



LWD REALTIME LOG - RUN 1

Drilling Dynamics

Gamma Ray

Gamma Ray

Scale:		Company: Anadarko				
1:240 MD		Well: Castle Pines 19-12HZ				
Depth Reference:		Field: N/A				
Driller's Depth		County: Weld				
		State: Colorado				
Status:		Surface Location:				
Field Print		Latitude: 040° 07' 03.641" N				
API No: 051234771500		Longitude: 104° 48' 50.674" W				
Job ID: 109461978	SEC: 19	TWN: 2N	RGE: 66W			
Permanent Datum (P.D.): Mean Sea Level		Elevation: 0.00 ft				
Log Measured From: Rig Floor		Above P.D. 4902.00 ft				
		Elev. KB: N/A				
		Elev. DF: 4902.00 ft				
		Elev. GL: 4876.00 ft				
Dates		Interval Drilled				
		Magnetic Field Reference				
Date From: 2018-12-23	Top: (ft) 1855.00	Azi Reference North: True				
Date To: 2018-12-28	Bottom: (ft) 18634.74	Total Magnetic Field Strength: (nT) 52398				
Spud Date: 2018-12-23		Mag to Reference North Correction: (deg) 8.15				
Borehole Record		Casing Record				
Hole Size (in)	From (ft)	To (ft)	Size (in)	Weight (lb/ft)	From (ft)	To (ft)
N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mud Record						
Type	From (ft)	To (ft)	Hole Size (in)	Interval (ft)	Inc Az (Start)	Inc Az (End)
Oil Based Mud	1855.00	18634.74	8.500	16779.74	16.10 346.67	90.22 177.06
Deviation Record						
Acquisition System						
Baker Hughes Cadence	RT 4.2	Precision 564	Other			
DeliverableGen	1.0.8107.2	Rig: Contractor: District:	Unit: D&E			

© 2018 Baker Hughes, a GE company, LLC – All rights reserved. Baker Hughes, a GE company, LLC and its affiliates (“BHGE”) provides this information on an “as is” basis for general information purposes and believes it to be accurate as of the date of publication. BHGE does not make any representation as to the accuracy or completeness of the information and makes no warranties of any kind, specific, implied or oral, to the fullest extent permissible by law, including those of merchantability and fitness for a particular purpose or use. BHGE hereby disclaims any and all liability for any direct, indirect, consequential or special damages, claims for lost profits, or third party claims arising from the use of the information, whether a claim is asserted in contract, tort, or otherwise. The BHGE logo is a trademark of Baker Hughes, a GE company, LLC. GE and the GE monogram are trademarks of General Electric Company used under trademark license.

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
						Top	Bottom	From	To	Start Logging	End Logging	
						(ft)	(ft)	(ft)	(ft)			
1	1	8.500	PDC	3.00	AutoTrak Curve	1842.53	18622.03	1855.00	18634.50	2018-12-23 15:24	2018-12-27 23:53	94.29

Crew

Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
------	--------------------	--------------------	------	--------------------	--------------------	------	--------------------	--------------------

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+ (%)
2018-12-23 07:57	1	1900.00	Oil Based Mud	9.1	18	0	6.4	66/24	Active Pit	31000	0.00
2018-12-25 01:16	1	8006.00	Oil Based Mud	9.1	18	0	5.2	67/23	Suction	41000	0.00
2018-12-27 01:37	1	12622.00	Oil Based Mud	9.2	18	0	4.2	65/24.5	Suction	38000	0.00
2018-12-27 18:50	1	17233.00	Oil Based Mud	9.3	19	0	5.6	66/23	Suction	40000	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	14186736	Near Bit VSS	5.93	6.83	7.000	4.330
1	ATC_SU	14186736	Near Bit Inclination	5.93	6.83	7.000	4.330
1	ATC_MWD	12577852	Gamma (single)	2.20	12.47	7.000	3.250
1	ATC_MWD	12577852	Directional (mag)	12.27	22.54	7.000	3.250

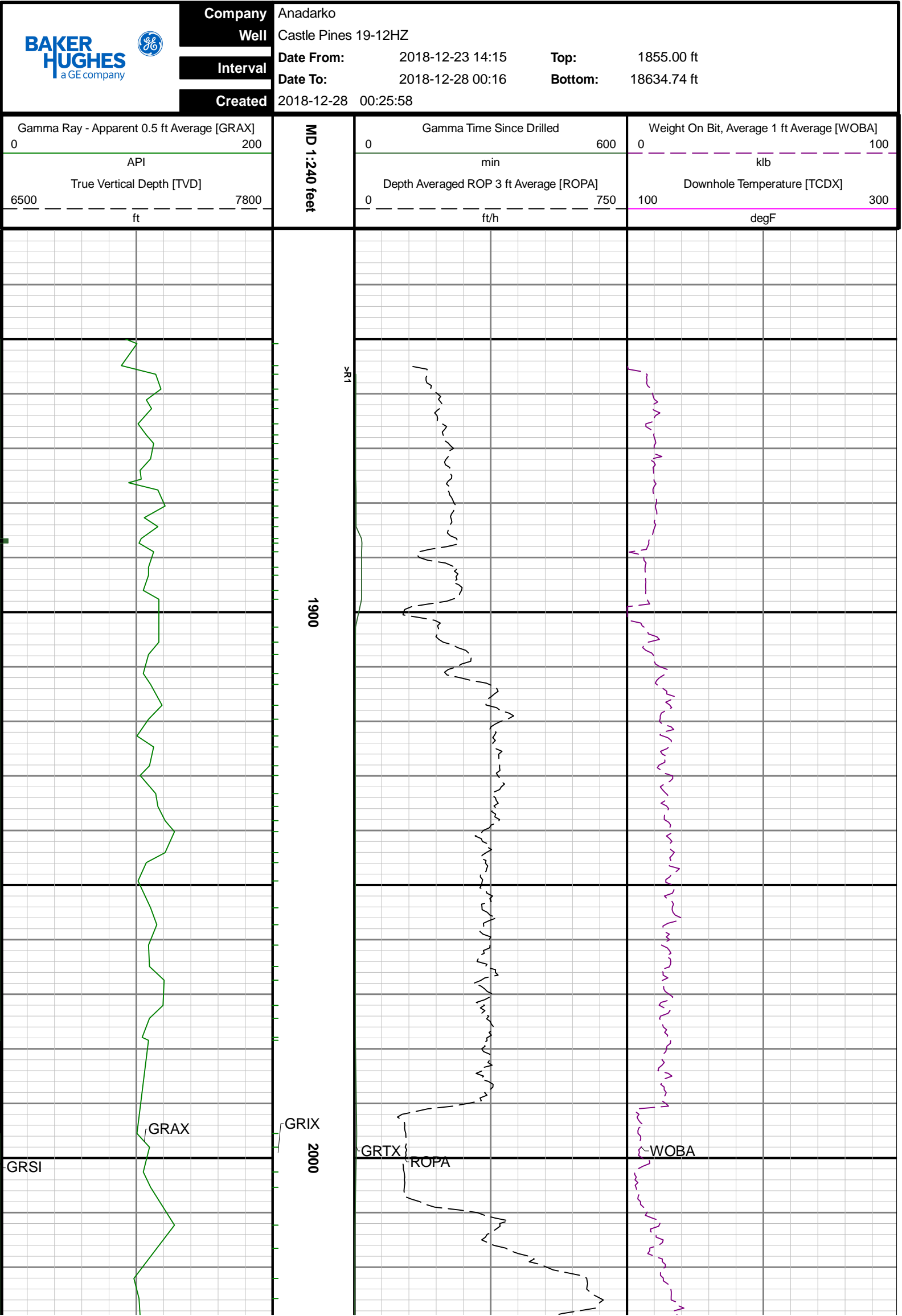
Service and Tool Mnemonics

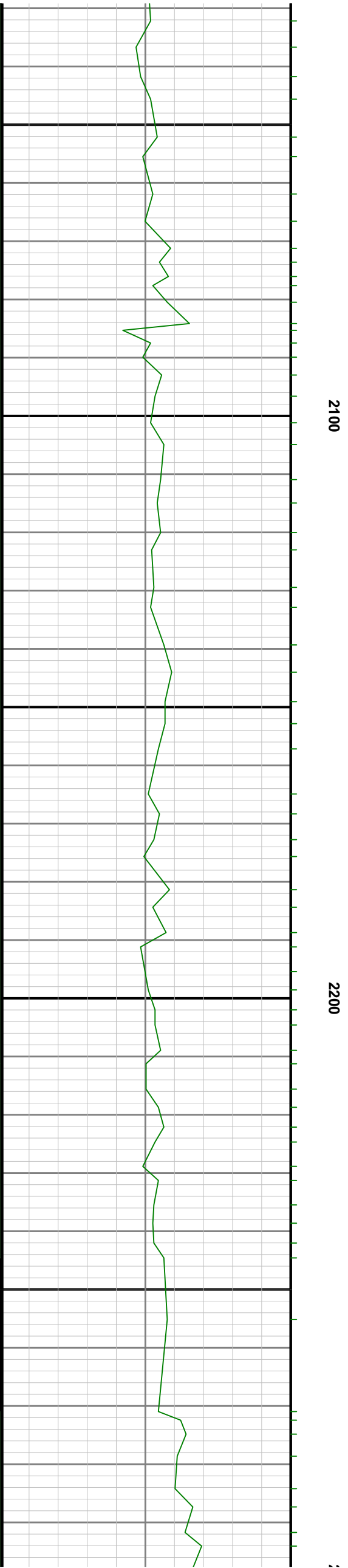
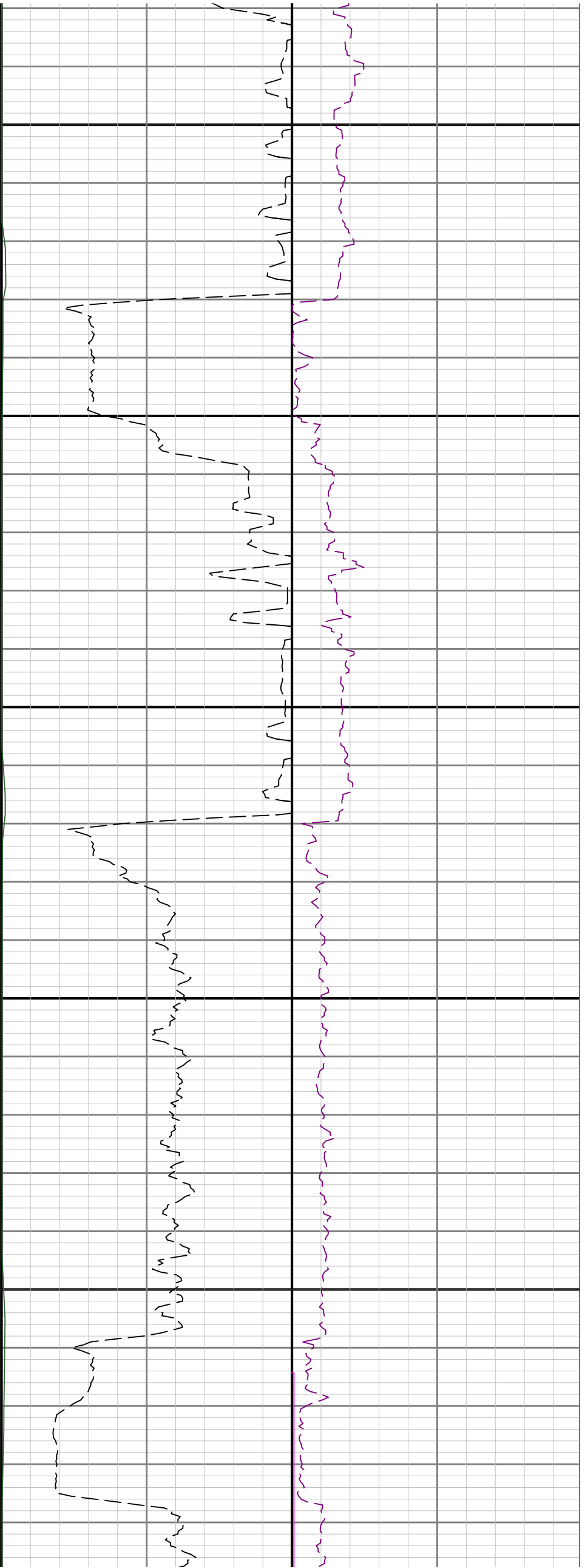
Mnemonic	Name	Description
ATC_SU	ATC_SU	Auto Trak Curve Steering Unit
ATC_MWD	ATC_MWD	Auto Trak Curve MWD
ATC_LCPM	ATC_LCPM	Auto Trak Curve LCPM

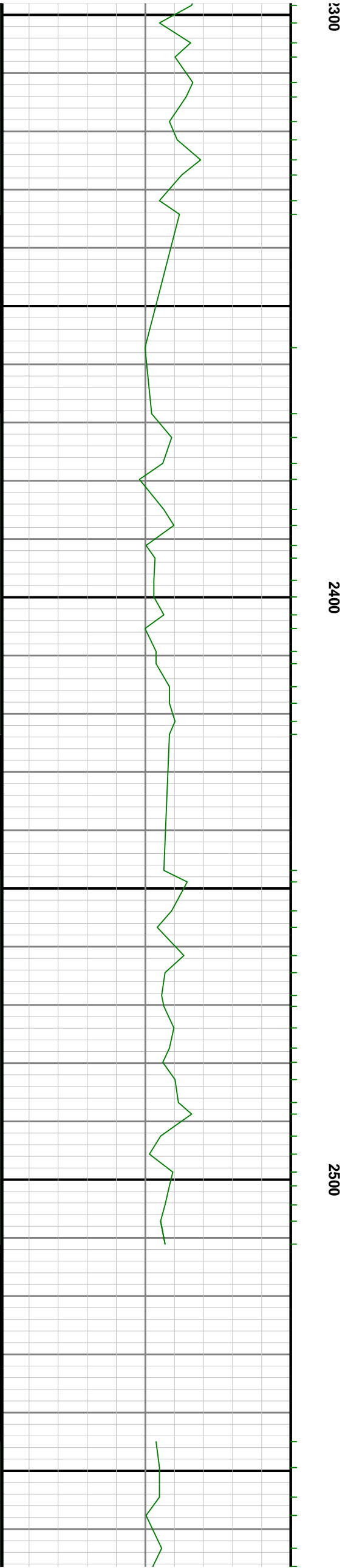
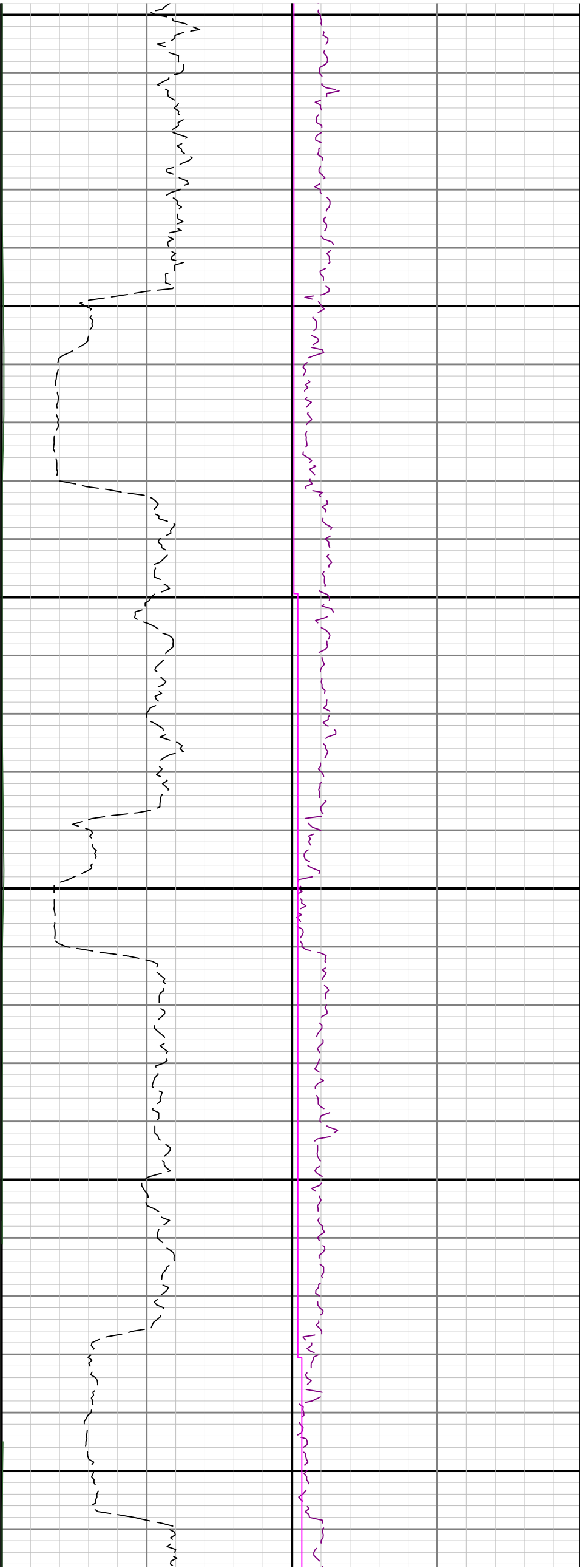
Curve Mnemonics

