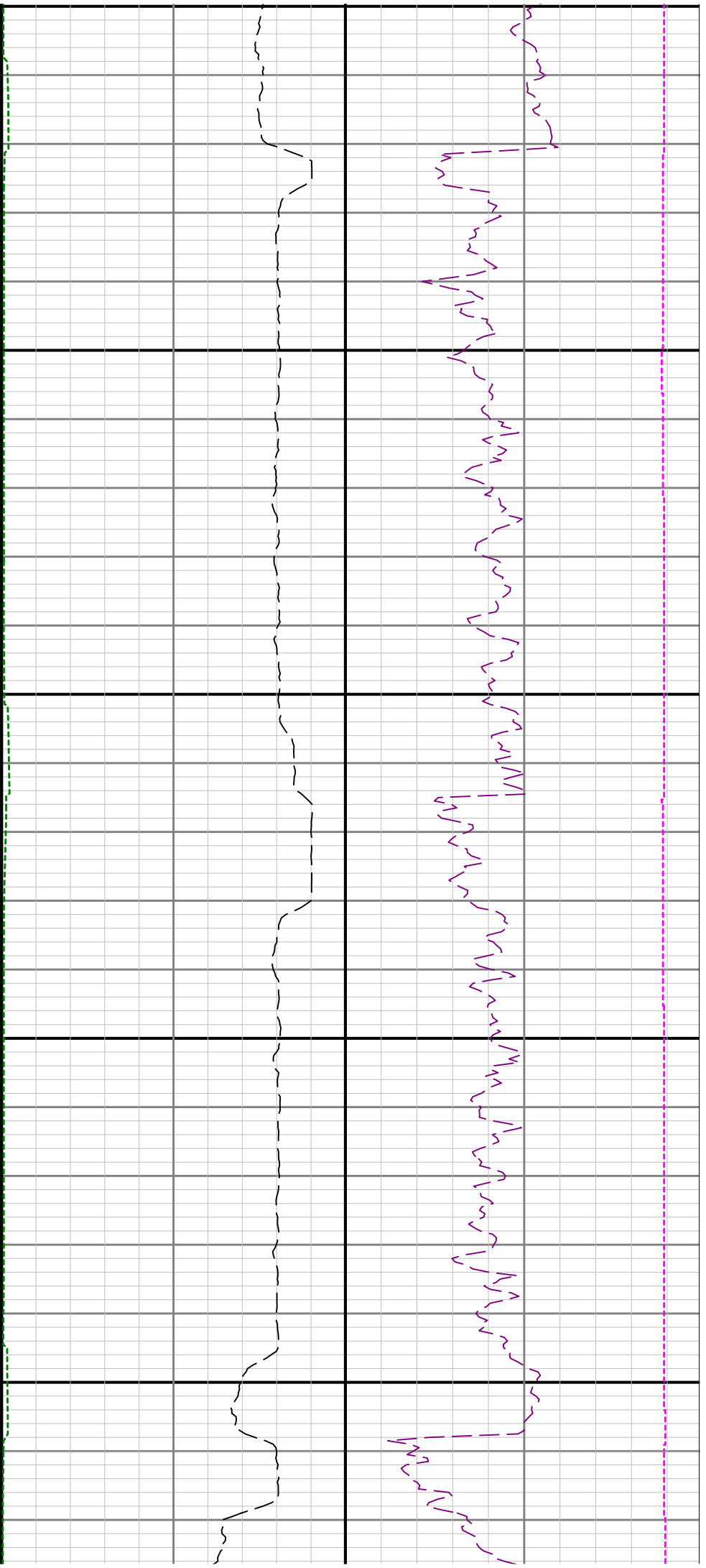


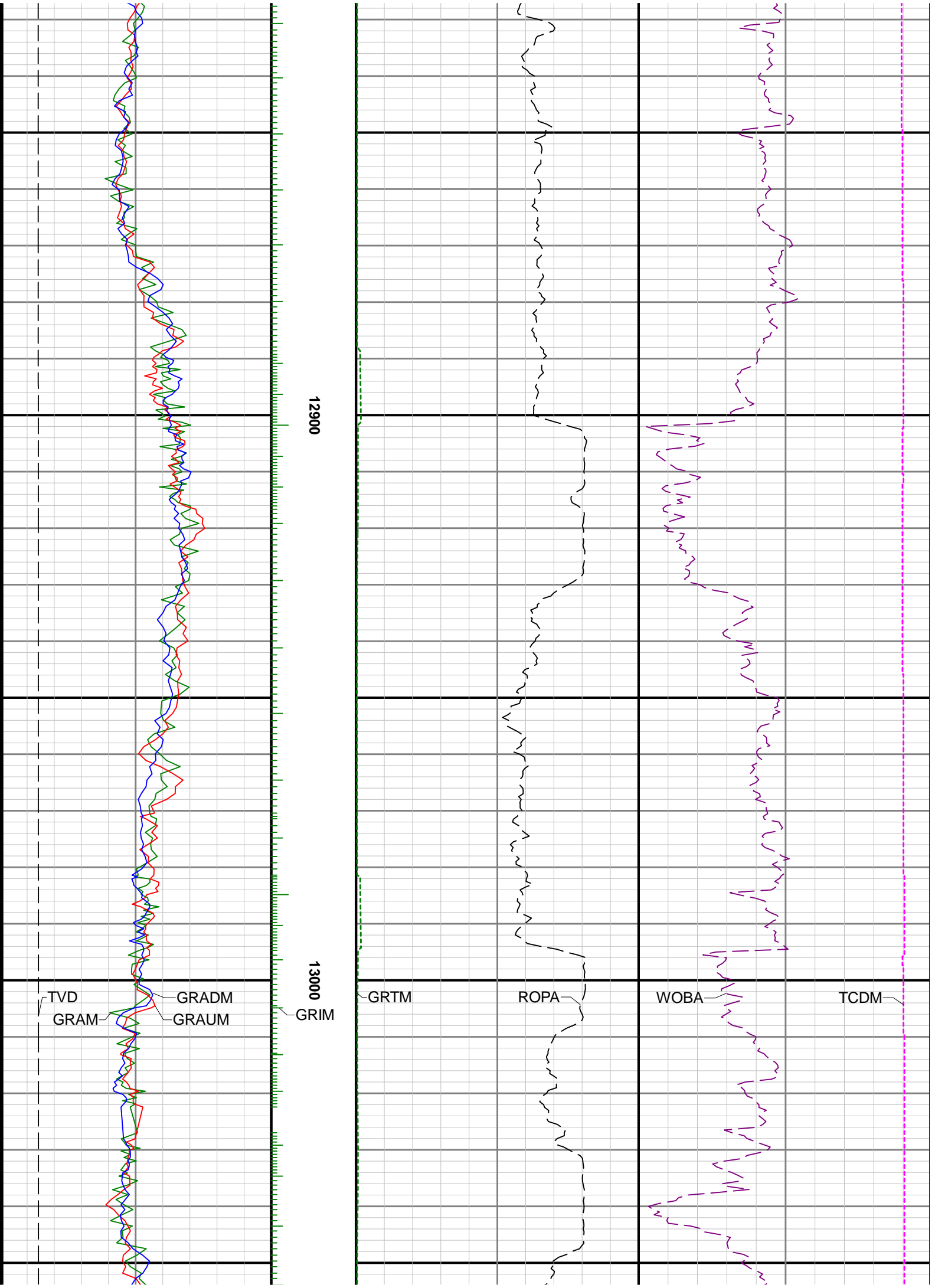


