


LWD REALTIME LOG											
<div><div><div>BAKER HUGHES</div><div>a GE company</div></div><div></div></div>				Gamma Ray							
Scale:		Company: Bison Oil & Gas									
1:240 MD		Well: HUNT 8-60 6C-5-6									
Depth Reference:		Field: Weld County									
Driller's Depth		County: Weld Country: United States									
Status:		State: Colorado				Other Services:					
Final Print		Surface Location:				Latitude: <div>⓪° 51' 17.1" N</div> Longitude: <div>105° 46' 00.0" W</div>					
API No: 05-123-46460		SEC: 6				TWN: 8N		RGE: 60W		Directional	
Job ID: 9068607		Permanent Datum (P.D.): Mean Sea Level				Elevation: 0.00 ft		Elev. KB: 4986.90 ft		N/A	
Log Measured From: Rig Floor		Above P.D.				4986.90 ft		Elev. DF: 4963.90 ft		Elev. GL:	
Dates		Interval Logged				Magnetic Field Reference					
Date From: 2018-03-17		Top: (ft) 0.00		Azi Reference North: True		Dip Angle: (deg) 67.17					
Date To: 2018-03-23		Bottom: (ft) 16487.88		Total Magnetic Field Strength: (nT) 52540							
Spud Date: 2018-03-15				Mag to Reference North Correction: (deg) 7.98 E							
Borehole Record											
Casing Record											
Hole Size (in)		From (ft)		To (ft)		Size (in)		Weight (lb/ft)		From (ft) To (ft)	
13.500		23.00		1953.00		9.625		32.00		23.00 1943.00	
8.500		1953.00		16488.00							
Mud Record											
Deviation Record											
Type		From (ft)		To (ft)		Hole Size (in)		Interval (ft)		Inc Az (Start) Inc Az (End)	
Water Based Mud		0.00		1953.00		13.500		1953.00		0.28 109.79 11.99 276.92	
Diesel-Oil Based Mud		1953.00		16488.00		8.500		14535.00		11.99 276.92 91.17 91.21	
Acquisition System											
Software Version				Other							
Baker Hughes Cadence				RT4.1				Rig: Ensign 140			
PlotStudio				4.1.7763.3				Contractor: Ensign Drilling			
								District: US Land Unit: RMA			

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+ (%)
2018-03-16 05:00	1	1093.00	Water Based Mud	8.6	3	6.8	0.0	1/99	Active Pit	1000	0.00
2018-03-17 17:00	2	1953.00	Water Based Mud	8.6	30	6.8	0.0	1/99	Active Pit	1000	0.00
2018-03-18 05:00	3	1953.00	Diesel-Oil Based Mud	8.7	6	0	0.0	78.3/21.7	Active Pit	22000	0.00
2018-03-19 17:00	3	5526.00	Diesel-Oil Based Mud	8.6	10	0	0.0	74.5/25.5	Active Pit	20000	0.00
2018-03-21 05:00	3	9488.00	Diesel-Oil Based Mud	9.0	9	0	0.0	78/22	Active Pit	33000	0.00
2018-03-22 05:00	3	12760.00	Diesel-Oil Based Mud	9.0	10	0	0.0	78.7/21.3	Active Pit	32000	0.00
2018-03-23 05:00	3	15081.00	Diesel-Oil Based Mud	9.0	10	0	0.0	82.2/17.8	Active Pit	35000	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	NaviTrak	12366173	Directional (mag)	16.78	53.51	8.000	0.000
1	NaviTrak	12366173	VSS	16.78	53.51	8.000	0.000
2	NaviGamma	12366176	Gamma (single)	8.20	58.43	6.750	3.250
2	NaviGamma	12366176	Directional (mag)	11.70	61.93	6.750	3.250
2	NaviGamma	12366176	VSS	11.70	61.93	6.750	3.250
3	NaviGamma	12813115	Gamma (single)	8.69	58.92	6.750	3.250
3	NaviGamma	12813115	Directional (mag)	12.19	62.42	6.750	3.250
3	NaviGamma	12813115	VSS	12.19	62.42	6.750	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
NTK	NaviTrak	Probe Based Directional Module, NaviTrak Platform
GAM	NaviGamma	Probe Based Gamma Module, NaviTrak Platform

Comments

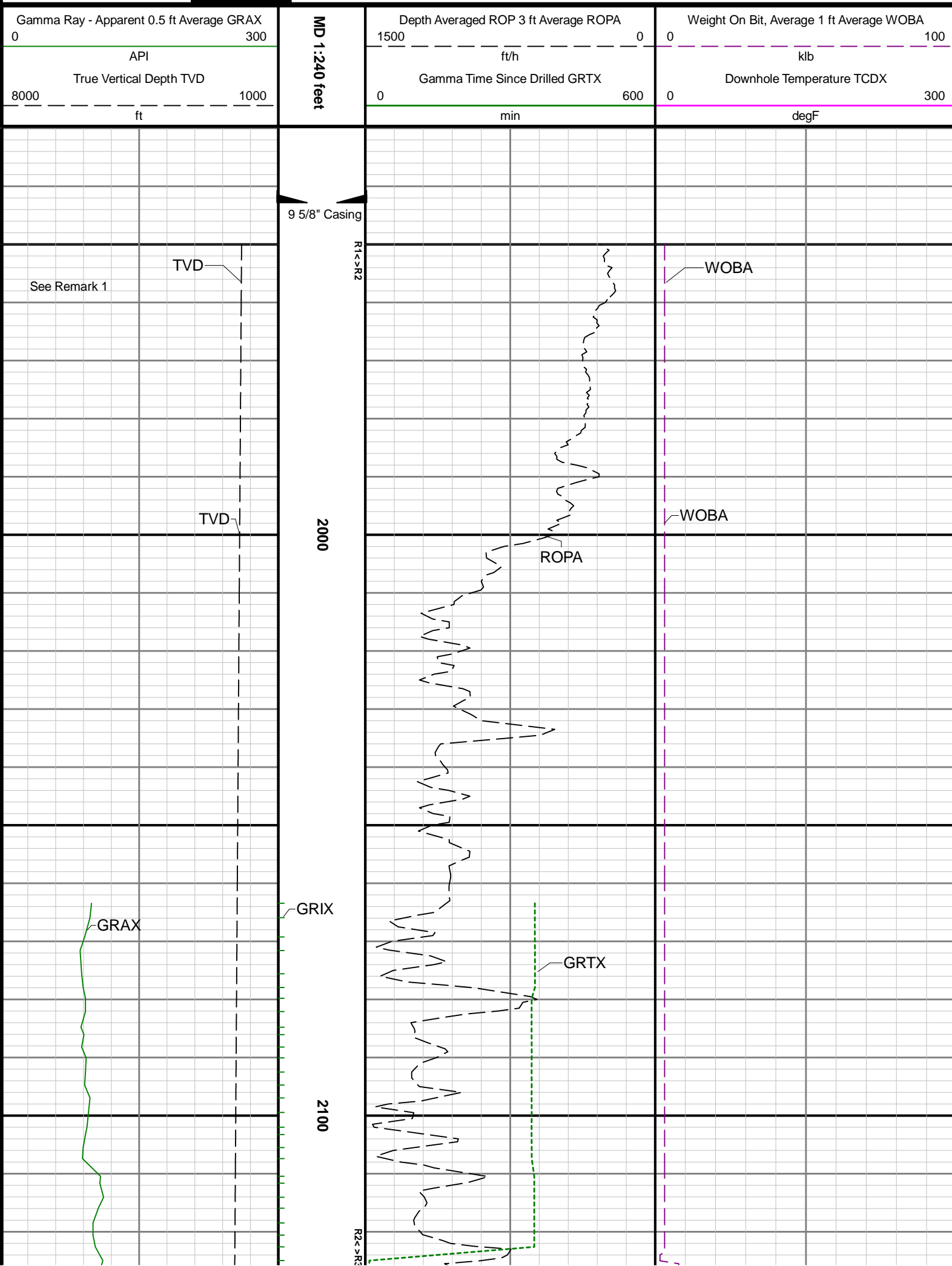
1	Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified.
2	Tool joint was not detected at 1927 feet TVD).
3	Tool joint was not detected at 1953 to 16488 feet MD (1927 to 6537 feet TVD).
4	Gaps in Gamma Ray data are present throughout the log due to surveying while drilling ahead.

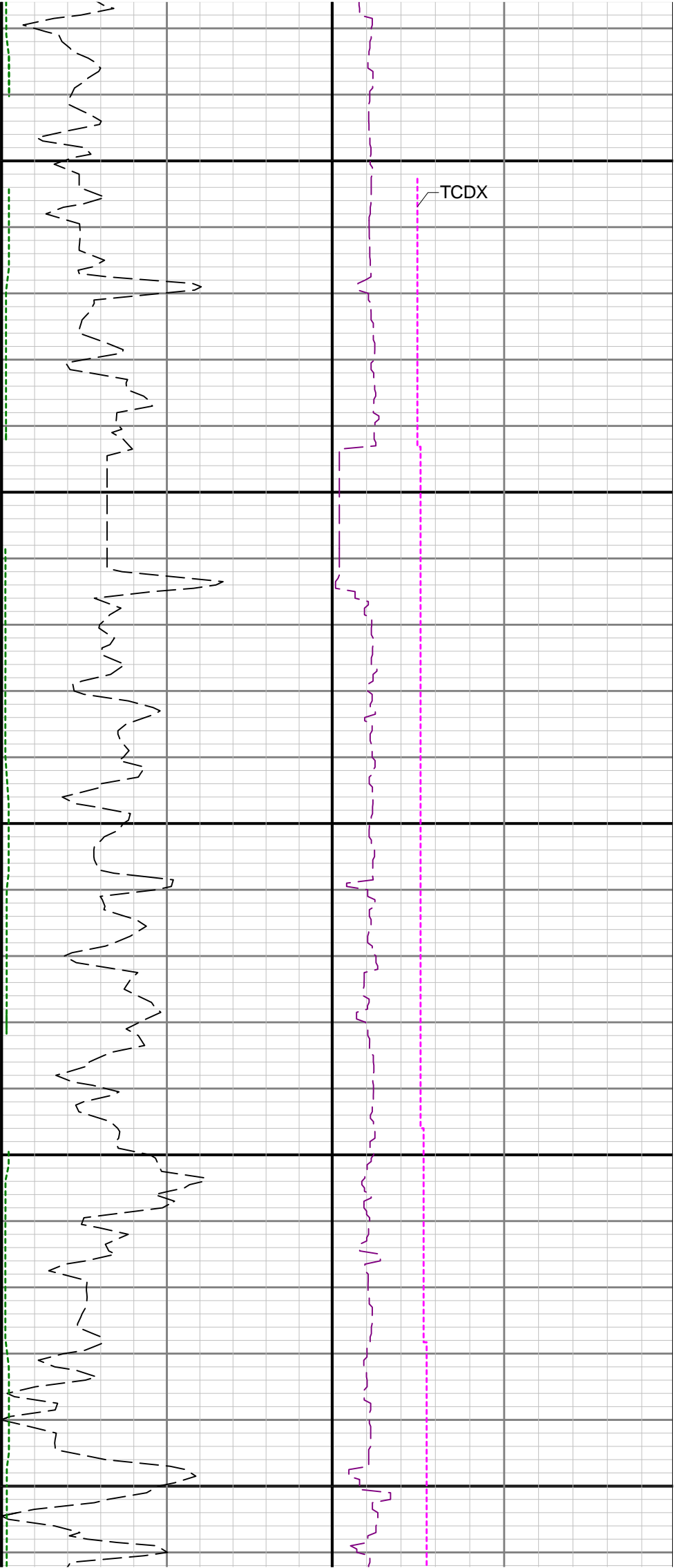
Remarks

Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	1975.00	13.500	1	No data was logged during the interval from 1958 to 2063 feet MD (2424 to 2034 feet TVD) due to MWD tool failure, Customer was aware.
2	15310.00	8.500	3	The interval from 15286 to 15357 feet MD (6361 feet to 6360 feet TVD) due to an error made in the surface data acquisition system.
3	16475.00	8.500	3	The interval from 16428 to 16488 feet MD (6537 feet TVD) was not logged due to sensor to bit offset at well TD.

Curve Mnemonics

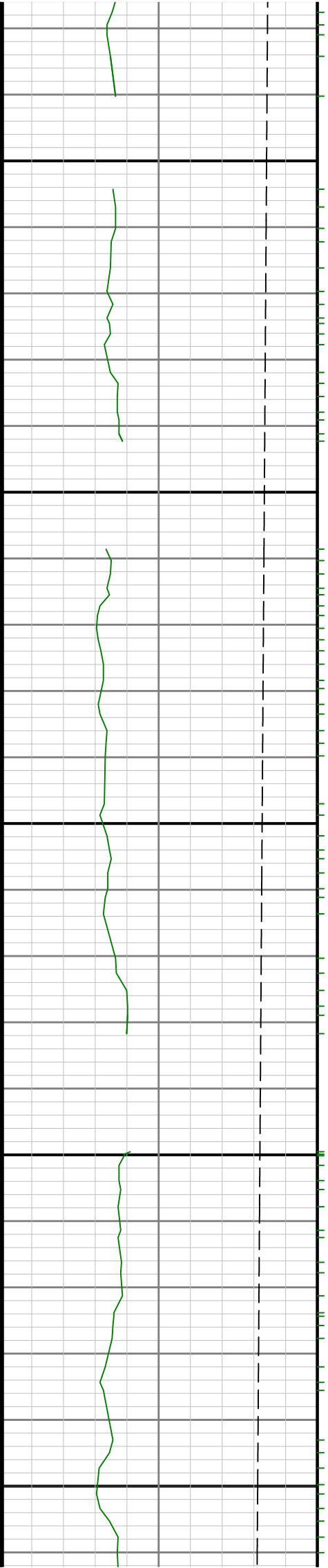
Presented Curves	Description	Units
TCDX	Downhole Temperature	degF
ROPA	Depth Averaged ROP 3 ft Average	ft/h
TVD	True Vertical Depth	ft
WOBA	Weight On Bit, Average 1 ft Average	klb
GRAX	Gamma Ray - Apparent - Real-Time 0.5 ft Average	API
GRIX	Gamma Ray - Data Point Indicator - Real-Time	unitless
GRTX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

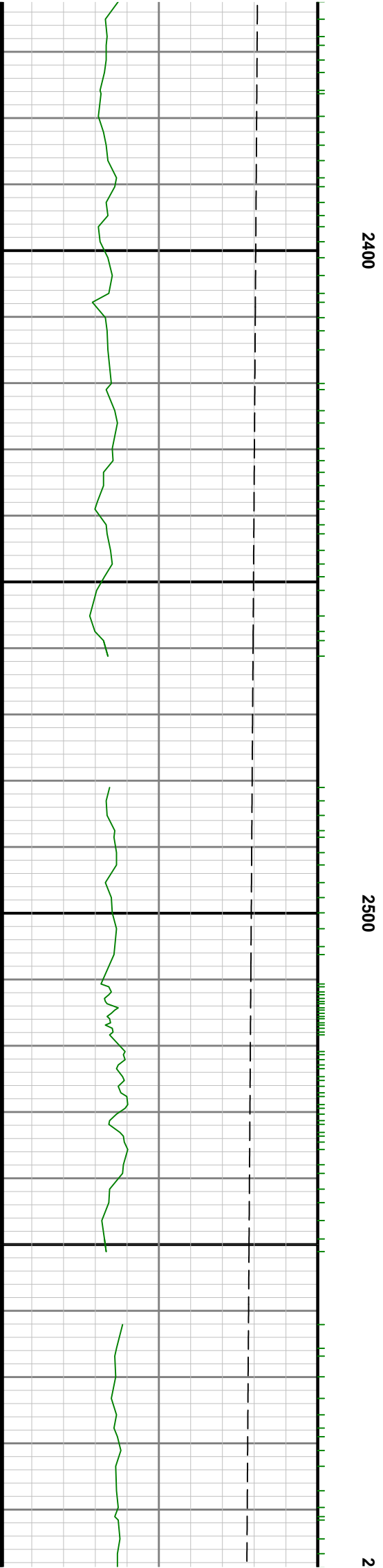
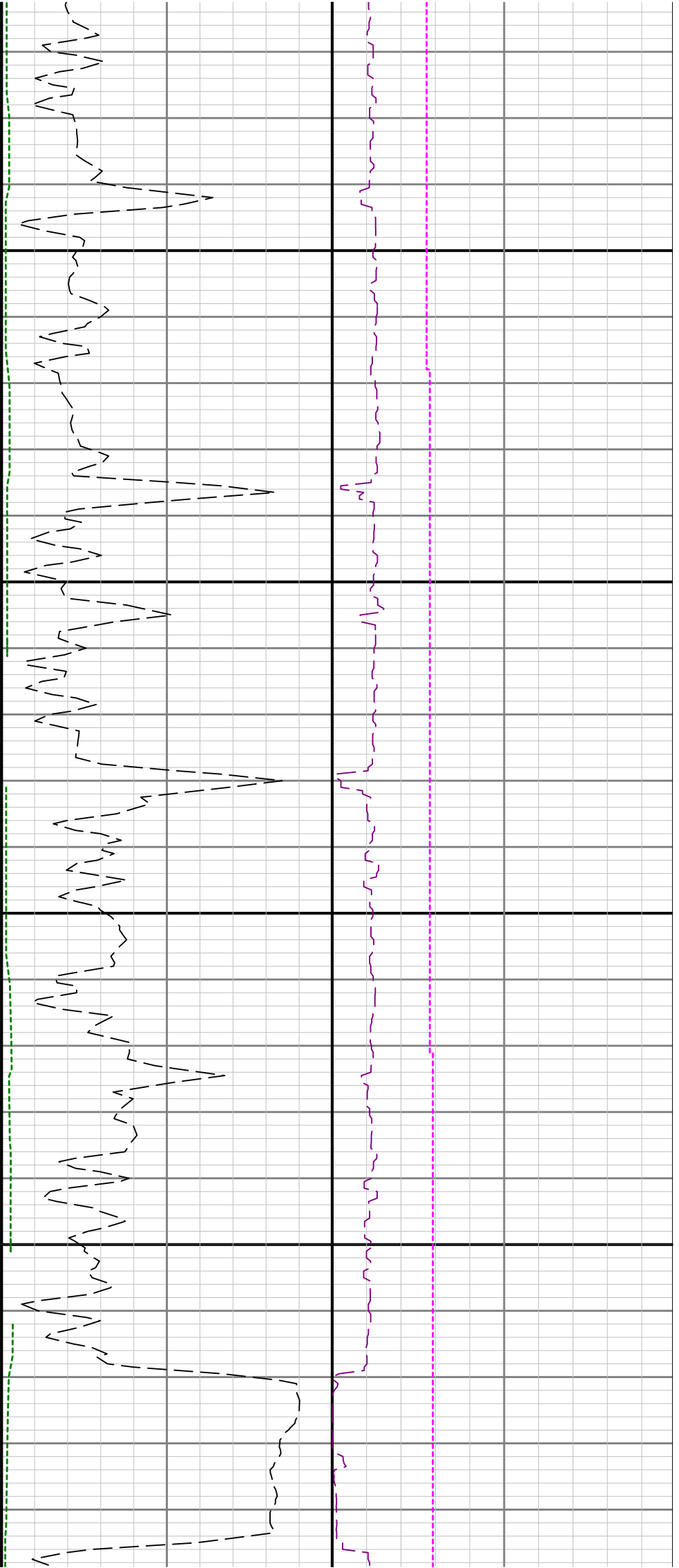