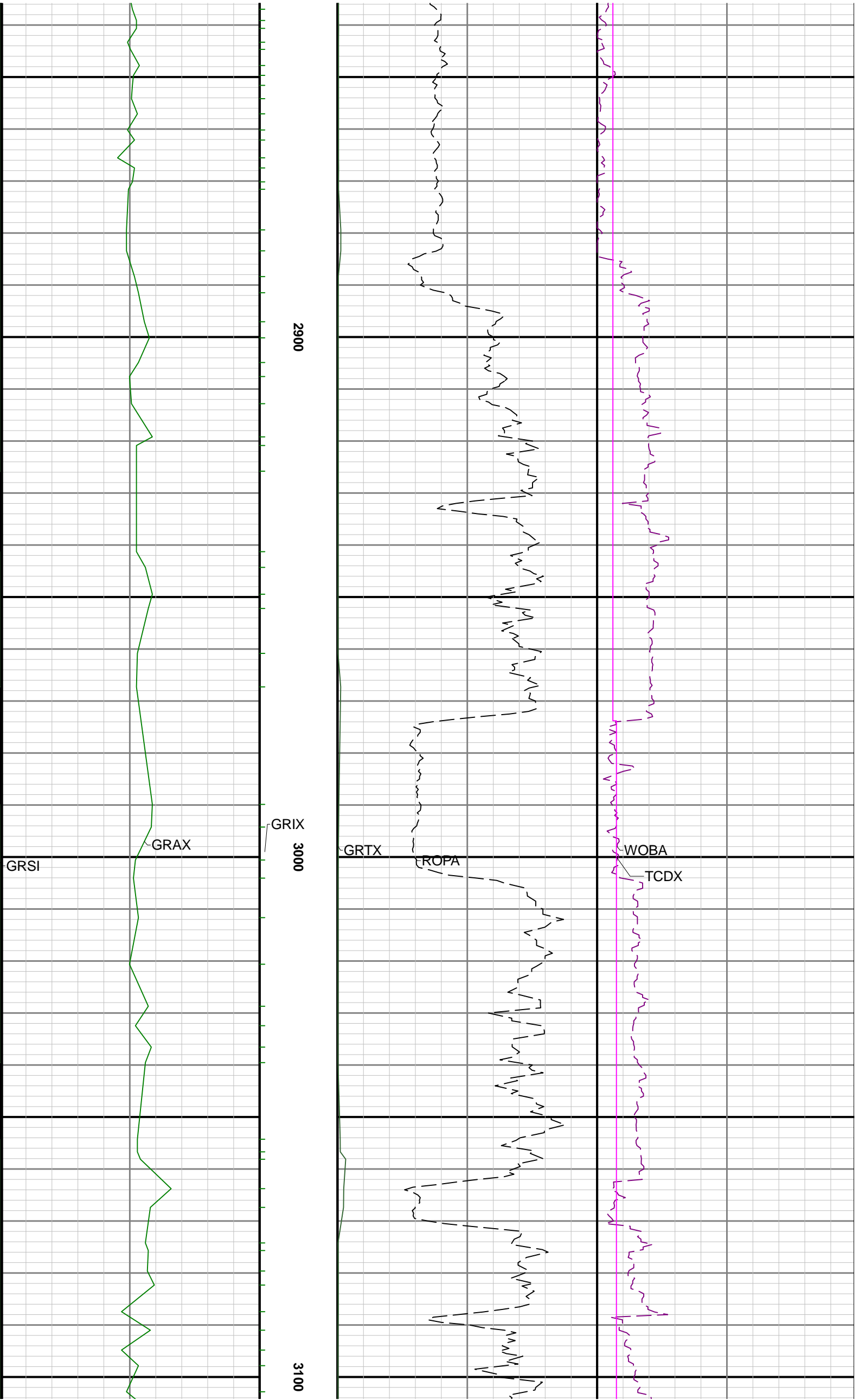
Proposed Courses	Description	Units
------------------	-------------	-------

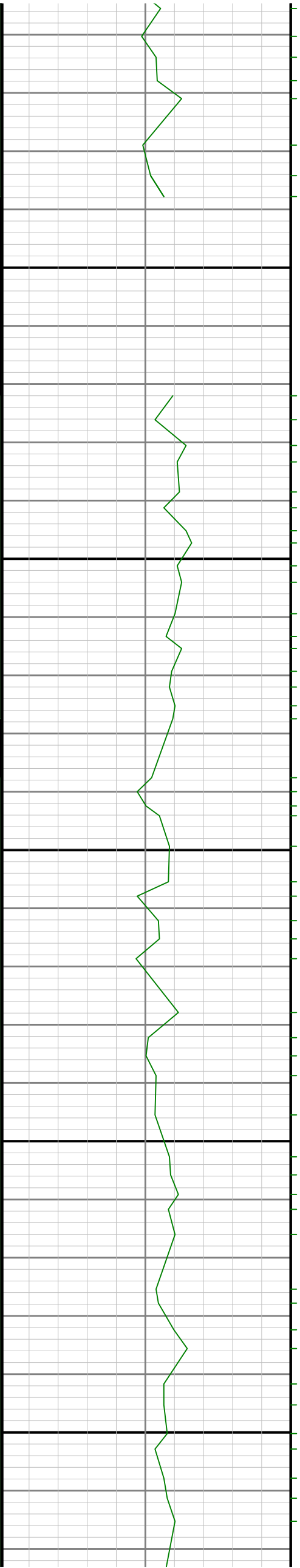
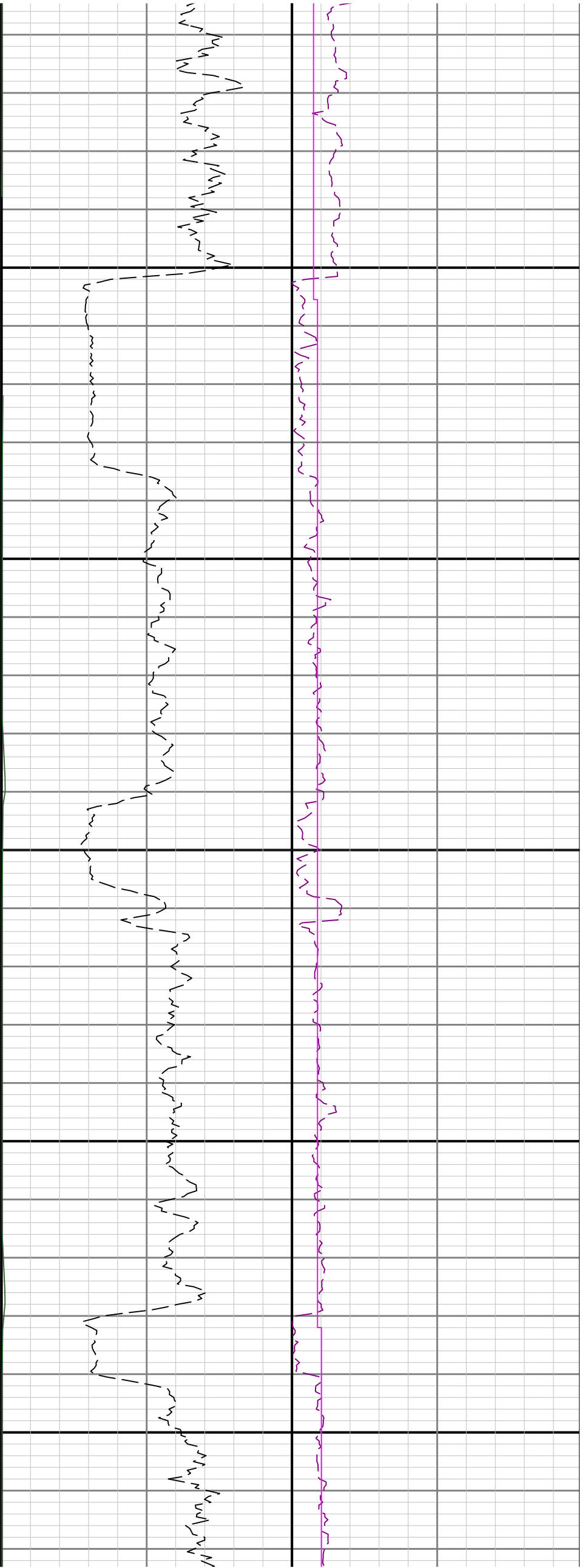
Presented Curves	Description	Units
TCDX	Downhole Temperature	degF
ROPA	Depth Averaged ROP 3 ft Average	ft/h
TVD	True Vertical Depth	ft
WOBA	Weight On Bit, Average 1 ft Average	klb
GRAX	Gamma Ray - Apparent - Real-Time 0.5 ft Average	API
GRIX	Gamma Ray - Data Point Indicator - Real-Time	unitless
GRTX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









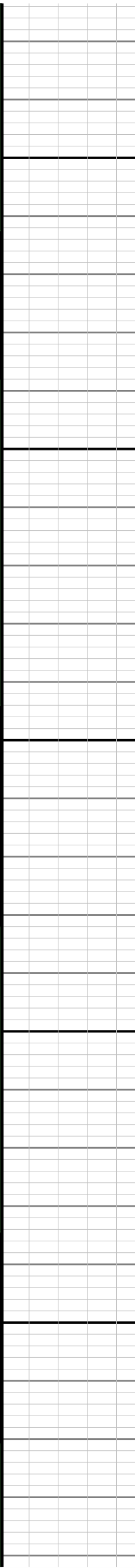
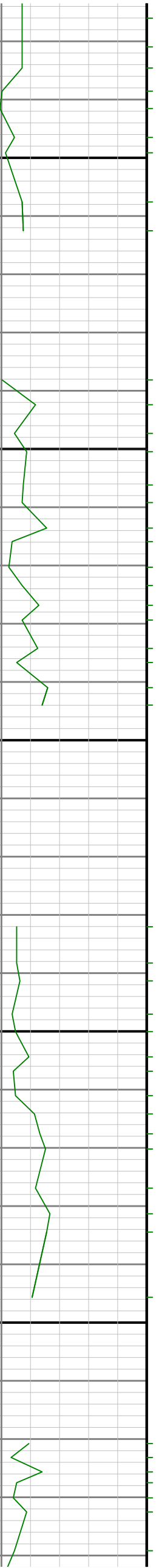


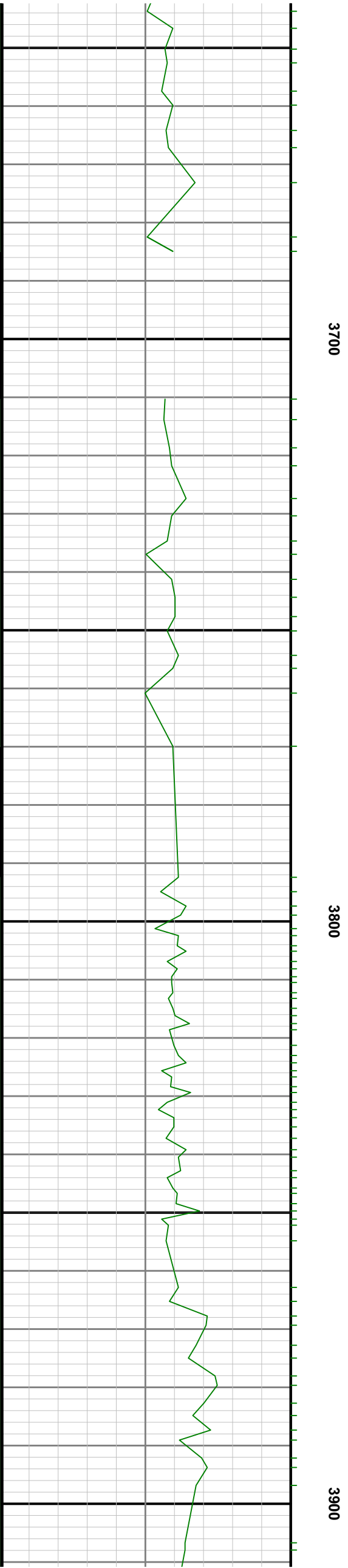
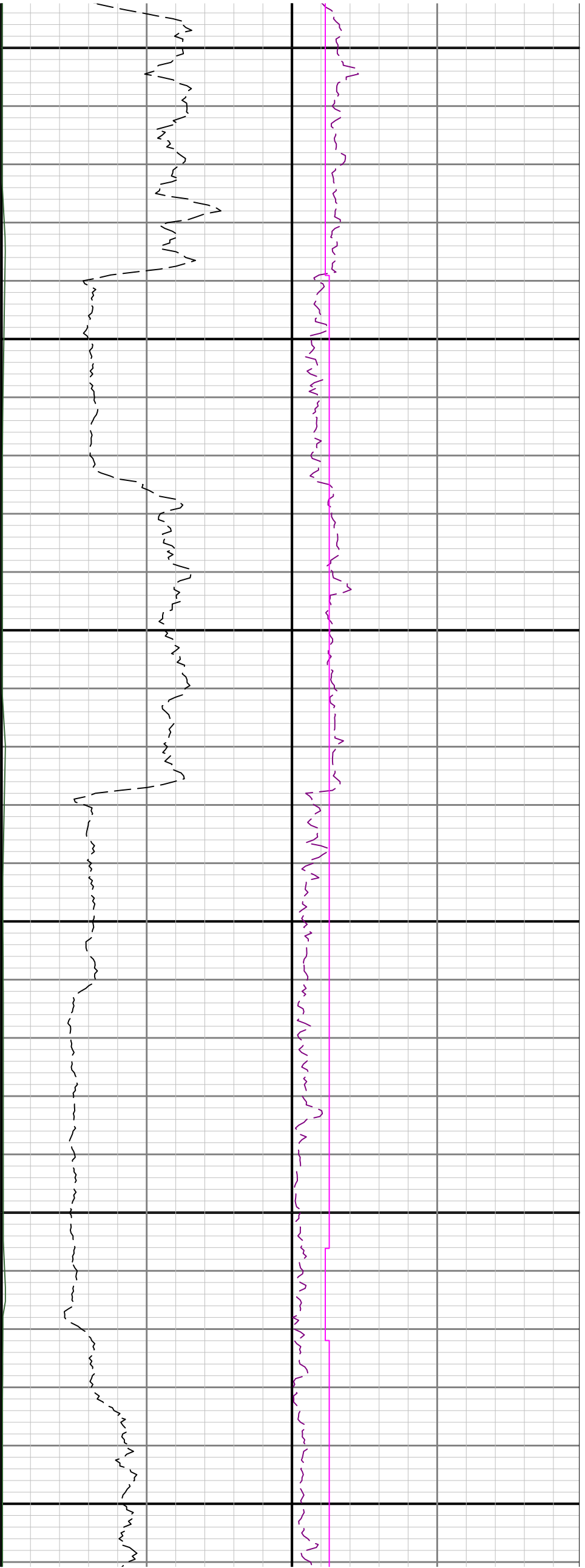