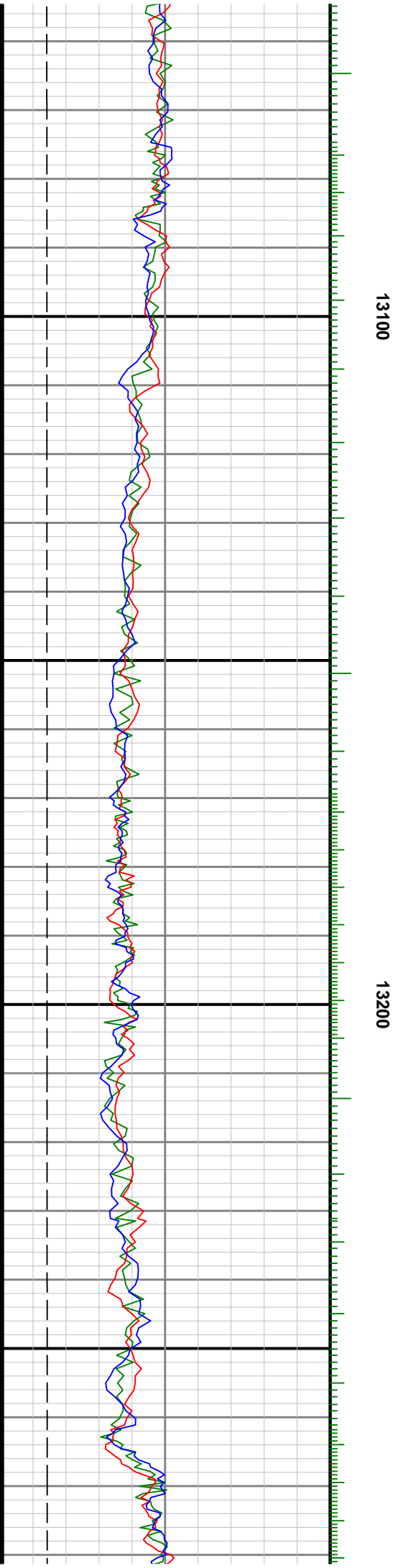
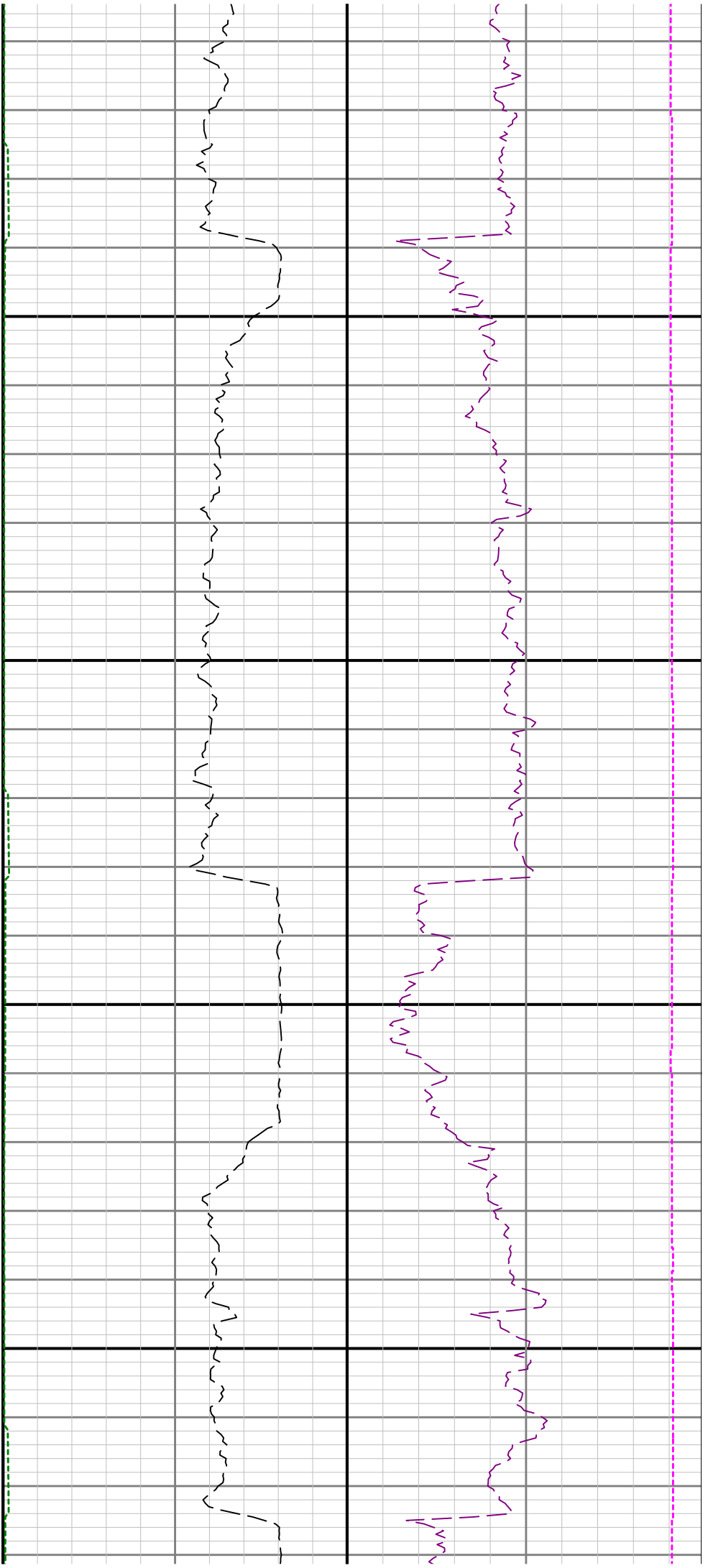