2200

2300



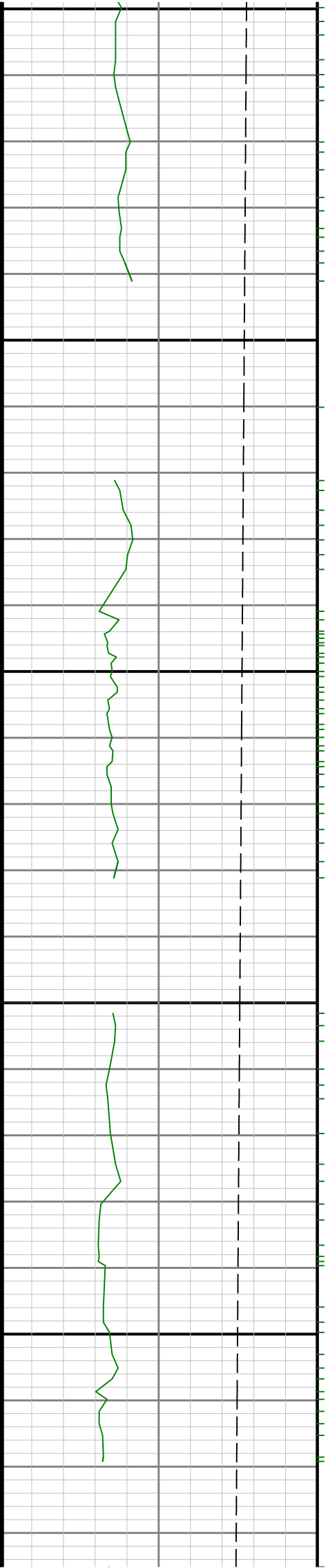


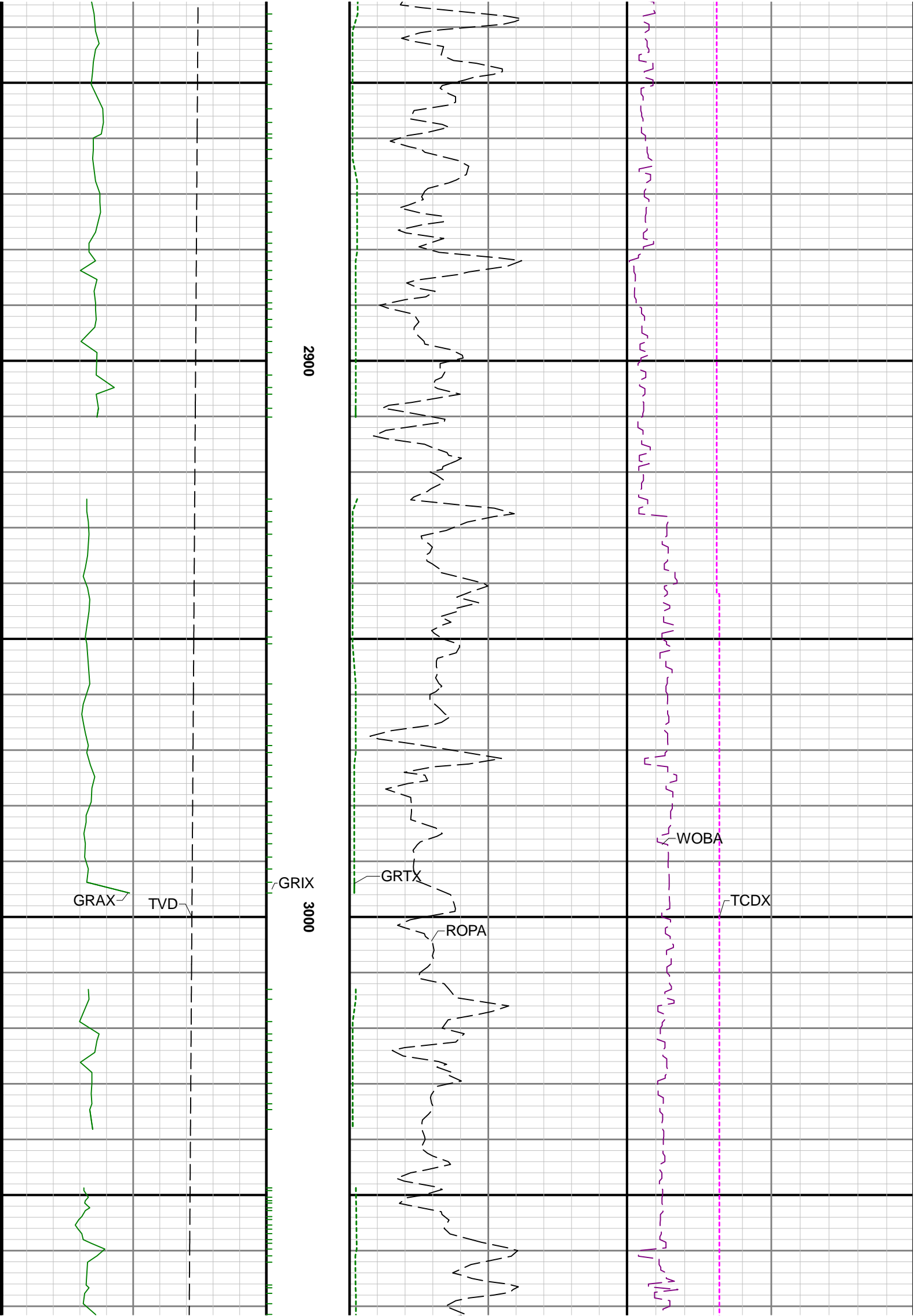


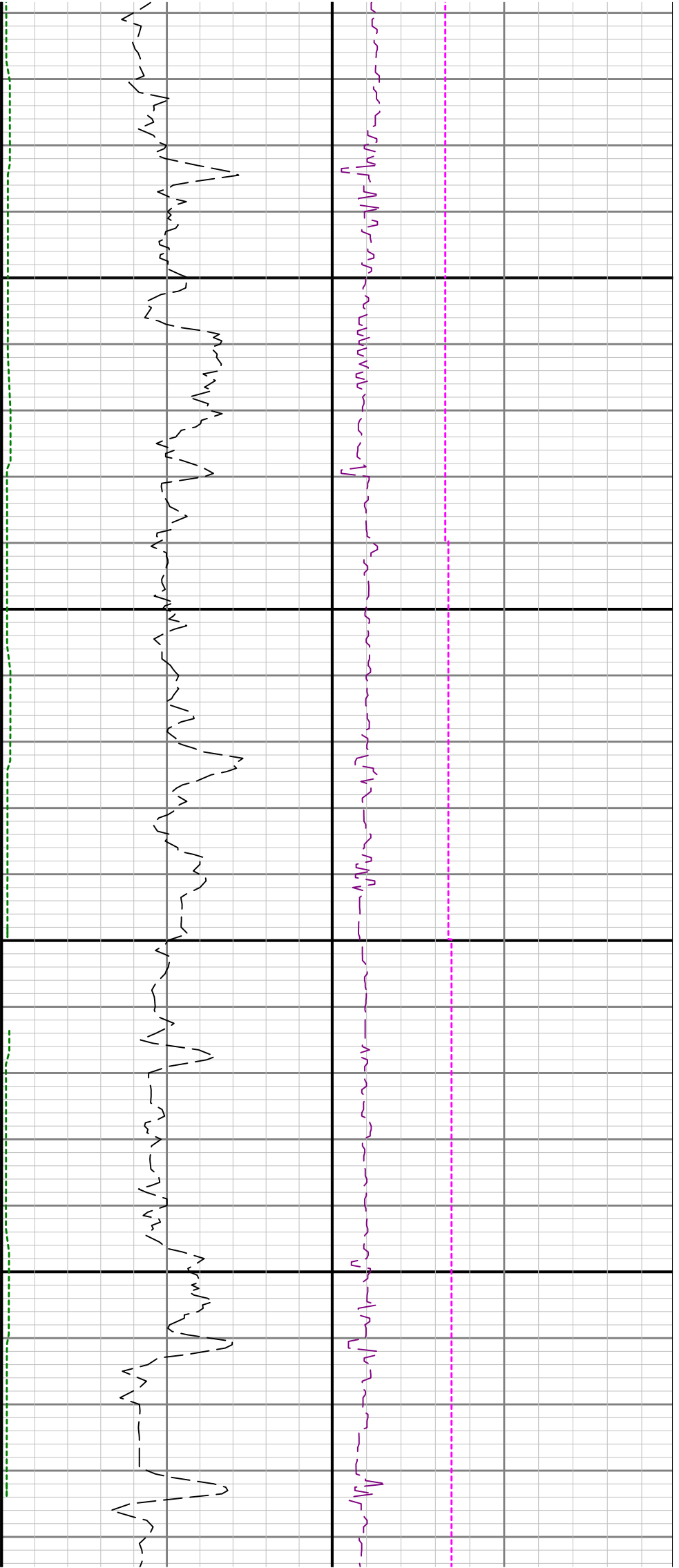
600

2700

2800

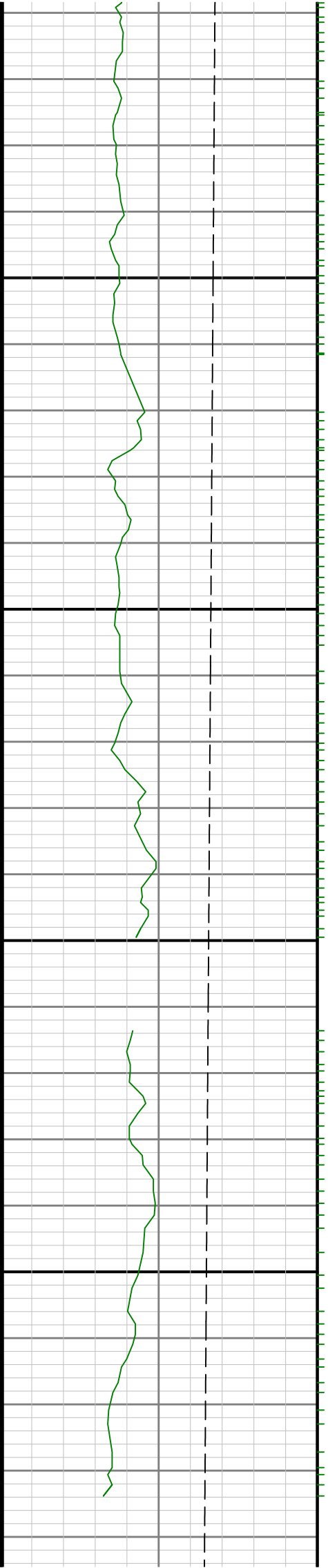






3400

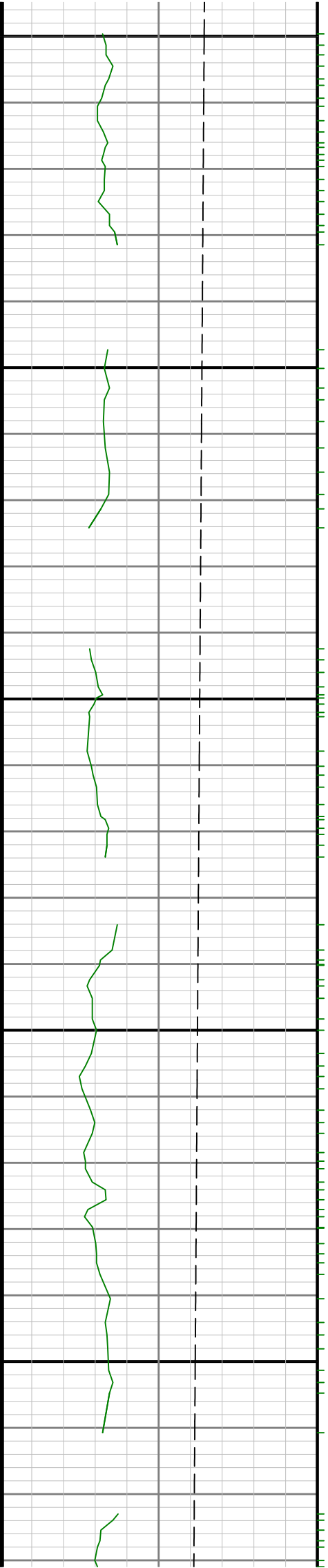
3500

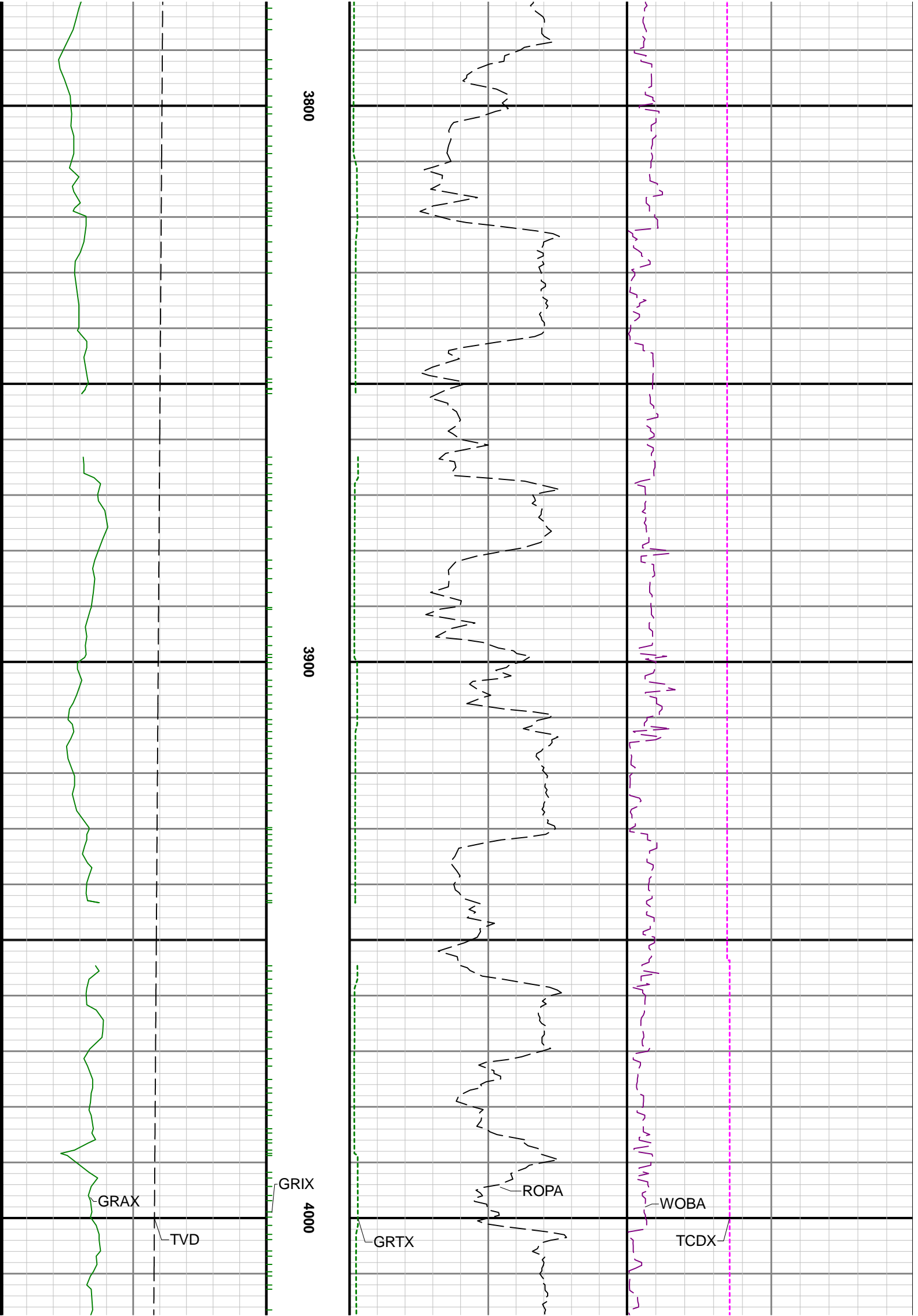


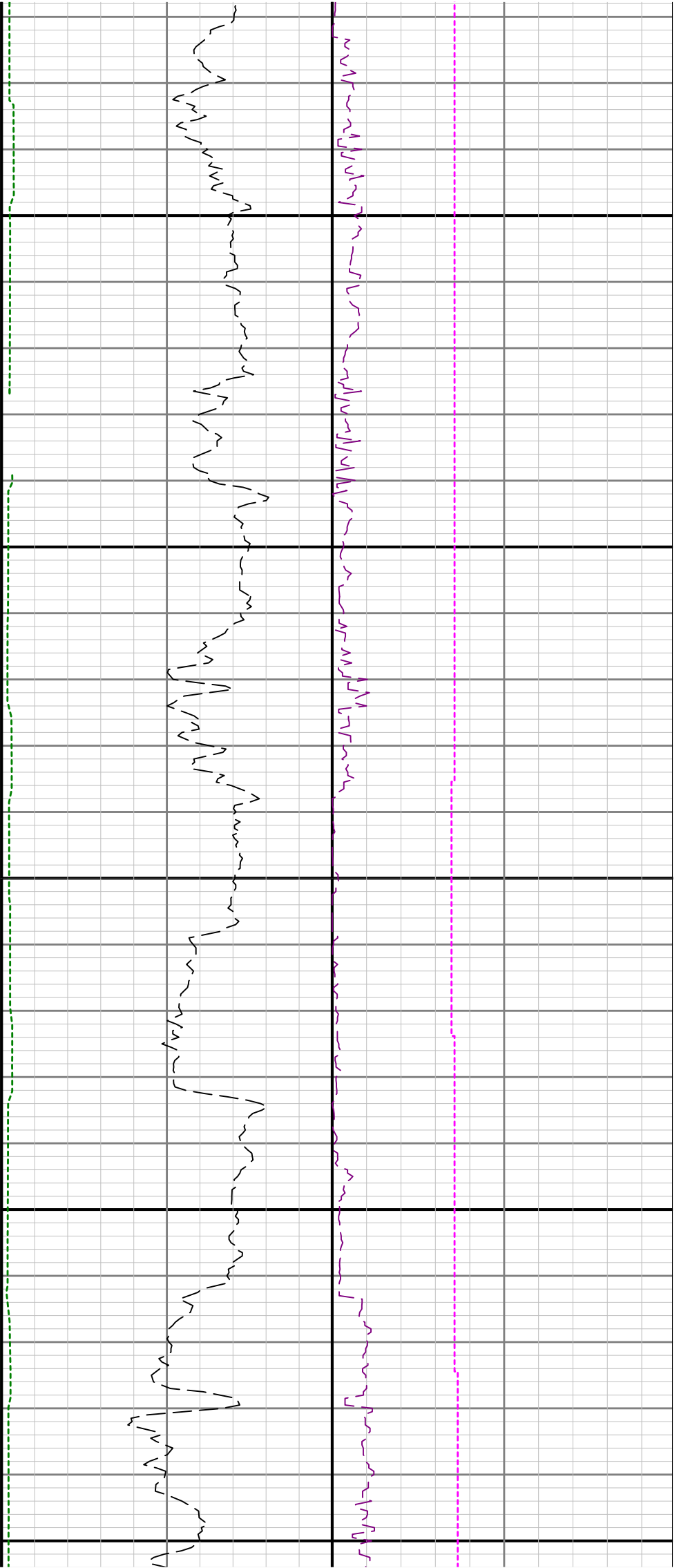


3600

3700

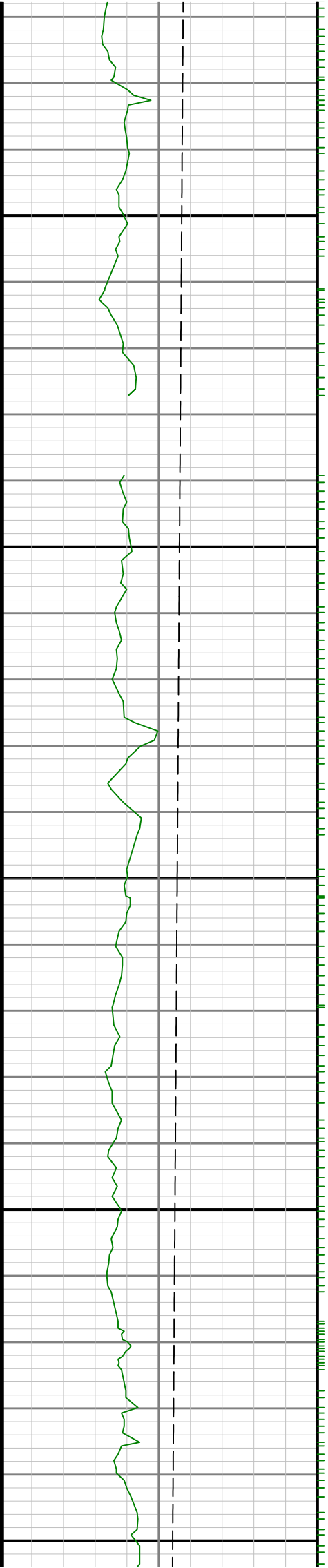


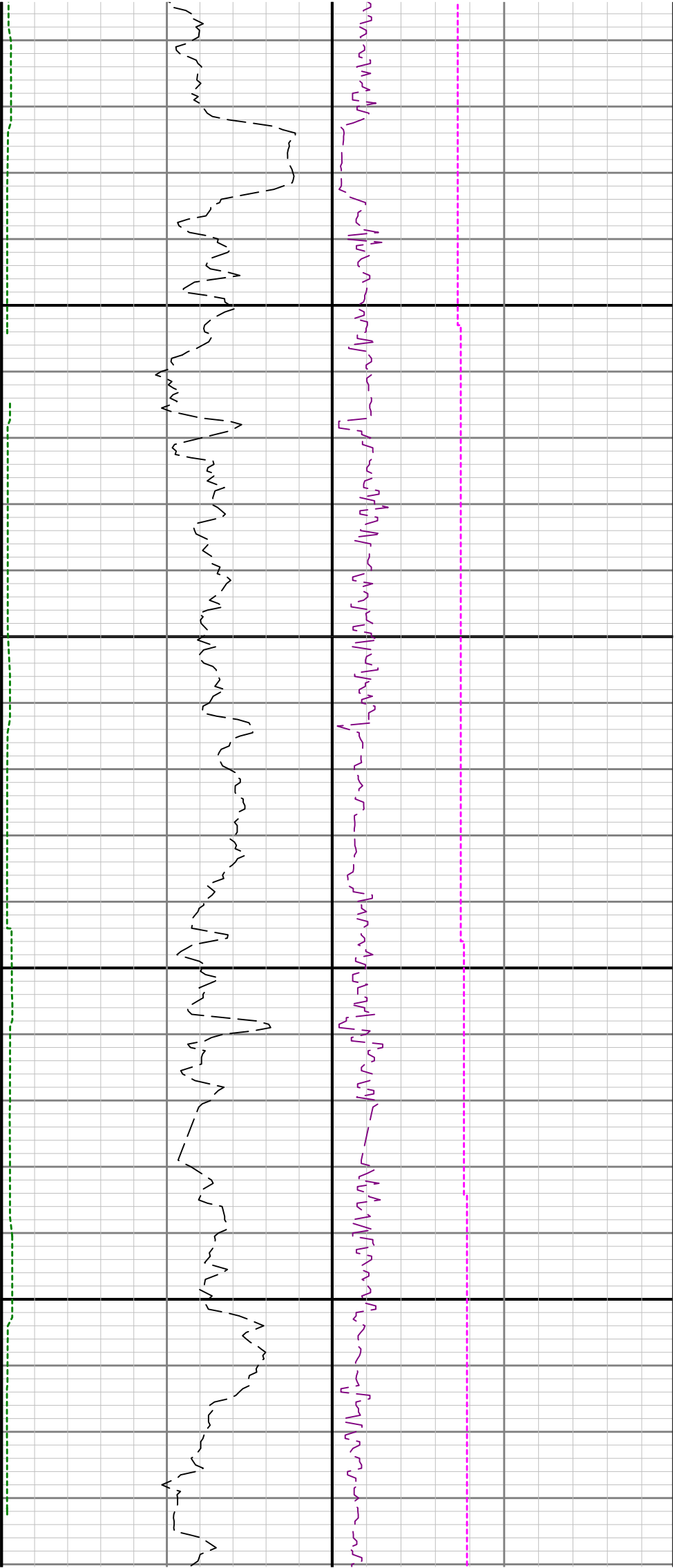




4100

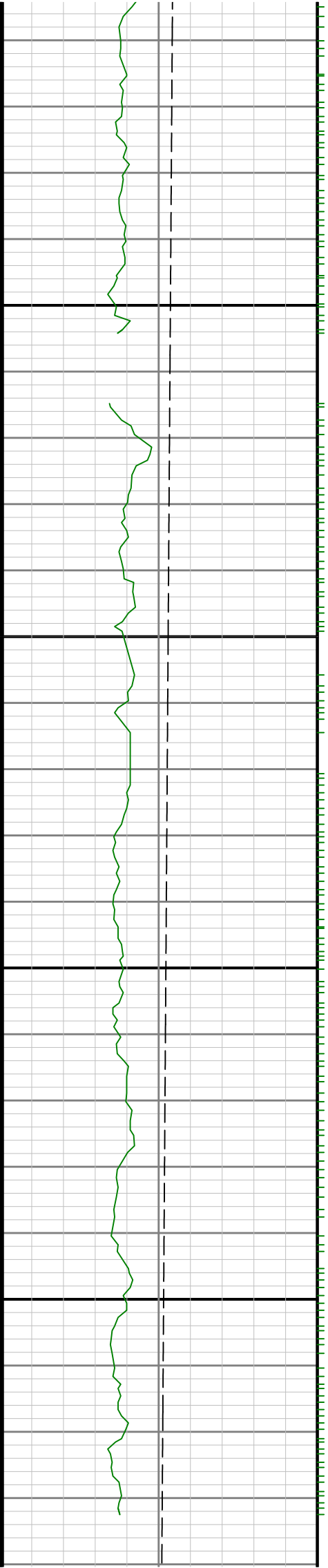
4200

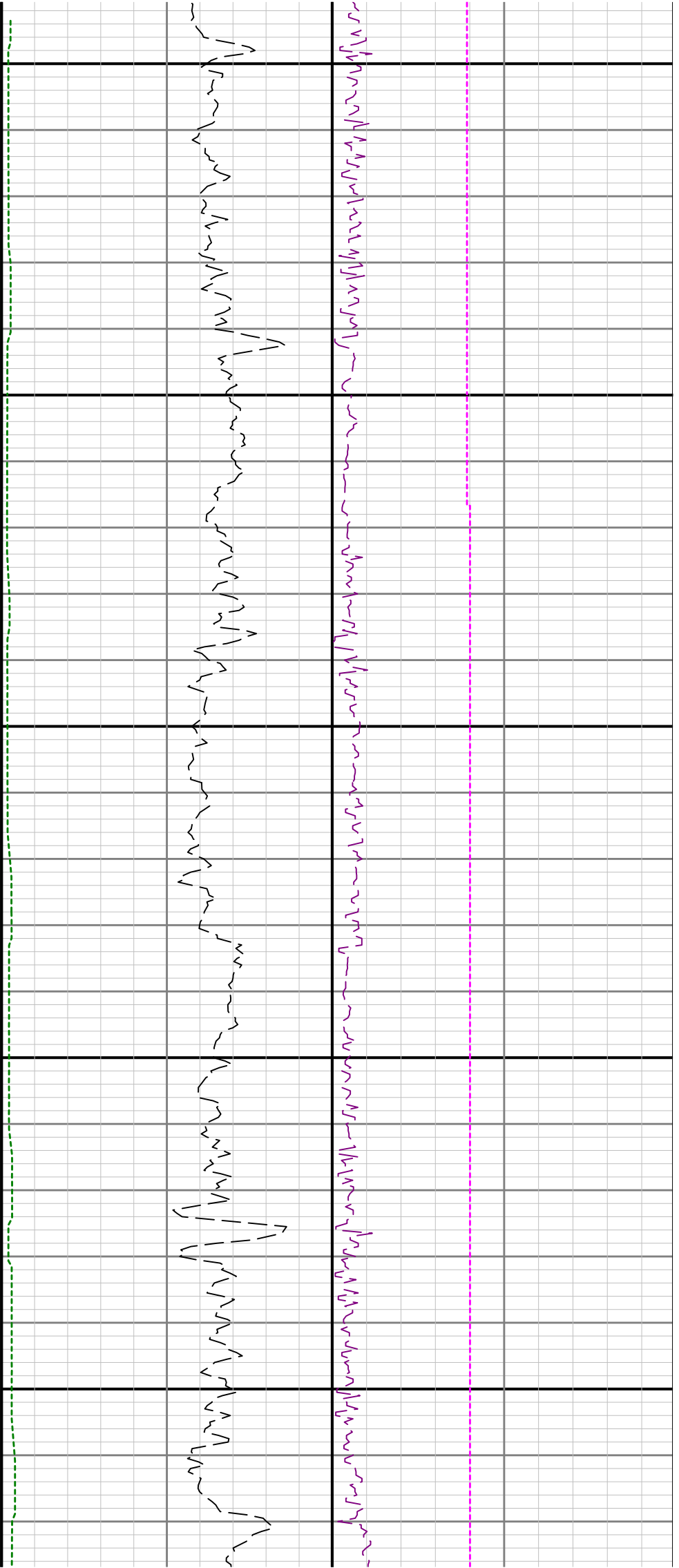




4300

4400

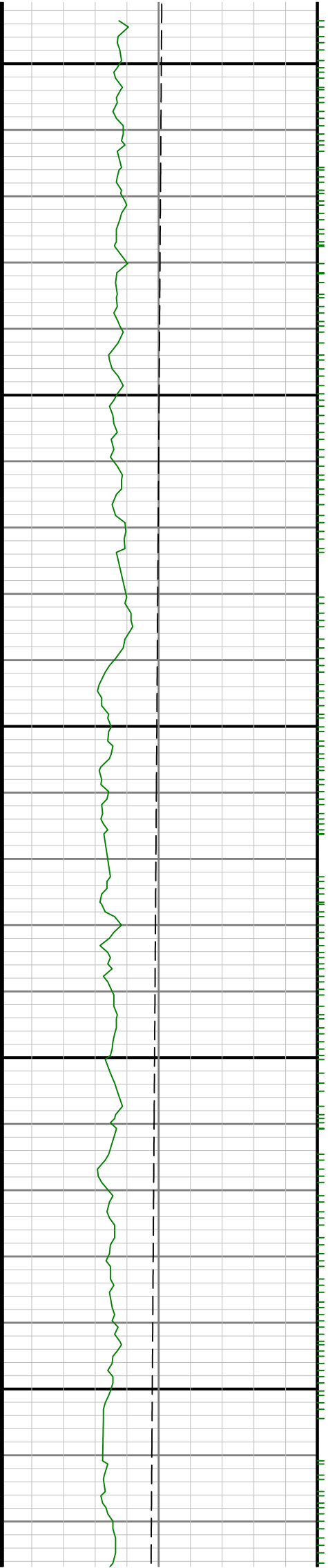


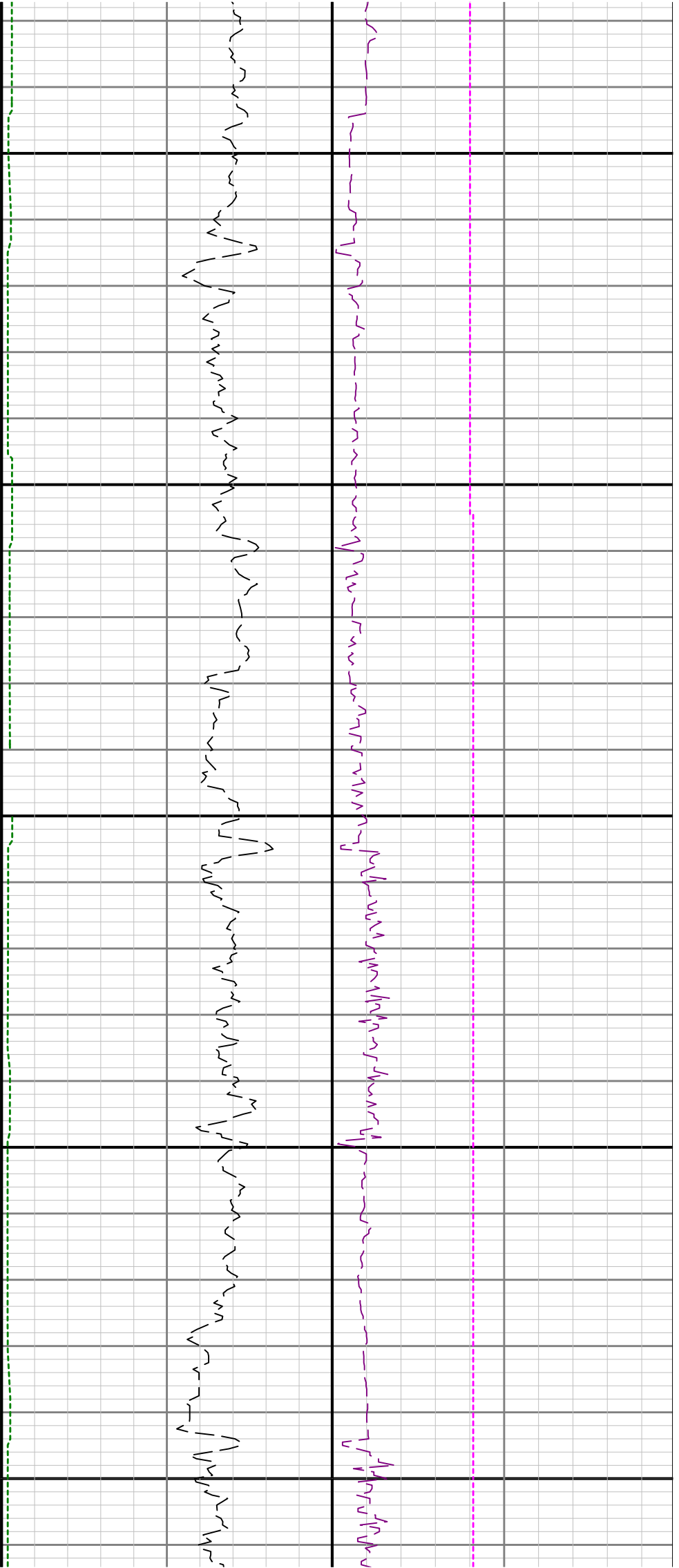


4500

4600

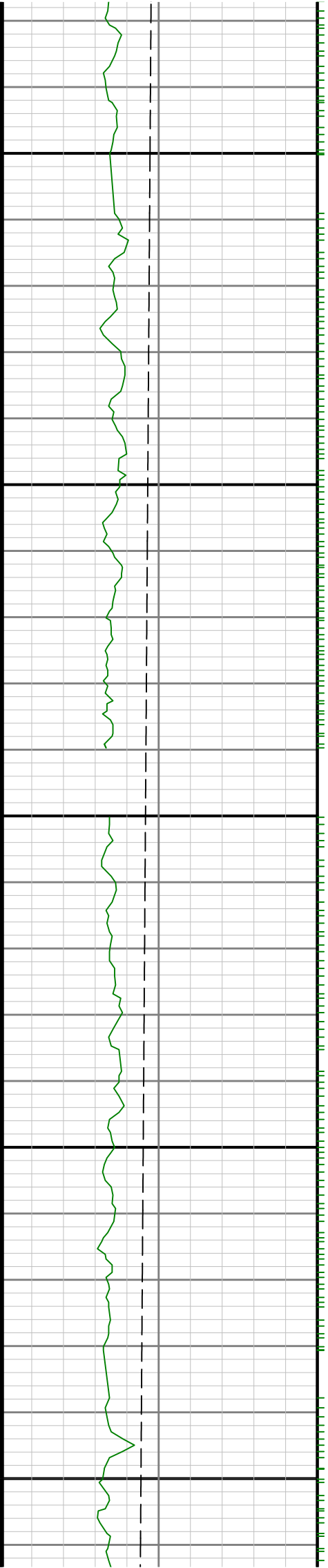
4700

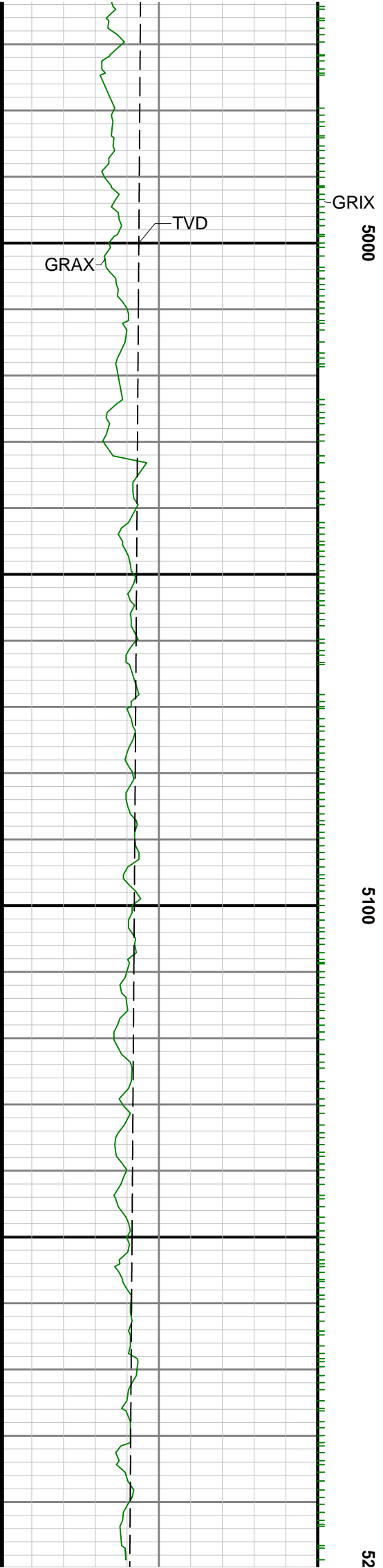
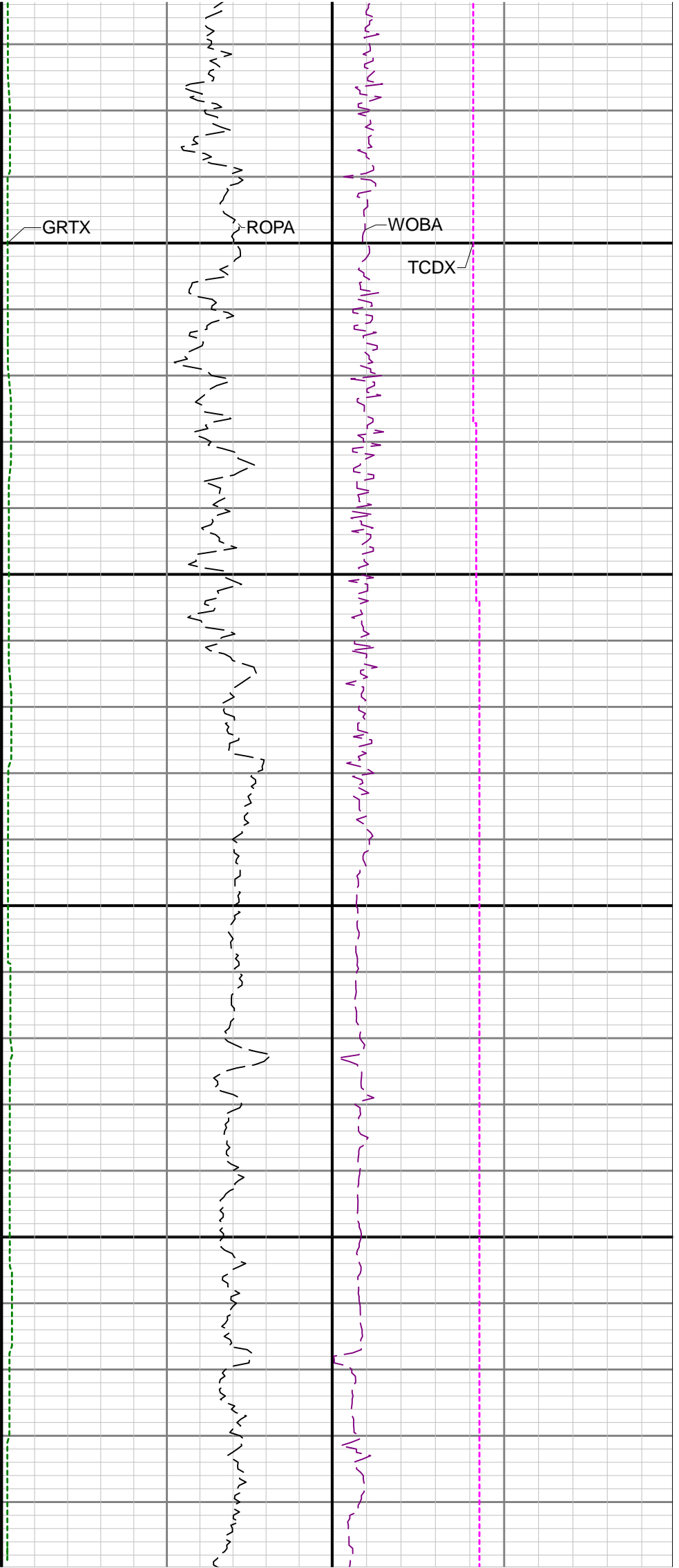