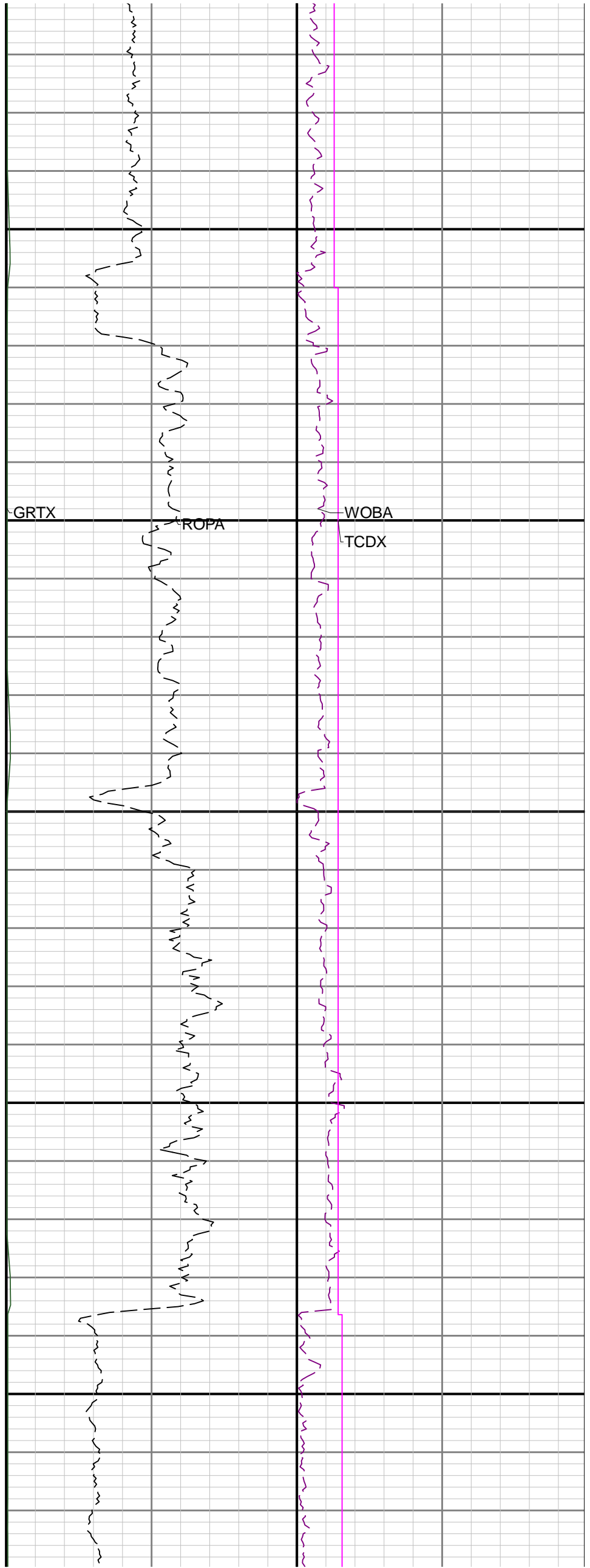
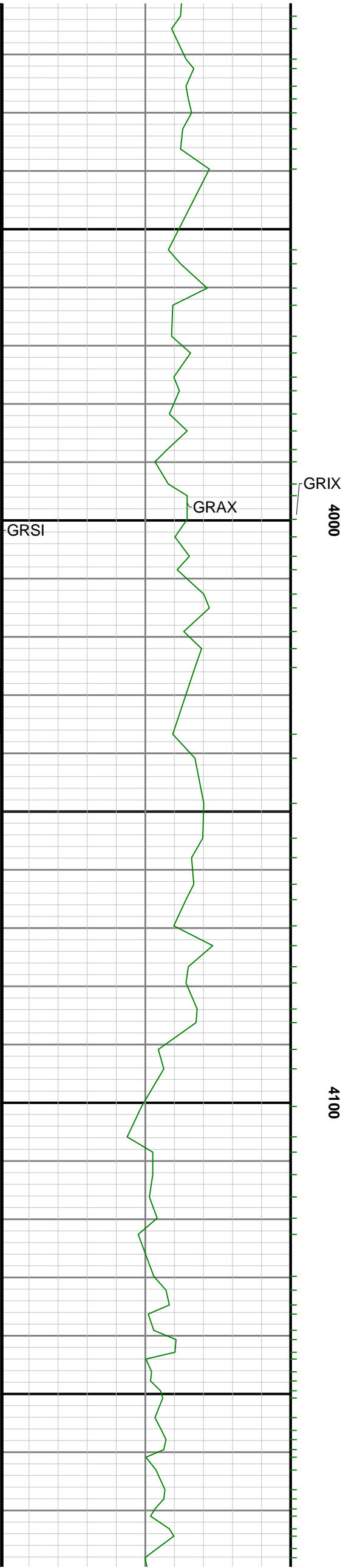
3400

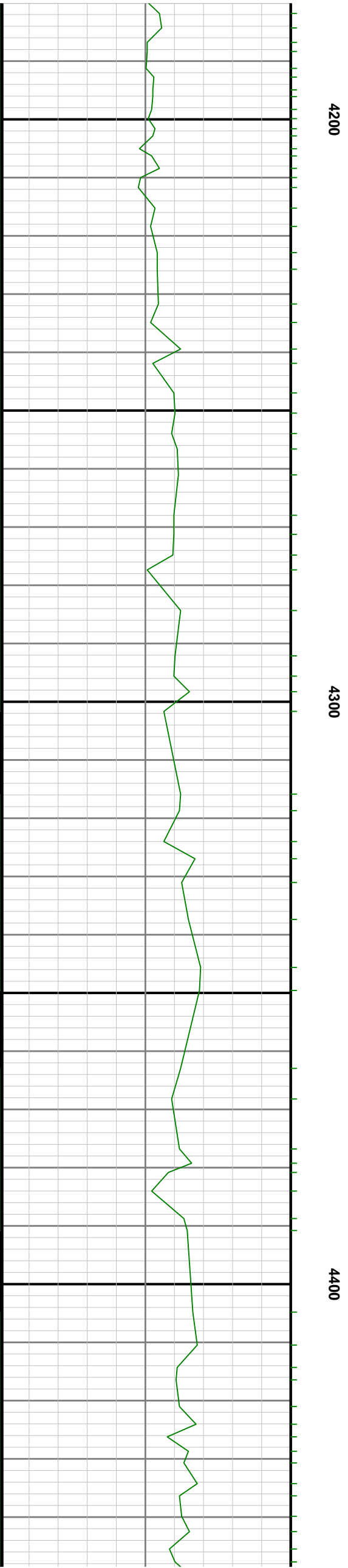
3500

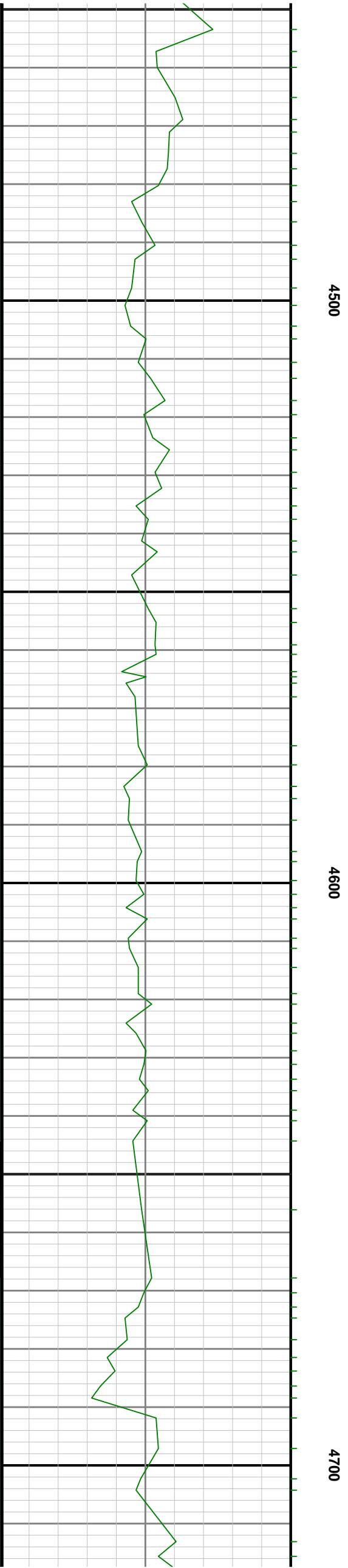
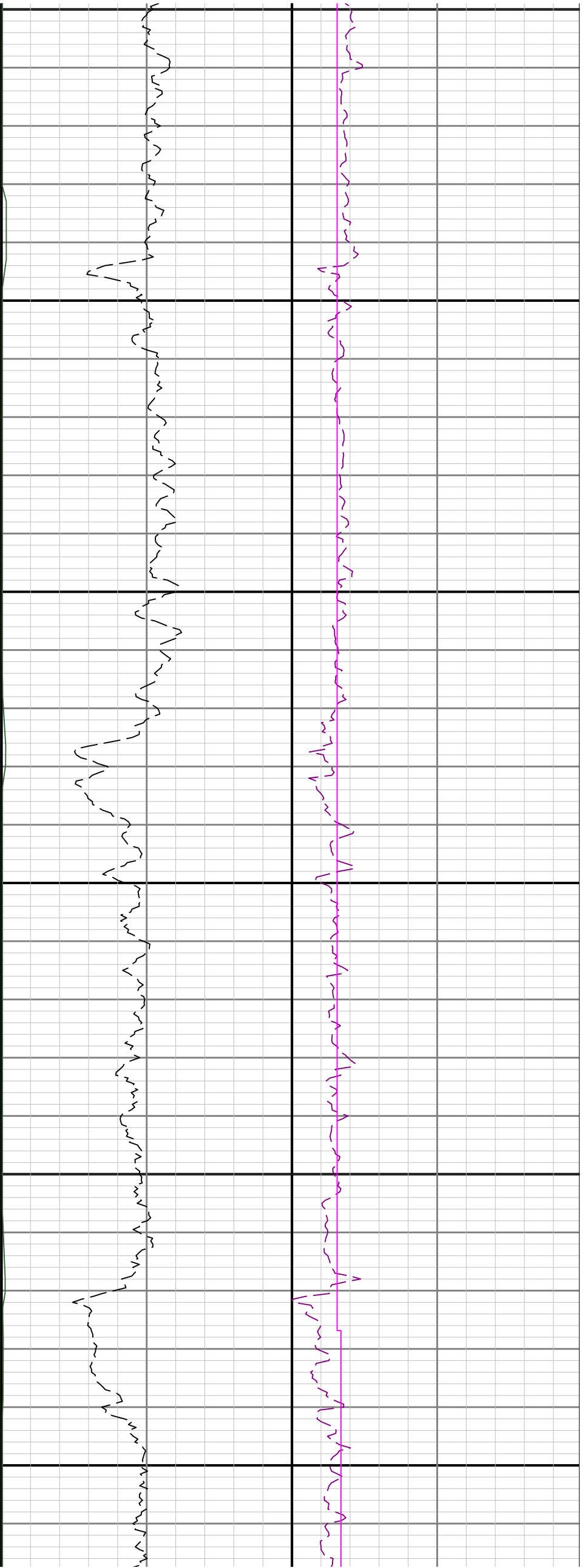
3600

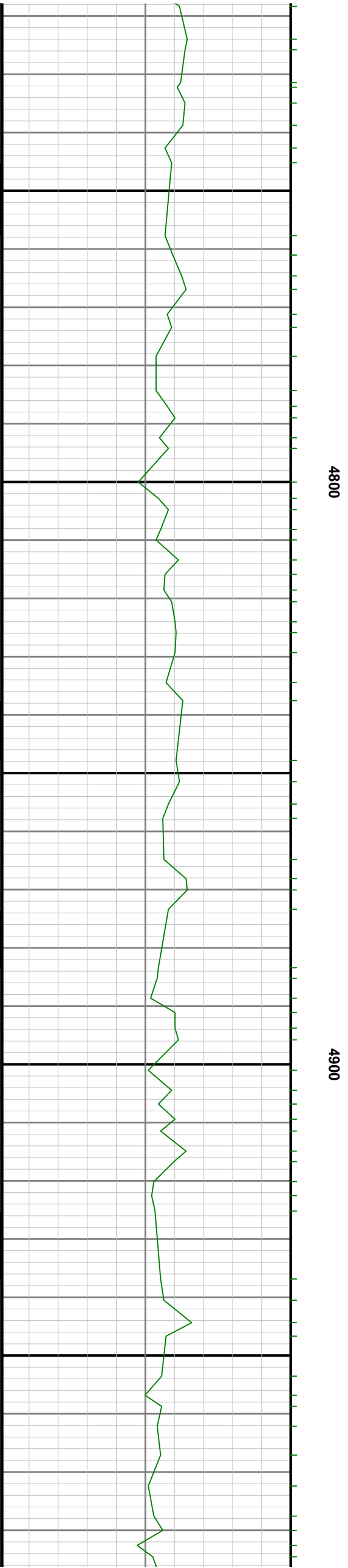
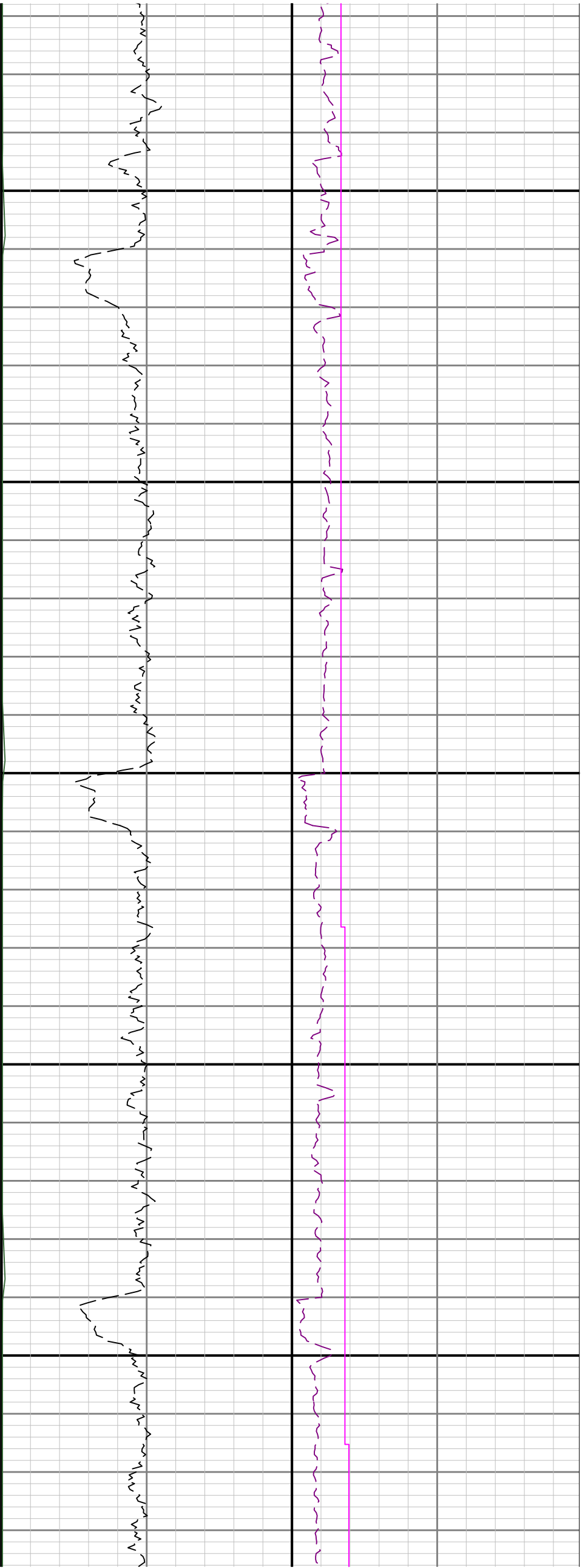