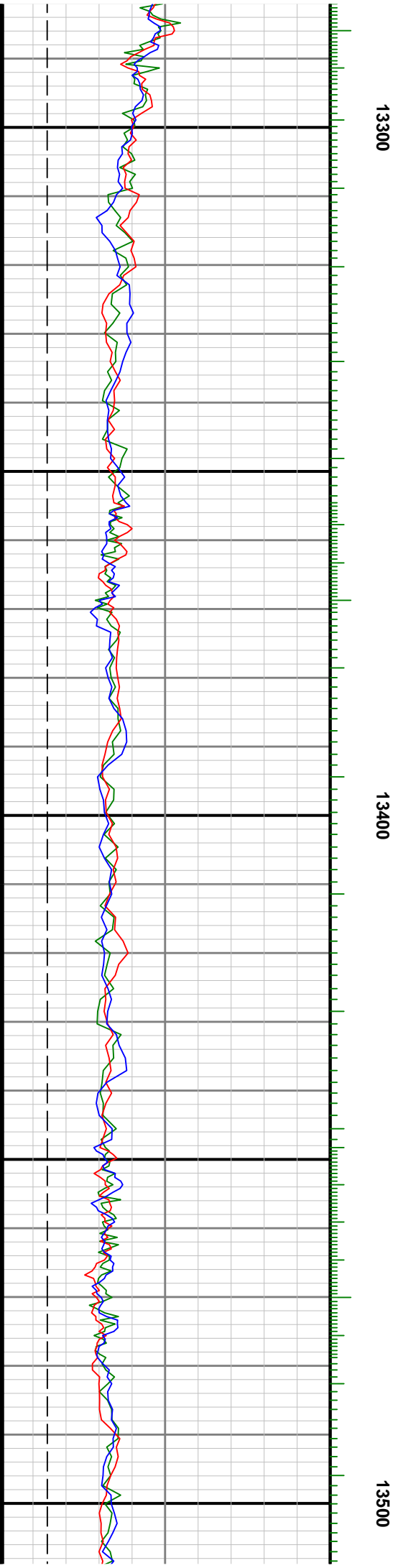
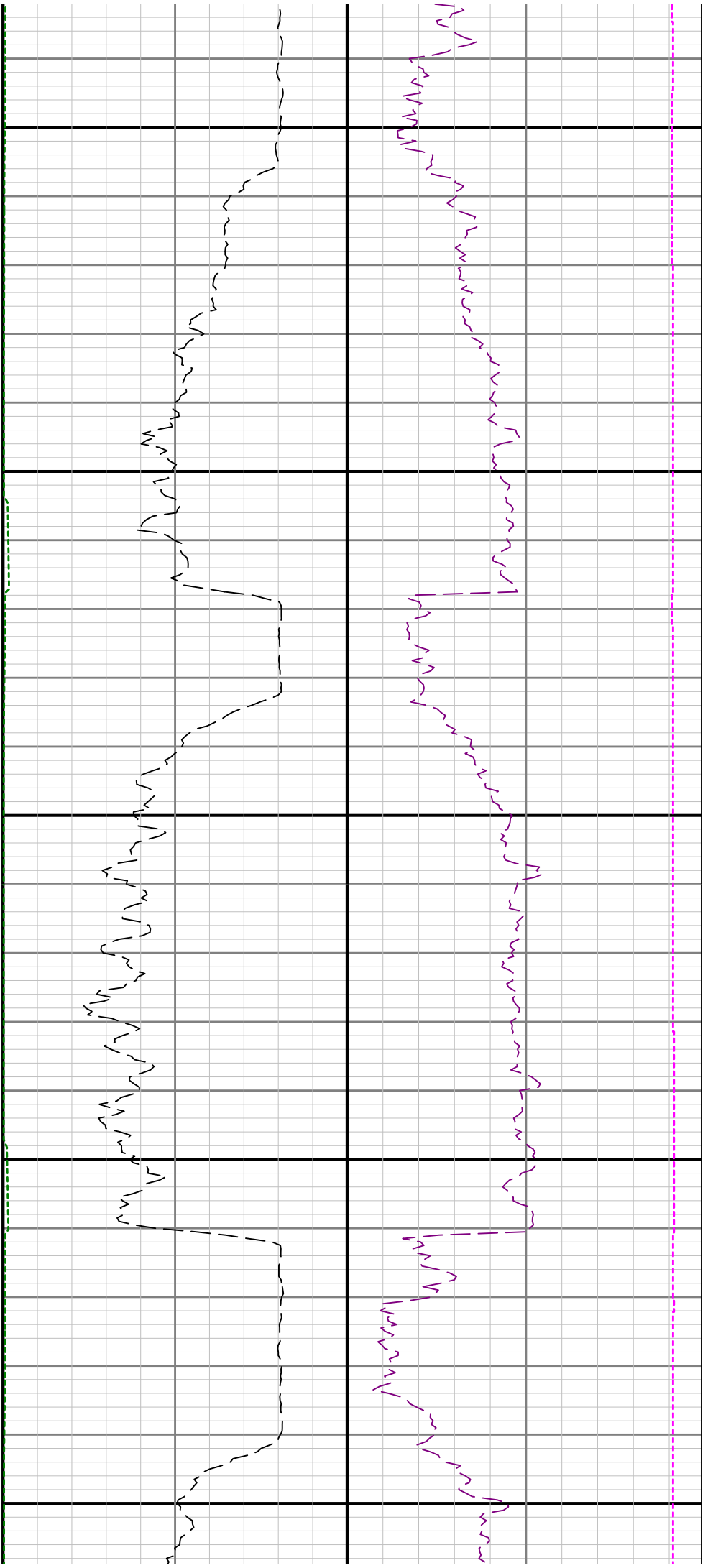


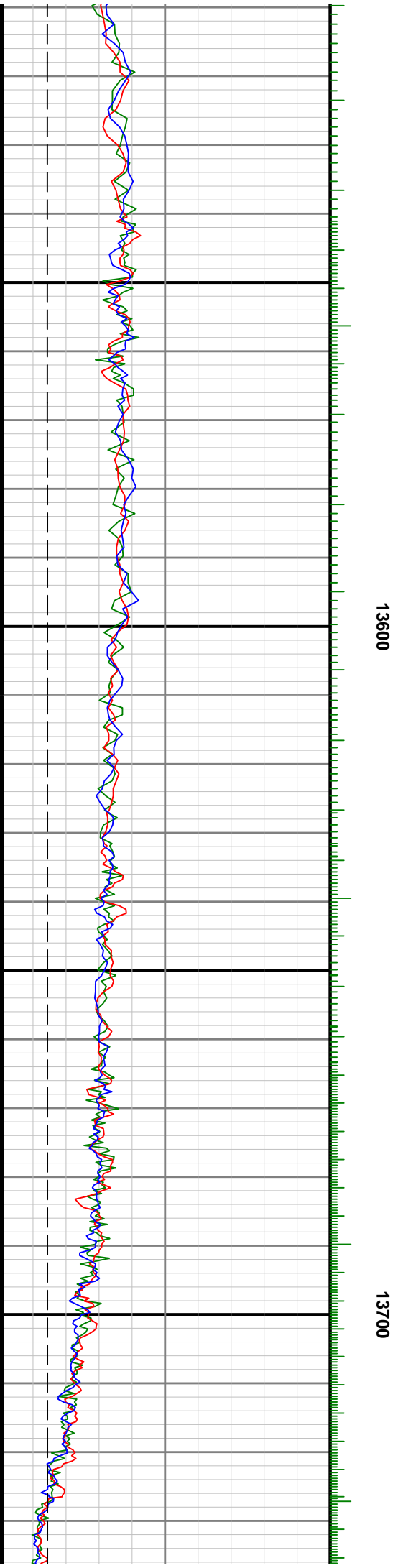