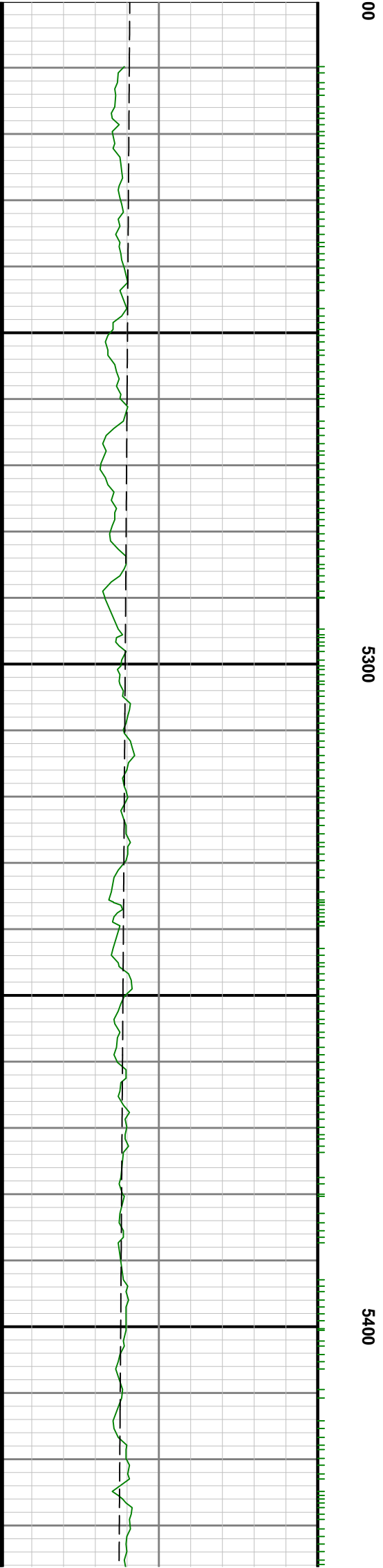
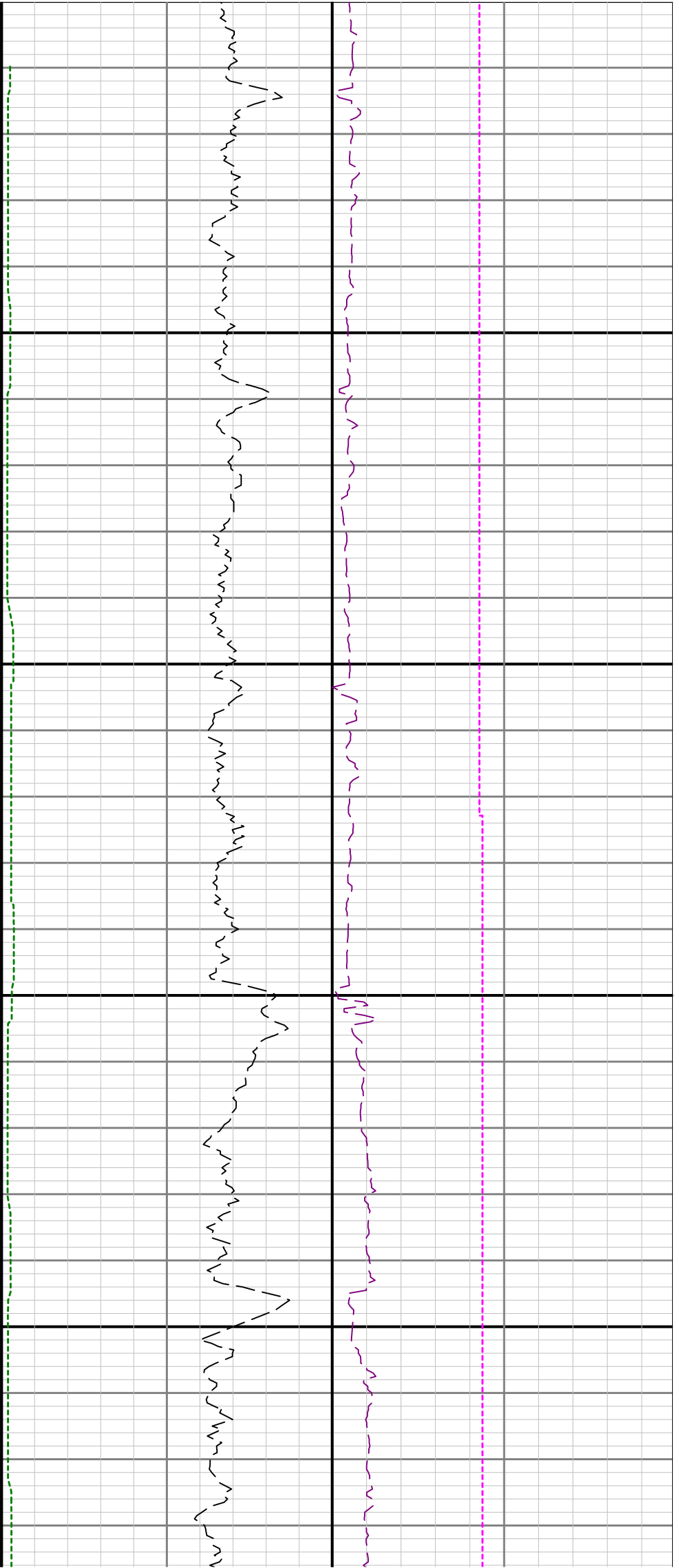


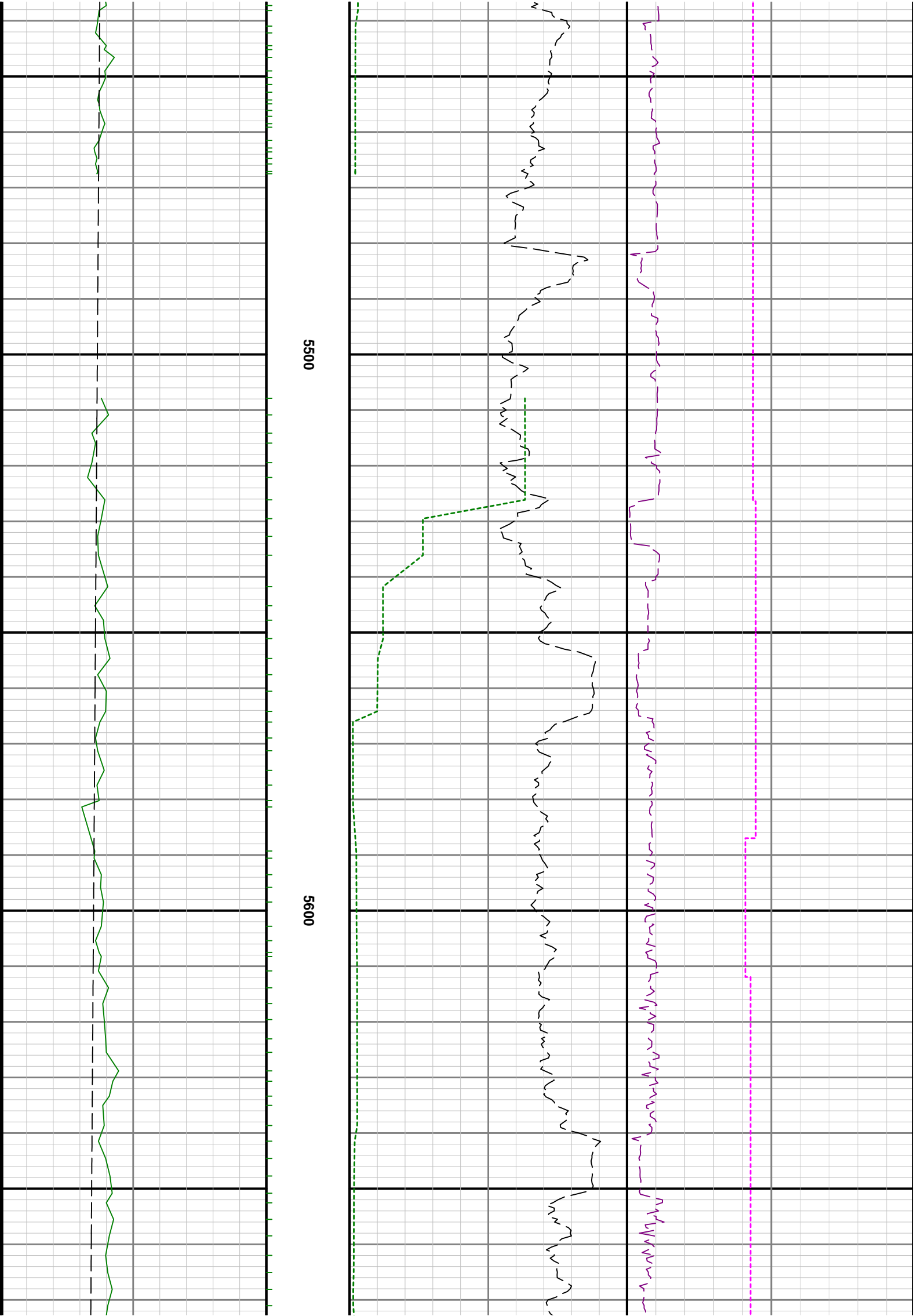
4800

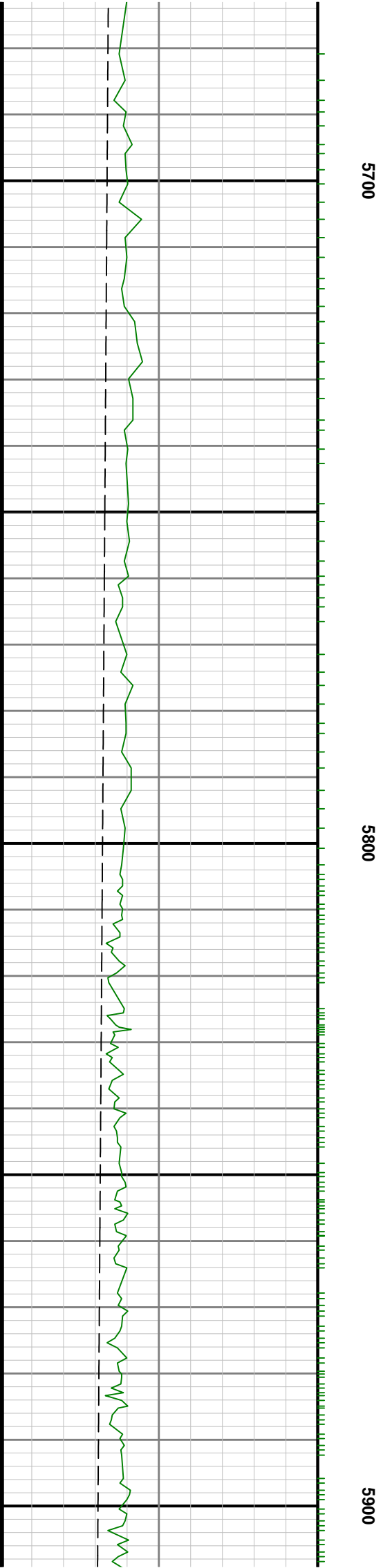
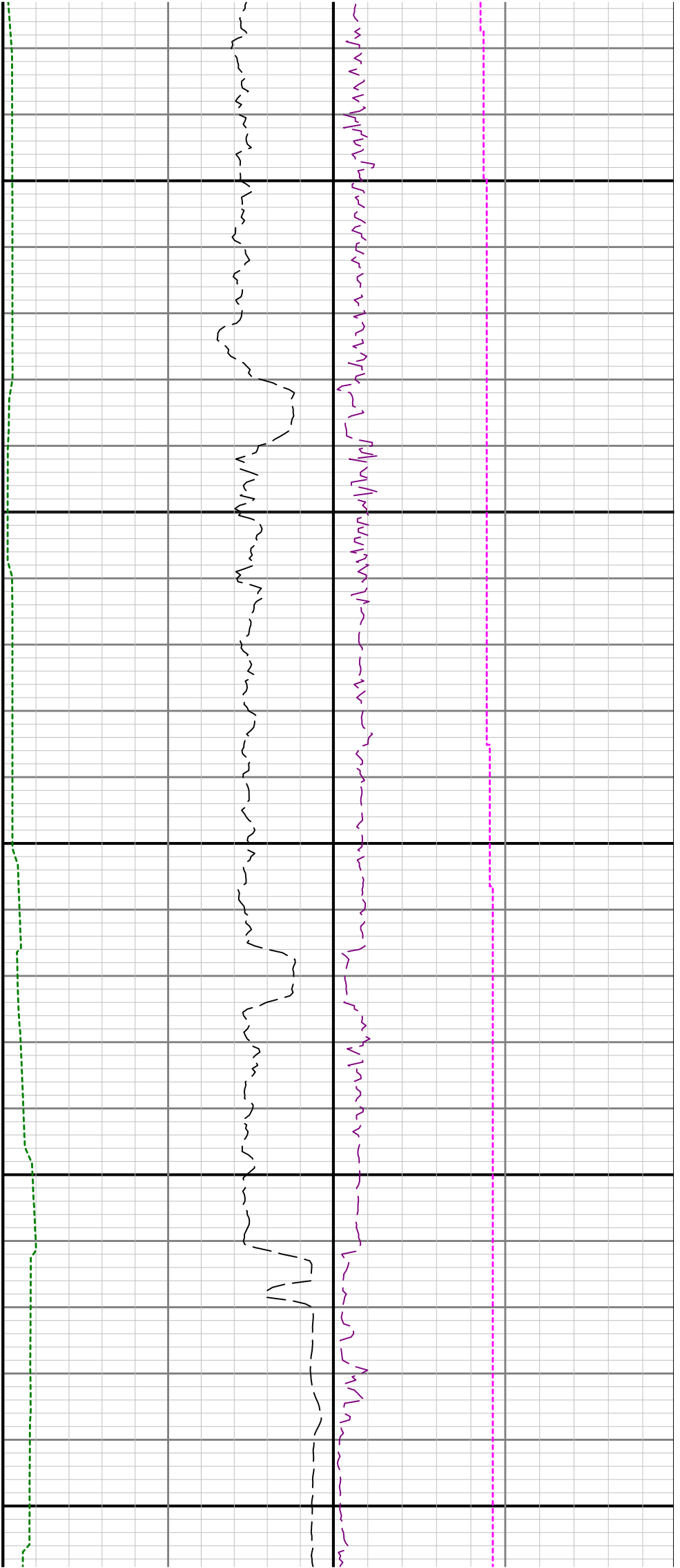
4900

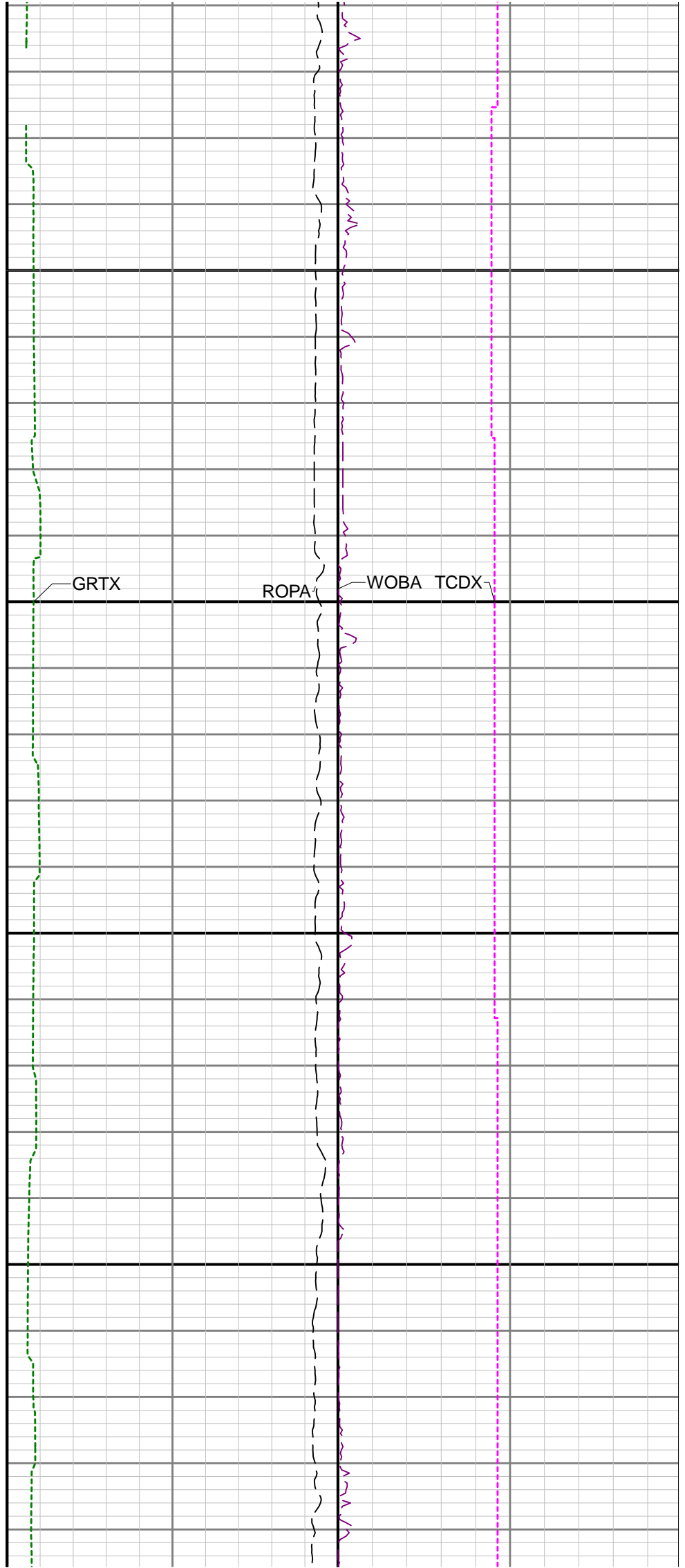
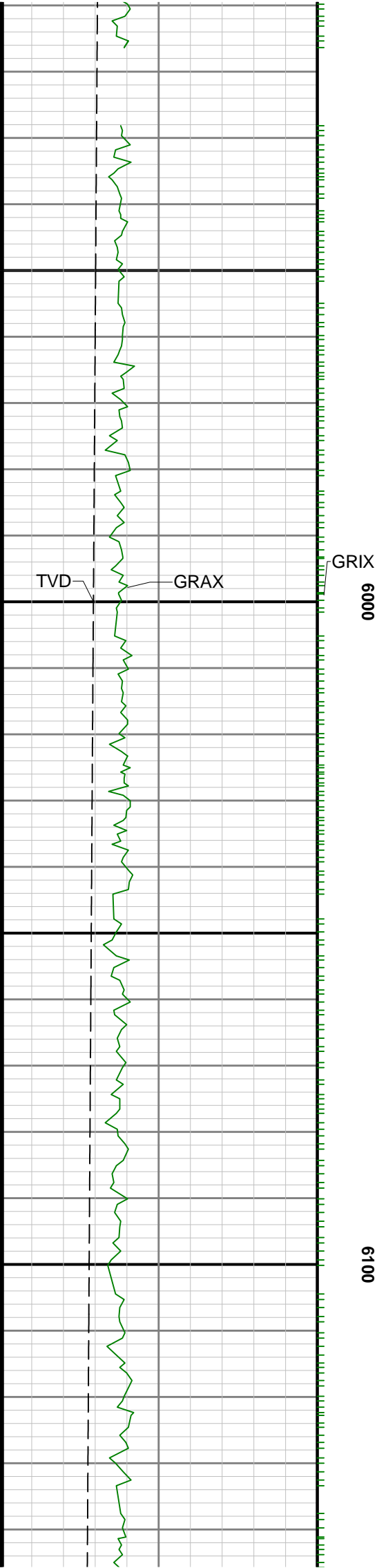


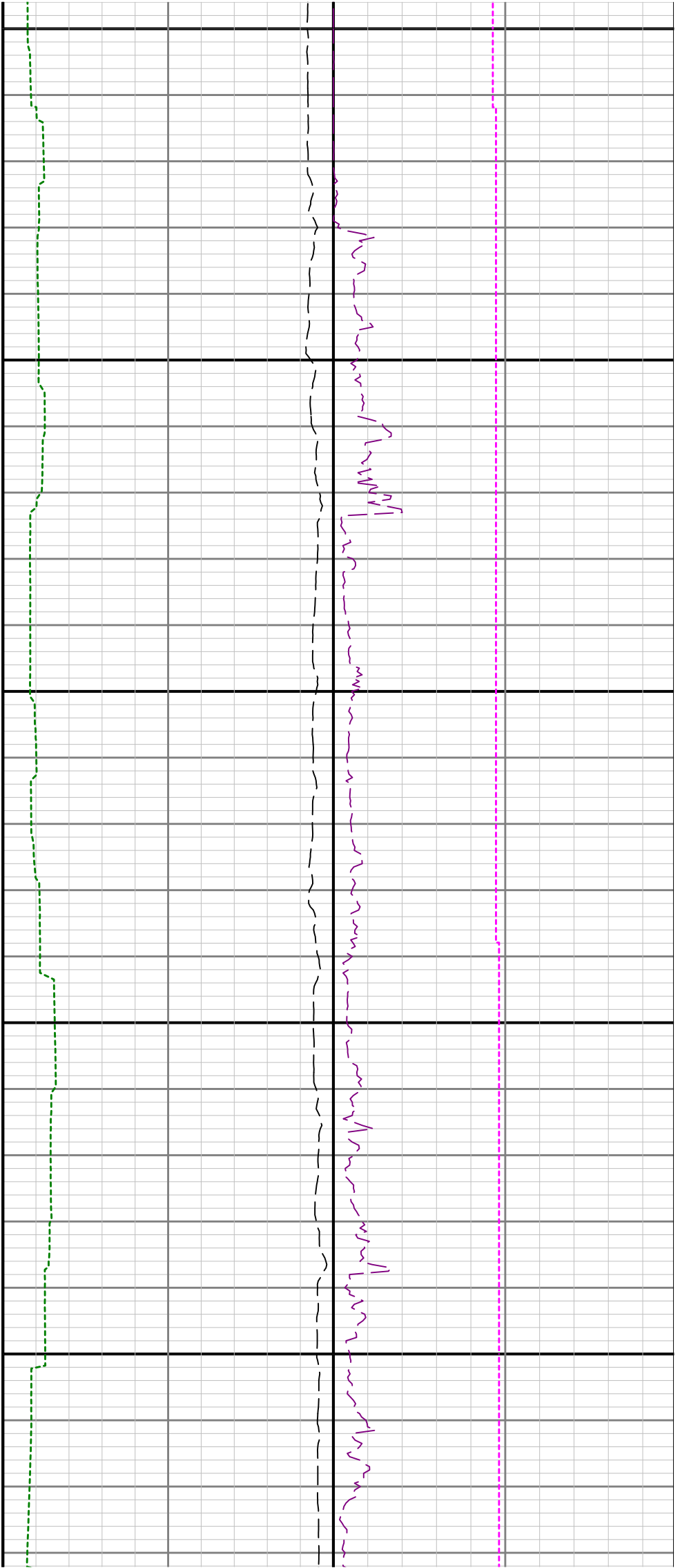






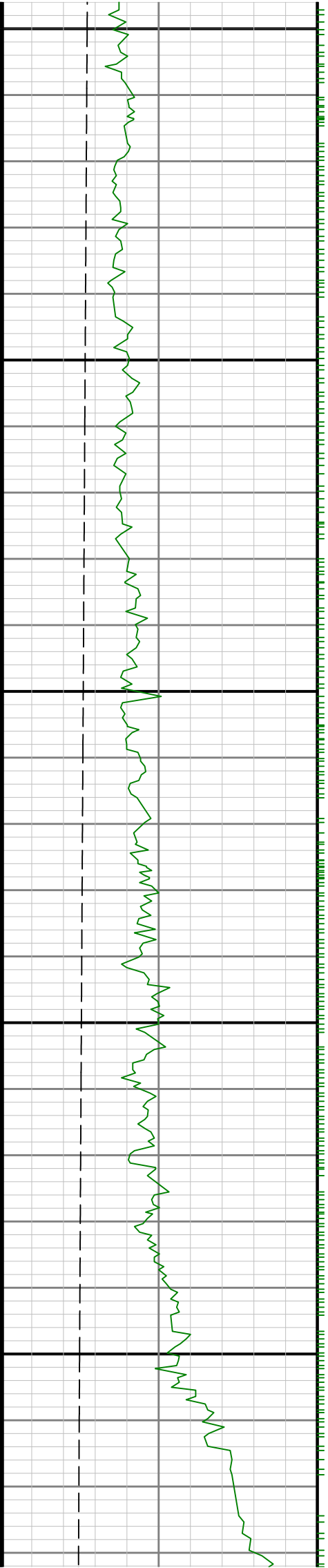


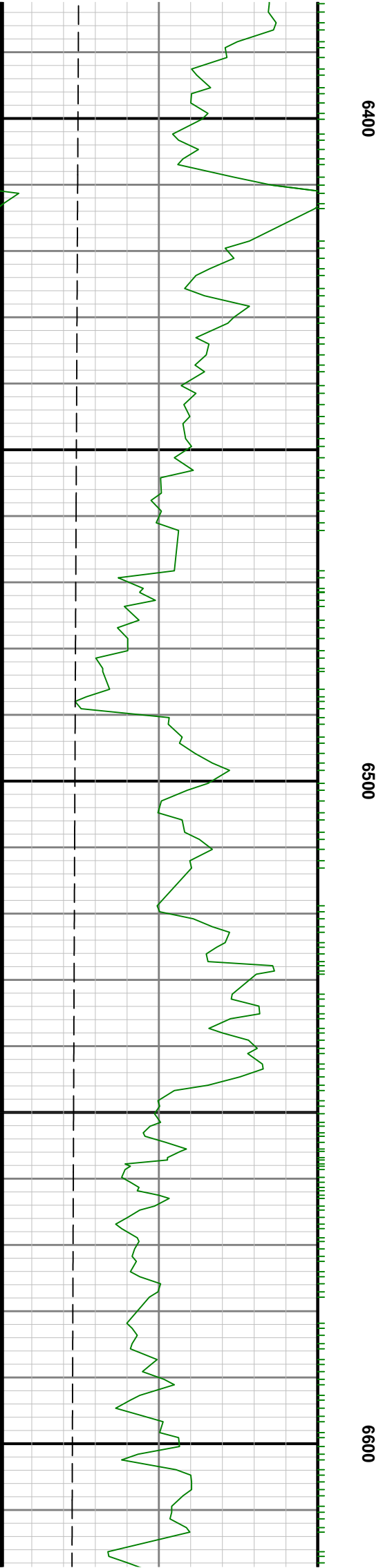
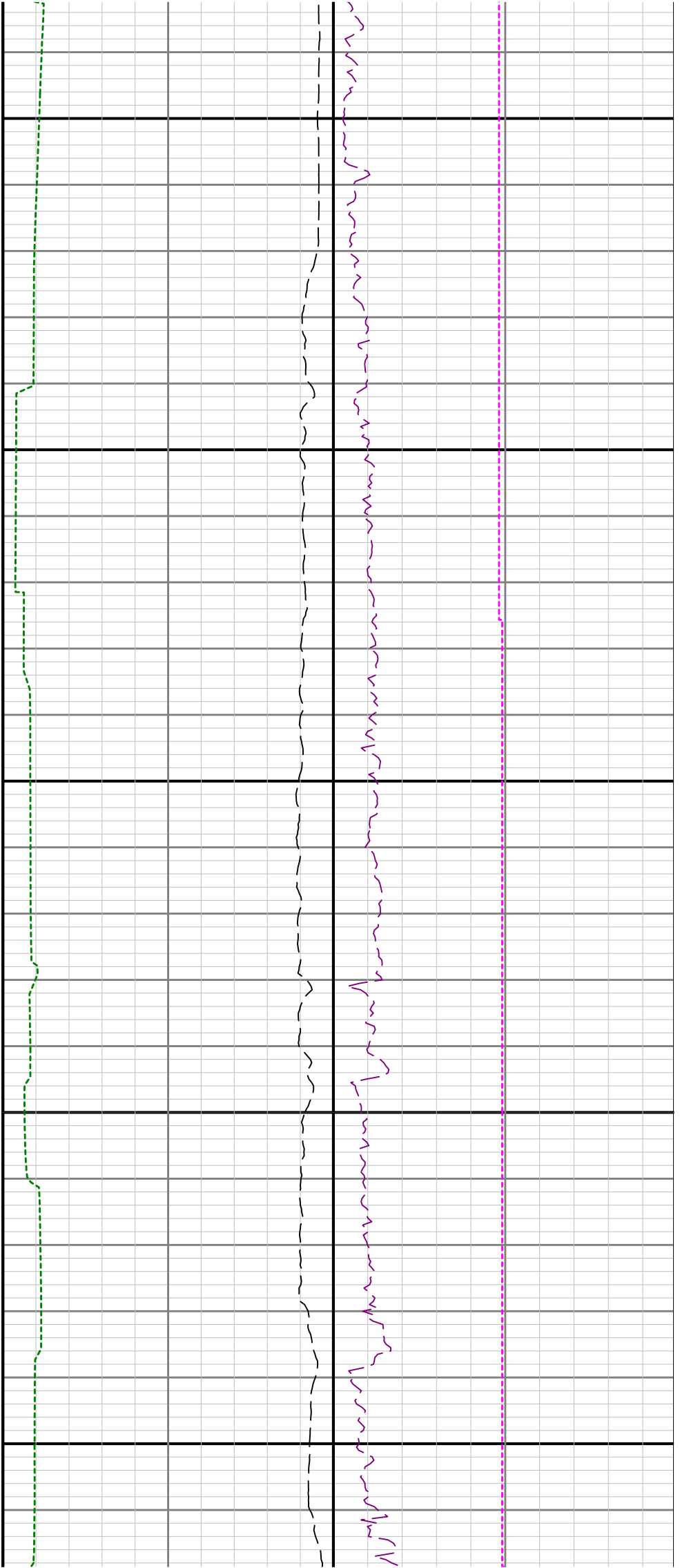