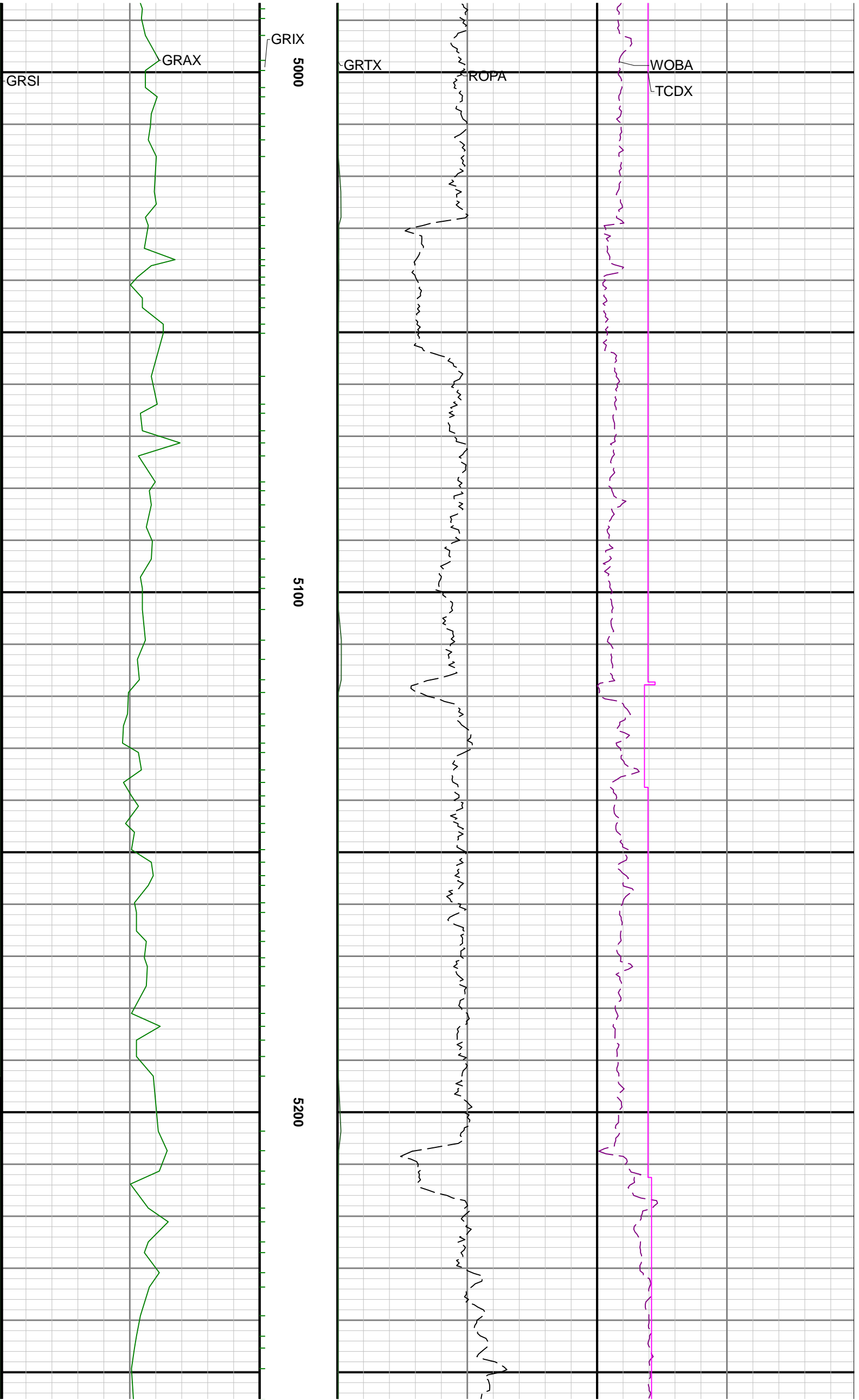


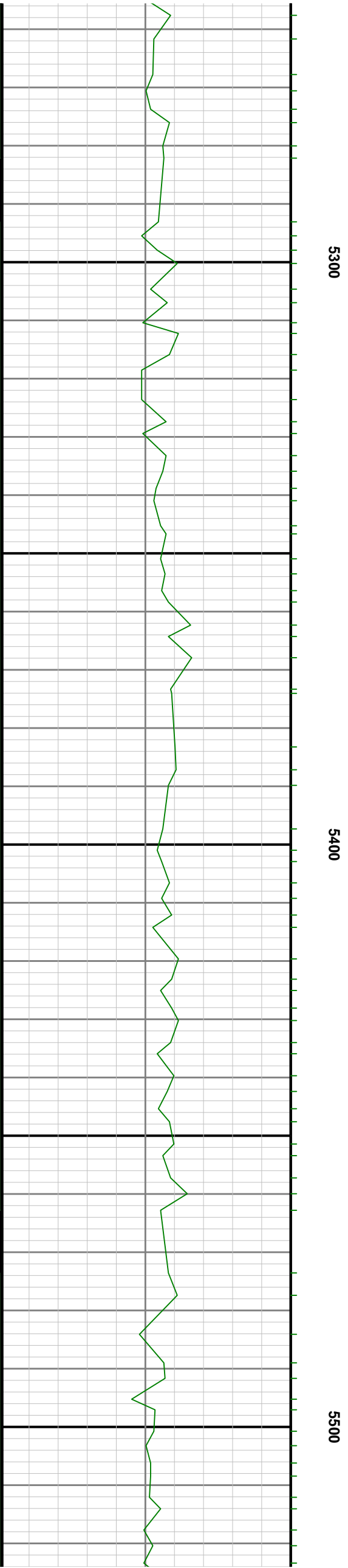
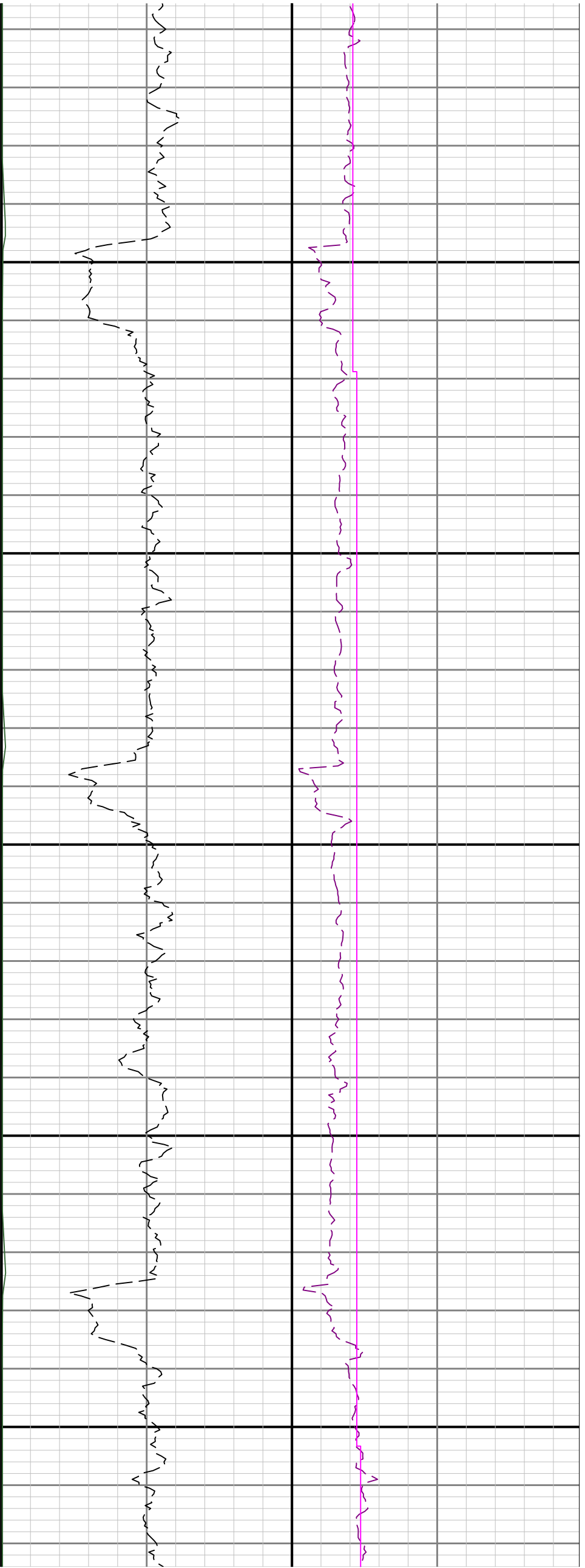


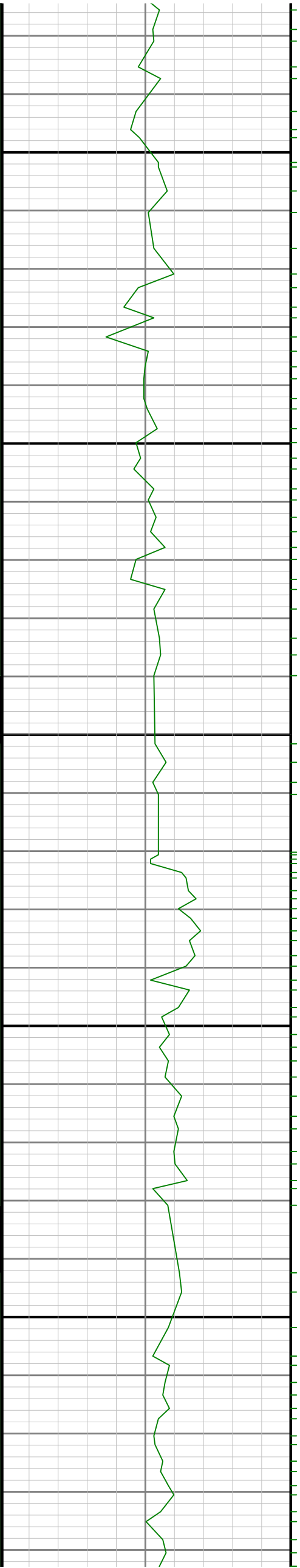
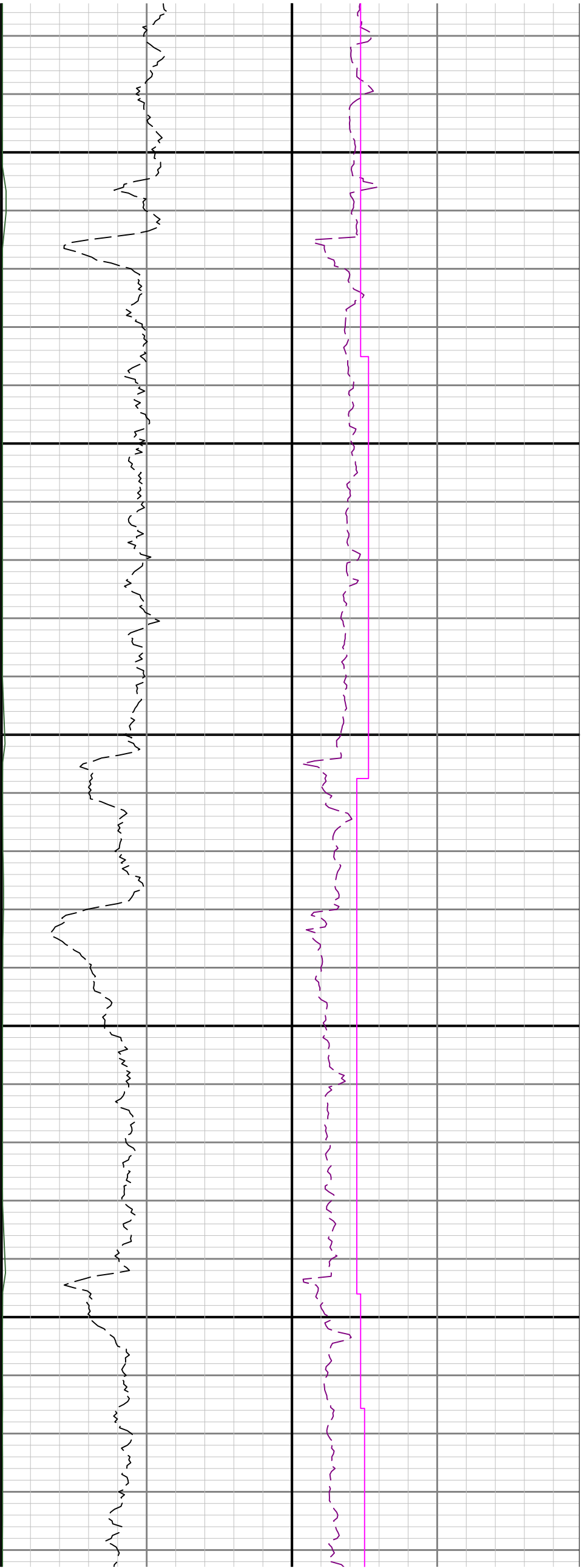