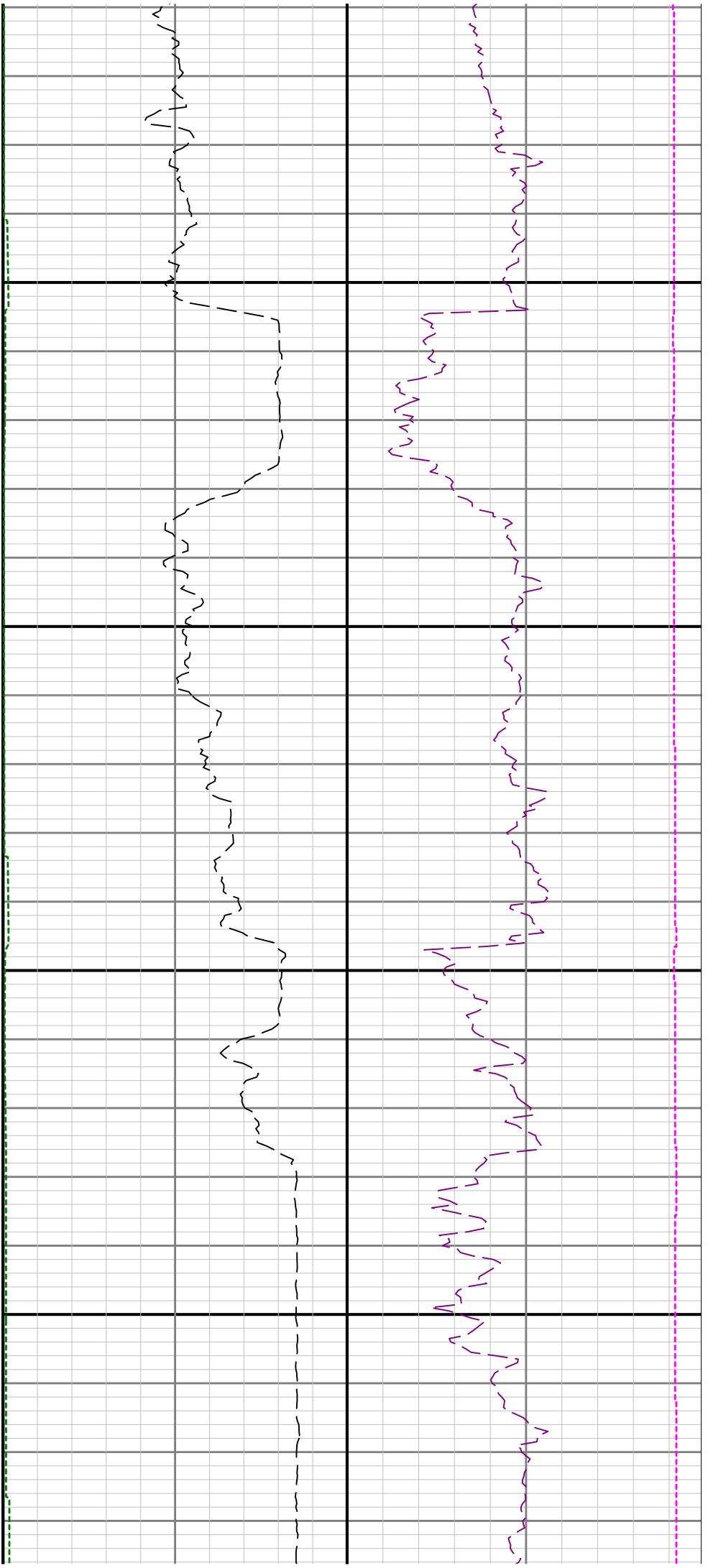


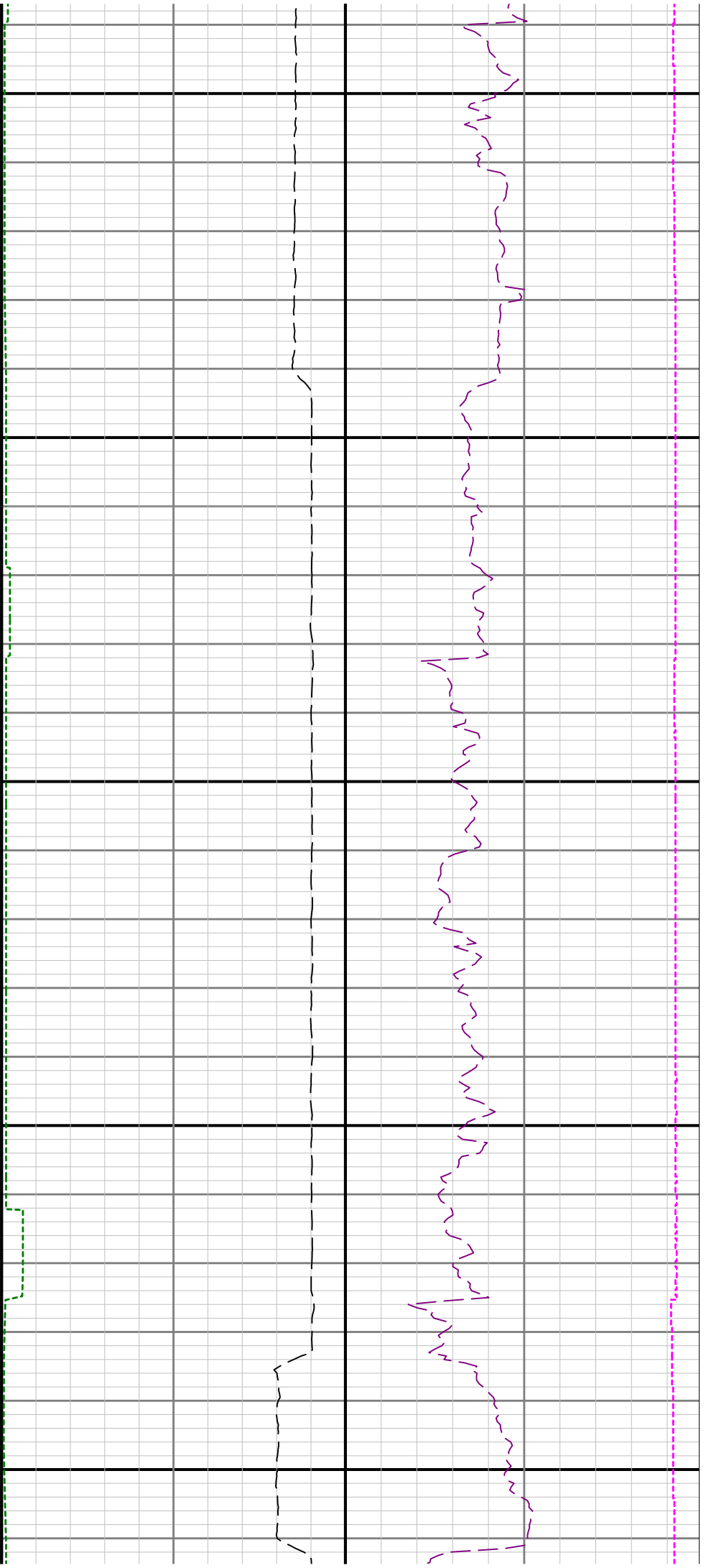