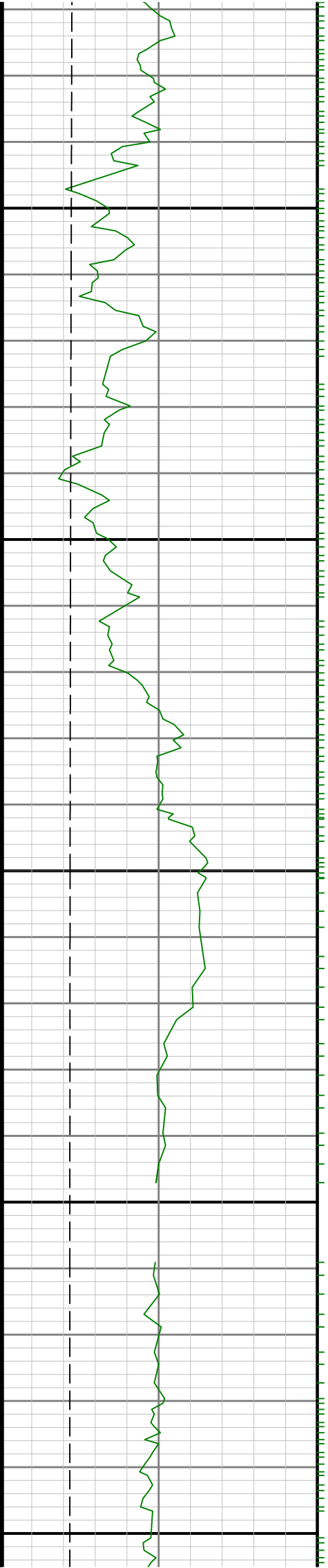


6200

6300

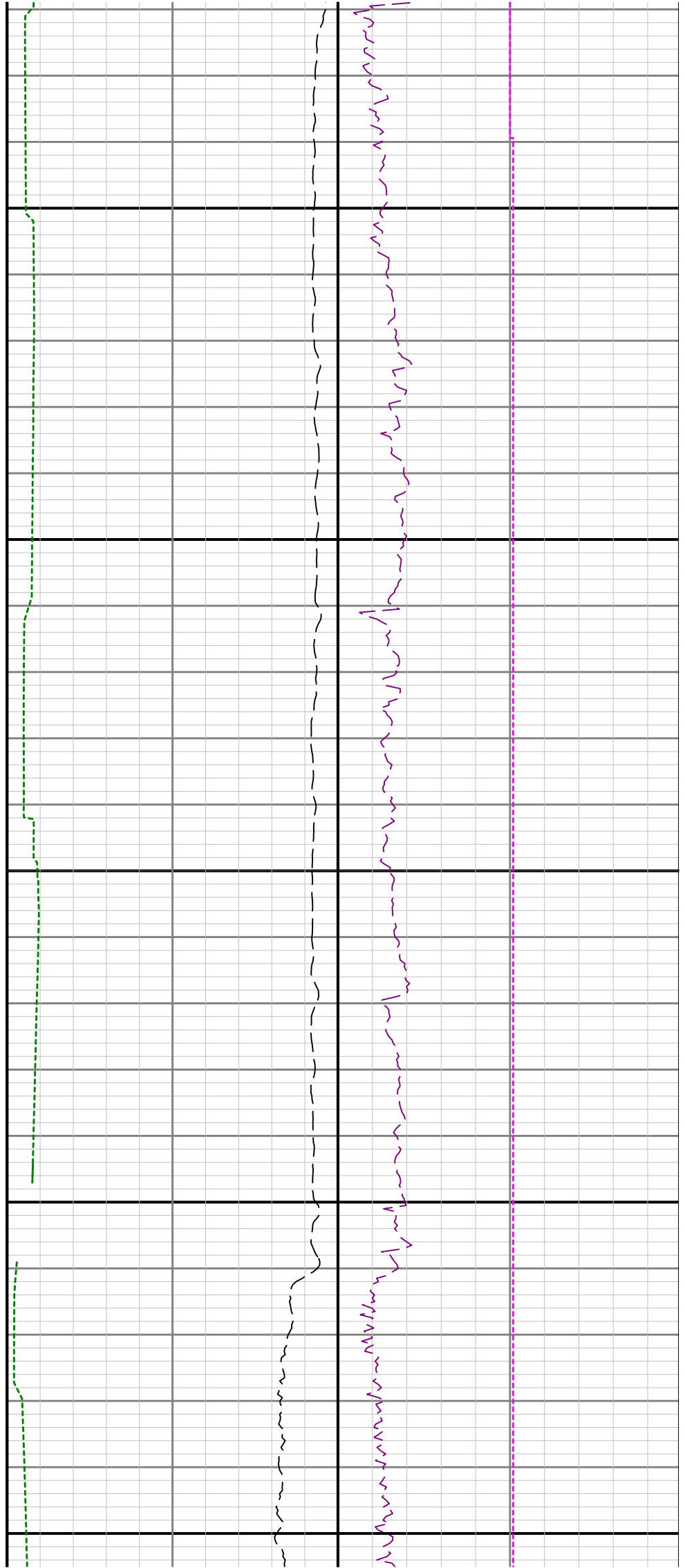


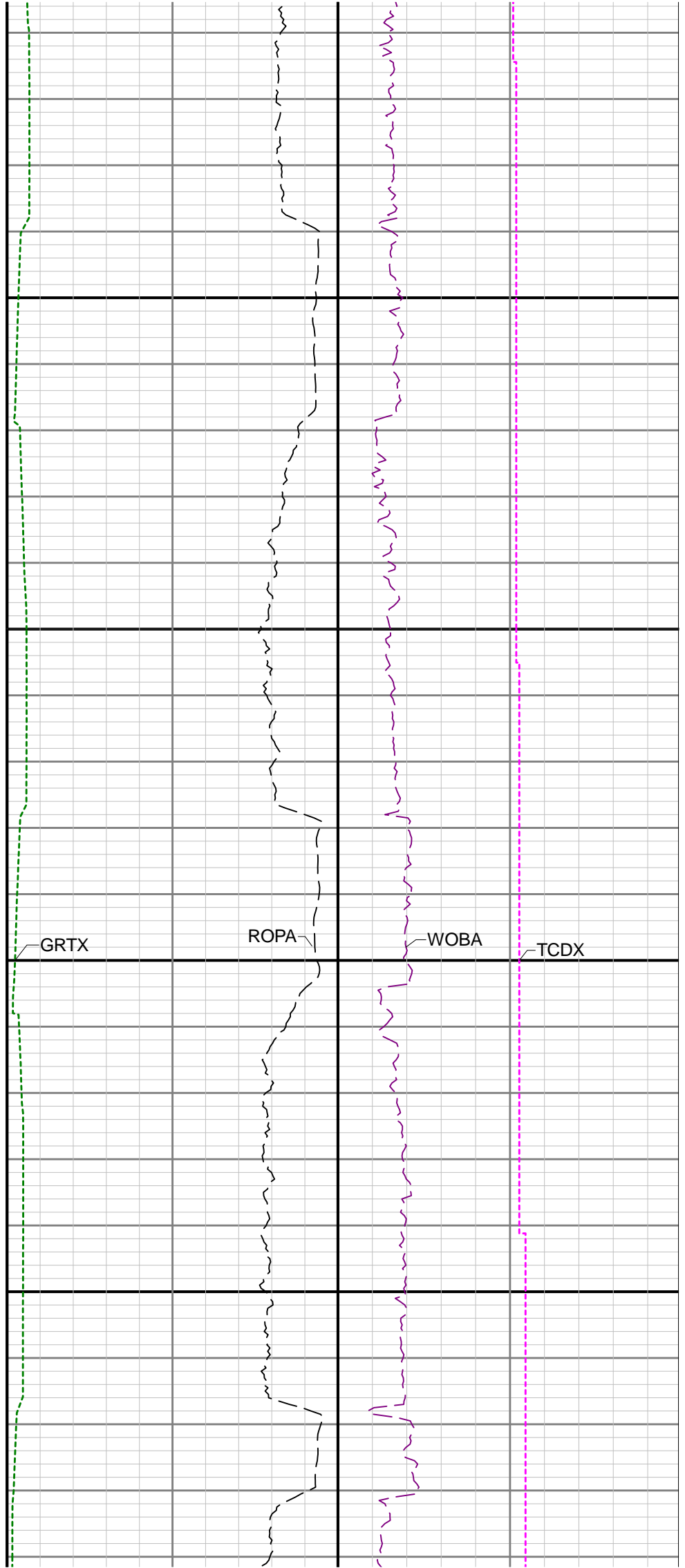
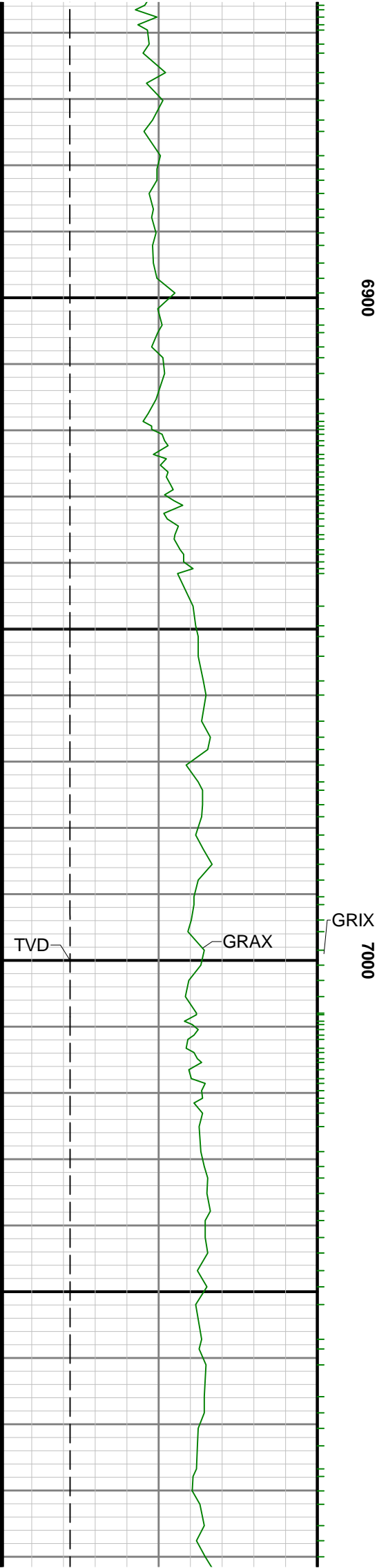


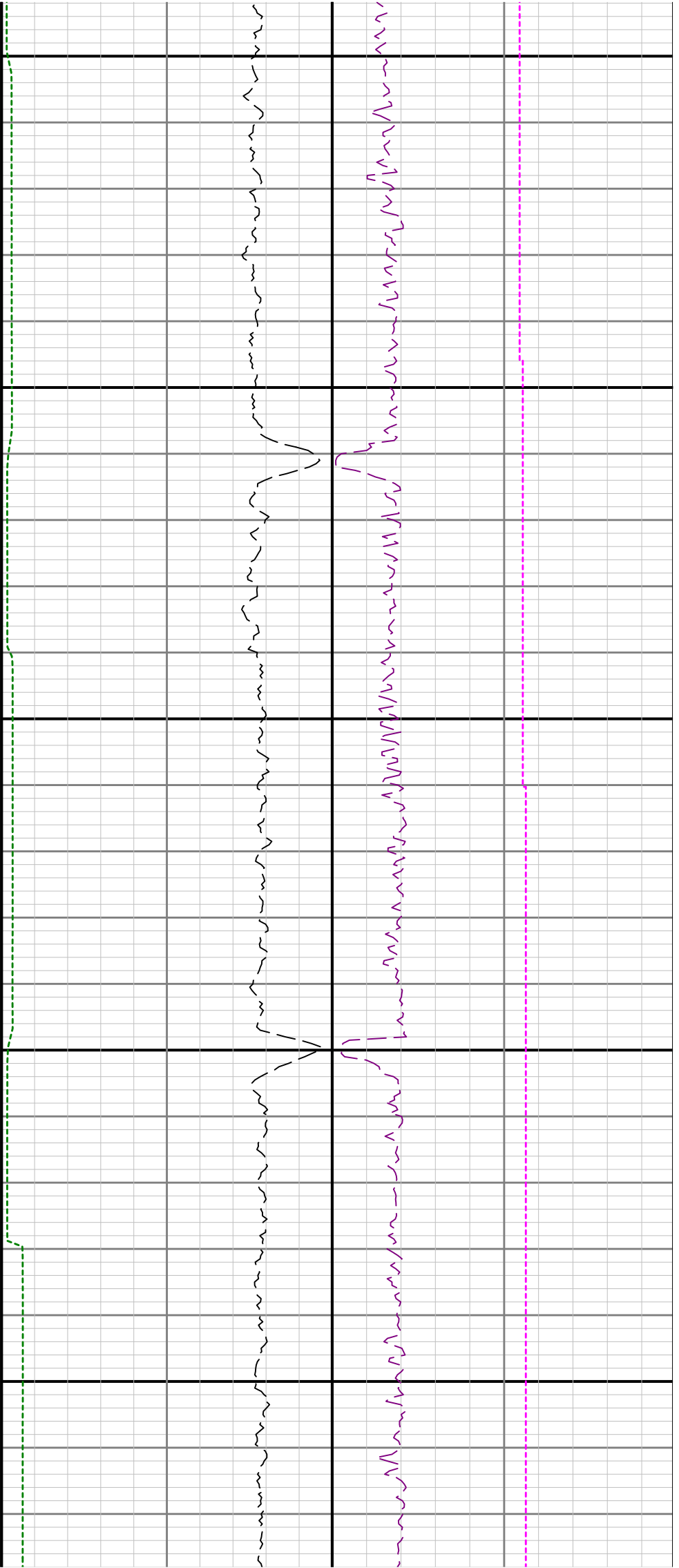


6700

6800



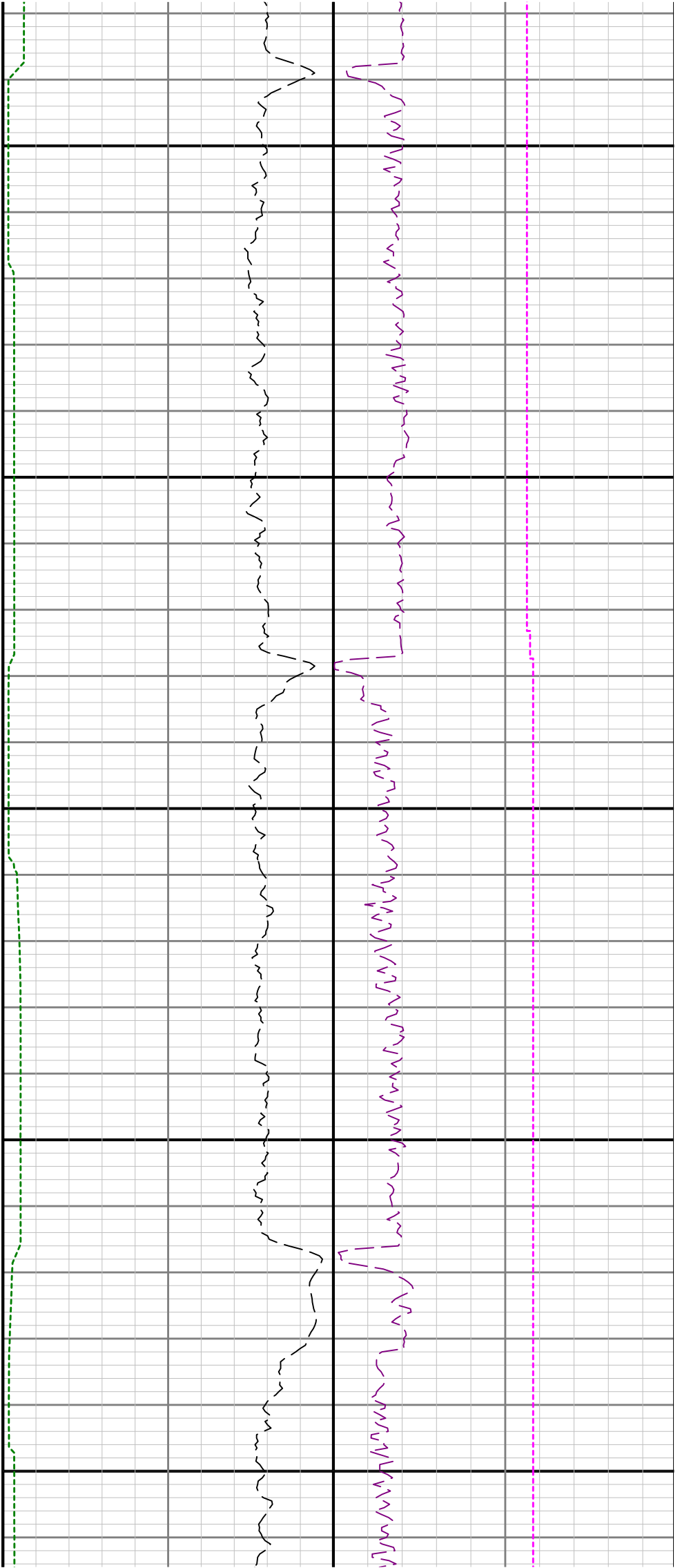




7100

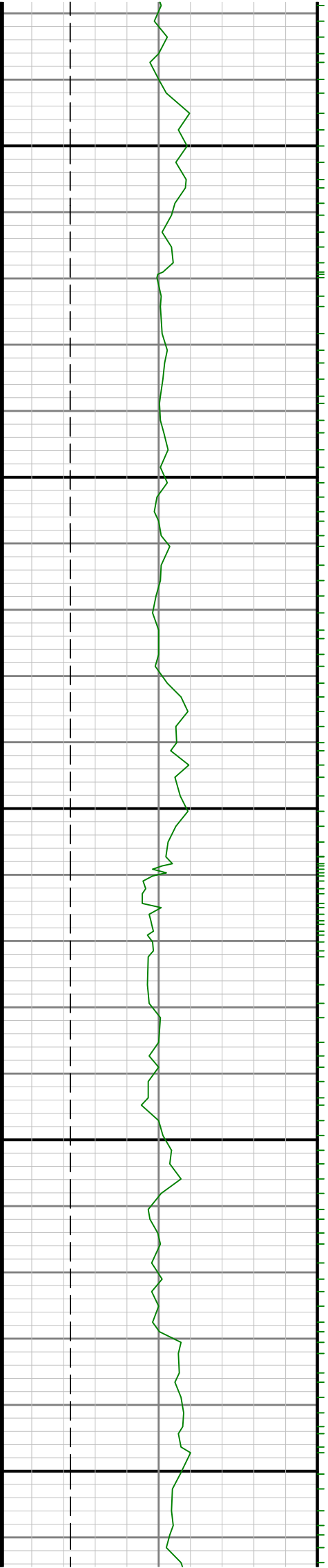
7200

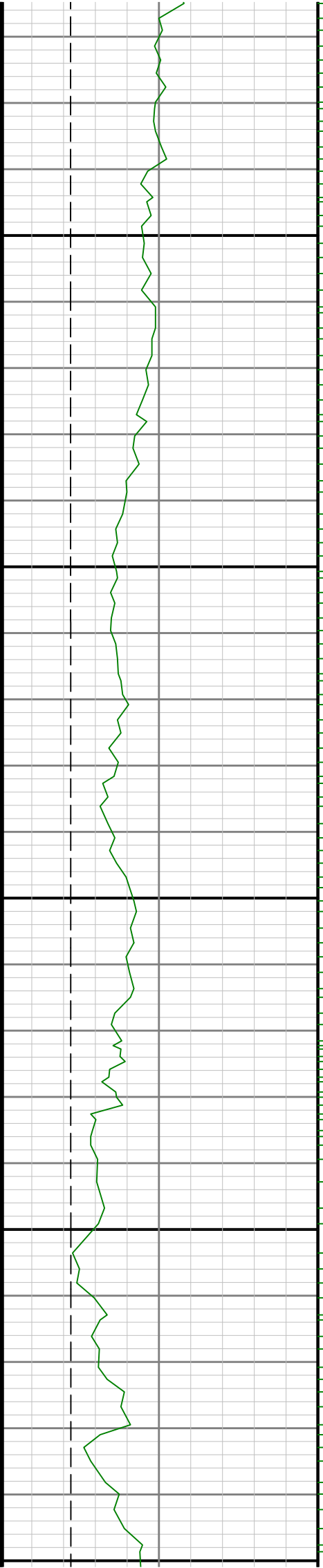
7300



7400

7500

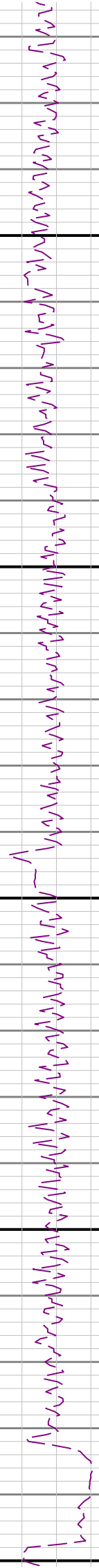
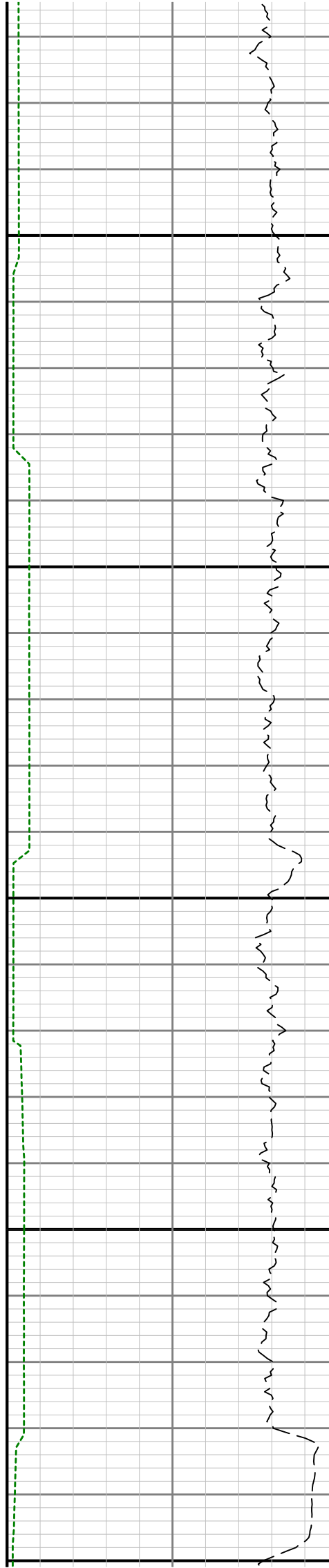