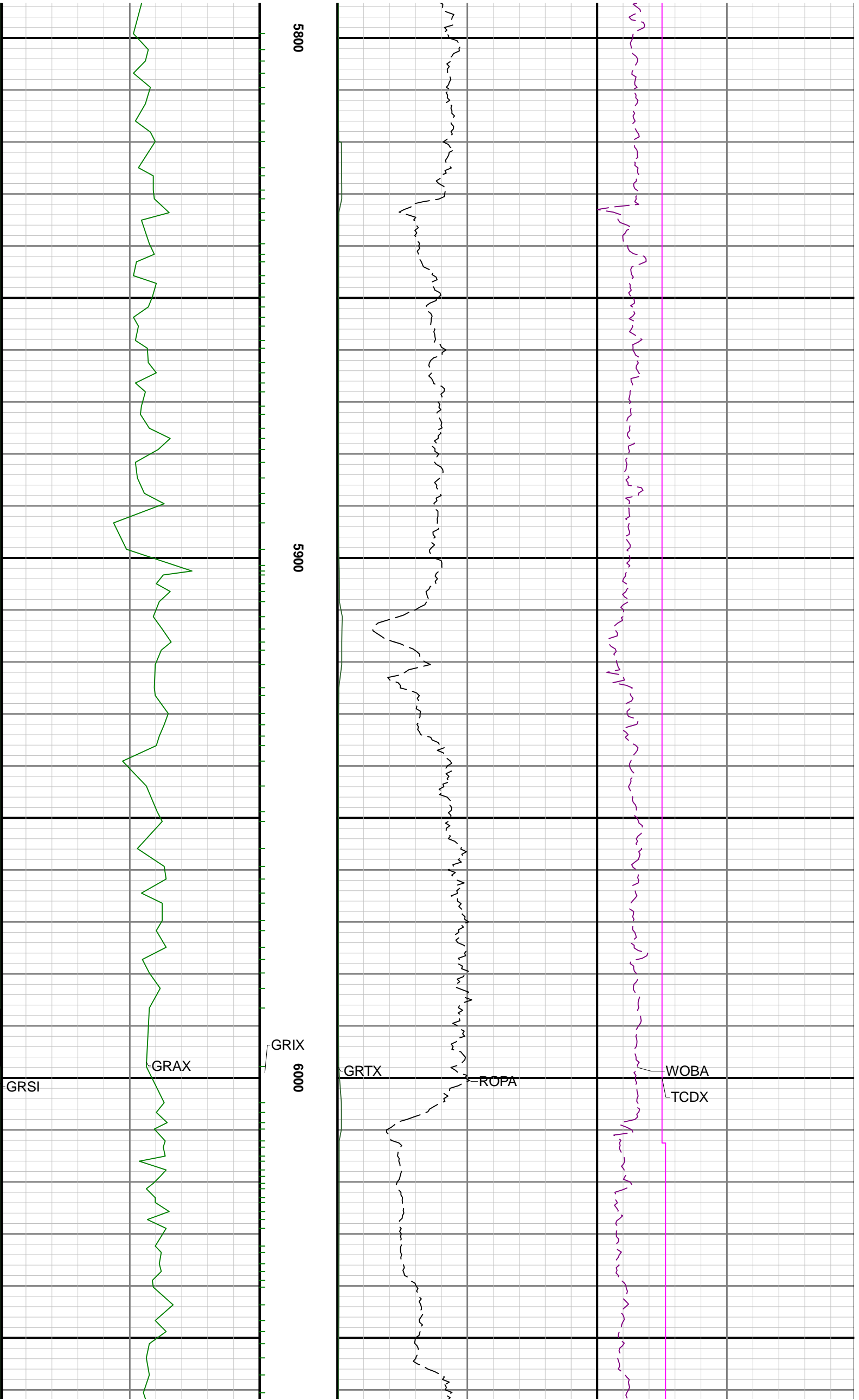


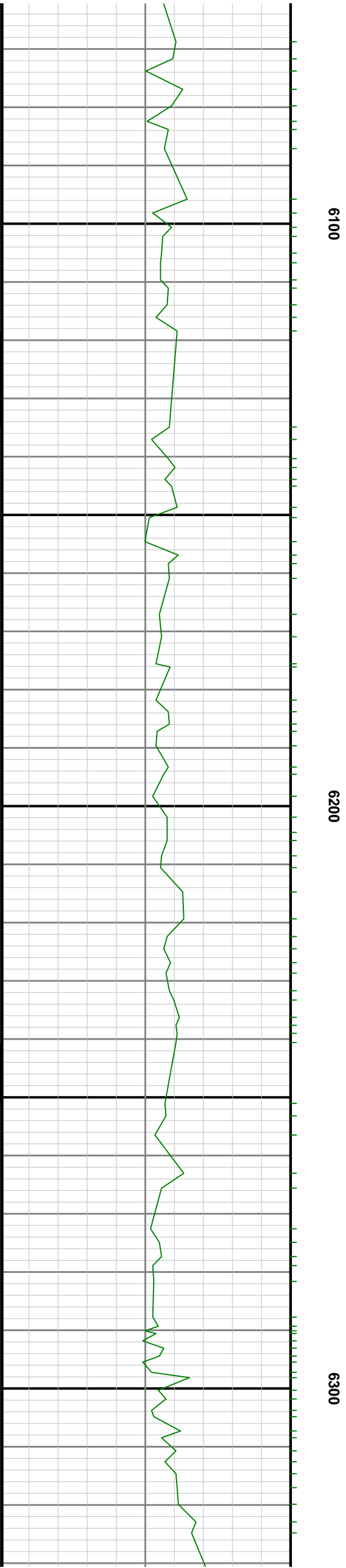
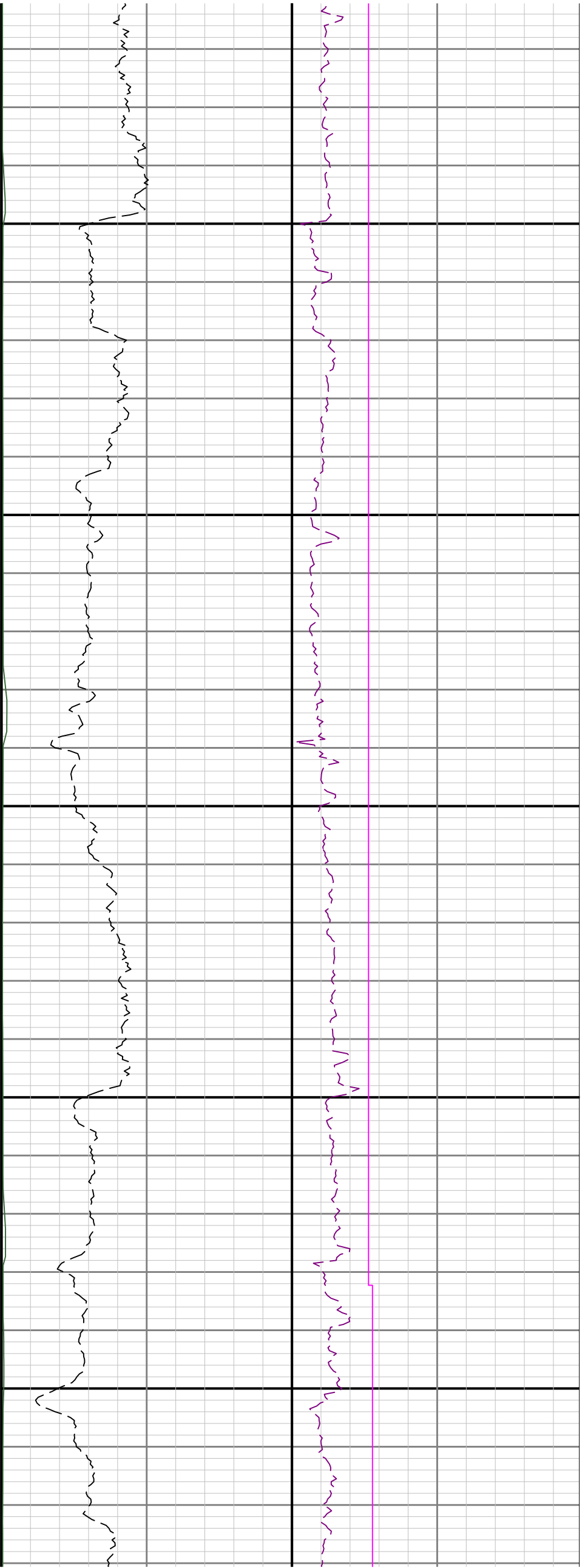


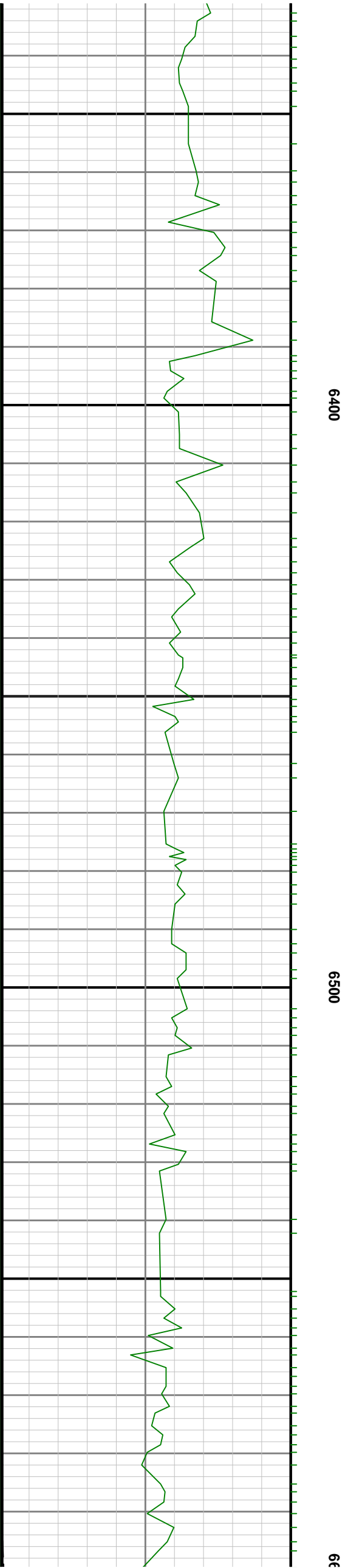
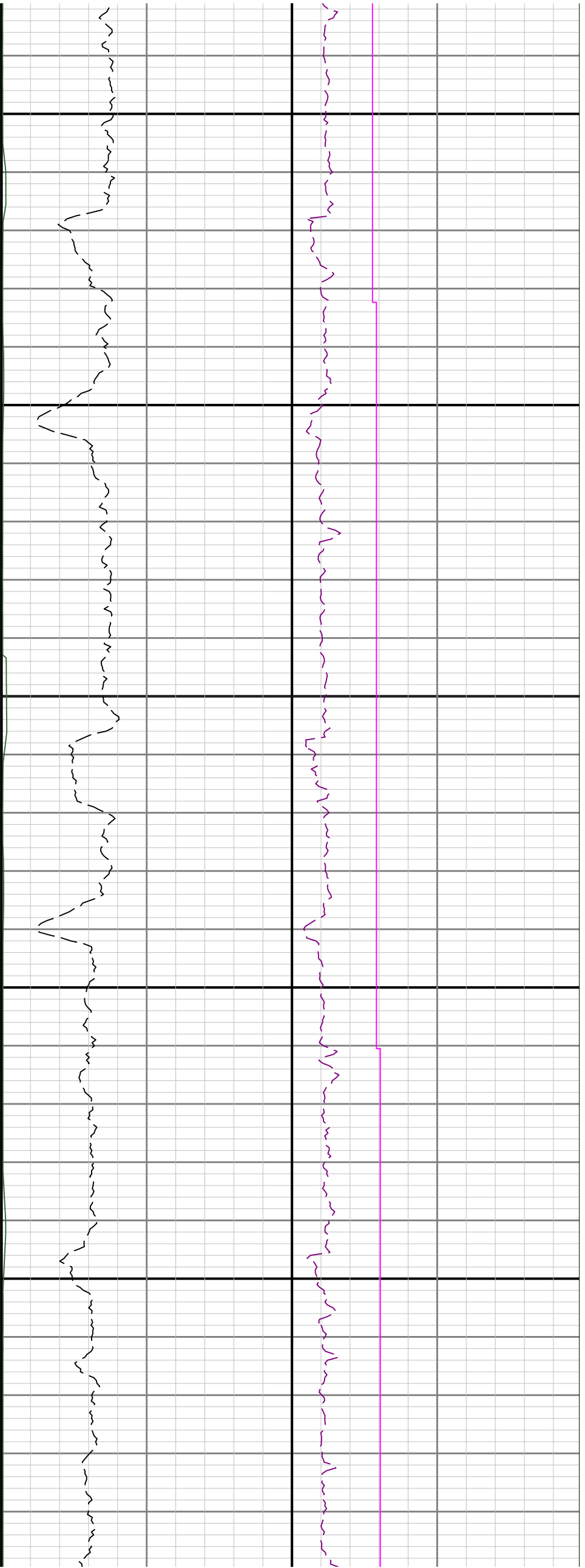


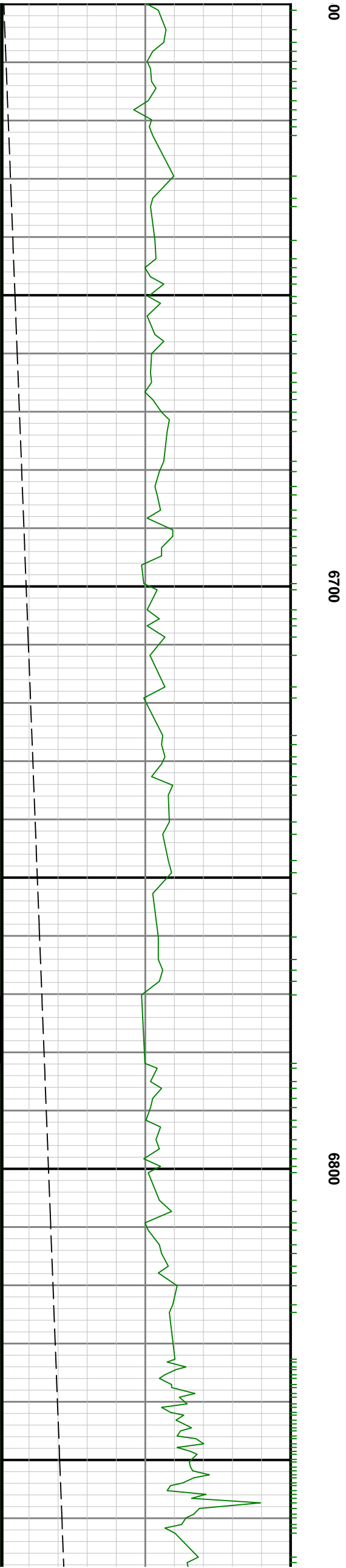
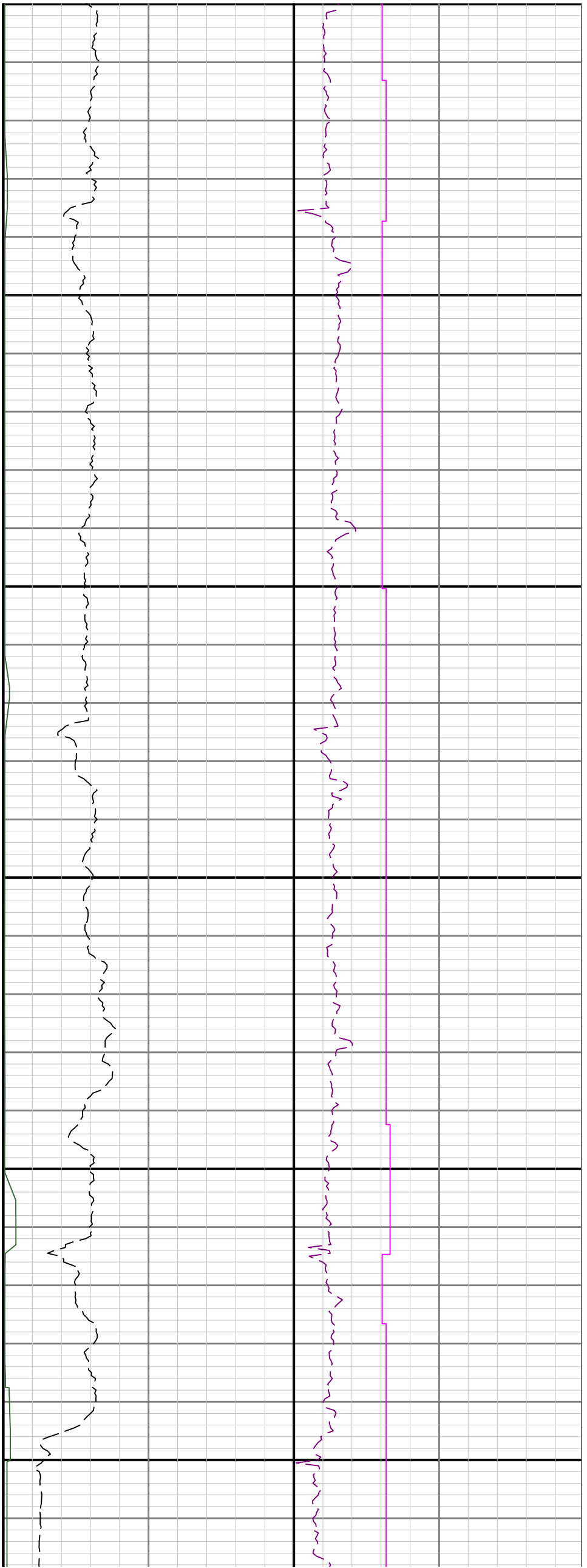