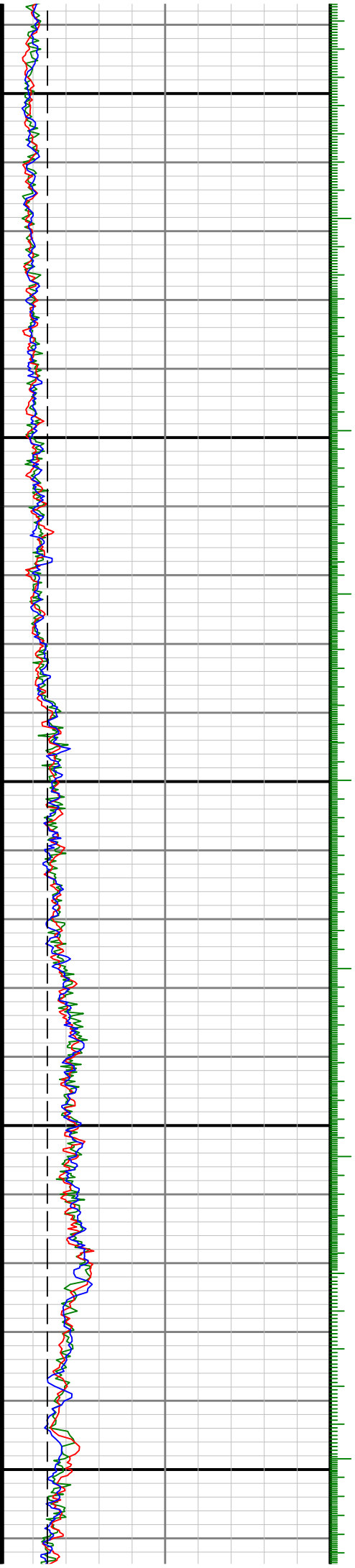


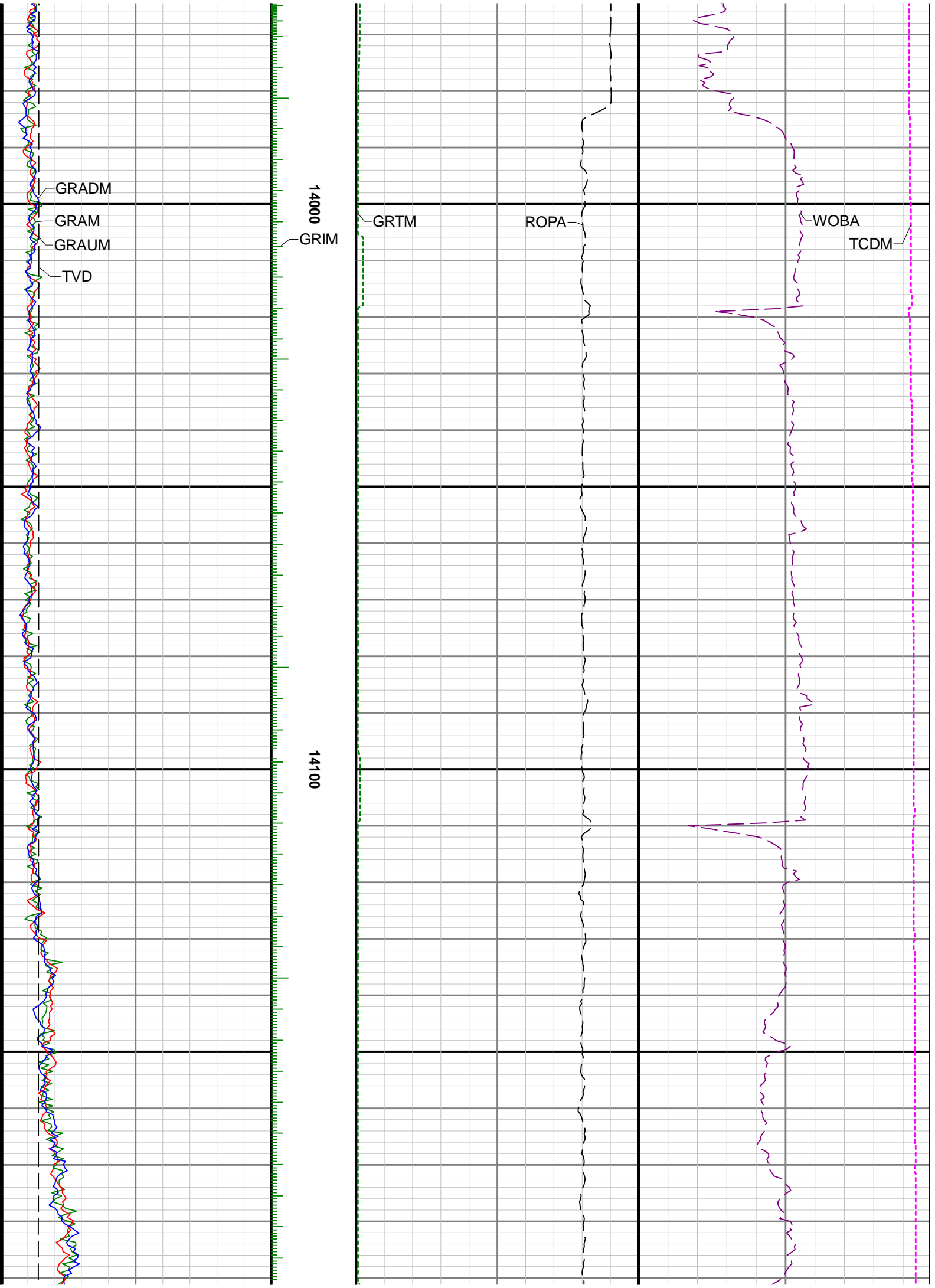