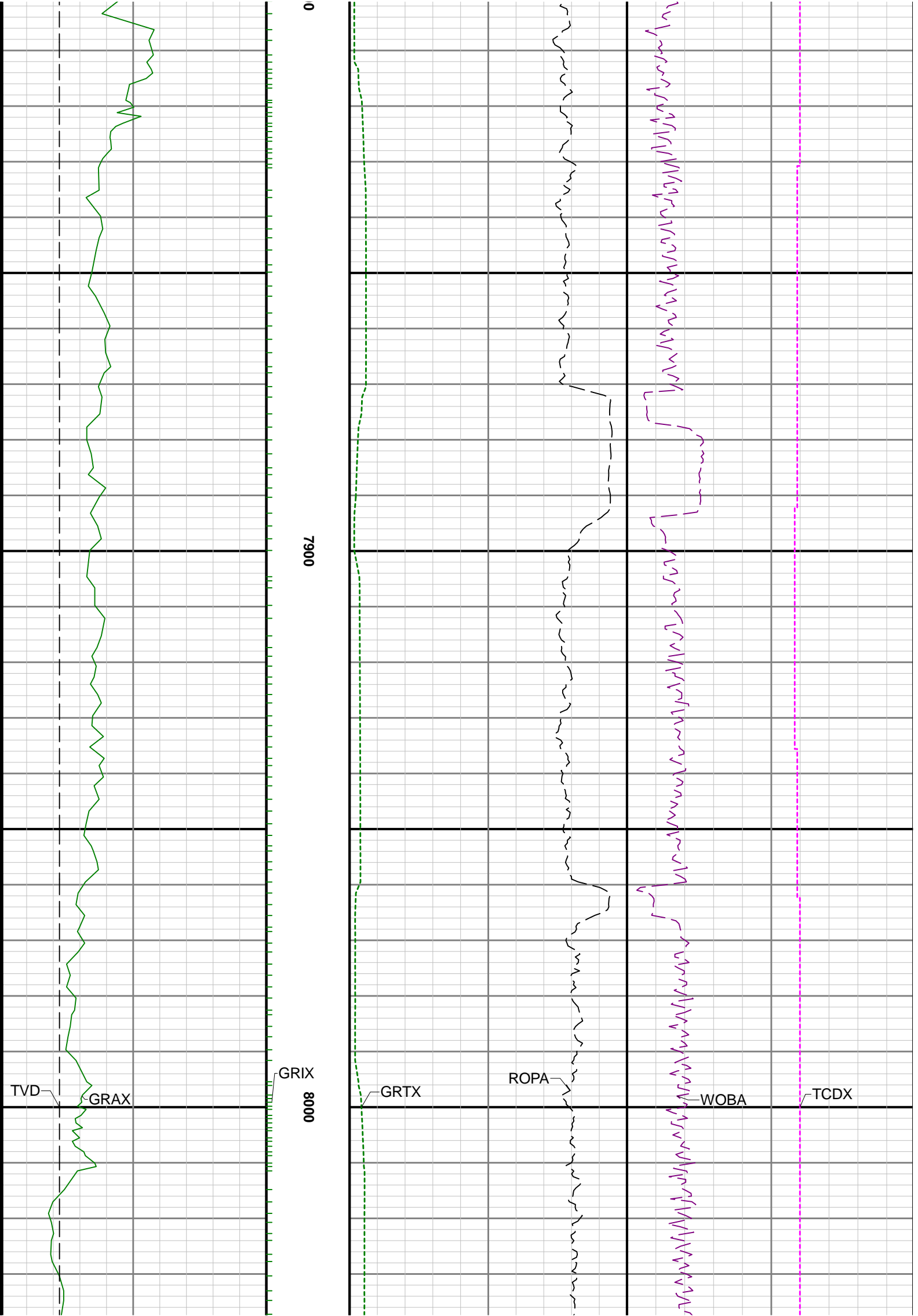


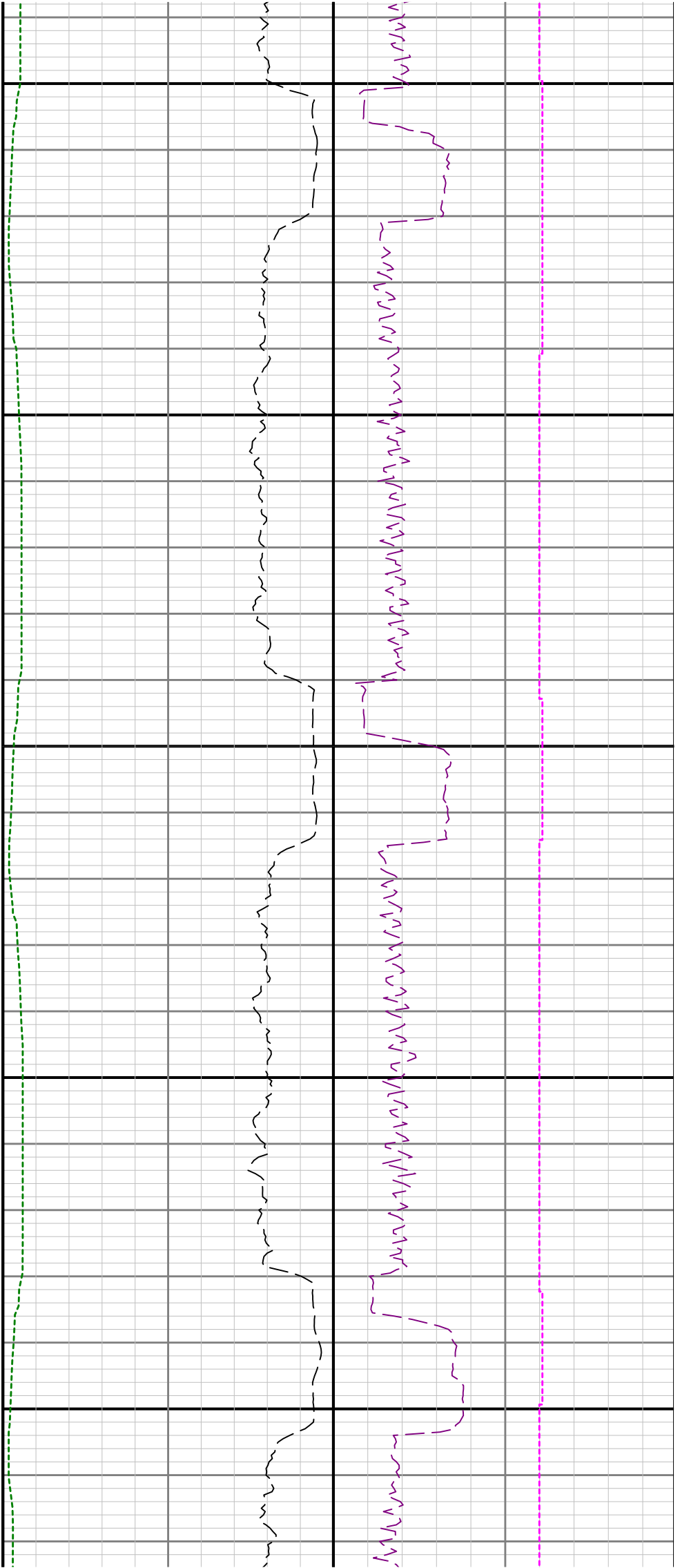
7600

7700

7800

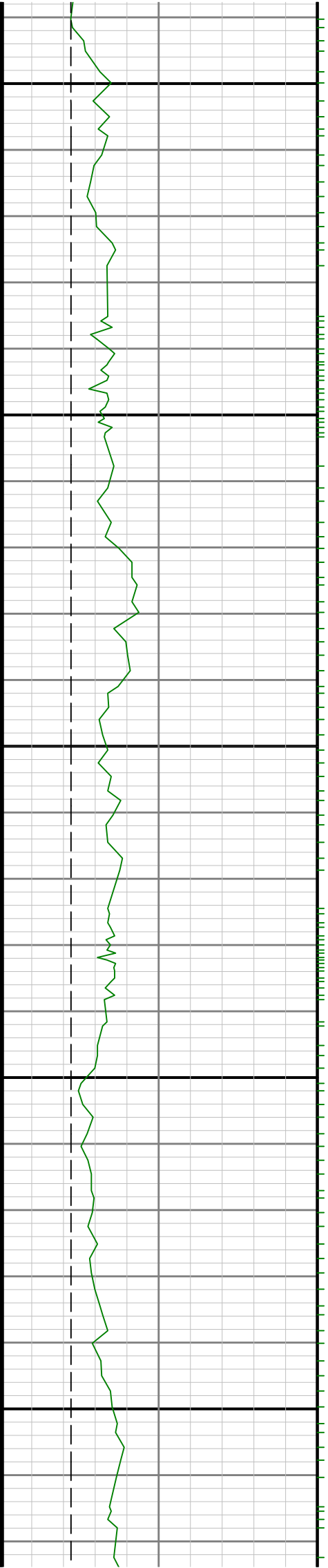


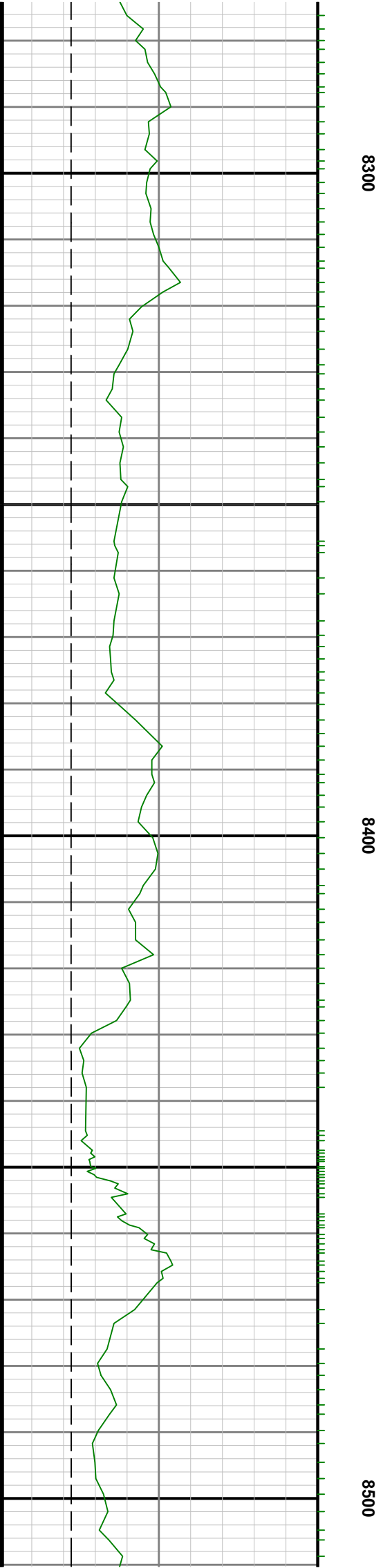
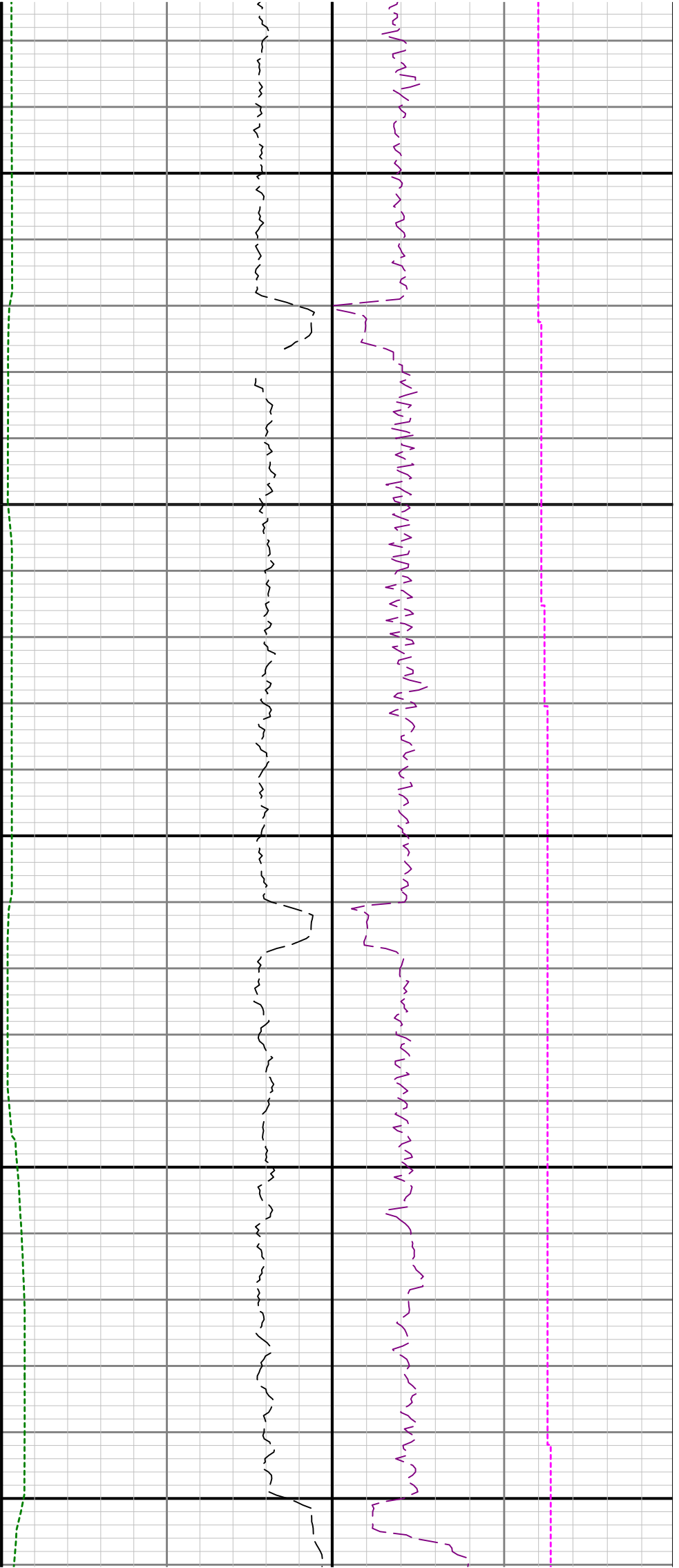