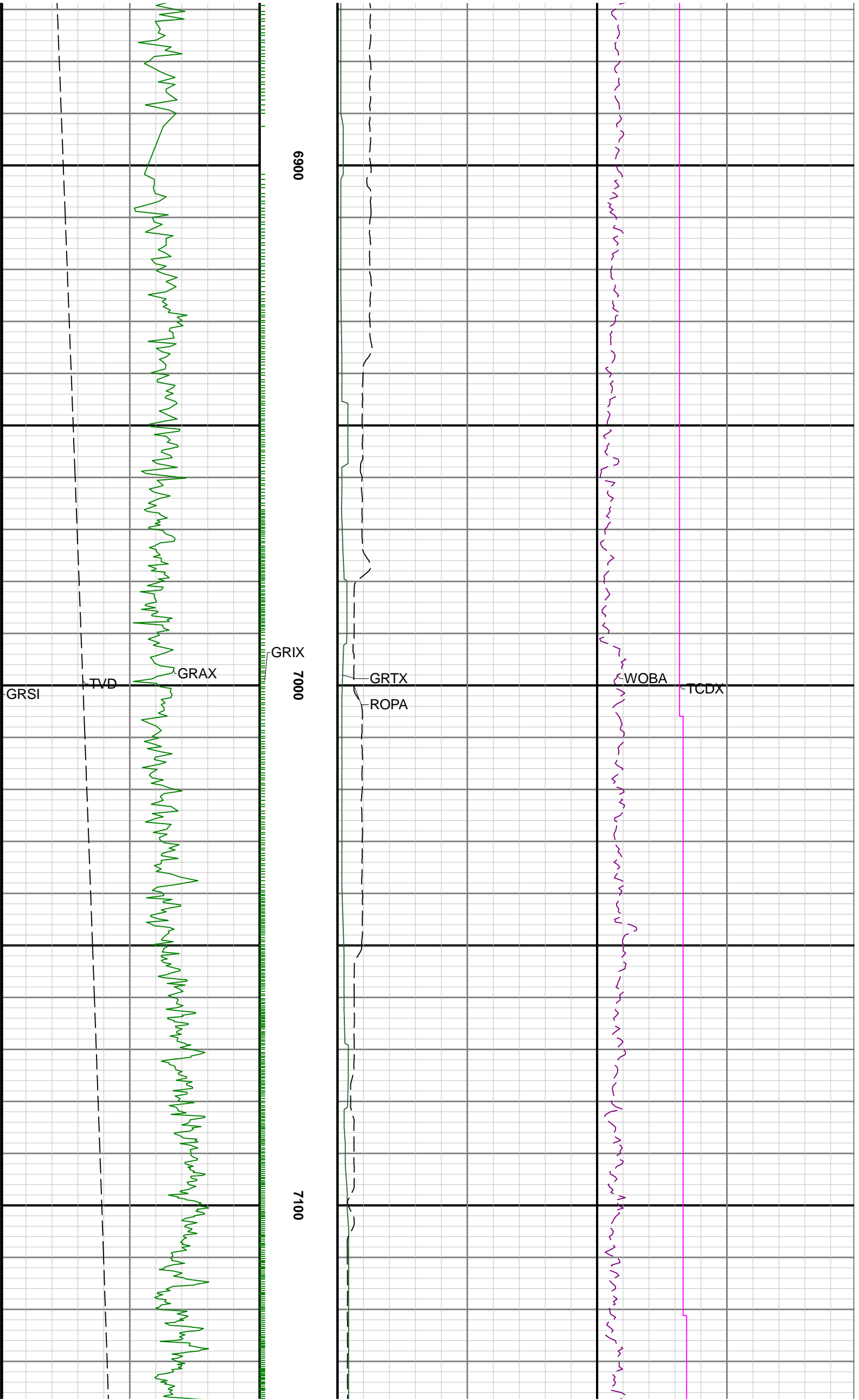


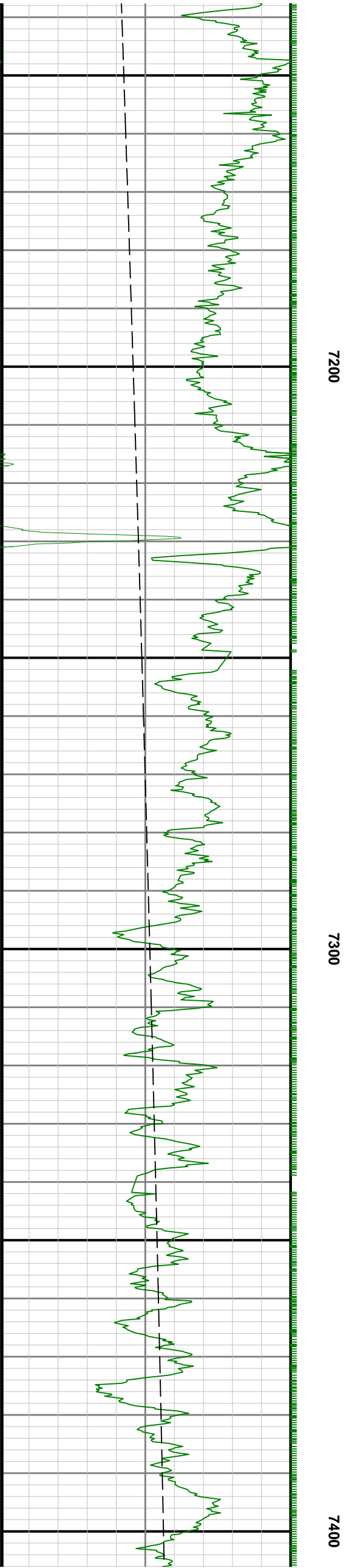


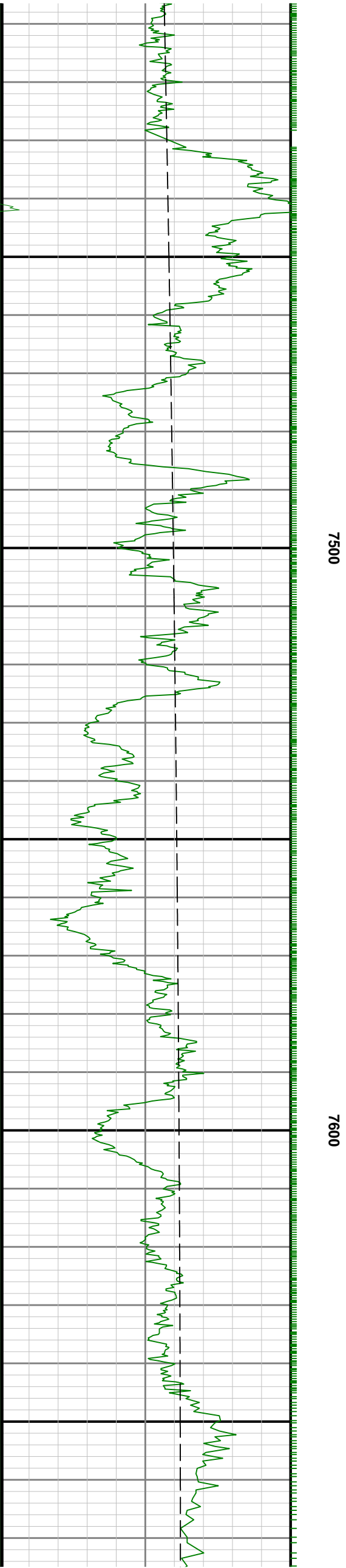
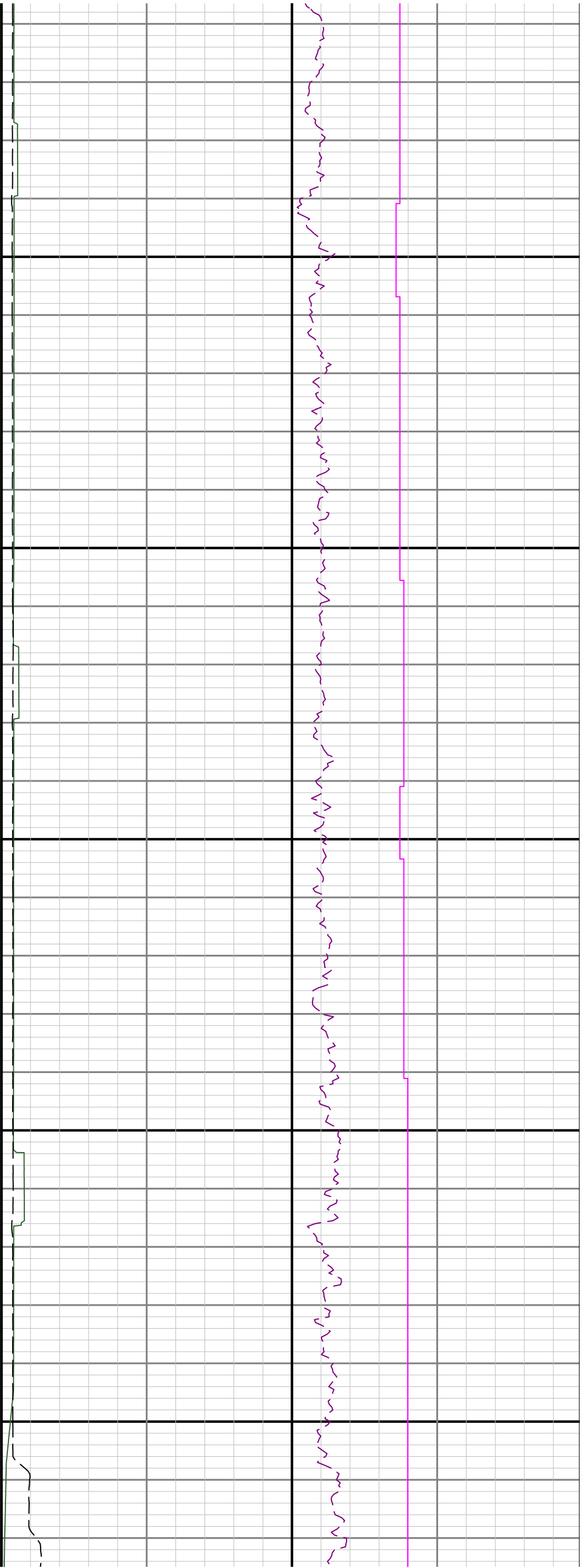


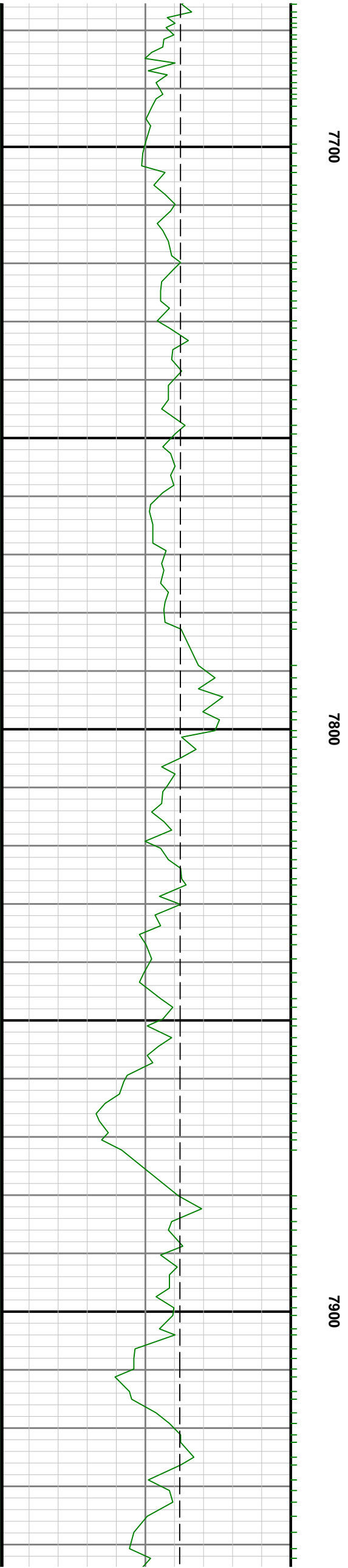
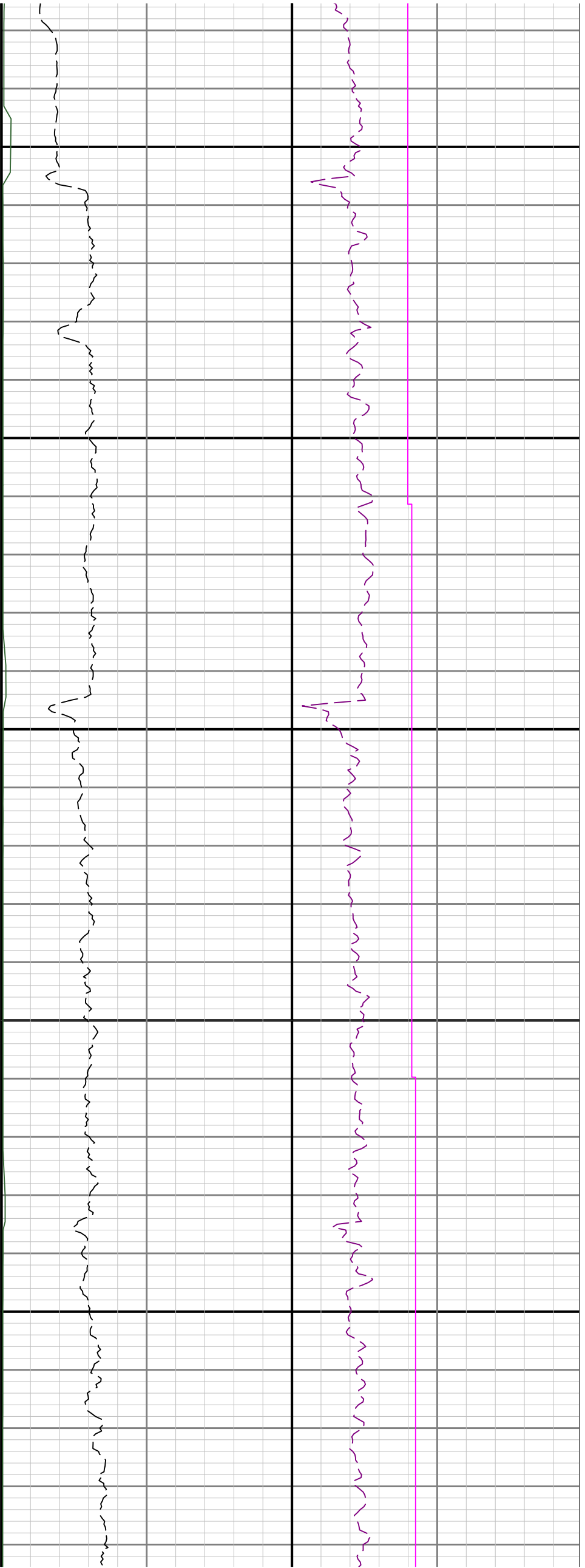


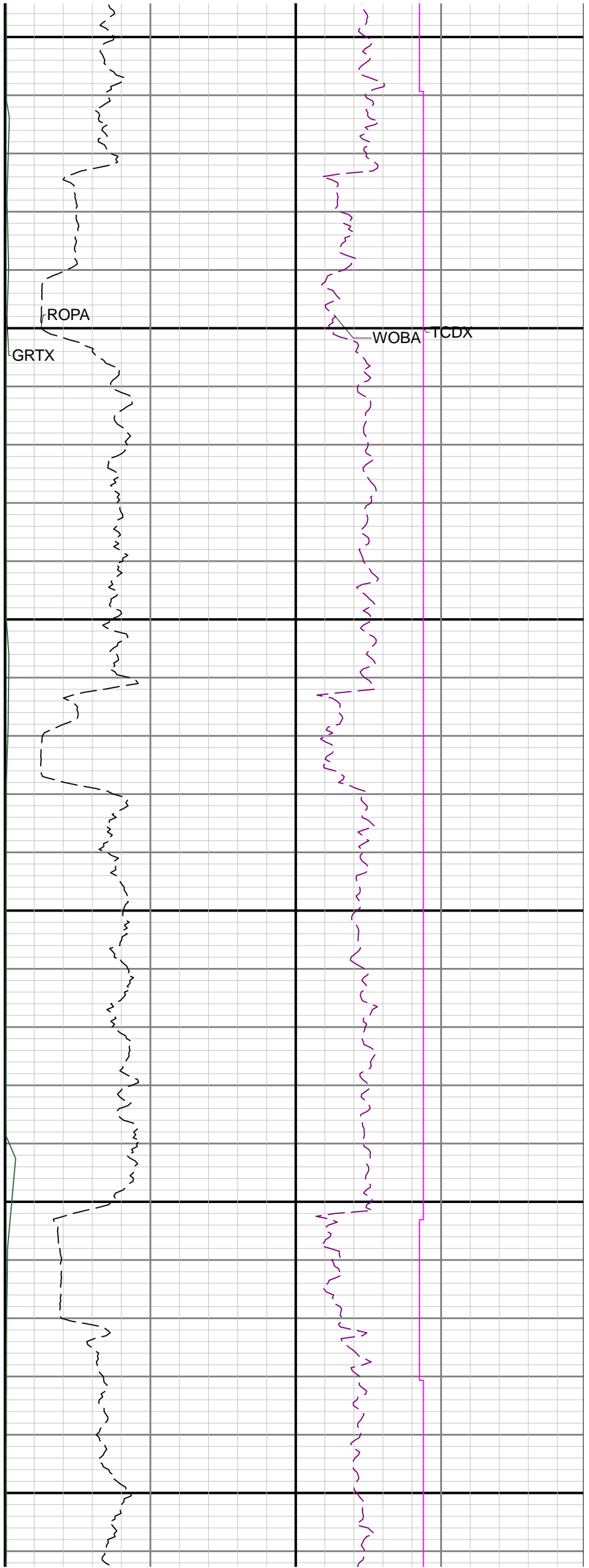
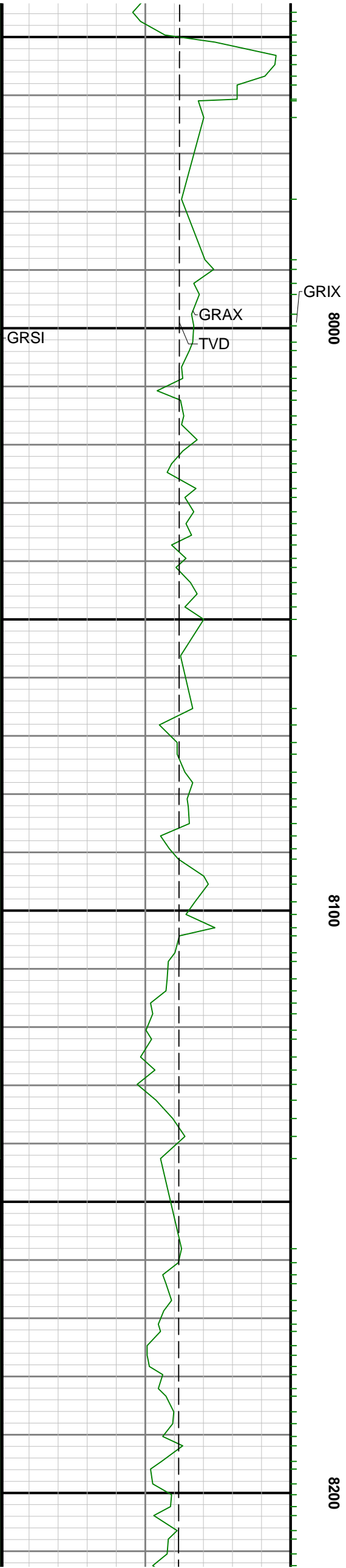