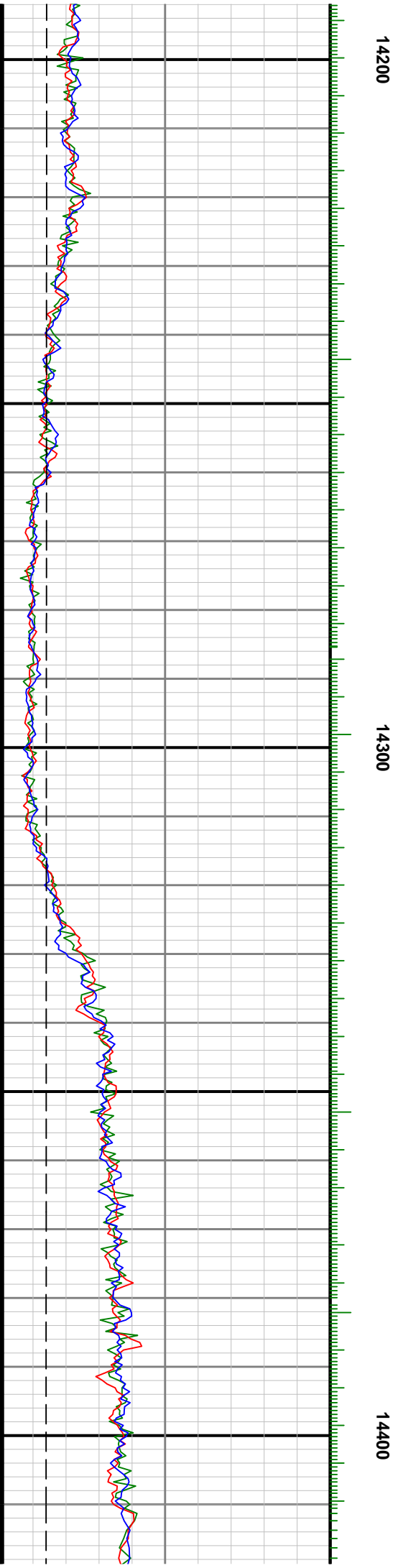


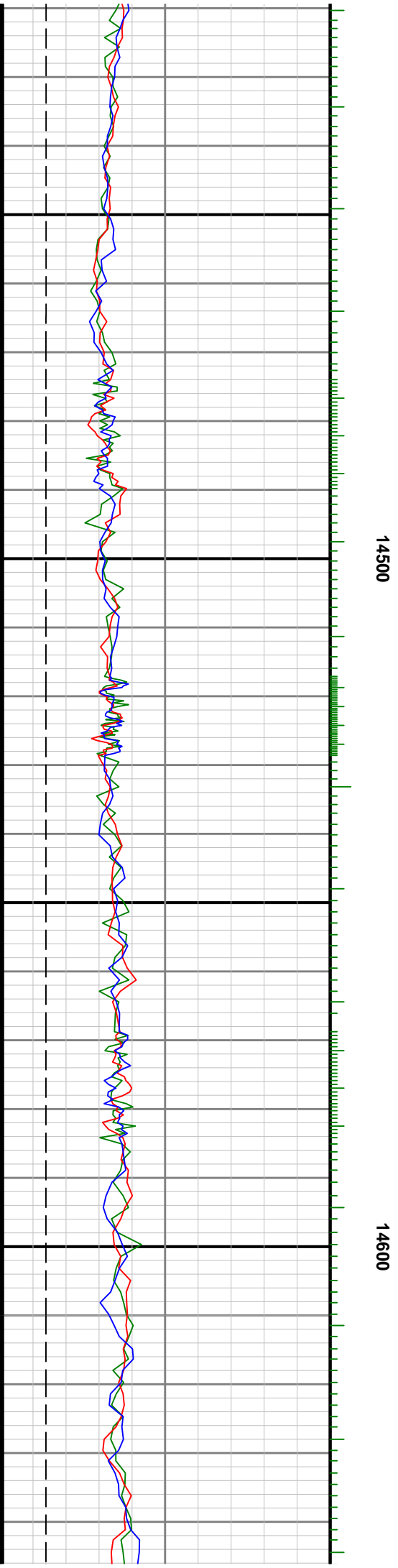