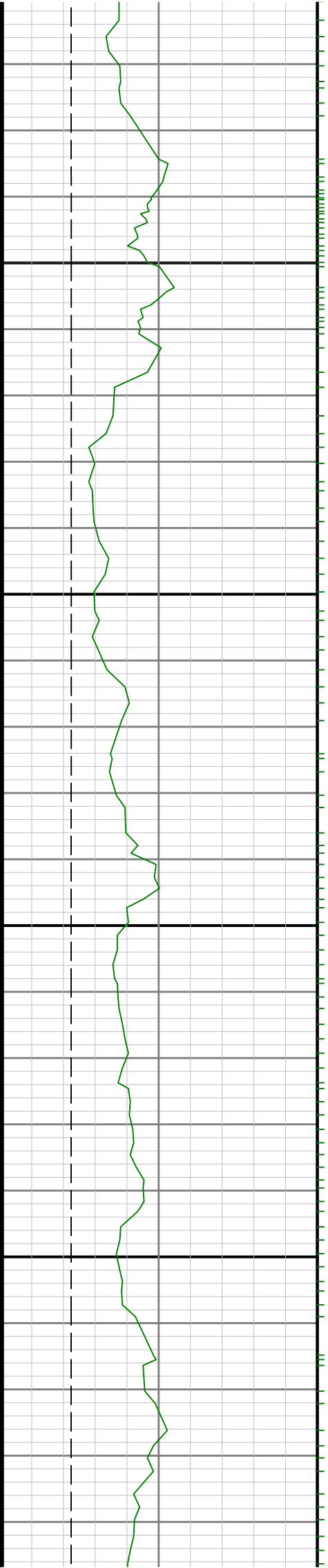


8100

8200



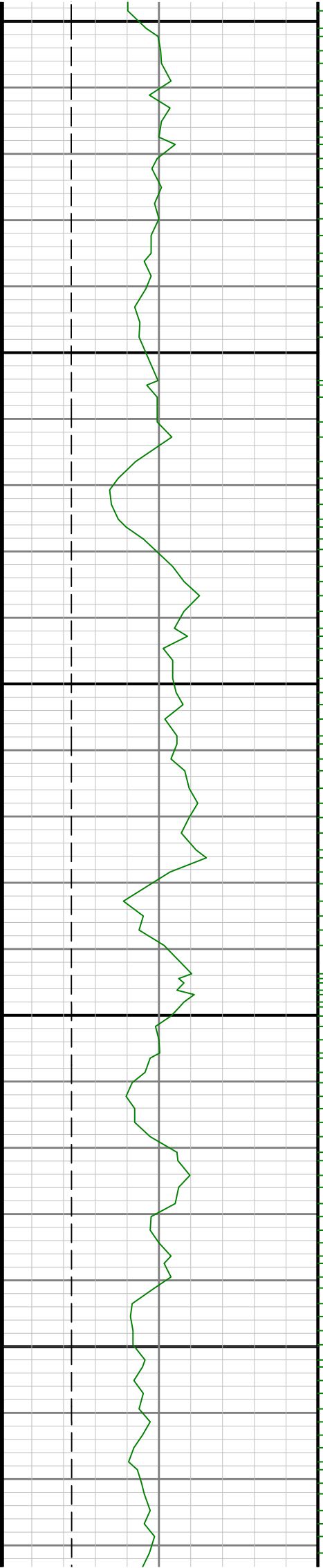




8600

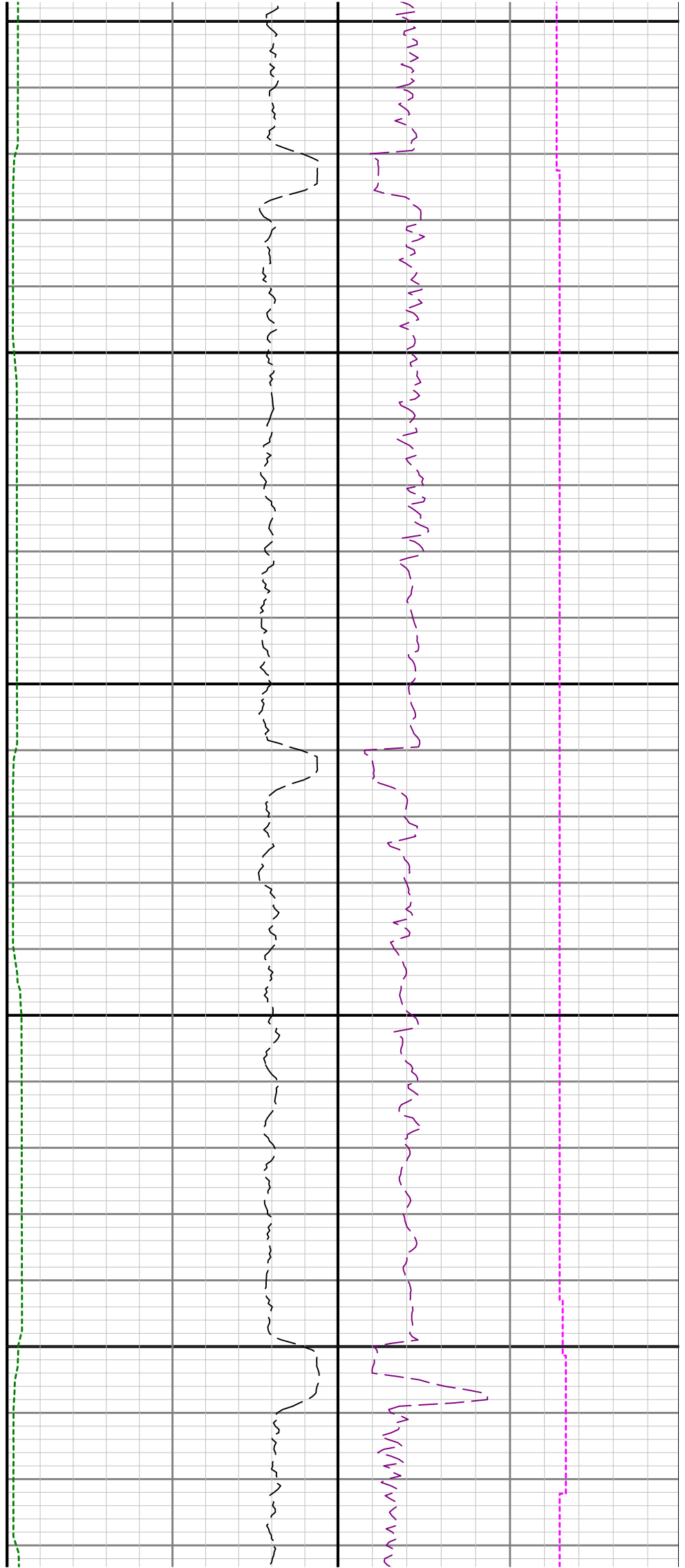
8700

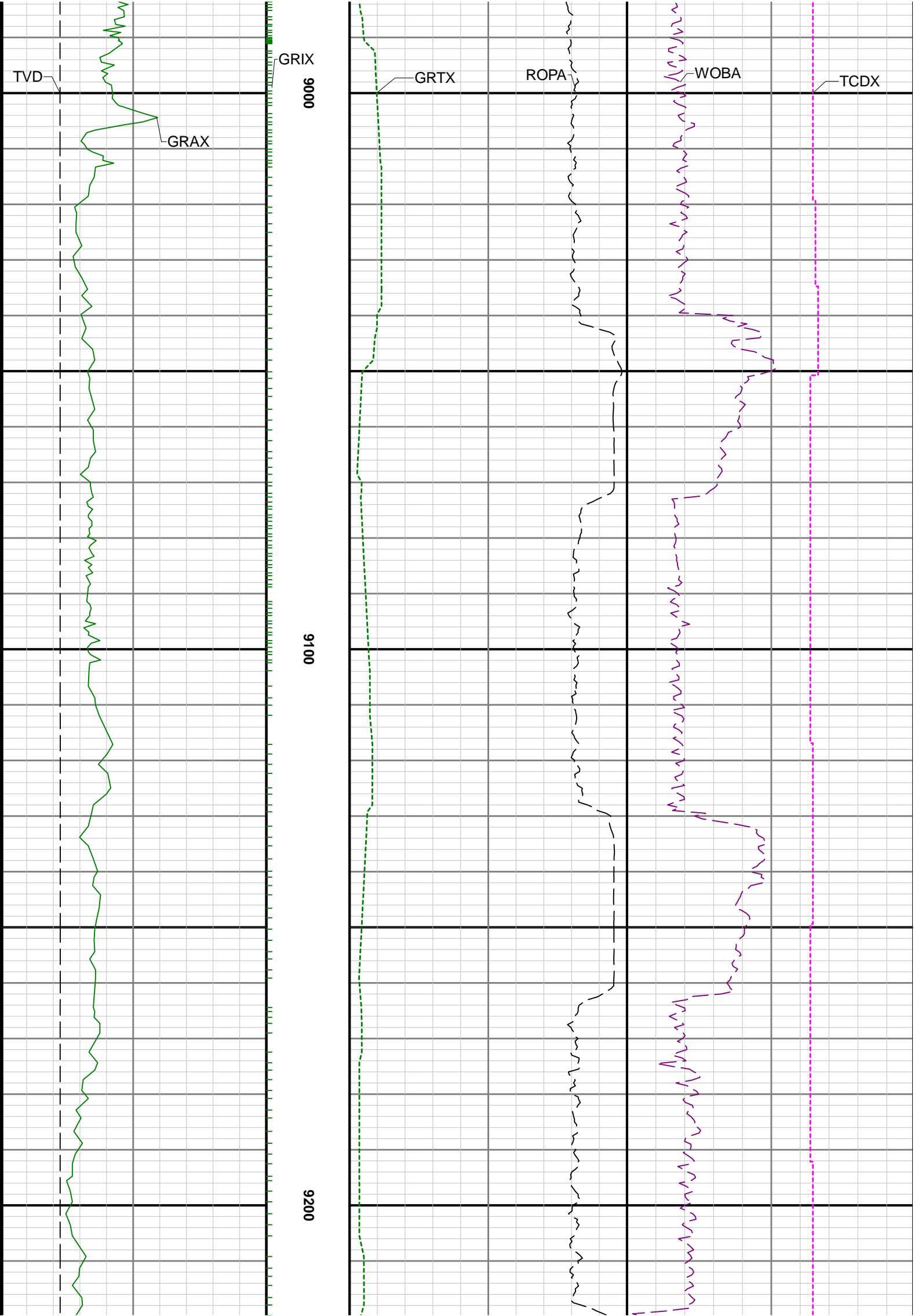


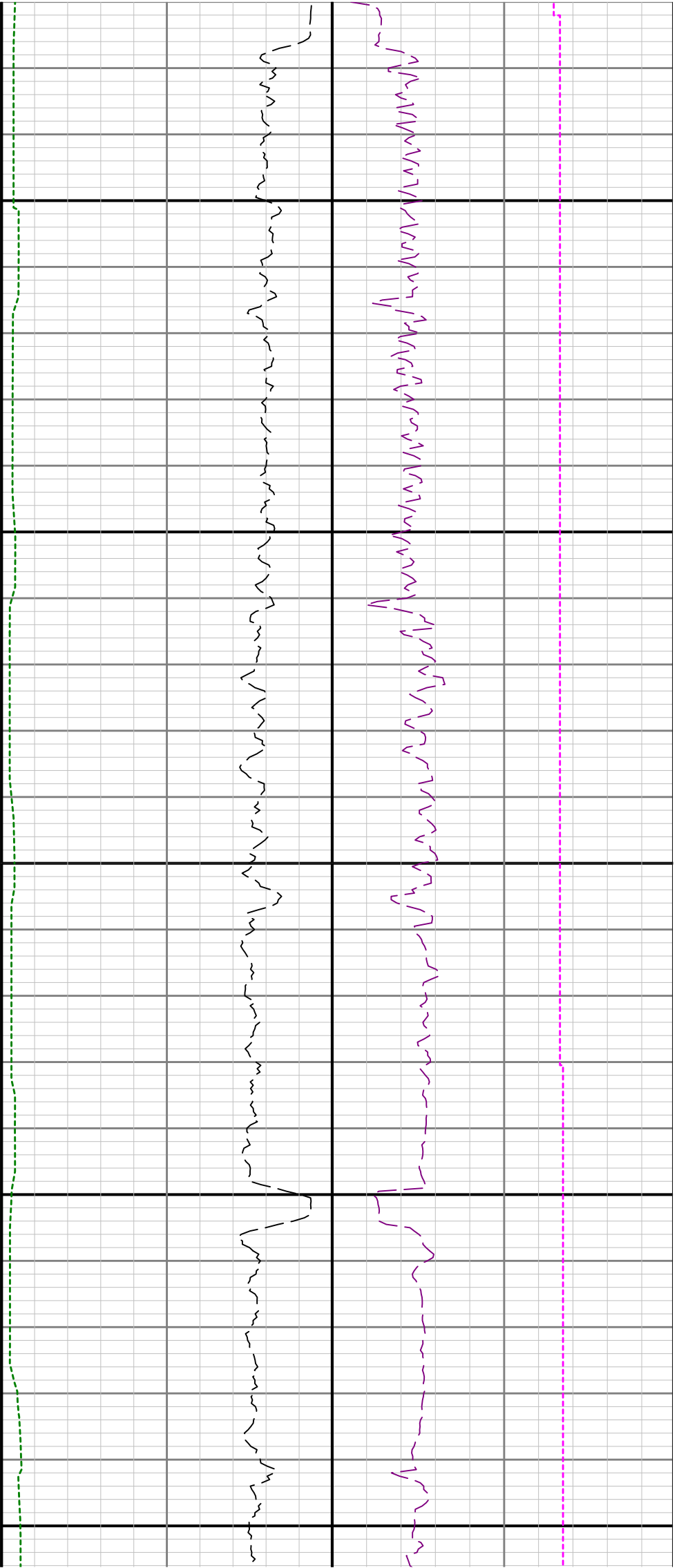


0068

0088

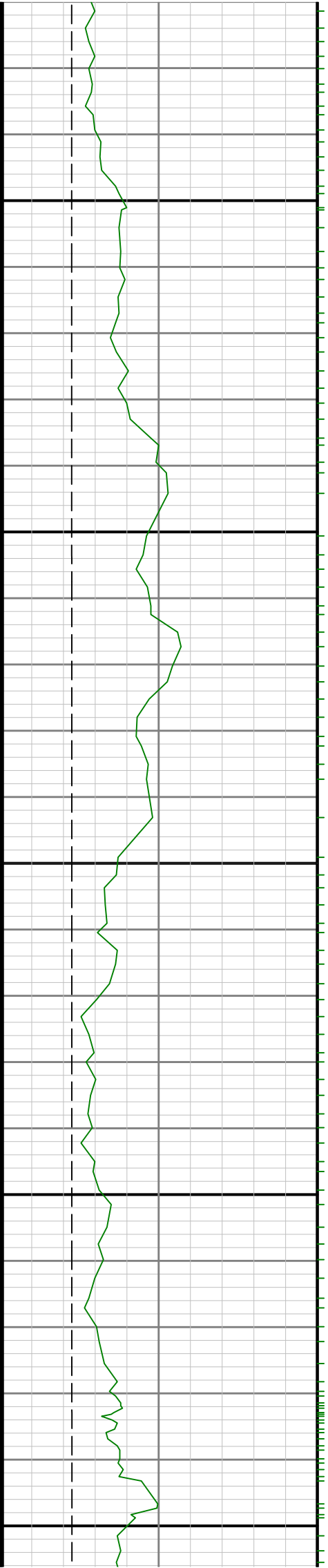


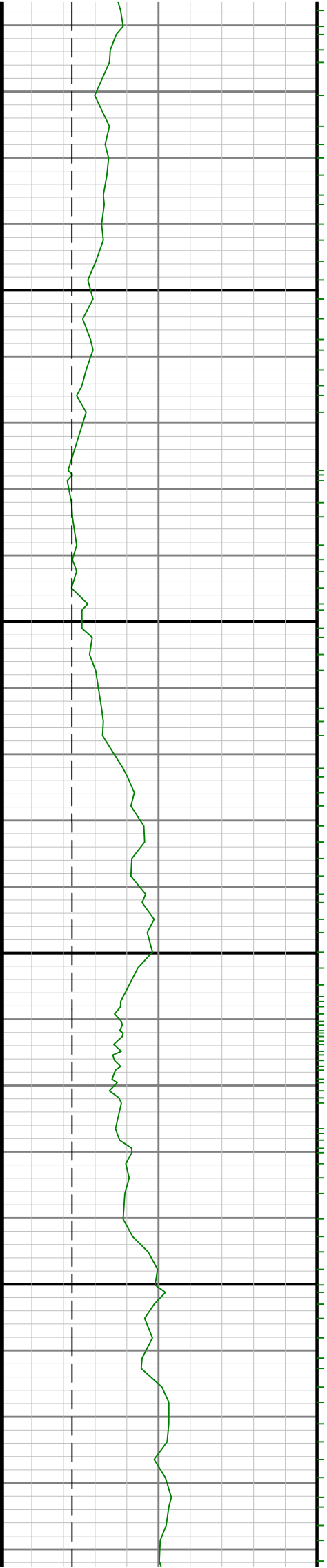




9300

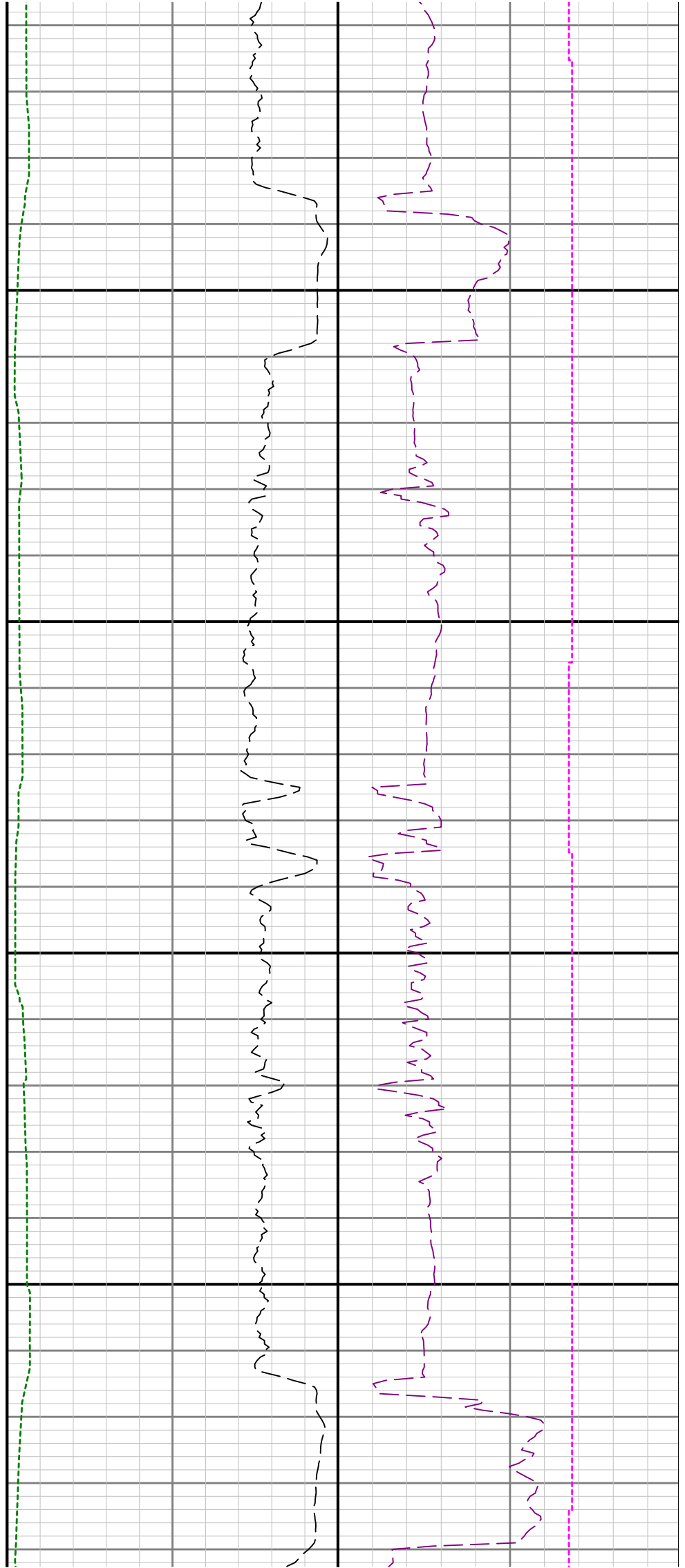
9400

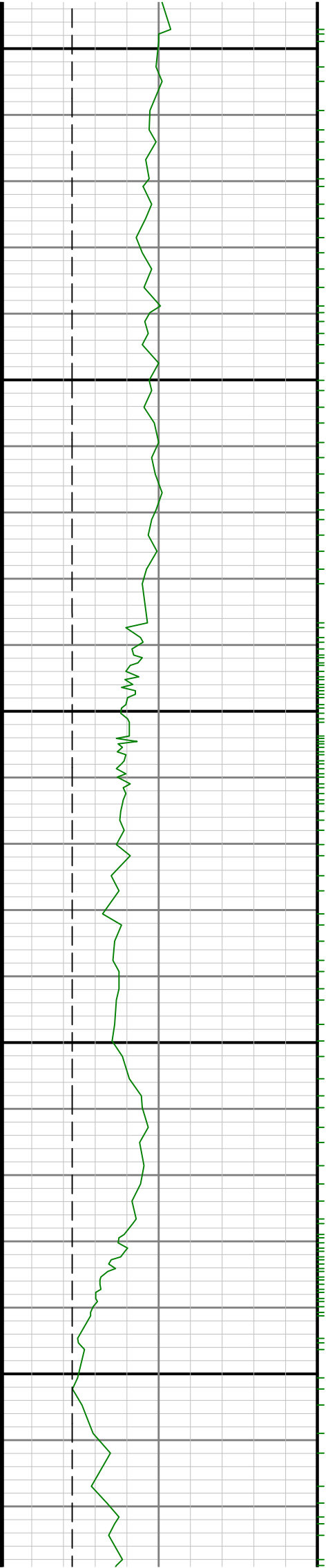




9500

0096

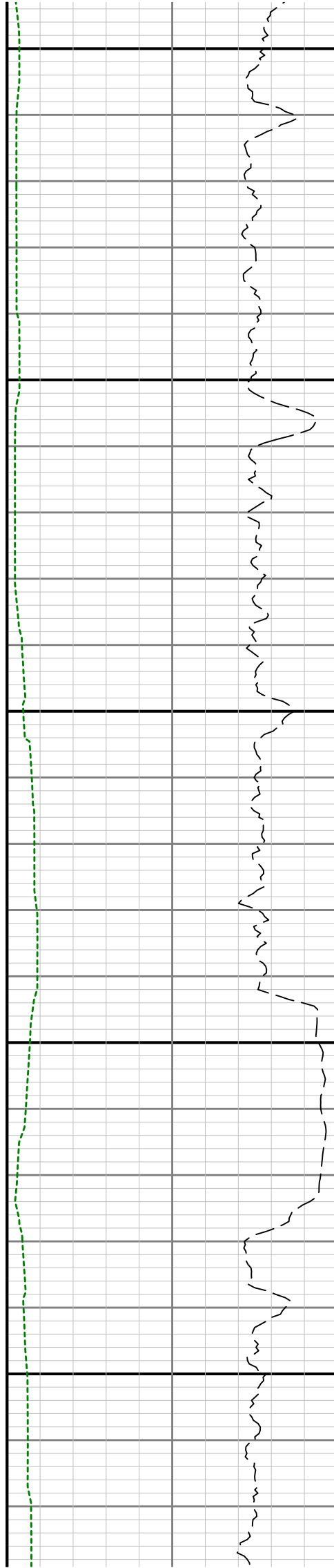


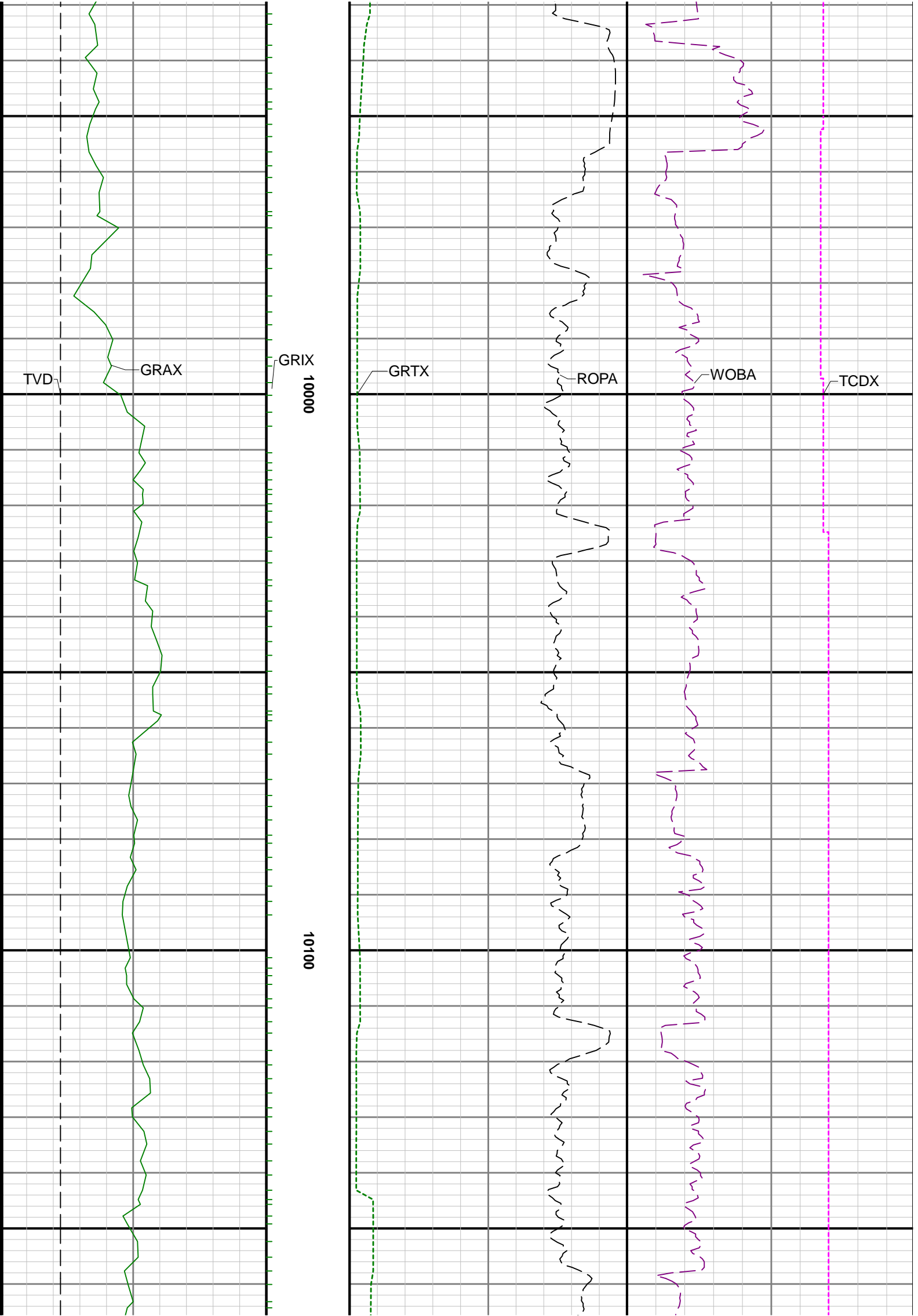


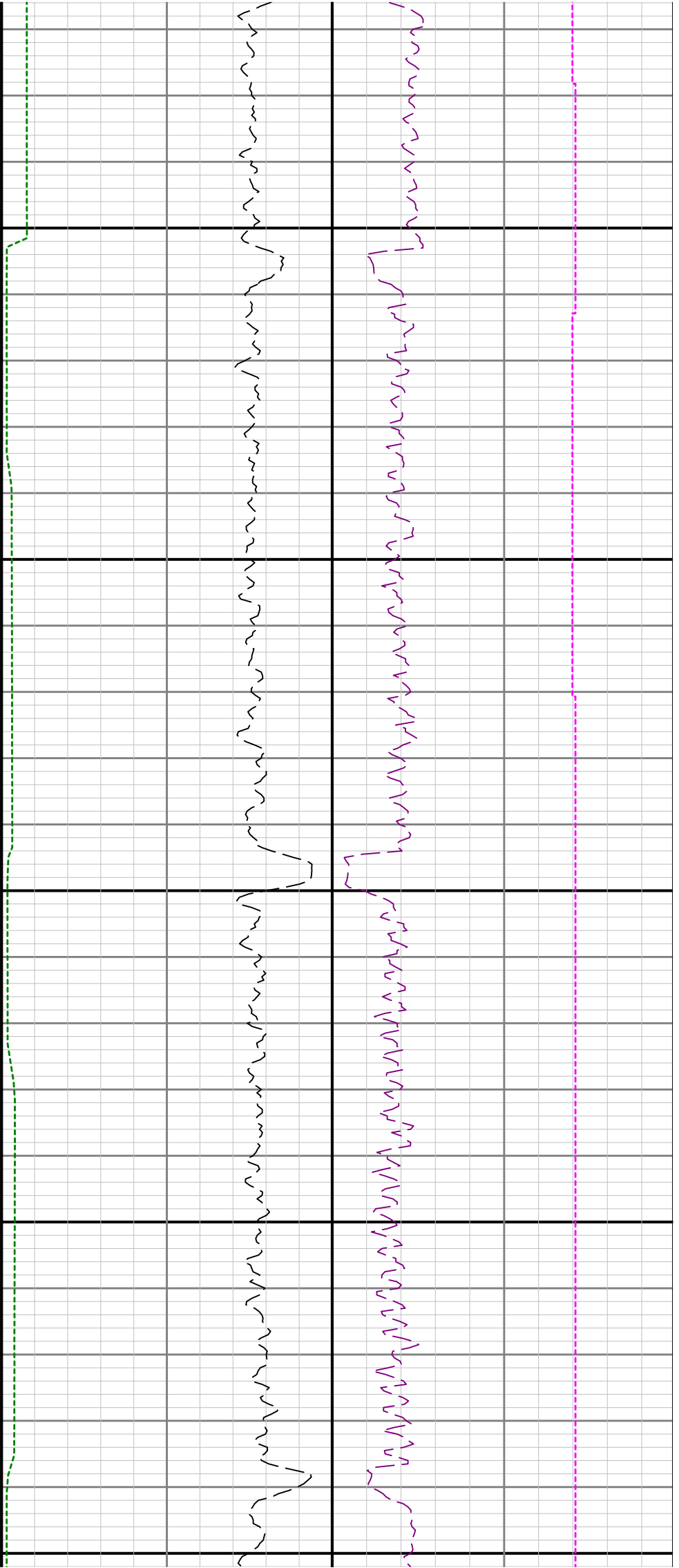
9700

9800

9900



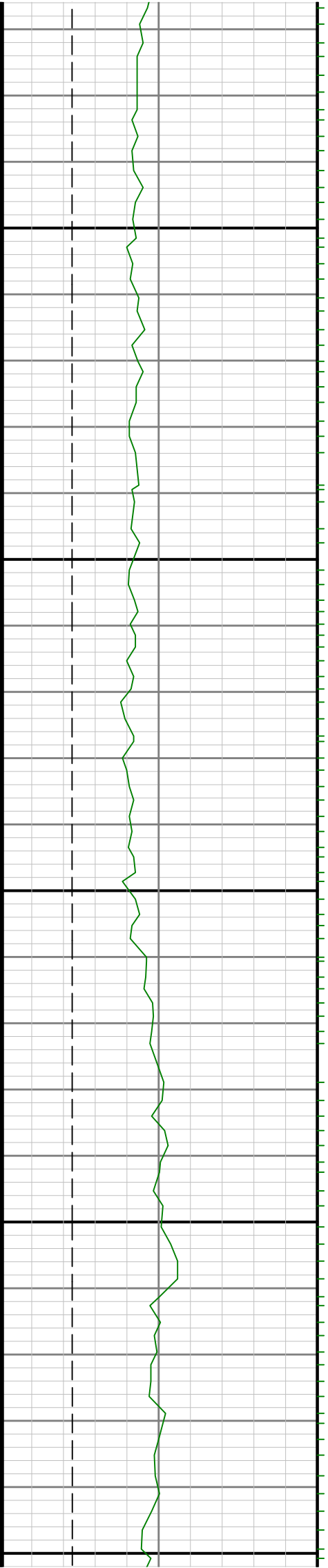


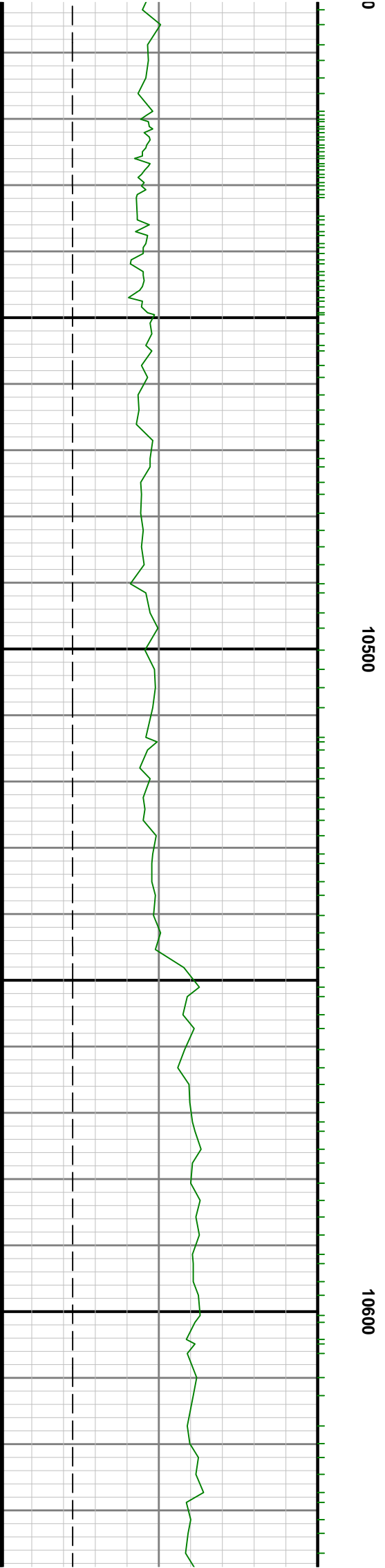
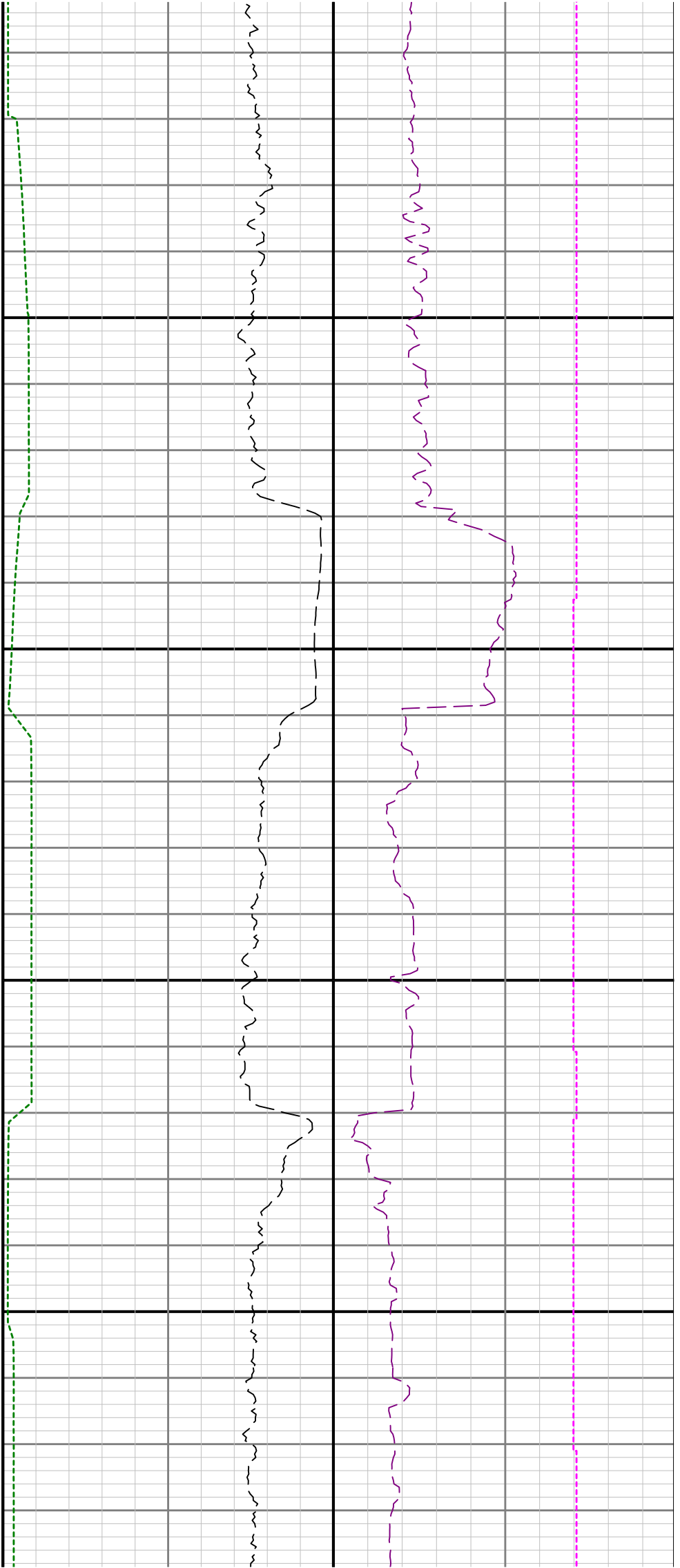


10200

10300

10400

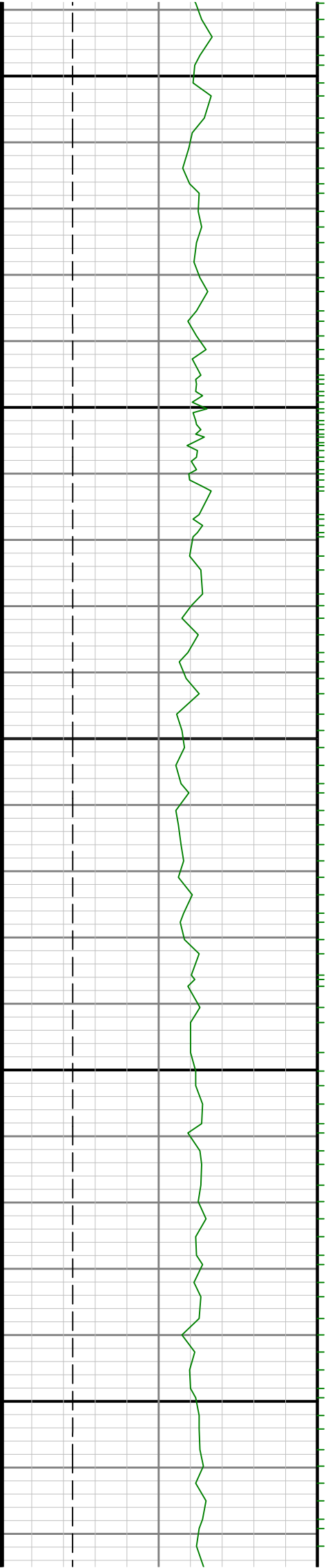


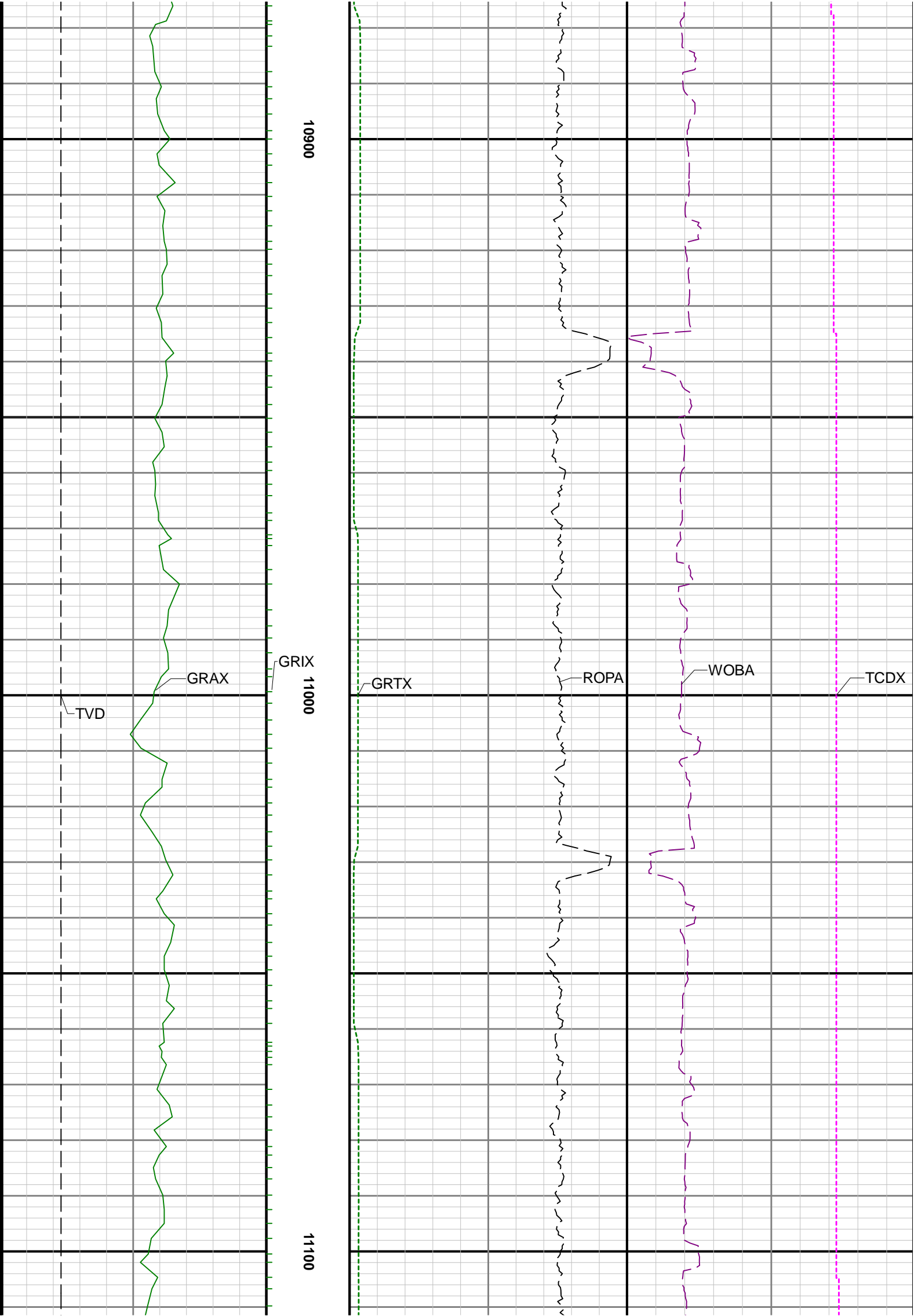


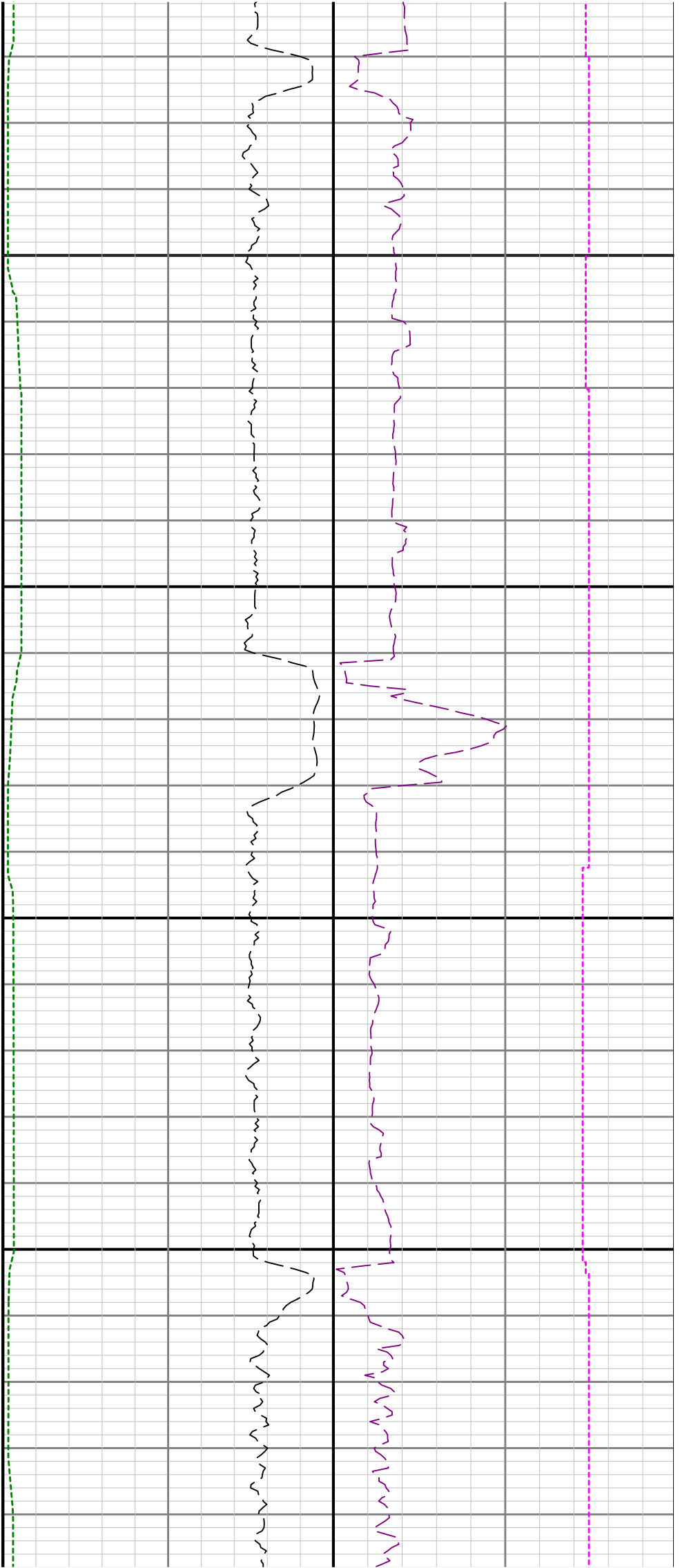


10700

10800

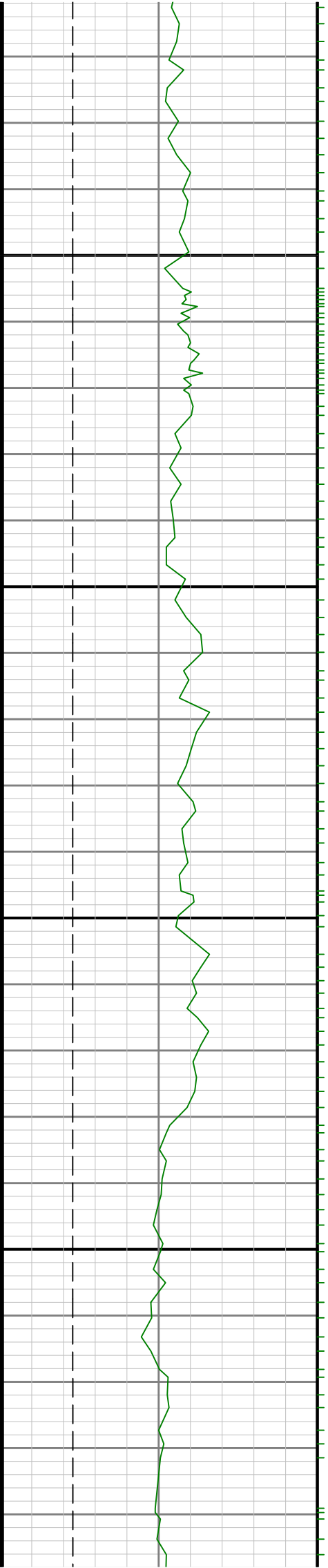


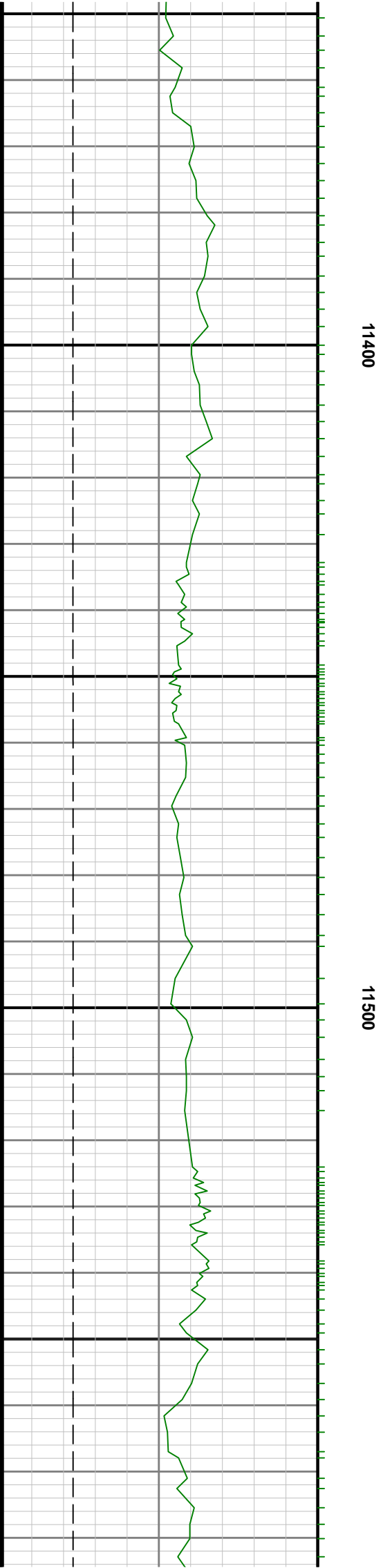
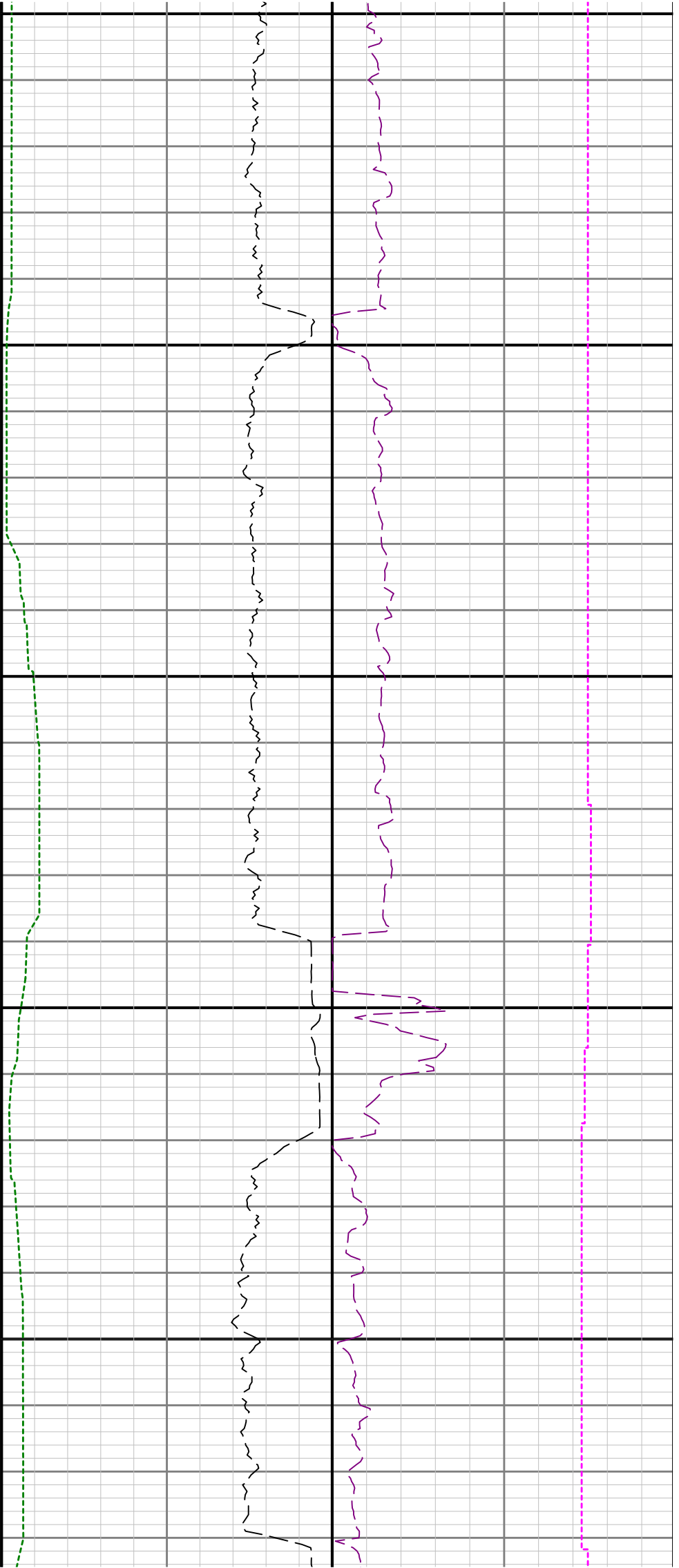