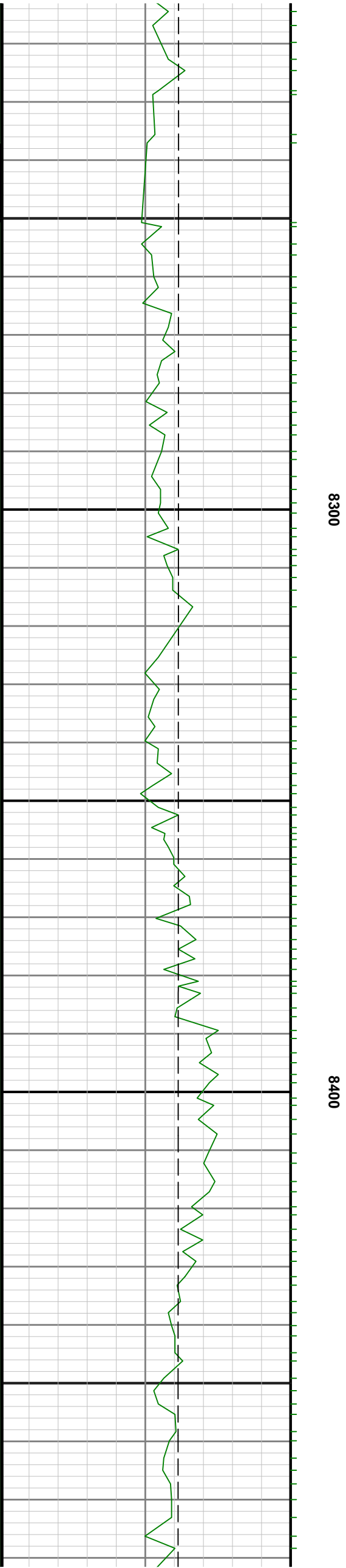
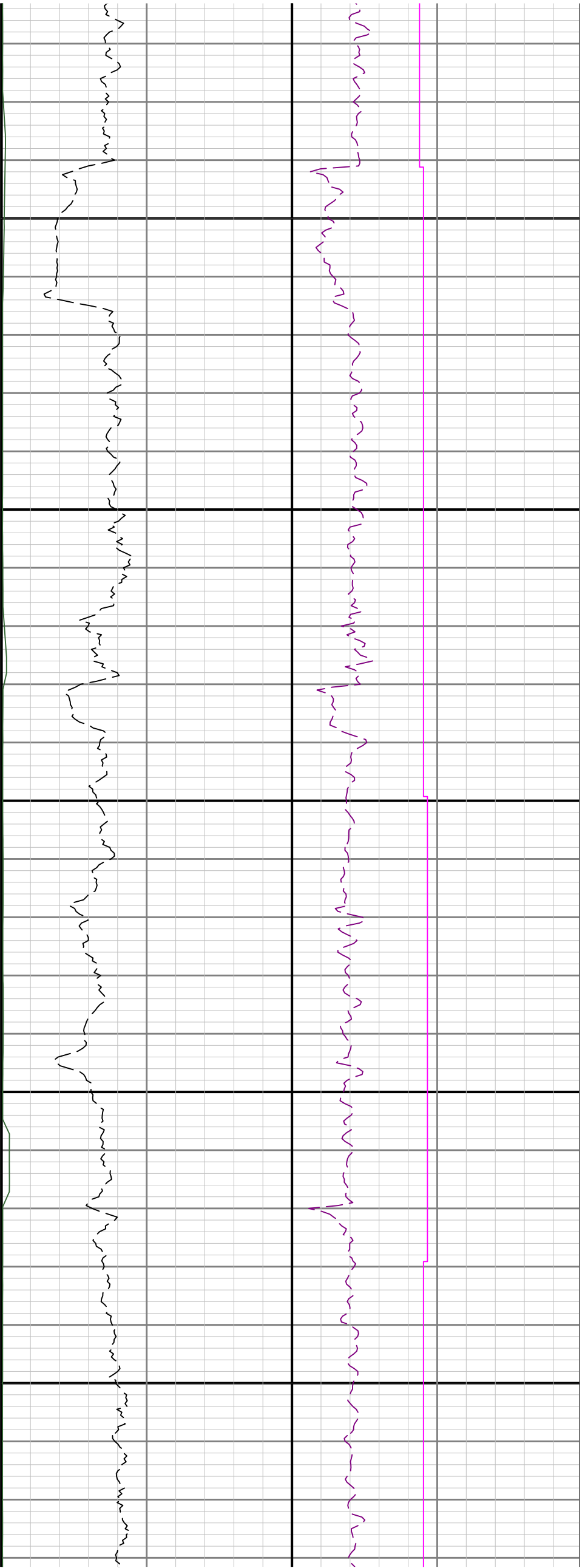


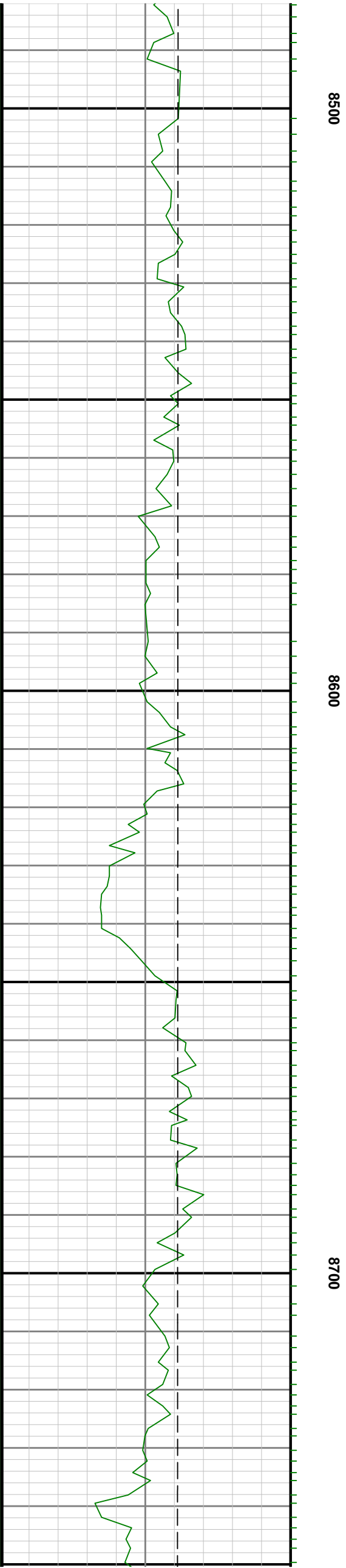
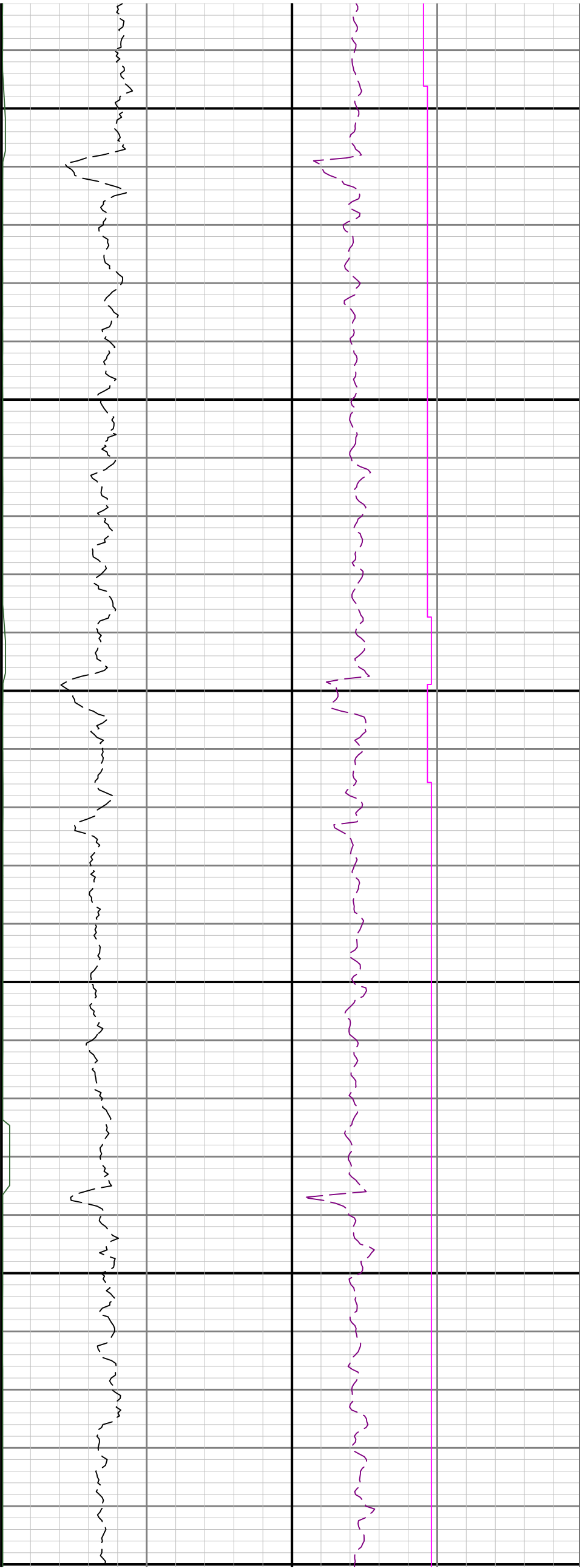


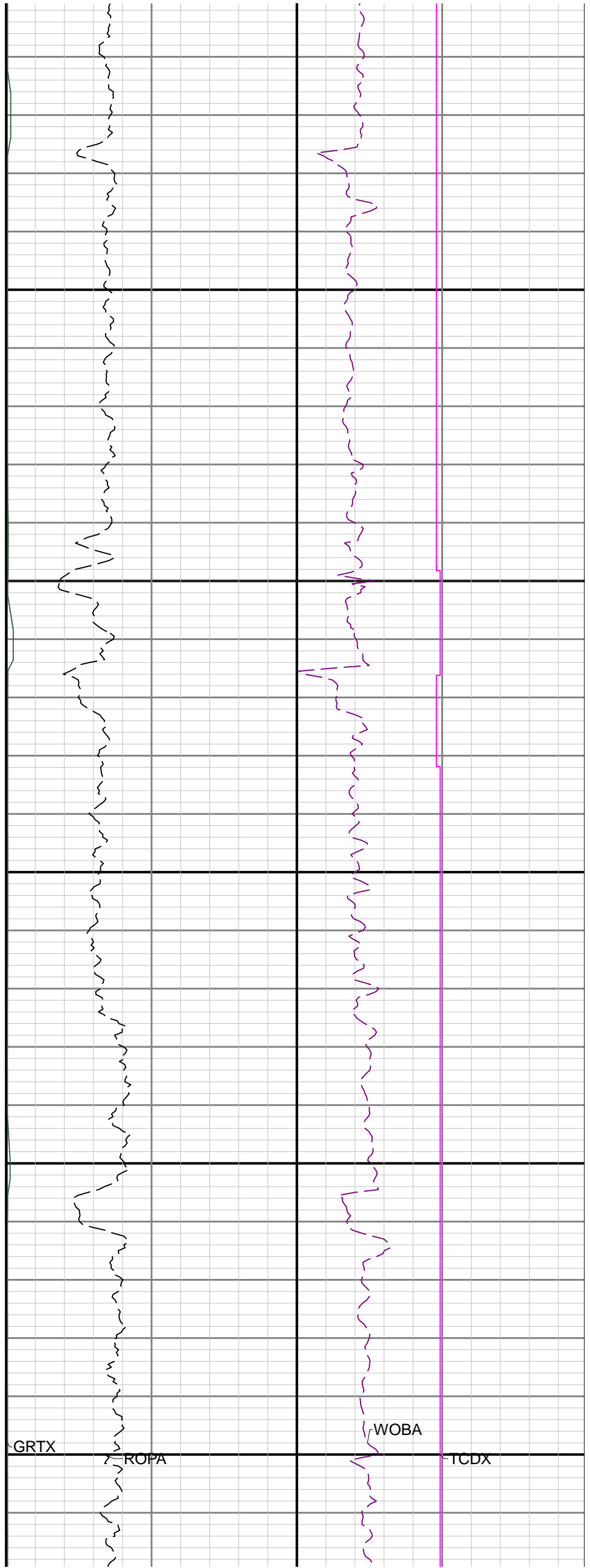
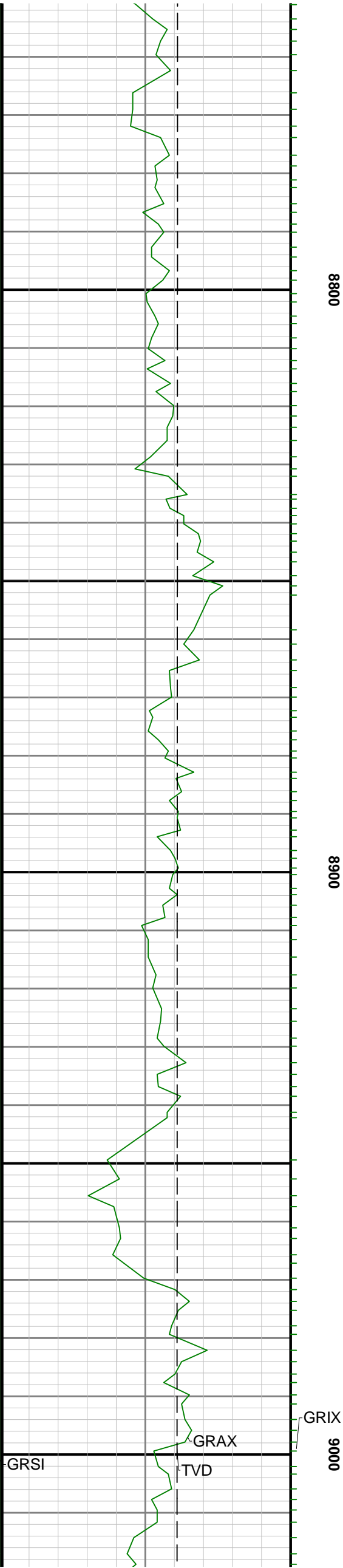