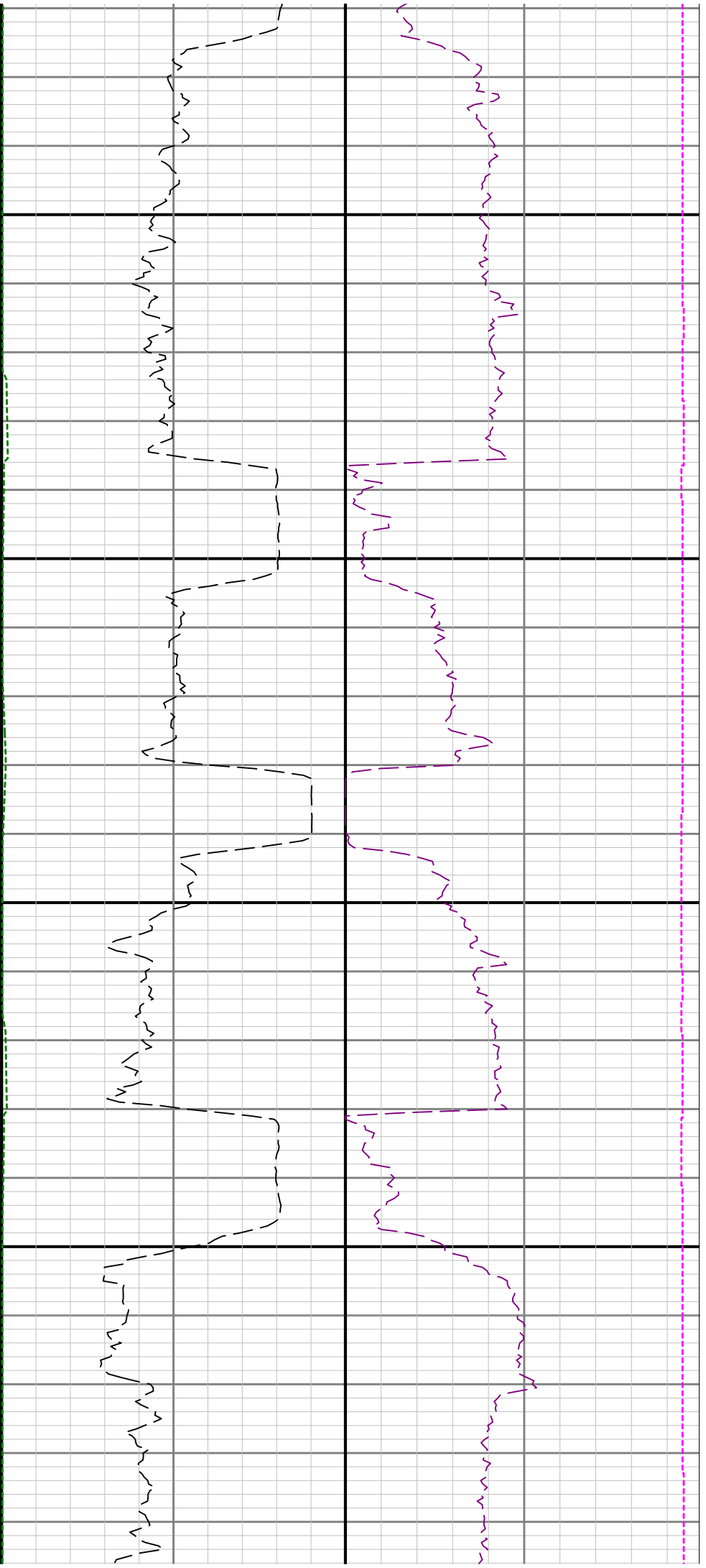
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