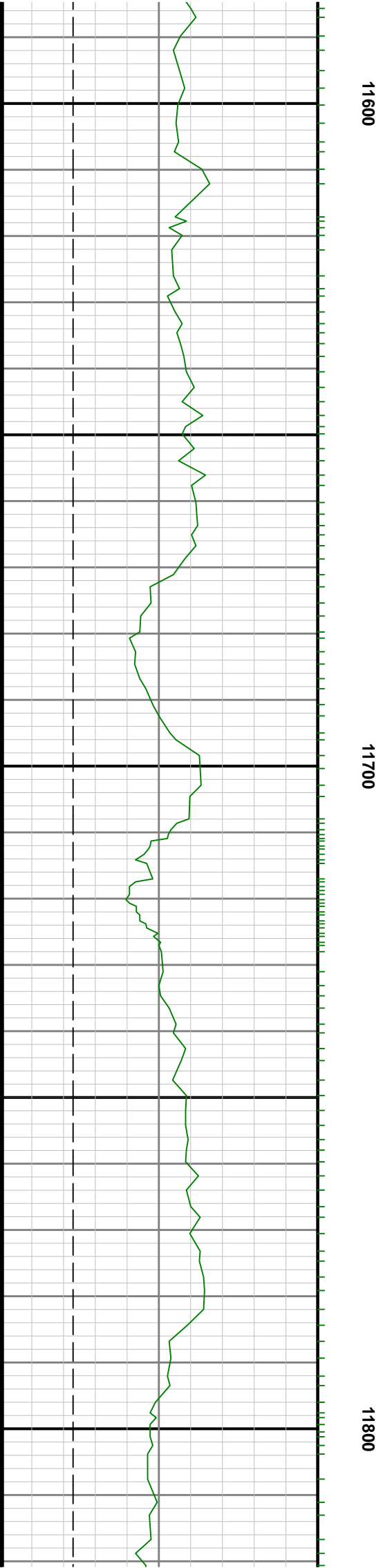
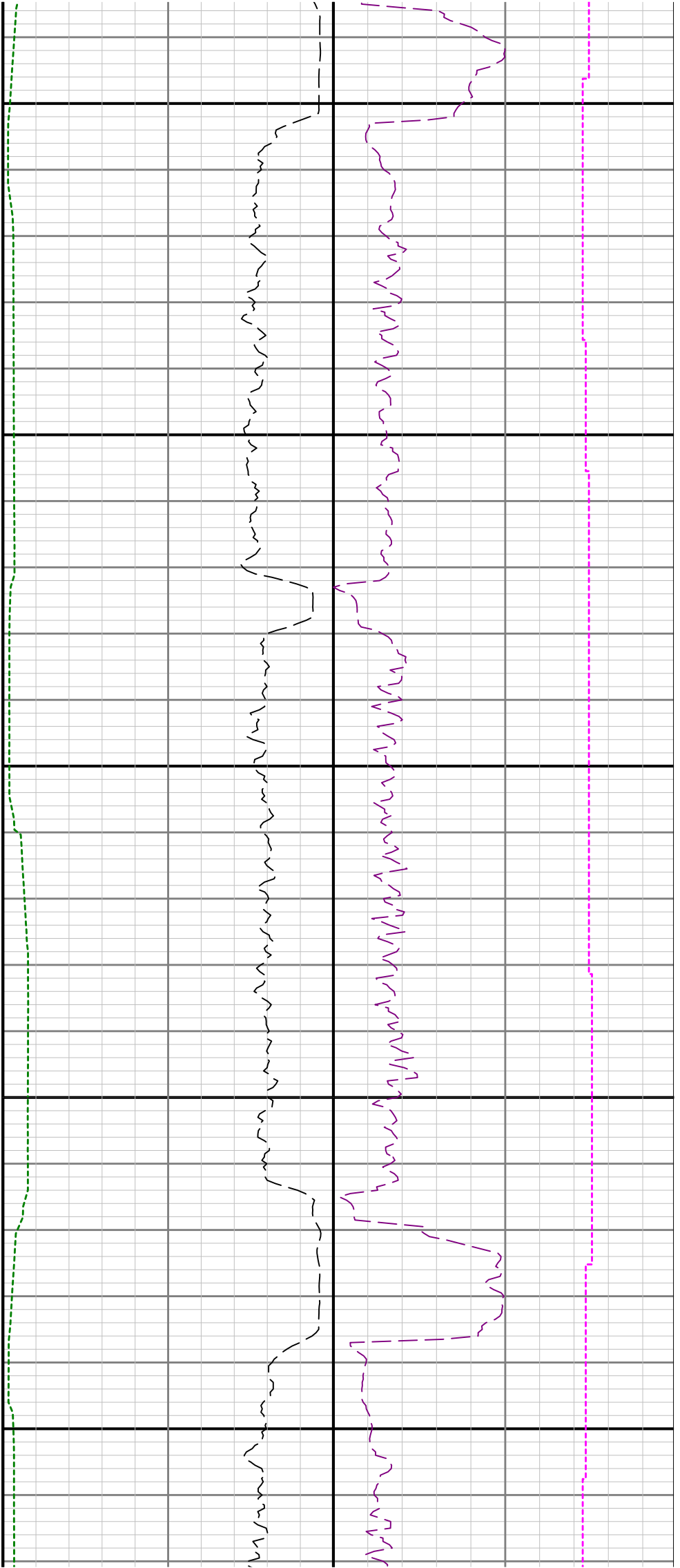


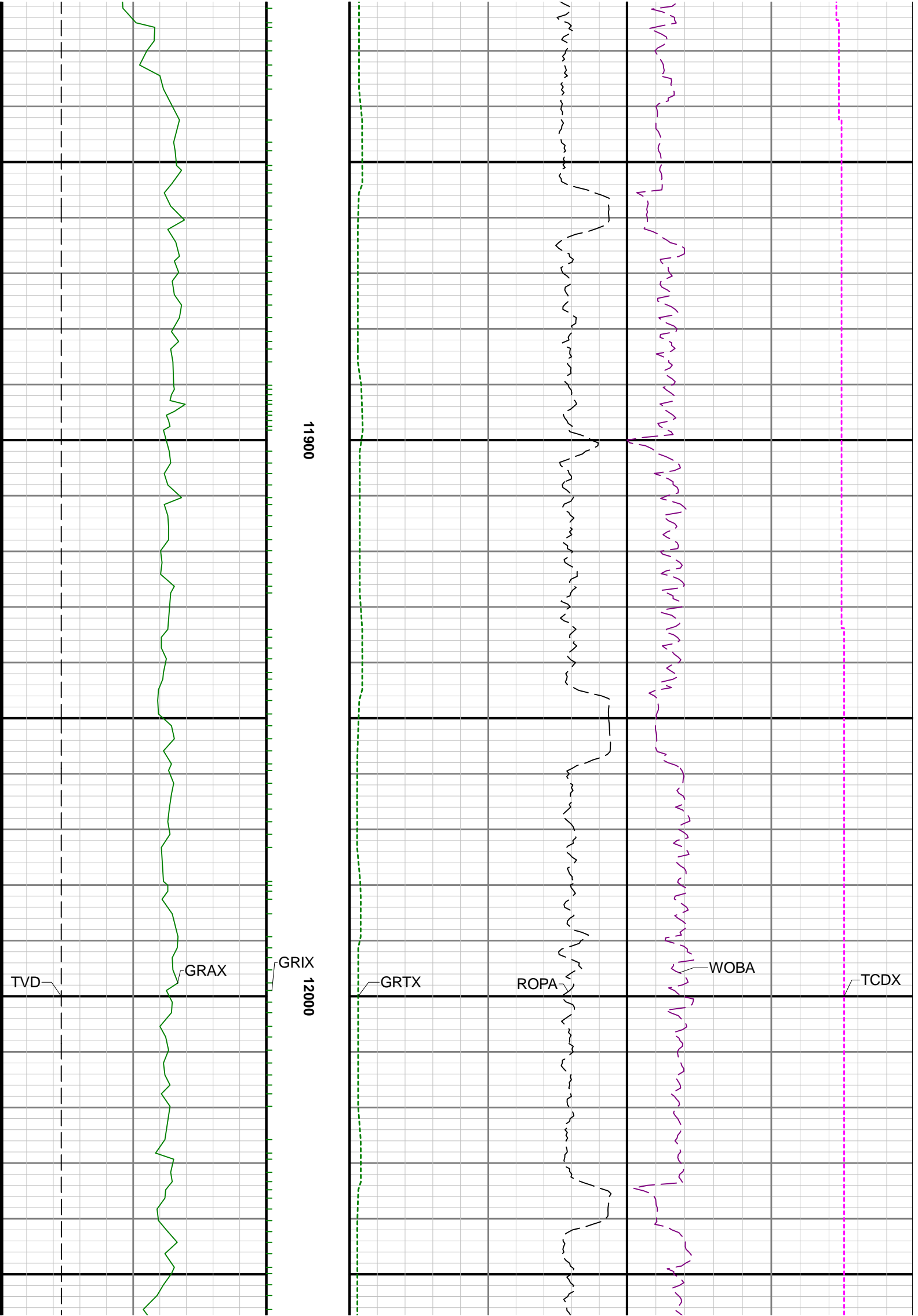
11200

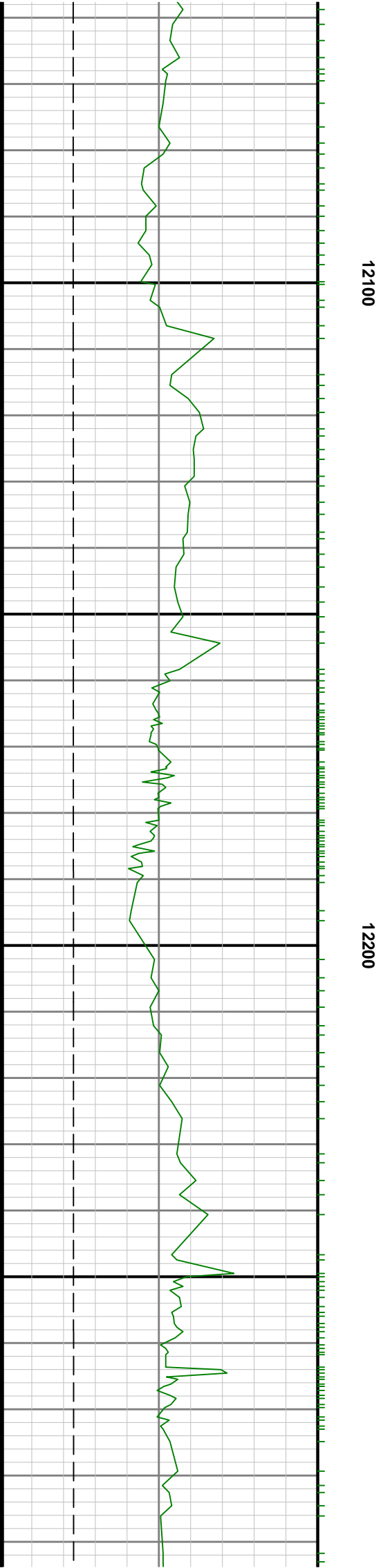
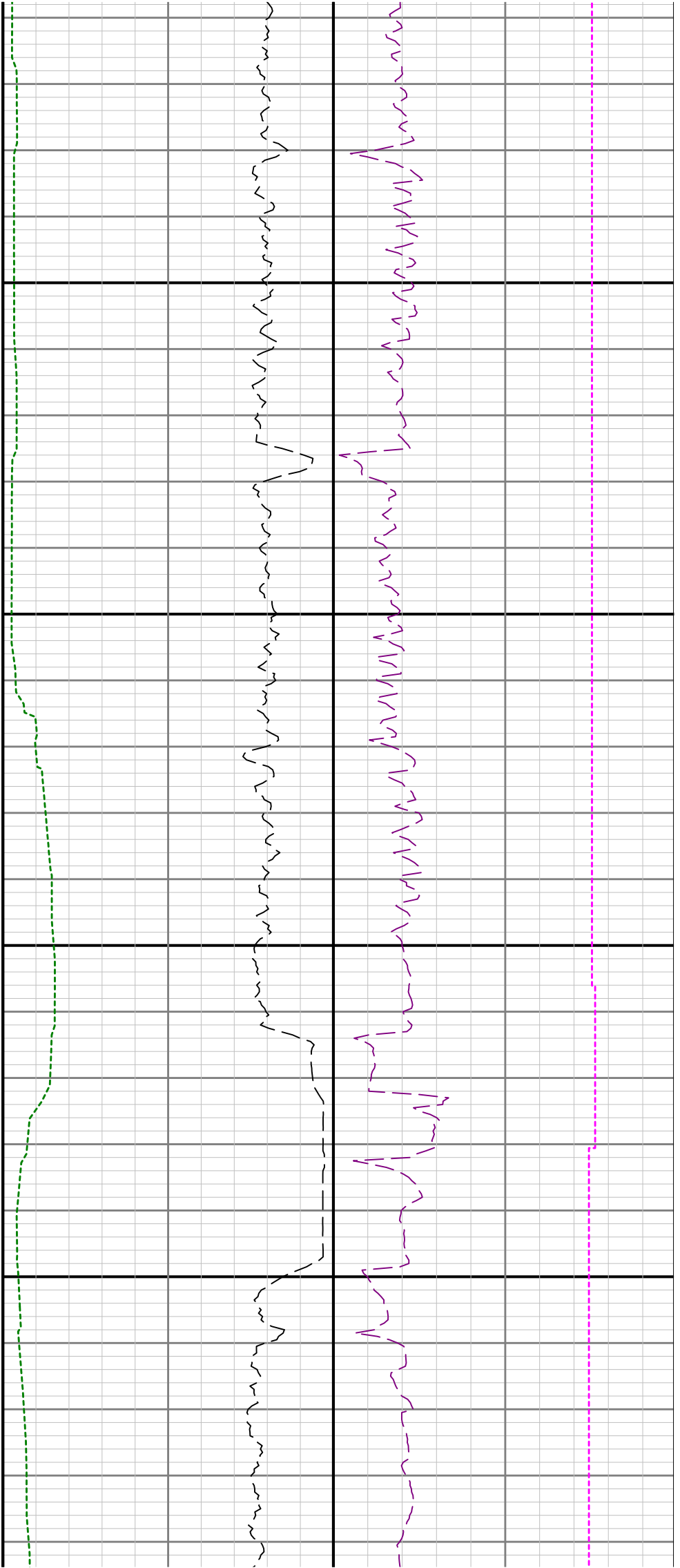
11300

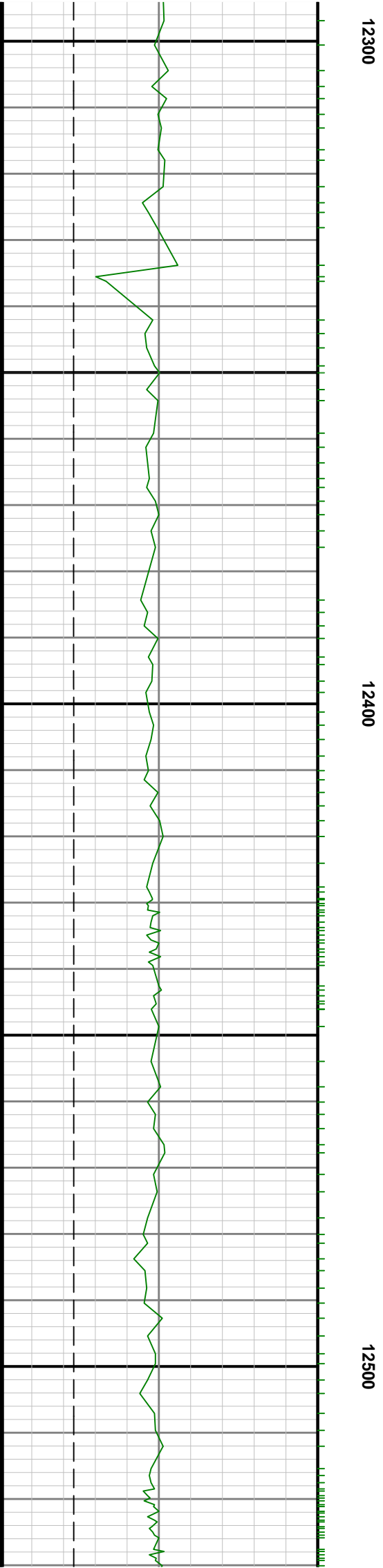














12600

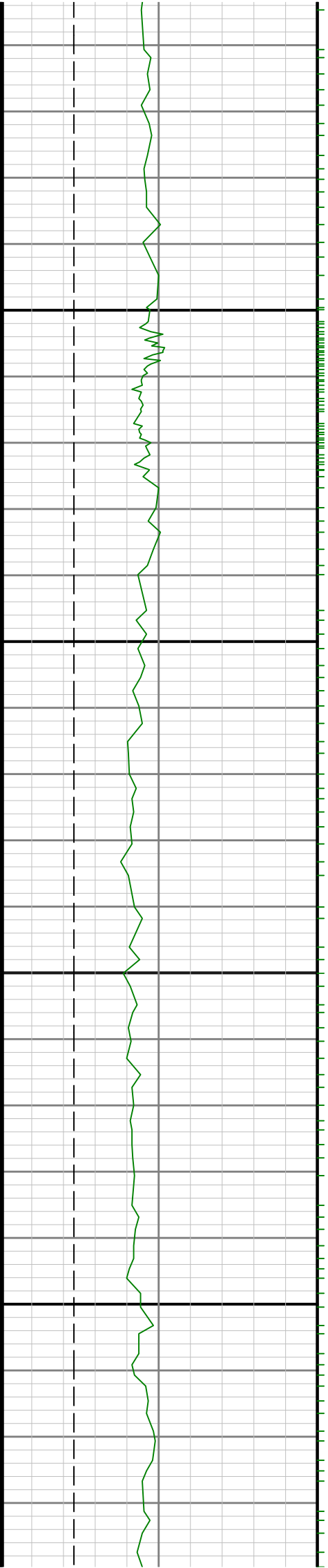
12700

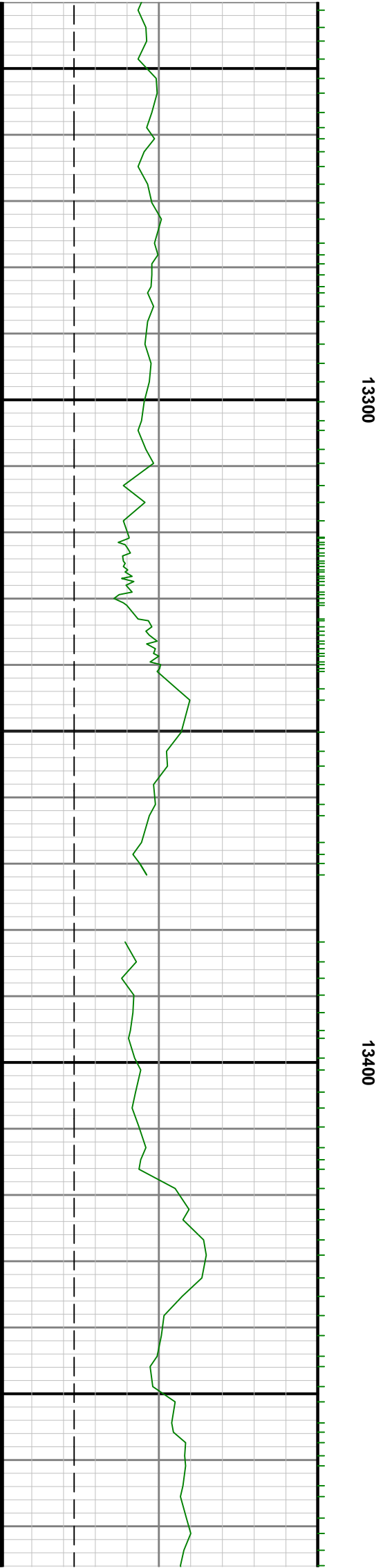


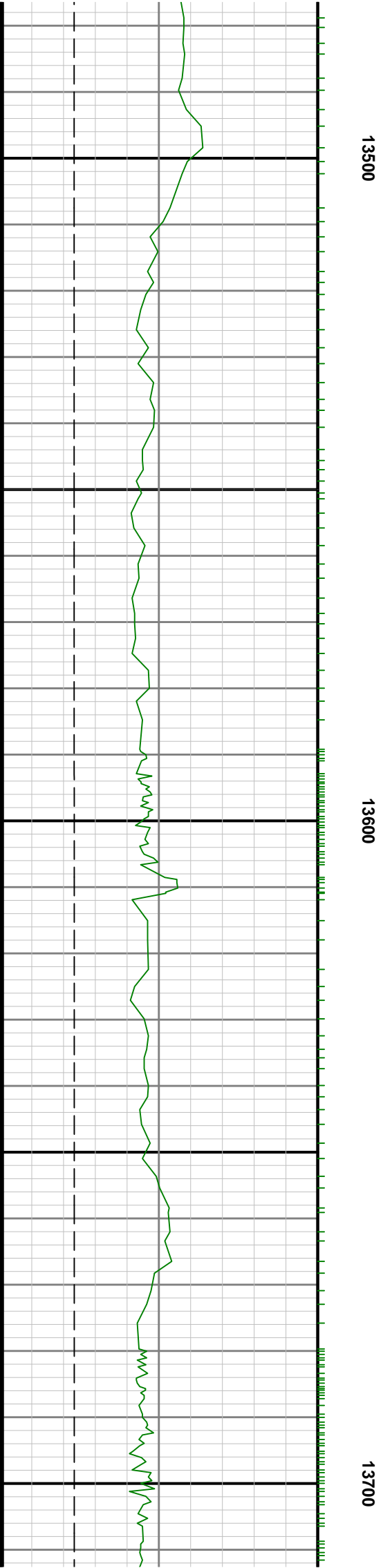
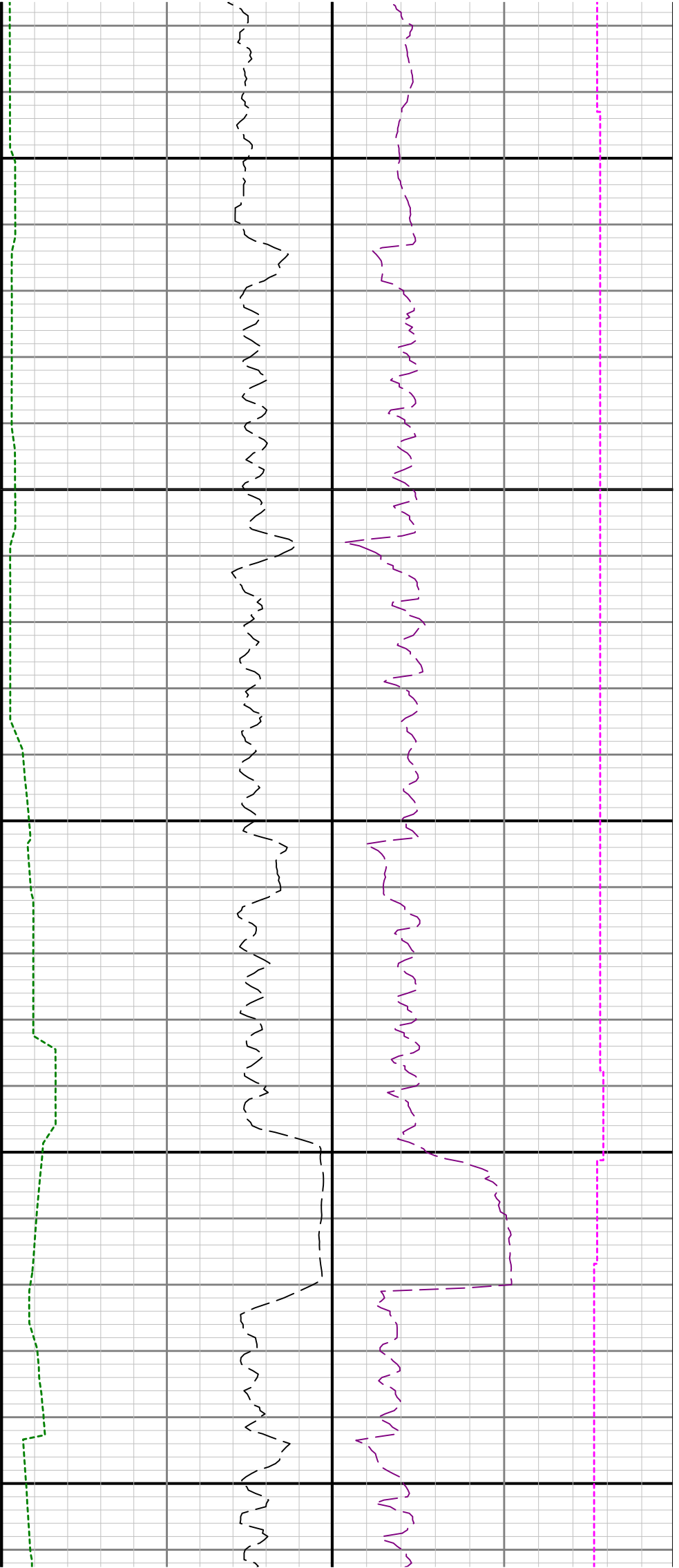