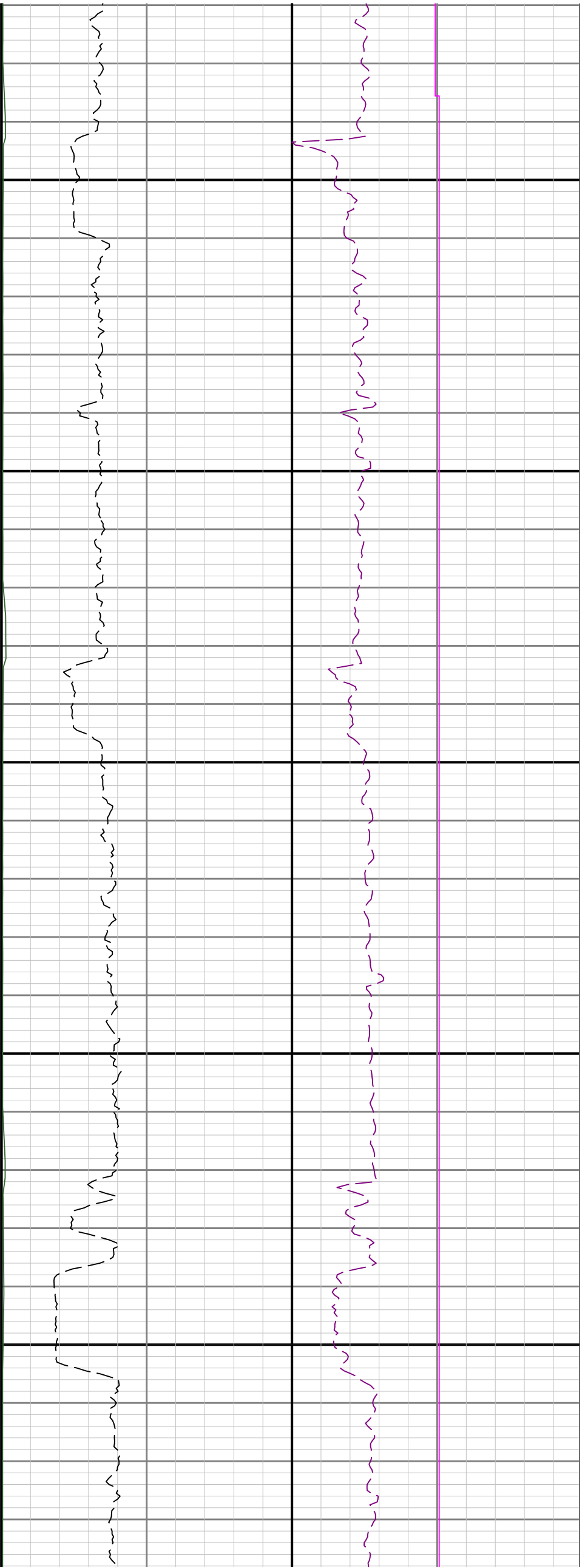






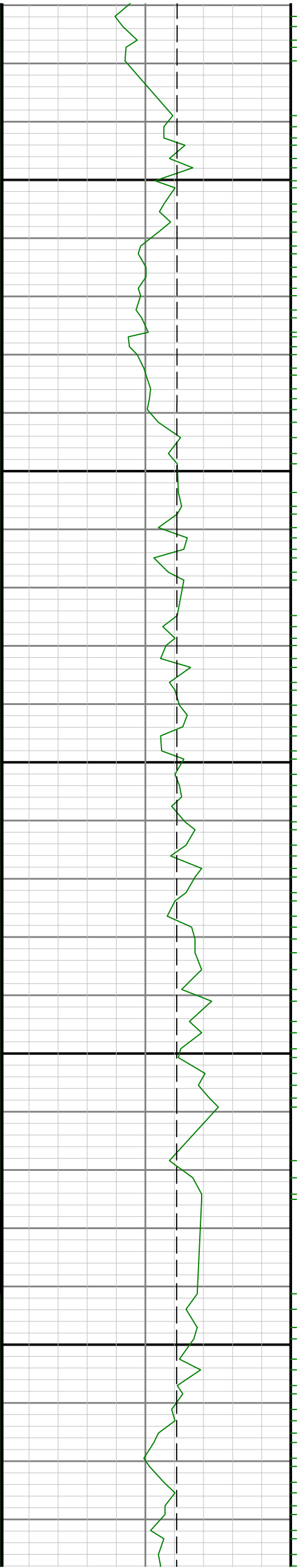


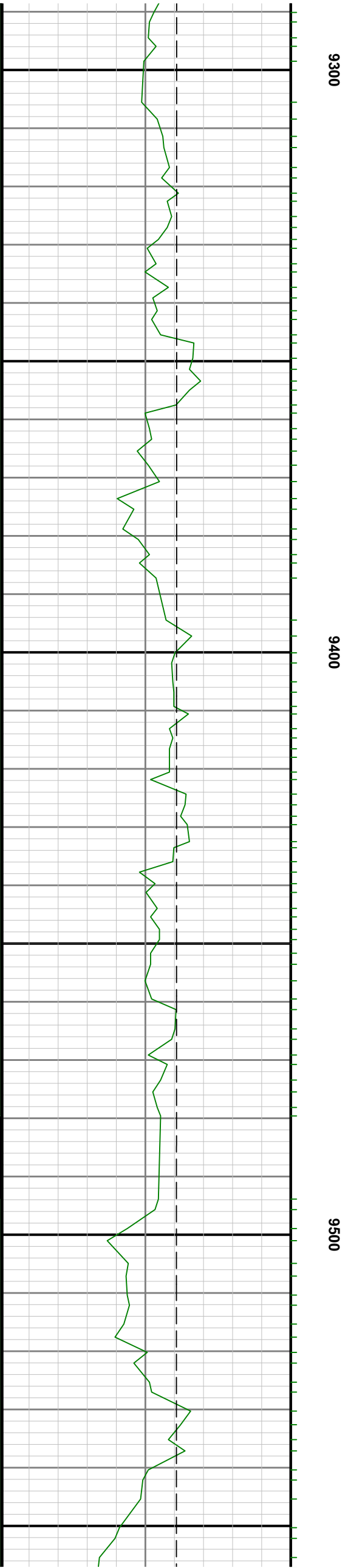
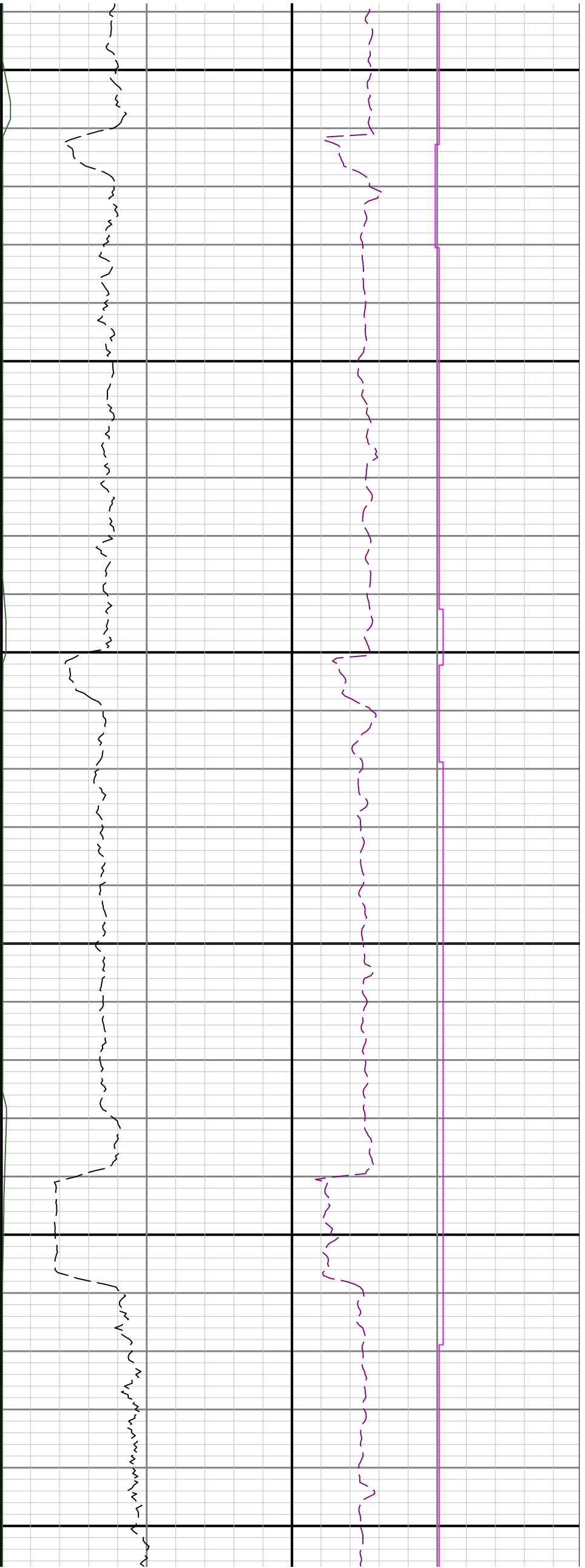




9100

9200



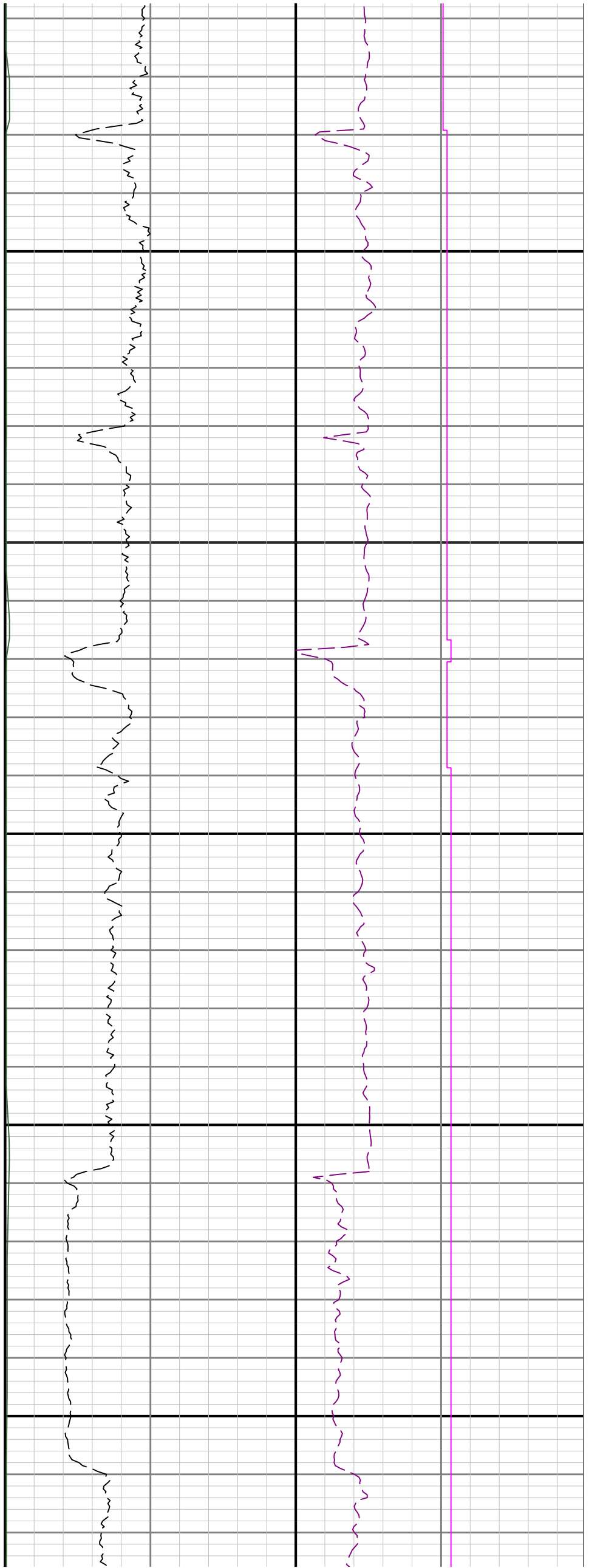


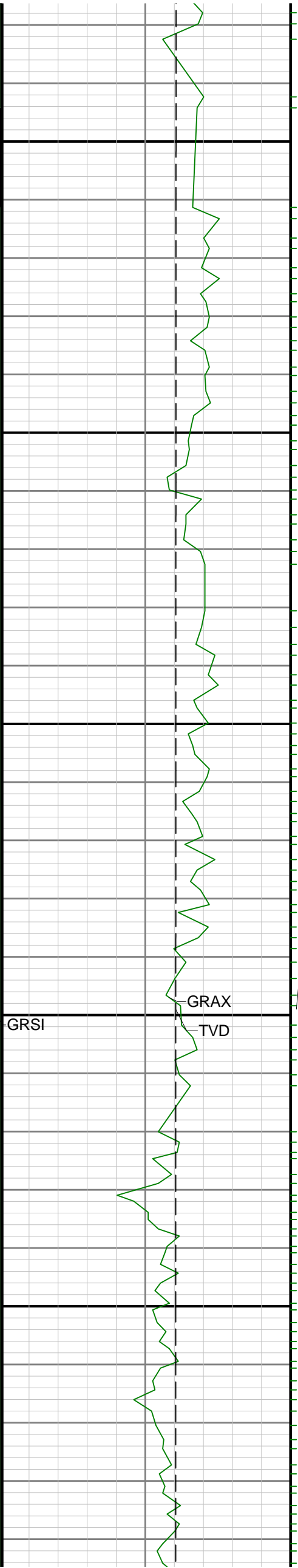


9600

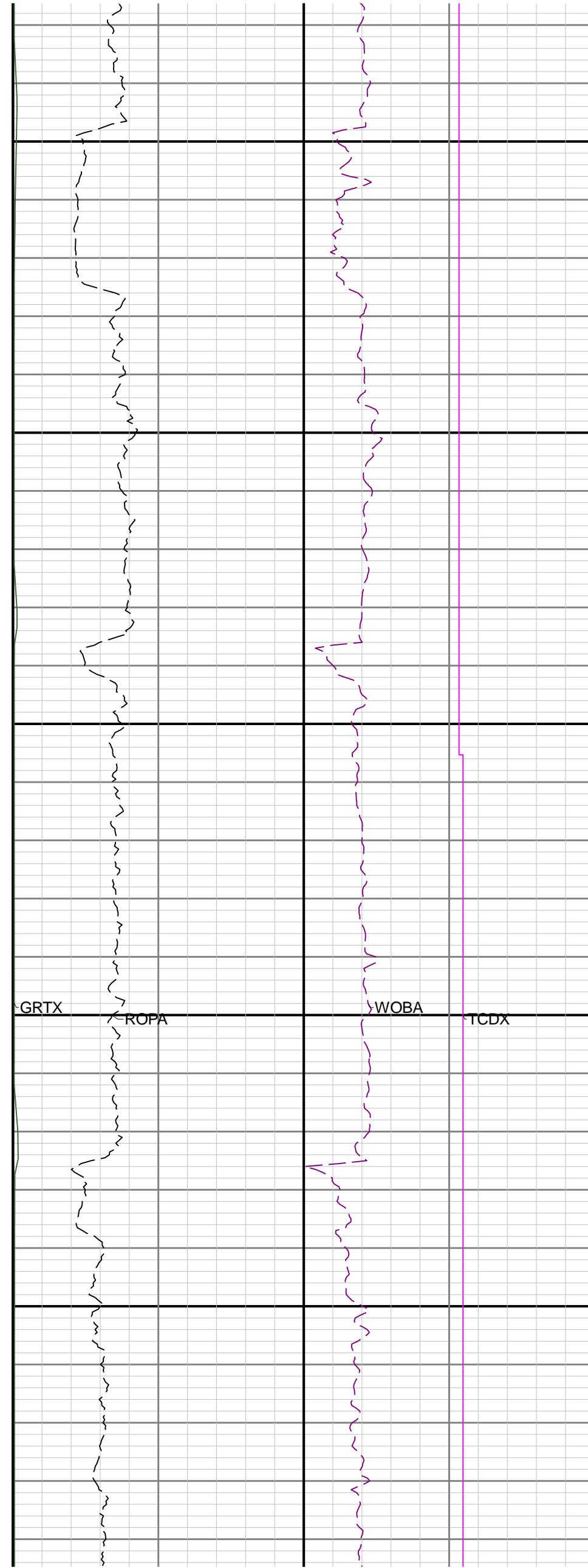
9700

9800





GRAX
10000
9900



GRTX
ROPA
WOBA
TCDX