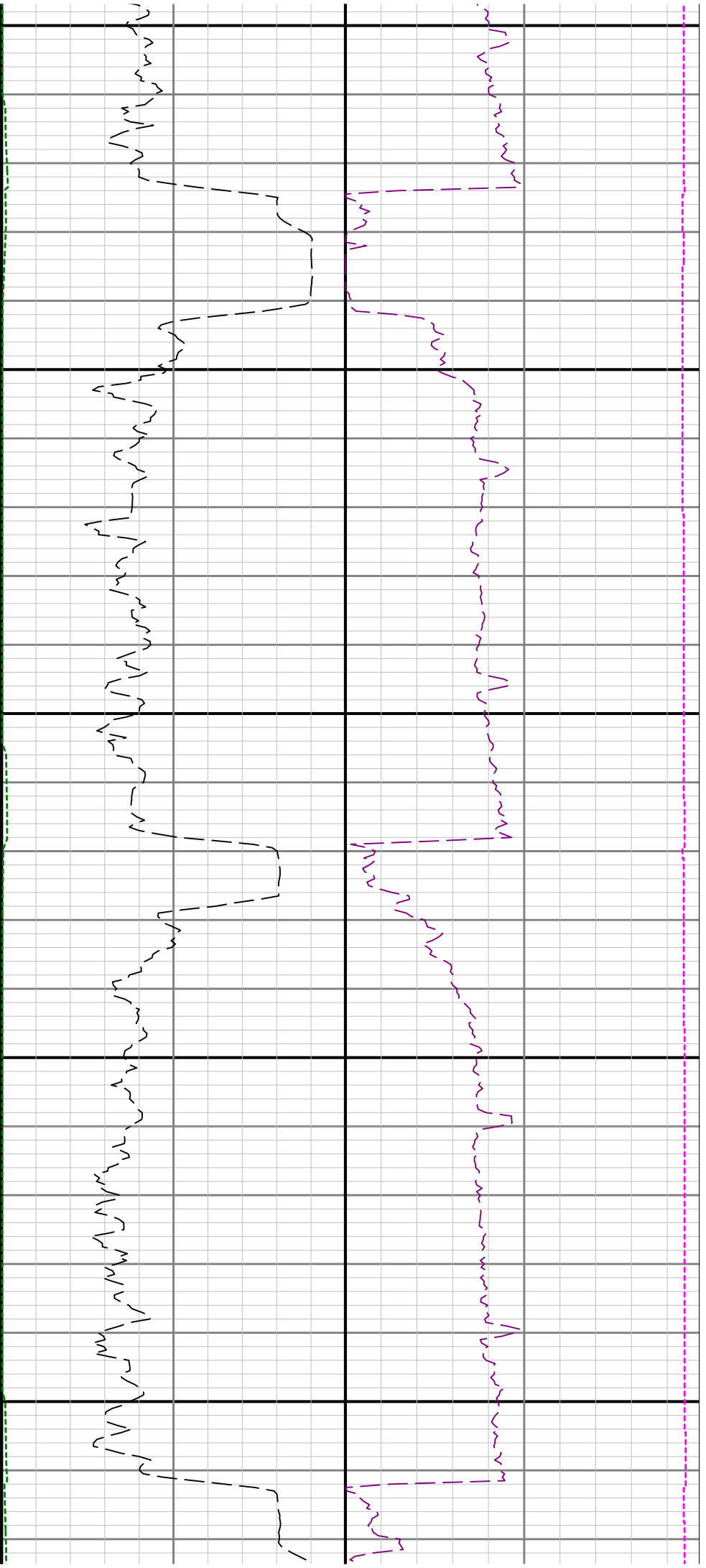
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14700

14800