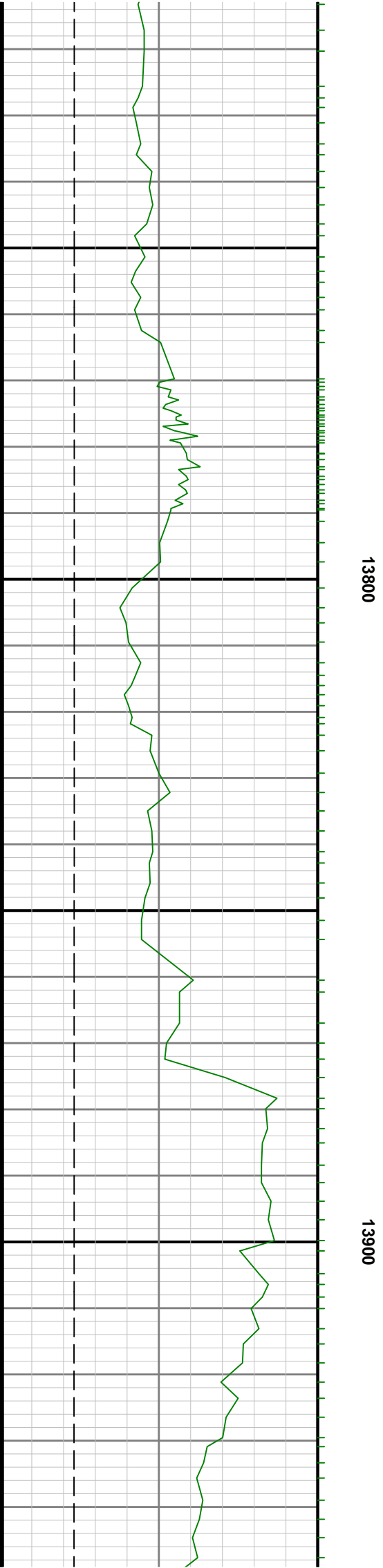
13100

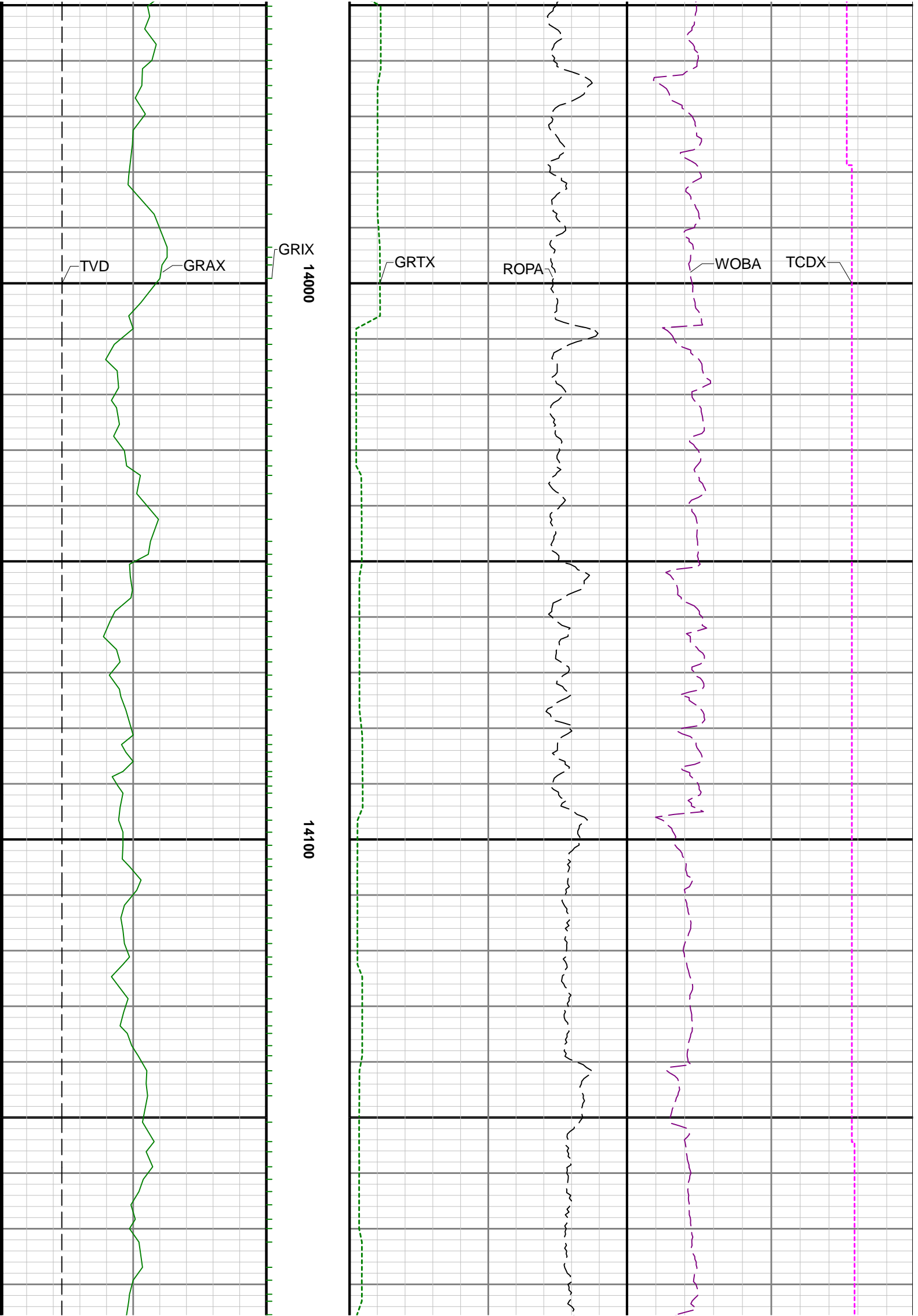
13200

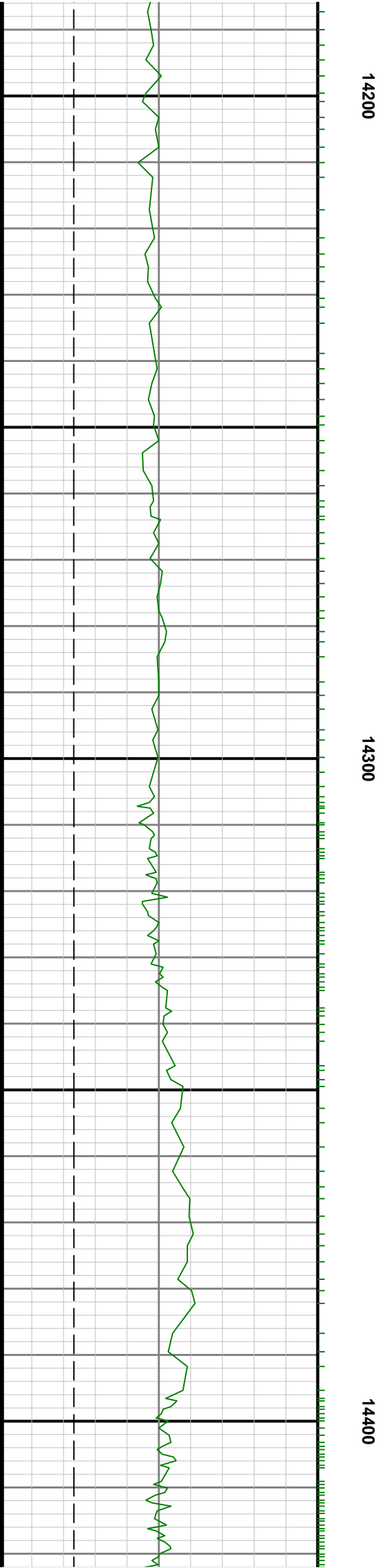
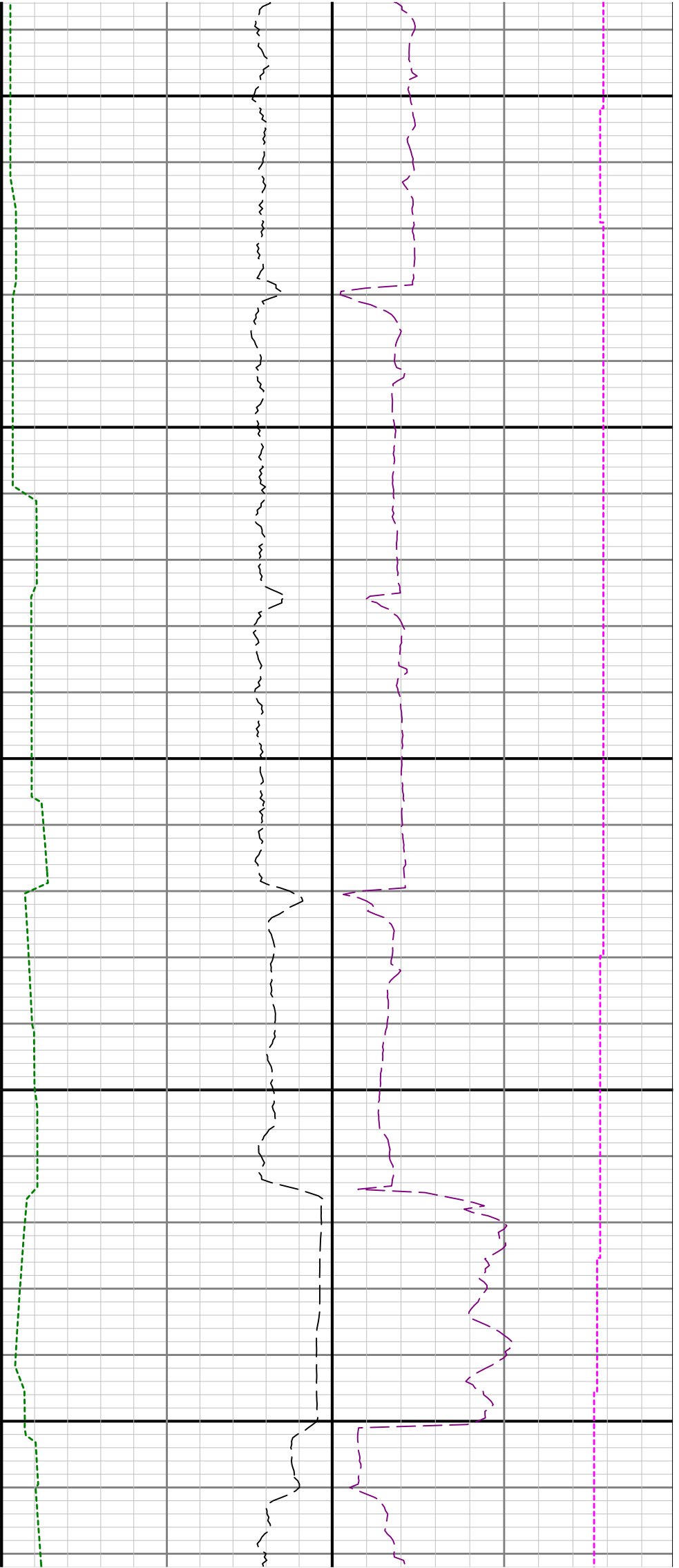


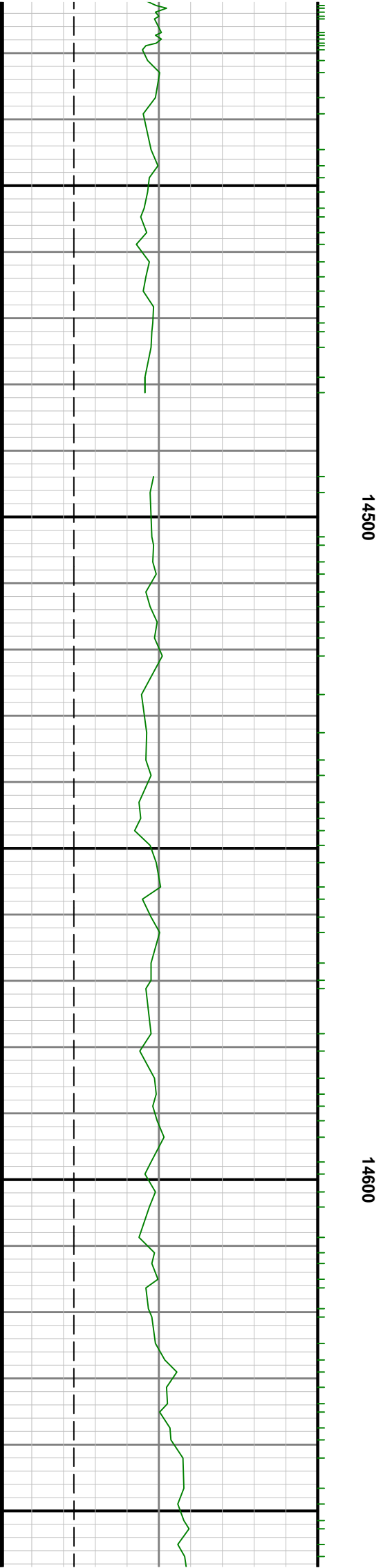
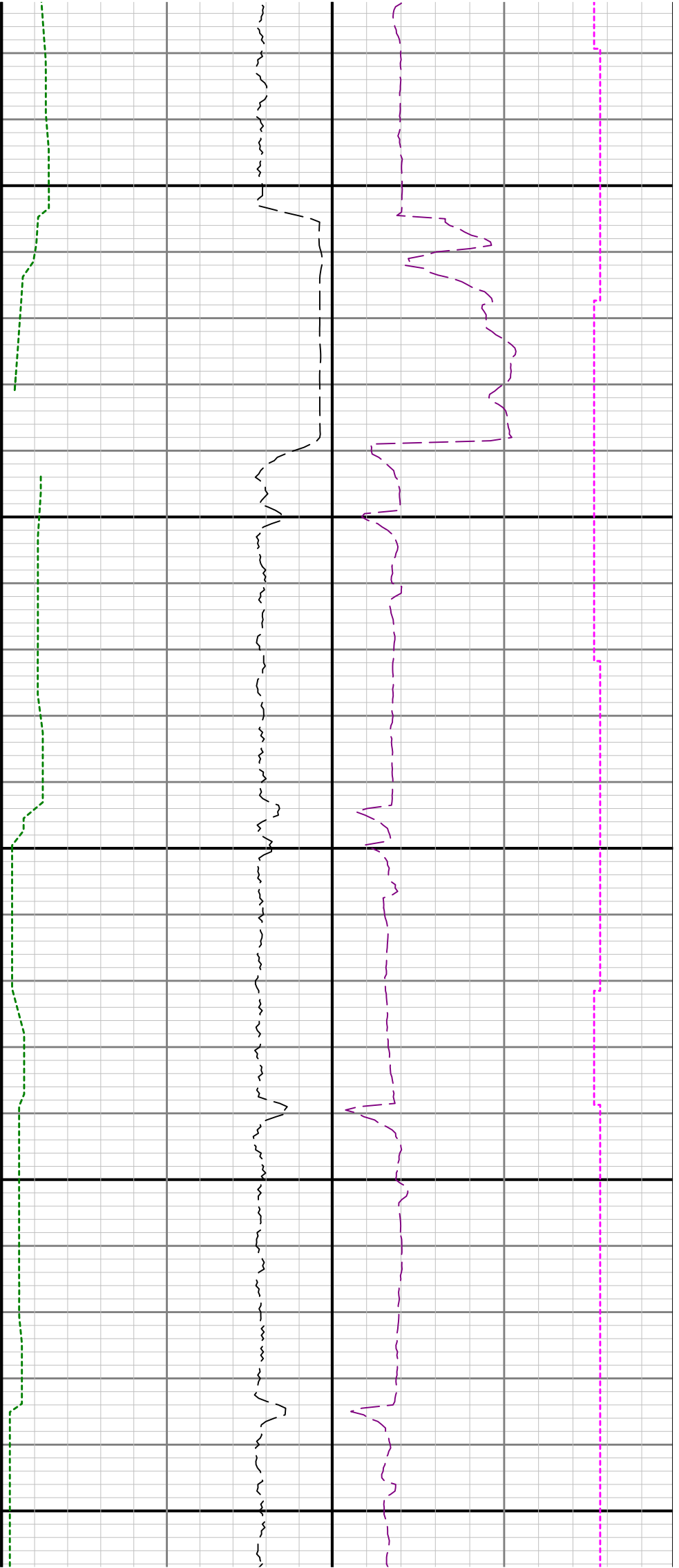


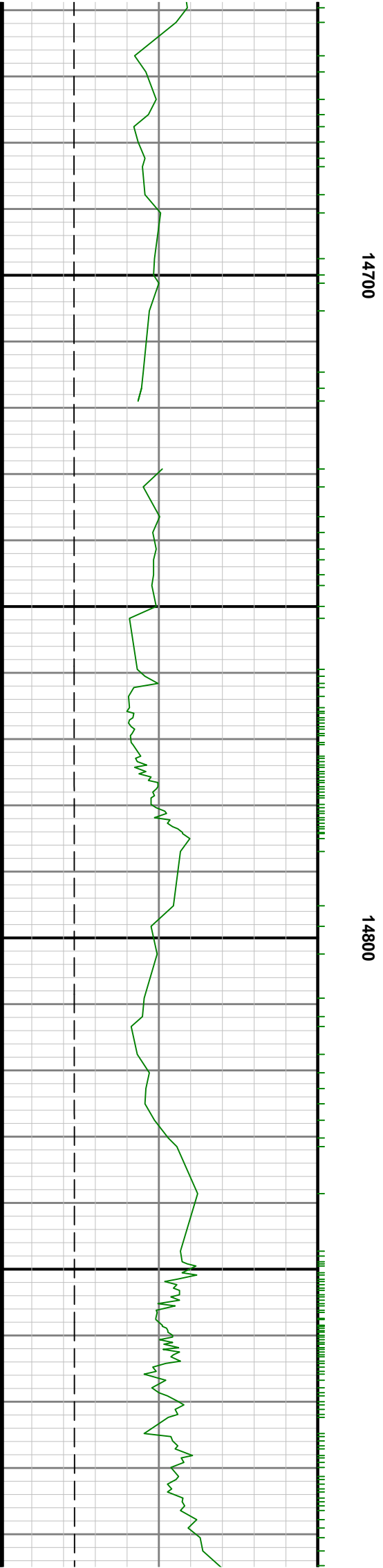


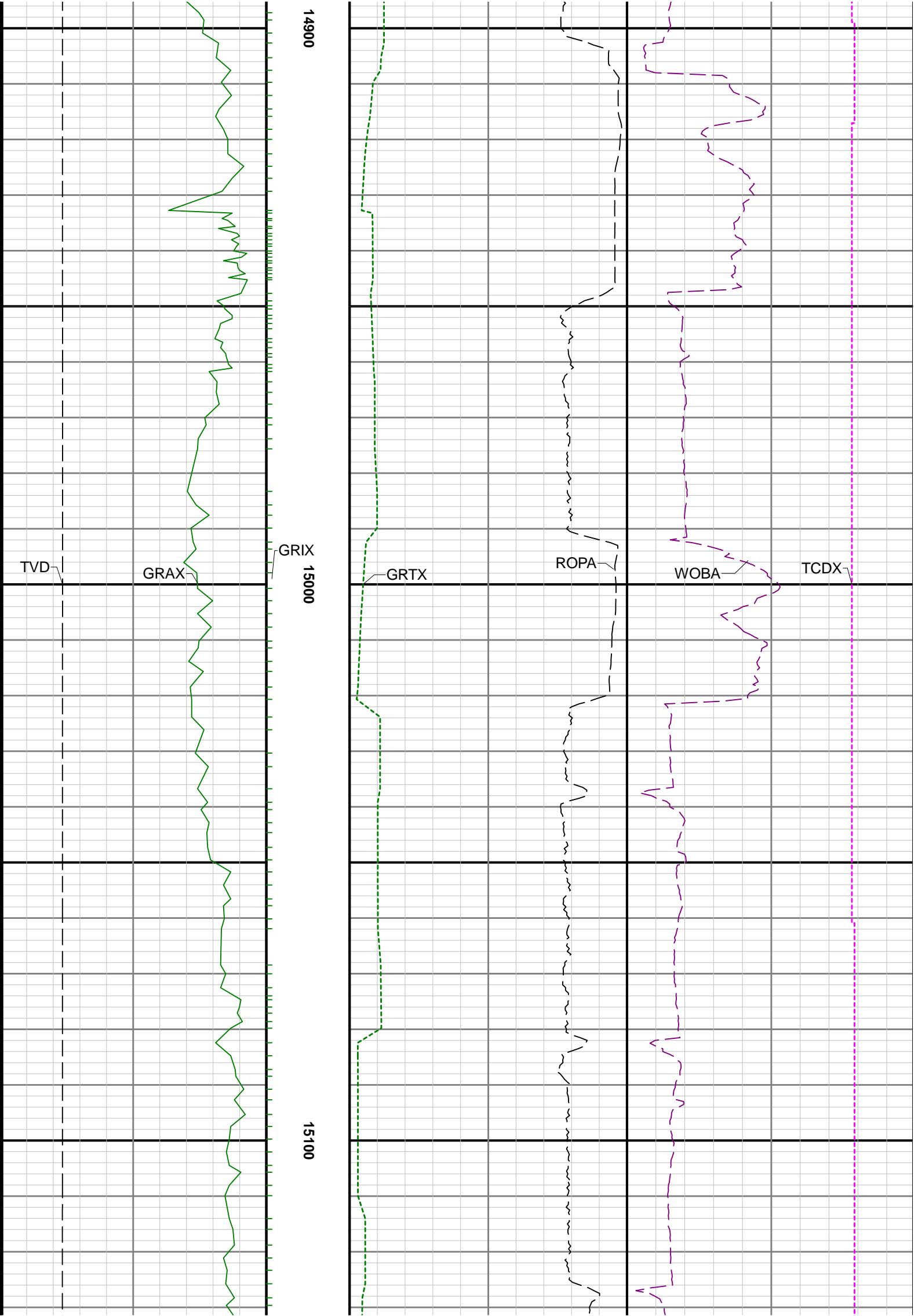


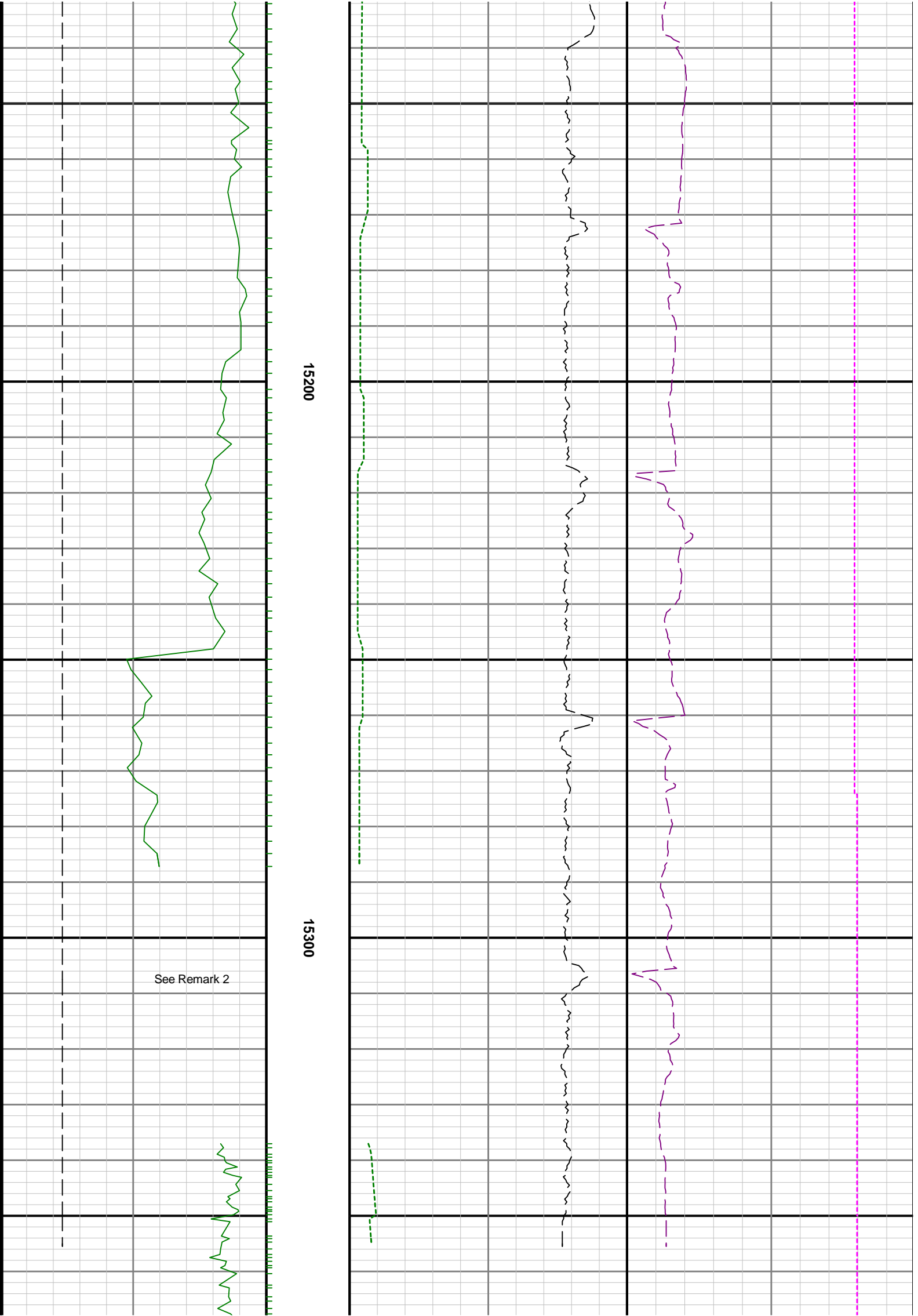


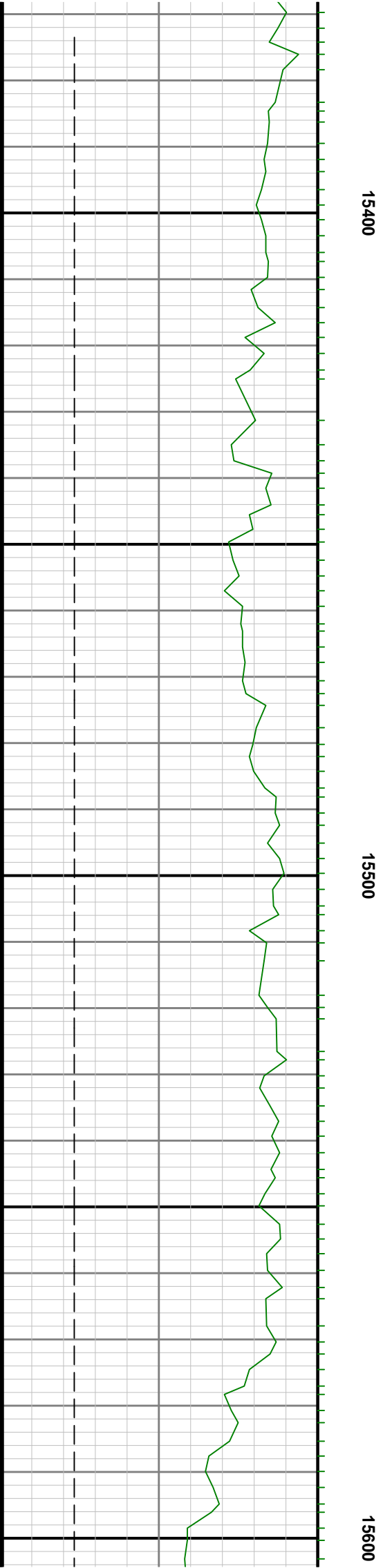


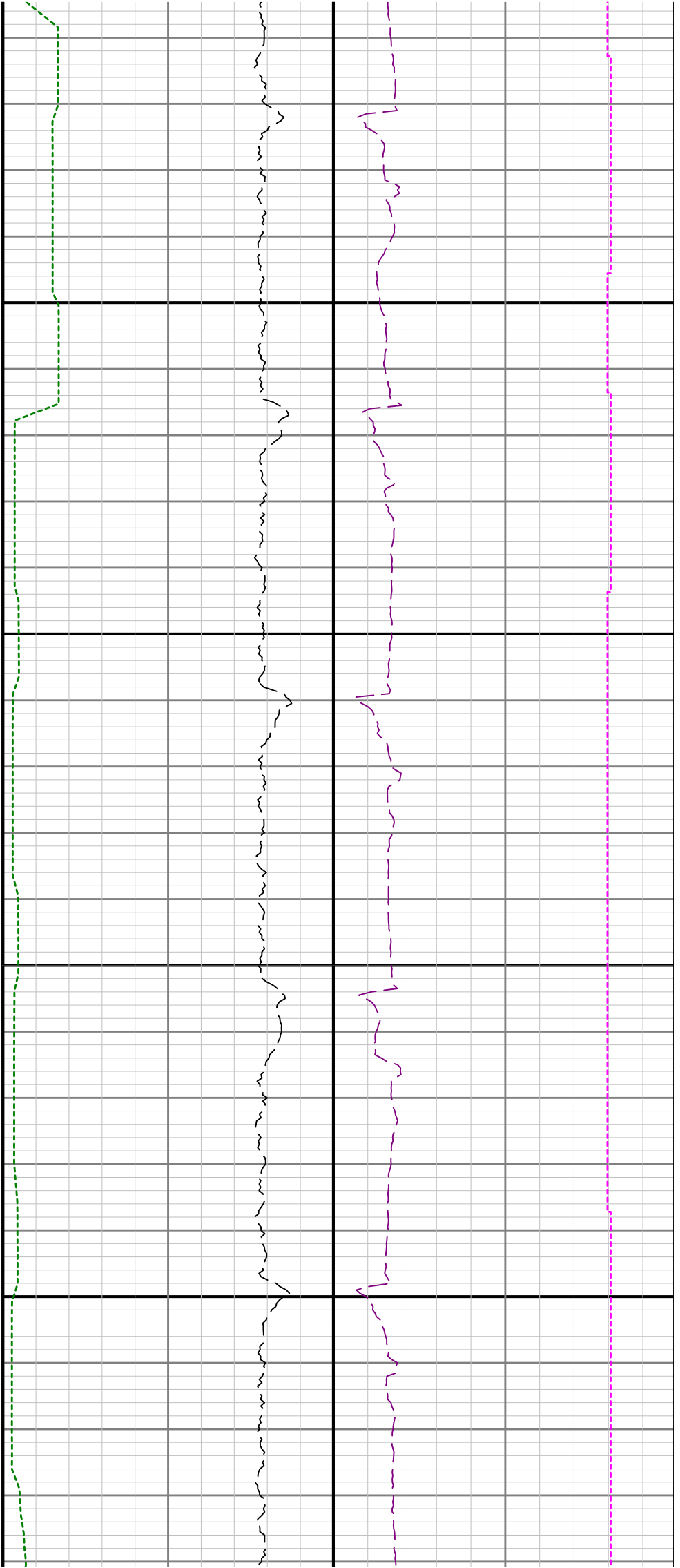












15700

15800

